Peace River Area Monitoring Program

JULY 2019

- Monthly Ambient Air Quality Monitoring Report -

- Ambient Air Monthly Calibration Report -

August 28, 2019

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Peace River Area Monitoring Program

JULY 2019

Monthly Ambient Air Quality Monitoring Report

PRAMP-201907

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August 9, 2019

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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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Alberta Environment and Parks (AEP)

August 9, 2019

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9820 106 Street
Edmonton, AB, T5K 2J6
Emailed to: Air.Reporting@gov.ab.ca

RE: PRAMP – July 2019 Monthly Ambient Air Quality Monitoring Report

Enclosed is the July 2019 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
Michael Bisaga / Lily Lin, Technical Program Managers
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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:

- 986b Station
- 842b Station
- Reno Station

Station ID	Station Name	Latitude	Longitude
1562	986b	56.376056	-116.940704
1561	842b	56.27406	-116.98129
1563	Reno	55.86936	-117.05739

Listing of Intermittent Monitoring Stations

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

Monitoring Notes during the Month of July 2019

986b 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.
- The air monitoring station was relocated to the coordinates of 56.36980, -116.92500 on August 1. All equipment were shut down on July 31 during hour 17. No data were collected on July 31 between hour 17 and hour 23.
- All parameters: The channels were put offline on July 30 hour 17 for datalogger reconfiguration. One hour of downtime was recorded as a result.
- SO2:
    - One hour of downtime was recorded on July 25 hour 6 as an additional zero/span check was initiated to verify the span system response.
    - Thirty-four hours of data were not available between July 30 hour 12 and July 31 hour 23 as the analyzer was shut down for the station relocation.
- RH/BP/Temperature: The channels were put offline on July 30 between hour 15 and hour 17 in order to reconfigure the datalogger settings and rewire the equipment cables.
- A meteorological system check was performed on the RH, BP, Temperature, and anemometer sensors on July 30. The sensors passed the check requirements.

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.
- A meteorological system check was performed on the RH, BP, Temperature, and anemometer sensors on July 3. The sensors passed the check requirements.

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.
- A meteorological system check was performed on the RH, BP, Temperature, and anemometer sensors on July 4. The sensors passed the check requirements.

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 and are in place at all stations in the PRAMP network. Both trigger points are based on real-time monitoring data that are averaged over a 5-minute period.
- No canister was collected in July as both the CH4 and NMHC concentrations were recorded below the trigger points.

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.

At the 986 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.

Hourly instantaneous maximum data included in this report have not gone through data validation/verification steps and are considered raw data. The intention of including this data set in the report is for reference purposes and should not be used in published documents.

Equipment calibration / maintenance records were provided by Maxxam Analytics.

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

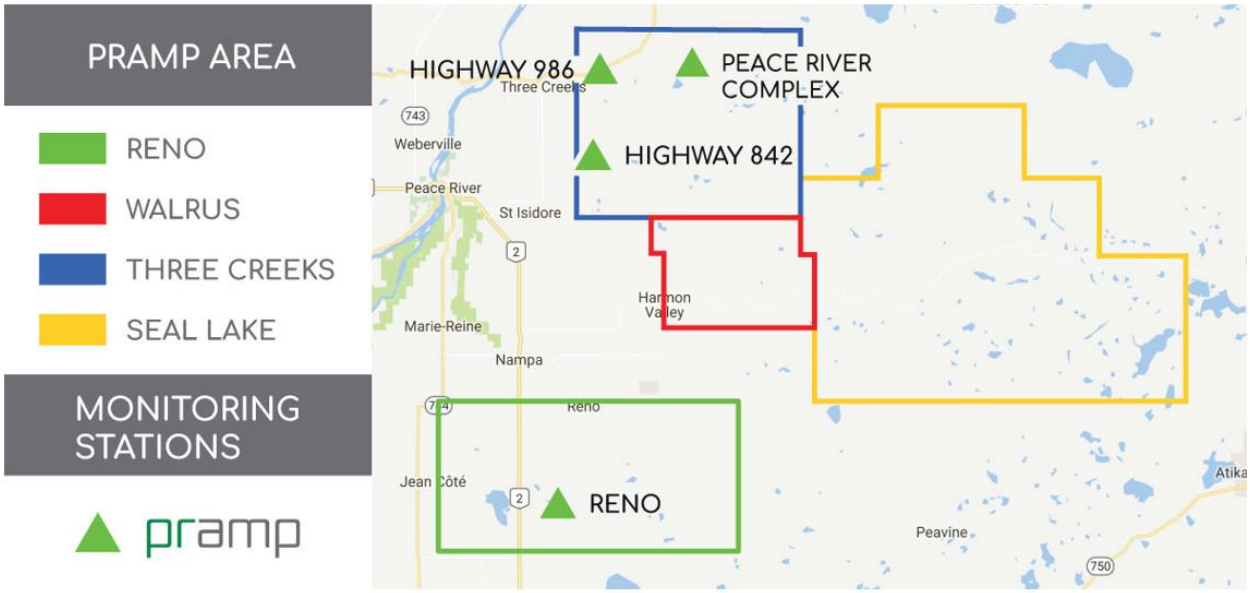
This report was reviewed by Mike Bisaga in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).

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

August 9, 2019

Map of PRAMP Continuous Monitoring Network



CONTINUOUS NETWORK EQUIPMENT AND MONITORING RESULTS SUMMARY

986b Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	
SO2	**Thermo / 43C**	**43C-62339-335**	
• A power outage occurred on July 8 at 20:36. One-minute data was discarded, and hourly data was re-averaged. Data collected between 20:37 and 20:39 were also discarded as the analyzer was recovering from the power outage. • The analyzer showed a high span drift on July 24. An additional zero/span check was initiated on July 25 at hour 6. The check results were within the requirements. One hour of downtime was recorded. • A shut-down calibration was performed on July 30 for the air monitoring station relocation. The channel was put offline after the calibration was completed. Thirty-four hours of downtime were recorded due to this event.			
TRS	**Thermo / 43i-TLE**	**1152940011**	
• A power outage occurred on July 8 at 20:36. One-minute data was discarded, and hourly data was re-averaged. Data collected between 20:37 and 20:40 were also discarded as the analyzer was recovering from the power outage. • A successful monthly calibration was performed on July 30. • The channel was put offline on July 30 hour 17 for datalogger reconfiguration. One hour of downtime was recorded as a result. • The analyzer was shut down on July 31 during hour 17. Severn hours of downtime were recorded.			
THC/CH4/NMHC	**Thermo / 55i**	**1022143392**	
• A power outage occurred on July 8 at 20:36. One-minute data was discarded, and hourly data was re-averaged. Data collected between 20:37 and 20:44 were also discarded as the analyzer was recovering from the power outage. • A successful monthly calibration was performed on July 30. • The channel was put offline on July 30 hour 17 for datalogger reconfiguration. One hour of downtime was recorded as a result. • The analyzer was shut down on July 31 during hour 17. Severn hours of downtime were recorded.			
Station Temperature (ST)	**Maxxam**	**N/A**	
• A power outage occurred on July 8 at 20:36. One-minute data was discarded, and hourly data was re-averaged. • The channel was put offline on July 30 hour 17 for datalogger reconfiguration. One hour of downtime was recorded as a result.			

Parameter	Make / Model	Serial Number	
Relative Humidity (RH)	**RM Young / 43172VC & 431872VC**	**61012322 & 030978**	

- A power outage occurred on July 8 at 20:36. One-minute data was discarded, and hourly data was re-averaged.
- The RH sensor was checked on July 30. The sensor passed the check requirements.
- The channel was put offline on July 30 between hour 15 and hour 17 in order to reconfigure the datalogger settings and rewire the equipment cables. Three hours of downtime were recorded as a result.
- The RH sensor was disconnected on July 31 during hour 17. Severn hours of downtime were recorded.

Barometric Pressure (BP)	**MetOne / 090D**	**F3845**	

- A power outage occurred on July 8 at 20:36. One-minute data was discarded, and hourly data was re-averaged.
- The BP sensor was checked on July 30. The sensor passed the check requirements.
- The channel was put offline on July 30 between hour 15 and hour 17 in order to reconfigure the datalogger settings and rewire the equipment cables. Three hours of downtime were recorded as a result.
- The BP sensor was disconnected on July 31 during hour 17. Severn hours of downtime were recorded.

Ambient Temperature (AT)	**RM Young 43172VC & 431872VC**	**61012322 & 030978**	

- A power outage occurred on July 8 at 20:36. One-minute data was discarded, and hourly data was re-averaged.
- The AT sensor was checked on July 30. The sensor passed the check requirements.
- The channel was put offline on July 30 between hour 15 and hour 17 in order to reconfigure the datalogger settings and rewire the equipment cables. Three hours of downtime were recorded as a result.
- The temperature sensor was disconnected on July 31 during hour 17. Severn hours of downtime were recorded.

Wind Speed/Wind Direction (WS/ WD)	**RM Young / 5305VK**	**129612**	

- Wind direction data contained in this report represents where the wind is coming from.
- A power outage occurred on July 8 at 20:36. One-minute data was discarded, and hourly data was re-averaged.
- The anemometer sensors were checked on July 30. The sensor passed the check requirements.
- Both wind speed and wind direction channels were put offline on July 30 hour 17 for datalogger reconfiguration. One hour of downtime was recorded as a result.
- The anemometer sensors were disconnected on July 31 during hour 17. Severn hours of downtime were recorded.

Monitored Data Summary

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	July 1 at hour 0	9.8	NNW	0.0	July 1	95.3	90.8
TRS (ppb)	10	3	-	-	-	-	0.7	0.00	2.23	July 6 at hour 5	2.5	ESE	1.03	July 2	98.9	93.8
THC (ppm)	-	-	-	-	-	-	2.04	1.89	3.02	July 24 at hour 4	2	NE	2.15	July 26	98.9	94.1
CH4 (ppm)	-	-	-	-	-	-	2.04	1.89	3.02	July 24 at hour 4	2	NE	2.15	July 26	98.9	94.1
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.04	July 19 at hour 12	6.1	NNW	0.00	July 1	98.9	94.1
RH (%)	-	-	-	-	-	-	77.0	33	100	July 8 at hour 22	1.6	SSE	97.3	July 3	98.7	98.7
BP (millibar)	-	-	-	-	-	-	941	927	954	July 5 at hour	0.8	ESE	953	July 18	98.7	98.7
Ext. Temp. (°C)	-	-	-	-	-	-	15.2	1.0	28.2	July 22 at hour 17	3.8	NW	21.1	July 8	98.7	98.7
Stn. Temp. (°C)	-	-	-	-	-	-	21.9	19.4	28.1	July 20 at hour 4	3.7	SSE	23.6	July 12	99.9	99.9
WSV (km/hr)	-	-	-	-	-	-	1.6	0.1	17.6	July 3 at hour 13	17.6	WNW	10.0	July 22	98.9	98.9
WDV (sector)	-	-	-	-	-	-	269 (W)	-	-	-	-	-	-	-	98.9	98.9

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

Alberta Ambient Air Quality Objectives (AAAQOs) Exceedances

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

842b Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	
SO2	**Thermo / 43i**	**835033373**	
• A power outage occurred on July 8 at 20:36. One-minute data was discarded, and hourly data was re-averaged. Data collected at 20:37 was also discarded as the analyzer was recovering from the power outage • A successful monthly calibration was performed on July 3.			
TRS	**Thermo / 43i-TLE**	**1162460023**	
• A power outage occurred on July 8 at 20:36. One-minute data was discarded, and hourly data was re-averaged. • A successful monthly calibration was performed on July 3.			
THC/CH4/NMHC	**Thermo / 55i**	**1505664392**	
• A power outage occurred on July 8 at 20:36. One-minute data was discarded, and hourly data was re-averaged. Data collected between 20:37 and 20:47 were also discarded as the analyzer was recovering from the power outage • A successful monthly calibration was performed on July 3.			
Relative Humidity (RH)	**Campbell Scientific / HMP45C**	**C2608**	
• A power outage occurred on July 8 at 20:36. One-minute data was discarded, and hourly data was re-averaged. • The RH sensor was checked on July 3. The sensor passed the check requirements.			
Barometric Pressure (BP)	**MetOne / 92**	**K12864**	
• A power outage occurred on July 8 at 20:36. One-minute data was discarded, and hourly data was re-averaged. • The BP sensor was checked on July 3. The sensor passed the check requirements.			
Station Temperature (ST)	**Maxxam**	**N/A**	
• A power outage occurred on July 8 at 20:36. One-minute data was discarded, and hourly data was re-averaged.			
Ambient Temperature (AT)	**Campbell Scientific / HMP45C**	**C2608**	
• A power outage occurred on July 8 at 20:36. One-minute data was discarded, and hourly data was re-averaged. • The temperature sensor was checked on July 3. The sensor passed the check requirements.			

Parameter	Make / Model	Serial Number	
Wind Speed/Wind Direction (WS/ WD)	**RM Young / 5305VK**	**124638**	

- Wind direction data contained in this report represents where the wind is coming from.
- A power outage occurred on July 8 at 20:36. One-minute data was discarded, and hourly data was re-averaged.
- The anemometer sensors were checked on July 11. The sensor passed the check requirements.

Monitored Data Summary

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	1	July 16 at hour 10	14.3	SW	0.2	July 1	100.0	94.7
TRS (ppb)	10	3	-	-	-	-	0.5	0.30	1.22	July 9 at hour 3	2.5	ESE	0.62	July 11	100.0	94.7
THC (ppm)	-	-	-	-	-	-	1.96	1.88	2.38	July 31 at hour 5	1.8	ENE	2.05	July 26	100.0	94.7
CH4 (ppm)	-	-	-	-	-	-	1.96	1.88	2.38	July 31 at hour 5	1.8	ENE	2.05	July 26	100.0	94.7
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.02	July 5 at hour 18	5.1	E	0.00	July 1	100.0	94.7
RH (%)	-	-	-	-	-	-	73.4	34	95	July 9 at hour 1	1.4	E	91.0	July 5	100.0	100.0
BP (millibar)	-	-	-	-	-	-	942	928	955	July 5 at hour 5	3.2	NE	954	July 17	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	15.1	1.6	27.8	July 22 at hour 15	7.5	WNW	21.1	July 8	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	23.4	21.8	24.0	July 3 at hour 9	10.1	NW	23.6	July 8	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	2.7	0.0	21.6	July 26 at hour 14	21.6	WSW	12.9	July 6	100.0	100.0
WDV (sector)	-	-	-	-	-	-	247 (WSW)	-	-	-	-	-	-	-	100.0	100.0

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

Reno Station

Equipment Operation Summary

Parameter	Make / Model	Serial Number	
SO2	**API / 100A**	**841**	
• No issue was identified this month. • A successful monthly calibration was performed on July 4.			
TRS	**Thermo / 43i-TLE**	**1162460022**	
• No issue was identified this month. • A successful monthly calibration was performed on July 4.			
THC/CH4/NMHC	**Thermo / 55i**	**1314057759**	
• No issue was identified this month. • A successful monthly calibration was performed on July 4. • The canister system was tested during the time the monthly calibration was performed on July 4.			
Relative Humidity (RH)	**RM Young / 43172VC**	**60837897**	
• No issues were identified this month. • The RH sensor was checked on July 4. The sensor passed the check requirements.			
Barometric Pressure (BP)	**MetOne / 92**	**R12877**	
• No issues were identified this month. • The BP sensor was checked on July 4. The sensor passed the check requirements.			
Ambient Temperature (AT)	**RM Young / 43172VC**	**60837897**	
• No issues were identified this month. • The temperature sensor was checked on July 4. The sensor passed the check requirements.			
Station Temperature (ST)	**Maxxam**	**N/A**	
• No issues were identified this month.			
Wind Speed/Wind Direction (WS/ WD)	**RM Young / 5305VK**	**149769**	
• No issues were identified this month. • Wind direction data contained in this report represents where the wind is coming from. • The anemometer sensors were checked on July 4. The sensor passed the check requirements.			

Monitored Data Summary

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	2	July 21 at hour 9	3.8	S	0.2	July 1	100.0	94.9
TRS (ppb)	10	3	-	-	-	-	0.5	0.22	4.56	July 31 at hour 6	1.9	SW	1.17	July 12	100.0	94.7
THC (ppm)	-	-	-	-	-	-	1.97	1.88	2.60	July 9 at hour 6	0.7	SSW	2.08	July 26	100.0	94.9
CH4 (ppm)	-	-	-	-	-	-	1.97	1.88	2.60	July 9 at hour 6	0.7	SSW	2.08	July 26	100.0	94.9
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	July 1 at hour 0	6.4	WNW	0.00	July 1	100.0	94.9
RH (%)	-	-	-	-	-	-	73.6	38	100	July 11 at hour 3	2.2	SW	92.2	July 5	100.0	100.0
BP (millibar)	-	-	-	-	-	-	938	925	950	July 5 at hour 4	0.7	ENE	949	July 17	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	15.3	2.8	27.3	July 23 at hour 17	2	SSE	21.2	July 8	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.2	21.0	25.3	July 4 at hour 16	10.5	NE	23.1	July 8	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.9	0.0	14.4	July 26 at hour 13	14.4	WSW	9.3	July 31	100.0	100.0
WDV (sector)	-	-	-	-	-	-	273 (W)	-	-	-	-	-	-	-	100.0	100.0

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

Alberta Ambient Air Quality Objectives (AAAQOs) Exceedances

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

TABLES, CHARTS, WIND ROSES AND EQUIPMENT CALIBRATION RECORDS

986b STATION

PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

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 Exceedences: 0 Number of 24-Hour Exceedences: 0 30-Day Exceedence: 0

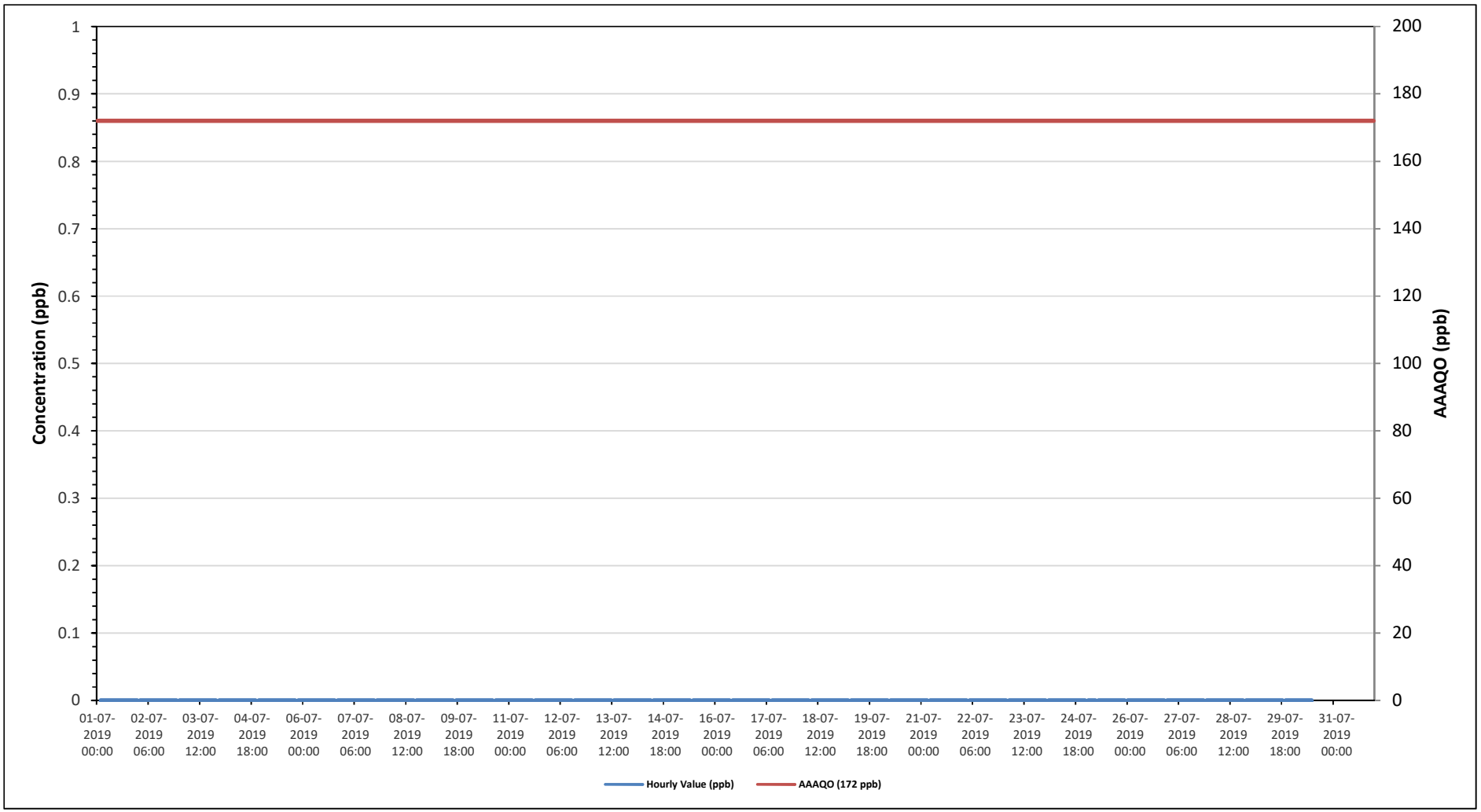
Maximum Hourly Value:	0	ppb	on July 1 at hour 0	Hours in Service:	744
Maximum Daily Value:	0.0	ppb	on July 1	Hours of Data:	676
Minimum Hourly Value:	0	ppb	on July 1 at hour 0	Hours of Missing Data:	35
Minimum Daily Value:	0.0	ppb	on July 1	Hours of Calibration:	33
Monthly Average:	0.0	ppb		Operational Uptime:	95.3

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			
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 25	S	0	0	0	0	0	S1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0
Jul 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
Jul 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
Jul 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
Jul 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
Jul 30	0	0	0	0	0	0	0	0	0	0	0	0	C	C	N	N	N	N	N	N	N	N	N	N	0	0	-
Jul 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
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			
Daiurnal 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			

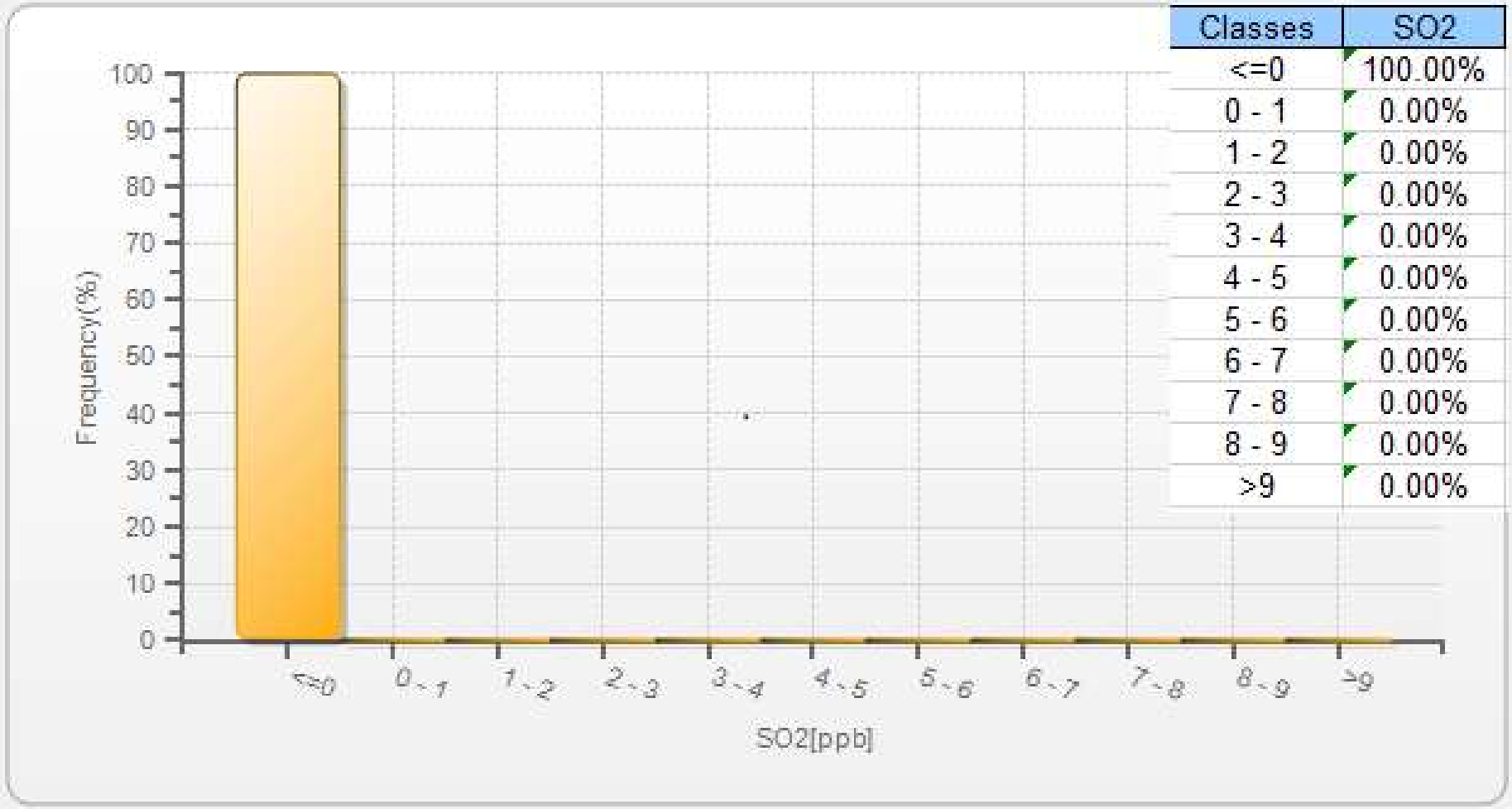
C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 - 986b Station



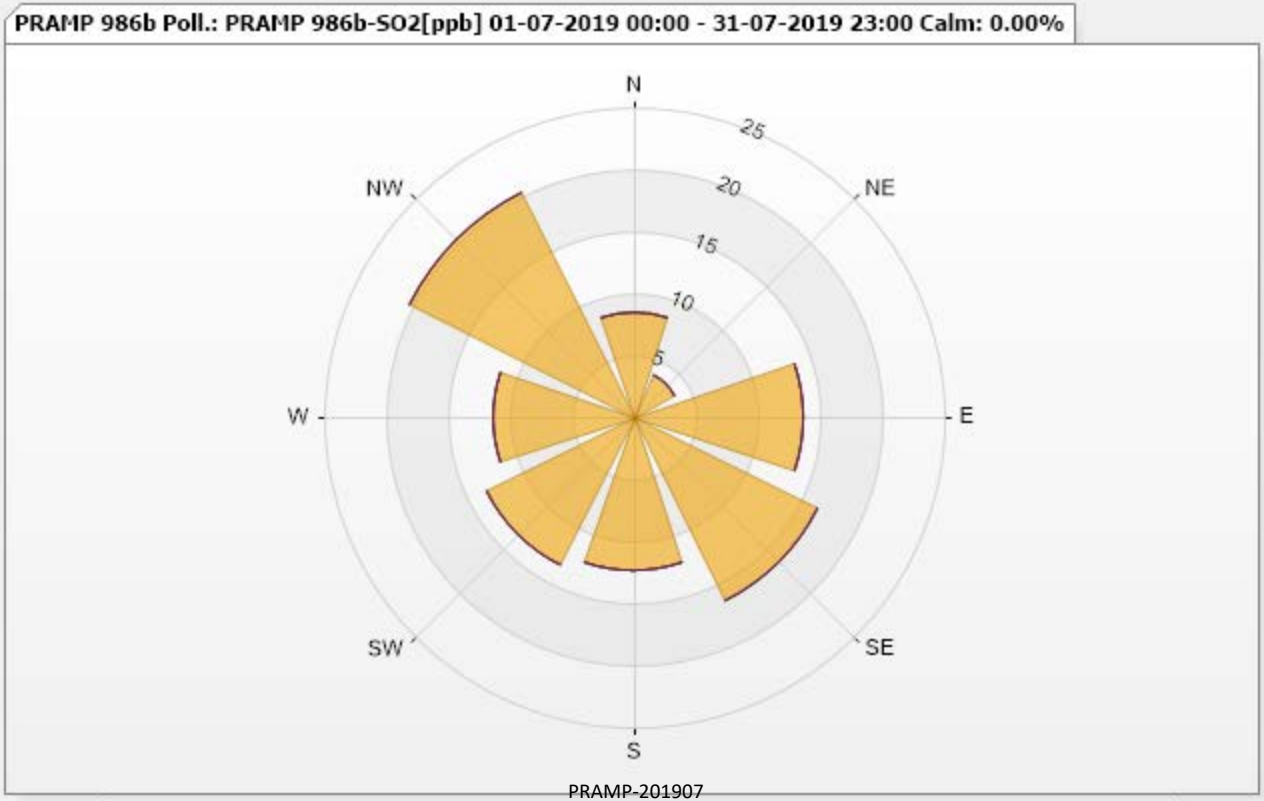
SO2[ppb] Histogram: PRAMP 986b Monthly: 07-2019 1 Hr.



Classes	SO2
<=0	100.00%
0 - 1	0.00%
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: PRAMP 986b Poll.: PRAMP 986b-SO2[ppb] Monthly: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 90.46% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	8.47	0	0	0	0	8.47
NE	3.71	0	0	0	0	3.71
E	13.67	0	0	0	0	13.67
SE	16.64	0	0	0	0	16.64
S	12.48	0	0	0	0	12.48
SW	13.37	0	0	0	0	13.37
W	11.44	0	0	0	0	11.44
NW	20.21	0	0	0	0	20.21
Summary	100	0	0	0	0	100


PRAMP 986b Poll.: PRAMP 986b-SO2[ppb] 01-07-2019 00:00 - 31-07-2019 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

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

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 Exceedences: 0 Number of 24-Hour Exceedences: 0

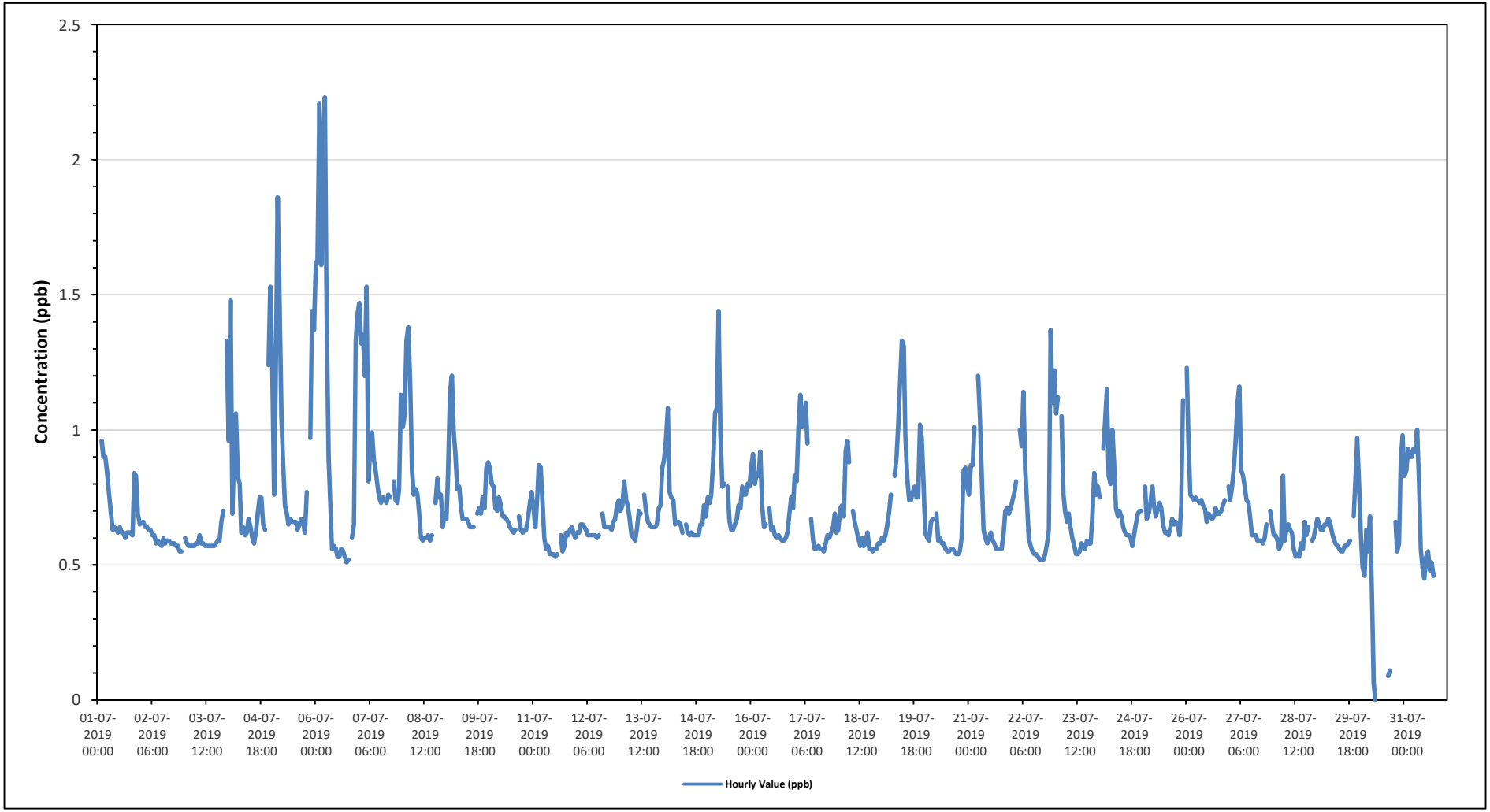
Maximum Hourly Value:	2.23	ppb	on July 6 at hour 5	Hours in Service:	744
Maximum Daily Value:	1.03	ppb	on July 6	Hours of Data:	698
Minimum Hourly Value:	0.00	ppb	on July 30 at hour 8	Hours of Missing Data:	8
Minimum Daily Value:	0.59	ppb	on July 2	Hours of Calibration:	38
Monthly Average:	0.73	ppb		Operational Uptime:	98.9

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			
Jul 1	0.6	S	0.96	0.9	0.9	0.84	0.77	0.7	0.63	0.64	0.63	0.62	0.64	0.62	0.62	0.6	0.62	0.62	0.62	0.61	0.84	0.83	0.69	0.65	0.60	0.96	0.70
Jul 2	S	0.66	0.64	0.64	0.63	0.63	0.61	0.61	0.58	0.59	0.58	0.57	0.6	0.58	0.59	0.59	0.58	0.58	0.58	0.57	0.57	0.55	0.55	S	0.55	0.66	0.59
Jul 3	0.6	0.58	0.57	0.57	0.57	0.57	0.58	0.58	0.61	0.58	0.58	0.57	0.57	0.57	0.57	0.57	0.57	0.58	0.59	0.59	0.66	0.7	S	1.33	0.57	1.33	0.62
Jul 4	0.96	1.48	0.69	0.92	1.06	0.83	0.8	0.62	0.64	0.61	0.62	0.67	0.64	0.6	0.58	0.62	0.69	0.75	0.75	0.65	0.63	S	1.24	1.53	0.58	1.53	0.81
Jul 5	1.22	0.76	1.2	1.86	1.48	1.05	0.88	0.72	0.69	0.65	0.67	0.66	0.66	0.66	0.63	0.65	0.67	0.66	0.62	0.77	S	0.97	1.44	1.37	0.62	1.86	0.91
Jul 6	1.62	1.62	2.21	1.61	2.02	**2.23**	1.39	0.9	0.73	0.56	0.57	0.56	0.53	0.53	0.56	0.55	0.53	0.51	0.52	S	0.6	0.65	1.33	1.43	0.51	**2.23**	**1.03**
Jul 7	1.47	1.32	1.35	1.2	1.53	0.81	0.94	0.99	0.89	0.85	0.79	0.75	0.73	0.75	0.74	0.73	0.76	0.75	S	0.81	0.74	0.73	0.78	1.13	0.73	1.53	0.94
Jul 8	1.01	1.06	1.33	1.38	1.18	0.85	0.76	0.78	0.76	0.69	0.6	0.59	0.6	0.6	0.61	0.59	0.61	S	0.73	0.82	0.75	0.76	0.64	0.69	0.59	1.38	0.80
Jul 9	0.67	0.84	1.14	1.2	0.99	0.91	0.78	0.79	0.71	0.67	0.67	0.67	0.66	0.64	0.64	0.64	S	0.69	0.71	0.69	0.75	0.71	0.86	0.88	0.64	1.20	0.78
Jul 10	0.86	0.8	0.79	0.71	0.7	0.75	0.72	0.68	0.68	0.67	0.66	0.64	0.63	0.62	0.63	S	0.68	0.63	0.62	0.63	0.63	0.68	0.73	0.77	0.62	0.86	0.69
Jul 11	0.71	0.64	0.75	0.87	0.86	0.72	0.6	0.56	0.57	0.54	0.54	0.54	0.53	0.54	S	0.61	0.55	0.57	0.62	0.61	0.63	0.64	0.62	0.6	0.53	0.87	0.63
Jul 12	0.62	0.62	0.65	0.65	0.64	0.63	0.61	0.61	0.61	0.61	0.61	0.6	0.61	S	0.69	0.64	0.64	0.64	0.64	0.63	0.66	0.67	0.72	0.74	0.60	0.74	0.64
Jul 13	0.7	0.72	0.81	0.74	0.72	0.67	0.61	0.6	0.59	0.63	0.7	0.69	S	0.76	0.7	0.66	0.65	0.64	0.64	0.64	0.65	0.71	0.72	0.86	0.59	0.86	0.69
Jul 14	0.89	0.96	1.08	0.77	0.75	0.74	0.65	0.66	0.66	0.65	0.62	S	0.65	0.62	0.61	0.62	0.61	0.61	0.61	0.61	0.65	0.65	0.72	0.68	0.61	1.08	0.70
Jul 15	0.75	0.73	0.76	0.88	1.06	1.08	1.44	0.99	0.79	0.8	S	0.79	0.66	0.63	0.63	0.65	0.67	0.72	0.71	0.79	0.76	0.76	0.8	0.79	0.63	1.44	0.81
Jul 16	0.87	0.91	0.8	0.84	0.83	0.92	0.72	0.64	0.65	S	0.71	0.63	0.64	0.61	0.6	0.61	0.6	0.59	0.59	0.6	0.62	0.69	0.75	0.71	0.59	0.92	0.70
Jul 17	0.83	0.81	1.01	1.13	1.01	1.02	1.1	0.95	S	0.67	0.59	0.56	0.56	0.57	0.56	0.56	0.55	0.58	0.61	0.6	0.62	0.64	0.69	0.62	0.55	1.13	0.73
Jul 18	0.63	0.71	0.72	0.68	0.92	0.96	0.88	S	0.7	0.66	0.63	0.6	0.57	0.6	0.57	0.58	0.62	0.56	0.56	0.55	0.56	0.56	0.58	0.58	0.55	0.96	0.65
Jul 19	0.6	0.59	0.61	0.65	0.7	0.76	S	0.83	0.9	1.01	1.18	1.33	1.31	0.98	0.82	0.74	0.74	0.77	0.79	0.75	0.75	1.02	0.97	0.79	0.59	1.33	0.85
Jul 20	0.62	0.6	0.59	0.66	0.67	S	0.69	0.59	0.6	0.58	0.58	0.56	0.55	0.55	0.56	0.56	0.55	0.54	0.54	0.55	0.6	0.85	0.86	0.79	0.54	0.86	0.62
Jul 21	0.76	0.87	0.87	1.01	S	1.2	1.04	0.84	0.63	0.6	0.58	0.6	0.62	0.59	0.58	0.56	0.56	0.56	0.56	0.61	0.7	0.71	0.69	0.71	0.56	1.20	0.72
Jul 22	0.74	0.77	0.81	S	1	0.94	1.14	0.85	0.72	0.6	0.57	0.55	0.54	0.54	0.53	0.52	0.52	0.52	0.54	0.58	0.63	1.37	1.1	1.22	0.52	1.37	0.75
Jul 23	1.06	1.12	S	1.05	0.76	0.7	0.66	0.69	0.64	0.6	0.57	0.54	0.54	0.55	0.58	0.57	0.56	0.59	0.58	0.58	0.68	0.84	0.76	0.79	0.54	1.12	0.70
Jul 24	0.75	S	0.93	1.02	1.15	0.83	0.8	1	0.88	0.71	0.68	0.7	0.68	0.64	0.62	0.61	0.61	0.6	0.57	0.61	0.65	0.69	0.7	0.7	0.57	1.15	0.74
Jul 25	S	0.79	0.67	0.69	0.73	0.79	0.72	0.68	0.71	0.73	0.71	0.65	0.62	0.62	0.61	0.64	0.67	0.65	0.66	0.65	0.61	0.72	1.11	S	0.61	1.11	0.70
Jul 26	1.23	0.97	0.76	0.75	0.74	0.75	0.74	0.73	0.74	0.72	0.71	0.66	0.69	0.68	0.67	0.68	0.71	0.69	0.69	0.7	0.72	0.74	S	0.79	0.66	1.23	0.75
Jul 27	0.74	0.79	0.86	0.97	1.1	1.16	0.85	0.83	0.79	0.74	0.73	0.67	0.61	0.61	0.61	0.59	0.59	0.59	0.58	0.6	0.65	S	0.7	0.65	0.58	1.16	0.74
Jul 28	0.61	0.61	0.59	0.56	0.58	0.83	0.59	0.64	0.65	0.63	0.62	0.56	0.53	0.54	0.53	0.58	0.56	0.66	0.61	0.64	S	0.59	0.6	0.64	0.53	0.83	0.61
Jul 29	0.67	0.65	0.63	0.63	0.65	0.65	0.67	0.66	0.62	0.6	0.58	0.57	0.56	0.55	0.55	0.57	0.57	0.58	0.59	S	0.68	0.82	0.97	0.79	0.55	0.97	0.64
Jul 30	0.6	0.49	0.46	0.63	0.55	0.68	0.41	0.06	0	C	C	C	C	C	C	0.09	0.11	Y	S	0.66	0.55	0.58	0.9	0.98	0.00	0.98	-
Jul 31	0.83	0.85	0.93	0.9	0.9	0.93	0.92	1	0.81	0.56	0.48	0.45	0.53	0.55	0.48	0.51	0.46	N	N	N	N	N	N	N	0.45	1.00	-
Diurnal Maximum	1.62	1.62	2.21	1.86	2.02	2.23	1.44	1.00	0.90	1.01	1.18	1.33	1.31	0.98	0.82	0.74	0.76	0.77	0.79	0.82	0.84	1.37	1.44	1.53			
Daiurnal Average	0.84	0.84	0.87	0.90	0.91	0.88	0.80	0.73	0.67	0.66	0.65	0.64	0.63	0.62	0.61	0.59	0.59	0.62	0.62	0.65	0.66	0.74	0.83	0.86			

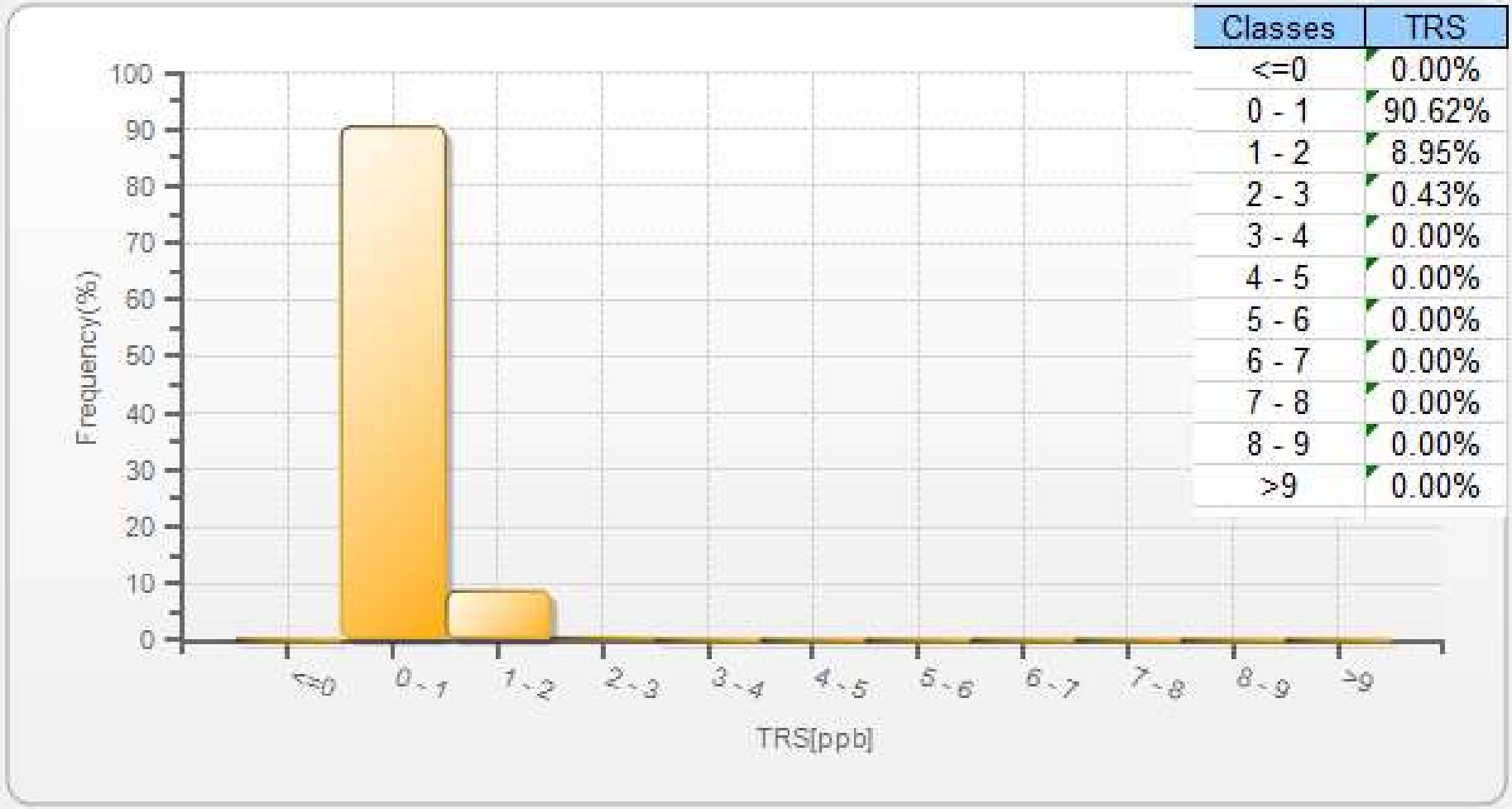
C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 - 986b Station



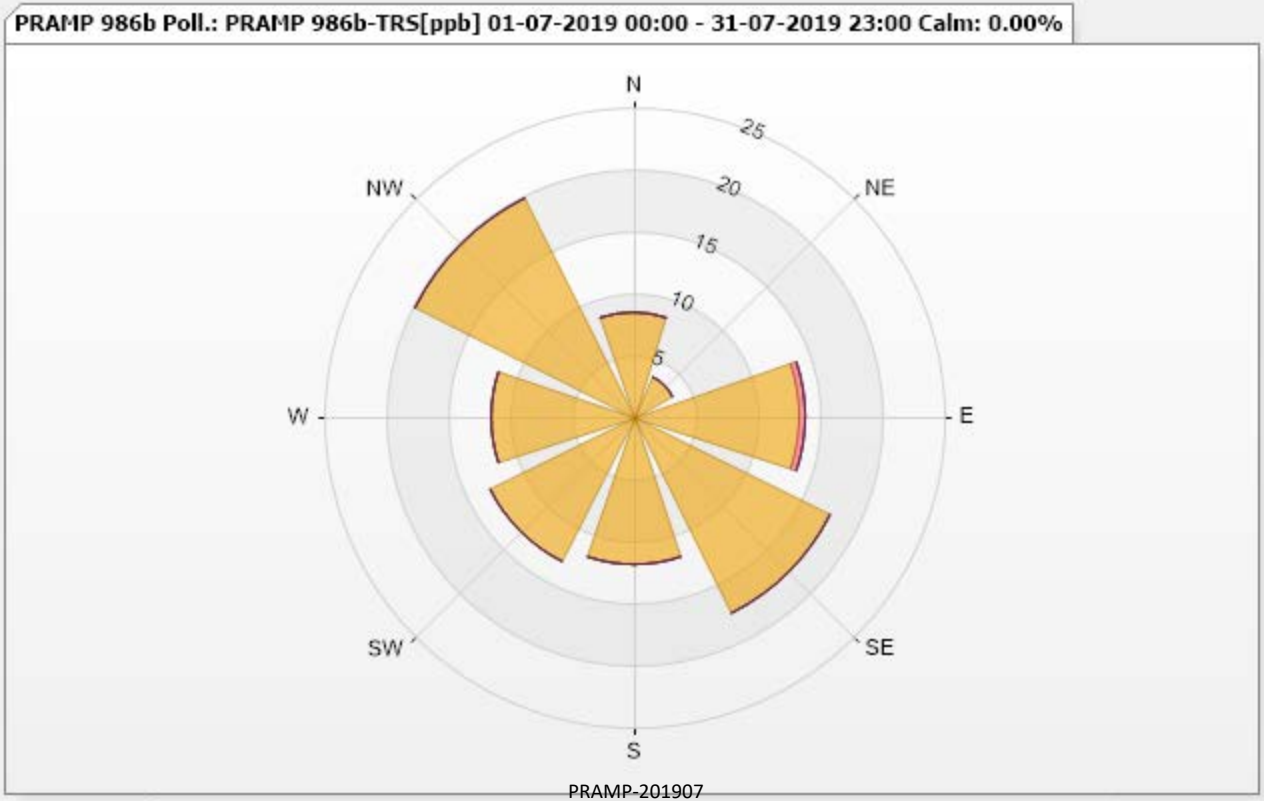
TRS[ppb] Histogram: PRAMP 986b Monthly: 07-2019 1 Hr.



Classes	TRS
<=0	0.00%
0 - 1	90.62%
1 - 2	8.95%
2 - 3	0.43%
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 986b Poll.: PRAMP 986b-TRS[ppb] Monthly: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 92.88% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	8.39	0	0	0	0	8.39
NE	3.62	0	0	0	0	3.62
E	13.46	0.43	0	0	0	13.89
SE	17.8	0	0	0	0	17.8
S	11.87	0	0	0	0	11.87
SW	13.02	0	0	0	0	13.02
W	11.58	0	0	0	0	11.58
NW	19.83	0	0	0	0	19.83
Summary	100	0.43	0	0	0	100


PRAMP 986b Poll.: PRAMP 986b-TRS[ppb] 01-07-2019 00:00 - 31-07-2019 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

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PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

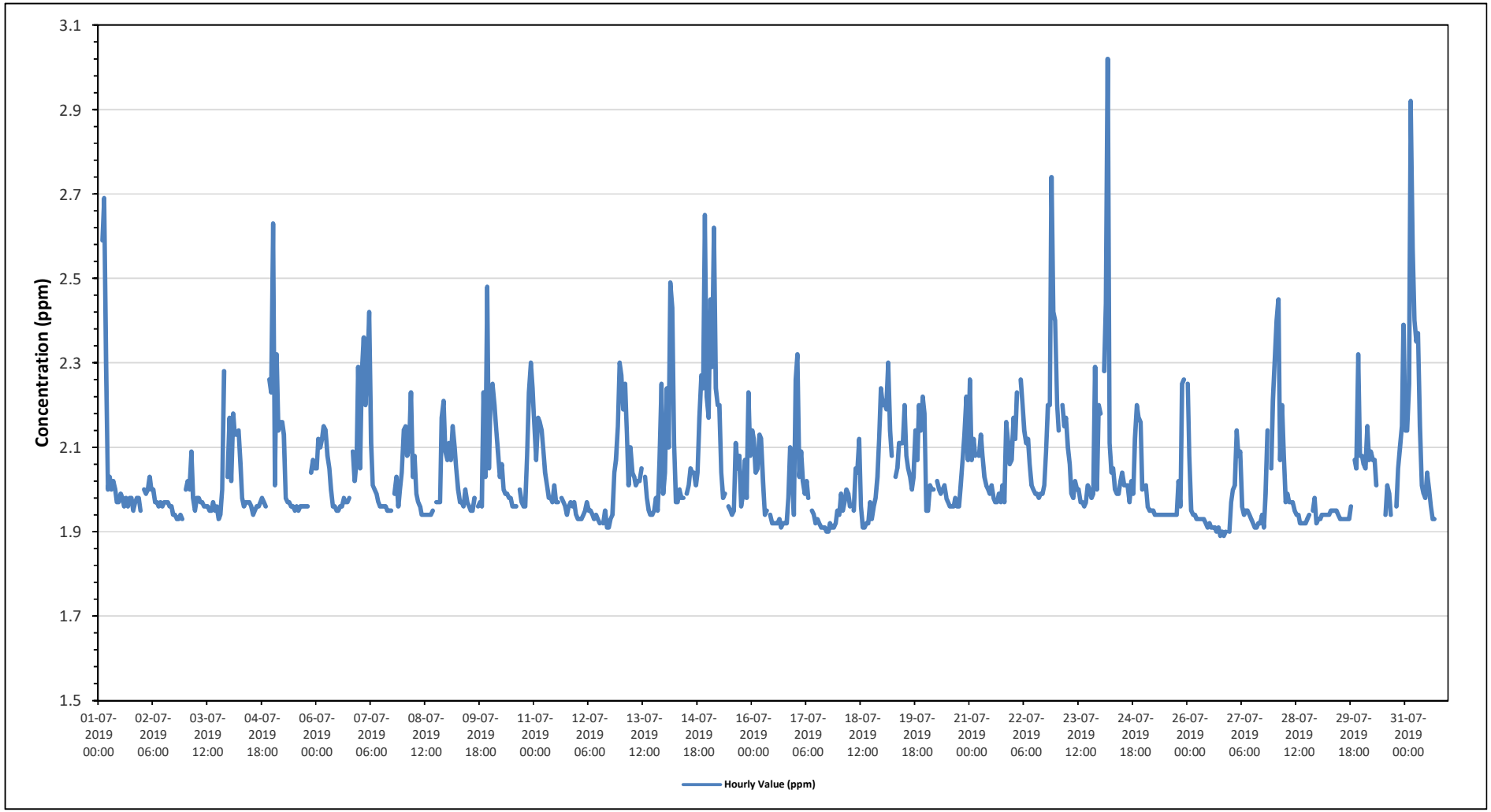
Maximum Hourly Value:	3.02	ppm	on July 24 at hour 4	Hours in Service:	744
Maximum Daily Value:	2.15	ppm	on July 22	Hours of Data:	700
Minimum Hourly Value:	1.89	ppm	on July 26 at hour 20	Hours of Missing Data:	8
Minimum Daily Value:	1.94	ppm	on July 26	Hours of Calibration:	36
Monthly Average:	2.04	ppm		Operational Uptime:	98.9

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jul 1	2.28	S	2.59	2.69	2.30	2.00	2.03	2.00	2.02	2.00	1.97	1.97	1.99	1.98	1.96	1.98	1.96	1.98	1.98	1.95	1.97	1.98	1.98	1.95	1.95	2.69	2.07
Jul 2	S	2.00	1.99	2.00	2.03	2.00	2.00	1.97	1.97	1.96	1.97	1.96	1.97	1.97	1.97	1.96	1.96	1.94	1.94	1.93	1.93	1.94	1.93	S	1.93	2.03	1.97
Jul 3	2.00	2.02	2.00	2.09	1.98	1.95	1.98	1.98	1.97	1.97	1.96	1.96	1.96	1.95	1.95	1.97	1.95	1.96	1.93	1.94	2.00	2.28	S	2.03	1.93	2.28	1.99
Jul 4	2.17	2.02	2.18	2.13	2.13	2.14	2.06	1.98	1.96	1.97	1.97	1.97	1.96	1.94	1.95	1.96	1.96	1.97	1.98	1.97	1.96	S	2.26	2.23	1.94	2.26	2.04
Jul 5	2.63	2.01	2.32	2.14	2.16	2.16	2.13	1.98	1.97	1.97	1.96	1.96	1.95	1.96	1.95	1.96	1.96	1.96	1.96	1.96	S	2.04	2.07	2.05	1.95	2.63	2.05
Jul 6	2.05	2.12	2.10	2.12	2.15	2.14	2.08	2.05	2.00	1.96	1.96	1.95	1.95	1.96	1.96	1.98	1.97	1.97	1.98	S	2.09	2.02	2.07	2.29	1.95	2.29	2.04
Jul 7	2.05	2.28	2.36	2.20	2.28	2.42	2.11	2.01	2.00	1.99	1.97	1.96	1.96	1.96	1.96	1.95	1.95	1.95	S	1.99	2.03	1.96	2.00	2.04	1.95	2.42	2.06
Jul 8	2.14	2.15	2.08	2.10	2.23	2.03	2.08	1.99	1.97	1.96	1.94	1.94	1.94	1.94	1.94	1.94	1.95	S	1.97	1.97	1.97	2.17	2.21	2.09	1.94	2.23	2.03
Jul 9	2.07	2.11	2.07	2.15	2.10	2.05	2.00	1.97	1.97	1.96	2.00	1.97	1.96	1.95	1.95	1.98	S	1.96	1.97	1.96	2.23	2.03	2.48	2.05	1.95	2.48	2.04
Jul 10	2.24	2.25	2.20	2.14	2.09	2.03	2.06	2.00	1.99	1.99	1.98	1.98	1.96	1.96	1.96	S	2.00	1.97	1.96	1.96	2.08	2.23	2.30	2.24	1.96	2.30	2.07
Jul 11	2.15	2.07	2.17	2.16	2.14	2.09	2.04	2.01	1.98	1.98	1.97	2.01	1.97	1.97	S	1.98	1.97	1.96	1.94	1.96	1.97	1.96	1.97	1.94	1.94	2.17	2.02
Jul 12	1.93	1.93	1.93	1.94	1.95	1.97	1.95	1.95	1.94	1.93	1.94	1.93	1.92	S	1.92	1.95	1.91	1.91	1.93	1.94	2.04	2.07	2.15	2.30	1.91	2.30	1.97
Jul 13	2.27	2.19	2.25	2.13	2.01	2.10	2.04	2.03	2.01	2.02	2.02	2.05	S	2.03	1.98	1.95	1.94	1.94	1.95	1.98	1.95	2.07	2.25	1.99	1.94	2.27	2.05
Jul 14	2.04	2.24	2.10	2.49	2.43	2.11	1.97	1.97	2.00	1.98	1.98	S	1.99	2.01	2.05	2.04	2.04	2.01	2.04	2.17	2.27	2.24	2.65	2.22	1.97	2.65	2.13
Jul 15	2.17	2.45	2.29	2.62	2.24	2.20	2.20	2.04	1.98	1.99	S	1.96	1.95	1.94	1.95	2.11	2.05	2.08	1.96	1.99	2.07	1.98	2.23	2.08	1.94	2.62	2.11
Jul 16	2.14	2.12	2.04	2.05	2.13	2.12	2.02	1.94	1.95	S	1.94	1.92	1.92	1.92	1.92	1.93	1.91	1.92	1.92	1.92	1.98	2.10	2.02	1.94	1.91	2.14	1.99
Jul 17	2.26	2.32	2.03	2.09	2.02	1.99	2.02	1.98	S	1.95	1.94	1.92	1.93	1.92	1.91	1.91	1.91	1.90	1.90	1.92	1.91	1.91	1.92	1.95	1.90	2.32	1.98
Jul 18	1.94	1.99	1.95	1.97	2.00	1.99	1.96	S	1.95	2.05	2.04	2.12	1.96	1.91	1.91	1.92	1.92	1.97	1.93	1.96	1.98	2.03	2.12	2.24	1.91	2.24	1.99
Jul 19	2.20	2.21	2.19	2.30	2.14	2.08	S	2.03	2.05	2.11	2.11	2.11	2.20	2.08	2.05	2.03	2.00	2.03	2.14	2.07	2.20	2.14	2.22	2.18	2.00	2.30	2.12
Jul 20	1.95	1.95	2.01	2.00	2.00	S	2.02	2.00	1.99	2.00	2.01	1.98	1.97	1.96	1.96	1.96	1.98	1.96	1.96	2.01	2.07	2.13	2.22	2.07	1.95	2.22	2.01
Jul 21	2.26	2.07	2.12	2.08	S	2.08	2.13	2.08	2.03	2.01	2.00	1.99	2.01	1.98	1.97	1.97	1.99	1.97	2.01	1.97	2.16	2.11	2.06	2.07	1.97	2.26	2.05
Jul 22	2.17	2.12	2.23	S	2.26	2.20	2.14	2.11	2.12	2.06	2.01	2.00	1.99	1.99	1.98	1.99	1.99	2.01	2.09	2.20	2.20	2.74	2.42	2.40	1.98	2.74	**2.15**
Jul 23	2.20	2.14	S	2.20	2.15	2.17	2.10	2.06	1.99	1.98	2.02	2.00	2.00	1.97	1.97	1.96	1.97	2.01	2.00	1.98	1.99	2.29	2.00	2.20	1.96	2.29	2.06
Jul 24	2.18	S	2.28	2.44	**3.02**	2.11	2.04	2.05	2.00	1.99	1.99	2.02	2.04	2.01	2.01	2.01	1.97	2.02	1.99	2.12	2.20	2.17	2.16	2.00	1.97	**3.02**	2.12
Jul 25	S	2.01	1.96	1.95	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	2.02	1.96	2.25	2.26	S	1.94	2.26	1.98
Jul 26	2.25	2.08	1.95	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.92	1.91	1.92	1.91	1.91	1.91	1.90	1.91	1.89	1.90	1.89	1.90	S	1.90	1.89	2.25	1.94
Jul 27	1.97	2.00	2.01	2.14	2.08	2.09	1.96	1.94	1.95	1.95	1.94	1.93	1.92	1.91	1.91	1.92	1.92	1.94	1.91	1.99	2.14	S	2.05	2.21	1.91	2.21	1.99
Jul 28	2.31	2.40	2.45	2.07	2.20	2.08	1.97	1.99	1.97	1.97	1.97	1.95	1.94	1.94	1.92	1.92	1.92	1.92	1.93	1.94	S	1.95	1.98	1.92	1.92	2.45	2.03
Jul 29	1.93	1.93	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.95	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.96	S	2.07	2.05	2.32	2.08	1.93	2.32	1.97
Jul 30	2.08	2.06	2.05	2.15	2.07	2.09	2.07	2.07	2.01	C	C	C	C	1.94	2.01	1.99	1.94	Y	S	1.96	2.05	2.10	2.15	2.39	1.94	2.39	2.07
Jul 31	2.14	2.14	2.25	2.92	2.57	2.40	2.35	2.37	2.15	2.01	1.99	1.98	2.04	2.00	1.96	1.93	1.93	N	N	N	N	N	N	N	1.93	2.92	-
Diurnal Maximum	2.63	2.45	2.59	2.92	3.02	2.42	2.35	2.37	2.15	2.11	2.11	2.12	2.20	2.08	2.05	2.11	2.05	2.08	2.14	2.20	2.27	2.74	2.65	2.40			
Daiurnal Average	2.14	2.12	2.14	2.18	2.16	2.09	2.04	2.01	1.99	1.98	1.98	1.98	1.97	1.96	1.96	1.96	1.96	1.96	1.97	1.99	2.05	2.10	2.16	2.11			

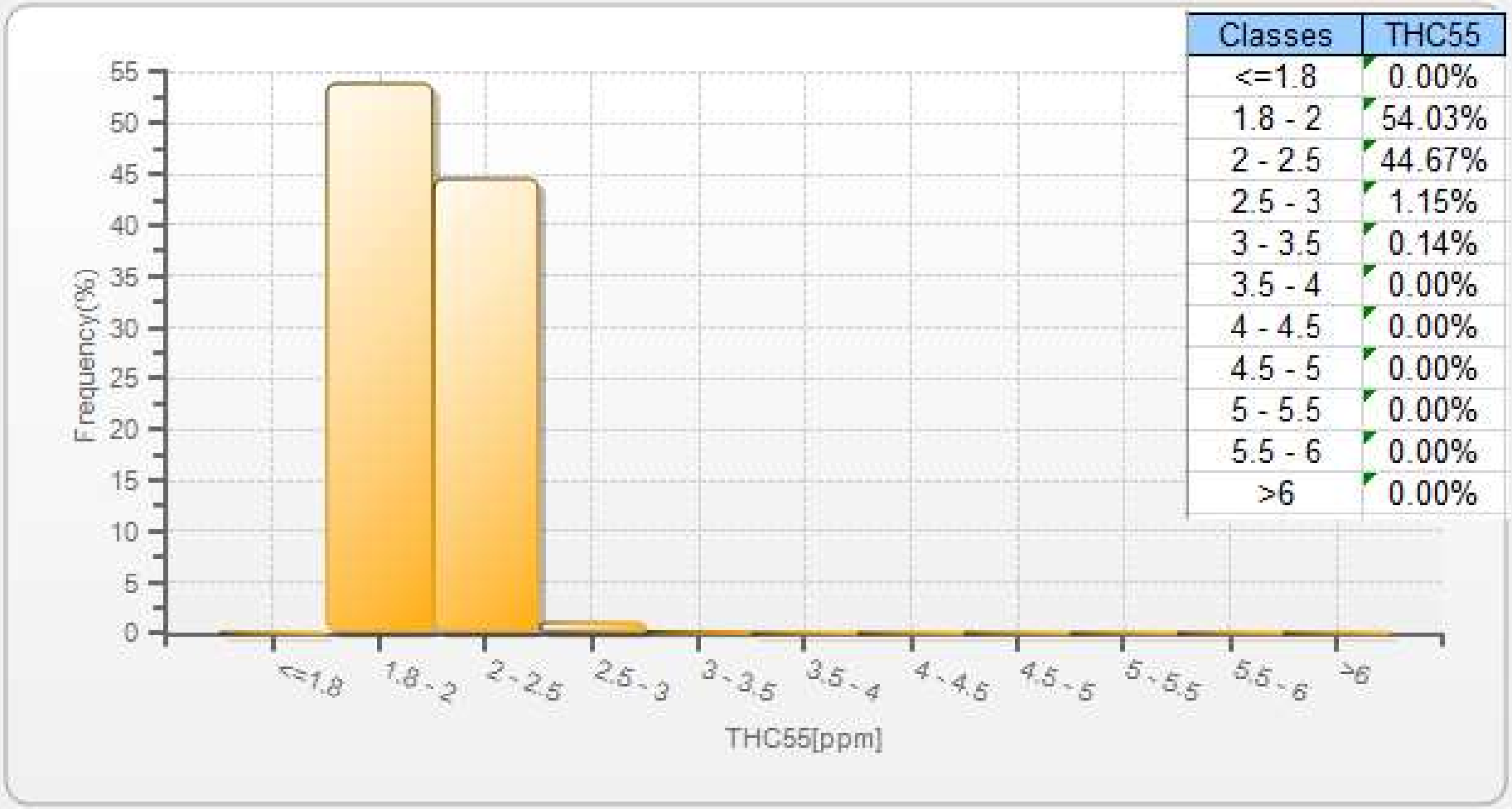
C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 - 986b Station



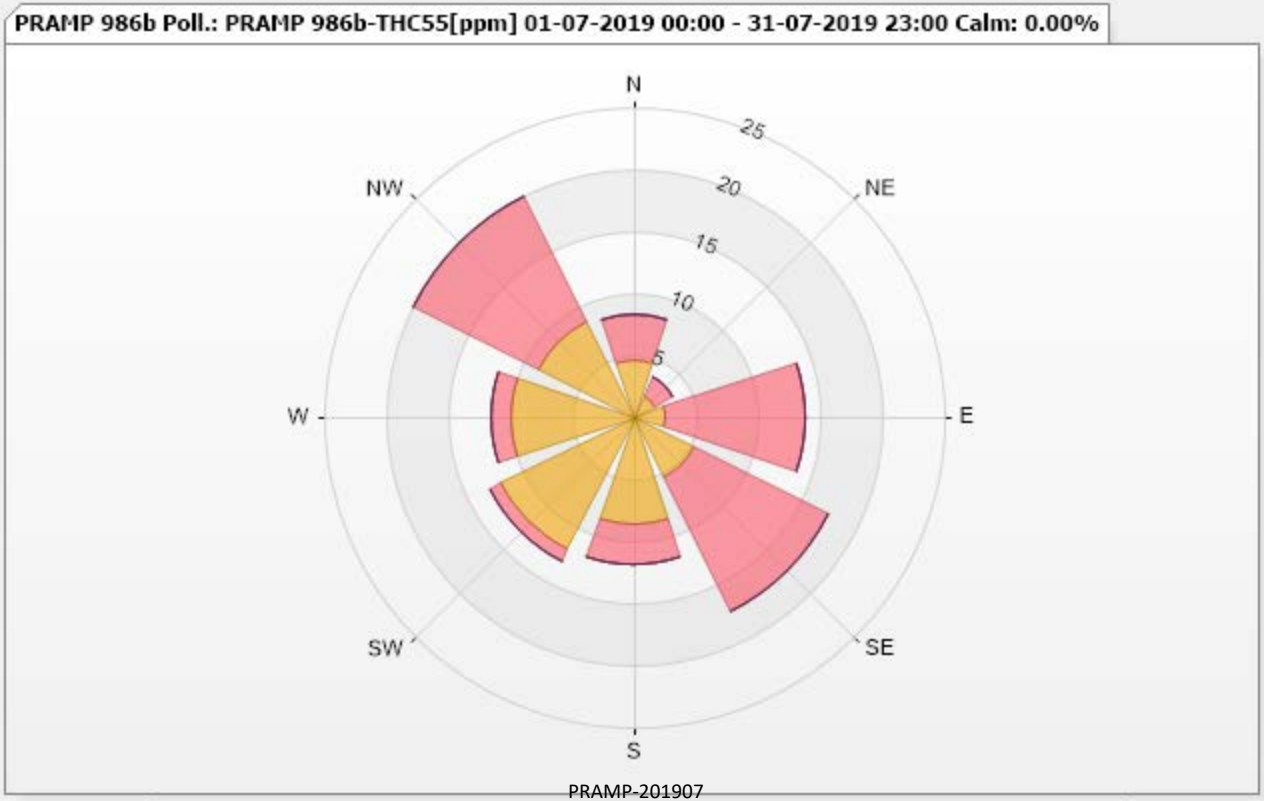
THC55[ppm] Histogram: PRAMP 986b Monthly: 07-2019 1 Hr.



Classes	THC55
<=1.8	0.00%
1.8 - 2	54.03%
2 - 2.5	44.67%
2.5 - 3	1.15%
3 - 3.5	0.14%
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 986b Poll.: PRAMP 986b-THC55[ppm] Monthly: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 93.01% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	4.62	3.76	0	0	0	8.38
NE	1.88	1.73	0	0	0	3.61
E	2.6	11.27	0	0	0	13.87
SE	5.49	12.14	0	0	0	17.63
S	8.67	3.32	0	0	0	11.99
SW	11.99	1.01	0	0	0	13
W	9.97	1.59	0	0	0	11.56
NW	8.67	11.27	0	0	0	19.94
Summary	53.89	46.09	0	0	0	100


PRAMP 986b Poll.: PRAMP 986b-THC55[ppm] 01-07-2019 00:00 - 31-07-2019 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
25
20
15
10
5
% Icon Classes (ppm)
54 0-2
46 2-5
0 5-10
0 10-40
0 >40.0

peace river area monitoring program
pramp

PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

Summary of Hourly Averages

METHANE (CH4) in ppm

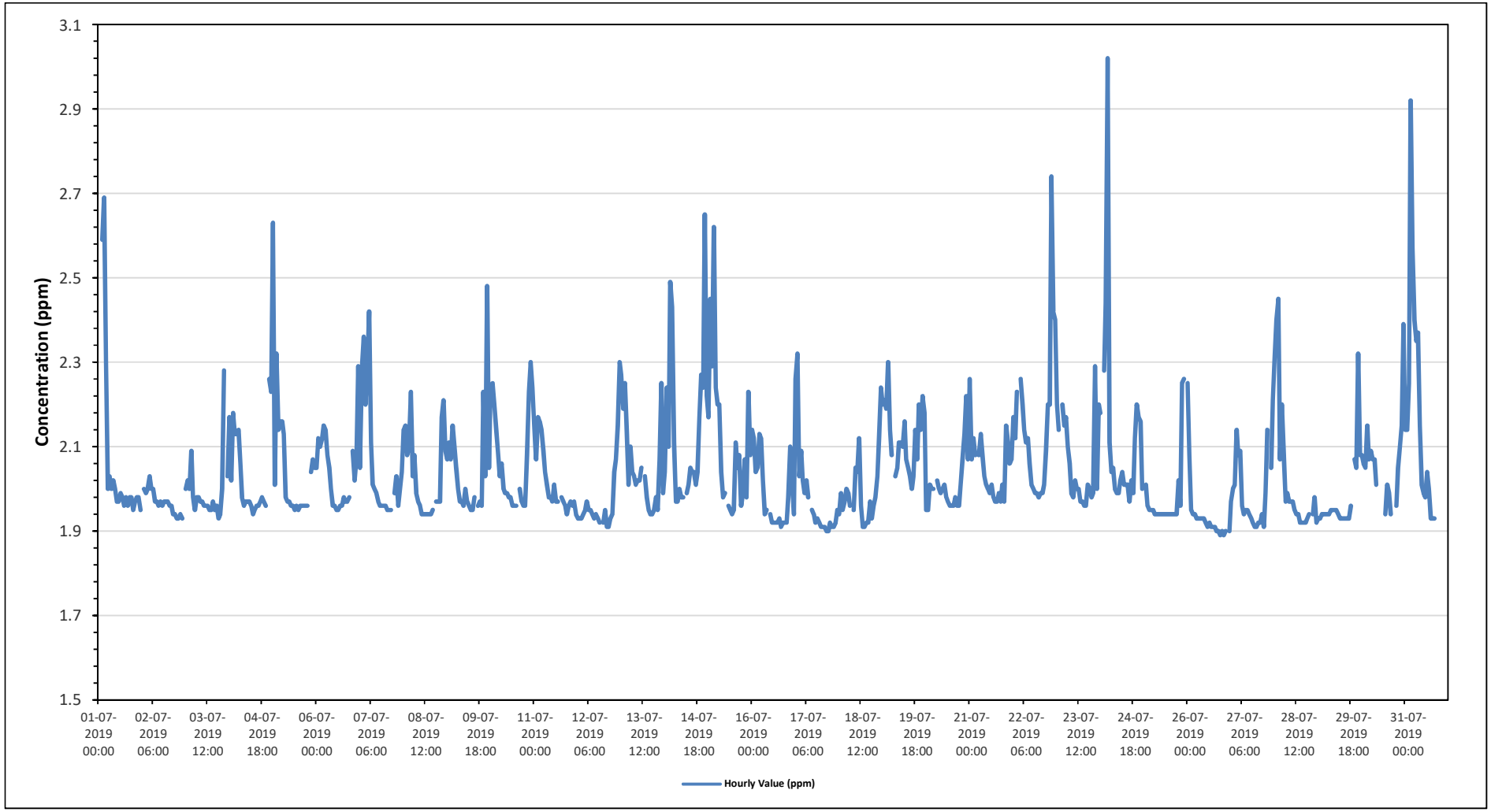
Maximum Hourly Value:	3.02	ppm	on July 24 at hour 4	Hours in Service:	744
Maximum Daily Value:	2.15	ppm	on July 22	Hours of Data:	700
Minimum Hourly Value:	1.89	ppm	on July 26 at hour 18	Hours of Missing Data:	8
Minimum Daily Value:	1.94	ppm	on July 26	Hours of Calibration:	36
Monthly Average:	2.04	ppm		Operational Uptime:	98.9

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			
Jul 1	2.28	S	2.59	2.69	2.30	2.00	2.03	2.00	2.02	2.00	1.97	1.97	1.99	1.98	1.96	1.98	1.96	1.98	1.98	1.95	1.97	1.98	1.98	1.95	1.95	2.69	2.07
Jul 2	S	2.00	1.99	2.00	2.03	2.00	2.00	1.97	1.97	1.96	1.97	1.96	1.97	1.97	1.97	1.96	1.96	1.94	1.94	1.93	1.93	1.94	1.93	S	1.93	2.03	1.97
Jul 3	2.00	2.02	2.00	2.09	1.98	1.95	1.98	1.98	1.97	1.97	1.96	1.96	1.96	1.95	1.95	1.97	1.95	1.96	1.93	1.94	2.00	2.28	S	2.03	1.93	2.28	1.99
Jul 4	2.17	2.02	2.18	2.13	2.13	2.14	2.06	1.98	1.96	1.97	1.97	1.97	1.96	1.94	1.95	1.96	1.96	1.97	1.98	1.97	1.96	S	2.26	2.23	1.94	2.26	2.04
Jul 5	2.63	2.01	2.32	2.14	2.16	2.16	2.13	1.98	1.97	1.97	1.96	1.96	1.95	1.96	1.95	1.96	1.96	1.96	1.96	1.96	S	2.04	2.07	2.05	1.95	2.63	2.05
Jul 6	2.05	2.12	2.10	2.12	2.15	2.14	2.08	2.05	2.00	1.96	1.96	1.95	1.95	1.96	1.96	1.98	1.97	1.97	1.98	S	2.09	2.02	2.07	2.29	1.95	2.29	2.04
Jul 7	2.05	2.28	2.36	2.20	2.28	2.42	2.11	2.01	2.00	1.99	1.97	1.96	1.96	1.96	1.96	1.95	1.95	1.95	S	1.99	2.03	1.96	2.00	2.04	1.95	2.42	2.06
Jul 8	2.14	2.15	2.08	2.10	2.23	2.03	2.08	1.99	1.97	1.96	1.94	1.94	1.94	1.94	1.94	1.94	1.95	S	1.97	1.97	1.97	2.17	2.21	2.09	1.94	2.23	2.03
Jul 9	2.07	2.11	2.07	2.15	2.10	2.05	2.00	1.97	1.97	1.96	2.00	1.97	1.96	1.95	1.95	1.98	S	1.96	1.97	1.96	2.23	2.03	2.48	2.05	1.95	2.48	2.04
Jul 10	2.24	2.25	2.20	2.14	2.09	2.03	2.06	2.00	1.99	1.99	1.98	1.98	1.96	1.96	1.96	S	2.00	1.97	1.96	1.96	2.08	2.23	2.30	2.24	1.96	2.30	2.07
Jul 11	2.15	2.07	2.17	2.16	2.14	2.09	2.04	2.01	1.98	1.98	1.97	2.01	1.97	1.97	S	1.98	1.97	1.96	1.94	1.96	1.97	1.96	1.97	1.94	1.94	2.17	2.02
Jul 12	1.93	1.93	1.93	1.94	1.95	1.97	1.95	1.95	1.94	1.93	1.94	1.93	1.92	S	1.92	1.95	1.91	1.91	1.93	1.94	2.04	2.07	2.15	2.30	1.91	2.30	1.97
Jul 13	2.27	2.19	2.25	2.13	2.01	2.10	2.04	2.03	2.01	2.02	2.02	2.05	S	2.03	1.98	1.95	1.94	1.94	1.95	1.98	1.95	2.07	2.25	1.99	1.94	2.27	2.05
Jul 14	2.04	2.24	2.10	2.49	2.43	2.11	1.97	1.97	2.00	1.98	1.98	S	1.99	2.01	2.05	2.04	2.04	2.01	2.04	2.17	2.27	2.24	2.65	2.22	1.97	2.65	2.13
Jul 15	2.17	2.45	2.29	2.62	2.24	2.20	2.20	2.04	1.98	1.99	S	1.96	1.95	1.94	1.95	2.11	2.05	2.08	1.96	1.99	2.07	1.98	2.23	2.08	1.94	2.62	2.11
Jul 16	2.14	2.12	2.04	2.05	2.13	2.12	2.02	1.94	1.95	S	1.94	1.92	1.92	1.92	1.92	1.93	1.91	1.92	1.92	1.92	1.98	2.10	2.02	1.94	1.91	2.14	1.99
Jul 17	2.26	2.32	2.03	2.09	2.02	1.99	2.02	1.98	S	1.95	1.94	1.92	1.93	1.92	1.91	1.91	1.91	1.90	1.90	1.92	1.91	1.91	1.92	1.95	1.90	2.32	1.98
Jul 18	1.94	1.99	1.95	1.97	2.00	1.99	1.96	S	1.95	2.05	2.04	2.12	1.96	1.91	1.91	1.92	1.92	1.97	1.93	1.96	1.98	2.03	2.12	2.24	1.91	2.24	1.99
Jul 19	2.20	2.21	2.19	2.30	2.14	2.08	S	2.03	2.05	2.11	2.11	2.10	2.16	2.07	2.05	2.03	2.00	2.03	2.14	2.07	2.20	2.14	2.22	2.18	2.00	2.30	2.12
Jul 20	1.95	1.95	2.01	2.00	2.00	S	2.02	2.00	1.99	2.00	2.01	1.98	1.97	1.96	1.96	1.96	1.98	1.96	1.96	2.01	2.07	2.13	2.22	2.07	1.95	2.22	2.01
Jul 21	2.26	2.07	2.12	2.08	S	2.08	2.13	2.08	2.03	2.01	2.00	1.99	2.01	1.98	1.97	1.97	1.99	1.97	2.01	1.97	2.15	2.11	2.06	2.07	1.97	2.26	2.05
Jul 22	2.17	2.12	2.23	S	2.26	2.20	2.14	2.11	2.12	2.06	2.01	2.00	1.99	1.99	1.98	1.99	1.99	2.01	2.09	2.20	2.20	2.74	2.42	2.40	1.98	2.74	**2.15**
Jul 23	2.20	2.14	S	2.20	2.15	2.17	2.10	2.06	1.99	1.98	2.02	2.00	2.00	1.97	1.97	1.96	1.96	2.01	2.00	1.98	1.99	2.29	2.00	2.20	1.96	2.29	2.06
Jul 24	2.18	S	2.28	2.44	**3.02**	2.11	2.04	2.05	2.00	1.99	1.99	2.02	2.04	2.01	2.01	2.01	1.97	2.02	1.99	2.12	2.20	2.17	2.16	2.00	1.97	**3.02**	2.12
Jul 25	S	2.01	1.96	1.95	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	2.02	1.96	2.25	2.26	S	1.94	2.26	1.98
Jul 26	2.25	2.08	1.95	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.92	1.91	1.92	1.91	1.91	1.91	1.90	1.90	1.89	1.90	1.89	1.90	S	1.90	1.89	2.25	1.94
Jul 27	1.97	2.00	2.01	2.14	2.08	2.09	1.96	1.94	1.95	1.95	1.94	1.93	1.92	1.91	1.91	1.92	1.92	1.94	1.91	1.99	2.14	S	2.05	2.21	1.91	2.21	1.99
Jul 28	2.31	2.40	2.45	2.07	2.20	2.08	1.97	1.99	1.97	1.97	1.97	1.95	1.94	1.94	1.92	1.92	1.92	1.92	1.93	1.94	S	1.94	1.98	1.92	1.92	2.45	2.03
Jul 29	1.93	1.93	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.95	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.96	S	2.07	2.05	2.32	2.08	1.93	2.32	1.97
Jul 30	2.08	2.06	2.05	2.15	2.07	2.09	2.07	2.07	2.01	C	C	C	C	1.94	2.01	1.99	1.94	Y	S	1.96	2.05	2.10	2.15	2.39	1.94	2.39	2.07
Jul 31	2.14	2.14	2.25	2.92	2.57	2.40	2.35	2.37	2.15	2.01	1.99	1.98	2.04	2.00	1.93	1.93	1.93	N	N	N	N	N	N	N	1.93	2.92	-
Diurnal Maximum	2.63	2.45	2.59	2.92	3.02	2.42	2.35	2.37	2.15	2.11	2.11	2.12	2.16	2.07	2.05	2.11	2.05	2.08	2.14	2.20	2.27	2.74	2.65	2.40			
Daiurnal Average	2.14	2.12	2.14	2.18	2.16	2.09	2.04	2.01	1.99	1.98	1.98	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.97	1.99	2.05	2.10	2.16	2.11			

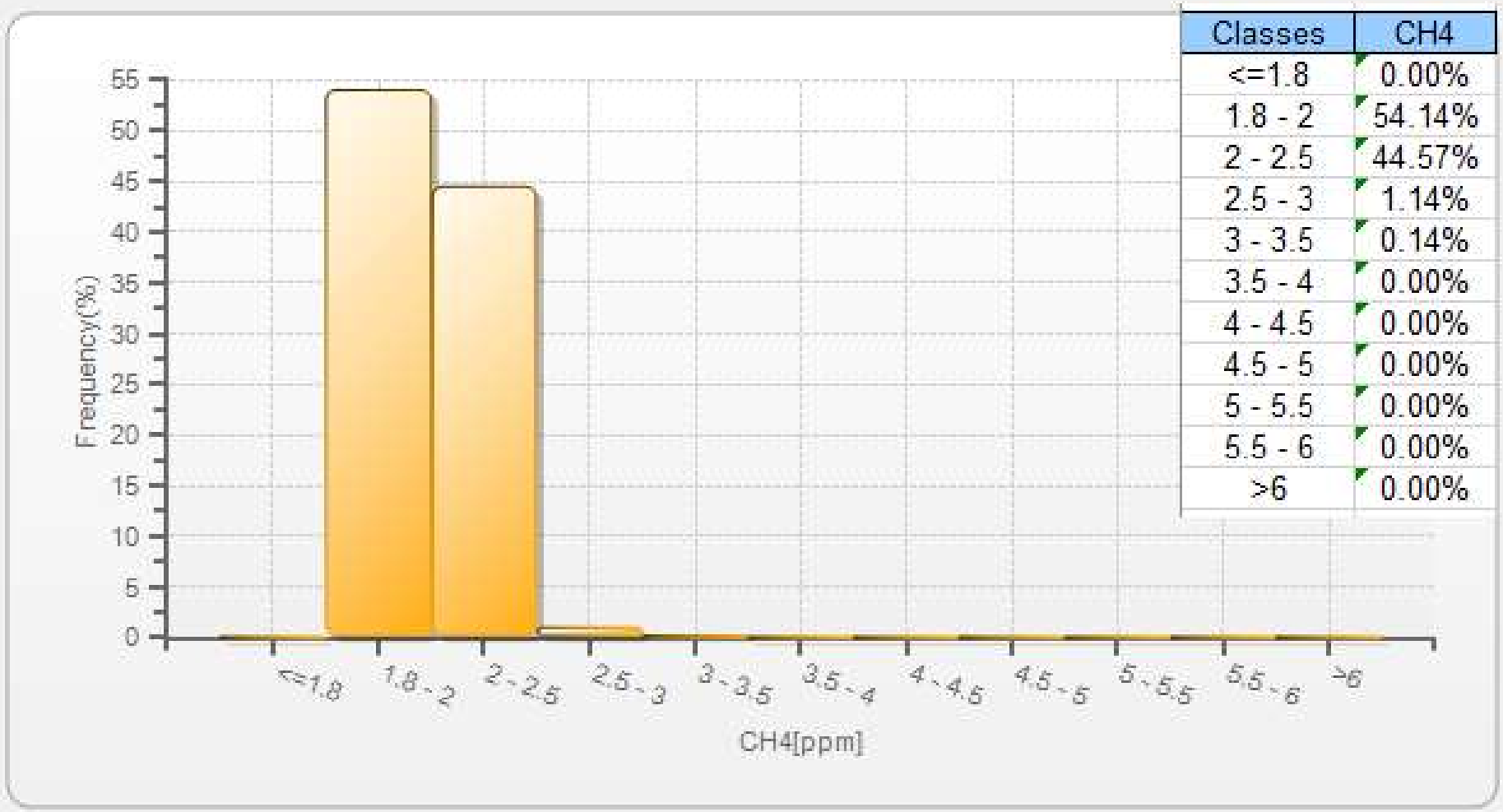
C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 - 986b Station



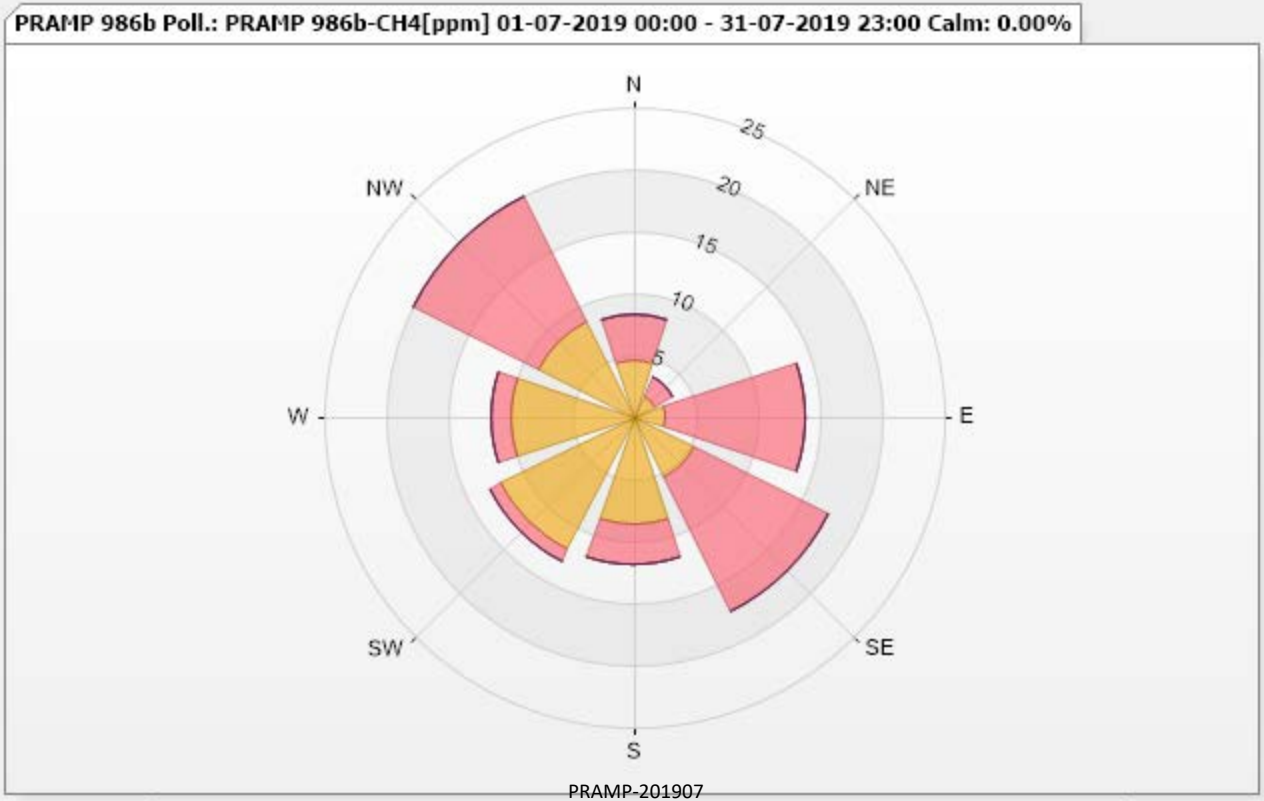
CH4[ppm] Histogram: PRAMP 986b Monthly: 07-2019 1 Hr.



Classes	CH4
<=1.8	0.00%
1.8 - 2	54.14%
2 - 2.5	44.57%
2.5 - 3	1.14%
3 - 3.5	0.14%
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 986b Poll.: PRAMP 986b-CH4[ppm] Monthly: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 93.01% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	4.62	3.76	0	0	0	8.38
NE	1.88	1.73	0	0	0	3.61
E	2.6	11.27	0	0	0	13.87
SE	5.49	12.14	0	0	0	17.63
S	8.67	3.32	0	0	0	11.99
SW	11.99	1.01	0	0	0	13
W	9.97	1.59	0	0	0	11.56
NW	8.67	11.27	0	0	0	19.94
Summary	53.89	46.09	0	0	0	100


PRAMP 986b Poll.: PRAMP 986b-CH4[ppm] 01-07-2019 00:00 - 31-07-2019 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
25
20
15
10
5
% Icon Classes (ppm)
54 0-2
46 2-5
0 5-10
0 10-20
0 >20.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

Summary of Hourly Averages

NON-METHANE HYDROCARBONS (NMHC) in ppm

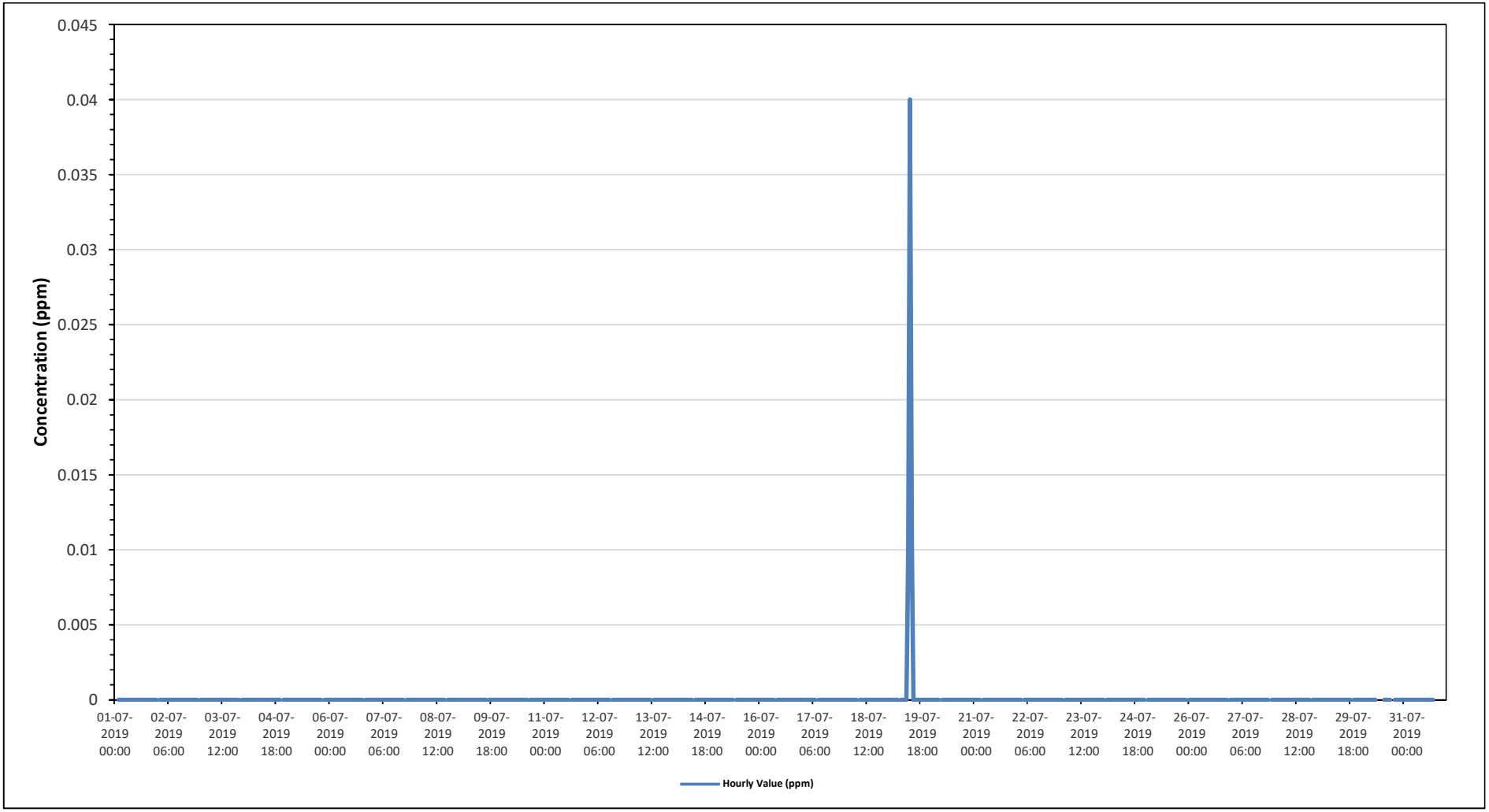
Maximum Hourly Value:	0.04	ppm	on July 19 at hour 12	Hours in Service:	744
Maximum Daily Value:	0.00	ppm	on July 19	Hours of Data:	700
Minimum Hourly Value:	0.00	ppm	on July 1 at hour 0	Hours of Missing Data:	8
Minimum Daily Value:	0.00	ppm	on July 1	Hours of Calibration:	36
Monthly Average:	0.00	ppm		Operational Uptime:	98.9

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jul 1	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 2	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
Jul 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Jul 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jul 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Jul 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 19	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.01	**0.04**	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.04**	**0.00**
Jul 20	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 21	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 22	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 23	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 24	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 25	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
Jul 26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Jul 27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jul 28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Jul 29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	0.00	0.00	0.00	0.00	Y	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N	N	N	N	N	N	N	0.00	0.00	-
Diurnal Maximum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Daiurnal 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			

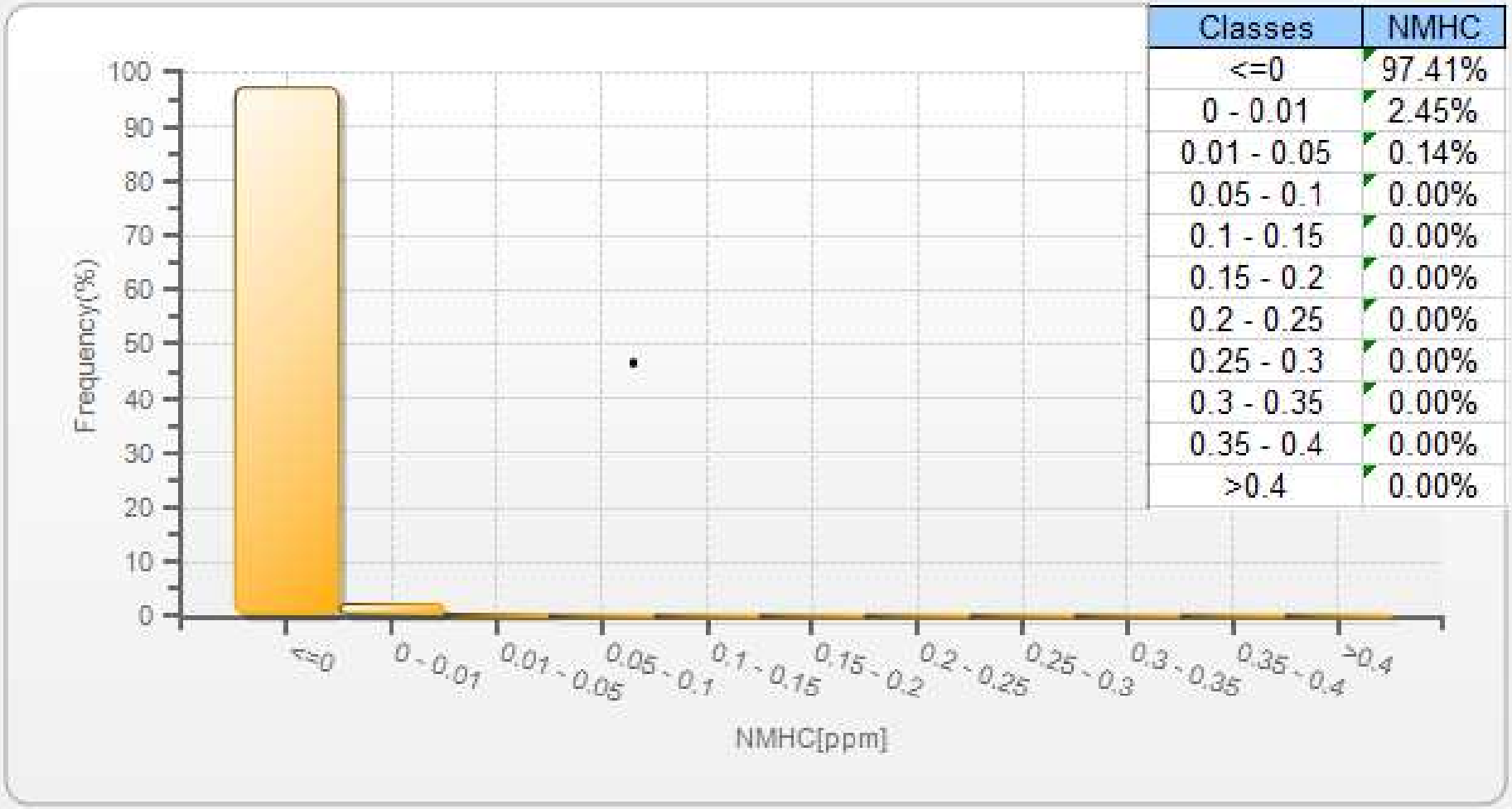
C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 - 986b Station



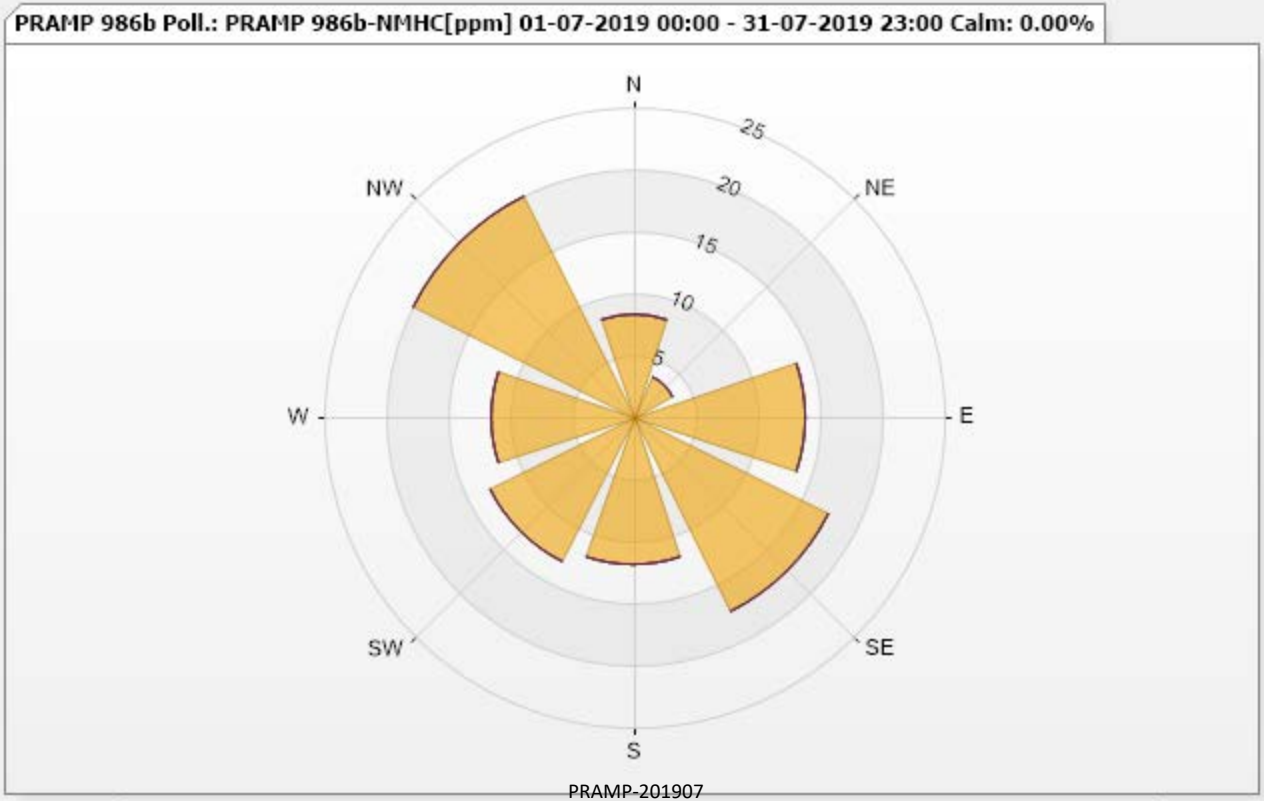
NMHC[ppm] Histogram: PRAMP 986b Monthly: 07-2019 1 Hr.



Classes	NMHC
<=0	97.41%
0 - 0.01	2.45%
0.01 - 0.05	0.14%
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	0.00%

Wind: PRAMP 986b Poll.: PRAMP 986b-NMHC[ppm] Monthly: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 93.01% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	8.38	0	0	0	0	8.38
NE	3.61	0	0	0	0	3.61
E	13.87	0	0	0	0	13.87
SE	17.63	0	0	0	0	17.63
S	11.99	0	0	0	0	11.99
SW	13.01	0	0	0	0	13.01
W	11.56	0	0	0	0	11.56
NW	19.94	0	0	0	0	19.94
Summary	100	0	0	0	0	100


PRAMP 986b Poll.: PRAMP 986b-NMHC[ppm] 01-07-2019 00:00 - 31-07-2019 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

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

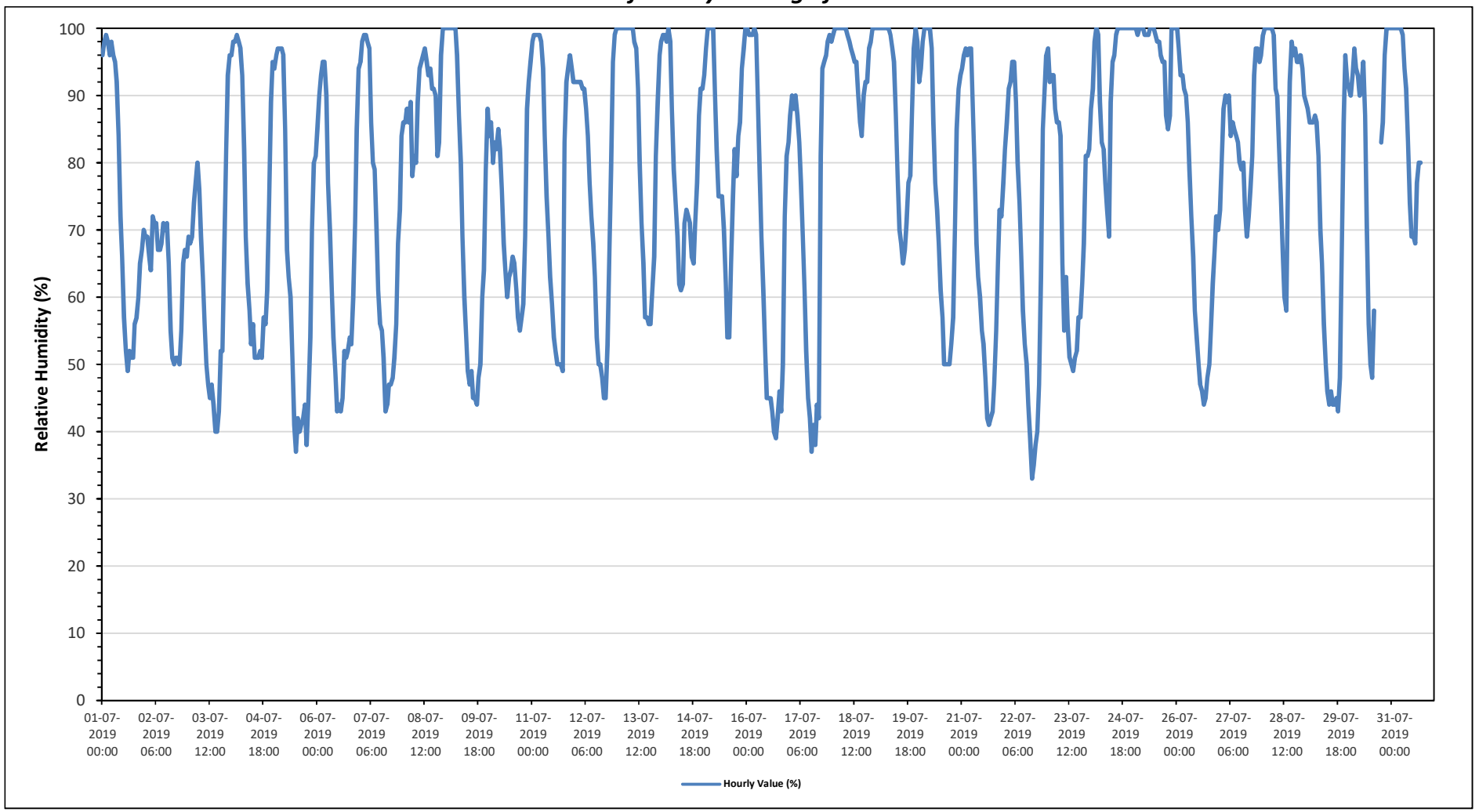
Maximum Hourly Value:	100	%	on July 8 at hour 22	Hours in Service:	744
Maximum Daily Value:	97.3	%	on July 25	Hours of Data:	734
Minimum Hourly Value:	33	%	on July 22 at hour 15	Hours of Missing Data:	10
Minimum Daily Value:	62.5	%	on July 3	Hours of Calibration:	0
Monthly Average:	77.0	%		Operational Uptime:	98.7

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
Jul 1	96	98	99	98	96	98	96	95	92	84	72	66	57	52	49	52	51	51	56	57	60	65	67	70	49	99	74
Jul 2	69	69	66	64	72	71	71	67	67	68	71	70	71	65	55	51	50	51	51	50	55	65	67	66	50	72	63
Jul 3	69	68	69	74	77	80	76	69	63	56	50	47	45	47	44	40	40	43	52	52	67	82	93	96	40	96	62
Jul 4	96	98	98	99	98	97	93	82	69	62	58	53	56	51	51	51	52	51	57	56	61	74	89	95	51	99	73
Jul 5	94	96	97	97	97	96	85	67	63	60	51	41	37	42	40	41	42	44	38	45	54	70	80	81	37	97	65
Jul 6	85	90	93	95	95	90	77	70	61	54	49	43	44	43	45	52	51	52	54	53	60	71	85	94	43	95	67
Jul 7	95	98	99	99	98	97	86	80	79	70	61	56	55	51	43	44	47	47	48	51	56	68	73	84	43	99	70
Jul 8	86	86	88	86	89	78	81	80	89	94	95	96	97	95	93	94	91	91	90	81	83	96	**100**	**100**	78	**100**	90
Jul 9	**100**	**100**	**100**	**100**	**100**	**100**	96	87	80	69	60	54	49	47	49	45	45	44	48	50	60	64	79	88	44	**100**	71
Jul 10	84	86	80	83	82	85	82	76	68	64	60	63	64	66	65	61	57	55	57	59	69	88	92	95	55	95	73
Jul 11	98	99	99	99	99	98	94	84	75	69	63	59	54	52	50	50	50	49	83	92	94	96	94	92	49	99	79
Jul 12	92	92	92	92	91	91	88	84	77	72	68	63	54	50	50	48	45	45	53	67	79	95	99	**100**	45	**100**	74
Jul 13	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	98	97	91	80	71	65	57	57	56	56	61	66	81	89	96	56	**100**	84
Jul 14	98	99	99	98	**100**	98	88	79	74	69	62	61	62	71	73	72	71	66	65	71	77	87	91	91	61	**100**	80
Jul 15	93	97	**100**	**100**	**100**	**100**	90	82	75	75	75	70	62	54	54	65	75	82	78	84	86	94	97	**100**	54	**100**	83
Jul 16	**100**	99	99	99	**100**	99	89	78	69	61	52	45	45	45	43	40	39	42	46	43	50	72	81	83	39	**100**	67
Jul 17	87	90	88	90	87	83	77	69	61	52	45	42	37	41	38	44	42	81	94	95	96	98	99	98	37	99	72
Jul 18	99	**100**	**100**	**100**	**100**	**100**	**100**	**100**	99	98	97	96	95	95	90	86	84	90	92	92	97	98	**100**	**100**	84	**100**	96
Jul 19	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	99	97	95	87	78	70	68	65	67	71	77	78	87	97	**100**	98	65	**100**	89
Jul 20	92	94	98	**100**	**100**	**100**	**100**	97	86	77	73	68	61	57	50	50	50	50	53	57	71	85	91	93	50	**100**	77
Jul 21	94	96	97	96	97	97	88	79	68	63	60	55	53	48	42	41	42	43	47	55	65	73	72	77	41	97	69
Jul 22	82	86	91	92	95	95	89	80	74	66	58	53	50	44	39	**33**	35	38	40	47	63	85	90	96	**33**	96	68
Jul 23	97	92	93	93	88	86	86	84	65	55	63	56	51	50	49	51	52	57	57	62	68	81	81	82	49	97	71
Jul 24	88	91	98	**100**	99	89	83	82	77	73	69	89	95	96	99	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	69	**100**	93
Jul 25	**100**	**100**	99	**100**	**100**	**100**	99	99	99	**100**	**100**	**100**	99	98	98	96	95	95	87	85	87	**100**	**100**	**100**	85	**100**	**97**
Jul 26	**100**	97	93	93	91	90	86	79	72	66	58	54	50	47	46	44	45	48	50	55	62	67	72	70	44	**100**	68
Jul 27	73	80	88	90	89	90	84	86	85	84	83	80	79	80	73	69	72	76	81	93	97	97	95	96	69	97	84
Jul 28	99	**100**	**100**	**100**	**100**	**100**	99	91	90	82	75	67	60	58	79	92	98	96	97	95	95	96	94	90	58	**100**	90
Jul 29	89	88	86	86	86	87	86	81	70	65	56	50	46	44	46	44	44	45	43	48	67	86	96	92	43	96	68
Jul 30	91	90	93	97	94	93	90	91	95	87	71	56	50	48	58	**Y**	**Y**	**Y**	83	86	96	**100**	**100**	**100**	48	**100**	84
Jul 31	**100**	**100**	**100**	**100**	**100**	**100**	99	94	91	83	74	69	69	68	77	80	80	**N**	**N**	**N**	**N**	**N**	**N**	**N**	68	**100**	-
Diurnal Maximum	100	100	100	100	100	100	100	100	100	100	100	100	99	98	99	100	100	100	100	100	100	100	100	100			
Daiurnal Average	91.8	92.9	93.6	94.2	94.2	93.2	89.0	83.6	78.5	73.3	68.4	64.5	61.5	59.5	58.7	58.6	59.0	60.7	64.4	67.3	74.3	84.4	88.9	90.8			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 - 986b Station



PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

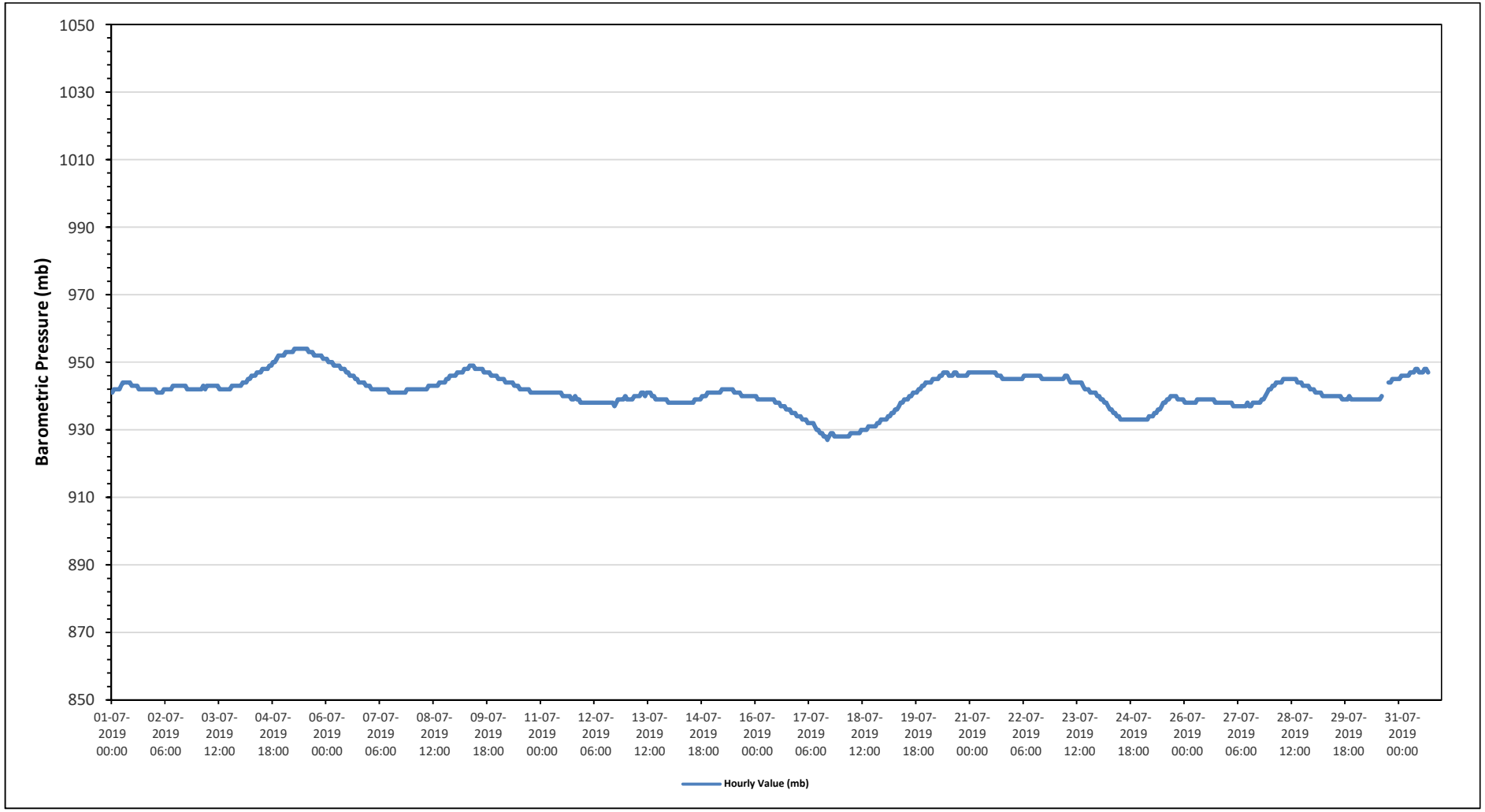
Maximum Hourly Value:	954	mb	on July 5 at hour	Hours in Service:	744
Maximum Daily Value:	953	mb	on July 5	Hours of Data:	734
Minimum Hourly Value:	927	mb	on July 17 at hour	Hours of Missing Data:	10
Minimum Daily Value:	930	mb	on July 18	Hours of Calibration:	0
Monthly Average:	941	mb		Operational Uptime:	98.7

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
Jul 1	941	942	942	942	942	943	944	944	944	944	944	943	943	943	943	942	942	942	942	942	942	942	942	942	941	944	943
Jul 2	942	941	941	941	941	942	942	942	942	942	943	943	943	943	943	943	943	943	942	942	942	942	942	942	941	943	942
Jul 3	942	942	942	943	942	943	943	943	943	943	943	943	942	942	942	942	942	942	942	943	943	943	943	943	942	943	943
Jul 4	943	944	944	944	945	945	946	946	946	947	947	947	948	948	948	948	949	949	950	950	951	952	952	952	943	952	948
Jul 5	952	953	953	953	953	953	**954**	**954**	**954**	**954**	**954**	**954**	**954**	**954**	953	953	953	952	952	952	952	952	951	951	951	**954**	**953**
Jul 6	951	950	950	950	949	949	949	949	948	948	948	947	947	946	946	946	945	945	944	944	944	944	943	943	943	951	947
Jul 7	943	942	942	942	942	942	942	942	942	942	942	941	941	941	941	941	941	941	941	941	941	942	942	942	941	943	942
Jul 8	942	942	942	942	942	942	942	942	942	943	943	943	943	943	943	944	944	944	944	945	945	946	946	946	942	946	943
Jul 9	946	947	947	947	947	948	948	948	949	949	949	948	948	948	948	948	947	947	947	947	946	946	946	946	946	949	947
Jul 10	945	945	945	945	944	944	944	944	944	943	943	943	942	942	942	942	942	942	941	941	941	941	941	941	941	945	943
Jul 11	941	941	941	941	941	941	941	941	941	941	941	941	940	940	940	940	940	939	939	940	939	939	938	938	938	941	940
Jul 12	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	937	938	939	939	939	939	940	937	940	938
Jul 13	939	939	939	939	940	940	940	940	941	941	940	941	941	941	940	940	939	939	939	939	939	939	939	938	938	941	940
Jul 14	938	938	938	938	938	938	938	938	938	938	938	938	938	938	939	939	939	939	940	940	940	941	941	941	938	941	939
Jul 15	941	941	941	941	941	942	942	942	942	942	942	942	941	941	941	941	940	940	940	940	940	940	940	940	940	942	941
Jul 16	940	939	939	939	939	939	939	939	939	939	939	938	938	938	937	937	937	936	936	936	935	935	935	934	934	940	938
Jul 17	934	934	933	933	933	932	932	932	932	931	930	930	929	929	928	928	**927**	928	929	929	928	928	928	928	**927**	934	930
Jul 18	928	928	928	928	928	929	929	929	929	929	929	930	930	930	930	931	931	931	931	931	932	932	933	933	928	933	930
Jul 19	933	933	934	934	935	935	936	936	937	938	938	939	939	939	940	940	941	941	941	942	942	943	943	944	933	944	938
Jul 20	944	944	944	945	945	945	945	946	946	947	947	947	946	946	946	947	947	946	946	946	946	946	946	947	944	947	946
Jul 21	947	947	947	947	947	947	947	947	947	947	947	947	947	947	947	946	946	946	945	945	945	945	945	945	945	947	946
Jul 22	945	945	945	945	945	945	946	946	946	946	946	946	946	946	946	946	945	945	945	945	945	945	945	945	945	946	945
Jul 23	945	945	945	945	945	946	946	945	944	944	944	944	944	944	944	943	942	942	942	941	941	941	941	940	940	946	943
Jul 24	940	939	939	938	938	937	936	936	935	935	934	934	933	933	933	933	933	933	933	933	933	933	933	933	933	940	935
Jul 25	933	933	933	933	934	934	934	935	935	936	936	937	938	938	939	939	940	940	940	940	939	939	939	939	933	940	937
Jul 26	938	938	938	938	938	938	938	939	939	939	939	939	939	939	939	939	939	938	938	938	938	938	938	938	938	939	938
Jul 27	938	938	938	937	937	937	937	937	937	937	937	938	937	937	938	938	938	938	938	939	939	940	941	942	937	942	938
Jul 28	942	943	943	944	944	944	944	945	945	945	945	945	945	945	945	944	944	944	943	943	943	943	942	942	942	945	944
Jul 29	942	941	941	941	941	940	940	940	940	940	940	940	940	940	940	940	939	939	939	939	940	939	939	939	939	942	940
Jul 30	939	939	939	939	939	939	939	939	939	939	939	939	939	939	940	Y	Y	Y	944	944	945	945	945	945	939	945	941
Jul 31	945	946	946	946	946	946	947	947	947	948	948	947	947	947	948	948	947	N	N	N	N	N	N	N	945	948	-
Diurnal Maximum	952	953	953	953	953	953	954	954	954	954	954	954	954	954	953	953	953	952	952	952	952	952	952	952			
Daiurnal Average	941	941	941	941	941	941	942	942	942	942	942	942	941	941	942	942	941	941	941	941	941	941	941	941			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 - 986b Station



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

Maximum Hourly Value:	28.2	°C	on July 22 at hour 17	Hours in Service:	744
Maximum Daily Value:	21.1	°C	on July 23	Hours of Data:	734
Minimum Hourly Value:	1.0	°C	on July 9 at hour 3	Hours of Missing Data:	10
Minimum Daily Value:	9.3	°C	on July 8	Hours of Calibration:	0
Monthly Average:	15.2	°C		Operational Uptime:	98.7

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
Jul 1	11.5	9.7	8.1	7.3	6.7	6.5	6.5	6.7	7.3	8.4	9.8	10.5	12.0	12.9	13.7	13.8	14.1	14.2	13.9	13.8	13.4	12.8	12.4	11.8	6.5	14.2	10.7
Jul 2	11.8	11.9	12.0	11.7	10.1	10.8	11.2	12.0	11.8	11.6	11.4	11.7	12.3	13.8	15.1	16.4	16.6	16.3	16.8	16.9	15.9	13.6	13.1	13.1	10.1	16.9	13.2
Jul 3	12.7	12.4	12.2	11.5	11.1	10.9	11.8	12.9	14.3	15.4	16.7	17.1	17.9	17.4	18.2	18.8	18.7	18.1	16.4	16.7	14.9	11.8	9.0	7.5	7.5	18.8	14.4
Jul 4	6.5	6.0	5.1	4.3	3.6	4.1	8.0	11.3	14.1	15.4	16.1	16.9	16.0	16.8	17.0	17.3	16.8	17.2	16.1	16.2	15.1	12.8	10.0	8.3	3.6	17.3	12.1
Jul 5	8.1	7.8	6.1	6.8	7.3	7.5	10.7	15.2	16.2	16.9	17.9	19.0	19.4	18.8	19.3	19.3	19.6	19.4	20.1	19.0	17.6	14.8	11.8	10.3	6.1	20.1	14.5
Jul 6	9.1	7.8	7.0	6.2	5.6	7.7	11.5	14.6	17.0	18.5	19.4	20.7	20.1	20.5	20.2	19.7	19.9	19.8	19.6	19.8	18.9	17.0	14.3	11.3	5.6	20.7	15.3
Jul 7	10.4	8.8	7.9	7.2	7.6	8.6	12.7	14.4	15.1	17.0	18.6	19.6	19.6	20.0	20.7	20.3	19.1	18.2	17.7	17.5	16.6	13.9	11.5	9.4	7.2	20.7	14.7
Jul 8	9.4	9.7	10.0	10.3	9.7	10.6	10.8	10.6	9.9	9.9	9.8	9.0	8.9	8.8	8.7	9.0	9.5	9.8	10.1	11.1	10.5	7.9	5.5	3.7	3.7	11.1	9.3
Jul 9	2.3	1.3	1.4	**1.0**	3.0	4.3	6.4	9.1	10.9	12.8	13.8	14.6	15.6	15.6	15.8	17.1	16.9	17.7	17.4	16.4	14.5	13.3	11.2	10.3	**1.0**	17.7	10.9
Jul 10	10.7	10.3	10.7	10.6	10.9	10.9	11.7	12.8	14.4	15.5	16.1	16.4	16.7	16.6	16.9	17.6	18.1	17.8	17.6	17.1	16.2	13.0	10.9	9.4	9.4	18.1	14.1
Jul 11	7.9	7.9	7.1	6.9	6.9	8.3	11.2	14.1	15.8	16.7	17.6	18.5	19.5	20.5	21.1	21.7	22.3	21.4	14.1	13.0	13.2	12.8	12.4	12.5	6.9	22.3	14.3
Jul 12	12.7	12.4	12.2	11.9	11.5	11.5	12.7	14.1	16.0	17.5	18.9	20.4	22.0	22.9	23.7	23.9	24.1	23.9	21.7	18.1	16.1	14.7	14.2	13.6	11.5	24.1	17.1
Jul 13	13.3	12.2	10.7	11.5	12.0	12.5	13.1	13.5	13.9	14.0	14.2	15.2	16.8	18.1	19.0	20.4	21.0	21.4	21.3	20.3	17.3	14.6	13.2	11.2	10.7	21.4	15.4
Jul 14	10.7	10.5	10.9	10.9	10.4	11.4	14.1	15.9	17.2	18.4	19.7	20.7	20.7	18.9	17.5	16.8	17.3	18.4	18.8	17.8	17.1	14.9	13.7	13.8	10.4	20.7	15.7
Jul 15	13.2	11.7	9.8	8.9	8.2	8.8	12.5	15.1	17.0	17.8	18.1	19.0	19.9	21.0	20.8	19.0	17.7	17.0	17.1	16.8	16.4	14.4	12.6	11.3	8.2	21.0	15.2
Jul 16	11.3	11.4	11.1	11.0	9.9	10.5	13.2	16.0	17.9	19.4	20.6	21.3	21.9	22.1	22.8	23.2	23.5	22.9	22.1	21.4	19.6	15.9	13.3	12.8	9.9	23.5	17.3
Jul 17	12.1	11.3	11.5	10.6	10.8	12.3	14.6	16.7	18.6	21.2	22.5	23.1	23.9	23.6	23.6	23.0	23.1	16.0	14.7	14.4	14.3	13.8	13.4	13.2	10.6	23.9	16.8
Jul 18	12.8	12.7	12.4	12.4	12.6	12.7	12.9	13.2	13.3	13.5	13.6	13.7	13.7	14.1	14.8	15.4	15.5	15.2	15.1	15.2	14.8	14.3	12.9	12.2	12.2	15.5	13.7
Jul 19	12.0	12.0	12.0	12.1	12.3	12.4	12.6	13.0	13.0	13.7	14.3	16.0	18.8	21.0	22.0	22.4	22.1	21.0	20.5	20.0	18.5	16.1	14.6	14.4	12.0	22.4	16.1
Jul 20	14.8	14.2	13.1	12.3	11.6	11.5	12.7	14.2	16.2	17.9	19.5	20.8	21.9	22.5	23.2	23.6	23.7	23.6	23.3	22.5	20.3	17.1	15.0	14.1	11.5	23.7	17.9
Jul 21	13.9	13.3	12.6	12.4	12.0	12.2	14.6	17.6	20.0	21.3	22.6	23.9	24.4	25.0	25.4	25.7	25.7	25.6	25.1	23.3	21.6	19.6	18.6	17.3	12.0	25.7	19.7
Jul 22	16.1	15.3	14.2	13.8	13.3	13.3	15.1	17.7	19.2	21.2	23.0	24.3	25.2	26.3	27.0	27.9	28.1	**28.2**	27.3	26.4	24.1	19.3	17.1	14.9	13.3	**28.2**	20.8
Jul 23	14.3	15.2	14.4	14.4	15.5	16.2	16.5	17.2	20.9	23.9	23.3	24.7	26.5	26.7	26.9	26.2	26.3	26.1	26.1	24.6	22.4	20.1	19.1	18.6	14.3	26.9	**21.1**
Jul 24	17.4	17.5	16.6	15.6	14.7	16.2	17.0	17.5	18.8	19.4	20.6	18.1	17.7	17.6	17.0	16.9	16.8	16.7	16.7	16.6	16.3	16.0	15.7	15.6	14.7	20.6	17.0
Jul 25	15.6	15.3	14.4	13.8	13.6	13.4	13.3	13.1	13.1	13.2	13.2	13.3	13.6	14.1	14.5	14.8	14.7	14.9	15.9	15.7	15.5	12.5	10.5	9.8	9.8	15.9	13.8
Jul 26	9.3	10.4	11.0	10.8	11.1	11.5	12.6	14.6	16.3	18.1	19.6	20.3	21.3	22.0	22.5	23.0	23.2	22.8	22.8	21.8	19.8	18.0	16.4	15.5	9.3	23.2	17.3
Jul 27	14.1	12.6	11.2	10.7	11.1	11.7	13.6	14.4	14.9	15.5	15.8	16.0	16.3	16.4	17.5	18.0	17.6	17.2	17.0	15.7	15.2	14.7	14.1	13.5	10.7	18.0	14.8
Jul 28	12.3	11.6	12.1	12.0	11.5	11.1	11.8	13.6	14.2	15.9	17.2	18.4	19.5	20.1	16.9	14.8	13.6	14.5	14.7	15.0	14.7	14.1	13.7	14.0	11.1	20.1	14.5
Jul 29	13.0	12.4	12.1	11.7	11.4	11.2	11.6	12.8	14.8	16.2	17.7	18.8	19.4	19.7	20.0	20.3	20.1	19.8	19.5	18.7	16.0	12.3	10.0	10.3	10.0	20.3	15.4
Jul 30	9.6	9.7	9.1	8.5	9.3	9.9	11.1	12.1	12.3	14.1	17.0	18.6	19.5	19.6	17.3	**Y**	**Y**	**Y**	15.4	15.9	14.2	12.3	10.1	9.0	8.5	19.6	13.1
Jul 31	9.1	10.0	9.7	8.2	7.0	7.3	9.6	12.2	13.6	15.6	17.3	18.4	18.9	19.0	17.1	16.5	16.7	N	**N**	**N**	**N**	**N**	**N**	**N**	7.0	19.0	-
Diurnal Maximum	17.4	17.5	16.6	15.6	15.5	16.2	17.0	17.7	20.9	23.9	23.3	24.7	26.5	26.7	27.0	27.9	28.1	28.2	27.3	26.4	24.1	20.1	19.1	18.6			
Daiurnal Average	11.5	11.1	10.6	10.2	10.1	10.6	12.2	13.8	15.1	16.3	17.3	18.0	18.7	19.1	19.2	19.4	19.4	19.1	18.5	17.9	16.7	14.6	13.0	12.1			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
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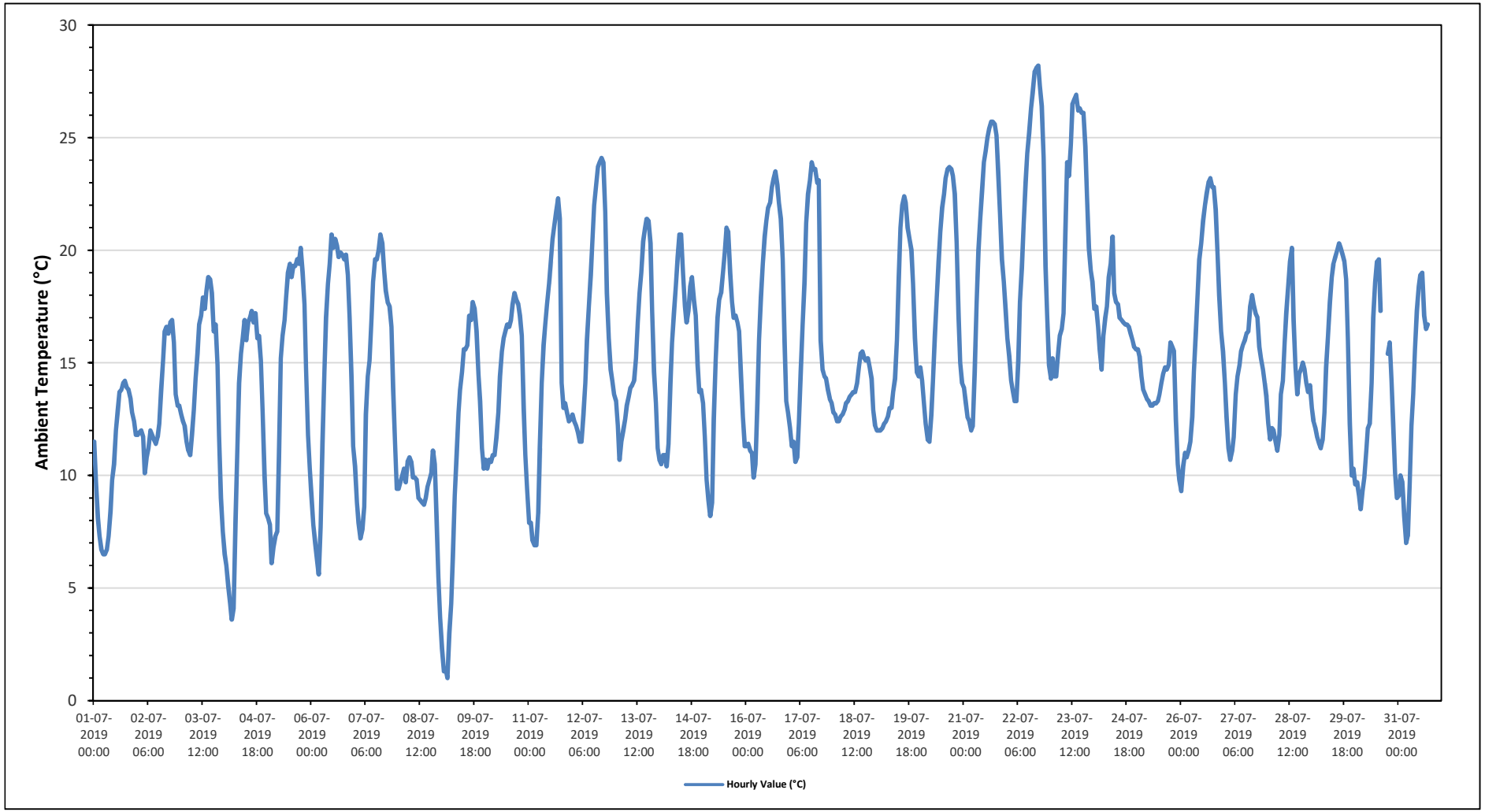
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for AT - 986b Station



PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

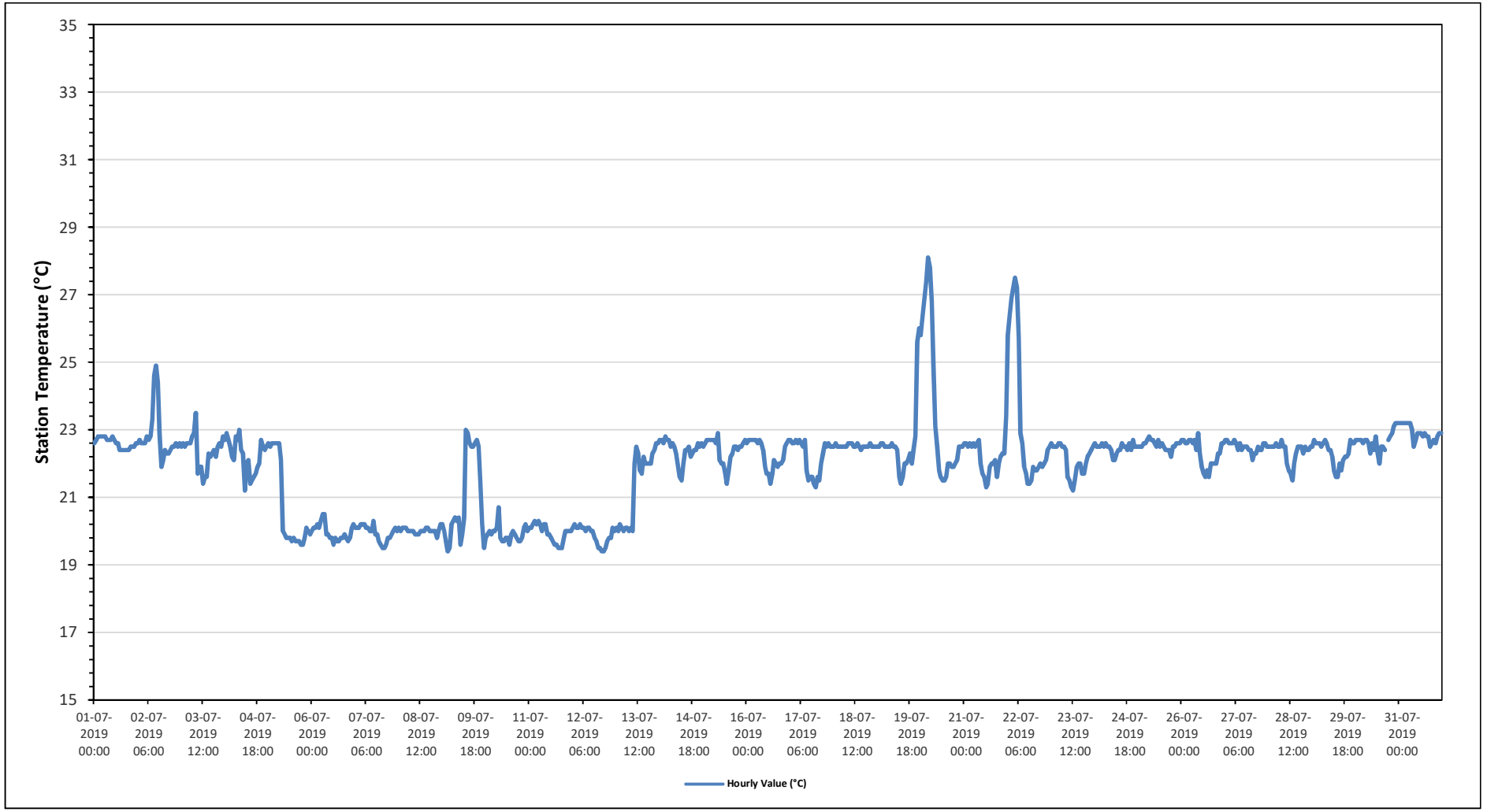
Maximum Hourly Value:	28.1	°C	on July 20 at hour 4	Hours in Service:	744
Maximum Daily Value:	23.6	°C	on July 20	Hours of Data:	743
Minimum Hourly Value:	19.4	°C	on July 9 at hour 3	Hours of Missing Data:	1
Minimum Daily Value:	19.9	°C	on July 12	Hours of Calibration:	0
Monthly Average:	21.9	°C		Operational Uptime:	99.9

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jul 1	22.6	22.7	22.8	22.8	22.8	22.8	22.8	22.7	22.7	22.7	22.8	22.7	22.6	22.6	22.4	22.4	22.4	22.4	22.4	22.4	22.5	22.5	22.5	22.6	22.4	22.8	22.6
Jul 2	22.6	22.7	22.6	22.6	22.6	22.8	22.7	22.8	23.3	24.6	24.9	24.4	22.9	21.9	22.1	22.4	22.3	22.3	22.4	22.5	22.5	22.6	22.5	22.6	21.9	24.9	22.8
Jul 3	22.5	22.6	22.5	22.6	22.6	22.6	22.8	22.9	23.5	21.7	21.9	21.9	21.4	21.6	21.6	22.3	22.2	22.3	22.4	22.2	22.5	22.6	22.5	22.8	21.4	23.5	22.4
Jul 4	22.7	22.9	22.7	22.5	22.2	22.1	22.8	22.7	23.0	22.4	22.3	21.2	22.0	22.1	21.4	21.5	21.6	21.7	21.9	22.0	22.7	22.5	22.4	22.5	21.2	23.0	22.2
Jul 5	22.6	22.5	22.6	22.6	22.6	22.6	22.6	22.1	20.0	19.9	19.8	19.8	19.8	19.7	19.8	19.7	19.7	19.7	19.6	19.6	19.8	20.1	20.0	19.9	19.6	22.6	20.7
Jul 6	20.0	20.1	20.1	20.2	20.1	20.3	20.5	20.5	19.9	19.9	19.8	19.8	19.6	19.8	19.7	19.7	19.8	19.8	19.9	19.8	19.7	19.8	20.1	20.2	19.6	20.5	20.0
Jul 7	20.1	20.1	20.1	20.2	20.2	20.2	20.1	20.1	20.0	20.0	20.3	19.9	19.9	19.7	19.6	19.5	19.5	19.6	19.8	19.8	19.9	20.0	20.1	20.0	19.5	20.3	19.9
Jul 8	20.1	20.0	20.1	20.1	20.1	20.0	20.0	20.0	20.0	19.9	19.9	19.9	20.0	20.0	20.0	20.1	20.1	20.0	20.0	20.0	20.0	19.8	20.0	20.2	19.8	20.2	20.0
Jul 9	20.2	20.0	19.7	**19.4**	19.5	20.2	20.3	20.4	20.3	20.4	19.6	19.9	20.4	23.0	22.9	22.6	22.5	22.5	22.6	22.7	22.5	21.4	20.2	19.5	**19.4**	23.0	20.9
Jul 10	19.8	19.9	20.0	19.9	20.0	20.0	20.1	20.7	19.8	19.7	19.7	19.8	19.8	19.6	19.9	20.0	19.9	19.8	19.7	19.7	19.8	20.1	20.2	20.0	19.6	20.7	19.9
Jul 11	20.1	20.1	20.2	20.3	20.2	20.3	20.2	20.0	20.2	20.2	19.9	19.9	19.8	19.7	19.6	19.6	19.5	19.5	19.5	19.8	20.0	20.0	20.0	20.0	19.5	20.3	19.9
Jul 12	20.1	20.2	20.1	20.1	20.2	20.1	20.1	20.0	20.1	20.1	20.0	20.0	19.8	19.7	19.5	19.5	**19.4**	**19.4**	19.5	19.7	19.8	19.8	20.1	20.0	**19.4**	20.2	19.9
Jul 13	20.1	20.0	20.2	20.1	20.0	20.1	20.1	20.0	20.1	20.0	22.0	22.5	22.3	21.8	21.7	22.2	22.0	22.0	22.0	22.0	22.3	22.4	22.6	22.6	20.0	22.6	21.3
Jul 14	22.7	22.7	22.6	22.8	22.7	22.7	22.5	22.6	22.5	22.3	21.9	21.6	21.5	22.0	22.4	22.4	22.5	22.2	22.3	22.4	22.4	22.6	22.5	22.6	21.5	22.8	22.4
Jul 15	22.5	22.6	22.7	22.7	22.7	22.7	22.7	22.6	22.9	22.1	22.0	22.0	21.7	21.4	21.8	22.2	22.3	22.5	22.5	22.4	22.5	22.5	22.6	22.7	21.4	22.9	22.4
Jul 16	22.6	22.7	22.7	22.7	22.7	22.7	22.6	22.7	22.6	22.4	21.9	21.7	21.7	21.4	21.7	22.1	22.0	21.9	22.0	22.0	22.1	22.5	22.6	22.7	21.4	22.7	22.3
Jul 17	22.7	22.6	22.6	22.7	22.6	22.7	22.6	22.5	22.7	21.8	21.5	21.6	21.6	21.4	21.3	21.6	21.5	22.0	22.3	22.6	22.5	22.6	22.5	22.5	21.3	22.7	22.2
Jul 18	22.5	22.6	22.5	22.5	22.5	22.5	22.5	22.5	22.6	22.6	22.6	22.5	22.5	22.6	22.5	22.4	22.5	22.5	22.5	22.5	22.6	22.5	22.5	22.5	22.4	22.6	22.5
Jul 19	22.5	22.5	22.6	22.6	22.5	22.5	22.5	22.5	22.6	22.5	22.5	22.4	21.6	21.4	21.6	22.0	22.0	22.1	22.3	22.0	22.4	22.8	25.6	26.0	21.4	26.0	22.6
Jul 20	25.8	26.4	26.9	27.4	**28.1**	27.8	26.8	24.9	23.1	22.5	21.8	21.6	21.5	21.5	21.6	22.0	22.0	21.9	21.9	22.0	22.1	22.5	22.5	22.5	21.5	**28.1**	**23.6**
Jul 21	22.6	22.6	22.5	22.6	22.5	22.6	22.5	22.6	22.7	22.0	21.7	21.6	21.3	21.4	21.9	22.0	22.0	22.1	21.6	22.0	22.2	22.3	22.3	23.4	21.3	23.4	22.2
Jul 22	25.8	26.4	26.9	27.2	27.5	27.2	25.7	22.9	22.6	21.9	21.7	21.4	21.4	21.5	21.9	21.8	21.8	21.9	22.0	21.9	22.0	22.1	22.4	22.5	21.4	27.5	23.4
Jul 23	22.6	22.5	22.5	22.5	22.6	22.6	22.5	22.5	22.4	21.6	21.5	21.3	21.2	21.5	21.9	22.0	22.0	21.7	21.7	22.0	22.2	22.3	22.4	22.5	21.2	22.6	22.1
Jul 24	22.6	22.5	22.5	22.5	22.6	22.5	22.6	22.5	22.5	22.4	22.1	22.1	22.3	22.4	22.4	22.6	22.5	22.5	22.4	22.6	22.4	22.7	22.5	22.5	22.1	22.7	22.5
Jul 25	22.5	22.5	22.5	22.6	22.6	22.7	22.8	22.7	22.7	22.6	22.5	22.7	22.5	22.6	22.5	22.4	22.4	22.4	22.2	22.5	22.5	22.6	22.6	22.6	22.2	22.8	22.6
Jul 26	22.7	22.7	22.6	22.6	22.7	22.7	22.6	22.7	22.4	22.9	22.3	21.9	21.7	21.6	21.8	21.6	22.0	22.0	22.0	22.0	22.3	22.3	22.6	22.6	21.6	22.9	22.3
Jul 27	22.7	22.7	22.6	22.6	22.6	22.7	22.6	22.4	22.6	22.4	22.5	22.5	22.5	22.4	22.4	22.1	22.3	22.3	22.5	22.4	22.4	22.6	22.6	22.5	22.1	22.7	22.5
Jul 28	22.5	22.5	22.5	22.5	22.6	22.5	22.5	22.7	22.5	22.5	22.0	21.8	21.7	21.5	22.0	22.3	22.5	22.5	22.5	22.3	22.5	22.4	22.4	22.5	21.5	22.7	22.3
Jul 29	22.5	22.7	22.6	22.6	22.6	22.5	22.6	22.7	22.6	22.4	22.4	22.2	21.8	21.6	21.6	22.0	21.8	22.1	22.2	22.2	22.3	22.7	22.6	22.6	21.6	22.7	22.3
Jul 30	22.7	22.7	22.7	22.7	22.6	22.7	22.7	22.6	22.3	22.6	22.4	22.8	22.3	22.0	22.5	22.5	22.4	**Y**	22.7	22.8	22.9	23.1	23.2	23.2	22.0	23.2	22.7
Jul 31	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.0	22.5	22.7	22.9	22.9	22.9	22.8	22.9	22.8	22.8	22.5	22.6	22.7	22.6	22.8	22.9	22.9	22.5	23.2	22.9
Diurnal Maximum	25.8	26.4	26.9	27.4	28.1	27.8	26.8	24.9	23.5	24.6	24.9	24.4	22.9	23.0	22.9	22.8	22.8	22.5	22.7	22.8	22.9	23.1	25.6	26.0			
Daiurnal Average	22.2	22.2	22.2	22.3	22.3	22.3	22.2	22.1	21.9	21.7	21.6	21.6	21.4	21.4	21.5	21.6	21.6	21.6	21.7	21.7	21.8	21.9	22.0	22.1			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 - 986b Station



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

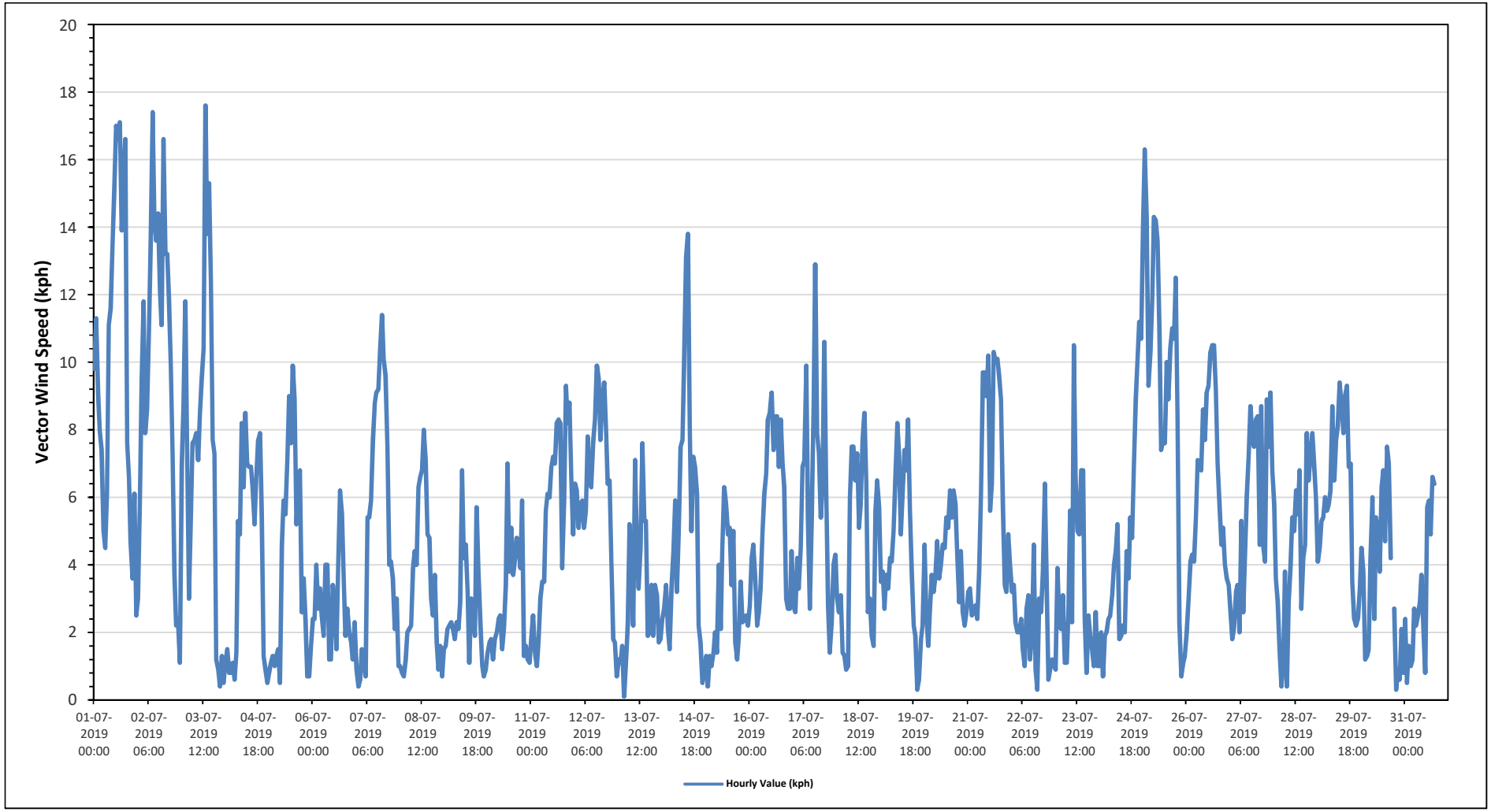
Maximum Hourly Value:	17.6	kph	on July 3 at hour 13	Hours in Service:	744
Maximum Daily Value:	10.0	kph	on July 1	Hours of Data:	736
Minimum Hourly Value:	0.1	kph	on July 13 at hour 3	Hours of Missing Data:	8
Minimum Daily Value:	2.3	kph	on July 22	Hours of Calibration:	0
Monthly Average:	1.6	kph		Operational Uptime:	98.9

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jul 1	9.8	11.3	9.1	8	7.4	5	4.5	6.1	11.1	11.6	13.5	15	17	16.6	17.1	13.9	15.2	16.6	7.6	6.6	4.7	3.6	6.1	2.5	2.5	17.1	**10.0**
Jul 2	3	5.7	9.4	11.8	7.9	8.6	10.8	13.6	17.4	14.2	13.6	14.4	12.1	11.1	16.6	13.2	13.2	11.9	9.9	7.3	3.7	2.2	2.4	1.1	1.1	17.4	9.8
Jul 3	6.9	8.7	11.8	7.2	3	5.5	7.6	7.7	7.9	7.1	8.4	9.5	10.4	**17.6**	13.8	15.3	12.4	7.7	7.3	1.2	0.9	0.4	1.3	0.5	0.4	**17.6**	7.5
Jul 4	1.1	1.5	0.8	0.8	1.1	0.6	1.4	5.3	4.9	8.2	6.3	8.5	7	6.9	6.9	6.3	5.2	6.6	7.7	7.9	5.5	1.3	0.9	0.5	0.5	8.5	4.3
Jul 5	0.8	1.1	1.3	1	1.3	1.5	0.5	4.6	5.9	5.5	7.1	9	7.6	9.9	8.9	5.2	6.4	6.8	2.6	3.6	2.3	0.7	0.7	1.6	0.5	9.9	4.0
Jul 6	2.4	2.4	4	2.7	3.3	2.5	1.9	4	4	1.2	1.2	3.4	2.7	1.5	4.1	6.2	5.5	3.5	1.9	2.7	2	1.7	1.2	2.3	1.2	6.2	2.8
Jul 7	0.9	0.4	0.6	1.5	1.2	0.7	5.4	5.4	5.9	7.7	8.8	9.1	9.2	10.4	11.4	10.1	9.6	7.5	4	4.1	3.6	2.1	3	1	0.4	11.4	5.2
Jul 8	1	0.8	0.7	1.2	2	2.1	2.2	3.9	4.4	4	6.3	6.6	6.8	8	7.1	4.9	4.8	3	2.5	3.7	1.7	0.9	1.6	0.7	0.7	8.0	3.4
Jul 9	1.5	1.6	2.1	2.2	2.3	2.1	1.8	2.3	2.1	2.9	6.8	4.2	4.6	3.2	1.1	3	2.4	1.9	5.7	3.8	2.3	1	0.7	0.9	0.7	6.8	2.6
Jul 10	1.4	1.7	1.8	1.2	1.8	2	2.4	2.5	1.5	2.1	3.4	7	3.8	5.1	3.7	4.1	4.8	4.5	3.9	5.9	1.3	1.6	1.2	1.1	1.1	7.0	2.9
Jul 11	1.8	2.5	1.4	1	1.7	3	3.5	3.5	5.6	6.1	6	6.9	7.2	7	8.2	8.3	8.2	3.9	5.9	9.3	8.2	8.8	6.6	4.9	1.0	9.3	5.4
Jul 12	6.4	6.2	5.1	5.8	5.9	5.1	5.6	7.8	6.6	6.3	7.6	8.3	9.9	9.5	7.7	8.9	9.4	8	6.4	6.5	4.1	1.8	1.7	0.7	0.7	9.9	6.3
Jul 13	1.2	1.1	1.6	**0.1**	1.1	2.3	5.2	3.8	2.2	7.1	4.3	3.3	4.5	7.6	5.3	5.3	1.9	2	3.4	1.9	3.4	3.1	1.7	1.8	**0.1**	7.6	3.1
Jul 14	2.4	2.7	3.4	2.1	1.5	3.3	4.4	5.9	3.2	4.9	7.5	7.7	10	13.1	13.8	8	5	7.2	6.9	6.1	2.2	1.7	0.5	0.8	0.5	13.8	5.2
Jul 15	1.3	0.4	1.3	1	1.4	2	1.4	4	2.1	4.5	6.3	5.8	4.9	5.1	3.4	5	1.7	1.2	1.8	3.5	2.3	2.4	2.5	2.2	0.4	6.3	2.8
Jul 16	2.8	4.2	4.6	3.7	2.2	2.6	3.3	4.9	6.1	6.7	8.3	8.5	9.1	7.4	8.4	8.4	6.9	8.3	7	6.3	3	2.7	2.7	4.4	2.2	9.1	5.5
Jul 17	2.8	2.6	4.2	3.3	4.5	6.9	7.1	9.9	5.4	2.7	5.4	8.7	12.9	7.9	7.3	5.4	6.3	10.6	6.2	2.8	1.4	2.3	4	4.3	1.4	12.9	5.6
Jul 18	3	2.6	3.1	1.4	1.3	0.9	1	6	7.5	7.5	6.5	7.3	5.1	5.8	7.7	8.5	6.4	2.6	3	1.9	1.6	5.6	6.5	5.7	0.9	8.5	4.5
Jul 19	3.5	3.8	2.7	3.7	3.3	4.2	4.1	5	6.6	8.2	7.3	4.9	6.1	7.4	6.8	8.3	5.6	3.7	2.2	1.9	0.3	0.6	1.8	2.2	0.3	8.3	4.3
Jul 20	4.6	2.6	1.6	2.6	3.7	3.2	3.7	4.7	3.6	4	4.6	4.5	5.4	5.1	6.2	5.4	6.2	5.8	4.2	2.9	4.4	2.6	2.2	2.6	1.6	6.2	4.0
Jul 21	3.2	3.3	2.5	2.6	2.8	2.4	3.8	6.2	9.7	9.7	9	10.2	5.6	6.4	10.3	10	10.1	9.6	8.9	5.8	3.4	3.2	4.9	4	2.4	10.3	6.2
Jul 22	3.2	3.4	2.3	2	2	2.4	1.5	1	2.7	3.1	1.2	1.9	4.6	0.9	0.3	3	2.6	3.8	6.4	3.7	0.6	0.9	1.2	1.1	0.3	6.4	**2.3**
Jul 23	0.9	3.9	2.3	2.1	3.1	1.1	1.1	2.5	5.6	2.3	10.5	6.6	5	4.9	6.8	6.8	2.4	0.8	2.5	1.9	1.5	1	2.6	1	0.8	10.5	3.3
Jul 24	1	2	0.7	1.9	2	2.4	2.5	3.1	4	4.4	5.2	1.8	1.9	2.2	2	4.4	3.6	5.4	4.8	6.9	8.9	10	11.2	10.7	0.7	11.2	4.3
Jul 25	14	16.3	14.3	9.3	10.3	11.9	14.3	14.2	13.6	10.9	7.4	7.7	7.6	10	8.9	10.4	11	10.7	12.5	8.4	2.3	0.7	1.1	1.3	0.7	16.3	9.5
Jul 26	2	3	4.1	4.3	4.1	5.4	7.1	7	6.8	8.6	7.7	9.1	9.3	10.3	10.5	10.5	9.2	7	5.8	4.6	5.1	4	3.6	3.4	2.0	10.5	6.4
Jul 27	2.7	1.8	2.1	3.2	3.4	2	5.3	2.6	4.1	6	7.2	8.7	7.7	7.5	8.3	8.4	4.6	8.7	4.6	4.1	8.9	7.5	9.1	6.8	1.8	9.1	5.6
Jul 28	5.8	3.6	2.9	1.4	0.4	1	3.8	0.4	2.9	4	5.4	5	6.2	5.5	6.8	2.7	4.2	4.6	7.9	6.5	7.3	7.9	7	6	0.4	7.9	4.6
Jul 29	4.1	4.5	5.3	5.4	6	5.6	5.8	6.2	8.7	6.5	7.7	8.1	9.4	8.8	7.9	9	9.3	6.9	7	3.5	2.4	2.2	2.4	3.3	2.2	9.4	6.1
Jul 30	4.5	3.8	1.2	1.3	1.5	4.2	6	2.4	5.4	5	3.8	6.3	6.8	4.7	7.5	7	4.2	**Y**	2.7	0.3	0.9	0.6	2.1	0.8	0.3	7.5	3.6
Jul 31	2.4	0.5	1.6	1	1.2	2.7	2.2	2.5	2.9	3.7	2.1	0.8	5.7	5.9	4.9	6.6	6.4	**N**	**N**	**N**	**N**	**N**	**N**	**N**	0.5	6.6	-
Diurnal Maximum	14	16	14	12	10	12	14	14	17	14	14	15	17	18	17	15	15	17	13	9	9	10	11	11			
Daiurnal Average	3.3	3.5	3.5	3.1	3.1	3.4	4.2	5.1	5.8	6.0	6.7	7.1	7.3	7.5	7.7	7.5	6.6	6.2	5.4	4.5	3.3	2.8	3.2	2.7			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

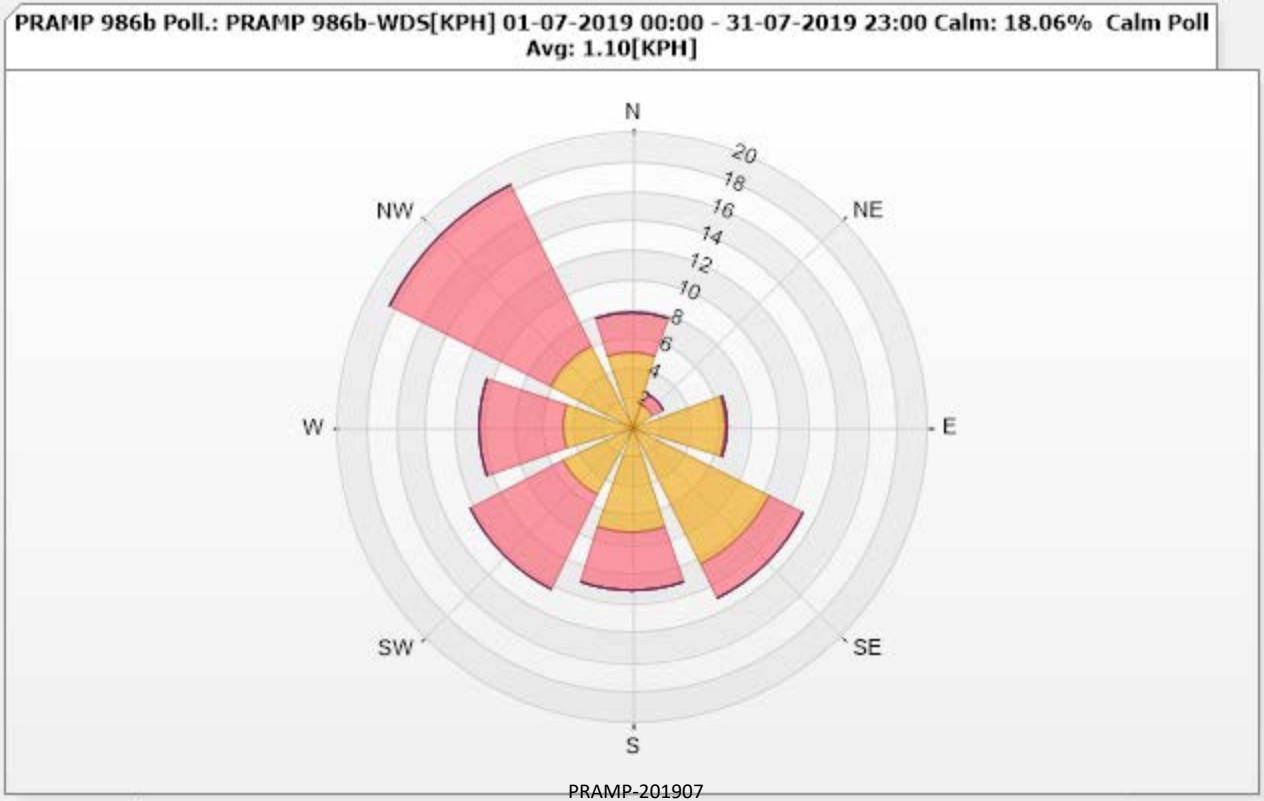
Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 hours per day is not met.
Monthly Average is shown "-" if minimum data completeness criteria of 75% of days per month is not met.

Timeseries Chart of Hourly Average for VWS - 986b Station



Wind: PRAMP 986b Poll.: PRAMP 986b-WDS[KPH] Monthly: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 18.06% Valid Data: 98.25% Calm Avg: 1.10 [KPH]

Direction	0-6	6-26	26-29	29-39	>39.0	Total
N	5.06	2.74	0	0	0	7.8
NE	1.64	0.82	0	0	0	2.46
E	6.43	0.14	0	0	0	6.57
SE	10.4	2.6	0	0	0	13
S	7.25	3.83	0	0	0	11.08
SW	5.2	7.11	0	0	0	12.31
W	4.65	5.75	0	0	0	10.4
NW	6.16	12.18	0	0	0	18.34
Summary	46.79	35.17	0	0	0	81.96


PRAMP 986b Poll.: PRAMP 986b-WDS[KPH] 01-07-2019 00:00 - 31-07-2019 23:00 Calm: 18.06% Calm Poll Avg: 1.10[KPH]
N
NE
E
SE
S
SW
W
NW
20
18
16
14
12
10
8
6
4
% Icon Classes (KPH)
47 0-6
35 6-26
0 26-29
0 29-39
0 >39.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

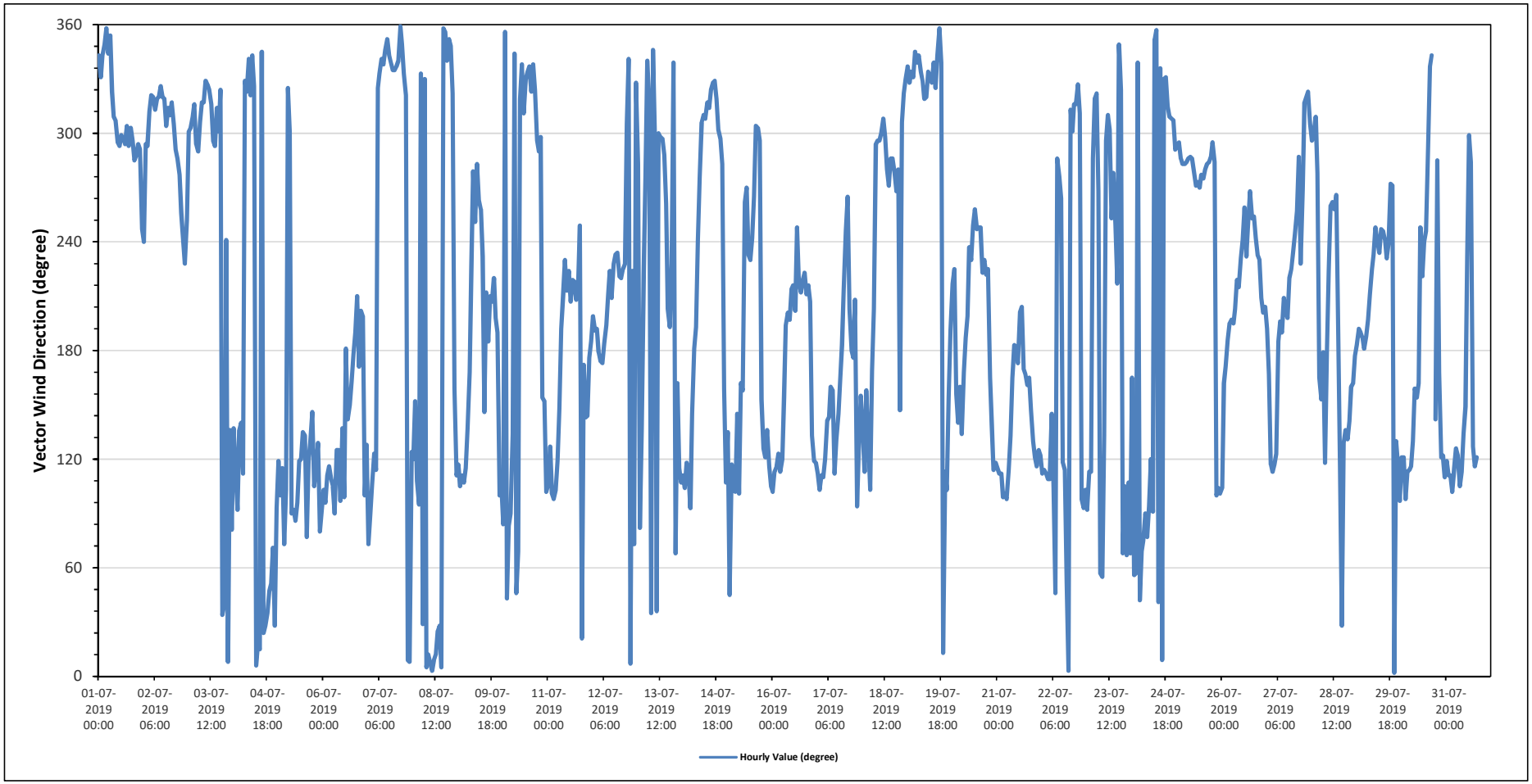
Monthly Average:	269 (W)	degree	
Hours in Service:	744		
Hours of Data:	736		
Hours of Missing Data:	8		
Hours of Calibration:	0		
Operational Uptime:	98.9		

Day	Hourly Period Starting at (MST)																								Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant
Jul 1	NNW	NNW	NNW	NNW	N	NNW	N	NW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WSW	308	NW
Jul 2	WSW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	NW	NW	NW	WNW	WNW	WNW	W	WSW	WSW	SW	WSW	308	NW
Jul 3	WNW	WNW	NW	NW	WNW	WNW	NW	NW	NW	NNW	NW	NW	NW	WNW	WNW	NW	WNW	NW	NE	NE	WSW	N	SE	E	312	NW
Jul 4	SE	ESE	E	SE	SE	ESE	NNW	NW	NNW	NW	NNW	NW	N	NNE	NNE	NNW	NNE	NNE	NE	NE	NE	ENE	NNE	E	9	N
Jul 5	ESE	E	ESE	ENE	ESE	NW	WNW	E	E	E	E	ESE	ESE	SE	SE	ENE	ESE	SE	SE	ESE	ESE	SE	E	E	112	ESE
Jul 6	ESE	E	ESE	ESE	ESE	ESE	E	SE	SE	E	SE	E	S	SE	SSE	SSE	S	S	SSW	S	SSW	SSW	E	SE	140	SE
Jul 7	ENE	E	ESE	ESE	ESE	NW	NNW	NNW	NNW	NNW	N	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	NNW	NW	N	N	ESE	344	NNW
Jul 8	ESE	SSE	ESE	E	NNW	NNE	NNW	N	NNE	N	N	N	NNE	NNE	NNE	N	N	N	NNW	N	NNW	NW	SSE	ESE	10	N
Jul 9	ESE	ESE	ESE	ESE	ESE	SE	SSE	SW	W	WSW	W	W	WSW	SW	SE	SSW	S	SSW	SSW	SW	SSW	S	E	ESE	214	SSW
Jul 10	E	N	NE	E	E	SE	NNW	NE	ENE	NW	NNW	NW	NNW	NNW	NNW	NW	NNW	NW	WNW	WNW	WNW	SSE	SSE	E	335	NNW
Jul 11	ESE	SE	E	E	ESE	ESE	SE	S	SSW	SW	SSW	SW	SSW	SW	SW	SSW	SSW	WSW	NNE	S	SE	SE	S	S	190	S
Jul 12	SSW	S	S	S	S	S	S	SSW	SSW	SW	SSW	SW	SW	SW	SW	SW	SW	SW	WNW	NNW	N	SW	ENE	NNW	217	SW
Jul 13	W	E	SE	SW	W	NNW	NW	NE	NNW	WNW	NE	WNW	WNW	WNW	WNW	W	SSW	S	SW	NNW	ENE	SSE	ESE	ESE	304	WNW
Jul 14	ESE	ESE	ESE	ESE	E	SE	S	S	WSW	W	NW	NW	NW	NW	NW	NW	NNW	NNW	NW	WNW	WNW	W	SSE	ESE	307	NW
Jul 15	SE	NE	ESE	ESE	E	SE	E	SSE	SSE	W	W	SW	SW	WSW	W	WNW	WNW	WNW	SSE	SE	ESE	SE	ESE	ESE	208	SSW
Jul 16	E	ESE	ESE	ESE	ESE	ESE	SSE	SSW	SSW	SSW	SSW	SW	SSW	WSW	SW	SSW	SW	SW	SSW	SW	SSW	SE	ESE	ESE	195	SSW
Jul 17	ESE	ESE	ESE	ESE	ESE	SE	SE	SSE	SSE	ESE	SE	SE	SSE	S	SSW	WSW	W	SSW	S	S	SSW	E	SE	SSE	162	SSE
Jul 18	SE	ESE	SSE	SE	ESE	SSE	SSW	WNW	WNW	WNW	WNW	NW	WNW	W	W	WNW	WNW	W	W	W	SE	NW	NW	NNW	291	WNW
Jul 19	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NW	NNW	NNW	NNW	NNW	NW	NNW	N	NNW	NNE	ESE	ESE	SSE	S	333	NNW
Jul 20	SW	SW	SSE	SE	SSE	SE	SSE	S	SSW	SW	SW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SSE	SE	ESE	ESE	211	SSW
Jul 21	ESE	ESE	ESE	E	E	E	ESE	SE	SSE	S	S	S	SSW	SSW	SSE	SSE	SSE	SSE	SE	SE	ESE	ESE	SE	ESE	155	SSE
Jul 22	ESE	ESE	ESE	ESE	ESE	SE	ESE	NE	WNW	W	W	ESE	ESE	NE	N	NW	WNW	NW	NW	NW	NW	E	E	ESE	35	NE
Jul 23	E	ESE	ESE	WNW	NW	NW	W	ENE	NE	SE	WNW	NW	WNW	WSW	W	WSW	SW	NNW	NW	ENE	ESE	ENE	ESE	ENE	302	WNW
Jul 24	SSE	NE	ENE	NNW	NE	ENE	ENE	E	ENE	E	ESE	E	N	N	NE	NNW	N	NNW	NNW	NW	NW	NW	NW	WNW	341	NNW
Jul 25	WNW	WNW	WNW	W	W	WNW	WNW	WNW	WNW	W	W	W	W	W	W	W	W	WNW	WNW	WNW	WNW	E	ESE	E	284	WNW
Jul 26	ESE	SSE	S	S	SSW	SSW	SSW	SSW	SW	SSW	SW	WSW	WSW	SW	WSW	W	WSW	WSW	WSW	SW	SW	SSW	SSW	SSW	227	SW
Jul 27	S	SSE	ESE	ESE	ESE	ESE	S	SSW	S	SSW	SSW	SSW	SW	SW	SW	WSW	WSW	WNW	SW	W	NW	NW	NW	WNW	240	WSW
Jul 28	WNW	WNW	NW	W	SSE	SSE	S	ESE	S	SW	WSW	W	WSW	W	S	ESE	NNE	SE	SE	SE	SE	SSE	SSE	S	190	S
Jul 29	S	S	S	S	S	S	SSW	SSW	SW	SW	WSW	WSW	SW	WSW	WSW	WSW	SW	WSW	W	W	N	SE	ESE	E	224	SW
Jul 30	ESE	ESE	E	ESE	ESE	ESE	SE	SSE	SSE	SSE	WSW	SW	WSW	WSW	WNW	NNW	NNW	**Y**	SE	WNW	SSE	ESE	ESE	ESE	180	S
Jul 31	ESE	ESE	ESE	E	ESE	SE	ESE	ESE	ESE	SE	SSE	SW	WNW	WNW	SE	ESE	ESE	**N**	**N**	**N**	**N**	**N**	**N**	**N**	-	SE

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 - 986b Station



842b STATION

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

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 Exceedences: 0 Number of 24-Hour Exceedences: 0 30-Day Exceedence: 0

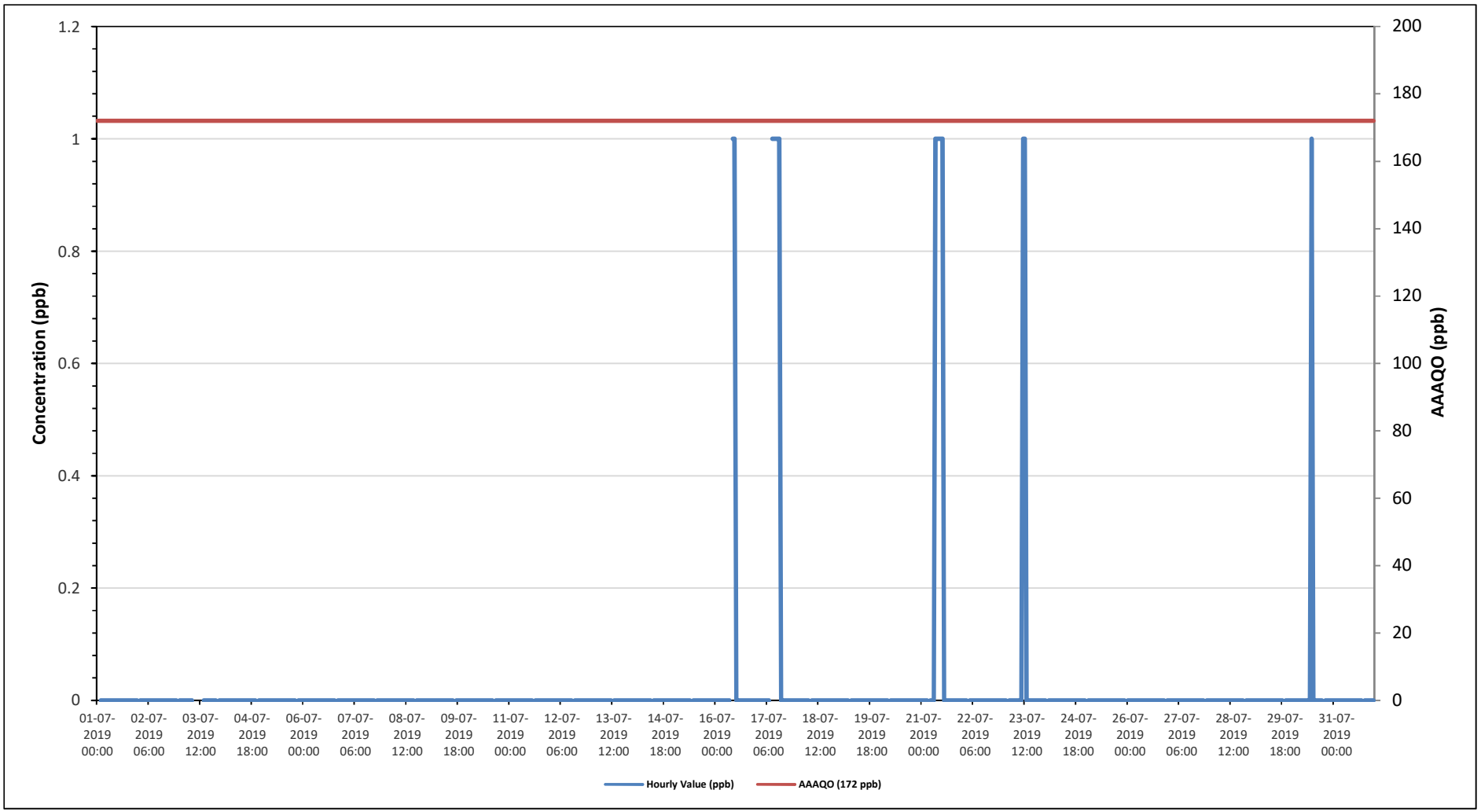
Maximum Hourly Value:	1	ppb	on July 16 at hour 10	Hours in Service:	744
Maximum Daily Value:	0.2	ppb	on July 17	Hours of Data:	705
Minimum Hourly Value:	0	ppb	on July 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on July 1	Hours of Calibration:	39
Monthly Average:	0.0	ppb		Operational 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			
Jul 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
Jul 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
Jul 3	0	0	0	0	0	0	0	0	C	C	C	C	C	C	0	0	0	0	0	0	0	0	S	0	0	0	-
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 16	0	0	0	0	0	0	0	0	0	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jul 17	0	0	0	0	0	0	0	0	S	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Jul 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
Jul 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
Jul 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
Jul 21	0	0	0	0	S	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Jul 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
Jul 23	0	0	S	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	S	0	0	0	0	0	0	1	0.0
Jul 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	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0			
Daiurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

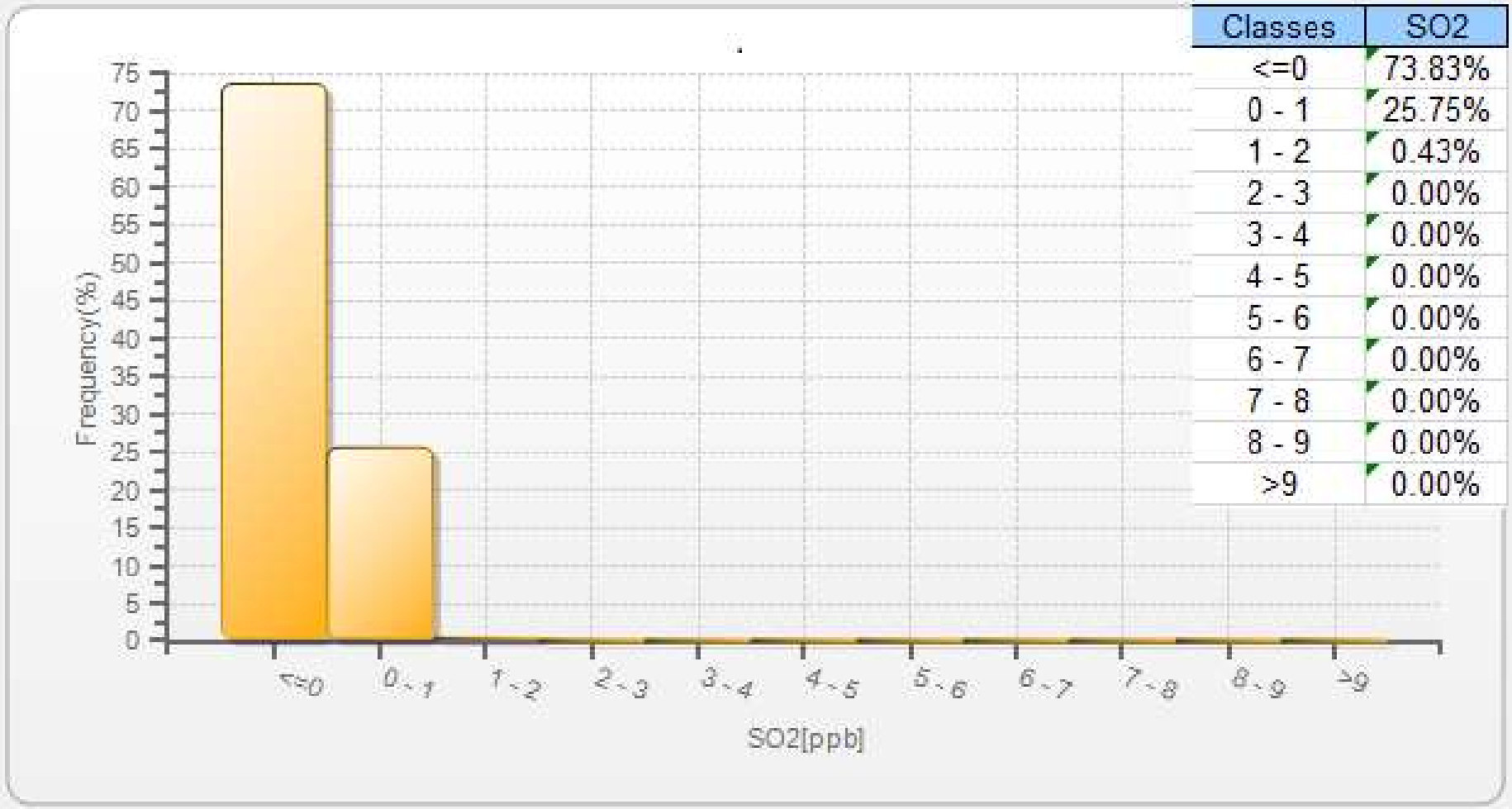
C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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



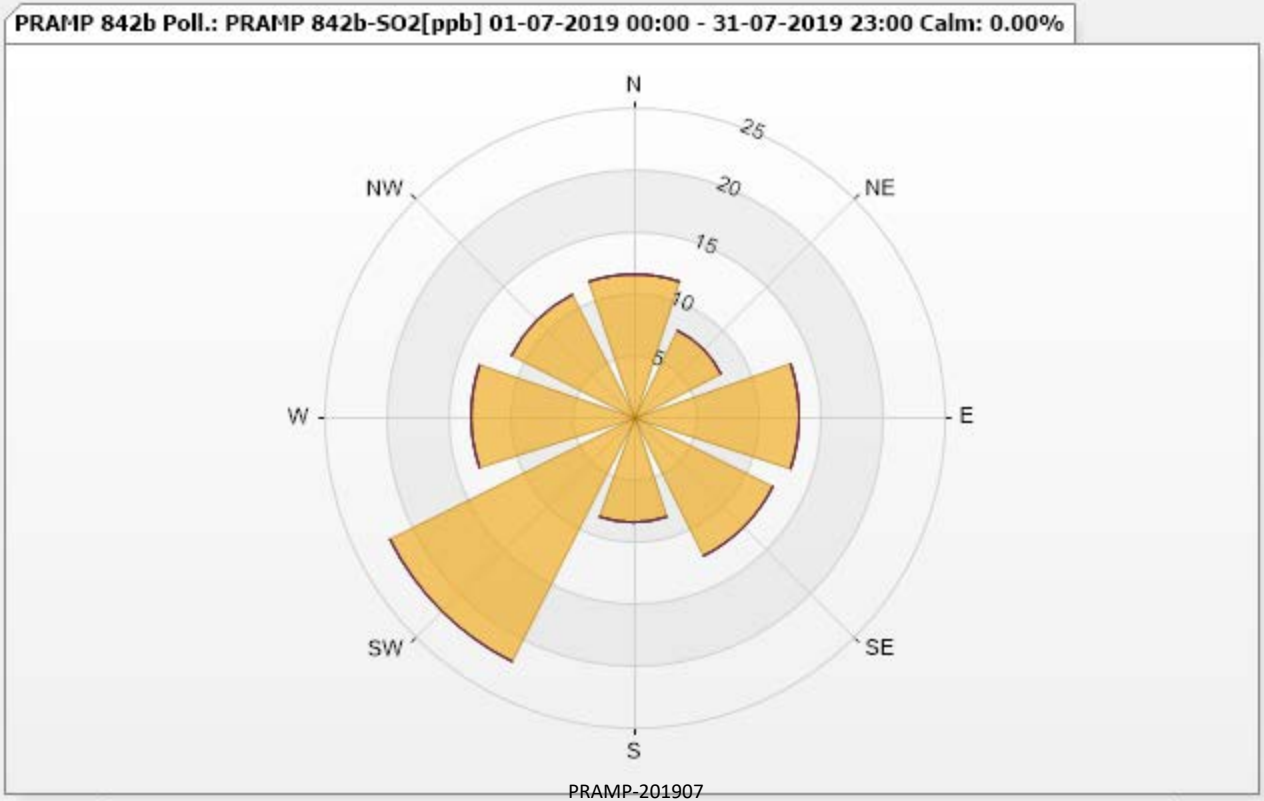
SO2[ppb] Histogram: PRAMP 842b Monthly: 07-2019 1 Hr.



Classes	SO2
<=0	73.83%
0 - 1	25.75%
1 - 2	0.43%
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: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.35% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	11.54	0	0	0	0	11.54
NE	7.83	0	0	0	0	7.83
E	13.39	0	0	0	0	13.39
SE	12.54	0	0	0	0	12.54
S	8.55	0	0	0	0	8.55
SW	22.08	0	0	0	0	22.08
W	13.11	0	0	0	0	13.11
NW	10.97	0	0	0	0	10.97
Summary	100	0	0	0	0	100


PRAMP 842b Poll.: PRAMP 842b-SO2[ppb] 01-07-2019 00:00 - 31-07-2019 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

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

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 Exceedences: 0 Number of 24-Hour Exceedences: 0

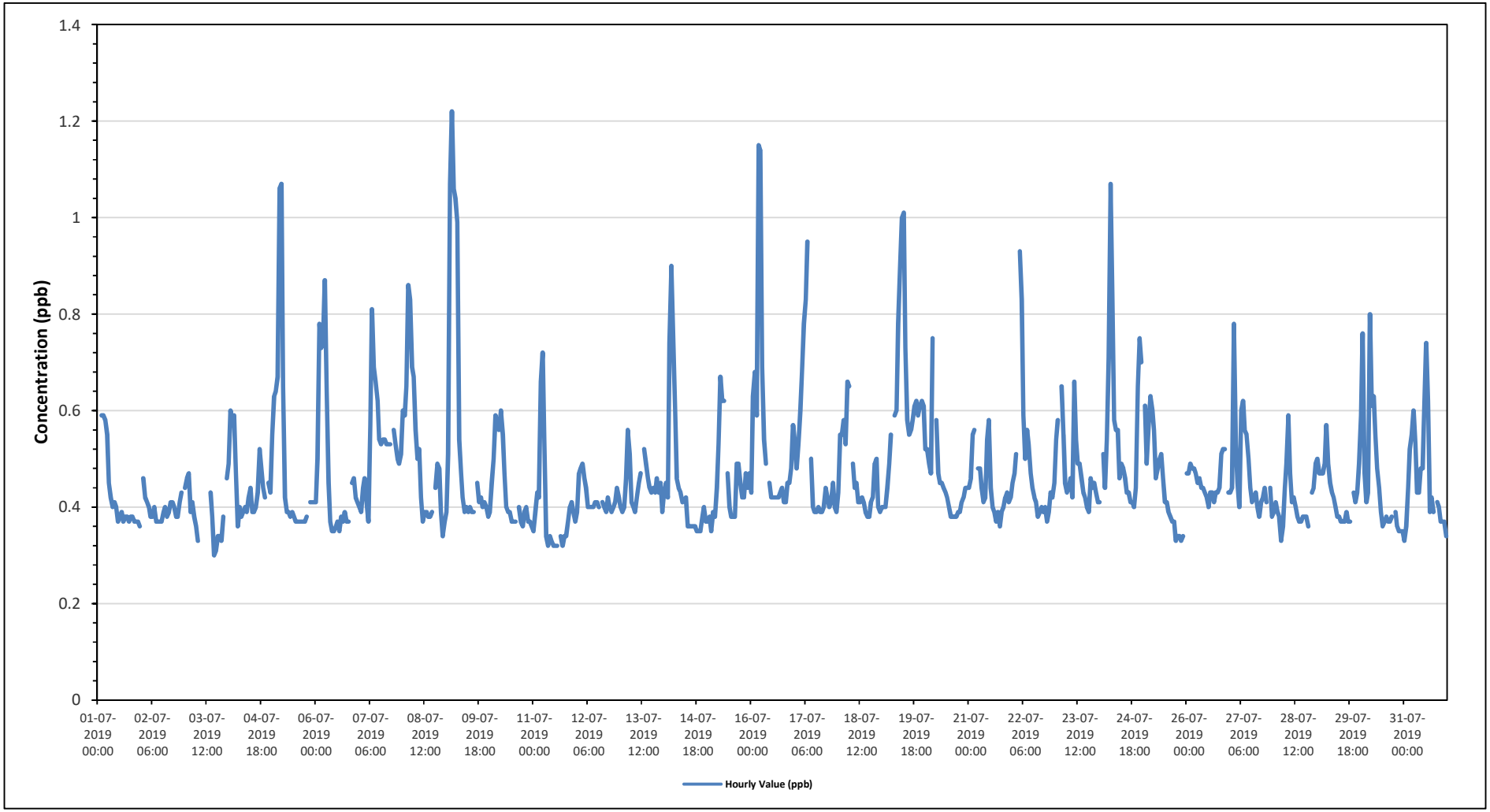
Maximum Hourly Value:	1.22	ppb	on July 9 at hour 3	Hours in Service:	744
Maximum Daily Value:	0.62	ppb	on July 19	Hours of Data:	705
Minimum Hourly Value:	0.30	ppb	on July 3 at hour 16	Hours of Missing Data:	0
Minimum Daily Value:	0.39	ppb	on July 11	Hours of Calibration:	39
Monthly Average:	0.47	ppb		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			
Jul 1	0.51	S	0.59	0.59	0.58	0.55	0.45	0.42	0.4	0.41	0.4	0.37	0.38	0.39	0.37	0.38	0.38	0.37	0.38	0.38	0.37	0.37	0.37	0.36	0.36	0.59	0.42
Jul 2	S	0.46	0.42	0.41	0.4	0.38	0.38	0.4	0.37	0.37	0.37	0.37	0.39	0.4	0.38	0.39	0.41	0.41	0.4	0.38	0.38	0.41	0.43	S	0.37	0.46	0.40
Jul 3	0.44	0.46	0.47	0.39	0.41	0.38	0.36	0.33	C	C	C	C	C	C	0.43	0.38	0.3	0.31	0.34	0.34	0.33	0.38	S	0.46	0.30	0.47	-
Jul 4	0.49	0.6	0.57	0.59	0.47	0.36	0.4	0.38	0.39	0.4	0.39	0.42	0.44	0.39	0.39	0.4	0.43	0.52	0.48	0.44	0.42	S	0.45	0.43	0.36	0.60	0.45
Jul 5	0.55	0.63	0.64	0.67	1.06	1.07	0.65	0.42	0.39	0.39	0.38	0.39	0.38	0.37	0.37	0.37	0.37	0.37	0.37	0.38	S	0.41	0.41	0.41	0.37	1.07	0.50
Jul 6	0.41	0.5	0.78	0.73	0.74	0.87	0.64	0.45	0.37	0.35	0.35	0.36	0.37	0.35	0.38	0.37	0.39	0.37	0.37	S	0.45	0.46	0.42	0.41	0.35	0.87	0.47
Jul 7	0.4	0.39	0.44	0.46	0.41	0.37	0.57	0.81	0.69	0.66	0.62	0.54	0.53	0.54	0.54	0.53	0.53	0.53	S	0.56	0.53	0.5	0.49	0.51	0.37	0.81	0.53
Jul 8	0.6	0.59	0.65	0.86	0.83	0.69	0.67	0.56	0.5	0.52	0.42	0.37	0.39	0.39	0.38	0.38	0.39	S	0.44	0.49	0.48	0.39	0.34	0.37	0.34	0.86	0.51
Jul 9	0.39	0.51	1.07	**1.22**	1.06	1.04	0.99	0.54	0.47	0.42	0.39	0.4	0.39	0.4	0.39	0.39	S	0.45	0.41	0.42	0.4	0.41	0.4	0.38	0.38	**1.22**	0.56
Jul 10	0.39	0.45	0.5	0.59	0.57	0.56	0.6	0.55	0.47	0.4	0.39	0.39	0.37	0.37	0.37	S	0.4	0.37	0.36	0.39	0.4	0.37	0.37	0.36	0.36	0.60	0.43
Jul 11	0.35	0.39	0.43	0.42	0.66	0.72	0.54	0.34	0.32	0.34	0.33	0.32	0.32	0.32	S	0.34	0.32	0.34	0.34	0.37	0.4	0.41	0.39	0.37	0.32	0.72	0.39
Jul 12	0.39	0.47	0.48	0.49	0.46	0.44	0.4	0.4	0.4	0.4	0.41	0.41	0.4	S	0.41	0.4	0.39	0.42	0.4	0.39	0.4	0.41	0.44	0.42	0.39	0.49	0.42
Jul 13	0.4	0.39	0.4	0.46	0.56	0.51	0.41	0.4	0.39	0.42	0.45	0.47	S	0.52	0.49	0.46	0.44	0.43	0.44	0.43	0.46	0.43	0.45	0.39	0.39	0.56	0.44
Jul 14	0.43	0.45	0.42	0.74	0.9	0.74	0.6	0.46	0.44	0.43	0.41	S	0.42	0.36	0.36	0.36	0.36	0.36	0.35	0.35	0.35	0.38	0.4	0.37	0.35	0.90	0.45
Jul 15	0.37	0.38	0.35	0.39	0.38	0.44	0.53	0.67	0.62	0.62	S	0.47	0.4	0.38	0.38	0.38	0.49	0.49	0.45	0.42	0.42	0.47	0.44	0.47	0.35	0.67	0.45
Jul 16	0.43	0.63	0.68	0.59	1.15	1.14	0.69	0.54	0.49	S	0.45	0.42	0.42	0.42	0.42	0.42	0.43	0.44	0.41	0.41	0.45	0.45	0.48	0.57	0.41	1.15	0.54
Jul 17	0.54	0.48	0.53	0.6	0.68	0.78	0.83	0.95	S	0.5	0.4	0.39	0.39	0.4	0.39	0.39	0.4	0.44	0.42	0.4	0.41	0.45	0.4	0.39	0.39	0.95	0.50
Jul 18	0.43	0.55	0.55	0.58	0.53	0.66	0.65	S	0.49	0.44	0.45	0.41	0.41	0.42	0.41	0.39	0.38	0.38	0.41	0.42	0.49	0.5	0.4	0.39	0.38	0.66	0.47
Jul 19	0.4	0.4	0.4	0.44	0.49	0.55	S	0.59	0.6	0.78	0.9	1	1.01	0.73	0.58	0.55	0.56	0.58	0.61	0.62	0.59	0.61	0.62	0.61	0.40	1.01	**0.62**
Jul 20	0.52	0.52	0.49	0.47	0.75	S	0.58	0.47	0.45	0.45	0.44	0.43	0.42	0.4	0.38	0.38	0.38	0.38	0.39	0.39	0.41	0.42	0.44	0.44	0.38	0.75	0.45
Jul 21	0.44	0.46	0.55	0.56	S	0.48	0.48	0.44	0.41	0.42	0.54	0.58	0.44	0.4	0.39	0.37	0.39	0.36	0.39	0.4	0.42	0.43	0.41	0.42	0.36	0.58	0.44
Jul 22	0.45	0.47	0.51	S	0.93	0.83	0.59	0.5	0.56	0.53	0.47	0.44	0.42	0.41	0.38	0.39	0.4	0.39	0.4	0.37	0.39	0.43	0.42	0.45	0.37	0.93	0.48
Jul 23	0.54	0.58	S	0.65	0.55	0.45	0.43	0.44	0.46	0.42	0.66	0.54	0.49	0.49	0.46	0.43	0.42	0.4	0.39	0.46	0.44	0.45	0.43	0.41	0.39	0.66	0.48
Jul 24	0.41	S	0.51	0.44	0.54	0.71	1.07	0.84	0.58	0.56	0.56	0.46	0.49	0.48	0.46	0.43	0.43	0.41	0.41	0.4	0.44	0.65	0.75	0.7	0.40	1.07	0.55
Jul 25	S	0.61	0.49	0.57	0.63	0.6	0.56	0.46	0.48	0.5	0.51	0.46	0.41	0.41	0.39	0.38	0.37	0.37	0.33	0.34	0.34	0.33	0.34	S	0.33	0.63	0.45
Jul 26	0.47	0.47	0.49	0.48	0.48	0.47	0.45	0.46	0.44	0.44	0.43	0.42	0.4	0.43	0.43	0.41	0.43	0.43	0.44	0.51	0.52	0.52	S	0.43	0.40	0.52	0.45
Jul 27	0.43	0.44	0.78	0.53	0.45	0.4	0.6	0.62	0.56	0.55	0.5	0.44	0.41	0.42	0.43	0.4	0.38	0.41	0.42	0.44	0.41	S	0.44	0.38	0.38	0.78	0.47
Jul 28	0.39	0.41	0.39	0.38	0.33	0.36	0.44	0.49	0.59	0.47	0.41	0.42	0.4	0.38	0.37	0.37	0.38	0.38	0.38	0.36	S	0.43	0.44	0.49	0.33	0.59	0.41
Jul 29	0.5	0.47	0.47	0.47	0.49	0.57	0.49	0.45	0.43	0.42	0.4	0.38	0.38	0.37	0.37	0.37	0.39	0.37	0.37	S	0.43	0.41	0.43	0.49	0.37	0.57	0.43
Jul 30	0.59	0.76	0.47	0.41	0.43	0.8	0.61	0.63	0.55	0.48	0.44	0.39	0.36	0.37	0.38	0.37	0.37	0.38	S	0.39	0.36	0.35	0.35	0.35	0.35	0.80	0.46
Jul 31	0.33	0.36	0.44	0.52	0.55	0.6	0.53	0.43	0.43	0.48	0.48	0.61	0.74	0.62	0.39	0.42	0.39	S	0.41	0.4	0.37	0.37	0.37	0.34	0.33	0.74	0.46
Diurnal Maximum	0.60	0.76	1.07	1.22	1.15	1.14	1.07	0.95	0.69	0.78	0.90	1.00	1.01	0.73	0.58	0.55	0.56	0.58	0.61	0.62	0.59	0.65	0.75	0.70			
Daiurnal Average	0.45	0.49	0.53	0.56	0.62	0.62	0.57	0.51	0.47	0.47	0.46	0.45	0.44	0.43	0.41	0.40	0.40	0.41	0.40	0.42	0.42	0.43	0.43	0.43			

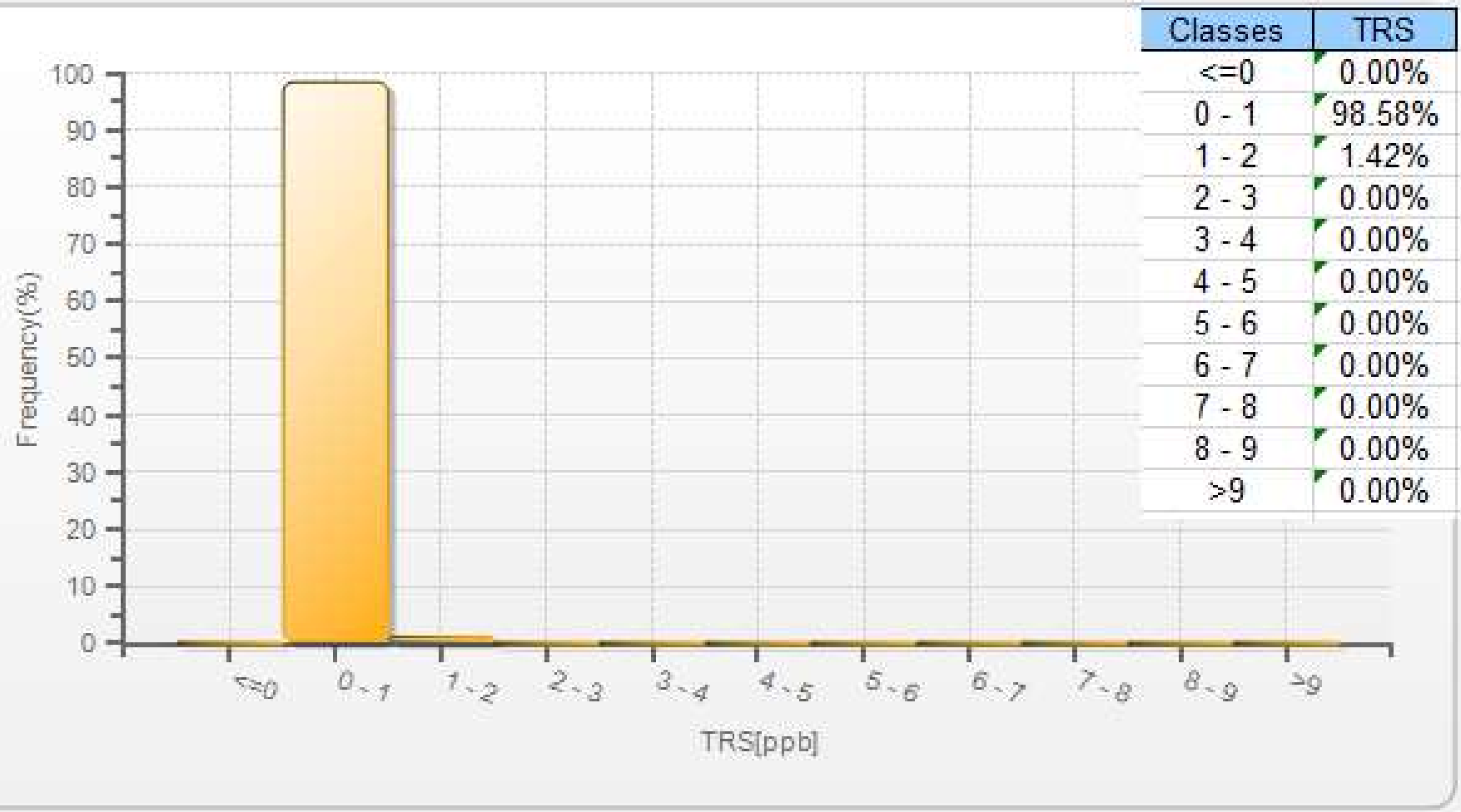
C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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



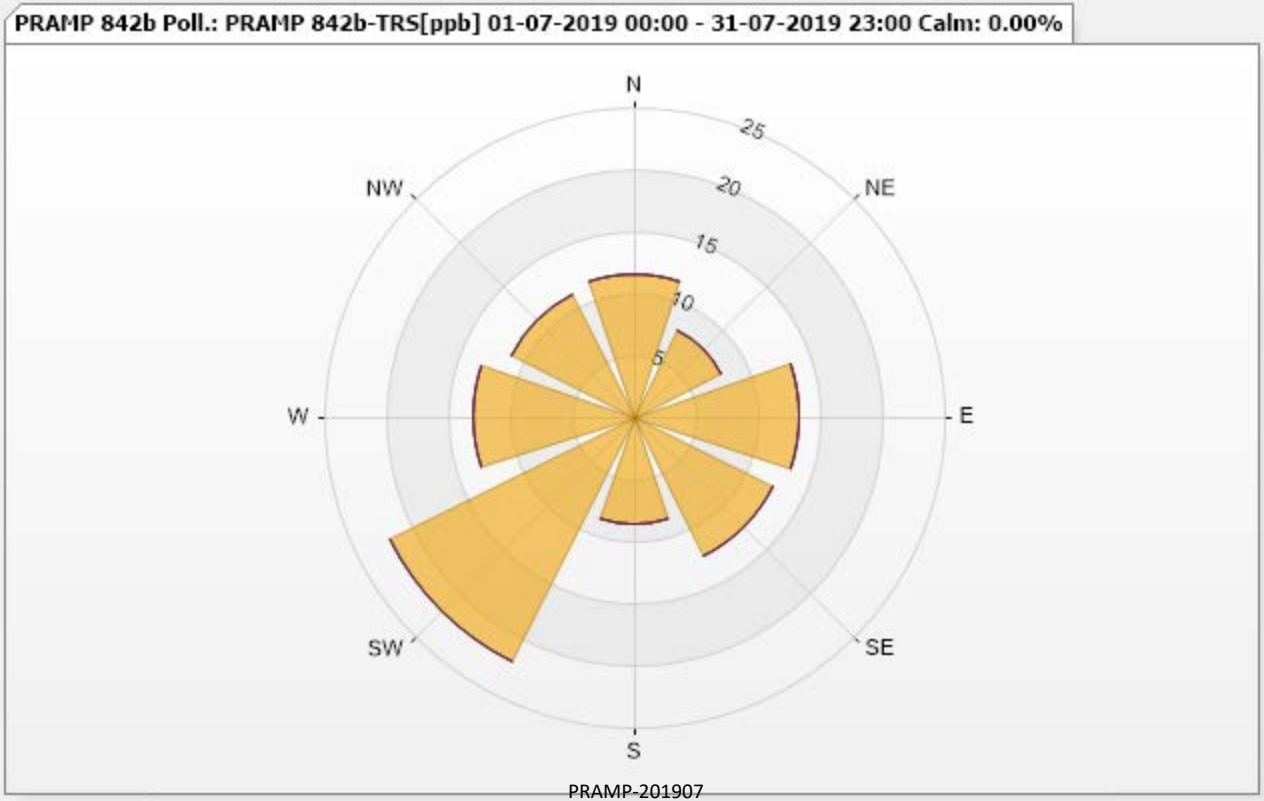
TRS[ppb] Histogram: PRAMP 842b Monthly: 07-2019 1 Hr.



Classes	TRS
<=0	0.00%
0 - 1	98.58%
1 - 2	1.42%
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: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.35% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	11.54	0	0	0	0	11.54
NE	7.83	0	0	0	0	7.83
E	13.39	0	0	0	0	13.39
SE	12.54	0	0	0	0	12.54
S	8.69	0	0	0	0	8.69
SW	22.08	0	0	0	0	22.08
W	12.96	0	0	0	0	12.96
NW	10.97	0	0	0	0	10.97
Summary	100	0	0	0	0	100


PRAMP 842b Poll.: PRAMP 842b-TRS[ppb] 01-07-2019 00:00 - 31-07-2019 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 pramp

PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

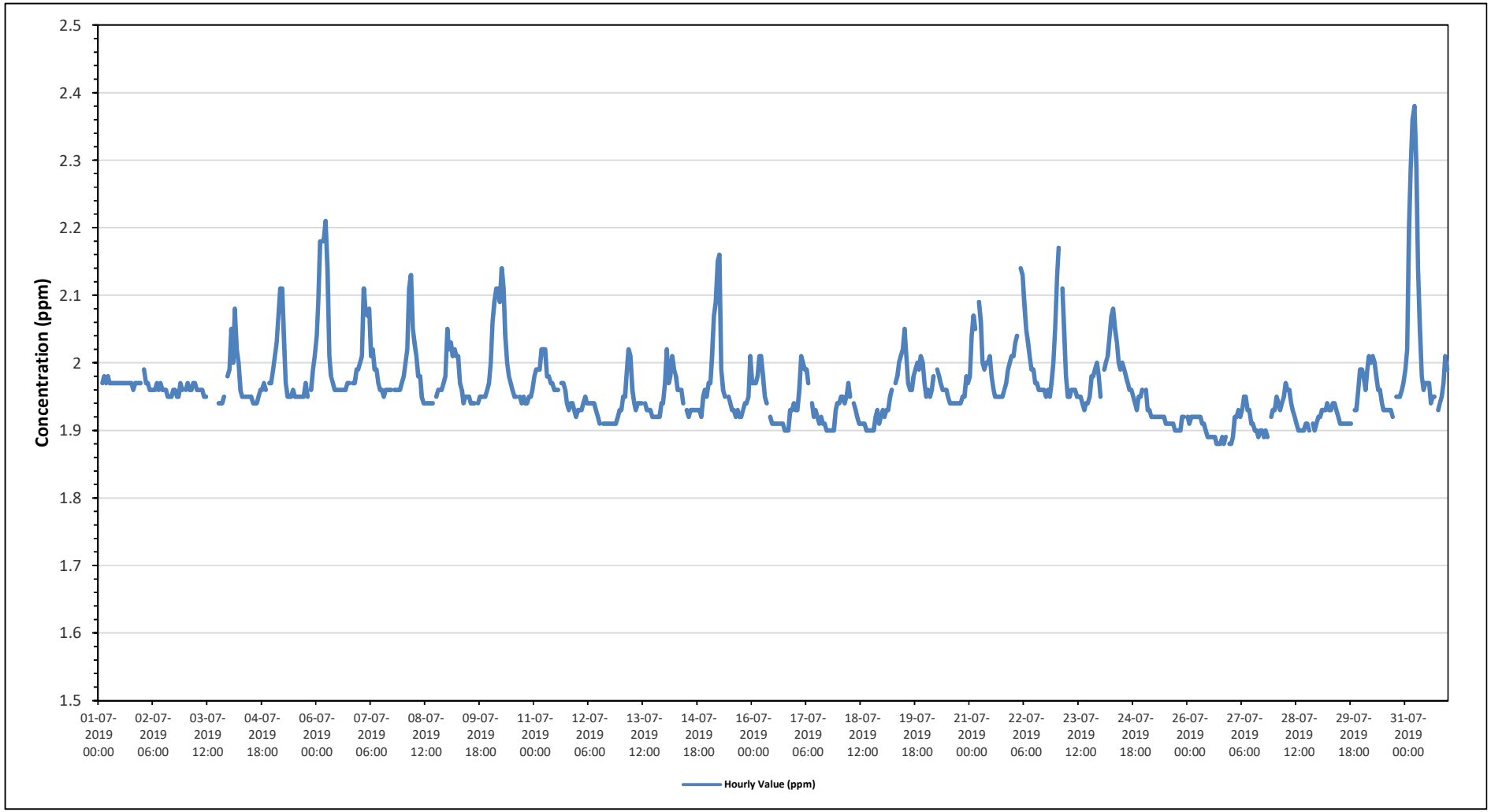
Maximum Hourly Value:	2.38	ppm	on July 31 at hour 5	Hours in Service:	744
Maximum Daily Value:	2.05	ppm	on July 31	Hours of Data:	705
Minimum Hourly Value:	1.88	ppm	on July 26 at hour 16	Hours of Missing Data:	0
Minimum Daily Value:	1.90	ppm	on July 26	Hours of Calibration:	39
Monthly Average:	1.96	ppm		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
Jul 1	1.96	S	1.97	1.98	1.97	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.97	1.97	1.97	1.97	1.96	1.98	1.97
Jul 2	S	1.99	1.97	1.97	1.96	1.96	1.96	1.96	1.97	1.96	1.97	1.96	1.96	1.96	1.95	1.95	1.95	1.96	1.96	1.95	1.95	1.97	1.96	S	1.95	1.99	1.96
Jul 3	1.96	1.97	1.96	1.96	1.97	1.97	1.96	1.96	1.96	1.96	1.95	1.95	C	C	C	C	C	C	1.94	1.94	1.94	1.95	S	1.98	1.94	1.98	-
Jul 4	1.99	2.05	2.00	2.08	2.02	2.00	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.94	1.94	1.94	1.95	1.96	1.96	1.97	1.96	S	1.97	1.97	1.94	2.08	1.97
Jul 5	1.99	2.01	2.03	2.07	2.11	2.11	2.04	1.97	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.97	1.95	S	1.96	1.99	2.01	1.95	2.11	1.99
Jul 6	2.04	2.09	2.18	2.18	2.18	2.21	2.14	2.01	1.98	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.97	S	1.97	1.97	1.99	1.99	1.96	2.21	2.02
Jul 7	2.00	2.01	2.11	2.08	2.07	2.08	2.01	2.02	1.99	1.99	1.97	1.96	1.96	1.95	1.96	1.96	1.96	1.96	S	1.96	1.96	1.96	1.96	1.97	1.95	2.11	1.99
Jul 8	1.98	2.00	2.02	2.11	2.13	2.05	2.03	2.01	1.98	1.98	1.95	1.94	1.94	1.94	1.94	1.94	1.94	S	1.95	1.96	1.96	1.96	1.97	1.98	1.94	2.13	1.99
Jul 9	2.05	2.02	2.03	2.01	2.02	2.01	2.01	1.97	1.96	1.94	1.95	1.95	1.95	1.94	1.94	1.94	S	1.94	1.95	1.95	1.95	1.95	1.96	1.97	1.94	2.05	1.97
Jul 10	2.00	2.06	2.09	2.11	2.11	2.09	2.14	2.11	2.04	2.00	1.98	1.97	1.96	1.95	1.95	S	1.95	1.94	1.95	1.94	1.94	1.95	1.95	1.96	1.94	2.14	2.01
Jul 11	1.98	1.99	1.99	1.99	2.02	2.02	2.02	1.98	1.98	1.97	1.97	1.96	1.96	1.96	S	1.97	1.97	1.96	1.94	1.93	1.94	1.94	1.93	1.92	1.92	2.02	1.97
Jul 12	1.93	1.93	1.93	1.94	1.95	1.94	1.94	1.94	1.94	1.94	1.93	1.92	1.91	S	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.93	1.91	1.95	1.92
Jul 13	1.93	1.95	1.95	1.99	2.02	2.01	1.96	1.94	1.93	1.94	1.94	1.94	S	1.94	1.93	1.93	1.93	1.92	1.92	1.92	1.92	1.92	1.94	1.94	1.92	2.02	1.94
Jul 14	1.97	2.02	1.97	1.98	2.01	1.99	1.98	1.96	1.96	1.96	1.94	S	1.93	1.92	1.93	1.93	1.93	1.93	1.93	1.93	1.92	1.95	1.96	1.95	1.92	2.02	1.95
Jul 15	1.97	1.97	2.01	2.07	2.09	2.15	2.16	1.99	1.96	1.95	S	1.95	1.94	1.93	1.93	1.92	1.93	1.92	1.92	1.93	1.94	1.94	1.95	2.01	1.92	2.16	1.98
Jul 16	1.97	1.97	1.97	1.98	2.01	2.01	1.98	1.95	1.94	S	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.93	1.93	1.94	1.90	2.01	1.94
Jul 17	1.93	1.93	1.96	2.01	2.00	1.99	1.99	1.97	S	1.94	1.92	1.93	1.92	1.91	1.92	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.93	1.94	1.90	2.01	1.94
Jul 18	1.94	1.95	1.95	1.94	1.95	1.97	1.95	S	1.94	1.93	1.92	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.92	1.93	1.91	1.92	1.90	1.97	1.92
Jul 19	1.93	1.92	1.93	1.93	1.95	1.96	S	1.97	1.98	2.00	2.01	2.02	2.05	2.01	1.97	1.96	1.96	1.98	1.99	2.00	1.99	2.01	2.00	1.97	1.92	2.05	1.98
Jul 20	1.95	1.96	1.95	1.96	1.98	S	1.99	1.98	1.97	1.96	1.96	1.96	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.98	1.97	1.94	1.99	1.96
Jul 21	1.98	2.04	2.07	2.05	S	2.09	2.06	2.00	1.99	2.00	2.00	2.01	1.98	1.96	1.95	1.95	1.95	1.95	1.95	1.96	1.97	1.99	2.00	2.01	1.95	2.09	2.00
Jul 22	2.01	2.03	2.04	S	2.14	2.13	2.09	2.05	2.03	2.01	1.99	1.99	1.97	1.97	1.96	1.96	1.96	1.96	1.95	1.96	1.95	1.97	2.00	2.05	1.95	2.14	2.01
Jul 23	2.13	2.17	S	2.11	2.04	1.98	1.95	1.95	1.96	1.96	1.96	1.95	1.95	1.95	1.94	1.93	1.94	1.94	1.95	1.98	1.98	1.99	2.00	1.98	1.93	2.17	1.99
Jul 24	1.95	S	1.99	2.00	2.01	2.04	2.07	2.08	2.05	2.03	2.00	1.99	2.00	1.99	1.98	1.97	1.96	1.96	1.95	1.94	1.93	1.95	1.95	1.96	1.93	2.08	1.99
Jul 25	S	1.96	1.93	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.92	1.92	S	1.90	1.96	1.92
Jul 26	1.92	1.91	1.92	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.90	1.89	1.89	1.89	1.89	1.89	1.88	1.88	1.88	1.89	1.88	1.89	S	1.88	1.88	1.92	1.90
Jul 27	1.88	1.89	1.92	1.92	1.93	1.92	1.93	1.95	1.95	1.93	1.93	1.91	1.91	1.90	1.90	1.89	1.90	1.90	1.89	1.90	1.89	S	1.92	1.93	1.88	1.95	1.91
Jul 28	1.93	1.95	1.94	1.93	1.94	1.95	1.97	1.96	1.96	1.94	1.93	1.92	1.91	1.90	1.90	1.90	1.90	1.91	1.91	1.90	S	1.91	1.90	1.91	1.90	1.97	1.92
Jul 29	1.92	1.92	1.93	1.93	1.93	1.94	1.93	1.93	1.94	1.94	1.93	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	S	1.93	1.93	1.96	1.99	1.91	1.99	1.93
Jul 30	1.99	1.98	1.96	1.99	2.01	2.00	2.01	2.00	1.98	1.96	1.96	1.94	1.93	1.93	1.93	1.93	1.93	1.92	S	1.95	1.95	1.95	1.96	1.97	1.92	2.01	1.96
Jul 31	1.99	2.02	2.20	2.29	2.36	**2.38**	2.29	2.14	2.05	1.98	1.96	1.97	1.97	1.97	1.94	1.95	1.95	S	1.93	1.94	1.95	1.97	2.01	1.99	1.93	**2.38**	**2.05**
Diurnal Maximum	2.13	2.17	2.20	2.29	2.36	2.38	2.29	2.14	2.05	2.03	2.01	2.02	2.05	2.01	1.98	1.97	1.97	1.98	1.99	2.00	1.99	2.01	2.01	2.05			
Daiurnal Average	1.97	1.99	2.00	2.01	2.02	2.03	2.01	1.98	1.97	1.96	1.95	1.95	1.95	1.94	1.94	1.93	1.93	1.93	1.93	1.94	1.94	1.95	1.96	1.96			

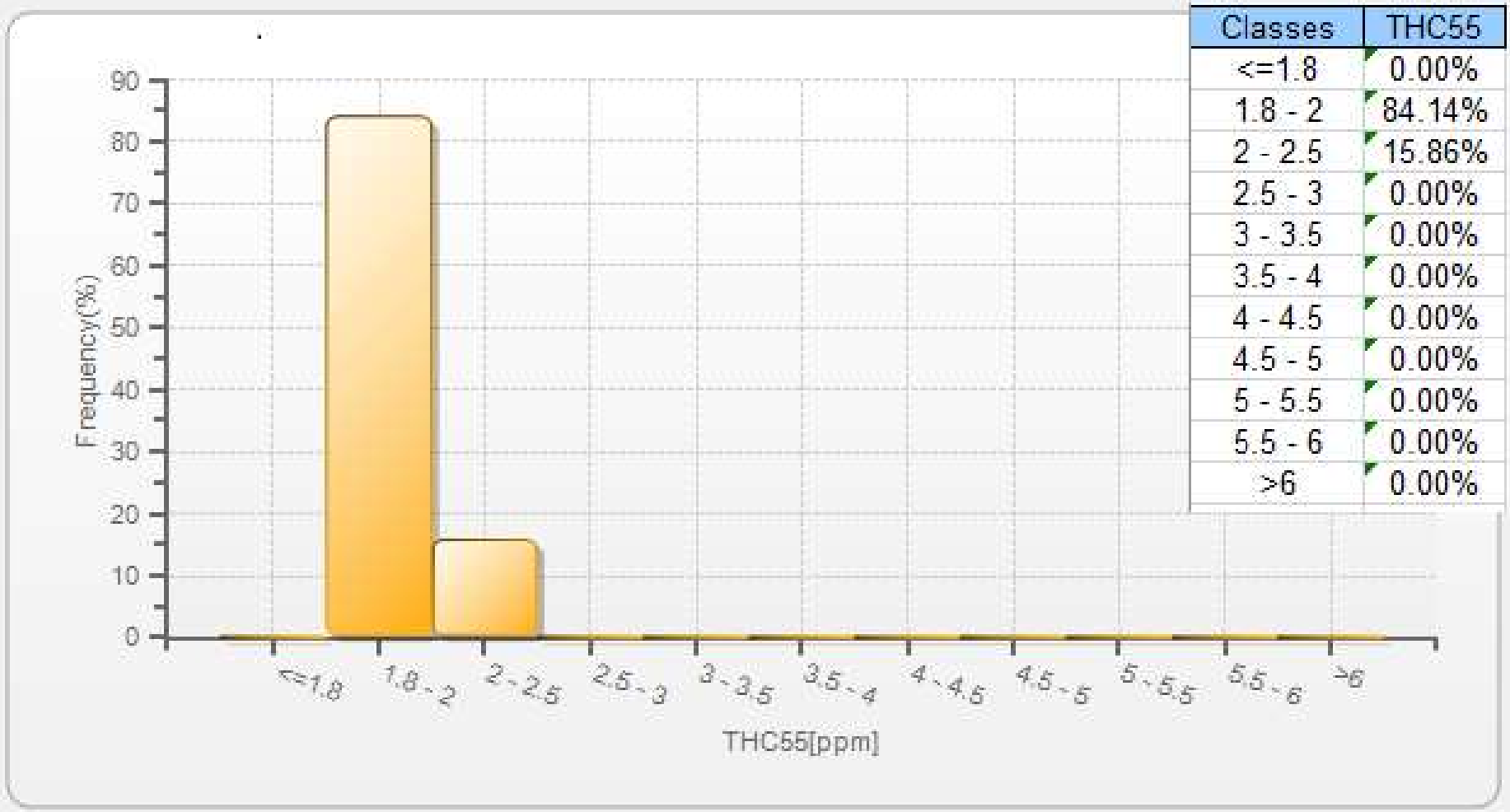
C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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



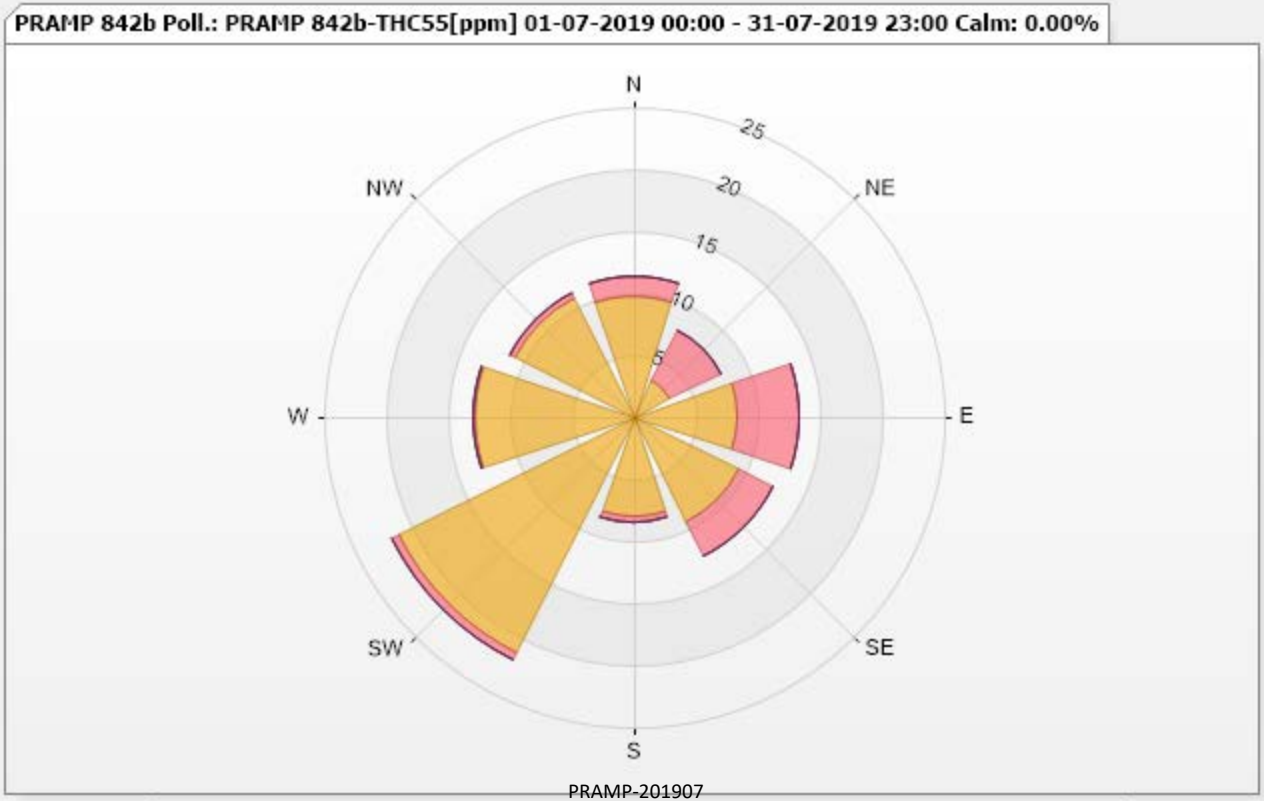
THC55[ppm] Histogram: PRAMP 842b Monthly: 07-2019 1 Hr.



Classes	THC55
<=1.8	0.00%
1.8 - 2	84.14%
2 - 2.5	15.86%
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: PRAMP 842b Poll.: PRAMP 842b-THC55[ppm] Monthly: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.09% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	9.71	1.71	0	0	0	11.42
NE	3.29	4.57	0	0	0	7.86
E	8.43	5	0	0	0	13.43
SE	9.57	3	0	0	0	12.57
S	8	0.57	0	0	0	8.57
SW	21.29	0.57	0	0	0	21.86
W	12.86	0.14	0	0	0	13
NW	10.71	0.57	0	0	0	11.28
Summary	83.86	16.13	0	0	0	100


PRAMP 842b Poll.: PRAMP 842b-THC55[ppm] 01-07-2019 00:00 - 31-07-2019 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
25
20
15
10
5
% Icon Classes (ppm)
84 0-2
16 2-5
0 5-10
0 10-40
0 >40.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

Summary of Hourly Averages

METHANE (CH4) in ppm

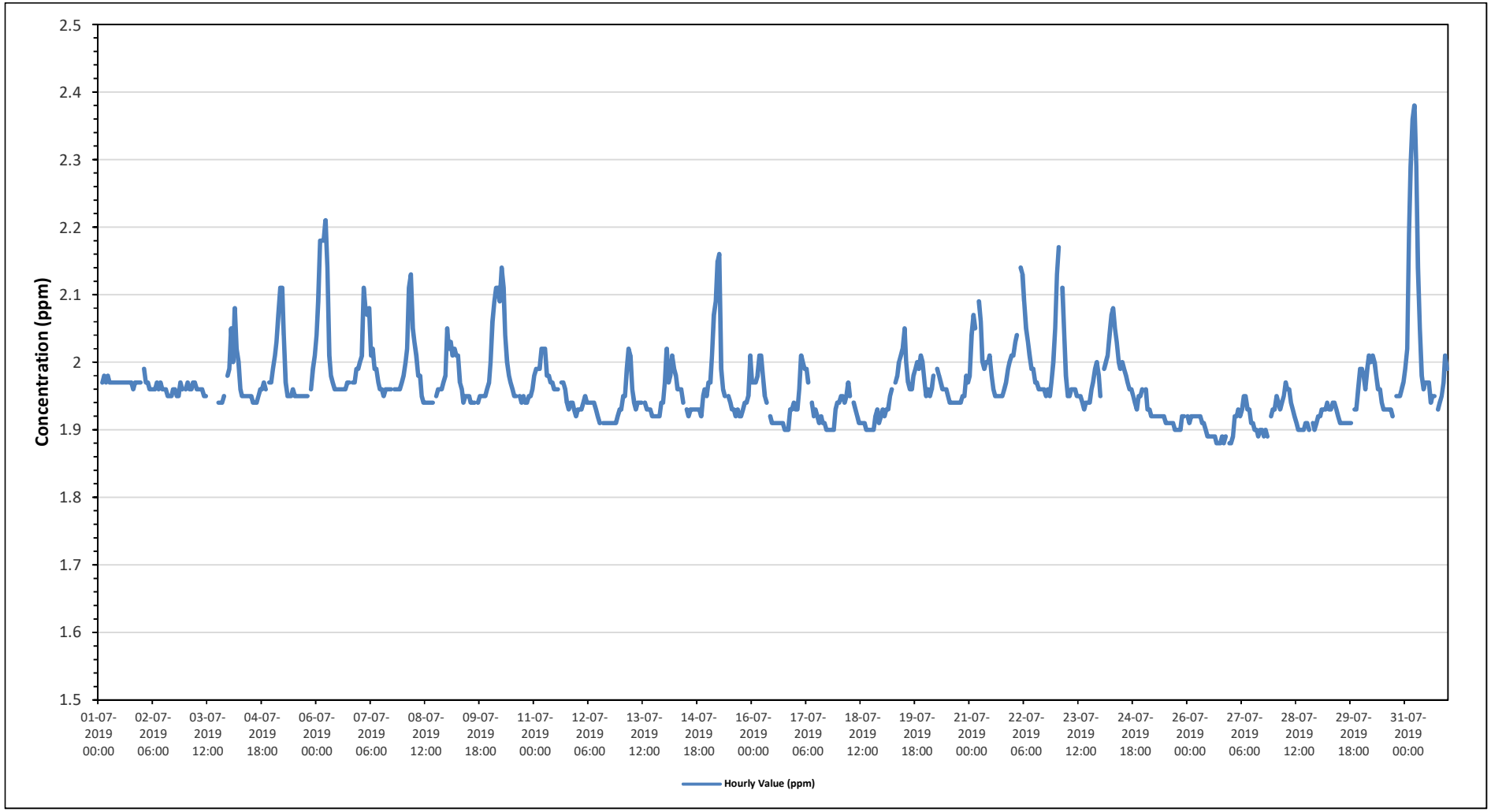
Maximum Hourly Value:	2.38	ppm	on July 31 at hour 5	Hours in Service:	744
Maximum Daily Value:	2.05	ppm	on July 31	Hours of Data:	705
Minimum Hourly Value:	1.88	ppm	on July 26 at hour 16	Hours of Missing Data:	0
Minimum Daily Value:	1.90	ppm	on July 26	Hours of Calibration:	39
Monthly Average:	1.96	ppm		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
Jul 1	1.96	S	1.97	1.98	1.97	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.97	1.97	1.97	1.97	1.96	1.98	1.97
Jul 2	S	1.99	1.97	1.97	1.96	1.96	1.96	1.96	1.97	1.96	1.97	1.96	1.96	1.96	1.95	1.95	1.95	1.96	1.96	1.95	1.95	1.97	1.96	S	1.95	1.99	1.96
Jul 3	1.96	1.97	1.96	1.96	1.97	1.97	1.96	1.96	1.96	1.96	1.95	1.95	C	C	C	C	C	C	1.94	1.94	1.94	1.95	S	1.98	1.94	1.98	-
Jul 4	1.99	2.05	2.00	2.08	2.02	2.00	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.94	1.94	1.94	1.95	1.96	1.96	1.97	1.96	S	1.97	1.97	1.94	2.08	1.97
Jul 5	1.99	2.01	2.03	2.07	2.11	2.11	2.04	1.97	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	S	1.96	1.99	2.01	1.95	2.11	1.99
Jul 6	2.04	2.09	2.18	2.18	2.18	2.21	2.14	2.01	1.98	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.97	S	1.97	1.97	1.99	1.99	1.96	2.21	2.02
Jul 7	2.00	2.01	2.11	2.08	2.07	2.08	2.01	2.02	1.99	1.99	1.97	1.96	1.96	1.95	1.96	1.96	1.96	1.96	S	1.96	1.96	1.96	1.96	1.97	1.95	2.11	1.99
Jul 8	1.98	2.00	2.02	2.11	2.13	2.05	2.03	2.01	1.98	1.98	1.95	1.94	1.94	1.94	1.94	1.94	1.94	S	1.95	1.96	1.96	1.96	1.97	1.98	1.94	2.13	1.99
Jul 9	2.05	2.02	2.03	2.01	2.02	2.01	2.01	1.97	1.96	1.94	1.95	1.95	1.95	1.94	1.94	1.94	S	1.94	1.95	1.95	1.95	1.95	1.96	1.97	1.94	2.05	1.97
Jul 10	2.00	2.06	2.09	2.11	2.11	2.09	2.14	2.11	2.04	2.00	1.98	1.97	1.96	1.95	1.95	S	1.95	1.94	1.95	1.94	1.94	1.95	1.95	1.96	1.94	2.14	2.01
Jul 11	1.98	1.99	1.99	1.99	2.02	2.02	2.02	1.98	1.98	1.97	1.97	1.96	1.96	1.96	S	1.97	1.97	1.96	1.94	1.93	1.94	1.94	1.93	1.92	1.92	2.02	1.97
Jul 12	1.93	1.93	1.93	1.94	1.95	1.94	1.94	1.94	1.94	1.94	1.93	1.92	1.91	S	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.93	1.91	1.95	1.92
Jul 13	1.93	1.95	1.95	1.99	2.02	2.01	1.96	1.94	1.93	1.94	1.94	1.94	S	1.94	1.93	1.93	1.93	1.92	1.92	1.92	1.92	1.92	1.94	1.94	1.92	2.02	1.94
Jul 14	1.97	2.02	1.97	1.98	2.01	1.99	1.98	1.96	1.96	1.96	1.94	S	1.93	1.92	1.93	1.93	1.93	1.93	1.93	1.93	1.92	1.95	1.96	1.95	1.92	2.02	1.95
Jul 15	1.97	1.97	2.01	2.07	2.09	2.15	2.16	1.99	1.96	1.95	S	1.95	1.94	1.93	1.93	1.92	1.93	1.92	1.92	1.93	1.94	1.94	1.95	2.01	1.92	2.16	1.98
Jul 16	1.97	1.97	1.97	1.98	2.01	2.01	1.98	1.95	1.94	S	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.93	1.93	1.94	1.90	2.01	1.94
Jul 17	1.93	1.93	1.96	2.01	2.00	1.99	1.99	1.97	S	1.94	1.92	1.93	1.92	1.91	1.92	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.93	1.94	1.90	2.01	1.94
Jul 18	1.94	1.95	1.95	1.94	1.95	1.97	1.95	S	1.94	1.93	1.92	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.92	1.93	1.91	1.92	1.90	1.97	1.92
Jul 19	1.93	1.92	1.93	1.93	1.95	1.96	S	1.97	1.98	2.00	2.01	2.02	2.05	2.00	1.97	1.96	1.96	1.98	1.99	2.00	1.99	2.01	2.00	1.97	1.92	2.05	1.98
Jul 20	1.95	1.96	1.95	1.96	1.98	S	1.99	1.98	1.97	1.96	1.96	1.96	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.98	1.97	1.94	1.99	1.96
Jul 21	1.98	2.04	2.07	2.05	S	2.09	2.06	2.00	1.99	2.00	2.00	2.01	1.98	1.96	1.95	1.95	1.95	1.95	1.95	1.96	1.97	1.99	2.00	2.01	1.95	2.09	2.00
Jul 22	2.01	2.03	2.04	S	2.14	2.13	2.09	2.05	2.03	2.01	1.99	1.99	1.97	1.97	1.96	1.96	1.96	1.96	1.95	1.96	1.95	1.97	2.00	2.05	1.95	2.14	2.01
Jul 23	2.13	2.17	S	2.11	2.04	1.98	1.95	1.95	1.96	1.96	1.96	1.95	1.95	1.95	1.94	1.93	1.94	1.94	1.94	1.96	1.97	1.99	2.00	1.98	1.93	2.17	1.98
Jul 24	1.95	S	1.99	2.00	2.01	2.04	2.07	2.08	2.05	2.03	2.00	1.99	2.00	1.99	1.98	1.97	1.96	1.96	1.95	1.94	1.93	1.95	1.95	1.96	1.93	2.08	1.99
Jul 25	S	1.96	1.93	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.92	1.92	S	1.90	1.96	1.92
Jul 26	1.92	1.91	1.92	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.90	1.89	1.89	1.89	1.89	1.89	1.88	1.88	1.88	1.89	1.88	1.89	S	1.88	1.88	1.92	1.90
Jul 27	1.88	1.89	1.92	1.92	1.93	1.92	1.93	1.95	1.95	1.93	1.93	1.91	1.91	1.90	1.90	1.89	1.90	1.90	1.89	1.90	1.89	S	1.92	1.93	1.88	1.95	1.91
Jul 28	1.93	1.95	1.94	1.93	1.94	1.95	1.97	1.96	1.96	1.94	1.93	1.92	1.91	1.90	1.90	1.90	1.90	1.91	1.91	1.90	S	1.91	1.90	1.91	1.90	1.97	1.92
Jul 29	1.92	1.92	1.93	1.93	1.93	1.94	1.93	1.93	1.94	1.94	1.93	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	S	1.93	1.93	1.96	1.99	1.91	1.99	1.93
Jul 30	1.99	1.98	1.96	1.99	2.01	2.00	2.01	2.00	1.98	1.96	1.96	1.94	1.93	1.93	1.93	1.93	1.93	1.92	S	1.95	1.95	1.95	1.96	1.97	1.92	2.01	1.96
Jul 31	1.99	2.02	2.19	2.29	2.36	2.38	2.29	2.14	2.05	1.98	1.96	1.97	1.97	1.97	1.94	1.95	1.95	S	1.93	1.94	1.95	1.97	2.01	1.99	1.93	2.38	2.05
Diurnal Maximum	2.13	2.17	2.19	2.29	2.36	2.38	2.29	2.14	2.05	2.03	2.01	2.02	2.05	2.00	1.98	1.97	1.97	1.98	1.99	2.00	1.99	2.01	2.01	2.05			
Daiurnal Average	1.97	1.99	2.00	2.01	2.02	2.03	2.01	1.98	1.97	1.96	1.95	1.95	1.95	1.94	1.94	1.93	1.93	1.93	1.93	1.94	1.94	1.95	1.96	1.96			

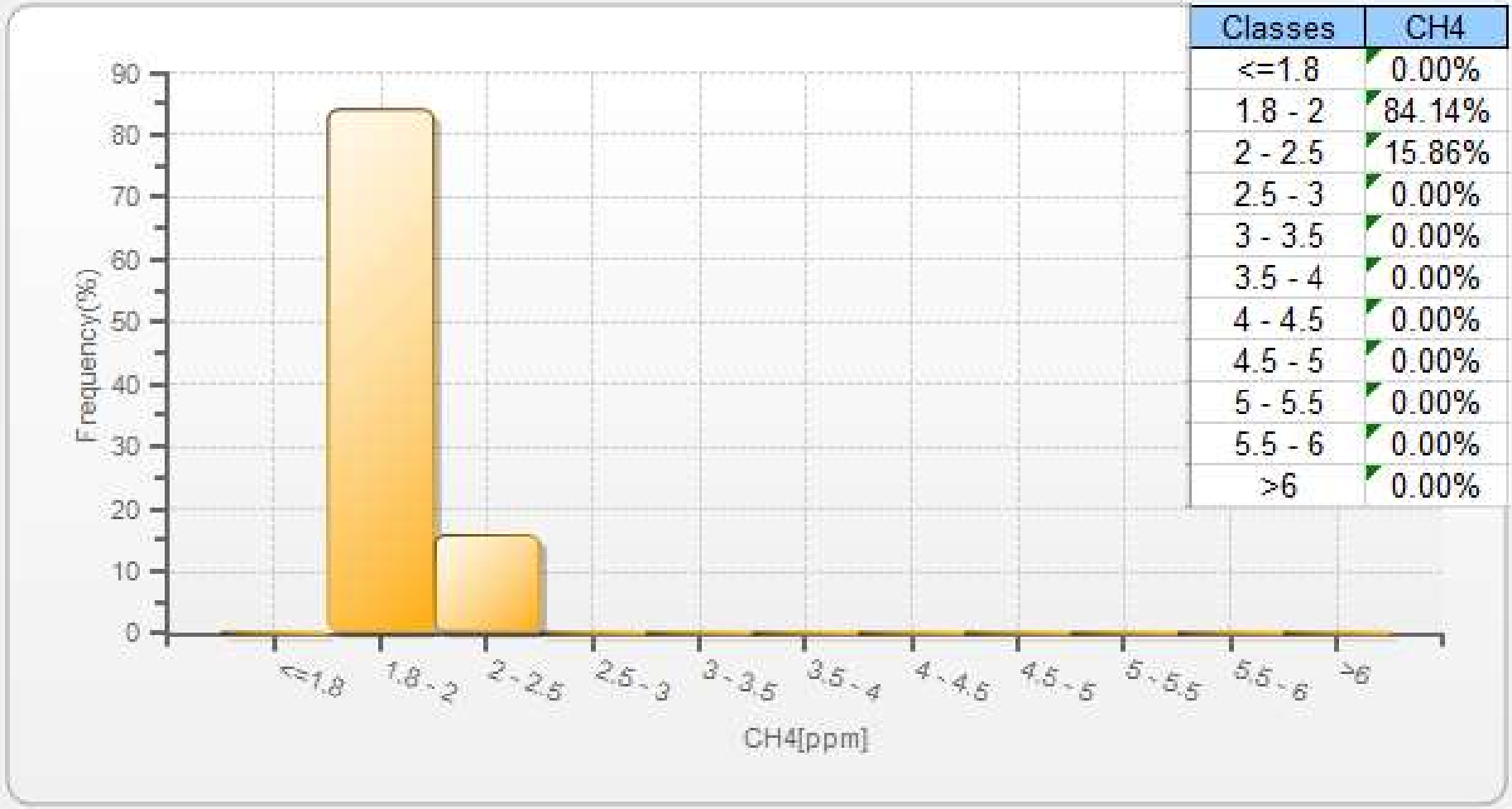
C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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



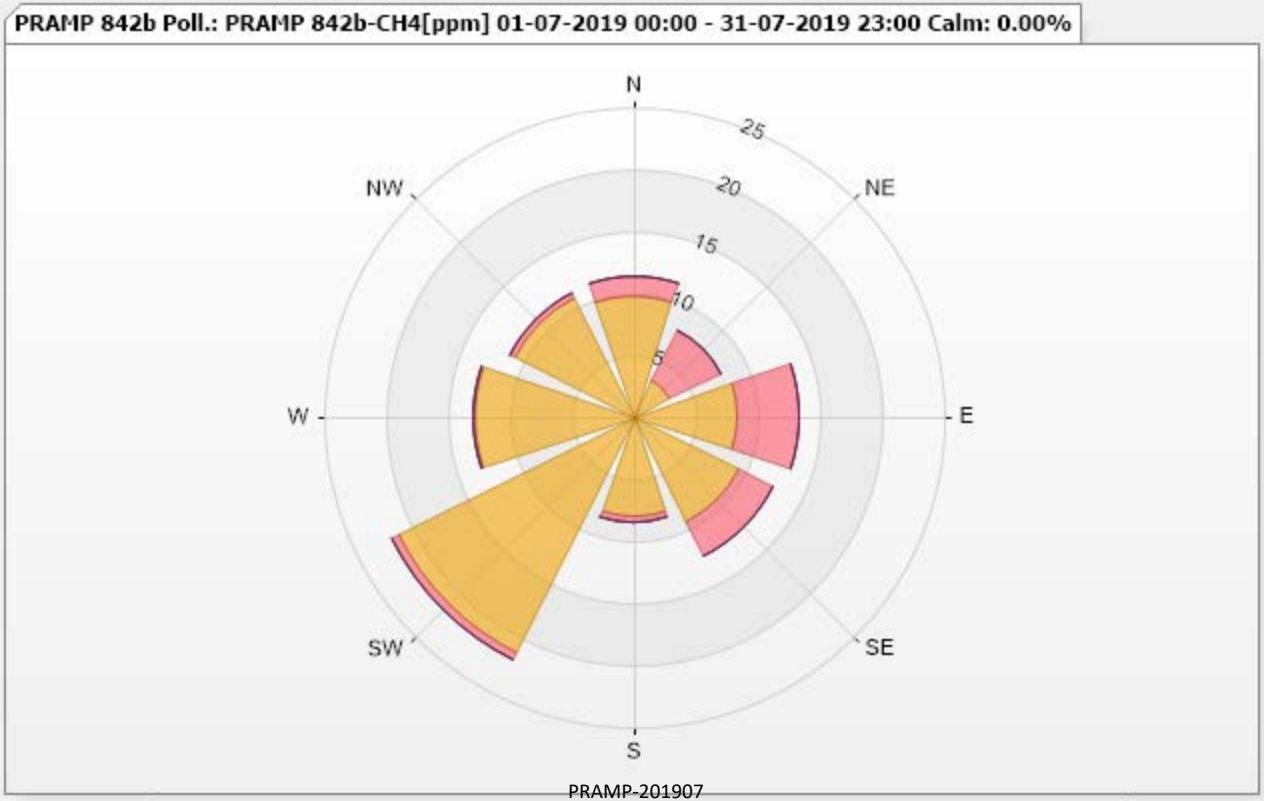
CH4[ppm] Histogram: PRAMP 842b Monthly: 07-2019 1 Hr.



Classes	CH4
<=1.8	0.00%
1.8 - 2	84.14%
2 - 2.5	15.86%
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: PRAMP 842b Poll.: PRAMP 842b-CH4[ppm] Monthly: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.09% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	9.71	1.71	0	0	0	11.42
NE	3.29	4.57	0	0	0	7.86
E	8.43	5	0	0	0	13.43
SE	9.57	3	0	0	0	12.57
S	8	0.57	0	0	0	8.57
SW	21.29	0.57	0	0	0	21.86
W	12.86	0.14	0	0	0	13
NW	10.71	0.57	0	0	0	11.28
Summary	83.86	16.13	0	0	0	100


PRAMP 842b Poll.: PRAMP 842b-CH4[ppm] 01-07-2019 00:00 - 31-07-2019 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
25
20
15
10
5
% Icon Classes (ppm)
84 0-2
16 2-5
0 5-10
0 10-20
0 >20.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

Summary of Hourly Averages

NON-METHANE HYDROCARBONS (NMHC) in ppm

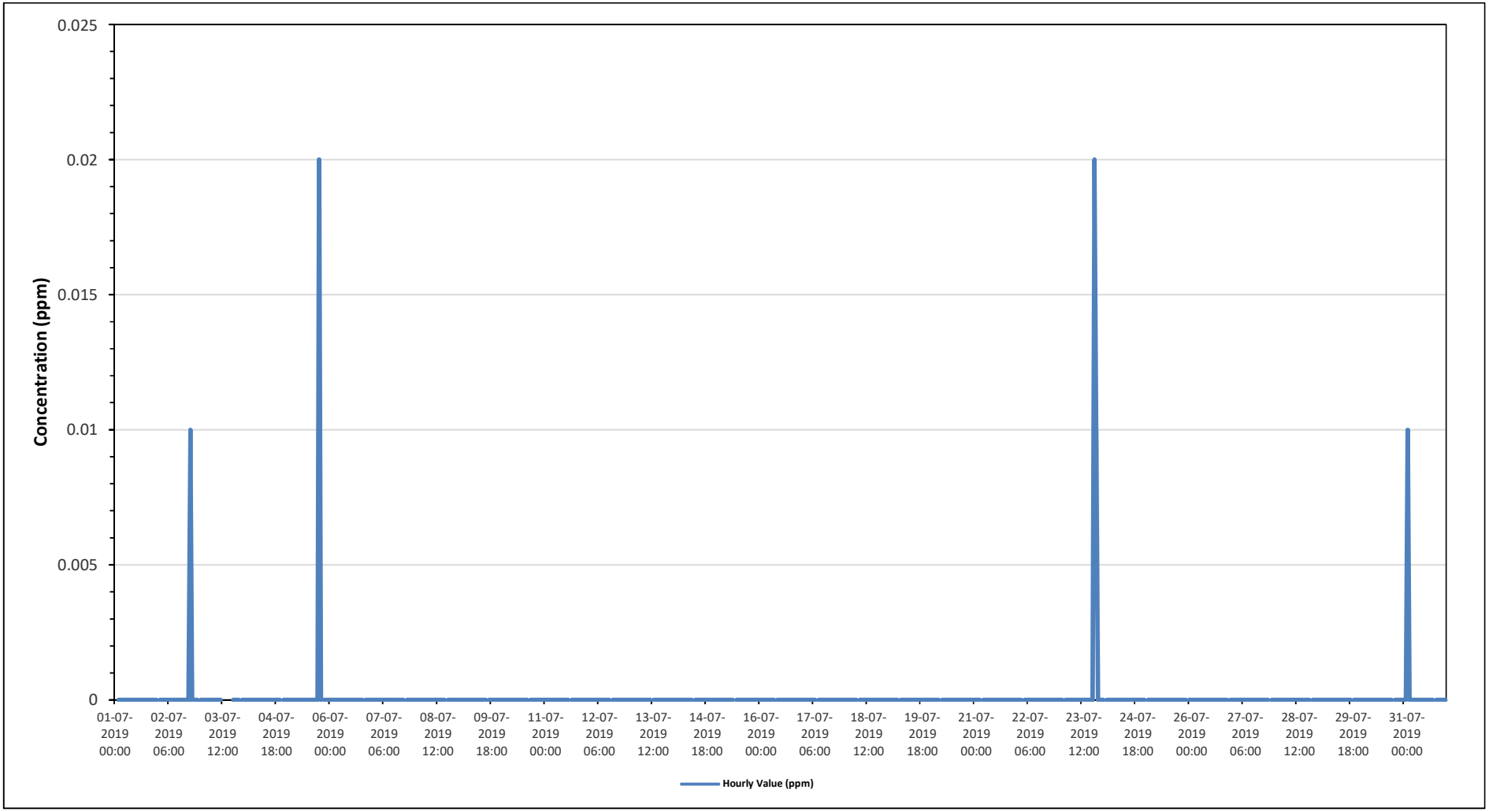
Maximum Hourly Value:	0.02	ppm	on July 5 at hour 18	Hours in Service:	744
Maximum Daily Value:	0.00	ppm	on July 23	Hours of Data:	705
Minimum Hourly Value:	0.00	ppm	on July 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.00	ppm	on July 1	Hours of Calibration:	39
Monthly Average:	0.00	ppm		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			
Jul 1	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 2	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	S	0.00	0.01	0.00
Jul 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	C	C	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	-
Jul 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jul 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	S	0.00	0.00	0.00	0.00	0.02	0.00
Jul 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 19	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 20	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 21	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 22	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 23	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.02	0.00
Jul 24	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 25	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
Jul 26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Jul 27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jul 28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Jul 29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 31	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Diurnal Maximum	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.01	0.00	0.00	0.00			
Daiurnal 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			

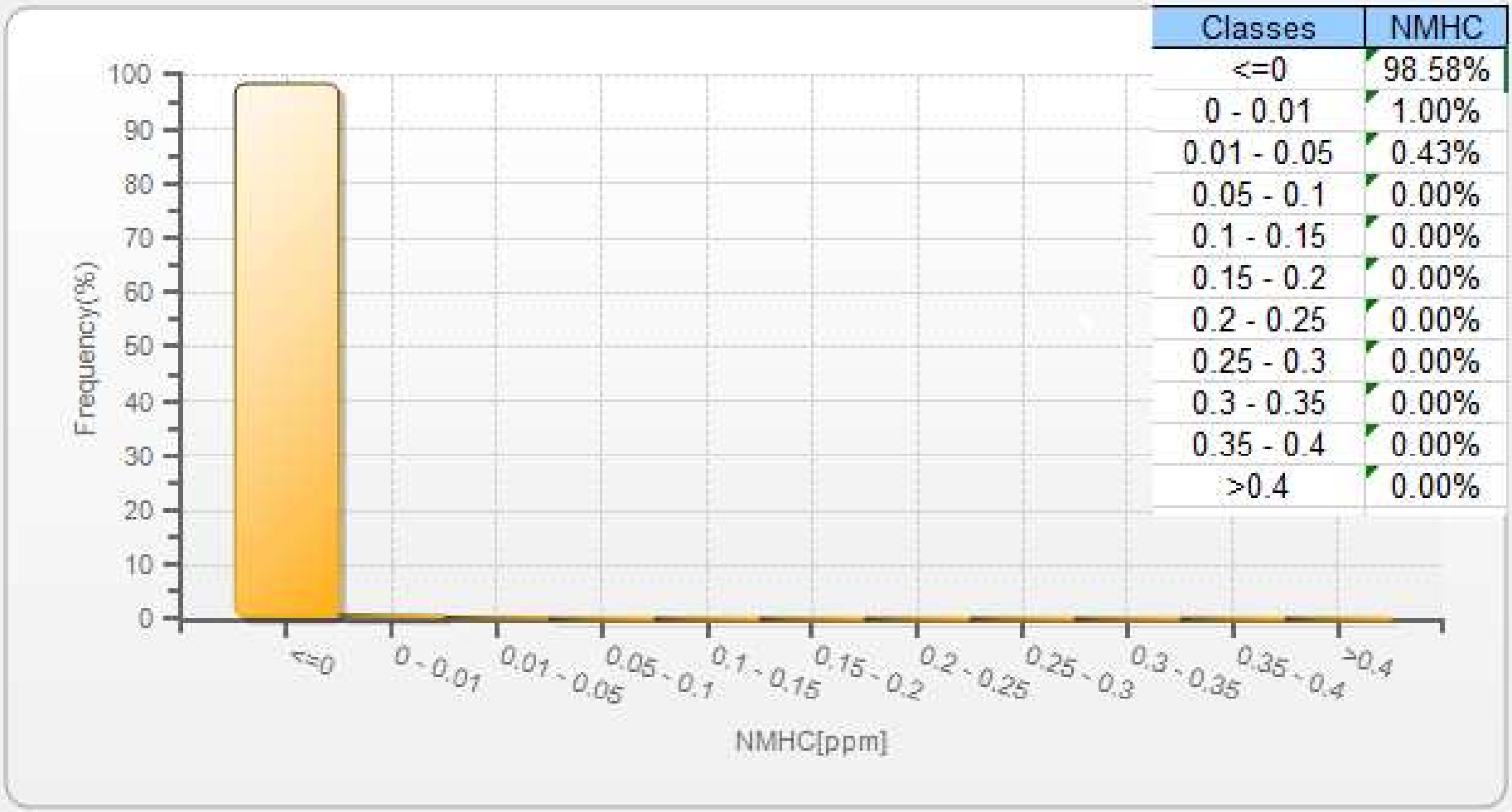
C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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



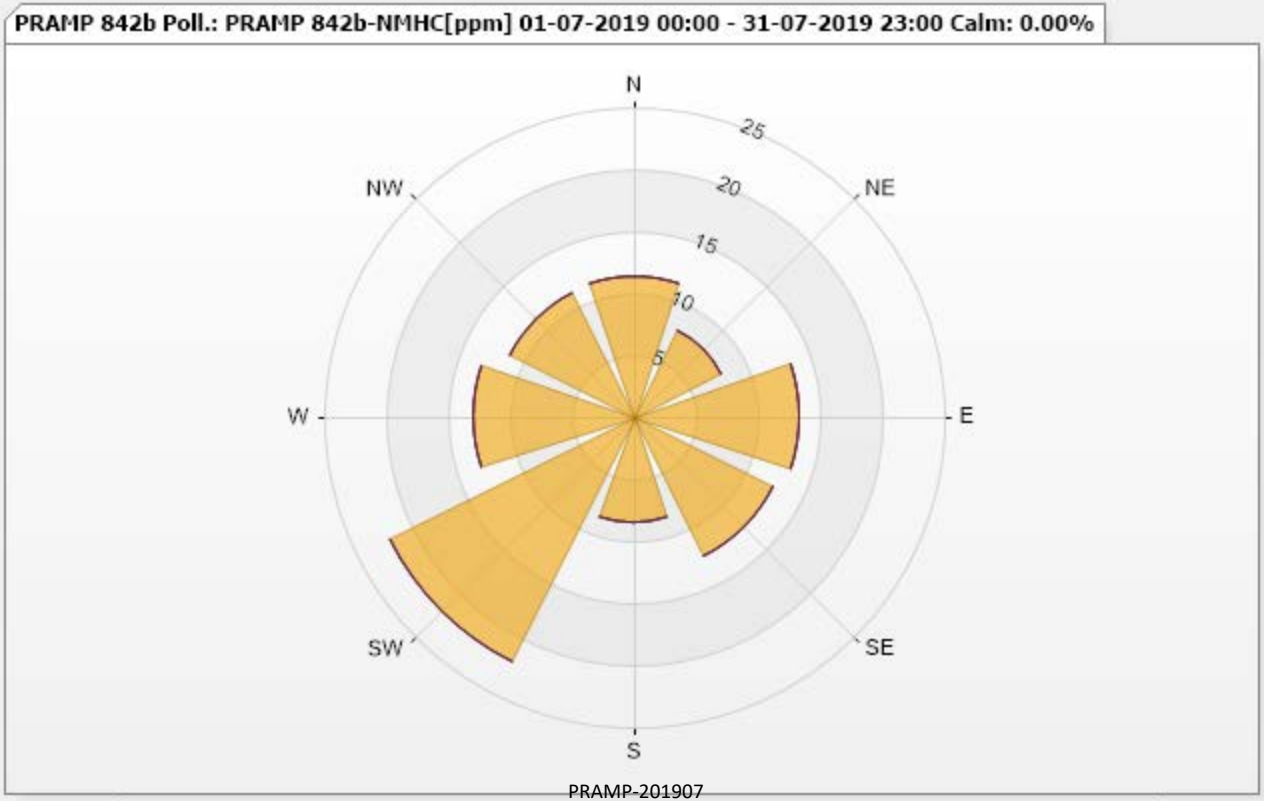
NMHC[ppm] Histogram: PRAMP 842b Monthly: 07-2019 1 Hr.



Classes	NMHC
<=0	98.58%
0 - 0.01	1.00%
0.01 - 0.05	0.43%
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	0.00%

Wind: PRAMP 842b Poll.: PRAMP 842b-NMHC[ppm] Monthly: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.35% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	11.4	0	0	0	0	11.4
NE	7.83	0	0	0	0	7.83
E	13.39	0	0	0	0	13.39
SE	12.54	0	0	0	0	12.54
S	8.55	0	0	0	0	8.55
SW	22.08	0	0	0	0	22.08
W	12.96	0	0	0	0	12.96
NW	11.25	0	0	0	0	11.25
Summary	100	0	0	0	0	100


PRAMP 842b Poll.: PRAMP 842b-NMHC[ppm] 01-07-2019 00:00 - 31-07-2019 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

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

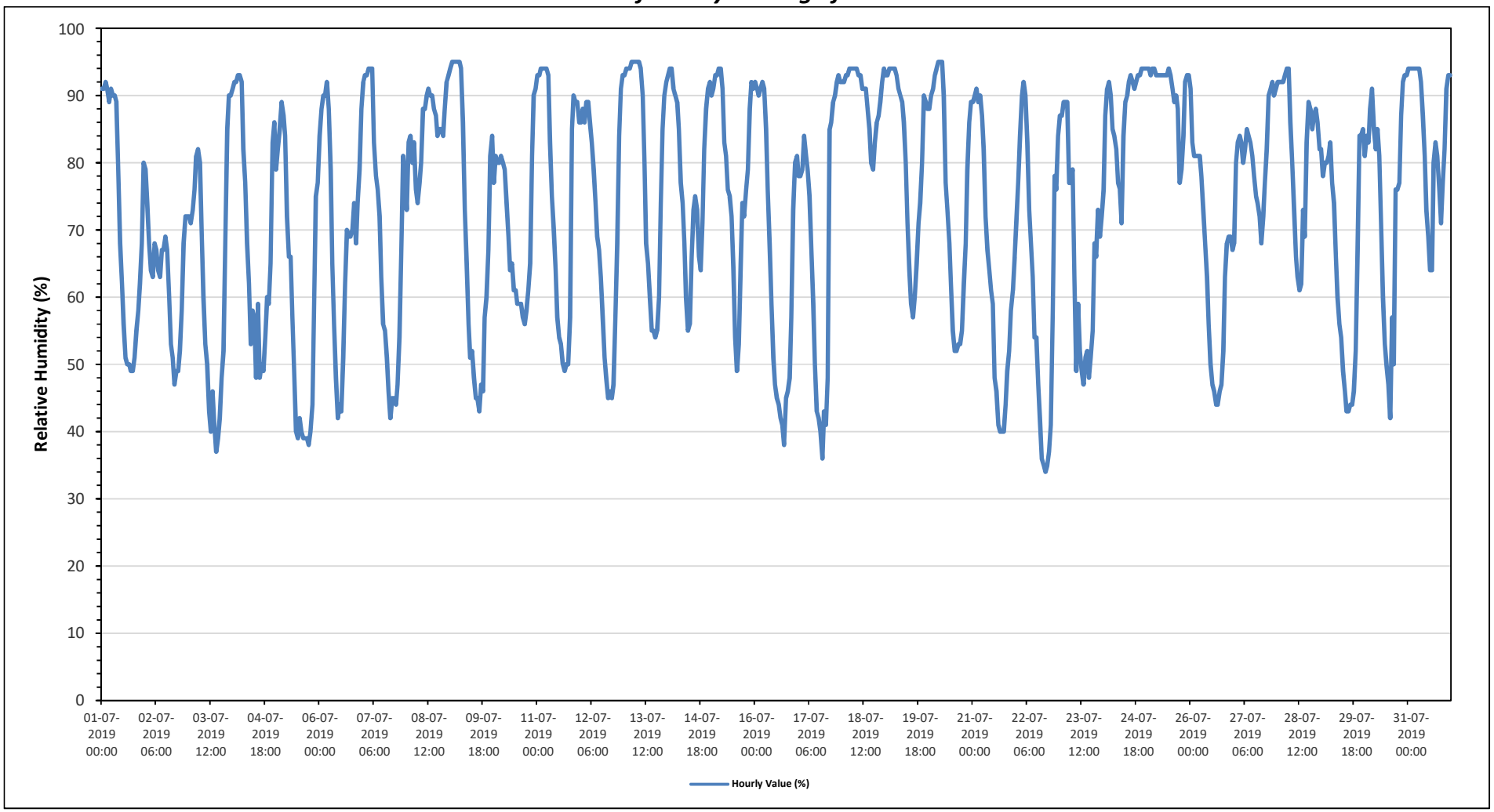
Maximum Hourly Value:	95	%	on July 9 at hour 1	Hours in Service:	744
Maximum Daily Value:	91.0	%	on July 25	Hours of Data:	744
Minimum Hourly Value:	34	%	on July 22 at hour 16	Hours of Missing Data:	0
Minimum Daily Value:	59.5	%	on July 5	Hours of Calibration:	0
Monthly Average:	73.4	%		Operational Uptime:	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
Jul 1	91	91	92	91	89	91	90	90	89	79	68	62	56	51	50	50	49	49	51	55	58	62	68	80	49	92	71
Jul 2	79	74	68	64	63	68	67	64	63	67	67	69	67	60	53	51	47	49	49	52	58	68	72	72	47	79	63
Jul 3	72	71	73	76	81	82	80	69	60	53	50	43	40	46	41	37	39	42	48	52	69	85	90	90	37	90	62
Jul 4	91	92	92	93	93	92	82	77	68	62	53	58	57	48	59	48	50	49	54	60	59	65	83	86	48	93	70
Jul 5	79	82	85	89	87	84	72	66	66	57	49	40	39	42	40	39	39	39	38	40	44	60	75	77	38	89	60
Jul 6	84	88	90	90	92	88	79	65	56	48	42	44	43	51	62	70	69	69	70	74	68	74	79	88	42	92	70
Jul 7	92	93	93	94	94	94	83	78	76	72	63	56	55	51	46	42	45	45	44	47	54	67	81	78	42	94	68
Jul 8	73	83	84	80	83	76	74	77	80	88	88	90	91	90	90	88	87	84	85	85	84	88	92	93	73	93	85
Jul 9	94	**95**	**95**	**95**	**95**	**95**	94	86	73	65	56	51	52	48	45	45	43	47	46	57	60	67	81	84	43	**95**	70
Jul 10	77	81	80	80	81	80	79	74	69	64	65	61	61	59	59	59	57	56	58	61	65	81	90	91	56	91	70
Jul 11	93	93	94	94	94	94	93	83	75	70	64	57	54	53	50	49	50	50	57	85	90	89	89	86	49	94	75
Jul 12	86	88	86	89	89	86	83	79	74	69	67	63	57	51	48	45	46	45	47	57	68	84	91	93	45	93	70
Jul 13	93	94	94	94	**95**	**95**	**95**	**95**	**95**	94	90	80	68	65	60	55	55	54	55	60	74	85	90	92	54	**95**	80
Jul 14	93	94	94	91	90	89	85	77	74	68	60	55	56	66	73	75	73	66	64	71	82	88	91	92	55	94	78
Jul 15	90	91	93	93	94	94	91	83	81	76	75	72	64	54	49	53	65	74	72	76	79	88	92	91	49	94	79
Jul 16	92	91	90	91	92	91	85	76	68	59	51	47	45	44	42	41	38	45	46	48	57	73	80	81	38	92	66
Jul 17	78	78	79	84	81	79	75	67	59	50	43	42	40	36	43	41	48	85	86	89	90	92	93	92	36	93	69
Jul 18	92	92	93	93	94	94	94	94	94	93	93	91	91	91	88	85	80	79	83	86	87	89	92	94	79	94	90
Jul 19	93	93	94	94	94	94	93	91	90	89	86	80	71	64	59	57	60	65	71	74	80	90	89	88	57	94	82
Jul 20	88	90	91	93	94	**95**	**95**	**95**	90	77	73	68	62	55	52	52	53	53	55	62	68	79	86	89	52	**95**	76
Jul 21	89	90	91	89	90	87	82	72	67	64	61	59	48	46	41	40	40	40	44	49	52	58	61	66	40	91	64
Jul 22	71	77	84	90	92	90	83	73	68	63	54	54	47	42	36	35	**34**	35	37	41	58	78	76	84	**34**	92	63
Jul 23	87	87	89	89	89	77	77	79	63	49	59	52	49	47	51	52	48	51	55	68	66	73	69	72	47	89	67
Jul 24	76	87	91	92	90	85	84	82	77	76	71	84	89	90	92	93	92	91	92	93	93	94	94	94	71	94	88
Jul 25	94	94	93	94	94	93	93	93	93	93	93	93	94	93	91	89	90	88	77	79	84	92	93	93	77	94	**91**
Jul 26	91	83	81	81	81	81	78	73	68	63	56	50	47	46	44	44	46	47	52	63	68	69	69	67	44	91	65
Jul 27	68	80	83	84	83	80	82	85	84	83	81	78	75	74	72	68	72	77	82	90	91	92	90	91	68	92	81
Jul 28	92	92	92	92	93	94	94	86	80	73	66	63	61	62	73	69	83	89	88	85	87	88	86	82	61	94	82
Jul 29	82	78	80	80	81	83	77	74	66	60	56	54	49	46	43	43	44	44	46	52	67	84	84	85	43	85	65
Jul 30	81	84	83	88	91	85	82	85	81	71	60	53	50	47	42	57	50	76	76	77	87	92	93	93	42	93	74
Jul 31	94	94	94	94	94	94	94	92	87	81	73	69	64	64	80	83	81	76	71	77	82	91	93	93	64	94	84
Diurnal Maximum	94	95	95	95	95	95	95	95	95	94	93	93	94	93	92	93	92	91	92	93	93	94	94	94			
Daiurnal Average	85.6	87.1	87.8	88.4	88.8	87.4	84.4	80.0	75.3	70.2	65.6	62.5	59.4	57.5	57.2	56.6	57.2	60.0	61.3	66.6	71.9	80.2	84.3	85.7			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 - July 2019

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

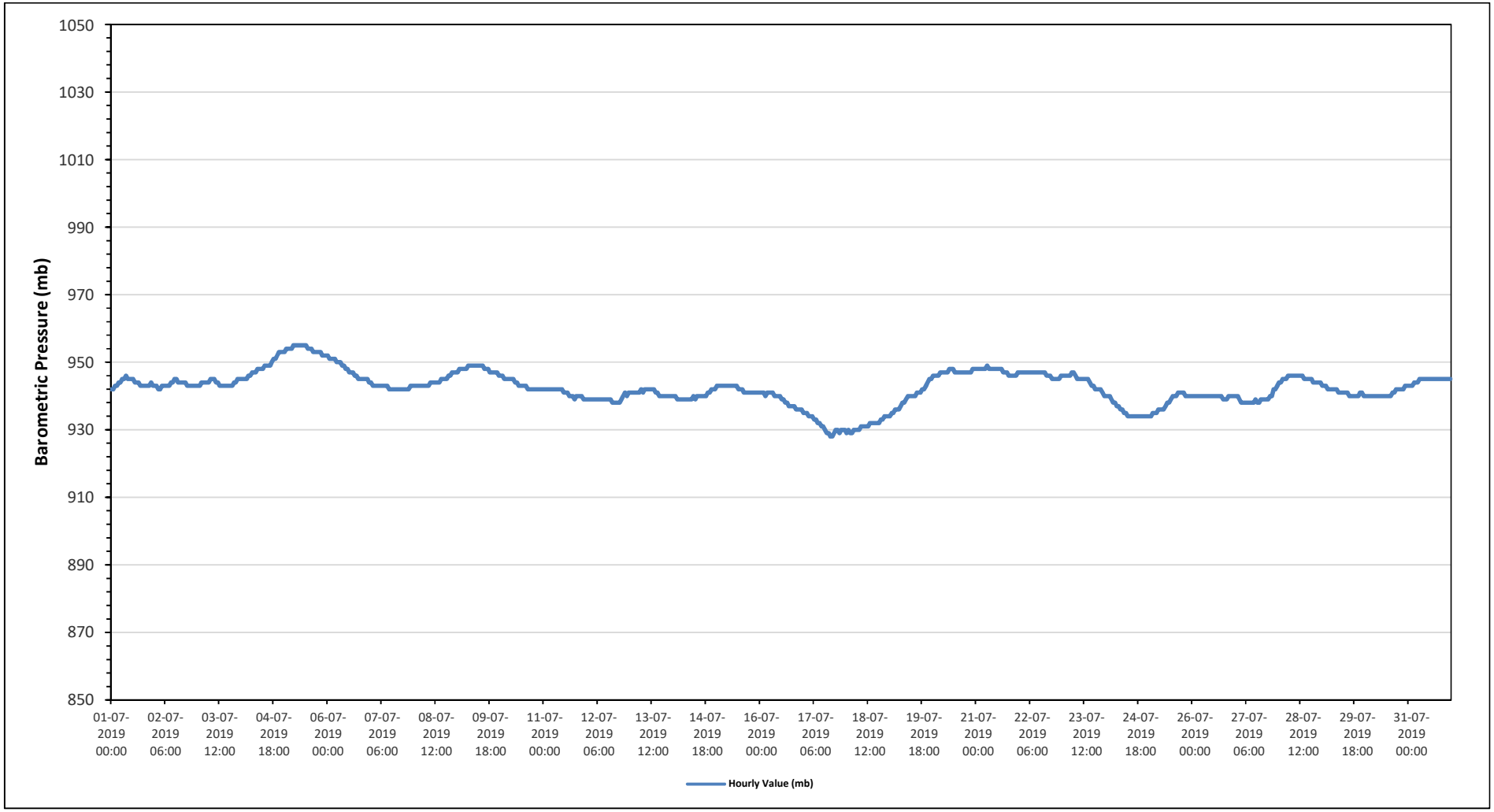
Maximum Hourly Value:	955	mb	on July 5 at hour 5	Hours in Service:	744
Maximum Daily Value:	954	mb	on July 5	Hours of Data:	744
Minimum Hourly Value:	928	mb	on July 17 at hour 15	Hours of Missing Data:	0
Minimum Daily Value:	931	mb	on July 17	Hours of Calibration:	0
Monthly Average:	942	mb		Operational 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
Jul 1	942	942	943	943	944	944	945	945	946	945	945	945	945	944	944	944	943	943	943	943	943	943	944	943	942	946	944
Jul 2	943	943	942	942	943	943	943	943	943	944	944	945	945	944	944	944	944	944	943	943	943	943	943	943	942	945	943
Jul 3	943	943	944	944	944	944	944	945	945	945	944	944	943	943	943	943	943	943	943	943	944	944	945	945	943	945	944
Jul 4	945	945	945	945	946	946	947	947	947	948	948	948	948	949	949	949	949	950	951	951	952	953	953	953	945	953	949
Jul 5	953	954	954	954	954	**955**	**955**	**955**	**955**	**955**	**955**	**955**	**955**	954	954	954	953	953	953	953	953	952	952	952	952	**955**	**954**
Jul 6	952	951	951	951	951	950	950	950	949	949	948	948	947	947	947	946	946	945	945	945	945	945	945	944	944	952	948
Jul 7	944	943	943	943	943	943	943	943	943	943	942	942	942	942	942	942	942	942	942	942	942	942	943	943	942	944	943
Jul 8	943	943	943	943	943	943	943	943	943	944	944	944	944	944	944	945	945	945	945	946	946	947	947	947	943	947	944
Jul 9	947	948	948	948	948	948	949	949	949	949	949	949	949	949	949	948	948	948	947	947	947	947	947	946	946	949	948
Jul 10	946	946	945	945	945	945	945	945	944	944	943	943	943	943	943	942	942	942	942	942	942	942	942	942	942	946	943
Jul 11	942	942	942	942	942	942	942	942	942	942	942	941	941	941	940	940	940	939	940	940	940	940	939	939	939	942	941
Jul 12	939	939	939	939	939	939	939	939	939	939	939	939	939	939	938	938	938	938	938	939	940	941	940	941	938	941	939
Jul 13	941	941	941	941	941	941	942	941	942	942	942	942	942	942	941	941	940	940	940	940	940	940	940	940	940	942	941
Jul 14	940	940	939	939	939	939	939	939	939	939	939	940	939	940	940	940	940	940	940	941	941	942	942	942	939	942	940
Jul 15	943	943	943	943	943	943	943	943	943	943	943	943	942	942	942	941	941	941	941	941	941	941	941	941	941	943	942
Jul 16	941	941	941	940	941	941	941	941	940	940	940	940	939	939	938	938	937	937	937	937	936	936	936	936	936	941	939
Jul 17	935	935	935	934	934	934	933	933	932	932	931	931	930	929	929	**928**	**928**	929	930	930	929	930	930	**928**	935	931
Jul 18	929	930	929	929	930	930	930	930	931	931	931	931	931	932	932	932	932	932	932	933	933	934	934	934	929	934	931
Jul 19	934	935	935	936	936	936	937	938	938	939	940	940	940	940	940	941	941	941	942	942	943	944	945	945	934	945	940
Jul 20	946	946	946	946	947	947	947	947	947	948	948	948	947	947	947	947	947	947	947	947	947	947	948	948	946	948	947
Jul 21	948	948	948	948	948	948	949	948	948	948	948	948	948	948	948	947	947	947	946	946	946	946	946	947	946	949	947
Jul 22	947	947	947	947	947	947	947	947	947	947	947	947	947	947	947	946	946	946	945	945	945	945	945	946	945	947	946
Jul 23	946	946	946	946	946	947	947	946	945	945	945	945	945	945	945	944	943	943	942	942	942	942	941	940	940	947	944
Jul 24	940	940	940	939	938	938	937	937	936	936	935	935	934	934	934	934	934	934	934	934	934	934	934	934	934	940	936
Jul 25	934	934	935	935	935	936	936	936	936	937	938	938	939	940	940	940	941	941	941	941	940	940	940	940	934	941	938
Jul 26	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	939	939	939	940	940	940	940	939	940	940
Jul 27	940	940	939	938	938	938	938	938	938	938	938	939	938	938	939	939	939	939	939	940	940	942	942	943	938	943	939
Jul 28	944	944	945	945	945	946	946	946	946	946	946	946	946	946	945	945	945	945	945	944	944	944	944	944	944	946	945
Jul 29	943	943	943	942	942	942	942	942	942	941	941	941	941	941	941	940	940	940	940	940	940	941	941	940	940	943	941
Jul 30	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	941	941	942	942	942	942	942	943	943	940	943	941
Jul 31	943	943	943	944	944	944	945	945	945	945	945	945	945	945	945	945	945	945	945	945	945	945	945	945	943	945	945
Diurnal Maximum	953	954	954	954	954	955	955	955	955	955	955	955	955	954	954	954	953	953	953	953	953	953	953	953			
Daiurnal Average	942	942	942	942	942	943	943	943	943	943	943	943	942	942	942	942	942	942	942	942	942	942	942	942			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 - July 2019

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

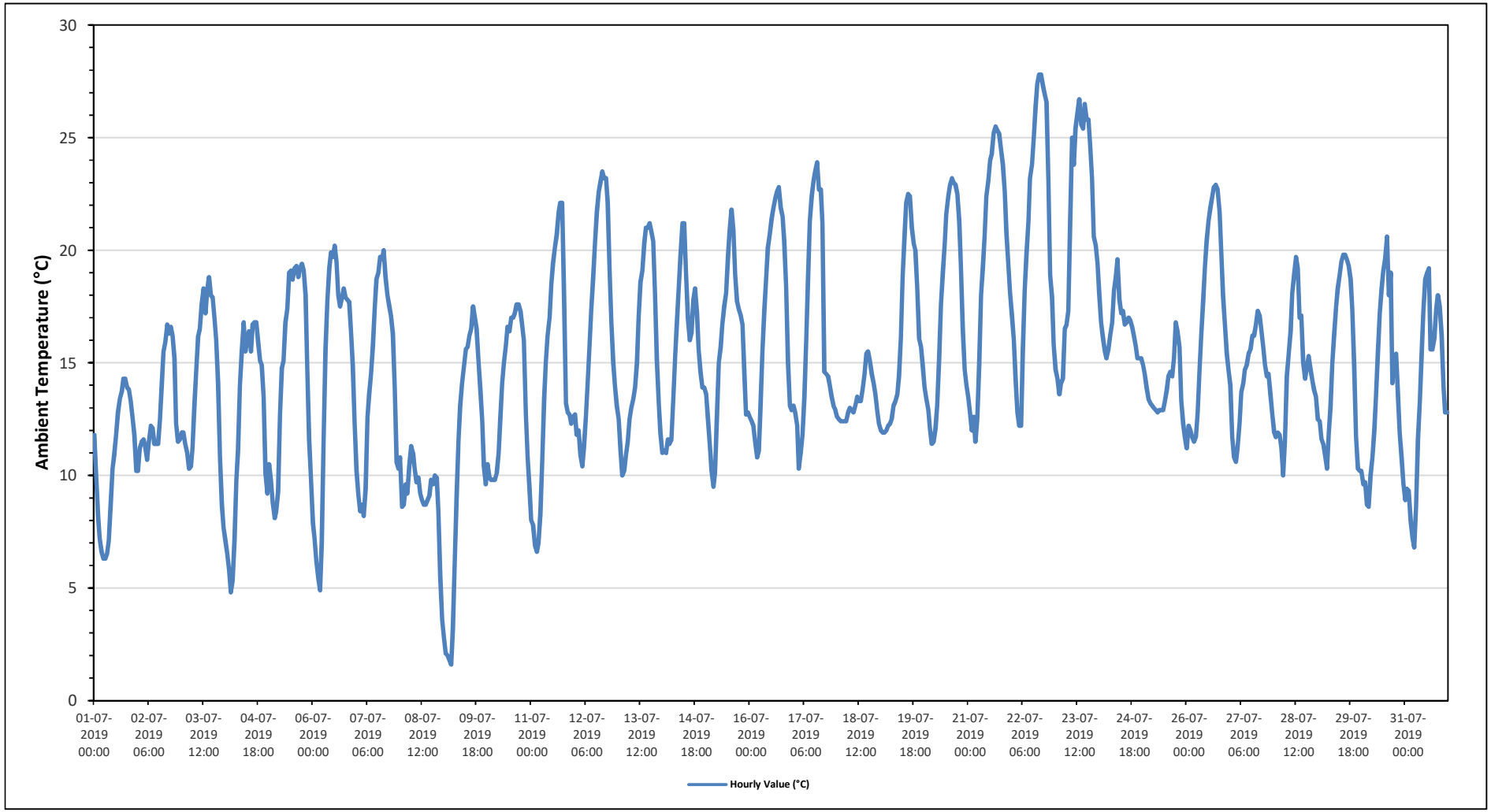
Maximum Hourly Value:	27.8	°C	on July 22 at hour 15	Hours in Service:	744
Maximum Daily Value:	21.1	°C	on July 23	Hours of Data:	744
Minimum Hourly Value:	1.6	°C	on July 9 at hour 4	Hours of Missing Data:	0
Minimum Daily Value:	9.2	°C	on July 8	Hours of Calibration:	0
Monthly Average:	15.1	°C		Operational 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
Jul 1	11.8	10.0	8.2	7.2	6.6	6.3	6.3	6.5	7.1	8.7	10.3	10.9	11.8	12.8	13.4	13.7	14.3	14.3	13.9	13.8	13.3	12.6	11.8	10.2	6.3	14.3	10.7
Jul 2	10.2	11.2	11.5	11.6	11.3	10.7	11.5	12.2	12.1	11.4	11.4	11.4	12.5	13.9	15.5	15.9	16.7	16.3	16.6	16.2	15.2	12.3	11.5	11.6	10.2	16.7	12.9
Jul 3	11.9	11.9	11.4	11.0	10.3	10.4	11.2	13.1	14.7	16.2	16.5	17.6	18.3	17.2	18.2	18.8	18.0	17.9	17.0	16.0	14.1	10.8	8.7	7.7	7.7	18.8	14.1
Jul 4	7.1	6.5	5.8	4.8	5.3	7.1	9.8	11.1	14.0	15.5	16.8	15.5	16.0	16.4	15.5	16.7	16.8	16.8	15.9	15.1	14.9	13.5	10.1	9.2	4.8	16.8	12.3
Jul 5	10.5	9.8	8.8	8.1	8.4	9.3	12.7	14.8	15.1	16.8	17.4	19.0	19.1	18.7	19.2	19.3	18.8	19.2	19.4	19.1	18.0	14.8	11.6	9.8	8.1	19.4	14.9
Jul 6	7.9	7.2	6.2	5.4	4.9	7.0	11.6	15.6	17.8	19.2	19.9	19.7	20.2	19.5	18.0	17.5	17.9	18.3	17.9	17.8	17.7	16.3	14.9	12.3	4.9	20.2	14.6
Jul 7	10.2	9.1	8.4	8.7	8.2	9.4	12.6	13.6	14.5	15.8	17.5	18.7	19.0	19.7	19.6	20.0	18.8	18.0	17.5	17.1	16.3	13.9	10.6	10.3	8.2	20.0	14.5
Jul 8	10.8	8.6	8.7	9.6	9.2	10.4	11.3	11.0	10.3	9.7	9.9	9.2	8.9	8.7	8.7	8.9	9.1	9.8	9.6	10.0	9.9	8.4	5.5	3.6	3.6	11.3	9.2
Jul 9	2.8	2.1	2.0	1.8	**1.6**	3.2	6.2	9.1	11.6	13.1	14.1	14.8	15.6	15.7	16.2	16.5	17.5	17.0	16.5	15.1	13.8	12.4	10.4	9.6	**1.6**	17.5	10.8
Jul 10	10.5	9.9	9.8	9.8	9.8	10.1	11.0	12.5	14.1	15.0	15.8	16.6	16.4	17.0	17.0	17.2	17.6	17.6	17.3	16.7	16.0	12.7	10.8	9.4	9.4	17.6	13.8
Jul 11	8.0	7.8	6.9	6.6	7.0	8.3	10.7	13.4	15.0	16.2	17.0	18.5	19.4	20.1	20.7	21.7	22.1	22.1	17.9	13.2	12.8	12.7	12.3	12.6	6.6	22.1	14.3
Jul 12	12.7	11.8	12.0	10.9	10.4	11.3	12.6	14.1	15.9	17.3	18.7	20.3	21.7	22.6	23.0	23.5	23.2	23.2	22.1	19.1	16.8	15.0	14.0	13.1	10.4	23.5	16.9
Jul 13	12.5	11.1	10.0	10.2	10.9	11.5	12.5	13.0	13.4	13.9	15.0	17.0	18.6	19.1	20.3	21.0	21.0	21.2	20.8	20.4	18.1	15.1	13.2	11.9	10.0	21.2	15.5
Jul 14	11.0	11.1	11.0	11.6	11.4	11.6	13.5	15.3	16.7	18.3	19.8	21.2	21.2	19.0	17.0	16.0	16.3	17.8	18.3	17.2	15.6	14.6	13.9	13.9	11.0	21.2	15.6
Jul 15	13.6	12.6	11.4	10.2	9.5	10.1	12.6	15.0	15.7	16.7	17.5	18.1	19.7	20.9	21.8	20.9	18.9	17.7	17.4	17.1	16.7	14.5	12.7	12.8	9.5	21.8	15.6
Jul 16	12.6	12.4	12.2	11.5	10.8	11.1	13.1	15.5	17.3	18.8	20.1	20.7	21.4	21.9	22.3	22.6	22.8	21.9	21.5	20.4	18.4	15.0	13.1	12.9	10.8	22.8	17.1
Jul 17	13.1	12.8	12.2	10.3	11.0	11.8	13.5	16.1	18.6	21.3	22.4	23.1	23.5	23.9	22.7	22.7	21.2	14.6	14.5	14.4	14.0	13.5	13.1	12.9	10.3	23.9	16.6
Jul 18	12.6	12.5	12.4	12.4	12.4	12.4	12.8	13.0	12.9	12.8	13.1	13.5	13.3	13.3	13.8	14.5	15.4	15.5	15.1	14.5	14.1	13.6	12.9	12.3	12.3	15.5	13.4
Jul 19	12.0	11.9	11.9	12.0	12.2	12.3	12.5	13.1	13.3	13.6	14.4	16.1	18.8	20.6	22.1	22.5	22.4	21.0	20.3	20.0	18.3	16.1	15.7	14.9	11.9	22.5	16.2
Jul 20	13.9	13.4	12.9	12.1	11.4	11.5	12.1	13.1	15.1	17.6	19.0	20.3	21.6	22.4	22.9	23.2	23.0	22.9	22.5	21.3	19.3	16.5	14.7	14.0	11.4	23.2	17.4
Jul 21	13.5	12.8	12.0	12.6	11.5	12.5	14.9	18.0	19.3	20.6	22.4	23.1	24.0	24.3	25.2	25.5	25.3	25.2	24.5	23.8	22.6	20.8	19.4	18.1	11.5	25.5	19.7
Jul 22	17.1	16.0	14.4	12.8	12.2	12.2	15.5	18.2	19.9	21.3	23.2	23.8	25.0	26.4	27.4	**27.8**	**27.8**	27.3	26.9	26.6	23.1	18.9	17.9	15.8	12.2	**27.8**	20.7
Jul 23	14.7	14.3	13.6	14.1	14.3	16.5	16.7	17.3	21.3	25.0	23.8	25.4	26.1	26.7	25.6	25.4	26.5	25.8	25.8	24.6	23.2	20.6	20.2	19.4	13.6	26.7	**21.1**
Jul 24	18.1	16.8	16.1	15.5	15.2	15.6	16.2	16.8	18.2	18.8	19.6	17.8	17.2	17.3	16.7	16.8	17.0	16.9	16.6	16.2	15.7	15.2	15.2	15.2	15.2	19.6	16.7
Jul 25	14.9	14.5	13.9	13.4	13.2	13.1	13.0	12.9	12.8	12.9	12.9	12.9	13.3	13.8	14.4	14.6	14.4	15.2	16.8	16.4	15.7	13.3	12.3	11.7	11.7	16.8	13.8
Jul 26	11.2	12.2	12.0	11.7	11.5	11.7	12.8	14.6	16.2	17.7	19.3	20.4	21.3	21.9	22.4	22.8	22.9	22.7	21.7	19.8	18.0	16.7	15.4	14.6	11.2	22.9	17.1
Jul 27	14.0	11.7	10.8	10.6	11.2	12.3	13.7	14.1	14.7	14.9	15.4	15.6	16.2	16.2	16.7	17.3	17.1	16.5	15.7	14.9	14.4	14.5	13.6	12.7	10.6	17.3	14.4
Jul 28	11.9	11.7	11.9	11.8	11.2	10.0	11.5	14.4	15.4	16.4	18.1	18.9	19.7	19.2	17.0	17.1	15.0	14.3	14.8	15.3	14.7	14.2	13.8	13.5	10.0	19.7	14.7
Jul 29	12.5	12.4	11.6	11.4	10.9	10.3	11.9	13.0	15.0	16.3	17.5	18.3	18.9	19.5	19.8	19.8	19.6	19.3	18.7	17.4	14.9	11.7	10.3	10.2	10.2	19.8	15.1
Jul 30	10.2	9.6	9.7	8.7	8.6	10.0	10.8	12.0	13.5	15.4	17.2	18.3	19.1	19.6	20.6	18.0	19.0	14.1	15.3	15.4	13.5	11.9	10.8	9.6	8.6	20.6	13.8
Jul 31	8.9	9.4	9.3	8.0	7.2	6.8	8.6	11.6	13.3	15.2	17.3	18.7	19.0	19.2	15.6	15.6	16.1	17.4	18.0	17.5	16.2	13.9	12.8	12.8	6.8	19.2	13.7
Diurnal Maximum	18.1	16.8	16.1	15.5	15.2	16.5	16.7	18.2	21.3	25.0	23.8	25.4	26.1	26.7	27.4	27.8	27.8	27.3	26.9	26.6	23.2	20.8	20.2	19.4			
Daiurnal Average	11.7	11.1	10.6	10.2	10.0	10.5	12.1	13.7	15.0	16.2	17.2	17.9	18.6	19.0	19.0	19.2	19.1	18.6	18.3	17.5	16.3	14.4	13.0	12.2			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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



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PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

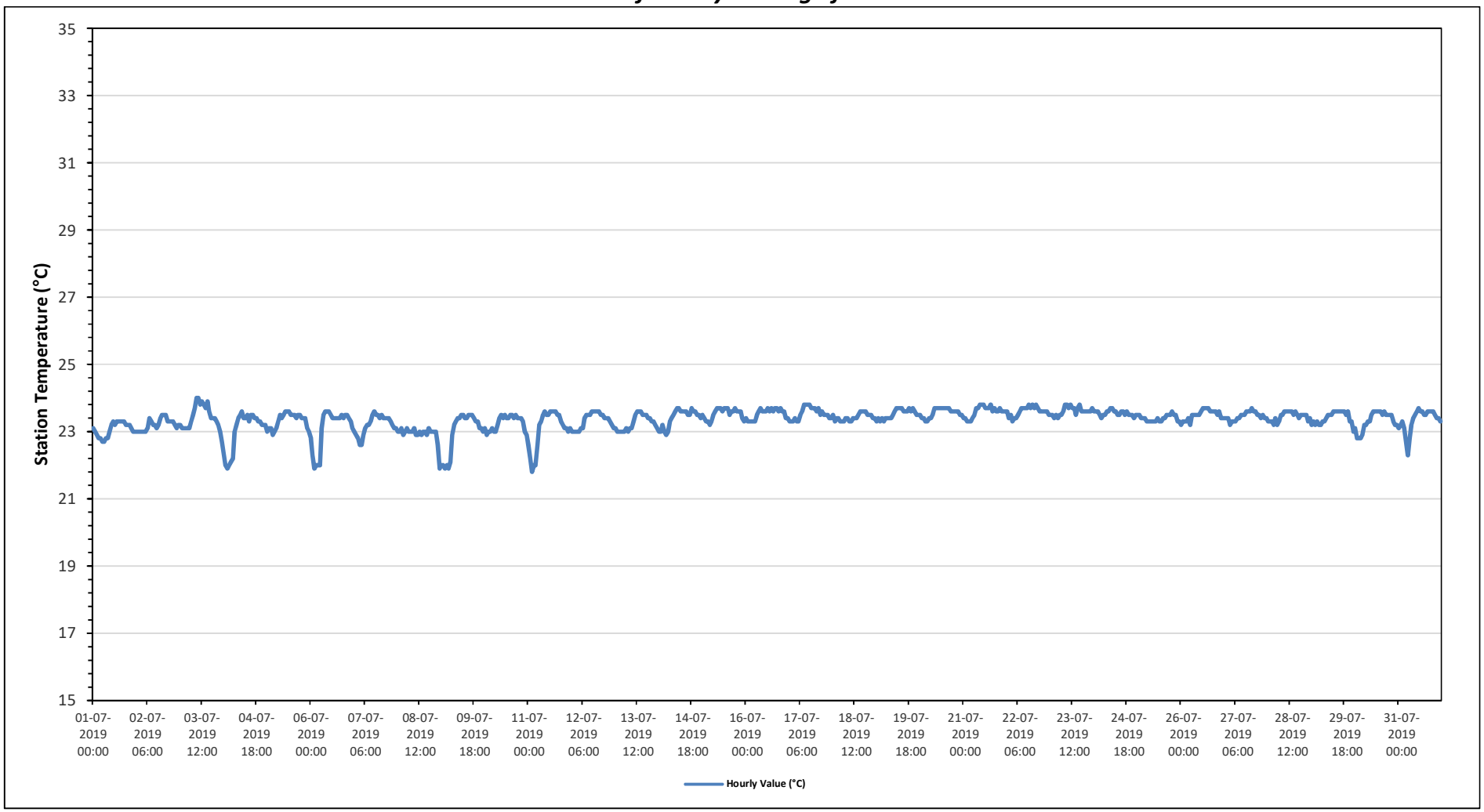
Maximum Hourly Value:	24.0	°C	on July 3 at hour 9	Hours in Service:	744
Maximum Daily Value:	23.6	°C	on July 23	Hours of Data:	744
Minimum Hourly Value:	21.8	°C	on July 11 at hour 2	Hours of Missing Data:	0
Minimum Daily Value:	22.9	°C	on July 8	Hours of Calibration:	0
Monthly Average:	23.4	°C		Operational 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
Jul 1	23.1	23.0	22.9	22.8	22.8	22.7	22.7	22.8	22.8	23.0	23.2	23.3	23.2	23.3	23.3	23.3	23.3	23.3	23.2	23.2	23.2	23.1	23.0	23.0	22.7	23.3	23.1
Jul 2	23.0	23.0	23.0	23.0	23.0	23.0	23.1	23.4	23.3	23.2	23.2	23.1	23.2	23.4	23.5	23.5	23.5	23.3	23.3	23.3	23.3	23.2	23.1	23.2	23.0	23.5	23.2
Jul 3	23.2	23.1	23.1	23.1	23.1	23.1	23.3	23.5	23.7	**24.0**	**24.0**	23.8	23.9	23.8	23.7	23.9	23.6	23.4	23.4	23.4	23.3	23.2	23.0	22.7	22.7	**24.0**	23.4
Jul 4	22.3	22.0	21.9	22.0	22.1	22.2	23.0	23.2	23.4	23.5	23.6	23.4	23.4	23.5	23.3	23.5	23.5	23.4	23.4	23.3	23.3	23.2	23.2	23.2	21.9	23.6	23.0
Jul 5	23.0	23.1	23.1	22.9	23.0	23.1	23.3	23.5	23.4	23.5	23.6	23.6	23.6	23.5	23.5	23.5	23.4	23.5	23.5	23.4	23.4	23.4	23.1	23.0	22.9	23.6	23.3
Jul 6	22.8	22.3	21.9	22.0	22.0	22.0	23.1	23.5	23.6	23.6	23.6	23.5	23.4	23.4	23.4	23.4	23.4	23.5	23.4	23.5	23.5	23.4	23.3	23.1	21.9	23.6	23.1
Jul 7	23.0	22.9	22.8	22.6	22.6	22.9	23.1	23.2	23.2	23.3	23.5	23.6	23.5	23.5	23.4	23.5	23.4	23.4	23.4	23.4	23.3	23.2	23.1	23.1	22.6	23.6	23.2
Jul 8	23.0	23.0	23.1	22.9	23.0	23.1	23.0	23.0	23.0	23.1	22.9	22.9	23.0	22.9	23.0	23.0	22.9	23.1	23.0	23.0	23.0	23.0	22.6	21.9	21.9	23.1	22.9
Jul 9	22.0	22.0	21.9	22.0	21.9	22.1	22.9	23.2	23.3	23.4	23.4	23.5	23.5	23.4	23.4	23.5	23.5	23.5	23.4	23.3	23.3	23.1	23.1	23.0	21.9	23.5	23.0
Jul 10	23.1	22.9	23.0	23.0	23.1	23.0	23.0	23.2	23.4	23.5	23.4	23.5	23.4	23.4	23.5	23.5	23.4	23.5	23.4	23.4	23.4	23.3	23.0	22.9	22.9	23.5	23.3
Jul 11	22.6	22.2	**21.8**	22.0	22.0	22.6	23.2	23.3	23.5	23.6	23.5	23.5	23.6	23.6	23.6	23.6	23.5	23.5	23.3	23.2	23.1	23.1	23.0	23.1	**21.8**	23.6	23.1
Jul 12	23.0	23.0	23.0	23.0	23.0	23.1	23.1	23.4	23.5	23.5	23.5	23.6	23.6	23.6	23.6	23.6	23.5	23.5	23.4	23.4	23.4	23.3	23.2	23.1	23.0	23.6	23.3
Jul 13	23.1	23.0	23.0	23.0	23.0	23.0	23.1	23.0	23.1	23.1	23.3	23.5	23.6	23.6	23.6	23.5	23.5	23.5	23.4	23.4	23.3	23.3	23.2	23.1	23.0	23.6	23.3
Jul 14	23.0	23.0	23.2	23.0	22.9	23.0	23.3	23.4	23.5	23.6	23.7	23.7	23.6	23.6	23.6	23.6	23.5	23.5	23.7	23.6	23.6	23.5	23.5	23.4	22.9	23.7	23.4
Jul 15	23.5	23.4	23.3	23.3	23.2	23.3	23.5	23.6	23.7	23.7	23.7	23.6	23.7	23.7	23.7	23.5	23.6	23.6	23.7	23.6	23.6	23.6	23.4	23.3	23.2	23.7	23.5
Jul 16	23.4	23.3	23.3	23.3	23.3	23.3	23.5	23.6	23.7	23.6	23.6	23.6	23.7	23.6	23.7	23.6	23.7	23.7	23.6	23.7	23.6	23.6	23.4	23.4	23.3	23.7	23.5
Jul 17	23.3	23.3	23.3	23.4	23.3	23.3	23.5	23.6	23.8	23.8	23.8	23.8	23.7	23.7	23.7	23.6	23.7	23.5	23.5	23.5	23.5	23.4	23.4	23.5	23.3	23.8	23.5
Jul 18	23.5	23.3	23.4	23.4	23.3	23.3	23.3	23.4	23.4	23.3	23.3	23.4	23.4	23.4	23.5	23.6	23.6	23.6	23.6	23.5	23.5	23.5	23.4	23.4	23.3	23.6	23.4
Jul 19	23.3	23.4	23.3	23.4	23.3	23.4	23.4	23.4	23.4	23.5	23.6	23.7	23.7	23.7	23.7	23.6	23.6	23.6	23.7	23.6	23.7	23.6	23.5	23.5	23.3	23.7	23.5
Jul 20	23.5	23.4	23.4	23.3	23.3	23.4	23.4	23.5	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.6	23.6	23.6	23.6	23.6	23.5	23.5	23.3	23.7	23.6
Jul 21	23.4	23.4	23.3	23.3	23.3	23.4	23.5	23.7	23.7	23.8	23.8	23.8	23.7	23.7	23.7	23.8	23.6	23.7	23.6	23.6	23.7	23.6	23.6	23.6	23.3	23.8	23.6
Jul 22	23.6	23.4	23.5	23.3	23.4	23.4	23.5	23.6	23.7	23.7	23.7	23.7	23.8	23.7	23.8	23.7	23.8	23.7	23.6	23.6	23.6	23.6	23.6	23.5	23.3	23.8	23.6
Jul 23	23.5	23.5	23.4	23.5	23.4	23.5	23.5	23.6	23.8	23.8	23.7	23.8	23.7	23.7	23.5	23.7	23.8	23.6	23.6	23.6	23.6	23.6	23.6	23.7	23.4	23.8	**23.6**
Jul 24	23.6	23.6	23.6	23.5	23.4	23.5	23.5	23.6	23.6	23.7	23.7	23.6	23.6	23.5	23.5	23.6	23.6	23.5	23.6	23.5	23.5	23.5	23.4	23.5	23.4	23.7	23.6
Jul 25	23.5	23.5	23.4	23.4	23.4	23.3	23.3	23.3	23.3	23.3	23.3	23.4	23.3	23.3	23.4	23.4	23.5	23.5	23.5	23.6	23.5	23.5	23.3	23.3	23.3	23.6	23.4
Jul 26	23.2	23.3	23.3	23.3	23.4	23.2	23.5	23.5	23.5	23.5	23.5	23.6	23.7	23.7	23.7	23.7	23.6	23.6	23.6	23.6	23.5	23.6	23.4	23.4	23.2	23.7	23.5
Jul 27	23.4	23.4	23.4	23.2	23.3	23.3	23.3	23.4	23.4	23.5	23.5	23.5	23.6	23.6	23.6	23.7	23.6	23.6	23.5	23.5	23.4	23.5	23.4	23.4	23.2	23.7	23.5
Jul 28	23.3	23.3	23.3	23.2	23.4	23.2	23.3	23.5	23.5	23.6	23.6	23.6	23.6	23.6	23.5	23.6	23.5	23.4	23.5	23.5	23.5	23.5	23.3	23.4	23.2	23.6	23.4
Jul 29	23.2	23.3	23.2	23.3	23.2	23.2	23.3	23.3	23.4	23.5	23.5	23.5	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.5	23.6	23.3	23.3	23.0	23.0	23.6	23.4
Jul 30	23.1	22.8	22.8	22.8	22.9	23.2	23.2	23.3	23.3	23.5	23.6	23.6	23.6	23.6	23.6	23.5	23.6	23.5	23.5	23.5	23.5	23.3	23.2	23.2	22.8	23.6	23.3
Jul 31	23.1	23.2	23.3	23.1	22.7	22.3	22.8	23.2	23.4	23.5	23.6	23.7	23.6	23.6	23.5	23.5	23.6	23.6	23.6	23.6	23.5	23.4	23.4	23.3	22.3	23.7	23.3
Diurnal Maximum	23.6	23.6	23.6	23.5	23.4	23.5	23.5	23.7	23.8	24.0	24.0	23.8	23.9	23.8	23.8	23.9	23.8	23.7	23.7	23.7	23.7	23.6	23.6	23.7			
Daiurnal Average	23.1	23.1	23.0	23.0	23.0	23.0	23.2	23.4	23.5	23.5	23.5	23.6	23.6	23.5	23.5	23.6	23.5	23.5	23.5	23.5	23.4	23.4	23.3	23.2			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 - July 2019

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

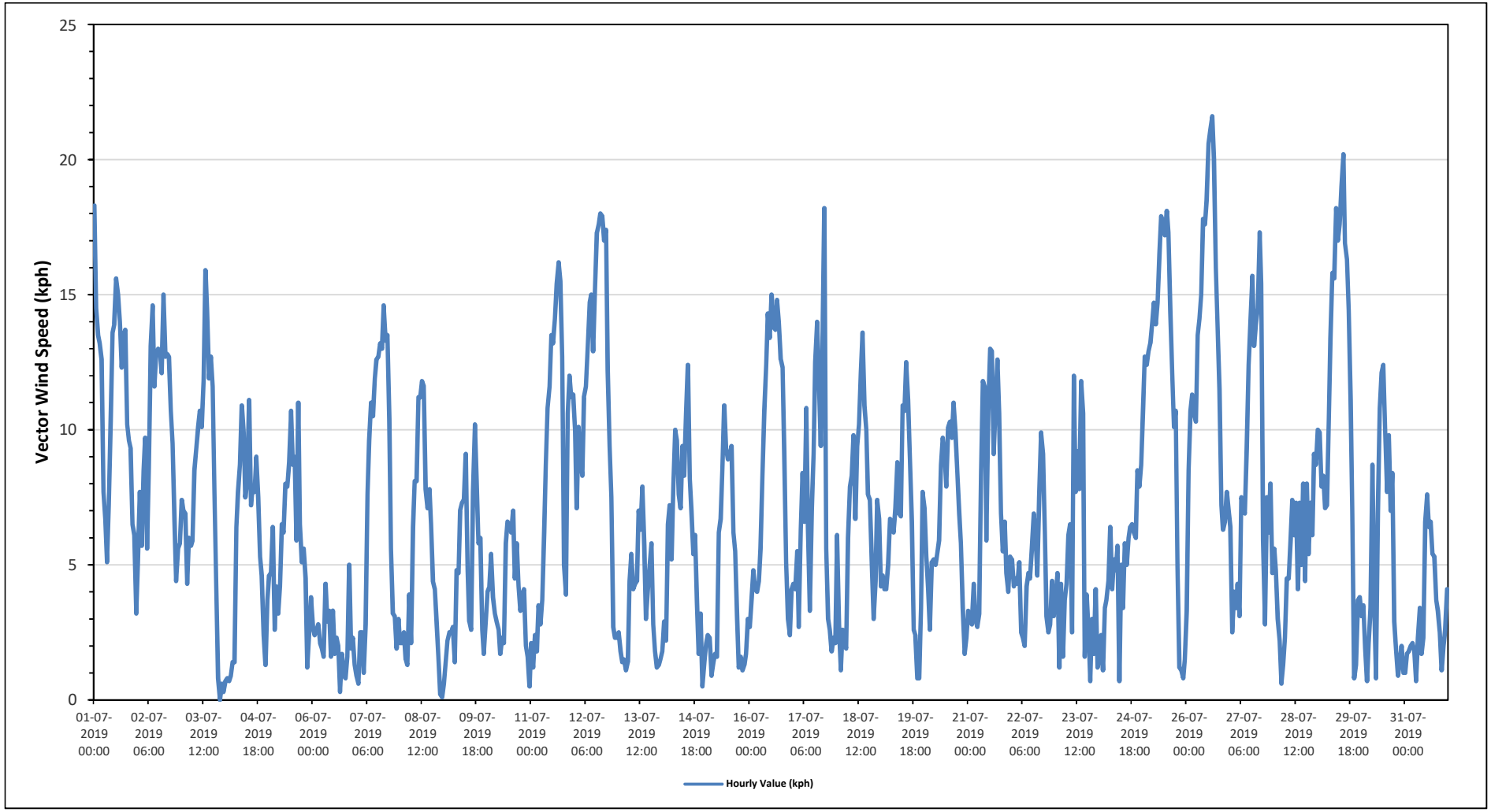
Maximum Hourly Value:	21.6	kph	on July 26 at hour 14	Hours in Service:	744
Maximum Daily Value:	12.9	kph	on July 26	Hours of Data:	744
Minimum Hourly Value:	0.0	kph	on July 3 at hour 21	Hours of Missing Data:	0
Minimum Daily Value:	2.2	kph	on July 6	Hours of Calibration:	0
Monthly Average:	2.7	kph		Operational 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
Jul 1	18.3	14.5	13.5	13.2	12.6	7.7	6.7	5.1	7.2	10.3	13.6	13.9	15.6	15	14	12.3	13.5	13.7	10.2	9.6	9.3	6.5	6.1	3.2	3.2	18.3	11.1
Jul 2	5.2	7.7	5.7	8.5	9.7	5.6	8.6	13.1	14.6	11.6	12.8	13	12.9	12.1	15	12.7	12.8	12.7	10.7	9.5	6.7	4.4	5.6	5.8	4.4	15.0	9.9
Jul 3	7.4	7	6.9	4.3	6	5.7	5.9	8.5	9.3	10.1	10.7	10.1	11.8	15.9	14.4	11.9	12.7	11.6	7.7	4.3	0.8	**0.0**	0.6	0.3	**0.0**	15.9	7.7
Jul 4	0.7	0.8	0.7	0.9	1.4	1.4	6.4	7.7	8.7	10.9	9.9	7.5	8.1	11.1	7.2	7.8	7.7	9	7.5	5.3	4.6	2.4	1.3	3.7	0.7	11.1	5.5
Jul 5	4.6	4.7	6.4	2.6	4.2	3.2	4.2	6.5	6.2	8	7.9	8.8	10.7	8.7	9	5.9	11	6.5	5.1	5.6	4.5	1.2	2.5	3.8	1.2	11.0	5.9
Jul 6	2.7	2.4	2.6	2.8	2.1	1.9	1.6	4.3	2.9	3.3	1.6	3.3	1.7	2.3	2	0.3	1.7	0.9	0.8	1.6	5	1.9	2.3	1.3	0.3	5.0	**2.2**
Jul 7	0.9	0.6	2.5	2.5	1	2.8	7.6	9.6	11	10.5	11.9	12.6	12.7	13.2	13	14.6	13.3	13.5	10.4	5.6	3.2	3.1	1.9	3	0.6	14.6	7.5
Jul 8	2.1	2.1	2.5	1.5	1.3	3.9	2.1	6.4	8.1	8.1	11.2	11.2	11.8	11.6	7.8	7.1	7.8	6.5	4.4	4.1	2.8	1.6	0.2	0.1	0.1	11.8	5.3
Jul 9	0.6	1.4	2.2	2.5	2.5	2.7	1.4	4.8	4.7	7	7.3	7.4	9.1	4.8	2.9	2.6	7.7	10.2	8.1	5.8	6	2.6	1.7	2.9	0.6	10.2	4.5
Jul 10	4	4.2	5.4	3.8	3.2	2.9	2.6	1.7	2.3	2.1	5.8	6.6	6.5	6.2	7	4.5	5.8	4.2	3.3	3.9	4.1	2	1.6	0.5	0.5	7.0	3.9
Jul 11	2.1	1.2	2.4	1.8	3.5	2.8	3.7	6.2	8.7	10.8	11.6	13.5	13.2	14.1	15.4	16.2	15.5	12.7	5	3.9	10.6	12	11.2	11.3	1.2	16.2	8.7
Jul 12	10	7.1	10.1	8.8	8.3	11.2	11.6	13	14.7	15	12.9	15.2	17.3	17.6	18	17.9	17	17.4	12.2	9.4	7.5	2.7	2.3	2.3	2.3	18.0	11.6
Jul 13	2.5	1.8	1.4	1.5	1.1	1.4	4.4	5.4	4.1	4.3	4.4	7	6.3	7.9	5.7	3	4.1	5	5.8	2.8	1.8	1.2	1.3	1.5	1.1	7.9	3.6
Jul 14	1.8	2.9	2.2	6.5	7.2	5.2	8	10	9.6	7.6	7.1	9.4	8.3	10.6	12.4	8.2	7	5.4	6.1	3.6	1.7	3.2	0.5	1.4	0.5	12.4	6.1
Jul 15	2.1	2.4	2.3	0.9	1.4	1.7	1.6	6.2	6.7	8.5	10.9	9.3	8.9	9	9.4	6.2	5.5	3.1	1.2	1.6	1.1	1.3	1.7	3	0.9	10.9	4.4
Jul 16	2.7	3.8	4.8	4.1	4	4.4	5.6	8.3	10.7	12.4	14.3	13.4	15	13.8	13.7	14.8	14	12.6	12.3	9.2	5.1	3	2.4	4.1	2.4	15.0	8.7
Jul 17	4.3	4.1	5.5	2.7	6.3	8.4	6.6	10.8	6.5	3.3	7	9.1	12.5	14	11.8	9.4	13.2	18.2	5.6	3	2.6	1.8	2.3	2.1	1.8	18.2	7.1
Jul 18	6.1	2.8	1.1	2.6	2.2	1.9	6	7.9	8.3	9.8	6.7	9.4	10.2	12.1	13.6	10.9	10	7.6	7.4	5.2	3	4.4	7.4	6.7	1.1	13.6	6.8
Jul 19	4.2	4.6	4.1	4.1	5	6.7	6.6	6.2	7.1	8.8	6.9	6.8	10.9	10.7	12.5	11.1	8.9	6.6	2.6	2.4	0.8	0.8	3.4	7.7	0.8	12.5	6.2
Jul 20	7.1	5.3	4.1	2.6	5.1	5.2	5	5.4	5.9	8.7	9.7	9	7.9	10.1	10.3	9.7	11	9.9	8.4	6.9	5.8	3.4	1.7	2.3	1.7	11.0	6.7
Jul 21	3.3	2.9	2.8	4.3	3	2.7	3.2	8.4	11.8	11.6	5.9	10.7	13	12.9	9.1	10.9	12.6	10.6	6.9	5.5	6.6	4.7	4	5.3	2.7	13.0	7.2
Jul 22	5.2	4.2	4.5	4.3	5.1	2.5	2.3	2	4.2	4.7	4.5	5.6	6.9	6.1	4.6	7.5	9.9	9.1	6.2	3.1	2.5	2.8	4.4	3.1	2.0	9.9	4.8
Jul 23	3.7	4.7	1.2	4.3	1.6	3.7	4.3	6.1	6.5	2.5	12	7.7	9.2	7.8	11.8	10.6	1.6	3.9	2.6	0.7	3	1.7	4.1	1.2	0.7	12.0	4.9
Jul 24	1.5	2.4	1.1	3.4	3.7	4.4	6.4	4.1	5.2	4.8	5.7	0.7	5	3.4	5.8	5	6	6.4	6.5	6.2	6	8.5	7.9	8.7	0.7	8.7	5.0
Jul 25	10.8	12.7	12.4	12.9	13.2	14	14.7	13.9	14.7	16.5	17.9	17.7	17.2	18.1	17.3	14.4	12.1	10.1	10.7	4.9	1.2	1.1	0.8	1.5	0.8	18.1	11.7
Jul 26	3.3	8.5	10.7	11.3	10.6	10.3	13.5	14.1	15	17.8	17.6	18.5	20.6	21.1	**21.6**	20	16	13.8	11.5	7.2	6.3	6.6	7.7	7	3.3	**21.6**	**12.9**
Jul 27	6.4	2.5	4	3.4	4.3	3.1	7.5	7.1	6.9	9.3	12.4	14	15.7	13.1	13.9	14.5	17.3	15.4	5.9	2.8	7.5	6.2	8	4.7	2.5	17.3	8.6
Jul 28	5.6	4.8	3	2.2	0.6	1.3	2.3	4.5	4.5	5.9	7.4	6.1	7.3	4.1	7.3	5	8	4.4	8	5.4	7.3	6.1	9.1	8.7	0.6	9.1	5.4
Jul 29	10	9.9	7.9	8.3	7.1	7.2	10.4	13.4	15.8	15.6	18.2	17	17.6	19	20.2	16.9	16.3	14.4	11.1	7	0.8	1.3	3.7	3.8	0.8	20.2	11.4
Jul 30	3.1	3.5	1.9	0.7	2.1	3.4	8.7	3.5	0.8	6.9	10.8	12.1	12.4	10.1	7.7	9.8	7	8.4	2.9	1.8	0.9	1.4	2	1	0.7	12.4	5.1
Jul 31	1	1.7	1.8	2	2.1	1.8	0.7	2.3	3.4	1.7	2.3	6.6	7.6	6.4	6.6	5.4	5.3	3.7	3.3	2.5	1.1	2	2.6	4.1	0.7	7.6	3.3
Diurnal Maximum	18	15	14	13	13	14	15	14	16	18	18	19	21	21	22	20	17	18	12	10	11	12	11	11			
Daiurnal Average	4.6	4.5	4.4	4.4	4.6	4.6	5.8	7.3	7.9	8.7	9.6	10.1	11.1	11.1	11.0	9.9	10.1	9.3	6.8	4.9	4.2	3.3	3.6	3.7			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

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

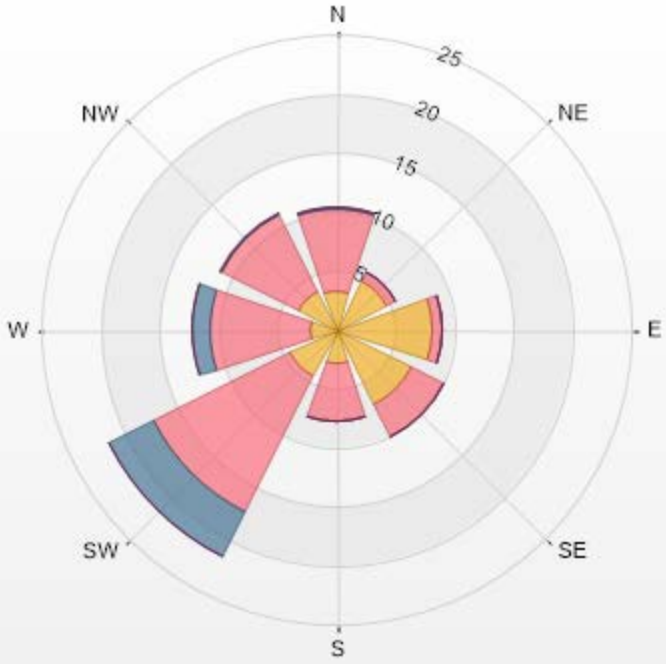
Timeseries Chart of Hourly Average for VWS - 842b Station



Wind: PRAMP 842b Poll.: PRAMP 842b-WDS[KPH] Monthly: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 12.25% Valid Data: 99.87% Calm Avg: 1.18 [KPH]

Direction	0-6	6-15	15-29	29-39	>39.0	Total
N	3.23	7	0.13	0	0	10.36
NE	4.71	0.81	0	0	0	5.52
E	8.21	0.81	0	0	0	9.02
SE	7.13	2.96	0	0	0	10.09
S	2.83	4.98	0	0	0	7.81
SW	4.44	12.92	4.17	0	0	21.53
W	2.29	8.48	1.48	0	0	12.25
NW	3.63	7.27	0.27	0	0	11.17
Summary	36.47	45.23	6.05	0	0	87.75

PRAMP 842b Poll.: PRAMP 842b-WDS[KPH] 01-07-2019 00:00 - 31-07-2019 23:00 Calm: 12.25% Calm Poll Avg: 1.18[KPH]



%	Icon	Classes (KPH)											
36		0-6	45		6-15	6		15-29	0		29-39	0	>39.0

PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

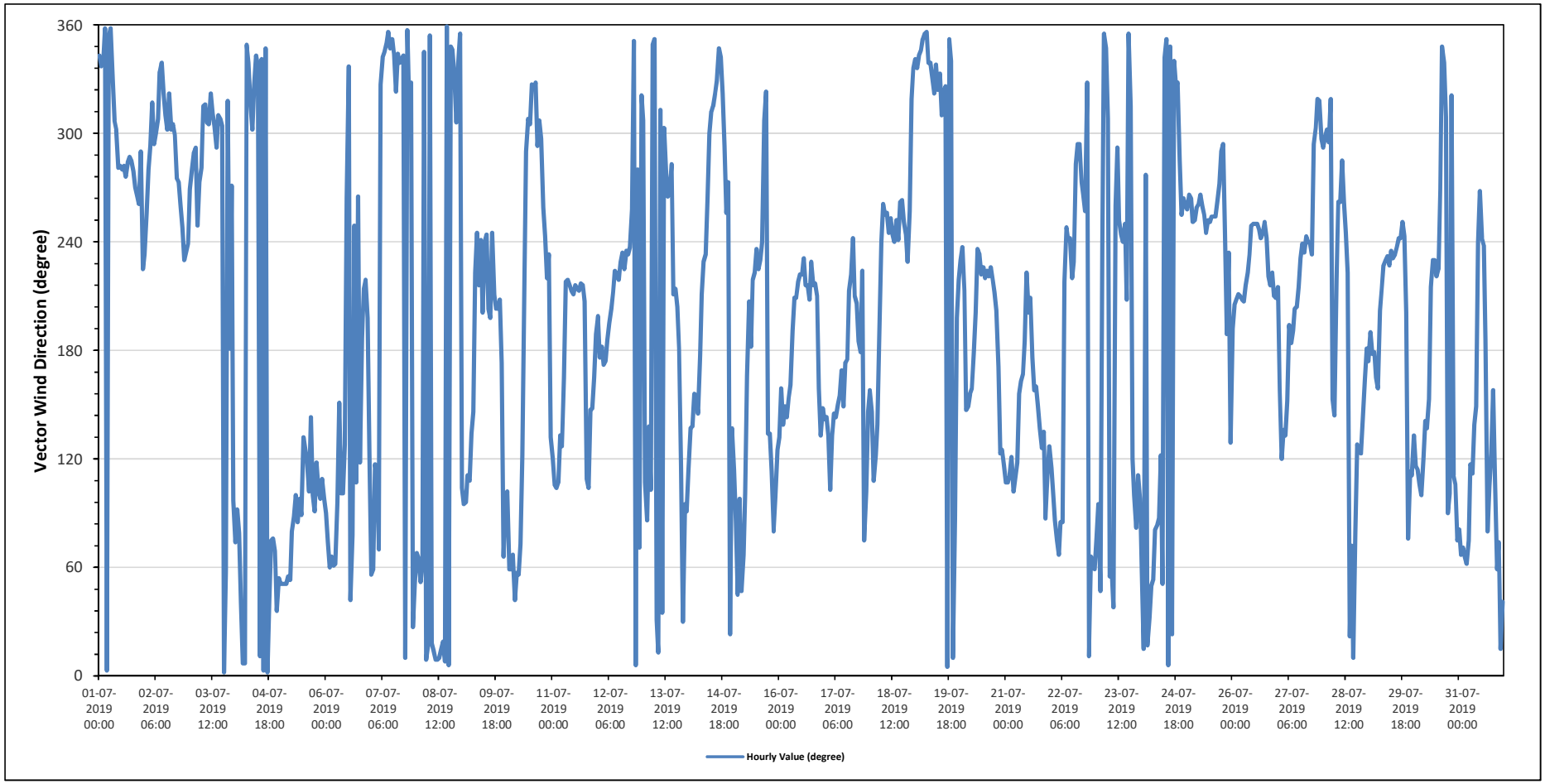
Monthly Average:	247 (WSW) degree	Hours in Service:	744
		Hours of Data:	744
		Hours of Missing Data:	0
		Hours of Calibration:	0
		Operational Uptime:	100.0

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
Jul 1	NNW	NNW	NNW	N	N	N	N	NNW	NW	WNW	W	W	W	W	W	WNW	WNW	WNW	W	W	W	W	WNW	SW	303	WNW
Jul 2	SW	WSW	W	WNW	NW	WNW	WNW	NW	NNW	NNW	NW	NW	WNW	NW	WNW	WNW	WNW	W	W	WSW	WSW	SW	SW	WSW	296	WNW
Jul 3	W	W	WNW	WNW	WSW	W	W	NW	NW	NW	WNW	NW	NW	WNW	WNW	NW	NW	WNW	N	ENE	NW	S	W	E	303	WNW
Jul 4	ENE	E	ENE	NE	N	N	NNW	NNW	NW	WNW	NW	NNW	NNW	NNE	NNW	N	NNW	N	NE	ENE	ENE	ENE	NE	NE	356	N
Jul 5	NE	NE	NE	NE	NE	NE	E	E	E	E	E	E	SE	SE	ESE	E	SE	E	E	ESE	E	E	ESE	E	98	E
Jul 6	E	ENE	ENE	ENE	ENE	ENE	E	SSE	E	E	SE	W	NNW	NE	ENE	WSW	ESE	W	ESE	S	SSW	SW	SSW	ESE	113	ESE
Jul 7	NE	ENE	ESE	ESE	ENE	NW	NNW	NNW	N	N	NNW	N	NNW	NW	NNW	NNW	NNW	NNW	N	N	NW	NNW	NNE	NE	348	NNW
Jul 8	ENE	ENE	NE	ENE	NNW	N	NNE	N	NNE	NNE	N	N	N	NNE	NNE	N	N	N	NNW	NNW	NNW	NW	NNW	N	10	N
Jul 9	ESE	E	E	ESE	ESE	SE	SE	SW	WSW	SW	WSW	SSW	WSW	WSW	SSW	SSW	WSW	SSW	SSW	SSW	SSW	S	ENE	E	209	SSW
Jul 10	E	ENE	ENE	ENE	NE	ENE	NE	ENE	ESE	SW	WNW	NW	WNW	NW	NW	NNW	WNW	NW	WNW	WSW	WSW	SW	SW	SE	327	NW
Jul 11	ESE	ESE	ESE	ESE	SE	SE	SSE	SW	SW	SW	SSW	SSW	SW	SSW	SSW	SW	SW	SSW	ESE	ESE	SE	SE	SSE	S	194	SSW
Jul 12	SSW	S	S	S	S	S	SSW	SSW	SSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	N	N	W	ENE	NW	220	SW
Jul 13	NW	ESE	E	SE	ESE	NNW	N	NNE	NNE	NW	NE	WNW	W	W	W	W	SSW	SSW	SSW	S	ESE	NNE	E	E	291	WNW
Jul 14	ESE	SE	SE	SSE	SSE	SE	S	SSW	SW	SW	W	WNW	NW	NW	NW	NNW	NNW	NNW	NW	WNW	WSW	W	NNE	SE	272	W
Jul 15	ESE	E	NE	E	NE	ENE	E	SSE	SSW	S	SW	SW	SW	SW	SW	WSW	NW	NW	SE	SE	ESE	E	E	SE	208	SSW
Jul 16	SE	SSE	SE	SSE	SE	SSE	SSE	S	SSW	SSW	SW	SW	SW	SW	SW	SW	SSW	SW	SW	SW	SSW	SSE	SE	SE	205	SSW
Jul 17	SE	SE	SE	ESE	SE	SE	SE	SSE	SSE	SSE	SSE	S	S	SSW	SW	WSW	SSW	SSW	S	S	SW	ENE	E	SE	178	S
Jul 18	SSE	SE	ESE	ESE	SE	S	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WSW	WSW	SW	WSW	NW	NNW	249	WSW
Jul 19	NNW	NNW	NNW	NNW	N	N	N	NNW	NNW	NNW	NW	NNW	NW	NNW	NW	NW	NW	N	N	NNW	N	E	SSW	SW	331	NNW
Jul 20	SW	SW	SSW	SE	SSE	SSE	SSE	S	SSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SSW	SSW	S	ESE	SE	ESE	209	SSW
Jul 21	ESE	ESE	ESE	ESE	E	ESE	ESE	SSE	SSE	SSE	S	SW	SSW	SSW	S	SSE	SSE	SSE	SE	SE	SE	E	ESE	SE	158	SSE
Jul 22	ESE	E	E	ENE	ENE	E	E	SW	WSW	WSW	WSW	SW	SW	W	WNW	WNW	W	W	WSW	NNW	NNE	ENE	ENE	ENE	269	W
Jul 23	ENE	E	NE	SW	N	NNW	NW	NE	ENE	NE	WSW	WNW	WSW	WSW	WSW	WSW	SSW	N	NW	ESE	E	E	ESE	E	274	W
Jul 24	ENE	NNE	W	NNE	NNE	NE	NE	E	E	E	ESE	NE	NNW	N	N	NNW	NNE	NNW	NW	NNW	WNW	WSW	W	WSW	351	N
Jul 25	WSW	W	W	WSW	WSW	WSW	W	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WNW	WNW	WSW	S	SW	SE	258	WSW
Jul 26	S	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SSW	SSW	232	SW
Jul 27	SSW	SSE	ESE	SE	SE	SSE	SSW	S	S	SSW	SSW	SSW	SW	WSW	SW	WSW	WSW	WSW	SW	WNW	WNW	NW	NW	WNW	228	SW
Jul 28	WNW	WNW	WNW	WNW	NW	SSE	SE	SW	W	W	WNW	W	WSW	SW	NNE	ENE	N	E	SE	SE	ESE	SE	SSE	S	208	SSW
Jul 29	S	S	S	S	SSE	SSE	SSW	SSW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	SSW	ENE	ESE	ESE	220	SW
Jul 30	SE	ESE	ESE	ESE	E	ESE	SE	SE	SSE	SSW	SW	SW	SW	SW	W	NNW	NNW	NW	E	E	NW	ESE	ESE	ENE	219	SW
Jul 31	E	ENE	ENE	ENE	ENE	ENE	ESE	ESE	SE	SSE	WSW	W	WSW	SW	S	E	ESE	ESE	SSE	ESE	ENE	ENE	NNE	NE	132	SE

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 - July 2019

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 Exceedences: 0 Number of 24-Hour Exceedences: 0 30-Day Exceedence: 0

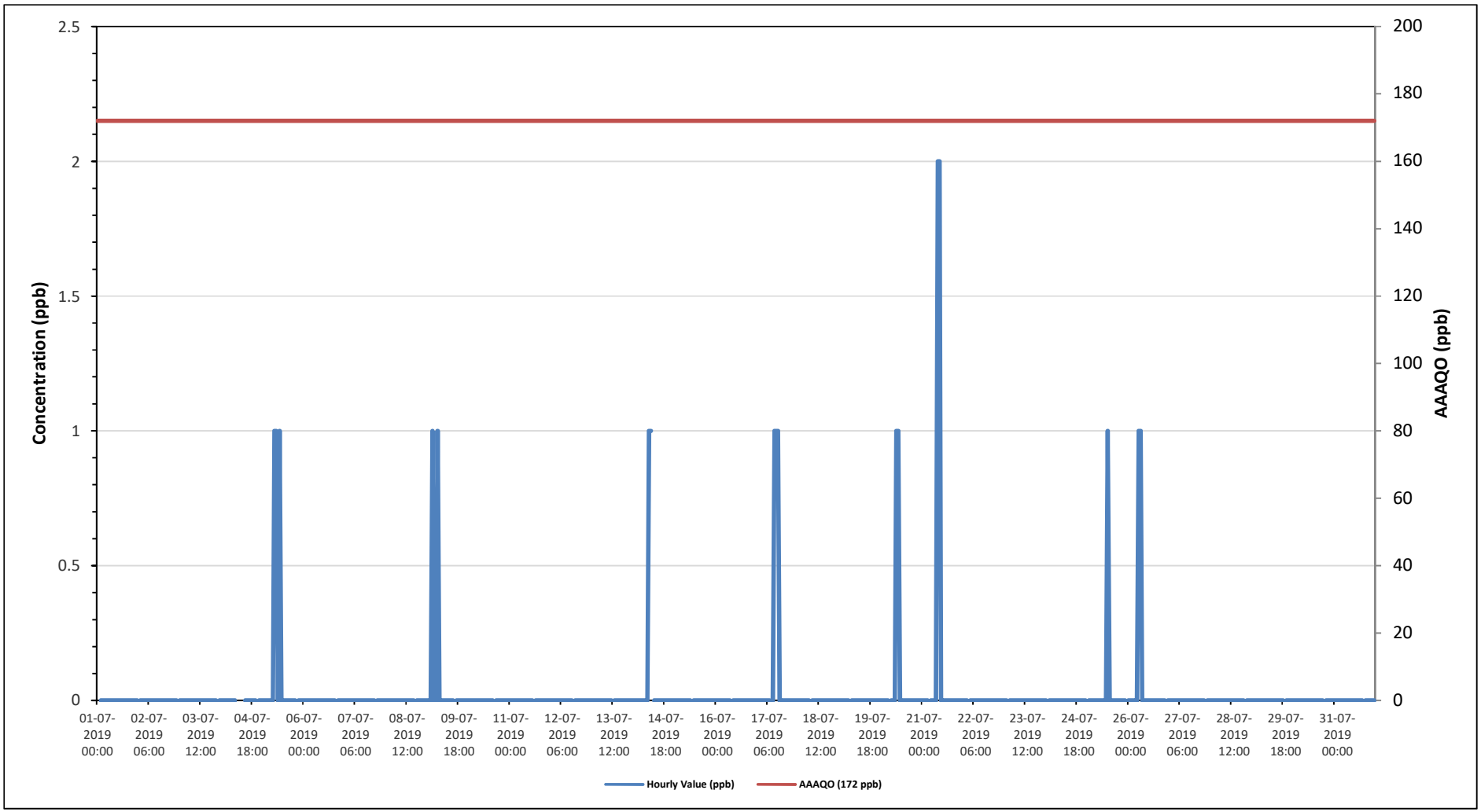
Maximum Hourly Value:	2	ppb	on July 21 at hour 9	Hours in Service:	744
Maximum Daily Value:	0.2	ppb	on July 21	Hours of Data:	706
Minimum Hourly Value:	0	ppb	on July 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on July 1	Hours of Calibration:	38
Monthly Average:	0.0	ppb		Operational 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			
Jul 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
Jul 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
Jul 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
Jul 4	0	0	0	0	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	0	0	S	0	0	0	0	0.0
Jul 5	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0.1
Jul 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
Jul 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
Jul 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
Jul 9	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	0.1
Jul 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
Jul 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
Jul 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
Jul 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
Jul 14	0	0	0	0	0	0	0	0	0	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jul 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
Jul 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
Jul 17	0	0	0	0	0	0	0	0	S	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jul 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
Jul 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
Jul 20	0	0	0	0	0	S	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jul 21	0	0	0	0	S	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2
Jul 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
Jul 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
Jul 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
Jul 25	S	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	S	0	1	0.0
Jul 26	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0.1
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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	1	0	0	1	1	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0			
Daiurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

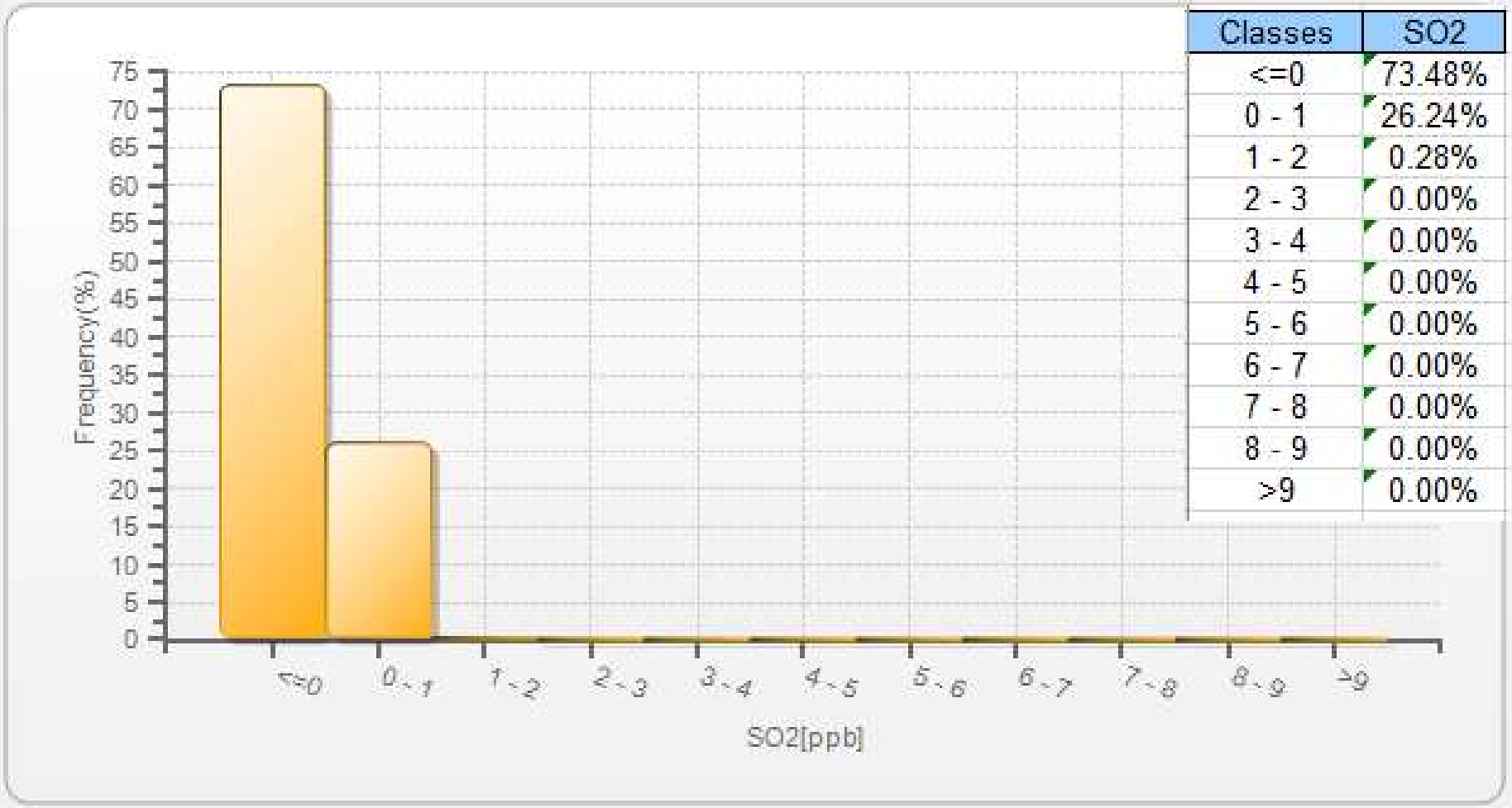
C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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



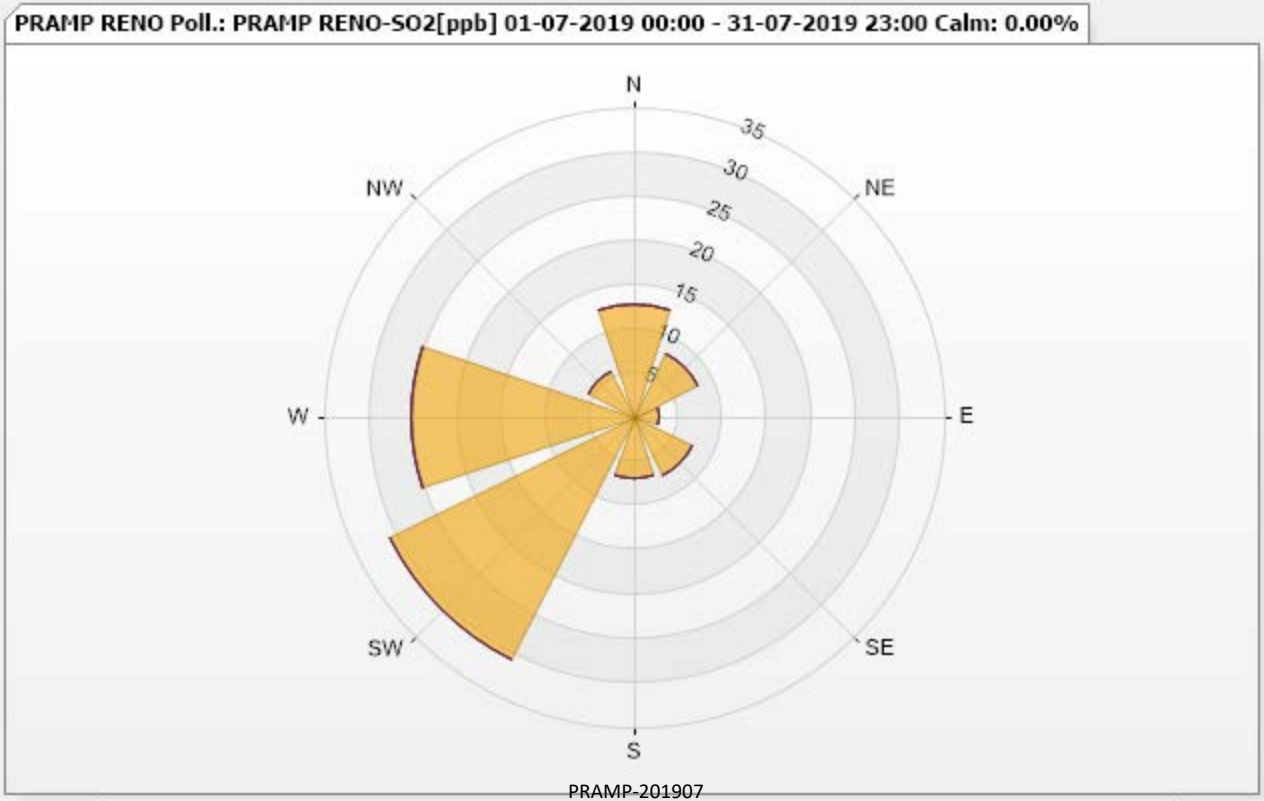
SO2[ppb] Histogram: PRAMP RENO Monthly: 07-2019 1 Hr.



Classes	SO2
<=0	73.48%
0 - 1	26.24%
1 - 2	0.28%
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: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppb]

Direction	0-10	10-50	50-100	100-172	>172.0	Total
N	12.77	0	0	0	0	12.77
NE	8.09	0	0	0	0	8.09
E	2.98	0	0	0	0	2.98
SE	7.52	0	0	0	0	7.52
S	6.95	0	0	0	0	6.95
SW	30.78	0	0	0	0	30.78
W	25.25	0	0	0	0	25.25
NW	5.67	0	0	0	0	5.67
Summary	100	0	0	0	0	100


PRAMP RENO Poll.: PRAMP RENO-SO2[ppb] 01-07-2019 00:00 - 31-07-2019 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
35
30
25
20
15
10
5
% Icon Classes (ppb)
100 0-10
0 10-30
0 50-100
0 100-172
0 >172.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

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 Exceedences: 0 Number of 24-Hour Exceedences: 0

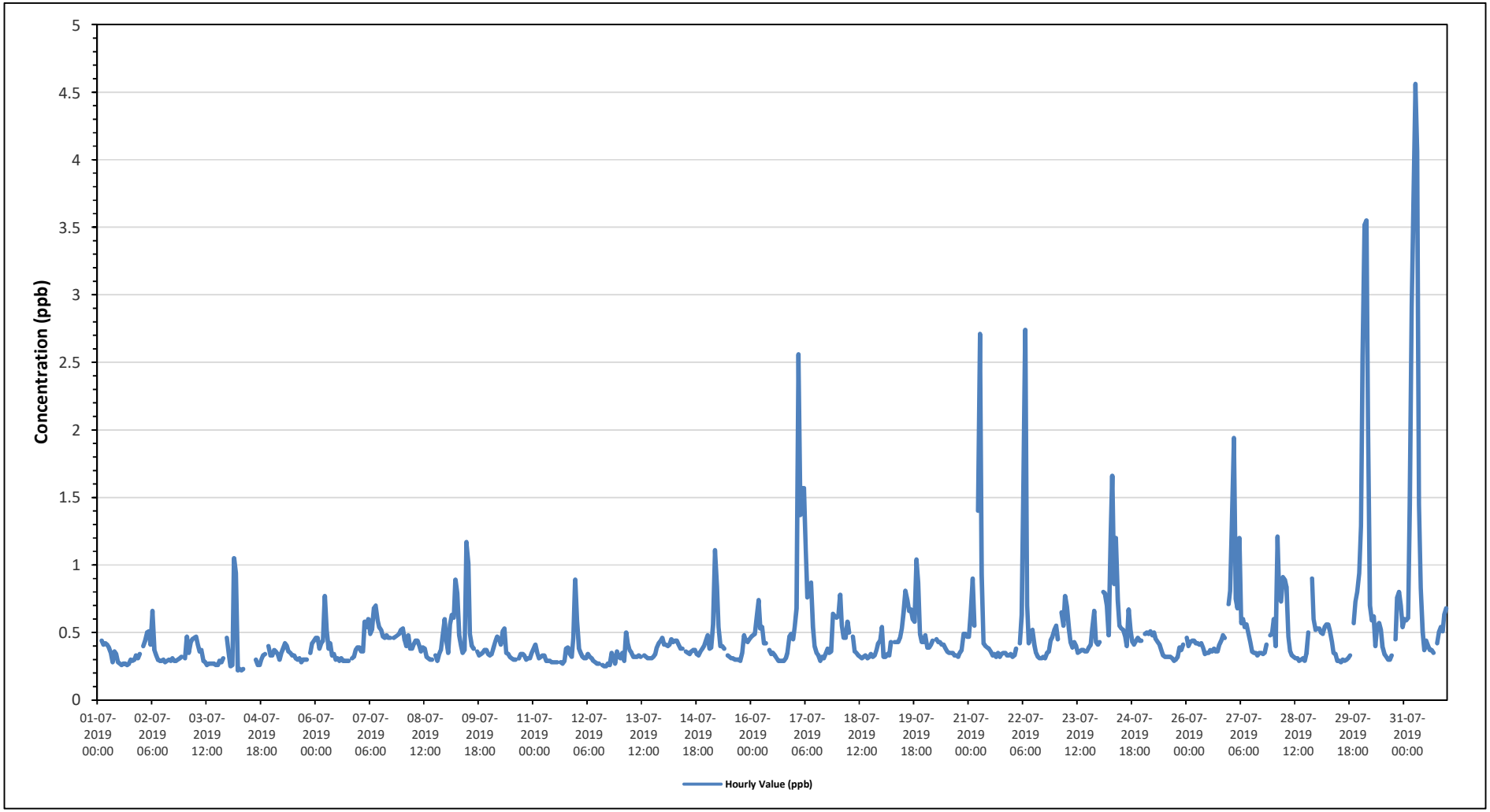
Maximum Hourly Value:	4.56	ppb	on July 31 at hour 6	Hours in Service:	744
Maximum Daily Value:	1.17	ppb	on July 31	Hours of Data:	705
Minimum Hourly Value:	0.22	ppb	on July 4 at hour 5	Hours of Missing Data:	0
Minimum Daily Value:	0.31	ppb	on July 12	Hours of Calibration:	39
Monthly Average:	0.49	ppb		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			
Jul 1	0.34	S	0.44	0.41	0.42	0.41	0.39	0.35	0.28	0.36	0.34	0.28	0.27	0.26	0.27	0.27	0.26	0.27	0.3	0.29	0.3	0.33	0.31	0.34	0.26	0.44	0.33
Jul 2	S	0.4	0.44	0.5	0.51	0.41	0.66	0.37	0.33	0.3	0.29	0.29	0.3	0.28	0.29	0.3	0.29	0.31	0.29	0.29	0.3	0.31	0.32	S	0.28	0.66	0.35
Jul 3	0.31	0.47	0.35	0.43	0.45	0.46	0.47	0.41	0.36	0.37	0.29	0.28	0.26	0.27	0.27	0.27	0.27	0.26	0.26	0.29	0.28	0.31	S	0.46	0.26	0.47	0.34
Jul 4	0.35	0.25	0.26	1.05	0.94	0.22	0.23	0.22	0.23	C	C	C	C	C	C	0.3	0.26	0.26	0.3	0.33	0.34	S	0.4	0.33	0.22	1.05	-
Jul 5	0.33	0.37	0.36	0.34	0.3	0.35	0.38	0.42	0.4	0.36	0.35	0.33	0.33	0.31	0.3	0.31	0.28	0.3	0.3	0.3	S	0.35	0.42	0.44	0.28	0.44	0.34
Jul 6	0.46	0.46	0.38	0.42	0.44	0.77	0.52	0.38	0.42	0.33	0.34	0.3	0.31	0.29	0.31	0.29	0.29	0.29	0.29	S	0.31	0.32	0.37	0.39	0.29	0.77	0.38
Jul 7	0.39	0.36	0.36	0.58	0.54	0.6	0.49	0.52	0.68	0.7	0.59	0.54	0.52	0.47	0.46	0.48	0.46	0.46	S	0.46	0.47	0.48	0.49	0.52	0.36	0.70	0.51
Jul 8	0.53	0.44	0.4	0.48	0.38	0.38	0.41	0.44	0.44	0.4	0.36	0.39	0.38	0.32	0.31	0.3	0.3	S	0.33	0.29	0.34	0.37	0.48	0.6	0.29	0.60	0.39
Jul 9	0.43	0.35	0.56	0.63	0.61	0.89	0.79	0.48	0.4	0.35	0.37	1.17	1.01	0.49	0.4	0.38	S	0.36	0.33	0.34	0.35	0.37	0.37	0.34	0.33	1.17	0.51
Jul 10	0.33	0.34	0.39	0.44	0.47	0.45	0.41	0.51	0.53	0.35	0.34	0.32	0.31	0.3	0.3	S	0.31	0.34	0.34	0.33	0.3	0.31	0.31	0.35	0.30	0.53	0.36
Jul 11	0.38	0.41	0.35	0.31	0.32	0.33	0.33	0.29	0.29	0.29	0.28	0.28	0.28	0.28	S	0.28	0.27	0.29	0.38	0.39	0.34	0.32	0.46	0.89	0.27	0.89	0.35
Jul 12	0.59	0.38	0.35	0.32	0.31	0.31	0.34	0.32	0.31	0.29	0.28	0.27	0.27	S	0.26	0.25	0.25	0.27	0.26	0.35	0.31	0.27	0.36	0.32	0.25	0.59	0.31
Jul 13	0.31	0.35	0.29	0.5	0.42	0.37	0.35	0.32	0.32	0.32	0.33	0.32	S	0.33	0.32	0.31	0.31	0.31	0.32	0.34	0.39	0.42	0.44	0.46	0.29	0.50	0.35
Jul 14	0.41	0.41	0.4	0.41	0.45	0.43	0.44	0.44	0.41	0.38	0.38	S	0.36	0.35	0.34	0.36	0.37	0.37	0.34	0.33	0.36	0.38	0.4	0.44	0.33	0.45	0.39
Jul 15	0.48	0.38	0.39	0.56	1.11	0.84	0.54	0.4	0.4	0.38	S	0.33	0.32	0.31	0.31	0.3	0.3	0.3	0.29	0.35	0.48	0.44	0.43	0.45	0.29	1.11	0.44
Jul 16	0.47	0.48	0.49	0.61	0.74	0.53	0.54	0.42	0.42	S	0.37	0.34	0.35	0.33	0.31	0.29	0.29	0.29	0.29	0.31	0.35	0.47	0.49	0.45	0.29	0.74	0.42
Jul 17	0.54	0.68	2.56	1.37	1.57	1.57	1.11	0.76	S	0.87	0.54	0.4	0.35	0.33	0.29	0.32	0.31	0.34	0.38	0.35	0.36	0.64	0.62	0.61	0.29	2.56	0.73
Jul 18	0.62	0.78	0.55	0.46	0.46	0.58	0.5	S	0.47	0.36	0.35	0.33	0.32	0.31	0.32	0.33	0.31	0.32	0.34	0.32	0.33	0.37	0.42	0.44	0.31	0.78	0.42
Jul 19	0.54	0.32	0.32	0.34	0.33	0.43	S	0.43	0.43	0.43	0.46	0.53	0.66	0.81	0.74	0.66	0.67	0.6	0.58	1.04	0.87	0.49	0.43	0.43	0.32	1.04	0.55
Jul 20	0.48	0.39	0.39	0.41	0.44	S	0.45	0.43	0.43	0.41	0.41	0.38	0.36	0.35	0.35	0.35	0.33	0.33	0.32	0.35	0.37	0.49	0.49	0.47	0.32	0.49	0.40
Jul 21	0.47	0.65	0.9	0.55	S	1.4	2.71	0.93	0.42	0.4	0.39	0.38	0.36	0.33	0.34	0.32	0.35	0.32	0.34	0.35	0.35	0.33	0.33	0.34	0.32	2.71	0.58
Jul 22	0.32	0.33	0.38	S	0.42	0.63	1.61	2.74	0.7	0.42	0.48	0.52	0.41	0.35	0.32	0.31	0.31	0.32	0.31	0.35	0.36	0.44	0.47	0.52	0.31	2.74	0.57
Jul 23	0.55	0.45	S	0.65	0.55	0.77	0.69	0.53	0.43	0.39	0.43	0.4	0.35	0.36	0.37	0.37	0.36	0.36	0.39	0.41	0.53	0.66	0.43	0.41	0.35	0.77	0.47
Jul 24	0.43	S	0.8	0.79	0.7	0.48	1.21	1.66	0.86	1.2	0.74	0.55	0.53	0.52	0.47	0.4	0.67	0.52	0.43	0.41	0.44	0.46	0.44	0.44	0.40	1.66	0.66
Jul 25	S	0.49	0.5	0.49	0.51	0.48	0.5	0.45	0.43	0.41	0.37	0.33	0.32	0.32	0.32	0.32	0.31	0.29	0.3	0.32	0.39	0.37	0.41	S	0.29	0.51	0.39
Jul 26	0.46	0.4	0.43	0.44	0.44	0.42	0.42	0.41	0.42	0.39	0.34	0.35	0.35	0.37	0.36	0.38	0.36	0.36	0.41	0.44	0.48	0.46	S	0.71	0.34	0.71	0.42
Jul 27	0.81	1.33	1.94	0.75	0.68	1.2	0.57	0.6	0.54	0.56	0.49	0.43	0.36	0.35	0.35	0.33	0.35	0.35	0.34	0.35	0.41	S	0.48	0.49	0.33	1.94	0.61
Jul 28	0.6	0.4	1.21	0.76	0.73	0.91	0.89	0.84	0.47	0.36	0.33	0.32	0.31	0.31	0.29	0.3	0.31	0.29	0.34	0.5	S	0.9	0.6	0.52	0.29	1.21	0.54
Jul 29	0.53	0.53	0.5	0.49	0.54	0.56	0.56	0.51	0.43	0.35	0.34	0.29	0.29	0.28	0.3	0.29	0.3	0.31	0.33	S	0.57	0.73	0.8	0.94	0.28	0.94	0.47
Jul 30	1.29	2.54	3.52	3.55	2.03	0.7	0.59	0.62	0.4	0.54	0.57	0.52	0.39	0.34	0.32	0.3	0.3	0.33	S	0.45	0.76	0.8	0.7	0.54	0.30	3.55	0.96
Jul 31	0.6	0.59	0.61	1.45	2.91	3.7	**4.56**	4.06	1.45	0.83	0.51	0.37	0.44	0.4	0.37	0.37	0.35	S	0.42	0.5	0.54	0.51	0.63	0.68	0.35	**4.56**	**1.17**
Diurnal Maximum	1.29	2.54	3.52	3.55	2.91	3.70	4.56	4.06	1.45	1.20	0.74	1.17	1.01	0.81	0.74	0.66	0.67	0.60	0.58	1.04	0.87	0.90	0.80	0.94			
Daiurnal Average	0.49	0.54	0.69	0.68	0.69	0.72	0.79	0.71	0.47	0.45	0.40	0.40	0.38	0.36	0.34	0.33	0.34	0.34	0.34	0.38	0.41	0.45	0.46	0.49			

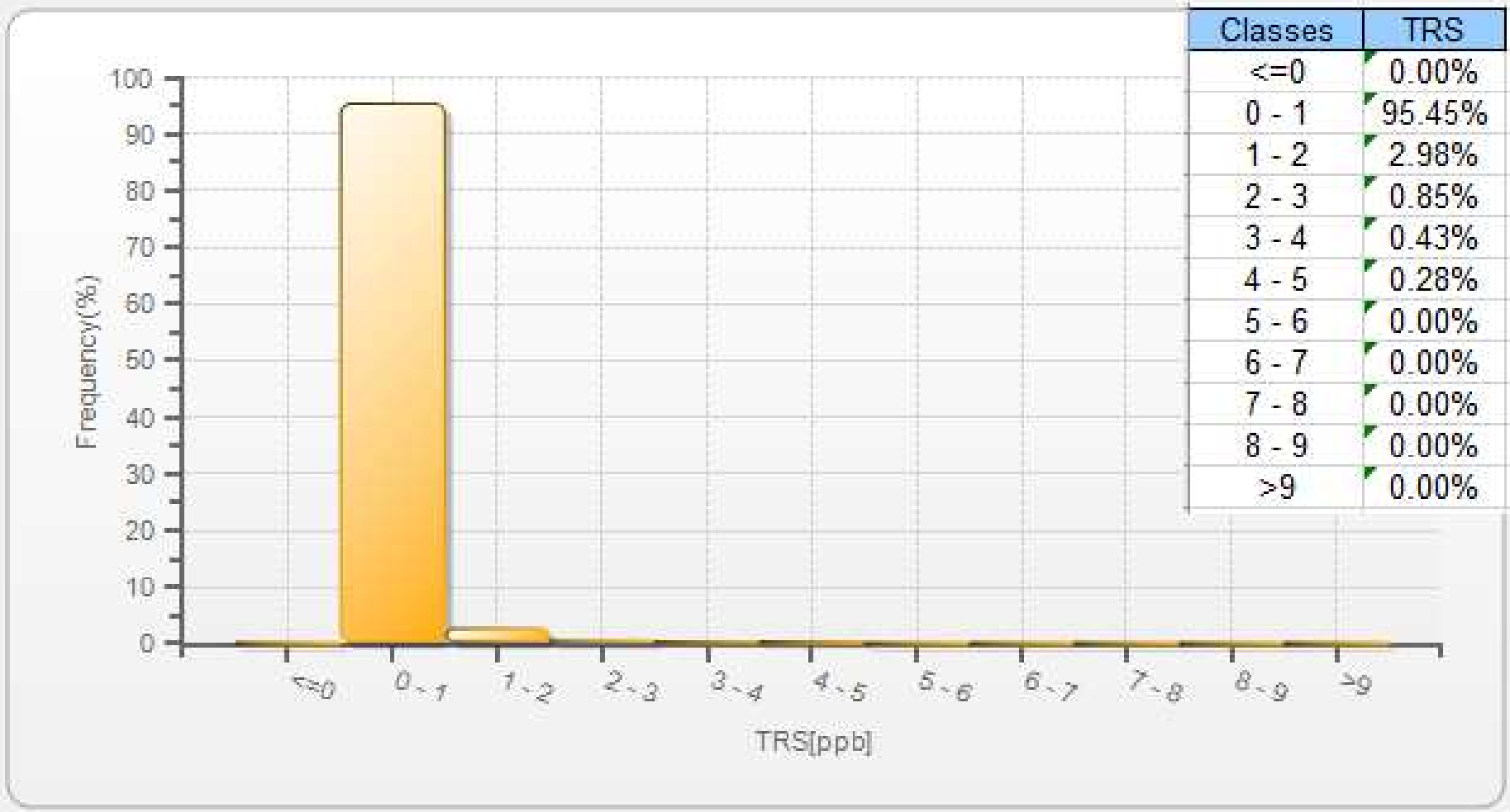
C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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



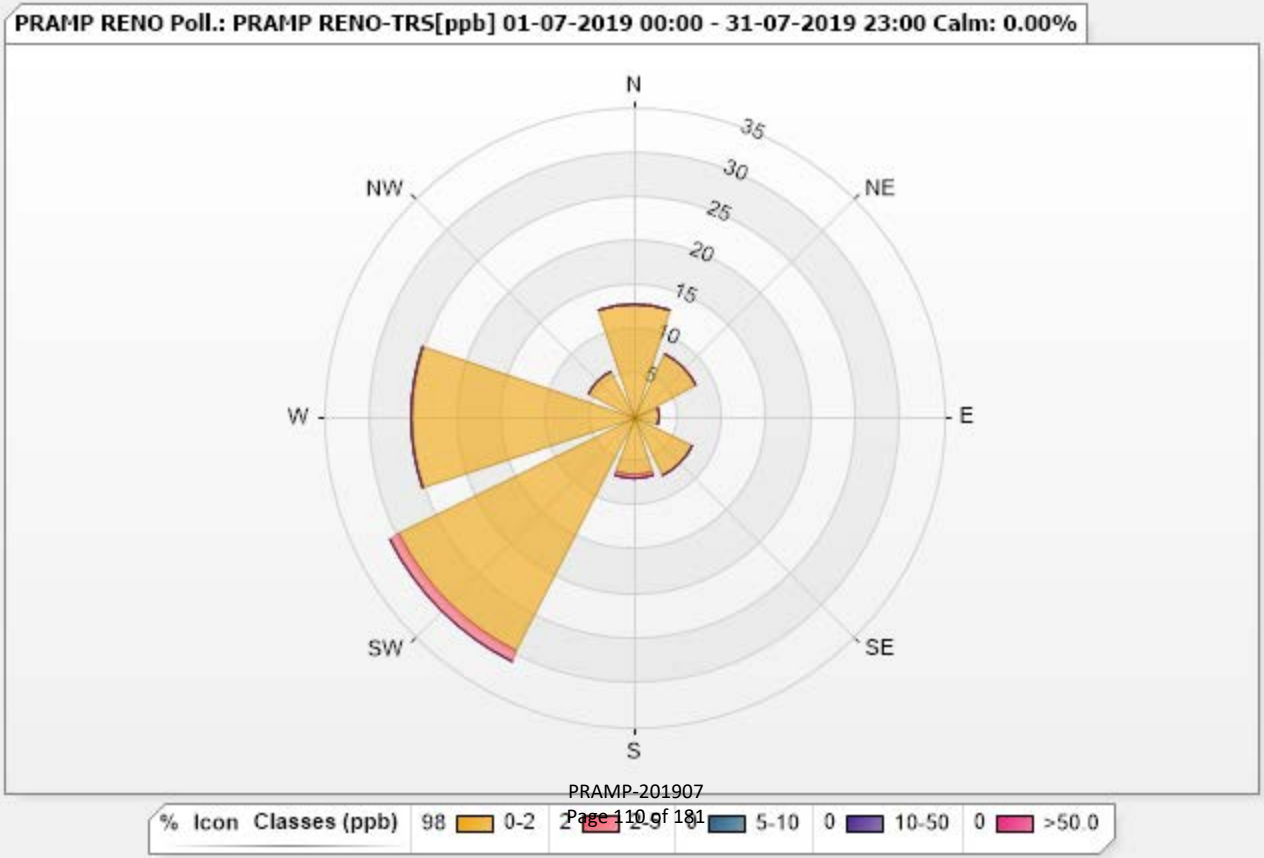
TRS[ppb] Histogram: PRAMP RENO Monthly: 07-2019 1 Hr.



Classes	TRS
<=0	0.00%
0 - 1	95.45%
1 - 2	2.98%
2 - 3	0.85%
3 - 4	0.43%
4 - 5	0.28%
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: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.62% Calm Avg: 0.00 [ppb]

Direction	0-2	2-5	5-10	10-50	>50.0	Total
N	12.78	0	0	0	0	12.78
NE	7.95	0	0	0	0	7.95
E	2.98	0	0	0	0	2.98
SE	7.53	0	0	0	0	7.53
S	6.53	0.43	0	0	0	6.96
SW	29.69	1.14	0	0	0	30.83
W	25.28	0	0	0	0	25.28
NW	5.68	0	0	0	0	5.68
Summary	98.42	1.57	0	0	0	100


PRAMP RENO Poll.: PRAMP RENO-TRS[ppb] 01-07-2019 00:00 - 31-07-2019 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
35
30
25
20
15
10
5
% Icon Classes (ppb)
98 0-2
2 2-5
0 5-10
0 10-50
0 >50.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

Summary of Hourly Averages

TOTAL HYDROCARBONS (THC) in ppm

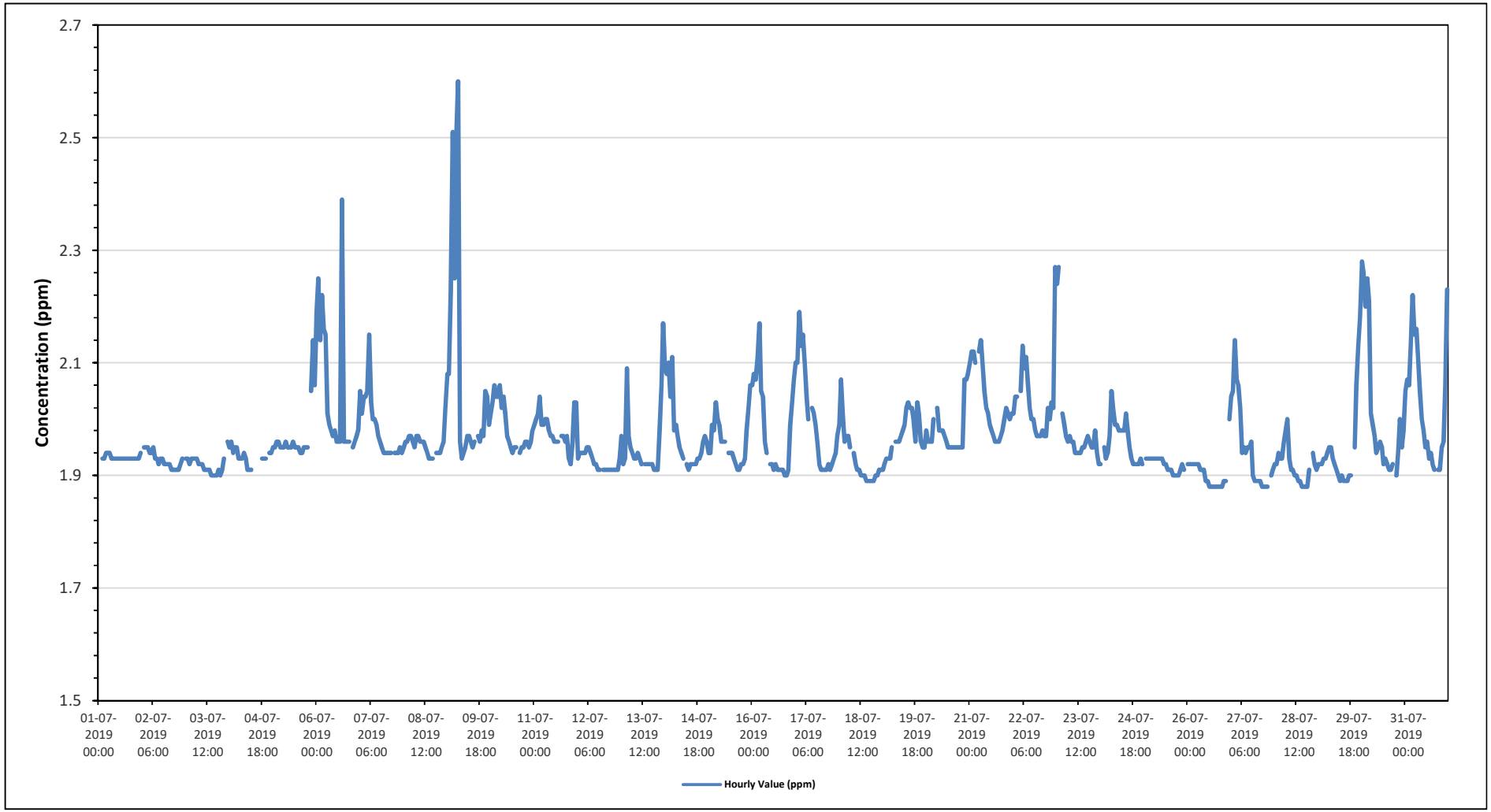
Maximum Hourly Value:	2.60	ppm	on July 9 at hour 6	Hours in Service:	744
Maximum Daily Value:	2.08	ppm	on July 9	Hours of Data:	706
Minimum Hourly Value:	1.88	ppm	on July 26 at hour 12	Hours of Missing Data:	0
Minimum Daily Value:	1.90	ppm	on July 26	Hours of Calibration:	38
Monthly Average:	1.97	ppm		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
Jul 1	1.90	S	1.93	1.93	1.94	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.90	1.94	1.93
Jul 2	S	1.95	1.95	1.95	1.94	1.94	1.95	1.93	1.93	1.92	1.93	1.93	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.92	1.93	S	1.91	1.95	1.93
Jul 3	1.93	1.93	1.92	1.93	1.93	1.93	1.93	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.91	1.90	1.91	1.93	S	1.96	1.90	1.96	1.92
Jul 4	1.95	1.96	1.94	1.95	1.95	1.93	1.93	1.93	1.94	1.93	1.91	1.91	1.91	C	C	C	C	C	1.93	1.93	1.93	S	1.94	1.94	1.91	1.96	1.93
Jul 5	1.95	1.95	1.96	1.96	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.94	1.94	1.95	1.95	1.95	S	2.05	2.14	2.06	1.94	2.14	1.97
Jul 6	2.19	2.25	2.14	2.22	2.16	2.15	2.01	1.99	1.98	1.97	1.98	1.96	1.96	1.96	2.39	1.96	1.96	1.96	1.96	S	1.95	1.96	1.97	1.98	1.95	2.39	2.04
Jul 7	2.05	2.01	2.04	2.04	2.05	2.15	2.03	2.00	2.00	1.99	1.97	1.96	1.95	1.94	1.94	1.94	1.94	1.94	S	1.94	1.94	1.94	1.95	1.94	1.94	2.15	1.98
Jul 8	1.95	1.96	1.96	1.97	1.97	1.96	1.95	1.97	1.97	1.96	1.96	1.96	1.95	1.94	1.93	1.93	1.93	S	1.94	1.94	1.94	1.95	1.96	2.02	1.93	2.02	1.96
Jul 9	2.08	2.08	2.23	2.51	2.25	2.50	**2.60**	1.96	1.93	1.94	1.95	1.97	1.97	1.96	1.95	1.96	S	1.97	1.96	1.98	1.97	2.05	2.04	1.99	1.93	**2.60**	**2.08**
Jul 10	2.01	2.03	2.06	2.04	2.04	2.06	2.02	2.04	2.01	1.97	1.96	1.95	1.94	1.95	1.95	S	1.94	1.95	1.95	1.96	1.96	1.95	1.96	1.98	1.94	2.06	1.99
Jul 11	1.99	2.00	2.01	2.04	1.99	1.99	2.00	2.00	1.98	1.97	1.97	1.96	1.96	1.96	S	1.97	1.97	1.96	1.97	1.93	1.92	1.96	2.03	2.03	1.92	2.04	1.98
Jul 12	1.93	1.94	1.94	1.94	1.94	1.95	1.95	1.94	1.93	1.92	1.92	1.91	1.91	S	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.93	1.91	1.95	1.92
Jul 13	1.97	1.92	1.93	2.09	1.97	1.95	1.94	1.93	1.93	1.94	1.93	1.92	S	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.98	2.06	2.17	1.91	2.17	1.95
Jul 14	2.09	2.08	2.10	2.04	2.11	1.98	1.99	1.97	1.95	1.94	1.93	S	1.92	1.91	1.92	1.92	1.92	1.92	1.93	1.93	1.94	1.96	1.97	1.96	1.91	2.11	1.97
Jul 15	1.94	1.94	1.99	1.98	2.03	2.00	1.99	1.96	1.96	1.96	S	1.94	1.94	1.94	1.93	1.92	1.91	1.91	1.92	1.92	1.93	1.98	2.02	2.06	1.91	2.06	1.96
Jul 16	2.06	2.08	2.07	2.11	2.17	2.05	2.04	1.96	1.94	S	1.92	1.92	1.91	1.92	1.91	1.91	1.91	1.91	1.90	1.90	1.91	1.99	2.03	2.07	1.90	2.17	1.98
Jul 17	2.10	2.10	2.19	2.13	2.15	2.10	2.04	2.00	S	2.02	2.01	1.99	1.96	1.92	1.91	1.91	1.91	1.91	1.92	1.91	1.92	1.93	1.94	1.97	1.91	2.19	2.00
Jul 18	1.99	2.07	2.01	1.96	1.97	1.97	1.95	S	1.94	1.92	1.91	1.91	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.90	1.90	1.91	1.91	1.89	2.07	1.93
Jul 19	1.91	1.92	1.93	1.93	1.93	1.95	S	1.96	1.96	1.96	1.97	1.98	1.99	2.02	2.03	2.02	2.02	2.00	1.96	2.03	2.01	1.96	1.95	1.95	1.91	2.03	1.97
Jul 20	1.98	1.96	1.96	1.96	2.00	S	2.02	1.98	1.98	1.98	1.97	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	2.07	2.07	2.08	1.95	2.08	1.98
Jul 21	2.10	2.12	2.12	2.10	S	2.12	2.14	2.10	2.05	2.02	2.01	1.99	1.98	1.97	1.96	1.96	1.96	1.97	1.98	2.00	2.02	2.01	2.00	2.01	1.96	2.14	2.03
Jul 22	2.01	2.04	2.04	S	2.05	2.13	2.09	2.11	2.06	2.02	2.00	2.00	1.98	1.97	1.97	1.97	1.98	1.97	1.97	2.02	2.00	2.03	2.02	2.27	1.97	2.27	2.03
Jul 23	2.24	2.27	S	2.01	1.99	1.97	1.96	1.97	1.96	1.96	1.94	1.94	1.94	1.94	1.95	1.95	1.96	1.97	1.96	1.95	1.95	1.98	1.94	1.92	1.92	2.27	1.98
Jul 24	1.92	S	1.95	1.93	1.94	1.97	2.05	2.02	1.99	1.99	1.98	1.98	1.98	1.98	2.01	1.98	1.95	1.93	1.92	1.92	1.92	1.92	1.93	1.92	1.92	2.05	1.96
Jul 25	S	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.92	1.92	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.91	1.92	1.91	S	1.90	1.93	1.92
Jul 26	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.89	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.89	S	2.00	1.88	2.00	1.90
Jul 27	2.04	2.05	2.14	2.07	2.06	2.02	1.94	1.95	1.94	1.95	1.95	1.96	1.90	1.89	1.89	1.89	1.89	1.88	1.88	1.88	1.88	S	1.90	1.91	1.88	2.14	1.95
Jul 28	1.92	1.92	1.94	1.93	1.93	1.96	1.98	2.00	1.93	1.91	1.91	1.90	1.90	1.89	1.89	1.88	1.88	1.88	1.88	1.91	S	1.94	1.92	1.91	1.88	2.00	1.92
Jul 29	1.92	1.92	1.92	1.93	1.93	1.94	1.95	1.95	1.93	1.92	1.91	1.90	1.89	1.90	1.89	1.89	1.89	1.90	1.90	S	1.95	2.06	2.13	2.18	1.89	2.18	1.94
Jul 30	2.28	2.26	2.20	2.25	2.21	2.01	1.99	1.97	1.94	1.95	1.96	1.95	1.92	1.93	1.92	1.91	1.91	1.92	S	1.90	1.94	2.00	1.95	1.98	1.90	2.28	2.01
Jul 31	2.05	2.07	2.06	2.13	2.22	2.15	2.16	2.11	2.05	2.00	1.98	1.95	1.96	1.93	1.94	1.92	1.91	S	1.91	1.91	1.95	1.96	2.06	2.23	1.91	2.23	2.03
Diurnal Maximum	2.28	2.27	2.23	2.51	2.25	2.50	2.60	2.11	2.06	2.02	2.01	2.00	1.99	2.02	2.39	2.02	2.02	2.00	1.98	2.03	2.02	2.07	2.14	2.27			
Daiurnal Average	2.01	2.02	2.02	2.03	2.02	2.02	2.01	1.98	1.96	1.96	1.95	1.94	1.94	1.93	1.95	1.93	1.93	1.93	1.93	1.93	1.94	1.97	1.98	2.01			

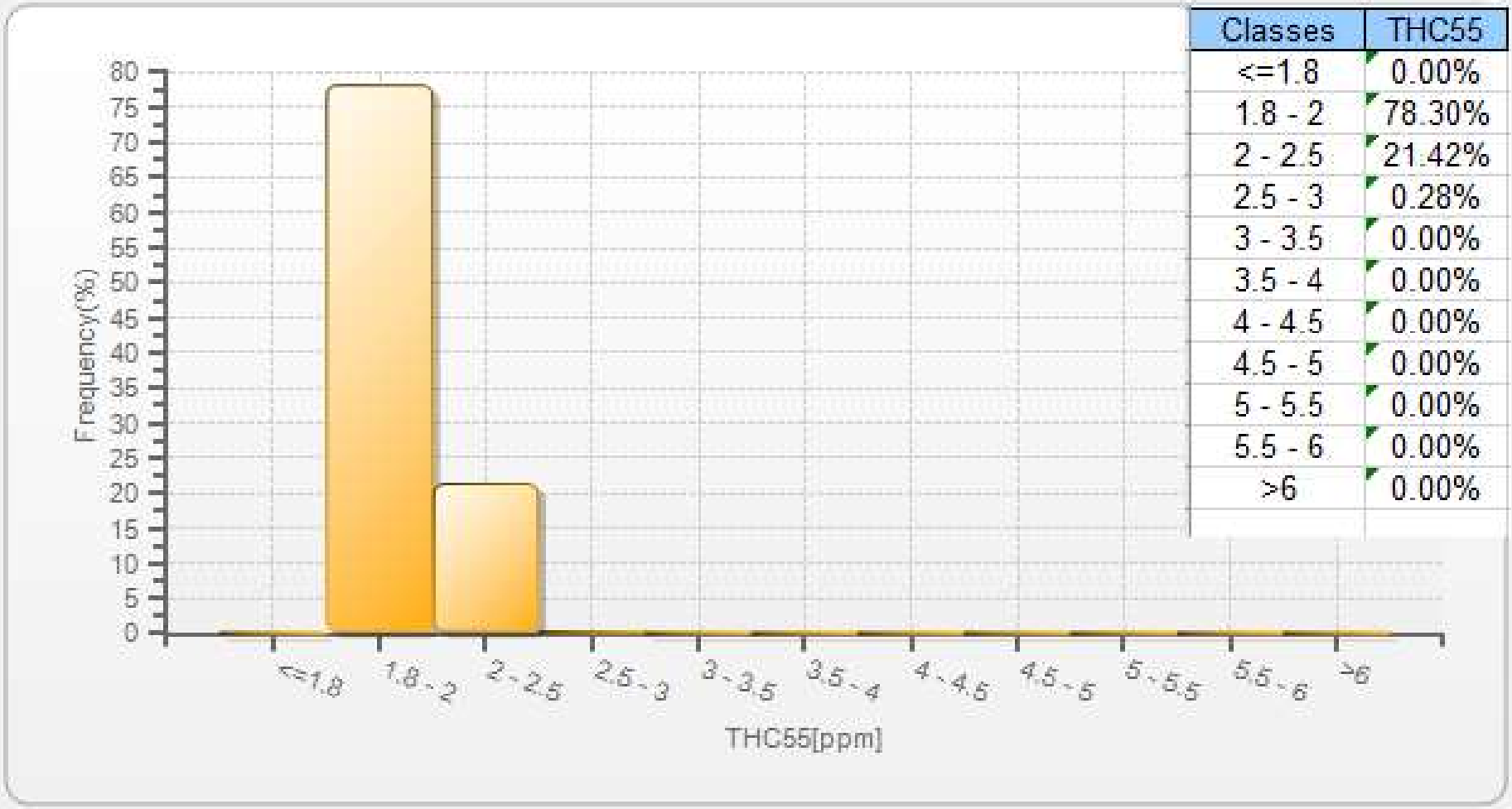
C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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



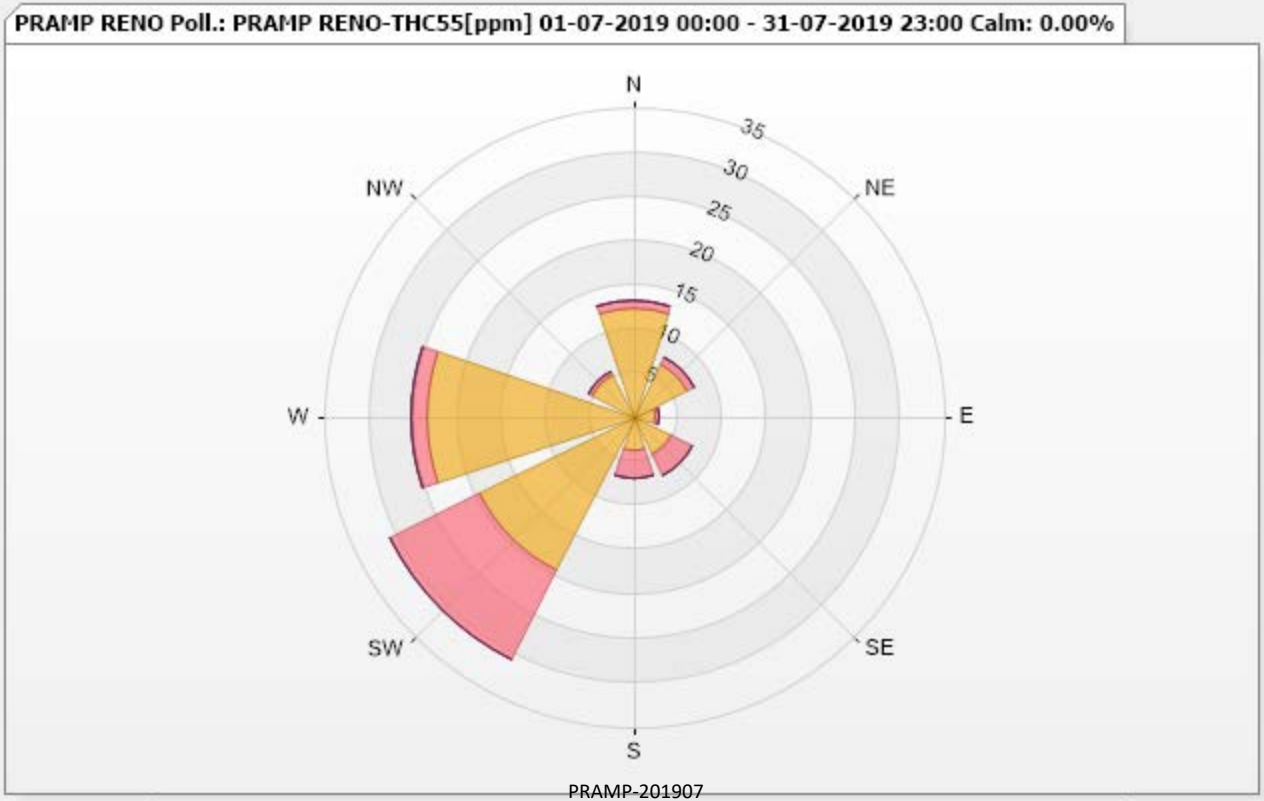
THC55[ppm] Histogram: PRAMP RENO Monthly: 07-2019 1 Hr.



Classes	THC55
<=1.8	0.00%
1.8 - 2	78.30%
2 - 2.5	21.42%
2.5 - 3	0.28%
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 RENO Poll.: PRAMP RENO-THC55[ppm] Monthly: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-40	>40.0	Total
N	12.34	0.85	0	0	0	13.19
NE	6.67	0.99	0	0	0	7.66
E	2.55	0.43	0	0	0	2.98
SE	4.82	2.7	0	0	0	7.52
S	3.83	3.12	0	0	0	6.95
SW	19.43	11.35	0	0	0	30.78
W	23.4	1.84	0	0	0	25.24
NW	5.25	0.43	0	0	0	5.68
Summary	78.29	21.71	0	0	0	100


PRAMP RENO Poll.: PRAMP RENO-THC55[ppm] 01-07-2019 00:00 - 31-07-2019 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
35
30
25
20
15
10
5
% Icon Classes (ppm)
78 0-2
22 2-5
0 5-10
0 10-40
0 >40.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

Summary of Hourly Averages

METHANE (CH4) in ppm

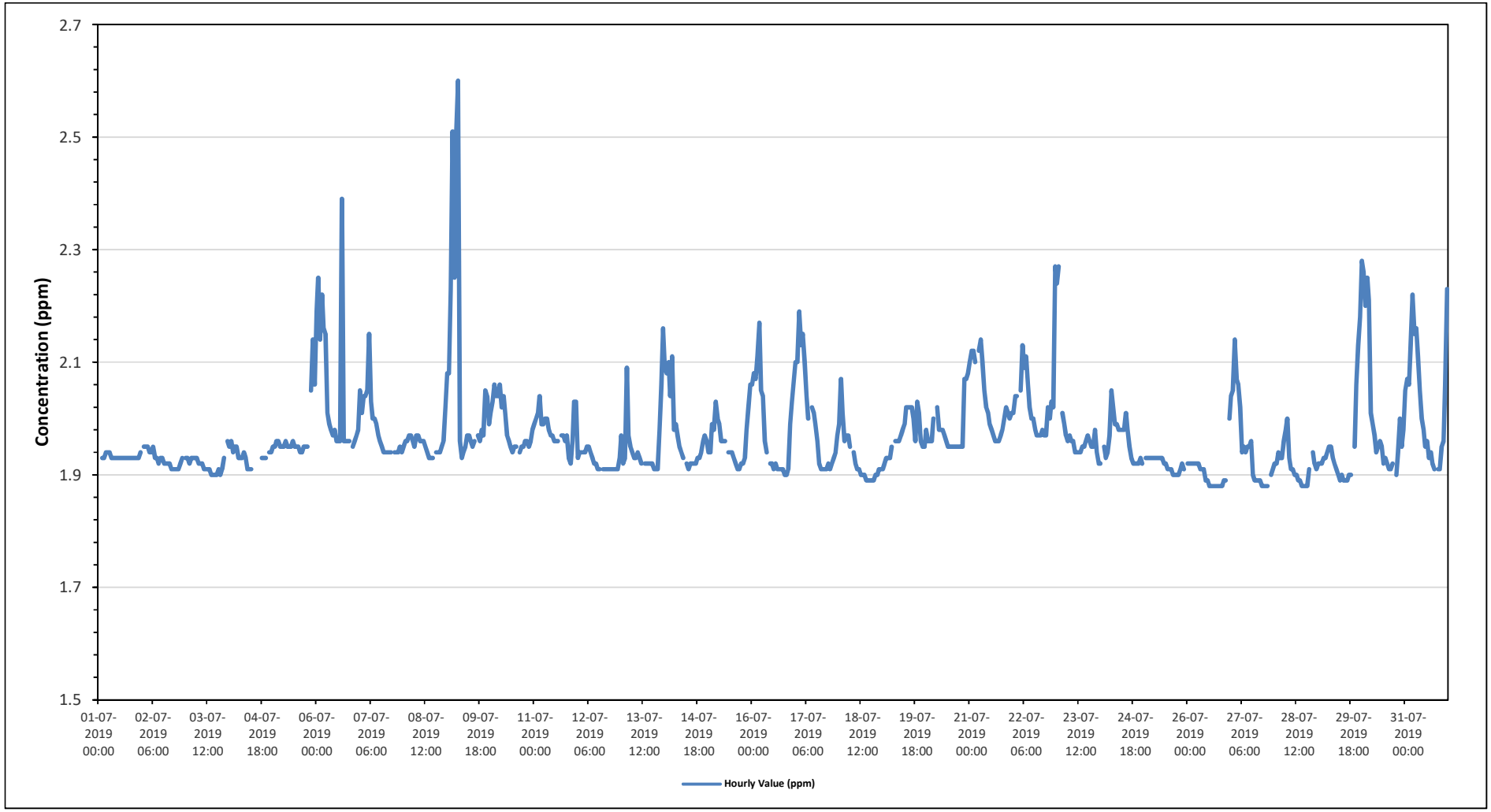
Maximum Hourly Value:	2.60	ppm	on July 9 at hour 6	Hours in Service:	744
Maximum Daily Value:	2.08	ppm	on July 9	Hours of Data:	706
Minimum Hourly Value:	1.88	ppm	on July 26 at hour 12	Hours of Missing Data:	0
Minimum Daily Value:	1.90	ppm	on July 26	Hours of Calibration:	38
Monthly Average:	1.97	ppm		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																								Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
Jul 1	1.90	S	1.93	1.93	1.94	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.90	1.94	1.93
Jul 2	S	1.95	1.95	1.95	1.94	1.94	1.95	1.93	1.93	1.92	1.93	1.93	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.92	1.93	S	1.91	1.95	1.93
Jul 3	1.93	1.93	1.92	1.93	1.93	1.93	1.93	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.91	1.90	1.91	1.93	S	1.96	1.90	1.96	1.92
Jul 4	1.95	1.96	1.94	1.95	1.95	1.93	1.93	1.93	1.94	1.93	1.91	1.91	1.91	C	C	C	C	C	1.93	1.93	1.93	S	1.94	1.94	1.91	1.96	1.93
Jul 5	1.95	1.95	1.96	1.96	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.94	1.94	1.95	1.95	1.95	S	2.05	2.14	2.06	1.94	2.14	1.97
Jul 6	2.19	2.25	2.14	2.22	2.16	2.15	2.01	1.99	1.98	1.97	1.98	1.96	1.96	1.96	2.39	1.96	1.96	1.96	1.96	S	1.95	1.96	1.97	1.98	1.95	2.39	2.04
Jul 7	2.05	2.01	2.04	2.04	2.05	2.15	2.03	2.00	2.00	1.99	1.97	1.96	1.95	1.94	1.94	1.94	1.94	1.94	S	1.94	1.94	1.94	1.95	1.94	1.94	2.15	1.98
Jul 8	1.95	1.96	1.96	1.97	1.97	1.96	1.95	1.97	1.97	1.96	1.96	1.96	1.95	1.94	1.93	1.93	1.93	S	1.94	1.94	1.94	1.95	1.96	2.02	1.93	2.02	1.96
Jul 9	2.08	2.08	2.23	2.51	2.25	2.50	**2.60**	1.96	1.93	1.94	1.95	1.97	1.97	1.96	1.95	1.96	S	1.97	1.96	1.98	1.97	2.05	2.04	1.99	1.93	**2.60**	**2.08**
Jul 10	2.01	2.03	2.06	2.04	2.04	2.06	2.02	2.04	2.01	1.97	1.96	1.95	1.94	1.95	1.95	S	1.94	1.95	1.95	1.96	1.96	1.95	1.96	1.98	1.94	2.06	1.99
Jul 11	1.99	2.00	2.01	2.04	1.99	1.99	2.00	2.00	1.98	1.97	1.97	1.96	1.96	1.96	S	1.97	1.97	1.96	1.97	1.93	1.92	1.96	2.03	2.03	1.92	2.04	1.98
Jul 12	1.93	1.94	1.94	1.94	1.94	1.95	1.95	1.94	1.93	1.92	1.92	1.91	1.91	S	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.93	1.91	1.95	1.92
Jul 13	1.97	1.92	1.93	2.09	1.97	1.95	1.94	1.93	1.93	1.94	1.93	1.92	S	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.98	2.06	2.16	1.91	2.16	1.95
Jul 14	2.09	2.08	2.10	2.04	2.11	1.98	1.99	1.97	1.95	1.94	1.93	S	1.92	1.91	1.92	1.92	1.92	1.92	1.93	1.93	1.94	1.96	1.97	1.96	1.91	2.11	1.97
Jul 15	1.94	1.94	1.99	1.98	2.03	2.00	1.99	1.96	1.96	1.96	S	1.94	1.94	1.94	1.93	1.92	1.91	1.91	1.92	1.92	1.93	1.98	2.02	2.06	1.91	2.06	1.96
Jul 16	2.06	2.08	2.07	2.11	2.17	2.05	2.04	1.96	1.94	S	1.92	1.92	1.91	1.92	1.91	1.91	1.91	1.91	1.90	1.90	1.91	1.99	2.03	2.07	1.90	2.17	1.98
Jul 17	2.10	2.10	2.19	2.13	2.15	2.10	2.04	2.00	S	2.02	2.01	1.99	1.96	1.92	1.91	1.91	1.91	1.91	1.92	1.91	1.92	1.93	1.94	1.97	1.91	2.19	2.00
Jul 18	1.99	2.07	2.01	1.96	1.97	1.97	1.95	S	1.94	1.92	1.91	1.91	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.90	1.90	1.91	1.91	1.89	2.07	1.93
Jul 19	1.91	1.92	1.93	1.93	1.93	1.95	S	1.96	1.96	1.96	1.97	1.98	1.99	2.02	2.02	2.02	2.02	2.00	1.96	2.03	2.01	1.96	1.95	1.95	1.91	2.03	1.97
Jul 20	1.98	1.96	1.96	1.96	2.00	S	2.02	1.98	1.98	1.98	1.97	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	2.07	2.07	2.08	1.95	2.08	1.98
Jul 21	2.10	2.12	2.12	2.10	S	2.12	2.14	2.10	2.05	2.02	2.01	1.99	1.98	1.97	1.96	1.96	1.96	1.97	1.98	2.00	2.02	2.01	2.00	2.01	1.96	2.14	2.03
Jul 22	2.01	2.04	2.04	S	2.05	2.13	2.09	2.11	2.06	2.02	2.00	2.00	1.98	1.97	1.97	1.97	1.98	1.97	1.97	2.02	2.00	2.03	2.02	2.27	1.97	2.27	2.03
Jul 23	2.24	2.27	S	2.01	1.99	1.97	1.96	1.97	1.96	1.96	1.94	1.94	1.94	1.94	1.95	1.95	1.96	1.97	1.96	1.95	1.95	1.98	1.94	1.92	1.92	2.27	1.98
Jul 24	1.92	S	1.95	1.93	1.94	1.97	2.05	2.02	1.99	1.99	1.98	1.98	1.98	1.98	2.01	1.98	1.95	1.93	1.92	1.92	1.92	1.92	1.93	1.92	1.92	2.05	1.96
Jul 25	S	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.92	1.92	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.91	1.92	1.91	S	1.90	1.93	1.92
Jul 26	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.89	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.89	S	2.00	1.88	2.00	1.90
Jul 27	2.04	2.05	2.14	2.07	2.06	2.02	1.94	1.95	1.94	1.95	1.95	1.96	1.90	1.89	1.89	1.89	1.89	1.88	1.88	1.88	1.88	S	1.90	1.91	1.88	2.14	1.95
Jul 28	1.92	1.92	1.94	1.93	1.93	1.96	1.98	2.00	1.93	1.91	1.91	1.90	1.90	1.89	1.89	1.88	1.88	1.88	1.88	1.91	S	1.94	1.92	1.91	1.88	2.00	1.92
Jul 29	1.92	1.92	1.92	1.93	1.93	1.94	1.95	1.95	1.93	1.92	1.91	1.90	1.89	1.90	1.89	1.89	1.89	1.90	1.90	S	1.95	2.06	2.13	2.18	1.89	2.18	1.94
Jul 30	2.28	2.26	2.20	2.25	2.21	2.01	1.99	1.97	1.94	1.95	1.96	1.95	1.92	1.93	1.92	1.91	1.91	1.92	S	1.90	1.94	2.00	1.95	1.98	1.90	2.28	2.01
Jul 31	2.05	2.07	2.06	2.13	2.22	2.15	2.16	2.11	2.05	2.00	1.98	1.95	1.96	1.93	1.94	1.92	1.91	S	1.91	1.91	1.95	1.96	2.06	2.23	1.91	2.23	2.03
Diurnal Maximum	2.28	2.27	2.23	2.51	2.25	2.50	2.60	2.11	2.06	2.02	2.01	2.00	1.99	2.02	2.39	2.02	2.02	2.00	1.98	2.03	2.02	2.07	2.14	2.27			
Daiurnal Average	2.01	2.02	2.02	2.03	2.02	2.02	2.01	1.98	1.96	1.96	1.95	1.94	1.94	1.93	1.95	1.93	1.93	1.93	1.93	1.93	1.94	1.97	1.98	2.01			

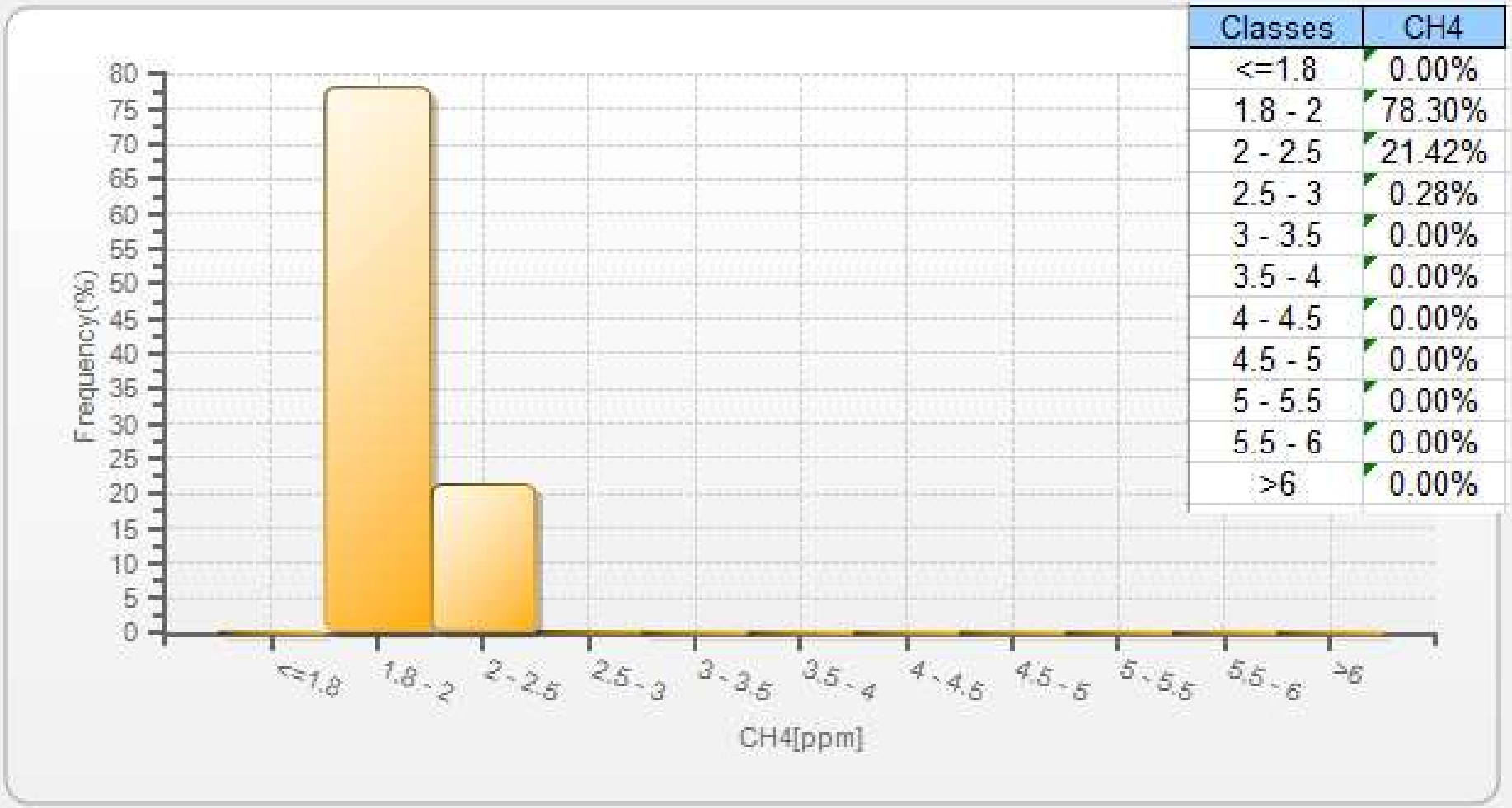
C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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



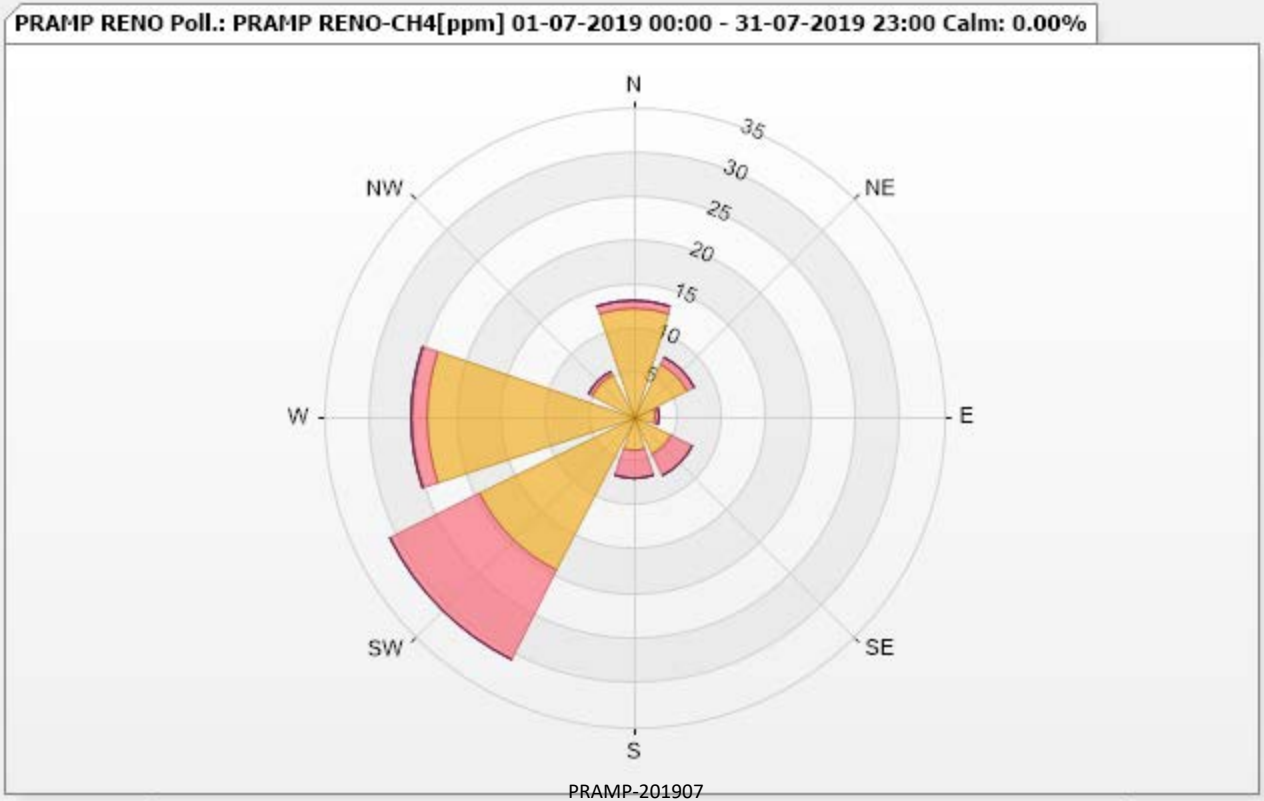
CH4[ppm] Histogram: PRAMP RENO Monthly: 07-2019 1 Hr.



Classes	CH4
<=1.8	0.00%
1.8 - 2	78.30%
2 - 2.5	21.42%
2.5 - 3	0.28%
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 RENO Poll.: PRAMP RENO-CH4[ppm] Monthly: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.76% Calm Avg: 0.00 [ppm]

Direction	0-2	2-5	5-10	10-20	>20.0	Total
N	12.34	0.85	0	0	0	13.19
NE	6.67	0.99	0	0	0	7.66
E	2.55	0.43	0	0	0	2.98
SE	4.82	2.7	0	0	0	7.52
S	3.83	3.12	0	0	0	6.95
SW	19.43	11.35	0	0	0	30.78
W	23.4	1.84	0	0	0	25.24
NW	5.25	0.43	0	0	0	5.68
Summary	78.29	21.71	0	0	0	100


PRAMP RENO Poll.: PRAMP RENO-CH4[ppm] 01-07-2019 00:00 - 31-07-2019 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
35
30
25
20
15
10
5
% Icon Classes (ppm)
78 0-2
22 2-5
0 5-10
0 10-20
0 >20.0

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

Summary of Hourly Averages

NON-METHANE HYDROCARBONS (NMHC) in ppm

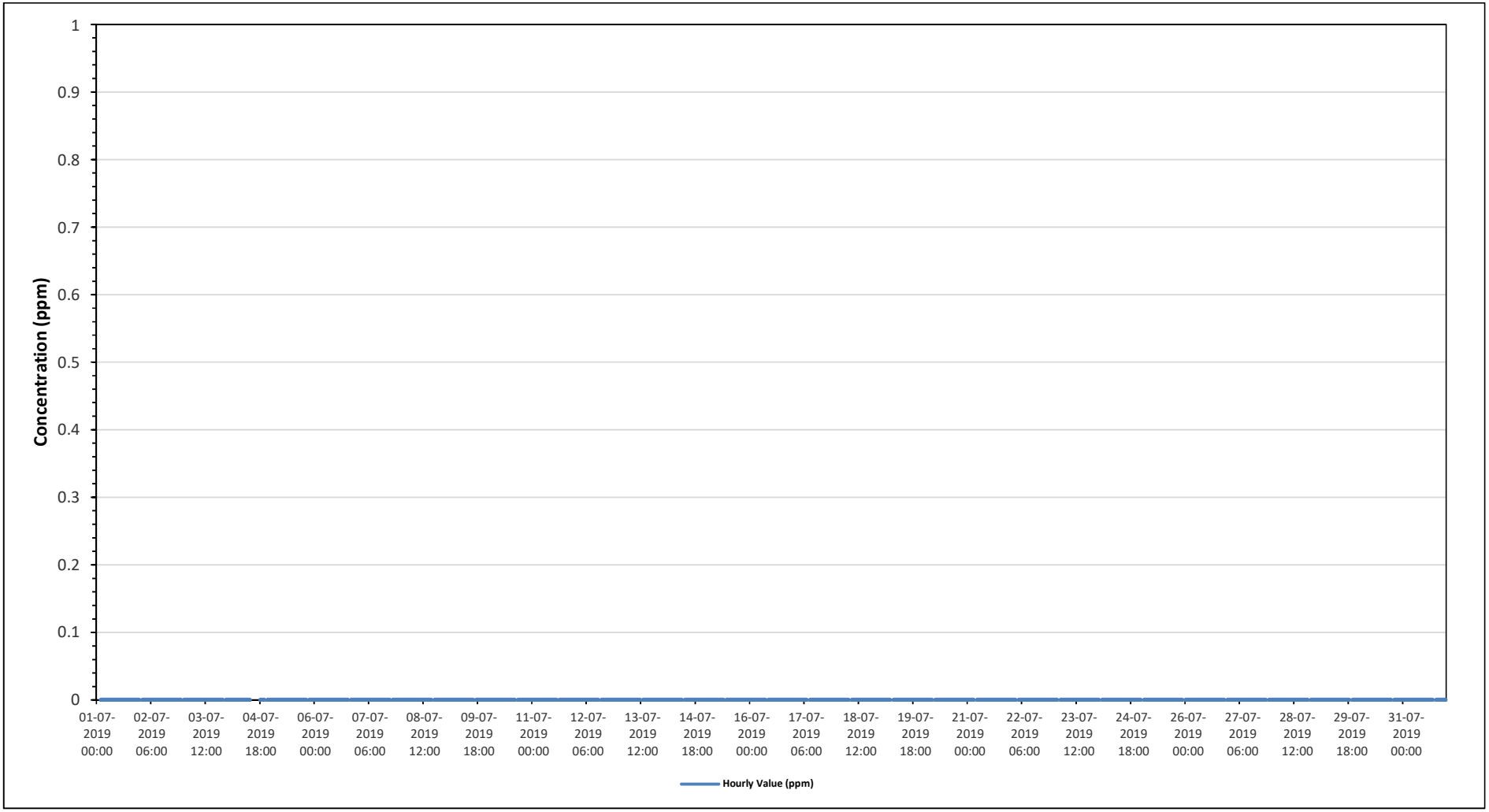
Maximum Hourly Value:	0.00	ppm	on July 1 at hour 0	Hours in Service:	744
Maximum Daily Value:	0.00	ppm	on July 1	Hours of Data:	706
Minimum Hourly Value:	0.00	ppm	on July 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.00	ppm	on July 1	Hours of Calibration:	38
Monthly Average:	0.00	ppm		Operational 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
Jul 1	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 2	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
Jul 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Jul 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	C	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jul 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Jul 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 19	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 20	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 21	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 22	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 23	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 24	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 25	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
Jul 26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Jul 27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jul 28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Jul 29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diurnal Maximum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Daiurnal 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			

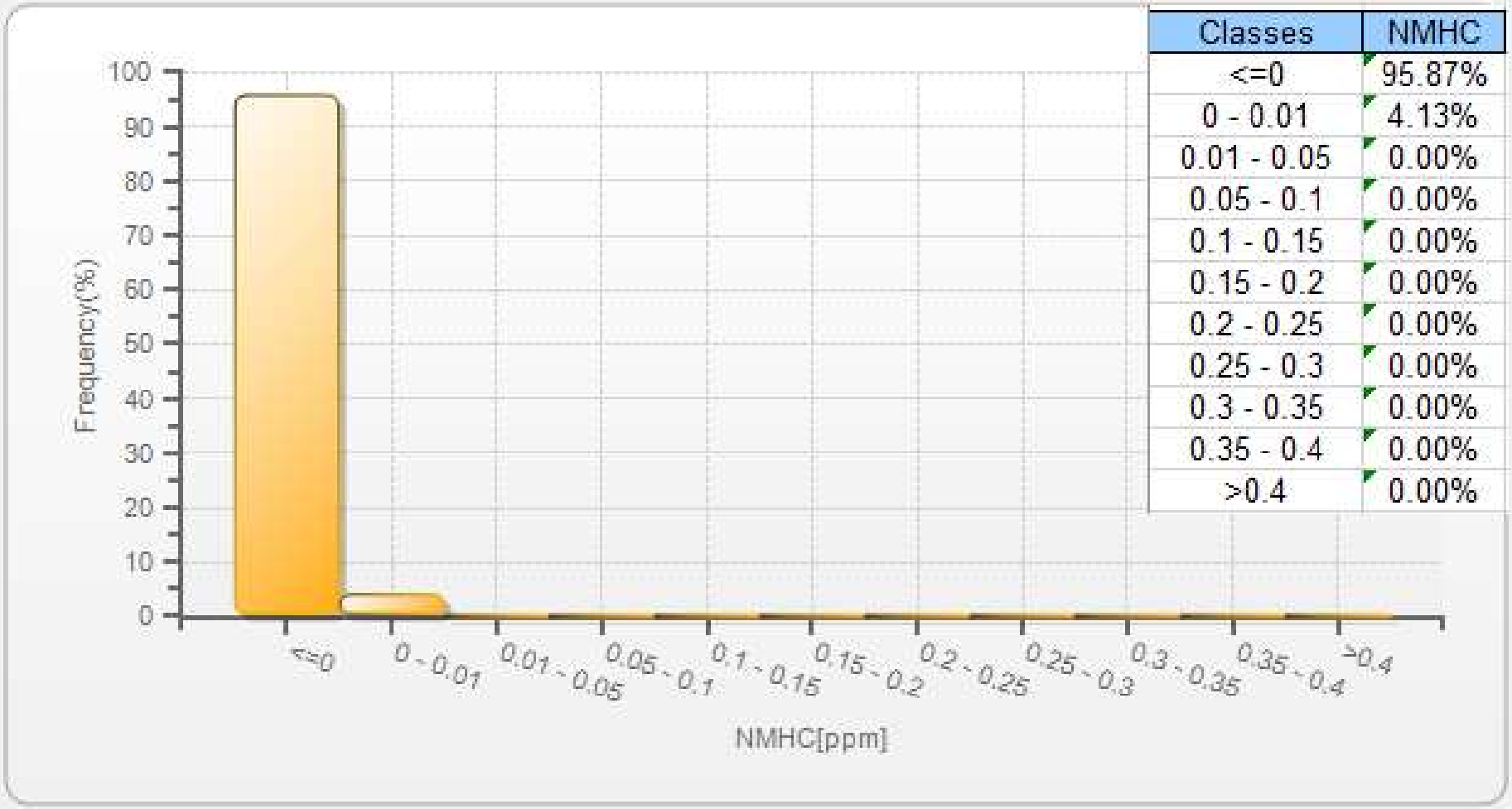
C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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



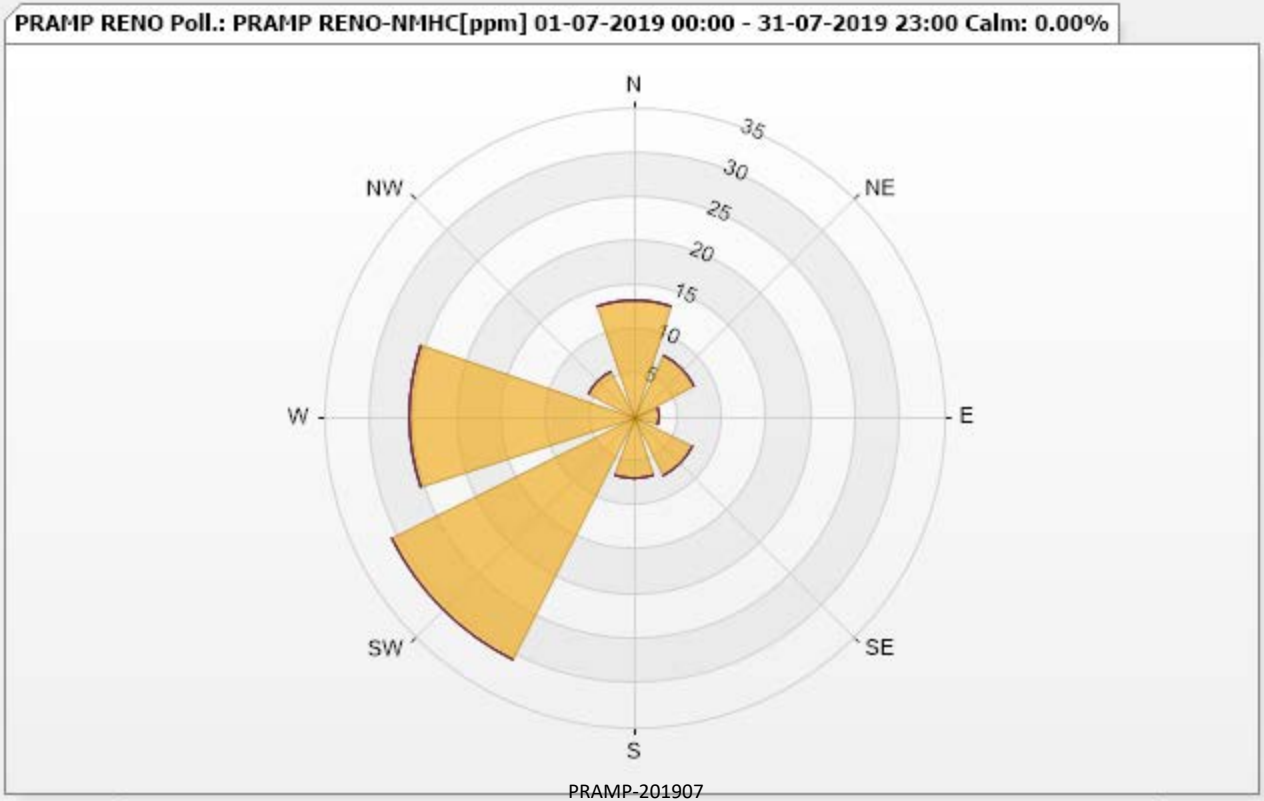
NMHC[ppm] Histogram: PRAMP RENO Monthly: 07-2019 1 Hr.



Classes	NMHC
<=0	95.87%
0 - 0.01	4.13%
0.01 - 0.05	0.00%
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	0.00%

Wind: PRAMP RENO Poll.: PRAMP RENO-NMHC[ppm] Monthly: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 0.00% Valid Data: 94.35% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-0.9	0.9-2	>2.0	Total
N	13.25	0	0	0	0	13.25
NE	7.69	0	0	0	0	7.69
E	2.99	0	0	0	0	2.99
SE	7.41	0	0	0	0	7.41
S	6.98	0	0	0	0	6.98
SW	30.63	0	0	0	0	30.63
W	25.36	0	0	0	0	25.36
NW	5.7	0	0	0	0	5.7
Summary	100	0	0	0	0	100


PRAMP RENO Poll.: PRAMP RENO-NMHC[ppm] 01-07-2019 00:00 - 31-07-2019 23:00 Calm: 0.00%
N
NE
E
SE
S
SW
W
NW
35
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

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

Summary of Hourly Averages

RELATIVE HUMIDITY (RH) in %

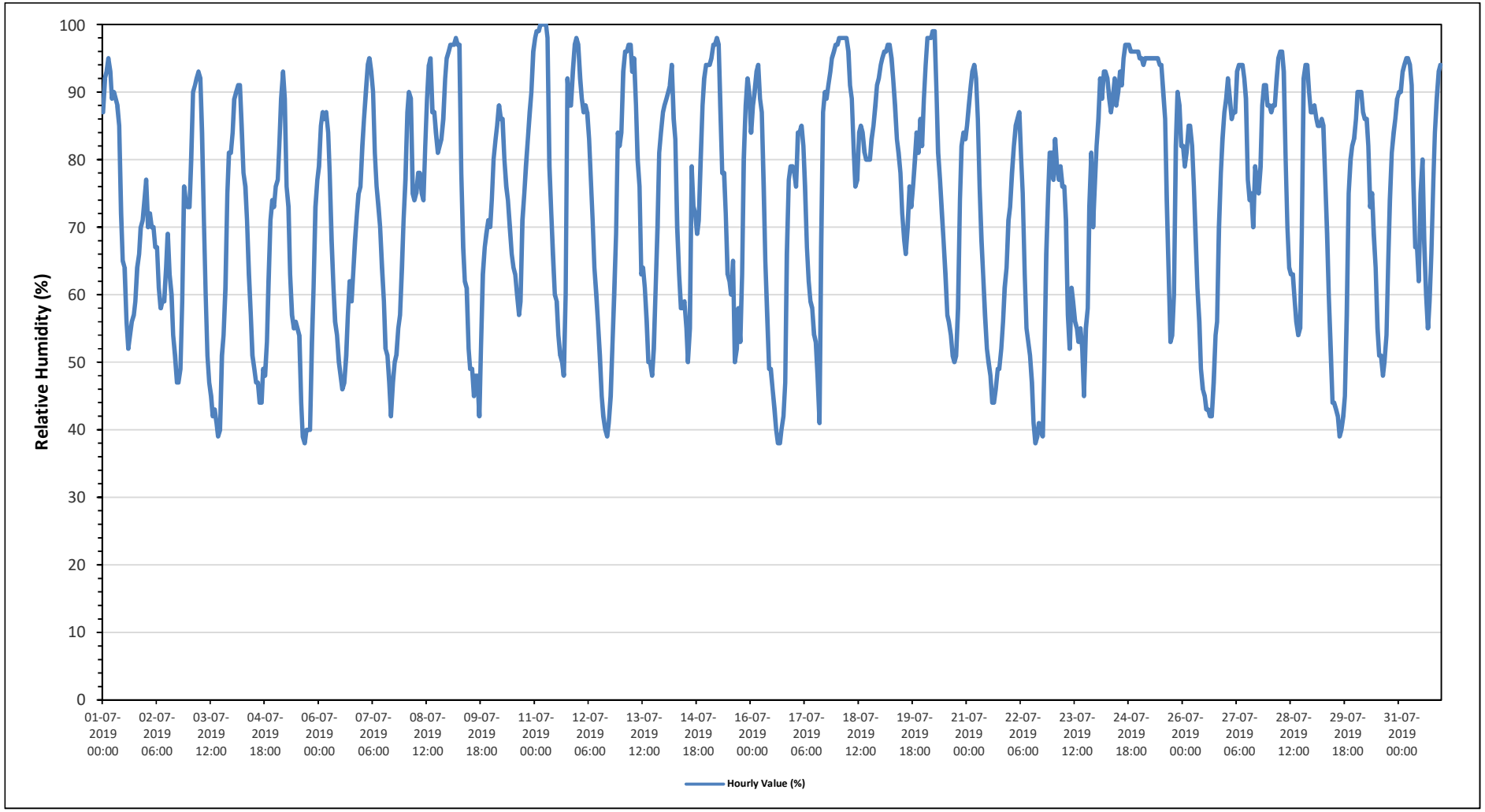
Maximum Hourly Value:	100	%	on July 11 at hour 3	Hours in Service:	744
Maximum Daily Value:	92.2	%	on July 24	Hours of Data:	744
Minimum Hourly Value:	38	%	on July 5 at hour 16	Hours of Missing Data:	0
Minimum Daily Value:	62.5	%	on July 5	Hours of Calibration:	0
Monthly Average:	73.6	%		Operational 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
Jul 1	87	92	93	95	93	89	90	89	88	85	72	65	64	56	52	54	56	57	59	64	66	70	71	74	52	95	74
Jul 2	77	70	72	70	70	67	67	61	58	59	59	64	69	63	60	54	51	47	47	49	59	76	74	73	47	77	63
Jul 3	73	80	90	91	92	93	92	84	71	60	51	47	45	42	43	41	39	40	51	54	61	75	81	81	39	93	66
Jul 4	84	89	90	91	91	85	78	76	71	63	57	51	49	47	47	44	44	49	48	53	62	71	74	73	44	91	66
Jul 5	76	77	82	89	93	89	76	73	63	57	55	56	55	54	44	39	**38**	40	40	40	53	61	73	77	**38**	93	63
Jul 6	79	85	87	86	87	84	78	68	61	56	54	50	48	46	47	51	57	62	59	63	68	72	75	76	46	87	67
Jul 7	82	86	90	94	95	93	90	81	76	73	70	64	59	52	51	47	42	47	50	51	55	57	64	71	42	95	68
Jul 8	77	87	90	89	75	74	75	78	78	75	74	82	89	94	95	87	87	84	81	82	83	86	92	95	74	95	84
Jul 9	96	97	97	97	98	97	97	78	67	62	61	52	49	49	45	48	48	42	52	63	67	69	71	70	42	98	70
Jul 10	74	80	83	85	88	86	86	80	76	74	70	66	64	63	60	57	59	71	75	79	83	87	90	96	57	96	76
Jul 11	98	99	99	**100**	**100**	**100**	**100**	98	79	72	66	60	59	54	51	50	48	60	92	88	88	93	97	98	48	**100**	81
Jul 12	97	92	89	87	88	87	83	77	71	64	60	56	51	45	42	40	39	41	45	53	60	69	84	82	39	97	67
Jul 13	84	93	96	96	97	97	93	95	88	80	76	63	64	61	56	50	50	48	52	61	70	81	84	87	48	97	76
Jul 14	88	89	90	91	94	86	83	70	63	58	58	59	55	50	55	79	73	72	69	71	80	88	92	94	50	94	75
Jul 15	94	94	95	97	97	98	97	88	78	78	72	63	62	60	65	50	52	58	53	63	80	88	92	90	50	98	78
Jul 16	84	88	90	93	94	89	87	76	65	57	49	49	46	43	40	**38**	**38**	40	42	47	66	77	79	79	**38**	94	65
Jul 17	78	76	84	84	85	82	76	67	62	59	58	54	53	48	41	67	87	90	89	91	93	95	96	97	41	97	76
Jul 18	97	98	98	98	98	98	96	91	89	81	76	77	84	85	84	81	80	80	80	83	85	88	91	92	76	98	88
Jul 19	94	95	96	96	97	97	95	92	88	83	81	78	72	68	66	70	76	73	76	80	84	81	86	82	66	97	84
Jul 20	89	94	98	98	98	99	99	90	81	77	72	68	63	57	56	54	51	50	51	58	74	82	84	83	50	99	76
Jul 21	85	88	91	93	94	92	86	76	68	63	57	52	50	48	44	44	46	49	49	52	56	61	64	71	44	94	66
Jul 22	73	78	82	85	86	87	80	75	63	55	53	51	47	41	**38**	39	41	40	39	50	66	75	81	81	**38**	87	63
Jul 23	77	83	79	77	79	76	76	71	57	52	61	59	56	55	53	55	52	45	55	58	73	81	70	76	45	83	66
Jul 24	82	86	92	89	93	93	92	89	87	89	92	88	90	93	91	95	97	97	97	96	96	96	96	96	82	97	**92**
Jul 25	95	95	94	95	95	95	95	95	95	95	95	94	94	90	86	74	63	53	54	60	82	90	88	82	53	95	86
Jul 26	82	79	81	85	85	82	76	69	61	56	49	46	45	43	43	42	42	47	54	56	70	78	83	87	42	87	64
Jul 27	89	92	89	86	87	87	93	94	94	94	92	89	77	74	75	70	79	77	75	79	88	91	91	88	70	94	85
Jul 28	88	87	88	88	92	95	96	96	93	80	70	64	63	63	59	56	54	55	69	92	94	94	90	87	54	96	80
Jul 29	87	88	86	85	85	86	85	77	69	60	52	44	44	43	42	39	40	42	45	57	75	80	82	83	39	88	66
Jul 30	86	90	90	90	87	86	86	82	73	75	69	64	55	51	51	48	50	54	65	74	81	84	86	89	48	90	74
Jul 31	90	90	93	94	95	95	94	91	77	67	67	62	75	80	68	60	55	59	66	77	84	89	93	94	55	95	80
Diurnal Maximum	98	99	99	100	100	100	100	98	95	95	95	94	94	94	95	95	97	97	97	96	96	96	97	98			
Daiurnal Average	85.2	87.6	89.5	90.1	90.6	89.2	87.0	81.5	74.5	69.6	66.1	62.5	61.2	58.6	56.5	55.6	55.9	57.1	60.6	65.9	74.3	80.2	83.0	84.0			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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

Reno Station - July 2019

Summary of Hourly Averages

BAROMETRIC PRESSURE (BP) in millibar

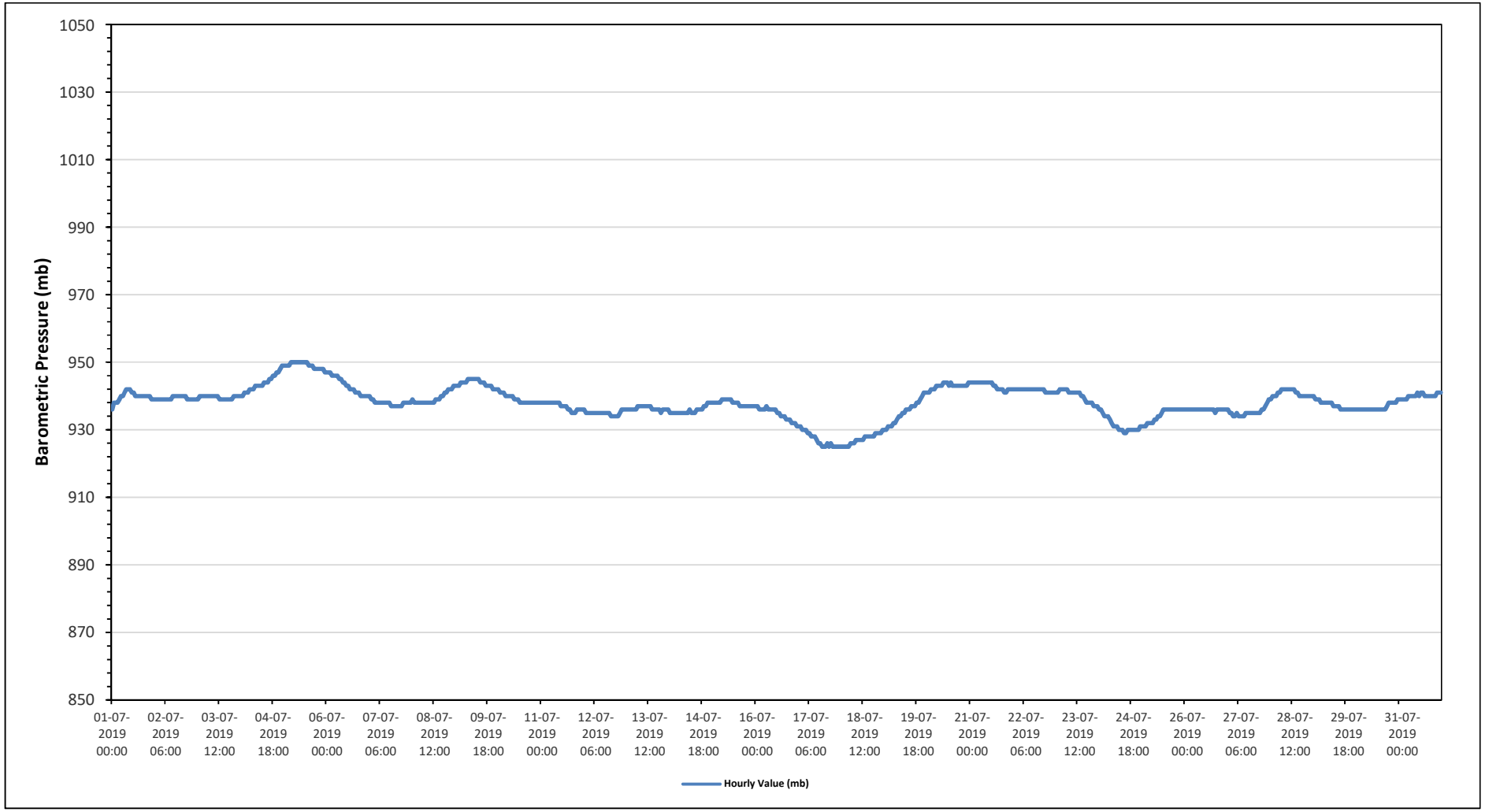
Maximum Hourly Value:	950	mb	on July 5 at hour 4	Hours in Service:	744
Maximum Daily Value:	949	mb	on July 5	Hours of Data:	744
Minimum Hourly Value:	925	mb	on July 17 at hour 13	Hours of Missing Data:	0
Minimum Daily Value:	927	mb	on July 17	Hours of Calibration:	0
Monthly Average:	938	mb		Operational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

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

Summary of Hourly Averages

AMBIENT TEMPERATURE (AT) in Degree Celsius

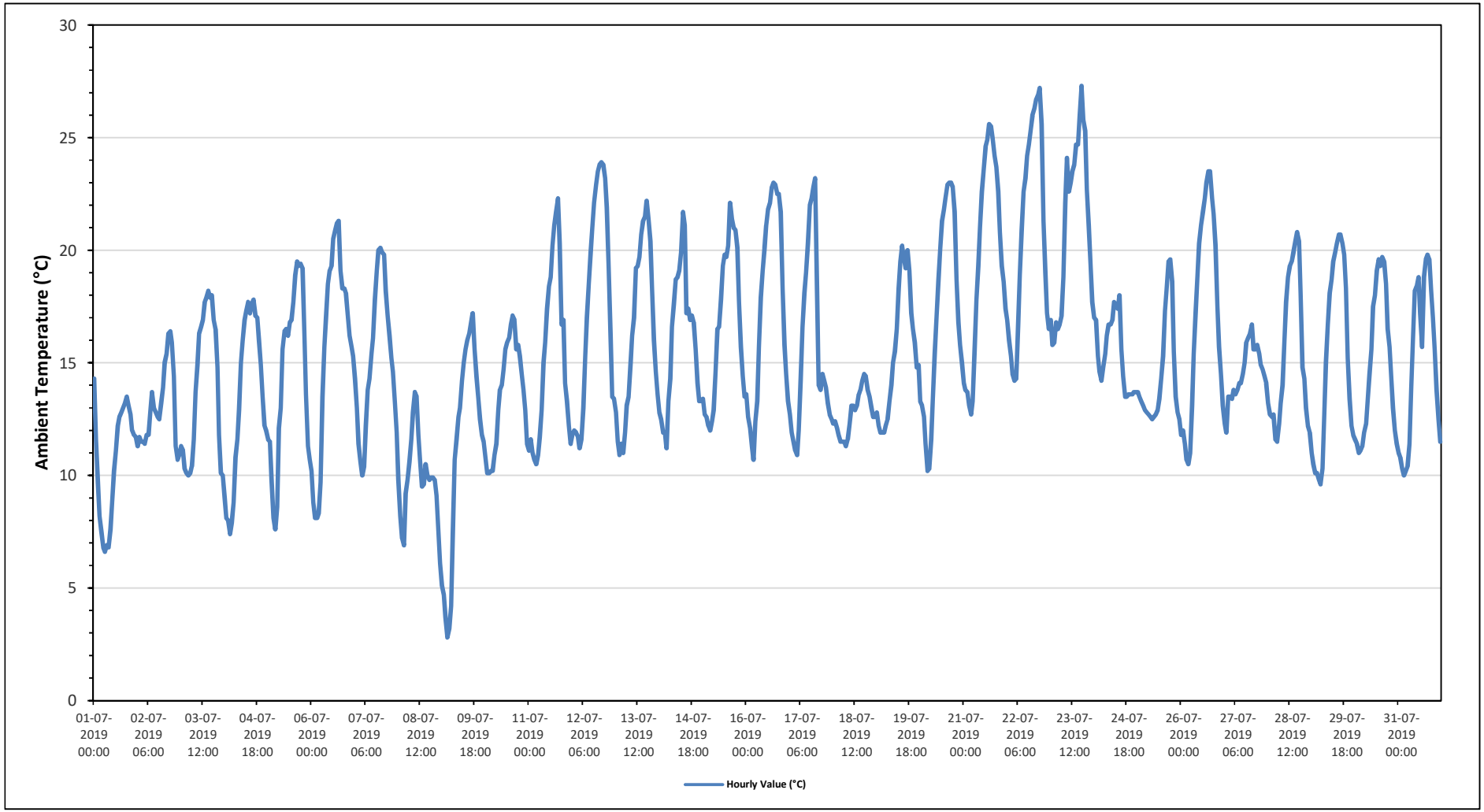
Maximum Hourly Value:	27.3	°C	on July 23 at hour 17	Hours in Service:	744
Maximum Daily Value:	21.2	°C	on July 23	Hours of Data:	744
Minimum Hourly Value:	2.8	°C	on July 9 at hour 3	Hours of Missing Data:	0
Minimum Daily Value:	9.9	°C	on July 8	Hours of Calibration:	0
Monthly Average:	15.3	°C		Operational 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
Jul 1	14.3	11.6	9.7	8.2	7.5	6.8	6.6	6.9	6.8	7.6	8.8	10.2	11.1	12.2	12.6	12.8	13.0	13.2	13.5	13.1	12.7	12.0	11.8	11.7	6.6	14.3	10.6
Jul 2	11.3	11.7	11.5	11.5	11.4	11.8	11.8	12.9	13.7	13.0	12.8	12.6	12.5	13.2	13.9	15.0	15.4	16.3	16.4	15.9	14.4	11.3	10.7	10.9	10.7	16.4	13.0
Jul 3	11.3	11.1	10.3	10.1	10.0	10.1	10.4	11.6	13.7	14.9	16.3	16.6	16.9	17.7	17.9	18.2	17.9	18.0	16.9	16.5	14.8	11.8	10.1	10.0	10.0	18.2	13.9
Jul 4	9.0	8.1	8.0	7.4	7.9	8.8	10.8	11.6	12.9	15.0	16.0	16.9	17.3	17.7	17.2	17.6	17.8	17.1	17.0	16.0	14.9	13.5	12.2	12.0	7.4	17.8	13.4
Jul 5	11.6	11.5	9.8	8.1	7.6	8.6	12.1	13.0	15.6	16.4	16.5	16.2	16.8	16.9	17.7	18.9	19.5	19.3	19.4	19.2	16.2	13.6	11.3	10.7	7.6	19.5	14.4
Jul 6	10.2	8.8	8.1	8.1	8.3	9.7	13.5	15.7	17.0	18.5	19.1	19.3	20.5	20.9	21.2	21.3	19.1	18.3	18.3	18.1	17.1	16.2	15.7	15.3	8.1	21.3	15.8
Jul 7	14.3	13.0	11.4	10.6	10.0	10.4	12.2	13.8	14.3	15.4	16.1	17.8	19.1	20.0	20.1	19.9	19.8	18.2	17.1	16.2	15.2	14.6	13.2	11.9	10.0	20.1	15.2
Jul 8	9.8	8.2	7.2	6.9	9.2	9.8	10.6	11.6	12.8	13.7	13.5	11.8	10.6	9.5	9.6	10.5	10.0	9.8	9.9	9.9	9.8	9.1	7.6	6.1	6.1	13.7	9.9
Jul 9	5.1	4.7	3.7	**2.8**	3.2	4.2	7.4	10.7	11.6	12.6	13.0	14.2	15.0	15.6	16.0	16.3	16.8	17.2	15.6	14.4	13.4	12.5	11.8	11.5	**2.8**	17.2	11.2
Jul 10	10.8	10.1	10.1	10.2	10.2	10.9	11.4	12.9	13.8	14.0	14.7	15.6	15.9	16.1	16.7	17.1	16.9	15.6	15.8	15.3	14.5	13.8	12.9	11.4	10.1	17.1	13.6
Jul 11	11.1	11.6	11.0	10.7	10.5	10.9	11.7	12.9	15.0	15.9	17.4	18.4	18.8	20.2	21.1	21.7	22.3	20.3	16.7	16.9	14.1	13.3	12.2	11.4	10.5	22.3	15.3
Jul 12	11.8	12.0	11.9	11.7	11.2	11.6	13.0	15.3	17.0	18.5	19.9	21.0	22.1	22.9	23.5	23.8	23.9	23.8	23.2	21.9	19.2	16.2	13.5	13.4	11.2	23.9	17.6
Jul 13	12.8	11.5	10.9	11.4	11.0	11.9	13.1	13.5	14.9	16.2	17.0	19.2	19.3	19.7	20.7	21.3	21.5	22.2	21.4	20.4	18.3	16.0	14.6	13.6	10.9	22.2	16.4
Jul 14	12.8	12.5	11.9	11.9	11.2	13.3	14.3	16.6	17.6	18.7	18.8	19.1	19.9	21.7	21.1	17.2	17.4	16.9	17.1	16.8	15.6	14.1	13.3	13.3	11.2	21.7	16.0
Jul 15	13.4	12.7	12.6	12.2	12.0	12.4	12.9	14.6	16.5	16.6	17.8	19.3	19.8	19.7	20.2	22.1	21.4	21.0	20.9	20.1	17.7	15.7	14.4	13.5	12.0	22.1	16.6
Jul 16	13.6	12.6	12.1	11.3	10.7	12.4	13.3	15.7	17.9	19.1	20.1	21.1	21.8	22.1	22.8	23.0	22.9	22.5	22.5	21.7	18.3	15.8	14.5	13.3	10.7	23.0	17.5
Jul 17	12.7	11.9	11.5	11.1	10.9	12.0	14.2	16.6	18.1	19.0	20.3	22.0	22.3	22.8	23.2	18.3	14.0	13.8	14.5	14.2	13.9	13.2	12.7	12.5	10.9	23.2	15.7
Jul 18	12.3	12.4	12.1	11.8	11.5	11.5	11.5	11.3	11.6	12.3	13.1	13.1	12.9	13.1	13.6	13.8	14.2	14.5	14.4	13.8	13.5	13.0	12.6	12.6	11.3	14.5	12.8
Jul 19	12.8	12.2	11.9	11.9	11.9	12.2	12.5	13.3	14.0	15.0	15.5	16.5	18.3	19.5	20.2	19.6	19.2	20.0	19.1	17.2	16.5	15.9	14.8	14.9	11.9	20.2	15.6
Jul 20	13.3	13.1	12.6	11.4	10.2	10.3	11.6	13.4	15.4	17.1	18.7	20.0	21.3	21.8	22.3	22.9	23.0	23.0	22.8	21.7	18.7	16.8	15.8	15.0	10.2	23.0	17.2
Jul 21	14.1	13.8	13.7	13.1	12.7	13.3	15.5	17.8	19.3	21.0	22.6	23.6	24.6	24.9	25.6	25.5	25.0	24.2	23.7	22.6	20.8	19.3	18.6	17.4	12.7	25.6	19.7
Jul 22	16.9	16.0	15.3	14.5	14.2	14.3	16.7	18.9	20.9	22.6	23.2	24.2	24.7	25.4	26.0	26.3	26.7	26.9	27.2	25.6	21.3	19.0	17.2	16.5	14.2	27.2	20.9
Jul 23	16.9	15.8	15.9	16.8	16.5	16.7	17.1	18.8	22.1	24.1	22.6	23.0	23.5	23.8	24.7	24.7	25.9	**27.3**	25.8	25.3	22.7	21.1	19.3	17.7	15.8	**27.3**	**21.2**
Jul 24	17.0	16.9	15.3	14.6	14.2	14.8	15.4	16.2	16.7	16.7	16.9	17.7	17.6	17.4	18.0	15.6	14.4	13.5	13.5	13.6	13.6	13.6	13.7	13.7	13.5	18.0	15.4
Jul 25	13.7	13.5	13.3	13.1	12.9	12.8	12.7	12.6	12.5	12.6	12.7	12.9	13.4	14.3	15.3	17.3	18.2	19.5	19.6	18.6	15.5	13.5	12.8	12.5	12.5	19.6	14.4
Jul 26	11.8	12.0	11.4	10.7	10.5	11.0	13.1	15.4	17.2	18.9	20.3	21.1	21.7	22.3	23.0	23.5	23.5	22.3	21.6	20.2	17.5	15.7	14.5	13.1	10.5	23.5	17.2
Jul 27	12.3	11.9	13.5	13.5	13.4	13.8	13.6	13.8	14.1	14.1	14.5	15.0	15.9	16.1	16.3	16.7	15.6	15.6	15.8	15.4	14.9	14.7	14.4	14.1	11.9	16.7	14.5
Jul 28	13.2	12.7	12.6	12.7	11.6	11.5	12.3	13.2	14.0	16.0	17.7	18.8	19.3	19.5	19.9	20.4	20.8	20.4	18.1	14.8	14.3	13.0	12.2	11.9	11.5	20.8	15.5
Jul 29	11.0	10.5	10.1	10.1	9.8	9.6	10.3	12.7	15.0	16.7	18.1	18.7	19.5	19.9	20.3	20.7	20.7	20.3	19.8	18.3	15.2	13.4	12.2	11.8	9.6	20.7	15.2
Jul 30	11.6	11.4	11.0	11.1	11.3	11.9	12.3	13.3	14.5	15.6	17.5	18.0	19.1	19.6	19.3	19.7	19.5	18.5	16.5	15.7	14.3	13.0	12.0	11.4	11.0	19.7	14.9
Jul 31	11.0	10.8	10.3	10.0	10.2	10.4	11.4	13.9	16.1	18.2	18.4	18.8	17.2	15.7	18.8	19.6	19.8	19.6	18.2	17.0	15.6	13.8	12.5	11.5	10.0	19.8	15.0
Diurnal Maximum	17.0	16.9	15.9	16.8	16.5	16.7	17.1	18.9	22.1	24.1	23.2	24.2	24.7	25.4	26.0	26.3	26.7	27.3	27.2	25.6	22.7	21.1	19.3	17.7			
Daiurnal Average	12.4	11.8	11.3	11.0	10.8	11.3	12.4	13.9	15.2	16.3	17.1	17.8	18.3	18.8	19.3	19.4	19.2	19.0	18.5	17.6	16.0	14.5	13.4	12.8			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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

Reno Station - July 2019

Summary of Hourly Averages

STATION TEMPERATURE (ST) in Degree Celsius

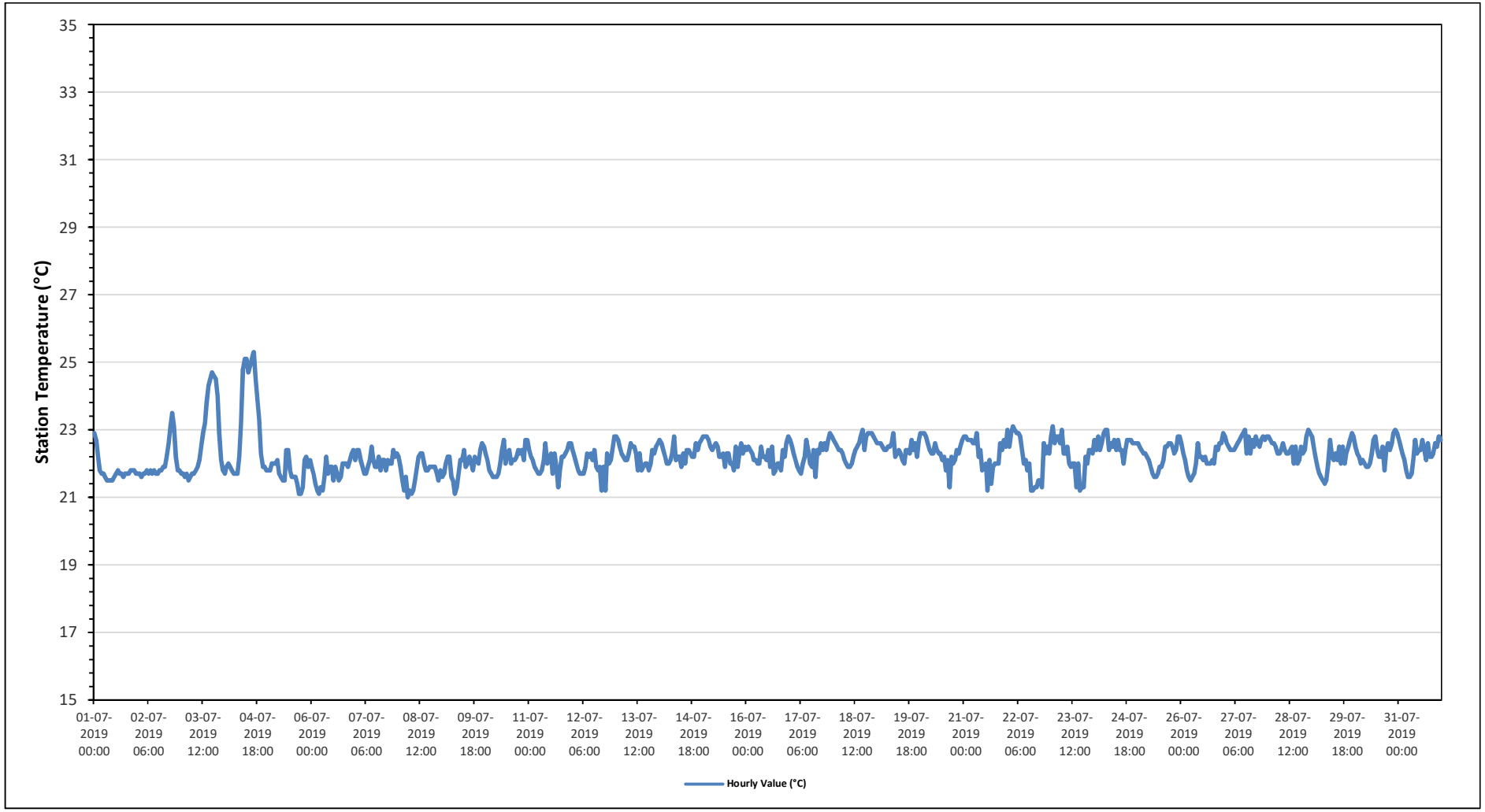
Maximum Hourly Value:	25.3	°C	on July 4 at hour 16	Hours in Service:	744
Maximum Daily Value:	23.1	°C	on July 4	Hours of Data:	744
Minimum Hourly Value:	21.0	°C	on July 8 at hour 5	Hours of Missing Data:	0
Minimum Daily Value:	21.7	°C	on July 8	Hours of Calibration:	0
Monthly Average:	22.2	°C		Operational 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
Jul 1	22.9	22.7	22.2	21.8	21.7	21.7	21.6	21.5	21.5	21.5	21.5	21.6	21.7	21.8	21.7	21.7	21.6	21.7	21.7	21.7	21.8	21.8	21.8	21.7	21.5	22.9	21.8
Jul 2	21.7	21.7	21.6	21.7	21.7	21.8	21.7	21.8	21.7	21.8	21.7	21.7	21.8	21.8	21.9	21.9	22.2	22.6	23.1	23.5	23.1	22.2	21.8	21.8	21.6	23.5	22.0
Jul 3	21.7	21.7	21.6	21.7	21.5	21.6	21.7	21.7	21.8	21.9	22.1	22.5	22.9	23.2	23.8	24.3	24.5	24.7	24.6	24.5	24.0	22.9	22.1	21.8	21.5	24.7	22.7
Jul 4	21.7	21.9	22.0	21.9	21.8	21.7	21.7	21.7	22.2	23.2	24.8	25.1	25.1	24.7	24.9	25.1	**25.3**	24.5	23.9	23.3	22.3	21.9	21.9	21.8	21.7	**25.3**	**23.1**
Jul 5	21.8	21.8	22.0	22.0	22.0	22.1	21.7	21.6	21.5	21.5	22.4	22.4	21.8	21.6	21.6	21.6	21.4	21.1	21.1	21.3	22.1	22.2	21.9	22.1	21.1	22.4	21.8
Jul 6	21.9	21.7	21.4	21.2	21.1	21.3	21.2	21.6	22.2	21.7	21.9	21.9	21.5	21.9	21.7	21.5	21.6	22.0	22.0	22.0	21.9	22.1	22.3	22.4	21.1	22.4	21.8
Jul 7	22.1	22.4	22.4	22.1	21.9	21.7	21.7	21.9	22.1	22.5	22.1	21.9	21.9	22.2	21.8	22.1	22.1	21.8	22.1	22.0	22.0	22.4	22.2	22.3	21.7	22.5	22.1
Jul 8	22.2	21.9	21.5	21.2	21.6	**21.0**	21.2	21.1	21.2	21.5	21.9	22.2	22.3	22.3	22.0	21.8	21.8	21.9	21.9	21.9	21.9	21.7	21.5	21.8	**21.0**	22.3	21.7
Jul 9	21.6	21.7	22.0	22.2	22.2	21.6	21.5	21.1	21.3	21.7	22.1	22.1	22.4	21.9	22.0	22.2	22.0	21.8	22.2	22.1	22.0	22.4	22.6	22.5	21.1	22.6	22.0
Jul 10	22.3	22.1	21.8	21.7	21.6	21.6	21.6	21.7	22.0	22.4	22.7	22.0	22.3	22.4	22.0	22.1	22.1	22.2	22.4	22.3	22.4	22.1	22.7	22.7	21.6	22.7	22.1
Jul 11	22.4	22.2	22.1	21.9	21.8	21.7	21.7	21.8	22.1	22.6	22.0	22.1	22.3	21.7	22.3	21.9	21.3	21.8	22.2	22.2	22.3	22.4	22.6	22.6	21.3	22.6	22.1
Jul 12	22.4	22.2	22.0	21.8	21.7	21.7	21.7	21.9	22.3	22.2	22.3	22.1	22.4	21.9	21.8	21.9	21.2	21.9	21.2	22.3	22.0	22.1	22.4	22.8	21.2	22.8	22.0
Jul 13	22.8	22.7	22.5	22.3	22.2	22.1	22.1	22.3	22.6	22.5	22.5	22.3	21.8	22.3	21.8	21.9	22.0	22.0	21.8	22.0	22.4	22.3	22.5	22.6	21.8	22.8	22.3
Jul 14	22.7	22.6	22.4	22.2	22.0	22.0	22.1	22.3	22.8	22.1	22.2	22.2	21.9	22.3	22.0	22.4	22.4	22.3	22.2	22.2	22.6	22.4	22.6	22.7	21.9	22.8	22.3
Jul 15	22.8	22.8	22.8	22.7	22.5	22.4	22.5	22.6	22.5	22.2	22.2	22.3	21.9	22.3	22.3	22.0	22.0	21.8	22.5	21.9	22.3	22.6	22.3	22.5	21.8	22.8	22.4
Jul 16	22.4	22.5	22.4	22.3	22.1	22.1	22.0	22.0	22.5	22.2	22.2	22.1	22.4	21.9	22.5	21.7	21.8	22.0	22.0	21.8	22.4	22.2	22.6	22.8	21.7	22.8	22.2
Jul 17	22.7	22.5	22.3	22.1	21.9	21.8	21.7	22.0	22.2	22.7	22.4	22.0	21.9	22.4	21.6	22.4	22.3	22.6	22.4	22.6	22.4	22.7	22.9	22.8	21.6	22.9	22.3
Jul 18	22.7	22.6	22.5	22.4	22.4	22.3	22.1	22.0	21.9	21.9	22.0	22.2	22.4	22.5	22.6	22.8	23.0	22.4	22.8	22.9	22.9	22.9	22.8	22.7	21.9	23.0	22.5
Jul 19	22.6	22.6	22.6	22.5	22.4	22.4	22.5	22.5	22.6	22.9	22.2	22.3	22.4	22.3	22.1	22.0	22.4	22.4	22.3	22.7	22.4	22.6	22.2	22.7	22.0	22.9	22.4
Jul 20	22.9	22.9	22.9	22.8	22.6	22.4	22.3	22.3	22.6	22.4	22.3	22.3	22.1	22.2	21.8	22.1	21.3	22.2	22.0	22.1	22.4	22.3	22.5	22.7	21.3	22.9	22.4
Jul 21	22.8	22.8	22.7	22.7	22.7	22.6	22.6	22.9	22.2	22.4	21.8	21.9	22.0	21.2	22.1	21.4	21.9	22.0	22.0	22.0	22.6	22.4	22.7	22.5	21.2	22.9	22.3
Jul 22	23.0	22.5	22.9	23.1	23.0	22.9	22.9	22.8	22.4	22.0	22.1	21.8	22.0	21.2	21.2	21.3	21.3	21.5	21.5	21.3	22.6	22.3	22.5	22.3	21.2	23.1	22.2
Jul 23	22.8	23.1	22.6	22.8	22.8	22.6	23.0	22.3	22.3	22.5	22.0	21.9	22.0	22.0	21.3	22.0	21.2	21.3	21.3	22.2	22.0	22.4	22.4	22.3	21.2	23.1	22.2
Jul 24	22.7	22.4	22.8	22.4	22.6	22.9	23.0	23.0	22.4	22.6	22.5	22.7	22.4	22.7	22.4	22.4	22.0	22.4	22.7	22.7	22.7	22.6	22.6	22.6	22.0	23.0	22.6
Jul 25	22.6	22.5	22.4	22.3	22.3	22.2	22.1	21.9	21.7	21.6	21.6	21.7	21.9	21.9	22.1	22.5	22.5	22.6	22.6	22.5	22.3	22.4	22.8	22.8	21.6	22.8	22.2
Jul 26	22.6	22.3	22.1	21.8	21.6	21.5	21.6	21.7	22.0	22.6	22.2	22.2	22.1	22.2	22.0	22.0	22.0	22.1	22.0	22.5	22.4	22.6	22.6	22.9	21.5	22.9	22.2
Jul 27	22.8	22.6	22.5	22.4	22.4	22.4	22.5	22.6	22.7	22.8	22.9	23.0	22.3	22.8	22.3	22.7	22.5	22.8	22.6	22.5	22.7	22.8	22.7	22.8	22.3	23.0	22.6
Jul 28	22.8	22.7	22.6	22.6	22.5	22.3	22.3	22.4	22.6	22.4	22.3	22.3	22.4	22.5	22.0	22.5	22.0	22.1	22.5	22.3	22.4	22.8	23.0	22.9	22.0	23.0	22.5
Jul 29	22.8	22.5	22.2	21.9	21.7	21.6	21.5	21.4	21.5	22.0	22.7	22.2	22.1	22.3	22.1	22.5	22.0	22.5	22.0	22.3	22.5	22.7	22.9	22.8	21.4	22.9	22.2
Jul 30	22.5	22.3	22.2	22.0	22.1	22.0	21.9	21.9	22.0	22.3	22.7	22.8	22.4	22.2	22.2	22.5	21.8	22.4	22.6	22.4	22.6	22.9	23.0	22.9	21.8	23.0	22.4
Jul 31	22.7	22.5	22.3	22.1	21.8	21.6	21.6	21.7	22.1	22.7	22.3	22.4	22.4	22.7	22.4	22.1	22.6	22.2	22.2	22.3	22.6	22.5	22.8	22.7	21.6	22.8	22.3
Diurnal Maximum	23.0	23.1	22.9	23.1	23.0	22.9	23.0	23.0	22.8	23.2	24.8	25.1	25.1	24.7	24.9	25.1	25.3	24.7	24.6	24.5	24.0	22.9	23.0	22.9			
Daiurnal Average	22.5	22.4	22.3	22.1	22.1	22.0	22.0	22.0	22.1	22.2	22.3	22.3	22.2	22.2	22.1	22.2	22.1	22.2	22.3	22.3	22.4	22.4	22.5	22.5			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

Summary of Hourly Averages

VECTOR WIND SPEED (VWS) in km/hr

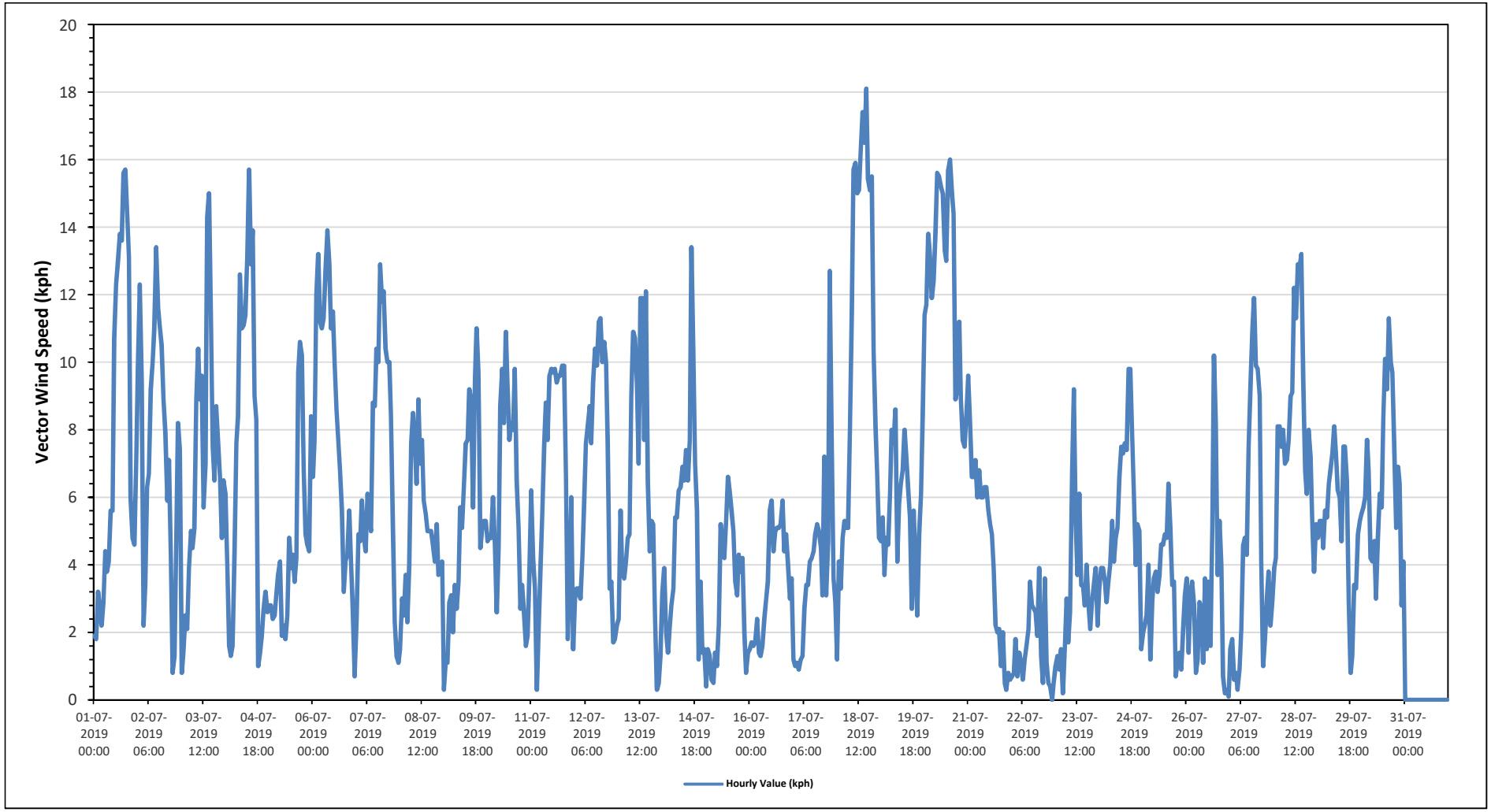
Maximum Hourly Value:	14.4	kph	on July 26 at hour 13	Hours in Service:	744
Maximum Daily Value:	9.3	kph	on July 25	Hours of Data:	744
Minimum Hourly Value:	0.0	kph	on July 13 at hour 20	Hours of Missing Data:	0
Minimum Daily Value:	1.5	kph	on July 31	Hours of Calibration:	0
Monthly Average:	1.9	kph		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
Jul 1	6.4	10.8	10.6	11.7	12.2	10.5	7.1	5.7	5.3	4.6	6.7	9.2	9.2	9.8	9.4	11.3	11.3	10.3	8.3	8.1	7.4	6.2	7.1	6.9	4.6	12.2	8.6
Jul 2	2.4	9.1	7.3	5.8	6.1	4.7	3.5	5.9	8.4	9.4	9.5	9.7	10	10.2	9.5	9.1	7.7	7.2	6.8	4.5	2.8	2.2	3.4	3.2	2.2	10.2	6.6
Jul 3	5.8	4.8	5.2	3.9	3.9	4.7	4.4	3.8	5.8	5.5	6.5	7.4	7.3	7.3	8	7.9	5.9	6.6	2.6	3.9	2.9	0.7	2.1	1.9	0.7	8.0	5.0
Jul 4	0.5	0.4	2.6	3.1	3.5	3.5	4.6	4.9	5.9	6.4	6	7.6	11.1	10.9	12.4	10.9	10.5	5.7	6.2	8.5	4.8	1.9	1.9	2	0.4	12.4	5.7
Jul 5	1.8	4	3.1	0.8	0.7	2.6	5.2	4.8	7	6.8	5.9	4.9	6.7	5.9	8.9	7	7.6	7.7	5.1	3.4	0.7	1.2	0.5	0.4	0.4	8.9	4.3
Jul 6	0.6	0.6	1.3	1.9	2.2	1.1	2.7	3.4	3.7	3.9	4.2	4.9	3.6	4.1	3	5.3	3.2	3.7	1.7	1.2	1.5	0.7	1.5	1.4	0.6	5.3	2.6
Jul 7	1	1.4	1.1	1.6	0.3	1.4	1.5	5.4	9	9.4	9.9	9.2	7.7	9.1	9.4	11.7	11	9.8	9	5.4	2.8	2.4	2.5	3.6	0.3	11.7	5.7
Jul 8	2.1	1.2	1	0.8	4.2	2.9	3.9	4.2	3.3	5	7.6	10.6	11.5	9.2	8	10.7	9.6	10.1	6.9	5	4.3	1.9	0.9	1	0.8	11.5	5.2
Jul 9	1.2	0.3	0.6	1.3	0.5	0.5	0.7	1.4	0.9	0.9	0.9	1.8	2.4	2.8	2.2	2.4	2.4	2.6	1.7	0.8	1.9	2	2.4	3.9	0.3	3.9	1.6
Jul 10	4.8	1	0.2	0.4	0.2	1.1	0.7	1.5	0.6	2.5	2.2	3.3	3.7	3.7	3.1	2.8	2.1	3.2	3.3	4.4	3.6	3.2	1.8	0.6	0.2	4.8	2.3
Jul 11	1.7	2.3	2.3	2.2	2.5	2.4	3.2	2.6	2.3	5.1	5	5.5	5.8	7.4	6.7	7.5	6.8	5.5	2	1.4	5	2.1	1.3	1.6	1.3	7.5	3.8
Jul 12	5.5	5.4	5.8	5.9	5.3	5.2	5.5	4.6	6.8	8.8	9.6	11.1	11.8	12.8	12.9	11.8	10.6	9.4	8.6	5.3	3.3	5.7	2.9	1.7	1.7	12.9	7.3
Jul 13	2	1.1	0.5	0.2	1.6	1.9	3	6.3	5.5	6.7	6.9	3.9	5.1	5.1	5	4.5	2.6	1.5	2.5	0.4	**0**	0.2	0.5	0.8	**0.0**	6.9	2.8
Jul 14	0.9	0.9	1.2	1.8	2.3	3.6	3.3	6.1	8.5	6.9	7	7.7	7.4	6.5	6.4	8.4	7.5	5.6	4.4	1.9	2	2.3	2.6	2.5	0.9	8.5	4.5
Jul 15	2.9	1	0.8	0.5	1	0.5	1.4	2.8	2.6	4.6	4.3	3.6	2.9	3.6	0.7	2.6	2.2	4.3	3.9	0.8	0.4	0.3	1.1	1.3	0.3	4.6	2.1
Jul 16	1.7	1	1.6	1	1.4	1.9	1.2	3.3	3.7	5	6.3	5.4	6.2	8.4	8.1	8.1	6.4	6.8	4.6	1.9	**0**	0.1	0.4	0.7	**0.0**	8.4	3.6
Jul 17	1.8	1.4	1.6	1.6	2	1.9	2.4	1.8	2.8	3.3	2.7	4.2	3.4	2.3	3	5	10.5	3.4	3	2.8	1.5	0.6	0.4	1.3	0.4	10.5	2.7
Jul 18	0.4	0.4	0.5	2	4.4	5.8	7.5	7.5	5.7	6.8	7.1	7.2	6	5.7	6.8	6.1	4.3	5.4	9.2	7.2	6.1	4.8	4.4	3.6	0.4	9.2	5.2
Jul 19	3.5	3.9	3.7	4	5	4.8	4.5	4.8	4.5	5.4	6.4	5.1	7.4	8.1	5.5	2.4	1.7	1.8	1.4	1.3	3.1	7.9	8.5	6.3	1.3	8.5	4.6
Jul 20	3.1	6.7	4.1	1.8	2.3	2.4	3.1	4.5	5.2	6.4	6.3	5.4	5.2	4.6	4.3	4	4.4	2.7	2.3	0.7	0.2	1	0.9	0.7	0.2	6.7	3.4
Jul 21	1.1	1.2	1.3	1.3	1.4	1.8	2.5	3	3.4	3.8	2.9	3.2	3.2	4.5	5.4	5.3	5.1	5.7	7	6.7	6.1	5.3	5.2	4.4	1.1	7.0	3.8
Jul 22	5.1	3.6	2.9	1.7	3	0.8	1.2	1.9	2.2	1.6	3.4	3.8	4.9	4.5	4.6	5.4	4.2	3.6	1.8	0.7	0.1	**0**	**0**	1	**0.0**	5.4	2.6
Jul 23	1.3	0.3	3.6	3.6	2.1	2.4	4.2	9	9.5	1.7	9	7.1	6.7	5.9	5	2.7	3.9	2	1.4	0.8	0.5	1.2	4.3	3.4	0.3	9.5	3.8
Jul 24	2.3	4.6	3.4	3.6	1.6	0.2	0.9	1.6	2.4	1.1	3.7	2.2	2.6	3.1	4.9	9.7	10.6	12.7	11.4	10.2	9.6	10.3	9.7	11.6	0.2	12.7	5.6
Jul 25	12	11.7	12.1	12.9	13.2	13.9	13.5	12.2	13.1	13.7	13.8	12.3	10.6	9.4	7.3	7.1	8.8	6.9	5.6	3.5	1.4	0.9	3.1	4.8	0.9	13.9	**9.3**
Jul 26	4.8	5.7	5.6	4.6	4.8	4.5	5.4	8.3	10.8	10.1	13.4	13.9	13.9	**14.4**	11.4	10.3	9	7.7	4.3	3	1	1.3	0.9	1.9	0.9	**14.4**	7.1
Jul 27	1.4	1.5	1.3	2	1.7	5.3	1.5	1.9	4.1	5	4.1	4.8	7.6	7.3	8	9.5	9.1	8.8	9	8.4	5.7	5.3	5.7	6.7	1.3	9.5	5.2
Jul 28	4.5	3.7	2.4	1.8	1.8	2.1	1.3	1.6	3.2	5.5	5.7	6.3	7.6	8.6	8.2	8.3	7.2	5.9	4.7	0.7	0.6	2	4.1	4.5	0.6	8.6	4.3
Jul 29	3.9	3.5	3.7	4	3.8	3.9	4.3	6.1	7.2	9.6	8.5	11.9	9	10.8	8.4	8.5	7	4.4	3.2	1.2	0.7	2.2	1.3	1.3	0.7	11.9	5.4
Jul 30	1.4	1.3	1.6	1.1	1.7	2.1	1	1.8	3.5	2	1.6	3	6.7	5.2	6.8	7.6	6	6.3	4.1	0.8	0.3	1	2	0.6	0.3	7.6	2.9
Jul 31	1.6	1.3	1.2	1.6	1.4	1.5	1.9	1.2	2	2.6	1.9	2.3	1.8	1.4	2.4	2.3	2.3	1.6	2	0.3	0.3	0.1	0.1	0.2	0.1	2.6	**1.5**
Diurnal Maximum	12	12	12	13	13	14	14	12	13	14	14	14	14	14	13	12	11	13	11	10	10	10	10	12			
Daiurnal Average	2.9	3.1	3.0	2.9	3.2	3.3	3.5	4.3	5.1	5.5	6.1	6.4	6.7	6.9	6.6	7.0	6.5	5.8	4.8	3.4	2.6	2.5	2.7	2.8			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

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

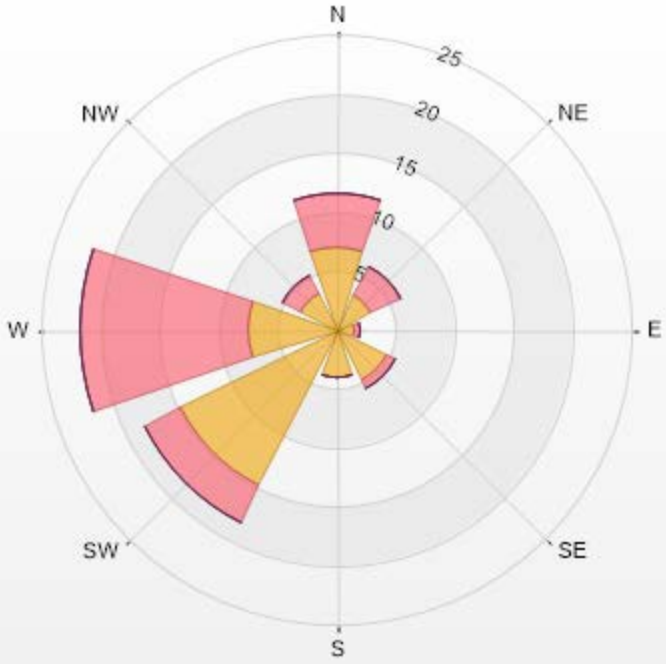
Timeseries Chart of Hourly Average for VWS - Reno Station



Wind: PRAMP RENO Poll.: PRAMP RENO-WDS[KPH] Monthly: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
Calm: 25.40% Valid Data: 100.00% Calm Avg: 1.02 [KPH]

Direction	0-6	6-26	26-29	29-39	>39.0	Total
N	6.99	4.7	0	0	0	11.69
NE	3.23	2.82	0	0	0	6.05
E	1.48	0.54	0	0	0	2.02
SE	4.7	0.94	0	0	0	5.64
S	4.03	0	0	0	0	4.03
SW	14.78	3.49	0	0	0	18.27
W	7.53	14.25	0	0	0	21.78
NW	3.49	1.61	0	0	0	5.1
Summary	46.23	28.35	0	0	0	74.58

PRAMP RENO Poll.: PRAMP RENO-WDS[KPH] 01-07-2019 00:00 - 31-07-2019 23:00 Calm: 25.40% Calm Poll Avg: 1.02[KPH]



% Icon Classes (KPH)	46	0-6	28	6-26	0	26-29	0	29-39	0	>39.0

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PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

Summary of Hourly Averages

WIND DIRECTION (VWD) in sector

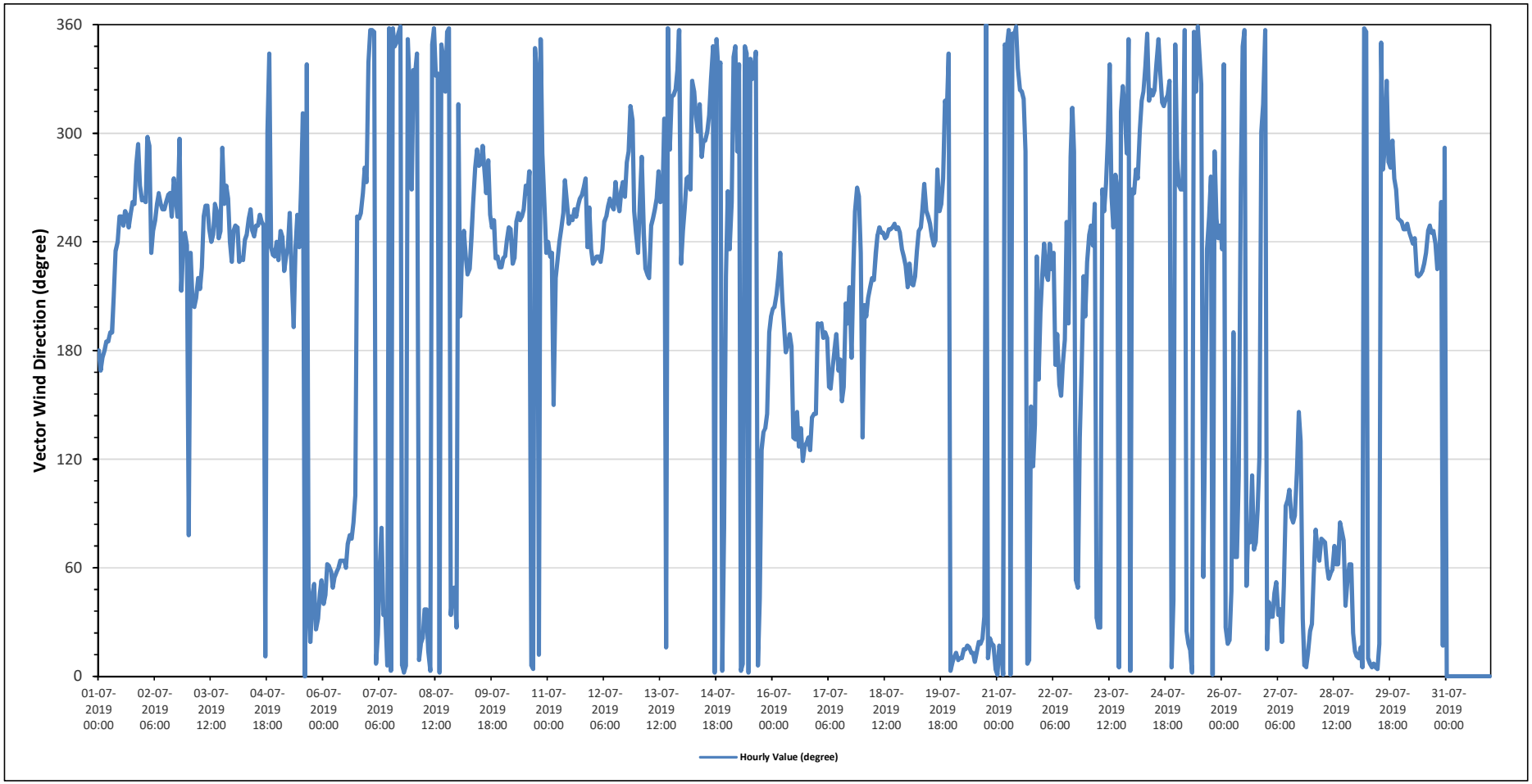
Monthly Average:	273 (W)	degree	
Hours in Service:	744		
Hours of Data:	744		
Hours of Missing Data:	0		
Hours of Calibration:	0		
Operational Uptime:	100.0		

Day	Hourly Period Starting at (MST)																							Daily Average	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Degree	Quadrant
Jul 1	WNW	N	N	NNE	NNE	NNE	NNE	NNE	N	NW	NW	W	W	W	W	W	WSW	W	W	W	W	W	WSW	WSW	302	WNW
Jul 2	WSW	WSW	W	W	W	W	WNW	NNW	NNW	NNW	NNW	N	N	N	NNW	NNW	NNW	WNW	NW	WNW	W	WSW	WSW	SW	317	NW
Jul 3	WSW	WNW	W	W	W	WSW	W	WNW	NNW	NNW	N	N	NNW	NW	NNE	NNW	NW	NW	WNW	W	NW	W	WNW	NNW	314	NW
Jul 4	NE	N	N	NNW	N	NNE	NNE	NNE	NNE	NNE	N	NNE	NE	NE	NE	NE	NE	NNE	NNE	ENE	ENE	NE	NNE	NNE	32	NNE
Jul 5	NNE	ENE	ENE	ENE	ENE	ENE	E	E	ESE	ESE	ESE	ESE	SE	SE	ESE	ESE	ESE	ESE	SE	SE	SSE	SE	SW	S	110	ESE
Jul 6	SE	SSW	SSW	WSW	SW	SW	SE	SE	E	SE	SE	SE	SE	SE	SSW	SW	SW	SW	W	WSW	SW	WSW	WNW	W	180	S
Jul 7	SSW	W	W	N	SSW	SW	W	N	NNE	NNE	NNE	NNE	N	N	N	N	N	N	NNE	N	N	N	N	N	6	N
Jul 8	NNE	N	NNW	ENE	SE	E	E	NE	ENE	NNE	NNE	NNE	NNE	NNE	NNE	NE	NNE	NNE	NNE	NNE	N	NNW	NW	W	31	NNE
Jul 9	WSW	WNW	SW	SW	SW	SW	SSW	W	W	SSW	WSW	SE	SSE	SSW	S	S	SSE	S	S	S	SE	SE	SE	ESE	176	S
Jul 10	SE	SSE	ENE	ENE	E	ENE	E	SE	NNE	N	NNE	NE	N	N	N	N	WNW	SW	SW	SW	SW	SW	SW	SW	312	NW
Jul 11	SW	SW	SSW	SW	SW	SW	WSW	WSW	SW	WSW	SW	SW	SW	WSW	SW	SW	SW	SW	SW	WNW	NE	SSE	SSW	SSW	232	SW
Jul 12	SSW	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	NNW	N	NE	SE	248	WSW
Jul 13	NNW	NNE	SW	NNE	NE	NE	NNE	NE	NE	N	NE	NNE	N	NW	WNW	WNW	W	W	WSW	ESE	SSE	SW	WSW	SW	357	N
Jul 14	SW	SW	SW	SW	SW	SW	SSW	WSW	WSW	WSW	WSW	WSW	WSW	W	WNW	N	NNE	NNE	N	NNW	W	WSW	WSW	W	273	W
Jul 15	ENE	ESE	SSE	SE	SSE	S	SSW	SW	SSW	WSW	WSW	WSW	W	W	NW	WSW	WSW	WSW	WSW	NNW	ESE	WSW	SW	SW	239	WSW
Jul 16	SSW	SW	SSW	SW	SW	SW	SSW	SW	SW	WSW	WSW	SW	SW	WSW	SW	WSW	SW	WSW	WSW	SW	WSW	SW	SW	SW	236	SW
Jul 17	SSW	SSW	SSW	SW	SSW	SSW	SSW	SSE	S	SE	S	SSE	SE	SSW	SW	SSW	SW	WSW	E	ENE	SW	SSE	E	NE	192	S
Jul 18	SW	SSW	SW	SW	WSW	WSW	WSW	WSW	W	W	W	W	W	W	W	W	W	W	WSW	W	W	W	W	W	266	W
Jul 19	NNW	N	NNW	NNW	N	NNE	NNE	NNE	NNE	N	N	N	N	N	NNW	NW	WNW	NNW	NE	SSW	SW	SW	WSW	W	335	NNW
Jul 20	SW	WSW	SW	SSW	SW	SSW	SW	SW	SW	WSW	WSW	SW	SW	SW	SW	SW	WSW	WSW	SW	SSW	S	SW	SW	SSW	232	SW
Jul 21	SW	SW	SW	SW	SSW	S	S	S	S	S	S	S	SSW	SE	SE	SE	SE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	145	SE
Jul 22	SE	SE	SE	SSE	SE	S	S	S	S	ENE	NE	ENE	N	NNE	N	N	N	N	N	NNE	NNE	WSW	WSW	SW	51	NE
Jul 23	SW	W	W	NNW	WNW	NNW	NNE	NE	ENE	NNE	W	W	W	W	W	NNE	E	SSE	NNW	NE	NNW	N	ENE	N	331	NNW
Jul 24	NNE	WSW	NE	NE	NE	ENE	SSW	WSW	NNW	NNE	W	NNW	W	WNW	WNW	WSW	W	W	W	W	W	W	W	W	276	W
Jul 25	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	WNW	W	WNW	WNW	W	WSW	SW	SW	SW	268	W
Jul 26	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WSW	W	W	SW	WSW	SW	SSW	252	WSW
Jul 27	SSW	SW	SSW	SW	SW	SW	SSW	SW	SW	SW	SW	SW	WSW	WSW	WSW	W	W	W	W	W	W	NW	NW	NW	258	WSW
Jul 28	NW	NW	WNW	WNW	WSW	WSW	SSW	SSW	SW	WSW	W	W	WSW	WSW	WSW	WSW	SW	WSW	WSW	S	SSW	SSW	SSW	SSW	250	WSW
Jul 29	SSW	SW	SW	SW	SSW	SSW	SSW	SW	WSW	WSW	WSW	W	W	W	W	W	W	WNW	NW	N	SW	SSW	SW	WSW	250	WSW
Jul 30	SW	SW	SW	SSW	SW	SW	SW	SW	WSW	SSW	SSE	SW	SW	WSW	WSW	WSW	WSW	WSW	NNE	NE	SW	SW	NE	SSW	244	WSW
Jul 31	SW	SW	SSW	SSW	SSW	SW	SW	S	S	SSE	S	S	SW	SSW	SSW	SSW	SSW	SW	WSW	WSW	NE	WSW	WSW		204	SSW

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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



REFERENCE DOCUMENTS

HOURLY INSTANTANEOUS DATA

986b STATION

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

Summary of Hourly Instantaneous Maximums

SULPHUR DIOXIDE (SO_2) in ppb

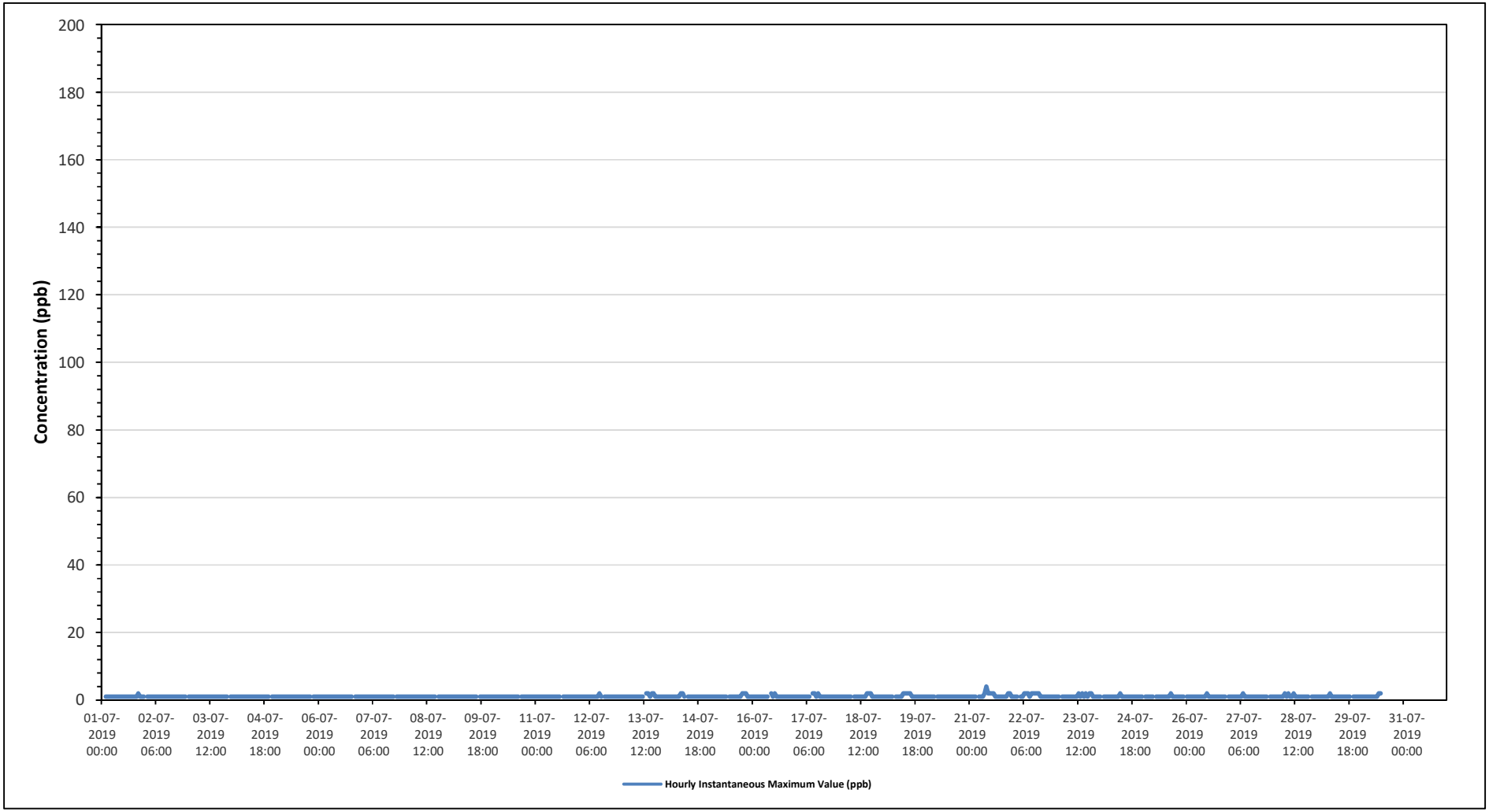
Maximum Hourly Value:	4	ppb	on July 21 at hour 9	Hours in Service:	744
Maximum Daily Value:	1.4	ppb	on July 21	Hours of Data:	676
Minimum Hourly Value:	1	ppb	on July 1 at hour 0	Hours of Missing Data:	35
Minimum Daily Value:	1.0	ppb	on July 2	Hours of Calibration:	33
Monthly Average:	1.1	ppb		Operational Uptime:	95.3

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
Jul 1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1.0
Jul 2	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1.0
Jul 3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1.0
Jul 4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1.0
Jul 5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1.0
Jul 6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1.0
Jul 7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1.0
Jul 8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1.0
Jul 9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1.0
Jul 10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1.0
Jul 11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1.0
Jul 12	1	1	1	1	1	1	1	1	1	1	1	2	1	S	1	1	1	1	1	1	1	1	1	1	1	2	1.0
Jul 13	1	1	1	1	1	1	1	1	1	1	1	1	S	2	2	1	2	2	1	1	1	1	1	1	1	2	1.2
Jul 14	1	1	1	1	1	1	1	1	2	2	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1
Jul 15	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	2	2	2	1	1	1	1	2	1.1
Jul 16	1	1	1	1	1	1	1	1	1	S	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1
Jul 17	1	1	1	1	1	1	1	1	S	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1
Jul 18	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	2	1.1
Jul 19	1	1	1	1	1	1	S	1	1	1	1	2	2	2	2	2	1	1	1	1	1	1	1	1	1	2	1.2
Jul 20	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0
Jul 21	1	1	1	1	S	1	1	1	2	4	2	2	2	2	1	1	1	1	1	1	1	2	2	1	1	4	1.4
Jul 22	1	1	1	S	1	1	2	2	2	1	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	2	1.3
Jul 23	1	1	S	1	1	1	1	1	1	1	1	1	2	1	2	1	2	1	2	2	1	1	1	1	1	2	1.2
Jul 24	1	S	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0
Jul 25	S	1	1	1	1	1	S1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	S	1	2	1.0
Jul 26	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	S	1	1	2	1.0
Jul 27	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	2	1.0
Jul 28	1	1	1	1	1	1	2	1	2	1	1	2	1	1	1	1	1	1	1	1	S	1	1	1	1	2	1.1
Jul 29	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	2	1.0
Jul 30	1	1	1	1	1	1	1	1	1	1	2	2	C	C	N	N	N	N	N	N	N	N	N	N	1	2	-
Jul 31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-	-	-
Diurnal Maximum	1	1	1	1	1	1	2	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	1			
Daiurnal Average	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.3	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for SO2 - 986b Station



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

Summary of Hourly Instantaneous Maximums

TOTAL REDUCED SULPHUR (TRS) in ppb

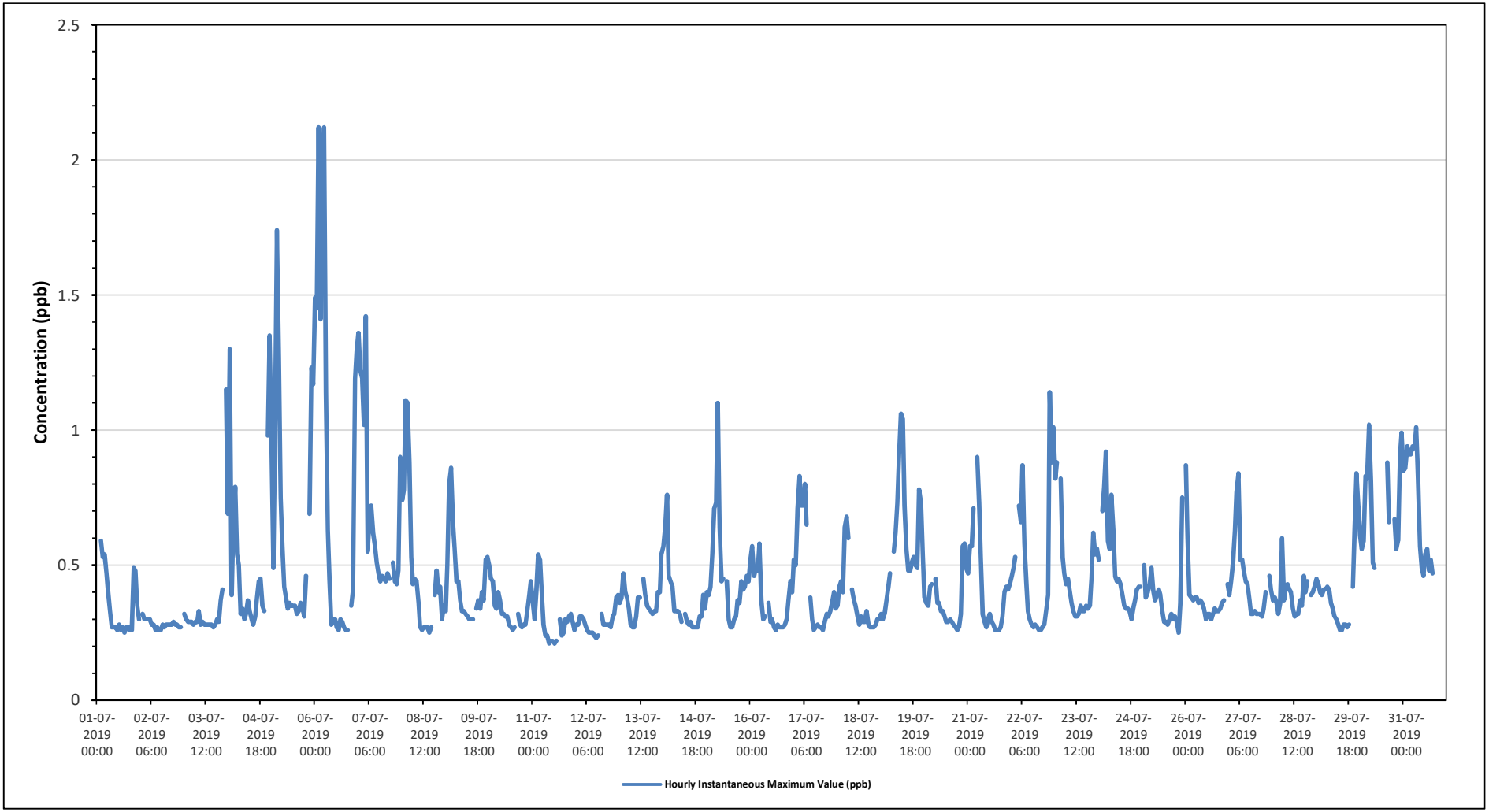
Maximum Hourly Value:	2.12	ppb	on July 6 at hour 2	Hours in Service:	744
Maximum Daily Value:	0.81	ppb	on July 6	Hours of Data:	698
Minimum Hourly Value:	0.21	ppb	on July 11 at hour 9	Hours of Missing Data:	8
Minimum Daily Value:	0.28	ppb	on July 2	Hours of Calibration:	38
Monthly Average:	0.45	ppb		Operational Uptime:	98.9

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jul 1	0.43	S	0.59	0.53	0.54	0.47	0.4	0.33	0.27	0.27	0.27	0.26	0.28	0.26	0.27	0.25	0.27	0.27	0.26	0.26	0.49	0.48	0.35	0.3	0.25	0.59	0.35
Jul 2	S	0.32	0.3	0.3	0.3	0.3	0.28	0.28	0.26	0.27	0.26	0.26	0.28	0.27	0.28	0.28	0.28	0.28	0.29	0.28	0.28	0.27	0.27	S	0.26	0.32	0.28
Jul 3	0.32	0.3	0.29	0.29	0.29	0.28	0.29	0.29	0.33	0.28	0.29	0.28	0.28	0.28	0.28	0.28	0.27	0.28	0.3	0.29	0.37	0.41	S	1.15	0.27	1.15	0.34
Jul 4	0.69	1.3	0.39	0.65	0.79	0.54	0.5	0.32	0.34	0.3	0.32	0.37	0.33	0.3	0.28	0.31	0.38	0.44	0.45	0.35	0.33	S	0.98	1.35	0.28	1.35	0.52
Jul 5	0.97	0.49	0.99	1.74	1.27	0.75	0.57	0.42	0.38	0.34	0.36	0.35	0.35	0.35	0.32	0.33	0.36	0.35	0.31	0.46	S	0.69	1.23	1.17	0.31	1.74	0.63
Jul 6	1.49	1.45	**2.12**	1.41	1.87	**2.12**	1.14	0.63	0.45	0.28	0.3	0.3	0.27	0.26	0.3	0.29	0.27	0.26	0.26	S	0.35	0.41	1.19	1.29	0.26	**2.12**	**0.81**
Jul 7	1.36	1.22	1.19	1.02	1.42	0.55	0.68	0.72	0.62	0.57	0.51	0.47	0.44	0.46	0.45	0.44	0.47	0.45	S	0.51	0.44	0.43	0.48	0.9	0.43	1.42	0.69
Jul 8	0.74	0.78	1.11	1.1	0.88	0.53	0.43	0.45	0.44	0.36	0.27	0.26	0.27	0.27	0.27	0.25	0.27	S	0.39	0.48	0.4	0.42	0.3	0.35	0.25	1.11	0.48
Jul 9	0.33	0.5	0.8	0.86	0.65	0.56	0.44	0.44	0.37	0.33	0.33	0.32	0.31	0.3	0.3	0.3	S	0.34	0.37	0.34	0.4	0.37	0.52	0.53	0.30	0.86	0.44
Jul 10	0.5	0.45	0.44	0.35	0.34	0.4	0.37	0.32	0.32	0.31	0.31	0.28	0.27	0.26	0.27	S	0.32	0.28	0.27	0.28	0.28	0.33	0.39	0.44	0.26	0.50	0.34
Jul 11	0.37	0.3	0.41	0.54	0.52	0.39	0.28	0.24	0.24	**0.21**	0.22	0.22	0.21	0.22	S	0.3	0.24	0.25	0.3	0.29	0.31	0.32	0.29	0.26	0.21	0.54	0.30
Jul 12	0.28	0.28	0.31	0.31	0.3	0.28	0.26	0.25	0.25	0.25	0.24	0.23	0.24	S	0.32	0.28	0.28	0.28	0.28	0.27	0.31	0.32	0.38	0.39	0.23	0.39	0.29
Jul 13	0.36	0.38	0.47	0.4	0.38	0.34	0.28	0.27	0.27	0.31	0.38	0.38	S	0.45	0.39	0.35	0.34	0.33	0.32	0.33	0.33	0.4	0.4	0.54	0.27	0.54	0.37
Jul 14	0.57	0.64	0.76	0.46	0.44	0.42	0.33	0.33	0.33	0.32	0.29	S	0.32	0.29	0.28	0.29	0.27	0.27	0.27	0.27	0.31	0.31	0.39	0.34	0.27	0.76	0.37
Jul 15	0.4	0.39	0.42	0.54	0.71	0.73	1.1	0.64	0.44	0.45	S	0.44	0.3	0.27	0.27	0.3	0.31	0.37	0.36	0.44	0.41	0.42	0.46	0.44	0.27	1.10	0.46
Jul 16	0.52	0.57	0.46	0.49	0.48	0.58	0.37	0.3	0.31	S	0.36	0.29	0.3	0.27	0.26	0.28	0.27	0.27	0.27	0.27	0.28	0.3	0.37	0.44	0.4	0.26	0.58	0.37
Jul 17	0.52	0.5	0.71	0.83	0.72	0.72	0.8	0.65	S	0.38	0.3	0.26	0.27	0.28	0.27	0.27	0.26	0.29	0.32	0.31	0.33	0.36	0.4	0.34	0.26	0.83	0.44
Jul 18	0.35	0.42	0.44	0.4	0.64	0.68	0.6	S	0.41	0.37	0.35	0.31	0.28	0.31	0.29	0.29	0.33	0.28	0.27	0.27	0.27	0.28	0.3	0.3	0.27	0.68	0.37
Jul 19	0.32	0.3	0.32	0.37	0.42	0.47	S	0.55	0.62	0.73	0.91	1.06	1.04	0.72	0.56	0.48	0.48	0.51	0.53	0.5	0.49	0.78	0.73	0.54	0.30	1.06	0.58
Jul 20	0.38	0.36	0.35	0.42	0.43	S	0.45	0.36	0.36	0.33	0.33	0.31	0.29	0.29	0.3	0.29	0.28	0.27	0.26	0.27	0.32	0.57	0.58	0.49	0.26	0.58	0.36
Jul 21	0.47	0.57	0.57	0.71	S	0.9	0.73	0.53	0.32	0.29	0.27	0.3	0.32	0.29	0.28	0.26	0.26	0.26	0.27	0.31	0.4	0.42	0.41	0.43	0.26	0.90	0.42
Jul 22	0.46	0.49	0.53	S	0.72	0.66	0.87	0.58	0.44	0.33	0.3	0.28	0.27	0.28	0.27	0.26	0.26	0.27	0.28	0.33	0.39	1.14	0.88	1.01	0.26	1.14	0.49
Jul 23	0.82	0.88	S	0.82	0.53	0.47	0.43	0.45	0.41	0.36	0.33	0.31	0.31	0.32	0.35	0.33	0.33	0.35	0.34	0.35	0.45	0.62	0.54	0.56	0.31	0.88	0.46
Jul 24	0.52	S	0.7	0.79	0.92	0.59	0.56	0.76	0.63	0.46	0.44	0.45	0.43	0.39	0.35	0.34	0.34	0.33	0.3	0.34	0.37	0.41	0.42	0.42	0.30	0.92	0.49
Jul 25	S	0.5	0.38	0.4	0.43	0.49	0.41	0.37	0.39	0.41	0.39	0.33	0.29	0.29	0.28	0.3	0.32	0.3	0.31	0.29	0.25	0.36	0.75	S	0.25	0.75	0.37
Jul 26	0.87	0.6	0.39	0.38	0.37	0.38	0.38	0.36	0.37	0.36	0.34	0.3	0.32	0.32	0.3	0.32	0.34	0.33	0.33	0.34	0.36	0.37	S	0.43	0.30	0.87	0.39
Jul 27	0.39	0.44	0.51	0.63	0.77	0.84	0.52	0.52	0.48	0.44	0.43	0.37	0.32	0.32	0.33	0.32	0.32	0.32	0.31	0.34	0.4	S	0.46	0.41	0.31	0.84	0.44
Jul 28	0.37	0.38	0.36	0.32	0.36	0.6	0.37	0.41	0.43	0.41	0.4	0.34	0.31	0.32	0.32	0.37	0.35	0.46	0.4	0.44	S	0.39	0.4	0.42	0.31	0.60	0.39
Jul 29	0.45	0.43	0.4	0.39	0.41	0.41	0.42	0.41	0.36	0.34	0.31	0.3	0.28	0.26	0.26	0.28	0.28	0.27	0.28	S	0.42	0.62	0.84	0.73	0.26	0.84	0.40
Jul 30	0.61	0.56	0.59	0.83	0.82	1.02	0.81	0.51	0.49	C	C	C	C	C	C	0.88	0.66	Y	S	0.67	0.56	0.59	0.91	0.99	0.49	1.02	-
Jul 31	0.85	0.86	0.94	0.91	0.91	0.94	0.93	1.01	0.82	0.57	0.49	0.46	0.54	0.56	0.48	0.52	0.47	N	N	N	N	N	N	N	0.46	1.01	-
Diurnal Maximum	1.49	1.45	2.12	1.74	1.87	2.12	1.14	1.01	0.82	0.73	0.91	1.06	1.04	0.72	0.56	0.88	0.66	0.51	0.53	0.67	0.56	1.14	1.23	1.35			
Daiurnal Average	0.58	0.57	0.61	0.64	0.65	0.61	0.53	0.46	0.41	0.37	0.36	0.35	0.34	0.33	0.32	0.33	0.33	0.32	0.32	0.35	0.37	0.46	0.56	0.60			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for TRS - 986b Station



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

Summary of Hourly Instantaneous Maximums

TOTAL HYDROCARBONS (THC) in ppm

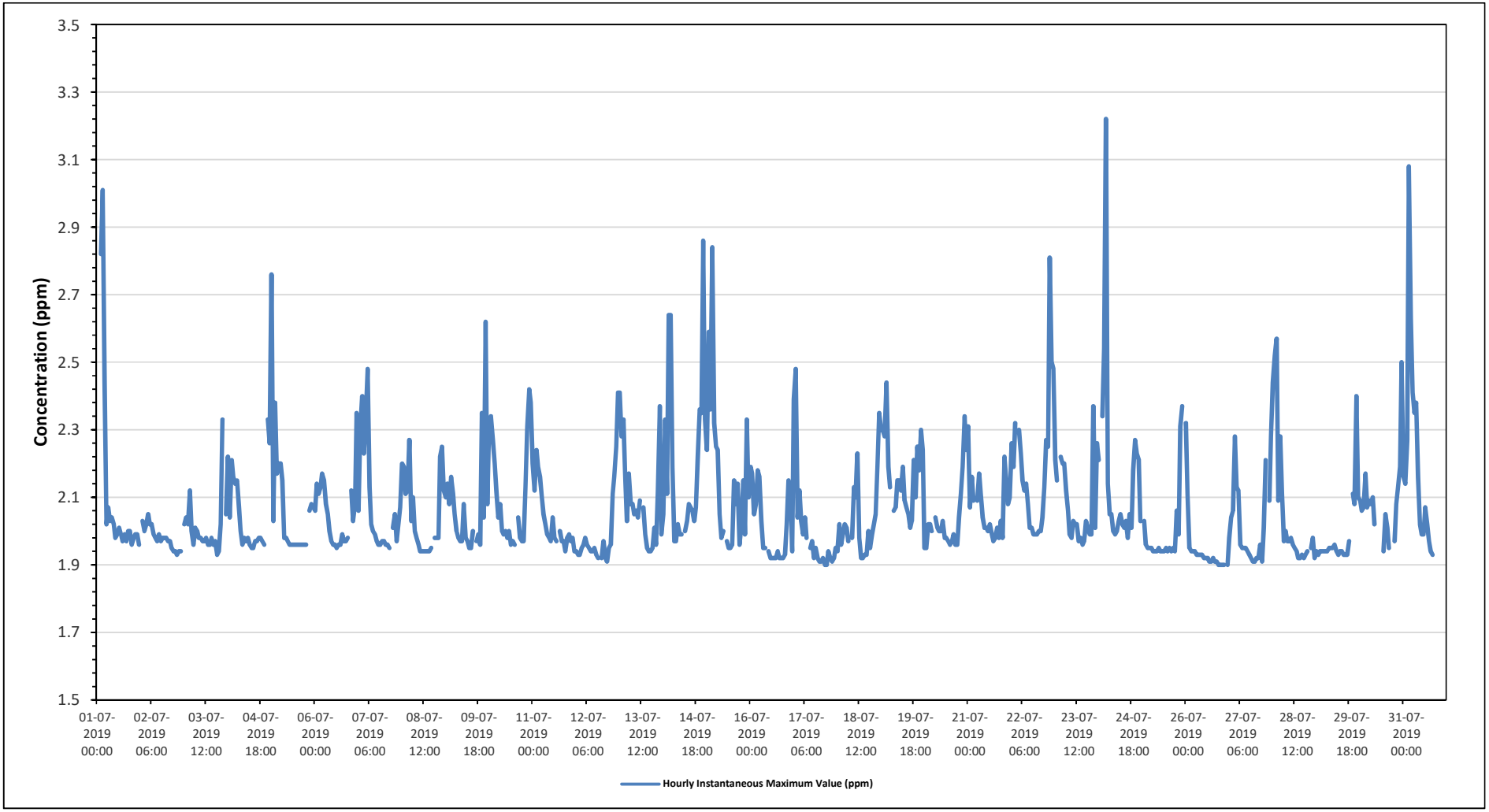
Maximum Hourly Value:	3.22	ppm	on July 24 at hour 4	Hours in Service:	744
Maximum Daily Value:	2.19	ppm	on July 14	Hours of Data:	700
Minimum Hourly Value:	1.90	ppm	on July 17 at hour 17	Hours of Missing Data:	8
Minimum Daily Value:	1.95	ppm	on July 26	Hours of Calibration:	36
Monthly Average:	2.06	ppm		Operational Uptime:	98.9

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jul 1	2.41	S	2.82	3.01	2.44	2.02	2.07	2.03	2.04	2.02	1.98	1.99	2.01	1.99	1.97	1.99	1.97	2.00	2.00	1.96	1.98	1.99	1.99	1.96	1.96	3.01	2.11
Jul 2	S	2.03	2.00	2.02	2.05	2.02	2.02	1.99	1.98	1.97	1.99	1.97	1.98	1.98	1.98	1.97	1.97	1.95	1.94	1.94	1.93	1.94	1.94	S	1.93	2.05	1.98
Jul 3	2.02	2.04	2.02	2.12	2.00	1.96	2.01	2.00	1.98	1.98	1.97	1.97	1.98	1.96	1.96	1.98	1.96	1.97	1.93	1.94	2.02	2.33	S	2.05	1.93	2.33	2.01
Jul 4	2.22	2.04	2.21	2.16	2.14	2.15	2.07	2.00	1.96	1.98	1.97	1.98	1.96	1.95	1.95	1.97	1.97	1.98	1.98	1.97	1.96	S	2.33	2.26	1.95	2.33	2.05
Jul 5	2.76	2.03	2.38	2.17	2.20	2.20	2.15	1.98	1.98	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	S	2.06	2.08	2.07	1.96	2.76	2.07
Jul 6	2.06	2.14	2.11	2.13	2.17	2.15	2.08	2.05	2.00	1.97	1.96	1.96	1.95	1.96	1.96	1.99	1.97	1.97	1.98	S	2.12	2.03	2.08	2.35	1.95	2.35	2.05
Jul 7	2.06	2.31	2.40	2.23	2.33	2.48	2.13	2.02	2.00	1.99	1.97	1.96	1.96	1.97	1.97	1.96	1.96	1.95	S	2.01	2.05	1.97	2.02	2.07	1.95	2.48	2.08
Jul 8	2.20	2.19	2.11	2.12	2.27	2.03	2.10	2.00	1.98	1.96	1.94	1.94	1.94	1.94	1.94	1.94	1.95	S	1.98	1.98	1.98	2.22	2.25	2.12	1.94	2.27	2.05
Jul 9	2.10	2.14	2.08	2.16	2.11	2.05	2.00	1.98	1.97	1.97	2.08	1.98	1.97	1.95	1.95	2.00	S	1.97	1.99	1.96	2.35	2.04	2.62	2.08	1.95	2.62	2.07
Jul 10	2.32	2.34	2.27	2.20	2.12	2.04	2.08	2.00	1.99	2.00	1.98	2.00	1.96	1.97	1.96	S	2.04	1.98	1.97	1.97	2.13	2.31	2.42	2.38	1.96	2.42	2.11
Jul 11	2.20	2.12	2.24	2.19	2.16	2.10	2.05	2.02	1.99	1.98	1.97	2.04	1.98	1.97	S	2.00	1.97	1.97	1.94	1.98	1.99	1.97	1.98	1.94	1.94	2.24	2.03
Jul 12	1.94	1.93	1.93	1.95	1.96	1.98	1.96	1.95	1.94	1.94	1.95	1.93	1.92	S	1.92	1.97	1.92	1.91	1.95	1.96	2.11	2.16	2.25	2.41	1.91	2.41	1.99
Jul 13	2.41	2.28	2.33	2.15	2.03	2.17	2.08	2.08	2.05	2.06	2.04	2.09	S	2.07	1.99	1.95	1.94	1.94	1.95	2.01	1.96	2.12	2.37	1.99	1.94	2.41	2.09
Jul 14	2.05	2.33	2.11	2.64	2.64	2.19	1.97	1.97	2.02	1.99	1.99	S	2.00	2.03	2.08	2.07	2.06	2.03	2.07	2.22	2.36	2.35	2.86	2.33	1.97	2.86	**2.19**
Jul 15	2.24	2.59	2.36	2.84	2.32	2.25	2.24	2.05	1.98	2.00	S	1.97	1.95	1.95	1.96	2.15	2.08	2.14	1.96	2.02	2.15	1.99	2.33	2.10	1.95	2.84	2.16
Jul 16	2.19	2.17	2.05	2.08	2.18	2.16	2.03	1.95	1.95	S	1.94	1.92	1.92	1.92	1.92	1.94	1.92	1.92	1.92	1.93	2.02	2.15	2.09	1.94	1.92	2.19	2.01
Jul 17	2.39	2.48	2.04	2.12	2.03	1.99	2.04	1.98	S	1.95	1.97	1.92	1.95	1.92	1.91	1.91	1.92	1.90	1.90	1.94	1.92	1.91	1.92	1.95	1.90	2.48	2.00
Jul 18	1.94	2.02	1.96	1.99	2.02	2.01	1.97	S	1.98	2.13	2.10	2.23	1.98	1.92	1.92	1.93	1.93	2.00	1.95	1.99	2.02	2.05	2.19	2.35	1.92	2.35	2.03
Jul 19	2.30	2.30	2.28	2.44	2.19	2.13	S	2.06	2.07	2.15	2.15	2.12	2.19	2.09	2.07	2.05	2.01	2.03	2.21	2.10	2.25	2.18	2.30	2.24	2.01	2.44	2.17
Jul 20	1.95	1.95	2.02	2.02	2.00	S	2.04	2.01	2.00	2.00	2.03	1.98	1.98	1.97	1.96	1.97	1.99	1.96	1.96	2.04	2.11	2.19	2.34	2.24	1.95	2.34	2.03
Jul 21	2.31	2.07	2.16	2.09	S	2.09	2.17	2.11	2.04	2.01	2.01	2.00	2.02	1.99	1.97	1.98	2.01	1.98	2.03	1.98	2.22	2.15	2.08	2.10	1.97	2.31	2.07
Jul 22	2.26	2.19	2.32	S	2.30	2.23	2.15	2.12	2.14	2.08	2.01	2.01	1.99	1.99	1.99	2.00	2.00	2.04	2.13	2.27	2.25	2.81	2.50	2.48	1.99	2.81	2.19
Jul 23	2.21	2.15	S	2.22	2.20	2.20	2.12	2.06	1.99	1.98	2.03	2.02	2.02	1.97	1.98	1.96	1.97	2.03	2.01	1.99	1.99	2.37	2.01	2.26	1.96	2.37	2.08
Jul 24	2.21	S	2.34	2.54	**3.22**	2.14	2.05	2.05	2.00	1.99	2.00	2.03	2.05	2.02	2.01	2.03	1.98	2.05	2.01	2.18	2.27	2.23	2.21	2.03	1.98	**3.22**	2.16
Jul 25	S	2.03	1.96	1.95	1.95	1.95	1.94	1.94	1.94	1.95	1.94	1.94	1.94	1.95	1.94	1.95	1.94	1.95	1.94	2.06	1.99	2.31	2.37	S	1.94	2.37	1.99
Jul 26	2.32	2.11	1.95	1.94	1.94	1.94	1.93	1.93	1.93	1.93	1.92	1.92	1.92	1.91	1.91	1.92	1.91	1.91	1.90	1.90	1.90	1.90	S	1.90	1.90	2.32	1.95
Jul 27	1.98	2.04	2.06	2.28	2.13	2.12	1.96	1.95	1.95	1.95	1.94	1.93	1.92	1.91	1.91	1.92	1.92	1.96	1.91	2.01	2.21	S	2.09	2.28	1.91	2.28	2.01
Jul 28	2.44	2.52	2.57	2.09	2.28	2.11	1.97	2.00	1.97	1.97	1.98	1.96	1.95	1.94	1.92	1.92	1.93	1.92	1.93	1.94	S	1.95	1.98	1.92	1.92	2.57	2.05
Jul 29	1.94	1.93	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.96	1.94	1.93	1.94	1.94	1.93	1.93	1.93	1.97	S	2.11	2.08	2.40	2.10	1.93	2.40	1.98
Jul 30	2.09	2.06	2.07	2.17	2.07	2.09	2.08	2.10	2.02	C	C	C	C	1.94	2.05	2.01	1.95	Y	S	1.97	2.08	2.13	2.19	2.50	1.94	2.50	2.09
Jul 31	2.16	2.14	2.27	3.08	2.63	2.41	2.35	2.38	2.16	2.02	1.99	1.99	2.07	2.02	1.97	1.94	1.93	N	N	N	N	N	N	N	1.93	3.08	-
Diurnal Maximum	2.76	2.59	2.82	3.08	3.22	2.48	2.35	2.38	2.16	2.15	2.15	2.23	2.19	2.09	2.08	2.15	2.08	2.14	2.21	2.27	2.36	2.81	2.86	2.50			
Daiurnal Average	2.20	2.16	2.18	2.23	2.20	2.11	2.06	2.02	2.00	1.99	1.99	1.99	1.98	1.97	1.96	1.98	1.97	1.98	1.98	2.01	2.09	2.14	2.22	2.16			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for THC - 986b Station



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PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

Summary of Hourly Instantaneous Maximums

METHANE (CH4) in ppm

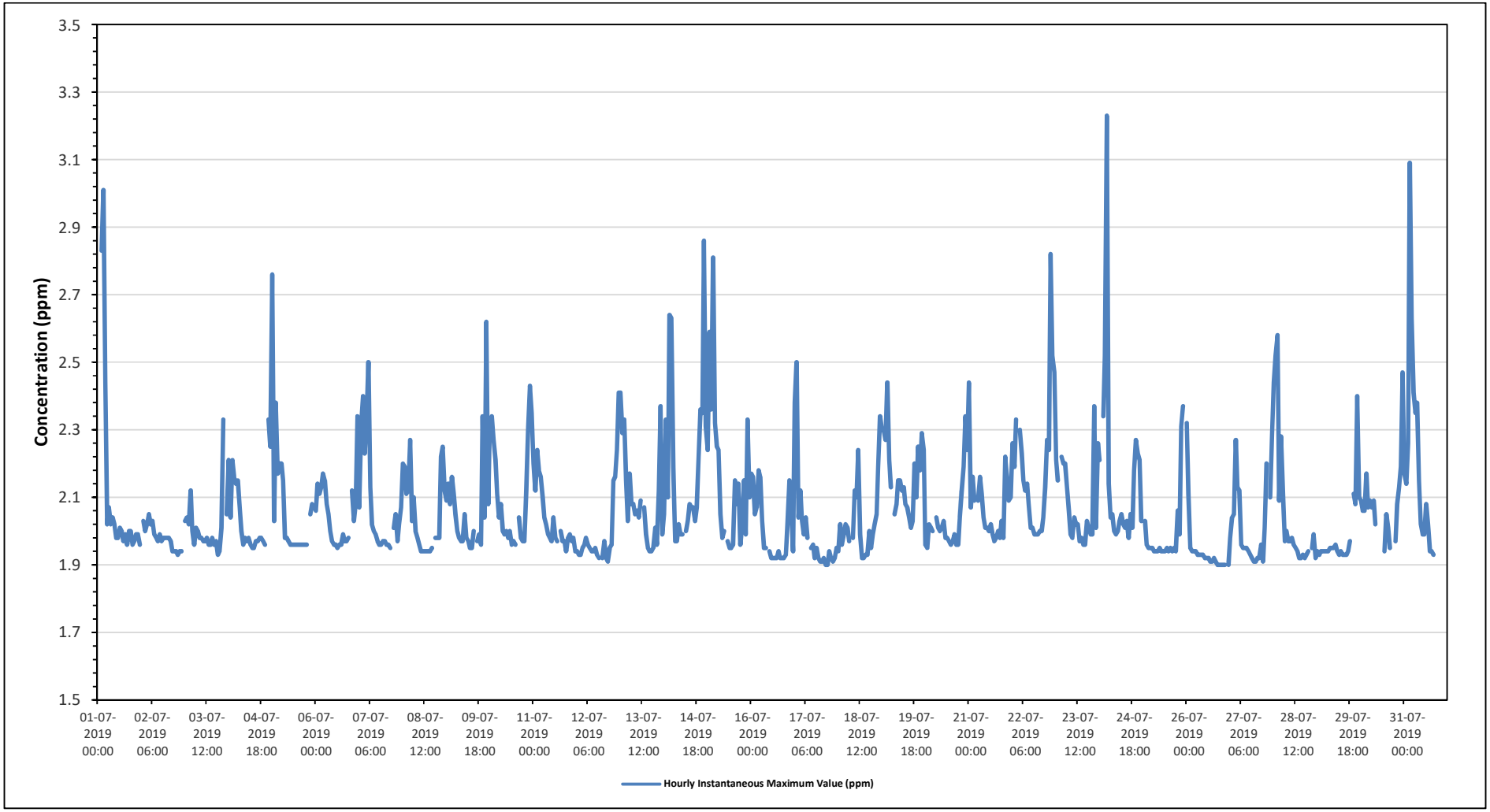
Maximum Hourly Value:	3.23	ppm	on July 24 at hour 4	Hours in Service:	744
Maximum Daily Value:	2.19	ppm	on July 14	Hours of Data:	700
Minimum Hourly Value:	1.90	ppm	on July 17 at hour 17	Hours of Missing Data:	9
Minimum Daily Value:	1.94	ppm	on July 26	Hours of Calibration:	35
Monthly Average:	2.06	ppm		Operational Uptime:	98.8

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jul 1	2.42	S	2.83	3.01	2.44	2.02	2.07	2.02	2.04	2.02	1.98	1.98	2.01	2.00	1.97	1.99	1.96	2.00	2.00	1.96	1.97	1.99	1.99	1.96	1.96	3.01	2.11
Jul 2	S	2.03	2.00	2.02	2.05	2.02	2.03	1.99	1.98	1.97	1.99	1.97	1.98	1.98	1.98	1.98	1.97	1.94	1.94	1.94	1.93	1.94	1.94	S	1.93	2.05	1.98
Jul 3	2.03	2.04	2.02	2.12	2.00	1.96	2.01	2.00	1.98	1.98	1.97	1.97	1.98	1.96	1.96	1.98	1.96	1.97	1.93	1.94	2.01	2.33	S	2.05	1.93	2.33	2.01
Jul 4	2.21	2.04	2.21	2.16	2.14	2.15	2.07	2.00	1.96	1.98	1.97	1.98	1.96	1.95	1.95	1.97	1.97	1.98	1.98	1.97	1.96	S	2.33	2.25	1.95	2.33	2.05
Jul 5	2.76	2.03	2.38	2.17	2.20	2.20	2.15	1.98	1.98	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	S	2.05	2.08	2.07	1.96	2.76	2.07
Jul 6	2.06	2.14	2.11	2.13	2.17	2.15	2.08	2.05	2.00	1.97	1.96	1.96	1.95	1.96	1.96	1.99	1.97	1.97	1.98	S	2.12	2.03	2.08	2.34	1.95	2.34	2.05
Jul 7	2.07	2.31	2.40	2.23	2.33	2.50	2.13	2.02	2.00	1.99	1.97	1.96	1.96	1.97	1.97	1.96	1.96	1.95	S	2.01	2.05	1.97	2.02	2.07	1.95	2.50	2.08
Jul 8	2.20	2.19	2.11	2.12	2.27	2.03	2.10	2.00	1.98	1.96	1.94	1.94	1.94	1.94	1.94	1.94	1.95	S	1.98	1.98	1.98	2.22	2.25	2.12	1.94	2.27	2.05
Jul 9	2.09	2.14	2.08	2.16	2.11	2.05	2.00	1.98	1.97	1.97	2.05	1.98	1.97	1.95	1.95	2.00	S	1.97	1.99	1.96	2.34	2.04	2.62	2.08	1.95	2.62	2.06
Jul 10	2.32	2.34	2.27	2.21	2.11	2.04	2.08	2.00	1.99	2.00	1.98	2.00	1.96	1.97	1.96	S	2.04	1.98	1.97	1.97	2.12	2.31	2.43	2.35	1.96	2.43	2.10
Jul 11	2.20	2.12	2.24	2.18	2.16	2.10	2.04	2.02	1.99	1.98	1.97	2.04	1.98	1.97	S	2.00	1.97	1.97	1.94	1.98	1.99	1.97	1.98	1.94	1.94	2.24	2.03
Jul 12	1.94	1.93	1.93	1.95	1.96	1.98	1.96	1.95	1.94	1.94	1.95	1.93	1.92	S	1.92	1.97	1.92	1.91	1.95	1.96	2.15	2.16	2.24	2.41	1.91	2.41	1.99
Jul 13	2.41	2.29	2.33	2.15	2.03	2.17	2.08	2.08	2.05	2.06	2.04	2.09	S	2.07	1.99	1.95	1.94	1.94	1.95	2.01	1.96	2.12	2.37	1.99	1.94	2.41	2.09
Jul 14	2.05	2.33	2.10	2.64	2.63	2.19	1.97	1.97	2.02	1.99	1.99	S	2.00	2.03	2.08	2.07	2.07	2.03	2.07	2.22	2.36	2.35	2.86	2.31	1.97	2.86	**2.19**
Jul 15	2.24	2.59	2.36	2.81	2.32	2.25	2.24	2.05	1.98	2.00	S	1.97	1.95	1.95	1.96	2.15	2.08	2.14	1.96	2.02	2.15	1.99	2.33	2.10	1.95	2.81	2.16
Jul 16	2.17	2.16	2.05	2.07	2.18	2.16	2.03	1.95	1.95	S	1.94	1.92	1.92	1.92	1.92	1.94	1.92	1.92	1.92	1.93	2.02	2.15	2.08	1.94	1.92	2.18	2.01
Jul 17	2.38	2.50	2.04	2.12	2.03	1.99	2.04	1.98	S	1.95	1.96	1.92	1.95	1.92	1.91	1.91	1.92	1.90	1.90	1.94	1.92	1.91	1.92	1.95	1.90	2.50	2.00
Jul 18	1.94	2.02	1.96	1.99	2.02	2.01	1.97	S	1.98	2.12	2.10	2.24	1.99	1.92	1.92	1.93	1.93	2.00	1.95	1.99	2.02	2.05	2.19	2.34	1.92	2.34	2.03
Jul 19	2.30	2.30	2.27	2.44	2.21	2.13	S	2.05	2.08	2.15	2.15	2.12	2.13	2.08	2.07	2.04	2.01	2.03	2.20	2.10	2.25	2.18	2.29	2.24	2.01	2.44	2.17
Jul 20	1.96	1.95	2.02	2.01	2.00	S	2.04	2.01	2.00	2.01	2.03	1.98	1.98	1.97	1.96	1.97	1.99	1.96	1.96	2.04	2.12	2.19	2.34	2.24	1.95	2.34	2.03
Jul 21	2.44	2.07	2.16	2.09	S	2.09	2.16	2.11	2.04	2.01	2.01	2.00	2.02	1.99	1.97	1.98	2.00	1.98	2.03	1.98	2.22	2.15	2.09	2.10	1.97	2.44	2.07
Jul 22	2.26	2.19	2.33	S	2.30	2.23	2.15	2.12	2.14	2.08	2.01	2.01	1.99	1.99	1.99	2.00	2.00	2.04	2.13	2.27	2.24	2.82	2.52	2.47	1.99	2.82	2.19
Jul 23	2.21	2.15	S	2.22	2.20	2.20	2.13	2.06	1.99	1.98	2.04	2.02	2.02	1.97	1.98	1.96	1.96	2.03	2.01	1.99	1.99	2.37	2.01	2.26	1.96	2.37	2.08
Jul 24	2.21	S	2.34	2.52	**3.23**	2.14	2.04	2.05	2.00	1.99	2.00	2.03	2.05	2.02	2.01	2.03	1.98	2.05	2.01	2.18	2.27	2.23	2.21	2.03	1.98	**3.23**	2.16
Jul 25	S	2.03	1.96	1.95	1.95	1.95	1.94	1.94	1.94	1.95	1.94	1.94	1.94	1.95	1.94	1.95	1.94	1.95	1.94	2.06	1.99	2.31	2.37	S	1.94	2.37	1.99
Jul 26	2.32	2.11	1.95	1.94	1.94	1.94	1.93	1.93	1.93	1.93	1.92	1.92	1.92	1.91	1.91	1.92	1.91	1.90	1.90	1.90	1.90	1.90	S	1.90	1.90	2.32	1.94
Jul 27	1.98	2.04	2.05	2.27	2.13	2.12	1.96	1.95	1.95	1.95	1.94	1.93	1.92	1.91	1.91	1.92	1.92	1.96	1.91	2.01	2.20	S	2.10	2.28	1.91	2.28	2.01
Jul 28	2.44	2.52	2.58	2.09	2.28	2.11	1.97	2.00	1.97	1.97	1.98	1.96	1.95	1.94	1.92	1.92	1.93	1.92	1.93	1.94	S	1.95	1.99	1.92	1.92	2.58	2.05
Jul 29	1.94	1.93	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.96	1.94	1.93	1.94	1.93	1.93	1.93	1.94	1.97	S	2.11	2.08	2.40	2.10	1.93	2.40	1.98
Jul 30	2.09	2.06	2.06	2.17	2.07	2.09	2.07	2.09	2.02	C	C	C	C	1.94	2.05	2.01	1.95	Y	Y	1.97	2.08	2.13	2.19	2.47	1.94	2.47	2.08
Jul 31	2.17	2.14	2.26	3.09	2.63	2.41	2.35	2.38	2.15	2.02	1.99	1.99	2.08	2.02	1.94	1.94	1.93	N	N	N	N	N	N	N	1.93	3.09	-
Diurnal Maximum	2.76	2.59	2.83	3.09	3.23	2.50	2.35	2.38	2.15	2.15	2.15	2.24	2.13	2.08	2.08	2.15	2.08	2.14	2.20	2.27	2.36	2.82	2.86	2.47			
Daiurnal Average	2.20	2.16	2.18	2.23	2.20	2.11	2.06	2.02	2.00	1.99	1.99	1.99	1.98	1.97	1.96	1.98	1.96	1.97	1.98	2.01	2.09	2.14	2.22	2.15			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for CH4 - 986b Station



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

Summary of Hourly Instantaneous Maximums

NON-METHANE HYDROCARBONS (NMHC) in ppm

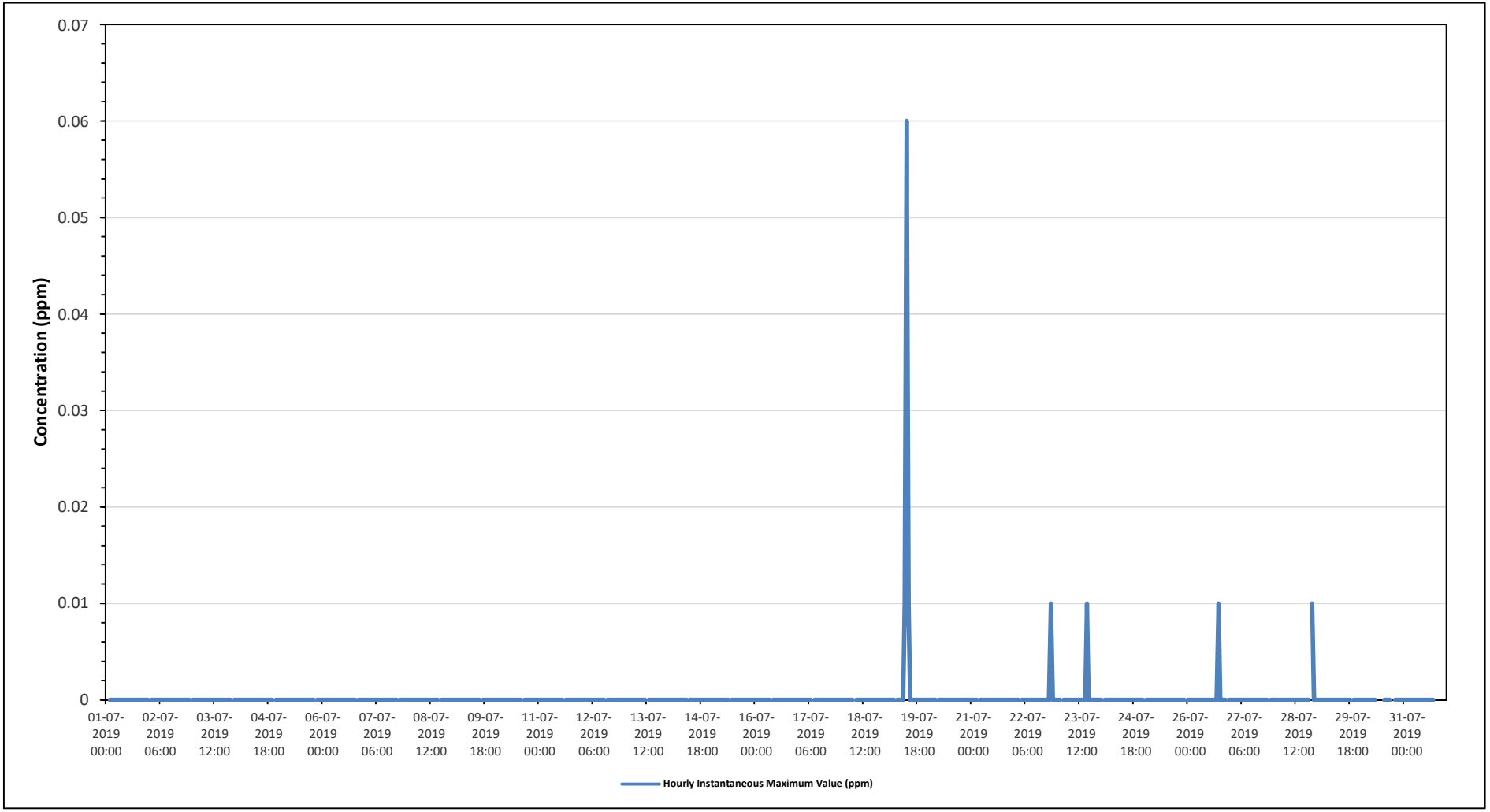
Maximum Hourly Value:	0.06	ppm	on July 19 at hour 12	Hours in Service:	744
Maximum Daily Value:	0.00	ppm	on July 19	Hours of Data:	700
Minimum Hourly Value:	0.00	ppm	on July 1 at hour 0	Hours of Missing Data:	8
Minimum Daily Value:	0.00	ppm	on July 1	Hours of Calibration:	36
Monthly Average:	0.00	ppm		Operational Uptime:	98.9

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jul 1	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 2	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
Jul 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Jul 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jul 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Jul 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 19	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.01	**0.06**	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.06**	**0.00**
Jul 20	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 21	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 22	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00
Jul 23	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Jul 24	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 25	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
Jul 26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	S	0.00	0.00	0.01	0.00
Jul 27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jul 28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.01	0.00	0.00	0.00	0.01	0.00
Jul 29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	0.00	0.00	0.00	0.00	Y	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N	N	N	N	N	N	N	0.00	0.00	-
Diurnal Maximum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.06	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00			
Daiurnal 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	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for NMHC - 986b Station



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

Summary of Hourly Instantaneous Maximums

WIND SPEED (WS) in km/h

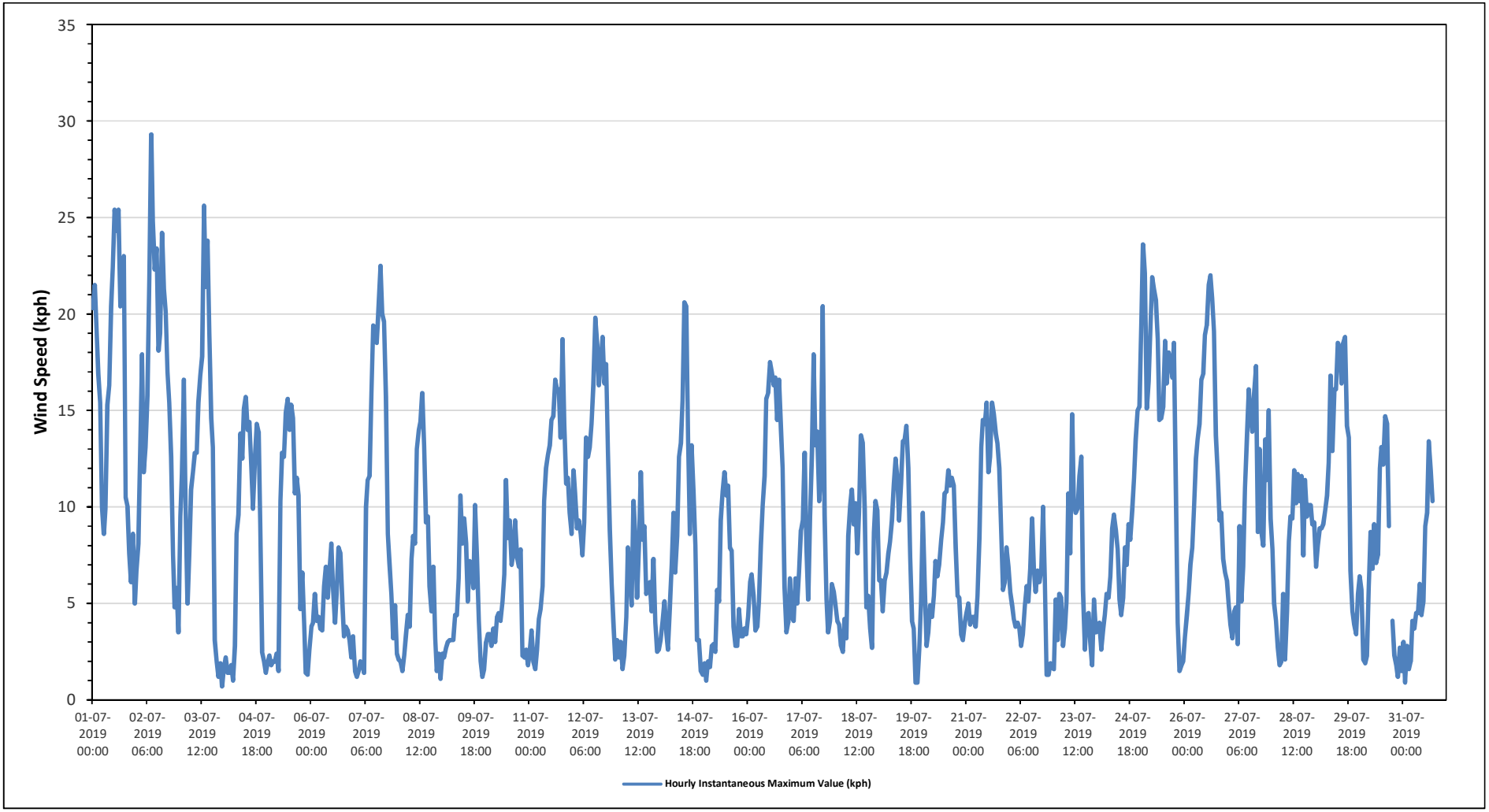
Maximum Hourly Value:	29.3	kph	on July 2 at hour 8	Hours in Service:	744
Maximum Daily Value:	16.0	kph	on July 1	Hours of Data:	736
Minimum Hourly Value:	0.7	kph	on July 3 at hour 23	Hours of Missing Data:	8
Minimum Daily Value:	4.9	kph	on July 6	Hours of Calibration:	0
Monthly Average:	8.8	kph		Operational Uptime:	98.9

Day	Hourly Period Starting at (MST)																								Daily	Daily	Daily
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minimum	Maximum	Average
Jul 1	20.3	21.5	19.1	16.9	15.4	10.0	8.6	9.9	15.3	16.3	20.4	22.4	25.4	24.3	25.4	20.4	21.4	23.0	10.5	10.0	7.6	6.1	8.6	5.0	5.0	25.4	**16.0**
Jul 2	6.7	8.1	13.1	17.9	11.8	13.1	15.8	21.9	**29.3**	24.8	22.3	23.4	18.1	19.0	24.2	21.3	20.1	17.0	15.4	12.6	7.5	4.8	5.8	3.5	3.5	**29.3**	15.7
Jul 3	9.5	11.7	16.6	9.9	5.0	7.7	10.9	11.8	12.8	12.8	15.4	16.8	17.8	25.6	21.4	23.8	19.0	14.6	13.1	3.1	2.0	1.2	1.9	**0.7**	**0.7**	25.6	11.9
Jul 4	1.7	2.2	1.4	1.4	1.8	1.0	2.8	8.6	9.6	13.8	12.5	15.1	15.7	14.0	14.4	12.2	9.9	12.4	14.3	13.9	9.1	2.5	2.0	1.4	1.0	15.7	8.1
Jul 5	1.9	2.3	1.8	2.0	2.0	2.4	1.5	10.3	12.8	12.6	14.9	15.6	14.0	15.3	14.6	10.7	11.5	10.6	4.7	6.6	4.0	1.4	1.3	2.6	1.3	15.6	7.4
Jul 6	3.8	4.0	5.5	4.1	4.3	3.7	3.6	5.9	6.9	5.3	6.6	8.1	5.7	4.0	5.5	7.9	7.6	5.1	3.3	3.8	3.6	3.1	2.2	3.3	2.2	8.1	**4.9**
Jul 7	1.5	1.2	1.5	2.0	1.8	1.4	10.0	11.4	11.6	15.9	19.4	19.3	18.5	20.4	22.5	20.0	19.6	15.7	8.6	7.1	5.5	3.2	4.9	2.4	1.2	22.5	10.2
Jul 8	2.1	2.0	1.5	2.3	3.3	4.4	3.8	7.3	8.5	8.1	13.0	14.0	14.4	15.9	13.2	9.2	9.5	5.9	4.6	6.9	3.2	1.5	2.4	1.1	1.1	15.9	6.6
Jul 9	2.4	2.2	2.7	3.0	3.1	3.1	3.1	4.4	4.4	6.3	10.6	8.1	9.4	8.1	5.1	7.2	7.1	5.8	10.1	7.3	4.1	2.0	1.2	1.6	1.2	10.6	5.1
Jul 10	3.0	3.4	3.4	2.8	3.7	3.0	4.3	4.5	4.1	5.1	6.5	11.4	8.4	9.3	7.0	7.6	9.3	7.4	6.9	7.8	2.3	2.2	2.6	1.8	1.8	11.4	5.3
Jul 11	2.4	3.6	2.0	1.6	2.6	4.2	4.7	5.9	10.3	12.0	12.7	13.2	14.5	14.7	16.6	16.1	16.1	13.6	18.7	14.3	11.2	11.5	9.7	8.6	1.6	18.7	10.0
Jul 12	11.9	10.7	8.9	9.3	8.6	7.5	9.2	13.6	12.6	13.1	14.3	16.4	19.8	18.4	16.3	17.5	18.8	16.4	17.4	12.9	8.8	6.0	4.1	2.1	2.1	19.8	12.3
Jul 13	3.1	2.2	3.0	1.6	2.3	4.3	7.9	6.7	4.9	10.3	8.3	5.3	7.9	11.8	8.3	9.0	5.5	6.0	6.1	4.6	7.3	4.0	2.5	2.6	1.6	11.8	5.6
Jul 14	3.1	4.1	5.1	3.4	2.6	4.8	7.0	9.7	6.6	8.5	12.6	13.3	15.5	20.6	20.4	13.5	8.6	13.2	10.7	8.0	3.1	3.1	1.5	1.3	1.3	20.6	8.3
Jul 15	1.9	1.0	2.0	1.7	2.8	2.9	2.5	5.7	5.1	9.3	10.8	11.8	10.6	11.1	7.9	7.7	3.8	2.8	2.8	4.7	3.3	3.3	3.7	3.4	1.0	11.8	5.1
Jul 16	4.3	6.1	6.5	5.4	3.6	3.8	5.1	8.0	10.1	11.6	15.6	15.9	17.5	17.0	16.3	16.7	14.5	16.6	14.0	12.0	5.9	3.5	4.0	6.3	3.5	17.5	10.0
Jul 17	4.3	4.1	6.3	5.0	6.6	8.8	9.3	12.8	8.0	5.2	9.5	12.9	17.9	13.2	13.9	10.3	11.5	20.4	9.6	5.2	3.5	4.1	6.0	5.6	3.5	20.4	8.9
Jul 18	5.0	4.1	3.9	2.8	2.5	4.2	3.2	8.5	10.1	10.9	9.1	10.2	7.6	9.7	13.7	13.3	9.9	4.8	5.4	3.7	2.7	8.7	10.3	9.8	2.5	13.7	7.3
Jul 19	6.2	6.2	4.6	6.2	6.6	7.6	8.2	9.3	11.2	12.5	11.5	9.3	11.2	13.4	13.4	14.2	12.0	7.4	4.1	3.7	0.9	0.9	2.6	5.1	0.9	14.2	7.8
Jul 20	9.7	5.9	2.8	3.5	4.9	4.3	5.4	7.2	6.4	7.0	8.3	9.2	10.7	10.8	11.9	11.1	11.5	11.1	7.9	5.4	5.3	3.4	3.1	4.0	2.8	11.9	7.1
Jul 21	4.5	5.0	3.9	4.3	4.3	3.8	5.4	8.4	13.1	14.5	14.3	15.4	11.8	12.6	15.4	14.8	13.8	13.3	12.0	8.7	5.7	6.1	7.9	6.9	3.8	15.4	9.4
Jul 22	5.6	4.9	4.2	3.8	4.0	3.7	2.8	3.4	4.9	5.9	5.1	6.8	9.4	6.7	5.6	6.7	6.1	6.8	10.0	6.3	1.3	1.3	1.9	1.7	1.3	10.0	5.0
Jul 23	1.6	5.2	3.1	5.5	5.3	2.8	3.7	5.1	10.7	7.6	14.8	10.3	9.7	9.9	11.6	12.6	5.7	2.6	4.4	4.5	3.0	1.8	5.2	3.5	1.6	14.8	6.3
Jul 24	3.6	4.0	2.6	3.7	4.4	5.5	5.3	6.4	8.9	9.6	8.8	7.8	5.2	4.4	5.3	7.9	7.0	9.1	8.3	9.8	11.5	13.5	15.0	15.2	2.6	15.2	7.6
Jul 25	19.7	23.6	22.1	15.1	16.5	19.3	21.9	21.3	20.7	18.7	14.5	14.6	15.2	18.6	16.4	18.0	17.6	16.7	18.5	11.3	4.0	1.5	1.8	2.0	1.5	23.6	15.4
Jul 26	3.3	4.4	5.6	7.0	7.9	10.0	12.5	13.5	14.3	16.6	16.9	18.9	19.4	21.5	22.0	20.8	19.1	13.7	11.7	9.3	9.7	7.3	6.6	6.2	3.3	22.0	12.4
Jul 27	5.0	3.9	3.2	4.6	4.8	2.9	9.0	5.1	6.9	11.0	13.5	16.1	14.7	13.9	15.9	17.3	8.7	13.0	8.7	8.0	13.5	11.4	15.0	9.4	2.9	17.3	9.8
Jul 28	7.8	5.0	4.1	2.7	1.8	2.0	5.5	2.1	4.6	8.2	9.5	9.4	11.9	10.2	11.7	10.3	11.6	7.5	11.4	9.5	10.1	10.1	9.1	9.2	1.8	11.9	7.7
Jul 29	6.9	8.0	8.9	8.9	9.1	9.8	10.6	12.3	16.8	12.9	16.1	16.1	18.5	18.3	16.4	18.5	18.8	14.2	13.6	6.7	4.6	3.9	3.4	5.5	3.4	18.8	11.6
Jul 30	6.4	5.7	2.1	1.9	2.3	5.9	8.7	6.8	9.1	7.1	7.5	12.0	13.1	12.2	14.7	14.3	9.0	**Y**	4.1	2.3	1.8	1.2	2.7	1.5	1.2	14.7	6.6
Jul 31	3.0	0.9	2.8	1.6	2.0	4.1	3.7	4.5	4.5	6.0	4.4	5.1	9.0	9.7	13.4	11.9	10.3	**N**	**N**	**N**	**N**	**N**	**N**	**N**	0.9	13.4	-
Diurnal Maximum	20.3	23.6	22.1	17.9	16.5	19.3	21.9	21.9	29.3	24.8	22.3	23.4	25.4	25.6	25.4	23.8	21.4	23.0	18.7	14.3	13.5	13.5	15.0	15.2			
Daiurnal Average	5.6	5.7	5.6	5.2	5.1	5.5	7.0	8.8	10.2	11.0	12.2	13.0	13.5	14.0	14.2	13.6	12.1	11.3	9.7	7.7	5.5	4.5	5.0	4.4			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for WS - 986b Station



842b STATION

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PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

Summary of Hourly Instantaneous Maximums

SULPHUR DIOXIDE (SO_2) in ppb

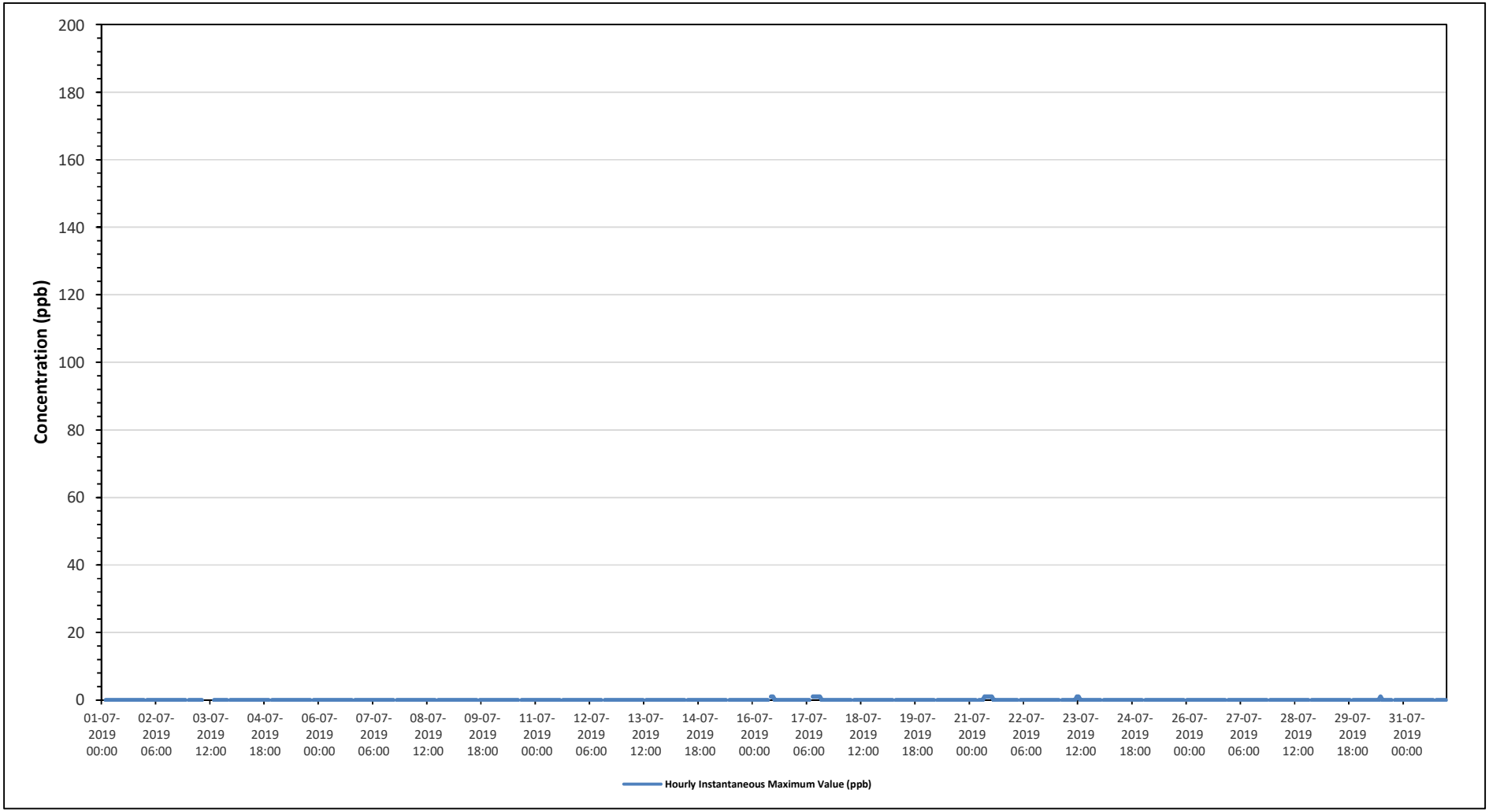
Maximum Hourly Value:	2	ppb	on July 23 at hour 11	Hours in Service:	744
Maximum Daily Value:	0.3	ppb	on July 17	Hours of Data:	705
Minimum Hourly Value:	0	ppb	on July 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.0	ppb	on July 1	Hours of Calibration:	39
Monthly Average:	0.0	ppb		Operational 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			
Jul 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
Jul 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
Jul 3	0	0	0	0	0	0	0	0	C	C	C	C	C	C	1	0	0	0	0	0	0	0	S	0	0	1	-
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 10	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0.1
Jul 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
Jul 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
Jul 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
Jul 14	0	0	0	0	0	0	0	0	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jul 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
Jul 16	0	0	0	0	0	0	0	0	0	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jul 17	0	0	0	0	0	0	0	0	S	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	**0.3**
Jul 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
Jul 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
Jul 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
Jul 21	0	0	0	0	S	0	0	0	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0.3
Jul 22	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jul 23	0	0	S	0	0	0	0	0	0	0	0	**2**	1	1	0	0	0	0	0	0	0	0	0	0	0	**2**	0.2
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 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
Jul 30	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	S	0	0	0	0	0	0	1	0.2
Jul 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	1	1	1	1	1	2	1	1	1	1	0	0	0	1	0	0	0	0			
Daiurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for SO2 - 842b Station



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PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

Summary of Hourly Instantaneous Maximums

TOTAL REDUCED SULPHUR (TRS) in ppb

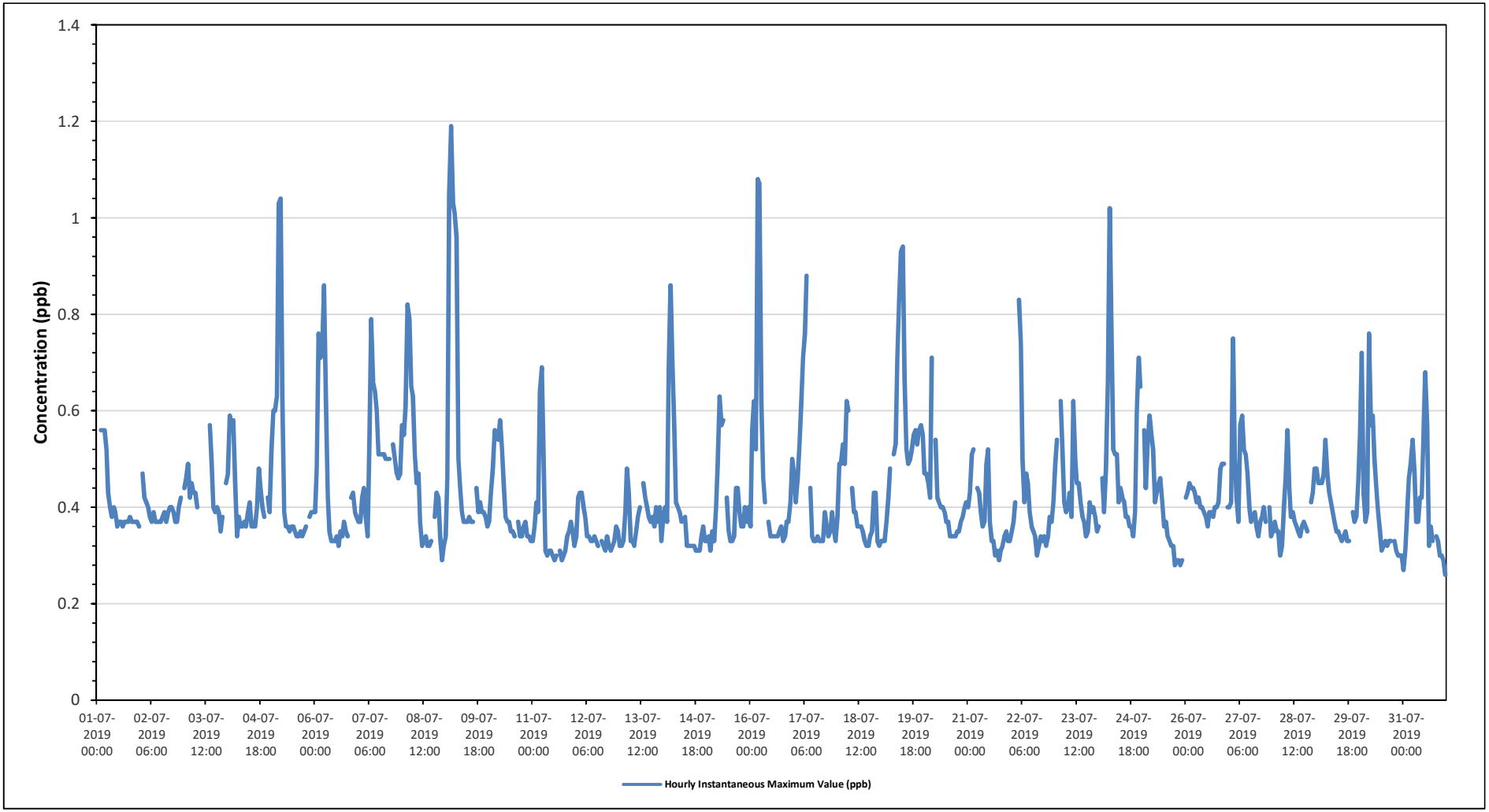
Maximum Hourly Value:	1.19	ppb	on July 9 at hour 3	Hours in Service:	744
Maximum Daily Value:	0.55	ppb	on July 19	Hours of Data:	705
Minimum Hourly Value:	0.26	ppb	on July 31 at hour 0.26	Hours of Missing Data:	0
Minimum Daily Value:	0.35	ppb	on July 12	Hours of Calibration:	39
Monthly Average:	0.43	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			
Jul 1	0.54	S	0.56	0.56	0.56	0.52	0.43	0.4	0.38	0.4	0.39	0.36	0.37	0.37	0.36	0.37	0.37	0.37	0.38	0.37	0.37	0.37	0.37	0.36	0.36	0.56	0.41
Jul 2	S	0.47	0.42	0.41	0.4	0.38	0.37	0.39	0.37	0.37	0.37	0.37	0.38	0.39	0.37	0.39	0.4	0.4	0.39	0.37	0.37	0.4	0.42	S	0.37	0.47	0.39
Jul 3	0.44	0.46	0.49	0.42	0.45	0.43	0.43	0.4	C	C	C	C	C	C	0.57	0.5	0.4	0.39	0.4	0.39	0.35	0.38	S	0.45	0.35	0.57	-
Jul 4	0.47	0.59	0.56	0.58	0.45	0.34	0.38	0.36	0.36	0.37	0.36	0.39	0.41	0.36	0.36	0.36	0.4	0.48	0.44	0.4	0.38	S	0.42	0.39	0.34	0.59	0.42
Jul 5	0.52	0.6	0.6	0.63	1.03	1.04	0.63	0.39	0.36	0.36	0.35	0.36	0.36	0.35	0.34	0.34	0.35	0.34	0.35	0.36	S	0.38	0.39	0.39	0.34	1.04	0.47
Jul 6	0.39	0.48	0.76	0.71	0.72	0.86	0.62	0.42	0.35	0.33	0.33	0.33	0.34	0.32	0.35	0.34	0.37	0.35	0.34	S	0.42	0.43	0.39	0.38	0.32	0.86	0.45
Jul 7	0.37	0.37	0.42	0.44	0.38	0.34	0.55	0.79	0.66	0.64	0.6	0.51	0.51	0.51	0.51	0.5	0.5	0.5	S	0.53	0.5	0.47	0.46	0.47	0.34	0.79	0.50
Jul 8	0.57	0.55	0.61	0.82	0.79	0.65	0.63	0.51	0.45	0.47	0.37	0.32	0.33	0.34	0.32	0.32	0.33	S	0.38	0.43	0.42	0.34	0.29	0.32	0.29	0.82	0.46
Jul 9	0.34	0.46	1.05	**1.19**	1.03	1.01	0.96	0.5	0.44	0.39	0.37	0.37	0.37	0.38	0.37	0.37	S	0.44	0.39	0.41	0.39	0.39	0.38	0.36	0.34	**1.19**	0.54
Jul 10	0.37	0.43	0.48	0.56	0.55	0.54	0.58	0.52	0.45	0.38	0.37	0.37	0.35	0.35	0.34	S	0.37	0.34	0.34	0.36	0.37	0.34	0.34	0.33	0.33	0.58	0.41
Jul 11	0.33	0.36	0.41	0.39	0.64	0.69	0.51	0.31	0.3	0.31	0.31	0.3	0.29	0.3	S	0.31	0.29	0.3	0.31	0.34	0.35	0.37	0.35	0.32	0.29	0.69	0.36
Jul 12	0.34	0.42	0.43	0.43	0.4	0.38	0.34	0.34	0.33	0.33	0.34	0.33	0.32	S	0.33	0.32	0.31	0.34	0.32	0.31	0.32	0.33	0.36	0.35	0.31	0.43	0.35
Jul 13	0.32	0.32	0.33	0.39	0.48	0.43	0.33	0.33	0.32	0.35	0.38	0.4	S	0.45	0.42	0.4	0.38	0.37	0.38	0.36	0.4	0.37	0.4	0.33	0.32	0.48	0.38
Jul 14	0.38	0.4	0.37	0.69	0.86	0.7	0.56	0.41	0.4	0.39	0.37	S	0.38	0.32	0.32	0.32	0.32	0.32	0.31	0.31	0.31	0.34	0.36	0.33	0.31	0.86	0.41
Jul 15	0.33	0.34	0.31	0.35	0.33	0.4	0.49	0.63	0.57	0.58	S	0.42	0.35	0.33	0.33	0.34	0.44	0.44	0.39	0.36	0.36	0.4	0.37	0.4	0.31	0.63	0.40
Jul 16	0.36	0.56	0.62	0.52	1.08	1.07	0.62	0.46	0.41	S	0.37	0.34	0.34	0.34	0.34	0.34	0.35	0.36	0.33	0.34	0.37	0.37	0.41	0.5	0.33	1.08	0.47
Jul 17	0.47	0.41	0.46	0.53	0.61	0.71	0.76	0.88	S	0.44	0.34	0.33	0.33	0.34	0.33	0.33	0.33	0.39	0.36	0.34	0.35	0.39	0.35	0.33	0.33	0.88	0.44
Jul 18	0.38	0.49	0.49	0.53	0.49	0.62	0.6	S	0.44	0.39	0.39	0.36	0.36	0.36	0.35	0.33	0.32	0.32	0.34	0.35	0.43	0.43	0.33	0.32	0.32	0.62	0.41
Jul 19	0.33	0.33	0.33	0.37	0.42	0.48	S	0.51	0.53	0.71	0.83	0.93	0.94	0.67	0.52	0.49	0.5	0.52	0.55	0.56	0.53	0.56	0.57	0.55	0.33	0.94	**0.55**
Jul 20	0.47	0.47	0.45	0.42	0.71	S	0.54	0.42	0.41	0.4	0.4	0.39	0.37	0.37	0.34	0.34	0.34	0.34	0.35	0.35	0.37	0.38	0.4	0.41	0.34	0.71	0.41
Jul 21	0.4	0.43	0.51	0.52	S	0.44	0.43	0.39	0.36	0.37	0.49	0.52	0.37	0.33	0.33	0.3	0.31	0.29	0.31	0.32	0.34	0.35	0.33	0.33	0.29	0.52	0.38
Jul 22	0.35	0.37	0.41	S	0.83	0.74	0.5	0.41	0.47	0.45	0.39	0.36	0.35	0.34	0.3	0.32	0.34	0.33	0.34	0.32	0.34	0.38	0.37	0.41	0.30	0.83	0.41
Jul 23	0.49	0.54	S	0.62	0.51	0.41	0.39	0.4	0.43	0.38	0.62	0.5	0.45	0.45	0.41	0.38	0.37	0.34	0.35	0.41	0.39	0.4	0.38	0.35	0.34	0.62	0.43
Jul 24	0.36	S	0.46	0.39	0.48	0.66	1.02	0.79	0.52	0.51	0.51	0.41	0.44	0.42	0.41	0.38	0.38	0.36	0.36	0.34	0.39	0.6	0.71	0.65	0.34	1.02	0.50
Jul 25	S	0.56	0.44	0.53	0.59	0.55	0.52	0.41	0.43	0.45	0.46	0.41	0.36	0.37	0.34	0.33	0.32	0.32	0.28	0.29	0.29	0.28	0.29	S	0.28	0.59	0.40
Jul 26	0.42	0.43	0.45	0.44	0.44	0.43	0.41	0.42	0.4	0.4	0.39	0.38	0.36	0.39	0.39	0.38	0.4	0.4	0.41	0.48	0.49	0.49	S	0.4	0.36	0.49	0.42
Jul 27	0.4	0.41	0.75	0.5	0.42	0.37	0.57	0.59	0.52	0.51	0.47	0.4	0.37	0.38	0.39	0.36	0.34	0.37	0.38	0.4	0.37	S	0.4	0.34	0.34	0.75	0.44
Jul 28	0.35	0.37	0.35	0.35	0.3	0.32	0.4	0.46	0.56	0.44	0.38	0.39	0.37	0.36	0.35	0.34	0.36	0.37	0.36	0.35	S	0.41	0.43	0.48	0.30	0.56	0.38
Jul 29	0.48	0.45	0.45	0.45	0.47	0.54	0.47	0.43	0.41	0.39	0.37	0.35	0.35	0.34	0.33	0.34	0.35	0.33	0.33	S	0.39	0.37	0.38	0.45	0.33	0.54	0.40
Jul 30	0.55	0.72	0.43	0.37	0.39	0.76	0.57	0.59	0.5	0.44	0.39	0.35	0.31	0.32	0.33	0.32	0.33	0.33	S	0.33	0.31	0.3	0.3	0.3	0.30	0.76	0.41
Jul 31	0.27	0.31	0.39	0.46	0.49	0.54	0.47	0.37	0.37	0.42	0.42	0.55	0.68	0.57	0.32	0.36	0.33	S	0.34	0.33	0.3	0.3	0.29	0.26	0.26	0.68	0.40
Diurnal Maximum	0.57	0.72	1.05	1.19	1.08	1.07	1.02	0.88	0.66	0.71	0.83	0.93	0.94	0.67	0.57	0.50	0.50	0.52	0.55	0.56	0.53	0.60	0.71	0.65			
Daiurnal Average	0.41	0.45	0.49	0.52	0.58	0.58	0.54	0.47	0.43	0.43	0.42	0.41	0.40	0.38	0.37	0.36	0.36	0.37	0.36	0.37	0.38	0.39	0.39	0.39			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for TRS - 842b Station



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PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

Summary of Hourly Instantaneous Maximums

TOTAL HYDROCARBONS (THC) in ppm

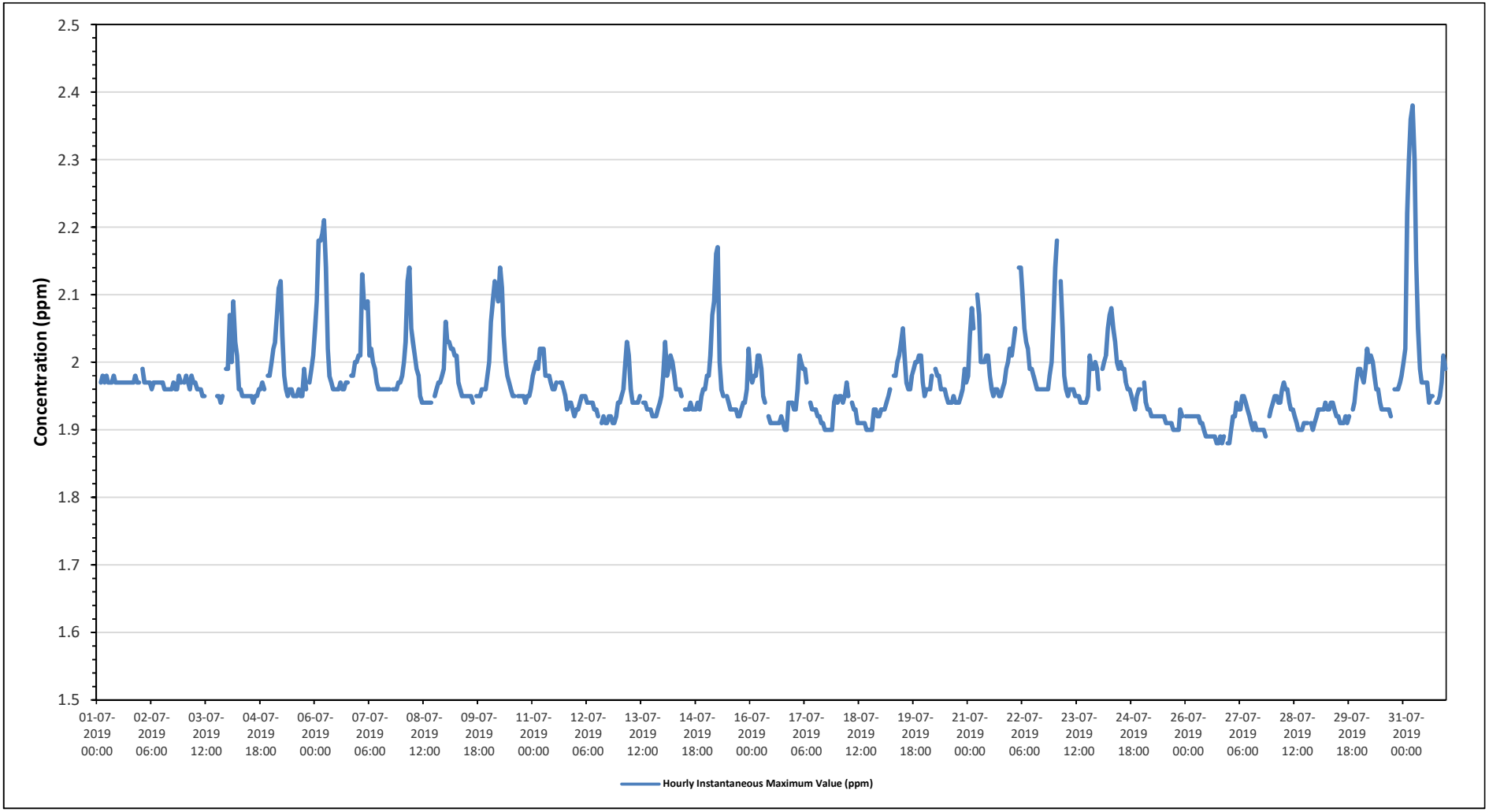
Maximum Hourly Value:	2.38	ppm	on July 31 at hour 5	Hours in Service:	744
Maximum Daily Value:	2.06	ppm	on July 31	Hours of Data:	705
Minimum Hourly Value:	1.88	ppm	on July 26 at hour 17	Hours of Missing Data:	0
Minimum Daily Value:	1.90	ppm	on July 26	Hours of Calibration:	39
Monthly Average:	1.97	ppm		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
Jul 1	1.97	S	1.97	1.98	1.97	1.98	1.97	1.97	1.97	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.98	1.97	1.97	1.97	1.98	1.97
Jul 2	S	1.99	1.97	1.97	1.97	1.97	1.96	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.97	1.96	1.96	1.98	1.97	S	1.96	1.99	1.97
Jul 3	1.97	1.98	1.97	1.96	1.98	1.97	1.97	1.96	1.96	1.96	1.95	1.95	C	C	C	C	C	C	1.95	1.95	1.94	1.95	S	1.99	1.94	1.99	-
Jul 4	1.99	2.07	2.00	2.09	2.03	2.01	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.94	1.95	1.95	1.96	1.96	1.97	1.96	S	1.98	1.98	1.94	2.09	1.98
Jul 5	2.00	2.02	2.03	2.07	2.11	2.12	2.04	1.98	1.96	1.95	1.96	1.96	1.95	1.95	1.95	1.96	1.95	1.95	1.99	1.96	S	1.97	1.99	2.01	1.95	2.12	1.99
Jul 6	2.05	2.09	2.18	2.18	2.19	2.21	2.14	2.02	1.98	1.97	1.96	1.96	1.96	1.96	1.97	1.96	1.96	1.97	1.97	S	1.98	1.98	2.00	2.00	1.96	2.21	2.03
Jul 7	2.01	2.01	2.13	2.09	2.08	2.09	2.01	2.02	2.00	1.99	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	S	1.96	1.96	1.96	1.97	1.97	1.96	2.13	2.00
Jul 8	1.98	2.00	2.03	2.12	2.14	2.05	2.03	2.01	1.99	1.98	1.95	1.94	1.94	1.94	1.94	1.94	1.94	S	1.95	1.96	1.97	1.97	1.98	1.99	1.94	2.14	1.99
Jul 9	2.06	2.03	2.03	2.02	2.02	2.01	2.01	1.97	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.94	S	1.95	1.95	1.95	1.96	1.96	1.96	1.98	1.94	2.06	1.98
Jul 10	2.00	2.06	2.09	2.12	2.11	2.09	2.14	2.11	2.04	2.00	1.98	1.97	1.96	1.95	1.95	S	1.95	1.95	1.95	1.95	1.94	1.95	1.95	1.96	1.94	2.14	2.01
Jul 11	1.98	1.99	2.00	1.99	2.02	2.02	2.02	1.98	1.98	1.98	1.97	1.96	1.96	1.97	S	1.97	1.97	1.96	1.95	1.93	1.94	1.94	1.93	1.92	1.92	2.02	1.97
Jul 12	1.93	1.93	1.94	1.95	1.95	1.95	1.94	1.94	1.94	1.94	1.93	1.93	1.92	S	1.91	1.92	1.91	1.91	1.92	1.92	1.91	1.91	1.92	1.94	1.91	1.95	1.93
Jul 13	1.94	1.95	1.96	2.00	2.03	2.01	1.96	1.94	1.94	1.94	1.94	1.95	S	1.94	1.94	1.93	1.93	1.93	1.92	1.92	1.92	1.93	1.94	1.95	1.92	2.03	1.95
Jul 14	1.98	2.03	1.98	1.99	2.01	2.00	1.98	1.96	1.96	1.96	1.95	S	1.93	1.93	1.93	1.94	1.93	1.93	1.93	1.94	1.93	1.95	1.96	1.96	1.93	2.03	1.96
Jul 15	1.98	1.98	2.01	2.07	2.09	2.16	2.17	2.00	1.96	1.95	S	1.95	1.94	1.93	1.93	1.93	1.93	1.92	1.92	1.93	1.94	1.94	1.96	2.02	1.92	2.17	1.98
Jul 16	1.98	1.97	1.98	1.98	2.01	2.01	1.99	1.95	1.94	S	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.91	1.90	1.90	1.94	1.94	1.94	1.90	2.01	1.94
Jul 17	1.93	1.93	1.96	2.01	2.00	1.99	1.99	1.97	S	1.94	1.93	1.93	1.93	1.92	1.92	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.94	1.95	1.90	2.01	1.94
Jul 18	1.94	1.95	1.95	1.94	1.95	1.97	1.95	S	1.94	1.93	1.93	1.91	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.93	1.93	1.92	1.92	1.90	1.97	1.93
Jul 19	1.93	1.93	1.93	1.94	1.95	1.96	S	1.98	1.98	2.00	2.01	2.03	2.05	2.01	1.97	1.96	1.96	1.98	1.99	2.00	2.00	2.01	2.01	1.97	1.93	2.05	1.98
Jul 20	1.95	1.96	1.96	1.96	1.98	S	1.99	1.98	1.98	1.96	1.96	1.96	1.95	1.94	1.94	1.94	1.95	1.94	1.94	1.94	1.95	1.96	1.99	1.97	1.94	1.99	1.96
Jul 21	1.98	2.04	2.08	2.05	S	2.10	2.07	2.00	2.00	2.00	2.01	2.01	1.98	1.96	1.95	1.96	1.96	1.95	1.95	1.96	1.97	1.99	2.00	2.02	1.95	2.10	2.00
Jul 22	2.01	2.03	2.05	S	2.14	2.14	2.10	2.05	2.03	2.02	1.99	1.99	1.98	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.98	2.00	2.06	1.96	2.14	2.01
Jul 23	2.14	2.18	S	2.12	2.05	1.98	1.96	1.95	1.96	1.96	1.96	1.95	1.95	1.95	1.94	1.94	1.94	1.94	1.95	2.01	1.99	1.99	2.00	1.99	1.94	2.18	1.99
Jul 24	1.96	S	1.99	2.00	2.01	2.05	2.07	2.08	2.05	2.03	2.00	1.99	2.00	1.99	1.99	1.97	1.96	1.96	1.95	1.94	1.93	1.95	1.96	1.96	1.93	2.08	1.99
Jul 25	S	1.97	1.94	1.93	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.93	1.92	S	1.90	1.97	1.92
Jul 26	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.88	1.88	1.89	1.88	1.89	S	1.88	1.88	1.92	1.90
Jul 27	1.88	1.90	1.92	1.92	1.94	1.93	1.93	1.95	1.95	1.94	1.93	1.92	1.91	1.90	1.91	1.90	1.90	1.90	1.90	1.90	1.89	S	1.92	1.93	1.88	1.95	1.92
Jul 28	1.94	1.95	1.95	1.94	1.94	1.96	1.97	1.96	1.96	1.94	1.93	1.93	1.92	1.91	1.90	1.90	1.90	1.91	1.91	1.91	S	1.91	1.90	1.91	1.90	1.97	1.93
Jul 29	1.92	1.93	1.93	1.93	1.93	1.94	1.93	1.93	1.94	1.94	1.93	1.92	1.92	1.91	1.91	1.91	1.92	1.91	1.92	S	1.93	1.94	1.97	1.99	1.91	1.99	1.93
Jul 30	1.99	1.98	1.97	1.99	2.02	2.00	2.01	2.00	1.98	1.96	1.96	1.94	1.93	1.93	1.93	1.93	1.93	1.92	S	1.96	1.96	1.96	1.97	1.98	1.92	2.02	1.97
Jul 31	2.00	2.02	2.22	2.30	2.36	2.38	2.30	2.15	2.05	1.99	1.97	1.97	1.97	1.97	1.94	1.95	1.95	S	1.94	1.94	1.95	1.97	2.01	1.99	1.94	2.38	2.06
Diurnal Maximum	2.14	2.18	2.22	2.30	2.36	2.38	2.30	2.15	2.05	2.03	2.01	2.03	2.05	2.01	1.99	1.97	1.97	1.98	1.99	2.01	2.00	2.01	2.01	2.06			
Daiurnal Average	1.98	1.99	2.00	2.02	2.03	2.03	2.01	1.99	1.97	1.96	1.96	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.96	1.97			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for THC - 842b Station



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PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

Summary of Hourly Instantaneous Maximums

METHANE (CH4) in ppm

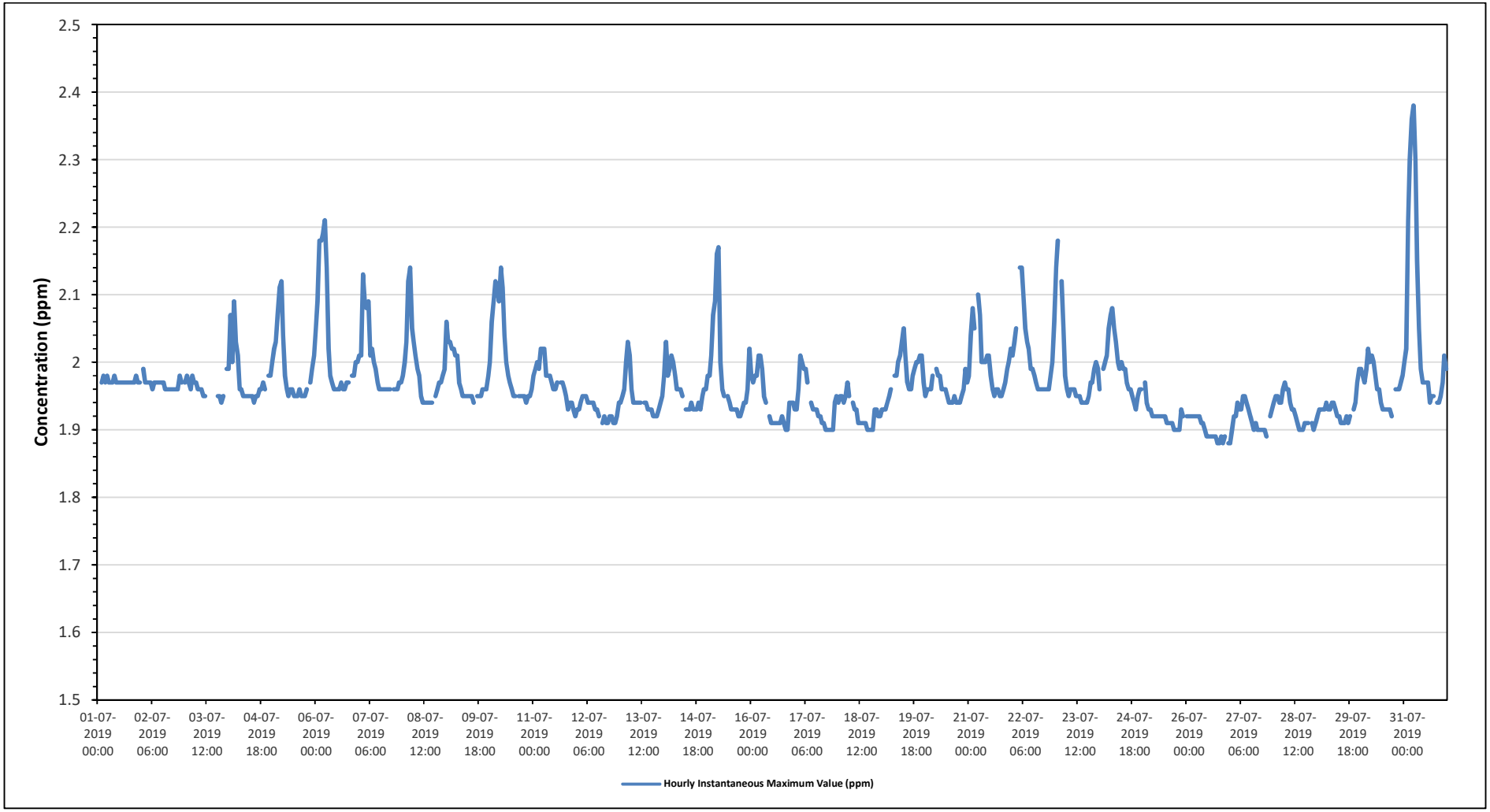
Maximum Hourly Value:	2.38	ppm	on July 31 at hour 5	Hours in Service:	744
Maximum Daily Value:	2.06	ppm	on July 31	Hours of Data:	705
Minimum Hourly Value:	1.88	ppm	on July 26 at hour 17	Hours of Missing Data:	0
Minimum Daily Value:	1.90	ppm	on July 26	Hours of Calibration:	39
Monthly Average:	1.97	ppm		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
Jul 1	1.97	S	1.97	1.98	1.97	1.98	1.97	1.97	1.97	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.98	1.97	1.97	1.97	1.98	1.97
Jul 2	S	1.99	1.97	1.97	1.97	1.97	1.96	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.98	1.97	S	1.96	1.99	1.97
Jul 3	1.97	1.98	1.97	1.96	1.98	1.97	1.97	1.96	1.96	1.96	1.95	1.95	C	C	C	C	C	C	1.95	1.95	1.94	1.95	S	1.99	1.94	1.99	-
Jul 4	1.99	2.07	2.00	2.09	2.03	2.01	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.94	1.95	1.95	1.96	1.96	1.97	1.96	S	1.98	1.98	1.94	2.09	1.98
Jul 5	2.00	2.02	2.03	2.07	2.11	2.12	2.04	1.98	1.96	1.95	1.96	1.96	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.96	S	1.97	1.99	2.01	1.95	2.12	1.99
Jul 6	2.05	2.09	2.18	2.18	2.19	2.21	2.14	2.02	1.98	1.97	1.96	1.96	1.96	1.96	1.97	1.96	1.96	1.97	1.97	S	1.98	1.98	2.00	2.00	1.96	2.21	2.03
Jul 7	2.01	2.01	2.13	2.09	2.08	2.09	2.01	2.02	2.00	1.99	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	S	1.96	1.96	1.96	1.97	1.97	1.96	2.13	2.00
Jul 8	1.98	2.00	2.03	2.12	2.14	2.05	2.03	2.01	1.99	1.98	1.95	1.94	1.94	1.94	1.94	1.94	1.94	S	1.95	1.96	1.97	1.97	1.98	1.99	1.94	2.14	1.99
Jul 9	2.06	2.03	2.03	2.02	2.02	2.01	2.01	1.97	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.94	S	1.95	1.95	1.95	1.96	1.96	1.96	1.98	1.94	2.06	1.98
Jul 10	2.00	2.06	2.09	2.12	2.11	2.09	2.14	2.11	2.04	2.00	1.98	1.97	1.96	1.95	1.95	S	1.95	1.95	1.95	1.95	1.94	1.95	1.95	1.96	1.94	2.14	2.01
Jul 11	1.98	1.99	2.00	1.99	2.02	2.02	2.02	1.98	1.98	1.98	1.97	1.96	1.96	1.97	S	1.97	1.97	1.96	1.95	1.93	1.94	1.94	1.93	1.92	1.92	2.02	1.97
Jul 12	1.93	1.93	1.94	1.95	1.95	1.95	1.94	1.94	1.94	1.94	1.93	1.93	1.92	S	1.91	1.92	1.91	1.91	1.92	1.92	1.91	1.91	1.92	1.94	1.91	1.95	1.93
Jul 13	1.94	1.95	1.96	2.00	2.03	2.01	1.96	1.94	1.94	1.94	1.94	1.94	S	1.94	1.94	1.93	1.93	1.93	1.92	1.92	1.92	1.93	1.94	1.95	1.92	2.03	1.95
Jul 14	1.98	2.03	1.98	1.99	2.01	2.00	1.98	1.96	1.96	1.96	1.95	S	1.93	1.93	1.93	1.94	1.93	1.93	1.93	1.94	1.93	1.95	1.96	1.96	1.93	2.03	1.96
Jul 15	1.98	1.98	2.01	2.07	2.09	2.16	2.17	2.00	1.96	1.95	S	1.95	1.94	1.93	1.93	1.93	1.93	1.92	1.92	1.93	1.94	1.94	1.96	2.02	1.92	2.17	1.98
Jul 16	1.98	1.97	1.98	1.98	2.01	2.01	1.99	1.95	1.94	S	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.91	1.90	1.90	1.94	1.94	1.94	1.90	2.01	1.94
Jul 17	1.93	1.93	1.96	2.01	2.00	1.99	1.99	1.97	S	1.94	1.93	1.93	1.93	1.92	1.92	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.94	1.95	1.90	2.01	1.94
Jul 18	1.94	1.95	1.95	1.94	1.95	1.97	1.95	S	1.94	1.93	1.93	1.91	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.93	1.93	1.92	1.92	1.90	1.97	1.93
Jul 19	1.93	1.93	1.93	1.94	1.95	1.96	S	1.98	1.98	2.00	2.01	2.03	2.05	2.01	1.97	1.96	1.96	1.98	1.99	2.00	2.00	2.01	2.01	1.97	1.93	2.05	1.98
Jul 20	1.95	1.96	1.96	1.96	1.98	S	1.99	1.98	1.98	1.96	1.96	1.96	1.95	1.94	1.94	1.94	1.95	1.94	1.94	1.94	1.95	1.96	1.99	1.97	1.94	1.99	1.96
Jul 21	1.98	2.04	2.08	2.05	S	2.10	2.07	2.00	2.00	2.00	2.01	2.01	1.98	1.96	1.95	1.96	1.96	1.95	1.95	1.96	1.97	1.99	2.00	2.02	1.95	2.10	2.00
Jul 22	2.01	2.03	2.05	S	2.14	2.14	2.10	2.05	2.03	2.02	1.99	1.99	1.98	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.98	2.00	2.06	1.96	2.14	2.01
Jul 23	2.14	2.18	S	2.12	2.05	1.98	1.96	1.95	1.96	1.96	1.96	1.95	1.95	1.95	1.94	1.94	1.94	1.94	1.95	1.97	1.97	1.99	2.00	1.99	1.94	2.18	1.99
Jul 24	1.96	S	1.99	2.00	2.01	2.05	2.07	2.08	2.05	2.03	2.00	1.99	2.00	1.99	1.99	1.97	1.96	1.96	1.95	1.94	1.93	1.95	1.96	1.96	1.93	2.08	1.99
Jul 25	S	1.97	1.94	1.93	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.93	1.92	S	1.90	1.97	1.92
Jul 26	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.88	1.88	1.89	1.88	1.89	S	1.88	1.88	1.92	1.90
Jul 27	1.88	1.90	1.92	1.92	1.94	1.93	1.93	1.95	1.95	1.94	1.93	1.92	1.91	1.90	1.91	1.90	1.90	1.90	1.90	1.90	1.89	S	1.92	1.93	1.88	1.95	1.92
Jul 28	1.94	1.95	1.95	1.94	1.94	1.96	1.97	1.96	1.96	1.94	1.93	1.93	1.92	1.91	1.90	1.90	1.90	1.91	1.91	1.91	S	1.91	1.90	1.91	1.90	1.97	1.93
Jul 29	1.92	1.93	1.93	1.93	1.93	1.94	1.93	1.93	1.94	1.94	1.93	1.92	1.92	1.91	1.91	1.91	1.92	1.91	1.92	S	1.93	1.94	1.97	1.99	1.91	1.99	1.93
Jul 30	1.99	1.98	1.97	1.99	2.02	2.00	2.01	2.00	1.98	1.96	1.96	1.94	1.93	1.93	1.93	1.93	1.93	1.92	S	1.96	1.96	1.96	1.97	1.98	1.92	2.02	1.97
Jul 31	2.00	2.02	2.21	2.30	2.36	2.38	2.30	2.15	2.05	1.99	1.97	1.97	1.97	1.97	1.94	1.95	1.95	S	1.94	1.94	1.95	1.97	2.01	1.99	1.94	2.38	2.06
Diurnal Maximum	2.14	2.18	2.21	2.30	2.36	2.38	2.30	2.15	2.05	2.03	2.01	2.03	2.05	2.01	1.99	1.97	1.97	1.98	1.99	2.00	2.00	2.01	2.01	2.06			
Daiurnal Average	1.98	1.99	2.00	2.02	2.03	2.03	2.01	1.99	1.97	1.96	1.96	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.96	1.97			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for CH4 - 842b Station



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

Summary of Hourly Instantaneous Maximums

NON-METHANE HYDROCARBONS (NMHC) in ppm

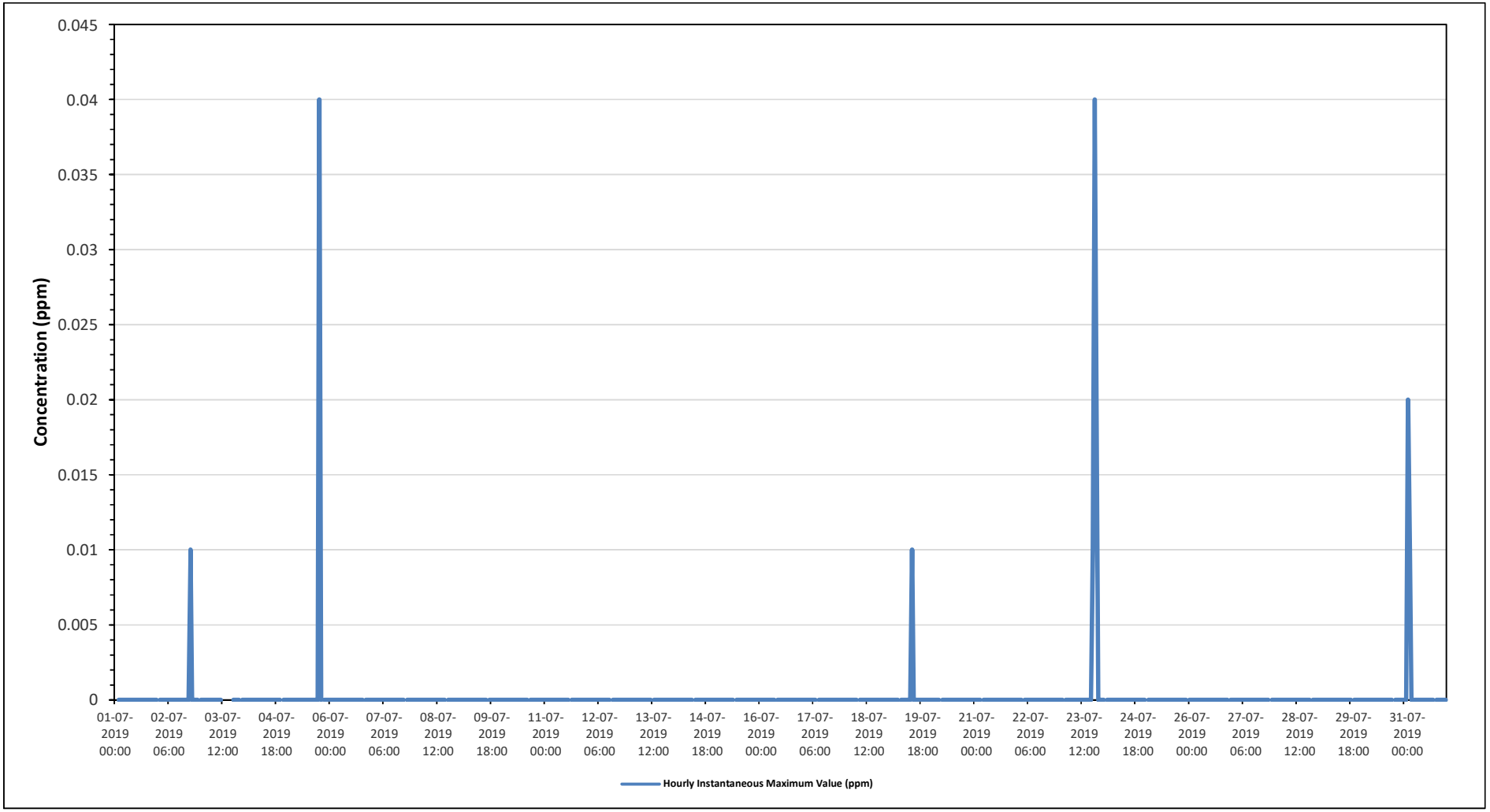
Maximum Hourly Value:	0.04	ppm	on July 5 at hour 18	Hours in Service:	744
Maximum Daily Value:	0.00	ppm	on July 23	Hours of Data:	705
Minimum Hourly Value:	0.00	ppm	on July 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.00	ppm	on July 1	Hours of Calibration:	39
Monthly Average:	0.00	ppm		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			
Jul 1	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 2	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	S	0.00	0.01	0.00
Jul 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	C	C	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	-
Jul 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jul 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.04**	0.00	S	0.00	0.00	0.00	0.00	**0.04**	0.00
Jul 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 19	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Jul 20	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 21	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 22	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 23	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	**0.04**	0.02	0.00	0.00	0.00	0.00	**0.04**	**0.00**
Jul 24	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 25	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
Jul 26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Jul 27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jul 28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Jul 29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 31	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Diurnal Maximum	0.00	0.00	0.02	0.01	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	0.04	0.04	0.02	0.00	0.00	0.00			
Daiurnal 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	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for NMHC - 842b Station



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PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

Summary of Hourly Instantaneous Maximums

WIND SPEED (WS) in km/h

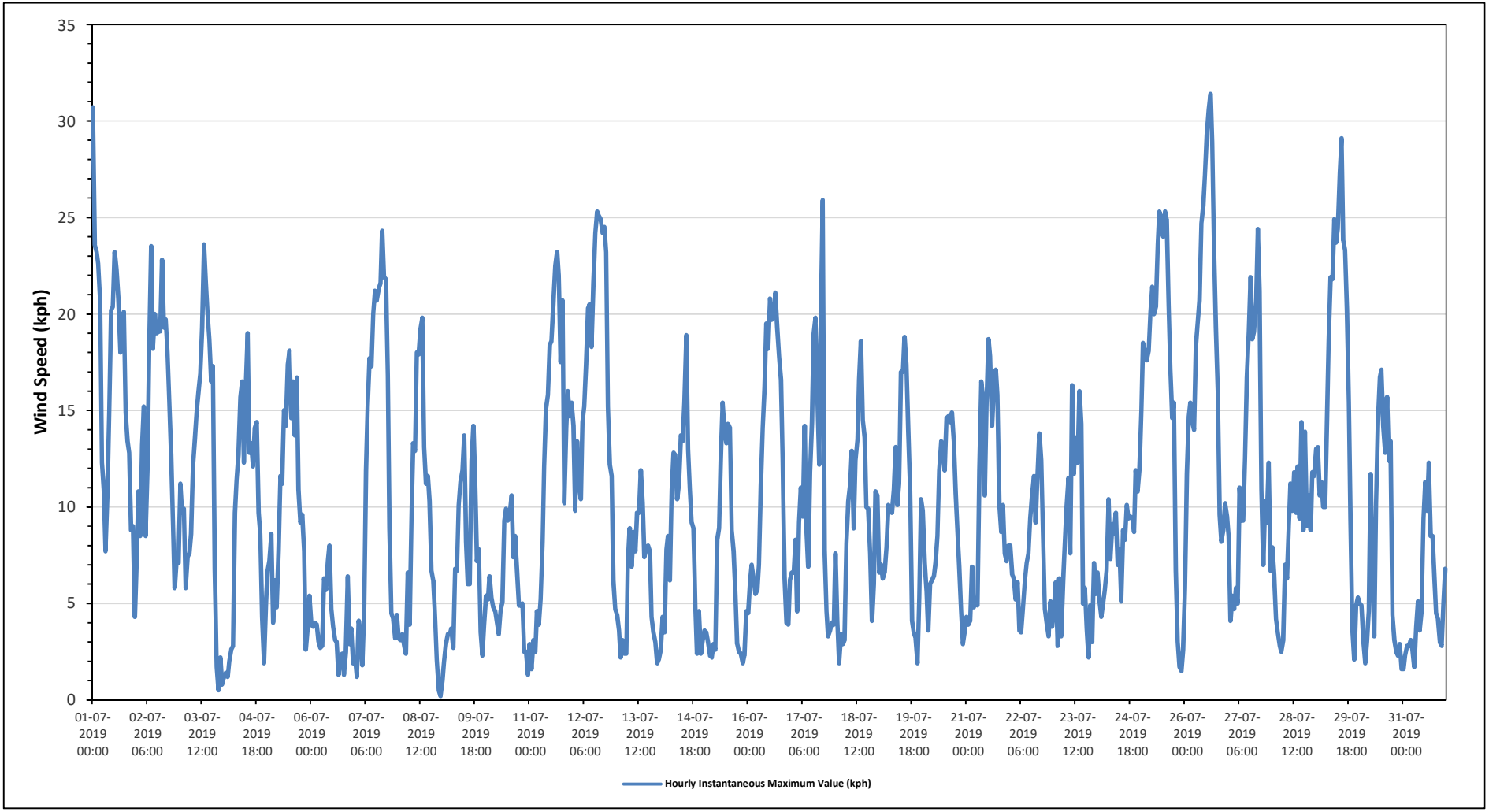
Maximum Hourly Value:	31.4	kph	on July 26 at hour 14	Hours in Service:	744
Maximum Daily Value:	18.2	kph	on July 26	Hours of Data:	744
Minimum Hourly Value:	0.2	kph	on July 8 at hour 23	Hours of Missing Data:	0
Minimum Daily Value:	3.8	kph	on July 6	Hours of Calibration:	0
Monthly Average:	10.3	kph		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
Jul 1	30.7	23.6	23.2	22.6	20.6	12.3	10.9	7.7	10.7	15.0	20.2	20.4	23.2	22.3	20.7	18.0	19.8	20.1	14.9	13.4	12.8	8.8	9.0	4.3	4.3	30.7	16.9
Jul 2	6.8	10.8	8.5	13.2	15.2	8.5	12.0	18.8	23.5	18.2	20.0	19.0	19.1	19.1	22.8	19.3	19.7	18.0	15.5	12.7	9.0	5.8	7.2	7.1	5.8	23.5	14.6
Jul 3	11.2	9.7	9.9	5.8	7.4	7.6	8.6	12.1	13.5	15.0	15.9	16.9	19.3	23.6	21.7	20.0	18.7	16.5	17.3	6.8	1.7	0.5	2.2	0.8	0.5	23.6	11.8
Jul 4	1.2	1.4	1.2	2.0	2.6	2.8	9.7	11.4	12.7	15.7	16.5	12.3	16.1	19.0	12.8	13.3	12.1	14.1	14.4	9.7	8.6	4.3	1.9	5.0	1.2	19.0	9.2
Jul 5	6.7	7.2	8.6	4.0	6.2	4.8	7.7	11.6	11.2	15.0	14.2	17.4	18.1	14.6	16.5	13.7	16.7	10.9	9.2	9.6	7.7	2.6	3.7	5.4	2.6	18.1	10.1
Jul 6	3.9	3.8	4.0	3.9	3.0	2.7	2.8	6.3	5.7	7.2	8.0	4.7	3.8	3.1	3.0	1.3	2.2	2.4	1.3	2.5	6.4	2.9	3.7	1.9	1.3	8.0	**3.8**
Jul 7	2.2	1.2	4.1	3.5	1.8	4.5	11.9	15.2	17.7	17.3	20.0	21.2	20.7	21.3	21.6	24.3	21.9	21.8	16.8	8.9	4.5	4.2	3.2	4.4	1.2	24.3	12.3
Jul 8	3.2	3.1	3.4	2.8	2.4	6.6	3.9	9.5	13.3	12.9	18.0	17.9	19.2	19.8	13.1	11.2	11.6	10.3	6.7	6.2	4.1	2.1	0.5	**0.2**	**0.2**	19.8	8.4
Jul 9	1.0	2.0	2.9	3.4	3.4	3.7	2.7	6.8	6.7	10.1	11.3	11.9	13.7	8.2	6.0	6.0	12.4	14.2	11.6	7.2	7.8	3.5	2.3	3.9	1.0	14.2	6.8
Jul 10	5.4	5.2	6.4	5.3	4.8	4.6	4.0	3.4	4.6	5.1	9.3	9.9	9.3	9.7	10.6	7.4	8.5	6.7	4.9	4.9	5.0	2.5	2.5	1.3	1.3	10.6	5.9
Jul 11	2.9	1.6	3.1	2.5	4.6	3.9	5.2	8.2	12.1	15.1	15.8	18.4	18.6	20.5	22.5	23.2	22.0	17.5	20.7	10.2	14.1	16.0	14.7	15.4	1.6	23.2	12.9
Jul 12	14.2	9.8	13.4	11.3	10.4	14.4	15.2	17.4	20.3	20.5	18.3	21.6	24.2	25.3	25.1	24.9	24.2	24.5	23.2	15.2	12.2	11.6	6.2	4.7	4.7	25.3	17.0
Jul 13	4.4	3.6	2.2	3.1	2.4	2.4	7.2	8.9	6.9	8.7	7.7	9.7	9.7	11.9	10.2	7.4	7.8	8.0	7.7	4.3	3.5	3.0	1.9	2.1	1.9	11.9	6.0
Jul 14	2.6	4.3	3.5	7.8	8.5	6.2	10.9	12.8	12.7	10.4	11.2	13.7	13.4	15.4	18.9	13.0	10.9	9.2	8.9	4.7	2.4	4.6	2.4	3.1	2.4	18.9	8.8
Jul 15	3.6	3.5	3.0	2.3	2.2	2.9	2.6	8.3	8.9	12.4	15.4	13.9	13.3	14.3	14.1	8.8	7.7	5.4	2.9	2.5	2.4	1.9	2.3	4.6	1.9	15.4	6.6
Jul 16	4.5	6.2	7.0	6.3	5.5	5.7	7.0	11.1	14.1	16.2	19.5	18.2	20.8	19.7	19.9	21.1	19.3	17.8	16.6	12.5	6.4	4.0	3.9	6.2	3.9	21.1	12.1
Jul 17	6.6	6.6	8.3	4.6	9.2	11.0	9.5	14.2	8.9	6.9	11.8	14.4	19.0	19.8	16.1	12.2	19.5	25.9	7.8	4.6	3.3	3.6	4.0	3.9	3.3	25.9	10.5
Jul 18	7.6	4.1	1.9	3.4	2.9	3.1	8.1	10.3	11.2	12.9	8.9	12.4	13.5	16.6	18.6	14.5	13.6	10.0	9.9	7.6	4.1	6.0	10.8	10.6	1.9	18.6	9.3
Jul 19	6.6	7.0	6.3	6.6	7.9	10.1	9.9	9.7	10.9	13.1	10.1	11.2	17.0	17.0	18.8	17.4	13.9	10.8	4.1	3.5	3.2	1.9	5.3	10.4	1.9	18.8	9.7
Jul 20	9.8	7.1	5.6	3.6	6.0	6.2	6.4	7.1	8.5	11.9	13.4	13.1	11.9	14.6	14.7	14.4	14.9	13.4	10.7	8.6	6.9	4.6	2.9	3.6	2.9	14.9	9.2
Jul 21	4.3	3.9	4.1	6.9	4.8	5.1	4.9	11.9	16.5	15.8	10.6	15.4	18.7	17.8	14.2	16.2	17.1	15.8	10.2	8.7	10.1	7.6	7.2	8.0	3.9	18.7	10.7
Jul 22	8.0	6.5	6.3	5.2	6.1	3.6	3.5	4.7	6.2	7.1	7.6	9.4	10.6	11.6	9.2	11.7	13.8	12.4	8.5	4.7	4.0	3.3	5.1	3.8	3.3	13.8	7.2
Jul 23	4.7	6.1	2.8	6.3	3.3	6.1	8.3	10.0	11.5	7.6	16.3	11.7	13.6	12.3	16.0	14.3	5.0	5.8	3.7	2.2	4.9	3.0	7.1	5.5	2.2	16.3	7.8
Jul 24	6.6	5.2	4.3	5.0	5.7	6.7	10.4	7.3	9.1	8.6	9.7	7.0	7.8	5.1	8.8	8.3	10.1	9.4	9.5	9.4	8.7	11.9	10.8	12.0	4.3	12.0	8.2
Jul 25	15.0	18.5	18.1	17.6	18.1	20.1	21.4	20.0	20.4	23.6	25.3	25.0	24.0	25.3	24.9	20.5	17.1	14.6	15.4	6.7	3.0	1.7	1.5	2.6	1.5	25.3	16.7
Jul 26	5.8	11.7	14.7	15.4	14.4	14.0	18.4	19.5	20.7	24.7	25.6	27.2	29.3	30.6	**31.4**	28.9	23.5	19.3	16.0	9.6	8.2	8.8	10.2	9.5	5.8	**31.4**	**18.2**
Jul 27	8.5	4.1	5.4	4.7	5.8	5.0	11.0	9.3	9.3	12.5	16.7	19.1	21.9	18.7	19.1	20.6	24.4	21.2	10.9	7.0	10.3	9.2	12.3	6.7	4.1	24.4	12.2
Jul 28	7.9	6.5	4.2	3.5	2.8	2.5	3.1	7.0	6.3	9.1	11.2	9.8	11.8	9.7	12.1	9.4	14.4	8.8	13.9	9.0	10.6	8.8	11.8	11.6	2.5	14.4	8.6
Jul 29	13.0	13.1	10.6	11.3	10.0	10.0	14.6	18.7	21.9	21.8	24.9	23.7	24.4	27.3	29.1	23.8	23.3	20.2	15.4	9.4	3.6	2.1	4.9	5.3	2.1	29.1	15.9
Jul 30	5.0	4.9	3.1	1.9	3.0	4.6	11.7	6.5	3.3	10.2	14.4	16.7	17.1	14.2	12.8	15.7	12.4	13.4	4.4	3.1	2.5	2.3	2.9	1.6	1.6	17.1	7.8
Jul 31	1.6	2.3	2.8	2.8	3.1	2.6	1.7	3.8	5.1	3.6	4.5	9.4	11.3	9.8	12.3	8.5	8.5	6.3	4.5	4.2	3.0	2.8	5.0	6.8	1.6	12.3	5.3
Diurnal Maximum	30.7	23.6	23.2	22.6	20.6	20.1	21.4	20.0	23.5	24.7	25.6	27.2	29.3	30.6	31.4	28.9	24.4	25.9	23.2	15.2	14.1	16.0	14.7	15.4			
Daiurnal Average	7.0	6.6	6.5	6.4	6.6	6.6	8.6	10.6	11.8	13.0	14.6	15.2	16.6	16.7	16.7	15.1	15.1	13.7	10.9	7.4	6.3	5.0	5.5	5.6			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for WS - 842b Station



RENO STATION

peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

Summary of Hourly Instantaneous Maximums

SULPHUR DIOXIDE (SO_2) in ppb

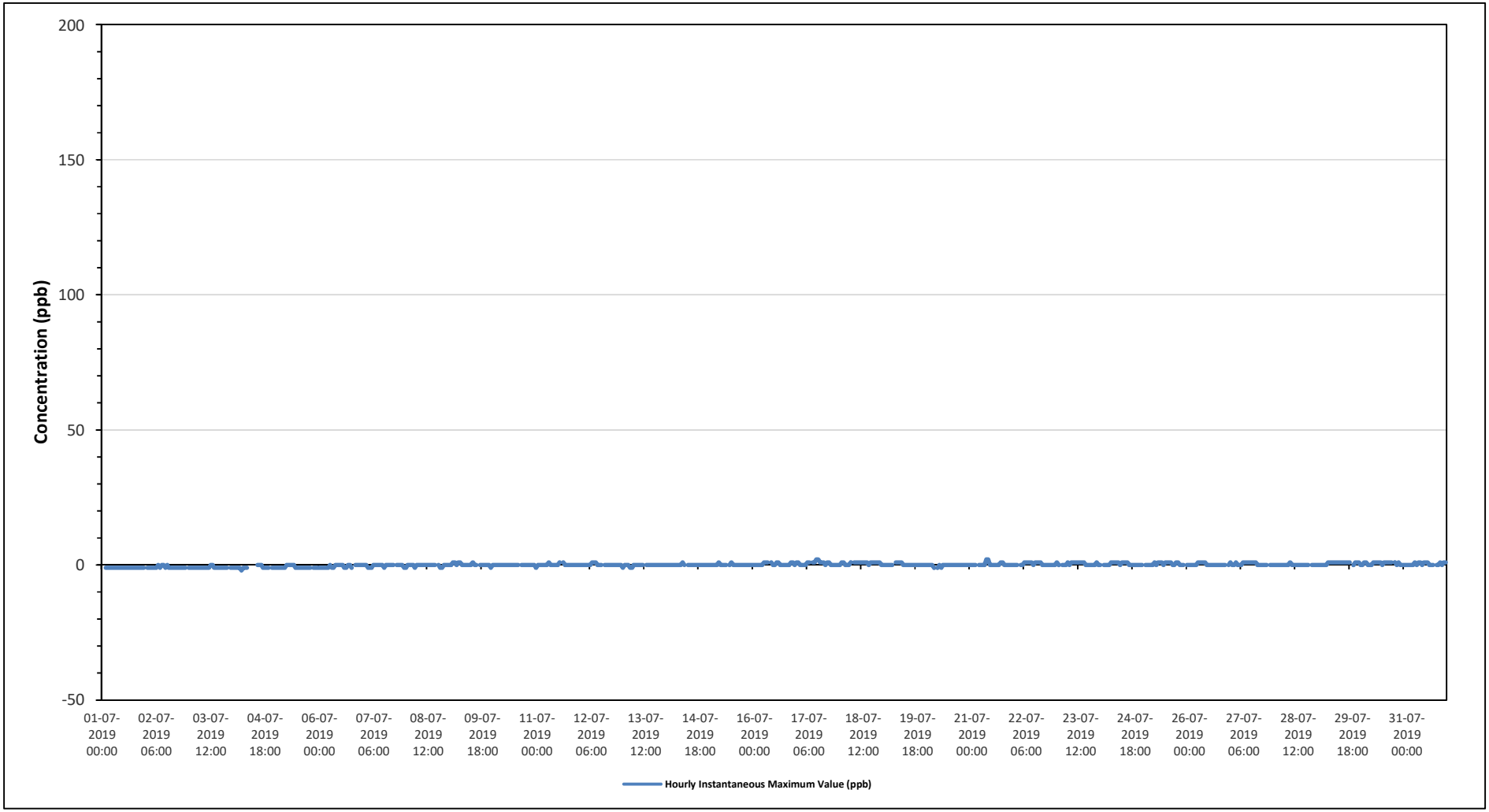
Maximum Hourly Value:	2	ppb	on July 17 at hour 11	Hours in Service:	744
Maximum Daily Value:	0.7	ppb	on July 18	Hours of Data:	706
Minimum Hourly Value:	-2	ppb	on July 4 at hour 5	Hours of Missing Data:	0
Minimum Daily Value:	-1.0	ppb	on July 1	Hours of Calibration:	38
Monthly Average:	0.0	ppb		Operational 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
Jul 1	-1	S	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1.0
Jul 2	S	-1	-1	-1	-1	-1	-1	0	-1	0	0	-1	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	S	-1	0	-0.8
Jul 3	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	0	-1	-1	-1	-1	-1	-1	-1	-1	S	-1	-1	0	-0.9
Jul 4	-1	-1	-1	-1	-1	-2	-1	-1	-1	C	C	C	C	C	0	0	0	-1	-1	-1	-1	S	-1	-1	-2	0	-0.9
Jul 5	-1	-1	-1	-1	-1	-1	0	0	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	S	-1	-1	-1	-1	0	-0.8
Jul 6	-1	-1	-1	-1	-1	-1	0	-1	-1	0	0	0	0	0	-1	-1	0	0	-1	S	0	0	0	0	-1	0	-0.5
Jul 7	0	0	0	-1	-1	-1	0	0	0	0	0	0	-1	0	0	0	0	0	S	0	0	0	0	-1	-1	0	-0.2
Jul 8	-1	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	0	S	0	-1	-1	0	0	0	-1	0	-0.2
Jul 9	0	0	1	1	0	1	1	0	0	0	0	0	0	1	0	0	S	0	0	0	0	0	0	-1	-1	1	0.2
Jul 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
Jul 11	-1	0	0	0	0	0	0	1	0	0	0	0	0	1	S	1	0	0	0	0	0	0	0	0	-1	1	0.1
Jul 12	0	0	0	0	0	0	0	1	1	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jul 13	-1	0	0	0	-1	-1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	-1	0	-0.1
Jul 14	0	0	0	0	0	0	0	0	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
Jul 15	0	0	0	0	0	1	0	0	0	0	S	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
Jul 16	0	0	0	0	0	0	1	1	1	S	1	0	0	1	1	0	0	0	0	0	0	1	1	0	0	1	0.3
Jul 17	1	1	0	0	0	0	1	1	S	1	1	2	2	1	1	1	0	1	1	0	0	0	0	0	0	2	0.7
Jul 18	0	1	1	0	0	0	1	S	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	0	1	0.7
Jul 19	0	0	0	0	0	0	S	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2
Jul 20	0	0	0	0	-1	S	-1	0	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	-0.1
Jul 21	0	0	0	0	S	0	0	0	0	2	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0.3
Jul 22	0	0	0	S	0	0	1	1	1	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0.4
Jul 23	1	0	S	0	0	0	1	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0	0	1	0.5
Jul 24	0	S	0	0	0	0	1	1	1	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0.4
Jul 25	S	0	0	0	0	0	1	0	1	1	1	0	1	1	1	1	0	0	1	1	0	0	0	S	0	1	0.5
Jul 26	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0.2
Jul 27	1	0	0	1	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	S	0	0	0	1	0.4
Jul 28	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0.0
Jul 29	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	S	0	1	1	1	0	1	0.7
Jul 30	0	0	1	1	0	0	0	1	1	1	1	1	0	1	1	1	1	1	S	1	0	1	0	0	0	1	0.6
Jul 31	0	0	0	0	0	0	1	0	1	1	0	1	1	1	0	0	0	S	0	0	1	0	1	1	0	1	0.4
Diurnal Maximum	1	1	1	1	0	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1			
Daiurnal Average	-0.2	-0.1	-0.1	-0.1	-0.3	-0.3	0.2	0.2	0.2	0.5	0.4	0.1	0.3	0.3	0.2	0.1	-0.1	0.0	0.0	-0.1	-0.1	0.0	0.0	-0.1			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for SO2 - Reno Station



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

Summary of Hourly Instantaneous Maximums

TOTAL REDUCED SULPHUR (TRS) in ppb

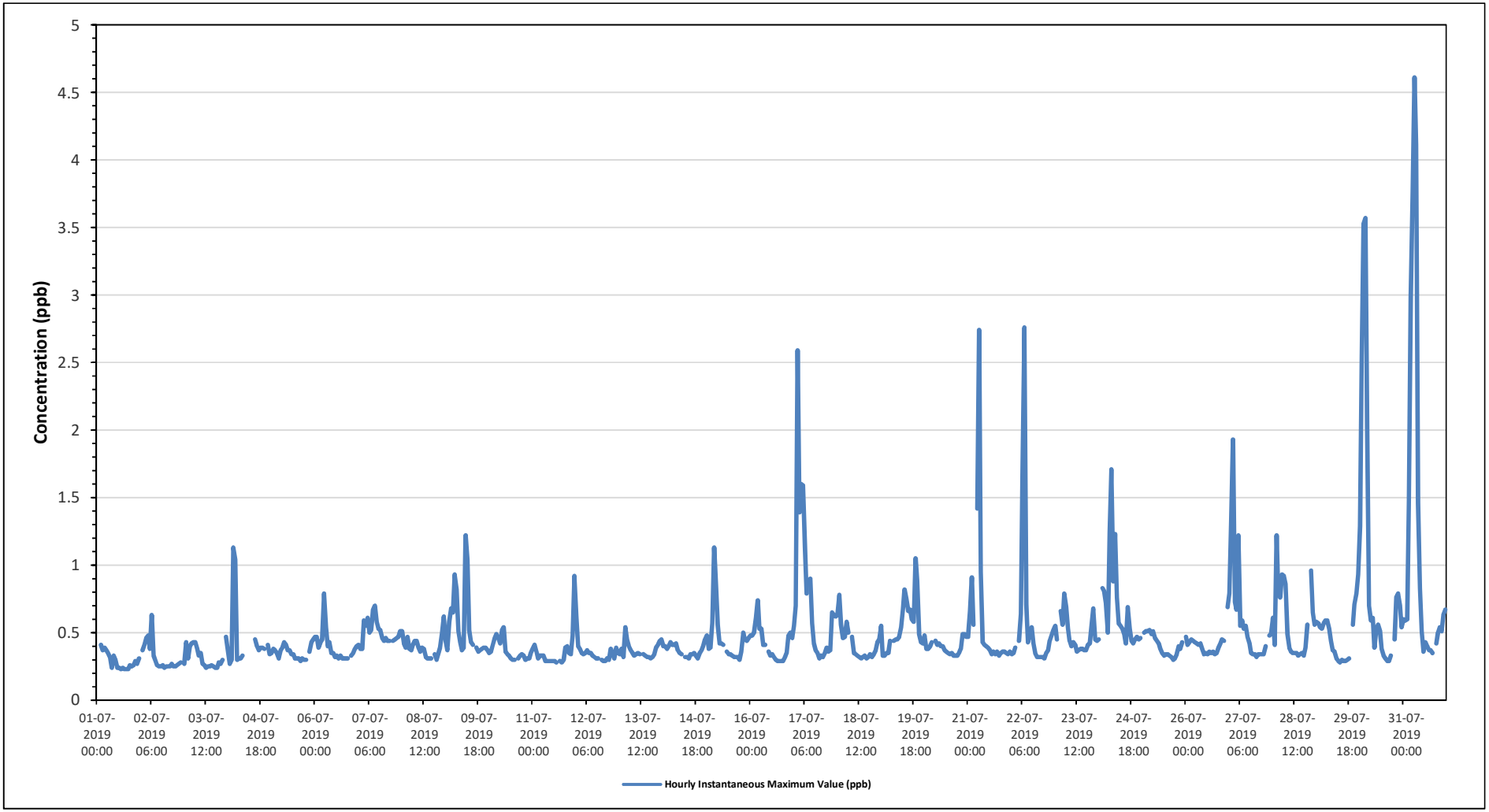
Maximum Hourly Value:	4.61	ppb	on July 31 at hour 6	Hours in Service:	744
Maximum Daily Value:	1.18	ppb	on July 31	Hours of Data:	705
Minimum Hourly Value:	0.23	ppb	on July 1 at hour 13	Hours of Missing Data:	0
Minimum Daily Value:	0.29	ppb	on July 1	Hours of Calibration:	39
Monthly Average:	0.49	ppb		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
Jul 1	0.36	S	0.41	0.37	0.39	0.37	0.35	0.32	0.24	0.33	0.3	0.24	0.24	0.23	0.24	0.23	0.23	0.23	0.26	0.25	0.26	0.29	0.27	0.31	0.23	0.41	0.29
Jul 2	S	0.37	0.41	0.46	0.48	0.38	0.63	0.33	0.29	0.26	0.25	0.25	0.26	0.24	0.25	0.25	0.25	0.27	0.25	0.25	0.26	0.27	0.28	S	0.24	0.63	0.32
Jul 3	0.27	0.43	0.31	0.4	0.42	0.43	0.43	0.38	0.33	0.35	0.27	0.26	0.24	0.25	0.25	0.26	0.25	0.24	0.24	0.28	0.27	0.3	S	0.47	0.24	0.47	0.32
Jul 4	0.36	0.27	0.3	1.13	1.04	0.3	0.31	0.31	0.33	C	C	C	C	C	C	0.45	0.4	0.37	0.39	0.39	0.38	S	0.41	0.34	0.27	1.13	-
Jul 5	0.35	0.38	0.37	0.35	0.31	0.37	0.39	0.43	0.41	0.37	0.37	0.34	0.34	0.31	0.31	0.31	0.29	0.31	0.3	0.3	S	0.36	0.43	0.45	0.29	0.45	0.35
Jul 6	0.47	0.47	0.39	0.43	0.45	0.79	0.54	0.4	0.43	0.35	0.35	0.32	0.33	0.31	0.33	0.31	0.31	0.31	0.31	S	0.33	0.35	0.38	0.4	0.31	0.79	0.39
Jul 7	0.41	0.38	0.38	0.59	0.55	0.61	0.5	0.52	0.67	0.7	0.58	0.53	0.52	0.46	0.44	0.46	0.44	0.44	S	0.44	0.45	0.46	0.47	0.51	0.38	0.70	0.50
Jul 8	0.51	0.42	0.39	0.47	0.38	0.37	0.41	0.44	0.44	0.39	0.36	0.39	0.38	0.32	0.31	0.31	0.31	S	0.34	0.3	0.35	0.39	0.5	0.62	0.30	0.62	0.40
Jul 9	0.44	0.37	0.58	0.68	0.65	0.93	0.82	0.51	0.43	0.37	0.39	1.22	1.04	0.52	0.43	0.41	S	0.39	0.36	0.37	0.38	0.39	0.39	0.37	0.36	1.22	0.54
Jul 10	0.35	0.36	0.41	0.46	0.49	0.46	0.42	0.52	0.54	0.36	0.34	0.33	0.31	0.3	0.3	S	0.31	0.33	0.34	0.33	0.3	0.31	0.31	0.35	0.30	0.54	0.37
Jul 11	0.38	0.41	0.36	0.31	0.33	0.33	0.33	0.29	0.29	0.29	0.29	0.29	0.29	0.28	S	0.29	0.28	0.3	0.39	0.4	0.35	0.34	0.48	0.92	0.28	0.92	0.36
Jul 12	0.62	0.4	0.38	0.35	0.34	0.35	0.37	0.35	0.35	0.33	0.32	0.31	0.31	S	0.3	0.29	0.29	0.31	0.3	0.38	0.35	0.31	0.39	0.35	0.29	0.62	0.35
Jul 13	0.34	0.38	0.32	0.54	0.45	0.4	0.37	0.35	0.33	0.34	0.35	0.34	S	0.34	0.33	0.32	0.32	0.31	0.32	0.34	0.39	0.41	0.44	0.45	0.31	0.54	0.37
Jul 14	0.4	0.4	0.38	0.4	0.43	0.41	0.41	0.42	0.37	0.35	0.34	S	0.32	0.32	0.31	0.34	0.34	0.35	0.33	0.31	0.35	0.37	0.4	0.45	0.31	0.45	0.37
Jul 15	0.48	0.38	0.39	0.57	1.13	0.85	0.56	0.42	0.42	0.41	S	0.36	0.34	0.34	0.33	0.32	0.32	0.32	0.3	0.36	0.5	0.45	0.44	0.46	0.30	1.13	0.45
Jul 16	0.48	0.48	0.5	0.61	0.74	0.53	0.53	0.41	0.41	S	0.36	0.33	0.34	0.32	0.3	0.29	0.29	0.29	0.29	0.32	0.35	0.48	0.5	0.46	0.29	0.74	0.42
Jul 17	0.55	0.7	2.59	1.39	1.6	1.59	1.14	0.79	S	0.9	0.57	0.42	0.37	0.35	0.31	0.33	0.32	0.35	0.39	0.36	0.37	0.65	0.63	0.62	0.31	2.59	0.75
Jul 18	0.63	0.78	0.56	0.46	0.47	0.58	0.5	S	0.47	0.35	0.34	0.33	0.32	0.31	0.32	0.33	0.31	0.32	0.34	0.32	0.34	0.37	0.43	0.45	0.31	0.78	0.42
Jul 19	0.55	0.33	0.33	0.35	0.35	0.44	S	0.44	0.45	0.45	0.47	0.54	0.67	0.82	0.75	0.66	0.67	0.6	0.58	1.05	0.88	0.49	0.43	0.42	0.33	1.05	0.55
Jul 20	0.48	0.38	0.38	0.4	0.43	S	0.44	0.41	0.42	0.4	0.4	0.37	0.36	0.35	0.34	0.35	0.33	0.33	0.33	0.35	0.38	0.49	0.49	0.47	0.33	0.49	0.39
Jul 21	0.47	0.66	0.91	0.56	S	1.42	2.74	0.95	0.43	0.41	0.4	0.39	0.37	0.34	0.36	0.34	0.36	0.33	0.35	0.36	0.36	0.35	0.34	0.36	0.33	2.74	0.59
Jul 22	0.34	0.35	0.39	S	0.44	0.64	1.65	2.76	0.71	0.43	0.49	0.54	0.42	0.35	0.32	0.32	0.32	0.32	0.31	0.35	0.37	0.44	0.48	0.52	0.31	2.76	0.58
Jul 23	0.55	0.45	S	0.66	0.56	0.79	0.69	0.53	0.44	0.4	0.43	0.41	0.36	0.37	0.38	0.38	0.37	0.37	0.41	0.42	0.55	0.68	0.45	0.44	0.36	0.79	0.48
Jul 24	0.45	S	0.83	0.81	0.72	0.5	1.24	1.71	0.88	1.23	0.76	0.57	0.55	0.53	0.49	0.42	0.69	0.53	0.44	0.42	0.45	0.47	0.45	0.46	0.42	1.71	0.68
Jul 25	S	0.5	0.51	0.51	0.52	0.49	0.51	0.46	0.44	0.42	0.38	0.35	0.33	0.34	0.34	0.33	0.32	0.3	0.31	0.34	0.4	0.38	0.43	S	0.30	0.52	0.41
Jul 26	0.47	0.41	0.43	0.45	0.44	0.43	0.42	0.41	0.42	0.38	0.34	0.35	0.34	0.36	0.35	0.36	0.34	0.35	0.39	0.42	0.45	0.44	S	0.69	0.34	0.69	0.41
Jul 27	0.79	1.33	1.93	0.73	0.67	1.22	0.55	0.59	0.53	0.55	0.47	0.42	0.35	0.34	0.34	0.32	0.34	0.34	0.34	0.34	0.4	S	0.48	0.49	0.32	1.93	0.60
Jul 28	0.61	0.41	1.22	0.79	0.76	0.93	0.92	0.86	0.49	0.39	0.36	0.35	0.35	0.35	0.33	0.34	0.35	0.33	0.39	0.56	S	0.96	0.65	0.56	0.33	1.22	0.58
Jul 29	0.58	0.57	0.54	0.53	0.57	0.59	0.59	0.53	0.44	0.37	0.36	0.31	0.29	0.28	0.3	0.29	0.29	0.3	0.31	S	0.56	0.71	0.79	0.93	0.28	0.93	0.48
Jul 30	1.29	2.54	3.53	3.57	2.03	0.7	0.59	0.61	0.39	0.53	0.56	0.51	0.38	0.33	0.31	0.29	0.29	0.33	S	0.45	0.76	0.79	0.7	0.54	0.29	3.57	0.96
Jul 31	0.6	0.59	0.6	1.47	2.98	3.77	**4.61**	4.11	1.46	0.83	0.51	0.36	0.43	0.4	0.37	0.37	0.35	S	0.42	0.5	0.54	0.51	0.63	0.67	0.35	**4.61**	**1.18**
Diurnal Maximum	1.29	2.54	3.53	3.57	2.98	3.77	4.61	4.11	1.46	1.23	0.76	1.22	1.04	0.82	0.75	0.66	0.69	0.60	0.58	1.05	0.88	0.96	0.79	0.93			
Daiurnal Average	0.50	0.55	0.70	0.69	0.70	0.73	0.80	0.72	0.48	0.46	0.40	0.40	0.38	0.36	0.35	0.34	0.34	0.34	0.35	0.39	0.42	0.46	0.46	0.50			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for TRS - Reno Station



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

Summary of Hourly Instantaneous Maximums

TOTAL HYDROCARBONS (THC) in ppm

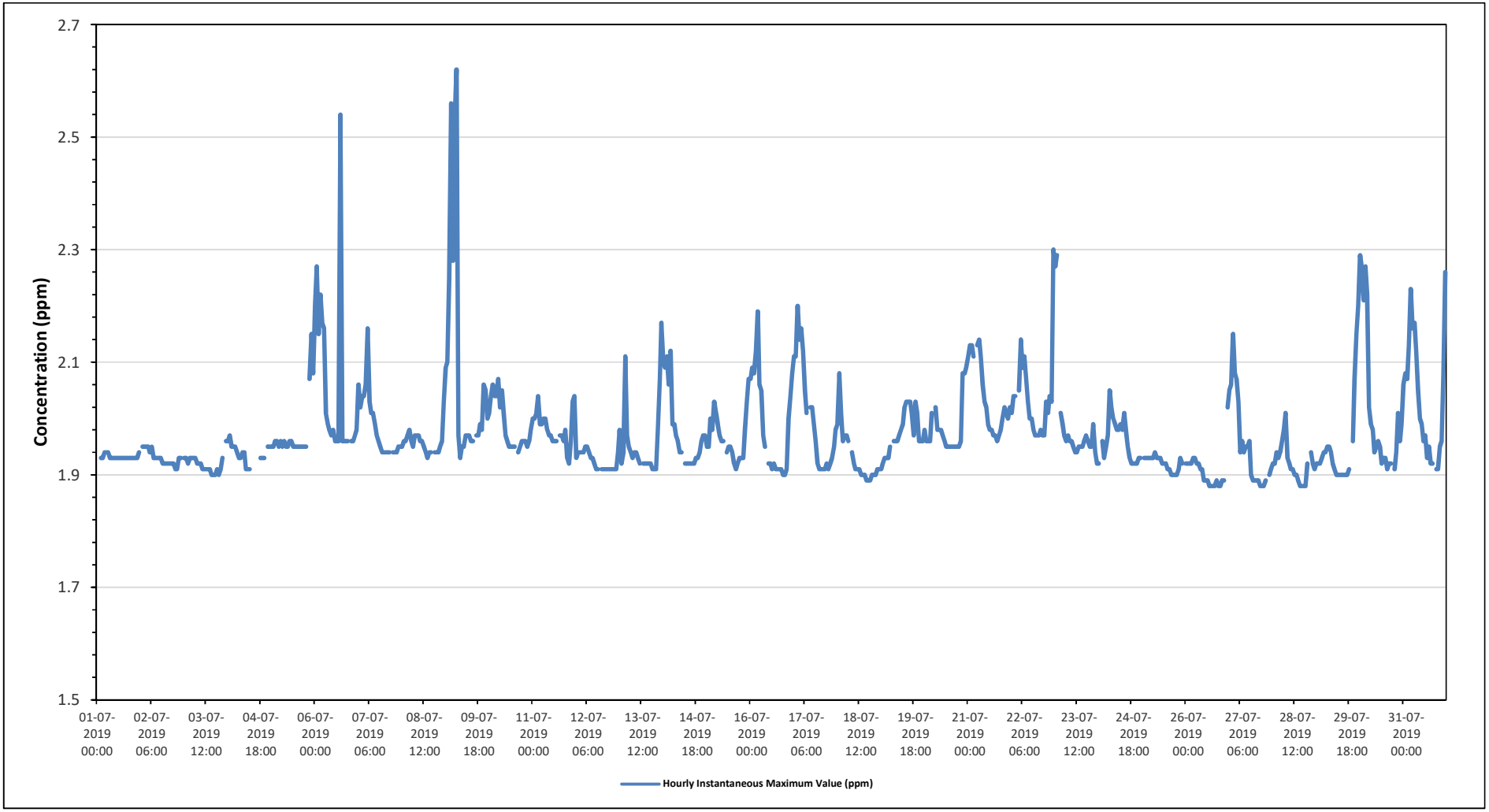
Maximum Hourly Value:	2.62	ppm	on July 9 at hour 6	Hours in Service:	744
Maximum Daily Value:	2.09	ppm	on July 9	Hours of Data:	706
Minimum Hourly Value:	1.88	ppm	on July 26 at hour 13	Hours of Missing Data:	0
Minimum Daily Value:	1.91	ppm	on July 26	Hours of Calibration:	38
Monthly Average:	1.97	ppm		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
Jul 1	1.90	S	1.93	1.93	1.94	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.90	1.94	1.93
Jul 2	S	1.95	1.95	1.95	1.95	1.94	1.95	1.93	1.93	1.93	1.93	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.93	1.93	S	1.91	1.95	1.93
Jul 3	1.93	1.93	1.92	1.93	1.93	1.93	1.93	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.91	1.90	1.91	1.93	S	1.96	1.90	1.96	1.92
Jul 4	1.96	1.97	1.95	1.95	1.95	1.94	1.93	1.93	1.94	1.94	1.91	1.91	1.91	C	C	C	C	C	1.93	1.93	1.93	S	1.95	1.95	1.91	1.97	1.94
Jul 5	1.95	1.95	1.96	1.96	1.95	1.96	1.95	1.96	1.95	1.95	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	S	2.07	2.15	2.08	1.95	2.15	1.97
Jul 6	2.20	2.27	2.15	2.22	2.17	2.16	2.01	1.99	1.98	1.97	1.98	1.96	1.96	1.96	2.54	1.96	1.96	1.96	1.96	S	1.96	1.96	1.97	1.98	1.96	2.54	2.05
Jul 7	2.06	2.02	2.04	2.04	2.06	2.16	2.03	2.01	2.01	1.99	1.97	1.96	1.95	1.94	1.94	1.94	1.94	1.94	S	1.94	1.94	1.94	1.95	1.95	1.94	2.16	1.99
Jul 8	1.95	1.96	1.96	1.97	1.98	1.96	1.95	1.97	1.97	1.97	1.96	1.96	1.95	1.94	1.93	1.94	1.94	S	1.94	1.94	1.94	1.95	1.96	2.03	1.93	2.03	1.96
Jul 9	2.09	2.10	2.25	2.56	2.28	2.53	**2.62**	1.97	1.93	1.95	1.95	1.97	1.97	1.97	1.96	1.96	S	1.97	1.97	1.99	1.98	2.06	2.05	2.00	1.93	**2.62**	**2.09**
Jul 10	2.01	2.04	2.06	2.04	2.04	2.07	2.02	2.05	2.01	1.97	1.96	1.95	1.95	1.95	1.95	S	1.94	1.95	1.96	1.96	1.96	1.95	1.96	1.98	1.94	2.07	1.99
Jul 11	2.00	2.00	2.01	2.04	1.99	1.99	2.00	2.00	1.98	1.97	1.97	1.96	1.96	1.96	S	1.97	1.97	1.96	1.98	1.93	1.92	1.96	2.03	2.04	1.92	2.04	1.98
Jul 12	1.93	1.94	1.94	1.94	1.94	1.95	1.95	1.94	1.93	1.93	1.92	1.91	1.91	S	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.94	1.91	1.95	1.92
Jul 13	1.98	1.92	1.94	2.11	1.97	1.95	1.94	1.93	1.94	1.94	1.93	1.92	S	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.98	2.07	2.17	1.91	2.17	1.96
Jul 14	2.10	2.09	2.11	2.06	2.12	1.99	1.99	1.97	1.96	1.94	1.94	S	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.93	1.94	1.96	1.97	1.97	1.92	2.12	1.98
Jul 15	1.95	1.95	2.00	1.98	2.03	2.01	1.99	1.97	1.96	1.96	S	1.94	1.95	1.95	1.94	1.92	1.91	1.92	1.93	1.93	1.93	1.98	2.03	2.07	1.91	2.07	1.97
Jul 16	2.07	2.09	2.08	2.12	2.19	2.06	2.05	1.97	1.95	S	1.92	1.92	1.91	1.92	1.91	1.91	1.91	1.91	1.90	1.90	1.91	2.00	2.04	2.08	1.90	2.19	1.99
Jul 17	2.11	2.11	2.20	2.14	2.16	2.12	2.05	2.01	S	2.02	2.02	1.99	1.96	1.92	1.91	1.91	1.91	1.91	1.92	1.91	1.92	1.93	1.95	1.98	1.91	2.20	2.00
Jul 18	1.99	2.08	2.01	1.96	1.97	1.97	1.96	S	1.94	1.92	1.91	1.91	1.91	1.90	1.90	1.90	1.89	1.89	1.89	1.90	1.90	1.90	1.91	1.91	1.89	2.08	1.93
Jul 19	1.91	1.92	1.93	1.93	1.93	1.95	S	1.96	1.96	1.96	1.97	1.98	1.99	2.02	2.03	2.03	2.03	2.01	1.97	2.03	2.01	1.96	1.96	1.96	1.91	2.03	1.97
Jul 20	1.98	1.96	1.96	1.96	2.01	S	2.02	1.98	1.98	1.98	1.97	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	2.08	2.08	2.09	1.95	2.09	1.98
Jul 21	2.11	2.13	2.13	2.11	S	2.13	2.14	2.11	2.06	2.03	2.02	1.99	1.98	1.98	1.97	1.97	1.96	1.97	1.98	2.00	2.02	2.01	2.00	2.02	1.96	2.14	2.04
Jul 22	2.01	2.04	2.04	S	2.05	2.14	2.09	2.11	2.07	2.03	2.00	2.00	1.98	1.97	1.97	1.97	1.98	1.97	1.97	2.03	2.01	2.04	2.03	2.30	1.97	2.30	2.03
Jul 23	2.27	2.29	S	2.01	1.99	1.97	1.96	1.97	1.96	1.96	1.95	1.94	1.94	1.95	1.95	1.95	1.96	1.97	1.96	1.95	1.95	1.99	1.94	1.92	1.92	2.29	1.99
Jul 24	1.92	S	1.96	1.93	1.95	1.97	2.05	2.02	2.00	1.99	1.98	1.98	1.99	1.98	2.01	1.98	1.95	1.93	1.92	1.92	1.92	1.92	1.93	1.93	1.92	2.05	1.96
Jul 25	S	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.93	1.93	1.93	1.92	1.92	1.92	1.91	1.91	1.90	1.90	1.90	1.90	1.91	1.93	1.92	S	1.90	1.94	1.92
Jul 26	1.92	1.92	1.92	1.92	1.93	1.93	1.92	1.92	1.91	1.91	1.89	1.89	1.89	1.88	1.88	1.88	1.88	1.89	1.88	1.88	1.89	1.89	S	2.02	1.88	2.02	1.91
Jul 27	2.05	2.06	2.15	2.08	2.07	2.03	1.94	1.96	1.94	1.95	1.95	1.96	1.90	1.89	1.89	1.89	1.89	1.88	1.88	1.88	1.89	S	1.90	1.91	1.88	2.15	1.95
Jul 28	1.92	1.92	1.94	1.93	1.94	1.96	1.98	2.01	1.93	1.92	1.91	1.91	1.90	1.90	1.89	1.88	1.88	1.88	1.88	1.92	S	1.94	1.92	1.91	1.88	2.01	1.92
Jul 29	1.92	1.92	1.92	1.93	1.94	1.94	1.95	1.95	1.94	1.92	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.91	S	1.96	2.07	2.15	2.20	1.90	2.20	1.95
Jul 30	2.29	2.27	2.21	2.27	2.22	2.02	1.99	1.98	1.94	1.95	1.96	1.95	1.92	1.93	1.93	1.91	1.92	1.92	S	1.91	1.94	2.01	1.96	1.99	1.91	2.29	2.02
Jul 31	2.06	2.08	2.07	2.13	2.23	2.16	2.17	2.12	2.05	2.00	1.99	1.96	1.97	1.93	1.95	1.92	1.92	S	1.91	1.91	1.95	1.96	2.08	2.26	1.91	2.26	2.03
Diurnal Maximum	2.29	2.29	2.25	2.56	2.28	2.53	2.62	2.12	2.07	2.03	2.02	2.00	1.99	2.02	2.54	2.03	2.03	2.01	1.98	2.03	2.02	2.08	2.15	2.30			
Daiurnal Average	2.02	2.03	2.02	2.03	2.03	2.03	2.01	1.98	1.96	1.96	1.95	1.94	1.94	1.94	1.95	1.93	1.93	1.93	1.93	1.93	1.94	1.97	1.99	2.02			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for THC - Reno Station



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PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

Summary of Hourly Instantaneous Maximums

METHANE (CH4) in ppm

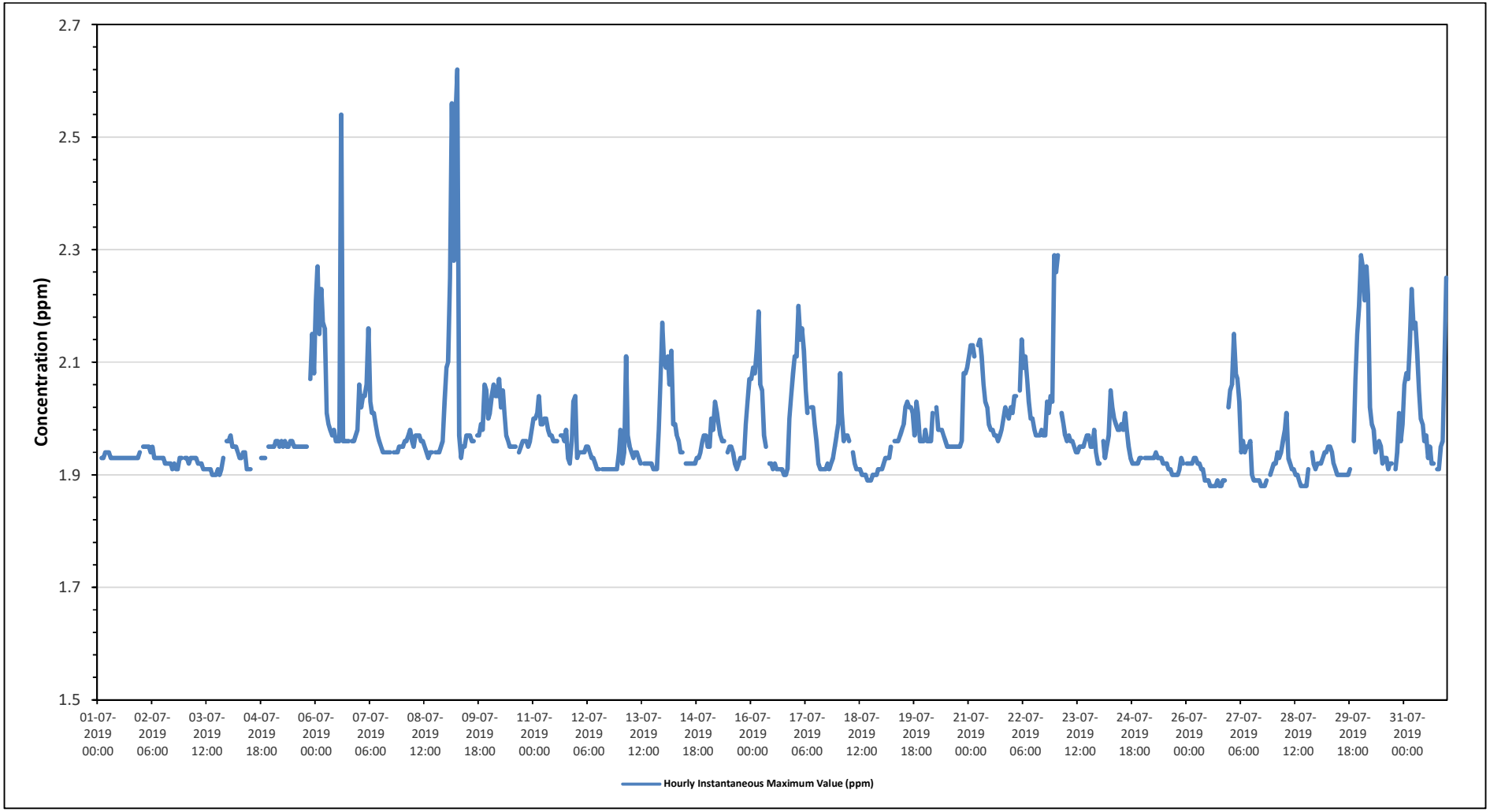
Maximum Hourly Value:	2.62	ppm	on July 9 at hour 2.62	Hours in Service:	744
Maximum Daily Value:	2.09	ppm	on July 9	Hours of Data:	706
Minimum Hourly Value:	1.88	ppm	on July 26 at hour 13	Hours of Missing Data:	0
Minimum Daily Value:	1.91	ppm	on July 26	Hours of Calibration:	38
Monthly Average:	1.97	ppm		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
Jul 1	1.90	S	1.93	1.93	1.94	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.90	1.94	1.93
Jul 2	S	1.95	1.95	1.95	1.95	1.94	1.95	1.93	1.93	1.93	1.93	1.93	1.93	1.92	1.92	1.92	1.92	1.91	1.92	1.91	1.91	1.93	1.93	S	1.91	1.95	1.93
Jul 3	1.93	1.93	1.92	1.93	1.93	1.93	1.93	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.91	1.90	1.91	1.93	S	1.96	1.90	1.96	1.92
Jul 4	1.96	1.97	1.95	1.95	1.95	1.94	1.93	1.93	1.94	1.94	1.91	1.91	1.91	C	C	C	C	C	1.93	1.93	1.93	S	1.95	1.95	1.91	1.97	1.94
Jul 5	1.95	1.95	1.96	1.96	1.95	1.96	1.95	1.96	1.95	1.95	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	S	2.07	2.15	2.08	1.95	2.15	1.97
Jul 6	2.21	2.27	2.15	2.23	2.17	2.16	2.01	1.99	1.98	1.97	1.98	1.96	1.96	1.96	2.54	1.96	1.96	1.96	1.96	S	1.96	1.96	1.97	1.98	1.96	2.54	2.05
Jul 7	2.06	2.02	2.04	2.04	2.06	2.16	2.03	2.01	2.01	1.99	1.97	1.96	1.95	1.94	1.94	1.94	1.94	1.94	S	1.94	1.94	1.94	1.95	1.95	1.94	2.16	1.99
Jul 8	1.95	1.96	1.96	1.97	1.98	1.96	1.95	1.97	1.97	1.97	1.96	1.96	1.95	1.94	1.93	1.94	1.94	S	1.94	1.94	1.94	1.95	1.96	2.03	1.93	2.03	1.96
Jul 9	2.09	2.10	2.25	2.56	2.28	2.53	**2.62**	1.97	1.93	1.95	1.95	1.97	1.97	1.97	1.96	1.96	S	1.97	1.97	1.99	1.98	2.06	2.05	2.00	1.93	**2.62**	**2.09**
Jul 10	2.01	2.04	2.06	2.04	2.04	2.07	2.02	2.05	2.01	1.97	1.96	1.95	1.95	1.95	1.95	S	1.94	1.95	1.96	1.96	1.96	1.95	1.96	1.98	1.94	2.07	1.99
Jul 11	2.00	2.00	2.01	2.04	1.99	1.99	2.00	2.00	1.98	1.97	1.97	1.96	1.96	1.96	S	1.97	1.97	1.96	1.98	1.93	1.92	1.96	2.03	2.04	1.92	2.04	1.98
Jul 12	1.93	1.94	1.94	1.94	1.94	1.95	1.95	1.94	1.93	1.93	1.92	1.91	1.91	S	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.94	1.91	1.95	1.92
Jul 13	1.98	1.92	1.94	2.11	1.97	1.95	1.94	1.93	1.94	1.94	1.93	1.92	S	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.98	2.07	2.17	1.91	2.17	1.96
Jul 14	2.10	2.09	2.11	2.06	2.12	1.99	1.99	1.97	1.96	1.94	1.94	S	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.93	1.94	1.96	1.97	1.97	1.92	2.12	1.98
Jul 15	1.95	1.95	2.00	1.98	2.03	2.01	1.99	1.97	1.96	1.96	S	1.94	1.95	1.95	1.94	1.92	1.91	1.92	1.93	1.93	1.93	1.99	2.03	2.07	1.91	2.07	1.97
Jul 16	2.07	2.09	2.08	2.12	2.19	2.06	2.05	1.97	1.95	S	1.92	1.92	1.91	1.92	1.91	1.91	1.91	1.91	1.90	1.90	1.91	2.00	2.04	2.08	1.90	2.19	1.99
Jul 17	2.11	2.11	2.20	2.14	2.16	2.12	2.05	2.01	S	2.02	2.02	1.99	1.96	1.92	1.91	1.91	1.91	1.91	1.92	1.91	1.92	1.93	1.95	1.97	1.91	2.20	2.00
Jul 18	1.99	2.08	2.01	1.96	1.97	1.97	1.96	S	1.94	1.92	1.91	1.91	1.91	1.90	1.90	1.90	1.89	1.89	1.89	1.90	1.90	1.90	1.91	1.91	1.89	2.08	1.93
Jul 19	1.91	1.92	1.93	1.93	1.93	1.95	S	1.96	1.96	1.96	1.97	1.98	1.99	2.02	2.03	2.02	2.02	2.01	1.97	2.03	2.01	1.96	1.96	1.96	1.91	2.03	1.97
Jul 20	1.98	1.96	1.96	1.96	2.01	S	2.02	1.98	1.98	1.98	1.97	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	2.08	2.08	2.09	1.95	2.09	1.98
Jul 21	2.11	2.13	2.13	2.11	S	2.13	2.14	2.11	2.06	2.03	2.02	1.99	1.98	1.98	1.97	1.97	1.96	1.97	1.98	2.00	2.02	2.01	2.00	2.02	1.96	2.14	2.04
Jul 22	2.01	2.04	2.04	S	2.05	2.14	2.09	2.11	2.07	2.03	2.00	2.00	1.98	1.97	1.97	1.97	1.98	1.97	1.97	2.03	2.01	2.04	2.03	2.29	1.97	2.29	2.03
Jul 23	2.26	2.29	S	2.01	1.99	1.97	1.96	1.97	1.96	1.96	1.95	1.94	1.94	1.95	1.95	1.95	1.96	1.97	1.97	1.95	1.95	1.98	1.94	1.92	1.92	2.29	1.99
Jul 24	1.92	S	1.96	1.93	1.95	1.97	2.05	2.02	2.00	1.99	1.98	1.98	1.99	1.98	2.01	1.98	1.95	1.93	1.92	1.92	1.92	1.92	1.93	1.93	1.92	2.05	1.96
Jul 25	S	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.93	1.93	1.93	1.92	1.92	1.92	1.91	1.91	1.90	1.90	1.90	1.90	1.91	1.93	1.92	S	1.90	1.94	1.92
Jul 26	1.92	1.92	1.92	1.92	1.93	1.93	1.92	1.92	1.91	1.91	1.89	1.89	1.89	1.88	1.88	1.88	1.88	1.89	1.88	1.88	1.89	1.89	S	2.02	1.88	2.02	1.91
Jul 27	2.05	2.06	2.15	2.08	2.07	2.03	1.94	1.96	1.94	1.95	1.95	1.96	1.90	1.89	1.89	1.89	1.89	1.88	1.88	1.88	1.89	S	1.90	1.91	1.88	2.15	1.95
Jul 28	1.92	1.92	1.94	1.93	1.94	1.96	1.98	2.01	1.93	1.92	1.91	1.91	1.90	1.90	1.89	1.88	1.88	1.88	1.88	1.91	S	1.94	1.92	1.91	1.88	2.01	1.92
Jul 29	1.92	1.92	1.92	1.93	1.94	1.94	1.95	1.95	1.94	1.92	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.91	S	1.96	2.07	2.15	2.20	1.90	2.20	1.95
Jul 30	2.29	2.27	2.21	2.27	2.22	2.02	1.99	1.98	1.94	1.95	1.96	1.95	1.92	1.93	1.93	1.91	1.92	1.92	S	1.91	1.94	2.01	1.96	1.99	1.91	2.29	2.02
Jul 31	2.06	2.08	2.07	2.13	2.23	2.16	2.17	2.12	2.05	2.00	1.99	1.96	1.97	1.93	1.95	1.92	1.92	S	1.91	1.91	1.95	1.96	2.08	2.25	1.91	2.25	2.03
Diurnal Maximum	2.29	2.29	2.25	2.56	2.28	2.53	2.62	2.12	2.07	2.03	2.02	2.00	1.99	2.02	2.54	2.02	2.02	2.01	1.98	2.03	2.02	2.08	2.15	2.29			
Daiurnal Average	2.02	2.03	2.02	2.03	2.03	2.03	2.01	1.98	1.96	1.96	1.95	1.94	1.94	1.94	1.95	1.93	1.93	1.93	1.93	1.93	1.94	1.97	1.99	2.02			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for CH4 - Reno Station



peace river area monitoring program pramp

PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

Summary of Hourly Instantaneous Maximums

NON-METHANE HYDROCARBONS (NMHC) in ppm

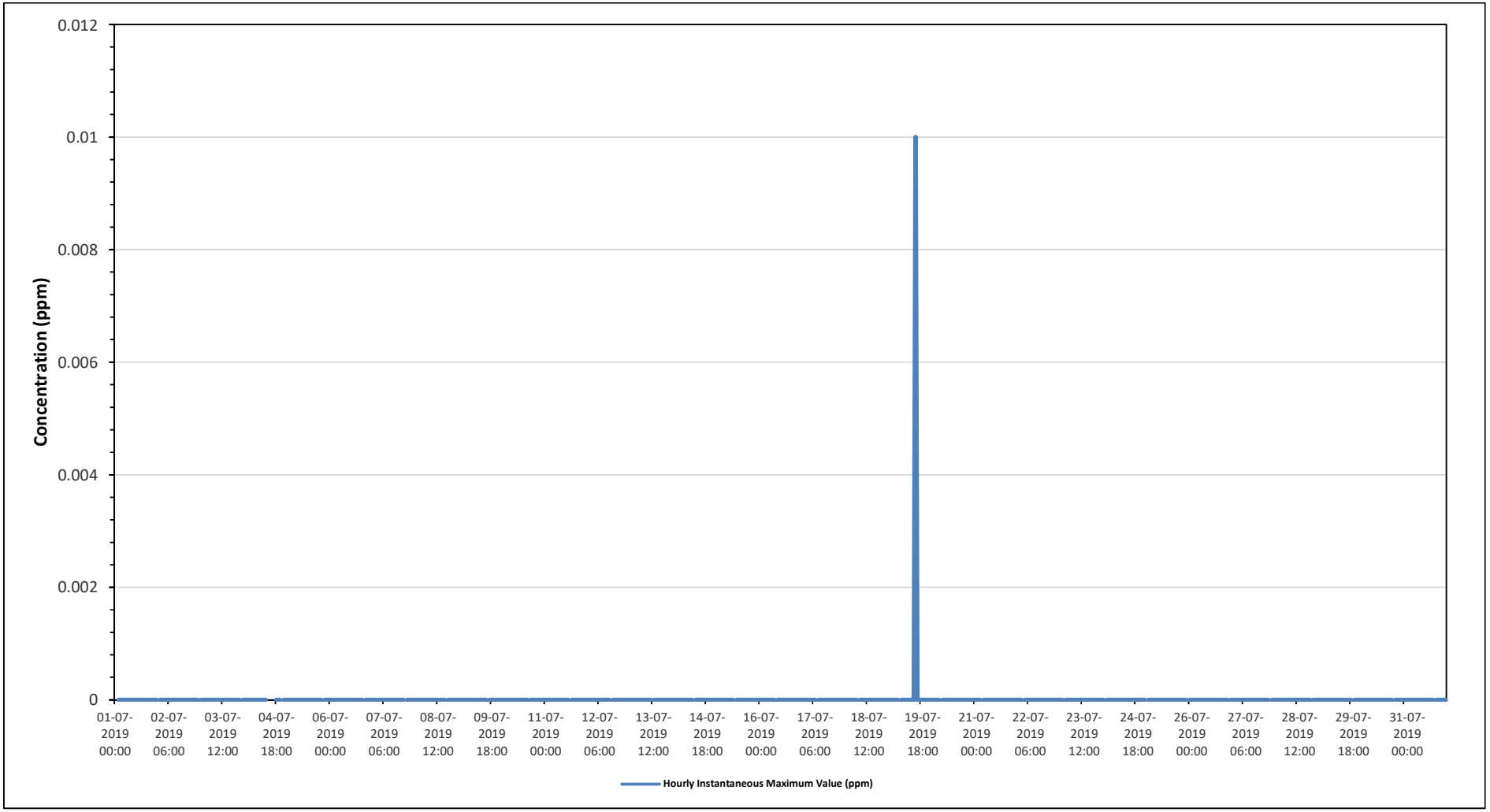
Maximum Hourly Value:	0.01	ppm	on July 19 at hour 15	Hours in Service:	744
Maximum Daily Value:	0.00	ppm	on July 19	Hours of Data:	706
Minimum Hourly Value:	0.00	ppm	on July 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.00	ppm	on July 1	Hours of Calibration:	38
Monthly Average:	0.00	ppm		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			
Jul 1	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 2	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
Jul 3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Jul 4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	C	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jul 5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Jul 6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 19	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.01**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.01**	**0.00**
Jul 20	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 21	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 22	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 23	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 24	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 25	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00
Jul 26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00
Jul 27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00
Jul 28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00
Jul 29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diurnal Maximum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Daiurnal 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	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for NMHC - Reno Station



PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

Summary of Hourly Instantaneous Maximums

WIND SPEED (WS) in km/h

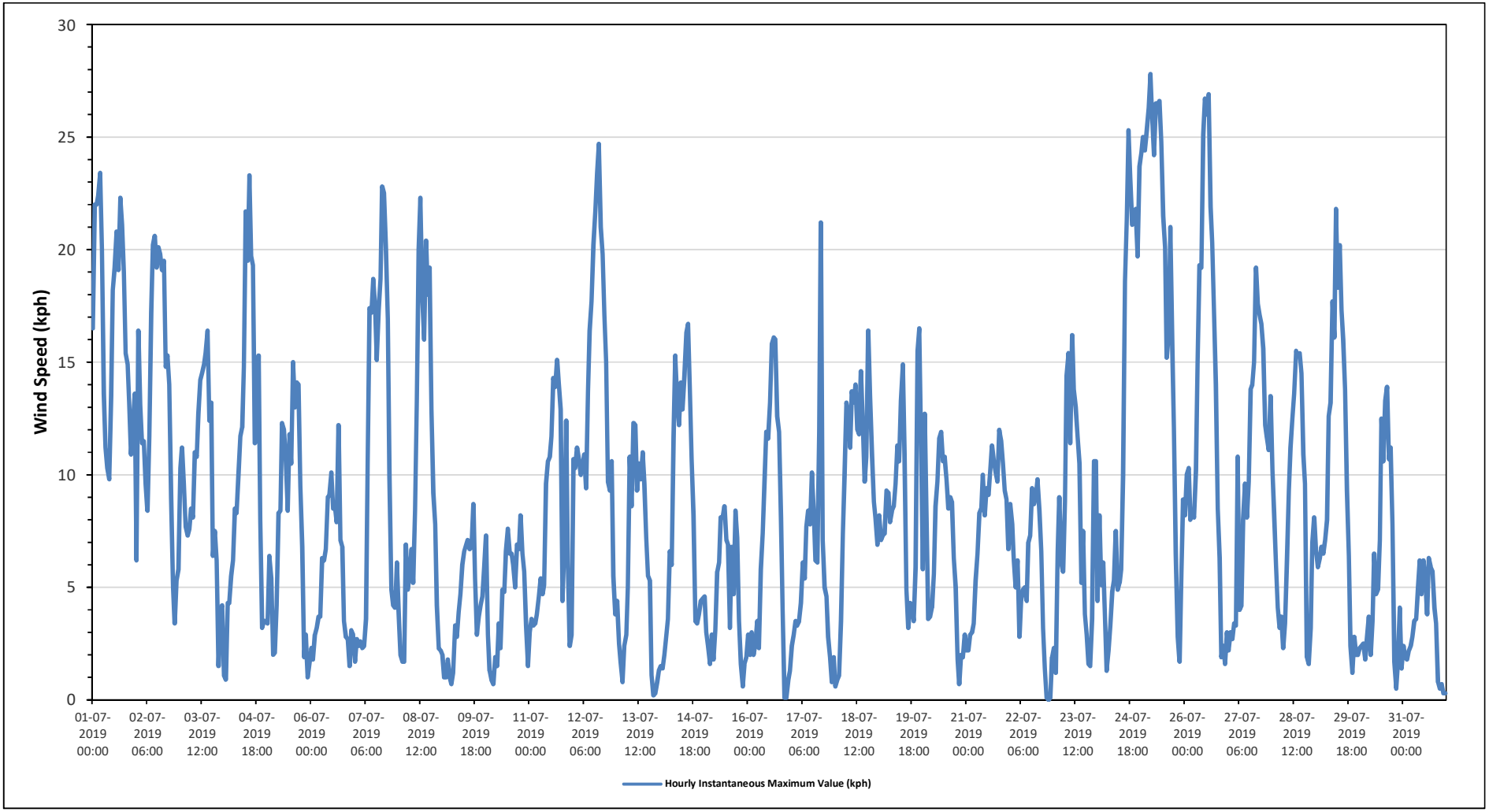
Maximum Hourly Value:	27.8	kph	on July 25 at hour 5	Hours in Service:	744
Maximum Daily Value:	19.0	kph	on July 25	Hours of Data:	744
Minimum Hourly Value:	0.0	kph	on July 22 at hour 21	Hours of Missing Data:	0
Minimum Daily Value:	3.3	kph	on July 31	Hours of Calibration:	0
Monthly Average:	8.8	kph		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
Jul 1	16.5	22.0	22.0	22.4	23.4	20.0	13.6	11.2	10.3	9.8	13.5	18.2	19.2	20.8	19.1	22.3	21.1	19.0	15.4	14.9	13.2	10.9	12.3	13.6	9.8	23.4	16.9
Jul 2	6.2	16.4	13.1	11.4	11.5	9.6	8.4	11.7	17.2	20.2	20.6	19.2	20.1	19.8	19.1	19.5	14.8	15.3	14.0	9.0	5.0	3.4	5.3	5.8	3.4	20.6	13.2
Jul 3	10.3	11.2	9.6	7.7	7.3	7.6	8.5	8.1	11.0	10.8	12.7	14.2	14.5	14.9	15.4	16.4	12.4	13.2	6.4	7.5	6.2	1.5	3.8	4.2	1.5	16.4	9.8
Jul 4	1.1	0.9	4.3	4.3	5.5	6.2	8.5	8.3	10.0	11.7	12.1	14.8	21.7	19.5	23.3	19.7	19.3	11.4	11.8	15.3	8.0	3.2	3.5	3.5	0.9	23.3	10.3
Jul 5	3.4	6.4	5.4	2.0	2.1	4.2	8.3	8.4	12.3	12.0	10.7	8.4	11.8	10.5	15.0	13.0	14.1	14.0	9.5	6.8	1.9	2.9	1.0	1.6	1.0	15.0	7.7
Jul 6	2.3	1.8	2.9	3.2	3.7	3.7	6.3	6.2	6.7	9.0	9.1	10.1	8.5	8.6	7.9	12.2	7.1	6.8	3.5	2.8	2.7	1.5	3.1	2.9	1.5	12.2	5.5
Jul 7	1.7	2.7	2.4	2.6	2.3	2.4	3.6	10.5	17.4	17.2	18.7	17.6	15.1	17.3	18.7	22.8	22.5	20.0	16.9	9.9	4.9	4.2	4.1	6.1	1.7	22.8	10.9
Jul 8	4.0	2.0	1.7	1.7	6.9	4.9	5.6	6.7	5.2	8.4	13.3	20.0	22.3	18.0	16.0	20.4	18.0	19.2	12.9	9.2	7.8	4.2	2.3	2.2	1.7	22.3	9.7
Jul 9	2.0	1.0	1.0	1.8	1.0	0.7	1.2	3.3	2.8	3.9	4.7	6.0	6.6	6.9	7.1	6.7	6.8	8.7	5.4	2.9	3.7	4.2	4.6	5.9	0.7	8.7	4.1
Jul 10	7.3	2.9	1.3	0.9	0.7	1.9	1.5	3.4	2.3	4.9	4.8	6.6	7.6	6.5	6.5	6.0	5.0	6.9	6.7	8.2	6.5	5.7	3.3	1.5	0.7	8.2	4.5
Jul 11	3.0	3.6	3.3	3.4	3.8	4.6	5.4	4.7	5.1	9.6	10.6	10.8	11.7	14.3	13.9	15.1	14.1	12.9	4.4	6.8	12.4	6.1	2.4	2.9	2.4	15.1	7.7
Jul 12	10.7	10.3	11.2	10.7	10.0	10.4	10.9	9.4	13.7	16.4	17.7	20.2	21.7	23.4	24.7	21.0	19.8	17.1	15.0	9.7	9.3	10.6	5.5	3.8	3.8	24.7	13.9
Jul 13	4.4	2.5	1.7	0.8	2.4	2.9	5.0	10.8	8.6	12.3	12.2	9.3	10.5	9.8	11.0	9.6	7.2	5.5	5.3	1.1	0.2	0.3	0.8	1.3	0.2	12.3	5.6
Jul 14	1.5	1.4	2.0	2.9	3.6	6.6	6.0	11.7	15.3	13.3	12.2	14.1	12.9	14.4	16.3	16.7	13.8	10.7	8.2	3.5	3.4	3.8	4.4	4.5	1.4	16.7	8.5
Jul 15	4.6	3.0	2.4	1.6	2.9	1.8	3.1	5.7	6.1	8.1	8.1	8.6	7.1	6.9	3.2	6.8	4.7	8.4	7.2	3.5	1.6	0.6	1.6	1.9	0.6	8.6	4.6
Jul 16	2.9	2.0	3.0	2.0	2.5	3.5	2.3	5.8	7.4	9.8	11.9	11.6	13.2	15.8	16.1	16.0	12.6	11.9	8.1	4.0	0.1	0.1	0.9	1.3	0.1	16.1	6.9
Jul 17	2.4	2.9	3.5	3.3	3.5	4.3	6.1	5.4	7.7	8.4	7.8	10.1	8.5	6.2	6.1	11.9	21.2	7.1	5.0	4.6	2.8	1.9	0.8	1.9	0.8	21.2	6.0
Jul 18	0.6	0.9	1.1	3.5	7.4	9.9	13.2	12.8	11.2	13.7	13.2	14.0	12.0	11.8	14.6	12.3	9.7	10.8	16.4	13.5	10.9	8.8	8.1	6.9	0.6	16.4	9.9
Jul 19	8.2	7.1	7.3	7.4	9.3	9.2	7.9	8.4	8.6	9.6	11.3	10.6	13.3	14.9	10.9	4.9	3.2	4.3	4.2	3.5	5.9	15.5	16.5	11.5	3.2	16.5	8.9
Jul 20	5.8	12.7	8.1	3.6	3.7	4.1	5.6	8.6	9.7	11.6	11.9	10.6	10.8	9.8	8.5	9.0	8.8	6.3	5.0	1.8	0.7	2.0	1.9	2.9	0.7	12.7	6.8
Jul 21	2.2	2.2	2.9	3.0	3.4	5.3	6.5	8.3	8.5	10.0	8.2	9.4	9.1	10.1	11.3	10.6	10.1	9.7	12.0	11.5	10.5	9.3	8.9	6.7	2.2	12.0	7.9
Jul 22	8.7	7.8	6.2	5.0	6.2	2.8	4.4	4.9	5.0	4.4	7.0	7.3	9.4	8.7	9.0	9.8	8.4	6.6	3.2	1.4	0.1	**0.0**	0.1	1.9	**0.0**	9.8	5.3
Jul 23	2.3	1.2	6.6	9.0	6.1	5.7	8.8	14.4	15.4	11.4	16.2	13.8	13.0	11.7	10.5	5.2	7.5	3.8	2.9	1.6	1.5	3.6	10.6	10.6	1.2	16.2	8.1
Jul 24	4.4	8.2	5.1	6.1	3.9	1.3	2.2	3.3	4.8	5.3	7.5	4.9	5.2	5.8	10.0	18.6	21.3	25.3	23.2	21.1	21.2	21.8	19.7	23.7	1.3	25.3	11.4
Jul 25	24.3	25.0	24.4	25.3	26.3	**27.8**	25.8	24.2	26.5	26.4	26.6	24.8	21.5	20.1	15.2	16.2	21.0	15.8	12.1	6.5	2.8	1.7	5.7	8.9	1.7	**27.8**	**19.0**
Jul 26	8.2	10.0	10.3	8.0	8.4	8.1	10.2	15.0	19.3	19.2	25.1	26.7	26.0	26.9	21.9	20.3	17.3	14.0	8.5	6.3	1.9	2.4	1.6	3.0	1.6	26.9	13.3
Jul 27	2.2	3.0	2.7	3.4	3.3	10.8	4.0	4.2	8.0	9.6	8.1	9.7	13.8	14.0	15.0	19.2	17.6	17.1	16.7	15.6	12.2	11.7	11.1	13.5	2.2	19.2	10.3
Jul 28	10.2	8.3	6.0	4.1	3.2	3.7	2.3	3.4	6.2	9.3	11.2	12.5	13.6	15.5	15.3	15.4	14.5	10.9	9.6	1.9	1.6	3.2	7.0	8.1	1.6	15.5	8.2
Jul 29	6.6	5.9	6.3	6.8	6.5	7.1	8.0	12.6	13.2	17.7	16.1	21.8	18.3	20.2	17.3	16.0	13.8	9.3	6.4	2.4	1.2	2.8	2.0	2.0	1.2	21.8	10.0
Jul 30	2.3	2.4	2.5	1.8	2.7	3.7	2.0	3.5	6.5	4.7	4.9	7.1	12.5	10.6	13.3	13.9	10.7	11.2	7.8	1.7	0.5	1.7	4.1	1.4	0.5	13.9	5.6
Jul 31	2.4	1.9	1.8	2.2	2.4	2.8	3.5	3.6	5.0	6.2	4.7	6.2	5.4	3.8	6.3	5.9	5.7	4.1	3.4	0.8	0.5	0.7	0.3	0.3	0.3	6.3	**3.3**
Diurnal Maximum	24.3	25.0	24.4	25.3	26.3	27.8	25.8	24.2	26.5	26.4	26.6	26.7	26.0	26.9	24.7	22.8	22.5	25.3	23.2	21.1	21.2	21.8	19.7	23.7			
Daiurnal Average	5.6	6.1	5.9	5.5	6.0	6.4	6.7	8.3	9.9	11.1	12.0	12.9	13.4	13.5	13.5	14.0	13.0	11.5	9.3	6.8	5.2	4.8	5.1	5.4			

C	Calibration	S	Daily Zero/Span	Q	Quality Assurance	C1	Repeat Calibration	S1	Repeat Daily Zero/Span
G	Out for Repair	K	Collection Error	N	Not in Service	O	Operator Error	P	Power Failure
R	Recovery	X	Machine Malfunction	Y	Maintenance	T	Exceeds Temperature Limits	N	Not in Service

Daily Average is shown "-" if minimum data completeness criteria of 75% or 18 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 Instantaneous Maximum for WS - Reno Station



END OF REPORT

This report, 181 of 181, ends the July 2019 Monthly Ambient Air Quality Monitoring Report.

Peace River Area Monitoring Program

JULY 2019

Ambient Air Monitoring Calibration Report

- 842b STATION-

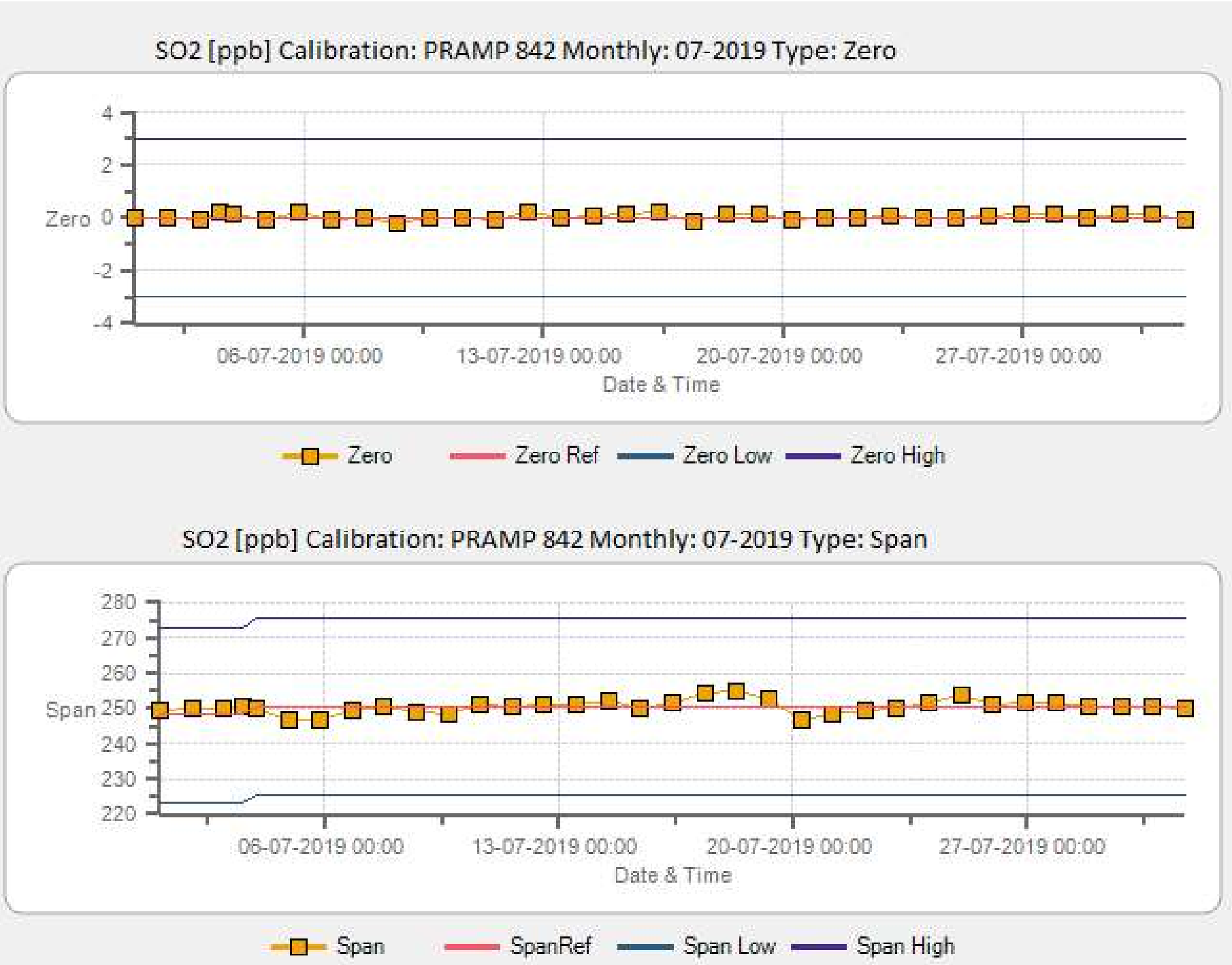
CAL-PRAMP-201907-01561

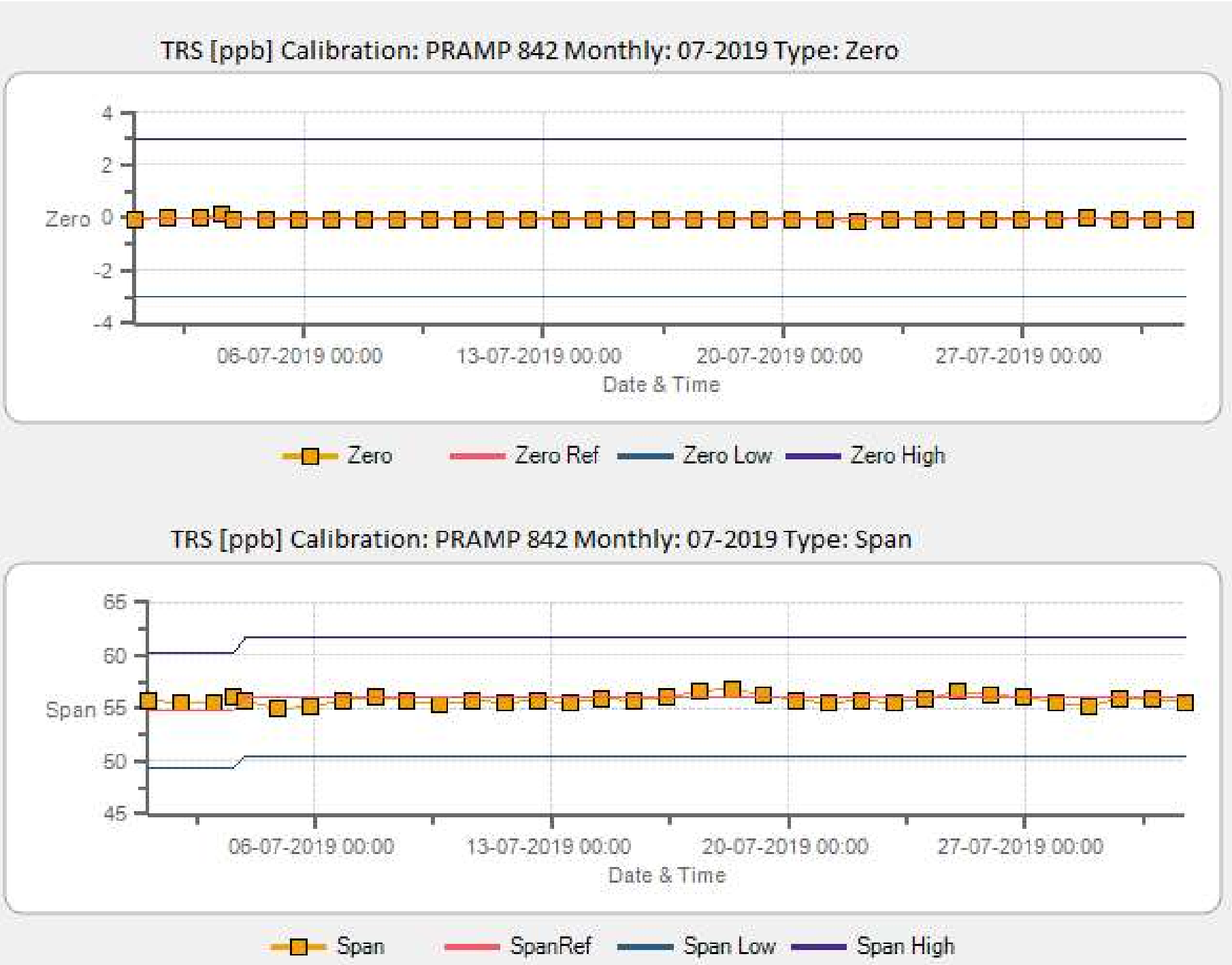
Operation and Maintenance:
Maxxam Analytics

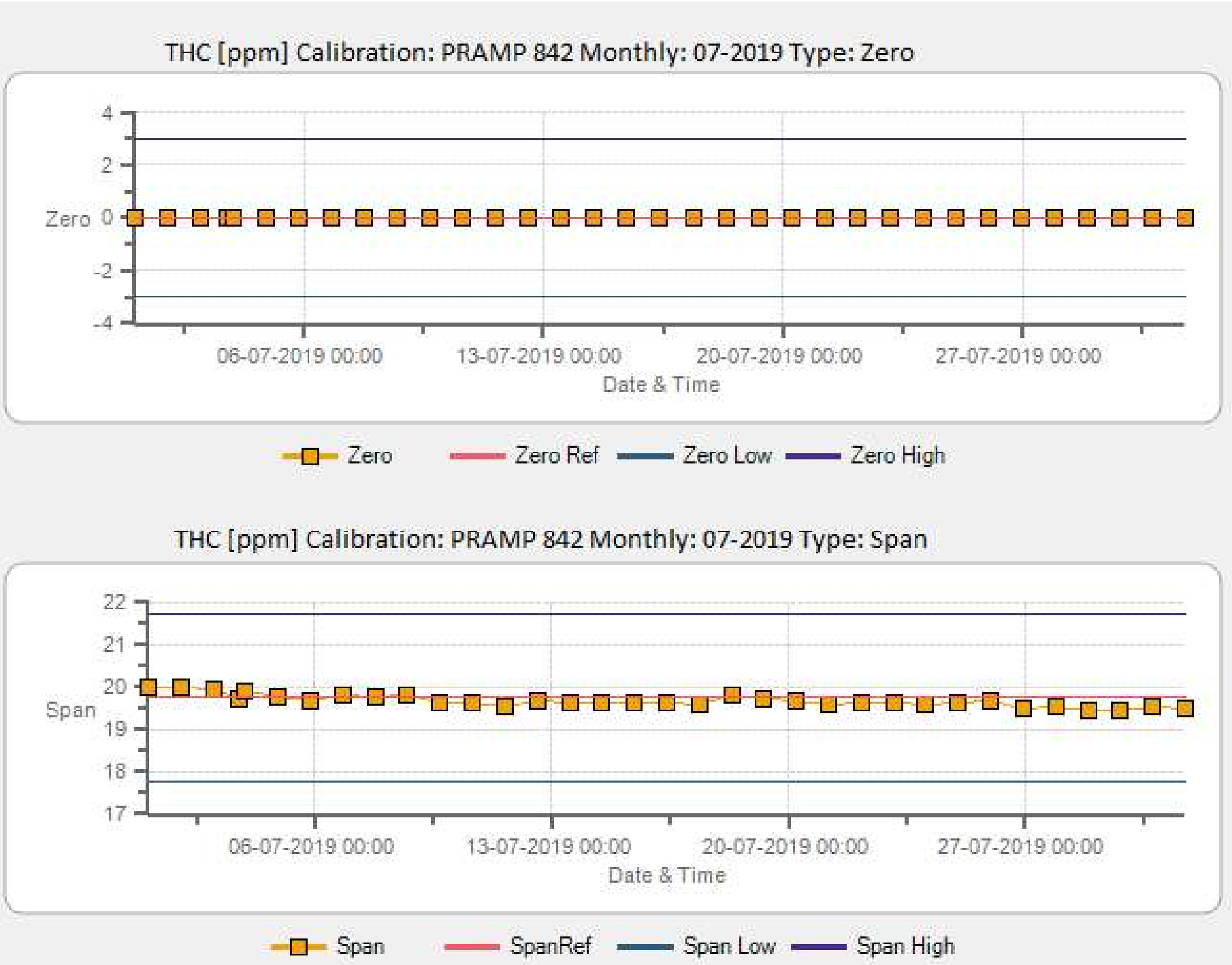
Data Validation and Report:
Maxxam Analytics

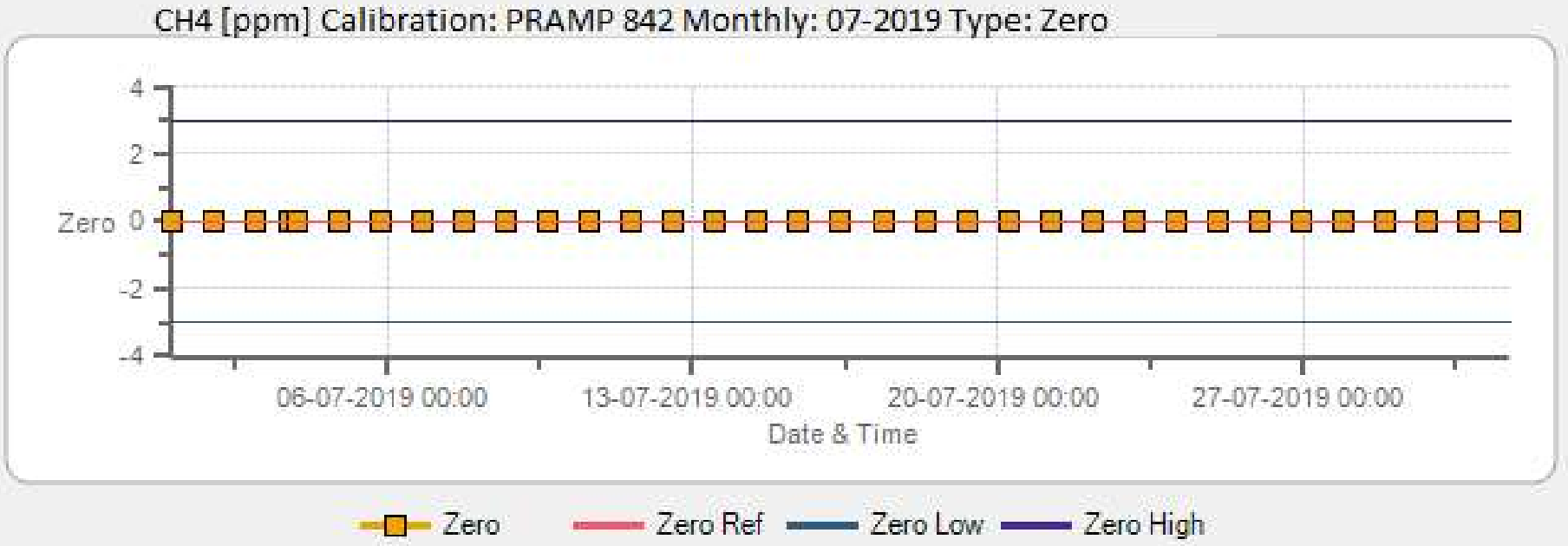
August 9, 2019

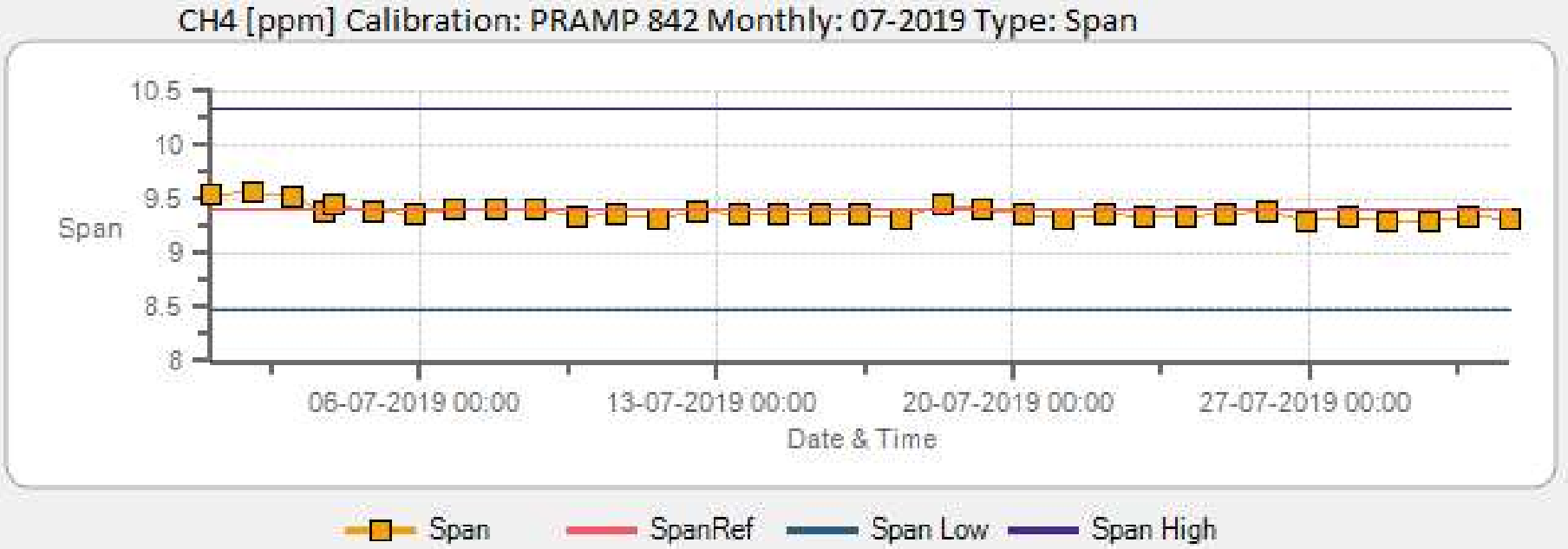
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

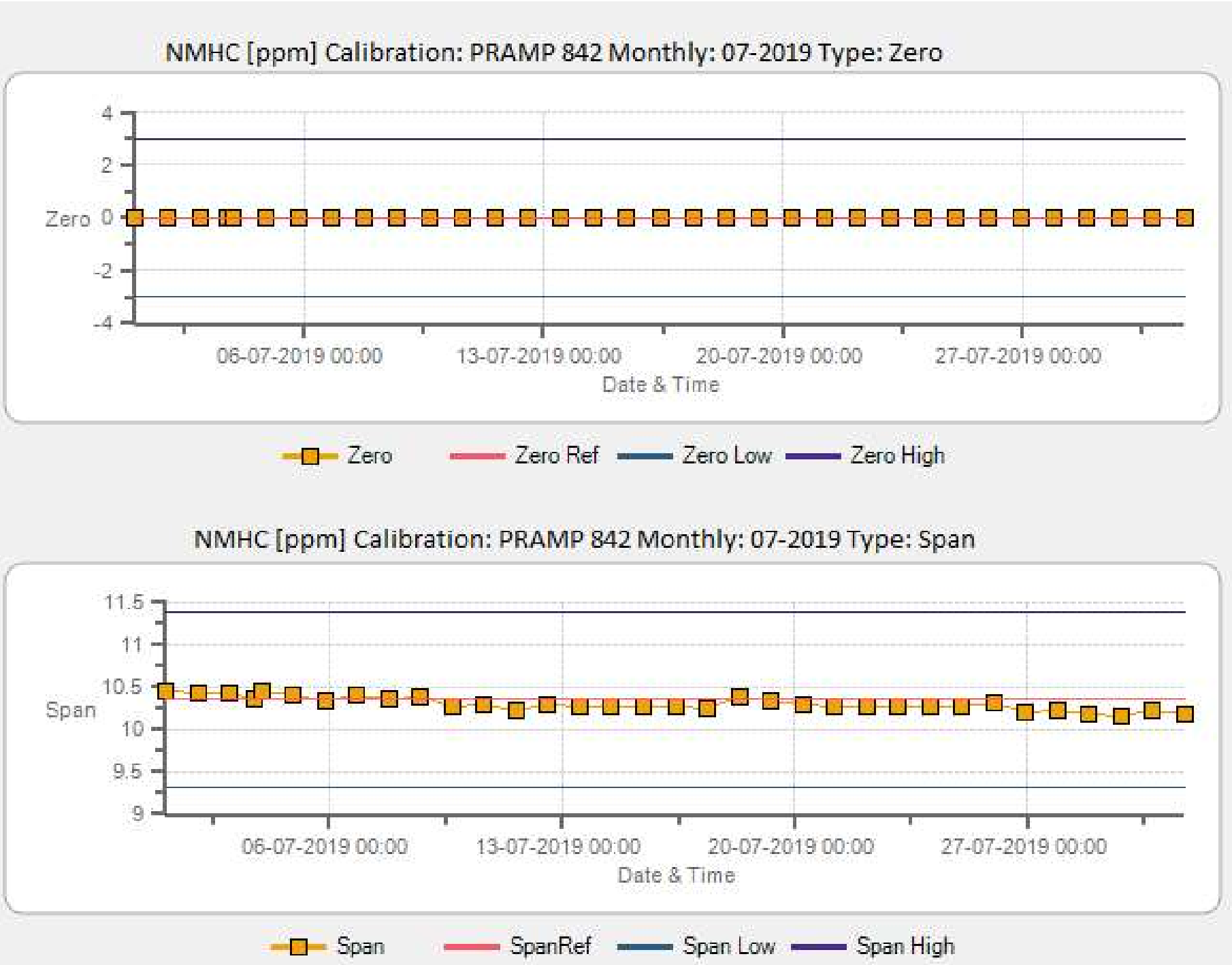

SO2 [ppb] Calibration: PRAMP 842 Monthly: 07-2019 Type: Zero
4
2
Zero 0
-2
-4
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
SO2 [ppb] Calibration: PRAMP 842 Monthly: 07-2019 Type: Span
280
270
260
Span 250
240
230
220
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Span
SpanRef
Span Low
Span High


TRS [ppb] Calibration: PRAMP 842 Monthly: 07-2019 Type: Zero
4
2
Zero 0
-2
-4
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
TRS [ppb] Calibration: PRAMP 842 Monthly: 07-2019 Type: Span
65
60
Span 55
50
45
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Span
SpanRef
Span Low
Span High


THC [ppm] Calibration: PRAMP 842 Monthly: 07-2019 Type: Zero
4
2
Zero 0
-2
-4
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
THC [ppm] Calibration: PRAMP 842 Monthly: 07-2019 Type: Span
22
21
20
Span
19
18
17
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Span
SpanRef
Span Low
Span High


CH4 [ppm] Calibration: PRAMP 842 Monthly: 07-2019 Type: Zero
4
2
Zero 0
-2
-4
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High


CH4 [ppm] Calibration: PRAMP 842 Monthly: 07-2019 Type: Span
10.5
10
9.5
Span
9
8.5
8
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Span
SpanRef
Span Low
Span High


NMHC [ppm] Calibration: PRAMP 842 Monthly: 07-2019 Type: Zero
4
2
Zero 0
-2
-4
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
NMHC [ppm] Calibration: PRAMP 842 Monthly: 07-2019 Type: Span
11.5
11
10.5
Span
10
9.5
9
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Span
SpanRef
Span Low
Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	03-Jul-2019	PREVIOUS CALIBRATION DATE:	11-Jun-2019
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	22.7
LOCATION:	842b	BAROMETRIC (mBar):	942
PURPOSE	Routine	START TIME (MST):	08:02
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	13:24

ANALYZER:

MAKE/MODEL	Thermo 43i	RANGE	500 ppb
SERIAL #	835033373	FLOW (mL/min)	421
INITIAL		FINAL	
BKG/OFFSET	14.7	BKG/OFFSET	14.5
COEF/SLOPE	1.018	COEF/SLOPE	1.018
Expected (reference) Value	248	Expected (reference) Value	250.5

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Environics	MAKE:	API
MODEL:	6100	MODEL:	T701
ID:	5212	ID:	74
MFC CALIBRATION DATE:	07-Feb-2019	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY0000597	HIGH ID	n/a
CONC (ppm):	50.4	EXPIRY DATE	n/a
CYLINDER (psi):	500	LOW ID	n/a
EXPIRY DATE	08-Dec-2019	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		
5998		5998	0.00	0	0		
5952	45.20	5997	379.85	377.2	380	1.007	1.000
5976	21.40	5997	179.87	n/a	180	n/a	0.999
5985	10.69	5996	89.90	n/a	89.7	n/a	1.002

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	0.0%

COMMENTS:

Monthly Calibration passed.

SO2[ppb] Station: PRAMP 842b Daily: 03-07-2019 Type: AVG 1 Min. [1 Min.]

TRS Analyzer Calibration by Dilution

DATE:	03-Jul-2019	PREVIOUS CALIBRATION DATE:	11-Jun-2019
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	22.7
LOCATION:	842b	BAROMETRIC (mBar):	942
PURPOSE	Routine	START TIME (MST):	08:03
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	14:01

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	100 ppb
SERIAL #	1162460023	FLOW (mL/min)	406
INITIAL		FINAL	
BKG/OFFSET	2.77	BKG/OFFSET	2.82
COEF/SLOPE	0.878	COEF/SLOPE	0.883
Expected (reference) Value	54.86	Expected (reference) Value	56.05

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Environics	MAKE:	API
MODEL:	6100	MODEL:	T701
ID:	4760	ID:	74
MFC CALIBRATION DATE:	07-Feb-2019	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL119420	HIGH ID	n/a
CONC (ppm):	10.2	EXPIRY DATE	n/a
CYLINDER (psi):	500	LOW ID	n/a
EXPIRY DATE	16-May-2020	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:	08:43	SO2 Conc (ppb)	380
END TIME:	09:01	Analyzer Response (ppb)	0.0

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
7487		7487	0.00	-0.07	0		
7430	57.21	7487	77.94	78.43	77.93	0.993	1.000
7460	27.86	7488	37.95	n/a	37.3	n/a	1.017
7473	13.94	7487	18.99	n/a	18.35	n/a	1.035

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.002	-0.4%

COMMENTS:

Monthly Calibration passed.


TRS[ppb] Station: PRAMP 842b Daily: 03-07-2019 Type: AVG 1 Min. [1 Min.]
TRS Value
80
70
60
50
40
30
20
10
0
-10
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
TRS[ppb]

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	03-Jul-2019	PREVIOUS CALIBRATION DATE:	11-Jun-2019
CLIENT:	PRAMP	TEMPERATURE (°C):	23.2
LOCATION:	842b	BAROMETRIC (mBar):	942
PURPOSE	Routine	START TIME (MST):	12:24
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	18:11

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1505664392	1251
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	1.001	1.000	1.000

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	Environics	MAKE:	API	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):	1500		LOW ID:	n/a
MFC CALIBRATION DATE:	07-Feb-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	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
	9.41	10.36	19.77		9.41	10.36	19.77

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
3146		3146	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
3076	70.45	3146	13.32	12.68	26.01	13.40	12.70	26.09	13.33	12.69	26.02	0.994	0.999	0.997	0.999	1.000	1.000
3111	37.93	3149	7.17	6.82	13.99	n/a	n/a	n/a	7.14	6.87	14.00	n/a	n/a	n/a	1.004	0.993	0.999
3130	16.25	3146	3.07	2.92	6.00	n/a	n/a	n/a	3.08	3.02	6.10	n/a	n/a	n/a	0.997	0.968	0.983

LINEAR REGRESSION ANALYSIS:

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

COMMENTS:

Monthly Calibration passed. Operator error- Restarted Ultimate Service at 17:16 while HC Internal Zero-Span is running causing sequence to stop without completing the span. The Internal Zero-Span was restarted at 17:26.

Station: PRAMP 842b Daily: 03-07-2019 Type: AVG 1 Min. [1 Min.]

Meteorological System Checklist

Date:	July 3, 2019		
Technician:	Ferdinand Roy		
Reviewer:	Rob Fisher		
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:	June 11, 2019		
Parameter:	Temperature @ 2 metres		
Reference Thermometer ID:	F.S. 160459244 expires Jun 19, 2020		
Reference Temperature (^{o}C):	15.9		
Station - Ambient Temperature (^{o}C):	15.7		
Temperature Difference (^{o}C):	0.2		
BAROMETRIC PRESSURE SENSOR CHECK			
Previous check date:	June 11, 2019		
Reference Barometer ID:	F.S. 10528 expires January 23, 2020		
Reference Pressure - Units/Reading:	millibar	942	
Station Pressure - Units/Reading:	millibar	944.5	
Pressure Tolerance +/- 15% of error:	801 - 1083	-0.27%	
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Previous check date:	June 11, 2019		
Reference Hygrometer ID:	F.S. 160459244 expires Jun 19, 2020		
Reference Hygrometer % RH- Reading:	56.03		
Station Hygrometer % RH- Reading:	55.80		
RH Tolerance +/- 15% of difference:	47.63 - 64.43	0.4%	
ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK			
WIND SPEED		WIND DIRECTION	
Previous check date:	June 11, 2019	Previous check date:	June 11, 2019
Wind Speed Observed (kph):	10-20	Wind Direction Observed:	SW
Wind speed on Data Logger (kph):	14	Wind Direction on Data Logger:	SW
		Wind Direction Pass/Fail?:	Pass
Comments			

Alberta Government

Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2019-426A

Company: Maxxam **Operator:** C. Wesson

Calibrator:				**Flow Measurement Device:**	
Make/Model	Evironics 6100			Make/Model	N/A
Serial Number	5212			Serial Number	N/A
Last Verification Date	March 2018			Temperature (°C)	N/A
NO Cylinder S/N	LL107918			Barometric Pressure	N/A
NO [PPM]	50.1	NOx [PPM]	50.2		
Expiry Date	August 2026				

Dilution Flow (sccm)

Pt. #1 5000 Pt. #2 5000 Pt. #3 5000

Gas Flow (sccm)

Pt. #1 80 Pt. #2 40 Pt. #3 20

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO_2	NOx	NO	NOx
5000	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
4997	77.8	0.780	0.782	0.768	-0.003	0.766	-2%	-2%
4997	37.9	0.380	0.381	0.372	-0.002	0.370	-2%	-3%
4996	18.9	0.190	0.190	0.186	-0.001	0.185	-2%	-3%
					Absolute Average Percent Difference		2%	2%

LINEAR REGRESSION ANALYSIS *y=mx+b (where x=calculated concentration, y=indicated concentration)*

NO		**LIMITS**	**NOx**	
Correlation=	1.0000	**≥ 0.990**	Correlation=	1.0000
m (Slope)=	0.9846	**0.90-1.10**	m (Slope)=	0.9802
b (Intercept % of FS)=	-0.0683	**± 3% F.S.**	b (Intercept % of FS)=	-0.1101

Flow	O_3 Conc	NO Decrease	NO	NO2	NOX	% Diff. Vs Audit gas	
4997	0.000	0.000	0.765	-0.002	0.764	NO_2	% Diff. Limit
4997	0.500	0.491	0.274	0.486	0.760	-1%	± 10%
4997	0.275	0.274	0.491	0.271	0.762	0%	± 10%
4997	0.090	0.091	0.674	0.089	0.762	0%	± 10%
				Absolute Average Percent Difference		0%	± 10%

LINEAR REGRESSION ANALYSIS *y=mx+b (where x=calculated concentration, y=indicated concentration)*

NO_2		**LIMITS**
Correlation=	1.0000	**≥ 0.995**
m (Slope)=	0.9937	**0.90-1.10**
b (Intercept % of FS)=	-0.1650	**± 3% F.S.**

AENV Standards		**NO_X Analyzer**	
Audit Calibrator		Make/Model	Teco 42i
Make/Model	Sabio 2010	Serial/AMU Number	AMU 1868
Serial/AMU Number	AMU 2092	Last Calibration Date	February 12, 2019
SRM Gas Cylinder No.	APEX1236645	Full Scale (ppm)	1.0
Cylinder Conc. (ppm)	50.05	Cylinder Gas Expiry Date	June 2021

COMMENTS: Contains 49.5 ppm SO2.

Auditor: Al Clark Date: February 13, 2019

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2019-427A

Company: Maxxam **Operator:** C. Wesson

Calibrator:				**Flow Measurement Device:**	
Make/Model	Evironics 6100			Make/Model	N/A
Serial Number	4760			Serial Number	N/A
Last Verification Date	March 2018			Temperature (°C)	N/A
NO Cylinder S/N	LL107918			Barometric Pressure	N/A
NO [PPM]	50.1	NOx [PPM]	50.2		
Expiry Date	August 2026				

Dilution Flow (sccm)

Pt. #1 5000 Pt. #2 5000 Pt. #3 5000

Gas Flow (sccm)

Pt. #1 80 Pt. #2 40 Pt. #3 20

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO_2	NOx	NO	NOx
5000	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
4994	77.7	0.779	0.781	0.798	0.000	0.798	2%	2%
4993	37.8	0.379	0.380	0.388	-0.001	0.387	2%	2%
4993	18.9	0.190	0.190	0.193	0.000	0.193	2%	2%
					Absolute Average Percent Difference		2%	2%

LINEAR REGRESSION ANALYSIS *y=mx+b (where x=calculated concentration, y=indicated concentration)*

NO		**LIMITS**	**NOx**	
Correlation=	1.0000	**≥ 0.990**	Correlation=	1.0000
m (Slope)=	1.0242	**0.90-1.10**	m (Slope)=	1.0221
b (Intercept % of FS)=	-0.0519	**± 3% F.S.**	b (Intercept % of FS)=	-0.0726

Flow	O_3 Conc	NO Decrease	NO	NO2	NOX	% Diff. Vs Audit gas	
4994	0.000	0.000	0.796	0.000	0.796	NO_2	% Diff. Limit
4994	0.550	0.502	0.294	0.499	0.792	-1%	± 10%
4994	0.300	0.275	0.521	0.274	0.795	0%	± 10%
4994	0.100	0.062	0.734	0.061	0.796	-2%	± 10%
			Absolute Average Percent Difference			1%	± 10%

LINEAR REGRESSION ANALYSIS *y=mx+b (where x=calculated concentration, y=indicated concentration)*

NO_2		**LIMITS**
Correlation=	1.0000	**≥ 0.995**
m (Slope)=	0.9949	**0.90-1.10**
b (Intercept % of FS)=	-0.0179	**± 3% F.S.**

AENV Standards		**NO_X Analyzer**	
Audit Calibrator			
Make/Model	Sabio 2010	Make/Model	Teco 42i
Serial/AMU Number	AMU 2092	Serial/AMU Number	AMU 1868
SRM Gas Cylinder No.	APEX1236645	Last Calibration Date	February 14, 2019
Cylinder Conc. (ppm)	50.05	Full Scale (ppm)	1.0
		Cylinder Gas Expiry Date	June 2021

COMMENTS: Contains 49.5 ppm SO2.

Auditor: Al Clark Date: February 14, 2019

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

Single Component Cylinder Gas

File No. 2016-438CGA

Company: Maxxam **Operator's Name:** Chris

Cylinder #: EY0000597 Concentration PPM: 50.4 Tolerance(%) 1.0 Certified By: Praxair

Expiry Date: December 8, 2019

Reference Calibrator and Gas:

Make/Model: Thermo 146i
Serial Number: AMU 1809
Last Verification Date: January 26, 2017
Gas Type: SO2 Conc. 98.07
Cylinder Number: CAL016625
Expiry Date: January 5, 2019

Flow Measurement Device:

Make/Model: Bios Befiner 220
Serial Number: AMU1941
Temp.°C: 24.4
B.P. 704.7

Reference Analyzer:

Make/Model: Themro 43C Serial/AMU Number: AMU 1623

Instrument Settings: Zero: 9.5 Span: 1.023 Range: 1.0

Last Calibration: Date: 25-Jan-17 C.F. 1.000 Done By: SB

Calibrator Flows (sccm)		Indicated	Gas Flow/	Concentration	Cylinder
Dilution	Gas	Concentration (PPM)	Dilution Flow	Factor	Concentration
4923	0.0	0.000			
4916	80.7	0.834	0.01642	60.917	50.8
4902	40.3	0.416	0.00822	121.638	50.6
4916	19.9	0.206	0.00405	247.035	50.9
				Average Cylinder Concentration:	**50.7**

Previous Stated Concentration PPM: 50.4

Percent variance from Stated: **0.7**

Meets Manufacturer Tolerance. Use manufacturers stated concentration [X] **COMMENTS:**

< =5% Outside Manufacturer Tolerance. Use manufacturers concentration [ ]

> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder [ ]

Auditor: Shea Beaton Date: January 26, 2017

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

Single Component Cylinder Gas

File No. 2017-135CGA

Company: Maxxam **Operator's Name:** Raja Abid Ashraf

Cylinder #: LL119420 Concentration PPM: 10.2 Tolerance(%) 2 Certified By: Praxair

Expiry Date: May 16, 2020

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: July 27, 2017
Gas Type: H2S Conc. 20.43
Cylinder Number: CAL015272
Expiry Date: Janaury 2019

Flow Measurement Device:

Make/Model: Mesa Definer 220
Serial Number: H-133034 L-132702
Temp.°C: 22.0 C
B.P. 700 mmhg

Reference Analyzer:

Make/Model: Teco 450i Serial/AMU Number: 1980

Instrument Settings: Zero: 21.9 Span: 1.069 Range: 0.1

Last Calibration: Date: July 27, 2017 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.0020			
5117	38.9	0.0781	0.00760	131.542	10.0
5103	18.4	0.0379	0.00361	277.337	10.5
5097	9.4	0.0198	0.00184	542.234	10.7
				Average Cylinder Concentration:	**10.4**

Previous Stated Concentration PPM: 10.2

Percent variance from Stated: **2**

Meets Manufacturer Tolerance. Use manufacturers stated concentration [ ] **COMMENTS:**

< =5% Outside Manufacturer Tolerance. Use manufacturers concentration [X]

> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder [ ]

Auditor: Al Clark Date: July 27, 2017

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

CH4 / C3H8 Cylinder Gas

File No. 2017-492CGA

Company: Maxxam **Operators name:** Mike

Cylinder #: LL43221 Conc CH4 (PPM) 595/206 Tolerance (%) 2 Certified By: Praxair

Expiry Date: October 2025

Reference Calibrator and Gas:

Make/Model	R&R MFC 201		
Serial Number	AMU 1690		
Last Verification Date	December 13, 2017		
Gas Type	CH4	Conc.	990.4
Cylinder Number	5604875	Expiry Date	July 2021
Gas Type	C3H8	Conc.	246.5
Cylinder Number	XF003845B	Expiry Date	July 2022

Flow Measurement Device:

Make/Model	Mesa Definer 220
Serial Number	H-133034 / L-132702
Temp.°C	23.1 C
B.P.	707 mmHg

Reference Analyzer:

Make/Model	Teco 55i			Serial/AMU Number:	2108
Instrument Settings	Zero: N/A		Span: N/A	Range:	20.0
Last Calibration:	Date: Dec 12/17		C.F. 1.000	Done By:	Al Clark

Calibrator Flows (sccm)		Indicated Conc. (ppm)		Gas Flow/	Concentration	Cylinder Concentration	
Dilution	Gas	CH4	C3H8	Dilution Flow	Factor	CH4	C3H8
3500	0.0	0.00	0.00				
3618	80.4	13.23	12.70	0.02	45.00	595	208
3547	39.8	6.65	6.44	0.01	89.12	593	209
3560	19.8	3.33	3.23	0.01	179.80	599	211
					Average Cylinder Concentration:	**596**	**209**

	CH4	C3H8
Previous Stated Concentration PPM:	595	206
Percent variance from Stated:	**0**	**2**

Cylinder gas tolerances based on CH4 only

Meets Manufacturer Tolerance. Use manufacturers stated concentration [X] **COMMENTS:**

< =5% Outside Manufacturer Tolerance. Use manufacturers concentration [ ]

> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder [ ]

Auditor: Al Clark Date: December 13, 2017

Operator Signature: Location: McIntyre Center Edmonton

Peace River Area Monitoring Program

JULY 2019

Ambient Air Monitoring Calibration Report

- 986b STATION-

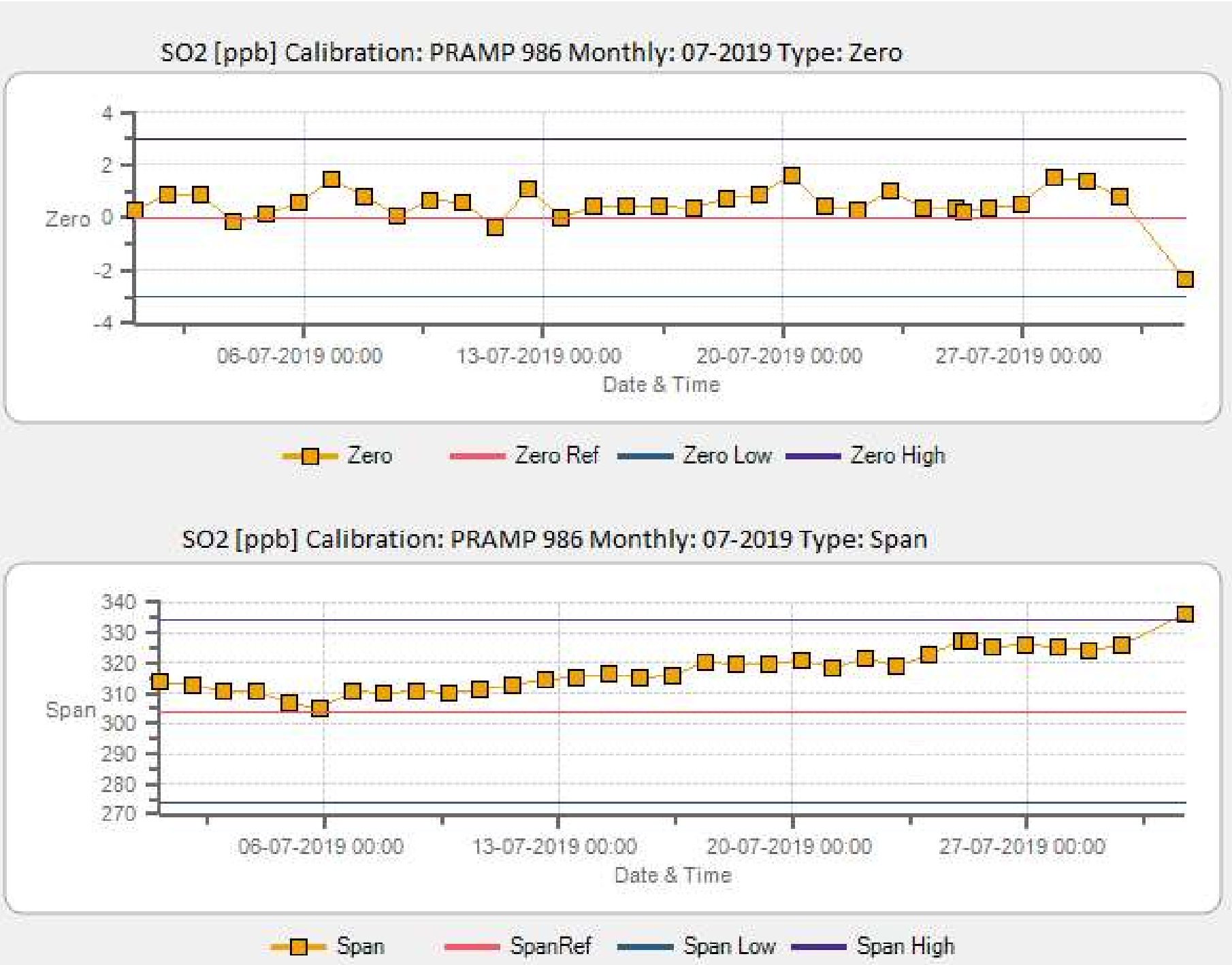
CAL-PRAMP-201907-01562

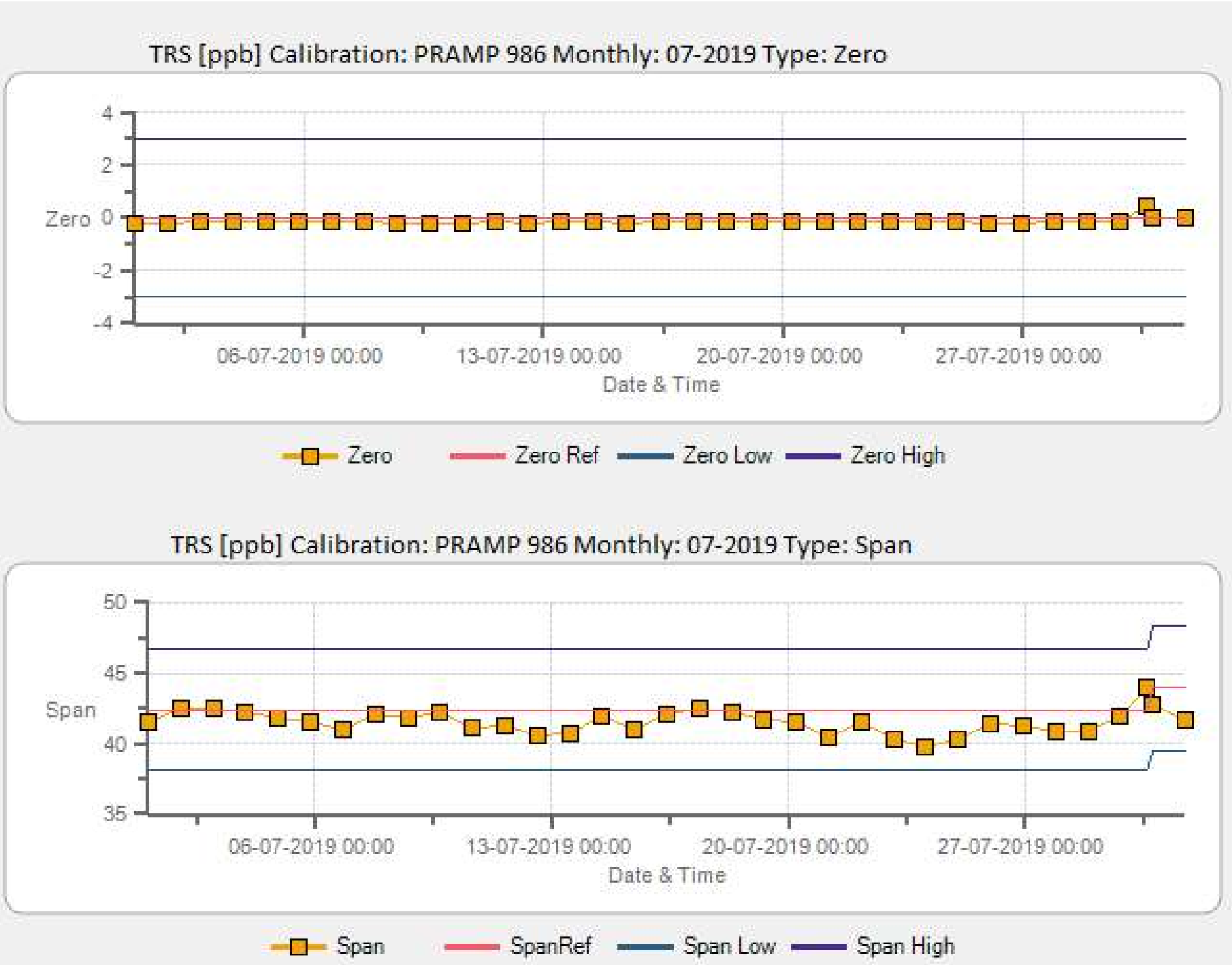
Operation and Maintenance:
Maxxam Analytics

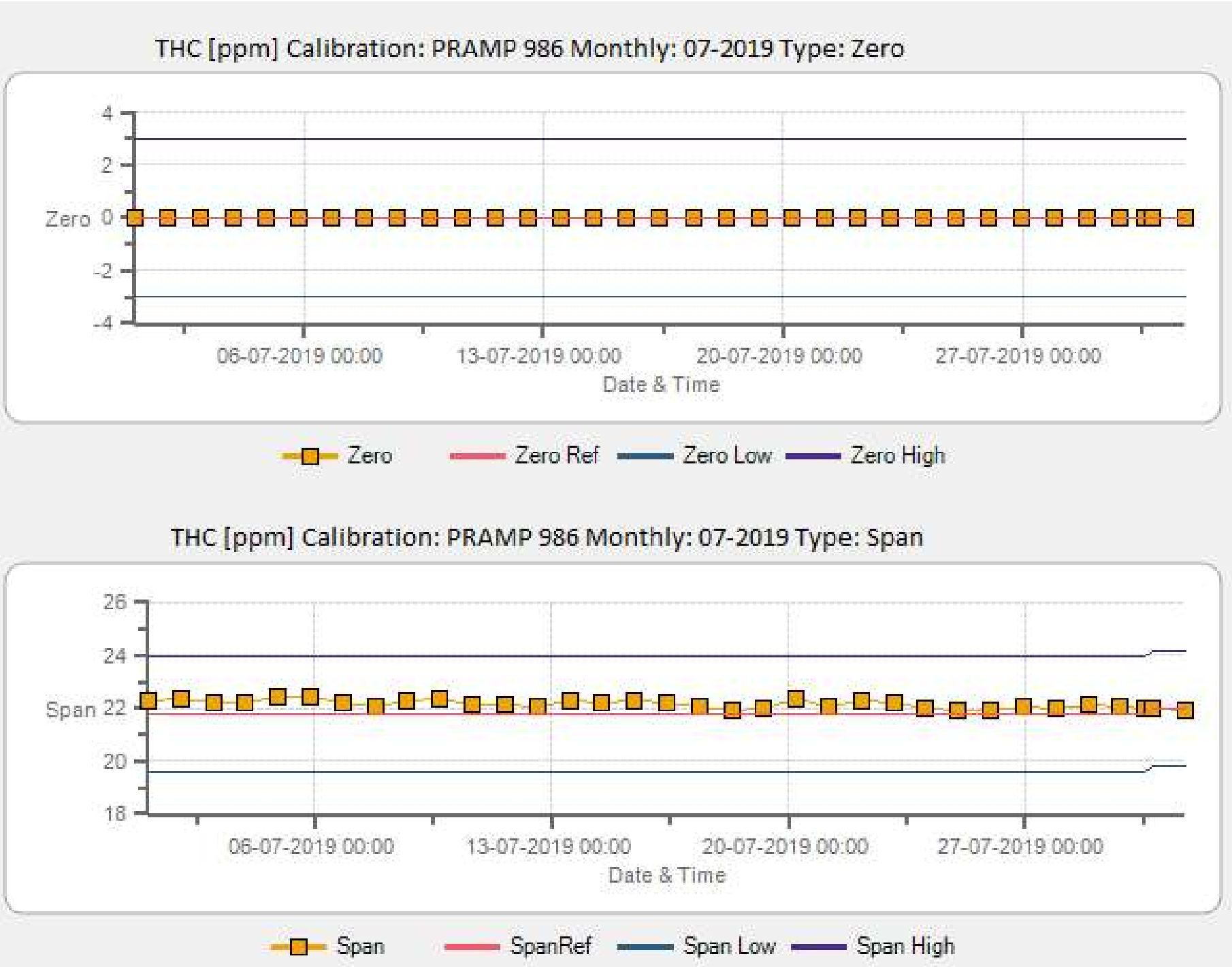
Data Validation and Report:
Maxxam Analytics

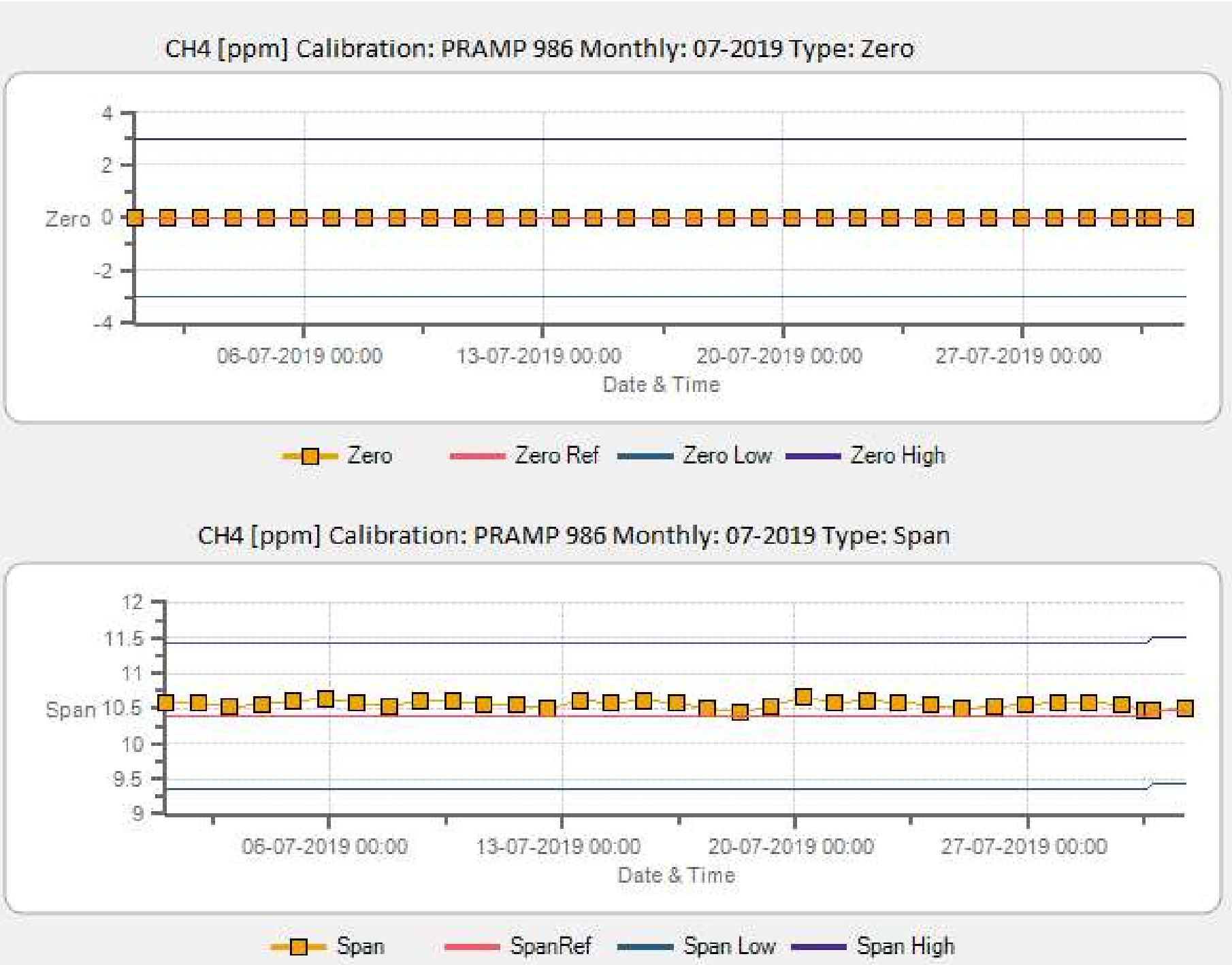
August 9, 2019

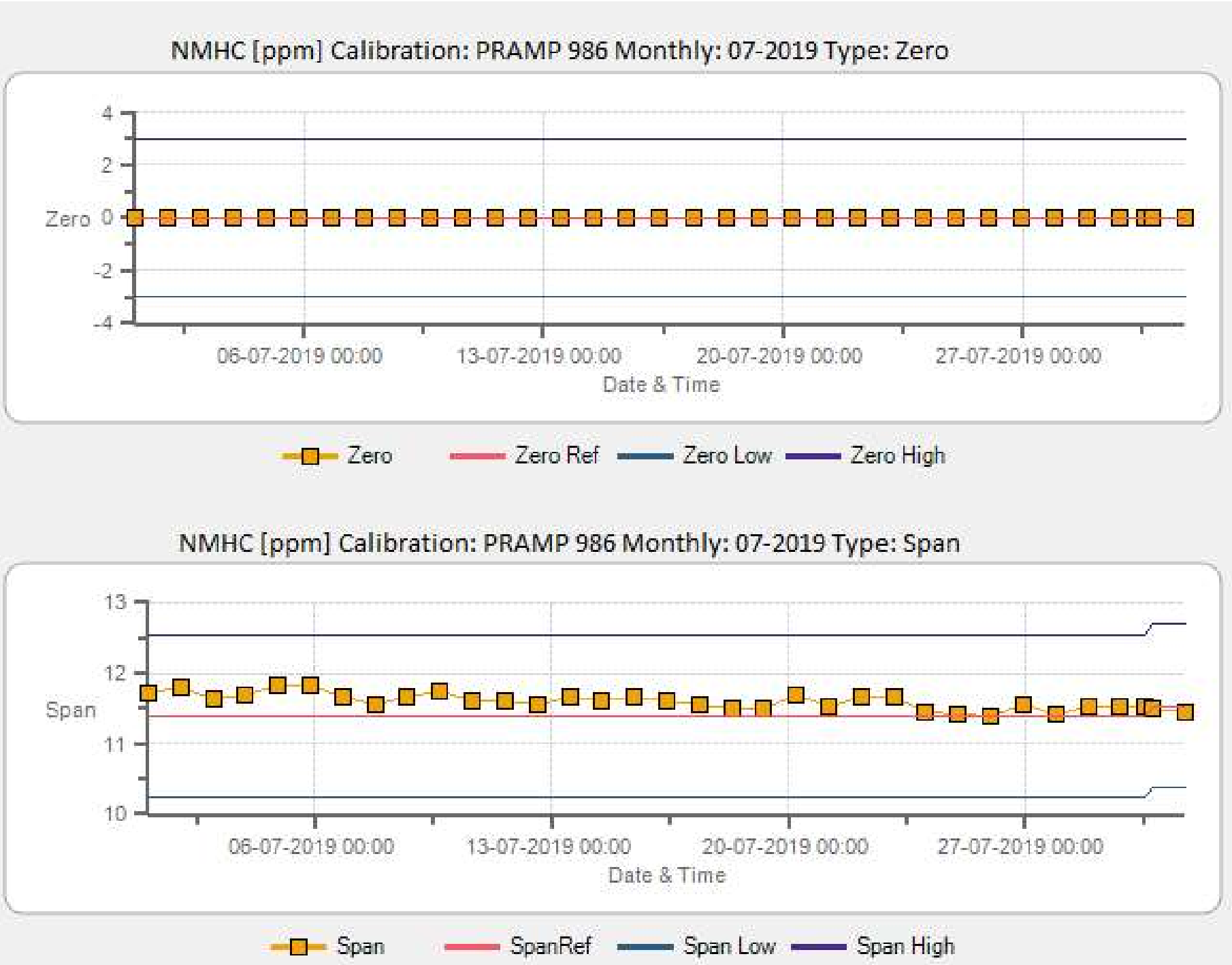
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS


SO2 [ppb] Calibration: PRAMP 986 Monthly: 07-2019 Type: Zero
Zero
4
2
0
-2
-4
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
SO2 [ppb] Calibration: PRAMP 986 Monthly: 07-2019 Type: Span
Span
340
330
320
310
300
290
280
270
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Span
SpanRef
Span Low
Span High


TRS [ppb] Calibration: PRAMP 986 Monthly: 07-2019 Type: Zero
4
2
Zero 0
-2
-4
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
TRS [ppb] Calibration: PRAMP 986 Monthly: 07-2019 Type: Span
50
45
Span
40
35
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Span
SpanRef
Span Low
Span High


THC [ppm] Calibration: PRAMP 986 Monthly: 07-2019 Type: Zero
4
2
Zero 0
-2
-4
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
THC [ppm] Calibration: PRAMP 986 Monthly: 07-2019 Type: Span
26
24
Span 22
20
18
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Span
SpanRef
Span Low
Span High


CH4 [ppm] Calibration: PRAMP 986 Monthly: 07-2019 Type: Zero
4
2
Zero 0
-2
-4
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
CH4 [ppm] Calibration: PRAMP 986 Monthly: 07-2019 Type: Span
12
11.5
11
Span 10.5
10
9.5
9
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Span
SpanRef
Span Low
Span High


NMHC [ppm] Calibration: PRAMP 986 Monthly: 07-2019 Type: Zero
4
2
Zero 0
-2
-4
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
NMHC [ppm] Calibration: PRAMP 986 Monthly: 07-2019 Type: Span
13
12
Span
11
10
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Span
SpanRef
Span Low
Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	30-Jul-2019	PREVIOUS CALIBRATION DATE:	03-Jun-2019
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	0.999
CLIENT:	PRAMP	TEMPERATURE (°C):	22.5
LOCATION:	986b	BAROMETRIC (mBar):	939
PURPOSE	Removal/Shut-down	START TIME (MST):	12:20
PERFORMED BY:	Chris Wesson	END TIME (MST):	13:56

ANALYZER:

MAKE/MODEL	Thermo 43C	RANGE	500 ppb
SERIAL #	43C-62339-335	FLOW (mL/min)	600
INITIAL		FINAL	
BKG/OFFSET	99.6	BKG/OFFSET	n/a
COEF/SLOPE	0.961	COEF/SLOPE	n/a
Expected (reference) Value	304	Expected (reference) Value	n/a

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Environics	MAKE:	Teledyne
MODEL:	2000	MODEL:	T701
ID:	1991	ID:	134
MFC CALIBRATION DATE:	17-May-2019	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL48147	HIGH ID	n/a
CONC (ppm):	49.5	EXPIRY DATE	n/a
CYLINDER (psi):	1750	LOW ID	n/a
EXPIRY DATE	20-Aug-2026	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		
4012		4012	0.00	1.1	n/a		
3980	30.70	4011	378.87	389	n/a	0.977	n/a
3998	14.50	4012	178.90	182.8	n/a	0.985	n/a
4006	7.30	4013	90.04	92.2	n/a	0.988	n/a

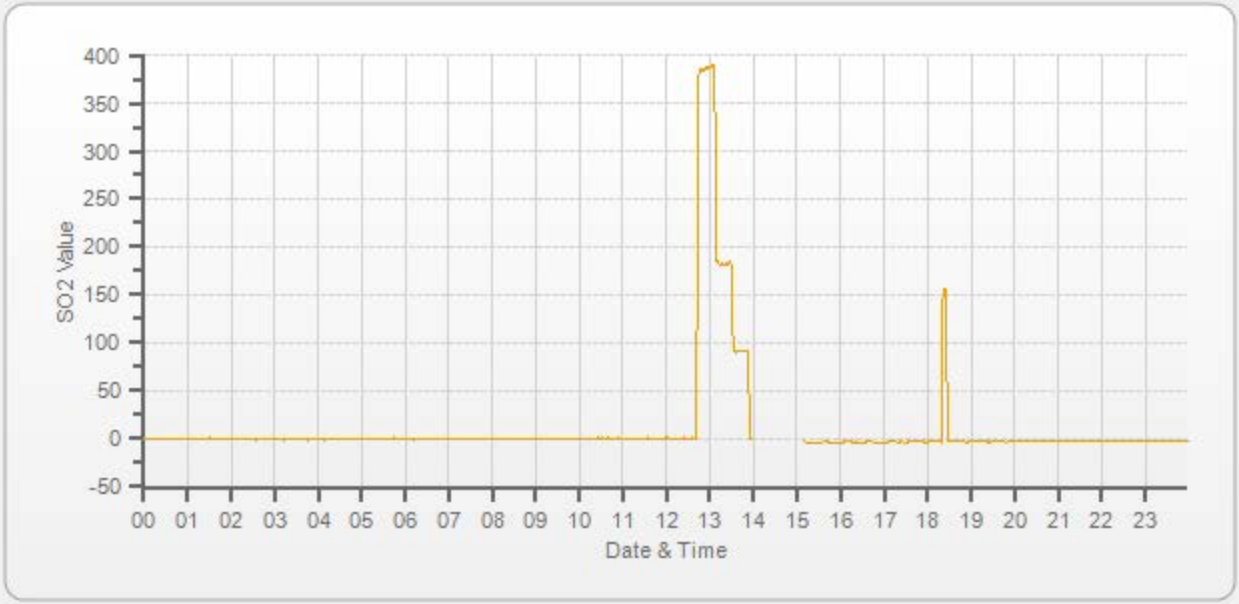
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.025	0.1%

COMMENTS:

Shut-down for site relocation.

SO2[ppb] Station: PRAMP 986b Daily: 30-07-2019 Type: AVG 1 Min. [1 Min.]



TRS Analyzer Calibration by Dilution

DATE:	30-Jul-2019	PREVIOUS CALIBRATION DATE:	03-Jun-2019
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	22.3
LOCATION:	986b	BAROMETRIC (mBar):	939
PURPOSE	Routine	START TIME (MST):	09:06
PERFORMED BY:	Chris Wesson	END TIME (MST):	14:48

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	100 ppb
SERIAL #	1152940011	FLOW (mL/min)	477
INITIAL		FINAL	
BKG/OFFSET	2.04	BKG/OFFSET	1.95
COEF/SLOPE	0.951	COEF/SLOPE	0.958
Expected (reference) Value	42.43	Expected (reference) Value	43.95

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Environics	MAKE:	Teledyne
MODEL:	2000	MODEL:	T701
ID:	1991	ID:	134
MFC CALIBRATION DATE:	17-May-2019	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL119432	HIGH ID	n/a
CONC (ppm):	10.3	EXPIRY DATE	n/a
CYLINDER (psi):	350	LOW ID	n/a
EXPIRY DATE	07-Nov-2020	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:	09:40	SO2 Conc (ppb)	380
END TIME:	09:55	Analyzer Response (ppb)	0.0

CALIBRATION:

FLOW RATES (mL/min)			CONCENTRATION (ppb)			CORRECTION FACTOR	
			ACTUAL	INDICATED		Initial	Final
DILUENT	GAS	TOTAL		Initial	Final		
4006		4006	0.00	-0.12	0		
3968	30.37	3998	78.08	76.25	78.1	1.022	1.000
3984	14.79	3999	38.02	n/a	38.03	n/a	1.000
3994	7.41	4001	19.04	n/a	18.44	n/a	1.032

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.003	-0.2%

COMMENTS:

An operator error occurred at 10:02-10:12. The As-found High point restarted. The filter was checked at 11:55 and the regulator was flushed due to low resposne. The Adjusted high was restarted.


TRS[ppb] Station: PRAMP 986b Daily: 30-07-2019 Type: AVG 1 Min. [1 Min.]
TRS Value
80
70
60
50
40
30
20
10
0
-10
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Date & Time
TRS[ppb]

Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	30-Jul-2019	PREVIOUS CALIBRATION DATE:	03-Jun-2019
CLIENT:	PRAMP	TEMPERATURE (°C):	22.2
LOCATION:	986b	BAROMETRIC (mBar):	939
PURPOSE	Routine	START TIME (MST):	09:06
PERFORMED BY:	Chris Wesson	END TIME (MST):	13:01

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1022143392	947
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	1.001	1.000	0.999

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):	1050		LOW ID:	n/a
MFC CALIBRATION DATE:	19-Jun-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
	10.40	11.39	21.80		10.47	11.54	22.00

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
3012		3012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
2939	71.80	3011	14.31	13.57	27.88	14.43	13.64	28.07	14.32	13.58	27.89	0.992	0.995	0.993	0.999	1.000	1.000
2975	35.90	3011	7.15	6.79	13.94	n/a	n/a	n/a	7.17	6.73	13.91	n/a	n/a	n/a	0.998	1.008	1.002
2992	18.00	3010	3.59	3.40	6.99	n/a	n/a	n/a	3.55	3.34	6.90	n/a	n/a	n/a	1.011	1.019	1.013

LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
CH4	1.000	1.002	-0.1%
NMHC	1.000	1.000	-0.2%
THC	1.000	1.001	-0.1%

COMMENTS:

n/a

Station: PRAMP 986b Daily: 30-07-2019 Type: AVG 1 Min. [1 Min.]

Meteorological System Checklist

Date:	July 30, 2019		
Technician:	Chris Wesson		
Reviewer:	Rob Fisher		
Station:	PRAMP 986b		
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:	June 3, 2019		
Parameter:	Temperature @ 2 metres		
Reference Thermometer ID:	FS 181341226		
Reference Temperature (^{o}C):	19.1		
Station - Ambient Temperature (^{o}C):	18.4		
Temperature Difference (^{o}C):	0.7		
BAROMETRIC PRESSURE SENSOR CHECK			
Previous check date:	June 3, 2019		
Reference Barometer ID:	Brunton 05490		
Reference Pressure - Units/Reading:	millibar	940.6	
Station Pressure - Units/Reading:	millibar	939.2	
Pressure Tolerance +/- 15% of error:	800 - 1082	0.15%	
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Previous check date:	June 3, 2019		
Reference Hygrometer ID:	FS 181341226		
Reference Hygrometer % RH- Reading:	52.90		
Station Hygrometer % RH- Reading:	54.70		
RH Tolerance +/- 15% of difference:	44.97 - 60.84	-3.4%	
ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK			
WIND SPEED		WIND DIRECTION	
Previous check date:	June 3, 2019	Previous check date:	June 3, 2019
Wind Speed Observed (kph):	0-5	Wind Direction Observed:	N
Wind speed on Data Logger (kph):	1.3	Wind Direction on Data Logger:	N
		Wind Direction Pass/Fail?:	Pass
Comments			

Alberta Government

Calibrator Performance Audit

Sulphur Dioxide (by Cylinder Dilution)

File No. 2019-424A

Company: Maxxam **Operator:** C. Wesson

Calibrator:		**Flow Measurement Device:**	
Make/Model	Environics 2000	Make/Model	N/A
Serial Number	1991	Serial Number	N/A
Last Verification Date	March 1, 2018	Temperature (°C)	N/A
SO_2 Cylinder Conc.	49.5	Barometric Pressure	N/A
SO_2 Cylinder S/N	LL48147		
Expiry Date	August 2026		

Flow Measurements

Pt. No. 1 78.8 **Pt. No. 2** 38.4 **Pt. No. 3** 19.2

Calibrator Flow (sccm)	Calculated Concentration (ppm)	Indicated Concentration (ppm)	% Difference vs Audit Gas	% Difference Limit
Zero Air	0.000	0.000		
5000	0.780	0.763	-2%	± 10%
4999	0.380	0.371	-2%	± 10%
5000	0.190	0.183	-4%	± 10%
		Absolute Average Percent Difference	3%	± 10%

LINEAR REGRESSION ANALYSIS

y=mx+b (where x=calculated concentration, y=indicated concentration)

SO_2		LIMITS
Correlation=	1.0000	**≥ 0.995**
m (Slope)=	0.9792	**0.90-1.10**
b (Intercept % of FS)=	-0.1346	**± 3% F.S.**

AENV Standards

Audit Calibrator

Make/Model	Sabio 2010
Serial/AMU Number	AMU 2092
SO_2 SRM Gas Cylinder No.	FF28071
Cylinder Conc. (ppm)	50.3

SO_2 Analyzer

Make/Model	Teco 43i
Serial/AMU Number	AMU 2195
Last Calibration Date	February 8, 2019
Full Scale (ppm)	1.0
Expiry Date	March 2020

COMMENTS:

Auditor: Al Clark Date: February 13, 2019

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2019-396A

Company Maxxam **Operator:** Alex

Calibrator:				**Flow Measurement Device:**	
Make/Model	Sabio 2010			Make/Model	N/A
Serial Number	26801218			Serial Number	N/A
Last Verification Date	New			Temperature (°C)	N/A
NO Cylinder S/N	LL48147			Barometric Pressure	N/A
NO [PPM]	50.5	NOx [PPM]	50.6		
Expiry Date	August 2026				

Dilution Flow (sccm)

Pt. #1 5000 Pt. #2 5000 Pt. #3 5000

Gas Flow (sccm)

Pt. #1 80 Pt. #2 40 Pt. #3 20

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO_2	NOx	NO	NOx
5000	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
5015	79.1	0.797	0.798	0.793	0.001	0.794	0%	-1%
5015	39.6	0.399	0.400	0.395	0.001	0.396	-1%	-1%
5017	19.8	0.199	0.200	0.197	0.000	0.197	-1%	-1%
					Absolute Average Percent Difference		1%	1%

LINEAR REGRESSION ANALYSIS *y=mx+b (where x=calculated concentration, y=indicated concentration)*

NO		**LIMITS**	**NOx**	
Correlation=	1.0000	**≥ 0.990**	Correlation=	1.0000
m (Slope)=	0.9959	**0.90-1.10**	m (Slope)=	0.9954
b (Intercept % of FS)=	-0.0968	**± 3% F.S.**	b (Intercept % of FS)=	-0.0969

Flow	O_3 Conc	NO Decrease	NO	NO2	NOX	% Diff. Vs Audit gas	
						NO_2	% Diff. Limit
5015	0.000	0.000	0.792	0.001	0.793		
5015	0.500	0.496	0.296	0.493	0.791	-1%	± 10%
5015	0.250	0.246	0.546	0.245	0.793	-1%	± 10%
5015	0.100	0.098	0.694	0.098	0.793	-1%	± 10%
				Absolute Average Percent Difference		1%	± 10%

LINEAR REGRESSION ANALYSIS *y=mx+b (where x=calculated concentration, y=indicated concentration)*

NO_2		**LIMITS**
Correlation=	1.0000	**≥ 0.995**
m (Slope)=	0.9921	**0.90-1.10**
b (Intercept % of FS)=	0.0909	**± 3% F.S.**

AENV Standards		**NO_X Analyzer**	
Audit Calibrator			
Make/Model	Teco 146i	Make/Model	Teco 42i
Serial/AMU Number	AMU 1809	Serial/AMU Number	AMU 1868
SRM Gas Cylinder No.	APEX1236645	Last Calibration Date	January 14, 2019
Cylinder Conc. (ppm)	50.05	Full Scale (ppm)	1.0
		Cylinder Gas Expiry Date	June 2021

COMMENTS:

Auditor: Al Clark Date: Janaury 15, 2019

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

Single Component Cylinder Gas

File No. 2019-390CGA

Company: Maxxam **Operator's Name:** Alex

Cylinder #: LL48147 Concentration PPM: 49.5 Tolerance(%) 1 Certified By: Praxair

Expiry Date: August 2026

Reference Calibrator and Gas:

Make/Model: Sabio 2010
Serial Number: AMU 2092
Last Verification Date: January 14, 2019
Gas Type: SO2 Conc. 50.26
Cylinder Number: FF28071
Expiry Date: March 2020

Flow Measurement Device:

Make/Model: Mesa Definer 220
Serial Number: H-133034 / L-132702
Temp.°C: 22.7 C
B.P. 707 mmHg

Reference Analyzer:

Make/Model: Teco 43i Serial/AMU Number: 2195

Instrument Settings: Zero: 11.8 Span: 0.980 Range: 1.0

Last Calibration: Date: Jan 14/19 C.F. 1.000 Done By: Shea Beaton

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.000			
4898	78.1	0.789	0.01595	62.714	49.5
4893	38.7	0.391	0.00791	126.434	49.4
4894	19.3	0.192	0.00394	253.575	48.7
				Average Cylinder Concentration:	**49.2**

Previous Stated Concentration PPM: 49.5

Percent variance from Stated: **1**

Meets Manufacturer Tolerance. Use manufacturers stated concentration [X] **COMMENTS:**

< =5% Outside Manufacturer Tolerance. Use manufacturers concentration [ ]

> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder [ ]

Auditor: Al Clark Date: January 15, 2019

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

Single Component Cylinder Gas

File No. 2017-137CGA

Company: Maxxam **Operator's Name:** Raja Abid Ashraf

Cylinder #: LL119432 Concentration PPM: 10.3 Tolerance(%) 2 Certified By: Praxair

Expiry Date: May 16, 2020

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: July 27, 2017
Gas Type: H2S Conc. 20.43
Cylinder Number: CAL015272
Expiry Date: Janaury 2019

Flow Measurement Device:

Make/Model: Mesa Definer 220
Serial Number: H-133034 L-132702
Temp.°C: 22.0 C
B.P. 700 mmhg

Reference Analyzer:

Make/Model: Teco 450i Serial/AMU Number: 1980
Instrument Settings: Zero: 21.9 Span: 1.069 Range: 0.1
Last Calibration: Date: July 27, 2017 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.0000			
5117	38.9	0.0595	0.00760	131.542	7.8
5103	18.4		0.00361	277.337	0.0
5097	9.4		0.00184	542.234	0.0
				Average Cylinder Concentration:	**2.6**

Previous Stated Concentration PPM: 10.3

Percent variance from Stated: **75**

Meets Manufacturer Tolerance. Use manufacturers stated concentration ☐ **COMMENTS:**

< =5% Outside Manufacturer Tolerance. Use manufacturers concentration ☐ Do not use.

> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder ☒ X

Auditor: Al Clark Date: July 27, 2017

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

CH4 / C3H8 Cylinder Gas

File No. 2017-484CGA

Company: Maxxam **Operators name:** Mike

Cylinder #: LL107207 Conc CH4 (PPM) 600/207 Tolerance (%) 2 Certified By: Praxair

Expiry Date: October 2025

Reference Calibrator and Gas:

Make/Model	R&R MFC 201		
Serial Number	AMU 1690		
Last Verification Date	December 13, 2017		
Gas Type	CH4	Conc.	990.4
Cylinder Number	5604875	Expiry Date	July 2021
Gas Type	C3H8	Conc.	246.5
Cylinder Number	XF003845B	Expiry Date	July 2022

Flow Measurement Device:

Make/Model	Mesa Definer 220
Serial Number	H-133034 / L-132702
Temp.°C	23.1 C
B.P.	707 mmHg

Reference Analyzer:

Make/Model Teco 55i Serial/AMU Number: 2108

Instrument Settings Zero: N/A Span: N/A Range: 20.0

Last Calibration: Date: Dec 12/17 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated Conc. (ppm)		Gas Flow/	Concentration	Cylinder Concentration	
Dilution	Gas	CH4	C3H8	Dilution Flow	Factor	CH4	C3H8
3500	0.0	0.00	0.00				
3618	80.4	13.28	12.77	0.02	45.00	598	209
3547	39.8	6.71	6.47	0.01	89.12	598	210
3560	19.8	3.35	3.26	0.01	179.80	602	213
					Average Cylinder Concentration:	**599**	**211**

	CH4	C3H8
Previous Stated Concentration PPM:	600	207
Percent variance from Stated:	**0**	**2**

Cylinder gas tolerances based on CH4 only

Meets Manufacturer Tolerance. Use manufacturers stated concentration [X] **COMMENTS:**

< =5% Outside Manufacturer Tolerance. Use manufacturers concentration [ ]

> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder [ ]

Auditor: Al Clark Date: December 13, 2017

Operator Signature: Location: McIntyre Center Edmonton

Peace River Area Monitoring Program

JULY 2019

Ambient Air Monitoring Calibration Report

- RENO STATION-

CAL-PRAMP-201907-01563

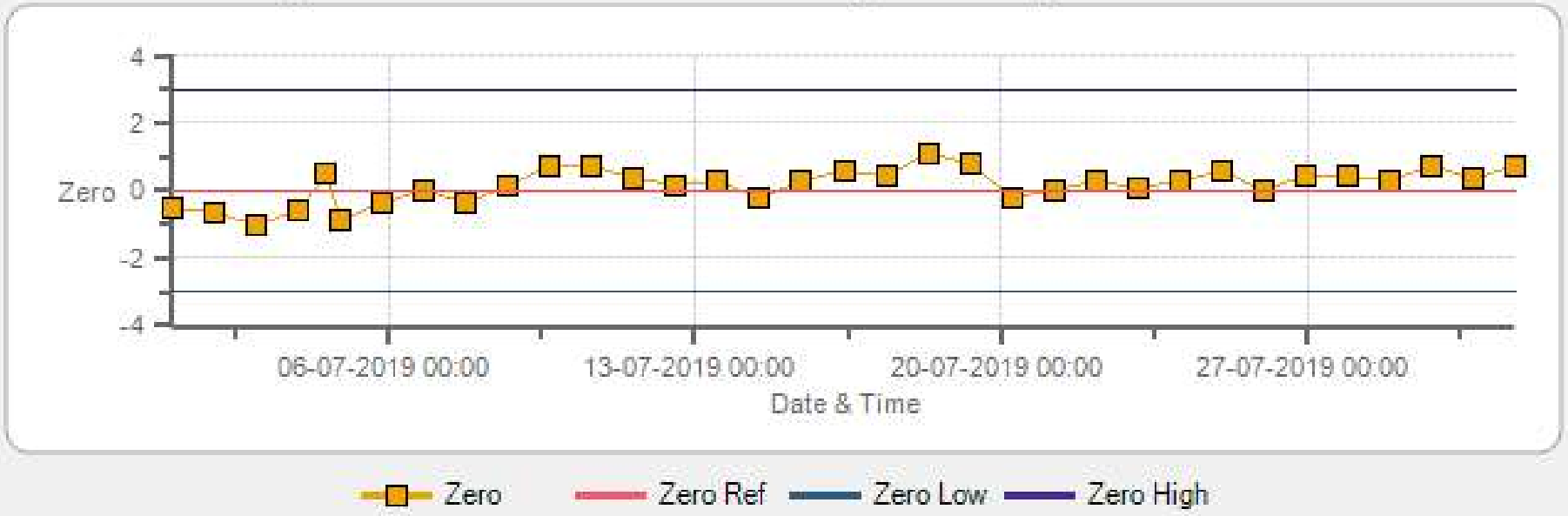
Operation and Maintenance:
Maxxam Analytics

Data Validation and Report:
Maxxam Analytics

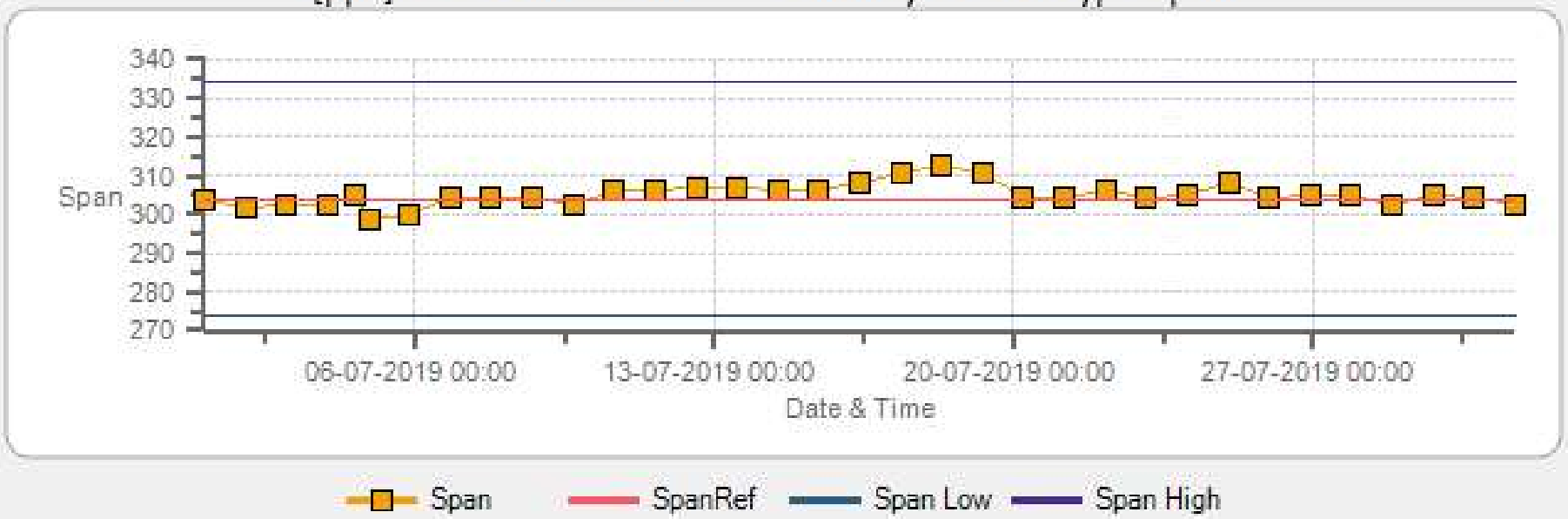
August 9, 2019

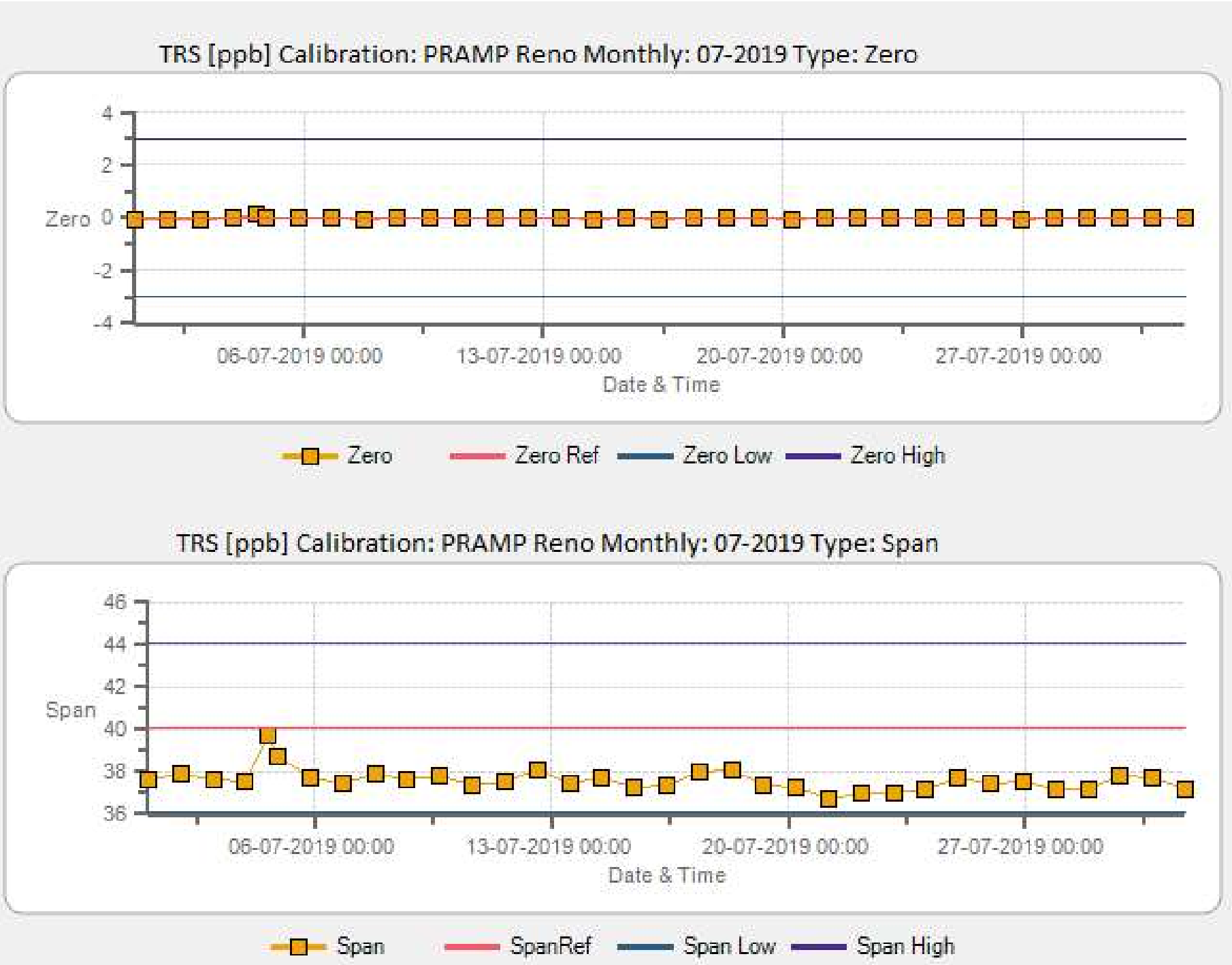
DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

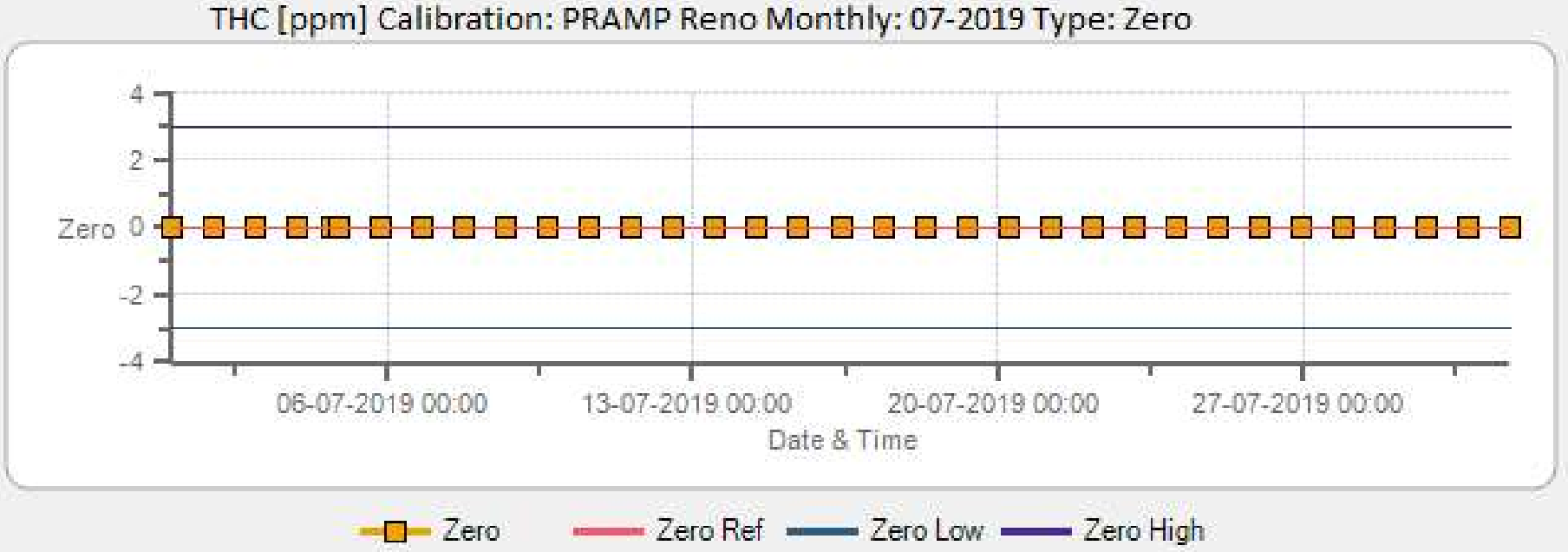
SO2 [ppb] Calibration: PRAMP Reno Monthly: 07-2019 Type: Zero

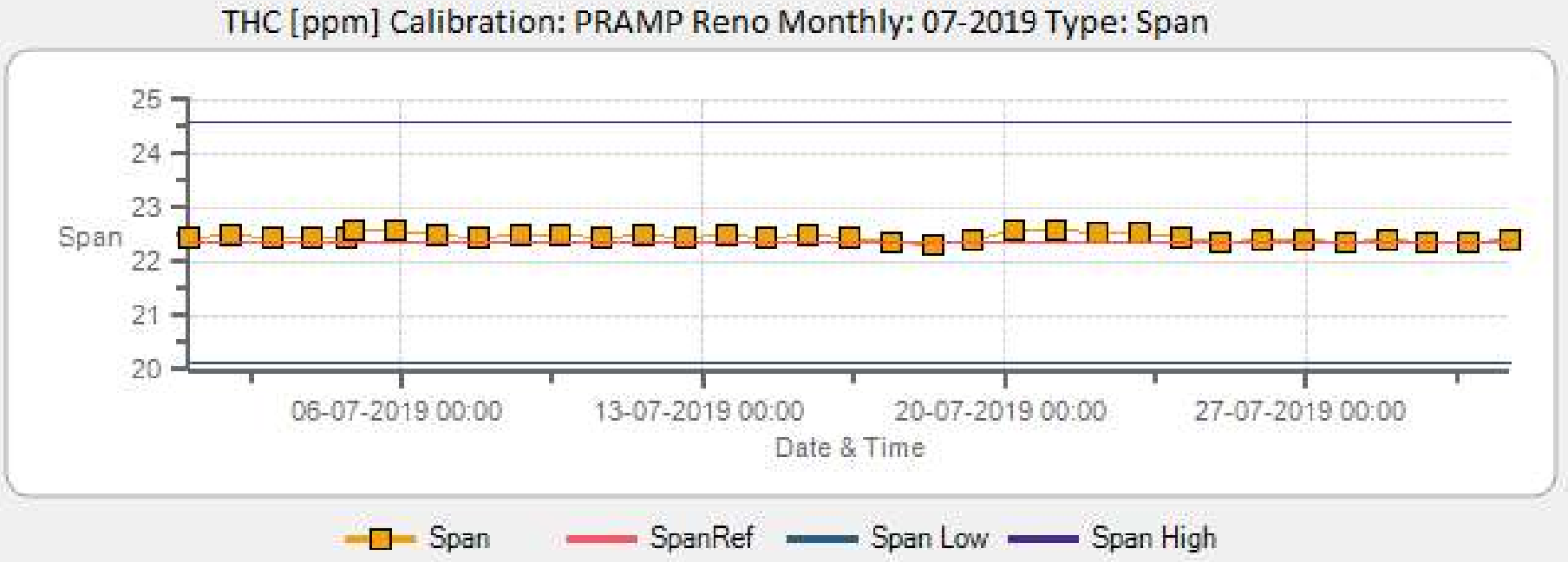


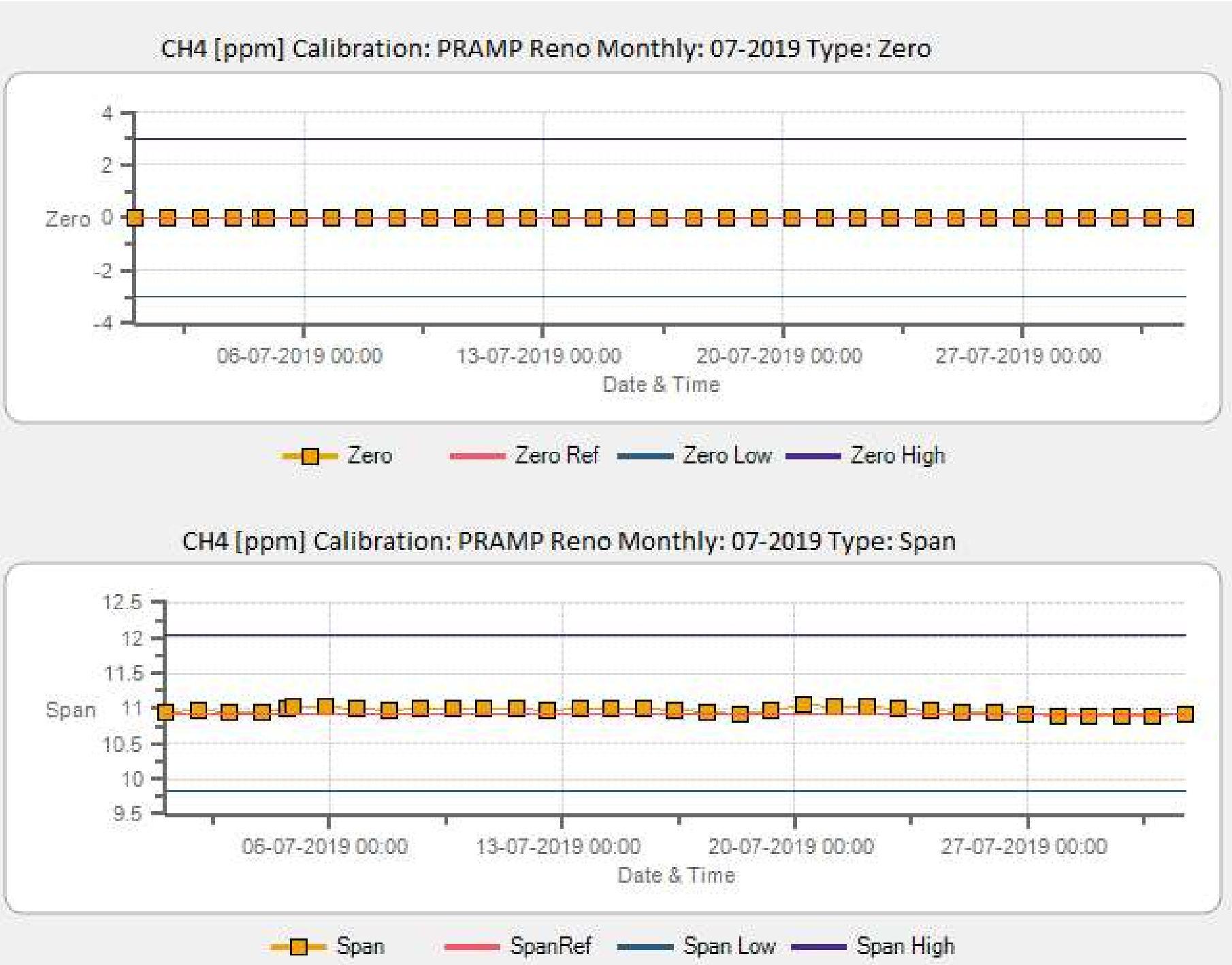
SO2 [ppb] Calibration: PRAMP Reno Monthly: 07-2019 Type: Span

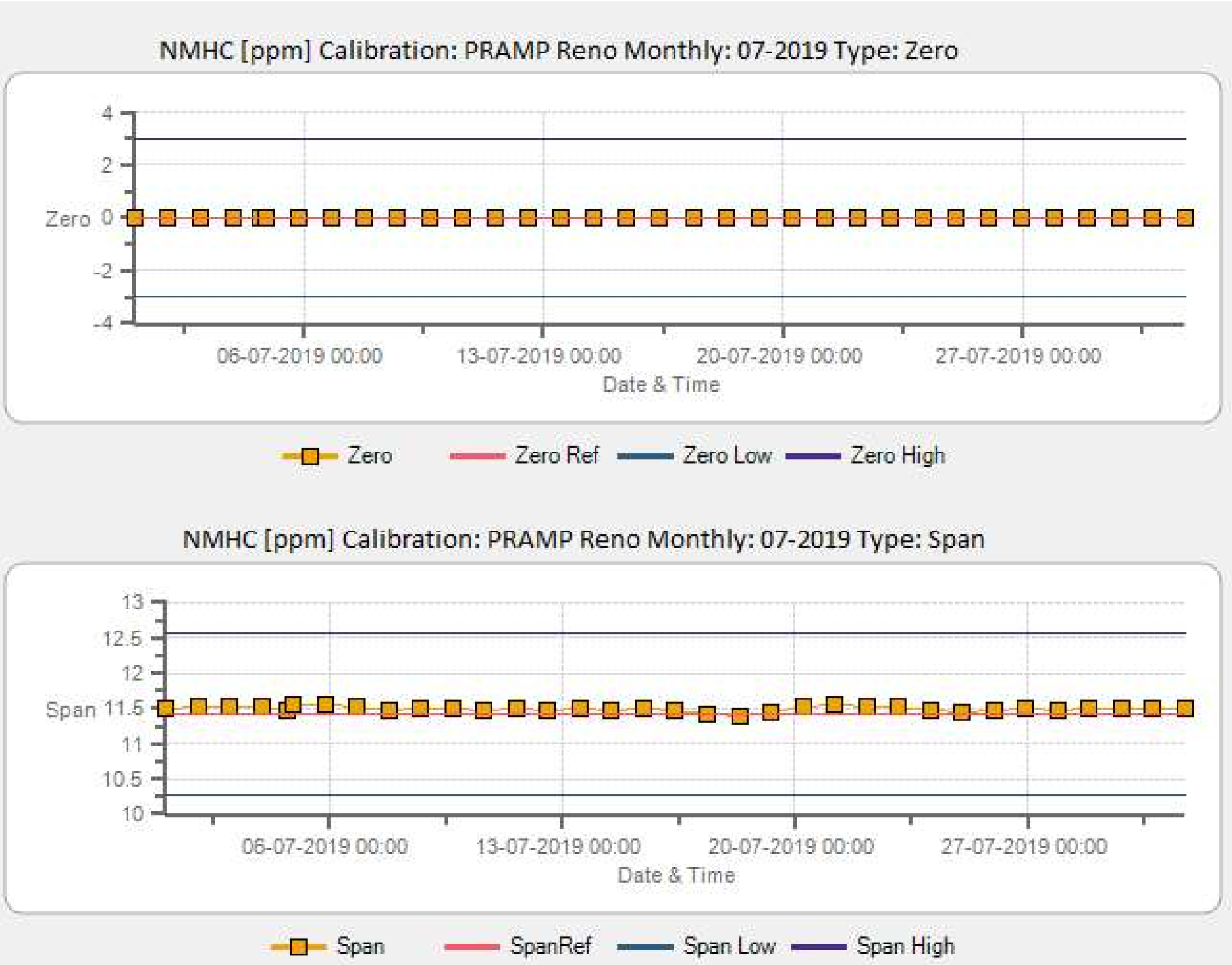



TRS [ppb] Calibration: PRAMP Reno Monthly: 07-2019 Type: Zero
4
2
Zero 0
-2
-4
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
TRS [ppb] Calibration: PRAMP Reno Monthly: 07-2019 Type: Span
46
44
42
Span
40
38
36
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Span
SpanRef
Span Low
Span High


THC [ppm] Calibration: PRAMP Reno Monthly: 07-2019 Type: Zero
4
2
Zero 0
-2
-4
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High


THC [ppm] Calibration: PRAMP Reno Monthly: 07-2019 Type: Span
25
24
23
Span
22
21
20
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Span
SpanRef
Span Low
Span High


CH4 [ppm] Calibration: PRAMP Reno Monthly: 07-2019 Type: Zero
4
2
Zero 0
-2
-4
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
CH4 [ppm] Calibration: PRAMP Reno Monthly: 07-2019 Type: Span
12.5
12
11.5
Span 11
10.5
10
9.5
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Span
SpanRef
Span Low
Span High


NMHC [ppm] Calibration: PRAMP Reno Monthly: 07-2019 Type: Zero
4
2
Zero 0
-2
-4
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Zero
Zero Ref
Zero Low
Zero High
NMHC [ppm] Calibration: PRAMP Reno Monthly: 07-2019 Type: Span
13
12.5
12
Span 11.5
11
10.5
10
06-07-2019 00:00
13-07-2019 00:00
20-07-2019 00:00
27-07-2019 00:00
Date & Time
Span
SpanRef
Span Low
Span High

MULTI-POINT CALIBRATION RECORDS

SO2 Analyzer Calibration by Dilution

DATE:	04-Jul-2019	PREVIOUS CALIBRATION DATE:	12-Jun-2019
PARAMETER:	SO2	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	22.7
LOCATION:	Reno	BAROMETRIC (mBar):	942
PURPOSE	Routine	START TIME (MST):	08:59
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	13:50

ANALYZER:

MAKE/MODEL	API 100A	RANGE	500 ppb
SERIAL #	841	FLOW (mL/min)	653
INITIAL		FINAL	
BKG/OFFSET	53.9	BKG/OFFSET	53.2
COEF/SLOPE	1.076	COEF/SLOPE	1.085
Expected (reference) Value	304	Expected (reference) Value	304.8

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Environics	MAKE:	API
MODEL:	6100	MODEL:	T701
ID:	5212	ID:	74
MFC CALIBRATION DATE:	07-Feb-2019	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	EY0000597	HIGH ID	n/a
CONC (ppm):	50.4	EXPIRY DATE	n/a
CYLINDER (psi):	500	LOW ID	n/a
EXPIRY DATE	08-Dec-2019	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		
5997		5997	0.00	-0.5	0		
5952	45.20	5997	379.84	375.2	379.8	1.011	1.000
5976	21.40	5997	179.87	n/a	179.4	n/a	1.003
5985	10.69	5996	89.89	n/a	90	n/a	0.999

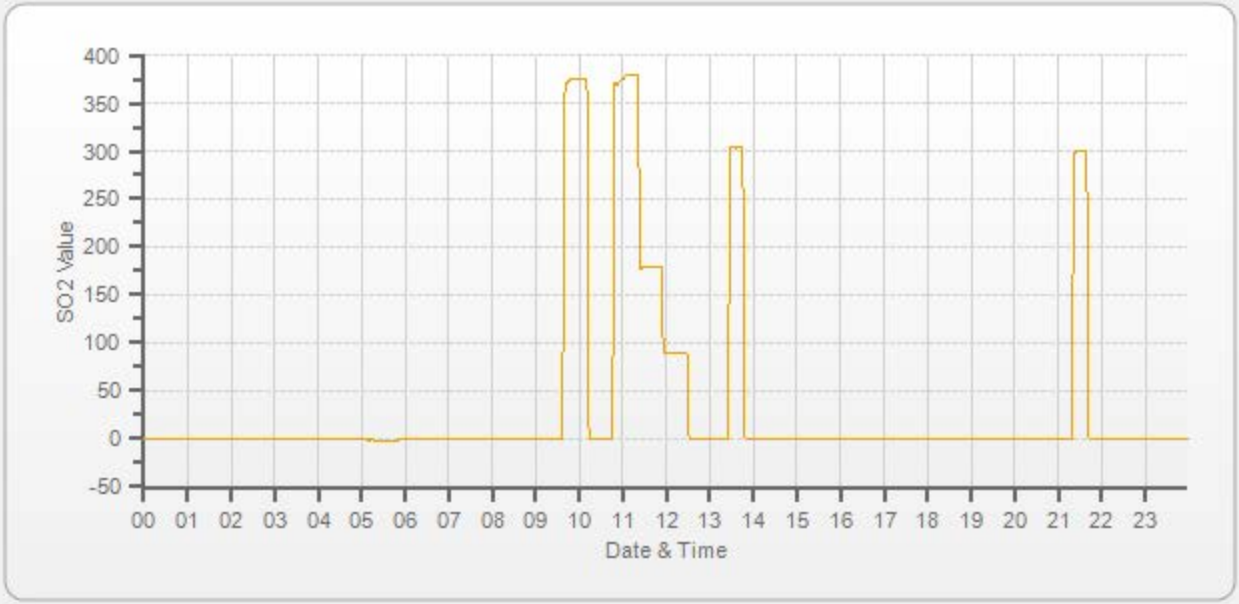
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	0.0%

COMMENTS:

Monthly Calibration passed.

SO2[ppb] Station: PRAMP RENO Daily: 04-07-2019 Type: AVG 1 Min. [1 Min.]



TRS Analyzer Calibration by Dilution

DATE:	04-Jul-2019	PREVIOUS CALIBRATION DATE:	12-Jun-2019
PARAMETER:	TRS	PREVIOUS CORRECTION FACTOR:	1.000
CLIENT:	PRAMP	TEMPERATURE (°C):	22.7
LOCATION:	Reno	BAROMETRIC (mBar):	942
PURPOSE	Routine	START TIME (MST):	08:59
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	14:34

ANALYZER:

MAKE/MODEL	Thermo 43I-TLE	RANGE	100 ppb
SERIAL #	1162460022	FLOW (mL/min)	411
INITIAL		FINAL	
BKG/OFFSET	2.21	BKG/OFFSET	2.17
COEF/SLOPE	0.944	COEF/SLOPE	0.945
Expected (reference) Value	40.11	Expected (reference) Value	39.75

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:	
MAKE:	Environics	MAKE:	API
MODEL:	6100	MODEL:	T701
ID:	4760	ID:	74
MFC CALIBRATION DATE:	07-Feb-2019	OXIDIZER ID:	n/a
CALIBRATION GAS:		FLOWMETERS (if applicable):	
CYLINDER ID:	LL119420	HIGH ID	n/a
CONC (ppm):	10.2	EXPIRY DATE	n/a
CYLINDER (psi):	500	LOW ID	n/a
EXPIRY DATE	16-May-2020	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:	09:31	SO2 Conc (ppb)	380
END TIME:	09:46	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	-0.01	0		
7430	57.21	7487	77.94	77.34	77.91	1.008	1.000
7460	27.86	7488	37.95	n/a	37.42	n/a	1.014
7475	13.93	7489	18.97	n/a	18.48	n/a	1.027

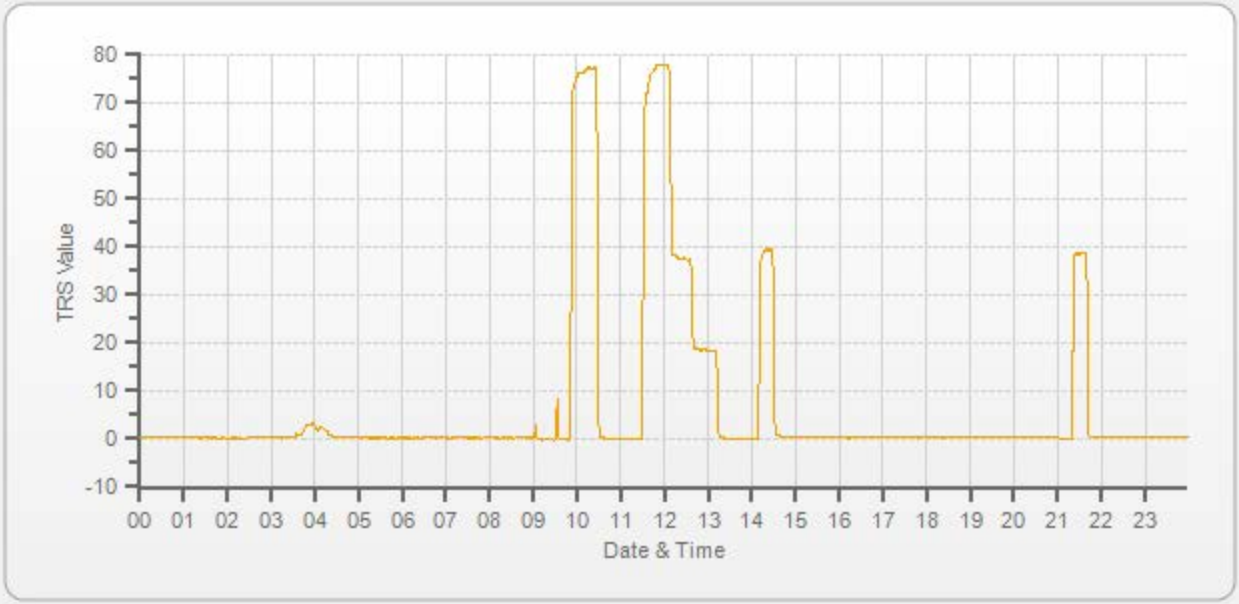
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	-0.3%

COMMENTS:

Monthly calibration passed.

TRS[ppb] Station: PRAMP RENO Daily: 04-07-2019 Type: AVG 1 Min. [1 Min.]



Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:

DATE:	04-Jul-2019	PREVIOUS CALIBRATION DATE:	12-Jun-2019
CLIENT:	PRAMP	TEMPERATURE (°C):	24.8
LOCATION:	Reno	BAROMETRIC (mBar):	943
PURPOSE	Routine	START TIME (MST):	12:51
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	17:46

ANALYZER:

VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
	Thermo 55i	1314057759	1213.5
PARAMETER:	CH4	NMHC	THC
RANGE (ppm):	20	20	40
PREVIOUS CF:	0.998	1.002	1.001

CALIBRATION SYSTEM:

CALIBRATOR:		ZERO AIR:		CALIBRATION GAS:			FLOWMETERS (if applicable):	
MAKE:	Environics	MAKE:	API	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):	1500		LOW ID:	n/a
MFC CALIBRATION DATE:	07-Feb-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	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
	10.93	11.42	22.35		10.93	11.42	22.35

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						
3076	70.47	3146	13.33	12.69	26.02	13.25	12.69	25.94	13.33	12.65	25.98	1.006	1.000	1.003	1.000	1.003	1.001
3111	37.94	3149	7.17	6.82	13.99	n/a	n/a	n/a	7.12	6.81	13.93	n/a	n/a	n/a	1.007	1.002	1.004
3130	16.25	3147	3.07	2.92	6.00	n/a	n/a	n/a	3.05	2.92	5.97	n/a	n/a	n/a	1.007	1.002	1.005

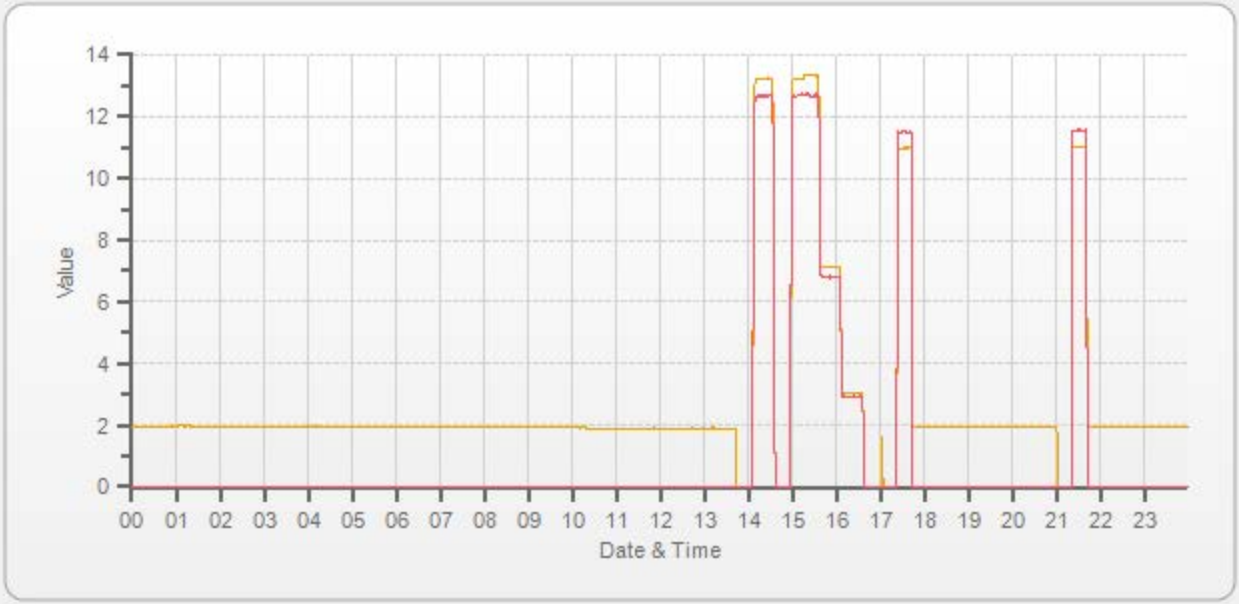
LINEAR REGRESSION ANALYSIS:

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

COMMENTS:

Monthly Calibration passed.

Station: PRAMP RENO Daily: 04-07-2019 Type: AVG 1 Min. [1 Min.]



Meteorological System Checklist

Date:	July 4, 2019		
Technician:	Ferdinand Roy		
Reviewer:	Rob Fisher		
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:	June 12, 2019		
Parameter:	Temperature @ 2 metres		
Reference Thermometer ID:	F.S. 160459244 expires Jun 19, 2020		
Reference Temperature (^{o}C):	15.8		
Station - Ambient Temperature (^{o}C):	15.7		
Temperature Difference (^{o}C):	0.1		
BAROMETRIC PRESSURE SENSOR CHECK			
Previous check date:	June 12, 2019		
Reference Barometer ID:	F.S. 10528 expires January 23, 2020		
Reference Pressure - Units/Reading:	millibar	942	
Station Pressure - Units/Reading:	millibar	943	
Pressure Tolerance +/- 15% of error:	801 - 1083	-0.11%	
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Previous check date:	June 12, 2019		
Reference Hygrometer ID:	F.S. 160459244 expires Jun 19, 2020		
Reference Hygrometer % RH- Reading:	62.23		
Station Hygrometer % RH- Reading:	59.30		
RH Tolerance +/- 15% of difference:	52.90 - 71.56	4.7%	
ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK			
WIND SPEED		WIND DIRECTION	
Previous check date:	June 12, 2019	Previous check date:	June 12, 2019
Wind Speed Observed (kph):	5-15	Wind Direction Observed:	SW
Wind speed on Data Logger (kph):	10.6	Wind Direction on Data Logger:	SW
		Wind Direction Pass/Fail?:	Pass

Comments

Alberta Government

Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2019-426A

Company: Maxxam **Operator:** C. Wesson

Calibrator:				**Flow Measurement Device:**	
Make/Model	Evironics 6100			Make/Model	N/A
Serial Number	5212			Serial Number	N/A
Last Verification Date	March 2018			Temperature (°C)	N/A
NO Cylinder S/N	LL107918			Barometric Pressure	N/A
NO [PPM]	50.1	NOx [PPM]	50.2		
Expiry Date	August 2026				

Dilution Flow (sccm)

Pt. #1 5000 Pt. #2 5000 Pt. #3 5000

Gas Flow (sccm)

Pt. #1 80 Pt. #2 40 Pt. #3 20

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO_2	NOx	NO	NOx
5000	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
4997	77.8	0.780	0.782	0.768	-0.003	0.766	-2%	-2%
4997	37.9	0.380	0.381	0.372	-0.002	0.370	-2%	-3%
4996	18.9	0.190	0.190	0.186	-0.001	0.185	-2%	-3%
					Absolute Average Percent Difference		2%	2%

LINEAR REGRESSION ANALYSIS *y=mx+b (where x=calculated concentration, y=indicated concentration)*

NO		**LIMITS**	**NOx**	
Correlation=	1.0000	**≥ 0.990**	Correlation=	1.0000
m (Slope)=	0.9846	**0.90-1.10**	m (Slope)=	0.9802
b (Intercept % of FS)=	-0.0683	**± 3% F.S.**	b (Intercept % of FS)=	-0.1101

Flow	O_3 Conc	NO Decrease	NO	NO2	NOX	% Diff. Vs Audit gas	
4997	0.000	0.000	0.765	-0.002	0.764	NO_2	% Diff. Limit
4997	0.500	0.491	0.274	0.486	0.760	-1%	± 10%
4997	0.275	0.274	0.491	0.271	0.762	0%	± 10%
4997	0.090	0.091	0.674	0.089	0.762	0%	± 10%
				Absolute Average Percent Difference		0%	± 10%

LINEAR REGRESSION ANALYSIS *y=mx+b (where x=calculated concentration, y=indicated concentration)*

NO_2		**LIMITS**
Correlation=	1.0000	**≥ 0.995**
m (Slope)=	0.9937	**0.90-1.10**
b (Intercept % of FS)=	-0.1650	**± 3% F.S.**

AENV Standards		**NO_X Analyzer**	
Audit Calibrator		Make/Model	Teco 42i
Make/Model	Sabio 2010	Serial/AMU Number	AMU 1868
Serial/AMU Number	AMU 2092	Last Calibration Date	February 12, 2019
SRM Gas Cylinder No.	APEX1236645	Full Scale (ppm)	1.0
Cylinder Conc. (ppm)	50.05	Cylinder Gas Expiry Date	June 2021

COMMENTS: Contains 49.5 ppm SO2.

Auditor: Al Clark Date: February 13, 2019

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2019-427A

Company: Maxxam **Operator:** C. Wesson

Calibrator:				**Flow Measurement Device:**	
Make/Model	Evironics 6100			Make/Model	N/A
Serial Number	4760			Serial Number	N/A
Last Verification Date	March 2018			Temperature (°C)	N/A
NO Cylinder S/N	LL107918			Barometric Pressure	N/A
NO [PPM]	50.1	NOx [PPM]	50.2		
Expiry Date	August 2026				

Dilution Flow (sccm)

Pt. #1 5000 Pt. #2 5000 Pt. #3 5000

Gas Flow (sccm)

Pt. #1 80 Pt. #2 40 Pt. #3 20

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO_2	NOx	NO	NOx
5000	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
4994	77.7	0.779	0.781	0.798	0.000	0.798	2%	2%
4993	37.8	0.379	0.380	0.388	-0.001	0.387	2%	2%
4993	18.9	0.190	0.190	0.193	0.000	0.193	2%	2%
					Absolute Average Percent Difference		2%	2%

LINEAR REGRESSION ANALYSIS *y=mx+b (where x=calculated concentration, y=indicated concentration)*

NO		**LIMITS**	**NOx**	
Correlation=	1.0000	**≥ 0.990**	Correlation=	1.0000
m (Slope)=	1.0242	**0.90-1.10**	m (Slope)=	1.0221
b (Intercept % of FS)=	-0.0519	**± 3% F.S.**	b (Intercept % of FS)=	-0.0726

Flow	O_3 Conc	NO Decrease	NO	NO2	NOX	% Diff. Vs Audit gas	
4994	0.000	0.000	0.796	0.000	0.796	NO_2	% Diff. Limit
4994	0.550	0.502	0.294	0.499	0.792	-1%	± 10%
4994	0.300	0.275	0.521	0.274	0.795	0%	± 10%
4994	0.100	0.062	0.734	0.061	0.796	-2%	± 10%
			Absolute Average Percent Difference			1%	± 10%

LINEAR REGRESSION ANALYSIS *y=mx+b (where x=calculated concentration, y=indicated concentration)*

NO_2		**LIMITS**
Correlation=	1.0000	**≥ 0.995**
m (Slope)=	0.9949	**0.90-1.10**
b (Intercept % of FS)=	-0.0179	**± 3% F.S.**

AENV Standards		**NO_X Analyzer**	
Audit Calibrator			
Make/Model	Sabio 2010	Make/Model	Teco 42i
Serial/AMU Number	AMU 2092	Serial/AMU Number	AMU 1868
SRM Gas Cylinder No.	APEX1236645	Last Calibration Date	February 14, 2019
Cylinder Conc. (ppm)	50.05	Full Scale (ppm)	1.0
		Cylinder Gas Expiry Date	June 2021

COMMENTS: Contains 49.5 ppm SO2.

Auditor: Al Clark Date: February 14, 2019

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

Single Component Cylinder Gas

File No. 2016-438CGA

Company: Maxxam **Operator's Name:** Chris

Cylinder #: EY0000597 Concentration PPM: 50.4 Tolerance(%) 1.0 Certified By: Praxair

Expiry Date: December 8, 2019

Reference Calibrator and Gas:

Make/Model: Thermo 146i
Serial Number: AMU 1809
Last Verification Date: January 26, 2017
Gas Type: SO2 Conc. 98.07
Cylinder Number: CAL016625
Expiry Date: January 5, 2019

Flow Measurement Device:

Make/Model: Bios Befiner 220
Serial Number: AMU1941
Temp.°C: 24.4
B.P. 704.7

Reference Analyzer:

Make/Model: Themro 43C Serial/AMU Number: AMU 1623

Instrument Settings: Zero: 9.5 Span: 1.023 Range: 1.0

Last Calibration: Date: 25-Jan-17 C.F. 1.000 Done By: SB

Calibrator Flows (sccm)		Indicated	Gas Flow/	Concentration	Cylinder
Dilution	Gas	Concentration (PPM)	Dilution Flow	Factor	Concentration
4923	0.0	0.000			
4916	80.7	0.834	0.01642	60.917	50.8
4902	40.3	0.416	0.00822	121.638	50.6
4916	19.9	0.206	0.00405	247.035	50.9
				Average Cylinder Concentration:	**50.7**

Previous Stated Concentration PPM: 50.4

Percent variance from Stated: **0.7**

Meets Manufacturer Tolerance. Use manufacturers stated concentration [X] **COMMENTS:**

< =5% Outside Manufacturer Tolerance. Use manufacturers concentration [ ]

> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder [ ]

Auditor: Shea Beaton Date: January 26, 2017

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

Single Component Cylinder Gas

File No. 2017-135CGA

Company: Maxxam **Operator's Name:** Raja Abid Ashraf

Cylinder #: LL119420 Concentration PPM: 10.2 Tolerance(%) 2 Certified By: Praxair

Expiry Date: May 16, 2020

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: July 27, 2017
Gas Type: H2S Conc. 20.43
Cylinder Number: CAL015272
Expiry Date: Janaury 2019

Flow Measurement Device:

Make/Model: Mesa Definer 220
Serial Number: H-133034 L-132702
Temp.°C: 22.0 C
B.P. 700 mmhg

Reference Analyzer:

Make/Model: Teco 450i Serial/AMU Number: 1980
Instrument Settings: Zero: 21.9 Span: 1.069 Range: 0.1
Last Calibration: Date: July 27, 2017 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.0020			
5117	38.9	0.0781	0.00760	131.542	10.0
5103	18.4	0.0379	0.00361	277.337	10.5
5097	9.4	0.0198	0.00184	542.234	10.7
				Average Cylinder Concentration:	**10.4**

Previous Stated Concentration PPM: 10.2

Percent variance from Stated: **2**

Meets Manufacturer Tolerance. Use manufacturers stated concentration [ ] **COMMENTS:**

< =5% Outside Manufacturer Tolerance. Use manufacturers concentration [X]

> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder [ ]

Auditor: Al Clark Date: July 27, 2017

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

CH4 / C3H8 Cylinder Gas

File No. 2017-492CGA

Company: Maxxam **Operators name:** Mike

Cylinder #: LL43221 Conc CH4 (PPM) 595/206 Tolerance (%) 2 Certified By: Praxair

Expiry Date: October 2025

Reference Calibrator and Gas:

Make/Model	R&R MFC 201		
Serial Number	AMU 1690		
Last Verification Date	December 13, 2017		
Gas Type	CH4	Conc.	990.4
Cylinder Number	5604875	Expiry Date	July 2021
Gas Type	C3H8	Conc.	246.5
Cylinder Number	XF003845B	Expiry Date	July 2022

Flow Measurement Device:

Make/Model	Mesa Definer 220
Serial Number	H-133034 / L-132702
Temp.°C	23.1 C
B.P.	707 mmHg

Reference Analyzer:

Make/Model	Teco 55i			Serial/AMU Number:	2108
Instrument Settings	Zero: N/A		Span: N/A	Range:	20.0
Last Calibration:	Date: Dec 12/17		C.F. 1.000	Done By:	Al Clark

Calibrator Flows (sccm)		Indicated Conc. (ppm)		Gas Flow/	Concentration	Cylinder Concentration	
Dilution	Gas	CH4	C3H8	Dilution Flow	Factor	CH4	C3H8
3500	0.0	0.00	0.00				
3618	80.4	13.23	12.70	0.02	45.00	595	208
3547	39.8	6.65	6.44	0.01	89.12	593	209
3560	19.8	3.33	3.23	0.01	179.80	599	211
					Average Cylinder Concentration:	**596**	**209**

	CH4	C3H8
Previous Stated Concentration PPM:	595	206
Percent variance from Stated:	**0**	**2**

Cylinder gas tolerances based on CH4 only

Meets Manufacturer Tolerance. Use manufacturers stated concentration [X] **COMMENTS:**

< =5% Outside Manufacturer Tolerance. Use manufacturers concentration [ ]

> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder [ ]

Auditor: Al Clark Date: December 13, 2017

Operator Signature: Location: McIntyre Center Edmonton