



Lakeland Industry & Community Association

SEPTEMBER 2021

Monthly Ambient Air Quality Monitoring Report

LICA-202109

Operation and Maintenance:

Bureau Veritas Canada

Data Validation and Report:

Lakeland Industry & Community Association

October 20, 2021

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October 20, 2021

Alberta Environment and Parks (AEP)

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RE: LICA – September 2021 Monthly Ambient Air Quality Monitoring Report

Enclosed is the September 2021 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		√	√
	PRECIPITATION		√	√
	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 September 2021

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.
- **THC/CH4/NMHC:**
 - Sporadic bad injections were noted commencing on September 3 and becoming frequent on September 4. A successful multi-point calibration was completed on September 5 to correct the issue. 1-minute data collected between September 3 and September 5 were reviewed and invalidated if data quality were affected by the injection issues. Two hourly data were invalidated as the 75% of valid 1-minute in an hour requirement were not achieved. Two hours of downtime were recorded due to this event.
 - Poor injections were recorded again starting September 13 hour 21. On September 14, a shut down calibration was attempted but failed due to multiple bad injections. The Thermo 55i analyzer, s/n: 1180030034, was removed, and the Thermo 55i analyzer, s/n: 1180930025, was installed. A successful installation calibration was completed on September 15. 1-minute data collected between September 13 and September 15 were reviewed and invalidated if data quality were affected by the injection issues. Twenty-four hours of data were invalidated as the 75% of valid 1-minute in an hour requirement were not achieved. Twenty-eight hours of downtime were recorded due to invalid data and additional quality check.

- **PM2.5:** No data were recorded between September 12 hour 7 and September 13 hour 7, likely due to communication issues between the analyzer and the datalogger. The PM unit was reset to correct the problem. Twenty-five hours of downtime were recorded due to this event.

Tamarack (formerly Maskwa)

- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement.
- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) where applicable, except PM2.5. One 1-hr exceedance was recorded this month. The exceedance recorded this month was likely due to road construction in the vicinity of the station.

Date	Time (MST)	Average Period	AAAQOs / AAAQGs (µg/m3)	Concentration (µg/m3)	Reference #
September 8	6	1-Hour	80	167	383326

- **O3:** On September 15, a successful shut-down calibration was performed on the BV-supplied API 400A analyzer, s/n: 445, and the LICA-owned Thermo 49iQ analyzer, s/n: 1202068570, was installed following factory repair. The analyzer was allowed to stabilize overnight. An installation calibration was completed on September 16. Fifteen hours of downtime were recorded due to this event.

St. Lina Station

- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- 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.
- **SO2:** The sample pump failed on September 14 hour 20 and was repaired on September 16. A successful post-repair calibration was completed on September 17. Sixty-six hours of downtime were recorded due to this event.
- **H2S:** The analyzer failed the daily span check on September 26 and the repeat zero-span check on September 27. A repeat multi-point calibration was completed to correct the drift on September 27. As the analyzer passed the September 27 multi-point calibration check, data collected between September 26 and 27 were considered valid. Six hours of downtime were recorded due to additional quality checks.
- **PM2.5:** On September 24, a successful shut-down audit was completed on the BV-supplied Thermo Sharp 5030i unit, s/n: CM17461021, and the LICA-owned Thermo Sharp 5030i unit, s/n: CM1709100, was installed and calibrated. The unit was removed for major repair/maintenance on May 6. Four hours of downtime were recorded due to this event.

Integrated Sampling

All the integrated sampling analytical results are included in the September 2021 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 North American Pollution Surveillance schedule (NAPS).
 - Five samples were collected this month: on September 1, 7, 13, 19 and 25.
- **PAHs Sampling System:**
 - The PAH sampler is programmed to collect a 24-hour sample of air every sixth day as per the North American Pollution Surveillance schedule (NAPS).
 - Five samples were collected this month: on September 1, 7, 13, 19 and 25.
- **Partisol Sampling System:**
 - The Partisol sampler is programmed to collect a 24-hour sample of air every sixth day as per the North American Pollution Surveillance schedule (NAPS).
 - Five samples were collected this month: on September 1, 7, 13, 19 and 25. However, the sample filters collected on September 7 went missing during courier and cannot be retrieved.
- **Passive Sampling System:**
 - The passive sample filters were installed at the stations between August 30 and September 1, and were removed between September 29 and October 1.
 - 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 September 2019, and is designed to collect a 2-month integrated sample.
 - The PAC sampling program is temporary paused as the EC laboratory is currently closed.

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).

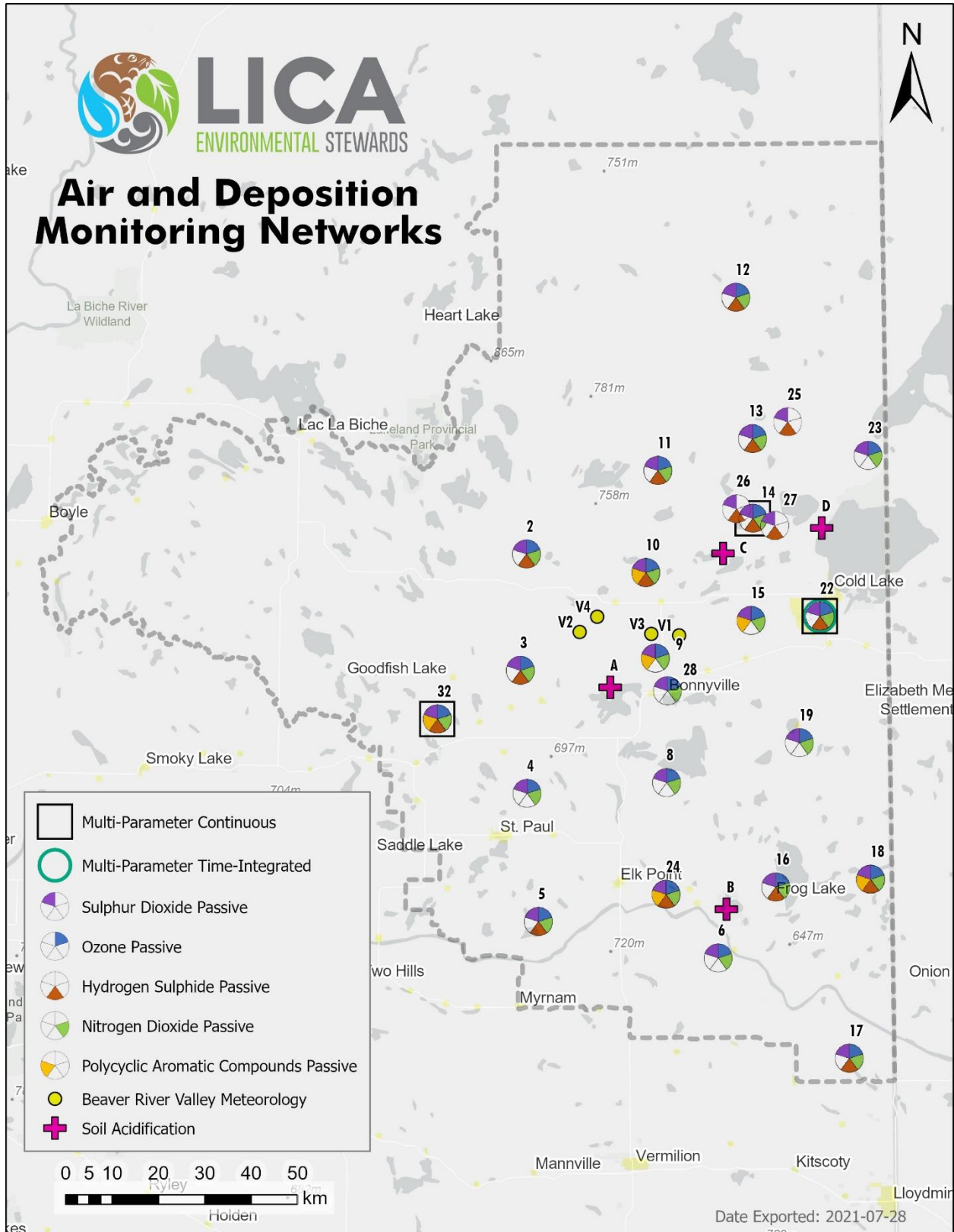
I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization and reporting requirements. I also certify that at the time of this report's submission, all 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 September 2021 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

October 20, 2021

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 (SO₂)	Thermo / 43i-TLE	1180260018	September 7, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Total Reduced Sulphur (TRS)	Thermo / 450i	812728560	September 7, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH₄/NMHC)	Thermo / 55i	1180030034 / 1180930025	September 15, 2021
<ul style="list-style-type: none"> Sporadic bad injections were noted commencing on September 3 and becoming frequent on September 4. On September 5, a successful multi-point calibration was completed and a new carrier gas cylinder was installed to correct the issue. 1-minute data collected between September 3 and September 5 were reviewed and invalidated if data quality were affected by the injection issues. Two hourly data were invalidated as the 75% of valid 1-minute in an hour requirement were not achieved. Two hours of downtime were recorded due to this event. Poor injections were recorded again starting September 13 hour 21. On September 14, a shut down calibration was attempted but failed due to multiple bad injections. The Thermo 55i analyzer, s/n: 1180030034, was removed, and the Thermo 55i analyzer, s/n: 1180930025, was installed. A successful installation calibration was completed on September 15. 1-minute data collected between September 13 and September 15 were reviewed and invalidated if data quality were affected by the injection issues. Twenty-four hours of data were invalidated as the 75% of valid 1-minute in an hour requirement were not achieved. Twenty-eight hours of downtime were recorded due to invalid data and additional quality check. 			
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NO_x/NO/NO₂)	Thermo / 42i	1505664393	September 7, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			

Parameter	Make / Model	Serial Number	Calibration Date
Ozone (O3)	Thermo / 49i	700419951	September 8, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Particulate Matter 2.5 (PM2.5)	Teledyne T640	575	September 8, 2021
<ul style="list-style-type: none"> No data were recorded between September 12 hour 7 and September 13 hour 7, likely due to communication issues between the analyzer and the datalogger. The PM unit was reset to correct the problem. Twenty-five hours of downtime were recorded due to this event. 			
Parameter	Make / Model	Serial Number	System Check Date
Relative Humidity (RH)	Rotronic HC2A-S3	20257103	July 6, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Barometric Pressure (BP)	Met One / Part 092	Y23368	July 6, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Ambient Temperature (AT)	Rotronic HC2A-S3	20257103	July 6, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Station Temperature (ST)	BV-supplied	n/a	n/a
<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	July 6, 2021
<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	0.0	0	2	September 28 at hour 13	5	NNW	0.6	September 28	100.0	95.0
TRS (ppb)	-	-	-	-	-	-	0.1	0	1	September 1 at hour 1	6.3	SW	0.5	September 14	100.0	95.0
NOx (ppb)	-	-	-	-	-	-	2.6	0	21	September 22 at hour 7	0.7	S	6.7	September 22	100.0	94.7
NO (ppb)	-	-	-	-	-	-	0.4	0	14	September 21 at hour 5	0.1	NE	2.4	September 22	100.0	94.7
NO2 (ppb)	159	-	-	0	-	-	2.2	0	10	September 22 at hour 13	5.7	WSW	4.3	September 22	100.0	94.7
O3 (ppb)	76	-	-	0	-	-	22.0	0.3	47.8	September 5 at hour 13	6.5	WSW	31.9	September 5	100.0	95.1
THC (ppm)	-	-	-	-	-	-	1.95	1.80	2.44	September 8 at hour 6	0.2	NNW	2.10	September 8	95.8	91.1
CH4 (ppm)	-	-	-	-	-	-	1.94	1.80	2.39	September 8 at hour 6	0.2	NNW	2.07	September 8	95.8	91.1
NMHC (ppm)	-	-	-	-	-	-	0.01	0.00	0.22	September 10 at hour 21	1.3	E	0.04	September 10	95.8	91.1
PM2.5 (µg/m3)	80	29	-	0	0	-	4.0	1	23	September 4 at hour 4	0	ESE	8.7	September 4	96.5	96.4
RH (%)	-	-	-	-	-	-	67.5	28	99	September 12 at hour 21	3.5	SW	84.9	September 2	100.0	100.0
BP (millibar)	-	-	-	-	-	-	946	930	956	September 8 at hour 0	0.5	SSW	954	September 11	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	11.9	-2.7	25.7	September 5 at hour 15	9	W	16.6	September 5	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.7	20.7	24.0	September 5 at hour 22	0.3	W	23.5	September 12	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	3.0	0.0	21.2	September 23 at hour 14	21.2	WNW	11.8	September 15	100.0	100.0
WDV (sector)	-	-	-	-	-	-	253 (WSW)	-	-	-	-	-	-	-	100.0	100.0

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

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

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

Tamarack Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	Calibration Date
Sulphur Dioxide (SO2)	Thermo / 43i-TLE	1180930031	September 21, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Hydrogen Sulphide (H2S)	Thermo / 450i	CM17360005	September 20, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NOx/NO/NO2)	Thermo / 42i	1180930028	September 21, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Ozone (O3)	API 400A / Thermo 49iQ	445 / 1202068570	September 16, 2021
<ul style="list-style-type: none"> On September 15, a successful shut-down calibration was performed on the BV-supplied API 400A analyzer, s/n: 445, and the LICA-owned Thermo 49iQ analyzer, s/n: 1202068570, was installed following factory repair. The analyzer was allowed to stabilize overnight. An installation calibration was completed on September 16. Fifteen hours of downtime were recorded due to this event. 			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH4/NMHC)	Thermo / 55i	1314057759	September 20, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Particulate Matter 2.5 (PM2.5)	Thermo / Sharp 5030	CM 2209	September 21, 2021
<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	April 13, 2021
<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	April 13, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Barometric Pressure (BP)	Met One / Part 090D	F4997	February 2, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Station Temperature (ST)	BV-supplied	n/a	n/a
<ul style="list-style-type: none"> No issues were identified this month. 			
Precipitation (PRECIP)	Met One / Part 387	F4481	February 2, 2021
<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	September 20, 2021
<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	0.8	0	12	September 2 at hour 18	8	NW	4.0	September 2	100.0	95.0
H2S (ppb)	10	3	-	0	0	-	0.1	0	4	September 8 at hour 21	6.4	SE	0.8	September 8	100.0	95.0
NOx (ppb)	-	-	-	-	-	-	3.8	0	31	September 16 at hour 13	13.1	WNW	9.9	September 2	100.0	94.7
NO (ppb)	-	-	-	-	-	-	0.9	0	16	September 16 at hour 13	13.1	WNW	3.8	September 2	100.0	94.7
NO2 (ppb)	159	-	-	0	-	-	2.9	0	17	September 10 at hour 1	6	WNW	6.1	September 2	100.0	94.7
O3 (ppb)	76	-	-	0	-	-	23.0	0.4	45.3	September 4 at hour 17	4.8	S	34.3	September 5	97.9	92.8
THC (ppm)	-	-	-	-	-	-	1.94	1.84	2.50	September 28 at hour 1	0.6	NNE	2.09	September 4	100.0	95.1
CH4 (ppm)	-	-	-	-	-	-	1.94	1.84	2.42	September 4 at hour 3	0.2	S	2.07	September 4	100.0	95.1
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.22	September 28 at hour 1	0.6	NNE	0.01	September 4	100.0	95.1
PM2.5 (µg/m3)	80	29	-	1	0	-	4.8	1	167	September 8 at hour 6	0.5	WSW	16.6	September 8	100.0	99.9
RH (%)	-	-	-	-	-	-	72.9	28	100	September 1 at hour 22	3.2	SSW	96.0	September 2	100.0	100.0
BP (millibar)	-	-	-	-	-	-	933	917	942	September 7 at hour 9	7.8	WNW	941	September 11	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	11.5	-2.3	23.8	September 5 at hour 14	7.8	W	16.2	September 5	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	23.4	21.7	25.7	September 18 at hour 0	3.3	NE	25.5	September 19	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	29.9	0.0	2.6	September 1 at hour 22	3.2	SSW	0.5	September 16	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	3.3	0.1	19.4	September 23 at hour 11	19.4	W	12.5	September 15	100.0	99.7
WDV (sector)	-	-	-	-	-	-	253 (WSW)	-	-	-	-	-	-	-	100.0	99.7

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

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

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

The following exceedance of AAAQGs was observed at the Tamarack Site.

Date	Time (MST)	Parameter	Average Period	AAAQOs	Concentration	Wind speed	Wind Direction	Reference #
September 8	6	PM2.5	1-Hour	80 µg/m3	167 µg/m3	0.5 km/hr	252° (WSW)	383326

The exceedance recorded this month was likely due to road construction in the vicinity of the station.

St. Lina Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	Calibration Date
Sulphur Dioxide (SO2)	Thermo / 43i-TLE	1180930030	September 17, 2021
<ul style="list-style-type: none"> The monthly calibration was completed on September 2. The sample pump failed on September 14 hour 20 and was repaired on September 16. A successful post-repair calibration was completed on September 17. Sixty-six hours of downtime were recorded due to this event. 			
Hydrogen Sulphide (H2S)	Thermo / 450i	CM18010058	September 27, 2021
<ul style="list-style-type: none"> The monthly calibration was completed on September 2. The analyzer failed the daily span check on September 26 and the repeat zero-span check on September 27. A repeat multi-point calibration was completed to correct the drift on September 27. As the analyzer passed the September 27 multi-point calibration check, data collected between September 26 and 27 were considered valid. Six hours of downtime were recorded due to additional quality checks. 			
Oxide of Nitrogen / Nitric Oxide/ Nitrogen Dioxide (NOx/NO/NO2)	Thermo / 42i	1180930029	September 2, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Total Hydrocarbons / Methane/ Non-methane Hydrocarbons (THC/CH4/NMHC)	Thermo / 55i	1236656107	September 3, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Ozone (O3)	Thermo / 49i	1002240371	September 3, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			

Parameter	Make / Model	Serial Number	Calibration Date
Particulate Matter 2.5 (PM2.5)	Thermo / Sharp 5030i	CM17461021 / CM1709100	September 24, 2021
<ul style="list-style-type: none"> The monthly calibration / audit was completed on Sharp 5030i, s/n: CM17461021 on September 3. On September 24, a successful shut-down audit was completed on the BV-supplied Thermo Sharp 5030i unit, s/n: CM17461021, and the LICA-owned Thermo Sharp 5030i unit, s/n: CM1709100, was installed and calibrated. The unit was removed for major repair/maintenance on May 6. Four hours of downtime were recorded due to this event. 			
Parameter	Make / Model	Serial Number	System Check Date
Relative Humidity (RH)	Campbell ScientificHC2-S3	20221366	September 20, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Ambient Temperature (AT)	Campbell ScientificHC2-S3	20221366	September 20, 2021
<ul style="list-style-type: none"> No issues were identified this month. 			
Barometric Pressure (BP)	Met One / Part 090D	F4998	December 23, 2020
<ul style="list-style-type: none"> No issues were identified this month. 			
Station Temperature (ST)	BV-supplied	n/a	n/a
<ul style="list-style-type: none"> No issues were identified this month. 			
Precipitation (PRECIP)	Met One / Part 387D	A23775	January 28, 2021
<ul style="list-style-type: none"> No issues were identified this month. The rain gauge sensor was checked on September 3. The sensor passed the check requirements. 			
Wind Speed (WS) / Wind Direction (WD)/ Stand Deviation Wind Direction (STDWD)	RM Young / 05305VK	161466	March 16, 2021
<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	0.1	0	2	September 21 at hour 10	6.8	SW	0.9	September 18	90.8	86.1
H2S (ppb)	10	3	-	0	0	-	0.2	0	2	September 4 at hour 8	7.7	SSW	0.6	September 4	99.2	94.0
NOx (ppb)	-	-	-	-	-	-	1.2	0	11	September 29 at hour 9	6.3	SW	2.3	September 29	100.0	94.6
NO (ppb)	-	-	-	-	-	-	0.1	0	4	September 29 at hour 9	6.3	SW	0.4	September 29	100.0	94.6
NO2 (ppb)	159	-	-	0	-	-	1.2	0	7	September 18 at hour 18	5.7	NNW	2.1	September 18	100.0	94.6
O3 (ppb)	76	-	-	0	-	-	29.8	12.1	49.7	September 8 at hour 14	11.7	SSE	40.0	September 25	100.0	95.0
THC (ppm)	-	-	-	-	-	-	1.90	1.80	2.39	September 27 at hour 13	6.8	SSW	1.96	September 11	100.0	95.0
CH4 (ppm)	-	-	-	-	-	-	1.90	1.80	2.16	September 22 at hour 7	3.9	WNW	1.96	September 11	100.0	95.0
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.49	September 27 at hour 13	6.8	SSW	0.02	September 27	100.0	95.0
PM2.5 (µg/m3)	80	29	-	0	0	-	2.7	0	12	September 9 at hour 13	13.1	WNW	5.1	September 4	99.4	99.3
RH (%)	-	-	-	-	-	-	64.5	24	100	September 20 at hour 6	9.1	WSW	91.4	September 2	100.0	100.0
BP (millibar)	-	-	-	-	-	-	915	900	925	September 23 at hour 18	11.7	WNW	922	September 7	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	12.5	0.1	24.4	September 27 at hour 15	6.3	SW	17.6	September 5	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	23.3	21.7	24.2	September 2 at hour 16	12.6	WNW	23.7	September 1	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	15.5	0.0	3.6	September 2 at hour 0	14	W	0.4	September 2	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	6.1	1.0	28.4	September 15 at hour 17	28.4	W	19.0	September 15	100.0	100.0
WDV (sector)	-	-	-	-	-	-	261 (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

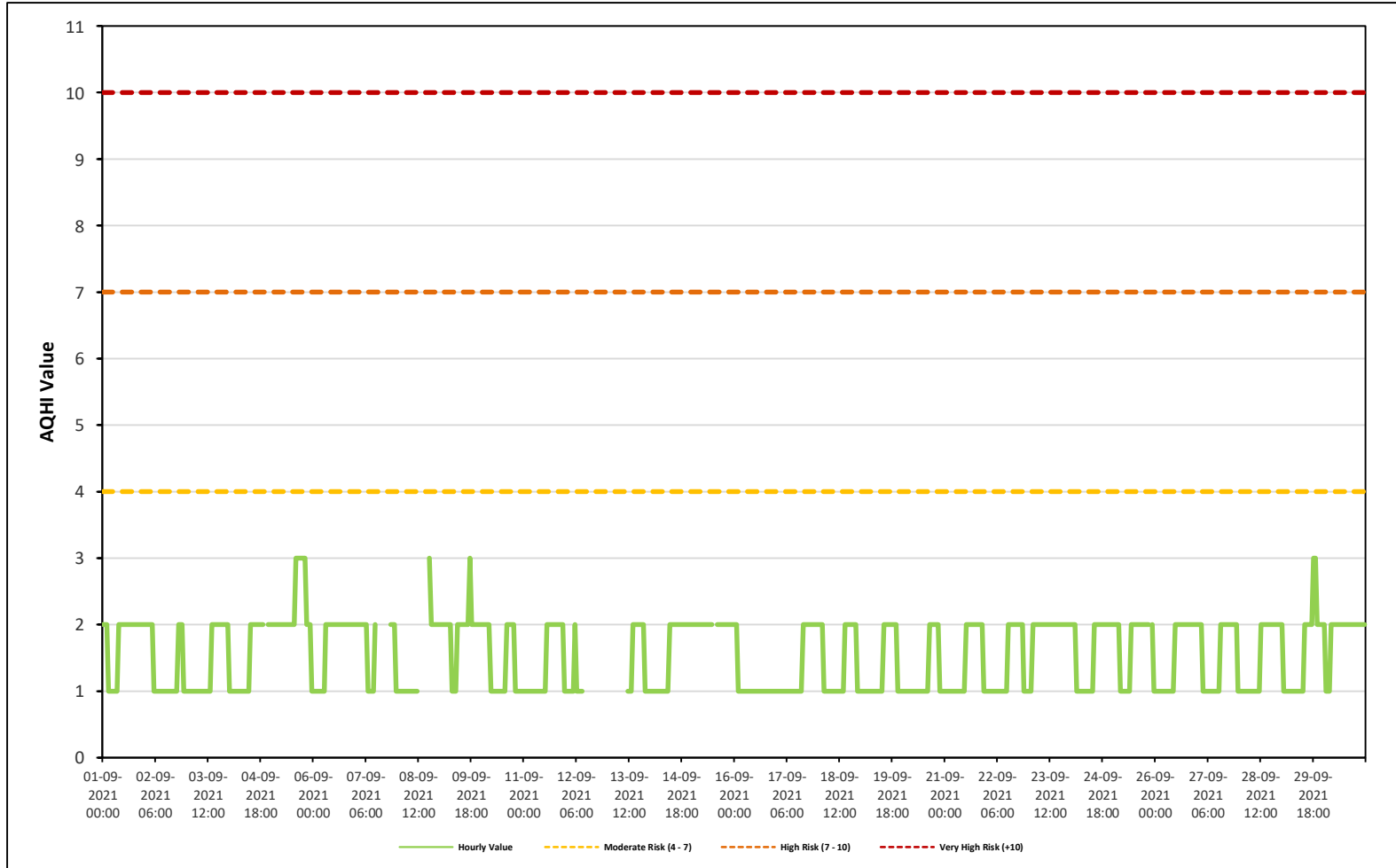
Alberta Ambient Air Quality Objectives (AAAQOs) and/or Alberta Ambient Air Quality Guidelines (AAAQGs) Exceedances

The measured ambient air quality was within the AAAQOs 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 - September 2021

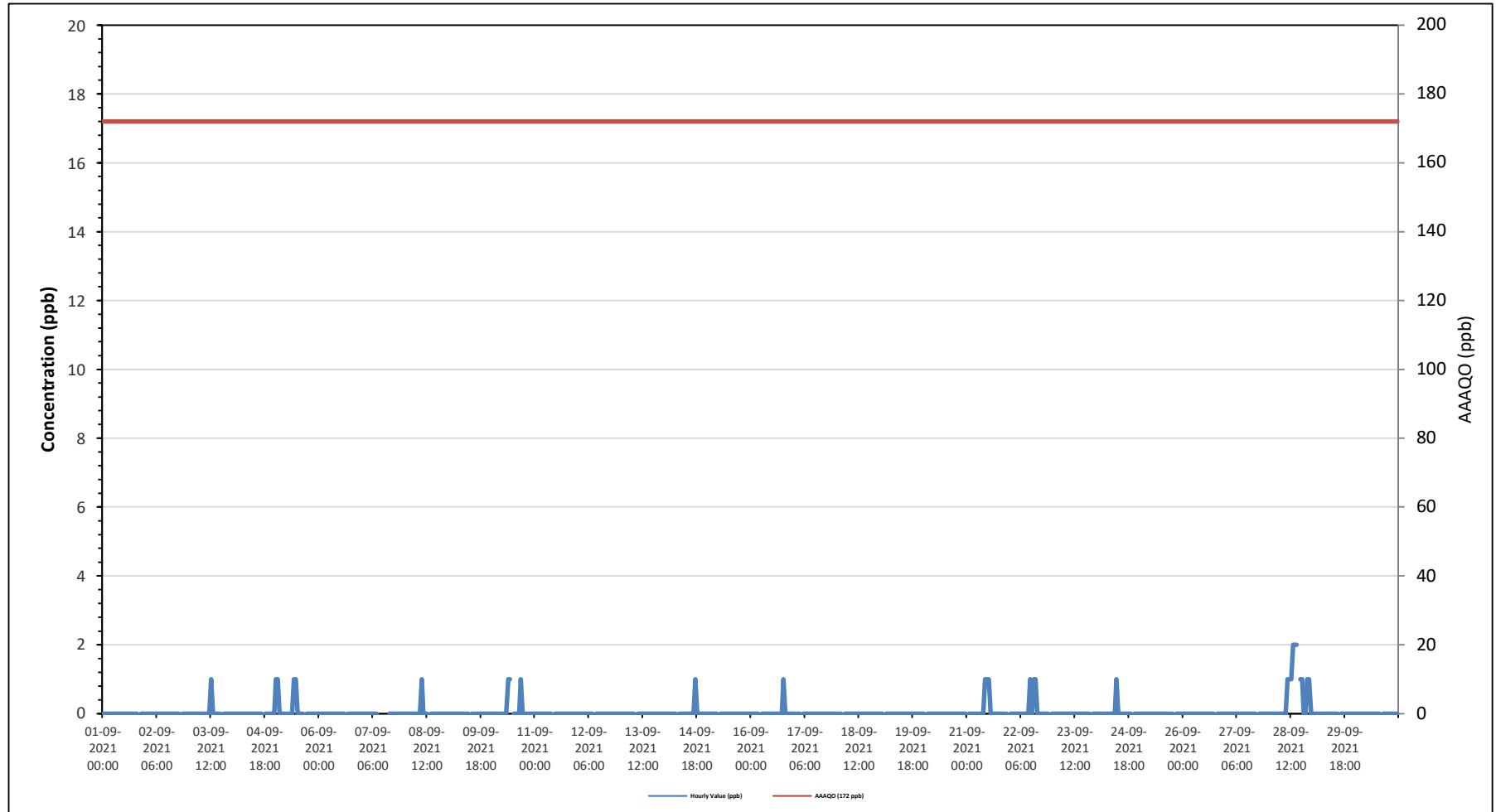
Summary of Hourly Averages

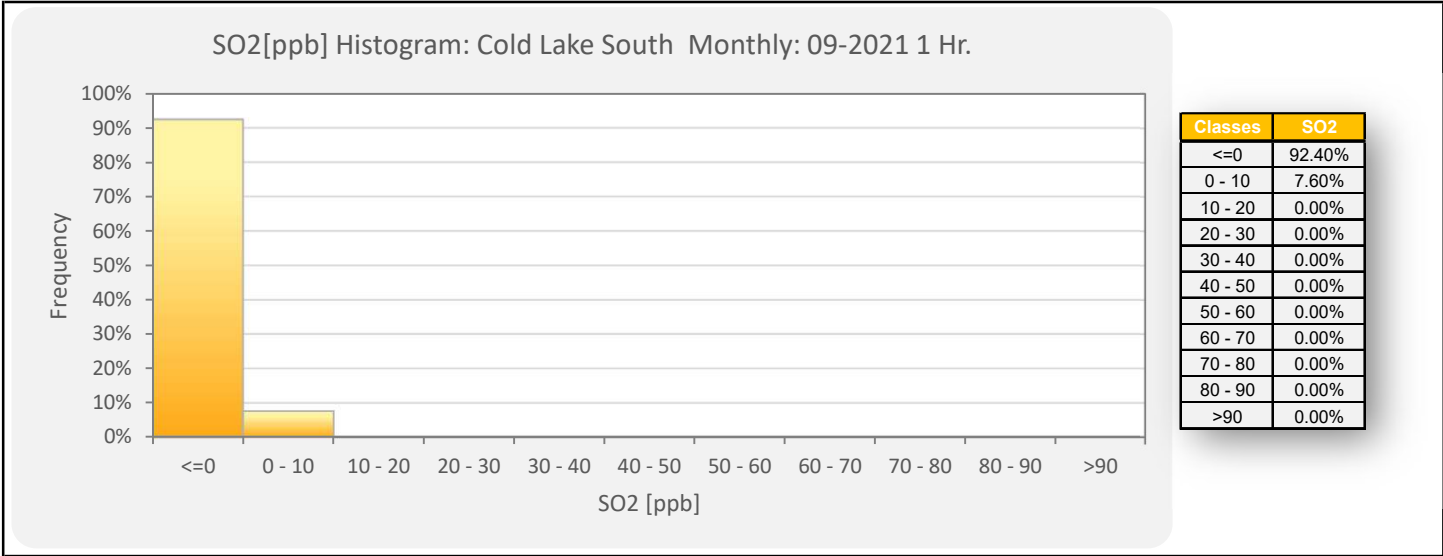
SULPHUR DIOXIDE (SO₂) in ppb

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: 2 ppb on September 28 at hour 13					Hours in Service: 720																														
Maximum Daily Value: 0.6 ppb on September 28					Hours of Data: 684																														
Minimum Hourly Value: 0 ppb on September 1 at hour 0					Hours of Missing Data: 0																														
Minimum Daily Value: 0.0 ppb on September 1					Hours of Calibration: 36																														
Monthly Average: 0.0 ppb					Operational Uptime: 100.0																														
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average									
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23											
Sep 1	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							
Sep 2	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							
Sep 3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0							
Sep 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0							
Sep 5	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0							
Sep 6	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							
Sep 7	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0							
Sep 8	0	0	0	0	0	0	0	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Sep 9	0	0	0	0	0	0	0	0	0	0	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Sep 10	0	0	0	0	0	0	0	0	0	0	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Sep 11	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Sep 12	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Sep 13	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Sep 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							
Sep 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Sep 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							
Sep 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Sep 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Sep 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Sep 20	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							
Sep 21	S	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0							
Sep 22	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	S	0	0							
Sep 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	S	0	0							
Sep 24	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							
Sep 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							
Sep 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							
Sep 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Sep 28	0	0	0	0	0	0	0	0	0	0	1	1	1	2	2	2	S	1	1	0	0	1	1	0	0	0	0	0							
Sep 29	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							
Sep 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0							
Diurnal Maximum	1	1	0	0	0	0	0	0	0	1	1	1	1	2	2	2	1	1	1	0	0	1	1	0	0	0	0	0							
Daiurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
C	Monthly Calibration								S	Daily Zero-Span Check								Q	Quality Assurance																
K	Collection Error								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.

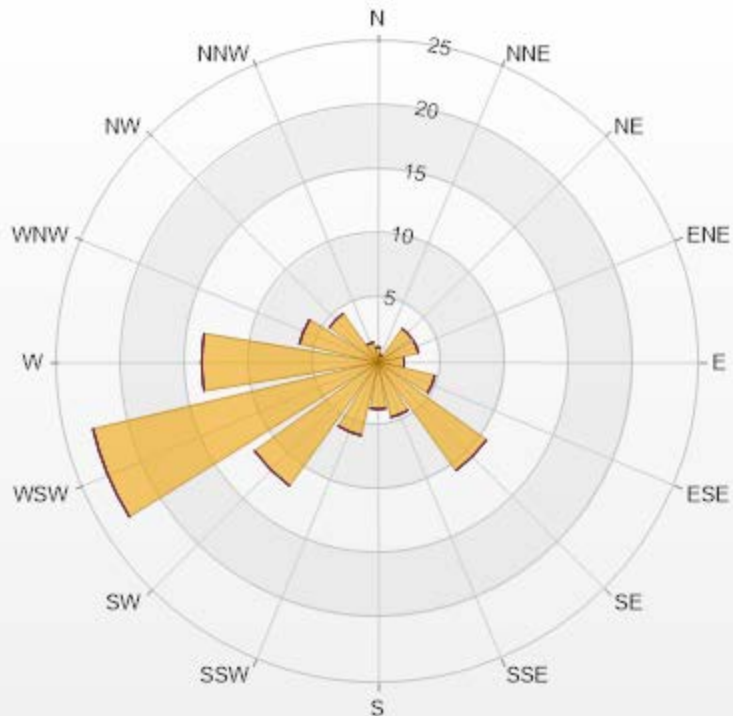
Timeseries Chart of Hourly Average for SO2 - Cold Lake South Station





Wind: Cold Lake South Poll.: Cold Lake South-SO2[ppb] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.00% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	1.17	0	0	0	0	1.17
NNE	0.58	0	0	0	0	0.58
NE	3.22	0	0	0	0	3.22
ENE	3.22	0	0	0	0	3.22
E	2.05	0	0	0	0	2.05
ESE	4.53	0	0	0	0	4.53
SE	10.38	0	0	0	0	10.38
SSE	4.39	0	0	0	0	4.39
S	3.65	0	0	0	0	3.65
SSW	5.85	0	0	0	0	5.85
SW	11.84	0	0	0	0	11.84
WSW	22.81	0	0	0	0	22.81
W	13.74	0	0	0	0	13.74
WNW	6.29	0	0	0	0	6.29
NW	4.68	0	0	0	0	4.68
NNW	1.61	0	0	0	0	1.61
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100 0-10

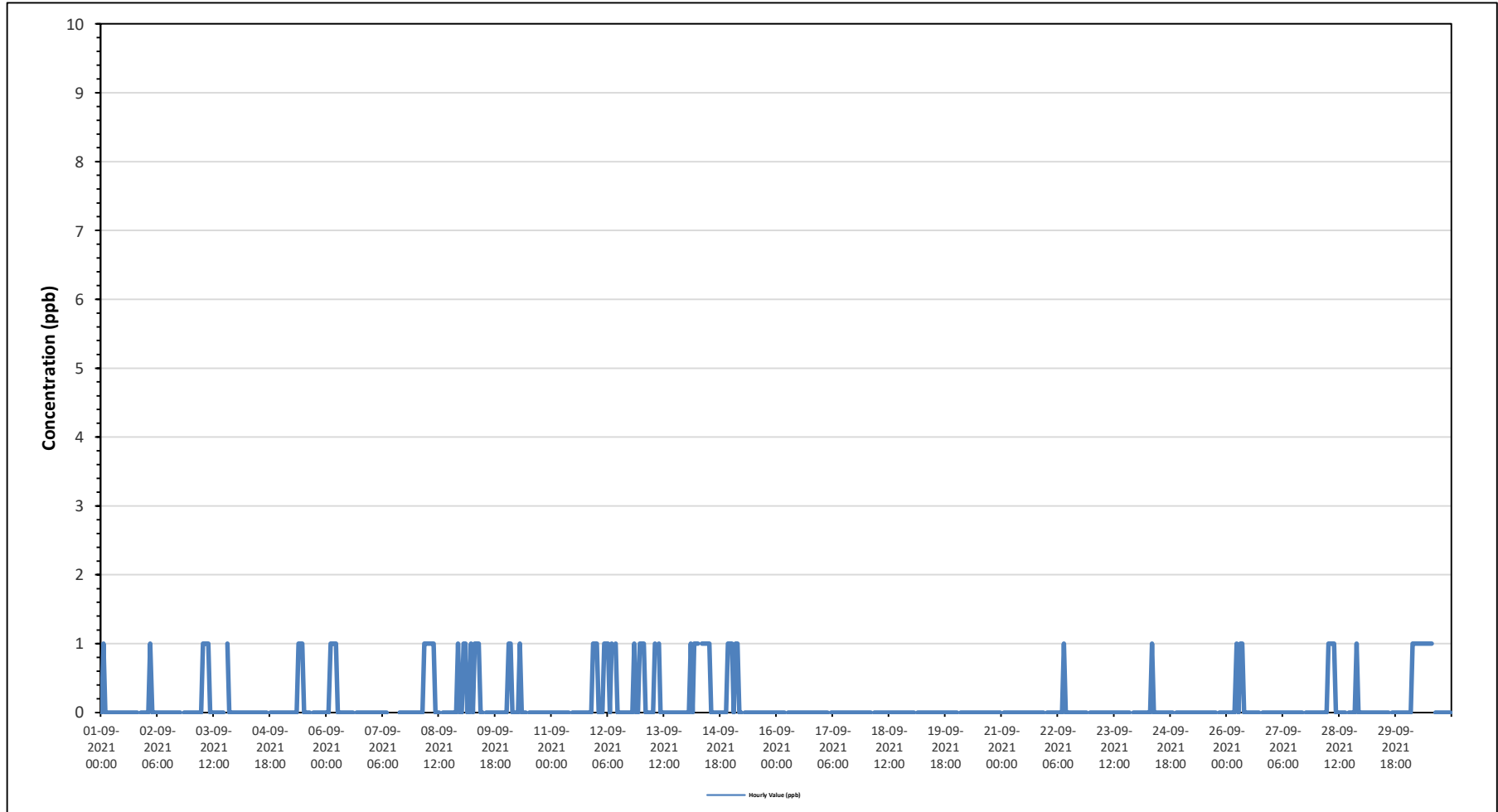
0 10-50

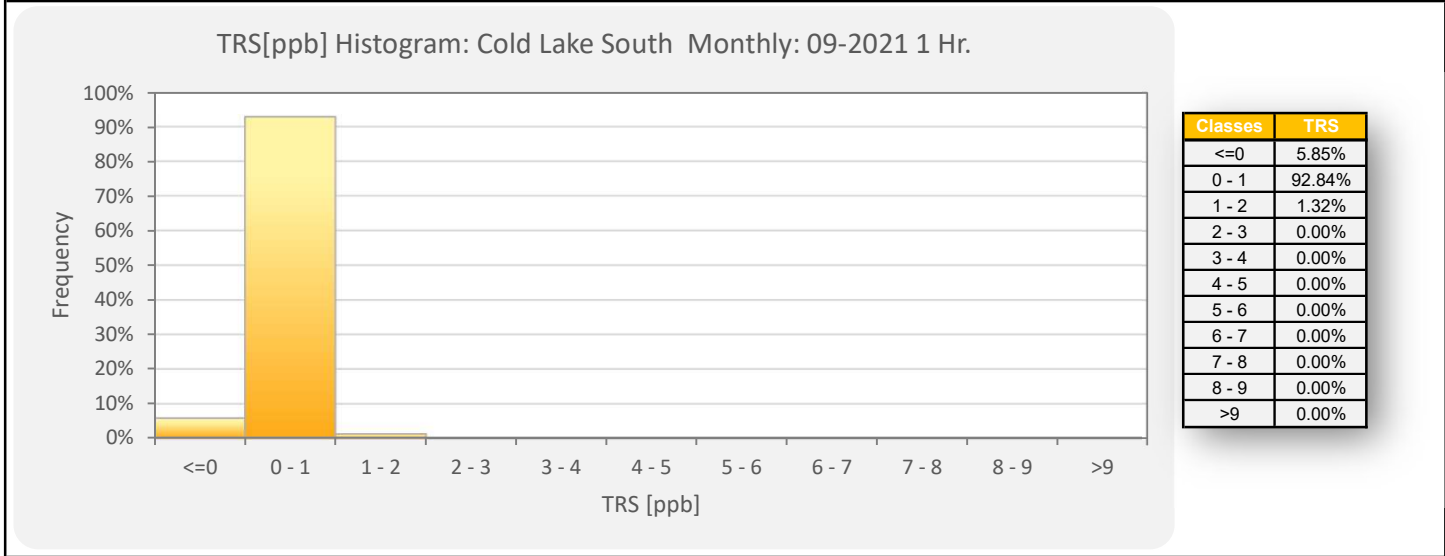
0 50-100

0 100-172

0 >172.0

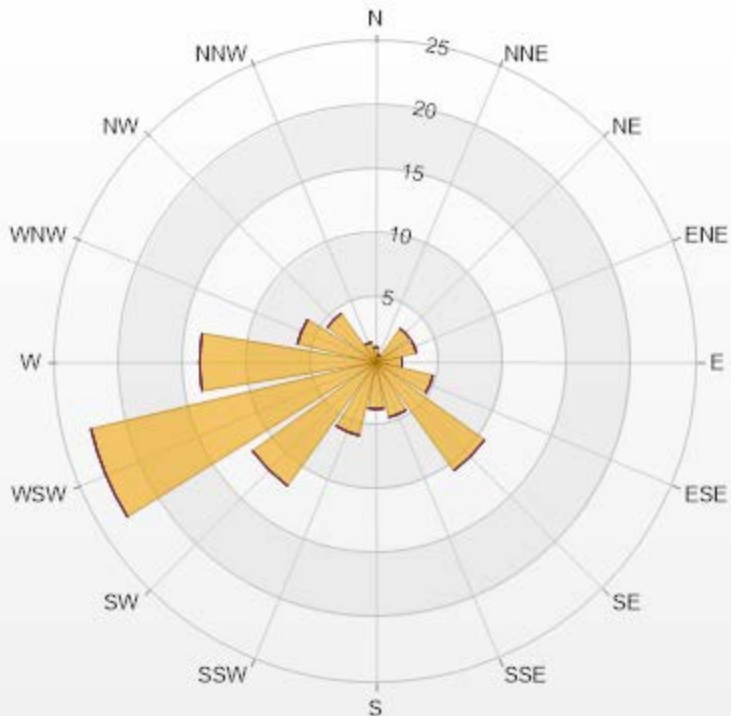
Timeseries Chart of Hourly Average for TRS - Cold Lake South Station





Wind: Cold Lake South Poll.: Cold Lake South-TRS[ppb] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.00% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	1.17	0	0	0	0	1.17
NNE	0.58	0	0	0	0	0.58
NE	3.22	0	0	0	0	3.22
ENE	3.22	0	0	0	0	3.22
E	2.05	0	0	0	0	2.05
ESE	4.53	0	0	0	0	4.53
SE	10.38	0	0	0	0	10.38
SSE	4.39	0	0	0	0	4.39
S	3.65	0	0	0	0	3.65
SSW	5.85	0	0	0	0	5.85
SW	11.84	0	0	0	0	11.84
WSW	22.81	0	0	0	0	22.81
W	13.74	0	0	0	0	13.74
WNW	6.29	0	0	0	0	6.29
NW	4.68	0	0	0	0	4.68
NNW	1.61	0	0	0	0	1.61
Summary	100	0	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



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - September 2021

Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

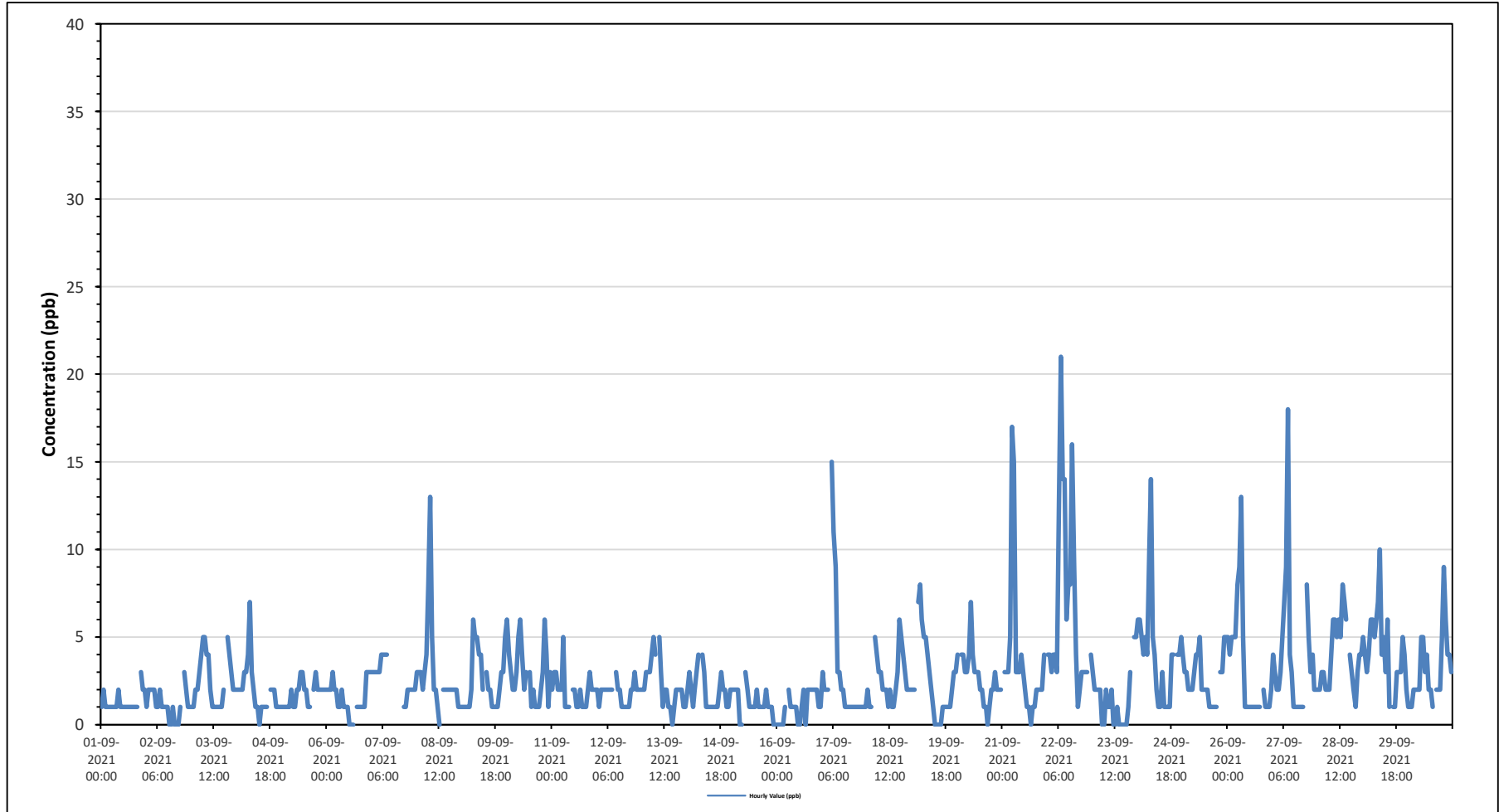
Maximum Hourly Value:	21 ppb	on September 22 at hour 7	Hours in Service:	720
Maximum Daily Value:	6.7 ppb	on September 22	Hours of Data:	682
Minimum Hourly Value:	0 ppb	on September 2 at hour 12	Hours of Missing Data:	0
Minimum Daily Value:	1.0 ppb	on September 16	Hours of Calibration:	38
Monthly Average:	2.6 ppb		Operational Uptime:	100.0

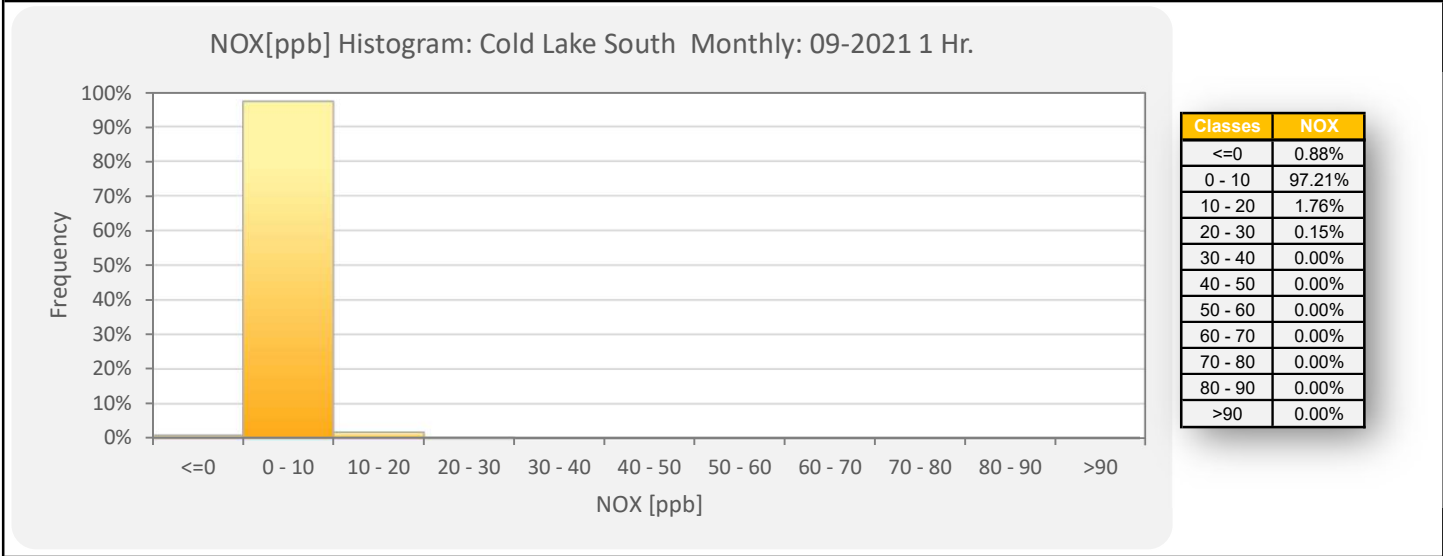
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Sep 1	1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	S	3	2	2	1	3	1.3	
Sep 2	1	2	2	2	2	1	1	2	1	1	1	0	0	1	0	0	0	0	1	S	3	2	1	1	0	3	1.1	
Sep 3	1	1	2	2	3	4	5	5	4	4	2	1	1	1	1	1	2	2	S	5	4	3	2	2	1	5	2.5	
Sep 4	2	2	2	2	3	3	4	7	3	2	1	1	0	1	1	1	S	2	2	2	2	1	1	1	0	7	2.0	
Sep 5	1	1	1	1	1	2	1	1	2	2	3	3	2	2	1	1	S	2	3	2	2	2	2	2	2	1	3	1.7
Sep 6	2	2	2	3	2	2	1	1	2	1	1	1	0	0	0	S	1	1	1	1	1	1	3	3	3	0	3	1.5
Sep 7	3	3	3	3	3	4	4	4	4	C	C	C	C	C	C	C	C	C	1	1	2	2	2	2	1	4	-	
Sep 8	3	3	3	2	3	4	8	13	5	2	2	1	0	S	2	2	2	2	2	2	2	2	2	1	1	0	13	2.9
Sep 9	1	1	1	1	1	2	6	5	5	4	4	2	S	3	2	2	1	1	1	1	2	3	3	5	1	6	2.5	
Sep 10	6	4	3	2	2	3	5	6	4	2	3	S	3	1	2	1	1	1	2	3	6	4	1	3	1	6	3.0	
Sep 11	2	3	3	2	2	2	5	1	1	1	S	2	2	1	1	2	1	1	1	2	3	2	2	2	1	5	1.9	
Sep 12	2	1	2	2	2	2	2	2	S	3	2	2	1	1	1	1	1	2	2	3	2	2	2	2	1	3	1.8	
Sep 13	2	2	3	3	3	4	5	4	S	5	3	1	2	2	1	1	0	1	2	2	2	2	1	1	0	5	2.3	
Sep 14	2	3	2	1	2	3	4	S	4	3	1	1	1	1	1	1	1	2	3	2	2	1	1	2	1	4	1.9	
Sep 15	2	2	2	2	0	0	S	3	2	1	1	1	1	2	1	1	1	1	2	1	1	1	0	0	0	3	1.2	
Sep 16	0	0	0	0	1	S	2	1	1	1	1	0	0	1	2	0	2	2	2	2	2	1	1	1	0	2	1.0	
Sep 17	3	2	2	2	S	15	11	9	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	15	2.9	
Sep 18	2	1	1	S	5	4	3	3	2	2	2	1	2	1	1	2	3	6	5	4	3	2	2	2	1	6	2.6	
Sep 19	2	2	S	7	8	6	5	5	4	3	2	1	0	0	0	1	1	1	1	1	1	2	3	3	0	8	2.5	
Sep 20	4	S	4	4	3	3	4	7	4	3	3	3	2	2	1	1	0	1	2	2	3	2	2	2	0	7	2.7	
Sep 21	S	3	3	3	5	17	15	3	3	3	4	3	2	1	1	0	1	1	2	2	2	2	4	S	0	17	3.6	
Sep 22	4	4	3	4	4	3	13	21	14	14	6	8	8	16	9	4	1	2	3	3	3	3	S	4	1	21	6.7	
Sep 23	3	2	2	2	2	0	0	2	1	1	2	0	0	1	0	0	0	0	0	1	3	S	5	5	0	5	1.4	
Sep 24	6	6	5	4	5	4	10	14	5	4	2	1	1	3	1	1	1	1	4	4	S	4	4	5	1	14	4.1	
Sep 25	4	3	3	2	2	2	3	4	4	5	2	2	2	2	1	1	1	1	1	S	3	3	5	5	1	5	2.7	
Sep 26	5	4	5	5	5	8	9	13	5	1	1	1	1	1	1	1	1	1	S	2	1	1	1	2	1	13	3.3	
Sep 27	4	3	2	2	3	5	7	9	18	4	3	1	1	1	1	1	1	S	8	5	3	4	2	2	1	18	3.9	
Sep 28	2	2	3	3	2	2	2	4	6	6	5	6	5	8	7	6	S	4	3	2	1	3	4	4	1	8	3.9	
Sep 29	5	4	3	4	6	6	5	6	7	10	4	5	3	6	1	S	1	1	3	3	3	5	4	2	1	10	4.2	
Sep 30	1	1	1	2	2	2	2	5	5	3	4	2	2	1	S	2	2	2	5	9	6	4	4	3	1	9	3.0	
Diurnal Maximum	6	6	5	7	8	17	15	21	18	14	6	8	8	16	9	6	3	6	8	9	6	5	5	5				
Dalurnal Average	2.6	2.4	2.4	2.5	2.9	3.9	4.9	5.6	4.2	3.3	2.5	1.9	1.6	2.2	1.5	1.3	1.0	1.5	2.3	2.5	2.5	2.4	2.3	2.4				

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

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

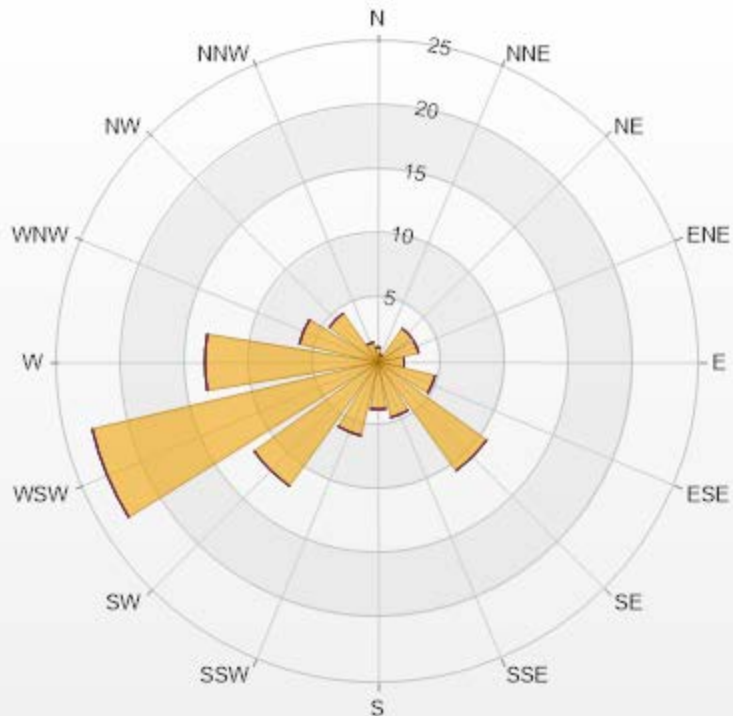
Timeseries Chart of Hourly Average for NOx - Cold Lake South Station





Wind: Cold Lake South Poll.: Cold Lake South-NOX[ppb] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	1.17	0	0	0	0	1.17
NNE	0.59	0	0	0	0	0.59
NE	3.23	0	0	0	0	3.23
ENE	3.23	0	0	0	0	3.23
E	2.05	0	0	0	0	2.05
ESE	4.55	0	0	0	0	4.55
SE	10.41	0	0	0	0	10.41
SSE	4.4	0	0	0	0	4.4
S	3.67	0	0	0	0	3.67
SSW	5.87	0	0	0	0	5.87
SW	11.88	0	0	0	0	11.88
WSW	22.87	0	0	0	0	22.87
W	13.49	0	0	0	0	13.49
WNW	6.3	0	0	0	0	6.3
NW	4.69	0	0	0	0	4.69
NNW	1.61	0	0	0	0	1.61
Summary	100	0	0	0	0	100



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% Icon Classes (ppb)

100  0-30

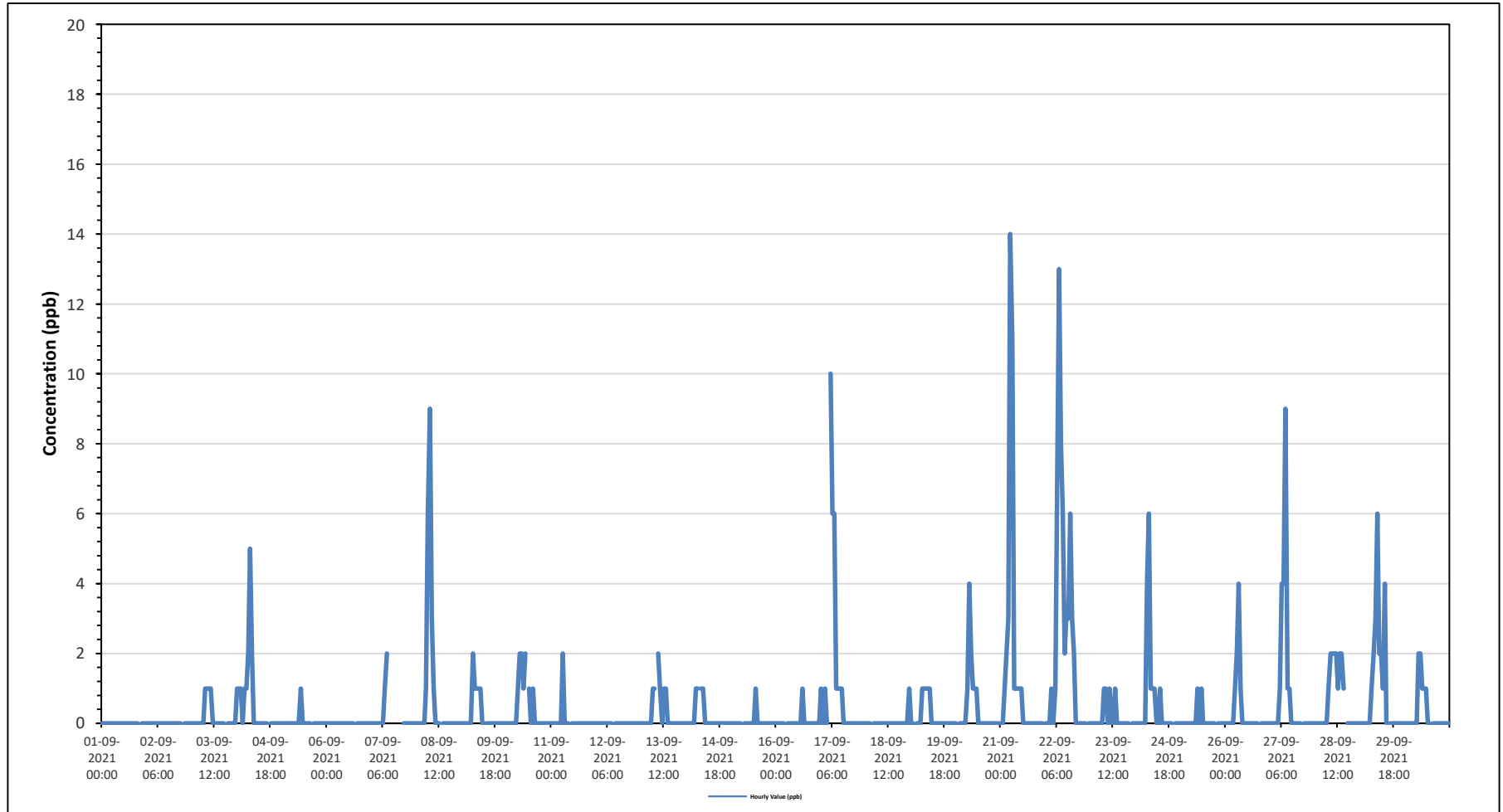
0  30-50

0  50-76

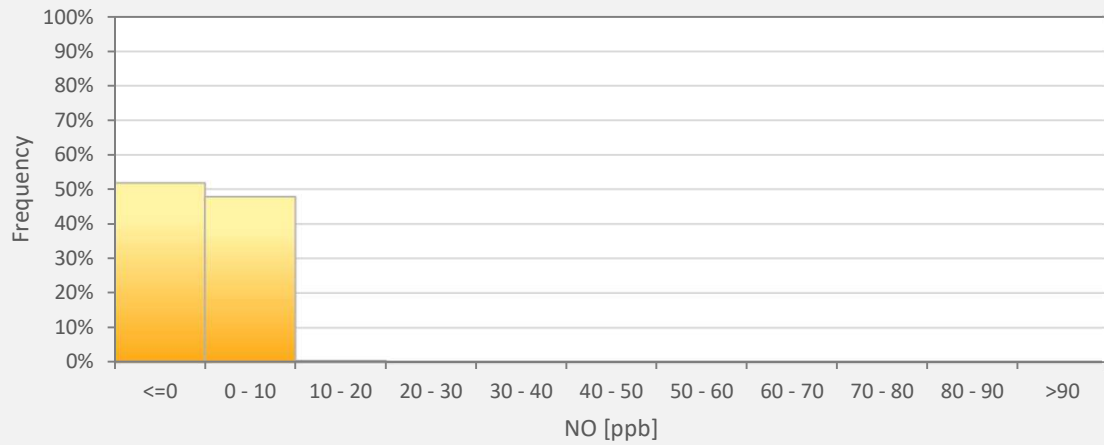
0  76-159

0  >159.0

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



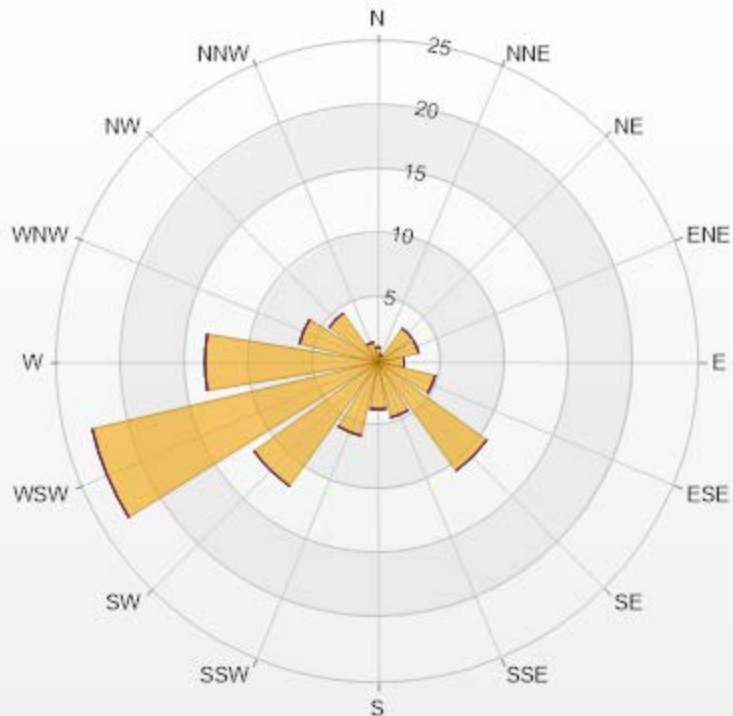
NO[ppb] Histogram: Cold Lake South Monthly: 09-2021 1 Hr.



Classes	NO
<=0	51.76%
0 - 10	47.80%
10 - 20	0.44%
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-NO[ppb] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	1.17	0	0	0	0	1.17
NNE	0.59	0	0	0	0	0.59
NE	3.23	0	0	0	0	3.23
ENE	3.23	0	0	0	0	3.23
E	2.05	0	0	0	0	2.05
ESE	4.55	0	0	0	0	4.55
SE	10.41	0	0	0	0	10.41
SSE	4.4	0	0	0	0	4.4
S	3.67	0	0	0	0	3.67
SSW	5.87	0	0	0	0	5.87
SW	11.88	0	0	0	0	11.88
WSW	22.87	0	0	0	0	22.87
W	13.49	0	0	0	0	13.49
WNW	6.3	0	0	0	0	6.3
NW	4.69	0	0	0	0	4.69
NNW	1.61	0	0	0	0	1.61
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 - September 2021

Summary of Hourly Averages

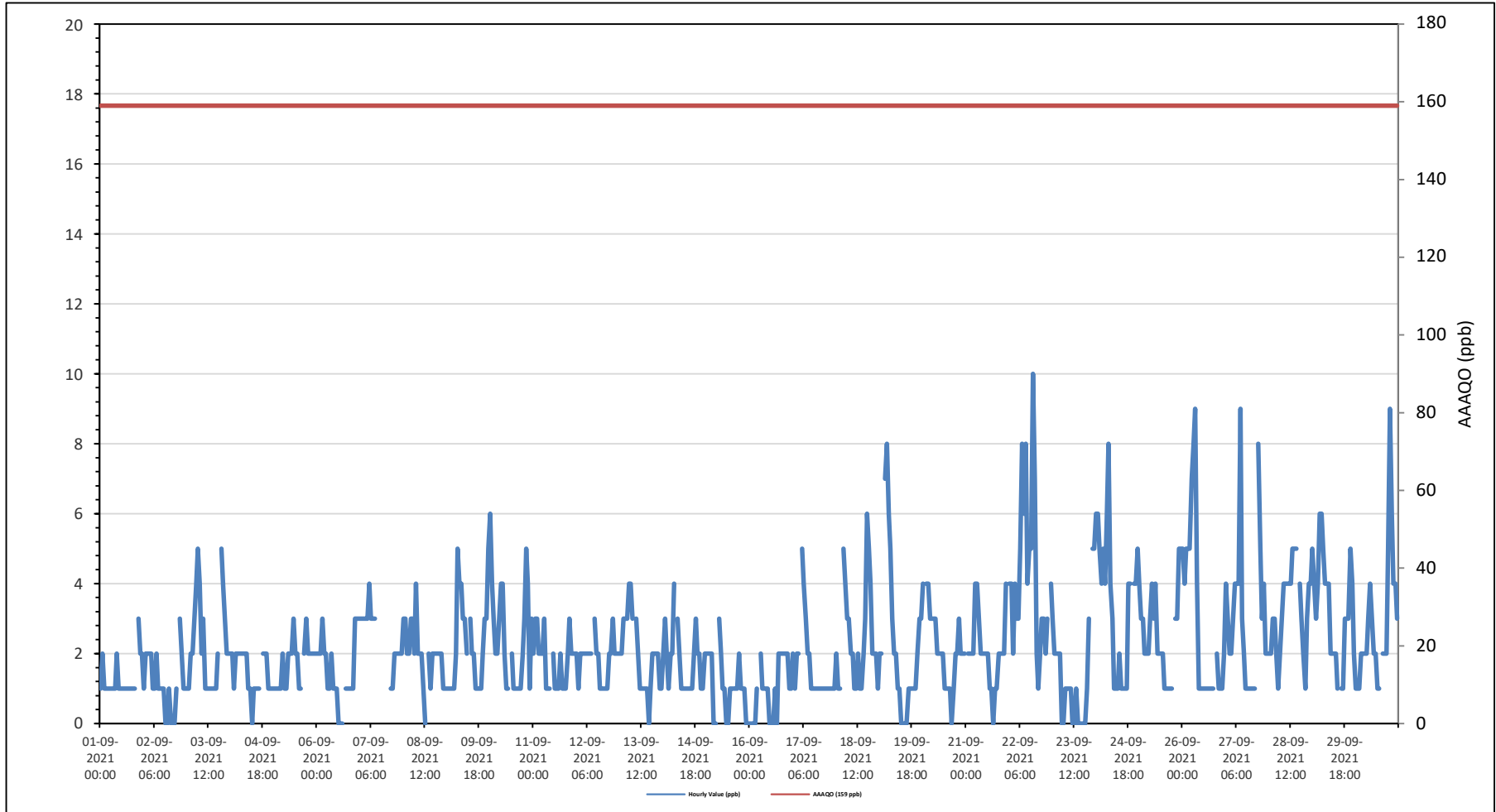
NITROGEN DIOXIDE (NO₂) in ppb

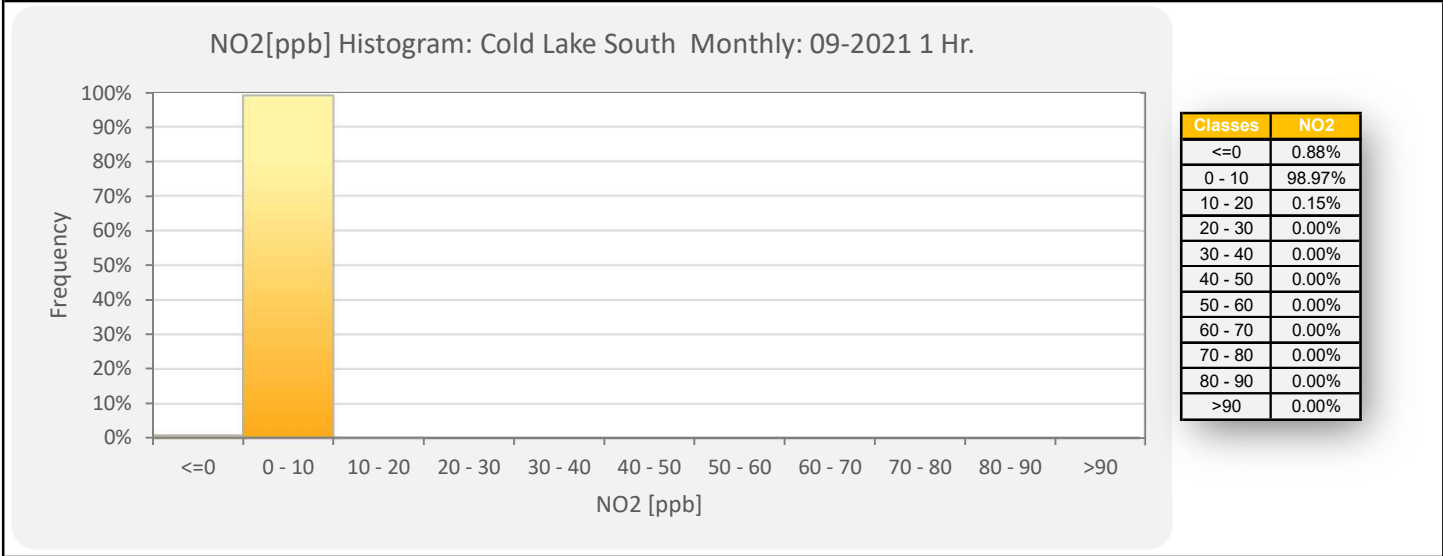
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb																															
Number of 1-Hour Exceedences: 0																															
Maximum Hourly Value: 10 ppb on September 22 at hour 13												Hours in Service: 720																			
Maximum Daily Value: 4.3 ppb on September 22												Hours of Data: 682																			
Minimum Hourly Value: 0 ppb on September 2 at hour 12												Hours of Missing Data: 0																			
Minimum Daily Value: 1.0 ppb on September 16												Hours of Calibration: 38																			
Monthly Average: 2.2 ppb												Operational Uptime: 100.0																			
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23							
Sep 1	1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	S	3	2	2	1	3	1.3				
Sep 2	1	2	2	2	2	1	1	2	1	1	1	1	0	0	1	0	0	0	1	S	3	2	1	1	0	3	1.1				
Sep 3	1	1	2	2	3	4	5	4	2	3	1	1	1	1	1	1	1	2	S	5	4	3	2	2	1	5	2.3				
Sep 4	2	2	1	2	2	2	2	2	2	2	1	1	0	1	1	1	1	S	2	2	2	1	1	1	0	2	1.5				
Sep 5	1	1	1	1	1	2	1	1	2	2	2	3	2	2	1	1	S	2	3	2	2	2	2	2	1	3	1.7				
Sep 6	2	2	2	3	2	2	1	1	2	1	1	1	0	0	S	1	1	1	1	1	1	3	3	3	0	3	1.5				
Sep 7	3	3	3	3	3	4	3	3	3	C	C	C	C	C	C	C	C	1	1	2	2	2	2	2	1	4	-				
Sep 8	3	3	2	2	3	3	2	4	2	2	2	1	0	S	2	1	2	2	2	2	2	2	1	1	0	4	2.0				
Sep 9	1	1	1	1	1	2	5	4	4	3	3	2	S	3	2	2	1	1	1	1	1	2	3	3	5	5	2.3				
Sep 10	6	4	3	2	2	3	4	4	2	1	1	S	2	1	1	1	1	1	2	3	5	4	1	3	1	6	2.5				
Sep 11	2	3	3	2	2	2	3	1	1	1	S	2	1	1	1	2	1	1	1	2	3	2	2	2	1	3	1.8				
Sep 12	2	1	2	2	2	2	2	2	S	3	2	2	2	1	1	1	1	1	2	2	3	2	2	2	1	3	1.8				
Sep 13	2	2	3	3	3	4	4	S	3	2	1	1	1	1	1	0	1	2	2	2	2	2	1	1	0	4	2.0				
Sep 14	2	3	2	1	2	2	4	S	3	2	1	1	1	1	1	1	1	2	3	2	2	1	1	2	1	4	1.8				
Sep 15	2	2	2	2	0	0	S	3	2	1	1	0	0	1	1	1	1	1	2	1	1	1	0	0	0	3	1.1				
Sep 16	0	0	0	0	1	S	2	1	1	1	1	0	0	0	1	0	2	2	2	2	2	1	1	1	0	2	1.0				
Sep 17	2	1	2	2	S	5	4	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1.6				
Sep 18	2	1	1	S	5	4	3	3	2	2	1	1	2	1	1	2	3	6	5	4	2	2	2	1	1	6	2.4				
Sep 19	2	2	S	7	8	6	5	3	2	2	1	1	0	0	0	1	1	1	1	1	1	2	3	3	0	8	2.3				
Sep 20	4	S	4	4	4	3	3	3	2	2	2	2	1	1	1	1	0	1	2	2	3	2	2	2	0	4	2.2				
Sep 21	S	2	2	2	2	4	4	3	2	2	2	2	2	1	1	0	1	1	2	2	2	2	4	S	0	4	2.0				
Sep 22	4	4	2	4	3	3	5	8	6	8	4	5	5	10	7	2	1	2	3	3	2	3	S	4	1	10	4.3				
Sep 23	3	2	2	2	2	0	0	1	1	1	1	0	0	1	0	0	0	0	0	1	3	S	5	5	0	5	1.3				
Sep 24	6	6	5	4	5	4	6	8	4	3	1	1	1	2	1	1	1	1	4	4	S	4	4	5	1	8	3.5				
Sep 25	4	3	3	2	2	2	3	4	3	4	2	2	2	2	1	1	1	1	1	S	3	3	5	5	1	5	2.6				
Sep 26	5	4	5	5	5	7	8	9	4	1	1	1	1	1	1	1	1	S	2	1	1	1	2	1	1	9	3.0				
Sep 27	4	3	2	2	3	4	4	4	9	3	2	1	1	1	1	1	1	S	8	5	3	4	2	2	1	9	3.0				
Sep 28	2	2	3	3	2	1	2	3	4	4	4	4	4	5	5	5	S	4	3	2	1	3	4	4	1	5	3.2				
Sep 29	5	4	3	4	6	6	5	4	4	4	2	2	2	2	1	S	1	1	3	3	3	5	4	2	1	6	3.3				
Sep 30	1	1	1	2	2	2	2	3	4	3	2	2	1	1	S	2	2	2	5	9	6	4	4	3	1	9	2.8				
Diurnal Maximum	6	6	5	7	8	7	8	9	9	8	4	5	5	10	7	5	3	6	8	9	6	5	5	5							
Daiurnal Average	2.6	2.3	2.2	2.5	2.7	2.9	3.2	3.3	2.7	2.4	1.7	1.5	1.2	1.5	1.3	1.1	1.0	1.5	2.3	2.5	2.4	2.4	2.3	2.4							
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance								
K	Collection Error										N	No Data (Machine Not in Service)										Y	Routine Maintenance				P	Power Failure			
X	InValid Data (Equipment Malfunction/Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																			

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

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

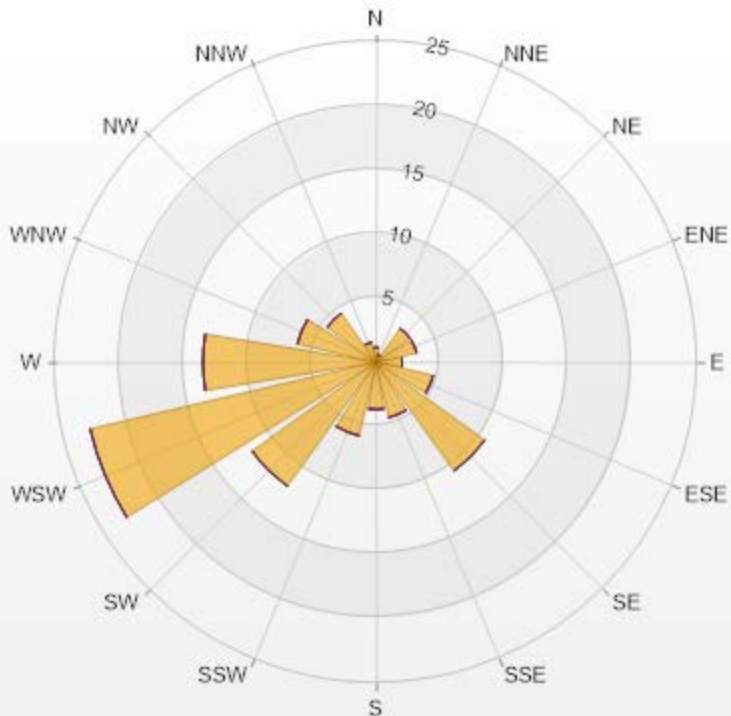
Timeseries Chart of Hourly Average for NO2 - Cold Lake South Station





Wind: Cold Lake South Poll.: Cold Lake South-NO2[ppb] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	1.17	0	0	0	0	1.17
NNE	0.59	0	0	0	0	0.59
NE	3.23	0	0	0	0	3.23
ENE	3.23	0	0	0	0	3.23
E	2.05	0	0	0	0	2.05
ESE	4.55	0	0	0	0	4.55
SE	10.41	0	0	0	0	10.41
SSE	4.4	0	0	0	0	4.4
S	3.67	0	0	0	0	3.67
SSW	5.87	0	0	0	0	5.87
SW	11.88	0	0	0	0	11.88
WSW	22.87	0	0	0	0	22.87
W	13.49	0	0	0	0	13.49
WNW	6.3	0	0	0	0	6.3
NW	4.69	0	0	0	0	4.69
NNW	1.61	0	0	0	0	1.61
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 - September 2021

Summary of Hourly Averages

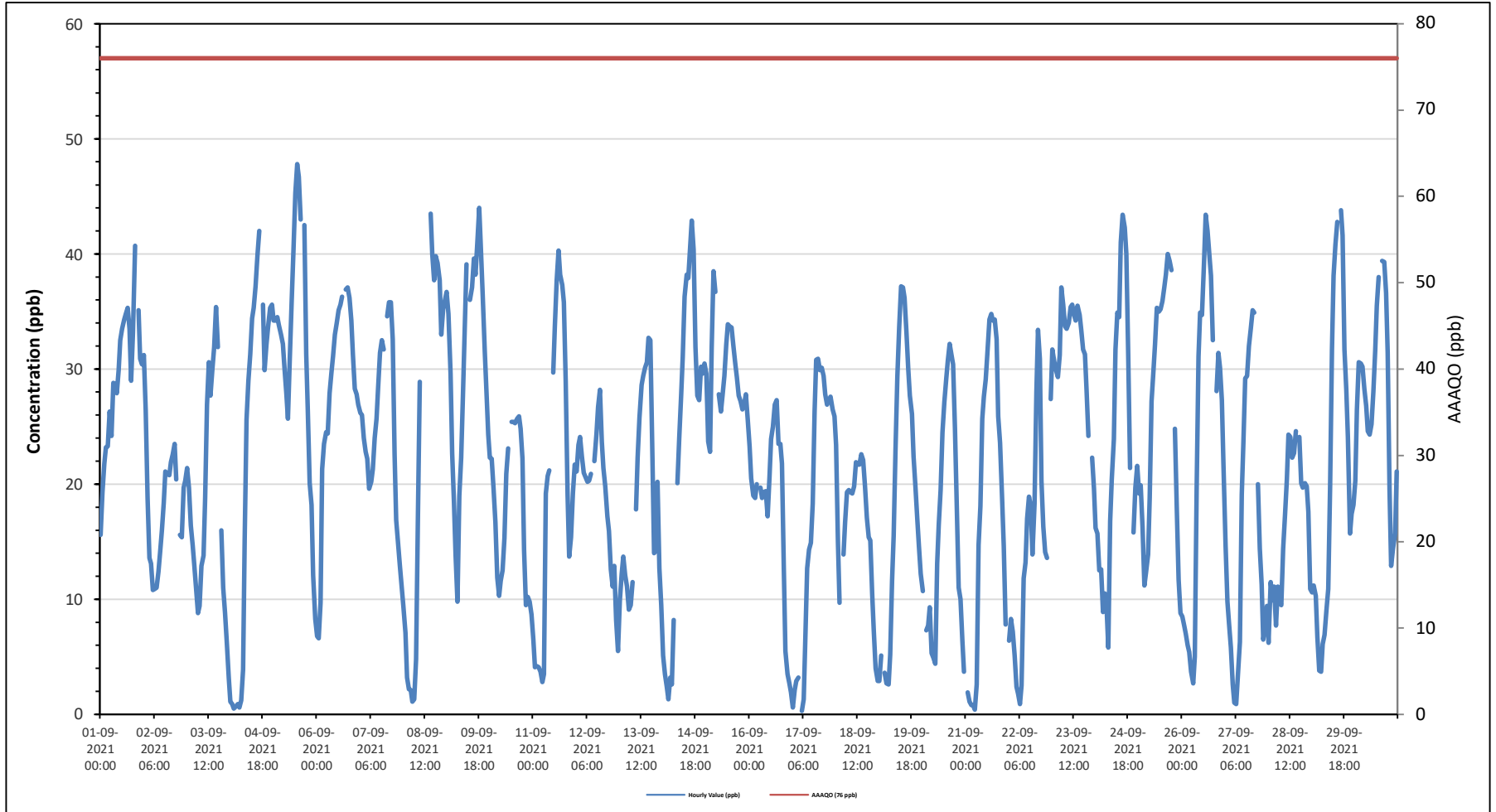
OZONE (O₃) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb																																															
Number of 1-Hour Exceedences: 0																																															
Maximum Hourly Value: 47.8 ppb on September 5 at hour 13												Hours in Service: 720																																			
Maximum Daily Value: 31.9 ppb on September 5												Hours of Data: 685																																			
Minimum Hourly Value: 0.3 ppb on September 17 at hour 5												Hours of Missing Data: 0																																			
Minimum Daily Value: 14.3 ppb on September 22												Hours of Calibration: 35																																			
Monthly Average: 22.0 ppb												Operational Uptime: 100.0																																			
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average																					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23																				
Sep 1	15.6	19.3	21.8	23.2	23.3	26.3	24.2	28.8	28.7	27.9	29.9	32.5	33.5	34.3	34.8	35.3	33.5	29.0	33.2	40.7	S	35.1	30.9	30.4	15.6	40.7	29.2																				
Sep 2	31.2	26.4	18.8	13.6	13.1	10.8	10.9	11.0	12.4	14.0	16.0	18.4	21.1	20.9	20.8	21.9	22.6	23.5	20.4	S	15.6	15.4	19.7	20.3	10.8	31.2	18.2																				
Sep 3	21.4	19.7	16.4	14.7	13.0	10.9	8.8	9.4	12.9	13.8	18.8	26.9	30.6	27.7	29.9	31.9	35.4	31.9	S	16.0	11.0	8.8	6.1	3.2	3.2	35.4	18.2																				
Sep 4	1.1	0.9	0.5	0.7	0.9	0.6	1.2	3.9	15.2	25.6	29.0	31.3	34.4	35.3	37.2	39.8	42.0	S	35.6	29.9	32.1	33.6	35.3	35.6	0.5	42.0	21.8																				
Sep 5	34.2	34.2	34.5	33.8	33.0	32.2	30.1	27.9	25.7	30.9	35.8	40.4	45.3	47.8	46.7	43.0	S	42.5	31.3	26.3	20.1	18.2	12.1	8.3	8.3	47.8	31.9																				
Sep 6	6.8	6.6	9.7	21.3	23.5	24.5	24.4	27.9	29.7	31.1	33.0	34.0	35.1	35.6	36.3	S	36.9	37.1	36.2	34.2	31.2	28.3	27.8	26.9	6.6	37.1	27.7																				
Sep 7	26.2	26.0	24.0	22.8	22.2	19.6	20.2	21.3	24.0	25.7	28.4	31.4	32.5	31.7	S	34.6	35.8	35.8	32.6	22.6	16.9	14.9	12.9	11.3	11.3	35.8	24.9																				
Sep 8	9.4	7.1	3.2	2.2	2.1	1.1	1.3	4.8	17.3	28.9	C	C	C	C	C	43.5	40.0	37.7	39.8	39.2	37.7	33.0	35.2	36.0	1.1	43.5	22.1																				
Sep 9	36.7	34.8	29.6	22.7	18.3	13.8	9.8	19.0	22.3	28.0	34.0	39.1	S	36.0	37.1	39.6	38.2	41.0	44.0	40.6	36.5	31.5	28.2	24.3	9.8	44.0	30.7																				
Sep 10	22.3	22.2	19.6	16.7	11.9	10.3	11.6	12.5	15.3	20.9	23.1	S	25.4	25.4	25.3	25.7	25.9	24.8	22.2	14.3	9.5	10.2	9.8	8.7	8.7	25.9	18.0																				
Sep 11	6.5	4.1	4.2	4.1	3.7	2.8	3.5	19.2	20.7	21.2	S	29.7	33.7	37.7	40.3	38.2	37.3	35.8	28.9	19.1	13.7	15.4	19.2	21.7	2.8	40.3	20.0																				
Sep 12	21.1	23.4	24.1	22.4	21.0	20.6	20.2	20.3	20.9	S	22.0	24.4	26.7	28.2	23.7	21.4	19.8	17.2	15.9	12.6	11.1	12.9	8.2	5.5	5.5	28.2	19.3																				
Sep 13	9.9	12.2	13.7	12.1	11.1	9.1	9.5	11.5	S	17.8	22.3	25.8	28.6	29.4	30.1	30.6	32.7	32.5	22.1	14.0	14.2	20.2	12.7	9.5	9.1	32.7	18.8																				
Sep 14	5.1	3.5	2.4	1.3	3.2	2.6	8.2	S	20.1	24.1	27.7	31.0	36.3	38.2	37.9	40.6	42.9	40.4	31.9	27.7	27.3	30.2	29.6	30.5	1.3	42.9	23.6																				
Sep 15	29.6	23.7	22.8	31.7	38.5	36.7	S	27.8	26.3	27.7	29.4	32.1	33.9	33.7	33.6	32.0	30.5	29.3	27.7	27.2	26.5	27.0	27.8	25.6	22.8	38.5	29.6																				
Sep 16	23.3	20.5	19.0	18.8	20.0	S	19.7	18.8	19.3	19.4	17.2	20.6	23.9	25.0	26.9	27.3	23.5	23.5	21.8	12.7	5.5	3.5	2.7	1.9	1.9	27.3	18.0																				
Sep 17	0.6	2.1	2.9	3.2	S	0.3	1.3	6.5	12.7	14.3	14.9	18.3	26.3	30.8	30.9	29.9	30.1	29.4	27.8	26.9	27.3	27.6	26.5	25.9	0.3	30.9	18.1																				
Sep 18	23.4	15.0	9.7	S	13.9	16.7	19.3	19.5	19.3	19.2	19.8	21.9	21.7	21.7	22.6	22.1	19.8	17.1	15.4	15.1	10.5	7.3	4.0	2.9	2.9	23.4	16.4																				
Sep 19	2.9	5.1	S	3.6	2.7	2.6	5.2	11.6	15.5	23.0	29.4	33.7	37.2	37.1	36.2	33.3	30.0	27.7	26.1	22.4	19.8	17.0	14.7	12.2	2.6	37.2	19.5																				
Sep 20	10.7	S	7.3	7.7	9.3	5.3	4.9	4.4	13.1	16.5	19.5	24.5	27.1	29.1	30.7	32.2	31.2	30.4	24.9	17.0	11.0	10.0	6.4	3.7	3.7	32.2	16.4																				
Sep 21	S	1.9	1.1	0.8	0.8	0.4	2.6	14.7	18.1	25.7	27.6	29.1	31.3	34.3	34.8	34.2	34.3	32.6	25.9	23.6	18.6	14.6	7.8	S	0.4	34.8	18.9																				
Sep 22	6.4	8.3	7.2	5.1	2.4	1.8	0.9	2.5	11.8	13.2	17.0	18.9	18.1	13.9	18.3	28.0	33.4	30.9	20.3	16.3	14.1	13.6	S	27.4	0.9	33.4	14.3																				
Sep 23	31.7	30.7	29.9	29.3	31.2	37.1	35.6	33.7	33.5	34.0	35.4	35.6	34.7	34.2	35.3	34.7	33.4	31.7	31.3	28.2	24.2	S	22.3	19.6	19.6	37.1	31.6																				
Sep 24	16.2	15.7	12.5	12.6	8.9	10.5	9.6	5.8	16.8	20.4	23.9	31.7	34.9	34.5	41.0	43.4	42.3	40.0	31.3	21.4	S	15.8	19.7	21.6	5.8	43.4	23.1																				
Sep 25	19.2	19.9	16.3	11.2	12.3	13.9	18.8	27.2	29.8	32.1	35.3	35.0	35.2	35.9	37.1	38.2	40.0	39.4	38.6	S	24.8	18.0	11.7	8.8	8.8	40.0	26.0																				
Sep 26	8.5	7.7	7.0	6.0	5.4	3.7	2.7	5.0	19.6	31.1	34.9	34.7	39.4	43.4	42.0	40.2	38.1	32.5	S	28.1	31.4	30.1	27.3	21.7	2.7	43.4	23.5																				
Sep 27	14.7	9.8	7.9	5.8	2.6	1.0	0.9	4.0	6.3	19.1	23.5	29.2	29.4	32.0	33.5	35.1	34.9	S	20.0	14.4	11.3	6.5	7.6	9.4	0.9	35.1	15.6																				
Sep 28	6.2	11.5	9.9	11.1	7.7	11.1	9.8	9.5	14.4	17.3	20.4	24.3	24.1	22.3	22.7	24.6	S	24.1	20.1	19.7	20.1	19.8	17.6	10.9	6.2	24.6	16.5																				
Sep 29	10.6	11.2	10.3	6.7	3.8	3.7	6.1	6.9	9.0	10.9	19.8	31.7	38.1	40.8	42.8	S	43.8	41.6	31.7	28.2	24.1	15.7	17.4	18.2	3.7	43.8	20.6																				
Sep 30	20.3	26.5	30.6	30.5	30.2	28.3	26.8	24.6	24.3	25.2	28.0	31.6	35.5	38.0	S	39.4	39.3	36.6	31.4	19.5	12.9	14.4	15.7	21.1	12.9	39.4	27.4																				
Diurnal Maximum	36.7	34.8	34.5	33.8	38.5	37.1	35.6	33.7	33.5	34.0	35.8	40.4	45.3	47.8	46.7	43.5	43.8	42.5	44.0	40.7	37.7	35.1	35.3	36.0																							
Diurnal Average	16.3	15.5	14.4	13.6	13.4	12.4	12.0	15.2	19.1	22.7	25.6	29.2	31.2	32.2	32.9	33.6	33.8	32.0	28.2	23.5	20.0	18.9	17.8	17.3																							
C	Monthly Calibration											S	Daily Zero-Span Check											Q	Quality Assurance																						
K	Collection Error											N	No Data (Machine Not in Service)											Y	Routine Maintenance											P	Power Failure										
X	Invalid Data (Equipment Malfunction / Recovery)											NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																																		

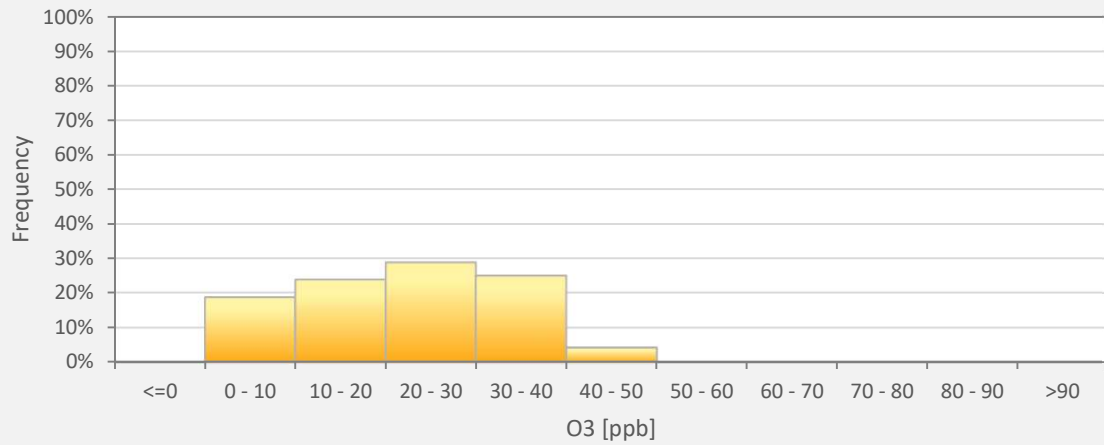
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.

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

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



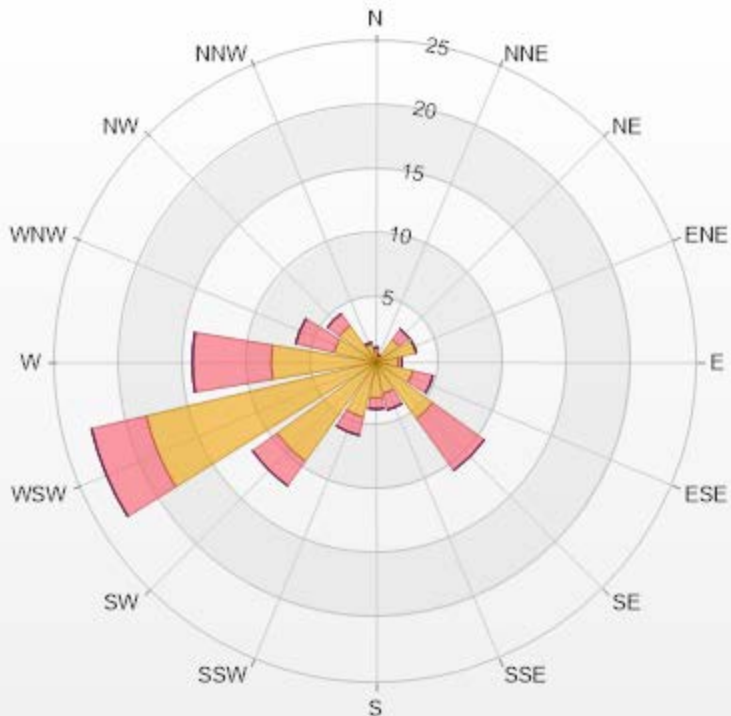
O3[ppb] Histogram: Cold Lake South Monthly: 09-2021 1 Hr.



Classes	O3
<=0	0.00%
0 - 10	18.69%
10 - 20	23.65%
20 - 30	28.61%
30 - 40	24.82%
40 - 50	4.23%
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: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.14% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	0.88	0.29	0	0	0	1.17
NNE	0.58	0	0	0	0	0.58
NE	2.19	1.02	0	0	0	3.21
ENE	3.21	0	0	0	0	3.21
E	1.75	0.29	0	0	0	2.04
ESE	2.92	1.61	0	0	0	4.53
SE	5.4	4.96	0	0	0	10.36
SSE	2.48	1.31	0	0	0	3.79
S	2.77	0.88	0	0	0	3.65
SSW	4.38	1.46	0	0	0	5.84
SW	9.49	2.34	0	0	0	11.83
WSW	18.39	4.38	0	0	0	22.77
W	8.18	6.13	0	0	0	14.31
WNW	3.36	3.07	0	0	0	6.43
NW	3.5	1.17	0	0	0	4.67
NNW	1.46	0.15	0	0	0	1.61
Summary	70.94	29.06	0	0	0	100



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% Icon Classes (ppb)

71

0-30

29

30-50

0

50-76

0

76-159

0

>159.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - September 2021

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

Maximum Hourly Value:	2.44 ppm on September 8 at hour 6	Hours in Service:	720
Maximum Daily Value:	2.10 ppm on September 8	Hours of Data:	656
Minimum Hourly Value:	1.80 ppm on September 21 at hour 15	Hours of Missing Data:	30
Minimum Daily Value:	1.86 ppm on September 16	Hours of Calibration:	34
Monthly Average:	1.95 ppm	Operational Uptime:	95.8

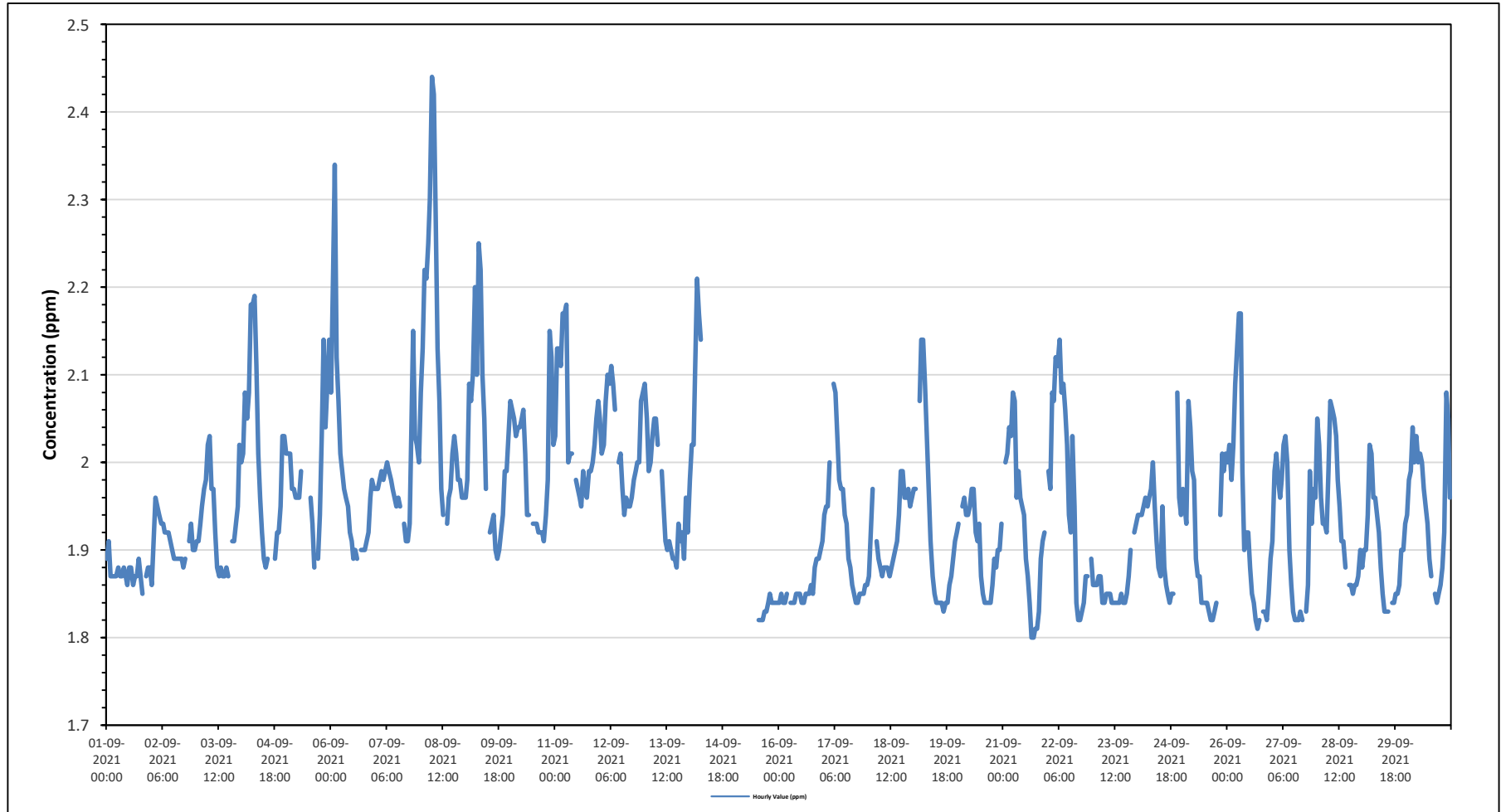
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Sep 1	1.89	1.91	1.87	1.87	1.87	1.87	1.88	1.87	1.87	1.88	1.87	1.86	1.88	1.88	1.86	1.87	1.87	1.89	1.87	1.85	S	1.87	1.88	1.88	1.85	1.91	1.87	
Sep 2	1.86	1.91	1.96	1.95	1.94	1.93	1.93	1.92	1.92	1.92	1.91	1.90	1.89	1.89	1.89	1.89	1.89	1.88	1.89	S	1.91	1.93	1.90	1.90	1.86	1.96	1.91	
Sep 3	1.91	1.91	1.93	1.95	1.97	1.98	2.02	2.03	1.97	1.97	1.92	1.88	1.87	1.88	1.87	1.87	1.88	1.87	S	1.91	1.91	1.93	1.95	2.02	1.87	2.03	1.93	
Sep 4	2.00	2.01	2.08	2.05	2.08	2.18	2.18	2.19	2.11	2.01	1.96	1.92	1.89	1.88	1.89	X	X	S	1.89	1.92	1.92	1.95	2.03	2.03	1.88	2.19	2.01	
Sep 5	2.01	2.01	2.01	1.97	1.97	1.96	1.96	1.96	1.99	C	C	C	C	1.96	1.93	1.88	S	1.89	1.94	2.03	2.14	2.04	2.09	2.14	1.88	2.14	1.99	
Sep 6	2.08	2.22	2.34	2.12	2.07	2.01	1.99	1.97	1.96	1.95	1.92	1.91	1.89	1.90	1.89	S	1.90	1.90	1.90	1.91	1.92	1.96	1.98	1.97	1.89	2.34	1.99	
Sep 7	1.97	1.97	1.98	1.99	1.98	1.99	2.00	1.99	1.98	1.97	1.96	1.95	1.96	1.95	S	1.93	1.91	1.91	1.93	2.03	2.15	2.03	2.02	2.00	1.91	2.15	1.98	
Sep 8	2.08	2.13	2.22	2.21	2.25	2.30	2.44	2.42	2.28	2.13	2.07	1.97	1.94	S	1.93	1.96	1.97	2.01	2.03	2.01	1.98	1.98	1.96	1.96	1.93	2.44	2.10	
Sep 9	1.96	1.98	2.09	2.07	2.10	2.20	2.10	2.25	2.22	2.10	2.05	1.97	S	1.92	1.93	1.94	1.90	1.89	1.90	1.92	1.94	1.99	1.99	2.03	1.89	2.25	2.02	
Sep 10	2.07	2.06	2.05	2.03	2.04	2.04	2.05	2.06	2.01	1.94	1.94	S	1.93	1.93	1.93	1.92	1.92	1.92	1.91	1.94	1.98	2.15	2.12	2.02	1.91	2.15	2.00	
Sep 11	2.03	2.13	2.13	2.11	2.17	2.17	2.18	2.00	2.01	2.01	S	1.98	1.97	1.96	1.95	1.99	1.97	1.96	1.99	1.99	2.00	2.02	2.05	2.07	1.95	2.18	2.04	
Sep 12	2.05	2.01	2.02	2.07	2.10	2.09	2.11	2.09	2.06	S	2.00	2.01	1.97	1.94	1.96	1.95	1.95	1.96	1.98	1.99	2.00	2.00	2.07	2.08	1.94	2.11	2.02	
Sep 13	2.09	2.05	1.99	2.00	2.03	2.05	2.05	2.02	S	1.99	1.95	1.91	1.90	1.91	1.90	1.89	1.89	1.88	1.93	1.91	1.92	1.89	1.96	1.92	1.88	2.09	1.96	
Sep 14	1.98	2.02	2.02	2.11	2.21	2.17	2.14	S	1.93	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.93	2.21	-	
Sep 15	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	NRM	1.82	1.82	1.82	1.83	1.83	1.84	1.85	1.84	1.84	1.84	1.84	1.82	1.85	-	
Sep 16	1.84	1.85	1.84	1.84	1.85	S	1.84	1.84	1.84	1.84	1.85	1.85	1.84	1.84	1.85	1.85	1.85	1.86	1.85	1.88	1.89	1.89	1.90	1.91	1.84	1.91	1.86	
Sep 17	1.94	1.95	1.95	2.00	S	2.09	2.08	2.03	1.98	1.97	1.97	1.94	1.93	1.89	1.88	1.86	1.85	1.84	1.84	1.85	1.85	1.85	1.86	1.86	1.84	2.09	1.92	
Sep 18	1.87	1.92	1.97	S	1.91	1.89	1.88	1.87	1.88	1.88	1.88	1.87	1.88	1.89	1.90	1.91	1.94	1.99	1.99	1.96	1.96	1.97	1.95	1.96	1.87	1.99	1.92	
Sep 19	1.97	1.97	S	2.07	2.14	2.14	2.09	2.03	1.97	1.91	1.87	1.85	1.84	1.84	1.84	1.84	1.83	1.84	1.84	1.84	1.86	1.87	1.89	1.91	1.92	1.83	2.14	1.93
Sep 20	1.93	S	1.95	1.96	1.94	1.94	1.95	1.97	1.97	1.92	1.91	1.93	1.87	1.85	1.84	1.84	1.84	1.84	1.86	1.89	1.88	1.90	1.90	1.93	1.84	1.97	1.90	
Sep 21	S	2.00	2.01	2.04	2.03	2.08	2.07	1.96	1.99	1.96	1.95	1.94	1.89	1.87	1.84	1.80	1.80	1.81	1.81	1.83	1.89	1.91	1.92	S	1.80	2.08	1.93	
Sep 22	1.99	1.97	2.08	2.07	2.12	2.11	2.14	2.08	2.09	2.06	2.02	1.94	1.92	2.03	1.95	1.84	1.82	1.82	1.83	1.84	1.87	1.87	S	1.89	1.82	2.14	1.97	
Sep 23	1.86	1.86	1.86	1.87	1.87	1.84	1.84	1.85	1.85	1.85	1.84	1.84	1.84	1.84	1.84	1.85	1.84	1.84	1.85	1.87	1.90	S	1.92	1.93	1.84	1.93	1.86	
Sep 24	1.94	1.94	1.94	1.95	1.96	1.95	1.96	1.97	2.00	1.95	1.91	1.88	1.87	1.95	1.88	1.86	1.85	1.84	1.85	1.85	1.85	S	2.08	1.96	1.84	2.08	1.93	
Sep 25	1.97	1.95	1.93	2.07	2.04	1.99	1.98	1.89	1.87	1.87	1.84	1.84	1.84	1.84	1.83	1.82	1.82	1.83	1.84	S	1.94	2.01	1.99	2.01	1.82	2.07	1.91	
Sep 26	2.00	2.02	1.98	2.02	2.09	2.13	2.17	2.17	1.99	1.90	1.92	1.92	1.88	1.85	1.84	1.82	1.81	1.82	S	1.83	1.83	1.82	1.85	1.89	1.81	2.17	1.94	
Sep 27	1.91	1.99	2.01	1.98	1.96	1.98	2.02	2.03	2.00	1.90	1.86	1.83	1.82	1.82	1.82	1.83	1.82	S	1.83	1.86	1.99	1.93	1.97	1.96	1.82	2.03	1.92	
Sep 28	2.05	2.02	1.96	1.93	1.93	1.92	1.99	2.07	2.06	2.05	2.03	1.98	1.95	1.91	1.91	1.88	S	1.86	1.86	1.85	1.86	1.86	1.87	1.90	1.85	2.07	1.94	
Sep 29	1.88	1.90	1.90	1.94	2.02	2.01	1.96	1.96	1.94	1.92	1.88	1.85	1.83	1.83	1.83	S	1.84	1.84	1.85	1.85	1.86	1.86	1.90	1.90	1.83	1.83	2.02	1.90
Sep 30	1.94	1.98	1.99	2.04	2.00	2.03	2.00	2.01	2.00	1.97	1.95	1.93	1.89	1.87	S	1.85	1.84	1.85	1.86	1.88	1.92	2.08	2.05	1.96	1.84	2.08	1.95	
Diurnal Maximum	2.09	2.22	2.34	2.21	2.25	2.30	2.44	2.42	2.28	2.13	2.07	2.01	1.97	2.03	1.96	1.99	1.97	2.01	2.03	2.03	2.15	2.15	2.12	2.14				
Dalurnal Average	1.97	1.99	2.00	2.01	2.02	2.04	2.03	2.02	1.99	1.96	1.93	1.91	1.89	1.89	1.88	1.88	1.87	1.88	1.89	1.90	1.93	1.95	1.96	1.96				

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

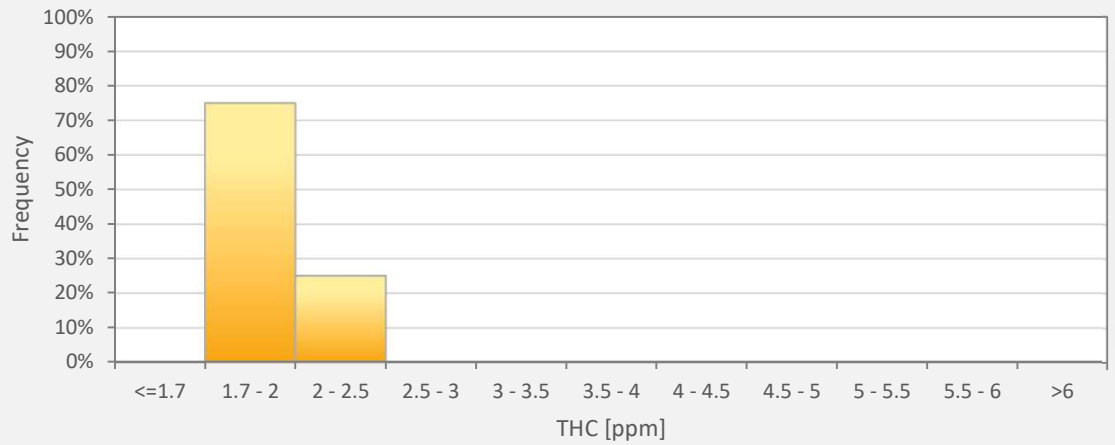
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.

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



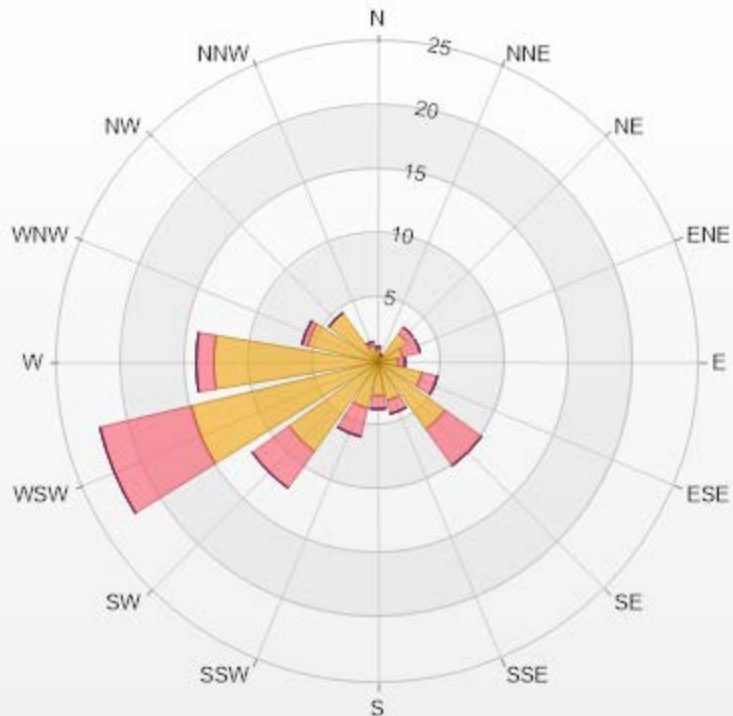
THC55[ppm] Histogram: Cold Lake South Monthly: 09-2021 1 Hr.



Classes	THC55
<=1.7	0.00%
1.7 - 2	75.00%
2 - 2.5	25.00%
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: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 91.11% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	0.91	0.3	0	0	0	1.21
NNE	0.46	0.15	0	0	0	0.61
NE	2.74	0.61	0	0	0	3.35
ENE	1.98	1.37	0	0	0	3.35
E	1.52	0.61	0	0	0	2.13
ESE	3.51	1.22	0	0	0	4.73
SE	6.4	3.51	0	0	0	9.91
SSE	3.05	1.07	0	0	0	4.12
S	2.59	1.07	0	0	0	3.66
SSW	3.66	2.29	0	0	0	5.95
SW	8.54	3.51	0	0	0	12.05
WSW	14.94	7.32	0	0	0	22.26
W	12.8	1.37	0	0	0	14.17
WNW	5.64	0.46	0	0	0	6.1
NW	4.73	0	0	0	0	4.73
NNW	1.37	0.3	0	0	0	1.67
Summary	74.84	25.16	0	0	0	100



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% Icon Classes (ppm)

75 0-2

25 2-5

0 5-10

0 10-40

0 >40.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - September 2021

Summary of Hourly Averages

METHANE (CH4) in ppm

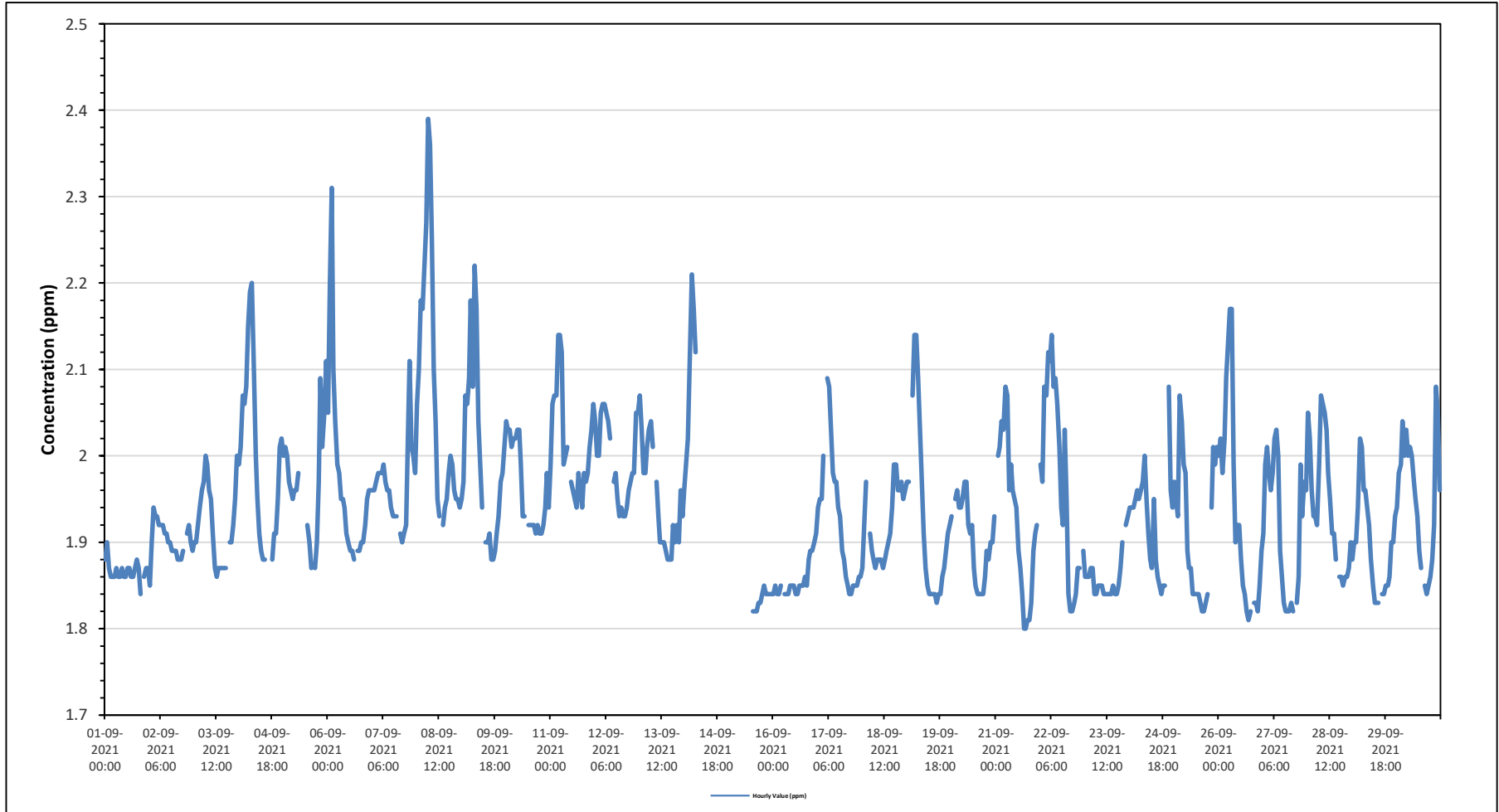
Maximum Hourly Value:	2.39 ppm	on September 8 at hour 6	Hours in Service:	720
Maximum Daily Value:	2.07 ppm	on September 8	Hours of Data:	656
Minimum Hourly Value:	1.80 ppm	on September 21 at hour 15	Hours of Missing Data:	30
Minimum Daily Value:	1.86 ppm	on September 16	Hours of Calibration:	34
Monthly Average:	1.94 ppm		Operational Uptime:	95.8

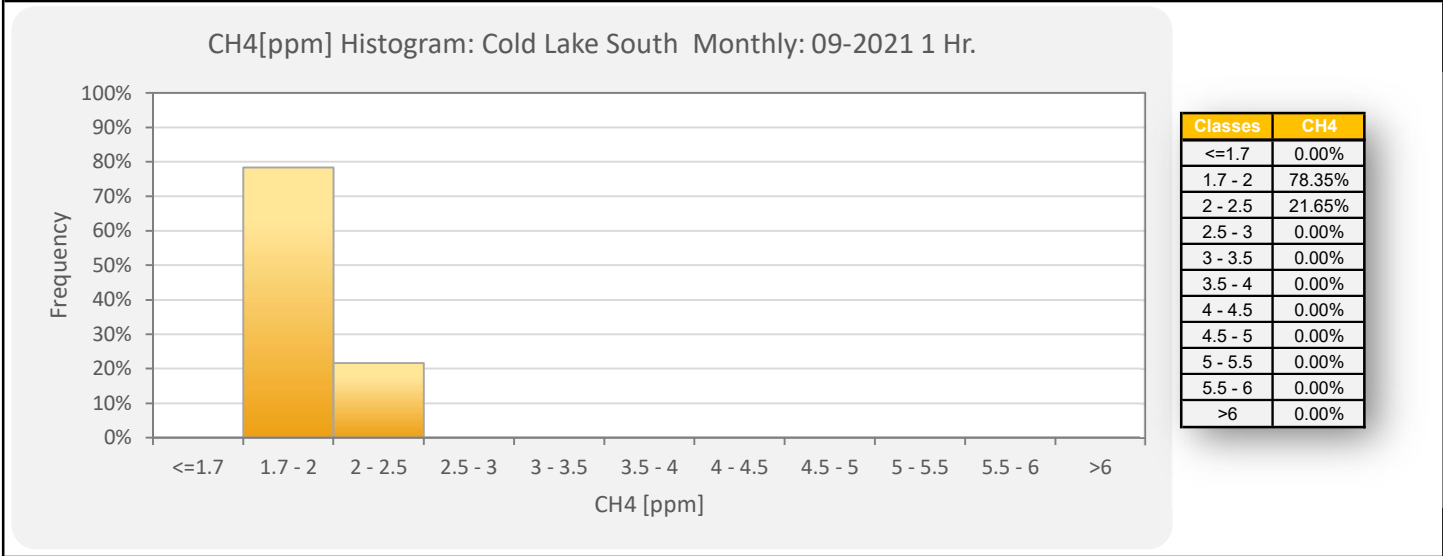
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Sep 1	1.88	1.90	1.87	1.86	1.86	1.86	1.87	1.86	1.86	1.87	1.86	1.86	1.87	1.87	1.86	1.86	1.87	1.88	1.87	1.84	S	1.86	1.87	1.87	1.84	1.90	1.87	
Sep 2	1.85	1.90	1.94	1.93	1.93	1.92	1.92	1.92	1.91	1.91	1.90	1.90	1.89	1.89	1.89	1.88	1.88	1.88	1.89	1.89	S	1.91	1.92	1.90	1.89	1.85	1.94	1.90
Sep 3	1.90	1.90	1.92	1.94	1.96	1.97	2.00	1.99	1.96	1.95	1.91	1.87	1.86	1.87	1.87	1.87	1.87	1.87	1.87	S	1.90	1.90	1.92	1.95	2.00	1.86	2.00	1.92
Sep 4	1.99	2.01	2.07	2.06	2.08	2.15	2.19	2.20	2.11	2.00	1.95	1.91	1.89	1.88	1.88	X	X	S	1.88	1.91	1.91	1.95	2.01	2.02	1.88	2.20	2.00	
Sep 5	2.00	2.01	2.00	1.97	1.96	1.95	1.96	1.96	1.98	C	C	C	C	1.92	1.90	1.87	S	1.87	1.90	1.97	2.09	2.01	2.05	2.11	1.87	2.11	1.97	
Sep 6	2.05	2.20	2.31	2.10	2.04	1.99	1.98	1.95	1.95	1.94	1.91	1.90	1.89	1.89	1.88	S	1.89	1.89	1.90	1.90	1.92	1.95	1.96	1.96	1.88	2.31	1.97	
Sep 7	1.96	1.96	1.97	1.98	1.98	1.98	1.99	1.97	1.96	1.96	1.94	1.93	1.93	1.93	S	1.91	1.90	1.91	1.92	2.01	2.11	2.01	2.00	1.98	1.90	2.11	1.96	
Sep 8	2.06	2.10	2.18	2.17	2.22	2.27	2.39	2.36	2.25	2.10	2.04	1.95	1.93	S	1.92	1.94	1.95	1.98	2.00	1.99	1.96	1.95	1.95	1.94	1.92	2.39	2.07	
Sep 9	1.95	1.97	2.07	2.06	2.09	2.18	2.08	2.22	2.17	2.04	1.99	1.94	S	1.90	1.90	1.91	1.88	1.88	1.89	1.91	1.93	1.97	1.98	2.01	1.88	2.22	2.00	
Sep 10	2.04	2.03	2.03	2.01	2.02	2.02	2.03	2.02	1.99	1.93	1.93	S	1.92	1.92	1.92	1.92	1.91	1.92	1.91	1.91	1.92	1.94	1.98	1.94	1.91	2.04	1.96	
Sep 11	1.99	2.06	2.07	2.07	2.14	2.14	2.12	1.99	2.00	2.01	S	1.97	1.96	1.95	1.94	1.98	1.96	1.94	1.98	1.97	1.98	2.01	2.03	2.06	1.94	2.14	2.01	
Sep 12	2.04	2.00	2.00	2.05	2.06	2.06	2.05	2.04	2.02	S	1.97	1.98	1.95	1.93	1.94	1.93	1.93	1.94	1.96	1.97	1.98	1.98	2.05	2.05	1.93	2.06	1.99	
Sep 13	2.07	2.03	1.98	1.98	2.01	2.03	2.04	2.01	S	1.97	1.93	1.90	1.90	1.89	1.88	1.88	1.88	1.88	1.92	1.90	1.92	1.90	1.96	1.93	1.88	2.07	1.95	
Sep 14	1.96	1.99	2.02	2.11	2.21	2.17	2.12	S	1.94	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.94	2.21	-	
Sep 15	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	NRM	1.82	1.82	1.82	1.83	1.83	1.84	1.85	1.84	1.84	1.84	1.84	1.82	1.85	-	
Sep 16	1.84	1.85	1.84	1.84	1.85	S	1.84	1.84	1.84	1.84	1.85	1.85	1.85	1.84	1.84	1.85	1.85	1.86	1.85	1.88	1.89	1.89	1.90	1.91	1.84	1.91	1.86	
Sep 17	1.94	1.95	1.95	2.00	S	2.09	2.08	2.03	1.98	1.97	1.97	1.94	1.93	1.89	1.88	1.86	1.85	1.84	1.84	1.85	1.85	1.85	1.86	1.86	1.84	2.09	1.92	
Sep 18	1.87	1.92	1.97	S	1.91	1.89	1.88	1.87	1.88	1.88	1.88	1.87	1.88	1.89	1.90	1.91	1.94	1.99	1.99	1.96	1.96	1.97	1.95	1.96	1.87	1.99	1.92	
Sep 19	1.97	1.97	S	2.07	2.14	2.14	2.09	2.03	1.97	1.91	1.87	1.85	1.84	1.84	1.84	1.84	1.83	1.84	1.84	1.84	1.86	1.87	1.89	1.91	1.92	1.83	2.14	1.93
Sep 20	1.93	S	1.95	1.96	1.94	1.94	1.95	1.97	1.97	1.92	1.91	1.92	1.87	1.85	1.84	1.84	1.84	1.84	1.86	1.89	1.88	1.90	1.90	1.93	1.84	1.97	1.90	
Sep 21	S	2.00	2.01	2.04	2.03	2.08	2.07	1.96	1.99	1.96	1.95	1.94	1.89	1.87	1.84	1.80	1.80	1.81	1.81	1.83	1.89	1.91	1.92	S	1.80	2.08	1.93	
Sep 22	1.99	1.97	2.08	2.07	2.12	2.11	2.14	2.08	2.09	2.06	2.01	1.94	1.92	2.03	1.95	1.84	1.82	1.82	1.83	1.84	1.87	1.87	S	1.89	1.82	2.14	1.97	
Sep 23	1.86	1.86	1.86	1.87	1.87	1.84	1.84	1.85	1.85	1.85	1.84	1.84	1.84	1.84	1.84	1.85	1.84	1.84	1.85	1.87	1.90	S	1.92	1.93	1.84	1.93	1.86	
Sep 24	1.94	1.94	1.94	1.95	1.96	1.95	1.96	1.97	2.00	1.95	1.91	1.88	1.87	1.95	1.88	1.86	1.85	1.84	1.85	1.85	1.85	S	2.08	1.96	1.84	2.08	1.93	
Sep 25	1.97	1.95	1.93	2.07	2.04	1.99	1.98	1.89	1.87	1.87	1.84	1.84	1.84	1.84	1.83	1.82	1.82	1.83	1.84	S	1.94	2.01	1.99	2.01	1.82	2.07	1.91	
Sep 26	2.00	2.02	1.98	2.02	2.09	2.13	2.17	2.17	1.99	1.90	1.92	1.92	1.88	1.85	1.84	1.82	1.81	1.82	S	1.83	1.83	1.82	1.85	1.89	1.81	2.17	1.94	
Sep 27	1.91	1.99	2.01	1.98	1.96	1.98	2.02	2.03	2.00	1.89	1.86	1.83	1.82	1.82	1.82	1.83	1.82	S	1.83	1.86	1.99	1.93	1.97	1.96	1.82	2.03	1.92	
Sep 28	2.05	2.02	1.96	1.93	1.93	1.92	1.99	2.07	2.06	2.05	2.03	1.98	1.95	1.91	1.91	1.88	S	1.86	1.86	1.85	1.86	1.86	1.87	1.90	1.85	2.07	1.94	
Sep 29	1.88	1.90	1.90	1.94	2.02	2.01	1.96	1.96	1.94	1.92	1.88	1.85	1.83	1.83	1.83	S	1.84	1.84	1.85	1.85	1.86	1.86	1.90	1.90	1.93	1.83	2.02	1.90
Sep 30	1.94	1.98	1.99	2.04	2.00	2.03	2.00	2.01	2.00	1.97	1.95	1.93	1.89	1.87	S	1.85	1.84	1.85	1.86	1.88	1.92	2.08	2.05	1.96	1.84	2.08	1.95	
Diurnal Maximum	2.07	2.20	2.31	2.17	2.22	2.27	2.39	2.36	2.25	2.10	2.04	1.98	1.96	2.03	1.95	1.98	1.96	1.99	2.00	2.01	2.11	2.08	2.05	2.11				
Dalurnal Average	1.96	1.98	1.99	2.00	2.02	2.03	2.02	2.01	1.98	1.95	1.92	1.90	1.89	1.89	1.88	1.87	1.87	1.87	1.88	1.89	1.92	1.93	1.95	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.

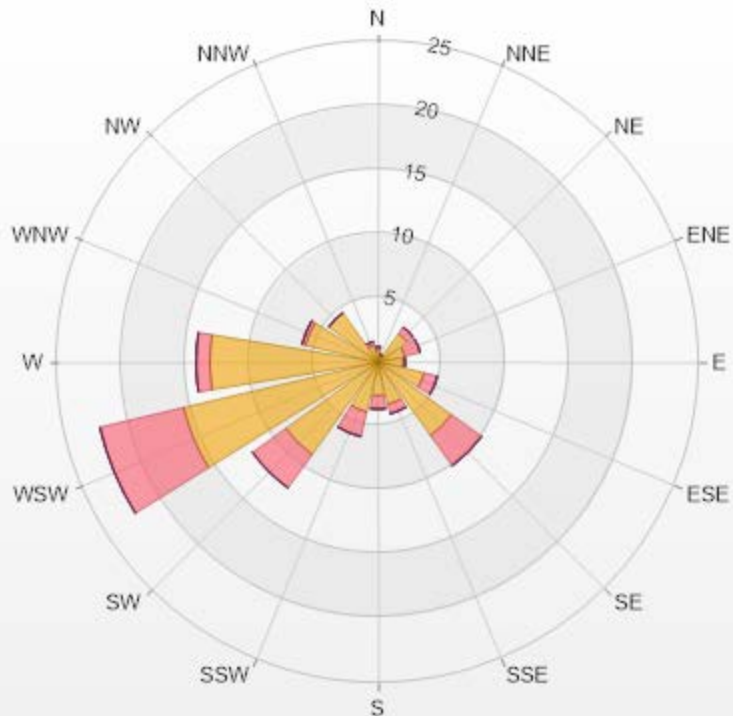
Timeseries Chart of Hourly Average for CH4 - Cold Lake South Station





Wind: Cold Lake South Poll.: Cold Lake South-CH4[ppm] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 91.11% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	0.91	0.3	0	0	0	1.21
NNE	0.46	0.15	0	0	0	0.61
NE	2.74	0.61	0	0	0	3.35
ENE	2.13	1.22	0	0	0	3.35
E	1.98	0.15	0	0	0	2.13
ESE	3.66	1.07	0	0	0	4.73
SE	7.01	2.9	0	0	0	9.91
SSE	3.35	0.76	0	0	0	4.11
S	2.59	1.07	0	0	0	3.66
SSW	3.96	1.98	0	0	0	5.94
SW	8.84	3.2	0	0	0	12.04
WSW	15.55	6.71	0	0	0	22.26
W	13.11	1.07	0	0	0	14.18
WNW	5.79	0.3	0	0	0	6.09
NW	4.73	0	0	0	0	4.73
NNW	1.37	0.3	0	0	0	1.67
Summary	78.18	21.79	0	0	0	100



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% Icon Classes (ppm)

78  0-2

22  2-5

0  5-10

0  10-20

0  >20.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - September 2021

Summary of Hourly Averages

NON-METHANE HYDROCARBONS (NMHC) in ppm

Maximum Hourly Value:	0.22 ppm on September 10 at hour 21	Hours in Service:	720
Maximum Daily Value:	0.04 ppm on September 10	Hours of Data:	656
Minimum Hourly Value:	0.00 ppm on September 1 at hour 10	Hours of Missing Data:	30
Minimum Daily Value:	0.00 ppm on September 16	Hours of Calibration:	34
Monthly Average:	0.01 ppm	Operational Uptime:	95.8

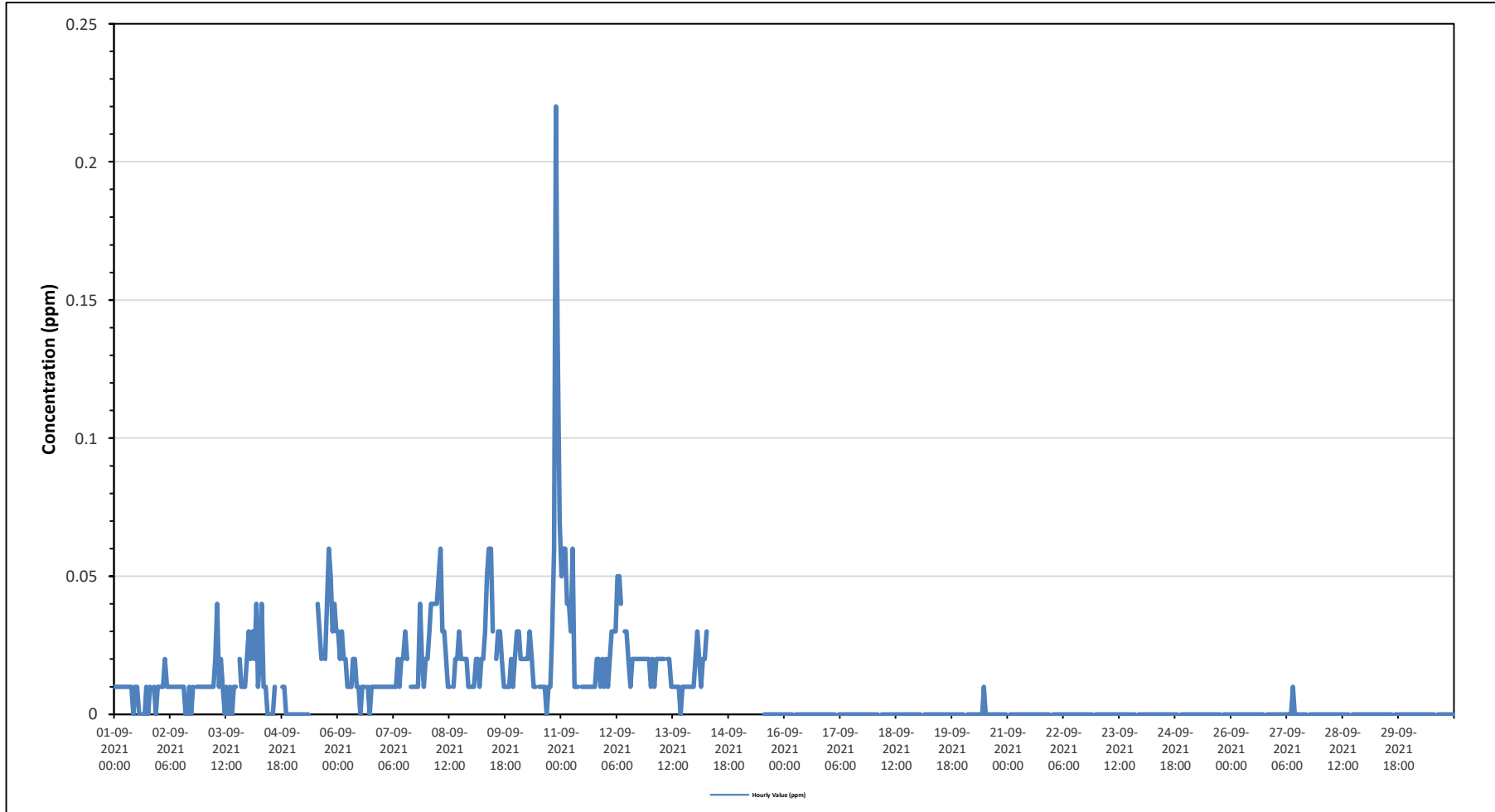
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Sep 1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.01	S	0.01	0.00	0.01	0.00	0.01	0.01
Sep 2	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.01	S	0.01	0.01	0.01	0.01	0.01	0.00	0.02
Sep 3	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.04	0.01	0.02	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.01	S	0.02	0.01	0.01	0.01	0.01	0.02	0.00	0.04
Sep 4	0.03	0.02	0.03	0.02	0.04	0.01	0.02	0.04	0.01	0.01	0.00	0.00	0.00	0.00	0.01	X	X	S	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Sep 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	0.04	0.03	0.02	S	0.02	0.04	0.06	0.05	0.03	0.04	0.03	0.00	0.06	0.02
Sep 6	0.03	0.02	0.03	0.02	0.02	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.00	0.01	0.01	S	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.03
Sep 7	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.02	0.03	0.02	S	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.02	0.01	0.02	0.01	0.04
Sep 8	0.02	0.03	0.04	0.04	0.04	0.04	0.05	0.06	0.03	0.03	0.02	0.01	0.01	S	0.01	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.06	0.03
Sep 9	0.01	0.01	0.02	0.02	0.01	0.02	0.02	0.03	0.05	0.06	0.06	0.03	S	0.02	0.03	0.03	0.02	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.01	0.02	0.02
Sep 10	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.01	0.01	S	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.03	0.06	0.22	0.14	0.07	0.00	0.22	0.04
Sep 11	0.05	0.06	0.06	0.04	0.04	0.03	0.06	0.01	0.01	0.01	S	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.02	0.01	0.02	0.01	0.06
Sep 12	0.02	0.01	0.02	0.03	0.03	0.03	0.05	0.05	0.04	S	0.03	0.03	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.05
Sep 13	0.01	0.02	0.01	0.02	0.02	0.02	0.02	0.02	S	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01
Sep 14	0.02	0.03	0.02	0.01	0.02	0.02	0.03	S	0.01	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.03
Sep 15	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	NRM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Sep 16	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sep 17	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sep 18	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sep 19	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sep 20	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Sep 21	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00
Sep 22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sep 23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Sep 24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Sep 25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Sep 26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sep 27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Sep 28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sep 29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sep 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diurnal Maximum	0.05	0.06	0.06	0.04	0.04	0.04	0.06	0.06	0.05	0.06	0.06	0.03	0.03	0.04	0.03	0.03	0.02	0.03	0.04	0.06	0.06	0.22	0.14	0.07			
Dalurnal Average	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

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

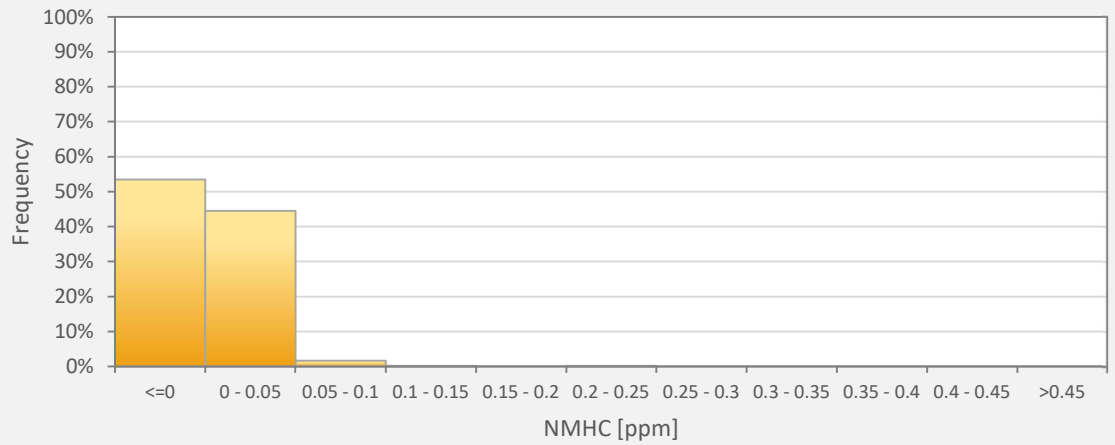
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.

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

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



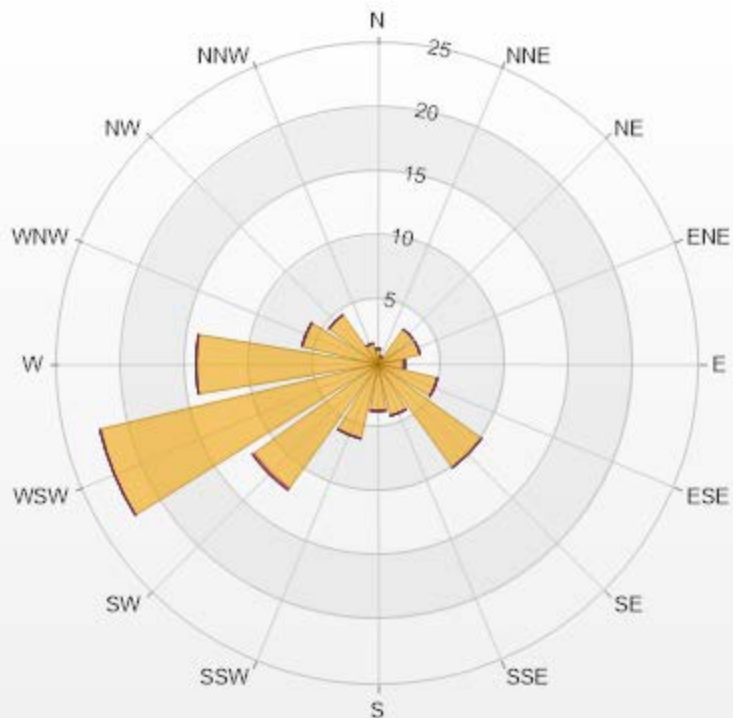
NMHC[ppm] Histogram: Cold Lake South Monthly: 09-2021 1 Hr.



Classes	NMHC
<=0	53.51%
0 - 0.05	44.51%
0.05 - 0.1	1.68%
0.1 - 0.15	0.15%
0.15 - 0.2	0.00%
0.2 - 0.25	0.15%
0.25 - 0.3	0.00%
0.3 - 0.35	0.00%
0.35 - 0.4	0.00%
0.4 - 0.45	0.00%
>0.45	0.00%

Wind: Cold Lake South Poll.: Cold Lake South-NMHC[ppm] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 91.11% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	1.22	0	0	0	0	1.22
NNE	0.61	0	0	0	0	0.61
NE	3.35	0	0	0	0	3.35
ENE	3.35	0	0	0	0	3.35
E	1.98	0.15	0	0	0	2.13
ESE	4.73	0	0	0	0	4.73
SE	9.91	0	0	0	0	9.91
SSE	4.12	0	0	0	0	4.12
S	3.66	0	0	0	0	3.66
SSW	5.95	0	0	0	0	5.95
SW	11.89	0.15	0	0	0	12.04
WSW	22.26	0	0	0	0	22.26
W	14.18	0	0	0	0	14.18
WNW	6.1	0	0	0	0	6.1
NW	4.73	0	0	0	0	4.73
NNW	1.68	0	0	0	0	1.68
Summary	100	0.3	0	0	0	100




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% Icon Classes (ppm)

100  0-0.1

0  0.1-0.3

0  0.3-0.9

0  0.9-2

0  >2.0



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Cold Lake South Station - September 2021

Summary of Hourly Averages

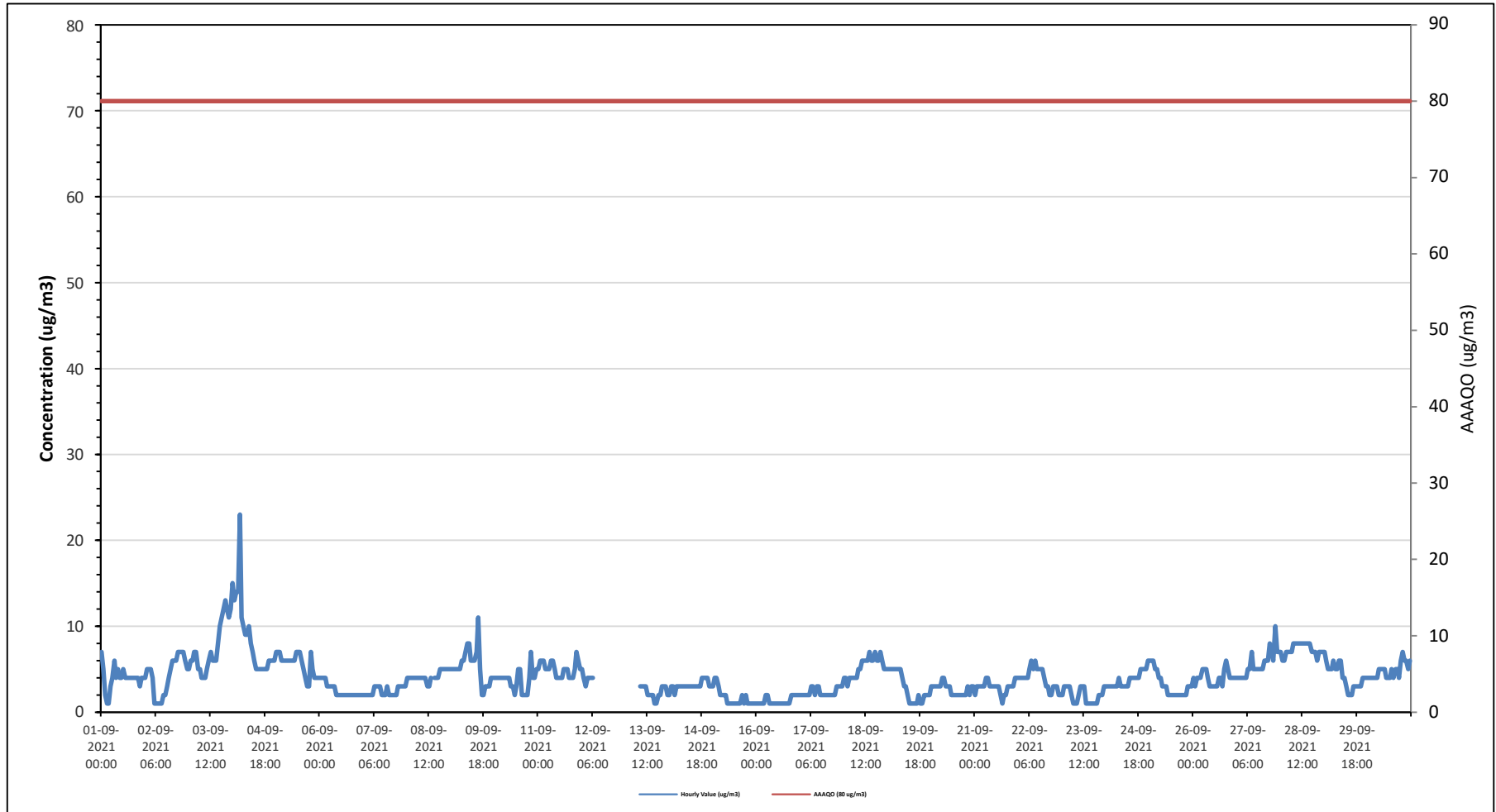
PARTICULATE MATTER 2.5 (PM_{2.5}) in µg/m³

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: 23 µg/m ³ on September 4 at hour 4										Hours in Service: 720																	
Maximum Daily Value: 8.7 µg/m ³ on September 4										Hours of Data: 694																	
Minimum Hourly Value: 1 µg/m ³ on September 1 at hour 3										Hours of Missing Data: 25																	
Minimum Daily Value: 1 µg/m ³ on September 16										Hours of Calibration: 1																	
Monthly Average: 4.0 µg/m ³										Operational Uptime: 96.5																	
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Sep 1	7	5	2	1	1	3	4	6	4	5	4	4	5	4	4	4	4	4	4	4	3	4	4	1	7	3.9	
Sep 2	4	5	5	5	4	1	1	1	1	1	2	2	3	4	5	6	6	6	7	7	7	7	6	5	1	7	4.2
Sep 3	5	6	6	7	7	5	5	4	4	4	5	6	7	6	6	6	8	10	11	12	13	12	11	12	4	13	7.4
Sep 4	15	13	14	14	23	11	10	9	9	10	8	7	6	5	5	5	5	5	5	6	6	6	6	6	5	23	8.7
Sep 5	7	7	7	6	6	6	6	6	6	6	6	7	7	7	6	5	4	3	3	7	5	4	4	4	3	7	5.6
Sep 6	4	4	4	4	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2.5
Sep 7	2	2	2	2	2	2	3	3	3	3	2	2	2	3	2	2	2	2	2	3	3	3	3	3	2	3	2.4
Sep 8	4	4	4	4	4	4	4	4	4	4	4	3	3	4	C	4	4	4	5	5	5	5	5	5	3	5	4.2
Sep 9	5	5	5	5	5	5	6	6	7	8	8	6	6	6	7	11	5	2	2	3	3	3	4	4	2	11	5.3
Sep 10	4	4	4	4	4	4	4	4	3	3	2	3	5	5	2	2	2	2	4	7	4	4	5	2	7	3.7	
Sep 11	5	6	6	6	5	5	5	6	6	5	4	4	4	4	5	5	5	4	4	4	5	7	6	5	4	7	5.0
Sep 12	5	4	3	4	4	4	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	5	-
Sep 13	X	X	X	X	X	X	X	X	3	3	3	3	2	2	2	1	1	2	2	3	3	3	2	1	3	-	
Sep 14	2	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	3	3	2	4	3.1	
Sep 15	3	4	4	3	2	2	2	2	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	4	1.7
Sep 16	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	2	1.3	
Sep 17	2	2	2	2	2	2	3	3	2	3	2	2	2	2	2	2	2	2	2	3	3	3	3	2	3	2.3	
Sep 18	4	4	3	4	4	4	4	4	5	5	6	6	6	6	7	6	6	7	6	6	7	6	5	5	3	7	5.3
Sep 19	5	5	5	5	5	5	5	5	4	3	3	2	1	1	1	1	2	1	1	2	2	2	2	1	5	2.9	
Sep 20	3	3	3	3	3	3	4	4	3	3	3	2	2	2	2	2	2	2	2	3	2	3	3	2	4	2.7	
Sep 21	2	3	3	3	3	3	4	4	3	3	3	3	3	3	2	1	2	2	3	3	3	3	4	4	1	4	2.9
Sep 22	4	4	4	4	4	4	5	6	5	6	5	5	5	5	4	3	3	2	2	3	3	2	2	2	6	3.9	
Sep 23	2	3	3	3	3	2	1	1	1	2	3	3	3	1	1	1	1	1	1	2	2	2	3	1	3	1.9	
Sep 24	3	3	3	3	3	3	3	4	3	3	3	3	3	4	4	4	4	4	4	5	5	5	5	6	3	6	3.8
Sep 25	6	6	6	5	5	4	4	3	3	3	2	2	2	2	2	2	2	2	2	2	3	3	3	2	6	3.2	
Sep 26	4	3	4	4	4	5	5	5	4	3	3	3	3	4	4	3	5	6	5	4	4	4	4	3	6	4.0	
Sep 27	4	4	4	4	4	4	5	5	7	5	5	5	5	5	6	6	6	8	7	6	10	7	7	4	10	5.6	
Sep 28	7	6	6	7	7	7	7	8	8	8	8	8	8	8	8	8	8	7	7	7	6	7	7	6	8	7.3	
Sep 29	7	6	5	5	5	6	5	5	6	6	4	4	3	2	2	3	3	3	3	4	4	4	4	2	7	4.2	
Sep 30	4	4	4	4	4	4	5	5	5	5	4	4	4	5	4	5	5	4	6	7	6	6	5	6	4	7	4.8
Diurnal Maximum	15	13	14	14	23	11	10	9	9	10	8	8	8	8	8	11	8	10	11	12	13	12	11	12			
Diurnal Average	4.5	4.4	4.3	4.3	4.5	4.0	4.2	4.3	4.1	4.0	3.8	3.6	3.6	3.7	3.6	3.7	3.5	3.4	3.8	4.1	4.3	4.3	4.1	4.2			
C	Monthly Calibration										S										Q						
K	Collection Error										N										Y						
X	Invalid Data (Equipment Malfunction /Recovery)										NRM										P						
											Daily Zero-Span Check										Routine Maintenance						
											No Data (Machine Not in Service)										Power Failure						
											UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																

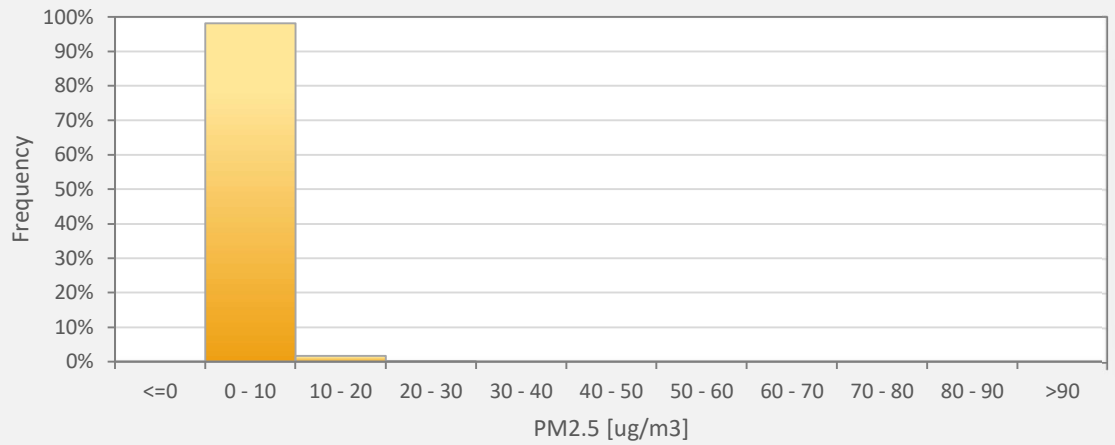
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.

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



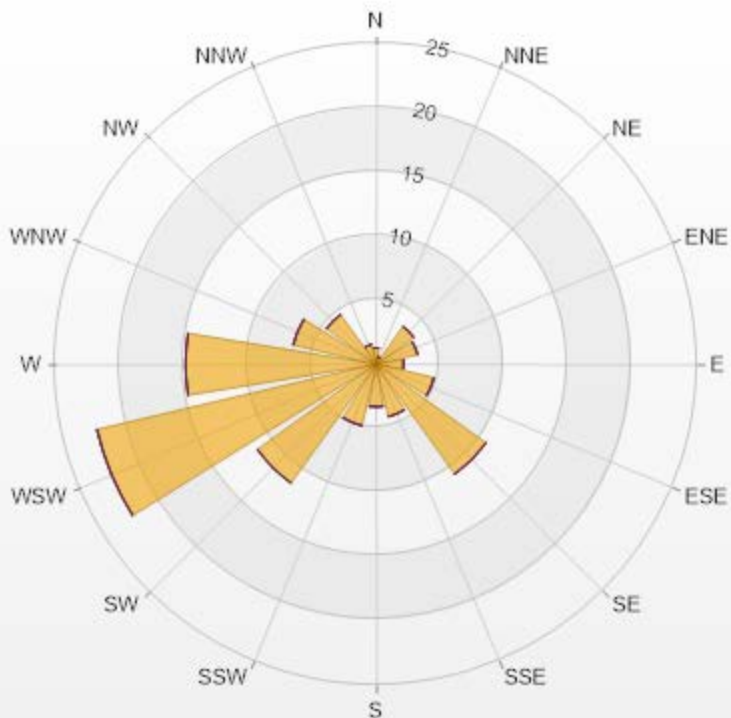
PM2.5[ug/m3(L)] Histogram: Cold Lake South Monthly: 09-2021 1 Hr.



Classes	PM2.5
<=0	0.00%
0 - 10	98.13%
10 - 20	1.73%
20 - 30	0.14%
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: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 96.39% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	1.3	0	0	0	0	1.3
NNE	0.58	0	0	0	0	0.58
NE	3.6	0	0	0	0	3.6
ENE	3.31	0	0	0	0	3.31
E	2.16	0	0	0	0	2.16
ESE	4.61	0	0	0	0	4.61
SE	10.52	0	0	0	0	10.52
SSE	4.18	0	0	0	0	4.18
S	3.31	0	0	0	0	3.31
SSW	4.9	0	0	0	0	4.9
SW	11.38	0	0	0	0	11.38
WSW	22.33	0	0	0	0	22.33
W	14.84	0	0	0	0	14.84
WNW	6.63	0	0	0	0	6.63
NW	4.76	0	0	0	0	4.76
NNW	1.59	0	0	0	0	1.59
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



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - September 2021

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

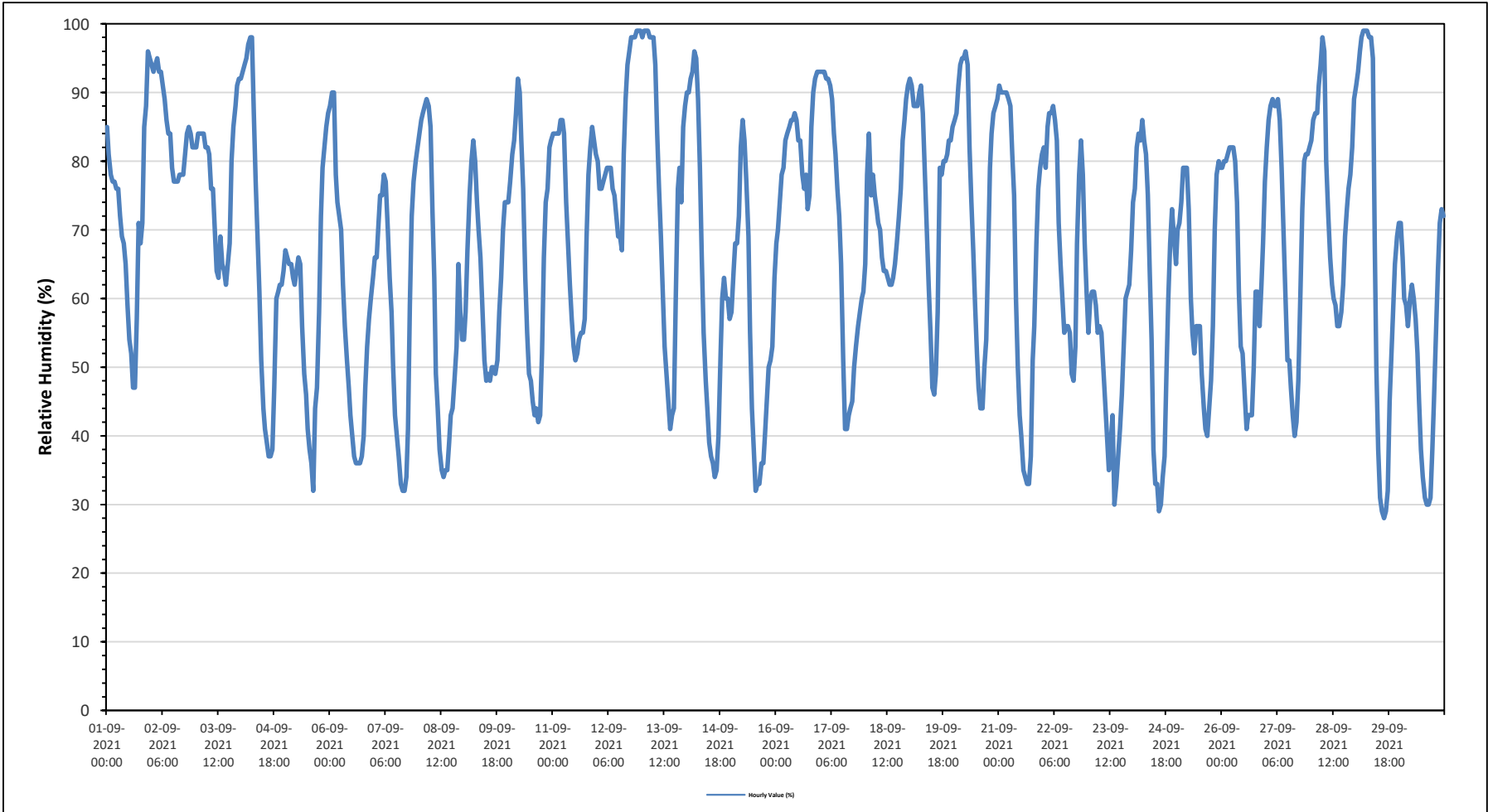
Maximum Hourly Value:	99 %	on September 12 at hour 21	Hours in Service:	720
Maximum Daily Value:	84.9 %	on September 2	Hours of Data:	720
Minimum Hourly Value:	28 %	on September 29 at hour 15	Hours of Missing Data:	0
Minimum Daily Value:	50.2 %	on September 23	Hours of Calibration:	0
Monthly Average:	67.5 %		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Sep 1	85	81	78	77	77	76	76	72	69	68	65	59	54	52	47	47	57	71	68	71	85	88	96	95	47	96	71.4
Sep 2	94	93	94	95	93	93	91	89	86	84	84	79	77	77	77	78	78	81	84	85	84	82	82	77	95	84.9	
Sep 3	82	84	84	84	84	82	82	81	76	76	70	64	63	69	65	64	62	65	68	80	85	88	91	92	62	92	76.7
Sep 4	92	93	94	95	97	98	98	87	77	69	61	51	44	41	39	37	37	38	47	60	61	62	62	64	37	98	66.8
Sep 5	67	66	65	65	63	62	64	66	65	56	49	46	41	38	36	32	44	47	58	72	79	82	85	87	32	87	59.8
Sep 6	88	90	90	78	74	72	70	62	56	51	47	43	40	37	36	36	36	37	40	47	53	57	60	63	36	90	56.8
Sep 7	66	66	71	75	75	78	77	70	63	58	50	43	40	37	33	32	32	34	41	59	72	77	80	82	32	82	58.8
Sep 8	84	86	87	88	89	88	85	73	63	49	44	38	35	34	35	35	39	43	44	48	53	65	58	54	34	89	59.0
Sep 9	54	58	67	75	80	83	80	74	70	66	59	51	48	49	48	50	50	49	51	58	63	70	74	74	48	83	62.5
Sep 10	74	77	81	83	87	92	90	83	76	63	55	49	48	45	43	44	42	43	52	66	74	76	82	83	42	92	67.0
Sep 11	84	84	84	84	86	86	84	74	68	62	57	53	51	52	54	55	55	57	69	78	82	85	83	81	51	86	71.2
Sep 12	80	76	76	77	78	79	79	79	76	75	72	69	69	67	81	89	94	96	98	98	99	99	99	67	99	83.5	
Sep 13	98	99	99	99	98	98	98	94	84	76	69	61	53	49	45	41	43	44	60	76	79	74	85	88	41	99	75.4
Sep 14	90	90	92	93	96	95	89	79	66	55	48	44	39	37	36	34	35	40	52	60	63	60	60	57	34	96	62.9
Sep 15	58	64	68	68	72	82	86	83	77	69	55	44	38	32	33	33	36	36	40	45	50	51	53	63	32	86	55.7
Sep 16	68	70	74	78	79	83	84	85	86	86	87	86	83	83	78	76	78	73	75	85	90	92	93	93	68	93	81.9
Sep 17	93	93	93	92	92	91	89	84	81	76	72	65	51	41	41	43	44	45	50	53	56	58	60	61	41	93	67.7
Sep 18	65	78	84	75	78	75	73	71	70	66	64	64	63	62	62	63	65	68	72	76	83	86	89	91	62	91	72.6
Sep 19	92	91	88	88	88	90	91	87	79	70	62	55	47	46	49	58	79	78	80	80	81	83	83	85	46	92	76.3
Sep 20	86	87	91	94	95	95	96	94	82	74	67	59	52	47	44	44	50	54	66	79	84	87	88	89	44	96	75.2
Sep 21	91	90	90	90	90	89	88	81	75	60	50	43	40	35	34	33	33	37	51	56	68	76	79	81	33	91	65.0
Sep 22	82	79	85	87	87	88	86	83	71	65	60	55	56	56	55	49	48	53	68	78	83	78	68	61	48	88	70.0
Sep 23	55	60	61	61	59	55	56	55	50	45	40	35	39	43	30	33	37	41	46	53	60	61	62	67	30	67	50.2
Sep 24	74	76	82	84	83	86	83	81	75	64	54	38	33	33	29	30	34	37	49	60	68	73	69	65	29	86	60.8
Sep 25	70	71	74	79	79	79	73	60	55	52	56	56	56	49	44	41	40	44	48	56	70	78	80	79	40	80	62.0
Sep 26	79	80	80	81	82	82	82	80	74	61	53	52	46	41	43	43	43	50	61	61	56	62	68	77	41	82	64.0
Sep 27	82	86	88	89	88	88	89	86	79	70	61	51	51	47	43	40	42	48	61	73	80	81	81	82	40	89	70.3
Sep 28	83	86	87	87	91	94	98	96	80	72	66	62	60	59	56	56	58	62	69	73	76	78	82	89	56	98	75.8
Sep 29	91	93	96	98	99	99	99	98	98	95	68	50	38	31	29	28	29	32	45	51	58	65	69	71	28	99	67.9
Sep 30	71	66	60	59	56	60	62	60	57	52	45	38	34	31	30	30	31	38	45	54	64	71	73	72	30	73	52.5
Diurnal Maximum	98	99	99	99	99	99	99	98	98	95	87	86	83	83	81	89	94	96	98	98	99	99	99	99			
Daiurnal Average	79.3	80.4	82.1	82.6	83.2	83.9	83.3	78.9	72.8	66.2	59.7	53.4	49.6	47.3	45.8	45.8	48.4	51.3	58.5	66.3	72.0	74.9	76.5	77.6			

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

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

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - September 2021

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

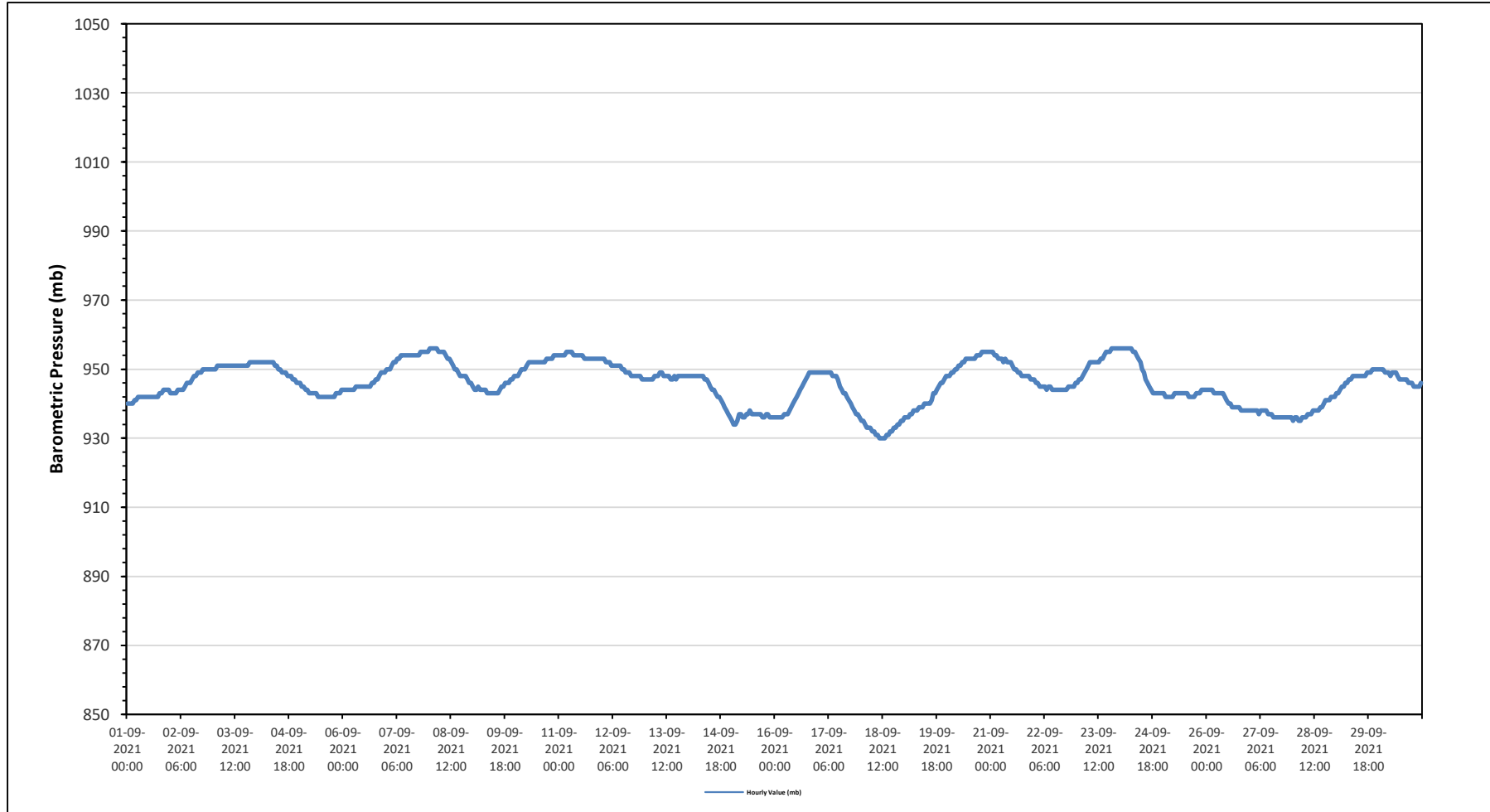
Maximum Hourly Value:	956	mb	on September 8 at hour 0	Hours in Service:	720
Maximum Daily Value:	954	mb	on September 11	Hours of Data:	720
Minimum Hourly Value:	930	mb	on September 18 at hour 10	Hours of Missing Data:	0
Minimum Daily Value:	932	mb	on September 18	Hours of Calibration:	0
Monthly Average:	946	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
Sep 1	940	940	940	940	941	941	942	942	942	942	942	942	942	942	942	942	942	942	943	943	944	944	944	944	940	944	942.0
Sep 2	943	943	943	943	944	944	944	944	945	946	946	946	947	948	948	949	949	949	950	950	950	950	950	950	943	950	946.7
Sep 3	950	950	951	951	951	951	951	951	951	951	951	951	951	951	951	951	951	951	951	951	951	952	952	952	950	952	951.1
Sep 4	952	952	952	952	952	952	952	952	952	952	951	951	950	950	949	949	949	948	948	948	947	947	946	946	946	952	950.0
Sep 5	946	945	945	944	944	943	943	943	943	943	942	942	942	942	942	942	942	942	942	942	943	943	943	944	942	946	943.0
Sep 6	944	944	944	944	944	944	944	945	945	945	945	945	945	945	945	945	946	946	947	947	948	949	949	949	944	949	945.6
Sep 7	950	950	950	951	952	952	953	953	954	954	954	954	954	954	954	954	954	954	954	955	955	955	955	955	950	955	953.3
Sep 8	956	956	956	956	956	955	955	955	955	954	953	953	952	951	950	950	949	948	948	948	948	947	946	946	946	956	951.8
Sep 9	945	944	944	945	944	944	944	944	943	943	943	943	943	943	944	945	945	946	946	946	947	947	948	948	943	948	944.5
Sep 10	948	948	949	950	950	950	951	952	952	952	952	952	952	952	952	952	952	953	953	953	953	954	954	954	948	954	951.7
Sep 11	954	954	954	954	955	955	955	955	954	954	954	954	954	953	953	953	953	953	953	953	953	953	953	953	953	955	953.8
Sep 12	953	953	952	952	952	951	951	951	951	951	951	950	950	949	949	949	948	948	948	948	948	948	947	947	947	953	949.9
Sep 13	947	947	947	947	947	948	948	948	949	949	949	948	948	948	947	947	948	947	948	948	948	948	948	948	947	949	947.8
Sep 14	948	948	948	948	948	948	948	948	948	947	947	946	945	944	944	943	942	942	941	940	939	938	937	936	936	948	944.3
Sep 15	935	934	934	935	937	937	936	936	937	937	938	937	937	937	937	937	937	936	936	937	937	936	936	936	934	938	936.3
Sep 16	936	936	936	936	936	937	937	937	938	939	940	941	942	943	944	945	946	947	948	949	949	949	949	949	936	949	942.0
Sep 17	949	949	949	949	949	949	949	949	948	948	948	947	945	944	943	943	942	941	940	939	938	937	937	936	936	949	944.5
Sep 18	935	935	934	933	933	933	932	932	931	931	930	930	930	930	931	931	932	932	933	933	934	934	935	935	930	935	932.5
Sep 19	936	936	936	937	937	938	938	938	939	939	939	940	940	940	940	941	943	943	944	945	946	946	947	948	936	948	940.7
Sep 20	948	948	949	949	950	950	951	951	952	952	953	953	953	953	953	953	954	954	954	955	955	955	955	955	948	955	952.3
Sep 21	955	955	954	954	953	953	953	952	953	952	952	951	950	950	949	949	948	948	948	948	948	947	947	947	947	955	950.9
Sep 22	947	946	946	945	945	945	944	945	945	944	944	944	944	944	944	944	944	944	944	945	945	945	946	946	944	947	944.8
Sep 23	946	947	947	948	949	950	951	952	952	952	952	952	952	953	953	954	955	955	955	956	956	956	956	956	946	956	952.3
Sep 24	956	956	956	956	956	956	956	955	955	954	953	952	950	949	947	946	945	944	943	943	943	943	943	943	943	956	950.0
Sep 25	943	942	942	942	942	942	943	943	943	943	943	943	943	943	942	942	942	942	943	943	943	944	944	944	942	944	942.8
Sep 26	944	944	944	944	943	943	943	943	943	943	942	941	940	940	939	939	939	939	938	938	938	938	938	938	938	944	940.9
Sep 27	938	938	938	938	938	937	938	938	938	938	937	937	937	936	936	936	936	936	936	936	936	936	936	936	936	938	936.9
Sep 28	935	936	936	935	935	936	936	936	937	937	937	938	938	938	938	939	939	940	941	941	941	942	942	942	935	942	938.1
Sep 29	943	943	944	945	945	946	946	947	947	948	948	948	948	948	948	948	949	949	949	950	950	950	950	943	950	947.4	
Sep 30	950	950	950	949	949	949	948	949	949	949	948	947	947	947	947	946	946	946	946	945	945	945	946	945	950	947.5	
Diurnal Maximum	956	956	956	956	956	956	956	955	955	954	954	954	954	954	954	955	955	955	955	956	956	956	956	956	946	956	952.3
Diurnal Average	946	946	946	946	946	946	946	946	946	946	946	946	946	946	945	945	946	946	946	946	946	946	946	946	946	946	946

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

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

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - September 2021

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

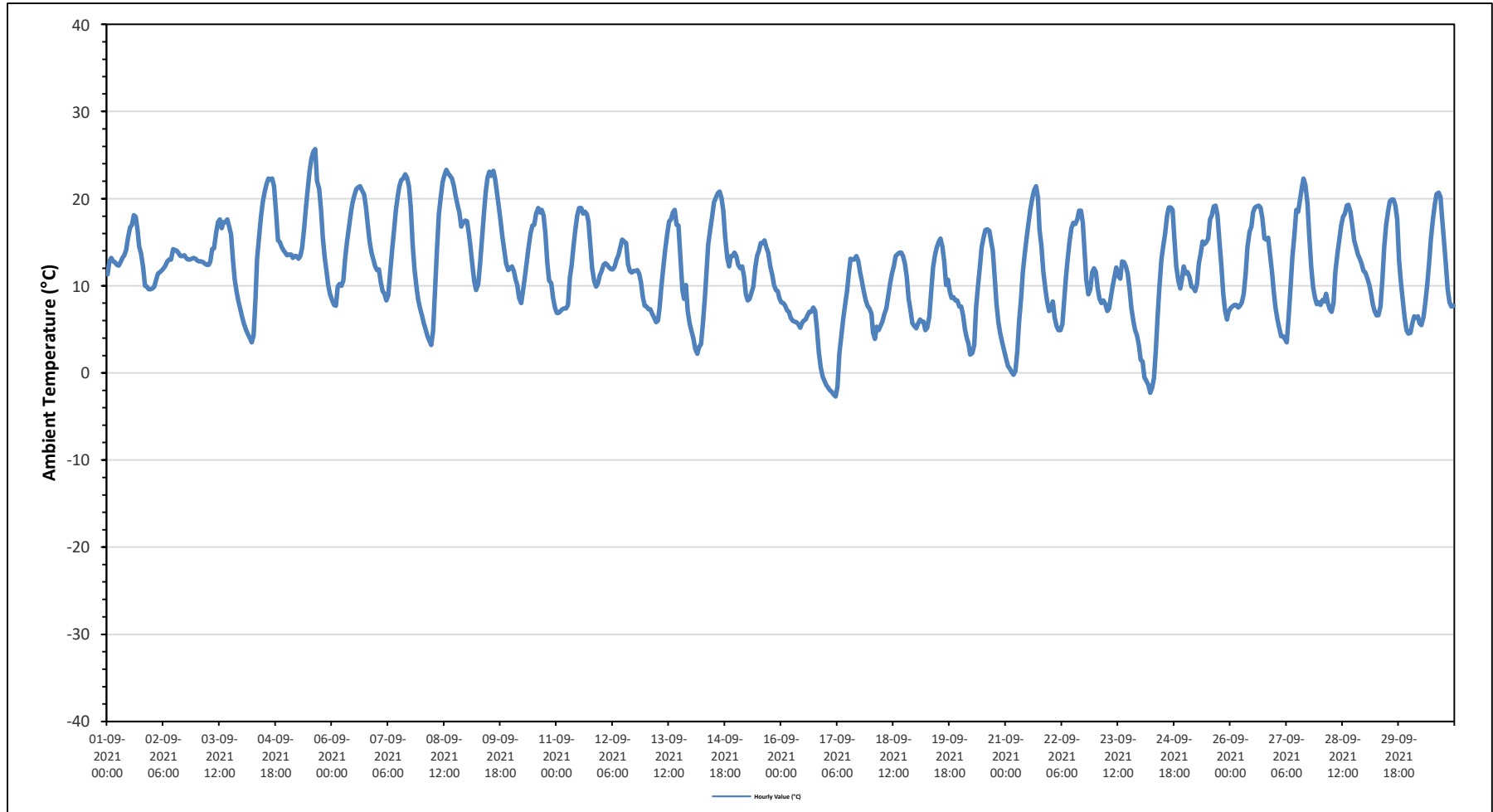
Maximum Hourly Value:	25.7 °C	on September 5 at hour 15	Hours in Service:	720
Maximum Daily Value:	16.6 °C	on September 5	Hours of Data:	720
Minimum Hourly Value:	-2.7 °C	on September 17 at hour 5	Hours of Missing Data:	0
Minimum Daily Value:	5.5 °C	on September 16	Hours of Calibration:	0
Monthly Average:	11.9 °C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Sep 1	11.3	12.8	13.2	12.8	12.7	12.4	12.3	12.7	13.2	13.5	14.1	15.5	16.7	17	18.1	17.9	16.4	14.5	13.7	12.1	10	9.9	9.6	9.6	9.6	18.1	13.4
Sep 2	9.7	9.9	10.7	11.4	11.6	11.8	12	12.3	12.8	13	13	14.2	14.1	14	13.7	13.4	13.4	13.5	13.2	13	13	13.1	13.2	13.1	9.7	14.2	12.6
Sep 3	12.9	12.8	12.8	12.7	12.5	12.4	12.4	12.8	14.2	14.3	16.1	17.3	17.6	16.6	17.3	17.3	17.6	16.8	15.9	12.7	10.7	9.3	8.2	7.3	7.3	17.6	13.8
Sep 4	6.4	5.6	4.9	4.4	4	3.5	4.3	8.4	13	15.7	18	19.7	20.8	21.7	22.3	22.2	22.3	21.4	18.3	15.2	15	14.5	14.1	13.8	3.5	22.3	13.7
Sep 5	13.5	13.6	13.6	13.2	13.4	13.4	13.1	13.4	14.4	16.8	18.9	21.1	23.2	24.6	25.4	25.7	22	21.1	18.7	15.4	13.2	11.6	10.1	9	9.0	25.7	16.6
Sep 6	8.3	7.8	7.7	9.9	10.2	10	10.6	13.2	15.1	16.9	18.5	19.6	20.4	21.1	21.3	21.4	20.9	20.5	19.1	17	15.1	13.8	13	12.2	7.7	21.4	15.2
Sep 7	11.8	11.9	10.4	9.4	9.1	8.3	8.9	11.4	14.2	16.4	18.7	20.3	21.4	22.1	22.3	22.8	22.4	21.4	19	14.8	11.9	10	8.4	7.4	7.4	22.8	14.8
Sep 8	6.5	5.7	5	4.2	3.7	3.2	4.8	9.9	14.4	18.3	20.2	21.9	22.7	23.3	22.9	22.6	22.3	21.5	20.3	19.3	18.4	16.8	17.2	17.5	3.2	23.3	15.1
Sep 9	17.4	15.9	14.4	12.4	10.5	9.5	10.2	12.5	15.3	18.1	20.7	22.4	23.1	22.6	23.2	22.4	20.8	19.2	17.5	15.6	14.1	12.6	11.8	12	9.5	23.2	16.4
Sep 10	12.2	11.7	10.7	10.1	8.6	8	9.5	11.1	12.8	14.5	16	16.9	17	18.3	18.9	18.4	18.7	18.1	16	12.7	10.6	10.3	8.6	7.5	7.5	18.9	13.2
Sep 11	6.9	6.9	7.1	7.3	7.4	7.4	7.8	10.9	12.4	14.6	16.5	18.1	18.9	18.9	18.3	18.5	18.2	17.4	14.8	12	10.5	9.9	10.3	11.2	6.9	18.9	12.6
Sep 12	11.7	12.4	12.6	12.4	12.1	11.9	11.9	12.2	13	13.5	14.4	15.3	15.1	14.9	12.5	11.7	11.5	11.7	11.7	11.8	11.4	10.4	8.7	7.7	7.7	15.3	12.2
Sep 13	7.6	7.3	7.3	6.8	6.3	5.8	6	7.5	10	12.1	14.1	16	17.4	17.6	18.4	18.7	17	16.9	13.5	9.5	8.5	10.1	7.1	5.7	5.7	18.7	11.1
Sep 14	4.8	4	2.8	2.2	3	3.3	5.6	8.4	11.7	14.7	16.5	18	19.6	20.1	20.6	20.8	20.1	18.6	15.6	13.2	12.2	13.4	13.4	13.8	2.2	20.8	12.4
Sep 15	13.4	12.4	12	12.2	11.1	9	8.3	8.5	9.2	9.9	12	13.4	14	14.9	14.9	15.2	14.4	13.8	12.2	11.3	10.1	9.5	9.4	8.6	8.3	15.2	11.7
Sep 16	8.1	8	7.7	7.2	7	6.3	6	5.9	5.8	5.6	5.2	5.7	6	6.1	6.6	7	7	7.5	7.1	4.9	2.3	0.6	-0.4	-0.9	-0.9	8.1	5.5
Sep 17	-1.4	-1.7	-2	-2.2	-2.5	-2.7	-1.6	2.2	4.1	6.3	7.9	9.4	11.5	13.1	13	13	13.4	12.9	11.6	10.5	9.4	8.4	7.7	7.4	-2.7	13.4	6.2
Sep 18	6.8	4.6	3.9	5.3	4.9	5.4	5.9	6.7	7.4	8.8	10.2	11.4	12.2	13.4	13.6	13.8	13.8	13.4	12.5	11	8.5	7.2	5.7	5.4	3.9	13.8	8.8
Sep 19	5.1	5.7	6.1	5.9	5.9	4.9	5.2	6.5	9.4	12.1	13.5	14.4	15	15.4	14.5	12.8	10.1	10.7	9.3	8.6	8.7	8.3	8.3	7.6	4.9	15.4	9.3
Sep 20	7.6	6.6	5	4	3.4	2.1	2.3	3.2	7.5	9.9	12.1	14.4	15.5	16.4	16.5	16.3	15	14	11	7.9	5.8	4.5	3.4	2.5	2.1	16.5	8.6
Sep 21	1.6	0.8	0.5	0.1	-0.2	0.2	2.4	5.9	8.4	11.5	13.6	15.4	17.1	18.7	20.1	21	21.4	20.1	16.4	14.6	11.7	9.6	8.1	7.1	-0.2	21.4	10.3
Sep 22	7.3	8.2	6.3	5.4	4.9	4.9	5.6	8	10.8	13.1	15.1	16.6	17.2	17.1	17.6	18.6	18.6	17.2	13.7	10.7	9	9.6	11.5	12	4.9	18.6	11.6
Sep 23	11.6	9.7	8.5	8	8.3	7.9	7.1	7.4	8.6	9.9	11	12.1	11.1	10.8	12.8	12.7	12.2	11.4	9.6	7.4	5.8	4.9	4.3	3.2	3.2	12.8	9.0
Sep 24	1.5	1.3	-0.5	-0.9	-1.4	-2.3	-1.7	-0.6	2.6	6.1	9.7	13	14.6	16	18	19	19	18.7	15.3	12.2	10.5	9.7	10.7	12.2	-2.3	19.0	8.4
Sep 25	11.4	11.6	11.1	9.9	9.8	9.4	10.2	12.6	13.7	15.1	14.8	15	15.4	17.6	18.1	19.1	19.2	18.1	15.3	12.2	9	7.1	6.1	7	6.1	19.2	12.9
Sep 26	7.4	7.6	7.8	7.8	7.5	7.7	8.1	9.1	11.3	14.4	16.2	16.8	18.4	19	19.1	19.2	19	17.8	15.4	15.3	15.5	13.6	11.7	9.3	7.4	19.2	13.1
Sep 27	7.4	6.1	5.1	4.2	4.2	3.9	3.5	6.4	9.7	13.2	15.9	18.7	18.5	19.7	21.1	22.3	21.6	19.5	15.6	12.2	9.9	8.7	7.9	8.1	3.5	22.3	11.8
Sep 28	7.8	8.4	8.2	9.1	8	7.3	7	8	11.6	13.7	15.3	16.9	17.9	18.3	19.2	19.3	18.5	16.9	15.2	14.4	13.6	13.1	12.5	11.7	7.0	19.3	13.0
Sep 29	11.5	10.8	10.1	9.2	7.9	7.1	6.6	6.6	7.6	10.6	14.4	16.9	18.4	19.7	19.9	19.9	19.2	17.6	12.9	10.4	8.3	6.3	4.9	4.5	4.5	19.9	11.7
Sep 30	4.6	5.7	6.5	6.3	6.5	5.7	5.5	6.4	8.1	10.1	12.6	15.4	17.5	19.2	20.5	20.7	20.2	17.8	15.2	12.5	9.6	8.1	7.6	7.7	4.6	20.7	11.3
Diurnal Maximum	17.4	15.9	14.4	13.2	13.4	13.4	13.1	13.4	15.3	18.3	20.7	22.4	23.2	24.6	25.4	25.7	22.4	21.5	20.3	19.3	18.4	16.8	17.2	17.5			
Daiurnal Average	8.4	8.1	7.7	7.4	7.0	6.6	7.0	8.7	10.7	12.8	14.5	16.1	16.9	17.6	18.0	18.1	17.5	16.7	14.5	12.3	10.7	9.8	9.1	8.7			

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

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

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - September 2021

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

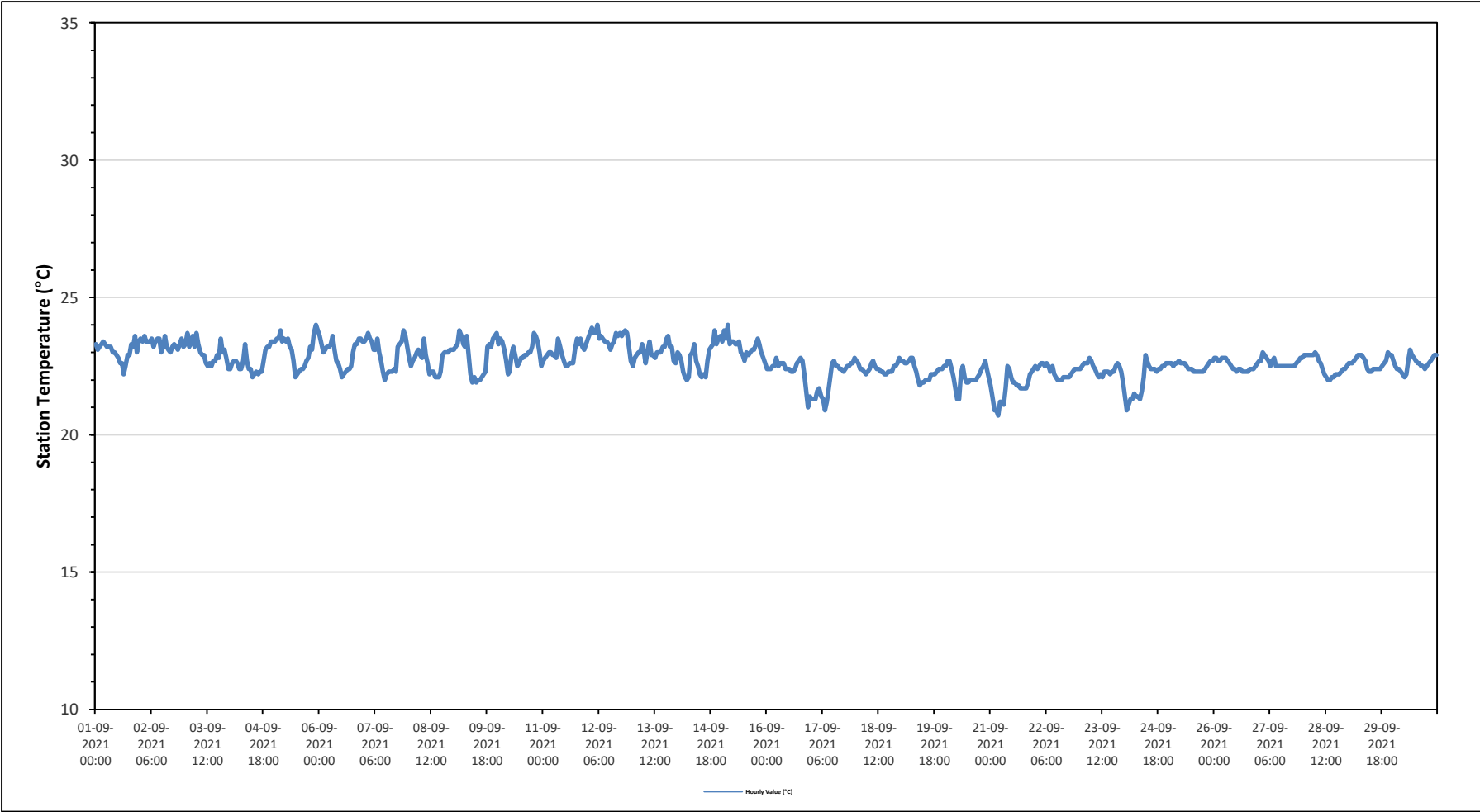
Maximum Hourly Value:	24.0 °C	on September 5 at hour 22	Hours in Service:	720
Maximum Daily Value:	23.5 °C	on September 12	Hours of Data:	720
Minimum Hourly Value:	20.7 °C	on September 21 at hour 4	Hours of Missing Data:	0
Minimum Daily Value:	21.7 °C	on September 21	Hours of Calibration:	0
Monthly Average:	22.7 °C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Sep 1	23.3	23.1	23.2	23.3	23.4	23.3	23.2	23.2	23.2	23.0	23.0	22.9	22.8	22.6	22.6	22.2	22.5	22.9	22.9	23.3	23.2	23.6	23.0	23.4	22.2	23.6	23.0
Sep 2	23.5	23.4	23.6	23.4	23.4	23.4	23.5	23.2	23.4	23.5	23.5	23.0	23.2	23.6	23.2	23.1	23.0	23.2	23.3	23.2	23.1	23.3	23.5	23.2	23.0	23.6	23.3
Sep 3	23.3	23.7	23.2	23.4	23.6	23.2	23.7	23.3	23.0	22.9	22.9	22.6	22.5	22.6	22.5	22.7	22.7	22.9	22.8	23.5	23.0	23.1	22.8	22.4	22.4	23.7	23.0
Sep 4	22.4	22.6	22.7	22.7	22.6	22.4	22.4	22.7	23.3	22.7	22.4	22.4	22.1	22.2	22.3	22.2	22.3	22.3	22.7	23.1	23.2	23.2	23.4	23.4	22.1	23.4	22.7
Sep 5	23.4	23.5	23.5	23.8	23.4	23.5	23.4	23.5	23.2	23.1	22.7	22.1	22.2	22.3	22.4	22.4	22.5	22.7	22.8	23.2	23.1	23.7	24.0	23.8	22.1	24.0	23.1
Sep 6	23.6	23.3	23.0	23.1	23.2	23.2	23.3	23.6	23.1	22.7	22.6	22.4	22.1	22.2	22.3	22.4	22.4	22.5	23.0	23.3	23.5	23.5	23.4	22.1	23.6	23.0	
Sep 7	23.4	23.5	23.7	23.5	23.4	23.1	23.1	23.5	23.0	22.7	22.3	22.0	22.2	22.3	22.3	22.3	22.4	22.3	23.2	23.3	23.4	23.8	23.6	23.2	22.0	23.8	23.0
Sep 8	22.8	22.5	22.7	22.8	23.0	23.1	22.9	22.8	23.5	22.9	22.6	22.2	22.3	22.3	22.1	22.1	22.1	22.3	22.9	23.0	23.0	23.0	23.1	23.1	22.1	23.5	22.7
Sep 9	23.1	23.2	23.3	23.8	23.6	23.3	23.2	23.6	22.9	22.2	21.9	22.1	21.9	22.0	22.0	22.1	22.2	22.3	23.2	23.3	23.2	23.5	23.6	23.7	21.9	23.8	22.9
Sep 10	23.3	23.5	23.4	23.1	22.7	22.2	22.3	22.9	23.2	22.9	22.5	22.6	22.8	22.8	22.9	22.9	23.0	23.0	23.2	23.7	23.6	23.4	23.0	22.5	22.2	23.7	23.0
Sep 11	22.7	22.8	22.9	23.0	23.0	22.9	22.9	22.8	23.5	23.2	22.9	22.7	22.5	22.5	22.6	22.6	22.6	23.1	23.5	23.3	23.5	23.2	23.1	23.3	22.5	23.5	23.0
Sep 12	23.5	23.7	23.9	23.7	23.7	24.0	23.5	23.6	23.5	23.4	23.4	23.3	23.1	23.3	23.4	23.7	23.6	23.7	23.6	23.7	23.8	23.7	23.2	22.7	22.7	24.0	23.5
Sep 13	22.5	22.8	22.9	23.0	23.0	23.3	23.0	22.6	23.1	23.4	22.9	22.9	22.8	23.0	23.0	23.0	23.2	23.2	23.5	23.6	23.2	23.2	22.7	22.6	22.5	23.6	23.0
Sep 14	23.0	22.9	22.7	22.3	22.1	22.0	22.1	22.9	23.0	23.3	22.7	22.5	22.2	22.1	22.2	22.1	22.7	23.1	23.2	23.3	23.8	23.3	23.5	23.6	22.0	23.8	22.8
Sep 15	23.4	23.8	23.5	24.0	23.3	23.4	23.4	23.3	23.4	23.0	22.9	22.7	23.0	22.9	23.0	23.1	23.1	23.3	23.5	23.3	23.0	22.8	22.6	22.6	24.0	23.2	22.5
Sep 16	22.4	22.4	22.4	22.5	22.5	22.8	22.5	22.6	22.6	22.6	22.4	22.4	22.4	22.3	22.3	22.4	22.6	22.7	22.8	22.7	22.2	21.6	21.0	21.4	21.0	22.8	22.4
Sep 17	21.3	21.3	21.3	21.6	21.7	21.4	21.3	20.9	21.2	21.6	22.1	22.6	22.7	22.5	22.5	22.4	22.4	22.3	22.4	22.5	22.5	22.6	22.6	22.8	20.9	22.8	22.0
Sep 18	22.7	22.6	22.4	22.4	22.3	22.2	22.3	22.4	22.6	22.7	22.5	22.4	22.4	22.3	22.3	22.2	22.2	22.3	22.3	22.5	22.5	22.6	22.8	22.2	22.8	22.8	22.4
Sep 19	22.7	22.7	22.6	22.6	22.7	22.8	22.8	22.5	22.3	22.0	21.8	21.9	21.9	22.0	22.0	22.0	22.2	22.2	22.2	22.3	22.4	22.4	22.4	22.5	21.8	22.8	22.3
Sep 20	22.5	22.7	22.7	22.4	22.1	21.7	21.3	21.3	22.2	22.5	22.1	21.9	21.9	22.0	22.0	22.0	22.0	22.1	22.2	22.4	22.5	22.7	22.4	22.1	21.3	22.7	22.2
Sep 21	21.8	21.4	20.9	20.9	20.7	21.2	21.2	21.1	21.7	22.5	22.4	22.1	21.9	21.9	21.8	21.8	21.7	21.7	21.7	21.7	21.9	22.2	22.3	22.4	20.7	22.5	21.7
Sep 22	22.5	22.4	22.5	22.6	22.6	22.5	22.6	22.5	22.3	22.5	22.2	22.1	22.0	22.0	22.0	22.1	22.1	22.1	22.1	22.2	22.3	22.4	22.4	22.4	22.0	22.6	22.3
Sep 23	22.4	22.5	22.6	22.6	22.6	22.8	22.7	22.5	22.4	22.2	22.1	22.2	22.1	22.3	22.3	22.3	22.2	22.3	22.3	22.5	22.6	22.5	22.3	21.9	21.9	22.8	22.4
Sep 24	21.4	20.9	21.1	21.3	21.3	21.5	21.4	21.4	21.3	21.6	22.1	22.9	22.7	22.5	22.4	22.4	22.4	22.3	22.4	22.4	22.5	22.5	22.6	22.6	20.9	22.9	22.0
Sep 25	22.6	22.6	22.5	22.6	22.6	22.7	22.6	22.6	22.6	22.5	22.4	22.4	22.4	22.3	22.3	22.3	22.3	22.3	22.4	22.5	22.6	22.7	22.7	22.3	22.7	22.5	22.5
Sep 26	22.8	22.8	22.7	22.7	22.8	22.8	22.8	22.7	22.6	22.5	22.4	22.4	22.3	22.4	22.4	22.3	22.3	22.3	22.3	22.3	22.4	22.4	22.5	22.6	22.3	22.8	22.5
Sep 27	22.7	22.7	23.0	22.9	22.8	22.7	22.5	22.7	22.8	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.7	22.8	22.5	23.0	22.6
Sep 28	22.9	22.9	22.9	22.9	22.9	22.9	23.0	22.9	22.7	22.6	22.4	22.2	22.1	22.0	22.0	22.1	22.1	22.2	22.2	22.2	22.3	22.4	22.4	22.5	22.0	23.0	22.5
Sep 29	22.6	22.6	22.6	22.7	22.8	22.9	22.9	22.9	22.8	22.7	22.4	22.3	22.3	22.4	22.4	22.4	22.4	22.4	22.5	22.6	22.7	23.0	22.9	22.9	22.3	23.0	22.6
Sep 30	22.7	22.5	22.4	22.4	22.3	22.2	22.1	22.2	22.7	23.1	22.9	22.8	22.7	22.6	22.6	22.5	22.5	22.4	22.5	22.6	22.7	22.8	22.9	22.9	22.1	23.1	22.6
Diurnal Maximum	23.6	23.8	23.9	24.0	23.7	24.0	23.7	23.6	23.5	23.5	23.5	23.3	23.2	23.6	23.4	23.7	23.6	23.7	23.6	23.7	23.8	23.8	24.0	23.8	22.8	23.8	23.8
Daiurnal Average	22.8	22.8	22.8	22.7	22.7	22.7	22.7	22.7	22.8	22.7	22.5	22.5	22.4	22.4	22.4	22.4	22.5	22.6	22.7	22.9	22.9	22.9	22.8	22.8	22.8	23.1	22.6

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

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

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - September 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

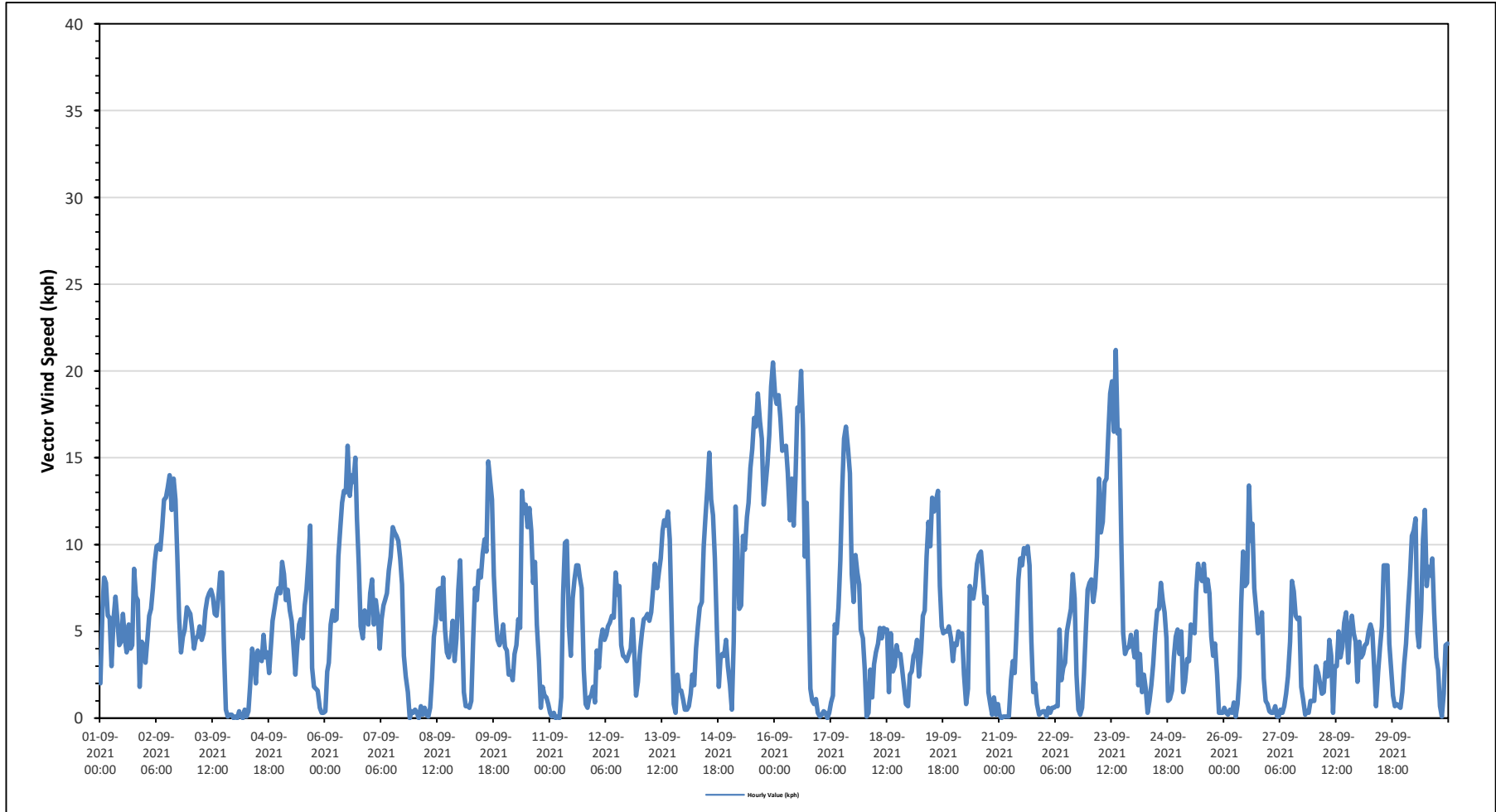
Maximum Hourly Value:	21.2 kph	on September 23 at hour 14	Hours in Service:	720
Maximum Daily Value:	11.8 kph	on September 15	Hours of Data:	720
Minimum Hourly Value:	0.0 kph	on September 3 at hour 23	Hours of Missing Data:	0
Minimum Daily Value:	1.0 kph	on September 18	Hours of Calibration:	0
Monthly Average:	3.0 kph		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Sep 1	2.0	6.3	8.1	7.8	5.9	5.8	3.0	5.8	7.0	5.7	4.2	4.4	6.0	4.6	3.8	5.4	4.0	4.2	8.6	7.0	6.8	1.8	4.4	4.2	1.8	8.6	4.3
Sep 2	3.2	4.5	5.9	6.3	7.5	9.0	9.9	10.0	9.7	11.0	12.6	12.7	13.3	14.0	12.0	13.8	12.6	9.3	5.7	3.8	4.7	5.1	6.4	6.2	3.2	14.0	8.1
Sep 3	6.0	5.1	4.0	4.6	4.7	5.3	4.5	4.9	6.2	6.9	7.2	7.4	7.0	6.0	5.9	7.0	8.4	8.4	3.9	0.5	0.1	0.2	0.2	0.0	0.0	8.4	1.9
Sep 4	0.1	0.0	0.4	0.1	0.0	0.5	0.1	0.4	2.0	4.0	3.5	2.0	3.9	3.5	3.3	4.8	3.5	3.8	2.6	4.2	5.6	6.4	7.1	7.5	0.0	7.5	2.7
Sep 5	7.2	9.0	8.3	6.8	7.4	6.2	5.6	4.1	2.5	4.2	5.4	5.7	4.6	6.5	7.4	9.0	11.1	2.9	1.8	1.7	1.6	0.6	0.3	0.3	0.3	11.1	1.7
Sep 6	0.4	2.7	3.2	5.4	6.2	5.6	5.7	9.3	10.9	12.4	13.1	13.0	15.7	12.8	14.0	13.6	15.0	11.5	8.8	5.3	4.6	6.2	5.6	5.4	0.4	15.7	8.3
Sep 7	7.2	8.0	5.4	6.8	5.8	4.0	5.7	6.5	6.8	7.2	8.5	9.3	11.0	10.7	10.5	10.2	9.2	7.7	3.6	2.4	1.5	0.0	0.4	0.3	0.0	11.0	5.9
Sep 8	0.5	0.3	0.0	0.7	0.2	0.6	0.2	0.1	0.6	2.3	4.7	5.5	7.4	7.5	5.7	8.1	5.1	3.8	3.5	4.3	5.6	3.3	4.6	7.4	0.0	8.1	3.1
Sep 9	9.1	5.5	1.5	0.7	0.7	0.6	1.0	4.5	7.5	6.8	8.5	8.1	9.5	10.3	9.6	14.8	13.7	12.6	8.2	6.0	4.5	4.2	4.5	5.4	0.6	14.8	5.2
Sep 10	4.1	3.9	2.5	2.7	2.2	3.7	4.2	5.7	5.2	13.1	11.8	12.3	11.0	12.1	10.8	7.8	9.0	5.4	3.3	0.6	1.8	1.3	1.2	0.8	0.6	13.1	4.5
Sep 11	0.3	0.1	0.3	0.0	0.1	0.0	1.2	7.1	10.1	10.2	5.3	3.6	6.9	8.0	8.8	8.8	8.1	7.5	2.8	0.8	0.6	1.2	1.3	1.8	0.0	10.2	2.6
Sep 12	0.9	3.9	2.9	4.5	5.1	4.5	4.8	5.3	5.5	5.9	5.8	8.4	7.1	7.6	4.2	3.6	3.5	3.3	3.7	4.0	5.7	3.5	1.3	2.1	0.9	8.4	4.2
Sep 13	3.7	4.9	5.7	5.8	6.0	5.6	6.1	7.4	8.9	7.5	8.4	9.2	10.8	11.4	11.1	11.9	10.3	5.1	0.8	0.3	2.5	1.6	1.6	1.1	0.3	11.9	5.4
Sep 14	0.5	0.5	0.7	1.4	2.5	1.9	4.0	5.3	6.4	6.7	9.9	11.7	13.3	15.3	12.6	11.7	9.2	4.9	1.8	3.4	3.7	3.6	4.5	3.0	0.5	15.3	4.7
Sep 15	1.9	0.5	4.4	12.2	9.8	6.3	6.5	10.5	9.7	11.6	12.4	14.4	15.5	17.3	16.8	18.7	17.1	16.1	12.3	13.4	14.6	16.3	19.1	20.5	0.5	20.5	11.8
Sep 16	18.6	18.1	18.6	17.3	15.4	15.6	15.7	14.1	11.4	13.8	11.1	13.9	17.9	17.7	20.0	16.7	9.3	12.4	7.2	1.7	1.0	0.8	1.1	0.3	0.3	20.0	10.8
Sep 17	0.1	0.2	0.4	0.3	0.0	0.3	0.9	1.3	5.4	4.9	6.4	9.1	13.2	16.1	16.8	15.5	14.1	8.3	6.7	9.4	8.4	7.7	5.1	4.6	0.0	16.8	6.3
Sep 18	2.8	0.1	0.3	2.8	1.2	3.1	3.8	4.3	5.2	4.6	5.2	5.1	5.1	1.5	4.9	2.7	3.0	4.2	3.6	3.7	2.8	1.8	0.8	0.7	0.1	5.2	1.0
Sep 19	2.5	2.7	3.6	3.8	4.5	2.4	3.8	5.9	6.2	9.3	11.3	9.9	12.7	11.9	12.5	13.1	7.6	5.3	4.9	5.0	5.0	5.3	4.6	3.3	2.4	13.1	6.2
Sep 20	4.3	4.2	5.0	4.7	4.9	2.5	0.8	1.7	7.6	7.2	6.9	7.6	8.9	9.4	9.6	8.2	6.6	7.0	1.5	0.8	0.2	1.2	0.2	0.8	0.2	9.6	4.1
Sep 21	0.2	0.0	0.1	0.1	0.1	0.1	2.2	3.3	2.6	5.1	8.0	9.2	8.8	9.8	9.5	9.9	8.8	4.4	1.5	2.0	0.8	0.2	0.3	0.4	0.0	9.9	3.4
Sep 22	0.4	0.1	0.6	0.3	0.6	0.6	0.7	0.7	5.1	2.2	2.9	3.2	5.0	5.7	6.3	8.3	6.9	2.5	0.5	0.2	0.6	2.5	5.0	7.4	0.1	8.3	2.6
Sep 23	7.8	8.0	6.7	7.5	9.3	13.8	10.7	11.3	13.6	13.8	16.4	18.7	19.4	16.5	21.2	16.4	16.6	10.1	4.9	3.7	4.0	4.1	4.8	4.2	3.7	21.2	10.4
Sep 24	3.5	5.0	1.9	3.7	1.5	2.5	1.7	0.3	1.0	1.9	3.1	4.8	6.2	6.3	7.8	6.8	6.1	4.6	1.0	1.1	1.6	3.5	4.7	5.1	0.3	7.8	3.2
Sep 25	3.7	5.0	1.5	2.1	3.4	3.3	5.4	5.1	4.9	7.3	8.9	8.2	7.9	8.9	7.3	8.0	7.2	4.7	3.6	4.3	2.5	0.3	0.3	0.3	0.3	8.9	4.6
Sep 26	0.6	0.3	0.2	0.5	0.3	0.9	0.1	0.8	2.4	6.7	9.6	7.6	7.8	13.4	10.2	11.2	7.5	6.3	4.9	5.3	6.1	2.3	1.0	0.8	0.1	13.4	4.2
Sep 27	0.4	0.3	0.3	0.7	0.1	0.1	0.5	0.3	0.7	1.4	2.4	4.4	7.9	7.3	5.9	5.7	5.8	1.8	1.1	0.2	0.4	0.3	1.0	1.0	0.1	7.9	1.8
Sep 28	1.0	3.0	2.6	2.0	1.4	1.5	3.2	2.4	4.5	3.6	0.3	3.0	3.0	5.0	3.5	4.1	5.5	6.1	3.2	5.2	5.9	4.9	4.4	2.1	0.3	6.1	1.7
Sep 29	4.4	3.5	3.7	4.2	4.3	5.0	5.4	5.0	2.9	0.7	2.7	4.1	5.3	8.8	8.8	8.8	4.3	2.8	1.3	0.7	0.8	0.7	0.6	1.5	0.6	8.8	3.3
Sep 30	3.1	4.3	6.5	8.2	10.5	10.8	11.5	4.9	4.1	6.2	10.3	12.0	7.6	8.7	8.2	9.2	6.1	3.5	2.8	0.7	0.1	1.4	4.2	4.3	0.1	12.0	5.6
Diurnal Maximum	19	18	19	17	15	16	16	14	14	14	16	19	19	18	21	19	17	16	12	13	15	16	19	21			
Dalurnal Average	3.4	3.7	3.5	4.1	4.1	4.1	4.3	4.9	5.9	6.8	7.6	8.3	9.3	9.8	9.6	9.8	8.5	6.4	4.0	3.4	3.5	3.1	3.4	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
X	Invalid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

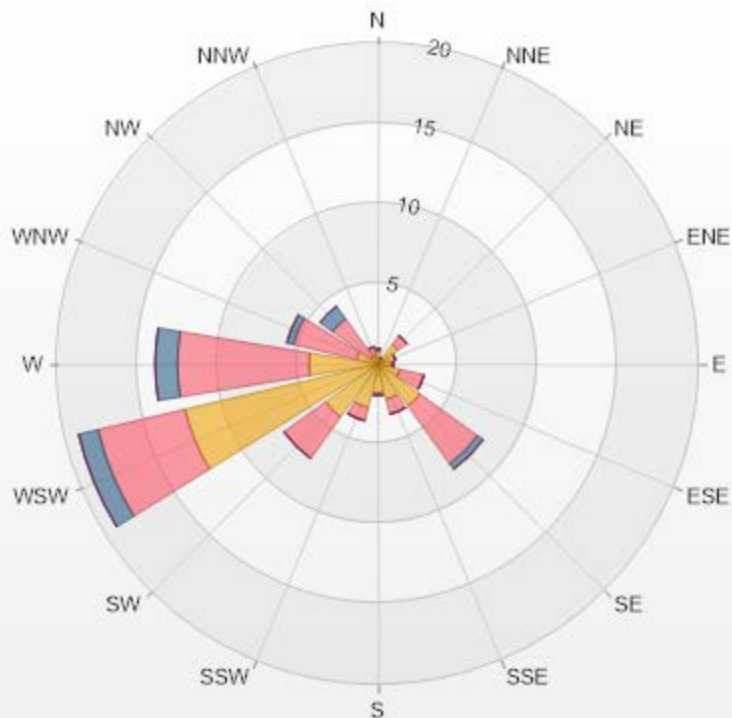
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

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



Wind: Cold Lake South Monitor: WDS [kph] Monthly: 09-2021 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 22.92% 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	0.83	0.14	0	0	0	0.97
NNE	0.28	0.14	0	0	0	0.42
NE	1.53	0.69	0	0	0	2.22
ENE	1.11	0	0	0	0	1.11
E	0.83	0.14	0	0	0	0.97
ESE	1.39	1.53	0	0	0	2.92
SE	3.19	4.44	0.42	0	0	8.05
SSE	2.22	0.97	0	0	0	3.19
S	1.81	0.14	0	0	0	1.95
SSW	2.78	0.83	0	0	0	3.61
SW	4.03	3.19	0	0	0	7.22
WSW	12.36	5.56	1.25	0	0	19.17
W	4.31	8.19	1.39	0	0	13.89
WNW	1.39	4.03	0.42	0	0	5.84
NW	0.56	2.92	0.97	0	0	4.45
NNW	0.56	0.56	0	0	0	1.12
Summary	39.18	33.47	4.45	0	0	77.1



LICA-202109

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% Icon Classes (kph)

39  1.8-6.0

33  6.0-15.0

4  15.0-29.0

0  29.0-39.0

0  >39.0



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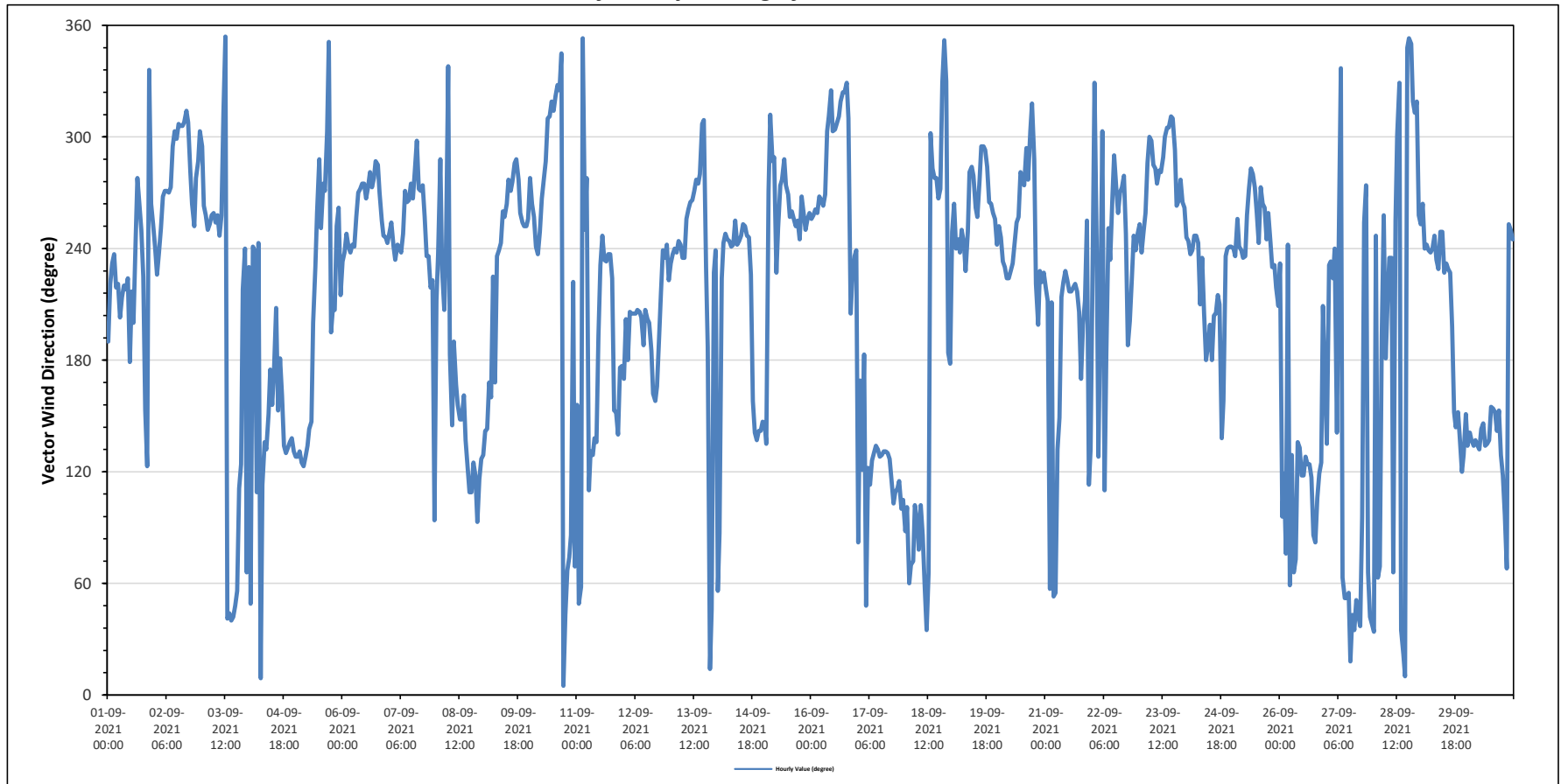
Cold Lake South Station - September 2021

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:		253 (WSW) degree														Hours in Service:		720									
																Hours of Data:		720									
																Hours of Missing Data:		0									
																Hours of Calibration:		0									
																Operational Uptime:		100.0									
Day	Hourly Period Starting at (MST)																							Daily Average			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant	
Sep 1	S	SW	SW	SW	SW	SW	SSW	SSW	SW	SW	SW	S	SW	SSW	WSW	W	W	WSW	SW	SSE	ESE	NNW	W	WSW	221	SW	
Sep 2	WSW	SW	SW	WSW	W	W	W	W	W	WNW	WNW	WNW	NW	NW	NW	NW	NW	W	W	WSW	W	WNW	WNW	288	WNW		
Sep 3	WNW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	NW	N	NE	NE	NE	NE	NE	ESE	ESE	SW	WSW	ENE	310	NW		
Sep 4	SW	NE	WSW	WSW	ESE	WSW	N	ESE	SE	SE	SSE	S	SSE	S	SSW	SSE	S	SSE	SE	SE	SE	SE	SE	149	SSE		
Sep 5	SE	SE	SE	SE	ESE	SE	SE	SE	SE	SSW	SW	WSW	WNW	WSW	W	W	WNW	N	SSW	SSW	SSW	WSW	W	SSW	190	S	
Sep 6	SW	SW	WSW	WSW	SW	WSW	WSW	WSW	W	W	W	W	W	W	W	W	W	WNW	WNW	W	WSW	WSW	WSW	WSW	267	W	
Sep 7	WSW	WSW	WSW	SW	WSW	WSW	SW	WSW	W	W	W	W	W	W	W	WNW	W	W	W	WSW	SW	SW	SW	E	263	W	
Sep 8	SSW	SW	WNW	SW	SSW	WSW	NNW	S	SE	S	SSE	SSE	SE	SE	SSE	SE	ESE	ESE	ESE	SE	ESE	E	ESE	SE	138	SE	
Sep 9	SE	SE	SE	SSE	SSE	SW	SSE	SW	SSW	WSW	WSW	WSW	W	W	W	W	WNW	WNW	W	WSW	WSW	WSW	WSW	WSW	260	WSW	
Sep 10	W	W	WSW	WSW	SW	WSW	W	W	WNW	NW	NW	NW	NW	NW	NNW	NW	NNW	N	NE	ENE	ENE	E	SW	ENE	312	NW	
Sep 11	SSE	NE	ENE	N	WSW	W	ESE	SE	SE	SE	SE	S	SW	WSW	SW	SW	SW	SW	SSE	SSE	SE	S	S	S	195	SSW	
Sep 12	SSE	SSW	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSW	SSW	SSW	S	SSE	SSE	SSE	SSW	SW	WSW	SW	WSW	SW	202	SSW	
Sep 13	SW	SW	WSW	SW	WSW	WSW	SW	SW	WSW	W	W	W	W	W	W	W	NW	NW	SW	S	NNE	NE	SW	WSW	264	W	
Sep 14	NE	E	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SSE	SE	SE	SE	SE	SE	236	SW	
Sep 15	SE	SE	W	NW	WNW	WNW	SW	WSW	W	W	WNW	W	W	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW	WSW	WSW	WSW	263	W	
Sep 16	WSW	WSW	W	WSW	W	W	W	WNW	NW	NW	WNW	WNW	NW	NW	NW	NW	NW	NW	SSW	SSW	SW	SW	WSW	WSW	289	WNW	
Sep 17	E	SSE	ESE	S	NE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE	ESE	E	ESE	E	ESE	123	ESE	
Sep 18	E	E	ENE	ENE	ENE	E	E	ENE	E	E	ENE	NE	ENE	WNW	W	W	W	W	W	NNW	N	NNW	S	S	42	NE	
Sep 19	WSW	W	WSW	WSW	SW	WSW	WSW	SW	WSW	W	WNW	W	W	WSW	W	WNW	WNW	WNW	WNW	W	W	WSW	WSW	WSW	268	W	
Sep 20	WSW	WSW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	W	W	W	WNW	W	WNW	W	WNW	SW	SSW	SW	SW	SW	266	W	
Sep 21	SW	SSW	ENE	SSW	NE	NE	SE	SSE	SSW	SW	SW	SW	SW	SW	SW	SW	SW	SSW	SSE	SSW	SSW	WSW	ESE	SE	214	SSW	
Sep 22	WSW	NNW	WSW	SE	SW	WNW	ESE	S	WSW	SW	W	WNW	W	WSW	W	W	WSW	S	SSW	SW	WSW	WSW	WSW	WSW	260	WSW	
Sep 23	WSW	SW	WSW	WSW	WNW	WNW	WNW	WNW	W	W	W	WNW	WNW	WNW	WNW	WNW	NW	WNW	W	W	W	W	W	W	287	WNW	
Sep 24	WSW	WSW	SW	WSW	WSW	WSW	SSW	SW	SSW	S	S	SSW	S	SSW	SSW	SSW	SSW	SSW	SE	SSE	SW	WSW	WSW	WSW	216	SW	
Sep 25	WSW	SW	WSW	WSW	WSW	SW	SW	WSW	W	W	W	WSW	WSW	W	W	W	WSW	WSW	SW	SW	SW	SSW	SSW	SSW	257	WSW	
Sep 26	SW	E	ESE	ENE	WSW	ENE	SE	ENE	ENE	SE	SE	ESE	ESE	SE	ESE	ESE	ESE	E	E	ESE	ESE	SE	SSW	SSE	119	ESE	
Sep 27	SE	SW	SW	SW	WSW	SE	SW	NNW	ENE	NE	NE	NE	NE	NE	NE	NE	NE	NE	E	WSW	W	ENE	NE	NE	41	NE	
Sep 28	NE	WSW	ENE	ENE	S	WSW	S	SSW	SW	SW	ENE	WSW	WNW	NNW	N	NNE	N	NNW	N	N	NW	NW	NW	WSW	321	NW	
Sep 29	WSW	W	WSW	WSW	WSW	SW	WSW	WSW	SW	SW	WSW	WSW	SW	SW	SW	SW	SSW	SSE	SE	SSE	SE	ESE	SE	SSE	230	SW	
Sep 30	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	E	ENE	WSW	WSW	WSW	143	SE		
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.																											
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Timeseries Chart of Hourly Average for VWD - Cold Lake South Station





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - September 2021

Summary of Hourly Averages

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

WIND SPEED																												
Maximum Hourly Value:		21.2 kph on September 23 at hour 14														Hours in Service:		720										
Maximum Daily Value:		11.8 kph on September 15														Hours of Data:		720										
Minimum Hourly Value:		0.0 kph on September 3 at hour 23														Hours of Missing Data:		0										
Minimum Daily Value:		1.0 kph on September 18														Hours of Calibration:		0										
Monthly Average:		3.0 kph														Operational Uptime:		100										
WIND DIRECTION																												
Monthly Average:		253 (WSW, degree)																										
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Sep 1	2.0	6.3	8.1	7.8	5.9	5.8	3.0	5.8	7.0	5.7	4.2	4.4	6.0	4.6	3.8	5.4	4.0	4.2	8.6	7.0	6.8	1.8	4.4	4.2	1.8	8.6	4.3	
S	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	
Sep 2	3.2	4.5	5.9	6.3	7.5	9.0	9.9	10.0	9.7	11.0	12.6	12.7	13.3	14.0	12.0	13.8	12.6	9.3	5.7	3.8	4.7	5.1	6.4	6.2	3.2	14.0	8.1	
WSW	SW	SW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
Sep 3	6.0	5.1	4.0	4.6	4.7	5.3	4.5	4.9	6.2	6.9	7.2	7.4	7.0	6.0	5.9	7.0	8.4	8.4	3.9	0.5	0.1	0.2	0.2	0.0	0.0	8.4	1.9	
W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	
Sep 4	0.1	0.0	0.4	0.1	0.0	0.5	0.1	0.4	2.0	4.0	3.5	2.0	3.9	3.5	3.3	4.8	3.5	3.8	2.6	4.2	5.6	6.4	7.1	7.5	0.0	7.5	2.7	
SW	NE	WSW	WSW	ESE	WSW	N	ESE	SE	SSE	S	SSE	S	SSE	S	SSE	S	SSE	S	SSE	S	SSE	S	SSE	S	SSE	S	SSE	
Sep 5	7.2	9.0	8.3	6.8	7.4	6.2	5.6	4.1	2.5	4.2	5.4	5.7	4.6	6.5	7.4	9.0	11.1	2.9	1.8	1.7	1.6	0.6	0.3	0.3	0.3	11.1	1.7	
SE	SE	SE	SE	ESE	SE	SE	SE	SE	SSW	SW	WSW	WNW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
Sep 6	0.4	2.7	3.2	5.4	6.2	5.6	5.7	9.3	10.9	12.4	13.1	13.0	15.7	12.8	14.0	13.6	15.0	11.5	8.8	5.3	4.6	6.2	5.6	5.4	0.4	15.7	8.3	
SW	SW	WSW	WSW	SW	WSW	WSW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
Sep 7	7.2	8.0	5.4	6.8	5.8	4.0	5.7	6.5	6.8	7.2	8.5	9.3	11.0	10.7	10.5	10.2	9.2	7.7	3.6	2.4	1.5	0.0	0.4	0.3	0.0	11.0	5.9	
WSW	WSW	WSW	SW	WSW	WSW	SW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
Sep 8	0.5	0.3	0.0	0.7	0.2	0.6	0.2	0.1	0.6	2.3	4.7	5.5	7.4	7.5	5.7	8.1	5.1	3.8	3.5	4.3	5.6	3.3	4.6	7.4	0.0	8.1	3.1	
SSW	SW	WNW	SW	SSW	WSW	NNW	S	SE	S	SSE	SSE	SE	SE	SSE	SE	ESE	ESE	ESE	SE	ESE	E	ESE	SE	ESE	SE	ESE	SE	
Sep 9	9.1	5.5	1.5	0.7	0.7	0.6	1.0	4.5	7.5	6.8	8.5	8.1	9.5	10.3	9.6	14.8	13.7	12.6	8.2	6.0	4.5	4.2	4.5	5.4	0.6	14.8	5.2	
SE	SE	SE	SSE	SSE	SW	SSE	SW	WSW	WSW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
Sep 10	4.1	3.9	2.5	2.7	2.2	3.7	4.2	5.7	5.2	13.1	11.8	12.3	11.0	12.1	10.8	7.8	9.0	5.4	3.3	0.6	1.8	1.3	1.2	0.8	0.6	13.1	4.5	
W	W	WSW	WSW	SW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
Sep 11	0.3	0.1	0.3	0.0	0.1	0.0	1.2	7.1	10.1	10.2	5.3	3.6	6.9	8.0	8.8	8.8	8.1	7.5	2.8	0.8	0.6	1.2	1.3	1.8	0.0	10.2	2.6	
SSE	NE	ENE	N	WSW	W	ESE	SE	SE	SE	SE	S	SW	WSW	SW	SW	SW	SW	SW	SW	SSE	SSE	SE	S	S	0.0	10.2	2.6	
Sep 12	0.9	3.9	2.9	4.5	5.1	4.5	4.8	5.3	5.5	5.9	5.8	8.4	7.1	7.6	4.2	3.6	3.5	3.3	3.7	4.0	5.7	3.5	1.3	2.1	0.9	8.4	4.2	
SSE	SSW	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSW	SSW	SSW	S	SSE	SSE	SSE	SSW	SW	WSW	SW	WSW	SW	WSW	SW	0.9	8.4	4.2
Sep 13	3.7	4.9	5.7	5.8	6.0	5.6	6.1	7.4	8.9	7.5	8.4	9.2	10.8	11.4	11.1	11.9	10.3	5.1	0.8	0.3	2.5	1.6	1.6	1.1	0.3	11.9	5.4	
SW	SW	WSW	SW	WSW	WSW	SW	SW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	0.3	11.9	5.4
Sep 14	0.5	0.5	0.7	1.4	2.5	1.9	4.0	5.3	6.4	6.7	9.9	11.7	13.3	15.3	12.6	11.7	9.2	4.9	1.8	3.4	3.7	3.6	4.5	3.0	0.5	15.3	4.7	
NE	E	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	0.5	15.3	4.7
Sep 15	1.9	0.5	4.4	12.2	9.8	6.3	6.5	10.5	9.7	11.6	12.4	14.4	15.5	17.3	16.8	18.7	17.1	16.1	12.3	13.4	14.6	16.3	19.1	20.5	0.5	20.5	11.8	
SE	SE	W	NW	WNW	WNW	SW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	0.5	20.5	11.8
Sep 16	18.6	18.1	18.6	17.3	15.4	15.6	15.7	14.1	11.4	13.8	11.1	13.9	17.9	17.7	20.0	16.7	9.3	12.4	7.2	1.7	1.0	0.8	1.1	0.3	0.3	20.0	10.8	
WSW	WSW	W	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	0.3	20.0	10.8
Sep 17	0.1	0.2	0.4	0.3	0.0	0.3	0.9	1.3	5.4	4.9	6.4	9.1	13.2	16.1	16.8	15.5	14.1	8.3	6.7	9.4	8.4	7.7	5.1	4.6	0.0	16.8	6.3	
E	SSE	ESE	S	NE	ESE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE	ESE	ESE	E	ESE	0.0	16.8	6.3	
Sep 18	2.8	0.1	0.3	2.8	1.2	3.1	3.8	4.3	5.2	4.6	5.2	5.1	5.1	1.5	4.9	2.7	3.0	4.2	3.6	3.7	2.8	1.8	0.8	0.7	0.1	5.2	1.0	
E	E	ENE	ENE	E	E	ENE	E	E	ENE	E	ENE	NE	ENE	WNW	W	W	W	W	W	W	W	W	W	W	W	0.1	5.2	1.0
Sep 19	2.5	2.7	3.6	3.8	4.5	2.4	3.8	5.9	6.2	9.3	11.3	9.9	12.7	11.9	12.5	13.1	7.6	5.3	4.9	5.0	5.0	5.3	4.6	3.3	2.4	13.1	6.2	
WSW	W	WSW	WSW	SW	WSW	WSW	SW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	2.4	13.1	6.2
Sep 20	4.3	4.2	5.0	4.7	4.9	2.5	0.8	1.7	7.6	7.2	6.9	7.6	8.9	9.4	9.6	8.2	6.6	7.0	1.5	0.8	0.2	1.2	0.2	0.8	0.2	9.6	4.1	
WSW	WSW	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	0.2	9.6	4.1



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - September 2021

Summary of Hourly Averages

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

WIND SPEED																															
Maximum Hourly Value:	21.2	kph	on September 23 at hour 14	Hours in Service:	720																										
Maximum Daily Value:	11.8	kph	on September 15	Hours of Data:	720																										
Minimum Hourly Value:	0.0	kph	on September 3 at hour 23	Hours of Missing Data:	0																										
Minimum Daily Value:	1.0	kph	on September 18	Hours of Calibration:	0																										
Monthly Average:	3.0	kph		Operational Uptime:	100																										
WIND DIRECTION																															
Monthly Average:	253 (WSW degree)																														
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average					
Sep 21	0.2	0.0	0.1	0.1	0.1	0.1	2.2	3.3	2.6	5.1	8.0	9.2	8.8	9.8	9.5	9.9	8.8	4.4	1.5	2.0	0.8	0.2	0.3	0.4	0.0	9.9	3.4				
Sep 22	0.4	0.1	0.6	0.3	0.6	0.6	0.7	0.7	5.1	2.2	2.9	3.2	5.0	5.7	6.3	8.3	6.9	2.5	0.5	0.2	0.6	2.5	5.0	7.4	0.1	8.3	2.6				
Sep 23	7.8	8.0	6.7	7.5	9.3	13.8	10.7	11.3	13.6	13.8	16.4	18.7	19.4	16.5	21.2	16.4	16.6	10.1	4.9	3.7	4.0	4.1	4.8	4.2	3.7	21.2	10.4				
Sep 24	3.5	5.0	1.9	3.7	1.5	2.5	1.7	0.3	1.0	1.9	3.1	4.8	6.2	6.3	7.8	6.8	6.1	4.6	1.0	1.1	1.6	3.5	4.7	5.1	0.3	7.8	3.2				
Sep 25	3.7	5.0	1.5	2.1	3.4	3.3	5.4	5.1	4.9	7.3	8.9	8.2	7.9	8.9	7.3	8.0	7.2	4.7	3.6	4.3	2.5	0.3	0.3	0.3	0.3	8.9	4.6				
Sep 26	0.6	0.3	0.2	0.5	0.3	0.9	0.1	0.8	2.4	6.7	9.6	7.6	7.8	13.4	10.2	11.2	7.5	6.3	4.9	5.3	6.1	2.3	1.0	0.8	0.1	13.4	4.2				
Sep 27	0.4	0.3	0.3	0.7	0.1	0.1	0.5	0.3	0.7	1.4	2.4	4.4	7.9	7.3	5.9	5.7	5.8	1.8	1.1	0.2	0.4	0.3	1.0	1.0	0.1	7.9	1.8				
Sep 28	1.0	3.0	2.6	2.0	1.4	1.5	3.2	2.4	4.5	3.6	0.3	3.0	3.0	5.0	3.5	4.1	5.5	6.1	3.2	5.2	5.9	4.9	4.4	2.1	0.3	6.1	1.7				
Sep 29	4.4	3.5	3.7	4.2	4.3	5.0	5.4	5.0	2.9	0.7	2.7	4.1	5.3	8.8	8.8	8.8	4.3	2.8	1.3	0.7	0.8	0.7	0.6	1.5	0.6	8.8	3.3				
Sep 30	3.1	4.3	6.5	8.2	10.5	10.8	11.5	4.9	4.1	6.2	10.3	12.0	7.6	8.7	8.2	9.2	6.1	3.5	2.8	0.7	0.1	1.4	4.2	4.3	0.1	12.0	5.6				
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.																															



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - September 2021

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

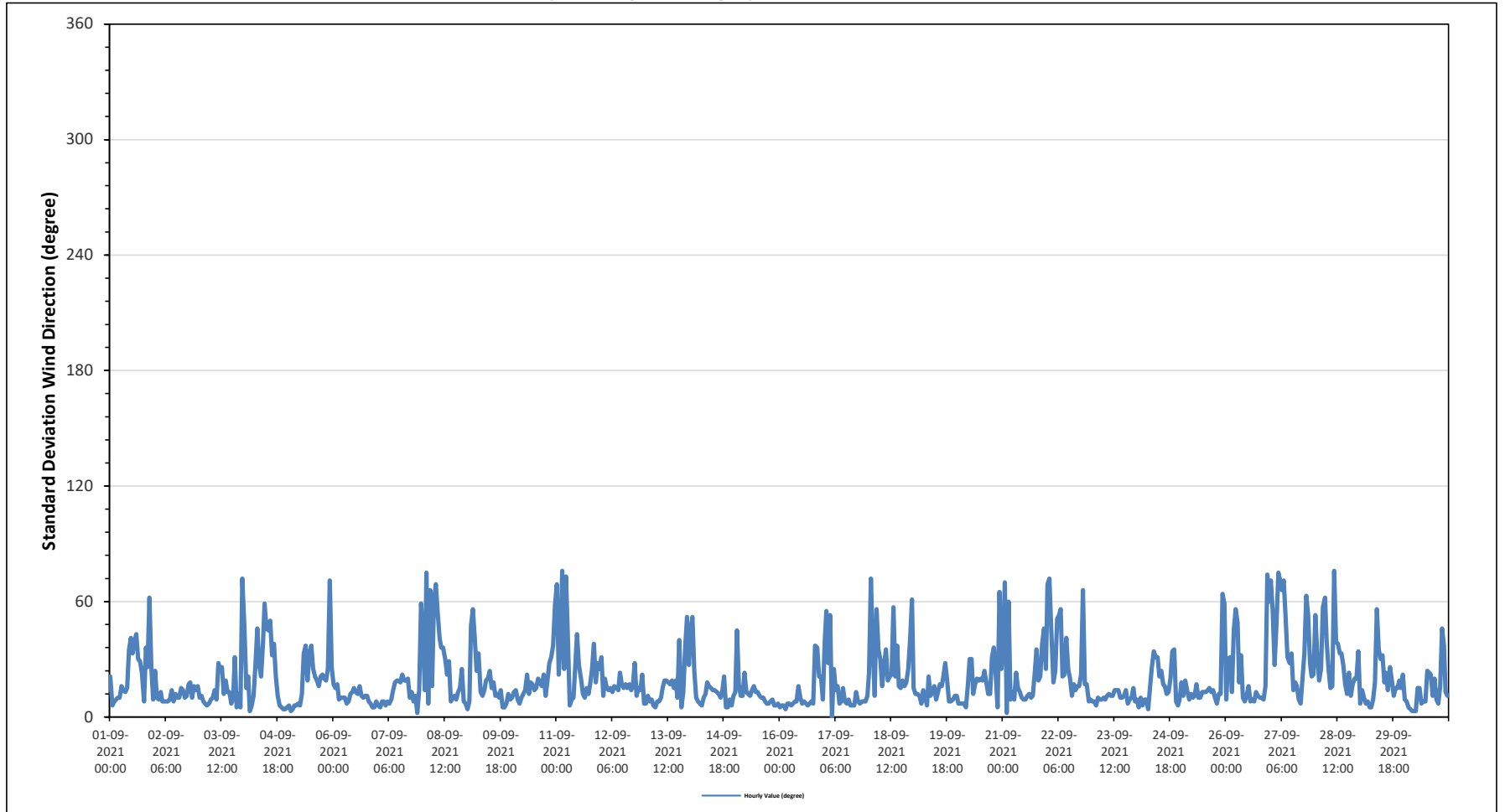
Maximum Hourly Value:	76 degree on September 11 at hour 3	Hours in Service:	720
Minimum Hourly Value:	0 degree on September 17 at hour 4	Hours of Data:	720
		Hours of Missing Data:	0
		Hours of Calibration:	0
		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily	Daily	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum
Sep 1	21	6	8	9	10	10	16	14	13	15	35	41	33	39	43	30	29	23	8	36	26	62	26	9	6	62
Sep 2	24	10	9	13	8	8	8	8	9	14	8	12	10	10	15	14	10	11	17	18	10	16	14	16	8	24
Sep 3	10	11	8	7	6	7	9	10	14	9	28	25	26	12	19	13	13	7	10	31	5	12	5	72	5	72
Sep 4	46	15	21	3	6	11	27	46	27	21	38	59	46	45	50	32	38	21	11	6	5	4	4	5	3	59
Sep 5	6	3	4	6	6	7	6	12	33	37	19	33	37	25	21	19	16	21	22	20	19	25	71	26	3	71
Sep 6	17	15	17	9	10	10	10	7	8	12	13	15	13	12	16	11	10	11	11	8	7	5	5	8	5	17
Sep 7	6	5	8	8	6	8	7	9	14	18	19	19	18	22	19	19	20	10	13	8	11	2	14	59	2	59
Sep 8	43	14	75	7	66	16	60	69	54	41	36	36	30	22	29	8	10	11	9	13	15	25	8	7	7	75
Sep 9	4	8	47	56	41	24	33	13	11	14	19	20	24	15	18	11	12	10	14	5	5	7	12	9	4	56
Sep 10	10	13	14	9	7	10	12	14	22	12	18	17	14	15	20	18	16	22	11	19	28	31	37	58	7	58
Sep 11	69	22	38	76	25	73	41	6	9	10	25	43	27	20	12	10	15	12	17	25	38	18	28	25	6	76
Sep 12	31	11	20	15	14	15	13	16	15	14	23	17	15	17	15	17	14	16	28	11	15	14	22	7	7	31
Sep 13	7	11	8	9	6	5	8	8	10	15	19	19	18	17	19	15	19	10	40	5	13	36	52	27	5	52
Sep 14	45	52	24	10	8	7	6	10	12	18	16	15	14	14	13	12	10	13	21	5	5	9	6	11	5	52
Sep 15	13	45	17	11	11	23	13	12	11	14	16	13	13	11	10	10	8	7	7	8	9	6	6	7	6	45
Sep 16	5	6	6	4	7	7	6	7	8	8	16	10	7	8	7	6	7	8	7	37	36	21	21	9	4	37
Sep 17	39	55	28	53	0	25	14	16	7	8	15	8	7	9	6	6	6	13	8	7	8	8	8	11	0	55
Sep 18	23	72	37	11	56	35	30	16	27	35	19	21	22	57	21	37	16	15	19	16	18	25	40	61	11	72
Sep 19	15	12	12	11	7	14	10	6	21	11	13	16	9	13	17	16	21	28	19	8	8	9	11	11	6	28
Sep 20	7	7	7	7	5	16	30	30	12	17	20	19	20	19	24	18	12	12	31	36	22	5	65	25	5	65
Sep 21	37	70	2	60	9	13	9	23	15	13	10	9	9	11	12	10	11	22	35	19	21	38	46	25	2	70
Sep 22	69	72	45	18	24	51	53	56	21	22	41	25	20	11	17	14	16	16	22	66	17	17	8	9	8	72
Sep 23	8	8	6	10	9	9	10	9	11	12	11	11	14	14	10	10	11	14	7	9	10	15	8	6	6	15
Sep 24	9	5	10	6	9	9	4	14	25	34	31	31	21	24	17	16	12	13	20	34	35	8	6	9	4	35
Sep 25	18	11	19	14	9	12	10	11	17	10	10	13	13	13	14	15	13	14	10	7	12	12	64	59	7	64
Sep 26	9	30	31	13	45	56	49	18	32	10	8	11	16	8	9	8	13	11	10	10	9	16	74	60	8	74
Sep 27	71	55	27	48	75	71	66	71	52	31	28	33	14	18	16	9	7	20	33	63	53	28	21	22	7	75
Sep 28	53	32	19	25	57	62	39	25	15	16	76	39	38	33	33	27	17	12	23	11	17	20	20	34	11	76
Sep 29	7	14	10	7	8	5	5	9	18	56	35	30	32	18	23	14	26	19	11	15	15	19	15	22	5	56
Sep 30	9	8	5	4	3	3	3	15	15	7	8	8	24	23	22	11	20	9	7	16	46	37	13	11	3	46
Diurnal Minimum	4	3	2	3	0	3	3	6	7	7	8	8	7	8	6	6	6	7	7	5	5	2	4	5		
Diurnal Maximum	71	72	75	76	75	73	66	71	54	56	76	59	46	57	50	37	38	28	40	66	53	62	74	72		

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

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

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



TAMARACK STATION



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - September 2021

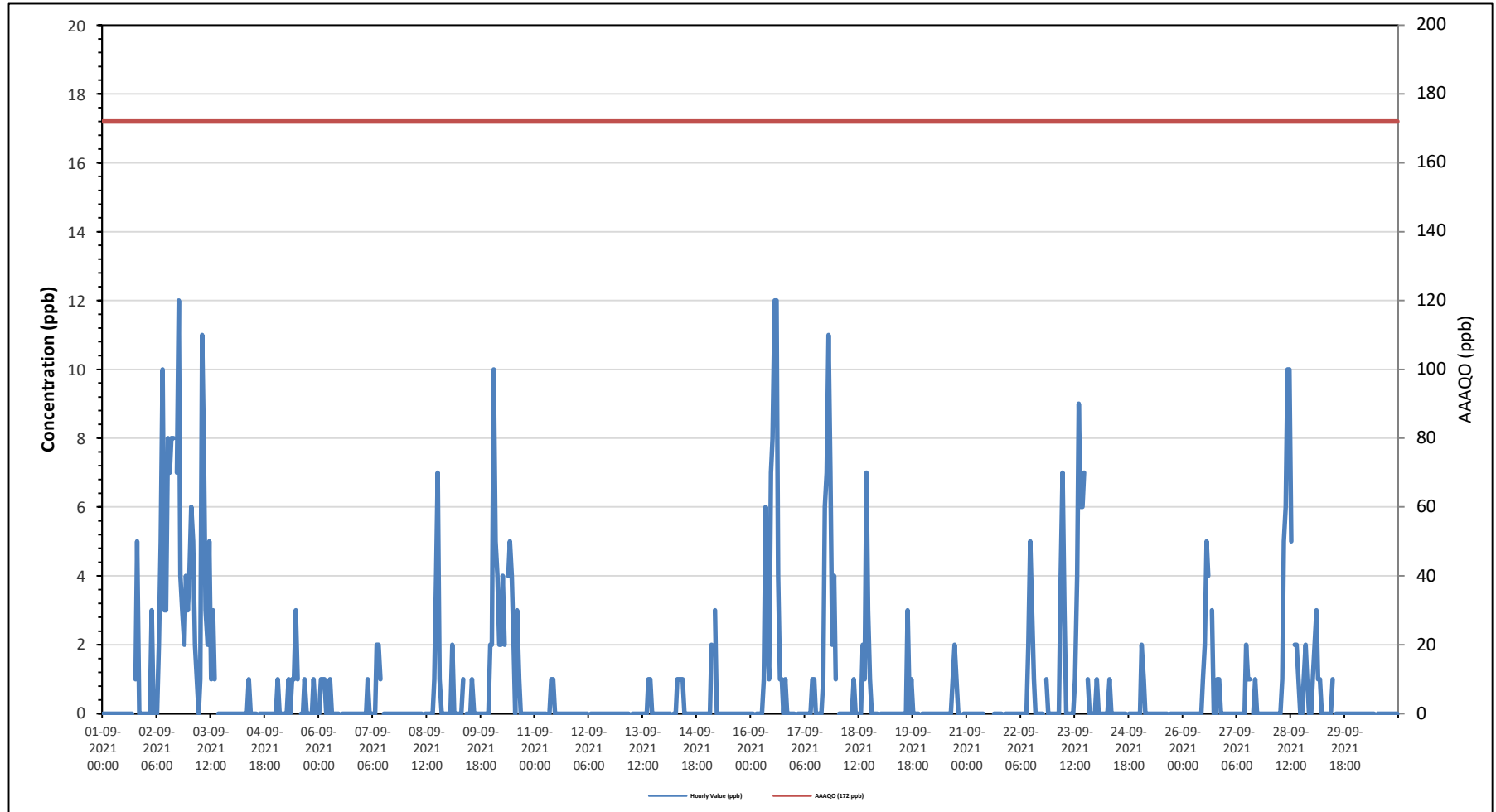
Summary of Hourly Averages

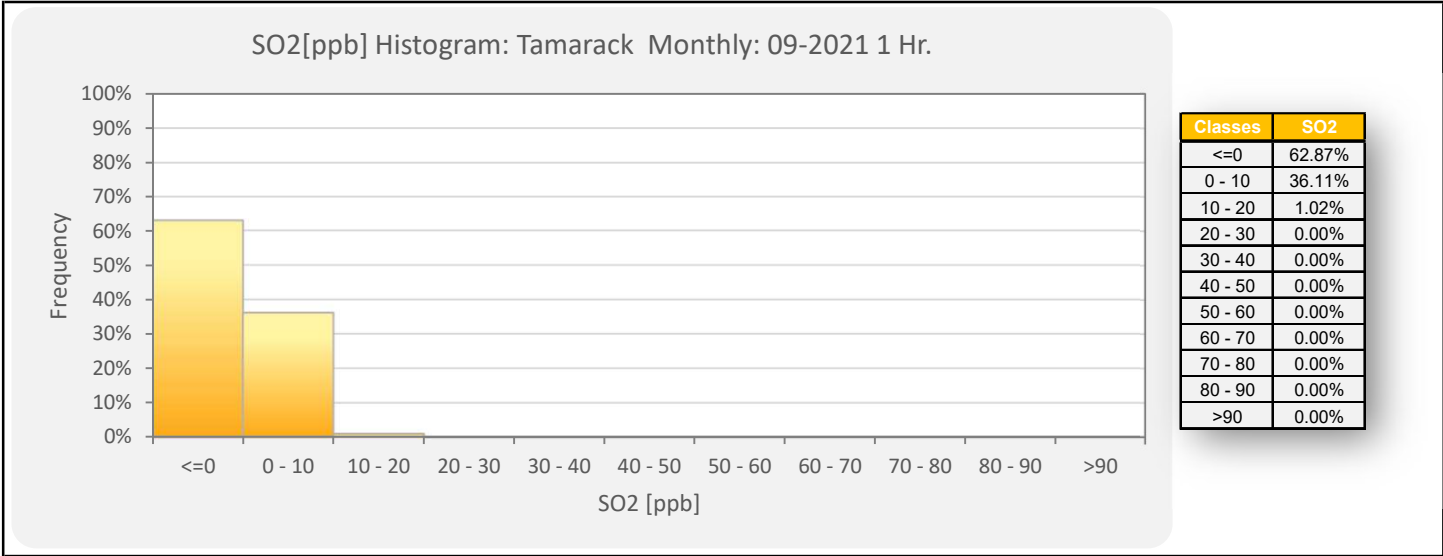
SULPHUR DIOXIDE (SO₂) in ppb

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: 12 ppb on September 2 at hour 18													Hours in Service: 720																	
Maximum Daily Value: 4.0 ppb on September 2													Hours of Data: 684																	
Minimum Hourly Value: 0 ppb on September 1 at hour 0													Hours of Missing Data: 0																	
Minimum Daily Value: 0.0 ppb on September 12													Hours of Calibration: 36																	
Monthly Average: 0.8 ppb													Operational Uptime: 100.0																	
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23						
Sep 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	5	0	0	0	0	0	0	0	5	4.0	0.3
Sep 2	0	0	0	3	0	0	0	2	5	10	3	3	8	7	8	8	S	7	12	4	3	2	4	3	0	0	12	4.0	2.3	
Sep 3	4	6	5	2	1	0	1	11	8	3	2	5	1	3	1	S	0	0	0	0	0	0	0	0	0	0	11	1.0	0.0	
Sep 4	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.0	0.0	
Sep 5	0	1	0	0	0	0	0	1	0	1	1	3	1	S	0	0	1	0	0	0	0	1	0	0	0	0	3	0.4	0.2	
Sep 6	0	1	1	1	0	0	1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	0.3	
Sep 7	0	0	0	1	0	0	0	0	2	2	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	0.3	
Sep 8	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	4	7	1	0	0	0	0	0	7	0.6	0.0	
Sep 9	0	0	2	0	0	0	0	0	1	S	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	2	0.3	0.0	
Sep 10	2	10	5	4	2	2	4	2	S	4	5	4	2	0	3	1	0	0	0	0	0	0	0	0	0	0	10	2.2	0.1	
Sep 11	0	0	0	0	0	0	0	S	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	0.0	
Sep 12	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	
Sep 13	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0.1	0.2	
Sep 14	0	0	0	0	S	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	0.2	
Sep 15	0	0	2	S	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.2	0.0	
Sep 16	0	0	S	0	0	0	1	6	2	1	7	8	12	12	4	1	1	0	1	0	0	0	0	0	0	0	12	2.4	1.8	
Sep 17	0	S	0	0	0	0	0	0	0	1	1	0	0	0	0	1	6	7	11	7	2	4	1	0	0	11	0.7	0.2	0.2	
Sep 18	S	0	0	0	0	0	0	0	1	0	0	0	0	0	2	1	7	3	1	0	0	0	0	S	0	7	0.7	0.0		
Sep 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	0	S	0	0	0	3	0.2	0.2	0.0	
Sep 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	S	0	0	0	2	0.2	0.0	0.0	
Sep 21	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	0	S	0	0	0	0	0.0	0.5	2.1	
Sep 22	0	0	0	0	0	0	0	0	0	0	2	5	3	1	0	0	0	0	0	S	1	0	0	0	0	0	5	0.5	0.1	
Sep 23	0	0	0	0	4	7	3	0	0	0	0	0	1	4	9	6	6	7	S	1	0	0	0	0	0	0	9	2.1	0.1	
Sep 24	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0.1	0.0	0.7	
Sep 25	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	2	0.1	0.2	0.0	
Sep 26	0	0	0	0	0	0	0	0	0	0	1	2	5	4	S	3	0	0	1	1	0	0	0	0	0	5	0.7	0.2	0.0	
Sep 27	0	0	0	0	0	0	0	0	0	0	2	1	1	S	0	1	0	0	0	0	0	0	0	0	0	2	0.2	2.0	0.4	
Sep 28	0	0	0	0	0	0	1	5	6	10	10	5	S	2	2	1	0	0	1	2	1	0	0	0	0	10	2.0	0.4	0.0	
Sep 29	1	2	3	1	1	0	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	3	0.4	0.0	0.0	
Sep 30	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Diurnal Maximum	4	10	5	4	4	7	4	11	8	10	10	10	8	12	12	8	7	7	12	11	7	2	4	3						
Diurnal Average	0.3	0.8	0.7	0.4	0.4	0.3	0.3	0.7	1.0	1.1	1.0	1.6	1.2	1.3	1.5	0.9	0.9	1.1	1.0	0.9	0.5	0.2	0.3	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.

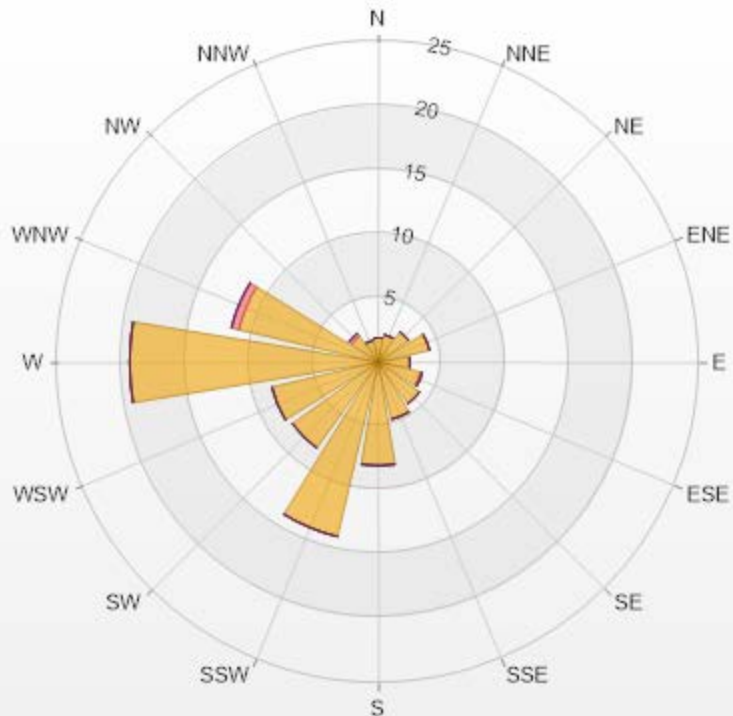
Timeseries Chart of Hourly Average for SO₂ - Tamarack Site





Wind: Tamarack Poll.: Tamarack-SO2[ppb] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.72% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	1.91	0	0	0	0	1.91
NNE	2.2	0	0	0	0	2.2
NE	2.93	0	0	0	0	2.93
ENE	4.11	0	0	0	0	4.11
E	2.49	0	0	0	0	2.49
ESE	3.37	0.15	0	0	0	3.52
SE	3.96	0	0	0	0	3.96
SSE	4.55	0	0	0	0	4.55
S	8.06	0	0	0	0	8.06
SSW	13.93	0	0	0	0	13.93
SW	8.21	0	0	0	0	8.21
WSW	8.5	0	0	0	0	8.5
W	19.35	0	0	0	0	19.35
WNW	11.14	0.59	0	0	0	11.73
NW	2.49	0.29	0	0	0	2.78
NNW	1.76	0	0	0	0	1.76
Summary	98.96	1.03	0	0	0	100



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% Icon Classes (ppb)

99  0-10

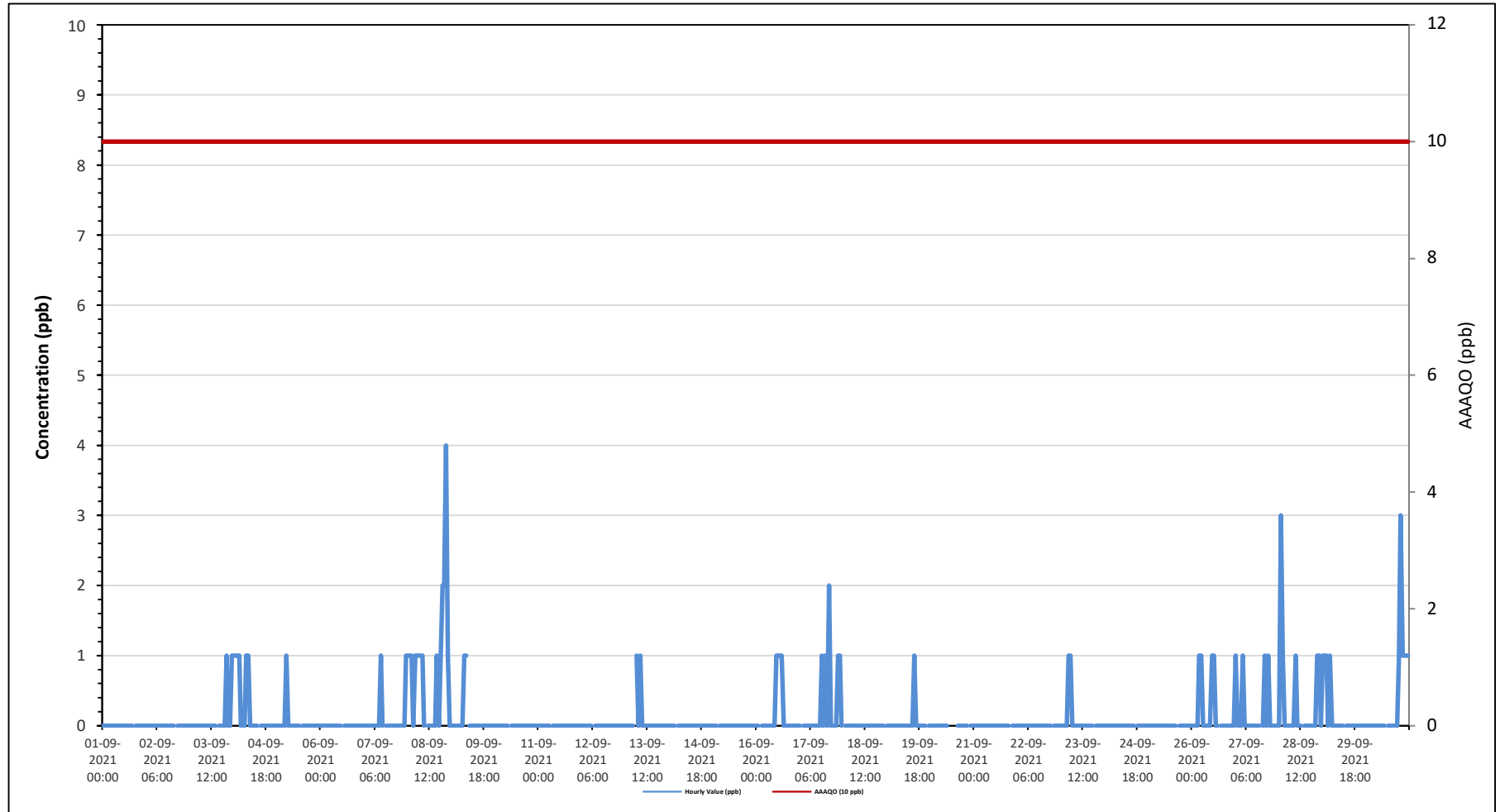
1  10-50

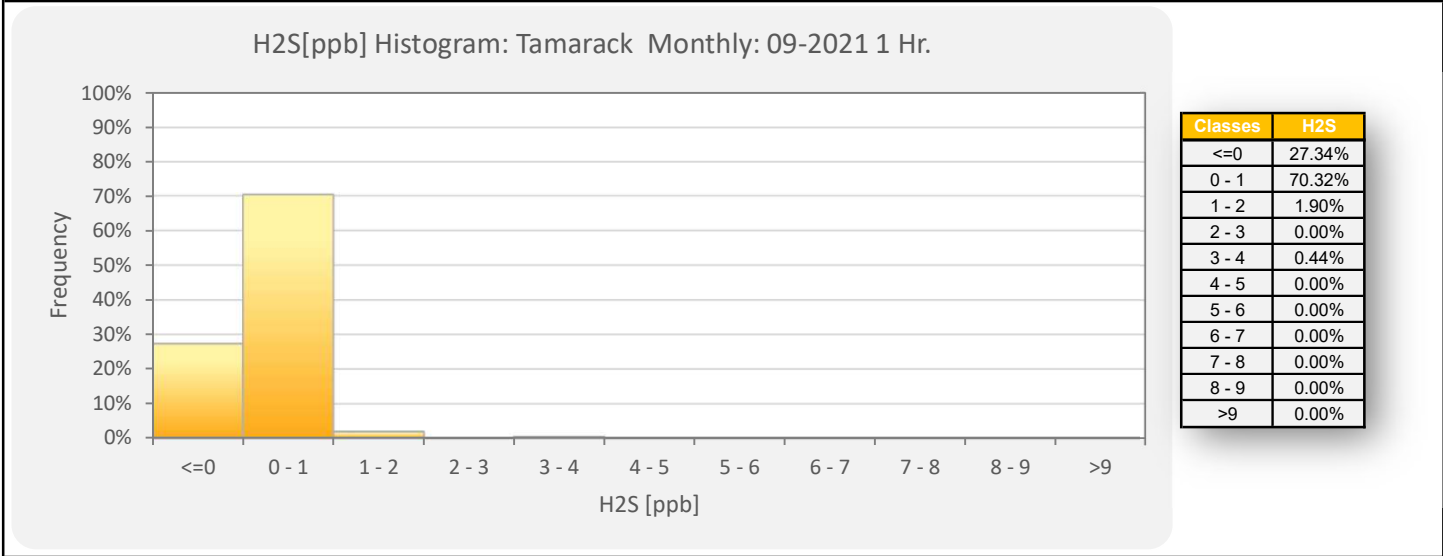
0  50-100

0  100-172

0  >172.0

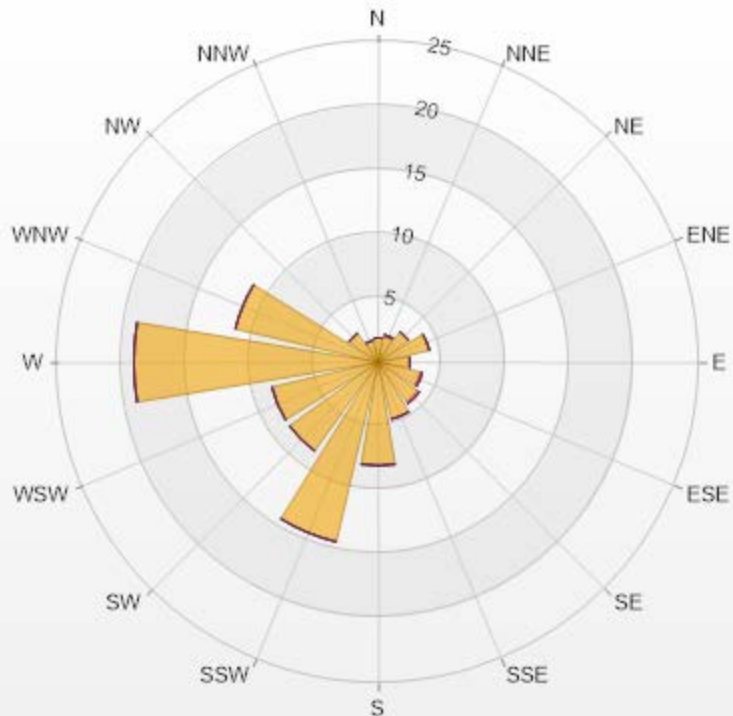
Timeseries Chart of Hourly Average for H2S - Tamarack Site





Wind: Tamarack Poll.: Tamarack-H2S[ppb] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.86% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	1.9	0	0	0	0	1.9
NNE	2.05	0.15	0	0	0	2.2
NE	2.93	0	0	0	0	2.93
ENE	4.1	0	0	0	0	4.1
E	2.49	0	0	0	0	2.49
ESE	3.37	0.15	0	0	0	3.52
SE	3.81	0.15	0	0	0	3.96
SSE	4.54	0	0	0	0	4.54
S	8.05	0	0	0	0	8.05
SSW	14.35	0	0	0	0	14.35
SW	8.49	0	0	0	0	8.49
WSW	8.49	0	0	0	0	8.49
W	19.03	0	0	0	0	19.03
WNW	11.42	0	0	0	0	11.42
NW	2.78	0	0	0	0	2.78
NNW	1.76	0	0	0	0	1.76
Summary	100	0.45	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 - September 2021

Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

Maximum Hourly Value:	31 ppb on September 16 at hour 13	Hours in Service:	720
Maximum Daily Value:	9.9 ppb on September 2	Hours of Data:	682
Minimum Hourly Value:	0 ppb on September 4 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.9 ppb on September 4	Hours of Calibration:	38
Monthly Average:	3.8 ppb	Operational Uptime:	100.0

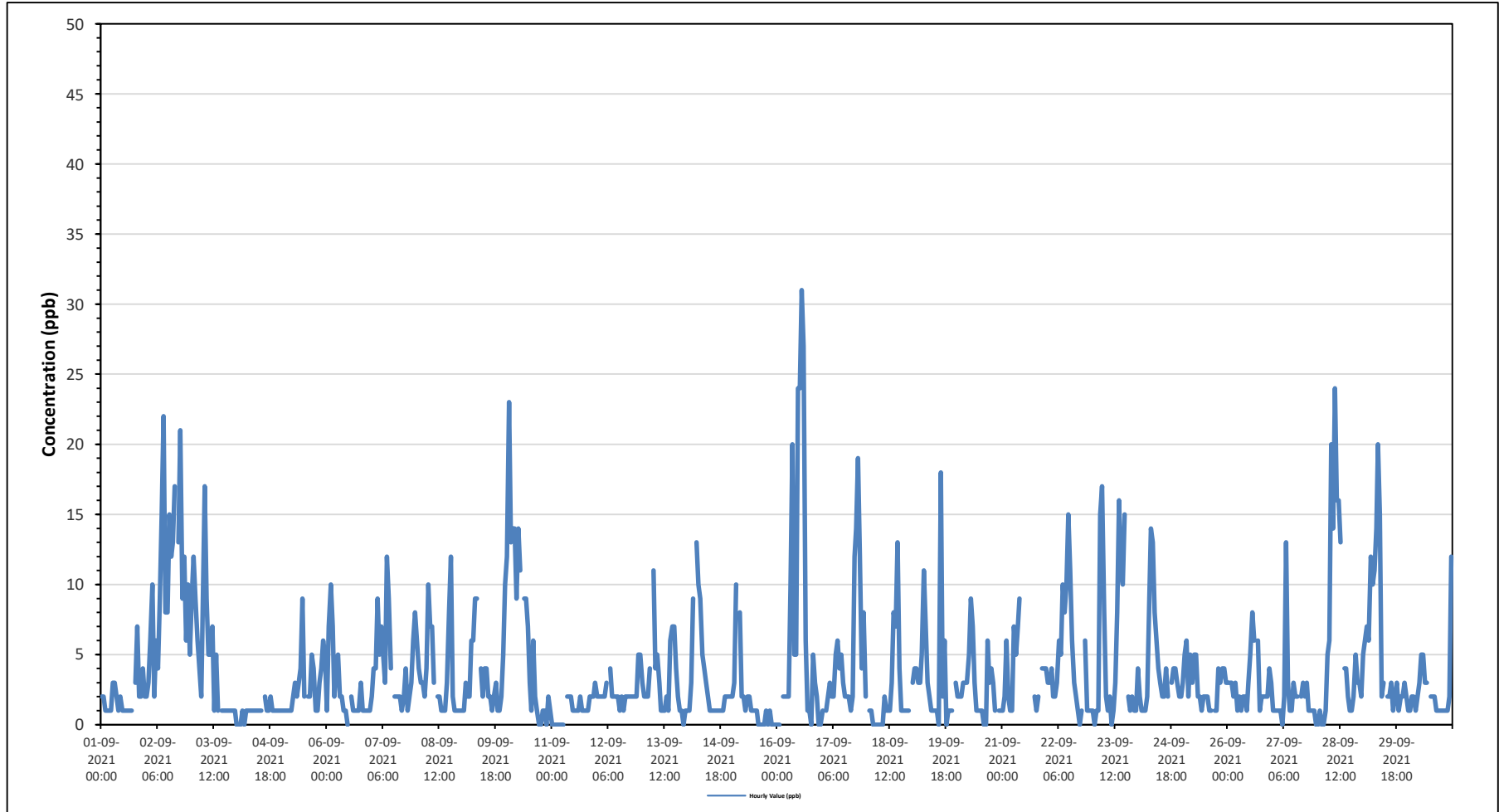
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Sep 1	2	2	1	1	1	1	3	3	2	1	2	1	1	1	1	1	1	S	3	7	2	2	4	2	1	7	2.0	
Sep 2	2	3	6	10	2	6	4	9	15	22	8	8	15	12	13	17	S	13	21	9	12	6	10	5	2	22	9.9	
Sep 3	9	12	9	6	4	2	10	17	9	5	5	7	1	5	1	S	1	1	1	1	1	1	1	1	1	1	17	4.8
Sep 4	0	0	0	1	0	1	1	1	1	1	1	1	1	1	S	2	1	1	2	1	1	1	1	1	0	2	0.9	
Sep 5	1	1	1	1	1	1	2	3	2	3	4	9	2	S	2	2	5	4	1	1	3	4	6	5	1	9	2.8	
Sep 6	1	7	10	7	2	4	5	2	2	1	1	0	S	2	1	1	1	1	3	1	1	1	1	1	0	10	2.4	
Sep 7	2	4	4	9	5	7	5	3	12	9	4	S	2	2	2	2	1	2	4	1	2	3	6	8	1	12	4.3	
Sep 8	6	4	3	3	2	4	10	7	7	3	S	2	2	1	1	1	3	8	12	2	1	1	1	1	1	12	3.7	
Sep 9	1	1	3	2	2	6	6	9	9	S	4	2	4	4	2	2	1	2	3	1	1	2	5	10	1	10	3.6	
Sep 10	12	23	13	14	14	9	14	11	S	9	9	7	3	1	6	2	1	0	0	1	1	0	2	1	0	23	6.7	
Sep 11	0	0	0	0	0	0	0	S	2	2	2	1	1	1	1	2	1	1	1	1	2	2	2	3	0	3	1.1	
Sep 12	2	2	2	2	2	3	S	4	2	2	2	2	1	2	1	2	2	2	2	2	2	2	5	5	1	5	2.3	
Sep 13	3	2	2	2	4	S	11	4	5	3	1	1	1	2	1	6	7	7	4	2	1	1	0	1	0	11	3.1	
Sep 14	1	1	3	9	S	13	10	9	5	4	3	2	1	1	1	1	1	1	1	1	1	2	2	2	1	13	3.3	
Sep 15	2	3	10	S	8	2	2	1	2	2	1	1	1	1	0	0	0	1	0	1	0	0	0	0	0	10	1.7	
Sep 16	0	0	S	2	2	2	10	20	5	5	24	24	31	27	6	1	1	0	5	3	2	0	0	0	0	31	7.5	
Sep 17	1	S	1	2	3	2	2	5	6	4	5	3	2	2	1	2	12	14	19	12	4	8	2	1	19	5.0		
Sep 18	S	1	1	0	0	0	0	0	0	2	1	1	1	3	8	7	13	4	1	1	1	1	1	S	0	13	2.1	
Sep 19	3	4	4	3	3	5	11	7	3	2	1	1	1	1	0	18	2	6	0	1	1	1	S	3	0	18	3.5	
Sep 20	2	2	2	3	3	3	5	9	7	3	1	1	1	1	0	0	6	3	4	3	1	S	1	1	0	9	2.7	
Sep 21	1	2	6	2	1	1	7	5	7	9	C	C	C	C	C	C	C	2	1	2	S	4	4	4	1	9	-	
Sep 22	3	3	4	2	2	3	6	5	10	8	10	15	11	6	3	2	1	0	1	S	6	1	1	1	0	15	4.5	
Sep 23	1	0	1	1	15	17	8	2	1	2	0	1	3	8	16	11	10	15	S	2	1	2	1	1	1	0	17	5.2
Sep 24	4	2	1	1	1	2	9	14	13	8	6	4	3	2	2	4	2	S	3	4	4	3	2	2	1	14	4.2	
Sep 25	3	5	6	2	5	3	5	5	2	2	1	2	2	2	1	1	S	1	1	4	3	4	4	3	1	6	2.9	
Sep 26	3	3	3	2	3	1	2	1	2	2	1	3	5	8	6	S	6	1	2	2	2	2	4	3	1	8	2.9	
Sep 27	1	1	1	1	1	0	2	13	3	1	1	3	2	2	S	2	3	2	3	1	1	1	1	0	0	13	2.0	
Sep 28	0	1	0	0	1	5	6	20	14	24	16	16	13	S	4	4	2	1	1	2	5	3	3	2	0	24	6.2	
Sep 29	5	6	7	6	12	10	11	14	20	15	2	3	S	2	2	3	1	2	3	1	2	2	3	2	1	20	5.8	
Sep 30	1	1	2	2	1	2	3	5	5	3	3	S	2	2	2	1	1	1	1	1	1	1	2	12	1	12	2.4	
Diurnal Maximum	12	23	13	14	15	17	14	20	20	24	16	24	24	31	27	18	13	15	21	19	12	6	10	12				
Dalurnal Average	2.5	3.3	3.7	3.3	3.4	4.0	5.6	6.8	6.5	5.4	3.6	4.5	3.9	3.9	3.9	3.7	2.8	3.4	3.2	2.7	2.6	2.0	2.8	2.8				

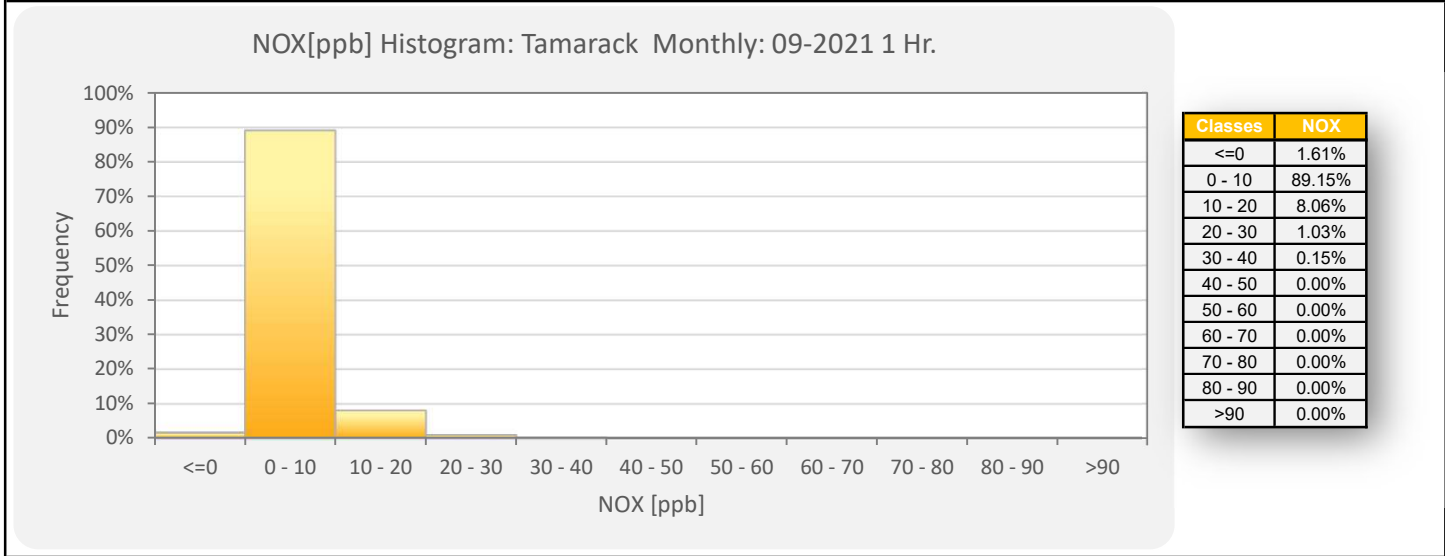
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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

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

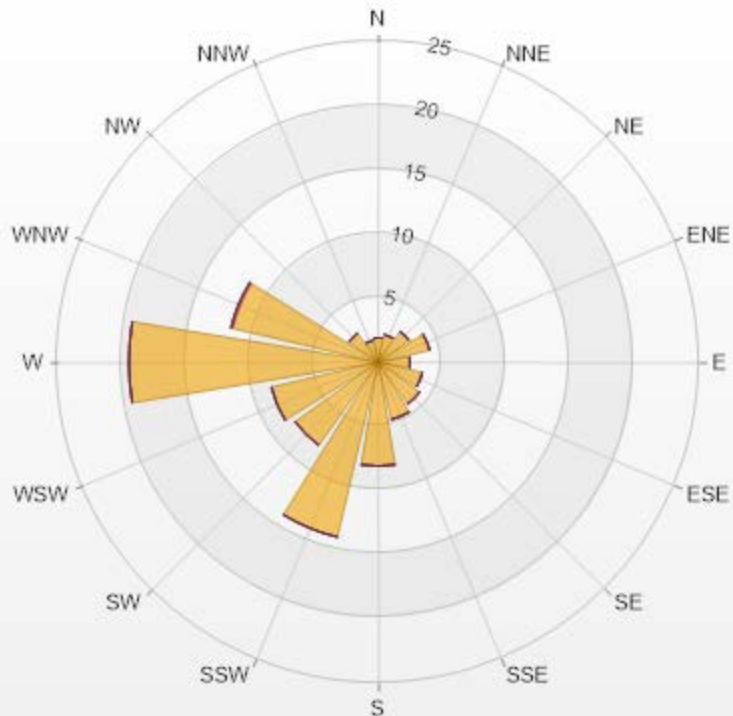
Timeseries Chart of Hourly Average for NOx - Tamarack Site





Wind: Tamarack Poll.: Tamarack-NOX[ppb] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.44% Calm Avg: 0.00 [ppb]

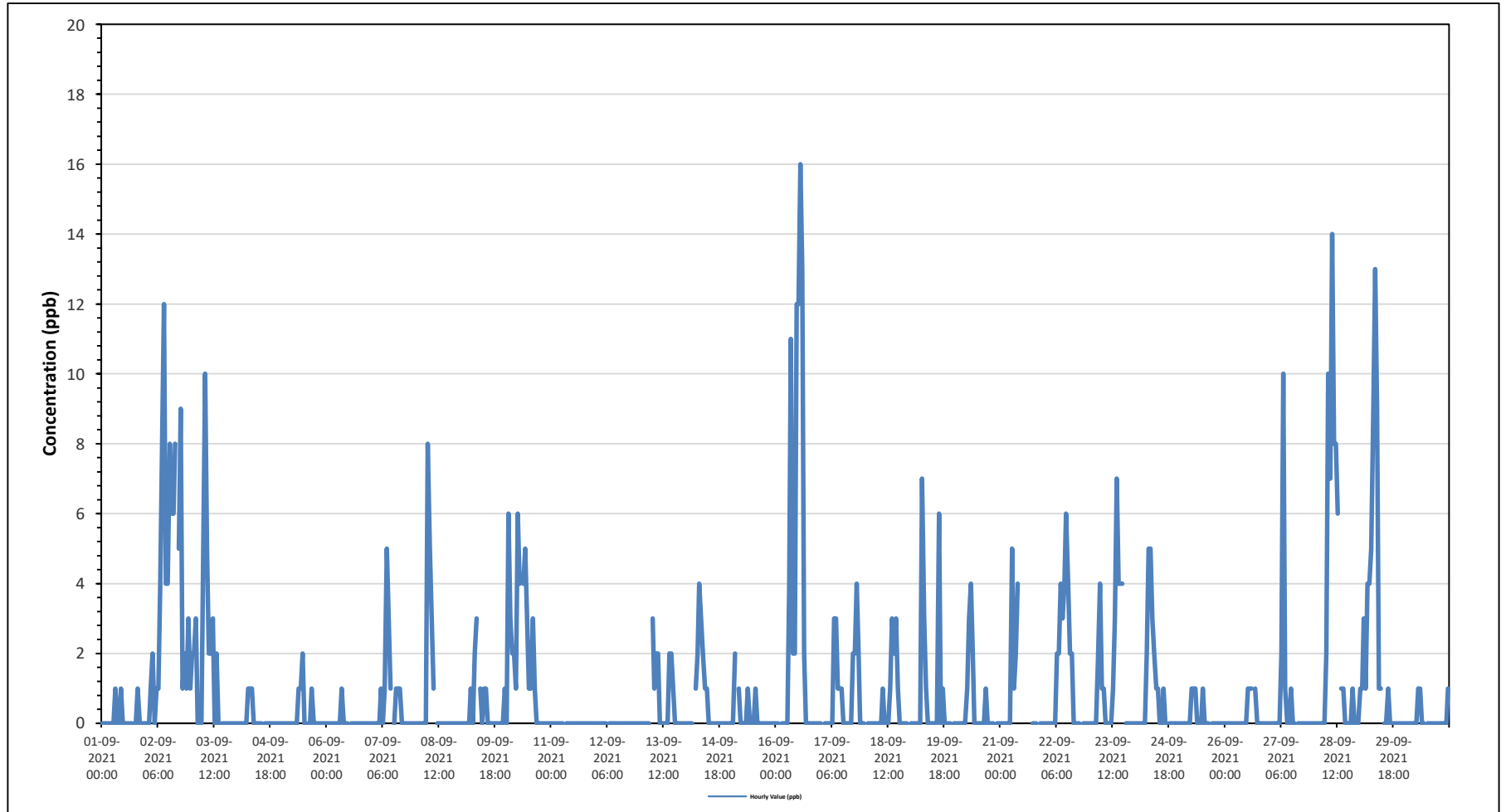
Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	1.91	0	0	0	0	1.91
NNE	2.21	0	0	0	0	2.21
NE	2.94	0	0	0	0	2.94
ENE	4.12	0	0	0	0	4.12
E	2.5	0	0	0	0	2.5
ESE	3.53	0	0	0	0	3.53
SE	3.97	0	0	0	0	3.97
SSE	4.56	0	0	0	0	4.56
S	8.09	0	0	0	0	8.09
SSW	13.97	0	0	0	0	13.97
SW	7.94	0	0	0	0	7.94
WSW	8.53	0	0	0	0	8.53
W	19.41	0	0	0	0	19.41
WNW	11.62	0.15	0	0	0	11.77
NW	2.79	0	0	0	0	2.79
NNW	1.76	0	0	0	0	1.76
Summary	100	0.15	0	0	0	100

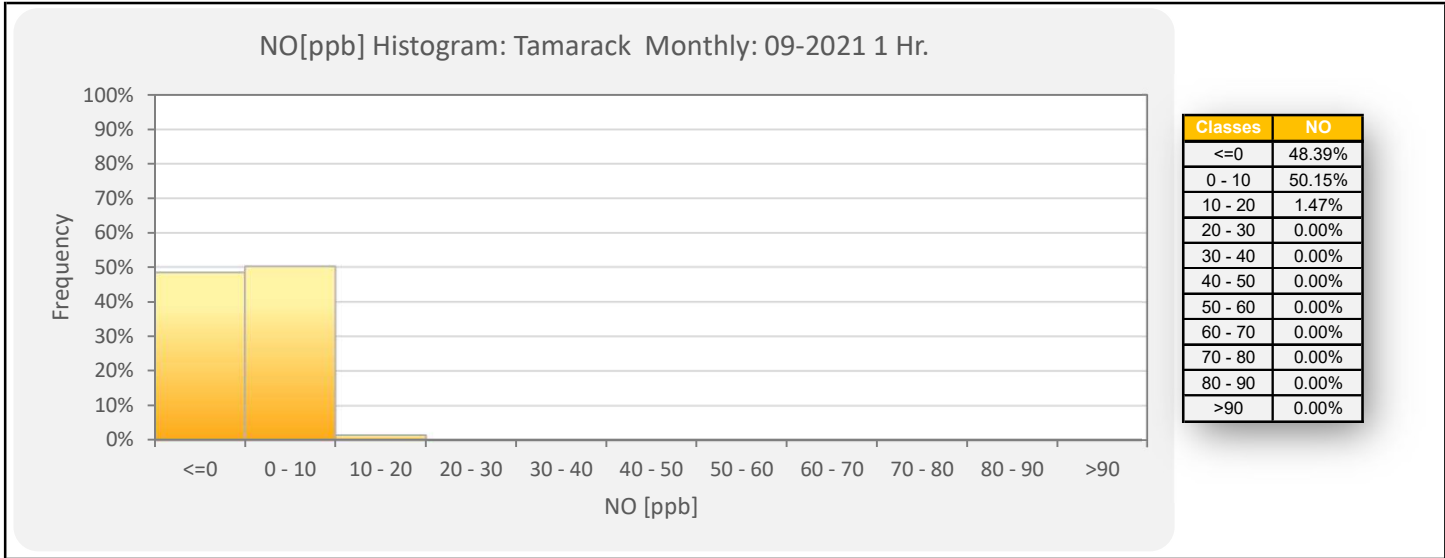


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% Icon Classes (ppb)	100	0-30	0	30-50	0	50-76	0	76-159	0	>159.0
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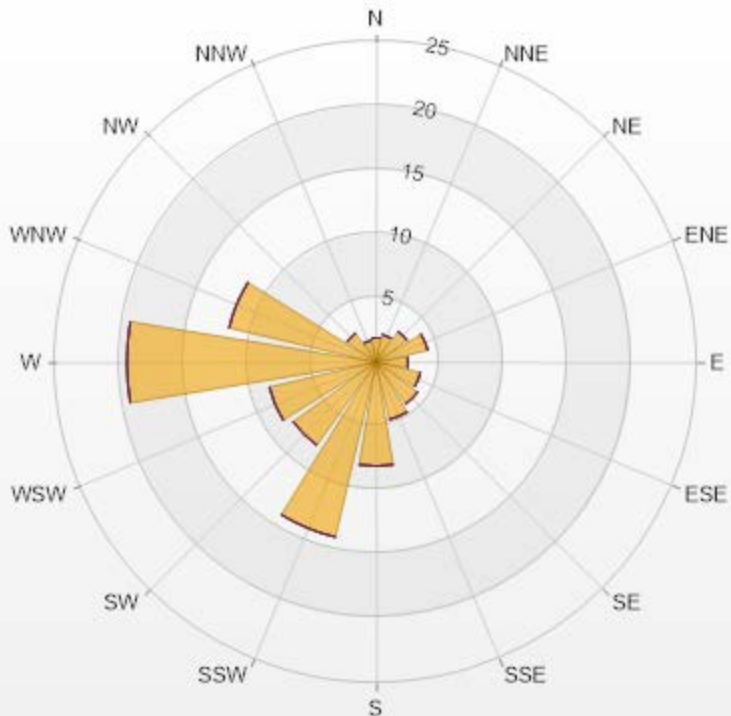
Timeseries Chart of Hourly Average for NO - Tamarack Site





Wind: Tamarack Poll.: Tamarack-NO[ppb] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.44% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	1.91	0	0	0	0	1.91
NNE	2.21	0	0	0	0	2.21
NE	2.94	0	0	0	0	2.94
ENE	4.12	0	0	0	0	4.12
E	2.5	0	0	0	0	2.5
ESE	3.53	0	0	0	0	3.53
SE	3.97	0	0	0	0	3.97
SSE	4.56	0	0	0	0	4.56
S	8.09	0	0	0	0	8.09
SSW	13.97	0	0	0	0	13.97
SW	7.94	0	0	0	0	7.94
WSW	8.53	0	0	0	0	8.53
W	19.41	0	0	0	0	19.41
WNW	11.76	0	0	0	0	11.76
NW	2.79	0	0	0	0	2.79
NNW	1.76	0	0	0	0	1.76
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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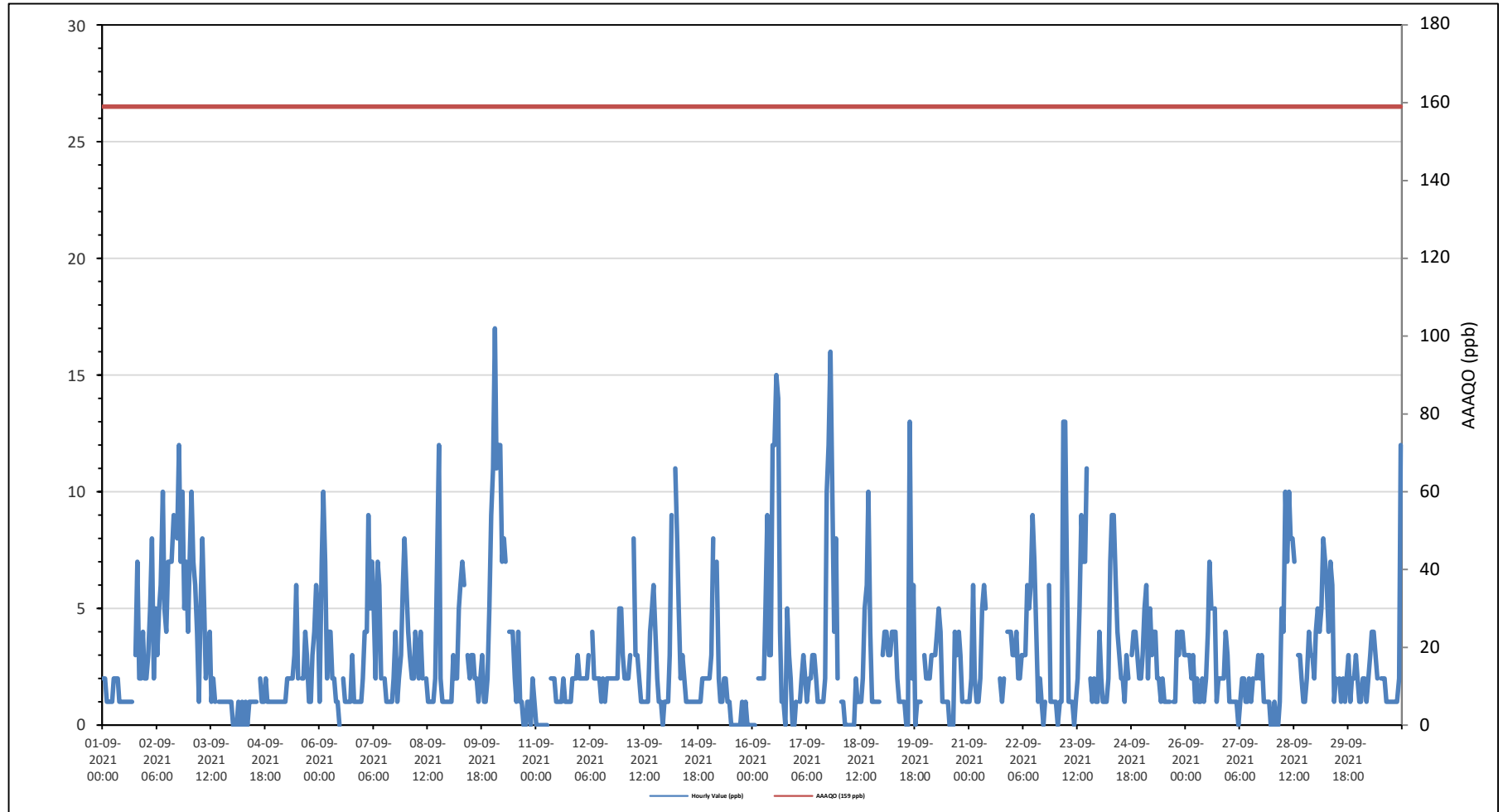
Tamarack Site - September 2021

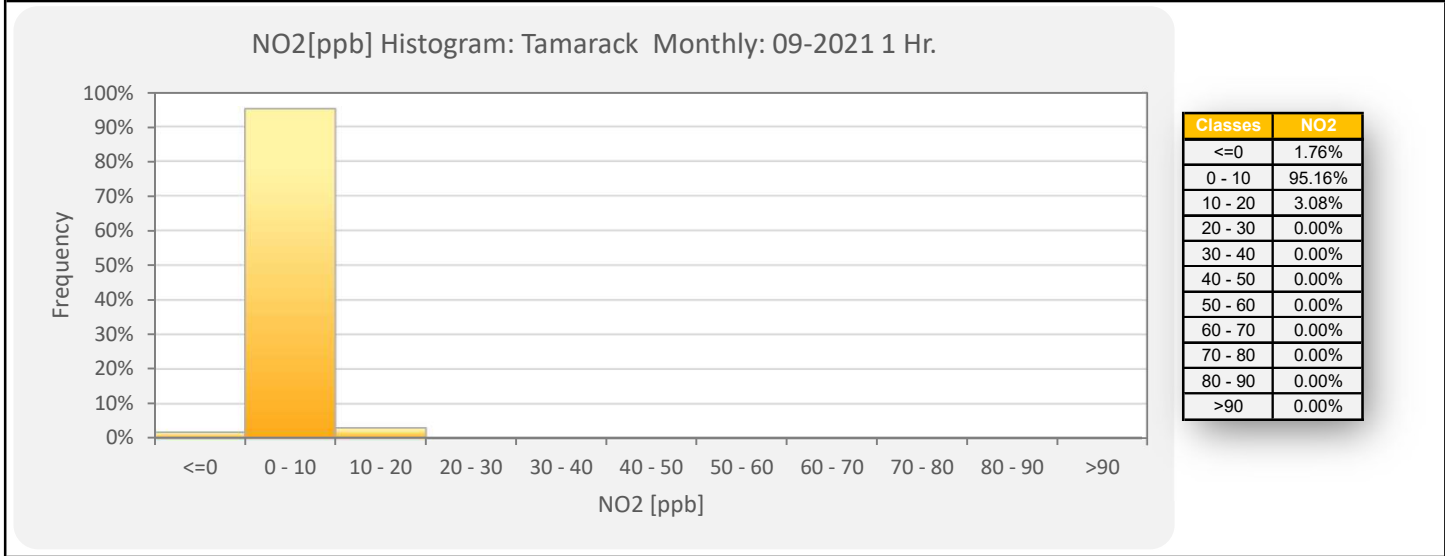
Summary of Hourly Averages

NITROGEN DIOXIDE (NO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb																																															
Number of 1-Hour Exceedences: 0																																															
Maximum Hourly Value: 17 ppb on September 10 at hour 1												Hours in Service: 720																																			
Maximum Daily Value: 6.1 ppb on September 2												Hours of Data: 682																																			
Minimum Hourly Value: 0 ppb on September 4 at hour 0												Hours of Missing Data: 0																																			
Minimum Daily Value: 0.8 ppb on September 4												Hours of Calibration: 38																																			
Monthly Average: 2.9 ppb												Operational Uptime: 100.0																																			
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average																					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23																							
Sep 1	2	2	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	S	3	7	2	2	4	2	1	7	1.8																				
Sep 2	2	3	5	8	2	5	3	5	6	10	5	4	7	7	7	9	S	8	12	7	10	5	7	4	2	12	6.1																				
Sep 3	7	10	7	6	4	1	5	8	5	2	3	4	1	2	1	S	1	1	1	1	1	1	1	1	1	10	3.2																				
Sep 4	0	0	0	1	0	1	0	1	0	1	1	1	1	1	S	2	1	1	2	1	1	1	1	1	1	0	2	0.8																			
Sep 5	1	1	1	1	1	1	2	2	2	2	3	6	2	S	2	2	4	3	1	1	3	4	6	5	1	6	2.4																				
Sep 6	1	7	10	7	2	4	4	2	2	1	1	0	S	2	1	1	1	1	3	1	1	1	1	1	0	10	2.4																				
Sep 7	2	4	4	9	5	7	5	2	7	6	2	S	2	1	1	1	1	2	4	1	2	3	6	8	1	9	3.7																				
Sep 8	6	4	3	2	2	4	3	2	4	2	S	2	1	1	1	1	2	7	12	2	1	1	1	1	1	12	2.8																				
Sep 9	1	1	3	2	2	5	6	7	6	S	3	2	3	3	2	2	1	2	3	1	1	2	5	9	1	9	3.1																				
Sep 10	11	17	11	12	12	7	8	7	S	4	4	4	2	1	4	1	1	0	0	1	1	0	2	1	0	17	4.8																				
Sep 11	0	0	0	0	0	0	0	S	2	2	2	1	1	1	1	2	1	1	1	1	2	2	2	3	0	3	1.1																				
Sep 12	2	2	2	2	2	3	S	4	2	2	2	2	1	2	1	2	2	2	2	2	2	2	5	5	1	5	2.3																				
Sep 13	3	2	2	2	3	S	8	3	3	2	1	1	1	1	1	4	5	6	4	2	1	1	0	1	0	8	2.5																				
Sep 14	1	1	3	9	S	11	8	5	2	3	2	1	1	1	1	1	1	1	1	1	2	2	2	2	1	11	2.7																				
Sep 15	2	3	8	S	7	2	1	1	2	2	1	1	0	0	0	0	0	0	1	0	1	0	0	0	0	8	1.4																				
Sep 16	0	0	S	2	2	2	2	5	9	3	3	12	12	15	14	4	1	1	0	5	3	2	0	0	0	15	4.2																				
Sep 17	1	S	1	2	3	2	1	2	2	3	3	2	1	1	1	2	10	12	16	10	4	8	2	1	16	3.9																					
Sep 18	S	1	1	0	0	0	0	0	0	2	1	1	1	2	5	6	10	4	1	1	1	1	1	S	0	10	1.8																				
Sep 19	3	4	4	3	3	4	4	4	2	1	1	1	1	0	0	13	2	6	0	1	1	1	S	3	0	13	2.7																				
Sep 20	2	2	2	3	3	3	4	5	4	1	1	1	1	0	0	0	4	3	4	3	1	S	1	1	0	5	2.1																				
Sep 21	1	2	6	2	1	1	2	5	6	5	C	C	C	C	C	C	C	2	1	2	S	4	4	4	1	6	-																				
Sep 22	3	3	4	2	2	3	3	3	6	5	6	9	7	4	1	2	1	0	1	S	6	1	1	1	0	9	3.2																				
Sep 23	1	0	1	1	13	13	7	1	1	1	0	1	2	5	9	7	7	11	S	2	1	2	1	1	0	13	3.8																				
Sep 24	4	2	1	1	1	2	7	9	9	6	4	3	2	2	1	3	2	S	3	4	4	4	3	2	1	9	3.3																				
Sep 25	3	5	6	2	5	3	4	4	2	2	1	2	1	1	1	1	S	1	1	4	3	4	4	3	1	6	2.7																				
Sep 26	3	3	3	2	3	1	2	1	1	2	1	2	4	7	5	S	5	1	2	2	2	2	4	3	1	7	2.7																				
Sep 27	1	1	1	1	1	0	1	2	2	1	1	2	1	2	S	2	3	2	3	1	1	1	1	0	0	3	1.3																				
Sep 28	0	1	0	0	1	5	4	10	7	10	8	8	7	S	3	3	2	1	1	2	4	3	3	2	0	10	3.7																				
Sep 29	4	5	4	5	8	7	6	4	7	6	1	2	S	2	1	2	1	2	3	1	2	2	3	2	1	8	3.5																				
Sep 30	1	1	2	2	1	2	3	4	4	3	2	S	2	2	2	1	1	1	1	1	1	1	2	12	1	12	2.3																				
Diurnal Maximum	11	17	11	12	13	13	8	10	9	10	8	12	12	15	14	13	10	11	12	16	10	5	8	12																							
Daiurnal Average	2.3	3.0	3.3	3.1	3.1	3.4	3.6	3.8	3.7	3.1	2.3	2.8	2.4	2.5	2.5	2.7	2.3	2.9	2.6	2.4	2.0	2.7	2.8																								
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.																																															

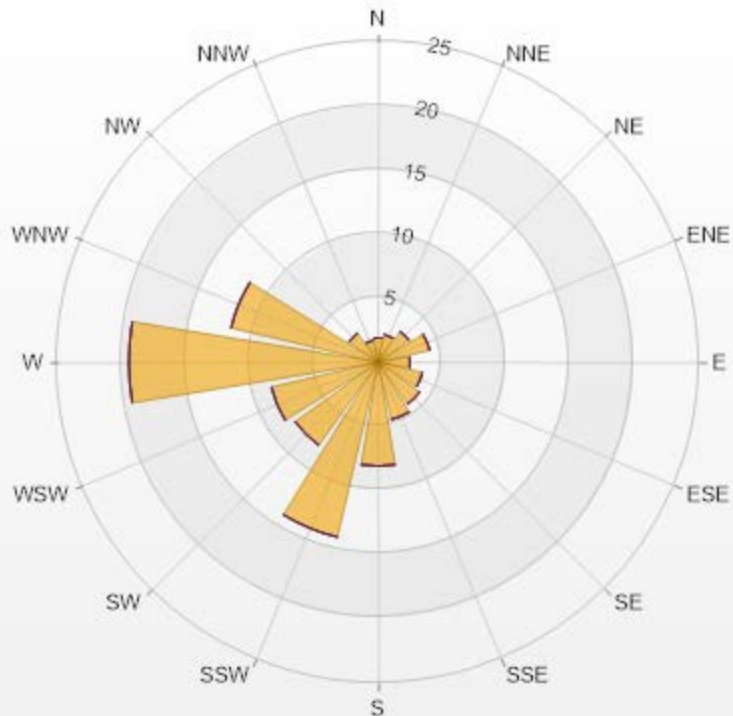
Timeseries Chart of Hourly Average for NO2 - Tamarack Site





Wind: Tamarack Poll.: Tamarack-NO2[ppb] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.44% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	1.91	0	0	0	0	1.91
NNE	2.21	0	0	0	0	2.21
NE	2.94	0	0	0	0	2.94
ENE	4.12	0	0	0	0	4.12
E	2.5	0	0	0	0	2.5
ESE	3.53	0	0	0	0	3.53
SE	3.97	0	0	0	0	3.97
SSE	4.56	0	0	0	0	4.56
S	8.09	0	0	0	0	8.09
SSW	13.97	0	0	0	0	13.97
SW	7.94	0	0	0	0	7.94
WSW	8.53	0	0	0	0	8.53
W	19.41	0	0	0	0	19.41
WNW	11.76	0	0	0	0	11.76
NW	2.79	0	0	0	0	2.79
NNW	1.76	0	0	0	0	1.76
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 - September 2021

Summary of Hourly Averages

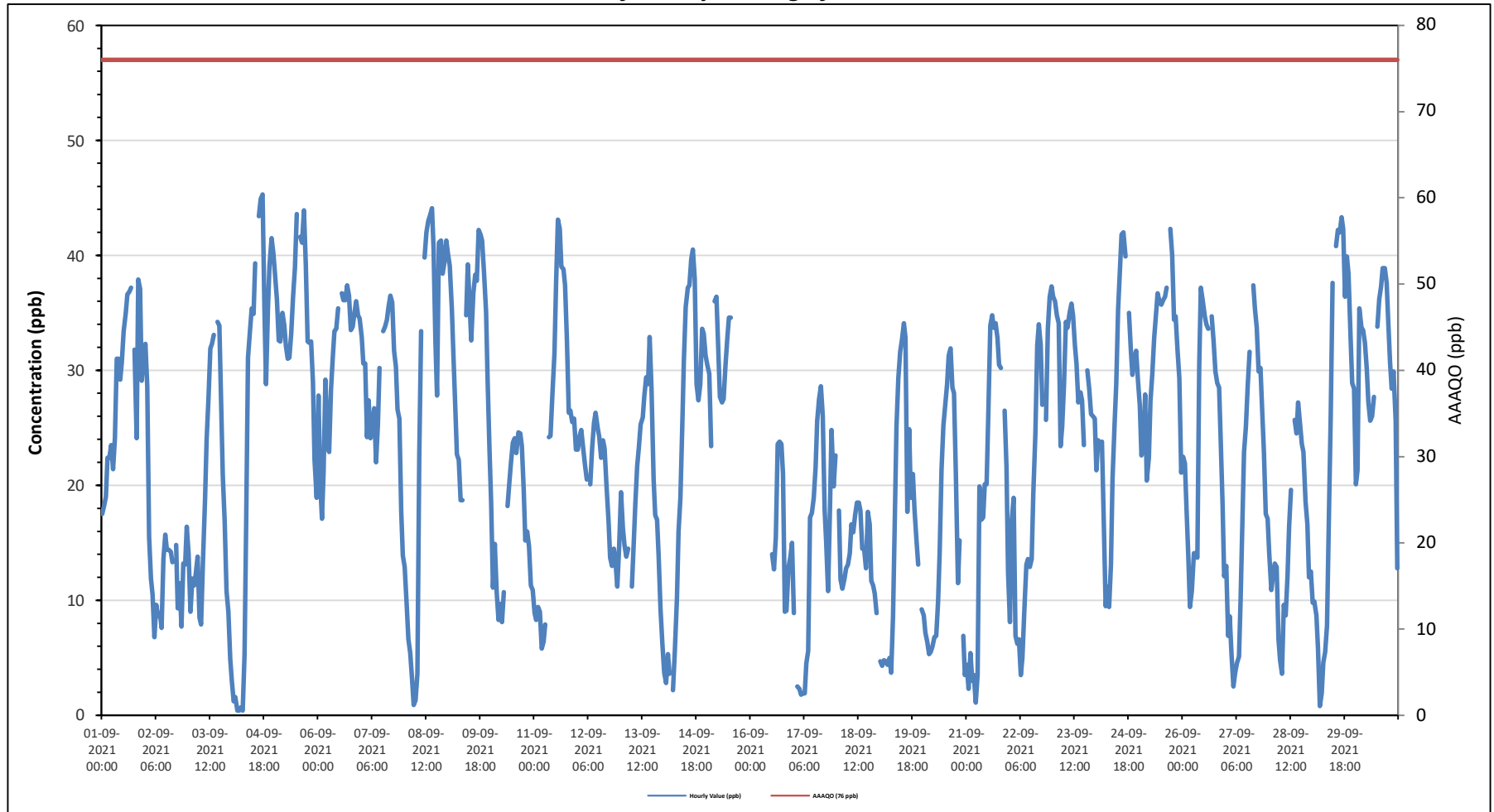
OZONE (O₃) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb																												
Number of 1-Hour Exceedences: 0																												
Maximum Hourly Value: 45.3 ppb on September 4 at hour 17												Hours in Service: 720																
Maximum Daily Value: 34.3 ppb on September 5												Hours of Data: 668																
Minimum Hourly Value: 0.4 ppb on September 4 at hour 3												Hours of Missing Data: 15																
Minimum Daily Value: 13.6 ppb on September 2												Hours of Calibration: 37																
Monthly Average: 23.0 ppb												Operational Uptime: 97.9																
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
Sep 1	17.5	18.2	19.0	22.4	22.4	23.5	21.4	24.1	31.0	31.0	29.2	30.7	33.4	35.0	36.6	36.8	37.2	S	31.8	24.1	37.9	37.1	29.1	31.2	17.5	37.9	28.7	
Sep 2	32.3	28.6	15.5	11.9	10.5	6.8	9.6	8.6	8.9	7.6	13.6	15.7	14.4	14.4	14.2	13.3	S	14.8	9.3	11.5	7.7	13.2	13.1	16.4	6.8	32.3	13.6	
Sep 3	14.0	9.0	11.9	11.3	12.3	13.8	8.5	7.9	13.3	18.8	24.0	27.6	31.9	32.3	33.1	S	43.4	44.9	33.9	27.8	20.8	16.9	10.8	9.0	4.9	4.9	34.2	18.6
Sep 4	3.0	1.2	1.6	0.4	0.4	0.7	0.4	5.3	16.5	31.1	33.3	35.4	34.9	39.3	S	43.4	44.9	45.3	35.4	28.8	35.2	39.1	41.5	40.1	0.4	45.3	24.2	
Sep 5	38.3	36.2	32.6	32.5	35.0	33.9	32.1	31.0	31.1	33.2	36.4	38.9	43.6	S	41.6	41.1	43.9	39.2	32.5	32.4	32.5	29.0	22.2	18.9	18.9	43.9	34.3	
Sep 6	27.8	20.4	17.1	21.1	29.2	23.5	22.9	28.3	31.2	33.4	33.6	35.4	S	36.7	36.1	36.1	37.4	36.5	33.5	33.8	34.9	36.0	34.8	34.5	17.1	37.4	31.1	
Sep 7	32.9	30.6	30.6	24.2	27.4	24.1	25.3	26.7	22.0	25.3	30.2	S	33.4	33.8	34.4	35.5	36.5	35.9	31.7	30.3	26.6	25.8	17.7	13.9	13.9	36.5	28.5	
Sep 8	12.9	9.4	6.6	5.4	3.1	0.9	1.3	3.6	22.6	33.4	S	39.8	42.0	43.0	43.5	44.1	40.6	32.5	27.8	41.1	41.3	38.4	39.4	41.3	0.9	44.1	26.7	
Sep 9	40.2	39.1	35.3	31.2	26.7	22.7	22.2	18.7	18.7	S	34.8	39.2	35.8	32.6	36.7	38.3	37.8	42.2	41.8	41.3	38.6	35.1	29.0	23.0	18.7	42.2	33.1	
Sep 10	18.6	11.1	14.9	10.7	8.3	9.7	8.1	10.7	S	18.2	20.3	22.0	23.7	24.1	22.8	24.6	24.5	23.4	19.6	15.2	16.0	14.7	11.3	10.9	8.1	24.6	16.7	
Sep 11	8.9	8.3	9.4	9.0	5.8	6.4	7.9	S	24.2	24.3	28.3	31.5	37.5	43.1	42.3	39.0	38.8	37.4	32.6	26.3	26.5	25.5	25.8	23.1	5.8	43.1	24.4	
Sep 12	23.1	24.3	24.8	23.3	21.8	20.5	S	20.1	23.2	25.4	26.3	25.0	24.2	22.4	23.9	23.2	20.1	16.9	13.7	13.0	14.5	13.4	11.2	14.7	11.2	26.3	20.4	
Sep 13	19.4	16.3	14.8	13.8	14.5	S	11.2	15.0	18.4	21.7	23.2	25.3	25.9	27.8	29.4	28.8	32.9	28.4	20.5	17.4	17.0	13.8	9.2	6.2	6.2	32.9	19.6	
Sep 14	3.7	2.8	5.3	3.6	S	2.2	5.6	10.2	16.0	18.9	25.1	30.8	35.5	37.2	37.4	39.7	40.5	38.0	28.8	27.4	28.8	33.6	33.2	31.3	2.2	40.5	23.3	
Sep 15	30.4	29.7	23.4	S	36.0	36.4	32.4	27.7	27.2	27.5	30.4	32.8	34.6	34.6	C	C	C	NRM	NRM	NRM	NRM	NRM	NRM	NRM	23.4	36.4	-	
Sep 16	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	C	C	C	C	14.0	12.7	15.5	23.6	23.8	23.6	21.0	9.0	9.1	12.9	13.8	15.0	9.0	23.8	-	
Sep 17	8.9	S	2.5	2.3	1.8	1.9	1.9	4.5	5.6	17.2	17.6	18.9	21.6	25.6	27.5	28.6	26.0	17.9	15.0	10.8	17.8	24.8	19.9	22.6	1.8	28.6	14.8	
Sep 18	S	17.8	11.8	11.0	11.9	12.8	13.1	14.1	16.6	15.9	17.4	18.5	18.5	17.8	14.5	14.5	12.8	17.7	16.6	11.7	11.3	10.6	8.9	S	8.9	18.5	14.4	
Sep 19	4.7	4.3	4.8	4.7	4.4	5.0	3.7	8.6	16.1	25.1	29.3	31.6	32.7	34.1	32.8	17.7	24.9	18.9	21.0	17.9	15.4	13.1	S	9.2	3.7	34.1	16.5	
Sep 20	8.7	7.2	6.4	5.3	5.5	6.0	6.8	6.9	9.9	14.2	21.4	25.2	27.0	28.8	31.3	31.9	28.5	28.0	21.0	11.5	15.2	S	6.9	3.5	3.5	31.9	15.5	
Sep 21	4.4	2.3	5.4	3.0	3.5	1.1	3.5	19.9	17.0	17.2	20.1	20.1	25.8	33.9	34.8	33.7	34.1	32.8	30.5	30.2	S	26.5	21.6	12.4	1.1	34.8	18.9	
Sep 22	8.1	17.0	18.9	6.9	6.2	6.6	3.5	5.0	9.5	13.1	13.6	12.9	13.6	19.2	24.5	32.2	34.0	32.2	27.0	S	25.7	33.6	36.4	37.3	3.5	37.3	19.0	
Sep 23	36.4	36.0	34.8	34.1	23.4	25.1	28.8	34.2	33.7	35.0	35.8	34.8	32.2	30.6	27.2	28.1	27.4	23.5	S	30.0	28.4	26.2	26.0	25.8	23.4	36.4	30.3	
Sep 24	21.3	23.9	23.2	23.8	16.8	9.5	11.2	9.4	13.1	20.6	25.5	28.8	35.3	38.8	41.8	42.0	39.9	S	35.0	31.8	29.6	31.0	31.7	29.1	9.4	42.0	26.7	
Sep 25	26.9	22.6	23.2	27.9	20.4	22.4	27.3	29.7	32.8	34.6	36.7	35.9	35.7	36.1	36.4	37.2	S	42.3	40.0	34.4	34.7	31.8	29.3	21.1	20.4	42.3	31.3	
Sep 26	22.5	21.9	18.0	13.7	9.4	10.8	14.1	14.1	13.7	30.4	37.2	36.1	34.7	34.0	33.6	S	34.7	32.6	29.9	28.9	28.5	23.9	18.4	12.1	9.4	37.2	24.1	
Sep 27	13.0	6.9	8.6	5.2	2.5	3.6	4.5	5.1	10.0	17.0	22.9	25.1	28.7	31.6	S	37.4	35.4	33.7	29.9	30.2	26.2	22.9	17.5	17.1	2.5	37.4	18.9	
Sep 28	14.1	10.9	12.3	13.2	12.9	6.6	4.8	3.6	9.6	8.7	12.1	16.4	19.6	S	25.7	24.5	27.2	25.4	23.6	22.9	18.6	16.6	12.0	12.5	3.6	27.2	15.4	
Sep 29	9.8	9.9	8.7	5.8	0.8	1.9	4.6	5.5	7.8	17.1	26.1	37.6	S	40.8	42.2	42.0	43.3	42.3	36.4	39.9	38.4	32.8	28.9	28.4	0.8	43.3	24.0	
Sep 30	20.1	21.3	35.4	33.7	33.5	32.4	30.1	27.2	25.6	26.0	27.7	S	33.8	36.2	37.3	38.9	38.9	37.6	34.2	30.6	28.4	29.9	25.6	12.8	12.8	38.9	30.3	
Diurnal Maximum	40.2	39.1	35.4	34.1	36.0	36.4	32.4	34.2	33.7	35.0	37.2	39.8	43.6	43.1	43.5	44.1	44.9	45.3	41.8	41.3	41.3	39.1	41.5	41.3				
Diurnal Average	18.6	17.4	16.4	14.7	14.5	13.2	13.1	15.2	18.8	22.9	26.1	28.6	29.4	31.3	31.7	32.5	33.3	30.8	27.4	25.1	25.1	25.1	22.3	20.3				
C	Monthly Calibration							S	Daily Zero-Span Check							Q	Quality Assurance											
K	Collection Error							N	No Data (Machine Not in Service)							Y	Routine Maintenance							P	Power Failure			
X	Invalid Data (Equipment Malfunction / Recovery)							NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																			

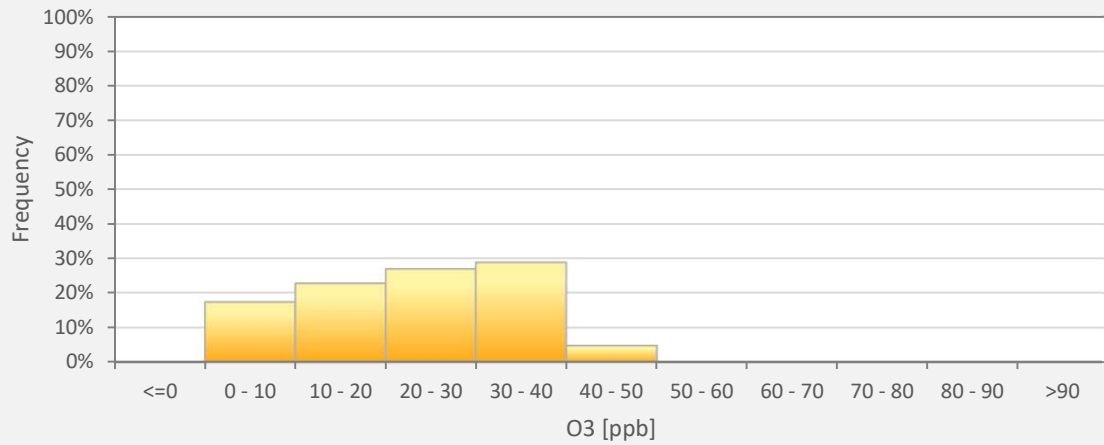
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.

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

Timeseries Chart of Hourly Average for O3 - Tamarack Site



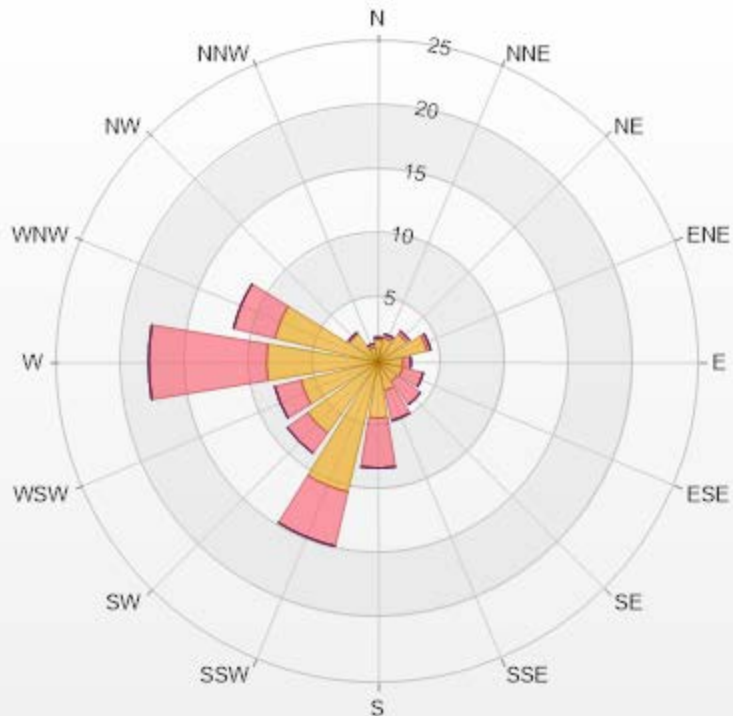
O3[ppb] Histogram: Tamarack Monthly: 09-2021 1 Hr.



Classes	O3
<=0	0.00%
0 - 10	17.22%
10 - 20	22.60%
20 - 30	26.80%
30 - 40	28.59%
40 - 50	4.79%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: Tamarack Poll.: Tamarack-O3[ppb] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 92.50% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	1.8	0.15	0	0	0	1.95
NNE	1.95	0.3	0	0	0	2.25
NE	2.7	0.3	0	0	0	3
ENE	3.9	0.3	0	0	0	4.2
E	1.95	0.6	0	0	0	2.55
ESE	1.95	1.65	0	0	0	3.6
SE	1.8	2.25	0	0	0	4.05
SSE	2.25	2.4	0	0	0	4.65
S	4.35	3.9	0	0	0	8.25
SSW	10.36	4.35	0	0	0	14.71
SW	6.76	1.95	0	0	0	8.71
WSW	6.16	2.1	0	0	0	8.26
W	8.71	9.16	0	0	0	17.87
WNW	8.26	3.3	0	0	0	11.56
NW	2.7	0.15	0	0	0	2.85
NNW	1.2	0.3	0	0	0	1.5
Summary	66.8	33.16	0	0	0	100



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

Tamarack Site - September 2021

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

Maximum Hourly Value:	2.50 ppm on September 28 at hour 1	Hours in Service:	720
Maximum Daily Value:	2.09 ppm on September 4	Hours of Data:	685
Minimum Hourly Value:	1.84 ppm on September 21 at hour 16	Hours of Missing Data:	0
Minimum Daily Value:	1.88 ppm on September 16	Hours of Calibration:	35
Monthly Average:	1.94 ppm	Operational Uptime:	100.0

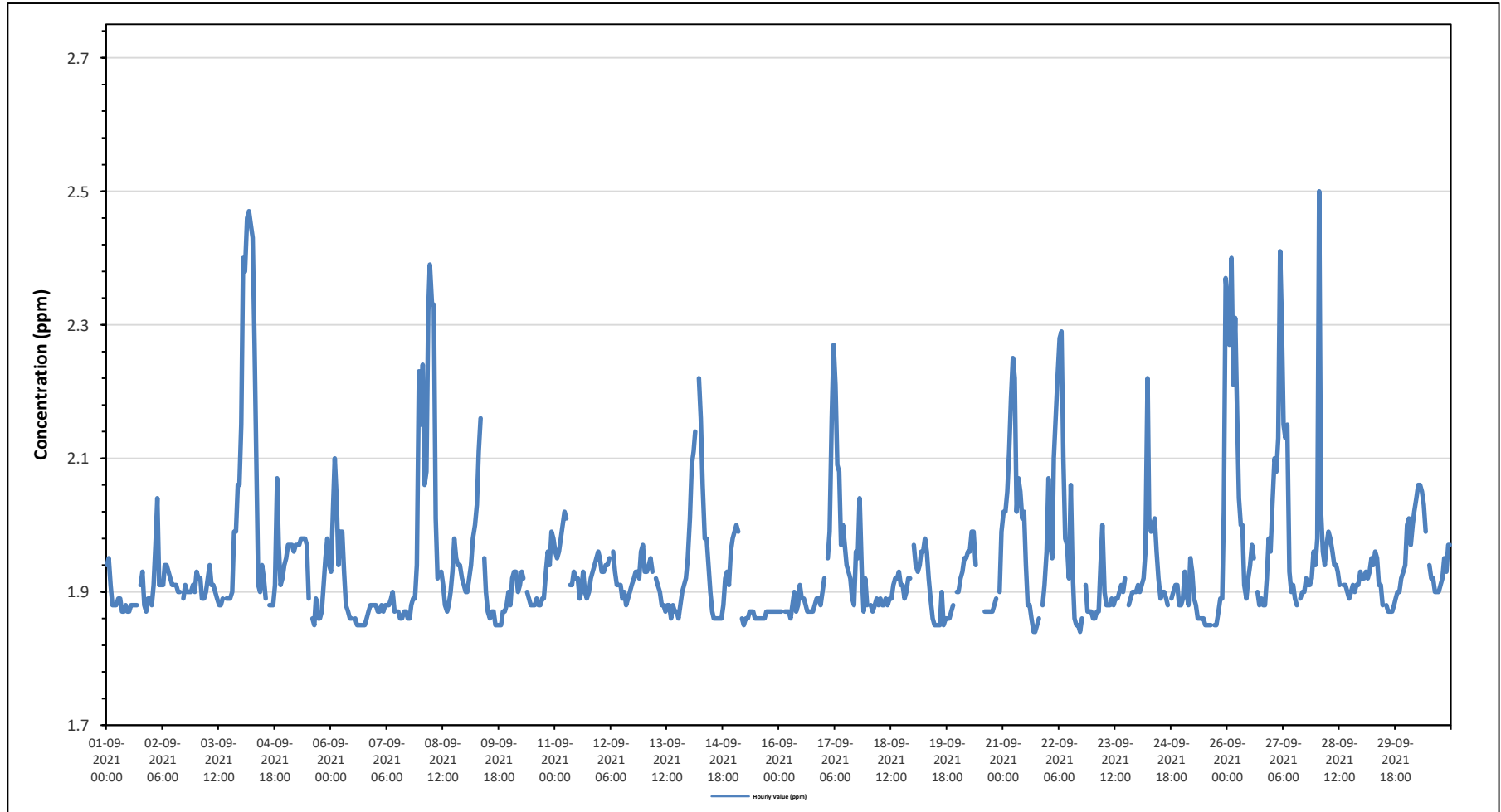
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Sep 1	1.94	1.95	1.91	1.88	1.88	1.88	1.89	1.89	1.87	1.87	1.88	1.87	1.87	1.88	1.88	1.88	1.88	S	1.91	1.93	1.88	1.87	1.89	1.89	1.87	1.95	1.89	
Sep 2	1.88	1.91	1.97	2.04	1.91	1.91	1.91	1.94	1.94	1.93	1.92	1.91	1.91	1.91	1.90	1.90	S	1.89	1.91	1.90	1.90	1.91	1.90	1.91	1.90	1.88	2.04	1.92
Sep 3	1.93	1.92	1.92	1.89	1.89	1.90	1.92	1.94	1.91	1.91	1.90	1.89	1.88	1.88	1.89	S	1.89	1.89	1.89	1.90	1.99	1.99	2.06	2.06	1.88	2.06	1.92	
Sep 4	2.15	2.40	2.38	2.46	2.47	2.45	2.43	2.27	2.09	1.91	1.90	1.94	1.92	1.89	S	1.88	1.88	1.88	1.91	2.07	1.97	1.91	1.92	1.94	1.88	2.47	2.09	
Sep 5	1.95	1.97	1.97	1.97	1.96	1.97	1.97	1.97	1.98	1.98	1.98	1.97	1.89	S	1.86	1.85	1.89	1.86	1.86	1.87	1.91	1.95	1.98	1.94	1.85	1.98	1.93	
Sep 6	1.93	2.03	2.10	2.04	1.94	1.99	1.99	1.93	1.88	1.87	1.86	1.86	S	1.86	1.85	1.85	1.85	1.85	1.85	1.86	1.87	1.88	1.88	1.88	1.85	2.10	1.91	
Sep 7	1.88	1.87	1.87	1.88	1.87	1.88	1.88	1.88	1.89	1.90	1.87	S	1.87	1.86	1.86	1.87	1.87	1.86	1.86	1.88	1.89	1.89	1.94	2.23	1.86	2.23	1.89	
Sep 8	2.15	2.24	2.06	2.08	2.32	2.39	2.33	2.33	2.01	1.92	S	1.93	1.91	1.88	1.87	1.88	1.90	1.93	1.98	1.95	1.94	1.94	1.92	1.91	1.87	2.39	2.03	
Sep 9	1.90	1.90	1.92	1.94	1.98	2.00	2.03	2.11	2.16	S	1.95	1.90	1.87	1.86	1.87	1.87	1.85	1.85	1.85	1.85	1.87	1.87	1.88	1.90	1.85	2.16	1.92	
Sep 10	1.88	1.92	1.93	1.93	1.90	1.91	1.93	1.92	S	1.90	1.89	1.88	1.88	1.88	1.89	1.88	1.88	1.89	1.89	1.93	1.96	1.94	1.99	1.98	1.88	1.99	1.91	
Sep 11	1.96	1.95	1.96	1.98	2.00	2.02	2.01	S	1.91	1.91	1.93	1.92	1.92	1.89	1.90	1.93	1.90	1.89	1.90	1.92	1.93	1.94	1.95	1.96	1.89	2.02	1.94	
Sep 12	1.95	1.93	1.93	1.94	1.94	1.95	S	1.96	1.93	1.91	1.91	1.91	1.89	1.90	1.88	1.89	1.90	1.91	1.92	1.93	1.93	1.92	1.96	1.97	1.88	1.97	1.92	
Sep 13	1.93	1.93	1.94	1.95	1.93	S	1.92	1.91	1.90	1.88	1.88	1.87	1.88	1.88	1.86	1.88	1.87	1.87	1.86	1.88	1.90	1.91	1.92	1.95	1.86	1.95	1.90	
Sep 14	2.01	2.09	2.11	2.14	S	2.22	2.16	2.06	1.98	1.98	1.94	1.90	1.87	1.86	1.86	1.86	1.86	1.86	1.88	1.92	1.93	1.91	1.96	1.98	1.86	2.22	1.97	
Sep 15	1.99	2.00	1.99	S	1.86	1.85	1.86	1.86	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.85	2.00	1.88	
Sep 16	1.87	1.87	S	1.87	1.87	1.87	1.86	1.88	1.90	1.87	1.88	1.91	1.89	1.89	1.88	1.87	1.87	1.87	1.87	1.88	1.89	1.89	1.88	1.90	1.86	1.91	1.88	
Sep 17	1.92	S	1.95	1.99	2.16	2.27	2.21	2.09	2.08	1.97	2.00	1.97	1.94	1.93	1.92	1.89	1.88	1.96	1.95	2.04	1.93	1.87	1.92	1.88	1.87	2.27	1.99	
Sep 18	S	1.88	1.87	1.88	1.89	1.88	1.89	1.88	1.88	1.89	1.88	1.89	1.89	1.91	1.92	1.92	1.93	1.91	1.89	1.90	1.92	1.92	S	1.87	1.87	1.93	1.90	
Sep 19	1.97	1.94	1.93	1.94	1.96	1.96	1.98	1.96	1.92	1.89	1.86	1.85	1.85	1.85	1.85	1.90	1.85	1.86	1.86	1.86	1.87	1.88	S	1.90	1.85	1.98	1.90	
Sep 20	1.90	1.92	1.93	1.95	1.95	1.96	1.96	1.99	1.99	1.94	C	C	C	C	1.87	1.87	1.87	1.87	1.87	1.88	1.89	S	1.90	1.99	1.87	1.99	1.92	
Sep 21	2.02	2.02	2.05	2.11	2.19	2.25	2.22	2.02	2.07	2.05	2.01	2.02	1.94	1.88	1.88	1.86	1.84	1.84	1.85	1.86	S	1.88	1.91	1.96	1.84	2.25	1.99	
Sep 22	2.07	1.97	1.95	2.10	2.16	2.22	2.28	2.29	2.10	1.98	1.97	1.92	2.06	1.94	1.86	1.85	1.85	1.84	1.86	S	1.91	1.87	1.87	1.87	1.84	2.29	1.99	
Sep 23	1.86	1.86	1.87	1.87	1.94	2.00	1.90	1.88	1.88	1.88	1.89	1.88	1.89	1.90	1.91	1.90	1.92	S	1.88	1.89	1.90	1.90	1.90	1.90	1.86	2.00	1.90	
Sep 24	1.91	1.90	1.91	1.92	1.96	2.22	2.01	1.99	2.00	2.01	1.96	1.92	1.89	1.90	1.90	1.89	1.88	S	1.89	1.90	1.91	1.91	1.88	1.88	1.88	2.22	1.94	
Sep 25	1.89	1.93	1.90	1.88	1.95	1.93	1.89	1.88	1.86	1.86	1.86	1.86	1.85	1.85	1.85	1.85	S	1.85	1.85	1.87	1.89	1.89	2.02	2.37	1.85	2.37	1.91	
Sep 26	2.33	2.27	2.40	2.21	2.31	2.17	2.04	2.00	2.00	1.91	1.89	1.92	1.94	1.97	1.95	S	1.90	1.88	1.89	1.88	1.88	1.92	1.98	1.96	1.88	2.40	2.03	
Sep 27	2.03	2.10	2.08	2.13	2.41	2.31	2.15	2.13	2.15	1.93	1.90	1.91	1.89	1.88	S	1.89	1.90	1.90	1.92	1.91	1.91	1.92	1.96	1.94	1.88	2.41	2.01	
Sep 28	1.98	2.50	2.02	1.96	1.94	1.97	1.99	1.98	1.96	1.94	1.94	1.93	1.91	S	1.91	1.91	1.90	1.89	1.90	1.91	1.90	1.91	1.91	1.93	1.89	2.50	1.96	
Sep 29	1.92	1.92	1.93	1.92	1.93	1.95	1.94	1.96	1.95	1.91	1.91	1.88	S	1.88	1.87	1.87	1.87	1.88	1.89	1.90	1.90	1.92	1.93	1.94	1.87	1.96	1.91	
Sep 30	2.00	2.01	1.97	2.00	2.02	2.04	2.06	2.06	2.05	2.03	1.99	S	1.94	1.92	1.92	1.90	1.90	1.90	1.91	1.92	1.95	1.93	1.97	1.97	1.90	2.06	1.97	
Diurnal Maximum	2.33	2.50	2.40	2.46	2.47	2.45	2.43	2.33	2.16	2.05	2.01	2.02	2.06	1.97	1.95	1.93	1.93	1.96	1.98	2.07	1.99	1.99	2.06	2.37				
Dalurnal Average	1.97	2.00	1.99	1.99	2.02	2.05	2.02	2.00	1.97	1.92	1.92	1.91	1.90	1.89	1.88	1.88	1.88	1.88	1.89	1.90	1.91	1.91	1.93	1.96				

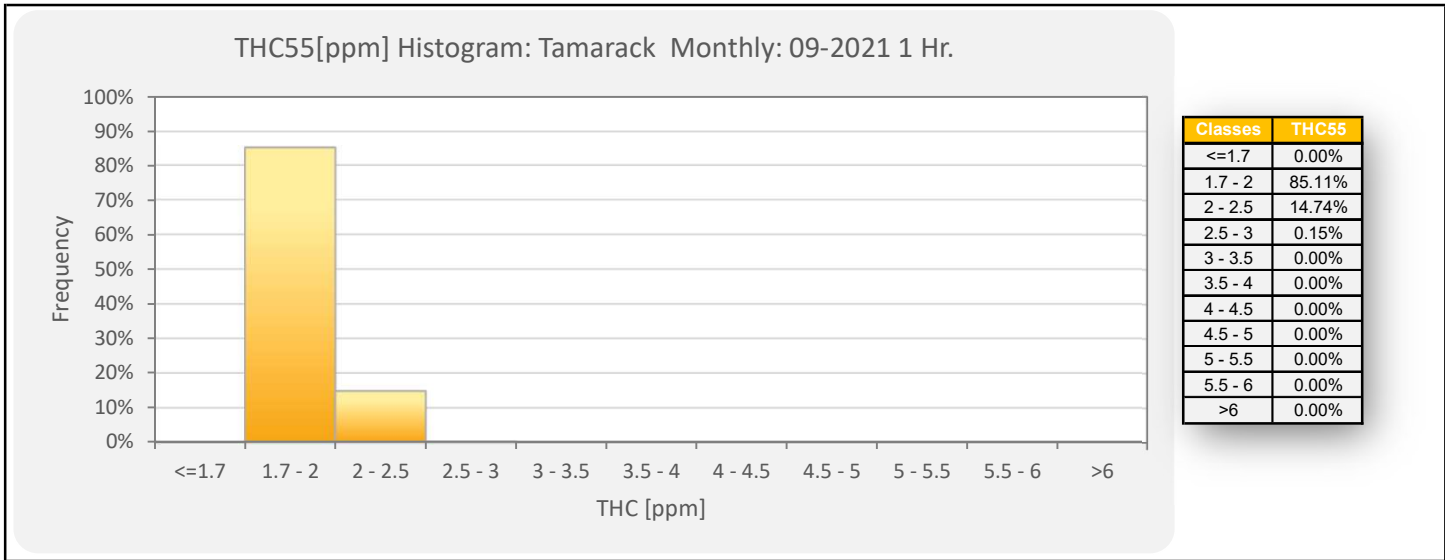
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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

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

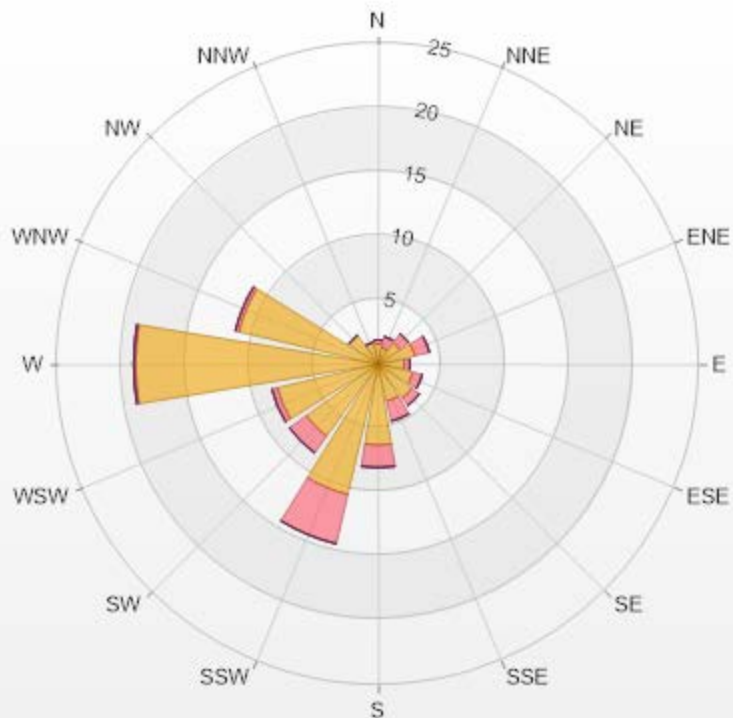
Timeseries Chart of Hourly Average for THC - Tamarack Site





Wind: Tamarack Poll.: Tamarack-THC55[ppm] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.86% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	1.61	0.29	0	0	0	1.9
NNE	1.32	0.88	0	0	0	2.2
NE	2.05	0.88	0	0	0	2.93
ENE	2.93	1.17	0	0	0	4.1
E	2.05	0.44	0	0	0	2.49
ESE	2.78	0.73	0	0	0	3.51
SE	3.22	0.73	0	0	0	3.95
SSE	2.93	1.61	0	0	0	4.54
S	6.3	1.76	0	0	0	8.06
SSW	10.4	3.95	0	0	0	14.35
SW	6.88	1.61	0	0	0	8.49
WSW	8.05	0.44	0	0	0	8.49
W	18.89	0.15	0	0	0	19.04
WNW	11.13	0.29	0	0	0	11.42
NW	2.78	0	0	0	0	2.78
NNW	1.76	0	0	0	0	1.76
Summary	85.08	14.93	0	0	0	100



LICA-202109

% Icon Classes (ppm)

85

0-2

15

2-5

0

5-10

0

10-40

0

>40.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - September 2021

Summary of Hourly Averages

METHANE (CH4) in ppm

Maximum Hourly Value:	2.42 ppm on September 4 at hour 3	Hours in Service:	720
Maximum Daily Value:	2.07 ppm on September 4	Hours of Data:	685
Minimum Hourly Value:	1.84 ppm on September 21 at hour 16	Hours of Missing Data:	0
Minimum Daily Value:	1.88 ppm on September 16	Hours of Calibration:	35
Monthly Average:	1.94 ppm	Operational Uptime:	100.0

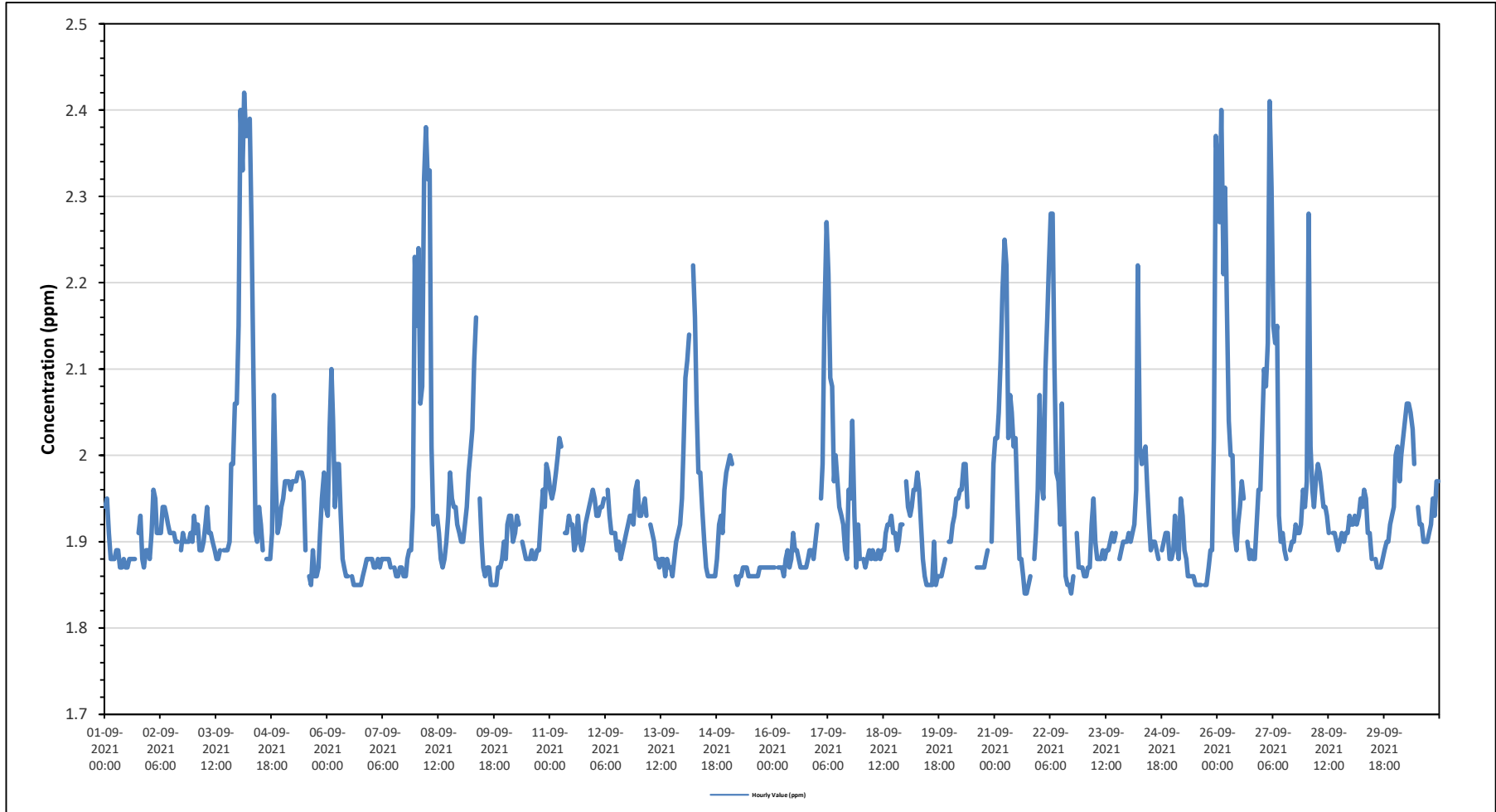
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Sep 1	1.94	1.95	1.91	1.88	1.88	1.88	1.89	1.89	1.87	1.87	1.88	1.87	1.87	1.88	1.88	1.88	1.88	S	1.91	1.93	1.88	1.87	1.89	1.89	1.87	1.95	1.89	
Sep 2	1.88	1.91	1.96	1.95	1.91	1.91	1.91	1.94	1.94	1.93	1.92	1.91	1.91	1.90	1.90	S	1.89	1.91	1.90	1.90	1.90	1.91	1.90	1.91	1.90	1.88	1.96	1.91
Sep 3	1.93	1.91	1.92	1.89	1.89	1.90	1.92	1.94	1.91	1.91	1.90	1.89	1.88	1.88	1.89	S	1.89	1.89	1.89	1.90	1.99	1.99	2.06	2.06	1.88	2.06	1.92	
Sep 4	2.15	2.40	2.33	2.42	2.37	2.37	2.39	2.26	2.09	1.91	1.90	1.94	1.92	1.89	S	1.88	1.88	1.88	1.91	2.07	1.97	1.91	1.92	1.94	1.88	2.42	2.07	
Sep 5	1.95	1.97	1.97	1.97	1.96	1.97	1.97	1.97	1.98	1.98	1.98	1.97	1.89	S	1.86	1.85	1.89	1.86	1.86	1.87	1.91	1.95	1.98	1.94	1.85	1.98	1.93	
Sep 6	1.93	2.03	2.10	2.04	1.94	1.99	1.99	1.93	1.88	1.87	1.86	1.86	S	1.86	1.85	1.85	1.85	1.85	1.85	1.86	1.87	1.88	1.88	1.88	1.85	2.10	1.91	
Sep 7	1.88	1.87	1.87	1.88	1.87	1.88	1.88	1.88	1.88	1.88	1.87	S	1.87	1.86	1.86	1.87	1.87	1.86	1.86	1.88	1.89	1.89	1.94	2.23	1.86	2.23	1.89	
Sep 8	2.15	2.24	2.06	2.08	2.32	2.38	2.32	2.33	2.01	1.92	S	1.93	1.91	1.88	1.87	1.88	1.90	1.93	1.98	1.95	1.94	1.94	1.92	1.91	1.87	2.38	2.03	
Sep 9	1.90	1.90	1.92	1.94	1.98	2.00	2.03	2.11	2.16	S	1.95	1.90	1.87	1.86	1.87	1.87	1.85	1.85	1.85	1.85	1.87	1.87	1.88	1.90	1.85	2.16	1.92	
Sep 10	1.88	1.92	1.93	1.93	1.90	1.91	1.93	1.92	S	1.90	1.89	1.88	1.88	1.89	1.88	1.88	1.89	1.89	1.89	1.93	1.96	1.94	1.99	1.98	1.88	1.99	1.91	
Sep 11	1.96	1.95	1.96	1.98	2.00	2.02	2.01	S	1.91	1.91	1.93	1.92	1.92	1.89	1.90	1.93	1.90	1.89	1.90	1.92	1.93	1.94	1.95	1.96	1.89	2.02	1.94	
Sep 12	1.95	1.93	1.93	1.94	1.94	1.95	S	1.96	1.93	1.91	1.91	1.91	1.89	1.90	1.88	1.89	1.90	1.91	1.92	1.93	1.93	1.92	1.96	1.97	1.88	1.97	1.92	
Sep 13	1.93	1.93	1.94	1.95	1.93	S	1.92	1.91	1.90	1.88	1.88	1.87	1.88	1.88	1.86	1.88	1.87	1.87	1.86	1.88	1.90	1.91	1.92	1.95	1.86	1.95	1.90	
Sep 14	2.01	2.09	2.11	2.14	S	2.22	2.16	2.06	1.98	1.98	1.94	1.90	1.87	1.86	1.86	1.86	1.86	1.86	1.88	1.92	1.93	1.91	1.96	1.98	1.86	2.22	1.97	
Sep 15	1.99	2.00	1.99	S	1.86	1.85	1.86	1.86	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.85	2.00	1.88	
Sep 16	1.87	1.87	S	1.87	1.87	1.87	1.86	1.88	1.89	1.87	1.88	1.91	1.89	1.89	1.88	1.87	1.87	1.87	1.87	1.88	1.89	1.89	1.88	1.90	1.86	1.91	1.88	
Sep 17	1.92	S	1.95	1.99	2.16	2.27	2.21	2.09	2.08	1.97	2.00	1.97	1.94	1.93	1.92	1.89	1.88	1.96	1.95	2.04	1.93	1.87	1.92	1.88	1.87	2.27	1.99	
Sep 18	S	1.88	1.87	1.88	1.89	1.88	1.89	1.88	1.88	1.89	1.88	1.89	1.89	1.91	1.92	1.92	1.93	1.91	1.89	1.90	1.92	1.92	S	1.87	1.87	1.93	1.90	
Sep 19	1.97	1.94	1.93	1.94	1.96	1.96	1.98	1.96	1.92	1.88	1.86	1.85	1.85	1.85	1.85	1.90	1.85	1.86	1.86	1.86	1.87	1.88	S	1.90	1.85	1.98	1.90	
Sep 20	1.90	1.92	1.93	1.95	1.95	1.96	1.96	1.99	1.99	1.94	C	C	C	C	1.87	1.87	1.87	1.87	1.88	1.89	S	1.90	1.99	1.87	1.99	1.92	1.92	
Sep 21	2.02	2.02	2.05	2.11	2.19	2.25	2.22	2.02	2.07	2.05	2.01	2.02	1.94	1.88	1.88	1.86	1.84	1.84	1.85	1.86	S	1.88	1.91	1.96	1.84	2.25	1.99	
Sep 22	2.07	1.97	1.95	2.10	2.16	2.22	2.28	2.10	1.98	1.97	1.92	2.06	1.94	1.86	1.85	1.85	1.84	1.86	S	1.91	1.87	1.87	1.87	1.84	2.28	1.99		
Sep 23	1.86	1.86	1.87	1.87	1.92	1.95	1.90	1.88	1.88	1.88	1.89	1.88	1.89	1.90	1.91	1.90	1.91	1.90	1.91	S	1.88	1.89	1.90	1.90	1.86	1.95	1.89	
Sep 24	1.91	1.90	1.91	1.92	1.96	2.22	2.01	1.99	2.00	2.01	1.96	1.92	1.89	1.90	1.90	1.89	1.88	S	1.89	1.90	1.91	1.91	1.88	1.88	1.88	2.22	1.94	
Sep 25	1.89	1.93	1.90	1.88	1.95	1.93	1.89	1.88	1.86	1.86	1.86	1.86	1.85	1.85	1.85	1.85	S	1.85	1.85	1.87	1.89	1.89	2.02	2.37	1.85	2.37	1.91	
Sep 26	2.33	2.27	2.40	2.21	2.31	2.17	2.04	2.00	2.00	1.91	1.89	1.92	1.95	S	1.90	1.88	1.89	1.88	1.88	1.92	1.96	1.96	1.96	1.88	2.40	2.03	2.03	
Sep 27	2.03	2.10	2.08	2.13	2.41	2.31	2.15	2.13	2.15	1.93	1.90	1.91	1.89	1.88	S	1.89	1.90	1.90	1.92	1.91	1.91	1.92	1.96	1.94	1.88	2.41	2.01	
Sep 28	1.97	2.28	2.01	1.96	1.94	1.97	1.99	1.98	1.96	1.94	1.94	1.93	1.91	S	1.91	1.91	1.90	1.89	1.90	1.91	1.90	1.91	1.93	1.89	2.28	1.95	1.95	
Sep 29	1.92	1.92	1.93	1.92	1.93	1.95	1.94	1.96	1.95	1.91	1.91	1.88	S	1.88	1.87	1.87	1.88	1.89	1.90	1.90	1.92	1.93	1.94	1.87	1.96	1.91	1.91	
Sep 30	2.00	2.01	1.97	2.00	2.02	2.04	2.06	2.06	2.05	2.03	1.99	S	1.94	1.92	1.92	1.90	1.90	1.90	1.91	1.92	1.95	1.93	1.97	1.97	1.90	2.06	1.97	
Diurnal Maximum	2.33	2.40	2.40	2.42	2.41	2.38	2.39	2.33	2.16	2.05	2.01	2.02	2.06	1.97	1.95	1.93	1.93	1.96	1.98	2.07	1.99	1.99	2.06	2.37				
Dalurnal Average	1.97	2.00	1.99	1.99	2.01	2.04	2.02	2.00	1.97	1.92	1.92	1.91	1.90	1.89	1.88	1.88	1.88	1.88	1.89	1.90	1.91	1.91	1.93	1.96				

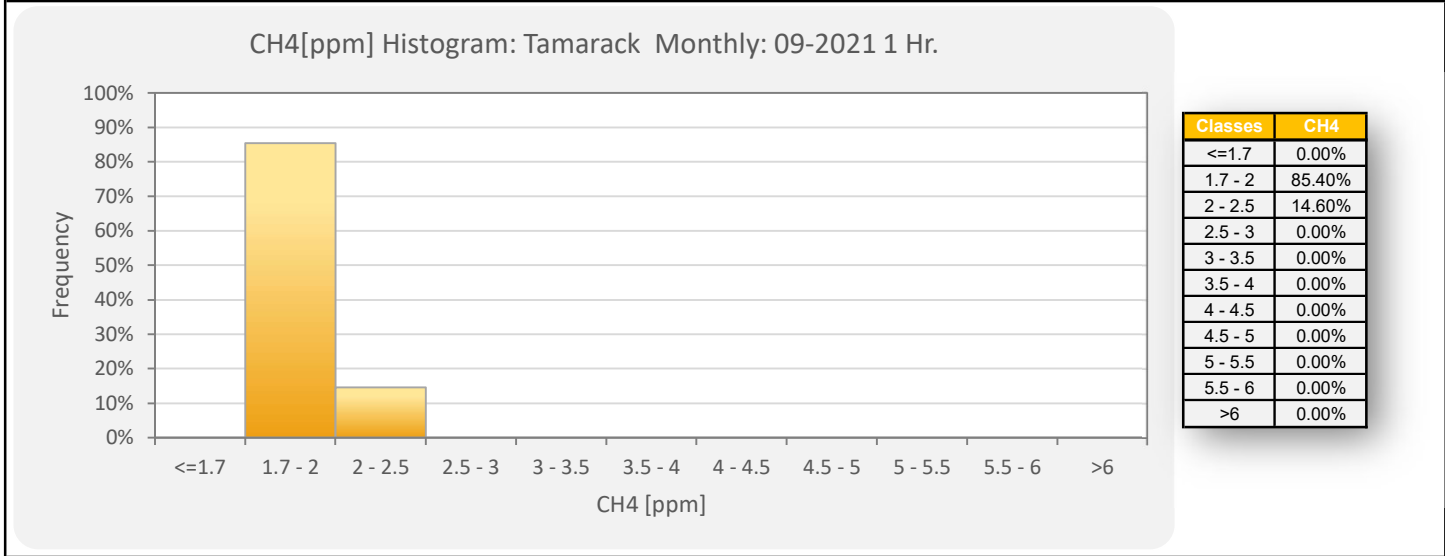
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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.

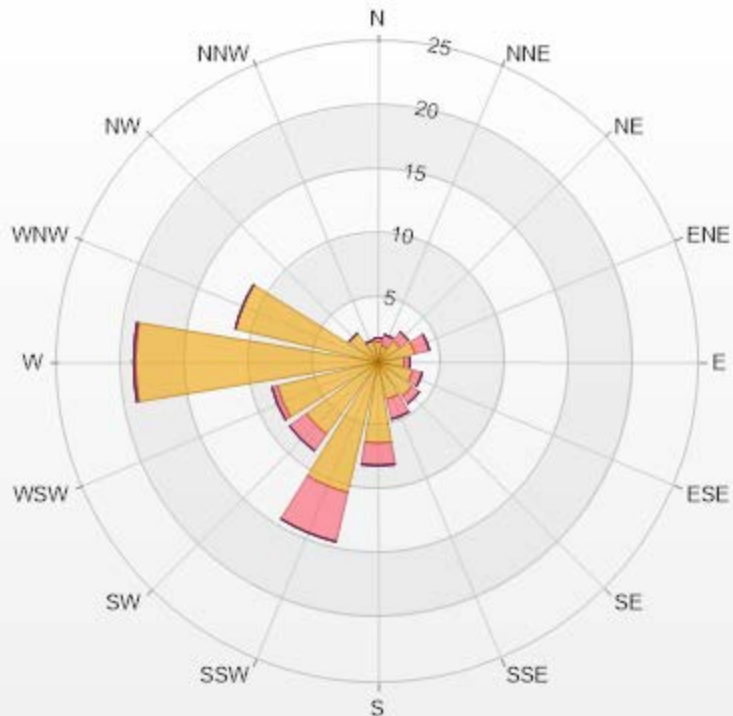
Timeseries Chart of Hourly Average for CH4 - Tamarack Site





Wind: Tamarack Poll.: Tamarack-CH4[ppm] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.86% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	1.61	0.29	0	0	0	1.9
NNE	1.32	0.88	0	0	0	2.2
NE	2.05	0.88	0	0	0	2.93
ENE	2.93	1.17	0	0	0	4.1
E	2.05	0.44	0	0	0	2.49
ESE	2.78	0.73	0	0	0	3.51
SE	3.22	0.73	0	0	0	3.95
SSE	2.93	1.61	0	0	0	4.54
S	6.3	1.76	0	0	0	8.06
SSW	10.4	3.95	0	0	0	14.35
SW	6.88	1.61	0	0	0	8.49
WSW	8.05	0.44	0	0	0	8.49
W	18.89	0.15	0	0	0	19.04
WNW	11.42	0	0	0	0	11.42
NW	2.78	0	0	0	0	2.78
NNW	1.76	0	0	0	0	1.76
Summary	85.37	14.64	0	0	0	100



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% Icon Classes (ppm)

85 0-2

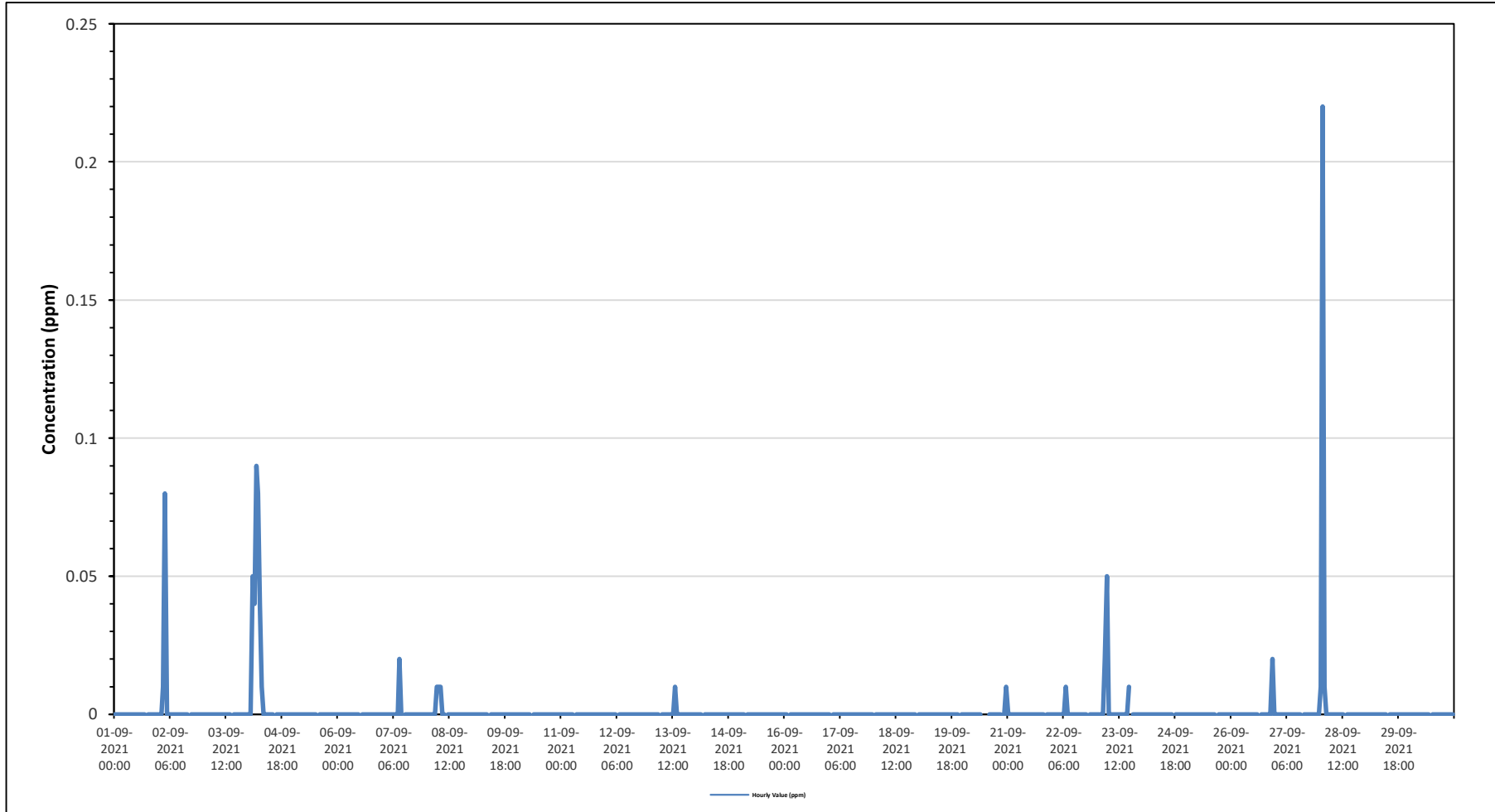
15 2-5

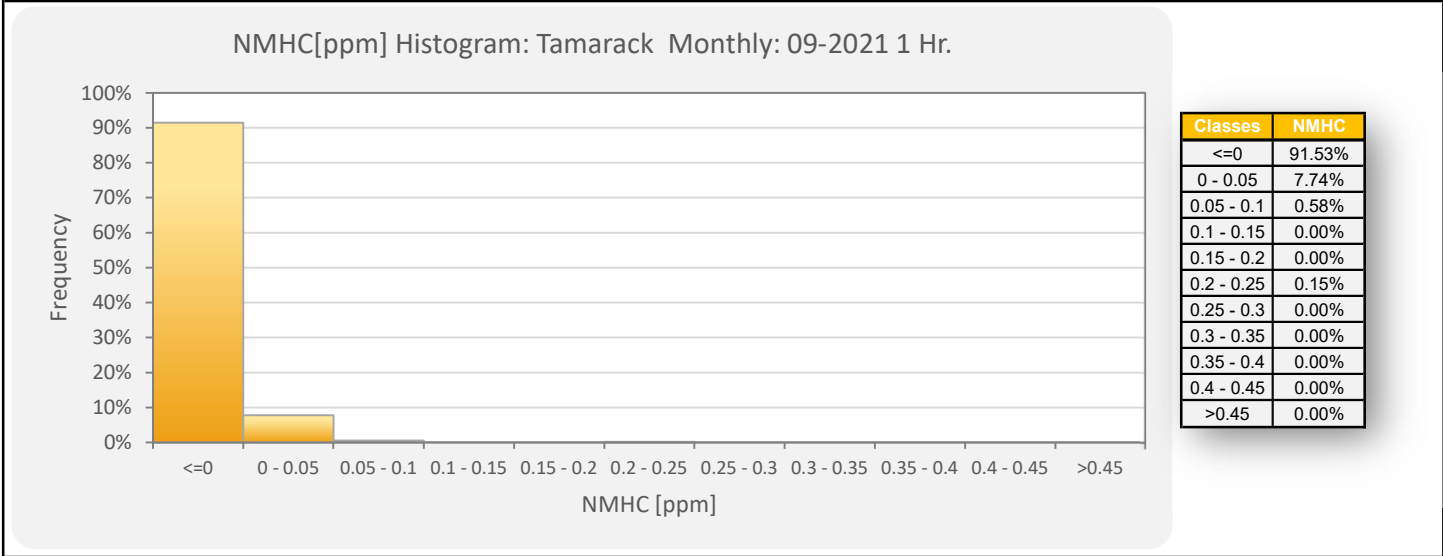
0 5-10

0 10-20

0 >20.0

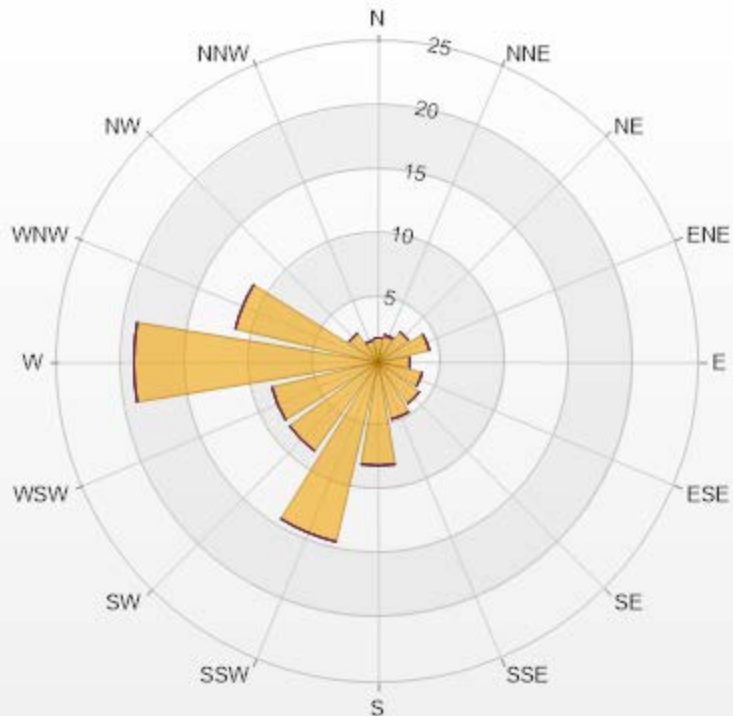
Timeseries Chart of Hourly Average for NMHC - Tamarack Site





Wind: Tamarack Poll.: Tamarack-NMHC[ppm] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.86% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	1.9	0	0	0	0	1.9
NNE	2.05	0.15	0	0	0	2.2
NE	2.93	0	0	0	0	2.93
ENE	4.1	0	0	0	0	4.1
E	2.49	0	0	0	0	2.49
ESE	3.51	0	0	0	0	3.51
SE	3.95	0	0	0	0	3.95
SSE	4.54	0	0	0	0	4.54
S	8.05	0	0	0	0	8.05
SSW	14.35	0	0	0	0	14.35
SW	8.49	0	0	0	0	8.49
WSW	8.49	0	0	0	0	8.49
W	19.03	0	0	0	0	19.03
WNW	11.42	0	0	0	0	11.42
NW	2.78	0	0	0	0	2.78
NNW	1.76	0	0	0	0	1.76
Summary	100	0.15	0	0	0	100



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% Icon Classes (ppm)

100

0-0.1

0

0.1-0.3

0

0.3-0.9

0

0.9-2

0

>2.0



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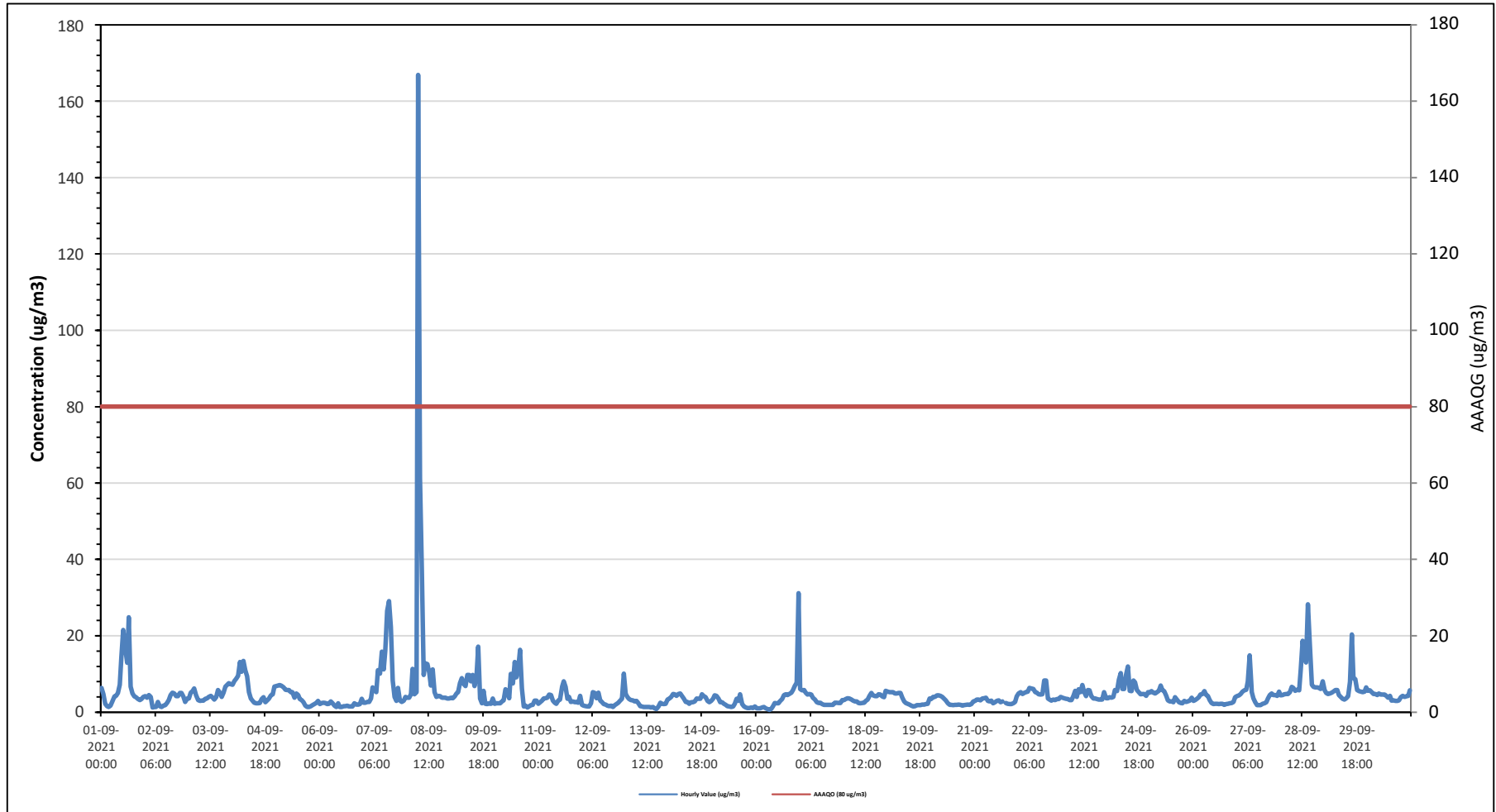
Tamarack Site - September 2021

Summary of Hourly Averages

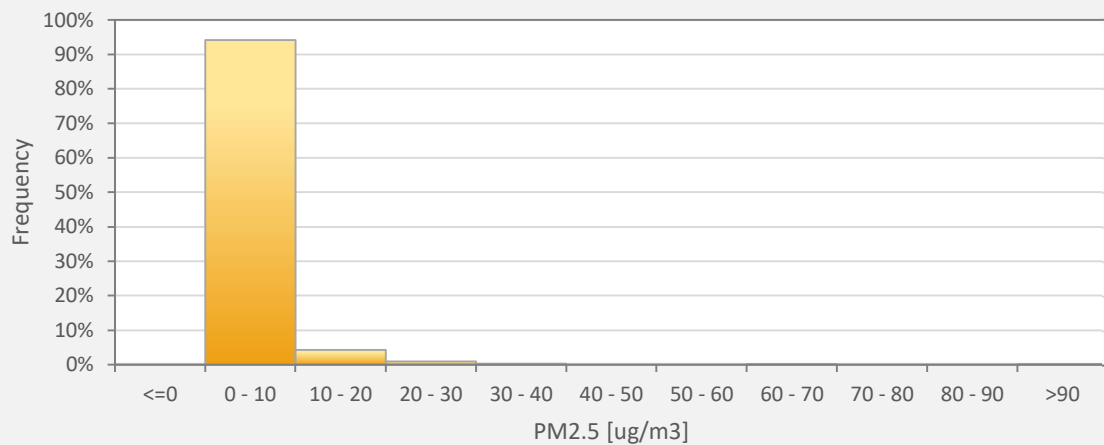
PARTICULATE MATTER 2.5 (PM_{2.5}) in µg/m³

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: 1										Number of 24-Hour Exceedences: 0																							
Maximum Hourly Value: 167 µg/m ³ on September 8 at hour 6													Hours in Service: 720																				
Maximum Daily Value: 16.6 µg/m ³ on September 8													Hours of Data: 719																				
Minimum Hourly Value: 1 µg/m ³ on September 16 at hour 7													Hours of Missing Data: 0																				
Minimum Daily Value: 2 µg/m ³ on September 6													Hours of Calibration: 1																				
Monthly Average: 4.8 µg/m ³													Operational Uptime: 100.0																				
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23						
Sep 1	6	5	2	2	1	2	3	4	4	5	7	14	22	17	13	25	7	5	4	4	3	3	3	4	1	25	6.9						
Sep 2	4	4	5	4	1	1	1	3	2	1	2	2	3	3	5	5	5	4	4	5	5	4	3	4	1	5	3.3						
Sep 3	4	5	6	6	5	3	3	3	4	4	4	4	4	3	4	6	5	4	5	7	7	8	7	3	8	4.7							
Sep 4	7	8	9	10	13	11	13	11	9	5	4	3	3	2	2	3	4	3	4	4	5	7	2	2	13	6.0							
Sep 5	7	7	7	7	7	6	6	6	5	5	4	5	5	3	3	3	2	1	1	2	2	2	2	3	1	7	4.2						
Sep 6	2	2	3	2	2	2	3	2	2	1	2	1	1	2	2	2	2	2	2	2	2	2	4	1	4	2.0							
Sep 7	3	3	3	3	4	7	6	5	11	10	16	11	16	27	29	22	8	4	3	6	3	3	3	4	3	29	8.7						
Sep 8	4	4	5	11	5	5	167	61	37	10	13	13	10	7	11	5	4	4	4	4	4	4	4	4	4	167	16.6						
Sep 9	4	4	4	5	5	8	9	7	7	10	10	8	10	7	10	17	4	2	6	2	2	2	4	2	17	6.2							
Sep 10	2	2	2	2	3	3	6	5	4	10	8	13	9	11	16	6	2	2	1	2	2	3	3	3	1	16	5.0						
Sep 11	2	3	3	4	4	4	5	5	3	3	2	3	3	7	8	7	4	4	3	3	3	3	4	2	8	3.7							
Sep 12	2	2	2	2	2	2	5	5	4	5	3	3	2	2	2	2	1	2	2	3	3	4	10	1	10	2.9							
Sep 13	5	4	3	3	3	3	3	2	2	2	1	1	1	1	1	1	1	1	2	3	2	2	3	1	5	2.2							
Sep 14	4	4	5	5	4	5	5	4	4	3	3	2	3	3	3	4	4	4	5	4	4	3	3	2	5	3.6							
Sep 15	4	4	4	4	3	3	2	2	2	2	1	2	2	4	3	5	2	2	1	1	1	1	2	1	5	2.3							
Sep 16	1	1	1	1	1	1	1	1	1	2	2	2	2	3	3	5	5	5	5	6	7	8	31	1	31	4.1							
Sep 17	6	6	6	5	5	5	5	4	3	3	2	3	2	2	2	2	2	2	2	3	3	2	3	2	6	3.2							
Sep 18	3	3	4	4	3	3	3	3	2	2	2	3	3	3	4	5	4	4	4	5	5	4	4	6	2	6	3.6						
Sep 19	5	5	5	5	5	5	5	5	4	3	2	2	2	2	2	2	2	2	2	2	2	2	4	2	5	3.2							
Sep 20	3	4	4	4	4	4	4	4	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	4	2.7							
Sep 21	3	3	3	3	4	4	4	4	3	3	3	3	3	3	3	3	C	2	2	2	2	3	4	2	4	2.9							
Sep 22	5	5	5	5	5	5	6	6	6	5	5	5	5	8	8	4	3	3	3	3	3	4	3	8	4.9								
Sep 23	4	4	4	3	3	3	4	6	4	6	5	7	5	4	6	6	4	4	4	3	3	3	5	3	7	4.3							
Sep 24	4	4	4	4	4	6	6	9	10	6	6	10	12	6	6	8	8	6	5	5	5	4	5	4	12	6.1							
Sep 25	5	6	5	5	5	6	7	6	6	4	3	3	3	3	4	3	3	2	2	3	3	3	4	2	7	4.0							
Sep 26	3	3	4	4	5	5	6	5	4	3	2	2	2	2	2	2	2	2	2	2	2	3	4	2	6	3.1							
Sep 27	4	4	5	5	6	6	8	15	5	4	3	2	2	2	2	3	4	5	5	5	5	4	5	2	15	4.5							
Sep 28	4	5	5	5	5	5	7	6	6	6	6	11	19	14	13	28	18	7	7	7	7	6	8	4	28	8.7							
Sep 29	6	5	5	5	5	5	6	6	5	4	4	3	4	4	8	20	9	9	6	6	5	5	7	3	20	6.1							
Sep 30	6	6	5	5	5	5	5	5	5	4	4	4	3	3	3	3	3	4	4	4	4	4	6	3	6	4.3							
Diurnal Maximum	7	8	9	11	13	11	167	61	37	10	16	14	22	27	29	28	18	9	7	7	7	8	31										
Diurnal Average	4.0	4.1	4.2	4.4	4.2	4.4	10.4	6.9	5.5	4.4	4.4	4.9	5.4	5.2	5.9	7.0	4.2	3.3	3.2	3.5	3.4	3.4	3.5	5.4									
C	Monthly Calibration										S	Daily Zero-Span Check										Q	Quality Assurance										
K	Collection Error										N	No Data (Machine Not in Service)										Y	Routine Maintenance					P	Power Failure				
X	Invalid Data (Equipment Malfunction /Recovery)										NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)																					
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																																	
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																																	

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



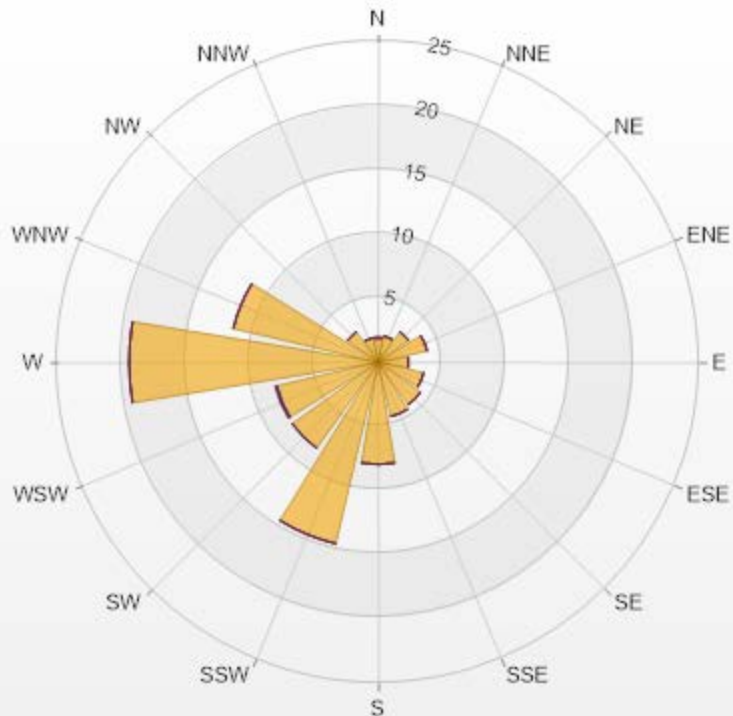
PM2.5[ug/m3(L)] Histogram: Tamarack Monthly: 09-2021 1 Hr.



Classes	PM2.5
<=0	0.00%
0 - 10	94.16%
10 - 20	4.31%
20 - 30	0.97%
30 - 40	0.28%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.14%
70 - 80	0.00%
80 - 90	0.00%
>90	0.14%

Wind: Tamarack Poll.: Tamarack-PM2.5[ug/m3(L)] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 99.58% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	1.81	0.14	0	0	0	1.95
NNE	2.09	0	0	0	0	2.09
NE	2.93	0	0	0	0	2.93
ENE	3.91	0	0	0	0	3.91
E	2.37	0	0	0	0	2.37
ESE	3.63	0	0	0	0	3.63
SE	4.04	0	0	0	0	4.04
SSE	4.32	0	0	0	0	4.32
S	7.95	0	0	0	0	7.95
SSW	14.5	0	0	0	0	14.5
SW	8.23	0	0	0	0	8.23
WSW	8.09	0	0	0.14	0	8.23
W	19.39	0	0	0	0	19.39
WNW	11.58	0	0	0	0	11.58
NW	2.93	0	0	0	0	2.93
NNW	1.95	0	0	0	0	1.95
Summary	100	0.14	0	0.14	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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Tamarack Site - September 2021

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

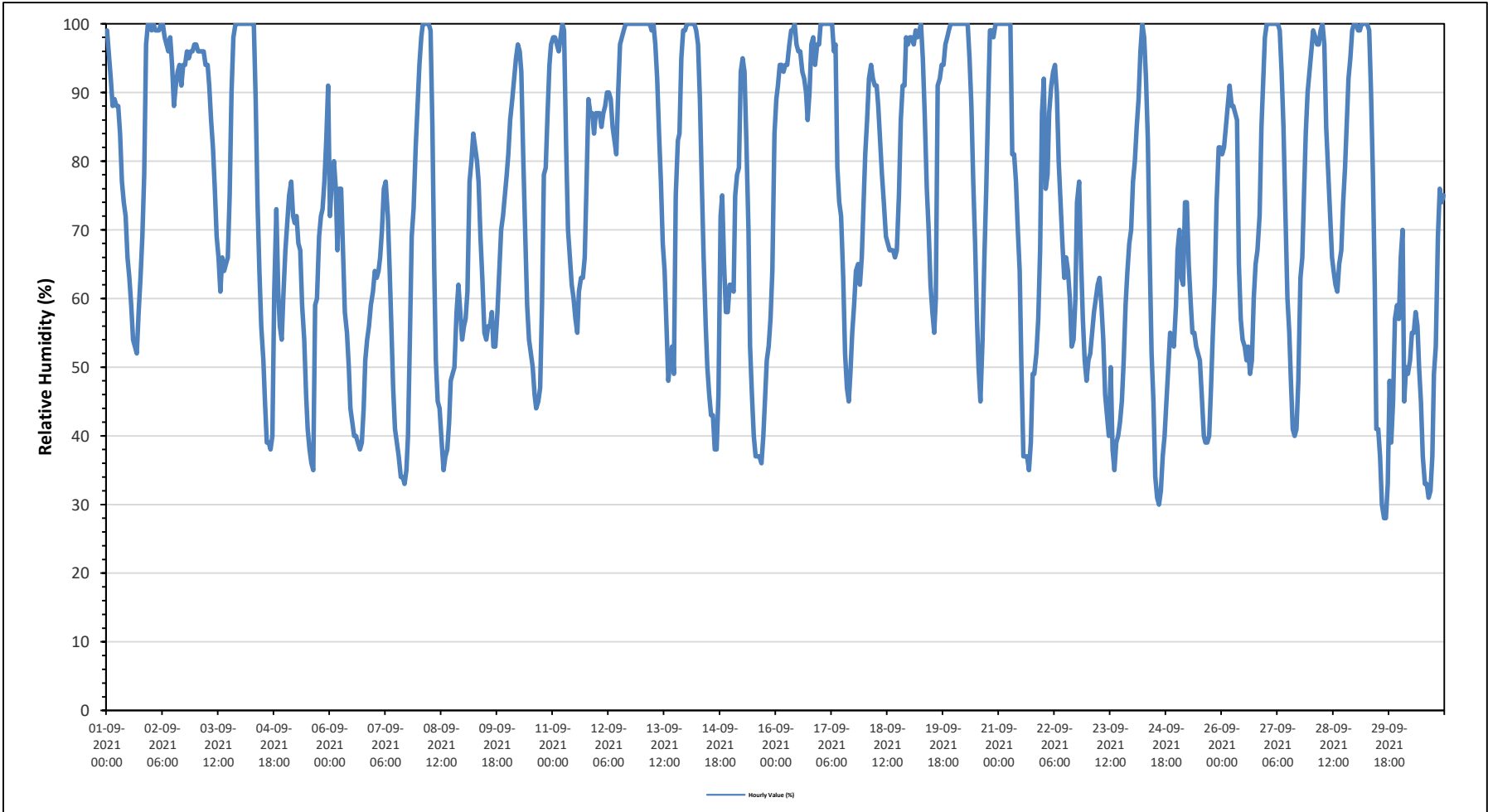
Maximum Hourly Value:	100 %	on September 1 at hour 22	Hours in Service:	720
Maximum Daily Value:	96.0 %	on September 2	Hours of Data:	720
Minimum Hourly Value:	28 %	on September 29 at hour 15	Hours of Missing Data:	0
Minimum Daily Value:	51.8 %	on September 23	Hours of Calibration:	0
Monthly Average:	72.9 %		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Sep 1	99	96	92	88	89	88	88	84	77	74	72	66	63	59	54	53	52	58	63	69	78	97	100	100	52	100	77.5	
Sep 2	99	100	99	99	99	100	100	98	97	96	98	94	88	91	93	94	91	94	94	96	95	96	96	97	88	100	96.0	
Sep 3	97	96	96	96	96	94	94	91	86	82	76	69	66	61	66	64	65	66	75	90	98	100	100	100	61	100	84.3	
Sep 4	100	100	100	100	100	100	100	100	89	74	64	56	51	45	39	39	38	40	61	73	61	56	54	61	38	100	70.9	
Sep 5	67	71	75	77	72	71	72	68	67	59	54	46	41	38	36	35	59	60	69	72	73	77	83	91	35	91	63.9	
Sep 6	72	78	80	76	67	76	76	67	58	55	50	44	42	40	40	39	38	39	44	51	54	56	59	61	38	80	56.8	
Sep 7	64	63	64	66	70	76	77	72	64	55	47	41	39	37	34	34	33	35	40	54	69	73	82	88	33	88	57.4	
Sep 8	94	98	100	100	100	100	99	85	64	51	45	44	39	35	37	38	42	48	49	50	58	62	58	54	35	100	64.6	
Sep 9	56	57	61	77	80	84	82	80	77	69	63	55	54	56	56	58	53	53	58	64	70	72	75	78	53	84	66.2	
Sep 10	81	86	89	92	95	97	96	93	81	69	59	54	52	50	46	44	45	47	59	78	79	87	94	97	44	97	73.8	
Sep 11	98	98	97	96	98	100	99	82	70	66	62	60	57	55	61	63	63	66	77	89	87	87	84	87	55	100	79.3	
Sep 12	87	87	85	87	88	90	90	89	85	83	81	90	97	98	99	100	100	100	100	100	100	100	100	100	81	100	93.2	
Sep 13	100	100	100	100	100	99	100	97	92	84	77	68	64	56	48	51	53	49	75	83	84	95	99	99	48	100	82.2	
Sep 14	100	100	100	100	100	99	97	89	77	66	56	50	46	43	43	38	38	46	72	75	65	58	58	62	38	100	69.9	
Sep 15	62	61	75	78	79	93	95	93	83	70	53	46	40	37	37	37	36	40	45	51	53	57	64	84	36	95	61.2	
Sep 16	89	91	94	94	93	94	94	97	99	99	100	97	96	96	93	92	90	86	90	97	98	94	97	97	86	100	94.5	
Sep 17	100	100	100	100	100	100	100	96	97	79	74	72	63	52	47	45	49	55	59	64	65	62	66	73	45	100	75.8	
Sep 18	81	86	92	94	92	91	91	88	83	78	74	69	68	67	67	67	66	67	75	86	91	91	98	97	66	98	81.6	
Sep 19	98	98	97	99	98	99	100	95	87	76	70	62	58	55	60	91	92	94	94	97	98	99	99	100	55	100	88.2	
Sep 20	100	100	100	100	100	100	100	100	95	88	77	68	57	50	45	54	66	76	88	99	99	98	100	100	45	100	85.8	
Sep 21	100	100	100	100	100	100	100	81	81	77	70	64	51	37	37	37	35	39	49	49	52	57	67	87	35	100	69.6	
Sep 22	92	76	78	87	91	93	94	90	80	74	68	63	66	64	60	53	54	60	74	77	66	57	51	48	48	94	71.5	
Sep 23	51	52	55	58	60	62	63	59	54	46	43	40	50	38	35	39	40	42	45	51	59	64	68	70	35	70	51.8	
Sep 24	77	80	85	89	96	100	98	92	83	66	52	45	34	31	30	32	37	40	45	50	55	54	53	59	30	100	61.8	
Sep 25	67	70	63	62	74	74	65	59	55	55	53	52	51	46	40	39	39	40	47	55	62	74	82	82	39	82	58.6	
Sep 26	81	82	85	88	91	88	88	87	86	65	57	54	53	51	53	49	51	60	65	67	72	85	91	98	49	98	72.8	
Sep 27	100	100	100	100	100	100	100	99	93	85	73	60	55	48	41	40	41	48	63	66	76	84	90	93	40	100	77.3	
Sep 28	96	99	98	97	97	99	100	97	85	78	72	66	64	62	61	65	67	74	79	86	92	95	99	100	61	100	84.5	
Sep 29	100	99	99	100	100	100	100	99	90	78	62	41	41	37	30	28	28	33	48	39	45	57	59	57	28	100	65.4	
Sep 30	66	70	45	50	49	51	55	55	58	56	50	45	37	33	33	31	32	37	49	53	69	76	74	75	31	76	52.0	
Diurnal Maximum	100	100	100	100	100	100	100	100	99	99	100	97	97	98	99	100	100	100	100	100	100	100	100	100	100	100	100	100
Daiurnal Average	85.8	86.5	86.8	88.3	89.1	90.6	90.4	86.1	79.8	71.8	65.1	59.4	56.1	52.3	50.7	51.6	53.1	56.4	65.0	71.0	74.1	77.3	80.0	83.2				

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

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

Timeseries Chart of Hourly Average for RH - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - September 2021

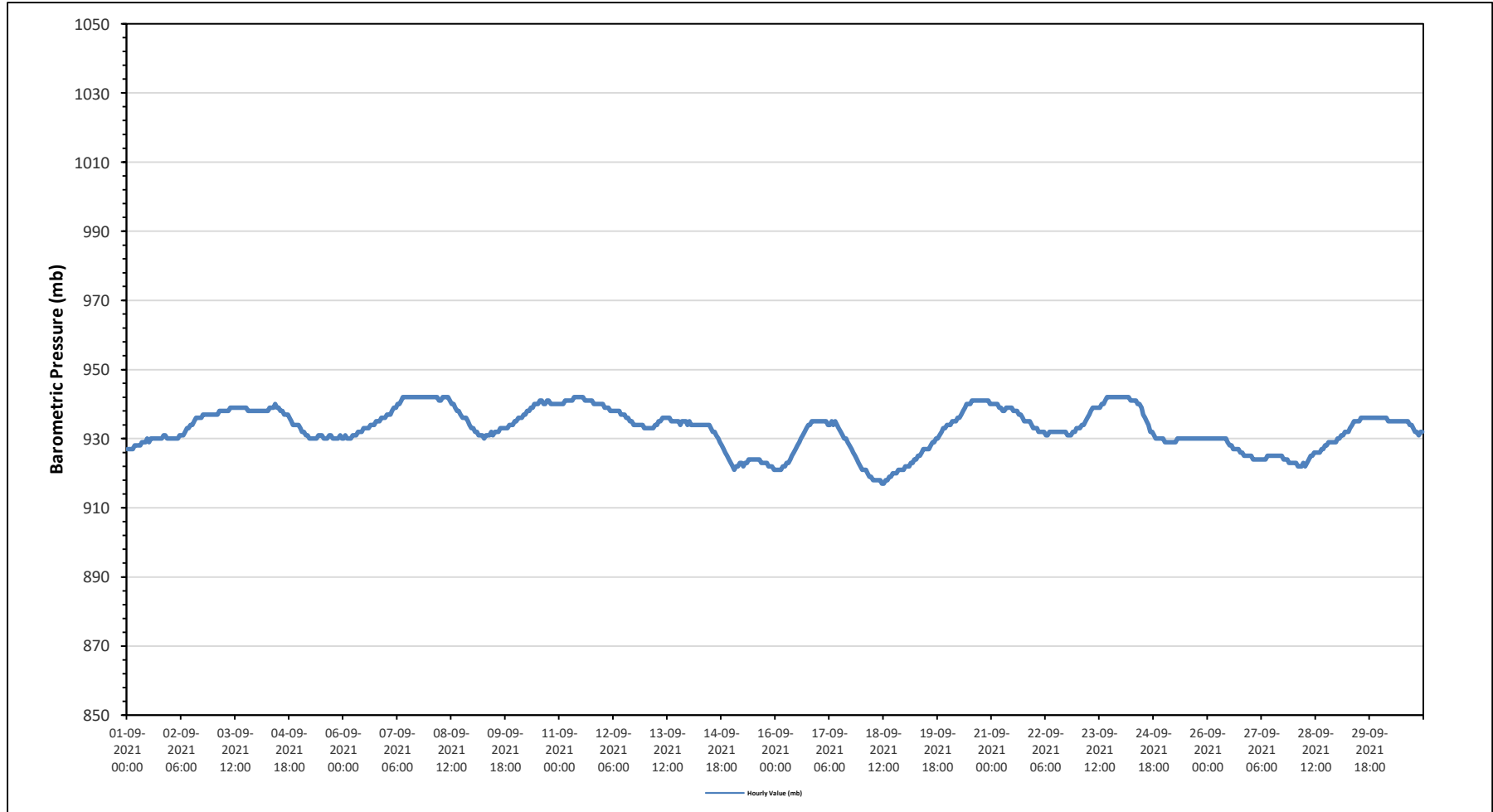
Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

Maximum Hourly Value:	942	mb	on September 7 at hour 9	Hours in Service:	720
Maximum Daily Value:	941	mb	on September 11	Hours of Data:	720
Minimum Hourly Value:	917	mb	on September 18 at hour 11	Hours of Missing Data:	0
Minimum Daily Value:	919	mb	on September 18	Hours of Calibration:	0
Monthly Average:	933	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				
Sep 1	927	927	927	927	928	928	928	928	929	929	929	930	929	930	930	930	930	930	930	930	931	931	930	930	927	931	929.1				
Sep 2	930	930	930	930	930	931	931	931	932	933	933	934	934	935	936	936	936	936	937	937	937	937	937	937	930	937	933.8				
Sep 3	937	937	937	938	938	938	938	938	938	939	939	939	939	939	939	939	939	939	939	938	938	938	938	937	939	938.3					
Sep 4	938	938	938	938	938	938	938	939	939	939	940	939	939	938	938	937	937	937	936	935	934	934	934	934	934	940	937.3				
Sep 5	933	932	932	931	931	930	930	930	930	930	931	931	931	930	930	930	931	931	930	930	930	931	930	930	930	933	930.6				
Sep 6	930	931	930	930	930	931	931	931	932	932	932	933	933	933	934	934	934	935	935	935	935	936	936	936	930	936	932.8				
Sep 7	937	937	937	938	939	939	940	940	941	942	942	942	942	942	942	942	942	942	942	942	942	942	942	937	942	940.8					
Sep 8	942	942	942	942	942	941	941	942	942	942	942	941	940	940	939	938	938	937	936	936	936	935	934	933	933	942	939.3				
Sep 9	933	932	932	931	931	931	930	931	931	931	932	931	932	932	932	933	933	933	933	933	934	934	934	935	930	935	932.3				
Sep 10	935	936	936	936	937	937	938	938	939	939	940	940	940	941	941	940	940	941	941	941	940	940	940	940	935	941	939.0				
Sep 11	940	940	940	941	941	941	941	941	942	942	942	942	942	942	941	941	941	941	941	940	940	940	940	940	940	942	940.9				
Sep 12	940	939	939	939	938	938	938	938	938	938	937	937	937	936	936	935	935	935	934	934	934	934	933	933	940	936.5					
Sep 13	933	933	933	933	933	934	934	935	935	936	936	936	936	936	935	935	935	935	935	934	934	935	935	933	936	934.6					
Sep 14	935	934	934	934	934	934	934	934	934	934	934	934	933	932	932	931	930	929	928	927	926	925	924	923	923	935	931.2				
Sep 15	922	921	922	922	923	923	922	923	923	924	924	924	924	924	924	924	923	923	923	923	922	922	922	921	921	924	922.8				
Sep 16	921	921	921	921	922	922	923	923	924	925	926	927	928	929	930	931	932	933	934	934	935	935	935	935	921	935	927.8				
Sep 17	935	935	935	935	935	934	934	935	934	935	934	933	932	931	930	930	929	928	927	926	925	924	923	922	922	935	930.9				
Sep 18	921	921	921	920	919	919	918	918	918	918	918	917	917	918	918	919	919	920	920	920	921	921	921	921	917	921	919.3				
Sep 19	922	922	922	923	923	924	924	925	925	926	927	927	927	928	929	929	930	930	931	931	932	933	933	934	922	934	927.2				
Sep 20	934	934	935	935	935	936	936	937	938	939	940	940	940	941	941	941	941	941	941	941	941	941	941	940	934	941	938.7				
Sep 21	940	940	940	940	939	939	938	938	939	939	939	939	938	938	938	937	937	936	935	935	935	934	933	933	933	940	937.5				
Sep 22	933	933	932	932	932	932	931	931	932	932	932	932	932	932	932	932	932	932	931	931	931	932	932	931	931	933	931.9				
Sep 23	933	933	934	934	935	936	937	938	939	939	939	939	939	940	940	941	942	942	942	942	942	942	942	933	942	938.8					
Sep 24	942	942	942	942	942	941	941	941	941	940	940	939	937	936	935	934	932	932	931	930	930	930	930	930	930	942	936.7				
Sep 25	929	929	929	929	929	929	929	930	930	930	930	930	930	930	930	930	930	930	930	930	930	930	930	929	930	929.7					
Sep 26	930	930	930	930	930	930	930	930	930	930	929	928	928	927	927	927	926	926	925	925	925	925	925	925	925	930	928.1				
Sep 27	925	924	924	924	924	924	924	924	924	925	925	925	925	925	925	925	925	925	924	924	924	923	923	923	923	925	924.3				
Sep 28	923	923	922	922	922	923	922	923	924	925	925	926	926	926	926	927	927	928	928	929	929	929	929	922	929	925.5					
Sep 29	930	930	931	931	932	932	932	933	934	935	935	935	936	936	936	936	936	936	936	936	936	936	936	930	936	934.2					
Sep 30	936	936	936	936	935	935	935	935	935	935	935	935	935	935	935	934	934	933	932	932	931	932	932	931	936	934.3					
Diurnal Maximum	942	942	942	942	942	941	941	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942				
Diurnal Average	932	932	932	932	932	932	932	933	933	933	934	934	933	933	933	933	933	933	933	933	933	933	933	933	933	933	932				
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 - September 2021

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

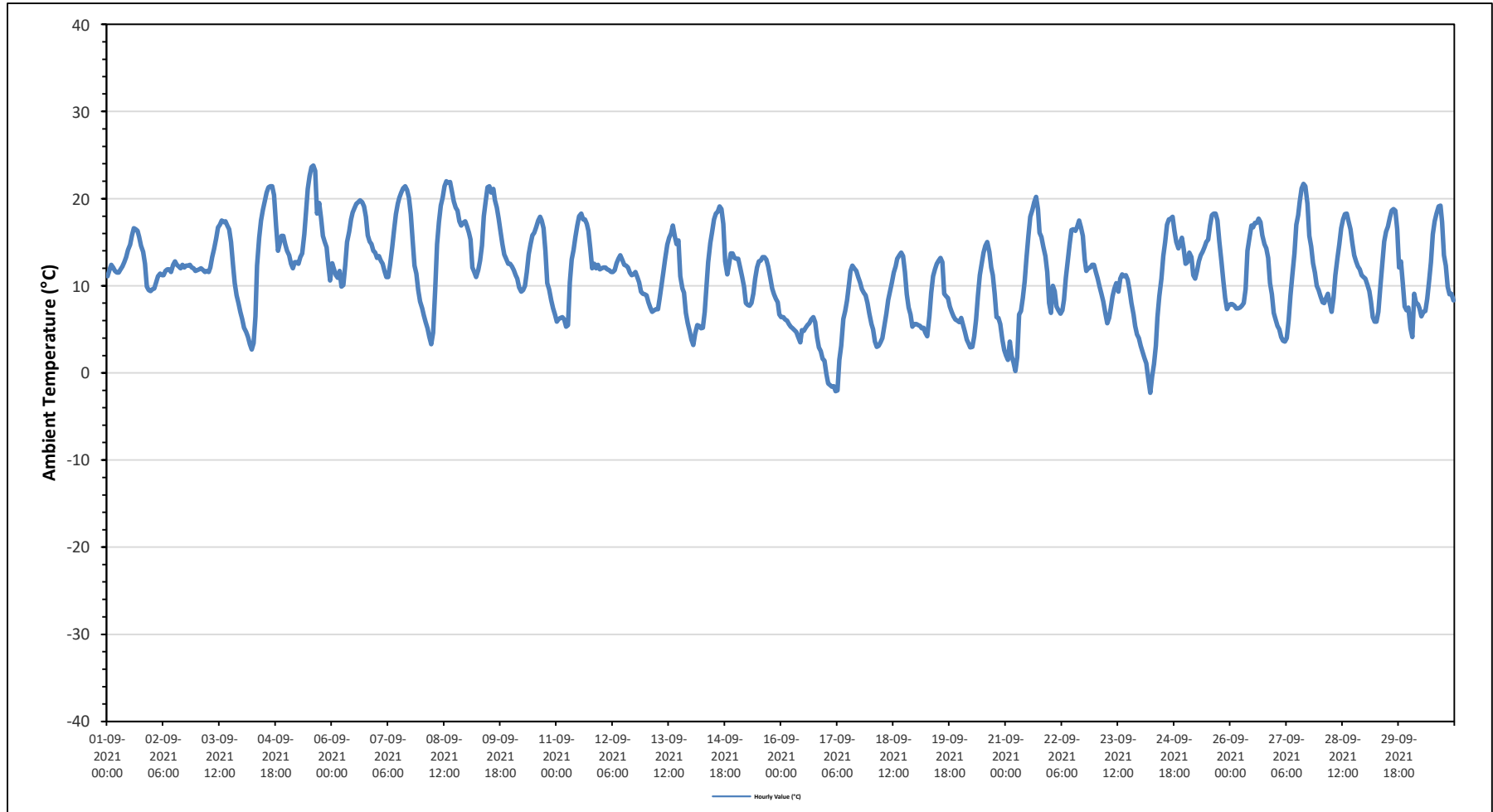
Maximum Hourly Value:	23.8 °C	on September 5 at hour 14	Hours in Service:	720
Maximum Daily Value:	16.2 °C	on September 5	Hours of Data:	720
Minimum Hourly Value:	-2.3 °C	on September 24 at hour 5	Hours of Missing Data:	0
Minimum Daily Value:	4.8 °C	on September 16	Hours of Calibration:	0
Monthly Average:	11.5 °C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Sep 1	11.1	11.8	12.4	12.1	11.7	11.5	11.5	11.9	12.2	12.7	13.3	14.1	14.7	15.8	16.6	16.5	16.3	15.6	14.6	13.9	12.5	9.9	9.5	9.4	9.4	16.6	13.0
Sep 2	9.6	9.7	10.4	11.1	11.4	11.2	11.2	11.7	11.9	11.9	11.6	12.4	12.8	12.4	12.2	12	12.4	12.1	12.3	12.3	12.4	12.1	12	11.7	9.6	12.8	11.7
Sep 3	11.8	11.9	12	11.8	11.6	11.7	11.6	12.1	13.3	14.2	15.4	16.7	17	17.5	17.3	17.4	16.9	16.5	15	12.2	10.3	8.9	8	7	7.0	17.5	13.3
Sep 4	6.2	5.2	4.7	4.1	3.3	2.7	3.4	6.5	12.3	15.5	17.5	18.7	19.7	20.7	21.3	21.4	21.4	20.4	16.8	14	14.9	15.7	15.7	14.8	2.7	21.4	13.2
Sep 5	14	13.5	12.5	12	12.7	12.7	12.5	13.3	13.7	15.9	18.3	21.1	22.6	23.6	23.8	23.2	18.3	19.5	17.8	15.7	15	14.4	12.5	10.6	10.6	23.8	16.2
Sep 6	12.6	11.9	11.2	10.9	11.7	9.9	10.1	12.3	15	16.2	17.6	18.4	18.9	19.4	19.6	19.8	19.6	19.1	17.9	15.8	15.1	14.8	14	13.8	9.9	19.8	15.2
Sep 7	13.2	13.4	12.9	12.5	11.7	11	11	12.4	14.4	16.4	18.2	19.4	20.1	20.7	21.2	21.4	21	20.1	18.2	15.2	12.3	11.4	9.5	8.2	8.2	21.4	15.2
Sep 8	7.4	6.6	5.8	5.1	4.1	3.3	4.6	9.6	14.8	17.3	19.2	20.1	21.4	22	21.8	21.9	20.8	19.7	19	18.6	17.4	16.9	17.2	17.4	3.3	22.0	14.7
Sep 9	16.8	16.1	15.3	12.1	11.6	11	11.8	12.9	14.6	18	19.7	21.3	21.4	20.7	21.1	19.8	19	17.7	16.2	14.8	13.6	13.1	12.5	12.5	11.0	21.4	16.0
Sep 10	12.2	11.8	11.2	10.8	9.8	9.3	9.5	10	11.6	13.6	14.8	15.8	16.1	16.7	17.5	17.9	17.5	16.6	14	10.3	9.6	8.3	7.4	6.7	6.7	17.9	12.5
Sep 11	5.9	6.2	6.3	6.4	6.1	5.3	5.5	10.4	13	14.1	15.6	16.9	18	18.3	17.6	17.6	17.1	16.3	14.3	12	12.5	12	12.4	11.9	5.3	18.3	12.2
Sep 12	12	12.1	12.1	11.9	11.8	11.6	11.6	11.8	12.6	13.1	13.5	13	12.4	12.3	12.1	11.5	11.2	11.3	11.6	11	10.4	9.3	9.1	9	9.0	13.5	11.6
Sep 13	8.9	8.1	7.5	7	7.2	7.3	7.3	8.5	10	11.5	13.1	14.7	15.5	16	16.9	15.7	14.8	15.2	11.1	9.7	9.2	6.9	5.7	4.8	4.8	16.9	10.5
Sep 14	3.8	3.2	4.5	5.5	5.4	5.1	5.2	7	10.1	12.7	14.9	16.2	17.6	18.3	18.5	19.1	18.8	17.1	12.8	11.3	12.5	13.7	13.7	13.2	3.2	19.1	11.7
Sep 15	13.1	13.1	12	11	9.9	8	7.8	7.7	8	9.1	10.8	12.1	12.8	12.9	13.3	13.3	13	12.2	10.9	9.7	9	8.5	8.1	6.7	6.7	13.3	10.5
Sep 16	6.4	6.4	6.1	6	5.6	5.3	5.1	4.9	4.7	4.1	3.5	4.9	4.8	5.2	5.5	5.7	6.1	6.4	5.8	4.1	2.9	2.5	1.6	1.4	1.4	6.4	4.8
Sep 17	-0.1	-1.2	-1.4	-1.6	-1.5	-2.1	-2	1.5	3.1	6.2	7.1	8.3	10.1	11.7	12.3	12	11.7	11	10.4	9.6	9.2	8.9	8	6.8	-2.1	12.3	5.8
Sep 18	5.6	5	3.6	3	3.1	3.5	4	5.3	6.8	8.4	9.4	10.4	11.5	12.2	13.1	13.5	13.8	13.4	11.6	9	7.5	6.7	5.3	5.6	3.0	13.8	8.0
Sep 19	5.6	5.5	5.4	5.1	5.2	4.6	4.2	6.5	9.2	11.1	11.9	12.5	12.9	13.2	12.7	9.1	8.8	8.6	7.6	7	6.5	6.1	6	5.8	4.2	13.2	8.0
Sep 20	6.3	5.5	4.7	3.8	3.4	2.9	3	4.2	6.1	8.9	11.2	12.5	13.8	14.6	15	13.9	12.1	11.2	9.1	6.4	6.3	5.6	3.8	2.6	2.6	15.0	7.8
Sep 21	2	1.5	3.6	1.9	1.2	0.2	1.8	6.7	7.1	8.6	10.5	13.3	15.7	17.9	18.7	19.6	20.2	18.8	16.1	15.6	14.5	13.4	11.6	8	0.2	20.2	10.4
Sep 22	6.9	10	9.4	7.6	7.2	6.8	7.2	8.4	10.9	12.8	14.7	16.4	16.5	16.3	16.8	17.5	16.7	15.7	13	11.7	12	12.1	12.4	12.4	6.8	17.5	12.1
Sep 23	11.6	10.8	9.9	9.1	8.2	6.8	5.7	6.3	7.4	8.8	9.7	10.3	9.3	10.8	11.3	11.1	11.2	10.7	9.5	8	6.7	5.4	4.4	4	4.0	11.6	8.6
Sep 24	3.1	2.4	1.7	1.1	-0.8	-2.3	-0.4	1	3.1	6.4	8.8	10.8	13.4	15	17	17.6	17.7	17.9	16.3	15	14.3	15	15.5	14.2	-2.3	17.9	9.3
Sep 25	12.5	12.7	13.8	13.3	11.2	10.8	11.7	12.8	13.5	13.9	14.4	15	15.3	16.9	18.1	18.3	18.3	17.5	15.1	12.8	10.6	8.6	7.3	7.7	7.3	18.3	13.4
Sep 26	7.9	7.9	7.7	7.4	7.4	7.5	7.7	8	9.6	14	15.6	16.9	16.7	17.2	17.2	17.7	17.3	15.8	14.8	14.3	13.2	10.3	9	6.9	6.9	17.7	12.0
Sep 27	6.1	5.4	5	4.1	3.7	3.6	4	6	8.9	11.2	13.7	17	18.1	19.7	21.2	21.7	21.4	19.4	15.7	14.5	12.6	11.5	10	9.5	3.6	21.7	11.8
Sep 28	8.8	8.1	8	8.6	9.1	8	7	8.6	11.2	13.2	14.8	16.6	17.6	18.2	18.3	17.5	16.5	14.9	13.5	12.8	12.2	11.9	11.2	11	7.0	18.3	12.4
Sep 29	10.8	10.1	9.4	8.2	6.4	5.9	5.9	7	10.1	12.6	15.1	16.2	16.8	17.8	18.6	18.8	18.6	16.5	12.1	12.8	10.3	7.6	7.2	7.5	5.9	18.8	11.8
Sep 30	5.1	4.1	9.1	8	7.9	7.4	6.5	7	7.1	8.5	10.5	12.7	15.9	17.4	18.3	19.1	19.2	17.3	13.5	12.3	9.9	9	9.1	8.3	4.1	19.2	11.0
Diurnal Maximum	16.8	16.1	15.3	13.3	12.7	12.7	12.5	13.3	15.0	18.0	19.7	21.3	22.6	23.6	23.8	23.2	21.4	20.4	19.0	18.6	17.4	16.9	17.2	17.4			
Dairurnal Average	8.6	8.3	8.2	7.7	7.2	6.7	6.9	8.4	10.2	12.0	13.5	14.8	15.6	16.4	16.8	16.7	16.3	15.5	13.6	12.1	11.2	10.4	9.7	9.0			

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	In/Valid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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

Timeseries Chart of Hourly Average for AT - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - September 2021

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

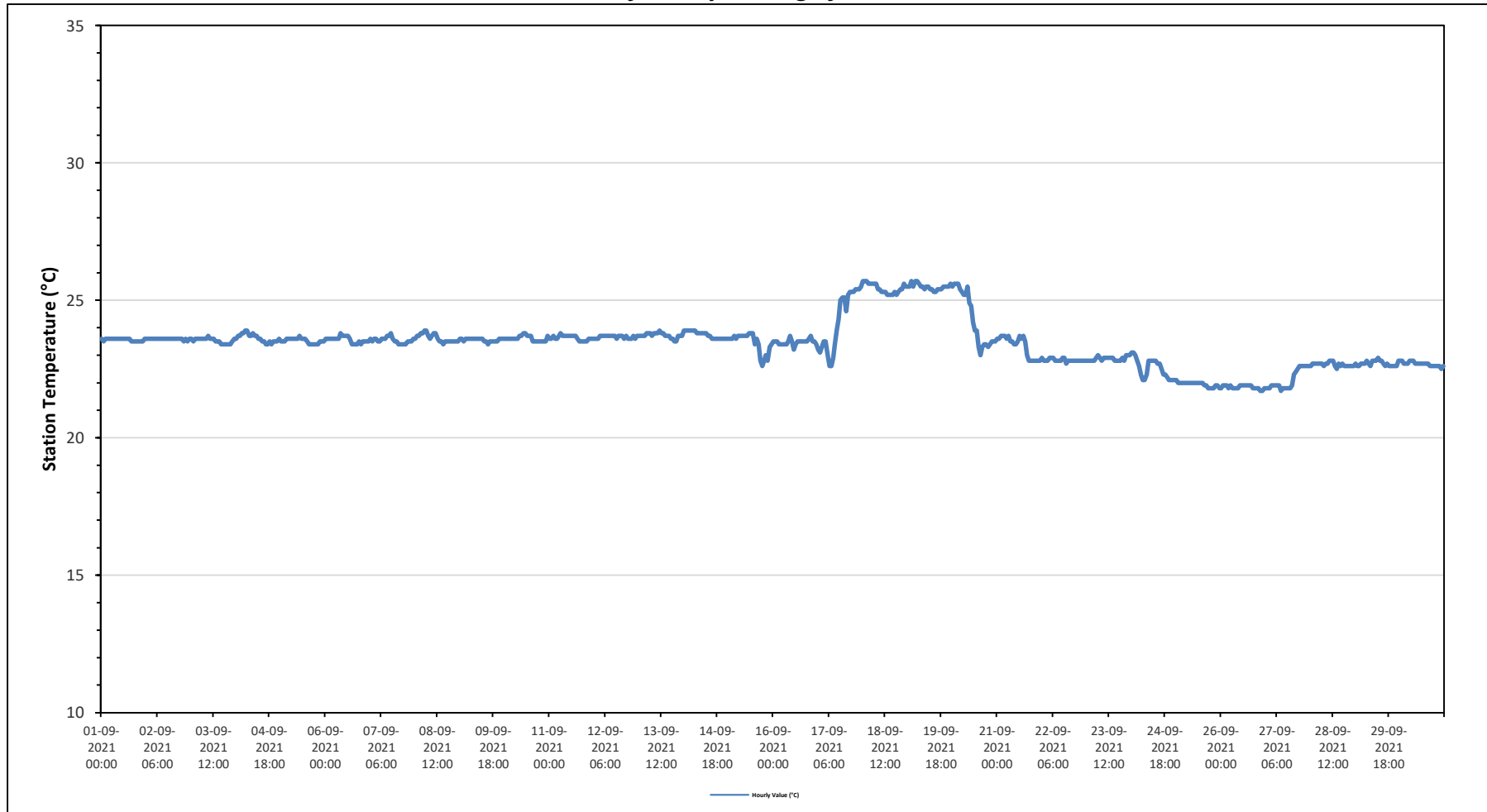
Maximum Hourly Value:	25.7 °C	on September 18 at hour 0	Hours in Service:	720
Maximum Daily Value:	25.5 °C	on September 19	Hours of Data:	720
Minimum Hourly Value:	21.7 °C	on September 26 at hour 21	Hours of Missing Data:	0
Minimum Daily Value:	21.8 °C	on September 26	Hours of Calibration:	0
Monthly Average:	23.4 °C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23		
Sep 1	23.6	23.5	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.6	23.5	23.6	23.6		
Sep 2	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	
Sep 3	23.6	23.5	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.5	23.5	23.5	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.5	23.6	23.6	23.6	
Sep 4	23.6	23.7	23.7	23.8	23.8	23.9	23.9	23.7	23.7	23.8	23.7	23.7	23.6	23.6	23.5	23.5	23.4	23.4	23.5	23.4	23.5	23.5	23.5	23.5	23.6	23.4	23.9	23.6	
Sep 5	23.5	23.5	23.5	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.5	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.5	23.5	23.5	23.5	23.4	23.7	23.5
Sep 6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.4	23.4	23.4	23.4	23.4	23.5	23.5	23.5	23.5	23.5	23.4	23.8	23.6	
Sep 7	23.6	23.5	23.6	23.6	23.5	23.5	23.6	23.6	23.6	23.6	23.6	23.7	23.7	23.8	23.6	23.5	23.4	23.4	23.4	23.4	23.4	23.5	23.5	23.5	23.5	23.6	23.4	23.8	23.5
Sep 8	23.6	23.7	23.7	23.8	23.8	23.9	23.9	23.7	23.6	23.7	23.8	23.8	23.6	23.5	23.5	23.4	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.4	23.9	23.6	
Sep 9	23.6	23.6	23.5	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.5	23.5	23.4	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.6	23.6	23.4	23.6	23.6	
Sep 10	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.7	23.7	23.8	23.8	23.7	23.7	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.7	23.5	23.8	23.6	
Sep 11	23.6	23.6	23.7	23.6	23.6	23.7	23.8	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.6	23.5	23.5	23.5	23.5	23.5	23.5	23.6	23.6	23.6	23.5	23.8	23.6	
Sep 12	23.6	23.6	23.6	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.7	
Sep 13	23.7	23.7	23.7	23.7	23.8	23.8	23.8	23.7	23.8	23.8	23.8	23.8	23.8	23.8	23.7	23.7	23.7	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.7	
Sep 14	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.7	23.7	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.7	
Sep 15	23.6	23.6	23.6	23.7	23.6	23.7	23.7	23.7	23.7	23.7	23.7	23.8	23.8	23.8	23.8	23.4	23.6	23.4	22.8	22.6	22.8	23.0	22.8	23.3	23.4	22.6	23.8	23.5	
Sep 16	23.5	23.5	23.5	23.4	23.4	23.4	23.4	23.4	23.5	23.7	23.5	23.2	23.4	23.5	23.5	23.5	23.5	23.5	23.5	23.6	23.7	23.5	23.5	23.5	23.4	23.2	23.7	23.5	
Sep 17	23.2	23.1	23.3	23.5	23.5	23.0	22.6	22.6	22.9	23.4	23.9	24.3	25.0	25.1	25.1	24.6	25.2	25.3	25.3	25.3	25.4	25.4	25.4	25.5	22.6	25.5	24.2		
Sep 18	25.7	25.7	25.7	25.6	25.6	25.6	25.6	25.6	25.4	25.4	25.3	25.3	25.3	25.2	25.2	25.2	25.2	25.3	25.2	25.3	25.4	25.4	25.6	25.5	25.2	25.7	25.4		
Sep 19	25.5	25.5	25.7	25.5	25.7	25.7	25.6	25.5	25.5	25.4	25.5	25.5	25.4	25.4	25.3	25.3	25.4	25.4	25.4	25.5	25.5	25.5	25.5	25.6	25.3	25.7	25.5		
Sep 20	25.5	25.6	25.6	25.6	25.4	25.3	25.2	25.2	25.5	24.9	24.8	24.2	23.9	23.9	23.3	23.0	23.3	23.4	23.4	23.3	23.4	23.3	23.5	23.5	23.0	25.6	24.3		
Sep 21	23.6	23.6	23.7	23.7	23.7	23.6	23.7	23.5	23.5	23.4	23.4	23.5	23.7	23.6	23.7	23.5	23.0	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	23.7	23.3	
Sep 22	22.9	22.8	22.8	22.8	22.9	22.9	22.9	22.8	22.8	22.8	22.8	22.9	22.9	22.9	22.7	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.7	22.9	22.8		
Sep 23	22.8	22.8	22.8	22.8	22.8	22.9	23.0	22.9	22.8	22.9	22.9	22.9	22.9	22.9	22.9	22.8	22.8	22.8	22.8	22.8	22.8	22.8	23.0	23.0	22.8	23.0	22.9		
Sep 24	23.1	23.1	23.0	22.8	22.6	22.3	22.1	22.1	22.3	22.8	22.8	22.8	22.8	22.8	22.7	22.7	22.5	22.3	22.3	22.2	22.1	22.1	22.1	22.1	22.1	23.1	22.5		
Sep 25	22.1	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	21.9	21.9	21.8	21.8	21.8	21.8	21.8	21.8	21.9	21.9	21.8	22.1	21.9		
Sep 26	21.8	21.9	21.9	21.9	21.8	21.9	21.8	21.8	21.8	21.8	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.8	21.8	21.8	21.8	21.8	21.8	21.7	21.7	21.9	21.8		
Sep 27	21.8	21.8	21.8	21.9	21.9	21.9	21.9	21.9	21.7	21.8	21.8	21.8	21.8	21.8	21.9	22.3	22.4	22.5	22.6	22.6	22.6	22.6	22.6	22.6	21.7	22.6	22.1		
Sep 28	22.6	22.7	22.7	22.7	22.7	22.7	22.7	22.6	22.7	22.7	22.7	22.8	22.8	22.8	22.6	22.5	22.7	22.6	22.7	22.6	22.6	22.6	22.6	22.6	22.5	22.8	22.7		
Sep 29	22.7	22.6	22.6	22.7	22.7	22.7	22.8	22.7	22.6	22.8	22.8	22.8	22.9	22.8	22.8	22.7	22.6	22.7	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.8	22.7	
Sep 30	22.8	22.8	22.7	22.7	22.7	22.8	22.8	22.8	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.5	22.8	22.7		
Diurnal Maximum	25.7	25.7	25.7	25.6	25.7	25.7	25.6	25.6	25.5	25.4	25.5	25.5	25.4	25.4	25.3	25.3	25.4	25.4	25.4	25.5	25.5	25.6	25.6	25.6	25.6	25.6	25.6		
Daiurnal Average	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.4	23.4	23.5	23.5	23.4	23.4	23.4	23.4	23.3	23.3	23.3	23.3	23.3	23.4	23.4	23.4	23.4	23.4	23.4		

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

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

Timeseries Chart of Hourly Average for ST - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - September 2021

Summary of Hourly Averages

PRECIPITATION in mm

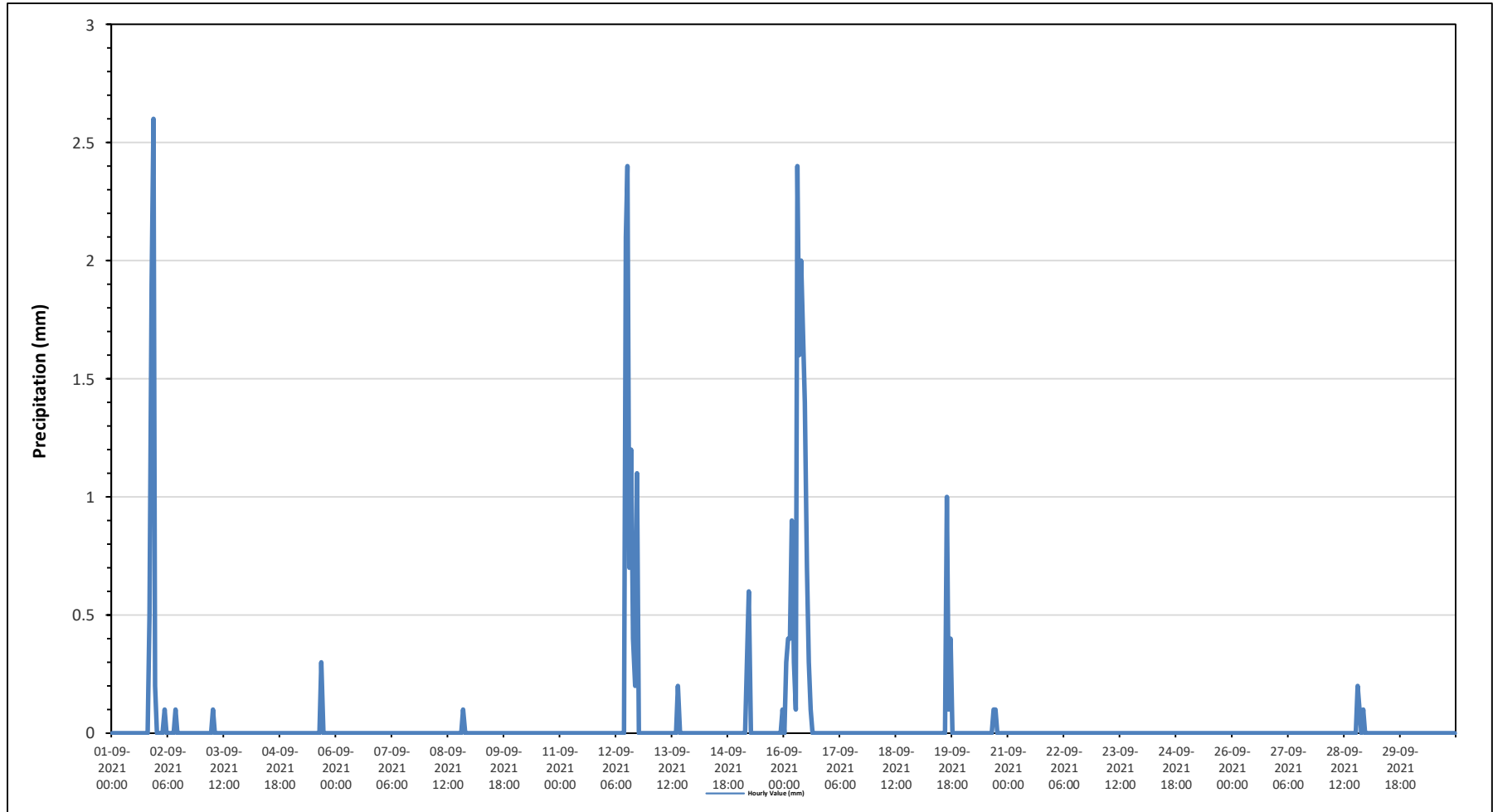
Maximum Hourly Value:	2.6 mm on September 1 at hour 22	Hours in Service:	720
Maximum Daily Value:	0.5 mm on September 16	Hours of Data:	720
Minimum Hourly Value:	0.0 mm on September 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0 mm on September 4	Hours of Calibration:	0
Monthly Total:	29.9 mm	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Total	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Sep 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	1.9	2.6	0.2	0.0	2.6	0.2
Sep 2	0	0	0	0	0.1	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.0
Sep 3	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.0
Sep 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0.0	0.3	0.0
Sep 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 8	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	0.1	0.0
Sep 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 12	0	0	0	0	0	0	0	0	0	0	0	2.1	2.4	0.7	1.2	0.4	0.2	1.1	0	0	0	0	0	0	0.0	2.4	0.3
Sep 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0.0	0.2	0.0
Sep 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
Sep 15	0	0	0	0	0.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	0.6	0.0
Sep 16	0	0.3	0.4	0.4	0.9	0.3	0.1	2.4	1.6	2	1.7	1.4	0.7	0.3	0.1	0	0	0	0	0	0	0	0	0	0.0	2.4	0.5
Sep 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	0.4	0	0	0	0	0	0	0.0	1.0	0.1
Sep 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0.0	0.1	0.0
Sep 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
Sep 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
Sep 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
Sep 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
Sep 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
Sep 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
Sep 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.1	0	0.1	0	0.0	0.2	0.0
Sep 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Diurnal Maximum	0.0	0.3	0.4	0.4	0.9	0.6	0.1	2.4	1.6	2.0	1.7	2.1	2.4	0.7	1.2	1.0	0.3	1.1	0.0	0.2	0.5	1.9	2.6	0.2			
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0			

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

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

Timeseries Chart of Hourly Average for Precipitation - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - September 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

Maximum Hourly Value:	19.4 kph	on September 23 at hour 11	Hours in Service:	720
Maximum Daily Value:	12.5 kph	on September 15	Hours of Data:	718
Minimum Hourly Value:	0.1 kph	on September 4 at hour 4	Hours of Missing Data:	0
Minimum Daily Value:	2.0 kph	on September 18	Hours of Calibration:	2
Monthly Average:	3.3 kph		Operational Uptime:	100.0

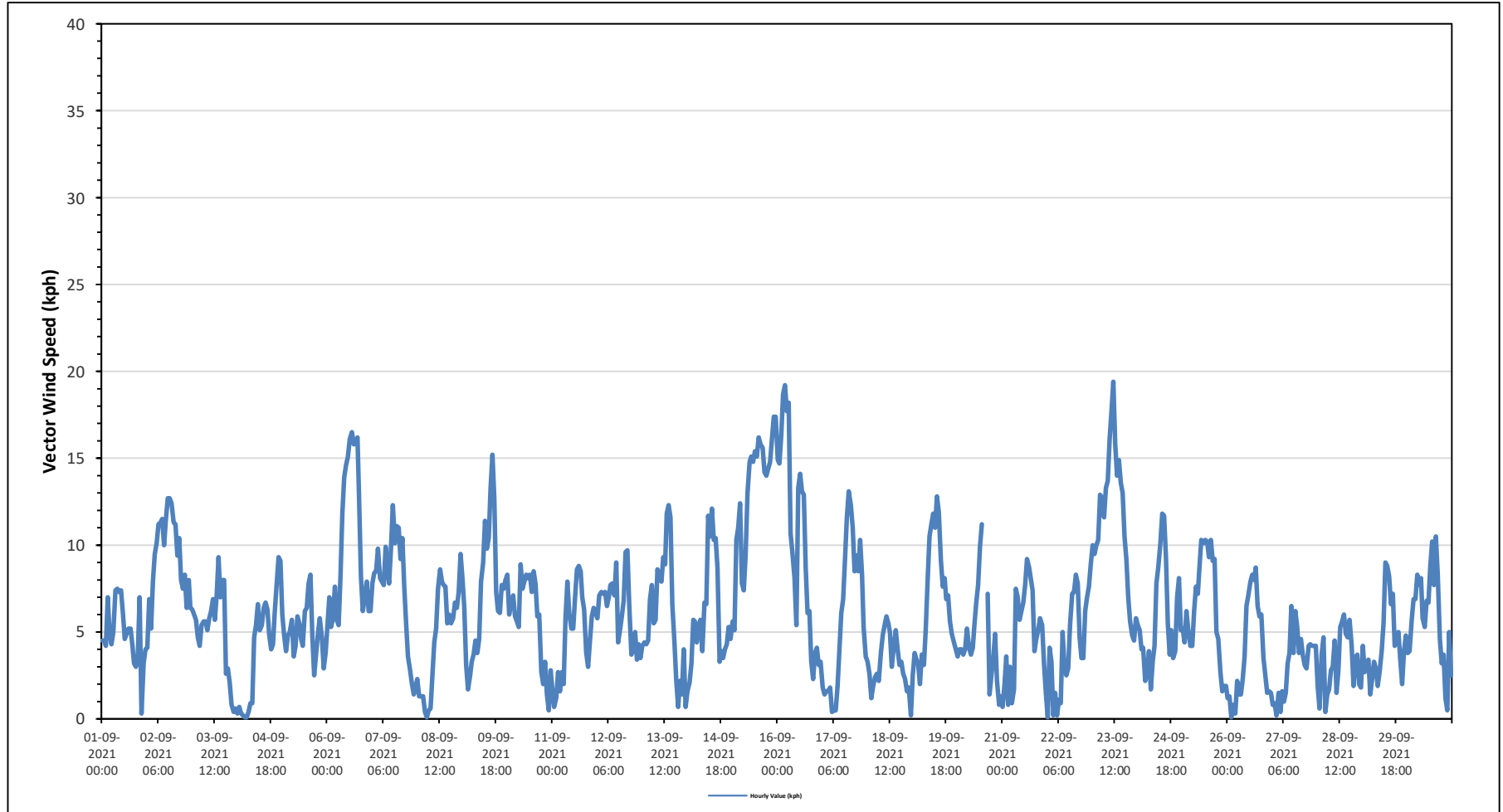
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Sep 1	4.5	4.5	4.2	7.0	4.9	4.3	5.0	7.4	7.5	7.3	7.4	6.1	4.6	4.9	5.2	5.2	4.2	3.2	3.0	3.6	7.0	0.3	3.2	4.0	0.3	7.5	3.5
Sep 2	4.1	6.9	5.2	7.9	9.5	10.1	11.2	11.3	11.5	10.0	11.5	12.7	12.7	12.4	11.3	11.2	9.4	10.4	8.0	7.5	8.3	6.4	8.0	6.4	4.1	12.7	9.0
Sep 3	6.3	6.0	5.7	4.7	4.2	5.4	5.6	5.6	5.1	5.8	6.2	6.9	5.7	7.1	9.3	7.0	8.0	8.0	2.6	2.9	2.1	0.8	0.4	0.6	0.4	9.3	3.5
Sep 4	0.3	0.7	0.3	0.2	0.1	0.1	0.4	0.9	0.9	4.7	5.4	6.6	5.1	5.4	6.4	6.7	6.3	4.8	4.0	4.3	6.0	7.8	9.3	9.1	0.1	9.3	3.5
Sep 5	6.0	4.8	3.9	4.8	5.0	5.7	3.6	4.2	5.9	5.5	4.6	4.2	6.2	6.4	7.8	8.3	4.8	2.5	3.7	4.9	5.8	4.7	2.9	3.8	2.5	8.3	2.2
Sep 6	5.4	7.0	5.3	5.7	7.6	5.7	5.4	8.2	11.8	13.9	14.6	15.1	16.1	16.5	15.8	16.0	16.2	12.7	8.2	6.2	7.1	7.9	6.2	6.2	5.3	16.5	9.4
Sep 7	7.8	8.4	8.5	9.8	8.1	7.9	7.7	9.9	8.8	7.8	9.8	12.3	10.1	11.1	11.0	9.2	10.4	7.6	5.5	3.6	2.8	2.0	1.4	1.8	1.4	12.3	7.4
Sep 8	2.3	1.3	1.3	1.3	0.4	0.1	0.5	0.6	2.5	4.4	5.2	7.5	8.6	7.9	7.7	7.6	5.5	6.0	5.5	5.8	6.7	6.4	7.3	9.5	0.1	9.5	4.2
Sep 9	8.1	6.4	3.1	1.7	2.5	3.3	3.7	4.5	3.8	4.6	7.9	9.0	11.4	9.8	10.4	13.3	15.2	12.7	7.3	6.2	6.1	7.7	7.5	8.0	1.7	15.2	5.6
Sep 10	8.3	6.0	6.7	7.1	5.9	5.6	5.3	8.9	7.5	7.9	8.3	8.1	8.3	7.3	8.5	7.8	5.9	6.0	2.7	2.0	3.3	1.4	0.5	2.8	0.5	8.9	4.6
Sep 11	1.6	0.7	1.2	2.7	1.6	2.7	2.0	5.8	7.9	6.1	5.2	5.2	7.0	8.6	8.8	8.5	7.0	6.3	3.8	3.0	4.5	5.9	6.4	6.1	0.7	8.8	3.7
Sep 12	5.8	7.1	7.3	7.2	7.3	6.5	7.0	7.7	7.8	7.1	9.0	4.4	5.1	5.9	6.8	9.6	9.7	6.5	3.7	4.0	5.0	3.4	4.3	3.5	3.4	9.7	6.0
Sep 13	4.2	4.4	4.3	4.5	6.9	7.7	5.5	5.7	8.6	8.2	7.9	9.3	8.9	11.8	12.3	11.6	6.6	4.4	2.2	0.7	2.2	1.4	4.0	0.7	0.7	12.3	5.4
Sep 14	1.6	2.1	3.2	5.7	5.6	4.4	5.4	5.7	3.9	6.7	6.6	11.7	10.5	12.1	10.3	10.4	8.7	3.3	3.9	3.5	4.0	4.3	5.3	4.6	1.6	12.1	5.1
Sep 15	5.6	5.1	10.3	11.0	12.4	7.8	7.4	9.5	13.0	14.8	15.1	14.8	15.4	15.1	16.2	15.8	15.6	14.2	14.0	14.4	14.8	16.1	17.4	17.4	5.1	17.4	12.5
Sep 16	14.9	14.7	16.3	18.7	19.2	17.7	18.2	10.7	9.4	8.1	5.4	13.3	14.1	13.1	12.9	8.7	6.1	6.2	3.3	2.3	3.8	4.1	3.1	3.3	2.3	19.2	9.3
Sep 17	1.8	1.4	1.6	1.6	1.8	0.4	0.5	0.5	1.9	4.0	6.1	6.9	9.2	11.6	13.1	12.3	11.0	8.5	9.4	8.5	10.3	8.3	5.3	3.6	0.4	13.1	5.2
Sep 18	3.3	2.6	1.2	1.9	2.4	2.6	2.2	3.8	4.8	5.4	5.9	5.5	5.0	3.0	4.1	5.1	4.0	3.1	3.3	2.6	2.3	1.6	1.8	0.2	0.2	5.9	2.0
Sep 19	2.5	3.8	3.4	3.2	2.0	3.7	3.1	5.2	8.0	10.5	11.2	11.8	11.0	12.8	11.9	9.1	7.6	8.1	6.9	7.1	5.6	4.9	4.4	4.0	2.0	12.8	6.4
Sep 20	3.6	4.0	4.0	3.7	4.0	5.2	4.1	3.7	4.1	5.4	6.7	7.7	9.9	11.2	C	C	7.2	1.4	2.5	3.5	4.9	2.2	0.8	1.3	0.8	11.2	3.9
Sep 21	0.7	1.9	3.6	0.8	3.0	0.9	1.7	7.5	7.0	5.7	6.2	6.7	7.7	9.2	8.7	8.1	7.4	3.9	4.6	5.1	5.8	5.4	3.2	1.5	0.7	9.2	4.7
Sep 22	0.1	4.1	3.3	0.2	1.5	0.2	1.1	0.9	5.0	3.0	2.5	2.9	5.4	7.2	7.3	8.3	7.8	4.7	3.5	3.5	6.2	7.0	7.6	8.9	0.1	8.9	3.6
Sep 23	10.0	9.5	10.0	10.3	12.9	12.7	11.6	13.3	13.7	16.1	17.7	19.4	15.8	14.0	14.9	13.6	13.0	10.5	9.2	7.0	5.6	4.8	4.5	5.8	4.5	19.4	11.3
Sep 24	5.4	5.1	4.0	4.1	2.2	2.6	3.9	1.7	3.3	4.2	7.8	8.7	10.1	11.8	11.7	9.3	5.5	3.7	5.1	3.5	3.9	7.0	8.1	5.1	1.7	11.8	5.1
Sep 25	5.2	4.4	6.2	5.1	4.2	4.2	6.2	7.6	7.2	8.7	10.3	10.1	10.3	10.2	9.3	10.3	9.1	9.2	5.0	4.6	2.7	1.6	1.9	1.9	1.6	10.3	6.1
Sep 26	1.2	1.3	0.1	0.8	0.3	2.2	1.4	1.4	2.3	3.6	6.5	7.1	7.9	8.3	8.0	8.7	6.5	5.9	6.0	3.5	2.5	1.5	1.6	1.5	0.1	8.7	3.3
Sep 27	0.8	0.9	0.2	1.5	0.4	1.6	1.0	1.5	3.2	3.8	6.5	3.8	6.2	5.3	3.8	4.6	3.7	3.1	2.9	4.2	4.3	4.2	4.2	4.2	0.2	6.5	2.6
Sep 28	1.9	0.6	3.7	4.7	0.4	1.4	1.7	2.8	3.0	4.5	1.5	2.8	5.3	5.6	6.0	4.9	4.7	5.7	4.2	1.9	3.5	3.7	2.0	1.8	0.4	6.0	2.1
Sep 29	4.2	2.7	3.1	3.4	1.4	2.3	3.3	2.9	1.9	2.7	3.9	5.5	9.0	8.8	8.2	6.6	7.2	4.2	4.6	5.0	3.4	2.0	3.9	4.8	1.4	9.0	3.6
Sep 30	3.8	3.9	5.7	6.9	6.9	8.3	7.7	8.1	5.8	5.3	6.8	6.7	8.8	10.2	7.7	10.5	8.3	4.6	3.2	3.7	1.2	0.5	5.0	2.5	0.5	10.5	5.2
Diurnal Maximum	15	15	16	19	19	18	18	13	14	16	18	19	16	17	16	16	16	14	14	14	15	16	17	17			
Dalurnal Average	4.4	4.4	4.6	4.9	4.8	4.8	4.8	5.6	6.2	6.9	7.7	8.4	9.0	9.5	9.5	9.3	8.1	6.4	5.1	4.6	5.1	4.5	4.7	4.5			

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

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

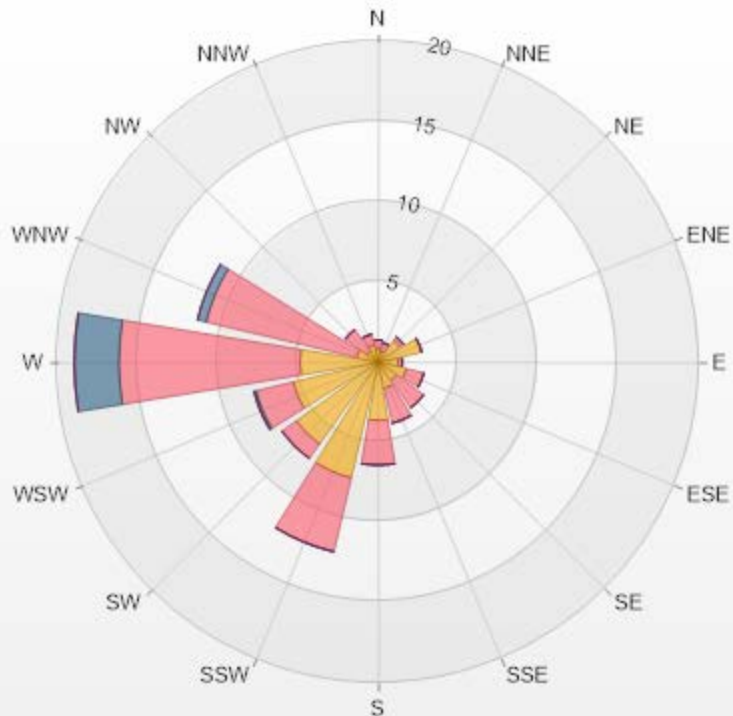
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for VWS - Tamarack Site



Wind: Tamarack Monitor: WDS [kph] Monthly: 09-2021 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 12.12% Valid Data: 99.72%

Direction	1.8-6.0	6.0-15.0	15.0-29.0	29.0-39.0	>39.0	Total
N	0.84	0.56	0	0	0	1.4
NNE	0.7	0.56	0	0	0	1.26
NE	1.67	0.28	0	0	0	1.95
ENE	2.79	0	0	0	0	2.79
E	1.25	0.28	0	0	0	1.53
ESE	1.81	1.11	0	0	0	2.92
SE	1.39	2.09	0	0	0	3.48
SSE	1.67	2.23	0	0	0	3.9
S	3.62	2.79	0	0	0	6.41
SSW	7.38	4.74	0	0	0	12.12
SW	6.27	1.11	0	0	0	7.38
WSW	5.43	2.37	0.14	0	0	7.94
W	4.87	11.28	2.79	0	0	18.94
WNW	1.39	9.61	0.56	0	0	11.56
NW	0.84	1.67	0	0	0	2.51
NNW	1.11	0.7	0	0	0	1.81
Summary	43.03	41.38	3.49	0	0	87.9



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% Icon Classes (kph)	43	1.8-6.0	41	6.0-15.0	3	15.0-29.0	0	29.0-39.0	0	>39.0
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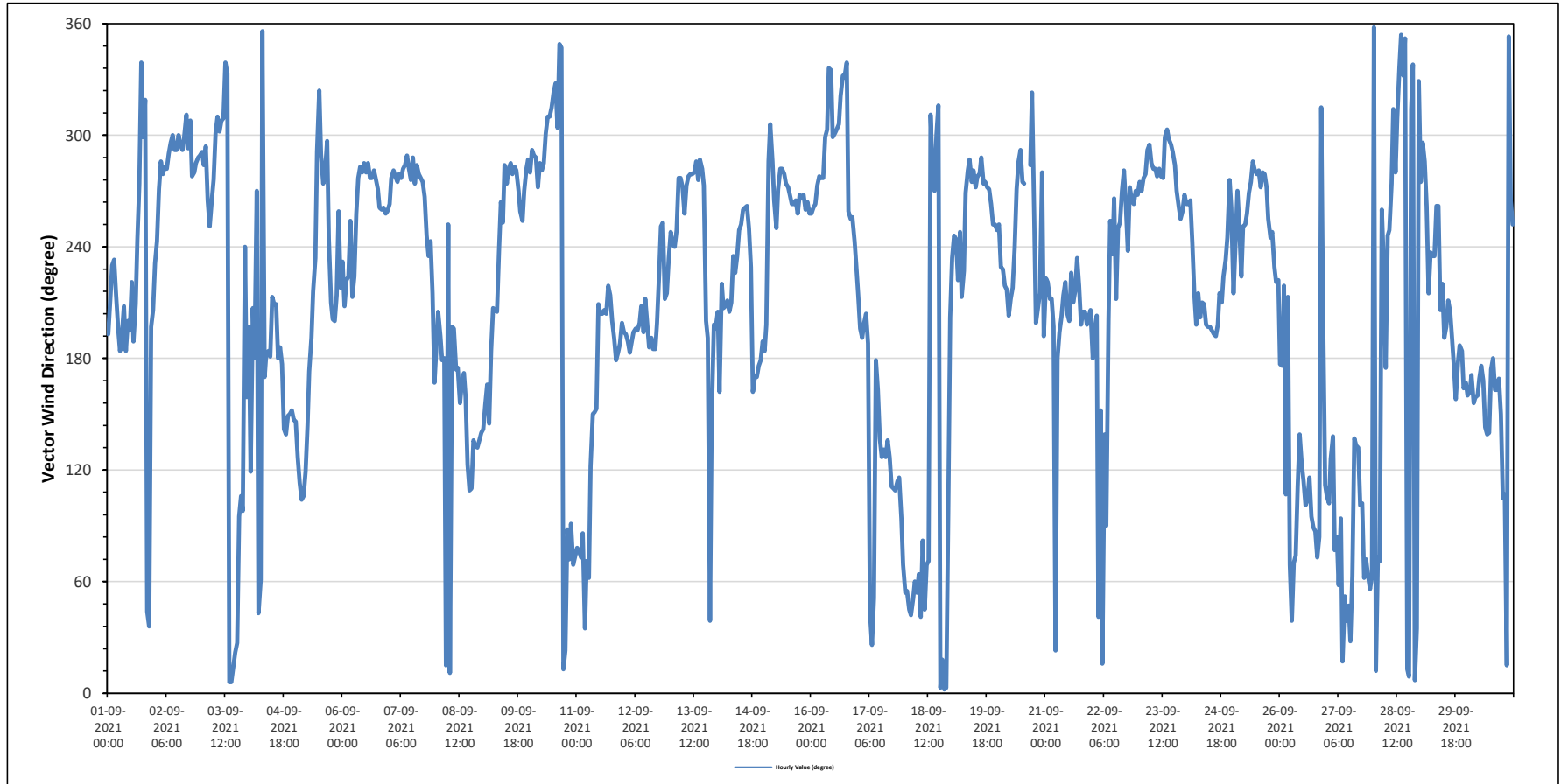
Tamarack Site - September 2021

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:		253 (WSW) degree														Hours in Service:		720									
																Hours of Data:		718									
																Hours of Missing Data:		0									
																Hours of Calibration:		2									
																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	
Sep 1	S	SSW	SW	SW	SSW	SSW	S	S	SSW	S	SSW	SSW	SW	S	SSW	WSW	W	NNW	WNW	NW	NE	NE	SSW	SSW	212	SSW	
Sep 2	SW	WSW	W	WNW	W	W	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW	NW	W	W	WNW	WNW	WNW	289	WNW	
Sep 3	WNW	WNW	WNW	W	WSW	W	W	WNW	NW	WNW	NW	NW	NNW	NNW	N	N	NNE	NNE	NNE	E	ESE	E	WSW	SSE	321	NW	
Sep 4	SSW	ESE	SSW	S	W	NE	ENE	N	SSE	S	S	S	SSW	SSW	SSW	S	S	S	SE	SE	SSE	SSE	SSE	SE	171	S	
Sep 5	SE	SE	ESE	ESE	ESE	ESE	SE	S	S	SW	SW	WNW	NW	WNW	W	W	WNW	WSW	SSW	SSW	SSW	SSW	SSW	SW	214	SSW	
Sep 6	SW	SSW	SW	SW	WSW	SSW	SW	WSW	W	W	W	WNW	W	WNW	W	W	W	W	W	W	WSW	W	WSW	WSW	268	W	
Sep 7	W	W	W	W	W	W	W	W	WNW	WNW	W	W	WNW	W	WNW	W	W	W	W	W	WSW	SW	WSW	SSW	276	W	
Sep 8	S	SSW	S	S	S	NNE	WSW	NNE	SSW	SSW	S	S	SSE	SSE	S	SSE	ESE	ESE	ESE	SE	SE	SE	SE	SE	152	SSE	
Sep 9	SE	SSE	SSE	SE	S	SSW	SSW	SSW	SW	W	WSW	WNW	W	WNW	W	W	W	W	WSW	WSW	W	W	WNW	W	262	W	
Sep 10	W	WNW	WNW	WNW	W	WNW	W	WNW	WNW	NW	NW	NW	NW	NNW	WNW	NNW	NNW	NNE	NNE	E	ENE	E	ENE	ENE	312	NW	
Sep 11	ENE	ENE	ENE	E	NE	ENE	ENE	ESE	SSE	SSE	SSE	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	S	S	SSW	182	S	
Sep 12	SSW	S	S	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	S	S	SSW	SW	WSW	WSW	SSW	SSW	SW	199	SSW	
Sep 13	WSW	WSW	WSW	WSW	W	W	W	WSW	W	W	W	W	W	WNW	W	WNW	W	W	SSW	S	NE	SE	SSW	SSW	271	W	
Sep 14	SSW	SSE	SW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	WSW	WSW	W	W	WSW	SW	SSE	SSE	SSE	S	S	S	S	227	SW	
Sep 15	S	SSW	WNW	NW	WNW	W	WSW	W	W	W	W	W	W	W	W	W	W	WSW	W	W	W	WSW	W	WSW	268	W	
Sep 16	WSW	W	W	W	W	W	W	WNW	WNW	NNW	NNW	NNW	NNW	NNW	NW	NNW	NNW	NNW	NNW	WSW	WSW	WSW	WSW	SW	287	WNW	
Sep 17	SSW	SSW	S	SSW	SSW	S	NE	NNE	NE	S	SSE	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE	ESE	ESE	E	ENE	126	SE	
Sep 18	NE	NE	NE	NE	NE	ENE	NE	ENE	NE	E	NE	ENE	ENE	NW	W	W	WNW	NW	N	NNE	N	N	E	SSW	32	NNE	
Sep 19	SW	WSW	WSW	SW	WSW	SSW	SW	W	W	WNW	W	W	W	W	W	WNW	W	W	W	W	W	WSW	WSW	WSW	269	W	
Sep 20	WSW	SW	SW	SW	SW	SSW	SSW	SW	WSW	W	WNW	WNW	W	W	C	C	WNW	NW	WSW	SSW	SSW	SSW	W	S	251	WSW	
Sep 21	SW	SW	SSW	SSW	SSW	NNE	S	SSW	SSW	SSW	SW	SSW	SSW	SW	SSW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	210	SSW	
Sep 22	S	SSW	SSW	NE	SSE	NNE	SE	E	SSW	WSW	SW	W	SSW	WSW	WSW	W	W	W	SW	W	W	W	W	W	251	WSW	
Sep 23	W	W	W	W	WNW	WNW	WNW	W	W	W	W	W	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	W	WSW	WSW	W	283	W
Sep 24	W	W	W	WSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	SSW	SSW	SSW	SSW	SW	SW	WSW	W	217	SW	
Sep 25	SSW	SW	W	WSW	SW	WSW	WSW	WSW	W	W	WNW	W	W	W	W	W	W	W	WSW	WSW	WSW	SW	SW	SW	266	W	
Sep 26	S	S	SW	ESE	SSW	ENE	NE	ENE	ENE	ESE	SE	ESE	ESE	E	ESE	ESE	E	E	E	ENE	E	ENE	ENE	ESE	105	ESE	
Sep 27	ESE	E	SE	SE	ENE	E	ENE	E	NNE	NE	NE	NE	NNE	ENE	SE	SE	SE	E	E	ENE	ENE	ENE	ENE	ENE	71	ENE	
Sep 28	N	NNE	ENE	ENE	WSW	SW	S	WSW	WSW	W	NW	W	NW	NNW	N	NNW	N	NNE	N	NW	NNW	N	NE	NNW	340	NNW	
Sep 29	W	WNW	WNW	W	SSW	SW	SW	SW	W	W	SSW	SW	S	SSW	SSW	SSW	S	S	SSE	S	S	S	SSE	SSE	207	SSW	
Sep 30	SSE	SSE	S	SSE	SSE	SSE	SSE	S	SSE	SE	SE	SE	S	S	SSE	SSE	SSE	SSE	ESE	ESE	NNE	N	W	WSW	163	SSE	
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 VWD - Tamarack Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - September 2021

Summary of Hourly Averages

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

WIND SPEED																											
Maximum Hourly Value: 19.4 kph on September 23 at hour 11													Hours in Service: 720														
Maximum Daily Value: 12.5 kph on September 15													Hours of Data: 718														
Minimum Hourly Value: 0.1 kph on September 4 at hour 4													Hours of Missing Data: 0														
Minimum Daily Value: 2.0 kph on September 18													Hours of Calibration: 2														
Monthly Average: 3.3 kph													Operational Uptime: 100														
WIND DIRECTION																											
Monthly Average: 253 (WSW, degree)																											
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Sep 1	4.5	4.5	4.2	7.0	4.9	4.3	5.0	7.4	7.5	7.3	7.4	6.1	4.6	4.9	5.2	5.2	4.2	3.2	3.0	3.6	7.0	0.3	3.2	4.0	0.3	7.5	3.5
Sep 2	4.1	6.9	5.2	7.9	9.5	10.1	11.2	11.3	11.5	10.0	11.5	12.7	12.7	12.4	11.3	11.2	9.4	10.4	8.0	7.5	8.3	6.4	8.0	6.4	4.1	12.7	9.0
Sep 3	6.3	6.0	5.7	4.7	4.2	5.4	5.6	5.6	5.1	5.8	6.2	6.9	5.7	7.1	9.3	7.0	8.0	2.6	2.9	2.1	0.8	0.4	0.6	0.4	9.3	3.5	
Sep 4	0.3	0.7	0.3	0.2	0.1	0.1	0.4	0.9	0.9	4.7	5.4	6.6	5.1	5.4	6.4	6.7	6.3	4.8	4.0	4.3	6.0	7.8	9.3	9.1	0.1	9.3	3.5
Sep 5	6.0	4.8	3.9	4.8	5.0	5.7	3.6	4.2	5.9	5.5	4.6	4.2	6.2	6.4	7.8	8.3	4.8	2.5	3.7	4.9	5.8	4.7	2.9	3.8	2.5	8.3	2.2
Sep 6	5.4	7.0	5.3	5.7	7.6	5.7	5.4	8.2	11.8	13.9	14.6	15.1	16.1	16.5	15.8	16.0	16.2	12.7	8.2	6.2	7.1	7.9	6.2	6.2	5.3	16.5	9.4
Sep 7	7.8	8.4	8.5	9.8	8.1	7.9	7.7	9.9	8.8	7.8	9.8	12.3	10.1	11.1	11.0	9.2	10.4	7.6	5.5	3.6	2.8	2.0	1.4	1.8	1.4	12.3	7.4
Sep 8	2.3	1.3	1.3	1.3	0.4	0.1	0.5	0.6	2.5	4.4	5.2	7.5	8.6	7.9	7.7	7.6	5.5	6.0	5.5	5.8	6.7	6.4	7.3	9.5	0.1	9.5	4.2
Sep 9	8.1	6.4	3.1	1.7	2.5	3.3	3.7	4.5	3.8	4.6	7.9	9.0	11.4	9.8	10.4	13.3	15.2	12.7	7.3	6.2	6.1	7.7	7.5	8.0	1.7	15.2	5.6
Sep 10	8.3	6.0	6.7	7.1	5.9	5.6	5.3	8.9	7.5	7.9	8.3	8.1	8.3	7.3	8.5	7.8	5.9	6.0	2.7	2.0	3.3	1.4	0.5	2.8	0.5	8.9	4.6
Sep 11	1.6	0.7	1.2	2.7	1.6	2.7	2.0	5.8	7.9	6.1	5.2	5.2	7.0	8.6	8.8	8.5	7.0	6.3	3.8	3.0	4.5	5.9	6.4	6.1	0.7	8.8	3.7
Sep 12	5.8	7.1	7.3	7.2	7.3	6.5	7.0	7.7	7.8	7.1	9.0	4.4	5.1	5.9	6.8	9.6	9.7	6.5	3.7	4.0	5.0	3.4	4.3	3.5	3.4	9.7	6.0
Sep 13	4.2	4.4	4.3	4.5	6.9	7.7	5.5	5.7	8.6	8.2	7.9	9.3	8.9	11.8	12.3	11.6	6.6	4.4	2.2	0.7	2.2	1.4	4.0	0.7	0.7	12.3	5.4
Sep 14	1.6	2.1	3.2	5.7	5.6	4.4	5.4	5.7	3.9	6.7	6.6	11.7	10.5	12.1	10.3	10.4	8.7	3.3	3.9	3.5	4.0	4.3	5.3	4.6	1.6	12.1	5.1
Sep 15	5.6	5.1	10.3	11.0	12.4	7.8	7.4	9.5	13.0	14.8	15.1	14.8	15.4	15.1	16.2	15.8	15.6	14.2	14.0	14.4	14.8	16.1	17.4	17.4	5.1	17.4	12.5
Sep 16	14.9	14.7	16.3	18.7	19.2	17.7	18.2	10.7	9.4	8.1	5.4	13.3	14.1	13.1	12.9	8.7	6.1	6.2	3.3	2.3	3.8	4.1	3.1	3.3	2.3	19.2	9.3
Sep 17	1.8	1.4	1.6	1.6	1.8	0.4	0.5	0.5	1.9	4.0	6.1	6.9	9.2	11.6	13.1	12.3	11.0	8.5	9.4	8.5	10.3	8.3	5.3	3.6	0.4	13.1	5.2
Sep 18	3.3	2.6	1.2	1.9	2.4	2.6	2.2	3.8	4.8	5.4	5.9	5.5	5.0	3.0	4.1	5.1	4.0	3.1	3.3	2.6	2.3	1.6	1.8	0.2	0.2	5.9	2.0
Sep 19	2.5	3.8	3.4	3.2	2.0	3.7	3.1	5.2	8.0	10.5	11.2	11.8	11.0	12.8	11.9	9.1	7.6	8.1	6.9	7.1	5.6	4.9	4.4	4.0	2.0	12.8	6.4
Sep 20	3.6	4.0	4.0	3.7	4.0	5.2	4.1	3.7	4.1	5.4	6.7	7.7	9.9	11.2	C	C	7.2	1.4	2.5	3.5	4.9	2.2	0.8	1.3	0.8	11.2	3.9



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - September 2021

Summary of Hourly Averages

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

WIND SPEED																																			
Maximum Hourly Value:	19.4	kph	on September 23 at hour 11	Hours in Service:	720																														
Maximum Daily Value:	12.5	kph	on September 15	Hours of Data:	718																														
Minimum Hourly Value:	0.1	kph	on September 4 at hour 4	Hours of Missing Data:	0																														
Minimum Daily Value:	2.0	kph	on September 18	Hours of Calibration:	2																														
Monthly Average:	3.3	kph		Operational Uptime:	100																														
WIND DIRECTION																																			
Monthly Average:	253 (WSW degree)																																		
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average									
Sep 21	0.7	1.9	3.6	0.8	3.0	0.9	1.7	7.5	7.0	5.7	6.2	6.7	7.7	9.2	8.7	8.1	7.4	3.9	4.6	5.1	5.8	5.4	3.2	1.5	0.7	9.2	4.7								
Sep 22	0.1	4.1	3.3	0.2	1.5	0.2	1.1	0.9	5.0	3.0	2.5	2.9	5.4	7.2	7.3	8.3	7.8	4.7	3.5	3.5	6.2	7.0	7.6	8.9	0.1	8.9	3.6								
Sep 23	10.0	9.5	10.0	10.3	12.9	12.7	11.6	13.3	13.7	16.1	17.7	19.4	15.8	14.0	14.9	13.6	13.0	10.5	9.2	7.0	5.6	4.8	4.5	5.8	4.5	19.4	11.3								
Sep 24	5.4	5.1	4.0	4.1	2.2	2.6	3.9	1.7	3.3	4.2	7.8	8.7	10.1	11.8	11.7	9.3	5.5	3.7	5.1	3.5	3.9	7.0	8.1	5.1	1.7	11.8	5.1								
Sep 25	5.2	4.4	6.2	5.1	4.2	4.2	6.2	7.6	7.2	8.7	10.3	10.1	10.3	10.2	9.3	10.3	9.1	9.2	5.0	4.6	2.7	1.6	1.9	1.9	1.6	10.3	6.1								
Sep 26	1.2	1.3	0.1	0.8	0.3	2.2	1.4	1.4	2.3	3.6	6.5	7.1	7.9	8.3	8.0	8.7	6.5	5.9	6.0	3.5	2.5	1.5	1.6	1.5	0.1	8.7	3.3								
Sep 27	0.8	0.9	0.2	1.5	0.4	1.6	1.0	1.5	3.2	3.8	6.5	3.8	6.2	5.3	3.8	4.6	3.7	3.1	2.9	4.2	4.3	4.2	4.2	4.2	0.2	6.5	2.6								
Sep 28	1.9	0.6	3.7	4.7	0.4	1.4	1.7	2.8	3.0	4.5	1.5	2.8	5.3	5.6	6.0	4.9	4.7	5.7	4.2	1.9	3.5	3.7	2.0	1.8	0.4	6.0	2.1								
Sep 29	4.2	2.7	3.1	3.4	1.4	2.3	3.3	2.9	1.9	2.7	3.9	5.5	9.0	8.8	8.2	6.6	7.2	4.2	4.6	5.0	3.4	2.0	3.9	4.8	1.4	9.0	3.6								
Sep 30	3.8	3.9	5.7	6.9	8.3	7.7	8.1	5.8	5.3	6.8	6.7	8.8	10.2	7.7	10.5	8.3	4.6	3.2	3.7	1.2	0.5	5.0	2.5	2.5	0.5	10.5	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.																																			



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Tamarack Site - September 2021

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

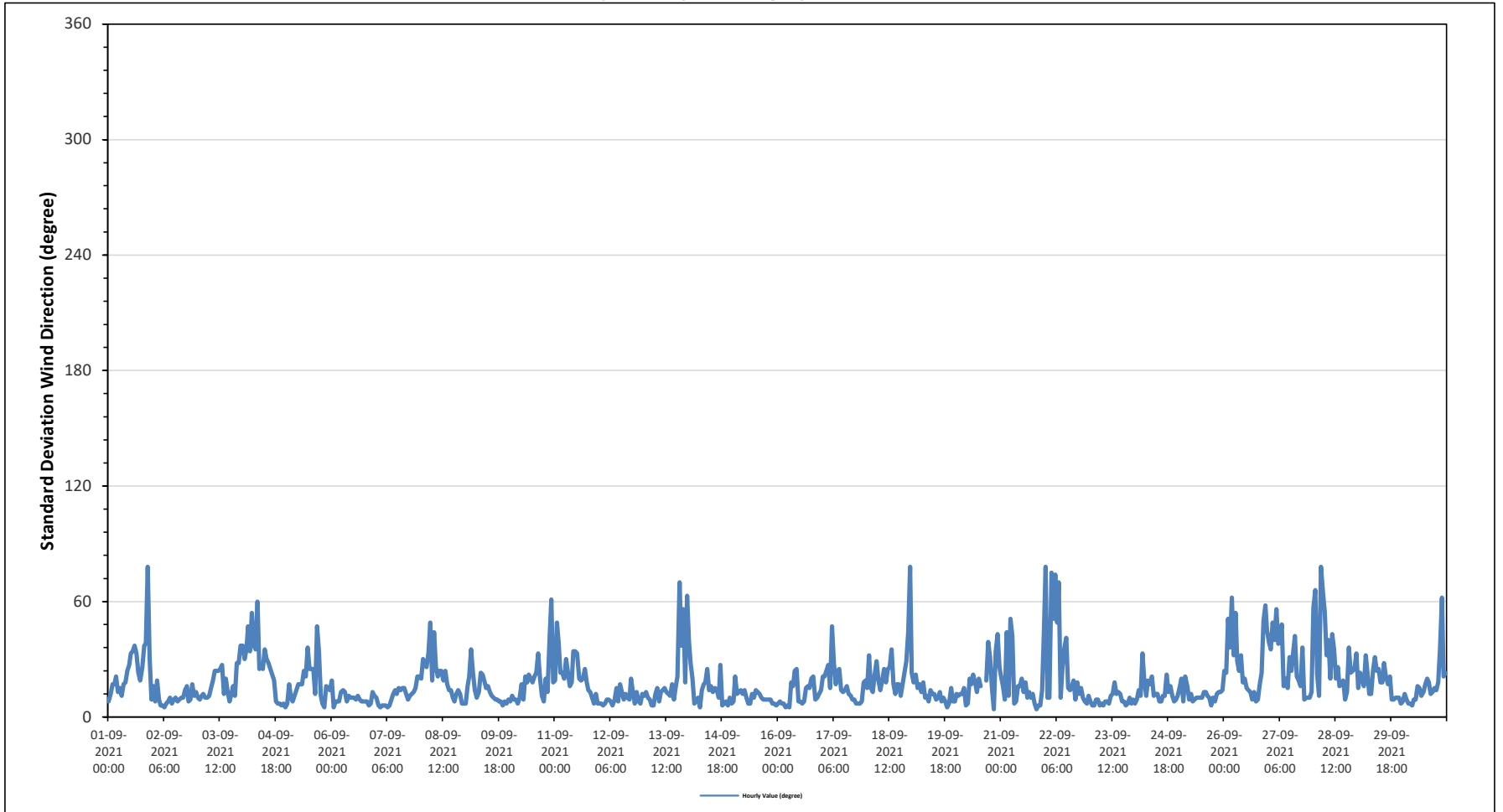
Maximum Hourly Value:	78 degree on September 1 at hour 21	Hours in Service:	720
Minimum Hourly Value:	4 degree on September 20 at hour 20	Hours of Data:	718
		Hours of Missing Data:	0
		Hours of Calibration:	2
		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily	Daily	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum
Sep 1	8	12	17	17	21	13	15	11	17	18	24	27	33	34	37	33	23	19	26	37	38	78	31	9	8	78
Sep 2	16	8	19	9	6	6	5	7	8	10	7	9	10	8	9	10	10	14	16	8	9	17	11	13	5	19
Sep 3	10	9	11	12	10	10	11	15	19	24	24	24	25	27	12	20	13	8	12	16	11	28	28	37	8	37
Sep 4	37	30	35	47	34	54	37	35	60	25	27	25	35	30	28	25	22	19	8	7	7	6	7	5	5	60
Sep 5	7	17	10	8	11	14	17	17	17	24	21	36	25	25	25	12	47	34	11	7	5	16	15	14	5	47
Sep 6	19	5	8	8	8	13	14	13	8	11	10	10	10	9	11	9	8	8	8	6	7	13	11	5	19	
Sep 7	10	6	5	6	6	6	5	6	9	12	14	12	15	14	15	15	12	9	11	12	13	15	21	21	5	21
Sep 8	20	30	27	26	33	49	19	44	26	21	24	24	19	24	17	14	14	10	8	12	14	12	7	7	7	49
Sep 9	7	16	21	35	23	14	10	13	23	22	19	15	16	13	11	10	9	9	8	8	6	8	7	9	6	35
Sep 10	8	11	9	9	7	10	17	9	21	18	22	20	18	21	23	33	20	11	8	20	13	39	61	18	7	61
Sep 11	19	49	39	23	23	20	30	23	16	18	34	34	33	20	19	20	25	18	14	13	10	7	12	7	7	49
Sep 12	7	7	6	7	9	9	8	6	9	15	8	17	13	9	12	10	9	20	13	7	13	8	7	12	6	20
Sep 13	11	13	10	9	6	6	12	15	8	13	14	15	13	12	11	17	9	15	21	70	37	56	18	63	6	70
Sep 14	39	28	20	7	8	10	5	14	17	18	25	14	16	13	15	14	10	27	6	7	8	6	10	7	5	39
Sep 15	8	21	12	13	14	12	14	10	7	7	12	10	14	13	12	10	9	9	9	9	9	7	7	6	6	21
Sep 16	7	8	7	7	5	6	5	18	16	24	25	8	8	7	8	15	16	15	20	21	9	10	12	14	5	25
Sep 17	21	21	24	27	15	47	28	17	24	25	14	13	14	16	12	11	9	9	7	7	7	8	18	19	7	47
Sep 18	15	32	15	13	22	29	19	14	19	25	18	25	26	35	17	12	17	17	11	17	23	29	44	78	11	78
Sep 19	23	18	22	15	17	13	18	10	11	8	14	12	12	9	10	13	8	10	8	5	7	15	8	8	5	23
Sep 20	12	11	12	12	15	6	7	20	17	22	18	13	20	16	C	C	19	39	31	15	4	34	43	26	4	43
Sep 21	21	16	9	44	11	51	42	7	8	16	16	20	13	18	10	13	10	12	7	4	6	6	14	46	4	51
Sep 22	78	10	10	75	51	74	49	70	10	26	36	41	15	14	16	19	9	18	12	15	10	8	7	11	7	78
Sep 23	8	6	6	9	9	6	7	6	8	8	7	11	12	18	12	13	12	8	8	6	7	10	7	9	6	18
Sep 24	7	9	14	11	33	18	11	19	17	21	11	12	12	8	8	11	11	22	13	16	11	8	9	11	7	33
Sep 25	15	20	8	21	16	9	12	8	9	10	10	10	10	13	13	11	10	6	10	8	12	13	13	14	6	21
Sep 26	24	23	51	36	62	32	54	29	24	32	18	20	15	14	13	9	13	8	9	17	23	50	58	45	8	62
Sep 27	39	35	49	40	56	38	39	48	16	20	15	31	24	34	42	21	19	16	36	9	10	10	10	13	9	56
Sep 28	57	66	22	11	78	64	55	32	40	20	43	35	20	26	16	17	19	9	13	36	23	24	25	33	9	78
Sep 29	15	23	20	16	32	22	12	12	24	31	24	25	18	18	28	21	17	21	9	9	10	10	10	7	7	32
Sep 30	8	12	9	7	7	6	9	9	16	15	11	13	17	20	18	12	13	15	14	18	36	62	21	23	6	62
Diurnal Minimum	7	5	5	6	5	6	5	6	7	7	7	8	8	7	8	9	8	6	6	4	4	6	7	5		
Diurnal Maximum	78	66	51	75	78	74	55	70	60	32	43	41	35	35	42	33	47	39	36	70	38	78	61	78		

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

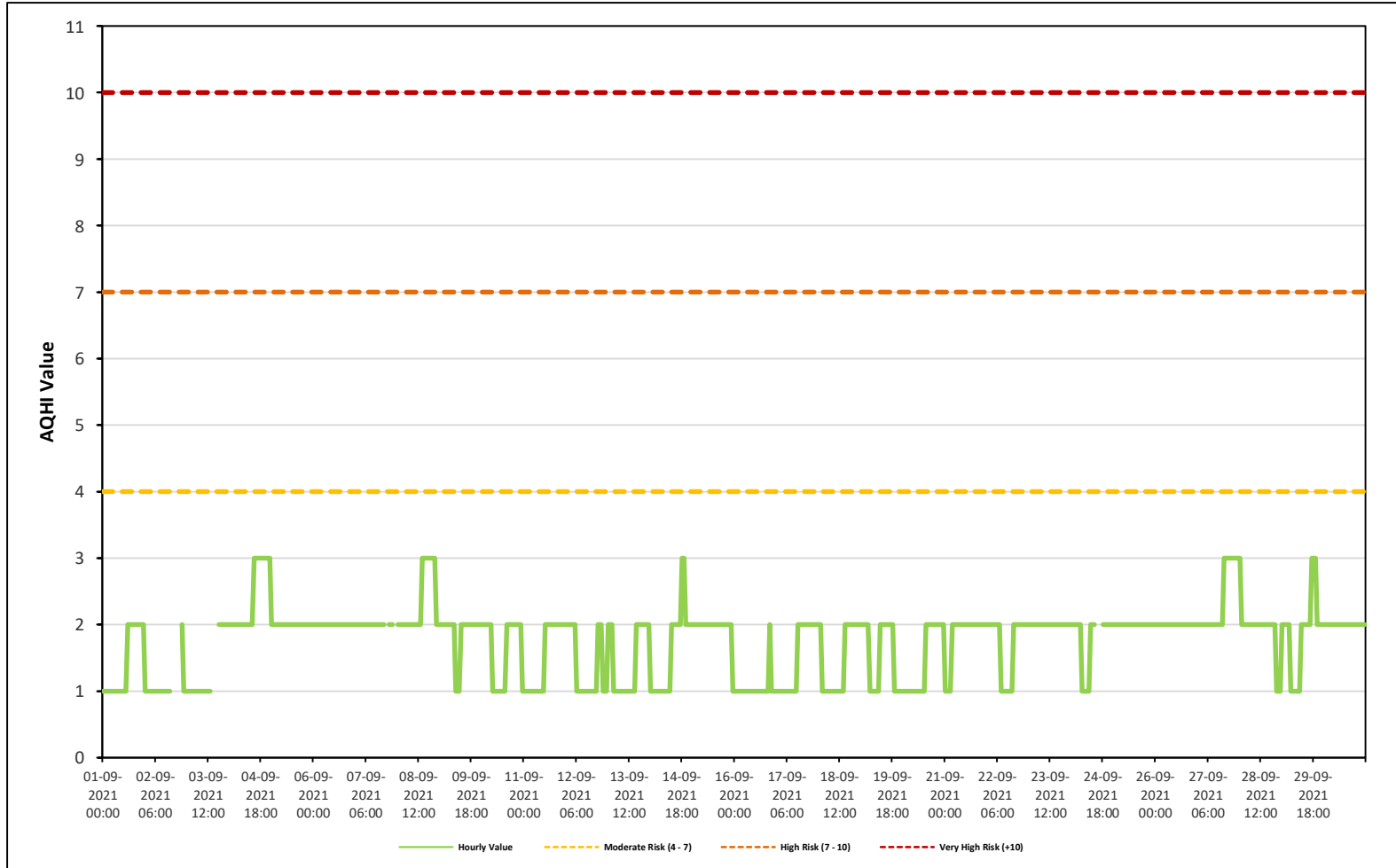
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
 Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for STDWD - Tamarack Site



ST. LINA STATION

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - September 2021

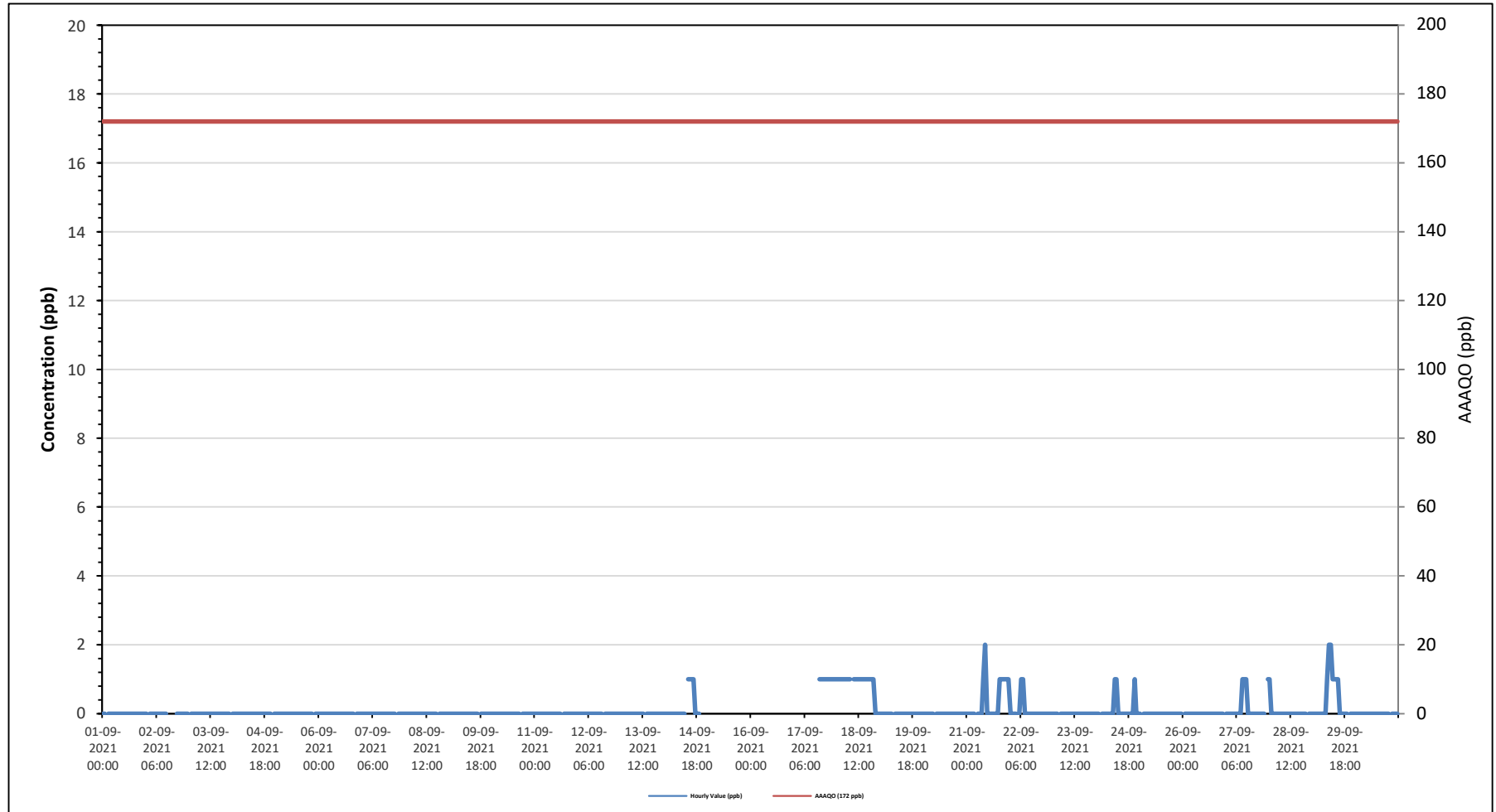
Summary of Hourly Averages

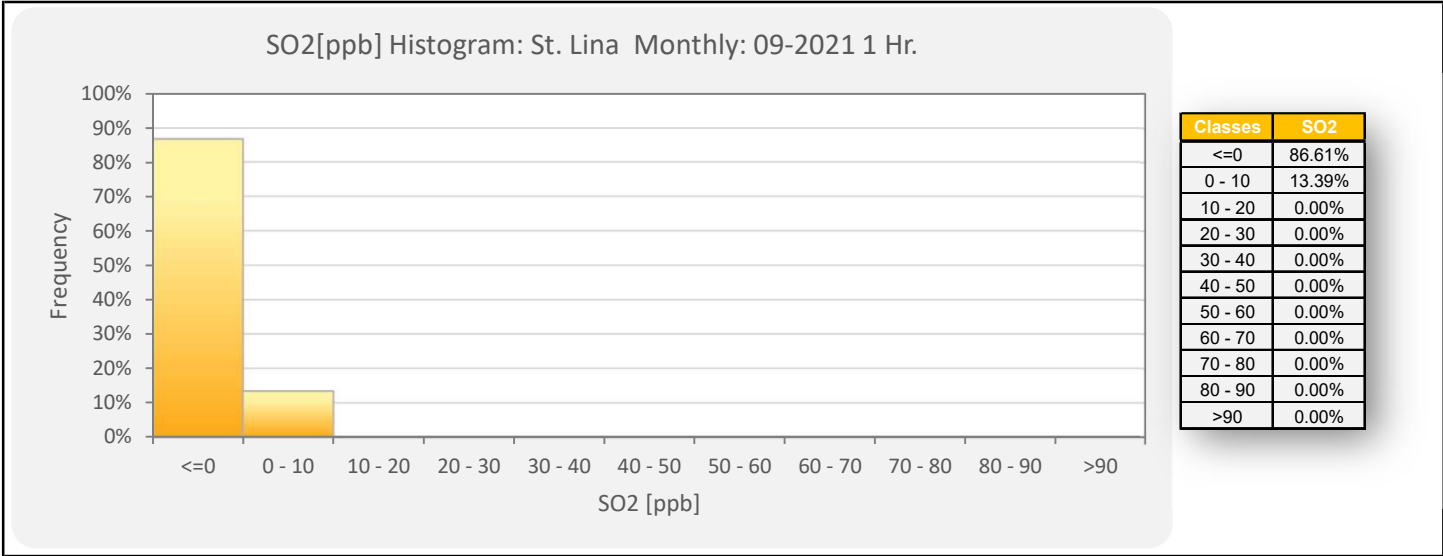
SULPHUR DIOXIDE (SO₂) in ppb

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: 2 ppb on September 21 at hour 10						Hours in Service: 720						Maximum Daily Value: 0.9 ppb on September 18						Hours of Data: 620																													
Minimum Hourly Value: 0 ppb on September 1 at hour 0						Hours of Missing Data: 66						Minimum Daily Value: 0.0 ppb on September 1						Hours of Calibration: 34																													
Monthly Average: 0.1 ppb						Operational Uptime: 90.8																																									
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average																					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23																							
Sep 1	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																			
Sep 2	0	S	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0.0																			
Sep 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																			
Sep 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0																			
Sep 5	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																			
Sep 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0																			
Sep 7	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																			
Sep 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																			
Sep 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0																			
Sep 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0																			
Sep 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	0.0																			
Sep 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0																			
Sep 13	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0																			
Sep 14	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	0	0	0	0	X	X	X	X	0	1	0.2																			
Sep 15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-																		
Sep 16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-																		
Sep 17	X	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	NRM	1	1	1	1	1	1	1	1	1	1	1	1	1	-																			
Sep 18	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	0.9																			
Sep 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	0.0																			
Sep 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	0.0																			
Sep 21	0	0	0	0	0	S	0	0	0	1	2	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	2	0.4																			
Sep 22	0	0	0	0	S	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1																			
Sep 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	0.0																			
Sep 24	0	0	S	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0.1																			
Sep 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	0.0																			
Sep 26	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.0																			
Sep 27	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0	0.2																			
Sep 28	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0.0																			
Sep 29	0	0	0	0	0	0	0	0	1	2	2	1	1	1	1	0	0	0	0	0	0	S	0	0	0	0	2	0.4																			
Sep 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0																			
Diurnal Maximum	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1																				
Diurnal Average	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.3	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	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.

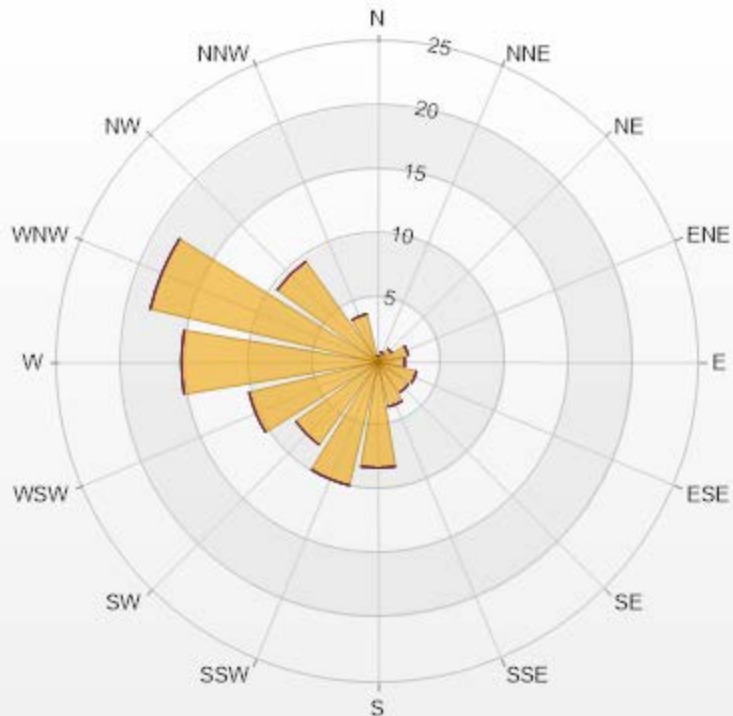
Timeseries Chart of Hourly Average for SO2 - St. Lina Site





Wind: St. Lina Poll.: St. Lina-SO2[ppb] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 86.11% Calm Avg: 0.00 [ppb]


Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	0.48	0	0	0	0	0.48
NNE	0.81	0	0	0	0	0.81
NE	1.29	0	0	0	0	1.29
ENE	2.42	0	0	0	0	2.42
E	2.1	0	0	0	0	2.1
ESE	3.06	0	0	0	0	3.06
SE	2.9	0	0	0	0	2.9
SSE	3.55	0	0	0	0	3.55
S	8.23	0	0	0	0	8.23
SSW	9.84	0	0	0	0	9.84
SW	7.9	0	0	0	0	7.9
WSW	10.32	0	0	0	0	10.32
W	15.32	0	0	0	0	15.32
WNW	18.23	0	0	0	0	18.23
NW	9.68	0	0	0	0	9.68
NNW	3.87	0	0	0	0	3.87
Summary	100	0	0	0	0	100



LICA-202109

% Icon Classes (ppb)

100  0-10

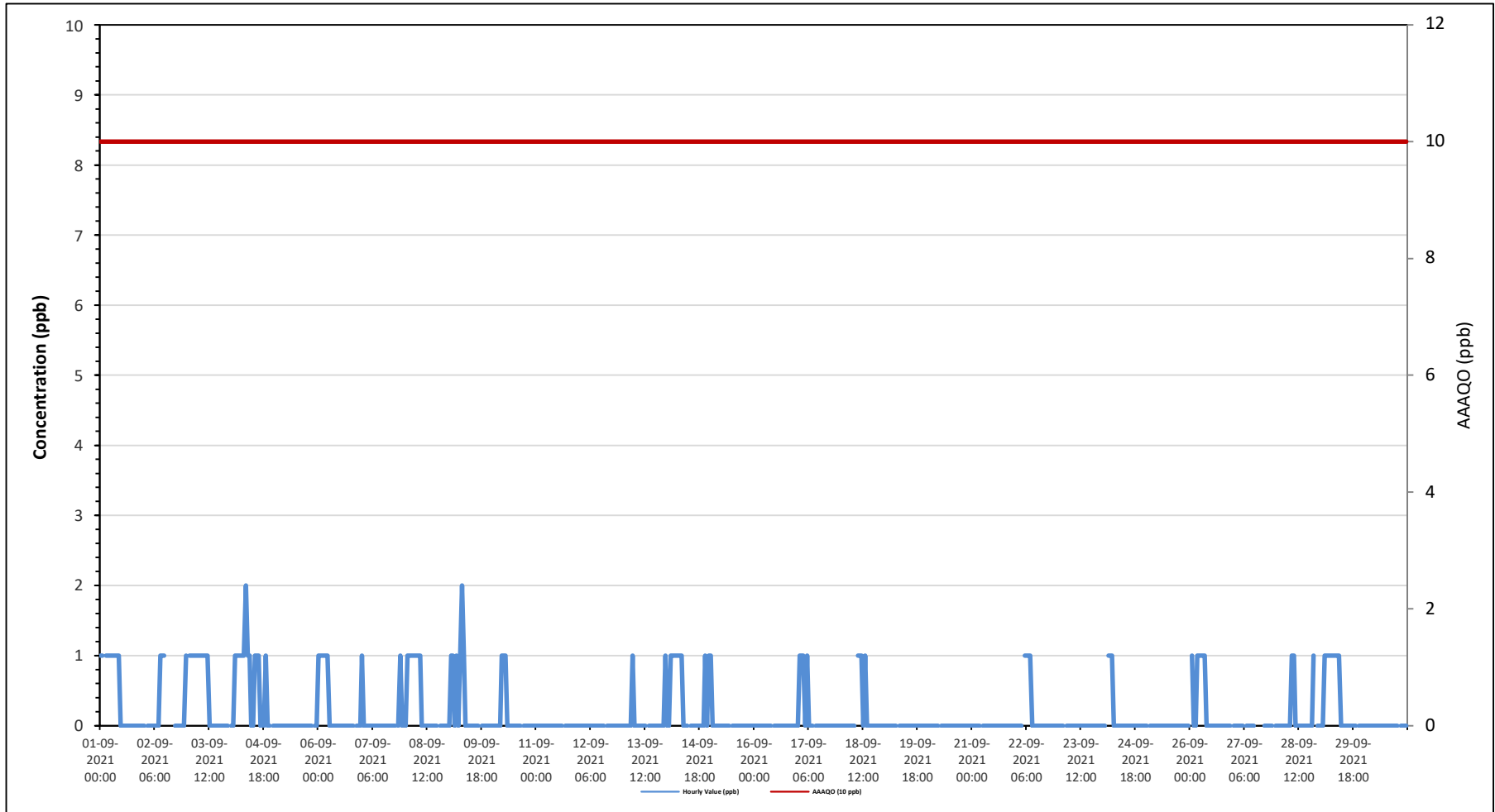
0  10-50

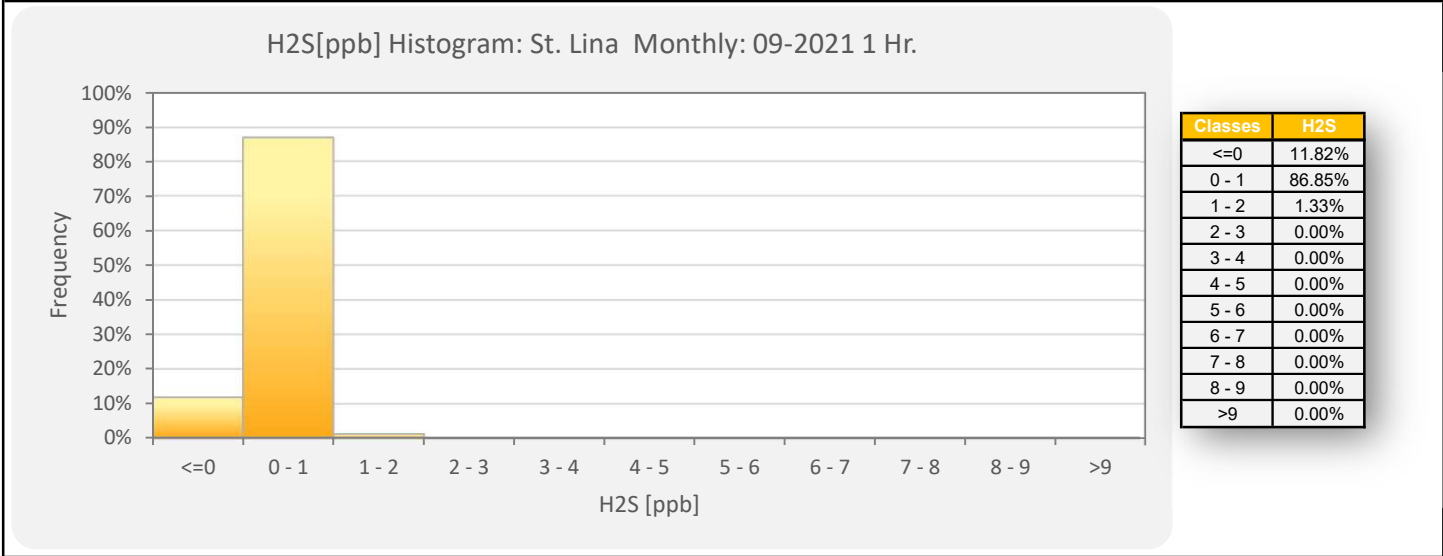
0  50-100

0  100-172

0  >172.0

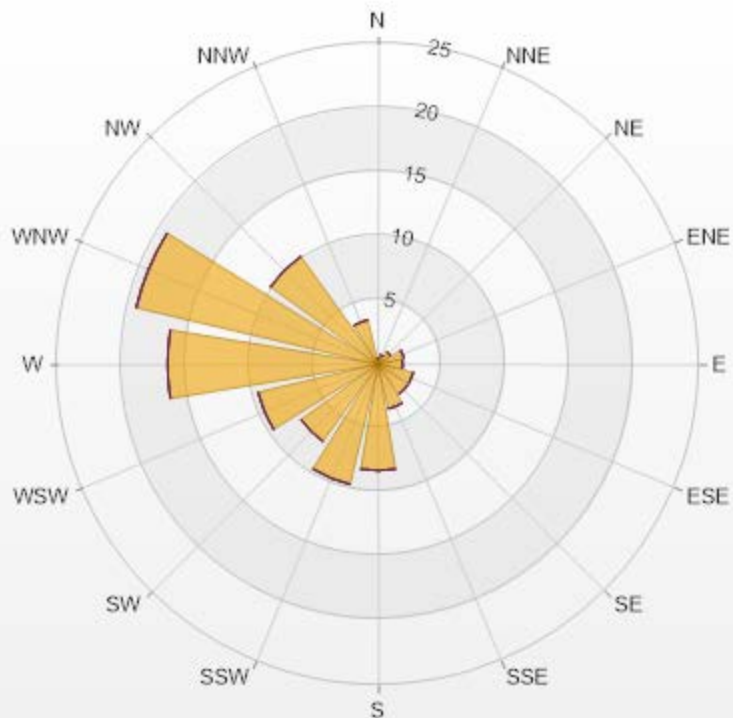
Timeseries Chart of Hourly Average for H2S - St. Lina Site





Wind: St. Lina Poll.: St. Lina-H2S[ppb] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.03% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	0.44	0	0	0	0	0.44
NNE	0.74	0	0	0	0	0.74
NE	1.18	0	0	0	0	1.18
ENE	2.07	0	0	0	0	2.07
E	1.92	0	0	0	0	1.92
ESE	2.81	0	0	0	0	2.81
SE	2.81	0	0	0	0	2.81
SSE	3.55	0	0	0	0	3.55
S	8.27	0	0	0	0	8.27
SSW	9.6	0	0	0	0	9.6
SW	7.39	0	0	0	0	7.39
WSW	9.6	0	0	0	0	9.6
W	16.4	0	0	0	0	16.4
WNW	19.35	0	0	0	0	19.35
NW	10.34	0	0	0	0	10.34
NNW	3.55	0	0	0	0	3.55
Summary	100	0	0	0	0	100



LICA-202109

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% Icon Classes (ppb)

100 0-2

0 2-5

0 5-10

0 10-50

0 >50.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - September 2021

Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

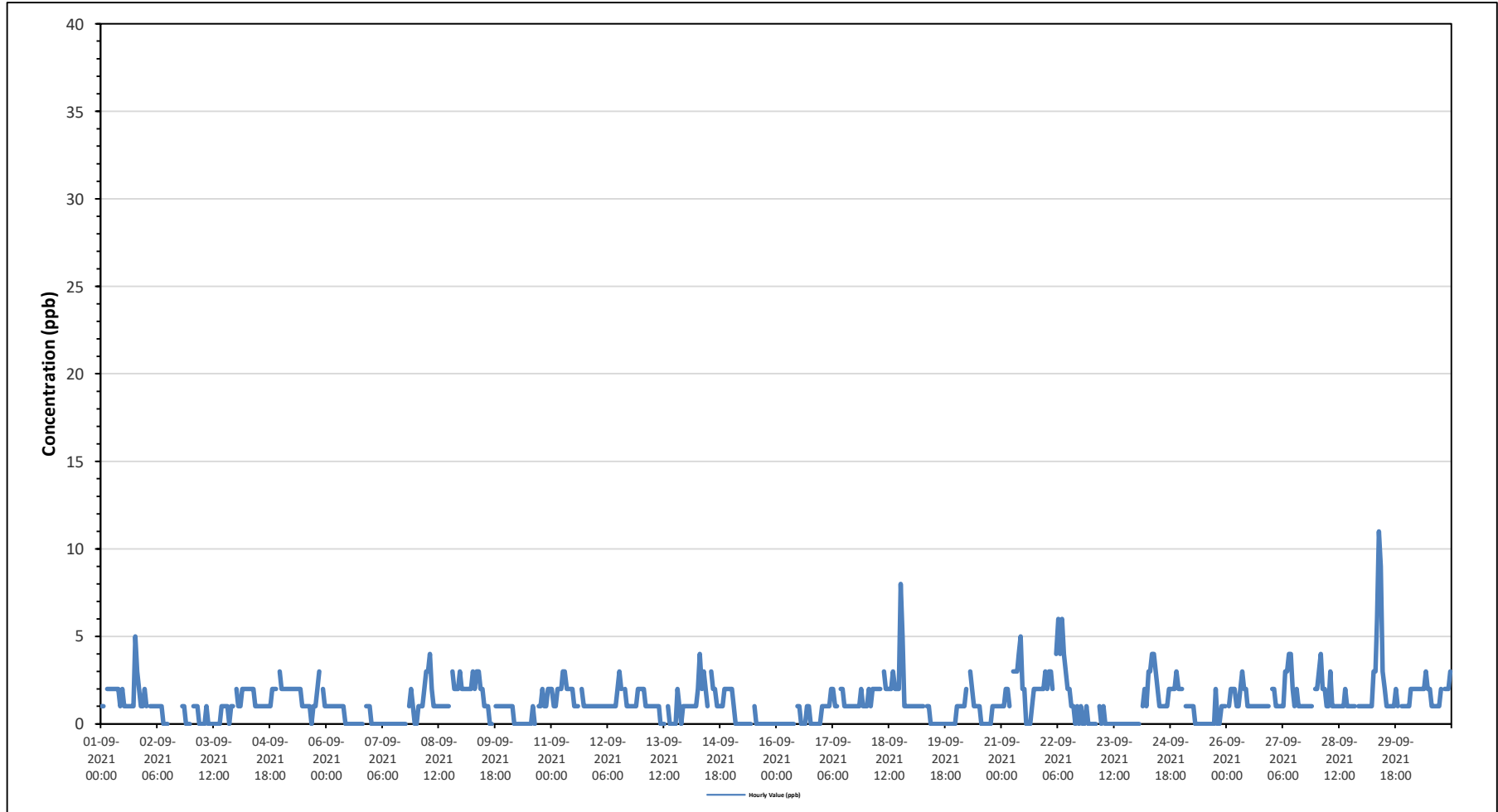
Maximum Hourly Value:	11 ppb on September 29 at hour 9	Hours in Service:	720
Maximum Daily Value:	2.3 ppb on September 29	Hours of Data:	681
Minimum Hourly Value:	0 ppb on September 2 at hour 9	Hours of Missing Data:	0
Minimum Daily Value:	0.1 ppb on September 23	Hours of Calibration:	39
Monthly Average:	1.2 ppb	Operational Uptime:	100.0

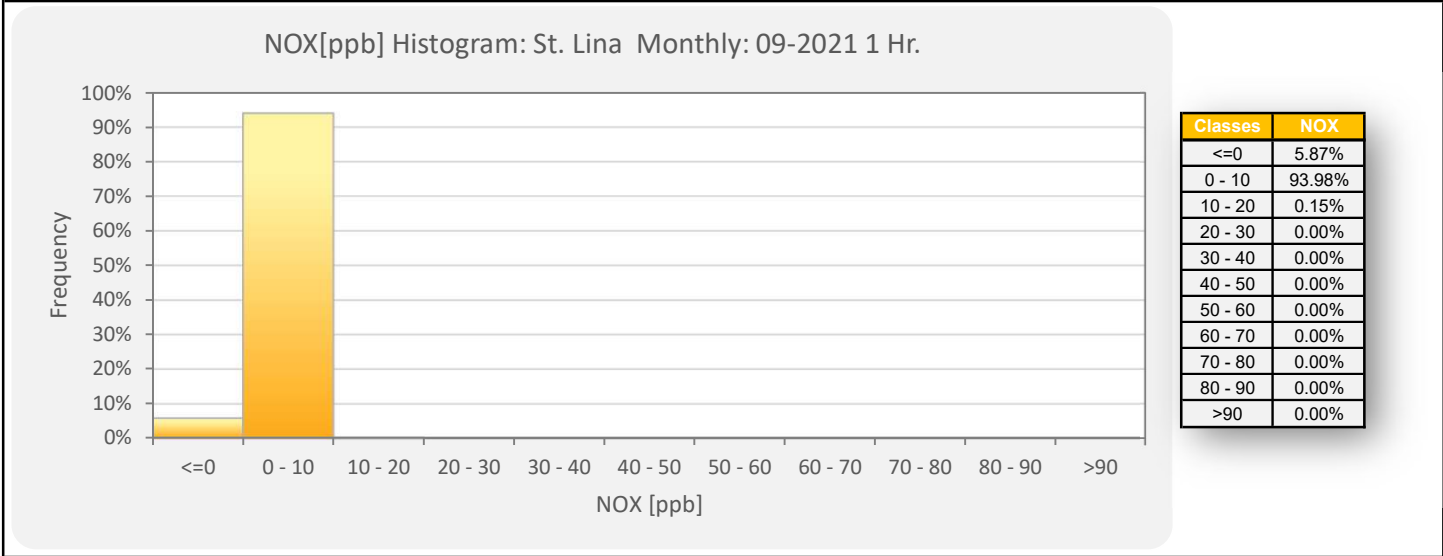
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Sep 1	1	1	S	2	2	2	2	2	2	2	1	2	1	1	1	1	1	1	5	3	2	1	1	2	1	5	1.7	
Sep 2	1	S	1	1	1	1	1	1	1	0	0	0	C	C	C	C	C	C	C	1	1	0	0	0	0	1	-	
Sep 3	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	1	S	0	0.5	
Sep 4	2	1	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	2	2	2	S	3	1	3	1.6	
Sep 5	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	0	1	1	1	2	3	S	2	1	0	3	1.6	
Sep 6	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	0	0.6	
Sep 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	2	1	0	0	2	0.2	
Sep 8	0	1	1	1	2	3	3	4	2	1	1	1	1	1	1	1	1	S	3	2	2	2	3	0	4	1.7		
Sep 9	2	2	2	2	2	3	2	3	3	2	2	1	1	1	0	0	S	1	1	1	1	1	1	1	1	3	1.6	
Sep 10	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	S	1	1	2	1	1	2	2	0	2	0.7	
Sep 11	2	1	1	2	2	2	3	3	2	2	2	2	1	1	1	S	2	1	1	1	1	1	1	1	1	3	1.6	
Sep 12	1	1	1	1	1	1	1	1	1	1	1	2	3	2	S	1	2	1	1	1	1	1	2	2	1	3	1.3	
Sep 13	2	2	1	1	1	1	1	1	1	1	0	0	0	S	1	0	0	0	0	2	1	0	1	1	0	2	0.8	
Sep 14	1	1	1	1	1	1	2	4	2	3	2	1	S	3	2	2	1	1	1	1	2	2	2	2	1	4	1.7	
Sep 15	2	1	0	0	0	0	0	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	2	0.2	
Sep 16	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0	0	0	1	1	0	0	0	0	0	0	1	0.2	
Sep 17	1	1	1	1	1	2	2	1	1	S	2	2	1	1	1	1	1	1	1	1	1	2	1	1	1	2	1.2	
Sep 18	1	2	1	2	2	2	2	S	3	2	2	2	2	3	2	2	2	8	5	1	1	1	1	1	1	8	2.2	
Sep 19	1	1	1	1	1	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	
Sep 20	1	1	1	1	1	2	S	3	2	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	0	3	0.9	
Sep 21	1	1	2	2	1	S	3	3	3	4	5	2	2	0	0	0	1	2	2	2	2	2	2	3	0	5	2.0	
Sep 22	2	3	3	2	S	4	6	4	6	4	3	2	2	1	1	0	1	0	1	0	0	1	0	0	0	6	2.0	
Sep 23	0	0	0	S	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	
Sep 24	0	0	S	1	2	1	3	3	4	4	3	2	1	1	1	1	1	2	2	2	2	3	2	2	0	4	1.9	
Sep 25	2	S	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	1	1	0	2	0.5	
Sep 26	S	1	2	2	2	1	1	2	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	3	1.4
Sep 27	2	2	1	1	1	1	1	3	3	4	4	2	1	2	1	1	1	1	1	1	1	1	1	1	1	4	1.7	
Sep 28	2	3	4	2	2	1	1	3	1	1	1	1	1	1	1	2	1	1	1	1	1	S	1	1	1	4	1.5	
Sep 29	1	1	1	1	1	1	3	3	6	11	9	3	2	1	1	1	1	1	2	1	S	1	1	1	1	11	2.3	
Sep 30	1	1	2	2	2	2	2	2	2	2	3	2	2	1	1	1	1	1	1	2	S	2	2	3	1	3	1.8	
Diurnal Maximum	2	3	4	2	2	4	6	4	6	11	9	3	3	3	3	2	2	2	8	5	3	3	2	3				
Dalurnal Average	1.2	1.2	1.2	1.3	1.2	1.3	1.7	1.8	1.8	1.9	1.6	1.1	1.0	0.8	0.8	0.6	0.7	0.8	1.3	1.3	1.1	1.1	1.1	1.3				

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

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

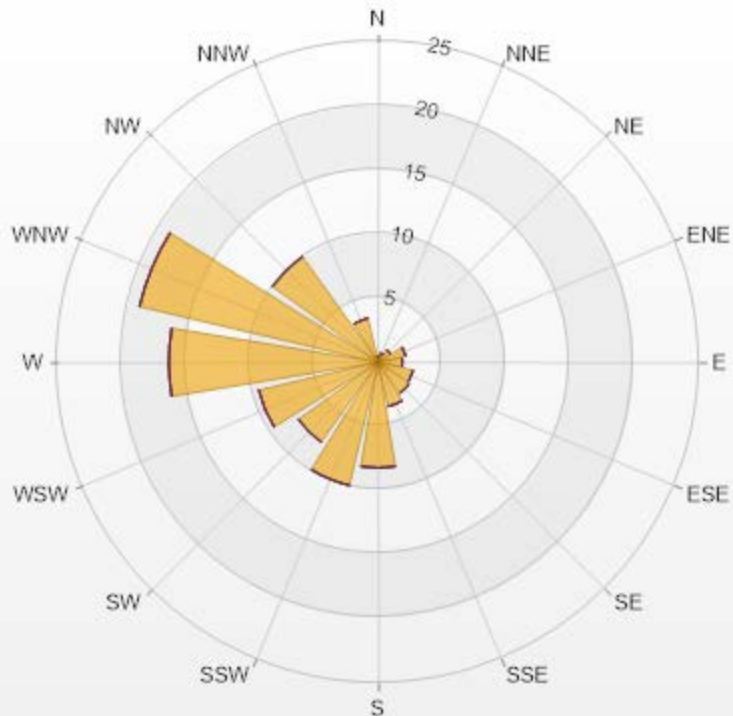
Timeseries Chart of Hourly Average for NOx - St. Lina Site





Wind: St. Lina Poll.: St. Lina-NOX[ppb] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.58% Calm Avg: 0.00 [ppb]

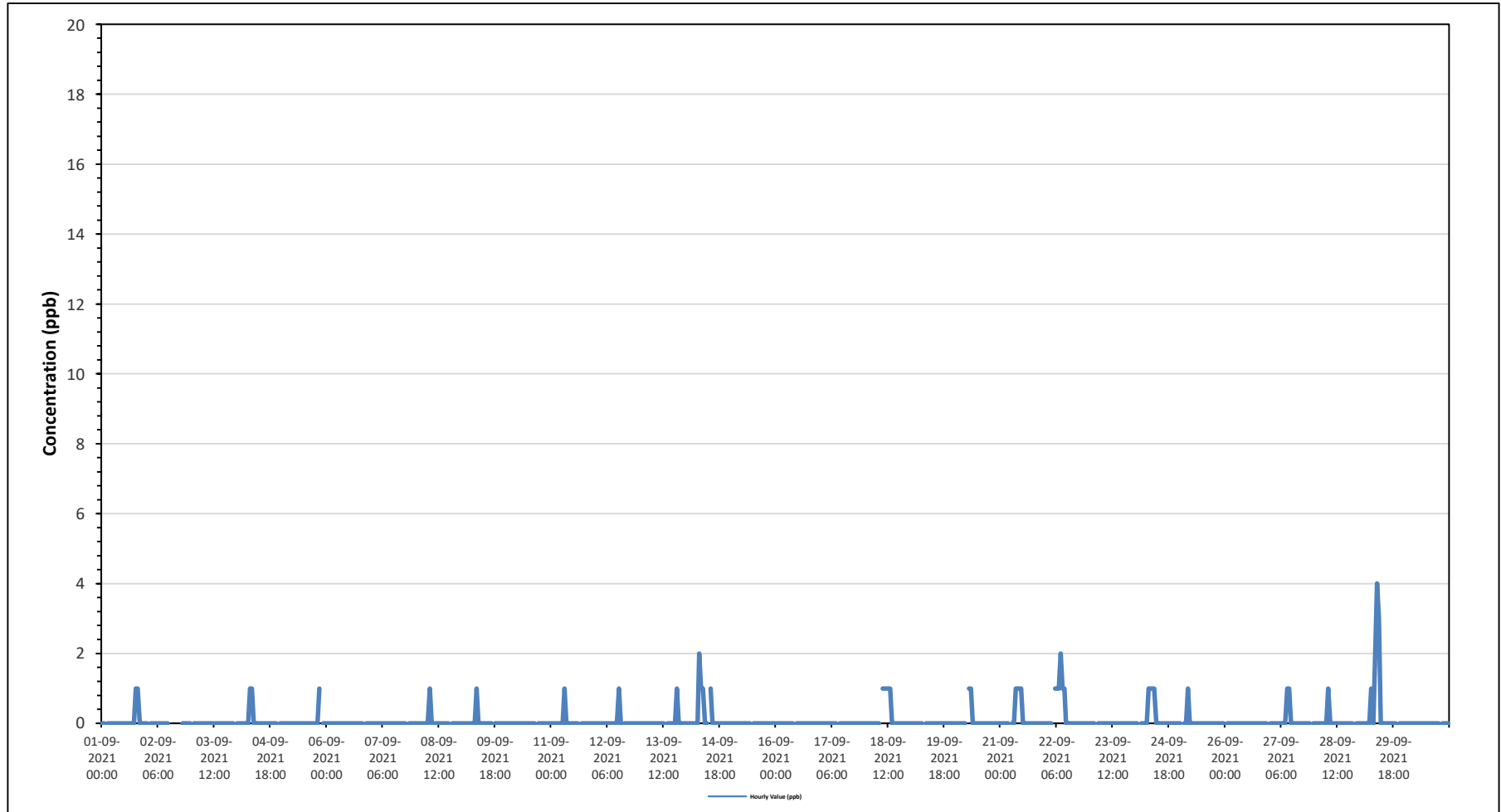
Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	0.44	0	0	0	0	0.44
NNE	0.73	0	0	0	0	0.73
NE	1.17	0	0	0	0	1.17
ENE	2.2	0	0	0	0	2.2
E	1.91	0	0	0	0	1.91
ESE	2.79	0	0	0	0	2.79
SE	2.94	0	0	0	0	2.94
SSE	3.52	0	0	0	0	3.52
S	8.22	0	0	0	0	8.22
SSW	9.84	0	0	0	0	9.84
SW	7.64	0	0	0	0	7.64
WSW	9.54	0	0	0	0	9.54
W	16.3	0	0	0	0	16.3
WNW	19.09	0	0	0	0	19.09
NW	10.13	0	0	0	0	10.13
NNW	3.52	0	0	0	0	3.52
Summary	100	0	0	0	0	100

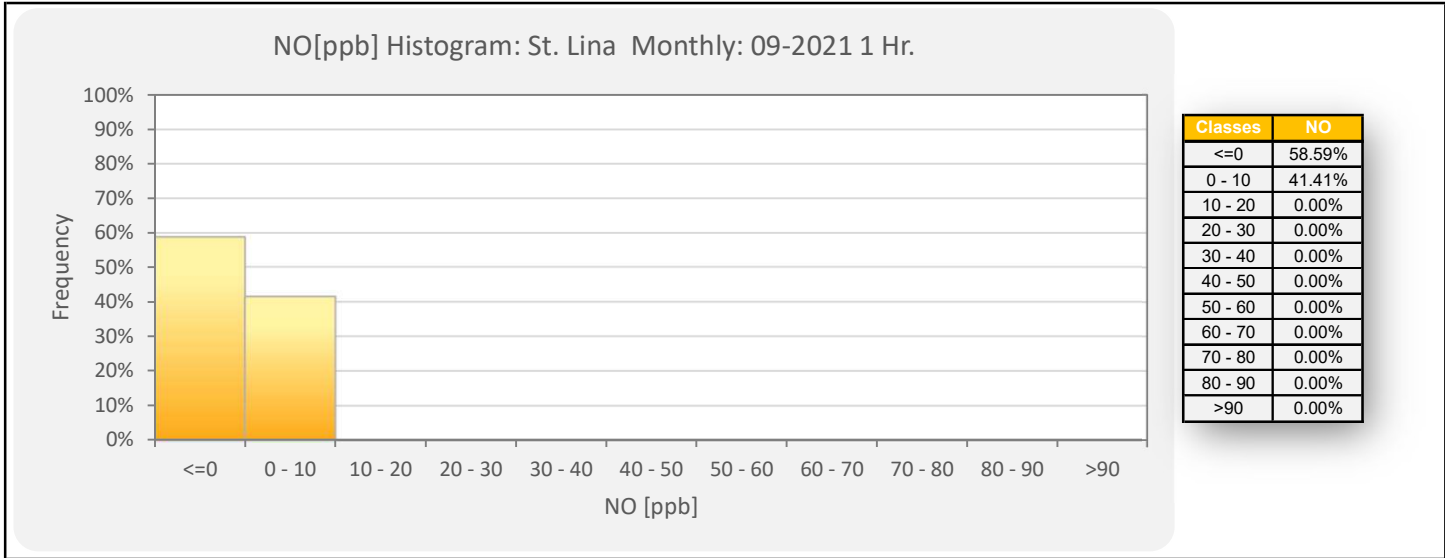


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% Icon Classes (ppb)	100	0-30	0	30-50	0	50-76	0	76-159	0	>159.0
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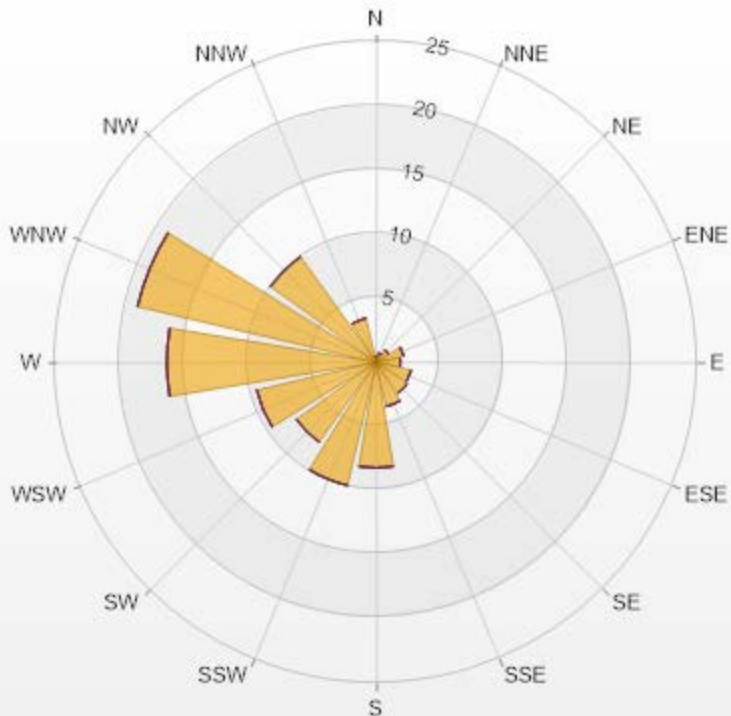
Timeseries Chart of Hourly Average for NO - St. Lina Site





Wind: St. Lina Poll.: St. Lina-NO[ppb] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.58% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	0.44	0	0	0	0	0.44
NNE	0.73	0	0	0	0	0.73
NE	1.17	0	0	0	0	1.17
ENE	2.2	0	0	0	0	2.2
E	1.91	0	0	0	0	1.91
ESE	2.79	0	0	0	0	2.79
SE	2.94	0	0	0	0	2.94
SSE	3.52	0	0	0	0	3.52
S	8.22	0	0	0	0	8.22
SSW	9.84	0	0	0	0	9.84
SW	7.64	0	0	0	0	7.64
WSW	9.54	0	0	0	0	9.54
W	16.3	0	0	0	0	16.3
WNW	19.09	0	0	0	0	19.09
NW	10.13	0	0	0	0	10.13
NNW	3.52	0	0	0	0	3.52
Summary	100	0	0	0	0	100



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St. Lina Site - September 2021

Summary of Hourly Averages

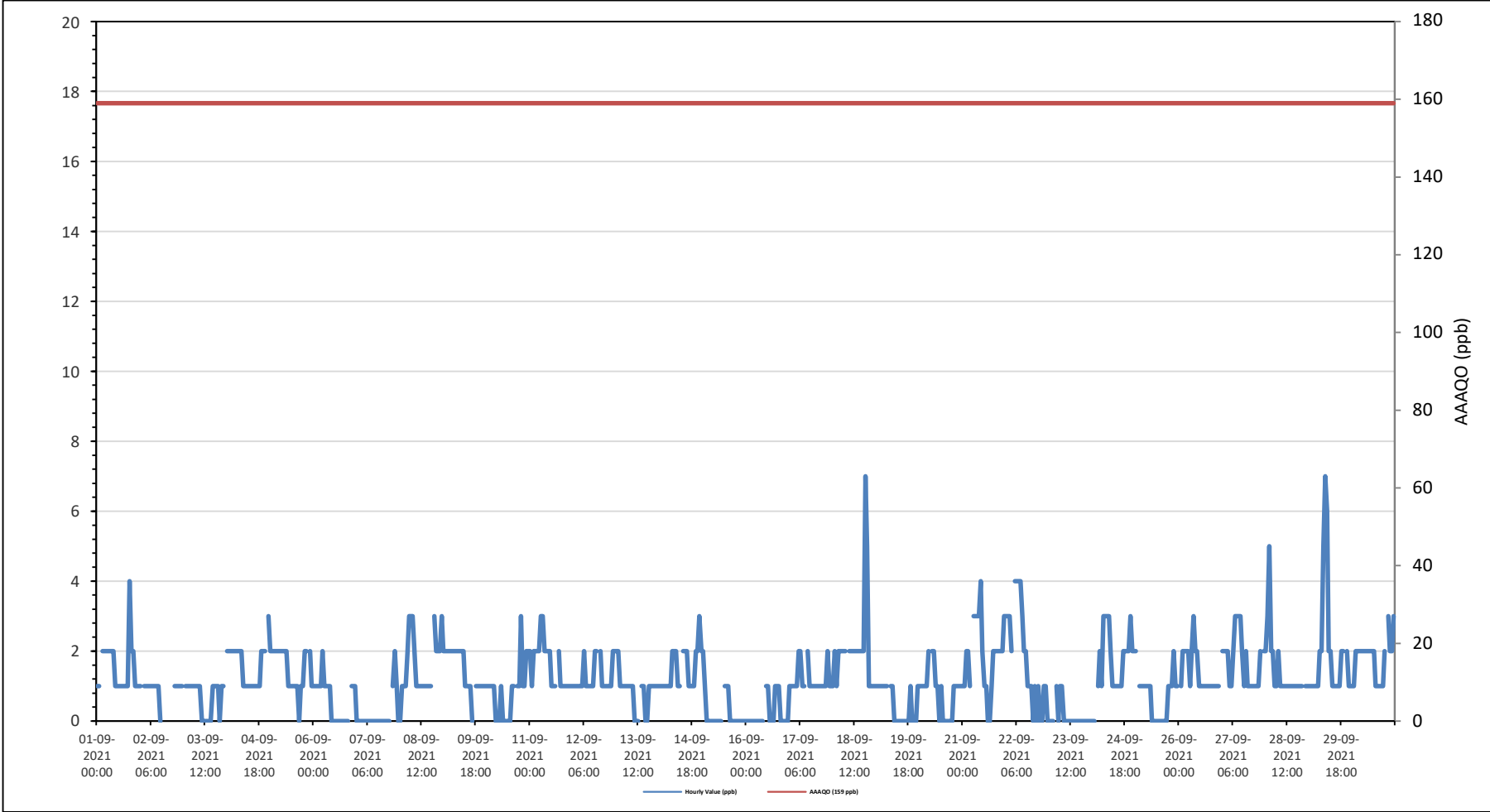
NITROGEN DIOXIDE (NO₂) in ppb

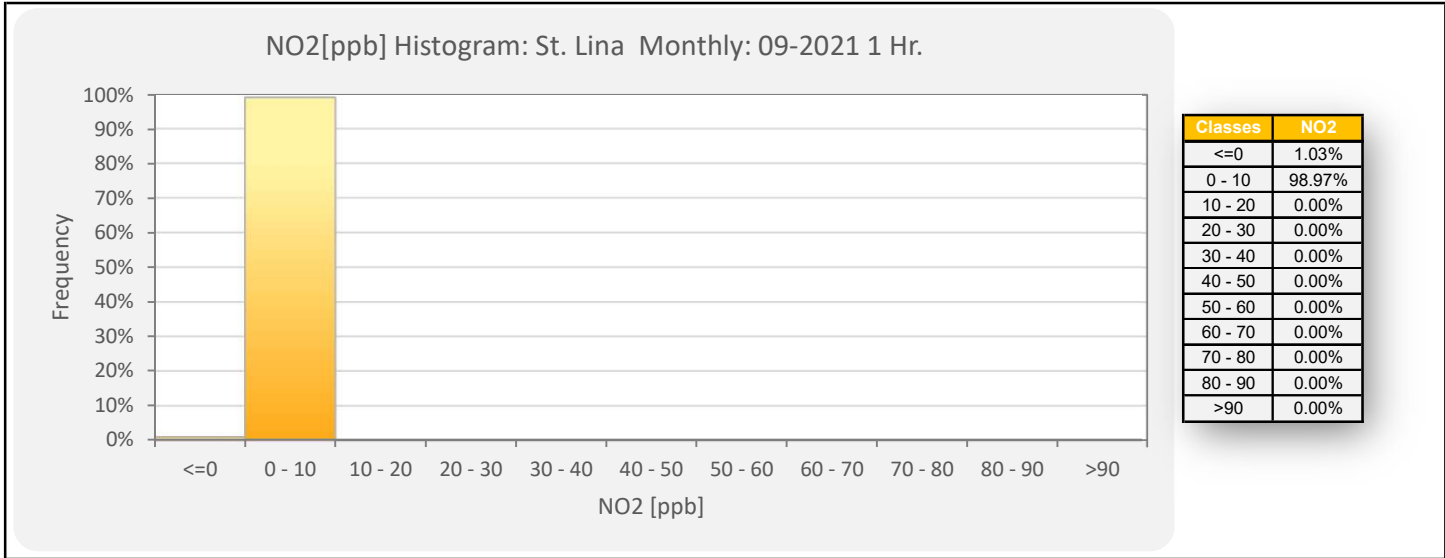
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 159 ppb																																															
Number of 1-Hour Exceedences: 0																																															
Maximum Hourly Value: 7 ppb on September 18 at hour 18												Hours in Service: 720																																			
Maximum Daily Value: 2.1 ppb on September 18												Hours of Data: 681																																			
Minimum Hourly Value: 0 ppb on September 2 at hour 11												Hours of Missing Data: 0																																			
Minimum Daily Value: 0.1 ppb on September 23												Hours of Calibration: 39																																			
Monthly Average: 1.2 ppb												Operational Uptime: 100.0																																			
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average																					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23																							
Sep 1	1	1	S	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	4	2	2	1	1	1	1	0	1	4	1.5																		
Sep 2	1	S	1	1	1	1	1	1	1	1	1	0	C	C	C	C	C	C	C	1	1	1	1	1	1	0	1	-																			
Sep 3	S	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1	1	1	1	1	0	1	1	1	1	0	1	0.7																			
Sep 4	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	2	2	2	S	3	1	3	1.6																				
Sep 5	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	0	1	1	2	2	S	2	1	0	2	1.5																				
Sep 6	1	1	1	1	1	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	S	1	1	1	0	2	0.6																				
Sep 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	2	1	0	0	2	0.2																				
Sep 8	0	1	1	1	2	3	3	3	2	1	1	1	1	1	1	1	1	1	S	3	2	2	2	3	0	3	1.6																				
Sep 9	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	0	S	1	1	1	1	1	1	0	2	1.5																				
Sep 10	1	1	1	1	1	0	0	0	1	0	0	0	0	0	1	1	S	1	1	3	1	1	2	2	0	3	0.8																				
Sep 11	2	1	2	2	2	2	3	3	2	2	2	2	1	1	1	S	2	1	1	1	1	1	1	1	1	3	1.6																				
Sep 12	1	1	1	1	1	1	2	1	1	1	1	1	2	2	S	2	1	1	1	1	1	1	2	2	1	2	1.3																				
Sep 13	2	2	1	1	1	1	1	1	1	1	0	0	0	S	1	1	0	0	1	1	1	1	1	1	0	2	0.9																				
Sep 14	1	1	1	1	1	1	1	2	2	2	1	1	S	2	2	2	1	1	1	1	2	2	3	2	1	3	1.5																				
Sep 15	2	1	0	0	0	0	0	0	0	0	0	S	1	1	1	0	0	0	0	0	0	0	0	0	0	2	0.3																				
Sep 16	0	0	0	0	0	0	0	0	0	0	0	S	1	1	0	0	1	1	1	0	0	0	0	0	0	1	0.2																				
Sep 17	1	1	1	1	1	2	2	1	1	S	2	1	1	1	1	1	1	1	1	1	0	1	2	1	1	1	2	1.2																			
Sep 18	1	2	1	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	7	5	1	1	1	1	7	2.1																				
Sep 19	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0.5																				
Sep 20	1	1	1	1	1	2	S	2	2	1	1	0	1	0	0	0	0	0	0	1	1	1	1	1	0	2	0.8																				
Sep 21	1	1	2	2	1	S	3	3	3	3	4	2	1	1	0	0	1	2	2	2	2	2	2	3	0	4	1.9																				
Sep 22	3	3	3	2	S	4	4	4	4	3	2	2	1	1	1	0	1	0	1	0	0	1	1	0	0	4	1.8																				
Sep 23	0	0	0	S	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1																				
Sep 24	0	0	S	1	2	1	3	3	3	3	2	1	1	1	1	1	2	2	2	2	2	3	2	2	0	3	1.7																				
Sep 25	2	S	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	2	1	1	0	2	0.7																				
Sep 26	S	1	2	2	2	2	1	2	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.4																				
Sep 27	2	2	2	2	1	1	2	3	3	3	3	2	1	2	1	1	1	1	1	1	1	2	S	2	1	3	1.7																				
Sep 28	2	3	5	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	5	1.4																				
Sep 29	1	1	1	1	1	1	2	2	5	7	6	2	2	1	1	1	1	1	1	2	2	S	2	1	1	7	2.0																				
Sep 30	1	1	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	2	S	3	2	2	3	1	3	1.8																				
Diurnal Maximum	3	3	5	2	2	4	4	4	5	7	6	2	2	2	2	2	2	2	7	5	3	3	3	3																							
Daiurnal Average	1.2	1.2	1.4	1.3	1.3	1.4	1.6	1.7	1.6	1.3	0.9	0.9	0.8	0.8	0.7	0.8	0.8	1.3	1.3	1.1	1.3	1.2	1.3																								
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.

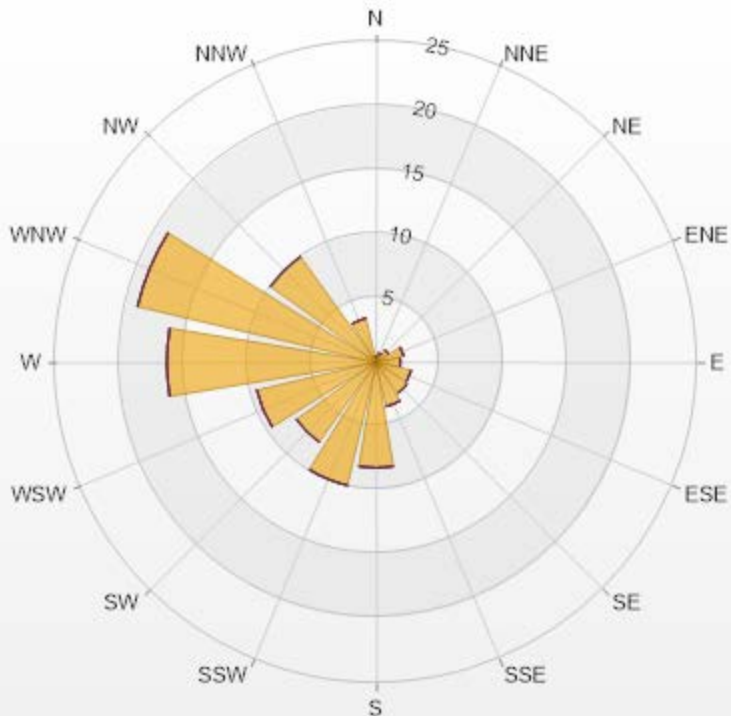
Timeseries Chart of Hourly Average for NO2 - St. Lina Site





Wind: St. Lina Poll.: St. Lina-NO2[ppb] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.58% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	0.44	0	0	0	0	0.44
NNE	0.73	0	0	0	0	0.73
NE	1.17	0	0	0	0	1.17
ENE	2.2	0	0	0	0	2.2
E	1.91	0	0	0	0	1.91
ESE	2.79	0	0	0	0	2.79
SE	2.94	0	0	0	0	2.94
SSE	3.52	0	0	0	0	3.52
S	8.22	0	0	0	0	8.22
SSW	9.84	0	0	0	0	9.84
SW	7.64	0	0	0	0	7.64
WSW	9.54	0	0	0	0	9.54
W	16.3	0	0	0	0	16.3
WNW	19.09	0	0	0	0	19.09
NW	10.13	0	0	0	0	10.13
NNW	3.52	0	0	0	0	3.52
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 - September 2021

Summary of Hourly Averages

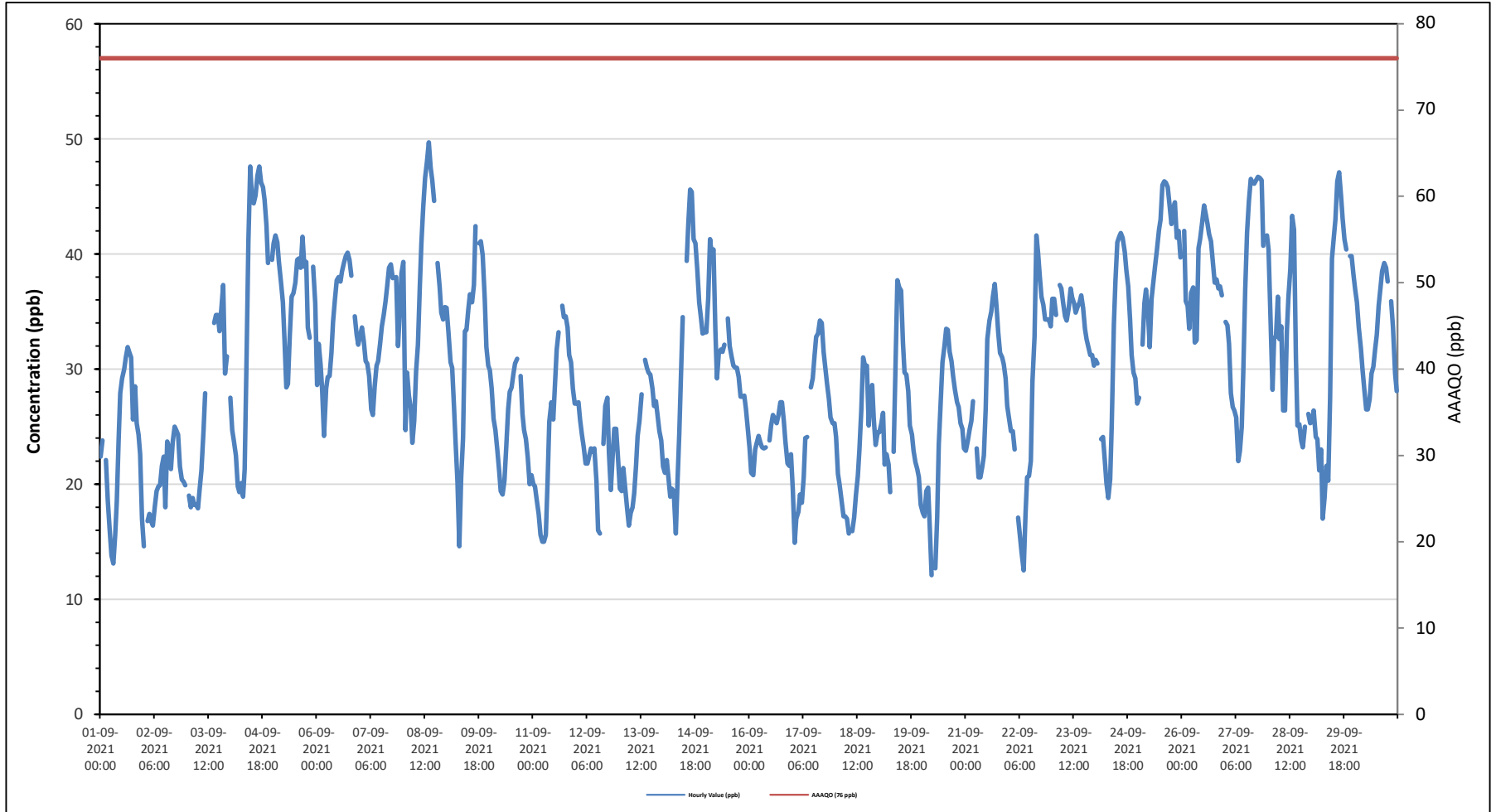
OZONE (O₃) in ppb

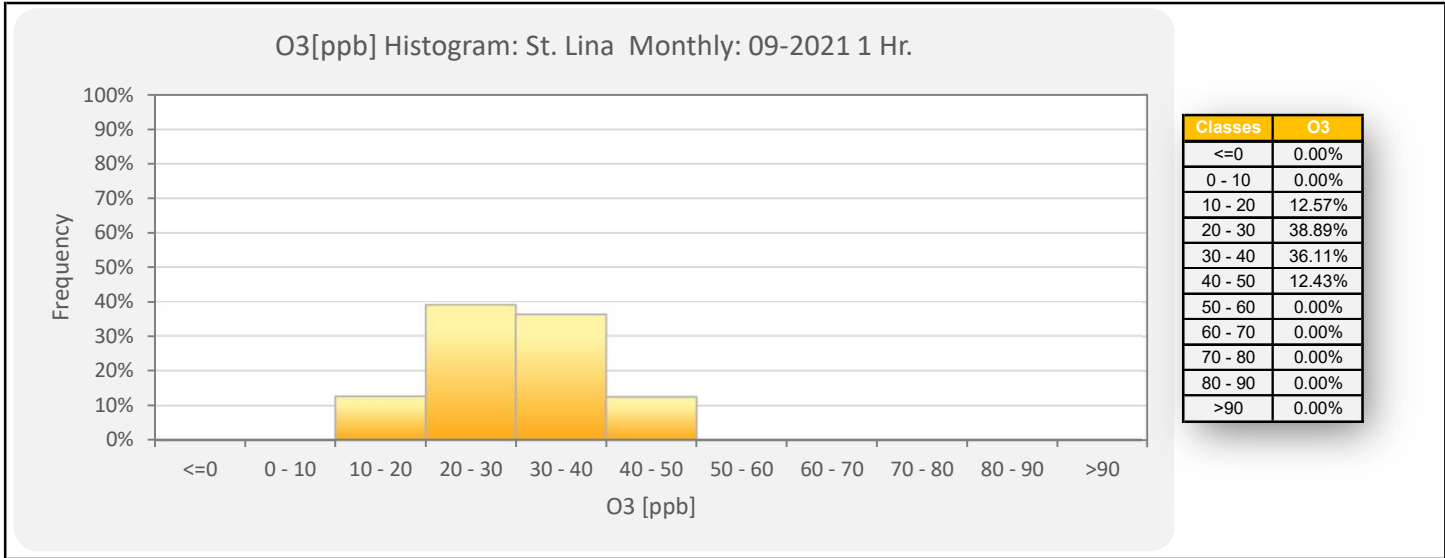
Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 76 ppb																																															
Number of 1-Hour Exceedences: 0																																															
Maximum Hourly Value: 49.7 ppb on September 8 at hour 14												Hours in Service: 720																																			
Maximum Daily Value: 40.0 ppb on September 25												Hours of Data: 684																																			
Minimum Hourly Value: 12.1 ppb on September 20 at hour 5												Hours of Missing Data: 0																																			
Minimum Daily Value: 20.4 ppb on September 2												Hours of Calibration: 36																																			
Monthly Average: 29.8 ppb												Operational Uptime: 100.0																																			
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average																					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23																							
Sep 1	22.4	23.8	S	22.1	18.6	16.1	13.8	13.1	15.6	18.5	23.9	27.9	29.2	30.0	31.0	31.9	31.4	31.0	25.6	28.5	25.3	24.3	22.6	17.0	13.1	31.9	23.6																				
Sep 2	14.6	S	16.8	17.4	16.8	16.4	18.0	19.4	19.8	19.9	21.6	22.4	18.0	23.7	23.1	21.3	23.7	25.0	24.7	24.3	21.5	20.4	20.2	19.9	14.6	25.0	20.4																				
Sep 3	S	19.0	18.0	18.8	18.2	18.2	17.9	19.5	21.2	24.7	27.9	C	C	C	C	34.0	34.7	34.7	33.3	35.2	37.3	29.6	31.1	S	17.9	37.3	26.3																				
Sep 4	27.5	24.7	23.8	22.5	19.8	19.3	20.1	18.9	21.3	30.8	41.1	47.6	44.6	44.4	45.1	46.8	47.6	46.2	45.8	44.7	42.5	39.2	S	39.5	18.9	47.6	34.9																				
Sep 5	40.9	41.6	41.0	39.3	37.5	35.8	32.6	28.4	28.7	32.9	36.3	36.6	37.5	39.5	39.6	38.8	41.5	38.9	39.3	33.6	32.7	S	38.9	35.7	28.4	41.6	36.9																				
Sep 6	28.6	32.2	30.4	28.2	24.2	28.3	29.3	29.4	31.4	34.1	36.0	37.7	38.0	37.6	38.5	39.2	39.8	40.1	39.5	38.1	S	34.6	33.0	32.1	24.2	40.1	33.9																				
Sep 7	33.0	33.6	32.4	30.7	30.5	29.4	26.5	26.0	28.5	30.3	30.7	32.1	33.7	34.7	35.9	37.2	38.8	39.1	37.9	S	38.0	32.0	35.2	38.3	26.0	39.1	33.2																				
Sep 8	39.3	24.7	29.7	27.7	26.6	23.6	25.5	29.8	32.1	37.1	40.9	44.1	46.6	48.0	49.7	47.5	46.4	44.6	S	39.2	37.1	34.9	34.3	35.4	23.6	49.7	36.7																				
Sep 9	35.3	33.2	30.6	30.1	26.7	23.6	20.2	14.6	20.6	24.0	33.3	33.4	35.2	36.5	35.8	37.3	42.4	S	40.9	41.1	39.9	36.0	31.9	30.3	14.6	42.4	31.9																				
Sep 10	29.9	28.3	25.7	24.7	23.0	21.2	19.4	19.1	20.3	23.3	26.5	28.0	28.4	29.6	30.5	30.9	S	29.4	26.1	24.7	23.9	22.3	20.0	20.8	19.1	30.9	25.0																				
Sep 11	20.0	19.8	18.6	17.4	15.6	15.0	15.0	15.6	20.5	25.4	27.1	25.6	28.4	31.7	33.2	S	35.5	34.5	34.6	33.6	31.2	30.6	28.3	27.0	15.0	35.5	25.4																				
Sep 12	27.0	27.1	25.6	24.3	23.2	21.8	21.8	22.4	23.1	22.8	23.1	20.2	16.0	15.7	S	23.5	26.8	27.5	22.7	19.5	22.5	24.8	24.8	22.3	15.7	27.5	23.0																				
Sep 13	19.6	19.4	21.4	19.7	18.0	16.4	17.5	18.0	19.2	21.6	24.2	25.5	27.8	S	30.8	30.1	29.7	29.5	28.3	26.8	27.2	26.0	24.6	23.8	16.4	30.8	23.7																				
Sep 14	21.5	21.0	22.1	20.6	18.9	19.6	19.4	15.7	20.0	24.4	29.9	34.5	S	39.4	42.6	45.6	45.4	41.3	40.9	38.6	35.8	34.4	33.1	33.2	15.7	45.6	30.3																				
Sep 15	33.2	36.1	41.3	40.0	40.4	33.4	29.2	31.4	31.7	31.5	32.1	S	34.4	32.0	31.1	30.3	30.1	30.1	29.3	27.6	27.6	27.7	26.6	24.9	24.9	41.3	31.8																				
Sep 16	23.1	21.0	20.8	23.0	23.6	24.2	23.6	23.2	23.1	23.2	S	23.8	25.1	26.0	25.6	25.3	26.0	27.1	27.1	25.5	23.7	21.8	21.6	22.6	20.8	27.1	23.9																				
Sep 17	19.5	14.9	17.0	17.6	19.1	18.4	20.6	24.0	24.1	S	28.4	29.2	31.2	32.8	33.1	34.2	34.0	31.5	30.2	28.7	27.4	25.8	25.3	25.3	14.9	34.2	25.8																				
Sep 18	24.1	20.9	20.0	18.7	17.2	17.2	17.0	15.7	S	15.9	17.1	19.1	20.7	23.0	26.4	31.0	30.3	30.3	25.1	28.0	28.6	25.7	23.4	24.5	15.7	31.0	22.6																				
Sep 19	24.5	25.2	26.2	21.7	22.6	21.7	19.3	S	22.8	30.3	37.7	37.1	36.8	32.3	29.7	29.5	28.1	25.1	24.3	22.9	21.9	21.3	20.6	18.2	18.2	37.7	26.1																				
Sep 20	17.5	17.2	19.4	19.7	16.3	12.1	S	12.7	17.1	23.4	27.0	30.6	31.9	33.5	33.4	31.5	30.7	29.4	28.2	27.1	26.7	25.3	24.8	23.1	12.1	33.5	24.3																				
Sep 21	22.9	23.7	24.7	25.5	27.2	S	23.1	20.6	20.6	21.5	22.5	26.6	32.6	34.2	35.0	36.3	37.4	35.3	33.2	31.4	31.0	30.4	29.2	26.8	20.6	37.4	28.3																				
Sep 22	25.7	24.6	24.6	23.0	S	17.1	15.5	14.1	12.5	17.4	20.6	20.7	22.0	28.9	32.8	41.6	40.2	38.0	36.3	35.6	34.3	34.3	34.3	33.7	12.5	41.6	27.3																				
Sep 23	36.1	36.1	34.7	S	37.3	37.0	35.7	34.6	34.2	35.3	37.0	36.2	35.7	34.9	35.4	35.8	36.4	35.3	33.5	32.6	31.9	31.2	31.2	30.3	30.3	30.5	37.3	34.7																			
Sep 24	30.8	30.5	S	23.9	24.1	22.0	20.1	18.8	20.4	25.2	33.9	37.7	41.0	41.5	41.8	41.4	40.2	38.6	37.2	34.3	31.2	29.7	29.2	27.0	18.8	41.8	31.3																				
Sep 25	27.5	S	32.1	35.7	36.9	34.8	31.9	36.1	37.6	38.9	40.3	42.1	43.0	46.0	46.3	46.2	45.8	44.2	42.6	44.0	44.5	41.4	42.0	39.7	27.5	46.3	40.0																				
Sep 26	S	42.0	35.9	35.5	33.5	36.6	37.1	32.3	32.5	40.5	41.3	42.6	44.2	43.5	42.6	41.7	41.1	39.3	37.5	37.8	37.0	37.2	36.4	S	32.3	44.2	38.6																				
Sep 27	34.1	33.8	32.2	27.9	26.7	26.4	25.8	22.0	22.9	25.0	30.0	36.9	41.9	44.6	46.5	46.2	46.1	46.4	46.7	46.6	46.4	40.7	S	41.6	22.0	46.7	36.4																				
Sep 28	40.4	33.9	28.2	32.7	32.8	36.3	32.6	33.7	26.4	26.4	33.3	36.3	38.7	43.3	42.1	31.1	25.1	25.2	23.8	23.2	25.0	S	26.1	25.3	23.2	43.3	31.4																				
Sep 29	25.4	26.4	24.1	23.9	21.2	23.0	17.0	18.8	21.6	20.3	27.5	39.6	41.2	43.0	46.3	47.1	45.1	43.1	40.4	S	39.8	39.8	38.2	17.0	47.1	32.8																					
Sep 30	36.8	35.8	33.6	31.8	30.0	28.2	26.5	26.5	27.4	29.6	30.2	31.8	33.0	35.5	37.1	38.5	39.2	38.8	37.6	S	35.9	33.6	29.6	28.1	26.5	39.2	32.8																				
Diurnal Maximum	40.9	42.0	41.3	40.0	40.4	37.0	37.1	36.1	37.6	40.5	41.3	47.6	46.6	48.0	49.7	47.5	47.6	46.4	46.7	46.6	46.4	41.4	42.0	41.6																							
Diurnal Average	27.9	27.5	26.8	25.7	25.1	23.9	23.2	22.6	24.0	26.7	30.4	32.4	33.5	35.2	36.5	36.3	36.5	35.2	33.6	32.6	31.7	30.5	29.2	28.7																							
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.

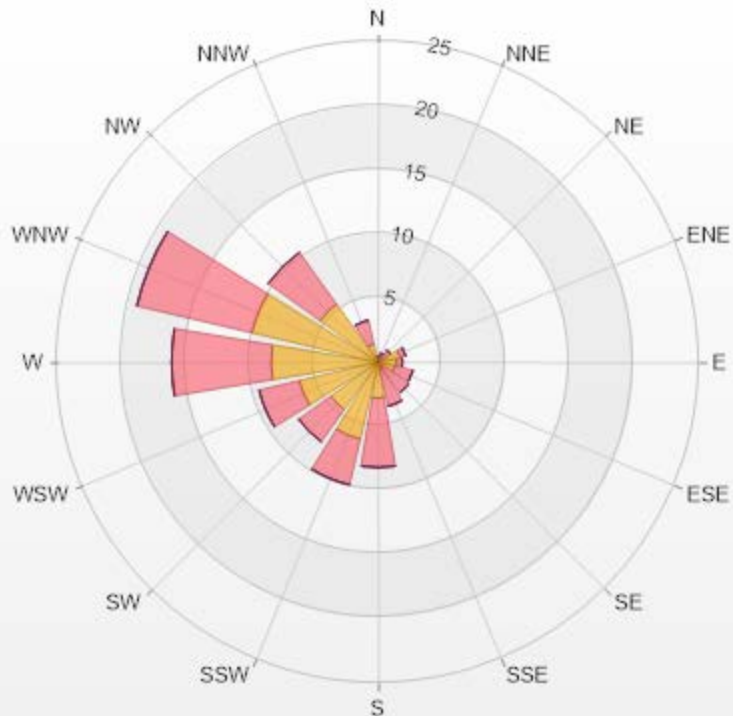
Timeseries Chart of Hourly Average for O3 - St. Lina Site





Wind: St. Lina Poll.: St. Lina-O3[ppb] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.00% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-76	76-159	>159.0	Total
N	0	0.44	0	0	0	0.44
NNE	0.44	0.29	0	0	0	0.73
NE	0.44	0.73	0	0	0	1.17
ENE	1.75	0.44	0	0	0	2.19
E	1.46	0.44	0	0	0	1.9
ESE	1.32	1.46	0	0	0	2.78
SE	0.29	2.63	0	0	0	2.92
SSE	0.58	2.92	0	0	0	3.5
S	2.78	5.41	0	0	0	8.19
SSW	6.14	3.65	0	0	0	9.79
SW	4.53	3.07	0	0	0	7.6
WSW	6.29	3.22	0	0	0	9.51
W	8.33	7.75	0	0	0	16.08
WNW	10.09	9.21	0	0	0	19.3
NW	5.56	4.97	0	0	0	10.53
NNW	1.46	1.9	0	0	0	3.36
Summary	51.46	48.53	0	0	0	100



LICA-202109

% Icon Classes (ppb)	51	49	0	0	0
0-30	51				
30-50		49			
50-76			0		
76-159				0	
>159.0					0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - September 2021

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

Maximum Hourly Value:	2.39 ppm on September 27 at hour 13	Hours in Service:	720
Maximum Daily Value:	1.96 ppm on September 11	Hours of Data:	684
Minimum Hourly Value:	1.80 ppm on September 21 at hour 14	Hours of Missing Data:	0
Minimum Daily Value:	1.84 ppm on September 25	Hours of Calibration:	36
Monthly Average:	1.90 ppm	Operational Uptime:	100.0

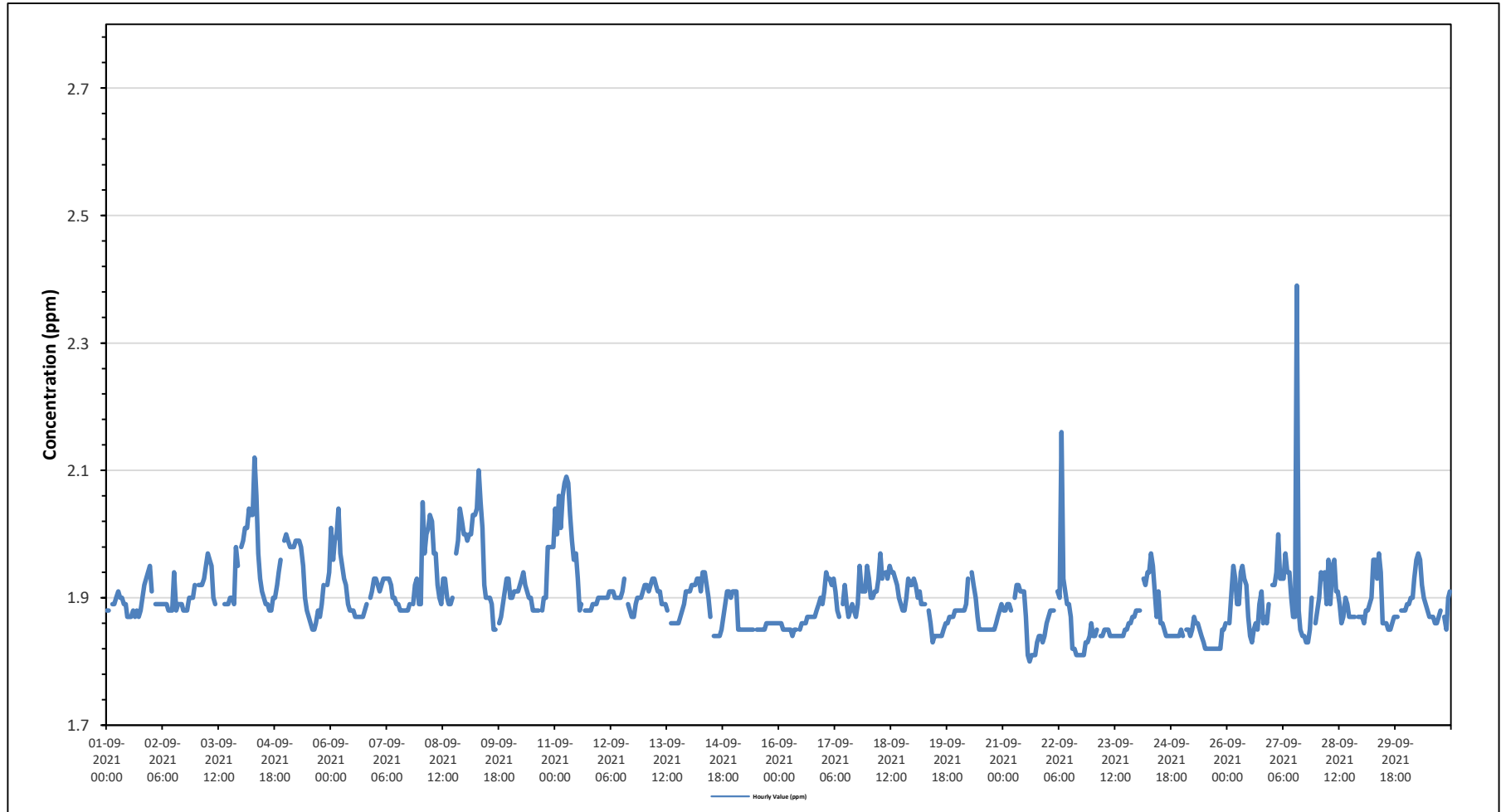
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Sep 1	1.88	1.88	S	1.89	1.89	1.90	1.91	1.90	1.90	1.89	1.89	1.87	1.87	1.87	1.88	1.87	1.88	1.87	1.88	1.90	1.92	1.93	1.94	1.95	1.87	1.95	1.89	
Sep 2	1.91	S	1.89	1.89	1.89	1.89	1.89	1.89	1.88	1.88	1.88	1.94	1.88	1.89	1.89	1.89	1.88	1.88	1.88	1.88	1.90	1.90	1.90	1.90	1.92	1.88	1.94	1.89
Sep 3	S	1.92	1.92	1.92	1.93	1.95	1.97	1.96	1.95	1.90	1.89	C	C	C	C	1.89	1.89	1.89	1.90	1.90	1.89	1.98	1.95	S	1.89	1.98	1.92	
Sep 4	1.98	1.99	2.01	2.01	2.04	2.03	2.03	2.12	2.06	1.97	1.93	1.91	1.90	1.89	1.89	1.88	1.88	1.90	1.90	1.92	1.94	1.96	S	1.99	1.88	2.12	1.96	
Sep 5	2.00	1.99	1.98	1.98	1.98	1.99	1.99	1.99	1.98	1.95	1.90	1.88	1.87	1.86	1.85	1.85	1.86	1.88	1.87	1.89	1.92	S	1.92	1.94	1.85	2.00	1.93	
Sep 6	2.01	1.96	1.99	2.00	2.04	1.97	1.95	1.93	1.92	1.89	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.88	1.89	S	S	1.90	1.91	1.93	1.87	2.04	1.92	
Sep 7	1.93	1.92	1.91	1.92	1.93	1.93	1.93	1.93	1.92	1.90	1.90	1.89	1.89	1.88	1.88	1.88	1.88	1.88	1.89	S	1.89	1.92	1.93	1.89	1.88	1.93	1.91	
Sep 8	1.89	2.05	1.97	2.00	2.01	2.03	2.02	1.97	1.97	1.92	1.90	1.89	1.93	1.93	1.90	1.89	1.89	1.90	S	1.97	1.99	2.04	2.02	2.00	1.89	2.05	1.96	
Sep 9	2.00	1.99	2.00	2.00	2.03	2.03	2.04	2.10	2.05	2.01	1.92	1.90	1.90	1.89	1.85	1.85	S	1.86	1.87	1.89	1.91	1.93	1.93	1.85	2.10	1.95		
Sep 10	1.90	1.90	1.91	1.91	1.91	1.92	1.93	1.94	1.92	1.91	1.90	1.90	1.88	1.88	1.88	1.88	S	1.88	1.90	1.90	1.98	1.98	1.98	1.98	1.88	1.98	1.92	
Sep 11	2.04	2.00	2.06	2.01	2.06	2.08	2.09	2.08	2.03	1.99	1.96	1.97	1.93	1.88	1.89	S	1.88	1.88	1.88	1.88	1.89	1.89	1.89	1.90	1.88	2.09	1.96	
Sep 12	1.90	1.90	1.90	1.90	1.90	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.91	1.93	S	1.89	1.88	1.87	1.87	1.89	1.90	1.90	1.90	1.91	1.87	1.93	1.90	
Sep 13	1.92	1.92	1.91	1.92	1.93	1.93	1.92	1.91	1.91	1.89	1.89	1.89	1.88	S	1.86	1.86	1.86	1.86	1.86	1.87	1.88	1.89	1.91	1.91	1.86	1.93	1.89	
Sep 14	1.91	1.92	1.92	1.92	1.93	1.93	1.91	1.94	1.94	1.92	1.90	1.87	S	1.84	1.84	1.84	1.84	1.85	1.87	1.89	1.91	1.91	1.90	1.91	1.84	1.94	1.90	
Sep 15	1.91	1.91	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	S	1.85	1.85	1.85	1.85	1.85	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.85	1.91	1.86	
Sep 16	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.84	1.85	1.85	S	1.85	1.86	1.86	1.86	1.87	1.87	1.87	1.87	1.87	1.88	1.89	1.90	1.89	1.84	1.90	1.86	
Sep 17	1.91	1.94	1.93	1.93	1.92	1.93	1.91	1.88	1.87	S	1.89	1.92	1.89	1.87	1.88	1.89	1.88	1.87	1.89	1.95	1.91	1.91	1.91	1.95	1.87	1.95	1.91	
Sep 18	1.93	1.90	1.90	1.91	1.91	1.93	1.97	1.93	S	1.94	1.93	1.95	1.94	1.94	1.93	1.92	1.90	1.89	1.88	1.88	1.90	1.93	1.92	1.92	1.88	1.97	1.92	
Sep 19	1.93	1.92	1.90	1.91	1.89	1.89	S	1.88	1.86	1.83	1.84	1.84	1.84	1.84	1.84	1.85	1.86	1.86	1.86	1.87	1.87	1.88	1.88	1.88	1.83	1.93	1.87	
Sep 20	1.88	1.88	1.88	1.88	1.89	1.93	S	1.94	1.92	1.90	1.87	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.86	1.87	1.88	1.89	1.85	1.94	1.87	
Sep 21	1.88	1.88	1.89	1.89	1.88	S	1.90	1.92	1.92	1.91	1.91	1.91	1.87	1.81	1.80	1.81	1.81	1.81	1.83	1.84	1.84	1.83	1.84	1.86	1.80	1.92	1.86	
Sep 22	1.87	1.88	1.88	1.88	S	1.91	1.90	2.16	1.93	1.91	1.89	1.89	1.87	1.82	1.82	1.81	1.81	1.81	1.81	1.81	1.83	1.84	1.84	1.86	1.81	2.16	1.87	
Sep 23	1.84	1.84	1.85	S	1.84	1.84	1.84	1.85	1.85	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.85	1.85	1.86	1.86	1.87	1.87	1.88	1.84	1.88	1.85	
Sep 24	1.88	1.88	S	1.93	1.92	1.94	1.94	1.97	1.95	1.91	1.87	1.91	1.86	1.86	1.85	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.85	1.84	1.97	1.88	
Sep 25	1.84	S	1.85	1.85	1.84	1.85	1.87	1.86	1.86	1.85	1.84	1.83	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.85	1.85	1.86	1.82	1.87	1.84	
Sep 26	S	1.86	1.91	1.95	1.93	1.89	1.89	1.94	1.95	1.93	1.92	1.87	1.84	1.83	1.85	1.86	1.85	1.89	1.91	1.86	1.87	1.86	1.89	S	1.83	1.95	1.89	
Sep 27	1.92	1.92	1.94	2.00	1.93	1.93	1.93	1.97	1.94	1.94	1.90	1.87	1.87	2.39	1.88	1.85	1.84	1.84	1.83	1.83	1.85	1.90	S	1.86	1.83	2.39	1.92	
Sep 28	1.88	1.90	1.94	1.93	1.94	1.89	1.96	1.89	1.95	1.96	1.91	1.91	1.89	1.86	1.87	1.90	1.89	1.87	1.87	1.87	1.87	1.87	S	1.87	1.86	1.96	1.90	
Sep 29	1.87	1.86	1.88	1.88	1.89	1.90	1.96	1.96	1.93	1.97	1.94	1.86	1.86	1.85	1.85	1.86	1.87	1.87	1.87	1.87	S	S	1.88	1.88	1.85	1.97	1.89	
Sep 30	1.89	1.89	1.90	1.90	1.93	1.96	1.97	1.96	1.92	1.90	1.89	1.88	1.87	1.87	1.87	1.86	1.86	1.87	1.88	S	1.87	1.85	1.90	1.91	1.85	1.97	1.90	
Diurnal Maximum	2.04	2.05	2.06	2.01	2.06	2.08	2.09	2.16	2.06	2.01	1.96	1.97	1.94	2.39	1.93	1.92	1.90	1.90	1.91	1.97	1.99	2.04	2.02	2.00				
Dalurnal Average	1.91	1.92	1.92	1.93	1.93	1.94	1.95	1.95	1.93	1.91	1.89	1.89	1.88	1.89	1.86	1.86	1.86	1.86	1.87	1.88	1.89	1.90	1.90	1.91				

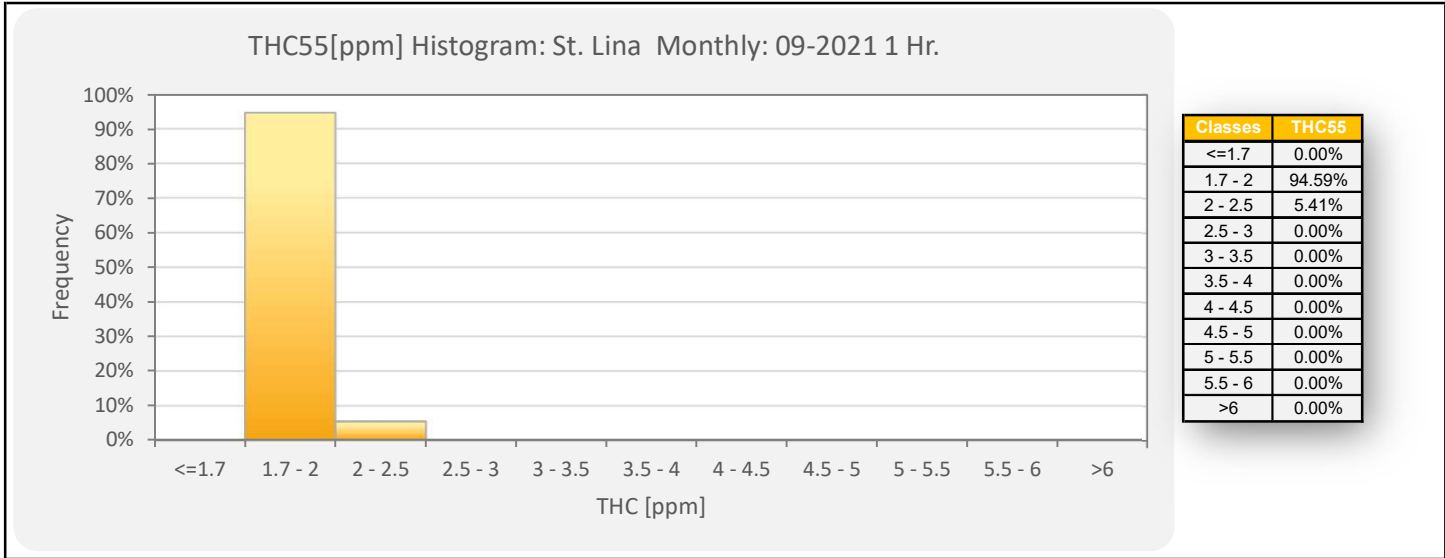
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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.

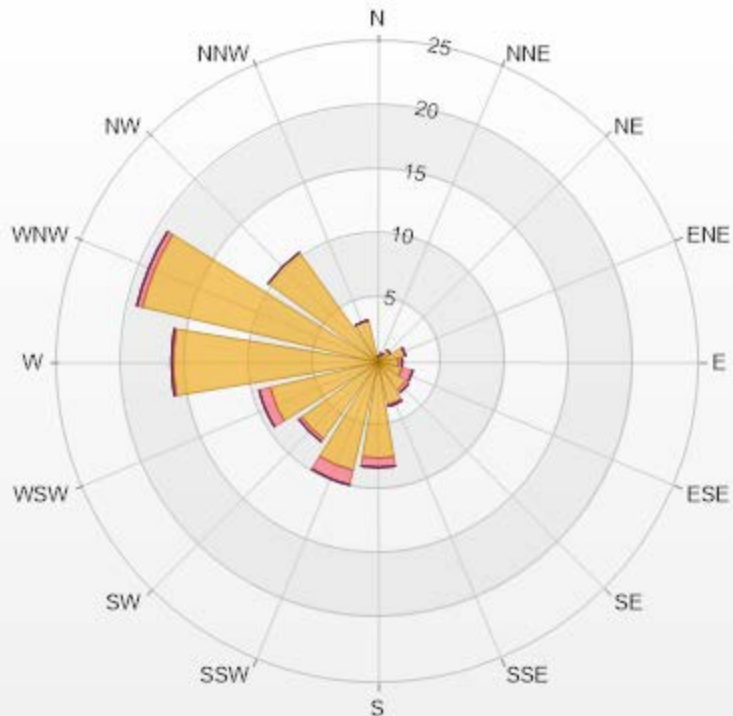
Timeseries Chart of Hourly Average for THC - St. Lina Site





Wind: St. Lina Poll.: St. Lina-THC55[ppm] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.00% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	0.44	0	0	0	0	0.44
NNE	0.58	0.15	0	0	0	0.73
NE	1.17	0	0	0	0	1.17
ENE	2.19	0	0	0	0	2.19
E	1.61	0.29	0	0	0	1.9
ESE	1.9	0.88	0	0	0	2.78
SE	2.63	0.29	0	0	0	2.92
SSE	3.36	0.15	0	0	0	3.51
S	7.46	0.73	0	0	0	8.19
SSW	8.63	1.17	0	0	0	9.8
SW	7.31	0.29	0	0	0	7.6
WSW	8.63	0.88	0	0	0	9.51
W	15.94	0.15	0	0	0	16.09
WNW	18.86	0.44	0	0	0	19.3
NW	10.53	0	0	0	0	10.53
NNW	3.36	0	0	0	0	3.36
Summary	94.6	5.42	0	0	0	100



LICA-202109

% Icon Classes (ppm)

95 0-2

5 2-5

0 5-10

0 10-40

0 >40.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - September 2021

Summary of Hourly Averages

METHANE (CH4) in ppm

Maximum Hourly Value:	2.16 ppm on September 22 at hour 7	Hours in Service:	720
Maximum Daily Value:	1.96 ppm on September 11	Hours of Data:	684
Minimum Hourly Value:	1.80 ppm on September 21 at hour 14	Hours of Missing Data:	0
Minimum Daily Value:	1.84 ppm on September 25	Hours of Calibration:	36
Monthly Average:	1.90 ppm	Operational Uptime:	100.0

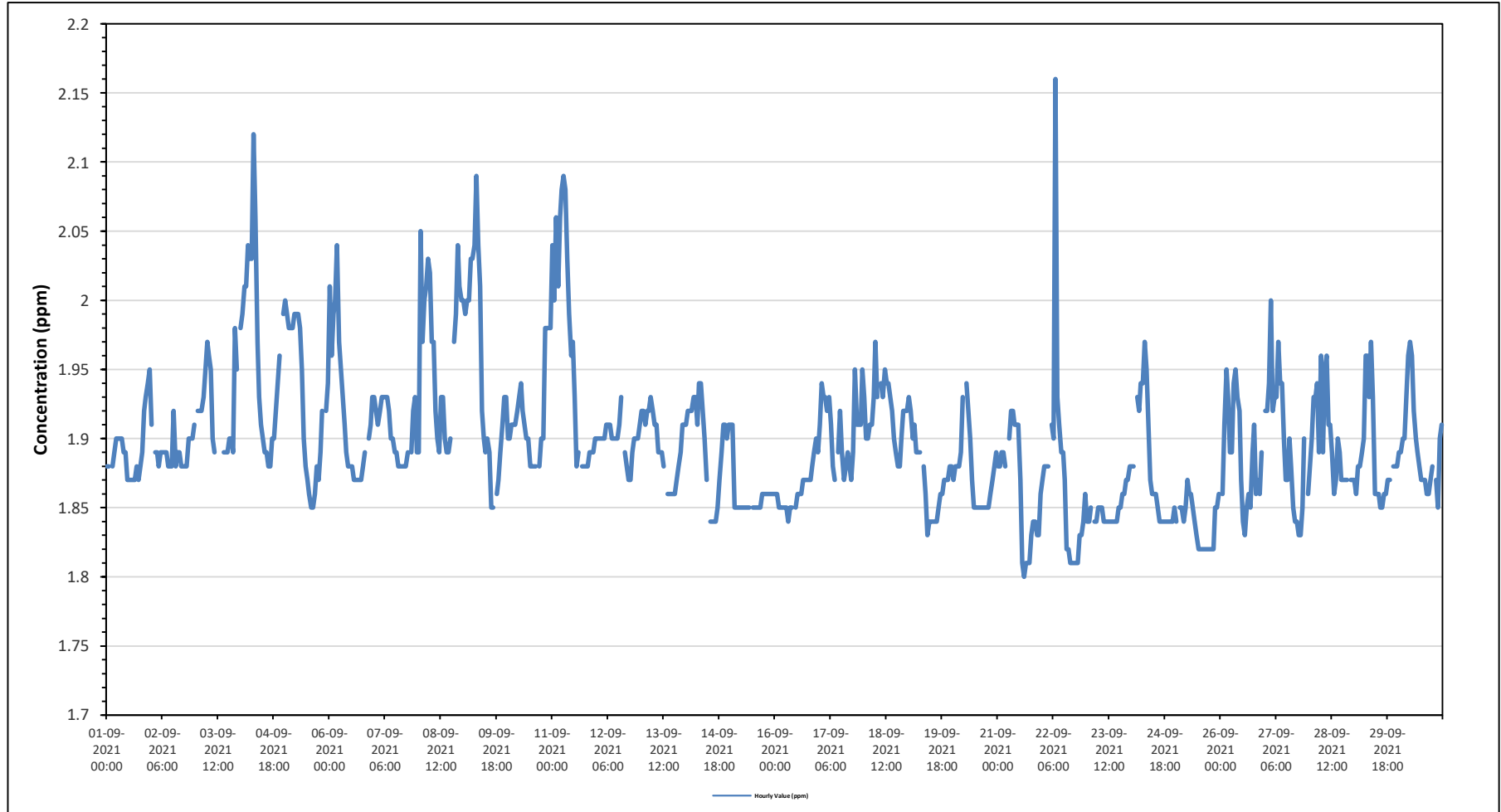
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Sep 1	1.88	1.88	S	1.88	1.89	1.90	1.90	1.90	1.90	1.89	1.89	1.87	1.87	1.87	1.87	1.87	1.88	1.87	1.88	1.89	1.92	1.93	1.94	1.95	1.87	1.95	1.89
Sep 2	1.91	S	1.89	1.89	1.88	1.89	1.89	1.89	1.89	1.88	1.88	1.92	1.88	1.89	1.89	1.88	1.88	1.88	1.88	1.88	1.90	1.90	1.90	1.91	1.88	1.92	1.89
Sep 3	S	1.92	1.92	1.92	1.93	1.95	1.97	1.96	1.95	1.90	1.89	C	C	C	C	1.89	1.89	1.89	1.90	1.90	1.89	1.98	1.95	S	1.89	1.98	1.92
Sep 4	1.98	1.99	2.01	2.01	2.04	2.03	2.03	2.12	2.06	1.97	1.93	1.91	1.90	1.89	1.89	1.88	1.88	1.90	1.90	1.92	1.94	1.96	S	1.99	1.88	2.12	1.96
Sep 5	2.00	1.99	1.98	1.98	1.98	1.99	1.99	1.99	1.98	1.95	1.90	1.88	1.87	1.86	1.85	1.85	1.86	1.88	1.87	1.89	1.92	S	1.92	1.94	1.85	2.00	1.93
Sep 6	2.01	1.96	1.99	2.00	2.04	1.97	1.95	1.93	1.91	1.89	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.88	1.89	S	S	1.90	1.91	1.93	1.87	2.04	1.92
Sep 7	1.93	1.92	1.91	1.92	1.93	1.93	1.93	1.93	1.92	1.90	1.90	1.89	1.89	1.88	1.88	1.88	1.88	1.88	1.89	S	1.89	1.92	1.93	1.89	1.88	1.93	1.91
Sep 8	1.89	2.05	1.97	2.00	2.01	2.03	2.02	1.97	1.97	1.92	1.90	1.89	1.93	1.93	1.90	1.89	1.89	1.90	S	1.97	1.99	2.04	2.01	2.00	1.89	2.05	1.96
Sep 9	2.00	1.99	2.00	2.00	2.03	2.03	2.04	2.09	2.04	2.01	1.92	1.90	1.89	1.90	1.89	1.85	1.85	S	1.86	1.87	1.89	1.91	1.93	1.93	1.85	2.09	1.95
Sep 10	1.90	1.90	1.91	1.91	1.91	1.92	1.93	1.94	1.92	1.91	1.90	1.90	1.88	1.88	1.88	1.88	S	1.88	1.90	1.90	1.98	1.98	1.98	1.98	1.88	1.98	1.92
Sep 11	2.04	2.00	2.06	2.01	2.06	2.08	2.09	2.08	2.03	1.99	1.96	1.97	1.93	1.88	1.89	S	1.88	1.88	1.88	1.88	1.89	1.89	1.89	1.90	1.88	2.09	1.96
Sep 12	1.90	1.90	1.90	1.90	1.90	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.91	1.93	S	1.89	1.88	1.87	1.87	1.89	1.90	1.90	1.90	1.91	1.87	1.93	1.90
Sep 13	1.92	1.92	1.91	1.92	1.92	1.93	1.92	1.91	1.91	1.89	1.89	1.89	1.88	S	1.86	1.86	1.86	1.86	1.86	1.87	1.88	1.89	1.91	1.91	1.86	1.93	1.89
Sep 14	1.91	1.92	1.92	1.92	1.93	1.93	1.91	1.94	1.94	1.92	1.90	1.87	S	1.84	1.84	1.84	1.84	1.85	1.87	1.89	1.91	1.91	1.90	1.91	1.84	1.94	1.90
Sep 15	1.91	1.91	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	S	1.85	1.85	1.85	1.85	1.85	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.85	1.91	1.86
Sep 16	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.84	1.85	1.85	S	1.85	1.86	1.86	1.86	1.87	1.87	1.87	1.87	1.87	1.88	1.89	1.90	1.89	1.84	1.90	1.86
Sep 17	1.91	1.94	1.93	1.93	1.92	1.93	1.91	1.88	1.87	S	1.89	1.92	1.89	1.87	1.88	1.89	1.88	1.87	1.89	1.95	1.91	1.91	1.91	1.95	1.87	1.95	1.91
Sep 18	1.93	1.90	1.90	1.91	1.91	1.93	1.97	1.93	S	1.94	1.93	1.95	1.94	1.94	1.93	1.92	1.90	1.89	1.88	1.88	1.90	1.92	1.92	1.92	1.88	1.97	1.92
Sep 19	1.93	1.92	1.90	1.91	1.89	1.89	S	1.88	1.86	1.83	1.84	1.84	1.84	1.84	1.84	1.85	1.86	1.86	1.86	1.87	1.87	1.88	1.88	1.88	1.83	1.93	1.87
Sep 20	1.87	1.88	1.88	1.88	1.89	1.93	S	1.94	1.92	1.90	1.87	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.86	1.87	1.88	1.89	1.85	1.94	1.87
Sep 21	1.88	1.88	1.89	1.89	1.88	S	1.90	1.92	1.92	1.91	1.91	1.91	1.87	1.81	1.80	1.81	1.81	1.81	1.83	1.84	1.84	1.83	1.83	1.86	1.80	1.92	1.86
Sep 22	1.87	1.88	1.88	1.88	S	1.91	1.90	2.16	1.93	1.91	1.89	1.89	1.87	1.82	1.82	1.81	1.81	1.81	1.81	1.81	1.81	1.83	1.84	1.86	1.81	2.16	1.87
Sep 23	1.84	1.84	1.85	S	1.84	1.84	1.85	1.85	1.85	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.85	1.85	1.86	1.86	1.87	1.87	1.88	1.84	1.88	1.85
Sep 24	1.88	1.88	S	1.93	1.92	1.94	1.94	1.97	1.95	1.91	1.87	1.86	1.86	1.86	1.85	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.85	1.84	1.97	1.88
Sep 25	1.84	S	1.85	1.85	1.84	1.85	1.87	1.86	1.86	1.85	1.84	1.83	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.85	1.85	1.86	1.82	1.87	1.84
Sep 26	S	1.86	1.91	1.95	1.93	1.89	1.89	1.94	1.95	1.93	1.92	1.87	1.84	1.83	1.85	1.86	1.85	1.89	1.91	1.86	1.87	1.86	1.89	S	1.83	1.95	1.89
Sep 27	1.92	1.92	1.94	2.00	1.92	1.93	1.93	1.97	1.94	1.94	1.90	1.87	1.87	1.90	1.88	1.85	1.84	1.84	1.83	1.83	1.85	1.90	S	1.86	1.83	2.00	1.90
Sep 28	1.88	1.90	1.93	1.93	1.94	1.89	1.96	1.89	1.95	1.96	1.91	1.91	1.89	1.86	1.87	1.90	1.89	1.87	1.87	1.87	1.87	S	1.87	1.87	1.86	1.96	1.90
Sep 29	1.87	1.86	1.88	1.88	1.89	1.90	1.96	1.96	1.93	1.97	1.93	1.86	1.86	1.85	1.85	1.86	1.86	1.87	1.87	S	S	1.88	1.88	1.88	1.85	1.97	1.89
Sep 30	1.89	1.89	1.90	1.90	1.93	1.96	1.97	1.96	1.92	1.90	1.89	1.88	1.87	1.87	1.87	1.86	1.86	1.87	1.88	S	1.87	1.85	1.90	1.91	1.85	1.97	1.90
Diurnal Maximum	2.04	2.05	2.06	2.01	2.06	2.08	2.09	2.16	2.06	2.01	1.96	1.97	1.94	1.94	1.93	1.92	1.90	1.90	1.91	1.97	1.99	2.04	2.01	2.00			
Dalurnal Average	1.91	1.92	1.92	1.93	1.93	1.94	1.95	1.95	1.93	1.91	1.89	1.88	1.88	1.87	1.86	1.86	1.86	1.86	1.87	1.88	1.89	1.90	1.90	1.91			

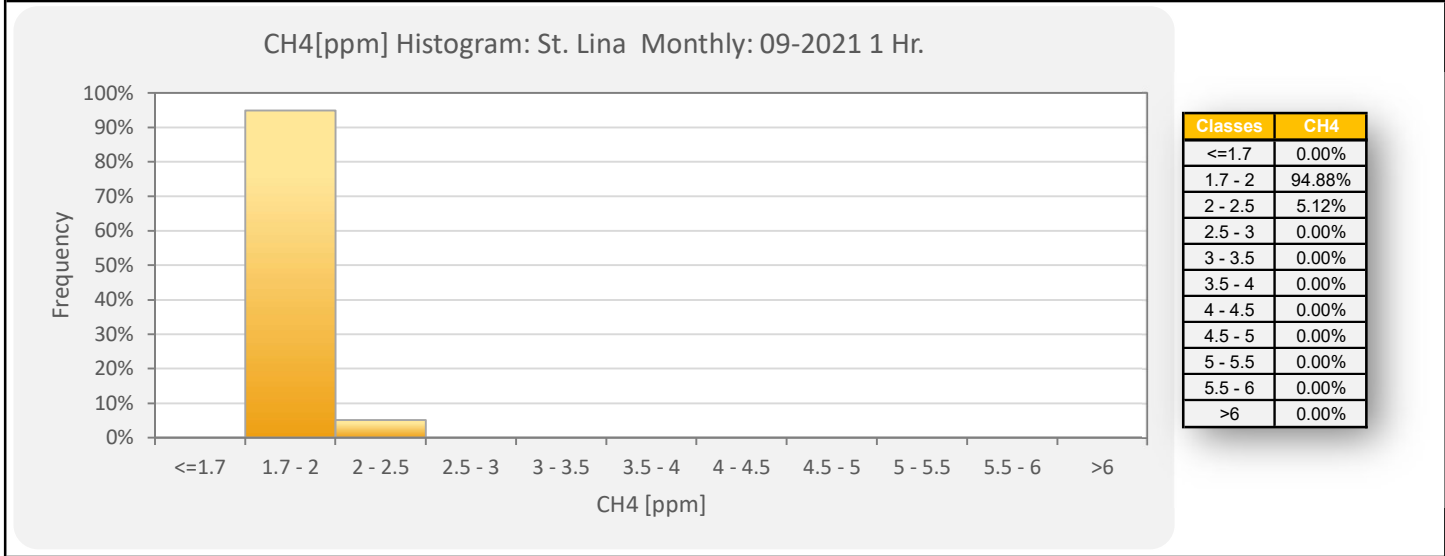
C	Monthly Calibration	S	Daily Zero-Span Check	Q	Quality Assurance
K	Collection Error	N	No Data (Machine Not in Service)	Y	Routine Maintenance
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)	P	Power Failure

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.

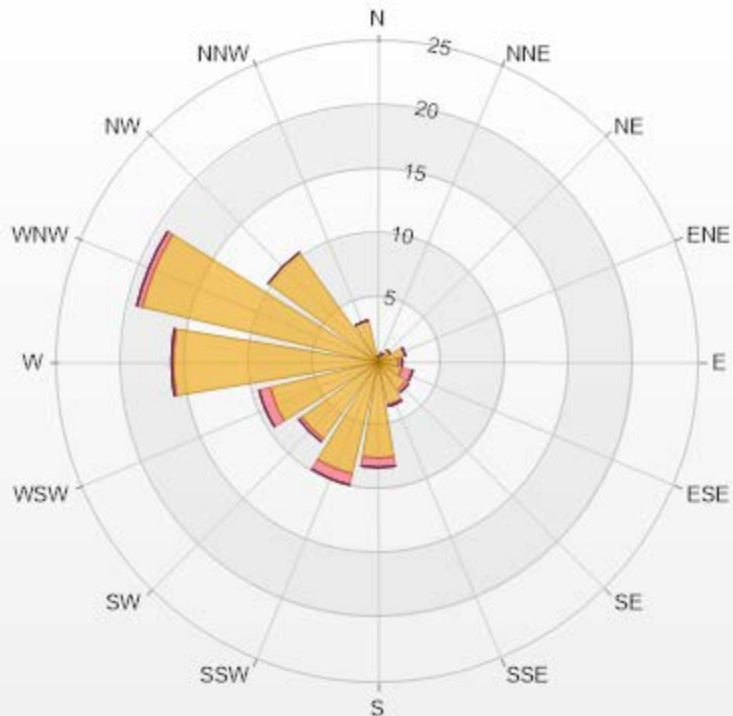
Timeseries Chart of Hourly Average for CH4 - St. Lina Site





Wind: St. Lina Poll.: St. Lina-CH4[ppm] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.00% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	0.44	0	0	0	0	0.44
NNE	0.58	0.15	0	0	0	0.73
NE	1.17	0	0	0	0	1.17
ENE	2.19	0	0	0	0	2.19
E	1.61	0.29	0	0	0	1.9
ESE	1.9	0.88	0	0	0	2.78
SE	2.63	0.29	0	0	0	2.92
SSE	3.36	0.15	0	0	0	3.51
S	7.46	0.73	0	0	0	8.19
SSW	8.92	0.88	0	0	0	9.8
SW	7.31	0.29	0	0	0	7.6
WSW	8.63	0.88	0	0	0	9.51
W	15.94	0.15	0	0	0	16.09
WNW	18.86	0.44	0	0	0	19.3
NW	10.53	0	0	0	0	10.53
NNW	3.36	0	0	0	0	3.36
Summary	94.89	5.13	0	0	0	100



LICA-202109

% Icon Classes (ppm)

95

0-2

5

2-5

0

5-10

0

10-20

0

>20.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - September 2021

Summary of Hourly Averages

NON-METHANE HYDROCARBONS (NMHC) in ppm

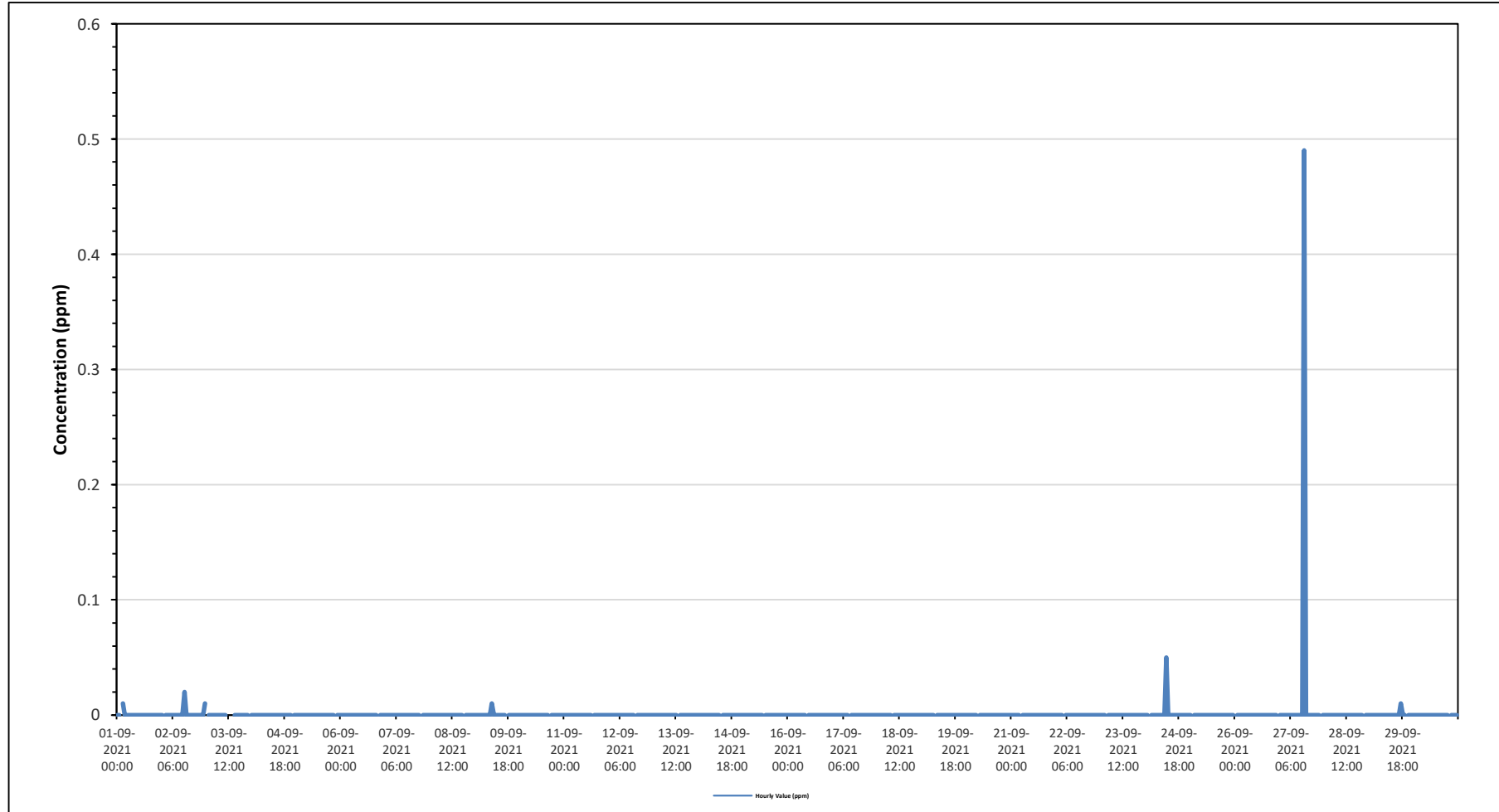
Maximum Hourly Value:	0.49 ppm on September 27 at hour 13	Hours in Service:	720
Maximum Daily Value:	0.02 ppm on September 27	Hours of Data:	684
Minimum Hourly Value:	0.00 ppm on September 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.00 ppm on September 3	Hours of Calibration:	36
Monthly Average:	0.00 ppm	Operational Uptime:	100.0

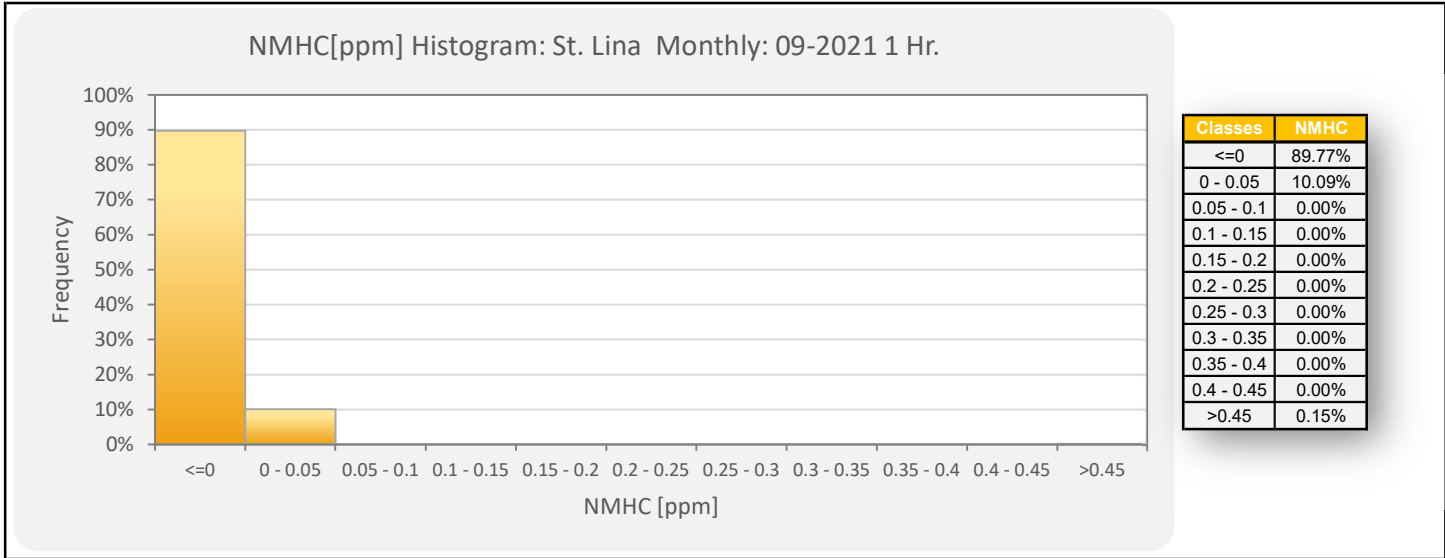
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23			
Sep 1	0.00	0.00	S	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00
Sep 2	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Sep 3	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00
Sep 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	
Sep 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	
Sep 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	S	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	
Sep 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 19	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 20	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 21	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 22	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 23	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 24	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
Sep 25	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep 26	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	
Sep 27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.49	0.02	
Sep 28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	
Sep 29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	S	S	0.00	0.00	0.00	0.00	0.00	0.01	0.00	
Sep 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Diurnal Maximum	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.05	0.02	0.49	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	
Dalurnal Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

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

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

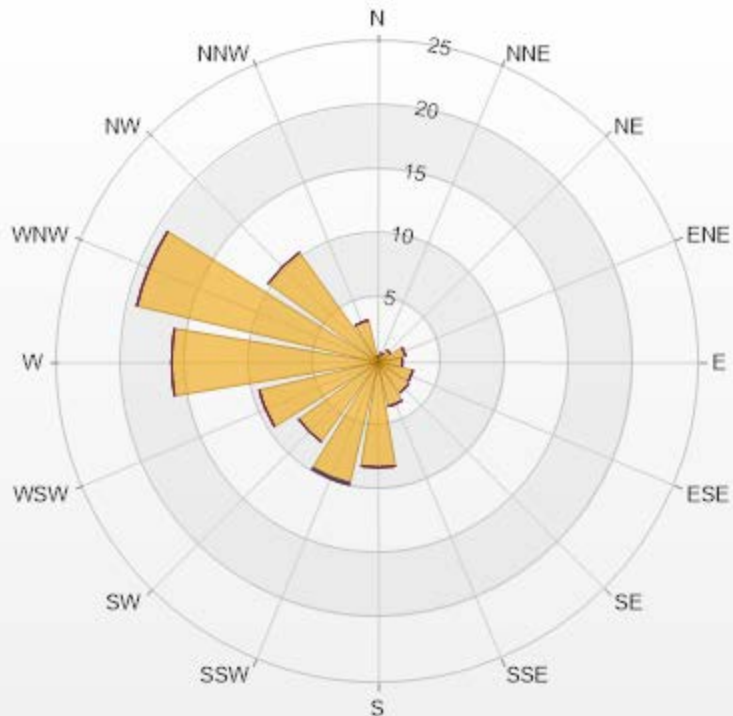
Timeseries Chart of Hourly Average for NMHC - St. Lina Site





Wind: St. Lina Poll.: St. Lina-NMHC[ppm] Monthly: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 95.00% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	0.44	0	0	0	0	0.44
NNE	0.73	0	0	0	0	0.73
NE	1.17	0	0	0	0	1.17
ENE	2.19	0	0	0	0	2.19
E	1.9	0	0	0	0	1.9
ESE	2.78	0	0	0	0	2.78
SE	2.92	0	0	0	0	2.92
SSE	3.51	0	0	0	0	3.51
S	8.19	0	0	0	0	8.19
SSW	9.65	0	0.15	0	0	9.8
SW	7.6	0	0	0	0	7.6
WSW	9.5	0	0	0	0	9.5
W	16.08	0	0	0	0	16.08
WNW	19.3	0	0	0	0	19.3
NW	10.53	0	0	0	0	10.53
NNW	3.36	0	0	0	0	3.36
Summary	100	0	0.15	0	0	100





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% Icon Classes (ppm)

100  0-0.1

0  0.1-0.3

0  0.3-0.9

0  0.9-2

0  >2.0



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - September 2021

Summary of Hourly Averages

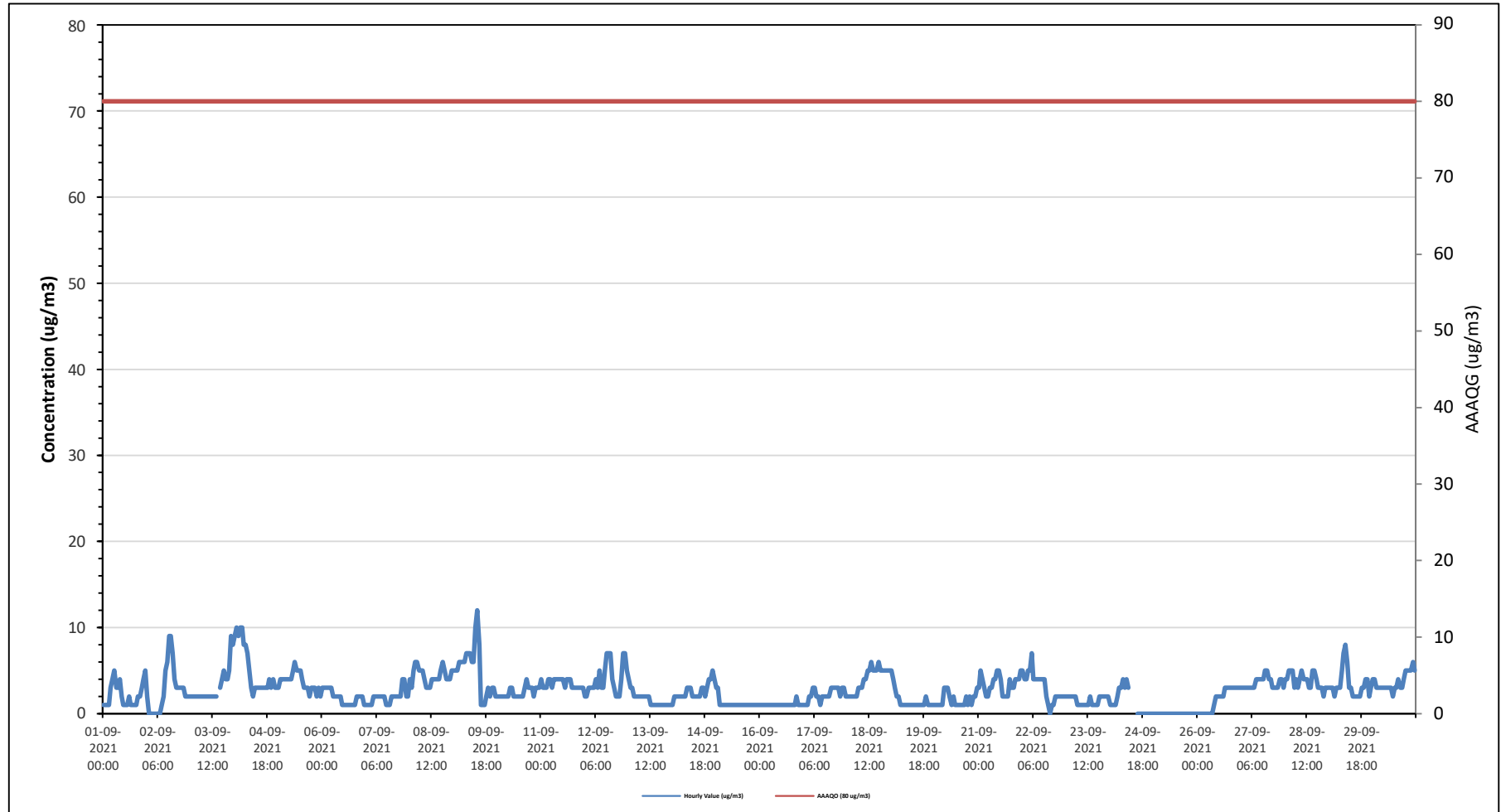
PARTICULATE MATTER 2.5 (PM_{2.5}) in µg/m³

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: 12 µg/m ³ on September 9 at hour 13													Hours in Service: 720																																		
Maximum Daily Value: 5.1 µg/m ³ on September 4													Hours of Data: 715																																		
Minimum Hourly Value: 0 µg/m ³ on September 2 at hour 1													Hours of Missing Data: 4																																		
Minimum Daily Value: 0 µg/m ³ on September 25													Hours of Calibration: 1																																		
Monthly Average: 2.7 µg/m ³													Operational Uptime: 99.4																																		
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average																					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23																				
Sep 1	1	1	1	1	3	4	5	3	3	4	2	1	1	1	2	1	1	1	1	2	2	3	4	5	1	5	2.2																				
Sep 2	2	0	0	0	0	0	0	0	1	2	5	6	9	9	7	4	3	3	3	3	3	2	2	2	2	0	9	2.8																			
Sep 3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	C	3	4	5	4	4	5	9	8	2	9	3.1																					
Sep 4	9	10	9	10	10	8	8	7	5	3	2	3	3	3	3	3	3	4	3	4	3	3	3	2	10	5.1																					
Sep 5	3	4	4	4	4	4	4	4	5	6	5	5	5	4	3	3	3	2	3	3	3	2	3	2	2	6	3.7																				
Sep 6	3	3	3	3	3	3	2	2	2	2	2	1	1	1	1	1	1	1	1	2	2	2	2	1	1	3	1.9																				
Sep 7	1	1	1	1	2	2	2	2	2	2	2	1	1	1	2	2	2	2	2	2	4	4	2	2	1	4	1.9																				
Sep 8	4	3	5	6	6	5	5	5	4	3	3	3	4	4	4	4	5	6	5	4	4	4	4	5	3	6	4.4																				
Sep 9	5	5	5	6	6	6	6	7	7	7	6	6	10	12	8	1	1	1	2	3	2	3	3	2	1	12	5.0																				
Sep 10	2	2	2	2	2	2	3	3	2	2	2	2	2	2	3	4	3	3	3	2	3	3	3	3	2	4	2.5																				
Sep 11	4	3	3	3	4	4	3	4	4	4	4	4	4	3	4	4	3	3	3	3	3	3	3	3	3	4	3.5																				
Sep 12	2	2	3	3	3	3	4	3	5	3	3	5	7	7	7	4	3	2	2	2	4	7	7	5	2	7	4.0																				
Sep 13	4	3	3	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.7																				
Sep 14	1	2	2	2	2	2	2	2	3	3	3	2	2	2	2	3	3	2	3	4	4	5	4	1	5	2.6																					
Sep 15	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.2																				
Sep 16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1.0																				
Sep 17	1	1	1	2	2	3	3	2	2	1	2	2	2	2	3	3	3	3	2	3	3	2	3	2	1	3	2.2																				
Sep 18	2	2	2	2	2	2	3	3	3	4	4	5	5	6	5	5	5	6	5	5	5	5	5	5	2	6	4.0																				
Sep 19	5	4	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	5	1.5																				
Sep 20	1	1	1	1	1	3	3	3	2	1	2	1	1	1	1	1	1	2	1	2	1	2	2	3	1	3	1.6																				
Sep 21	3	5	4	3	2	2	3	3	4	4	5	5	4	2	2	2	2	4	3	3	4	4	5	2	5	3.4																					
Sep 22	5	4	4	5	5	7	4	4	4	4	4	4	4	2	1	0	1	1	2	2	2	2	2	2	0	7	3.1																				
Sep 23	2	2	2	2	2	2	1	1	1	1	1	1	1	2	1	1	1	1	2	2	2	2	2	2	1	2	1.5																				
Sep 24	1	1	1	1	2	3	3	4	3	4	3	NRM	NRM	NRM	NRM	0	0	0	0	0	0	0	0	0	0	4	1.3																				
Sep 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																				
Sep 26	0	0	0	0	0	0	0	0	0	1	2	2	2	2	3	3	3	3	3	3	3	3	3	3	0	3	1.6																				
Sep 27	3	3	3	3	3	3	3	3	4	4	4	4	4	5	5	4	4	3	3	3	3	4	4	3	3	5	3.5																				
Sep 28	4	4	5	5	5	3	4	3	4	5	4	4	4	3	3	5	5	4	3	3	3	2	3	3	2	5	3.8																				
Sep 29	3	3	3	2	3	3	3	5	7	8	6	3	3	2	2	2	2	3	3	4	4	2	3	2	8	3.4																					
Sep 30	4	4	3	3	3	3	3	3	3	3	3	2	3	3	4	3	3	4	5	5	5	6	5	2	6	3.7																					
Diurnal Maximum	9	10	9	10	10	8	8	7	7	8	6	6	10	12	8	5	5	6	6	5	5	7	9	8																							
Diurnal Average	2.7	2.6	2.6	2.6	2.8	2.8	2.8	2.8	2.9	2.9	2.9	2.7	3.0	2.9	2.7	2.2	2.3	2.3	2.4	2.6	2.6	2.9	3.0	2.8																							
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)																																		

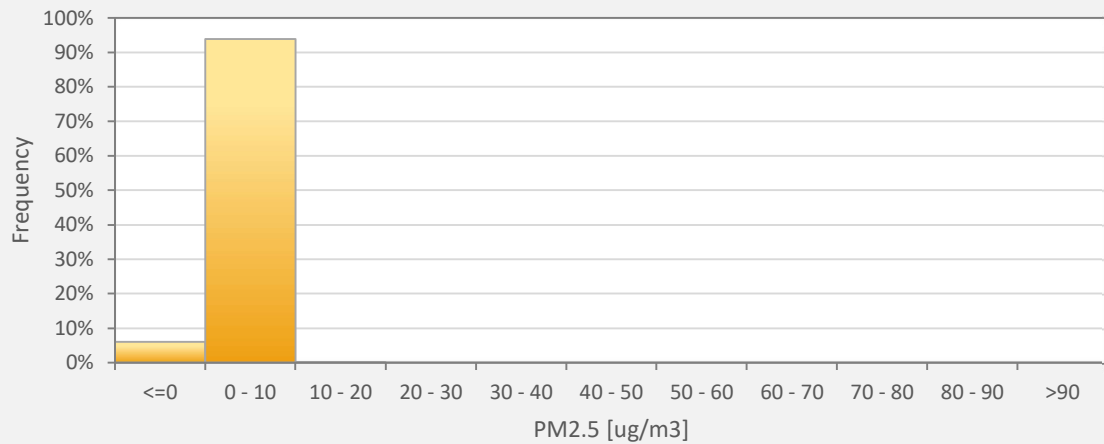
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.

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

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



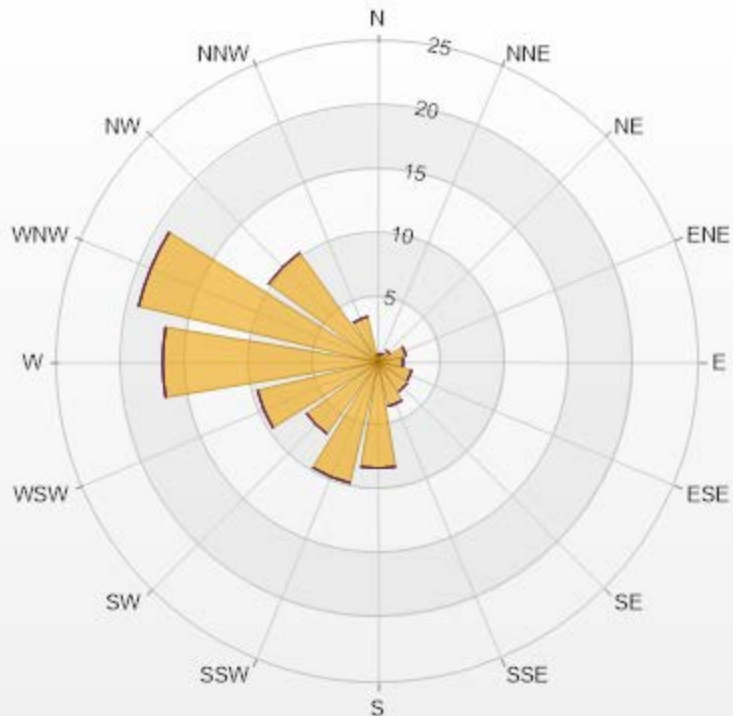
PM2.5[ug/m3(L)] Histogram: St. Lina Monthly: 09-2021 1 Hr.



Classes	PM2.5
<=0	6.01%
0 - 10	93.85%
10 - 20	0.14%
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: 09-2021 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 99.31% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	0.56	0	0	0	0	0.56
NNE	0.7	0	0	0	0	0.7
NE	1.12	0	0	0	0	1.12
ENE	2.24	0	0	0	0	2.24
E	1.96	0	0	0	0	1.96
ESE	2.66	0	0	0	0	2.66
SE	2.8	0	0	0	0	2.8
SSE	3.5	0	0	0	0	3.5
S	8.25	0	0	0	0	8.25
SSW	9.65	0	0	0	0	9.65
SW	6.85	0	0	0	0	6.85
WSW	9.65	0	0	0	0	9.65
W	16.78	0	0	0	0	16.78
WNW	19.16	0	0	0	0	19.16
NW	10.49	0	0	0	0	10.49
NNW	3.64	0	0	0	0	3.64
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



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - September 2021

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

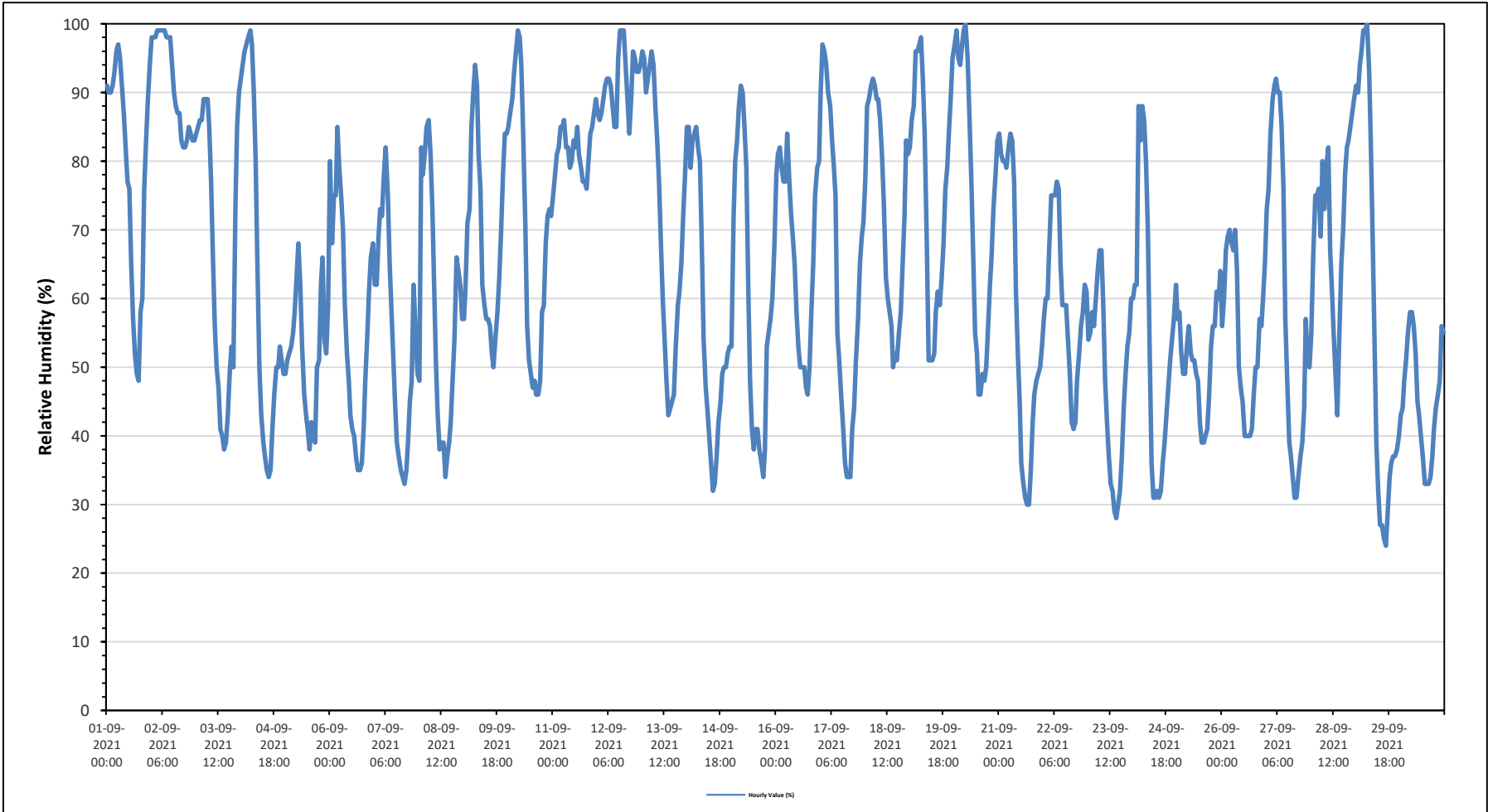
Maximum Hourly Value:	100 %	on September 20 at hour 6	Hours in Service:	720
Maximum Daily Value:	91.4 %	on September 2	Hours of Data:	720
Minimum Hourly Value:	24 %	on September 29 at hour 16	Hours of Missing Data:	0
Minimum Daily Value:	45.4 %	on September 30	Hours of Calibration:	0
Monthly Average:	64.5 %		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Sep 1	91	90	90	91	93	96	97	95	91	87	82	77	76	65	57	52	49	48	58	60	76	83	89	94	48	97	78.6
Sep 2	98	98	98	99	99	99	99	99	98	98	98	94	90	88	87	83	82	82	83	85	84	83	83	82	99	91.4	
Sep 3	84	85	86	86	89	89	89	85	77	66	56	50	47	41	40	38	39	43	49	53	50	74	85	90	38	90	66.3
Sep 4	92	94	96	97	98	99	97	90	80	64	50	43	39	37	35	34	35	41	46	50	50	53	51	49	34	99	63.3
Sep 5	49	51	52	53	55	58	63	68	62	53	46	43	41	38	42	40	39	50	51	62	66	54	52	59	38	68	52.0
Sep 6	80	68	75	75	85	79	75	70	59	52	48	43	41	40	37	35	35	36	41	48	54	61	66	68	35	85	57.1
Sep 7	62	62	69	73	72	78	82	75	65	58	52	45	39	37	35	34	33	35	39	45	48	62	55	49	33	82	54.3
Sep 8	48	82	78	81	85	86	81	73	61	51	43	38	39	39	34	37	39	42	48	54	66	64	62	57	34	86	57.8
Sep 9	57	62	71	73	85	90	94	91	81	76	62	59	57	57	56	52	50	54	58	63	70	78	84	84	50	94	69.3
Sep 10	85	87	89	93	96	99	98	94	84	71	56	51	49	47	48	46	46	48	58	59	68	72	73	72	46	99	70.4
Sep 11	75	78	81	82	85	85	86	82	82	79	80	83	82	85	81	79	77	77	76	80	84	85	87	89	75	89	81.7
Sep 12	87	86	87	89	91	92	92	91	88	85	85	95	99	99	99	94	89	84	89	96	95	93	93	94	84	99	91.3
Sep 13	96	95	90	92	94	96	94	88	83	77	68	60	54	48	43	44	45	46	53	59	61	65	72	78	43	96	70.9
Sep 14	85	85	79	83	84	85	82	80	68	54	47	44	40	36	32	33	37	42	45	49	50	50	52	53	32	85	58.1
Sep 15	53	72	80	83	88	91	90	85	79	60	48	41	38	41	41	38	36	34	38	53	55	57	60	68	34	91	59.5
Sep 16	78	81	82	79	77	77	84	77	72	69	65	58	53	50	50	50	47	46	50	58	65	75	79	80	46	84	66.8
Sep 17	90	97	96	94	90	88	83	79	75	55	51	46	41	36	34	34	34	41	44	51	57	65	69	71	34	97	63.4
Sep 18	77	88	89	91	92	91	89	89	86	81	74	63	60	58	56	50	52	51	55	58	65	72	83	81	50	92	73.0
Sep 19	82	86	88	96	96	97	98	92	84	68	51	51	51	52	58	61	59	63	68	76	79	84	89	95	51	98	76.0
Sep 20	97	99	95	94	97	99	100	95	86	77	66	55	52	46	46	49	48	50	56	62	66	73	78	83	46	100	73.7
Sep 21	84	81	80	80	79	82	84	83	77	61	52	45	36	33	31	30	30	35	42	46	48	49	50	53	30	84	57.1
Sep 22	57	60	60	67	75	75	75	77	76	65	59	59	59	54	49	42	41	42	48	52	56	58	62	61	41	77	59.5
Sep 23	54	55	58	56	60	64	67	67	59	48	42	37	33	32	29	28	30	32	37	44	49	53	55	60	28	67	47.9
Sep 24	60	62	62	88	83	88	86	80	70	52	36	31	31	32	31	32	36	39	43	47	51	54	57	62	31	88	54.7
Sep 25	57	58	52	49	49	53	56	52	51	51	49	48	42	39	39	40	41	46	53	56	56	61	60	64	39	64	50.9
Sep 26	56	60	67	69	70	68	67	70	64	50	47	45	40	40	40	40	41	46	50	50	57	56	60	65	40	70	54.9
Sep 27	73	76	84	89	91	92	90	90	85	76	57	47	39	37	34	31	31	34	37	39	44	57	51	50	31	92	59.8
Sep 28	55	66	75	75	76	69	80	73	79	82	67	61	55	49	43	54	65	70	78	82	83	85	87	89	43	89	70.8
Sep 29	91	90	94	96	99	99	100	93	81	67	52	39	32	27	27	25	24	29	34	36	37	37	38	40	24	100	57.8
Sep 30	43	44	48	51	55	58	58	56	52	45	43	40	37	33	33	33	33	34	37	41	44	46	48	55	33	58	45.4
Diurnal Maximum	98	99	98	99	99	100	99	98	98	98	95	99	99	99	99	94	89	84	89	96	95	93	93	95			
Daiurnal Average	73.2	76.6	78.4	80.8	82.9	84.1	84.5	81.3	75.2	65.9	57.7	53.0	49.7	47.2	45.6	44.7	44.8	47.4	52.2	57.2	61.2	65.4	67.9	69.9			

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

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

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - September 2021

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

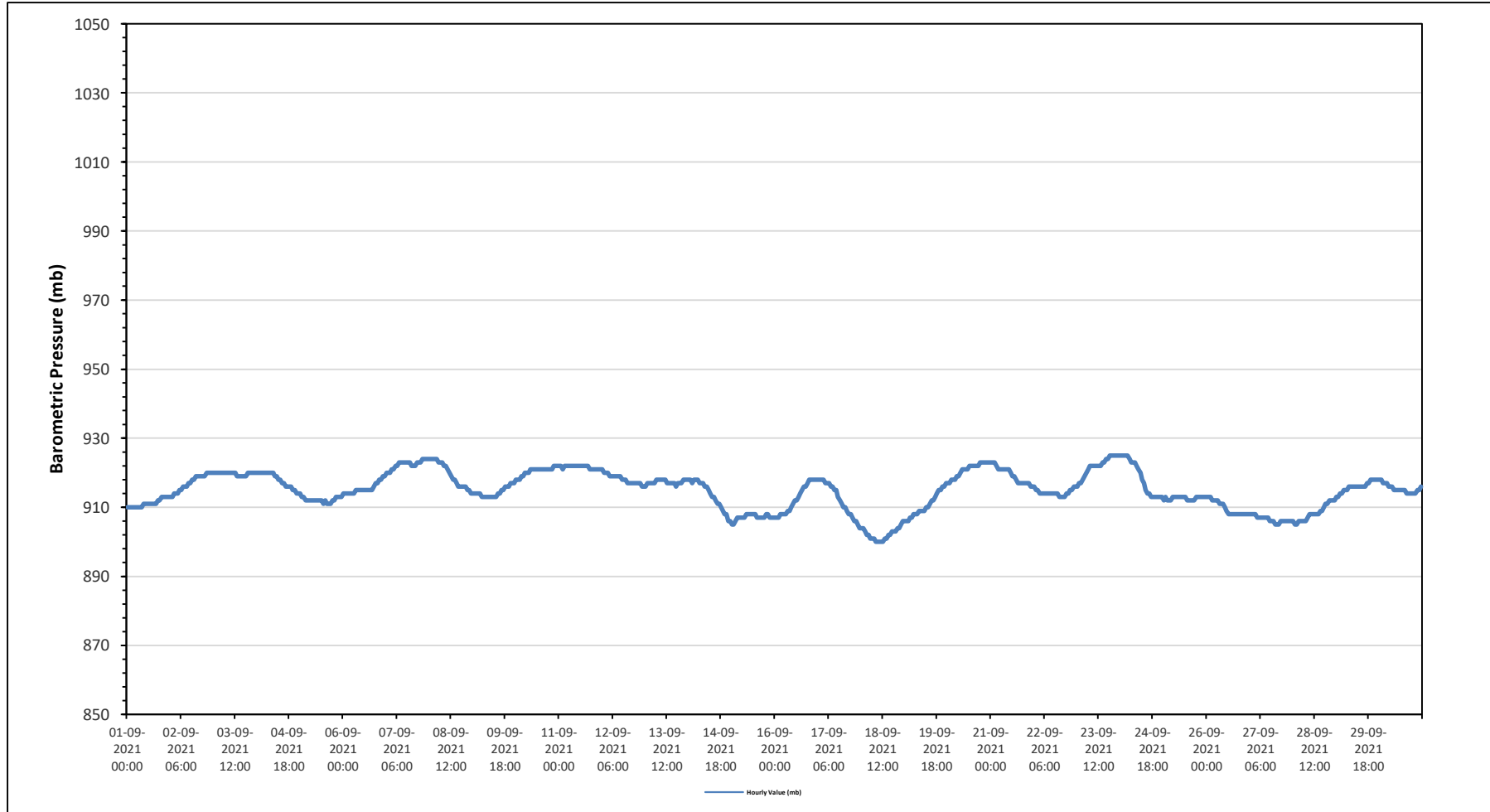
Maximum Hourly Value:	925	mb	on September 23 at hour 18	Hours in Service:	720
Maximum Daily Value:	922	mb	on September 7	Hours of Data:	720
Minimum Hourly Value:	900	mb	on September 18 at hour 8	Hours of Missing Data:	0
Minimum Daily Value:	902	mb	on September 18	Hours of Calibration:	0
Monthly Average:	915	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
Sep 1	910	910	910	910	910	910	910	910	910	911	911	911	911	911	911	911	911	912	912	913	913	913	913	913	910	913	911.1
Sep 2	913	913	914	914	914	915	915	916	916	916	917	917	918	918	919	919	919	919	919	919	920	920	920	920	913	920	917.1
Sep 3	920	920	920	920	920	920	920	920	920	920	920	920	920	919	919	919	919	919	919	920	920	920	920	919	920	919.8	
Sep 4	920	920	920	920	920	920	920	920	920	920	919	919	918	918	917	917	916	916	916	916	915	915	914	914	914	920	917.9
Sep 5	914	913	913	912	912	912	912	912	912	912	912	912	912	911	912	911	911	911	912	912	913	913	913	913	911	914	912.2
Sep 6	914	914	914	914	914	914	914	915	915	915	915	915	915	915	915	915	915	916	917	917	918	918	919	919	914	919	915.5
Sep 7	920	920	920	921	921	922	922	923	923	923	923	923	923	922	922	922	922	923	923	923	924	924	924	924	920	924	922.4
Sep 8	924	924	924	924	924	923	923	923	922	922	921	920	919	918	918	917	916	916	916	916	915	915	914	914	914	924	919.6
Sep 9	914	914	914	914	914	913	913	913	913	913	913	913	913	914	914	915	915	916	916	916	917	917	917	917	913	917	914.3
Sep 10	918	918	918	919	919	920	920	920	921	921	921	921	921	921	921	921	921	921	921	921	921	922	922	922	918	922	920.5
Sep 11	922	922	921	922	922	922	922	922	922	922	922	922	922	922	922	922	922	921	921	921	921	921	921	921	921	922	921.7
Sep 12	921	920	920	920	919	919	919	919	919	919	919	918	918	918	917	917	917	917	917	917	917	917	916	916	916	921	918.2
Sep 13	916	917	917	917	917	917	918	918	918	918	918	918	917	917	917	917	916	917	917	917	918	918	918	918	916	918	917.3
Sep 14	918	918	917	918	918	918	917	917	917	916	916	915	914	913	913	912	911	911	910	909	908	908	906	906	906	918	913.6
Sep 15	905	905	906	907	907	907	907	907	908	908	908	908	908	907	907	907	907	907	908	908	907	907	907	907	905	908	907.1
Sep 16	907	907	907	908	908	908	908	909	909	910	911	912	912	913	914	915	916	916	917	918	918	918	918	918	907	918	912.4
Sep 17	918	918	918	918	917	917	917	916	916	915	915	913	912	911	910	910	909	908	908	907	906	906	905	904	904	918	912.3
Sep 18	904	904	903	902	902	901	901	901	900	900	900	900	900	901	901	902	902	903	903	903	904	904	905	906	900	906	902.2
Sep 19	906	906	906	907	907	908	908	908	909	909	909	909	910	910	911	912	912	913	914	915	915	916	916	917	906	917	910.5
Sep 20	917	917	918	918	918	919	919	920	921	921	921	921	922	922	922	922	922	922	923	923	923	923	923	923	917	923	920.8
Sep 21	923	923	923	922	921	921	921	921	921	921	921	920	919	919	918	917	917	917	917	917	917	917	916	916	916	923	919.4
Sep 22	916	915	915	914	914	914	914	914	914	914	914	914	914	914	913	913	913	913	914	914	915	915	916	916	913	916	914.3
Sep 23	916	917	917	918	919	920	921	922	922	922	922	922	922	922	923	923	924	924	925	925	925	925	925	925	916	925	921.9
Sep 24	925	925	925	925	925	924	923	923	923	922	921	920	918	917	915	914	914	913	913	913	913	913	913	913	913	913	918.8
Sep 25	912	913	912	912	912	913	913	913	913	913	913	913	912	912	912	912	912	912	913	913	913	913	913	913	912	913	912.6
Sep 26	913	913	913	912	912	912	912	911	911	911	910	909	908	908	908	908	908	908	908	908	908	908	908	908	908	913	909.8
Sep 27	908	908	908	908	907	907	907	907	907	907	907	906	906	906	905	905	905	906	906	906	906	906	906	906	905	908	906.5
Sep 28	906	905	905	906	906	906	906	906	907	908	908	908	908	908	909	909	910	911	911	912	912	912	912	912	905	912	908.3
Sep 29	913	913	914	914	915	915	915	916	916	916	916	916	916	916	916	916	917	917	918	918	918	918	918	918	913	918	916.0
Sep 30	918	918	917	917	917	916	916	916	915	915	915	915	915	915	915	914	914	914	914	914	914	915	915	916	914	918	915.4
Diurnal Maximum	925	925	925	925	925	924	923	923	923	923	923	923	923	923	923	923	924	924	925	925	925	925	925	925	913	925	918.8
Diurnal Average	915	915	915	915	915	915	915	915	915	915	915	915	915	915	915	914	914	915	915	915	915	915	915	915	915	915	915.4

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

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

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - September 2021

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

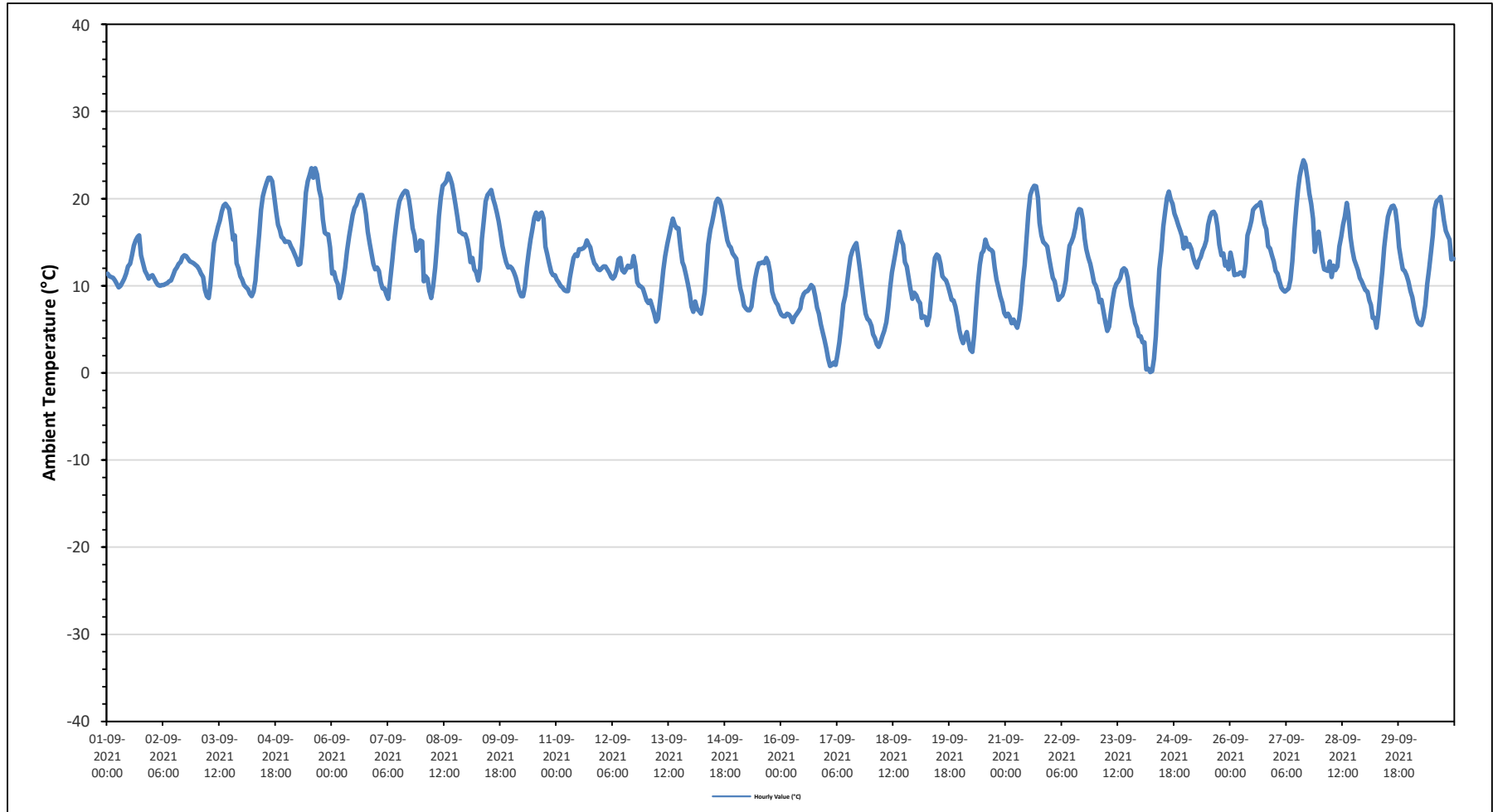
Maximum Hourly Value:	24.4 °C	on September 27 at hour 15	Hours in Service:	720
Maximum Daily Value:	17.6 °C	on September 5	Hours of Data:	720
Minimum Hourly Value:	0.1 °C	on September 24 at hour 5	Hours of Missing Data:	0
Minimum Daily Value:	7.3 °C	on September 16	Hours of Calibration:	0
Monthly Average:	12.5 °C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Sep 1	11.4	11.1	11	10.9	10.6	10.2	9.8	10	10.4	10.8	11.4	12.2	12.5	13.5	14.6	15.2	15.6	15.8	13.5	12.5	11.7	11.3	10.8	11.1	9.8	15.8	12.0
Sep 2	11.2	10.8	10.4	10.1	10	10.1	10.1	10.2	10.3	10.5	10.6	11.2	11.8	12.1	12.5	12.7	13.3	13.5	13.4	13.1	12.8	12.7	12.6	12.4	10.0	13.5	11.6
Sep 3	12.2	11.9	11.4	11	9.5	8.8	8.6	10	12.6	14.9	15.9	16.8	17.5	18.5	19.2	19.4	19.1	18.8	17.3	15.3	15.8	12.6	12	11.1	8.6	19.4	14.2
Sep 4	10.7	10.1	9.8	9.6	9.1	8.8	9.3	10.6	13.1	15.9	18.7	20.3	21.1	21.8	22.4	22.4	22	20.4	18.5	17	16.4	15.6	15.4	15	8.8	22.4	15.6
Sep 5	15.1	15	14.5	14.1	13.6	13.1	12.4	12.5	14.7	18	20.7	22	22.7	23.5	22.4	23.5	22.8	21	20.1	17.6	16.1	15.9	15.9	14.4	12.4	23.5	17.6
Sep 6	11.4	11.6	10.7	10.2	8.6	9.3	10.6	12.1	14	15.7	17	18.1	18.9	19.3	20	20.4	20.4	19.6	18.2	16.2	14.9	13.7	12.5	11.9	8.6	20.4	14.8
Sep 7	12.1	11.7	10.4	9.7	9.7	9	8.5	10.5	12.8	15	16.9	18.6	19.7	20.2	20.6	20.9	20.8	19.9	18.4	16.6	15.8	14	14.3	15.2	8.5	20.9	15.1
Sep 8	15.1	10.5	11.1	10.8	9.4	8.6	9.9	12.1	14.8	18	20.1	21.5	21.7	22	22.9	22.4	21.7	20.5	19.2	17.8	16.2	16.1	15.9	15.9	8.6	22.9	16.4
Sep 9	15.3	14.1	12.7	13.2	11.9	11.6	10.6	12	15.4	17.5	19.7	20.4	20.7	21	19.9	19.3	18.4	17.4	16.1	14.6	13.6	12.7	12.1	12.2	10.6	21.0	15.5
Sep 10	12	11.6	11	10.3	9.4	8.8	8.8	9.9	12.1	13.8	15.3	16.5	17.8	18.4	17.6	18.3	18.4	17.7	14.5	13.6	12.6	11.6	11.2	11.2	8.8	18.4	13.4
Sep 11	10.7	10.4	10	9.8	9.5	9.4	9.4	10.9	12.1	13.2	13.6	13.4	14.2	14.2	14.3	14.5	15.2	14.8	14.4	13.4	12.6	12.3	11.9	11.8	9.4	15.2	12.3
Sep 12	12	12.2	12.2	11.9	11.5	11	10.8	11.1	11.8	13	13.2	11.8	11.5	11.9	12.3	12.1	12.2	13.4	12.3	10.4	10	9.9	9.7	9	9.0	13.4	11.6
Sep 13	8.3	8	8.3	7.6	6.8	5.9	6.2	7.8	9.7	11.8	13.4	14.8	15.8	16.8	17.7	17	16.6	16.6	14.6	12.7	12.2	11.3	10.3	9.2	5.9	17.7	11.6
Sep 14	7.6	7	8.2	7.3	7.1	6.8	7.9	9.3	12.1	14.7	16.4	17.3	18.4	19.6	20	19.8	19.1	17.9	16.6	15.2	14.6	14.4	13.7	13.4	6.8	20.0	13.5
Sep 15	13.1	11.3	9.7	8.9	7.7	7.4	7.2	7.2	7.6	9.3	10.8	11.9	12.6	12.6	12.7	12.6	13.2	12.7	11.4	9.3	8.6	8.1	7.8	7.2	7.2	13.2	10.0
Sep 16	6.7	6.5	6.5	6.8	6.7	6.4	5.8	6.4	6.7	7	7.4	8.5	9.1	9.3	9.4	9.7	10.1	9.8	8.8	7.5	6.8	5.6	4.7	3.8	3.8	10.1	7.3
Sep 17	2.8	1.6	0.8	0.9	1.2	0.9	2.1	3.5	5.4	7.9	8.8	10.3	12	13.3	14	14.5	14.9	13.4	11.8	10	8.3	6.8	6.2	6	0.8	14.9	7.4
Sep 18	5.4	4.4	4	3.3	3	3.5	4.2	4.8	5.8	7.5	9.7	11.5	12.7	13.9	15	16.2	15.2	14.7	12.7	12.2	10.9	9.6	8.5	9.2	3.0	16.2	9.1
Sep 19	8.9	8.3	8	6.3	6.5	6.4	5.5	6.5	8.7	11.4	13.2	13.6	13.4	12.5	11.1	10.8	10.6	10	9.2	8.4	8.3	7.6	6.5	4.9	4.9	13.6	9.0
Sep 20	4	3.4	4.1	4.7	3.7	2.7	2.4	4.4	7.5	10.3	12.4	13.7	14	15.3	14.6	14.2	14.1	13.9	12.1	10.7	9.8	8.8	8	6.9	2.4	15.3	9.0
Sep 21	6.5	6.8	6.4	5.7	6.1	5.6	5.2	6.1	7.9	10.5	12.4	15.4	18.4	20.4	21.1	21.5	21.4	20.1	17.2	15.8	15	14.8	14.5	13.2	5.2	21.5	12.8
Sep 22	12	10.9	10.5	9.4	8.4	8.7	8.9	9.5	10.6	12.9	14.6	15	15.6	16.7	18.3	18.8	18.7	17.6	15.4	14.2	13.2	12.5	11.5	10.4	8.4	18.8	13.1
Sep 23	10	9.3	8.1	8.4	7.2	5.8	4.8	5.3	6.8	8.4	9.6	10.2	10.5	10.9	11.8	12	11.8	10.9	9.2	7.7	6.7	5.7	5.2	4.2	4.2	12.0	8.4
Sep 24	4.2	3.5	3.5	0.4	0.5	0.1	0.2	1.6	4.2	7.9	11.9	14	16.8	18.5	20.1	20.8	19.9	19.4	18.3	17.7	16.9	16.3	15.7	14.3	0.1	20.8	11.1
Sep 25	15.5	14.5	14.8	14.2	13.2	12.5	12.1	12.9	13.3	14	14.5	15.2	17	17.9	18.4	18.5	18.1	16.8	14.7	13.5	13.7	12.3	12.7	11.9	11.9	18.5	14.7
Sep 26	13.8	12.8	11.2	11.3	11.3	11.5	11.5	11.1	12.6	15.8	16.6	17.5	18.7	19	19.2	19.3	19.6	18.4	17.1	16.5	14.5	14.3	13.5	12.8	11.1	19.6	15.0
Sep 27	11.7	11.4	10.6	9.8	9.5	9.3	9.5	9.7	10.7	12.8	16.4	19	21.2	22.6	23.6	24.4	23.9	22.3	20.6	19.4	17.7	13.9	15.5	16.2	9.3	24.4	15.9
Sep 28	14.7	12.8	11.9	11.8	11.7	12.8	11	12.3	11.8	12.2	14.5	15.6	17	18	19.5	18.3	15.6	14.1	13	12.4	11.8	10.9	10.5	10	10.0	19.5	13.5
Sep 29	9.5	9.3	8.3	7.8	6.3	6.3	5.2	6.8	9.5	11.7	14.4	16.3	17.9	18.6	19.1	19.2	18.7	17	14.4	13.1	11.9	11.7	11.2	10.5	5.2	19.2	12.3
Sep 30	9.4	8.7	7.5	6.5	5.8	5.6	5.5	6.4	7.8	10.2	11.9	13.8	15.8	18.8	19.7	19.9	20.2	19.1	17.5	16.3	15.8	15.3	13	13.1	5.5	20.2	12.7
Diurnal Maximum	15.5	15.0	14.8	14.2	13.6	13.1	12.4	12.9	15.4	18.0	20.7	22.0	22.7	23.5	23.6	24.4	23.9	22.3	20.6	19.4	17.7	16.3	15.9	16.2			
Diurnal Average	10.4	9.7	9.3	8.8	8.2	7.9	7.8	8.8	10.4	12.4	14.1	15.2	16.2	17.0	17.5	17.6	17.4	16.6	15.0	13.7	12.8	11.9	11.4	10.9			

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

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

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - September 2021

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

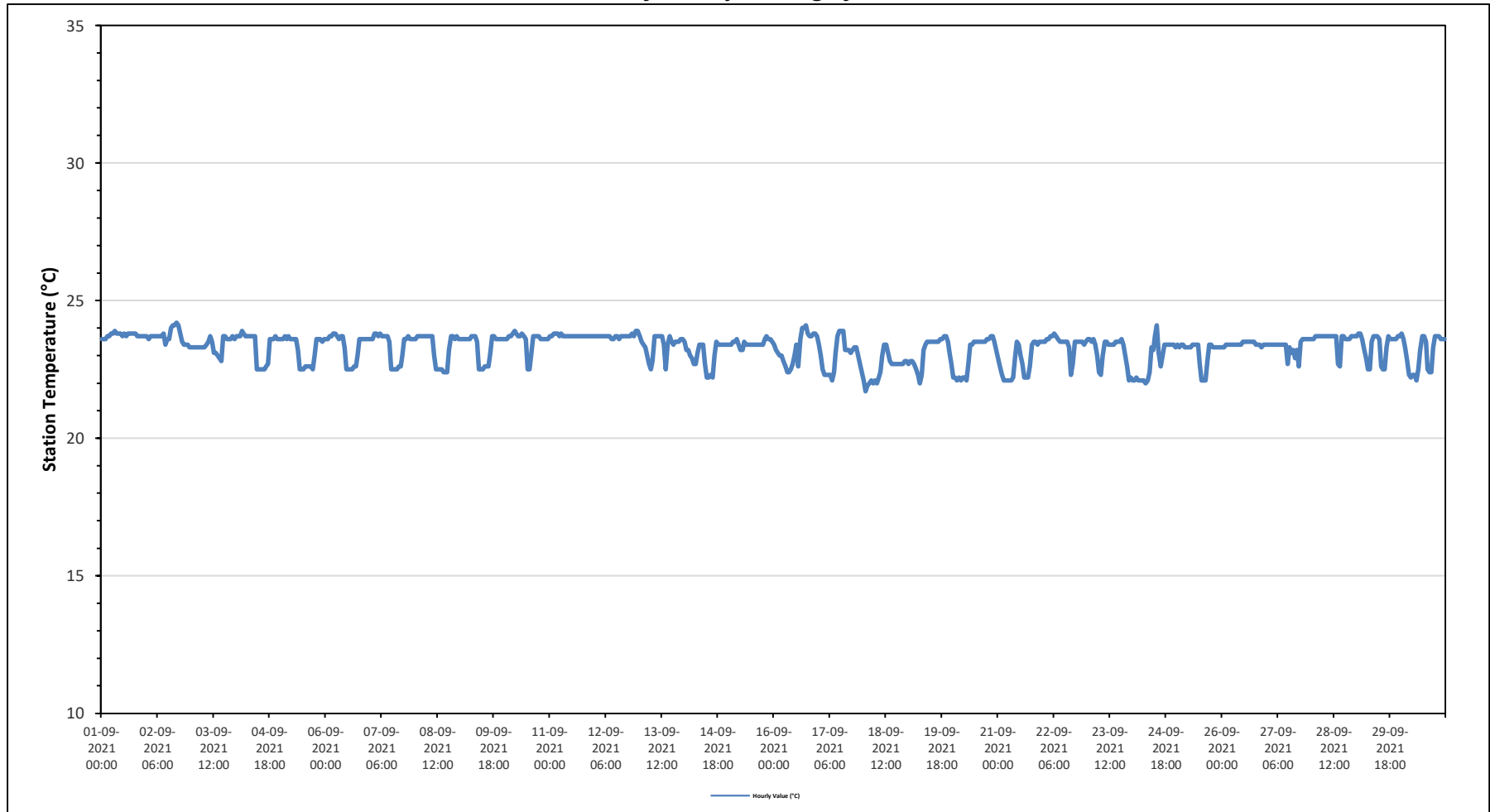
Maximum Hourly Value:	24.2 °C	on September 2 at hour 16	Hours in Service:	720
Maximum Daily Value:	23.7 °C	on September 1	Hours of Data:	720
Minimum Hourly Value:	21.7 °C	on September 18 at hour 1	Hours of Missing Data:	0
Minimum Daily Value:	22.5 °C	on September 18	Hours of Calibration:	0
Monthly Average:	23.3 °C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23	
Sep 1	23.6	23.6	23.6	23.7	23.7	23.8	23.8	23.9	23.8	23.8	23.8	23.7	23.8	23.7	23.8	23.8	23.8	23.8	23.8	23.7	23.7	23.7	23.7	23.7	23.6	23.9	23.7	
Sep 2	23.7	23.6	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.8	23.4	23.6	23.6	24.0	24.1	24.1	24.2	24.1	23.8	23.5	23.4	23.4	23.4	23.4	23.3	23.3	24.2	23.7
Sep 3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.4	23.5	23.7	23.5	23.1	23.1	23.0	22.9	22.8	23.7	23.7	23.6	23.6	23.6	23.7	23.6	22.8	23.7	23.4	
Sep 4	23.7	23.7	23.7	23.9	23.8	23.7	23.7	23.7	23.7	23.7	23.7	22.5	22.5	22.5	22.5	22.5	22.6	22.7	23.6	23.6	23.6	23.7	23.6	23.6	22.5	23.9	23.4	
Sep 5	23.6	23.6	23.7	23.6	23.7	23.6	23.6	23.6	23.6	23.6	23.2	22.5	22.5	22.5	22.6	22.6	22.6	22.5	23.0	23.6	23.6	23.6	23.5	23.6	22.5	23.7	23.2	
Sep 6	23.6	23.6	23.7	23.7	23.8	23.8	23.7	23.6	23.7	23.7	23.3	22.5	22.5	22.5	22.5	22.6	22.6	23.0	23.6	23.6	23.6	23.6	23.6	23.6	22.5	23.8	23.3	
Sep 7	23.6	23.6	23.8	23.8	23.7	23.8	23.7	23.7	23.7	23.7	23.5	22.5	22.5	22.5	22.5	22.6	22.6	23.0	23.6	23.6	23.7	23.6	23.6	23.6	22.5	23.8	23.4	
Sep 8	23.6	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.0	22.5	22.5	22.5	22.5	22.4	22.4	22.4	23.2	23.7	23.7	23.6	23.7	23.6	22.4	23.7	23.3	
Sep 9	23.6	23.6	23.6	23.6	23.6	23.6	23.7	23.7	23.7	23.5	22.5	22.5	22.6	22.6	22.6	23.1	23.7	23.7	23.7	23.6	23.6	23.6	23.6	23.6	22.5	23.7	23.3	
Sep 10	23.6	23.6	23.7	23.7	23.8	23.9	23.8	23.7	23.7	23.8	23.7	23.6	22.5	22.5	23.1	23.7	23.7	23.7	23.7	23.6	23.6	23.6	23.6	23.6	22.5	23.9	23.6	
Sep 11	23.7	23.7	23.8	23.8	23.8	23.7	23.8	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.8	23.7	
Sep 12	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.6	23.6	23.7	23.7	23.6	23.7	23.7	23.6	23.7	23.7	23.7	23.7	23.8	23.7	23.9	23.9	23.6	23.7	
Sep 13	23.7	23.5	23.4	23.3	23.0	22.7	22.5	22.8	23.7	23.7	23.7	23.7	23.7	23.4	22.5	23.4	23.7	23.5	23.4	23.5	23.5	23.5	23.6	23.6	22.5	23.7	23.4	
Sep 14	23.5	23.2	23.2	23.0	22.9	22.7	22.7	23.1	23.4	23.4	23.4	22.7	22.2	22.2	22.3	22.2	23.0	23.5	23.4	23.4	23.4	23.4	23.4	23.4	22.2	23.5	23.0	
Sep 15	23.4	23.4	23.5	23.5	23.6	23.4	23.2	23.2	23.5	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.6	23.7	23.6	23.6	23.6	23.5	23.2	23.7	23.4	
Sep 16	23.4	23.2	23.1	23.0	23.0	22.8	22.6	22.4	22.4	22.5	22.7	23.0	23.4	22.6	23.6	24.0	24.0	24.1	23.8	23.7	23.7	23.8	23.8	23.7	22.4	24.1	23.3	
Sep 17	23.4	23.0	22.5	22.3	22.3	22.3	22.3	22.1	22.4	23.1	23.7	23.9	23.9	23.9	23.2	23.2	23.2	23.1	23.2	23.3	23.3	23.0	22.7	22.4	22.1	23.9	23.0	
Sep 18	22.1	21.7	21.9	22.0	22.1	22.0	22.1	22.0	22.2	22.4	23.0	23.4	23.4	23.1	22.8	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.8	22.8	21.7	23.4	22.5	
Sep 19	22.7	22.8	22.8	22.7	22.5	22.3	22.0	22.3	23.2	23.4	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.6	23.6	23.7	23.7	23.5	23.1	22.7	22.0	23.7	23.1	
Sep 20	22.2	22.2	22.1	22.2	22.1	22.2	22.2	22.1	22.7	23.4	23.4	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.6	23.6	23.7	23.7	23.5	23.2	22.1	23.7	23.0	
Sep 21	22.9	22.6	22.3	22.1	22.1	22.1	22.1	22.1	22.2	22.9	23.5	23.4	23.0	22.7	22.2	22.2	22.2	22.6	23.4	23.5	23.5	23.4	23.5	23.5	22.1	23.5	22.8	
Sep 22	23.5	23.5	23.6	23.6	23.7	23.7	23.8	23.7	23.6	23.5	23.5	23.5	23.5	23.3	22.3	22.7	23.5	23.5	23.5	23.5	23.5	23.5	23.4	23.5	22.3	23.8	23.5	
Sep 23	23.6	23.6	23.5	23.6	23.4	23.0	22.4	22.3	23.0	23.5	23.5	23.4	23.4	23.4	23.4	23.5	23.5	23.5	23.6	23.4	23.0	22.6	22.1	22.2	22.1	23.6	23.2	
Sep 24	22.1	22.1	22.2	22.1	22.1	22.1	22.1	22.0	22.1	22.4	23.3	23.2	23.7	24.1	23.1	22.6	23.0	23.4	23.4	23.4	23.4	23.4	23.4	23.3	22.0	24.1	22.8	
Sep 25	23.4	23.3	23.4	23.4	23.3	23.3	23.3	23.3	23.4	23.4	23.4	23.4	22.7	22.1	22.1	22.8	23.4	23.4	23.3	23.3	23.3	23.3	23.3	23.3	22.1	23.4	23.1	
Sep 26	23.3	23.3	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.5	23.5	23.5	23.5	23.5	23.5	23.4	23.4	23.4	23.3	23.4	23.4	23.3	23.5	23.4	
Sep 27	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	22.7	23.3	23.1	23.2	22.9	23.2	22.6	23.5	23.6	23.6	23.6	23.6	23.6	22.6	23.6	23.3	
Sep 28	23.6	23.6	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	22.7	22.6	23.7	23.7	23.6	23.6	23.6	23.7	23.7	23.7	22.6	23.7	23.6	
Sep 29	23.7	23.8	23.8	23.6	23.2	22.9	22.5	22.5	23.5	23.7	23.7	23.7	23.6	22.6	22.5	23.3	23.7	23.6	23.6	23.6	23.6	23.7	23.7	23.7	22.5	23.8	23.4	
Sep 30	23.8	23.6	23.3	22.8	22.3	22.2	22.3	22.3	22.1	22.5	23.2	23.7	23.7	23.5	22.5	22.4	22.4	23.3	23.7	23.7	23.6	23.6	23.6	23.6	22.1	23.8	23.1	
Diurnal Maximum	23.8	23.8	23.8	23.9	23.8	23.9	23.8	23.9	23.8	23.8	23.8	23.9	23.9	24.1	24.1	24.1	24.2	24.1	23.8	23.7	23.8	23.8	23.9	23.9	23.9	23.9	23.9	
Dairurnal Average	23.4	23.3	23.3	23.2	23.2	23.1	23.1	23.3	23.4	23.3	23.2	23.1	23.0	23.0	23.0	23.2	23.4	23.5	23.5	23.5	23.5	23.4	23.4	23.4	23.4	23.5	23.4	

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

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

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





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - September 2021

Summary of Hourly Averages

PRECIPITATION in mm

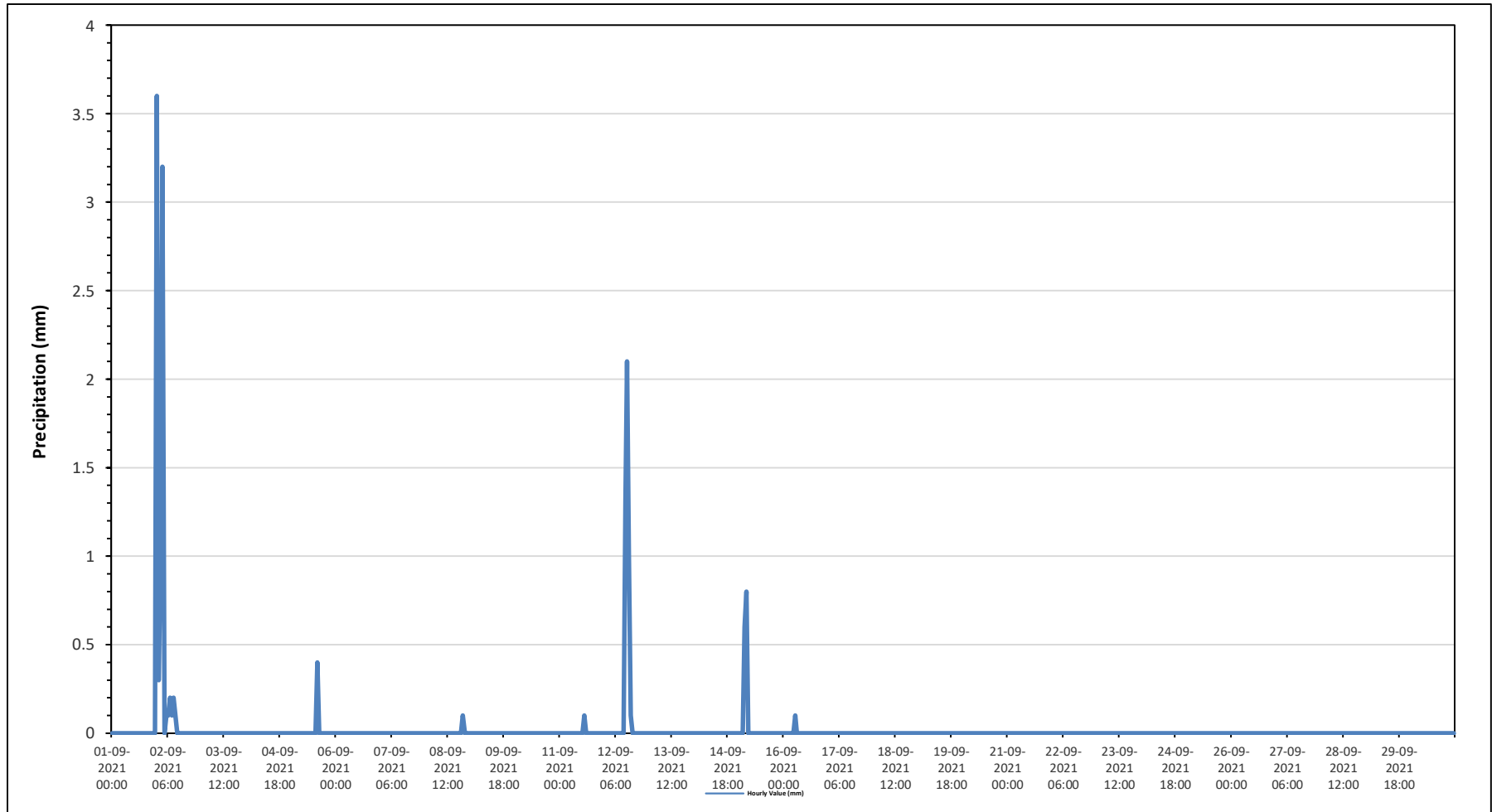
Maximum Hourly Value:	3.6 mm on September 2 at hour 0	Hours in Service:	720
Maximum Daily Value:	0.4 mm on September 2	Hours of Data:	720
Minimum Hourly Value:	0.0 mm on September 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0 mm on September 1	Hours of Calibration:	0
Monthly Total:	15.5 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
Sep 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
Sep 2	3.6	0.3	1	3.2	0	0.1	0.1	0.2	0.1	0.2	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	3.6	0.4
Sep 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
Sep 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0	0	0	0.0	0.4	0.0
Sep 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 8	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	0.1	0.0
Sep 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 11	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	0.1	0.0
Sep 12	0	0	0	0	0	0	0	0	0	0	0	1.3	2.1	1	0.1	0	0	0	0	0	0	0	0	0	0.0	2.1	0.2
Sep 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
Sep 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
Sep 15	0	0	0	0.6	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.8	0.1
Sep 16	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	0.0
Sep 17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 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
Sep 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
Sep 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
Sep 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
Sep 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
Sep 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
Sep 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
Sep 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 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
Sep 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sep 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Diurnal Maximum	3.6	0.3	1.0	3.2	0.8	0.1	0.1	0.2	0.1	0.2	0.1	1.3	2.1	1.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Diurnal Average	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	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

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 - September 2021

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

Maximum Hourly Value:	28.4 kph	on September 15 at hour 17	Hours in Service:	720
Maximum Daily Value:	19.0 kph	on September 15	Hours of Data:	720
Minimum Hourly Value:	1.0 kph	on September 1 at hour 17	Hours of Missing Data:	0
Minimum Daily Value:	1.7 kph	on September 27	Hours of Calibration:	0
Monthly Average:	6.1 kph		Operational Uptime:	100.0

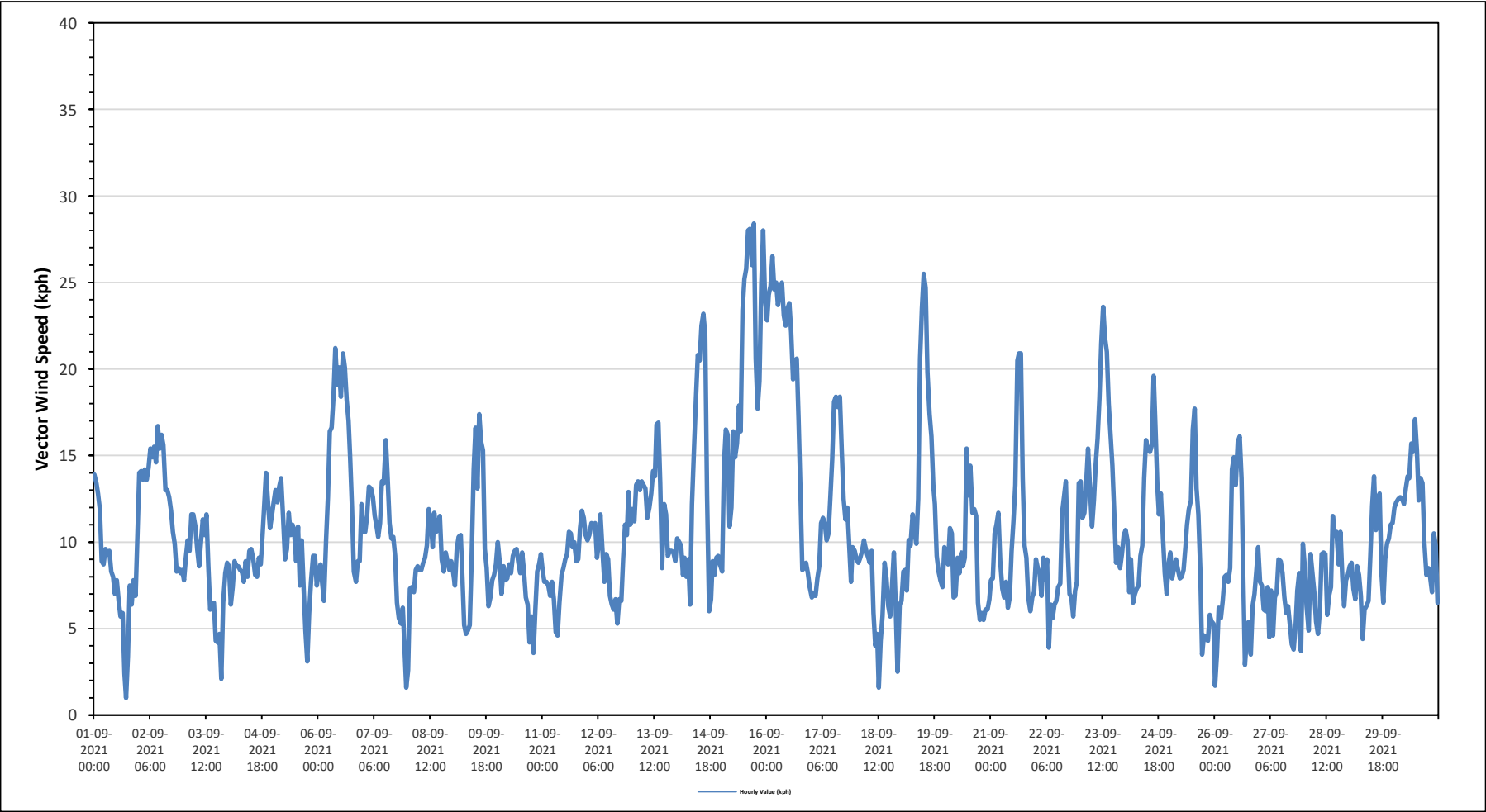
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				23
Sep 1	13.9	13.4	12.8	11.9	8.9	8.7	9.6	9.3	9.5	8.3	8.0	7.0	7.8	6.6	5.7	5.9	2.4	1.0	3.4	7.5	6.4	7.8	6.9	10.4	1.0	13.9	5.8
Sep 2	14.0	14.1	13.6	14.2	13.6	14.3	15.4	14.9	15.5	14.6	16.7	15.4	16.2	15.6	13.0	13.0	12.6	11.8	10.6	9.9	8.3	8.5	8.2	8.4	8.2	16.7	12.9
Sep 3	7.8	9.1	10.1	9.5	11.6	11.6	10.9	9.6	8.6	10.0	11.3	10.4	11.6	8.6	6.1	6.4	6.5	4.3	4.2	4.7	2.1	6.5	8.2	8.8	2.1	11.6	5.9
Sep 4	8.6	6.4	7.4	8.9	8.6	8.6	8.4	8.3	7.7	8.9	8.0	9.5	9.6	9.0	8.1	8.0	9.1	8.7	10.4	12.3	14.0	12.2	10.8	11.5	6.4	14.0	8.4
Sep 5	12.3	13.0	12.3	13.2	13.7	11.3	9.0	9.6	11.7	10.4	11.0	10.7	8.9	10.9	7.5	10.1	7.4	4.9	3.1	5.9	7.7	9.2	9.2	7.5	3.1	13.7	5.7
Sep 6	8.3	8.7	7.7	6.6	10.1	12.6	16.4	16.6	18.4	21.2	19.1	20.1	18.4	20.9	20.1	18.2	17.0	14.9	12.0	8.3	7.7	8.9	8.9	12.2	6.6	21.2	13.3
Sep 7	10.6	10.6	11.5	13.2	13.1	12.6	11.5	10.9	10.3	11.1	13.5	13.4	15.9	13.6	11.1	10.2	10.3	9.2	6.5	5.6	5.3	6.2	3.7	1.6	1.6	15.9	9.4
Sep 8	2.6	7.3	7.4	7.1	8.4	8.6	8.4	8.4	8.8	9.1	9.8	11.9	11.2	9.7	11.7	10.6	11.0	11.5	9.0	8.3	9.4	8.9	8.4	8.9	2.6	11.9	6.7
Sep 9	8.3	7.5	9.6	10.3	10.4	8.1	5.2	4.7	4.9	5.2	8.9	14.2	16.6	13.1	17.4	15.8	15.3	9.6	8.5	6.3	6.8	7.8	8.1	8.7	4.7	17.4	8.4
Sep 10	10.0	8.9	7.0	8.6	7.8	7.9	8.7	8.2	9.2	9.5	9.6	8.8	8.2	9.4	8.3	6.8	6.4	4.2	5.7	3.6	6.1	8.3	8.7	9.3	3.6	10.0	5.1
Sep 11	8.3	7.7	7.7	7.5	6.9	7.7	6.7	4.8	4.6	6.5	8.1	8.5	9.0	9.3	10.6	10.5	9.7	10.0	8.9	9.0	10.8	11.8	11.4	10.4	4.6	11.8	6.7
Sep 12	10.1	10.4	11.1	11.0	11.1	9.1	10.0	11.6	9.7	7.7	9.3	9.0	6.9	6.4	6.1	6.7	5.3	6.7	6.6	9.1	11.0	10.4	12.9	11.0	5.3	12.9	8.3
Sep 13	11.9	11.2	13.3	13.5	13.0	13.5	13.3	13.1	11.4	12.0	12.8	14.1	13.8	16.8	16.9	13.4	8.5	12.2	11.6	9.2	9.5	9.5	9.4	8.9	8.5	16.9	12.1
Sep 14	10.2	10.0	9.8	8.1	9.1	8.0	9.0	6.4	12.2	15.5	18.3	20.8	20.5	22.5	23.2	22.0	12.7	6.0	6.7	8.9	8.1	9.1	9.2	8.7	6.0	23.2	11.1
Sep 15	8.3	14.5	16.5	16.2	10.9	12.0	16.4	14.9	15.7	17.9	16.4	23.4	25.2	25.8	28.0	28.1	26.0	28.4	20.6	17.7	19.3	24.9	28.0	24.1	8.3	28.4	19.0
Sep 16	22.8	24.3	24.8	26.5	24.6	25.0	23.7	24.4	25.0	23.1	22.5	23.5	23.8	22.1	19.4	20.5	20.6	17.0	12.9	8.4	8.5	8.8	8.2	7.4	7.4	26.5	18.7
Sep 17	6.8	7.0	6.9	7.9	8.6	11.1	11.4	11.1	10.1	10.5	12.6	14.8	18.1	18.4	17.8	18.4	15.3	12.5	11.3	12.0	9.9	7.7	9.7	9.5	6.8	18.4	9.1
Sep 18	9.0	8.8	9.1	9.5	10.1	9.6	9.2	8.8	9.5	5.9	4.0	4.7	1.6	4.3	5.7	8.8	7.9	6.3	5.7	7.4	9.4	6.3	2.5	6.4	1.6	10.1	4.1
Sep 19	6.6	8.3	8.4	7.2	10.1	9.8	11.6	10.6	9.9	12.5	20.6	23.5	25.5	24.7	19.8	17.4	16.1	13.3	12.2	9.2	8.3	7.8	7.4	9.7	6.6	25.5	12.6
Sep 20	9.2	8.7	10.8	10.5	6.8	6.9	9.1	8.2	9.4	8.6	9.1	15.4	12.7	14.4	11.7	11.9	11.5	6.5	5.5	5.9	5.5	6.1	6.1	6.7	5.5	15.4	8.4
Sep 21	7.8	7.9	10.5	11.0	11.7	8.9	7.3	6.8	7.7	6.2	6.8	9.5	11.2	13.3	20.5	20.9	20.9	13.7	9.8	9.1	6.8	6.0	6.8	7.1	6.0	20.9	9.5
Sep 22	9.0	8.5	8.2	6.9	9.1	7.8	9.0	3.9	6.4	5.6	6.4	6.6	7.4	7.6	11.7	12.6	13.5	9.7	7.0	6.8	5.7	7.2	7.7	13.4	3.9	13.5	7.0
Sep 23	13.5	11.4	11.7	13.4	15.4	12.9	10.9	12.4	14.5	16.0	18.3	21.5	23.6	21.8	21.0	18.0	16.2	14.4	11.7	8.8	9.7	8.5	9.3	10.4	8.5	23.6	14.1
Sep 24	10.7	10.1	7.1	9.0	6.5	7.0	7.3	7.5	9.2	9.8	13.7	15.9	15.3	15.2	15.6	19.6	16.5	13.2	11.6	12.8	10.3	8.2	7.0	8.7	6.5	19.6	10.3
Sep 25	9.4	7.9	8.5	9.0	8.4	7.9	8.0	8.4	9.7	11.0	11.9	12.4	16.5	17.7	13.1	11.6	8.5	3.5	4.6	4.5	4.3	5.8	5.4	5.3	3.5	17.7	8.2
Sep 26	1.7	3.5	6.2	5.6	6.6	8.0	8.1	7.7	8.5	14.2	14.9	13.3	15.8	16.1	13.7	8.5	2.9	4.5	5.4	3.5	6.3	7.0	8.3	9.7	1.7	16.1	5.0
Sep 27	7.7	7.5	6.1	6.0	7.4	4.5	7.2	4.6	6.8	7.1	9.0	8.9	8.2	6.8	5.9	6.3	5.2	4.1	3.8	5.3	7.2	8.2	3.7	9.9	3.7	9.9	1.7
Sep 28	8.6	6.3	4.9	9.3	8.2	7.1	5.4	4.7	6.0	9.3	9.4	9.3	5.8	6.9	7.4	11.5	10.4	10.6	8.7	10.6	8.0	6.3	7.8	8.1	4.7	11.5	6.7
Sep 29	8.6	8.8	7.3	6.7	8.6	8.1	6.9	4.4	6.1	6.3	6.6	9.2	12.1	13.8	10.7	12.1	12.8	8.2	6.5	9.0	9.9	10.2	11.0	11.1	4.4	13.8	6.7
Sep 30	12.0	12.3	12.5	12.6	12.5	12.2	13.1	13.8	13.7	15.7	15.2	17.1	15.3	12.4	13.7	13.4	10.0	8.1	8.5	8.0	7.1	10.5	9.8	6.5	6.5	17.1	9.8
Diurnal Maximum	23	24	25	27	25	25	24	24	25	23	23	24	26	26	28	28	26	28	21	18	19	25	28	24			
Dalurnal Average	9.6	9.8	10.0	10.4	10.4	10.0	10.2	9.6	10.4	11.0	12.1	13.4	13.8	13.8	13.4	13.2	11.6	9.6	8.4	8.3	8.3	8.8	8.8	9.3			

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

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

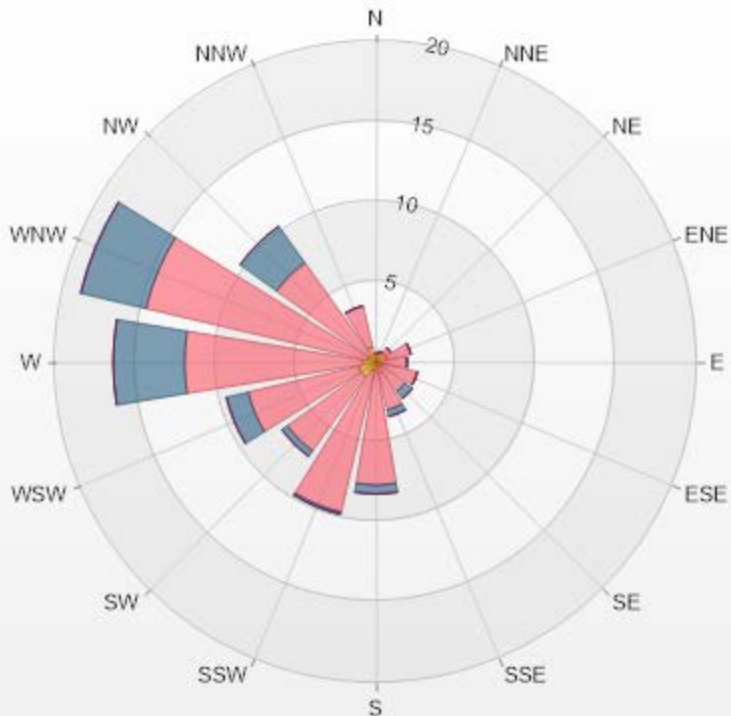
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

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



Wind: St. Lina Monitor: WDS [kph] Monthly: 09-2021 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.56% 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	0.56	0	0	0	0.56
NNE	0.56	0.14	0	0	0	0.7
NE	0.69	0.42	0	0	0	1.11
ENE	0.69	1.53	0	0	0	2.22
E	0.14	1.81	0	0	0	1.95
ESE	0.42	2.22	0	0	0	2.64
SE	0.14	2.08	0.56	0	0	2.78
SSE	0.69	2.36	0.42	0	0	3.47
S	0.28	7.36	0.56	0	0	8.2
SSW	0.56	9.03	0.14	0	0	9.73
SW	1.11	5.69	0.42	0	0	7.22
WSW	1.11	7.08	1.39	0	0	9.58
W	0.83	11.11	4.44	0	0	16.38
WNW	0.56	14.17	4.17	0	0	18.9
NW	0.56	7.08	2.78	0	0	10.42
NNW	0.97	2.64	0	0	0	3.61
Summary	9.31	75.28	14.88	0	0	99.47



LICA-202109

% Icon Classes (kph)

9 1.8-6.0

75 6.0-15.0

15 15.0-29.0

0 29.0-39.0

0 >39.0



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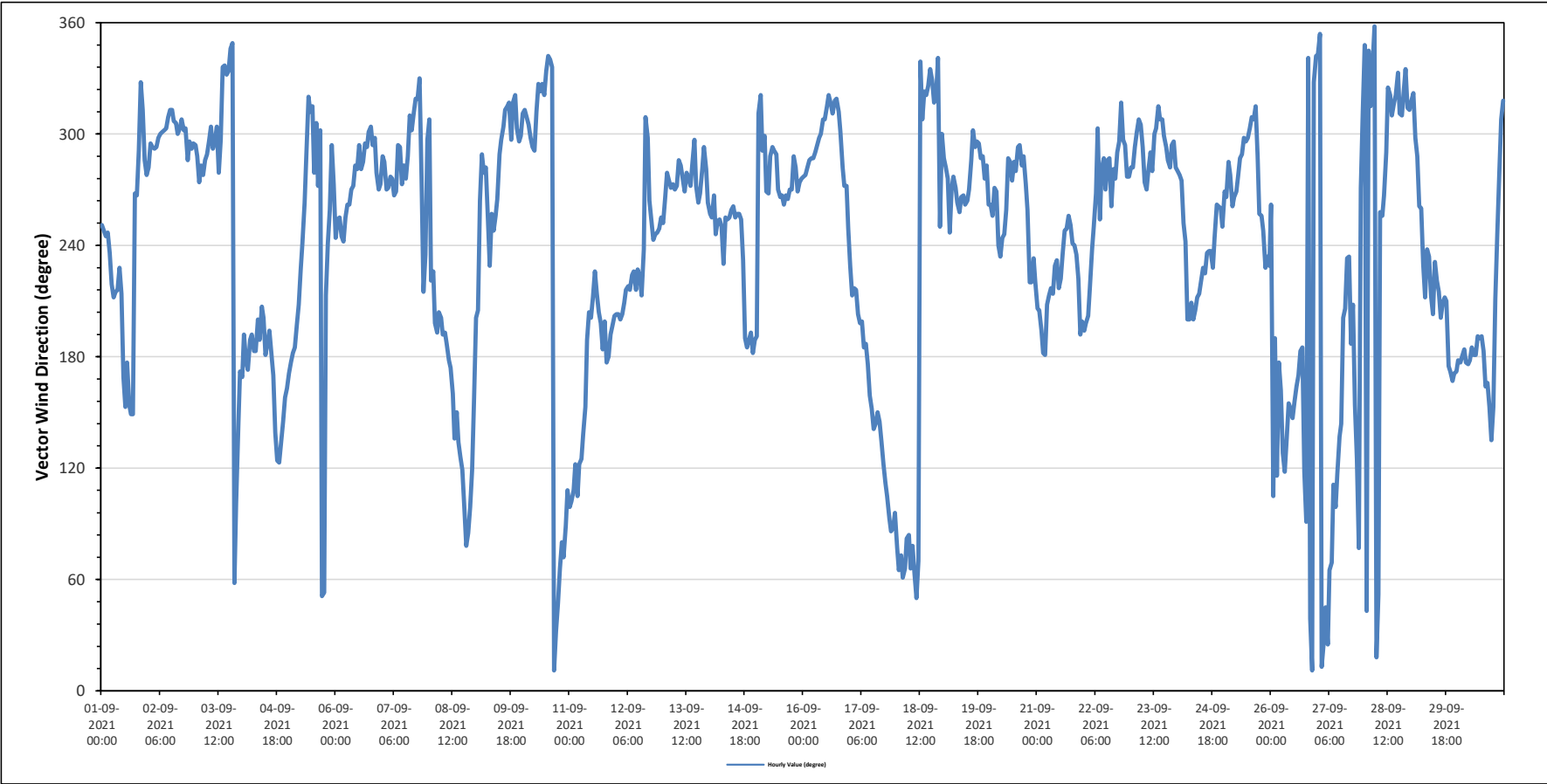
St. Lina Site - September 2021

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average:		261 (W) degree													Hours in Service:		720										
															Hours of Data:		720										
															Hours of Missing Data:		0										
															Hours of Calibration:		0										
															Operational Uptime:		100.0										
Day	Hourly Period Starting at (MST)																							Daily Average			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant	
Sep 1	WSW	WSW	WSW	WSW	SW	SW	SSW	SSW	SW	SW	SSW	SSE	SSE	S	SSE	SSE	SSE	W	W	WNW	NNW	NW	WNW	W	234	SW	
Sep 2	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	WNW	WNW	NW	WNW	WNW	WNW	WNW	WNW	WNW	300	WNW	
Sep 3	WNW	WNW	W	W	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	WNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	295	WNW	
Sep 4	SSE	S	S	S	S	S	S	S	S	SSW	S	SSW	SSW	S	S	SSW	S	SSE	SE	ESE	ESE	SE	SE	SSE	SSE	170	SSE
Sep 5	S	S	S	S	SSW	SSW	SW	WSW	W	WNW	NW	NW	NW	W	NW	W	WNW	NE	NE	SSW	WSW	WSW	WNW	W	248	WSW	
Sep 6	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	W	W	W	W	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	277	W	
Sep 7	WNW	WNW	W	W	W	W	W	W	WNW	WNW	W	W	W	WNW	NW	WNW	NW	NW	NW	NNW	W	SSW	SW	WNW	284	WNW	
Sep 8	NW	SW	SW	SSW	S	SSW	SSW	S	S	S	S	S	SSE	SE	SSE	SE	SE	ESE	E	ENE	E	ESE	SSE	SSE	157	SSE	
Sep 9	SSW	SSW	W	WNW	W	W	WSW	SW	WSW	WSW	WSW	W	WNW	WNW	WNW	NNW	NW	NW	NNW	NW	NW	WNW	WNW	WNW	286	WNW	
Sep 10	NW	NW	NW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNE	NNE	NE	ENE	E	ENE	E	ESE	338	NNW	
Sep 11	E	E	ESE	ESE	ESE	ESE	SE	SE	SSE	S	SSW	SSW	SSW	SW	SSW	SSW	SSW	S	SSW	S	S	S	SSW	SSW	177	S	
Sep 12	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	NW	WNW	W	WSW	WSW	WSW	WSW	229	SW	
Sep 13	WSW	W	W	W	W	W	W	W	WNW	W	W	W	W	W	W	W	W	WNW	W	W	W	WNW	W	W	275	W	
Sep 14	WSW	WSW	W	WSW	WSW	WSW	WSW	SW	WSW	WSW	WSW	WSW	WSW	W	WSW	WSW	WSW	WSW	SW	S	S	S	S	S	245	WSW	
Sep 15	S	NW	NW	WNW	WNW	W	W	WNW	WNW	WNW	WNW	W	W	W	W	W	W	W	W	WNW	W	W	W	W	276	W	
Sep 16	W	W	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	W	W	W	WSW	297	WNW	
Sep 17	SW	SSW	SW	SW	SSW	SSW	SSW	S	S	S	SSE	SSE	SE	SE	SSE	SE	SE	ESE	ESE	ESE	E	E	E	E	152	SSE	
Sep 18	ENE	ENE	ENE	ENE	ENE	E	E	ENE	ENE	ENE	NE	ENE	NNW	NW	NW	NW	NW	NNW	NNW	NW	NW	NNW	WSW	WNW	29	NNE	
Sep 19	WNW	W	W	WSW	W	W	W	W	WSW	W	W	W	W	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	W	276	W	
Sep 20	W	WSW	W	W	WSW	SW	WSW	WSW	WSW	WNW	WNW	W	WNW	W	WNW	WNW	W	WNW	W	WSW	SW	SW	SW	SW	266	W	
Sep 21	SSW	SSW	SSW	S	S	SSW	SSW	SW	SSW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	S	SSW	225	SW
Sep 22	SSW	SSW	SSW	SW	SW	WSW	W	WNW	WSW	W	WNW	W	WNW	WNW	W	W	WNW	WNW	NW	WNW	NW	WNW	W	W	267	W	
Sep 23	W	W	WNW	WNW	NW	WNW	WNW	W	W	WNW	W	WNW	WNW	NW	NW	WNW	WNW	WNW	WNW	W	WNW	WNW	W	W	294	WNW	
Sep 24	W	W	W	WSW	WSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	SW	SW	SW	SW	SW	W	W	WSW	WSW	234	SW
Sep 25	W	W	WNW	W	W	W	W	W	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	WNW	WSW	WSW	WSW	WSW	SW	SW	SW	283	W	
Sep 26	W	ESE	S	ESE	S	SSE	SE	ESE	SE	SSE	SSE	SE	SSE	SSE	S	S	ESE	E	NNW	NE	NNE	NNW	NNW	NNW	147	SE	
Sep 27	NNW	N	NNE	NNE	NE	NNE	ENE	ENE	ESE	E	ESE	SE	SSE	SSW	SW	SW	S	SSW	SSE	SE	ENE	W	NW	NW	100	E	
Sep 28	NNW	NE	NNW	NW	NNW	N	NNE	NE	WSW	WSW	W	WNW	NW	NW	NW	NW	NNW	NW	NNW	NW	NW	NNW	NW	NW	320	NW	
Sep 29	NW	NW	WNW	WNW	W	WSW	SW	SSW	SW	SW	SSW	SSW	SSW	SW	SW	SSW	SSW	SSW	SSW	S	S	SSE	S	S	219	SW	
Sep 30	S	S	S	S	S	S	S	S	S	S	S	S	S	S	SSE	SSE	SSE	SE	SSE	SSW	WSW	W	NW	NW	185	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												
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 VWD - St. Lina Site





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - September 2021

Summary of Hourly Averages

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

WIND SPEED																											
Maximum Hourly Value:		28.4 kph on September 15 at hour 17										Hours in Service:		720													
Maximum Daily Value:		19.0 kph on September 15										Hours of Data:		720													
Minimum Hourly Value:		1.0 kph on September 1 at hour 17										Hours of Missing Data:		0													
Minimum Daily Value:		1.7 kph on September 27										Hours of Calibration:		0													
Monthly Average:		6.1 kph										Operational Uptime:		100													
WIND DIRECTION																											
Monthly Average:		261 (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
Sep 1	13.9	13.4	12.8	11.9	8.9	8.7	9.6	9.3	9.5	8.3	8.0	7.0	7.8	6.6	5.7	5.9	2.4	1.0	3.4	7.5	6.4	7.8	6.9	10.4	1.0	13.9	5.8
Sep 2	14.0	14.1	13.6	14.2	13.6	14.3	15.4	14.9	15.5	14.6	16.7	15.4	16.2	15.6	13.0	13.0	12.6	11.8	10.6	9.9	8.3	8.5	8.2	8.4	8.2	16.7	12.9
Sep 3	7.8	9.1	10.1	9.5	11.6	11.6	10.9	9.6	8.6	10.0	11.3	10.4	11.6	8.6	6.1	6.4	6.5	4.3	4.2	4.7	2.1	6.5	8.2	8.8	2.1	11.6	5.9
Sep 4	8.6	6.4	7.4	8.9	8.6	8.6	8.4	8.3	7.7	8.9	8.0	9.5	9.6	9.0	8.1	8.0	9.1	8.7	10.4	12.3	14.0	12.2	10.8	11.5	6.4	14.0	8.4
Sep 5	12.3	13.0	12.3	13.2	13.7	11.3	9.0	9.6	11.7	10.4	11.0	10.7	8.9	10.9	7.5	10.1	7.4	4.9	3.1	5.9	7.7	9.2	9.2	7.5	3.1	13.7	5.7
Sep 6	8.3	8.7	7.7	6.6	10.1	12.6	16.4	16.6	18.4	21.2	19.1	20.1	18.4	20.9	20.1	18.2	17.0	14.9	12.0	8.3	7.7	8.9	8.9	12.2	6.6	21.2	13.3
Sep 7	10.6	10.6	11.5	13.2	13.1	12.6	11.5	10.9	10.3	11.1	13.5	13.4	15.9	13.6	11.1	10.2	10.3	9.2	6.5	5.6	5.3	6.2	3.7	1.6	1.6	15.9	9.4
Sep 8	2.6	7.3	7.4	7.1	8.4	8.6	8.4	8.4	8.8	9.1	9.8	11.9	11.2	9.7	11.7	10.6	11.0	11.5	9.0	8.3	9.4	8.9	8.4	8.9	2.6	11.9	6.7
Sep 9	8.3	7.5	9.6	10.3	10.4	8.1	5.2	4.7	4.9	5.2	8.9	14.2	16.6	13.1	17.4	15.8	15.3	9.6	8.5	6.3	6.8	7.8	8.1	8.7	4.7	17.4	8.4
Sep 10	10.0	8.9	7.0	8.6	7.8	7.9	8.7	8.2	9.2	9.5	9.6	8.8	8.2	9.4	8.3	6.8	6.4	4.2	5.7	3.6	6.1	8.3	8.7	9.3	3.6	10.0	5.1
Sep 11	8.3	7.7	7.7	7.5	6.9	7.7	6.7	4.8	4.6	6.5	8.1	8.5	9.0	9.3	10.6	10.5	9.7	10.0	8.9	9.0	10.8	11.8	11.4	10.4	4.6	11.8	6.7
Sep 12	10.1	10.4	11.1	11.0	11.1	9.1	10.0	11.6	9.7	7.7	9.3	9.0	6.9	6.4	6.1	6.7	5.3	6.7	6.6	9.1	11.0	10.4	12.9	11.0	5.3	12.9	8.3
Sep 13	11.9	11.2	13.3	13.5	13.0	13.5	13.3	13.1	11.4	12.0	12.8	14.1	13.8	16.8	16.9	13.4	8.5	12.2	11.6	9.2	9.5	9.5	9.4	8.9	8.5	16.9	12.1
Sep 14	10.2	10.0	9.8	8.1	9.1	8.0	9.0	6.4	12.2	15.5	18.3	20.8	20.5	23.2	22.0	12.7	6.0	6.7	8.9	8.1	9.1	9.2	8.7	6.0	23.2	11.1	
Sep 15	8.3	14.5	16.5	16.2	10.9	12.0	16.4	14.9	15.7	17.9	16.4	23.4	25.2	25.8	28.0	28.1	26.0	28.4	20.6	17.7	19.3	24.9	28.0	24.1	8.3	28.4	19.0
Sep 16	22.8	24.3	24.8	26.5	24.6	25.0	23.7	24.4	25.0	23.1	22.5	23.5	23.8	22.1	19.4	20.5	20.6	17.0	12.9	8.4	8.5	8.8	8.2	7.4	7.4	26.5	18.7
Sep 17	6.8	7.0	6.9	7.9	8.6	11.1	11.4	11.1	10.1	10.5	12.6	14.8	18.1	18.4	17.8	18.4	15.3	12.5	11.3	12.0	9.9	7.7	9.7	9.5	6.8	18.4	9.1
Sep 18	9.0	8.8	9.1	9.5	10.1	9.6	9.2	8.8	9.5	5.9	4.0	4.7	1.6	4.3	5.7	8.8	7.9	6.3	5.7	7.4	9.4	6.3	2.5	6.4	1.6	10.1	4.1
Sep 19	6.6	8.3	8.4	7.2	10.1	9.8	11.6	10.6	9.9	12.5	20.6	23.5	25.5	24.7	19.8	17.4	16.1	13.3	12.2	9.2	8.3	7.8	7.4	9.7	6.6	25.5	12.6
Sep 20	9.2	8.7	10.8	10.5	6.8	6.9	9.1	8.2	9.4	8.6	9.1	15.4	12.7	14.4	11.7	11.9	11.5	6.5	5.5	5.9	5.5	6.1	6.1	6.7	5.5	15.4	8.4



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - September 2021

Summary of Hourly Averages

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

WIND SPEED																												
Maximum Hourly Value:	28.4	kph	on September 15 at hour 17	Hours in Service:	720																							
Maximum Daily Value:	19.0	kph	on September 15	Hours of Data:	720																							
Minimum Hourly Value:	1.0	kph	on September 1 at hour 17	Hours of Missing Data:	0																							
Minimum Daily Value:	1.7	kph	on September 27	Hours of Calibration:	0																							
Monthly Average:	6.1	kph		Operational Uptime:	100																							
WIND DIRECTION																												
Monthly Average:	261	(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				
Sep 21	7.8	7.9	10.5	11.0	11.7	8.9	7.3	6.8	7.7	6.2	6.8	9.5	11.2	13.3	20.5	20.9	20.9	13.7	9.8	9.1	6.8	6.0	6.8	7.1	6.0	20.9	9.5	
	SSW	SSW	SSW	S	S	SSW	SSW	SW	SSW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	S	SSW				
Sep 22	9.0	8.5	8.2	6.9	9.1	7.8	9.0	3.9	6.4	5.6	6.4	6.6	7.4	7.6	11.7	12.6	13.5	9.7	7.0	6.8	5.7	7.2	7.7	13.4	3.9	13.5	7.0	
	SSW	SSW	SSW	SW	SW	WSW	W	WNW	WSW	W	WNW	W	WNW	WNW	W	W	W	WNW	WNW	NW	WNW	WNW	W	W				
Sep 23	13.5	11.4	11.7	13.4	15.4	12.9	10.9	12.4	14.5	16.0	18.3	21.5	23.6	21.8	21.0	18.0	16.2	14.4	11.7	8.8	9.7	8.5	9.3	10.4	8.5	23.6	14.1	
	W	W	WNW	WNW	NW	WNW	WNW	W	W	W	WNW	W	WNW	WNW	NW	NW	NW	WNW	WNW	WNW	W	WNW	WNW	W				
Sep 24	10.7	10.1	7.1	9.0	6.5	7.0	7.3	7.5	9.2	9.8	13.7	15.9	15.3	15.2	15.6	19.6	16.5	13.2	11.6	12.8	10.3	8.2	7.0	8.7	6.5	19.6	10.3	
	W	W	W	WSW	WSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	W	W	WSW	WSW			
Sep 25	9.4	7.9	8.5	9.0	8.4	7.9	8.0	8.4	9.7	11.0	11.9	12.4	16.5	17.7	13.1	11.6	8.5	3.5	4.6	4.5	4.3	5.8	5.4	5.3	3.5	17.7	8.2	
	W	W	WNW	W	W	W	W	W	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	WNW	WSW	WSW	WSW	SW	SW	SW				
Sep 26	1.7	3.5	6.2	5.6	6.6	8.0	8.1	7.7	8.5	14.2	14.9	13.3	15.8	16.1	13.7	8.5	2.9	4.5	5.4	3.5	6.3	7.0	8.3	9.7	1.7	16.1	5.0	
	W	ESE	S	ESE	S	SSE	SE	ESE	SE	SSE	SE	SSE	SSE	SSE	SSE	S	S	ESE	E	NNW	NE	NNE	NNW	NNW				
Sep 27	7.7	7.5	6.1	6.0	7.4	4.5	7.2	4.6	6.8	7.1	9.0	8.9	8.2	6.8	5.9	6.3	5.2	4.1	3.8	5.3	7.2	8.2	3.7	9.9	3.7	9.9	1.7	
	NNW	N	NNE	NNE	NE	NNE	ENE	ENE	ESE	E	ESE	SE	SE	SSW	SSW	SW	SW	S	SSW	SSE	SE	ENE	W	NW				
Sep 28	8.6	6.3	4.9	9.3	8.2	7.1	5.4	4.7	6.0	9.3	9.4	9.3	5.8	6.9	7.4	11.5	10.4	10.6	8.7	10.6	8.0	6.3	7.8	8.1	4.7	11.5	6.7	
	NNW	NE	NNW	NW	NNW	N	NNE	NE	WSW	WSW	W	WNW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW				
Sep 29	8.6	8.8	7.3	6.7	8.6	8.1	6.9	4.4	6.1	6.3	6.6	9.2	12.1	13.8	10.7	12.1	12.8	8.2	6.5	9.0	9.9	10.2	11.0	11.1	4.4	13.8	6.7	
	NW	NW	WNW	WNW	W	WSW	SW	SSW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	SSE	S				
Sep 30	12.0	12.3	12.5	12.6	12.5	12.2	13.1	13.8	13.7	15.7	15.2	17.1	15.3	12.4	13.7	13.4	10.0	8.1	8.5	8.0	7.1	10.5	9.8	6.5	6.5	17.1	9.8	
	S	S	S	S	S	S	S	S	S	S	S	S	S	S	SSE	SSE	SE	SSE	SSW	WSW	W	NW	NW					
C	Monthly Calibration				S	Daily Zero-Span Check				Q	Quality Assurance																	
K	Collection Error				N	No Data (Machine Not in Service)				Y	Routine Maintenance																	
X	Invalid Data (Equipment Malfunction/Recovery)				NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)				P	Power Failure																	
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.																												
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.																												



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

St. Lina Site - September 2021

Summary of Hour Standard Deviations

STANDARD DEVIATION WIND DIRECTION (STDWD) in Degree

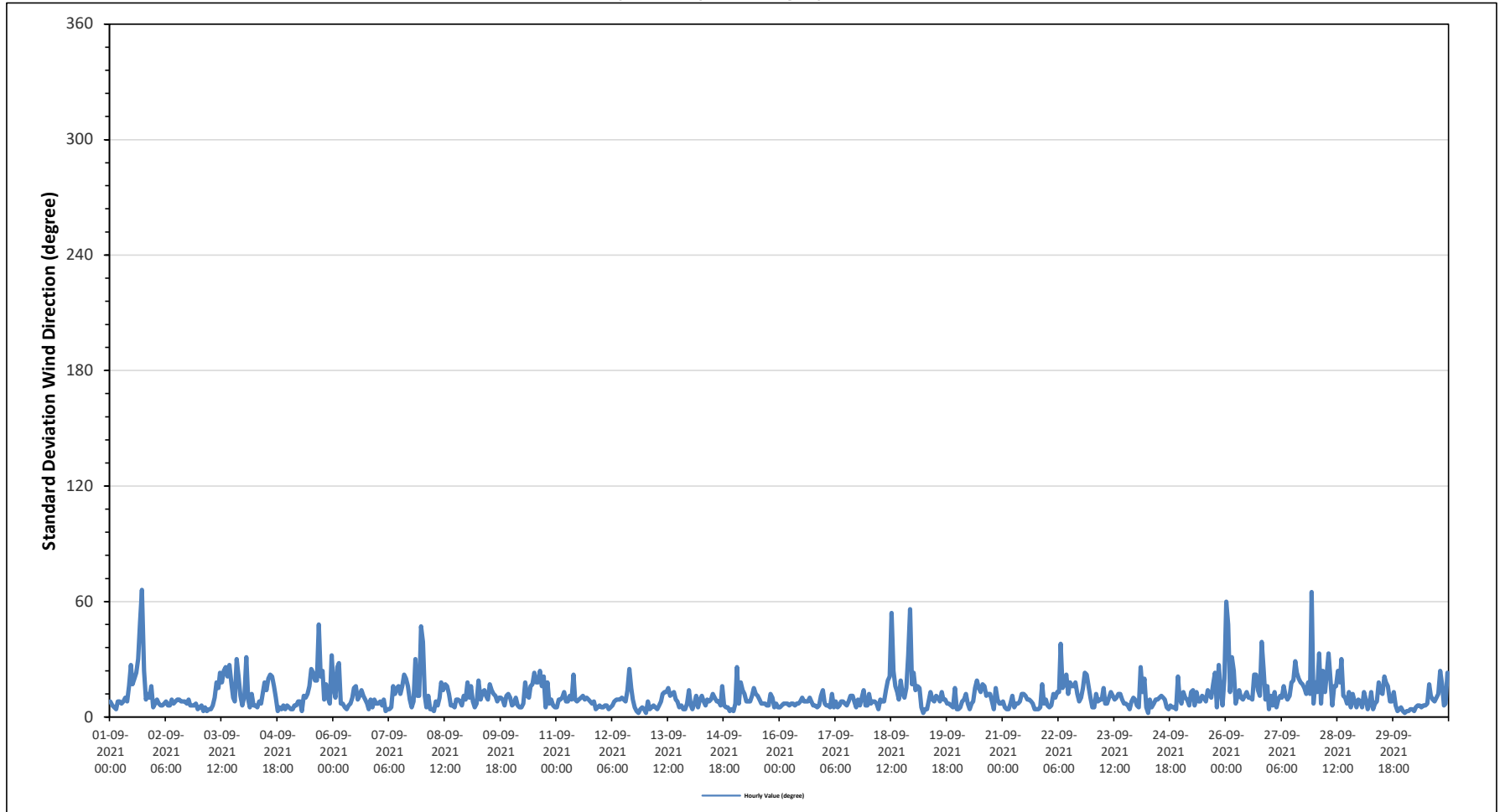
Maximum Hourly Value:	66 degree on September 1 at hour 17	Hours in Service:	720
Minimum Hourly Value:	2 degree on September 12 at hour 20	Hours of Data:	720
		Hours of Missing Data:	0
		Hours of Calibration:	0
		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily	Daily	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum
Sep 1	8	6	5	4	8	8	7	8	10	8	16	27	17	20	23	30	49	66	24	9	12	10	16	5	4	66
Sep 2	7	9	7	6	6	7	8	6	6	9	7	8	9	9	8	8	8	7	9	6	6	6	7	4	4	9
Sep 3	5	6	3	5	3	4	4	6	10	18	15	23	18	24	26	21	27	18	10	8	30	21	11	6	3	30
Sep 4	11	31	9	5	12	6	6	5	8	7	13	18	14	20	22	21	16	10	3	5	4	6	4	6	3	31
Sep 5	5	4	4	6	6	8	8	3	11	10	12	16	25	23	19	19	48	21	24	9	17	10	7	32	3	48
Sep 6	15	10	26	28	7	7	5	4	6	7	10	15	16	9	11	14	11	9	7	4	9	5	9	7	4	28
Sep 7	7	8	6	9	3	4	4	5	16	12	15	16	12	16	22	20	16	9	5	8	30	11	11	47	3	47
Sep 8	39	11	5	11	4	4	3	8	6	10	18	14	17	16	12	6	6	5	9	9	8	6	11	9	3	39
Sep 9	18	10	16	8	5	7	19	9	13	14	11	9	17	14	12	11	8	10	10	9	6	11	12	10	5	19
Sep 10	6	7	10	6	5	5	7	18	11	10	16	17	23	18	18	24	16	21	5	18	7	9	6	5	5	24
Sep 11	5	9	9	10	13	8	8	11	9	22	9	8	9	10	11	9	10	9	8	7	8	4	5	6	4	22
Sep 12	5	5	6	6	4	5	6	8	9	9	10	9	8	14	25	15	9	5	3	2	4	5	4	2	2	25
Sep 13	2	8	4	5	6	5	4	6	8	12	13	13	15	11	12	13	9	8	5	6	4	4	7	14	2	15
Sep 14	6	4	7	11	5	9	11	8	6	9	8	9	12	10	8	8	6	16	6	5	5	3	4	3	3	16
Sep 15	7	26	7	18	14	12	8	8	8	11	15	12	11	9	7	7	6	6	12	10	5	7	5	5	5	26
Sep 16	5	6	7	7	7	6	7	7	6	7	7	8	10	8	8	10	8	6	6	5	6	11	14	5	5	14
Sep 17	7	6	6	5	12	5	8	5	6	8	8	7	6	8	11	11	8	5	9	6	10	14	6	6	5	14
Sep 18	12	7	8	8	7	4	9	8	8	14	19	21	54	24	16	13	9	19	12	10	15	32	56	17	4	56
Sep 19	23	14	16	15	5	2	4	4	8	13	9	8	11	10	8	13	9	9	7	7	6	5	15	4	2	23
Sep 20	4	5	8	9	12	7	4	7	8	15	19	15	13	17	16	11	12	12	8	4	15	9	7	7	4	19
Sep 21	8	5	4	4	7	11	5	7	7	8	12	12	11	9	9	8	7	4	4	4	5	17	7	9	4	17
Sep 22	6	5	6	12	10	13	13	38	15	17	22	12	18	16	16	18	12	8	10	15	23	22	15	10	5	38
Sep 23	5	5	12	8	9	9	15	7	7	10	13	11	9	10	12	12	9	7	7	6	4	8	10	9	4	15
Sep 24	6	5	26	13	20	5	2	9	5	7	9	9	10	11	10	9	5	4	6	5	5	4	21	10	2	26
Sep 25	7	13	10	9	6	13	14	6	13	8	8	11	10	8	14	12	10	17	23	5	27	14	6	20	5	27
Sep 26	60	48	13	31	24	7	11	14	10	9	11	13	10	10	9	22	22	14	11	39	25	9	16	4	4	60
Sep 27	11	6	13	5	9	11	10	16	11	9	11	18	19	29	23	20	18	17	15	12	18	12	65	7	5	65
Sep 28	18	13	33	7	24	13	22	33	20	6	16	16	24	18	30	11	10	7	13	5	12	8	5	9	5	33
Sep 29	8	5	13	9	4	7	13	4	7	8	18	13	12	21	18	16	8	8	13	6	3	4	5	3	3	21
Sep 30	2	3	3	4	4	3	5	6	6	5	6	6	7	17	11	9	8	10	12	24	17	6	7	23	2	24
Diurnal Minimum	2	3	3	4	3	2	2	3	5	5	6	6	6	8	7	6	5	4	3	3	2	3	4	3		
Diurnal Maximum	60	48	33	31	24	13	22	38	20	22	27	54	29	30	30	49	66	24	39	30	32	65	47			

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

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

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



END OF REPORT

This page, 237 of 237, ends the September 2021 Monthly Ambient Air Quality Monitoring Report.



Lakeland Industry & Community Association

SEPTEMBER 2021

Ambient Air Monitoring Calibration Report

- COLD LAKE SOUTH STATION-

CAL-LICA-202109-01174

Station Operation and Maintenance:

Bureau Veritas Canada

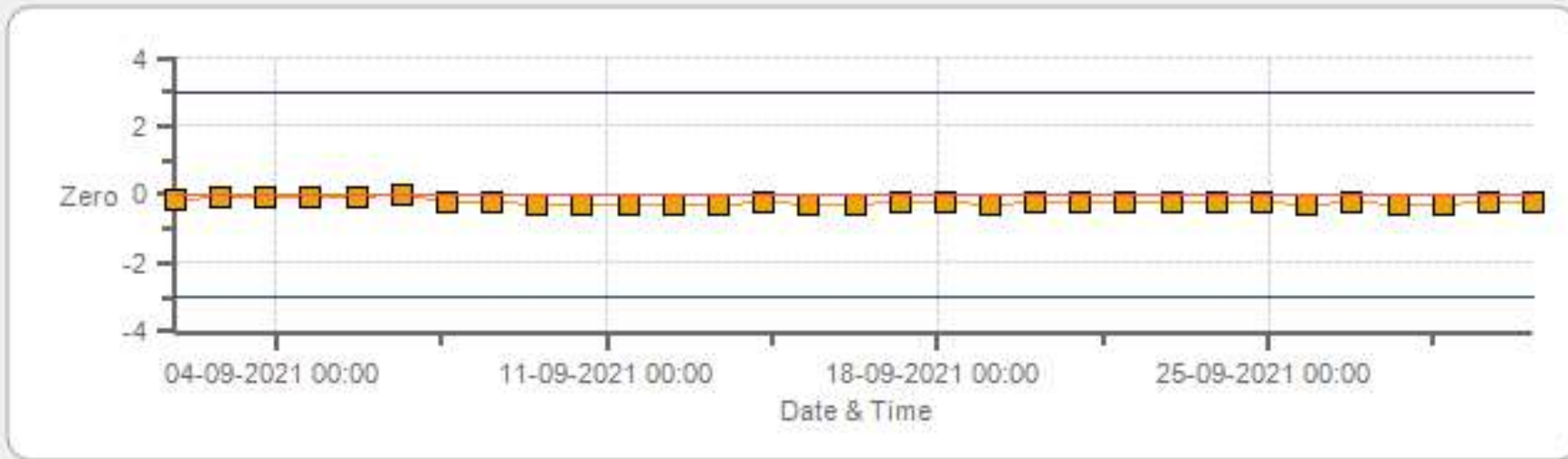
Data Validation and Report:

LICA / Bureau Veritas Canada

October 20, 2021

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

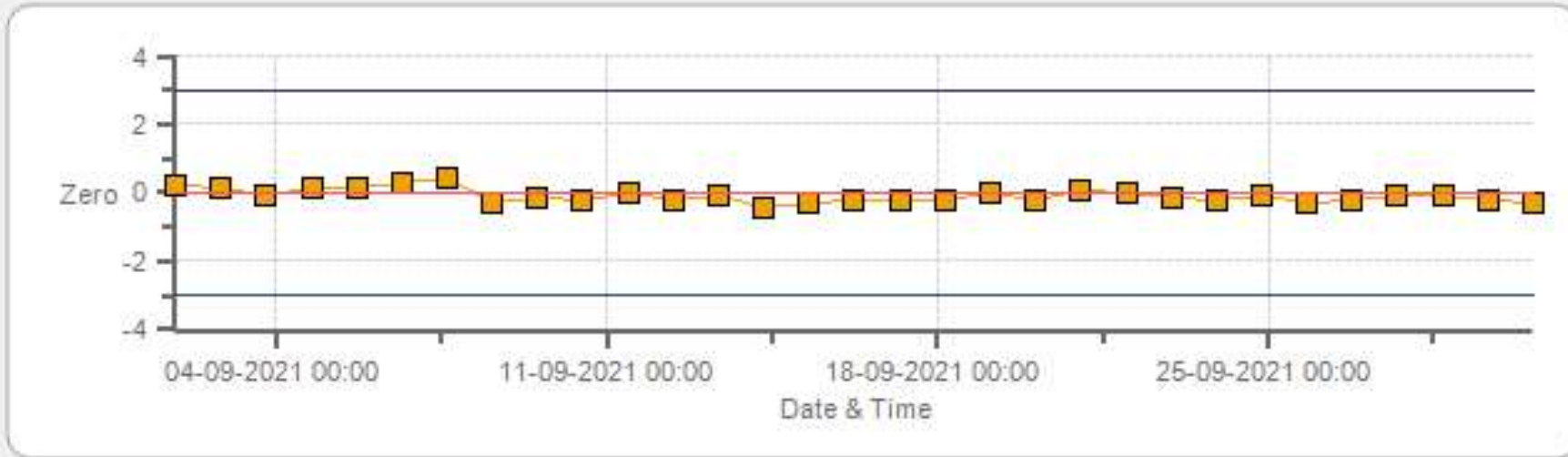
SO2[ppb] Calibration: Cold Lake South Monthly: 09-2021 Type: SpanAndZero - Zero



SO2[ppb] Calibration: Cold Lake South Monthly: 09-2021 Type: SpanAndZero - Span

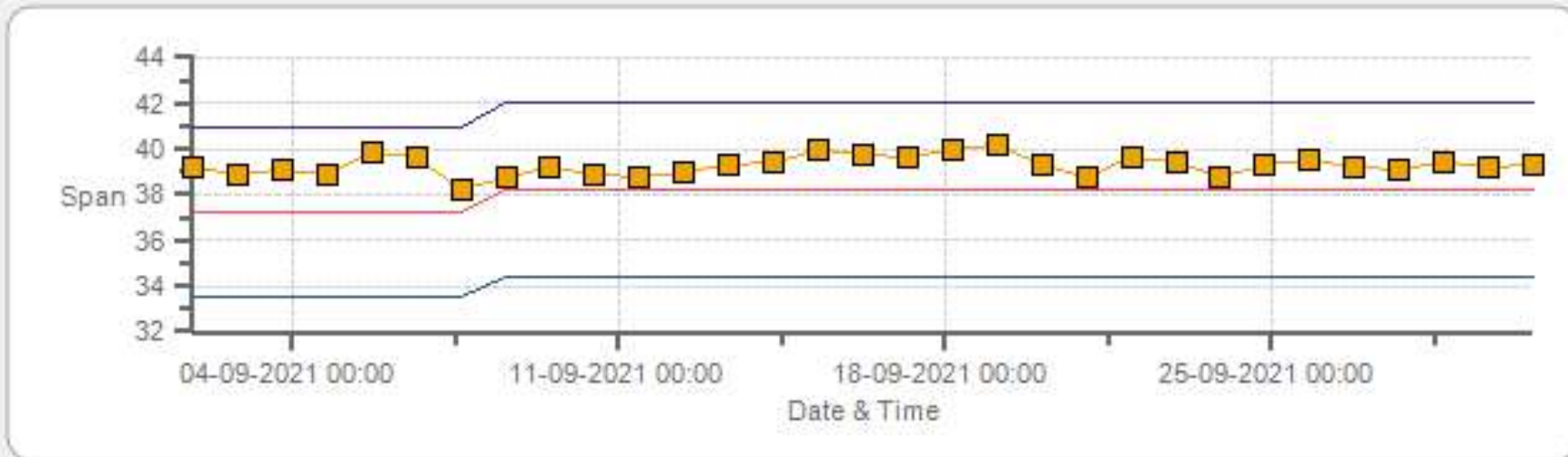


TRS[ppb] Calibration: Cold Lake South Monthly: 09-2021 Type: SpanAndZero - Zero



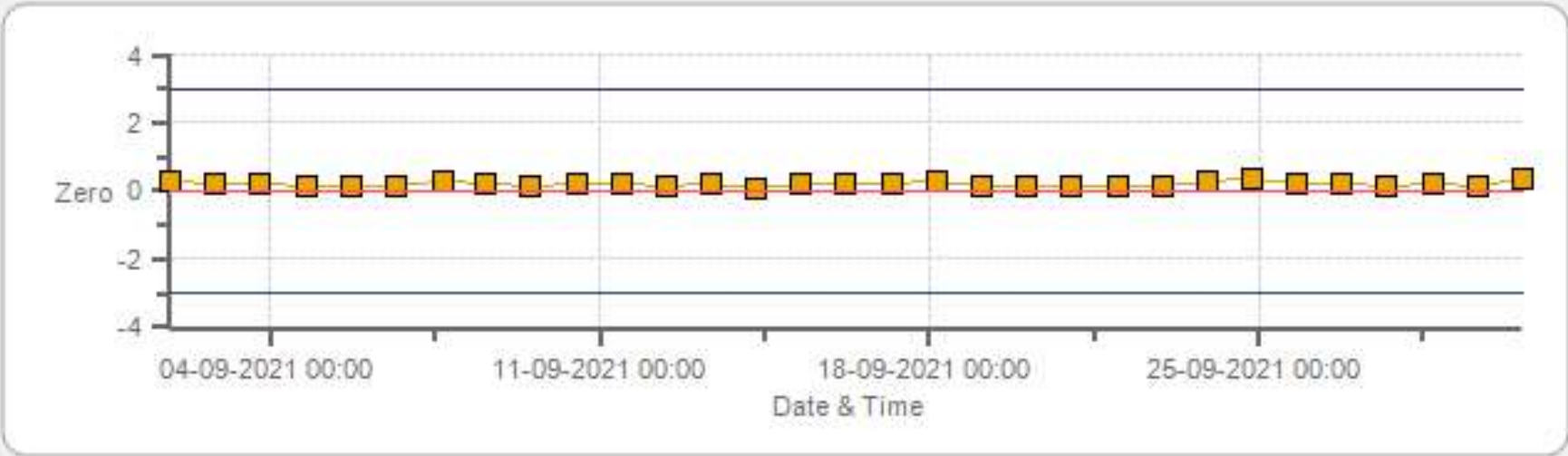
Zero Zero Ref Zero Low Zero High

TRS[ppb] Calibration: Cold Lake South Monthly: 09-2021 Type: SpanAndZero - Span



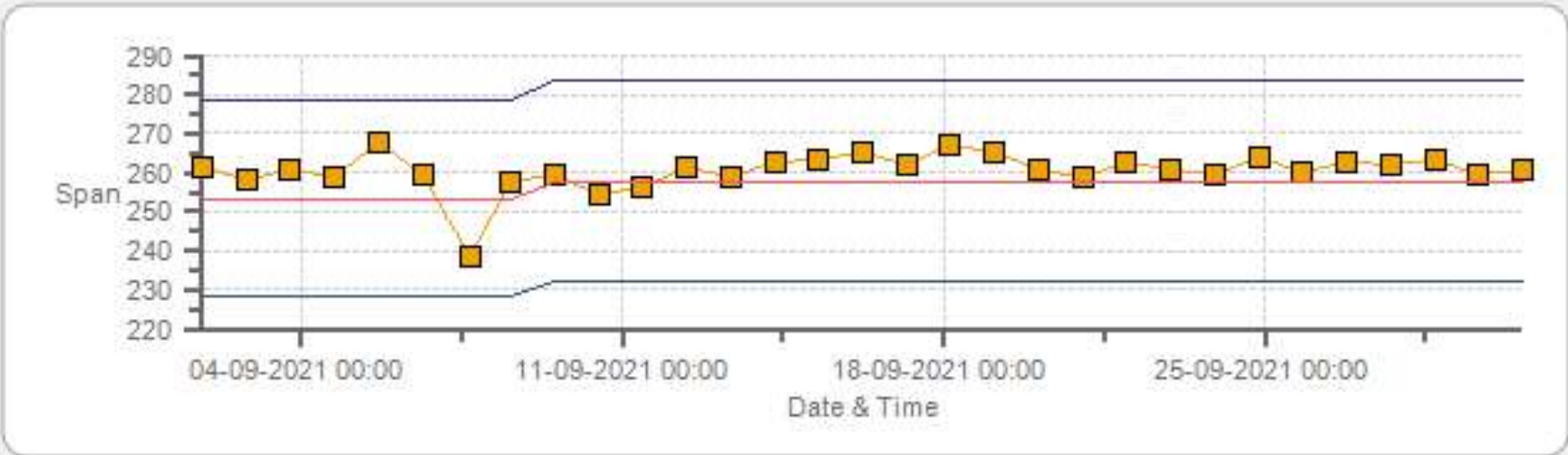
Span SpanRef Span Low Span High

NOX[ppb] Calibration: Cold Lake South Monthly: 09-2021 Type: SpanAndZero - Zero



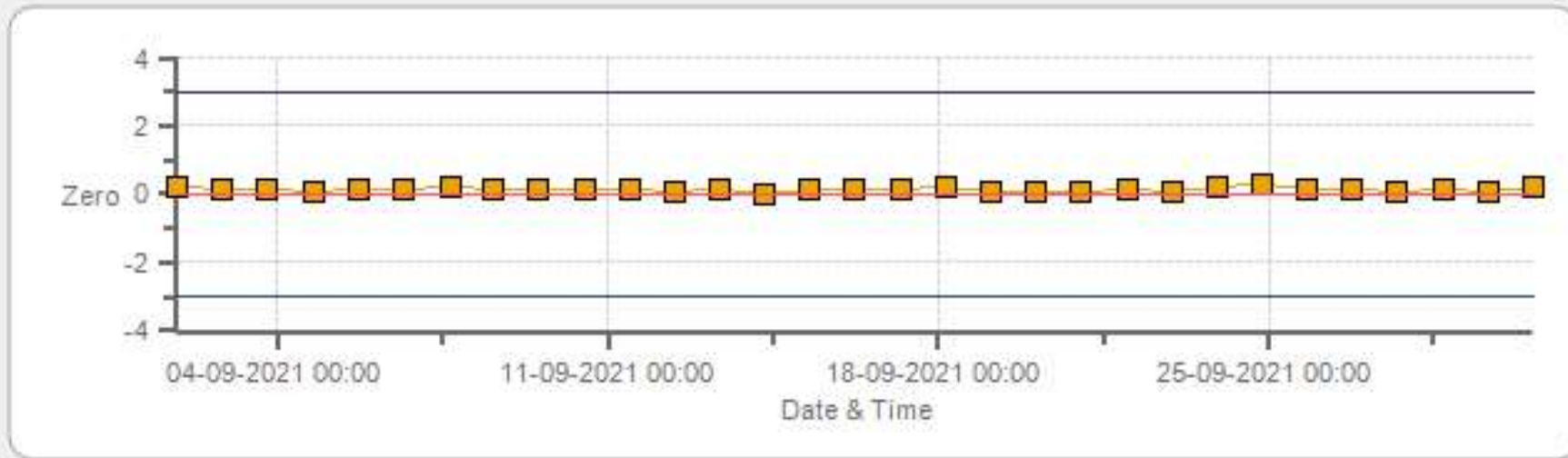
Zero Zero Ref Zero Low Zero High

NOX[ppb] Calibration: Cold Lake South Monthly: 09-2021 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

NO2[ppb] Calibration: Cold Lake South Monthly: 09-2021 Type: SpanAndZero - Zero



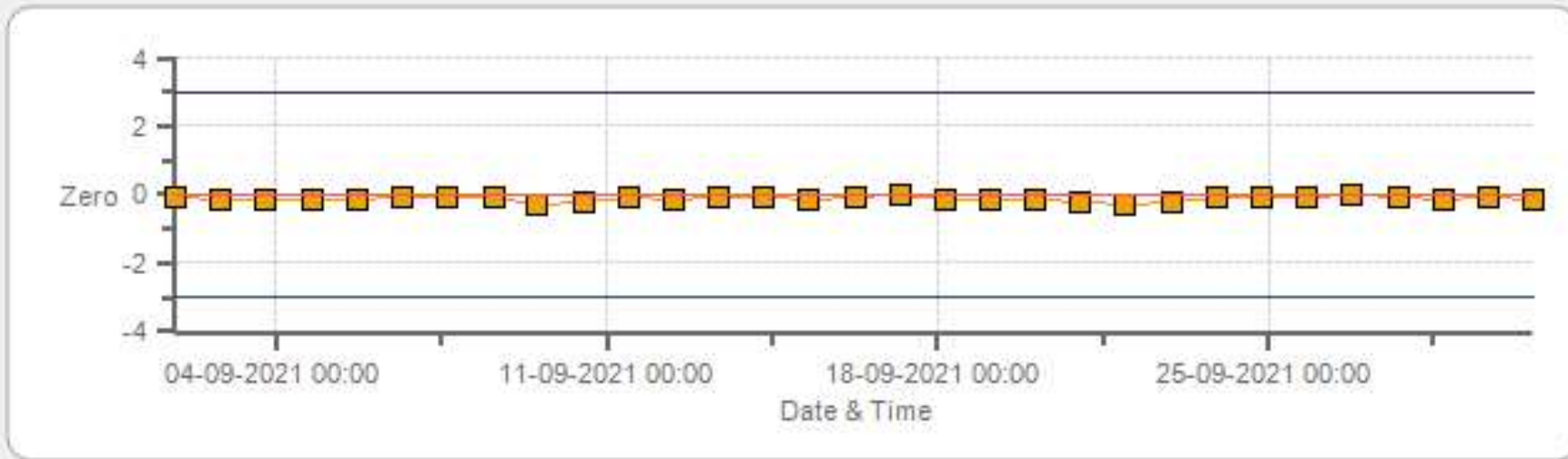
Zero Zero Ref Zero Low Zero High

NO2[ppb] Calibration: Cold Lake South Monthly: 09-2021 Type: SpanAndZero - Span



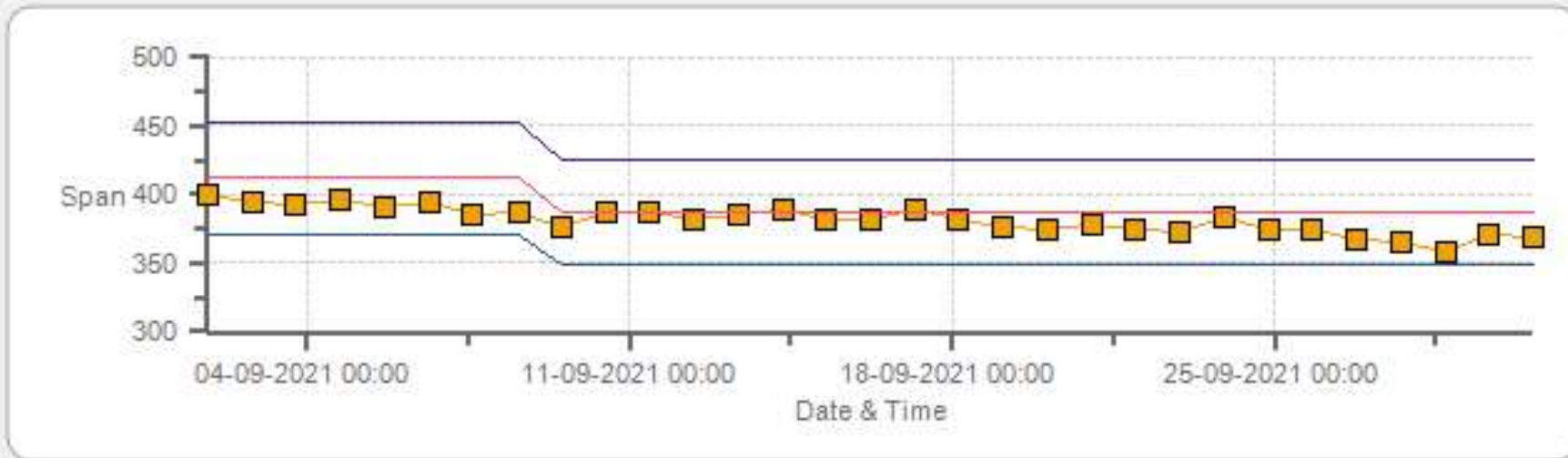
Span SpanRef Span Low Span High

O3[ppb] Calibration: Cold Lake South Monthly: 09-2021 Type: SpanAndZero - Zero



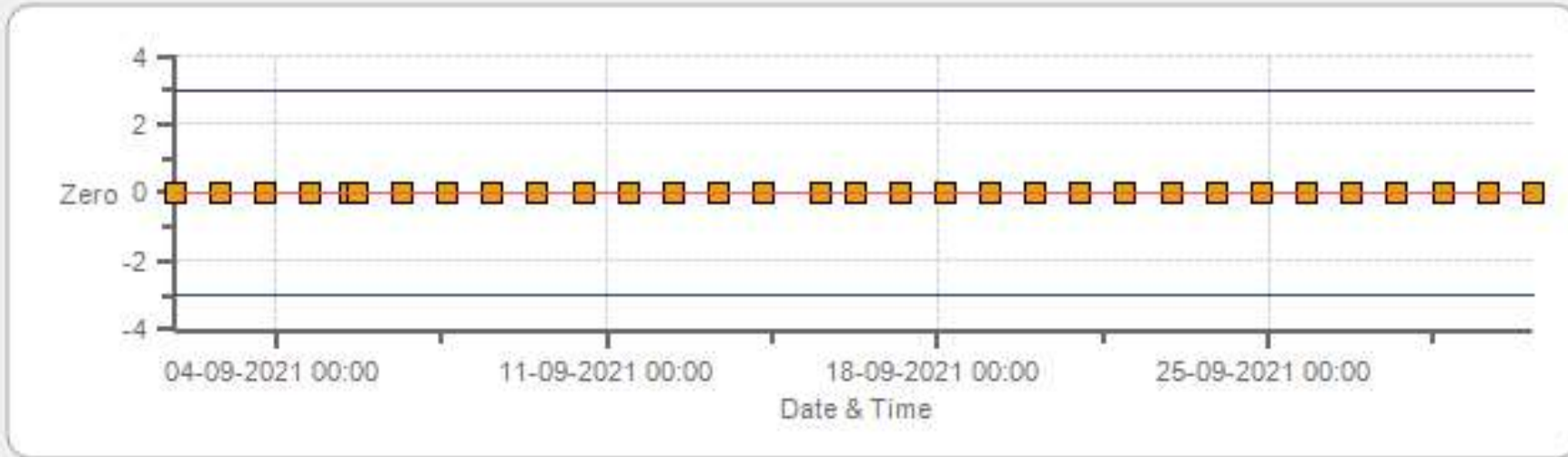
Zero Zero Ref Zero Low Zero High

O3[ppb] Calibration: Cold Lake South Monthly: 09-2021 Type: SpanAndZero - Span



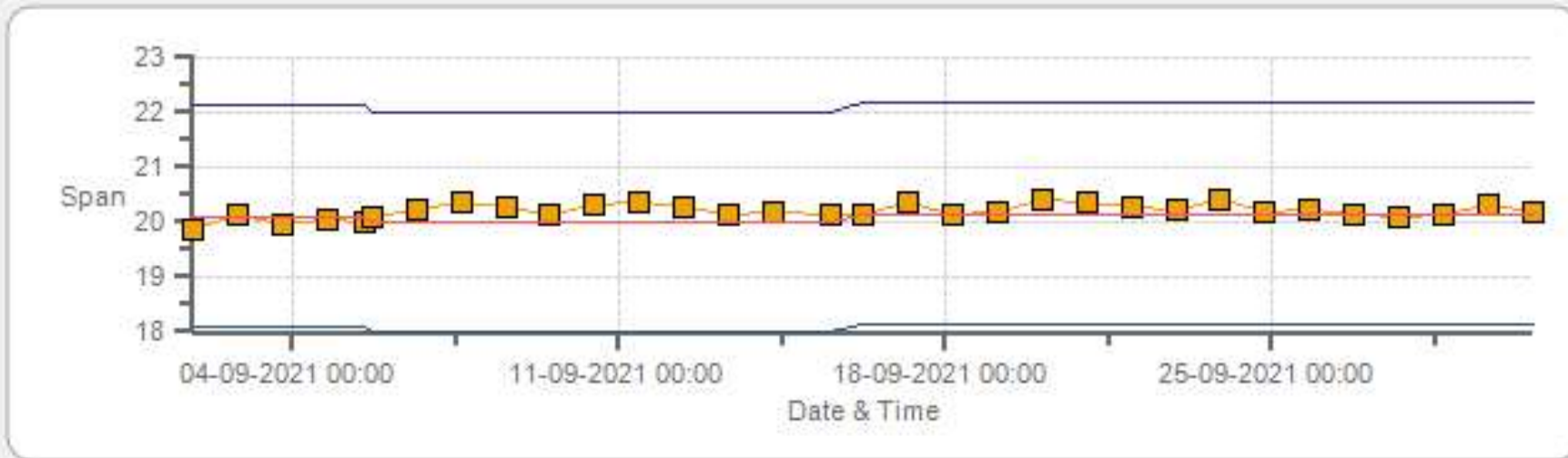
Span SpanRef Span Low Span High

THC55[ppm] Calibration: Cold Lake South Monthly: 09-2021 Type: SpanAndZero - Zero



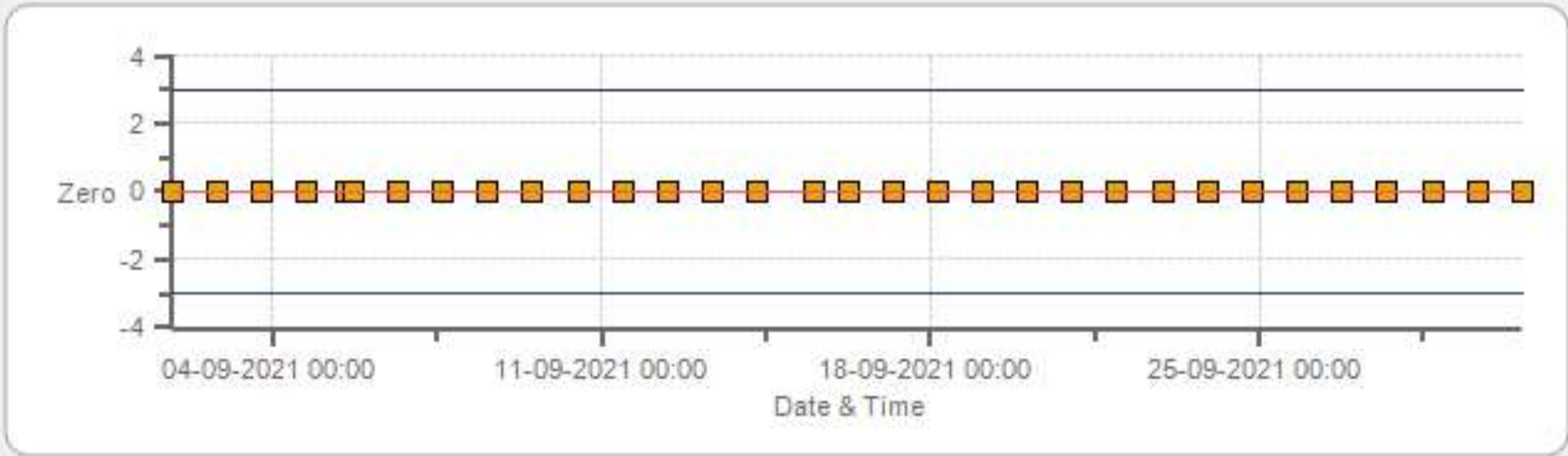
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: Cold Lake South Monthly: 09-2021 Type: SpanAndZero - Span



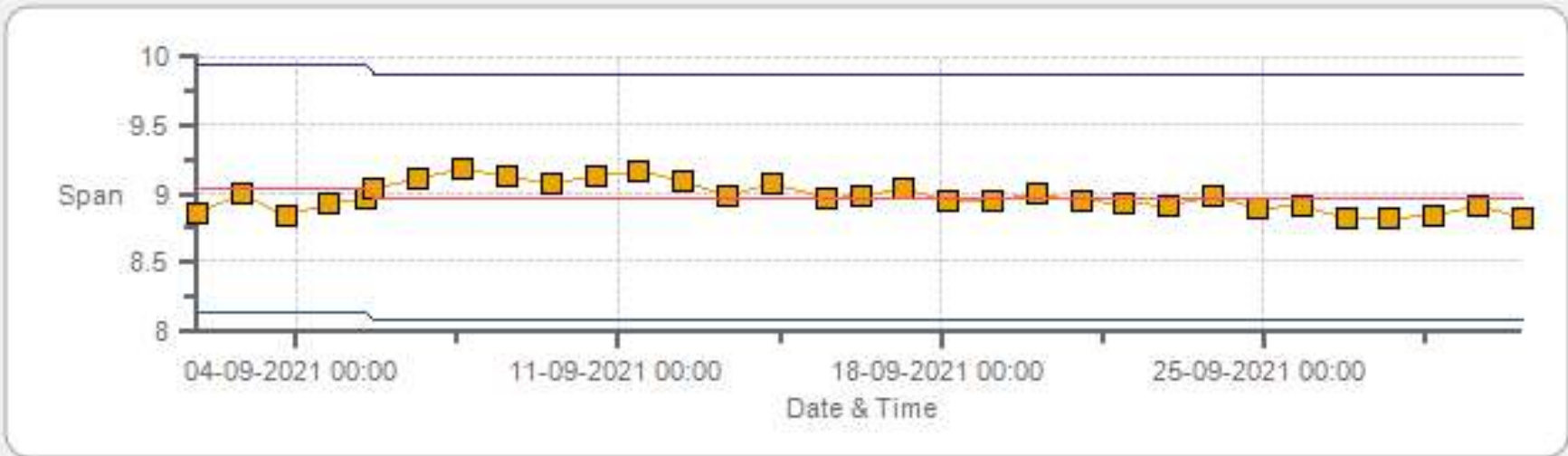
Span SpanRef Span Low Span High

CH4[ppm] Calibration: Cold Lake South Monthly: 09-2021 Type: SpanAndZero - Zero



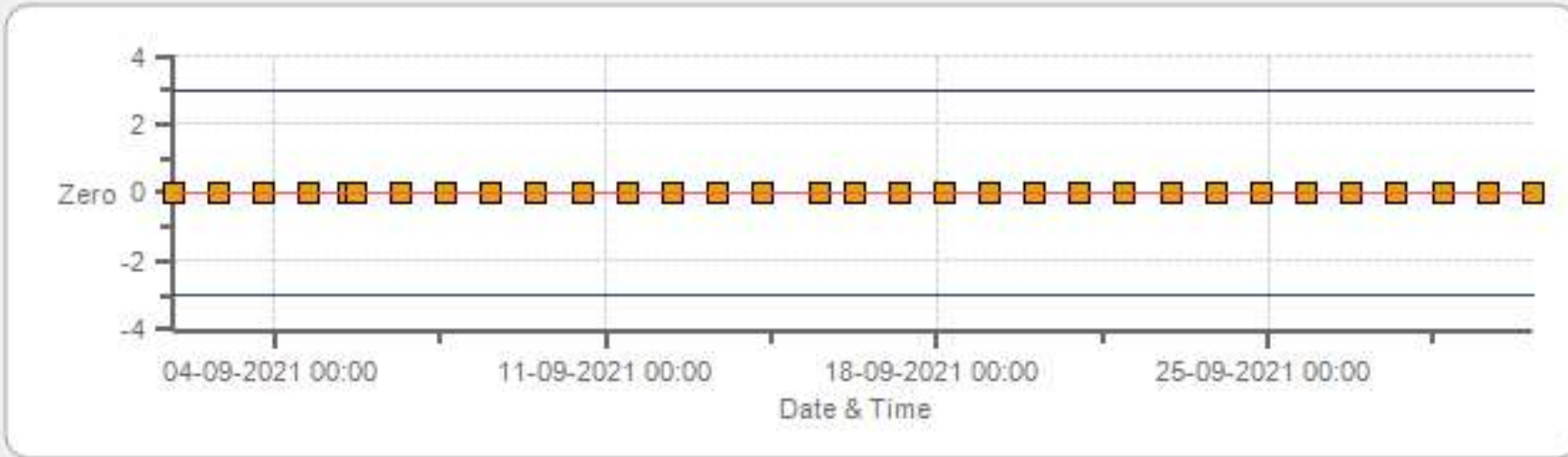
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: Cold Lake South Monthly: 09-2021 Type: SpanAndZero - Span



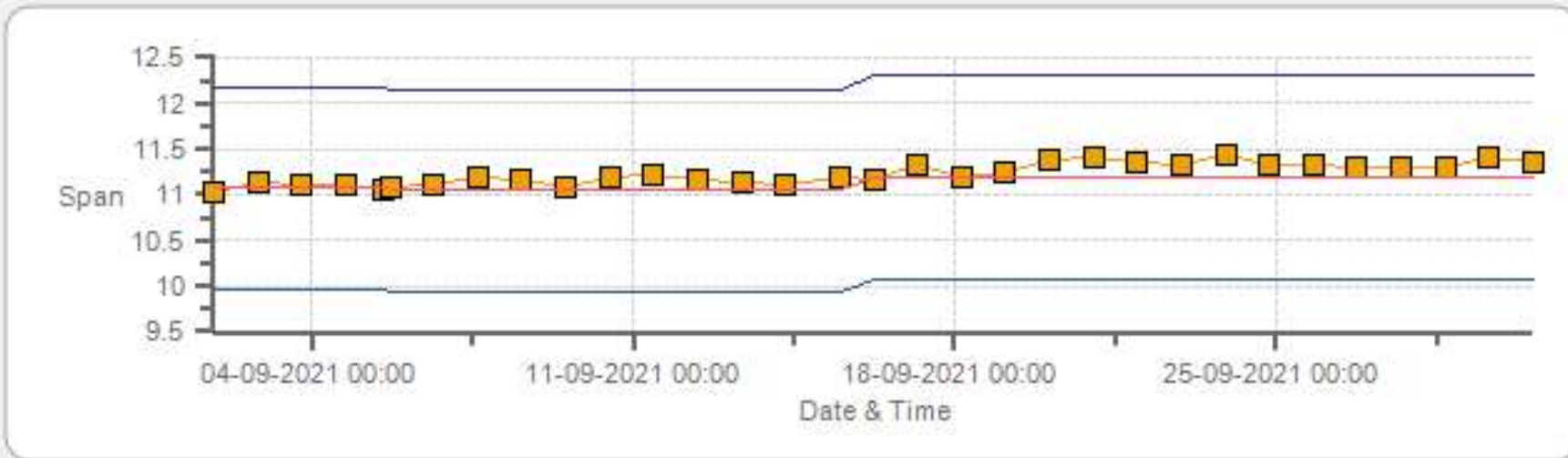
Span SpanRef Span Low Span High

NMHC[ppm] Calibration: Cold Lake South Monthly: 09-2021 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: Cold Lake South Monthly: 09-2021 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution



DATE:	07-Sep-2021	PREVIOUS CALIBRATION DATE:	16-Aug-2021
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	953
PURPOSE:	Routine	START TIME (MST):	09:29
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:45

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180260018	FLOW (mL/min)	445
INITIAL		FINAL	
BKG/OFFSET	1.94	BKG/OFFSET	2.14
COEF/SLOPE	0.957	COEF/SLOPE	0.96
Expected (reference) Value	264.9	Expected (reference) Value	260

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	09-Apr-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):	1700	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:

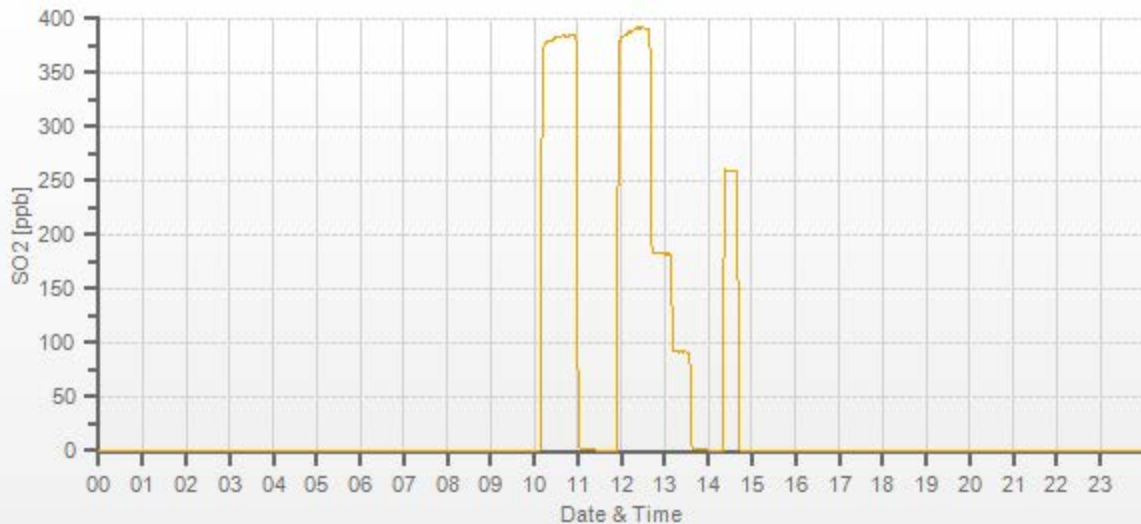
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	38.50	5000	0.00	0	0	1.018	1.000
4962	38.50	5000	391.16	384.4	391.1	1.018	1.000
4982	18.00	5000	182.88	n/a	182.5	n/a	1.002
4991	9.00	5000	91.44	n/a	90.9	n/a	1.006

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	-0.1%

COMMENTS:

Sample inlet filter was changed.



TRS Analyzer Calibration by Dilution



DATE:	07-Sep-2021	PREVIOUS CALIBRATION DATE:	16-Aug-2021
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.003
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	953
PURPOSE:	Routine	START TIME (MST):	09:28
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:45

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	812728560	FLOW (mL/min)	496
INITIAL		FINAL	
BKG/OFFSET	21.7	BKG/OFFSET	22
COEF/SLOPE	1.047	COEF/SLOPE	1.058
Expected (reference) Value	37.2	Expected (reference) Value	38.2

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 19174	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	300	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:	09:34	SO2 Conc (ppb)	380
END TIME:	09:49	Analyzer Response (ppb)	0.0

CALIBRATION:

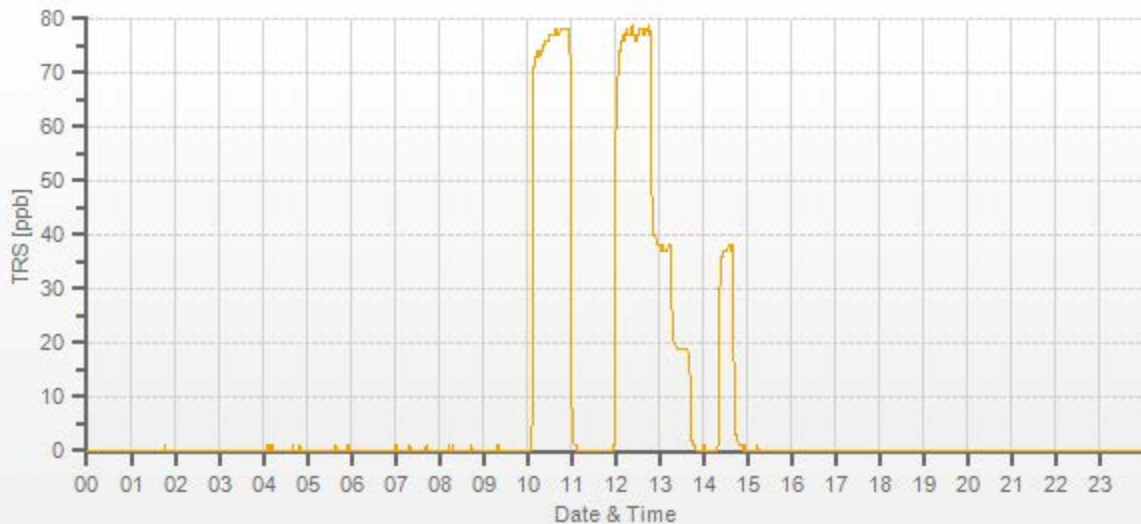
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	58.50	7500	0.00	0.3	0	1.009	0.997
7442	58.50	7500	78.00	77.6	78.2	1.009	0.997
7472	28.50	7500	38.00	n/a	38.1	n/a	0.997
7486	14.20	7500	18.93	n/a	19.2	n/a	0.986

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.002	0.1%

COMMENTS:

Sample inlet filter was changed.
Converter = CDN-101#501



NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	07-Sep-2021	PREVIOUS CALIBRATION DATE:	16-Aug-2021	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1505664393	NOx	0.999
LOCATION:	CLS	BAROMETRIC (mBar):	953	FLOW (mL/min)	781	NO	1.000
PURPOSE:	Routine	START TIME (MST):	09:30	RANGE (ppb)	500	NO2	0.998
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:25	GPT FOR O3?		No	

CALIBRATION SYSTEM:							
CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 105146	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.0 50.1	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	1700	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Apr-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:	4.2	4.1	n/a
SLOPE/COEF/CE:	1	0.968	1.006	SLOPE/COEF/CE:	0.999	0.959	1

EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	240.5	3.9	236.6		257.7	4.8	252.9

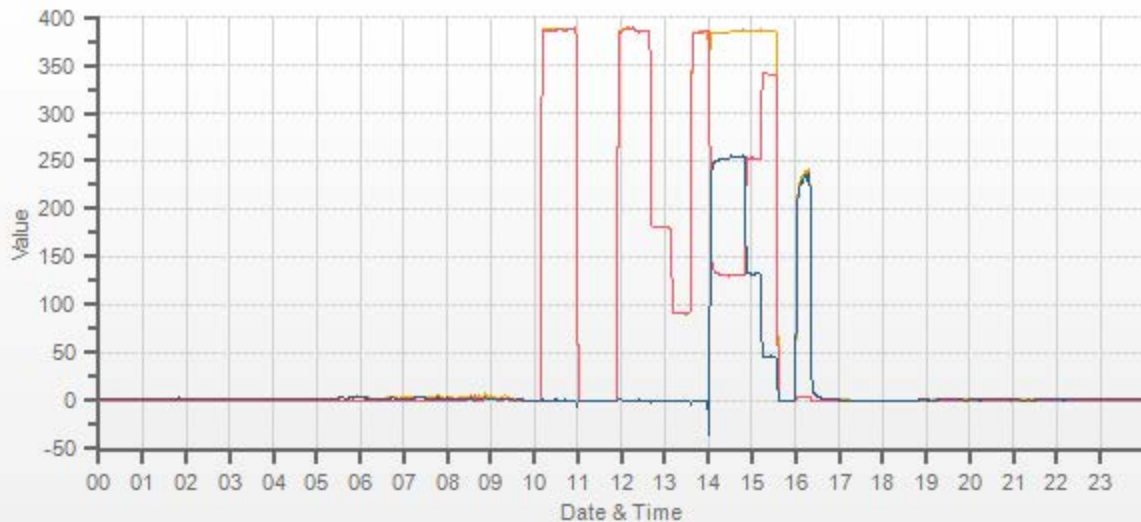
CALIBRATION PARAMETERS:				
POINT	NO TARGET (PPB)	NO2 TARGET (PPB)	NO2 RANGE	O3 POINT
HIGH	380	250	230-265	n/a
MID	180	125	115-150	n/a
LOW	90	45	40-55	n/a
EXTRA 1	n/a	n/a	n/a	n/a

NO/NOx CALIBRATION:																		
FLOW RATE			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)						
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL			
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	
5000	38.50	5000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.997	0.994	1.000	0.999	0.996	0.996	
4962	38.50	5000	385.0	385.8	0.8	386.2	388.0	1.7	385.0	386.1	1.0	0.997	0.994	1.000	0.999	0.996	0.996	
4982	18.00	5000	180.0	180.4	0.4	n/a	n/a	n/a	180.7	181.1	0.3	n/a	n/a	0.996	0.996	0.996	0.996	
4991	9.00	5000	90.0	90.2	0.2	n/a	n/a	n/a	90.9	90.9	0.0	n/a	n/a	0.990	0.992	0.992	0.992	

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	384.5	385.6	1.1	253.3	251.8	1.006	99.41%
AS-FOUND HIGH	38.50	5000	240	131.2	384.1	252.9	253.3	251.8	1.006	99.41%
ADJUSTED HIGH	38.50	5000	240	131.0	386.2	255.1	253.5	254	0.998	100.20%
MID	38.50	5000	125	253.1	386.3	133.1	131.4	132	0.995	100.46%
LOW	38.50	5000	45	340.1	386.5	46.4	44.4	45.3	0.980	102.03%
NO2 COEF/CONVERTER EFFICIENCY ADJUSTED									AVERAGE:	100.89%

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	0.999	0.10%	
NOx	1.000	1.000	0.08%	
NO2	1.000	0.998	0.19%	

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



CAL-LICA-202109-01174

Ozone Calibration by Photometer (Varying UV Lamp)



DATE:	08-Sep-2021	PREVIOUS CALIBRATION DATE:	13-Aug-2021
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.002
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	CLS	BAROMETRIC (mBar):	953
PURPOSE:	Routine	START TIME (MST):	10:01
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:20

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	700419951	FLOW (mL/min)	1471
INITIAL		FINAL	
BKG/OFFSET	0	BKG/OFFSET	0
COEF/SLOPE	1.047	COEF/SLOPE	1.054
Expected (reference) Value	412.2	Expected (reference) Value	387.6

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	09-Apr-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:

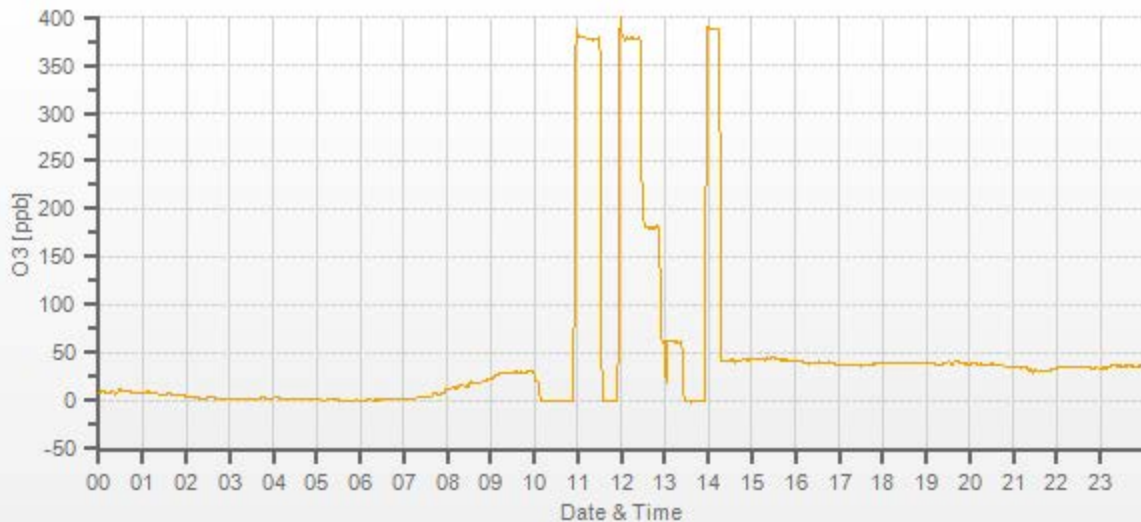
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	XXXX	5000	0.0	0.0	0.0	XXXX	XXXX
5000	XXXX	5000	378.0	377.0	377.7	1.003	1.001
5000	XXXX	5000	180.0	n/a	180.9	n/a	0.995
5000	XXXX	5000	60.0	n/a	61.3	n/a	0.979

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.998	0.2%

COMMENTS:

Sample inlet filter was changed.
13:00 - scheduled daily ZS check interfered with the calibration. Restarted low point.



Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	05-Sep-2021	PREVIOUS CALIBRATION DATE:	23-Aug-2021	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.0		Thermo 55i	1180030034	965
LOCATION:	CLS	BAROMETRIC (mBar):	942	PARAMETER:	CH4	NMHC	THC
PURPOSE:	Routine	START TIME (MST):	09:06	RANGE (ppm):	20	20	40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	12:56	PREVIOUS CF:	1.000	0.985	0.992

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):	1000	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Apr-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
	9.04	11.07	20.11		8.97	11.05	20.02

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	14.17	13.50	27.68	14.61	13.49	28.10	1.028	0.997	1.012	0.997	0.997	0.997
3075	24.70	3100	7.28	6.73	14.01	n/a	n/a	n/a	7.27	6.73	14.01	n/a	n/a	n/a	1.002	1.000	1.000
3088	12.40	3100	3.66	3.38	7.03	n/a	n/a	n/a	3.62	3.34	6.96	n/a	n/a	n/a	1.010	1.011	1.010

LINEAR REGRESSION ANALYSIS:

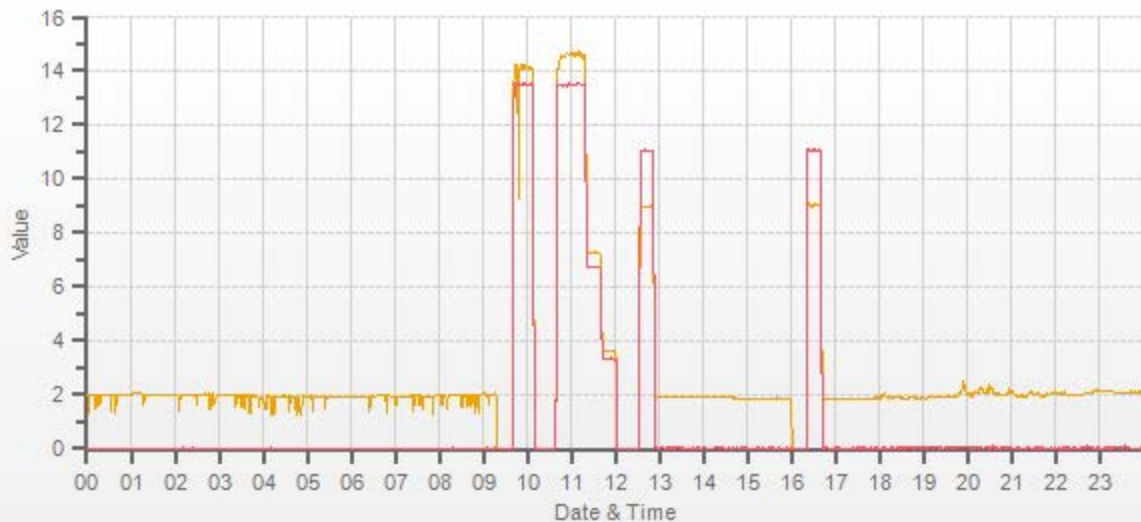
	CORRELATION	SLOPE	INTERCEPT
CH ₄	1.000	1.004	-0.1%
NMHC	1.000	1.004	-0.1%
THC	1.000	1.004	-0.1%

Comments:

Sample filter changed

Use Zero Chrom?

Yes



CAL-LICA-202109-01174

Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	15-Sep-2021	PREVIOUS CALIBRATION DATE:	n/a	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.0		Thermo 55i	1180930025	n/a
LOCATION:	CLS	BAROMETRIC (mBar):	937	PARAMETER:	CH4	NMHC	THC
PURPOSE:	Install/Post-Repair	START TIME (MST):	09:07	RANGE (ppm):	20	20	40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	12:45	PREVIOUS CF:	n/a	n/a	n/a

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 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):	1000	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Apr-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
	n/a	n/a	n/a		n/a	8.97	11.18

CALIBRATION:

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC
3100	X	3100	0.00	0.00	0.00	n/a	n/a	n/a	0.00	0.00	0.00	X	X	X	X	X	X
3051	49.40	3100	14.57	13.45	28.02	n/a	n/a	n/a	14.52	13.43	27.96	n/a	n/a	n/a	1.003	1.002	1.002
3075	24.70	3100	7.28	6.73	14.01	n/a	n/a	n/a	7.17	6.66	13.84	n/a	n/a	n/a	1.016	1.010	1.012
3088	12.40	3100	3.66	3.38	7.03	n/a	n/a	n/a	3.53	3.27	6.80	n/a	n/a	n/a	1.036	1.033	1.034

LINEAR REGRESSION ANALYSIS:

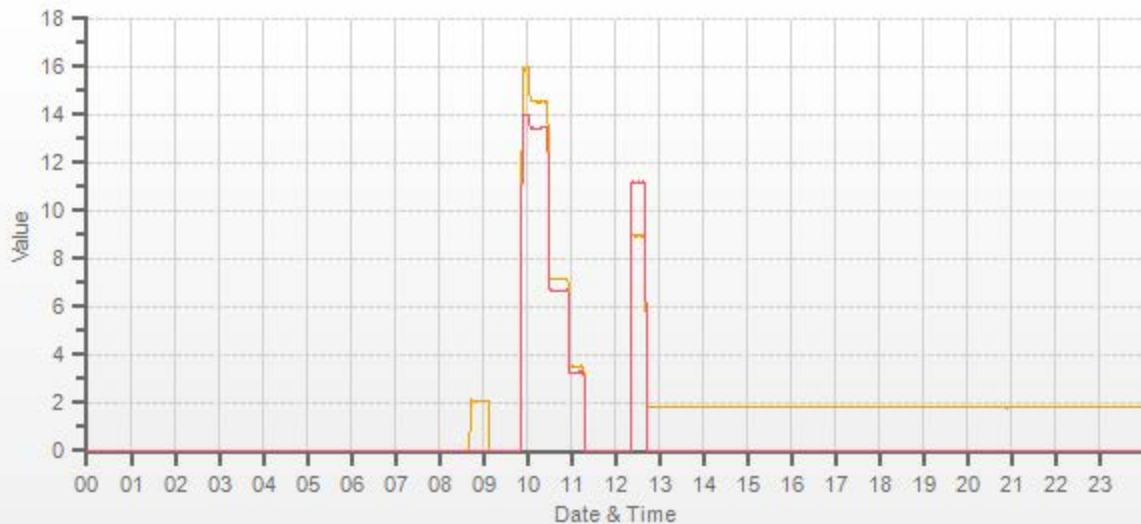
	CORRELATION	SLOPE	INTERCEPT
CH ₄	1.000	0.999	-0.3%
NMHC	1.000	1.000	-0.3%
THC	1.000	1.000	-0.3%

Comments:

Installation, no issues

Use Zero Chrom?

Yes



CAL-LICA-202109-01174



Teledyne T640 Audit/Calibration

Date/Previous Audit Date:	September 8, 2021	August 20, 2021	Weather Conditions:	Mainly sunny	
Company:	LICA		Start Time (mst):	14:00	
Station:	Cold Lake South		End Time (mst):	14:47	
Parameter:	PM 2.5	Performed By/Reviewer:	Alex Yakupov	Chris Wesson	
Instrument Data:					
Make/Model:	Teledyne T640		Serial Number:	575	
Owner:	LICA		Alarms (detail in comments):	Yes	
Reference Standards/I.D./Expiry Date:					
Flow Standard: DeltaCal DC1 S/N177246 / Jul 12, 2022			Temperature: VAISALA HMP76B / SN: T1640130		
Digital Manometer: DeltaCal DC1 S/N177246 / Jul 12, 2022			Pressure: FS FB61291 / SN: 130168457 / Feb 17, 2022		
DIAGNOSTICS:					
Ambient Pressure (mmHg)	711.9	Ambient Temp (°C)	22.7	ASC Heater Duty (%)	0.0
Box Temp (°C)	27.5	Current PMT HV (V)	1441	LED Temp (°C)	36.75
P3 Value	48	PMT Setting (V)	1444	Pump PWM (%)	46
Sample Flow (L/min)	5.00	Sample RH (%RH)	28.4	Sample Temp (°C)	25.5
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)	711.1	711.9	711.1	711.9	+/- 10 mm Hg
Ambient Temperature (°C)	23.00	23.4	n/a		+/- 2°C
Sample Flow (L/min)	5.01	5	5.01	5	+/- 5% of T640x (e.g., 4.75 – 5.25 lpm)
Additional Monthly Maintenance :					Completed
Inlet cleaned?					Yes
Sample tubing inspected (inner and outer)?					Yes
Comments:					
n/a					



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

SEPTEMBER 2021

Ambient Air Monitoring Calibration Report

- TAMARACK STATION-

(Formerly Maskwa Station)

CAL-LICA-202109-01248

Station Operation and Maintenance:

Bureau Veritas Canada

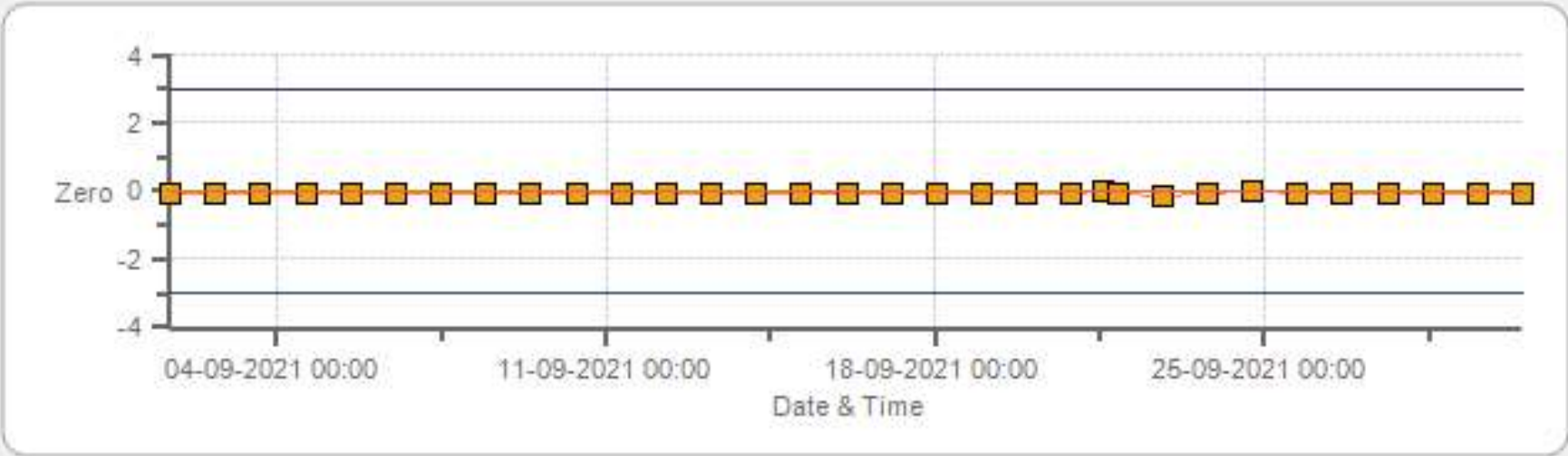
Data Validation and Report:

LICA / Bureau Veritas Canada

October 20, 2021

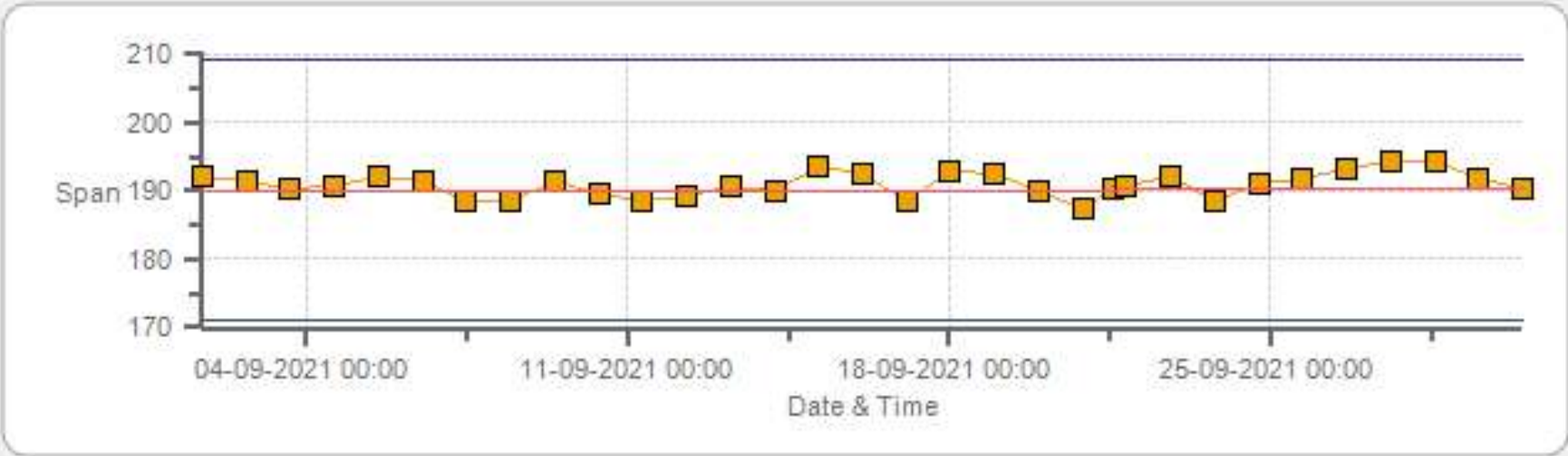
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: Tamarack Monthly: 09-2021 Type: SpanAndZero - Zero



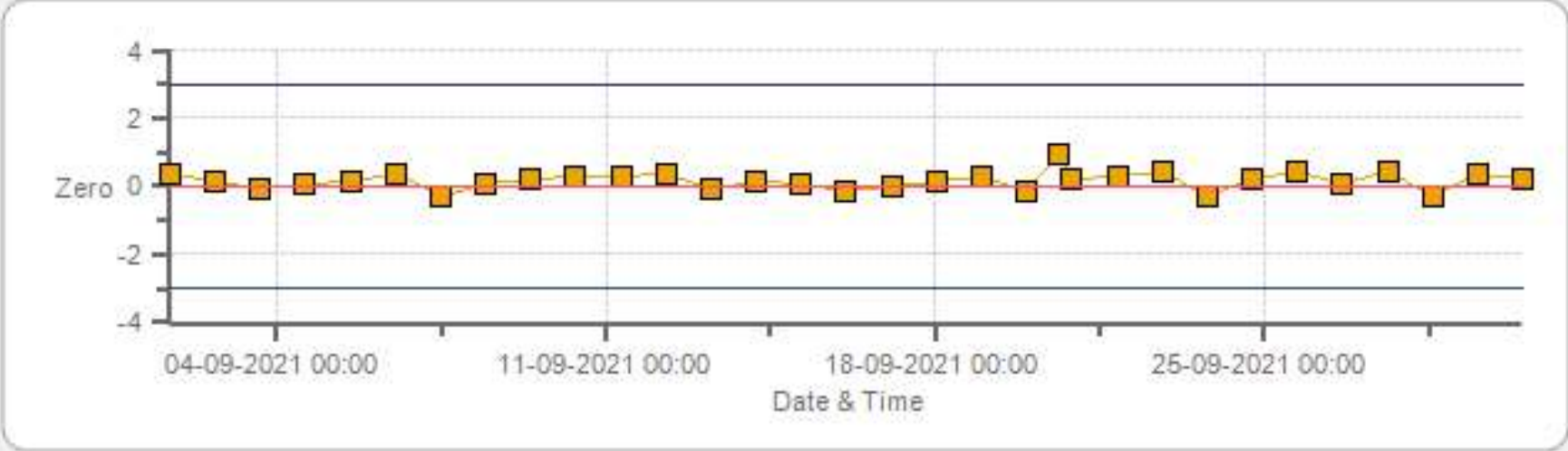
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: Tamarack Monthly: 09-2021 Type: SpanAndZero - Span

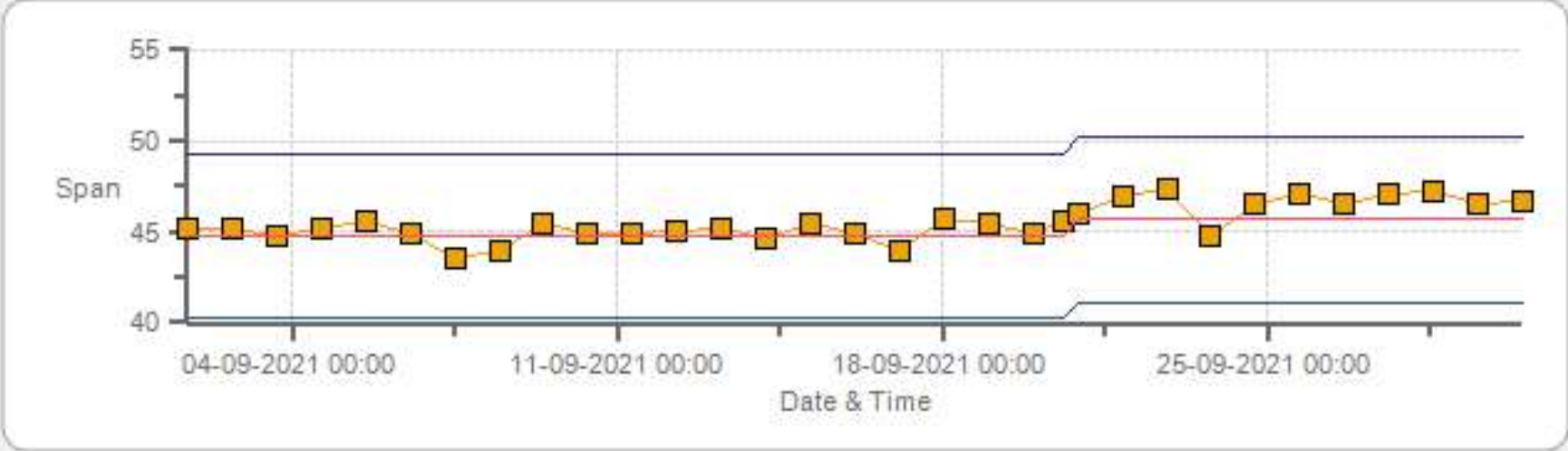


Span SpanRef Span Low Span High

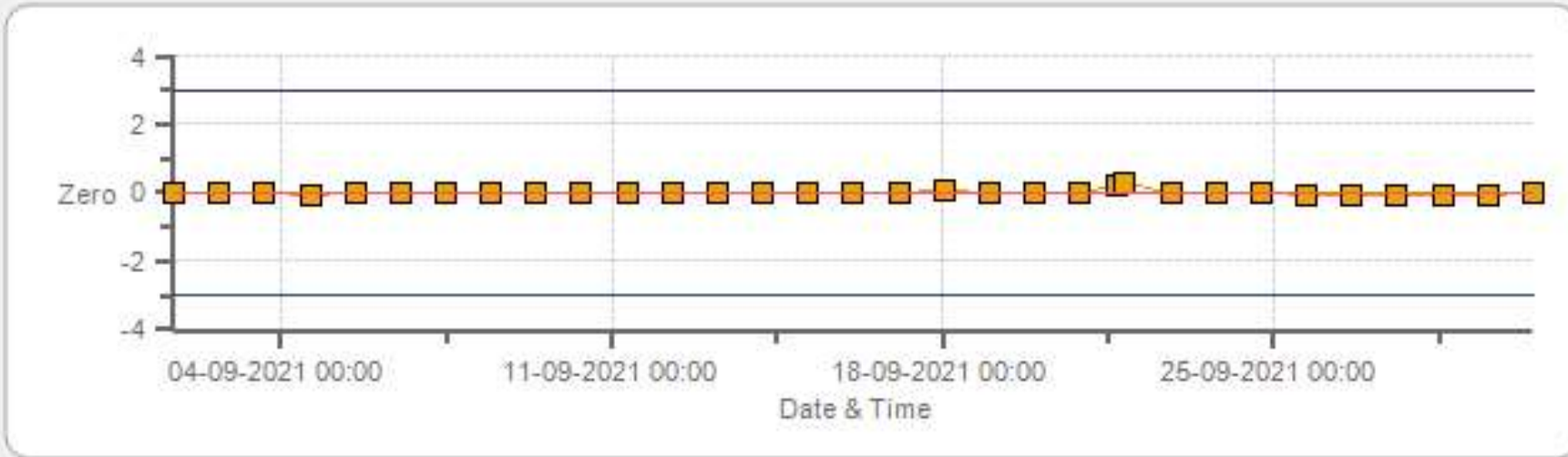
H2S[ppb] Calibration: Tamarack Monthly: 09-2021 Type: SpanAndZero - Zero



H2S[ppb] Calibration: Tamarack Monthly: 09-2021 Type: SpanAndZero - Span



NOX[ppb] Calibration: Tamarack Monthly: 09-2021 Type: SpanAndZero - Zero



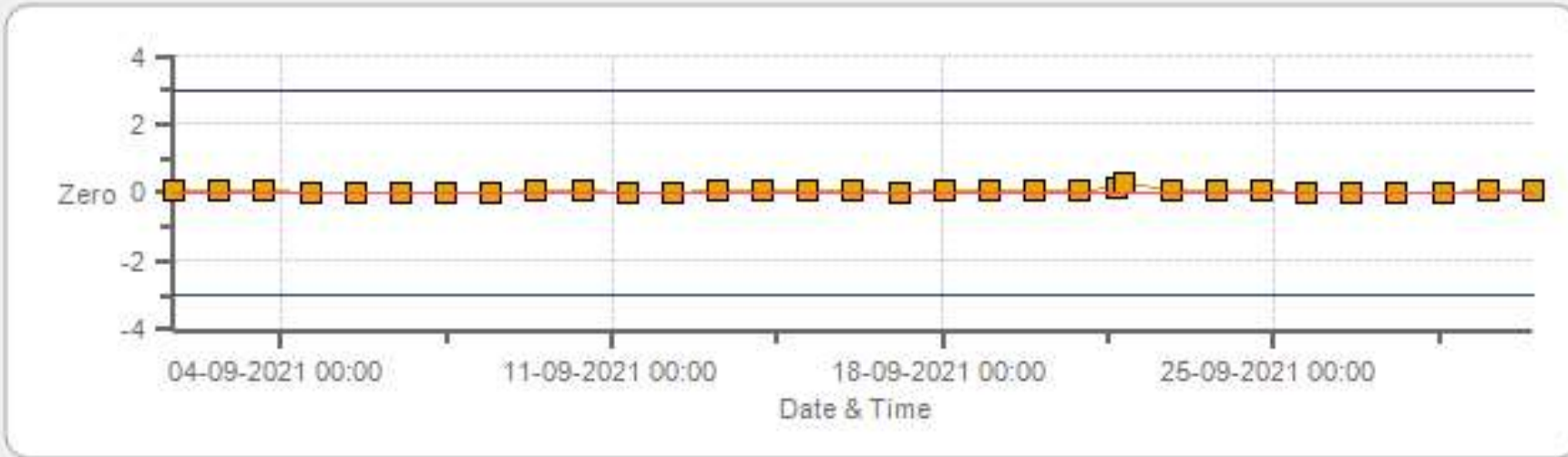
Zero Zero Ref Zero Low Zero High

NOX[ppb] Calibration: Tamarack Monthly: 09-2021 Type: SpanAndZero - Span



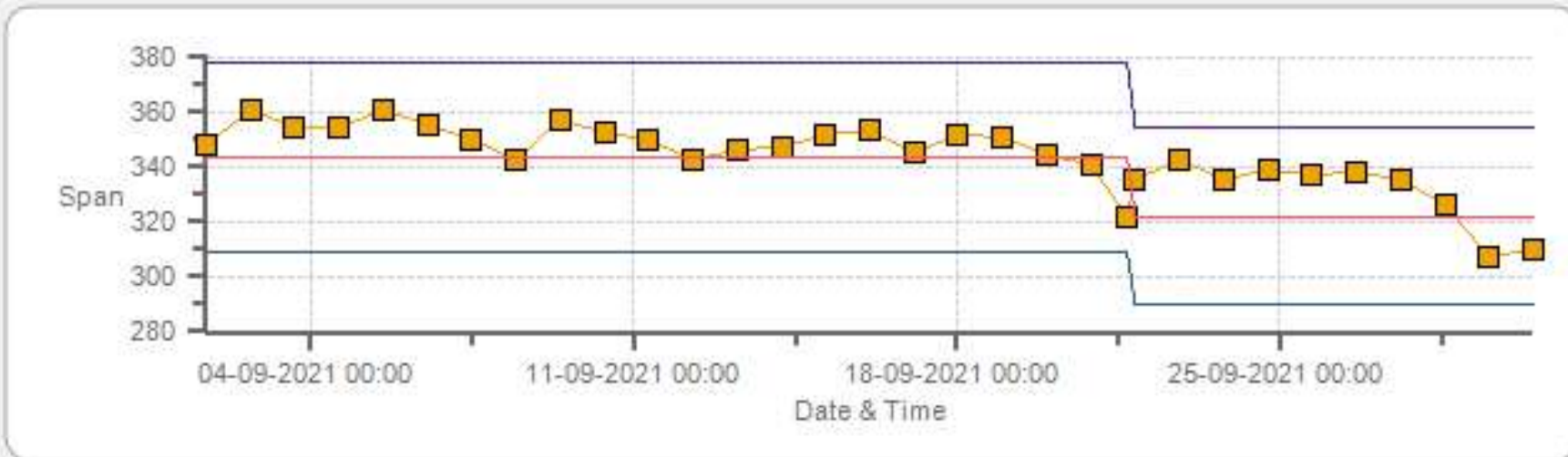
Span SpanRef Span Low Span High

NO2[ppb] Calibration: Tamarack Monthly: 09-2021 Type: SpanAndZero - Zero



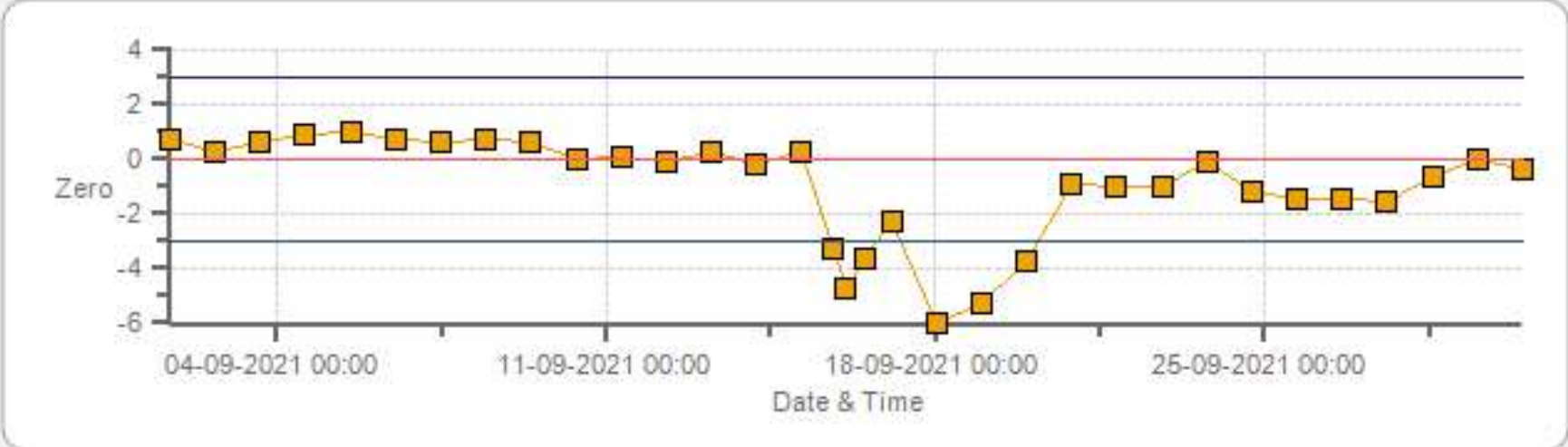
Zero Zero Ref Zero Low Zero High

NO2[ppb] Calibration: Tamarack Monthly: 09-2021 Type: SpanAndZero - Span



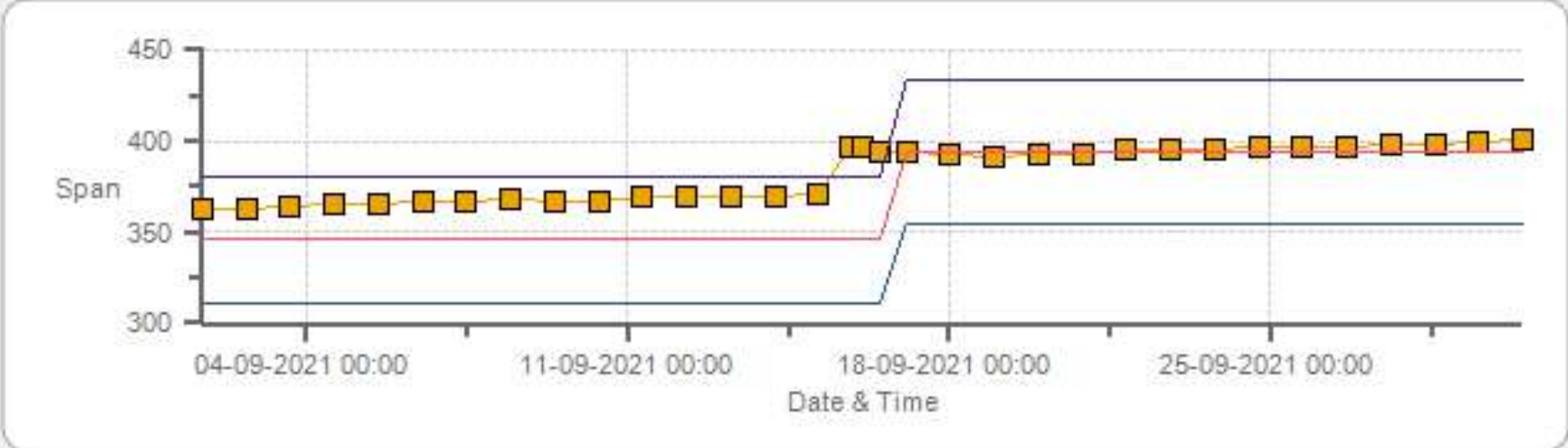
Span SpanRef Span Low Span High

O3[ppb] Calibration: Tamarack Monthly: 09-2021 Type: SpanAndZero - Zero



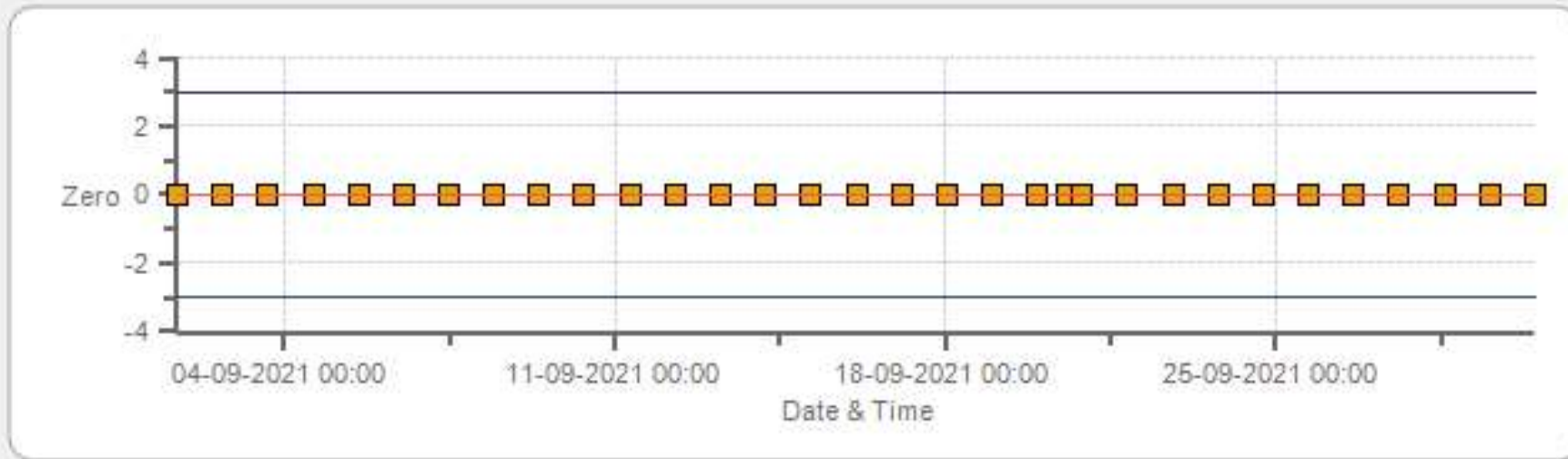
Zero Zero Ref Zero Low Zero High

O3[ppb] Calibration: Tamarack Monthly: 09-2021 Type: SpanAndZero - Span



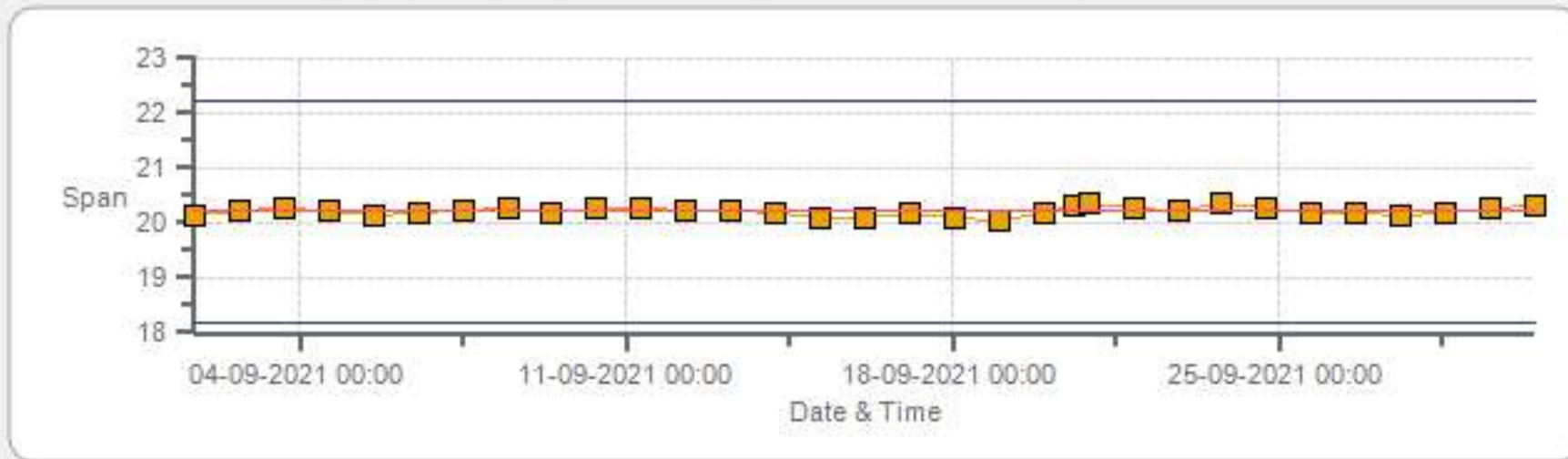
Span SpanRef Span Low Span High

THC55[ppm] Calibration: Tamarack Monthly: 09-2021 Type: SpanAndZero - Zero



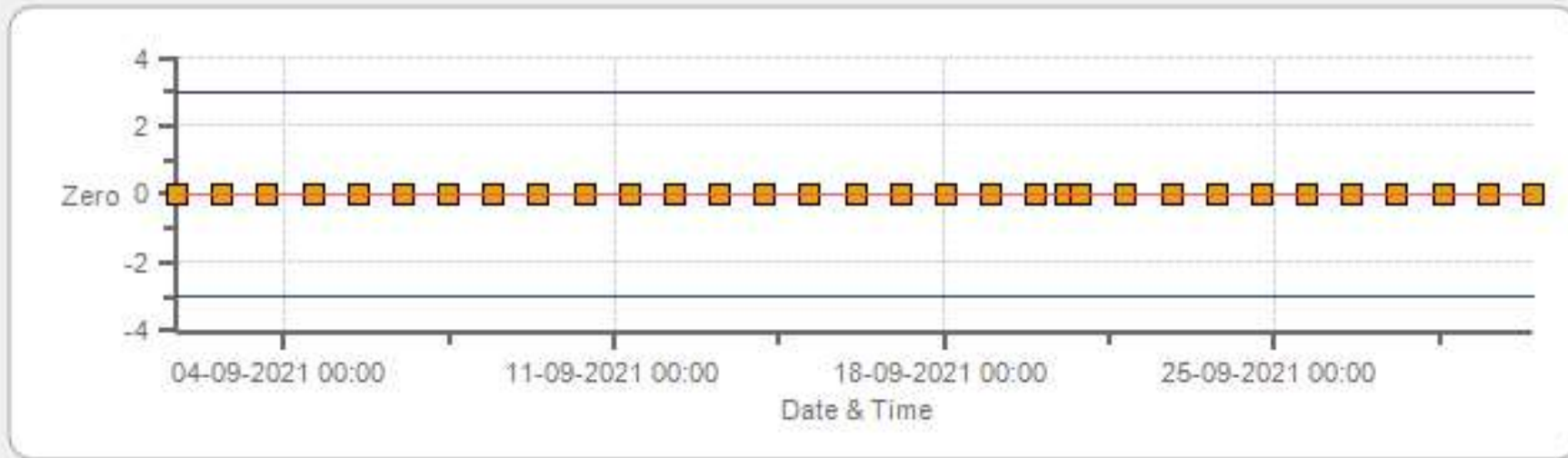
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: Tamarack Monthly: 09-2021 Type: SpanAndZero - Span



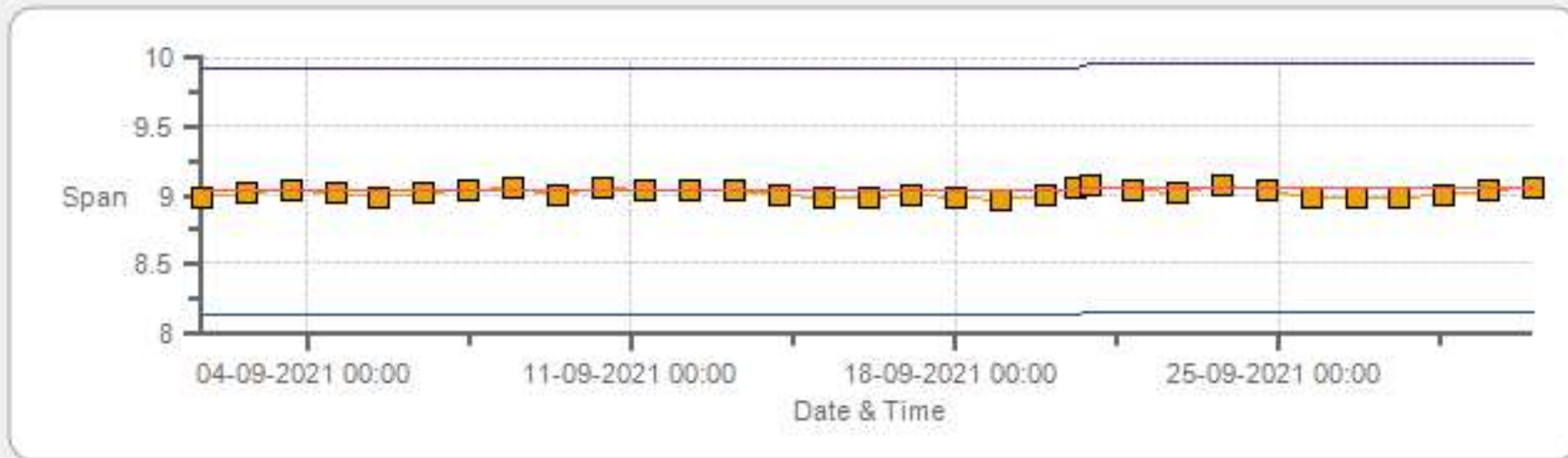
Span SpanRef Span Low Span High

CH4[ppm] Calibration: Tamarack Monthly: 09-2021 Type: SpanAndZero - Zero



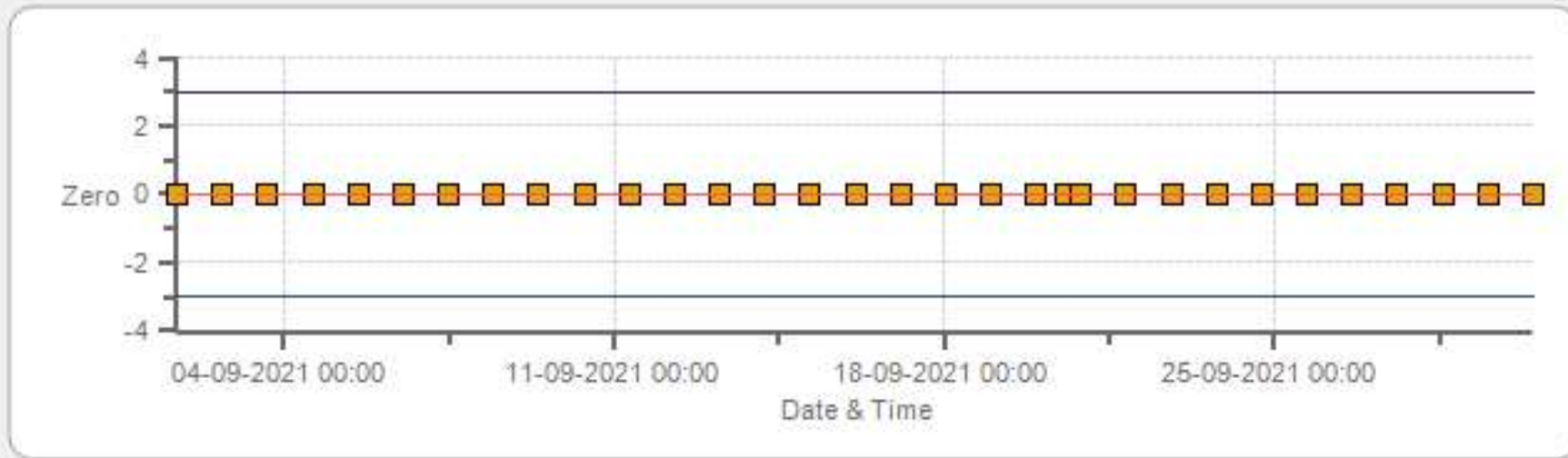
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: Tamarack Monthly: 09-2021 Type: SpanAndZero - Span



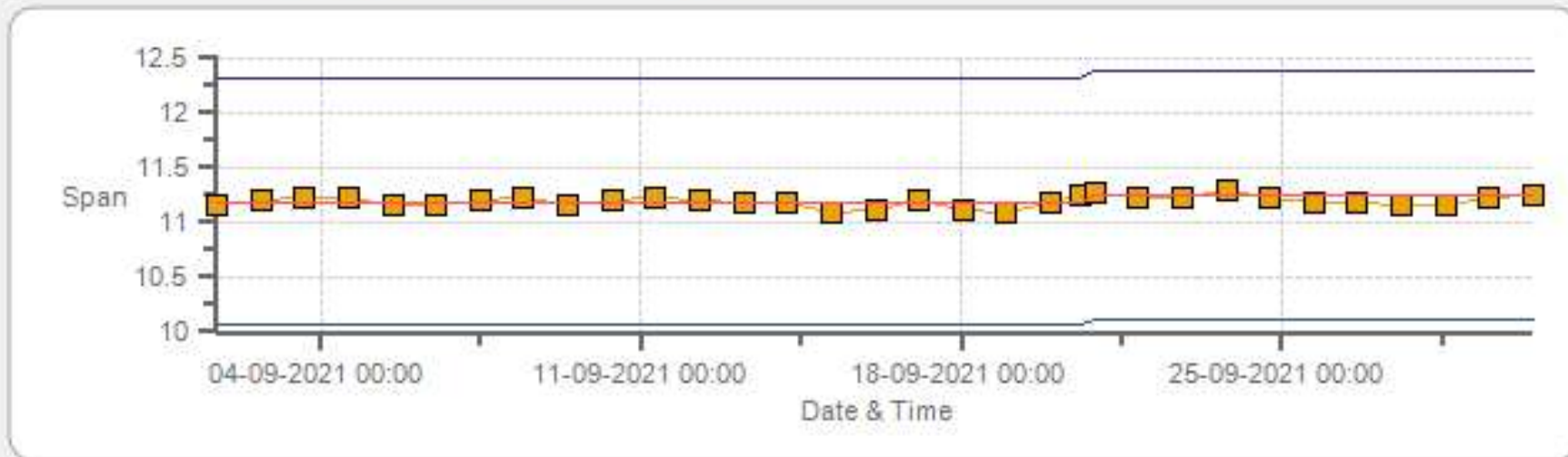
Span SpanRef Span Low Span High

NMHC[ppm] Calibration: Tamarack Monthly: 09-2021 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: Tamarack Monthly: 09-2021 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution



DATE:	21-Sep-2021	PREVIOUS CALIBRATION DATE:	18-Aug-2021
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	938
PURPOSE:	Routine	START TIME (MST):	09:49
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:38

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930031	FLOW (mL/min)	451
INITIAL		FINAL	
BKG/OFFSET	2.51	BKG/OFFSET	2.54
COEF/SLOPE	0.95	COEF/SLOPE	0.962
Expected (reference) Value	190.1	Expected (reference) Value	190.3

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	09-Apr-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):	1700	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	-0.1	0	1.019	0.997
4962	38.50	5000	391.16	383.6	392.2	1.019	0.997
4982	18.00	5000	182.88	n/a	182.3	n/a	1.003
4991	9.00	5000	91.44	n/a	90.6	n/a	1.009

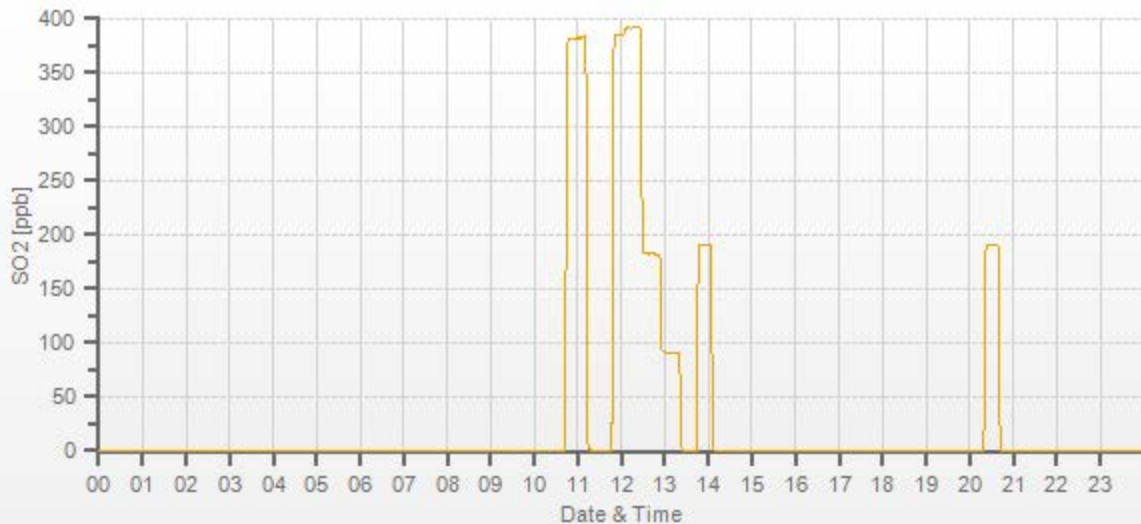
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.003	-0.1%

COMMENTS:

Sample inlet filter was changed.

SO2[ppb] Station: Tamarack Daily: 21-09-2021 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202109-01248

H2S Analyzer Calibration by Dilution



DATE:	20-Sep-2021	PREVIOUS CALIBRATION DATE:	18-Aug-2021
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	1.004
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	939
PURPOSE:	Routine	START TIME (MST):	09:56
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:38

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 17360005	FLOW (mL/min)	937
INITIAL		FINAL	
BKG/OFFSET	27.8	BKG/OFFSET	28.7
COEF/SLOPE	0.802	COEF/SLOPE	0.801
Expected (reference) Value	54.6	Expected (reference) Value	45.7

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 19174	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	300	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:	09:58	SO2 Conc (ppb)	380
END TIME:	10:13	Analyzer Response (ppb)	0.0

CALIBRATION:

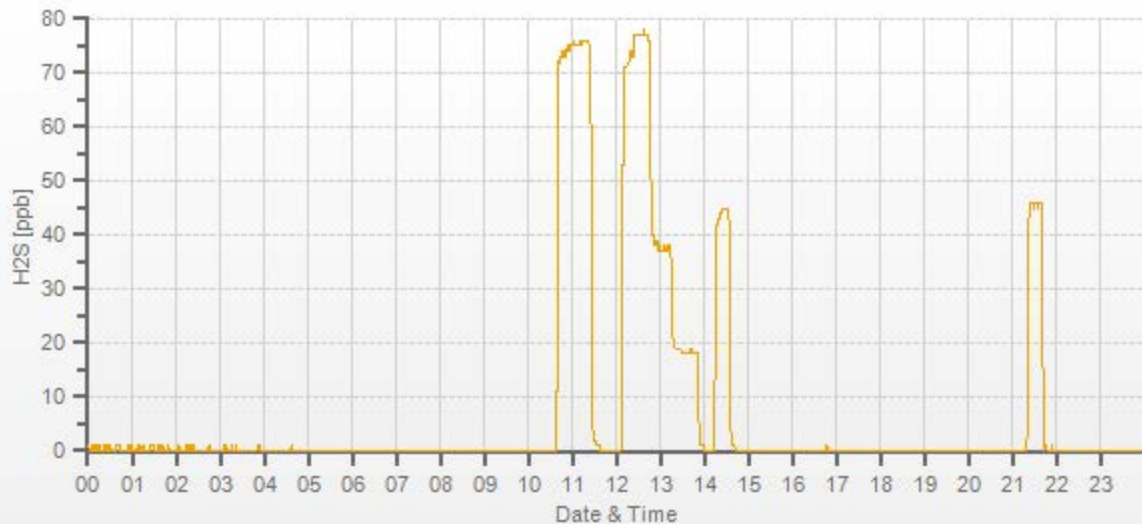
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	58.50	7500	0.00	0.2	0	1.025	0.999
7442	58.50	7500	78.00	76.3	78.1	1.025	0.999
7472	28.50	7500	38.00	n/a	38.1	n/a	0.997
7486	14.20	7500	18.93	n/a	19.3	n/a	0.981

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	0.1%

COMMENTS:

Sample inlet filter was changed.



NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	21-Sep-2021	PREVIOUS CALIBRATION DATE:	28-Aug-2021	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1180930028	NOx	1.000
LOCATION:	Tamarack	BAROMETRIC (mBar):	938	FLOW (mL/min)	933	NO	1.001
PURPOSE:	Routine	START TIME (MST):	09:51	RANGE (ppb)	500	NO2	1.002
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:27	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):	1700	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Apr-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:	1.5	1.5	n/a	BKG/OFFSET:	1.5	1.4	n/a
SLOPE/COEF/CE:	1.001	0.513	1.008	SLOPE/COEF/CE:	1.003	0.5	0.999

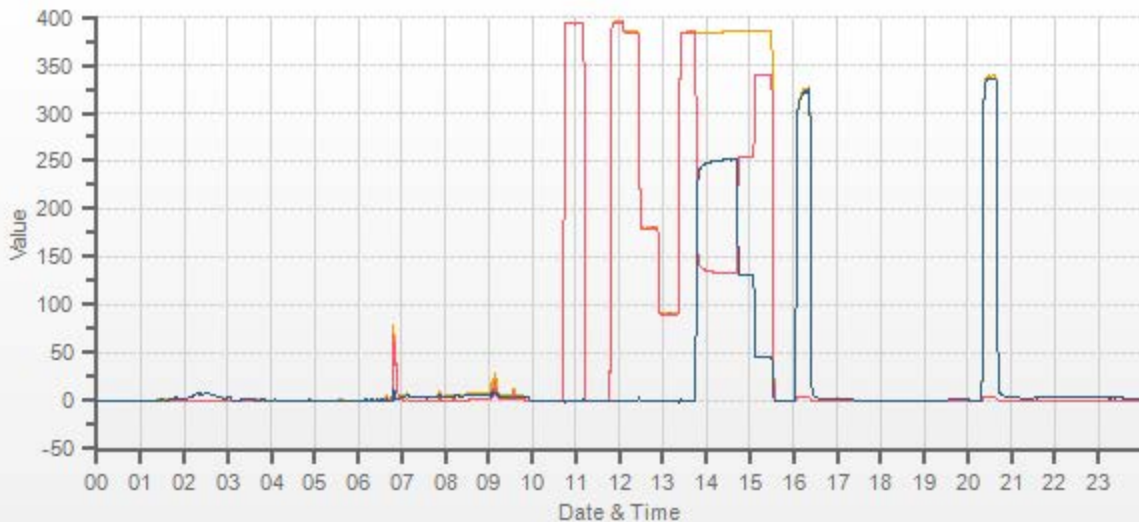
EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	347.6	3.7	343.9		325.8	3.7	322.1

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	0.0	0.0	0.0	0.0	0.0	0.980	0.979	0.999	1.003	1.001	0.999
4962	38.50	5000	385.0	385.8	0.8	392.9	394.1	1.2	384.0	385.5	1.5	0.980	0.979	0.999	1.003	1.001	0.999
4982	18.00	5000	180.0	180.4	0.4	n/a	n/a	n/a	181.4	181.0	0.4	n/a	n/a	0.999	0.992	0.996	0.999
4991	9.00	5000	90.0	90.2	0.2	n/a	n/a	n/a	90.5	90.7	0.2	n/a	n/a	0.999	0.994	0.994	0.999

Point	CALIBRATOR			INDICATED (ppb)			NO DROP / O3 Conc (ppb)	NO2 GAIN (ppb)	NO2 Corr. FACTOR	CONV. EFFICIENCY
	GAS	TOTAL	O3 SETPOINT	NO	NOx	NO2				
REFERENCE	38.50	5000	0	384.0	385.5	1.4	250.1	248.5	1.006	99.36%
AS-FOUND HIGH	38.50	5000	240	133.9	383.8	249.9	250.1	248.5	1.006	99.36%
ADJUSTED HIGH	38.50	5000	240	133.6	385.8	252.2	250.4	250.8	0.998	100.16%
MID	38.50	5000	125	253.9	386.3	132.4	130.1	131	0.993	100.69%
LOW	38.50	5000	45	340.1	386.0	45.9	43.9	44.5	0.987	101.37%
NO2 adjustment not required.									AVERAGE:	100.47%

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	0.997	0.14%	
NOx	1.000	0.999	0.08%	
NO2	1.000	0.989	0.31%	



CAL-LICA-202109-01248

Ozone Calibration by Photometer (Varying UV Lamp)



DATE:	15-Sep-2021	PREVIOUS CALIBRATION DATE:	19-Aug-2021
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	924
PURPOSE:	Removal/Shut-down	START TIME (MST):	14:43
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:49

ANALYZER:

MAKE/MODEL	API 400A	RANGE	500 ppb
SERIAL #	445	FLOW (mL/min)	805
INITIAL		FINAL	
BKG/OFFSET	-1.9	BKG/OFFSET	n/a
COEF/SLOPE	1.026	COEF/SLOPE	n/a
Expected (reference) Value	345.9	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:	09-Apr-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:

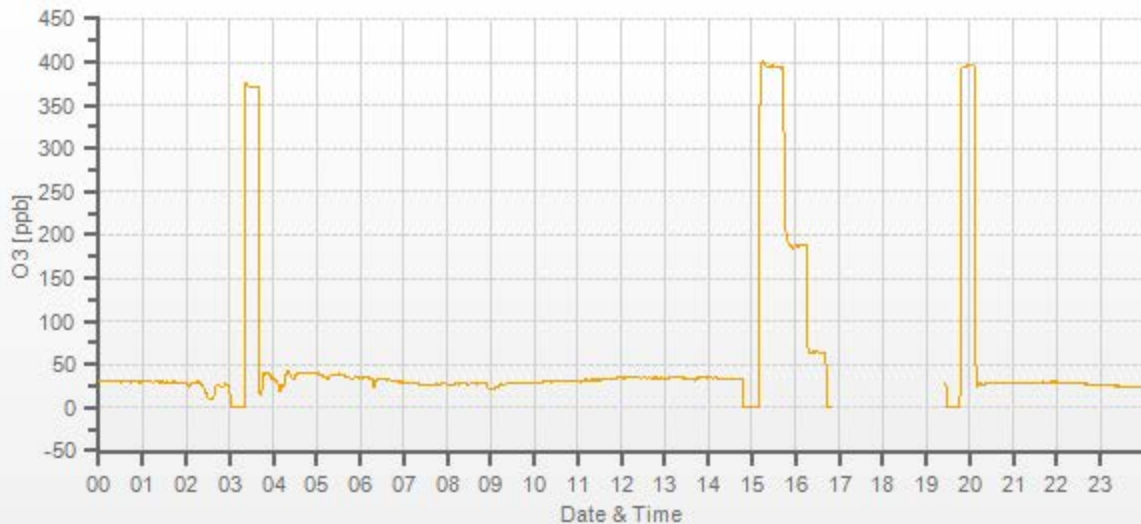
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	5000	5000	0.0	-0.3	n/a	0.959	n/a
5000	5000	5000	378.0	394.0	n/a	0.959	n/a
5000	5000	5000	180.0	188.1	n/a	0.955	n/a
5000	5000	5000	61.0	63.7	n/a	0.953	n/a

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.043	0.0%

COMMENTS:

Shutdown calibration was completed to install a LICA analyzer, which came back after a factory repair.



Ozone Calibration by Photometer (Varying UV Lamp)



DATE:	16-Sep-2021	PREVIOUS CALIBRATION DATE:	n/a
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	n/a
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	Tamarack	BAROMETRIC (mBar):	924
PURPOSE:	Install/Post-Repair	START TIME (MST):	08:48
PERFORMED BY:	Alex Yakupov	END TIME (MST):	11:58

ANALYZER:

MAKE/MODEL	Thermo 49iQ	RANGE	500 ppb
SERIAL #	1202068570	FLOW (mL/min)	1340
INITIAL		FINAL	
BKG/OFFSET	n/a	BKG/OFFSET	3
COEF/SLOPE	n/a	COEF/SLOPE	1.03
Expected (reference) Value	n/a	Expected (reference) Value	394

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	09-Apr-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	5000	5000	0.0	n/a	0.0	n/a	n/a
5000	5000	5000	378.0	n/a	377.6	n/a	1.001
5000	5000	5000	180.0	n/a	179.6	n/a	1.002
5000	5000	5000	61.0	n/a	62.8	n/a	0.971

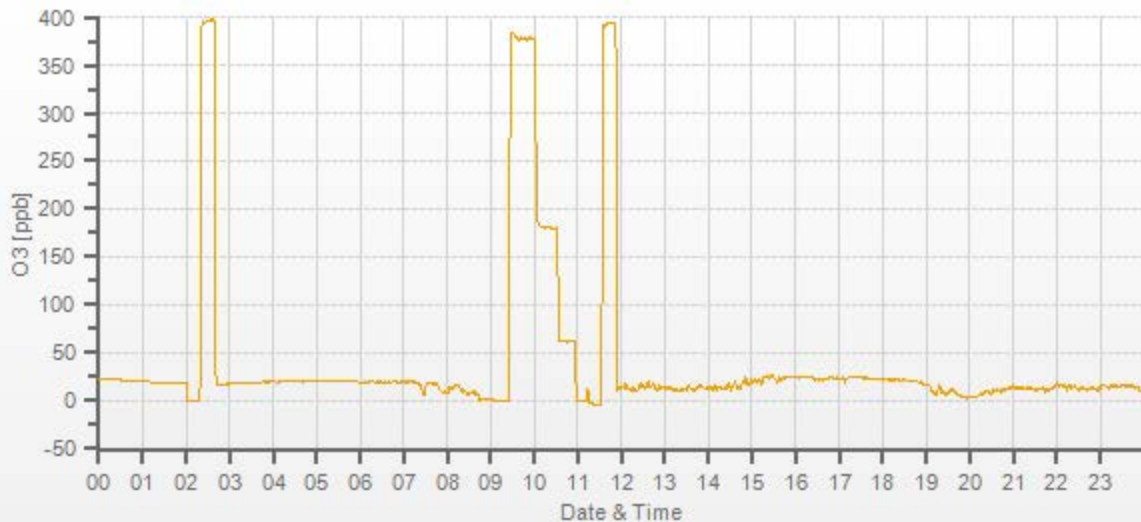
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.997	0.1%

COMMENTS:

The analyzer was installed following factory repair. Sample inlet filter was changed.

O3[ppb] Station: Tamarack Daily: 16-09-2021 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202109-01248

Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	20-Sep-2021	PREVIOUS CALIBRATION DATE:	19-Aug-2021	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.0		Thermo 55i	1314057759	1015
LOCATION:	Tamarack	BAROMETRIC (mBar):	939	PARAMETER:	CH4	NMHC	THC
PURPOSE:	Routine	START TIME (MST):	09:58	RANGE (ppm):	20	20	40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:07	PREVIOUS CF:	1.000	0.999	0.999

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):	1000	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Apr-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
	9.03	11.19	20.22		9.06	11.25	20.22

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	14.53	13.42	27.96	14.56	13.48	28.04	1.002	1.002	1.002	1.000	0.998	0.999
3075	24.70	3100	7.28	6.73	14.01	n/a	n/a	n/a	7.26	6.71	13.98	n/a	n/a	n/a	1.003	1.002	1.002
3088	12.40	3100	3.66	3.38	7.03	n/a	n/a	n/a	3.60	3.33	6.93	n/a	n/a	n/a	1.016	1.014	1.015

LINEAR REGRESSION ANALYSIS:

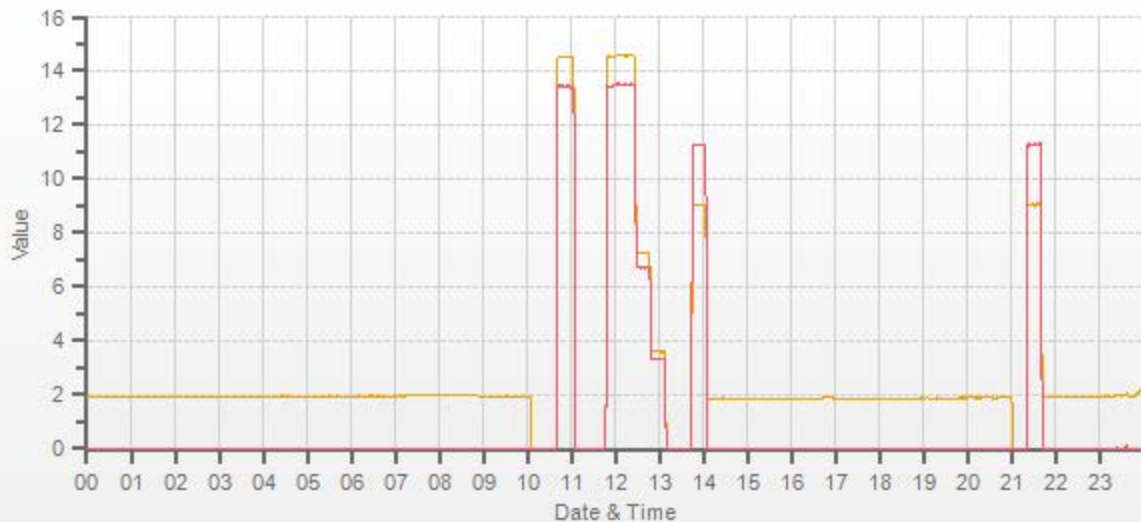
	CORRELATION	SLOPE	INTERCEPT
CH ₄	1.000	1.001	-0.1%
NMHC	1.000	1.003	-0.1%
THC	1.000	1.002	-0.1%

Comments:

Sample inlet filter was changed.

Use Zero Chrom?

Yes





Meteorological Sensor Audit/Calibration

Location Information

Company: LICA Performed By: Alex Yakupov
 Audit Location: Maskwa Reviewed By: Chris Wesson
 Audit Date: September 10, 2020 Start/End Time (mst): 14:51 / 17:06
 Calibration Purpose: routine annual Weather Conditions: Mix of sun and clouds

Wind Sensor Information

Sensor ID Data:		Sensor Outputs:	
Sensor Make:	RM Young	Velocity Voltage Output Range:	0-1
Sensor Model:	05305VK	Velocity Unit Output Range:	0-200
Serial #:	161465	Direction Voltage Output Range:	0-1
Previous Cal/Audit Date:	September 19, 2019	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	0.0	0.0	-
1000	18.4	18.5	18.5	0.996
2000	36.9	36.9	36.9	0.999
3000	55.3	55.4	55.4	0.998
4000	73.7	73.9	73.9	0.998
5000	92.2	92.4	92.5	0.997
6000	110.6	111.0	111.0	0.996
7000	129.0	129.5	129.5	0.996
8000	147.4	148.1	148.1	0.996
9000	165.9	166.7	166.7	0.995
10000	184.3	185.2	185.2	0.995
The audit meets AMD requirements.			Average Correction Factor=	0.997

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

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	1	355	1.1	-0.1	0.6
30	330	32	330	-2.1	-0.4	1.2
60	300	64	301	-3.8	-1.0	2.4
90	270	93	272	-3.0	-1.9	2.4
120	240	123	243	-2.7	-2.7	2.7
150	210	152	213	-2.0	-3.2	2.6
180	180	183	183	-3.3	-3.1	3.2
210	150	212	153	-1.8	-3.2	2.5
240	120	241	124	-1.3	-3.7	2.5
270	90	271	94	-0.8	-4.0	2.4
300	60	300	65	0.1	-4.6	2.4
330	30	330	34	-0.4	-4.1	2.2
355	0	355	2	-0.1	1.5	0.8
The audit meets AMD requirements.				Average Absolute Degrees Difference=		2.2

Comments:

n/a



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

SEPTEMBER 2021

Ambient Air Monitoring Calibration Report

- ST. LINA STATION-

CAL-LICA-202109-01250

Station Operation and Maintenance:

Bureau Veritas Canada

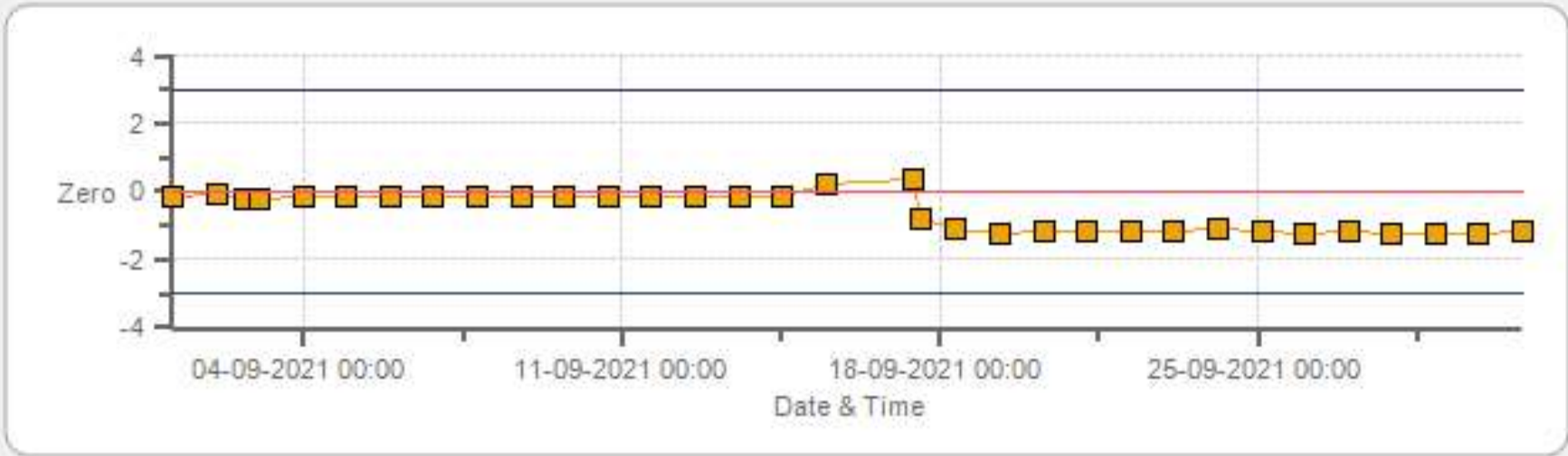
Data Validation and Report:

LICA / Bureau Veritas Canada

October 20, 2021

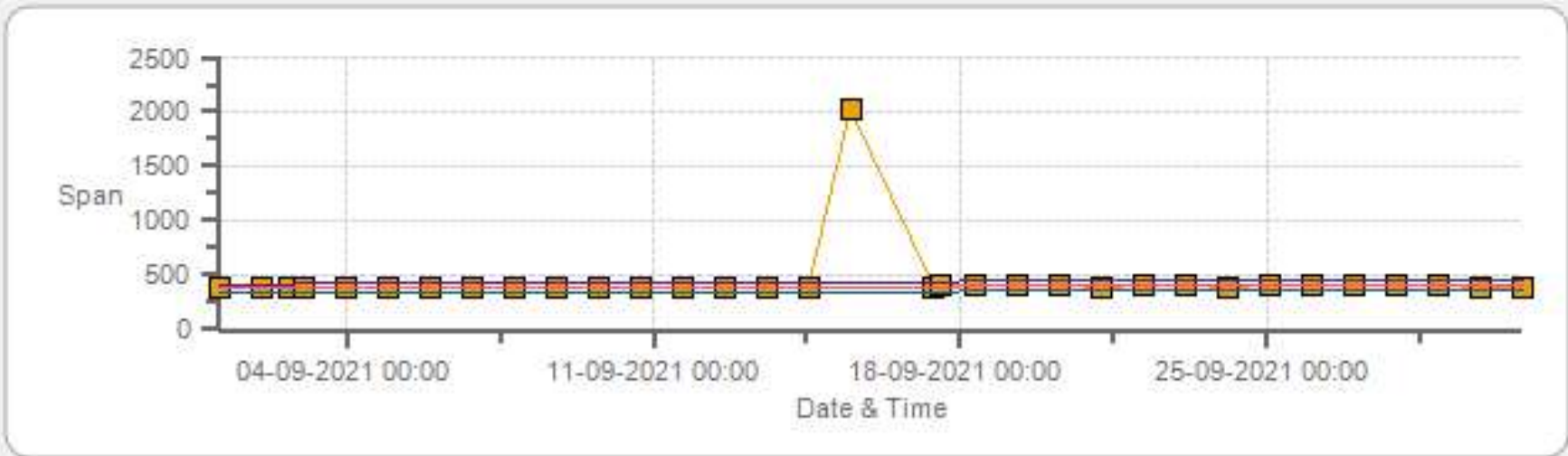
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2[ppb] Calibration: St. Lina Monthly: 09-2021 Type: SpanAndZero - Zero



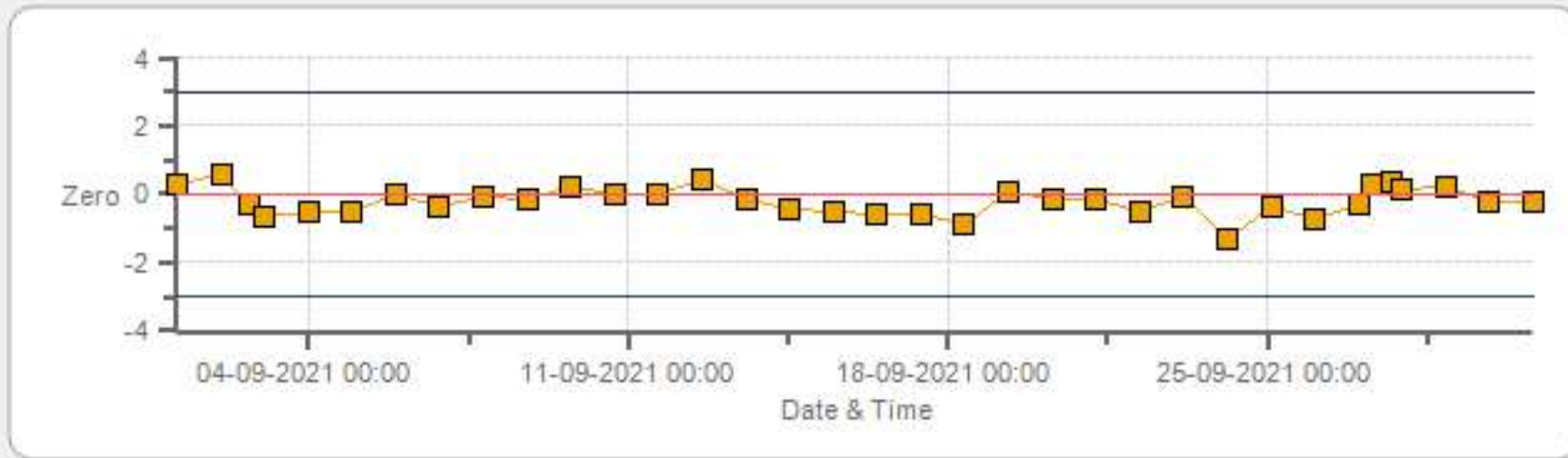
Zero Zero Ref Zero Low Zero High

SO2[ppb] Calibration: St. Lina Monthly: 09-2021 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

H2S[ppb] Calibration: St. Lina Monthly: 09-2021 Type: SpanAndZero - Zero



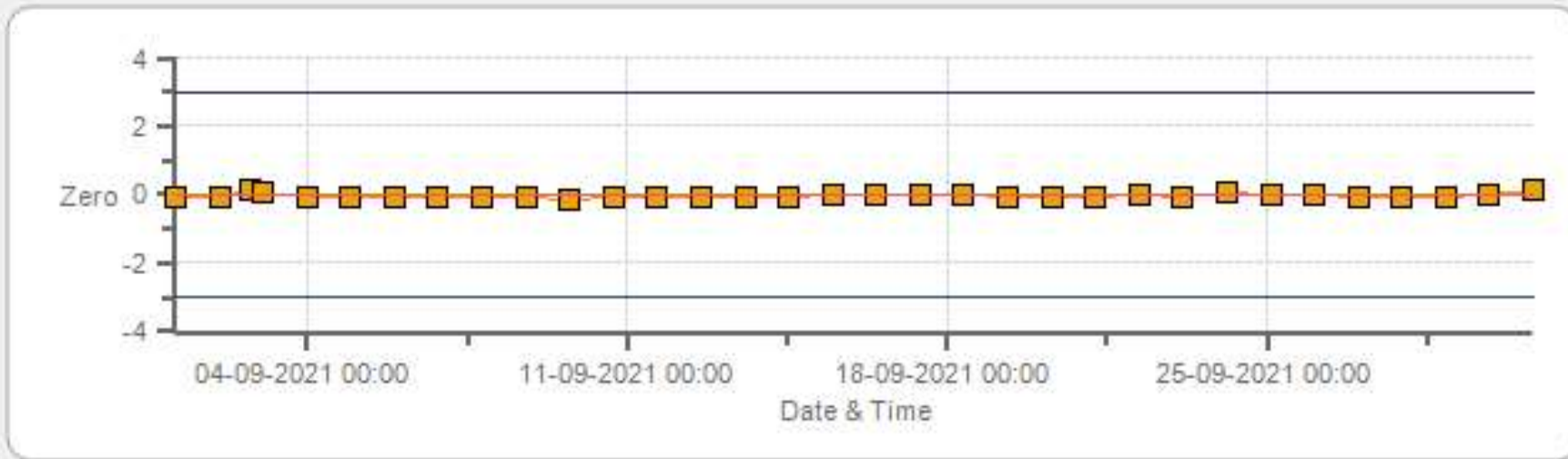
Zero Zero Ref Zero Low Zero High

H2S[ppb] Calibration: St. Lina Monthly: 09-2021 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

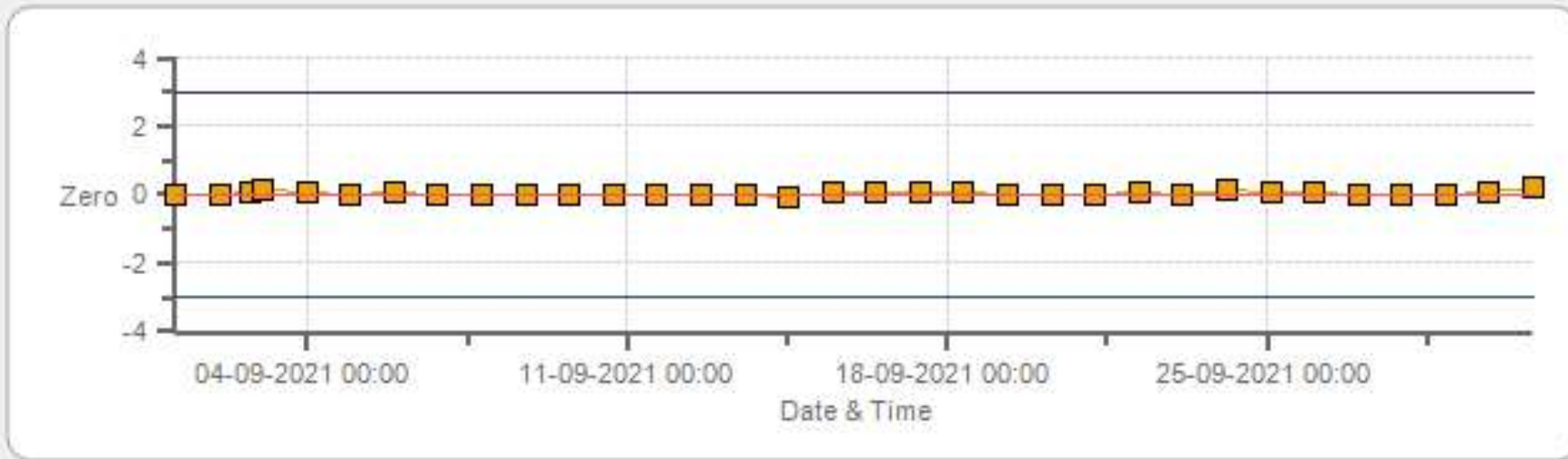
NOX[ppb] Calibration: St. Lina Monthly: 09-2021 Type: SpanAndZero - Zero



NOX[ppb] Calibration: St. Lina Monthly: 09-2021 Type: SpanAndZero - Span



NO2[ppb] Calibration: St. Lina Monthly: 09-2021 Type: SpanAndZero - Zero



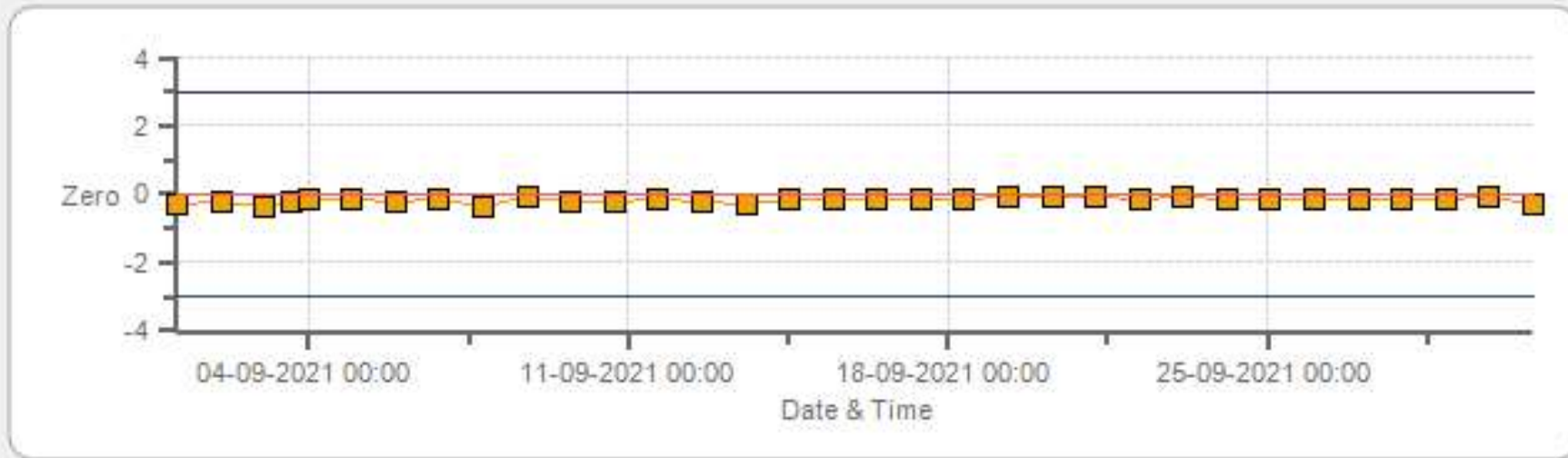
Zero Zero Ref Zero Low Zero High

NO2[ppb] Calibration: St. Lina Monthly: 09-2021 Type: SpanAndZero - Span



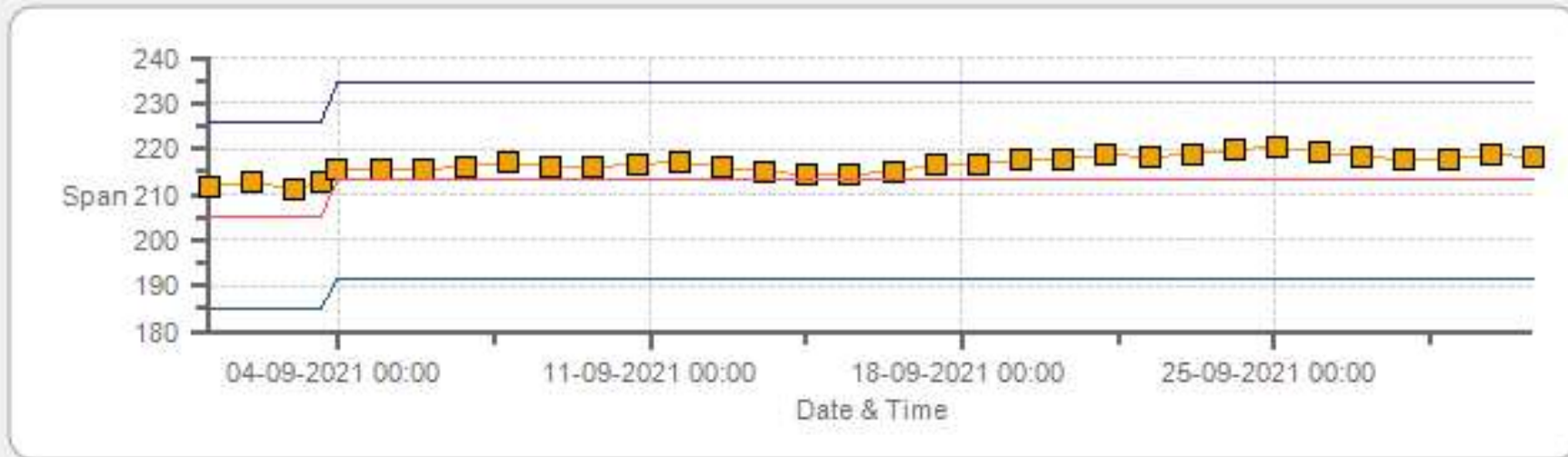
Span SpanRef Span Low Span High

O3[ppb] Calibration: St. Lina Monthly: 09-2021 Type: SpanAndZero - Zero



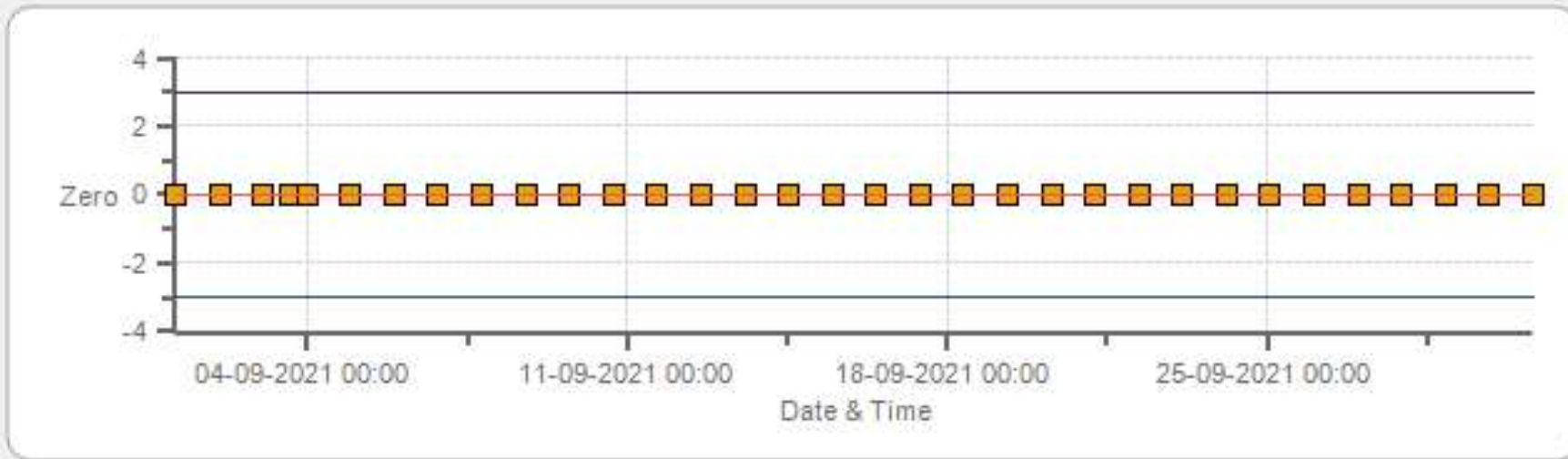
Zero Zero Ref Zero Low Zero High

O3[ppb] Calibration: St. Lina Monthly: 09-2021 Type: SpanAndZero - Span



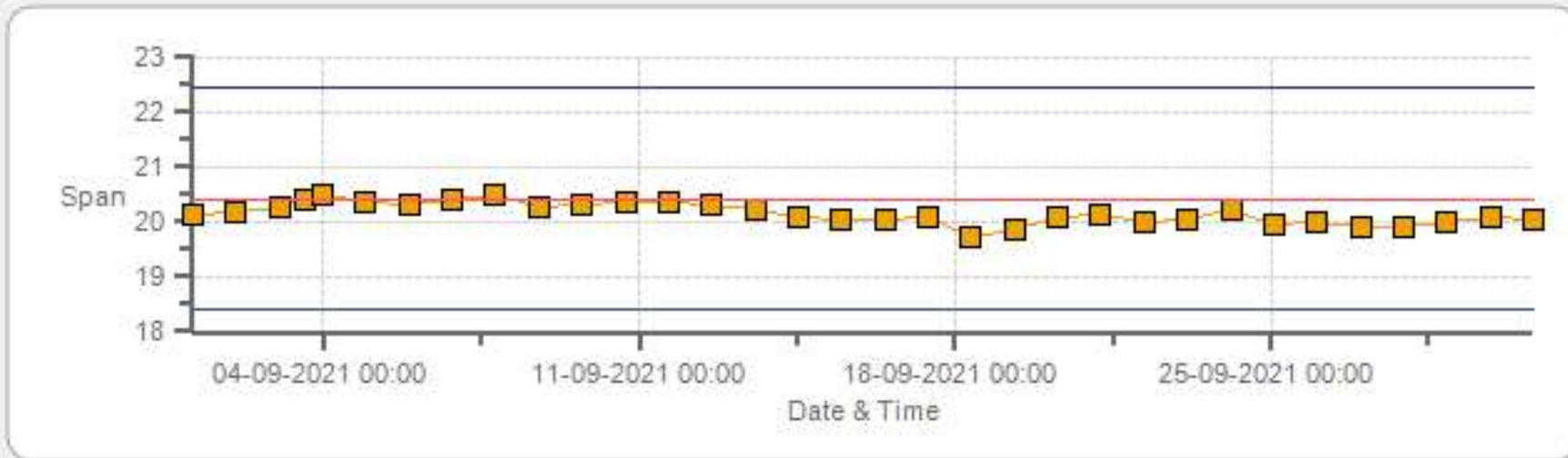
Span Span Ref Span Low Span High

THC55[ppm] Calibration: St. Lina Monthly: 09-2021 Type: SpanAndZero - Zero



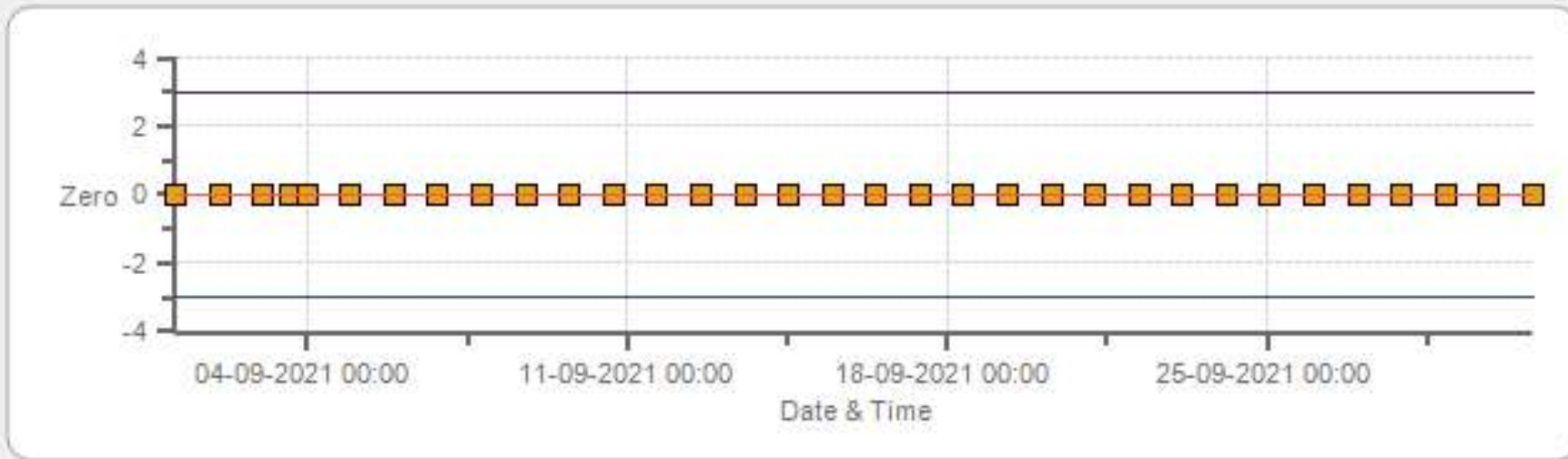
Zero Zero Ref Zero Low Zero High

THC55[ppm] Calibration: St. Lina Monthly: 09-2021 Type: SpanAndZero - Span



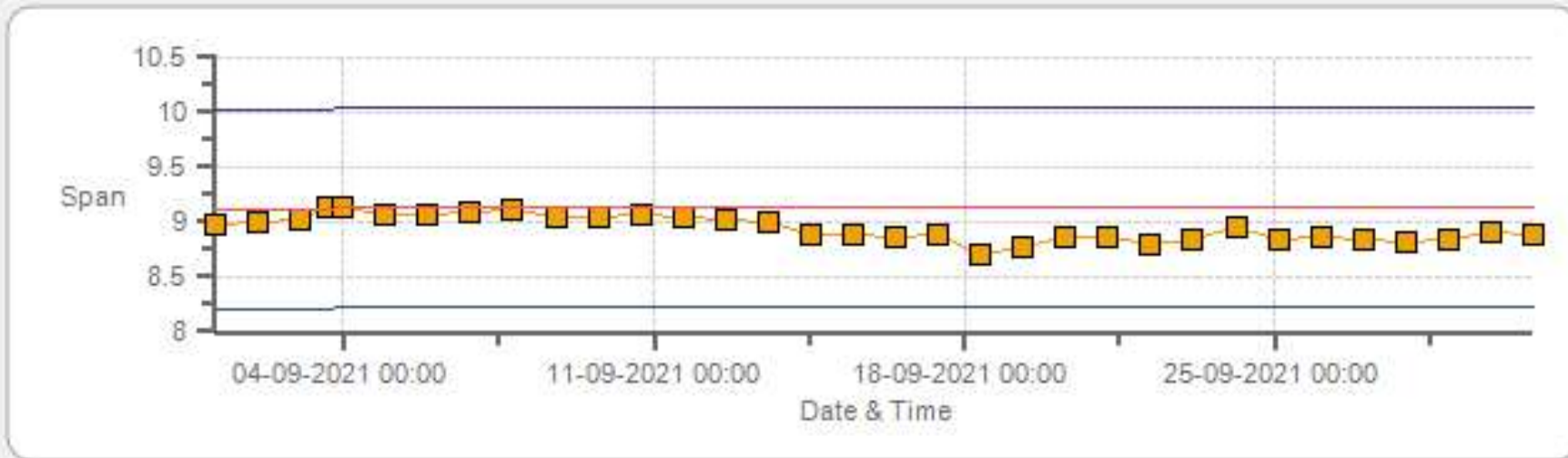
Span SpanRef Span Low Span High

CH4[ppm] Calibration: St. Lina Monthly: 09-2021 Type: SpanAndZero - Zero



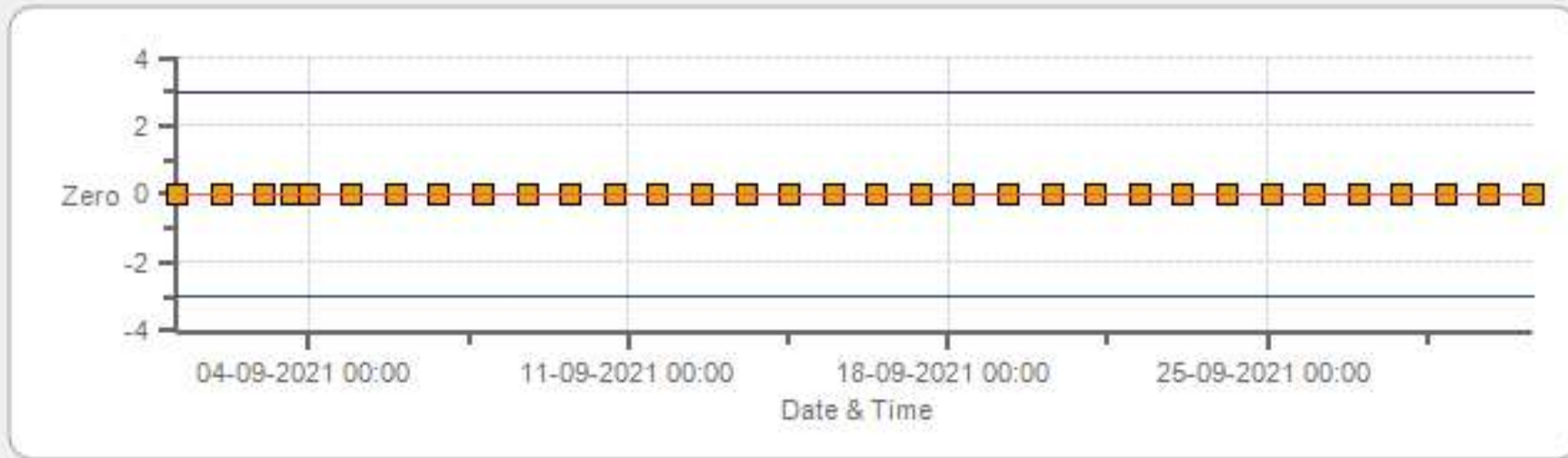
Zero Zero Ref Zero Low Zero High

CH4[ppm] Calibration: St. Lina Monthly: 09-2021 Type: SpanAndZero - Span



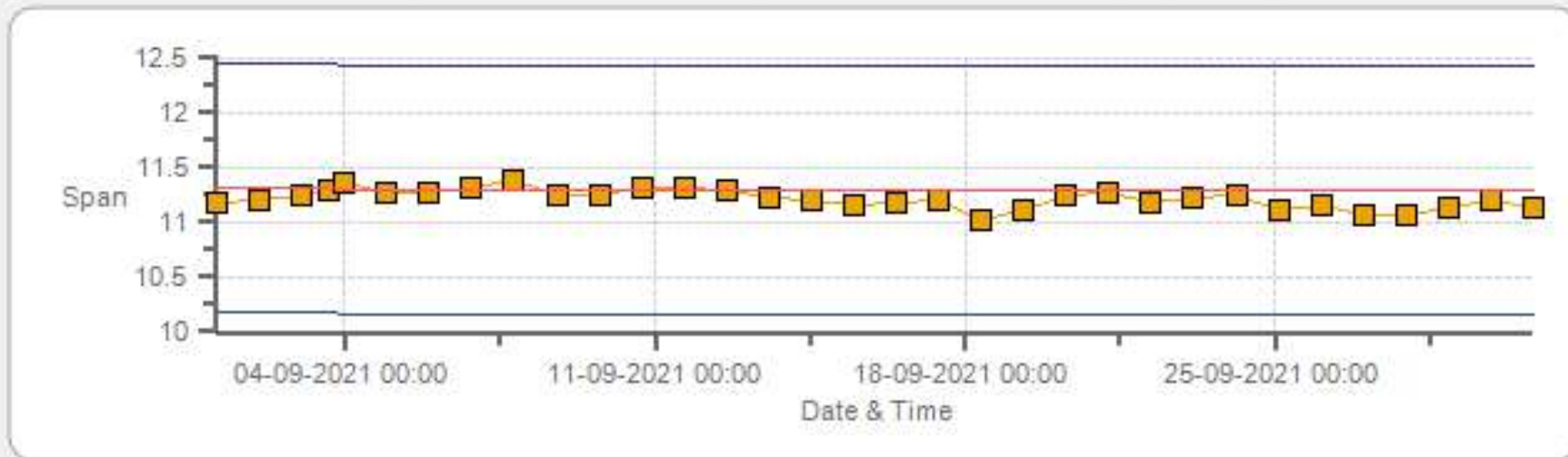
Span Span Ref Span Low Span High

NMHC[ppm] Calibration: St. Lina Monthly: 09-2021 Type: SpanAndZero - Zero



Zero Zero Ref Zero Low Zero High

NMHC[ppm] Calibration: St. Lina Monthly: 09-2021 Type: SpanAndZero - Span



Span SpanRef Span Low Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution



DATE:	02-Sep-2021	PREVIOUS CALIBRATION DATE:	11-Aug-2021
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.996
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	917
PURPOSE:	Routine	START TIME (MST):	11:52
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:28

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930030	FLOW (mL/min)	421
INITIAL		FINAL	
BKG/OFFSET	4.15	BKG/OFFSET	4.33
COEF/SLOPE	1.119	COEF/SLOPE	1.142
Expected (reference) Value	381.4	Expected (reference) Value	390.3

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	09-Apr-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):	1700	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	-0.1	0	1.018	0.995
4959	38.50	4997	391.39	384.2	393.2	1.018	0.995
4981	18.00	4999	182.92	n/a	180.4	n/a	1.014
4990	9.00	4999	91.46	n/a	89.1	n/a	1.026

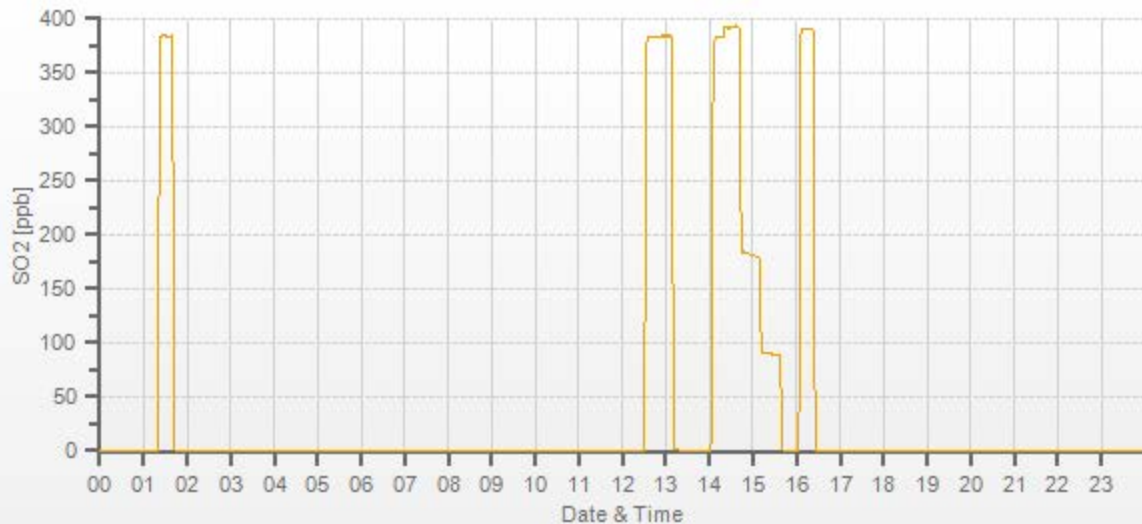
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.006	-0.4%

COMMENTS:

Sample inlet filter was changed.

SO2[ppb] Station: St. Lina Daily: 02-09-2021 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202109-01250

SO2 Analyzer Calibration by Dilution



DATE:	17-Sep-2021	PREVIOUS CALIBRATION DATE:	n/a
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	n/a
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	914
PURPOSE	Install/Post-Repair	START TIME (MST):	10:25
PERFORMED BY:	Alex Yakupov	END TIME (MST):	13:45

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	500 ppb
SERIAL #	1180930030	FLOW (mL/min)	435
INITIAL		FINAL	
BKG/OFFSET	n/a	BKG/OFFSET	5.69
COEF/SLOPE	n/a	COEF/SLOPE	1.205
Expected (reference) Value	n/a	Expected (reference) Value	412.4

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	132
MFC CALIBRATION DATE:	09-Apr-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):	1700	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	n/a	0	n/a	0.998
4959	38.50	4997	391.39	n/a	392.3	n/a	0.998
4981	18.00	4999	182.92	n/a	183.8	n/a	0.995
4990	9.00	4999	91.46	n/a	91.4	n/a	1.001

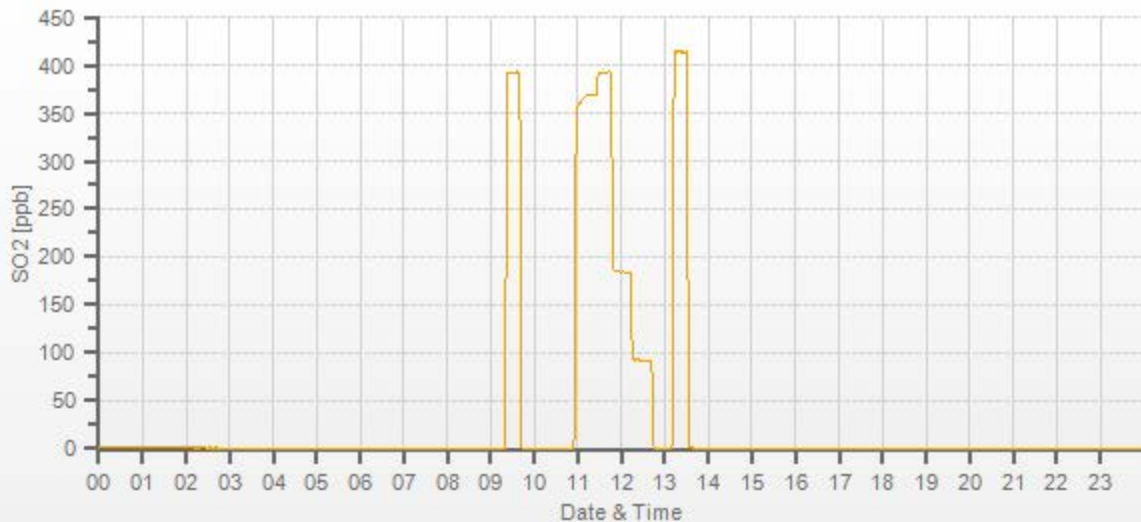
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.003	0.0%

COMMENTS:

Post-repair calibration was completed following the sample pump repair. No shutdown calibration was possible because of the sample flow was 0.0 lpm

SO2[ppb] Station: St. Lina Daily: 17-09-2021 Type: AVG 1 Min. [1 Min.]



CAL-LICA-202109-01250

H2S Analyzer Calibration by Dilution



DATE:	02-Sep-2021	PREVIOUS CALIBRATION DATE:	11-Aug-2021
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	1.001
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	917
PURPOSE:	Routine	START TIME (MST):	11:49
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:28

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 18010058	FLOW (mL/min)	812
INITIAL		FINAL	
BKG/OFFSET	57.8	BKG/OFFSET	57.6
COEF/SLOPE	0.863	COEF/SLOPE	0.853
Expected (reference) Value	46.4	Expected (reference) Value	50.9

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 19174	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	300	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:	11:54	SO2 Conc (ppb)	380
END TIME:	12:09	Analyzer Response (ppb)	0.0

CALIBRATION:

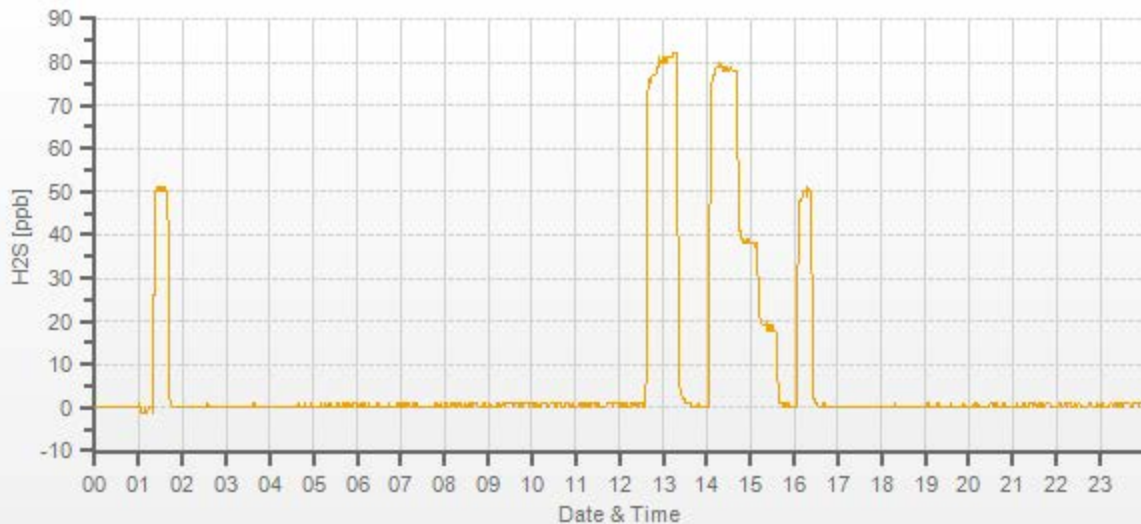
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	7500	7500	0.00	0.5	-0.1	0.969	1.005
7442	58.50	7500	78.00	81	78.2	0.969	0.996
7472	28.50	7500	38.00	n/a	37.7	n/a	1.005
7486	14.30	7500	19.07	n/a	18.4	n/a	1.031

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.006	-0.4%

COMMENTS:

Sample inlet filter was changed.



H2S Analyzer Calibration by Dilution



DATE:	27-Sep-2021	PREVIOUS CALIBRATION DATE:	02-Sep-2021
PARAMETER:	H2S	PREVIOUS CORRECTION FACTOR:	0.996
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	905
PURPOSE:	Routine	START TIME (MST):	12:23
PERFORMED BY:	Alex Yakupov	END TIME (MST):	16:55

ANALYZER:

MAKE/MODEL	Thermo 450i	RANGE	100 ppb
SERIAL #	CM 18010058	FLOW (mL/min)	805
INITIAL		FINAL	
BKG/OFFSET	57.6	BKG/OFFSET	57.5
COEF/SLOPE	0.853	COEF/SLOPE	0.848
Expected (reference) Value	50.9	Expected (reference) Value	56.3

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	09-Apr-2021	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL 19174	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	250	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:

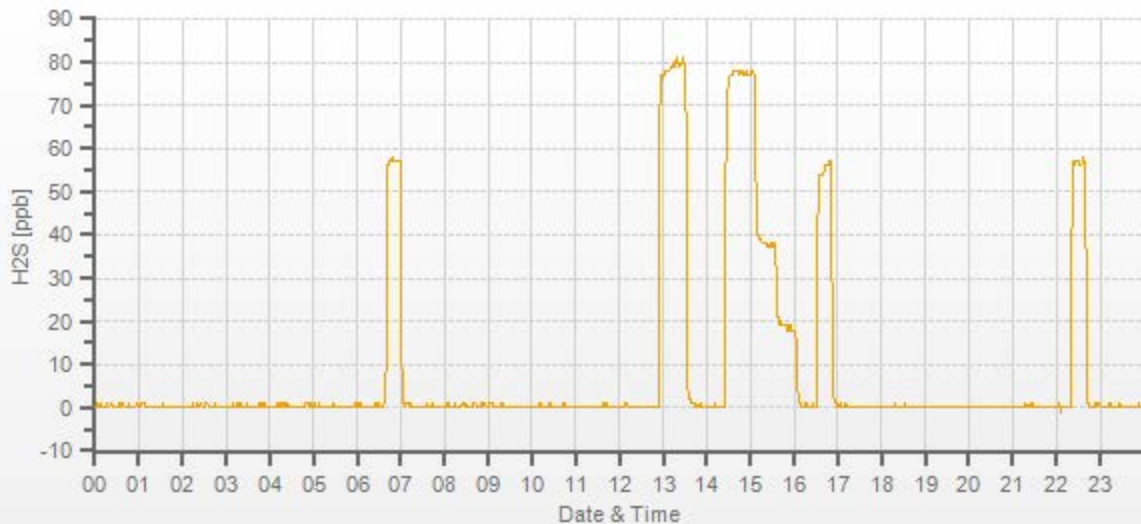
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7500	58.50	7500	0.00	-0.1	-0.1	0.973	1.003
7442	58.50	7500	78.00	80.1	77.7	0.973	1.003
7472	28.50	7500	38.00	n/a	37.4	n/a	1.013
7486	14.30	7500	19.07	n/a	18.3	n/a	1.036

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	-0.4%

COMMENTS:

Repeat calibration was completed to correct the EV drift.



NOx Calibration by Dilution/Gas-Phase Titration



CALIBRATION:				ANALYZER:			
DATE:	02-Sep-2021	PREVIOUS CALIBRATION DATE:	14-Jul-2021	MAKE/MODEL:	Thermo 42i	PREVIOUS CF.	
CLIENT:	LICA	TEMPERATURE (°C):	22.0	SERIAL #:	1180930029	NOx	0.999
LOCATION:	St. Lina	BAROMETRIC (mBar):	917	FLOW (mL/min)	821	NO	1.000
PURPOSE:	Routine	START TIME (MST):	11:54	RANGE (ppb)	500	NO2	1.003
PERFORMED BY:	Alex Yakupov	END TIME (MST):	18:13	GPT FOR O3?		No	

CALIBRATION SYSTEM:							
CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:		FLOWMETERS (if applicable):	
MAKE:	SABIO	MAKE:	Teledyne	CYLINDER ID:	LL 105146	HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.0 50.1	HIGH EXPIRY:	n/a
ID:	26801218	ID:	132	CYLINDER (psi):	1700	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Apr-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	3.9	n/a	BKG/OFFSET:	4	3.9	n/a
SLOPE/COEF/CE:	1.003	0.83	1.002	SLOPE/COEF/CE:	0.999	0.845	1.002

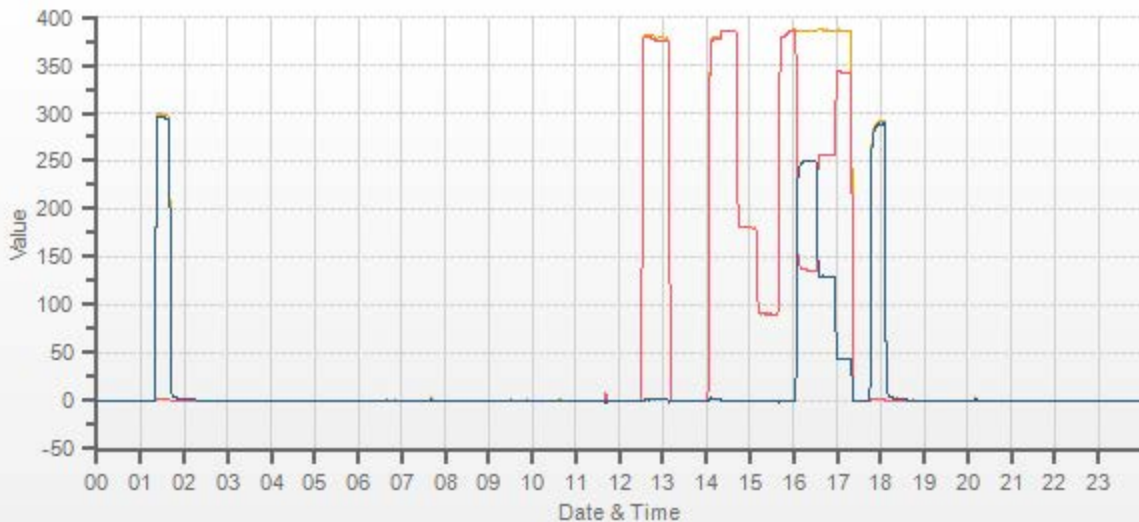
EXPECTED (REFERENCE) VALUE:							
INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	294.4	2.6	291.8		291.7	3.0	288.7

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	0.0	0.1	0.0	0.0	0.0	1.025	1.019	0.997	1.001	1.001	0.998
4959	38.50	4997	385.2	386.0	0.8	375.9	378.9	3.0	385.0	385.6	0.9	1.025	1.019	0.997	1.001	1.001	0.998
4981	18.00	4999	180.0	180.4	0.4	n/a	n/a	n/a	180.5	180.8	0.3	n/a	n/a	0.997	0.998	0.998	0.998
4990	9.00	4999	90.0	90.2	0.2	n/a	n/a	n/a	90.4	90.5	0.1	n/a	n/a	0.996	0.997	0.997	0.997

Point	CALIBRATOR			INDICATED (ppb)			NO DROP / O3 Conc (ppb)	NO2 GAIN (ppb)	NO2 Corr. FACTOR	CONV. EFFICIENCY
	GAS	TOTAL	O3 SETPOINT	NO	NOx	NO2				
REFERENCE	38.50	4997	0	385.2	385.7	0.6	249.2	249.6	0.998	100.16%
AS-FOUND HIGH	38.50	4997	240	136.0	386.2	250.2	249.2	249.6	0.998	100.16%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MID	38.50	4997	125	256.0	385.8	129.8	129.2	129.2	1.000	100.00%
LOW	38.50	4997	45	341.9	385.8	43.9	43.3	43.3	1.000	100.00%
NO2 adjustment not required.									AVERAGE:	100.05%

LINEAR REGRESSION ANALYSIS:				COMMENTS:
	CORRELATION	SLOPE	INTERCEPT	
NO	1.000	0.999	0.06%	
NOx	1.000	0.999	0.06%	
NO2	1.000	1.002	-0.03%	



CAL-LICA-202109-01250

Ozone Calibration by Photometer (Varying UV Lamp)



DATE:	03-Sep-2021	PREVIOUS CALIBRATION DATE:	26-Aug-2021
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	LICA	TEMPERATURE (°C):	22.0
LOCATION:	St. Lina	BAROMETRIC (mBar):	920
PURPOSE:	Routine	START TIME (MST):	11:00
PERFORMED BY:	Alex Yakupov	END TIME (MST):	14:42

ANALYZER:

MAKE/MODEL	Thermo 49i	RANGE	500 ppb
SERIAL #	1002240371	FLOW (mL/min)	1497
INITIAL		FINAL	
BKG/OFFSET	0.1	BKG/OFFSET	0.1
COEF/SLOPE	1.009	COEF/SLOPE	1.01
Expected (reference) Value	205.1	Expected (reference) Value	213

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	SABIO	MAKE:	Teledyne
MODEL:	2010 D	MODEL:	T701
ID:	11900613	ID:	132
MFC CALIBRATION DATE:	09-Apr-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:

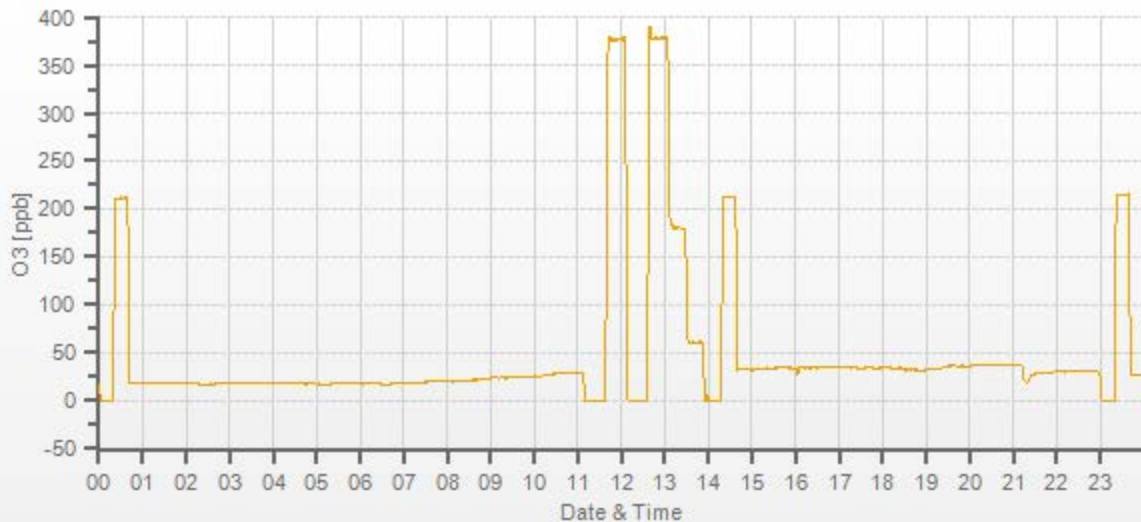
FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5000	XXXX	5000	0.0	0.0	0.0	XXXX	XXXX
5000	XXXX	5000	378.0	376.6	377.7	1.004	1.001
5000	XXXX	5000	180.0	n/a	179.4	n/a	1.003
5000	XXXX	5000	60.0	n/a	61.0	n/a	0.984

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	0.998	0.1%

COMMENTS:

Sampe inlet filter was changed.



Methane/Non-Methane Analyzer Calibration by Dilution



CALIBRATION:				ANALYZER:			
DATE:	03-Sep-2021	PREVIOUS CALIBRATION DATE:	06-Aug-2021	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	LICA	TEMPERATURE (°C):	22.0		Thermo 55i	1236656107	1200
LOCATION:	St. Lina	BAROMETRIC (mBar):	920	PARAMETER:	CH4	NMHC	THC
PURPOSE	Routine	START TIME (MST):	10:58	RANGE (ppm):	20	20	40
PERFORMED BY:	Alex Yakupov	END TIME (MST):	15:03	PREVIOUS CF:	1.000	1.003	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):	1000	LOW ID:	n/a
MFC CALIBRATION DATE:	09-Apr-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	11.32	20.43		9.13	11.30	20.43

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	14.43	13.38	27.80	14.57	13.49	28.05	1.009	1.005	1.008	1.000	0.997	0.999
3075	24.70	3100	7.28	6.73	14.01	n/a	n/a	n/a	7.31	6.75	14.05	n/a	n/a	n/a	0.996	0.997	0.997
3088	12.40	3100	3.66	3.38	7.03	n/a	n/a	n/a	3.64	3.37	7.01	n/a	n/a	n/a	1.004	1.002	1.003

LINEAR REGRESSION ANALYSIS:

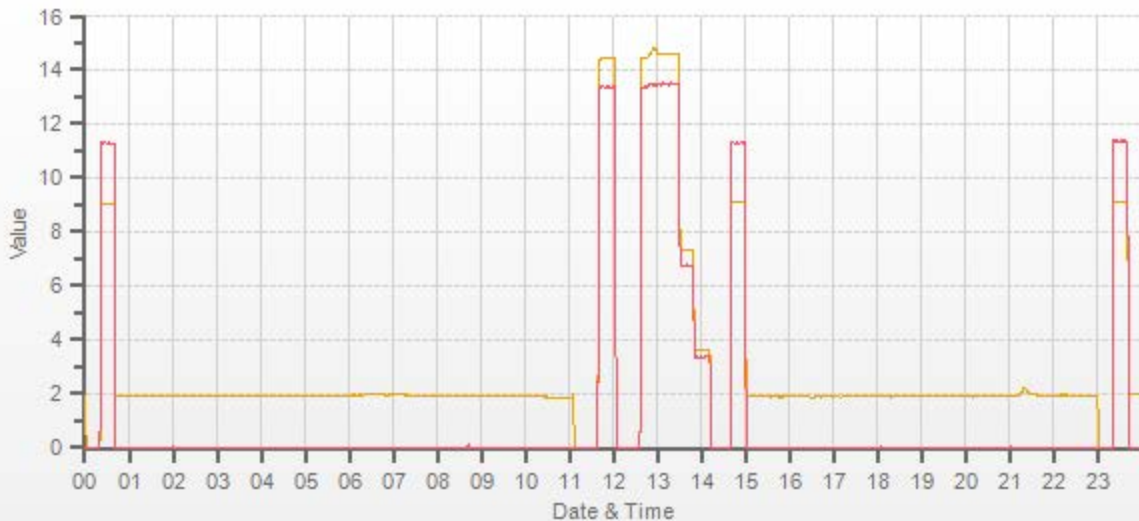
	CORRELATION	SLOPE	INTERCEPT
CH ₄	1.000	1.001	0.0%
NMHC	1.000	1.003	0.0%
THC	1.000	1.002	0.0%

Comments:

Sample inlet filter was changed.

Use Zero Chrom?

Yes



CAL-LICA-202109-01250

Thermo 5030i SHARP Monitor Monthly Check

Date: September 3, 2021	Performed By/Reviewer: Alex Yakupov Chris Wesson
Company: LICA	Start Time (mst): 15:17
Station Name/Location: St. Lina	End Time (mst): 16:12
Previous Audit Date: August 20, 2021	Calibration Purpose: routine monthly
Parameter: PM 2.5	Weather Conditions: Sunny

SHARP 5030i Information and Status:

Serial Number: CM 17461021 **Filter Tape Counter:** 232

Reference Standards:

Air Flow

	Manometer	Orifice	Pressure:	Temp / RH:
Make:	Delta Cal	Delta Cal	Fisher Scientific	VAISALA
Model:	DC1	DC1	FB61291	HMP76B
Serial Number:	177246	177246	130168457	T1640130
Calibration Expiration Date:	July 12, 2022	July 12, 2022	February 17, 2022	April 22, 2022

Ambient Temperature (°C)

	Reference	SHARP	Difference	Range	Action
#1	20.50	19.7	0.8	< ± 2°C 2-3 °C > 3°C	OK Recalibrate Fail

Ambient Relative Humidity (%RH)

	Reference	SHARP	Difference	Range	Action
As Found:				< ± 2 %RH	OK
#1	36.50	36.8	-0.3	2-5 %RH > 5 %RH	Recalibrate Fail

Barometric Pressure (mmHg)

	Reference	SHARP	Difference	Range	Action
As Found:				< ± 10 mmHg	OK
#1	698.0	698.0	0.0	10-12 mmHg > 12 mmHg	Recalibrate Fail

Flow Audit (L/min)

	Reference	SHARP		Range	Action
As Found:				< ± 4%	OK
#1	16.65	16.67	% Difference 0.08%	4-5%	Recalibrate
#2	16.66	16.67		>5%	Fail
#3	16.66	16.67			
Average	16.66	16.67			

Leak Check (L/min)

	Without Leak Check Adapter			With leak Check Adapter			
	Reference	SHARP	Difference	Reference	SHARP	Difference	
#1	16.66	16.67	-0.01	16.59	16.62	-0.03	<i>Leak Limit: 0.80 L/min</i>
				LEAK RATE:		-0.02	

Thermo 5030i SHARP Monitor Calibration

Date: <u>September 24, 2021</u>	Performed By/Reviewer: <u>Alex Yakupov</u> <u>Chris Wesson</u>
Company: <u>LICA</u>	Start Time (mst): <u>11:40</u>
Station Name/Location: <u>St. Lina</u>	End Time (mst): <u>12:46</u>
Previous Audit Date: <u>August 20, 2021</u>	Calibration Purpose: <u>removal</u>
Parameter: <u>PM 2.5</u>	Weather Conditions: <u>Mix of sun and clouds</u>

SHARP 5030i Information and Status:		
Serial Number: <u>CM 17461021</u>	Filter Tape Counter	<u>254</u>

Reference Standards: Air Flow						
	Manometer	Orifice	Pressure:		Temp / RH:	
Make:	<u>DeltaCal</u>	<u>DeltaCal</u>	<u>Fisher Scientific</u>		<u>VAISALA</u>	
Model:	<u>DC1</u>	<u>DC1</u>	<u>FB 61291</u>		<u>HMP76B</u>	
Serial Number:	<u>177246</u>	<u>177246</u>	<u>130168457</u>		<u>SN: T1640130</u>	
Expiry Date:	<u>July 12, 2022</u>	<u>July 12, 2022</u>	<u>February 17, 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	<u>15.40</u>	<u>15.1</u>	<u>0.3</u>	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>
#2	<u>15.40</u>	<u>15.1</u>	<u>0.3</u>	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>
#3	<u>15.40</u>	<u>15.1</u>	<u>0.3</u>	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>
Average	<u>15.4</u>	<u>15.1</u>	<u>0.3</u>	<u>#DIV/0!</u>	<u>#DIV/0!</u>	<u>#VALUE!</u>
Temp Limit: ± 2°C						

Ambient Relative Humidity (%RH)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Offset (ZERO)	Reference	SHARP	Offset (ZERO)
#1	<u>34.50</u>	<u>35.4</u>	<u>-0.9</u>	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>
#2	<u>34.50</u>	<u>35.4</u>	<u>-0.9</u>	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>
#3	<u>34.50</u>	<u>35.4</u>	<u>-0.9</u>	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>
Average	<u>34.5</u>	<u>35.4</u>	<u>-0.9</u>	<u>#DIV/0!</u>	<u>#DIV/0!</u>	<u>#VALUE!</u>
RH Limit: ± 2 %RH						

Flow Temperature (°C)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	<u>24.80</u>	<u>24.3</u>	<u>0.5</u>	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>
#2	<u>24.80</u>	<u>24.3</u>	<u>0.5</u>	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>
#3	<u>24.90</u>	<u>24.3</u>	<u>0.6</u>	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>
Average	<u>24.8</u>	<u>24.3</u>	<u>0.5</u>	<u>#DIV/0!</u>	<u>#DIV/0!</u>	<u>#VALUE!</u>
Temp Limit: ± 2°C						

Barometric Pressure (mmHg)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	<u>698.0</u>	<u>698.0</u>	<u>0.0</u>	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>
BP Limit: ± 2 mmHg						

Nephelometer Relative Humidity (%RH)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	<u>24.10</u>	<u>24.0</u>	<u>0.1</u>	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>
RH Limit: ± 2 %RH						

Nephelometer Temperature (%RH)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	<u>24.00</u>	<u>23.9</u>	<u>0.1</u>	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>
Temp Limit: ± 2°C						

Nephelometer Source Level						
As Found:			As Left: (same as found if acceptable)			
	Variable	Value		Variable	Value	
	<u>IRED</u>	<u>65</u>		<u>IRED</u>	<u>n/a</u>	
	<u>SRC LEVEL</u>	<u>53</u>		<u>SRC LEVEL</u>	<u>n/a</u>	
IRED Limit (as found): 60-70 mA Adjusted IRED Limit (as left): 65 mA						

Detector Calibration (Auto)						
Detector Auto Calibration Completed:			As Left:			
<u>YES</u>			Variable	Value		
			<u>HIGH VOLT</u>	<u>n/a</u>		
			<u>BETA REF TH</u>	<u>n/a</u>		
			<u>ALPHA TH</u>	<u>n/a</u>		
			<u>DIFF HV</u>	<u>n/a</u>		

Mass Coefficient (Auto)						
Zero			Span			
	Variable	Value		Variable	Value	
	<u>MASS COEF</u>	<u>n/a</u>		<u>MASS COEF</u>	<u>n/a</u>	
	<u>FOIL VALUE</u>	<u>n/a</u>		<u>FOIL VALUE</u>	<u>n/a</u>	
	<u>Beta Avg</u>	<u>n/a</u>		<u>Beta Avg</u>	<u>n/a</u>	
	<u>difference</u>	<u>n/a</u>		<u>difference</u>	<u>n/a</u>	
Foil Set: CM1597						

Flow Calibration (L/min)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	<u>16.66</u>	<u>16.67</u>	<u>-0.01</u>	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>
#2	<u>16.64</u>	<u>16.66</u>	<u>-0.02</u>	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>
#3	<u>16.65</u>	<u>16.66</u>	<u>-0.01</u>	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>
Average	<u>16.65</u>	<u>16.66</u>	<u>-0.01</u>	<u>#DIV/0!</u>	<u>#DIV/0!</u>	<u>#VALUE!</u>
Flow Limit: 16.67 ± 0.33 L/min						

Leak Check (L/min)						
Without Leak Check Adapter			With leak Check Adapter			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	<u>16.67</u>	<u>16.67</u>	<u>0.00</u>	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>
Leak Limit: 0.08 L/min						
						LEAK RATE: <u>#VALUE!</u>

Thermo 5030i SHARP Monitor Calibration

Date: <u>September 24, 2021</u>	Performed By/Reviewer: <u>Alex Yakupov</u> <u>Chris Wesson</u>
Company: <u>LICA</u>	Start Time (mst): <u>14:13</u>
Station Name/Location: <u>St. Lina</u>	End Time (mst): <u>15:05</u>
Previous Audit Date: <u>August 20, 2021</u>	Calibration Purpose: <u>installation</u>
Parameter: <u>PM 2.5</u>	Weather Conditions: <u>Mix of sun and clouds</u>

SHARP 5030i Information and Status:		
Serial Number: <u>CM 1709100</u>	Filter Tape Counter	<u>1</u>

Reference Standards: Air Flow						
	Manometer	Orifice	Pressure:		Temp / RH:	
Make:	<u>DeltaCal</u>	<u>DeltaCal</u>	<u>Fisher Scientific</u>		<u>VAISALA</u>	
Model:	<u>DC1</u>	<u>DC1</u>	<u>FB 61291</u>		<u>HMP76B</u>	
Serial Number:	<u>177246</u>	<u>177246</u>	<u>130168457</u>		<u>SN: T1640130</u>	
Expiry Date:	<u>July 12, 2022</u>	<u>July 12, 2022</u>	<u>February 17, 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	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>	<u>18.50</u>	<u>18.5</u>	<u>0.0</u>
#2	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>	<u>18.50</u>	<u>18.5</u>	<u>0.0</u>
#3	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>	<u>18.50</u>	<u>18.5</u>	<u>0.0</u>
Average	<u>#DIV/0!</u>	<u>#DIV/0!</u>	<u>#VALUE!</u>	<u>18.5</u>	<u>18.5</u>	<u>0.0</u>
						Temp Limit: ± 2°C

Ambient Relative Humidity (%RH)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Offset (ZERO)	Reference	SHARP	Offset (ZERO)
#1	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>	<u>32.60</u>	<u>32.6</u>	<u>0.0</u>
#2	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>	<u>32.60</u>	<u>32.6</u>	<u>0.0</u>
#3	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>	<u>32.60</u>	<u>32.6</u>	<u>0.0</u>
Average	<u>#DIV/0!</u>	<u>#DIV/0!</u>	<u>#VALUE!</u>	<u>32.6</u>	<u>32.6</u>	<u>0.0</u>
						RH Limit: ± 2 %RH

Flow Temperature (°C)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>	<u>22.80</u>	<u>22.8</u>	<u>0.0</u>
#2	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>	<u>22.80</u>	<u>22.8</u>	<u>0.0</u>
#3	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>	<u>22.80</u>	<u>22.8</u>	<u>0.0</u>
Average	<u>#DIV/0!</u>	<u>#DIV/0!</u>	<u>#VALUE!</u>	<u>22.8</u>	<u>22.8</u>	<u>0.0</u>
						Temp Limit: ± 2°C

Barometric Pressure (mmHg)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>	<u>697.0</u>	<u>697.0</u>	<u>0.0</u>
						BP Limit: ± 2 mmHg

Nephelometer Relative Humidity (%RH)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>	<u>24.20</u>	<u>24.2</u>	<u>0.0</u>
						RH Limit: ± 2 %RH

Nephelometer Temperature (%RH)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>	<u>23.60</u>	<u>23.6</u>	<u>0.0</u>
						Temp Limit: ± 2°C

Nephelometer Source Level						
As Found:			As Left: (same as found if acceptable)			
	Variable	Value		Variable	Value	
	<u>IRED</u>	<u>n/a</u>		<u>IRED</u>	<u>66</u>	
	<u>SRC LEVEL</u>	<u>n/a</u>		<u>SRC LEVEL</u>	<u>47</u>	
						IRED Limit (as found): 60-70 mA Adjusted IRED Limit (as left): 65 mA

Detector Calibration (Auto)						
Detector Auto Calibration Completed:			As Left:			
<u>YES</u>			Variable	Value		
			<u>HIGH VOLT</u>	<u>1370</u>		
			<u>BETA REF TH</u>	<u>270</u>		
			<u>ALPHA TH</u>	<u>680</u>		
			<u>DIFF HV</u>	<u>0</u>		

Mass Coefficient (Auto)						
Zero			Span			
	Variable	Value		Variable	Value	
	<u>MASS COEF</u>	<u>7062.1</u>		<u>MASS COEF</u>	<u>7096.9</u>	
	<u>FOIL VALUE</u>	<u>1045</u>		<u>FOIL VALUE</u>	<u>1045</u>	
	<u>Beta Avg</u>	<u>9052</u>		<u>Beta Avg</u>	<u>7674</u>	
	<u>difference</u>	<u>Foil set # 4804</u>		<u>difference</u>	<u>0.0</u>	
						Foil Set: CM1597

Flow Calibration (L/min)						
As Found:			As Left: (same as found if acceptable)			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>	<u>16.67</u>	<u>16.67</u>	<u>0.00</u>
#2	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>	<u>16.67</u>	<u>16.67</u>	<u>0.00</u>
#3	<u>n/a</u>	<u>n/a</u>	<u>#VALUE!</u>	<u>16.67</u>	<u>16.67</u>	<u>0.00</u>
Average	<u>#DIV/0!</u>	<u>#DIV/0!</u>	<u>#VALUE!</u>	<u>16.67</u>	<u>16.67</u>	<u>0.00</u>
						Flow Limit: 16.67 ± 0.33 L/min

Leak Check (L/min)						
Without Leak Check Adapter			With leak Check Adapter			
	Reference	SHARP	Difference	Reference	SHARP	Difference
#1	<u>16.67</u>	<u>16.67</u>	<u>0.00</u>	<u>16.65</u>	<u>16.66</u>	<u>-0.01</u>
						Leak Limit: 0.08 L/min
						LEAK RATE: <u>-0.01</u>



Meteorological System Checklist

Date:	September 3, 2021
Technician:	Alex Yakupov
Reviewer:	Chris Wesson
Station:	St. Lina

Unit:	Make:	Model:	Serial #:
Precipitation Sampler:	Met One - Heated Rain Gauge	Part 387D	A23775

PRECIPITATION SENSOR CHECK

Checklist:	Reply:	Comments:
Previous check date:	June 9, 2021	n/a
Is the sensor Level?	yes	n/a
Is the heater operating properly?	yes	n/a
Are the bucket drain holes clean?	yes	n/a
Is the screen on the housing? (screen should be on between July and September)	yes	n/a
Is the housing clean?	yes	n/a
Is the area around the housing clean and free from obstacles?	yes	n/a

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

# of Tips	Data Logger Response (ml):	Manual Specification = +/- 0.1 ml
10	1.00	



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