



Peace River Area Monitoring Program

JULY 2019

- Monthly Ambient Air Quality Monitoring Report -**
- Ambient Air Monthly Calibration Report -**

August 28, 2019

Pages may be left blank for double-sided printing

TABLE OF CONTENTS

Part I: Monthly Ambient Air Quality Monitoring Report

LIST OF ACRONYMS	PRAMP-201907- 4
COVER LETTER	PRAMP-201907- 5
NETWORK STATION SUMMARY	PRAMP-201907- 6
Listing of Continuous Monitoring Stations	PRAMP-201907- 6
Listing of Intermittent Monitoring Stations	PRAMP-201907- 6
Monitoring Notes	PRAMP-201907- 6
986 Station	PRAMP-201907- 6
842 Station	PRAMP-201907- 6
Reno Station	PRAMP-201907- 7
VOCs Canister Sampling Program	PRAMP-201907- 7
Revisions to Alberta's Ambient Air Quality Warehouse	PRAMP-201907- 7
Deviations from Authorized Monitoring Methods	PRAMP-201907- 7
Disclaimer	PRAMP-201907- 8
Certification	PRAMP-201907- 9
Map of PRAMP Continuous Monitoring Network	PRAMP-201907- 10
CONTINUOUS NETWORK EQUIPMENT AND MONITORING RESULTS SUMMARY	PRAMP-201907- 11
986 Station	PRAMP-201907- 11
842 Station	PRAMP-201907- 14
Reno Station	PRAMP-201907- 17
TABLES, CHARTS AND WIND ROSES	PRAMP-201907- 19
986 Station	PRAMP-201907- 20
842 Station	PRAMP-201907- 60
Reno Station	PRAMP-201907- 100
REFERENCE DOCUMENTS	PRAMP-201907- 140
HOURLY INSTANTANEOUS DATA	PRAMP-201907- 141
986 Station	PRAMP-201907- 142
842 Station	PRAMP-201907- 153
Reno Station	PRAMP-201907- 168
END OF REPORT	PRAMP-201907- 181

Part II: Ambient Air Monthly Calibration Report

986 Station	CAL-PRAMP-201907-01562- 1
842 Station	CAL-PRAMP-201907-01561- 1
Reno Station	CAL-PRAMP-201907-01563- 1



Peace River Area Monitoring Program

JULY 2019

Monthly Ambient Air Quality Monitoring Report

PRAMP-201907

Operation and Maintenance:

Maxxam Analytics

Data Validation and Report:

Peace River Area Monitoring Program

August 9, 2019

Pages may be left blank for double-sided printing

TABLE OF CONTENTS

LIST OF ACRONYMS	4
COVER LETTER	5
NETWORK STATION SUMMARY	6
Listing of Continuous Monitoring Stations	6
Listing of Intermittent Monitoring Stations	6
Monitoring Notes	6
986b Station	6
842b Station	6
Reno Station	7
VOCs Canister Sampling Program	7
Revisions to Alberta's Ambient Air Quality Data Warehouse	7
Deviations from Authorized Monitoring Methods	7
Disclaimer	8
Certification	9
Map of PRAMP Continuous Monitoring Network	10
CONTINUOUS NETWORK EQUIPMENT AND MONITORING RESULTS SUMMARY	11
986b Station	11
842b Station	14
Reno Station	17
TABLES, CHARTS AND WIND ROSES	19
986b Station	20
842b Station	60
Reno Station	100
REFERENCE DOCUMENTS	140
HOURLY INSTANTANEOUS DATA	141
986b Station	142
842b Station	153
Reno Station	168
END OF REPORT	181

LIST OF ACRONYMS

AAAQOs	Alberta Ambient Air Quality Objectives
AEP	Alberta Environment and Parks
AMD	Air Monitoring Directive
AT	Ambient Temperature
BP	Barometric Pressure
CH ₄	Methane
EPEA	Environmental Protection and Enhancement Act
H ₂ S	Hydrogen Sulphide
kph	kilometers per hour
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
SO ₂	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



Peace River Area Monitoring Program
Suite 91, 305 – 4625 Varsity Drive NW
Calgary, AB, T3A 0Z9
Phone #: 780-226-7068 / 587-225-2248
E-mail: pramptech@prampairshed.ca
www.prampairshed.ca

Alberta Environment and Parks (AEP)

August 9, 2019

11th Floor, Oxbridge Place
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
Suite 91, 305 – 4625 Varsity Drive NW
Calgary, AB, T3A 0Z9
Phone #: 780-226-7068 / 587-225-2248
E-mail: pramptech@prampairshed.ca

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).

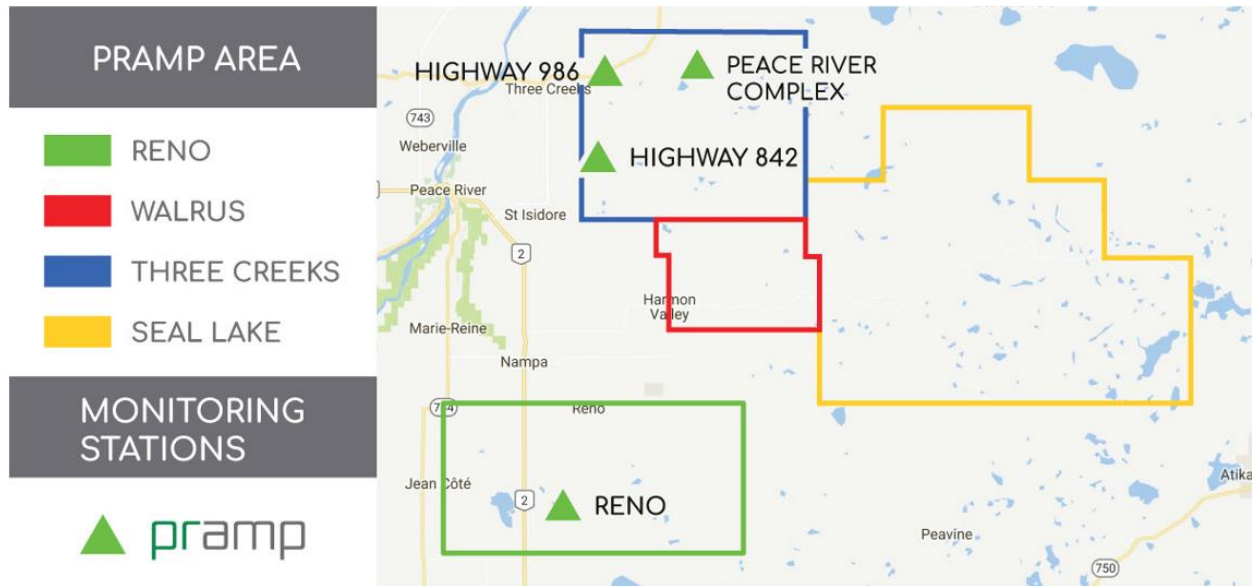
I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization and reporting requirements. I also certify that at the time of this report's submission, all 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. Several 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. Several 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. Seven 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. Seven 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. Seven 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. Seven 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										
SO ₂ (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	-	-	-	-	0.73	0.00	2.23	July 6 at hour 5	2.5	ESE	1.03	July 6	98.9	93.8
THC (ppm)	-	-	-	-	-	-	2.04	1.89	3.02	July 24 at hour 4	2	NE	2.15	July 22	98.9	94.1
CH ₄ (ppm)	-	-	-	-	-	-	2.04	1.89	3.02	July 24 at hour 4	2	NE	2.15	July 22	98.9	94.1
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.04	July 19 at hour 12	6.1	NNW	0.00	July 19	98.9	94.1
RH (%)	-	-	-	-	-	-	77.0	33	100	July 8 at hour 22	1.6	SSE	97.3	July 25	98.7	98.7
BP (millibar)	-	-	-	-	-	-	941	927	954	July 5 at hour	0.8	ESE	953	July 5	98.7	98.7
Ext. Temp. (°C)	-	-	-	-	-	-	15.2	1.0	28.2	July 22 at hour 17	3.8	NW	21.1	July 23	98.7	98.7
Stn. Temp. (°C)	-	-	-	-	-	-	21.9	19.4	28.1	July 20 at hour 4	3.7	SSE	23.6	July 20	99.9	99.9
WSV (km/hr)	-	-	-	-	-	-	1.6	0.1	17.6	July 3 at hour 13	17.6	WNW	10.0	July 1	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 986b Station 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										
SO ₂ (ppb)	172	48	11	0	0	0	0.0	0	1	July 16 at hour 10	14.3	SW	0.2	July 17	100.0	94.7
TRS (ppb)	10	3	-	-	-	-	0.47	0.30	1.22	July 9 at hour 3	2.5	ESE	0.62	July 19	100.0	94.7
THC (ppm)	-	-	-	-	-	-	1.96	1.88	2.38	July 31 at hour 5	1.8	ENE	2.05	July 31	100.0	94.7
CH ₄ (ppm)	-	-	-	-	-	-	1.96	1.88	2.38	July 31 at hour 5	1.8	ENE	2.05	July 31	100.0	94.7
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.02	July 5 at hour 18	5.1	E	0.00	July 23	100.0	94.7
RH (%)	-	-	-	-	-	-	73.4	34	95	July 9 at hour 1	1.4	E	91.0	July 25	100.0	100.0
BP (millibar)	-	-	-	-	-	-	942	928	955	July 5 at hour 5	3.2	NE	954	July 5	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	15.1	1.6	27.8	July 22 at hour 15	7.5	WNW	21.1	July 23	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	23.4	21.8	24.0	July 3 at hour 9	10.1	NW	23.6	July 23	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	2.7	0.0	21.6	July 26 at hour 14	21.6	WSW	12.9	July 26	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

Alberta Ambient Air Quality Objectives (AAAQOs) Exceedances

The measured ambient air quality for the 842b Station was within the AAAQOs for all monitored parameters.

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										
SO ₂ (ppb)	172	48	11	0	0	0	0.0	0	2	July 21 at hour 9	3.8	S	0.2	July 21	100.0	94.9
TRS (ppb)	10	3	-	-	-	-	0.49	0.22	4.56	July 31 at hour 6	1.9	SW	1.17	July 31	100.0	94.7
THC (ppm)	-	-	-	-	-	-	1.97	1.88	2.60	July 9 at hour 6	0.7	SSW	2.08	July 9	100.0	94.9
CH ₄ (ppm)	-	-	-	-	-	-	1.97	1.88	2.60	July 9 at hour 6	0.7	SSW	2.08	July 9	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 24	100.0	100.0
BP (millibar)	-	-	-	-	-	-	938	925	950	July 5 at hour 4	0.7	ENE	949	July 5	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	15.3	2.8	27.3	July 23 at hour 17	2	SSE	21.2	July 23	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.2	21.0	25.3	July 4 at hour 16	10.5	NE	23.1	July 4	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.9	0.0	14.4	July 26 at hour 13	14.4	WSW	9.3	July 25	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

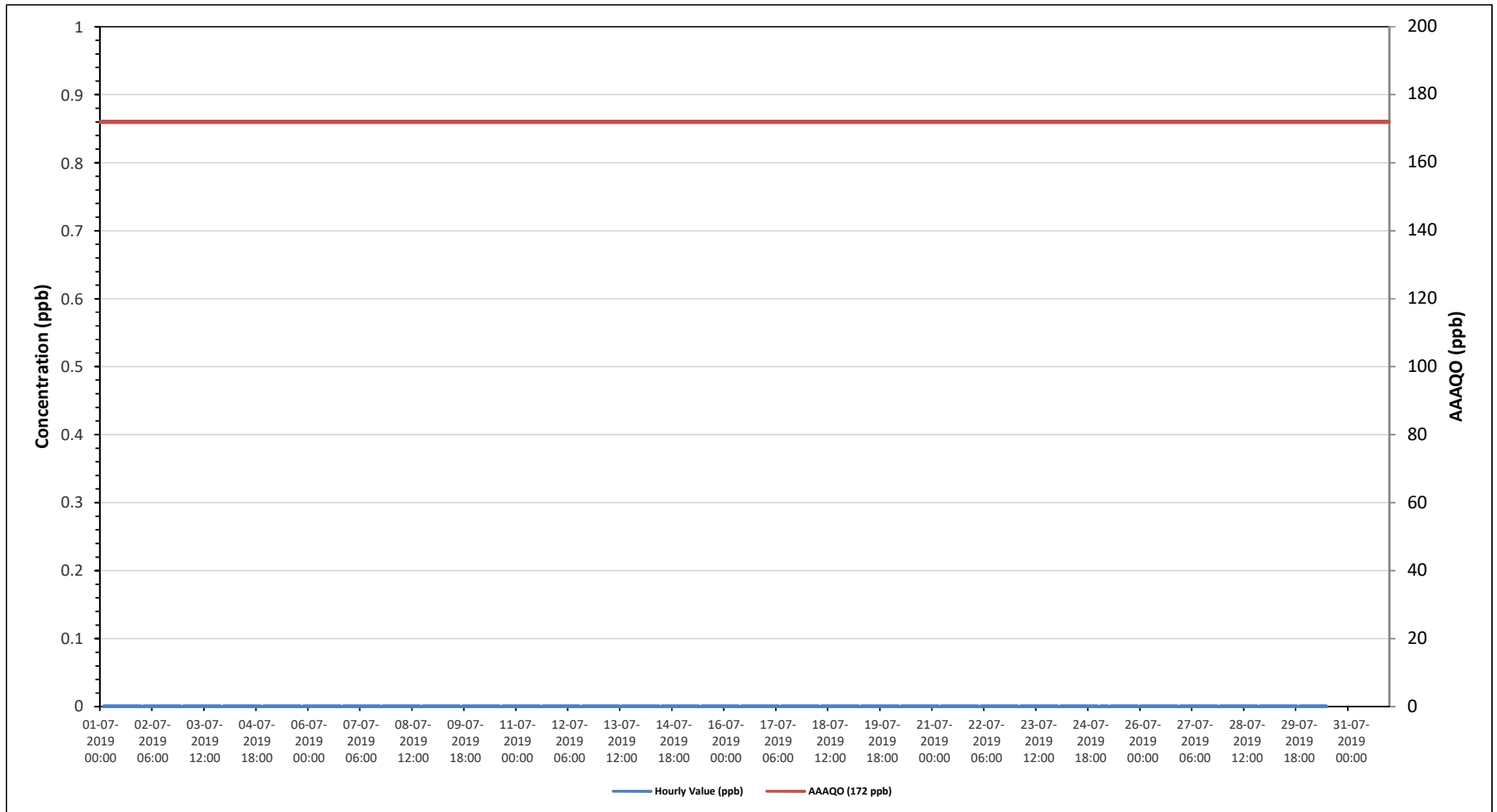
The measured ambient air quality for the Reno Station was within the AAAQOs for all monitored parameters.

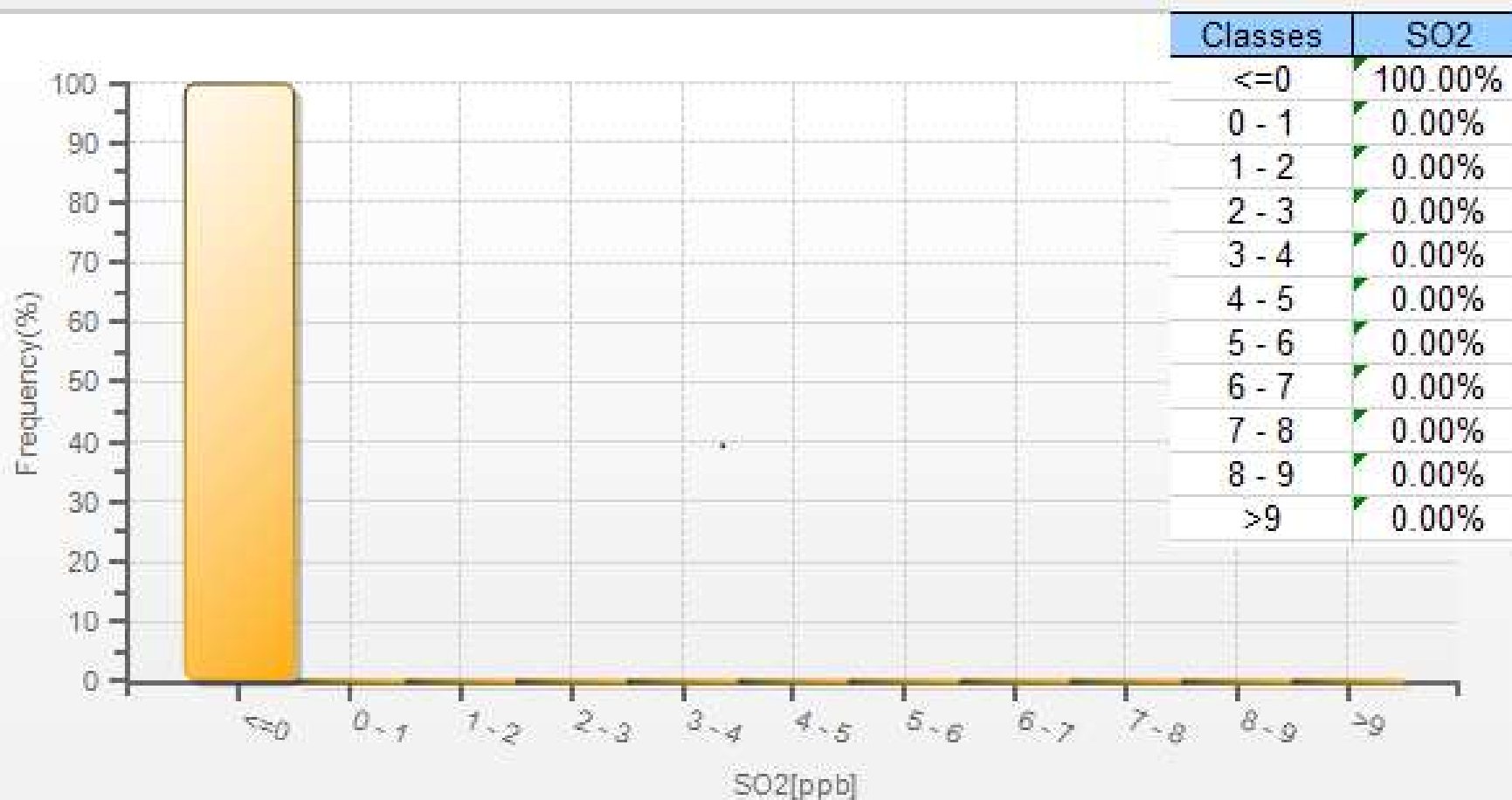
TABLES, CHARTS, WIND ROSES AND EQUIPMENT CALIBRATION RECORDS

986b STATION

SULPHUR DIOXIDE (SO₂) in ppb

PRAMP-201907-Revision 1
Page 21 of 180

Timeseries Chart of Hourly Average for SO₂ - 986b Station

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

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



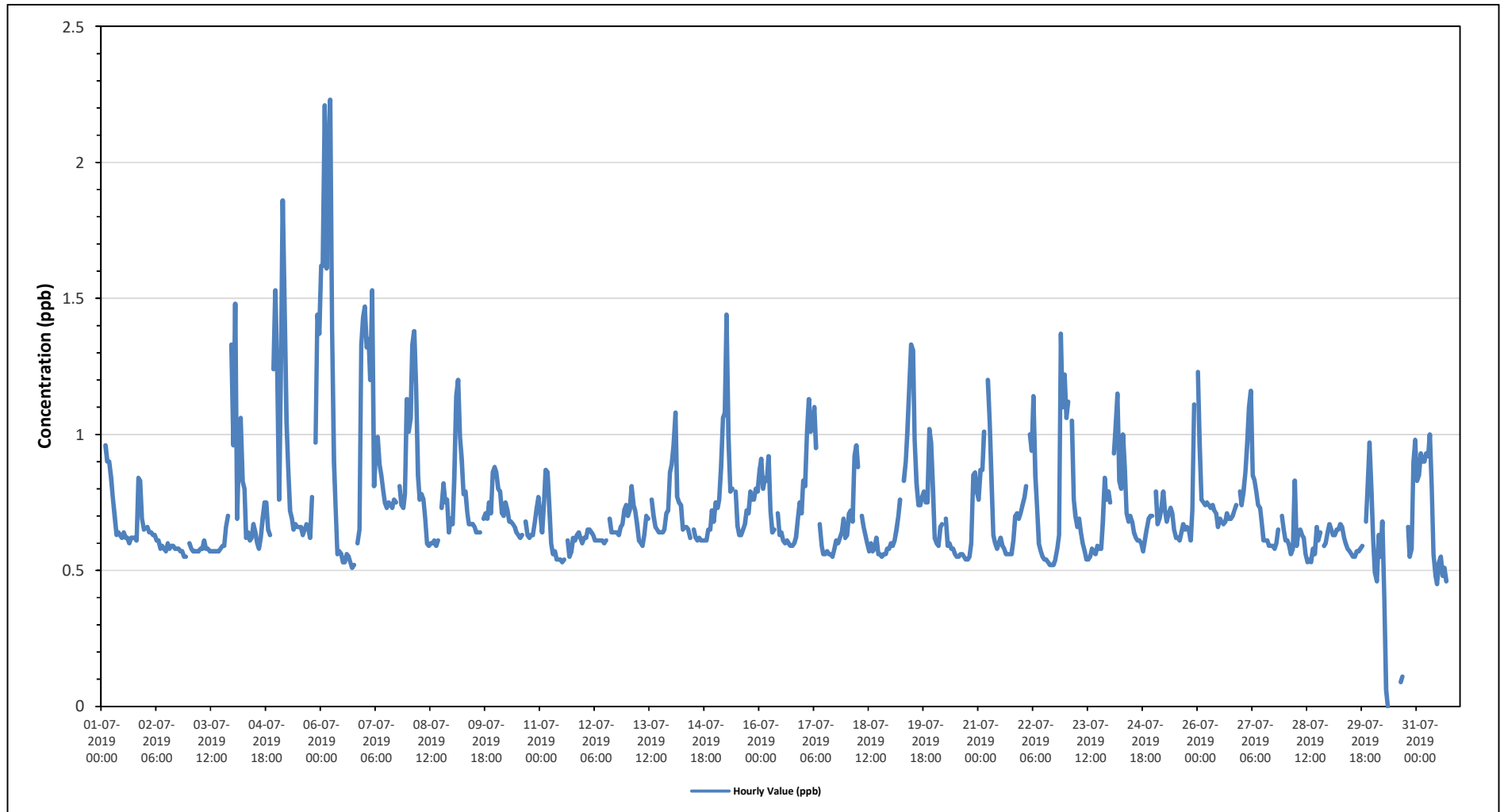
PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

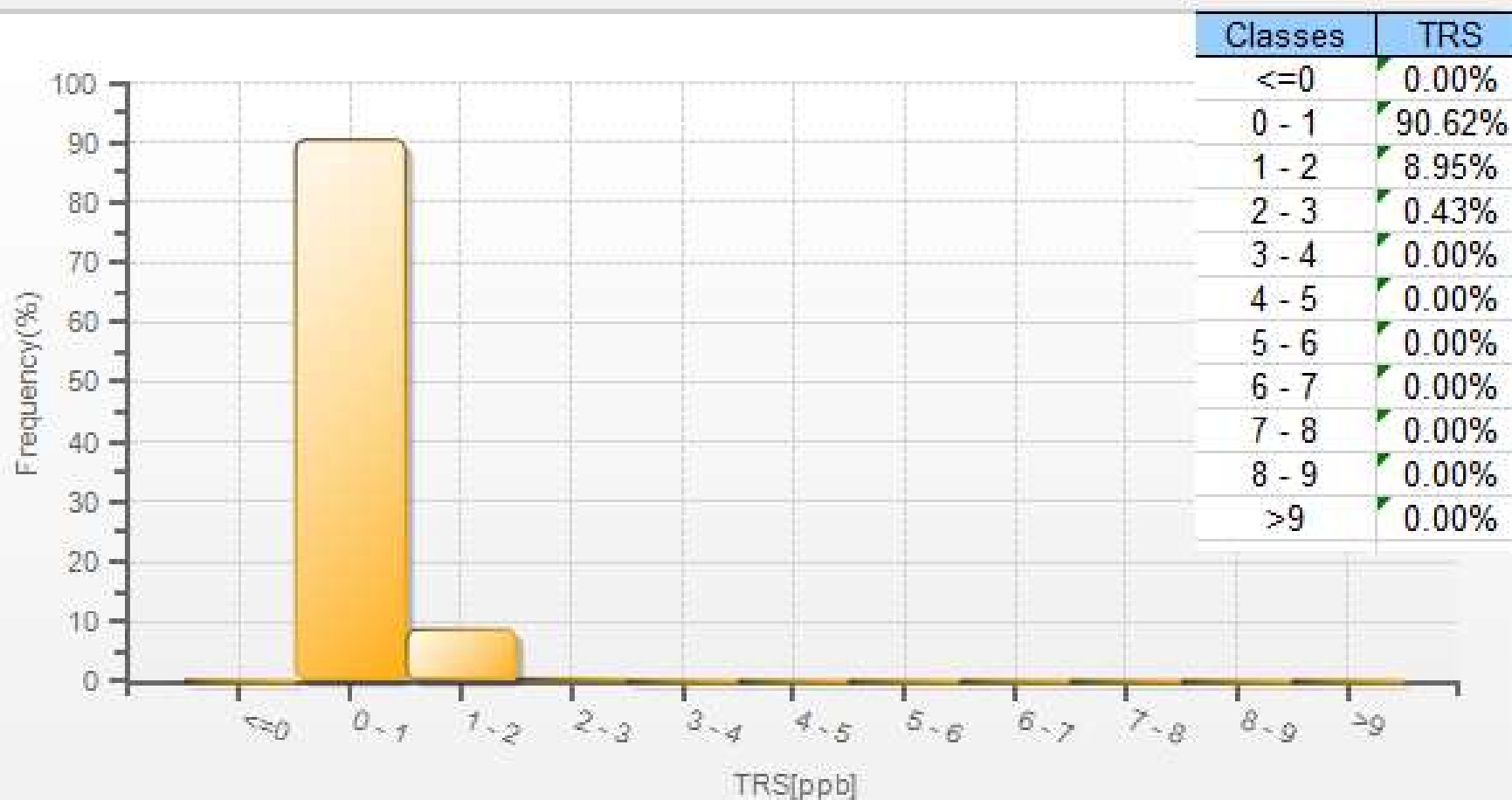
Summary of Hourly Averages

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	
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	0.58	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			
Diurnal 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

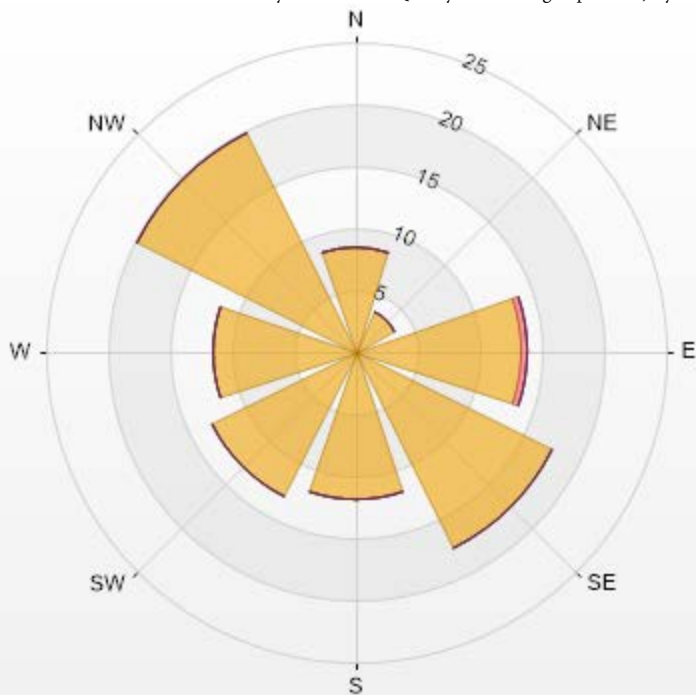
TRS[ppb] Histogram: PRAMP 986b Monthly: 07-2019 1 Hr.



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 Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



PRAMP-201907-Revision 1



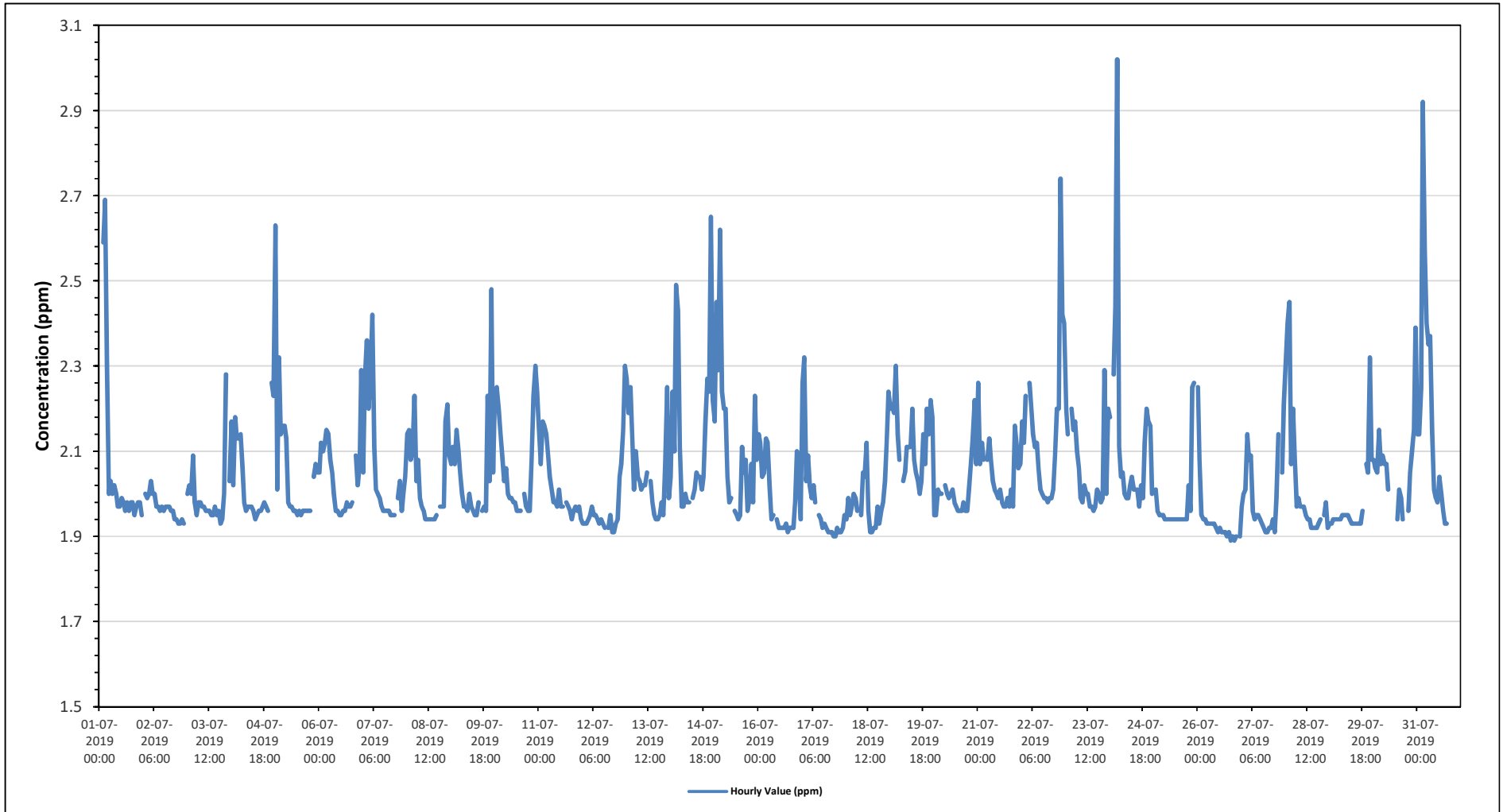
PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

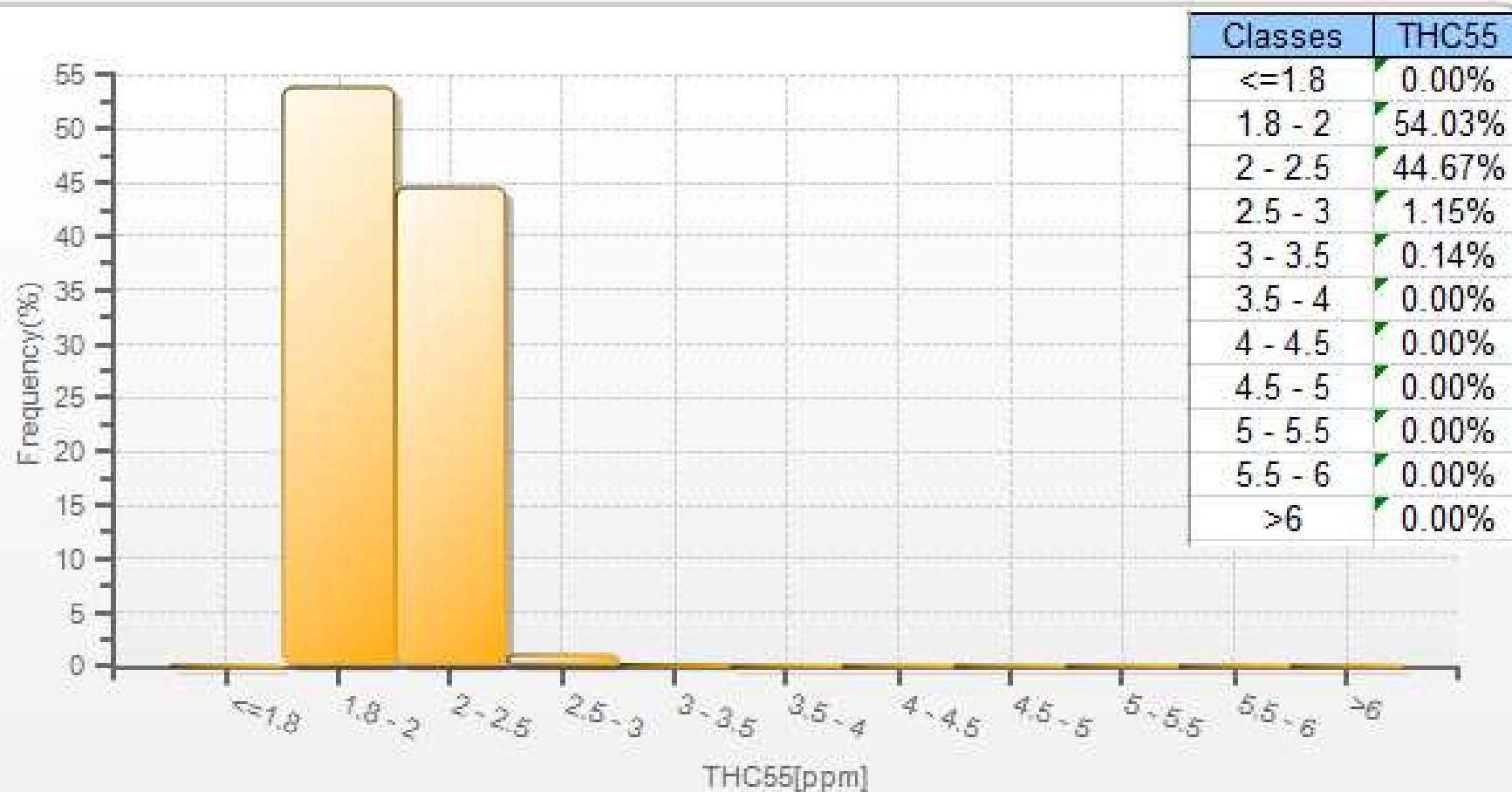
Summary of Hourly Averages

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	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	1.94	1.93	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	Y	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				
Dalurnal 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

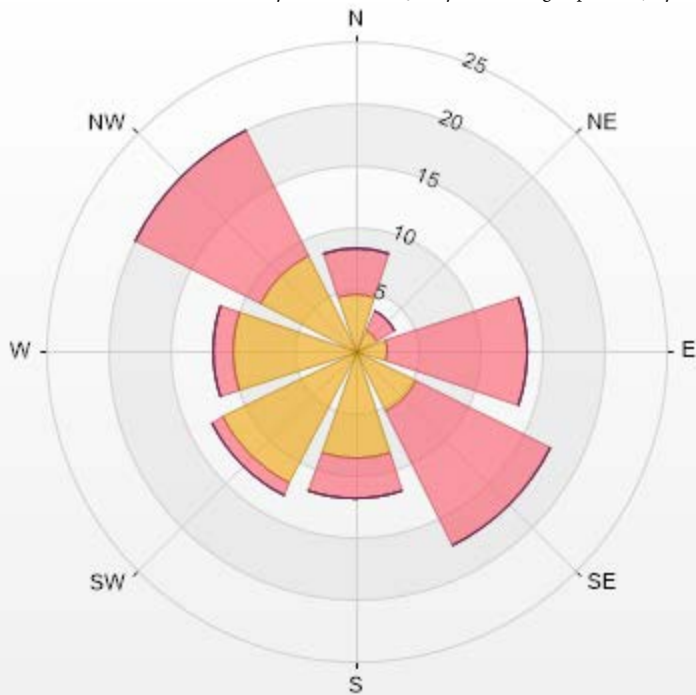
THC55[ppm] Histogram: PRAMP 986b Monthly: 07-2019 1 Hr.



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 Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



PRAMP-201907-Revision 1

% Icon Classes (ppm)	54	45	25	0	0	0
	0-2	2-5	5-10	10-40	>40.0	



PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

Summary of Hourly Averages

METHANE (CH4) in ppm

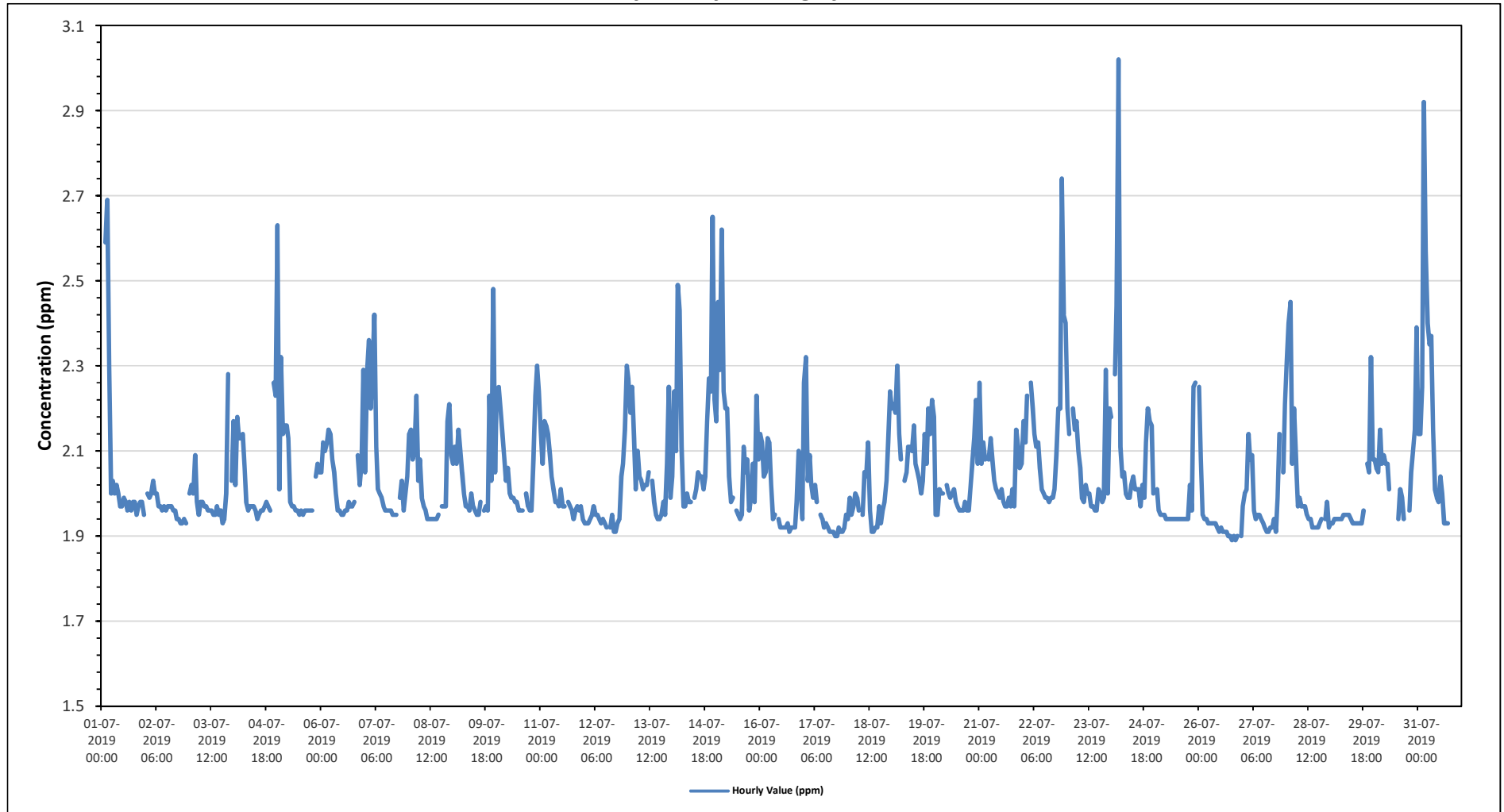
Maximum Hourly Value:	3.02 ppm	on July 24 at hour 4	Hours in Service:	744
Maximum Daily Value:	2.15 ppm	on July 22	Hours of Data:	700
Minimum Hourly Value:	1.89 ppm	on July 26 at hour 18	Hours of Missing Data:	8
Minimum Daily Value:	1.94 ppm	on July 26	Hours of Calibration:	36
Monthly Average:	2.04 ppm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

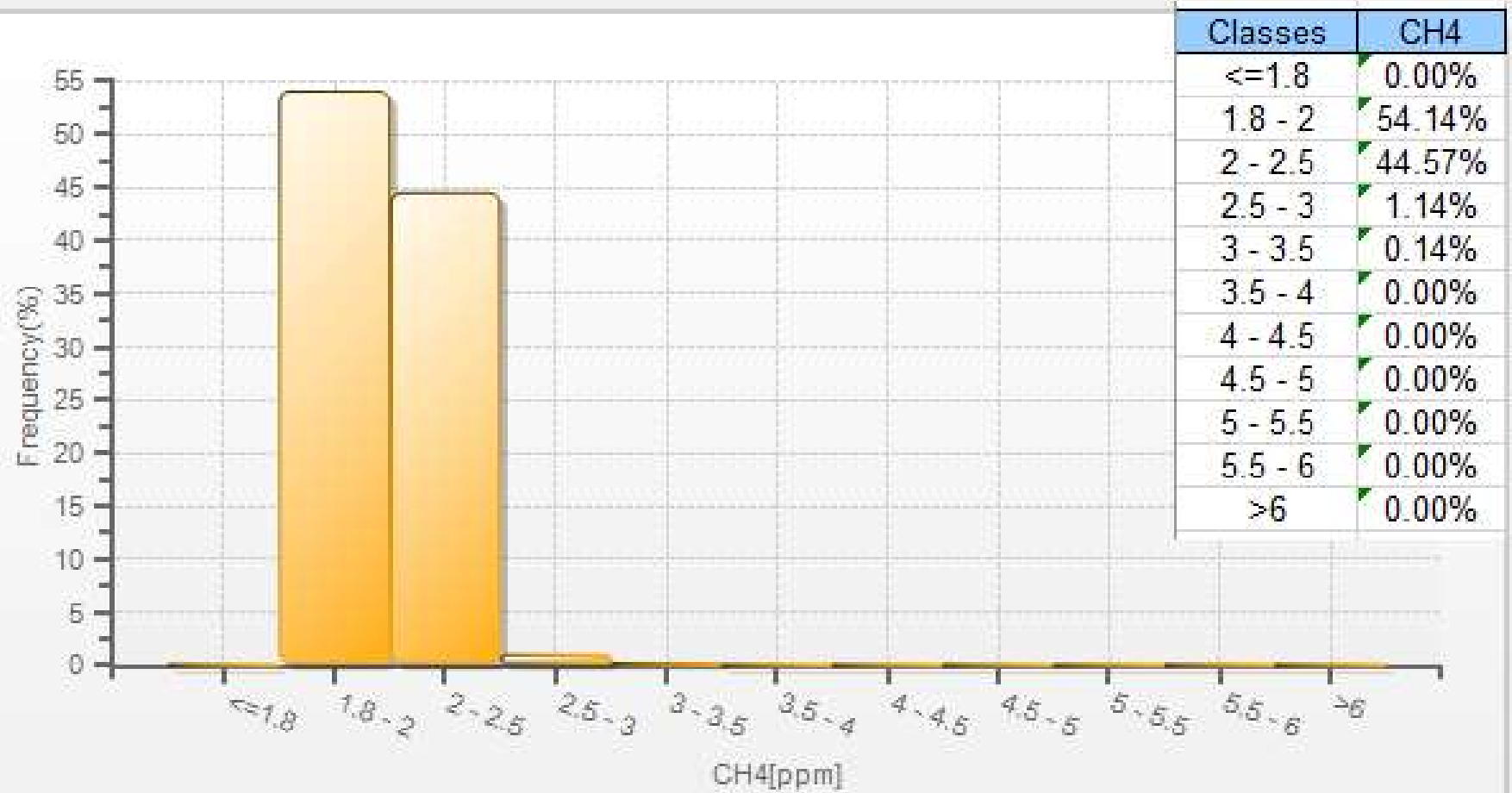
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
Jul 1	2.28	S	2.59	2.69	2.30	2.00	2.03	2.00	2.02	2.00	1.97	1.97	1.99	1.98	1.96	1.98	1.96	1.98	1.98	1.95	1.97	1.98	1.98	1.95	1.95	1.95	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	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	1.93	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				
Dalurnal 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.

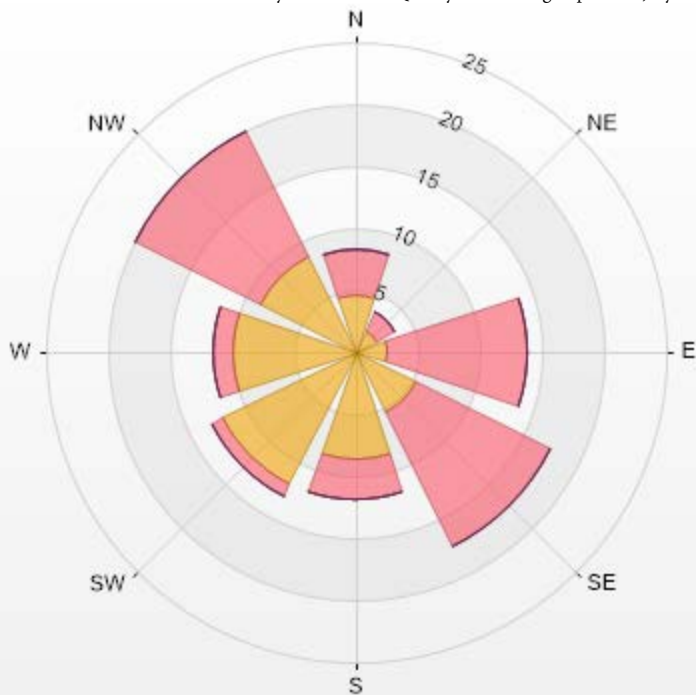
Timeseries Chart of Hourly Average for CH₄ - 986b Station

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

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 Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



PRAMP-201907-Revision 1



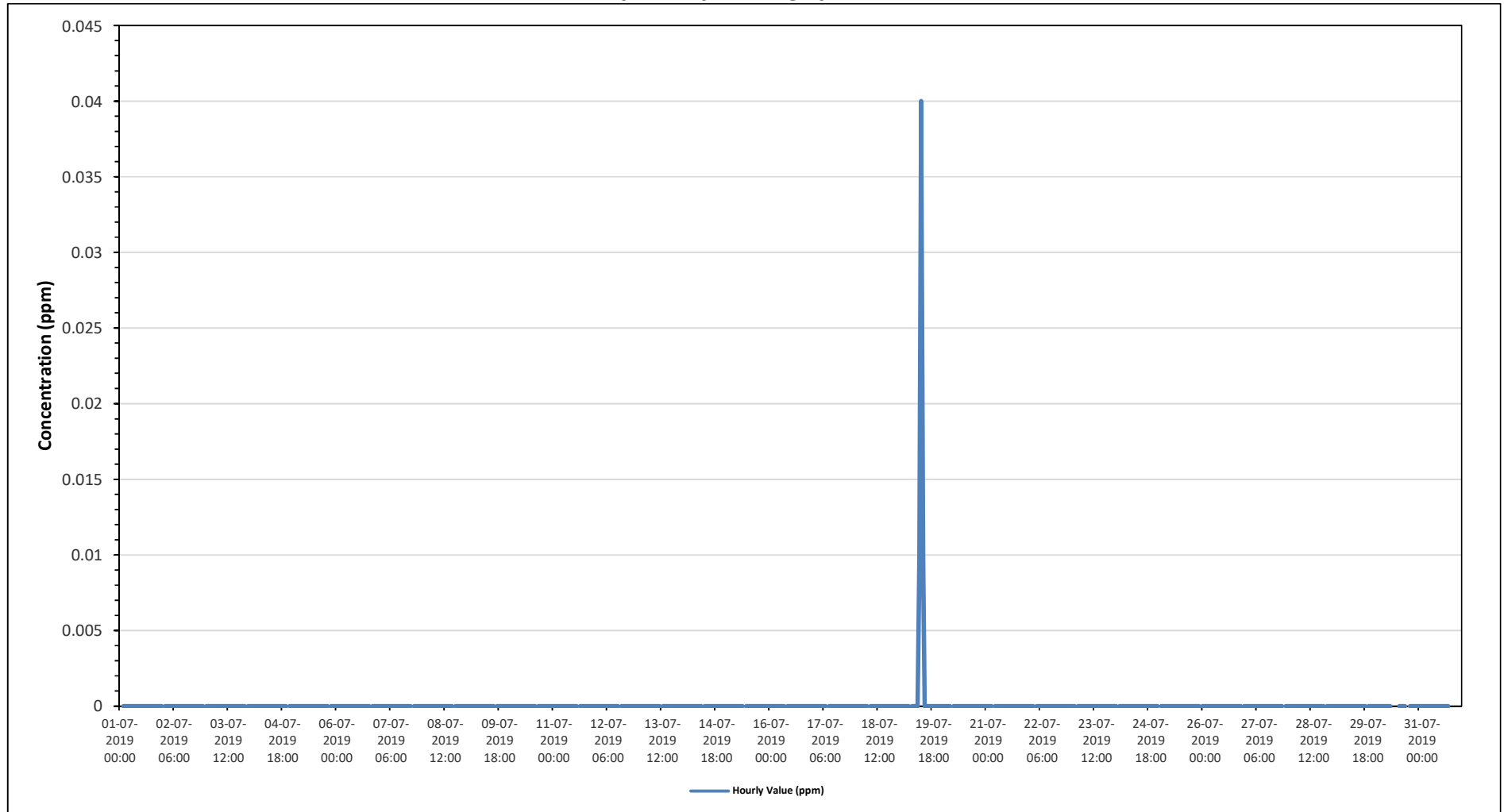
PEACE RIVER AREA MONITORING PROGRAM

986b Station - July 2019

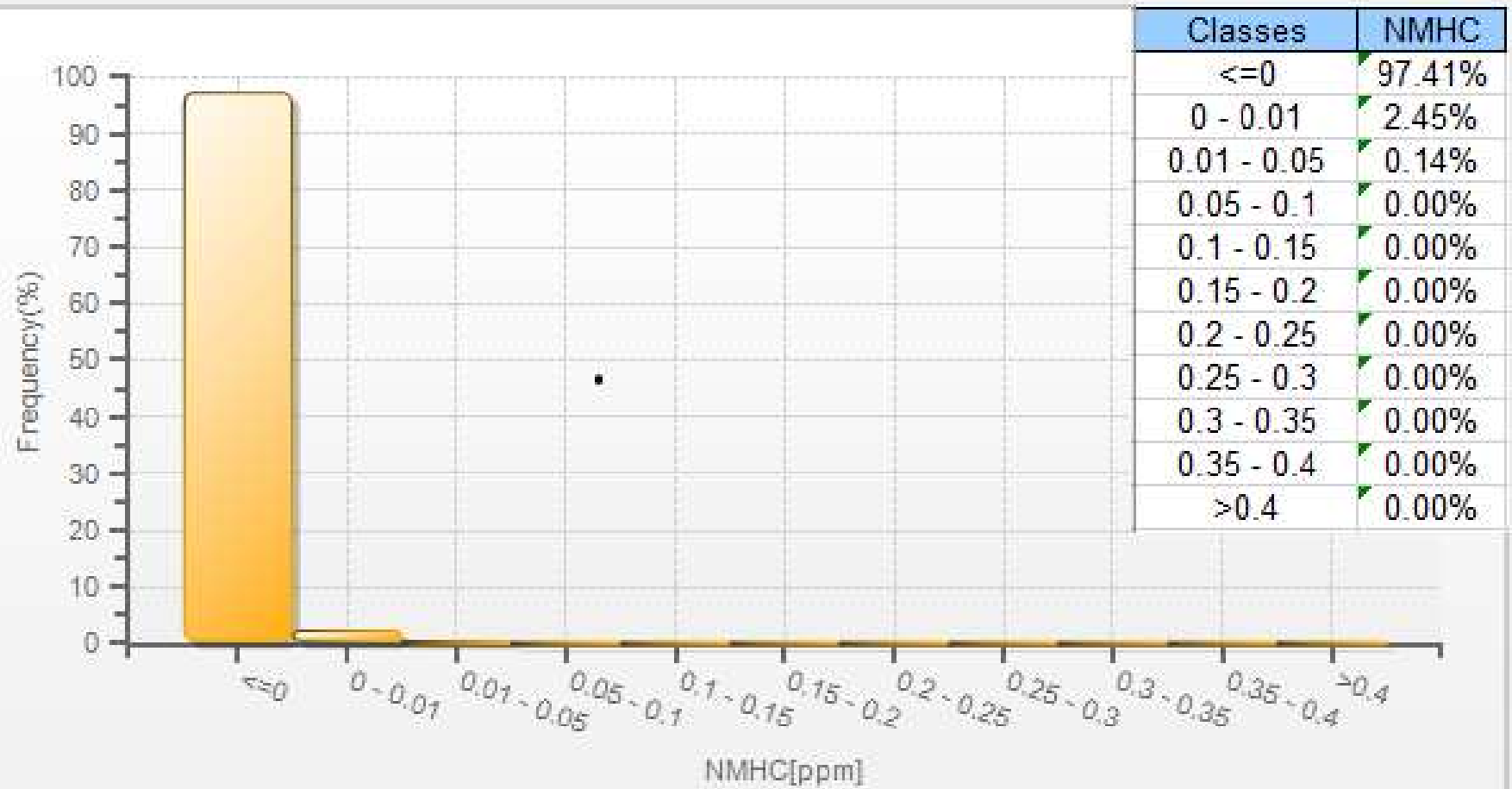
Summary of Hourly Averages

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	0.00	S	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	
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	
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	
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	
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	
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	
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	
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	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	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	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	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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	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	
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	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	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	
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	-	
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	0.00	0.00	
Diurnal Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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.

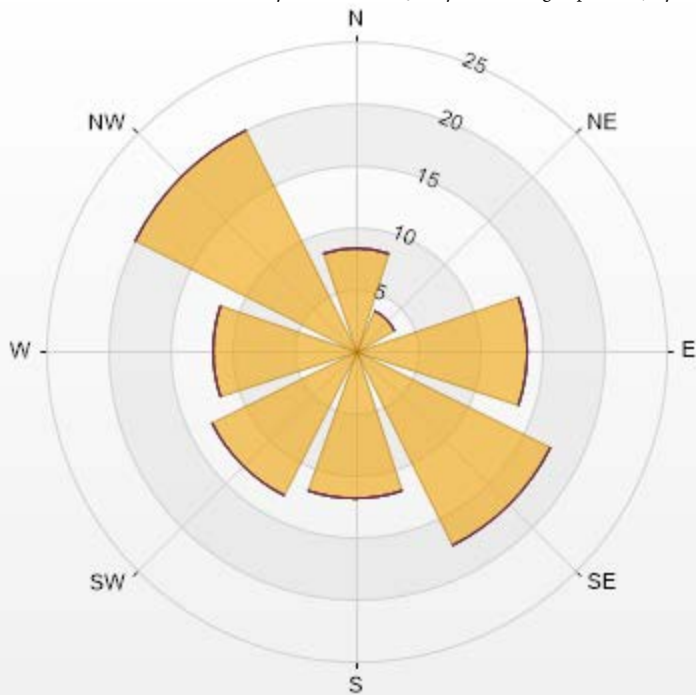


Wind: PRAMP 986b Poll.: PRAMP 986b-NMHC[ppm] Monthly: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.

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 Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



PRAMP-201907-Revision 1



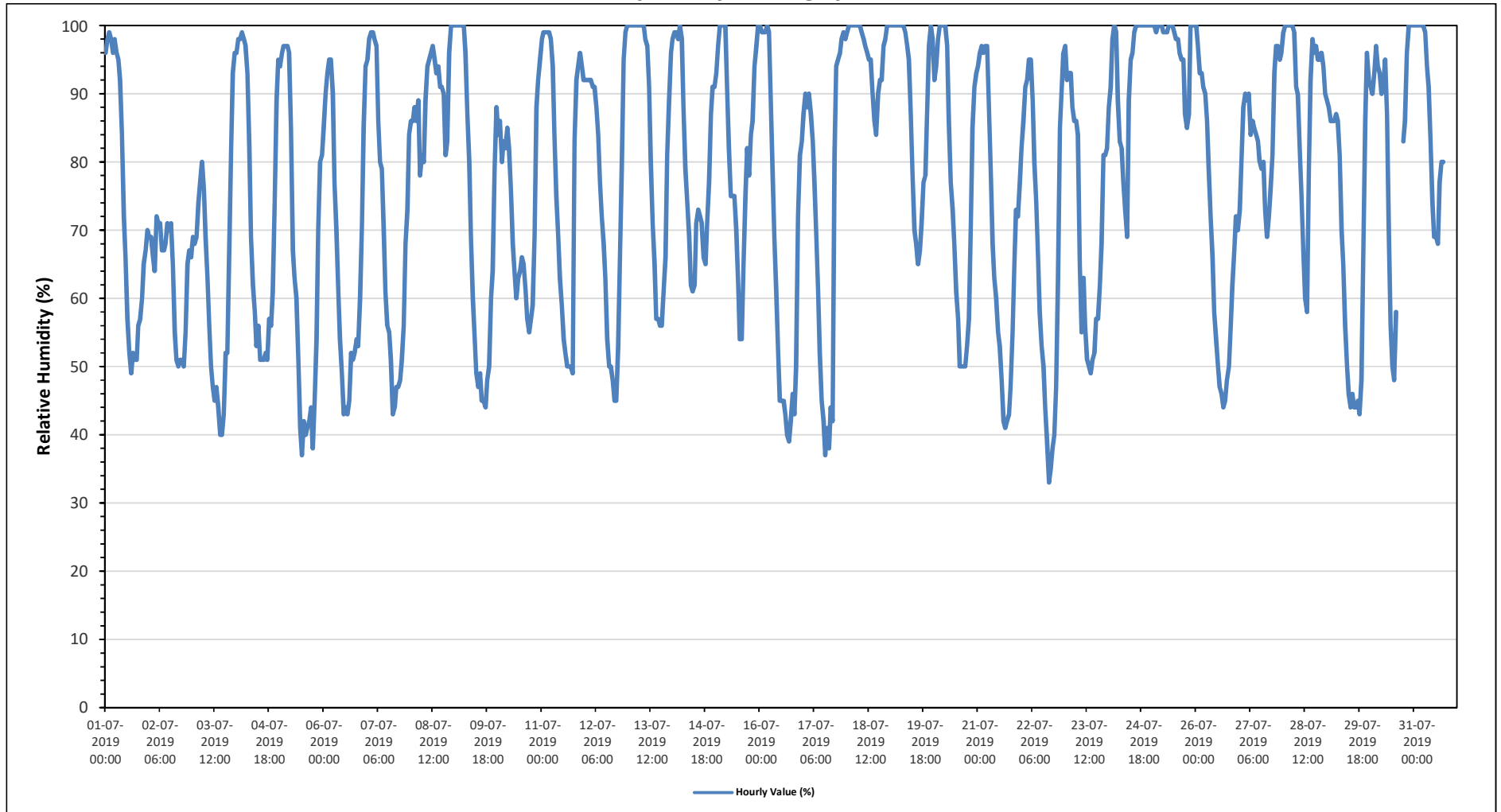
PEACE RIVER AREA MONITORING PROGRAM

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	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	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



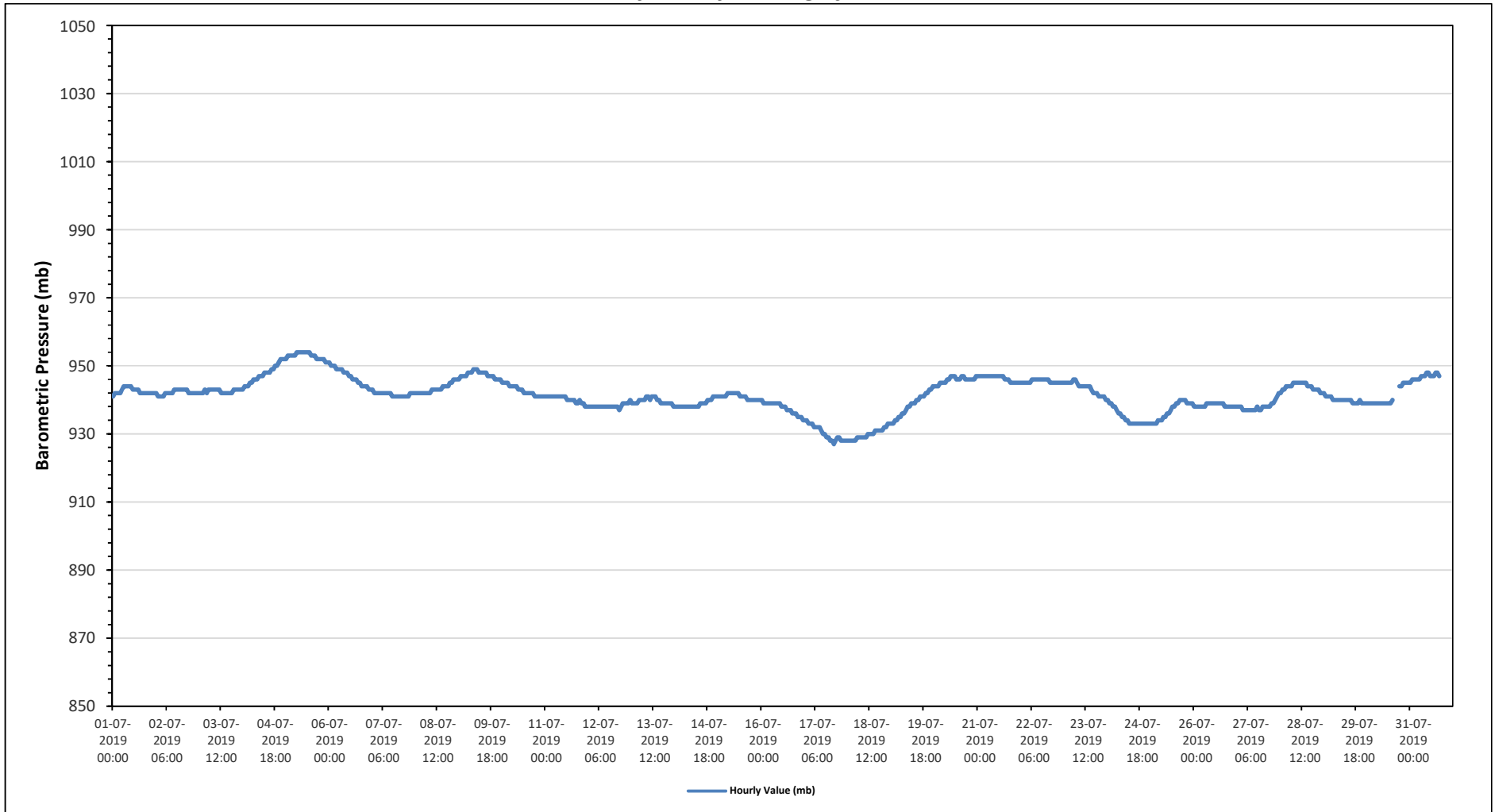
PEACE RIVER AREA MONITORING PROGRAM

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	941	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	946	945	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	952	952	952		
Daiurnal Average	941	941	941	941	941	941	942	942	942	942	942	941	941	941	942	942	941	941	941	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



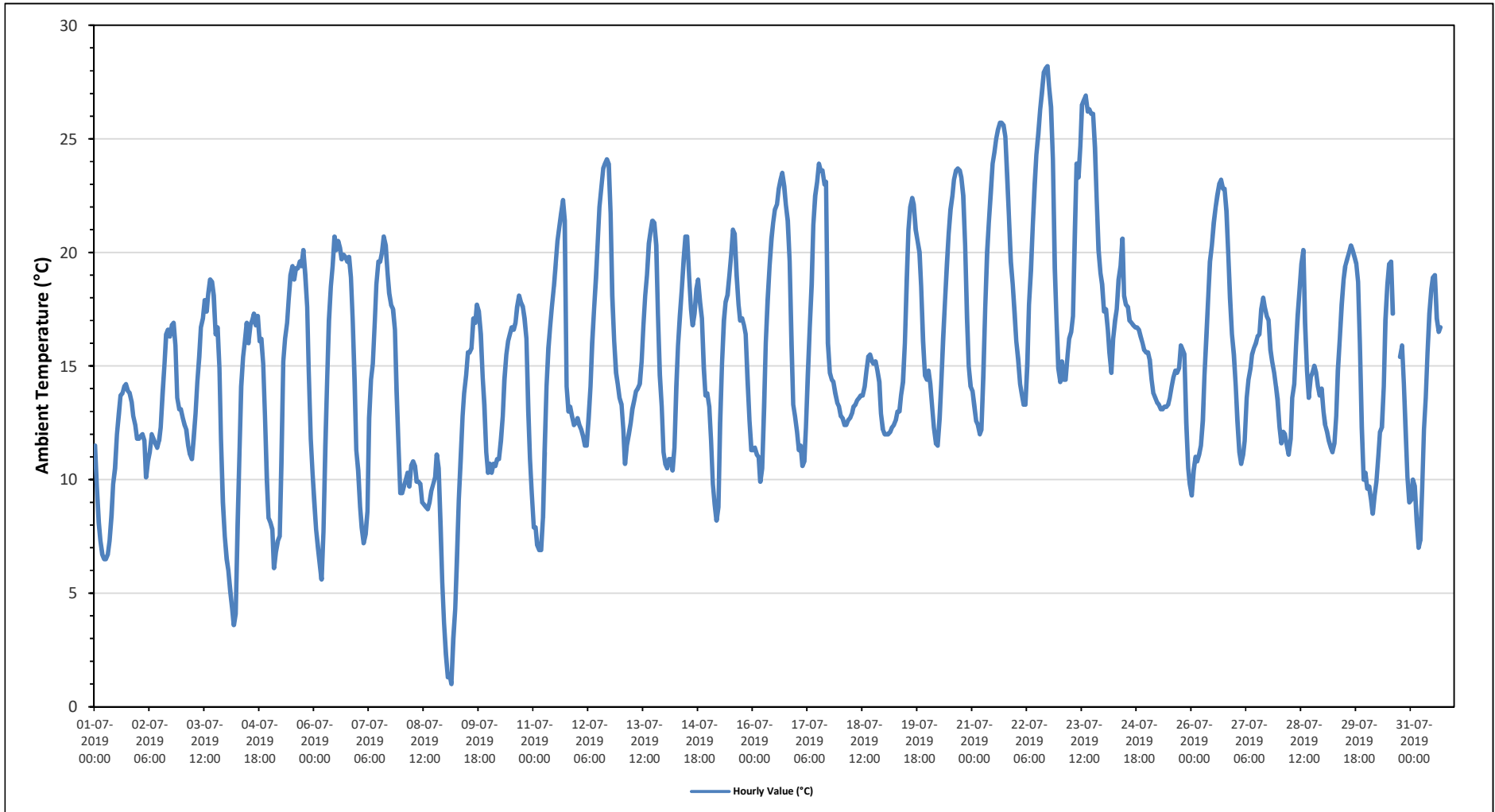
PEACE RIVER AREA MONITORING PROGRAM

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						
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 - 986b Station



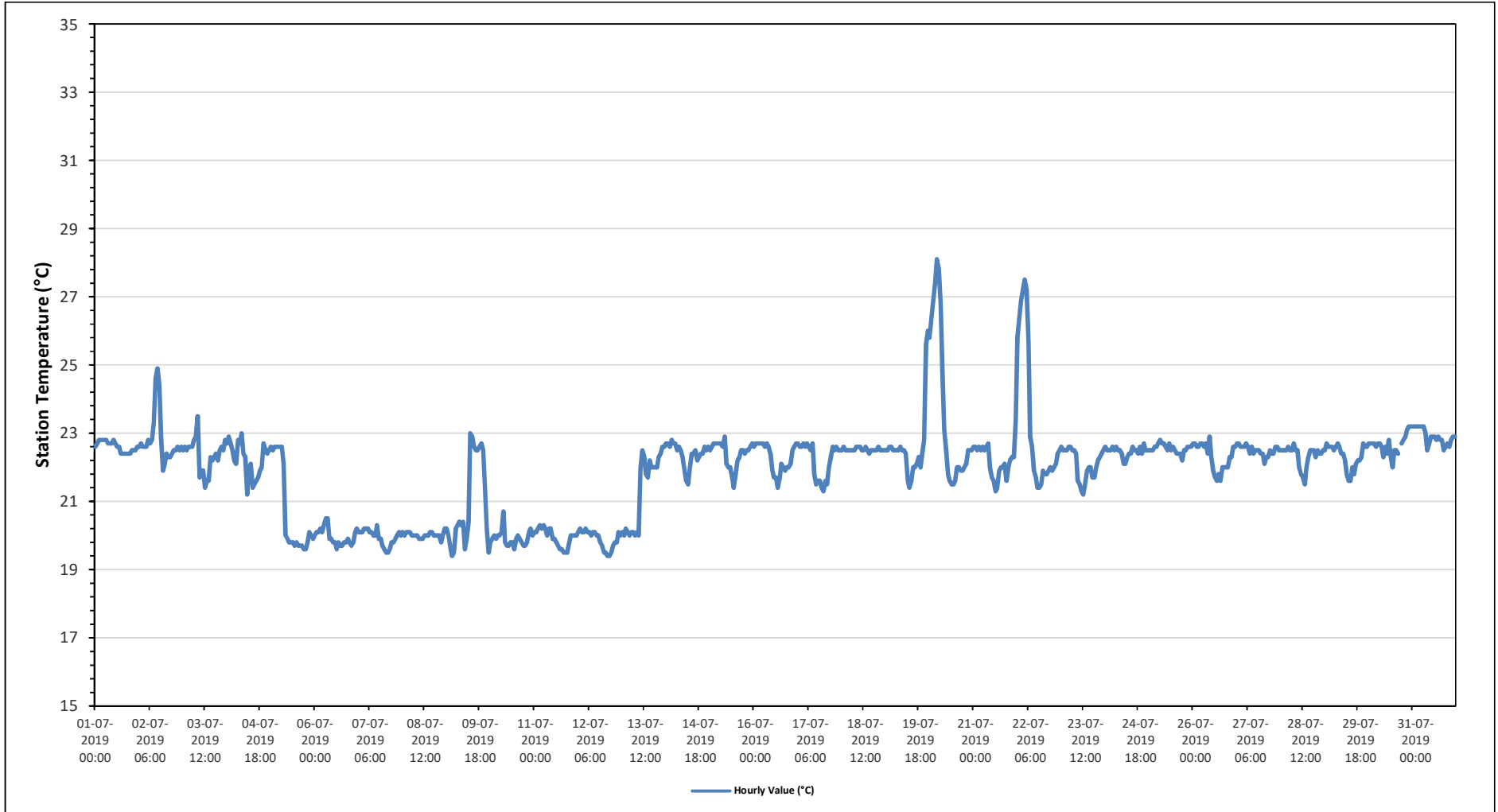
PEACE RIVER AREA MONITORING PROGRAM

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



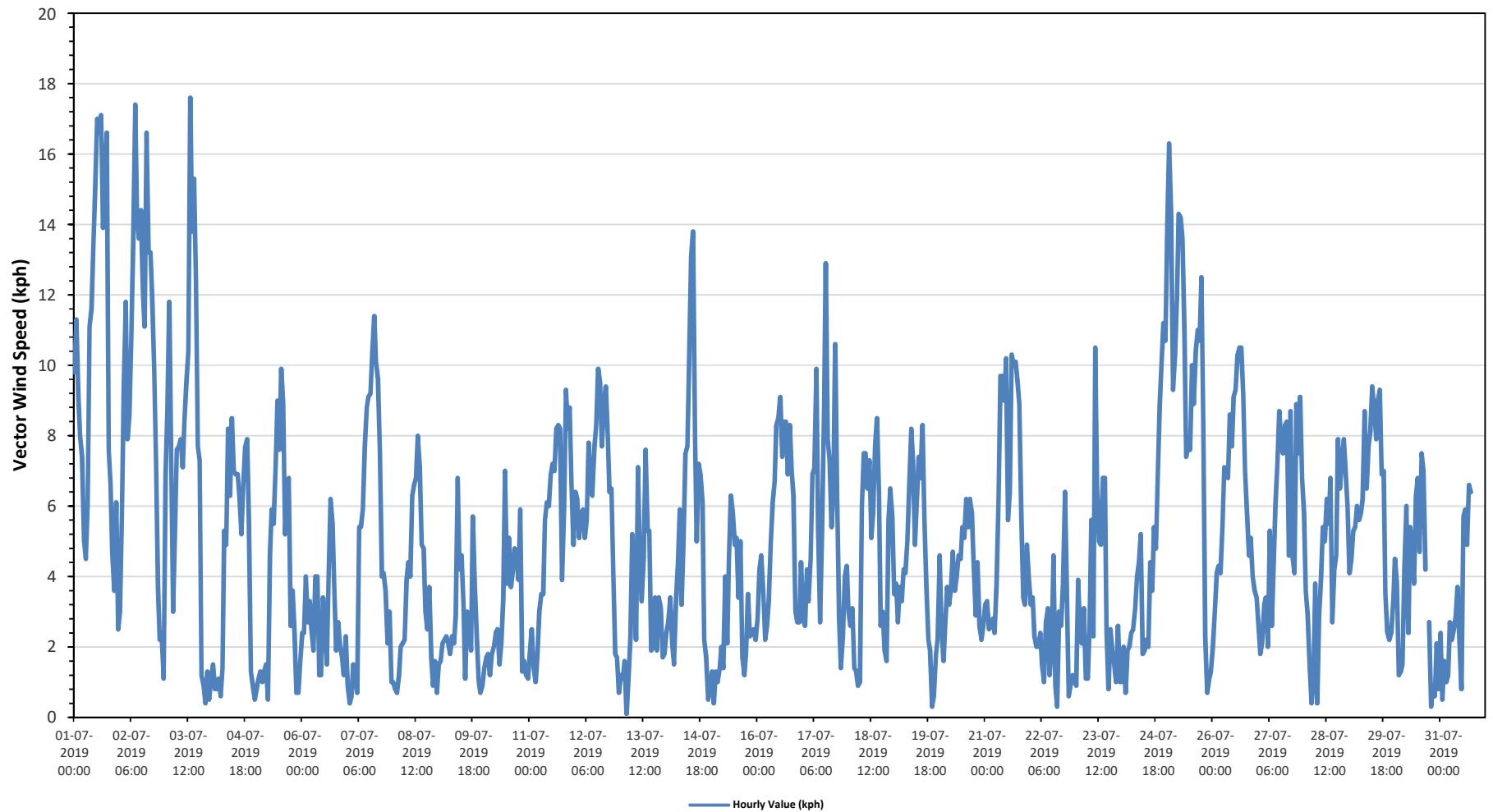
PEACE RIVER AREA MONITORING PROGRAM

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			
Diurnal 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.																											

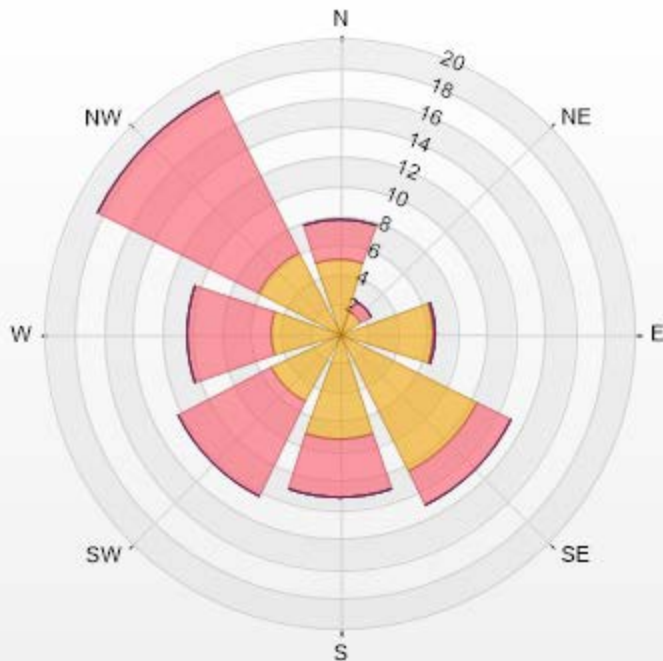
Timeseries Chart of Hourly Average for VWS - 986b Station

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

Avg: 1.10[KPH]

PRAMP Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



PRAMP-201907-Revision 1

% Icon Classes (KPH)

47

0-6

35

6-12

0

26-29

0

29-39

0

>39.0



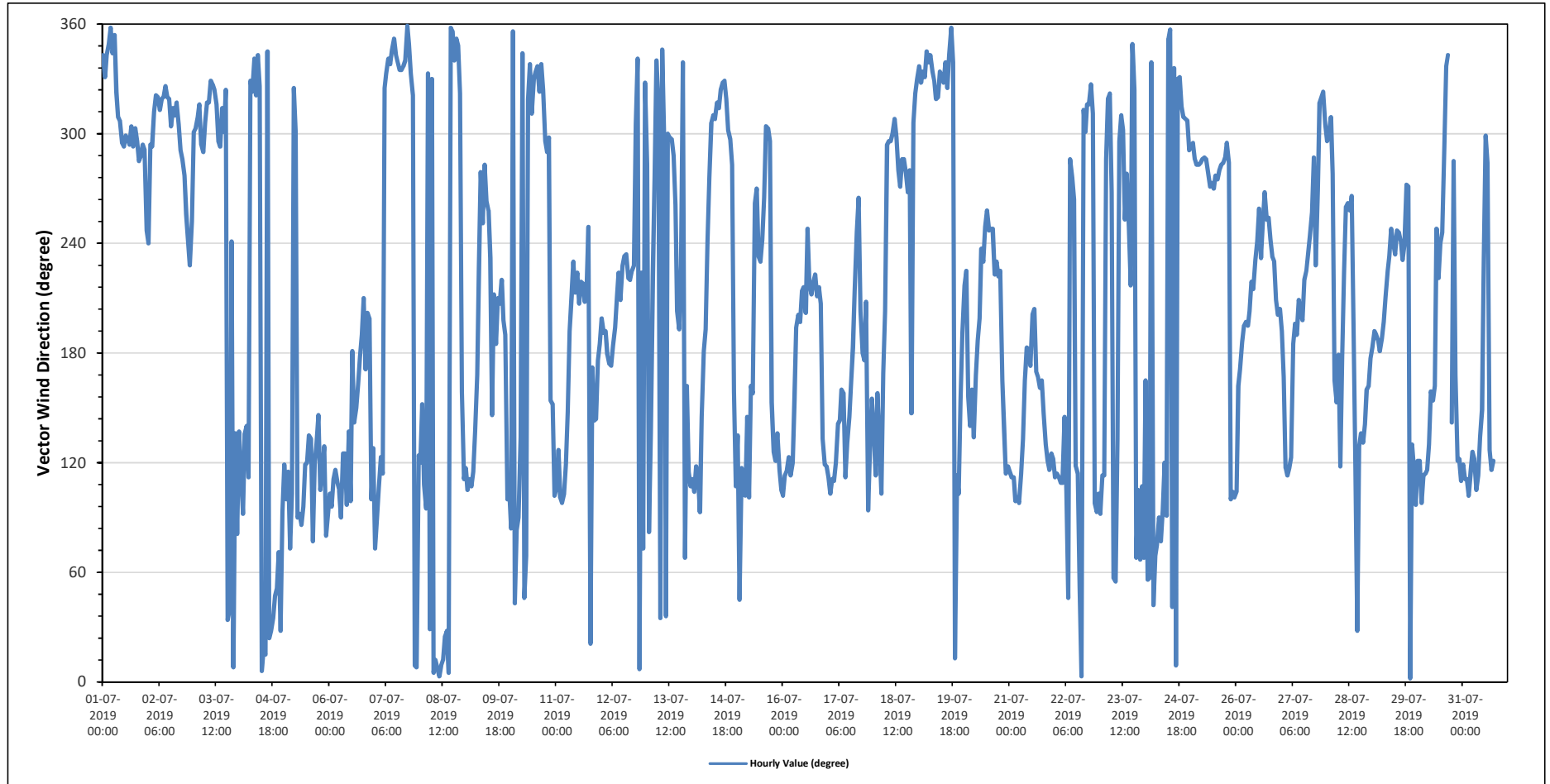
PEACE RIVER AREA MONITORING PROGRAM

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	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	ENE	NNE	E	9	N			
Jul 5	ESE	E	ESE	ENE	ESE	NW	WNW	E	E	E	E	ESE	ESE	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	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	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	SSE	SE	ESE	ESE	ESE	211	SSW		
Jul 21	ESE	ESE	ESE	E	E	E	ESE	SE	SSE	S	S	S	SSW	SSW	SSE	SSE	SSE	SE	SE	ESE	ESE	SE	ESE	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	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	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



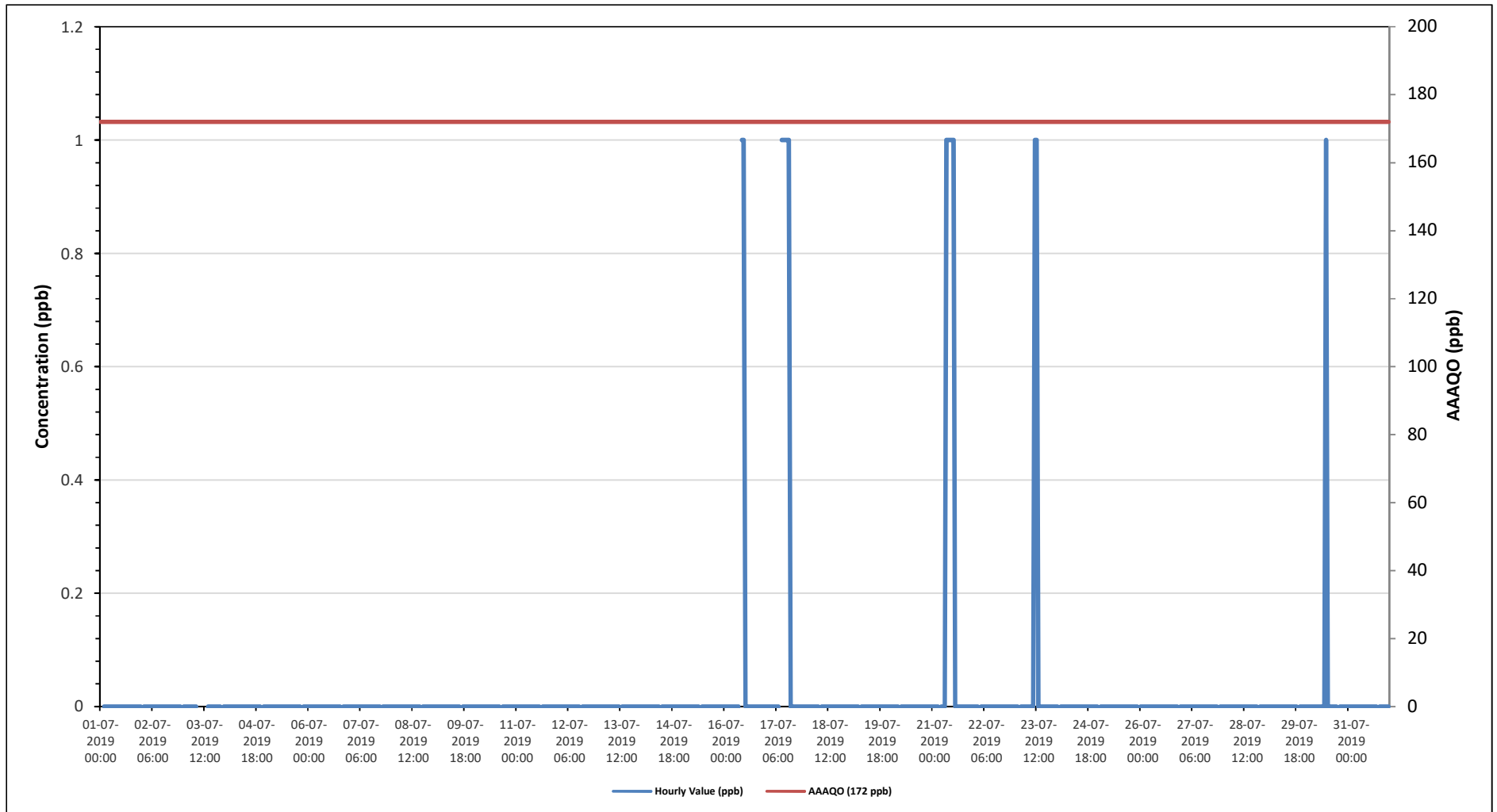
PEACE RIVER AREA MONITORING PROGRAM

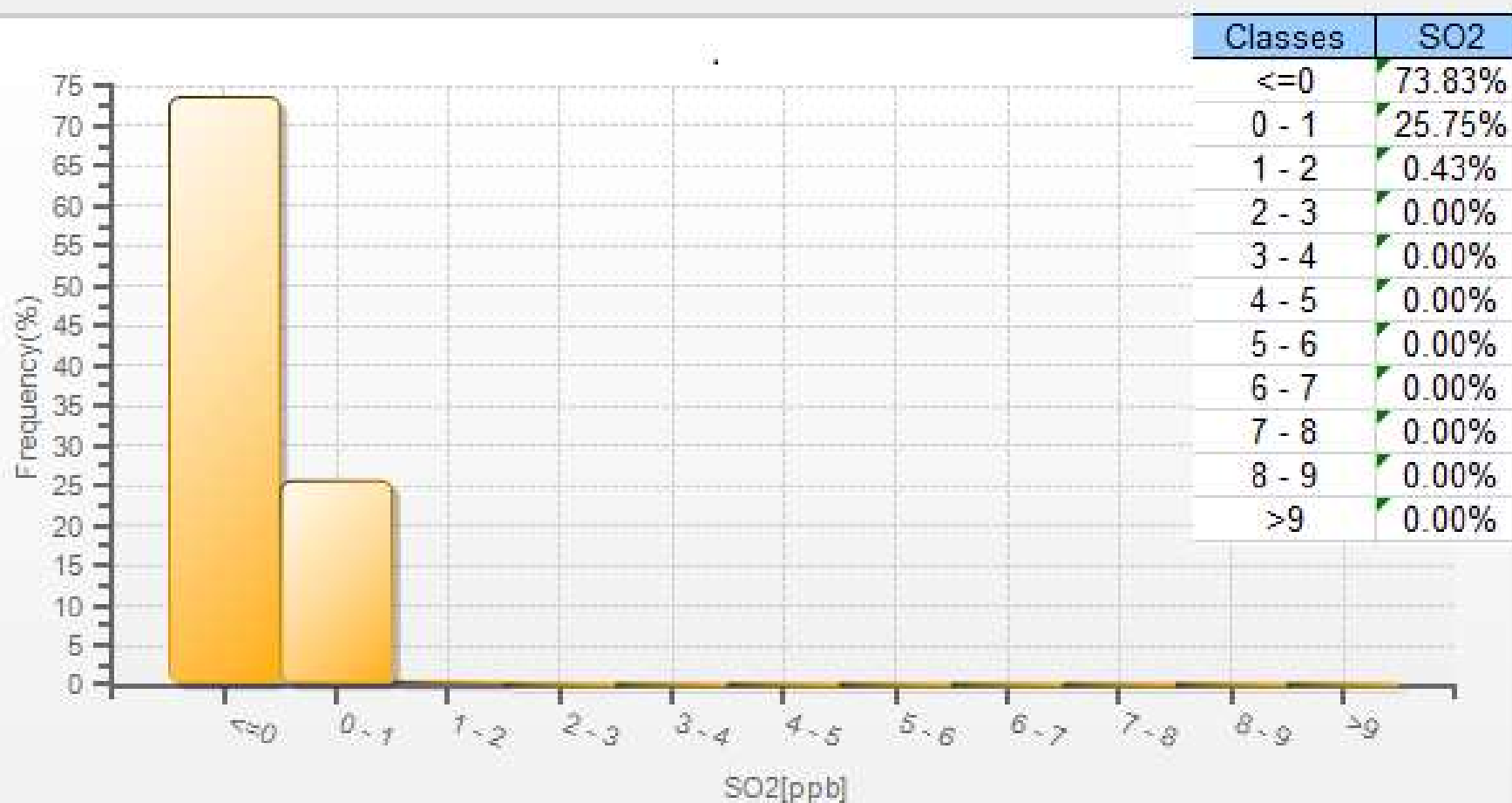
842b Station - July 2019

Summary of Hourly Averages

SULPHUR DIOXIDE (SO₂) in ppb

Alberta Ambient Air Quality Objectives (AAAQO): 1-Hour 172 ppb, 24-Hour 48 ppb, 30-Day 11 ppb																											
Number of 1-Hour Exceedences:			0			Number of 24-Hour Exceedences:			0			30-Day Exceedence:			0												
Maximum Hourly Value:			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	
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	0	S	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	0	0	S	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	0	0	S	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	0	S	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	S	0	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	S	0	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	1	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	0	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	0	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	S	0	0	0	0	0	0	0	0	0	0	1	1	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	0	S	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	0	S	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	S	0	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	S	0	0	0	0	0	0	0	0.0
Jul 30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	S	0	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	S	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diurnal Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	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	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.																											

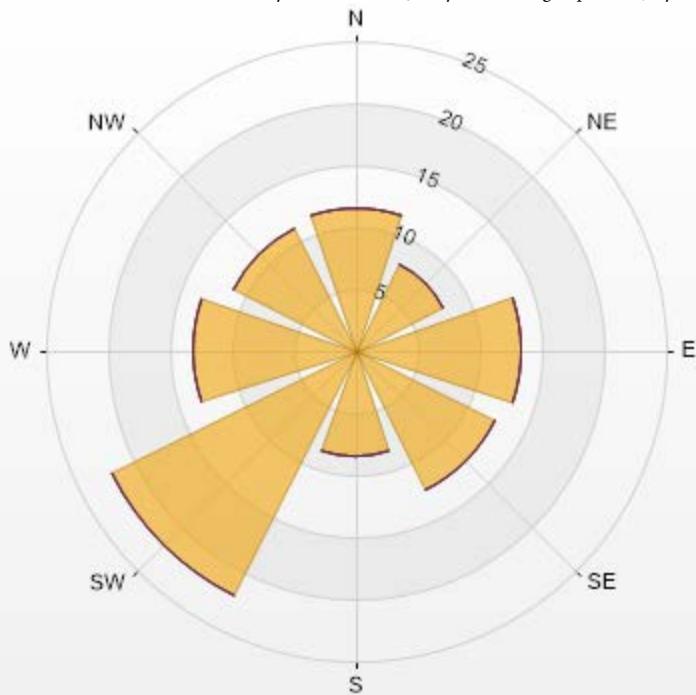
Timeseries Chart of Hourly Average for SO₂ - 842b Station

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

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 Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



PRAMP-201907-Revision 1

% Icon Classes (ppb)

100

0-10

0

10-50

50-100

0

100-172

0

>172.0



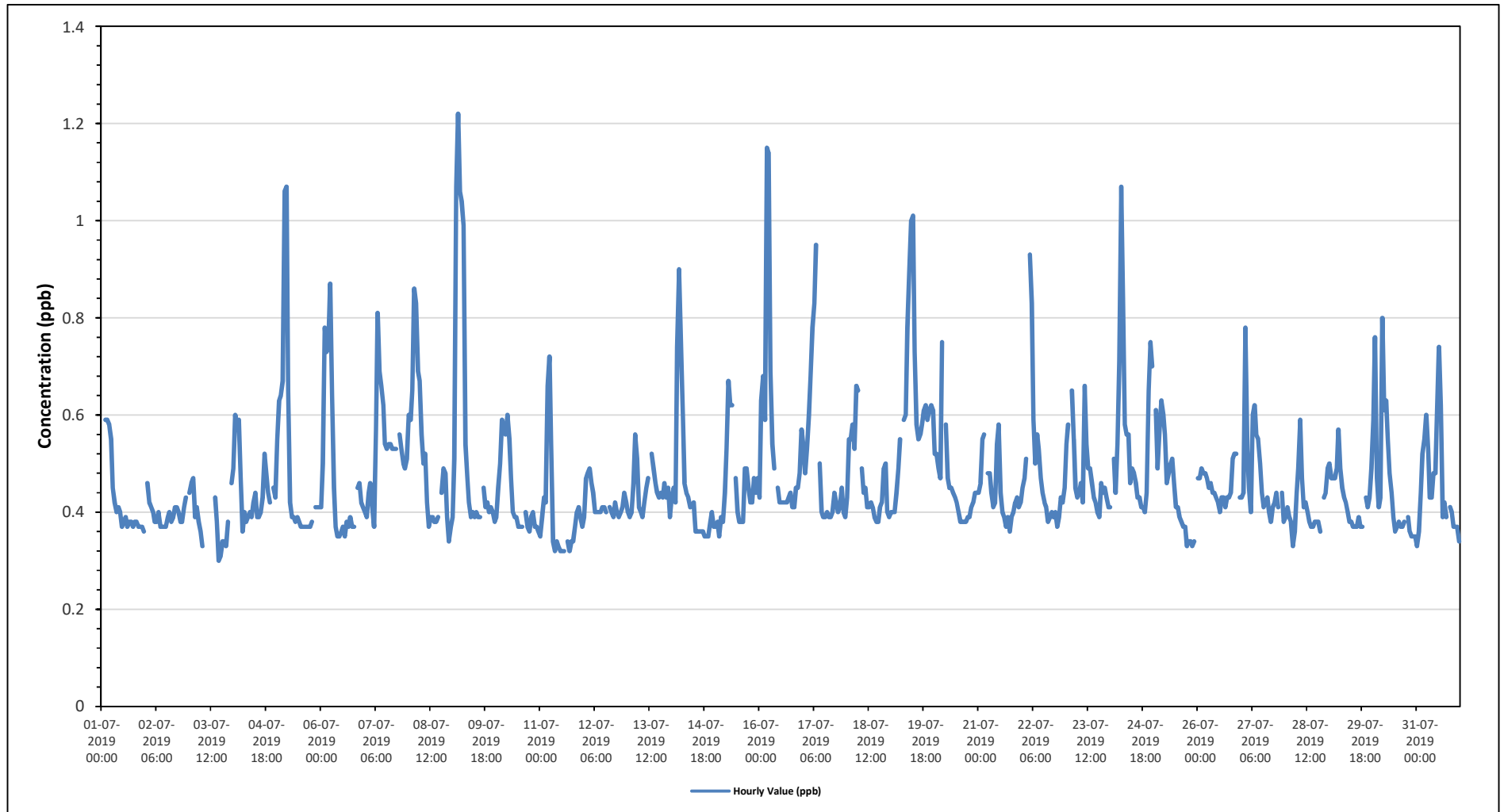
PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

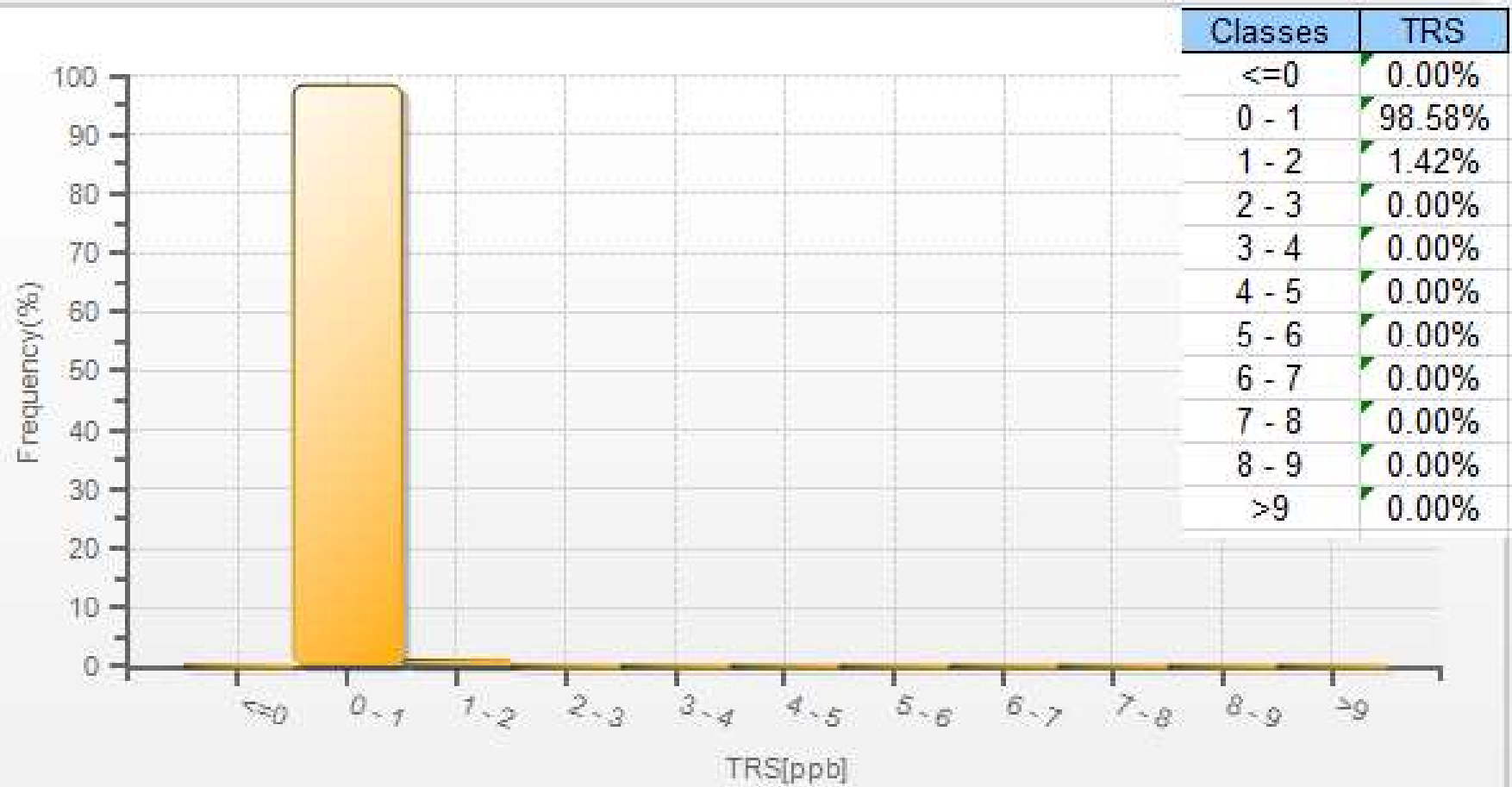
Summary of Hourly Averages

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	0.38	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	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	0.35	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				
Diurnal 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

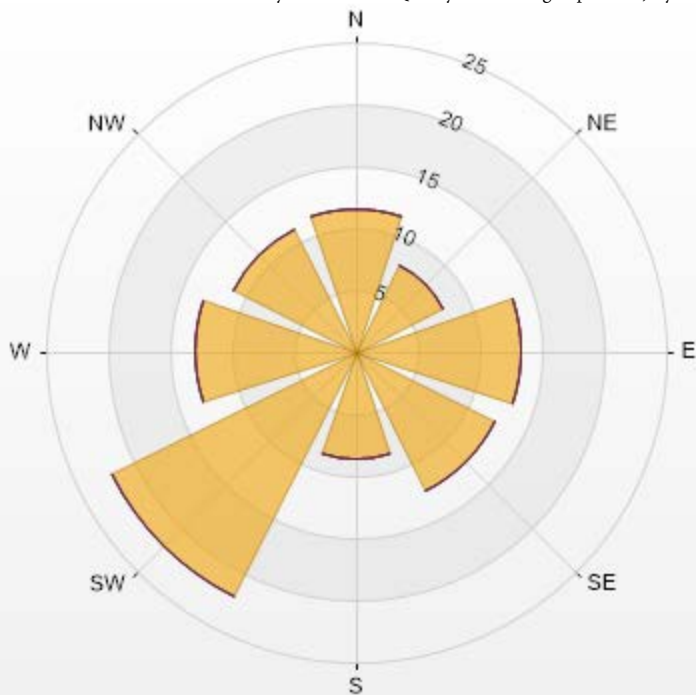
TRS[ppb] Histogram: PRAMP 842b Monthly: 07-2019 1 Hr.



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 Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



PRAMP-201907-Revision 1



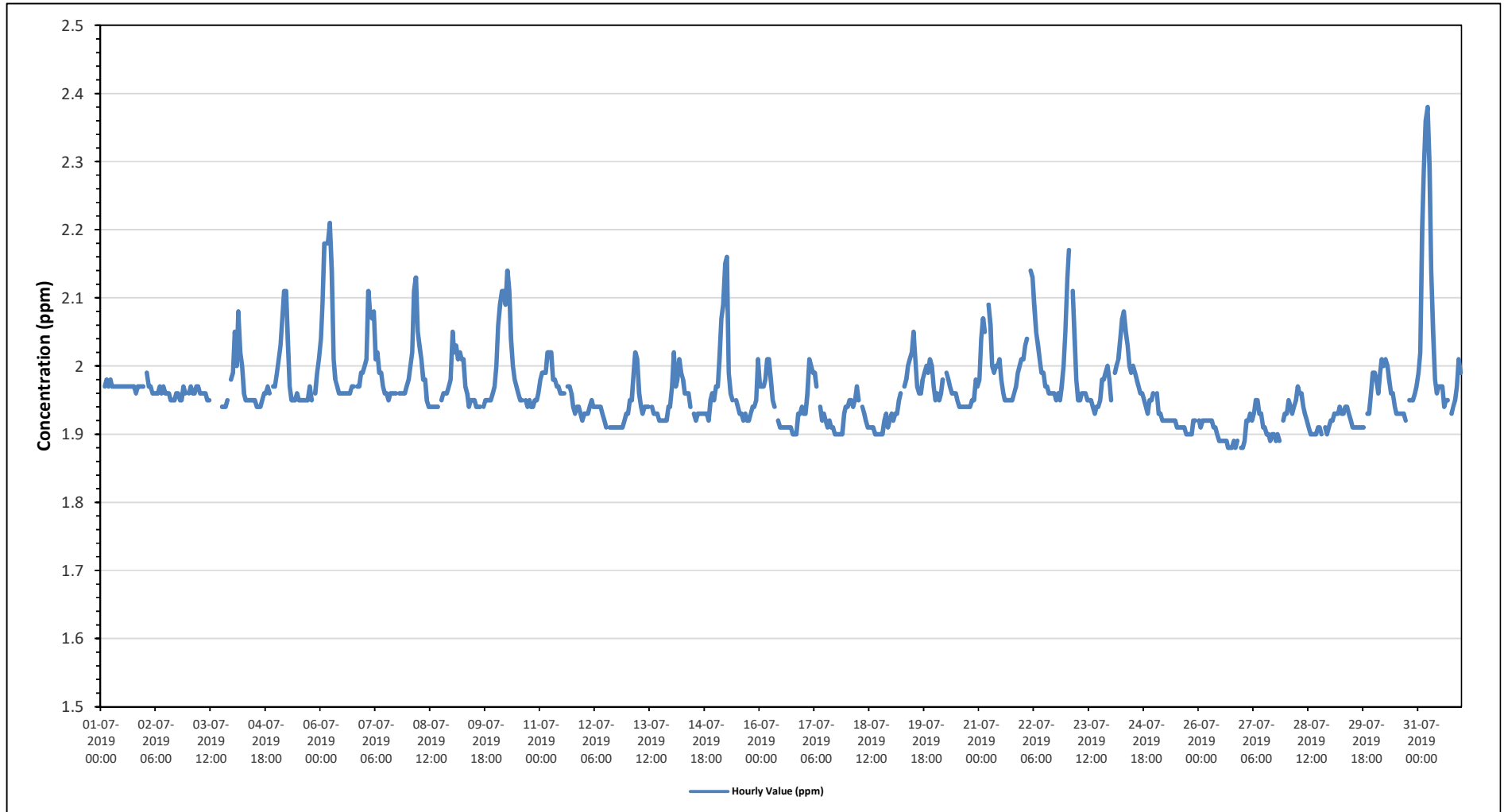
PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

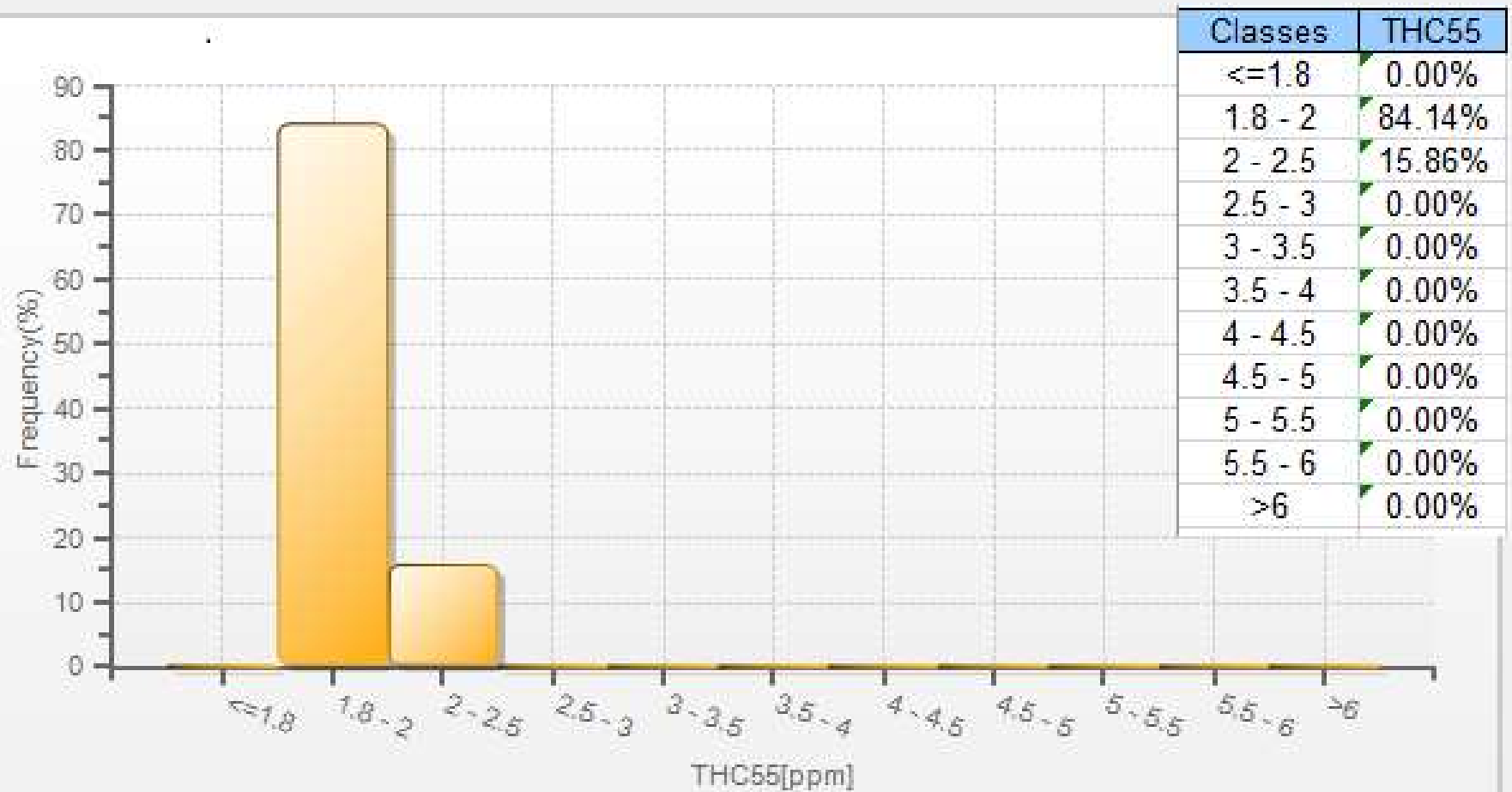
Summary of Hourly Averages

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	1.96	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	1.94	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	1.95	1.93	1.92	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	1.96	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

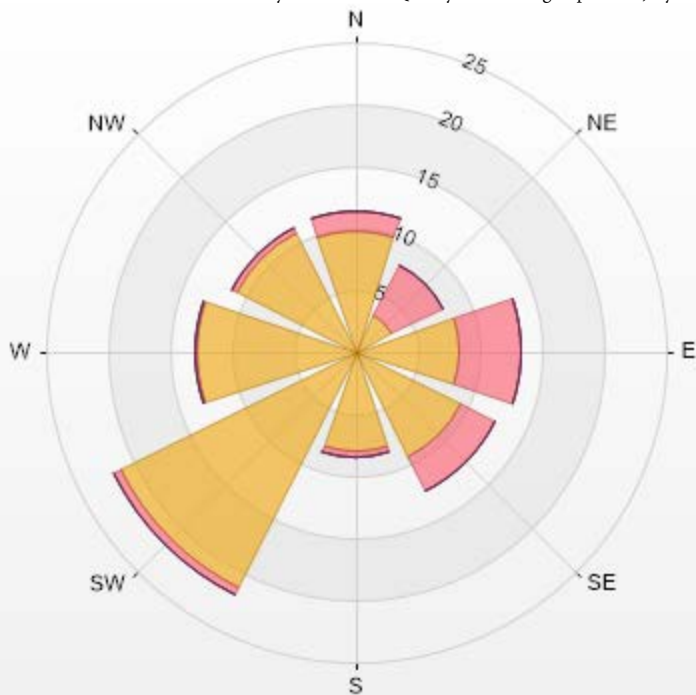
THC55[ppm] Histogram: PRAMP 842b Monthly: 07-2019 1 Hr.



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 Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



PRAMP-201907-Revision 1

% Icon Classes (ppm)	84	0-2	15	2-5	0	5-10	0	10-40	0	>40.0
----------------------	----	-----	----	-----	---	------	---	-------	---	-------



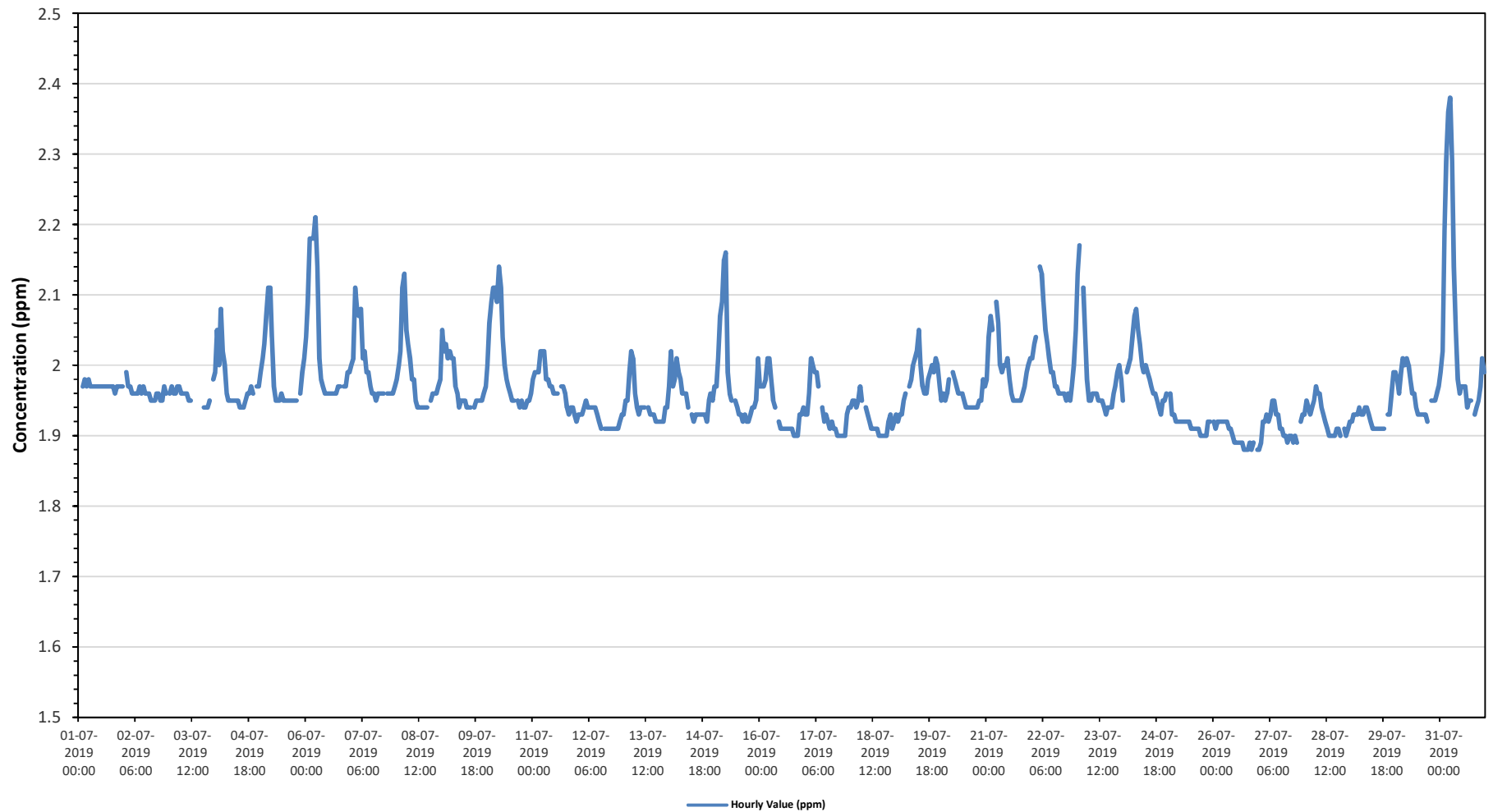
PEACE RIVER AREA MONITORING PROGRAM

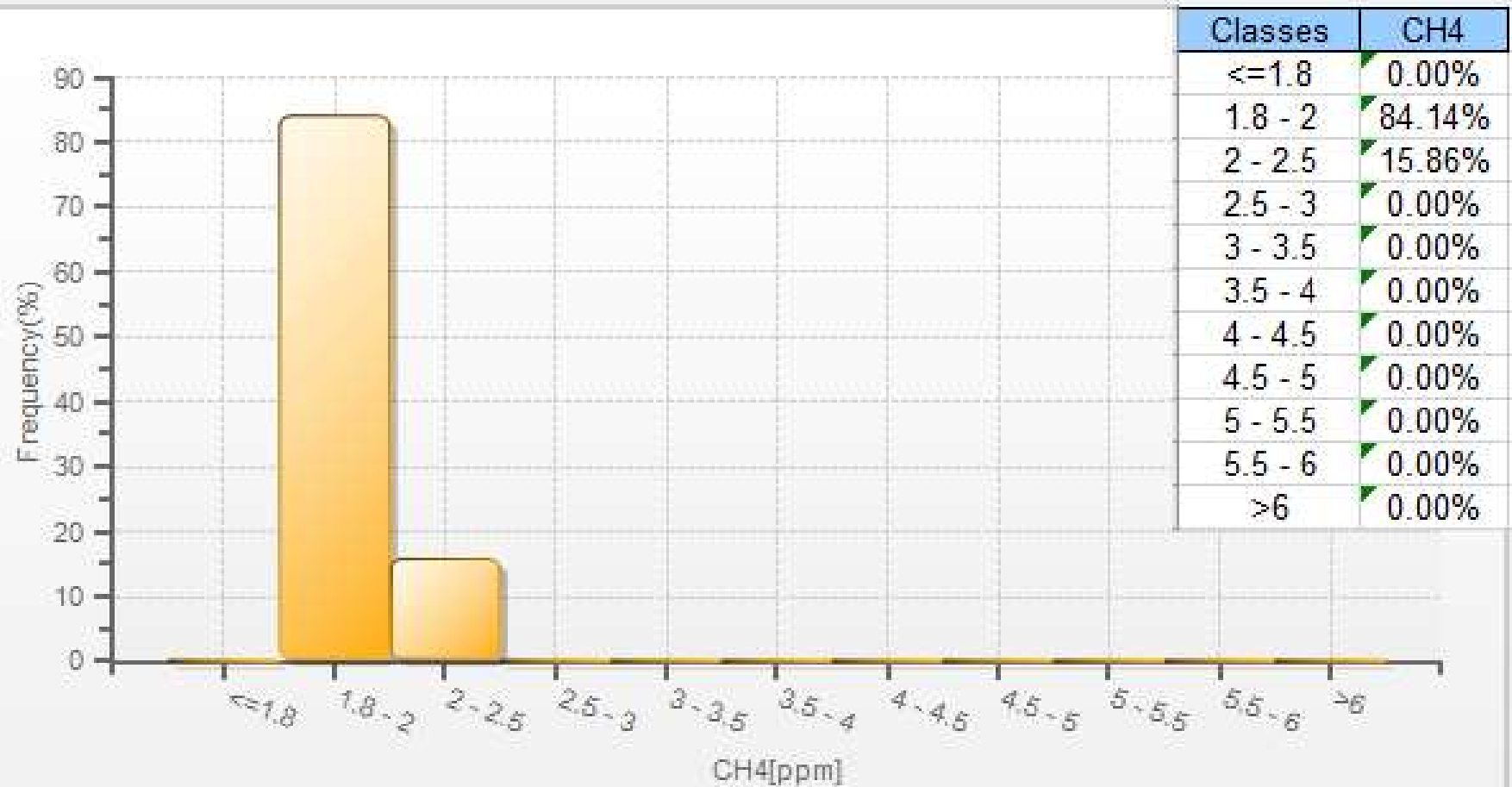
842b Station - July 2019

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	1.96	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	1.94	1.94	1.92	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	1.95	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	1.94	1.93	1.94	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	1.96	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				
Diurnal 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.																												

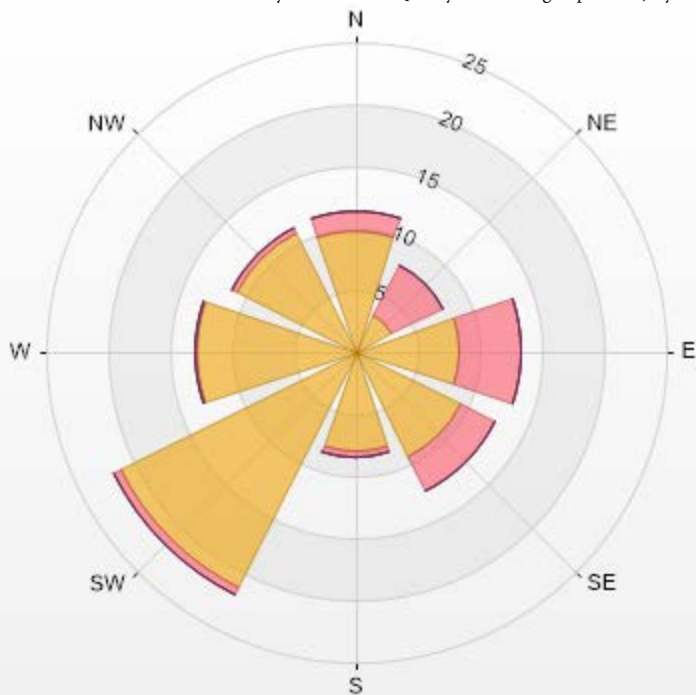
Timeseries Chart of Hourly Average for CH₄ - 842b Station

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

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 Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



PRAMP-201907-Revision 1

% Icon Classes (ppm)	84	15	0	0	0
	0-2	2.5-5	5-10	10-20	>20.0



PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

Summary of Hourly Averages

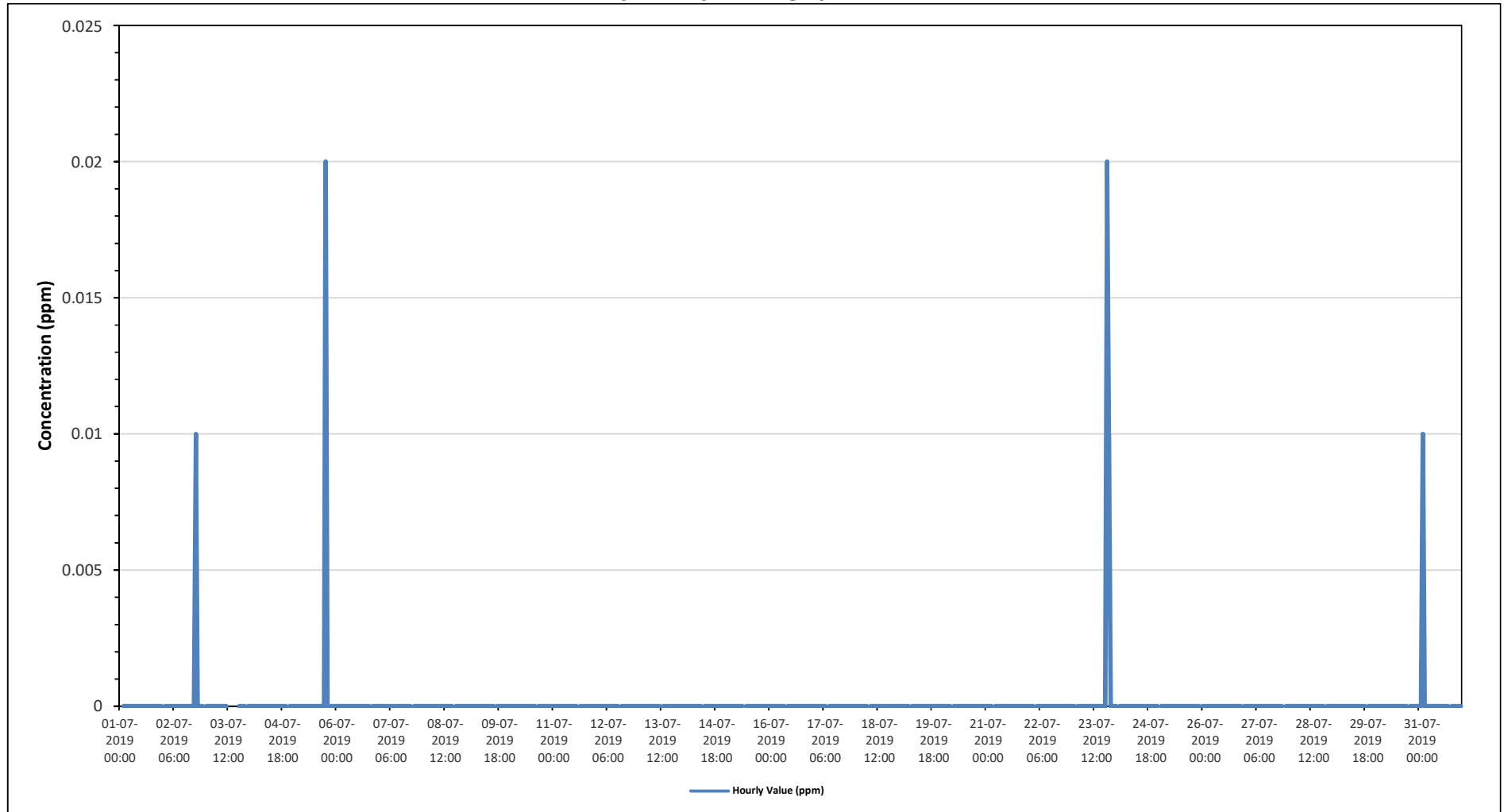
NON-METHANE HYDROCARBONS (NMHC) in ppm

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

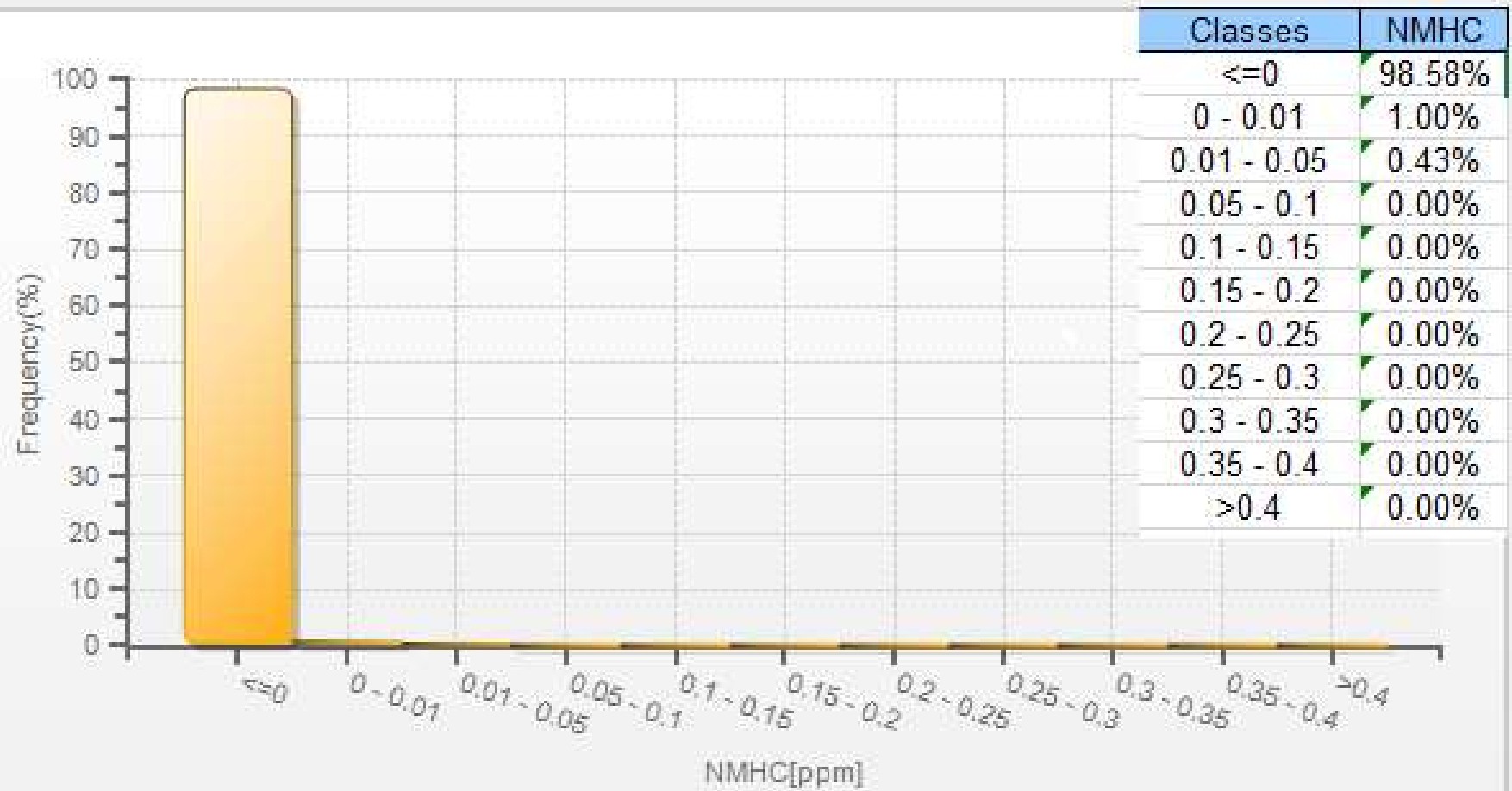
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
Jul 1	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 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	0.00
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	-
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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	0.00
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	0.00	0.00
Daily 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	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.

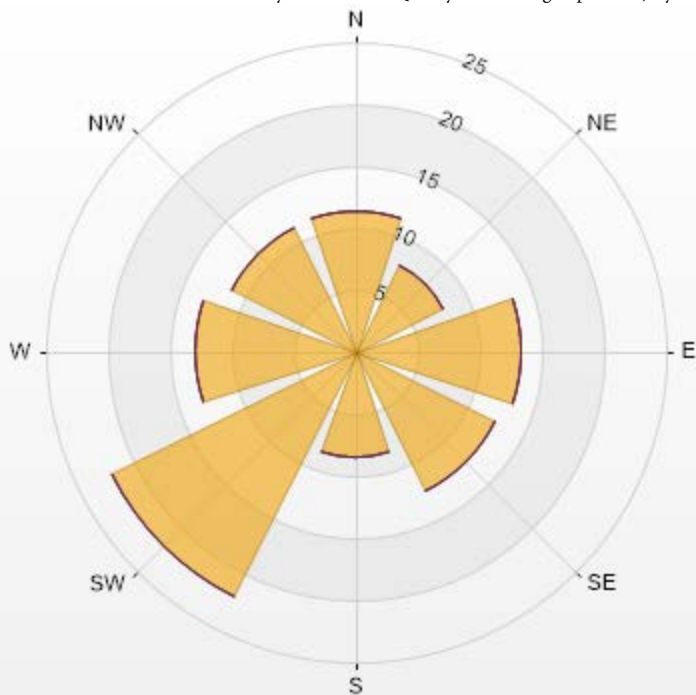


Wind: PRAMP 842b Poll.: PRAMP 842b-NMHC[ppm] Monthly: 07-2019 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.

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 Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



PRAMP-201907-Revision 1



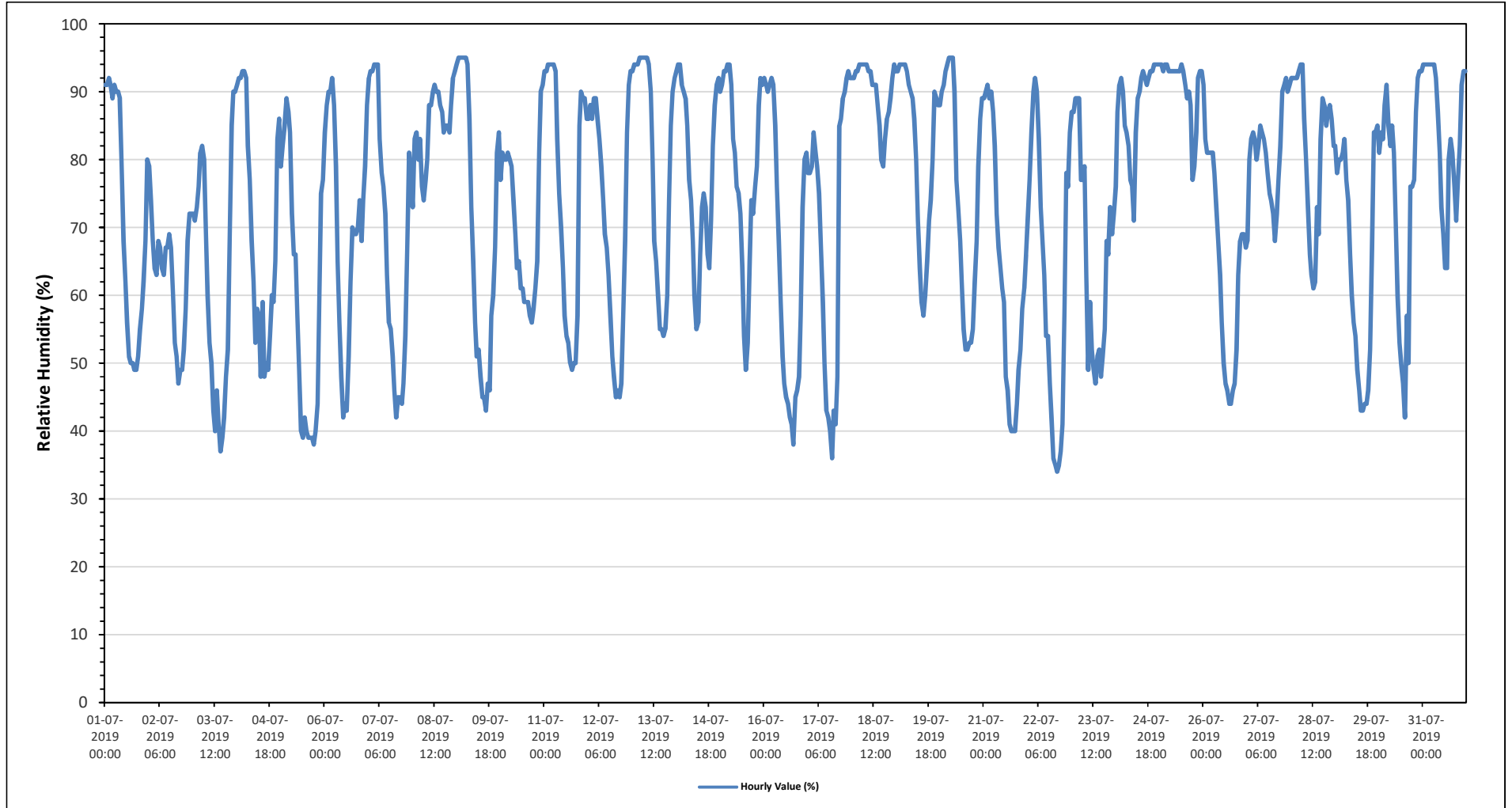
PEACE RIVER AREA MONITORING PROGRAM

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

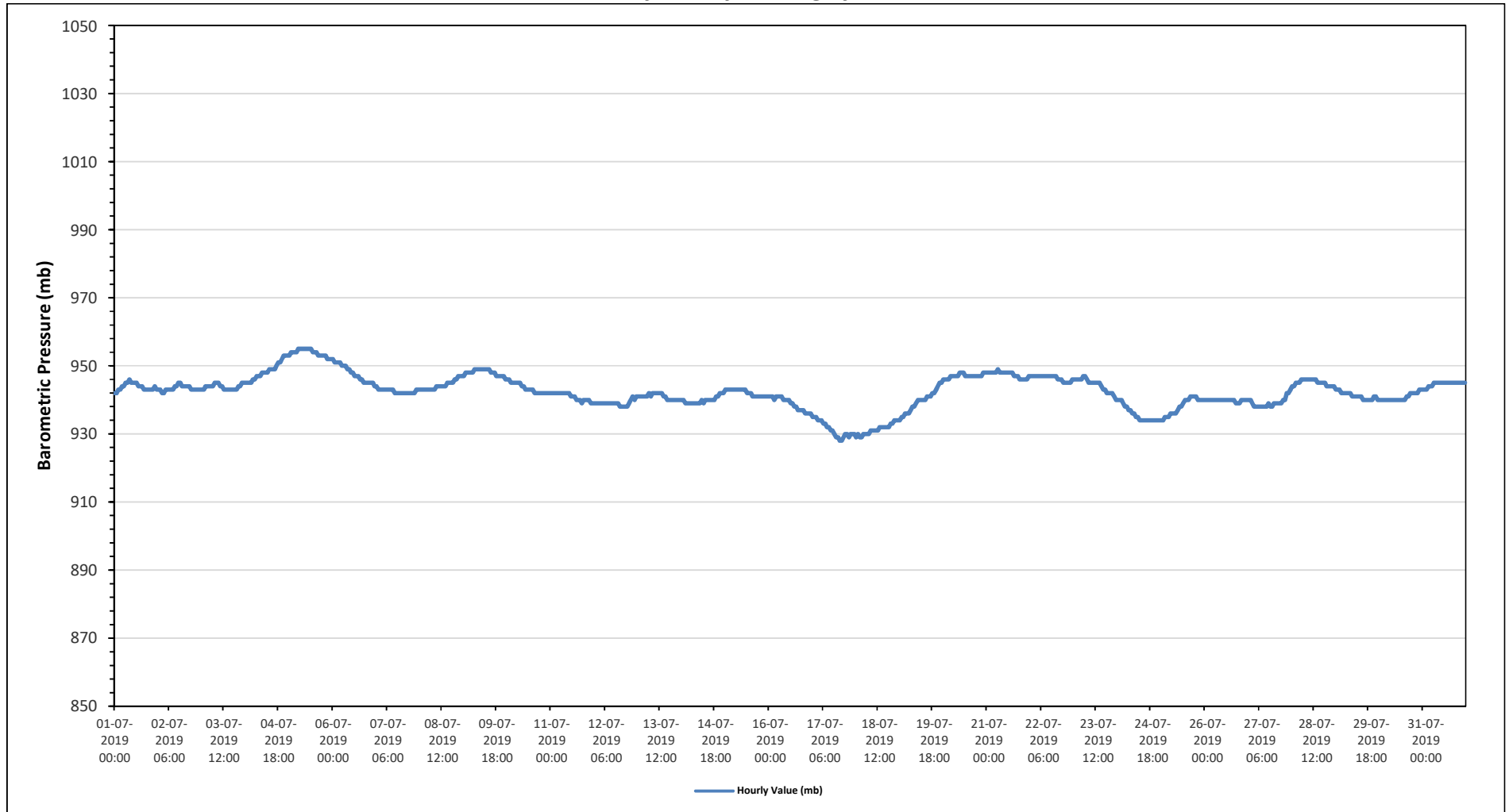
Summary of Hourly Averages

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	944	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	939	940	939	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	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	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	945	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	945	945	945	945	945	944	944	944	944	944	944	944	946	945
Jul 29	943	943	943	942	942	942	942	942	942	941	941	941	941	941	940	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	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	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



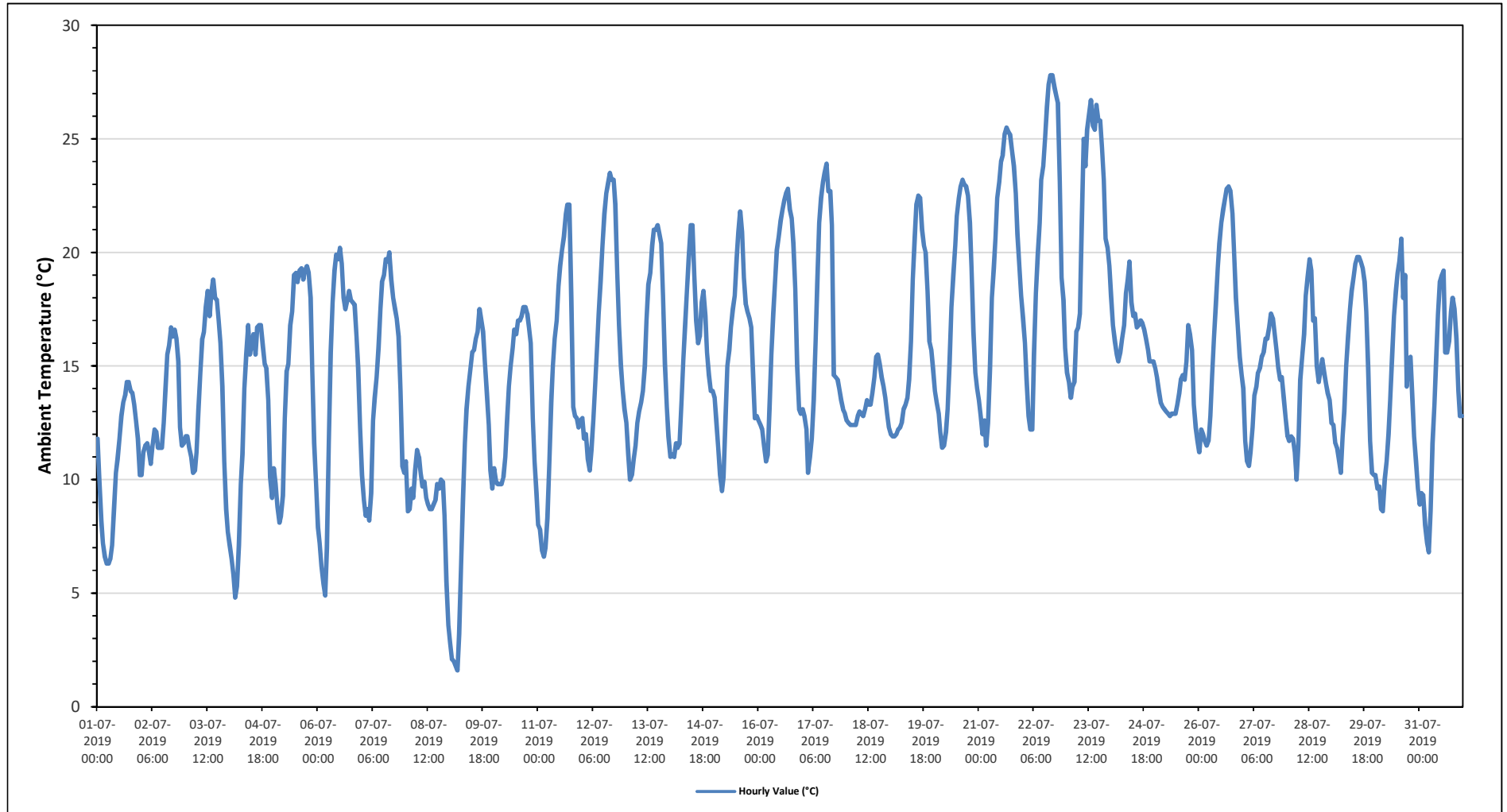
PEACE RIVER AREA MONITORING PROGRAM

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	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



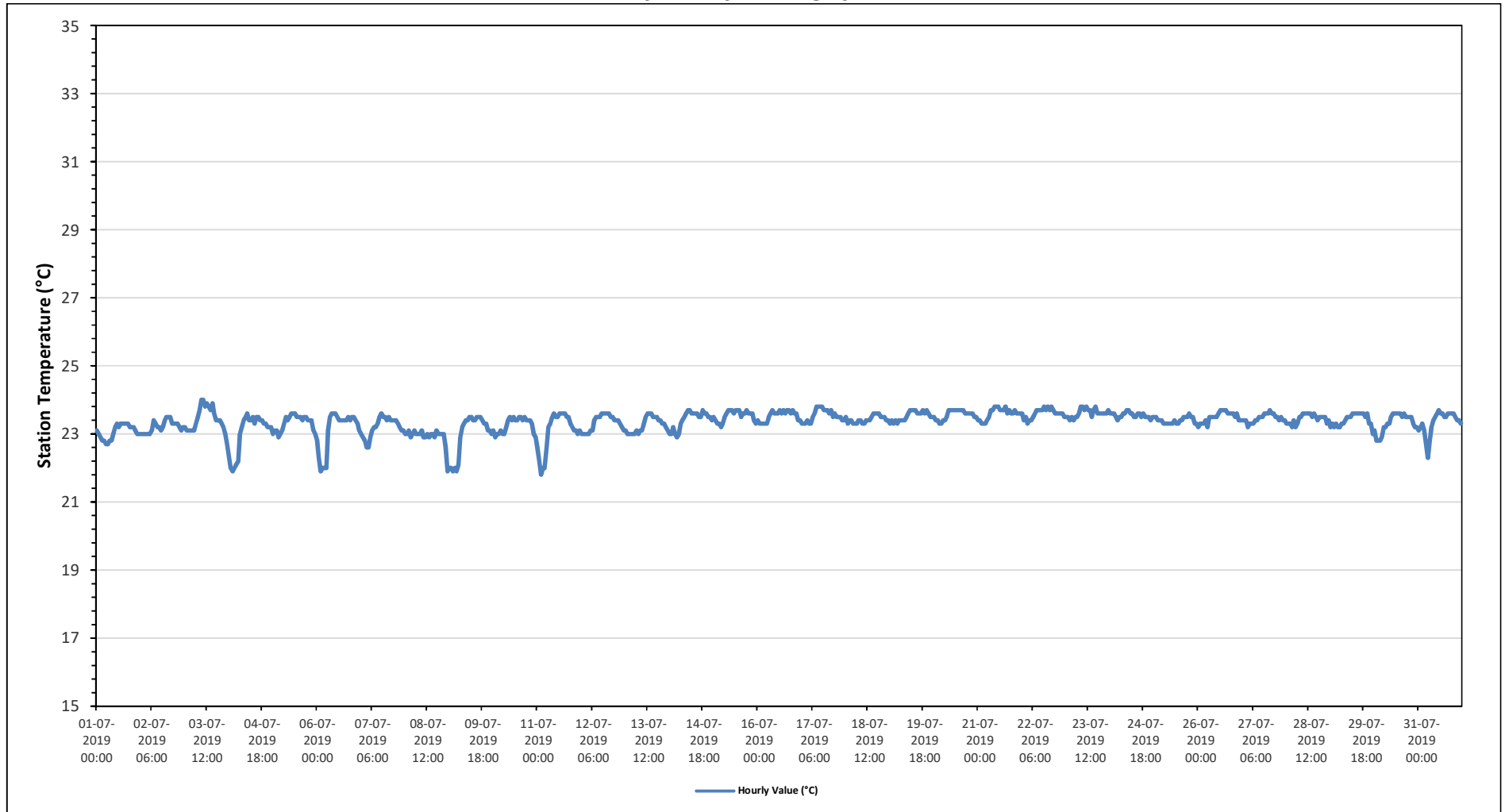
PEACE RIVER AREA MONITORING PROGRAM

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	23.2	23.1	23.2	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	23.7	23.6	23.7	23.6	23.6	23.4	23.4	23.3	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	23.6	23.5	23.5	23.5	23.4	23.4	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	23.7	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

842b Station - July 2019

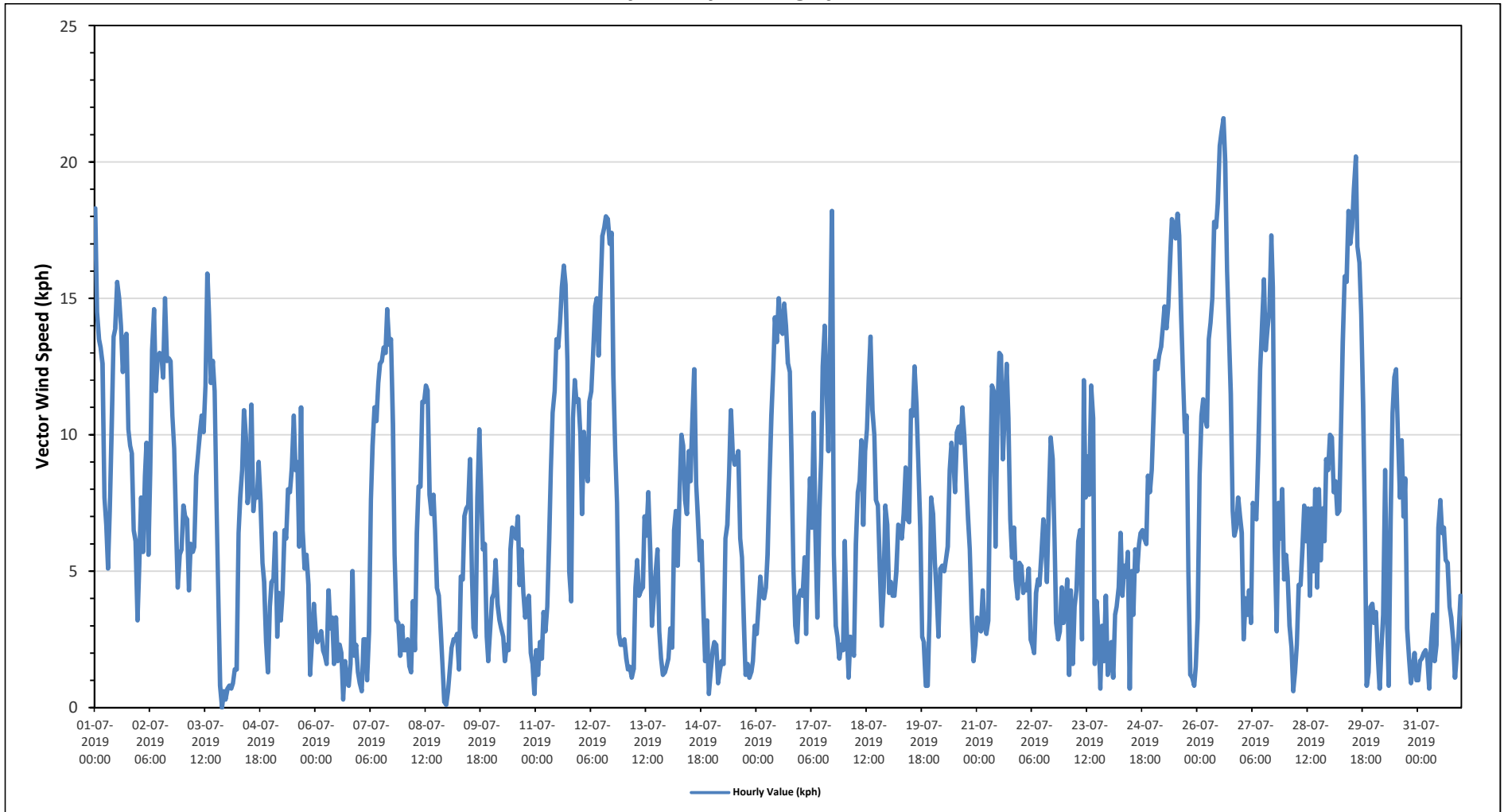
Summary of Hourly Averages

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.																											

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.

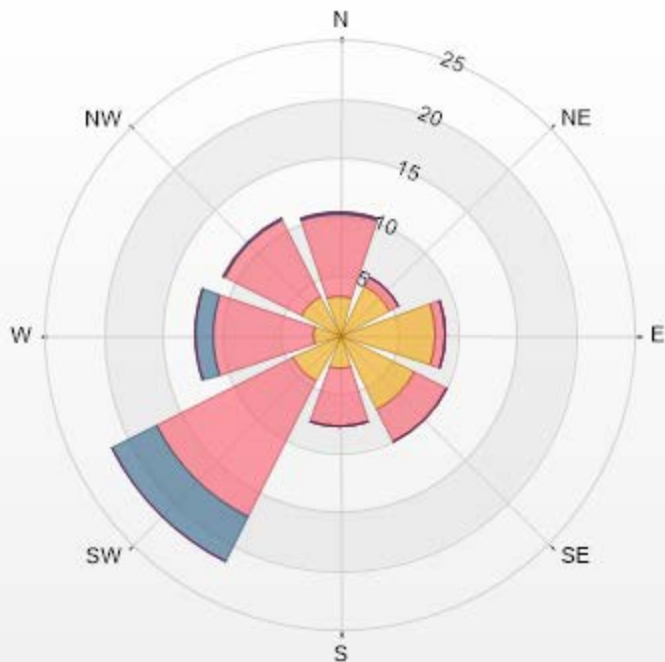
Timeseries Chart of Hourly Average for VWS - 842b Station

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

Avg: 1.18[KPH]

PRAMP Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



PRAMP-201907-Revision 1

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



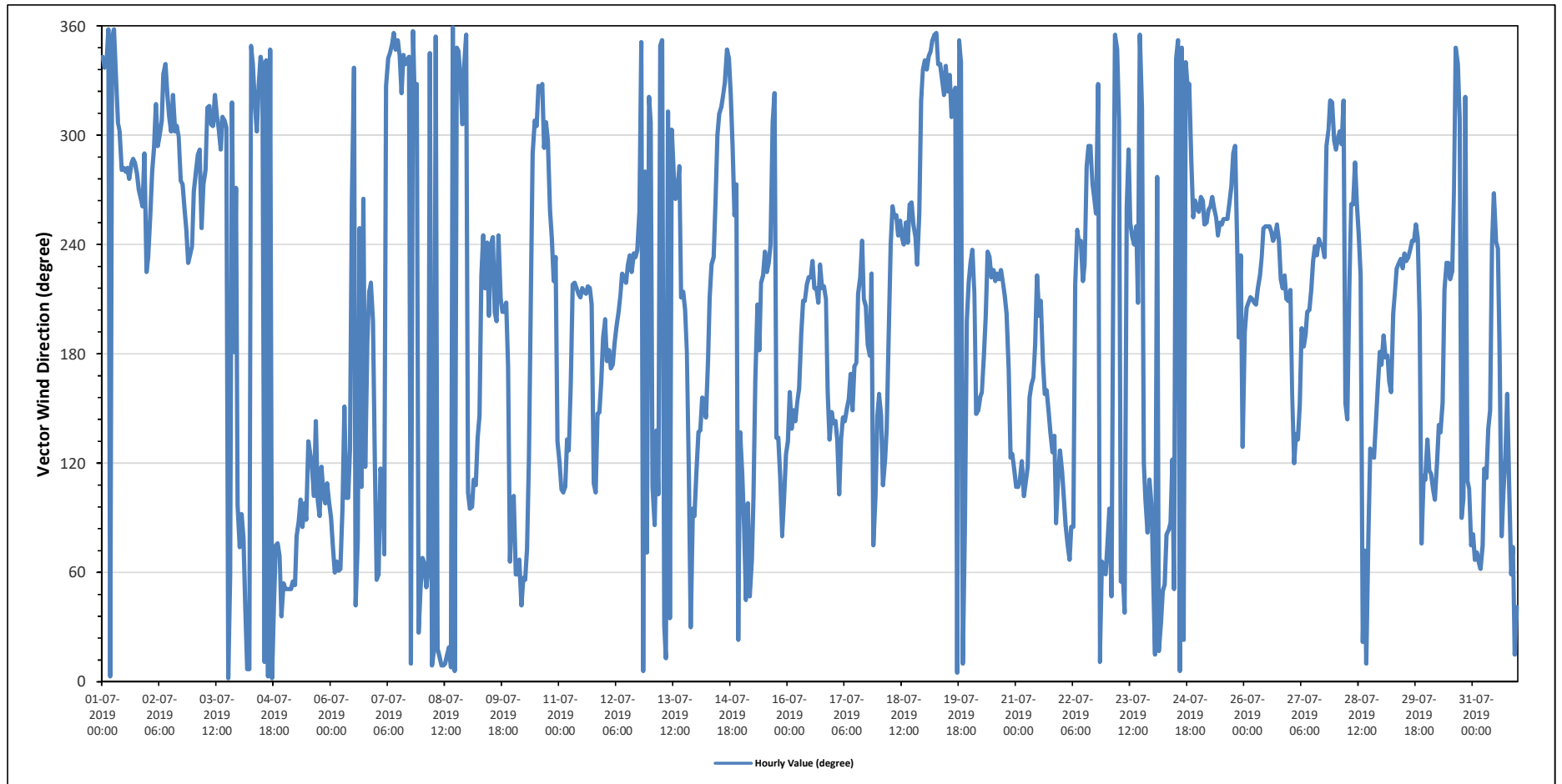
PEACE RIVER AREA MONITORING PROGRAM

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	
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	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	NNW	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	SSW	N	NW	ESE	E	E	ESE	E	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	SSW	SW	WSW	SW	WSW	WSW	WSW	SW	WNW	WNW	NW	NNW	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	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

Reno Station - July 2019

Summary of Hourly Averages

SULPHUR DIOXIDE (SO₂) in ppb

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

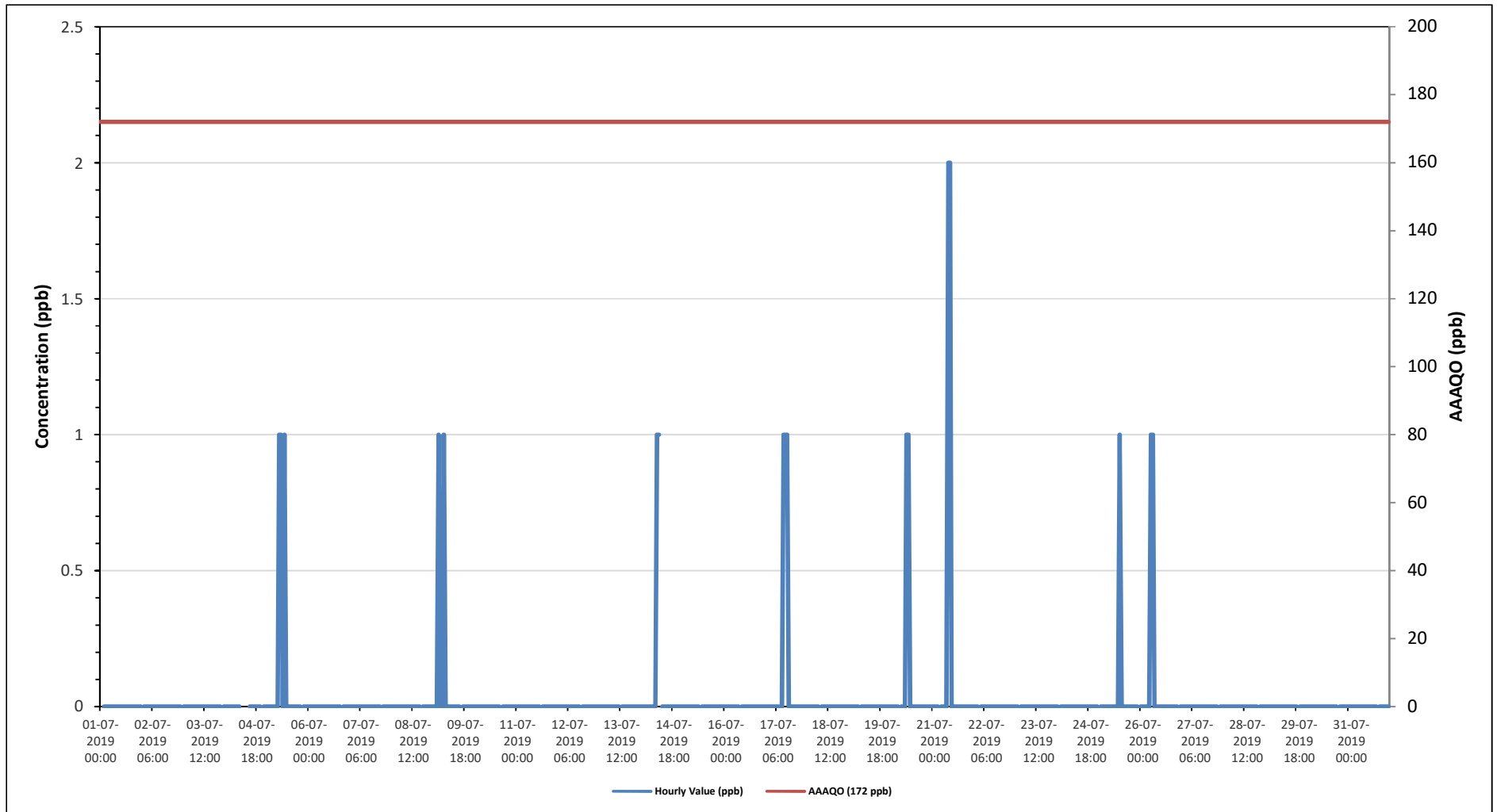
Number of 1-Hour Exceedences: 0 Number of 24-Hour Exceedences: 0 30-Day Exceedence: 0

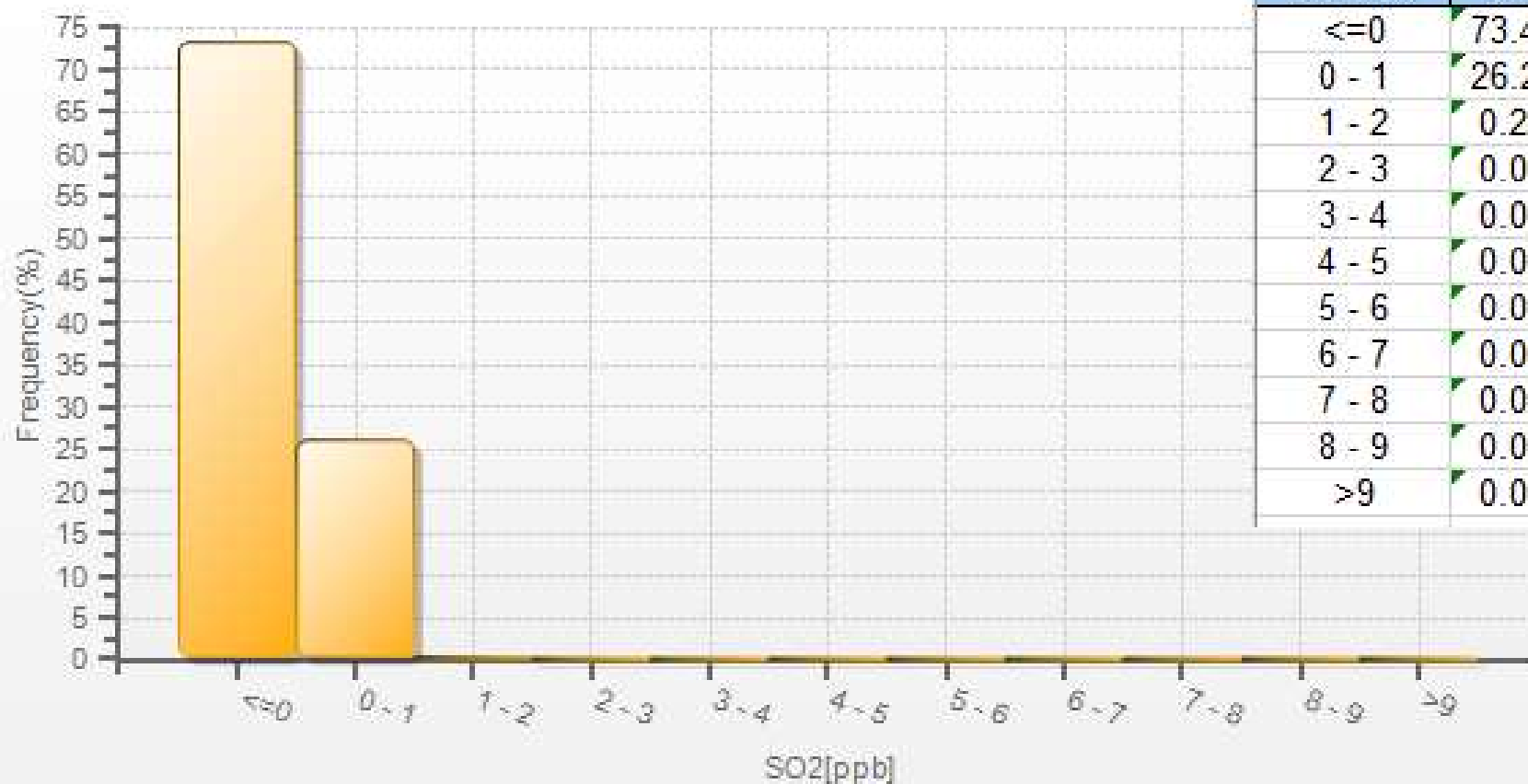
Maximum Hourly Value: 2 ppb on July 21 at hour 9 Hours in Service: 744
 Maximum Daily Value: 0.2 ppb on July 21 Hours of Data: 706
 Minimum Hourly Value: 0 ppb on July 1 at hour 0 Hours of Missing Data: 0
 Minimum Daily Value: 0.0 ppb on July 1 Hours of Calibration: 38
 Monthly Average: 0.0 ppb Operational 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
Jul 2	S	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
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
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	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
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
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
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	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
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
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
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
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	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
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
Jul 17	0	0	0	0	0	0	0	S	S	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	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
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
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	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	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
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
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
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	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	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	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	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	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
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
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	0	0.0
Diurnal 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	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.

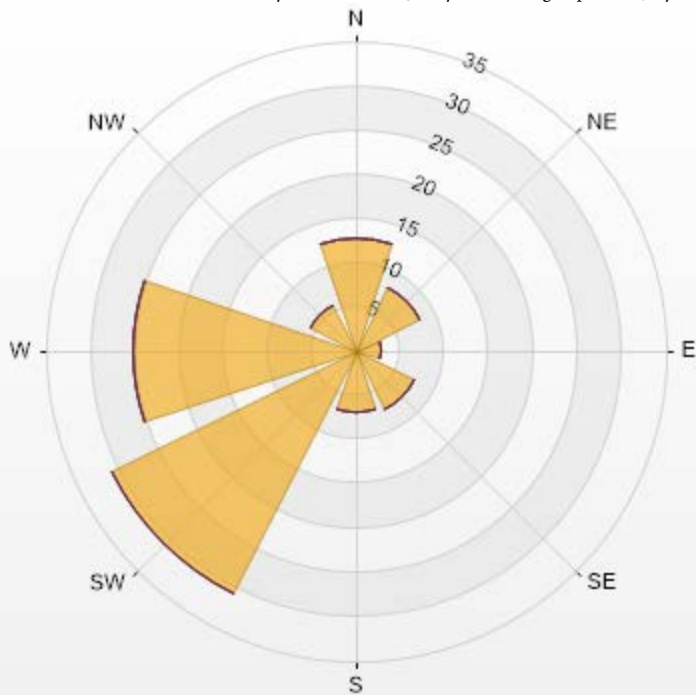
Timeseries Chart of Hourly Average for SO₂ - Reno Station

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

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 Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



PRAMP-201907-Revision 1



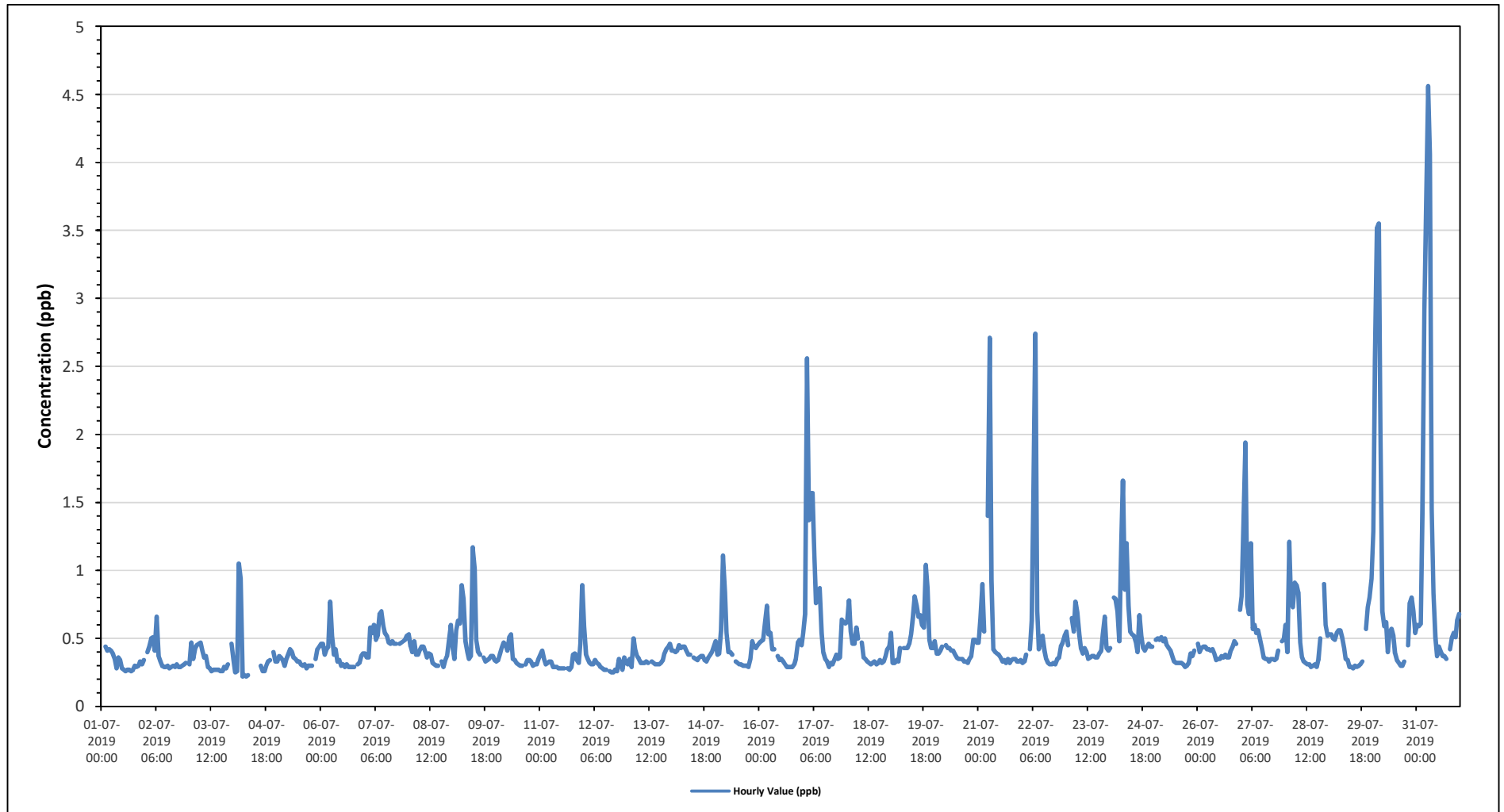
PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

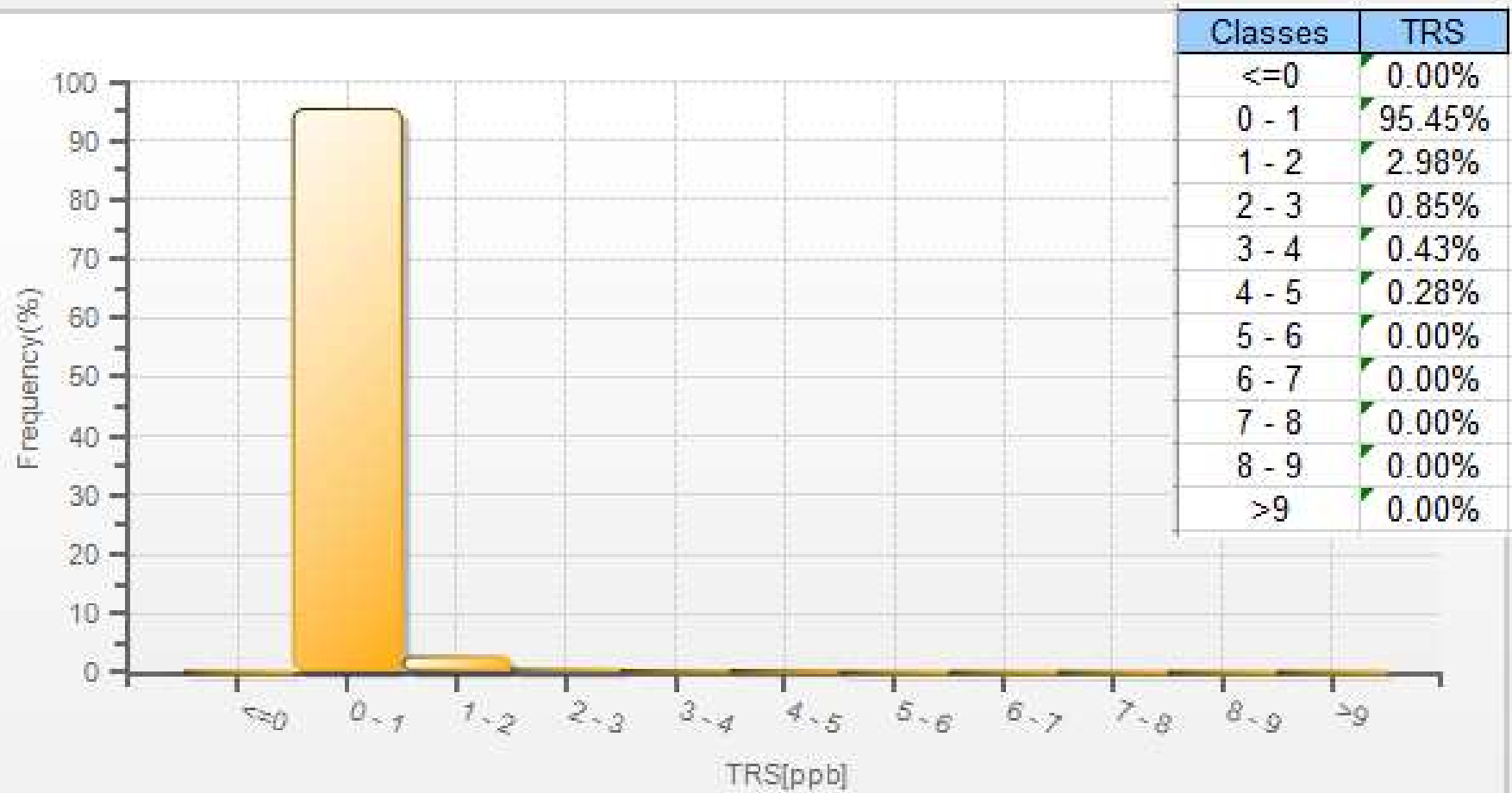
Summary of Hourly Averages

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	0.26	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	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	0.26	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					
Diurnal 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

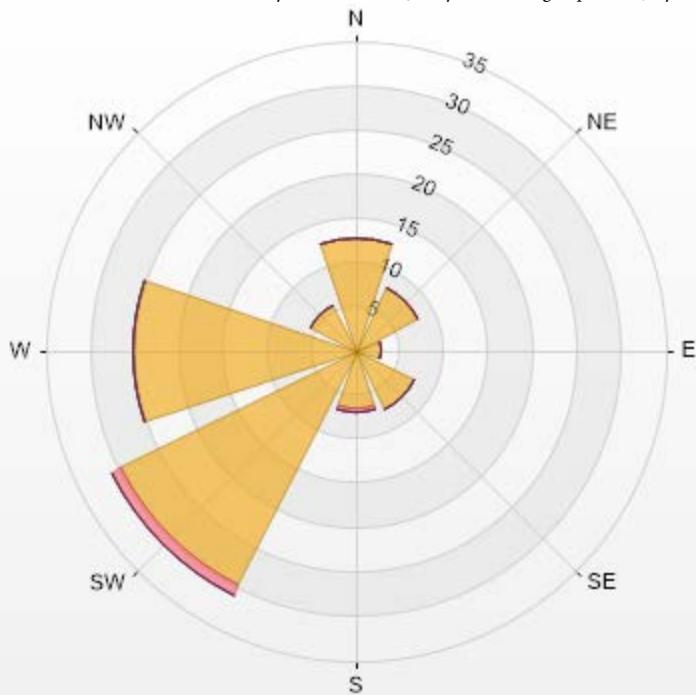
TRS[ppb] Histogram: PRAMP RENO Monthly: 07-2019 1 Hr.



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 Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



PRAMP-201907-Revision 1



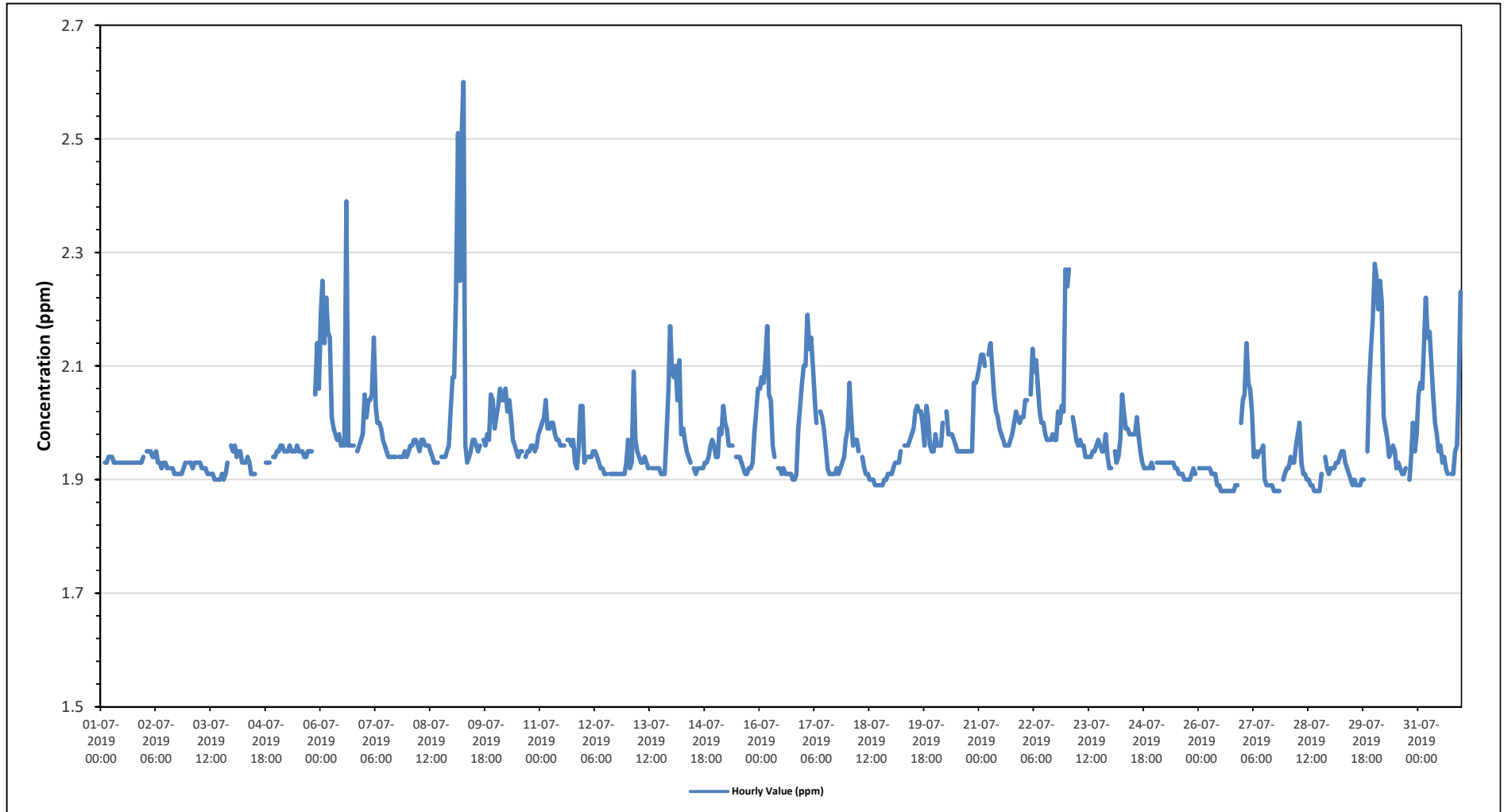
PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

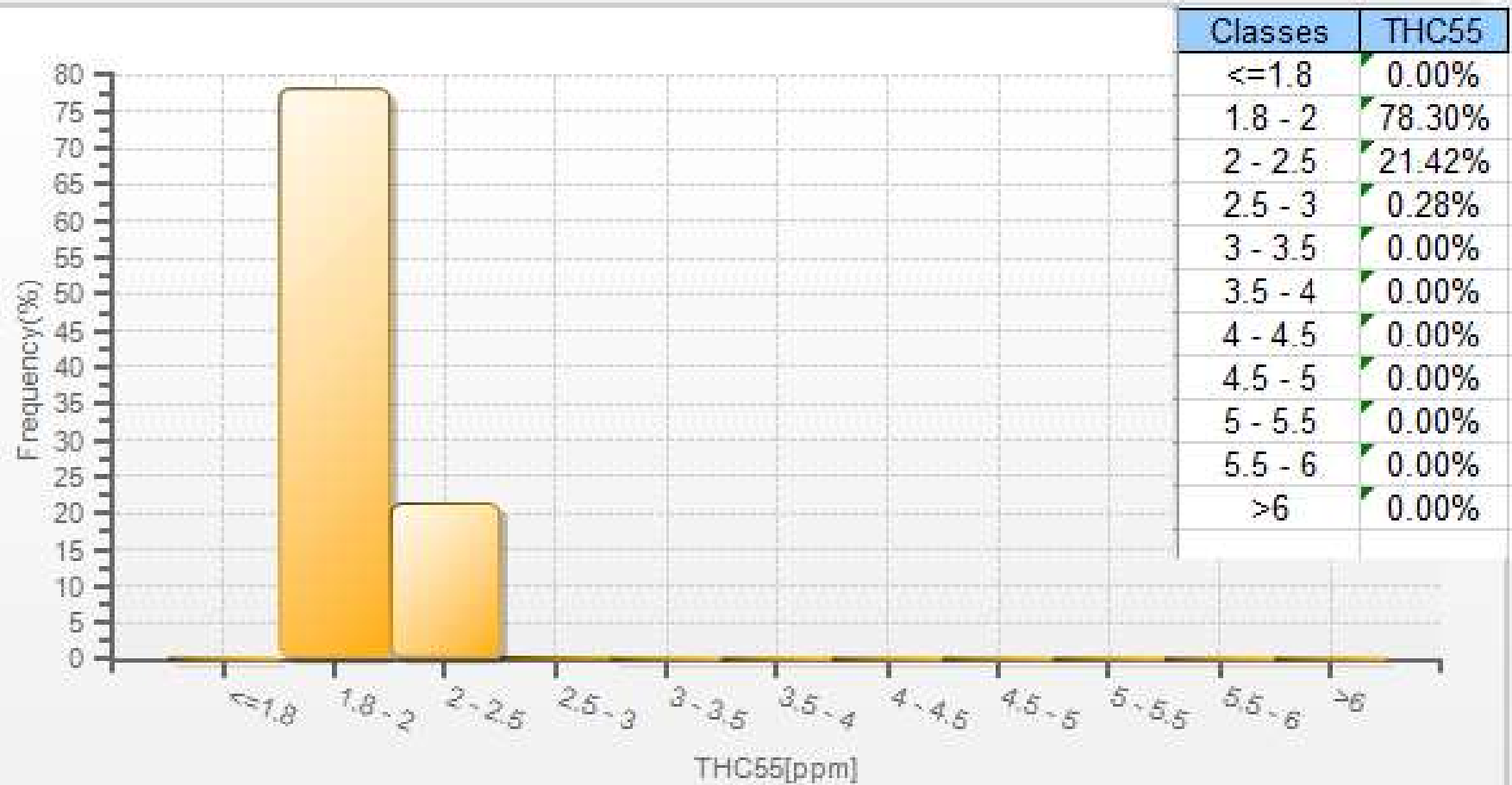
Summary of Hourly Averages

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	S	1.94	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	1.92	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	1.94	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	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	1.88	S	1.90	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

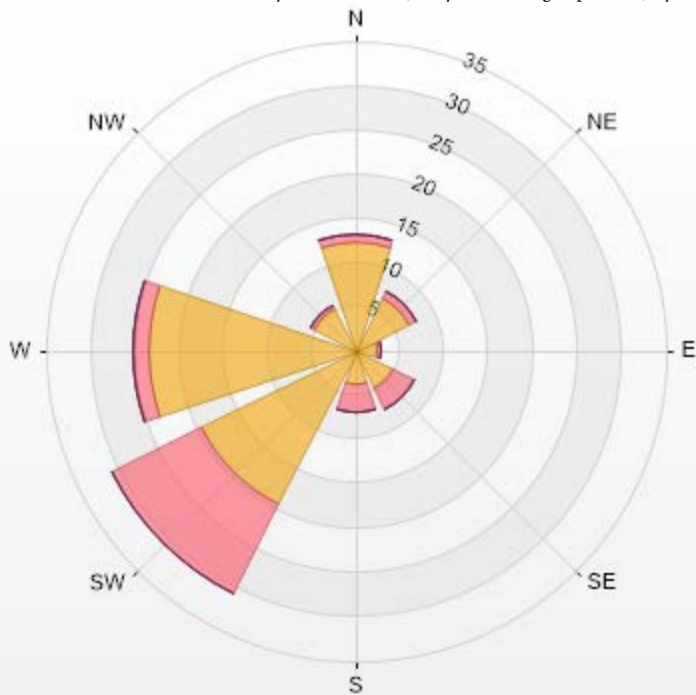
THC55[ppm] Histogram: PRAMP RENO Monthly: 07-2019 1 Hr.



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 Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



PRAMP-201907-Revision 1

% Icon Classes (ppm)	78	0-2	22	2-5	0	5-10	0	10-40	0	>40.0
----------------------	----	-----	----	-----	---	------	---	-------	---	-------



PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

Summary of Hourly Averages

METHANE (CH₄) in ppm

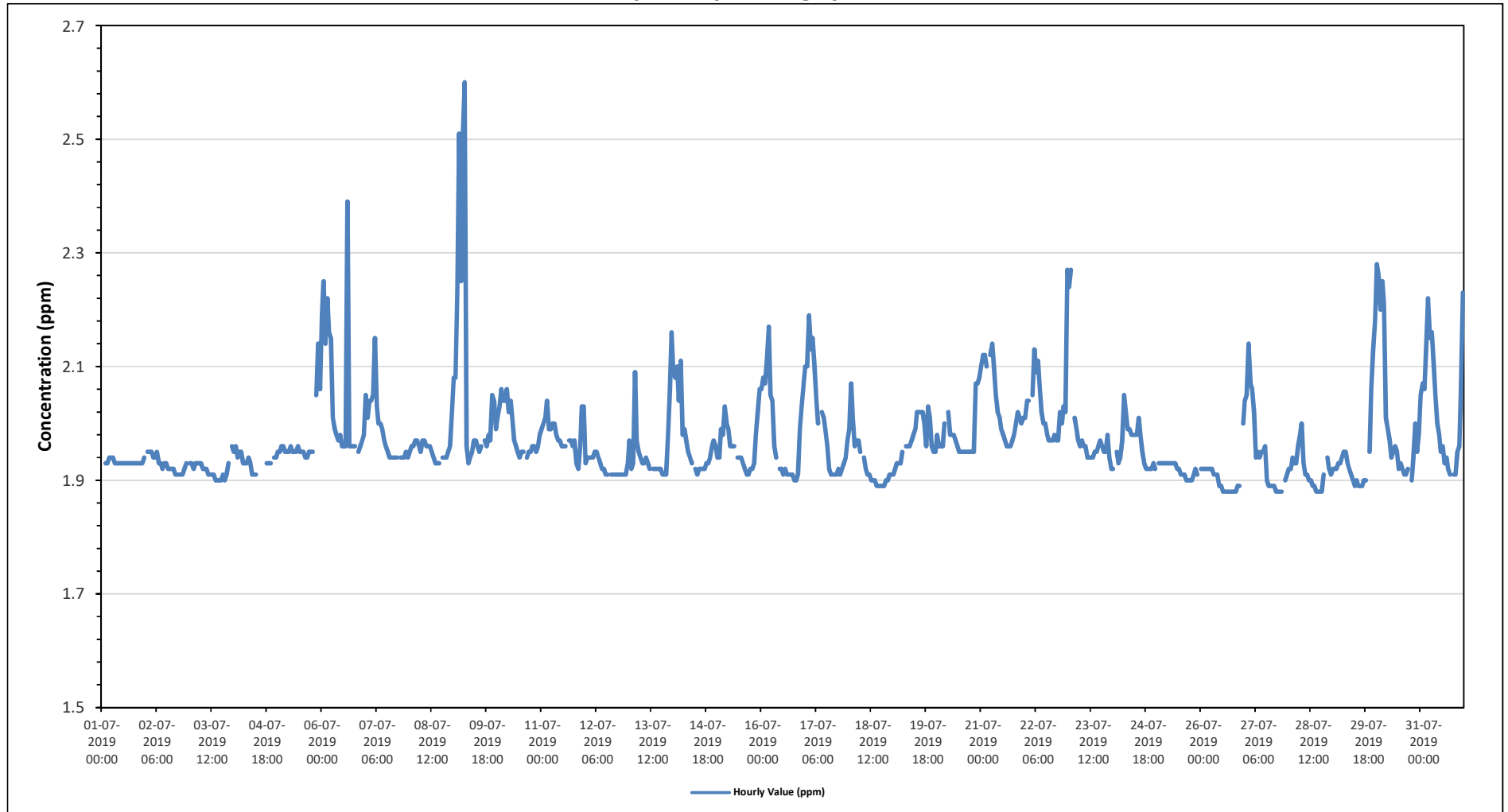
Maximum Hourly Value:	2.60 ppm on July 9 at hour 6	Hours in Service:	744
Maximum Daily Value:	2.08 ppm on July 9	Hours of Data:	706
Minimum Hourly Value:	1.88 ppm on July 26 at hour 12	Hours of Missing Data:	0
Minimum Daily Value:	1.90 ppm on July 26	Hours of Calibration:	38
Monthly Average:	1.97 ppm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

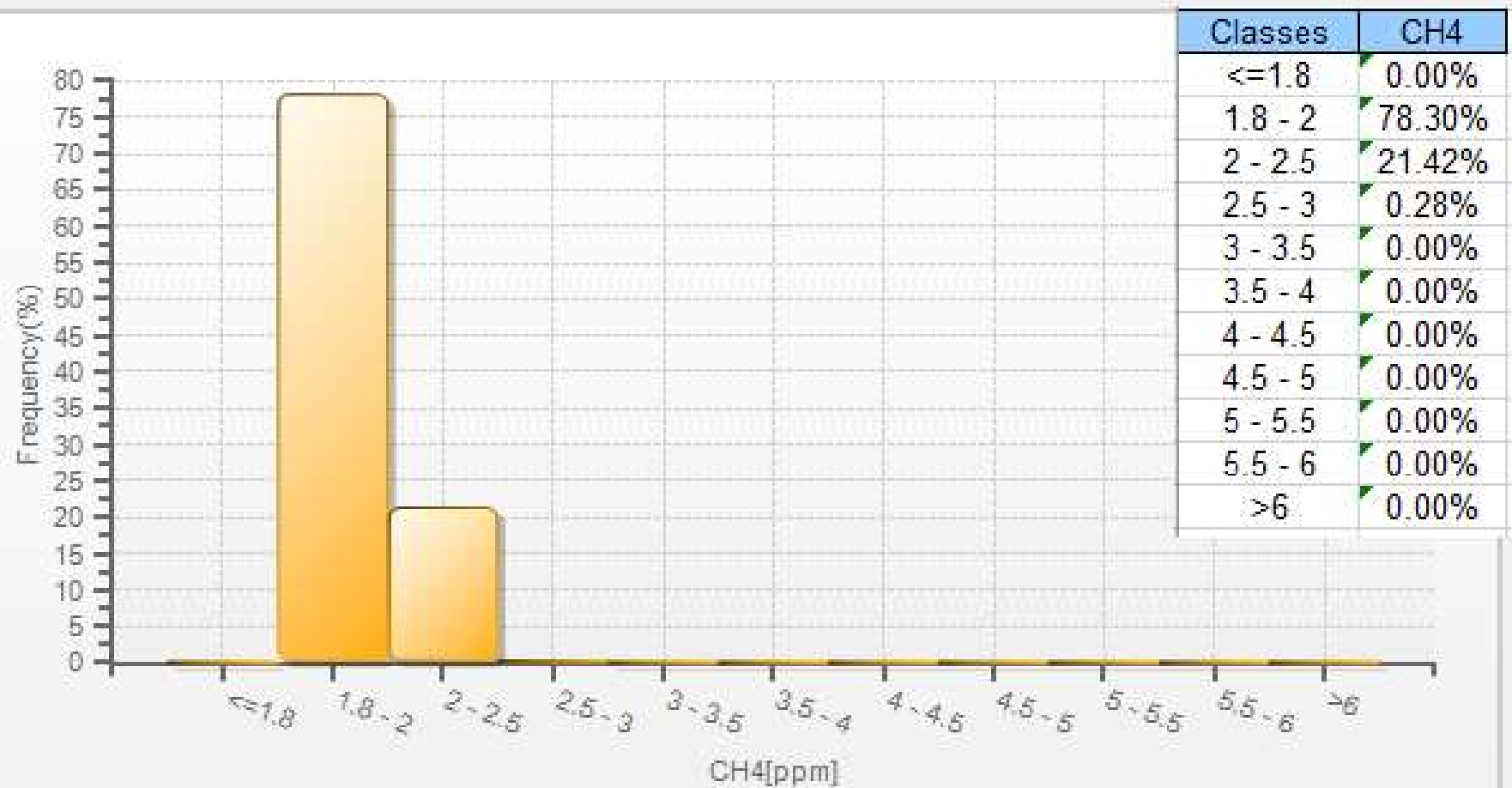
Day	Hourly Period Starting at (MST)																							Daily Minimum	Daily Maximum	Daily Average		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
Jul 1	1.90	S	1.93	1.93	1.94	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.90	1.94	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	1.96	1.95	1.95	1.95	1.96	1.95	1.95	1.96	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	1.99	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	1.93	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	2.00	1.96	2.03	2.01	1.96	1.95	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	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				
Dalurnal 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.

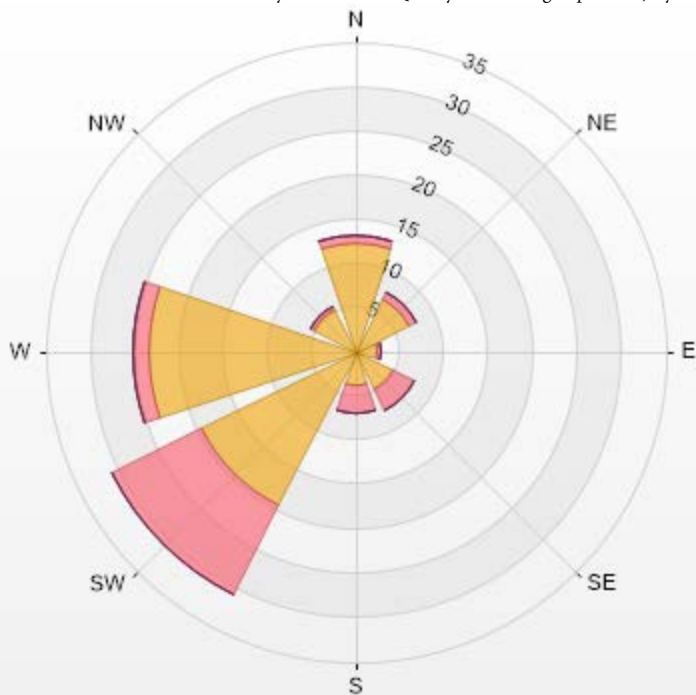
Timeseries Chart of Hourly Average for CH₄ - Reno Station

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

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 Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



PRAMP-201907-Revision 1



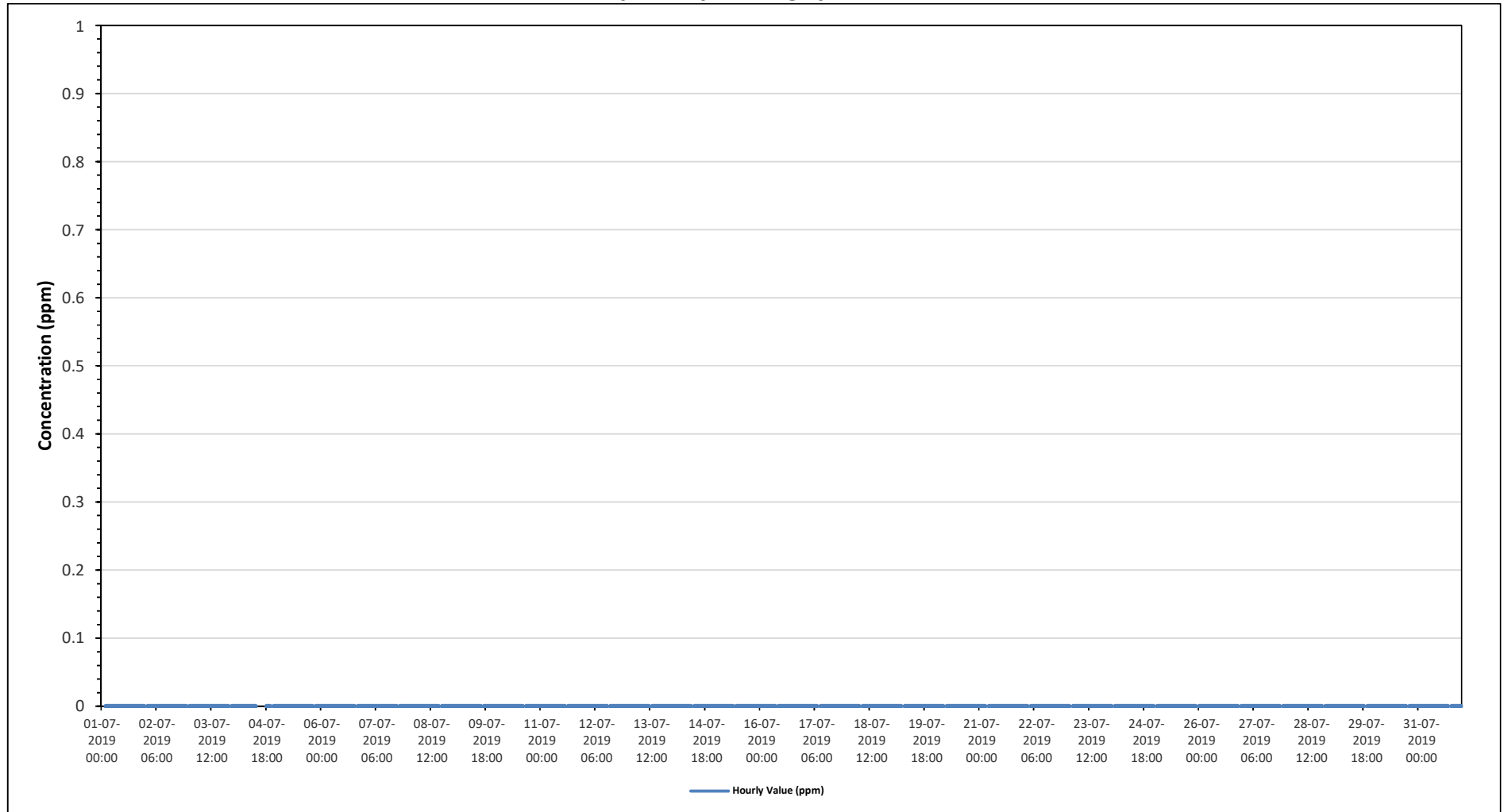
PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

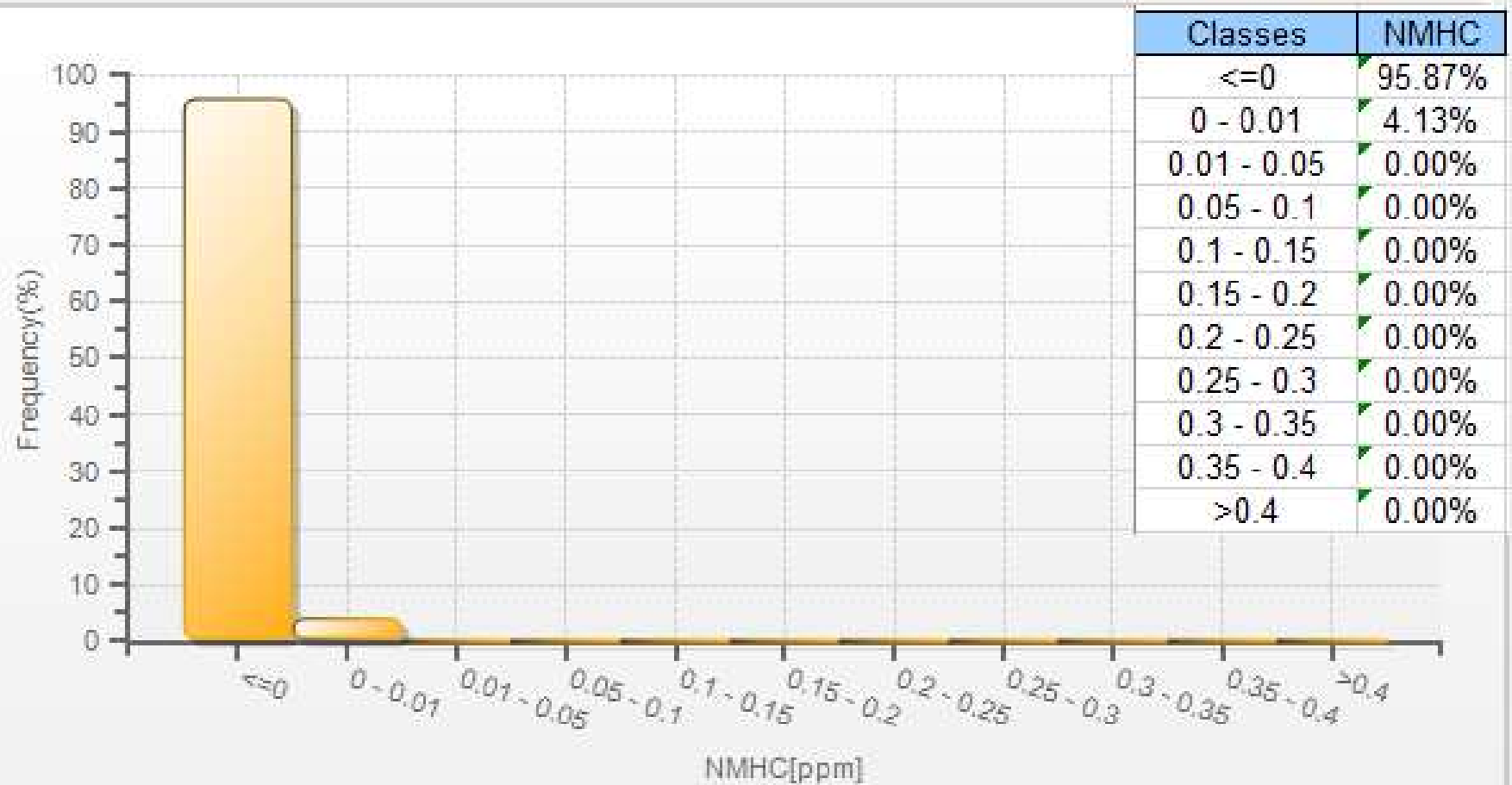
Summary of Hourly Averages

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	0.00	S	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	
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	
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	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	
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	
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	
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	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	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	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	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	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	
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	
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	
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	
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	
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	
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	
Jul 21	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	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	
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	
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	
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	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	
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	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	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	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	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	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	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

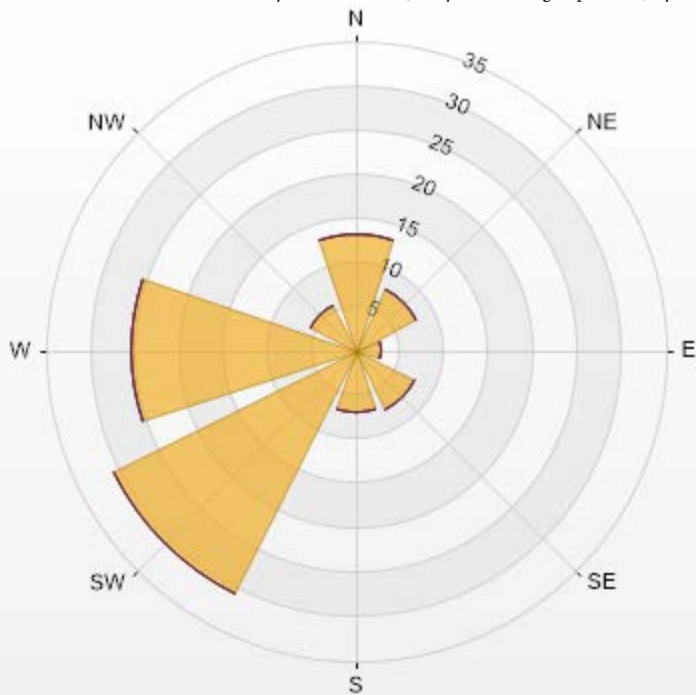
NMHC[ppm] Histogram: PRAMP RENO Monthly: 07-2019 1 Hr.



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 Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



PRAMP-201907-Revision 1



PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

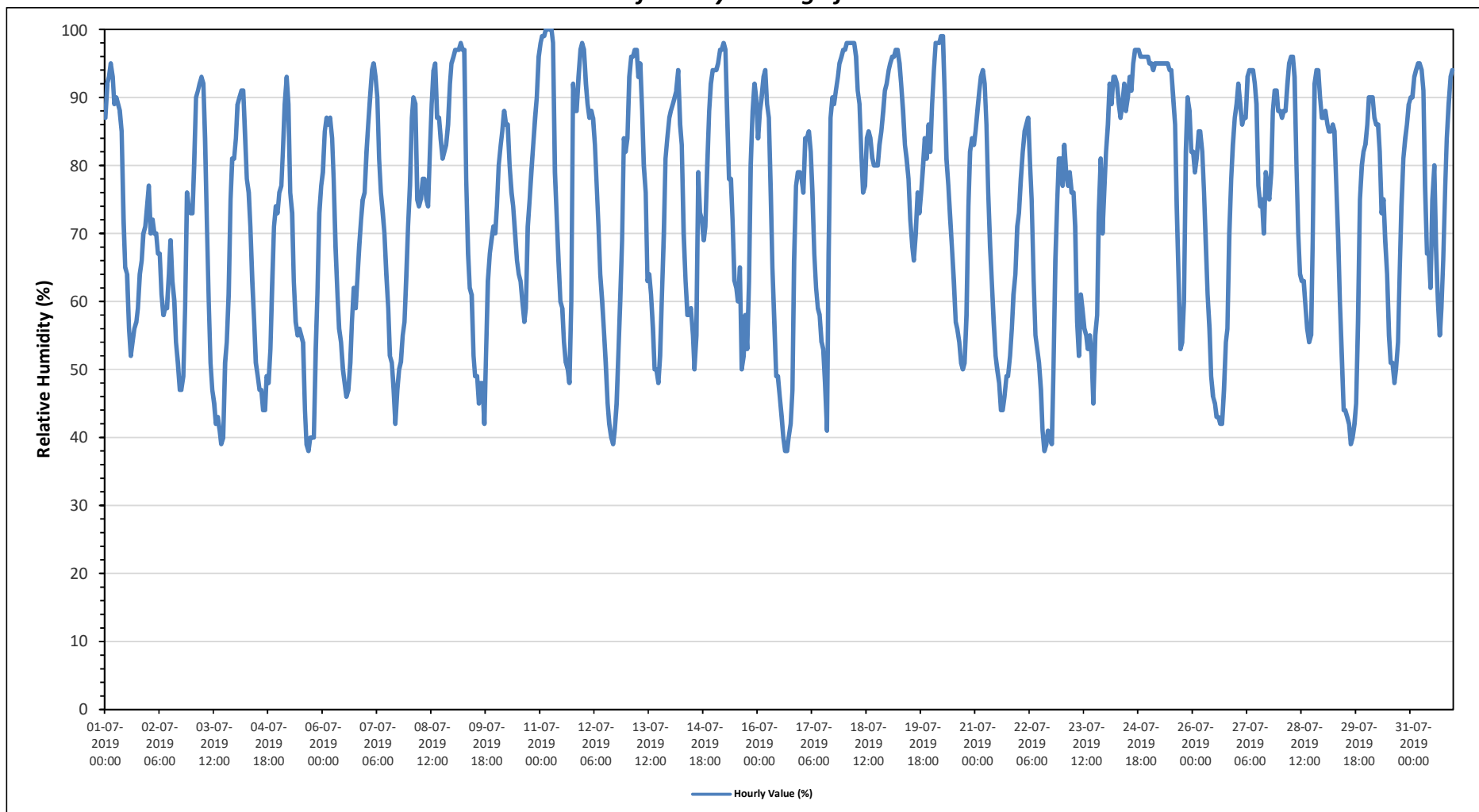
Summary of Hourly Averages

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 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	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	55	50	55	79	73	72	69	71	80	88	92	94	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			
Daily 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



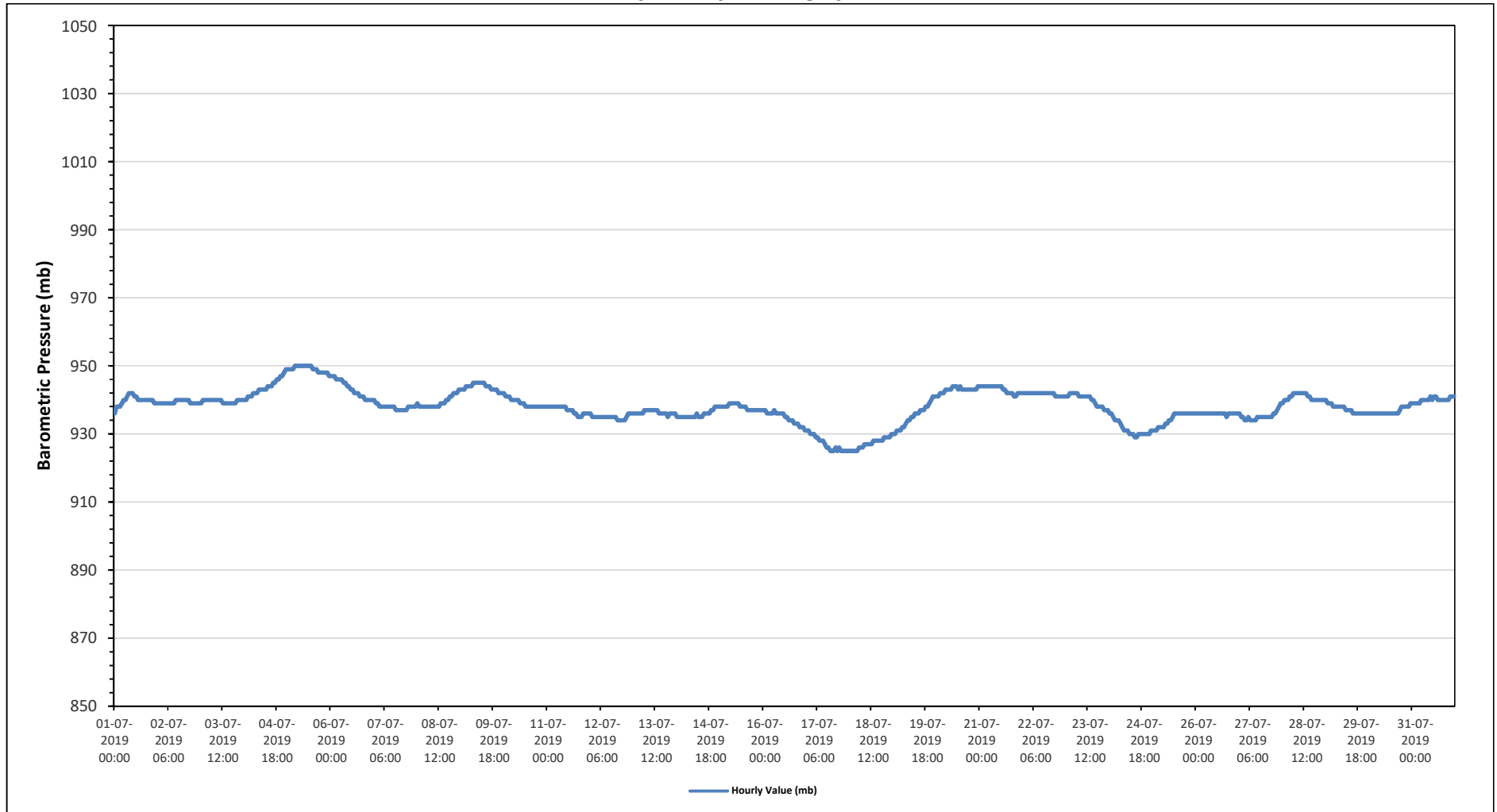
PEACE RIVER AREA MONITORING PROGRAM

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	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	939	940	940	
Jul 4	940	940	941	941	941	942	942	942	942	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	936	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	936	937	937	938	938	938	935	938
Jul 15	938	938	938	938	938	939	939	939	939	939	939	939	938	938	938	937	937	937	937	937	937	937	937	937	937	937	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	943	944	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	940	940	940	939	938	938	938	937	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	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	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	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	
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	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	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



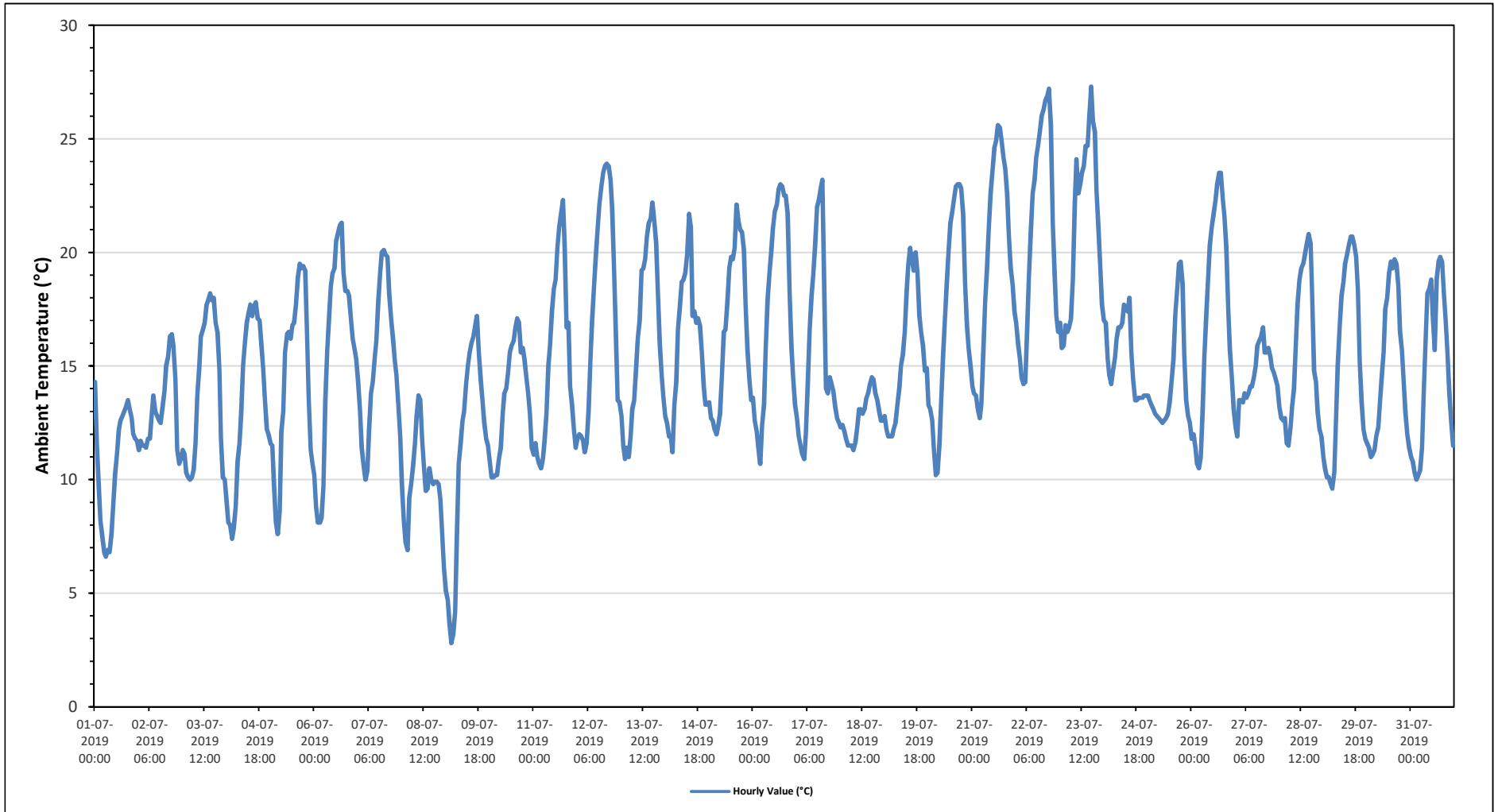
PEACE RIVER AREA MONITORING PROGRAM

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	11.3	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



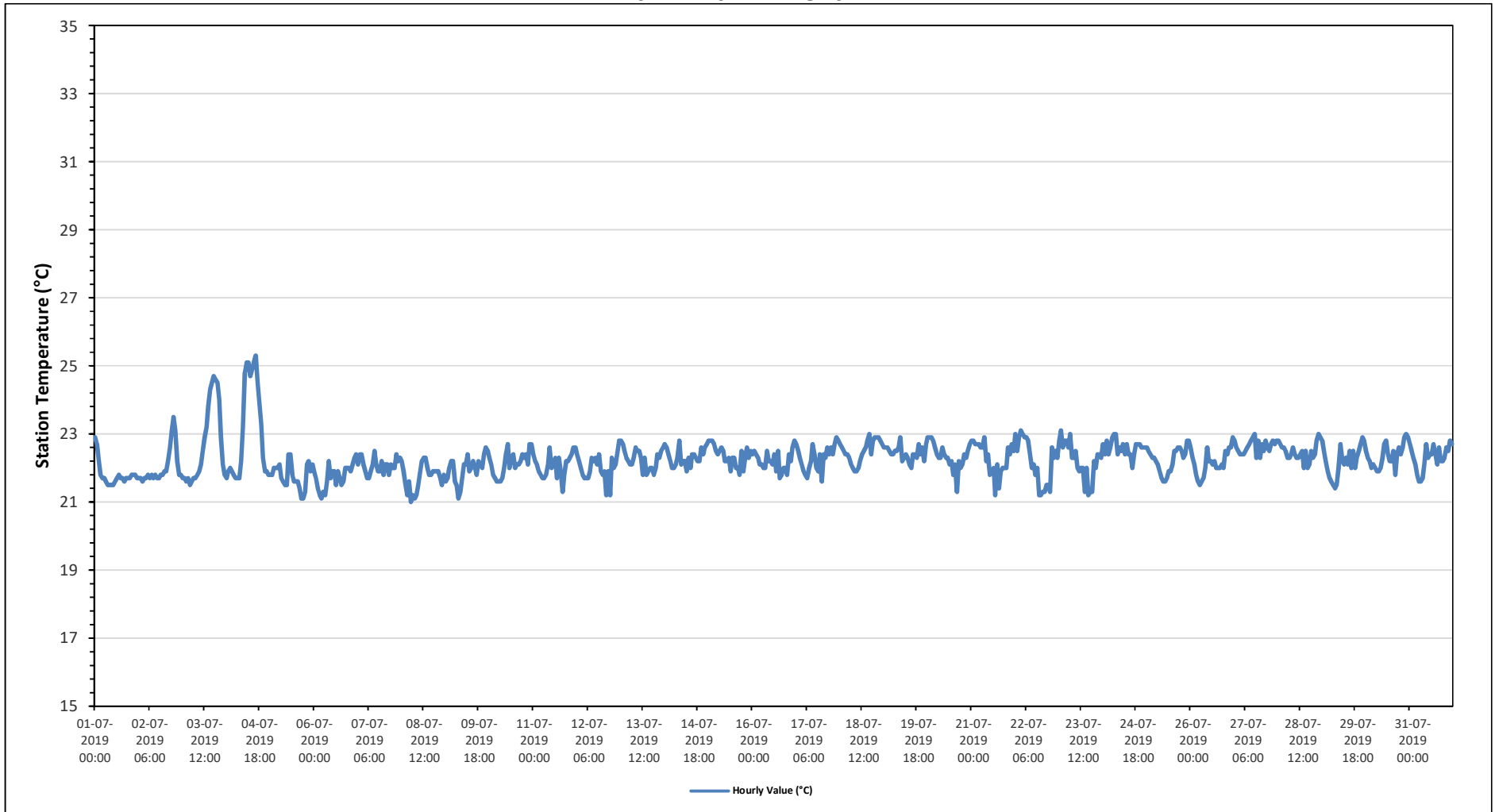
PEACE RIVER AREA MONITORING PROGRAM

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	21.5	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



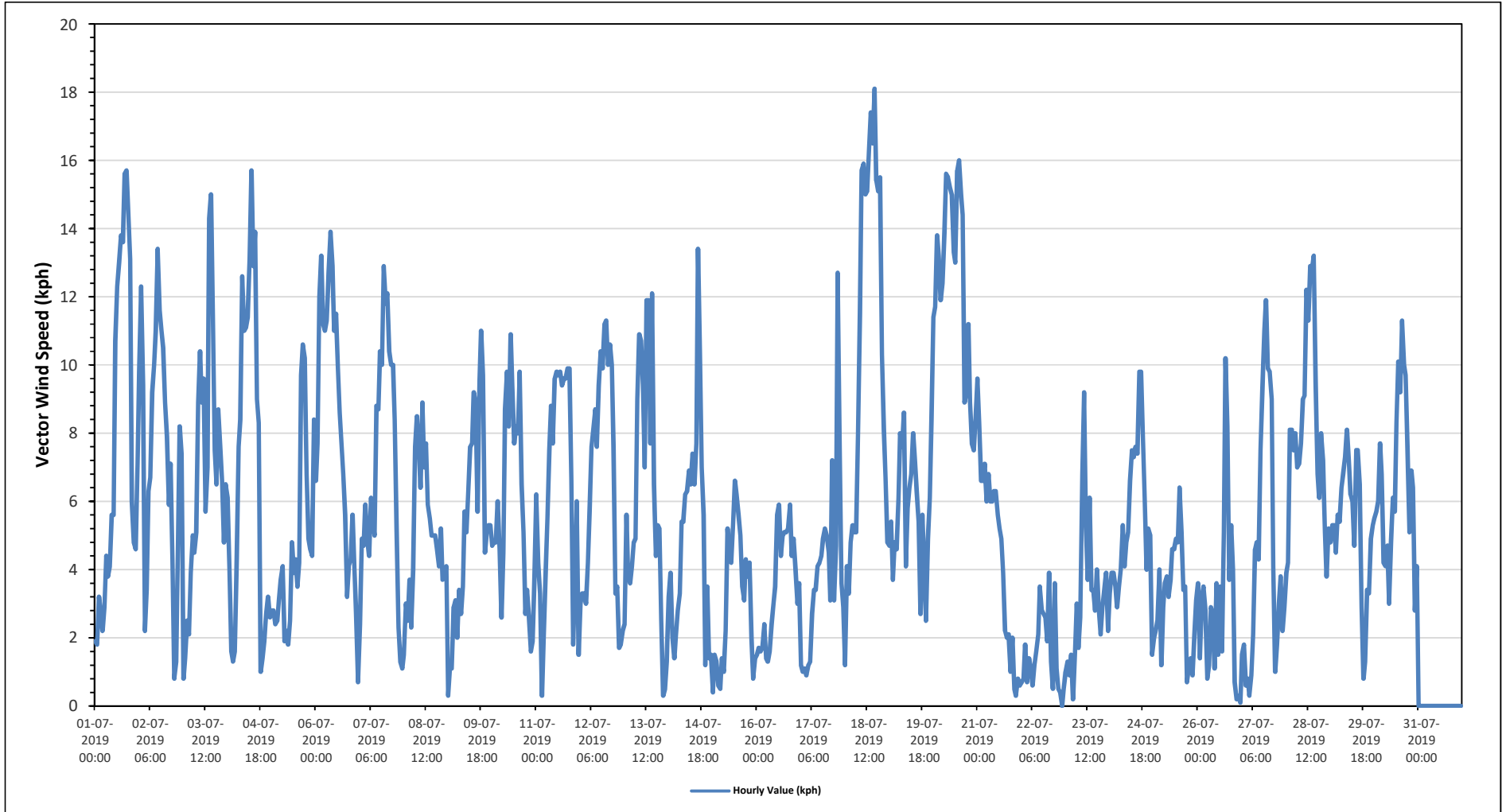
PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

Summary of Hourly Averages

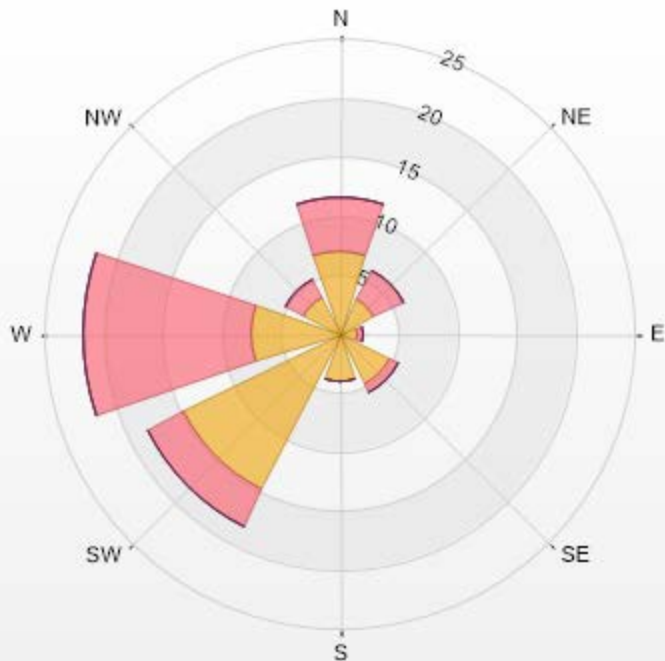
VECTOR WIND SPEED (VWS) in km/hr

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





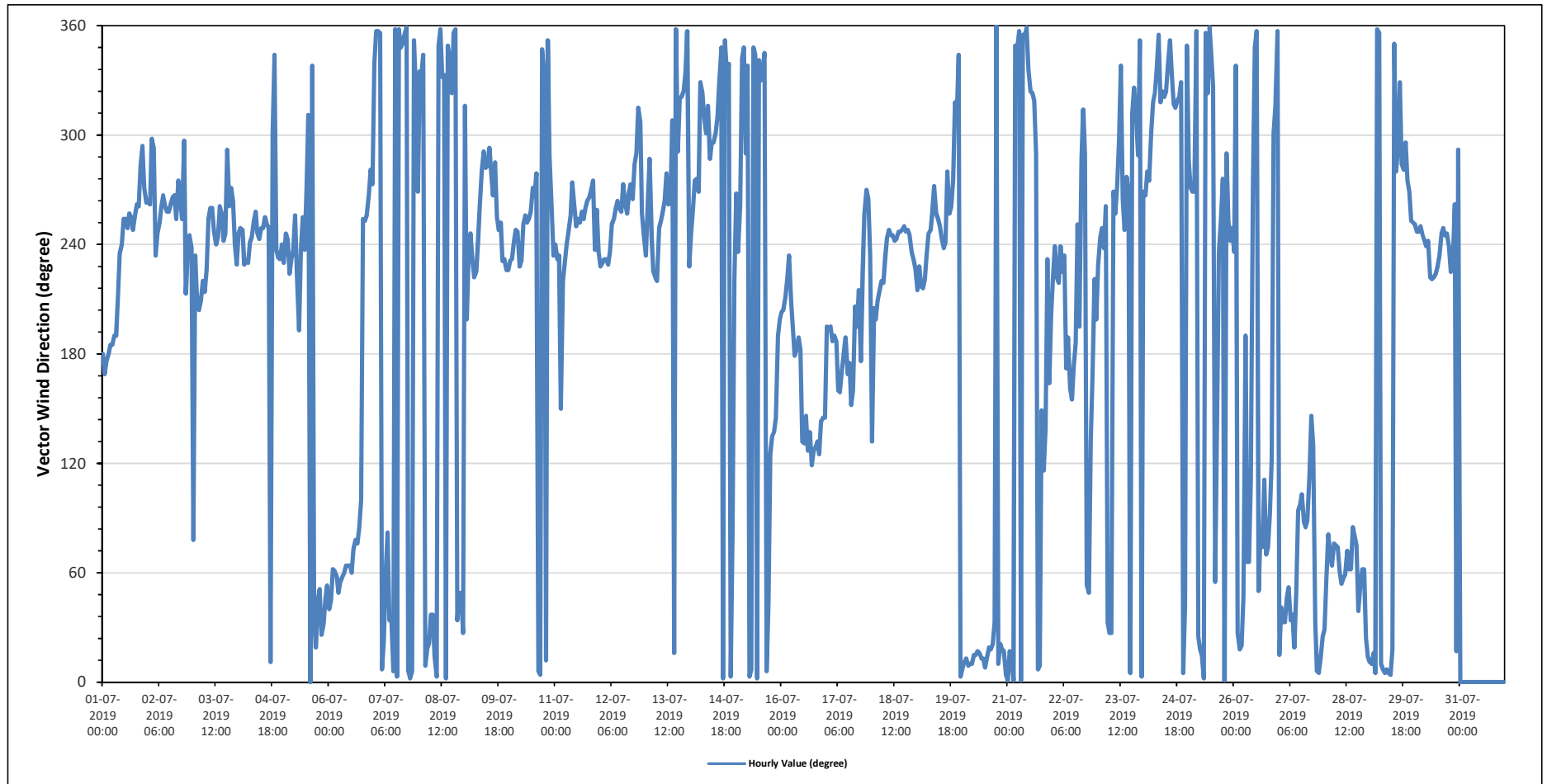
PEACE RIVER AREA MONITORING PROGRAM

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	NNW	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	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	312	NW																			
Jul 11	SW	SW	SSW	SW	SW	SW	WSW	WSW	SW	WSW	SW	SW	SW	WSW	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	WSW	W	WNW	N	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	W	WNW	W	WNW	WNW	W	WSW	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	SW	WSW	WSW	WSW	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	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

986b Station - July 2019

Summary of Hourly Instantaneous Maximums

SULPHUR DIOXIDE (SO₂) in ppb

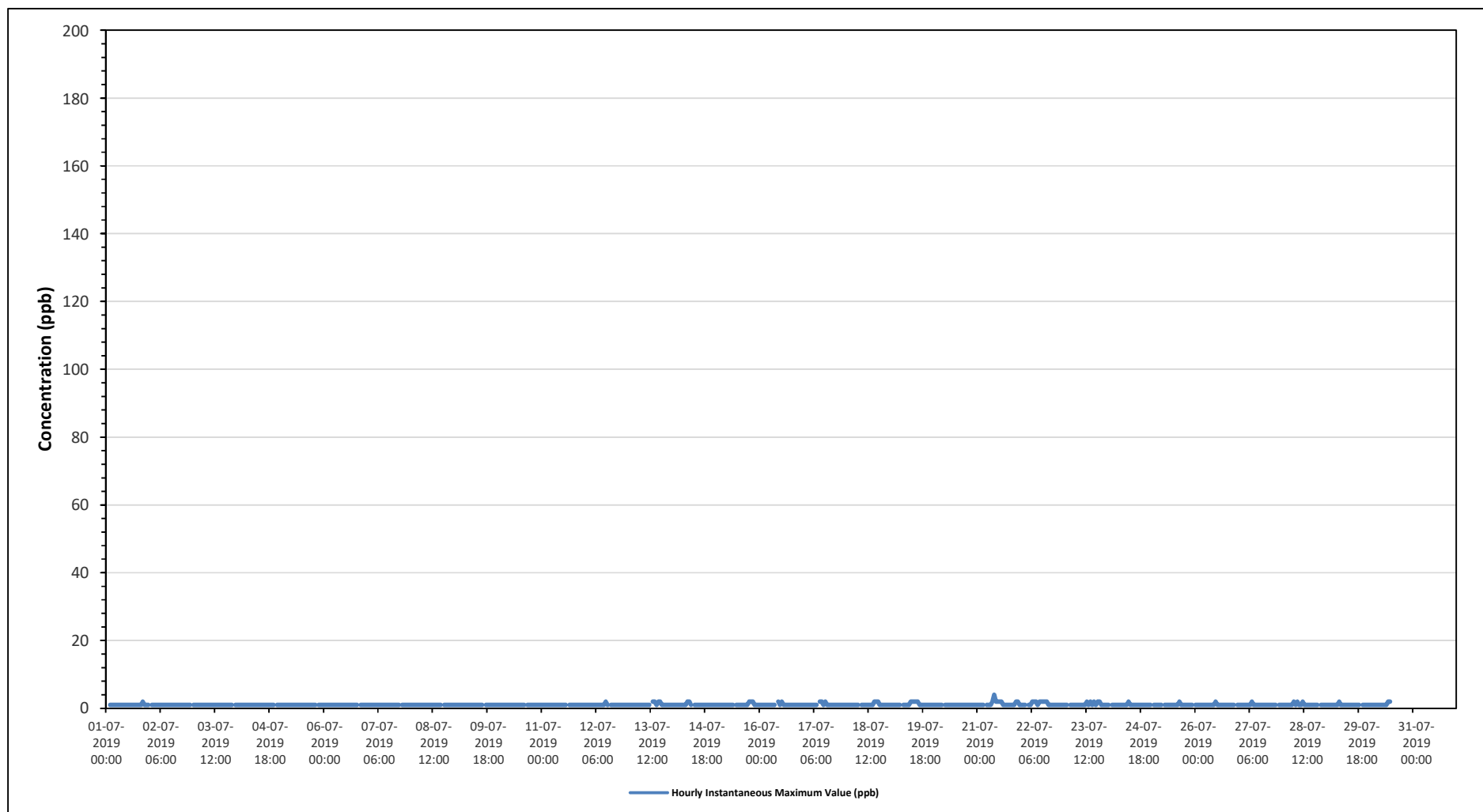
Maximum Hourly Value:	4	ppb	on July 21 at hour 9	Hours in Service:	744
Maximum Daily Value:	1.4	ppb	on July 21	Hours of Data:	676
Minimum Hourly Value:	1	ppb	on July 1 at hour 0	Hours of Missing Data:	35
Minimum Daily Value:	1.0	ppb	on July 2	Hours of Calibration:	33
Monthly Average:	1.1	ppb		Operational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

Day	Hourly Period Starting at (MST)																								Daily 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	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	2	1	S	1	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	S	2	2	2	1	2	2	1	1	1	1	1	1	1	2	1.2
Jul 14	1	1	1	1	1	1	1	2	2	2	S	1	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	2	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	2	4	2	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	2	1	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	2	1	2	1	1	2	1	1	1	1	1	1	1	1	1	S	1	1	1	1	2	1.1
Jul 29	1	1	1	1	1	1	2	1	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	N	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	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	2	1	1	
Dalurnal 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



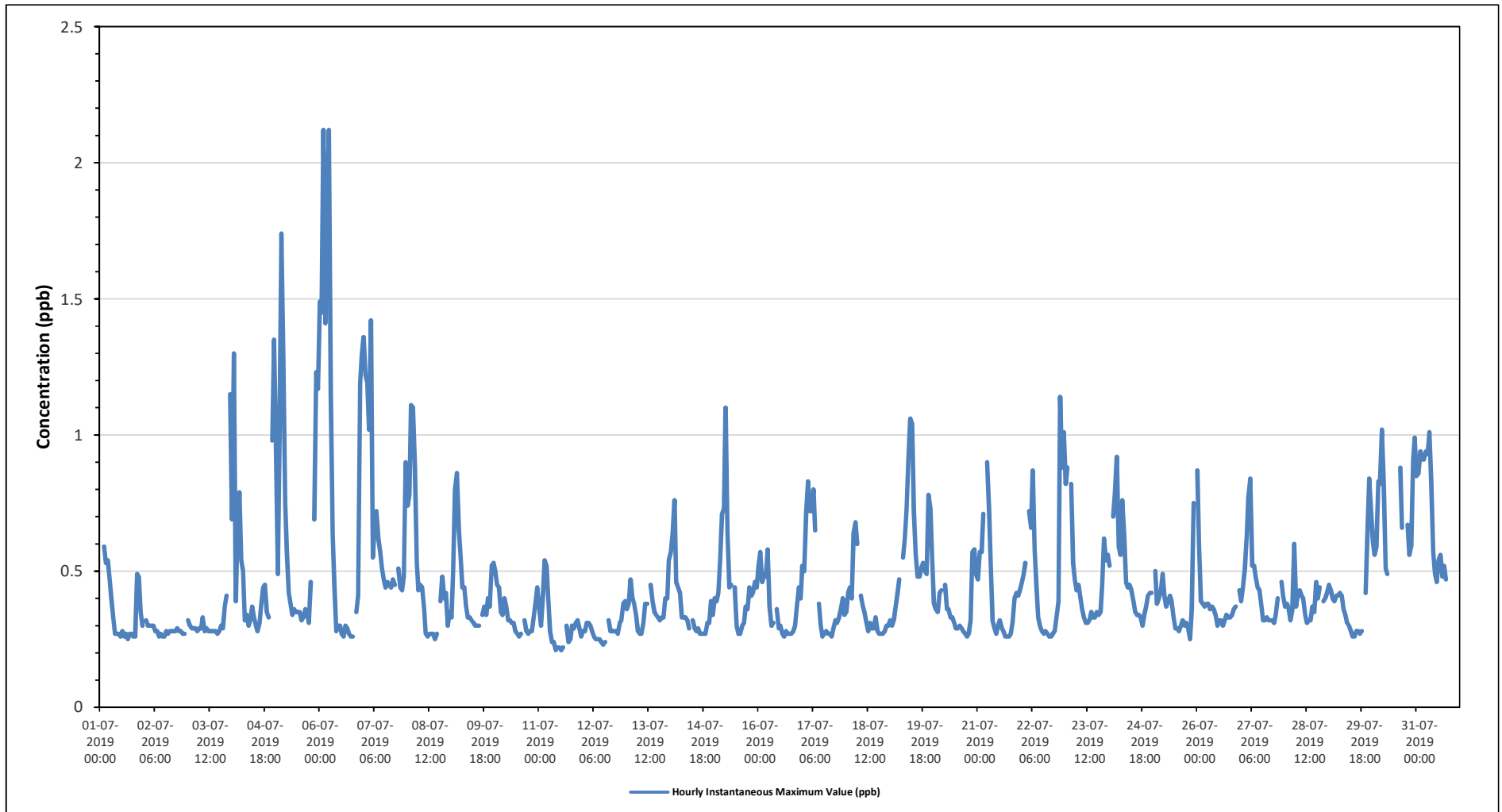
PEACE RIVER AREA MONITORING PROGRAM

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	0.25	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	0.28	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	0.26	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	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



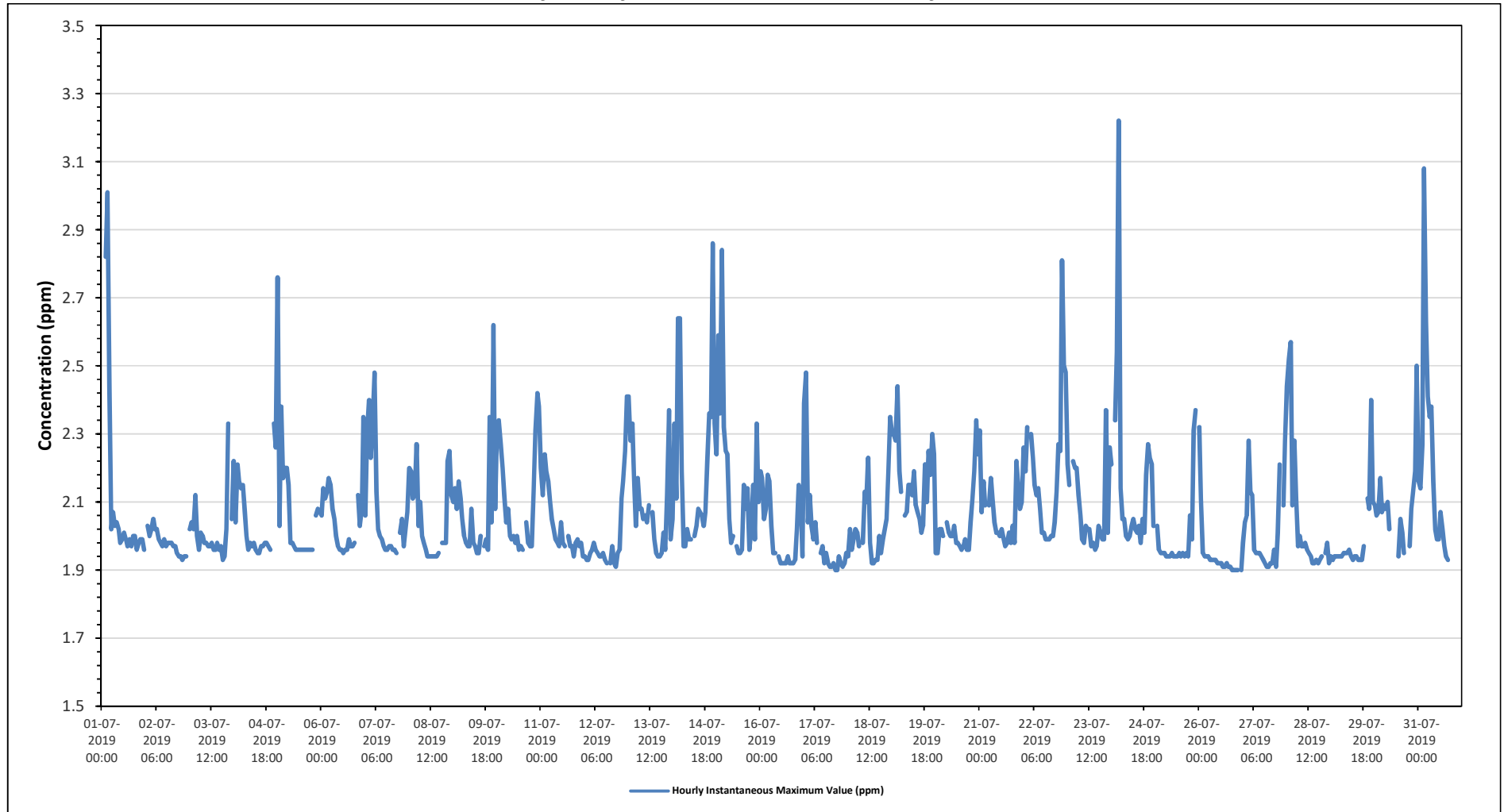
PEACE RIVER AREA MONITORING PROGRAM

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	1.98	2.13	2.10	2.23	1.98	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



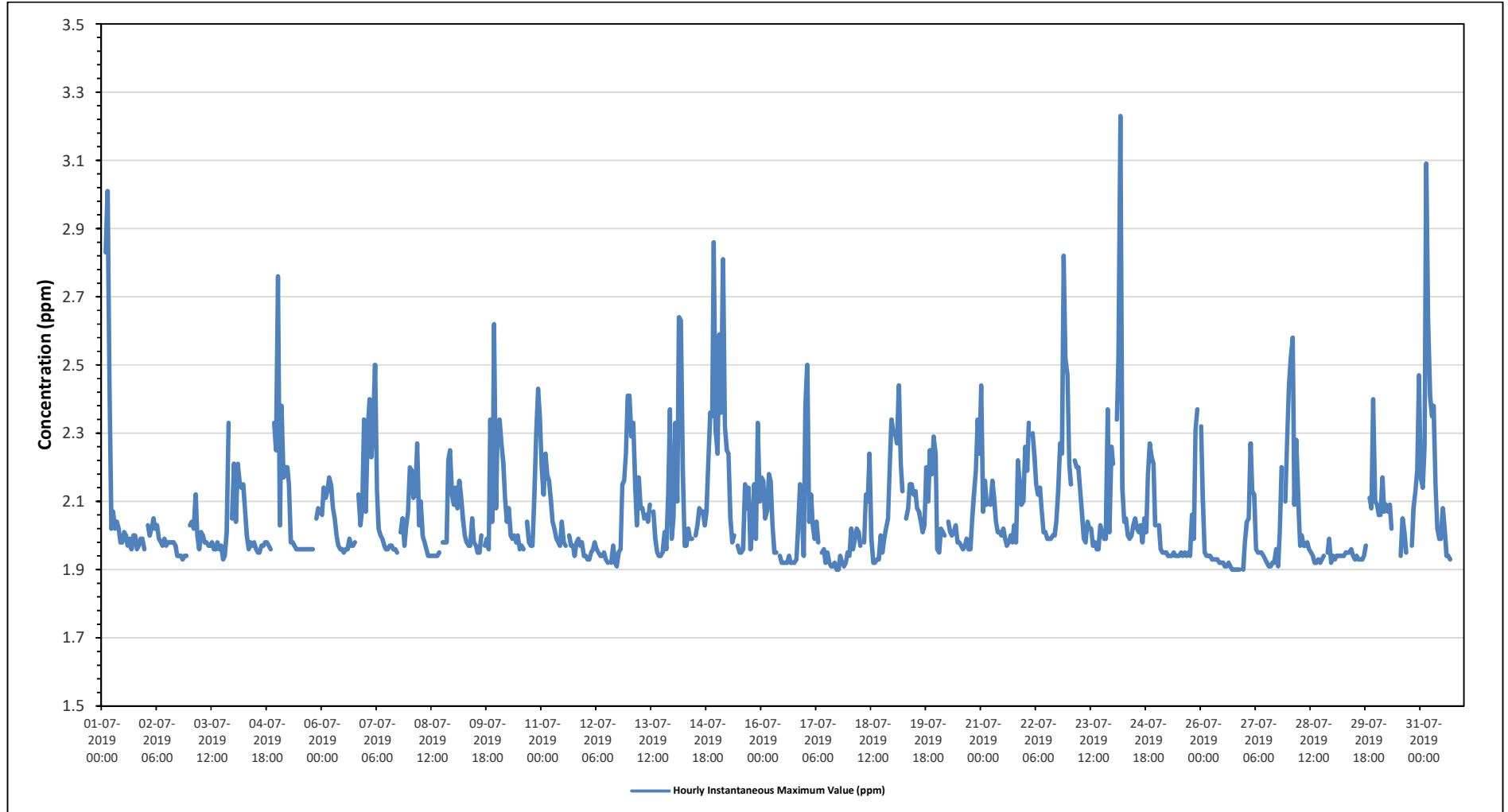
PEACE RIVER AREA MONITORING PROGRAM

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	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	1.92	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	2.07	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	Y	Y	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

986b Station - July 2019

Summary of Hourly Instantaneous Maximums

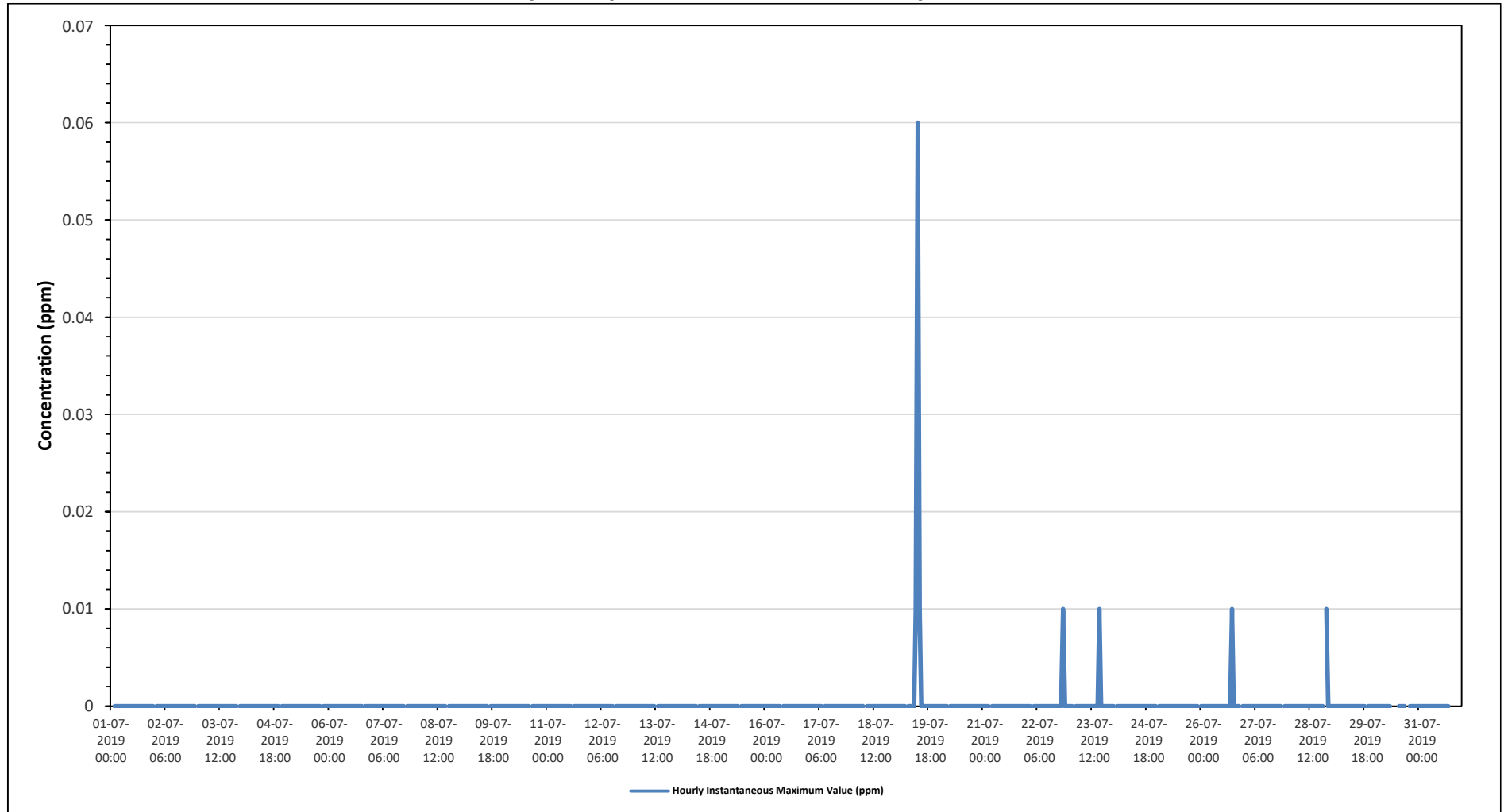
NON-METHANE HYDROCARBONS (NMHC) in ppm

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 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
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	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
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
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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	0.00
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
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	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	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	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	S	0.01	0.00	0.00	0.00	0.00	0.01
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	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
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	-
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	0.00	0.00
Diurnal Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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

986b Station - July 2019

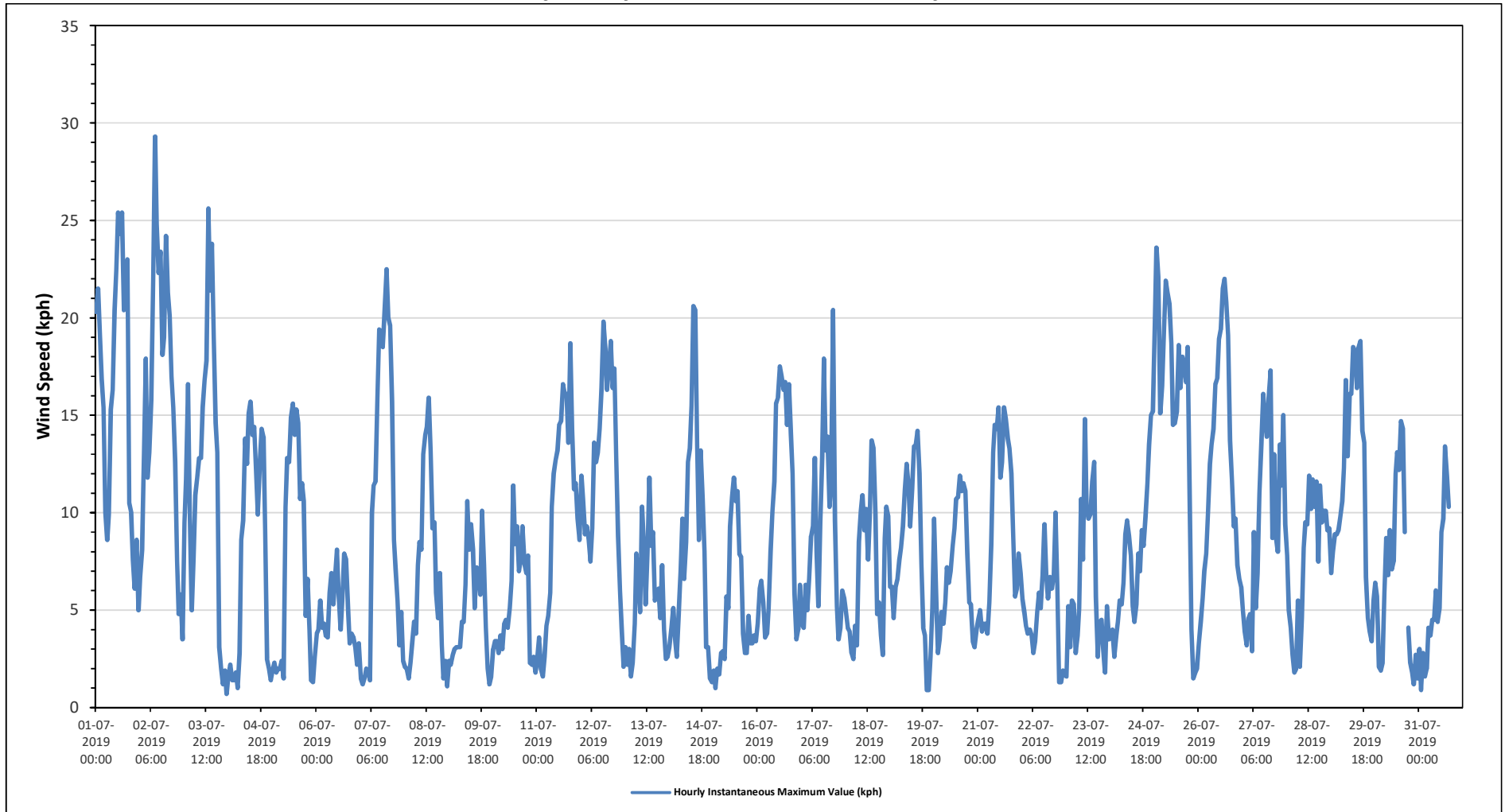
Summary of Hourly Instantaneous Maximums

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.																											

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



PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

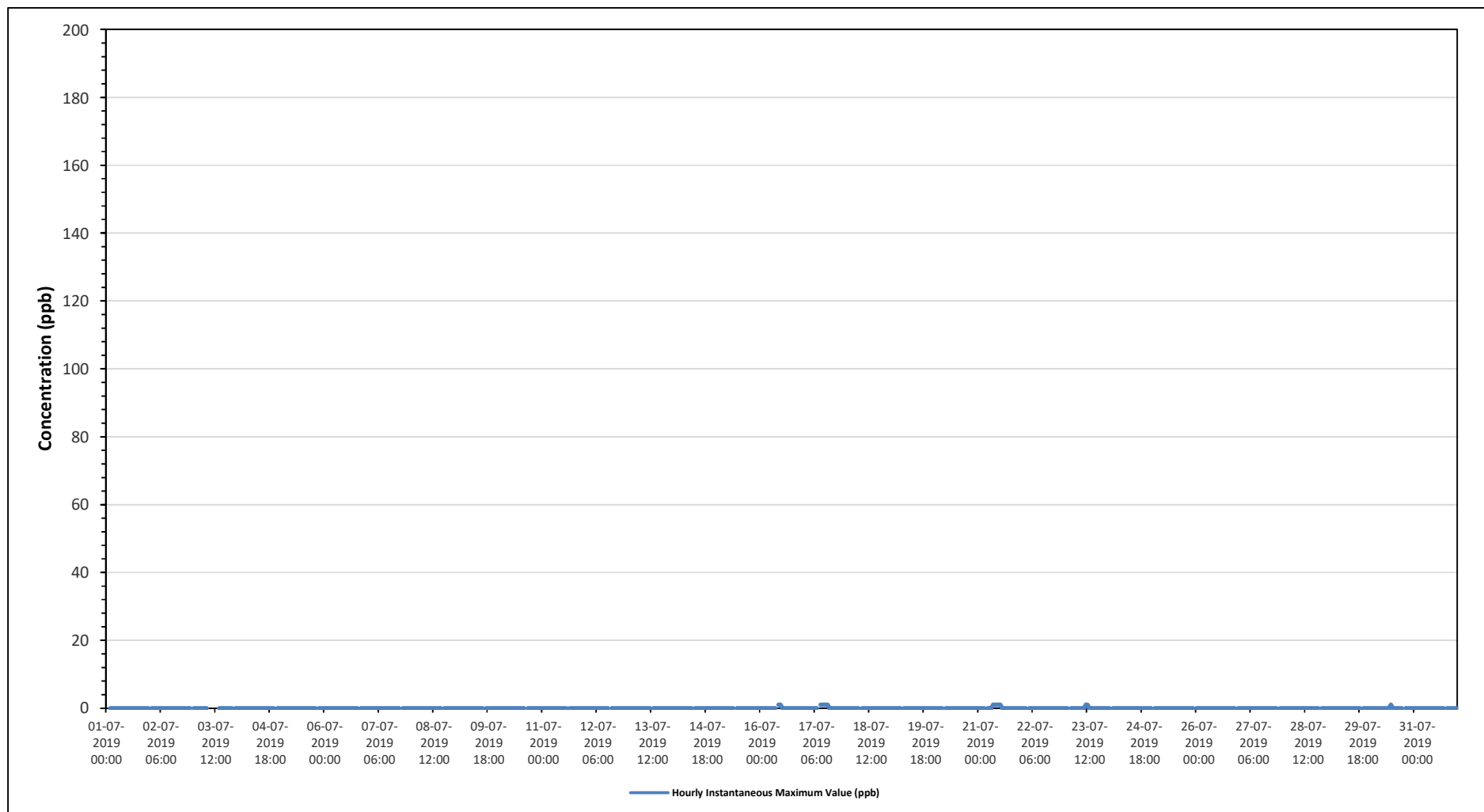
Summary of Hourly Instantaneous Maximums

SULPHUR DIOXIDE (SO₂) 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
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
Jul 3	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	1	0	0	0	0	0	0	S	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
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
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
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
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
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
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	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
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
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
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	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
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	0.1
Jul 17	0	0	0	0	0	0	0	S	S	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	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
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
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
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	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	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	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
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
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
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
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
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
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	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
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	0	
Dalurnal 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	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



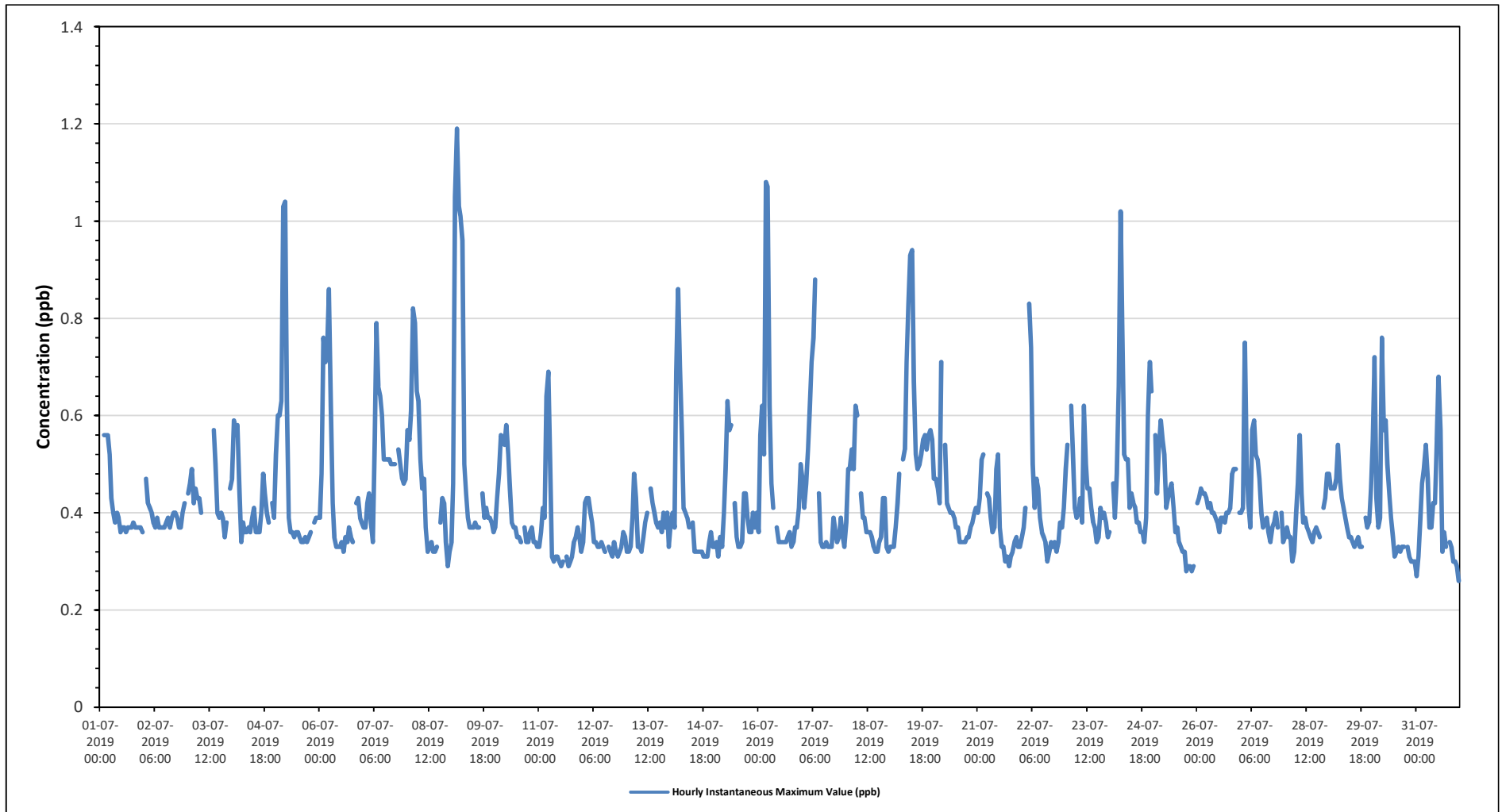
PEACE RIVER AREA MONITORING PROGRAM

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			
Diurnal 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



PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

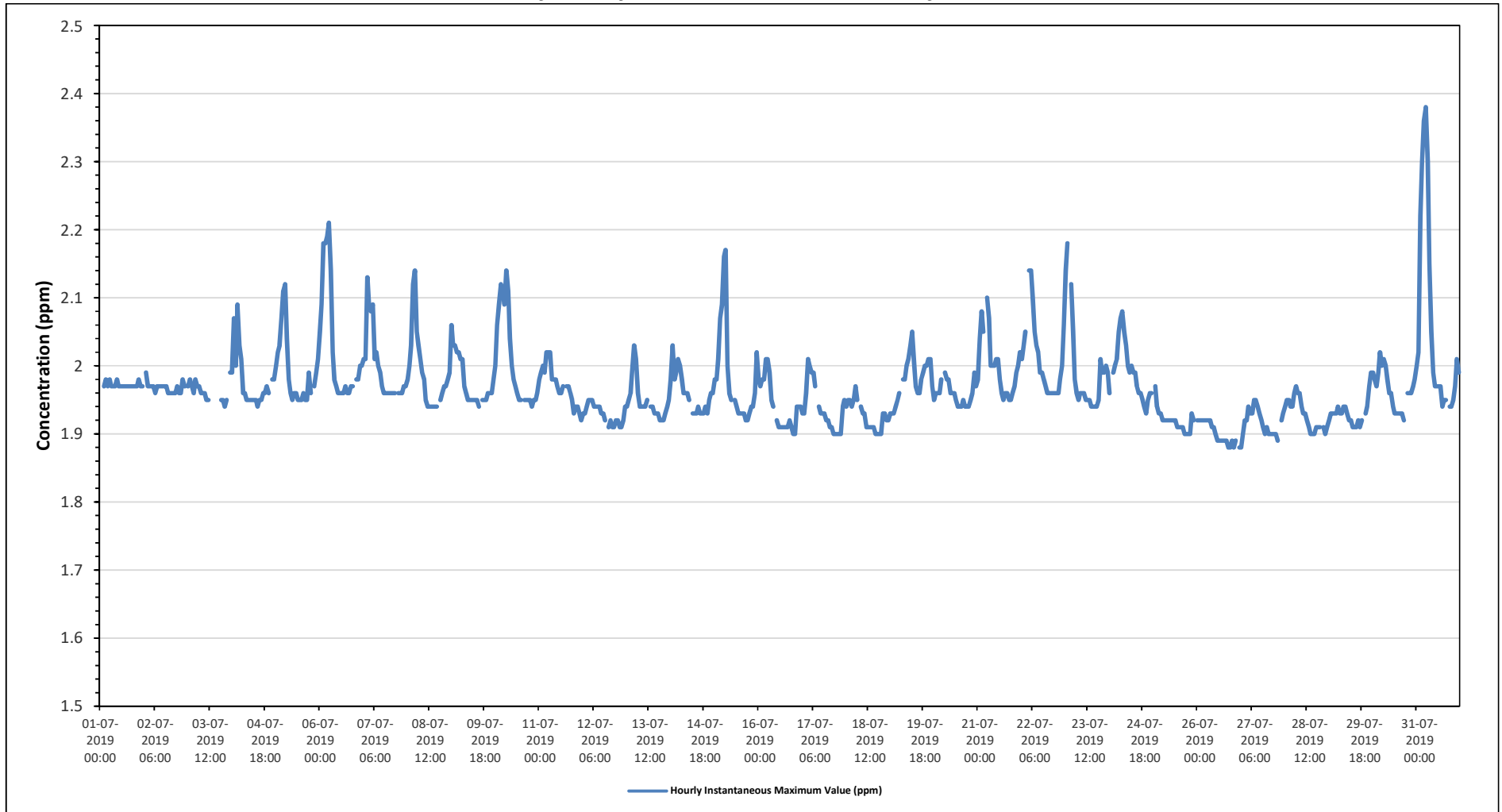
Summary of Hourly Instantaneous Maximums

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 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	1.97	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	1.98	1.97	1.97	1.97	1.97	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	1.99	1.96
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
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
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
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
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
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	S	S	1.95	1.95	1.95	1.96	1.96	1.96	1.98	1.94	2.06
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
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
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
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
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	1.93	1.94	1.93	1.93	1.94	1.93	1.95	1.96	1.96	1.93	2.03
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
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
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
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	1.93	1.93	1.92	1.92	1.92	1.90	1.97
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
Jul 20	1.95	1.96	1.96	1.96	1.98	S	1.99	1.98	1.98	1.96	1.96	1.95	1.94	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
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
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
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
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
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
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
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
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
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
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
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	1.94	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		
Dalurnal 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



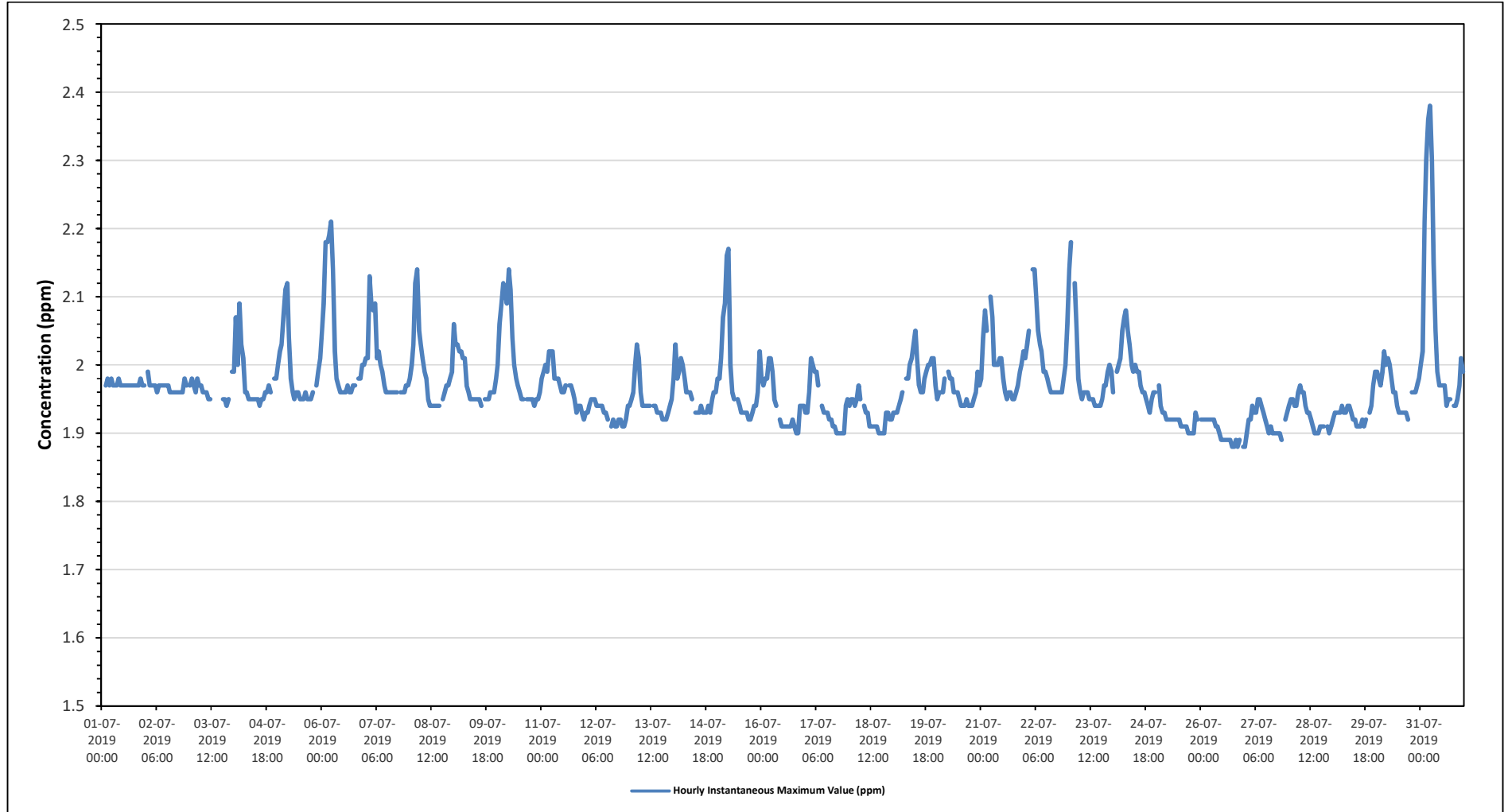
PEACE RIVER AREA MONITORING PROGRAM

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	1.98	1.97	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	1.98	1.97	S	1.99	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	1.93	1.94	1.93	1.95	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	1.93	1.92	1.92	1.93	1.94	1.94	1.96	2.02	1.92	2.17
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	1.95	1.96	1.96	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	1.90	1.91	1.91	1.91	S	1.91	1.90	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	1.94	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			
Dalurnal 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

842b Station - July 2019

Summary of Hourly Instantaneous Maximums

NON-METHANE HYDROCARBONS (NMHC) in ppm

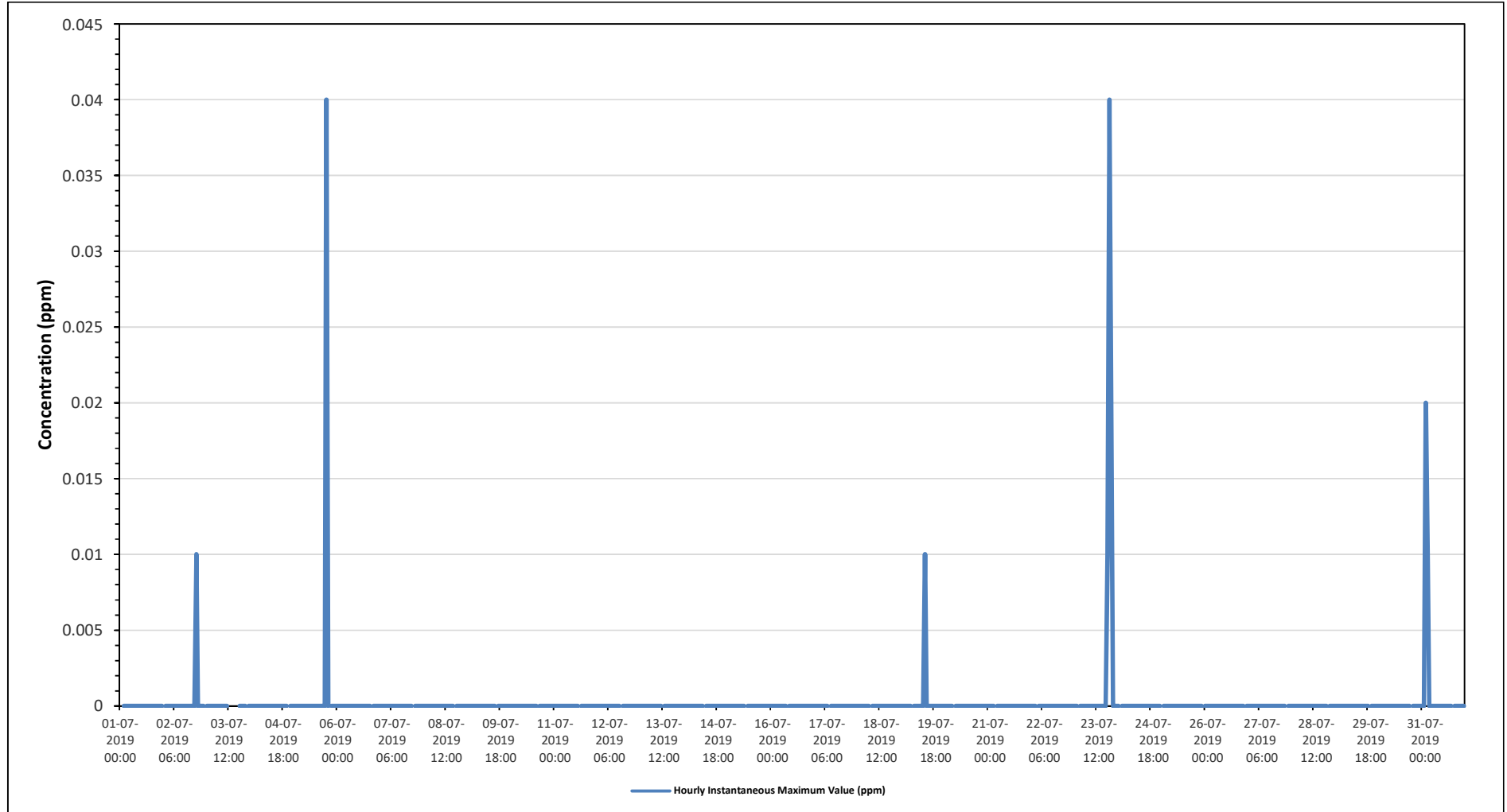
Maximum Hourly Value:	0.04 ppm	on July 5 at hour 18	Hours in Service:	744
Maximum Daily Value:	0.00 ppm	on July 23	Hours of Data:	705
Minimum Hourly Value:	0.00 ppm	on July 1 at hour 0	Hours of Missing Data:	0
Minimum Daily Value:	0.00 ppm	on July 1	Hours of Calibration:	39
Monthly Average:	0.00 ppm		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	0.00	S	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	C	C	C	C	C	C	0.00	0.00	0.00	0.00	0.00	S	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	0.00	0.04
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	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 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	0.00	0.01
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	0.00	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	0.00	S	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	0.00	S	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	0.00	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	0.00	0.00	0.00
Diurnal Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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



PEACE RIVER AREA MONITORING PROGRAM

842b Station - July 2019

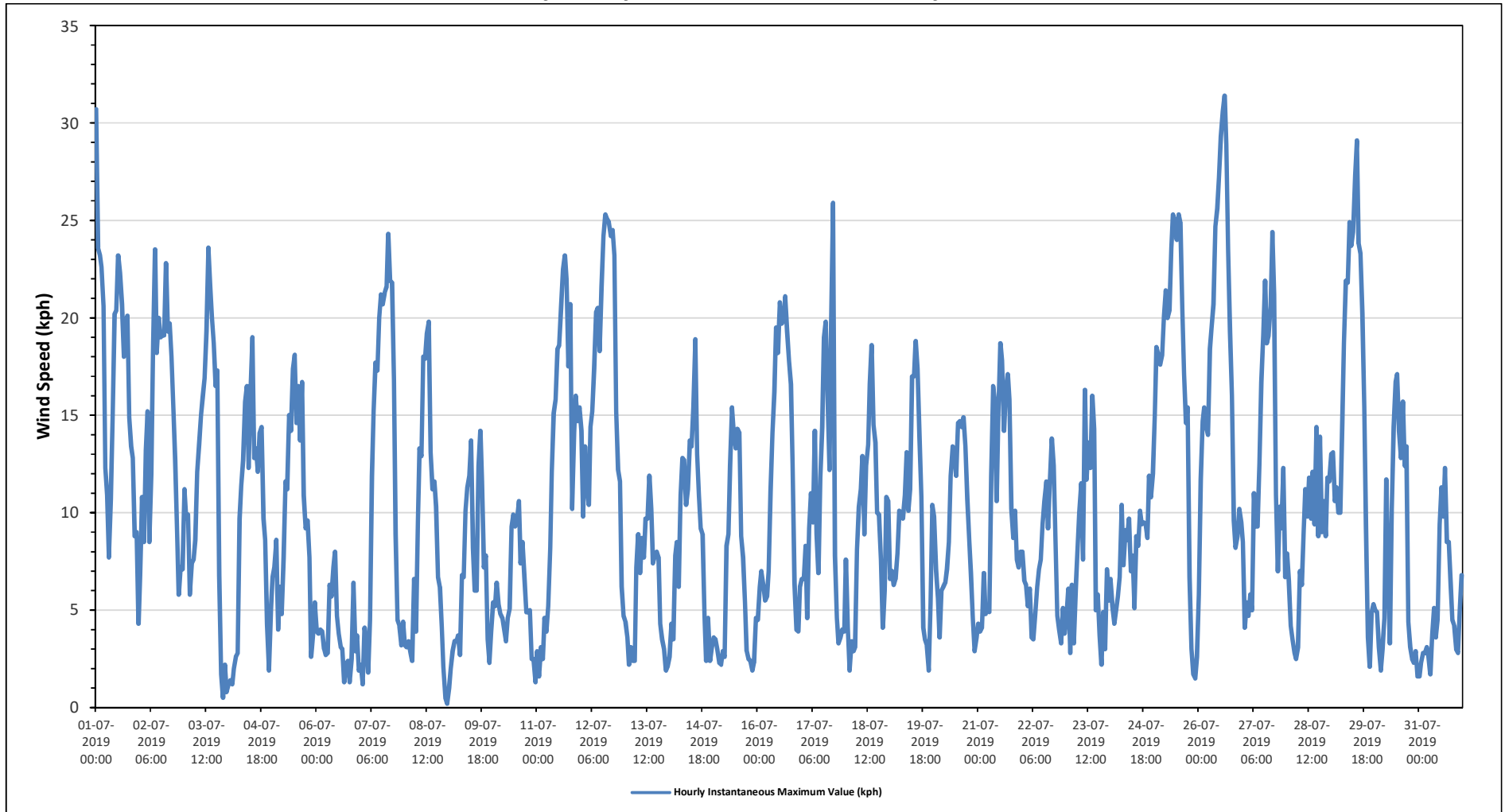
Summary of Hourly Instantaneous Maximums

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			
Diurnal 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.																											

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

Reno Station - July 2019

Summary of Hourly Instantaneous Maximums

SULPHUR DIOXIDE (SO₂) in ppb

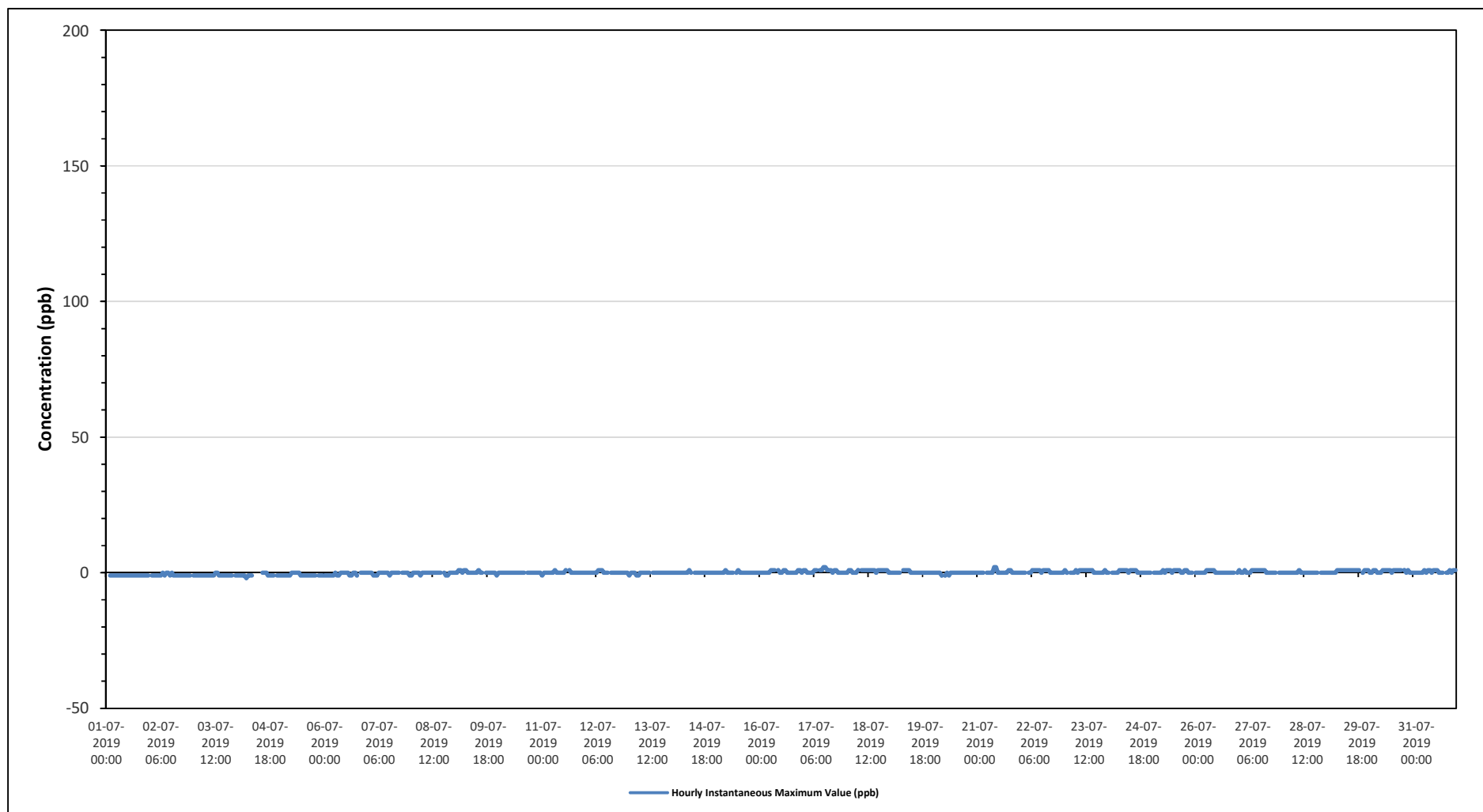
Maximum Hourly Value:	2	ppb	on July 17 at hour 11	Hours in Service:	744
Maximum Daily Value:	0.7	ppb	on July 18	Hours of Data:	706
Minimum Hourly Value:	-2	ppb	on July 4 at hour 5	Hours of Missing Data:	0
Minimum Daily Value:	-1.0	ppb	on July 1	Hours of Calibration:	38
Monthly Average:	0.0	ppb		Operational 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	S	-1	-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	S	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	S	0	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	S	0	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	1		
Dalurnal 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



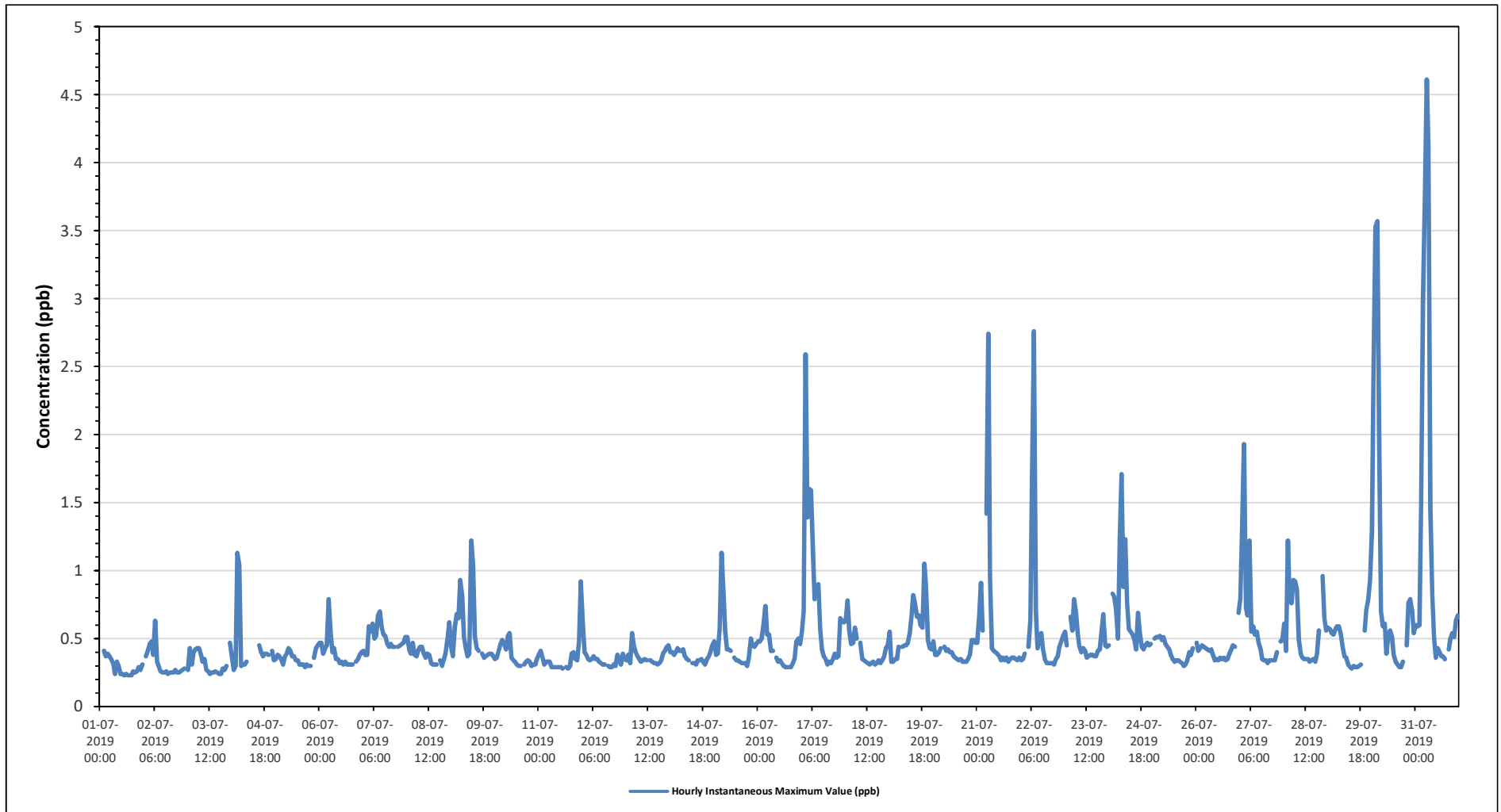
PEACE RIVER AREA MONITORING PROGRAM

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	0.28	S	0.3	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											
Diurnal 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



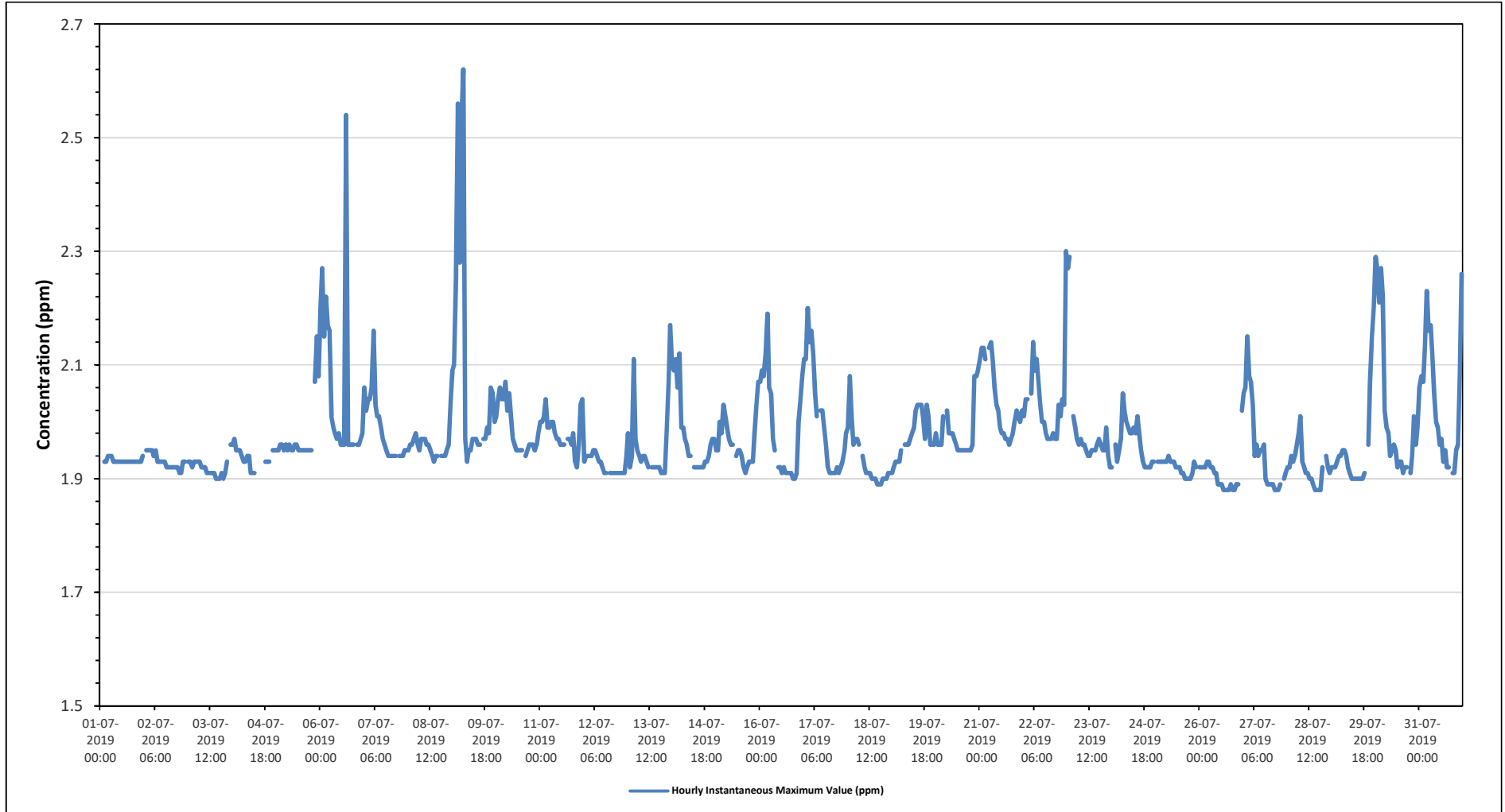
PEACE RIVER AREA MONITORING PROGRAM

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	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	S	1.94	1.94	1.94	1.95	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	1.88	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	1.91	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



PEACE RIVER AREA MONITORING PROGRAM

Reno Station - July 2019

Summary of Hourly Instantaneous Maximums

METHANE (CH₄) in ppm

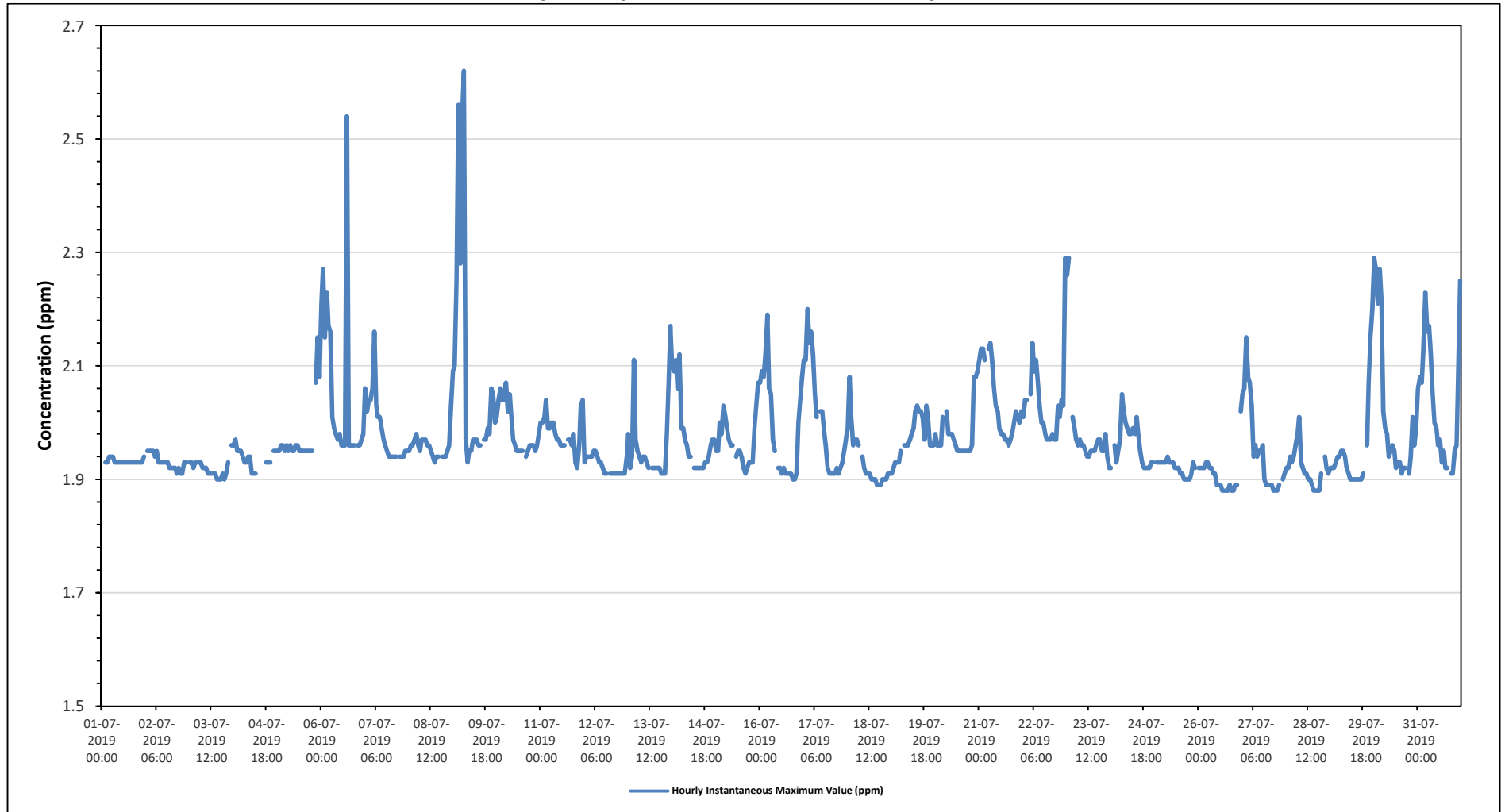
Maximum Hourly Value:	2.62 ppm	on July 9 at hour 2.62	Hours in Service:	744
Maximum Daily Value:	2.09 ppm	on July 9	Hours of Data:	706
Minimum Hourly Value:	1.88 ppm	on July 26 at hour 13	Hours of Missing Data:	0
Minimum Daily Value:	1.91 ppm	on July 26	Hours of Calibration:	38
Monthly Average:	1.97 ppm		Operational Uptime:	100.0

Day	Hourly Period Starting at (MST)																							Daily 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	1.95	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	1.96	1.95	1.96	1.95	1.96	1.95	1.96	1.96	1.96	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	1.96	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	1.94	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	1.94	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	1.91	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	1.91	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				
Dalurnal 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

Reno Station - July 2019

Summary of Hourly Instantaneous Maximums

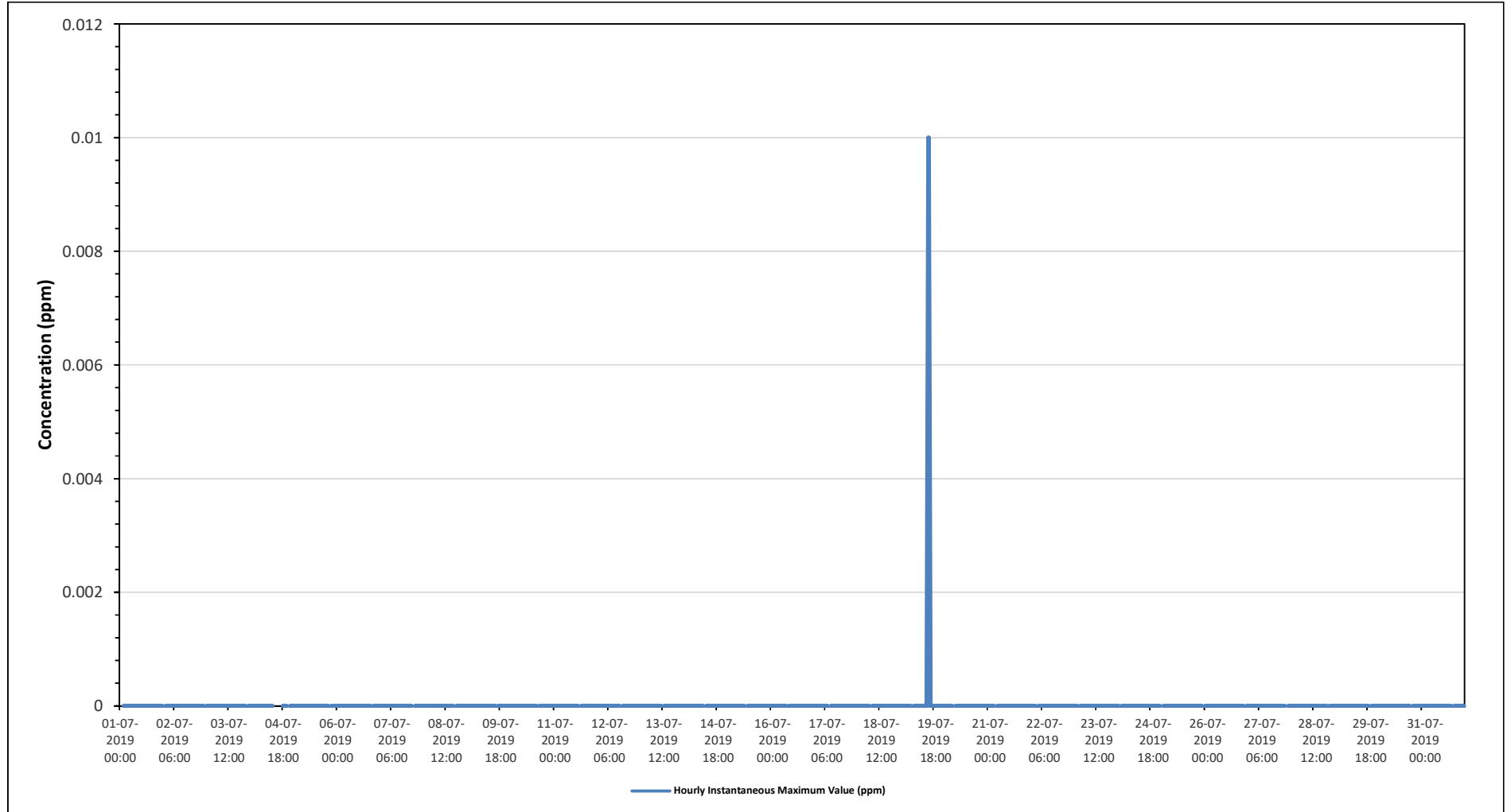
NON-METHANE HYDROCARBONS (NMHC) in ppm

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
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	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
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
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	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
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
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
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	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
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
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
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
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
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
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
Jul 17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	S	0.00	0.00	0.00	0.00	0.00	0.00	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
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	0.01	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
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
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
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
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
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	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
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
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	S	S	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	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
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
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	0.00	0.00
Diurnal Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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



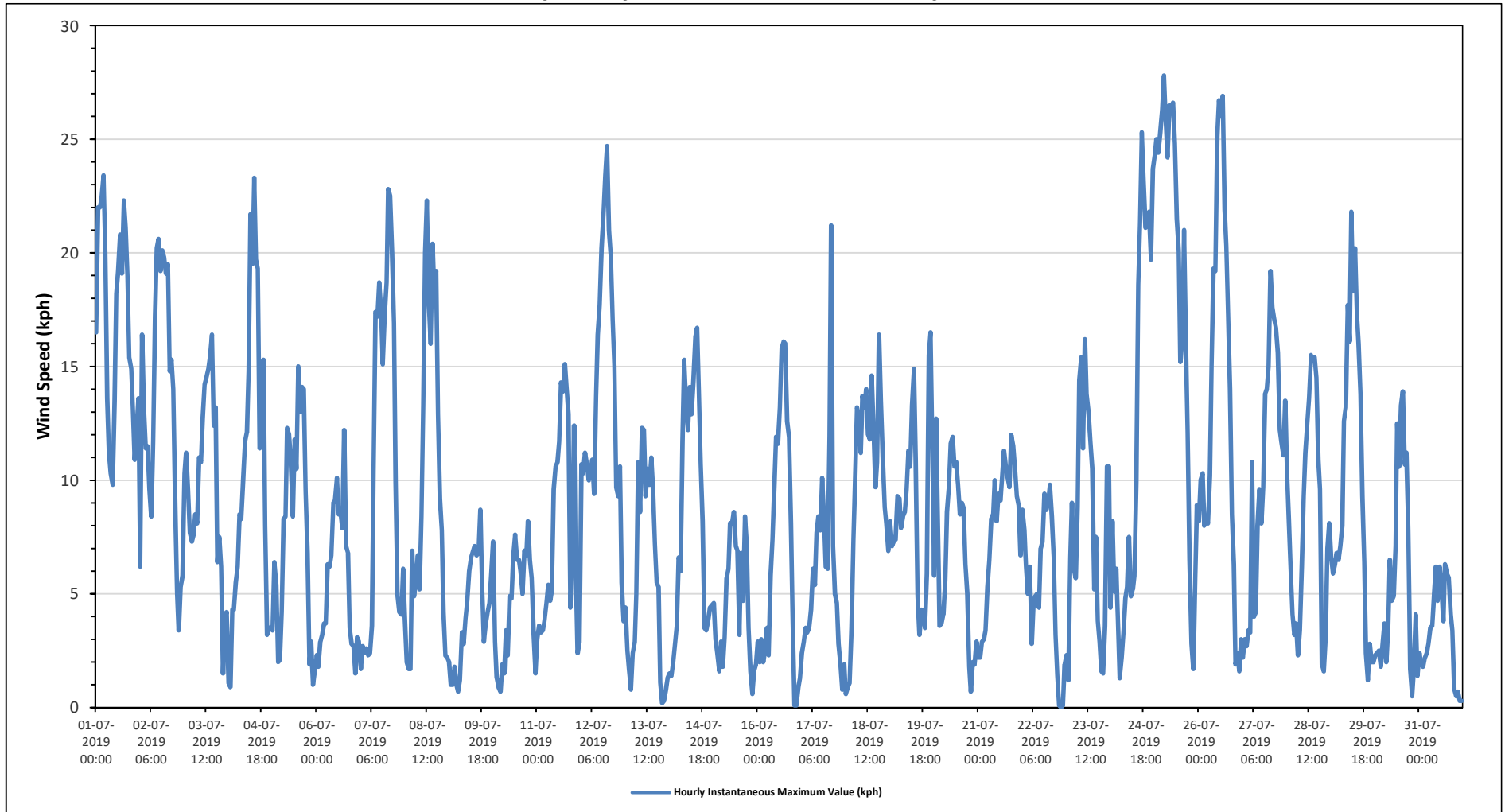
PEACE RIVER AREA MONITORING PROGRAM

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:

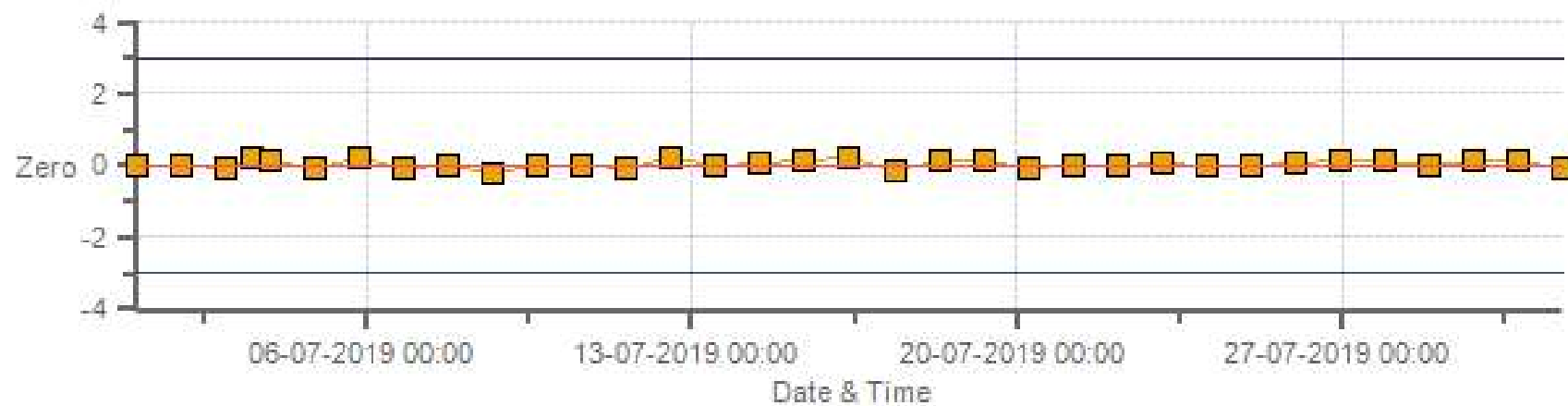
Maxxam Analytics

Data Validation and Report:

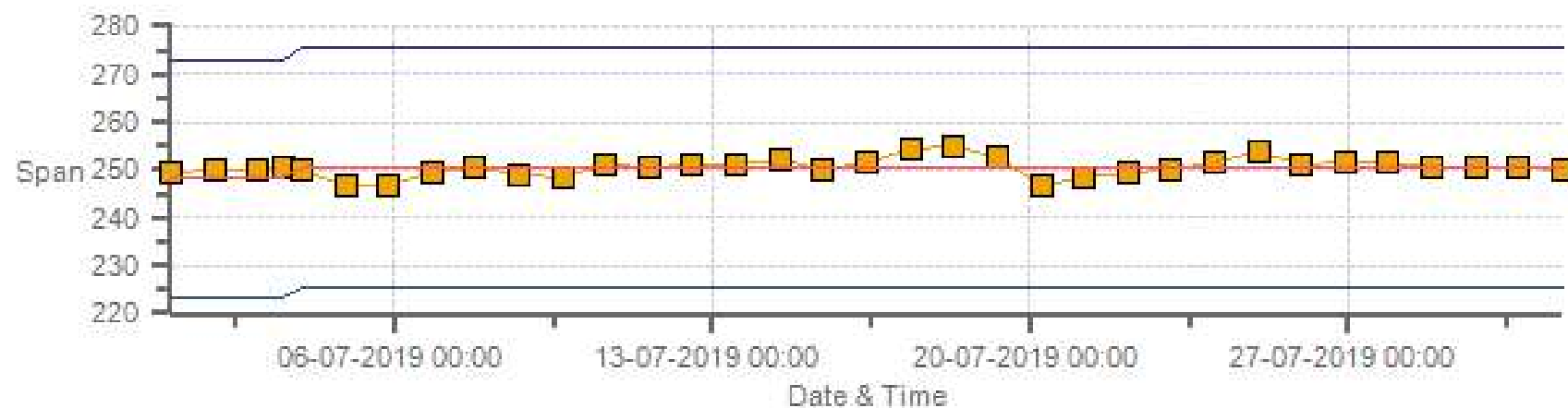
Maxxam Analytics

August 9, 2019

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

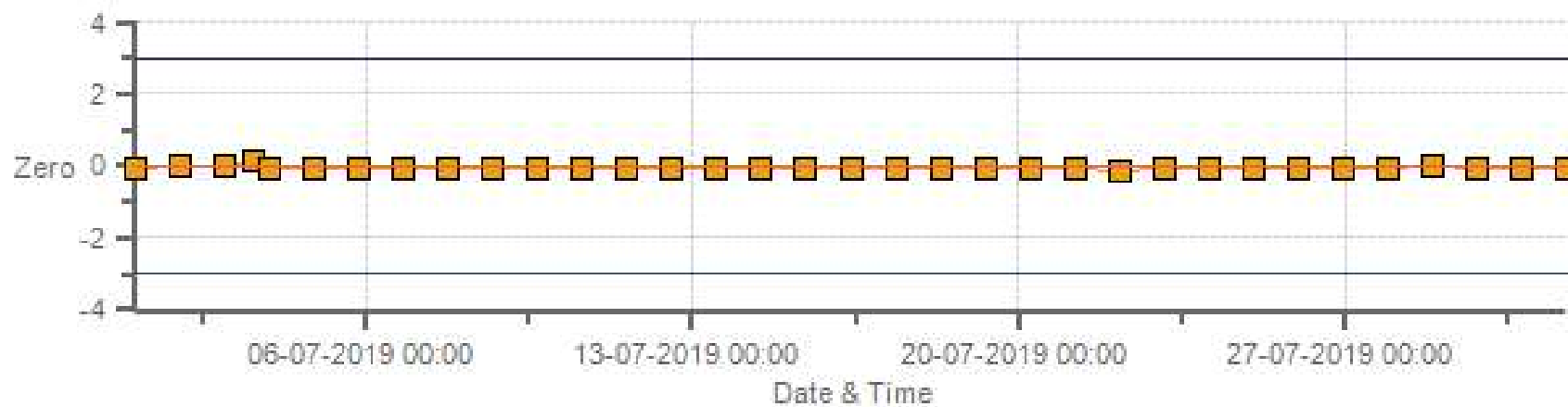
SO₂ [ppb] Calibration: PRAMP 842 Monthly: 07-2019 Type: Zero

Zero Zero Ref Zero Low Zero High

SO₂ [ppb] Calibration: PRAMP 842 Monthly: 07-2019 Type: Span

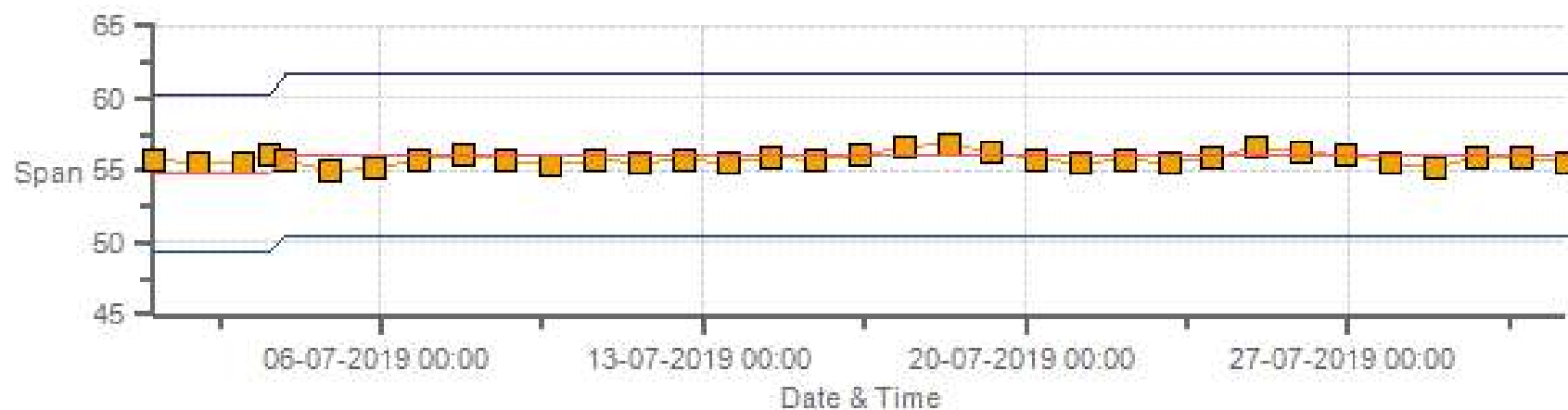
Span Span Ref Span Low Span High

TRS [ppb] Calibration: PRAMP 842 Monthly: 07-2019 Type: Zero



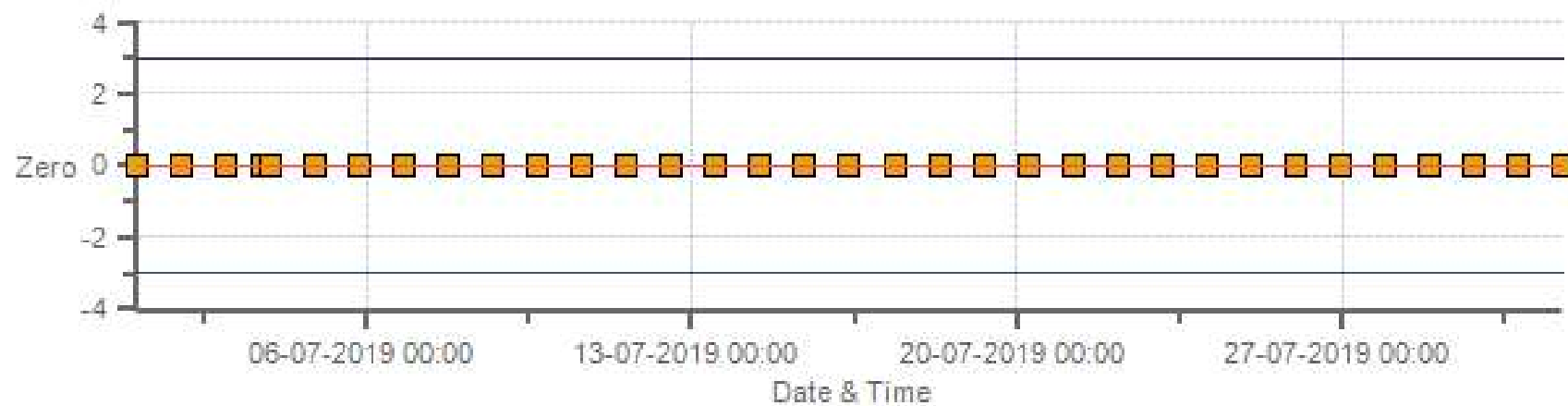
Zero Zero Ref Zero Low Zero High

TRS [ppb] Calibration: PRAMP 842 Monthly: 07-2019 Type: Span



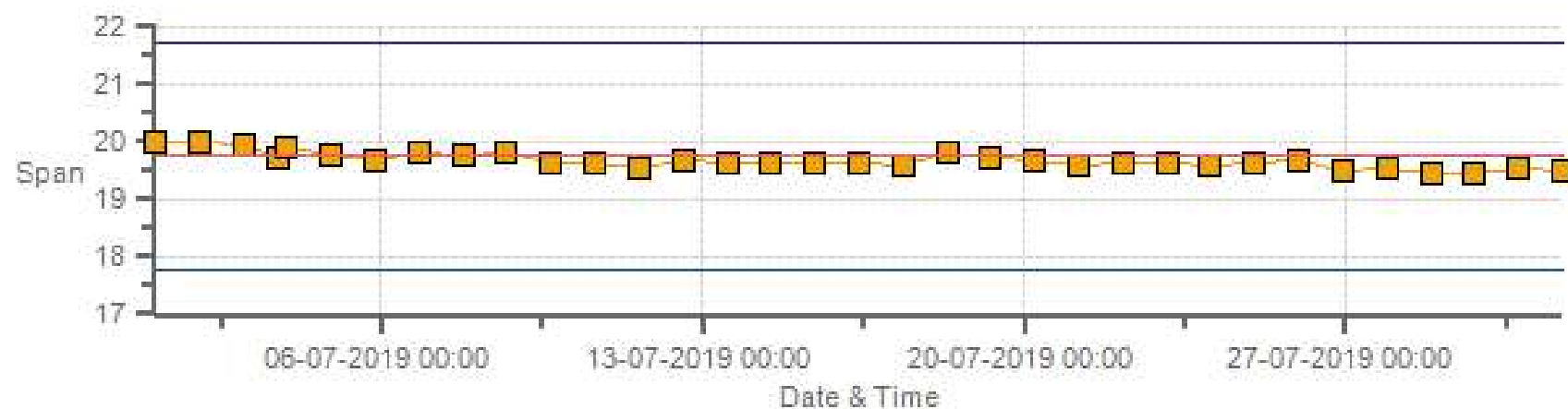
Span SpanRef Span Low Span High

THC [ppm] Calibration: PRAMP 842 Monthly: 07-2019 Type: Zero



Zero Zero Ref Zero Low Zero High

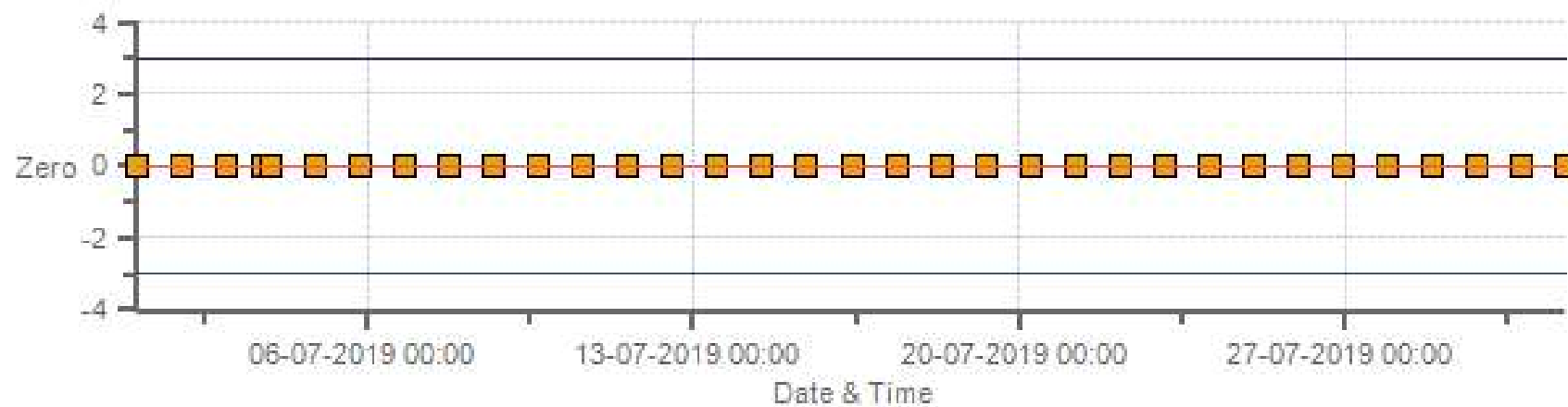
THC [ppm] Calibration: PRAMP 842 Monthly: 07-2019 Type: Span



Span SpanRef Span Low Span High

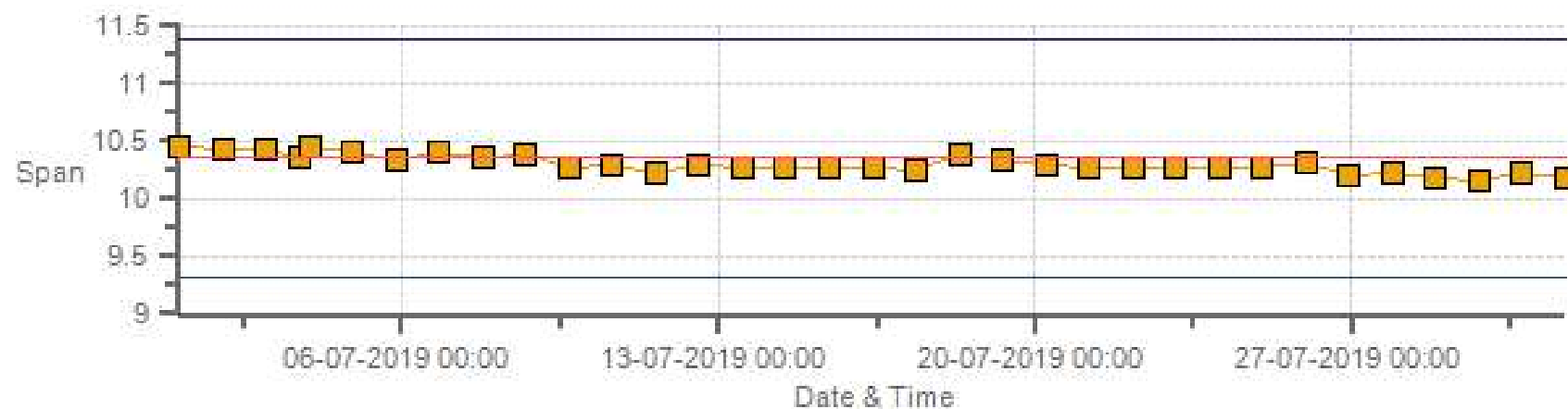


NMHC [ppm] Calibration: PRAMP 842 Monthly: 07-2019 Type: Zero



Zero Zero Ref Zero Low Zero High

NMHC [ppm] Calibration: PRAMP 842 Monthly: 07-2019 Type: Span



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	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5998	45.20	5998	0.00	0	0	1.007	1.000
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:

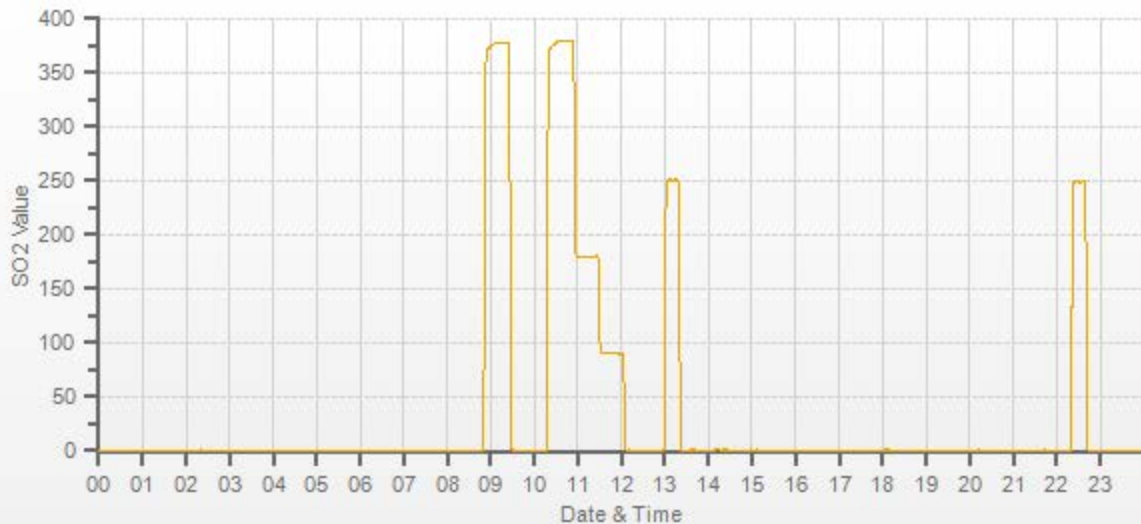
	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	0.0%

COMMENTS:

Monthly Calibration passed.

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

PRAMP Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



CAL-PRAMP-201907-01561



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	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7487	57.21	7487	0.00	-0.07	0	0.993	1.000
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:

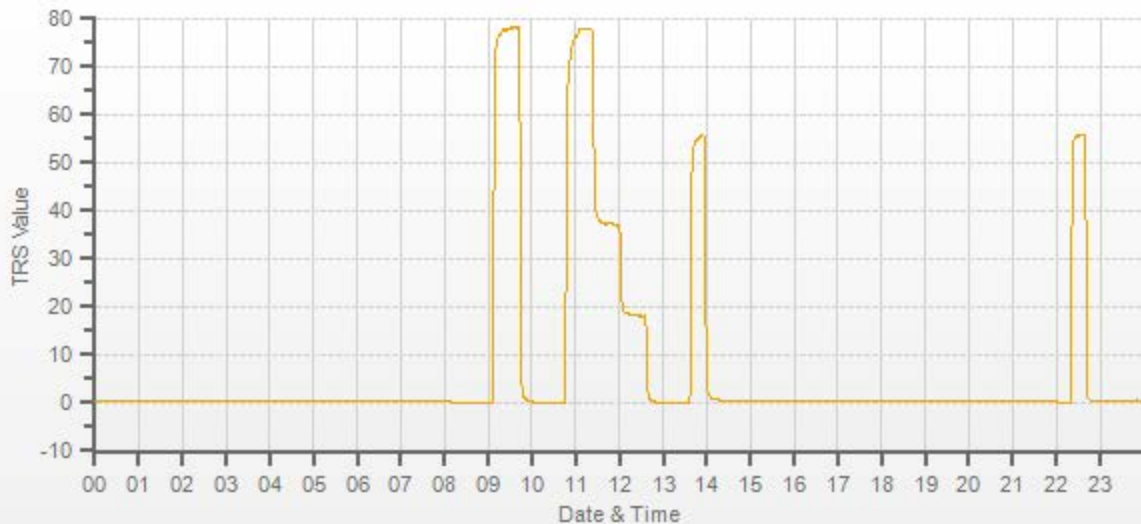
	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.002	-0.4%

COMMENTS:

Monthly Calibration passed.

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

PRAMP Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



CAL-PRAMP-201907-01561



Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:				ANALYZER:			
DATE:	03-Jul-2019	PREVIOUS CALIBRATION DATE:	11-Jun-2019	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	PRAMP	TEMPERATURE (°C):	23.2		Thermo 55i	1505664392	1251
LOCATION:	842b	BAROMETRIC (mBar):	942	PARAMETER:	CH4	NMHC	THC
PURPOSE:	Routine	START TIME (MST):	12:24	RANGE (ppm):	20	20	40
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	18:11	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 ₃ H 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 (CH ₄ /NMHC)	HIGH	MID	LOW	CH ₄ EQUIVILANCE	
TARGET	14	7	3.5	C ₃ H ₈ as CH ₄	566.5
RANGE	12 - 16	6 - 8	2 - 4	THC as CH ₄	1161.5

EXPECTED (REFERENCE) VALUE:

INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	9.41	10.36	19.77		9.41	10.36	19.77

CALIBRATION:

FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC
3146	70.45	3146	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.994	0.999	0.997	0.999	1.000	1.000
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

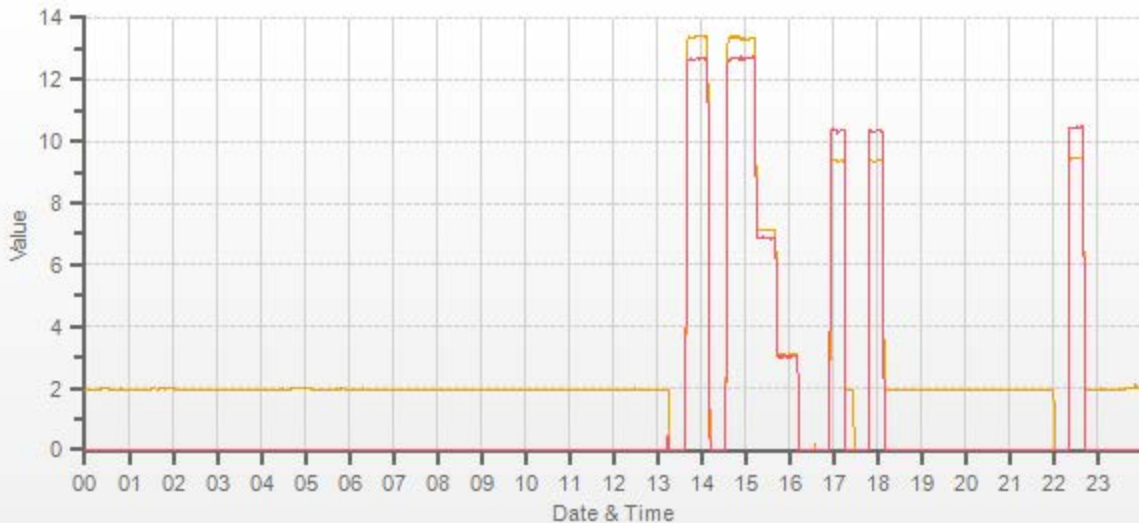
LINEAR REGRESSION ANALYSIS:

	CORRELATION	SLOPE	INTERCEPT	COMMENTS:
CH ₄	1.000	1.000	0.0%	
NMHC	1.000	1.000	0.2%	
THC	1.000	0.999	0.1%	

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.]

PRAMP Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



CAL-PRAMP-201907-01561

Page 14 of 20
CH₄[ppm] NMHC[ppm]

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 (°C):	15.9		
Station - Ambient Temperature (°C):	15.7		
Temperature Difference (°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			

Company: <u>Maxxam</u>		Operator: <u>C. Wesson</u>	
Calibrator:		Flow Measurement Device:	
Make/Model	<u>Evionics 6100</u>	Make/Model	<u>N/A</u>
Serial Number	<u>5212</u>	Serial Number	<u>N/A</u>
Last Verification Date	<u>March 2018</u>	Temperature (°C)	<u>N/A</u>
NO Cylinder S/N	<u>LL107918</u>	Barometric Pressure	<u>N/A</u>
NO [PPM]	<u>50.1</u>	NOx [PPM]	<u>50.2</u>
Expiry Date	<u>August 2026</u>		

Dilution Flow (sccm)			
Pt. #1	<u>5000</u>	Pt. #2	<u>5000</u>
Pt. #3	<u>5000</u>		
Gas Flow (sccm)			
Pt. #1	<u>80</u>	Pt. #2	<u>40</u>
Pt. #3	<u>20</u>		

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	NO ₂	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 Audit Calibrator		NO _x Analyzer	
Make/Model	<u>Sabio 2010</u>	Make/Model	<u>Teco 42i</u>
Serial/AMU Number	<u>AMU 2092</u>	Serial/AMU Number	<u>AMU 1868</u>
SRM Gas Cylinder No.	<u>APEX1236645</u>	Last Calibration Date	<u>February 12, 2019</u>
Cylinder Conc. (ppm)	<u>50.05</u>	Full Scale (ppm)	<u>1.0</u>
		Cylinder Gas Expiry Date	<u>June 2021</u>

COMMENTS: Contains 49.5 ppm SO₂.

Auditor: Al Clark
Operator Signature: [Signature]

Date: February 13, 2019
Location: McIntyre Center Edmonton

Company: Maxxam		Operator: C. Wesson	
Calibrator:		Flow Measurement Device:	
Make/Model	Evtronics 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 ₂ Conc	NO Decrease	NO	NO ₂	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		NOx Analyzer	
Audit Calibrator		Make/Model	
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
 Operator Signature: 

 Date: February 14, 2019
 Location: McIntyre Center Edmonton



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 Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
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: 50.4Percent variance from Stated: 0.7

Meets Manufacturer Tolerance. Use manufacturers stated concentration ☒ COMMENTS: _____
 < =5% Outside Manufacturer Tolerance. Use manufacturers concentration ☐ _____
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder ☐ _____

Auditor: Shea Beaton
 Operator Signature: _____

Date: January 26, 2017
 Location: McIntyre Center Edmonton



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: January 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	0.00760	131.542	10.0
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: 10.2Percent variance from Stated: 2Meets Manufacturer Tolerance. Use manufacturers stated concentration ☐

COMMENTS: _____

<=5% Outside Manufacturer Tolerance. Use manufacturers concentration ☒> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder ☐Auditor: Al ClarkDate: July 27, 2017Operator Signature: *Al Clark*Location: McIntyre Center Edmonton



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/ Dilution Flow	Concentration Factor	Cylinder Concentration	
Dilution	Gas	CH ₄	C ₃ H ₈			CH ₄	C ₃ H ₈
3500	0.0	0.00	0.00	0.02	45.00	595	208
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 ☒ **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: *Al Clark* **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:

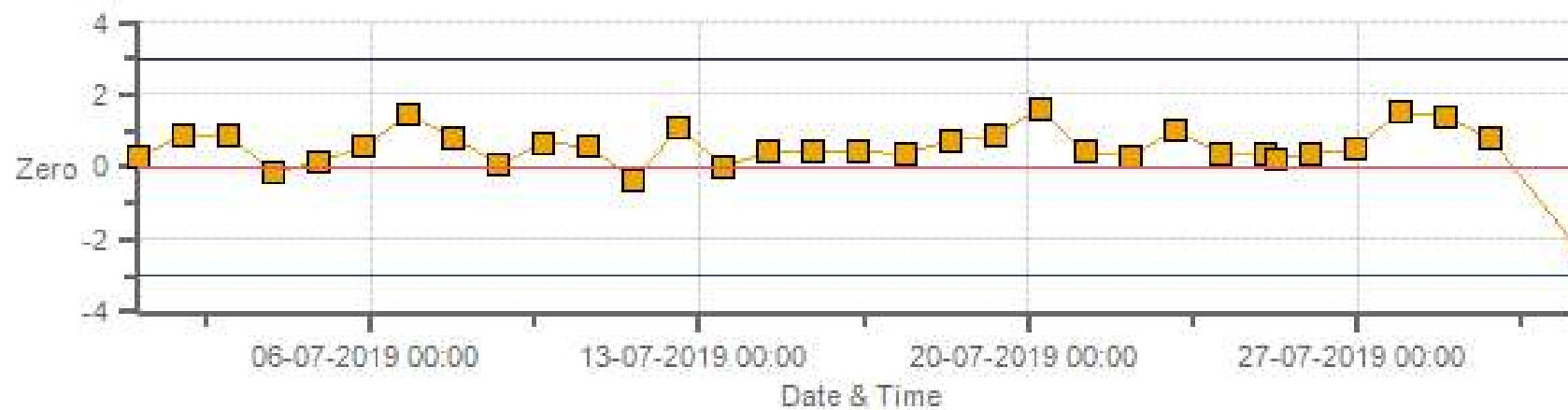
Maxxam Analytics

Data Validation and Report:

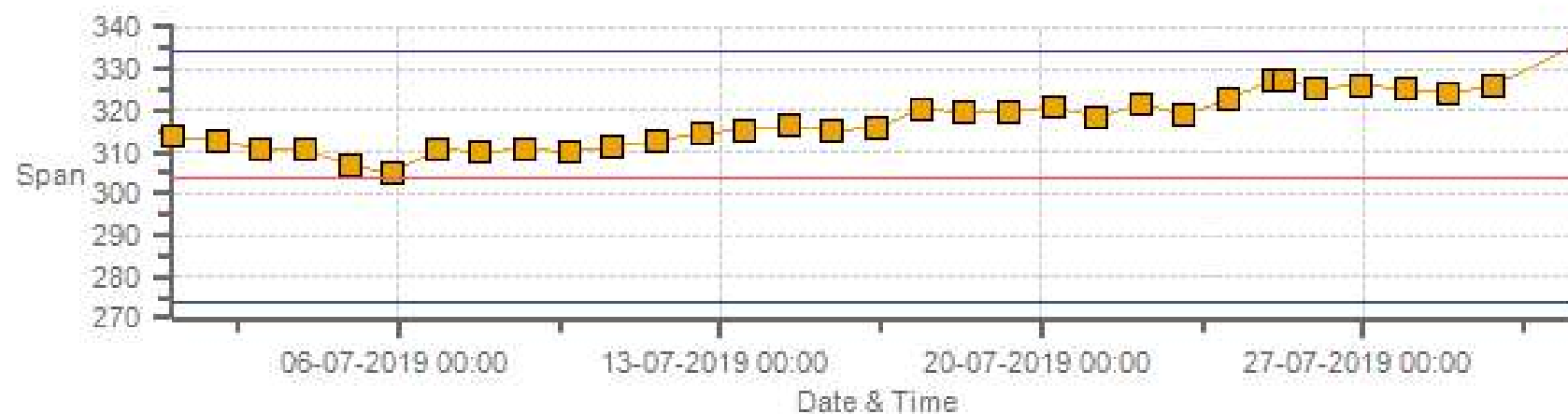
Maxxam Analytics

August 9, 2019

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

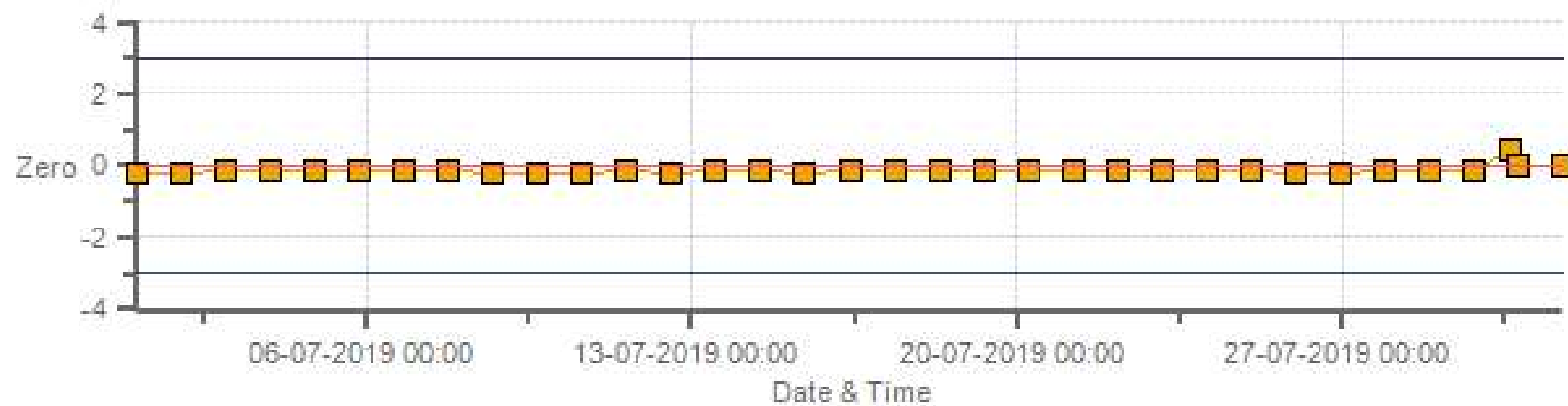
SO₂ [ppb] Calibration: PRAMP 986 Monthly: 07-2019 Type: Zero

Zero Zero Ref Zero Low Zero High

SO₂ [ppb] Calibration: PRAMP 986 Monthly: 07-2019 Type: Span

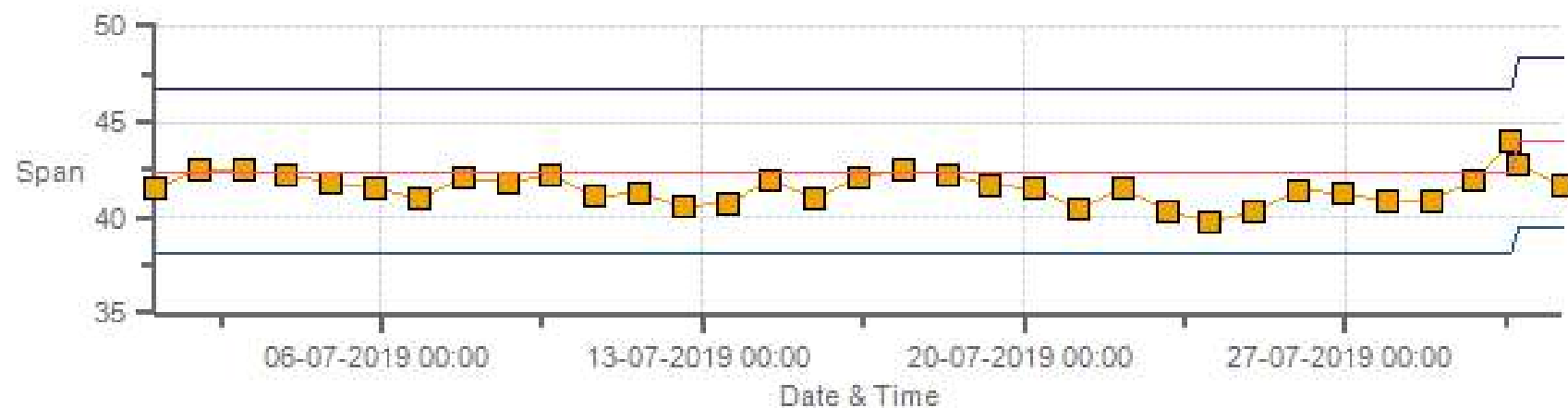
Span SpanRef Span Low Span High

TRS [ppb] Calibration: PRAMP 986 Monthly: 07-2019 Type: Zero



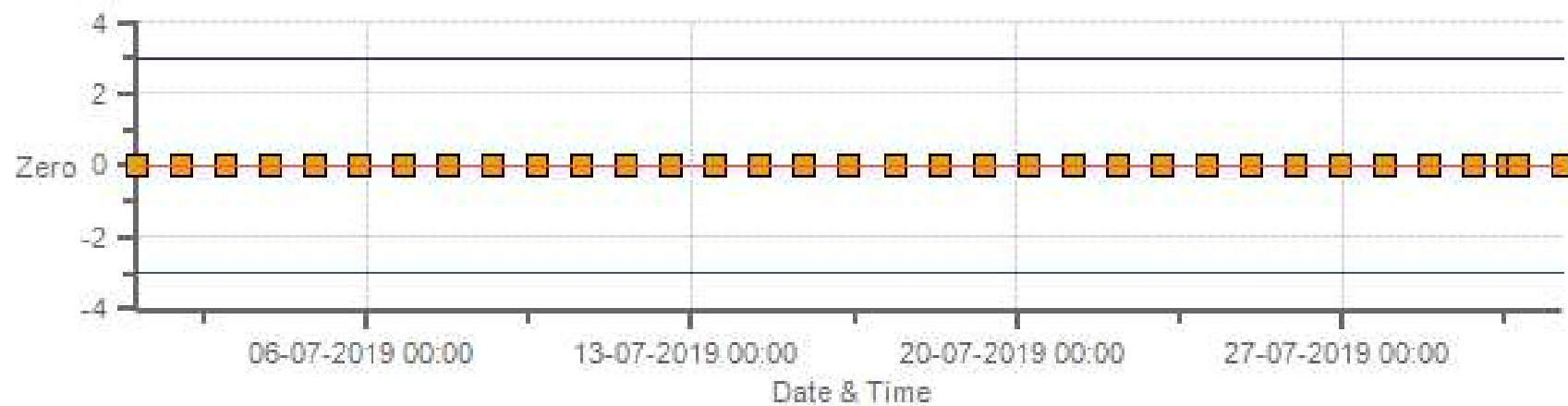
Zero Zero Ref Zero Low Zero High

TRS [ppb] Calibration: PRAMP 986 Monthly: 07-2019 Type: Span



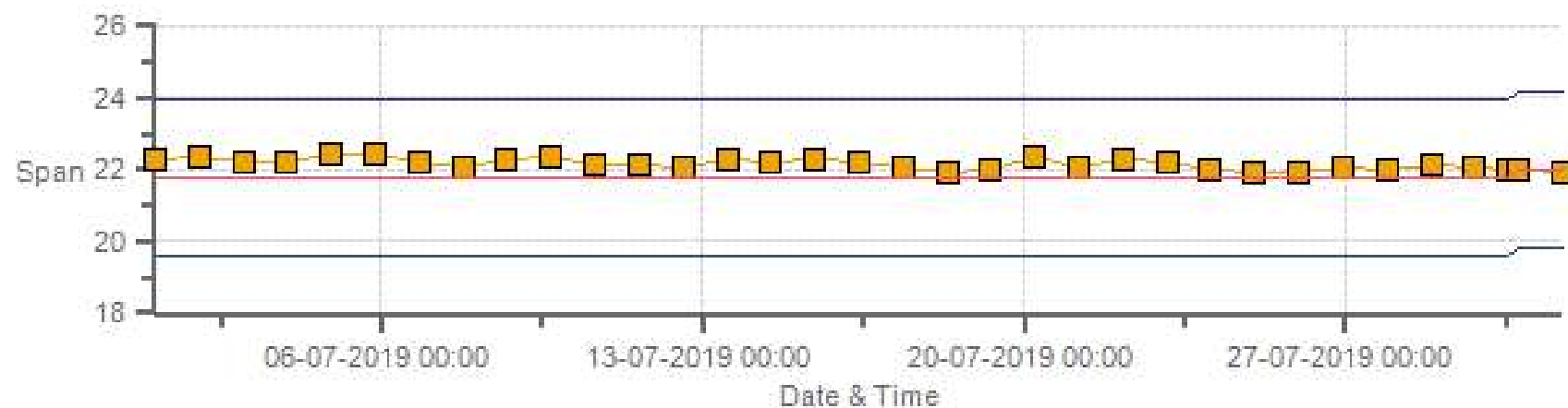
Span SpanRef Span Low Span High

THC [ppm] Calibration: PRAMP 986 Monthly: 07-2019 Type: Zero

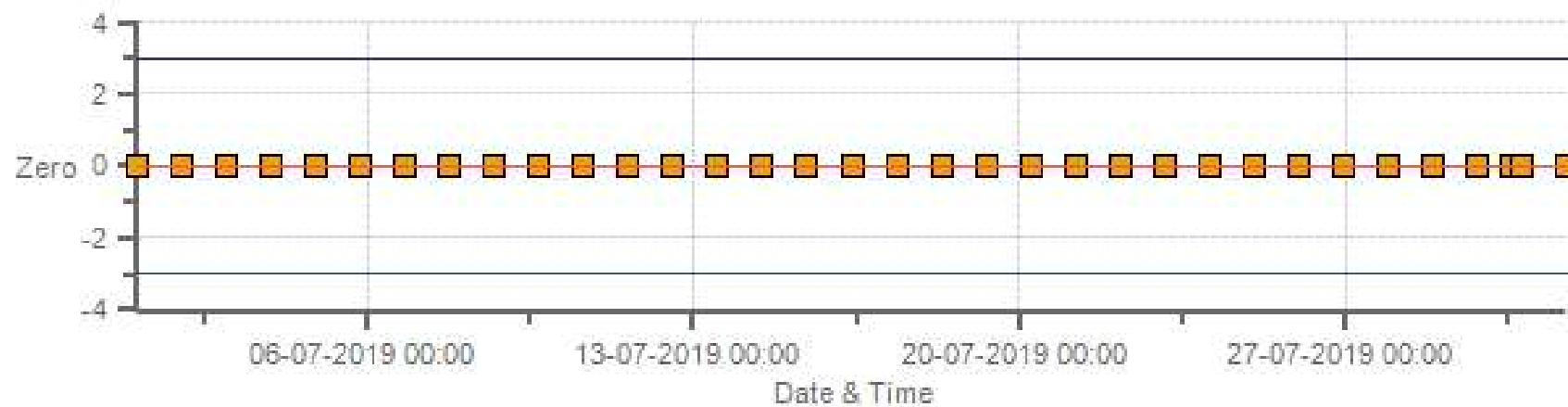


Zero Zero Ref Zero Low Zero High

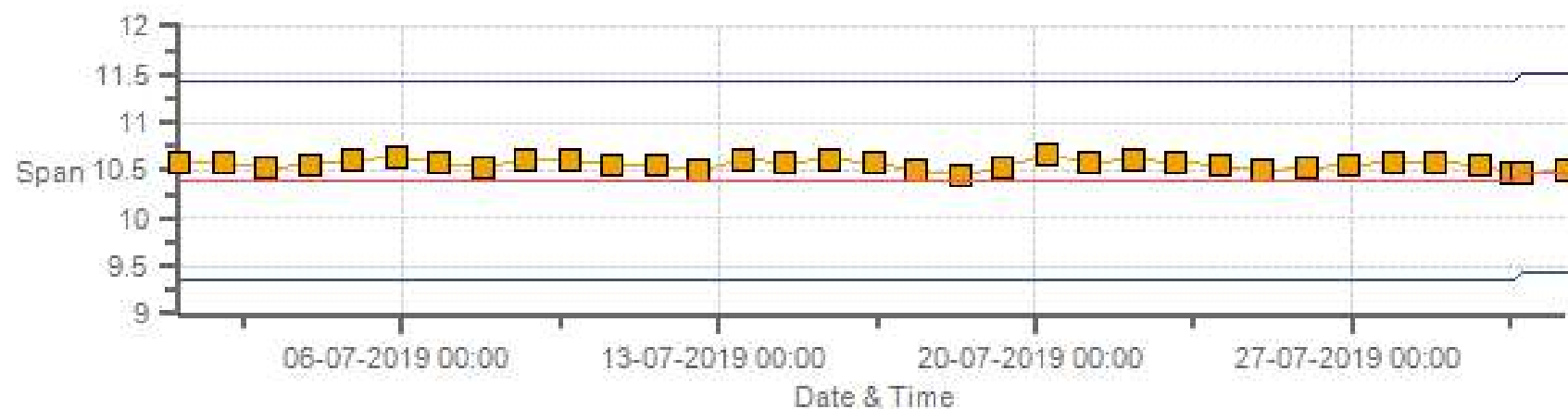
THC [ppm] Calibration: PRAMP 986 Monthly: 07-2019 Type: Span



Span SpanRef Span Low Span High

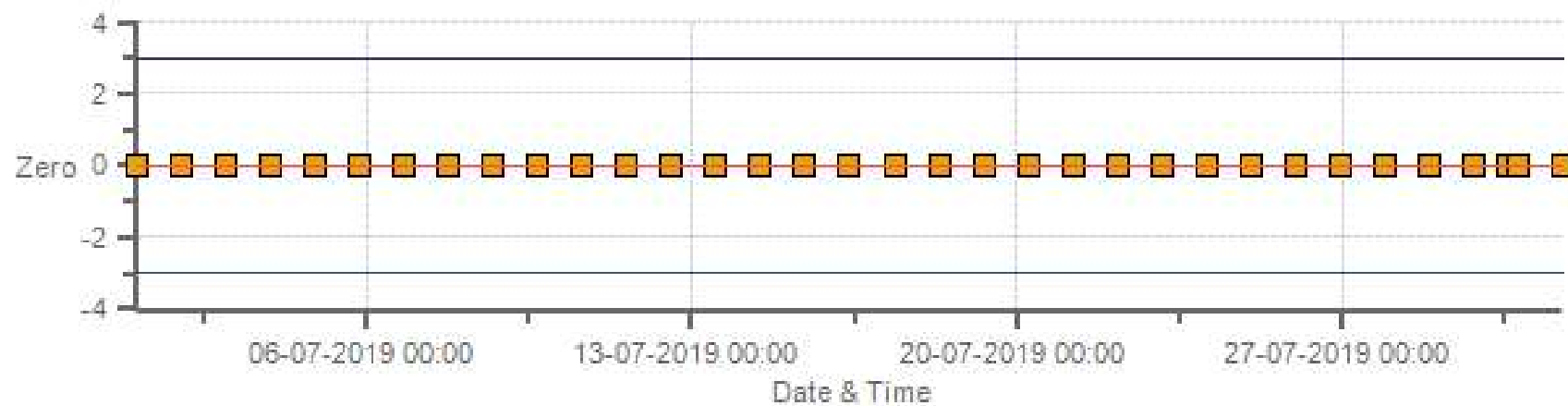
CH₄ [ppm] Calibration: PRAMP 986 Monthly: 07-2019 Type: Zero

Zero Zero Ref Zero Low Zero High

CH₄ [ppm] Calibration: PRAMP 986 Monthly: 07-2019 Type: Span

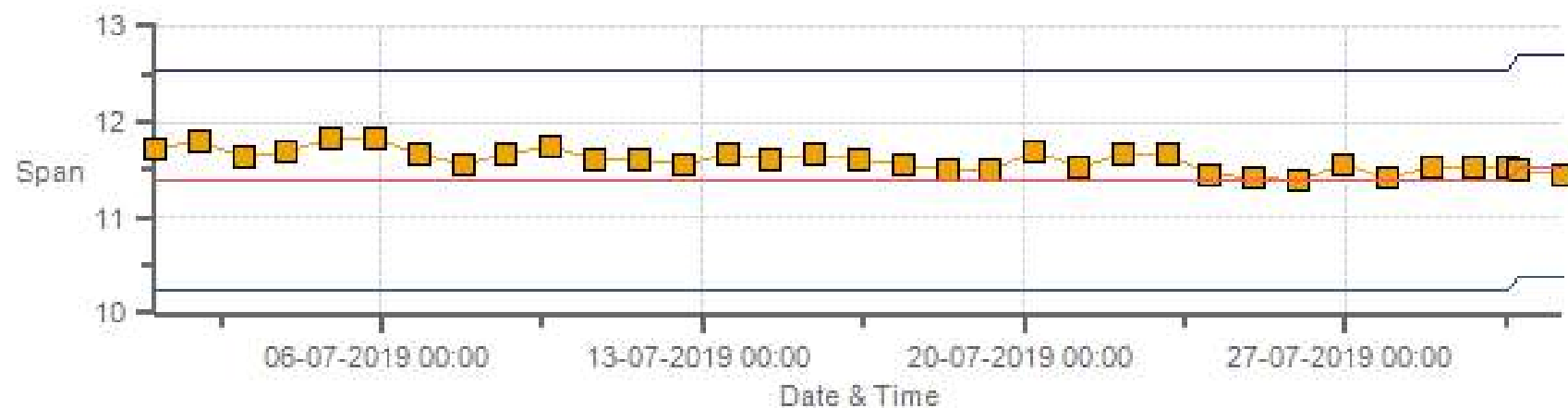
Span SpanRef Span Low Span High

NMHC [ppm] Calibration: PRAMP 986 Monthly: 07-2019 Type: Zero



Zero Zero Ref Zero Low Zero High

NMHC [ppm] Calibration: PRAMP 986 Monthly: 07-2019 Type: Span



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	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
4012	30.70	4012	0.00	1.1	n/a	0.977	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:

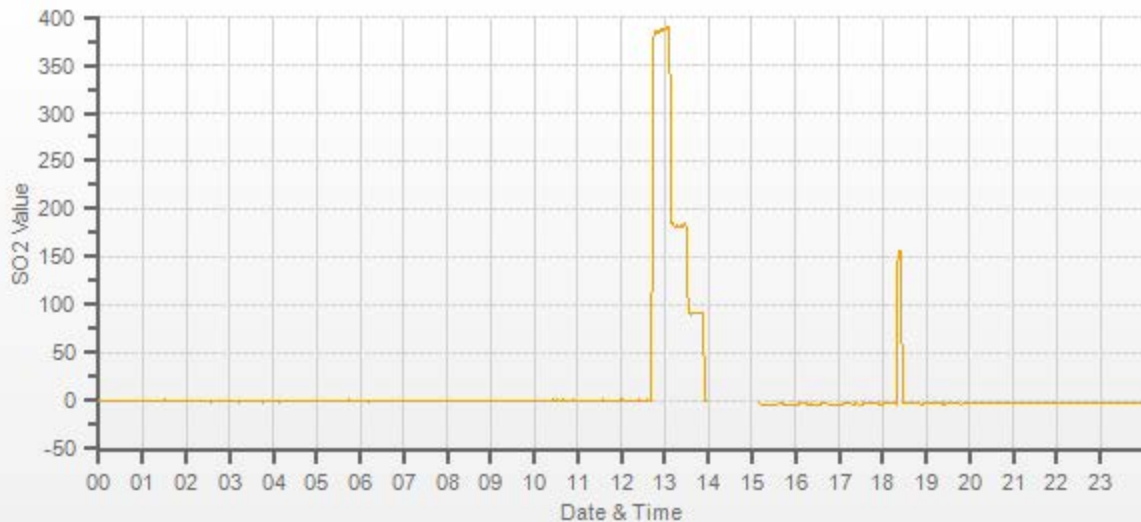
	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.025	0.1%

COMMENTS:

Shut-down for site relocation.

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

PRAMP Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



CAL-PRAMP-201907-01562



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	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
4006	30.37	4006	0.00	-0.12	0	1.022	1.000
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:

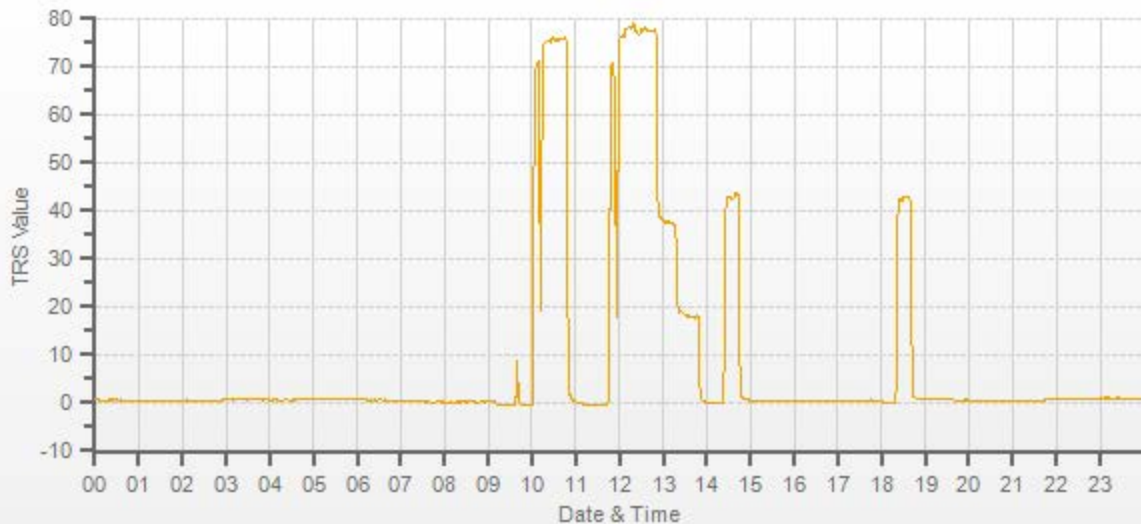
	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.003	-0.2%

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 response. The Adjusted high was restarted.

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

PRAMP Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



CAL-PRAMP-201907-01562



Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:				ANALYZER:			
DATE:	30-Jul-2019	PREVIOUS CALIBRATION DATE:	03-Jun-2019	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	PRAMP	TEMPERATURE (°C):	22.2		Thermo 55i	1022143392	947
LOCATION:	986b	BAROMETRIC (mBar):	939	PARAMETER:	CH4	NMHC	THC
PURPOSE:	Routine	START TIME (MST):	09:06	RANGE (ppm):	20	20	40
PERFORMED BY:	Chris Wesson	END TIME (MST):	13:01	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 ₃ H 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 (CH ₄ /NMHC)	HIGH	MID	LOW	CH ₄ EQUIVILANCE	
TARGET	14	7	3.5	C ₃ H ₈ as CH ₄	569.3
RANGE	12 - 16	6 - 8	2 - 4	THC as CH ₄	1169.3

EXPECTED (REFERENCE) VALUE:

INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	10.40	11.39	21.80		10.47	11.54	22.00

CALIBRATION:

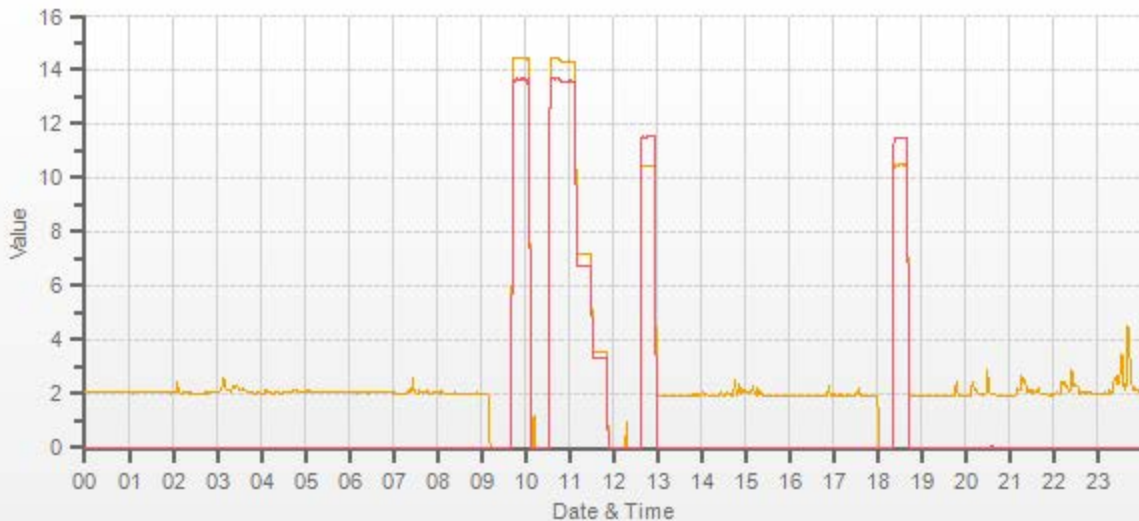
FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC
3012	71.80	3012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.992	0.995	0.993	0.999	1.000	1.000
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	COMMENTS:
CH ₄	1.000	1.002	-0.1%	
NMHC	1.000	1.000	-0.2%	
THC	1.000	1.001	-0.1%	

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

PRAMP Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



CAL-PRAMP-201907-01562

Page 14 of 20
CH₄[ppm] NMHC[ppm]



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 (°C):	19.1		
Station - Ambient Temperature (°C):	18.4		
Temperature Difference (°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			

Company: Maxxam

Operator: C. Wesson

Calibrator:

Make/Model	<u>Envionics 2000</u>
Serial Number	<u>1991</u>
Last Verification Date	<u>March 1, 2018</u>
SO ₂ Cylinder Conc.	<u>49.5</u>
SO ₂ Cylinder S/N	<u>LL48147</u>
Expiry Date	<u>August 2026</u>

Flow Measurement Device:

Make/Model	<u>N/A</u>
Serial Number	<u>N/A</u>
Temperature (°C)	<u>N/A</u>
Barometric Pressure	<u>N/A</u>

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	% Diff. 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)

SO₂		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	<u>Sabio 2010</u>
Serial/AMU Number	<u>AMU 2092</u>
SO ₂	
SRM Gas Cylinder No.	<u>FF28071</u>
Cylinder Conc. (ppm)	<u>50.3</u>

SO₂ Analyzer

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

COMMENTS:

Auditor: Al Clark

Operator Signature: [Signature]

Date: February 13, 2019

Location: McIntyre Center Edmonton



Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2019-396A

Company Maxxam		Operator: Alex	
Calibrator: Make/Model Sabio 2010 Serial Number 26801218 Last Verification Date New NO Cylinder S/N LL48147 NO [PPM] 50.5 NOx [PPM] 50.6 Expiry Date August 2026		Flow Measurement Device: Make/Model N/A Serial Number N/A Temperature (°C) N/A Barometric Pressure N/A	
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	NO ₂	NOX	% Diff. Vs Audit gas	
5015	0.000	0.000	0.792	0.001	0.793	NO ₂	% Diff. Limit
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 Audit Calibrator		NO _x Analyzer	
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
 Operator Signature:

 Date: January 15, 2019
 Location: McIntyre Center Edmonton



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: 49.5Percent variance from Stated: 1

Meets Manufacturer Tolerance. Use manufacturers stated concentration ☒ **COMMENTS:** _____
 < =5% Outside Manufacturer Tolerance. Use manufacturers concentration ☐ _____
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder ☐ _____

Auditor: Al Clark
Operator Signature: 

Date: January 15, 2019
Location: McIntyre Center Edmonton



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: January 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 (scm)		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: 10.3Percent variance from Stated: 75Meets 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 ☒Auditor: Al ClarkDate: July 27, 2017Operator Signature: *Al Clark*Location: McIntyre Center Edmonton



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:				Flow Measurement Device:	
Make/Model	R&R MFC 201			Make/Model	Mesa Definer 220
Serial Number	AMU 1690			Serial Number	H-133034 / L-132702
Last Verification Date	December 13, 2017			Temp. °C	23.1 C
Gas Type	CH ₄	Conc.	990.4	B.P.	707 mmHg
Cylinder Number	5604875	Expiry Date	July 2021		
Gas Type	C ₃ H ₈	Conc.	246.5		
Cylinder Number	XF003845B	Expiry Date	July 2022		

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/ Dilution Flow	Concentration Factor	Cylinder Concentration	
Dilution	Gas	CH ₄	C ₃ H ₈			CH ₄	C ₃ H ₈
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

	<u>CH₄</u>	<u>C₃H₈</u>
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 ☒ **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:

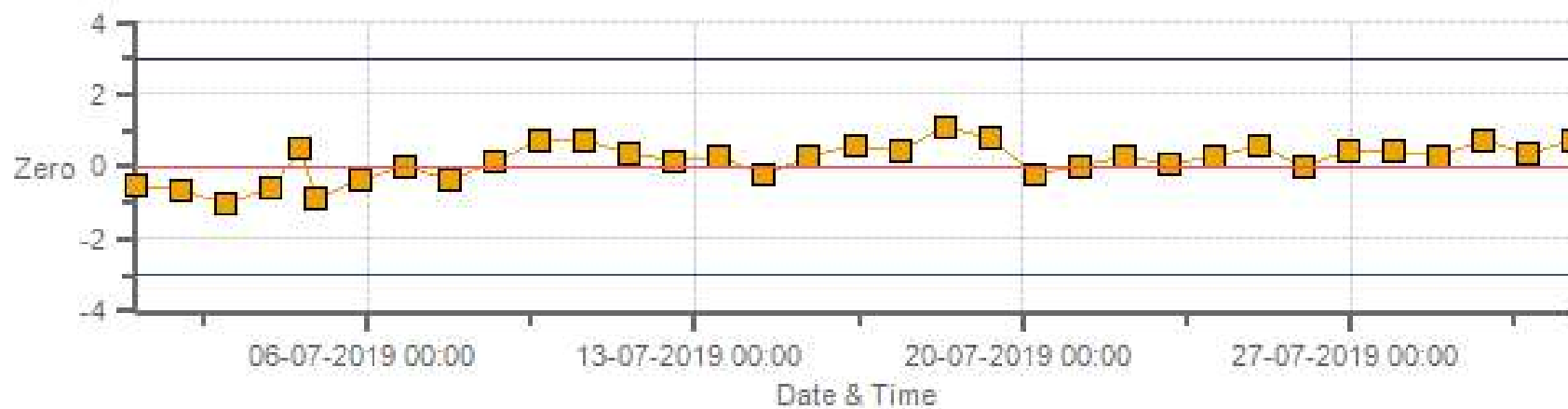
Maxxam Analytics

Data Validation and Report:

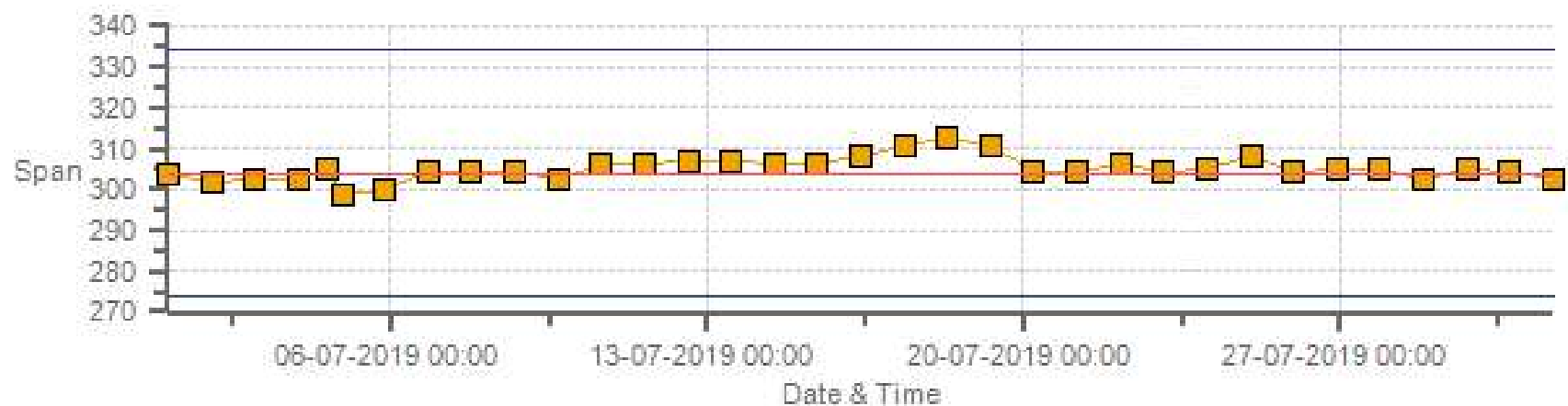
Maxxam Analytics

August 9, 2019

DAILY INTERNAL ZERO-SPAN CALIBRATION RECORDS

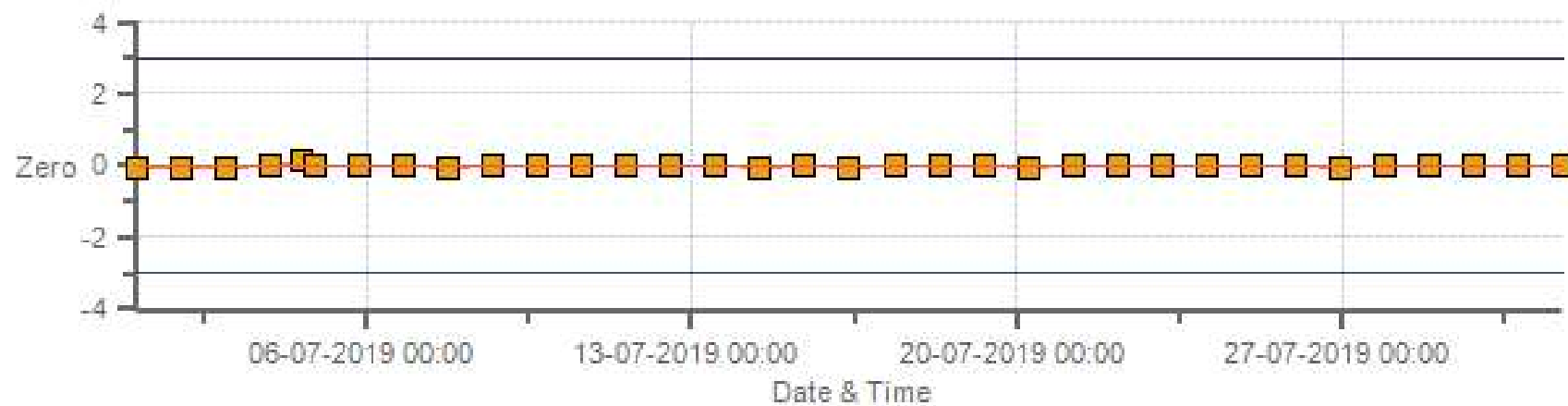
SO₂ [ppb] Calibration: PRAMP Reno Monthly: 07-2019 Type: Zero

Zero Zero Ref Zero Low Zero High

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

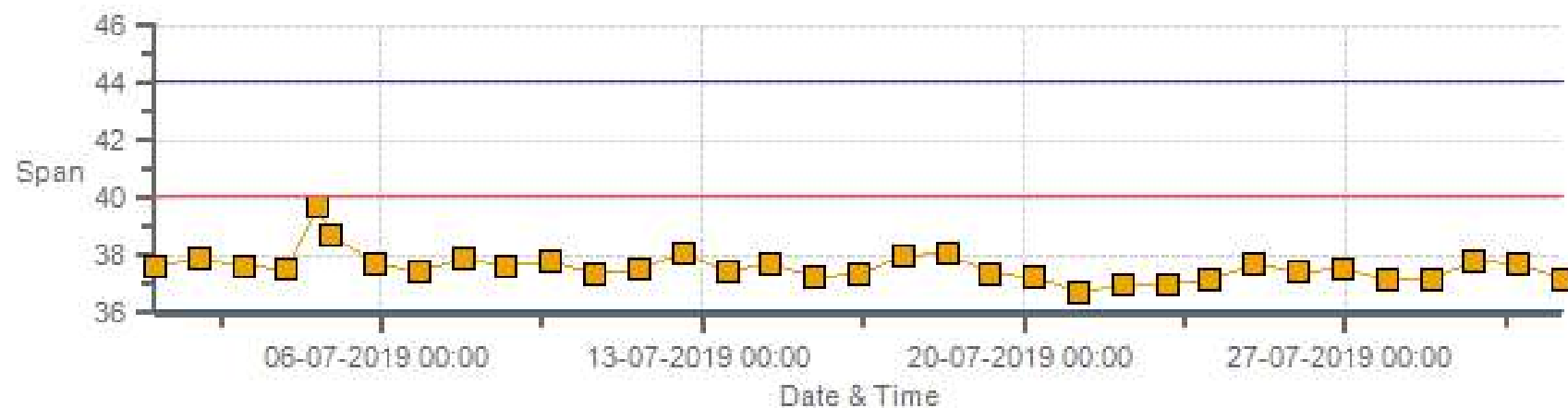
Span SpanRef Span Low Span High

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



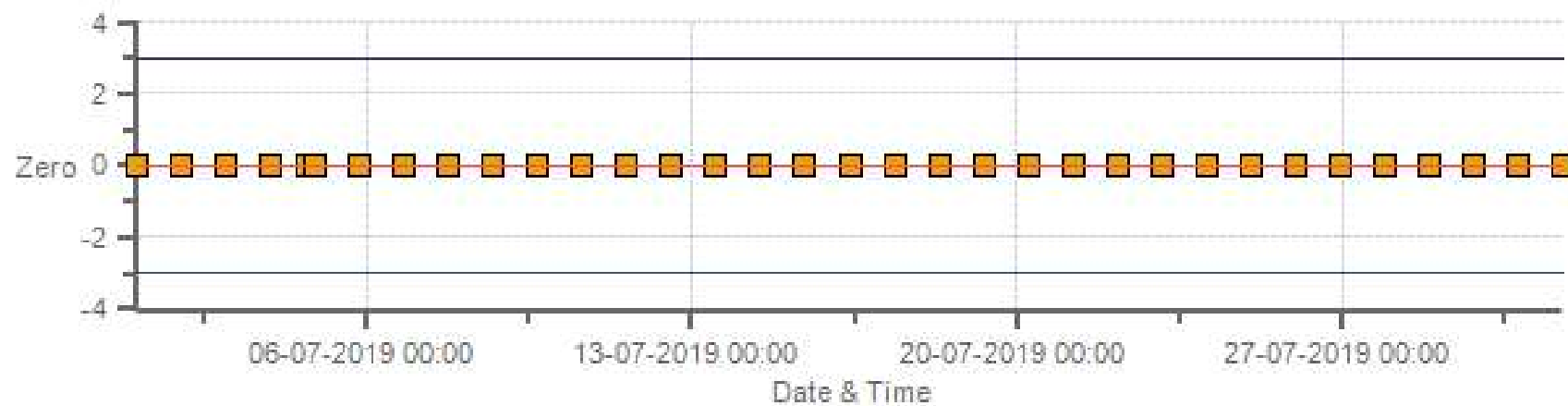
Zero Zero Ref Zero Low Zero High

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



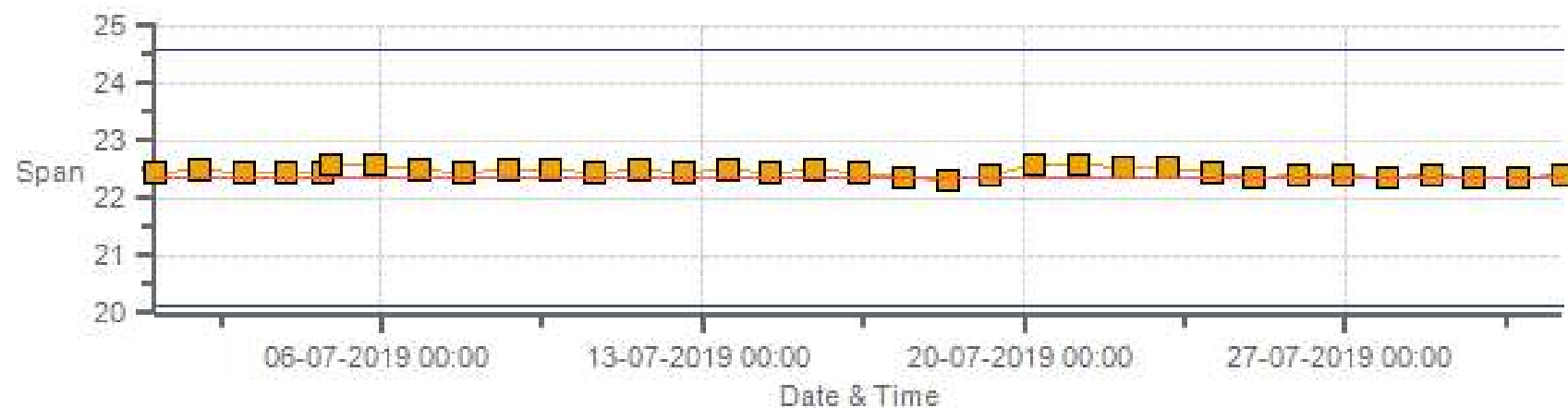
Span SpanRef Span Low Span High

THC [ppm] Calibration: PRAMP Reno Monthly: 07-2019 Type: Zero



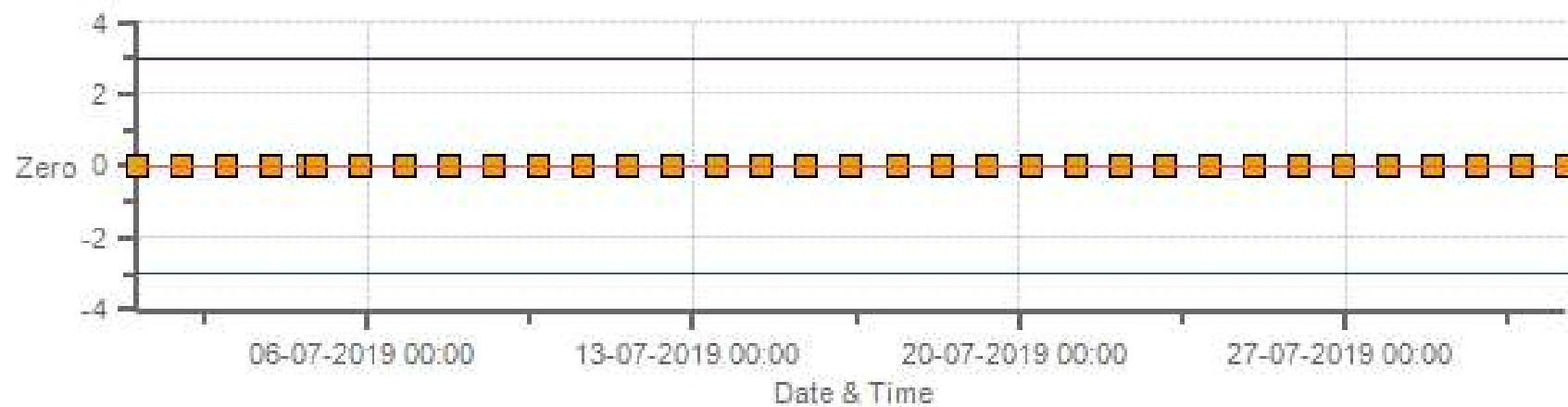
Zero Zero Ref Zero Low Zero High

THC [ppm] Calibration: PRAMP Reno Monthly: 07-2019 Type: Span

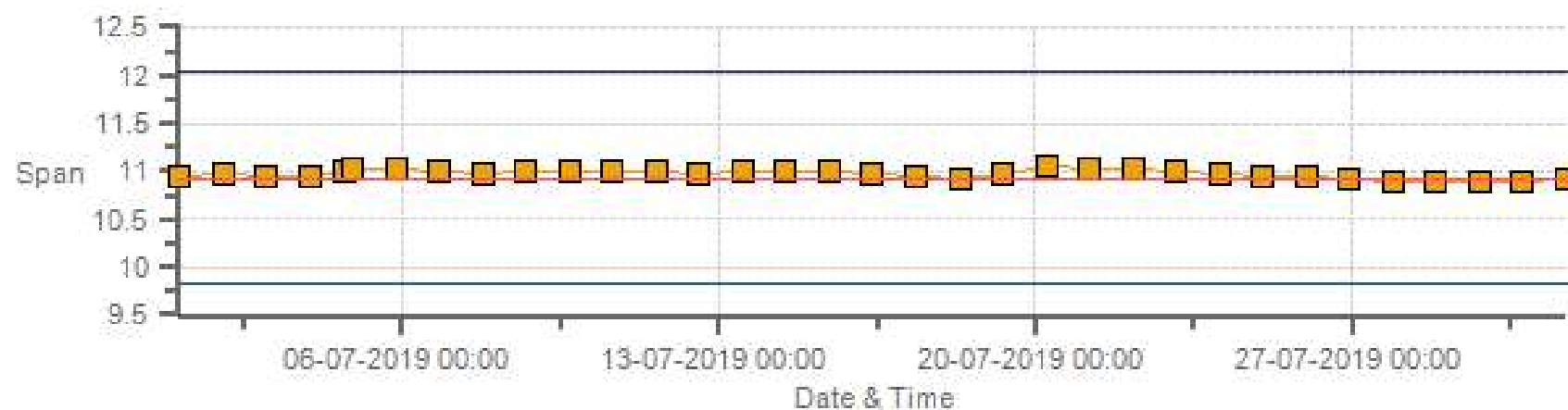


Span SpanRef Span Low Span High

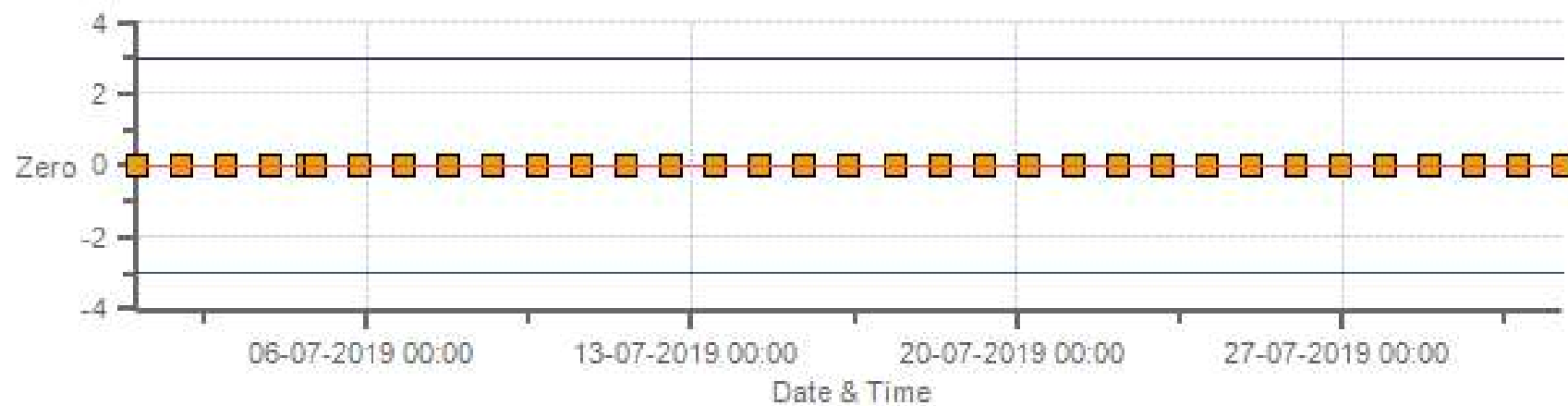
CH4 [ppm] Calibration: PRAMP Reno Monthly: 07-2019 Type: Zero



CH4 [ppm] Calibration: PRAMP Reno Monthly: 07-2019 Type: Span

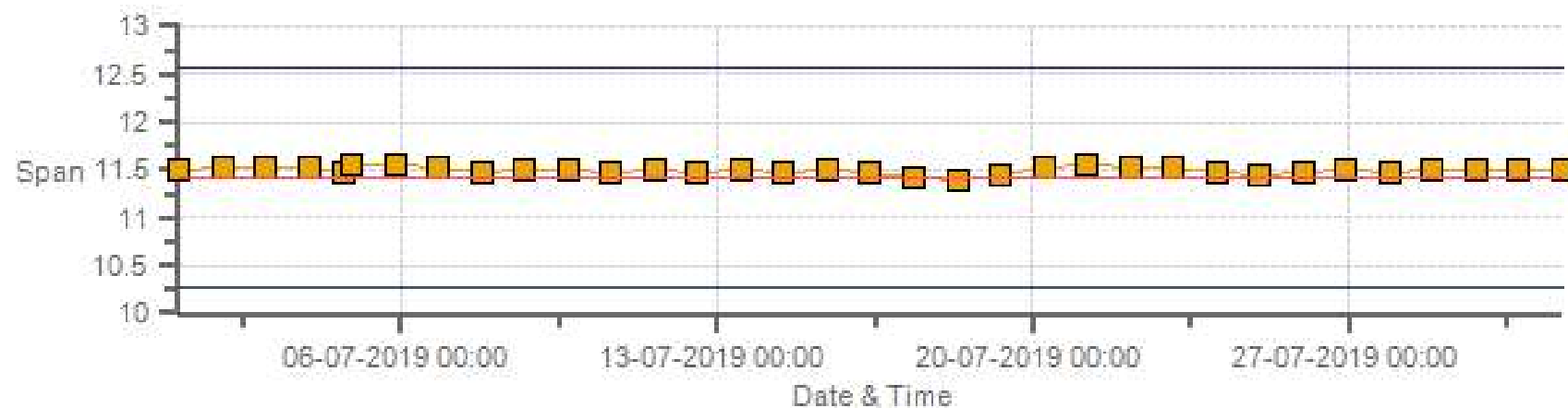


NMHC [ppm] Calibration: PRAMP Reno Monthly: 07-2019 Type: Zero



Zero Zero Ref Zero Low Zero High

NMHC [ppm] Calibration: PRAMP Reno Monthly: 07-2019 Type: Span



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	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
5997	45.20	5997	0.00	-0.5	0	1.011	1.000
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:

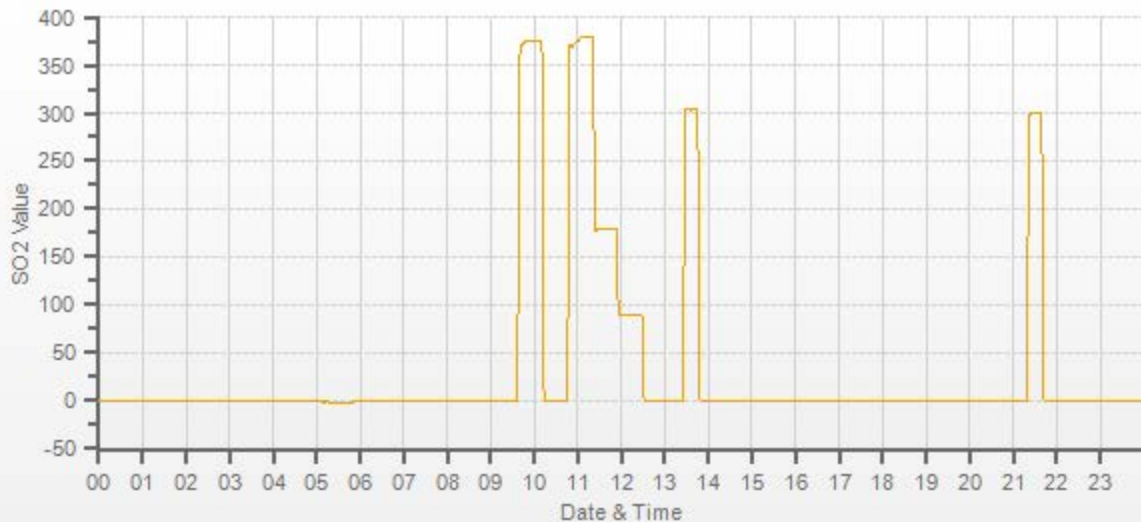
	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.000	0.0%

COMMENTS:

Monthly Calibration passed.

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

PRAMP Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



CAL-PRAMP-201907-01563



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	
DILUENT	GAS	TOTAL	ACTUAL	INDICATED		Initial	Final
				Initial	Final		
7488	57.21	7488	0.00	-0.01	0	1.008	1.000
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:

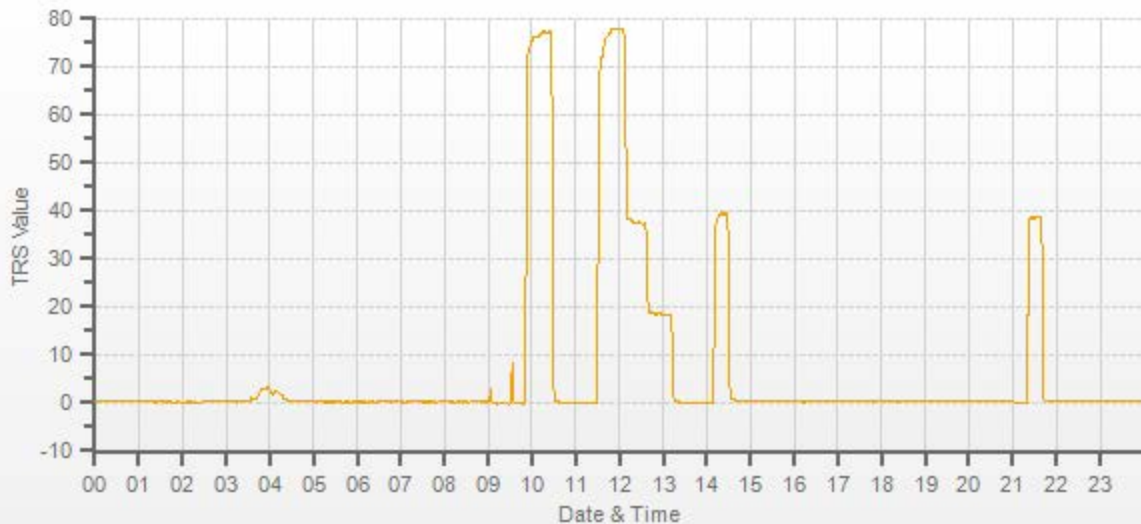
	CORRELATION	SLOPE	INTERCEPT
VALUE	1.000	1.001	-0.3%

COMMENTS:

Monthly calibration passed.

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

PRAMP Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



CAL-PRAMP-201907-01563



Methane/Non-Methane Analyzer Calibration by Dilution

CALIBRATION:				ANALYZER:			
DATE:	04-Jul-2019	PREVIOUS CALIBRATION DATE:	12-Jun-2019	VALUE	MAKE/MODEL	SERIAL	FLOW (mL/min)
CLIENT:	PRAMP	TEMPERATURE (°C):	24.8		Thermo 55i	1314057759	1213.5
LOCATION:	Reno	BAROMETRIC (mBar):	943	PARAMETER:	CH4	NMHC	THC
PURPOSE:	Routine	START TIME (MST):	12:51	RANGE (ppm):	20	20	40
PERFORMED BY:	Ferdinand Roy	END TIME (MST):	17:46	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 ₃ H 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 (CH ₄ /NMHC)	HIGH	MID	LOW	CH ₄ EQUIVILANCE	
TARGET	14	7	3.5	C ₃ H ₈ as CH ₄	566.5
RANGE	12 - 16	6 - 8	2 - 4	THC as CH ₄	1161.5

EXPECTED (REFERENCE) VALUE:

INITIAL	CH ₄	NMHC	THC	FINAL	CH ₄	NMHC	THC
	10.93	11.42	22.35		10.93	11.42	22.35

CALIBRATION:

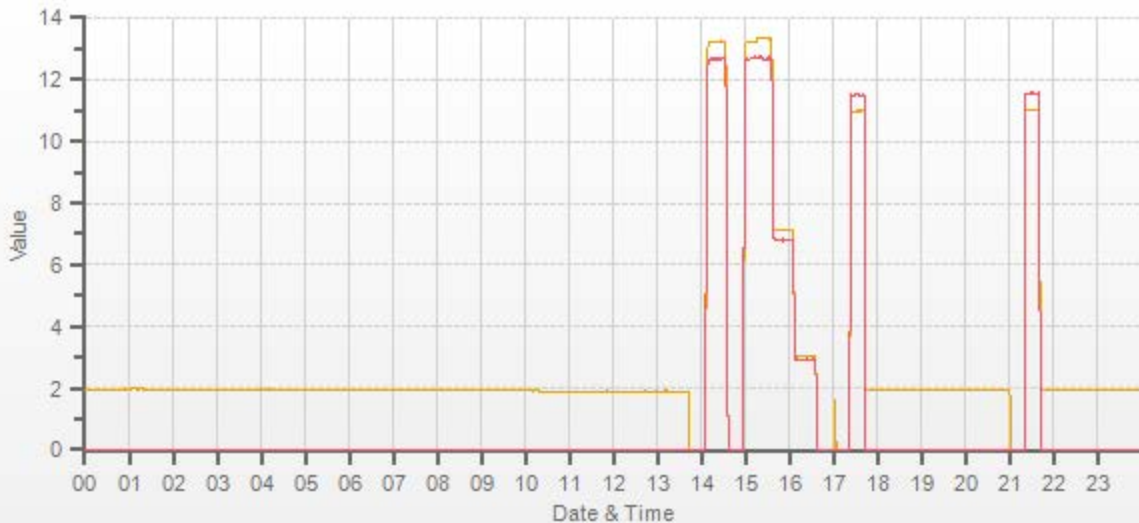
FLOW RATE			CONCENTRATION (PPM)									CORRECTION FACTOR (CF.)					
(mL/min)			CALCULATED			INITIAL INDICATED			FINAL INDICATED			INITIAL			FINAL		
DILUENT	GAS	TOTAL	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC	CH ₄	NMHC	THC
3147	70.47	3147	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.006	1.000	1.003	1.000	1.003	1.001
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	COMMENTS:
CH ₄	1.000	1.000	-0.1%	
NMHC	1.000	1.000	0.0%	
THC	1.000	0.999	0.0%	

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

PRAMP Monthly Ambient Air Quality Monitoring Report for July 2019 (Revision 1)



CAL-PRAMP-201907-01563

Page 14 of 20
CH₄[ppm] NMHC[ppm]

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 (°C):	15.8		
Station - Ambient Temperature (°C):	15.7		
Temperature Difference (°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			

Company: <u>Maxxam</u>		Operator: <u>C. Wesson</u>	
Calibrator:		Flow Measurement Device:	
Make/Model	<u>Evionics 6100</u>	Make/Model	<u>N/A</u>
Serial Number	<u>5212</u>	Serial Number	<u>N/A</u>
Last Verification Date	<u>March 2018</u>	Temperature (°C)	<u>N/A</u>
NO Cylinder S/N	<u>LL107918</u>	Barometric Pressure	<u>N/A</u>
NO [PPM]	<u>50.1</u>	NOx [PPM]	<u>50.2</u>
Expiry Date	<u>August 2026</u>		

Dilution Flow (sccm)			
Pt. #1	<u>5000</u>	Pt. #2	<u>5000</u>
Pt. #3	<u>5000</u>		
Gas Flow (sccm)			
Pt. #1	<u>80</u>	Pt. #2	<u>40</u>
Pt. #3	<u>20</u>		

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	
Correlation=	1.0000	≥ 0.990	
m (Slope)=	0.9846	0.90-1.10	
b (Intercept % of FS)=	-0.0683	± 3% F.S.	
NOx		LIMITS	
Correlation=	1.0000	≥ 0.995	
m (Slope)=	0.9802	0.90-1.10	
b (Intercept % of FS)=	-0.1101	± 3% F.S.	

Flow	O ₂ Conc	NO Decrease	NO	NO ₂	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 Audit Calibrator		NOx Analyzer	
Make/Model	<u>Sabio 2010</u>	Make/Model	<u>Teco 42i</u>
Serial/AMU Number	<u>AMU 2092</u>	Serial/AMU Number	<u>AMU 1868</u>
SRM Gas Cylinder No.	<u>APEX1236645</u>	Last Calibration Date	<u>February 12, 2019</u>
Cylinder Conc. (ppm)	<u>50.05</u>	Full Scale (ppm)	<u>1.0</u>
		Cylinder Gas Expiry Date	<u>June 2021</u>

COMMENTS: Contains 49.5 ppm SO₂.

Auditor: Al Clark
Operator Signature: [Signature]

Date: February 13, 2019
Location: McIntyre Center Edmonton

Company: Maxxam		Operator: C. Wesson	
Calibrator:		Flow Measurement Device:	
Make/Model	Evtronics 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 ₂ Conc	NO Decrease	NO	NO ₂	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)
NO₂		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		NOx 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
 Operator Signature: 

 Date: February 14, 2019
 Location: McIntyre Center Edmonton



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 Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
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: 50.4Percent variance from Stated: 0.7

Meets Manufacturer Tolerance. Use manufacturers stated concentration ☒ COMMENTS: _____
 < =5% Outside Manufacturer Tolerance. Use manufacturers concentration ☐ _____
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder ☐ _____

Auditor: Shea Beaton
 Operator Signature: _____

Date: January 26, 2017
 Location: McIntyre Center Edmonton



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: January 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	0.00760	131.542	10.0
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: 10.2Percent variance from Stated: 2Meets Manufacturer Tolerance. Use manufacturers stated concentration ☐

COMMENTS: _____

<=5% Outside Manufacturer Tolerance. Use manufacturers concentration ☒> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder ☐Auditor: Al ClarkDate: July 27, 2017Operator Signature: *Al Clark*Location: McIntyre Center Edmonton



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 (scm)		Indicated Conc. (ppm)		Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration	
Dilution	Gas	CH ₄	C ₃ H ₈			CH ₄	C ₃ H ₈
3500	0.0	0.00	0.00	0.02	45.00	595	208
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 ☒ **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: *Al Clark* **Location:** McIntyre Center Edmonton