Peace River Area Monitoring Program

JANUARY 2020

Monthly Ambient Air Quality Monitoring Report

PRAMP-202001

Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
Peace River Area Monitoring Program

February 14, 2020

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LIST OF ACRONYMS

AAAQOs	Alberta Ambient Air Quality Objectives
AEP	Alberta Environment and Parks
AMD	Air Monitoring Directive
AT	Ambient Temperature
BP	Barometric Pressure
CH4	Methane
EPEA	Environmental Protection and Enhancement Act
H2S	Hydrogen Sulphide
kph	kilometers per hour
mb	millibar
mm	millimeter
NMHC	Non-Methane Hydrocarbons
ppb	parts per billion
ppm	parts per million
PRAMP	Peace River Area Monitoring Program
RH	Relative Humidity
SO2	Sulphur Dioxide
ST	Station Temperature
THC	Total Hydrocarbons
TRS	Total Reduced Sulphur
VWD	Vector Wind Direction
VWS	Vector Wind Speed
WD	Wind Direction
WS	Wind Speed
°C	Degrees Celsius

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February 14, 2020

RE: PRAMP – January 2020 Monthly Ambient Air Quality Monitoring Report

Enclosed is the January 2020 Monthly Ambient Air Quality Monitoring Report for the continuous ambient air quality monitoring stations of the Peace River Area Monitoring Program (PRAMP) regional air quality monitoring network.

The representative of the Person Responsible for this monitoring program is

PRAMP Airshed
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This report has been prepared, reviewed and submitted by Michael Bisaga & Lily Lin of the PRAMP Airshed.

NETWORK STATION SUMMARY

Listing of Continuous Monitoring Stations

The PRAMP continuous ambient air quality monitoring network stations are:

- 986c Station
- 842b Station
- Reno Station
- AQHI Cadotte Lake

Station ID	Station Name	Latitude	Longitude
1562	986c	56.36980	-116.92500
1561	842b	56.27406	-116.98129
1563	Reno	55.86936	-117.05739
1651	AQHI-Cadotte Lake	56.49022	-116.42739

Listing of Intermittent Monitoring Stations

- VOC Canister Sampling Station
  - 986c Station
  - 842b Station
  - Reno Station

Monitoring Notes during the Month of January 2020

986c Station:

- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable.
- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement.
- **THC/CH4/NMHC:** Hourly data collected on January 1 hour 0 was considered invalid and was discarded as <75% of hourly data was retrieved. One hour of downtime was recorded due to this event.
- **TRS:** The analyzer spanned outside the lower acceptable range between January 13 and 18 due to low ambient temperatures. As the station was inaccessible due to weather conditions, the analyzer's functionality could not be checked. The analyzer spanned within the acceptance limit once temperatures improved. No action was required by the time access to the station was restored. Data collected during the time of the span drifts are considered valid.

842b Station:

- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable.

- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement.
- **TRS:** The analyzer spanned outside the lower acceptable range between January 13 and 17 due to low ambient temperatures. The analyzer spanned within the acceptance limit once temperature improved. As the station was inaccessible due to weather conditions, the analyzer's functionality could not be checked. The analyzer spanned within the acceptance limit once temperatures improved. No action was required by the time access to the station was restored. Data collected during the time of the span drifts are considered valid.

Reno Station:

- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable.
- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement, with an exception of THC/CH4/NMHC (79.8%). AEP reference #: 363422.
- **TRS:** The analyzer spanned outside the lower acceptable range between January 13 and 16 due to low ambient temperatures. The analyzer spanned within the acceptance limit once temperature improved. An as-found points check was performed on January 17 to demonstrate analyzer accuracy. The analyzer passed the check requirements, which confirmed data quality were not affected by low ambient temperatures. Two hours of downtime were recorded due to the additional check.
- **THC/CH4/NMHC:**
    - The analyzer malfunction on January 5 hour 23 due to valve/injection issues yielding low CH4 data. The Thermo 55i analyzer, s/n: 1314057759, was removed, and the Thermo 55i analyzer, s/n: 1433563261, was installed. The analyzer was put offline overnight for column conditioning. A successful installation calibration was performed on January 7. Thirty-four hours of downtime were recorded due to this event.
    - Hourly data collected on January 15 hour 3 was invalidated due to poor sample injections. Troubleshooting was performed remotely on January 15 between hour 7 and 9 following the scheduled zero/span check. The analyzer passed the check requirements. A successful repeat multi-point calibration was performed on January 17 to confirm the analyzer's functionality. Seven hours of downtime were recorded due to this event.
    - Poor sample injections appeared again on January 20 hour 2 and caused the daily zero-span check, which occurred at hour 5, to fail. Troubleshooting was performed remotely on January 20 hour 11. An additional zero/span check was initiated at hour 14. The analyzer passed the check requirements. A successful repeat multi-point calibration was performed on January 21 to confirm the analyzer's functionality. As the analyzer failed the hour 5 zero-span check, data between January 20 hour 2 and hour 11 were invalidated. Sixteen hours of downtime were recorded due to this event.
    - Poor sample injections appeared again on January 26. Remote troubleshooting was attempted on January 26 hour 18. However, the issue was not resolved. Maintenance was performed on the analyzer on January 28. A successful post-repair calibration was performed on January 28. However, unusual NMHC activity was noted after the post-repair calibration. A successful shut-down calibration was performed on January 29 prior to maintenance/investigation. Maintenance were performed on the analyzer follow by a successful post-repair calibration. As data between the January 28 post-repair calibration and the January 29 shut-down calibration were questionable, data were discarded. Ninety-three hours of downtime were recorded due to this event.

AQHI – Cadotte Lake Station:

- Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable.
- All data collected this month were compliant with the requirements outlined in the AMD 2016.
- All parameters met the 90% operational uptime requirement, with an exception of TRS (87.9%). AEP reference #: 363669.
- **TRS:**
    - The analyzer failed the daily span check on January 7. An additional zero-span check was initiated on January 7 during hour 7 and 8. The analyzer failed the check requirements. Another zero-span check was initiated on January 8 hour 8. The analyzer passed the check requirements. The failure was likely related to low ambient temperatures. As the analyzer passed the check requirements on January 8, no data were discarded. Three hours of downtime were recorded due to additional checks.
    - The analyzer spanned outside the lower acceptable range on January 12 and 13 due to low ambient temperatures. The analyzer failed the shut-down calibration on January 14. The probable cause of the failure was the very dry air during low ambient temperatures having adverse effect on scrubber beads. Maintenance were performed following by a post-repair calibration on January 14. Seventy-one hours of downtime were recorded due to the additional check.
    - Hourly data collected on January 17 between hour 17 and 19 are missing. Although the exact cause cannot be determined, it was likely related to issues from firmware. PRAMP will monitor this closely for re-occurrence. Three hours of downtime were recorded.
    - Hourly data collected from January 20 hour 20 to January 21 hour 6 were invalidated due to firmware crash. The analyzer was reset, and a successful zero-span check was initiated on January 21 hour 7 and 8. Thirteen hours of downtime were recorded due to this event.

VOCs Canister Sampling program:

- The canister sampling program collects a 1-hour sample of air when the continuously measured methane (CH4) and/or non-methane hydrocarbon (NMHC) concentration reaches a specified trigger point. The current trigger points are 5.5 ppm for methane and 0.3 ppm for non-methane hydrocarbons. Both trigger points are based on real-time monitoring data that are averaged over a 5-minute period.
- Canisters sample collection systems are in place at Station 986c, 842b, and the Reno Station; a canister sample collection system is not part of the suite of instruments currently deployed at the AQHI-Cadotte Lake Station.
- Sample analysis and analytical results were prepared and provided by InnoTech Alberta.
- In this report, a value of zero (0) value is assigned if the laboratory analysis results in a concentration that is below Reported Detection Limits (RDL).
- Two CH4 canister events were recorded at Reno site this month: on January 3 at 01:43, at concentration of 6.79ppm, and on January 24 at 03:45, at concentration of 9.30ppm. this month.

Sample Date/Time	2020-01-03								
Canister Sample	Methane								
Canister ID	32265								
Method	NA-025		Method	NA-024		Method	AC-058	
Maximum Reading	2.9	Methane	Maximum Reading	1.9	Hydrogen sulphide	Maximum Reading	0.9	Acetone

Sample Date/Time	2020-01-24							
Canister Sample	Methane							
Canister ID	28938							
Method	NA-025		Method	NA-024		Method	AC-058	
Maximum Reading	2.9	Methane	Maximum Reading	-	-	Maximum Reading	2.2	Ethanol

For RSC Air analysis (Method NA-024), all parameter results were below the RDL.

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

At the Reno station, nearby trees exceed the height allowed under section 2.3 of the wind speed and wind direction siting criteria in Chapter 3 of the AMD. This non-conformance was documented in the updated station site documents. Further actions are being considered including siting the wind sensor so that it meets AMD Chapter 3 siting requirements, or obtaining written authorization from "The Director" to deviate from AMD Siting requirements.

Disclaimer

Data verification/validation were performed on the 1-minute and 5-minute data. Hourly data that are included in this report are calculated based on the post- validation 1-minute data set.

Equipment calibration / maintenance records were provided by Bureau Veritas.

Certification

This report was prepared and submitted by Lily Lin in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).

Lily Lin, Environmental Monitoring Program Manager, PRAMP Airshed

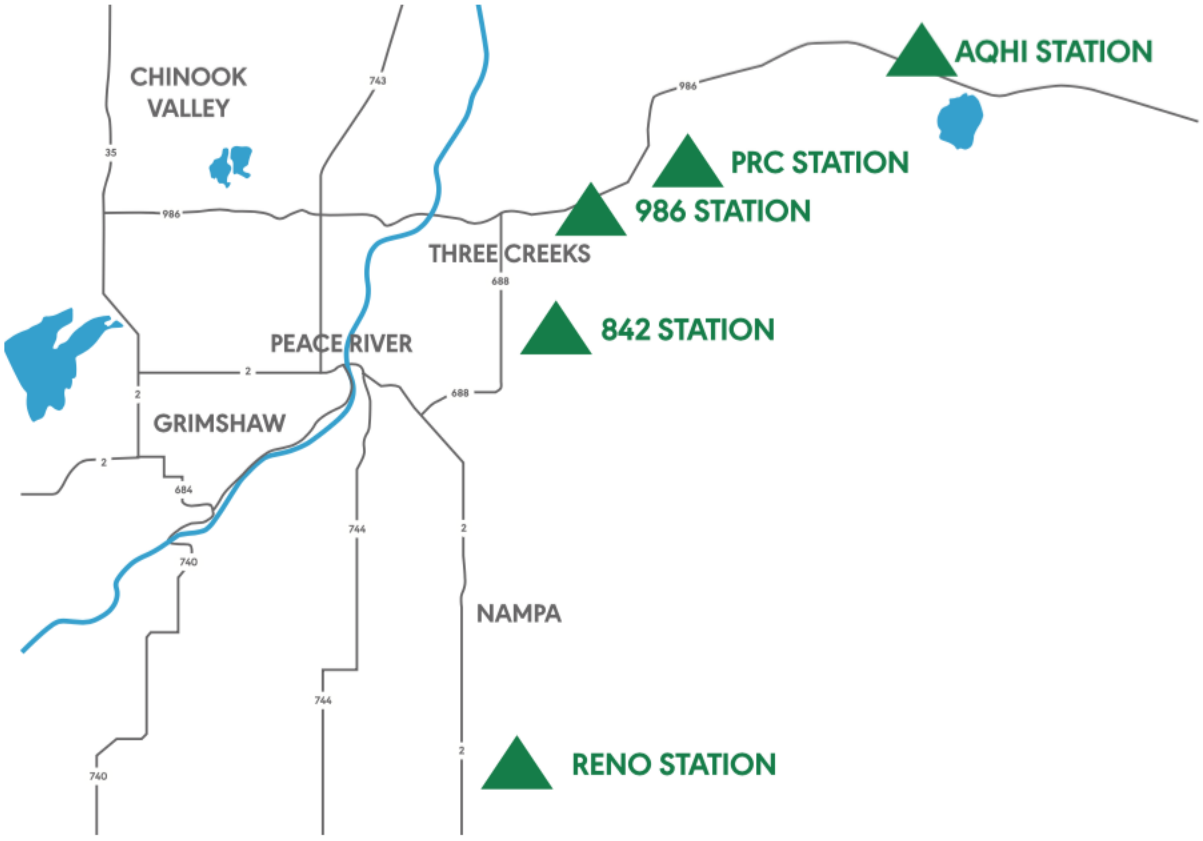
This report was reviewed by Mike Bisaga in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).

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. Uploading of VOC data from the canister sampling program was not required at the time of completing this report.

Michael Bisaga, Environmental Monitoring Program Manager, PRAMP Airshed

February 14, 2020

Map of PRAMP Continuous Monitoring Network



CONTINUOUS NETWORK EQUIPMENT AND MONITORING RESULTS SUMMARY

986c Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	
SO2	**API 100A**	**1298**	
• A successful monthly calibration was performed on January 9.			
TRS	**Thermo / 43i-TLE**	**1152940011**	
• A successful monthly calibration was performed on January 9. • The analyzer spanned outside the lower acceptable range between January 13 and 18 due to low ambient temperatures. The analyzer spanned within the acceptance limit once temperature improved. As the station was inaccessible due to weather conditions, the analyzer's functionality could not be checked. The analyzer spanned within the acceptance limit once temperatures improved. No action was required by the time access to the station was restored. Data collected during the time of the span drifts are considered valid.			
THC/CH4/NMHC	**Thermo / 55i**	**1022143392**	
• Hourly data collected on January 1 hour 0 was considered invalid and was discarded as <75% of hourly data was retrieved. One hour of downtime was recorded due to this event. • The fuel gas (H2) cylinder was replaced on January 6. • A successful monthly calibration was performed on January 9.			
Relative Humidity (RH)	**RM Young / 43182VC**	**030978**	
• The RH sensor was checked on January 9. The sensor passed the check requirements.			
Barometric Pressure (BP)	**MetOne / 090D**	**F3845**	
• The BP sensor was checked on January 9. The sensor passed the check requirements.			

Parameter	Make / Model	Serial Number	
Ambient Temperature (AT)	**RM Young 43182VC**	**030978**	
• The temperature sensor was checked on January 9. The sensor passed the check requirements.			
Station Temperature (ST)	**Maxxam**	**N/A**	
• No issue was identified this month.			
Wind Speed/Wind Direction (WS/ WD)	**RM Young / 5305VK**	**129612**	
• Wind direction data contained in this report represents where the wind is coming from. • The last wind system calibration was completed on April 24, 2019. • The anemometer sensors were checked on January 9. The sensor passed the check requirements.			

Monitored Data Summary for 986c Station

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.1	0	2	January 1 at hour 0	8	SSW	0.7	January 25	100.0	95.0
TRS (ppb)	10	3	-	-	-	-	0.51	0.07	1.01	January 3 at hour 5	7.6	ESE	0.64	January 20	100.0	94.9
THC (ppm)	-	-	-	-	-	-	2.03	1.92	2.54	January 18 at hour 9	8.2	ESE	2.15	January 20	99.9	94.7
CH4 (ppm)	-	-	-	-	-	-	2.03	1.92	2.53	January 18 at hour 9	8.2	ESE	2.15	January 20	99.9	94.7
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.01	January 7 at hour 20	13.9	ENE	0.00	January 7	99.9	94.7
RH (%)	-	-	-	-	-	-	79.7	45	100	January 1 at hour 0	8	SSW	99.2	January 1	100.0	100.0
BP (millibar)	-	-	-	-	-	-	941	920	965	January 18 at hour 3	3.6	SSE	961	January 18	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-14.8	-40.1	4.8	January 30 at hour 21	27.3	SSW	1.4	January 30	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	21.3	20.4	23.1	January 8 at hour 2	17.4	ENE	21.8	January 17	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	2.7	0.4	37.7	January 31 at hour 0	37.7	SW	25.0	January 30	100.0	100.0
WDV (sector)	-	-	-	-	-	-	200 (SSW)	-	-	-	-	-	-	-	100.0	100.0

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

Alberta Ambient Air Quality Objectives (AAAQOs) Exceedances at 986c Station

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

842b Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	
SO2	**Thermo / 43i**	**835033373**	
• A successful monthly calibration was performed on January 8.			
TRS	**Thermo / 43i-TLE**	**1162460023**	
• A successful monthly calibration was performed on January 8. • The analyzer spanned outside the lower acceptable range between January 13 and 18 due to low ambient temperatures. The analyzer spanned within the acceptance limit once temperature improved. As the station was inaccessible due to weather conditions, the analyzer's functionality could not be checked. The analyzer spanned within the acceptance limit once temperatures improved. No action was required by the time access to the station was restored. Data collected during the time of the span drifts are considered valid.			
THC/CH4/NMHC	**Thermo / 55i**	**1505664392**	
• A successful monthly calibration was performed on January 8.			
Relative Humidity (RH)	**Campbell Scientific / HMP45C**	**C2608**	
• The RH sensor was checked on January 19. The sensor passed the check requirements.			
Barometric Pressure (BP)	**MetOne / 92**	**K12864**	
• The BP sensor was checked on January 8. The sensor passed the check requirements.			
Station Temperature (ST)	**Maxxam**	**N/A**	
• No issue was identified this month.			

Parameter	Make / Model	Serial Number	
Ambient Temperature (AT)	**Campbell Scientific / HMP45C**	**C2608**	
• The temperature sensor was checked on January 8. The sensor passed the check requirements.			
Wind Speed/Wind Direction (WS/ WD)	**RM Young / 5305VK**	**124638**	
• Wind direction data contained in this report represents where the wind is coming from. • The last wind system calibration was completed on August 7, 2019. • The anemometer sensors were checked on January 8. The sensor passed the check requirements.			

Monitored Data Summary for 842b Station

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.1	0	2	January 2 at hour 12	15.1	WNW	0.8	January 19	100.0	94.9
TRS (ppb)	10	3	-	-	-	-	0.47	0.35	1.05	January 7 at hour 0	4.3	ENE	0.59	January 20	100.0	94.7
THC (ppm)	-	-	-	-	-	-	2.04	1.94	2.64	January 16 at hour 1	7.6	ENE	2.16	January 7	100.0	95.0
CH4 (ppm)	-	-	-	-	-	-	2.04	1.94	2.64	January 16 at hour 1	7.6	ENE	2.16	January 18	100.0	95.0
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.09	January 7 at hour 9	3.3	E	0.00	January 7	100.0	95.0
RH (%)	-	-	-	-	-	-	75.3	41	94	January 1 at hour 22	8.6	S	91.2	January 1	100.0	100.0
BP (millibar)	-	-	-	-	-	-	940	919	964	January 18 at hour 2	2.2	SE	960	January 18	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-14.9	-39.8	4.9	January 26 at hour 14	5.2	ENE	1.2	January 30	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.4	21.3	22.8	January 19 at hour 6	6.1	ESE	22.6	January 19	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.8	0.1	33.0	January 31 at hour 1	33	WSW	20.2	January 30	100.0	100.0
WDV (sector)	-	-	-	-	-	-	201 (SSW)	-	-	-	-	-	-	-	100.0	100.0

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

Alberta Ambient Air Quality Objectives (AAAQOs) Exceedances at 842b Station

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

Reno Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	
SO2	**API / 100A**	**841**	
• A successful monthly calibration was performed on January 7.			
TRS	**Thermo / 43i-TLE**	**1162460022**	
• A successful monthly calibration was performed on January 7. • The analyzer spanned outside the lower acceptable range between January 13 and 16 due to low ambient temperatures. The analyzer spanned within the acceptance limit once temperature improved. An as-found points check was performed on January 17 to demonstrate analyzer accuracy. The analyzer passed the check requirements, which confirmed data quality were not affected by low ambient temperatures. Two hours of downtime were recorded due to the additional check.			
THC/CH4/NMHC	**Thermo / 55i**	**1314057759/1433563261**	
• The analyzer malfunction on January 5 hour 23 due to valve/injection issues yielding low CH4 data. The Thermo 55i analyzer, s/n: 1314057759, was removed, and the Thermo 55i analyzer, s/n: 1433563261, was installed. The analyzer was put offline overnight for column conditioning. A successful installation calibration was performed on January 7. Thirty-four hours of downtime were recorded due to this event. • Hourly data collected on January 15 hour 3 was invalidated due to poor sample injections. Troubleshooting was performed remotely on January 15 between hour 7 and 9 following by the scheduled zero/span check. The analyzer passed the check requirements. A successful repeat multi-point calibration was performed on January 17 to confirm the analyzer's functionality. Seven hours of downtime were recorded due to this event. • Poor sample injections appeared again on January 20 hour 2 and caused the daily zero-span check, which occurred at hour 5, to fail. Troubleshooting was performed remotely on January 20 hour 11. An additional zero/span check was initiated at hour 14. The analyzer passed the check requirements. A successful repeat multi-point calibration was performed on January 21 to confirm the analyzer's functionality. As the analyzer failed the hour 5 zero-span check, data between January 20 hour 2 and hour 11 were invalidated. Sixteen hours of downtime were recorded due to this event. • The carrier gas (N2) cylinder was replaced on January 21. (Continued on next page)			

Parameter	Make / Model	Serial Number	
THC/CH4/NMHC	**Thermo / 55i**	**1314057759/1433563261**	
• Poor sample injections appeared again on January 26. Remote troubleshooting was attempted on January 26 hour 18. However, the issue was not resolved. Maintenance was performed on the analyzer on January 28, including actuator realignment and adjustment to carrier gas (N2) pressure. A successful post-repair calibration was performed on January 28. However, unusual NMHC activity was noted after the post-repair calibration. A successful shut-down calibration was performed on January 29 prior to maintenance/investigation. Maintenance were performed on the analyzer, including replacing valve and actuator, tightening fittings, and performing column condition and gas pressure optimization. A successful post-repair calibration was completed after the maintenance. As data between the January 28 post-repair calibration and the January 29 shut-down calibration were questionable, data were discarded. Ninety-three hours of downtime were recorded due to this event.			
Relative Humidity (RH)	**RM Young / 43172VC**	**60837897**	
• No issue was identified this month. • Due to foggy weather conditions, the RH sensor could not be checked on January 7.			
Barometric Pressure (BP)	**MetOne / 92**	**R12877**	
• The BP sensor was checked on January 7. The sensor passed the check requirements.			
Ambient Temperature (AT)	**RM Young / 43172VC**	**60837897**	
• The temperature sensor was checked on January 7. The sensor passed the check requirements.			
Station Temperature (ST)	**Maxxam**	**N/A**	
• No issue was identified this month.			
Wind Speed/Wind Direction (WS/ WD)	**RM Young / 5305VK**	**149769**	
• Wind direction data contained in this report represents where the wind is coming from. • The last wind system calibration was completed on April 24, 2019. • The anemometer sensors were checked on January 7. The sensor passed the check requirements.			

Monitored Data Summary for Reno Station

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.1	0	1	January 1 at hour 15	0	S	0.5	January 20	100.0	94.9
TRS (ppb)	10	3	-	-	-	-	0.45	0.17	1.02	January 28 at hour 0	4	SSW	0.72	January 25	99.7	94.5
THC (ppm)	-	-	-	-	-	-	2.07	1.93	3.96	January 24 at hour 3	4	S	2.32	January 24	79.8	75.7
CH4 (ppm)	-	-	-	-	-	-	2.07	1.93	3.94	January 24 at hour 3	4	S	2.32	January 24	79.8	75.7
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.03	January 24 at hour 3	4	S	0.00	January 25	79.8	75.7
RH (%)	-	-	-	-	-	-	68.3	48	94	January 1 at hour 23	4.1	SSW	88.2	January 1	100.0	100.0
BP (millibar)	-	-	-	-	-	-	935	913	957	January 18 at hour 1	2.8	SW	954	January 18	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-14.9	-38.7	3.9	January 30 at hour 19	12.4	SSW	0.6	January 30	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.4	20.2	24.0	January 3 at hour 19	13.6	ESE	23.3	January 19	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.5	0.0	20.6	January 31 at hour 0	20.6	WSW	10.3	January 2	100.0	100.0
WDV (sector)	-	-	-	-	-	-	216 (SW)	-	-	-	-	-	-	-	100.0	100.0

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

Alberta Ambient Air Quality Objectives (AAAQOs) Exceedances at Reno Station

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

AQHI – Cadotte Lake Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	
SO2	**Teledyne / T100**	**722**	
• A successful monthly calibration was performed on January 14.			
TRS	**Teledyne / T100U**	**132**	
• The analyzer failed the daily span check on January 7. An additional zero-span check was initiated on January 7 during hour 7 and 8. The analyzer failed the check requirements. Another zero-span check was initiated on January 8 hour 8. The analyzer passed the check requirements. The failure was likely related to low ambient temperatures. As the analyzer passed the check requirements on January 8, no data were discarded. Three hours of downtime were recorded due to additional checks. • The analyzer spanned outside the lower acceptable range on January 12 and 13 due to low ambient temperatures. The analyzer failed the shut-down calibration on January 14. The probable cause of the failure was the very dry air during low ambient temperatures having adverse effect on scrubber beads. Maintenance were performed, including renewing scrubber material and adjusting convertor temperature. A post-repair calibration was performed after the maintenance on January 14. Seventy-one hours of downtime were recorded due to the additional check. • Hourly data collected on January 17 between hour 17 and 19 are missing. Although the exact cause cannot be determined, it was likely related to issues from firmware. PRAMP will monitor this closely for re-occurrence. Three hours of downtime were recorded. • Hourly data collected from January 20 hour 20 to January 21 hour 6 due to firmware crash. The analyzer was reset, and a successful zero-span check was initiated on January 21 hour 7 and 8. Thirteen hours of downtime were recorded due to this event.			
NOx/NO/NO2	**Teledyne / T200**	**837**	
• A successful monthly calibration was performed on January 14.			
O3	**Teledyne / T400**	**824**	
• A successful monthly calibration was performed on January 14.			

Parameter	Make / Model	Serial Number	
THC/CH4/NMHC	**Thermo / 55i**	**1501663728**	

- A successful monthly calibration was performed on January 14.
- Both the carrier gas (N2) cylinder and the span gas cylinder were replaced on January 14.

Parameter	Make / Model	Serial Number	
PM2.5	**Teledyne / T640**	**318**	

- A successful monthly calibration/audit was performed on January 14.

Relative Humidity (RH)	**Vaisala / HMP155**	**N2910506**	

- The sensor was checked on January 14. The sensor passed the check requirements.

Ambient Temperature (AT)	**Vaisala / HMP155**	**N2910506**	

- Hourly data collected on January 17 hour 18 was invalidated due to maintenance performed on the datalogger.
- The sensor was checked on January 14. The sensor passed the check requirements.

Station Temperature (ST)	**Maxxam**	**N/A**	

- Hourly data collected on January 17 hour 18 was invalidated due to maintenance performed on the datalogger.

Wind Speed/Wind Direction (WS/ WD)	**MetOne / 010C/020C**	**W15277/WW16102**	

- Wind direction data contained in this report represents where the wind is coming from.
- The last wind system calibration was completed on June 28, 2019.
- The anemometer sensors were checked on January 14. The sensor passed the check requirements.
- An alternate wind system, RM Young 05305VK, was mounted in parallel for comparison purposes in December 2019. Data comparison shows that output from the RM Young and the resident MetOne wind system are relatively the same, proving the MetOne to be accurate. The observed variance between wind data at the AQHI- Cadotte Lake station and that od the other PRAMP stations is attributed to difference in location.

Monitored Data Summary for AQHI - Cadotte Lake 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	0	January 1 at hour 0	1.6	WNW	0.0	January 1	100.0	95.0
TRS (ppb)	10	3	-	-	-	-	0.41	0.00	1.73	January 21 at hour 10	2.5	ENE	0.80	January 20	87.9	83.4
Nox (ppb)	-	-	-	-	-	-	2.9	0	36	January 21 at hour 16	0.7	NNE	8.3	January 27	100.0	94.9
NO (ppb)	-	-	-	-	-	-	1.0	0	24	January 25 at hour 10	1	WNW	4.4	January 25	100.0	94.9
NO2 (ppb)	159	-	-	0	-	-	1.9	0	21	January 21 at hour 16	0.7	NNE	6.1	January 20	100.0	94.9
O3 (ppb)	76	-	-	0	-	-	20.8	0	44	January 30 at hour 20	13.8	SSW	40.4	January 30	100.0	95.0
THC (ppm)	-	-	-	-	-	-	2.01	1.93	2.51	January 24 at hour 8	1.2	W	2.13	January 20	100.0	95.0
CH4 (ppm)	-	-	-	-	-	-	2.01	1.93	2.27	January 24 at hour 8	1.2	W	2.10	January 20	100.0	95.0
NMHC (ppm)	-	-	-	-	-	-	0.01	0.00	0.26	January 1 at hour 11	1.1	W	0.10	January 1	100.0	95.0
PM2.5 (µg/m3)	80	30	-	0	0	-	3.9	0.4	15.9	January 12 at hour 16	7	WNW	8.3	January 27	100.0	99.9
RH (%)	-	-	-	-	-	-	76.9	47	97	January 25 at hour 18	1.7	ENE	88.7	January 24	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-17.1	-41.1	4.7	January 30 at hour 23	21.9	SW	1.2	January 30	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.3	19.5	24.4	January 13 at hour 21	6	NW	22.9	January 15	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	0.6	0.1	24.8	January 31 at hour 0	24.8	SW	11.7	January 31	100.0	100.0
WDV (sector)	-	-	-	-	-	-	248 (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) Exceedances at AQHI - Cadotte Lake Station

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

TABLES, CHARTS, WIND ROSES AND EQUIPMENT CALIBRATION RECORDS

986c STATION

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

986c Station - January 2020

Summary of Hourly Averages

SULPHUR DIOXIDE (SO_2) in ppb

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

Number of 1-Hour Exceedances: 0 Number of 24-Hour Exceedances: 0 30-Day Exceedance: 0

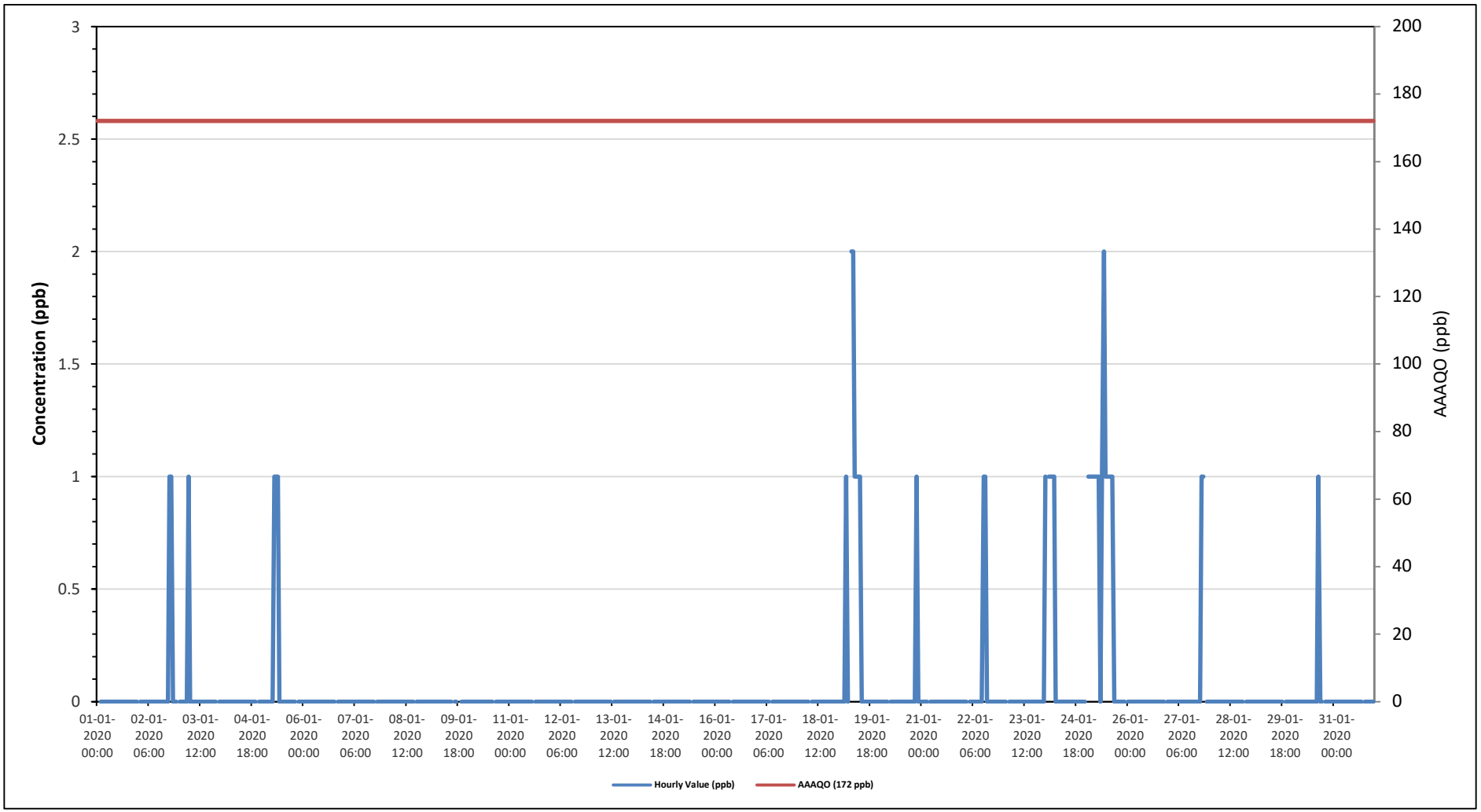
Maximum Hourly Value:	2	ppb	on January 1 at hour 0	Hours in Service:	744
Maximum Daily Value:	0.7	ppb	on January 25	Hours of Data:	707
Minimum Hourly Value:	0	ppb	on January 1 at hour 2	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on January 4	Hours of Calibration:	37
Monthly Average:	0.1	ppb		Operational Uptime:	100.0

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

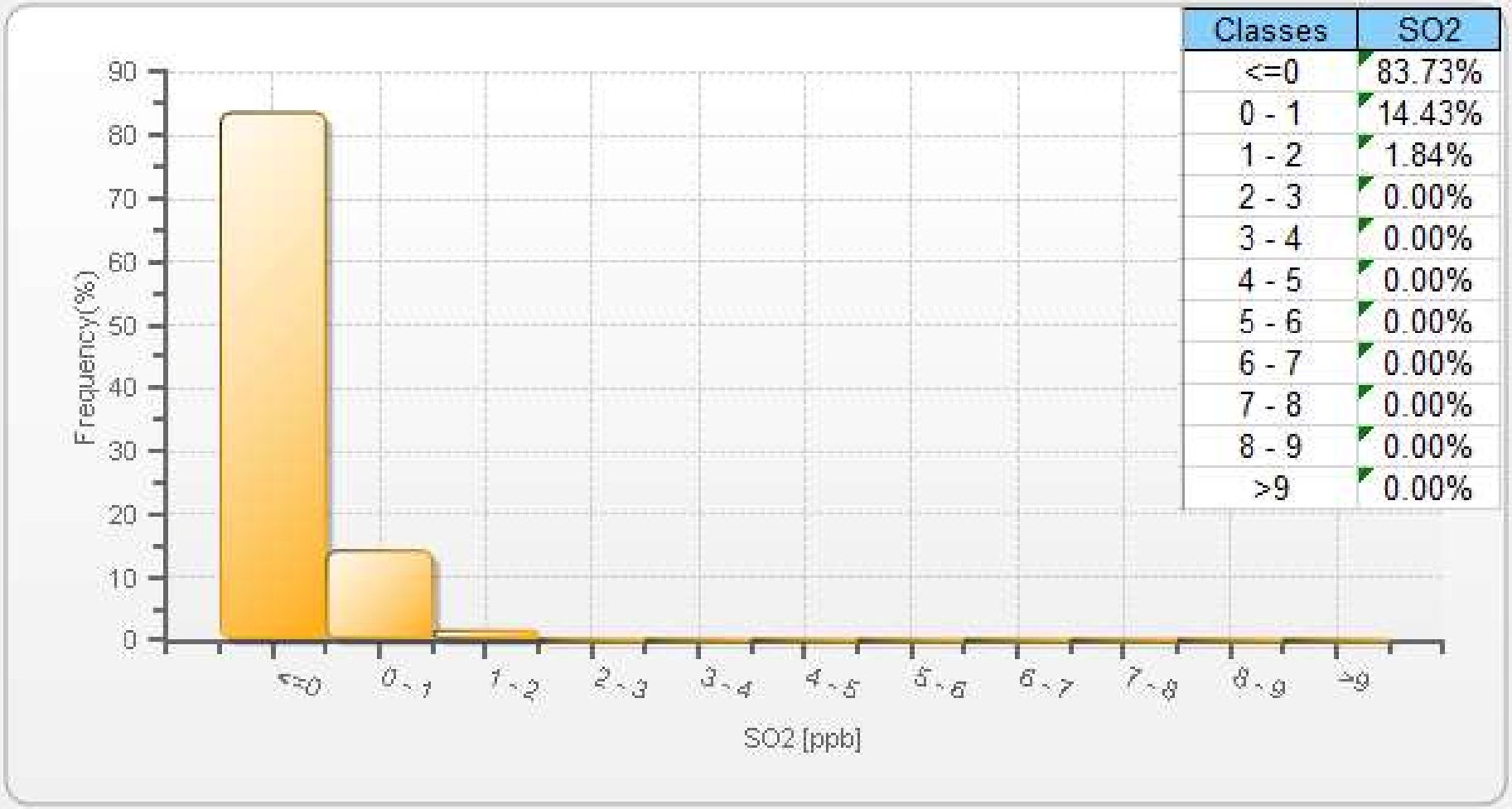
C	Monthly Calibration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Equipment Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine 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 - 986c Station

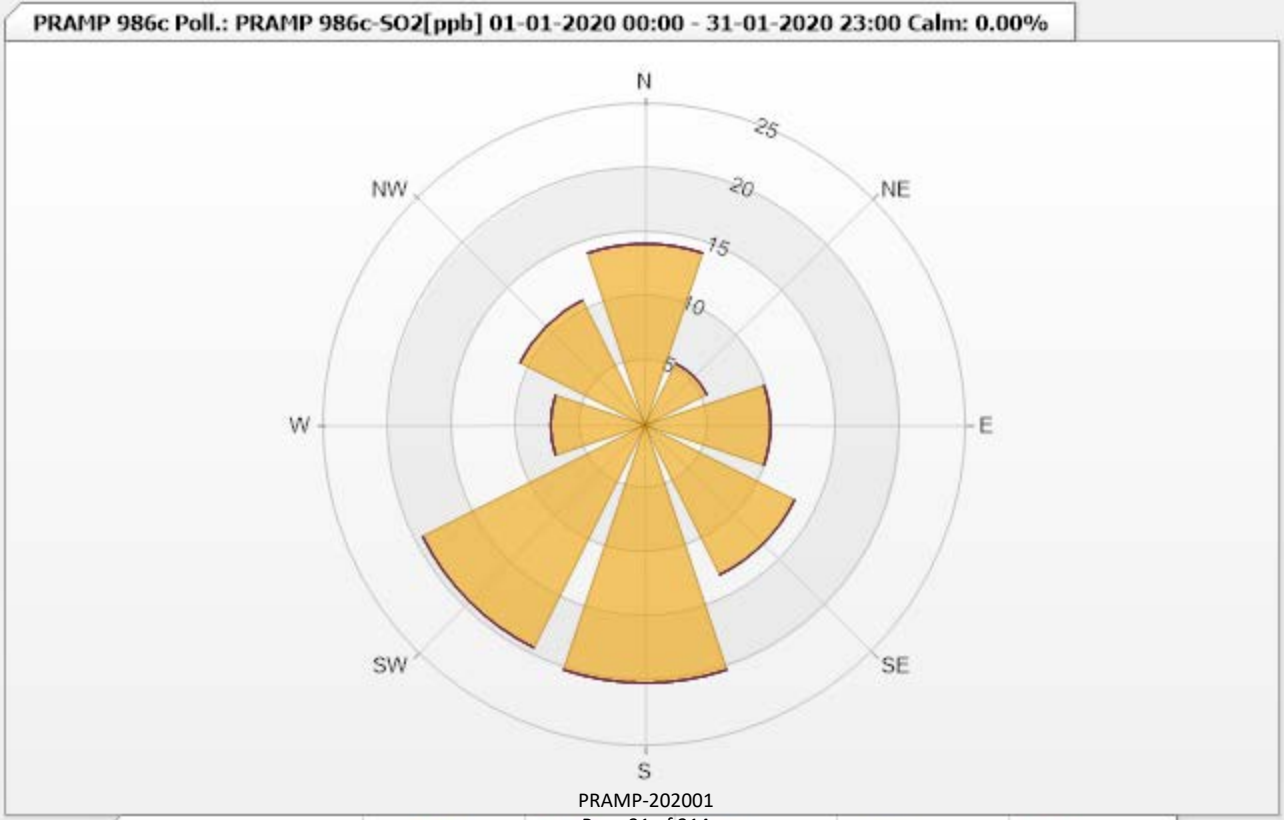


SO2[ppb] Histogram: PRAMP 986c Monthly: 01-2020 1 Hr.



Wind: PRAMP 986c Poll.: PRAMP 986c-SO2[ppb] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	14.14	0	0	0	0	14.14
NE	5.37	0	0	0	0	5.37
E	9.76	0	0	0	0	9.76
SE	13.01	0	0	0	0	13.01
S	20.08	0	0	0	0	20.08
SW	19.38	0	0	0	0	19.38
W	7.36	0	0	0	0	7.36
NW	10.89	0	0	0	0	10.89
Summary	100	0	0	0	0	100


PRAMP 986c Poll.: PRAMP 986c-SO2[ppb] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
25
20
15
10
5
% Icon Classes (ppb)
100 0-10
0 10-50
0 50-100
0 100-172
0 >172.0

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PEACE RIVER AREA MONITORING PROGRAM

986c Station - January 2020

Summary of Hourly Averages

TOTAL REDUCED SULPHUR (TRS) in ppb

Alberta Ambient Air Quality Objectives (AAAQO) for H2S: 1-Hour 10 ppb, 24-Hour 3 ppb

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

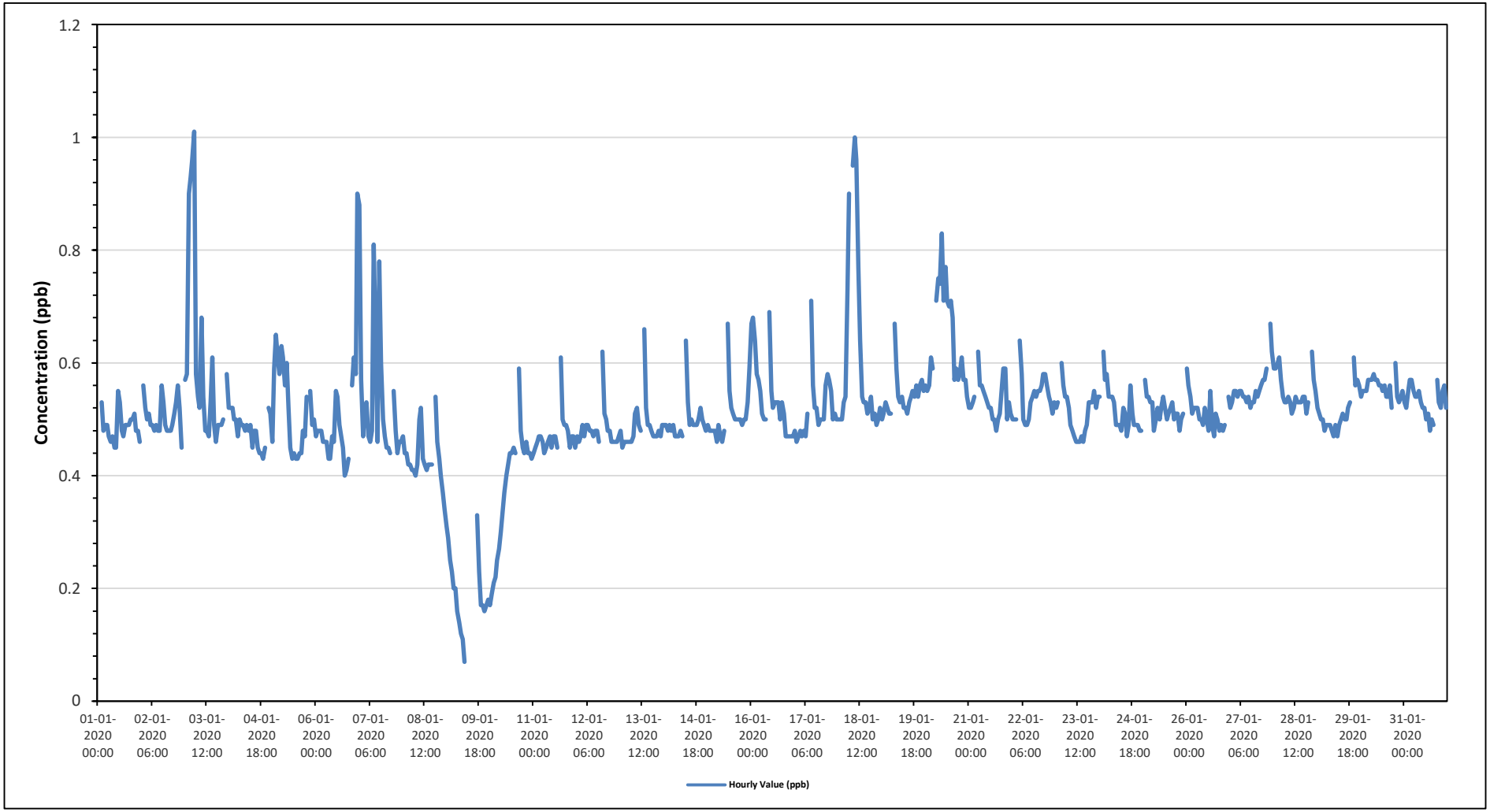
Maximum Hourly Value:	1.01	ppb	on January 3 at hour 5	Hours in Service:	744
Maximum Daily Value:	0.64	ppb	on January 20	Hours of Data:	706
Minimum Hourly Value:	0.07	ppb	on January 9 at hour 10	Hours of Missing Data:	0
Minimum Daily Value:	0.19	ppb	on January 9	Hours of Calibration:	38
Monthly Average:	0.51	ppb		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	0.45	S	0.53	0.48	0.49	0.49	0.47	0.46	0.47	0.45	0.45	0.55	0.53	0.48	0.47	0.49	0.49	0.49	0.5	0.5	0.51	0.48	0.48	0.46	0.45	0.55	0.49
Jan 2	S	0.56	0.52	0.5	0.51	0.49	0.49	0.48	0.49	0.48	0.48	0.56	0.53	0.49	0.48	0.48	0.48	0.49	0.51	0.53	0.56	0.52	0.45	S	0.45	0.56	0.50
Jan 3	0.57	0.58	0.9	0.93	0.96	**1.01**	0.58	0.54	0.52	0.68	0.54	0.48	0.48	0.47	0.53	0.61	0.49	0.46	0.49	0.49	0.49	0.5	S	0.58	0.46	**1.01**	0.60
Jan 4	0.52	0.52	0.52	0.5	0.5	0.47	0.5	0.49	0.49	0.48	0.49	0.48	0.49	0.45	0.48	0.48	0.45	0.44	0.44	0.43	0.45	S	0.52	0.51	0.43	0.52	0.48
Jan 5	0.46	0.59	0.65	0.61	0.58	0.63	0.61	0.56	0.6	0.52	0.45	0.43	0.44	0.43	0.43	0.44	0.44	0.48	0.47	0.54	S	0.55	0.49	0.5	0.43	0.65	0.52
Jan 6	0.47	0.48	0.48	0.48	0.46	0.46	0.46	0.43	0.43	0.47	0.46	0.55	0.54	0.49	0.47	0.45	0.4	0.41	0.43	S	0.56	0.61	0.58	0.9	0.40	0.90	0.50
Jan 7	0.88	0.57	0.47	0.52	0.53	0.47	0.46	0.48	0.81	0.63	0.46	0.78	0.6	0.5	0.47	0.45	0.45	0.44	S	0.55	0.48	0.44	0.46	0.46	0.44	0.88	0.54
Jan 8	0.47	0.44	0.44	0.42	0.42	0.41	0.41	0.4	0.42	0.5	0.52	0.43	0.42	0.41	0.42	0.42	0.42	S	0.54	0.46	0.43	0.4	0.37	0.34	0.34	0.54	0.43
Jan 9	0.31	0.29	0.25	0.23	0.2	0.2	0.16	0.14	0.12	0.11	0.07	C	C	C	C	C	C	0.33	0.23	0.17	0.17	0.16	0.17	0.18	0.07	0.33	0.19
Jan 10	0.17	0.19	0.21	0.22	0.25	0.27	0.3	0.34	0.37	0.4	0.42	0.44	0.44	0.45	0.44	S	0.59	0.48	0.45	0.44	0.46	0.44	0.44	0.43	0.17	0.59	0.38
Jan 11	0.44	0.45	0.46	0.47	0.47	0.46	0.44	0.45	0.46	0.47	0.45	0.47	0.47	0.45	S	0.61	0.5	0.49	0.49	0.48	0.45	0.47	0.47	0.45	0.44	0.61	0.47
Jan 12	0.47	0.46	0.47	0.49	0.47	0.49	0.49	0.48	0.48	0.47	0.48	0.48	0.46	S	0.62	0.51	0.5	0.48	0.48	0.46	0.46	0.46	0.46	0.47	0.46	0.62	0.48
Jan 13	0.48	0.45	0.46	0.46	0.46	0.46	0.46	0.47	0.51	0.52	0.49	0.48	S	0.66	0.52	0.49	0.49	0.48	0.47	0.47	0.47	0.48	0.47	0.49	0.45	0.66	0.49
Jan 14	0.49	0.49	0.48	0.49	0.48	0.49	0.47	0.47	0.47	0.48	0.47	S	0.64	0.53	0.49	0.5	0.49	0.49	0.49	0.5	0.52	0.5	0.49	0.48	0.47	0.64	0.50
Jan 15	0.49	0.48	0.48	0.48	0.48	0.46	0.49	0.47	0.46	0.48	S	0.67	0.55	0.52	0.51	0.5	0.5	0.5	0.5	0.49	0.5	0.5	0.53	0.59	0.46	0.67	0.51
Jan 16	0.67	0.68	0.64	0.58	0.57	0.55	0.51	0.5	0.5	S	0.69	0.55	0.52	0.53	0.53	0.53	0.5	0.53	0.51	0.47	0.47	0.47	0.47	0.47	0.47	0.69	0.54
Jan 17	0.48	0.46	0.47	0.48	0.47	0.48	0.47	0.51	S	0.71	0.56	0.52	0.52	0.49	0.5	0.5	0.5	0.56	0.58	0.57	0.55	0.5	0.51	0.5	0.46	0.71	0.52
Jan 18	0.5	0.5	0.5	0.53	0.54	0.73	0.9	S	0.95	1	0.96	0.77	0.64	0.54	0.53	0.53	0.51	0.52	0.54	0.5	0.51	0.49	0.5	0.52	0.49	1.00	0.62
Jan 19	0.5	0.51	0.53	0.52	0.51	0.51	S	0.67	0.59	0.54	0.53	0.54	0.52	0.52	0.51	0.53	0.54	0.55	0.54	0.56	0.54	0.56	0.57	0.55	0.50	0.67	0.54
Jan 20	0.56	0.55	0.56	0.61	0.59	S	0.71	0.75	0.74	0.83	0.71	0.77	0.71	0.7	0.71	0.68	0.57	0.59	0.57	0.58	0.61	0.57	0.57	0.54	0.54	0.83	**0.64**
Jan 21	0.52	0.52	0.53	0.54	S	0.62	0.56	0.56	0.55	0.54	0.53	0.52	0.52	0.5	0.5	0.48	0.5	0.51	0.55	0.59	0.59	0.5	0.53	0.51	0.48	0.62	0.53
Jan 22	0.5	0.5	0.5	S	0.64	0.58	0.5	0.49	0.49	0.5	0.53	0.54	0.55	0.54	0.55	0.55	0.56	0.58	0.58	0.56	0.54	0.53	0.51	0.53	0.49	0.64	0.54
Jan 23	0.52	0.53	S	0.6	0.56	0.54	0.54	0.52	0.49	0.48	0.47	0.46	0.46	0.46	0.47	0.46	0.48	0.49	0.53	0.53	0.53	0.55	0.52	0.54	0.46	0.60	0.51
Jan 24	0.54	S	0.62	0.57	0.58	0.54	0.54	0.54	0.53	0.49	0.49	0.49	0.48	0.52	0.51	0.47	0.49	0.56	0.51	0.49	0.49	0.49	0.48	0.48	0.47	0.62	0.52
Jan 25	S	0.57	0.54	0.54	0.53	0.53	0.48	0.5	0.52	0.5	0.52	0.54	0.52	0.5	0.51	0.52	0.53	0.5	0.51	0.51	0.48	0.5	0.51	S	0.48	0.57	0.52
Jan 26	0.59	0.56	0.54	0.51	0.52	0.52	0.52	0.5	0.5	0.49	0.52	0.5	0.48	0.55	0.49	0.47	0.51	0.5	0.48	0.49	0.48	0.49	S	0.54	0.47	0.59	0.51
Jan 27	0.52	0.53	0.55	0.55	0.54	0.55	0.55	0.54	0.54	0.53	0.54	0.52	0.53	0.53	0.55	0.54	0.55	0.56	0.57	0.57	0.59	S	0.67	0.62	0.52	0.67	0.55
Jan 28	0.59	0.59	0.6	0.61	0.57	0.54	0.53	0.53	0.54	0.53	0.51	0.52	0.54	0.53	0.53	0.53	0.54	0.54	0.51	0.53	S	0.62	0.57	0.55	0.51	0.62	0.55
Jan 29	0.52	0.51	0.5	0.5	0.48	0.49	0.49	0.49	0.48	0.47	0.49	0.47	0.49	0.5	0.51	0.5	0.5	0.52	0.53	S	0.61	0.56	0.57	0.56	0.47	0.61	0.51
Jan 30	0.54	0.55	0.55	0.55	0.57	0.57	0.57	0.58	0.57	0.57	0.56	0.56	0.55	0.56	0.54	0.54	0.56	0.52	S	0.6	0.54	0.53	0.54	0.55	0.52	0.60	0.56
Jan 31	0.53	0.52	0.55	0.57	0.57	0.55	0.54	0.54	0.55	0.53	0.52	0.52	0.5	0.51	0.48	0.5	0.49	S	0.57	0.53	0.52	0.55	0.56	0.52	0.48	0.57	0.53
Diurnal Maximum	0.88	0.68	0.90	0.93	0.96	1.01	0.90	0.75	0.95	1.00	0.96	0.78	0.71	0.70	0.71	0.68	0.59	0.59	0.58	0.60	0.61	0.62	0.67	0.90			
Diurnal Average	0.51	0.50	0.52	0.52	0.52	0.52	0.51	0.50	0.52	0.53	0.51	0.54	0.52	0.51	0.51	0.51	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.51			

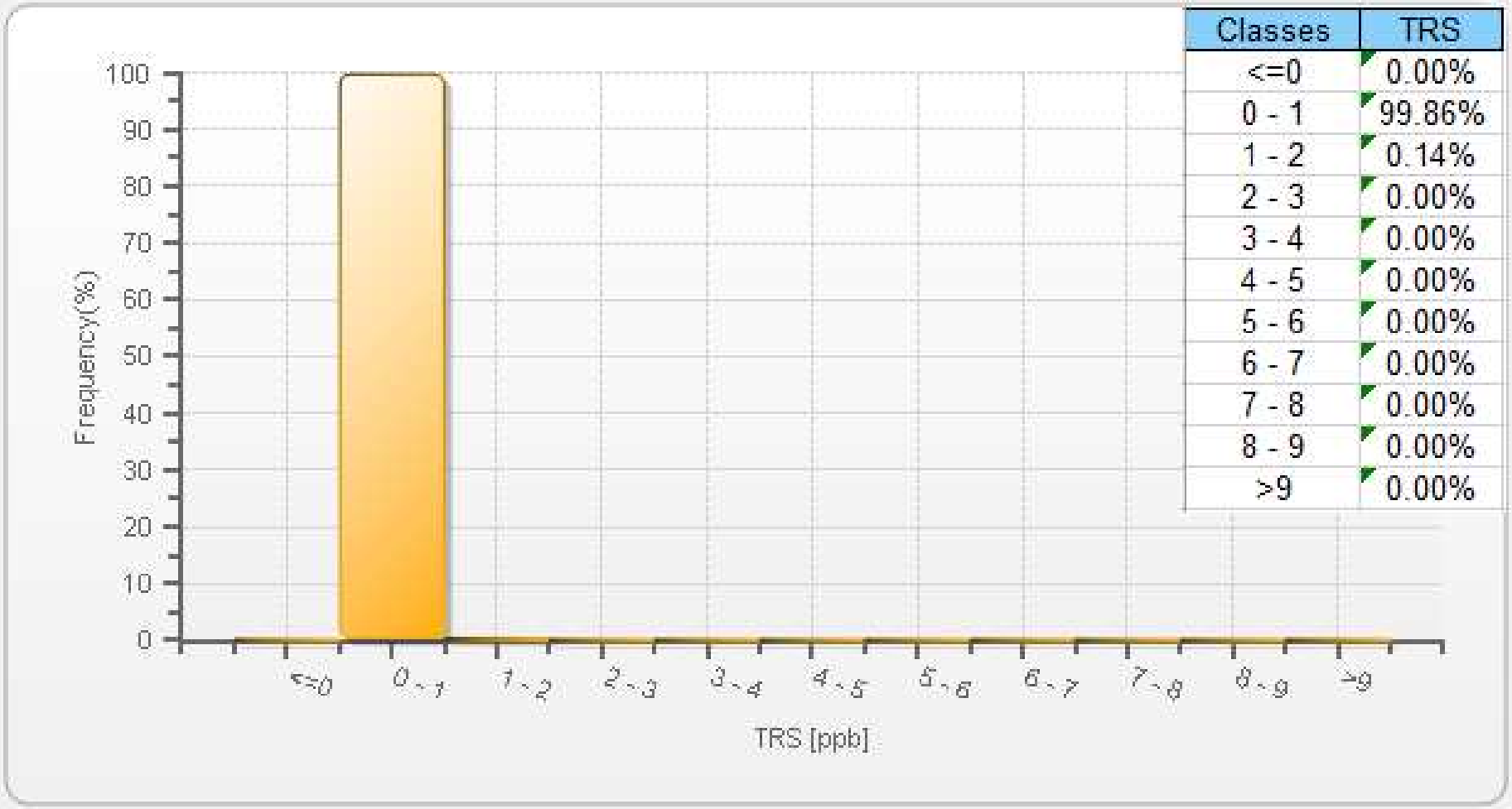
C	Monthly Calibration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Equipment Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine 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 TRS - 986c Station



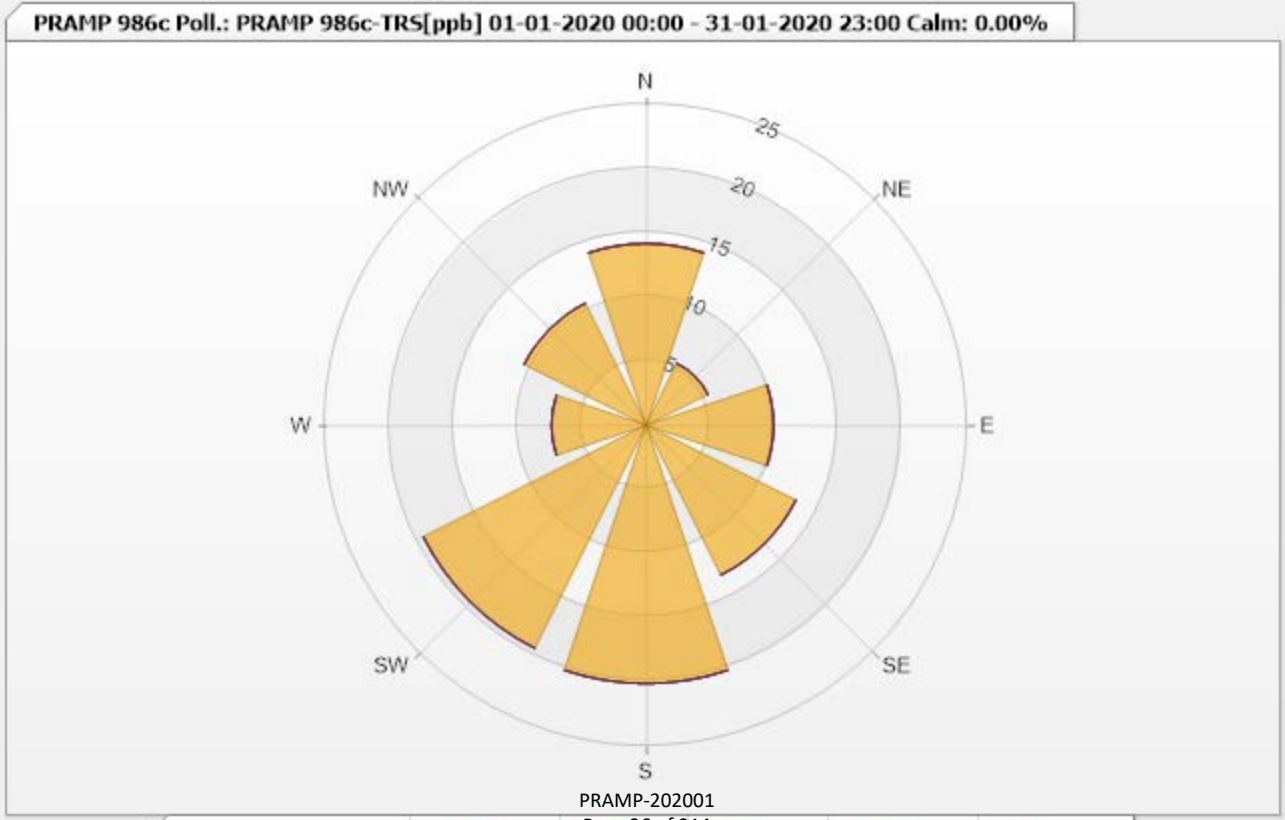
TRS[ppb] Histogram: PRAMP 986c Monthly: 01-2020 1 Hr.



Classes	TRS
<=0	0.00%
0 - 1	99.86%
1 - 2	0.14%
2 - 3	0.00%
3 - 4	0.00%
4 - 5	0.00%
5 - 6	0.00%
6 - 7	0.00%
7 - 8	0.00%
8 - 9	0.00%
>9	0.00%

Wind: PRAMP 986c Poll.: PRAMP 986c-TRS[ppb] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	14.16	0	0	0	0	14.16
NE	5.38	0	0	0	0	5.38
E	9.92	0	0	0	0	9.92
SE	13.03	0	0	0	0	13.03
S	20.11	0	0	0	0	20.11
SW	19.41	0	0	0	0	19.41
W	7.37	0	0	0	0	7.37
NW	10.62	0	0	0	0	10.62
Summary	100	0	0	0	0	100


PRAMP 986c Poll.: PRAMP 986c-TRS[ppb] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
25
20
15
10
5
% Icon Classes (ppb)
100 0-2
0 2-5
0 5-10
0 10-50
0 >50.0

PEACE RIVER AREA MONITORING PROGRAM

986c Station - January 2020

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

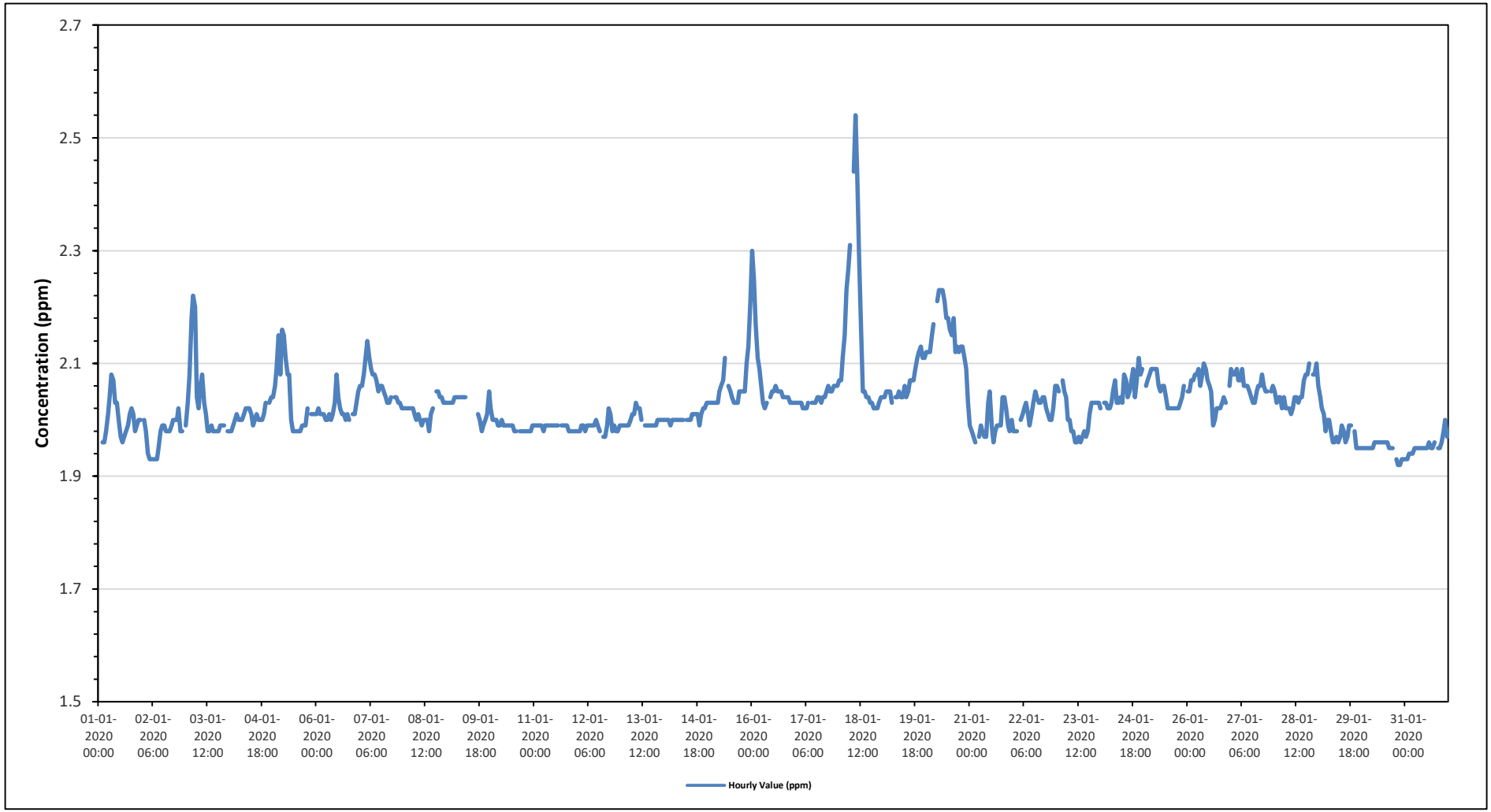
Maximum Hourly Value:	2.54	ppm	on January 18 at hour 9	Hours in Service:	744
Maximum Daily Value:	2.15	ppm	on January 20	Hours of Data:	705
Minimum Hourly Value:	1.92	ppm	on January 30 at hour 20	Hours of Missing Data:	1
Minimum Daily Value:	1.95	ppm	on January 30	Hours of Calibration:	38
Monthly Average:	2.03	ppm		Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	K	S	1.96	1.96	1.98	2.01	2.04	2.08	2.07	2.03	2.03	2	1.97	1.96	1.97	1.98	1.99	2.01	2.02	2.01	1.98	1.99	2	2	1.96	2.08	2.00
Jan 2	S	2	1.98	1.94	1.93	1.93	1.93	1.93	1.93	1.95	1.98	1.99	1.99	1.98	1.98	1.98	1.99	2	2	2	2.02	1.98	1.98	S	1.93	2.02	1.97
Jan 3	1.99	2.03	2.08	2.18	2.22	2.2	2.04	2.02	2.06	2.08	2.03	2.01	1.98	1.98	1.99	1.98	1.98	1.98	1.98	1.99	1.99	1.99	S	1.98	1.98	2.22	2.03
Jan 4	1.98	1.98	1.99	2	2.01	2	2	2	2.01	2.02	2.02	2.02	2.01	1.99	2	2.01	2	2	2	2.01	2.03	S	2.03	2.04	1.98	2.04	2.01
Jan 5	2.04	2.06	2.09	2.15	2.08	2.16	2.15	2.11	2.08	2.08	2	1.98	1.98	1.98	1.98	1.98	1.99	1.99	1.99	2.02	S	2.01	2.01	2.01	1.98	2.16	2.04
Jan 6	2.01	2.02	2.01	2.01	2.01	2	2	2.01	2	2.01	2.03	2.08	2.04	2.02	2.01	2.01	2	2.01	2	S	2.01	2.01	2.03	2.05	2.00	2.08	2.02
Jan 7	2.06	2.06	2.08	2.11	2.14	2.11	2.09	2.08	2.08	2.07	2.05	2.06	2.06	2.05	2.04	2.03	2.03	2.04	S	2.04	2.04	2.03	2.03	2.02	2.02	2.14	2.06
Jan 8	2.02	2.02	2.02	2.02	2.02	2.02	2.01	2	2.01	2	1.99	2	2	2	1.98	2.01	2.02	S	2.05	2.05	2.04	2.04	2.03	2.03	1.98	2.05	2.02
Jan 9	2.03	2.03	2.03	2.03	2.04	2.04	2.04	2.04	2.04	2.04	2.04	C	C	C	C	C	S	2.01	2	1.98	1.99	2	2.01	2.05	1.98	2.05	2.02
Jan 10	2.02	2	2	2	1.99	1.99	2	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.98	S	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.98	2.02	1.99
Jan 11	1.99	1.99	1.99	1.99	1.99	1.98	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	S	1.99	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.99
Jan 12	1.98	1.98	1.99	1.99	1.98	1.99	1.99	1.99	1.99	1.99	2	1.99	1.98	S	1.97	1.97	1.99	2.02	2.01	1.98	1.99	1.98	1.98	1.99	1.97	2.02	1.99
Jan 13	1.99	1.99	1.99	1.99	1.99	2	2.01	2.01	2.03	2.02	2.02	2	S	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2	2	2	2	1.99	2.03	2.00
Jan 14	2	2	2	1.99	2	2	2	2	2	2	2	S	2	2	2	2.01	2.01	2.01	2.01	1.99	2.01	2.02	2.02	2.03	1.99	2.03	2.00
Jan 15	2.03	2.03	2.03	2.03	2.03	2.03	2.05	2.06	2.07	2.11	S	2.06	2.05	2.04	2.03	2.03	2.03	2.05	2.05	2.05	2.05	2.1	2.13	2.21	2.03	2.21	2.06
Jan 16	2.3	2.25	2.17	2.11	2.09	2.06	2.03	2.02	2.03	S	2.04	2.05	2.05	2.06	2.05	2.05	2.05	2.04	2.04	2.04	2.04	2.03	2.03	2.03	2.02	2.30	2.07
Jan 17	2.03	2.03	2.03	2.03	2.02	2.02	2.02	2.03	S	2.03	2.03	2.03	2.04	2.04	2.03	2.04	2.04	2.05	2.06	2.05	2.05	2.06	2.06	2.06	2.02	2.06	2.04
Jan 18	2.07	2.07	2.11	2.15	2.23	2.27	2.31	S	2.44	**2.54**	2.43	2.29	2.16	2.05	2.05	2.04	2.04	2.03	2.03	2.02	2.02	2.02	2.03	2.04	2.02	**2.54**	2.15
Jan 19	2.04	2.04	2.05	2.05	2.05	2.03	S	2.04	2.04	2.05	2.04	2.04	2.06	2.04	2.05	2.07	2.07	2.07	2.09	2.11	2.12	2.13	2.11	2.11	2.03	2.13	2.07
Jan 20	2.12	2.12	2.12	2.15	2.17	S	2.21	2.23	2.23	2.23	2.21	2.18	2.18	2.16	2.15	2.18	2.12	2.13	2.12	2.13	2.13	2.11	2.09	2.03	2.03	2.23	**2.15**
Jan 21	1.99	1.98	1.97	1.96	S	1.97	1.99	1.98	1.97	1.97	2.03	2.05	1.99	1.96	1.98	1.99	1.99	1.99	2.04	2.04	2.02	1.99	1.98	2	1.96	2.05	1.99
Jan 22	1.98	1.98	1.98	S	2	2.01	2.02	2.03	2.01	1.99	2.01	2.03	2.05	2.04	2.03	2.03	2.04	2.04	2.02	2.01	2	2	2.02	2.06	1.98	2.06	2.02
Jan 23	2.06	2.05	S	2.07	2.05	2.04	2	2	1.98	1.98	1.96	1.96	1.97	1.96	1.97	1.98	1.97	1.98	2.01	2.03	2.03	2.03	2.03	2.03	1.96	2.07	2.01
Jan 24	2.02	S	2.03	2.03	2.02	2.02	2.03	2.05	2.07	2.03	2.03	2.04	2.03	2.08	2.07	2.04	2.05	2.07	2.09	2.04	2.07	2.11	2.08	2.09	2.02	2.11	2.05
Jan 25	S	2.06	2.07	2.08	2.09	2.09	2.09	2.09	2.06	2.05	2.06	2.06	2.04	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.03	2.04	2.06	S	2.02	2.09	2.05
Jan 26	2.05	2.05	2.07	2.07	2.08	2.08	2.09	2.06	2.08	2.1	2.09	2.07	2.06	2.05	1.99	2	2.02	2.02	2.02	2.03	2.04	2.03	S	2.06	1.99	2.10	2.05
Jan 27	2.09	2.08	2.08	2.09	2.07	2.07	2.09	2.06	2.06	2.06	2.05	2.04	2.03	2.03	2.05	2.06	2.06	2.08	2.06	2.05	2.05	S	2.05	2.06	2.03	2.09	2.06
Jan 28	2.05	2.03	2.04	2.04	2.02	2.04	2.02	2.02	2.02	2.01	2.02	2.04	2.04	2.03	2.04	2.04	2.07	2.08	2.08	2.1	S	2.08	2.08	2.1	2.01	2.10	2.05
Jan 29	2.06	2.04	2.02	2.01	1.98	2	2	1.98	1.96	1.96	1.97	1.96	1.97	1.99	1.98	1.96	1.97	1.99	1.99	S	1.98	1.95	1.95	1.95	1.95	2.06	1.98
Jan 30	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.95	1.95	1.95	S	1.93	1.92	1.92	1.93	1.93	1.92	1.96	1.95
Jan 31	1.93	1.93	1.94	1.94	1.94	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.95	1.95	1.96	S	1.95	1.95	1.96	1.98	2	1.97	1.93	2.00	1.95
Diurnal Maximum	2.30	2.25	2.17	2.18	2.23	2.27	2.31	2.23	2.44	2.54	2.43	2.29	2.18	2.16	2.15	2.18	2.12	2.13	2.12	2.13	2.13	2.13	2.13	2.21			
Diurnal Average	2.03	2.03	2.03	2.04	2.04	2.04	2.04	2.03	2.04	2.04	2.04	2.03	2.02	2.01	2.01	2.01	2.01	2.02	2.02	2.02	2.02	2.02	2.02	2.03			

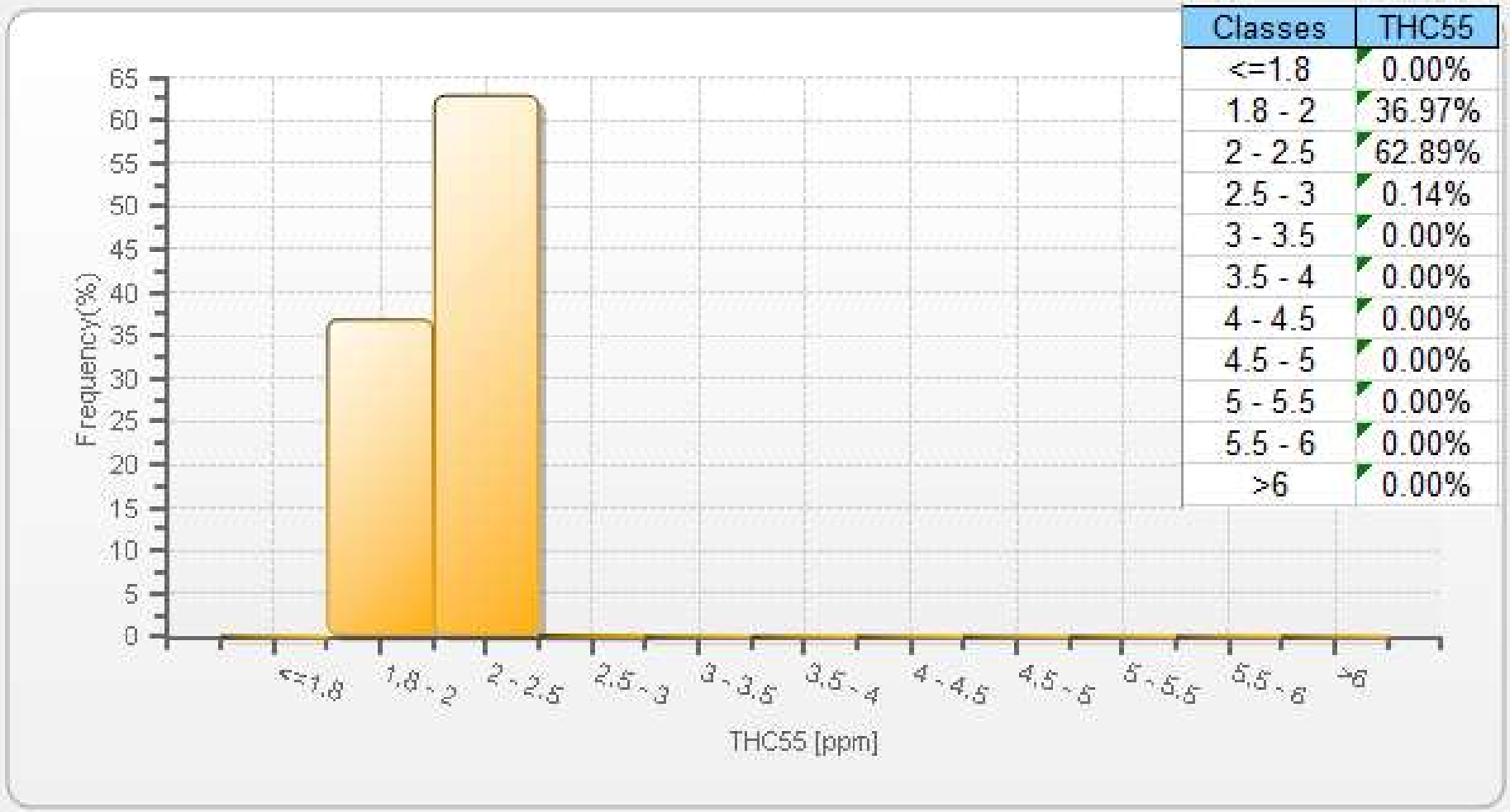
C	Monthly Calibration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Equipment Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine 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 THC - 986c Station



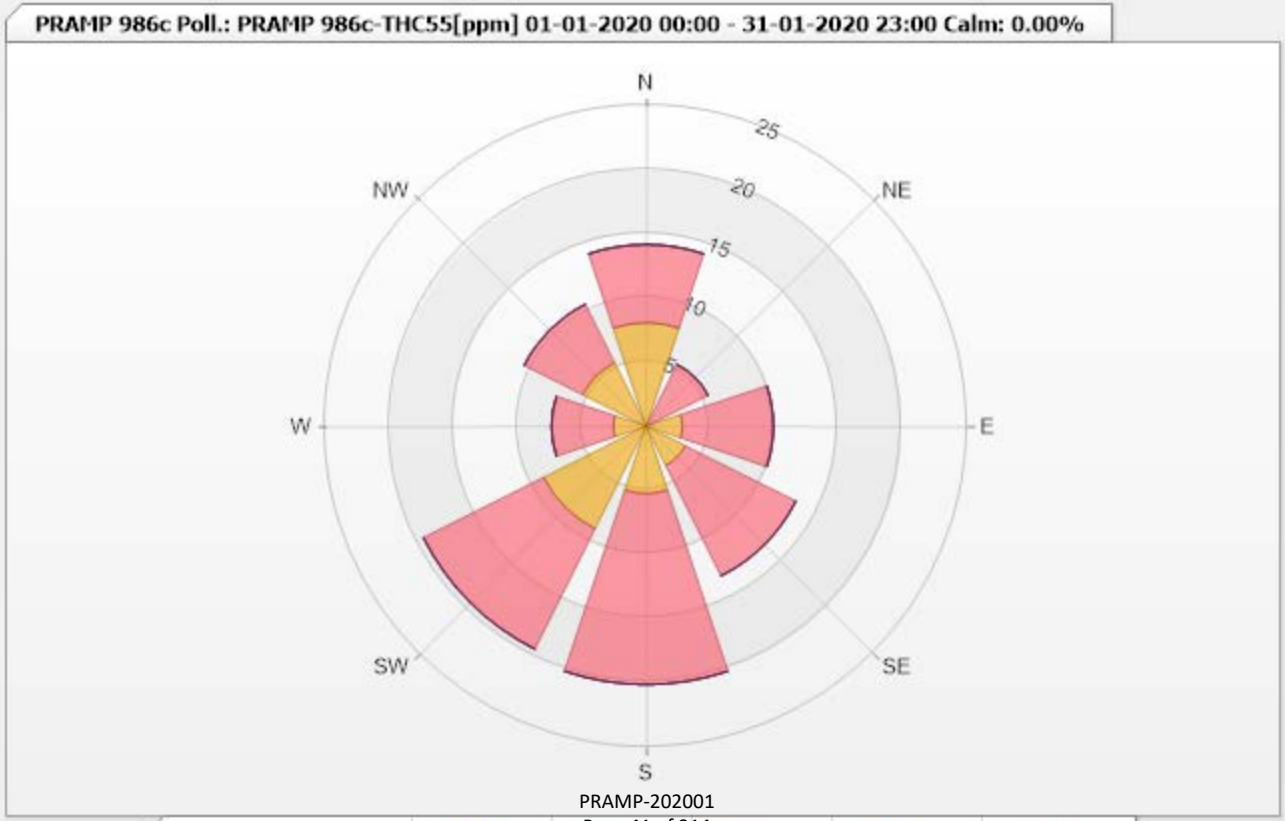
THC55[ppm] Histogram: PRAMP 986c Monthly: 01-2020 1 Hr.



Classes	THC55
<=1.8	0.00%
1.8 - 2	36.97%
2 - 2.5	62.89%
2.5 - 3	0.14%
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: PRAMP 986c Poll.: PRAMP 986c-THC55[ppm] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	8.07	6.09	0	0	0	14.16
NE	0.14	5.24	0	0	0	5.38
E	2.83	7.08	0	0	0	9.91
SE	3.4	9.63	0	0	0	13.03
S	5.24	14.87	0	0	0	20.11
SW	8.92	10.48	0	0	0	19.4
W	2.55	4.82	0	0	0	7.37
NW	5.52	5.1	0	0	0	10.62
Summary	36.67	63.31	0	0	0	100


PRAMP 986c Poll.: PRAMP 986c-THC55[ppm] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
25
20
15
10
5
% Icon Classes (ppm)
37 0-2
63 2-5
0 5-10
0 10-40
0 >40.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

986c Station - January 2020

Summary of Hourly Averages

METHANE (CH4) in ppm

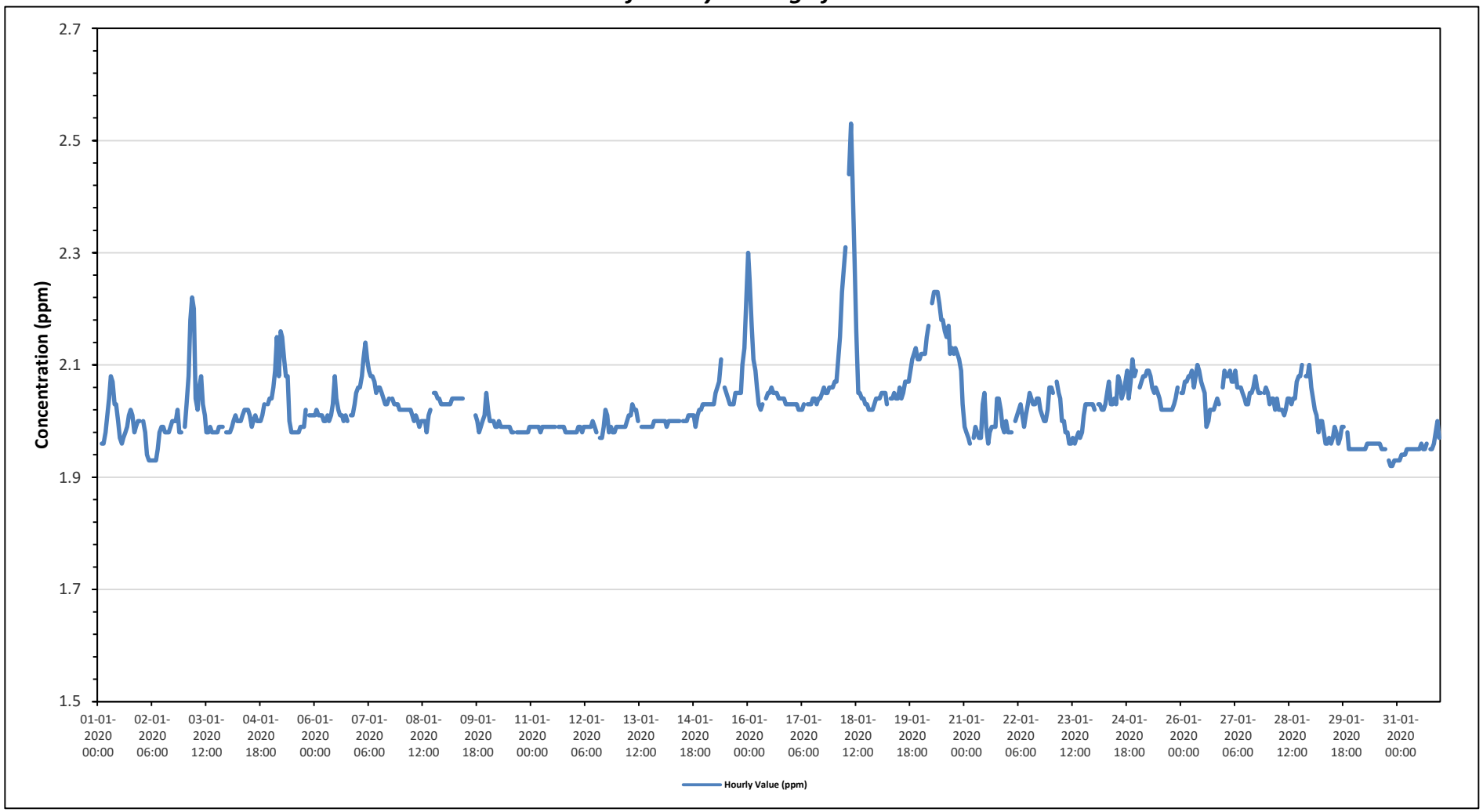
Maximum Hourly Value:	2.53	ppm	on January 18 at hour 9	Hours in Service:	744
Maximum Daily Value:	2.15	ppm	on January 20	Hours of Data:	705
Minimum Hourly Value:	1.92	ppm	on January 30 at hour 20	Hours of Missing Data:	1
Minimum Daily Value:	1.95	ppm	on January 30	Hours of Calibration:	38
Monthly Average:	2.03	ppm		Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	K	S	1.96	1.96	1.98	2.01	2.04	2.08	2.07	2.03	2.03	2	1.97	1.96	1.97	1.98	1.99	2.01	2.02	2.01	1.98	1.99	2	2	1.96	2.08	2.00
Jan 2	S	2	1.98	1.94	1.93	1.93	1.93	1.93	1.93	1.95	1.98	1.99	1.99	1.98	1.98	1.98	1.99	2	2	2	2.02	1.98	1.98	S	1.93	2.02	1.97
Jan 3	1.99	2.03	2.08	2.18	2.22	2.2	2.04	2.02	2.06	2.08	2.03	2.01	1.98	1.98	1.99	1.98	1.98	1.98	1.98	1.99	1.99	1.99	S	1.98	1.98	2.22	2.03
Jan 4	1.98	1.98	1.99	2	2.01	2	2	2	2.01	2.02	2.02	2.02	2.01	1.99	2	2.01	2	2	2	2.01	2.03	S	2.03	2.04	1.98	2.04	2.01
Jan 5	2.04	2.06	2.09	2.15	2.08	2.16	2.15	2.11	2.08	2.08	2	1.98	1.98	1.98	1.98	1.98	1.99	1.99	1.99	2.02	S	2.01	2.01	2.01	1.98	2.16	2.04
Jan 6	2.01	2.02	2.01	2.01	2.01	2	2	2.01	2	2.01	2.03	2.08	2.04	2.02	2.01	2.01	2	2.01	2	S	2.01	2.01	2.03	2.05	2.00	2.08	2.02
Jan 7	2.06	2.06	2.08	2.11	2.14	2.11	2.09	2.08	2.08	2.07	2.05	2.06	2.06	2.05	2.04	2.03	2.03	2.04	S	2.04	2.03	2.03	2.03	2.02	2.02	2.14	2.06
Jan 8	2.02	2.02	2.02	2.02	2.02	2.02	2.01	2	2.01	2	1.99	2	2	2	1.98	2.01	2.02	S	2.05	2.05	2.04	2.04	2.03	2.03	1.98	2.05	2.02
Jan 9	2.03	2.03	2.03	2.03	2.04	2.04	2.04	2.04	2.04	2.04	2.04	C	C	C	C	C	S	2.01	2	1.98	1.99	2	2.01	2.05	1.98	2.05	2.02
Jan 10	2.02	2	2	2	1.99	1.99	2	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.98	S	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.98	2.02	1.99
Jan 11	1.99	1.99	1.99	1.99	1.99	1.98	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	S	1.99	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.99
Jan 12	1.98	1.98	1.99	1.99	1.98	1.99	1.99	1.99	1.99	1.99	2	1.99	1.98	S	1.97	1.97	1.99	2.02	2.01	1.98	1.99	1.98	1.98	1.99	1.97	2.02	1.99
Jan 13	1.99	1.99	1.99	1.99	1.99	2	2.01	2.01	2.03	2.02	2.02	2	S	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2	2	2	2	1.99	2.03	2.00
Jan 14	2	2	2	1.99	2	2	2	2	2	2	2	S	2	2	2	2.01	2.01	2.01	2.01	1.99	2.01	2.02	2.02	2.03	1.99	2.03	2.00
Jan 15	2.03	2.03	2.03	2.03	2.03	2.03	2.05	2.06	2.07	2.11	S	2.06	2.05	2.04	2.03	2.03	2.03	2.05	2.05	2.05	2.05	2.1	2.13	2.21	2.03	2.21	2.06
Jan 16	2.3	2.25	2.17	2.11	2.09	2.06	2.03	2.02	2.03	S	2.04	2.05	2.05	2.06	2.05	2.05	2.05	2.04	2.04	2.04	2.04	2.03	2.03	2.03	2.02	2.30	2.07
Jan 17	2.03	2.03	2.03	2.03	2.02	2.02	2.02	2.03	S	2.03	2.03	2.03	2.04	2.04	2.03	2.04	2.04	2.05	2.06	2.05	2.05	2.06	2.06	2.06	2.02	2.06	2.04
Jan 18	2.07	2.07	2.11	2.15	2.23	2.27	2.31	S	2.44	**2.53**	2.43	2.29	2.16	2.05	2.05	2.04	2.04	2.03	2.03	2.02	2.02	2.02	2.03	2.04	2.02	**2.53**	2.15
Jan 19	2.04	2.04	2.05	2.05	2.05	2.03	S	2.04	2.04	2.05	2.04	2.04	2.06	2.04	2.05	2.07	2.07	2.07	2.09	2.11	2.12	2.13	2.11	2.11	2.03	2.13	2.07
Jan 20	2.12	2.12	2.12	2.15	2.17	S	2.21	2.23	2.23	2.23	2.21	2.18	2.18	2.16	2.15	2.17	2.12	2.13	2.12	2.13	2.12	2.11	2.09	2.03	2.03	2.23	**2.15**
Jan 21	1.99	1.98	1.97	1.96	S	1.97	1.99	1.98	1.97	1.97	2.03	2.05	1.99	1.96	1.98	1.99	1.99	1.99	2.04	2.04	2.02	1.99	1.98	2	1.96	2.05	1.99
Jan 22	1.98	1.98	1.98	S	2	2.01	2.02	2.03	2.01	1.99	2.01	2.03	2.05	2.04	2.03	2.03	2.04	2.04	2.02	2.01	2	2	2.02	2.06	1.98	2.06	2.02
Jan 23	2.06	2.05	S	2.07	2.05	2.04	2	2	1.98	1.98	1.96	1.96	1.97	1.96	1.97	1.98	1.97	1.98	2.01	2.03	2.03	2.03	2.03	2.03	1.96	2.07	2.01
Jan 24	2.02	S	2.03	2.03	2.02	2.02	2.03	2.05	2.07	2.03	2.03	2.04	2.03	2.08	2.07	2.04	2.05	2.07	2.09	2.04	2.07	2.11	2.08	2.09	2.02	2.11	2.05
Jan 25	S	2.06	2.07	2.08	2.08	2.09	2.09	2.08	2.06	2.05	2.06	2.05	2.04	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.03	2.04	2.06	S	2.02	2.09	2.05
Jan 26	2.05	2.05	2.07	2.07	2.08	2.08	2.09	2.06	2.08	2.1	2.09	2.07	2.06	2.05	1.99	2	2.02	2.02	2.02	2.03	2.04	2.03	S	2.06	1.99	2.10	2.05
Jan 27	2.09	2.08	2.08	2.09	2.07	2.07	2.09	2.06	2.06	2.06	2.05	2.04	2.03	2.03	2.05	2.05	2.06	2.08	2.06	2.05	2.05	S	2.05	2.06	2.03	2.09	2.06
Jan 28	2.05	2.03	2.04	2.04	2.02	2.04	2.02	2.02	2.02	2.01	2.02	2.04	2.04	2.03	2.04	2.04	2.07	2.08	2.08	2.1	S	2.08	2.08	2.1	2.01	2.10	2.05
Jan 29	2.06	2.04	2.02	2.01	1.98	2	2	1.98	1.96	1.96	1.97	1.96	1.97	1.99	1.98	1.96	1.97	1.99	1.99	S	1.98	1.95	1.95	1.95	1.95	2.06	1.98
Jan 30	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.95	1.95	1.95	S	1.93	1.92	1.92	1.93	1.93	1.92	1.96	1.95
Jan 31	1.93	1.93	1.94	1.94	1.94	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.95	1.95	1.96	S	1.95	1.95	1.96	1.98	2	1.97	1.93	2.00	1.95
Diurnal Maximum	2.30	2.25	2.17	2.18	2.23	2.27	2.31	2.23	2.44	2.53	2.43	2.29	2.18	2.16	2.15	2.17	2.12	2.13	2.12	2.13	2.12	2.13	2.13	2.21			
Diurnal Average	2.03	2.03	2.03	2.04	2.04	2.04	2.04	2.03	2.04	2.04	2.04	2.03	2.02	2.01	2.01	2.01	2.01	2.02	2.02	2.02	2.02	2.02	2.02	2.03			

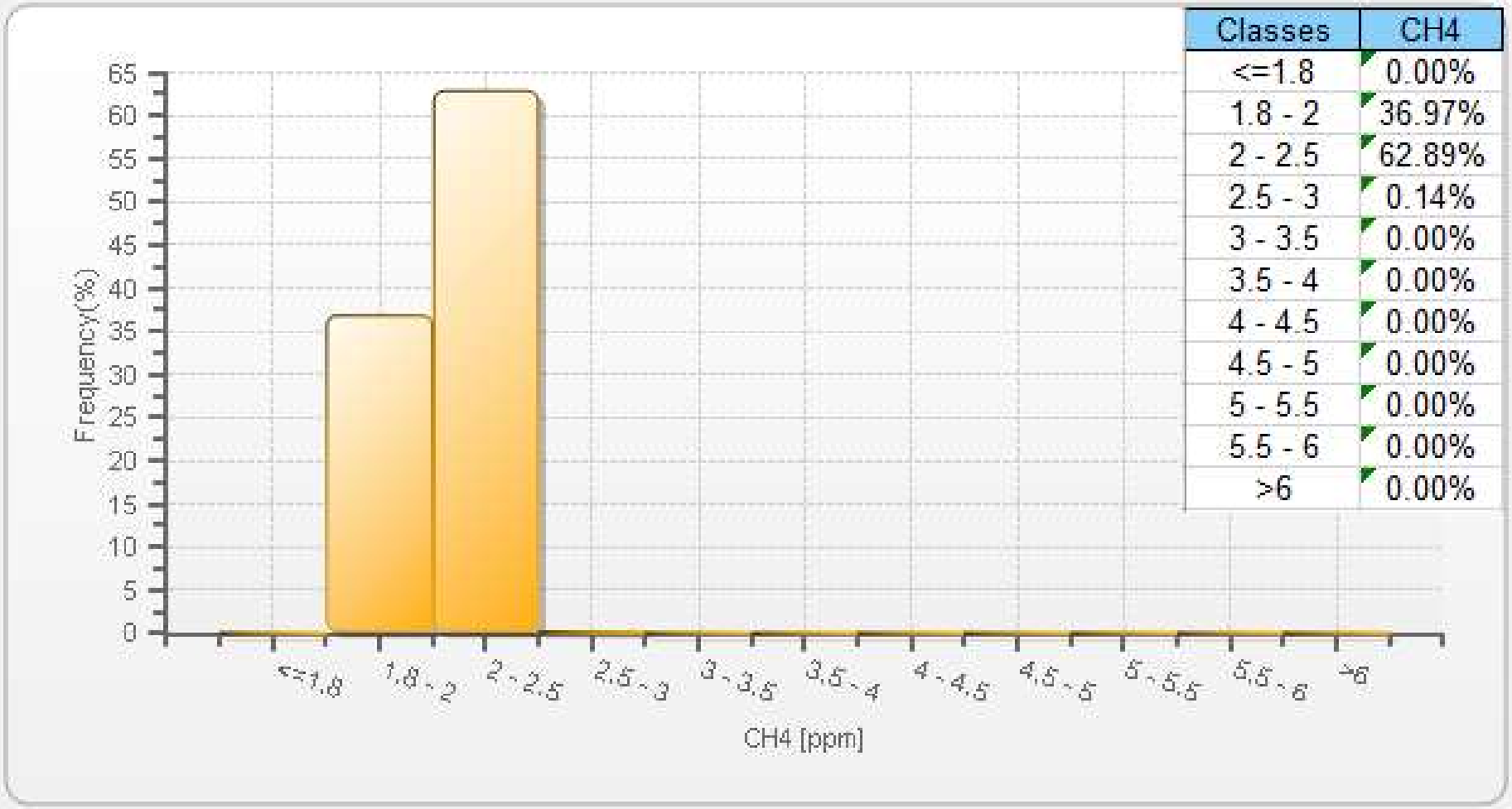
C	Monthly Calibration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Equipment Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine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

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

Timeseries Chart of Hourly Average for CH4 - 986c Station



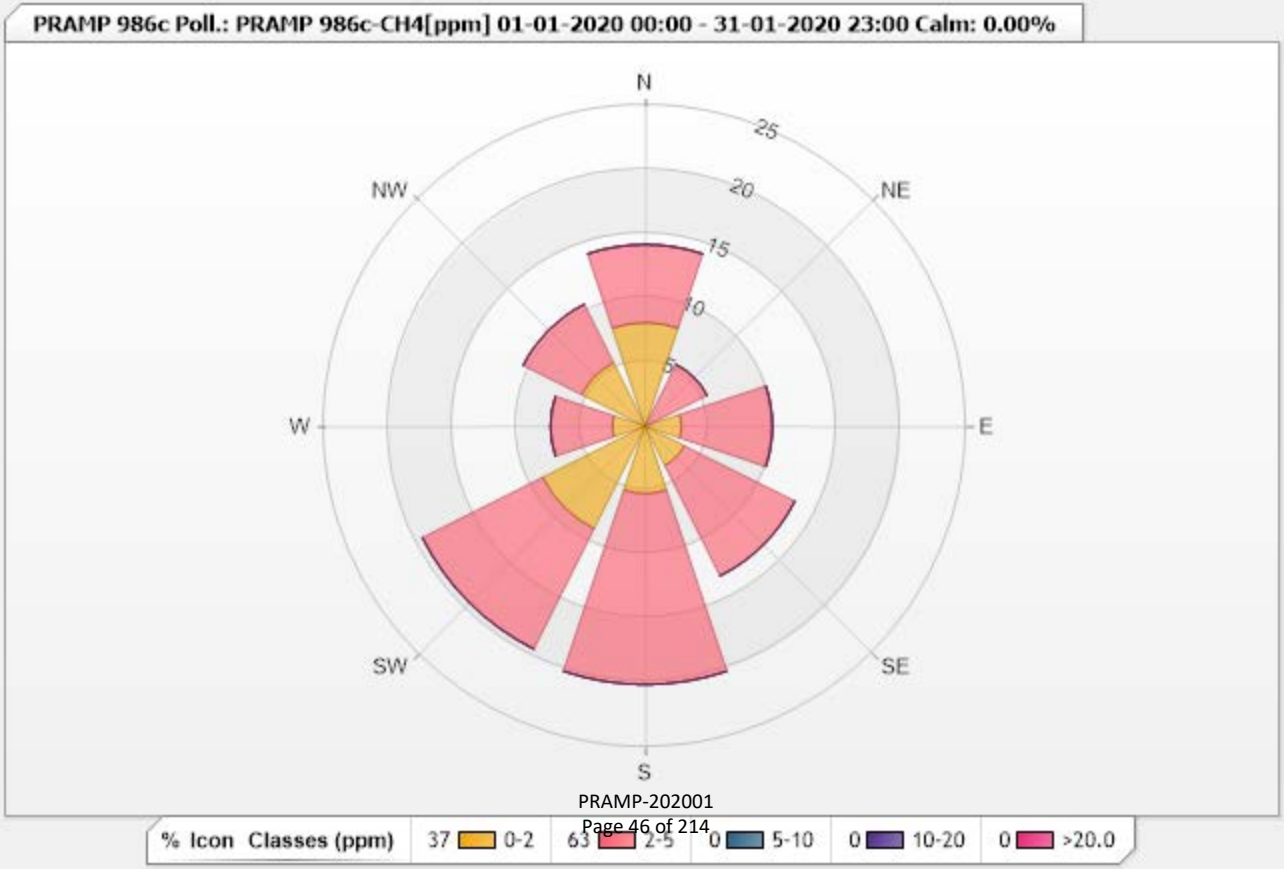
CH4[ppm] Histogram: PRAMP 986c Monthly: 01-2020 1 Hr.



Classes	CH4
<=1.8	0.00%
1.8 - 2	36.97%
2 - 2.5	62.89%
2.5 - 3	0.14%
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: PRAMP 986c Poll.: PRAMP 986c-CH4[ppm] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	8.07	6.09	0	0	0	14.16
NE	0.14	5.24	0	0	0	5.38
E	2.83	7.08	0	0	0	9.91
SE	3.4	9.63	0	0	0	13.03
S	5.24	14.87	0	0	0	20.11
SW	8.92	10.48	0	0	0	19.4
W	2.55	4.82	0	0	0	7.37
NW	5.52	5.1	0	0	0	10.62
Summary	36.67	63.31	0	0	0	100


PRAMP 986c Poll.: PRAMP 986c-CH4[ppm] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
25
20
15
10
5
% Icon Classes (ppm)
37 0-2
63 2-5
0 5-10
0 10-20
0 >20.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

986c Station - January 2020

Summary of Hourly Averages

NON-METHANE HYDROCARBONS (NMHC) in ppm

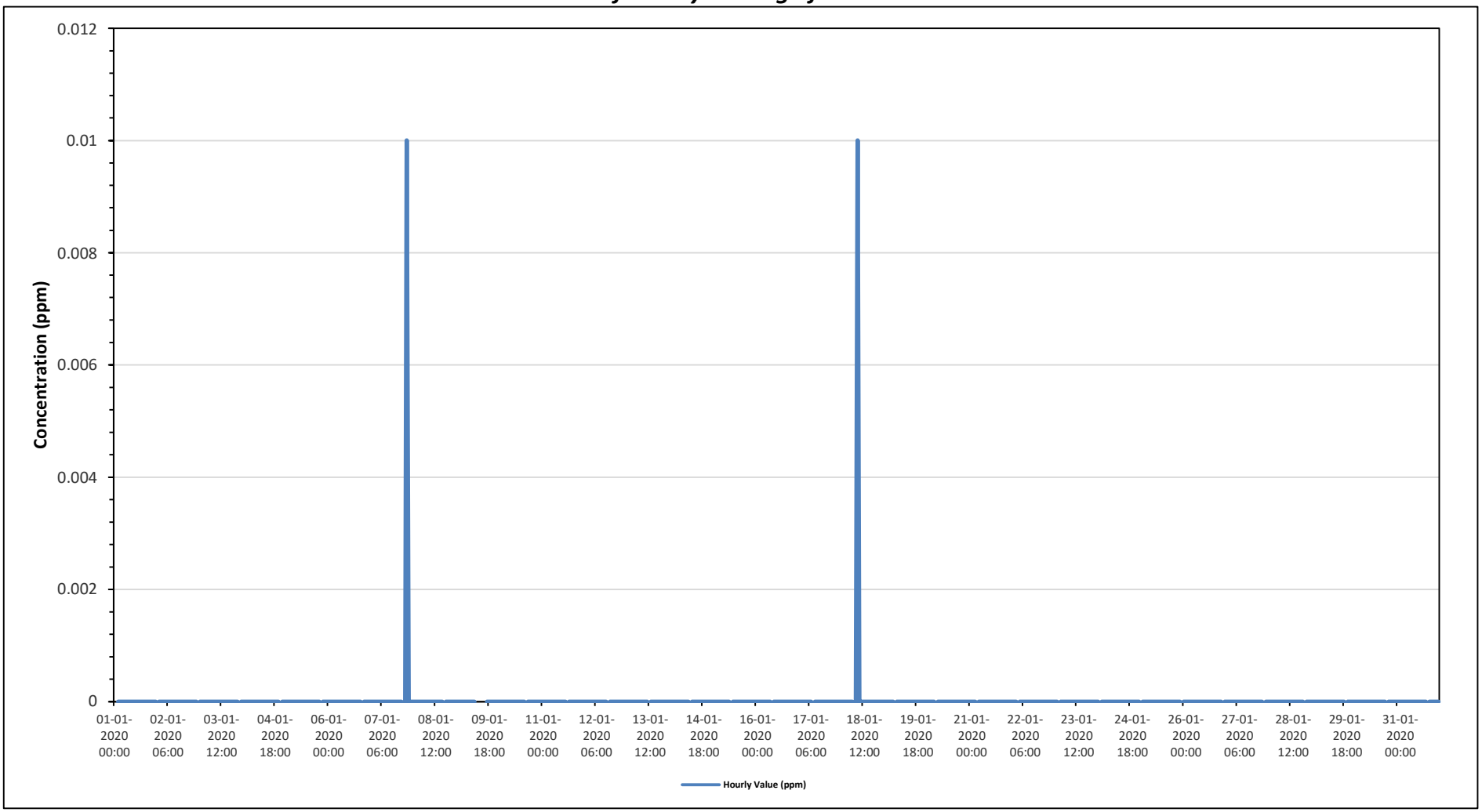
Maximum Hourly Value:	0.01	ppm	on January 7 at hour 20	Hours in Service:	744
Maximum Daily Value:	0.00	ppm	on January 7	Hours of Data:	705
Minimum Hourly Value:	0.00	ppm	on January 1 at hour 2	Hours of Missing Data:	1
Minimum Daily Value:	0.00	ppm	on January 1	Hours of Calibration:	38
Monthly Average:	0.00	ppm		Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	K	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 2	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.00	0.00	0.00
Jan 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.00	0.00	0.00
Jan 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.00	0.00	0.00
Jan 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.00	0.00	0.00
Jan 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.00	0.00	0.00
Jan 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.01	0	0	0	0.00	0.01	0.00
Jan 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.00	0.00	0.00
Jan 9	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	S	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 12	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 13	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 14	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 15	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 16	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 17	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 18	0	0	0	0	0	0	0	S	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.01	0.00
Jan 19	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 20	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 21	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 22	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 23	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 24	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 25	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.00	0.00	0.00
Jan 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.00	0.00	0.00
Jan 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.00	0.00	0.00
Jan 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.00	0.00	0.00
Jan 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.00	0.00	0.00
Jan 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.00	0.00	0.00
Jan 31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.00	0.00	0.00
Diurnal Maximum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00			
Diurnal Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			

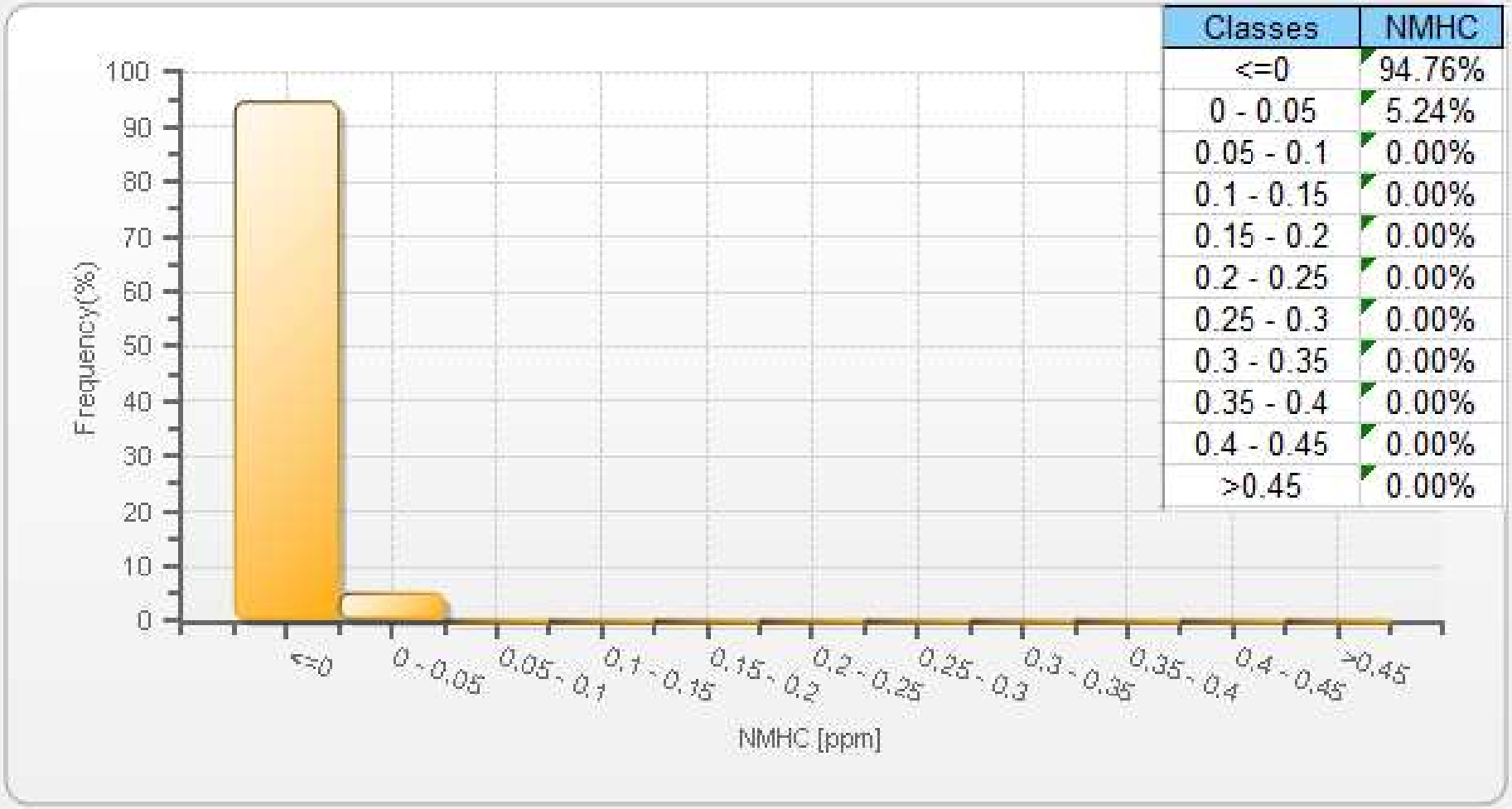
C	Monthly Calibration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Equipment Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine 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 NMHC - 986c Station



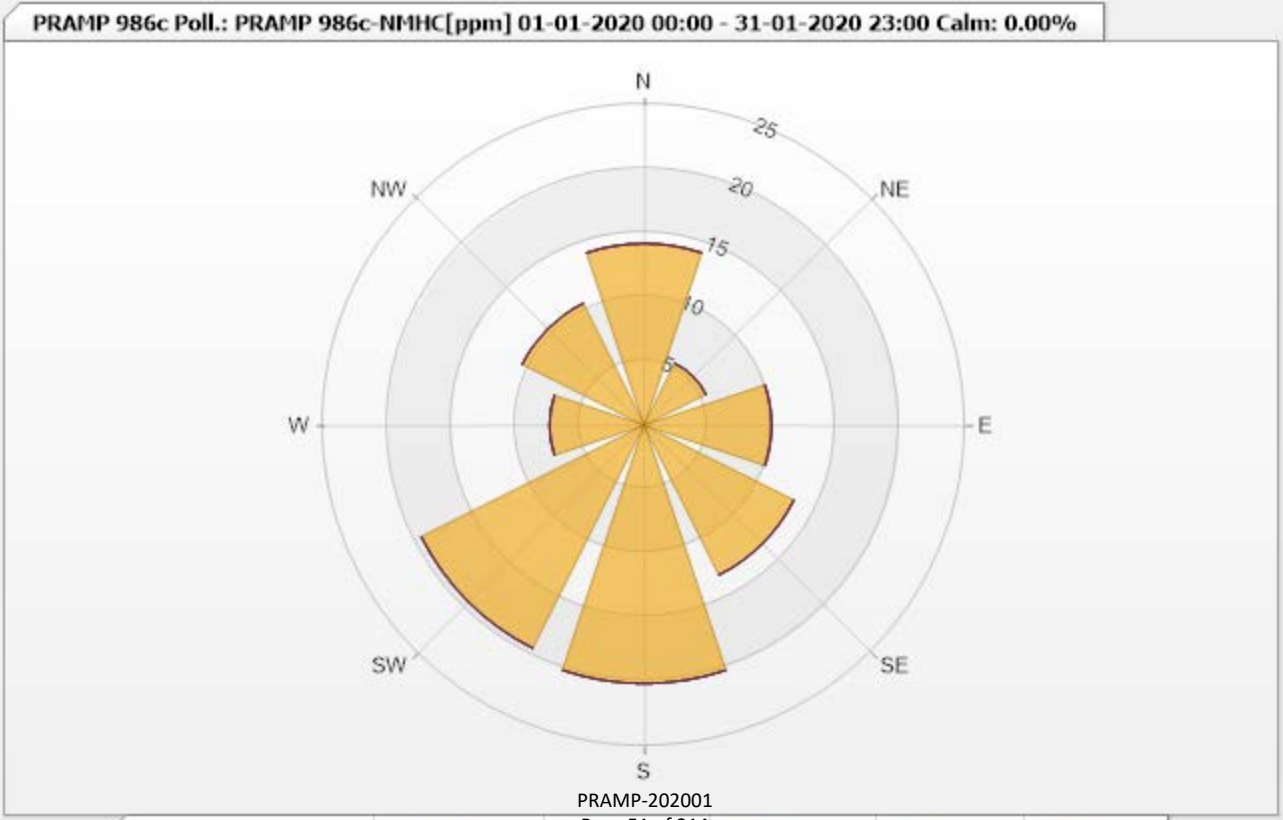
NMHC[ppm] Histogram: PRAMP 986c Monthly: 01-2020 1 Hr.



Classes	NMHC
<=0	94.76%
0 - 0.05	5.24%
0.05 - 0.1	0.00%
0.1 - 0.15	0.00%
0.15 - 0.2	0.00%
0.2 - 0.25	0.00%
0.25 - 0.3	0.00%
0.3 - 0.35	0.00%
0.35 - 0.4	0.00%
0.4 - 0.45	0.00%
>0.45	0.00%

Wind: PRAMP 986c Poll.: PRAMP 986c-NMHC[ppm] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	14.16	0	0	0	0	14.16
NE	5.38	0	0	0	0	5.38
E	9.92	0	0	0	0	9.92
SE	13.03	0	0	0	0	13.03
S	20.11	0	0	0	0	20.11
SW	19.41	0	0	0	0	19.41
W	7.37	0	0	0	0	7.37
NW	10.62	0	0	0	0	10.62
Summary	100	0	0	0	0	100


PRAMP 986c Poll.: PRAMP 986c-NMHC[ppm] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
25
20
15
10
5
% 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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PEACE RIVER AREA MONITORING PROGRAM

986c Station - January 2020

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

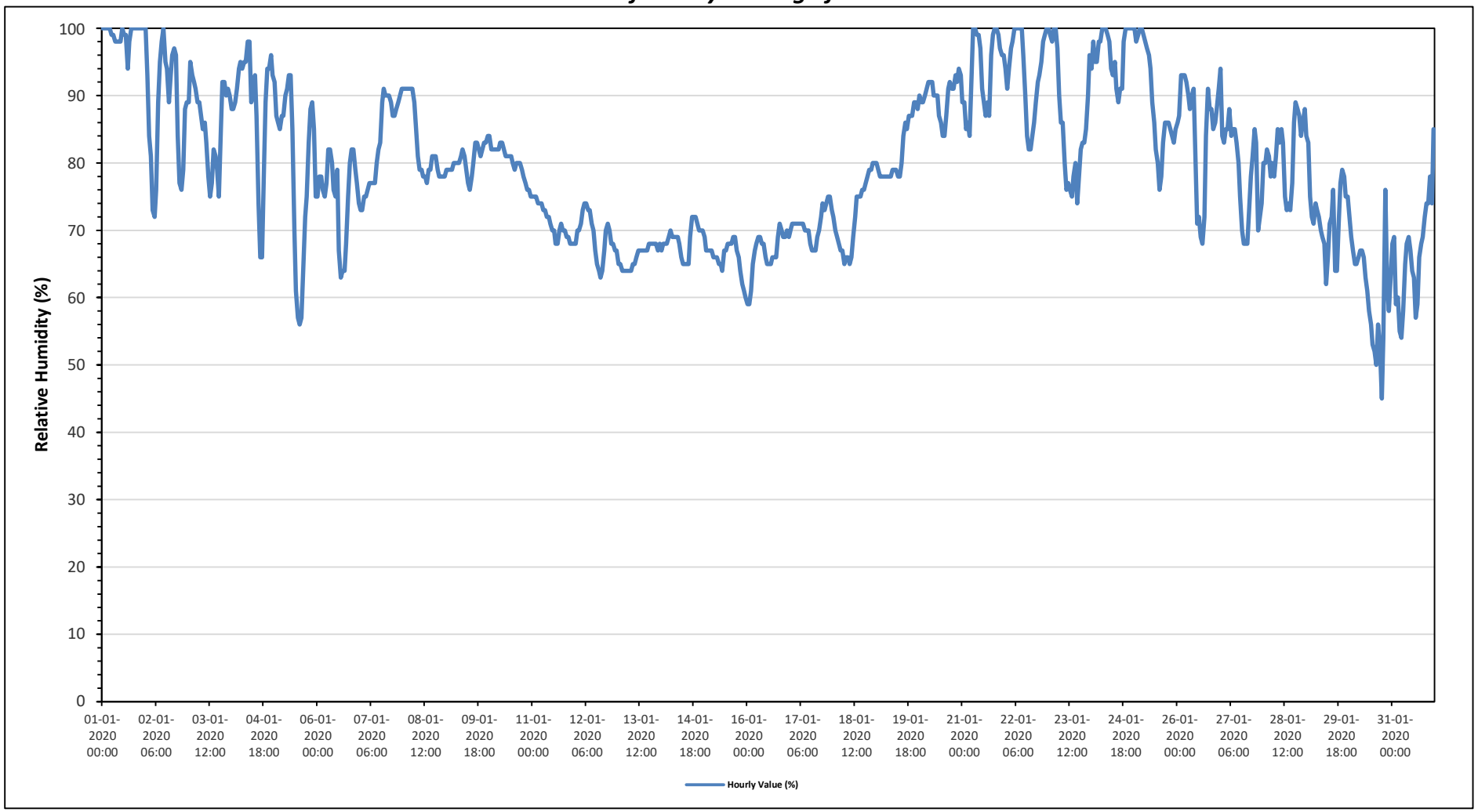
Maximum Hourly Value:	100	%	on January 1 at hour 0	Hours in Service:	744
Maximum Daily Value:	99.2	%	on January 1	Hours of Data:	744
Minimum Hourly Value:	45	%	on January 30 at hour 18	Hours of Missing Data:	0
Minimum Daily Value:	61.0	%	on January 30	Hours of Calibration:	0
Monthly Average:	79.7	%		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	**100**	**100**	**100**	**100**	**100**	99	99	98	98	98	98	**100**	99	99	94	98	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	94	**100**	**99.2**
Jan 2	**100**	93	84	81	73	72	76	89	95	98	**100**	95	94	89	93	96	97	96	84	77	76	79	88	89	72	**100**	88.1
Jan 3	89	95	93	92	91	89	89	87	85	86	83	78	75	77	82	81	79	75	85	92	92	90	91	90	75	95	86.1
Jan 4	88	88	89	91	94	95	94	95	95	98	98	89	90	93	87	74	66	66	78	89	94	94	96	93	66	98	88.9
Jan 5	92	87	86	85	87	87	90	91	93	93	85	70	61	57	56	57	64	72	75	83	88	89	85	75	56	93	79.5
Jan 6	75	78	78	76	75	77	82	82	80	76	75	79	67	63	64	64	68	75	80	82	82	79	77	74	63	82	75.3
Jan 7	73	73	75	75	76	77	77	77	77	80	82	83	89	91	90	90	90	89	87	87	88	89	90	91	73	91	83.2
Jan 8	91	91	91	91	91	91	89	85	81	79	79	78	78	77	79	79	81	81	81	79	78	78	78	78	77	91	82.7
Jan 9	79	79	79	79	80	80	80	80	81	82	81	79	77	76	78	80	83	83	82	81	82	83	83	84	76	84	80.5
Jan 10	84	82	82	82	82	82	83	83	82	81	81	81	81	80	79	80	80	80	79	78	77	76	76	75	75	84	80.3
Jan 11	75	75	75	74	74	74	73	73	72	72	71	70	70	68	68	70	71	70	70	69	69	68	68	68	68	75	71.1
Jan 12	68	70	70	71	73	74	74	73	73	71	70	67	65	64	63	64	67	70	71	70	68	68	67	67	63	74	69.1
Jan 13	65	65	64	64	64	64	64	64	65	65	66	67	67	67	67	67	67	68	68	68	68	68	67	68	64	68	66.1
Jan 14	67	68	68	68	69	70	69	69	69	69	68	66	65	65	65	65	69	72	72	72	71	70	70	70	65	72	68.6
Jan 15	69	67	67	67	67	66	66	66	65	65	64	67	67	68	68	68	69	69	67	66	64	62	61	60	60	69	66.0
Jan 16	59	59	61	65	67	68	69	69	68	68	66	65	65	65	66	66	66	69	71	70	69	69	70	69	59	71	66.6
Jan 17	70	71	71	71	71	71	71	71	70	70	70	68	67	67	67	69	70	72	74	73	74	75	75	73	67	75	70.9
Jan 18	72	70	69	68	67	67	65	66	66	65	66	69	72	75	75	75	76	76	77	78	79	79	80	80	65	80	72.2
Jan 19	80	79	78	78	78	78	78	78	78	79	79	79	78	78	80	84	86	85	87	87	87	89	89	88	78	89	81.7
Jan 20	90	89	89	90	91	92	92	92	90	90	90	87	86	84	84	87	91	92	91	91	93	92	94	93	84	94	90.0
Jan 21	89	89	85	86	84	93	**100**	**100**	99	99	97	91	89	87	89	87	96	99	**100**	**100**	99	97	96	96	84	**100**	93.6
Jan 22	94	91	94	97	98	**100**	**100**	**100**	**100**	**100**	96	90	84	82	82	84	86	89	92	93	95	98	99	**100**	82	**100**	93.5
Jan 23	**100**	99	98	**100**	**100**	97	90	86	86	80	76	77	76	75	78	80	74	78	82	83	83	85	90	96	74	**100**	86.2
Jan 24	94	98	95	95	98	98	**100**	**100**	**100**	99	98	94	93	95	91	89	91	91	98	**100**	**100**	**100**	**100**	**100**	89	**100**	96.5
Jan 25	**100**	98	99	**100**	**100**	99	98	97	96	94	89	86	82	80	76	78	83	86	86	86	85	84	83	85	76	**100**	89.6
Jan 26	86	87	93	93	93	92	90	88	90	91	81	71	72	69	68	72	84	91	88	88	85	86	88	91	68	93	84.9
Jan 27	94	84	83	85	85	88	84	85	85	83	80	75	70	68	68	68	73	78	81	85	83	70	72	74	68	94	79.2
Jan 28	80	80	82	81	78	80	78	81	85	83	85	83	75	73	74	73	77	86	89	88	87	84	86	88	73	89	81.5
Jan 29	84	83	75	72	71	74	73	72	70	69	68	62	66	71	72	76	64	64	71	77	79	78	75	75	62	84	72.5
Jan 30	72	69	67	65	65	66	67	67	66	63	61	58	56	53	52	50	56	53	**45**	54	76	62	58	63	**45**	76	61.0
Jan 31	68	69	59	60	55	54	58	65	68	69	67	64	63	57	59	66	68	69	72	74	74	78	74	85	54	85	66.5
Diurnal Maximum	100	100	100	100	100	100	100	100	100	100	100	100	99	99	94	98	100	100	100	100	100	100	100	100			
Diurnal Average	82.2	81.5	80.6	80.7	80.5	81.1	81.2	81.6	81.5	81.1	79.7	77.0	75.5	74.6	74.6	75.4	77.2	78.8	80.1	81.3	82.1	81.3	81.5	81.9			

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

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

Timeseries Chart of Hourly Average for RH - 986c Station



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

986c Station - January 2020

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

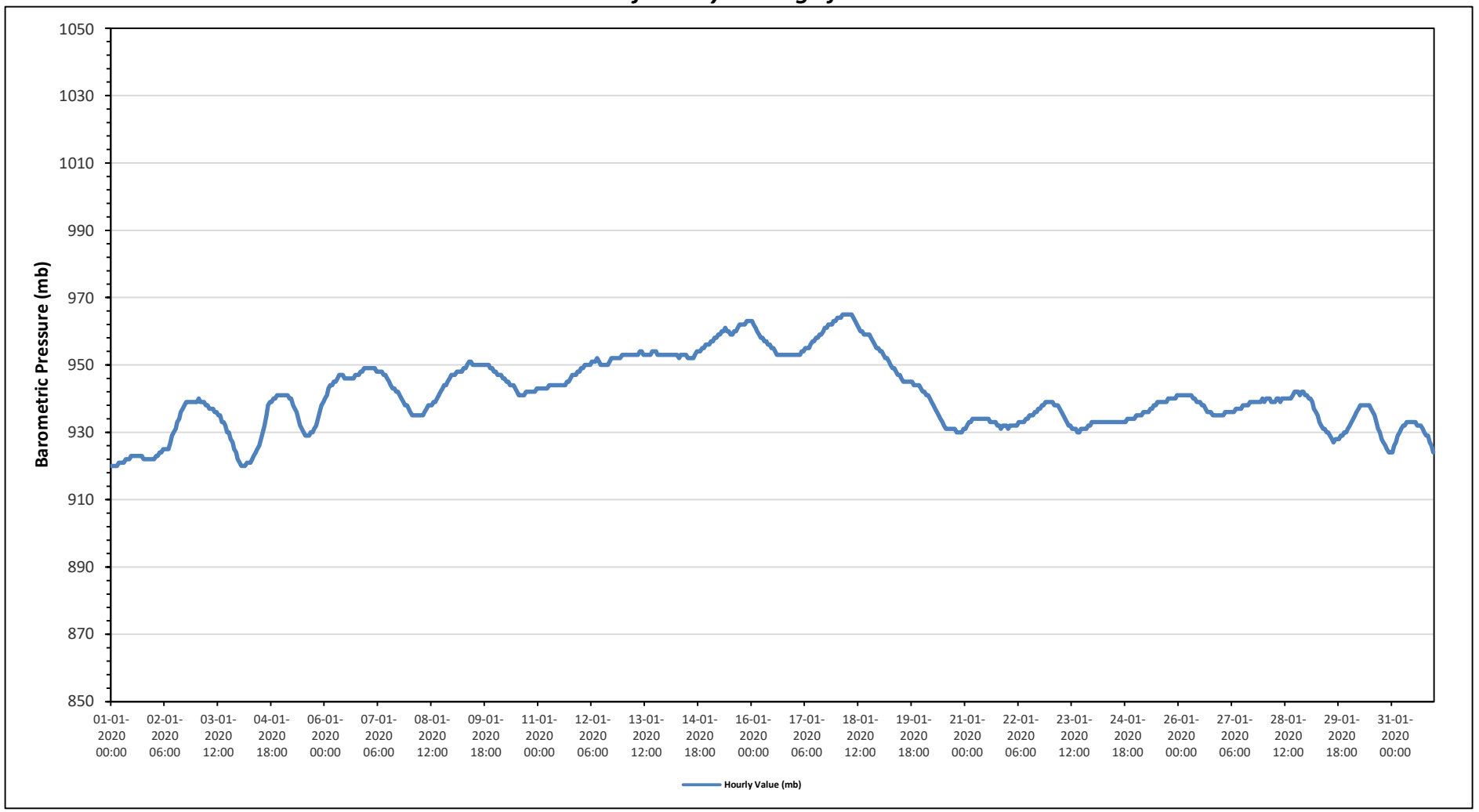
Maximum Hourly Value:	965	mb	on January 18 at hour 3	Hours in Service:	744
Maximum Daily Value:	961	mb	on January 18	Hours of Data:	744
Minimum Hourly Value:	920	mb	on January 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	922	mb	on January 1	Hours of Calibration:	0
Monthly Average:	941	mb		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	**920**	**920**	**920**	**920**	921	921	921	921	922	922	922	923	923	923	923	923	923	923	922	922	922	922	922	922	**920**	923	922
Jan 2	922	923	923	924	924	925	925	925	925	927	929	930	931	933	934	936	937	938	939	939	939	939	939	939	922	939	931
Jan 3	939	940	939	939	939	938	938	937	937	937	936	936	935	935	933	933	932	930	930	928	927	925	924	922	922	940	934
Jan 4	921	**920**	**920**	**920**	921	921	921	922	923	924	925	926	928	930	932	935	938	939	939	940	940	941	941	941	**920**	941	930
Jan 5	941	941	941	941	940	940	938	937	936	934	932	931	930	929	929	929	930	930	931	932	934	936	938	939	929	941	935
Jan 6	940	941	943	944	944	945	945	946	947	947	947	946	946	946	946	946	946	947	947	947	948	948	949	949	940	949	946
Jan 7	949	949	949	949	949	948	948	948	948	947	947	946	945	944	943	943	942	942	941	940	939	938	938	937	937	949	945
Jan 8	936	935	935	935	935	935	935	935	936	937	938	938	938	939	939	940	941	942	943	944	944	945	946	947	935	947	939
Jan 9	947	947	948	948	948	948	949	949	950	951	951	950	950	950	950	950	950	950	950	950	950	949	949	948	947	951	949
Jan 10	948	947	947	947	946	946	945	945	944	944	944	943	942	941	941	941	941	942	942	942	942	942	942	943	941	948	944
Jan 11	943	943	943	943	943	943	944	944	944	944	944	944	944	944	944	944	945	945	946	947	947	947	948	948	943	948	945
Jan 12	949	949	950	950	950	950	951	951	951	952	951	950	950	950	950	950	951	952	952	952	952	952	952	953	949	953	951
Jan 13	953	953	953	953	953	953	953	953	953	954	954	953	953	953	953	953	954	954	954	953	953	953	953	953	953	954	953
Jan 14	953	953	953	953	953	953	953	952	953	953	953	953	952	952	952	952	953	954	954	954	955	955	956	956	952	956	953
Jan 15	956	957	957	958	958	959	959	960	960	961	960	960	959	959	960	960	961	962	962	962	962	963	963	963	956	963	960
Jan 16	963	962	961	960	959	958	958	957	957	956	956	955	955	954	953	953	953	953	953	953	953	953	953	953	953	963	956
Jan 17	953	953	953	953	954	954	955	955	955	956	957	957	958	958	959	959	960	961	961	962	962	962	963	963	953	963	958
Jan 18	964	964	964	**965**	**965**	**965**	**965**	**965**	**965**	964	963	962	961	960	960	959	959	959	959	958	957	956	955	955	955	**965**	**961**
Jan 19	954	954	953	952	952	951	950	949	949	948	947	947	946	945	945	945	945	945	945	944	944	944	944	943	943	954	948
Jan 20	942	942	941	941	940	939	938	937	936	935	934	933	932	931	931	931	931	931	931	930	930	930	930	931	930	942	934
Jan 21	931	932	933	933	934	934	934	934	934	934	934	934	934	934	933	933	933	933	932	932	931	932	932	932	931	934	933
Jan 22	931	932	932	932	932	932	933	933	933	933	934	934	935	935	935	936	936	937	937	938	938	939	939	939	931	939	935
Jan 23	939	939	938	938	938	937	936	935	934	933	932	932	931	931	931	930	930	931	931	931	931	932	932	933	930	939	934
Jan 24	933	933	933	933	933	933	933	933	933	933	933	933	933	933	933	933	933	933	933	934	934	934	934	934	933	934	933
Jan 25	935	935	935	935	936	936	936	936	937	937	938	938	939	939	939	939	939	939	940	940	940	940	940	941	935	941	938
Jan 26	941	941	941	941	941	941	941	941	940	940	939	939	939	938	938	937	936	936	936	935	935	935	935	935	935	941	938
Jan 27	935	935	936	936	936	936	936	936	937	937	937	937	938	938	938	938	939	939	939	939	939	939	939	940	935	940	937
Jan 28	939	940	940	940	939	939	939	940	940	939	940	940	940	940	940	940	941	942	942	942	941	942	942	941	939	942	940
Jan 29	941	940	940	939	937	936	935	933	932	931	931	930	930	929	928	927	928	928	928	929	929	930	930	931	927	941	932
Jan 30	932	933	934	935	936	937	938	938	938	938	938	938	937	936	935	933	931	930	928	927	926	925	924	924	924	938	933
Jan 31	924	926	927	929	930	931	932	932	933	933	933	933	933	933	932	932	932	931	930	929	929	927	926	924	924	933	930
Diurnal Maximum	964	964	964	965	965	965	965	965	965	964	963	962	961	960	960	960	961	962	962	962	962	963	963	963			
Diurnal Average	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941			

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
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 - 986c Station



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PEACE RIVER AREA MONITORING PROGRAM

986c Station - January 2020

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

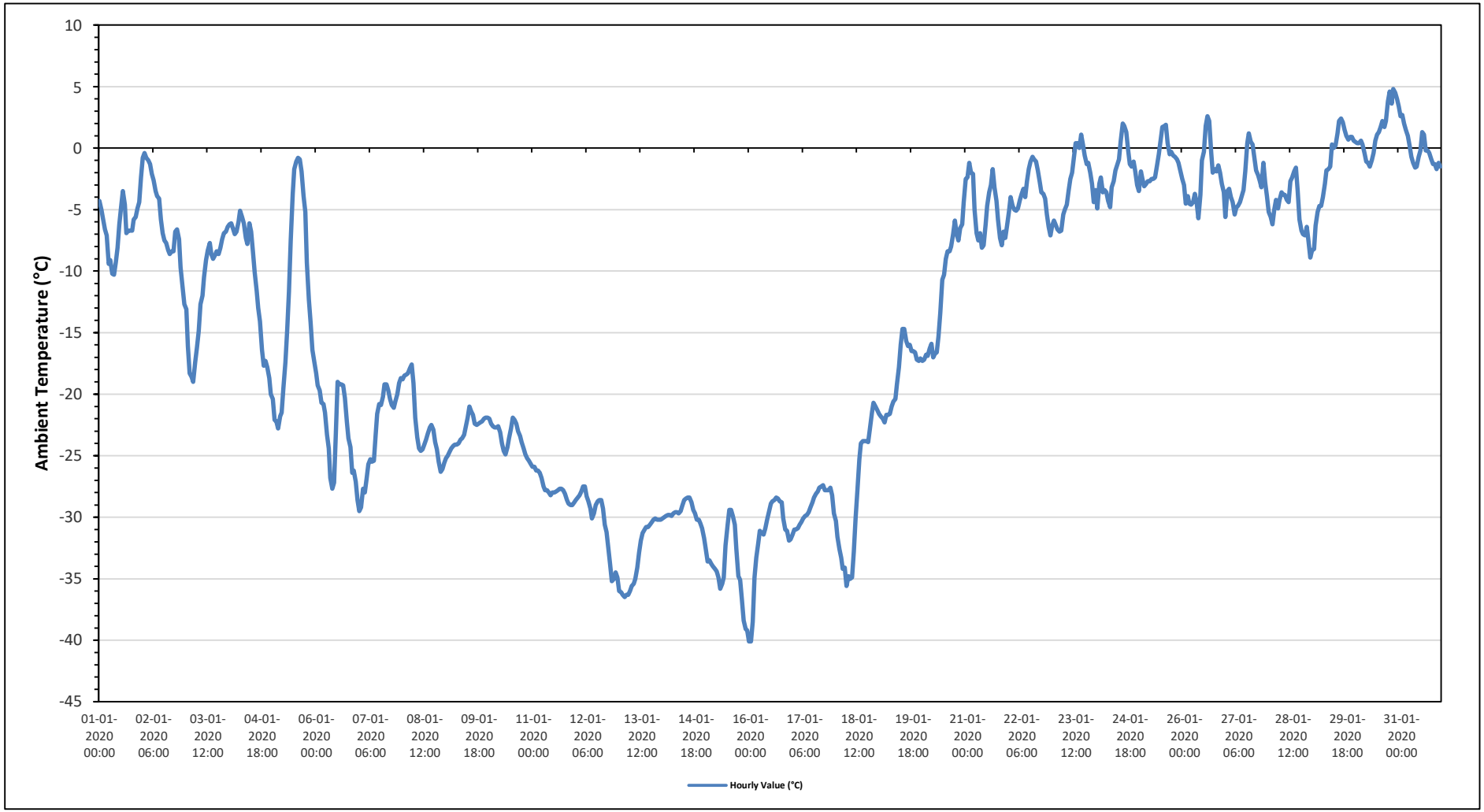
Maximum Hourly Value:	4.8	°C	on January 30 at hour 21	Hours in Service:	744
Maximum Daily Value:	1.4	°C	on January 30	Hours of Data:	744
Minimum Hourly Value:	-40.1	°C	on January 16 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	-34.0	°C	on January 15	Hours of Calibration:	0
Monthly Average:	-14.8	°C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	-4.3	-5	-5.7	-6.6	-7.1	-9.4	-9.1	-10.2	-10.3	-9.3	-8.1	-6.2	-4.8	-3.5	-4.6	-6.9	-6.7	-6.7	-6.7	-5.8	-5.6	-4.9	-4.4	-2.4	-10.3	-2.4	-6.4
Jan 2	-0.8	-0.4	-0.8	-1	-1.3	-2.1	-2.6	-3.5	-3.9	-4.1	-5.8	-6.9	-7.5	-7.7	-8.3	-8.6	-8.4	-8.4	-6.8	-6.6	-7.4	-9.7	-11.3	-12.7	-12.7	-0.4	-5.7
Jan 3	-13.1	-16.1	-18.3	-18.6	-19	-17.4	-16.2	-14.9	-12.7	-12	-10.5	-9.1	-8.3	-7.7	-8.6	-9	-8.7	-8.4	-8.6	-8.1	-7.4	-6.9	-6.8	-6.4	-19.0	-6.4	-11.4
Jan 4	-6.2	-6.1	-6.6	-7	-6.8	-6	-5.1	-5.6	-6.1	-7.3	-7.8	-6.1	-6.8	-8.4	-10.1	-11.6	-13	-14.1	-16.4	-17.7	-17.3	-17.8	-18.7	-20	-20.0	-5.1	-10.4
Jan 5	-20.4	-22.1	-22.2	-22.8	-21.8	-21.5	-19.5	-17.4	-14.8	-11.7	-7.5	-3.7	-1.7	-1.1	-0.8	-0.9	-1.9	-3.9	-5.2	-9.3	-12.3	-14.2	-16.4	-17.3	-22.8	-0.8	-12.1
Jan 6	-18.3	-19.3	-19.7	-20.7	-20.8	-21.5	-23.3	-24.4	-26.8	-27.7	-27.2	-23.2	-19	-19.2	-19.2	-19.3	-20.3	-22.3	-23.6	-24.3	-26.4	-26.2	-27.1	-28.6	-28.6	-18.3	-22.9
Jan 7	-29.5	-29.2	-27.7	-28	-26.9	-25.7	-25.3	-25.5	-25.4	-23.3	-21.6	-20.8	-20.9	-20.2	-19.2	-19.2	-19.7	-20.4	-20.9	-21.1	-20.6	-20	-19.1	-18.7	-29.5	-18.7	-22.9
Jan 8	-18.8	-18.5	-18.4	-18.3	-17.9	-17.6	-19.1	-21.9	-23.5	-24.4	-24.6	-24.5	-24.1	-23.7	-23.2	-22.7	-22.5	-22.9	-23.9	-24.5	-25.5	-26.3	-26.1	-25.6	-26.3	-17.6	-22.4
Jan 9	-25.2	-25	-24.7	-24.4	-24.2	-24.1	-24.1	-24	-23.7	-23.6	-23.3	-22.6	-21.9	-21	-21.4	-21.7	-22.4	-22.5	-22.4	-22.3	-22.2	-22	-21.9	-21.9	-25.2	-21.0	-23.0
Jan 10	-22	-22.4	-22.6	-22.7	-22.7	-22.6	-23.1	-24	-24.6	-24.9	-24.3	-23.6	-22.8	-21.9	-22.1	-22.4	-23	-23.4	-23.9	-24.4	-24.9	-25.2	-25.4	-25.7	-25.7	-21.9	-23.5
Jan 11	-25.9	-25.9	-26.2	-26.2	-26.4	-26.8	-27.5	-27.8	-27.8	-28	-28.2	-28	-28	-27.9	-27.8	-27.7	-27.7	-27.8	-28.1	-28.6	-28.9	-29	-29	-28.8	-29.0	-25.9	-27.7
Jan 12	-28.6	-28.4	-28.2	-27.9	-27.5	-27.5	-28.3	-28.7	-29.3	-30.1	-29.7	-29	-28.7	-28.6	-28.6	-29.3	-30.6	-31.2	-32.5	-33.8	-35.2	-35	-34.5	-34.9	-35.2	-27.5	-30.3
Jan 13	-36	-36.1	-36.3	-36.5	-36.3	-36.3	-36	-35.6	-35.4	-35	-34.1	-32.9	-31.9	-31.3	-31	-30.8	-30.8	-30.6	-30.4	-30.2	-30.1	-30.2	-30.2	-30.2	-36.5	-30.1	-33.1
Jan 14	-30.1	-30	-29.9	-29.8	-29.8	-29.9	-29.7	-29.6	-29.6	-29.7	-29.5	-29.1	-28.6	-28.5	-28.4	-28.4	-28.8	-29.4	-29.7	-30.2	-30.2	-30.5	-30.9	-31.7	-31.7	-28.4	-29.7
Jan 15	-32.5	-33.6	-33.5	-33.8	-34	-34.2	-34.4	-34.9	-35.8	-35.4	-34.9	-32.3	-30.7	-29.4	-29.4	-29.9	-30.6	-32.6	-34.8	-35.1	-36.7	-38.4	-39.1	-39.2	-39.2	-29.4	-34.0
Jan 16	**-40.1**	**-40.1**	-38.5	-34.9	-33.3	-32.1	-31.1	-31.3	-31.4	-30.9	-30.2	-29.5	-28.9	-28.7	-28.6	-28.4	-28.5	-28.7	-28.8	-30.1	-31	-31.1	-31.9	-31.8	**-40.1**	-28.4	-31.7
Jan 17	-31.4	-31	-31	-30.9	-30.6	-30.4	-30.1	-29.9	-29.8	-29.6	-29.2	-28.8	-28.4	-28.1	-27.9	-27.6	-27.5	-27.4	-27.8	-27.8	-27.8	-27.6	-28.2	-29.7	-31.4	-27.4	-29.1
Jan 18	-30.3	-31.6	-32.6	-33.3	-34.2	-34.1	-35.6	-34.8	-35	-34.9	-32.8	-30.1	-27.9	-25.3	-24	-23.8	-23.8	-23.8	-23.9	-22.8	-21.5	-20.7	-21	-21.3	-35.6	-20.7	-28.3
Jan 19	-21.6	-21.8	-22	-22.3	-21.7	-21.7	-21.6	-21	-20.6	-20.4	-19.2	-17.8	-16	-14.7	-14.7	-15.7	-16.1	-16	-16.5	-16.5	-16.6	-17.2	-17.3	-17.1	-22.3	-14.7	-18.6
Jan 20	-17.3	-17.2	-16.8	-16.9	-16.3	-15.9	-17	-16.7	-16.6	-15.3	-13.4	-10.7	-10.3	-9	-8.4	-8.4	-8	-7	-5.9	-7	-7.5	-6.5	-6.2	-4.4	-17.3	-4.4	-11.6
Jan 21	-2.5	-2.4	-1.2	-2	-2.1	-5	-6.9	-7.5	-6.9	-8.1	-7.9	-6.2	-4.7	-3.6	-3	-1.7	-3.2	-4.3	-5.8	-7.3	-7.9	-6.8	-7.3	-6.3	-8.1	-1.2	-5.0
Jan 22	-5.1	-4	-4.7	-5	-5.1	-4.9	-4.2	-3.7	-3.3	-4	-2.7	-1.7	-1.1	-0.7	-0.9	-1.1	-1.8	-2.8	-3.6	-3.7	-4.1	-5.4	-6.4	-7.1	-7.1	-0.7	-3.6
Jan 23	-6.3	-5.9	-6.3	-6.6	-6.8	-6.7	-5.4	-5	-4.6	-3.5	-2.5	-2	-0.8	0.4	0.4	0	1.1	0.3	-0.6	-1.3	-1.2	-2	-2.9	-4.4	-6.8	1.1	-3.0
Jan 24	-3.4	-4.9	-2.9	-2.4	-3.6	-3.4	-3.6	-4.3	-4.8	-3.2	-2.7	-1.8	-1.3	-0.9	0.6	2	1.8	1.3	-0.1	-1.3	-1.5	-1.1	-1.8	-3	-4.9	2.0	-1.9
Jan 25	-3.5	-1.9	-2.5	-3.1	-2.9	-2.7	-2.7	-2.5	-2.5	-2.4	-1.4	-0.5	0.6	1.7	1.8	1.9	0.4	-0.5	-0.3	-0.6	-0.7	-0.9	-1.2	-1.9	-3.5	1.9	-1.2
Jan 26	-2.5	-3	-4.5	-3.9	-4.5	-4.6	-4.4	-3.7	-4.4	-5.7	-3.8	-1	-0.3	1.8	2.6	2.2	-0.4	-2	-1.7	-1.9	-1.4	-2	-2.9	-3.6	-5.7	2.6	-2.3
Jan 27	-5.6	-3.5	-3.3	-4	-4.4	-5.4	-4.8	-4.7	-4.4	-3.9	-3.4	-1.9	0.4	1.2	0.5	0.3	-0.9	-1.8	-2.2	-2.7	-3.2	-1.2	-2.8	-3.9	-5.6	1.2	-2.7
Jan 28	-5.2	-5.6	-6.2	-5	-4.2	-4.9	-4.2	-3.6	-3.8	-3.8	-4.2	-4.4	-2.7	-2.4	-1.9	-1.6	-3.5	-5.8	-6.7	-7	-7.1	-6.4	-7.4	-8.9	-8.9	-1.6	-4.9
Jan 29	-8.3	-8.2	-6.3	-5.2	-4.7	-4.7	-4	-2.9	-1.8	-1.7	-1.5	0.3	0	0.2	1.2	2.2	2.4	2.1	1.5	1	0.7	0.9	0.9	0.6	-8.3	2.4	-1.5
Jan 30	0.5	0.4	0.4	0.6	0.3	-0.4	-1.1	-1.2	-1.5	-1	-0.4	0.6	1.1	1.3	1.7	2.2	1.7	2.2	3.8	4.6	3.6	**4.8**	4.5	4	-1.5	**4.8**	**1.4**
Jan 31	3.4	2.6	2.7	2	1.5	1	0.2	-0.7	-1.2	-1.6	-1.5	-0.7	-0.2	1.3	1.1	-0.2	-0.2	-0.4	-0.9	-1.3	-1.3	-1.7	-1.2	-1.5	-1.7	3.4	0.1
Diurnal Maximum	3.4	2.6	2.7	2.0	1.5	1.0	0.2	-0.7	-1.2	-1.0	-0.4	0.6	1.1	1.8	2.6	2.2	2.4	2.2	3.8	4.6	3.6	4.8	4.5	4.0			
Diurnal Average	-15.8	-16.0	-16.0	-16.0	-16.0	-16.1	-16.1	-16.2	-16.2	-16.0	-15.3	-14.0	-13.1	-12.4	-12.3	-12.5	-13.0	-13.5	-14.0	-14.4	-14.8	-14.9	-15.3	-15.6			

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

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

Timeseries Chart of Hourly Average for AT - 986c Station



PEACE RIVER AREA MONITORING PROGRAM

986c Station - January 2020

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

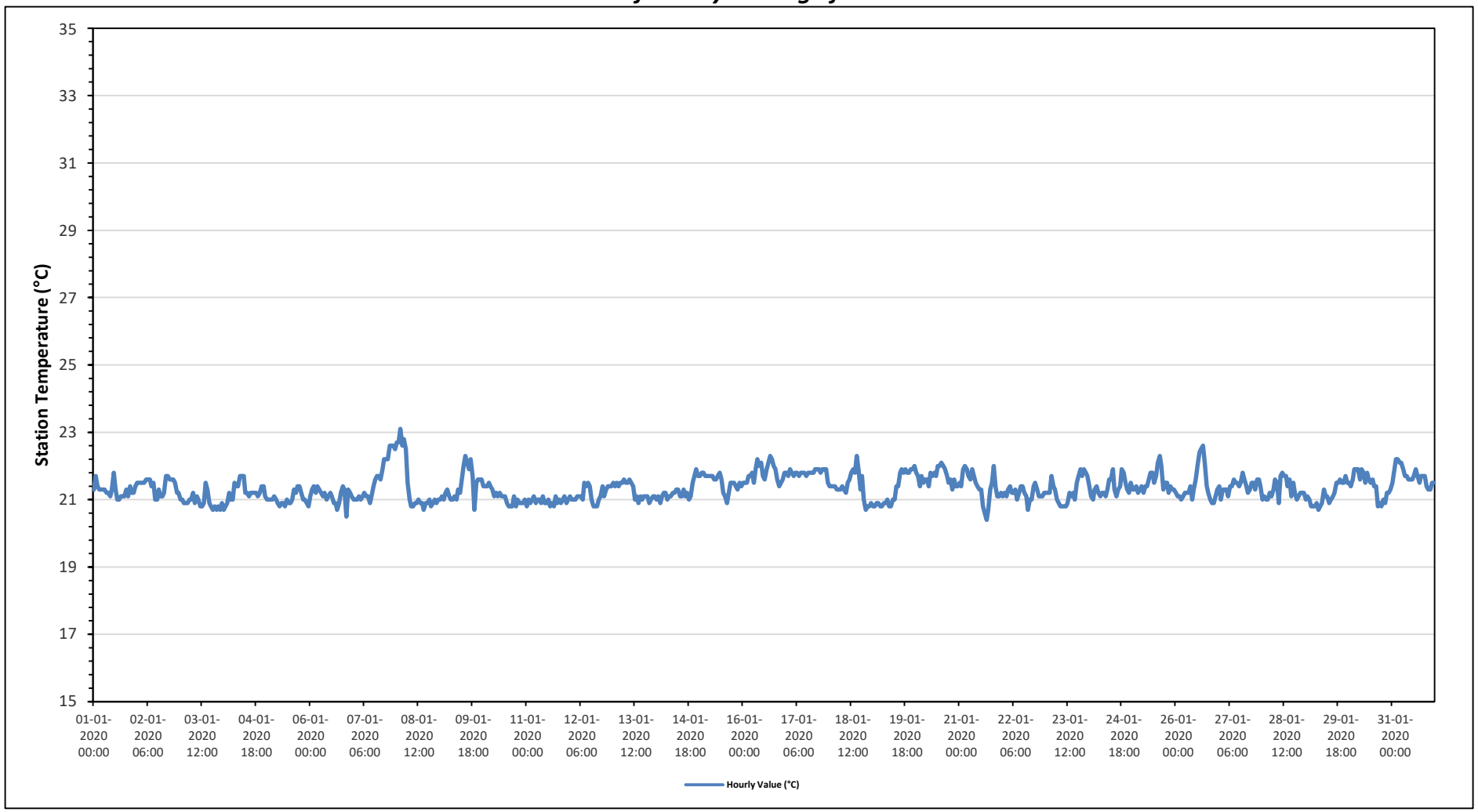
Maximum Hourly Value:	23.1	°C	on January 8 at hour 2	Hours in Service:	744
Maximum Daily Value:	21.8	°C	on January 17	Hours of Data:	744
Minimum Hourly Value:	20.4	°C	on January 21 at hour 15	Hours of Missing Data:	0
Minimum Daily Value:	20.9	°C	on January 3	Hours of Calibration:	0
Monthly Average:	21.3	°C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	21.3	21.7	21.4	21.3	21.3	21.3	21.3	21.2	21.2	21.1	21.3	21.8	21.3	21	21	21.1	21.1	21.1	21.3	21.1	21.4	21.2	21.2	21.4	21.0	21.8	21.3
Jan 2	21.5	21.5	21.5	21.5	21.5	21.6	21.6	21.6	21.4	21.5	21	21	21.3	21.1	21.1	21.2	21.7	21.7	21.6	21.6	21.6	21.5	21.2	21.2	21.0	21.7	21.4
Jan 3	21	21	20.9	20.9	20.9	21	21	21.2	20.9	21.1	21	20.8	20.8	20.9	21.5	21.3	20.9	20.8	20.7	20.8	20.7	20.8	20.7	20.9	20.7	21.5	20.9
Jan 4	20.7	20.8	20.9	21.2	21	21	21.5	21.4	21.4	21.7	21.7	21.7	21.2	21.2	21.1	21.2	21.2	21.2	21.2	21.1	21.2	21.4	21.4	21.1	20.7	21.7	21.2
Jan 5	21	21	21	21	21.1	21	20.9	20.8	20.9	20.9	20.8	21	20.9	20.9	21	21.3	21.2	21.4	21.4	21.2	21	21	20.9	20.8	20.8	21.4	21.0
Jan 6	21.1	21.3	21.4	21.2	21.4	21.3	21.2	21.1	21.2	21	21.1	21.2	21.1	20.9	20.9	20.7	20.9	21.2	21.4	21.3	20.5	21.3	21.2	21.1	20.5	21.4	21.1
Jan 7	21	21	21	21.1	21	21.1	21.2	21.1	21.1	20.9	21.1	21.4	21.6	21.7	21.7	21.6	21.9	22.2	22.2	22.2	22.6	22.6	22.6	22.5	20.9	22.6	21.6
Jan 8	22.7	22.7	**23.1**	22.6	22.8	22.5	21.5	21	20.8	20.8	20.9	20.9	21	20.9	20.9	20.7	20.9	20.9	21	20.8	20.9	21	20.9	21	20.7	**23.1**	21.4
Jan 9	21	21.1	21	21.2	21.3	21.1	21	21	21.1	21	21.3	21.2	21.6	22	22.3	22.1	21.9	22.2	21.7	20.7	21.5	21.6	21.6	21.6	20.7	22.3	21.4
Jan 10	21.4	21.4	21.4	21.5	21.4	21.3	21.1	21.2	21.1	21.2	21.1	21.1	21.1	20.9	20.8	20.8	20.8	21.1	20.8	21	20.9	20.9	20.9	21	20.8	21.5	21.1
Jan 11	20.8	21	20.9	21	21.1	20.9	21	21	20.9	21.1	20.9	20.9	21	20.8	20.9	20.8	21.1	20.9	21	20.9	21	21.1	20.9	21	20.8	21.1	21.0
Jan 12	21.1	21	21	21	21.1	21.1	21.1	21	21.5	21.4	21.5	21.4	21	20.8	20.8	20.8	21	21.1	21.4	21.1	21.3	21.4	21.4	21.4	20.8	21.5	21.2
Jan 13	21.5	21.4	21.5	21.4	21.5	21.5	21.6	21.5	21.5	21.6	21.5	21.4	21	21.1	20.9	21.1	21	21.1	21.1	21.1	20.9	21	21.1	21.1	20.9	21.6	21.3
Jan 14	21	21.1	20.9	21.1	21.2	21.2	21	21.1	21.1	21.2	21.2	21.3	21.3	21.1	21.1	21.3	21.1	21.2	21	21.1	21.5	21.7	21.9	21.7	20.9	21.9	21.2
Jan 15	21.7	21.8	21.8	21.7	21.7	21.7	21.7	21.7	21.6	21.6	21.7	21.8	21.6	21.2	21.1	20.9	21.2	21.5	21.5	21.5	21.4	21.3	21.5	21.4	20.9	21.8	21.5
Jan 16	21.5	21.5	21.5	21.7	21.7	21.8	21.5	21.9	22.2	22	22.1	21.7	21.6	21.9	22.1	22.3	22.2	22	21.9	21.6	21.4	21.5	21.6	21.8	21.4	22.3	21.8
Jan 17	21.8	21.7	21.9	21.8	21.7	21.8	21.8	21.7	21.8	21.8	21.8	21.7	21.8	21.8	21.8	21.8	21.9	21.9	21.9	21.8	21.9	21.9	21.9	21.5	21.5	21.9	**21.8**
Jan 18	21.4	21.4	21.4	21.4	21.3	21.3	21.3	21.4	21.3	21.2	21.5	21.6	21.8	21.9	21.8	22.3	21.9	21.3	21.7	21	20.7	20.8	20.8	20.9	20.7	22.3	21.4
Jan 19	20.8	20.8	20.9	20.9	20.8	20.8	20.9	20.9	21	20.8	20.8	21	21	21.4	21.4	21.8	21.9	21.8	21.9	21.8	21.8	21.9	21.9	22	20.8	22.0	21.3
Jan 20	21.8	21.7	21.4	21.7	21.5	21.6	21.6	21.4	21.8	21.7	21.8	21.7	22	22	22.1	22	21.9	21.7	21.5	21.6	21.3	21.6	21.4	21.4	21.3	22.1	21.7
Jan 21	21.5	21.4	21.9	22	21.9	21.7	21.6	21.9	21.7	21.5	21.4	21.3	21.3	20.8	20.6	**20.4**	20.7	21.3	21.5	22	21.4	21.1	21.1	21.2	**20.4**	22.0	21.4
Jan 22	21.1	21.2	21.1	21.3	21.4	21.2	21.2	21.3	21	21.2	21.4	21.4	21.2	21.1	20.7	21	21	21.4	21.5	21.3	21.1	21.1	21.1	21.2	20.7	21.5	21.2
Jan 23	21.2	21.2	21.2	21.7	21.4	21.3	21	20.9	20.8	20.8	20.8	20.8	20.9	21.2	21.1	21.2	21	21.5	21.7	21.9	21.7	21.9	21.8	21.7	20.8	21.9	21.3
Jan 24	21.4	21.1	21	21.3	21.4	21.2	21.1	21.2	21.2	21.1	21.3	21.6	21.6	21.9	21.3	21.1	21.3	21.4	21.9	21.8	21.5	21.3	21.2	21.5	21.0	21.9	21.4
Jan 25	21.3	21.3	21.4	21.2	21.3	21.4	21.2	21.4	21.4	21.6	21.8	21.8	21.5	21.7	22.1	22.3	22	21.3	21.5	21.5	21.2	21.4	21.3	21.3	21.2	22.3	21.5
Jan 26	21.2	21.1	21.1	21	21.1	21.2	21.2	21.2	21.4	21	21.3	21.6	22	22.4	22.5	22.6	22.1	21.4	21.2	21	20.9	20.9	21.1	21.3	20.9	22.6	21.4
Jan 27	21.4	21	21.3	21.3	21.3	21.1	21.4	21.4	21.6	21.5	21.5	21.4	21.5	21.8	21.6	21.4	21.2	21.3	21.5	21.5	21.3	21.6	21.6	21.4	21.0	21.8	21.4
Jan 28	21	21.1	21	21	21.2	21.1	21.3	21.6	21.5	20.9	21.7	21.8	21.7	21.7	21.4	21.6	21.1	21.5	21.2	21	21.1	21.2	21.2	21.2	20.9	21.8	21.3
Jan 29	21	21.1	21	20.8	20.8	20.8	20.9	20.7	20.8	20.9	21.3	21.1	21.1	20.9	21	21.1	21.2	21.5	21.5	21.6	21.5	21.5	21.7	21.5	20.7	21.7	21.1
Jan 30	21.5	21.4	21.6	21.9	21.9	21.9	21.6	21.9	21.8	21.5	21.8	21.6	21.5	21.6	21.4	21.4	20.8	20.9	20.8	21	20.9	21.2	21.2	21.3	20.8	21.9	21.4
Jan 31	21.5	21.8	22.2	22.2	22.1	22.1	21.9	21.7	21.7	21.6	21.6	21.6	21.7	21.9	21.7	21.5	21.7	21.7	21.7	21.4	21.3	21.3	21.5	21.5	21.3	22.2	21.7
Diurnal Maximum	22.7	22.7	23.1	22.6	22.8	22.5	21.9	21.9	22.2	22.0	22.1	21.8	22.0	22.4	22.5	22.6	22.2	22.2	22.2	22.2	22.6	22.6	22.6	22.5			
Diurnal Average	21.3	21.3	21.3	21.4	21.4	21.4	21.3	21.3	21.3	21.3	21.4	21.4	21.4	21.4	21.3	21.4	21.3	21.4	21.4	21.3	21.3	21.4	21.3	21.4			

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

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

Timeseries Chart of Hourly Average for ST - 986c Station



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

986c Station - January 2020

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

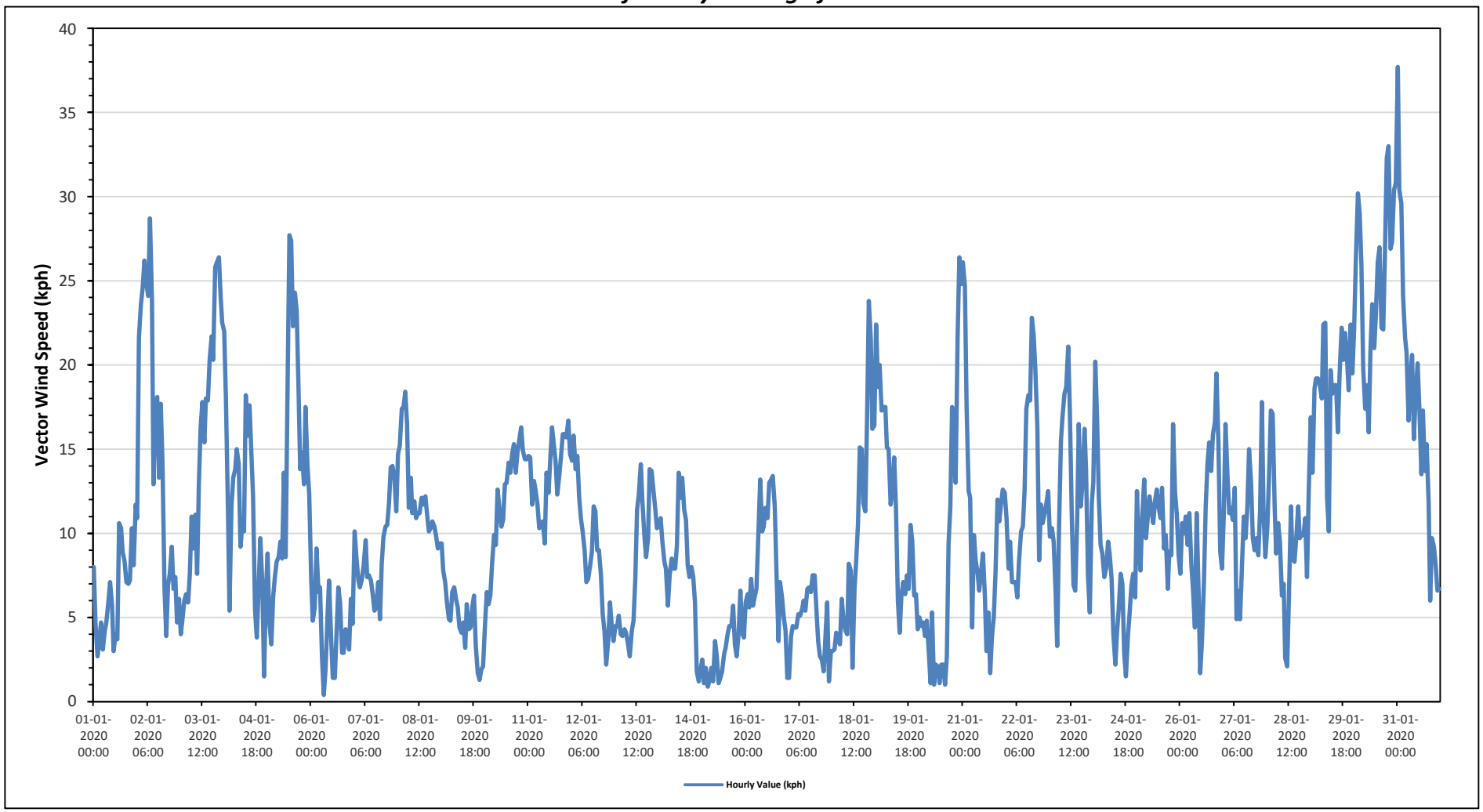
Maximum Hourly Value:	37.7	kph	on January 31 at hour 0	Hours in Service:	744
Maximum Daily Value:	25.0	kph	on January 30	Hours of Data:	744
Minimum Hourly Value:	0.4	kph	on January 6 at hour 7	Hours of Missing Data:	0
Minimum Daily Value:	3.0	kph	on January 15	Hours of Calibration:	0
Monthly Average:	2.7	kph		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	8	4.6	2.7	3.5	4.7	3.1	4.2	4.7	5.9	7.1	5.7	3	4	3.7	10.6	10.3	8.9	8.3	7.1	7	7.2	10.3	8.1	11.7	2.7	11.7	6.4
Jan 2	10.9	21.6	23.6	24.6	26.2	24.9	24.1	28.7	23.9	12.9	17.7	18.1	13.3	17.7	14.2	6.7	3.9	6.9	7.6	9.2	6.7	7.4	4.7	6.1	3.9	28.7	15.1
Jan 3	4	4.8	6	6.4	5.9	7.6	11	9.1	11.1	7.6	12.9	16.3	17.8	15.4	18	17.9	20.3	21.7	20.3	25.8	26.1	26.4	24	22.5	4.0	26.4	15.0
Jan 4	22	17.9	11.4	5.4	11.6	13.3	13.8	15	14.1	9.2	10.5	10.1	18.2	15.8	17.6	14.9	12.2	5.4	3.8	7.1	9.7	7	1.5	6.4	1.5	22.0	11.4
Jan 5	8.8	4.7	3.4	6.2	7.4	8.3	8.6	9.5	8.5	13.6	8.6	19.2	27.7	27.4	22.3	24.3	23.2	18.8	13.8	14.8	12.9	17.5	14	12.3	3.4	27.7	14.0
Jan 6	7.2	4.8	5.6	9.1	6.5	6.8	2.6	**0.4**	1.9	5.1	7.2	3.9	1.4	1.4	3.7	6.8	5.9	2.9	2.9	4.3	4	3.1	6.1	4.6	**0.4**	9.1	4.5
Jan 7	10.1	8.6	7.2	6.8	7.3	8.1	9.6	7.4	7.5	7.2	6.4	5.4	5.6	7.1	4.9	8.2	9.8	10.4	10.5	11.8	13.9	14	13.2	11.3	4.9	14.0	8.8
Jan 8	14.7	15.2	17.4	17.5	18.4	16.5	11.5	13.3	11.2	11.9	10.9	11.2	11.2	12.1	11.7	12.2	11.1	10.1	10.3	10.7	10.4	9.9	9.1	9.4	9.1	18.4	12.4
Jan 9	9.4	7.8	7.1	5.9	4.9	4.8	6.5	6.8	6.1	5.6	4.4	4.1	4.7	3.2	5.8	4.3	4.4	5.6	6.3	3.3	1.7	1.3	1.9	2.1	1.3	9.4	4.9
Jan 10	4.6	6.5	5.8	6.3	8.2	9.9	9.3	12.6	11.5	10.4	10.8	12.9	13	14.2	13.6	14.7	15.3	13.6	14.9	15.5	16.3	14.9	14.4	14.4	4.6	16.3	11.8
Jan 11	14.6	14.5	11.7	13.1	12.6	11.7	10.3	10.5	10.7	9.4	13.6	12.4	14.1	16.3	15.3	14.3	12.3	13.3	14.6	15.9	15.9	15.7	16.7	14.7	9.4	16.7	13.5
Jan 12	14.3	15.8	13.8	14.6	12.2	10.9	10.1	9	7.1	7.3	8	8.9	11.6	11.3	9	9	7.5	5.2	4.2	2.2	3.6	5.9	4.5	3.6	2.2	15.8	8.7
Jan 13	4.5	4.5	5.1	4	3.9	4.3	4.1	3.4	2.7	4.2	4.8	7.3	11.4	12.3	14.1	12	9.9	8.6	9.7	13.8	13.7	12.6	11.4	10.3	2.7	14.1	8.0
Jan 14	10.4	10.9	9.5	8.3	7.9	5.7	7.5	8.5	7.9	7.9	9.3	13.6	12.1	13.3	11.4	10.8	8.1	7.4	8	7.4	5.9	1.8	1.2	1.9	1.2	13.6	8.2
Jan 15	2.5	1.1	2	0.9	1.3	2	1.2	3.6	2.7	1.1	1.4	1.8	2.8	3.2	4	4.5	4.5	5.7	3.4	2.7	4.1	6.6	4.1	3.8	0.9	6.6	**3.0**
Jan 16	5.9	6.4	5.6	7.3	5.7	6.3	6.7	10.1	13.2	10.1	10.4	11.5	10.9	13	13.2	13.4	11.6	7.6	3.6	7.1	6.2	5	4.2	1.4	1.4	13.4	8.2
Jan 17	1.4	3.9	4.5	4.4	4.4	5.2	5.1	5.5	6	5.4	6.7	6.8	6.5	7.5	7.5	5.5	3.6	2.7	2.5	1.8	3.8	5.9	1.2	3	1.2	7.5	4.6
Jan 18	3	3.1	4.1	3.6	3.4	6.1	4.9	4.2	4	8.2	7.8	2	6.7	8.2	10.6	15.1	15	11.8	11.3	16.8	23.8	21.5	16.2	16.4	2.0	23.8	9.5
Jan 19	22.4	18.7	20	17.3	17.5	17.5	15.1	15	11.7	12.5	14.5	11.6	6	4.1	6.3	7.1	6.4	7.5	6.7	10.5	9.6	6.3	6.4	4.3	4.1	22.4	11.5
Jan 20	5	4.5	4.7	3.9	4.8	3	1.1	5.3	1	2.2	2.1	1.1	2.2	2.2	1	2.7	9.4	11.6	17.5	14.4	13	21.7	26.4	24.8	1.0	26.4	7.7
Jan 21	26.1	24.7	17.4	12.5	12.1	4.4	9.9	8.4	7.6	6.6	7.8	8.8	6.2	3	5.3	1.7	3.9	5	7.6	12	10.7	11.7	12.6	12.4	1.7	26.1	9.9
Jan 22	10.9	7.9	9.5	7.1	7.1	7.1	6.2	8.4	10.1	10.4	12.5	17.4	18.2	17.9	22.8	21.8	19.7	16.3	8.4	11.7	10.6	11.2	11.8	12.5	6.2	22.8	12.4
Jan 23	9.8	10.3	9.5	6.8	3.3	10.1	15.5	16.9	18.3	18.7	21.1	17.6	11.2	6.9	6.6	11	16.5	11.6	13	16.2	13.8	7.4	5.3	11.8	3.3	21.1	12.1
Jan 24	13	20.2	16.8	12.1	9.3	8.8	7.4	7.9	9.5	8.8	7.3	4	2.2	4	5.4	7.6	7	2.9	1.5	3.9	5.3	6.9	7.6	6.2	1.5	20.2	7.7
Jan 25	12.5	9.2	7.8	11	13.2	9.7	10.9	12.2	11.4	10.6	11.9	12.6	11.5	10.9	12.7	9.1	9.9	6.7	8.9	8.7	16.5	12.4	11.1	8.7	6.7	16.5	10.8
Jan 26	7.6	10.6	10	11	9.3	11.2	8.1	6.8	4.4	11.2	6.4	1.7	3.5	7.1	11.5	14.1	15.4	13.7	15.9	16.6	19.5	15.2	8.9	7.9	1.7	19.5	10.3
Jan 27	11	16.5	13.4	11.2	11.5	10.8	12.7	4.9	6.6	4.9	8.2	11	9.7	11.5	15	13	9.7	9	9.7	8.7	11.4	17.8	11.1	8.6	4.9	17.8	10.7
Jan 28	10.4	13.1	17.3	17.1	11.6	8.8	10.6	9.5	6.3	7	2.6	2.1	6.3	11.6	8.5	8.3	9.7	11.6	9.7	9.9	9.9	10.9	7.4	12.6	2.1	17.3	9.7
Jan 29	16.9	13.6	18.6	19.2	19.2	18.8	18	22.4	22.5	12.1	10.1	19.7	18.3	18.8	18.8	16	19.5	22.2	20.3	21.9	20.5	18.5	22.4	19.5	10.1	22.5	18.7
Jan 30	22.2	26.4	30.2	29	25.9	19.8	17.4	18.8	16	20.9	23.6	21	22.8	26.1	27	22.2	22.1	26.9	32.3	33	26.9	27.3	30.4	30.8	16.0	33.0	**25.0**
Jan 31	**37.7**	30.4	29.6	24.1	21.6	20.7	16.7	19.3	20.6	15.6	18.2	20.1	17.4	13.5	17.3	13.7	15.3	11.8	6	9.7	9.2	8.1	6.6	6.7	6.0	**37.7**	17.1
Diurnal Maximum	38	30	30	29	26	25	24	29	24	21	24	21	28	27	27	24	23	27	32	33	27	27	30	31			
Diurnal Average	11.7	11.7	11.3	10.7	10.3	9.9	9.7	10.3	9.7	9.2	9.8	10.2	10.6	11.0	11.8	11.4	11.4	10.4	10.1	11.4	11.7	11.7	10.5	10.4			

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

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

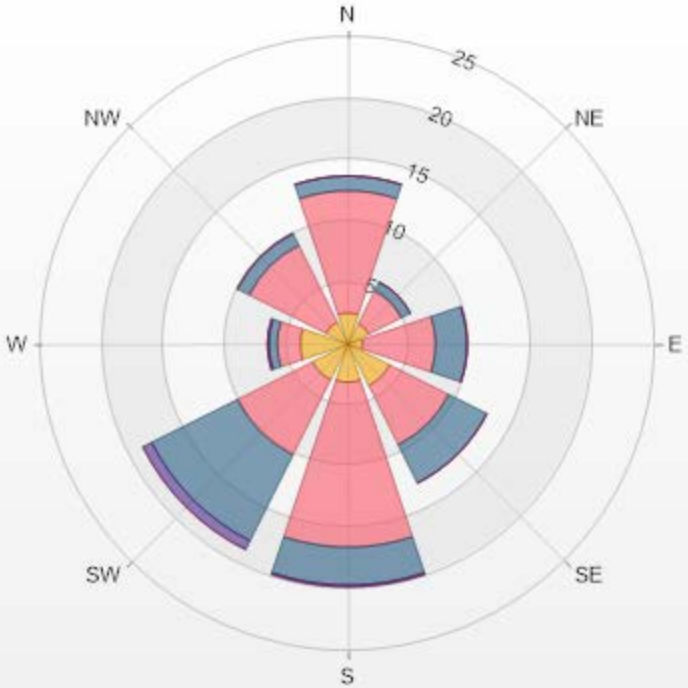
Timeseries Chart of Hourly Average for VWS - 986c Station



Wind: PRAMP 986c Poll.: PRAMP 986c-WDS[KPH] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 3.23% Valid Data: 100.00% Calm Avg: 1.28 [KPH]

Direction	0-6	6-15	15-29	29-39	>39.0	Total
N	2.55	9.95	1.21	0	0	13.71
NE	1.88	2.96	0.81	0	0	5.65
E	1.21	5.91	2.55	0	0	9.67
SE	3.76	5.38	3.49	0	0	12.63
S	3.09	13.44	3.09	0.13	0	19.75
SW	3.23	6.85	7.8	0.81	0	18.69
W	3.9	1.88	0.67	0.13	0	6.58
NW	2.02	6.99	1.08	0	0	10.09
Summary	21.64	53.36	20.7	1.07	0	96.77

PRAMP 986c Poll.: PRAMP 986c-WDS[KPH] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 3.23% Calm Poll Avg: 1.28 [KPH]



% Icon Classes (KPH)	22	0-6	53	6-15	21	15-29	1	29-39	0	>39.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

986c Station - January 2020

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

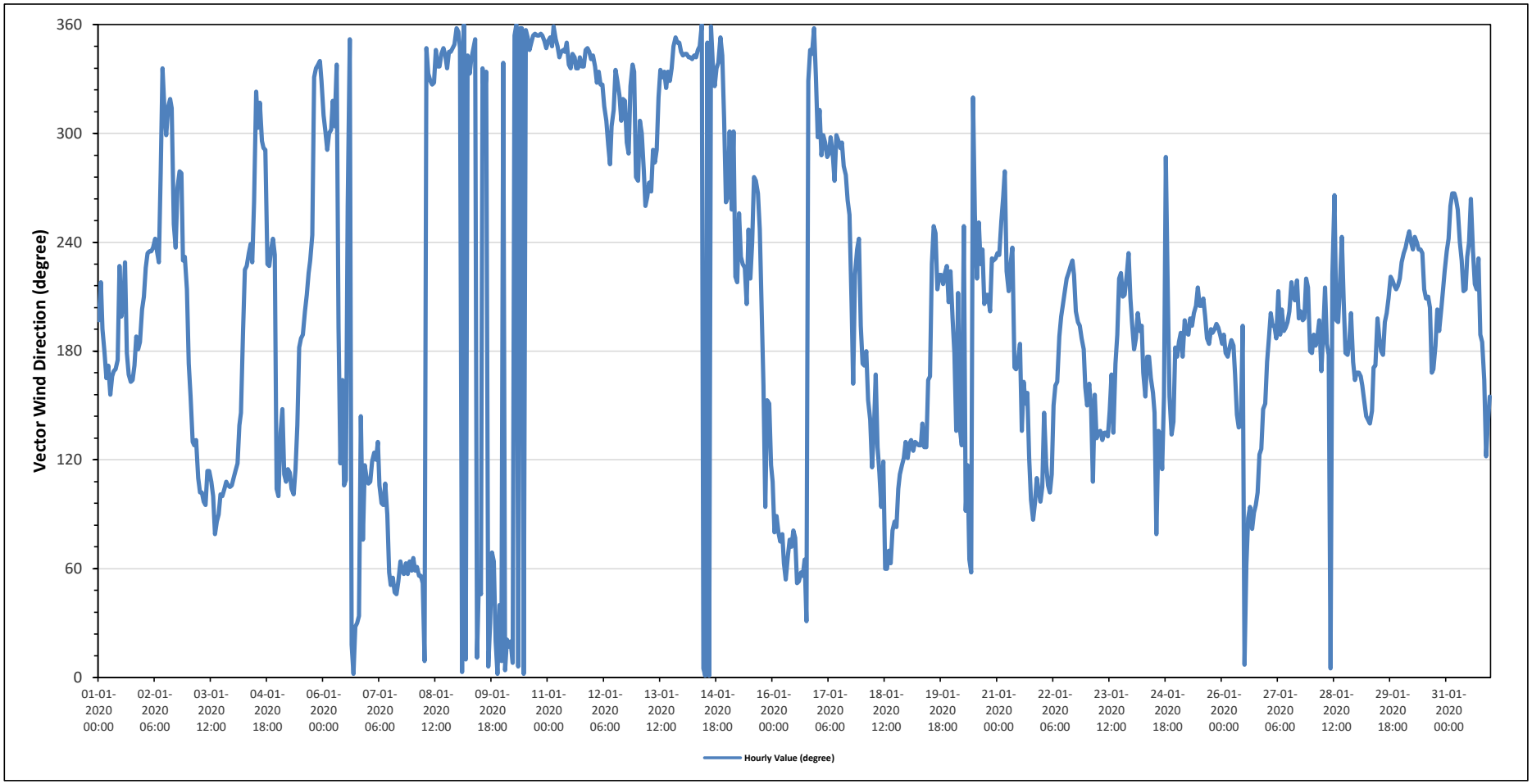
Monthly Average:	200 (SSW) degree	Hours in Service:	744
		Hours of Data:	744
		Hours of Missing Data:	0
		Hours of Calibration:	0
		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant
Jan 1	SSW	SW	S	S	SSE	S	SSE	SSE	SSE	SSE	S	SW	SSW	SSW	SW	S	SSE	SSE	SSE	S	S	S	S	SSW	184	S
Jan 2	SSW	SW	SW	SW	SW	SW	WSW	SW	SW	W	NNW	NW	WNW	NW	NW	NW	WSW	SW	W	W	W	SW	SW	SSW	255	WSW
Jan 3	S	SSE	SE	SE	SE	ESE	E	E	E	E	ESE	ESE	ESE	E	ENE	E	E	E	E	ESE	ESE	ESE	ESE	ESE	104	ESE
Jan 4	ESE	ESE	ESE	SE	SE	S	SW	SW	SW	WSW	SW	W	NW	WNW	NW	WNW	WNW	WNW	SW	SW	SW	WSW	SW	ESE	236	SW
Jan 5	E	SE	SE	ESE	ESE	ESE	ESE	ESE	E	ESE	SE	S	S	S	SSW	SSW	SW	SW	WSW	NNW	NNW	NNW	NNW	NNW	191	S
Jan 6	NW	WNW	WNW	WNW	WNW	NW	WNW	NNW	S	ESE	SSE	ESE	ESE	WSW	N	NNE	N	NNE	NNE	NE	SE	ENE	ESE	ESE	354	N
Jan 7	ESE	ESE	ESE	ESE	ESE	SE	ESE	E	E	ESE	E	ENE	NE	NE	NE	NE	NE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	78	ENE
Jan 8	ENE	ENE	ENE	NE	NE	NE	N	NNW	NNW	NNW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	6	N
Jan 9	N	NNW	N	N	N	NNW	NNW	NNW	NNW	N	NNE	NE	NE	NNW	NW	NNW	N	NNE	ENE	ENE	NNE	N	NE	N	2	N
Jan 10	NNW	N	NNE	NNE	NNE	N	N	N	N	N	N	N	N	N	NNW	N	N	N	N	N	N	N	N	NNW	357	N
Jan 11	N	N	NNW	N	N	NNW	NNW	NNW	NNW	NNW	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	344	NNW
Jan 12	NNW	NNW	NNW	NNW	NW	NW	NW	NW	WNW	W	WNW	NW	NNW	NNW	NW	NW	NW	NW	WNW	WNW	NW	NNW	NNW	W	322	NW
Jan 13	W	NW	WNW	W	WSW	W	W	W	WNW	WNW	WNW	NW	NNW	NNW	NNW	NW	NNW	NNW	NNW	NNW	N	N	N	NNW	326	NW
Jan 14	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	N	N	N	N	NNW	NW	NNW	NNW	N	NNW	NW	W	347	NNW
Jan 15	W	WNW	WSW	WNW	SW	SW	WSW	SW	SW	SW	SSW	WSW	SW	WSW	W	W	W	WSW	SSW	SSE	E	SSE	SSE	ESE	222	SW
Jan 16	ESE	E	E	E	ENE	ENE	ENE	NE	ENE	ENE	ENE	E	ENE	NE	NE	ENE	NE	ENE	NNE	NNW	NNW	NNW	N	NNW	60	ENE
Jan 17	WNW	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	WNW	WNW	WNW	WNW	W	W	W	WSW	SSW	SSE	SW	SW	WSW	SSW	280	W
Jan 18	S	S	S	SSE	SE	ESE	SE	SSE	SE	ESE	E	ESE	ENE	ENE	ENE	ENE	E	E	E	ESE	ESE	ESE	ESE	SE	105	ESE
Jan 19	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SSE	SSE	SW	WSW	WSW	SSW	SW	SW	SW	SW	SW	SSW	SW	152	SSE
Jan 20	SSW	S	SE	SSW	SE	SE	WSW	E	ESE	ENE	ENE	NW	WSW	SW	WSW	SW	SW	SSW	SSW	SSW	SSW	SW	SW	SW	214	SSW
Jan 21	SW	SW	WSW	W	W	SW	SSW	SW	SW	S	SSE	S	S	SE	SSE	SSE	SSE	ESE	E	E	E	ESE	ESE	E	192	S
Jan 22	ESE	SE	ESE	ESE	E	ESE	SSE	SSE	SSE	S	SSW	SSW	SSW	SW	SW	SW	SW	SW	SSW	SSW	SSW	S	S	SSE	191	S
Jan 23	SSE	SSE	SSE	ESE	SSE	SE	SE	SE	SE	SE	SE	SE	SE	SSE	SE	S	S	SW	SW	SSW	SSW	SW	SW	SSW	163	SSE
Jan 24	SSW	S	S	SSW	S	SSW	SSE	SSE	S	S	SSE	SSE	SE	ENE	SE	SE	ESE	SSE	WNW	SW	SSE	SE	SE	S	171	S
Jan 25	S	S	S	S	SSW	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	S	S	S	SSW	S	S	195	SSW
Jan 26	S	S	S	S	S	S	S	SSE	SE	SE	SE	SSW	N	ENE	E	E	E	E	E	E	ESE	SE	SE	SSE	131	SE
Jan 27	S	S	SSW	SSW	SSW	S	SSW	S	SSW	S	S	SSW	SSW	SW	SSW	SSW	SW	SSW	SSW	SSW	SSW	SW	SSW	S	201	SSW
Jan 28	S	S	S	S	SSW	SSE	S	SSW	S	S	N	SW	W	SSW	SSW	SW	WSW	SSW	S	S	S	SSW	S	SSE	193	S
Jan 29	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	SE	S	S	SSW	S	S	S	SSW	SSW	SSW	SW	SW	SW	SSW	SW	SW	184	S
Jan 30	SW	SW	SW	WSW	WSW	WSW	SW	WSW	WSW	SW	SW	SW	SSW	SSW	SSW	SSW	SSE	SSE	S	SSW	S	SSW	SSW	SW	217	SW
Jan 31	SW	WSW	WSW	W	W	W	WSW	WSW	SW	SSW	SSW	SW	WSW	W	SW	SW	SSW	SW	S	S	SSE	ESE	SE	SSE	235	SW

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

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

Timeseries Chart of Hourly Average for VWD - 986c Station



842b STATION

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

842b Station - January 2020

Summary of Hourly Averages

SULPHUR DIOXIDE (SO_2) in ppb

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

Number of 1-Hour Exceedances: 0 Number of 24-Hour Exceedances: 0 30-Day Exceedance: 0

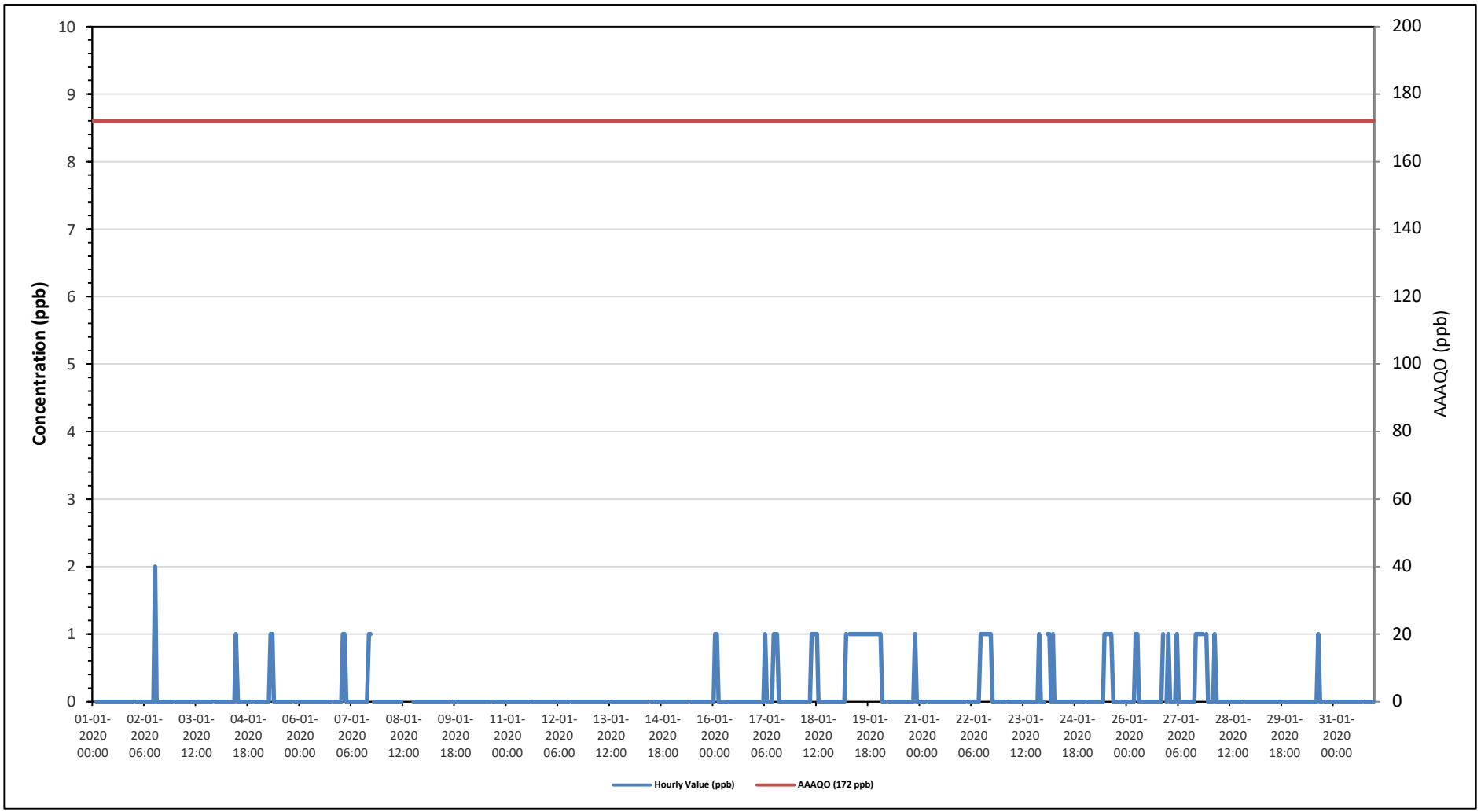
Maximum Hourly Value:	2	ppb	on January 2 at hour 12	Hours in Service:	744
Maximum Daily Value:	0.8	ppb	on January 19	Hours of Data:	706
Minimum Hourly Value:	0	ppb	on January 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on January 1	Hours of Calibration:	38
Monthly Average:	0.1	ppb		Operational Uptime:	100.0

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

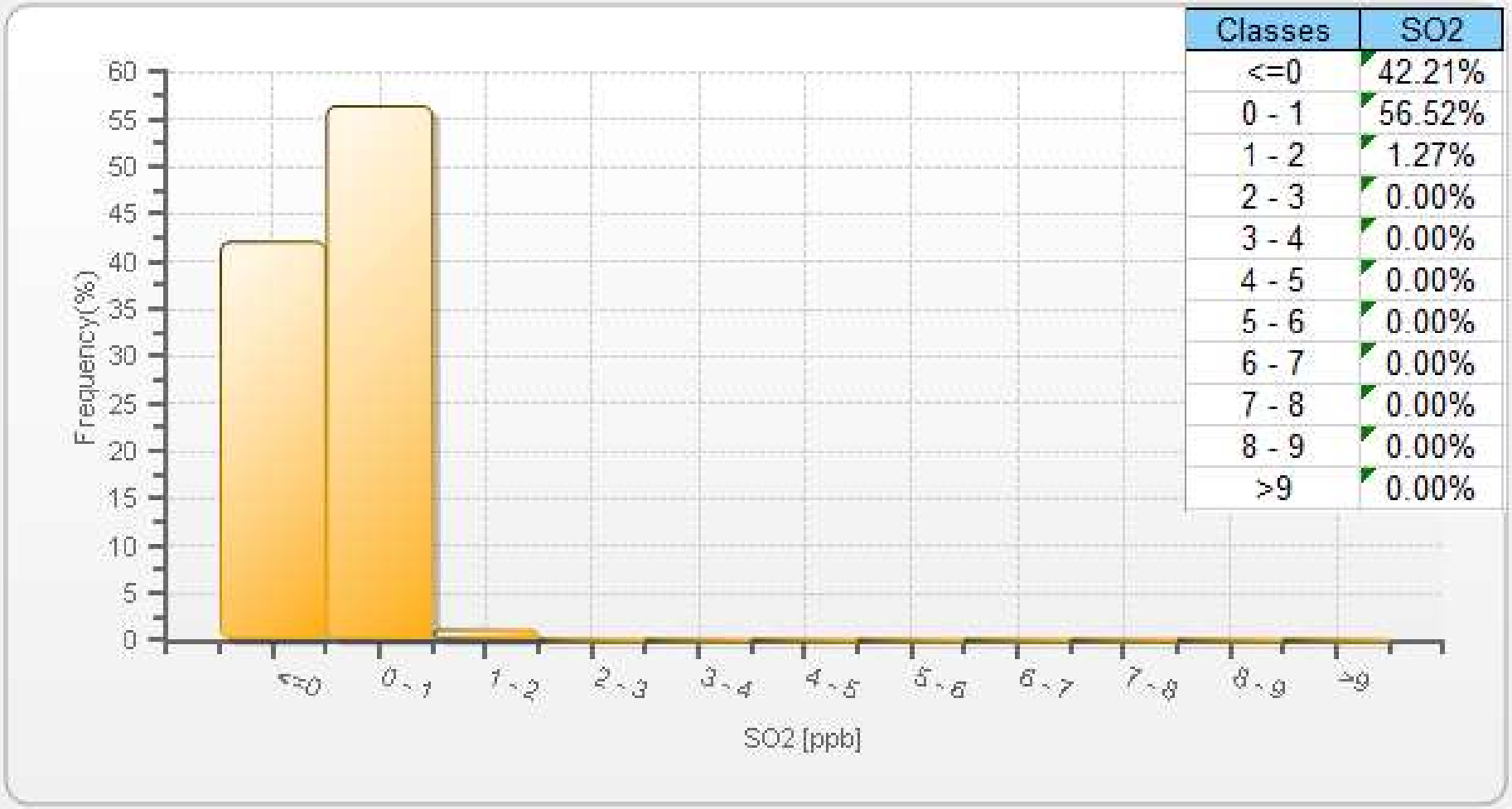
C	Monthly Calibration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Equipment Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine 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 - 842b Station



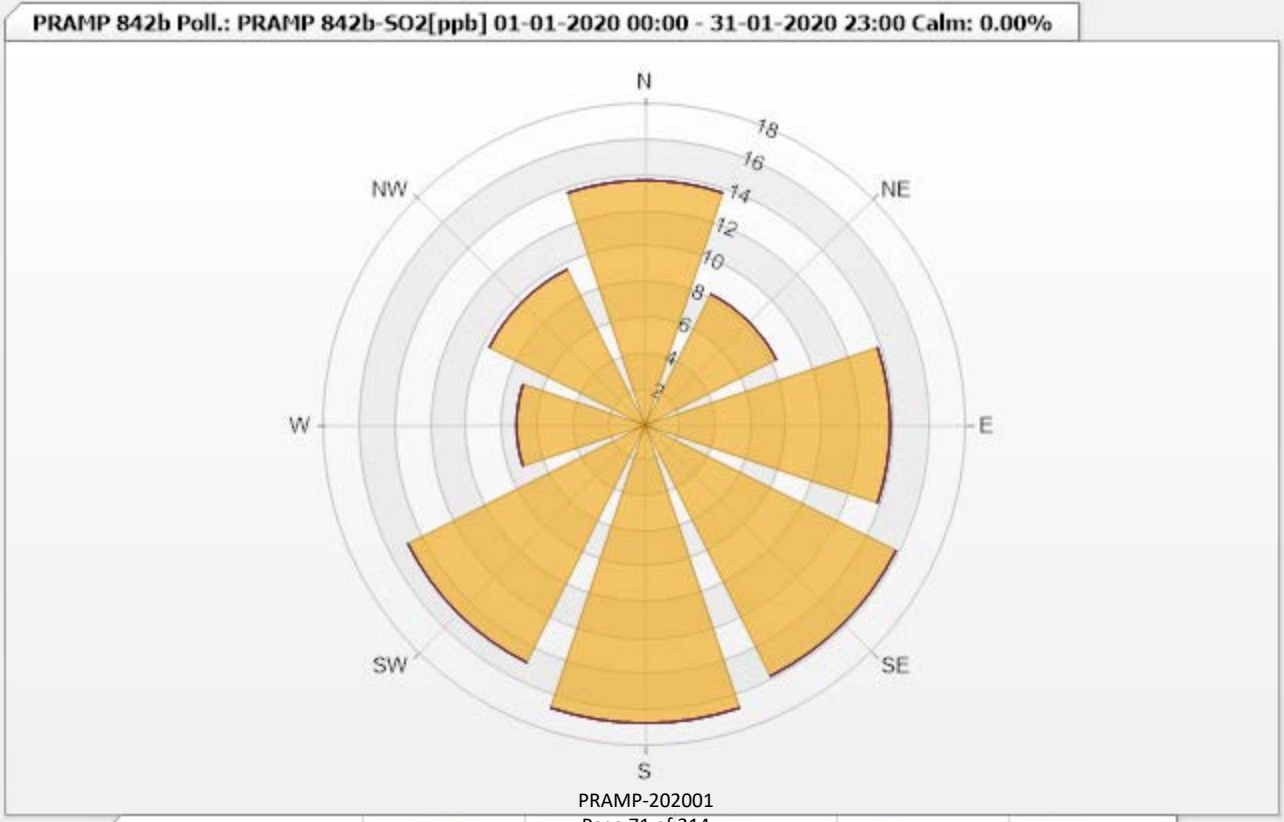
SO2[ppb] Histogram: PRAMP 842b Monthly: 01-2020 1 Hr.



Classes	SO2
<=0	42.21%
0 - 1	56.52%
1 - 2	1.27%
2 - 3	0.00%
3 - 4	0.00%
4 - 5	0.00%
5 - 6	0.00%
6 - 7	0.00%
7 - 8	0.00%
8 - 9	0.00%
>9	0.00%

Wind: PRAMP 842b Poll.: PRAMP 842b-SO2[ppb] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	13.74	0	0	0	0	13.74
NE	8.22	0	0	0	0	8.22
E	13.74	0	0	0	0	13.74
SE	15.72	0	0	0	0	15.72
S	16.71	0	0	0	0	16.71
SW	14.87	0	0	0	0	14.87
W	7.22	0	0	0	0	7.22
NW	9.77	0	0	0	0	9.77
Summary	100	0	0	0	0	100


PRAMP 842b Poll.: PRAMP 842b-SO2[ppb] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
18
16
14
12
10
8
6
4
2
% Icon Classes (ppb)
100 0-10
0 10-50
0 50-100
0 100-172
0 >172.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

842b Station - January 2020

Summary of Hourly Averages

TOTAL REDUCED SULPHUR (TRS) in ppb

Alberta Ambient Air Quality Objectives (AAAQO) for H2S: 1-Hour 10 ppb, 24-Hour 3 ppb

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

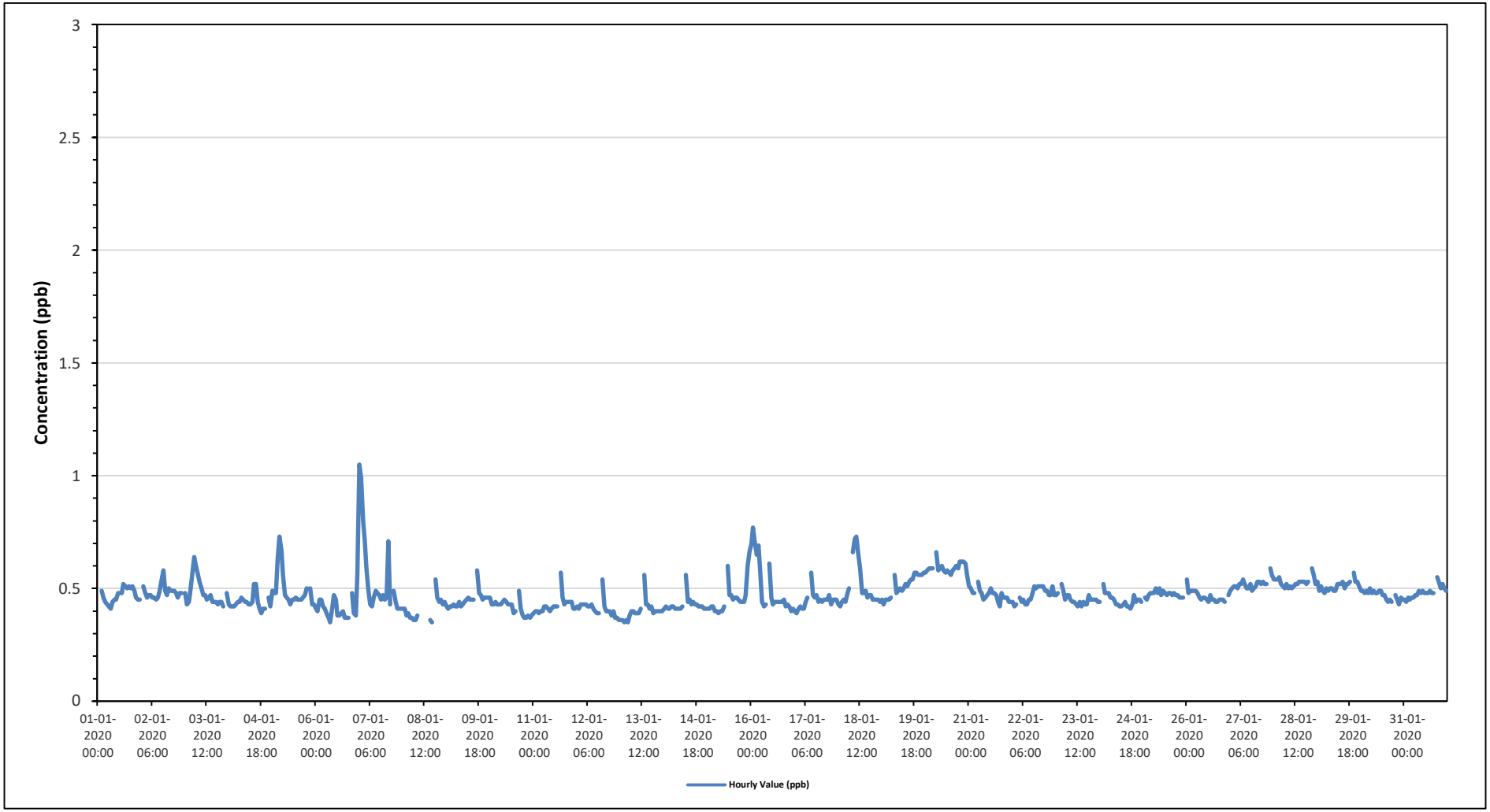
Maximum Hourly Value:	1.05	ppb	on January 7 at hour 0	Hours in Service:	744
Maximum Daily Value:	0.59	ppb	on January 20	Hours of Data:	705
Minimum Hourly Value:	0.35	ppb	on January 6 at hour 8	Hours of Missing Data:	0
Minimum Daily Value:	0.40	ppb	on January 13	Hours of Calibration:	39
Monthly Average:	0.47	ppb		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	0.41	S	0.49	0.46	0.44	0.43	0.42	0.41	0.44	0.45	0.45	0.48	0.48	0.48	0.52	0.51	0.5	0.51	0.5	0.51	0.49	0.46	0.45	0.45	0.41	0.52	0.47
Jan 2	S	0.51	0.48	0.46	0.47	0.47	0.46	0.46	0.45	0.46	0.49	0.54	0.58	0.49	0.47	0.5	0.49	0.49	0.49	0.48	0.46	0.48	0.48	S	0.45	0.58	0.48
Jan 3	0.48	0.43	0.44	0.5	0.56	0.64	0.6	0.56	0.53	0.5	0.47	0.47	0.45	0.46	0.47	0.44	0.44	0.44	0.43	0.44	0.44	0.42	S	0.48	0.42	0.64	0.48
Jan 4	0.43	0.42	0.42	0.42	0.43	0.44	0.44	0.46	0.45	0.44	0.44	0.43	0.43	0.44	0.52	0.52	0.44	0.41	0.39	0.41	0.41	S	0.46	0.42	0.39	0.52	0.44
Jan 5	0.49	0.48	0.48	0.63	0.73	0.67	0.56	0.47	0.46	0.45	0.43	0.45	0.45	0.46	0.45	0.45	0.45	0.46	0.47	0.5	S	0.5	0.43	0.43	0.43	0.73	0.49
Jan 6	0.41	0.4	0.45	0.45	0.42	0.41	0.39	0.37	0.35	0.41	0.47	0.45	0.38	0.38	0.39	0.4	0.37	0.37	0.37	S	0.48	0.39	0.38	0.56	0.35	0.56	0.41
Jan 7	1.05	0.99	0.8	0.72	0.59	0.49	0.43	0.42	0.46	0.49	0.48	0.47	0.45	0.47	0.45	0.46	0.71	0.43	S	0.49	0.44	0.41	0.41	0.41	0.41	1.05	0.54
Jan 8	0.41	0.41	0.38	0.39	0.37	0.37	0.36	0.36	0.38	C	C	C	C	C	C	0.36	0.35	S	0.54	0.46	0.44	0.45	0.43	0.44	0.35	0.54	-
Jan 9	0.42	0.41	0.42	0.42	0.43	0.42	0.42	0.44	0.42	0.43	0.44	0.45	0.46	0.45	0.45	0.45	S	0.58	0.48	0.47	0.45	0.46	0.46	0.46	0.41	0.58	0.45
Jan 10	0.46	0.43	0.43	0.44	0.43	0.43	0.43	0.44	0.45	0.44	0.43	0.43	0.43	0.39	0.4	S	0.49	0.41	0.38	0.37	0.37	0.38	0.37	0.38	0.37	0.49	0.42
Jan 11	0.39	0.4	0.4	0.39	0.4	0.4	0.42	0.42	0.41	0.4	0.41	0.42	0.42	0.42	S	0.57	0.46	0.43	0.44	0.44	0.44	0.44	0.41	0.41	0.39	0.57	0.42
Jan 12	0.42	0.41	0.43	0.43	0.43	0.43	0.42	0.42	0.43	0.41	0.4	0.39	0.39	S	0.54	0.42	0.4	0.4	0.4	0.38	0.4	0.37	0.37	0.36	0.36	0.54	0.41
Jan 13	0.36	0.36	0.35	0.36	0.35	0.38	0.4	0.4	0.39	0.39	0.39	0.41	S	0.56	0.43	0.43	0.41	0.42	0.39	0.4	0.4	0.4	0.4	0.4	0.35	0.56	0.40
Jan 14	0.41	0.42	0.41	0.41	0.42	0.42	0.41	0.41	0.41	0.41	0.42	S	0.56	0.44	0.45	0.43	0.44	0.43	0.43	0.42	0.42	0.42	0.41	0.41	0.41	0.56	0.43
Jan 15	0.41	0.41	0.42	0.42	0.4	0.4	0.39	0.4	0.4	0.42	S	0.6	0.47	0.47	0.45	0.46	0.46	0.45	0.44	0.44	0.44	0.47	0.6	0.66	0.39	0.66	0.46
Jan 16	0.7	0.77	0.7	0.65	0.69	0.57	0.44	0.42	0.43	S	0.61	0.46	0.43	0.44	0.44	0.44	0.44	0.44	0.45	0.42	0.43	0.42	0.4	0.41	0.40	0.77	0.50
Jan 17	0.4	0.39	0.41	0.42	0.41	0.41	0.44	0.46	S	0.57	0.47	0.46	0.47	0.44	0.45	0.44	0.45	0.45	0.45	0.47	0.43	0.45	0.45	0.45	0.39	0.57	0.45
Jan 18	0.43	0.42	0.44	0.45	0.44	0.48	0.5	S	0.66	0.72	0.73	0.65	0.59	0.48	0.48	0.49	0.46	0.47	0.47	0.45	0.45	0.45	0.45	0.44	0.42	0.73	0.50
Jan 19	0.45	0.43	0.45	0.45	0.45	0.46	S	0.56	0.48	0.49	0.5	0.49	0.5	0.52	0.51	0.53	0.54	0.54	0.57	0.57	0.56	0.56	0.56	0.57	0.43	0.57	0.51
Jan 20	0.57	0.58	0.59	0.59	0.59	S	0.66	0.58	0.59	0.6	0.58	0.57	0.58	0.57	0.56	0.58	0.59	0.6	0.59	0.62	0.62	0.62	0.61	0.56	0.56	0.66	0.59
Jan 21	0.51	0.5	0.48	0.48	S	0.53	0.49	0.48	0.45	0.46	0.47	0.48	0.5	0.48	0.48	0.47	0.44	0.42	0.48	0.46	0.46	0.46	0.44	0.44	0.42	0.53	0.47
Jan 22	0.44	0.42	0.43	S	0.46	0.44	0.45	0.43	0.43	0.45	0.45	0.48	0.51	0.5	0.51	0.51	0.51	0.51	0.49	0.49	0.47	0.47	0.51	0.47	0.42	0.51	0.47
Jan 23	0.47	0.48	S	0.52	0.49	0.45	0.47	0.47	0.45	0.44	0.44	0.43	0.42	0.44	0.42	0.44	0.43	0.43	0.47	0.45	0.45	0.45	0.45	0.44	0.42	0.52	0.45
Jan 24	0.44	S	0.52	0.48	0.48	0.48	0.46	0.46	0.45	0.43	0.43	0.42	0.42	0.43	0.44	0.42	0.42	0.41	0.43	0.47	0.44	0.45	0.45	0.44	0.41	0.52	0.45
Jan 25	S	0.46	0.45	0.47	0.48	0.48	0.48	0.5	0.48	0.5	0.47	0.49	0.48	0.47	0.48	0.48	0.47	0.48	0.47	0.47	0.46	0.46	0.46	S	0.45	0.50	0.47
Jan 26	0.54	0.48	0.49	0.49	0.49	0.49	0.48	0.46	0.45	0.46	0.46	0.45	0.44	0.47	0.45	0.45	0.44	0.44	0.45	0.45	0.45	0.44	S	0.47	0.44	0.54	0.46
Jan 27	0.49	0.5	0.51	0.51	0.5	0.52	0.52	0.54	0.52	0.5	0.5	0.52	0.49	0.5	0.51	0.53	0.53	0.52	0.53	0.52	0.52	S	0.59	0.56	0.49	0.59	0.52
Jan 28	0.54	0.54	0.54	0.55	0.52	0.51	0.5	0.52	0.5	0.51	0.5	0.51	0.52	0.52	0.53	0.53	0.53	0.53	0.52	0.53	S	0.59	0.56	0.52	0.50	0.59	0.53
Jan 29	0.53	0.49	0.51	0.49	0.48	0.5	0.49	0.5	0.5	0.49	0.49	0.52	0.52	0.52	0.53	0.5	0.52	0.52	0.53	S	0.57	0.53	0.53	0.51	0.48	0.57	0.51
Jan 30	0.49	0.49	0.48	0.49	0.48	0.5	0.48	0.49	0.48	0.48	0.49	0.49	0.47	0.47	0.45	0.44	0.45	0.44	S	0.47	0.45	0.43	0.46	0.45	0.43	0.50	0.47
Jan 31	0.45	0.44	0.46	0.45	0.46	0.46	0.47	0.47	0.49	0.48	0.49	0.48	0.48	0.48	0.49	0.48	0.48	S	0.55	0.53	0.5	0.52	0.5	0.49	0.44	0.55	0.48
Diurnal Maximum	1.05	0.99	0.80	0.72	0.73	0.67	0.66	0.58	0.66	0.72	0.73	0.65	0.59	0.57	0.56	0.58	0.71	0.60	0.59	0.62	0.62	0.62	0.61	0.66			
Diurnal Average	0.48	0.48	0.48	0.48	0.48	0.47	0.46	0.46	0.46	0.47	0.48	0.48	0.47	0.47	0.47	0.47	0.47	0.46	0.47	0.47	0.46	0.46	0.46	0.47			

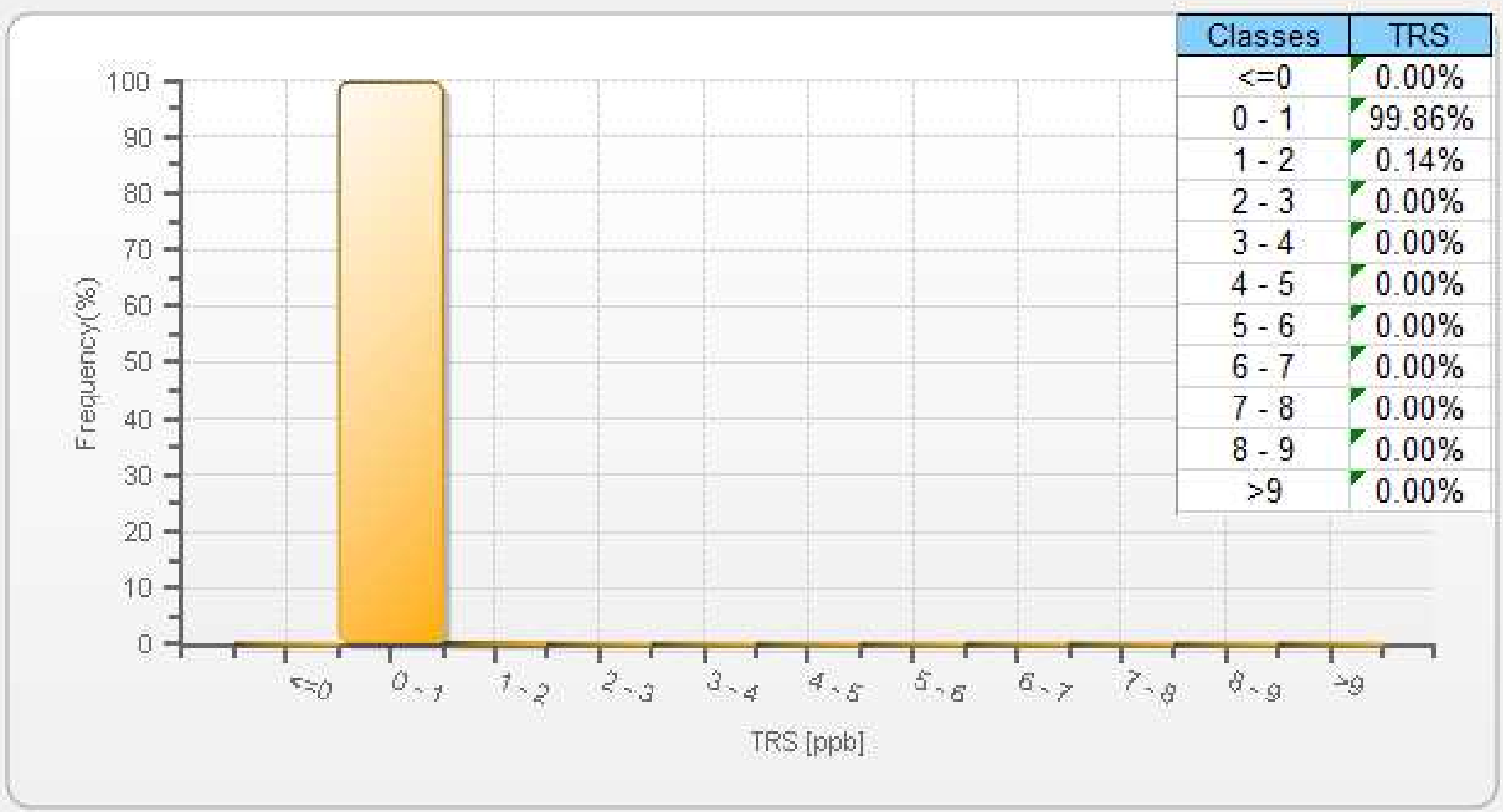
C	Monthly Calibration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P** Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance	
X	InValid Data (Equipment Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine 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 TRS - 842b Station



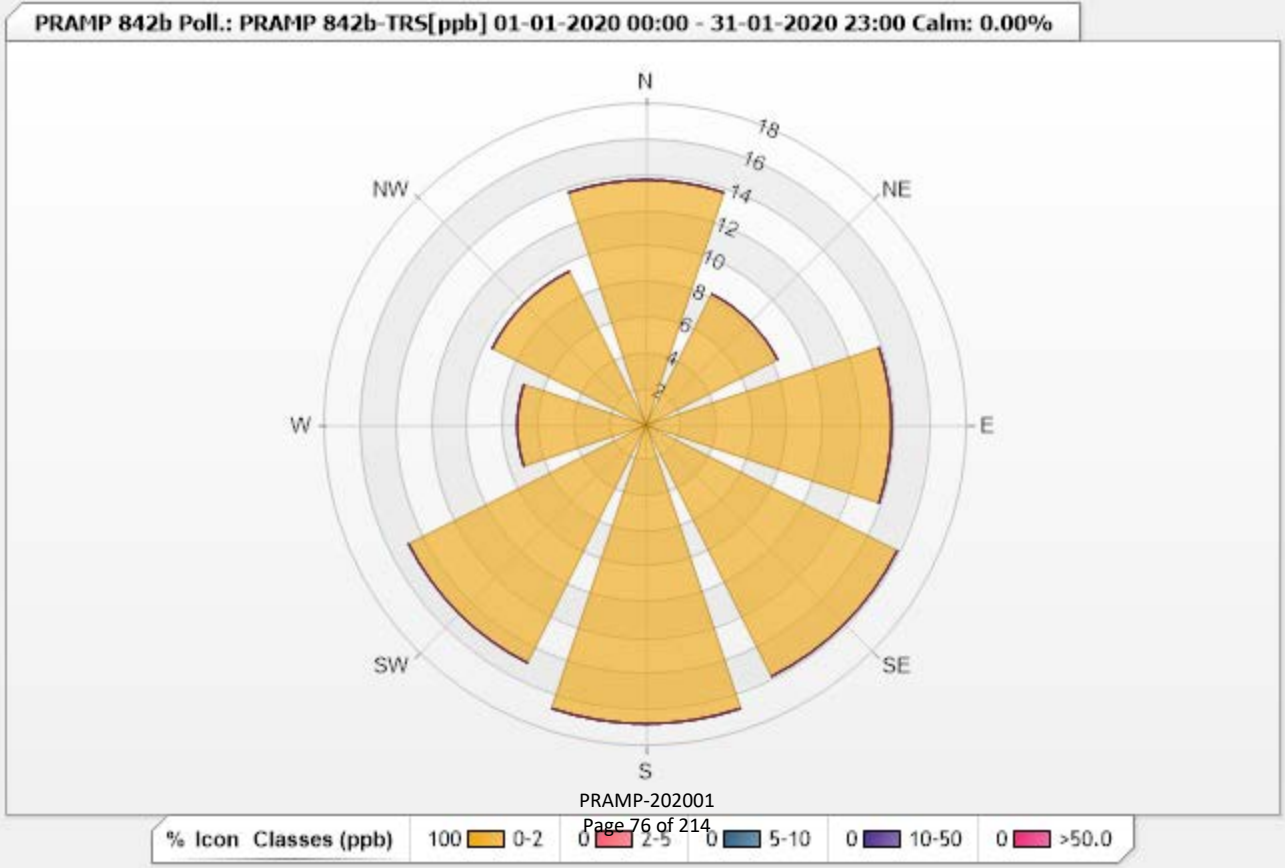
TRS[ppb] Histogram: PRAMP 842b Monthly: 01-2020 1 Hr.



Classes	TRS
<=0	0.00%
0 - 1	99.86%
1 - 2	0.14%
2 - 3	0.00%
3 - 4	0.00%
4 - 5	0.00%
5 - 6	0.00%
6 - 7	0.00%
7 - 8	0.00%
8 - 9	0.00%
>9	0.00%

Wind: PRAMP 842b Poll.: PRAMP 842b-TRS[ppb] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	13.76	0	0	0	0	13.76
NE	8.23	0	0	0	0	8.23
E	13.76	0	0	0	0	13.76
SE	15.74	0	0	0	0	15.74
S	16.74	0	0	0	0	16.74
SW	14.89	0	0	0	0	14.89
W	7.23	0	0	0	0	7.23
NW	9.65	0	0	0	0	9.65
Summary	100	0	0	0	0	100


PRAMP 842b Poll.: PRAMP 842b-TRS[ppb] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
18
16
14
12
10
8
6
4
2
% Icon Classes (ppb)
100 0-2
0 2-5
0 5-10
0 10-50
0 >50.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

842b Station - January 2020

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

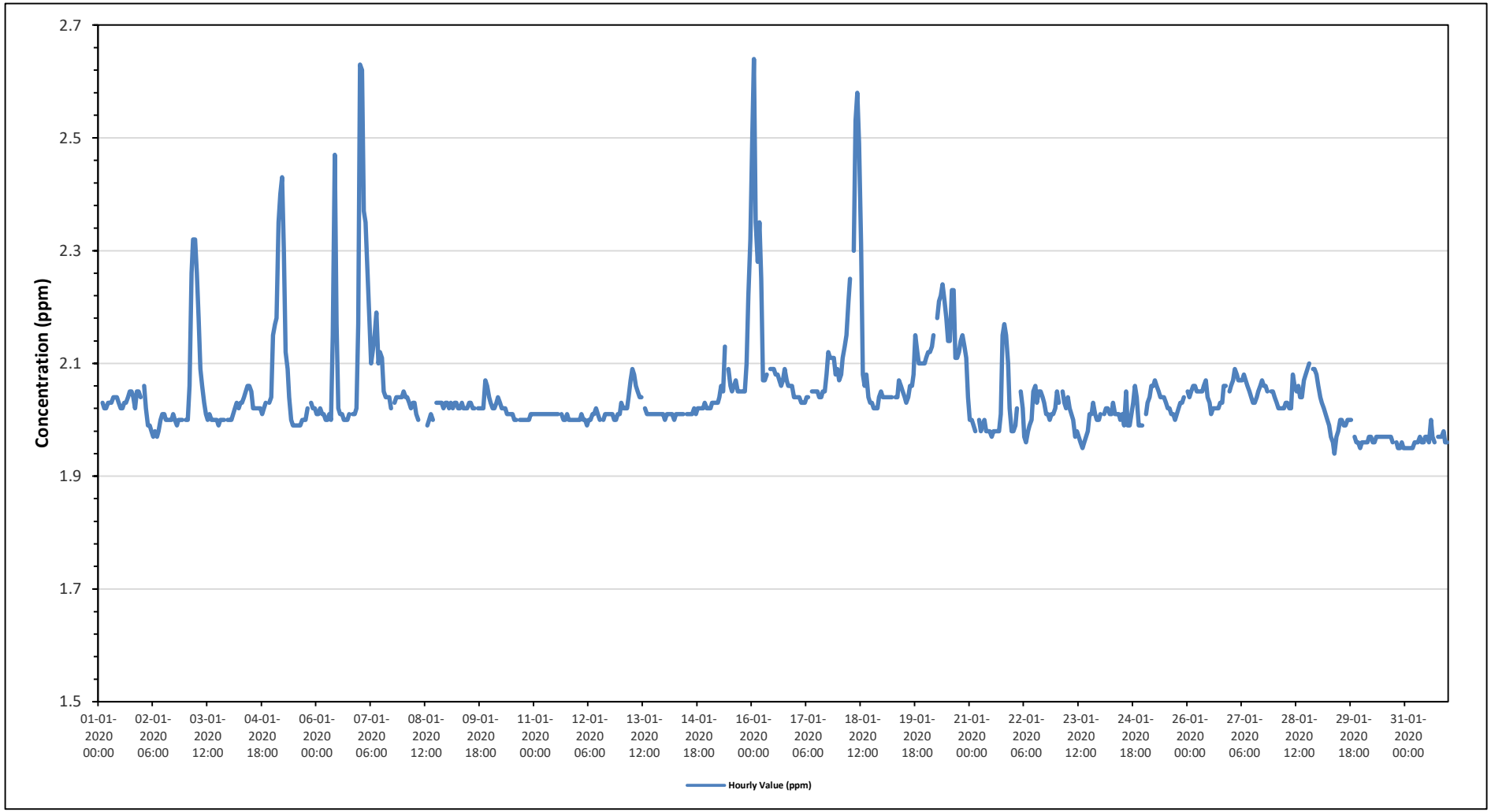
Maximum Hourly Value:	2.64	ppm	on January 16 at hour 1	Hours in Service:	744
Maximum Daily Value:	2.16	ppm	on January 7	Hours of Data:	707
Minimum Hourly Value:	1.94	ppm	on January 29 at hour 9	Hours of Missing Data:	0
Minimum Daily Value:	1.96	ppm	on January 31	Hours of Calibration:	37
Monthly Average:	2.04	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			
Jan 1	2.01	S	2.03	2.02	2.02	2.03	2.03	2.03	2.04	2.04	2.04	2.03	2.02	2.02	2.03	2.03	2.04	2.05	2.05	2.04	2.02	2.05	2.05	2.04	2.01	2.05	2.03
Jan 2	S	2.06	2.02	1.99	1.99	1.98	1.97	1.98	1.97	1.98	2	2.01	2.01	2	2	2	2	2.01	2	1.99	2	2	2	S	1.97	2.06	2.00
Jan 3	2	2	2.06	2.26	2.32	2.32	2.26	2.18	2.09	2.06	2.03	2.01	2	2.01	2	2	2	2	1.99	2	2	2	S	2	1.99	2.32	2.07
Jan 4	2	2	2.01	2.02	2.03	2.02	2.03	2.03	2.04	2.05	2.06	2.06	2.05	2.02	2.02	2.02	2.02	2.02	2.01	2.02	2.03	S	2.03	2.04	2.00	2.06	2.03
Jan 5	2.15	2.17	2.18	2.35	2.4	2.43	2.3	2.12	2.09	2.04	2	1.99	1.99	1.99	1.99	1.99	2	2	2	2.02	S	2.03	2.02	2.02	1.99	2.43	2.10
Jan 6	2.01	2.01	2.02	2.01	2.01	2	2	2.01	2	2.15	2.47	2.17	2.02	2.01	2.01	2	2	2	2.01	S	2.01	2.01	2.02	2.17	2.00	2.47	2.05
Jan 7	2.63	2.62	2.37	2.35	2.27	2.18	2.1	2.12	2.15	2.19	2.1	2.12	2.11	2.05	2.04	2.04	2.04	2.02	S	2.03	2.04	2.04	2.04	2.04	2.02	2.63	**2.16**
Jan 8	2.05	2.04	2.04	2.03	2.02	2.03	2.03	2.01	2	C	C	C	C	1.99	2	2.01	2	S	2.03	2.03	2.03	2.03	2.02	2.03	1.99	2.05	2.02
Jan 9	2.03	2.02	2.03	2.02	2.03	2.03	2.02	2.02	2.03	2.02	2.02	2.02	2.03	2.03	2.02	2.02	S	2.02	2.02	2.02	2.02	2.07	2.06	2.04	2.02	2.07	2.03
Jan 10	2.03	2.02	2.02	2.03	2.04	2.03	2.02	2.02	2.02	2.01	2.01	2.01	2.01	2	2	S	2	2	2	2	2	2	2.01	2.01	2.00	2.04	2.01
Jan 11	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	S	2.01	2	2	2.01	2	2	2	2	2	2.00	2.01	2.01
Jan 12	2	2	2.01	2	2	1.99	2	2	2.01	2.01	2.02	2.01	2	S	2	2.01	2.01	2.01	2.01	2.01	2	2	2.01	2.01	1.99	2.02	2.01
Jan 13	2.03	2.02	2.02	2.02	2.04	2.07	2.09	2.08	2.06	2.05	2.04	2.04	S	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.09	2.03
Jan 14	2	2.01	2.01	2.01	2.01	2	2.01	2.01	2.01	2.01	2.01	S	2.01	2.01	2.01	2.01	2.02	2.01	2.02	2.02	2.02	2.02	2.03	2.02	2.00	2.03	2.01
Jan 15	2.02	2.02	2.03	2.03	2.03	2.03	2.04	2.06	2.05	2.13	S	2.09	2.06	2.05	2.06	2.07	2.05	2.05	2.05	2.05	2.05	2.1	2.22	2.32	2.02	2.32	2.07
Jan 16	2.49	**2.64**	2.35	2.28	2.35	2.25	2.07	2.07	2.08	S	2.09	2.09	2.09	2.08	2.08	2.07	2.06	2.07	2.09	2.07	2.06	2.06	2.06	2.04	2.04	**2.64**	2.16
Jan 17	2.04	2.04	2.04	2.03	2.03	2.03	2.04	2.04	S	2.05	2.05	2.05	2.05	2.04	2.04	2.05	2.05	2.08	2.12	2.11	2.11	2.11	2.08	2.09	2.03	2.12	2.06
Jan 18	2.07	2.08	2.11	2.13	2.15	2.21	2.25	S	2.3	2.53	2.58	2.49	2.31	2.08	2.06	2.08	2.04	2.03	2.03	2.02	2.02	2.02	2.04	2.05	2.02	2.58	2.16
Jan 19	2.04	2.04	2.04	2.04	2.04	2.04	S	2.04	2.04	2.07	2.06	2.05	2.04	2.03	2.04	2.06	2.06	2.08	2.15	2.12	2.1	2.1	2.1	2.1	2.03	2.15	2.06
Jan 20	2.11	2.12	2.12	2.13	2.15	S	2.18	2.21	2.22	2.24	2.21	2.18	2.14	2.14	2.23	2.23	2.11	2.11	2.12	2.14	2.15	2.13	2.11	2.04	2.04	2.24	2.15
Jan 21	2	2	1.99	1.98	S	2	1.98	1.99	2	1.98	1.98	1.98	1.97	1.98	1.98	1.98	1.98	2.01	2.15	2.17	2.15	2.1	2.02	1.98	1.97	2.17	2.02
Jan 22	1.98	1.99	2.02	S	2.05	2.02	1.97	1.96	1.98	1.99	2	2.05	2.06	2.03	2.05	2.05	2.04	2.03	2.01	2.01	2	2.01	2.01	2.02	1.96	2.06	2.01
Jan 23	2.05	2.03	S	2.05	2.03	2.02	2.04	2.02	2.01	2	1.97	1.98	1.97	1.96	1.95	1.96	1.97	1.98	2.01	2.01	2.03	2.01	2	2	1.95	2.05	2.00
Jan 24	2.01	S	2.01	2.02	2.02	2.01	2.01	2.03	2.01	2.01	2.01	2	2.01	1.99	2.05	1.99	1.99	2.01	2.03	2.06	2.04	1.99	1.99	1.99	1.99	2.06	2.01
Jan 25	S	2.01	2.03	2.04	2.06	2.06	2.07	2.06	2.05	2.04	2.04	2.04	2.03	2.02	2.02	2.01	2.01	2	2.01	2.02	2.03	2.03	2.04	S	2.00	2.07	2.03
Jan 26	2.05	2.04	2.05	2.06	2.06	2.05	2.05	2.05	2.05	2.06	2.07	2.04	2.03	2.01	2.02	2.02	2.02	2.02	2.03	2.03	2.06	2.06	S	2.05	2.01	2.07	2.04
Jan 27	2.06	2.07	2.09	2.08	2.07	2.07	2.07	2.08	2.07	2.06	2.05	2.04	2.03	2.03	2.04	2.05	2.06	2.07	2.06	2.06	2.05	S	2.05	2.05	2.03	2.09	2.06
Jan 28	2.04	2.03	2.02	2.02	2.02	2.02	2.03	2.03	2.02	2.02	2.08	2.06	2.05	2.06	2.04	2.04	2.07	2.08	2.09	2.1	S	2.09	2.09	2.08	2.02	2.10	2.05
Jan 29	2.06	2.04	2.03	2.02	2.01	2	1.99	1.97	1.96	1.94	1.97	1.98	2	2	1.99	1.99	2	2	2	S	1.97	1.96	1.96	1.95	1.94	2.06	1.99
Jan 30	1.96	1.96	1.96	1.96	1.97	1.97	1.96	1.96	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.96	S	1.96	1.95	1.95	1.96	1.95	1.95	1.97	1.96
Jan 31	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.97	1.96	1.96	1.97	1.97	1.96	2	1.97	1.96	S	1.97	1.97	1.97	1.98	1.96	1.96	1.95	2.00	1.96
Diurnal Maximum	2.63	2.64	2.37	2.35	2.40	2.43	2.30	2.21	2.30	2.53	2.58	2.49	2.31	2.14	2.23	2.23	2.11	2.11	2.15	2.17	2.15	2.13	2.22	2.32			
Diurnal Average	2.06	2.07	2.06	2.06	2.07	2.06	2.05	2.04	2.04	2.06	2.07	2.05	2.04	2.02	2.03	2.02	2.02	2.03	2.04	2.04	2.03	2.03	2.03	2.04			

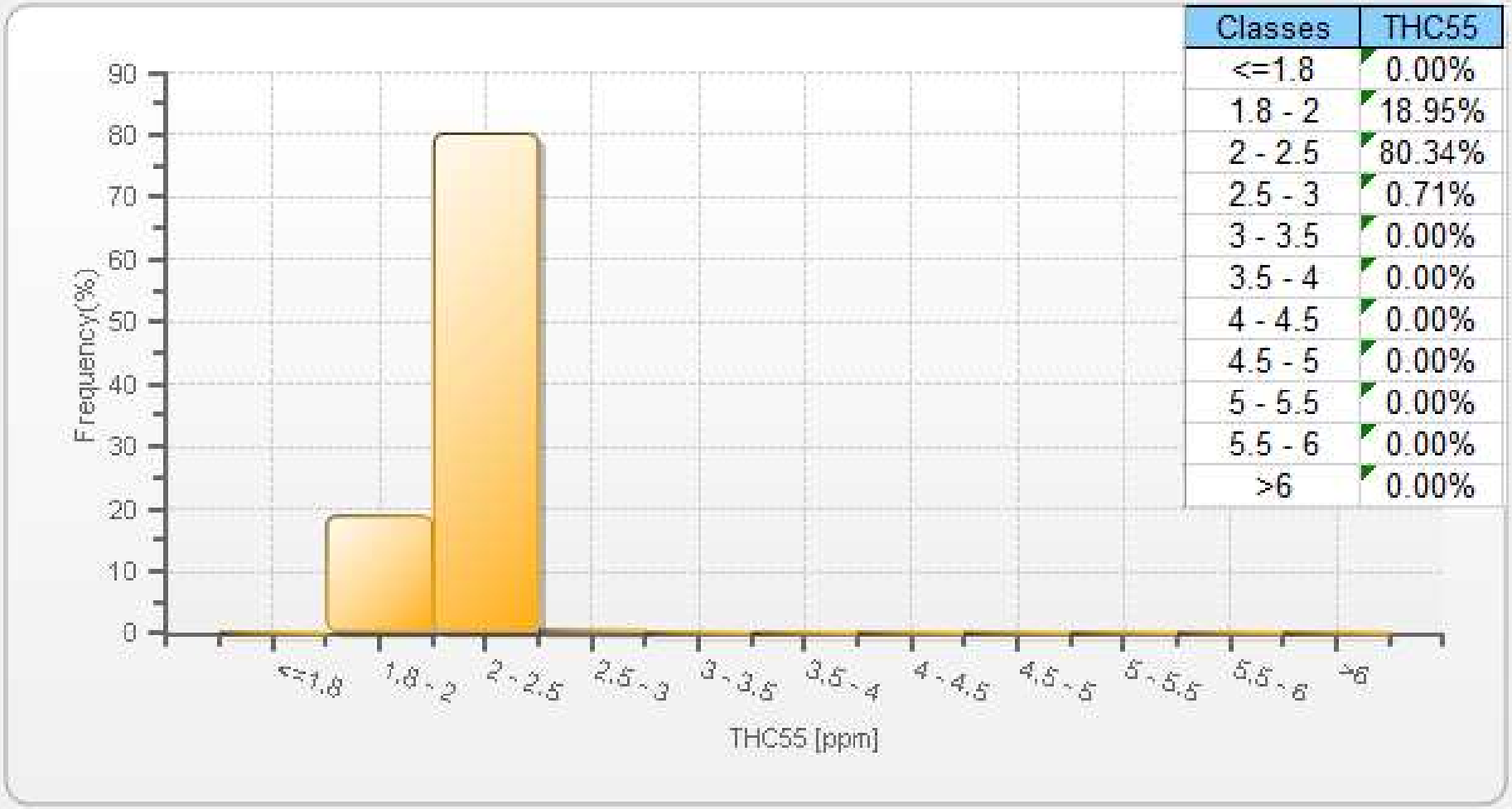
C	Monthly Calibration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Equipment Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine 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 THC - 842b Station



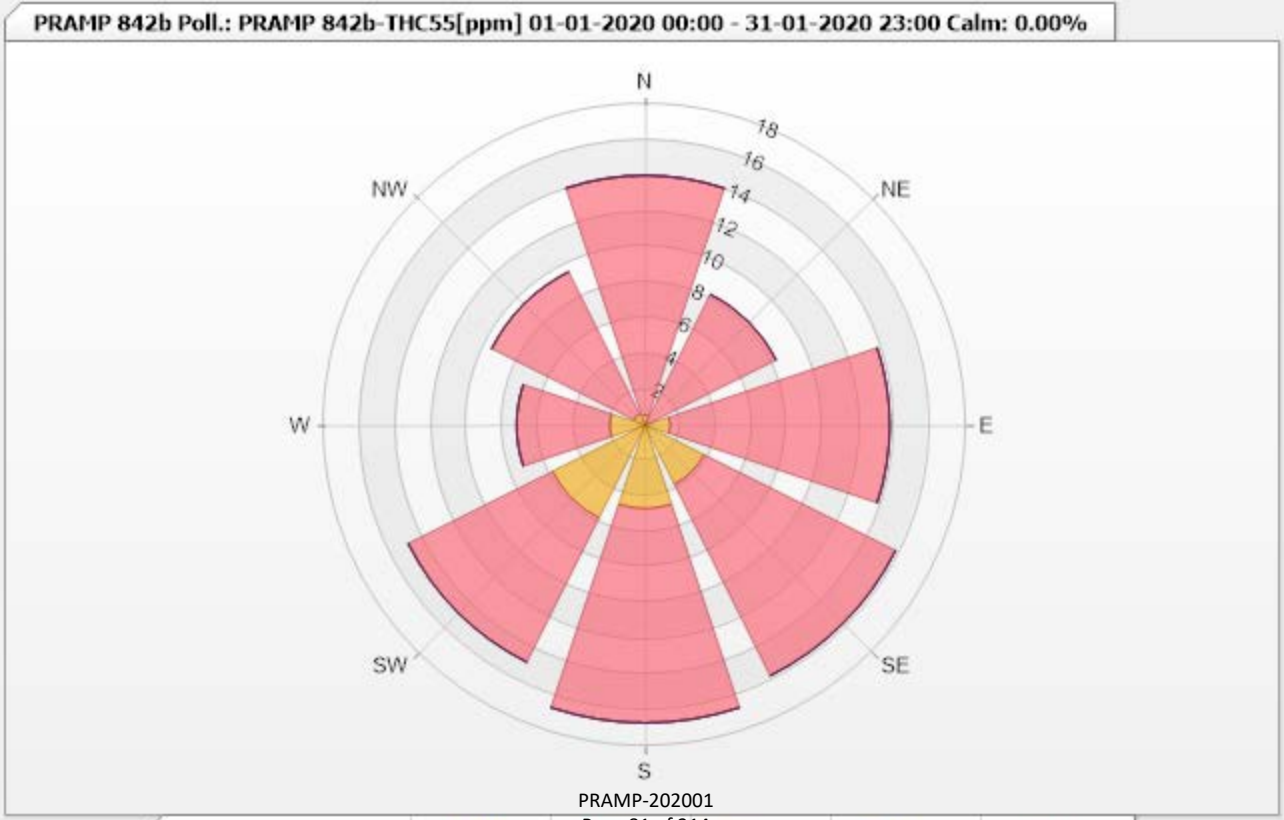
THC55[ppm] Histogram: PRAMP 842b Monthly: 01-2020 1 Hr.



Classes	THC55
<=1.8	0.00%
1.8 - 2	18.95%
2 - 2.5	80.34%
2.5 - 3	0.71%
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: PRAMP 842b Poll.: PRAMP 842b-THC55[ppm] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	0.57	13.44	0	0	0	14.01
NE	0	8.2	0	0	0	8.2
E	1.41	12.31	0	0	0	13.72
SE	3.68	12.02	0	0	0	15.7
S	4.67	12.02	0	0	0	16.69
SW	5.8	9.05	0	0	0	14.85
W	1.98	5.23	0	0	0	7.21
NW	0.71	8.91	0	0	0	9.62
Summary	18.82	81.18	0	0	0	100


PRAMP 842b Poll.: PRAMP 842b-THC55[ppm] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
18
16
14
12
10
8
6
4
2
% Icon Classes (ppm)
19 0-2
81 2-5
0 5-10
0 10-40
0 >40.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

842b Station - January 2020

Summary of Hourly Averages

METHANE (CH4) in ppm

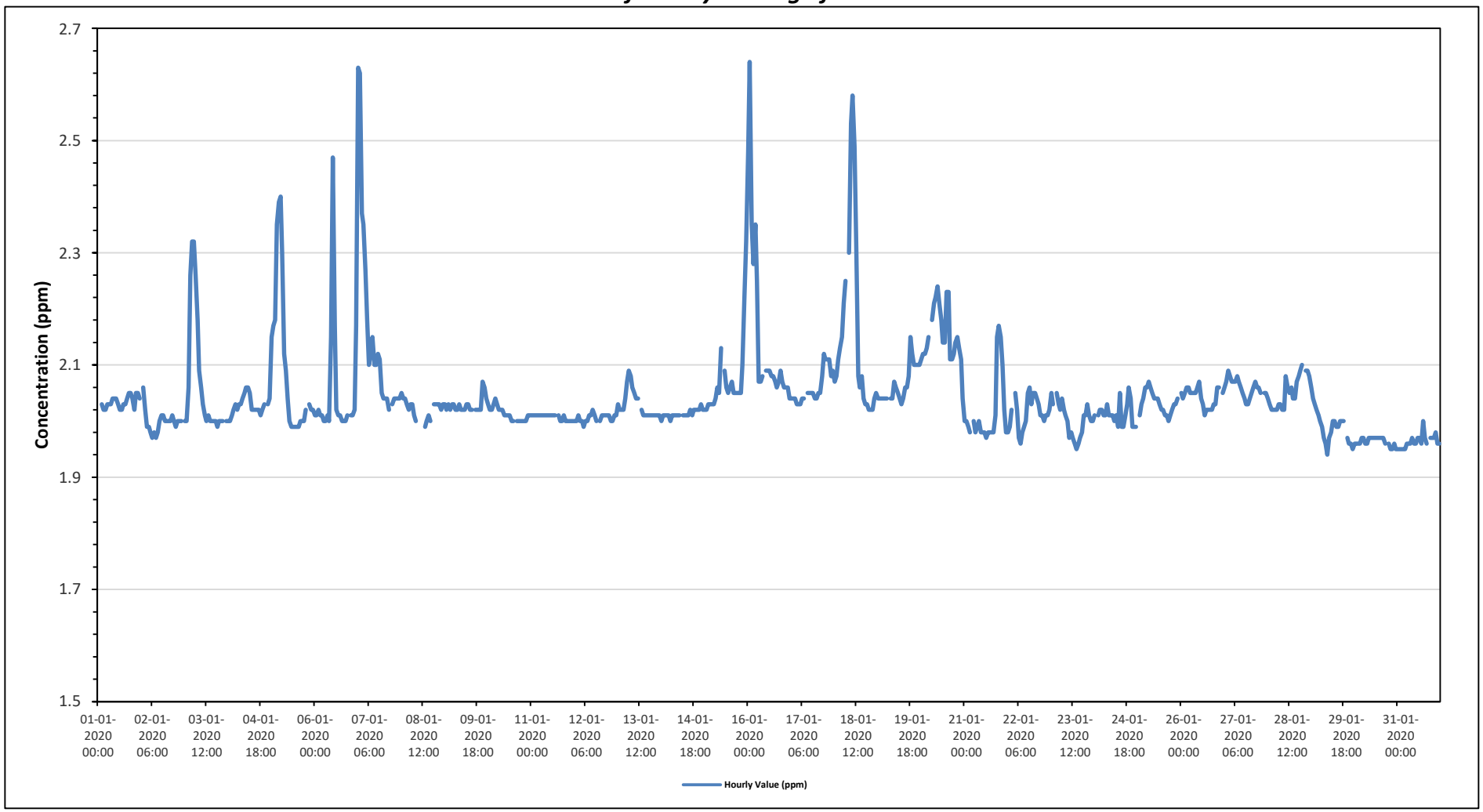
Maximum Hourly Value:	2.64	ppm	on January 16 at hour 1	Hours in Service:	744
Maximum Daily Value:	2.16	ppm	on January 18	Hours of Data:	707
Minimum Hourly Value:	1.94	ppm	on January 29 at hour 9	Hours of Missing Data:	0
Minimum Daily Value:	1.96	ppm	on January 31	Hours of Calibration:	37
Monthly Average:	2.04	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			
Jan 1	2.01	S	2.03	2.02	2.02	2.03	2.03	2.03	2.04	2.04	2.04	2.03	2.02	2.02	2.03	2.03	2.04	2.05	2.05	2.04	2.02	2.05	2.05	2.04	2.01	2.05	2.03
Jan 2	S	2.06	2.02	1.99	1.99	1.98	1.97	1.98	1.97	1.98	2	2.01	2.01	2	2	2	2	2.01	2	1.99	2	2	2	S	1.97	2.06	2.00
Jan 3	2	2	2.06	2.26	2.32	2.32	2.26	2.18	2.09	2.06	2.03	2.01	2	2.01	2	2	2	2	1.99	2	2	2	S	2	1.99	2.32	2.07
Jan 4	2	2	2.01	2.02	2.03	2.02	2.03	2.03	2.04	2.05	2.06	2.06	2.05	2.02	2.02	2.02	2.02	2.02	2.01	2.02	2.03	S	2.03	2.04	2.00	2.06	2.03
Jan 5	2.15	2.17	2.18	2.35	2.39	2.4	2.3	2.12	2.09	2.04	2	1.99	1.99	1.99	1.99	1.99	2	2	2	2.02	S	2.03	2.02	2.02	1.99	2.40	2.10
Jan 6	2.01	2.01	2.02	2.01	2.01	2	2	2.01	2	2.15	2.47	2.17	2.02	2.01	2.01	2	2	2	2.01	S	2.01	2.01	2.02	2.17	2.00	2.47	2.05
Jan 7	2.63	2.62	2.37	2.35	2.27	2.18	2.1	2.12	2.15	2.1	2.1	2.12	2.11	2.05	2.04	2.04	2.04	2.02	S	2.03	2.04	2.04	2.04	2.04	2.02	2.63	2.16
Jan 8	2.05	2.04	2.04	2.03	2.02	2.03	2.03	2.01	2	C	C	C	C	1.99	2	2.01	2	S	2.03	2.03	2.03	2.03	2.02	2.03	1.99	2.05	2.02
Jan 9	2.03	2.02	2.03	2.02	2.03	2.03	2.02	2.02	2.03	2.02	2.02	2.02	2.03	2.03	2.02	2.02	S	2.02	2.02	2.02	2.02	2.07	2.06	2.04	2.02	2.07	2.03
Jan 10	2.03	2.02	2.02	2.03	2.04	2.03	2.02	2.02	2.02	2.01	2.01	2.01	2.01	2	2	S	2	2	2	2	2	2	2.01	2.01	2.00	2.04	2.01
Jan 11	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	S	2.01	2	2	2.01	2	2	2	2	2	2.00	2.01	2.01
Jan 12	2	2	2.01	2	2	1.99	2	2	2.01	2.01	2.02	2.01	2	S	2	2.01	2.01	2.01	2.01	2.01	2	2	2.01	2.01	1.99	2.02	2.01
Jan 13	2.03	2.02	2.02	2.02	2.04	2.07	2.09	2.08	2.06	2.05	2.04	2.04	S	2.02	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.09	2.03
Jan 14	2	2.01	2.01	2.01	2.01	2	2.01	2.01	2.01	2.01	2.01	S	2.01	2.01	2.01	2.01	2.02	2.01	2.02	2.02	2.02	2.02	2.03	2.02	2.00	2.03	2.01
Jan 15	2.02	2.02	2.03	2.03	2.03	2.03	2.04	2.06	2.05	2.13	S	2.09	2.06	2.05	2.06	2.07	2.05	2.05	2.05	2.05	2.05	2.1	2.22	2.32	2.02	2.32	2.07
Jan 16	2.48	**2.64**	2.35	2.28	2.35	2.25	2.07	2.07	2.08	S	2.09	2.09	2.09	2.08	2.08	2.07	2.06	2.07	2.09	2.07	2.06	2.06	2.06	2.04	2.04	**2.64**	2.16
Jan 17	2.04	2.04	2.04	2.03	2.03	2.03	2.04	2.04	S	2.05	2.05	2.05	2.05	2.04	2.04	2.05	2.05	2.08	2.12	2.11	2.11	2.11	2.08	2.09	2.03	2.12	2.06
Jan 18	2.07	2.08	2.11	2.13	2.15	2.21	2.25	S	2.3	2.53	2.58	2.49	2.31	2.08	2.06	2.08	2.04	2.03	2.03	2.02	2.02	2.02	2.04	2.05	2.02	2.58	**2.16**
Jan 19	2.04	2.04	2.04	2.04	2.04	2.04	S	2.04	2.04	2.07	2.06	2.05	2.04	2.03	2.04	2.06	2.06	2.08	2.15	2.12	2.1	2.1	2.1	2.1	2.03	2.15	2.06
Jan 20	2.11	2.12	2.12	2.13	2.15	S	2.18	2.21	2.22	2.24	2.21	2.18	2.14	2.14	2.23	2.23	2.11	2.11	2.12	2.14	2.15	2.13	2.11	2.04	2.04	2.24	2.15
Jan 21	2	2	1.99	1.98	S	2	1.98	1.99	2	1.98	1.98	1.98	1.97	1.98	1.98	1.98	1.98	2.01	2.15	2.17	2.15	2.1	2.02	1.98	1.97	2.17	2.02
Jan 22	1.98	1.99	2.02	S	2.05	2.02	1.97	1.96	1.98	1.99	2	2.05	2.06	2.03	2.05	2.05	2.04	2.03	2.01	2.01	2	2.01	2.01	2.02	1.96	2.06	2.01
Jan 23	2.05	2.03	S	2.05	2.03	2.02	2.04	2.02	2.01	2	1.97	1.98	1.97	1.96	1.95	1.96	1.97	1.98	2.01	2.01	2.03	2.01	2	2	1.95	2.05	2.00
Jan 24	2.01	S	2.01	2.02	2.02	2.01	2.01	2.03	2.01	2.01	2.01	2	2.01	1.99	2.05	1.99	1.99	2.01	2.03	2.06	2.04	1.99	1.99	1.99	1.99	2.06	2.01
Jan 25	S	2.01	2.03	2.04	2.06	2.06	2.07	2.06	2.05	2.04	2.04	2.04	2.03	2.02	2.02	2.01	2.01	2	2.01	2.02	2.03	2.03	2.04	S	2.00	2.07	2.03
Jan 26	2.05	2.04	2.05	2.06	2.06	2.05	2.05	2.05	2.05	2.06	2.07	2.04	2.03	2.01	2.02	2.02	2.02	2.02	2.03	2.03	2.06	2.06	S	2.05	2.01	2.07	2.04
Jan 27	2.06	2.07	2.09	2.08	2.07	2.07	2.07	2.08	2.07	2.06	2.05	2.04	2.03	2.03	2.04	2.05	2.06	2.07	2.06	2.06	2.05	S	2.05	2.05	2.03	2.09	2.06
Jan 28	2.04	2.03	2.02	2.02	2.02	2.02	2.03	2.03	2.02	2.02	2.08	2.06	2.05	2.06	2.04	2.04	2.07	2.08	2.09	2.1	S	2.09	2.09	2.08	2.02	2.10	2.05
Jan 29	2.06	2.04	2.03	2.02	2.01	2	1.99	1.97	1.96	1.94	1.97	1.98	2	2	1.99	1.99	2	2	2	S	1.97	1.96	1.96	1.95	1.94	2.06	1.99
Jan 30	1.96	1.96	1.96	1.96	1.97	1.97	1.96	1.96	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.96	S	1.96	1.95	1.95	1.96	1.95	1.95	1.97	1.96
Jan 31	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.97	1.96	1.96	1.97	1.97	1.96	2	1.97	1.96	S	1.97	1.97	1.97	1.98	1.96	1.96	1.95	2.00	1.96
Diurnal Maximum	2.63	2.64	2.37	2.35	2.39	2.40	2.30	2.21	2.30	2.53	2.58	2.49	2.31	2.14	2.23	2.23	2.11	2.11	2.15	2.17	2.15	2.13	2.22	2.32			
Diurnal Average	2.06	2.07	2.06	2.06	2.07	2.06	2.05	2.04	2.04	2.05	2.07	2.05	2.04	2.02	2.03	2.02	2.02	2.03	2.04	2.04	2.03	2.03	2.03	2.04			

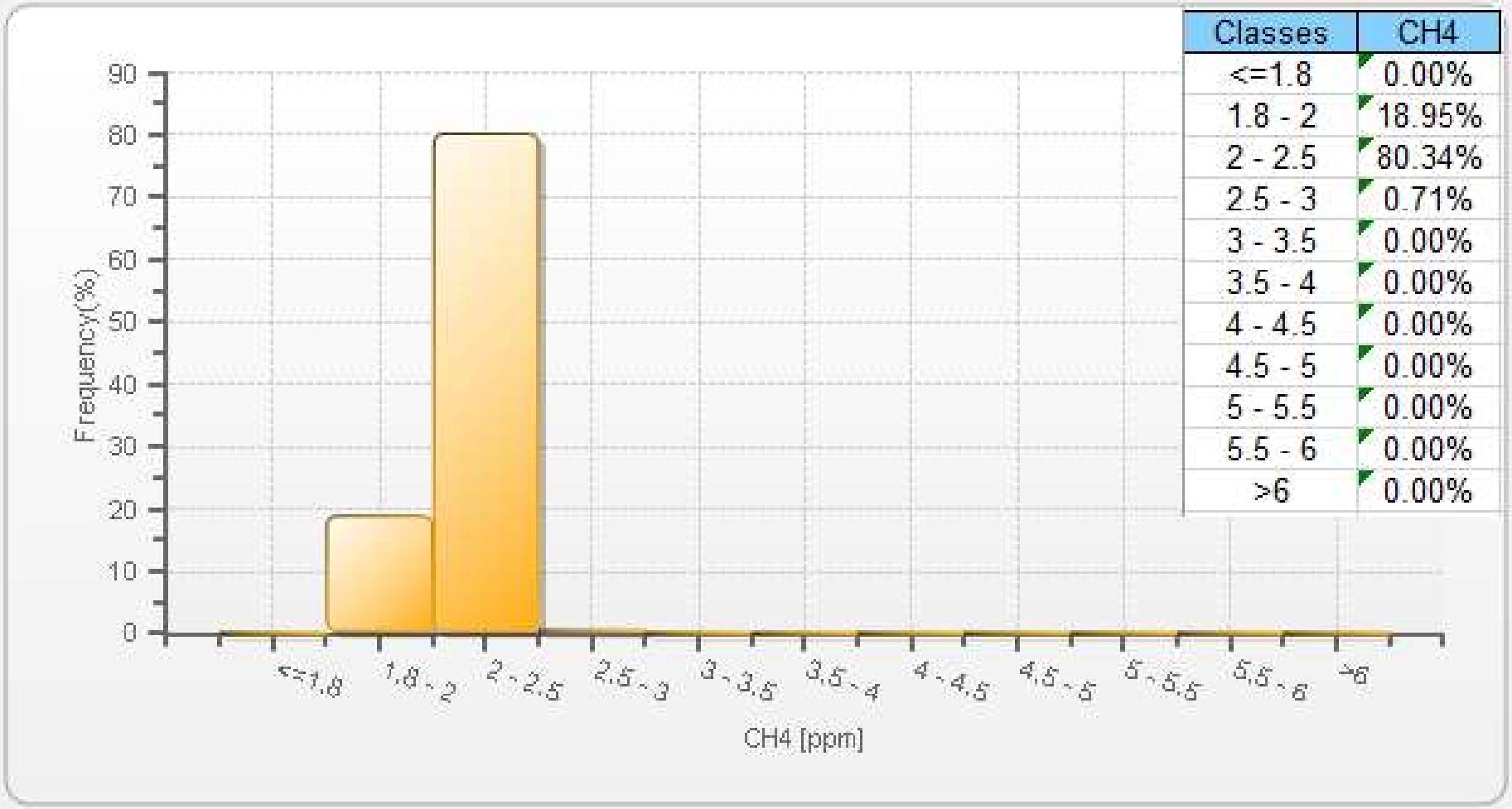
C	Monthly Calibration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Equipment Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine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

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

Timeseries Chart of Hourly Average for CH4 - 842b Station



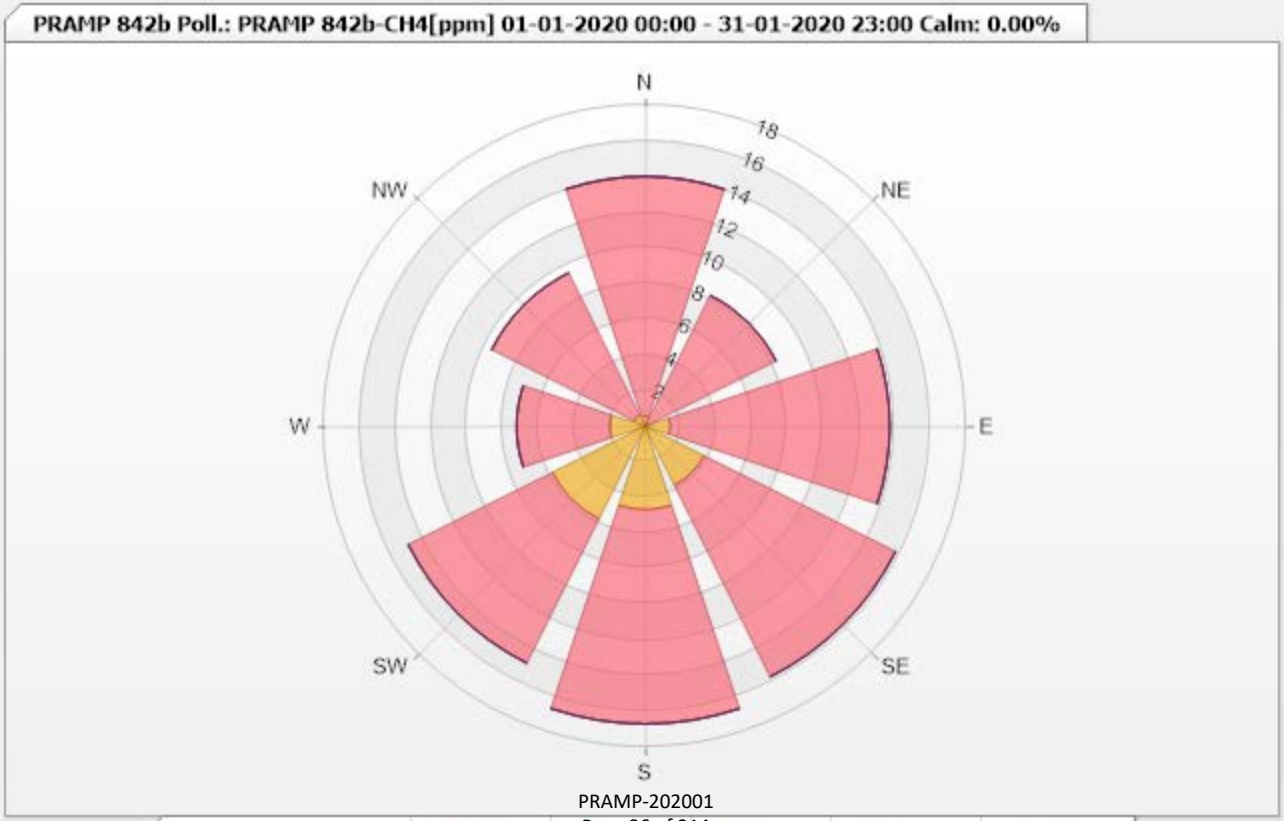
CH4[ppm] Histogram: PRAMP 842b Monthly: 01-2020 1 Hr.



Classes	CH4
<=1.8	0.00%
1.8 - 2	18.95%
2 - 2.5	80.34%
2.5 - 3	0.71%
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: PRAMP 842b Poll.: PRAMP 842b-CH4[ppm] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	0.57	13.44	0	0	0	14.01
NE	0	8.2	0	0	0	8.2
E	1.41	12.31	0	0	0	13.72
SE	3.68	12.02	0	0	0	15.7
S	4.67	12.02	0	0	0	16.69
SW	5.8	9.05	0	0	0	14.85
W	1.98	5.23	0	0	0	7.21
NW	0.71	8.91	0	0	0	9.62
Summary	18.82	81.18	0	0	0	100


PRAMP 842b Poll.: PRAMP 842b-CH4[ppm] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
18
16
14
12
10
8
6
4
2
% Icon Classes (ppm)
19 0-2
81 2-5
0 5-10
0 10-20
0 >20.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

842b Station - January 2020

Summary of Hourly Averages

NON-METHANE HYDROCARBONS (NMHC) in ppm

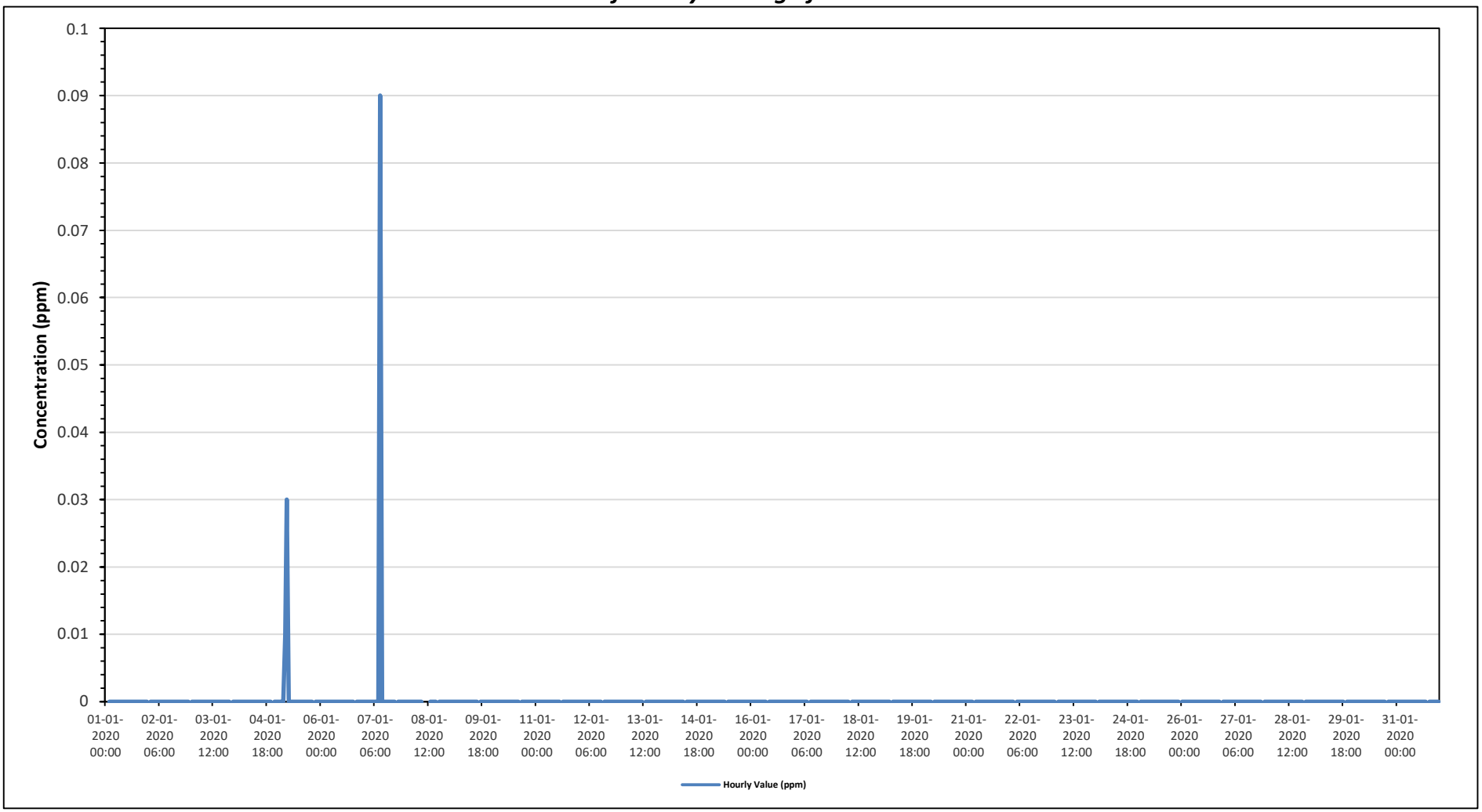
Maximum Hourly Value:	0.09	ppm	on January 7 at hour 9	Hours in Service:	744
Maximum Daily Value:	0.00	ppm	on January 7	Hours of Data:	707
Minimum Hourly Value:	0.00	ppm	on January 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.00	ppm	on January 1	Hours of Calibration:	37
Monthly Average:	0.00	ppm		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 2	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.00	0.00	0.00
Jan 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.00	0.00	0.00
Jan 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.00	0.00	0.00
Jan 5	0	0	0	0	0.01	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.00	0.03	0.00
Jan 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.00	0.00	0.00
Jan 7	0	0	0	0	0	0	0	0	0	**0.09**	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.00	**0.09**	**0.00**
Jan 8	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	S	0	0	0	0	0	0	0.00	0.00	0.00
Jan 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 12	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 13	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 14	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 15	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 16	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 17	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 18	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 19	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 20	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 21	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 22	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 23	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 24	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 25	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.00	0.00	0.00
Jan 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.00	0.00	0.00
Jan 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.00	0.00	0.00
Jan 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.00	0.00	0.00
Jan 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.00	0.00	0.00
Jan 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.00	0.00	0.00
Jan 31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.00	0.00	0.00
Diurnal Maximum	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Diurnal Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			

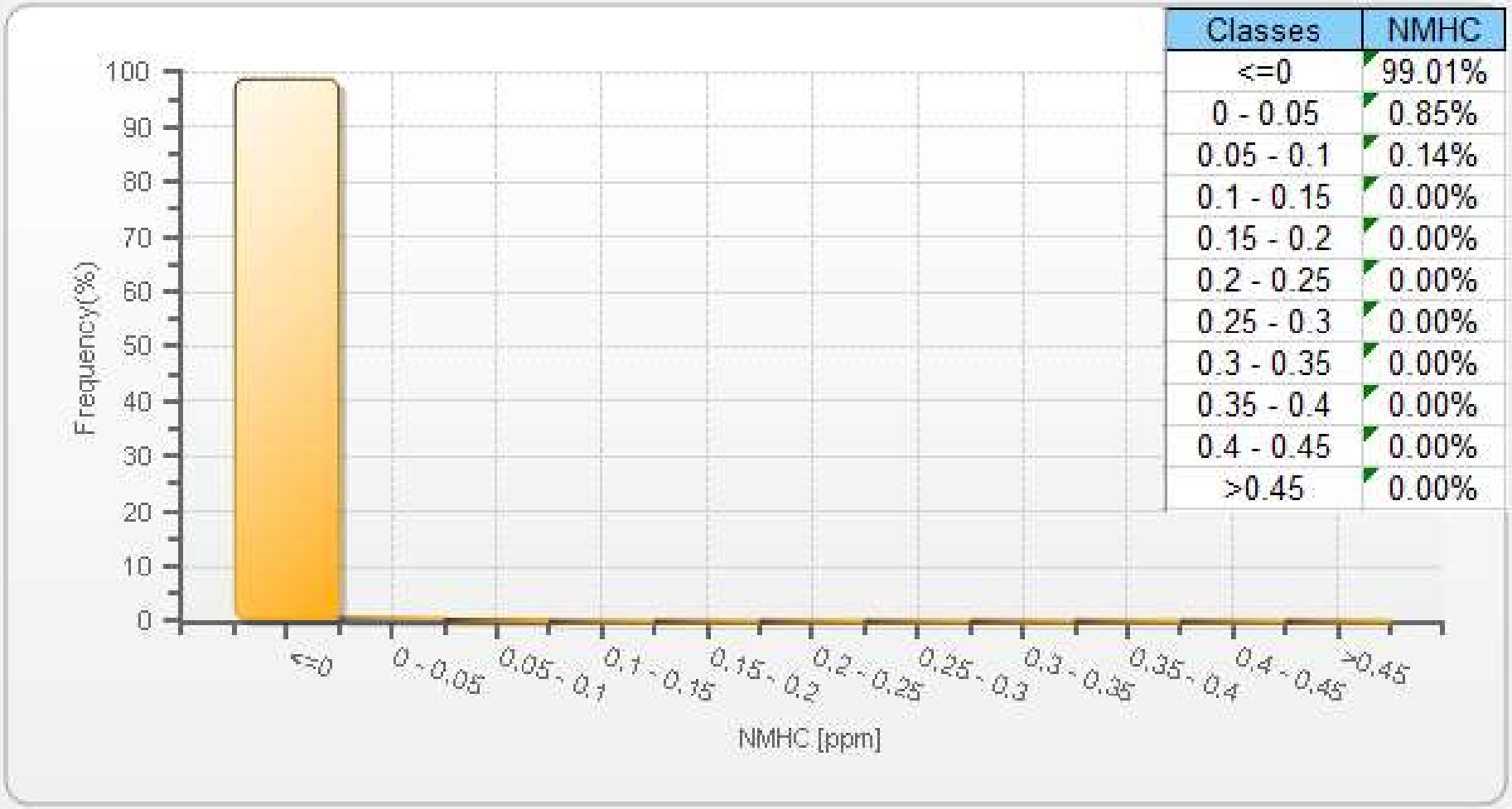
C	Monthly Calibration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Equipment Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine 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 NMHC - 842b Station



NMHC[ppm] Histogram: PRAMP 842b Monthly: 01-2020 1 Hr.

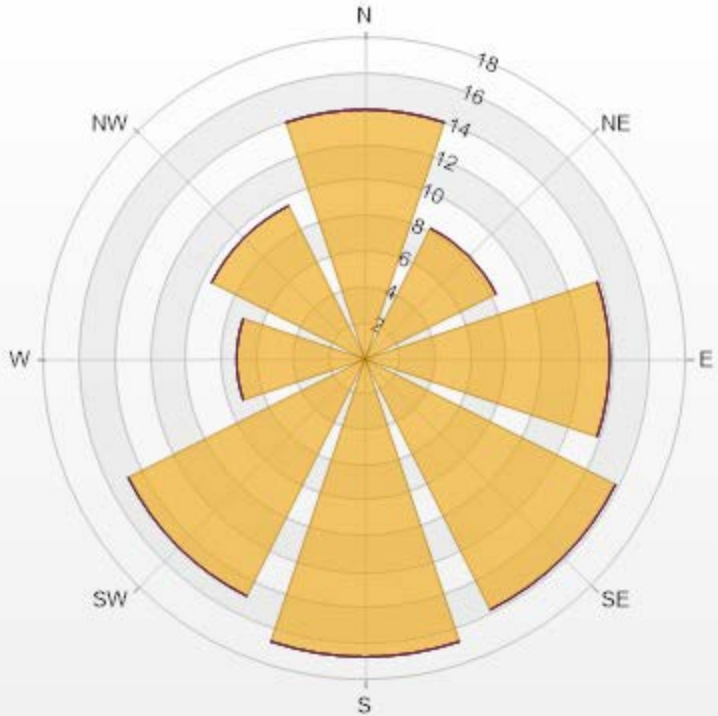


Classes	NMHC
<=0	99.01%
0 - 0.05	0.85%
0.05 - 0.1	0.14%
0.1 - 0.15	0.00%
0.15 - 0.2	0.00%
0.2 - 0.25	0.00%
0.25 - 0.3	0.00%
0.3 - 0.35	0.00%
0.35 - 0.4	0.00%
0.4 - 0.45	0.00%
>0.45	0.00%

Wind: PRAMP 842b Poll.: PRAMP 842b-NMHC[ppm] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	14	0	0	0	0	14
NE	8.2	0	0	0	0	8.2
E	13.72	0	0	0	0	13.72
SE	15.7	0	0	0	0	15.7
S	16.69	0	0	0	0	16.69
SW	14.85	0	0	0	0	14.85
W	7.21	0	0	0	0	7.21
NW	9.62	0	0	0	0	9.62
Summary	100	0	0	0	0	100

PRAMP 842b Poll.: PRAMP 842b-NMHC[ppm] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%



% Icon Classes (ppm)	100 0-0.1	0 0.1-0.3	0 0.3-0.9	0 0.9-2	0 >2.0

PEACE RIVER AREA MONITORING PROGRAM

842b Station - January 2020

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

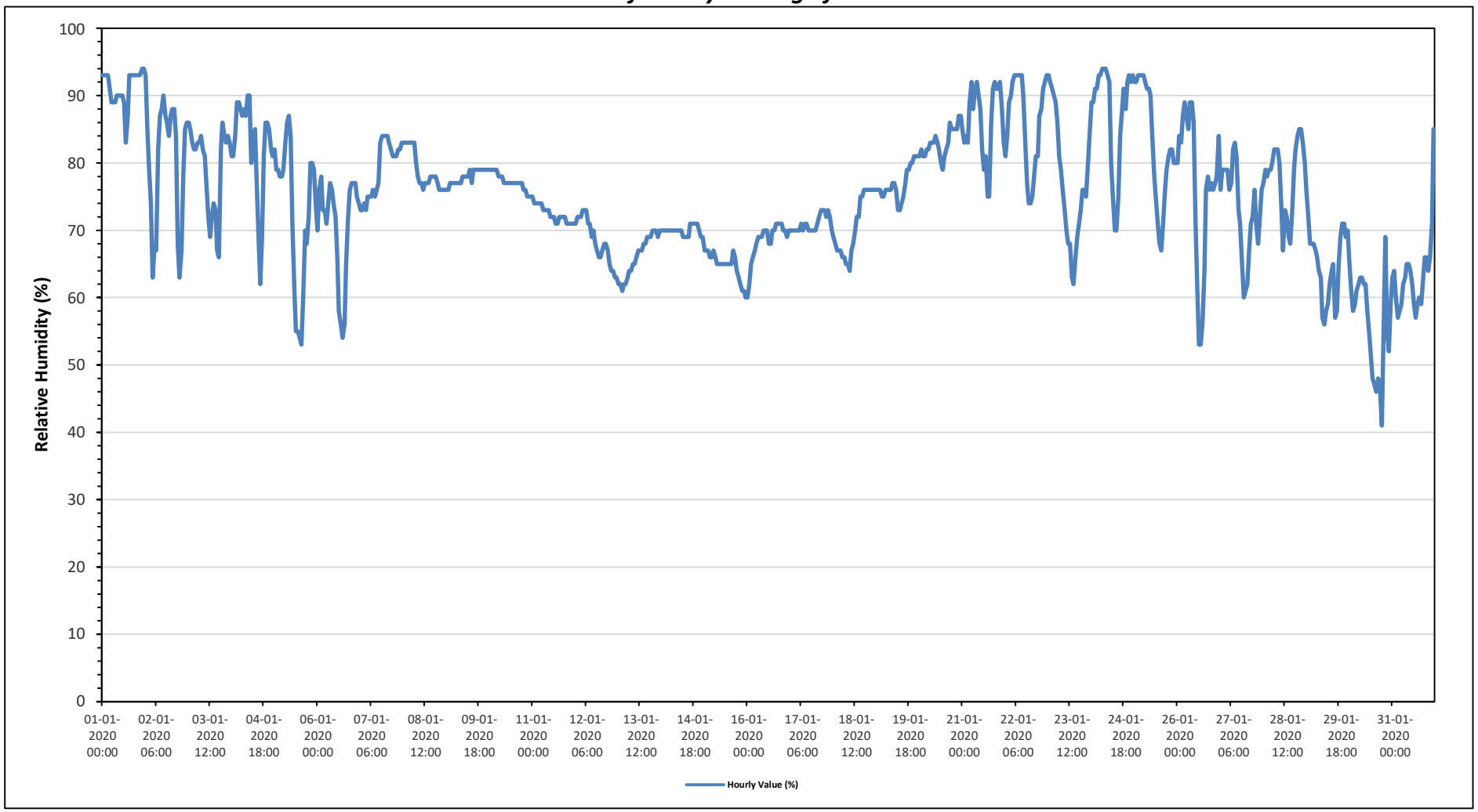
Maximum Hourly Value:	94	%	on January 1 at hour 22	Hours in Service:	744
Maximum Daily Value:	91.2	%	on January 1	Hours of Data:	744
Minimum Hourly Value:	41	%	on January 30 at hour 18	Hours of Missing Data:	0
Minimum Daily Value:	56.0	%	on January 30	Hours of Calibration:	0
Monthly Average:	75.3	%		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	93	93	93	93	91	89	89	89	90	90	90	90	89	83	87	93	93	93	93	93	93	93	**94**	**94**	83	**94**	**91.2**
Jan 2	93	85	79	74	63	68	67	82	87	88	90	87	86	84	87	88	88	84	68	63	67	78	85	86	63	93	80.3
Jan 3	86	85	83	82	82	83	83	84	82	81	77	72	69	72	74	73	67	66	82	86	84	83	84	83	66	86	79.3
Jan 4	81	81	84	89	89	88	87	88	87	90	90	80	81	85	78	69	62	69	81	86	86	85	82	81	62	90	82.5
Jan 5	82	79	79	78	78	79	83	86	87	84	71	61	55	55	54	53	60	70	68	72	80	80	79	74	53	87	72.8
Jan 6	70	76	78	73	73	71	74	77	76	74	72	66	58	56	54	56	65	72	76	77	77	77	75	74	54	78	70.7
Jan 7	73	73	74	73	75	75	75	76	75	76	77	83	84	84	84	84	83	82	81	81	81	82	82	83	73	84	79.0
Jan 8	83	83	83	83	83	83	83	80	78	77	77	76	77	77	77	78	78	78	78	77	76	76	76	76	76	83	78.9
Jan 9	76	76	77	77	77	77	77	77	77	78	78	78	78	79	77	79	79	79	79	79	79	79	79	79	76	79	77.9
Jan 10	79	79	79	79	79	78	78	78	77	77	77	77	77	77	77	77	77	77	77	76	76	75	75	75	75	79	77.2
Jan 11	75	74	74	74	74	74	73	73	73	73	72	72	72	71	71	72	72	72	72	71	71	71	71	71	71	75	72.4
Jan 12	71	72	72	72	73	73	73	71	71	69	70	68	67	66	66	67	68	68	67	65	64	64	63	63	63	73	68.5
Jan 13	62	62	61	62	62	63	64	64	65	65	66	67	67	67	68	68	69	69	69	70	70	70	69	70	61	70	66.2
Jan 14	70	70	70	70	70	70	70	70	70	70	70	70	69	69	69	69	71	71	71	71	71	70	69	69	69	71	70.0
Jan 15	67	67	67	66	66	67	66	65	65	65	65	65	65	65	65	65	67	66	64	63	62	61	61	60	60	67	64.8
Jan 16	60	62	65	66	67	68	69	69	69	70	70	70	68	68	70	70	71	71	71	71	70	70	69	70	60	71	68.5
Jan 17	70	70	70	70	70	70	71	70	71	71	70	70	70	70	70	71	72	73	73	73	72	73	72	70	70	73	70.9
Jan 18	69	68	67	67	67	66	66	65	65	64	67	68	70	72	72	75	75	76	76	76	76	76	76	76	64	76	70.6
Jan 19	76	76	76	75	75	76	76	76	76	77	77	76	73	73	74	75	77	79	79	80	80	81	81	81	73	81	76.9
Jan 20	81	82	81	81	82	82	83	83	83	84	83	82	80	79	81	82	83	86	85	85	85	85	87	87	79	87	83.0
Jan 21	85	83	84	83	89	92	88	91	92	90	88	82	79	81	75	75	86	91	92	91	91	92	88	83	75	92	86.3
Jan 22	81	84	89	90	92	93	93	93	93	93	90	83	77	74	74	75	78	81	81	87	88	91	92	93	74	93	86.0
Jan 23	93	92	91	90	89	86	81	79	76	73	70	68	68	63	62	66	69	71	73	76	76	75	80	84	62	93	77.1
Jan 24	89	89	91	91	93	93	**94**	**94**	**94**	93	92	80	75	70	70	75	84	88	91	88	92	93	92	93	70	**94**	87.7
Jan 25	92	92	93	93	93	93	92	91	91	90	84	78	75	71	68	67	71	76	79	81	82	82	80	80	67	93	83.1
Jan 26	80	84	83	87	89	87	85	89	89	86	72	62	53	53	56	64	76	78	76	77	76	77	78	84	53	89	76.7
Jan 27	76	79	79	79	79	76	77	82	83	81	73	71	65	60	61	62	67	71	72	76	71	68	72	76	60	83	73.2
Jan 28	77	79	78	79	79	80	82	82	82	80	73	67	73	72	69	68	73	79	82	84	85	85	83	80	67	85	78.0
Jan 29	76	72	68	68	68	67	66	64	63	57	56	58	59	62	64	65	57	58	65	69	71	71	69	70	56	76	65.1
Jan 30	65	61	58	59	61	62	63	63	62	62	58	55	51	48	47	46	48	47	**41**	53	69	55	52	59	**41**	69	56.0
Jan 31	63	64	60	57	58	59	62	63	65	65	64	62	59	57	59	60	59	62	66	66	64	66	71	85	57	85	63.2
Diurnal Maximum	93	93	93	93	93	93	94	94	94	93	92	90	89	85	87	93	93	93	93	93	93	93	94	94			
Diurnal Average	77.2	77.2	77.0	76.8	77.0	77.0	77.1	77.9	77.9	77.2	75.1	72.4	70.6	69.8	69.7	70.5	72.4	74.3	75.1	76.2	76.9	76.9	77.0	77.7			

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

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

Timeseries Chart of Hourly Average for RH - 842b Station



PEACE RIVER AREA MONITORING PROGRAM

842b Station - January 2020

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

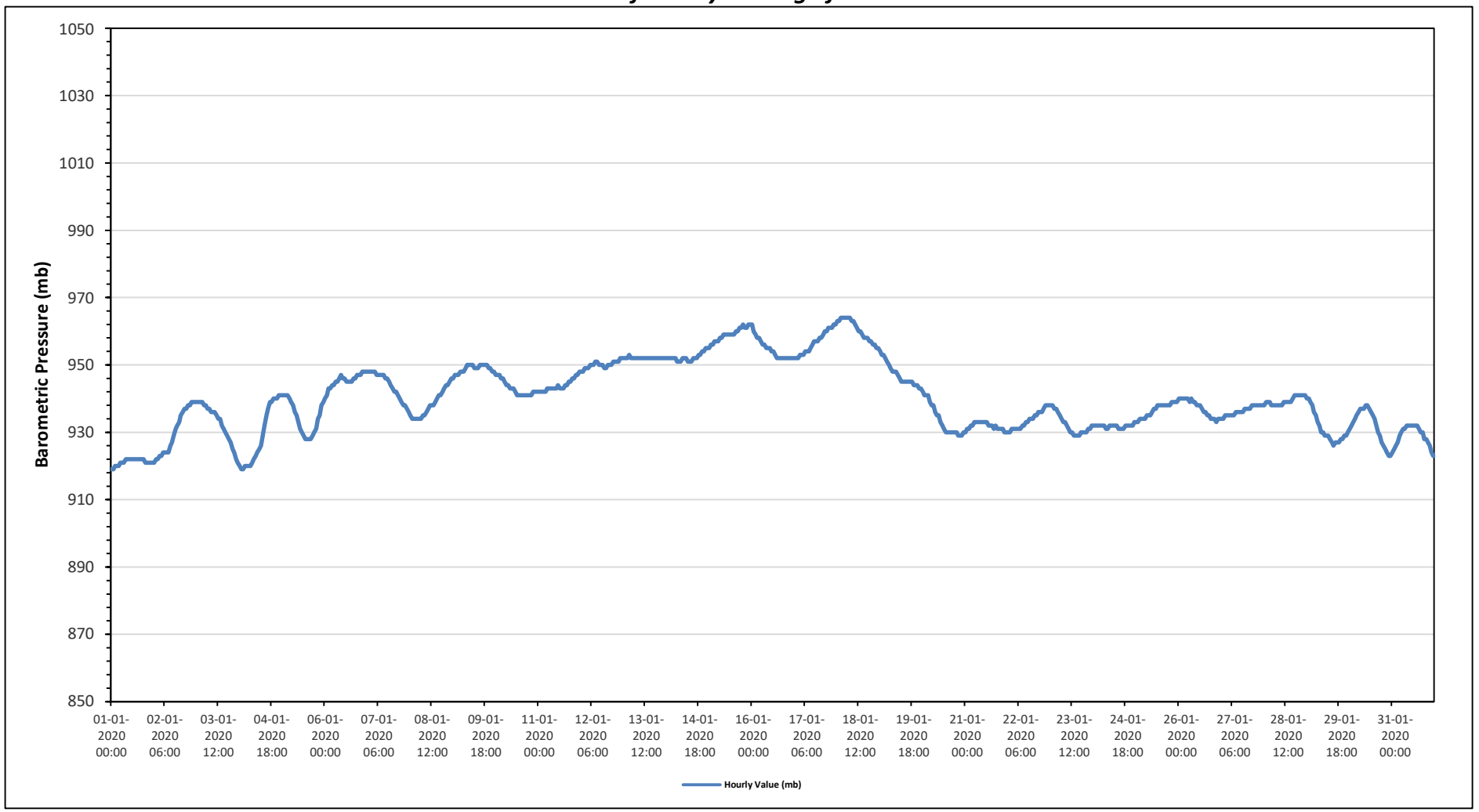
Maximum Hourly Value:	964	mb	on January 18 at hour 2	Hours in Service:	744
Maximum Daily Value:	960	mb	on January 18	Hours of Data:	744
Minimum Hourly Value:	919	mb	on January 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	921	mb	on January 1	Hours of Calibration:	0
Monthly Average:	940	mb		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	**919**	**919**	920	920	920	921	921	921	922	922	922	922	922	922	922	922	922	922	922	921	921	921	921	921	**919**	922	921
Jan 2	921	922	922	923	923	924	924	924	924	926	927	929	931	932	933	935	936	937	937	938	938	939	939	939	921	939	930
Jan 3	939	939	939	939	938	938	937	937	936	936	936	935	934	934	932	931	930	929	928	927	925	924	922	921	921	939	933
Jan 4	920	**919**	**919**	920	920	920	920	921	922	923	924	925	926	929	932	935	937	939	939	940	940	940	941	941	**919**	941	929
Jan 5	941	941	941	941	940	939	938	936	935	933	931	930	929	928	928	928	928	929	930	931	934	935	938	939	928	941	934
Jan 6	940	941	943	943	944	944	945	945	946	947	946	946	945	945	945	945	946	946	947	947	947	948	948	948	940	948	945
Jan 7	948	948	948	948	948	947	947	947	947	947	946	946	945	944	943	942	942	941	940	939	938	938	937	936	936	948	944
Jan 8	935	934	934	934	934	934	934	935	935	936	937	938	938	938	939	940	941	941	942	943	944	944	945	946	934	946	938
Jan 9	946	947	947	947	948	948	948	949	950	950	950	950	949	949	949	950	950	950	950	950	949	949	948	948	946	950	949
Jan 10	947	947	947	946	946	945	944	944	943	943	943	942	941	941	941	941	941	941	941	941	941	942	942	942	941	947	943
Jan 11	942	942	942	942	942	943	943	943	943	943	943	944	943	943	943	944	944	945	945	946	946	947	947	948	942	948	944
Jan 12	948	948	949	949	949	950	950	950	951	951	950	950	950	949	949	950	950	950	951	951	951	951	952	952	948	952	950
Jan 13	952	952	952	953	952	952	952	952	952	952	952	952	952	952	952	952	952	952	952	952	952	952	952	952	952	953	952
Jan 14	952	952	952	952	952	952	951	951	951	952	952	952	951	951	951	952	952	952	953	953	954	954	955	955	951	955	952
Jan 15	955	956	956	957	957	957	958	958	959	959	959	959	959	959	959	960	960	961	961	962	961	961	962	962	955	962	959
Jan 16	962	960	959	958	958	957	956	956	955	955	955	954	954	953	952	952	952	952	952	952	952	952	952	952	952	962	955
Jan 17	952	952	952	953	953	953	954	954	954	955	956	957	957	957	958	958	959	960	960	961	961	961	962	962	952	962	957
Jan 18	963	963	**964**	**964**	**964**	**964**	**964**	**964**	963	963	962	961	960	960	959	958	958	958	957	957	956	956	955	955	955	**964**	**960**
Jan 19	954	953	953	952	951	950	949	948	948	948	947	946	945	945	945	945	945	945	945	944	944	944	943	943	943	954	947
Jan 20	942	941	941	941	939	938	938	936	935	935	933	932	931	930	930	930	930	930	930	930	929	929	929	930	929	942	934
Jan 21	930	931	931	932	932	933	933	933	933	933	933	933	933	932	932	932	931	932	931	931	931	931	930	930	930	933	932
Jan 22	930	930	931	931	931	931	931	931	932	932	933	933	934	934	934	935	935	936	936	936	937	938	938	938	930	938	934
Jan 23	938	938	937	937	936	935	934	933	933	932	931	930	930	929	929	929	929	930	930	930	930	931	931	932	929	938	932
Jan 24	932	932	932	932	932	932	932	931	931	932	932	932	932	932	931	931	931	931	932	932	932	932	932	933	931	933	932
Jan 25	933	933	934	934	934	934	935	935	935	936	937	937	938	938	938	938	938	938	938	938	939	939	939	939	933	939	937
Jan 26	940	940	940	940	940	940	939	940	939	939	938	938	938	937	936	936	935	935	934	934	934	933	934	934	933	940	937
Jan 27	934	934	935	935	935	935	935	935	936	936	936	936	936	937	937	937	937	938	938	938	938	938	938	938	934	938	936
Jan 28	938	939	939	939	938	938	938	938	938	938	938	939	939	939	939	939	940	941	941	941	941	941	941	941	938	941	939
Jan 29	940	940	939	938	936	935	933	932	930	930	929	929	929	928	927	926	927	927	927	928	928	929	929	930	926	940	931
Jan 30	931	932	933	934	935	936	937	937	937	938	938	937	936	935	934	932	930	929	927	926	925	924	923	923	923	938	932
Jan 31	924	925	926	927	929	930	931	931	932	932	932	932	932	932	932	931	930	930	928	928	927	926	924	923	923	932	929
Diurnal Maximum	963	963	964	964	964	964	964	964	963	963	962	961	960	960	959	960	960	961	961	962	961	961	962	962			
Diurnal Average	940	940	941	941	941	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940			

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
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 - 842b Station



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

842b Station - January 2020

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

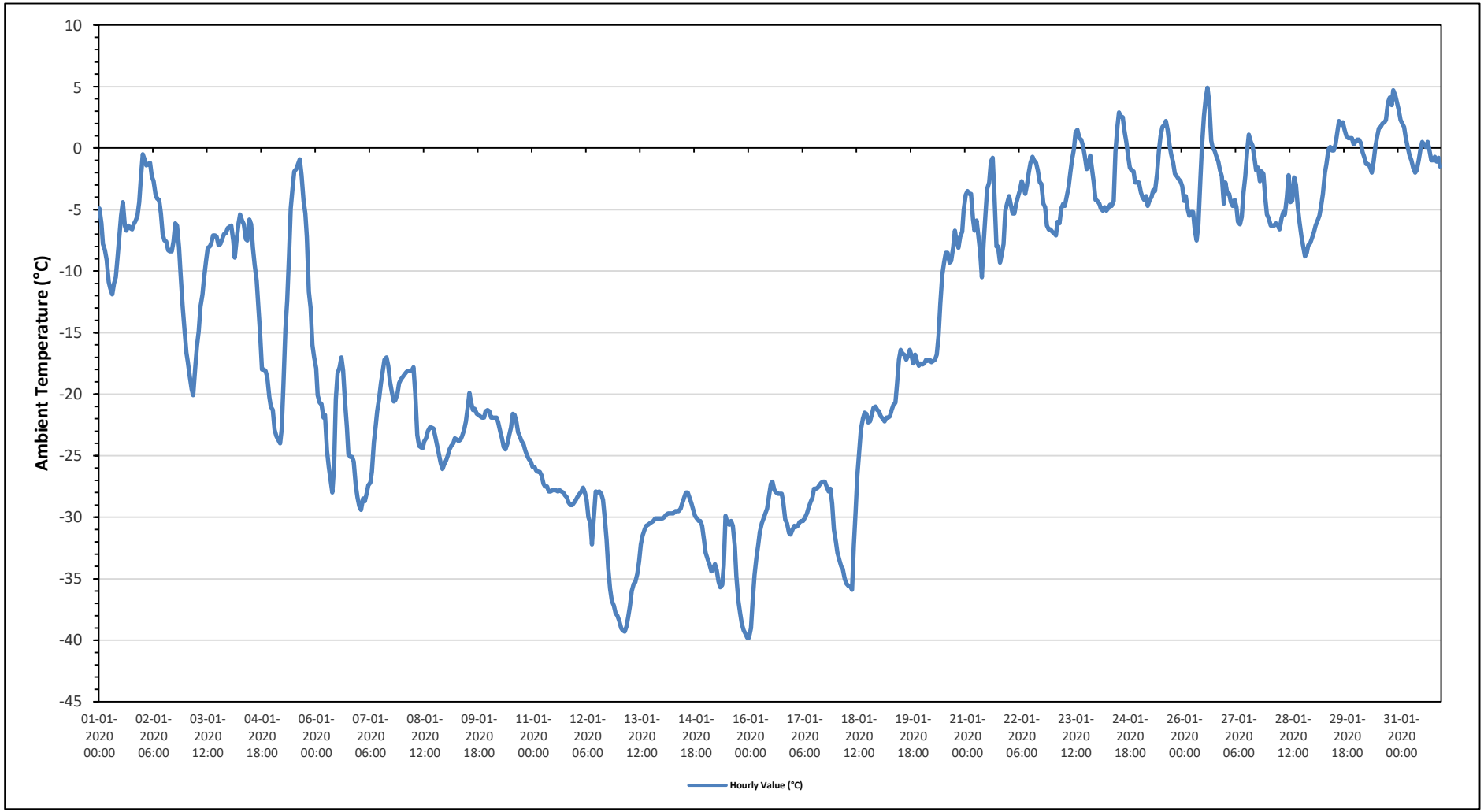
Maximum Hourly Value:	4.9	°C	on January 26 at hour 14	Hours in Service:	744
Maximum Daily Value:	1.2	°C	on January 30	Hours of Data:	744
Minimum Hourly Value:	-39.8	°C	on January 15 at hour 23	Hours of Missing Data:	0
Minimum Daily Value:	-34.5	°C	on January 15	Hours of Calibration:	0
Monthly Average:	-14.9	°C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	-4.9	-6.1	-7.8	-8.3	-9.1	-10.9	-11.4	-11.9	-11	-10.5	-8.9	-7.2	-5.5	-4.4	-6.3	-6.7	-6.3	-6.5	-6.6	-6.2	-5.9	-5.5	-4.4	-2.3	-11.9	-2.3	-7.3
Jan 2	-0.5	-0.9	-1.4	-1.3	-1.2	-2.3	-2.7	-3.8	-4.1	-4.2	-5.3	-7	-7.5	-7.6	-8.3	-8.4	-8.4	-7.6	-6.1	-6.3	-8.1	-10.2	-12.8	-14.6	-14.6	-0.5	-5.9
Jan 3	-16.6	-17.4	-18.5	-19.6	-20.1	-17.9	-16.1	-14.9	-12.9	-11.9	-10.6	-9.2	-8.1	-8	-7.7	-7.1	-7.1	-7.2	-7.9	-7.8	-7.4	-7	-6.9	-6.5	-20.1	-6.5	-11.4
Jan 4	-6.4	-6.3	-7.5	-8.9	-7.5	-6.1	-5.4	-5.9	-6.2	-7.4	-7.5	-5.8	-6.2	-8.1	-9.5	-10.8	-12.7	-14.9	-18	-18	-18.1	-18.6	-20.2	-21	-21.0	-5.4	-10.7
Jan 5	-21.3	-22.9	-23.4	-23.7	-24	-22.9	-19.3	-14.7	-12.4	-8.9	-4.9	-3.1	-1.9	-1.7	-1.3	-0.9	-2.2	-4.3	-5.3	-7.2	-11.7	-13	-16	-17	-24.0	-0.9	-11.8
Jan 6	-17.9	-20.1	-20.7	-20.8	-21.9	-21.7	-24.6	-25.9	-26.8	-28	-25.9	-20.4	-18.3	-17.8	-17	-18.1	-20.5	-22.7	-24.9	-25.1	-25.1	-25.5	-27.4	-28.4	-28.4	-17.0	-22.7
Jan 7	-29.1	-29.4	-28.5	-28.7	-28.1	-27.4	-27.2	-26.3	-23.9	-22.6	-21.4	-20.3	-19.1	-18	-17.2	-17	-17.7	-19	-19.8	-20.6	-20.5	-20	-19.1	-18.8	-29.4	-17.0	-22.5
Jan 8	-18.6	-18.4	-18.2	-18.1	-18.1	-18.1	-17.8	-19.9	-23.3	-24.2	-24.3	-24.4	-23.8	-23.6	-23	-22.7	-22.7	-22.8	-23.4	-24.1	-24.8	-25.6	-26.1	-25.7	-26.1	-17.8	-22.2
Jan 9	-25.4	-25	-24.5	-24.2	-24	-23.6	-23.7	-23.8	-23.7	-23.4	-22.9	-22.2	-21.1	-19.9	-20.7	-21.3	-21.2	-21.6	-21.7	-21.8	-21.9	-21.9	-21.4	-21.3	-25.4	-19.9	-22.6
Jan 10	-21.4	-21.9	-21.9	-21.9	-21.9	-22.3	-23	-23.6	-24.3	-24.5	-24	-23.4	-22.7	-21.6	-21.7	-22.2	-23.1	-23.5	-23.8	-24.1	-24.6	-25	-25.3	-25.5	-25.5	-21.4	-23.2
Jan 11	-25.9	-25.9	-26.2	-26.3	-26.3	-26.6	-27.3	-27.5	-27.5	-27.9	-27.9	-27.8	-27.8	-27.8	-27.9	-27.8	-27.9	-28	-28.2	-28.4	-28.8	-29	-29	-28.8	-29.0	-25.9	-27.6
Jan 12	-28.6	-28.3	-28.1	-27.9	-27.6	-28	-28.6	-30	-30.5	-32.2	-29.9	-27.9	-28	-27.9	-28.1	-28.6	-30.1	-31.8	-34.2	-35.8	-36.8	-37.2	-37.8	-38	-38.0	-27.6	-30.9
Jan 13	-38.4	-39	-39.2	-39.3	-38.9	-38.1	-37.2	-36	-35.4	-35.3	-34.6	-33.6	-32.2	-31.5	-31	-30.7	-30.6	-30.5	-30.4	-30.3	-30.1	-30.1	-30.1	-30.1	-39.3	-30.1	-33.9
Jan 14	-30.1	-30	-29.8	-29.7	-29.7	-29.7	-29.7	-29.5	-29.5	-29.5	-29.3	-28.9	-28.4	-28	-28	-28.4	-28.9	-29.4	-29.9	-30.1	-30.3	-30.3	-30.7	-31.9	-31.9	-28.0	-29.6
Jan 15	-32.9	-33.4	-33.8	-34.4	-34.3	-33.8	-34.3	-35.2	-35.7	-35.5	-33.9	-29.9	-30.5	-30.6	-30.3	-30.7	-32.4	-34.8	-36.8	-37.8	-38.7	-39.2	-39.5	**-39.8**	**-39.8**	-29.9	-34.5
Jan 16	**-39.8**	-39	-36.7	-34.7	-33.4	-32.2	-31.2	-30.5	-30.1	-29.7	-29.3	-28.2	-27.3	-27.1	-27.8	-28	-28.1	-28.1	-28.1	-28.8	-30.2	-30.5	-31.3	-31.4	**-39.8**	-27.1	-30.9
Jan 17	-31	-30.7	-30.8	-30.7	-30.4	-30.3	-30.3	-30	-29.7	-29.2	-28.8	-28.4	-27.7	-27.7	-27.6	-27.4	-27.2	-27.1	-27.1	-27.5	-27.9	-27.7	-28.9	-31	-31.0	-27.1	-29.0
Jan 18	-32	-32.9	-33.5	-34	-34.2	-35	-35.4	-35.6	-35.6	-35.9	-32.3	-29.6	-26.6	-24.5	-22.9	-22	-21.5	-21.6	-22.3	-22.2	-21.6	-21.1	-21	-21.3	-35.9	-21.0	-28.1
Jan 19	-21.4	-21.8	-22	-22.2	-21.9	-21.9	-21.8	-21.3	-20.9	-20.7	-19.3	-17.2	-16.4	-16.7	-16.8	-17.2	-16.9	-16.4	-16.9	-17.5	-16.8	-17.3	-17.7	-17.5	-22.2	-16.4	-19.0
Jan 20	-17.6	-17.5	-17.2	-17.3	-17.2	-17.4	-17.3	-17.2	-16.8	-15.3	-12.7	-10.3	-9.3	-8.5	-8.5	-9.3	-9.2	-8.1	-6.7	-7.6	-8.1	-7.2	-6.8	-5	-17.6	-5.0	-12.0
Jan 21	-3.8	-3.5	-3.7	-3.7	-5.8	-6.7	-5.9	-7.1	-8.4	-10.5	-7.7	-5.2	-3.3	-2.8	-1.1	-0.8	-3.9	-8	-8	-9.3	-8.6	-7.8	-5.1	-4.5	-10.5	-0.8	-5.6
Jan 22	-3.9	-4.5	-5.3	-5.3	-4.5	-4	-3.4	-2.7	-3.1	-3.7	-3	-2	-1.2	-0.7	-1	-1.2	-1.8	-2.8	-2.9	-4.5	-4.8	-6.3	-6.6	-6.6	-6.6	-0.7	-3.6
Jan 23	-6.8	-6.9	-7.1	-6	-6.1	-4.9	-4.5	-4.7	-3.9	-3.2	-2	-0.9	-0.1	1.3	1.5	0.8	0.7	0.2	-0.6	-1.7	-1.6	-0.6	-1.7	-2.8	-7.1	1.5	-2.6
Jan 24	-4.2	-4.3	-4.5	-4.9	-5.1	-4.8	-5.1	-4.9	-4.6	-4.7	-4.3	-0.3	1.8	2.9	2.6	2.5	1.5	0.5	-0.6	-1.6	-1.8	-1.9	-2.8	-2.8	-5.1	2.9	-2.1
Jan 25	-2.8	-3.6	-4	-4.2	-3.9	-4.7	-4.2	-4	-3.4	-3.5	-2.1	-0.3	1	1.7	1.9	2.2	1.5	0.2	-0.5	-1.2	-2.1	-2.3	-2.5	-2.7	-4.7	2.2	-1.8
Jan 26	-3.1	-4.3	-3.9	-5	-5.5	-5.2	-5.2	-6.7	-7.5	-6.2	-2.5	0.1	2.6	4	**4.9**	3.7	0.6	0	-0.2	-0.7	-1.1	-1.8	-2.3	-4.5	-7.5	**4.9**	-2.1
Jan 27	-2.8	-3.7	-3.7	-4.4	-4.7	-4.2	-4.8	-6	-6.2	-5.6	-3.6	-2.3	-0.1	1.1	0.5	0.2	-0.9	-1.8	-1.6	-2.7	-1.9	-2.1	-4	-5.4	-6.2	1.1	-2.9
Jan 28	-5.7	-6.3	-6.3	-6.3	-6.1	-6.3	-6.6	-5.7	-5.2	-5.4	-4	-2.2	-4.4	-4.3	-2.4	-3	-4.7	-6	-7.2	-7.9	-8.8	-8.5	-7.9	-7.7	-8.8	-2.2	-5.8
Jan 29	-7.3	-6.8	-6.3	-5.9	-5.5	-4.7	-3.7	-2	-1.3	-0.1	0.1	-0.2	-0.2	0.3	1.4	2.2	1.9	2.1	1.5	1	0.8	0.8	0.8	0.3	-7.3	2.2	-1.3
Jan 30	0.5	0.7	0.7	0.4	-0.3	-0.8	-1.3	-1.3	-1.5	-2	-1.1	0.1	0.9	1.6	1.7	2	2.1	2.3	3.7	4.1	3.5	4.7	4.3	3.7	-2.0	4.7	**1.2**
Jan 31	3.1	2.3	2	1.7	0.8	0	-0.6	-1	-1.6	-2	-1.8	-1	-0.1	0.5	0.3	0.1	0.5	-0.1	-1	-1	-0.7	-1.1	-0.8	-1.5	-2.0	3.1	-0.1
Diurnal Maximum	3.1	2.3	2.0	1.7	0.8	0.0	-0.6	-1.0	-1.3	-0.1	0.1	0.1	2.6	4.0	4.9	3.7	2.1	2.3	3.7	4.1	3.5	4.7	4.3	3.7			
Diurnal Average	-16.0	-16.4	-16.5	-16.6	-16.7	-16.5	-16.4	-16.4	-16.4	-16.2	-15.0	-13.5	-12.6	-12.1	-12.0	-12.1	-12.8	-13.5	-14.0	-14.6	-15.0	-15.1	-15.5	-15.8			

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

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

Timeseries Chart of Hourly Average for AT - 842b Station



PEACE RIVER AREA MONITORING PROGRAM

842b Station - January 2020

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

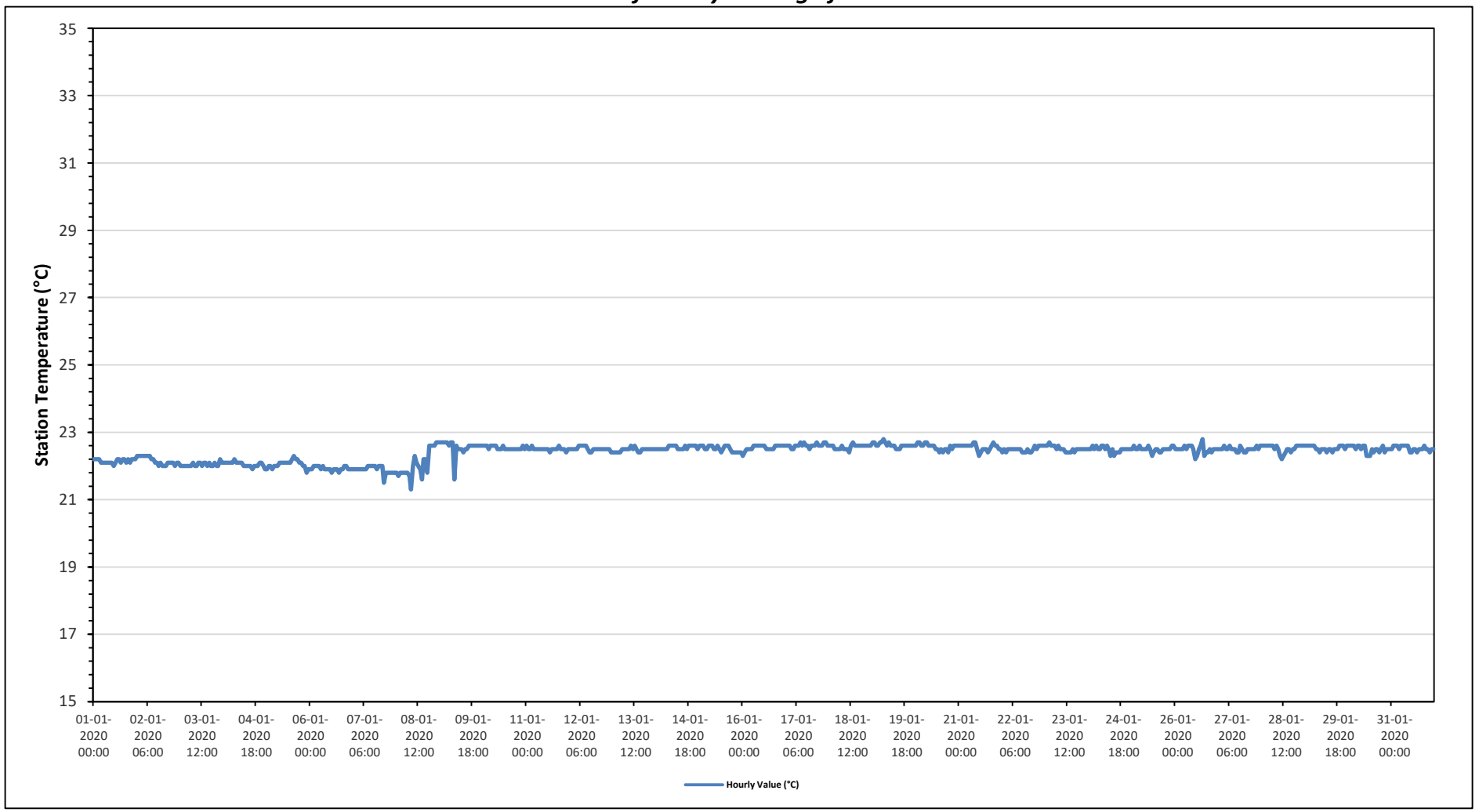
Maximum Hourly Value:	22.8	°C	on January 19 at hour 6	Hours in Service:	744
Maximum Daily Value:	22.6	°C	on January 19	Hours of Data:	744
Minimum Hourly Value:	21.3	°C	on January 8 at hour 8	Hours of Missing Data:	0
Minimum Daily Value:	21.9	°C	on January 7	Hours of Calibration:	0
Monthly Average:	22.4	°C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	22.2	22.2	22.2	22.2	22.1	22.1	22.1	22.1	22.1	22.1	22.1	22	22.1	22.2	22.2	22.1	22.2	22.2	22.1	22.2	22.1	22.2	22.2	22.2	22.0	22.2	22.1
Jan 2	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.2	22.2	22.1	22.1	22	22.1	22	22	22	22.1	22.1	22.1	22.1	22	22.1	22.1	22.0	22.3	22.2
Jan 3	22	22	22	22	22	22	22	22.1	22	22	22.1	22.1	22	22.1	22.1	22	22.1	22	22	22.1	22	22	22.2	22.1	22.0	22.2	22.0
Jan 4	22.1	22.1	22.1	22.1	22.1	22.1	22.2	22.1	22.1	22.1	22.1	22	22	22	22	22	21.9	22	22	22	22.1	22.1	22	21.9	21.9	22.2	22.1
Jan 5	21.9	22	22	21.9	22	22	22	22.1	22.1	22.1	22.1	22.1	22.1	22.1	22.2	22.3	22.2	22.2	22.1	22.1	22	22	21.8	21.9	21.8	22.3	22.1
Jan 6	21.9	21.9	22	22	22	22	21.9	22	21.9	21.9	21.9	21.9	21.8	21.9	21.9	21.9	21.8	21.9	21.9	22	22	21.9	21.9	21.9	21.8	22.0	21.9
Jan 7	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	22	22	22	22	22	21.9	22	22	22	21.5	21.8	21.8	21.8	21.8	21.8	21.8	21.5	22.0	21.9
Jan 8	21.8	21.7	21.8	21.8	21.8	21.8	21.8	21.7	**21.3**	22	22.3	22.1	22	21.9	21.6	22.2	22.2	21.8	22.6	22.6	22.6	22.6	22.7	22.7	**21.3**	22.7	22.1
Jan 9	22.7	22.7	22.7	22.7	22.7	22.6	22.7	22.7	21.6	22.6	22.5	22.5	22.5	22.4	22.5	22.5	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	21.6	22.7	22.6
Jan 10	22.6	22.6	22.6	22.5	22.6	22.6	22.6	22.6	22.5	22.5	22.5	22.6	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.5	22.5	22.6	22.5
Jan 11	22.6	22.5	22.5	22.6	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.4	22.5	22.5	22.5	22.5	22.6	22.5	22.5	22.5	22.4	22.5	22.4	22.6	22.5
Jan 12	22.5	22.5	22.5	22.5	22.5	22.6	22.6	22.6	22.6	22.6	22.5	22.4	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.4	22.4	22.6	22.5
Jan 13	22.4	22.4	22.4	22.4	22.4	22.5	22.5	22.5	22.5	22.5	22.6	22.5	22.6	22.5	22.4	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.4	22.6	22.5
Jan 14	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.6	22.6	22.6	22.6	22.5	22.5	22.5	22.5	22.6	22.5	22.6	22.6	22.6	22.6	22.6	22.5	22.5	22.6	22.5
Jan 15	22.6	22.6	22.6	22.5	22.5	22.6	22.6	22.6	22.5	22.5	22.6	22.5	22.4	22.5	22.6	22.6	22.6	22.5	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.6	22.5
Jan 16	22.3	22.4	22.5	22.5	22.5	22.5	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.5	22.5	22.5	22.5	22.5	22.6	22.6	22.6	22.6	22.6	22.6	22.3	22.6	22.5
Jan 17	22.6	22.6	22.6	22.5	22.5	22.6	22.6	22.6	22.7	22.6	22.7	22.6	22.6	22.5	22.6	22.6	22.6	22.7	22.6	22.6	22.6	22.7	22.7	22.6	22.5	22.7	22.6
Jan 18	22.6	22.6	22.6	22.5	22.5	22.5	22.5	22.6	22.5	22.5	22.5	22.4	22.6	22.7	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.4	22.7	22.6
Jan 19	22.7	22.7	22.6	22.6	22.7	22.7	**22.8**	22.7	22.6	22.7	22.6	22.6	22.6	22.5	22.5	22.5	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.5	**22.8**	**22.6**
Jan 20	22.6	22.7	22.7	22.6	22.6	22.7	22.7	22.6	22.6	22.6	22.6	22.5	22.5	22.4	22.5	22.4	22.5	22.5	22.4	22.6	22.5	22.6	22.6	22.6	22.4	22.7	22.6
Jan 21	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.7	22.7	22.5	22.3	22.4	22.5	22.5	22.5	22.4	22.5	22.6	22.7	22.6	22.6	22.5	22.5	22.3	22.7	22.6
Jan 22	22.4	22.5	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.4	22.4	22.4	22.5	22.4	22.4	22.5	22.6	22.5	22.6	22.6	22.6	22.6	22.4	22.6	22.5
Jan 23	22.6	22.6	22.7	22.6	22.6	22.6	22.5	22.6	22.5	22.5	22.5	22.4	22.4	22.4	22.4	22.5	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.4	22.7	22.5
Jan 24	22.5	22.5	22.6	22.5	22.6	22.5	22.5	22.6	22.6	22.5	22.6	22.5	22.3	22.5	22.3	22.4	22.4	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.3	22.6	22.5
Jan 25	22.5	22.6	22.5	22.5	22.6	22.5	22.5	22.5	22.5	22.6	22.5	22.3	22.4	22.5	22.5	22.4	22.4	22.5	22.5	22.5	22.5	22.5	22.6	22.6	22.3	22.6	22.5
Jan 26	22.5	22.5	22.5	22.5	22.5	22.6	22.5	22.6	22.6	22.6	22.5	22.2	22.3	22.5	22.6	**22.8**	22.3	22.4	22.4	22.5	22.4	22.5	22.5	22.5	22.2	**22.8**	22.5
Jan 27	22.5	22.5	22.5	22.6	22.5	22.5	22.6	22.5	22.5	22.5	22.4	22.4	22.6	22.5	22.4	22.4	22.5	22.5	22.5	22.5	22.5	22.6	22.5	22.6	22.4	22.6	22.5
Jan 28	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.5	22.6	22.5	22.3	22.2	22.3	22.4	22.5	22.5	22.4	22.5	22.5	22.6	22.6	22.6	22.6	22.6	22.2	22.6	22.5
Jan 29	22.6	22.6	22.6	22.6	22.6	22.6	22.5	22.5	22.4	22.5	22.5	22.5	22.4	22.5	22.5	22.4	22.5	22.5	22.5	22.6	22.6	22.6	22.5	22.6	22.4	22.6	22.5
Jan 30	22.6	22.6	22.6	22.6	22.5	22.6	22.6	22.5	22.6	22.6	22.3	22.3	22.3	22.5	22.4	22.5	22.5	22.4	22.5	22.6	22.4	22.5	22.5	22.5	22.3	22.6	22.5
Jan 31	22.5	22.6	22.6	22.6	22.5	22.6	22.6	22.6	22.6	22.6	22.4	22.4	22.5	22.5	22.4	22.5	22.5	22.5	22.6	22.5	22.5	22.4	22.5	22.5	22.4	22.6	22.5
Diurnal Maximum	22.7	22.7	22.7	22.7	22.7	22.7	22.8	22.7	22.7	22.7	22.7	22.6	22.6	22.7	22.6	22.8	22.6	22.7	22.6	22.7	22.6	22.7	22.7	22.7			
Diurnal Average	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.3	22.3	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4			

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

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

Timeseries Chart of Hourly Average for ST - 842b Station



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

842b Station - January 2020

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

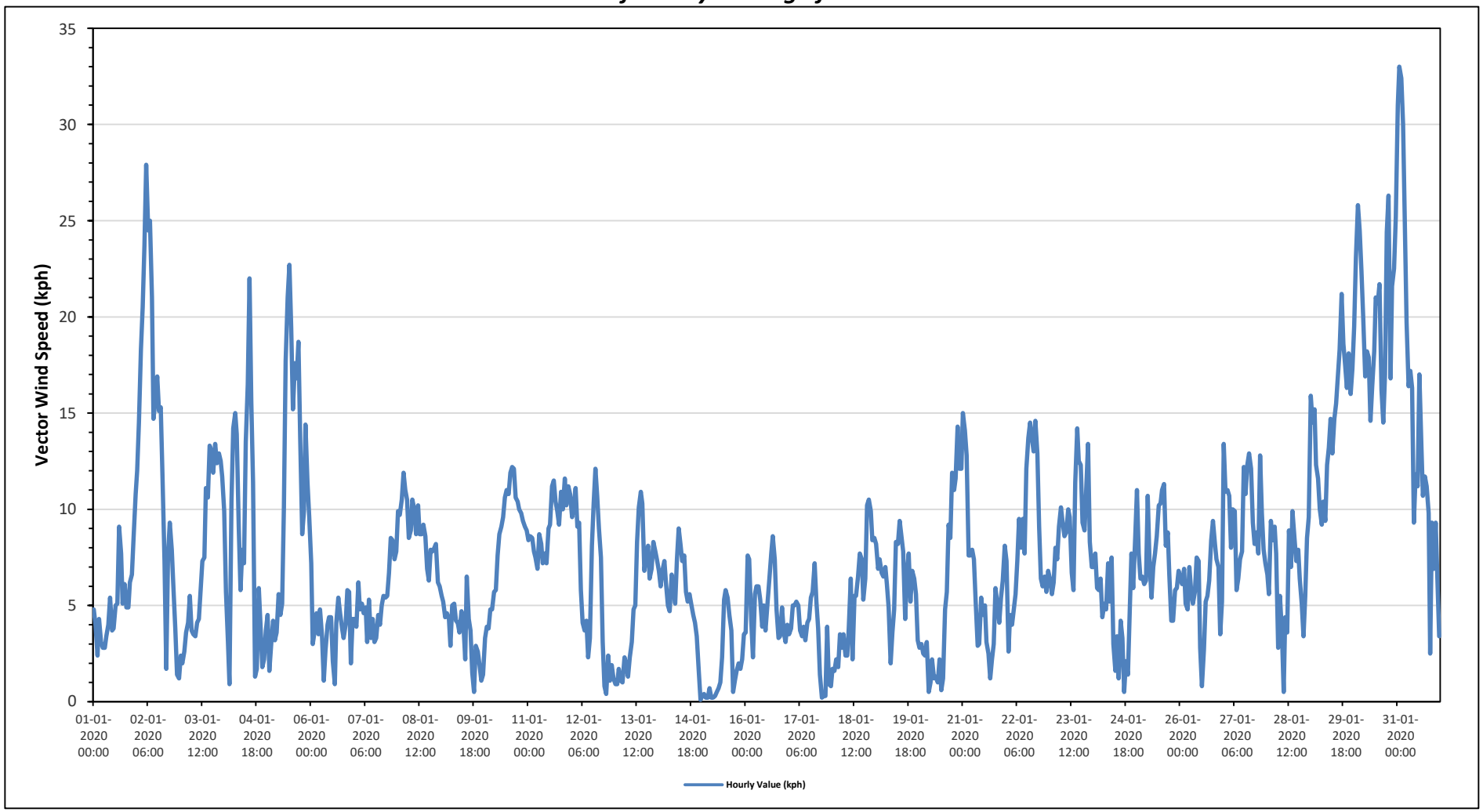
Maximum Hourly Value:	33.0	kph	on January 31 at hour 1	Hours in Service:	744
Maximum Daily Value:	20.2	kph	on January 30	Hours of Data:	744
Minimum Hourly Value:	0.1	kph	on January 14 at hour 23	Hours of Missing Data:	0
Minimum Daily Value:	1.8	kph	on January 15	Hours of Calibration:	0
Monthly Average:	1.8	kph		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	4.8	4	2.4	4.3	3.1	2.8	2.8	3.4	4	5.4	3.7	3.8	5	5.1	9.1	7.7	5.1	6.1	4.9	4.9	6.2	6.6	8.6	10.8	2.4	10.8	5.2
Jan 2	12	14.5	18.3	20.5	23.7	27.9	24.5	25	21	14.7	15.7	16.9	15.1	15.3	11.7	7.3	1.7	7.6	9.3	7.9	5.8	3.8	1.4	1.2	1.2	27.9	13.5
Jan 3	2.4	2	2.6	3.6	4.1	5.5	3.7	3.5	3.4	4.1	4.3	5.8	7.3	7.5	11.1	10.6	13.3	13	11.9	13.4	12.4	12.9	12.5	11.7	2.0	13.4	7.6
Jan 4	9.9	5.7	3.1	0.9	10.4	14.2	15	13.9	9.1	5.8	7.9	7.2	13.5	16.5	22	15.6	11.4	1.3	1.7	5.9	4.2	1.8	2.2	3.7	0.9	22.0	8.5
Jan 5	4.5	1.6	3.1	4.2	3.2	3.6	5.6	4.5	5.1	10.1	17.7	21	22.7	19.5	15.2	17.6	16.8	18.7	13.7	8.7	9.9	14.4	11.4	9.6	1.6	22.7	10.9
Jan 6	7.2	3	3.7	4.6	3.5	4.8	3.4	1.1	2.7	4	4.4	4.4	2.1	0.9	4.1	5.4	4.6	3.8	3.3	4	5.8	5.7	2	4.3	0.9	7.2	3.9
Jan 7	4.3	3.9	6.2	4.8	5.1	4.6	4.9	3.1	5.3	3.3	4.3	3.1	3.3	4.5	4	5	5.5	5.4	5.5	6.7	8.5	8.4	7.4	7.8	3.1	8.5	5.2
Jan 8	9.9	9.7	10.5	11.9	11	10.5	8.5	8.9	10.5	10	8.7	10.2	8.7	8.7	9.2	8.6	6.9	6.3	7.9	7.8	8	8.2	6.2	6	6.0	11.9	8.9
Jan 9	5.5	5.2	4.4	4.6	4.3	2.9	5	5.1	4.2	4.1	3.6	4.7	4.2	2.2	6.5	4.3	3.7	1.5	0.5	2.9	2.6	1.9	1.1	1.4	0.5	6.5	3.6
Jan 10	3.3	3.9	3.8	4.8	4.8	5.7	5.8	7.6	8.7	9.1	9.6	10.6	11	10.8	11.9	12.2	12.1	10.6	10.4	10	9.8	9.4	9.1	8.9	3.3	12.2	8.5
Jan 11	8.4	8.6	8.5	7.8	7.5	6.9	8.7	8.2	7.2	7.7	7.2	9	9.2	11.2	11.5	10.4	9.9	9.2	10.9	10	11.6	10.2	11.2	10.8	6.9	11.6	9.2
Jan 12	9.6	10.1	11.1	9.1	9.3	5.8	4.1	3.7	4.2	2.3	3.3	8.1	10.3	12.1	10.7	9	7.5	3.1	0.8	0.4	2.4	1.1	1.9	1.2	0.4	12.1	5.9
Jan 13	0.9	0.9	1.7	1.1	1	2.3	2	1.3	2.3	3.1	4.8	5	8.3	10.1	10.9	10.3	6.8	7.6	8.1	6.4	6.9	8.3	7.8	7.4	0.9	10.9	5.2
Jan 14	6.8	6	6.8	7.3	6.2	5	4.7	6.6	6	5.1	7.4	9	8.2	7.3	7.6	5.7	5.2	5.6	5	4.5	4.1	3.4	1.6	**0.1**	**0.1**	9.0	5.6
Jan 15	0.3	0.4	0.2	0.2	0.7	0.2	0.2	0.3	0.5	0.7	1	2.3	5.3	5.8	5.4	4.5	3.7	0.5	1.1	1.6	2	1.7	2.2	3.5	0.2	5.8	**1.8**
Jan 16	3.6	7.6	7.4	4.3	2.3	5.6	6	6	5.3	3.9	5	3.7	5.1	6.3	7.7	8.6	7.4	4.8	3.3	3.4	4.9	3.6	3.1	4	2.3	8.6	5.1
Jan 17	3.5	3.8	5	5	5.2	5	3.7	3.4	3.9	3.2	4.1	4.3	5.4	5.7	7.2	5.2	3.8	1.4	0.2	0.3	0.3	3.9	0.9	0.8	0.2	7.2	3.6
Jan 18	1.7	1.6	2.2	1.8	3.5	2.8	3.5	2.4	2.4	3.8	6.4	2.2	5.5	5.5	6.5	7.7	7.4	5.3	6.4	10.2	10.5	9.9	8.4	8.5	1.6	10.5	5.3
Jan 19	8.2	6.9	7.4	6.7	6.5	7	6.1	4.9	2	3.6	4.8	8.3	8.2	9.4	8.6	7.8	4.3	6.7	7.7	5.2	6.8	6.4	5.6	3.2	2.0	9.4	6.3
Jan 20	2.8	3	2.5	2.4	3.1	0.5	1	2.2	1.2	1.3	1	2.2	0.6	1.2	4.8	5.7	9.2	8.5	11.9	11	11.6	14.3	12.1	12.1	0.5	14.3	5.3
Jan 21	15	14.1	12.8	7.6	7.6	7.9	7.4	5.2	2.9	3	5.4	4.5	5	3.1	2.5	1.2	2.2	3	5.9	5	4.1	5.4	6.3	8.1	1.2	15.0	6.1
Jan 22	7.3	2.6	4.5	4	4.8	5.6	7.3	9.5	8	9.5	7.7	12.1	13.7	14.5	13.7	13	14.6	12.9	9.1	6.4	6	6.5	5.7	6.8	2.6	14.6	8.6
Jan 23	6.4	5.6	6.2	8	7.4	9.1	10.1	9.4	8.6	8.8	10	9.6	6.7	5.8	11.4	14.2	12.5	12.3	9.3	8.9	10.8	13.4	8.3	7	5.6	14.2	9.2
Jan 24	7	7.7	5.9	5.8	6.4	4.4	5.1	4.8	7.2	5.2	7.5	3	1.6	3.4	1.2	4.2	3.3	0.5	2.1	1.4	4.6	7.7	5.9	8.5	0.5	8.5	4.8
Jan 25	11	7.7	6.4	6.5	6.1	6.3	10.7	7.3	5.4	7	7.7	8.6	10.2	10.3	11	11.3	8.1	8.8	6.6	4.2	4.2	5.8	5.9	6.8	4.2	11.3	7.7
Jan 26	6.4	6.1	6.9	5.1	4.8	7	5.6	5.1	5.7	7.5	7.3	2.8	0.8	2.7	5.2	5.5	6.3	8.4	9.4	8.2	7.4	7	3.5	5.2	0.8	9.4	5.8
Jan 27	13.4	10.9	11	10.7	8	10	9.9	5.8	6.4	7.4	7.8	12.2	10.8	12.3	12.9	12.1	9.3	8.2	8.8	7.7	12.8	9.8	7.9	7.2	5.8	13.4	9.7
Jan 28	6.6	5.6	9.4	8.4	9.1	7.7	2.8	5.5	3.6	0.5	4.4	3.6	8.9	7	9.9	8.5	7.3	7.9	6.4	5.1	3.4	5.5	8.5	9.6	0.5	9.9	6.5
Jan 29	15.9	14.5	15.2	12.3	11.6	10	9.2	10.4	9.4	12.3	13.2	14.7	12.9	14.7	15.5	16.9	18.3	21.2	18.6	17.5	16.3	18.1	16	17.3	9.2	21.2	14.7
Jan 30	19.5	23.1	25.8	24.5	22.4	20	16.9	18.2	17.9	14.6	16.4	18.2	21	20.7	21.7	16.2	14.5	17	24.4	26.3	16.8	21.6	22.5	25.2	14.5	26.3	**20.2**
Jan 31	31	**33**	32.4	30	24.1	19.7	16.4	17.2	16.3	9.3	11.8	11.2	17	13.3	10.7	11.7	11.2	9.8	2.5	9.3	6.9	9.3	6.3	3.4	2.5	**33.0**	15.2
Diurnal Maximum	31	33	32	30	24	28	25	25	21	15	18	21	23	21	22	18	18	21	24	26	17	22	23	25			
Diurnal Average	8.0	7.5	8.0	7.5	7.4	7.5	7.1	6.9	6.5	6.1	7.2	7.8	8.6	8.8	9.7	9.2	8.2	7.6	7.3	7.3	7.3	7.9	6.9	7.2			

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

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

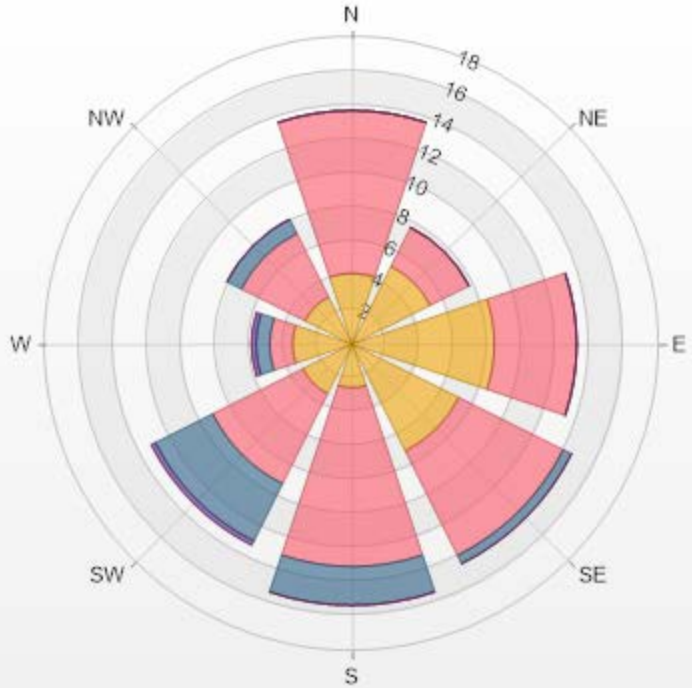
Timeseries Chart of Hourly Average for VWS - 842b Station



Wind: PRAMP 842b Poll.: PRAMP 842b-WDS[KPH] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 8.47% Valid Data: 100.00% Calm Avg: 0.97 [KPH]

Direction	0-6	6-15	15-29	29-39	>39.0	Total
N	4.17	9.54	0	0	0	13.71
NE	5.11	2.55	0	0	0	7.66
E	8.33	4.84	0	0	0	13.17
SE	6.99	6.85	0.54	0	0	14.38
S	2.55	10.48	2.28	0	0	15.31
SW	3.23	5.91	3.76	0.27	0	13.17
W	3.49	1.34	0.81	0.27	0	5.91
NW	3.09	4.17	0.94	0	0	8.2
Summary	36.96	45.68	8.33	0.54	0	91.51

PRAMP 842b Poll.: PRAMP 842b-WDS[KPH] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 8.47% Calm Poll Avg: 0.97 [KPH]



% Icon Classes (KPH)	37	0-6	46	6-15	8	15-29	1	29-39	0	>39.0

PEACE RIVER AREA MONITORING PROGRAM

842b Station - January 2020

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

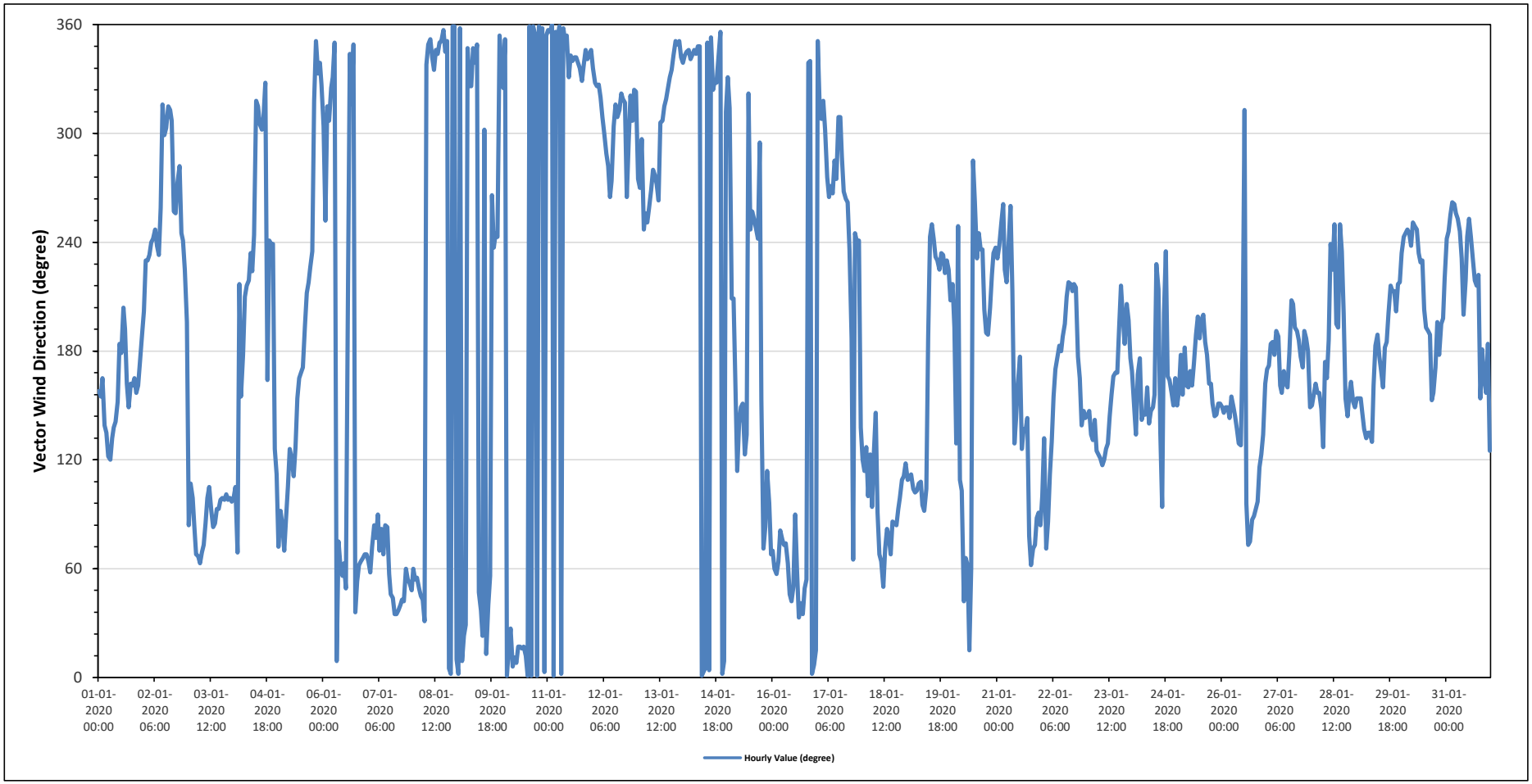
Monthly Average:	201 (SSW) degree	Hours in Service:	744
		Hours of Data:	744
		Hours of Missing Data:	0
		Hours of Calibration:	0
		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant
Jan 1	SSE	SSE	SSE	SE	SE	ESE	ESE	SE	SE	SE	SSE	S	S	SSW	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S	S	163	SSE
Jan 2	SSW	SW	SW	SW	WSW	WSW	WSW	SW	SW	WSW	NW	WNW	WNW	NW	NW	NW	WSW	WSW	W	W	WSW	WSW	SW	SSW	257	WSW
Jan 3	E	ESE	E	E	ENE	ENE	ENE	ENE	ENE	E	E	ESE	E	E	E	E	E	E	E	E	E	E	E	E	92	E
Jan 4	E	ESE	ENE	SW	SSE	S	SSW	SW	SW	SW	SW	WSW	NW	NW	WNW	WNW	NW	NNW	SSE	WSW	WSW	WSW	SE	ESE	250	WSW
Jan 5	ENE	E	E	ENE	E	ESE	SE	ESE	ESE	SE	SSE	SSE	SSE	S	SSW	SSW	SW	SW	SW	NW	N	NNW	NNW	NW	185	S
Jan 6	WNW	WSW	NW	NW	NW	NNW	N	N	ENE	ENE	NE	ENE	NE	S	NNW	NW	NNW	NE	NE	ENE	ENE	ENE	ENE	ENE	15	NNE
Jan 7	ENE	ENE	ENE	E	ENE	E	ENE	E	ENE	E	E	ENE	NE	NE	NE	NE	NE	NE	NE	NE	ENE	NE	NE	NE	58	ENE
Jan 8	ENE	NE	NE	NE	NE	NE	NNE	NNW	NNW	N	NNW	NNW	NNW	NNW	N	N	N	NNW	N	N	N	N	N	N	9	N
Jan 9	N	N	N	NNE	NNE	NNW	NW	NW	NNW	NNW	NNW	NE	NE	NNE	WNW	NNE	NE	NE	W	SW	WSW	WSW	N	NNW	354	N
Jan 10	NW	N	N	NNE	NNE	N	NNE	N	NNE	NNE	NNE	NNE	NNE	N	N	N	N	N	N	N	N	N	N	N	4	N
Jan 11	N	N	N	N	N	N	N	N	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	347	NNW
Jan 12	NNW	NNW	NW	NW	NW	NW	WNW	WNW	W	W	W	WNW	NW	NW	NW	NW	NW	NW	W	WNW	NW	NW	NW	NW	315	NW
Jan 13	W	W	WNW	WSW	WSW	WSW	WSW	W	W	W	W	W	NW	NW	NW	NW	NW	NNW	NNW	NNW	N	NNW	N	NNW	318	NW
Jan 14	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	N	N	N	N	NW	NNW	NNW	NNW	N	N	N	NW	348	NNW
Jan 15	NNW	NW	SSW	SSW	SSE	ESE	SE	SSE	SSE	ESE	SE	NW	WSW	WSW	WSW	WSW	WSW	WNW	SSE	ENE	E	ESE	E	ENE	235	SW
Jan 16	ENE	ENE	ENE	ENE	E	ENE	ENE	ENE	ENE	NE	NE	NE	E	ENE	NNE	NE	NE	NE	NE	NNW	NNW	N	N	NNE	49	NE
Jan 17	N	NW	NW	NW	WNW	W	W	W	W	WNW	W	NW	NW	WNW	W	W	W	SW	S	ENE	WSW	WSW	WSW	SE	285	WNW
Jan 18	ESE	ESE	SE	E	ESE	E	ESE	SE	E	ENE	ENE	NE	ENE	E	ENE	ENE	E	E	E	E	E	ESE	ESE	ESE	94	E
Jan 19	ESE	ESE	ESE	ESE	E	ESE	ESE	ESE	E	E	ESE	S	WSW	WSW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SSW	182	S
Jan 20	SW	S	SE	WSW	ESE	ESE	NE	ENE	ENE	NNE	ENE	WNW	W	SW	WSW	SW	SW	SSW	S	S	SSW	SW	SW	SW	215	SSW
Jan 21	SW	SW	WSW	W	SW	SW	WSW	WSW	SSW	SE	SE	SSE	S	SE	SE	SE	SE	ENE	ENE	ENE	ENE	E	E	E	197	SSW
Jan 22	E	SE	ENE	E	ESE	SE	SSE	SSE	S	S	S	S	SSW	SSW	SW	SW	SSW	SW	SSW	S	SSE	SE	SE	SE	182	S
Jan 23	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE	ESE	SE	SE	SE	SSE	SSE	SSE	SSE	S	S	SSW	S	SSW	SSW	S	158	SSE
Jan 24	SSE	SSE	SE	SSE	S	SE	SE	SE	SSE	SE	SE	SSE	SSE	SW	SSW	SE	E	SSW	SW	SSE	SSE	SSE	SSE	SSE	156	SSE
Jan 25	SSE	SSE	S	SSE	S	SSE	SSE	SSE	SSE	S	S	SSW	S	SSW	SSW	S	S	SSE	SSE	SSE	SE	SE	SSE	SSE	171	S
Jan 26	SSE	SE	SSE	SSE	SE	SSE	SSE	SE	SE	SE	SE	S	NW	E	ENE	ENE	E	E	E	E	ESE	ESE	SE	SSE	124	ESE
Jan 27	SSE	S	S	S	S	S	S	SSE	SSE	SSE	SSE	SSE	S	SSW	SSW	S	S	S	S	S	S	S	S	SSE	181	S
Jan 28	SSE	SSE	SSE	SSE	SSE	SE	SE	S	SSE	S	WSW	SW	WSW	SSW	S	WSW	SW	SSW	SSE	SE	SSE	SSE	SSE	SSE	178	S
Jan 29	SSE	SSE	SSE	SE	SE	SE	SE	SE	SE	SSE	S	S	S	SSE	SSE	S	S	SSW	SW	SSW	SSW	SSW	SW	SW	179	S
Jan 30	SW	WSW	WSW	WSW	WSW	SW	WSW	WSW	WSW	SW	SW	SW	SSW	S	S	S	SSE	SSE	S	SSW	S	SSW	SSW	SW	215	SSW
Jan 31	WSW	WSW	WSW	W	W	WSW	WSW	WSW	SW	SSW	SW	WSW	WSW	WSW	SW	SW	SW	SW	SSE	S	SSE	SSE	S	SE	238	SW

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

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

Timeseries Chart of Hourly Average for VWD - 842b Station



RENO STATION

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - January 2020

Summary of Hourly Averages

SULPHUR DIOXIDE (SO_2) in ppb

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

Number of 1-Hour Exceedances: 0 Number of 24-Hour Exceedances: 0 30-Day Exceedance: 0

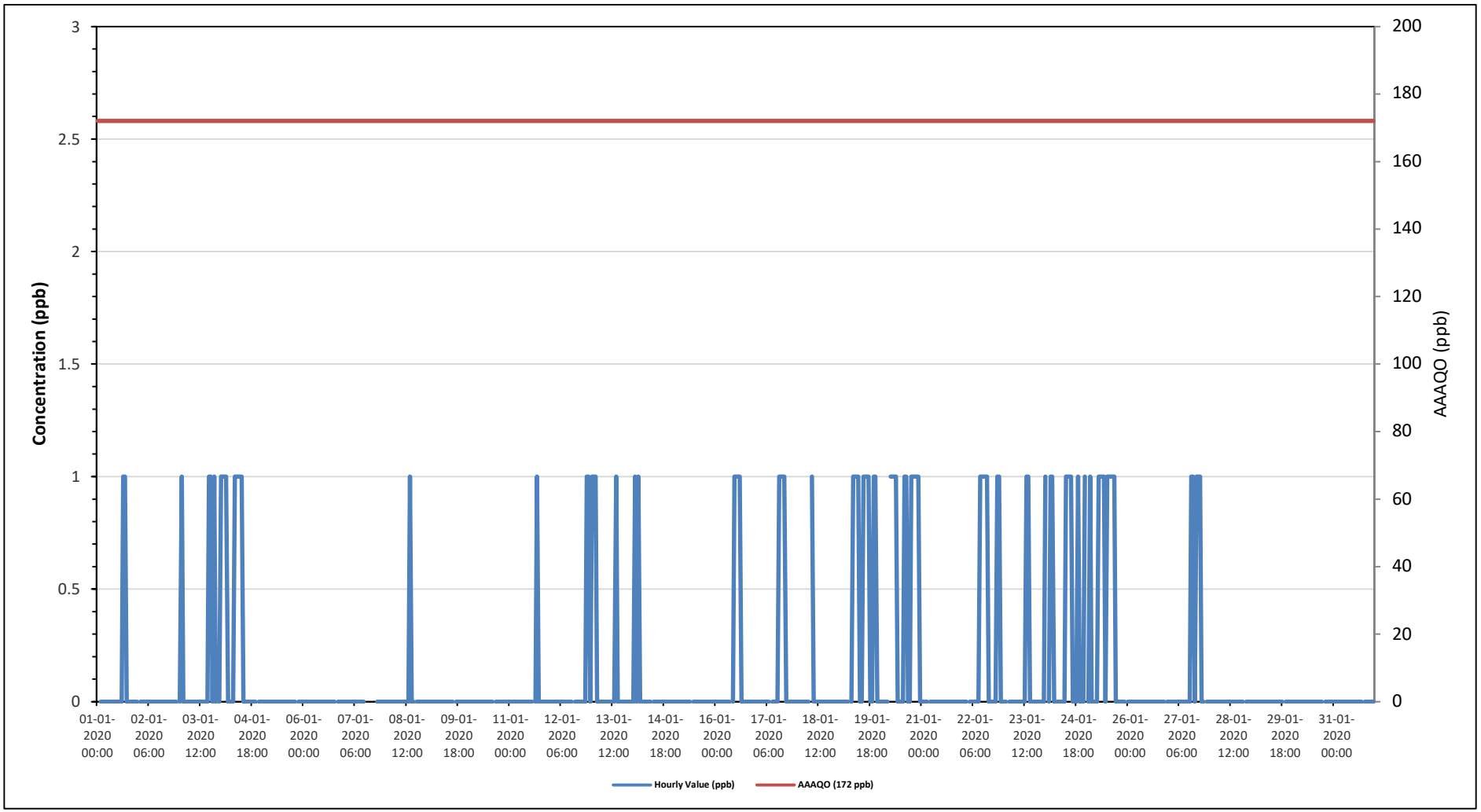
Maximum Hourly Value:	1	ppb	on January 1 at hour 15	Hours in Service:	744
Maximum Daily Value:	0.5	ppb	on January 20	Hours of Data:	706
Minimum Hourly Value:	0	ppb	on January 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on January 2	Hours of Calibration:	38
Monthly Average:	0.1	ppb		Operational Uptime:	100.0

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

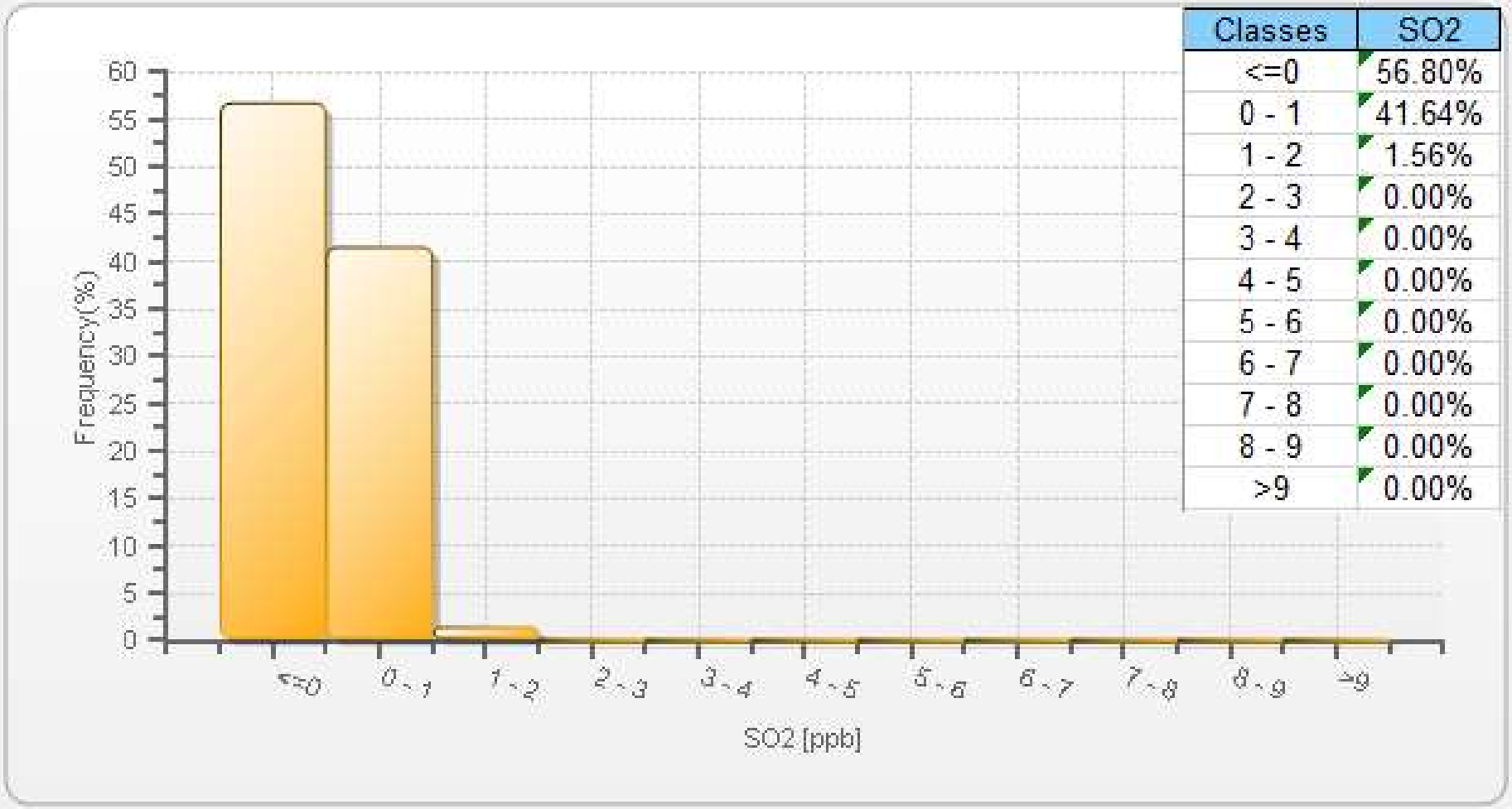
C	Monthly Calibration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Equipment Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine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



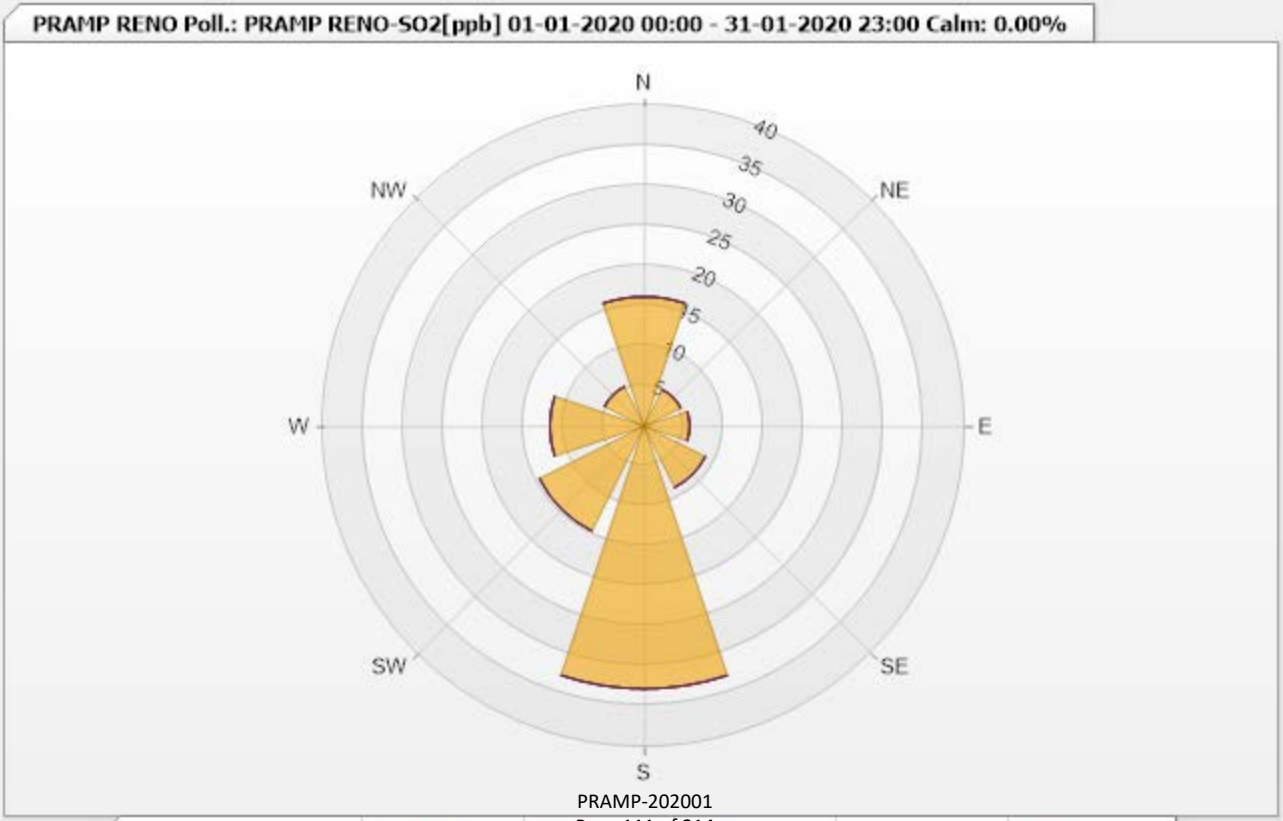
SO2[ppb] Histogram: PRAMP RENO Monthly: 01-2020 1 Hr.



Classes	SO2
<=0	56.80%
0 - 1	41.64%
1 - 2	1.56%
2 - 3	0.00%
3 - 4	0.00%
4 - 5	0.00%
5 - 6	0.00%
6 - 7	0.00%
7 - 8	0.00%
8 - 9	0.00%
>9	0.00%

Wind: PRAMP RENO Poll.: PRAMP RENO-SO2[ppb] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	16.15	0	0	0	0	16.15
NE	5.1	0	0	0	0	5.1
E	5.67	0	0	0	0	5.67
SE	8.5	0	0	0	0	8.5
S	32.72	0	0	0	0	32.72
SW	14.59	0	0	0	0	14.59
W	11.76	0	0	0	0	11.76
NW	5.52	0	0	0	0	5.52
Summary	100	0	0	0	0	100


PRAMP RENO Poll.: PRAMP RENO-SO2[ppb] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
40
35
30
25
20
5
0
% Icon Classes (ppb)
100 0-10
0 10-50
0 50-100
0 100-172
0 >172.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - January 2020

Summary of Hourly Averages

TOTAL REDUCED SULPHUR (TRS) in ppb

Alberta Ambient Air Quality Objectives (AAAQO) for H2S: 1-Hour 10 ppb, 24-Hour 3 ppb

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

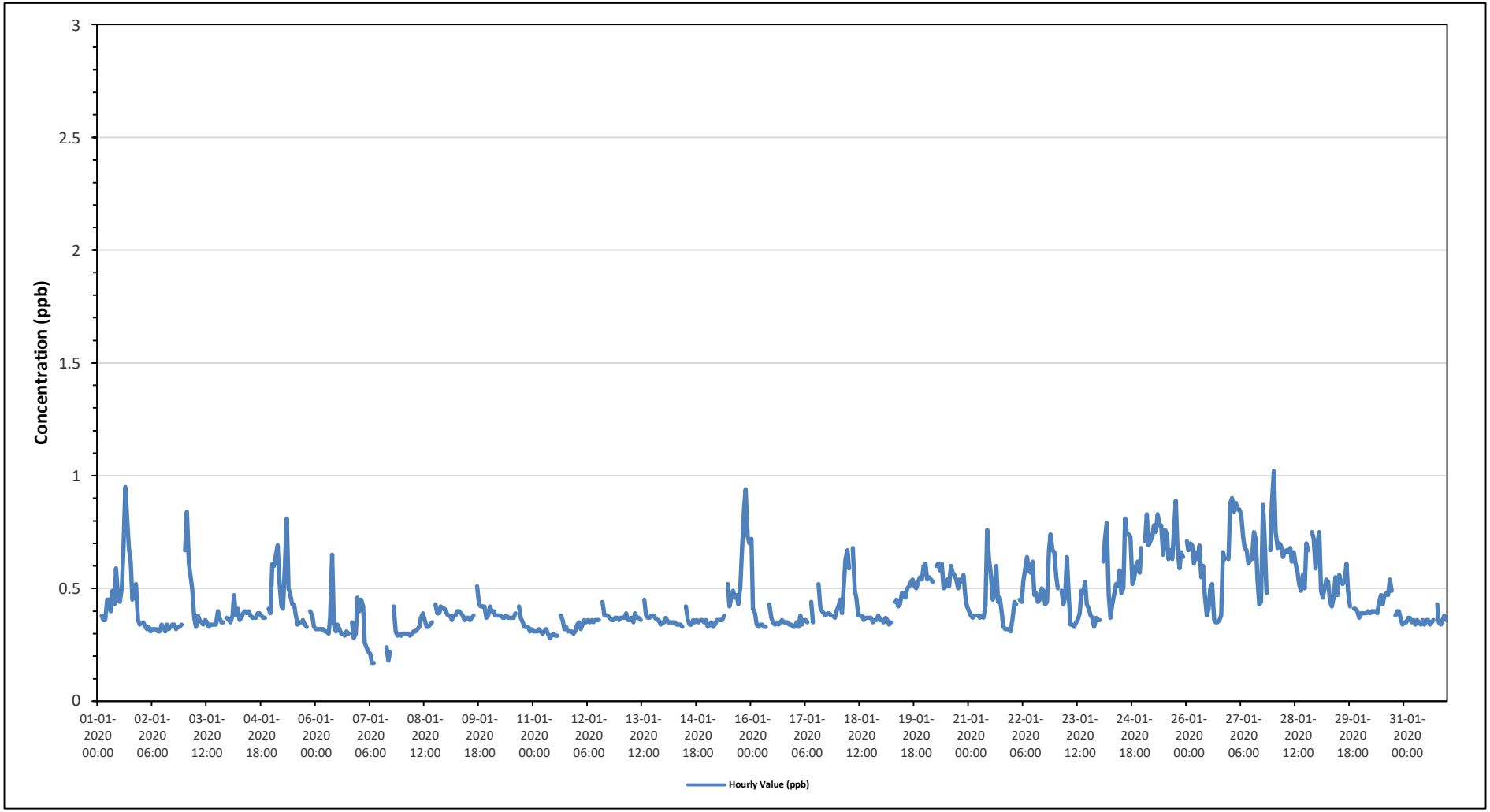
Maximum Hourly Value:	1.02	ppb	on January 28 at hour 0	Hours in Service:	744
Maximum Daily Value:	0.72	ppb	on January 25	Hours of Data:	703
Minimum Hourly Value:	0.17	ppb	on January 7 at hour 7	Hours of Missing Data:	2
Minimum Daily Value:	0.31	ppb	on January 11	Hours of Calibration:	39
Monthly Average:	0.45	ppb		Operational Uptime:	99.7

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	0.22	S	0.38	0.36	0.36	0.45	0.45	0.4	0.49	0.43	0.59	0.46	0.44	0.5	0.66	0.95	0.81	0.68	0.62	0.45	0.51	0.52	0.36	0.34	0.22	0.95	0.50
Jan 2	S	0.35	0.33	0.32	0.33	0.31	0.32	0.32	0.32	0.31	0.31	0.34	0.33	0.31	0.34	0.32	0.33	0.34	0.34	0.32	0.33	0.33	0.34	S	0.31	0.35	0.33
Jan 3	0.67	0.84	0.61	0.55	0.5	0.37	0.33	0.38	0.36	0.35	0.34	0.36	0.35	0.33	0.34	0.34	0.34	0.34	0.4	0.37	0.35	0.35	S	0.37	0.33	0.84	0.41
Jan 4	0.36	0.35	0.38	0.47	0.38	0.41	0.36	0.37	0.39	0.4	0.39	0.4	0.38	0.37	0.37	0.37	0.39	0.39	0.38	0.37	0.37	S	0.41	0.39	0.35	0.47	0.38
Jan 5	0.61	0.6	0.65	0.69	0.53	0.42	0.41	0.61	0.81	0.5	0.47	0.43	0.43	0.38	0.34	0.35	0.35	0.36	0.34	0.33	S	0.4	0.38	0.33	0.33	0.81	0.47
Jan 6	0.32	0.32	0.32	0.32	0.32	0.31	0.31	0.3	0.37	0.65	0.34	0.31	0.34	0.32	0.3	0.3	0.29	0.31	0.3	S	0.35	0.28	0.3	0.46	0.28	0.65	0.34
Jan 7	0.4	0.45	0.42	0.26	0.24	0.22	0.21	0.17	0.17	C	C	C	C	C	C	0.24	0.18	0.22	S	0.42	0.31	0.29	0.3	0.29	0.17	0.45	-
Jan 8	0.3	0.3	0.3	0.3	0.29	0.3	0.31	0.31	0.32	0.33	0.37	0.39	0.36	0.33	0.33	0.34	0.35	S	0.43	0.39	0.39	0.42	0.41	0.41	0.29	0.43	0.35
Jan 9	0.39	0.38	0.38	0.36	0.38	0.38	0.4	0.4	0.39	0.38	0.36	0.37	0.37	0.36	0.37	0.38	S	0.51	0.43	0.42	0.42	0.42	0.37	0.38	0.36	0.51	0.39
Jan 10	0.42	0.4	0.4	0.38	0.38	0.38	0.38	0.37	0.37	0.38	0.37	0.37	0.37	0.37	0.39	S	0.42	0.37	0.35	0.33	0.33	0.33	0.31	0.32	0.31	0.42	0.37
Jan 11	0.31	0.31	0.31	0.32	0.31	0.3	0.31	0.32	0.3	0.28	0.29	0.3	0.29	0.29	S	0.38	0.36	0.32	0.33	0.31	0.31	0.31	0.3	0.31	0.28	0.38	0.31
Jan 12	0.34	0.35	0.32	0.34	0.36	0.35	0.36	0.35	0.36	0.35	0.36	0.36	0.36	S	0.44	0.38	0.38	0.38	0.37	0.36	0.36	0.37	0.37	0.36	0.32	0.44	0.36
Jan 13	0.37	0.37	0.37	0.39	0.36	0.36	0.37	0.35	0.39	0.37	0.37	0.36	S	0.45	0.38	0.37	0.37	0.38	0.38	0.37	0.36	0.36	0.34	0.35	0.34	0.45	0.37
Jan 14	0.35	0.37	0.35	0.35	0.35	0.35	0.35	0.34	0.34	0.34	0.33	S	0.42	0.36	0.34	0.34	0.36	0.35	0.36	0.35	0.36	0.36	0.35	0.36	0.33	0.42	0.35
Jan 15	0.33	0.34	0.35	0.33	0.34	0.36	0.36	0.36	0.36	0.38	S	0.52	0.42	0.46	0.49	0.46	0.47	0.43	0.51	0.68	0.86	0.94	0.73	0.7	0.33	0.94	0.49
Jan 16	0.72	0.41	0.39	0.34	0.33	0.34	0.34	0.33	0.33	S	0.43	0.37	0.35	0.34	0.35	0.34	0.35	0.36	0.35	0.35	0.35	0.34	0.34	0.33	0.33	0.72	0.37
Jan 17	0.33	0.35	0.33	0.38	0.34	0.36	0.36	0.35	S	0.44	0.35	NRM	NRM	0.52	0.42	0.4	0.39	0.38	0.39	0.39	0.38	0.38	0.37	0.4	0.33	0.52	0.38
Jan 18	0.42	0.45	0.39	0.51	0.63	0.67	0.59	S	0.68	0.49	0.46	0.38	0.38	0.38	0.36	0.37	0.37	0.37	0.37	0.35	0.36	0.36	0.38	0.36	0.35	0.68	0.44
Jan 19	0.36	0.35	0.37	0.36	0.34	0.35	S	0.44	0.45	0.42	0.43	0.48	0.48	0.46	0.5	0.51	0.53	0.54	0.51	0.5	0.53	0.55	0.54	0.6	0.34	0.60	0.46
Jan 20	0.61	0.54	0.55	0.54	0.53	S	0.6	0.61	0.58	0.61	0.5	0.51	0.54	0.51	0.6	0.57	0.56	0.54	0.5	0.54	0.53	0.56	0.46	0.42	0.42	0.61	0.54
Jan 21	0.4	0.38	0.37	0.38	S	0.38	0.37	0.38	0.37	0.42	0.76	0.63	0.57	0.45	0.47	0.6	0.44	0.46	0.4	0.33	0.32	0.32	0.32	0.31	0.31	0.76	0.43
Jan 22	0.37	0.44	0.43	S	0.45	0.44	0.53	0.59	0.64	0.58	0.57	0.62	0.47	0.48	0.44	0.45	0.5	0.49	0.43	0.44	0.67	0.74	0.67	0.66	0.37	0.74	0.53
Jan 23	0.55	0.5	S	0.49	0.43	0.46	0.64	0.46	0.34	0.34	0.33	0.35	0.36	0.39	0.49	0.48	0.53	0.43	0.41	0.38	0.37	0.33	0.37	0.36	0.33	0.64	0.43
Jan 24	0.36	S	0.62	0.72	0.79	0.47	0.37	0.43	0.47	0.52	0.51	0.58	0.48	0.5	0.81	0.74	0.74	0.73	0.52	0.54	0.6	0.62	0.57	0.68	0.36	0.81	0.58
Jan 25	S	0.71	0.83	0.69	0.71	0.73	0.78	0.75	0.83	0.78	0.78	0.65	0.76	0.74	0.63	0.67	0.63	0.76	0.89	0.67	0.59	0.66	0.64	S	0.59	0.89	**0.72**
Jan 26	0.71	0.67	0.7	0.69	0.61	0.66	0.63	0.69	0.55	0.6	0.47	0.38	0.41	0.5	0.52	0.36	0.35	0.35	0.36	0.38	0.66	0.63	S	0.63	0.35	0.71	0.54
Jan 27	0.88	0.9	0.84	0.88	0.85	0.85	0.83	0.73	0.68	0.67	0.61	0.63	0.63	0.75	0.72	0.54	0.43	0.44	0.87	0.73	0.48	S	0.67	0.88	0.43	0.90	0.72
Jan 28	**1.02**	0.75	0.68	0.7	0.69	0.64	0.66	0.67	0.66	0.68	0.62	0.66	0.61	0.57	0.52	0.49	0.56	0.5	0.7	0.67	S	0.75	0.72	0.59	0.49	**1.02**	0.66
Jan 29	0.7	0.75	0.49	0.46	0.5	0.54	0.53	0.44	0.42	0.46	0.55	0.47	0.56	0.53	0.52	0.54	0.61	0.49	0.42	S	0.41	0.41	0.4	0.37	0.37	0.75	0.50
Jan 30	0.39	0.39	0.39	0.39	0.4	0.39	0.4	0.4	0.4	0.39	0.44	0.47	0.43	0.47	0.48	0.47	0.54	0.49	S	0.38	0.4	0.4	0.36	0.34	0.34	0.54	0.42
Jan 31	0.35	0.35	0.37	0.37	0.35	0.36	0.34	0.36	0.35	0.34	0.36	0.34	0.36	0.36	0.34	0.35	0.36	S	0.43	0.35	0.34	0.36	0.38	0.36	0.34	0.43	0.36
Diurnal Maximum	1.02	0.90	0.84	0.88	0.85	0.85	0.83	0.75	0.83	0.78	0.78	0.66	0.76	0.75	0.81	0.95	0.81	0.76	0.89	0.73	0.86	0.94	0.73	0.88			
Diurnal Average	0.47	0.47	0.45	0.45	0.45	0.43	0.44	0.43	0.45	0.45	0.45	0.45	0.44	0.44	0.46	0.45	0.44	0.44	0.45	0.43	0.43	0.45	0.43	0.44			

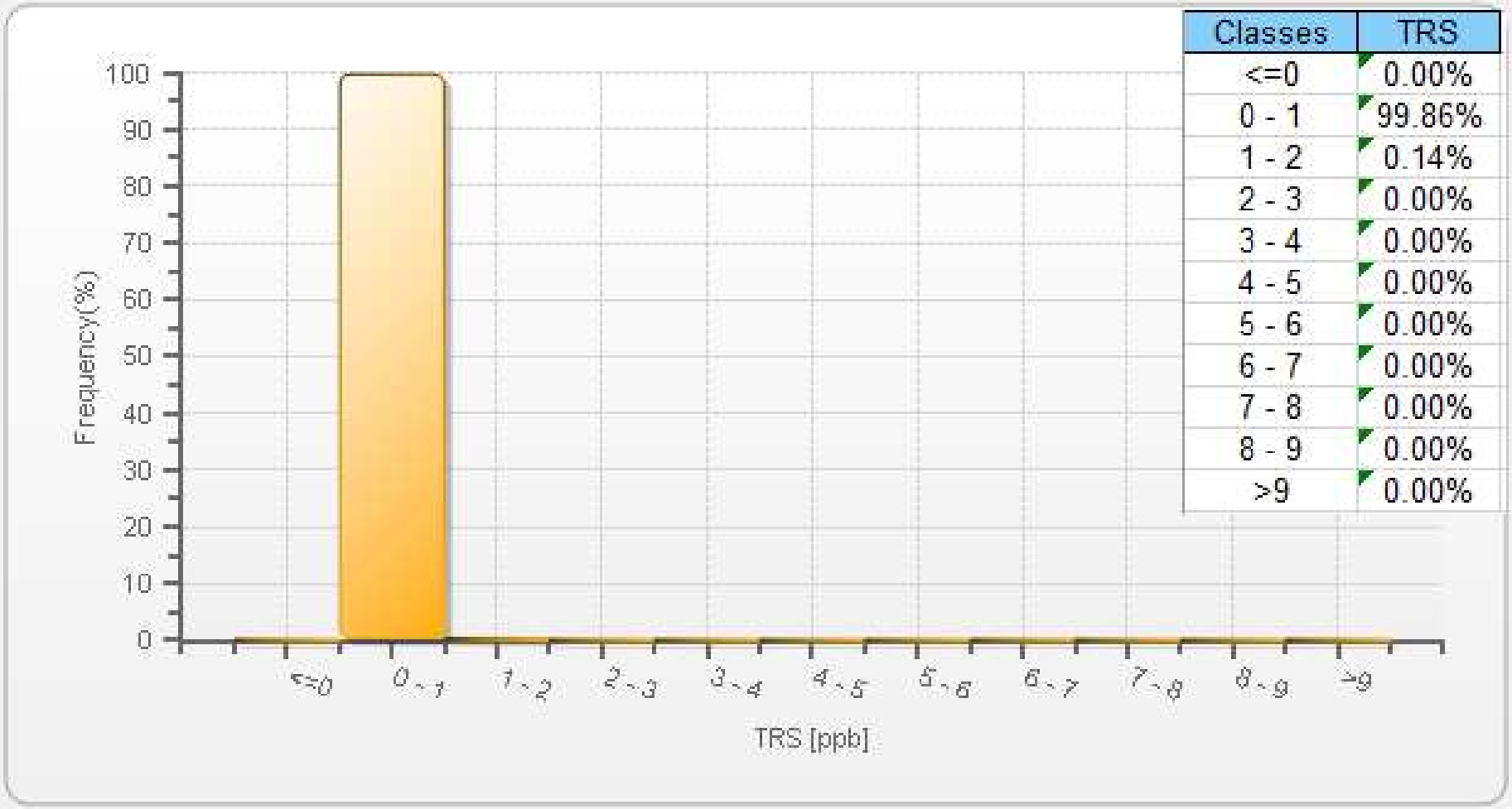
C	Monthly Calibration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Equipment Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine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



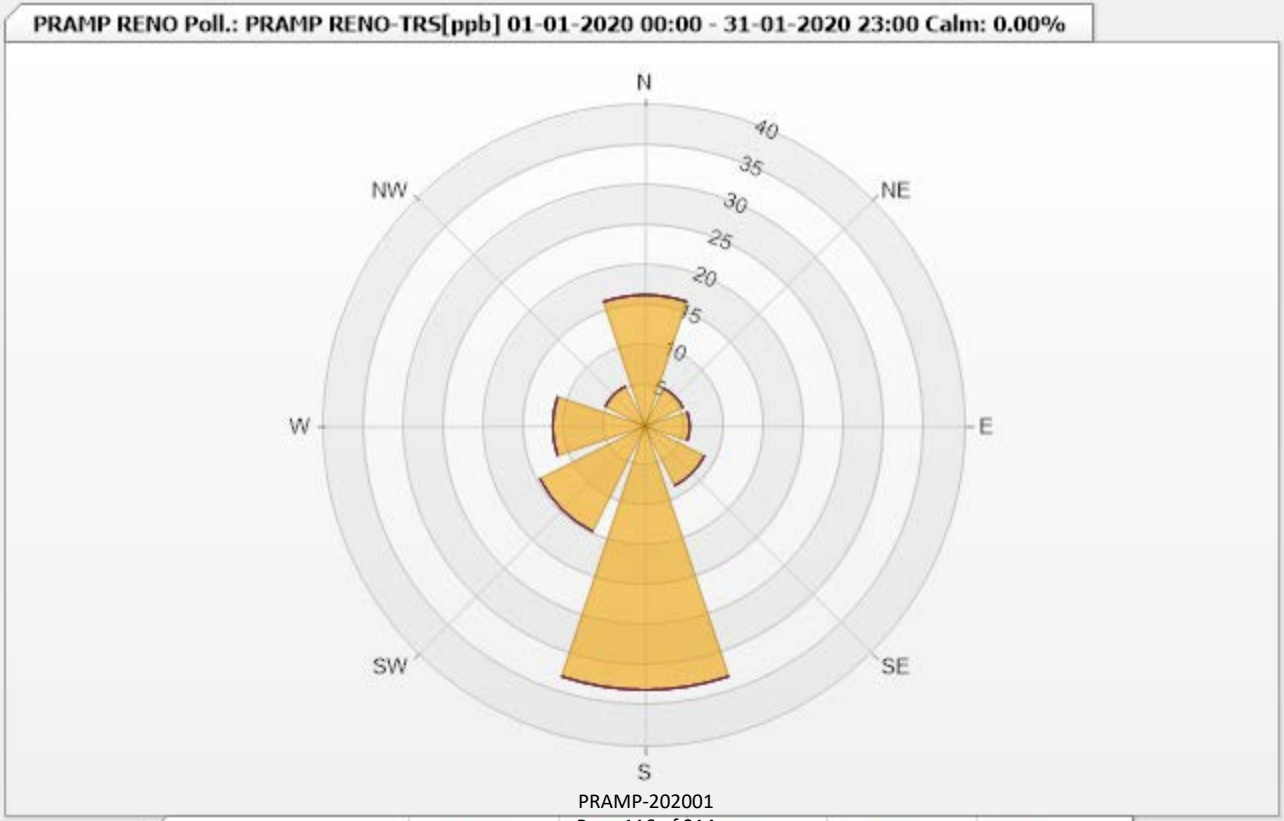
TRS[ppb] Histogram: PRAMP RENO Monthly: 01-2020 1 Hr.



Classes	TRS
<=0	0.00%
0 - 1	99.86%
1 - 2	0.14%
2 - 3	0.00%
3 - 4	0.00%
4 - 5	0.00%
5 - 6	0.00%
6 - 7	0.00%
7 - 8	0.00%
8 - 9	0.00%
>9	0.00%

Wind: PRAMP RENO Poll.: PRAMP RENO-TRS[ppb] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.49% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	16.36	0	0	0	0	16.36
NE	5.26	0	0	0	0	5.26
E	5.55	0	0	0	0	5.55
SE	8.25	0	0	0	0	8.25
S	32.86	0	0	0	0	32.86
SW	14.65	0	0	0	0	14.65
W	11.52	0	0	0	0	11.52
NW	5.55	0	0	0	0	5.55
Summary	100	0	0	0	0	100


PRAMP RENO Poll.: PRAMP RENO-TRS[ppb] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
40
35
30
25
20
15
10
5
% Icon Classes (ppb)
100 0-2
0 2-5
0 5-10
0 10-50
0 >50.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - January 2020

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

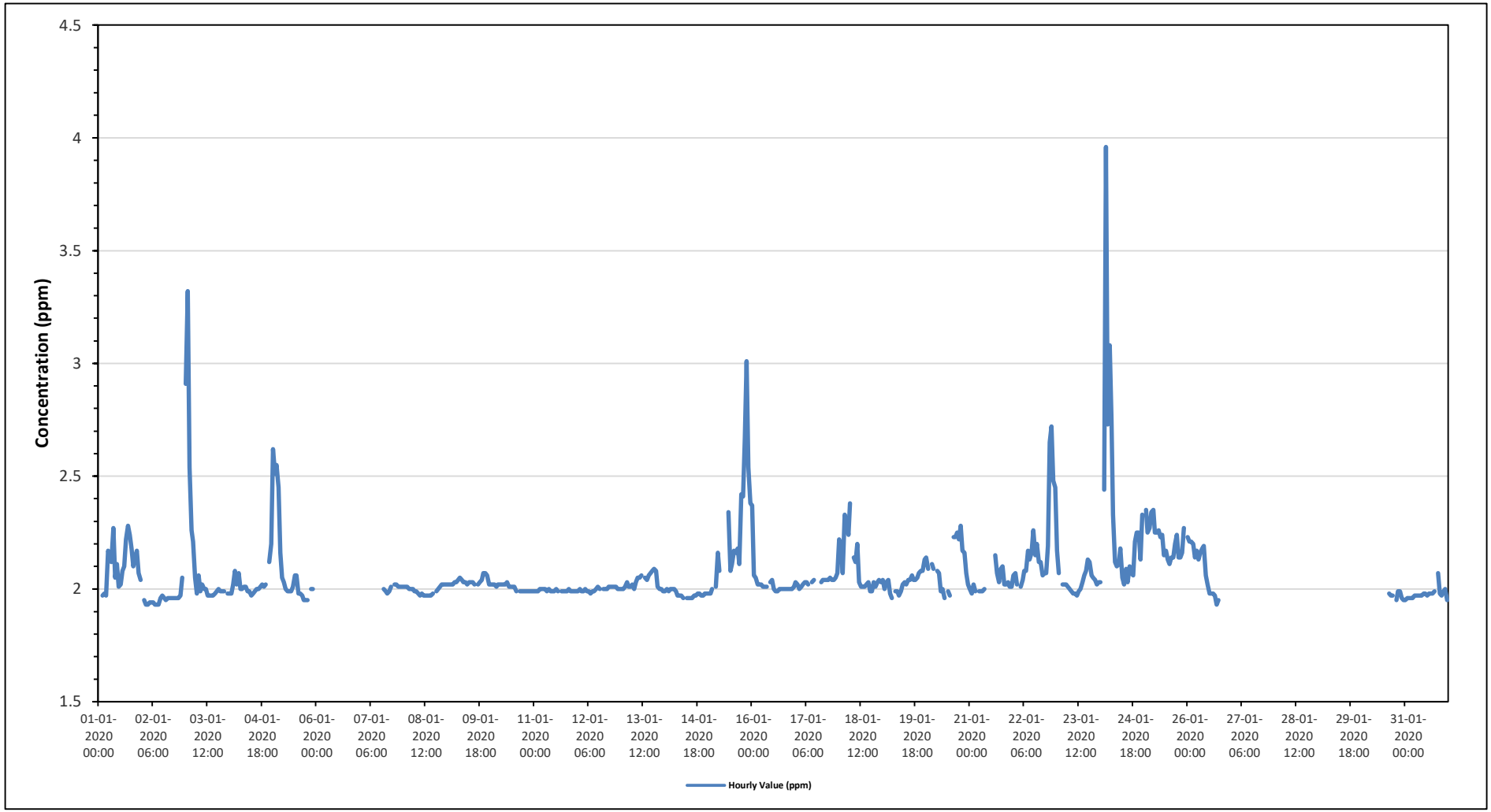
Maximum Hourly Value:	3.96	ppm	on January 24 at hour 3	Hours in Service:	744
Maximum Daily Value:	2.32	ppm	on January 24	Hours of Data:	563
Minimum Hourly Value:	1.93	ppm	on January 2 at hour 2	Hours of Missing Data:	150
Minimum Daily Value:	1.95	ppm	on January 2	Hours of Calibration:	31
Monthly Average:	2.07	ppm		Operational Uptime:	79.8

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	2.02	S	1.97	1.98	1.97	2.17	2.15	2.12	2.27	2.05	2.11	2.01	2.02	2.08	2.1	2.22	2.28	2.24	2.18	2.1	2.14	2.17	2.07	2.04	1.97	2.28	2.11
Jan 2	S	1.95	1.93	1.93	1.94	1.94	1.94	1.93	1.93	1.93	1.96	1.97	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	2.05	S	1.93	2.05	1.95
Jan 3	2.91	3.32	2.54	2.26	2.21	2.05	1.98	2.06	1.99	2.02	2	2	1.97	1.97	1.97	1.97	1.98	1.99	2	1.99	1.99	1.99	S	1.98	1.97	3.32	2.14
Jan 4	1.98	1.98	2.02	2.08	2.02	2.07	2	2	2.01	2.01	1.99	1.99	1.97	1.98	1.99	2	2	2.01	2.02	2.01	2.02	S	2.12	2.2	1.97	2.20	2.02
Jan 5	2.62	2.51	2.55	2.45	2.16	2.05	2.03	2	1.99	1.99	1.99	2.01	2.06	2.06	1.98	1.98	1.97	1.95	1.95	1.95	S	2	2	X	1.95	2.62	2.10
Jan 6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	Y	Y	Y	Y	Y	Y	-	-	-
Jan 7	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	2	1.99	1.98	1.99	2.01	S	2.02	2.02	2.01	2.01	2.01	1.98	2.02	-
Jan 8	2.01	2.01	2.01	2	2	2	1.99	1.99	1.98	1.97	1.98	1.97	1.97	1.97	1.97	1.97	1.98	S	1.99	2	2.01	2.02	2.02	2.02	1.97	2.02	1.99
Jan 9	2.02	2.02	2.02	2.02	2.03	2.03	2.04	2.05	2.04	2.03	2.03	2.02	2.03	2.03	2.03	2.02	S	2.02	2.03	2.04	2.07	2.07	2.06	2.02	2.02	2.07	2.03
Jan 10	2.02	2.02	2.02	2.01	2.02	2.02	2.02	2.02	2.02	2.03	2.01	2.01	2.01	2.01	1.99	S	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.03	2.01
Jan 11	1.99	1.99	1.99	2	2	2	2	1.99	2	1.99	1.99	1.99	2	1.99	S	1.99	1.99	1.99	1.99	2	1.99	1.99	1.99	1.99	1.99	2.00	1.99
Jan 12	1.99	2	1.99	1.99	2	1.99	1.99	1.98	1.99	1.99	2	2.01	2	S	2	2	2	2.01	2.01	2.01	2.01	2.01	2	2	1.98	2.01	2.00
Jan 13	2	2	2.01	2.03	2.01	2.01	2.02	2	2.03	2.05	2.05	2.06	S	2.05	2.04	2.06	2.07	2.08	2.09	2.08	2.01	2	2	1.99	1.99	2.09	2.03
Jan 14	1.99	2	1.99	2	2	2	1.99	1.97	1.97	1.97	1.96	S	1.96	1.96	1.96	1.96	1.97	1.97	1.98	1.98	1.97	1.97	1.98	1.98	1.96	2.00	1.98
Jan 15	1.98	1.98	2	X	2.01	2.16	2.08	NRM	NRM	NRM	S	2.34	2.08	2.11	2.17	2.16	2.18	2.11	2.42	2.41	2.67	3.01	2.54	2.38	1.98	3.01	2.25
Jan 16	2.37	2.06	2.05	2.02	2.02	2.02	2.01	2.01	2.01	S	2.03	2.04	2	1.99	1.99	2	2	2	2	2	2	2	2	2.01	1.99	2.37	2.03
Jan 17	2.03	2.02	2	2.01	2.02	2.03	2.03	2.02	S	2.03	2.04	NRM	NRM	NRM	2.03	2.04	2.04	2.04	2.04	2.05	2.04	2.04	2.05	2.07	2.00	2.07	2.03
Jan 18	2.22	2.19	2.07	2.33	2.3	2.24	2.38	S	2.14	2.12	2.2	2.03	2.01	2.01	2.01	2.02	2.03	1.99	1.99	2.03	2.01	2.03	2.04	2.03	1.99	2.38	2.11
Jan 19	2.04	2	2.03	2.04	1.98	1.96	S	1.99	1.99	1.97	1.99	2.02	2.03	2.02	2.04	2.04	2.06	2.04	2.04	2.05	2.07	2.08	2.08	2.13	1.96	2.13	2.03
Jan 20	2.14	2.09	X	X	X	X	X	X	X	X	X	NRM	1.99	1.97	NRM	2.23	2.23	2.25	2.22	2.28	2.17	2.16	2.07	2.02	1.97	2.28	-
Jan 21	2	1.98	2.02	1.99	S	1.99	1.99	1.99	2	NRM	NRM	NRM	NRM	NRM	2.15	2.07	2.03	2.09	2.1	2.02	2.02	2.03	2.01	2.01	1.98	2.15	2.03
Jan 22	2.06	2.07	2.02	S	2.01	2.04	2.08	2.08	2.17	2.13	2.16	2.26	2.15	2.2	2.12	2.12	2.06	2.07	2.07	2.19	2.65	2.72	2.48	2.45	2.01	2.72	2.19
Jan 23	2.17	2.07	S	2.02	2.02	2.02	2.01	2	1.99	1.98	1.98	1.97	1.99	2	2.03	2.06	2.08	2.13	2.12	2.06	2.05	2.04	2.02	2.03	1.97	2.17	2.04
Jan 24	2.03	S	2.44	3.96	2.73	3.08	2.75	2.33	2.12	2.1	2.11	2.18	2.05	2.02	2.09	2.03	2.1	2.07	2.06	2.21	2.25	2.25	2.13	2.33	2.02	3.96	2.32
Jan 25	S	2.35	2.25	2.27	2.34	2.35	2.25	2.25	2.26	2.23	2.24	2.15	2.17	2.13	2.11	2.14	2.14	2.2	2.24	2.14	2.14	2.16	2.27	S	2.11	2.35	2.22
Jan 26	2.23	2.21	2.21	2.2	2.14	2.17	2.13	2.16	2.18	2.19	2.06	2.02	1.98	1.98	1.98	1.97	1.93	1.95	Y	X	X	X	X	X	1.93	2.23	2.09
Jan 27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Jan 28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	X	X	X	X	X	X	-	-	-
Jan 29	X	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	-	-	-
Jan 30	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	1.98	1.97	1.97	S	1.95	1.99	1.99	1.96	1.95	1.95	1.99	-
Jan 31	1.95	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.97	1.97	1.98	1.98	1.97	1.98	1.98	1.98	1.99	S	2.07	1.98	1.97	1.99	2	1.95	1.95	2.07	1.98
Diurnal Maximum	2.91	3.32	2.55	3.96	2.73	3.08	2.75	2.33	2.27	2.23	2.24	2.34	2.17	2.20	2.17	2.23	2.28	2.25	2.42	2.41	2.67	3.01	2.54	2.45			
Diurnal Average	2.12	2.12	2.09	2.16	2.08	2.10	2.08	2.04	2.05	2.04	2.04	2.05	2.02	2.02	2.03	2.04	2.04	2.05	2.07	2.06	2.09	2.11	2.08	2.07			

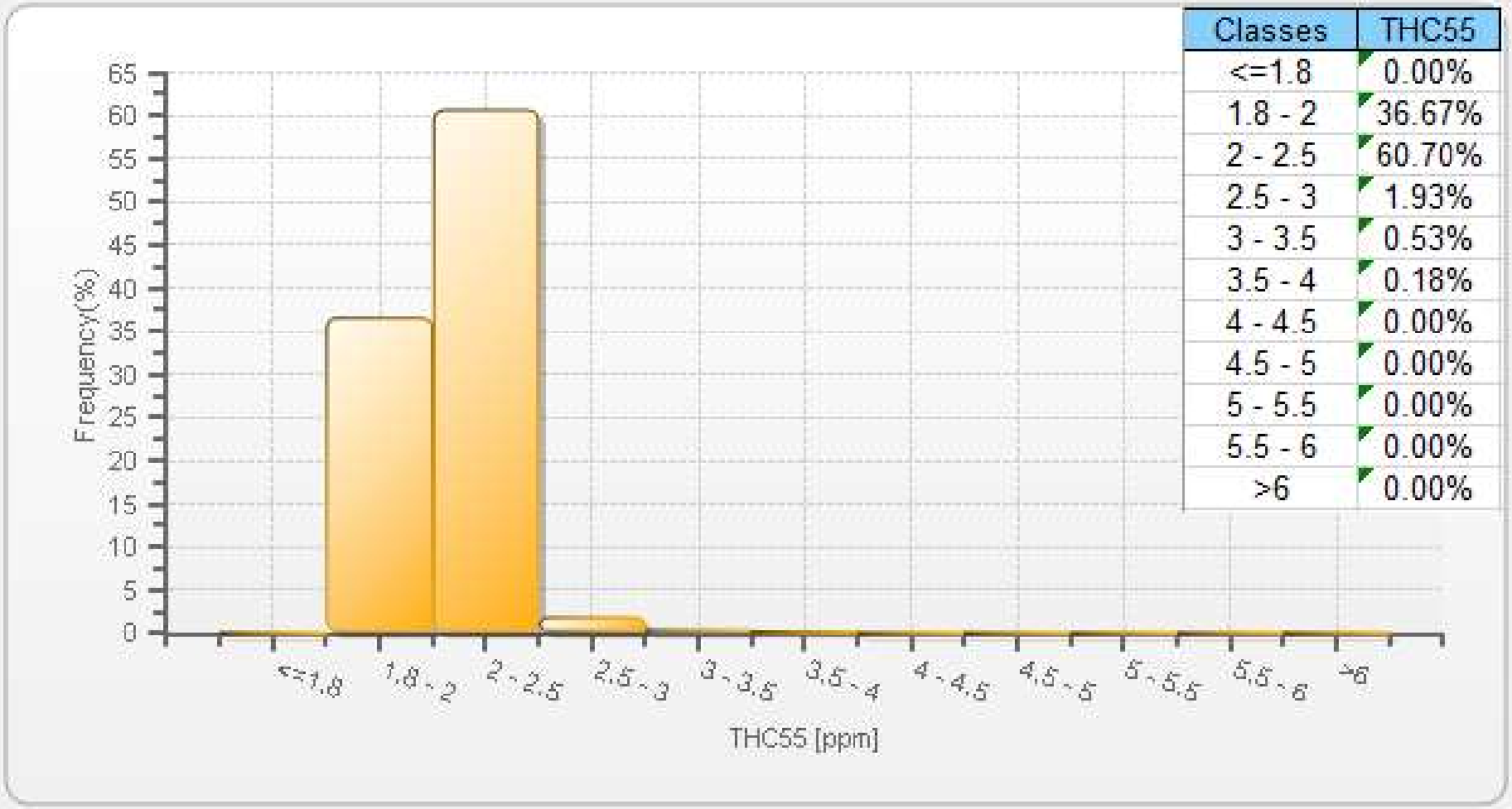
C	Monthly Calibration	S	Daily Zero-Span Check	Y	Routine Maintenance	P	Power Failure
K	Collection Error	N	No Data (Machine Not in Service)	Q	Quality Assurance		
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)				

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 THC - Reno Station



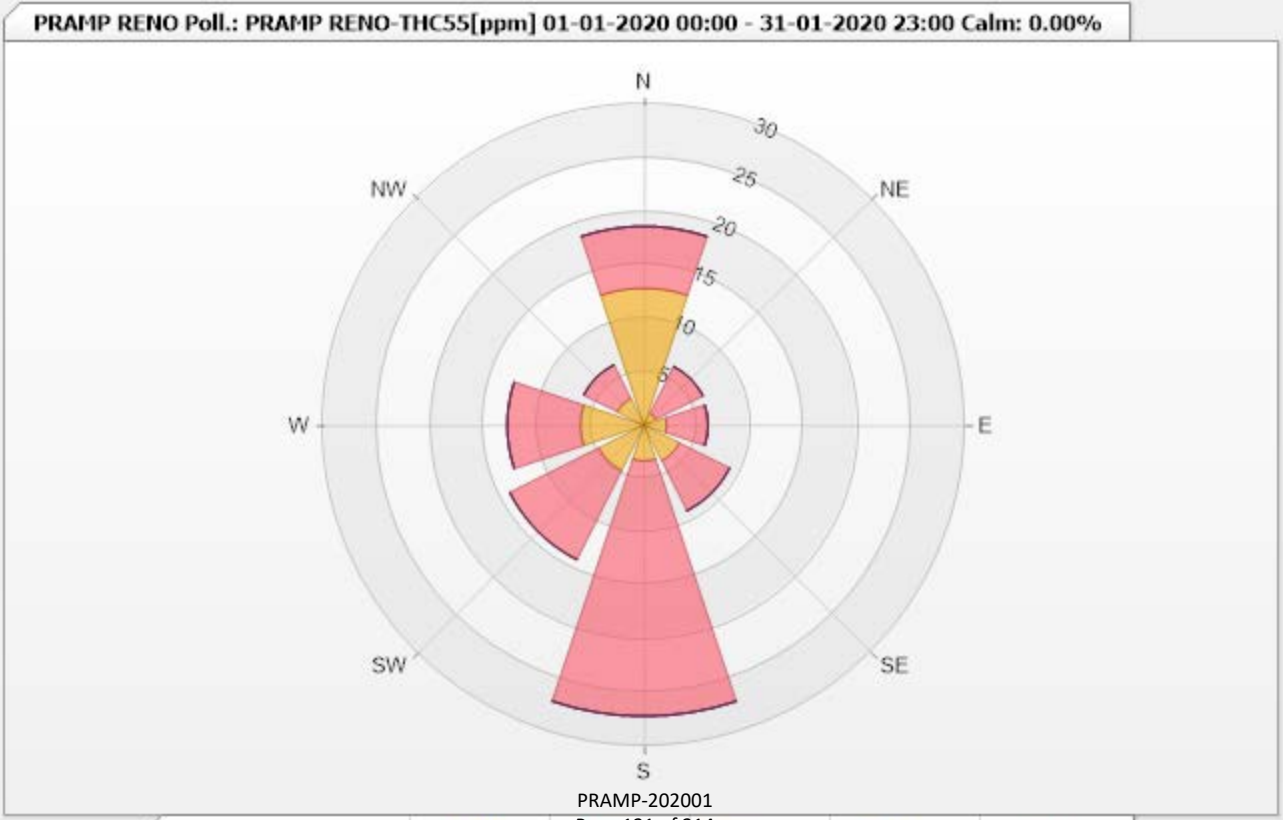
THC55[ppm] Histogram: PRAMP RENO Monthly: 01-2020 1 Hr.



Classes	THC55
<=1.8	0.00%
1.8 - 2	36.67%
2 - 2.5	60.70%
2.5 - 3	1.93%
3 - 3.5	0.53%
3.5 - 4	0.18%
4 - 4.5	0.00%
4.5 - 5	0.00%
5 - 5.5	0.00%
5.5 - 6	0.00%
>6	0.00%

Wind: PRAMP RENO Poll.: PRAMP RENO-THC55[ppm] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 76.61% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	12.81	5.79	0	0	0	18.6
NE	1.23	4.91	0	0	0	6.14
E	2.11	3.86	0	0	0	5.97
SE	3.68	5.26	0	0	0	8.94
S	3.33	23.86	0	0	0	27.19
SW	4.74	9.3	0	0	0	14.04
W	5.96	6.84	0	0	0	12.8
NW	2.81	3.51	0	0	0	6.32
Summary	36.67	63.33	0	0	0	100


PRAMP RENO Poll.: PRAMP RENO-THC55[ppm] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
30
25
20
15
10
5
% Icon Classes (ppm)
37 0-2
63 2-5
0 5-10
0 10-40
0 >40.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - January 2020

Summary of Hourly Averages

METHANE (CH4) in ppm

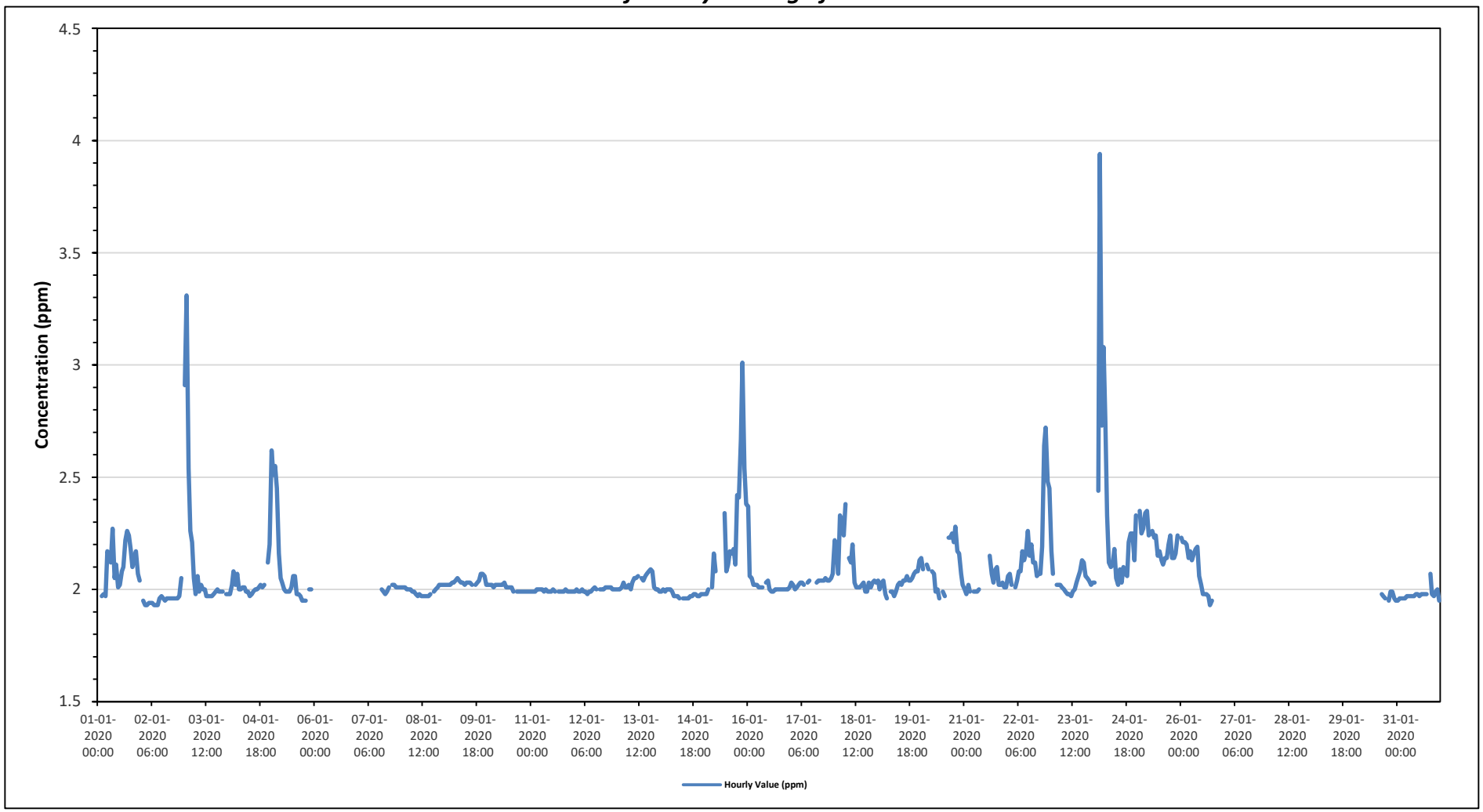
Maximum Hourly Value:	3.94	ppm	on January 24 at hour 3	Hours in Service:	744
Maximum Daily Value:	2.32	ppm	on January 24	Hours of Data:	563
Minimum Hourly Value:	1.93	ppm	on January 2 at hour 2	Hours of Missing Data:	150
Minimum Daily Value:	1.95	ppm	on January 2	Hours of Calibration:	31
Monthly Average:	2.07	ppm		Operational Uptime:	79.8

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	2.02	S	1.97	1.98	1.97	2.17	2.15	2.12	2.27	2.05	2.11	2.01	2.02	2.08	2.1	2.22	2.26	2.24	2.18	2.1	2.14	2.17	2.07	2.04	1.97	2.27	2.11
Jan 2	S	1.95	1.93	1.93	1.94	1.94	1.94	1.93	1.93	1.93	1.96	1.97	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	2.05	S	1.93	2.05	1.95
Jan 3	2.91	3.31	2.54	2.26	2.21	2.05	1.98	2.06	1.99	2.02	2	2	1.97	1.97	1.97	1.97	1.98	1.99	2	1.99	1.99	1.99	S	1.98	1.97	3.31	2.14
Jan 4	1.98	1.98	2.02	2.08	2.02	2.07	2	2	2.01	2.01	1.99	1.99	1.97	1.98	1.99	2	2	2.01	2.02	2.01	2.02	S	2.12	2.2	1.97	2.20	2.02
Jan 5	2.62	2.51	2.55	2.45	2.16	2.05	2.03	2	1.99	1.99	1.99	2.01	2.06	2.06	1.98	1.98	1.97	1.95	1.95	1.95	S	2	2	X	1.95	2.62	2.10
Jan 6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	Y	Y	Y	Y	Y	Y	-	-	-
Jan 7	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	2	1.99	1.98	1.99	2.01	S	2.02	2.02	2.01	2.01	2.01	1.98	2.02	-
Jan 8	2.01	2.01	2.01	2	2	2	1.99	1.99	1.98	1.97	1.98	1.97	1.97	1.97	1.97	1.97	1.98	S	1.99	2	2.01	2.02	2.02	2.02	1.97	2.02	1.99
Jan 9	2.02	2.02	2.02	2.02	2.03	2.03	2.04	2.05	2.04	2.03	2.03	2.02	2.03	2.03	2.03	2.02	S	2.02	2.03	2.04	2.07	2.07	2.06	2.02	2.02	2.07	2.03
Jan 10	2.02	2.02	2.02	2.01	2.02	2.02	2.02	2.02	2.02	2.03	2.01	2.01	2.01	2.01	1.99	S	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.03	2.01
Jan 11	1.99	1.99	1.99	2	2	2	2	1.99	2	1.99	1.99	1.99	2	1.99	S	1.99	1.99	1.99	1.99	2	1.99	1.99	1.99	1.99	1.99	2.00	1.99
Jan 12	1.99	2	1.99	1.99	2	1.99	1.99	1.98	1.99	1.99	2	2.01	2	S	2	2	2	2.01	2.01	2.01	2.01	2	2	2	1.98	2.01	2.00
Jan 13	2	2	2.01	2.03	2.01	2.01	2.02	2	2.03	2.05	2.05	2.06	S	2.05	2.04	2.06	2.07	2.08	2.09	2.08	2.01	2	2	1.99	1.99	2.09	2.03
Jan 14	1.99	2	1.99	2	2	2	1.99	1.97	1.97	1.97	1.96	S	1.96	1.96	1.96	1.96	1.97	1.97	1.98	1.98	1.97	1.97	1.98	1.98	1.96	2.00	1.98
Jan 15	1.98	1.98	2	X	2.01	2.16	2.08	NRM	NRM	NRM	S	2.34	2.08	2.11	2.17	2.16	2.18	2.11	2.42	2.41	2.67	3.01	2.54	2.38	1.98	3.01	2.25
Jan 16	2.37	2.06	2.05	2.02	2.02	2.02	2.01	2.01	2.01	S	2.03	2.04	2	1.99	1.99	2	2	2	2	2	2	2	2	2.01	1.99	2.37	2.03
Jan 17	2.03	2.02	2	2.01	2.02	2.03	2.03	2.02	S	2.03	2.04	NRM	NRM	NRM	2.03	2.04	2.04	2.04	2.04	2.04	2.05	2.04	2.04	2.05	2.07	2.00	2.07	2.03
Jan 18	2.22	2.19	2.07	2.33	2.3	2.24	2.38	S	2.14	2.12	2.2	2.03	2.01	2.01	2.01	2.02	2.03	1.99	1.99	2.03	2.01	2.03	2.04	2.03	1.99	2.38	2.11
Jan 19	2.04	2	2.03	2.04	1.98	1.96	S	1.99	1.99	1.97	1.99	2.02	2.03	2.02	2.04	2.04	2.06	2.04	2.04	2.05	2.07	2.08	2.08	2.13	1.96	2.13	2.03
Jan 20	2.14	2.09	X	X	X	X	X	X	X	X	X	NRM	1.99	1.97	NRM	2.23	2.23	2.25	2.21	2.28	2.17	2.16	2.07	2.02	1.97	2.28	-
Jan 21	2	1.98	2.02	1.99	S	1.99	1.99	1.99	2	NRM	NRM	NRM	NRM	NRM	2.15	2.07	2.03	2.09	2.1	2.02	2.02	2.03	2.01	2.01	1.98	2.15	2.03
Jan 22	2.06	2.07	2.02	S	2.01	2.04	2.08	2.08	2.17	2.13	2.16	2.26	2.15	2.2	2.12	2.12	2.06	2.07	2.07	2.19	2.64	2.72	2.48	2.45	2.01	2.72	2.19
Jan 23	2.17	2.07	S	2.02	2.02	2.02	2.01	2	1.99	1.98	1.98	1.97	1.99	2	2.03	2.06	2.08	2.13	2.12	2.06	2.05	2.04	2.02	2.03	1.97	2.17	2.04
Jan 24	2.03	S	2.44	3.94	2.73	3.08	2.75	2.33	2.12	2.1	2.11	2.18	2.05	2.02	2.09	2.03	2.1	2.07	2.06	2.21	2.25	2.25	2.13	2.33	2.02	3.94	2.32
Jan 25	S	2.35	2.25	2.27	2.34	2.35	2.24	2.25	2.26	2.23	2.24	2.15	2.17	2.13	2.11	2.14	2.14	2.2	2.24	2.14	2.14	2.16	2.24	S	2.11	2.35	2.22
Jan 26	2.23	2.21	2.21	2.2	2.14	2.17	2.13	2.16	2.18	2.19	2.06	2.02	1.98	1.98	1.98	1.97	1.93	1.95	Y	X	X	X	X	X	1.93	2.23	2.09
Jan 27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Jan 28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	X	X	X	X	X	X	-	-	-
Jan 29	X	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	-	-	-
Jan 30	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	1.98	1.97	1.96	S	1.95	1.99	1.99	1.96	1.95	1.95	1.99	-
Jan 31	1.95	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.97	1.97	1.98	1.98	1.97	1.98	1.98	1.98	1.98	S	2.07	1.98	1.97	1.99	2	1.95	1.95	2.07	1.98
Diurnal Maximum	2.91	3.31	2.55	3.94	2.73	3.08	2.75	2.33	2.27	2.23	2.24	2.34	2.17	2.20	2.17	2.23	2.26	2.25	2.42	2.41	2.67	3.01	2.54	2.45			
Diurnal Average	2.12	2.12	2.09	2.16	2.08	2.10	2.08	2.04	2.05	2.04	2.04	2.05	2.02	2.02	2.03	2.04	2.04	2.04	2.06	2.06	2.09	2.11	2.08	2.07			

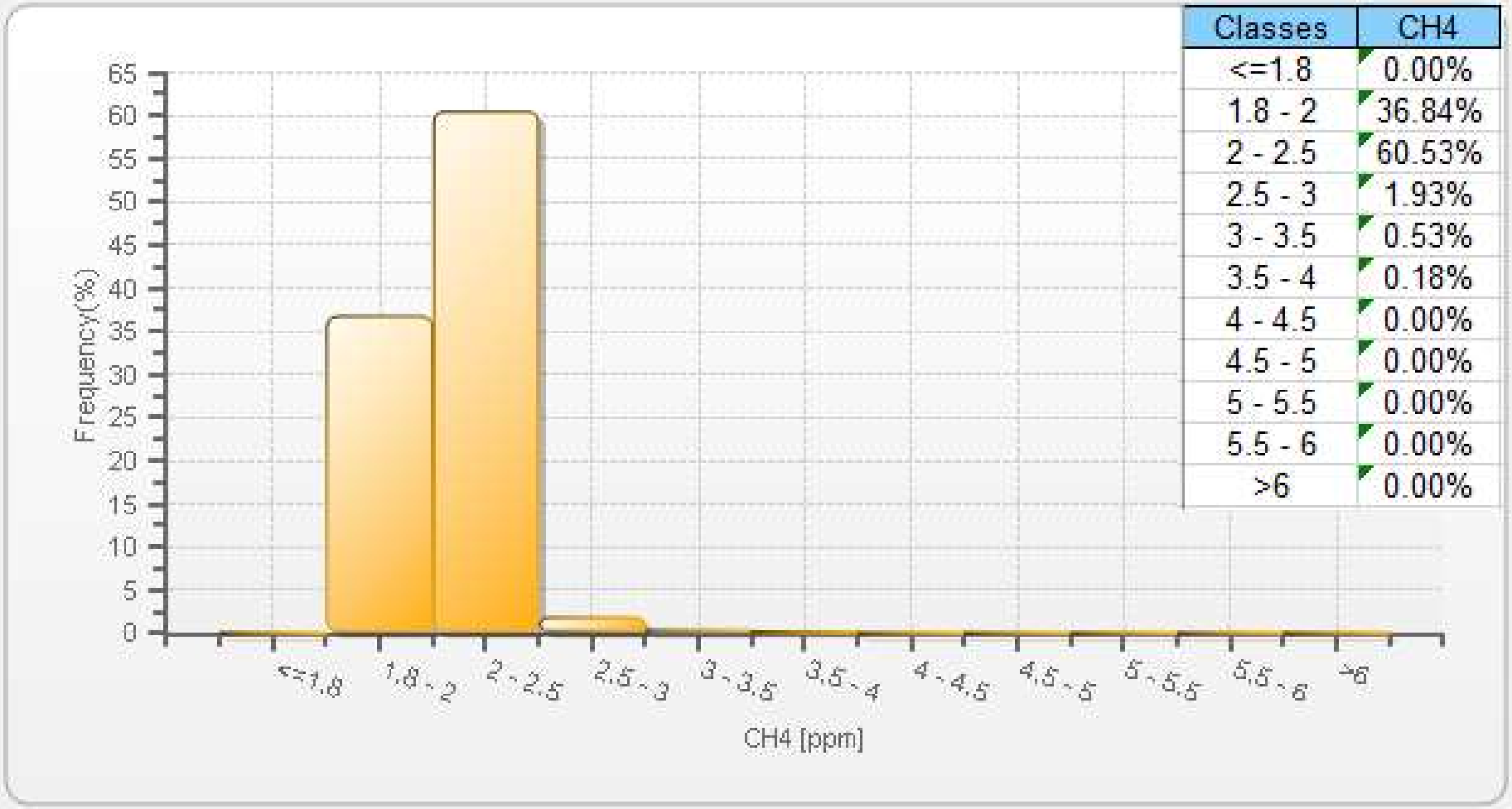
C	Monthly Calibration	S	Daily Zero-Span Check	Y	Routine Maintenance	P	Power Failure
K	Collection Error	N	No Data (Machine Not in Service)	Q	Quality Assurance		
X	InValid Data (Equipment Malfunction /Recovery)	NRM	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine Maintenance)				

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

Timeseries Chart of Hourly Average for CH4 - Reno Station



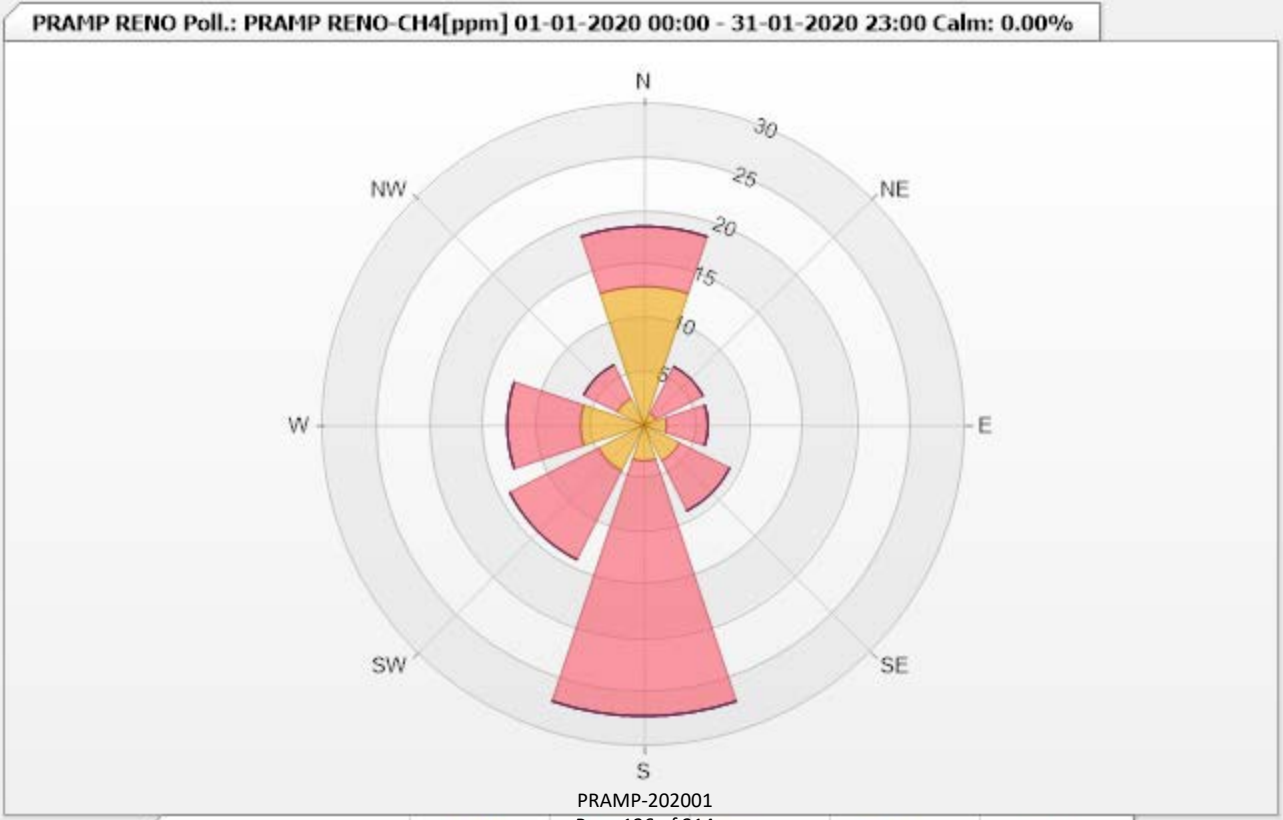
CH4[ppm] Histogram: PRAMP RENO Monthly: 01-2020 1 Hr.



Classes	CH4
<=1.8	0.00%
1.8 - 2	36.84%
2 - 2.5	60.53%
2.5 - 3	1.93%
3 - 3.5	0.53%
3.5 - 4	0.18%
4 - 4.5	0.00%
4.5 - 5	0.00%
5 - 5.5	0.00%
5.5 - 6	0.00%
>6	0.00%

Wind: PRAMP RENO Poll.: PRAMP RENO-CH4[ppm] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 76.61% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	12.98	5.61	0	0	0	18.59
NE	1.23	4.91	0	0	0	6.14
E	2.11	3.86	0	0	0	5.97
SE	3.68	5.26	0	0	0	8.94
S	3.33	23.86	0	0	0	27.19
SW	4.74	9.3	0	0	0	14.04
W	5.96	6.84	0	0	0	12.8
NW	2.81	3.51	0	0	0	6.32
Summary	36.84	63.15	0	0	0	100


PRAMP RENO Poll.: PRAMP RENO-CH4[ppm] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
30
25
20
15
10
5
% Icon Classes (ppm)
37 0-2
63 2-5
0 5-10
0 10-20
0 >20.0

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PEACE RIVER AREA MONITORING PROGRAM

Reno Station - January 2020

Summary of Hourly Averages

NON-METHANE HYDROCARBONS (NMHC) in ppm

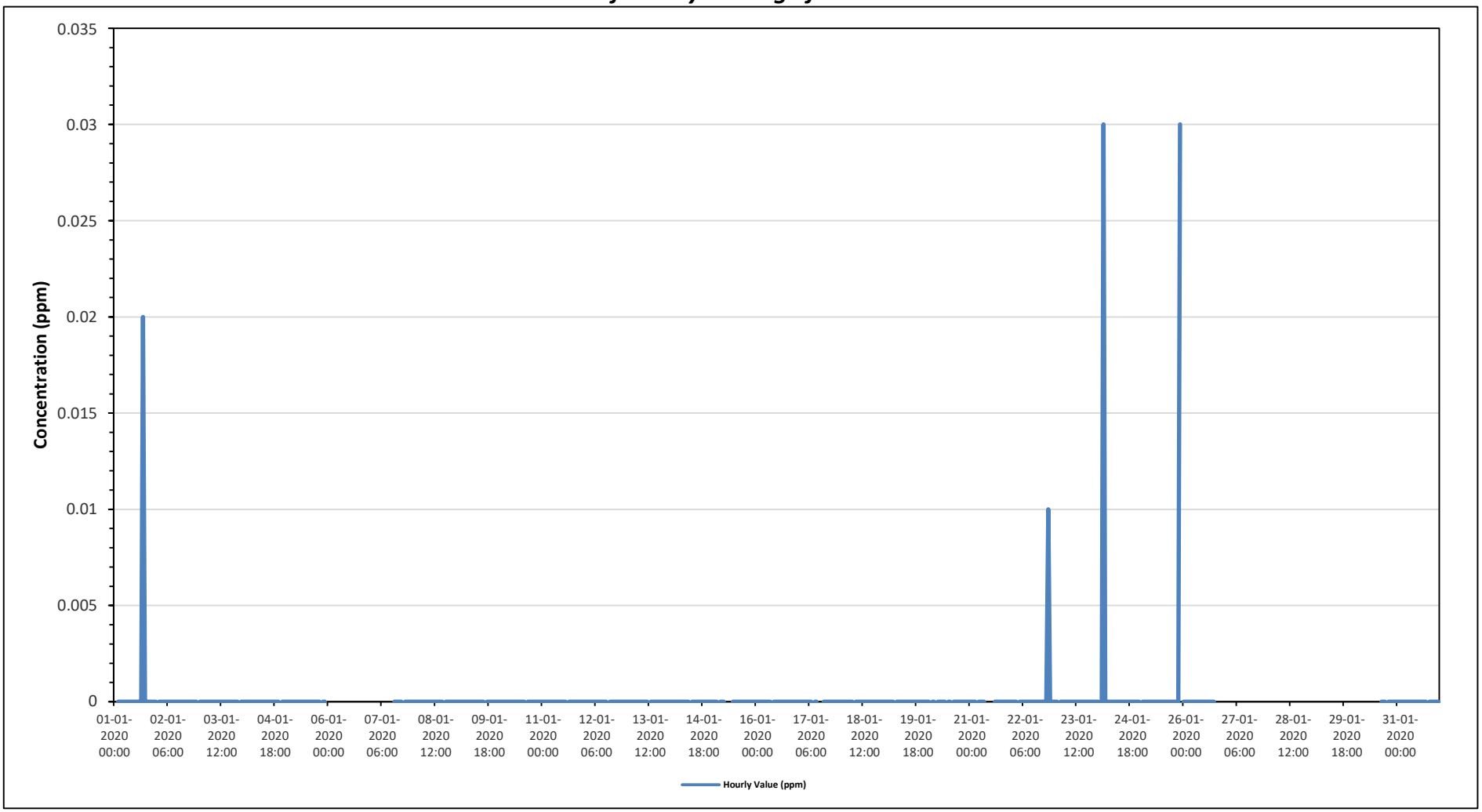
Maximum Hourly Value:	0.03	ppm	on January 24 at hour 3	Hours in Service:	744
Maximum Daily Value:	0.00	ppm	on January 25	Hours of Data:	563
Minimum Hourly Value:	0.00	ppm	on January 1 at hour 0	Hours of Missing Data:	150
Minimum Daily Value:	0.00	ppm	on January 2	Hours of Calibration:	31
Monthly Average:	0.00	ppm		Operational Uptime:	79.8

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	0	0	0	0	0	0	0	0.00	0.02	0.00
Jan 2	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.00	0.00	0.00
Jan 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.00	0.00	0.00
Jan 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.00	0.00	0.00
Jan 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	X	0.00	0.00	0.00
Jan 6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	Y	Y	Y	Y	Y	Y	-	-	-
Jan 7	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	0	0	0	0	0	S	0	0	0	0	0	0.00	0.00	-
Jan 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.00	0.00	0.00
Jan 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 12	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 13	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 14	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 15	0	0	0	X	0	0	0	NRM	NRM	NRM	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 16	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 17	0	0	0	0	0	0	0	0	S	0	0	NRM	NRM	NRM	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 18	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 19	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 20	0	0	X	X	X	X	X	X	X	X	X	NRM	0	0	NRM	0	0	0	0	0	0	0	0	0	0.00	0.00	-
Jan 21	0	0	0	0	S	0	0	0	0	NRM	NRM	NRM	NRM	NRM	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 22	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0.00	0.01	0.00
Jan 23	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 24	0	S	0	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	**0.03**	0.00
Jan 25	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03	S	0.00	**0.03**	**0.00**
Jan 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Y	X	X	X	X	X	0.00	0.00	0.00
Jan 27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
Jan 28	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	X	X	X	X	X	X	-	-	-
Jan 29	X	X	X	X	X	X	X	X	X	X	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	-	-	-
Jan 30	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	NRM	0	0	0	S	0	0	0	0	0	0.00	0.00	-
Jan 31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.00	0.00	0.00
Diurnal Maximum	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.00	0.03	0.00			
Diurnal Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			

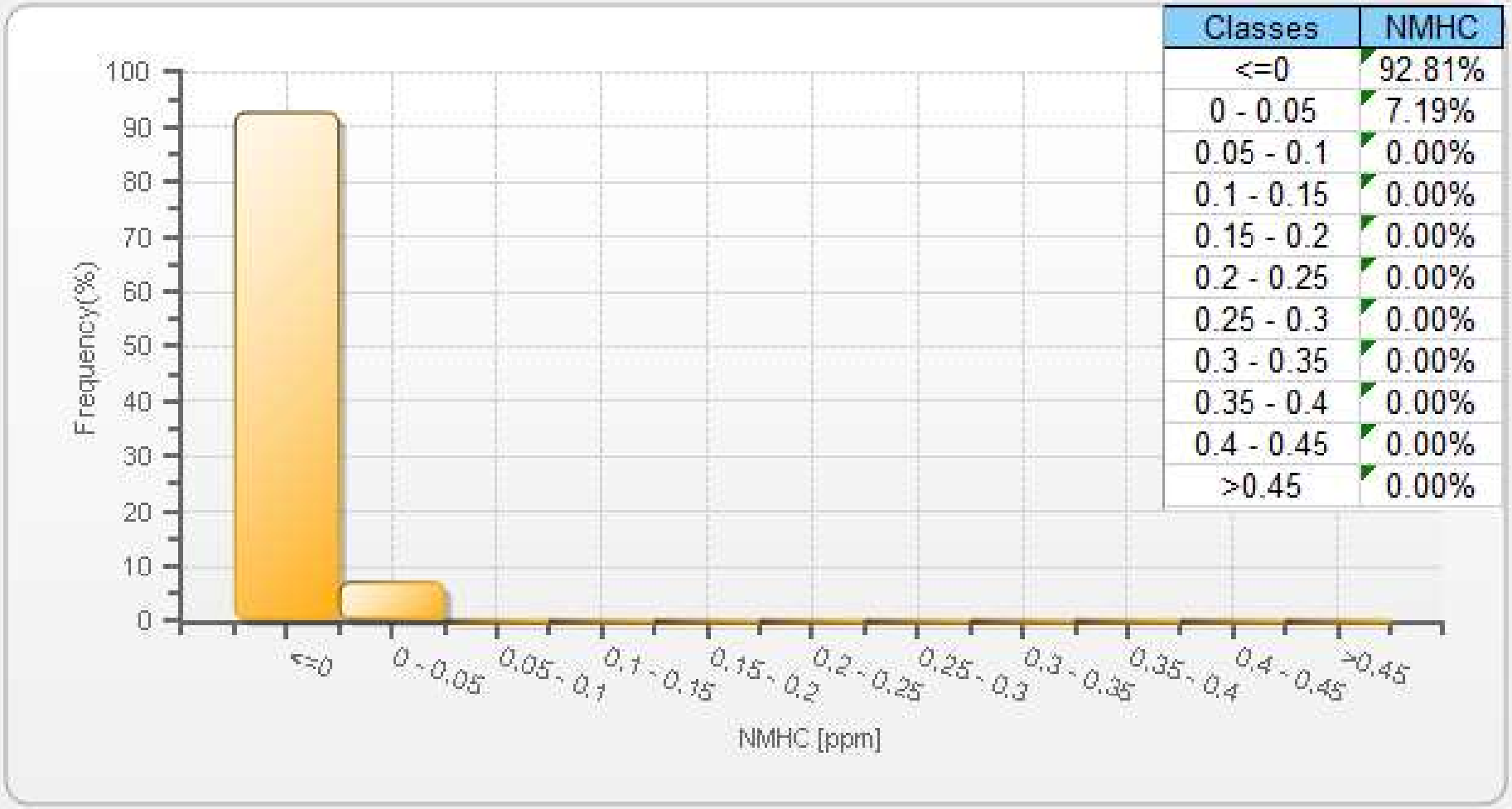
C	Monthly Calibration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Equipment Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine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

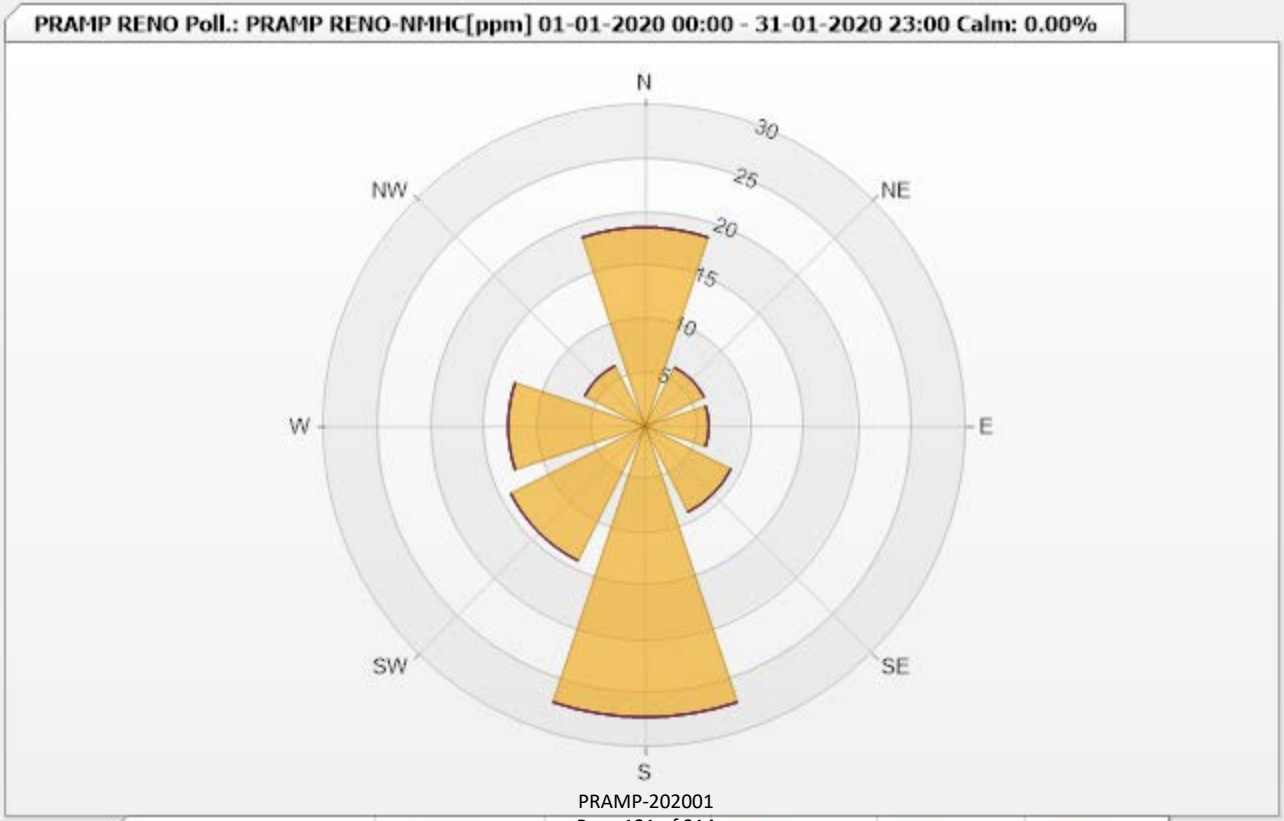


NMHC[ppm] Histogram: PRAMP RENO Monthly: 01-2020 1 Hr.



Wind: PRAMP RENO Poll.: PRAMP RENO-NMHC[ppm] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 76.61% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	18.6	0	0	0	0	18.6
NE	6.14	0	0	0	0	6.14
E	5.96	0	0	0	0	5.96
SE	8.95	0	0	0	0	8.95
S	27.19	0	0	0	0	27.19
SW	14.04	0	0	0	0	14.04
W	12.81	0	0	0	0	12.81
NW	6.32	0	0	0	0	6.32
Summary	100	0	0	0	0	100


PRAMP RENO Poll.: PRAMP RENO-NMHC[ppm] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
30
25
20
15
10
5
% 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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PEACE RIVER AREA MONITORING PROGRAM

Reno Station - January 2020

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

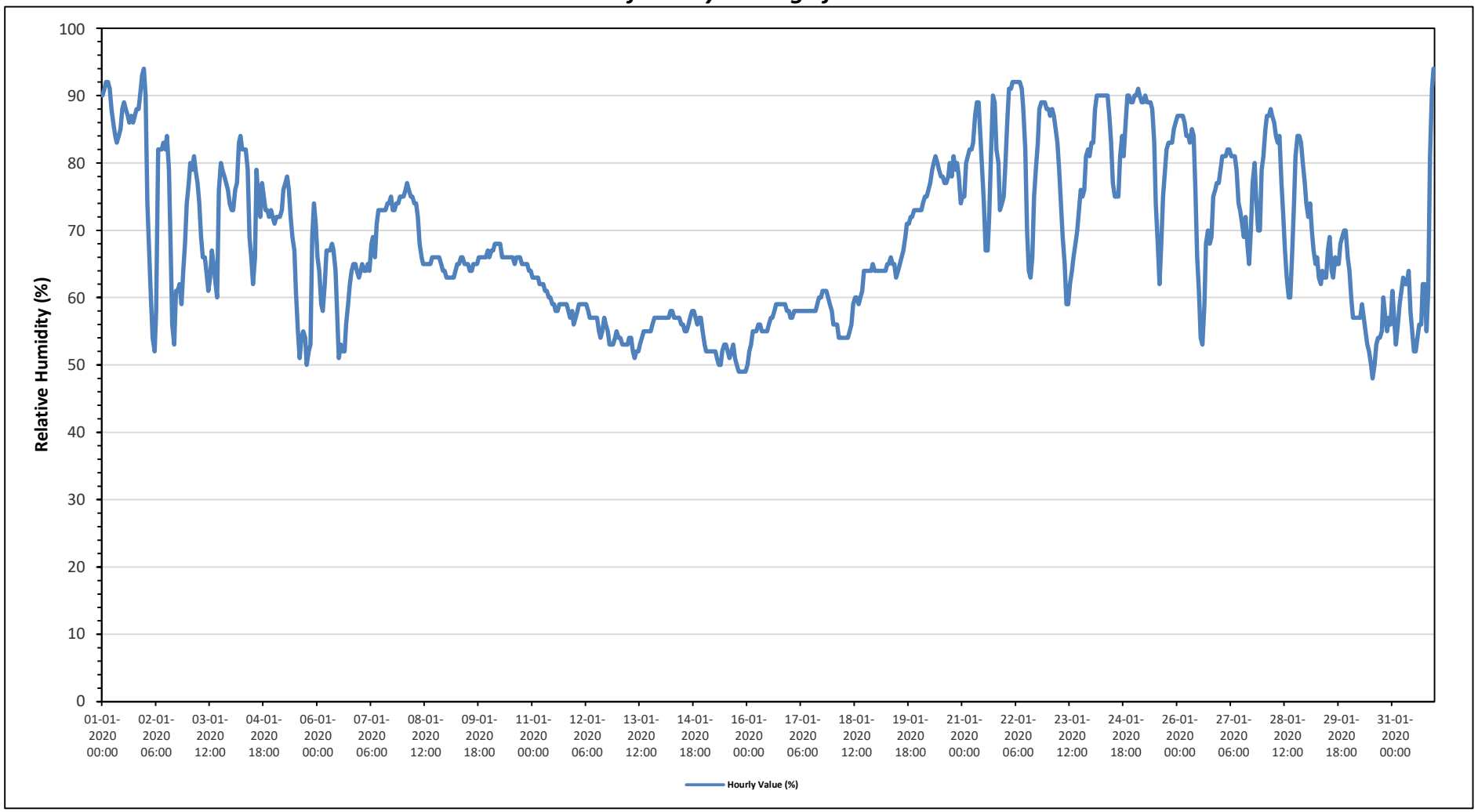
Maximum Hourly Value:	94	%	on January 1 at hour 23	Hours in Service:	744
Maximum Daily Value:	88.2	%	on January 1	Hours of Data:	744
Minimum Hourly Value:	48	%	on January 30 at hour 13	Hours of Missing Data:	0
Minimum Daily Value:	51.2	%	on January 15	Hours of Calibration:	0
Monthly Average:	68.3	%		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	90	91	92	92	91	88	86	84	83	84	85	88	89	88	87	86	87	86	87	88	88	90	93	**94**	83	**94**	**88.2**
Jan 2	90	74	67	60	54	52	58	82	82	82	83	82	84	79	67	56	53	61	61	62	59	64	68	74	52	90	68.9
Jan 3	77	80	79	81	79	77	74	69	66	66	64	61	63	67	65	62	60	76	80	79	78	77	76	74	60	81	72.1
Jan 4	73	73	76	77	83	84	82	82	82	79	69	66	62	66	79	74	72	77	75	73	73	72	73	72	62	84	74.8
Jan 5	71	72	72	72	73	76	77	78	76	72	69	67	61	55	51	54	55	54	50	52	53	69	74	71	50	78	65.6
Jan 6	66	64	59	58	62	67	67	67	68	67	64	57	51	53	52	52	56	59	62	64	65	65	64	63	51	68	61.3
Jan 7	64	65	64	64	65	64	68	69	66	71	73	73	73	73	73	74	74	75	73	73	74	74	75	75	64	75	70.5
Jan 8	75	76	77	76	75	75	74	74	72	68	66	65	65	65	65	65	66	66	66	66	66	65	64	64	64	77	69.0
Jan 9	63	63	63	63	63	64	65	65	66	66	65	65	65	64	64	65	65	65	66	66	66	66	66	67	63	67	64.8
Jan 10	66	67	67	68	68	68	68	66	66	66	66	66	66	66	65	66	66	66	65	65	65	65	64	64	64	68	66.0
Jan 11	63	63	63	63	62	62	62	61	61	60	60	59	59	58	58	59	59	59	59	59	58	57	58	56	56	63	59.9
Jan 12	57	58	59	59	59	59	59	58	57	57	57	57	57	55	54	55	57	56	55	53	53	53	54	55	53	59	56.4
Jan 13	54	54	53	53	53	53	54	54	52	51	52	52	53	54	55	55	55	55	55	56	57	57	57	57	51	57	54.2
Jan 14	57	57	57	57	57	58	58	57	57	57	57	56	56	55	55	56	57	58	58	57	56	57	57	55	55	58	56.8
Jan 15	53	52	52	52	52	52	52	51	50	50	52	53	53	52	51	52	53	51	50	49	49	49	49	49	49	53	51.2
Jan 16	50	52	53	55	55	55	56	56	55	55	55	55	56	57	57	58	59	59	59	59	59	59	58	58	50	59	56.3
Jan 17	57	57	58	58	58	58	58	58	58	58	58	58	58	58	58	59	60	60	61	61	61	60	59	58	57	61	58.6
Jan 18	56	56	56	54	54	54	54	54	54	55	56	59	60	60	59	60	61	64	64	64	64	64	65	64	54	65	58.8
Jan 19	64	64	64	64	64	64	65	65	66	65	65	63	64	65	66	67	69	71	71	72	72	73	73	73	63	73	67.0
Jan 20	73	73	74	75	75	76	77	79	80	81	80	79	78	78	77	77	78	80	78	81	79	80	78	74	73	81	77.5
Jan 21	75	75	80	81	82	82	83	87	89	89	84	79	74	67	67	72	82	90	89	82	80	73	74	75	67	90	79.6
Jan 22	80	86	91	91	92	92	92	92	92	91	88	82	70	64	63	66	75	79	83	88	89	89	89	88	63	92	83.8
Jan 23	88	87	88	87	85	83	79	74	69	65	59	59	62	64	66	68	70	73	76	75	76	81	82	81	59	88	74.9
Jan 24	83	83	88	90	90	90	90	90	90	90	87	83	77	75	75	75	81	84	81	86	90	90	89	89	75	90	85.3
Jan 25	90	90	91	90	89	89	90	89	89	89	88	83	74	68	62	68	75	79	82	83	83	83	85	86	62	91	83.1
Jan 26	87	87	87	87	86	84	84	83	85	84	76	66	61	54	53	59	68	70	68	69	75	76	77	77	53	87	75.1
Jan 27	79	81	81	81	82	82	81	81	81	79	74	73	71	69	72	68	65	70	77	80	75	70	70	79	65	82	75.9
Jan 28	81	85	87	87	88	87	86	84	83	84	77	73	67	63	60	60	67	74	81	84	84	83	80	77	60	88	78.4
Jan 29	74	72	74	70	67	65	66	63	62	64	63	63	67	69	64	63	66	65	65	68	69	70	70	66	62	74	66.9
Jan 30	64	60	57	57	57	57	57	59	57	55	53	52	50	**48**	50	53	54	54	55	60	57	55	57	56	**48**	64	55.6
Jan 31	61	57	53	56	59	61	63	62	62	64	58	55	52	52	54	56	56	62	62	55	61	81	91	**94**	52	**94**	62.0
Diurnal Maximum	90	91	92	92	92	92	92	92	92	91	88	88	89	88	87	86	87	90	89	88	90	90	93	94			
Diurnal Average	70.4	70.1	70.4	70.3	70.3	70.3	70.5	70.7	70.2	69.8	67.8	66.1	64.5	63.3	62.7	63.2	65.2	67.7	68.2	68.7	68.8	69.9	70.6	70.5			

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

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

Timeseries Chart of Hourly Average for RH - Reno Station



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - January 2020

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

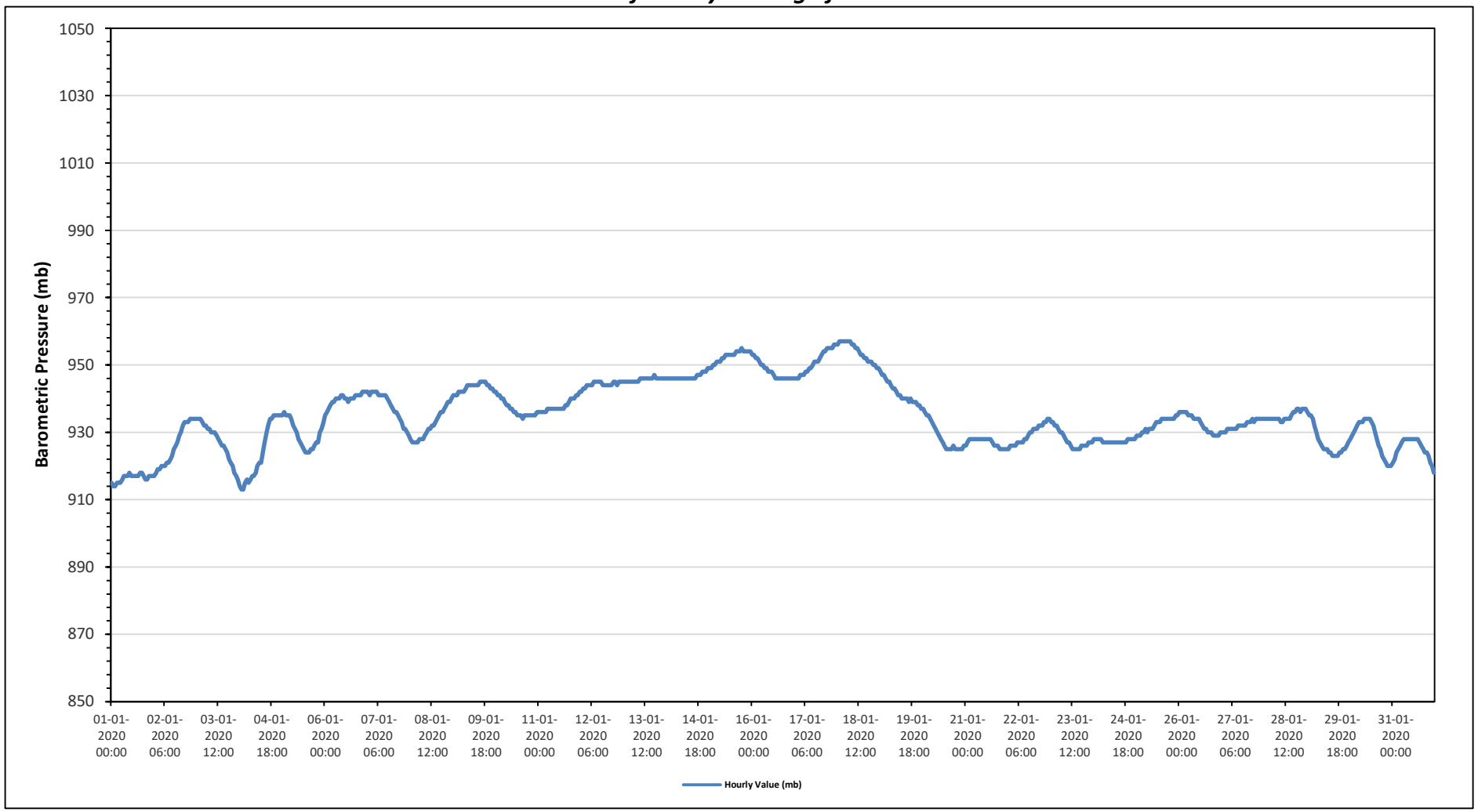
Maximum Hourly Value:	957	mb	on January 18 at hour 1	Hours in Service:	744
Maximum Daily Value:	954	mb	on January 18	Hours of Data:	744
Minimum Hourly Value:	913	mb	on January 4 at hour 1	Hours of Missing Data:	0
Minimum Daily Value:	916	mb	on January 1	Hours of Calibration:	0
Monthly Average:	935	mb		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	915	914	914	915	915	915	916	917	917	917	918	917	917	917	917	917	918	918	917	916	916	917	917	917	914	918	916
Jan 2	917	918	919	919	920	920	920	921	921	922	923	925	926	927	929	930	932	933	933	933	934	934	934	934	917	934	926
Jan 3	934	934	934	933	932	932	931	931	930	930	930	929	928	927	926	926	925	924	922	921	920	918	917	916	916	934	927
Jan 4	914	**913**	**913**	915	916	915	916	917	917	918	920	921	921	924	927	930	932	934	934	935	935	935	935	935	**913**	935	924
Jan 5	935	936	935	935	935	934	932	931	930	928	927	926	925	924	924	924	925	925	926	927	927	930	931	933	924	936	929
Jan 6	935	936	937	938	939	939	940	940	940	941	941	940	940	939	940	940	940	941	941	941	941	942	942	942	935	942	940
Jan 7	942	941	942	942	942	942	941	941	941	941	941	940	939	938	937	936	936	935	934	933	931	931	930	929	929	942	938
Jan 8	928	927	927	927	927	928	928	928	929	930	931	931	932	932	933	934	935	936	936	937	938	939	939	940	927	940	932
Jan 9	941	941	941	942	942	942	942	943	944	944	944	944	944	944	944	945	945	945	945	944	944	943	943	942	941	945	943
Jan 10	942	941	941	940	940	939	938	938	937	937	936	936	935	935	935	934	935	935	935	935	935	935	935	936	934	942	937
Jan 11	936	936	936	936	936	937	937	937	937	937	937	937	937	937	937	938	938	939	940	940	940	941	941	942	936	942	938
Jan 12	942	943	943	944	944	944	944	945	945	945	945	945	944	944	944	944	944	944	945	945	944	945	945	945	942	945	944
Jan 13	945	945	945	945	945	945	945	945	945	946	946	946	946	946	946	946	946	947	946	946	946	946	946	946	945	947	946
Jan 14	946	946	946	946	946	946	946	946	946	946	946	946	946	946	946	946	946	947	947	947	948	948	948	949	946	949	947
Jan 15	949	949	950	950	951	951	951	952	952	953	953	953	953	953	953	954	954	954	955	954	954	954	954	954	949	955	953
Jan 16	953	953	952	952	951	950	950	949	949	948	948	948	947	946	946	946	946	946	946	946	946	946	946	946	946	953	948
Jan 17	946	946	946	947	947	947	948	948	949	949	950	951	951	951	952	953	954	954	955	955	955	955	956	956	946	956	951
Jan 18	956	**957**	**957**	**957**	**957**	**957**	**957**	**957**	956	956	955	955	954	953	953	952	952	951	951	951	950	950	949	949	949	**957**	**954**
Jan 19	948	947	947	946	945	945	944	943	943	942	941	941	940	940	940	940	939	940	939	939	939	938	938	937	937	948	942
Jan 20	937	936	935	935	934	933	932	931	930	929	928	927	926	925	925	925	925	926	925	925	925	925	925	926	925	937	929
Jan 21	926	927	928	928	928	928	928	928	928	928	928	928	928	928	928	927	926	926	926	925	925	925	925	925	925	928	927
Jan 22	925	926	926	926	926	927	927	927	927	928	928	929	930	930	931	931	931	932	932	932	933	933	934	934	925	934	929
Jan 23	933	933	932	932	931	930	930	929	928	927	927	926	925	925	925	925	925	926	926	926	926	927	927	927	925	933	928
Jan 24	928	928	928	928	928	927	927	927	927	927	927	927	927	927	927	927	927	927	927	927	928	928	928	928	927	928	927
Jan 25	929	929	929	930	930	931	930	931	931	931	932	933	933	933	934	934	934	934	934	934	934	934	935	935	929	935	932
Jan 26	936	936	936	936	936	935	935	935	934	934	934	934	933	932	931	931	930	930	930	929	929	929	929	930	929	936	933
Jan 27	930	930	930	931	931	931	931	931	931	932	932	932	932	932	933	933	933	934	933	934	934	934	934	934	930	934	932
Jan 28	934	934	934	934	934	934	934	934	934	933	933	934	934	934	934	935	936	936	937	937	936	937	937	937	933	937	935
Jan 29	936	935	935	934	932	930	928	927	926	925	925	925	924	924	923	923	923	923	924	924	925	925	926	927	923	936	927
Jan 30	928	929	930	931	932	933	933	933	934	934	934	934	933	932	930	928	926	925	923	922	921	920	920	920	920	934	929
Jan 31	921	922	924	925	926	927	928	928	928	928	928	928	928	928	928	927	926	925	924	924	923	921	920	918	918	928	925
Diurnal Maximum	956	957	957	957	957	957	957	957	956	956	955	955	954	953	953	954	954	954	955	955	955	955	956	956			
Diurnal Average	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935	935			

C	Monthly Calibration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
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 - Reno Station



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PEACE RIVER AREA MONITORING PROGRAM

Reno Station - January 2020

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

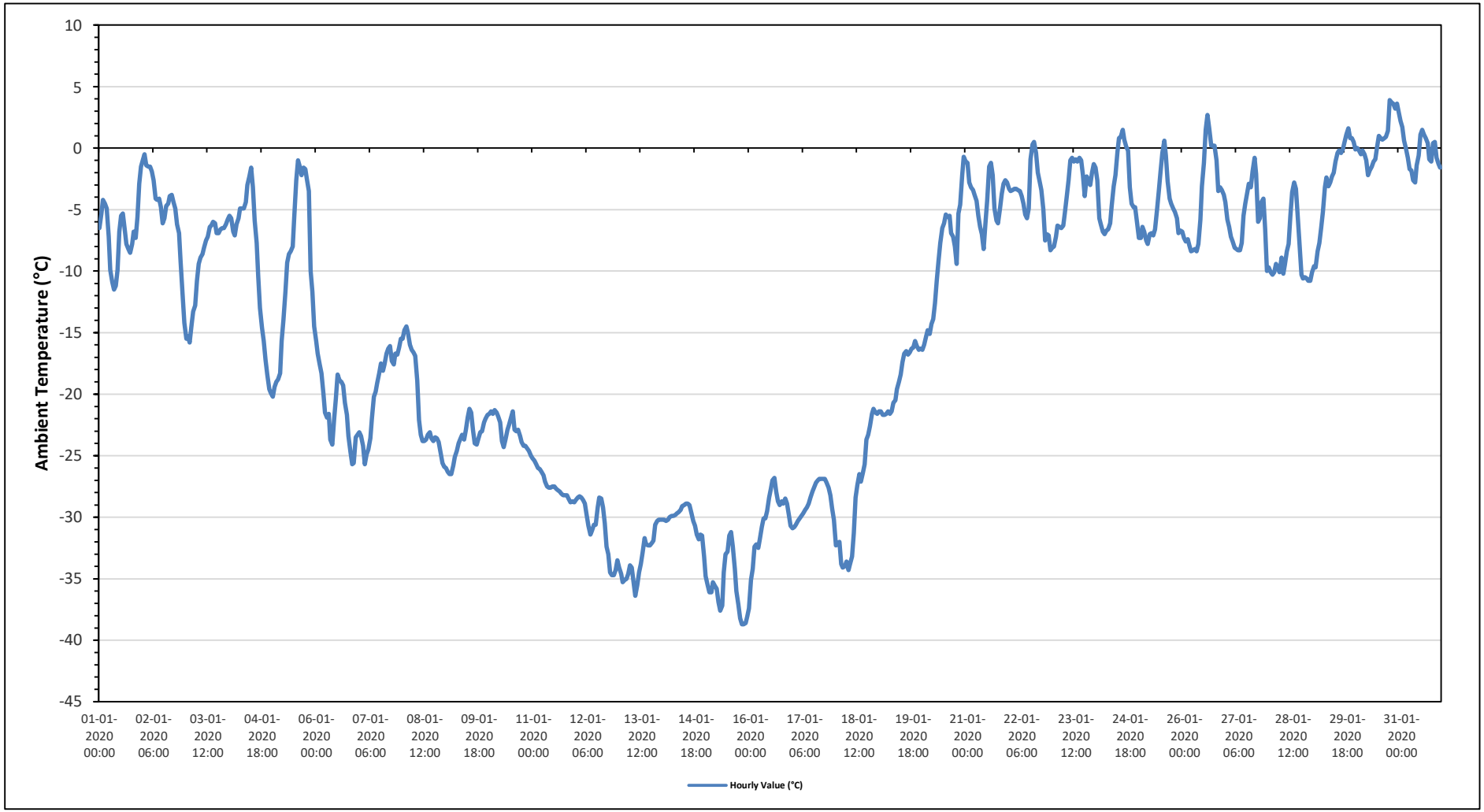
Maximum Hourly Value:	3.9	°C	on January 30 at hour 19	Hours in Service:	744
Maximum Daily Value:	0.6	°C	on January 30	Hours of Data:	744
Minimum Hourly Value:	-38.7	°C	on January 15 at hour 20	Hours of Missing Data:	0
Minimum Daily Value:	-35.7	°C	on January 15	Hours of Calibration:	0
Monthly Average:	-14.9	°C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	-6.5	-5.3	-4.2	-4.5	-4.9	-7.2	-9.9	-10.9	-11.5	-11.2	-9.9	-6.8	-5.5	-5.3	-6.7	-7.8	-8.2	-8.5	-7.8	-6.8	-7.3	-5.6	-2.9	-1.5	-11.5	-1.5	-6.9
Jan 2	-1	-0.5	-1.4	-1.5	-1.5	-1.9	-2.6	-4.1	-4.2	-4.1	-4.8	-6.1	-5.7	-4.7	-4.5	-3.9	-3.8	-4.4	-4.9	-6.2	-6.9	-9.2	-11.9	-14.2	-14.2	-0.5	-4.8
Jan 3	-15.5	-15.3	-15.8	-14.3	-13.3	-12.8	-10.8	-9.4	-8.9	-8.6	-8.1	-7.5	-7.2	-6.4	-6.3	-6	-6.1	-6.9	-6.9	-6.6	-6.5	-6.5	-6.2	-5.8	-15.8	-5.8	-9.1
Jan 4	-5.5	-5.7	-6.8	-7.1	-6.2	-5.7	-4.9	-4.9	-4.9	-4.4	-3	-2.3	-1.6	-3.2	-5.9	-7.7	-10.4	-13	-14.6	-15.7	-17.2	-18.4	-19.6	-19.9	-19.9	-1.6	-8.7
Jan 5	-20.2	-19.4	-19	-18.8	-18.3	-15.7	-14	-11.7	-9.3	-8.6	-8.4	-8	-5.6	-2.6	-1	-1.5	-2.2	-1.6	-1.7	-2.5	-3.5	-10	-11.7	-14.5	-20.2	-1.0	-9.6
Jan 6	-15.7	-16.7	-17.6	-18.3	-20	-21.5	-21.9	-21.6	-23.7	-24.1	-22.1	-20.4	-18.4	-18.9	-19	-19.3	-20.7	-21.7	-23.4	-24.7	-25.7	-25.6	-23.5	-23.3	-25.7	-15.7	-21.2
Jan 7	-23.1	-23.4	-24.2	-25.7	-24.9	-24.5	-23.6	-22	-20.2	-19.8	-19.1	-18.3	-17.5	-18.1	-17.6	-16.7	-16.3	-16.1	-17.3	-17.6	-16.7	-16.8	-16.2	-15.5	-25.7	-15.5	-19.6
Jan 8	-15.5	-14.8	-14.5	-15	-16	-16.4	-16.6	-16.9	-18.9	-22.1	-23.3	-23.8	-23.8	-23.7	-23.3	-23.1	-23.6	-23.8	-23.5	-23.6	-23.9	-24.8	-25.6	-25.9	-25.9	-14.5	-20.9
Jan 9	-26	-26.3	-26.5	-26.5	-25.8	-25.1	-24.6	-24	-23.6	-23.3	-23.7	-22.9	-21.9	-21.2	-21.5	-22.9	-24	-24.1	-23.6	-23.1	-23	-22.3	-22	-21.7	-26.5	-21.2	-23.7
Jan 10	-21.6	-21.4	-21.6	-21.3	-21.5	-21.8	-22.3	-23.8	-24.3	-23.7	-22.9	-22.5	-21.9	-21.4	-22.9	-23	-22.9	-23.4	-23.9	-24.2	-24.2	-24.4	-24.6	-25	-25.0	-21.3	-22.9
Jan 11	-25.2	-25.4	-25.7	-26	-26.1	-26.3	-26.6	-27.1	-27.5	-27.6	-27.6	-27.5	-27.5	-27.7	-27.8	-27.9	-28.1	-28.2	-28.2	-28.2	-28.5	-28.8	-28.7	-28.8	-28.8	-25.2	-27.4
Jan 12	-28.6	-28.4	-28.3	-28.4	-28.6	-28.9	-29.8	-30.7	-31.4	-31.1	-30.6	-30.6	-29.2	-28.4	-28.5	-29.2	-30.5	-32.4	-33	-34.5	-34.7	-34.7	-34.3	-33.5	-34.7	-28.3	-30.8
Jan 13	-34.1	-34.6	-35.3	-35.1	-35	-34.6	-33.9	-34.1	-35.4	-36.4	-35.5	-34.5	-33.8	-32.9	-31.7	-32.2	-32.3	-32.3	-32.1	-31.9	-30.6	-30.3	-30.2	-30.2	-36.4	-30.2	-33.3
Jan 14	-30.2	-30.2	-30.3	-30.2	-30	-29.9	-29.9	-29.8	-29.7	-29.6	-29.4	-29.1	-29	-28.9	-28.9	-29	-29.7	-30.3	-30.7	-31.4	-31.8	-31.4	-31.5	-33.2	-33.2	-28.9	-30.2
Jan 15	-34.8	-35.5	-36.1	-36.1	-35.3	-35.6	-35.8	-36.9	-37.6	-37.2	-34.5	-33	-32.8	-31.5	-31.2	-32.4	-34.2	-36	-37.1	-38.2	**-38.7**	**-38.7**	-38.6	-38.1	**-38.7**	-31.2	-35.7
Jan 16	-37.4	-35.1	-34.2	-32.4	-32.2	-32.5	-31.8	-30.8	-30.1	-30.1	-29.5	-28.4	-27.7	-27	-26.8	-27.9	-28.7	-29	-28.7	-28.9	-28.5	-28.9	-29.9	-30.7	-37.4	-26.8	-30.3
Jan 17	-30.9	-30.8	-30.6	-30.3	-30.1	-29.9	-29.7	-29.4	-29.2	-28.9	-28.4	-27.9	-27.6	-27.2	-27	-26.9	-26.9	-26.9	-26.9	-27.2	-27.6	-28.2	-29.3	-30.2	-30.9	-26.9	-28.7
Jan 18	-32.3	-32.2	-32	-33.8	-34.1	-34	-33.6	-34.3	-33.8	-33.2	-31.3	-28.4	-27.4	-26.5	-27.1	-26.4	-25.7	-23.7	-23.3	-22.6	-21.6	-21.2	-21.5	-21.6	-34.3	-21.2	-28.4
Jan 19	-21.4	-21.4	-21.7	-21.7	-21.6	-21.4	-21.6	-21.4	-20.7	-20.5	-19.6	-19	-18.4	-17.4	-16.7	-16.5	-16.8	-16.6	-16.3	-16.2	-15.7	-16.1	-16.4	-16.3	-21.7	-15.7	-18.8
Jan 20	-16.4	-16	-15.3	-14.8	-15.1	-14.3	-13.9	-12.6	-10.8	-9.2	-7.7	-6.5	-6.1	-5.4	-5.6	-5.5	-6.9	-7.2	-8	-9.4	-5.3	-4.6	-2.2	-0.7	-16.4	-0.7	-9.1
Jan 21	-1.1	-1.2	-2.8	-3.2	-3.4	-3.8	-4.3	-5.5	-6.4	-7	-8.2	-5.9	-4.3	-1.5	-1.2	-2.2	-4.9	-5.9	-6.1	-4.9	-3.7	-2.9	-2.6	-2.8	-8.2	-1.1	-4.0
Jan 22	-3.3	-3.5	-3.4	-3.3	-3.3	-3.4	-3.5	-3.9	-4.5	-5.4	-5.7	-4.9	-0.9	0.3	0.5	-0.4	-2	-2.8	-3.4	-5	-7.5	-7	-7.1	-8.3	-8.3	0.5	-3.8
Jan 23	-8.1	-8	-7.2	-6.3	-6.4	-6.5	-6.3	-5.3	-3.9	-2.6	-1	-0.8	-1.1	-0.9	-1.1	-0.8	-1	-2.2	-3.9	-2.3	-2.7	-3	-2	-1.3	-8.1	-0.8	-3.5
Jan 24	-1.6	-2.6	-5.7	-6.2	-6.8	-7	-6.7	-6.6	-6.1	-4.7	-3.1	-2.2	-0.3	0.8	0.9	1.5	0.7	0.1	-0.2	-3.2	-4.5	-4.8	-4.8	-6.1	-7.0	1.5	-3.3
Jan 25	-7.3	-7.3	-6.4	-6.8	-7.5	-7.8	-7	-6.9	-7.1	-6.6	-5	-3.5	-1.9	-0.4	0.6	-0.6	-2.7	-4.1	-4.5	-4.9	-5.2	-5.7	-6.9	-6.7	-7.8	0.6	-5.1
Jan 26	-6.8	-7.3	-7.6	-7.4	-7.9	-8.4	-8.3	-8.2	-8.4	-7.8	-5.8	-3.1	-1.2	1.5	2.7	1.6	0.2	0.2	0.2	-1	-3.5	-3.2	-3.4	-3.8	-8.4	2.7	-4.0
Jan 27	-4.4	-5.8	-6.4	-7.2	-7.6	-8.1	-8.2	-8.3	-8.3	-7.7	-5.5	-4.5	-3.6	-2.9	-3.2	-1.9	-0.8	-2.1	-6	-5.7	-4.4	-4.1	-6.6	-10	-10.0	-0.8	-5.6
Jan 28	-9.7	-10.1	-10.3	-10.1	-9.4	-9.8	-10.1	-8.9	-10.2	-9.5	-8.4	-7.8	-5.5	-3.6	-2.8	-3.3	-5.5	-7.7	-10.3	-10.6	-10.5	-10.6	-10.8	-10.8	-10.8	-2.8	-8.6
Jan 29	-10.1	-9.6	-9.7	-8.4	-7.7	-6.5	-5.2	-3.2	-2.4	-3.1	-2.8	-2.3	-2	-1.1	-0.4	-0.2	-0.4	-0.1	0.5	1.1	1.6	0.8	0.8	0.5	-10.1	1.6	-2.9
Jan 30	-0.1	0	-0.2	-0.5	-0.2	-0.5	-1	-2.2	-1.8	-1.5	-1.1	-0.9	0.1	1	0.8	0.7	0.8	0.9	1.4	**3.9**	3.7	3.6	3.2	3.6	-2.2	**3.9**	**0.6**
Jan 31	2.9	2.2	1.7	0.6	0	-0.8	-1.7	-1.8	-2.6	-2.8	-1.4	-0.6	1.1	1.5	1.1	0.8	0.4	-0.9	-1.1	0.4	0.5	-0.8	-1.3	-1.6	-2.8	2.9	-0.2
Diurnal Maximum	2.9	2.2	1.7	0.6	0.0	-0.5	-1.0	-1.8	-1.8	-1.5	-1.0	-0.6	1.1	1.5	2.7	1.6	0.8	0.9	1.4	3.9	3.7	3.6	3.2	3.6			
Diurnal Average	-15.9	-15.9	-16.1	-16.1	-16.2	-16.2	-16.1	-16.0	-16.0	-15.9	-15.1	-14.2	-13.2	-12.4	-12.3	-12.6	-13.3	-13.9	-14.4	-14.6	-14.6	-15.0	-15.1	-15.4			

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

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

Timeseries Chart of Hourly Average for AT - Reno Station



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - January 2020

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

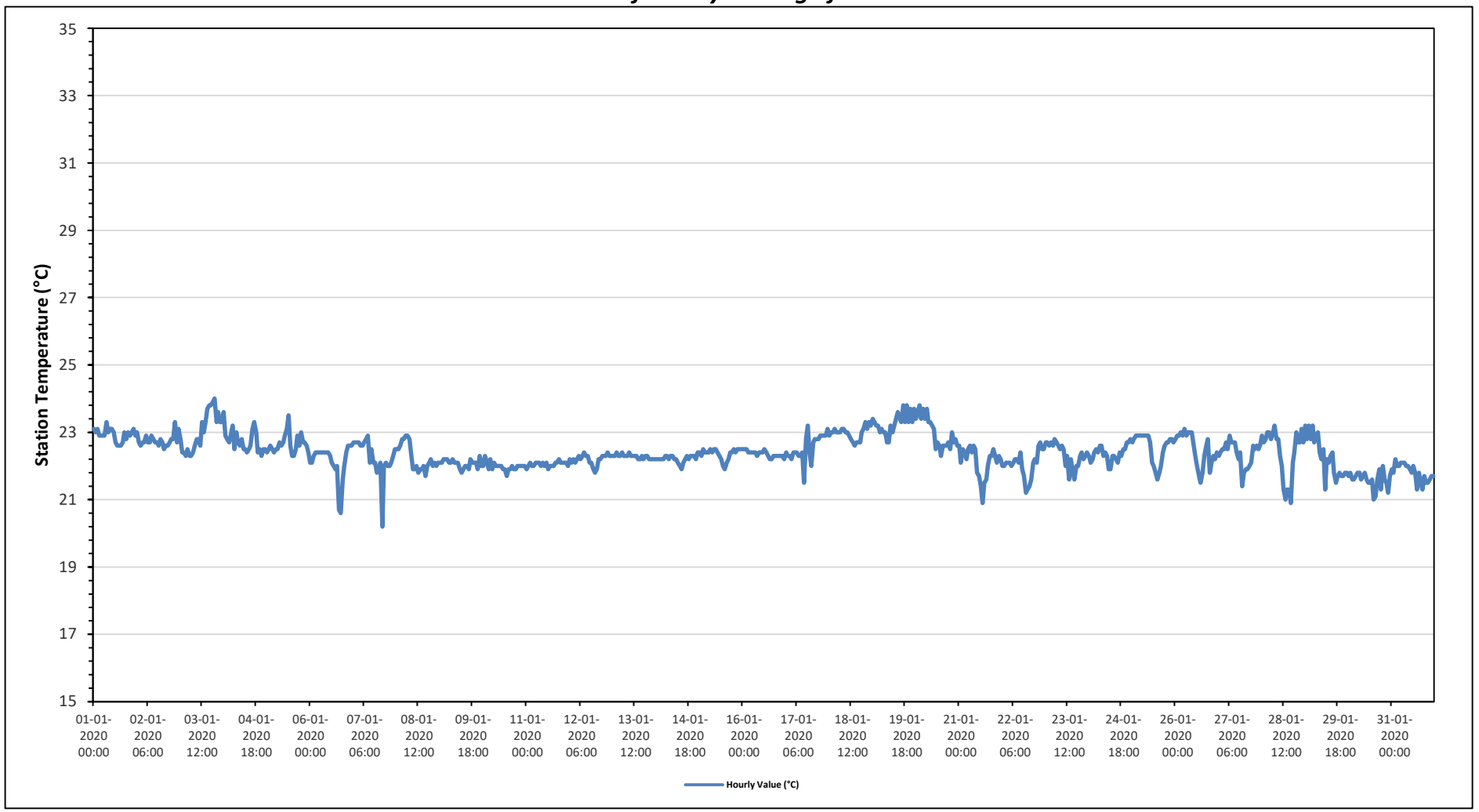
Maximum Hourly Value:	24.0	°C	on January 3 at hour 19	Hours in Service:	744
Maximum Daily Value:	23.3	°C	on January 19	Hours of Data:	744
Minimum Hourly Value:	20.2	°C	on January 7 at hour 16	Hours of Missing Data:	0
Minimum Daily Value:	21.6	°C	on January 30	Hours of Calibration:	0
Monthly Average:	22.4	°C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	23.1	23	23.1	22.9	22.9	22.9	22.9	23.3	23	23.1	23.1	23	22.7	22.6	22.6	22.6	22.7	23	22.8	23	22.9	23	23.1	22.9	22.6	23.3	22.9
Jan 2	23	22.7	22.6	22.7	22.7	22.9	22.7	22.7	22.9	22.8	22.7	22.7	22.6	22.8	22.7	22.5	22.6	22.6	22.7	22.8	22.8	23.3	22.7	23.1	22.5	23.3	22.8
Jan 3	22.8	22.4	22.4	22.3	22.5	22.3	22.3	22.4	22.6	22.8	22.8	22.6	23.3	23	23.3	23.7	23.8	23.8	23.9	**24**	23.3	23.6	23.3	23.3	22.3	**24.0**	23.0
Jan 4	23.6	22.9	22.8	22.7	22.9	23.2	22.5	23	22.7	22.6	22.8	22.5	22.5	22.4	22.5	22.6	23.1	23.3	23	22.4	22.5	22.3	22.5	22.5	22.3	23.6	22.7
Jan 5	22.4	22.5	22.6	22.5	22.4	22.5	22.5	22.7	22.6	22.7	22.9	23.1	23.5	22.6	22.3	22.3	22.5	22.9	22.6	23	22.7	22.7	22.6	22.4	22.3	23.5	22.6
Jan 6	22.1	22.1	22.3	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.3	22.1	22	21.9	22	20.7	20.6	21.6	22	22.4	22.6	22.6	22.6	20.6	22.6	22.1
Jan 7	22.7	22.7	22.7	22.7	22.6	22.6	22.7	22.8	22.9	22.1	22.5	22.1	22.1	21.8	21.9	22.1	**20.2**	22	22.1	22	22	22.1	22.3	22.5	**20.2**	22.9	22.3
Jan 8	22.5	22.5	22.6	22.8	22.8	22.9	22.9	22.8	22.4	21.9	21.9	22	21.8	21.9	21.9	22	21.7	22	22.1	22.2	22	22.1	22	22.1	21.7	22.9	22.2
Jan 9	22.1	22.1	22.2	22.2	22.2	22.1	22.1	22.2	22.1	22.1	22.1	21.9	21.8	21.9	22	22	21.9	22.2	22.1	22.1	22.1	21.9	22.3	22	21.8	22.3	22.1
Jan 10	22	22.3	22.1	21.9	22.2	21.9	22.1	22	22	22	22	21.9	21.9	21.7	21.9	21.9	22	21.9	21.9	22	22	22	22	22	21.7	22.3	22.0
Jan 11	21.9	22	22.1	22	22	22.1	22.1	22.1	22	22.1	22	22.1	21.9	22	22	22	22.1	22.1	22.2	22.1	22.1	22.1	22.1	22	21.9	22.2	22.1
Jan 12	22.2	22.1	22.2	22.1	22.2	22.3	22.2	22.3	22.4	22.3	22.3	22.1	22.1	21.9	21.8	21.9	22.2	22.2	22.3	22.3	22.3	22.4	22.3	22.3	21.8	22.4	22.2
Jan 13	22.3	22.3	22.4	22.3	22.3	22.4	22.3	22.3	22.3	22.4	22.3	22.3	22.3	22.3	22.2	22.2	22.3	22.2	22.3	22.3	22.2	22.2	22.2	22.2	22.2	22.4	22.3
Jan 14	22.2	22.2	22.2	22.2	22.2	22.3	22.3	22.2	22.3	22.3	22.2	22.2	22.1	22	21.9	22.1	22.2	22.3	22.2	22.3	22.3	22.3	22.2	22.4	21.9	22.4	22.2
Jan 15	22.4	22.3	22.5	22.4	22.4	22.4	22.5	22.4	22.5	22.5	22.4	22.3	22.2	22	21.9	22.1	22.2	22.4	22.4	22.5	22.4	22.5	22.5	22.5	21.9	22.5	22.4
Jan 16	22.5	22.5	22.5	22.4	22.4	22.4	22.4	22.4	22.3	22.4	22.4	22.4	22.5	22.4	22.3	22.2	22.2	22.3	22.3	22.3	22.3	22.3	22.3	22.2	22.2	22.5	22.4
Jan 17	22.4	22.3	22.3	22.2	22.4	22.4	22.4	22.3	22.3	22.4	21.5	22.8	23.2	22.4	22	22.7	22.8	22.8	22.8	22.9	22.9	22.9	22.9	23.1	21.5	23.2	22.5
Jan 18	22.9	23	23	23.1	23	23	23	23.1	23.1	23	23	22.9	22.8	22.7	22.6	22.7	22.7	22.7	23	23.1	23.3	23.1	23.3	23.2	22.6	23.3	23.0
Jan 19	23.4	23.3	23.2	23.2	23	23.1	23	23	22.7	22.7	23.2	23	23.2	23.4	23.6	23.4	23.3	23.8	23.3	23.8	23.3	23.7	23.3	23.7	22.7	23.8	**23.3**
Jan 20	23.4	23.6	23.8	23.4	23.7	23.4	23.7	23.3	23.3	23.2	23.1	22.5	22.7	22.6	22.3	22.6	22.6	22.6	22.7	22.5	23	22.7	22.8	22.6	22.3	23.8	23.0
Jan 21	22.6	22.1	22.5	22.4	22.2	22.5	22.6	22.4	22.6	22.5	21.8	21.7	21.4	20.9	21.5	21.6	22	22.3	22.3	22.5	22.3	22.1	22.3	22.2	20.9	22.6	22.1
Jan 22	22	22	22.1	22.1	22.1	22	22.1	22.2	22.2	22.1	22.4	21.9	21.7	21.2	21.3	21.4	21.6	22.1	22.2	22.1	22.6	22.7	22.5	22.5	21.2	22.7	22.0
Jan 23	22.7	22.7	22.6	22.7	22.6	22.8	22.7	22.6	22.5	22.6	22.5	22	22.3	21.6	22.2	21.8	21.6	22	22	22.3	22.4	22.2	22.3	22.4	21.6	22.8	22.3
Jan 24	22.3	22.1	22.2	22.4	22.5	22.4	22.6	22.6	22.3	22.4	22.3	21.9	21.9	22.3	22.3	22.2	22.1	22.4	22.3	22.5	22.5	22.7	22.7	22.8	21.9	22.8	22.4
Jan 25	22.7	22.8	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.9	22.7	22.1	22	21.8	21.6	21.8	22	22.4	22.6	22.7	22.7	22.8	22.8	22.7	21.6	22.9	22.6
Jan 26	22.8	22.9	22.9	23	22.9	23.1	22.9	23	23	23	22.7	22.3	22	21.7	21.5	21.8	22.3	22.6	22.8	21.8	22.1	22.3	22.2	22.4	21.5	23.1	22.5
Jan 27	22.3	22.4	22.5	22.5	22.7	22.5	22.9	22.7	22.7	22.7	22.4	22.2	22.4	21.4	21.8	21.9	21.9	22	22.1	22.6	22.5	22.6	22.5	22.6	21.4	22.9	22.4
Jan 28	22.9	22.7	22.8	23	23	22.8	23	23.2	22.8	22.8	22.3	22	21.3	21	21.3	21.3	20.9	22.1	22.4	23	22.7	22.7	23.1	22.7	20.9	23.2	22.4
Jan 29	23.2	22.8	23.2	22.8	23.2	22.7	22.9	23	22.4	22.2	22.5	21.3	22.2	22.1	22.3	22.4	21.8	21.5	21.7	21.8	21.7	21.7	21.8	21.8	21.3	23.2	22.3
Jan 30	21.7	21.8	21.6	21.6	21.7	21.8	21.8	21.6	21.7	21.8	21.6	21.5	21.5	21.6	21	21.1	21.6	21.9	21.3	22	21.6	21.5	21.2	21.7	21.0	22.0	21.6
Jan 31	21.9	21.8	22.2	22	22	22.1	22.1	22.1	22	22	21.9	21.8	22	21.8	21.3	21.8	21.5	21.3	21.7	21.5	21.5	21.6	21.7	21.7	21.3	22.2	21.8
Diurnal Maximum	23.6	23.6	23.8	23.4	23.7	23.4	23.7	23.3	23.3	23.2	23.2	23.1	23.5	23.4	23.6	23.7	23.8	23.8	23.9	24.0	23.3	23.7	23.3	23.7			
Diurnal Average	22.5	22.5	22.6	22.5	22.5	22.6	22.6	22.6	22.5	22.5	22.4	22.2	22.3	22.1	22.1	22.2	22.1	22.3	22.4	22.5	22.4	22.5	22.5	22.5			

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

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

Timeseries Chart of Hourly Average for ST - Reno Station



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PEACE RIVER AREA MONITORING PROGRAM

Reno Station - January 2020

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

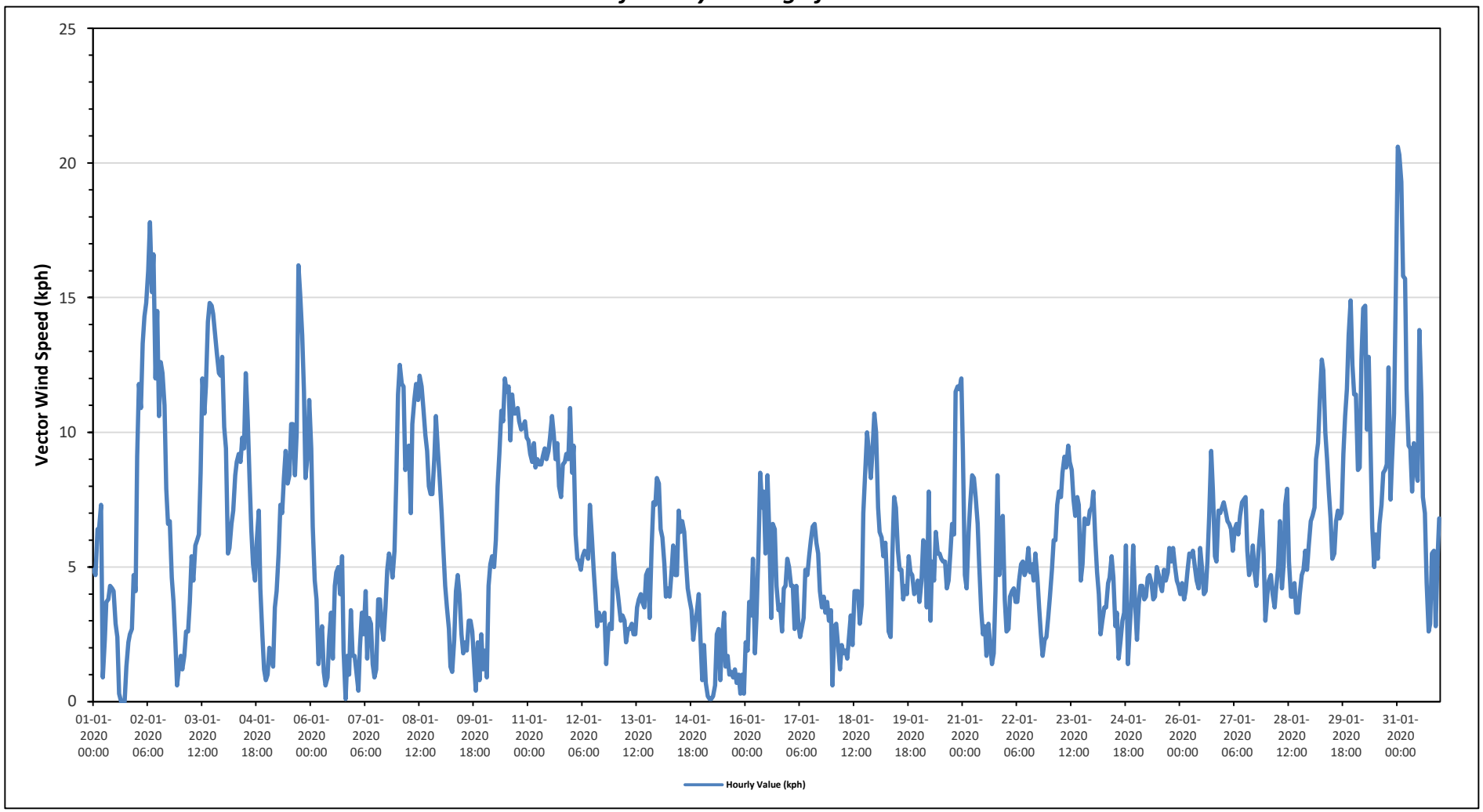
Maximum Hourly Value:	20.6	kph	on January 31 at hour 0	Hours in Service:	744
Maximum Daily Value:	10.3	kph	on January 2	Hours of Data:	744
Minimum Hourly Value:	0.0	kph	on January 1 at hour 15	Hours of Missing Data:	0
Minimum Daily Value:	1.1	kph	on January 15	Hours of Calibration:	0
Monthly Average:	1.5	kph		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	4.9	4.7	6.4	6.4	7.3	0.9	2.3	3.7	3.8	4.3	4.2	4.1	2.9	2.4	0.3	**0**	**0**	**0**	1.3	2.2	2.5	2.7	4.7	4.1	**0.0**	7.3	3.2
Jan 2	9.1	11.8	10.9	13.3	14.3	14.8	16	17.8	15.2	16.6	12	14.5	10.6	12.6	12.2	11	7.9	6.6	6.7	4.6	3.7	2.3	0.6	1.3	0.6	17.8	**10.3**
Jan 3	1.7	1.2	1.7	2.6	2.6	3.7	5.4	4.5	5.8	6	6.2	8.5	12	10.7	11.7	14.1	14.8	14.7	14.4	13.6	12.9	12.2	12.1	12.8	1.2	14.8	8.6
Jan 4	10.2	9.4	5.5	5.7	6.6	7.1	8.4	8.9	9.2	8.9	9.8	9.4	12.2	10.4	8.3	6.4	5.1	4.5	6	7.1	4.2	2.5	1.2	0.8	0.8	12.2	7.0
Jan 5	1	2	1.7	1.3	3.5	4.1	5.5	7.3	7	8.3	9.3	8.1	8.4	10.3	10.3	8.4	10	16.2	15.1	13.6	11.5	8.3	9.1	11.2	1.0	16.2	8.0
Jan 6	9.4	6.5	4.5	3.8	1.4	2.2	2.8	1.1	0.6	0.9	2.3	3.3	1.6	4.3	4.8	5	4	5.4	1.9	0.1	1.7	1	3.4	1.7	0.1	9.4	3.1
Jan 7	1.7	1.1	0.4	2	3.3	2.5	4.1	1.6	3.1	2.9	1.4	0.9	1.2	3.8	3.8	2.8	2.3	3.5	4.9	5.5	5.2	4.6	5.6	8.2	0.4	8.2	3.2
Jan 8	11.4	12.5	11.8	11.7	8.6	9	9.5	7	10.3	11.2	11.8	11.2	12.1	11.7	10.9	9.9	9.3	8	7.7	7.7	9.1	10.6	9.3	8.3	7.0	12.5	10.0
Jan 9	7	5.8	4.3	3.5	2.7	1.3	1.1	2.3	4.1	4.7	4	2.5	1.8	2.2	1.9	3	3	2.6	1.5	0.4	2.2	0.8	2.5	1.2	0.4	7.0	2.8
Jan 10	1.9	0.9	4.3	5.1	5.4	5	6	8	9.2	10.8	10.4	12	11.5	11.7	9.7	11.4	10.7	10.7	10.9	10.4	10.1	10.2	10.4	9.8	0.9	12.0	8.6
Jan 11	9.7	9.2	8.9	9.6	8.7	9	8.8	8.8	9.1	9.4	9	9.3	9.8	10.6	9.9	9	9.6	8	7.6	8.8	8.9	9.2	9	10.9	7.6	10.9	9.2
Jan 12	8.5	9.5	6.2	5.3	5.2	4.9	5.4	5.6	5.5	5.3	7.3	6.1	4.9	3.9	2.8	3.3	3	3.1	3.3	1.4	2.6	2.9	2.7	5.5	1.4	9.5	4.8
Jan 13	4.6	4.2	3.7	3	3.2	3	2.2	2.7	2.7	2.9	2.5	2.5	3.5	3.8	4	3.7	3.5	4.7	4.9	3.1	5.7	7.4	7.3	8.3	2.2	8.3	4.0
Jan 14	8.1	6.4	6.1	5.1	3.9	4.2	3.9	4.9	5.8	4.7	4.7	7.1	6.3	6.7	6.3	5.2	4.2	3.8	3.4	2.3	2.9	3.3	4	2.3	2.3	8.1	4.8
Jan 15	0.8	2.1	0.7	0.2	0.1	0.1	0.2	0.6	2.5	2.7	0.8	2.3	3.3	1.3	1.7	1	1.1	0.9	1.2	0.7	1	0.3	1	0.3	0.1	3.3	**1.1**
Jan 16	2.2	1.9	3.7	3.2	5.3	1.8	3.1	5.6	8.5	7.2	7.8	5.5	8.4	6.3	3.1	6.6	6.4	4.3	3.4	3.6	2.6	4.2	4.3	5.3	1.8	8.5	4.8
Jan 17	5	4.3	4.3	2.7	4.3	2.9	2.4	2.8	3.1	4.9	4.7	5.4	6	6.5	6.6	5.9	5.5	4.1	3.5	3.9	3.3	3.7	3	3.4	2.4	6.6	4.3
Jan 18	0.6	2.8	2.9	2	1.2	2.1	1.8	1.9	1.6	2.3	3.2	2.1	4.1	4.1	4.1	2.9	3.6	7	8.6	10	9.3	8.3	9.2	10.7	0.6	10.7	4.4
Jan 19	10	7.2	6.3	6.1	5.4	5.9	4.6	2.6	2.4	5.5	7.6	7.2	5.6	4.9	4.9	3.8	4.3	4	5.4	4.8	4.7	4	4.1	4.5	2.4	10.0	5.2
Jan 20	3.7	4.5	6	5.8	3.5	7.8	3	5.2	4.5	6.3	5.5	5.5	5.3	5.2	5.2	4.2	4.5	5.5	6.6	6.2	11.5	11.7	11.6	12	3.0	12.0	6.3
Jan 21	9.3	4.7	4.2	6.3	7.3	8.4	8.3	7.6	6.6	5.1	3.4	2.5	2.8	1.7	2.9	2.1	1.4	1.8	4.1	8.4	4.7	5.5	6.9	3.8	1.4	9.3	5.0
Jan 22	2.6	2.7	3.9	4.1	4.2	3.7	3.7	4.5	5.1	5.2	4.7	4.9	5.7	4.8	5.1	4.5	5.5	4.6	3.5	2.5	1.7	2.3	2.4	3.1	1.7	5.7	4.0
Jan 23	3.9	4.9	6	6	7.3	7.8	7.6	8.5	9.1	8.7	9.5	8.9	8.6	7.5	6.9	7.6	7.3	4.5	5.1	6.8	6.6	6.6	7.1	7.2	3.9	9.5	7.1
Jan 24	7.8	6	4.8	4	2.5	3	3.5	3.5	4.4	4.6	5.4	4.6	2.8	3.3	1.6	2.3	3	3.3	5.8	1.4	2.7	3.8	5.8	3.6	1.4	7.8	3.9
Jan 25	2.3	3.6	4.3	4.3	3.8	3.9	4.6	4.7	4.4	3.8	3.9	5	4.7	4.3	4.1	4.9	4.5	4.8	5.7	5.2	5.7	5	4.5	4.3	2.3	5.7	4.4
Jan 26	4	4.4	3.8	4.1	4.9	5.5	5.4	5.6	5	4.5	4.2	5.7	5	4	4.1	5.2	6.9	9.3	7.8	5.4	5.2	7.1	7	7.2	3.8	9.3	5.5
Jan 27	7.4	7.1	6.7	6.6	6.4	5.6	6.4	6.6	6.2	6.9	7.4	7.5	7.6	5.6	4.7	5	5.8	4.8	4.3	5.5	6.3	7.1	5.5	3	3.0	7.6	6.1
Jan 28	4	4.5	4.7	4	3.5	4.2	5	6.7	4.2	5.1	7.3	7.9	5.2	3.9	3.9	4.4	3.3	3.3	4	4.7	4.9	5.6	4.9	5.8	3.3	7.9	4.8
Jan 29	6.7	6.9	7.2	9	9.6	11.2	12.7	12.3	10	9	7.8	6.8	5.3	5.5	6.7	7.1	6.8	7	9.2	10.6	11.6	13.6	14.9	12.5	5.3	14.9	9.2
Jan 30	11.4	11.4	8.6	8.7	12.7	14.6	14.7	10.1	12.8	9.6	6.5	5	6.2	5.3	6.6	7.3	8.5	8.6	8.8	12.4	7.5	9	10.7	15.2	5.0	15.2	9.7
Jan 31	**20.6**	20.3	19.3	15.8	15.7	11.6	9.5	9.4	7.8	9.6	8.7	8.2	13.8	11.3	7.6	7	4.4	2.6	2.9	5.5	5.6	2.8	5.2	6.8	2.6	**20.6**	9.7
Diurnal Maximum	21	20	19	16	16	15	16	18	15	17	12	15	14	13	12	14	15	16	15	14	13	14	15	15			
Diurnal Average	6.2	6.0	5.6	5.5	5.6	5.5	5.7	5.9	6.1	6.4	6.2	6.3	6.4	6.1	5.7	5.6	5.5	5.6	5.8	5.8	5.7	5.8	6.1	6.3			

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

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

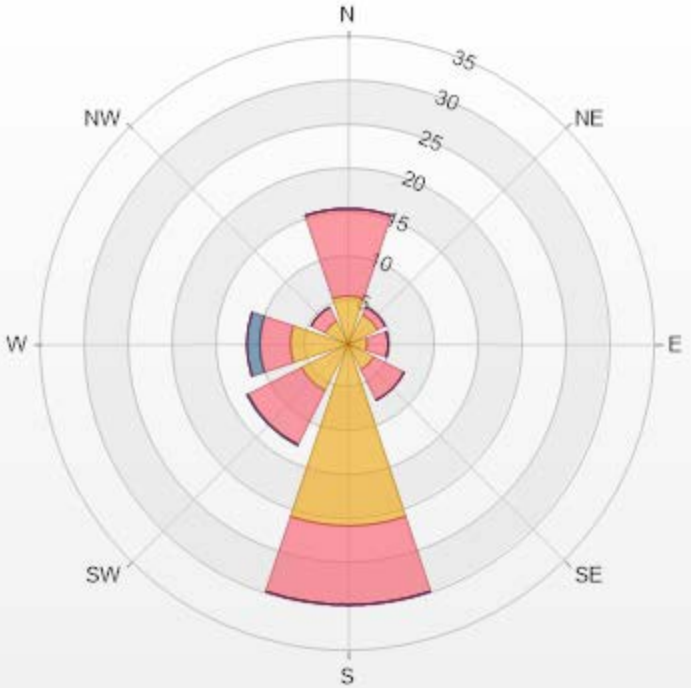
Timeseries Chart of Hourly Average for VWS - Reno Station



Wind: PRAMP RENO Poll.: PRAMP RENO-WDS[KPH] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 9.27% Valid Data: 100.00% Calm Avg: 1.04 [KPH]

Direction	0-6	6-15	15-29	29-39	>39.0	Total
N	5.51	9.95	0	0	0	15.46
NE	3.76	0.94	0	0	0	4.7
E	2.15	2.42	0	0	0	4.57
SE	3.23	3.9	0	0	0	7.13
S	20.7	9.01	0	0	0	29.71
SW	5.91	6.85	0.13	0	0	12.89
W	6.59	3.49	1.48	0	0	11.56
NW	2.96	1.75	0	0	0	4.71
Summary	50.81	38.31	1.61	0	0	90.73

PRAMP RENO Poll.: PRAMP RENO-WDS[KPH] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 9.27% Calm Poll Avg: 1.04[KPH]



% Icon Classes (KPH)	51 0-6	38 6-15	2 15-29	0 29-39	0 >39.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - January 2020

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

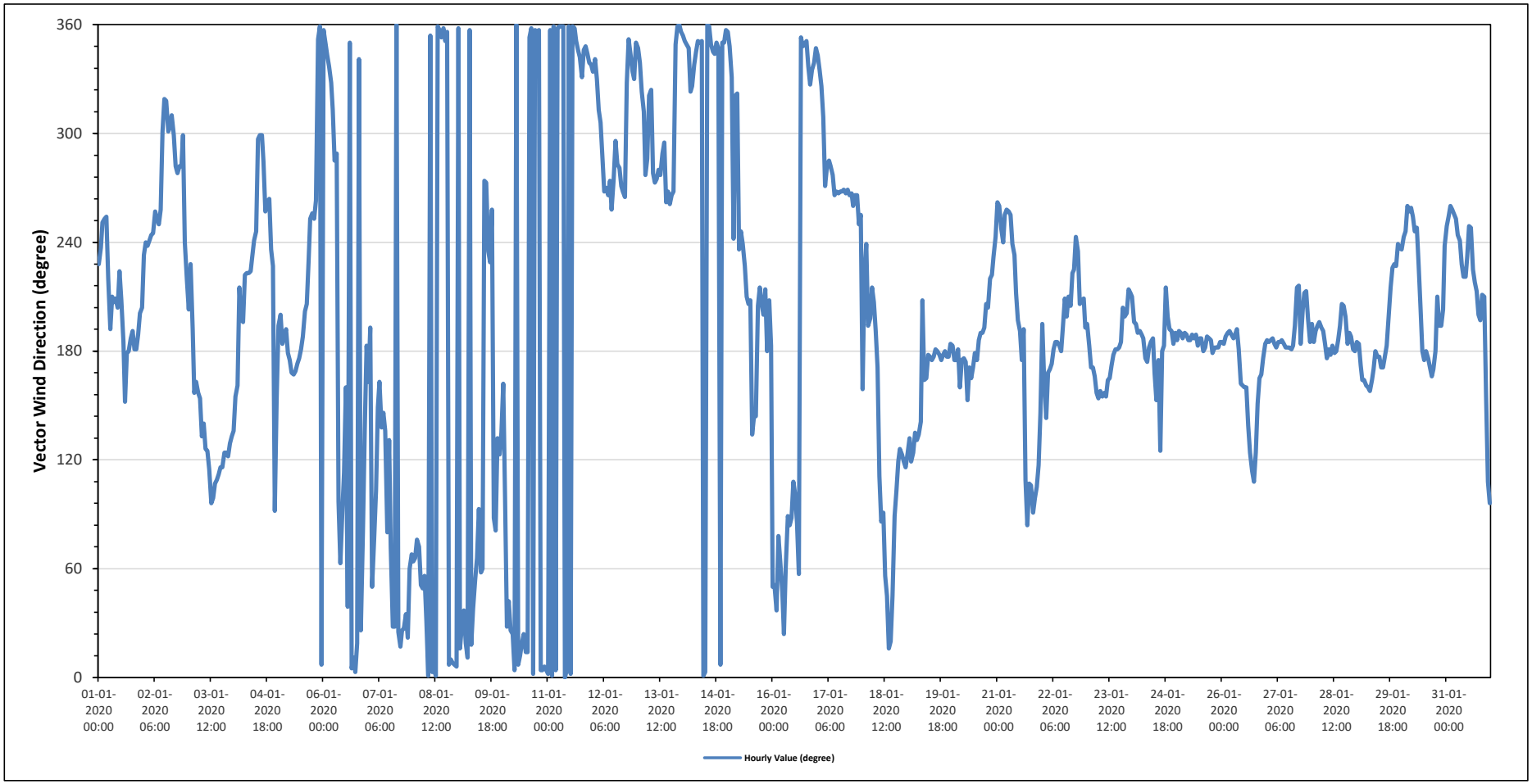
Monthly Average:	216 (SW)	degree	
Hours in Service:	744		
Hours of Data:	744		
Hours of Missing Data:	0		
Hours of Calibration:	0		
Operational Uptime:	100.0		

Day	Hourly Period Starting at (MST)																							Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant
Jan 1	SW	SW	WSW	WSW	WSW	SW	S	SSW	SSW	SSW	SSW	SW	SSW	S	SSE	S	S	S	S	S	S	S	SSW	SSW	219	SW
Jan 2	SW	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WNW	NW	NW	WNW	WNW	NW	WNW	W	W	W	W	WNW	WSW	SW	270	W
Jan 3	SSW	SW	S	SSE	SSE	SSE	SSE	SE	SE	SE	SE	ESE	E	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE	122	ESE
Jan 4	SE	SSE	SSE	SSW	SSW	SSW	SW	SW	SW	SW	SW	WSW	WSW	WNW	WNW	WNW	WNW	WSW	W	W	SW	SW	E	SSE	232	SW
Jan 5	SSW	SSW	S	S	S	S	S	SSE	SSE	SSE	S	S	S	S	SSW	SSW	SW	WSW	WSW	WSW	W	N	N	N	217	SW
Jan 6	N	N	NNW	NNW	NNW	NW	WNW	WNW	E	ENE	E	ESE	SSE	NE	N	N	NNE	N	NNE	NNW	NNE	E	SE	S	6	N
Jan 7	SSE	S	NE	ENE	ESE	SSE	SSE	SE	SE	SE	E	SE	ENE	NNE	NNE	N	NNE	NNE	NNE	NNE	NE	NNE	ENE	ENE	61	ENE
Jan 8	ENE	ENE	ENE	ENE	NE	NE	NE	NNE	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	20	NNE
Jan 9	N	NNE	NNE	NE	NNE	NNE	N	NNE	NE	NE	ENE	E	ENE	ENE	W	W	SW	SW	WSW	E	E	SE	ESE	SE	32	NNE
Jan 10	SSE	E	NNE	NE	NNE	NNE	N	N	N	NNE	NNE	NNE	NNE	NNE	N	N	N	N	N	N	N	N	N	N	8	N
Jan 11	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	354	N
Jan 12	NNW	NNW	NNW	NW	NW	WNW	W	W	W	W	WSW	W	WNW	W	W	W	W	W	NNW	N	NNW	NNW	NNW	N	300	WNW
Jan 13	NNW	NNW	NW	NW	W	WNW	NW	NW	W	W	W	W	W	WNW	WNW	W	W	W	W	W	NNW	N	N	N	310	NW
Jan 14	N	N	NNW	NNW	NW	NW	NNW	NNW	N	N	N	N	N	N	N	NNW	NNW	NNW	N	NNW	N	N	N	N	350	N
Jan 15	N	NNW	NNW	WSW	NW	NW	SW	WSW	WSW	SW	SSW	SSW	SSW	SE	SE	SE	SSW	SSW	SSW	SSW	SSW	S	SSW	S	212	SSW
Jan 16	NE	NE	NE	ENE	ENE	NE	NNE	ENE	E	E	E	ESE	E	E	ENE	N	NNW	NNW	N	NNW	NW	NNW	NNW	NNW	46	NE
Jan 17	NNW	NNW	NW	NW	W	W	WNW	W	W	W	W	W	W	W	W	W	W	W	W	WSW	W	W	WSW	WSW	277	W
Jan 18	SSE	SW	WSW	SSW	SSW	SSW	SSW	S	S	ESE	E	E	NE	NE	NNE	NNE	NE	E	ESE	ESE	SE	ESE	ESE	ESE	111	ESE
Jan 19	ESE	SE	ESE	ESE	SE	SE	SE	SE	SSW	SSE	SSE	S	S	S	S	S	S	S	S	S	S	S	S	S	159	SSE
Jan 20	S	S	S	S	SSE	S	S	S	SSE	S	SSE	S	S	S	S	S	S	S	SSW	SSW	SW	SW	SW	WSW	195	SSW
Jan 21	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SSW	SSW	S	S	S	ESE	E	ESE	ESE	E	E	ESE	ESE	SE	215	SSW
Jan 22	SSW	SSE	SE	SSE	SSE	S	S	S	S	S	S	S	SSW	SSW	SSW	SSW	SW	SW	WSW	SW	SSW	SSW	SSW	S	195	SSW
Jan 23	SSW	S	S	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S	S	S	S	S	S	SSW	SSW	SSW	SSW	SSW	175	S
Jan 24	SSW	SSW	SSW	S	S	S	S	S	S	S	S	S	SSE	SSE	S	SE	S	S	SSW	SSW	S	S	S	S	188	S
Jan 25	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	186	S
Jan 26	S	S	S	S	S	S	S	S	S	S	SSE	SSE	SSE	SSE	SE	ESE	ESE	ESE	ESE	SSE	SSE	SSE	S	S	163	SSE
Jan 27	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	SSW	SSW	SW	S	SSW	SSW	SSW	SSW	S	190	S
Jan 28	SSW	S	S	SSW	SSW	S	S	S	S	S	S	S	S	S	S	SSW	SSW	SSW	SSW	S	S	S	S	S	187	S
Jan 29	S	S	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S	S	S	S	S	S	S	SSW	SSW	SW	SW	SW	WSW	SW	190	S
Jan 30	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SSW	S	S	S	S	S	SSE	SSE	S	SSW	SSW	SSW	SSW	SW	221	SW
Jan 31	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	WSW	WSW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSE	ESE	E	239	WSW

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

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

Timeseries Chart of Hourly Average for VWD - Reno Station



AQHI CADOTTE LAKE STATION

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

AQHI - Cadotte Lake Station - January 2020

Summary of Hourly Averages

SULPHUR DIOXIDE (SO_2) in ppb

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

Number of 1-Hour Exceedances: 0 Number of 24-Hour Exceedances: 0 30-Day Exceedance: 0

Maximum Hourly Value:	0	ppb	on January 1 at hour 0	Hours in Service:	744
Maximum Daily Value:	0.0	ppb	on January 1	Hours of Data:	707
Minimum Hourly Value:	0	ppb	on January 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on January 1	Hours of Sration:	37
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			
Jan 1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 2	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0
Jan 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0
Jan 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0
Jan 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.0
Jan 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0
Jan 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0
Jan 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0
Jan 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0
Jan 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0
Jan 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 12	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 13	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 14	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	0.0
Jan 15	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 16	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 17	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 18	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 19	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 20	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 21	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 22	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 23	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 24	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 25	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0
Jan 26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0
Jan 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0
Jan 28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.0
Jan 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0
Jan 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0
Jan 31	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
Diurnal Maximum	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 Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

C	Monthly Sration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
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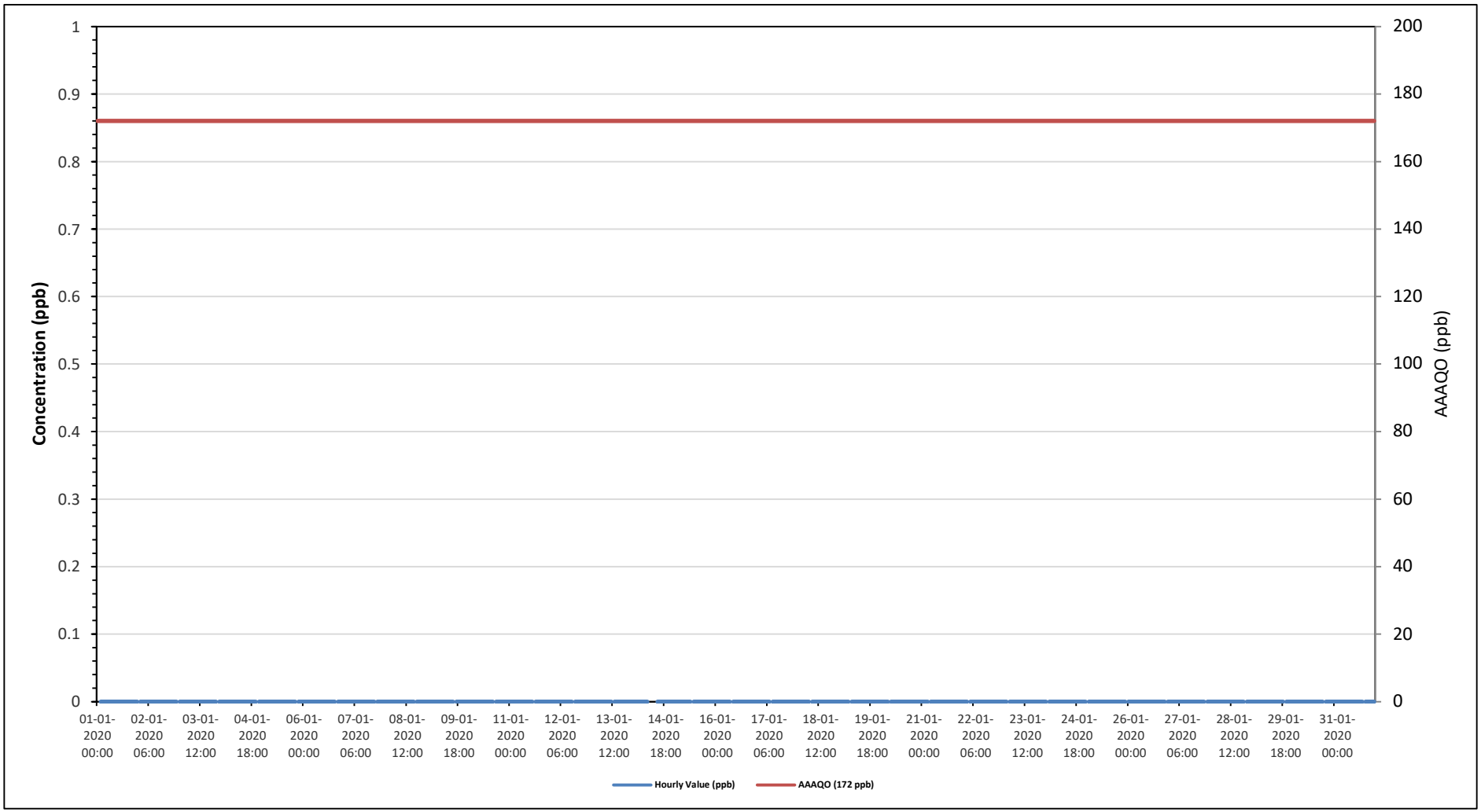
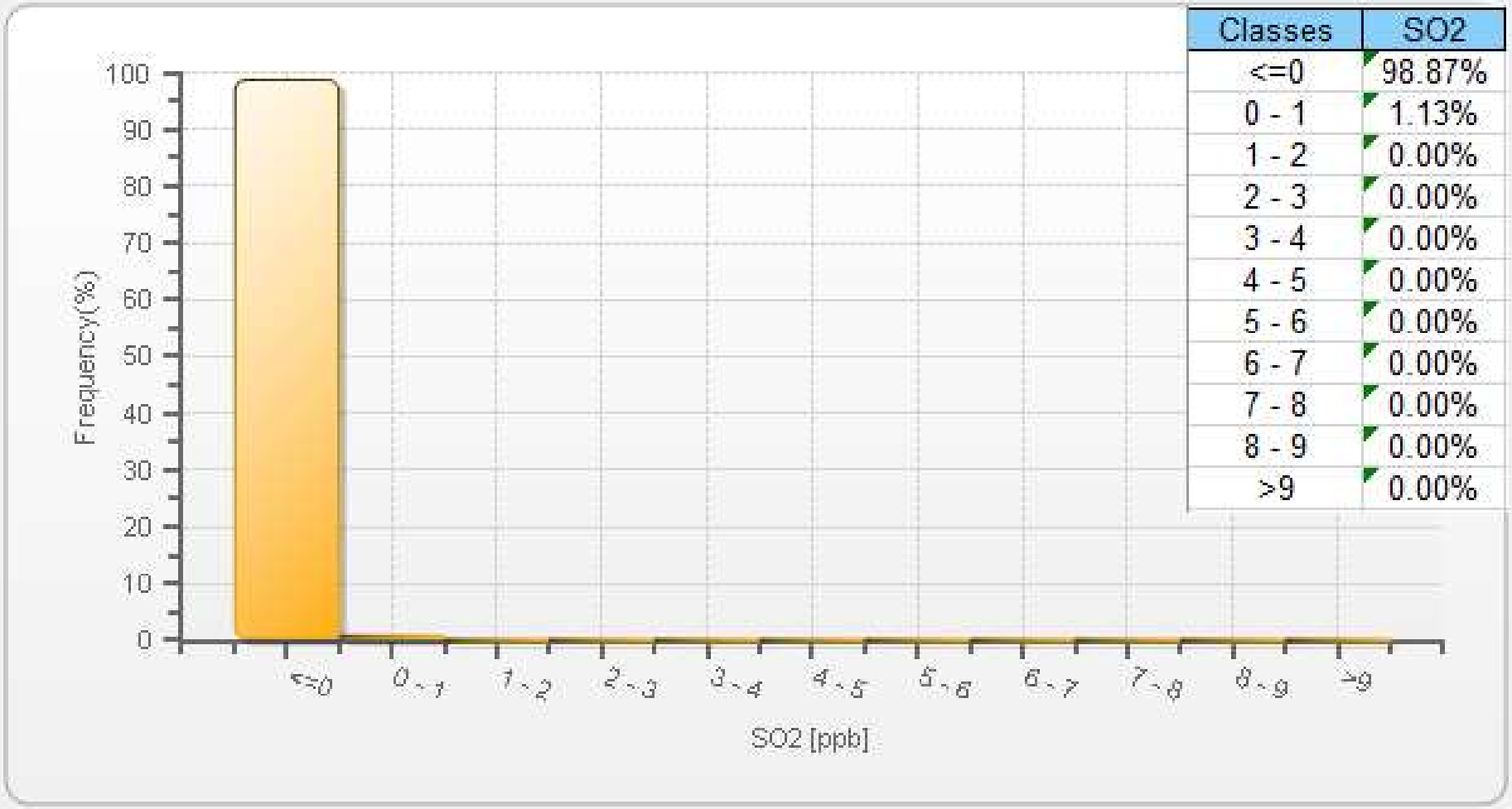
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for SO2 - AQHI - Cadotte Lake Station



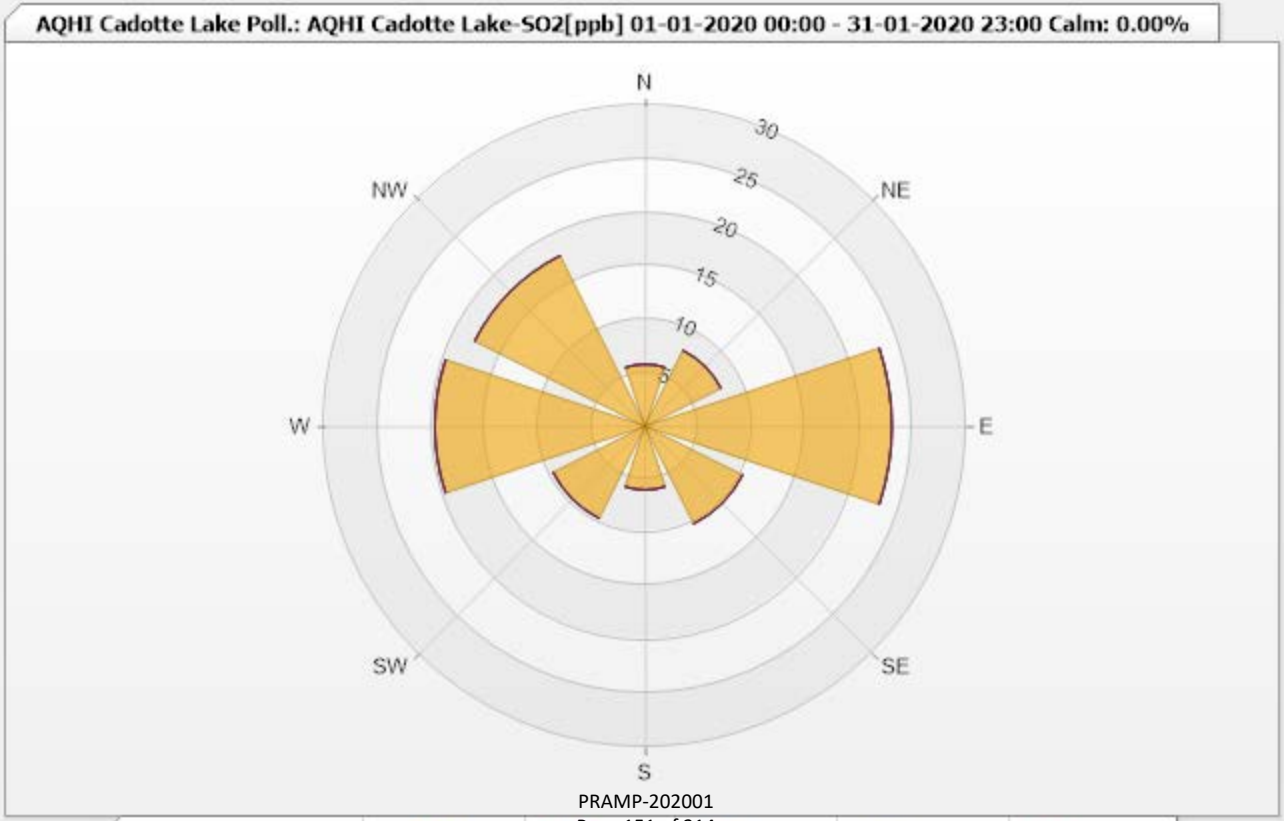
SO2[ppb] Histogram: AQHI Cadotte Lake Monthly: 01-2020 1 Hr.



Classes	SO2
<=0	98.87%
0 - 1	1.13%
1 - 2	0.00%
2 - 3	0.00%
3 - 4	0.00%
4 - 5	0.00%
5 - 6	0.00%
6 - 7	0.00%
7 - 8	0.00%
8 - 9	0.00%
>9	0.00%

Wind: AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-SO2[ppb] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	5.8	0	0	0	0	5.8
NE	7.92	0	0	0	0	7.92
E	23.06	0	0	0	0	23.06
SE	10.18	0	0	0	0	10.18
S	5.94	0	0	0	0	5.94
SW	9.62	0	0	0	0	9.62
W	19.66	0	0	0	0	19.66
NW	17.82	0	0	0	0	17.82
Summary	100	0	0	0	0	100


AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-SO2[ppb] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
30
25
20
15
10
5
% Icon Classes (ppb)
100 0-10
0 10-50
0 50-100
0 100-172
0 >172.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

AQHI - Cadotte Lake Station - January 2020

Summary of Hourly Averages

TOTAL REDUCED SULPHUR (TRS) in ppb

Alberta Ambient Air Quality Objectives (AAAQO) for H2S: 1-Hour 10 ppb, 24-Hour 3 ppb

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

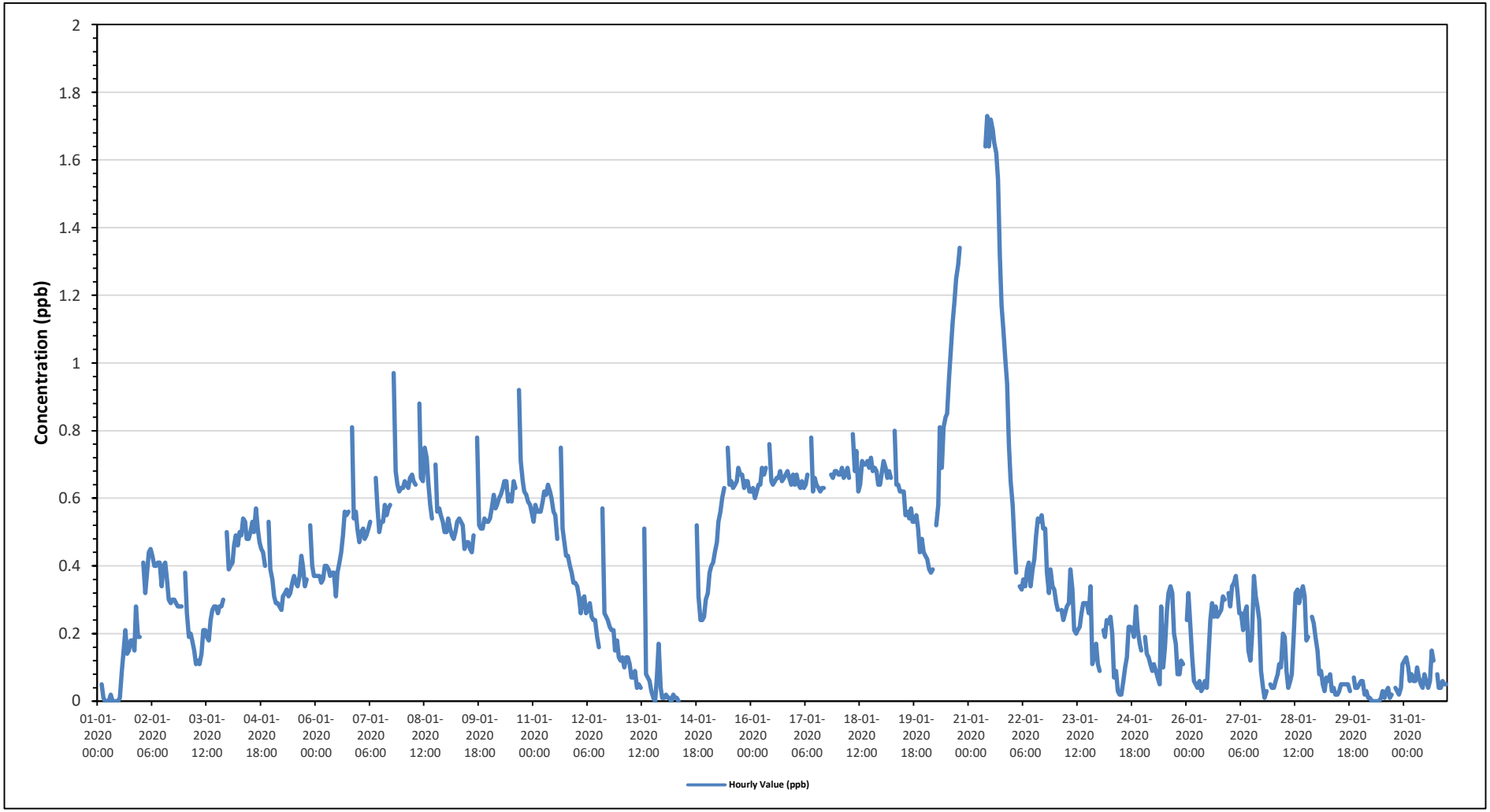
Maximum Hourly Value:	1.73	ppb	on January 21 at hour 10	Hours in Service:	744
Maximum Daily Value:	0.80	ppb	on January 20	Hours of Data:	621
Minimum Hourly Value:	0.00	ppb	on January 1 at hour 4	Hours of Missing Data:	90
Minimum Daily Value:	0.03	ppb	on January 30	Hours of Sration:	33
Monthly Average:	0.41	ppb		Operational Uptime:	87.9

Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	0.16	S	0.05	0.01	0	0	0	0.02	0	0	0	0	0.01	0.09	0.14	0.21	0.14	0.15	0.18	0.18	0.15	0.28	0.19	0.19	0.00	0.28	0.09
Jan 2	S	0.41	0.32	0.38	0.44	0.45	0.43	0.4	0.4	0.41	0.41	0.34	0.4	0.41	0.36	0.3	0.29	0.3	0.3	0.29	0.28	0.28	0.28	S	0.28	0.45	0.36
Jan 3	0.38	0.26	0.19	0.2	0.18	0.15	0.11	0.12	0.11	0.14	0.21	0.21	0.19	0.18	0.24	0.27	0.28	0.28	0.26	0.28	0.28	0.3	S	0.5	0.11	0.50	0.23
Jan 4	0.39	0.4	0.41	0.46	0.49	0.46	0.5	0.49	0.54	0.53	0.48	0.48	0.5	0.53	0.5	0.57	0.51	0.47	0.45	0.44	0.4	S	0.53	0.39	0.39	0.57	0.47
Jan 5	0.36	0.31	0.29	0.29	0.28	0.27	0.31	0.32	0.33	0.31	0.32	0.35	0.37	0.35	0.34	0.37	0.43	0.4	0.34	0.36	S	0.52	0.4	0.37	0.27	0.52	0.35
Jan 6	0.37	0.37	0.37	0.35	0.36	0.4	0.4	0.39	0.37	0.38	0.38	0.31	0.38	0.41	0.44	0.49	0.56	0.55	0.56	S	0.81	0.54	0.56	0.51	0.31	0.81	0.45
Jan 7	0.47	0.5	0.51	0.48	0.49	0.51	0.53	NRM	NRM	0.66	0.57	0.5	0.53	0.53	0.58	0.55	0.57	0.58	S	0.97	0.68	0.64	0.62	0.63	0.47	0.97	0.58
Jan 8	0.63	0.65	0.64	0.63	0.66	0.67	0.65	0.64	NRM	0.88	0.66	0.65	0.75	0.72	0.65	0.58	0.54	S	0.7	0.56	0.57	0.55	0.53	0.5	0.50	0.88	0.64
Jan 9	0.5	0.54	0.51	0.49	0.48	0.5	0.53	0.54	0.53	0.52	0.45	0.47	0.47	0.45	0.44	0.49	S	0.78	0.52	0.51	0.51	0.54	0.53	0.53	0.44	0.78	0.51
Jan 10	0.54	0.57	0.61	0.57	0.58	0.6	0.61	0.63	0.65	0.65	0.59	0.61	0.59	0.65	0.63	S	0.92	0.71	0.65	0.62	0.61	0.59	0.58	0.56	0.54	0.92	0.62
Jan 11	0.53	0.58	0.56	0.56	0.56	0.59	0.62	0.61	0.64	0.62	0.6	0.56	0.55	0.48	S	X	X	X	X	X	X	X	X	X	0.48	0.64	-
Jan 12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Jan 13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Jan 14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	C	C	C	C	0.52	0.31	0.24	0.24	0.25	0.3	0.24	0.52	-
Jan 15	0.32	0.38	0.4	0.41	0.44	0.47	0.53	0.56	0.6	0.63	S	0.75	0.64	0.65	0.63	0.64	0.65	0.69	0.67	0.67	0.63	0.65	0.65	0.62	0.32	0.75	0.58
Jan 16	0.62	0.63	0.6	0.62	0.64	0.64	0.69	0.67	0.69	S	0.76	0.65	0.64	0.65	0.66	0.66	0.68	0.65	0.66	0.67	0.68	0.66	0.64	0.67	0.60	0.76	0.66
Jan 17	0.64	0.67	0.64	0.63	0.65	0.63	0.64	0.67	S	0.78	0.62	0.66	0.64	0.63	0.62	0.63	0.63	X	X	X	0.67	0.66	0.68	0.68	0.62	0.78	0.65
Jan 18	0.67	0.67	0.69	0.66	0.67	0.69	0.66	S	0.79	0.68	0.74	0.62	0.64	0.71	0.7	0.7	0.71	0.69	0.72	0.68	0.69	0.68	0.64	0.64	0.62	0.79	0.68
Jan 19	0.68	0.71	0.69	0.66	0.68	0.66	S	0.8	0.64	0.64	0.62	0.62	0.62	0.55	0.56	0.54	0.57	0.53	0.53	0.55	0.51	0.44	0.48	0.44	0.44	0.80	0.60
Jan 20	0.43	0.42	0.39	0.38	0.39	S	0.52	0.58	0.81	0.69	0.81	0.84	0.85	0.96	1.04	1.12	1.18	1.25	1.29	1.34	X	X	X	X	0.38	1.34	**0.80**
Jan 21	X	X	X	X	X	X	X	NRM	NRM	1.64	1.73	1.64	1.72	1.69	1.65	1.62	1.54	1.32	1.17	1.1	1.01	0.94	0.76	0.65	0.65	**1.73**	-
Jan 22	0.58	0.47	0.38	S	0.34	0.33	0.36	0.34	0.39	0.41	0.34	0.39	0.42	0.49	0.54	0.53	0.55	0.51	0.51	0.38	0.32	0.39	0.34	0.33	0.32	0.58	0.42
Jan 23	0.29	0.27	S	0.27	0.24	0.26	0.28	0.29	0.39	0.33	0.21	0.2	0.21	0.22	0.26	0.29	0.29	0.29	0.26	0.34	0.11	0.13	0.17	0.11	0.11	0.39	0.25
Jan 24	0.09	S	0.21	0.19	0.24	0.23	0.25	0.2	0.07	0.09	0.03	0.02	0.02	0.06	0.1	0.13	0.22	0.22	0.21	0.19	0.28	0.21	0.17	0.15	0.02	0.28	0.16
Jan 25	S	0.19	0.14	0.13	0.11	0.09	0.11	0.09	0.07	0.05	0.28	0.1	0.16	0.27	0.32	0.34	0.32	0.2	0.17	0.08	0.08	0.12	0.11	S	0.05	0.34	0.16
Jan 26	0.24	0.32	0.22	0.13	0.06	0.05	0.04	0.06	0.03	0.04	0.06	0.04	0.14	0.24	0.29	0.25	0.28	0.25	0.26	0.27	0.31	0.3	S	0.32	0.03	0.32	0.18
Jan 27	0.28	0.34	0.35	0.37	0.32	0.26	0.26	0.21	0.26	0.28	0.15	0.12	0.19	0.37	0.31	0.28	0.24	0.09	0.04	0.01	0.03	S	0.05	0.04	0.01	0.37	0.21
Jan 28	0.04	0.06	0.08	0.11	0.1	0.2	0.19	0.09	0.04	0.06	0.08	0.2	0.32	0.33	0.29	0.32	0.34	0.31	0.18	0.19	S	0.25	0.23	0.19	0.04	0.34	0.18
Jan 29	0.15	0.08	0.09	0.05	0.03	0.07	0.06	0.08	0.03	0.04	0.02	0.02	0.03	0.05	0.05	0.05	0.05	0.05	0.03	S	0.07	0.04	0.04	0.05	0.02	0.15	0.05
Jan 30	0.06	0.06	0.02	0.03	0.01	0.01	0	0	0	0	0	0.01	0.03	0.01	0.03	0.04	0.01	0.02	S	0.04	0.03	0.02	0.04	0.11	0.00	0.11	0.03
Jan 31	0.12	0.13	0.1	0.06	0.08	0.06	0.06	0.1	0.07	0.05	0.04	0.08	0.06	0.04	0.06	0.15	0.12	S	0.08	0.04	0.04	0.06	0.05	0.05	0.04	0.15	0.07
Diurnal Maximum	0.68	0.71	0.69	0.66	0.68	0.69	0.69	0.80	0.81	1.64	1.73	1.64	1.72	1.69	1.65	1.62	1.54	1.32	1.29	1.34	1.01	0.94	0.76	0.68			
Diurnal Average	0.38	0.40	0.36	0.35	0.35	0.36	0.36	0.36	0.35	0.43	0.41	0.41	0.43	0.45	0.46	0.47	0.49	0.47	0.45	0.44	0.40	0.40	0.38	0.38			

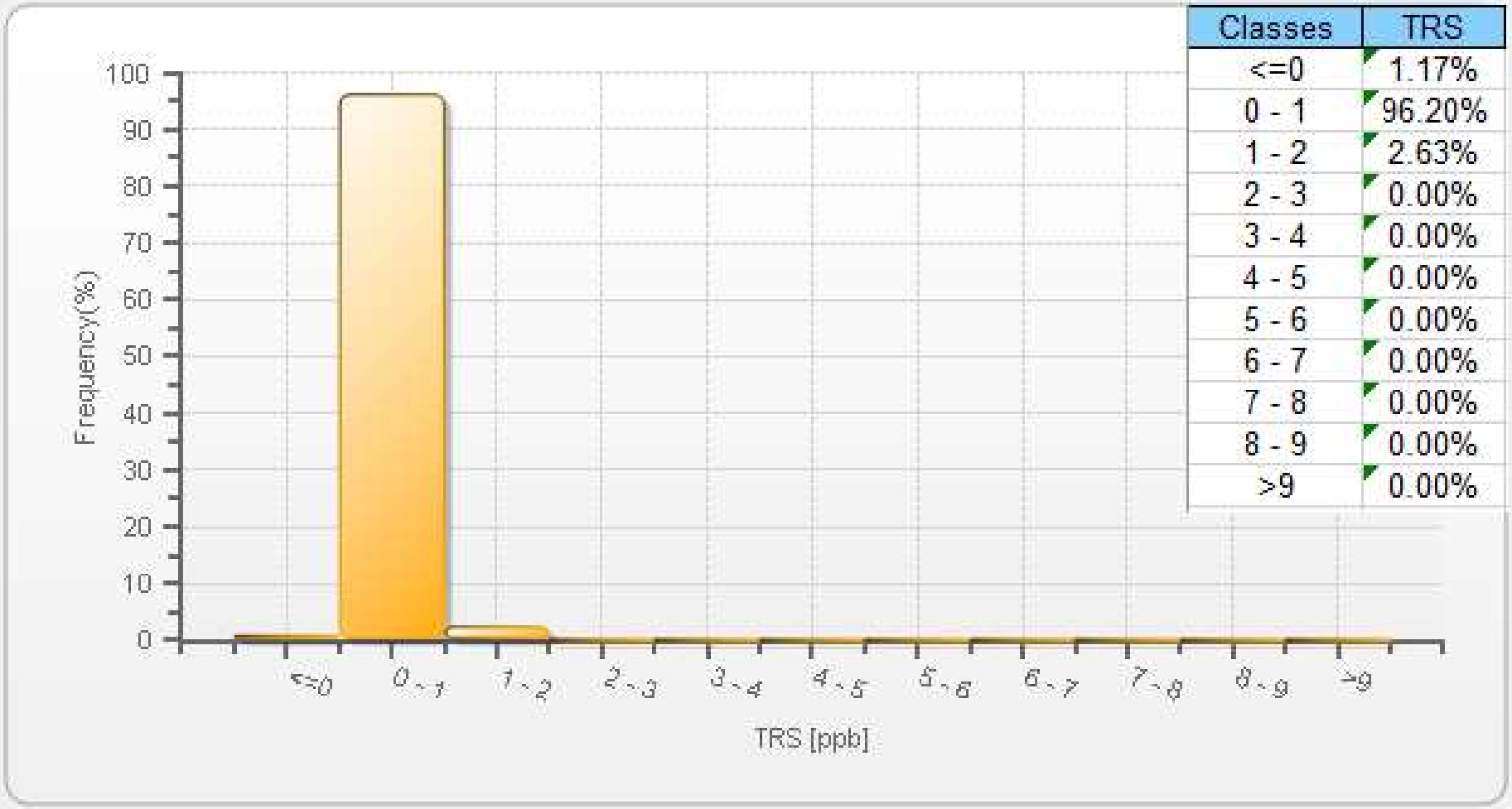
C	Monthly Sration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Machine Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Sration / Repeat Daily Zero-Span Check / Non-Routine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



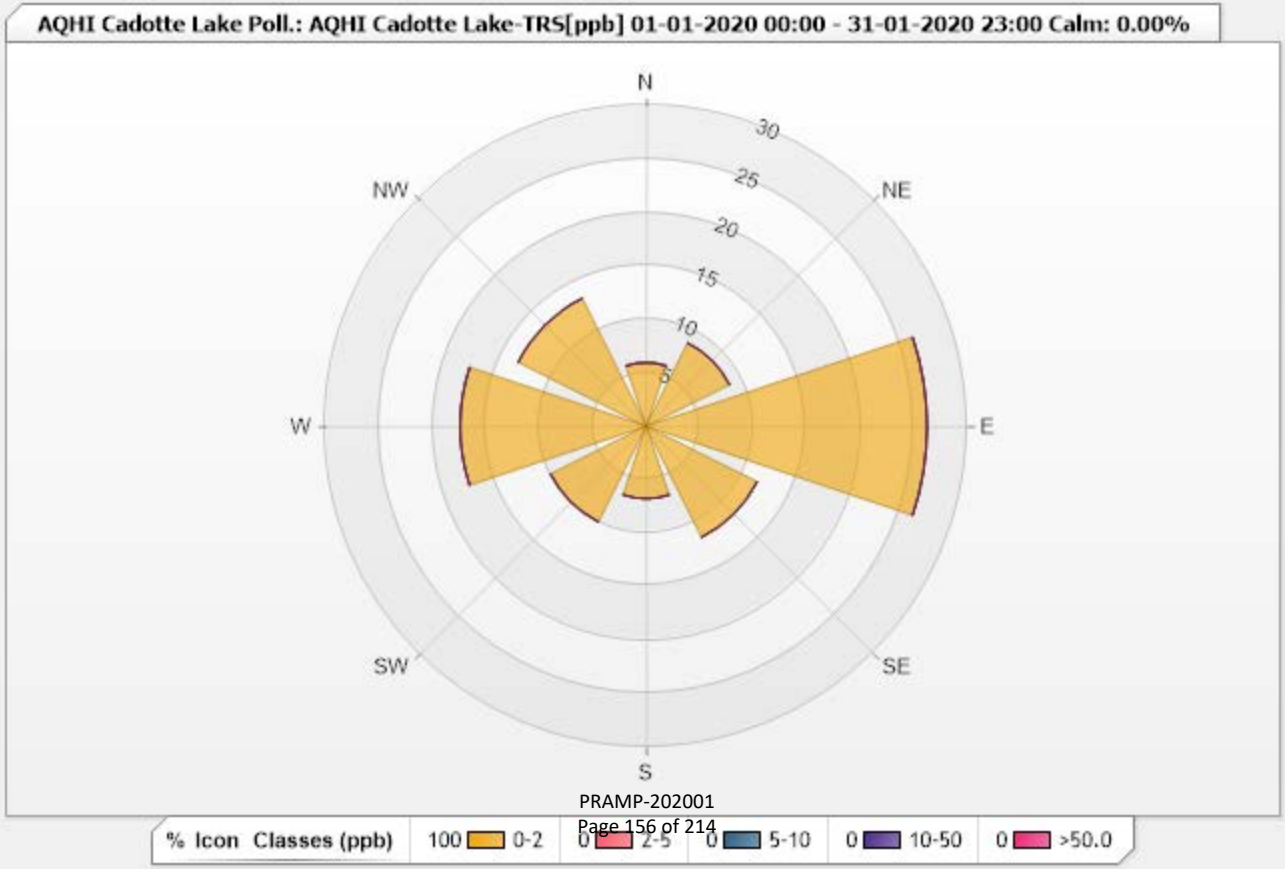
TRS[ppb] Histogram: AQHI Cadotte Lake Monthly: 01-2020 1 Hr.



Classes	TRS
<=0	1.17%
0 - 1	96.20%
1 - 2	2.63%
2 - 3	0.00%
3 - 4	0.00%
4 - 5	0.00%
5 - 6	0.00%
6 - 7	0.00%
7 - 8	0.00%
8 - 9	0.00%
>9	0.00%

Wind: AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-TRS[ppb] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 83.47% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	5.96	0	0	0	0	5.96
NE	8.7	0	0	0	0	8.7
E	26.25	0	0	0	0	26.25
SE	11.59	0	0	0	0	11.59
S	6.76	0	0	0	0	6.76
SW	9.98	0	0	0	0	9.98
W	17.39	0	0	0	0	17.39
NW	13.37	0	0	0	0	13.37
Summary	100	0	0	0	0	100


AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-TRS[ppb] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
30
25
20
15
10
5
% Icon Classes (ppb)
100 0-2
0 2-5
0 5-10
0 10-50
0 >50.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

AQHI - Cadotte Lake Station - January 2020

Summary of Hourly Averages

OXIDES OF NITROGEN (NOx) in ppb

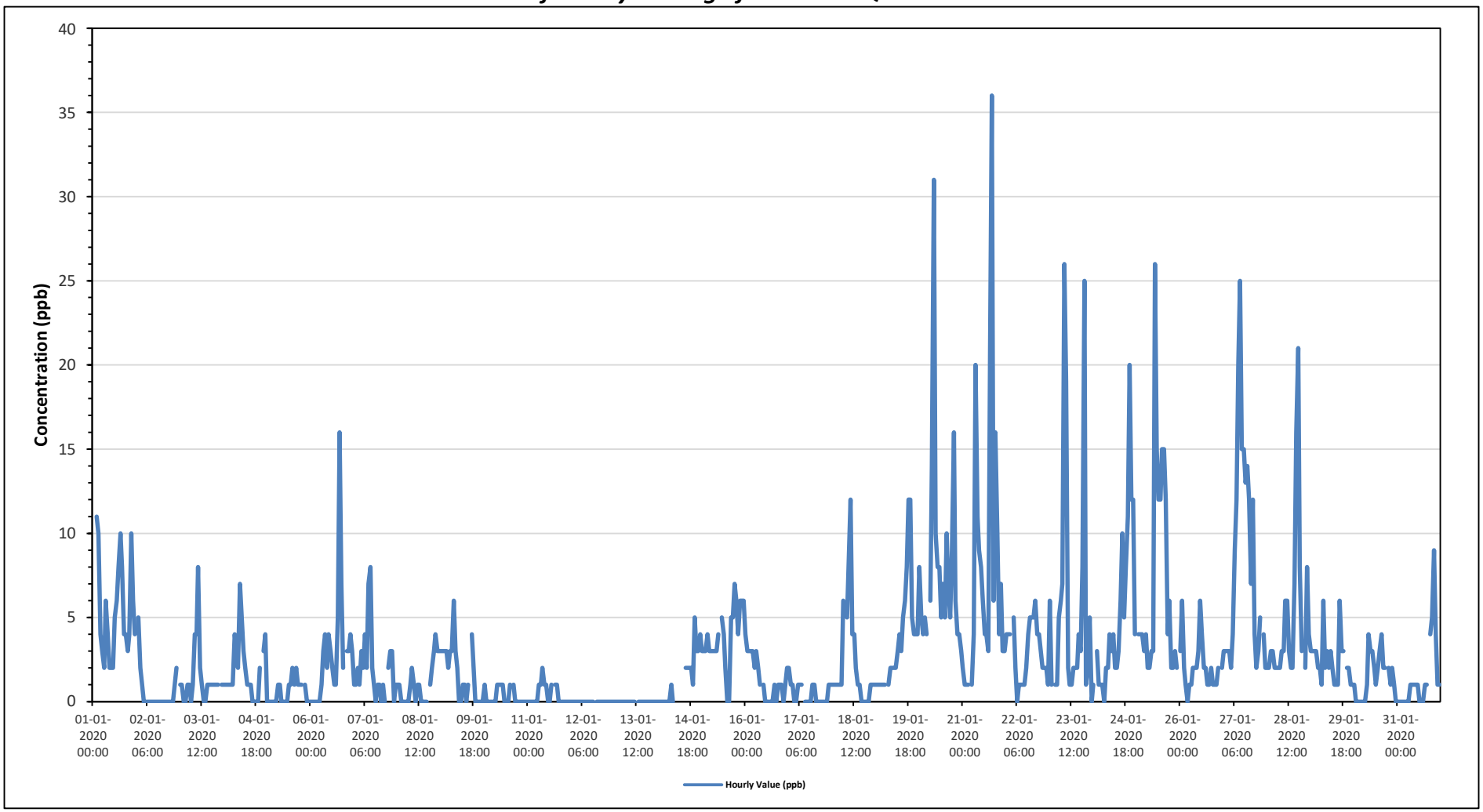
Maximum Hourly Value:	36	ppb	on January 21 at hour 16	Hours in Service:	744
Maximum Daily Value:	8.3	ppb	on January 27	Hours of Data:	706
Minimum Hourly Value:	0	ppb	on January 2 at hour 4	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on January 12	Hours of Sration:	38
Monthly Average:	2.9	ppb		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			
Jan 1	5	S	11	10	4	3	2	6	4	2	2	2	5	6	8	10	8	4	4	3	4	10	6	4	2	11	5.3
Jan 2	S	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	S	0	5	0.5
Jan 3	1	1	0	0	1	1	0	1	4	4	8	2	1	0	0	1	1	1	1	1	1	1	S	1	0	8	1.4
Jan 4	1	1	1	1	1	1	4	3	2	7	5	3	2	1	1	1	0	0	0	0	2	S	3	4	0	7	1.9
Jan 5	0	0	0	0	0	0	1	1	0	0	0	0	1	1	2	1	2	1	1	1	S	1	0	0	0	2	0.6
Jan 6	0	0	0	0	0	0	1	3	4	2	4	3	2	1	1	5	16	7	2	S	3	3	4	3	0	16	2.8
Jan 7	1	1	2	1	3	2	4	2	7	8	2	1	0	1	1	0	1	0	S	2	3	3	0	1	0	8	2.0
Jan 8	1	1	0	0	0	0	0	1	2	1	0	1	1	0	0	0	0	S	1	2	3	4	3	3	0	4	1.0
Jan 9	3	3	3	3	2	3	3	6	3	2	0	0	1	1	0	1	S	4	2	0	0	0	0	0	0	6	1.7
Jan 10	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	S	1	0	0	0	0	0	0	0	0	1	0.3
Jan 11	0	0	0	0	0	0	1	1	2	1	1	0	0	1	S	1	1	0	0	0	0	0	0	0	0	2	0.4
Jan 12	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 13	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 14	0	0	0	0	0	0	0	1	0	C	C	C	C	C	C	2	2	2	2	1	5	3	3	4	0	5	1.4
Jan 15	3	3	3	4	3	3	3	3	3	4	S	5	4	2	0	0	5	5	7	6	4	6	6	6	0	7	3.8
Jan 16	4	3	3	3	3	2	3	2	1	S	1	0	0	0	0	0	1	0	1	1	1	0	1	2	0	4	1.4
Jan 17	2	1	1	0	0	1	1	1	S	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	2	0.5
Jan 18	1	1	1	1	1	1	6	S	5	8	12	4	4	2	1	1	0	0	0	0	0	1	1	1	0	12	2.3
Jan 19	1	1	1	1	1	1	S	1	2	2	2	2	3	4	3	5	6	8	12	12	5	4	4	4	1	12	3.7
Jan 20	8	5	4	5	4	S	6	14	31	10	8	8	5	7	5	10	7	5	9	16	6	4	4	3	3	31	8.0
Jan 21	2	1	1	1	S	1	4	20	11	9	8	6	4	4	3	21	36	6	16	10	4	7	3	3	1	**36**	7.9
Jan 22	4	4	4	S	5	2	0	1	1	1	1	2	4	5	5	5	6	4	4	3	2	2	2	1	0	6	3.0
Jan 23	6	1	S	1	1	5	6	7	26	19	2	1	1	2	2	2	4	3	8	25	1	2	5	0	0	26	5.7
Jan 24	1	S	3	1	1	1	0	2	2	4	3	4	2	2	3	6	10	5	8	11	20	12	12	4	0	20	5.1
Jan 25	S	4	4	4	3	4	2	2	3	3	26	15	12	12	15	15	12	4	6	2	2	3	2	S	2	26	7.0
Jan 26	3	6	2	1	0	1	1	2	2	2	3	6	4	2	2	1	1	2	1	1	1	2	S	2	0	6	2.1
Jan 27	3	3	3	3	2	4	9	12	20	25	15	15	13	14	12	7	12	4	2	3	5	S	4	2	2	25	**8.3**
Jan 28	2	2	3	3	2	2	2	2	3	3	6	6	3	2	2	7	16	21	8	3	S	2	8	4	2	21	4.9
Jan 29	3	3	3	3	2	2	1	6	2	3	2	3	2	1	1	1	6	3	3	S	2	2	1	1	1	6	2.4
Jan 30	1	0	0	0	0	0	0	1	4	3	3	2	1	2	3	4	2	2	S	2	1	2	1	0	0	4	1.5
Jan 31	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	1	1	S	4	5	9	4	1	1	0	9	1.3
Diurnal Maximum	8	6	11	10	5	5	9	20	31	25	26	15	13	14	15	21	36	21	16	25	20	12	12	6			
Diurnal Average	2.0	1.7	1.8	1.6	1.3	1.3	2.0	3.4	4.9	4.3	4.0	3.1	2.6	2.6	2.5	3.6	5.2	3.1	3.5	3.8	2.9	2.7	2.7	1.9			

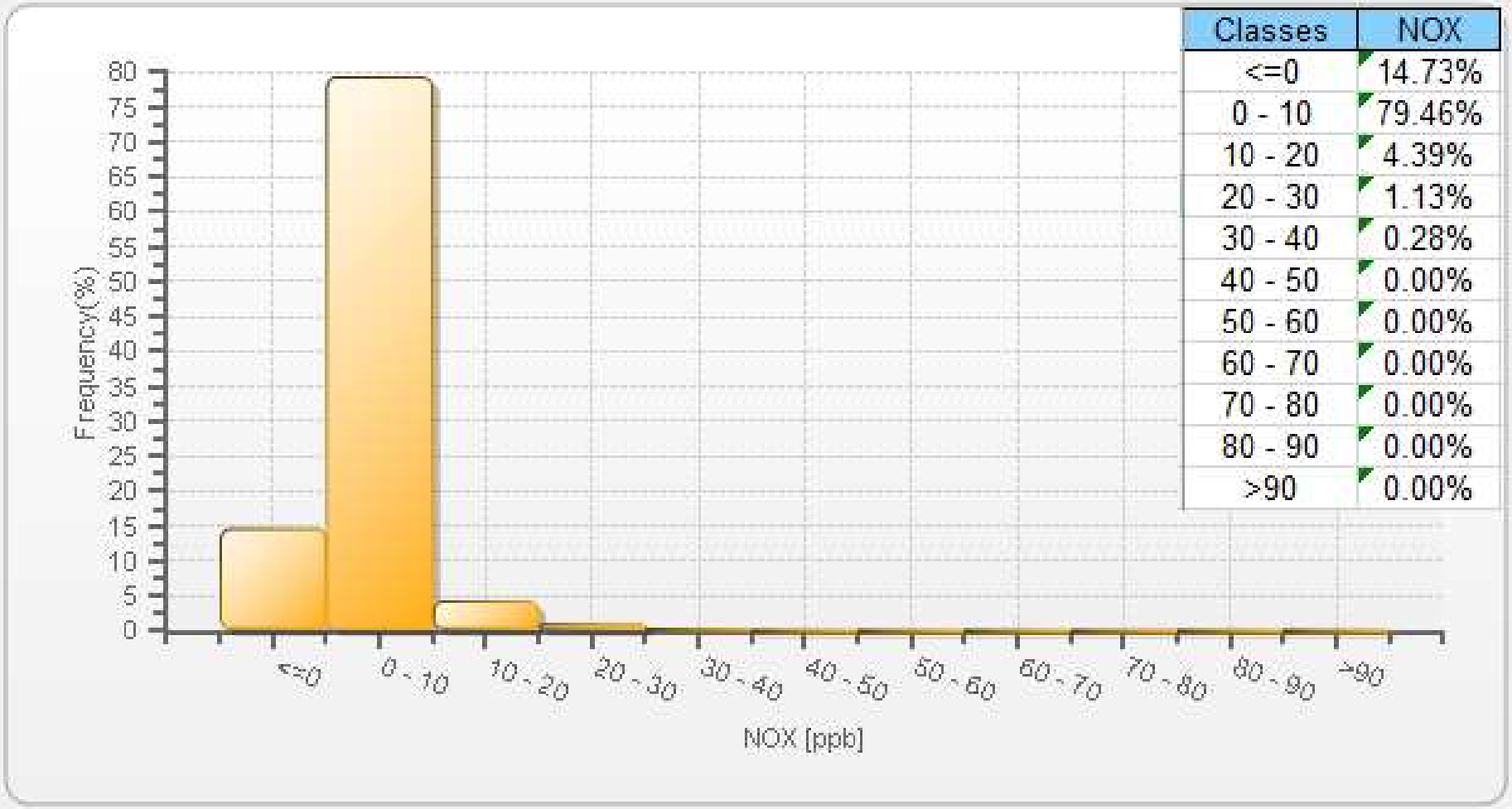
C	Monthly Sration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Machine Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Sration / Repeat Daily Zero-Span Check / Non-Routine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



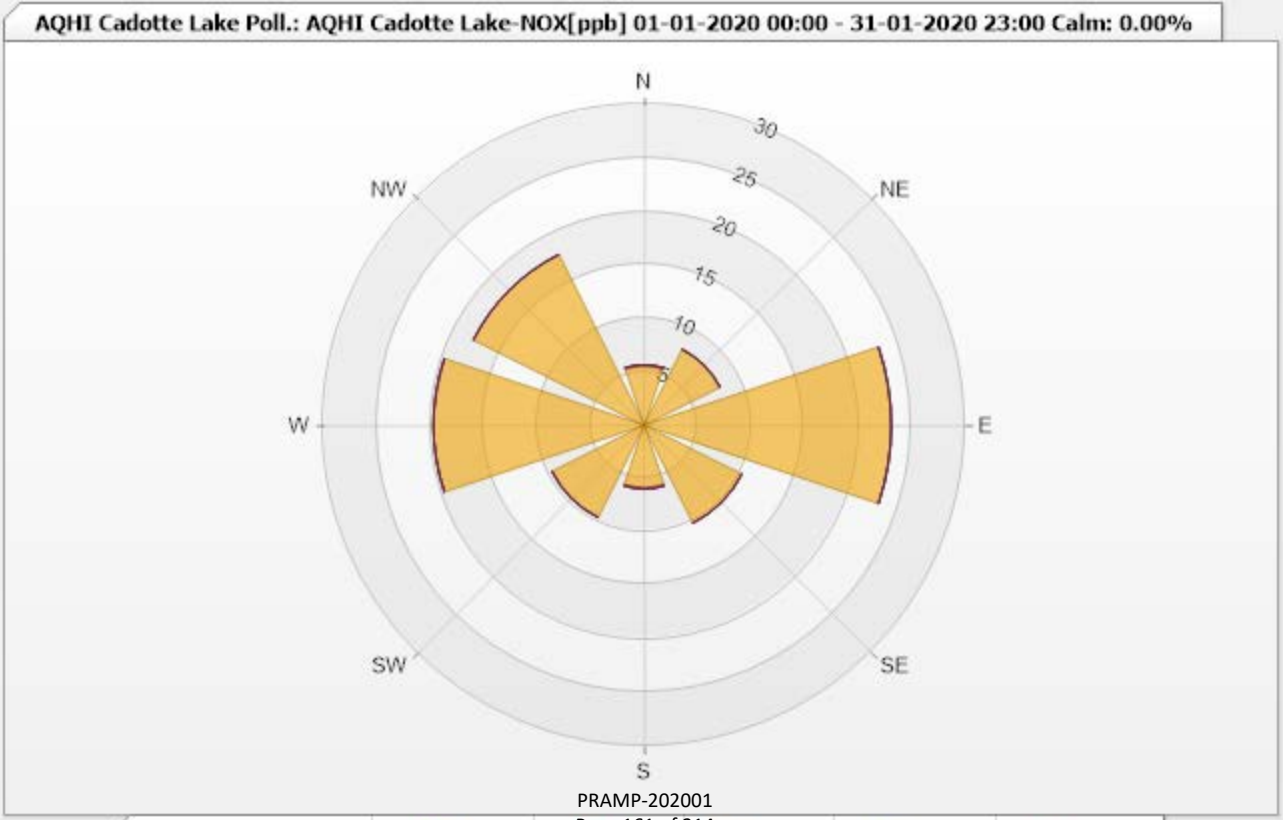
NOX[ppb] Histogram: AQHI Cadotte Lake Monthly: 01-2020 1 Hr.



Classes	NOX
<=0	14.73%
0 - 10	79.46%
10 - 20	4.39%
20 - 30	1.13%
30 - 40	0.28%
40 - 50	0.00%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-NOX[ppb] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-82	82-159	>159.0	Total
N	5.52	0.14	0	0	0	5.66
NE	7.93	0	0	0	0	7.93
E	23.09	0	0	0	0	23.09
SE	10.2	0	0	0	0	10.2
S	5.81	0.14	0	0	0	5.95
SW	9.63	0	0	0	0	9.63
W	19.69	0	0	0	0	19.69
NW	17.85	0	0	0	0	17.85
Summary	100	0.28	0	0	0	100


AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-NOX[ppb] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
30
25
20
15
10
5
% Icon Classes (ppb)
100 0-30
0 30-50
0 50-82
0 82-159
0 >159.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

AQHI - Cadotte Lake Station - January 2020

Summary of Hourly Averages

NITRIC OXIDE (NO) in ppb

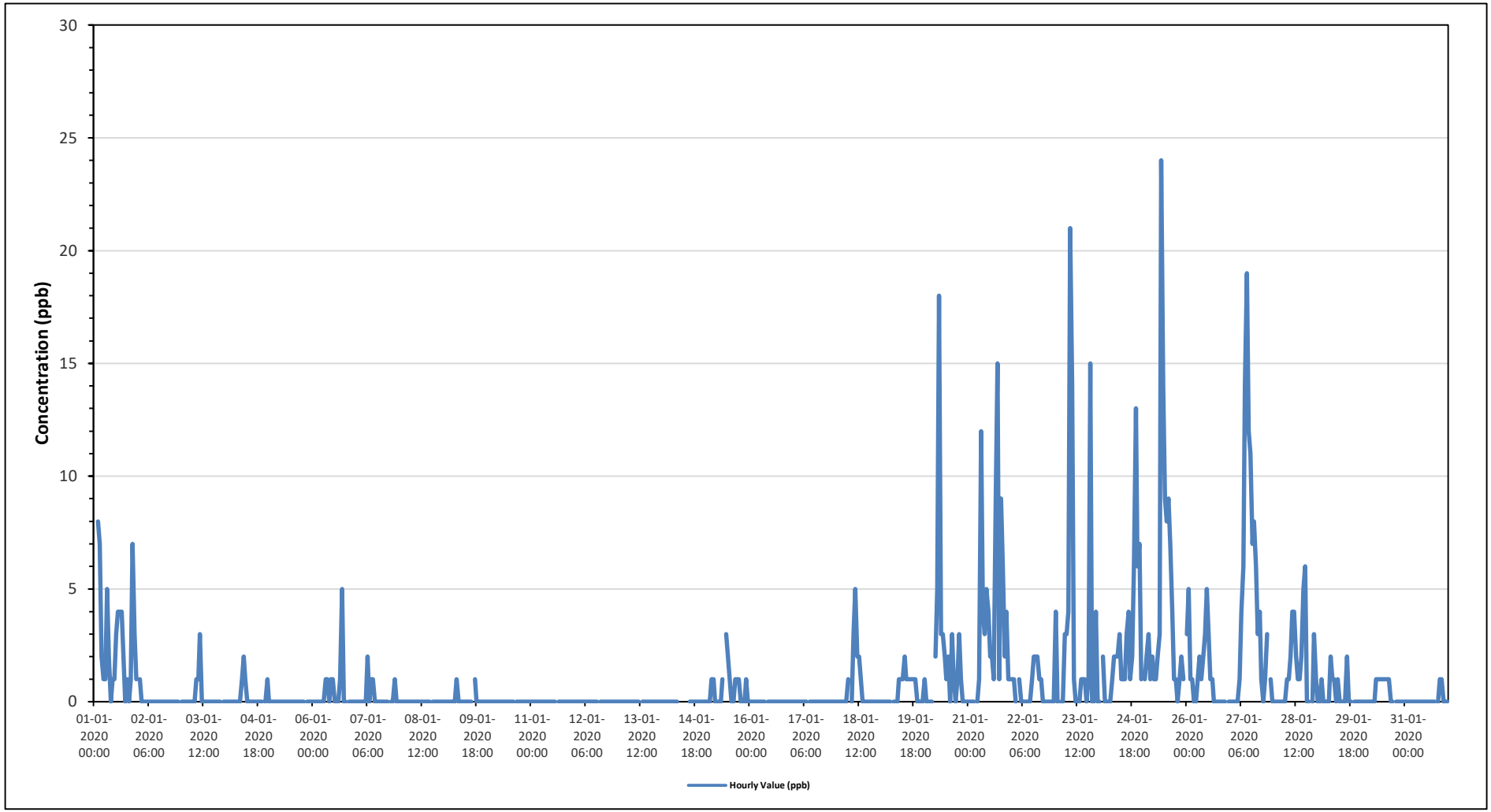
Maximum Hourly Value:	24	ppb	on January 25 at hour 10	Hours in Service:	744
Maximum Daily Value:	4.4	ppb	on January 25	Hours of Data:	706
Minimum Hourly Value:	0	ppb	on January 1 at hour 9	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on January 5	Hours of Sration:	38
Monthly Average:	1.0	ppb		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	3	S	8	7	2	1	1	5	2	0	1	1	3	4	4	4	2	0	1	0	1	7	3	1	0	8	2.7
Jan 2	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.0
Jan 3	0	0	0	0	0	0	0	0	1	1	3	0	0	0	0	0	0	0	0	0	0	0	S	0	0	3	0.2
Jan 4	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	S	0	1	0	2	0.2
Jan 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.0
Jan 6	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	1	5	0	0	S	0	0	0	0	0	5	0.4
Jan 7	0	0	0	0	0	0	2	0	1	1	0	0	0	0	0	0	0	0	S	0	0	1	0	0	0	2	0.2
Jan 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0
Jan 9	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	S	1	0	0	0	0	0	0	0	1	0.1
Jan 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0
Jan 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 12	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 13	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 14	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
Jan 15	0	0	0	1	1	0	0	0	0	1	S	3	2	1	0	0	1	1	1	0	0	0	1	0	0	3	0.6
Jan 16	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 17	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 18	0	0	0	0	0	0	1	S	0	3	5	2	2	1	0	0	0	0	0	0	0	0	0	0	0	5	0.6
Jan 19	0	0	0	0	0	0	S	0	0	0	1	1	1	2	1	1	1	1	1	1	0	0	0	0	0	2	0.5
Jan 20	1	0	0	0	0	S	2	5	18	3	3	2	1	2	0	3	1	0	1	3	1	0	0	0	0	18	2.0
Jan 21	0	0	0	0	S	0	1	12	4	3	5	4	2	2	1	9	15	1	9	6	2	4	1	1	0	15	3.6
Jan 22	1	1	0	S	1	0	0	0	0	0	0	1	2	2	2	1	1	0	0	0	0	0	0	0	0	2	0.5
Jan 23	4	0	S	0	0	3	3	4	21	14	1	0	0	0	1	1	1	0	1	15	0	0	4	0	0	21	3.2
Jan 24	0	S	2	0	0	0	0	1	2	2	2	3	1	1	1	3	4	1	2	6	13	6	7	1	0	13	2.5
Jan 25	S	1	2	3	1	2	1	1	2	3	24	14	9	8	9	7	4	1	1	0	1	2	1	S	0	**24**	**4.4**
Jan 26	3	5	1	1	0	0	1	2	1	2	3	5	3	1	1	0	0	0	0	0	0	0	S	0	0	5	1.3
Jan 27	0	0	0	0	0	1	4	6	14	19	12	11	7	8	6	3	4	1	0	1	3	S	1	0	0	19	4.4
Jan 28	0	0	0	0	0	0	0	1	1	2	4	4	2	1	1	2	5	6	0	0	S	0	3	1	0	6	1.4
Jan 29	0	0	1	0	0	0	0	2	1	1	0	1	0	0	0	0	2	0	0	S	0	0	0	0	0	2	0.3
Jan 30	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	S	0	0	0	0	0	0	1	0.3
Jan 31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	1	0	0	0	0	1	0.1
Diurnal Maximum	4	5	8	7	2	3	4	12	21	19	24	14	9	8	9	9	15	6	9	15	13	7	7	1			
Diurnal Average	0.4	0.3	0.5	0.4	0.2	0.2	0.5	1.4	2.3	2.0	2.3	1.8	1.2	1.2	1.0	1.2	1.5	0.4	0.6	1.1	0.8	0.7	0.7	0.2			

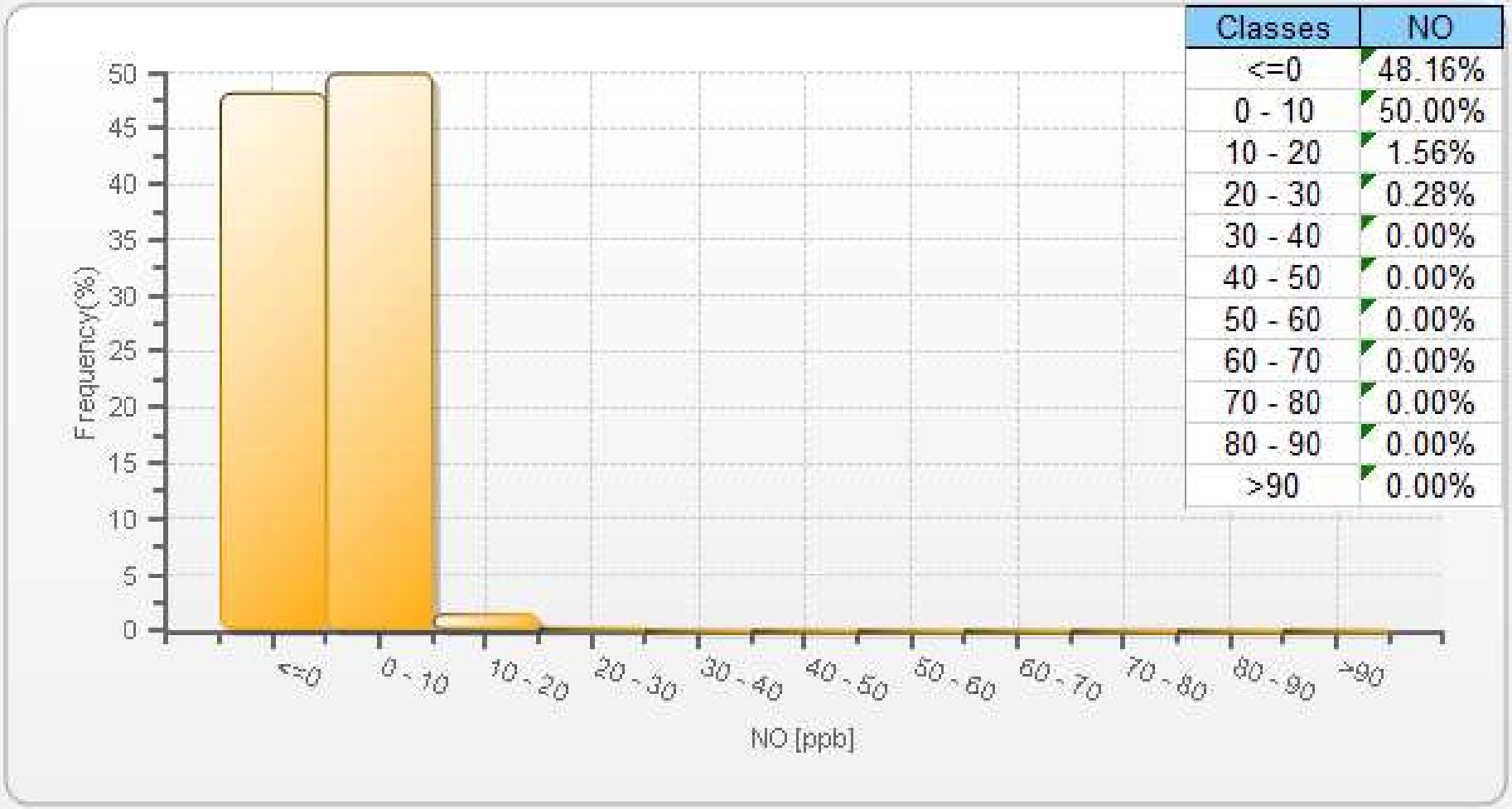
C	Monthly Sration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Machine Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Sration / Repeat Daily Zero-Span Check / Non-Routine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



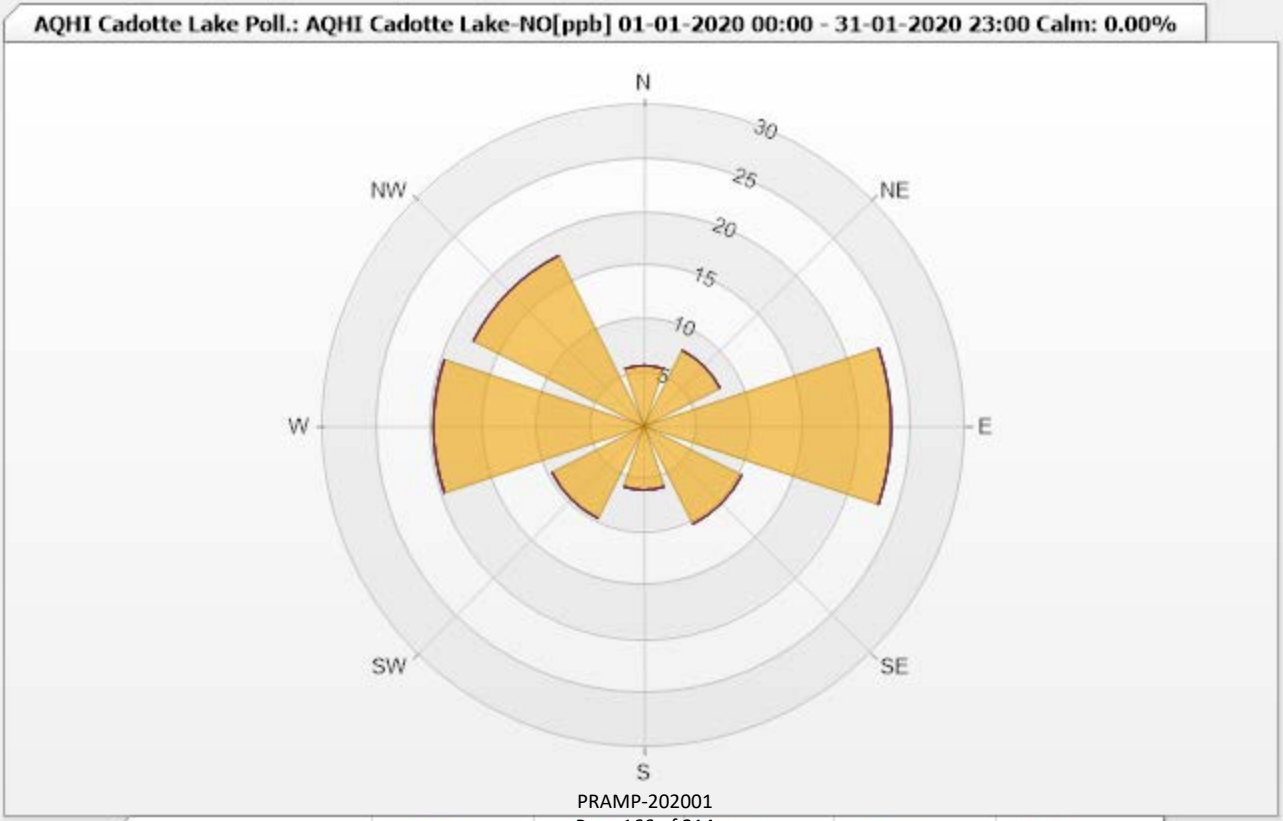
NO[ppb] Histogram: AQHI Cadotte Lake Monthly: 01-2020 1 Hr.



Classes	NO
<=0	48.16%
0 - 10	50.00%
10 - 20	1.56%
20 - 30	0.28%
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: AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-NO[ppb] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-82	82-159	>159.0	Total
N	5.67	0	0	0	0	5.67
NE	7.93	0	0	0	0	7.93
E	23.09	0	0	0	0	23.09
SE	10.2	0	0	0	0	10.2
S	5.95	0	0	0	0	5.95
SW	9.63	0	0	0	0	9.63
W	19.69	0	0	0	0	19.69
NW	17.85	0	0	0	0	17.85
Summary	100	0	0	0	0	100


AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-NO[ppb] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
30
25
20
15
10
5
% Icon Classes (ppb)
100 0-30
0 30-50
0 50-82
0 82-159
0 >159.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

AQHI - Cadotte Lake Station - January 2020

Summary of Hourly Averages

NITROGEN DIOXIDE (NO_2) in ppb

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

Number of 1-Hour Exceedances: 0

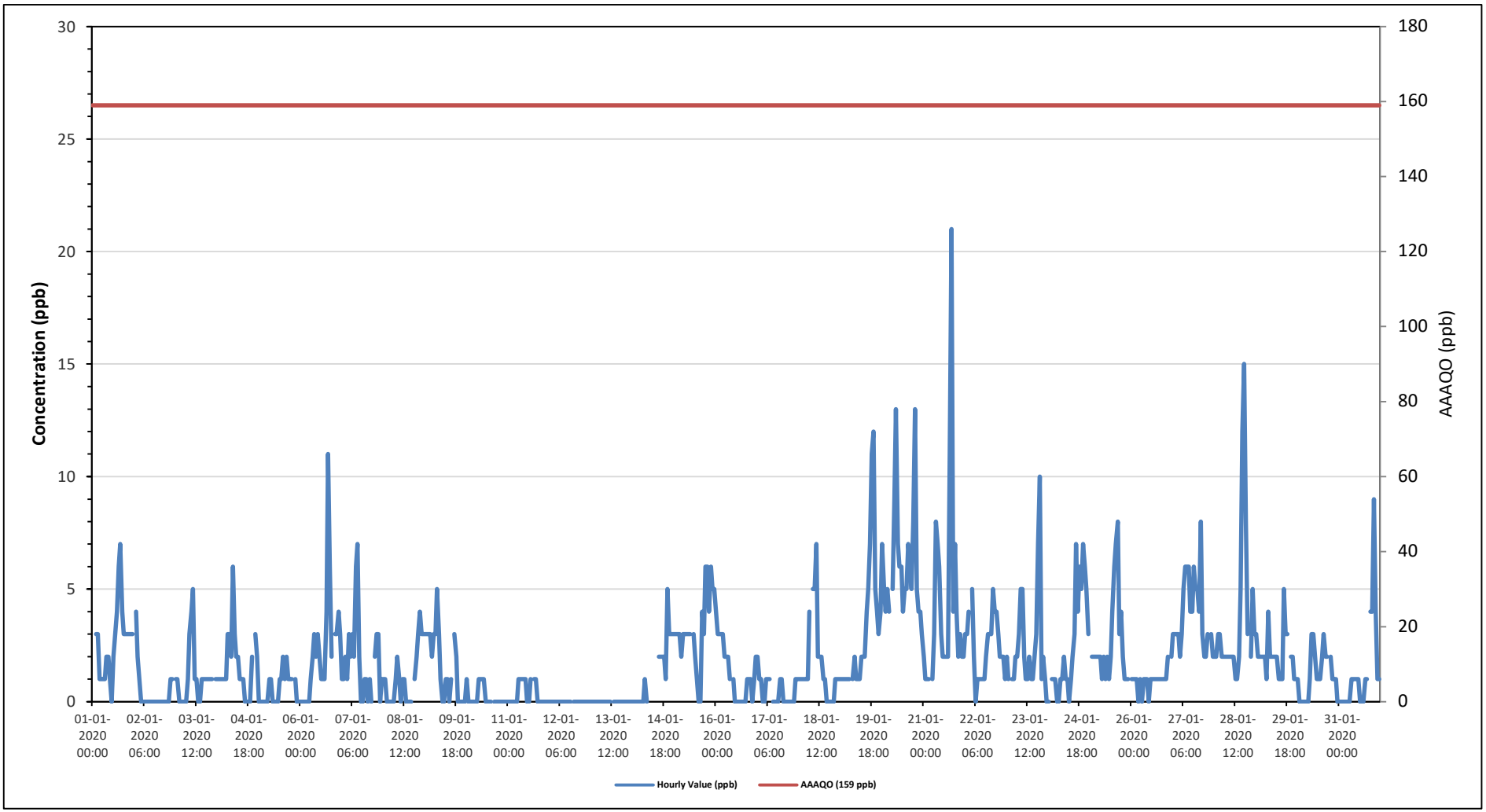
Maximum Hourly Value:	21	ppb	on January 21 at hour 16	Hours in Service:	744
Maximum Daily Value:	6.1	ppb	on January 20	Hours of Data:	706
Minimum Hourly Value:	0	ppb	on January 1 at hour 11	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on January 12	Hours of Sration:	38
Monthly Average:	1.9	ppb		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			
Jan 1	2	S	3	3	1	1	1	1	2	2	1	0	2	3	4	6	7	4	3	3	3	3	3	3	0	7	2.7
Jan 2	S	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	S	0	4	0.4
Jan 3	1	1	0	0	0	0	0	1	3	4	5	1	1	0	0	1	1	1	1	1	1	1	S	1	0	5	1.1
Jan 4	1	1	1	1	1	1	3	3	2	6	3	2	2	1	1	1	0	0	0	0	2	S	3	2	0	6	1.6
Jan 5	0	0	0	0	0	0	1	1	0	0	0	0	1	1	2	1	2	1	1	1	S	1	0	0	0	2	0.6
Jan 6	0	0	0	0	0	0	1	2	3	2	3	2	1	1	1	4	11	6	2	S	3	3	4	3	0	11	2.3
Jan 7	1	1	2	1	3	2	3	2	6	7	2	0	0	1	1	0	1	0	S	2	3	3	0	1	0	7	1.8
Jan 8	1	1	0	0	0	0	0	1	2	1	0	1	1	0	0	0	0	S	1	2	3	4	3	3	0	4	1.0
Jan 9	3	3	3	3	2	3	3	5	3	1	0	0	1	1	0	1	S	3	2	0	0	0	0	0	0	5	1.6
Jan 10	1	0	0	0	0	0	0	1	1	1	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0.2
Jan 11	0	0	0	0	0	0	1	1	1	1	1	0	0	1	S	1	1	0	0	0	0	0	0	0	0	1	0.3
Jan 12	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 13	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Jan 14	0	0	0	0	0	0	0	1	0	C	C	C	C	C	C	2	2	2	2	1	5	3	3	3	0	5	1.3
Jan 15	3	3	3	3	2	3	3	3	3	3	S	3	2	1	0	0	4	3	6	6	4	6	5	5	0	6	3.2
Jan 16	4	3	3	3	3	2	2	2	1	S	1	0	0	0	0	0	0	0	1	1	1	0	1	2	0	4	1.3
Jan 17	2	1	1	0	0	1	1	1	S	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	2	0.5
Jan 18	1	1	1	1	1	1	4	S	5	5	7	2	2	2	1	1	0	0	0	0	0	1	1	1	0	7	1.7
Jan 19	1	1	1	1	1	1	S	1	2	1	1	1	2	2	2	4	5	7	11	12	5	4	3	4	1	12	3.2
Jan 20	7	5	4	5	4	S	5	9	13	7	6	6	4	5	5	7	6	5	8	13	5	4	4	3	3	13	**6.1**
Jan 21	2	1	1	1	S	1	3	8	7	6	3	2	2	2	2	11	21	4	7	4	2	3	2	2	1	**21**	4.2
Jan 22	3	3	4	S	5	2	0	1	1	1	1	1	2	3	3	3	5	4	4	3	2	2	2	1	0	5	2.4
Jan 23	2	1	S	1	1	2	2	3	5	5	2	1	1	2	1	1	2	3	7	10	1	2	1	0	0	10	2.4
Jan 24	0	S	1	1	1	0	0	1	1	2	1	1	0	1	2	3	7	4	6	5	7	6	5	3	0	7	2.5
Jan 25	S	2	2	2	2	2	2	1	2	1	2	1	2	4	6	7	8	3	4	2	1	1	1	S	1	8	2.6
Jan 26	1	1	1	1	0	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	2	S	2	0	2	1.0
Jan 27	3	3	3	3	2	3	5	6	6	6	4	4	6	5	5	4	8	3	2	2	3	S	3	2	2	8	4.0
Jan 28	2	2	3	3	2	2	2	2	2	2	2	2	1	1	2	5	12	15	8	3	S	2	5	3	1	15	3.6
Jan 29	3	2	2	2	2	2	1	4	2	2	2	2	2	1	1	1	5	3	3	S	2	2	1	1	1	5	2.1
Jan 30	1	0	0	0	0	0	0	1	3	3	2	1	1	1	2	3	2	2	S	2	1	1	1	0	0	3	1.2
Jan 31	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	1	1	S	4	4	9	4	1	1	0	9	1.3
Diurnal Maximum	7	5	4	5	5	3	5	9	13	7	7	6	6	5	6	11	21	15	11	13	9	6	5	5			
Diurnal Average	1.6	1.4	1.4	1.2	1.1	1.0	1.4	2.1	2.6	2.4	1.8	1.2	1.3	1.4	1.5	2.3	3.7	2.6	2.9	2.7	2.2	2.0	1.9	1.6			

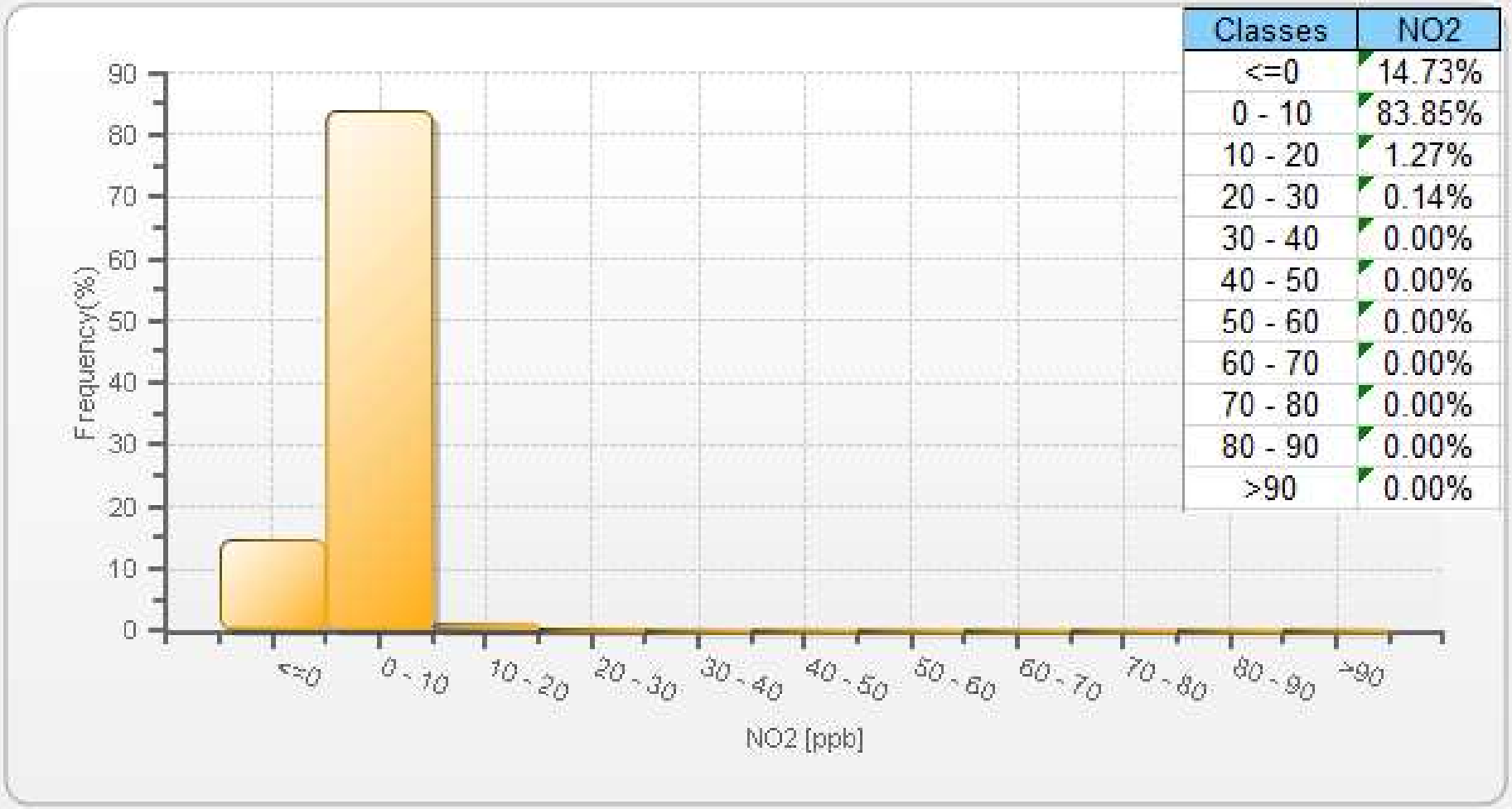
C	Monthly Sration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Machine Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Sration / Repeat Daily Zero-Span Check / Non-Routine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



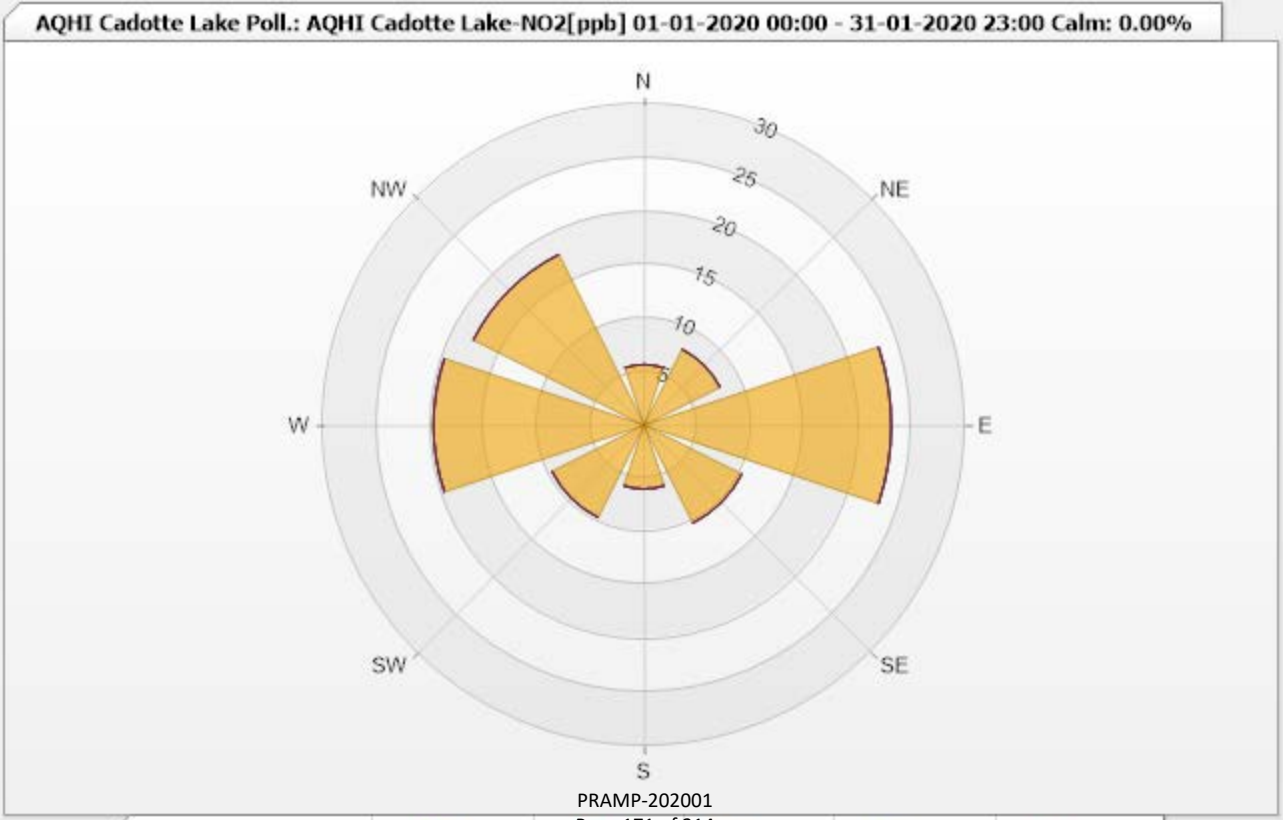
NO2[ppb] Histogram: AQHI Cadotte Lake Monthly: 01-2020 1 Hr.



Classes	NO2
<=0	14.73%
0 - 10	83.85%
10 - 20	1.27%
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: AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-NO2[ppb] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.89% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-82	82-159	>159.0	Total
N	5.67	0	0	0	0	5.67
NE	7.93	0	0	0	0	7.93
E	23.09	0	0	0	0	23.09
SE	10.2	0	0	0	0	10.2
S	5.95	0	0	0	0	5.95
SW	9.63	0	0	0	0	9.63
W	19.69	0	0	0	0	19.69
NW	17.85	0	0	0	0	17.85
Summary	100	0	0	0	0	100


AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-NO2[ppb] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
30
25
20
15
10
5
% Icon Classes (ppb)
100 0-30
0 30-50
0 50-82
0 82-159
0 >159.0

PEACE RIVER AREA MONITORING PROGRAM

AQHI - Cadotte Lake Station - January 2020

Summary of Hourly Averages

OZONE (O_3) in ppb

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

Number of 1-Hour Exceedances: 0

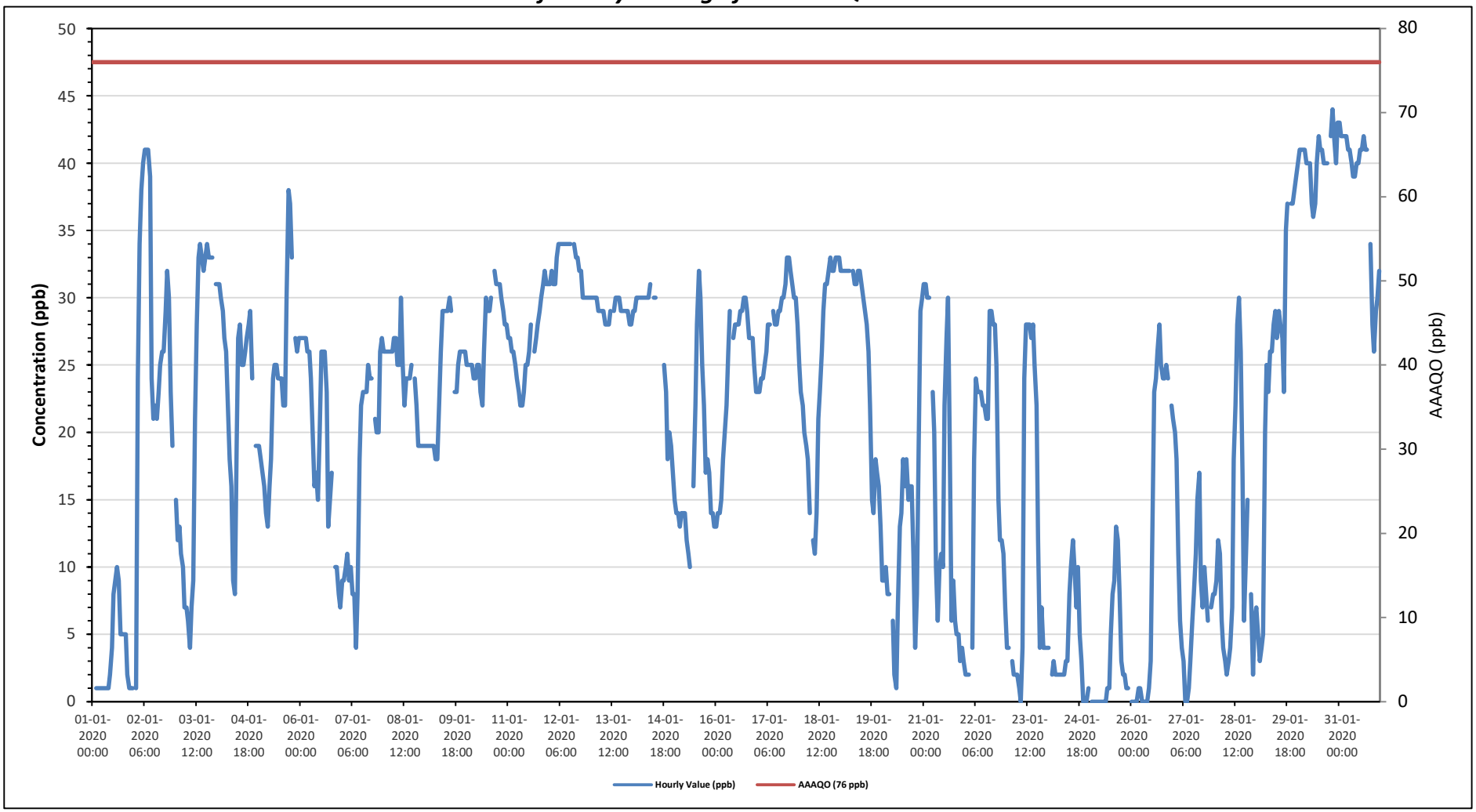
Maximum Hourly Value:	44	ppb	on January 30 at hour 20	Hours in Service:	744
Maximum Daily Value:	40.4	ppb	on January 30	Hours of Data:	707
Minimum Hourly Value:	0	ppb	on January 23 at hour 8	Hours of Missing Data:	0
Minimum Daily Value:	3.0	ppb	on January 25	Hours of Sration:	37
Monthly Average:	20.8	ppb		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	1	S	1	1	1	1	1	1	1	1	2	4	8	9	10	9	5	5	5	5	2	1	1	1	1	10	3.3
Jan 2	S	1	24	34	38	40	41	41	41	39	24	21	22	21	23	25	26	26	29	32	30	23	19	S	1	41	28.2
Jan 3	15	12	13	11	10	7	7	6	4	7	9	21	28	33	34	33	32	33	34	33	33	33	S	31	4	34	20.8
Jan 4	31	31	30	29	27	26	22	18	16	9	8	19	27	28	25	25	26	27	28	29	24	S	19	19	8	31	23.6
Jan 5	19	18	17	16	14	13	16	18	24	25	25	24	24	24	22	22	30	38	37	33	S	27	26	27	13	38	23.4
Jan 6	27	27	27	27	26	26	24	20	16	17	15	20	26	26	26	23	13	15	17	S	10	10	8	7	7	27	19.7
Jan 7	9	9	10	11	9	10	8	8	4	8	18	22	23	23	23	25	24	24	S	21	20	20	26	27	4	27	16.6
Jan 8	26	26	26	26	26	26	27	27	25	25	30	25	22	24	24	24	25	S	24	22	19	19	19	19	19	30	24.2
Jan 9	19	19	19	19	19	19	18	18	22	26	29	29	29	29	30	29	S	23	23	25	26	26	26	26	18	30	23.8
Jan 10	25	25	25	25	24	24	25	25	23	22	26	30	29	29	30	S	32	31	31	31	30	29	28	28	22	32	27.3
Jan 11	27	27	26	26	25	24	23	22	22	23	25	25	26	28	S	26	27	28	29	30	31	32	31	31	22	32	26.7
Jan 12	31	32	31	31	33	34	34	34	34	34	34	34	34	S	34	33	33	32	32	30	30	30	30	30	30	34	32.3
Jan 13	30	30	30	30	29	29	29	29	28	28	28	29	S	29	30	30	30	29	29	29	29	29	28	28	28	30	29.1
Jan 14	29	29	30	30	30	30	30	30	30	30	31	S	30	30	C	C	C	C	25	23	18	20	19	17	17	31	26.9
Jan 15	15	14	14	13	14	14	14	12	11	10	S	16	22	28	32	30	25	22	17	18	17	14	14	13	10	32	17.3
Jan 16	13	14	14	15	18	20	22	26	29	S	27	28	28	28	29	29	30	30	29	27	27	27	25	23	13	30	24.3
Jan 17	23	23	24	24	25	26	28	28	S	29	28	28	29	29	30	30	31	33	33	32	31	30	30	28	23	33	28.3
Jan 18	25	23	22	20	19	18	14	S	12	11	14	21	23	26	29	31	31	32	33	32	32	33	33	33	11	33	24.7
Jan 19	32	32	32	32	32	32	S	32	31	31	32	32	31	30	29	28	26	22	15	14	18	17	16	13	13	32	26.5
Jan 20	9	9	10	8	8	S	6	2	1	7	13	14	18	16	18	15	16	16	11	4	8	19	29	30	1	30	12.5
Jan 21	31	31	30	30	S	23	20	10	6	10	11	10	22	27	30	19	6	9	6	5	5	3	4	3	3	31	15.3
Jan 22	2	2	2	S	4	18	24	23	23	23	22	22	21	21	29	29	28	28	25	15	12	12	11	7	2	29	17.5
Jan 23	4	4	S	3	2	2	2	1	0	4	24	28	28	28	27	28	25	22	12	4	7	4	4	4	0	28	11.6
Jan 24	4	S	2	3	2	2	2	2	2	2	3	3	8	10	12	10	7	10	5	3	0	0	0	1	0	12	4.0
Jan 25	S	0	0	0	0	0	0	0	0	0	1	1	5	8	9	13	12	8	3	2	2	1	1	S	0	13	3.0
Jan 26	0	0	0	0	1	1	0	0	0	0	1	3	13	23	24	26	28	25	24	24	25	24	S	22	0	28	11.5
Jan 27	21	20	18	11	6	4	3	0	0	1	3	6	8	11	15	17	9	7	10	8	6	S	7	8	0	21	8.7
Jan 28	8	9	12	11	6	4	3	2	3	4	7	18	22	28	30	26	17	6	11	15	S	8	2	6	2	30	11.2
Jan 29	7	5	3	4	5	20	25	23	26	26	28	29	27	29	28	27	23	35	37	S	37	37	38	39	3	39	24.3
Jan 30	40	41	41	41	41	40	40	40	37	36	37	40	42	41	41	40	40	40	S	42	44	42	40	43	36	**44**	**40.4**
Jan 31	43	42	42	42	42	41	41	40	39	39	40	40	41	41	42	41	41	S	34	28	26	29	30	32	26	43	38.1
Diurnal Maximum	43	42	42	42	42	41	41	41	41	39	40	40	42	41	42	41	41	40	37	42	44	42	40	43			
Diurnal Average	19.5	19.1	19.2	19.1	17.9	19.1	18.3	17.9	17.0	17.6	19.8	21.4	23.9	25.2	26.4	25.6	24.1	23.4	22.3	21.2	20.7	20.7	19.4	20.6			

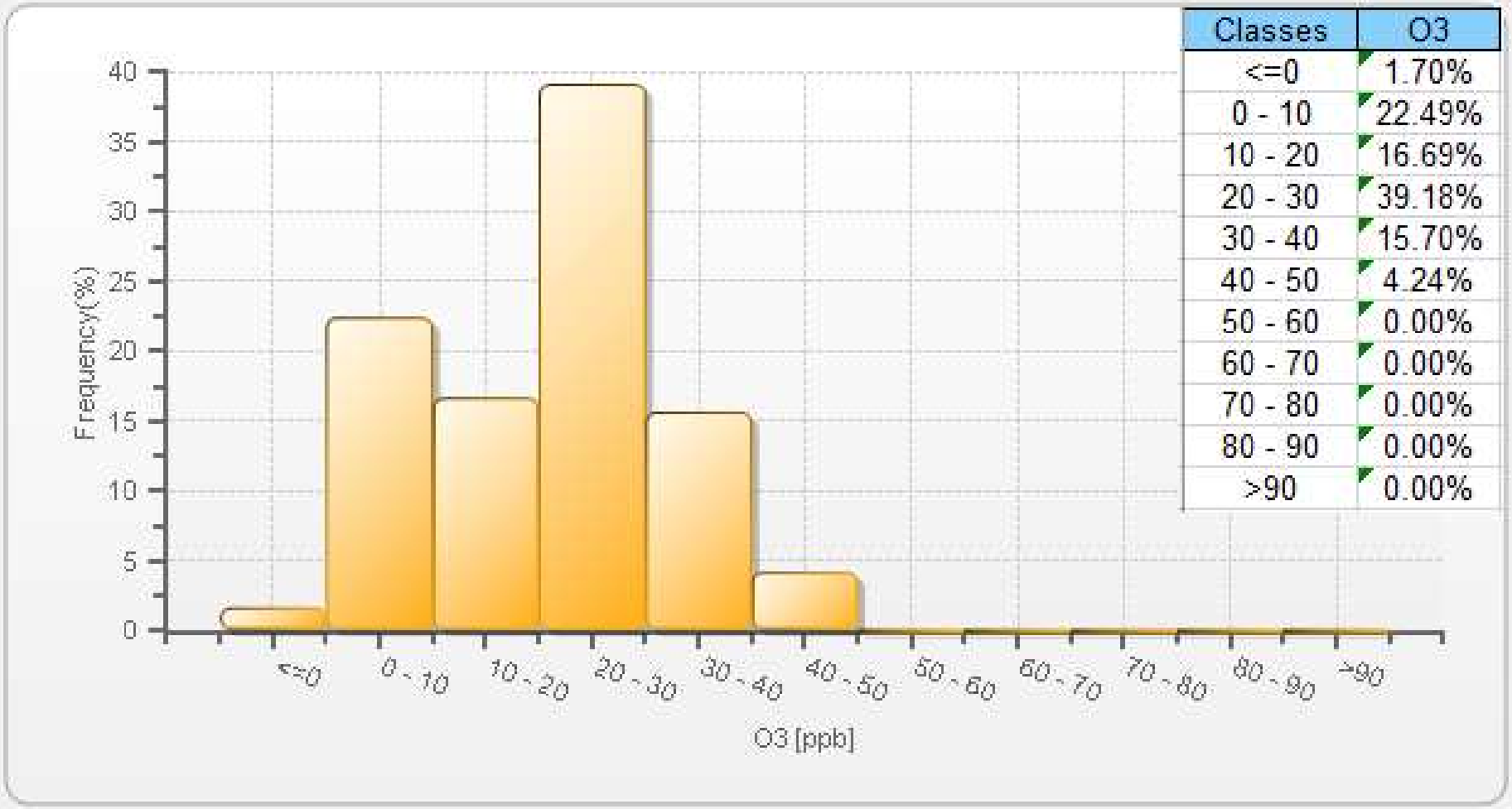
C	Monthly Sration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Machine Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Sration / Repeat Daily Zero-Span Check / Non-Routine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



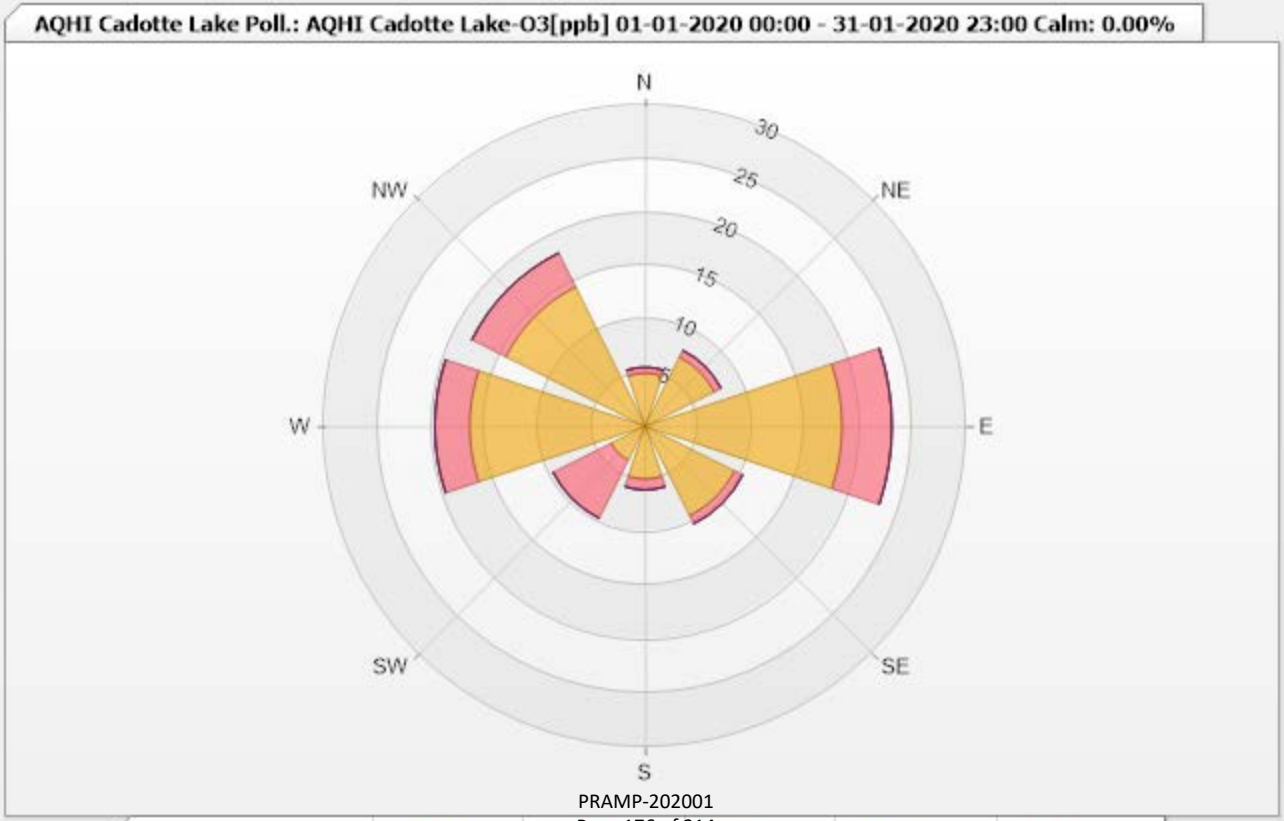
O3[ppb] Histogram: AQHI Cadotte Lake Monthly: 01-2020 1 Hr.



Classes	O3
<=0	1.70%
0 - 10	22.49%
10 - 20	16.69%
20 - 30	39.18%
30 - 40	15.70%
40 - 50	4.24%
50 - 60	0.00%
60 - 70	0.00%
70 - 80	0.00%
80 - 90	0.00%
>90	0.00%

Wind: AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-O3[ppb] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppb]

Direction	0-30	30-50	50-82	82-159	>159.0	Total
N	4.95	0.57	0	0	0	5.52
NE	7.21	0.71	0	0	0	7.92
E	18.39	4.67	0	0	0	23.06
SE	9.34	0.85	0	0	0	10.19
S	4.95	0.99	0	0	0	5.94
SW	3.54	6.08	0	0	0	9.62
W	16.41	3.25	0	0	0	19.66
NW	14.57	3.54	0	0	0	18.11
Summary	79.36	20.66	0	0	0	100


AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-O3[ppb] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
30
25
20
15
10
% Icon Classes (ppb)
79 0-30
21 30-50
0 50-82
0 82-159
0 >159.0

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PEACE RIVER AREA MONITORING PROGRAM

AQHI - Cadotte Lake Station - January 2020

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

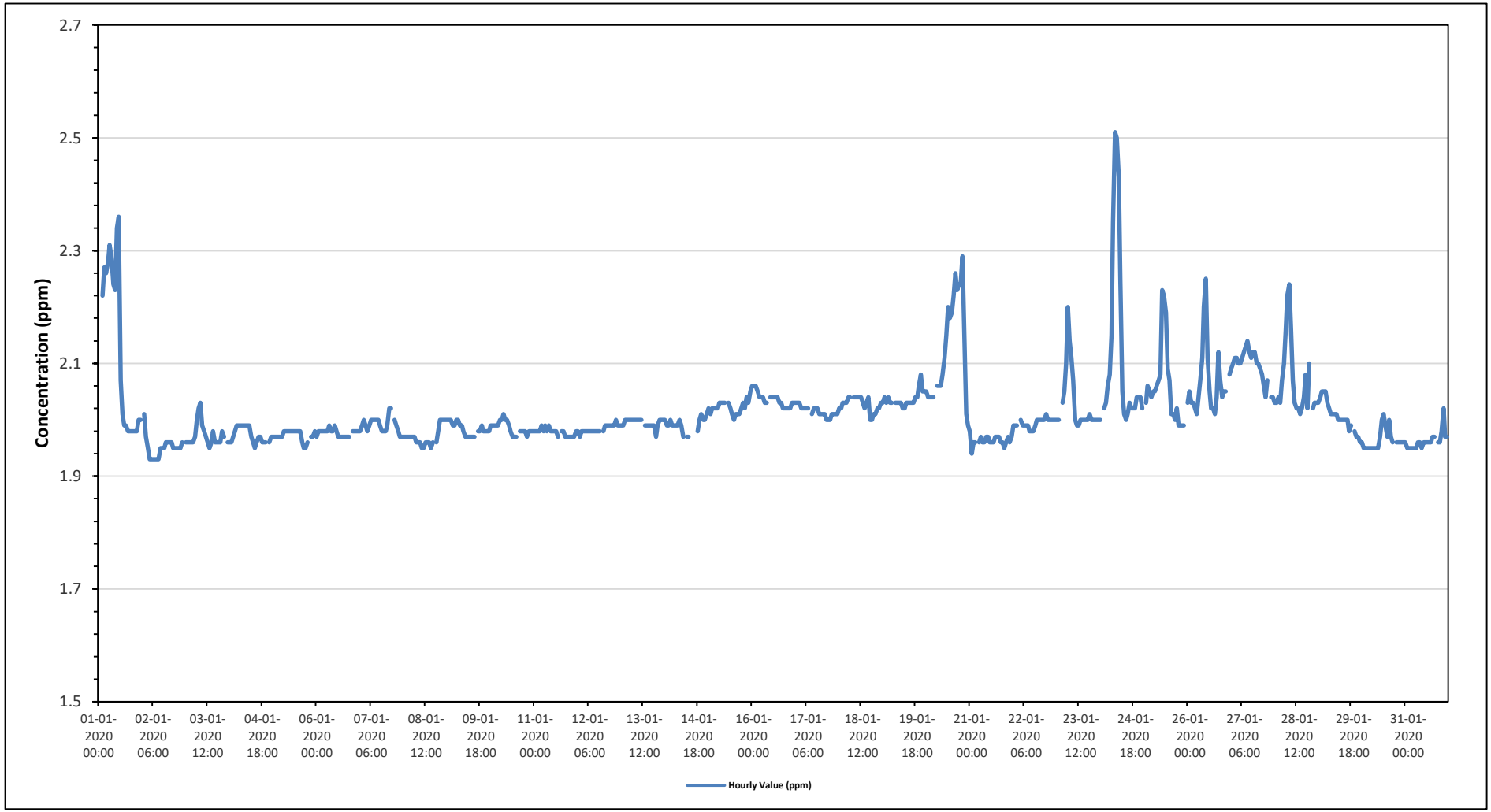
Maximum Hourly Value:	2.51	ppm	on January 24 at hour 8	Hours in Service:	744
Maximum Daily Value:	2.13	ppm	on January 20	Hours of Data:	707
Minimum Hourly Value:	1.93	ppm	on January 2 at hour 4	Hours of Missing Data:	0
Minimum Daily Value:	1.95	ppm	on January 2	Hours of Sration:	37
Monthly Average:	2.01	ppm		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	1.97	S	2.22	2.27	2.26	2.28	2.31	2.29	2.24	2.23	2.34	2.36	2.07	2.01	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98	2	2	1.97	2.36	2.12
Jan 2	S	2.01	1.97	1.95	1.93	1.93	1.93	1.93	1.93	1.93	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.96	S	1.93	2.01	1.95
Jan 3	1.96	1.96	1.96	1.96	1.96	1.97	2	2.02	2.03	1.99	1.98	1.97	1.96	1.95	1.96	1.98	1.96	1.96	1.96	1.96	1.98	1.97	S	1.96	1.95	2.03	1.97
Jan 4	1.96	1.96	1.97	1.98	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.97	1.96	1.95	1.96	1.97	1.97	1.96	1.96	1.96	S	1.96	1.97	1.95	1.99	1.97
Jan 5	1.97	1.97	1.97	1.97	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.96	1.95	1.95	1.96	S	1.97	1.97	1.98	1.95	1.98	1.97
Jan 6	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.98	1.98	1.99	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	S	1.98	1.98	1.98	1.98	1.97	1.99	1.98
Jan 7	1.98	1.99	2	1.99	1.98	1.99	2	2	2	2	2	1.99	1.98	1.98	1.98	1.99	2.02	2.02	S	2	1.99	1.98	1.97	1.97	1.97	2.02	1.99
Jan 8	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.96	1.96	1.95	1.95	1.96	1.96	1.96	1.95	1.96	S	1.96	1.98	2	2	2	2	1.95	2.00	1.97
Jan 9	2	2	2	1.99	1.99	2	2	1.99	1.99	1.98	1.97	1.97	1.97	1.97	1.97	1.97	S	1.98	1.98	1.99	1.98	1.98	1.98	1.98	1.97	2.00	1.98
Jan 10	1.99	1.99	1.99	1.99	1.99	2	2	2.01	2	2	1.99	1.98	1.97	1.97	1.97	S	1.98	1.98	1.98	1.98	1.97	1.98	1.98	1.98	1.97	2.01	1.99
Jan 11	1.98	1.98	1.98	1.98	1.99	1.98	1.99	1.98	1.99	1.98	1.98	1.98	1.98	1.97	S	1.98	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.98	1.97	1.99	1.98
Jan 12	1.98	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	S	1.98	1.99	1.99	1.99	1.99	1.99	1.99	2	1.99	1.99	1.97	2.00	1.98
Jan 13	1.99	1.99	2	2	2	2	2	2	2	2	2	2	S	1.99	1.99	1.99	1.99	1.99	1.99	1.97	1.99	2	2	2	1.97	2.00	1.99
Jan 14	2	1.99	1.99	2	1.99	1.99	1.99	1.99	2	1.99	1.97	S	1.97	1.97	C	C	C	C	1.98	2	2.01	2	2	2.01	1.97	2.01	1.99
Jan 15	2.02	2.01	2.02	2.02	2.02	2.02	2.03	2.03	2.03	2.03	S	2.03	2.02	2.01	2	2.01	2.01	2.01	2.02	2.03	2.02	2.04	2.03	2.05	2.00	2.05	2.02
Jan 16	2.06	2.06	2.06	2.05	2.04	2.04	2.04	2.03	2.03	S	2.04	2.04	2.04	2.04	2.04	2.03	2.03	2.02	2.02	2.02	2.02	2.02	2.03	2.03	2.02	2.06	2.04
Jan 17	2.03	2.03	2.03	2.02	2.02	2.02	2.02	2.02	S	2.01	2.02	2.02	2.02	2.01	2.01	2.01	2.01	2	2	2	2.01	2.01	2.01	2.01	2.00	2.03	2.01
Jan 18	2.02	2.02	2.03	2.03	2.03	2.04	2.04	S	2.04	2.04	2.04	2.04	2.04	2.03	2.02	2.03	2.04	2	2	2.01	2.01	2.02	2.02	2.03	2.00	2.04	2.03
Jan 19	2.03	2.04	2.03	2.04	2.03	2.03	S	2.03	2.03	2.03	2.03	2.02	2.02	2.03	2.03	2.03	2.03	2.03	2.04	2.04	2.06	2.08	2.05	2.05	2.02	2.08	2.04
Jan 20	2.05	2.04	2.04	2.04	2.04	S	2.06	2.06	2.06	2.08	2.11	2.15	2.2	2.18	2.19	2.22	2.26	2.23	2.24	2.24	2.29	2.14	2.01	1.99	1.99	2.29	**2.13**
Jan 21	1.98	1.94	1.96	1.96	S	1.96	1.97	1.96	1.96	1.97	1.97	1.96	1.96	1.96	1.97	1.97	1.97	1.96	1.96	1.95	1.96	1.97	1.96	1.97	1.94	1.98	1.96
Jan 22	1.99	1.99	1.99	S	2	1.99	1.99	1.99	1.99	1.98	1.98	1.98	1.99	2	2	2	2	2	2.01	2	2	2	2	2	1.98	2.01	1.99
Jan 23	2	2	S	2.03	2.05	2.1	2.2	2.14	2.11	2.07	2	1.99	1.99	2	2	2	2	2	2.01	2	2	2	2	2	1.99	2.20	2.03
Jan 24	2	S	2.02	2.03	2.06	2.08	2.15	2.35	2.51	2.5	2.43	2.25	2.05	2.01	2	2.01	2.03	2.02	2.02	2.02	2.04	2.04	2.04	2.02	2.00	**2.51**	2.12
Jan 25	S	2.03	2.06	2.05	2.04	2.05	2.05	2.06	2.07	2.08	2.23	2.22	2.19	2.09	2.07	2.01	2.01	2	2.02	1.99	1.99	1.99	1.99	S	1.99	2.23	2.06
Jan 26	2.03	2.05	2.03	2.03	2.02	2.01	2.04	2.07	2.11	2.2	2.25	2.11	2.05	2.02	2.02	2.01	2.04	2.12	2.07	2.04	2.05	2.05	S	2.08	2.01	2.25	2.07
Jan 27	2.09	2.1	2.11	2.11	2.1	2.1	2.11	2.12	2.13	2.14	2.12	2.11	2.12	2.12	2.1	2.1	2.09	2.08	2.06	2.04	2.07	S	2.04	2.04	2.04	2.14	2.10
Jan 28	2.03	2.03	2.04	2.03	2.07	2.1	2.16	2.22	2.24	2.16	2.07	2.03	2.02	2.02	2.01	2.02	2.04	2.08	2.02	2.1	S	2.02	2.03	2.03	2.01	2.24	2.07
Jan 29	2.03	2.04	2.05	2.05	2.05	2.03	2.02	2.01	2.01	2.01	2.01	2	2	2	2	2	2	1.98	1.99	S	1.98	1.97	1.97	1.96	1.96	2.05	2.01
Jan 30	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.97	2	2.01	1.99	1.97	2	1.97	1.96	S	1.96	1.96	1.96	1.96	1.96	1.95	2.01	1.96
Jan 31	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.97	1.97	S	1.96	1.96	1.98	2.02	1.97	1.97	1.95	2.02	1.96
Diurnal Maximum	2.09	2.10	2.22	2.27	2.26	2.28	2.31	2.35	2.51	2.50	2.43	2.36	2.20	2.18	2.19	2.22	2.26	2.23	2.24	2.24	2.29	2.14	2.05	2.08			
Diurnal Average	2.00	2.00	2.01	2.01	2.02	2.02	2.03	2.04	2.04	2.04	2.04	2.03	2.01	2.00	2.00	2.00	2.01	2.01	2.00	2.00	2.01	2.00	2.00	2.00			

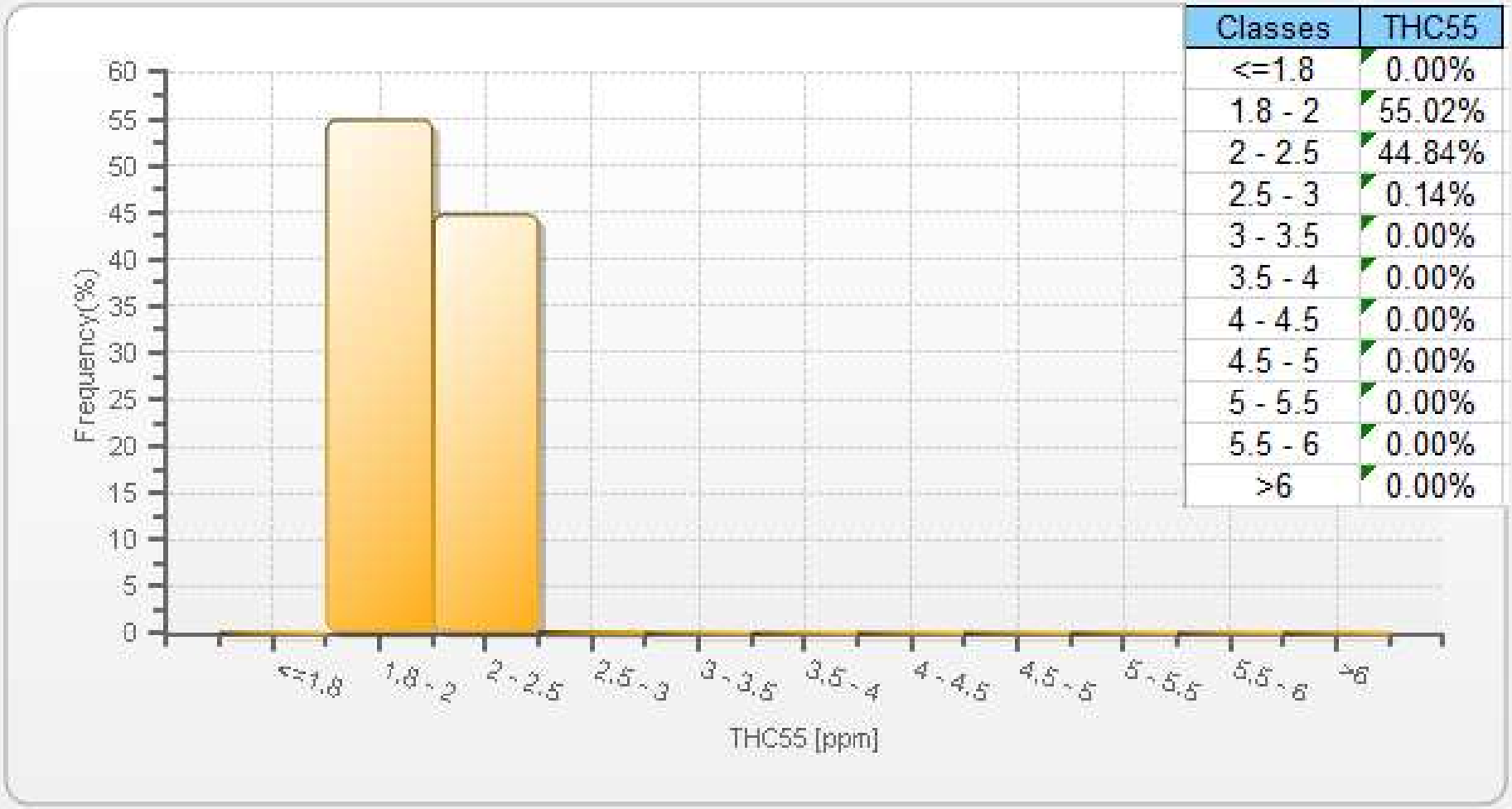
C	Monthly Sration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Machine Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Sration / Repeat Daily Zero-Span Check / Non-Routine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



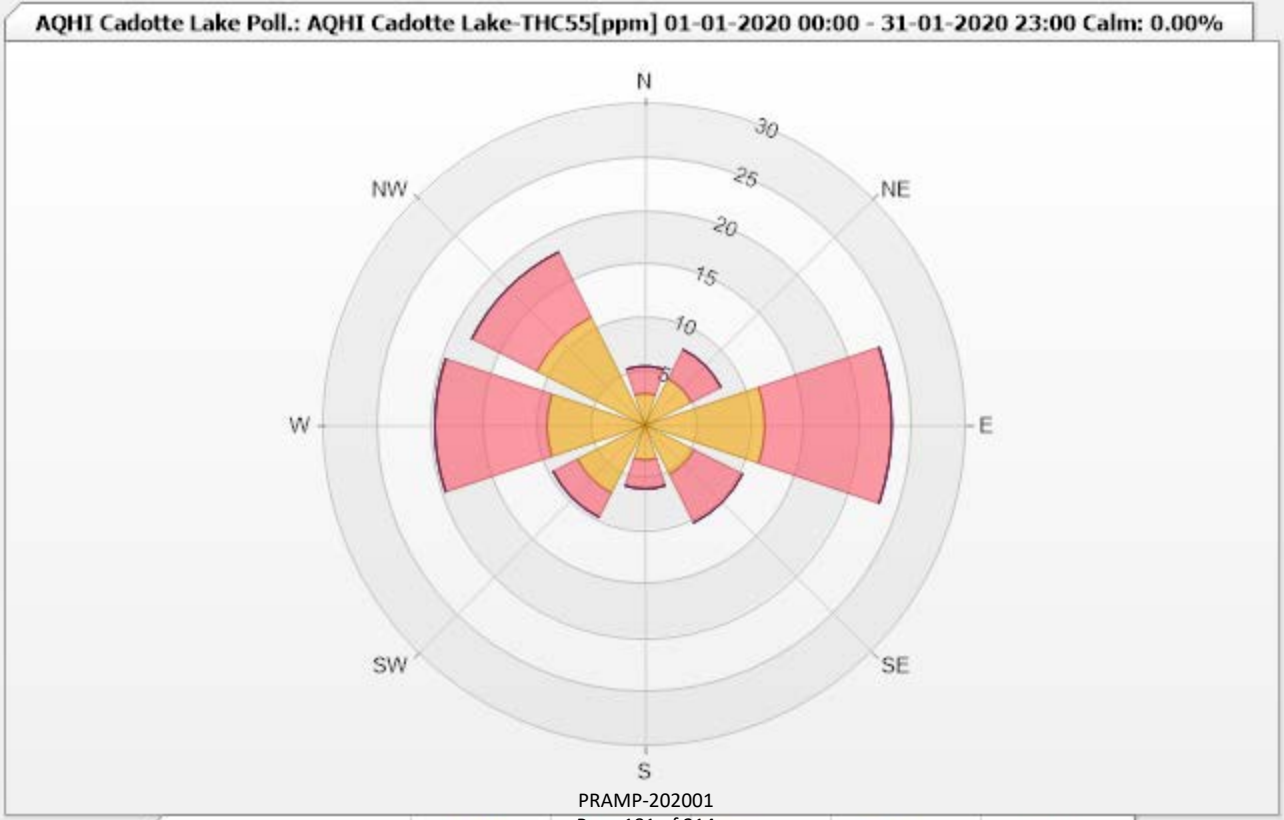
THC55[ppm] Histogram: AQHI Cadotte Lake Monthly: 01-2020 1 Hr.



Classes	THC55
<=1.8	0.00%
1.8 - 2	55.02%
2 - 2.5	44.84%
2.5 - 3	0.14%
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: AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-THC55[ppm] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	2.97	2.55	0	0	0	5.52
NE	4.81	3.11	0	0	0	7.92
E	11.17	11.88	0	0	0	23.05
SE	5.09	5.09	0	0	0	10.18
S	3.25	2.69	0	0	0	5.94
SW	7.07	2.55	0	0	0	9.62
W	9.19	10.47	0	0	0	19.66
NW	11.32	6.79	0	0	0	18.11
Summary	54.87	45.13	0	0	0	100


AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-THC55[ppm] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
30
25
20
15
10
% Icon Classes (ppm)
55 0-2
45 2-5
0 5-10
0 10-40
0 >40.0

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PEACE RIVER AREA MONITORING PROGRAM

AQHI - Cadotte Lake Station - January 2020

Summary of Hourly Averages

METHANE (CH4) in ppm

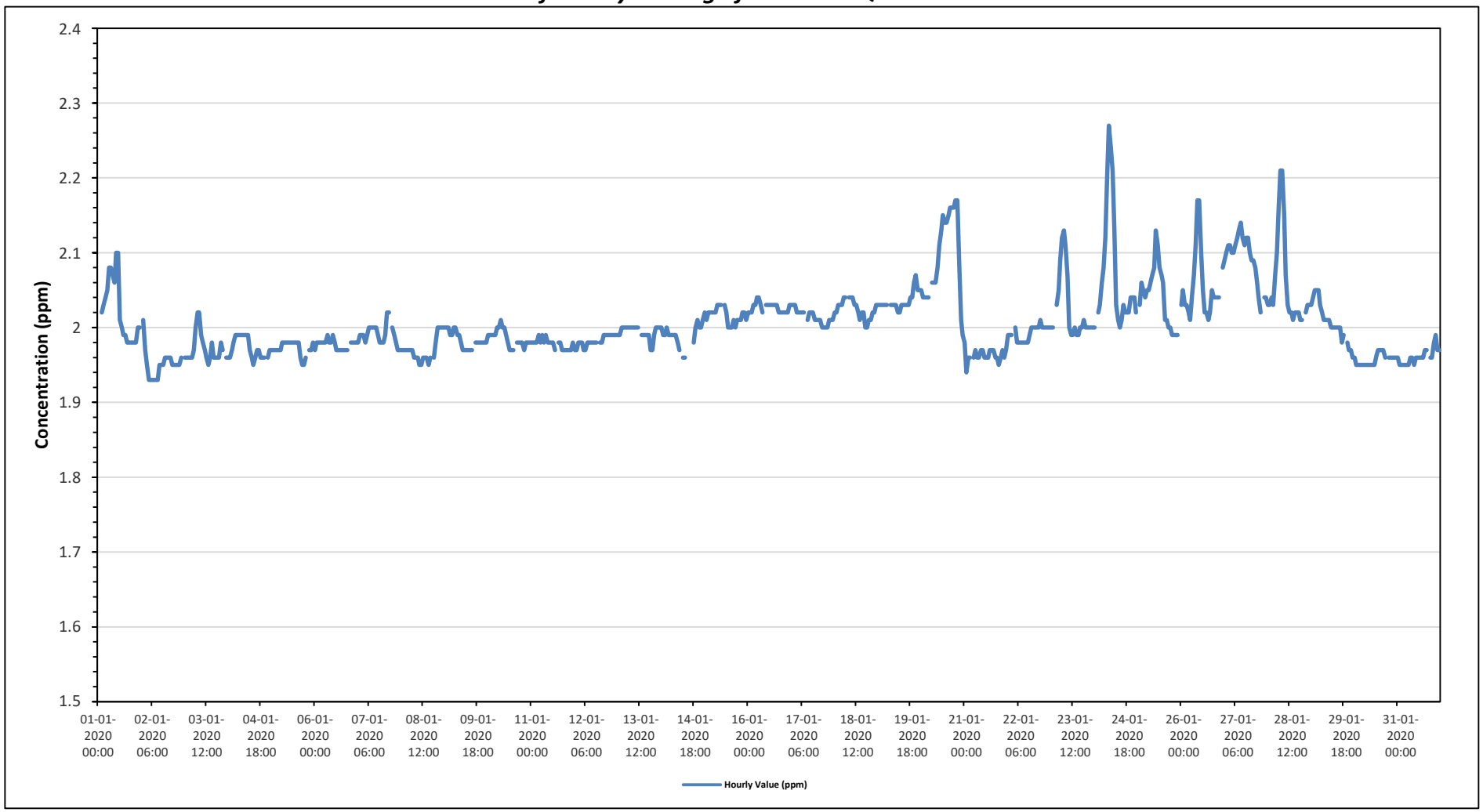
Maximum Hourly Value:	2.27	ppm	on January 24 at hour 8	Hours in Service:	744
Maximum Daily Value:	2.10	ppm	on January 20	Hours of Data:	707
Minimum Hourly Value:	1.93	ppm	on January 2 at hour 4	Hours of Missing Data:	0
Minimum Daily Value:	1.95	ppm	on January 2	Hours of Sration:	37
Monthly Average:	2.01	ppm		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	1.96	S	2.02	2.03	2.04	2.05	2.08	2.08	2.07	2.06	2.1	2.1	2.01	2	1.99	1.99	1.98	1.98	1.98	1.98	1.98	1.98	2	2	1.96	2.10	2.02
Jan 2	S	2.01	1.97	1.95	1.93	1.93	1.93	1.93	1.93	1.93	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.96	S	1.93	2.01	1.95
Jan 3	1.96	1.96	1.96	1.96	1.96	1.97	2	2.02	2.02	1.99	1.98	1.97	1.96	1.95	1.96	1.98	1.96	1.96	1.96	1.96	1.98	1.97	S	1.96	1.95	2.02	1.97
Jan 4	1.96	1.96	1.97	1.98	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.97	1.96	1.95	1.96	1.97	1.97	1.96	1.96	1.96	S	1.96	1.97	1.95	1.99	1.97
Jan 5	1.97	1.97	1.97	1.97	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.96	1.95	1.95	1.96	S	1.97	1.97	1.98	1.95	1.98	1.97
Jan 6	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.98	1.98	1.99	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	S	1.98	1.98	1.98	1.98	1.97	1.99	1.98
Jan 7	1.98	1.99	1.99	1.99	1.98	1.99	2	2	2	2	2	1.99	1.98	1.98	1.98	1.99	2.02	2.02	S	2	1.99	1.98	1.97	1.97	1.97	2.02	1.99
Jan 8	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.96	1.96	1.95	1.95	1.96	1.96	1.96	1.95	1.96	S	1.96	1.98	2	2	2	2	1.95	2.00	1.97
Jan 9	2	2	2	1.99	1.99	2	2	1.99	1.99	1.98	1.97	1.97	1.97	1.97	1.97	1.97	S	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.97	2.00	1.98
Jan 10	1.99	1.99	1.99	1.99	1.99	2	2	2.01	2	2	1.99	1.98	1.97	1.97	1.97	S	1.98	1.98	1.98	1.98	1.97	1.98	1.98	1.98	1.97	2.01	1.99
Jan 11	1.98	1.98	1.98	1.98	1.99	1.98	1.99	1.98	1.99	1.98	1.98	1.98	1.98	1.97	S	1.98	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.98	1.97	1.99	1.98
Jan 12	1.97	1.97	1.98	1.98	1.98	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	S	1.98	1.98	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.97	1.99	1.98
Jan 13	1.99	1.99	2	2	2	2	2	2	2	2	2	2	S	1.99	1.99	1.99	1.99	1.99	1.97	1.97	1.99	2	2	2	1.97	2.00	1.99
Jan 14	2	1.99	1.99	2	1.99	1.99	1.99	1.99	1.99	1.98	1.97	S	1.96	1.96	C	C	C	C	1.98	2	2.01	2	2	2.01	1.96	2.01	1.99
Jan 15	2.02	2.01	2.02	2.02	2.02	2.02	2.02	2.03	2.03	2.03	S	2.03	2.02	2	2	2	2.01	2	2.01	2.01	2.01	2.02	2.02	2.01	2.00	2.03	2.02
Jan 16	2.02	2.02	2.02	2.03	2.03	2.04	2.04	2.03	2.02	S	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.02	2.02	2.02	2.02	2.02	2.02	2.03	2.02	2.04	2.03
Jan 17	2.03	2.03	2.03	2.02	2.02	2.02	2.02	2.02	S	2.01	2.02	2.02	2.02	2.01	2.01	2.01	2.01	2	2	2	2	2.01	2.01	2.01	2.00	2.03	2.01
Jan 18	2.02	2.02	2.03	2.03	2.03	2.04	2.04	S	2.04	2.04	2.04	2.03	2.03	2.02	2.01	2.02	2.02	2	2	2.01	2.01	2.02	2.02	2.03	2.00	2.04	2.02
Jan 19	2.03	2.03	2.03	2.03	2.03	2.03	S	2.03	2.03	2.03	2.03	2.02	2.02	2.03	2.03	2.03	2.03	2.03	2.04	2.04	2.06	2.07	2.05	2.05	2.02	2.07	2.03
Jan 20	2.05	2.04	2.04	2.04	2.04	S	2.06	2.06	2.06	2.08	2.11	2.13	2.15	2.14	2.14	2.15	2.16	2.16	2.16	2.17	2.17	2.09	2.01	1.99	1.99	2.17	**2.10**
Jan 21	1.98	1.94	1.96	1.96	S	1.96	1.97	1.96	1.96	1.97	1.97	1.96	1.96	1.96	1.97	1.97	1.97	1.96	1.96	1.95	1.96	1.97	1.96	1.97	1.94	1.98	1.96
Jan 22	1.99	1.99	1.99	S	2	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	2	2	2	2	2	2.01	2	2	2	2	2	1.98	2.01	1.99
Jan 23	2	2	S	2.03	2.05	2.09	2.12	2.13	2.11	2.07	2	1.99	1.99	2	1.99	1.99	2	2	2.01	2	2	2	2	2	1.99	2.13	2.02
Jan 24	2	S	2.02	2.03	2.06	2.08	2.12	2.2	2.27	2.24	2.21	2.13	2.03	2.01	2	2.01	2.03	2.02	2.02	2.02	2.04	2.04	2.04	2.02	2.00	**2.27**	2.07
Jan 25	S	2.03	2.06	2.05	2.04	2.05	2.05	2.06	2.07	2.08	2.13	2.11	2.08	2.07	2.06	2.01	2.01	2	2	1.99	1.99	1.99	1.99	S	1.99	2.13	2.04
Jan 26	2.03	2.05	2.03	2.03	2.02	2.01	2.04	2.07	2.11	2.17	2.17	2.1	2.05	2.02	2.02	2.01	2.02	2.05	2.04	2.04	2.04	2.04	S	2.08	2.01	2.17	2.05
Jan 27	2.09	2.1	2.11	2.11	2.1	2.1	2.11	2.12	2.13	2.14	2.12	2.11	2.12	2.12	2.1	2.09	2.09	2.08	2.06	2.04	2.02	S	2.04	2.04	2.02	2.14	2.09
Jan 28	2.03	2.03	2.04	2.03	2.07	2.1	2.16	2.21	2.21	2.15	2.07	2.03	2.02	2.02	2.01	2.02	2.02	2.02	2.01	2.01	S	2.02	2.03	2.03	2.01	2.21	2.06
Jan 29	2.03	2.04	2.05	2.05	2.05	2.03	2.02	2.01	2.01	2.01	2.01	2	2	2	2	2	2	1.98	1.99	S	1.98	1.97	1.97	1.96	1.96	2.05	2.01
Jan 30	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.97	1.97	1.97	1.97	1.96	S	1.96	1.96	1.96	1.96	1.96	1.95	1.97	1.96
Jan 31	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.97	1.97	S	1.96	1.96	1.98	1.99	1.97	1.97	1.95	1.99	1.96
Diurnal Maximum	2.09	2.10	2.11	2.11	2.10	2.10	2.16	2.21	2.27	2.24	2.21	2.13	2.15	2.14	2.14	2.15	2.16	2.16	2.16	2.17	2.17	2.09	2.05	2.08			
Diurnal Average	2.00	2.00	2.00	2.00	2.01	2.01	2.02	2.02	2.03	2.02	2.02	2.01	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.99	2.00			

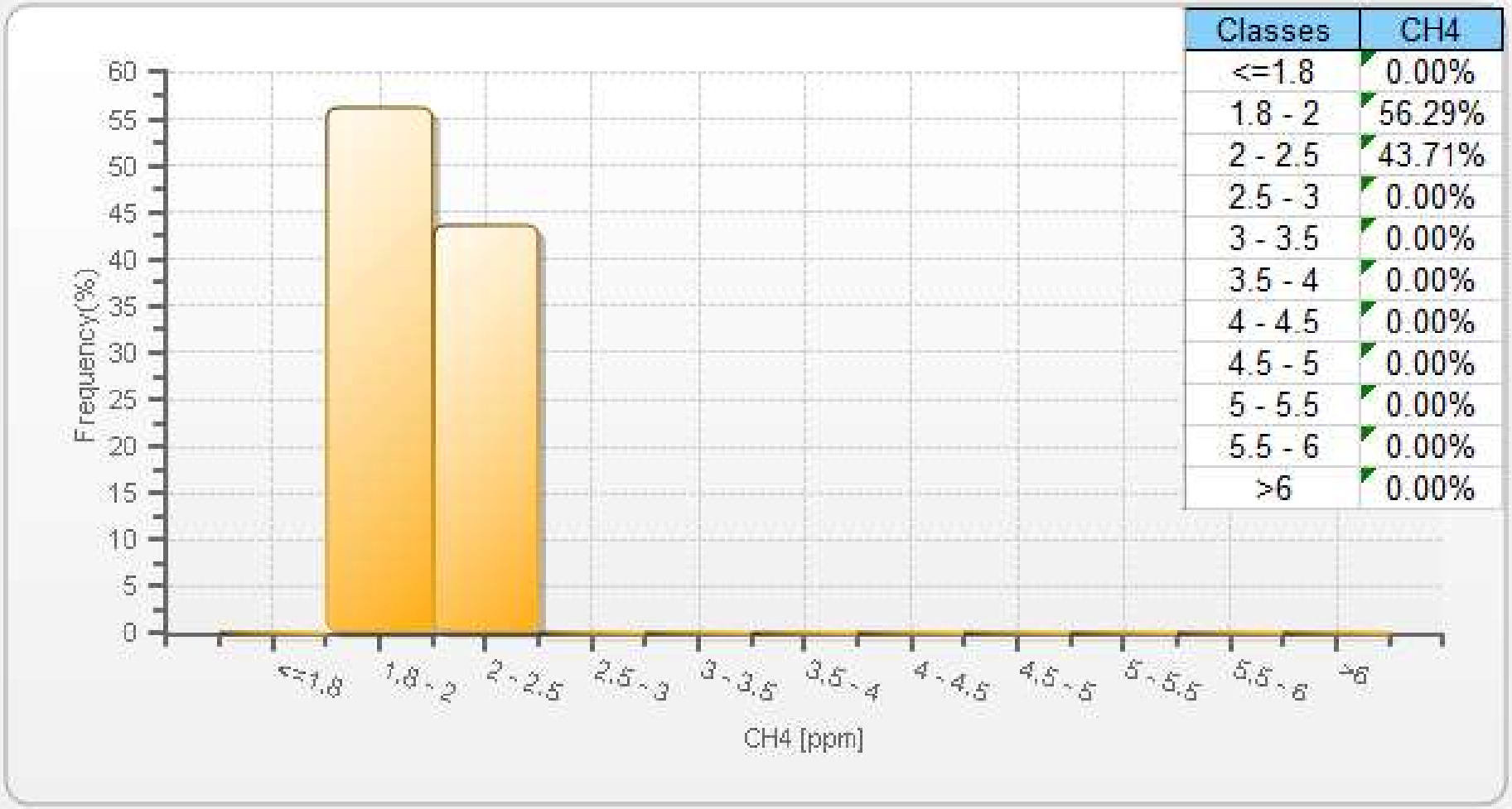
C	Monthly Sration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Machine Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Sration / Repeat Daily Zero-Span Check / Non-Routine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

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

Timeseries Chart of Hourly Average for CH4 - AQHI - Cadotte Lake Station



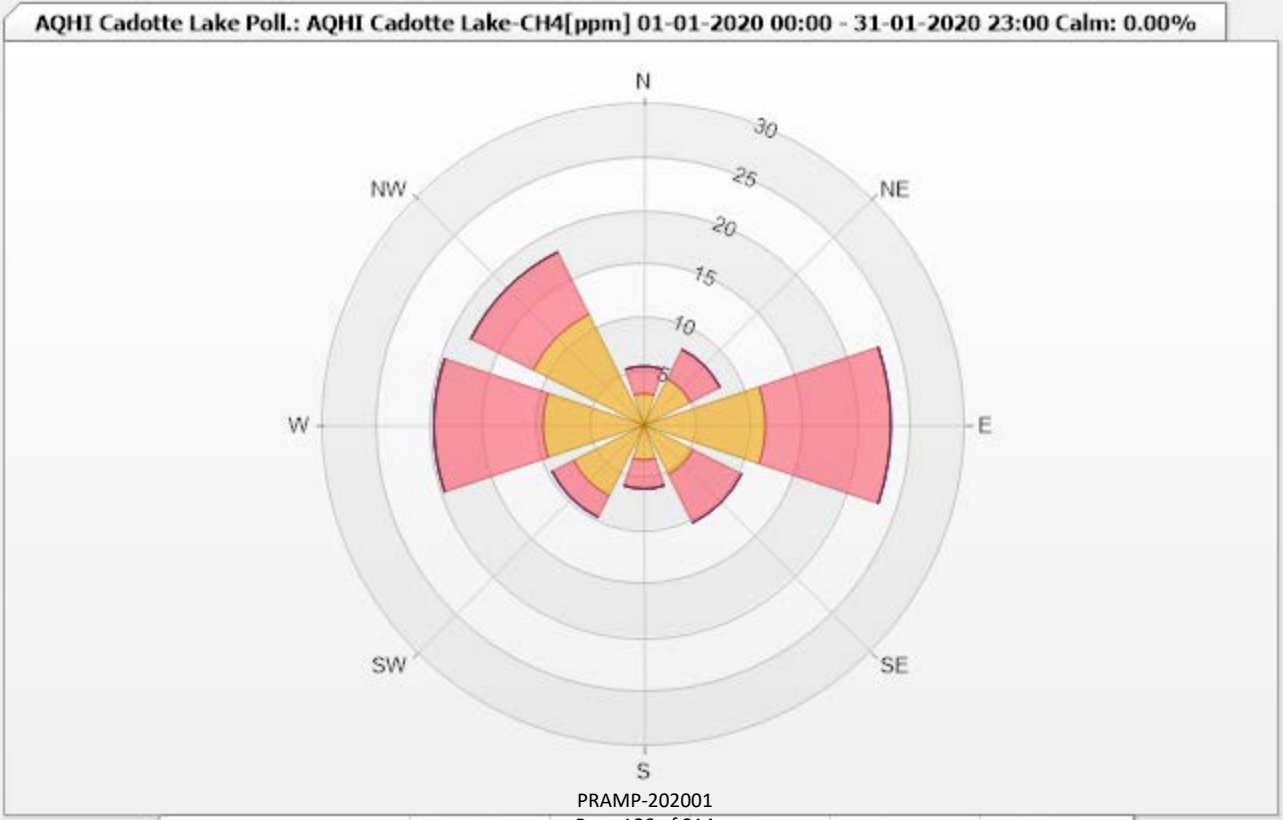
CH4[ppm] Histogram: AQHI Cadotte Lake Monthly: 01-2020 1 Hr.



Classes	CH4
<=1.8	0.00%
1.8 - 2	56.29%
2 - 2.5	43.71%
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: AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-CH4[ppm] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	2.97	2.55	0	0	0	5.52
NE	4.81	3.11	0	0	0	7.92
E	11.32	11.74	0	0	0	23.06
SE	5.09	5.09	0	0	0	10.18
S	3.25	2.69	0	0	0	5.94
SW	7.36	2.26	0	0	0	9.62
W	9.48	10.18	0	0	0	19.66
NW	11.6	6.51	0	0	0	18.11
Summary	55.88	44.13	0	0	0	100


AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-CH4[ppm] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
30
25
20
15
10
% Icon Classes (ppm)
56 0-2
44 2-5
0 5-10
0 10-20
0 >20.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

AQHI - Cadotte Lake Station - January 2020

Summary of Hourly Averages

NON-METHANE HYDROCARBONS (NMHC) in ppm

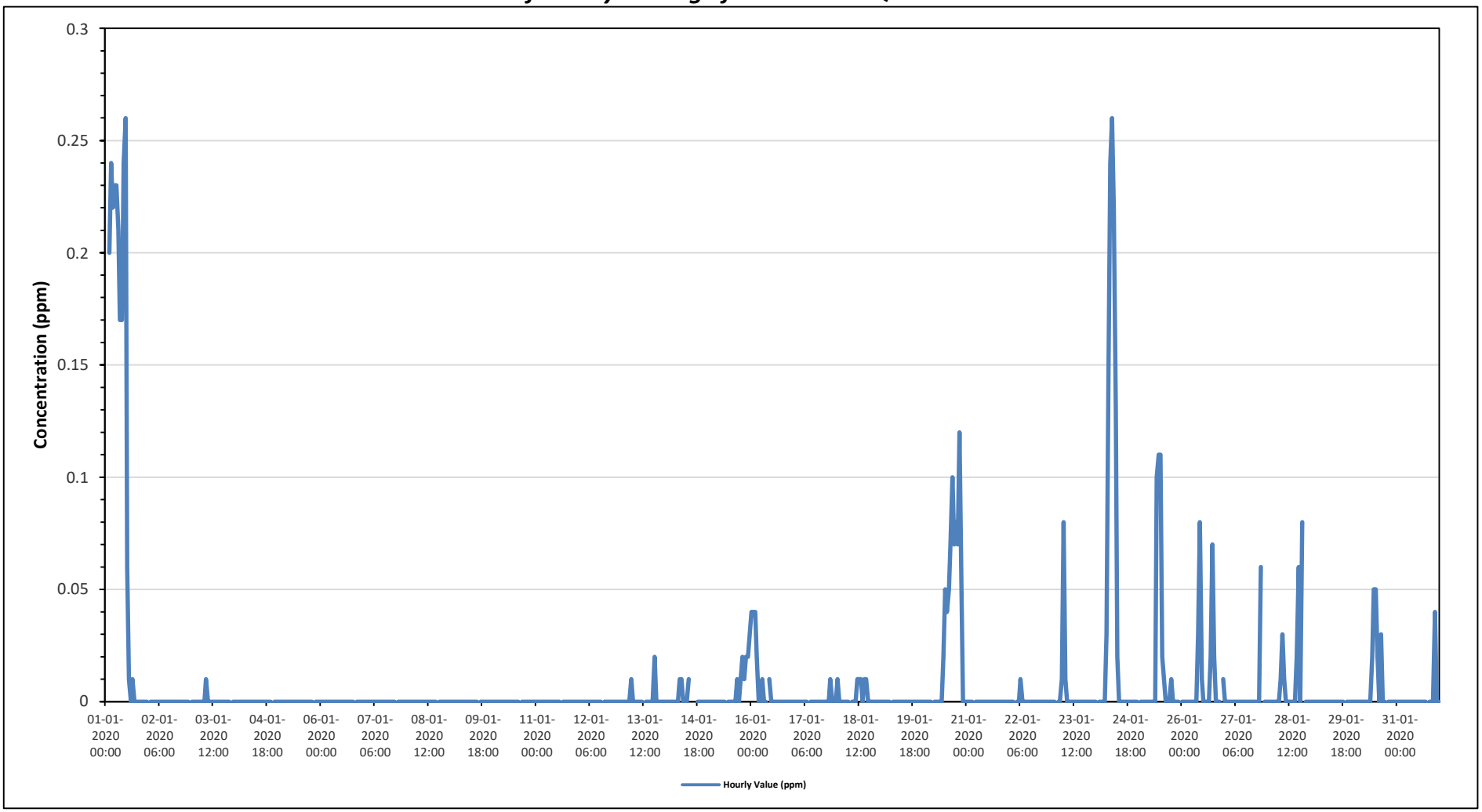
Maximum Hourly Value:	0.26	ppm	on January 1 at hour 11	Hours in Service:	744
Maximum Daily Value:	0.10	ppm	on January 1	Hours of Data:	707
Minimum Hourly Value:	0.00	ppm	on January 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.00	ppm	on January 2	Hours of Sration:	37
Monthly Average:	0.01	ppm		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jan 1	0	S	0.2	0.24	0.22	0.23	0.23	0.21	0.17	0.17	0.24	0.26	0.06	0.01	0	0.01	0	0	0	0	0	0	0	0	0.00	**0.26**	**0.10**
Jan 2	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.00	0.00	0.00
Jan 3	0	0	0	0	0	0	0	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.00	0.01	0.00
Jan 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.00	0.00	0.00
Jan 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.00	0.00	0.00
Jan 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.00	0.00	0.00
Jan 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.00	0.00	0.00
Jan 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.00	0.00	0.00
Jan 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 12	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 13	0	0	0	0	0	0.01	0	0	0	0	0	0	S	0	0	0	0	0	0.02	0	0	0	0	0	0.00	0.02	0.00
Jan 14	0	0	0	0	0	0	0	0	0.01	0.01	0	S	0	0.01	C	C	C	C	0	0	0	0	0	0	0.00	0.01	0.00
Jan 15	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.01	0	0.01	0.02	0.01	0.02	0.02	0.03	0.00	0.03	0.01
Jan 16	0.04	0.04	0.04	0.02	0	0	0.01	0	0	S	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.04	0.01
Jan 17	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0.00	0.01	0.00
Jan 18	0.01	0	0	0	0	0	0	S	0	0	0	0.01	0.01	0.01	0	0.01	0.01	0	0	0	0	0	0	0	0.00	0.01	0.00
Jan 19	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 20	0	0	0	0	0	S	0	0	0	0	0	0.02	0.05	0.04	0.05	0.07	0.1	0.07	0.08	0.07	0.12	0.05	0	0	0.00	0.12	0.03
Jan 21	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Jan 22	0	0	0	S	0	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.01	0.00
Jan 23	0	0	S	0	0	0.01	0.08	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.08	0.00
Jan 24	0	S	0	0	0	0	0.03	0.15	0.24	0.26	0.22	0.13	0.02	0	0	0	0	0	0	0	0	0	0	0	0.00	**0.26**	0.05
Jan 25	S	0	0	0	0	0	0	0	0	0	0.1	0.11	0.11	0.02	0.01	0	0	0	0.01	0	0	0	0	S	0.00	0.11	0.02
Jan 26	0	0	0	0	0	0	0	0	0	0.03	0.08	0.01	0	0	0	0	0.02	0.07	0.02	0	0	0	S	0.01	0.00	0.08	0.01
Jan 27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.06	S	0	0	0.00	0.06	0.00
Jan 28	0	0	0	0	0	0	0	0.01	0.03	0.01	0	0	0	0	0	0	0.02	0.06	0	0.08	S	0	0	0	0.00	0.08	0.01
Jan 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.00	0.00	0.00
Jan 30	0	0	0	0	0	0	0	0	0	0	0.02	0.05	0.05	0.02	0	0.03	0	0	S	0	0	0	0	0	0.00	0.05	0.01
Jan 31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.04	0	0	0.00	0.04	0.00
Diurnal Maximum	0.04	0.04	0.20	0.24	0.22	0.23	0.23	0.21	0.24	0.26	0.24	0.26	0.11	0.04	0.05	0.07	0.10	0.07	0.08	0.08	0.12	0.05	0.02	0.03			
Diurnal Average	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00			

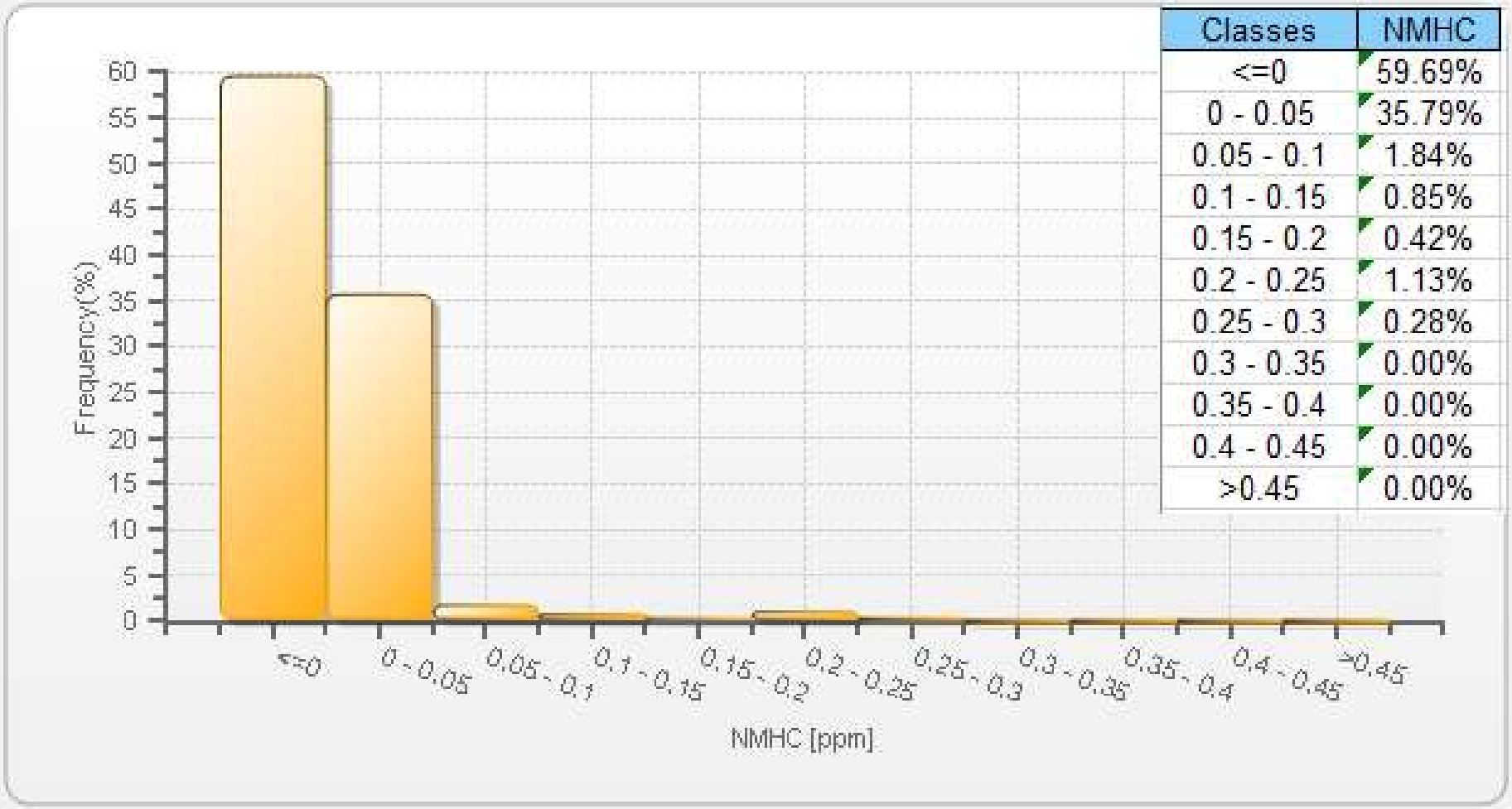
C	Monthly Sration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Machine Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Sration / Repeat Daily Zero-Span Check / Non-Routine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



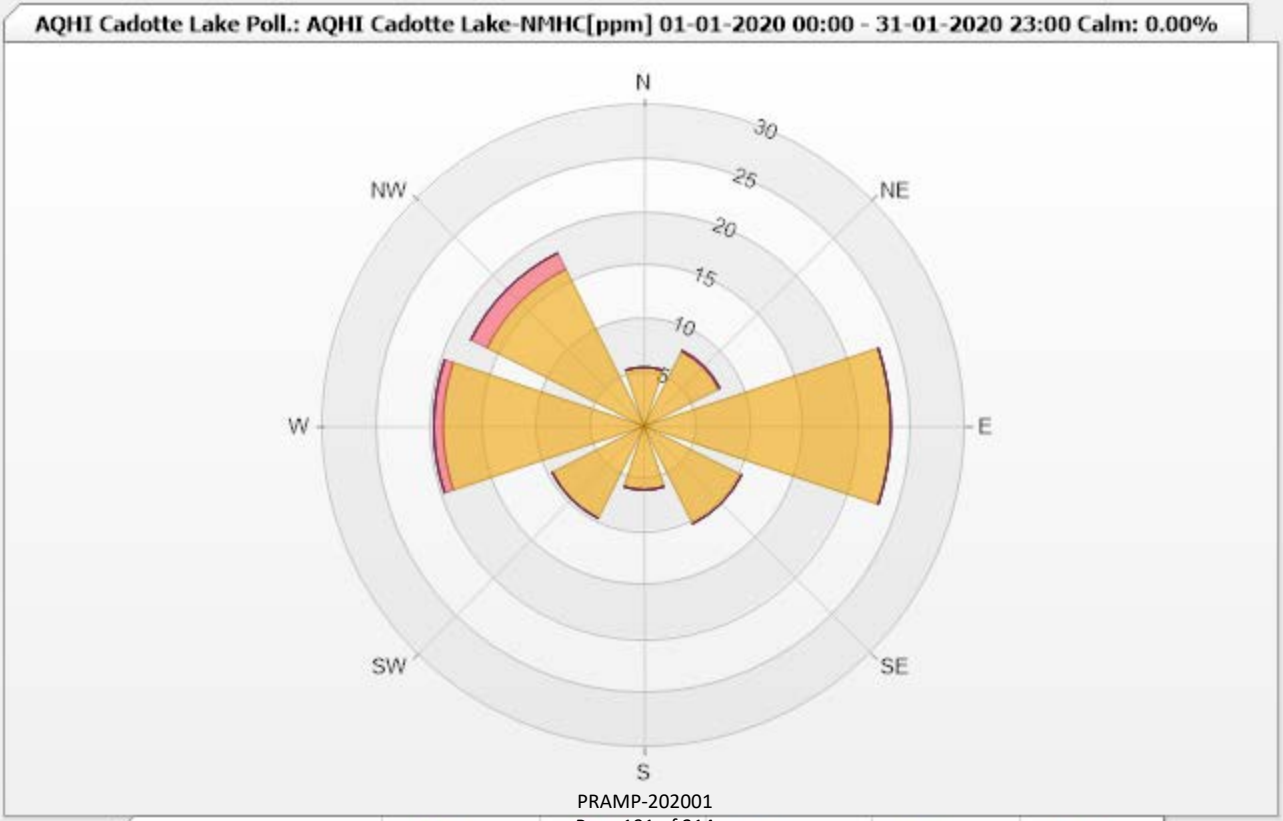
NMHC[ppm] Histogram: AQHI Cadotte Lake Monthly: 01-2020 1 Hr.



Classes	NMHC
<=0	59.69%
0 - 0.05	35.79%
0.05 - 0.1	1.84%
0.1 - 0.15	0.85%
0.15 - 0.2	0.42%
0.2 - 0.25	1.13%
0.25 - 0.3	0.28%
0.3 - 0.35	0.00%
0.35 - 0.4	0.00%
0.4 - 0.45	0.00%
>0.45	0.00%

Wind: AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-NMHC[ppm] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 95.03% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	5.52	0	0	0	0	5.52
NE	7.78	0.14	0	0	0	7.92
E	23.06	0	0	0	0	23.06
SE	10.18	0	0	0	0	10.18
S	5.94	0	0	0	0	5.94
SW	9.62	0	0	0	0	9.62
W	18.81	0.85	0	0	0	19.66
NW	16.41	1.7	0	0	0	18.11
Summary	97.32	2.69	0	0	0	100


AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-NMHC[ppm] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
30
25
20
15
10
5
% Icon Classes (ppm)
97 0-0.1
3 0.1-0.3
0 0.3-0.9
0 0.9-2
0 >2.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

AQHI - Cadotte Lake Station - January 2020

Summary of Hourly Averages

PARTICULATE MATTER 2.5 ($PM_{2.5}$) in $\mu g/m^3$

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

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

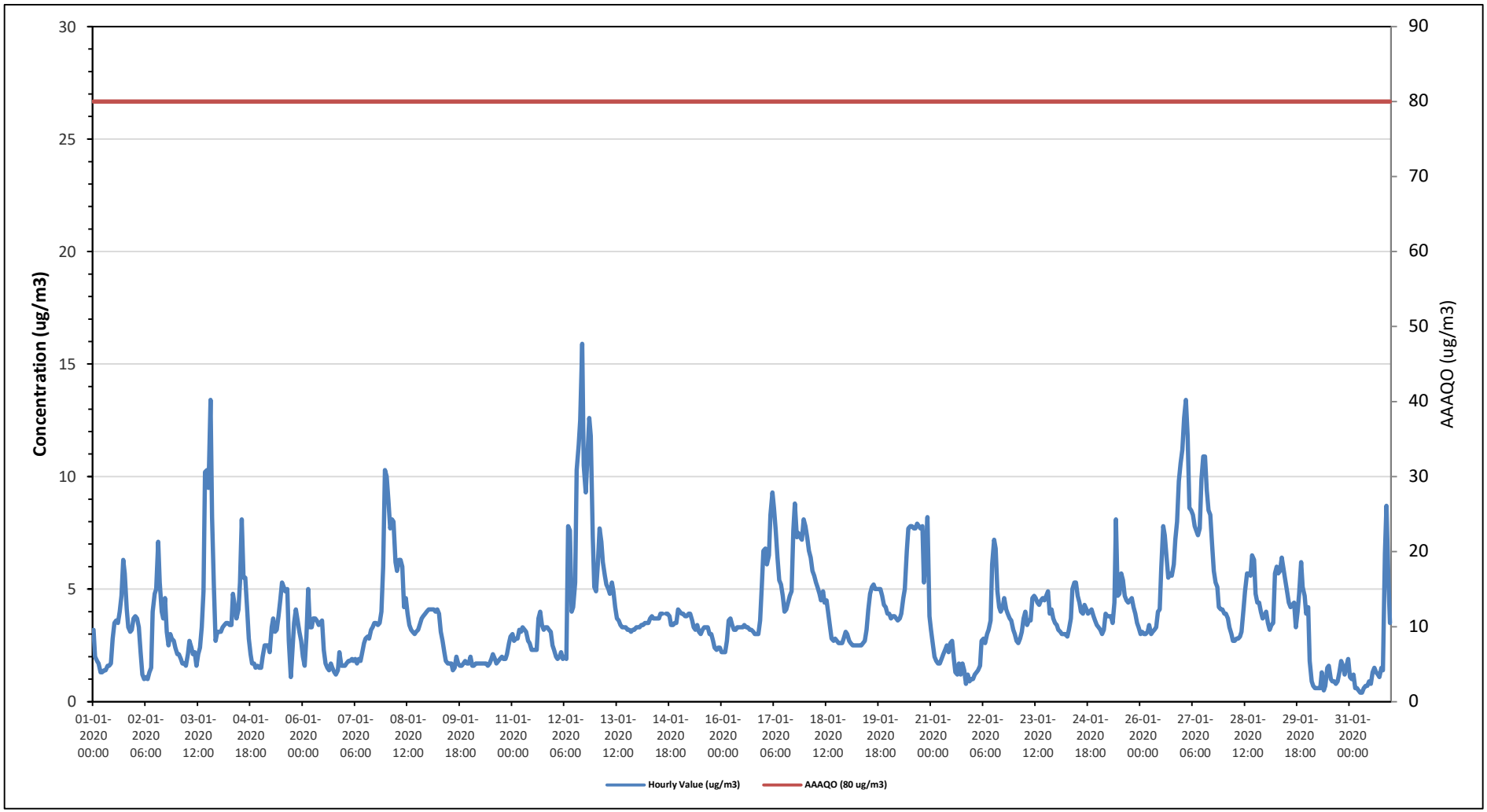
Maximum Hourly Value:	15.9 $\mu g/m^3$ on January 12 at hour 16	Hours in Service:	744
Maximum Daily Value:	8.3 $\mu g/m^3$ on January 27	Hours of Data:	743
Minimum Hourly Value:	0.4 $\mu g/m^3$ on January 31 at hour 6	Hours of Missing Data:	0
Minimum Daily Value:	1.2 $\mu g/m^3$ on January 30	Hours of Calibration:	1
Monthly Average:	3.9 $\mu g/m^3$	Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	3.2	2	1.8	1.7	1.3	1.3	1.4	1.4	1.6	1.6	1.7	2.8	3.5	3.6	3.5	4	4.7	6.3	5.7	4.1	3.3	3.1	3.2	3.7	1.3	6.3	2.9
Jan 2	3.8	3.7	3.3	2.2	1.2	1	1.1	1	1.3	1.5	4	4.8	5	7.1	5.3	4	3.7	4.6	3.1	2.5	3	2.8	2.7	2.4	1.0	7.1	3.1
Jan 3	2.1	2.1	1.9	1.7	1.7	1.6	2.1	2.7	2.4	2.1	2.2	1.6	2.1	2.4	3.3	4.9	10.2	10.3	9.5	13.4	8.2	5.2	2.7	3.1	1.6	13.4	4.1
Jan 4	3.1	3.1	3.3	3.4	3.5	3.5	3.4	3.4	4.8	4.2	3.7	4.1	5.3	8.1	5.5	5.5	4.2	2.8	2.1	1.7	1.7	1.5	1.6	1.5	1.5	8.1	3.5
Jan 5	1.5	2	2.5	2.5	2.5	2.2	3.3	3.7	3.1	3.2	3.8	4.5	5.3	5.1	4.9	5	2.7	1.1	2.2	3.5	4.1	3.6	3.1	2.7	1.1	5.3	3.3
Jan 6	2	1.6	2.9	5	3.3	3.3	3.7	3.7	3.6	3.4	3.5	3.6	2.3	1.7	1.5	1.4	1.7	1.5	1.3	1.2	1.4	2.2	1.6	1.6	1.2	5.0	2.5
Jan 7	1.6	1.7	1.8	1.8	1.9	1.8	1.9	1.7	1.9	1.8	2.2	2.6	2.8	2.9	2.8	3.2	3.3	3.5	3.5	3.4	3.5	4	6	10.3	1.6	10.3	3.0
Jan 8	10	8.9	7.7	8.1	8	6.2	5.8	6.3	6.3	6	4.2	4.6	3.9	3.4	3.2	3.1	3	3.1	3.2	3.4	3.7	3.8	3.9	4	3.0	10.0	5.2
Jan 9	4.1	4.1	4.1	4.1	4	4.1	3.9	3.1	2.7	2.2	1.8	1.7	1.7	1.7	1.4	1.5	2	1.7	1.6	1.6	1.7	1.8	1.7	1.7	1.4	4.1	2.5
Jan 10	2	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.7	1.9	2.1	1.9	1.7	1.8	1.9	2	1.9	1.9	2.1	2.6	2.9	1.6	2.9	1.9
Jan 11	3	2.7	2.8	2.8	3.2	3.1	3.3	3.2	3.1	2.7	2.6	2.3	2.3	2.3	2.3	3.7	4	3.4	3.2	3.3	3.3	3.2	3.1	2.5	2.3	4.0	3.0
Jan 12	2.3	2	1.9	2	2.2	1.9	2	1.9	7.8	7.6	4	4.2	5.3	10.3	11.4	12.5	15.9	10.5	9.3	10.7	12.6	11.8	7.3	5.1	1.9	**15.9**	6.8
Jan 13	4.9	6.1	7.7	7.1	6.2	5.6	5.2	5	4.8	5.3	4.9	4.2	3.7	3.6	3.4	3.3	3.3	3.3	3.2	3.2	3.1	3.2	3.2	3.3	3.1	7.7	4.5
Jan 14	3.3	3.3	3.4	3.4	3.5	3.5	3.5	3.7	3.8	3.7	3.7	3.7	3.7	3.9	3.9	**C**	3.9	3.9	3.8	3.4	3.4	3.5	3.5	4.1	3.3	4.1	3.6
Jan 15	4	3.9	3.9	3.8	3.8	3.9	3.9	3.6	3.3	3.2	3.4	3.1	3	3.2	3.3	3.3	3.3	3	3	2.7	2.4	2.3	2.4	2.4	2.3	4.0	3.3
Jan 16	2.2	2.2	2.2	2.7	3.6	3.7	3.4	3.2	3.2	3.3	3.3	3.3	3.3	3.4	3.3	3.3	3.2	3.2	3.1	3	3	3	3.6	5.2	2.2	5.2	3.2
Jan 17	6.7	6.8	6.1	6.5	8.3	9.3	8.6	7.6	6.4	5.4	5.2	4.7	4	4.1	4.4	4.7	4.9	7.6	8.8	7.3	7.5	7.3	7.2	8.1	4.0	9.3	6.6
Jan 18	7.8	7.3	6.7	6.4	5.8	5.6	5.3	5.1	4.8	4.5	4.9	4.4	4.5	4	3.3	2.8	2.7	2.8	2.7	2.6	2.6	2.6	2.8	3.1	2.6	7.8	4.4
Jan 19	3	2.7	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.7	3.2	4.1	4.8	5.1	5.2	5	5	5	5	4.7	4.3	4.2	3.9	2.5	5.2	3.7
Jan 20	3.9	3.7	3.8	3.8	3.7	3.6	3.7	3.9	4.6	5	6.7	7.7	7.8	7.8	7.7	7.7	7.9	7.8	7.7	7.8	5.3	6.7	8.2	3.8	3.6	8.2	5.8
Jan 21	3.2	2.5	2	1.8	1.7	1.7	1.9	2.1	2.3	2.5	2.2	2.6	2.7	1.9	1.3	1.2	1.7	1.2	1.7	1.4	0.8	1.2	0.9	1	0.8	3.2	1.8
Jan 22	1	1.2	1.3	1.4	1.6	2.7	2.8	2.6	3	3.2	3.6	6.1	7.2	6.8	4.9	4.2	4	4.2	4.6	4.1	3.9	3.7	3.6	3.2	1.0	7.2	3.5
Jan 23	3	2.7	2.6	2.8	3.1	3.7	4	3.4	3.6	3.6	4.6	4.7	4.6	4.4	4.3	4.5	4.6	4.5	4.7	4.9	3.9	4.1	3.7	3.5	2.6	4.9	3.9
Jan 24	3.4	3.2	3.1	3	3	3	2.9	3.2	3.7	5	5.3	5.3	4.7	4.4	4	3.9	4.3	4.1	3.9	4	4.1	3.8	3.6	3.4	2.9	5.3	3.8
Jan 25	3.3	3.2	3	3.2	3.9	3.8	3.8	3.8	3.5	4.4	8.1	4.7	4.8	5.7	5.4	4.7	4.5	4.4	4.5	4.6	4.2	3.9	3.5	3.3	3.0	8.1	4.3
Jan 26	3	3.1	3	3	3.1	3.4	3	3.1	3.2	3.3	4	4.1	5.9	7.8	7.4	6.3	5.5	5.7	5.6	6.1	7.2	8	9.8	10.6	3.0	10.6	5.2
Jan 27	11.2	12.6	13.4	11.8	8.6	8.5	8.3	7.8	7.6	7.4	7.7	9.9	10.9	10.9	9.4	8.5	8.3	7	5.8	5.3	5.1	4.2	4.1	4.1	4.1	13.4	**8.3**
Jan 28	3.9	3.9	3.7	3.3	3	2.7	2.7	2.8	2.8	2.9	3.1	4.1	4.9	5.7	5.7	5.6	6.5	6.3	4.8	4.4	4.4	4	3.7	3.8	2.7	6.5	4.1
Jan 29	4	3.5	3.2	3.4	3.5	5.7	6	5.7	5.8	6.4	5.9	5.4	4.9	4.4	4.2	4.3	4.4	3.3	4	4.8	6.2	5.1	4.7	3.9	3.2	6.4	4.7
Jan 30	4.2	1.8	0.9	0.7	0.6	0.6	0.6	0.6	1.3	0.5	0.7	1.5	1.6	1	0.9	0.9	0.8	0.9	1.3	1.8	1.6	1.2	1.6	1.9	0.5	4.2	1.2
Jan 31	1.1	1	1.2	0.6	0.6	0.5	0.4	0.4	0.6	0.7	0.7	0.9	0.8	1.3	1.5	1.3	1.2	1.1	1.5	1.4	6.6	8.7	5.3	3.5	0.4	8.7	1.8
Diurnal Maximum	11	13	13	12	9	9	9	8	8	8	8	10	11	11	11	13	16	11	10	13	13	12	10	11			
Diurnal Average	3.7	3.6	3.5	3.5	3.4	3.4	3.4	3.4	3.6	3.6	3.7	3.9	4.1	4.5	4.2	4.2	4.4	4.2	4.1	4.1	4.1	4.1	3.8	3.8			

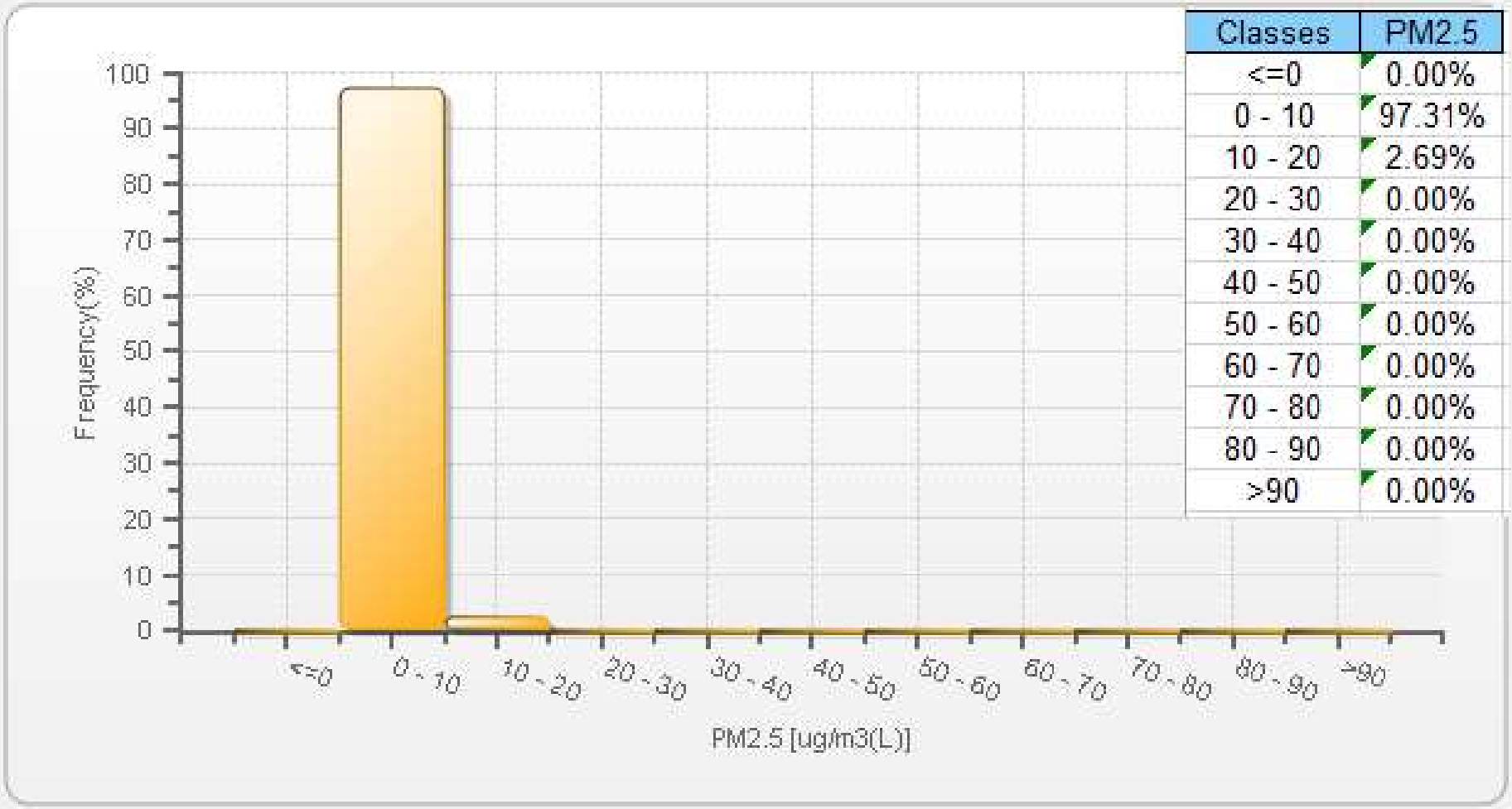
C	Monthly Calibration	**S**	Daily Zero-Span Check	**Y**	Routine Maintenance	**P**	Power Failure
K	Collection Error	**N**	No Data (Machine Not in Service)	**Q**	Quality Assurance		
X	InValid Data (Machine Malfunction /Recovery)	**NRM**	UnitMaint (Repeat Calibration / Repeat Daily Zero-Span Check / Non-Routine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

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

Timeseries Chart of Hourly Average for PM2.5 - AQHI - Cadotte Lake Station



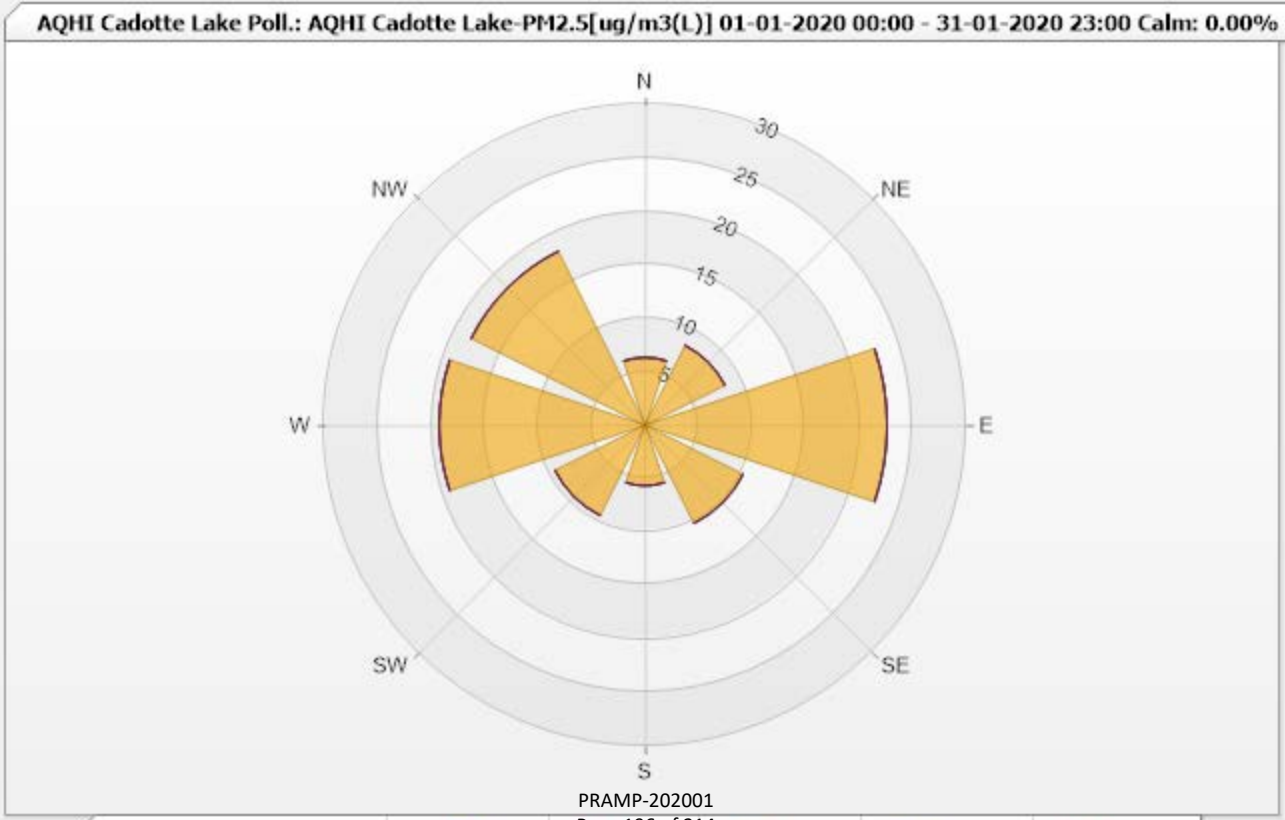
PM2.5[ug/m3(L)] Histogram: AQHI Cadotte Lake Monthly: 01-2020 1 Hr.



Classes	PM2.5
<=0	0.00%
0 - 10	97.31%
10 - 20	2.69%
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: AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-PM2.5[ug/m3(L)] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 99.87% Calm Avg: 0.00 [ug/m3(L)]

Direction	0-50	50-80	80-120	120-240	>240.0	Total
N	6.33	0	0	0	0	6.33
NE	8.34	0	0	0	0	8.34
E	22.61	0	0	0	0	22.61
SE	10.23	0	0	0	0	10.23
S	5.65	0	0	0	0	5.65
SW	9.42	0	0	0	0	9.42
W	19.25	0	0	0	0	19.25
NW	18.17	0	0	0	0	18.17
Summary	100	0	0	0	0	100


AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-PM2.5[ug/m3(L)] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
30
25
20
15
10
5
% Icon Classes (ug/m3(L))
100 0-50
0 50-80
0 80-120
0 120-240
0 >240.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

AQHI - Cadotte Lake Station - January 2020

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

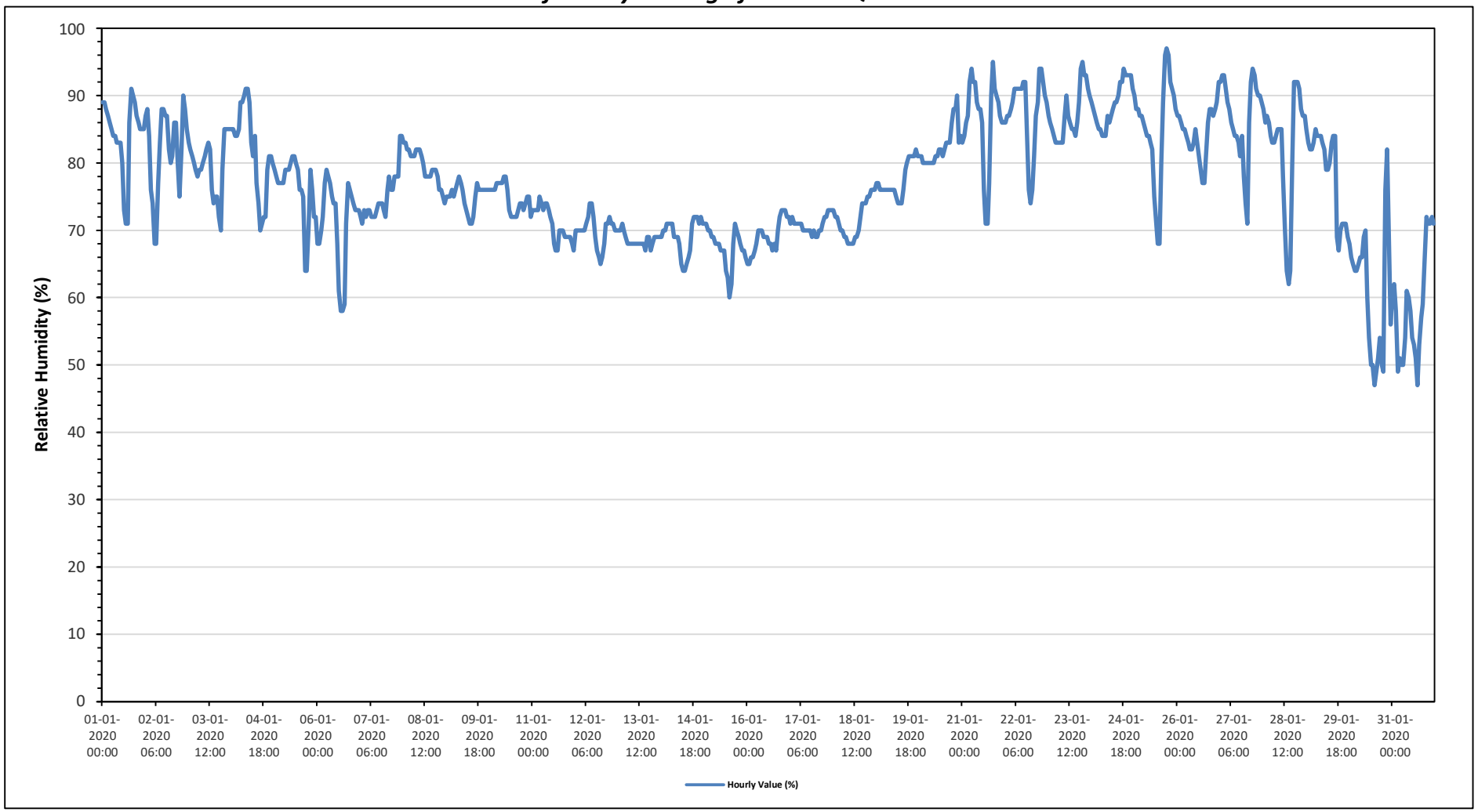
Maximum Hourly Value:	97	%	on January 25 at hour 18	Hours in Service:	744
Maximum Daily Value:	88.7	%	on January 24	Hours of Data:	744
Minimum Hourly Value:	47	%	on January 30 at hour 14	Hours of Missing Data:	0
Minimum Daily Value:	58.8	%	on January 31	Hours of Calibration:	0
Monthly Average:	76.9	%		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	89	89	88	87	86	85	84	84	83	83	83	80	73	71	71	86	91	90	89	87	86	85	85	85	71	91	84.2
Jan 2	87	88	84	76	74	68	68	77	83	88	88	87	87	82	80	81	86	86	80	75	82	90	88	85	68	90	82.1
Jan 3	83	82	81	80	79	78	79	79	80	81	82	83	82	76	74	75	75	72	70	79	85	85	85	85	70	85	79.6
Jan 4	85	85	84	84	85	89	89	90	91	91	89	83	81	84	77	74	70	71	72	72	79	81	81	80	70	91	82.0
Jan 5	79	78	77	77	77	77	79	79	79	80	81	81	80	79	76	76	75	64	64	71	79	76	72	72	64	81	76.2
Jan 6	68	68	70	72	77	79	78	77	75	74	74	68	61	58	58	59	71	77	76	75	74	73	73	73	58	79	71.2
Jan 7	72	71	73	72	73	73	72	72	72	73	74	74	74	73	72	76	78	76	76	78	78	78	84	84	71	84	74.9
Jan 8	83	83	82	82	81	81	81	82	82	82	81	80	78	78	78	78	79	79	79	78	76	76	75	74	74	83	79.5
Jan 9	75	75	75	76	75	76	77	78	77	76	74	73	72	71	71	72	75	77	76	76	76	76	76	76	71	78	75.0
Jan 10	76	76	76	76	77	77	77	77	78	78	76	73	72	72	72	72	73	74	74	73	74	75	75	72	72	78	74.8
Jan 11	73	73	73	73	75	74	73	74	74	73	72	71	68	67	67	70	70	70	69	69	69	69	68	67	67	75	70.9
Jan 12	70	70	70	70	70	70	71	72	74	74	72	69	67	66	65	66	68	71	71	72	71	71	70	70	65	74	70.0
Jan 13	70	70	71	70	69	68	68	68	68	68	68	68	68	68	68	67	69	69	67	68	69	69	69	69	67	71	68.6
Jan 14	69	70	70	71	71	71	71	69	69	69	68	65	64	64	65	66	67	71	72	72	72	71	72	71	64	72	69.2
Jan 15	71	71	70	70	69	69	68	68	68	67	67	67	64	63	60	62	68	71	70	69	68	67	67	66	60	71	67.5
Jan 16	65	65	66	66	67	68	70	70	70	69	69	69	68	68	67	68	67	70	72	73	73	73	72	72	65	73	69.0
Jan 17	71	72	71	71	71	71	71	70	70	70	70	70	69	70	69	69	70	70	71	72	72	73	73	73	69	73	70.8
Jan 18	73	72	72	71	70	70	69	69	68	68	68	68	69	69	70	72	74	74	74	75	75	76	76	76	68	76	71.6
Jan 19	77	77	76	76	76	76	76	76	76	76	76	75	74	74	74	76	79	80	81	81	81	81	82	81	74	82	77.4
Jan 20	81	81	80	80	80	80	80	80	80	81	81	82	82	81	82	83	83	83	86	88	88	90	83	84	80	90	82.5
Jan 21	83	84	86	87	92	94	92	92	89	88	88	86	76	71	71	77	90	95	91	90	89	87	86	86	71	95	86.3
Jan 22	86	87	87	88	89	91	91	91	91	91	92	92	84	76	74	76	81	87	89	94	94	92	90	89	74	94	87.6
Jan 23	87	86	85	84	83	83	83	83	83	87	90	87	86	85	85	84	86	89	94	95	93	93	91	90	83	95	87.2
Jan 24	89	88	87	86	85	85	84	84	84	87	86	87	88	89	89	90	92	92	94	93	93	93	93	91	84	94	**88.7**
Jan 25	90	88	88	87	87	86	85	84	84	83	82	75	72	68	68	80	89	96	**97**	96	92	91	90	88	68	**97**	85.3
Jan 26	87	87	86	85	85	84	83	82	82	83	85	83	81	79	77	77	81	86	88	88	87	88	89	92	77	92	84.4
Jan 27	92	93	93	91	89	88	86	85	84	84	83	81	84	78	74	71	86	92	94	93	91	90	90	89	71	94	86.7
Jan 28	88	86	87	86	84	83	83	84	85	85	85	78	70	64	62	64	80	92	92	92	91	88	87	87	62	92	82.6
Jan 29	85	83	82	82	83	85	84	84	84	83	82	79	79	80	83	84	84	69	67	70	71	71	71	69	67	85	78.9
Jan 30	68	66	65	64	64	65	66	66	69	70	60	54	50	50	47	49	51	54	50	49	76	82	69	56	**47**	82	60.8
Jan 31	61	62	58	49	51	50	50	54	61	60	58	54	53	51	47	53	57	59	66	72	71	71	72	71	**47**	72	58.8
Diurnal Maximum	92	93	93	91	92	94	92	92	91	91	92	92	88	89	89	90	92	96	97	96	94	93	93	92			
Diurnal Average	78.5	78.3	77.8	77.1	77.2	77.2	77.0	77.4	77.8	78.1	77.5	75.5	73.4	71.8	70.7	72.7	76.3	77.6	77.8	78.5	79.8	80.0	79.2	78.2			

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

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

Timeseries Chart of Hourly Average for RH - AQHI - Cadotte Lake Station



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

AQHI - Cadotte Lake Station - January 2020

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

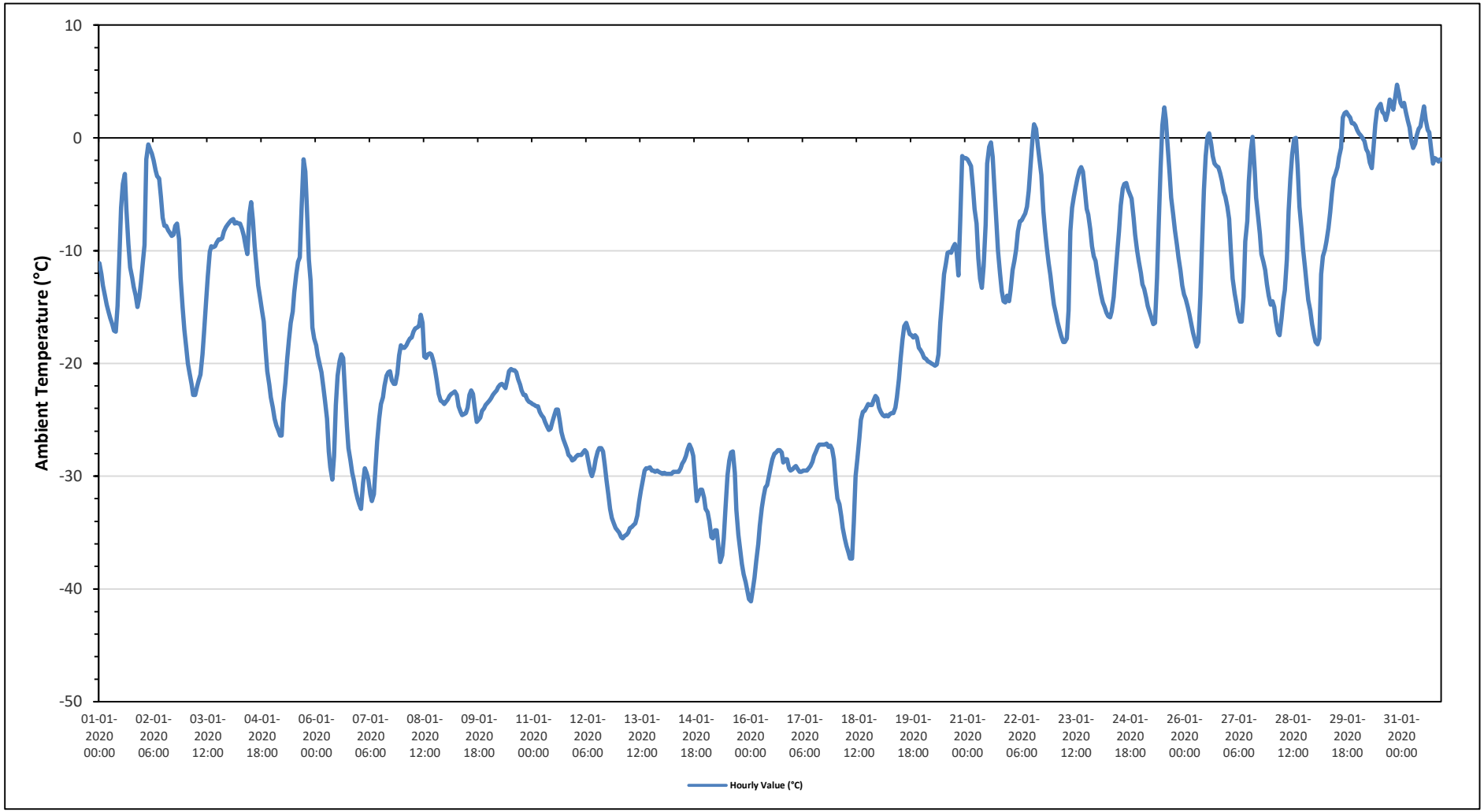
Maximum Hourly Value:	4.7	°C	on January 30 at hour 23	Hours in Service:	744
Maximum Daily Value:	1.2	°C	on January 30	Hours of Data:	744
Minimum Hourly Value:	-41.1	°C	on January 16 at hour 1	Hours of Missing Data:	0
Minimum Daily Value:	-34.4	°C	on January 15	Hours of Calibration:	0
Monthly Average:	-17.1	°C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	-11.1	-12.1	-13.1	-14	-14.8	-15.5	-16	-16.5	-17.1	-17.2	-14.9	-10.7	-6.2	-4.1	-3.2	-6.3	-9.4	-11.5	-12.4	-13.2	-14	-15	-14.2	-12.8	-17.2	-3.2	-12.3
Jan 2	-11.1	-9.5	-1.9	-0.6	-1	-1.4	-2	-2.9	-3.4	-3.6	-5.2	-7.1	-7.8	-7.8	-8.2	-8.4	-8.7	-8.6	-7.8	-7.6	-9	-12.4	-15	-17	-17.0	-0.6	-7.0
Jan 3	-18.7	-20	-20.9	-21.9	-22.8	-22.8	-22.1	-21.5	-21	-19.2	-17.3	-14.6	-12.3	-10.1	-9.6	-9.7	-9.6	-9.3	-9	-9	-8.9	-8.3	-7.9	-7.7	-22.8	-7.7	-14.8
Jan 4	-7.5	-7.3	-7.2	-7.6	-7.5	-7.6	-7.6	-8.1	-8.7	-9.7	-10.3	-6.8	-5.7	-7.3	-9.6	-11.6	-13.1	-14.1	-15.3	-16.3	-18.7	-20.7	-21.9	-23	-23.0	-5.7	-11.4
Jan 5	-23.9	-24.9	-25.5	-25.9	-26.4	-26.4	-23.5	-21.7	-19.6	-17.9	-16.4	-15.4	-13.7	-12.1	-11	-10.6	-6.3	-1.9	-3	-6.1	-10.8	-12.7	-16.8	-17.8	-26.4	-1.9	-16.3
Jan 6	-18.4	-19.3	-20.1	-20.8	-22.2	-23.3	-24.9	-27.8	-29.2	-30.3	-28.2	-23.7	-21.1	-19.8	-19.2	-19.5	-22.4	-25.6	-27.5	-28.6	-29.7	-30.3	-31.3	-32	-32.0	-18.4	-24.8
Jan 7	-32.5	-32.9	-30.6	-29.3	-29.7	-30.3	-31.6	-32.2	-31.6	-29	-26.9	-24.9	-23.6	-23	-22	-21.1	-20.8	-20.7	-21.5	-21.8	-21.8	-20.9	-19.3	-18.4	-32.9	-18.4	-25.7
Jan 8	-18.6	-18.6	-18.4	-18.1	-17.8	-17.7	-17.2	-16.9	-16.8	-16.7	-15.7	-16.4	-19.4	-19.5	-19.2	-19.1	-19.2	-19.8	-20.6	-21.6	-22.7	-23.3	-23.4	-23.6	-23.6	-15.7	-19.2
Jan 9	-23.4	-23.2	-22.9	-22.7	-22.6	-22.5	-22.8	-23.8	-24.3	-24.6	-24.5	-24.4	-23.9	-22.8	-22.4	-22.7	-23.9	-25.2	-25	-24.8	-24.2	-24	-23.7	-23.5	-25.2	-22.4	-23.7
Jan 10	-23.3	-23.1	-22.8	-22.6	-22.4	-22.1	-21.9	-21.8	-22	-22.2	-21.4	-20.7	-20.5	-20.6	-20.6	-20.8	-21.4	-21.9	-22.4	-22.8	-22.8	-23.2	-23.4	-23.5	-23.5	-20.5	-22.1
Jan 11	-23.6	-23.7	-23.8	-23.8	-24.3	-24.6	-24.8	-25.2	-25.6	-25.9	-25.8	-25.2	-24.6	-24.1	-24.1	-25	-26.1	-26.7	-27.1	-27.6	-28.1	-28.3	-28.6	-28.5	-28.6	-23.6	-25.6
Jan 12	-28.3	-28.1	-28.1	-28.1	-27.9	-27.7	-27.9	-28.7	-29.6	-30	-29.4	-28.5	-27.8	-27.5	-27.5	-27.8	-29	-30.4	-31.6	-32.9	-33.7	-34.2	-34.6	-34.8	-34.8	-27.5	-29.8
Jan 13	-35	-35.4	-35.5	-35.3	-35.2	-35	-34.6	-34.5	-34.3	-34.2	-33.5	-32.3	-31.3	-30.5	-29.5	-29.3	-29.3	-29.2	-29.5	-29.5	-29.6	-29.5	-29.6	-29.7	-35.5	-29.2	-32.1
Jan 14	-29.8	-29.7	-29.8	-29.8	-29.8	-29.8	-29.6	-29.6	-29.6	-29.6	-29.3	-28.9	-28.6	-28.2	-27.6	-27.2	-27.6	-28.2	-30.2	-32.2	-31.7	-31.2	-31.2	-31.9	-32.2	-27.2	-29.6
Jan 15	-32.9	-33.2	-34	-35.4	-35.5	-34.8	-34.8	-36.3	-37.6	-37	-35.5	-32.8	-29.9	-28.6	-27.9	-27.8	-29.7	-33	-35.2	-36.5	-37.8	-38.7	-39.4	-40.1	-40.1	-27.8	-34.4
Jan 16	-40.9	-41.1	-40.1	-39	-37.5	-36	-34.4	-32.8	-31.8	-31	-30.8	-29.9	-29.1	-28.5	-28	-27.9	-27.7	-27.7	-27.9	-28.8	-28.5	-28.5	-29.3	-29.5	**-41.1**	-27.7	-31.9
Jan 17	-29.4	-29.2	-29.1	-29.4	-29.6	-29.6	-29.5	-29.5	-29.5	-29.3	-29.1	-28.7	-28.2	-27.8	-27.4	-27.2	-27.2	-27.2	-27.2	-27.1	-27.4	-27.3	-27.6	-28.5	-29.6	-27.1	-28.4
Jan 18	-30.7	-32	-32.5	-33.5	-34.6	-35.5	-36.2	-36.8	-37.3	-37.3	-34.1	-30	-28.5	-26.6	-25	-24.3	-24.2	-23.9	-23.6	-23.7	-23.7	-23.3	-22.9	-23.1	-37.3	-22.9	-29.3
Jan 19	-23.9	-24.3	-24.6	-24.7	-24.6	-24.7	-24.5	-24.4	-24.4	-23.9	-23	-21.4	-19.5	-17.9	-16.7	-16.4	-16.9	-17.4	-17.5	-17.7	-17.5	-17.7	-18.6	-18.8	-24.7	-16.4	-20.9
Jan 20	-19.1	-19.5	-19.6	-19.8	-19.9	-20	-20.1	-20.2	-20.1	-19.2	-16.4	-14.2	-12.1	-11.2	-10.2	-10.1	-10.2	-9.7	-9.4	-10.2	-12.2	-7.5	-1.6	-1.8	-20.2	-1.6	-13.9
Jan 21	-1.8	-1.9	-2.2	-2.5	-4.5	-6.3	-7.6	-10.7	-12.5	-13.3	-11.4	-7.7	-2.3	-0.8	-0.4	-1.7	-4.5	-7.6	-10	-12	-13.6	-14.5	-14.6	-14	-14.6	-0.4	-7.4
Jan 22	-14.5	-13.5	-11.7	-10.9	-9.9	-8.3	-7.4	-7.3	-7	-6.7	-6.1	-4.7	-2.5	-0.1	1.2	0.8	-0.7	-2.2	-3.3	-6.5	-8.3	-9.8	-11.1	-12.2	-14.5	1.2	-6.8
Jan 23	-13.6	-14.8	-15.6	-16.3	-17	-17.6	-18.1	-18.1	-17.8	-15.3	-8.3	-6.2	-5.2	-4.4	-3.6	-2.9	-2.6	-3	-4.5	-6.3	-6.8	-8.1	-9.6	-10.5	-18.1	-2.6	-10.3
Jan 24	-10.9	-12	-13	-13.8	-14.6	-15	-15.5	-15.8	-15.9	-15.4	-14.1	-12.1	-9.9	-8.3	-6	-4.5	-4.1	-4	-4.6	-5	-5.4	-7.1	-8.6	-10	-15.9	-4.0	-10.2
Jan 25	-11	-12	-13	-13.4	-14.2	-14.9	-15.5	-16	-16.5	-16.4	-12.4	-7.4	-2.7	1.1	2.7	1.6	-0.7	-3.2	-5.3	-6.8	-8.2	-9.5	-10.6	-11.8	-16.5	2.7	-9.0
Jan 26	-13.1	-13.9	-14.3	-15	-15.6	-16.4	-17.3	-17.9	-18.5	-18.1	-14	-9.8	-4.6	-1.6	0.1	0.4	-0.6	-1.6	-2.3	-2.5	-2.6	-3.1	-3.8	-4.8	-18.5	0.4	-8.8
Jan 27	-5.2	-6.1	-7.2	-10.1	-12.5	-13.8	-14.7	-15.6	-16.3	-16.3	-14.1	-9.2	-7.4	-3.9	-1.2	0.1	-2.7	-5.3	-7	-8.5	-10.3	-11	-11.7	-13	-16.3	0.1	-9.3
Jan 28	-14	-14.8	-14.5	-15	-16.3	-17.3	-17.5	-16	-14.4	-13.5	-10.8	-6.5	-3.6	-1.5	-0.1	0	-2.7	-6.1	-8.1	-9.8	-11.5	-13.1	-14.4	-15.3	-17.5	0.0	-10.7
Jan 29	-16.5	-17.5	-18.1	-18.3	-17.8	-12.1	-10.5	-9.9	-9.2	-8	-6.6	-4.9	-3.6	-3.2	-2.6	-1.7	-0.9	1.8	2.2	2.3	2	1.8	1.3	1.3	-18.3	2.3	-6.2
Jan 30	1.1	0.7	0.4	0.2	0	-0.3	-1	-1.3	-2.2	-2.7	-0.8	1.2	2.5	2.8	3	2.3	2.1	1.6	2.3	3.4	3.1	2.5	3.6	**4.7**	-2.7	**4.7**	**1.2**
Jan 31	4	3.1	2.8	3.1	2.3	1.5	0.9	-0.3	-0.9	-0.5	0.2	0.8	1	1.9	2.8	1.6	0.7	0.5	-1.1	-2.3	-1.8	-1.9	-2.1	-1.9	-2.3	4.0	0.6
Diurnal Maximum	4.0	3.1	2.8	3.1	2.3	1.5	0.9	-0.3	-0.9	-0.5	0.2	1.2	2.5	2.8	3.0	2.3	2.1	1.8	2.3	3.4	3.1	2.5	3.6	4.7			
Diurnal Average	-18.6	-19.0	-18.9	-19.2	-19.6	-19.6	-19.7	-20.0	-20.2	-19.8	-18.3	-16.2	-14.6	-13.4	-12.7	-12.8	-13.5	-14.2	-15.0	-15.9	-16.7	-17.1	-17.5	-17.9			

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

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

Timeseries Chart of Hourly Average for AT - AQHI - Cadotte Lake Station



PEACE RIVER AREA MONITORING PROGRAM

AQHI - Cadotte Lake Station - January 2020

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

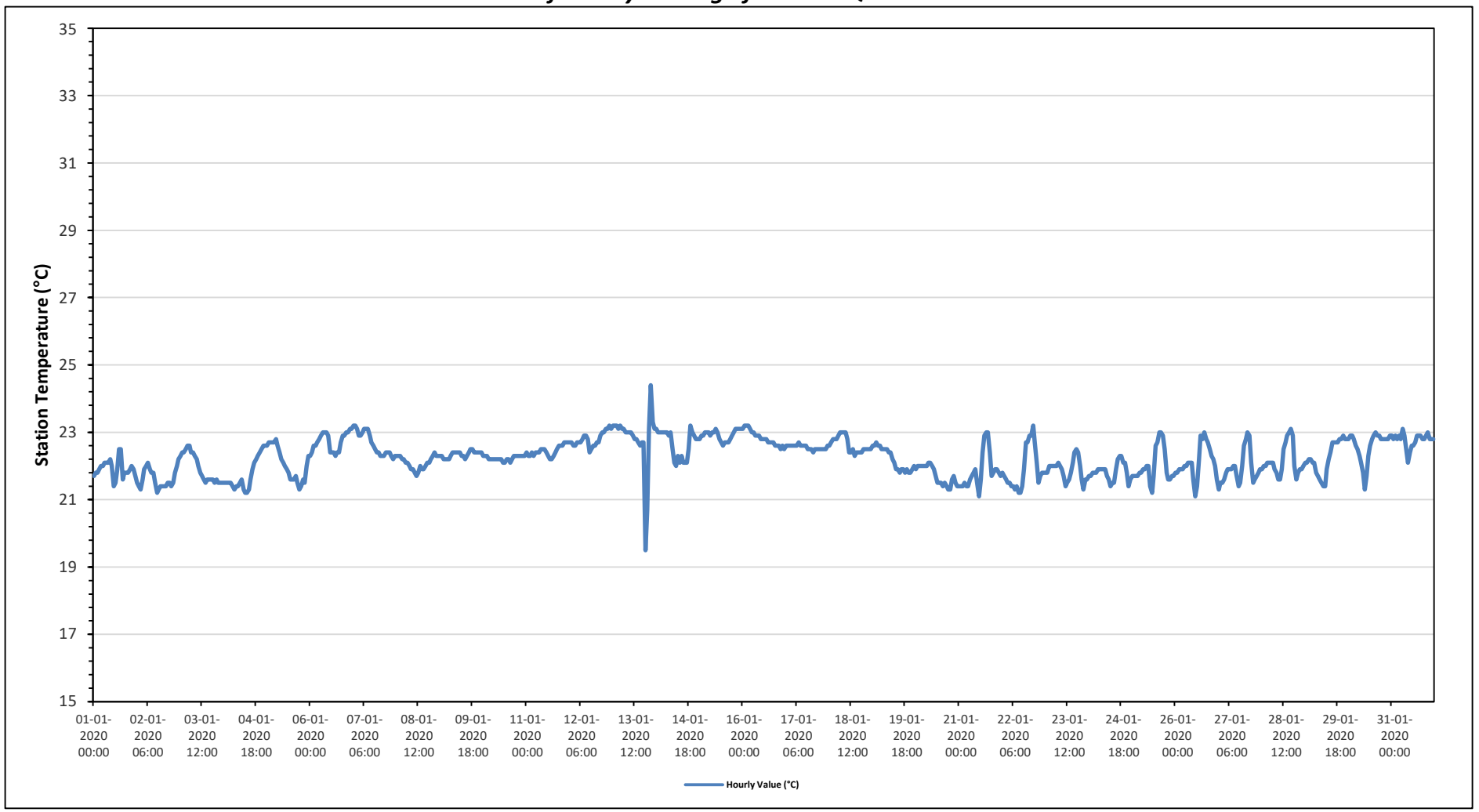
Maximum Hourly Value:	24.4	°C	on January 13 at hour 21	Hours in Service:	744
Maximum Daily Value:	22.9	°C	on January 15	Hours of Data:	744
Minimum Hourly Value:	19.5	°C	on January 13 at hour 18	Hours of Missing Data:	0
Minimum Daily Value:	21.6	°C	on January 2	Hours of Calibration:	0
Monthly Average:	22.3	°C		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	21.7	21.8	21.8	21.9	22	22	22.1	22.1	22.1	22.2	22	21.4	21.5	21.9	22.5	22.5	21.6	21.8	21.8	21.8	21.9	22	21.9	21.7	21.4	22.5	21.9
Jan 2	21.5	21.4	21.3	21.6	21.9	22	22.1	21.9	21.8	21.8	21.5	21.2	21.3	21.4	21.4	21.4	21.4	21.5	21.5	21.4	21.5	21.8	22	22.2	21.2	22.2	21.6
Jan 3	22.3	22.4	22.4	22.5	22.6	22.6	22.4	22.4	22.3	22.2	22	21.8	21.7	21.6	21.5	21.6	21.6	21.6	21.6	21.5	21.6	21.5	21.5	21.5	21.5	22.6	21.9
Jan 4	21.5	21.5	21.5	21.5	21.5	21.4	21.3	21.4	21.4	21.5	21.6	21.3	21.2	21.2	21.3	21.6	21.9	22.1	22.2	22.3	22.4	22.5	22.6	22.6	21.2	22.6	21.7
Jan 5	22.6	22.7	22.7	22.7	22.7	22.8	22.6	22.4	22.2	22.1	22	21.9	21.8	21.6	21.6	21.6	21.7	21.5	21.3	21.4	21.6	21.5	22	22.3	21.3	22.8	22.1
Jan 6	22.3	22.4	22.6	22.6	22.7	22.8	22.9	23	23	23	22.9	22.4	22.4	22.4	22.3	22.4	22.4	22.7	22.9	22.9	23	23	23.1	23.1	22.3	23.1	22.7
Jan 7	23.2	23.2	23.1	22.9	22.9	23	23.1	23.1	23.1	22.9	22.7	22.6	22.5	22.4	22.4	22.3	22.3	22.3	22.4	22.4	22.4	22.3	22.2	22.3	22.2	23.2	22.7
Jan 8	22.3	22.3	22.3	22.2	22.2	22.1	22.1	22	21.9	21.9	21.8	21.7	21.8	22	21.9	21.9	22	22.1	22.1	22.2	22.3	22.4	22.3	22.3	21.7	22.4	22.1
Jan 9	22.3	22.3	22.2	22.2	22.2	22.2	22.3	22.4	22.4	22.4	22.4	22.4	22.3	22.3	22.2	22.3	22.4	22.5	22.5	22.4	22.4	22.4	22.4	22.4	22.2	22.5	22.3
Jan 10	22.3	22.3	22.3	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.1	22.1	22.2	22.2	22.1	22.2	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.1	22.3	22.2
Jan 11	22.4	22.3	22.3	22.4	22.3	22.4	22.4	22.4	22.5	22.5	22.5	22.4	22.3	22.2	22.2	22.3	22.4	22.5	22.6	22.6	22.6	22.7	22.7	22.7	22.2	22.7	22.4
Jan 12	22.7	22.7	22.6	22.6	22.7	22.7	22.7	22.8	22.9	22.9	22.8	22.4	22.5	22.6	22.6	22.7	22.7	22.9	23	23	23.1	23.1	23.2	23.1	22.4	23.2	22.8
Jan 13	23.2	23.2	23.2	23.1	23.2	23.1	23.1	23	23	23	23	22.9	22.8	22.8	22.7	22.6	22.7	22.7	19.5	20.7	23.1	**24.4**	23.3	23.1	**19.5**	**24.4**	22.8
Jan 14	23.1	23	23	23	23	23	23	22.9	23	22.5	22.1	22	22.3	22.1	22.3	22.1	22.1	22.1	22.5	23.2	23	22.9	22.8	22.8	22.0	23.2	22.7
Jan 15	22.8	22.9	22.9	23	23	23	22.9	23	23	23.1	23	22.8	22.7	22.6	22.7	22.7	22.7	22.8	22.9	23	23.1	23.1	23.1	23.1	22.6	23.1	**22.9**
Jan 16	23.1	23.2	23.2	23.2	23.1	23	23	22.9	22.9	22.9	22.8	22.8	22.8	22.8	22.7	22.7	22.7	22.7	22.6	22.6	22.6	22.5	22.6	22.5	22.5	23.2	22.8
Jan 17	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.7	22.6	22.6	22.6	22.6	22.5	22.5	22.5	22.4	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.4	22.7	22.6
Jan 18	22.6	22.7	22.8	22.8	22.8	22.9	23	23	23	23	22.8	22.4	22.4	22.5	22.3	22.4	22.4	22.4	22.4	22.5	22.5	22.5	22.5	22.5	22.3	23.0	22.6
Jan 19	22.6	22.6	22.7	22.6	22.6	22.5	22.5	22.5	22.5	22.4	22.4	22.2	22.1	21.9	21.9	21.8	21.9	21.9	21.8	21.9	21.8	21.8	21.9	22	21.8	22.7	22.2
Jan 20	21.9	22	22	22	22	22	22	22.1	22.1	22	21.9	21.7	21.5	21.5	21.5	21.4	21.5	21.4	21.3	21.3	21.6	21.7	21.5	21.4	21.3	22.1	21.7
Jan 21	21.4	21.4	21.4	21.5	21.4	21.4	21.6	21.7	21.8	21.9	21.5	21.1	21.6	22.4	22.9	23	23	22.4	21.7	21.8	21.9	21.9	21.8	21.7	21.1	23.0	21.8
Jan 22	21.8	21.7	21.6	21.5	21.5	21.4	21.4	21.3	21.4	21.2	21.2	21.4	21.9	22.7	22.7	22.9	22.9	23.2	22.7	22.1	21.5	21.7	21.8	21.8	21.2	23.2	21.9
Jan 23	21.8	21.8	22	22	22	22	22	22.1	22	21.9	21.7	21.4	21.5	21.6	21.8	22.1	22.4	22.5	22.4	22	21.6	21.3	21.6	21.6	21.3	22.5	21.9
Jan 24	21.7	21.7	21.8	21.8	21.8	21.9	21.9	21.9	21.9	21.9	21.7	21.6	21.4	21.5	21.5	21.9	22.2	22.3	22.3	22.1	22.1	21.8	21.4	21.6	21.4	22.3	21.8
Jan 25	21.7	21.7	21.7	21.7	21.8	21.8	21.9	21.9	22	22	21.4	21.2	21.7	22.6	22.7	23	23	22.9	22.5	21.8	21.6	21.6	21.7	21.7	21.2	23.0	22.0
Jan 26	21.8	21.8	21.9	21.9	21.9	22	22	22.1	22.1	22.1	21.6	21.1	21.4	22.2	22.9	22.8	23	22.8	22.7	22.5	22.3	22.2	22	21.6	21.1	23.0	22.1
Jan 27	21.3	21.5	21.5	21.6	21.8	21.9	21.9	21.9	22	22	21.7	21.4	21.5	22	22.6	22.8	23	22.9	22.1	21.5	21.6	21.7	21.8	21.9	21.3	23.0	21.9
Jan 28	21.9	22	22	22.1	22.1	22.1	22.1	21.9	21.8	21.6	21.6	21.9	22.5	22.7	22.9	23	23.1	22.9	22	21.6	21.8	21.9	21.9	22	21.6	23.1	22.1
Jan 29	22.1	22.1	22.2	22.2	22.1	22.1	21.8	21.7	21.6	21.5	21.4	21.4	21.9	22.2	22.4	22.7	22.7	22.7	22.7	22.8	22.8	22.9	22.8	22.8	21.4	22.9	22.2
Jan 30	22.8	22.9	22.9	22.8	22.6	22.5	22.3	22.1	21.8	21.3	21.7	22.3	22.6	22.8	22.9	23	22.9	22.9	22.8	22.8	22.8	22.8	22.8	22.9	21.3	23.0	22.6
Jan 31	22.9	22.8	22.9	22.8	22.9	22.8	23.1	22.9	22.5	22.1	22.4	22.6	22.6	22.7	22.9	22.9	22.9	22.8	22.8	22.9	23	22.8	22.8	22.8	22.1	23.1	22.8
Diurnal Maximum	23.2	23.2	23.2	23.2	23.2	23.1	23.1	23.1	23.1	23.1	23.0	22.9	22.8	22.8	22.9	23.0	23.1	23.2	23.0	23.2	23.1	24.4	23.3	23.1			
Diurnal Average	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.2	22.1	21.9	22.0	22.2	22.3	22.4	22.4	22.4	22.2	22.2	22.3	22.3	22.3	22.3			

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

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

Timeseries Chart of Hourly Average for ST - AQHI - Cadotte Lake Station



PEACE RIVER AREA MONITORING PROGRAM

AQHI - Cadotte Lake Station - January 2020

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

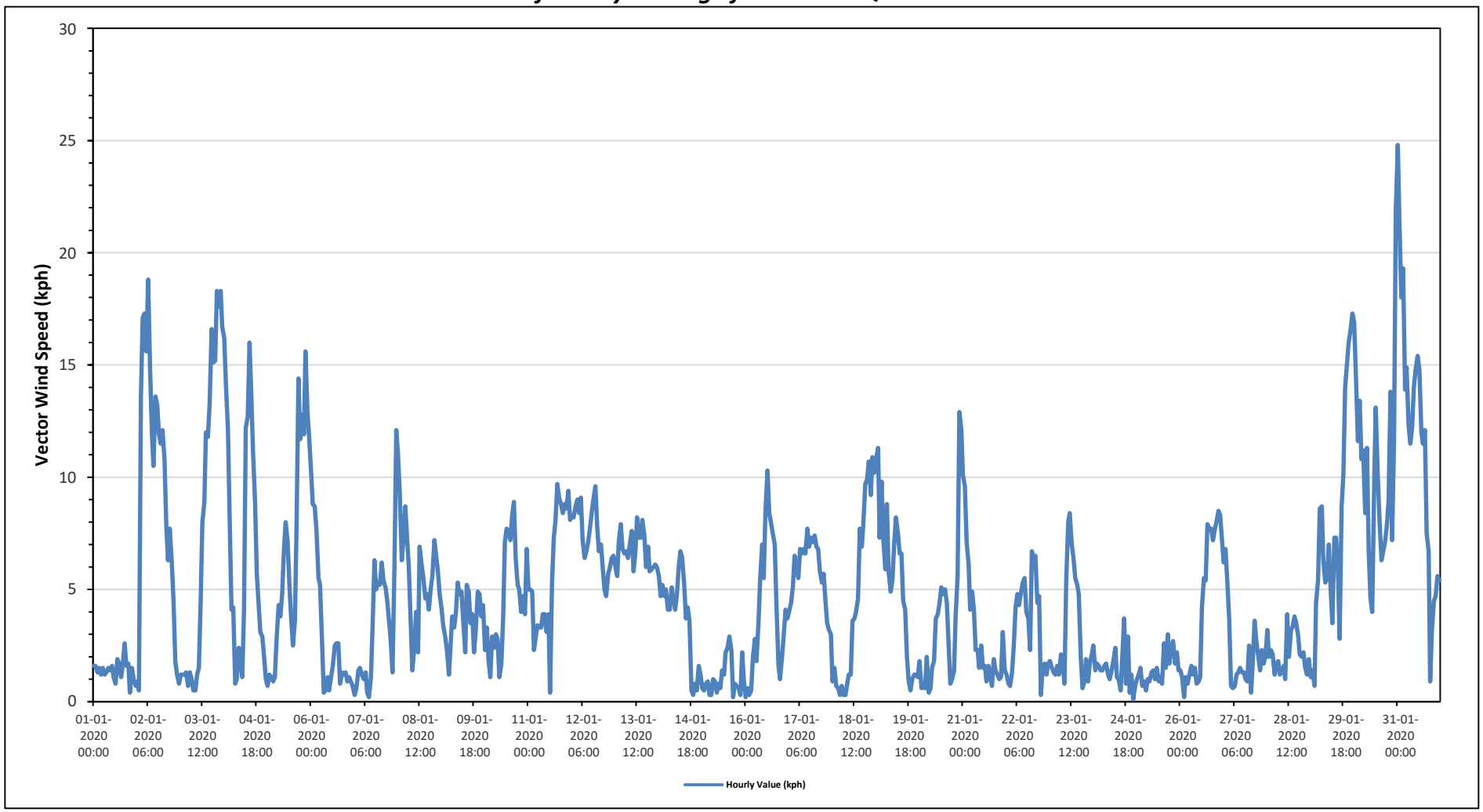
Maximum Hourly Value:	24.8	kph	on January 31 at hour 0	Hours in Service:	744
Maximum Daily Value:	11.7	kph	on January 31	Hours of Data:	744
Minimum Hourly Value:	0.1	kph	on January 24 at hour 22	Hours of Missing Data:	0
Minimum Daily Value:	1.1	kph	on January 15	Hours of Calibration:	0
Monthly Average:	0.6	kph		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jan 1	1.6	1.6	1.3	1.5	1.2	1.5	1.2	1.3	1.5	1.4	1.6	1.1	0.8	1.9	1.7	1.1	1.6	2.6	1.6	1.7	0.4	1.5	1	0.7	0.4	2.6	1.4
Jan 2	0.9	0.5	13.6	17.1	17.3	15.6	18.8	15	11.9	10.5	13.6	13.2	11.9	11.5	12.1	10.8	7.9	6.3	7.7	6.2	4.5	1.8	1.2	0.8	0.5	18.8	9.6
Jan 3	1.2	1.2	1.2	1.3	0.7	1.3	1	0.5	0.5	1.2	1.5	4.4	8	8.9	12	11.8	13.3	16.6	15.1	15.2	18.3	17.6	18.3	16.7	0.5	18.3	7.8
Jan 4	16.2	14.1	12.1	8.6	4.1	4.2	0.8	1	2.4	1.8	1.1	4.1	12.2	12.7	16	13.7	11.1	8.9	5.7	4.2	3.1	2.9	2	1	0.8	16.2	6.8
Jan 5	0.7	1.2	1.1	0.9	1.1	2.8	4.3	3.8	4.8	6.7	8	7.1	5.2	3.7	2.5	3.6	8.2	14.4	11.7	12.8	11.9	15.6	12.9	11.7	0.7	15.6	6.5
Jan 6	10.1	8.8	8.7	7.6	5.5	5.2	2.7	0.4	0.5	1.1	0.5	1.1	1.6	2.5	2.6	2.6	0.8	1.3	1.2	1.3	0.9	1.1	0.9	0.7	0.4	10.1	2.9
Jan 7	0.3	0.6	1.4	1.5	1.2	1	1.3	0.4	0.2	1.1	3.5	6.3	5	5.3	5.2	6.2	5.4	5.1	4.5	3.6	2.7	1.3	6.2	12.1	0.2	12.1	3.4
Jan 8	11	9.3	6.3	7.3	8.7	7.3	6	3.4	1.4	2.4	4	2.2	6.9	6.1	5.5	4.6	4.8	4.1	5	5.6	7.2	6.6	5.8	4.8	1.4	11.0	5.7
Jan 9	4.1	3.4	2.9	2.3	1.2	2.4	3.8	3.3	4	5.3	4.8	4.9	3.6	2.2	5.2	4.9	3.5	3.9	2.2	3.2	4.9	4.8	3.8	4.3	1.2	5.3	3.7
Jan 10	2.3	3.3	1.8	1.1	2.9	2.4	3	2.8	1.1	1.7	3.7	7.1	7.7	7.6	7.2	8.3	8.9	6.4	5.2	5	4	4.7	3.9	6.8	1.1	8.9	4.5
Jan 11	5	5	4.9	2.3	2.8	3.4	3.3	3.3	3.9	3.9	3.1	3.9	0.4	5.3	7.3	8.1	9.7	9.1	8.8	8.4	8.8	8.6	9.4	8.1	0.4	9.7	5.7
Jan 12	8.3	8.2	8.7	9	8.4	9.1	7.2	6.4	6.7	7.1	7.7	8.5	9.1	9.6	7.8	6.7	7	6	5	4.7	5.7	6	6.4	6.5	4.7	9.6	7.3
Jan 13	6	5.6	7.1	7.9	6.8	6.6	6.7	6.4	7	7.6	5.8	6.6	8.2	7.3	7.3	8.1	7.4	6	6.9	5.8	5.9	6	6.1	6	5.6	8.2	6.7
Jan 14	5.6	4.7	5.2	4.7	5	4.1	4.1	5.1	4.6	4.1	4.8	6	6.7	6.4	5.2	3.7	4.2	3.6	0.5	0.3	0.8	0.5	1.6	1.2	0.3	6.7	3.9
Jan 15	0.6	0.5	0.8	0.9	0.3	0.3	1	0.9	0.4	0.8	0.6	1.4	1.2	2.2	2.4	2.9	2.3	0.2	0.8	0.7	0.6	0.3	2.2	0.9	0.2	2.9	**1.1**
Jan 16	0.2	0.6	0.3	0.5	2	2.8	1.8	3.5	5.5	7	5.5	8.5	10.3	8.4	7.9	7.5	7	4.2	1.6	1	2	3	4.1	3.7	0.2	10.3	4.1
Jan 17	4	4.4	5.1	6.5	6	5.5	6.8	6.6	6.8	6.6	7.7	6.9	7.3	7.1	7.4	6.9	6.8	5.8	5.3	5.7	4.5	3.5	3.2	3	3.0	7.7	5.8
Jan 18	0.9	1.5	0.7	0.6	0.3	0.7	0.3	0.3	0.8	1.2	1.2	3.6	3.7	4	4.6	7.7	6.9	7.9	9.7	9.9	10.7	9.2	10.9	10.2	0.3	10.9	4.5
Jan 19	10.8	11.3	7.3	9.8	7.2	5.9	8.8	5.8	4.9	5.4	7	8.2	7.5	6.6	6.6	4.5	4.1	2	0.9	0.5	1	1.2	1.2	1.1	0.5	11.3	5.4
Jan 20	1.8	0.6	0.7	0.6	2	0.4	0.6	1.5	1.8	3.7	3.9	4.4	5.1	4.8	5	4.4	2.6	0.8	1	1.4	3.8	5.6	12.9	12.1	0.4	12.9	3.4
Jan 21	10.1	9.6	7.1	6.1	4.1	4.9	4.1	2.3	2.3	1.5	2.5	1.5	1.6	0.9	1.6	1.1	0.7	1.9	1.4	1.2	1	1.1	3.1	1.4	0.7	10.1	3.0
Jan 22	1.2	0.8	0.7	1.3	2.5	4.2	4.8	4.3	4.9	5.3	5.5	4	3.7	2.3	6.7	6.3	6.5	4.4	4.7	0.3	1.5	1.7	1.2	1.7	0.3	6.7	3.4
Jan 23	1.8	1.5	1.3	1.2	1.6	1.2	2.1	1.8	0.8	5.4	8	8.4	7	6.4	5.5	5.2	4.8	2	0.6	0.9	1.9	0.9	1.7	2.1	0.6	8.4	3.1
Jan 24	2.5	1.4	1.7	1.6	1.4	1.4	1.6	1.7	1.2	1	1.4	1.8	2.4	1.1	1	0.5	2.1	3.7	0.8	2.9	0.4	1.2	0.1	0.7	**0.1**	3.7	1.5
Jan 25	1	1.2	1.5	0.7	0.9	0.5	1	0.9	1.3	1.4	1	1.5	0.9	1.1	0.8	2.6	1.5	3	1.7	2.4	2.7	1.7	2.2	1.4	0.5	3.0	1.5
Jan 26	1.4	1.1	0.2	1.1	0.8	1.2	1.6	1.2	1.5	0.8	0.9	1.1	4.2	5.5	5.4	7.9	7.7	7.7	7.2	7.7	8	8.5	8.3	7.2	0.2	8.5	4.1
Jan 27	6.2	6.8	5.2	3.6	0.7	0.6	0.7	1.2	1.3	1.5	1.3	1.3	1	0.9	2.5	0.4	1.8	3.6	2.7	2	1.4	2.3	1.7	2	0.4	6.8	2.2
Jan 28	3.2	2	2.3	2.1	1.2	1.6	1.8	1.2	1.4	1.6	1	3.9	2	3.2	3.3	3.8	3.5	2.9	2.1	2	2.2	1.5	1.2	1.9	1.0	3.9	2.2
Jan 29	1.1	1.4	0.7	4.4	5.4	8.6	8.7	6.3	5.3	5.5	7	5.1	3.5	7.3	7.3	6	2.8	8.7	10.1	14	15	16	16.6	17.3	0.7	17.3	7.7
Jan 30	16.9	14.5	11.6	13.4	10.8	11.2	8.4	11.3	6.7	4.6	4	9.8	13.1	10.1	8.1	6.3	6.7	7.1	7.8	8.9	13.8	7.2	11.6	21.9	4.0	21.9	10.2
Jan 31	**24.8**	21.6	18	19.3	13.9	14.9	12.3	11.5	12.2	14	14.8	15.4	14.8	12	11.5	12.1	7.5	6.7	0.9	3.2	4.5	4.7	5.6	5.4	0.9	**24.8**	**11.7**
Diurnal Maximum	25	22	18	19	17	16	19	15	12	14	15	15	15	13	16	14	13	17	15	15	18	18	18	22			
Diurnal Average	5.2	4.8	4.6	4.7	4.1	4.3	4.2	3.7	3.5	4.0	4.4	5.3	5.7	5.6	6.0	5.8	5.5	5.4	4.5	4.6	5.0	4.8	5.4	5.7			

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

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

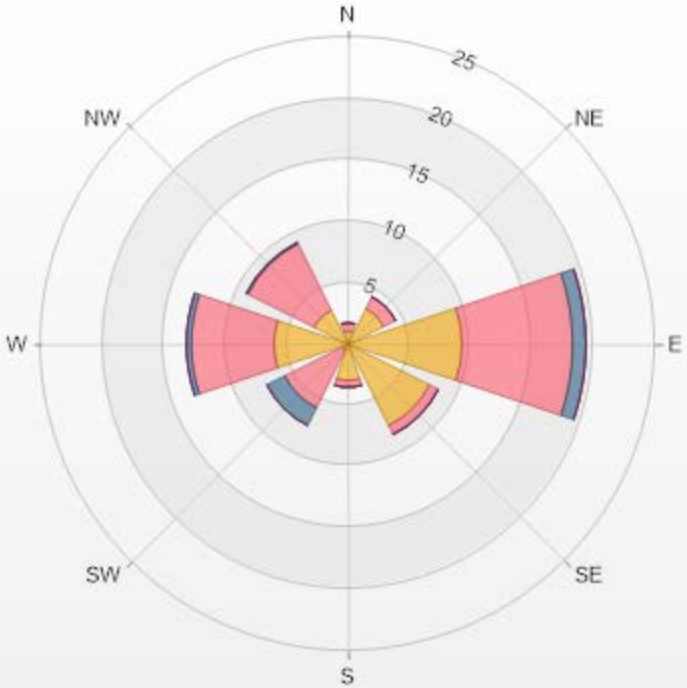
Timeseries Chart of Hourly Average for VWS - AQHI - Cadotte Lake Station



Wind: AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-WDS[KPH] Monthly: 01-2020 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 33.06% Valid Data: 100.00% Calm Avg: 1.06 [KPH]

Direction	0-6	6-15	15-29	29-39	>39.0	Total
N	1.08	0.67	0	0	0	1.75
NE	3.23	1.08	0	0	0	4.31
E	9.27	9.01	1.08	0	0	19.36
SE	7.39	0.81	0	0	0	8.2
S	2.96	0.54	0	0	0	3.5
SW	0.54	5.24	1.61	0	0	7.39
W	6.05	6.72	0.4	0	0	13.17
NW	3.09	6.05	0.13	0	0	9.27
Summary	33.61	30.12	3.22	0	0	66.95

AQHI Cadotte Lake Poll.: AQHI Cadotte Lake-WDS[KPH] 01-01-2020 00:00 - 31-01-2020 23:00 Calm: 33.06% Calm Pol
Avg: 1.06[KPH]



% Icon Classes (KPH) | 34 0-6 | 30 6-15 | 3 15-29 | 0 29-39 | 0 >39.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

AQHI - Cadotte Lake Station - January 2020

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

Monthly Average: 248 (WSW) degree

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Hours of Calibration:	0
Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant
Jan 1	WNW	NNW	WNW	NW	NW	WNW	NW	NW	NW	WNW	WNW	W	SW	S	S	S	SE	E	ENE	NE	NNW	NW	WNW	WSW	301	WNW
Jan 2	WNW	SSE	SW	SW	SW	SW	SW	SW	SW	SW	NW	NW	WNW	WNW	WNW	WNW	W	W	WNW	W	W	W	NW	N	263	W
Jan 3	NNW	NW	NNE	N	WNW	WNW	WNW	WNW	NNW	E	ESE	E	E	E	E	E	E	E	E	E	E	E	E	E	89	E
Jan 4	E	E	E	E	SE	E	ESE	ESE	ENE	WSW	NNW	NW	WNW	WNW	WNW	WNW	W	W	W	W	W	WNW	WSW	WNW	295	WNW
Jan 5	NE	ENE	ENE	NE	NNE	ESE	ESE	SE	ESE	E	ESE	ESE	ESE	ESE	SSE	SE	SW	WSW	WSW	WNW	WNW	NW	WNW	WNW	270	W
Jan 6	WNW	WNW	WNW	WNW	WNW	WNW	W	SSE	WNW	NNW	W	SE	S	S	SSW	SSE	S	NNE	NNW	WNW	NW	W	WNW	NW	284	WNW
Jan 7	N	NE	E	E	S	ESE	N	NNW	NE	SSE	ESE	E	ESE	SSE	ESE	E	ESE	ESE	ESE	ESE	SE	E	E	E	106	ESE
Jan 8	E	E	E	E	E	E	E	SE	WSW	W	NNW	WSW	W	W	W	W	W	W	W	W	WNW	WNW	NW	NW	333	NNW
Jan 9	WNW	WNW	W	WSW	SSE	ESE	ESE	SE	SE	SE	SE	SSE	SSE	SE	ESE	SSE	ESE	E	E	E	E	E	E	ESE	125	SE
Jan 10	SE	ENE	ESE	NE	E	ENE	ENE	ENE	NNW	NNE	NE	NE	NE	NNE	NNE	NNE	NNE	NE	NNE	NNE	NE	E	ENE	NNE	44	NE
Jan 11	NNE	NNE	N	NE	ESE	ESE	SSE	SSE	SSE	S	SSE	E	ENE	N	N	NW	WNW	NW	NW	NW	NW	NW	NW	NW	328	NNW
Jan 12	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	296	WNW
Jan 13	WNW	WNW	WNW	WNW	WNW	W	WNW	W	WNW	WNW	W	W	W	W	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	296	WNW
Jan 14	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	N	NNW	N	NNW	NNW	N	N	ESE	WNW	WNW	WNW	ENE	E	324	NW
Jan 15	N	WNW	SSE	SSE	NE	ENE	NE	NNW	NE	WSW	SE	SSW	S	SSE	NW	W	WSW	N	W	ENE	W	SSW	ENE	WNW	261	W
Jan 16	N	SW	N	SSW	SE	ESE	E	ESE	E	ESE	ESE	E	E	ENE	ENE	ENE	ENE	ENE	ENE	WNW	W	W	W	W	84	E
Jan 17	W	W	WNW	WNW	WNW	WNW	WNW	W	W	W	W	W	W	W	W	W	W	W	W	W	WNW	W	WNW	WNW	280	W
Jan 18	W	WSW	W	S	N	N	WSW	NE	W	WSW	ENE	ESE	SSE	SE	ESE	E	ESE	ESE	E	E	E	E	E	E	103	ESE
Jan 19	E	E	E	E	ESE	ESE	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE	ESE	SE	W	NNW	W	W	NW	NW	107	ESE
Jan 20	E	SSE	NW	SE	ENE	NE	E	ESE	SSE	ESE	SE	SE	ESE	SE	ESE	SE	S	SW	SE	ENE	NE	WSW	SW	WSW	162	SSE
Jan 21	WSW	WSW	W	WSW	W	WNW	WSW	W	W	ENE	ENE	NNE	N	SW	NNW	WNW	NNE	ENE	ESE	NNE	NW	SW	ENE	NE	271	W
Jan 22	NW	NNE	SSE	SSE	SE	SE	ESE	ESE	ESE	ESE	E	ESE	SE	SSE	SW	SW	WSW	WSW	WSW	N	NE	ENE	NNE	NNE	152	SSE
Jan 23	NNE	NW	NNE	NW	WNW	WNW	SE	S	ESE	ESE	E	E	ESE	E	E	E	ESE	E	NE	ESE	NE	NNW	NNE	NE	93	E
Jan 24	NNE	N	NNW	NNW	WNW	WNW	WNW	NW	W	NNW	W	WNW	W	W	ENE	NNE	SSE	SE	ENE	E	SSE	NNE	SW	ENE	336	NNW
Jan 25	NNE	WNW	W	ENE	W	SSW	NW	NW	WNW	WNW	WNW	W	W	NNE	NE	SSE	SSE	ENE	ENE	ENE	ENE	NE	ENE	NNW	20	NNE
Jan 26	WNW	WNW	W	WNW	WSW	WNW	WNW	WNW	WNW	W	NNE	SW	E	E	E	E	E	ESE	E	E	ESE	E	E	E	96	E
Jan 27	ESE	E	E	E	E	WNW	NW	WNW	W	WNW	W	SW	WSW	SSW	SSE	SE	ESE	ENE	E	E	NE	NNE	NNE	E	92	E
Jan 28	ENE	SE	E	NE	NW	WNW	W	WNW	WNW	W	WNW	SE	SSE	SSE	SE	SSE	S	S	SSE	ESE	NE	NNE	NNW	ENE	133	SE
Jan 29	NNE	NW	N	E	ESE	E	E	ESE	ESE	ESE	E	E	E	E	E	E	SSE	SSW	SW	SW	SW	SW	SW	SW	174	S
Jan 30	SW	SW	SW	SW	WSW	WSW	WSW	WSW	SSW	S	S	SW	SW	SSW	SSW	S	SSE	SE	SE	S	SSW	SSE	SSW	SW	215	SSW
Jan 31	SW	WSW	WSW	WSW	W	WSW	WSW	SW	SW	SW	SW	SW	WSW	WSW	WSW	SW	SW	SW	S	ESE	SSE	ESE	E	E	237	SW

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

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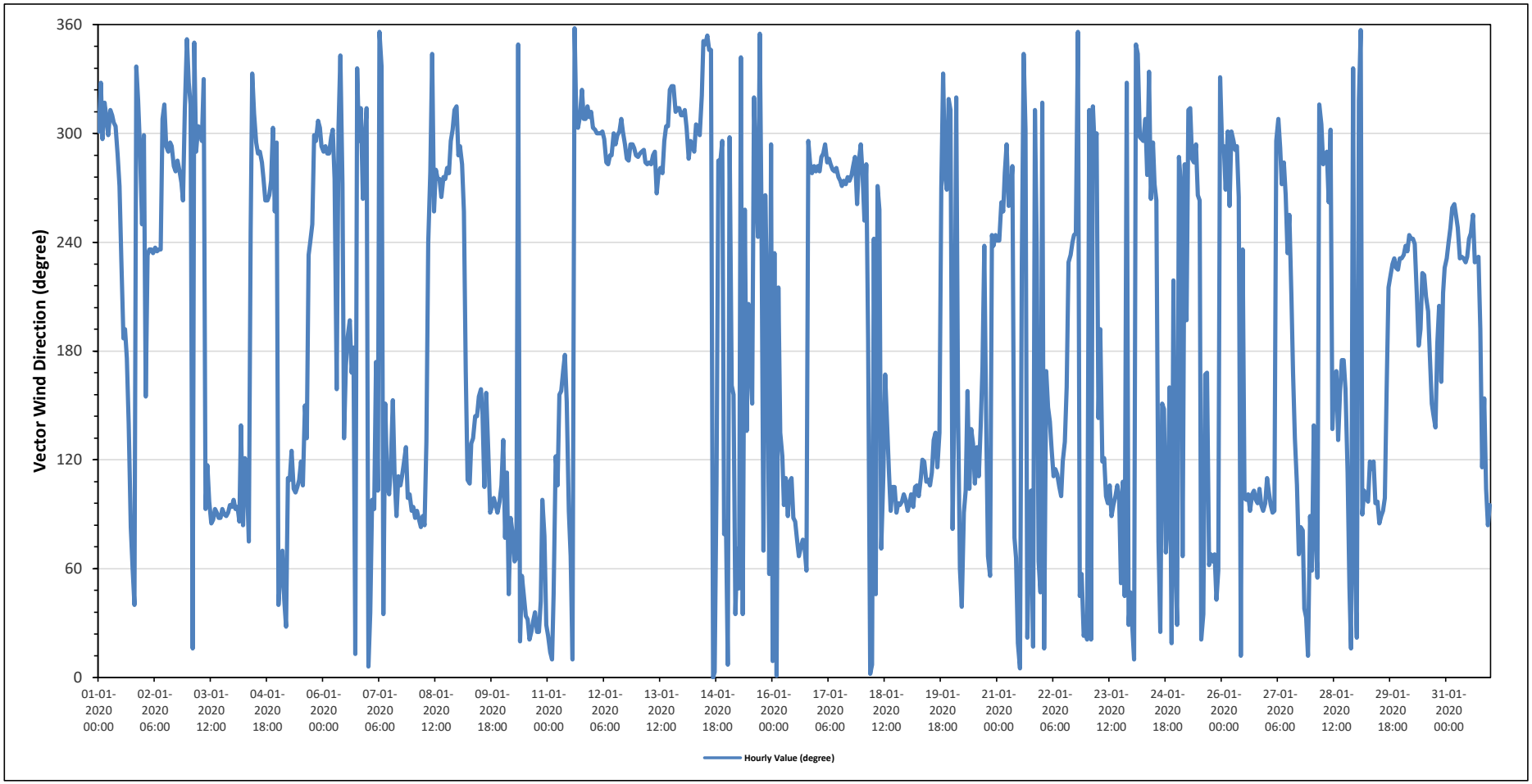


VOC CANISTER SAMPLING RESULTS

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Site - January 2020

Volatile Organic Compounds (VOCs) Results

Sample Date/Time	2020-01-03
Canister Sample	Methane
Canister ID	32265

Method	NA-025		Method	NA-024		Method	AC-058	
Maximum Reading	2.9	Methane	Maximum Reading	1.9	Hydrogen sulphide	Maximum Reading	0.9	Acetone
Parameter	**Result (ppmv)**	**RDL (ppmv)**	**Parameter**	**Result (ppbv)**	**RDL (ppbv)**	**Parameter**	**Result (ppbv)**	**RDL (ppbv)**
1-Butene	0	0.2	2,5-Dimethylthiophene	0	0.5	1,1,1-Trichloroethane	0	0.03
Acetylene	0	0.1	2-Ethylthiophene	0	0.3	1,1,2,2-Tetrachloroethane	0	0.03
cis-2-Butene	0	0.1	2-Methylthiophene	0	0.3	1,1,2-Trichloroethane	0	0.03
Ethane	0	0.2	3-Methylthiophene	0	0.5	1,1-Dichloroethane	0	0.03
Ethylacetylene	0	0.1	Butyl mercaptan	0	0.5	1,1-Dichloroethylene	0	0.07
Ethylene	0	0.1	Carbon disulphide	0	0.3	1,2,3-Trimethylbenzene	0	0.08
Isobutane	0	0.2	Carbonyl sulphide	0.8	0.5	1,2,4-Trichlorobenzene	0	1.3
Isobutylene	0	0.2	Dimethyl disulphide	0	0.3	1,2,4-Trimethylbenzene	0	0.08
Methane	2.9	0.2	Dimethyl sulphide	0	0.3	1,2-Dibromoethane	0	0.03
n-Butane	0	0.3	Ethyl mercaptan	0	0.5	1,2-Dichlorobenzene	0	0.05
n-Propane	0	0.1	Ethyl sulphide	0	0.5	1,2-Dichloroethane	0	0.02
Propylene	0	0.2	Hydrogen sulphide	1.9	0.5	1,2-Dichloropropane	0	0.02
Propyne	0	0.2	Isobutyl mercaptan	0	0.5	1,3,5-Trimethylbenzene	0	0.03
trans-2-Butene	0	0.2	Isopropyl mercaptan	0	0.5	1,3-Butadiene	0.05	0.03
			Methyl mercaptan	0	0.3	1,3-Dichlorobenzene	0	0.5
			Pentyl mercaptan	0	0.7	1,4-Dichlorobenzene	0	0.7
			Propyl mercaptan	0	0.7	1,4-Dioxane	0	0.7
			tert-Butyl mercaptan	0	0.5	1-Butene/Isobutylene	0.25	0.03
			Thiophene	0	0.3	1-Hexene/2-Methyl-1-pentene	0.38	0.03
						1-Pentene	0.08	0.02
						2,2,4-Trimethylpentane	0	0.02
						2,2-Dimethylbutane	0.05	0.02
						2,3,4-Trimethylpentane	0	0.02
						2,3-Dimethylbutane	0.08	0.03
						2,3-Dimethylpentane	0.06	0.03
						2,4-Dimethylpentane	0.05	0.02
						2-Methylheptane	0	0.02
						2-Methylhexane	0.05	0.02
						2-Methylpentane	0.11	0.02
						3-Methylheptane	0.12	0.03
						3-Methylhexane	0.09	0.03
						3-Methylpentane	0.09	0.02
						Acetone	0.9	2.0
						Acrolein	0	0.5
						Benzene	0.21	0.02
						Benzyl chloride	0	0.7
						Bromodichloromethane	0	0.03
						Bromoform	0	0.03
						Bromomethane	0	0.02
						Carbon disulfide	0	0.02
						Carbon tetrachloride	0.06	0.02
						Chlorobenzene	0	0.03
						Chloroethane	0	0.03
						Chloroform	0	0.03
						Chloromethane	0.51	0.03
						cis-1,2-Dichloroethene	0	0.02
						cis-1,3-Dichloropropene	0	0.07
						cis-2-Butene	0	0.03
						cis-2-Pentene	0.04	0.03
						Cyclohexane	0.28	0.03
						Cyclopentane	0.11	0.02
						Dibromochloromethane	0	0.02
						Ethanol	0.6	0.5
						Ethyl acetate	0	0.7
						Ethylbenzene	0	0.02
						Freon-11	0.21	0.03
						Freon-113	0.04	0.02
						Freon-114	0	0.03

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Site - January 2020

Volatile Organic Compounds (VOCs) Results

Sample Date/Time	**2020-01-03**
Canister Sample	**Methane**
Canister ID	**32265**

Method	**NA-025**		**Method**	**NA-024**		**Method**	**AC-058**	
Maximum Reading	**2.9**	**Methane**	**Maximum Reading**	**1.9**	**Hydrogen sulphide**	**Maximum Reading**	**0.9**	**Acetone**
Parameter	**Result (ppmv)**	**RDL (ppmv)**	**Parameter**	**Result (ppbv)**	**RDL (ppbv)**	**Parameter**	**Result (ppbv)**	**RDL (ppbv)**
						Freon-12	0.52	0.03
						Hexachloro-1,3-butadiene	0	0.83
						Isobutane	0.43	0.03
						Isopentane	0.32	0.05
						Isoprene	0.09	0.02
						Isopropyl alcohol	0	0.7
						Isopropylbenzene	0	0.02
						m,p-Xylene	0	0.05
						m-Diethylbenzene	0	0.07
						m-Ethyltoluene	0	0.13
						Methyl butyl ketone	0	0.83
						Methyl ethyl ketone	0	0.5
						Methyl isobutyl ketone	0	0.7
						Methyl methacrylate	0	0.12
						Methyl tert butyl ether	0.11	0.05
						Methylcyclohexane	0.15	0.02
						Methylcyclopentane	0.13	0.03
						Methylene chloride	0	0.5
						n-Butane	0.65	0.05
						n-Decane	0.26	0.10
						n-Dodecane	0	0.7
						n-Heptane	0.24	0.02
						n-Hexane	0.17	0.02
						n-Nonane	0	0.02
						n-Octane	0.13	0.03
						n-Pentane	0.2	0.2
						n-Propylbenzene	0	0.08
						n-Undecane	0	0.8
						Naphthalene	0	0.8
						o-Ethyltoluene	0	0.02
						o-Xylene	0	0.02
						p-Diethylbenzene	0	0.07
						p-Ethyltoluene	0	0.12
						Styrene	0	0.07
						Tetrachloroethylene	0	0.07
						Tetrahydrofuran	0	0.7
						Toluene	0.3	0.02
						trans-1,2-Dichloroethylene	0.03	0.02
						trans-1,3-Dichloropropylene	0	0.07
						trans-2-Butene	0	0.02
						trans-2-Pentene	0.05	0.03
						Trichloroethylene	0	0.07
						Vinyl acetate	0	0.7
						Vinyl chloride	0	0.03

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Site - January 2020

Volatile Organic Compounds (VOCs) Results

Sample Date/Time	**2020-01-24**
Canister Sample	**Methane**
Canister ID	**28938**

Method	**NA-025**		**Method**	**NA-024**		**Method**	**AC-058**	
Maximum Reading	**2.9**	**Methane**	**Maximum Reading**	**-**	**-**	**Maximum Reading**	**2.2**	**Ethanol**
Parameter	**Result (ppmv)**	**RDL (ppmv)**	**Parameter**	**Result (ppbv)**	**RDL (ppbv)**	**Parameter**	**Result (ppbv)**	**RDL (ppbv)**
1-Butene	0	0.2	2,5-Dimethylthiophene	0	0.5	1,1,1-Trichloroethane	0	0.03
Acetylene	0	0.1	2-Ethylthiophene	0	0.3	1,1,2,2-Tetrachloroethane	0	0.03
cis-2-Butene	0	0.1	2-Methylthiophene	0	0.3	1,1,2-Trichloroethane	0	0.03
Ethane	0	0.2	3-Methylthiophene	0	0.5	1,1-Dichloroethane	0	0.03
Ethylacetylene	0	0.1	Butyl mercaptan	0	0.5	1,1-Dichloroethylene	0	0.07
Ethylene	0	0.1	Carbon disulphide	0	0.3	1,2,3-Trimethylbenzene	0	0.08
Isobutane	0	0.2	Carbonyl sulphide	0	0.5	1,2,4-Trichlorobenzene	0	1.3
Isobutylene	0	0.2	Dimethyl disulphide	0	0.3	1,2,4-Trimethylbenzene	0	0.08
Methane	2.9	0.2	Dimethyl sulphide	0	0.3	1,2-Dibromoethane	0	0.03
n-Butane	0	0.3	Ethyl mercaptan	0	0.5	1,2-Dichlorobenzene	0	0.05
n-Propane	0	0.1	Ethyl sulphide	0	0.5	1,2-Dichloroethane	0.03	0.02
Propylene	0	0.2	Hydrogen sulphide	0	0.2	1,2-Dichloropropane	0	0.02
Propyne	0	0.2	Isobutyl mercaptan	0	0.5	1,3,5-Trimethylbenzene	0	0.03
trans-2-Butene	0	0.1	Isopropyl mercaptan	0	0.5	1,3-Butadiene	0.05	0.03
			Methyl mercaptan	0	0.3	1,3-Dichlorobenzene	0	0.5
			Pentyl mercaptan	0	0.7	1,4-Dichlorobenzene	0	0.7
			Propyl mercaptan	0	0.7	1,4-Dioxane	0	0.7
			tert-Butyl mercaptan	0	0.5	1-Butene/Isobutylene	0.6	0.03
			Thiophene	0	0.3	1-Hexene/2-Methyl-1-pentene	0	0.03
						1-Pentene	0.07	0.02
						2,2,4-Trimethylpentane	0	0.02
						2,2-Dimethylbutane	0.03	0.02
						2,3,4-Trimethylpentane	0	0.02
						2,3-Dimethylbutane	0.15	0.03
						2,3-Dimethylpentane	0.08	0.03
						2,4-Dimethylpentane	0	0.02
						2-Methylheptane	0.04	0.02
						2-Methylhexane	0.1	0.02
						2-Methylpentane	0.29	0.02
						3-Methylheptane	0	0.03
						3-Methylhexane	0.07	0.03
						3-Methylpentane	0.1	0.02
						Acetone	1.9	2.0
						Acrolein	0	0.5
						Benzene	0.25	0.02
						Benzyl chloride	0	0.7
						Bromodichloromethane	0	0.03
						Bromoform	0	0.03
						Bromomethane	0	0.02
						Carbon disulfide	0	0.02
						Carbon tetrachloride	0.11	0.02
						Chlorobenzene	0	0.03
						Chloroethane	0	0.03
						Chloroform	0	0.03
						Chloromethane	0.65	0.03
						cis-1,2-Dichloroethene	0	0.02
						cis-1,3-Dichloropropene	0	0.07
						cis-2-Butene	0	0.03
						cis-2-Pentene	0	0.03
						Cyclohexane	0.29	0.03
						Cyclopentane	0.12	0.02
						Dibromochloromethane	0	0.02
						Ethanol	2.2	0.5
						Ethyl acetate	0	0.7
						Ethylbenzene	0	0.02
						Freon-11	0.36	0.03
						Freon-113	0.12	0.02
						Freon-114	0	0.03

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Site - January 2020

Volatile Organic Compounds (VOCs) Results

Sample Date/Time	**2020-01-24**
Canister Sample	**Methane**
Canister ID	**28938**

Method	**NA-025**		**Method**	**NA-024**		**Method**	**AC-058**	
Maximum Reading	**2.9**	**Methane**	**Maximum Reading**	**-**	**-**	**Maximum Reading**	**2.2**	**Ethanol**
Parameter	**Result (ppmv)**	**RDL (ppmv)**	**Parameter**	**Result (ppbv)**	**RDL (ppbv)**	**Parameter**	**Result (ppbv)**	**RDL (ppbv)**
						Freon-12	0.64	0.03
						Hexachloro-1,3-butadiene	0	0.83
						Isobutane	1	0.03
						Isopentane	0.85	0.05
						Isoprene	0	0.02
						Isopropyl alcohol	0	0.7
						Isopropylbenzene	0	0.02
						m,p-Xylene	0	0.05
						m-Diethylbenzene	0	0.07
						m-Ethyltoluene	0	0.13
						Methyl butyl ketone	0	0.83
						Methyl ethyl ketone	0	0.5
						Methyl isobutyl ketone	0	0.7
						Methyl methacrylate	0	0.12
						Methyl tert butyl ether	0	0.05
						Methylcyclohexane	0.2	0.02
						Methylcyclopentane	0.12	0.03
						Methylene chloride	0	0.5
						n-Butane	1.81	0.05
						n-Decane	0.14	0.10
						n-Dodecane	0	0.7
						n-Heptane	0.22	0.02
						n-Hexane	0.14	0.02
						n-Nonane	0.03	0.02
						n-Octane	0.08	0.03
						n-Pentane	0.8	0.2
						n-Propylbenzene	0	0.08
						n-Undecane	0	0.8
						Naphthalene	0	0.8
						o-Ethyltoluene	0	0.02
						o-Xylene	0	0.02
						p-Diethylbenzene	0	0.07
						p-Ethyltoluene	0	0.12
						Styrene	0	0.07
						Tetrachloroethylene	0	0.07
						Tetrahydrofuran	0	0.7
						Toluene	0.47	0.02
						trans-1,2-Dichloroethylene	0.02	0.02
						trans-1,3-Dichloropropylene	0	0.07
						trans-2-Butene	0	0.02
						trans-2-Pentene	0	0.03
						Trichloroethylene	0	0.07
						Vinyl acetate	0	0.7
						Vinyl chloride	0	0.03

END OF REPORT

This report, 214 of 214, ends the January 2020 Monthly Ambient Air Quality Monitoring Report.

Peace River Area Monitoring Program

JANUARY 2020

Ambient Air Monitoring Calibration Report

- 842b STATION-

CAL-PRAMP-202001-01561

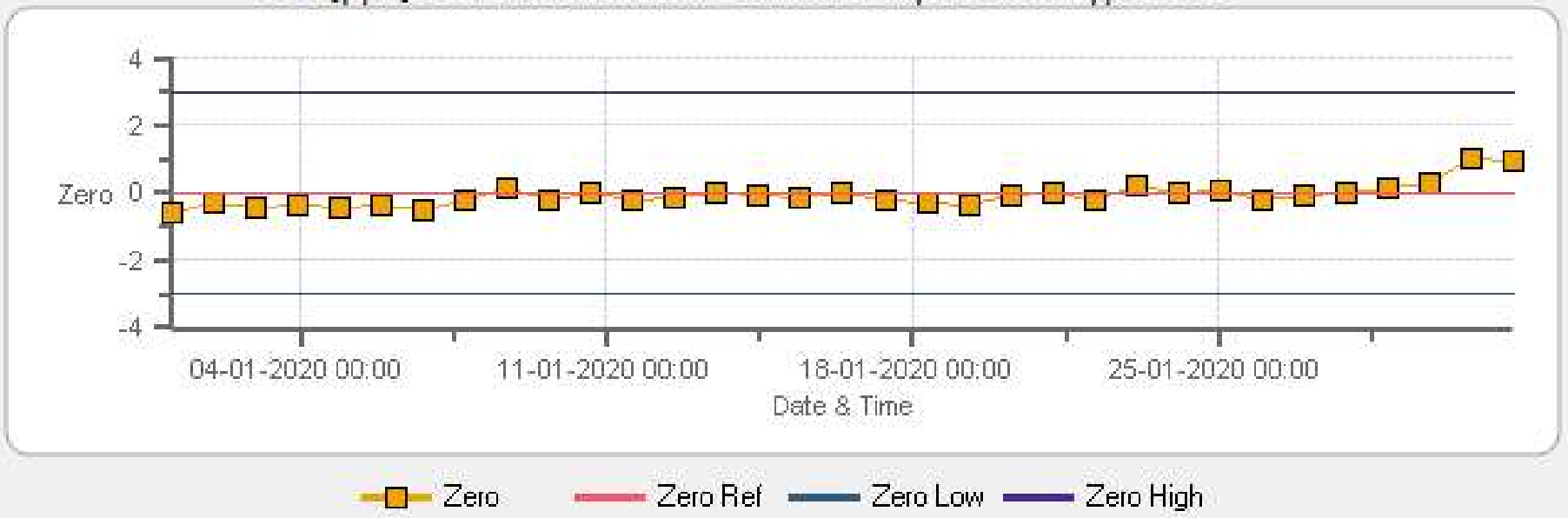
Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
Bureau Veritas Canada

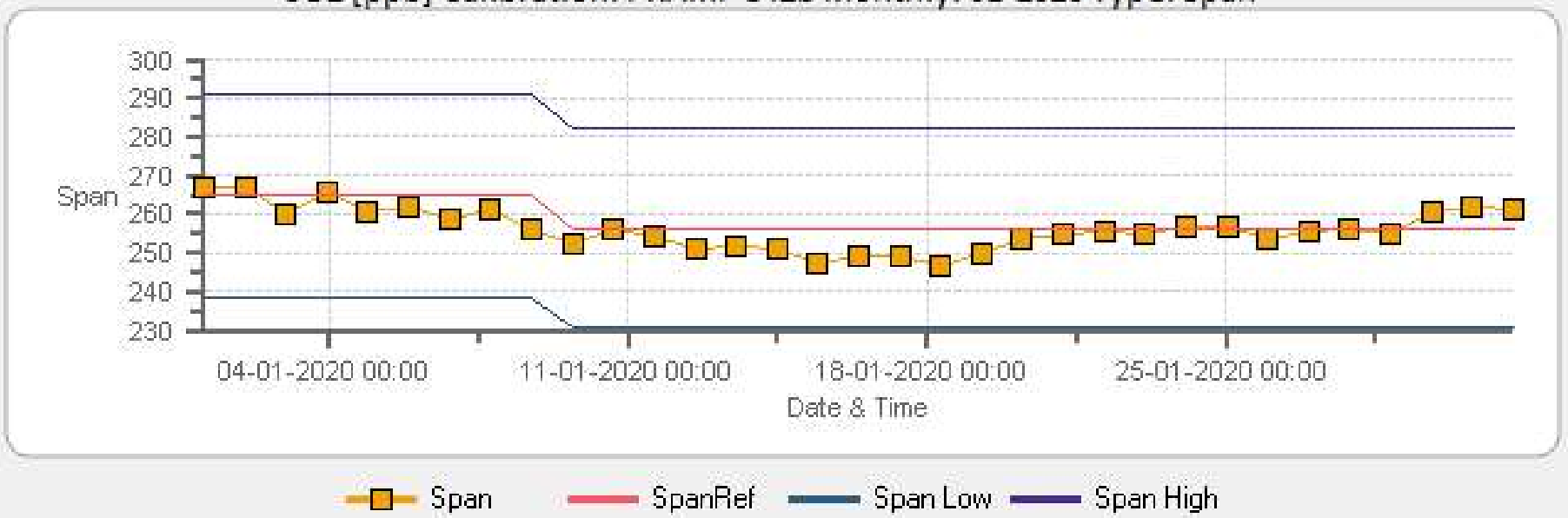
February 13, 2020

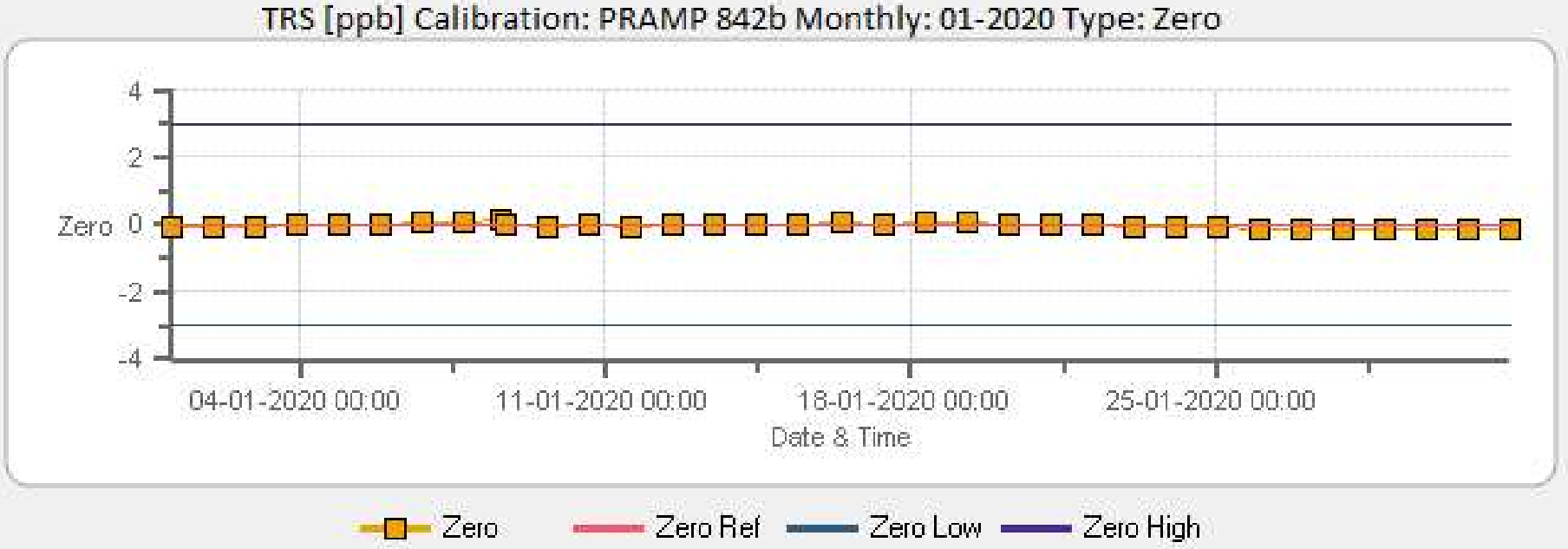
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

SO2 [ppb] Calibration: PRAMP 842b Monthly: 01-2020 Type: Zero



SO2 [ppb] Calibration: PRAMP 842b Monthly: 01-2020 Type: Span




TRS [ppb] Calibration: PRAMP 842b Monthly: 01-2020 Type: Zero
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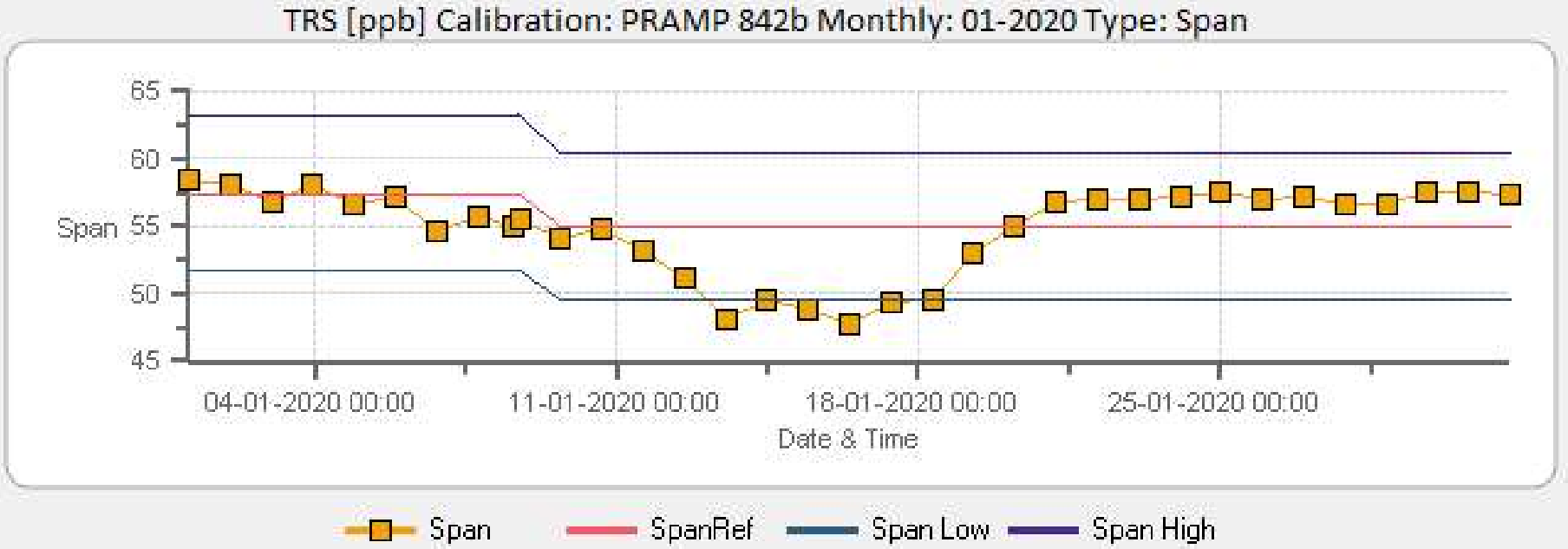
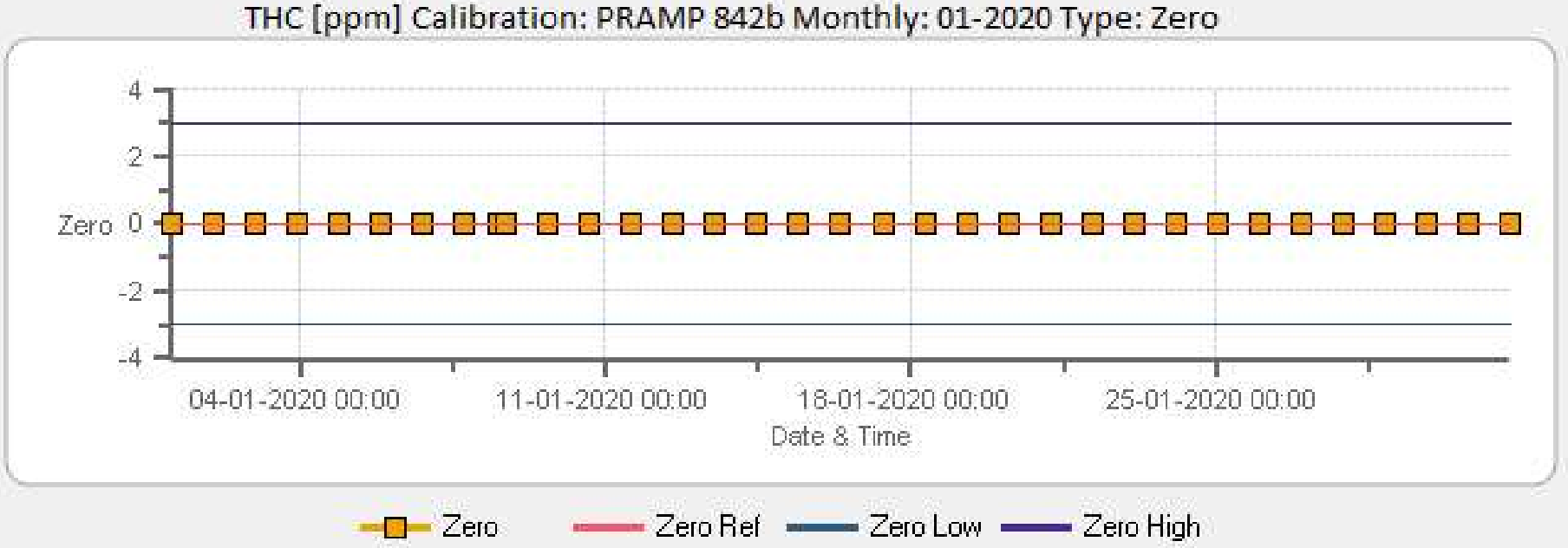
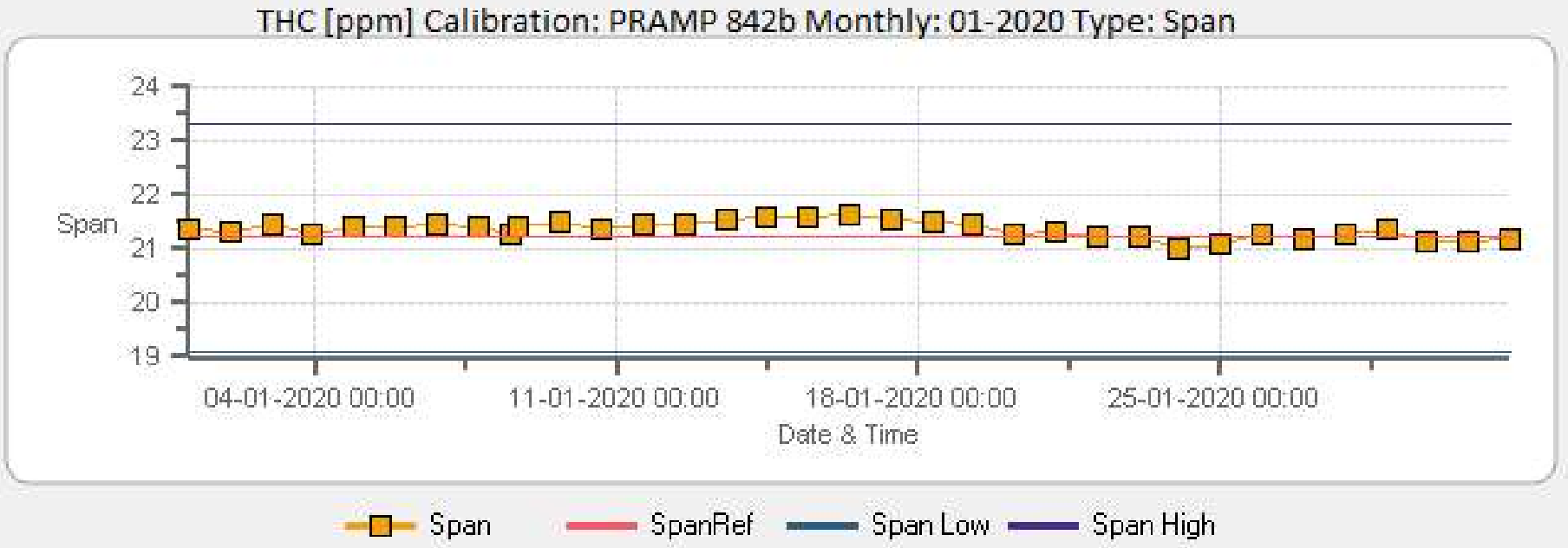
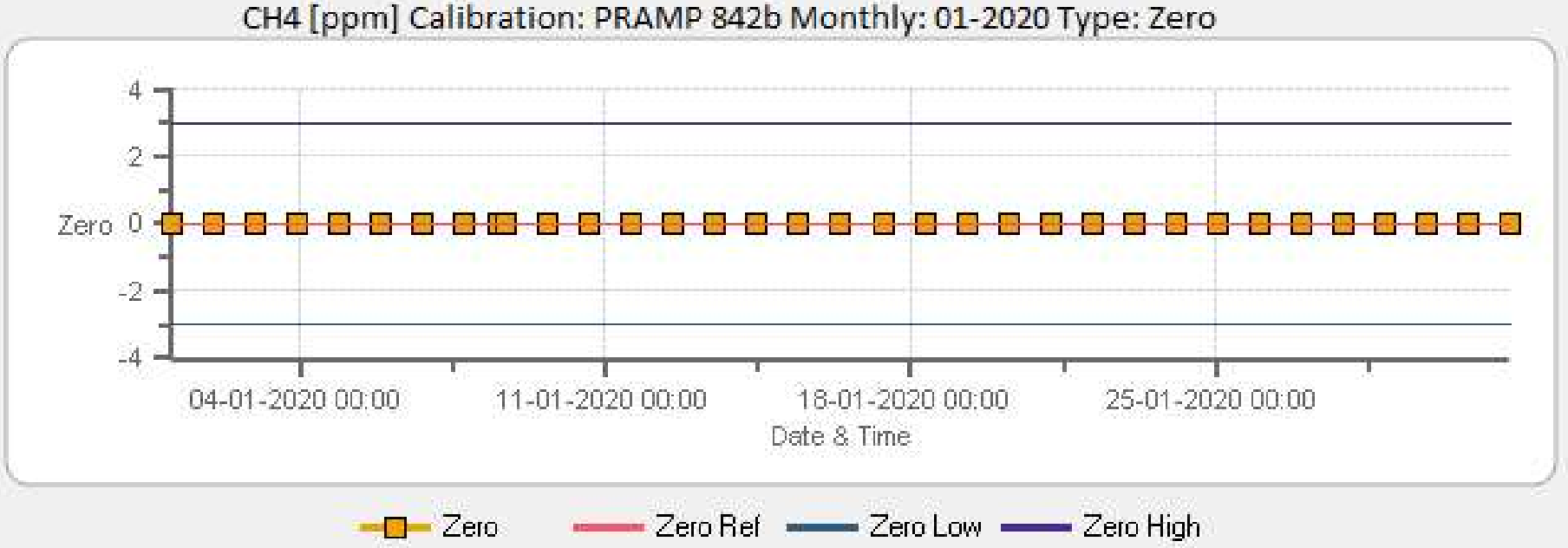
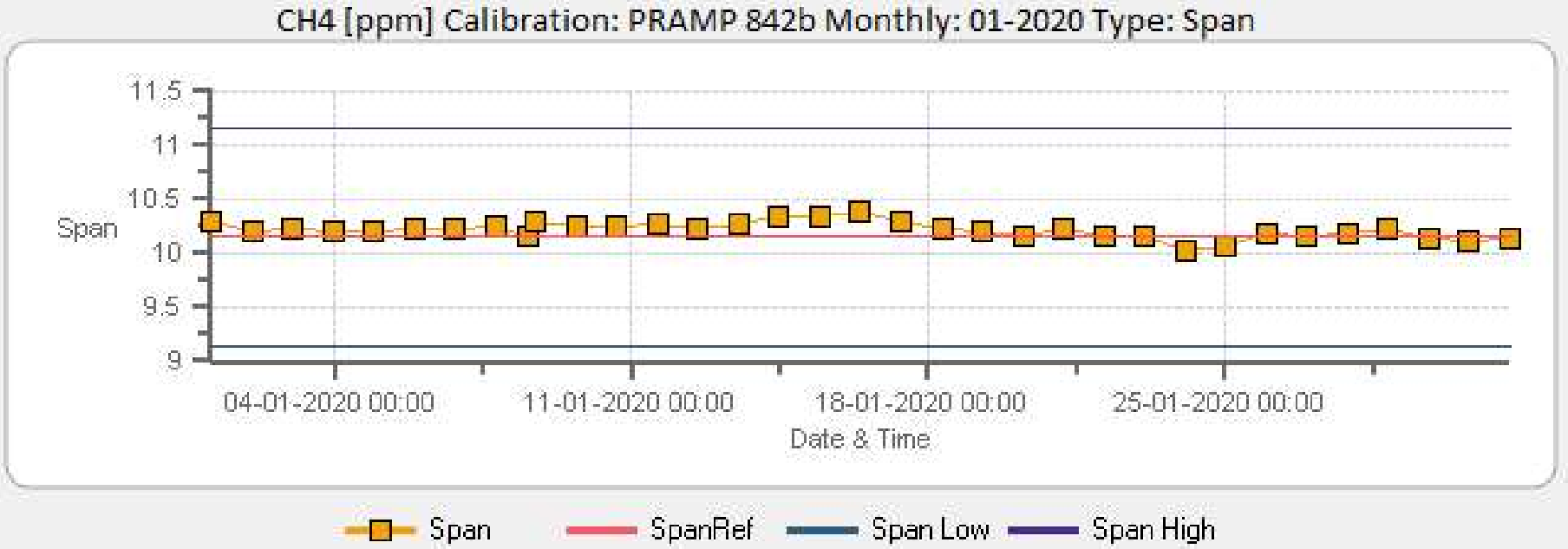
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High

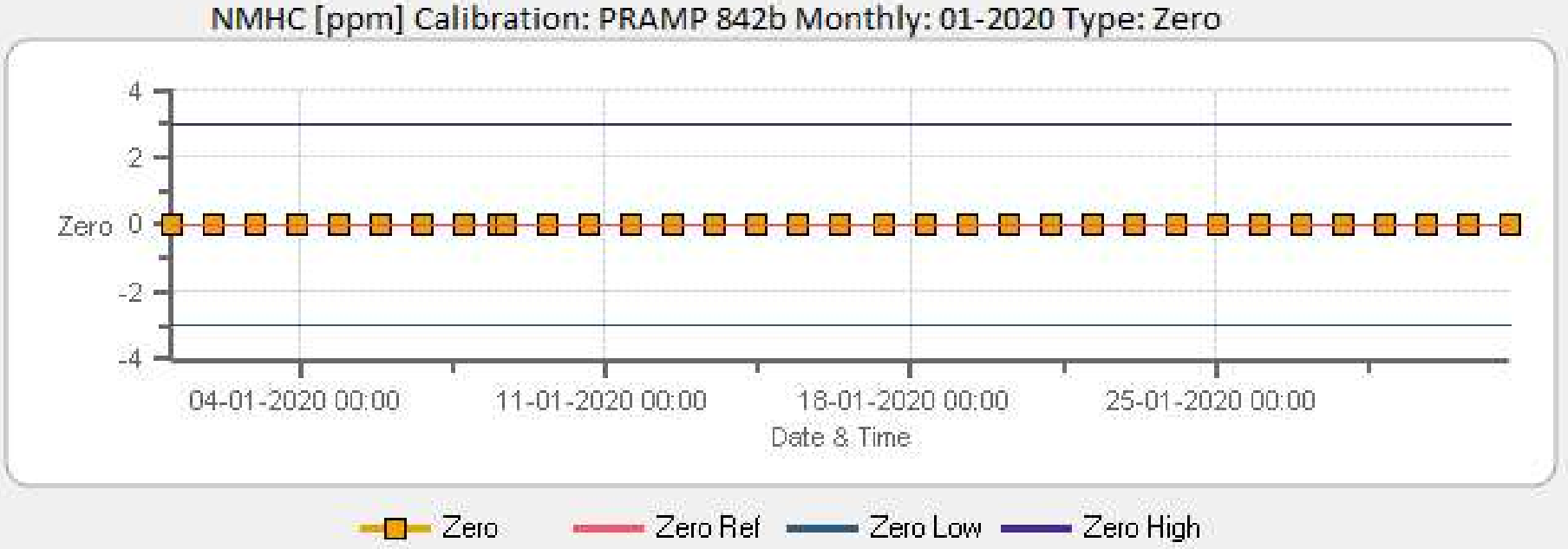

TRS [ppb] Calibration: PRAMP 842b Monthly: 01-2020 Type: Span
65
60
Span 55
50
45
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High

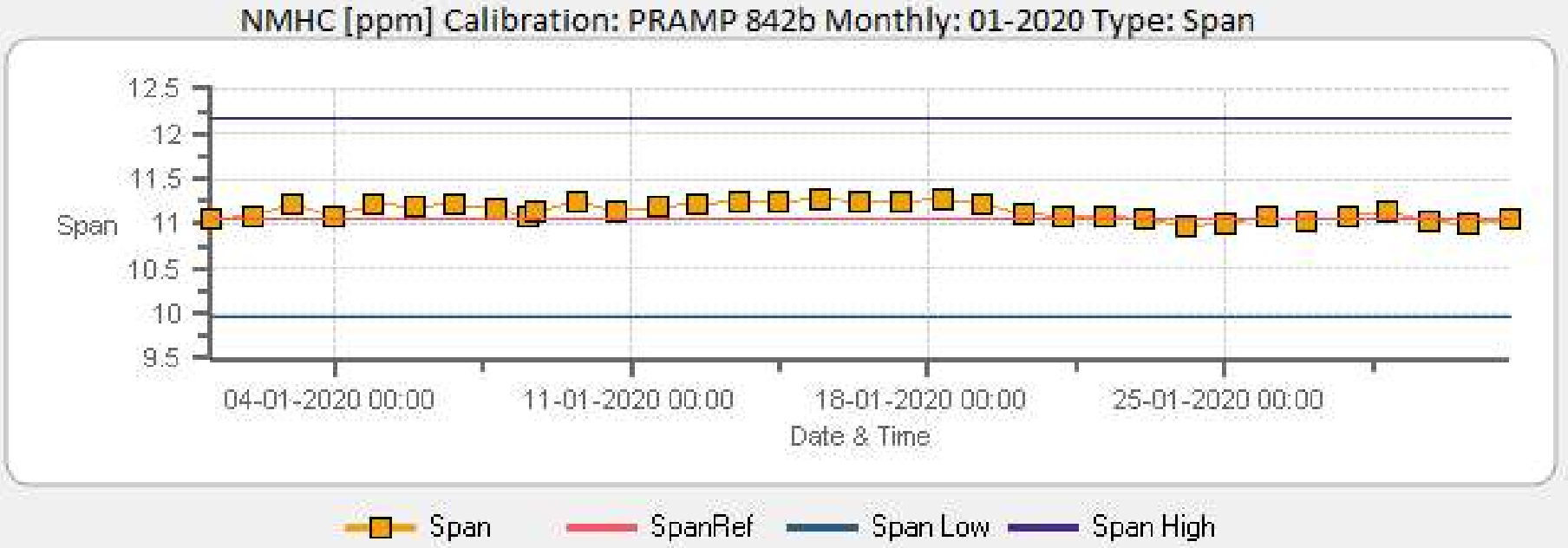

THC [ppm] Calibration: PRAMP 842b Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High


THC [ppm] Calibration: PRAMP 842b Monthly: 01-2020 Type: Span
24
23
22
Span
21
20
19
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High


CH4 [ppm] Calibration: PRAMP 842b Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High


CH4 [ppm] Calibration: PRAMP 842b Monthly: 01-2020 Type: Span
11.5
11
10.5
Span
10
9.5
9
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High


NMHC [ppm] Calibration: PRAMP 842b Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High


NMHC [ppm] Calibration: PRAMP 842b Monthly: 01-2020 Type: Span
12.5
12
11.5
Span 11
10.5
10
9.5
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	08-Jan-2020	PREVIOUS CALIBRATION DATE:	19-Dec-2019
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	21.9
LOCATION:	842b	BAROMETRIC (mBar):	935
PURPOSE	Routine	START TIME (MST):	11:59
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	17:18

ANALYZER:

MAKE/MODEL	Thermo 43i	RANGE	500 ppb
SERIAL #	835033373	FLOW (mL/min)	422
INITIAL		FINAL	
BKG/OFFSET	16.7	BKG/OFFSET	16
COEF/SLOPE	1	COEF/SLOPE	1.06
Expected (reference) Value	265	Expected (reference) Value	256

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Environics	MAKE:	Teledyne
MODEL:	6100	MODEL:	T701
ID:	5212	ID:	74
MFC CALIBRATION DATE:	19-Jul-2019	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	BAL3157	HIGH ID	n/a
CONC (ppm):	49.30	EXPIRY DATE	n/a
CYLINDER (psi):	1600	LOW ID	n/a
EXPIRY DATE	01-Jul-2027	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5995		5995	0.00	-0.4	0		
5951	46.18	5997	379.66	386.2	379.8	0.982	1.000
5977	21.88	5999	179.77	n/a	179.4	n/a	1.002
5986	10.94	5997	89.95	n/a	89.5	n/a	1.005

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	-0.1%

COMMENTS:

Calibration gas regulator was replaced after as-found high point to address slow analyzer response. Adjusted high point was then restarted. Monthly calibration successful.

TRS Analyzer Calibration by Dilution

DATE:	08-Jan-2020	PREVIOUS CALIBRATION DATE:	19-Dec-2019
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	23.1
LOCATION:	842b	BAROMETRIC (mBar):	933
PURPOSE	Routine	START TIME (MST):	09:05
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	14:19

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	100 ppb
SERIAL #	1162460023	FLOW (mL/min)	399
INITIAL		FINAL	
BKG/OFFSET	3.11	BKG/OFFSET	3.37
COEF/SLOPE	0.916	COEF/SLOPE	0.946
Expected (reference) Value	57.38	Expected (reference) Value	55.04

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Environics	MAKE:	Teledyne
MODEL:	6100	MODEL:	T701
ID:	4760	ID:	74
MFC CALIBRATION DATE:	18-Jul-2019	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY0000695	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	1800	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:	09:53	SO2 Conc (ppb)	380
END TIME:	10:11	Analyzer Response (ppb)	0.0

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
7485		7485	0.00	0.06	0		
7428	58.32	7487	77.90	76	77.93	1.026	1.000
7459	28.40	7488	37.92	n/a	37.7	n/a	1.006
7472	14.20	7487	18.97	n/a	18.52	n/a	1.024

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.002	-0.2%

COMMENTS:

Operator error - Valve was not opened on first run. SO2 scrubber check repeated at 9:53. Monthly calibration successful. Analyzer fan filter cleaned.

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	08-Jan-2020	PREVIOUS CALIBRATION DATE:	19-Dec-2019
CLIENT:	PRAMP	TEMPERATURE (°C):	23.1
LOCATION:	842b	BAROMETRIC (mBar):	933
PURPOSE	Routine	START TIME (MST):	09:05
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	12:43

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1505664392	1203
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	1.001	0.999	1.000

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	Environics	MAKE:	Teledyne	CYLINDER ID:	LL43221		HIGH ID:	n/a
MODEL:	6100	MODEL:	T701	CH_4/C_3H_8 (ppm):	595.0	206.0	HIGH EXPIRY:	n/a
ID:	5212	ID:	74	CYLINDER (psi):	1600		LOW ID:	n/a
MFC CALIBRATION DATE:	19-Jul-2019	OXIDIZER ID:	n/a	EXPIRY DATE	18-Oct-2025		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	566.5
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1161.5

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	10.15	11.06	21.21		10.15	11.06	21.21

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3145		3145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
3076	70.46	3147	13.32	12.69	26.01	13.46	12.81	26.27	13.28	12.69	25.96	0.990	0.990	0.990	1.003	1.000	1.002
3110	37.92	3148	7.17	6.82	13.99	n/a	n/a	n/a	7.18	6.87	14.05	n/a	n/a	n/a	0.998	0.993	0.996
3131	16.24	3148	3.07	2.92	5.99	n/a	n/a	n/a	3.10	3.00	6.09	n/a	n/a	n/a	0.990	0.974	0.984

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	0.996	0.1%
NMHC	1.000	0.999	0.2%
THC	1.000	0.997	0.2%

COMMENTS:

Monthly calibration successful. Analyzer fan filter cleaned.

Meteorological System Checklist

Date:	January 8, 2020		
Technician:	Ferdinand Roy		
Reviewer:	Wunmi Adekanmbi		
Station:	PRAMP 842b		
Unit:	**Make:**	**Model:**	**Serial #:**
Temperature Sensor:	Campbell Scientific	HMP45C	C2608
Barometric Pressure Sensor:	MetOne	92	K12864
Relative Humidity Sensor:	Campbell Scientific	HMP45C	C2608
Anemometer:	RM Young	05305VK	124638
AMBIENT TEMPERATURE SENSOR CHECK			
Previous check date:	December 19, 2019		
Parameter:	Temperature @ 2 metres		
Reference Thermometer ID:	F.S. 160459244 expires Jun 19, 2020		
Reference Temperature (^{o}C):	-24.2		
Station - Ambient Temperature (^{o}C):	-24.5		
Temperature Difference (^{o}C):	0.3		
BAROMETRIC PRESSURE SENSOR CHECK			
Previous check date:	December 19, 2019		
Reference Barometer ID:	F.S. 10528 expires Jan 23, 2020		
Reference Pressure - Units/Reading:	millibar	935	
Station Pressure - Units/Reading:	millibar	937.6	
Pressure Tolerance +/- 15% of error:	795 - 1075	-0.28%	
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Previous check date:	December 19, 2019		
Reference Hygrometer ID:	F.S. 160459244 expires Jun 19, 2020		
Reference Hygrometer % RH- Reading:	74.18		
Station Hygrometer % RH- Reading:	76.40		
RH Tolerance +/- 15% of difference:	63.05 - 85.31	-3.0%	
ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK			
WIND SPEED		WIND DIRECTION	
Previous check date:	December 19, 2019	Previous check date:	December 19, 2019
Wind Speed Observed (kph):	10-15	Wind Direction Observed:	SW
Wind speed on Data Logger (kph):	11.8	Wind Direction on Data Logger:	SW
		Wind Direction Pass/Fail?:	Pass

Comments

Meteorological Sensor Audit/Calibration

Location Information

Company:	PRAMP	**Performed By:**	Chris Wesson
Audit Location:	842b	**Reviewed By:**	Wunmi Adekanmbi
Audit Date:	August 7, 2019	**Start/End Time (mst):**	14:31 / 16:08
Calibration Purpose:	routine annual	**Weather Conditions:**	Mainly sunny

Wind Sensor Information

Sensor ID Data:		**Sensor Outputs:**	
Sensor Make:	RM Young	**Velocity Voltage Output Range:**	0 - 1 V
Sensor Model:	05305VK	**Velocity Unit Output Range:**	0-200 KPH
Serial #:	124638	**Direction Voltage Output Range:**	0 - 1 V
Previous Cal/Audit Date:	August 22, 2018	**Direction Unit Output Range:**	0-360 °

Wind Calibrator Information

Calibrator I.D. and Expiry Date: _____

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	0.2	0.4	-
1000	18.4	18.4	18.4	1.002
2000	36.9	36.8	36.8	1.002
3000	55.3	55.2	55.2	1.002
4000	73.7	73.6	73.6	1.002
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	147.4	147.4	1.000
9000	165.9	165.8	165.8	1.000
10000	184.3	184.4	184.4	0.999
		The audit meets AMD requirements.	**Average Correction Factor=**	**1.001**

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	354	1.0	1.0	1.0
30	330	30	329	0.0	1.0	0.5
60	300	61	299	-1.0	1.0	1.0
90	270	91	269	-1.0	1.0	1.0
120	240	121	239	-1.0	1.0	1.0
150	210	151	211	-1.0	-1.0	1.0
180	180	180	179	0.0	1.0	0.5
210	150	210	150	0.0	0.0	0.0
240	120	241	120	-1.0	0.0	0.5
270	90	270	90	0.0	0.0	0.0
300	60	300	59	0.0	1.0	0.5
330	30	329	28	1.0	2.0	1.5
355	0	354	1	1.0	1.0	1.0
The audit meets AMD requirements.			**Average Absolute Degrees Difference=**			**0.7**

Comments:

Calibrator: RM Young 18802 #CA03309 Expires: Oct03, 2019
Physical inspection completed, bearings replaced. Tower extended +1.25m. Alignment checked: declination +15Deg

Peace River Area Monitoring Program

JANUARY 2020

Ambient Air Monitoring Calibration Report

- 986c STATION-

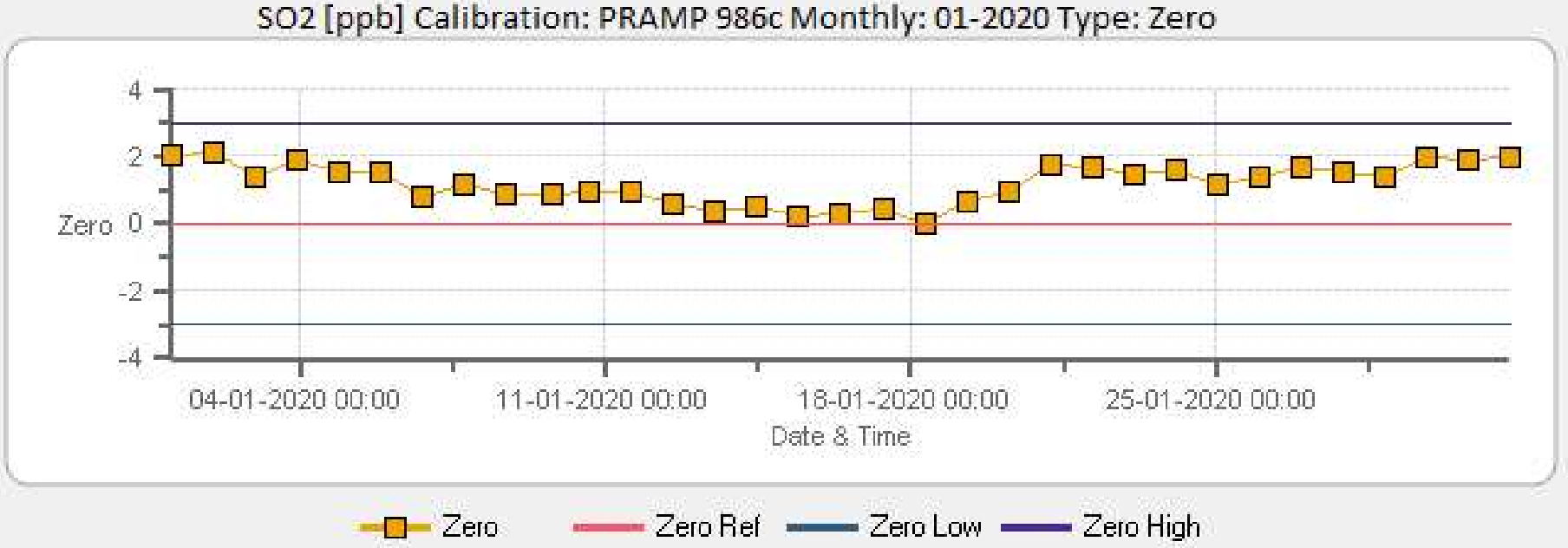
CAL-PRAMP-202001-01562

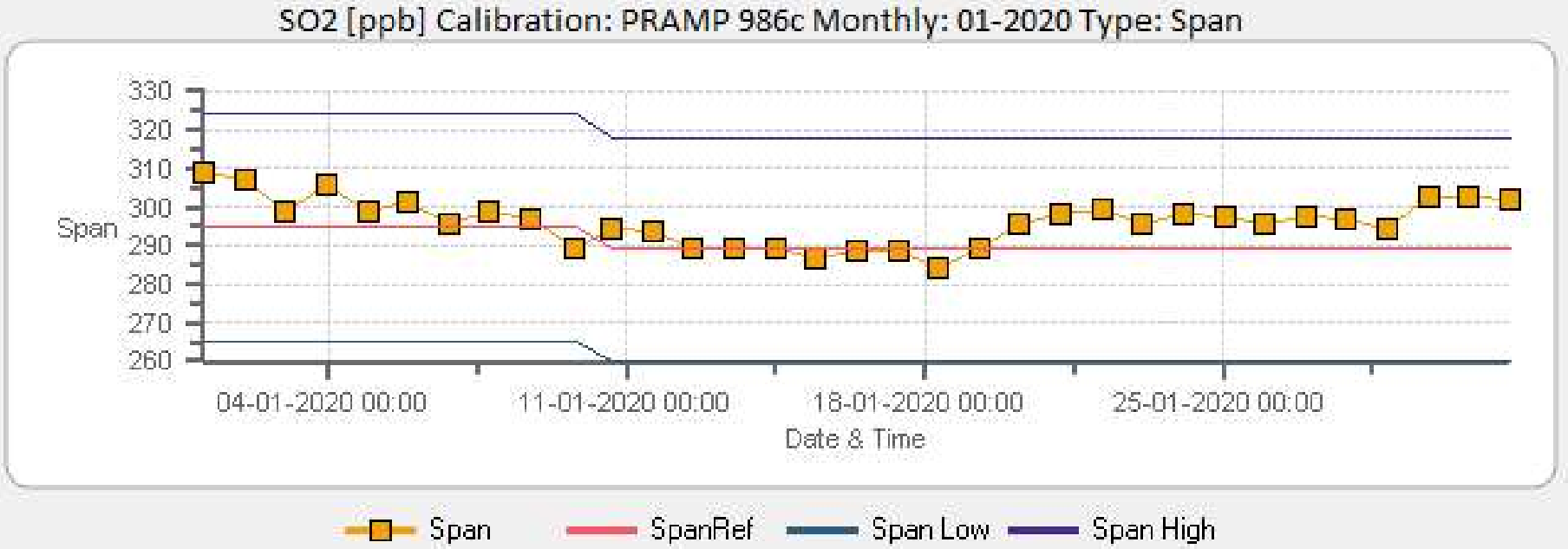
Operation and Maintenance:
Bureau Veritas Canada

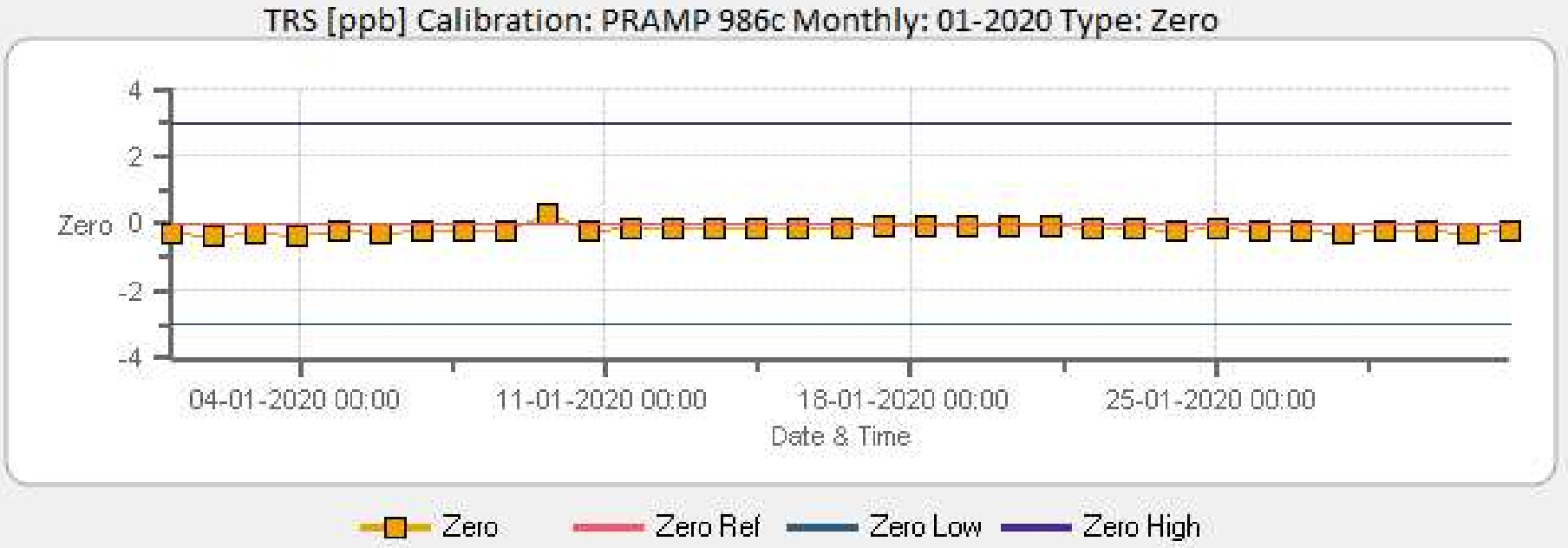
Data Validation and Report:
Bureau Veritas Canada

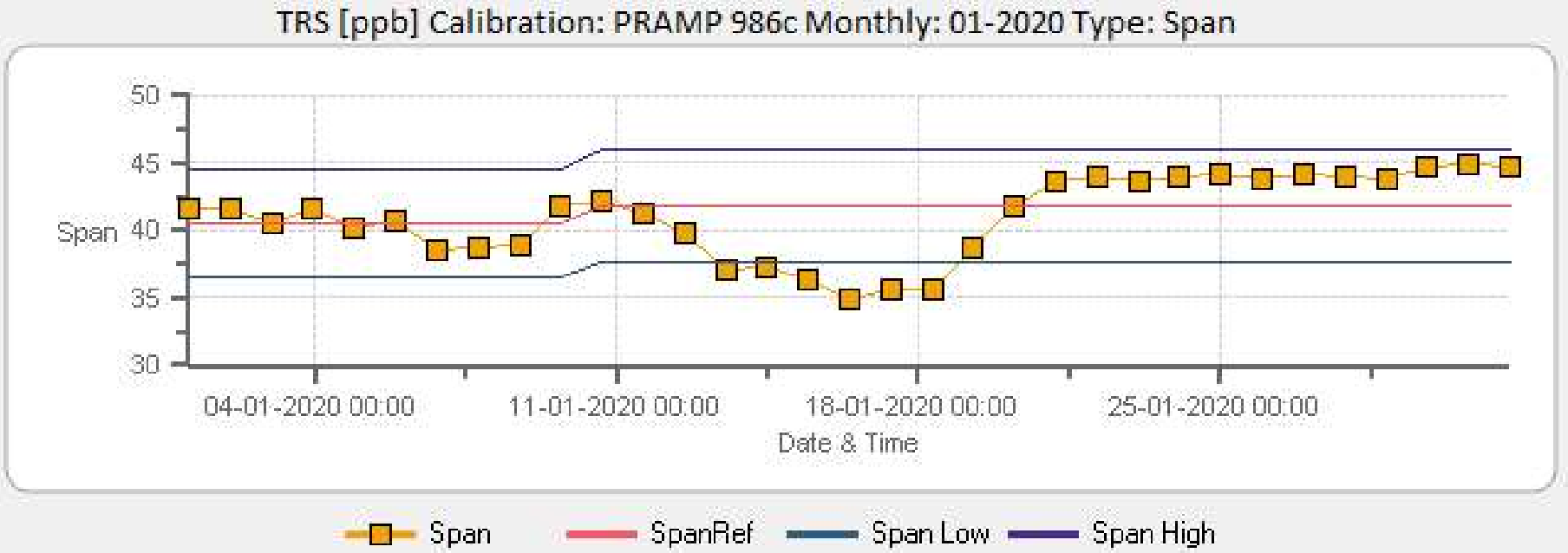
February 13, 2020

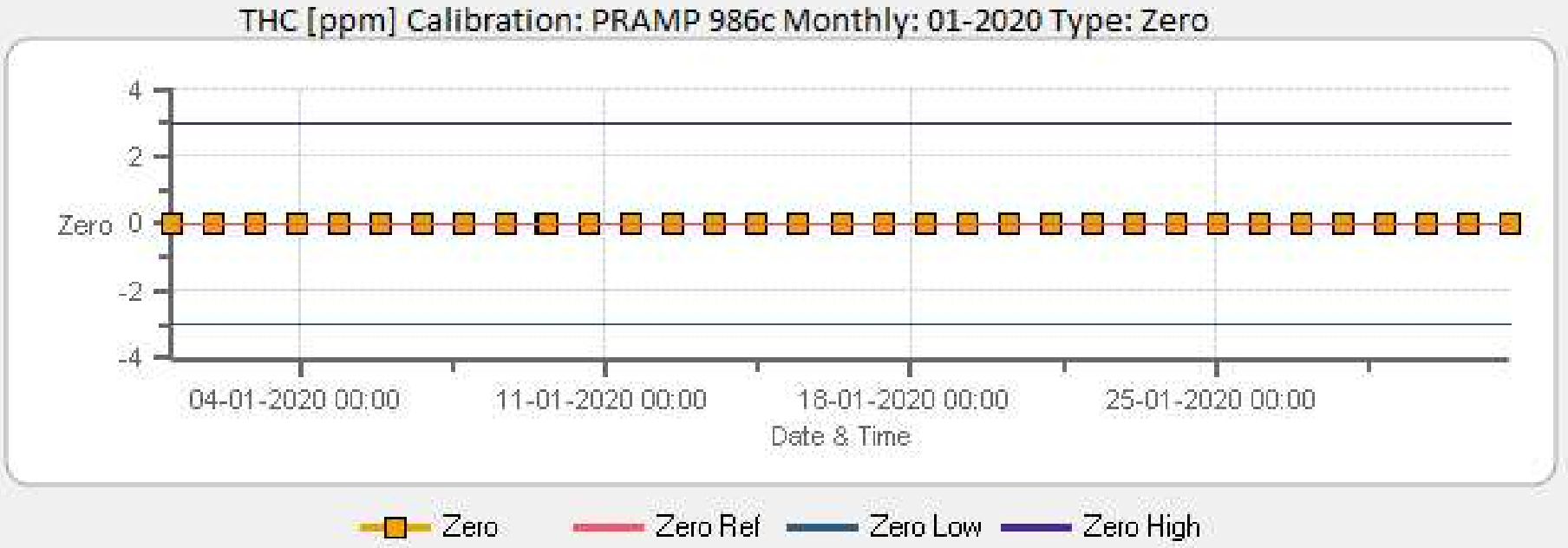
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

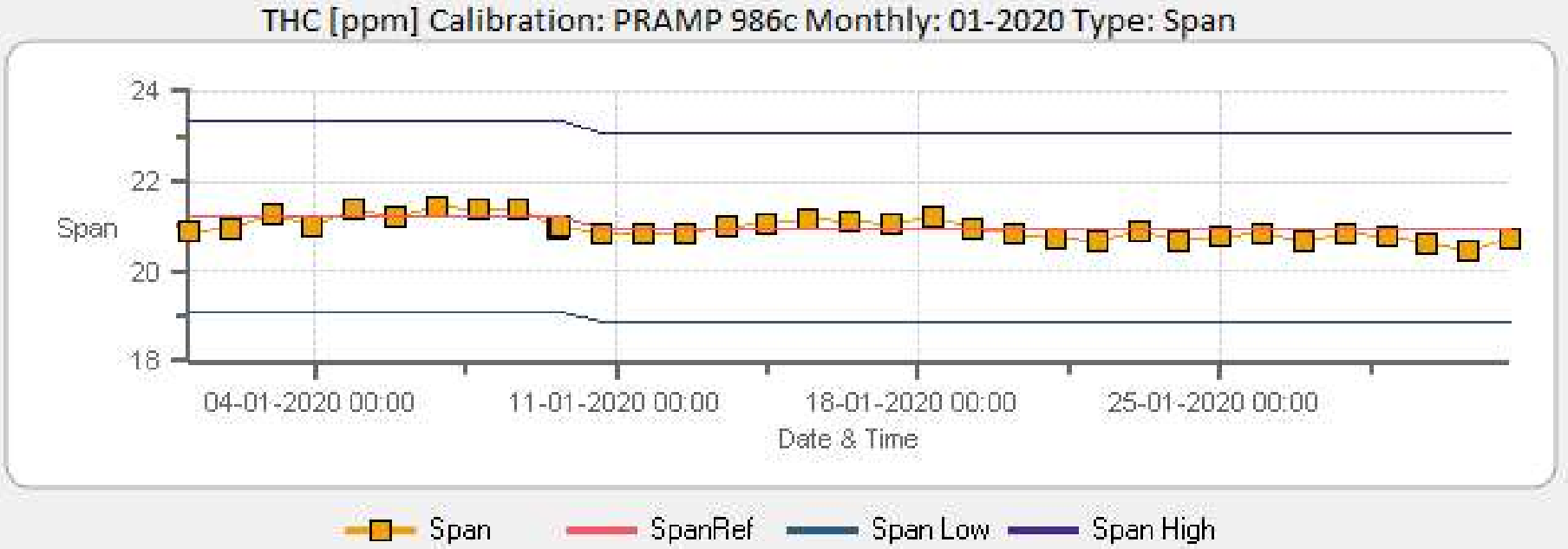

SO2 [ppb] Calibration: PRAMP 986c Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High

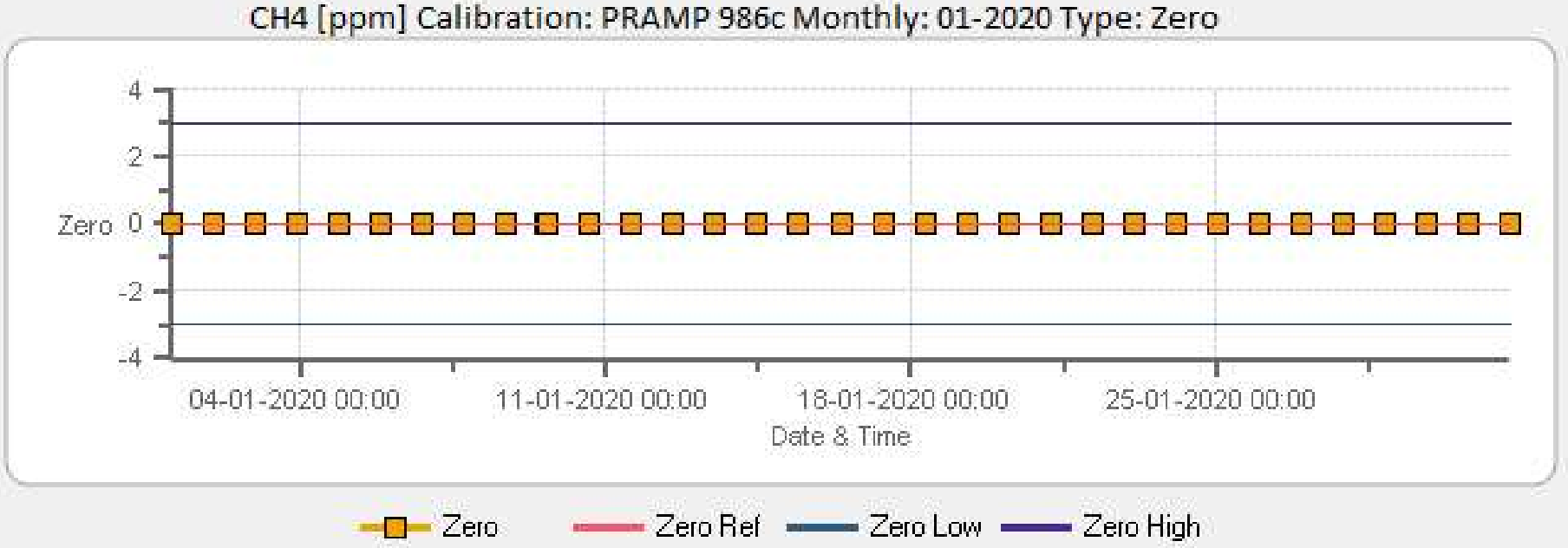

SO2 [ppb] Calibration: PRAMP 986c Monthly: 01-2020 Type: Span
330
320
310
300
Span 290
280
270
260
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High

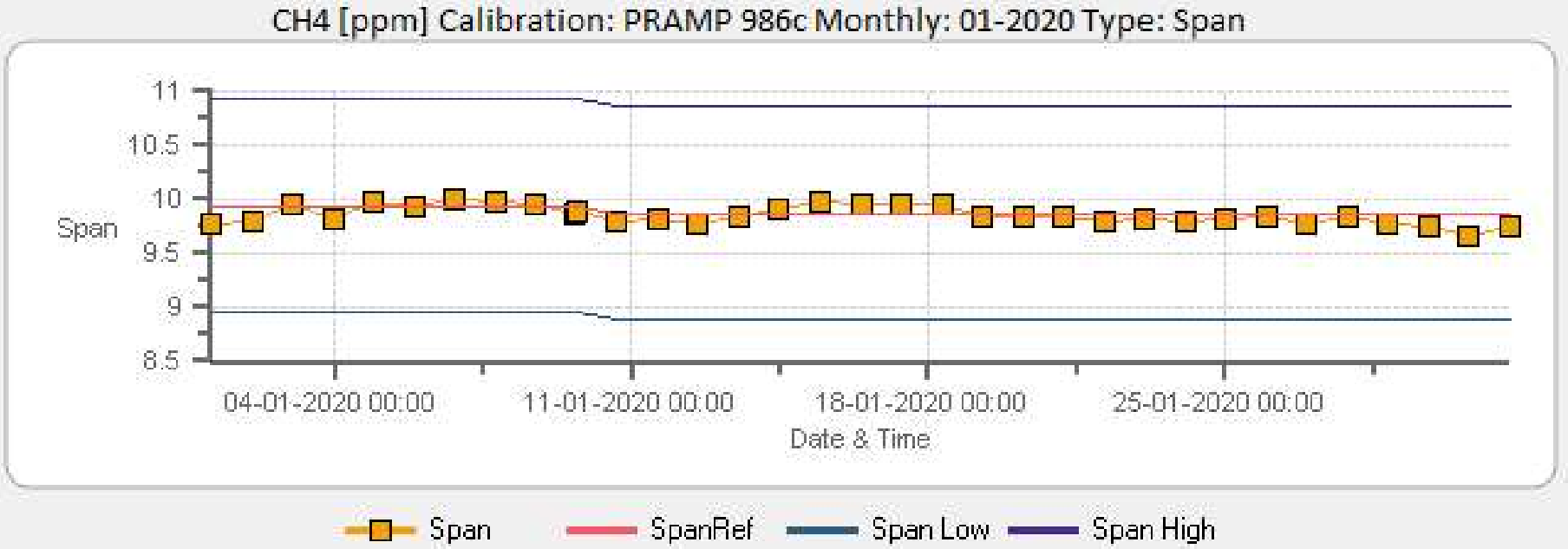

TRS [ppb] Calibration: PRAMP 986c Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High

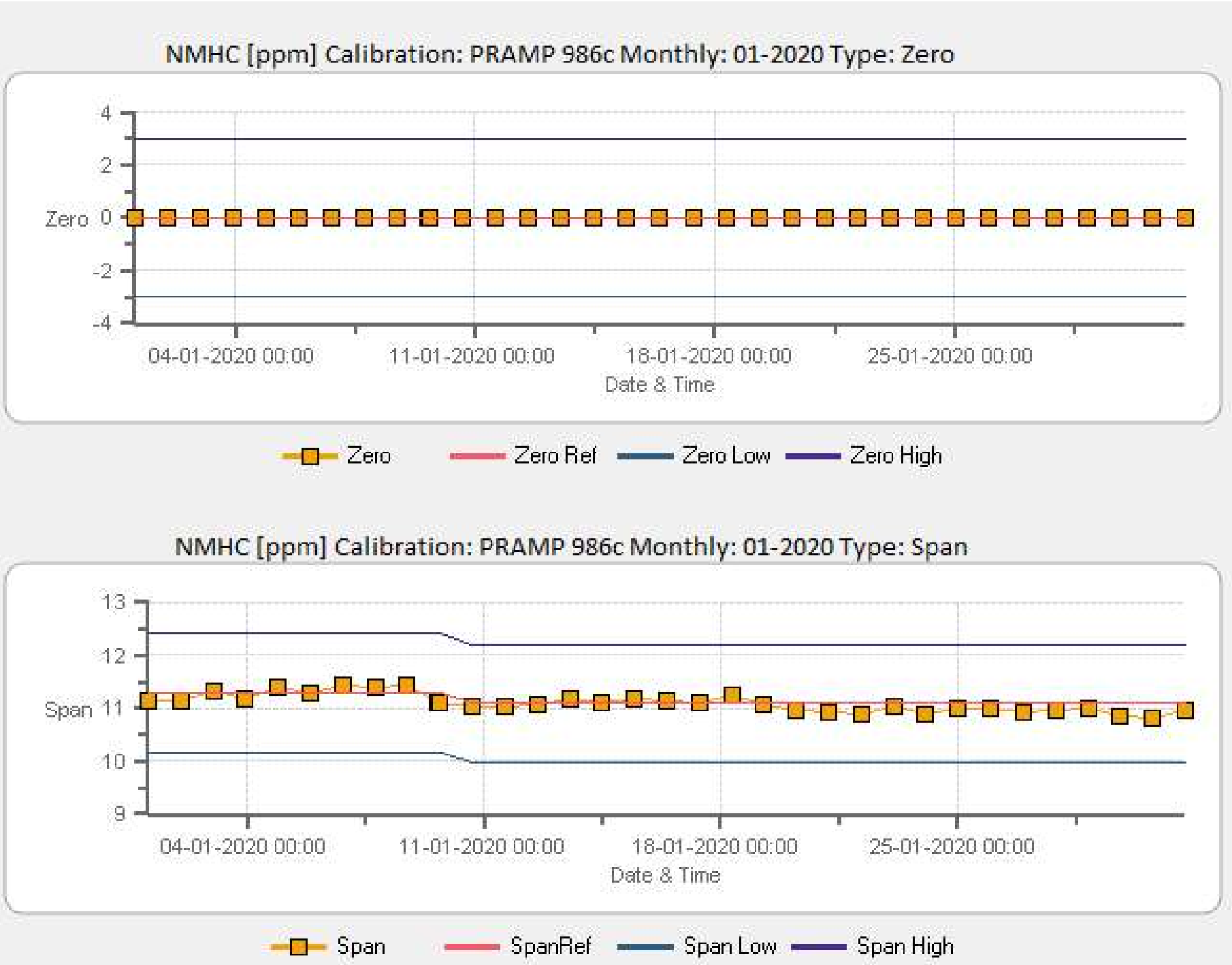

TRS [ppb] Calibration: PRAMP 986c Monthly: 01-2020 Type: Span
50
45
Span 40
35
30
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High


THC [ppm] Calibration: PRAMP 986c Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High


THC [ppm] Calibration: PRAMP 986c Monthly: 01-2020 Type: Span
24
22
Span
20
18
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High


CH4 [ppm] Calibration: PRAMP 986c Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High


CH4 [ppm] Calibration: PRAMP 986c Monthly: 01-2020 Type: Span
11
10.5
10
Span
9.5
9
8.5
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High


NMHC [ppm] Calibration: PRAMP 986c Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
NMHC [ppm] Calibration: PRAMP 986c Monthly: 01-2020 Type: Span
13
12
Span 11
10
9
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	09-Jan-2020	PREVIOUS CALIBRATION DATE:	11-Dec-2019
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	22.4
LOCATION:	986c	BAROMETRIC (mBar):	947
PURPOSE	Routine	START TIME (MST):	14:45
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	19:18

ANALYZER:

MAKE/MODEL	API 100A	RANGE	500 ppb
SERIAL #	1298	FLOW (mL/min)	610
INITIAL		FINAL	
BKG/OFFSET	97.2	BKG/OFFSET	96.5
COEF/SLOPE	0.88	COEF/SLOPE	0.886
Expected (reference) Value	295	Expected (reference) Value	289

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Environics	MAKE:	Teledyne
MODEL:	6100	MODEL:	T701
ID:	5212	ID:	74
MFC CALIBRATION DATE:	19-Jul-2019	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	BAL3157	HIGH ID	n/a
CONC (ppm):	49.30	EXPIRY DATE	n/a
CYLINDER (psi):	1790	LOW ID	n/a
EXPIRY DATE	01-Jul-2027	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5994		5994	0.00	0.3	0		
5951	46.21	5997	379.91	375.9	379.9	1.011	1.000
5977	21.87	5999	179.76	n/a	178.9	n/a	1.005
5986	10.94	5997	89.94	n/a	89.6	n/a	1.004

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	-0.1%

COMMENTS:

Sample filter changed. Adjusted high point repeated due to slow analyzer response.

TRS Analyzer Calibration by Dilution

DATE:	09-Jan-2020	PREVIOUS CALIBRATION DATE:	12-Dec-2019
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	22.6
LOCATION:	986c	BAROMETRIC (mBar):	948
PURPOSE	Routine	START TIME (MST):	11:41
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	16:46

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	100 ppb
SERIAL #	1152940011	FLOW (mL/min)	473
INITIAL		FINAL	
BKG/OFFSET	2.43	BKG/OFFSET	2.59
COEF/SLOPE	0.929	COEF/SLOPE	1.004
Expected (reference) Value	40.51	Expected (reference) Value	41.78

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Environics	MAKE:	Teledyne
MODEL:	6100	MODEL:	T701
ID:	4760	ID:	74
MFC CALIBRATION DATE:	18-Jul-2019	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY0000695	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	1790	LOW ID	n/a
EXPIRY DATE	16-Jul-2022	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

START TIME:	12:19	SO2 Conc (ppb)	380
END TIME:	12:37	Analyzer Response (ppb)	0.0

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
7488		7488	0.00	-0.2	0		
7430	58.34	7488	77.91	72.51	77.9	1.072	1.000
7459	28.40	7488	37.92	n/a	37.72	n/a	1.005
7473	14.21	7488	18.98	n/a	18.64	n/a	1.018

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	-0.2%

COMMENTS:

Monthly calibration passed. Analyzer fan filter cleaned.

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	09-Jan-2020	PREVIOUS CALIBRATION DATE:	12-Dec-2019
CLIENT:	PRAMP	TEMPERATURE (°C):	22.3
LOCATION:	986C	BAROMETRIC (mBar):	948
PURPOSE	Routine	START TIME (MST):	11:42
PERFORMED BY:	Ferdiannd Roy	END TIME (MST):	15:29

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1022143392	909.2
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	0.997	0.999	0.998

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	Environics	MAKE:	Teledyne	CYLINDER ID:	LL43221		HIGH ID:	n/a
MODEL:	6100	MODEL:	T701	CH_4/C_3H_8 (ppm):	595.0	206.0	HIGH EXPIRY:	n/a
ID:	5212	ID:	74	CYLINDER (psi):	1100		LOW ID:	n/a
MFC CALIBRATION DATE:	19-Jul-2019	OXIDIZER ID:	n/a	EXPIRY DATE	18-Oct-2025		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	566.5
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1161.5

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	9.94	11.30	21.23		9.87	11.10	20.97

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3145		3145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
3077	70.46	3147	13.32	12.68	26.00	13.54	12.99	26.54	13.31	12.66	25.97	0.984	0.976	0.980	1.001	1.002	1.001
3111	37.93	3149	7.17	6.82	13.99	n/a	n/a	n/a	7.19	6.80	13.96	n/a	n/a	n/a	0.997	1.004	1.002
3131	16.23	3148	3.07	2.92	5.99	n/a	n/a	n/a	3.08	2.90	5.99	n/a	n/a	n/a	0.996	1.008	1.000

LINEAR REGRESSION ANALYSIS:

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

COMMENTS:

Monthly calibration passed. Analyzer fan filter cleaned.

Meteorological System Checklist

Date:	January 9,2019		
Technician:	Ferdinand Roy		
Reviewer:	Wunmi Adekanmbi		
Station:	PRAMP 986c		
Unit:	**Make:**	**Model:**	**Serial #:**
Temperature Sensor:	RM Young	43182VC	030978
Barometric Pressure Sensor:	MetOne	090D	F3845
Relative Humidity Sensor:	RM Young	43182VC	030978
Anemometer:	RM Young	05305VK	129612
AMBIENT TEMPERATURE SENSOR CHECK			
Previous check date:	December 12, 2019		
Parameter:	Temperature @ 2 metres		
Reference Thermometer ID:	F.S. 160459244 expires Jun 19, 2020		
Reference Temperature (^{o}C):	-22.7		
Station - Ambient Temperature (^{o}C):	-22.2		
Temperature Difference (^{o}C):	-0.5		
BAROMETRIC PRESSURE SENSOR CHECK			
Previous check date:	December 12, 2019		
Reference Barometer ID:	Reference Barometer ID: F.S. 10528 expires January 23, 2020		
Reference Pressure - Units/Reading:	millibar	948	
Station Pressure - Units/Reading:	millibar	950.4	
Pressure Tolerance +/- 15% of error:	806 - 1090	-0.25%	
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Previous check date:	December 12, 2019		
Reference Hygrometer ID:	F.S. 160459244 expires Jun 19, 2020		
Reference Hygrometer % RH- Reading:	82.25		
Station Hygrometer % RH- Reading:	83.30		
RH Tolerance +/- 15% of difference:	69.91 - 94.59	-1.3%	
ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK			
WIND SPEED		WIND DIRECTION	
Previous check date:	December 12, 2019	Previous check date:	December 12, 2019
Wind Speed Observed (kph):	1-10	Wind Direction Observed:	NW
Wind speed on Data Logger (kph):	3.6	Wind Direction on Data Logger:	NW
		Wind Direction Pass/Fail?:	Pass
Comments			

Meteorological Sensor Audit/Calibration

Location Information

Company:	PRAMP	**Performed By:**	Chris Wesson
Audit Location:	986b	**Reviewed By:**	Rob Fisher
Audit Date:	April 24, 2019	**Start/End Time (mst):**	09:58/11:59
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:**	0-1V
Sensor Model:	05305VK	**Velocity Unit Output Range:**	0-200 kph
Serial #:	129612	**Direction Voltage Output Range:**	0-1V
Previous Cal/Audit Date:	April 4, 2018	**Direction Unit Output Range:**	0-360 DEG

Wind Calibrator Information

Calibrator I.D. and Expiry Date: RM Young 18802 id# CA03309 expires October 3, 2019

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

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.1	0.1	-
1000	18.4	18.5	18.5	0.996
2000	36.9	36.9	36.8	1.000
3000	55.3	55.3	55.3	1.000
4000	73.7	73.7	73.7	1.000
5000	92.2	92.2	92.2	0.999
6000	110.6	110.7	110.7	0.999
7000	129.0	129.2	129.2	0.999
8000	147.4	147.7	147.7	0.998
9000	165.9	166.2	166.2	0.998
10000	184.3	184.9	184.8	0.997
		The audit meets AMD requirements.	**Average Correction Factor=**	**0.999**

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	353	0.0	2.0	1.0
30	330	29	330	1.0	0.0	0.5
60	300	60	301	0.0	-1.0	0.5
90	270	91	272	-1.0	-2.0	1.5
120	240	121	242	-1.0	-2.0	1.5
150	210	152	212	-2.0	-2.0	2.0
180	180	182	181	-2.0	-1.0	1.5
210	150	214	150	-4.0	0.0	2.0
240	120	244	121	-4.0	-1.0	2.5
270	90	273	90	-3.0	0.0	1.5
300	60	302	60	-2.0	0.0	1.0
330	30	330	29	0.0	1.0	0.5
355	0	353	0	2.0	0.0	1.0
The audit meets AMD requirements.			**Average Absolute Degrees Difference=**			**1.3**

Comments:

Physical inspection completed. No issues.

Peace River Area Monitoring Program

JANUARY 2020

Ambient Air Monitoring Calibration Report

- RENO STATION-

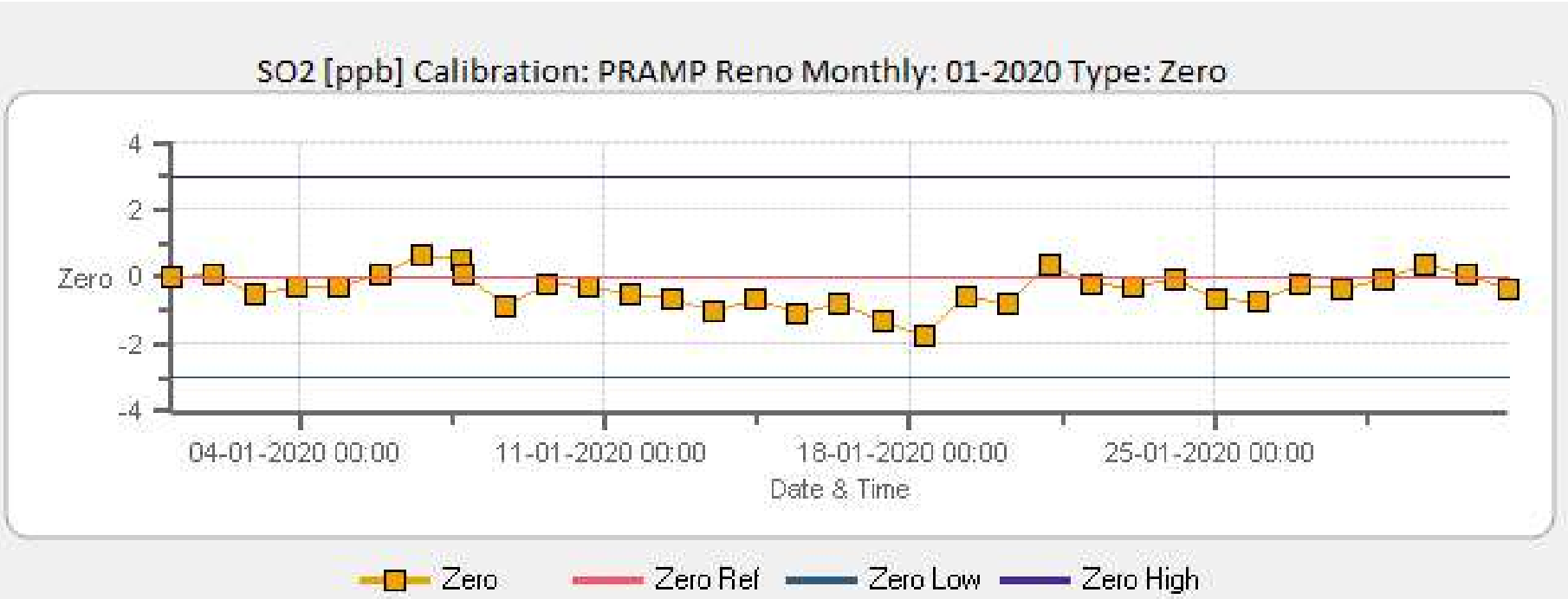
CAL-PRAMP-202001-01563

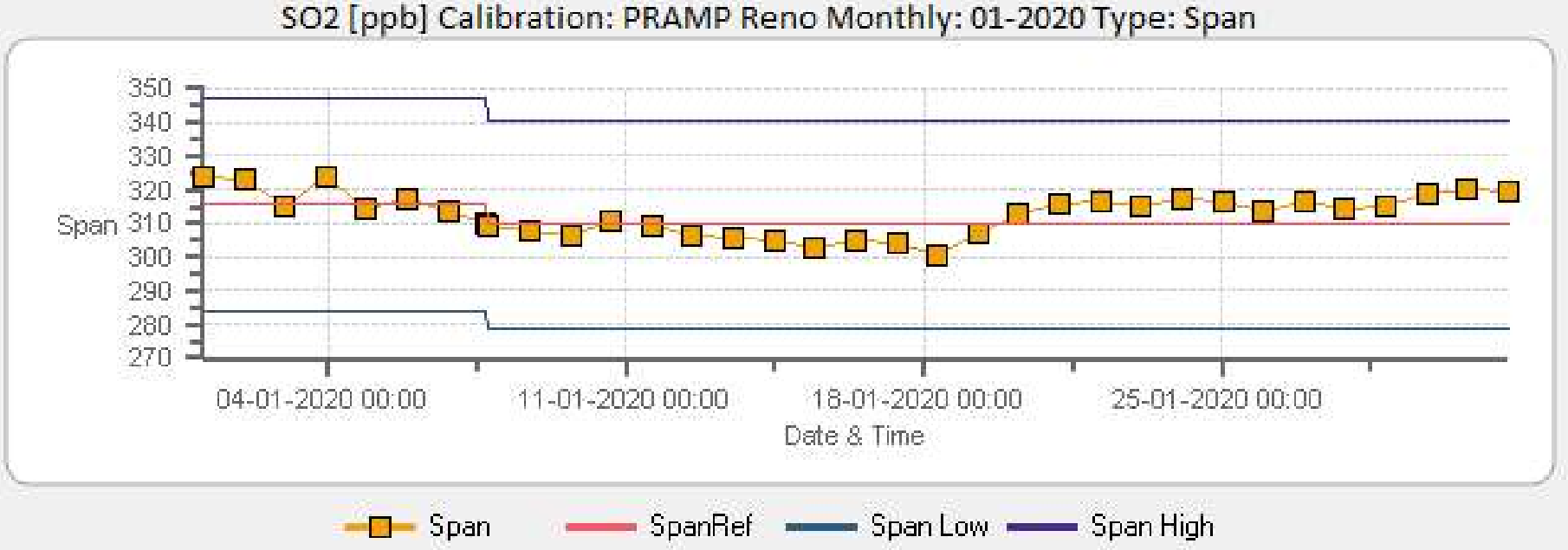
Operation and Maintenance:
Bureau Veritas Canada

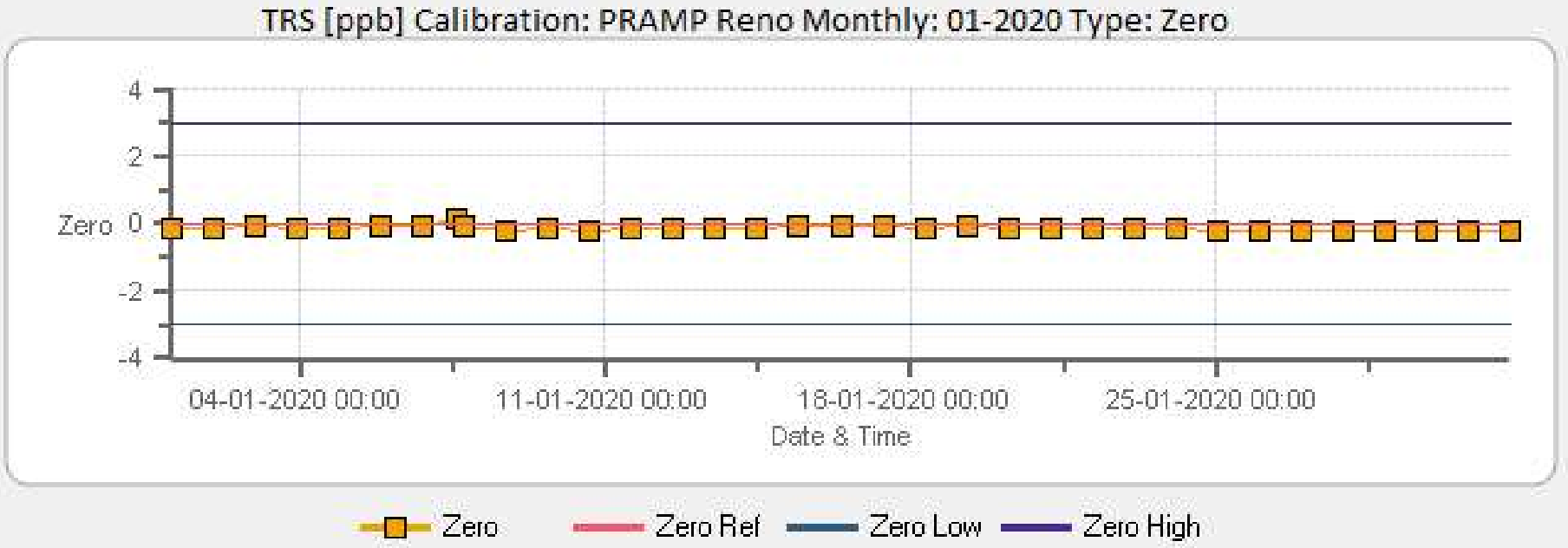
Data Validation and Report:
Bureau Veritas Canada

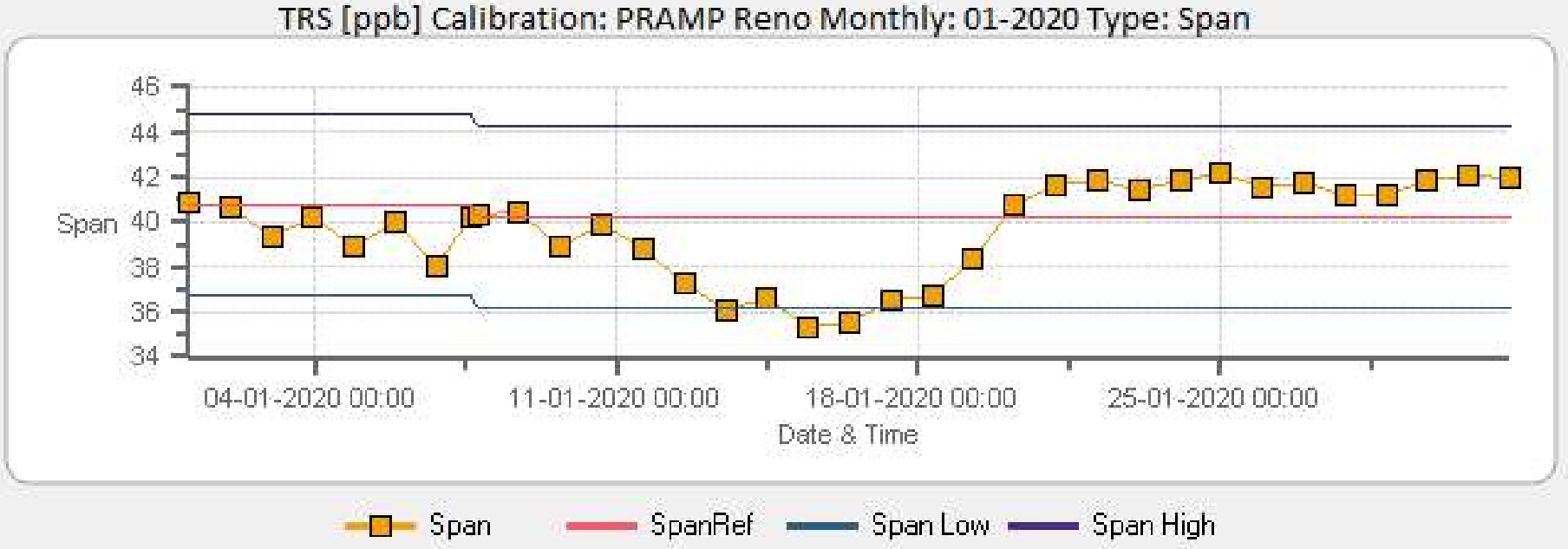
February 13, 2020

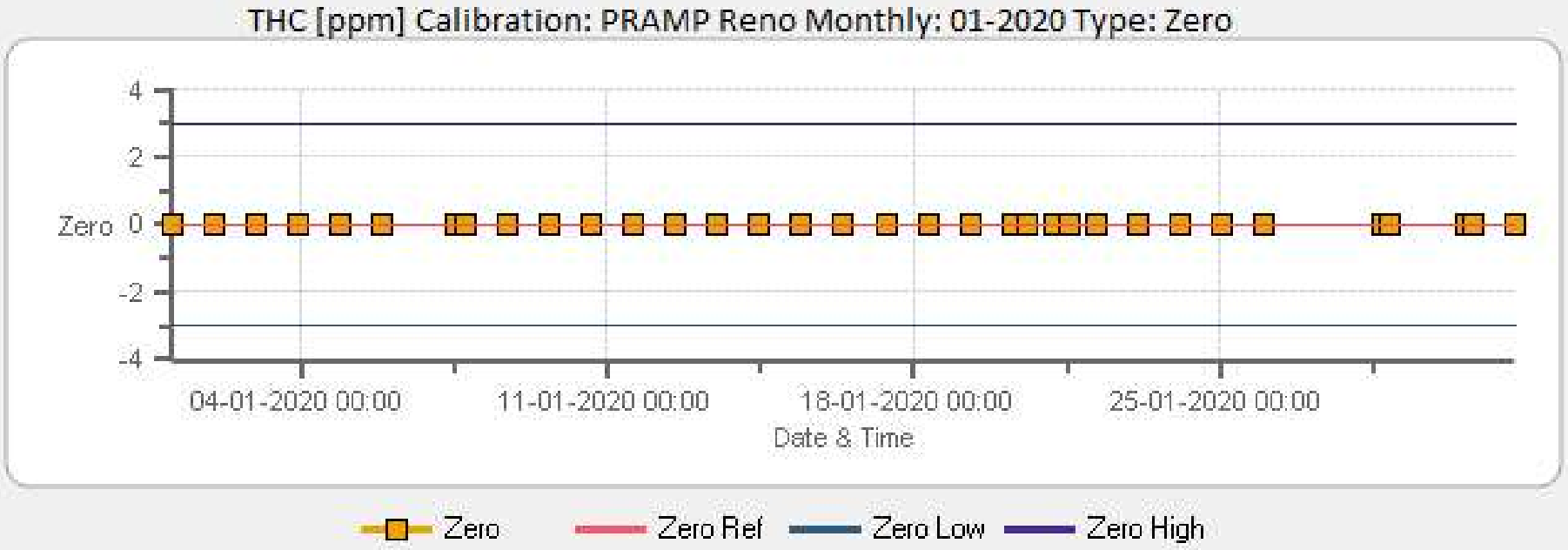
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

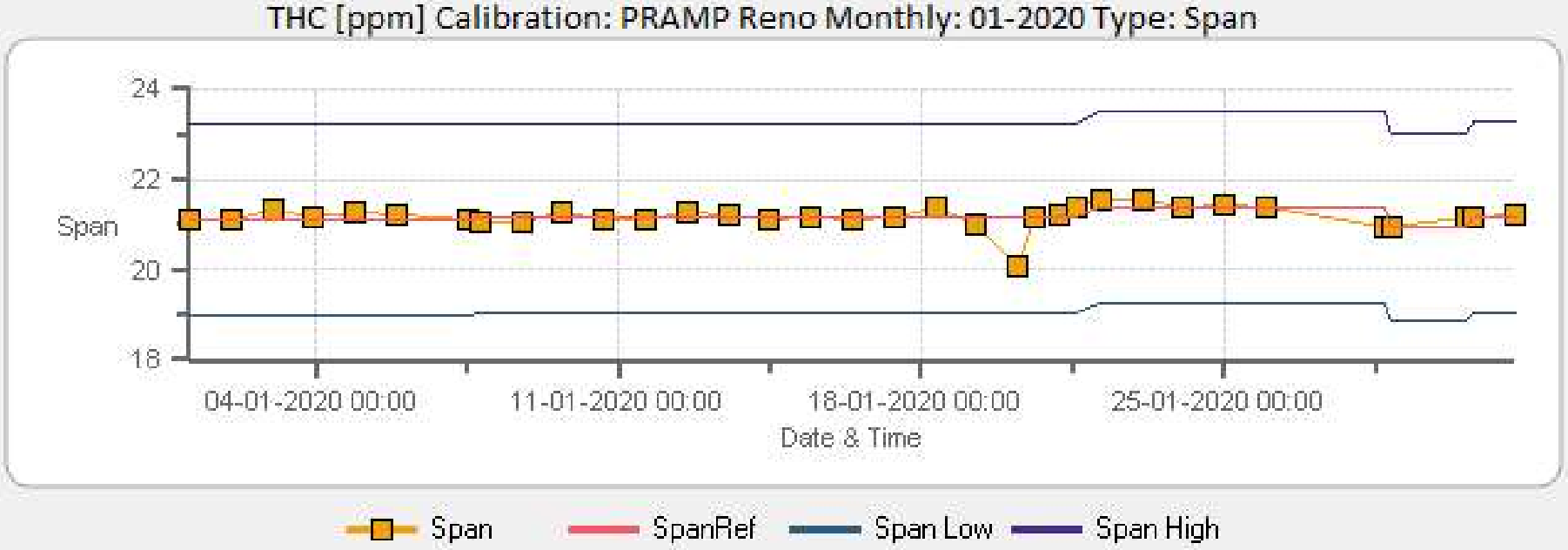

SO2 [ppb] Calibration: PRAMP Reno Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High

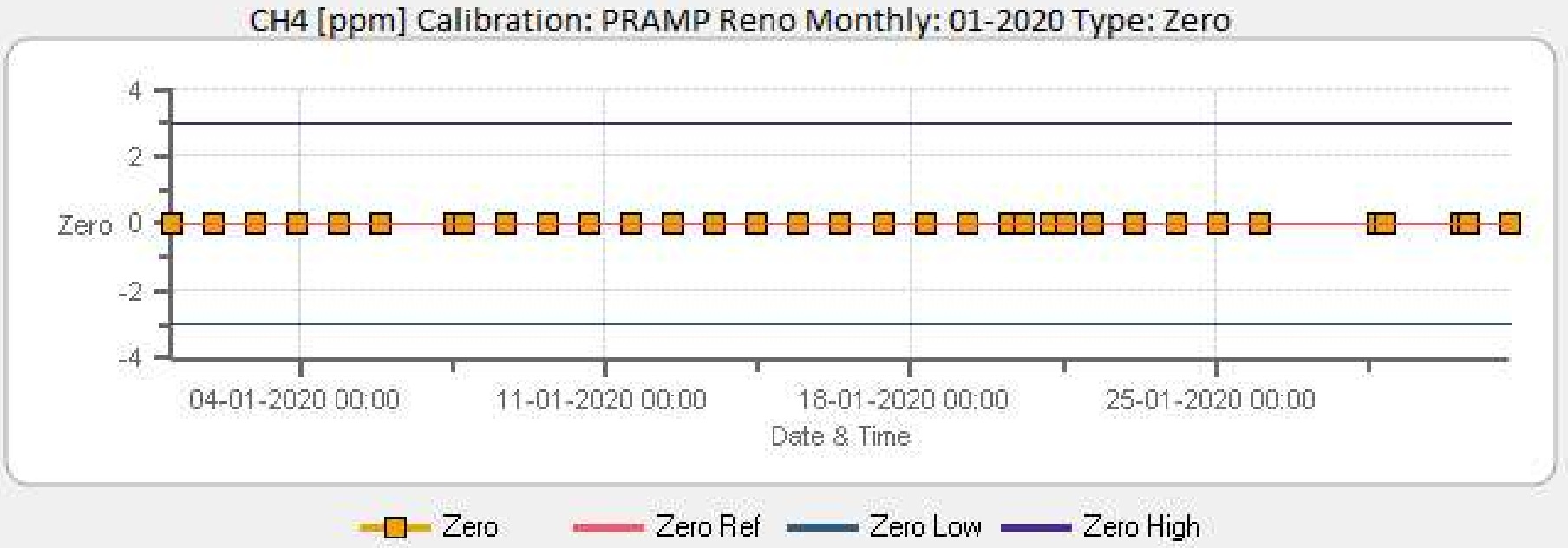

SO2 [ppb] Calibration: PRAMP Reno Monthly: 01-2020 Type: Span
350
340
330
320
Span 310
300
290
280
270
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High

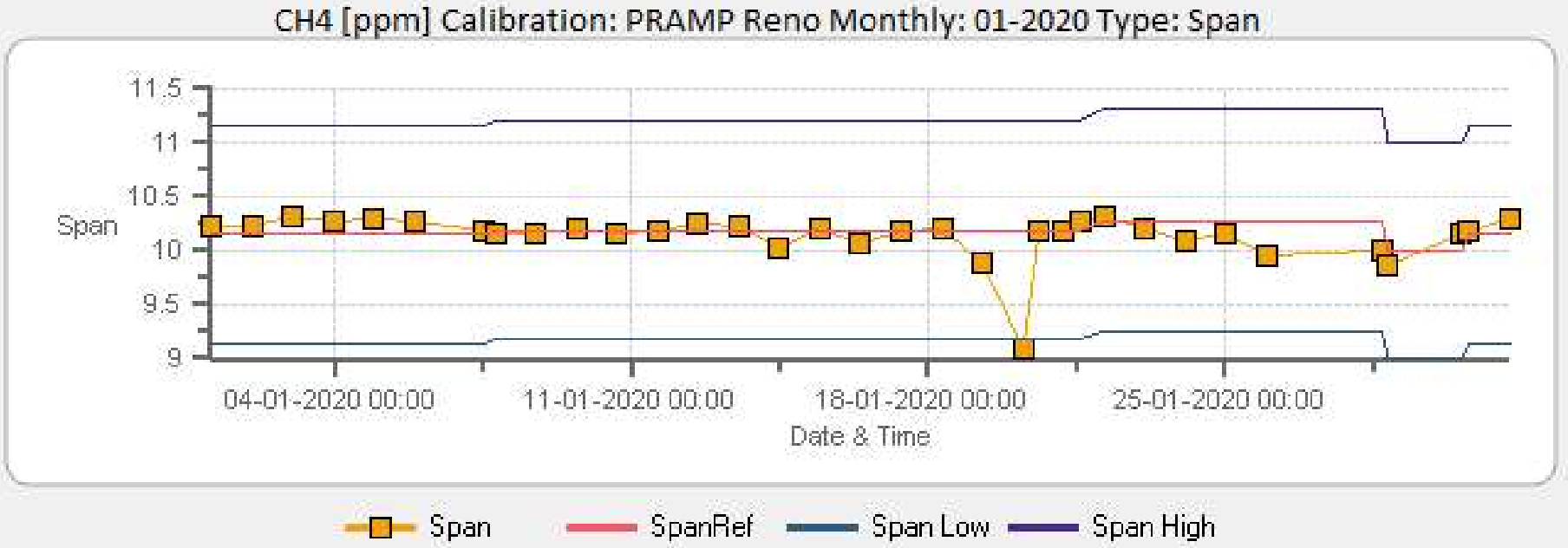

TRS [ppb] Calibration: PRAMP Reno Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High

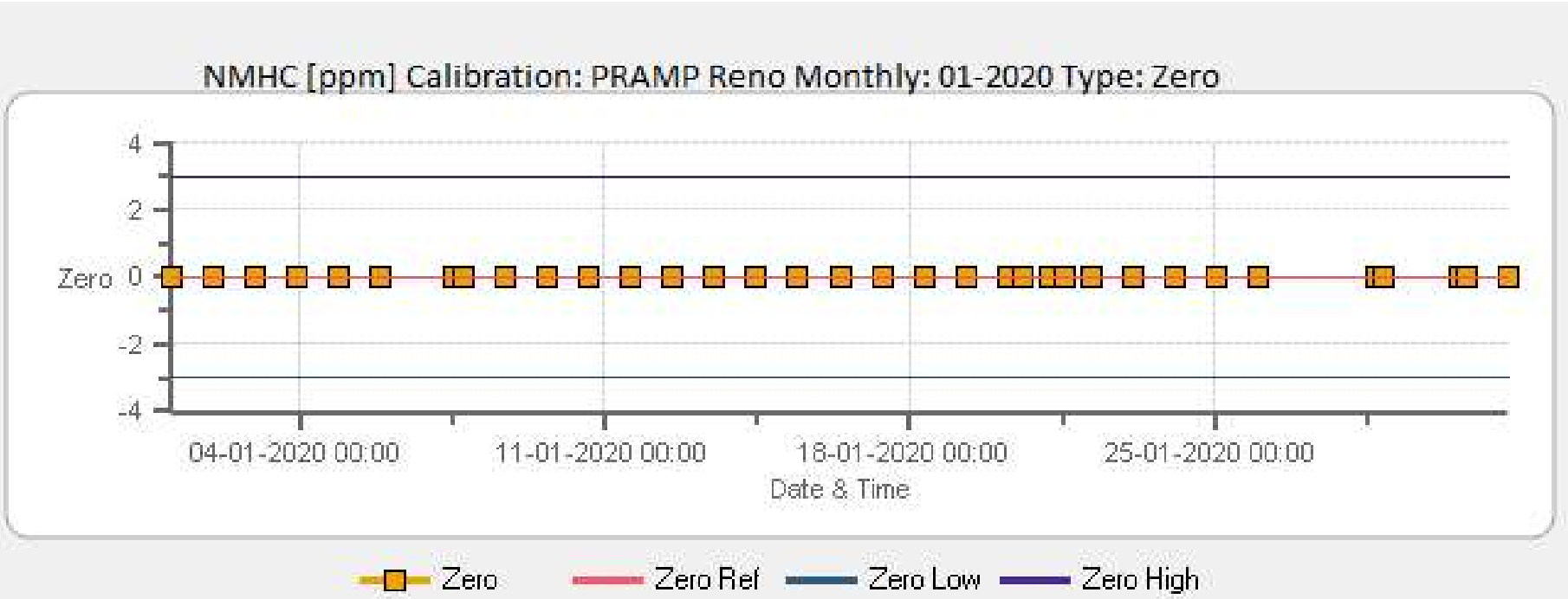

TRS [ppb] Calibration: PRAMP Reno Monthly: 01-2020 Type: Span
46
44
42
Span 40
38
36
34
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High

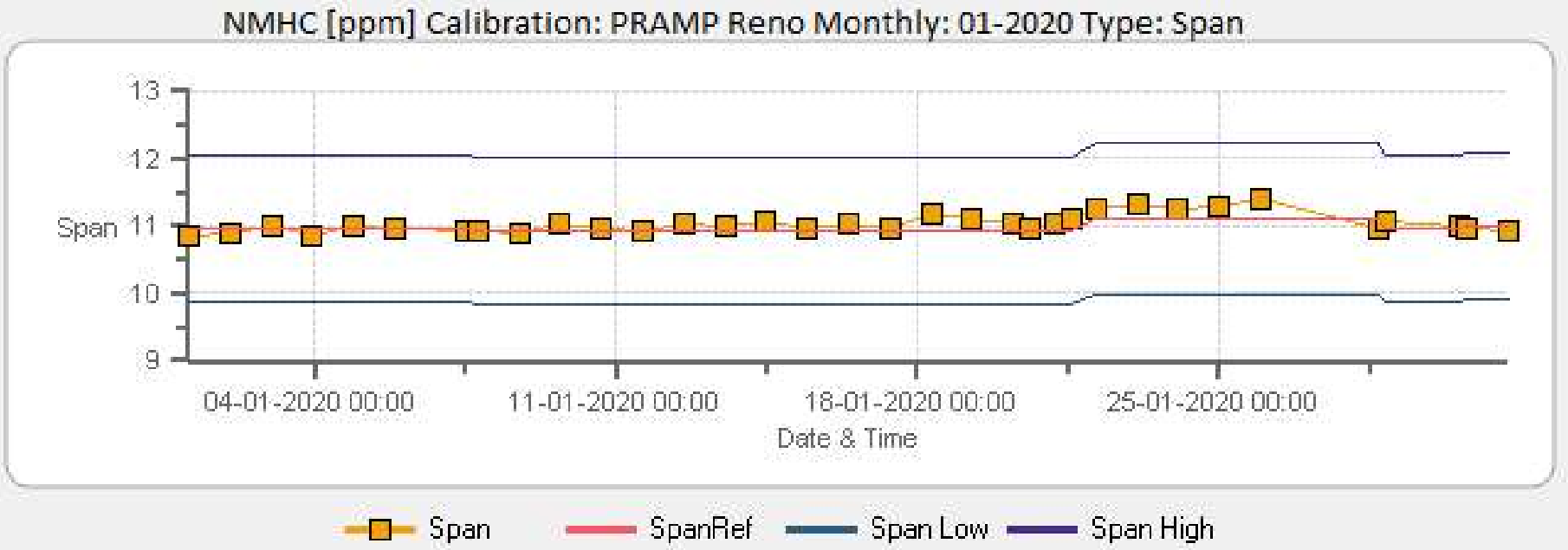

THC [ppm] Calibration: PRAMP Reno Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High


THC [ppm] Calibration: PRAMP Reno Monthly: 01-2020 Type: Span
24
22
Span
20
18
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High


CH4 [ppm] Calibration: PRAMP Reno Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High


CH4 [ppm] Calibration: PRAMP Reno Monthly: 01-2020 Type: Span
11.5
11
10.5
Span
10
9.5
9
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High


NMHC [ppm] Calibration: PRAMP Reno Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High


NMHC [ppm] Calibration: PRAMP Reno Monthly: 01-2020 Type: Span
13
12
Span 11
10
9
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	07-Jan-2020	PREVIOUS CALIBRATION DATE:	19-Dec-2019
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	22.2
LOCATION:	Reno	BAROMETRIC (mBar):	938
PURPOSE	Routine	START TIME (MST):	12:11
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	16:32

ANALYZER:

MAKE/MODEL	API 100A	RANGE	500 ppb
SERIAL #	841	FLOW (mL/min)	620
INITIAL		FINAL	
BKG/OFFSET	57.6	BKG/OFFSET	58.2
COEF/SLOPE	1.104	COEF/SLOPE	1.09
Expected (reference) Value	316	Expected (reference) Value	310

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Environics	MAKE:	Teledyne
MODEL:	6100	MODEL:	T701
ID:	5212	ID:	74
MFC CALIBRATION DATE:	19-Jul-2019	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	BAL3157	HIGH ID	n/a
CONC (ppm):	49.30	EXPIRY DATE	n/a
CYLINDER (psi):	1600	LOW ID	n/a
EXPIRY DATE	01-Jul-2027	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5995		5995	0.00	0.3	0		
5952	46.21	5998	379.77	385.8	379.7	0.985	1.000
5977	21.87	5999	179.72	n/a	178.8	n/a	1.005
5986	10.94	5997	89.97	n/a	90	n/a	1.000

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	0.0%

COMMENTS:

Monthly calibration passed. Sample filter changed.

TRS Analyzer Calibration by Dilution

DATE:	07-Jan-2020	PREVIOUS CALIBRATION DATE:	19-Dec-2019
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	PRAMP	TEMPERATURE (°C):	22.8
LOCATION:	Reno	BAROMETRIC (mBar):	939
PURPOSE	Routine	START TIME (MST):	09:10
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	14:33

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	100 ppb
SERIAL #	1162460022	FLOW (mL/min)	408
INITIAL		FINAL	
BKG/OFFSET	2.47	BKG/OFFSET	2.71
COEF/SLOPE	0.967	COEF/SLOPE	1.018
Expected (reference) Value	40.77	Expected (reference) Value	40.23

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Environics	MAKE:	Teledyne
MODEL:	6100	MODEL:	T701
ID:	4760	ID:	74
MFC CALIBRATION DATE:	18-Jul-2019	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY0000695	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	1750	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:	09:53	SO2 Conc (ppb)	380
END TIME:	10:11	Analyzer Response (ppb)	0.0

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
7488		7488	0.00	-0.06	0		
7430	58.35	7488	77.93	74.27	77.9	1.048	1.000
7460	28.42	7488	37.96	n/a	37.97	n/a	1.000
7476	14.21	7490	18.97	n/a	18.97	n/a	1.000

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	0.0%

COMMENTS:

Monthly calibration passed. Analyzer fan filter cleaned.

TRS Analyzer Calibration by Dilution

DATE:	17-Jan-2020	PREVIOUS CALIBRATION DATE:	07-Jan-2020
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	22.0
LOCATION:	Reno	BAROMETRIC (mBar):	1032mbar
PURPOSE	As-Found	START TIME (MST):	11:18
PERFORMED BY:	Moe Haddadi	END TIME (MST):	12:39

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	100 ppb
SERIAL #	1162460022	FLOW (mL/min)	411
INITIAL		FINAL	
BKG/OFFSET	2.69	BKG/OFFSET	2.69
COEF/SLOPE	1.018	COEF/SLOPE	1.018
Expected (reference) Value	40.23	Expected (reference) Value	40.23

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26701218	ID:	133
MFC CALIBRATION DATE:	26-Nov-2019	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL119507	HIGH ID	n/a
CONC (ppm):	10.10	EXPIRY DATE	n/a
CYLINDER (psi):	1200	LOW ID	n/a
EXPIRY DATE	13-Aug-2021	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	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
4998		4998	0.00	-0.05	n/a		
4958	38.60	4997	78.02	75.03	n/a	1.039	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	n/a	n/a	**n/a**

COMMENTS:

n/a

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	07-Jan-2020	PREVIOUS CALIBRATION DATE:	n/a
CLIENT:	PRAMP	TEMPERATURE (°C):	22.8
LOCATION:	Reno	BAROMETRIC (mBar):	939
PURPOSE	Install/Post-Repair	START TIME (MST):	09:10
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	12:52

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1433563261	1126
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	n/a	n/a	n/a

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	Environics	MAKE:	Teledyne	CYLINDER ID:	LL43221		HIGH ID:	n/a
MODEL:	6100	MODEL:	T701	CH_4/C_3H_8 (ppm):	595.0	206.0	HIGH EXPIRY:	n/a
ID:	5212	ID:	74	CYLINDER (psi):	1150		LOW ID:	n/a
MFC CALIBRATION DATE:	19-Jul-2019	OXIDIZER ID:	n/a	EXPIRY DATE	18-Oct-2025		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	566.5
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1161.5

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	n/a	n/a	n/a		10.19	10.94	21.14

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3145		3145	0.00	0.00	0.00	n/a	n/a	n/a	0.00	0.00	0.00						
3076	70.46	3146	13.33	12.69	26.01	n/a	n/a	n/a	13.35	12.70	26.05	n/a	n/a	n/a	0.998	0.999	0.999
3110	37.93	3148	7.17	6.83	13.99	n/a	n/a	n/a	7.17	6.82	13.99	n/a	n/a	n/a	1.000	1.001	1.000
3131	16.24	3147	3.07	2.92	5.99	n/a	n/a	n/a	3.08	2.94	6.02	n/a	n/a	n/a	0.997	0.994	0.995

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	1.002	0.0%
NMHC	1.000	1.000	0.0%
THC	1.000	1.001	0.0%

COMMENTS:

Install calibration passed (previous analyzer failed, no shutdown calibration required). Analyzer fan filter cleaned.

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	17-Jan-2020	PREVIOUS CALIBRATION DATE:	07-Jan-2020
CLIENT:	PRAMP	TEMPERATURE (°C):	22.0
LOCATION:	Reno	BAROMETRIC (mBar):	1032
PURPOSE	Repeat	START TIME (MST):	11:18
PERFORMED BY:	Moe Haddadi	END TIME (MST):	14:00

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1433563261	1231
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	0.999	1.001	0.998

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	Sabio	MAKE:	Teledyne	CYLINDER ID:	LL168404		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH_4/C_3H_8 (ppm):	597.0	206.0	HIGH EXPIRY:	n/a
ID:	17100415	ID:	133	CYLINDER (psi):	480		LOW ID:	n/a
MFC CALIBRATION DATE:	30-Sep-2019	OXIDIZER ID:	n/a	EXPIRY DATE	18-Oct-2025		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	566.5
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1163.5

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	10.20	10.94	21.14		10.20	10.94	21.14

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3198		3198	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
3121	78.40	3199	14.63	13.88	28.51	14.72	13.99	28.71	14.65	13.92	28.56	0.994	0.992	0.993	0.999	0.997	0.998
3159	39.20	3198	7.32	6.94	14.26	n/a	n/a	n/a	7.36	6.98	14.34	n/a	n/a	n/a	0.994	0.995	0.995
3180	19.60	3200	3.66	3.47	7.13	n/a	n/a	n/a	3.70	3.48	7.19	n/a	n/a	n/a	0.988	0.997	0.991

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	1.001	0.1%
NMHC	1.000	1.003	0.0%
THC	1.000	1.001	0.1%

COMMENTS:

n/a

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	21-Jan-2020	PREVIOUS CALIBRATION DATE:	17-Jan-2020
CLIENT:	PRAMP	TEMPERATURE (°C):	23.0
LOCATION:	Reno	BAROMETRIC (mBar):	928
PURPOSE	Repeat	START TIME (MST):	09:09
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	13:40

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1433563261	946.99
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	0.999	0.997	0.998

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	Environics	MAKE:	Teledyne	CYLINDER ID:	LL43221		HIGH ID:	n/a
MODEL:	6100	MODEL:	T701	CH_4/C_3H_8 (ppm):	595.0	206.0	HIGH EXPIRY:	n/a
ID:	5212	ID:	74	CYLINDER (psi):	1050		LOW ID:	n/a
MFC CALIBRATION DATE:	16-Jan-2020	OXIDIZER ID:	n/a	EXPIRY DATE	18-Oct-2025		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	566.5
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1161.5

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	10.19	10.94	21.14		10.28	11.11	21.39

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3147		3147	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
3075	70.46	3145	13.33	12.69	26.02	13.07	12.57	25.64	13.34	12.70	26.04	1.020	1.010	1.015	0.999	0.999	0.999
3107	37.93	3145	7.17	6.83	14.01	n/a	n/a	n/a	7.22	6.84	14.06	n/a	n/a	n/a	0.994	0.999	0.996
3130	16.24	3146	3.07	2.92	5.99	n/a	n/a	n/a	3.09	2.92	6.01	n/a	n/a	n/a	0.994	1.001	0.997

LINEAR REGRESSION ANALYSIS:

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

COMMENTS:

Sample filter changed.

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	28-Jan-2020	PREVIOUS CALIBRATION DATE:	n/a
CLIENT:	PRAMP	TEMPERATURE (°C):	21.2
LOCATION:	Reno	BAROMETRIC (mBar):	934
PURPOSE	Install/Post-Repair	START TIME (MST):	14:50
PERFORMED BY:	Chris Wesson	END TIME (MST):	17:10

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1433563261	1162
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	n/a	n/a	n/a

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	Sabio	MAKE:	Teledyne	CYLINDER ID:	LL107207		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH_4/C_3H_8 (ppm):	600.0	207.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	134	CYLINDER (psi):	800		LOW ID:	n/a
MFC CALIBRATION DATE:	28-Nov-2019	OXIDIZER ID:	Internal	EXPIRY DATE	18-Oct-2025		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	569.3
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1169.3

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	n/a	n/a	n/a		10.00	10.95	20.95

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3162		3162	0.00	0.00	0.00	n/a	n/a	n/a	0.00	0.00	0.00						
3086	75.40	3161	14.31	13.58	27.89	n/a	n/a	n/a	14.31	13.58	27.89	n/a	n/a	n/a	1.000	1.000	1.000
3123	37.70	3161	7.16	6.79	13.95	n/a	n/a	n/a	7.21	6.88	14.09	n/a	n/a	n/a	0.993	0.987	0.990
3142	18.80	3161	3.57	3.39	6.95	n/a	n/a	n/a	3.62	3.49	7.10	n/a	n/a	n/a	0.986	0.970	0.979

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	0.999	0.2%
NMHC	1.000	0.998	0.3%
THC	1.000	0.999	0.2%

COMMENTS:

Post-repair following adjustment to actuator and N2 pressure.

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	29-Jan-2020	PREVIOUS CALIBRATION DATE:	28-Jan-2020
CLIENT:	PRAMP	TEMPERATURE (°C):	23.4
LOCATION:	Reno	BAROMETRIC (mBar):	925
PURPOSE	Removal/Shut-down	START TIME (MST):	10:30
PERFORMED BY:	Chris Wesson	END TIME (MST):	11:59

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1433563261	1154
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	1.000	1.000	1.000

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	Sabio	MAKE:	Teledyne	CYLINDER ID:	LL107207		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH_4/C_3H_8 (ppm):	600.0	207.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	134	CYLINDER (psi):	800		LOW ID:	n/a
MFC CALIBRATION DATE:	28-Nov-2019	OXIDIZER ID:	Internal	EXPIRY DATE	18-Oct-2025		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	569.3
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1169.3

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	10.00	10.95	20.95		10.00	10.95	20.95

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3161		3161	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a						
3086	75.40	3161	14.31	13.58	27.89	13.87	13.60	27.46	n/a	n/a	n/a	1.032	0.998	1.016	n/a	n/a	n/a
3123	37.70	3161	7.16	6.79	13.95	6.98	6.86	13.83	n/a	n/a	n/a	1.025	0.990	1.008	n/a	n/a	n/a
3143	18.80	3162	3.57	3.38	6.95	3.49	3.47	6.95	n/a	n/a	n/a	1.022	0.975	1.000	n/a	n/a	n/a

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	0.969	0.1%
NMHC	1.000	1.000	0.2%
THC	1.000	0.984	0.2%

COMMENTS:

Shut-down to allow valve maintenance

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	30-Jan-2020	PREVIOUS CALIBRATION DATE:	n/a
CLIENT:	PRAMP	TEMPERATURE (°C):	21.2
LOCATION:	Reno	BAROMETRIC (mBar):	934
PURPOSE	Install/Post-Repair	START TIME (MST):	12:03
PERFORMED BY:	Chris Wesson	END TIME (MST):	14:23

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1433563261	1162
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	n/a	n/a	n/a

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	Sabio	MAKE:	Teledyne	CYLINDER ID:	LL107207		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	CH_4/C_3H_8 (ppm):	600.0	207.0	HIGH EXPIRY:	n/a
ID:	26801218	ID:	134	CYLINDER (psi):	800		LOW ID:	n/a
MFC CALIBRATION DATE:	28-Nov-2019	OXIDIZER ID:	Internal	EXPIRY DATE	18-Oct-2025		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	569.3
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1169.3

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	n/a	n/a	n/a		10.15	10.99	21.15

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
3162		3162	0.00	0.00	0.00	n/a	n/a	n/a	0.00	0.00	0.00						
3086	75.40	3161	14.31	13.58	27.89	n/a	n/a	n/a	14.31	13.59	27.90	n/a	n/a	n/a	1.000	0.999	1.000
3123	37.70	3161	7.16	6.79	13.95	n/a	n/a	n/a	7.17	6.83	14.00	n/a	n/a	n/a	0.998	0.994	0.996
3142	18.80	3161	3.57	3.39	6.95	n/a	n/a	n/a	3.58	3.46	7.04	n/a	n/a	n/a	0.997	0.978	0.988

LINEAR REGRESSION ANALYSIS:

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

COMMENTS:

Post-repair following valve/actuator replacement, column conditioning, gas pressure optimisation

Meteorological System Checklist

Date:	January 7, 2019		
Technician:	Ferdinand Roy		
Reviewer:	Wunmi Adekanmbi		
Station:	PRAMP Reno		
Unit:	**Make:**	**Model:**	**Serial #:**
Temperature Sensor:	RM Young	43172VC	60837897
Barometric Pressure Sensor:	MetOne	92	R12877
Relative Humidity Sensor:	RM Young	43172VC	60837897
Anemometer:	RM Young	05305VK	149769
AMBIENT TEMPERATURE SENSOR CHECK			
Previous check date:	December 19, 2019		
Parameter:	Temperature @ 2 metres		
Reference Thermometer ID:	F.S. 160459244 expires Jun 19, 2020		
Reference Temperature (^{o}C):	-18.2		
Station - Ambient Temperature (^{o}C):	-18.2		
Temperature Difference (^{o}C):	0.0		
BAROMETRIC PRESSURE SENSOR CHECK			
Previous check date:	December 19, 2019		
Reference Barometer ID:	F.S. 10528 expires Jan 23, 2020		
Reference Pressure - Units/Reading:	millibar	937	
Station Pressure - Units/Reading:	millibar	938	
Pressure Tolerance +/- 15% of error:	796 - 1078	-0.11%	
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Previous check date:	December 19, 2019		
Reference Hygrometer ID:	F.S. 160459244 expires Jun 19, 2020		
Reference Hygrometer % RH- Reading:	n/a		
Station Hygrometer % RH- Reading:	n/a		
RH Tolerance +/- 15% of difference:	n/a	n/a	
ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK			
WIND SPEED		WIND DIRECTION	
Previous check date:	December 19, 2019	Previous check date:	December 19, 2019
Wind Speed Observed (kph):	0-1	Wind Direction Observed:	SE
Wind speed on Data Logger (kph):	0	Wind Direction on Data Logger:	SE
		Wind Direction Pass/Fail?:	Pass

Comments

Not able to get a good RH reading due to foggy weather condition.

Meteorological Sensor Audit/Calibration

Location Information

Company:	PRAMP	**Performed By:**	Chris Wesson
Audit Location:	Reno	**Reviewed By:**	Rob Fisher
Audit Date:	April 24, 2019	**Start/End Time (mst):**	15:13 / 16:06
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:**	0-1V
Sensor Model:	05305VK	**Velocity Unit Output Range:**	0-200 kph
Serial #:	149769	**Direction Voltage Output Range:**	0-1V
Previous Cal/Audit Date:	April 5, 2018	**Direction Unit Output Range:**	0-360 DEG

Wind Calibrator Information

Calibrator I.D. and Expiry Date: RM Young 18802 id# CA03309 expires October 3, 2019

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	18.4	18.4	1.002
2000	36.9	36.8	36.8	1.002
3000	55.3	55.2	55.2	1.002
4000	73.7	73.6	73.6	1.002
5000	92.2	92.2	92.2	0.999
6000	110.6	110.6	110.6	1.000
7000	129.0	129.2	129.2	0.999
8000	147.4	147.8	147.6	0.998
9000	165.9	166.2	166.2	0.998
10000	184.3	184.8	184.8	0.997
		The audit meets AMD requirements.	**Average Correction Factor=**	**1.000**

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

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	0	354	0.0	1.0	0.5
30	330	29	329	1.0	1.0	1.0
60	300	60	299	0.0	1.0	0.5
90	270	90	269	0.0	1.0	0.5
120	240	120	239	0.0	1.0	0.5
150	210	150	210	0.0	0.0	0.0
180	180	179	179	1.0	1.0	1.0
210	150	209	150	1.0	0.0	0.5
240	120	239	120	1.0	0.0	0.5
270	90	269	90	1.0	0.0	0.5
300	60	300	60	0.0	0.0	0.0
330	30	329	30	1.0	0.0	0.5
355	0	354	0	1.0	0.0	0.5
The audit meets AMD requirements.			**Average Absolute Degrees Difference=**			**0.5**

Comments:

Physical inspection completed. No issues.

Peace River Area Monitoring Program

JANUARY 2020

Ambient Air Monitoring Calibration Report

- AQHI - CADOTTE LAKE STATION-

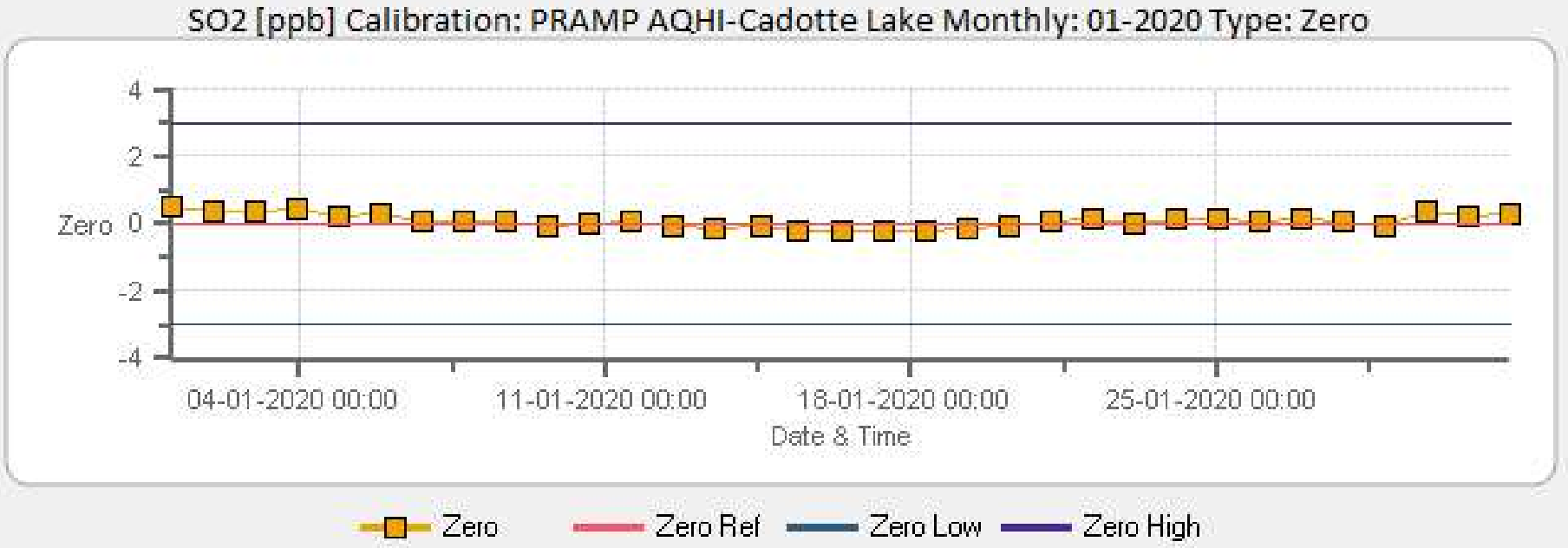
CAL-PRAMP-202001-01651

Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
Bureau Veritas Canada

February 13, 2020

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS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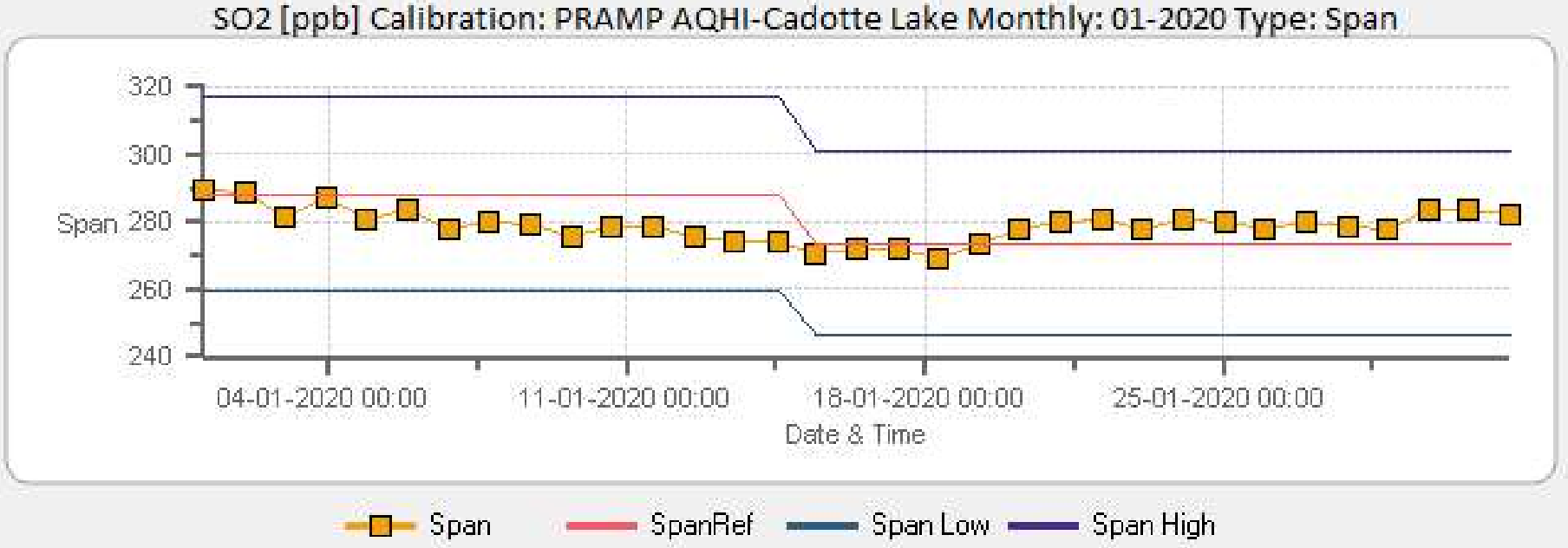
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High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Span 280
260
240
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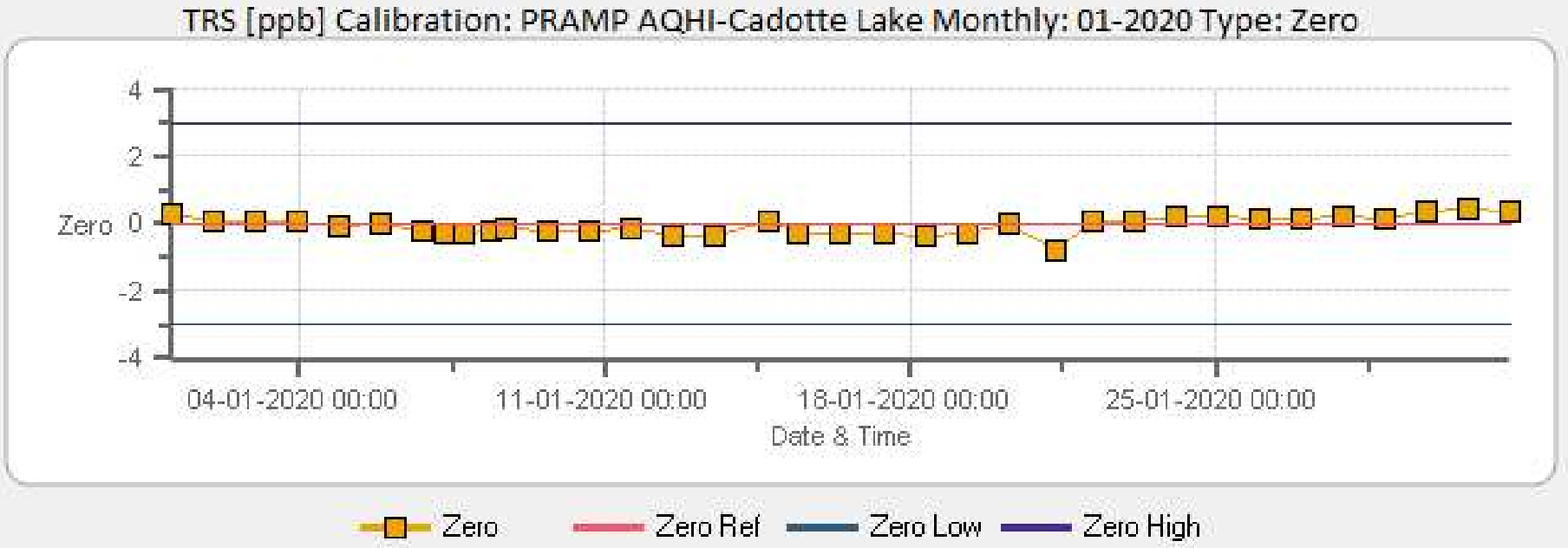
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High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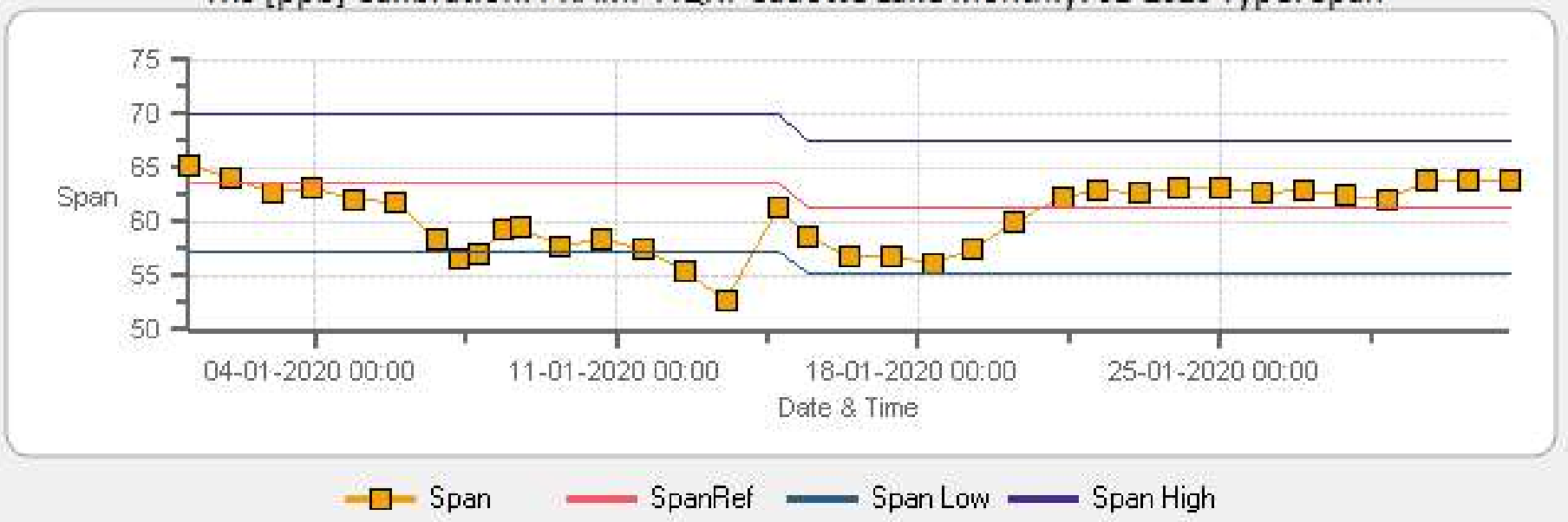
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High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70
65
Span
60
55
50
04-01-2020 00:00
11-01-2020 00:00
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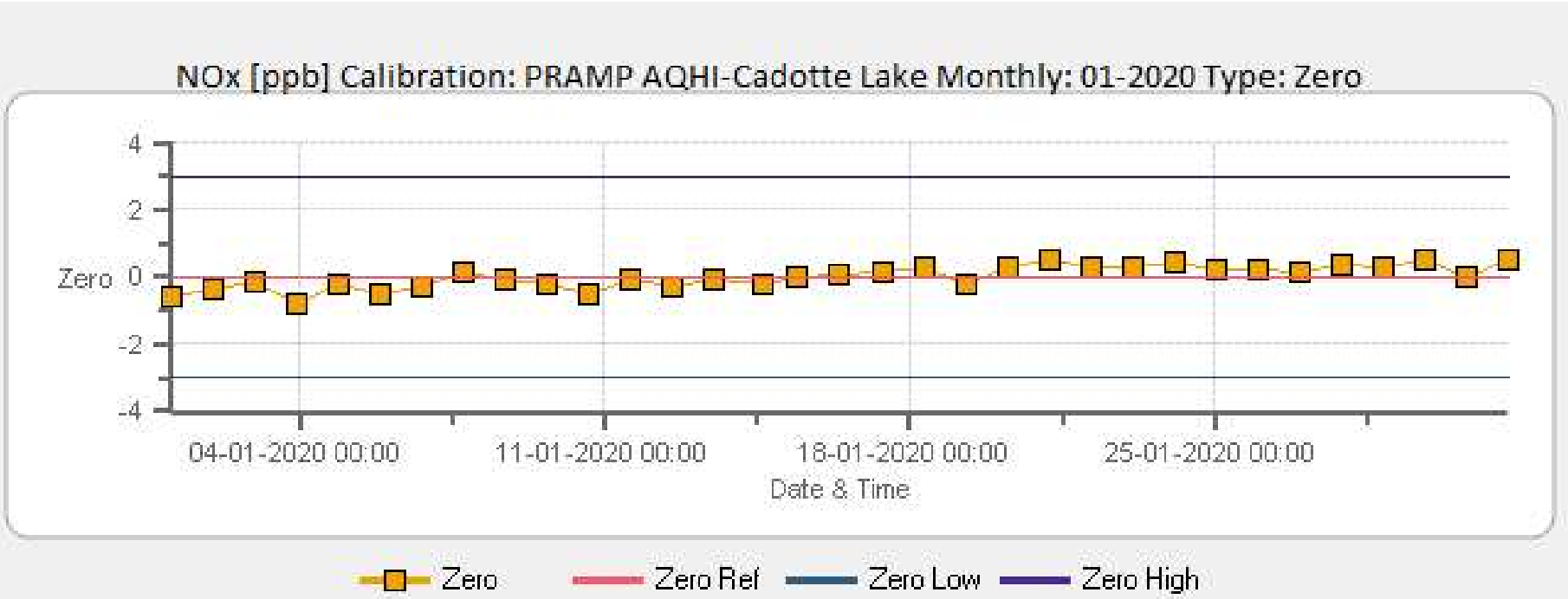
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High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-4
04-01-2020 00:00
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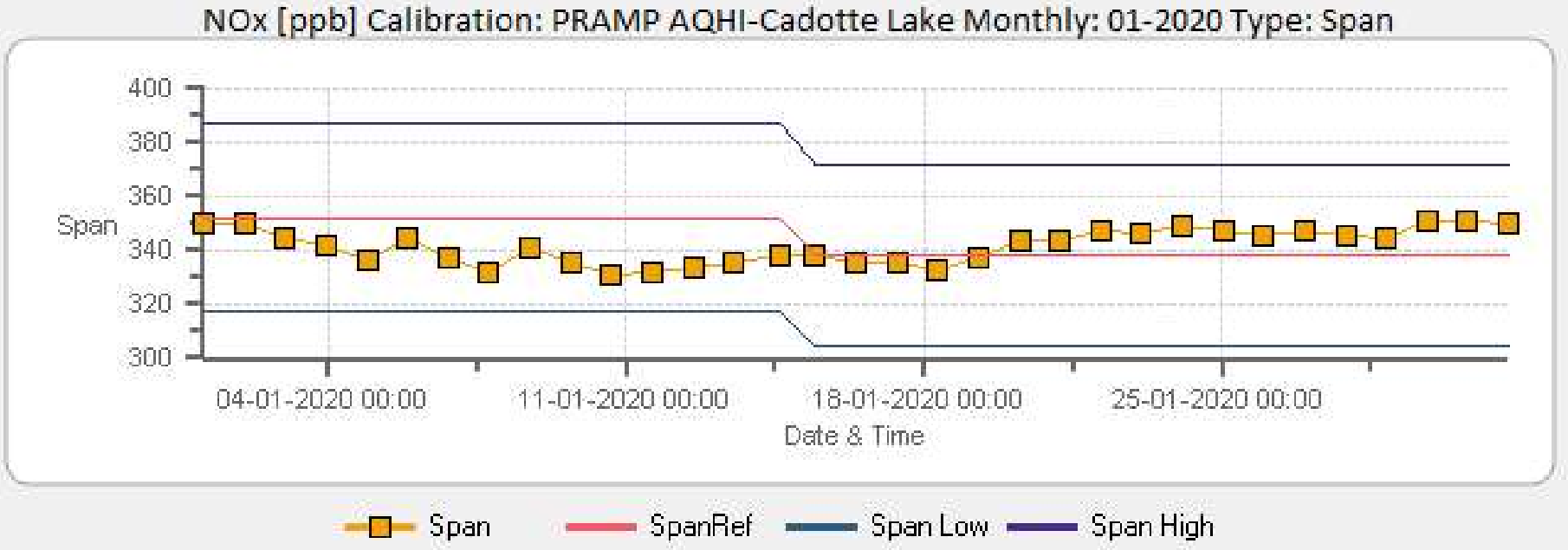
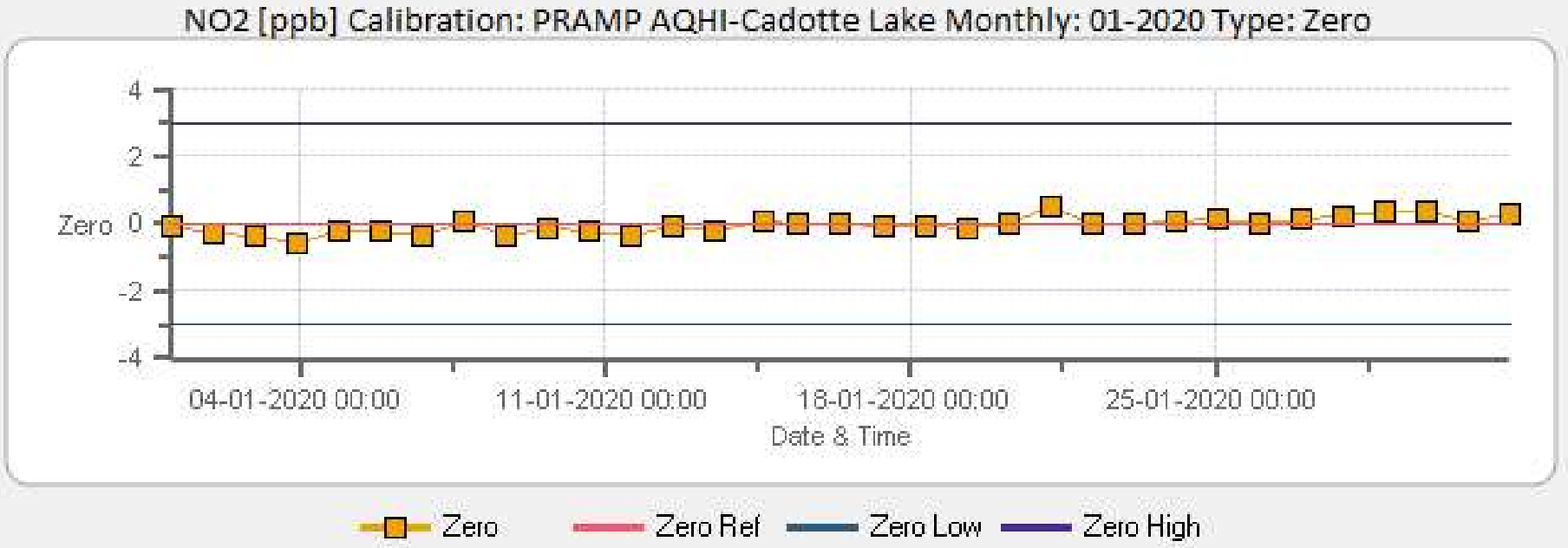
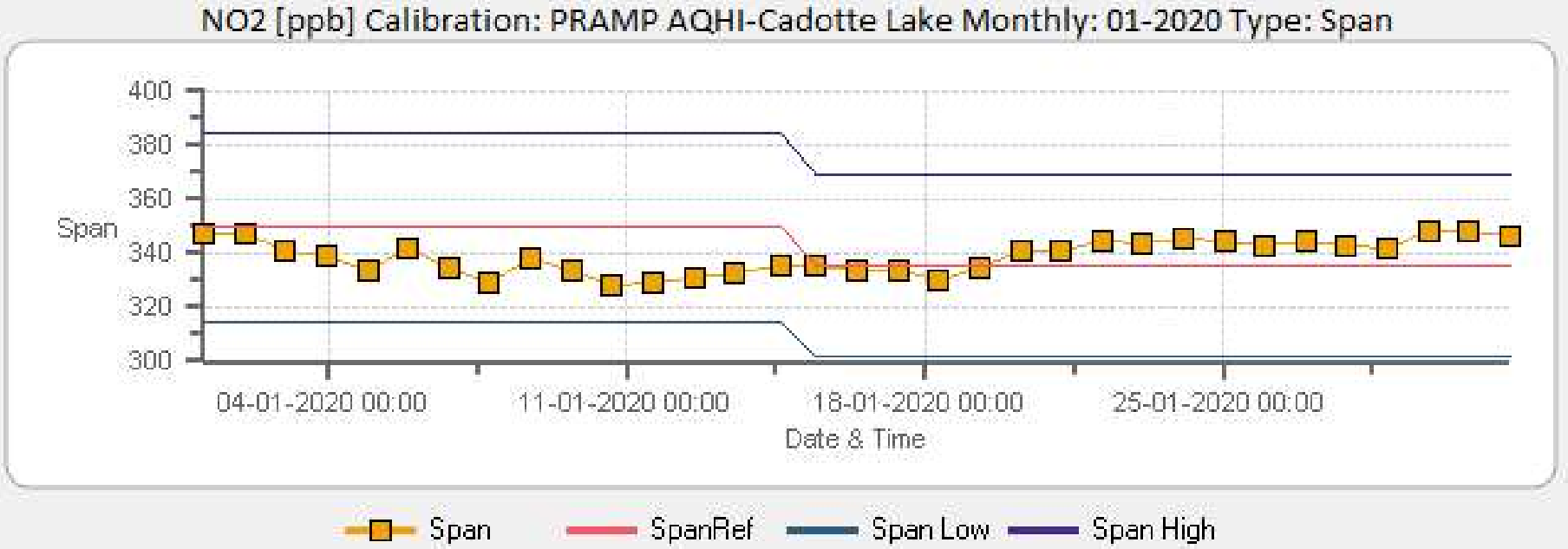
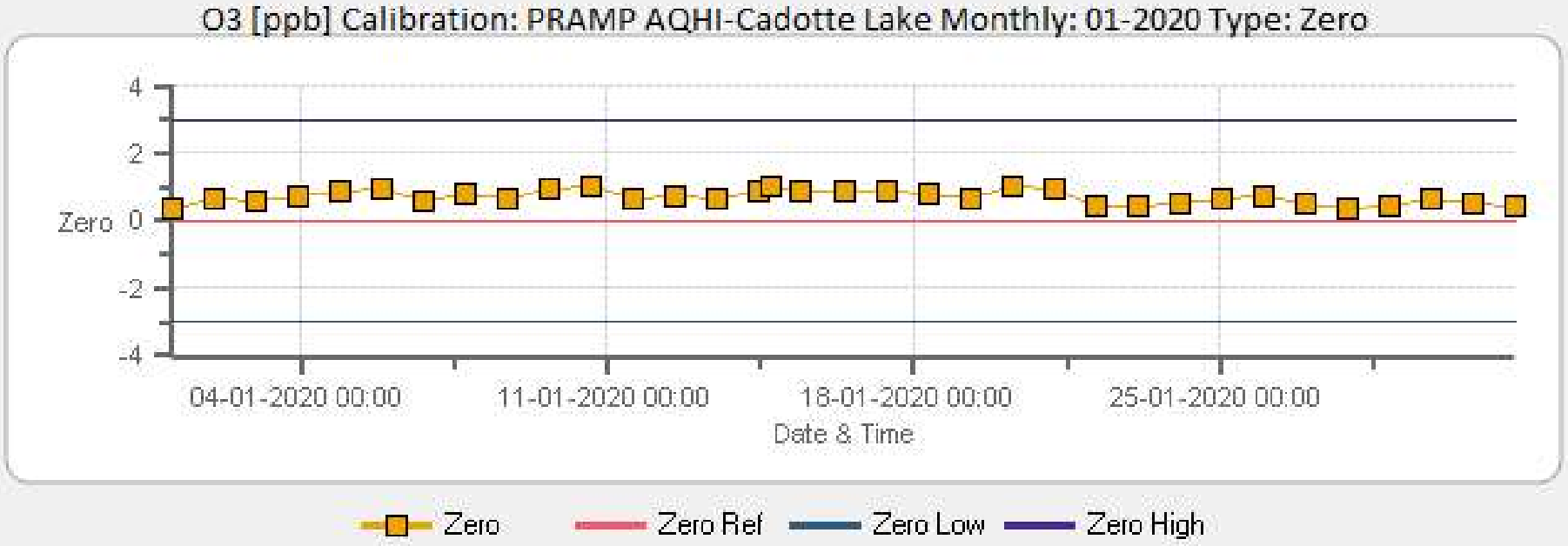
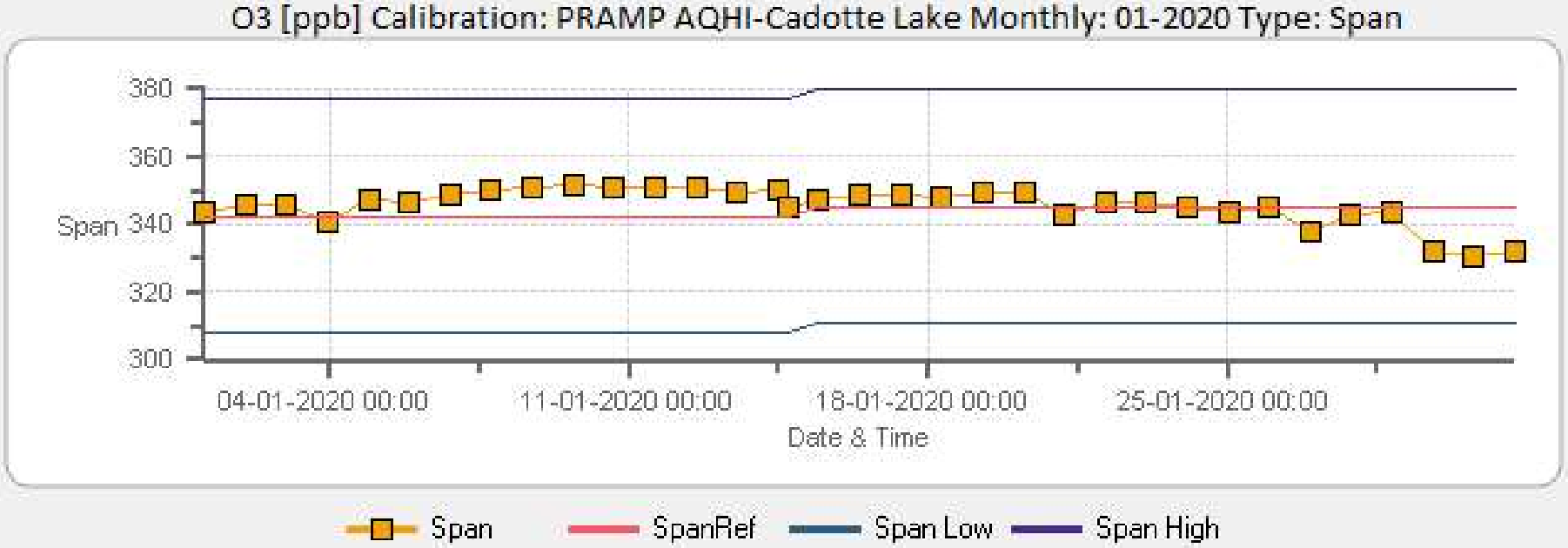
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High

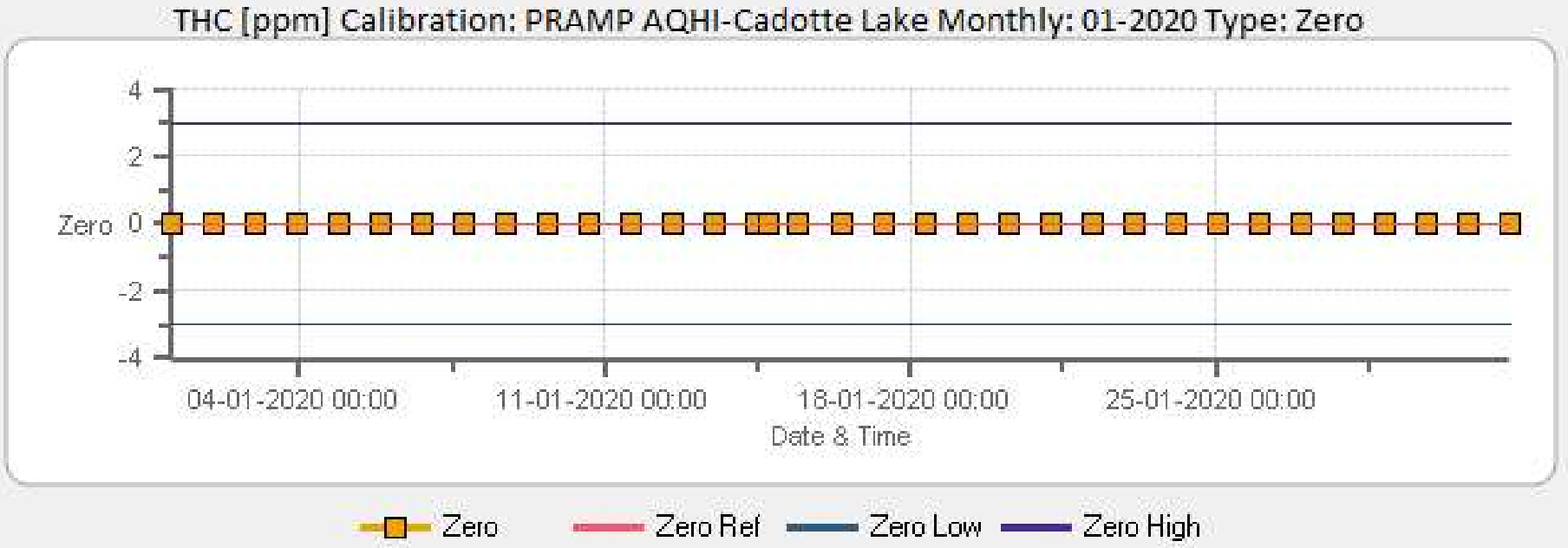

NOx [ppb] Calibration: PRAMP AQHI-Cadotte Lake Monthly: 01-2020 Type: Span
400
380
360
Span
340
320
300
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High

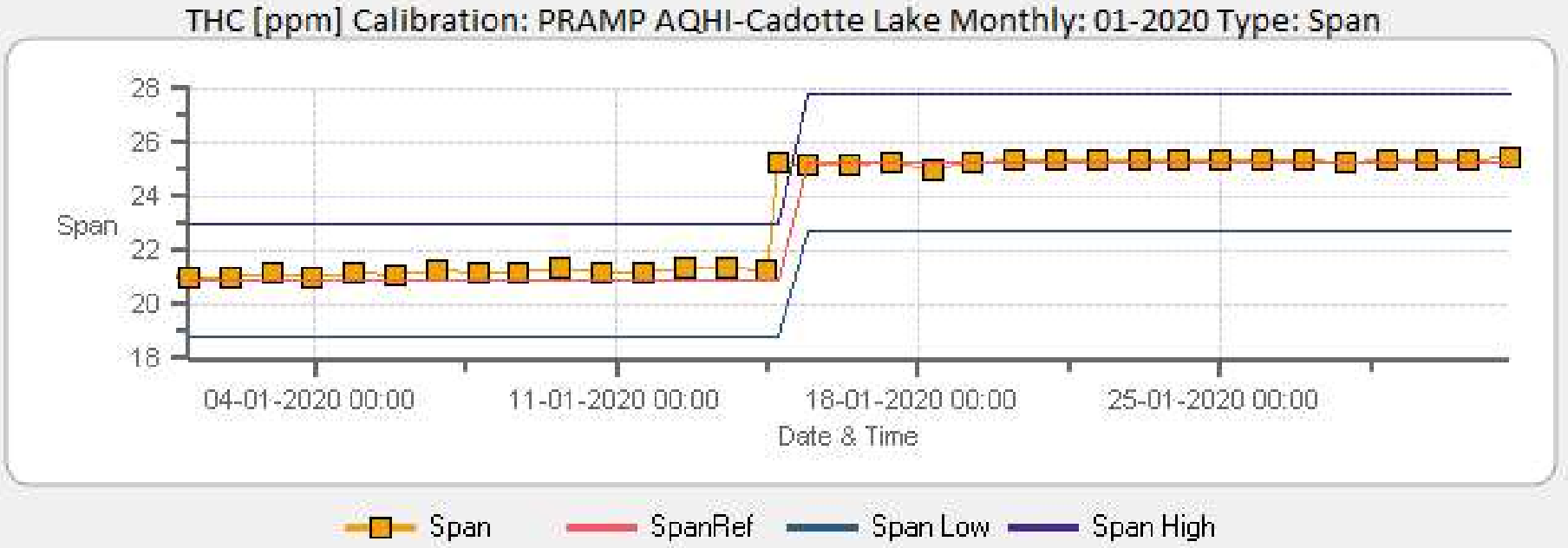

NO2 [ppb] Calibration: PRAMP AQHI-Cadotte Lake Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High

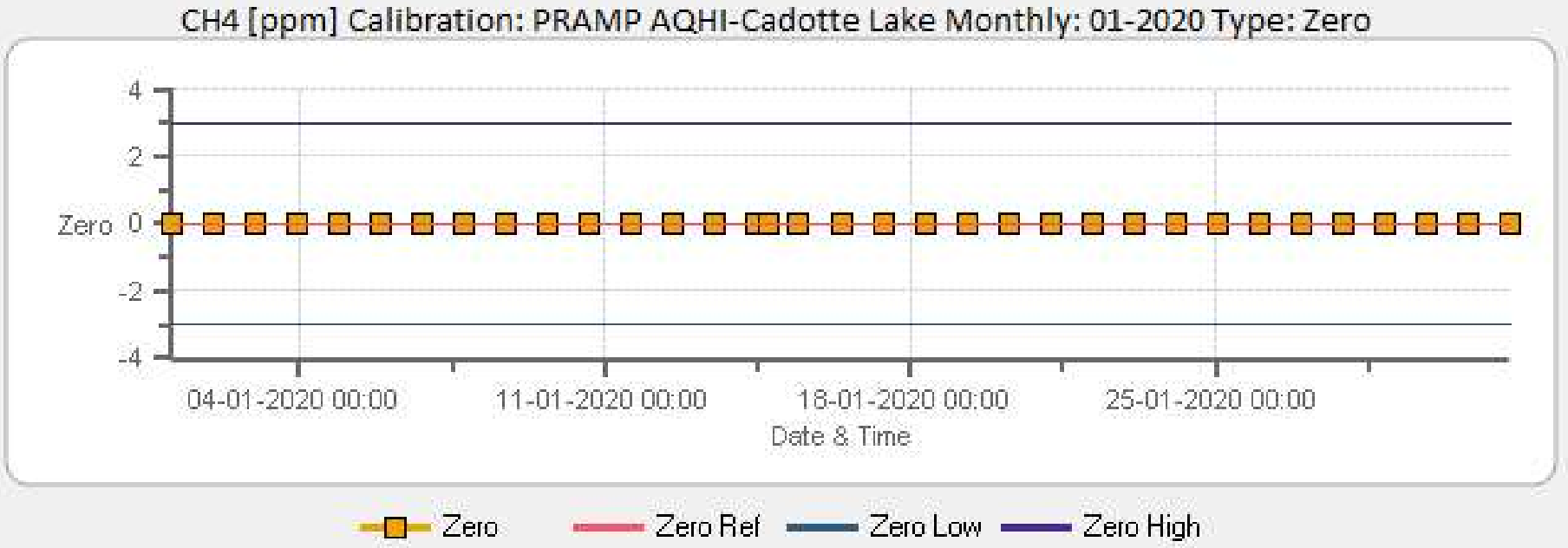

NO2 [ppb] Calibration: PRAMP AQHI-Cadotte Lake Monthly: 01-2020 Type: Span
400
380
360
Span
340
320
300
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High

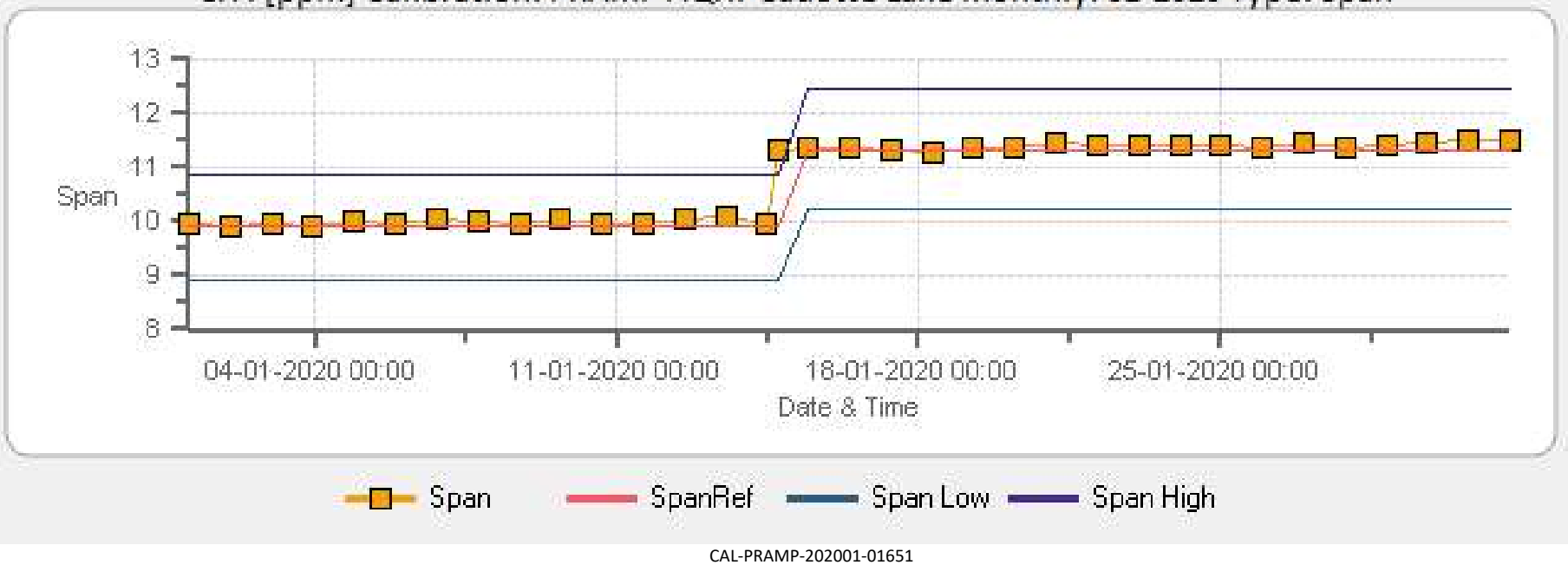

O3 [ppb] Calibration: PRAMP AQHI-Cadotte Lake Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High

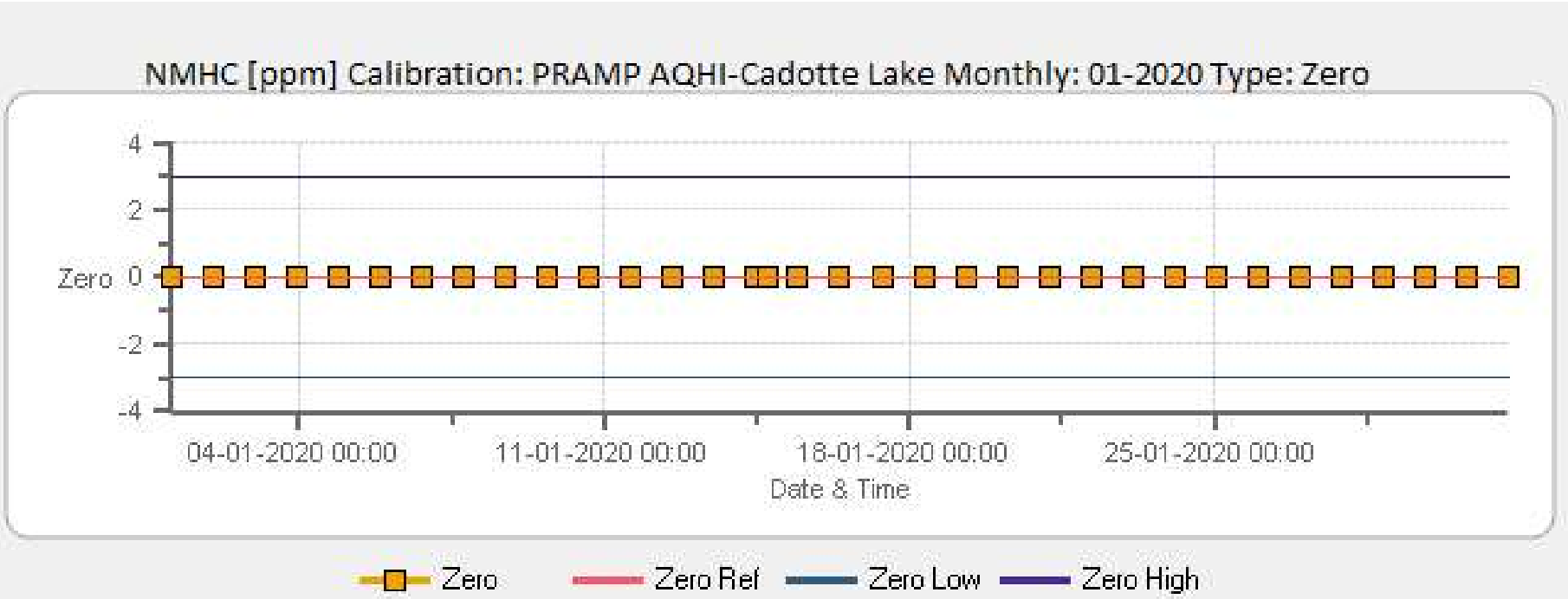

O3 [ppb] Calibration: PRAMP AQHI-Cadotte Lake Monthly: 01-2020 Type: Span
380
360
Span 340
320
300
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High

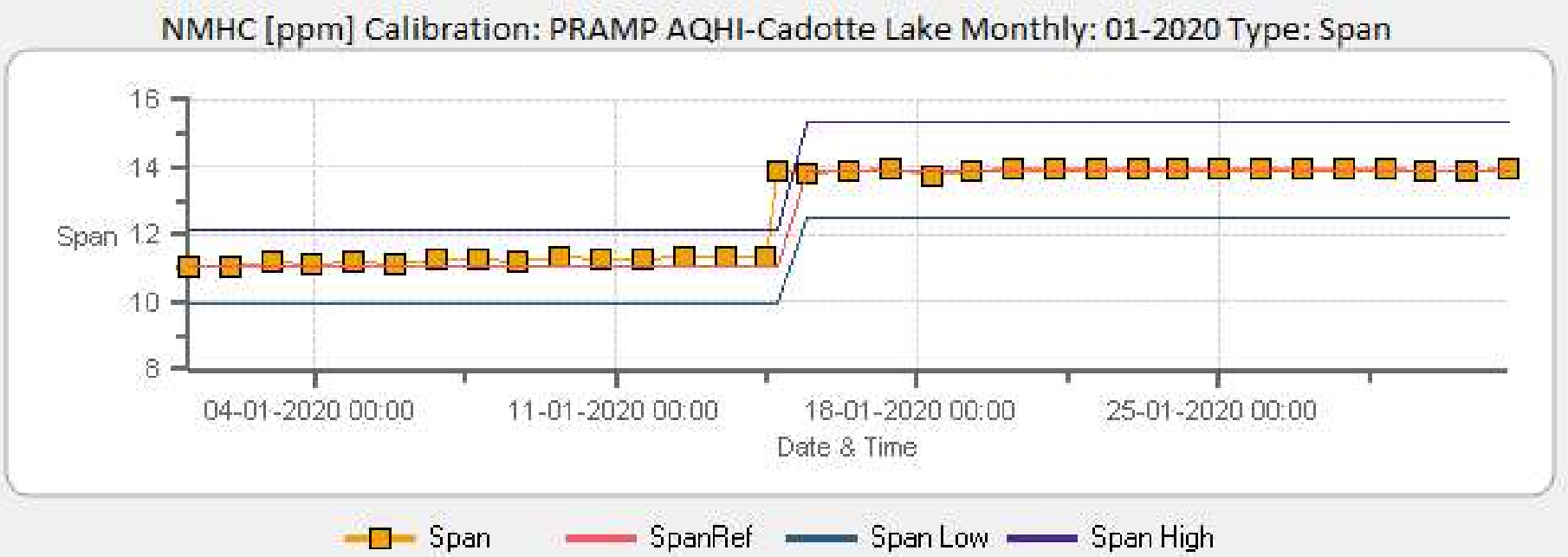

THC [ppm] Calibration: PRAMP AQHI-Cadotte Lake Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High


THC [ppm] Calibration: PRAMP AQHI-Cadotte Lake Monthly: 01-2020 Type: Span
28
26
24
Span
22
20
18
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High


CH4 [ppm] Calibration: PRAMP AQHI-Cadotte Lake Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High


CH4 [ppm] Calibration: PRAMP AQHI-Cadotte Lake Monthly: 01-2020 Type: Span
13
12
11
Span
10
9
8
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High


NMHC [ppm] Calibration: PRAMP AQHI-Cadotte Lake Monthly: 01-2020 Type: Zero
4
2
Zero 0
-2
-4
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High


NMHC [ppm] Calibration: PRAMP AQHI-Cadotte Lake Monthly: 01-2020 Type: Span
16
14
Span 12
10
8
04-01-2020 00:00
11-01-2020 00:00
18-01-2020 00:00
25-01-2020 00:00
Date & Time
Span
SpanRef
Span Low
Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	14-Jan-2020	PREVIOUS CALIBRATION DATE:	17-Dec-2019
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	22.8
LOCATION:	Cadotte Lake	BAROMETRIC (mBar):	953
PURPOSE	Routine	START TIME (MST):	09:18
PERFORMED BY:	Chris Wesson	END TIME (MST):	14:00

ANALYZER:

MAKE/MODEL	Teledyne T100	RANGE	500 ppb
SERIAL #	722	FLOW (mL/min)	545
INITIAL		FINAL	
BKG/OFFSET	18.6	BKG/OFFSET	18.6
COEF/SLOPE	0.953	COEF/SLOPE	0.952
Expected (reference) Value	288.2	Expected (reference) Value	273.8

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Environics	MAKE:	Teledyne
MODEL:	2000	MODEL:	T701
ID:	1991	ID:	134
MFC CALIBRATION DATE:	19-Nov-2019	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL19664	HIGH ID	n/a
CONC (ppm):	24.20	EXPIRY DATE	n/a
CYLINDER (psi):	1700	LOW ID	n/a
EXPIRY DATE	03-Jul-2023	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
4000		4000	0.00	-0.6	0		
3939	62.82	4002	379.83	378.9	379.8	1.001	1.000
3970	29.74	4000	179.94	n/a	179.2	n/a	1.004
3987	14.84	4001	89.77	n/a	89.3	n/a	1.005

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	-0.1%

COMMENTS:

TRS Analyzer Calibration by Dilution

DATE:	14-Jan-2020	PREVIOUS CALIBRATION DATE:	n/a
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	n/a
CLIENT:	PRAMP	TEMPERATURE (°C):	22.6
LOCATION:	Cadotte Lake	BAROMETRIC (mBar):	953
PURPOSE	Install/Post-Repair	START TIME (MST):	14:29
PERFORMED BY:	Chris Wesson	END TIME (MST):	18:11

ANALYZER:

MAKE/MODEL	Teledyne T100U	RANGE	100 ppb
SERIAL #	132	FLOW (mL/min)	523
INITIAL		FINAL	
BKG/OFFSET	16.3	BKG/OFFSET	16.2
COEF/SLOPE	1.073	COEF/SLOPE	1.072
Expected (reference) Value	63.7	Expected (reference) Value	61.44

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Environics	MAKE:	Teledyne
MODEL:	2000	MODEL:	T701
ID:	1991	ID:	134
MFC CALIBRATION DATE:	19-Nov-2019	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY0000644	HIGH ID	n/a
CONC (ppm):	10.00	EXPIRY DATE	n/a
CYLINDER (psi):	1700	LOW ID	n/a
EXPIRY DATE	16-Jul-2022	EXPIRY DATE	n/a

CALIBRATION PARAMETERS:

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

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

START TIME:	15:15	SO2 Conc (ppb)	380
END TIME:	15:39	Analyzer Response (ppb)	0.2

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
4002		4002	0.00	n/a	0		
3969	31.21	4000	78.01	n/a	78.01	n/a	1.000
3987	15.22	4002	38.04	n/a	37.82	n/a	1.006
3994	7.64	4002	19.09	n/a	18.93	n/a	1.009

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	-0.1%

COMMENTS:

Sample filter changed.

NOx Calibration by Dilution/Gas-Phase Titration

CALIBRATION:

DATE:	14-Jan-2020	PREVIOUS CALIBRATION DATE:	17-Dec-2019
CLIENT:	PRAMP	TEMPERATURE (°C):	22.0
LOCATION:	Cadotte Lake	BAROMETRIC (mBar):	953.40
PURPOSE	Routine	START TIME (MST):	09:18
PERFORMED BY:	Chris Wesson	END TIME (MST):	14:58

ANALYZER:

MAKE/MODEL:	Teledyne T200	PREVIOUS CF.	
SERIAL #:	837	NOx	1.000
FLOW (mL/min)	448	NO	1.000
RANGE (ppb)	500	NO2	1.003
GPT FOR O3?		Yes	

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	Sabio	MAKE:	Teledyne	CYLINDER ID:	LL48147		HIGH ID:	n/a
MODEL:	2010	MODEL:	T701	NO/NOx (PPM):	50.5	50.6	HIGH EXPIRY:	n/a
ID:	26801218	ID:	134	CYLINDER (psi):	1400		LOW ID:	n/a
MFC CALIBRATION DATE:	28-Nov-2019	OXIDIZER ID:	n/a	EXPIRY DATE	20-Aug-2026		LOW EXPIRY:	n/a

CALIBRATION SETTINGS:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
BKG/OFFSET:	1	0.3	n/a	BKG/OFFSET:	-0.1	-0.4	n/a
SLOPE/COEF/CE:	1.054	1.054	1	SLOPE/COEF/CE:	1.073	1.072	1

EXPECTED (REFERENCE) VALUE:

INITIAL	NOx	NO	NO2	FINAL	NOx	NO	NO2
	352	350	2.5		338	2	335.8

CALIBRATION PARAMETERS:

POINT	NO TARGET (PPB)	NO2 TARGET (PPB)	NO2 RANGE	O3 POINT
HIGH	395	250	240-275	n/a
MID	180	154	150-157	Mid
LOW	90	54	50-58	Low
EXTRA 1	n/a	340	300-370	High

NO/NOx CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (ppb)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2	NO	NOx	NO2
5016		5016	0.0	0.0	0.0	-0.3	-0.5	-0.2	0.0	0.0	0.0						
4979	39.10	5018	393.5	394.3	0.8	383.2	384.2	1.1	393.5	394.3	0.8	1.026	1.025		1.000	1.000	
5000	17.80	5018	179.1	179.5	0.4	n/a	n/a	n/a	179.1	180.0	0.9	n/a	n/a		1.000	0.997	
5008	8.90	5017	89.6	89.8	0.2	n/a	n/a	n/a	88.8	88.7	-0.1	n/a	n/a		1.009	1.012	

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	39.10	5018	0	395.6	395.6	0.0				
AS-FOUND HIGH	39.10	5018	250	131.2	395.8	264.6	264.4	264.6	0.999	100.08%
ADJUSTED HIGH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a
MID	39.10	5018	147	241.6	396.0	154.4	154	154.4	0.997	100.26%
LOW	39.10	5018	53	340.8	396.6	55.9	54.8	55.9	0.980	102.01%
NO2 adjustment not required.									AVERAGE:	100.78%

LINEAR REGRESSION ANALYSIS:

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

COMMENTS:

Additional GPT point for O3: Setting = 350, O3 conc = 379.4

Shaping a world of trust

Ozone Calibration by Direct GPT

DATE:	14-Jan-2020	PREVIOUS CALIBRATION DATE:	18-Dec-2019
PARAMETER:	O3	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	22.6
LOCATION:	Cadotte Lake	BAROMETRIC (mBar):	953
PURPOSE	Routine	START TIME (MST):	14:29
PERFORMED BY:	Chris Wesson	END TIME (MST):	18:04

ANALYZER:

MAKE/MODEL	Teledyne T400	RANGE	500 ppb
SERIAL #	824	FLOW (mL/min)	781
INITIAL		FINAL	
BKG/OFFSET	-1.1	BKG/OFFSET	-1
COEF/SLOPE	1.028	COEF/SLOPE	1.023
Expected (reference) Value	342.5	Expected (reference) Value	345.2

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Sabio	MAKE:	Teledyne
MODEL:	2010	MODEL:	T701
ID:	26801218	ID:	134
MFC CALIBRATION DATE:	28-Nov-2019	OXIDIZER ID:	n/a
	CALIBRATION METHOD:	Direct GPT	
GPT DATE:	14-Jan-2020	GPT END TIME:	14:58

CALIBRATION PARAMETERS:

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

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
5017		5017	0.0	-0.2	0.0		
5017		5017	379.4	380.2	379.5	0.997	1.000
5017		5017	154.0	n/a	154.9	n/a	0.994
5017		5017	54.8	n/a	54.1	n/a	1.013

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	0.0%

COMMENTS:

Sample filter changed.

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	14-Jan-2020	PREVIOUS CALIBRATION DATE:	18-Dec-2019
CLIENT:	PRAMP	TEMPERATURE (°C):	22.6
LOCATION:	Cadotte Lake	BAROMETRIC (mBar):	953
PURPOSE	Routine	START TIME (MST):	14:29
PERFORMED BY:	Chris Wesson	END TIME (MST):	18:05

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1501663728	1125
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	1.001	0.998	1.000

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	Sabio	MAKE:	Teledyne	CYLINDER ID:	LL107207		HIGH ID:	n/a
MODEL:	4010	MODEL:	T701	CH_4/C_3H_8 (ppm):	600.0	207.0	HIGH EXPIRY:	n/a
ID:	08400311	ID:	134	CYLINDER (psi):	800		LOW ID:	n/a
MFC CALIBRATION DATE:	17-Oct-2019	OXIDIZER ID:	Internal	EXPIRY DATE	18-Oct-2025		LOW EXPIRY:	n/a

CALIBRATION PARAMETERS:

POINT (CH4/NMHC)	HIGH	MID	LOW	CH4 EQUIVILANCE	
TARGET	14	7	3.5	C_3H_8 as CH_4	569.3
RANGE	12 - 16	6 - 8	2 - 4	THC as CH_4	1169.3

EXPECTED (REFERENCE) VALUE:

INITIAL	CH4	NMHC	THC	FINAL	CH4	NMHC	THC
	9.89	11.04	20.93		11.34	13.92	25.26

CALIBRATION:

FLOW RATE (mL/min)			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC	CH4	NMHC	THC
2998		2998	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00						
2927	70.00	2997	14.01	13.30	27.31	13.85	13.29	27.14	14.01	13.32	27.34	1.012	1.000	1.006	1.000	0.998	0.999
2964	35.00	2999	7.00	6.64	13.65	n/a	n/a	n/a	6.87	6.60	13.47	n/a	n/a	n/a	1.019	1.007	1.013
2984	17.50	3001	3.50	3.32	6.82	n/a	n/a	n/a	3.39	3.27	6.66	n/a	n/a	n/a	1.032	1.015	1.024

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	1.001	-0.3%
NMHC	1.000	1.003	-0.2%
THC	1.000	1.002	-0.3%

COMMENTS:

Sample filter changed. N2 (carrier) changed. Span gas changed.

Teledyne T640 Audit/Calibration

Date/Previous Audit Date:	January 14, 2020	December 17, 2019	**Weather Conditions:**	Light snow	
Company:	PRAMP		**Start Time (mst):**	15:16	
Station:	Cadotte Lake		**End Time (mst):**	15:40	
Parameter:	PM 2.5		**Performed By:**	Chris Wesson	
Instrument Data:					
Make/Model:	Teledyne T640		**Serial Number:**	318	
Owner:	PRAMP		**Alarms (detail in comments):**	No	
Reference Standards/I.D./Expiry Date:					
Flow Standard:	Maxxam ID #3 expires May 23, 2020		**Temperature:**	F.S. 181341226 expires June 07, 2020	
Digital Manometer:	Dwyer 475 Mark III id# 2 expires Jan 22, 2020		**Pressure:**	Brunton 05535 expires Jan 07, 2021	

DIAGNOSTICS:

Ambient Pressure (mmHg)	715.0	Ambient Temp (°C)	-25.4	ASC Heater Duty (%)	0.0
Box Temp (°C)	24.5	Current PMT HV (V)	1540	LED Temp (°C)	33.54
P3 Value	44	PMT Setting (V)	1547	Pump PWM (%)	46
Sample Flow (L/min)	5.05	Sample RH (%RH)	1.2	Sample Temp (°C)	22.4

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)	715.0	715.0	715	715	+/- 10 mm Hg
Ambient Temperature (°C)	-25.70	-25.5	n/a		+/- 2°C
Sample Flow (L/min)	4.94	5.01	5.03	5.02	+/-5% of T640x (e.g., 4.75 – 5.25 lpm)
Additional Monthly Maintenance :					***Completed***
				Inlet cleaned?	Yes
				Sample tubing inspected (inner and outer)?	Yes

Quarterly Audit/Calibration:

SpanDust™ Standard	Peak at Channel	Lot No:	Expiry:
	n/a	n/a	n/a

Item:	Verification:		Calibration (if needed):		Tolerance
	Reference	T640x	Reference	T640x	
Peak Channel	n/a	n/a	n/a	n/a	± 0.5
PMT Setting (V)	n/a	n/a	n/a	n/a	n/a
Peak Channel Counts:	n/a	n/a	n/a	n/a	n/a

Additional Checks and Maintenance:		***Completed***
Every 6 Months	1. Clean Optical Chamber	No
	2. Clean RH Sensor	No
	3. Clean Temp Sensor	No
Every 12 months (or if valve or pump PWM value approaches 80%)	1. New internal Disposable Filter Unit (DFU) [inside front panel]	No

Comments:

Meteorological System Checklist

Date:	January 14, 2020		
Technician:	Chris Wesson		
Reviewer:	Wunmi Adekanmbi		
Station:	PRAMP Cadotte Lake		
Unit:	**Make:**	**Model:**	**Serial #:**
Temperature Sensor:	Vaisala	HMP155	N2910506
Relative Humidity Sensor:	Vaisala	HMP155	N2910506
Anemometer:	MetOne	010C / 020C	W15277 / WW16102
AMBIENT TEMPERATURE SENSOR CHECK			
Previous check date:	December 18, 2019		
Parameter:	Temperature @ 2 metres		
Reference Thermometer ID:	FS 181341226		
Reference Temperature (^{o}C):	-26.7		
Station - Ambient Temperature (^{o}C):	-27.2		
Temperature Difference (^{o}C):	0.5		
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Previous check date:	December 18, 2019		
Reference Hygrometer ID:	FS 181341226		
Reference Hygrometer % RH- Reading:	74.40		
Station Hygrometer % RH- Reading:	66.30		
RH Tolerance +/- 15% of difference:	63.24 - 85.56	10.9%	
ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK			
WIND SPEED		WIND DIRECTION	
Previous check date:	December 18, 2019	Previous check date:	December 18, 2019
Wind Speed Observed (kph):	5-10	Wind Direction Observed:	N
Wind speed on Data Logger (kph):	6.7	Wind Direction on Data Logger:	N
		Wind Direction Pass/Fail?:	Pass
Comments			

Meteorological Sensor Audit/Calibration

Location Information

Company:	PRAMP	**Performed By:**	Chris Wesson
Audit Location:	BV Edmonton Lab	**Reviewed By:**	Wunmi Adekanmbi
Audit Date:	June 28, 2019	**Start/End Time (mst):**	13:03 / 13:22
Calibration Purpose:	installation	**Weather Conditions:**	n/a - in shop

Wind Sensor Information

Sensor ID Data:		**Sensor Outputs:**	
Sensor Make:	MetOne	**Velocity Voltage Output Range:**	n/a (frequency)
Sensor Model:	Speed: 010C / Direction: 020C	**Velocity Unit Output Range:**	0-160 kph
Serial #:	Speed: W15277 / Direction: W16102	**Direction Voltage Output Range:**	0-5 v
Previous Cal/Audit Date:	n/a or unknown	**Direction Unit Output Range:**	0-360 deg

Wind Calibrator Information

Calibrator I.D. and Expiry Date: RM Young 18811 #R9133 Expires: Jun 07, 2020

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	-
50	5.8	5.6	5.8	1.012
100	10.6	10.5	10.5	1.006
200	20.1	20.2	20.2	0.997
300	29.7	29.6	29.8	1.001
400	39.3	39.3	39.3	1.000
500	48.9	48.7	48.7	1.004
600	58.5	58.2	58.4	1.003
700	68.1	67.9	68.0	1.002
800	77.7	77.3	77.8	1.002
900	87.3	86.7	87.3	1.003
		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	354	0.0	1.3	0.7
30	330	32	329	-1.7	0.9	1.3
60	300	62	299	-1.9	1.1	1.5
90	270	91	269	-1.1	1.5	1.3
120	240	121	239	-1.0	0.9	1.0
150	210	151	210	-0.8	0.4	0.6
180	180	180	180	0.1	-0.3	0.2
210	150	210	151	0.5	-0.8	0.7
240	120	239	122	0.6	-1.9	1.3
270	90	269	92	1.0	-1.7	1.4
300	60	299	62	0.8	-1.8	1.3
330	30	329	32	0.7	-1.6	1.2
355	0	354	1	1.3	1.1	1.2
The audit meets AMD requirements.			**Average Absolute Degrees Difference=**			**1.0**

Comments:

Peace River Area Monitoring Program

JANUARY 2020

Ambient Air Monitoring

Certified Laboratory Analysis Report

LAB-PRAMP-202001

Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Report:
InnoTech Alberta

February 13, 2020

InnoTech ALBERTA

Highway 16A & 75 Street
PO Bag 4000
Vegreville, AB, T9C 1T4
Environmental Analytical Services
Phone: (780) 632-8403 Fax: (780) 632-8620

EAS CANISTER
Sample ID: 20010028-001

Customer ID: PRAMP
Cust Samp ID: PRAMP_842-20200103
Priority: Normal

Date Received- Lab Use Only RECEIVED JAN 0 6 2020

Client Contact Details:

Contact: Karla Ressor, Michael Bisaga/ Lily Lin
Company: PRAMP Airshed
PO#: ☐ 842 Station ☐ 986 Station ☐ Reno Station
Address: ☐ 842 (Lat. 56.27406N, Long. 116.98129W)
☐ 986 (Lat. 56.376056N, Long. 116.940704W)
☐ Reno (Lat. 55.86936N, Long. 117.05739W)
Telephone: 403-8072995, 780-2667068/587-2252248
Email: karla@prampairshed.ca, pramptech@prampairshed.ca

RUSH (Surcharge) ☐

Invoice Instructions:
Send to: officemanager@prampairshed.ca, karla@prampairshed.ca, pramptech@prampairshed.ca Attention: PRAMP Office Manager
Any correspondence related to canister analysis, send the information to karla@prampairshed.ca and pramptech@prampairshed.ca

InnoTech Contact: Graham Knox Phone: 780-6328403 Cell: 780-6321519
Email: Graham.Knox@innotechalberta.ca

Sample ID (PRAMP_statiom_yyyymmdd)	Canister Number	Sample Description	Date/Time Sampled From/To: Date (dd/mm/yy)	Date/Time Sampled From/To: Time (24 Hr) (MST)	Analysis Requested
PRAMP_842-20200103 (Sample date: yyyymmdd) PRAMP_986- (Sample date: yyyymmdd) PRAMP_Reno- (Sample date: yyyymmdd)	32265	X Methane Trigger READ 20200103 ☐ NMHC Trigger	03/01/20 mw	1630	* AIR C1C4, AIR VOC, AIR RSC * Unknown to be reported * Carbon Isotopic Analysis (if sample is collected from Methane trigger)

Sample Collection:

Collect By PRAMP **(Name) of** READ GLOBAL **(Company) on** JAN 3 1630 **(Date/Time (MST).**

Sample ID: 20010028-001

Customer ID: PRAMP

Cust Samp ID: PRAMP_842-20200103

Priority: Normal

RECEIVED
JAN 0 6 2020

InnoTech ALBERTA

Canister ID: 32265

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed on: Dos4 Evacuated on OCT 3 0 2019

Recertified on: DEC 0 5 2019

(3 months from evacuation date, if required)

Laboratory Contact Number: 780-632-8403

Sample ID: METHANE TRIGGER

Sampled By: WR GLOW SAM 3

Starting Vacuum: -27.2 "Hg

End Vacuum: 6 "Hg/ psig -6 Hg mw

PO Bag 4000
Vegreville, Alberta
Canada T9C 1T4
(780) 632-8211

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Office Manager
Peace River Area Monitoring Program Committee

INVOICE: Karla Reesor 403 807 2995

CLIENT SAMPLE ID: PRAMP_842-20200103

Matrix: Ambient Air

CANISTER ID: 32265

PRIORITY: Normal

DESCRIPTION: RENO 20200103

DATE SAMPLED: 03-Jan-20 10:30

DATE RECEIVED: 06-Jan-20

REPORT CREATED: 17-Jan-20

REPORT NUMBER: 20010028

VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010028-001	1-Butene	K, T, U	< 0.17	ppmv	0.17	NA-025	07-Jan-20
20010028-001	Acetylene	K, T, U	< 0.14	ppmv	0.14	NA-025	07-Jan-20
20010028-001	n-Butane	K, T, U	< 0.3	ppmv	0.3	NA-025	07-Jan-20
20010028-001	cis-2-Butene	K, T, U	< 0.07	ppmv	0.07	NA-025	07-Jan-20
20010028-001	Ethane	K, T, U	< 0.2	ppmv	0.2	NA-025	07-Jan-20
20010028-001	Ethylacetylene	K, T, U	< 0.10	ppmv	0.10	NA-025	07-Jan-20
20010028-001	Ethylene	K, T, U	< 0.12	ppmv	0.12	NA-025	07-Jan-20
20010028-001	Isobutane	K, T, U	< 0.2	ppmv	0.2	NA-025	07-Jan-20
20010028-001	Isobutylene	K, T, U	< 0.2	ppmv	0.2	NA-025	07-Jan-20
20010028-001	Methane		2.9	ppmv	0.2	NA-025	07-Jan-20
20010028-001	n-Propane	K, T, U	< 0.12	ppmv	0.12	NA-025	07-Jan-20
20010028-001	Propylene	K, T, U	< 0.2	ppmv	0.2	NA-025	07-Jan-20
20010028-001	Propyne	K, T, U	< 0.2	ppmv	0.2	NA-025	07-Jan-20
20010028-001	trans-2-Butene	K, T, U	< 0.16	ppmv	0.16	NA-025	07-Jan-20
20010028-001	2,5-Dimethylthiophene	K, T, U	< 0.5	ppbv	0.5	NA-024	08-Jan-20
20010028-001	2-Ethylthiophene	K, T, U	< 0.3	ppbv	0.3	NA-024	08-Jan-20
20010028-001	2-Methylthiophene	K, T, U	< 0.3	ppbv	0.3	NA-024	08-Jan-20
20010028-001	3-Methylthiophene	K, T, U	< 0.5	ppbv	0.5	NA-024	08-Jan-20

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: January 17, 2020

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

PO Bag 4000
Vegreville, Alberta
Canada T9C 1T4
(780) 632-8211

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PRAMP_842-20200103	32265	Ambient Air	03-Jan-20 10:30

DESCRIPTION: RENO 20200103

REPORT NUMBER: 20010028 **REPORT CREATED:** 17-Jan-20 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010028-001	Butyl mercaptan	K, T, U	< 0.5	ppbv	0.5	NA-024	08-Jan-20
20010028-001	Carbon disulphide	K, T, U	< 0.3	ppbv	0.3	NA-024	08-Jan-20
20010028-001	Carbonyl sulphide		0.8	ppbv	0.5	NA-024	08-Jan-20
20010028-001	Dimethyl disulphide	K, T, U	< 0.3	ppbv	0.3	NA-024	08-Jan-20
20010028-001	Dimethyl sulphide	K, T, U	< 0.3	ppbv	0.3	NA-024	08-Jan-20
20010028-001	Ethyl mercaptan	K, T, U	< 0.5	ppbv	0.5	NA-024	08-Jan-20
20010028-001	Ethyl sulphide	K, T, U	< 0.5	ppbv	0.5	NA-024	08-Jan-20
20010028-001	Hydrogen sulphide		1.9	ppbv	0.5	NA-024	08-Jan-20
20010028-001	Isobutyl mercaptan	K, T, U	< 0.5	ppbv	0.5	NA-024	08-Jan-20
20010028-001	Isopropyl mercaptan	K, T, U	< 0.5	ppbv	0.5	NA-024	08-Jan-20
20010028-001	Methyl mercaptan	K, T, U	< 0.3	ppbv	0.3	NA-024	08-Jan-20
20010028-001	Pentyl mercaptan	K, T, U	< 0.7	ppbv	0.7	NA-024	08-Jan-20
20010028-001	Propyl mercaptan	K, T, U	< 0.7	ppbv	0.7	NA-024	08-Jan-20
20010028-001	tert-Butyl mercaptan	K, T, U	< 0.5	ppbv	0.5	NA-024	08-Jan-20
20010028-001	Thiophene	K, T, U	< 0.3	ppbv	0.3	NA-024	08-Jan-20
20010028-001	1,1,1-Trichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	08-Jan-20
20010028-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	08-Jan-20
20010028-001	1,1,2-Trichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	08-Jan-20
20010028-001	1,1-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	08-Jan-20
20010028-001	1,1-Dichloroethylene	K, T, U	< 0.07	ppbv	0.07	AC-058	08-Jan-20
20010028-001	1,2,3-Trimethylbenzene	K, T, U	< 0.09	ppbv	0.09	AC-058	08-Jan-20
20010028-001	1,2,4-Trichlorobenzene	K, T, U	< 1.4	ppbv	1.4	AC-058	08-Jan-20
20010028-001	1,2,4-Trimethylbenzene	K, T, U	< 0.09	ppbv	0.09	AC-058	08-Jan-20
20010028-001	1,2-Dibromoethane	K, T, U	< 0.03	ppbv	0.03	AC-058	08-Jan-20
20010028-001	1,2-Dichlorobenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	08-Jan-20

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: January 17, 2020

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PRAMP_842-20200103	32265	Ambient Air	03-Jan-20 10:30

DESCRIPTION: RENO 20200103

REPORT NUMBER: 20010028 **REPORT CREATED:** 17-Jan-20 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010028-001	1,2-Dichloroethane	I	0.04	ppbv	0.02	AC-058	08-Jan-20
20010028-001	1,2-Dichloropropane	I	0.03	ppbv	0.02	AC-058	08-Jan-20
20010028-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	08-Jan-20
20010028-001	1,3-Butadiene	I	0.05	ppbv	0.03	AC-058	08-Jan-20
20010028-001	1,3-Dichlorobenzene	K, T, U	< 0.5	ppbv	0.5	AC-058	08-Jan-20
20010028-001	1,4-Dichlorobenzene	K, T, U	< 0.7	ppbv	0.7	AC-058	08-Jan-20
20010028-001	1,4-Dioxane	K, T, U	< 0.7	ppbv	0.7	AC-058	08-Jan-20
20010028-001	1-Butene/Isobutylene	I	0.25	ppbv	0.03	AC-058	08-Jan-20
20010028-001	1-Hexene/2-Methyl-1-pentene	I	0.38	ppbv	0.03	AC-058	08-Jan-20
20010028-001	1-Pentene		0.08	ppbv	0.02	AC-058	08-Jan-20
20010028-001	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	08-Jan-20
20010028-001	2,2-Dimethylbutane		0.05	ppbv	0.02	AC-058	08-Jan-20
20010028-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	08-Jan-20
20010028-001	2,3-Dimethylbutane		0.08	ppbv	0.03	AC-058	08-Jan-20
20010028-001	2,3-Dimethylpentane		0.06	ppbv	0.03	AC-058	08-Jan-20
20010028-001	2,4-Dimethylpentane		0.05	ppbv	0.02	AC-058	08-Jan-20
20010028-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	08-Jan-20
20010028-001	2-Methylhexane		0.05	ppbv	0.02	AC-058	08-Jan-20
20010028-001	2-Methylpentane		0.11	ppbv	0.02	AC-058	08-Jan-20
20010028-001	3-Methylheptane		0.12	ppbv	0.03	AC-058	08-Jan-20
20010028-001	3-Methylhexane		0.09	ppbv	0.03	AC-058	08-Jan-20
20010028-001	3-Methylpentane		0.09	ppbv	0.02	AC-058	08-Jan-20
20010028-001	Acetone		0.9	ppbv	0.7	AC-058	08-Jan-20
20010028-001	Acrolein	K, T, U	< 0.5	ppbv	0.5	AC-058	08-Jan-20
20010028-001	Benzene		0.21	ppbv	0.02	AC-058	08-Jan-20

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: January 17, 2020

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PRAMP_842-20200103	32265	Ambient Air	03-Jan-20 10:30

DESCRIPTION: RENO 20200103

REPORT NUMBER: 20010028 **REPORT CREATED:** 17-Jan-20 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010028-001	Benzyl chloride	K, T, U	< 0.7	ppbv	0.7	AC-058	08-Jan-20
20010028-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	08-Jan-20
20010028-001	Bromoform	K, T, U	< 0.03	ppbv	0.03	AC-058	08-Jan-20
20010028-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	08-Jan-20
20010028-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	08-Jan-20
20010028-001	Carbon tetrachloride	I	0.06	ppbv	0.02	AC-058	08-Jan-20
20010028-001	Chlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	08-Jan-20
20010028-001	Chloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	08-Jan-20
20010028-001	Chloroform	K, T, U	< 0.03	ppbv	0.03	AC-058	08-Jan-20
20010028-001	Chloromethane	I	0.51	ppbv	0.03	AC-058	08-Jan-20
20010028-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	08-Jan-20
20010028-001	cis-1,3-Dichloropropene	K, T, U	< 0.07	ppbv	0.07	AC-058	08-Jan-20
20010028-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	08-Jan-20
20010028-001	cis-2-Pentene		0.04	ppbv	0.03	AC-058	08-Jan-20
20010028-001	Cyclohexane		0.28	ppbv	0.03	AC-058	08-Jan-20
20010028-001	Cyclopentane		0.11	ppbv	0.02	AC-058	08-Jan-20
20010028-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	08-Jan-20
20010028-001	Ethanol		0.6	ppbv	0.5	AC-058	08-Jan-20
20010028-001	Ethyl acetate	K, T, U	< 0.7	ppbv	0.7	AC-058	08-Jan-20
20010028-001	Ethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	08-Jan-20
20010028-001	Freon-11	I	0.21	ppbv	0.03	AC-058	08-Jan-20
20010028-001	Freon-113	I	0.04	ppbv	0.02	AC-058	08-Jan-20
20010028-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	08-Jan-20
20010028-001	Freon-12	I	0.52	ppbv	0.03	AC-058	08-Jan-20
20010028-001	Hexachloro-1,3-butadiene	K, T, U	< 0.87	ppbv	0.87	AC-058	08-Jan-20

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: January 17, 2020

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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Canada T9C 1T4
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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PRAMP_842-20200103	32265	Ambient Air	03-Jan-20 10:30

DESCRIPTION: RENO 20200103

REPORT NUMBER: 20010028 **REPORT CREATED:** 17-Jan-20 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010028-001	Isobutane		0.43	ppbv	0.03	AC-058	08-Jan-20
20010028-001	Isopentane		0.32	ppbv	0.05	AC-058	08-Jan-20
20010028-001	Isoprene		0.09	ppbv	0.02	AC-058	08-Jan-20
20010028-001	Isopropyl alcohol	K, T, U	< 0.7	ppbv	0.7	AC-058	08-Jan-20
20010028-001	Isopropylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	08-Jan-20
20010028-001	m,p-Xylene	K, T, U	< 0.05	ppbv	0.05	AC-058	08-Jan-20
20010028-001	m-Diethylbenzene	K, T, U	< 0.07	ppbv	0.07	AC-058	08-Jan-20
20010028-001	m-Ethyltoluene	K, T, U	< 0.14	ppbv	0.14	AC-058	08-Jan-20
20010028-001	Methyl butyl ketone	K, T, U	< 0.87	ppbv	0.87	AC-058	08-Jan-20
20010028-001	Methyl ethyl ketone	K, T, U	< 0.5	ppbv	0.5	AC-058	08-Jan-20
20010028-001	Methyl isobutyl ketone	K, T, U	< 0.7	ppbv	0.7	AC-058	08-Jan-20
20010028-001	Methyl methacrylate	K, T, U	< 0.12	ppbv	0.12	AC-058	08-Jan-20
20010028-001	Methyl tert butyl ether	I	0.11	ppbv	0.05	AC-058	08-Jan-20
20010028-001	Methylcyclohexane		0.15	ppbv	0.02	AC-058	08-Jan-20
20010028-001	Methylcyclopentane		0.13	ppbv	0.03	AC-058	08-Jan-20
20010028-001	Methylene chloride	K, T, U	< 0.5	ppbv	0.5	AC-058	08-Jan-20
20010028-001	n-Butane		0.65	ppbv	0.05	AC-058	08-Jan-20
20010028-001	n-Decane		0.26	ppbv	0.10	AC-058	08-Jan-20
20010028-001	n-Dodecane	K, T, U	< 0.7	ppbv	0.7	AC-058	08-Jan-20
20010028-001	n-Heptane		0.24	ppbv	0.02	AC-058	08-Jan-20
20010028-001	n-Hexane		0.17	ppbv	0.02	AC-058	08-Jan-20
20010028-001	n-Octane		0.13	ppbv	0.03	AC-058	08-Jan-20
20010028-001	n-Pentane		0.2	ppbv	0.2	AC-058	08-Jan-20
20010028-001	n-Propylbenzene	K, T, U	< 0.09	ppbv	0.09	AC-058	08-Jan-20
20010028-001	n-Undecane	K, T, U	< 0.9	ppbv	0.9	AC-058	08-Jan-20

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: January 17, 2020

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PRAMP_842-20200103	32265	Ambient Air	03-Jan-20 10:30

DESCRIPTION: RENO 20200103

REPORT NUMBER: 20010028 **REPORT CREATED:** 17-Jan-20 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010028-001	Naphthalene	K, T, U	< 0.9	ppbv	0.9	AC-058	08-Jan-20
20010028-001	n-Nonane	K, T, U	< 0.02	ppbv	0.02	AC-058	08-Jan-20
20010028-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	08-Jan-20
20010028-001	o-Xylene	K, T, U	< 0.02	ppbv	0.02	AC-058	08-Jan-20
20010028-001	p-Diethylbenzene	K, T, U	< 0.07	ppbv	0.07	AC-058	08-Jan-20
20010028-001	p-Ethyltoluene	K, T, U	< 0.12	ppbv	0.12	AC-058	08-Jan-20
20010028-001	Styrene	K, T, U	< 0.07	ppbv	0.07	AC-058	08-Jan-20
20010028-001	Tetrachloroethylene	K, T, U	< 0.07	ppbv	0.07	AC-058	08-Jan-20
20010028-001	Tetrahydrofuran	K, T, U	< 0.7	ppbv	0.7	AC-058	08-Jan-20
20010028-001	Toluene		0.30	ppbv	0.02	AC-058	08-Jan-20
20010028-001	trans-1,2-Dichloroethylene	I	0.03	ppbv	0.02	AC-058	08-Jan-20
20010028-001	trans-1,3-Dichloropropylene	K, T, U	< 0.07	ppbv	0.07	AC-058	08-Jan-20
20010028-001	trans-2-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	08-Jan-20
20010028-001	trans-2-Pentene		0.05	ppbv	0.03	AC-058	08-Jan-20
20010028-001	Trichloroethylene	K, T, U	< 0.07	ppbv	0.07	AC-058	08-Jan-20
20010028-001	Vinyl acetate	K, T, U	< 0.7	ppbv	0.7	AC-058	08-Jan-20
20010028-001	Vinyl chloride	K, T, U	< 0.03	ppbv	0.03	AC-058	08-Jan-20

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: January 17, 2020

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
20010028	01	17-Jan-20	Report created

Methods

Method	Description
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
NA-024	Analysis for Reduced Sulfur Compounds in Air Samples
NA-025	Determination of Light Hydrocarbons (C1C4) in Ambient Air by Gas Chromatography Flame Ionization Detector

Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

Order Comments

20010028

Return canister to reception when finished for further analysis. Also send results to: officemanager@prampairshed.ca, karla@prampairshed.ca, pramptech@prampairshed.ca.

Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

SAMPLE ID PRAMP RENO 20200124 (CH4)

innoTech ALBERTA

Highway 16A & 75 Street
PO Bag 4000
Vegreville, AB, T9C 1T4
Environmental Analytical Services
Phone: (780) 632-8403 Fax: (780) 632-8620

EAS CANISTER
Sample ID: 20010206-001
Customer ID: PRAMP
Cust Samp ID: PRAMP_Reno-20200124
Priority: Normal

Date Received- Lab Use Only
RECEIVED
JAN 27 2020

Client Contact Details:

Contact: Karla Ressor, Michael Bisaga/ Lily Lin
Company: PRAMP Airshed
PO#: ☐ 842 Station ☐ 986 Station ☒ Reno Station
Address: ☐ 842 (Lat. 56.27406N, Long. 116.98129W)
☐ 986 (Lat. 56.376056N, Long. 116.940704W)
☐ Reno (Lat. 55.86936N, Long. 117.05739W)
Telephone: 403-8072995, 780-2667068/587-2252248
Email: karla@prampairshed.ca, pramptech@prampairshed.ca

RUSH (Surcharge) ☐
Invoice Instructions:
Send to: officemanager@prampairshed.ca, karla@prampairshed.ca, pramptech@prampairshed.ca Attention: PRAMP Office Manager
Any correspondence related to canister analysis, send the information to karla@prampairshed.ca and pramptech@prampairshed.ca

InnoTech Contact: Graham Knox Phone: 780-6328403 Cell: 780-6321519
Email: Graham.Knox@innotechalberta.ca

Sample ID (PRAMP_statiom_yyyymmdd)	Canister Number	Sample Description	Date/Time Sampled From/To		Analysis Requested
			Date (dd/mm/yy)	Time (24 Hr) (MST)	
PRAMP_842- _____ (Sample date: yyyymmdd) PRAMP_986- _____ (Sample date: yyyymmdd) PRAMP_Reno-20200124 (Sample date: yyyymmdd)	28938	☑ Methane Trigger ☐ NMHC Trigger	JAN 3 10 40 AM 6" Hg IS THE GAUGE READING	JAN 24 1153 AM	* AIR C1C4, AIR VOC, AIR RSC * Unknown to be reported * Carbon Isotopic Analysis (if sample is collected from Methane trigger) AFTER SAMPLING

Sample Collection:

Collect By ~~REID~~ PRAMP (Name) of REID GLENN (Company) on JAN 24 1153 AM (Date/Time (MST).

EMF078FRM

26" Hg ON INSTALLED CANISTER AFTER SWITCH

Sample ID: 20010206-001

Customer ID: PRAMP

Cust Samp ID: PRAMP_Reno-20200124

Priority: Normal

RECEIVED
JAN 2 7 2020

InnoTech ALBERTA

Canister ID: 28938

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed on: DOS 4 Evacuated on: OCT 3 0 2019

Recertified on: DEC 0 5 2019

(3 months from evacuation date, if required)

Laboratory Contact Number: 780-632-8403

Sample ID: Methane Trigger MW

Sampled By:

Starting Vacuum: -26.9 "Hg

End Pressure: -7 MW "Hg/ psig

InnoTech ALBERTA

Canister ID: 32275

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: DOS 4 on: NOV 2 5 2019

Evacuated on: NOV 2 5 2019

Use within: 3 months from evacuation date

Laboratory Contact Number: 780-632-8403

Sample ID: BLANK METHANE

Sampled By: REID GLENN

-28 Hg MW

Starting Vacuum: -27.3 "Hg

End Vacuum: 28 AC REID "Hg/psig

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Canada T9C 1T4
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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Office Manager
Peace River Area Monitoring Program Committee

INVOICE: Karla Reesor 403 807 2995

CLIENT SAMPLE ID	Matrix
PRAMP_Reno-20200124	Ambient Air

CANISTER ID: 28938
PRIORITY: Normal
DESCRIPTION: Reno 20200124 - Methane Trigger
DATE SAMPLED: 24-Jan-20 11:53
DATE RECEIVED: 27-Jan-20
REPORT CREATED: 06-Feb-20
REPORT NUMBER: 20010206
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010206-001	1-Butene	K, T, U	< 0.18	ppmv	0.18	NA-025	28-Jan-20
20010206-001	Acetylene	K, T, U	< 0.14	ppmv	0.14	NA-025	28-Jan-20
20010206-001	n-Butane	K, T, U	< 0.4	ppmv	0.4	NA-025	28-Jan-20
20010206-001	cis-2-Butene	K, T, U	< 0.07	ppmv	0.07	NA-025	28-Jan-20
20010206-001	Ethane	K, T, U	< 0.2	ppmv	0.2	NA-025	28-Jan-20
20010206-001	Ethylacetylene	K, T, U	< 0.11	ppmv	0.11	NA-025	28-Jan-20
20010206-001	Ethylene	K, T, U	< 0.12	ppmv	0.12	NA-025	28-Jan-20
20010206-001	Isobutane	K, T, U	< 0.2	ppmv	0.2	NA-025	28-Jan-20
20010206-001	Isobutylene	K, T, U	< 0.2	ppmv	0.2	NA-025	28-Jan-20
20010206-001	Methane		2.9	ppmv	0.2	NA-025	28-Jan-20
20010206-001	n-Propane	K, T, U	< 0.12	ppmv	0.12	NA-025	28-Jan-20
20010206-001	Propylene	K, T, U	< 0.2	ppmv	0.2	NA-025	28-Jan-20
20010206-001	Propyne	K, T, U	< 0.2	ppmv	0.2	NA-025	28-Jan-20
20010206-001	trans-2-Butene	K, T, U	< 0.16	ppmv	0.16	NA-025	28-Jan-20
20010206-001	2,5-Dimethylthiophene	K, T, U	< 0.5	ppbv	0.5	NA-024	28-Jan-20
20010206-001	2-Ethylthiophene	K, T, U	< 0.4	ppbv	0.4	NA-024	28-Jan-20
20010206-001	2-Methylthiophene	K, T, U	< 0.4	ppbv	0.4	NA-024	28-Jan-20
20010206-001	3-Methylthiophene	K, T, U	< 0.5	ppbv	0.5	NA-024	28-Jan-20

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: Thursday, February 6, 2020

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PRAMP_Reno-20200124	28938	Ambient Air	24-Jan-20 11:53

DESCRIPTION: Reno 20200124 - Methane Trigger

REPORT NUMBER: 20010206 **REPORT CREATED:** 06-Feb-20 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010206-001	Butyl mercaptan	K, T, U	< 0.5	ppbv	0.5	NA-024	28-Jan-20
20010206-001	Carbon disulphide	K, T, U	< 0.4	ppbv	0.4	NA-024	28-Jan-20
20010206-001	Carbonyl sulphide	K, T, U	< 0.5	ppbv	0.5	NA-024	28-Jan-20
20010206-001	Dimethyl disulphide	K, T, U	< 0.4	ppbv	0.4	NA-024	28-Jan-20
20010206-001	Dimethyl sulphide	K, T, U	< 0.4	ppbv	0.4	NA-024	28-Jan-20
20010206-001	Ethyl mercaptan	K, T, U	< 0.5	ppbv	0.5	NA-024	28-Jan-20
20010206-001	Ethyl sulphide	K, T, U	< 0.5	ppbv	0.5	NA-024	28-Jan-20
20010206-001	Hydrogen sulphide	K, T, U	< 0.5	ppbv	0.5	NA-024	28-Jan-20
20010206-001	Isobutyl mercaptan	K, T, U	< 0.5	ppbv	0.5	NA-024	28-Jan-20
20010206-001	Isopropyl mercaptan	K, T, U	< 0.5	ppbv	0.5	NA-024	28-Jan-20
20010206-001	Methyl mercaptan	K, T, U	< 0.4	ppbv	0.4	NA-024	28-Jan-20
20010206-001	Pentyl mercaptan	K, T, U	< 0.7	ppbv	0.7	NA-024	28-Jan-20
20010206-001	Propyl mercaptan	K, T, U	< 0.7	ppbv	0.7	NA-024	28-Jan-20
20010206-001	tert-Butyl mercaptan	K, T, U	< 0.5	ppbv	0.5	NA-024	28-Jan-20
20010206-001	Thiophene	K, T, U	< 0.4	ppbv	0.4	NA-024	28-Jan-20
20010206-001	1,1,1-Trichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-001	1,1,2-Trichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-001	1,1-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-001	1,1-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Jan-20
20010206-001	1,2,3-Trimethylbenzene	K, T, U	< 0.08	ppbv	0.08	AC-058	28-Jan-20
20010206-001	1,2,4-Trichlorobenzene	K, T, U	< 1.3	ppbv	1.3	AC-058	28-Jan-20
20010206-001	1,2,4-Trimethylbenzene	K, T, U	< 0.08	ppbv	0.08	AC-058	28-Jan-20
20010206-001	1,2-Dibromoethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-001	1,2-Dichlorobenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	28-Jan-20

Report certified by: Rebecca Holgate, Account Coordinator On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: Thursday, February 6, 2020

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PRAMP_Reno-20200124	28938	Ambient Air	24-Jan-20 11:53

DESCRIPTION: Reno 20200124 - Methane Trigger

REPORT NUMBER: 20010206 **REPORT CREATED:** 06-Feb-20 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010206-001	1,2-Dichloroethane	I	0.03	ppbv	0.02	AC-058	28-Jan-20
20010206-001	1,2-Dichloropropane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-001	1,3-Butadiene	I	0.05	ppbv	0.03	AC-058	28-Jan-20
20010206-001	1,3-Dichlorobenzene	K, T, U	< 0.5	ppbv	0.5	AC-058	28-Jan-20
20010206-001	1,4-Dichlorobenzene	K, T, U	< 0.6	ppbv	0.6	AC-058	28-Jan-20
20010206-001	1,4-Dioxane	K, T, U	< 0.6	ppbv	0.6	AC-058	28-Jan-20
20010206-001	1-Butene/Isobutylene		0.60	ppbv	0.03	AC-058	28-Jan-20
20010206-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-001	1-Pentene		0.07	ppbv	0.02	AC-058	28-Jan-20
20010206-001	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-001	2,2-Dimethylbutane		0.03	ppbv	0.02	AC-058	28-Jan-20
20010206-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-001	2,3-Dimethylbutane		0.15	ppbv	0.03	AC-058	28-Jan-20
20010206-001	2,3-Dimethylpentane		0.08	ppbv	0.03	AC-058	28-Jan-20
20010206-001	2,4-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-001	2-Methylheptane		0.04	ppbv	0.02	AC-058	28-Jan-20
20010206-001	2-Methylhexane		0.10	ppbv	0.02	AC-058	28-Jan-20
20010206-001	2-Methylpentane		0.29	ppbv	0.02	AC-058	28-Jan-20
20010206-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-001	3-Methylhexane		0.07	ppbv	0.03	AC-058	28-Jan-20
20010206-001	3-Methylpentane		0.10	ppbv	0.02	AC-058	28-Jan-20
20010206-001	Acetone		1.9	ppbv	0.6	AC-058	28-Jan-20
20010206-001	Acrolein	K, T, U	< 0.5	ppbv	0.5	AC-058	28-Jan-20
20010206-001	Benzene		0.25	ppbv	0.02	AC-058	28-Jan-20

Report certified by: Rebecca Holgate, Account Coordinator On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: Thursday, February 6, 2020

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PRAMP_Reno-20200124	28938	Ambient Air	24-Jan-20 11:53

DESCRIPTION: Reno 20200124 - Methane Trigger

REPORT NUMBER: 20010206 **REPORT CREATED:** 06-Feb-20 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010206-001	Benzyl chloride	K, T, U	< 0.6	ppbv	0.6	AC-058	28-Jan-20
20010206-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-001	Bromoform	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-001	Carbon tetrachloride	I	0.11	ppbv	0.02	AC-058	28-Jan-20
20010206-001	Chlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-001	Chloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-001	Chloroform	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-001	Chloromethane		0.65	ppbv	0.03	AC-058	28-Jan-20
20010206-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-001	cis-1,3-Dichloropropene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Jan-20
20010206-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-001	cis-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-001	Cyclohexane		0.29	ppbv	0.03	AC-058	28-Jan-20
20010206-001	Cyclopentane		0.12	ppbv	0.02	AC-058	28-Jan-20
20010206-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-001	Ethanol		2.2	ppbv	0.5	AC-058	28-Jan-20
20010206-001	Ethyl acetate	K, T, U	< 0.6	ppbv	0.6	AC-058	28-Jan-20
20010206-001	Ethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-001	Freon-11	I	0.36	ppbv	0.03	AC-058	28-Jan-20
20010206-001	Freon-113	I	0.12	ppbv	0.02	AC-058	28-Jan-20
20010206-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-001	Freon-12		0.64	ppbv	0.03	AC-058	28-Jan-20
20010206-001	Hexachloro-1,3-butadiene	K, T, U	< 0.80	ppbv	0.80	AC-058	28-Jan-20

Report certified by: Rebecca Holgate, Account Coordinator On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: Thursday, February 6, 2020

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PRAMP_Reno-20200124	28938	Ambient Air	24-Jan-20 11:53

DESCRIPTION: Reno 20200124 - Methane Trigger

REPORT NUMBER: 20010206 **REPORT CREATED:** 06-Feb-20 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010206-001	Isobutane		1.00	ppbv	0.03	AC-058	28-Jan-20
20010206-001	Isopentane		0.85	ppbv	0.05	AC-058	28-Jan-20
20010206-001	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-001	Isopropyl alcohol	K, T, U	< 0.6	ppbv	0.6	AC-058	28-Jan-20
20010206-001	Isopropylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-001	m,p-Xylene	K, T, U	< 0.05	ppbv	0.05	AC-058	28-Jan-20
20010206-001	m-Diethylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Jan-20
20010206-001	m-Ethyltoluene	K, T, U	< 0.13	ppbv	0.13	AC-058	28-Jan-20
20010206-001	Methyl butyl ketone	K, T, U	< 0.80	ppbv	0.80	AC-058	28-Jan-20
20010206-001	Methyl ethyl ketone	K, T, U	< 0.5	ppbv	0.5	AC-058	28-Jan-20
20010206-001	Methyl isobutyl ketone	K, T, U	< 0.6	ppbv	0.6	AC-058	28-Jan-20
20010206-001	Methyl methacrylate	K, T, U	< 0.11	ppbv	0.11	AC-058	28-Jan-20
20010206-001	Methyl tert butyl ether	K, T, U	< 0.05	ppbv	0.05	AC-058	28-Jan-20
20010206-001	Methylcyclohexane		0.20	ppbv	0.02	AC-058	28-Jan-20
20010206-001	Methylcyclopentane		0.12	ppbv	0.03	AC-058	28-Jan-20
20010206-001	Methylene chloride	K, T, U	< 0.5	ppbv	0.5	AC-058	28-Jan-20
20010206-001	n-Butane		1.81	ppbv	0.05	AC-058	28-Jan-20
20010206-001	n-Decane		0.14	ppbv	0.10	AC-058	28-Jan-20
20010206-001	n-Dodecane	K, T, U	< 0.6	ppbv	0.6	AC-058	28-Jan-20
20010206-001	n-Heptane		0.22	ppbv	0.02	AC-058	28-Jan-20
20010206-001	n-Hexane		0.14	ppbv	0.02	AC-058	28-Jan-20
20010206-001	n-Octane		0.08	ppbv	0.03	AC-058	28-Jan-20
20010206-001	n-Pentane		0.8	ppbv	0.2	AC-058	28-Jan-20
20010206-001	n-Propylbenzene	K, T, U	< 0.08	ppbv	0.08	AC-058	28-Jan-20
20010206-001	n-Undecane	K, T, U	< 0.8	ppbv	0.8	AC-058	28-Jan-20

Report certified by: Rebecca Holgate, Account Coordinator On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: Thursday, February 6, 2020

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PRAMP_Reno-20200124	28938	Ambient Air	24-Jan-20 11:53

DESCRIPTION: Reno 20200124 - Methane Trigger

REPORT NUMBER: 20010206 **REPORT CREATED:** 06-Feb-20 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010206-001	Naphthalene	K, T, U	< 0.8	ppbv	0.8	AC-058	28-Jan-20
20010206-001	n-Nonane		0.03	ppbv	0.02	AC-058	28-Jan-20
20010206-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-001	o-Xylene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-001	p-Diethylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Jan-20
20010206-001	p-Ethyltoluene	K, T, U	< 0.11	ppbv	0.11	AC-058	28-Jan-20
20010206-001	Styrene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Jan-20
20010206-001	Tetrachloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Jan-20
20010206-001	Tetrahydrofuran	K, T, U	< 0.6	ppbv	0.6	AC-058	28-Jan-20
20010206-001	Toluene		0.47	ppbv	0.02	AC-058	28-Jan-20
20010206-001	trans-1,2-Dichloroethylene	I	0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-001	trans-1,3-Dichloropropylene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Jan-20
20010206-001	trans-2-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-001	trans-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-001	Trichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Jan-20
20010206-001	Vinyl acetate	K, T, U	< 0.6	ppbv	0.6	AC-058	28-Jan-20
20010206-001	Vinyl chloride	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20

Report certified by: Rebecca Holgate, Account Coordinator On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PRAMP_Reno-Blank Methane	32275	Ambient Air	24-Jan-20 11:53

DESCRIPTION: Reno Blank Methane

REPORT NUMBER: 20010206 **REPORT CREATED:** 06-Feb-20 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010206-002	1-Butene	K, T, U	< 0.10	ppmv	0.10	NA-025	28-Jan-20
20010206-002	Acetylene	K, T, U	< 0.08	ppmv	0.08	NA-025	28-Jan-20
20010206-002	n-Butane	K, T, U	< 0.2	ppmv	0.2	NA-025	28-Jan-20
20010206-002	cis-2-Butene	K, T, U	< 0.04	ppmv	0.04	NA-025	28-Jan-20
20010206-002	Ethane	K, T, U	< 0.1	ppmv	0.1	NA-025	28-Jan-20
20010206-002	Ethylacetylene	K, T, U	< 0.06	ppmv	0.06	NA-025	28-Jan-20
20010206-002	Ethylene	K, T, U	< 0.07	ppmv	0.07	NA-025	28-Jan-20
20010206-002	Isobutane	K, T, U	< 0.1	ppmv	0.1	NA-025	28-Jan-20
20010206-002	Isobutylene	K, T, U	< 0.1	ppmv	0.1	NA-025	28-Jan-20
20010206-002	Methane	K, T, U	< 0.1	ppmv	0.1	NA-025	28-Jan-20
20010206-002	n-Propane	K, T, U	< 0.07	ppmv	0.07	NA-025	28-Jan-20
20010206-002	Propylene	K, T, U	< 0.1	ppmv	0.1	NA-025	28-Jan-20
20010206-002	Propyne	K, T, U	< 0.1	ppmv	0.1	NA-025	28-Jan-20
20010206-002	trans-2-Butene	K, T, U	< 0.09	ppmv	0.09	NA-025	28-Jan-20
20010206-002	2,5-Dimethylthiophene	K, T, U	< 0.3	ppbv	0.3	NA-024	28-Jan-20
20010206-002	2-Ethylthiophene	K, T, U	< 0.2	ppbv	0.2	NA-024	28-Jan-20
20010206-002	2-Methylthiophene	K, T, U	< 0.2	ppbv	0.2	NA-024	28-Jan-20
20010206-002	3-Methylthiophene	K, T, U	< 0.3	ppbv	0.3	NA-024	28-Jan-20
20010206-002	Butyl mercaptan	K, T, U	< 0.3	ppbv	0.3	NA-024	28-Jan-20
20010206-002	Carbon disulphide	K, T, U	< 0.2	ppbv	0.2	NA-024	28-Jan-20
20010206-002	Carbonyl sulphide	K, T, U	< 0.3	ppbv	0.3	NA-024	28-Jan-20
20010206-002	Dimethyl disulphide	K, T, U	< 0.2	ppbv	0.2	NA-024	28-Jan-20
20010206-002	Dimethyl sulphide	K, T, U	< 0.2	ppbv	0.2	NA-024	28-Jan-20
20010206-002	Ethyl mercaptan	K, T, U	< 0.3	ppbv	0.3	NA-024	28-Jan-20
20010206-002	Ethyl sulphide	K, T, U	< 0.3	ppbv	0.3	NA-024	28-Jan-20

Report certified by: Graham Knox, Admin. & Ops. Supervisor On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PRAMP_Reno-Blank Methane	32275	Ambient Air	24-Jan-20 11:53

DESCRIPTION: Reno Blank Methane

REPORT NUMBER: 20010206 **REPORT CREATED:** 06-Feb-20 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010206-002	Hydrogen sulphide	K, T, U	< 0.3	ppbv	0.3	NA-024	28-Jan-20
20010206-002	Isobutyl mercaptan	K, T, U	< 0.3	ppbv	0.3	NA-024	28-Jan-20
20010206-002	Isopropyl mercaptan	K, T, U	< 0.3	ppbv	0.3	NA-024	28-Jan-20
20010206-002	Methyl mercaptan	K, T, U	< 0.2	ppbv	0.2	NA-024	28-Jan-20
20010206-002	Pentyl mercaptan	K, T, U	< 0.4	ppbv	0.4	NA-024	28-Jan-20
20010206-002	Propyl mercaptan	K, T, U	< 0.4	ppbv	0.4	NA-024	28-Jan-20
20010206-002	tert-Butyl mercaptan	K, T, U	< 0.3	ppbv	0.3	NA-024	28-Jan-20
20010206-002	Thiophene	K, T, U	< 0.2	ppbv	0.2	NA-024	28-Jan-20
20010206-002	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	1,1-Dichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Jan-20
20010206-002	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	28-Jan-20
20010206-002	1,2,4-Trichlorobenzene	K, T, U	< 0.8	ppbv	0.8	AC-058	28-Jan-20
20010206-002	1,2,4-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	28-Jan-20
20010206-002	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-002	1,2-Dichloroethane	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	1,2-Dichloropropane	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	1,3,5-Trimethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	1,3-Butadiene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	1,3-Dichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Jan-20
20010206-002	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Jan-20
20010206-002	1,4-Dioxane	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Jan-20

Report certified by: Rebecca Holgate, Account Coordinator On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PRAMP_Reno-Blank Methane	32275	Ambient Air	24-Jan-20 11:53

DESCRIPTION: Reno Blank Methane

REPORT NUMBER: 20010206 **REPORT CREATED:** 06-Feb-20 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010206-002	1-Butene/Isobutylene	I	0.03	ppbv	0.02	AC-058	28-Jan-20
20010206-002	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	1-Pentene		0.02	ppbv	0.01	AC-058	28-Jan-20
20010206-002	2,2,4-Trimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	2,2-Dimethylbutane	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	2,3,4-Trimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	2,3-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	2,3-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	2,4-Dimethylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	2-Methylheptane	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	2-Methylhexane	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	2-Methylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	3-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	3-Methylhexane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	3-Methylpentane	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	Acetone	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Jan-20
20010206-002	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Jan-20
20010206-002	Benzene	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	Benzyl chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Jan-20
20010206-002	Bromodichloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	Bromomethane	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	Carbon disulfide	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	Carbon tetrachloride	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PRAMP_Reno-Blank Methane	32275	Ambient Air	24-Jan-20 11:53

DESCRIPTION: Reno Blank Methane

REPORT NUMBER: 20010206 **REPORT CREATED:** 06-Feb-20 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010206-002	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	Chloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	cis-1,2-Dichloroethene	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	cis-1,3-Dichloropropene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Jan-20
20010206-002	cis-2-Butene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	Cyclohexane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	Cyclopentane		0.18	ppbv	0.01	AC-058	28-Jan-20
20010206-002	Dibromochloromethane	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	Ethanol	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Jan-20
20010206-002	Ethyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Jan-20
20010206-002	Ethylbenzene	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	Freon-11	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	Freon-113	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	Freon-114	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	Freon-12	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	Hexachloro-1,3-butadiene	K, T, U	< 0.50	ppbv	0.50	AC-058	28-Jan-20
20010206-002	Isobutane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	Isopentane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-002	Isoprene	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	Isopropyl alcohol	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Jan-20
20010206-002	Isopropylbenzene	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	m,p-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-002	m-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Jan-20

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PRAMP_Reno-Blank Methane	32275	Ambient Air	24-Jan-20 11:53

DESCRIPTION: Reno Blank Methane

REPORT NUMBER: 20010206 **REPORT CREATED:** 06-Feb-20 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010206-002	m-Ethyltoluene	K, T, U	< 0.08	ppbv	0.08	AC-058	28-Jan-20
20010206-002	Methyl butyl ketone	K, T, U	< 0.50	ppbv	0.50	AC-058	28-Jan-20
20010206-002	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Jan-20
20010206-002	Methyl isobutyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Jan-20
20010206-002	Methyl methacrylate	K, T, U	< 0.07	ppbv	0.07	AC-058	28-Jan-20
20010206-002	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-002	Methylcyclohexane	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	Methylcyclopentane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	28-Jan-20
20010206-002	n-Butane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Jan-20
20010206-002	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Jan-20
20010206-002	n-Dodecane	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Jan-20
20010206-002	n-Heptane	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	n-Hexane	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	n-Pentane	K, T, U	< 0.1	ppbv	0.1	AC-058	28-Jan-20
20010206-002	n-Propylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	28-Jan-20
20010206-002	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	28-Jan-20
20010206-002	Naphthalene	K, T, U	< 0.5	ppbv	0.5	AC-058	28-Jan-20
20010206-002	n-Nonane	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	o-Ethyltoluene	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	o-Xylene	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	p-Diethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Jan-20
20010206-002	p-Ethyltoluene	K, T, U	< 0.07	ppbv	0.07	AC-058	28-Jan-20
20010206-002	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Jan-20

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
PRAMP_Reno-Blank Methane	32275	Ambient Air	24-Jan-20 11:53

DESCRIPTION: Reno Blank Methane

REPORT NUMBER: 20010206 **REPORT CREATED:** 06-Feb-20 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
20010206-002	Tetrachloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Jan-20
20010206-002	Tetrahydrofuran	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Jan-20
20010206-002	Toluene	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	trans-1,2-Dichloroethylene	I	0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	trans-1,3-Dichloropropylene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Jan-20
20010206-002	trans-2-Butene	K, T, U	< 0.01	ppbv	0.01	AC-058	28-Jan-20
20010206-002	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20
20010206-002	Trichloroethylene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Jan-20
20010206-002	Vinyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Jan-20
20010206-002	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	28-Jan-20

Report certified by: Rebecca Holgate, Account Coordinator On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: Thursday, February 6, 2020

Inquiries: (780) 632 8455 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
20010206	01	06-Feb-20	Report created

Methods

Method	Description
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
NA-024	Analysis for Reduced Sulfur Compounds in Air Samples
NA-025	Determination of Light Hydrocarbons (C1C4) in Ambient Air by Gas Chromatography Flame Ionization Detector

Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

Order Comments

20010206

Return canister to reception when finished for further analysis. Also send to: officemanager@prampairshed.ca and pramptech@prampairshed.ca.

Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

End of Report