



## **Peace River Area Monitoring Program**

# **2019**

## **Annual Ambient Air Quality Monitoring Report**

**PRAMP-2019**

**Report Prepared By:**

Peace River Area Monitoring Program

March 27, 2020

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## List of Acronyms

AAAQOs	Alberta Ambient Air Quality Objectives
AEP	Alberta Environment and Parks
AMD	Air Monitoring Directive
AT	Ambient Temperature
BP	Barometric Pressure
CH <sub>4</sub>	Methane
EPEA	Environmental Protection and Enhancement Act
H <sub>2</sub> 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 <sub>2</sub>	Sulphur Dioxide
ST	Station Temperature
THC	Total Hydrocarbons
TRS	Total Reduced Sulphur
VWD	Vector Wind Direction
VWS	Vector Wind Speed
WD	Wind Direction
WS	Wind Speed
°C	Degrees Celsius



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March 27, 2020

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**RE: 2019 Annual Ambient Air Quality Monitoring Report -PRAMP Airshed**

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Enclosed is the *2019 Annual Ambient Air Quality Monitoring Report* for the continuous ambient air quality monitoring stations of the Peace River Area Monitoring Program (PRAMP) Airshed regional air quality monitoring network, as operated in the year 2019.

The representative of the Person Responsible for this monitoring program is:

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This report was prepared by Lily Lin and reviewed by Mike Bisaga of PRAMP Airshed.

PRAMP Airshed has retained the services of Bureau Veritas to conduct continuous ambient monitoring on its behalf.

## Listing of Continuous Monitoring Stations and Integrated Sampling Stations

The PRAMP continuous ambient air quality monitoring network stations are:

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

Station ID	Station Name	Latitude	Longitude
1562	986b	56.376056	-116.940704
	986c	56.36980	-116.92500
1561	842b	56.27406	-116.98129
1563	Reno	55.86936	-117.05739
1651	AQHI-Cadotte Lake	56.49022	-116.42739

## Calibration Report and Data Submission

Hourly data and calibration reports for 2019 were submitted to Alberta's Ambient Air Data Warehouse for all stations. Data Qualifier Flags used in the monthly reports are summarized below.

Flag	Description	Instrument is operational?	Hour is valid?
C	Calibration	Yes	No
S	Daily zero/span	Yes	No
Q	Quality assurance	Yes	No
C1	Repeat Calibration	Yes	No
S1	Repeat zero/span check	Yes	No
Y	Maintenance	Yes (unless otherwise noted)	No
T	Exceeds operation temperature limits	Yes (unless otherwise noted)	No
G	Instrument out for repair	No	No
K	Recording system failure	No	No
N	Not in service	No	No
O	Operator Error	No	No
P	Power failure	No	No
R	Recovery	Yes	No
X	Machine malfunction	No	No
N	Instrument not in service	No	No

## Major Operations and Maintenance Events at Continuous Monitoring Stations During 2019

### 986b Station:

- There were no exceedances of the AAAQOs at the 986b Station in 2019.
- Uptime was over 90% for all instruments for all months at 986b Station.
- An ambient station audit was conducted on January 16 by AEP.
- RH/ TPX: The RM Young RH/ TPX 43172VC sensor, s/n: 61012322, was removed, and a replacement RM Young RH/TPX 43182VC sensor, s/n: 030978, was installed on April 30.
- A period of elevated TRS and NMHC concentrations were recorded beginning on May 30. The cause was likely the forest fire smoke from the High Level area.
- The air monitoring station was relocated from 56.376056, -116.940704 to 56.36980, -116.92500 on August 1 in order to address the AMD siting criteria non-conformance; this nonconformance was identified during the 2018 AEP audit. All equipment were shut down on July 31 during hour 17.

### 986c Station:

- There were no exceedances of the AAAQOs at the 986c Station in 2019.
- Uptime was over 90% for all instruments for all months at 986c Station.
- The air monitoring station was installed at 56.36980, -116.92500 on August 1. The installation calibrations were performed on the gas analyzers on August 1 and 2.
- The requirements outlined in the AMD 2016 were contravened on August 4 for all gas parameters; the daily automated zero-span check was not executed due to a datalogger programming error. AEP reference number: 357137.
- Due to a major power outage and associated instrument recovery time, the monthly operational uptimes for all parameters were less than 90% of the time in September. Total non-operational time associated with this power outage event ranged from 79 to 81 hours, depending on the parameter. AEP reference number: 358685.
- Precipitation: An EML ARG100 precipitation sensor, s/n: 190114, was installed on August 1. The sensor is designed to collect precipitation data when ambient temperature is above freezing. The sensor is programmed to collect precipitation data between April and October each year. Operational time less than 90% (AMD requirement) is not reported as a contravention; this instrumentation was added at the request of the landowner host.

### 842b Station:

- There were no exceedances of the AAAQOs at the 842c Station in 2019.
- Uptime was over 90% for all instruments for all months at 842b Station.
- The requirements outlined in the AMD 2016 were contravened on September 21 for all gas parameters; the daily automated zero-span check was not executed due to a power failure event. AEP reference number: 359235.
- An ambient station audit was conducted on January 16 by AEP.
- A period of elevated TRS and NMHC concentrations were recorded beginning on May 30. The cause was likely the forest fire smoke from the High Level area.
- WS/WD: The wind tower was extended by 1.25 meter following the annual wind system calibration on August 7 at hours 14 and 15.

### Reno Station:

- There were no exceedances of the AAAQOs at the Reno Station in 2019.
- Uptime was over 90% for all instruments for all months at Reno Station.
- The requirements outlined in the AMD 2016 were contravened on May 4 for all gas parameters; the daily automated zero-span check was not executed due to communication issues. AEP reference number: 354358.
- An ambient station audit was conducted on January 15 by AEP.
- A period of elevated TRS and NMHC concentrations were recorded beginning on May 30. The cause was likely the forest fire smoke from the High Level area.

### AQHI - Cadotte Lake Station:

- There were no exceedances of the AAAQOs at the AQHI - Cadotte Lake Station in 2019.
- The station was installed on October 1. An installation calibration was performed on October 2 and October 3.
- All parameters met the 90% operational uptime requirement, with an exception of NO<sub>x</sub>/NO/NO<sub>2</sub> (67.9%). During the month of October, most analyzers and support systems were in a stabilizing period following the new station's deployment in the field; data completeness that did not meet the 90% operational uptime requirement was not considered a contravention and was not reported to AEP.



## Special Studies

A multi-year integrated sampling program continued operating at 986b station, 986c station, 842b station and Reno station; this program collects air samples using Silco/Summa Canisters which are analyzed in a laboratory for VOC, reduced sulphur compounds, and methane isotopes. In 2019, the canister sampling program collected a 1-hour sample of air in a canister when the continuously measured methane (CH<sub>4</sub>) and/or non-methane hydrocarbon (NMHC) concentration reached a specified trigger point. The trigger points were 5.5 ppm for methane and 0.3 ppm for non-methane hydrocarbons. Both trigger points were based on real-time monitoring data that were averaged over a 5-minute period. Analysis of these samples were performed by InnoTech Alberta. Analytical results were included in the monthly reports following the month of sample collections.

A total of 11 methane canister samples and 9 non-methane canister samples were collected in 2019.

Date	Time	Station	Parameter	Concentration (ppm)
17-Feb	19:25	Reno	Methane	5.95
20-Feb	22:05	Reno	Methane	5.5
23-Feb	20:15	Reno	Methane	17.24
24-Feb	19:35	Reno	Methane	11.33
07-Mar*	20:15	Reno	Methane	9.51
08-Mar	22:20	Reno	Methane	9.92
10-Mar	8:25	Reno	Methane	5.93
16-Mar	15:35	Reno	Methane	6.05
29-Mar	1:55	Reno	Methane	6.56
18-Mar	21:55	Reno	NMHC	0.32
19-Mar	18:30	Reno	NMHC	0.67
10-Apr	21:20	Reno	Methane	5.86
30-May	5:55	986b	NMHC	0.62
30-May	6:05	842b	NMHC	0.39
30-May	7:15	Reno	NMHC	0.37
13-Jun	19:40	Reno	NMHC	0.57
14-Jun	1:10	986b	Methane	7.75
17-Oct	20:45	Reno	NMHC	0.73
05-Nov	22:15	Reno	NMHC	0.34
15-Nov	14:15	842b	NMHC	0.36

\* March 7 canister event was not collected as no spare canister was available for sampling.

### Notes:

The wildfire burning near Chuckegg Creek caused a period of elevated TRS and NMHC concentrations beginning on May 30. The canister sampling program was temporarily modified. Starting on May 30, the NMHC canister system was manually reset in the evening everyday, so it was ready for the next canister sample collection. Three NMHC canisters, representing the smoke event, from each PRAMP

station were planned to be collected using this daily reset method. After three canister samples from each station are collected using this method, the NMHC canister system will be paused; total of 9 canisters during this smoke event is expected using this sampling regime. No changes were made on the methane-triggered canister program; that component will remain in place, without modification. The standard canister sampling program resumed after smoke conditions in Peace River region improved in June.

## Notification of Changes Made After Monthly Report Issuance

### 986b Station:

Monthly reports for January to July: Errors were discovered on the Monitored Data Summary. The dates of maximum 24-hour average (Max. 24-hr) for all parameters were incorrectly referred to the minimum 24-hour average. The revised Monitored Data Summaries are presented in the following pages.

The revised monthly reports can be found on the PRAMP website.

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	WSV (km/hr)	WDV (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.8	0	4	January 17 at hour 10	6.2	E	2.8	January 17	99.2	93.9
TRS (ppb)	10	3	-	-	-	-	0.57	0.22	1.07	January 31 at hour 4	9	N	0.903	January 31	97.6	92.3
THC (ppm)	-	-	-	-	-	-	2.07	1.92	2.52	January 11 at hour 9	2.9	SE	2.20	January 13	92.5	88.6
CH4 (ppm)	-	-	-	-	-	-	2.07	1.92	2.52	January 11 at hour 9	2.9	SE	2.20	January 13	92.5	88.6
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.05	January 14 at hour 3	5.8	SSW	0.00	January 1	92.5	88.6
RH (%)	-	-	-	-	-	-	78.7	58	100	January 12 at hour 19	4.7	SE	95.8	January 13	99.2	99.2
BP (millibar)	-	-	-	-	-	-	941	921	959	January 27 at hour 21	7	NNW	958	January 28	99.2	99.2
Ext. Temp. (°C)	-	-	-	-	-	-	-10.5	-30.6	7.4	January 26 at hour 22	20.5	W	5.0	January 26	99.2	99.2
Stn. Temp. (°C)	-	-	-	-	-	-	21.3	-1.6	26.1	January 7 at hour 7	15.8	NW	24.6	January 16	99.2	99.2
WSV (km/hr)	-	-	-	-	-	-	0.4	0.3	26.6	January 27 at hour 0	26.6	WNW	13.1	January 27	99.2	99.2
WDV (sector)	-	-	-	-	-	-	263(W)	-	-	-	-	-	-	-	99.2	99.2

1. Date/ Time given is the first minimum and maximum value that were recorded.

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.1	0	8	February 5 at hour 17	1.1	WSW	0.9	February 5	99.9	95.1
TRS (ppb)	10	3	-	-	-	-	0.11	0.00	0.84	February 6 at hour 9	2.9	ESE	0.28	February 25	99.9	94.8
THC (ppm)	-	-	-	-	-	-	2.11	1.99	2.78	February 14 at hour 6	2.2	E	2.33	February 14	99.9	94.8
CH4 (ppm)	-	-	-	-	-	-	2.11	1.99	2.69	February 14 at hour 6	2.2	E	2.31	February 14	99.9	94.8
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.09	February 14 at hour 6	2.2	E	0.02	February 14	99.9	94.8
RH (%)	-	-	-	-	-	-	64.3	38	95	February 19 at hour 20	1.9	S	81.5	February 19	100.0	100.0
BP (millibar)	-	-	-	-	-	-	949	930	974	February 9 at hour 0	2	ESE	965	February 8	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-22.2	-41.0	-1.3	February 27 at hour 16	11.5	WNW	-6.0	February 27	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	20.7	20.0	21.6	February 27 at hour 10	14.4	NW	20.9	February 20	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	0.5	0.2	19.0	February 21 at hour 12	19	S	10.4	February 18	100.0	100.0
WDV (sector)	-	-	-	-	-	-	311(NW)	-	-	-	-	-	-	-	100.0	100.0

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.3	0	2	March 18 at hour 6	4.7	SSE	1.6	March 19	100.0	95.0
TRS (ppb)	10	3	-	-	-	-	0.20	0.06	0.96	March 2 at hour 8	2.2	ESE	0.37	March 2	100.0	95.1
THC (ppm)	-	-	-	-	-	-	2.04	1.92	2.66	March 2 at hour 8	2.2	ESE	2.21	March 9	100.0	95.1
CH4 (ppm)	-	-	-	-	-	-	2.04	1.92	2.64	March 2 at hour 8	2.2	ESE	2.20	March 9	100.0	95.1
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.05	March 9 at hour 7	2.7	ESE	0.01	March 9	100.0	95.1
RH (%)	-	-	-	-	-	-	59.3	19	100	March 26 at hour 9	2.5	WNW	77.2	March 25	100.0	100.0
BP (millibar)	-	-	-	-	-	-	947	923	973	March 2 at hour 3	1.9	ESE	970	March 2	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-2.7	-37.2	19.2	March 21 at hour 16	3.8	W	8.3	March 21	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	21.1	19.7	25.1	March 21 at hour 16	3.8	W	21.9	March 21	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	2.1	0.1	17.5	March 14 at hour 13	17.5	S	10.0	March 10	100.0	100.0
WDV (sector)	-	-	-	-	-	-	197(SSW)	-	-	-	-	-	-	-	100.0	100.0

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.7	0	3	April 29 at hour 8	8.2	WNW	1.1	April 18	100.0	94.8
TRS (ppb)	10	3	-	-	-	-	0.17	0.05	0.72	April 11 at hour 15	11.8	SSE	0.25	April 29	100.0	94.7
THC (ppm)	-	-	-	-	-	-	2.01	1.93	2.60	April 15 at hour 1	3.5	NW	2.07	April 29	99.4	94.4
CH4 (ppm)	-	-	-	-	-	-	2.01	1.93	2.60	April 15 at hour 1	3.5	NW	2.07	April 29	99.4	94.4
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.01	April 13 at hour 21	1.8	ESE	0.00	April 13	99.4	94.4
RH (%)	-	-	-	-	-	-	55.6	16	100	April 6 at hour 18	7	NW	85.5	April 6	99.3	99.3
BP (millibar)	-	-	-	-	-	-	940	924	955	April 28 at hour 10	8.9	NW	954	April 28	99.3	99.3
Ext. Temp. (°C)	-	-	-	-	-	-	4.5	-8.4	16.5	April 18 at hour 14	15.7	WSW	10.4	April 22	99.3	99.3
Stn. Temp. (°C)	-	-	-	-	-	-	21.5	20.4	24.0	April 9 at hour 15	9	SW	22.0	April 9	99.7	99.7
WSV (km/hr)	-	-	-	-	-	-	1.8	0.0	23.7	April 24 at hour 16	23.7	WNW	11.4	April 18	99.7	99.3
WDV (sector)	-	-	-	-	-	-	251 (WSW)	-	-	-	-	-	-	-	99.7	99.3

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.9	0	4	May 30 at hour 8	9.3	N	2.7	May 30	100.0	94.9
TRS (ppb)	10	3	-	-	-	-	0.35	0.10	3.67	May 30 at hour 6	10	N	2.17	May 30	100.0	94.9
THC (ppm)	-	-	-	-	-	-	2.02	1.90	3.14	May 30 at hour 6	10	N	2.46	May 30	99.7	94.5
CH4 (ppm)	-	-	-	-	-	-	2.01	1.90	2.71	May 23 at hour 1	0.5	NNE	2.23	May 30	99.7	94.5
NMHC (ppm)	-	-	-	-	-	-	0.01	0.00	0.57	May 30 at hour 6	10	N	0.23	May 30	99.7	94.5
RH (%)	-	-	-	-	-	-	44.3	14	94	May 14 at hour 4	1.8	ESE	69.0	May 1	100.0	100.0
BP (millibar)	-	-	-	-	-	-	942	929	951	May 8 at hour 7	2.3	WSW	950	May 8	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	11.1	-9.7	29.9	May 28 at hour 16	8.1	W	21.7	May 28	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.1	19.7	28.1	May 20 at hour 15	15.2	SE	23.8	May 20	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.6	0.2	31.2	May 9 at hour 14	31.2	WNW	17.4	May 18	100.0	100.0
WDV (sector)	-	-	-	-	-	-	116 (ESE)	-	-	-	-	-	-	-	100.0	100.0

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.1	0	2	June 1 at hour 0	6.5	ESE	0.6	June 1	98.8	93.4
TRS (ppb)	10	3	-	-	-	-	0.58	0.01	2.97	June 14 at hour 3	1.1	SE	0.81	June 14	93.5	88.9
THC (ppm)	-	-	-	-	-	-	1.99	1.87	3.07	June 14 at hour 1	1.6	NNW	2.11	June 14	98.8	93.9
CH4 (ppm)	-	-	-	-	-	-	1.99	1.87	3.07	June 14 at hour 1	1.6	NNW	2.11	June 14	98.8	93.9
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.05	June 1 at hour 0	6.5	ESE	0.00	June 1	98.8	93.9
RH (%)	-	-	-	-	-	-	66.6	20	100	June 5 at hour 3	1	ESE	92.9	June 20	98.9	98.9
BP (millibar)	-	-	-	-	-	-	941	933	949	June 9 at hour 6	4.1	SSW	948	June 9	98.9	98.9
Ext. Temp. (°C)	-	-	-	-	-	-	13.9	-0.4	27.8	June 17 at hour 16	14.1	SSE	20.4	June 17	98.9	98.9
Stn. Temp. (°C)	-	-	-	-	-	-	23.0	20.3	28.9	June 27 at hour 17	6.9	ESE	25.7	June 27	98.9	98.9
WSV (km/hr)	-	-	-	-	-	-	1.7	0.0	22.9	June 2 at hour 2	22.9	WNW	9.6	June 18	98.9	98.9
WDV (sector)	-	-	-	-	-	-	285 (WNW)	-	-	-	-	-	-	-	98.9	98.9

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	0	July 1 at hour 0	9.8	NNW	0.0	July 1	95.3	90.8
TRS (ppb)	10	3	-	-	-	-	0.73	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
CH4 (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																

## 986c Station:

Monthly reports for August, September, October, November and December: An error was discovered on the Summary of Hourly Averages and Summary of Hourly Instantaneous Maximums for all parameters. Incorrect dates of Maximum Daily Value (Max. 24-hr) were displayed on the summary table. The error was due to an incorrect formula being setup on the report template, which was used for the report preparation. The correct dates of Max. 24-hr are presented on the revised Monitored Data Summaries, which are presented in the following pages.

Monthly reports for August to December: Errors were discovered on the Monitored Data Summary. The dates of maximum 24-hour average (Max. 24-hr) for all parameters were referred to the minimum 24-hour average instead. The revised Monitored Data Summaries are presented in the following pages.

The revised monthly reports can be found on the PRAMP website.

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	2	August 30 at hour 9	1.2	NE	0.1	August 30	95.0	90.3
TRS (ppb)	10	3	-	-	-	-	0.71	0.02	2.55	August 14 at hour 20	4.8	S	1.00	August 7	92.3	87.6
THC (ppm)	-	-	-	-	-	-	1.98	1.88	2.38	August 10 at hour 6	4.2	ESE	2.07	August 29	95.0	90.3
CH4 (ppm)	-	-	-	-	-	-	1.98	1.88	2.38	August 10 at hour 6	4.2	ESE	2.07	August 29	95.0	90.3
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	August 1 at hour 18	6.8	NE	0.00	August 2	95.0	90.3
RH (%)	-	-	-	-	-	-	81.2	37	100	August 1 at hour 22	5.6	ESE	97.1	August 15	95.0	95.0
BP (millibar)	-	-	-	-	-	-	944	934	951	August 6 at hour 6	7.3	N	950	August 29	95.0	95.0
Ext. Temp. (°C)	-	-	-	-	-	-	12.7	-0.4	25.4	August 21 at hour 14	8.4	SSW	18.9	August 21	95.0	95.0
Stn. Temp. (°C)	-	-	-	-	-	-	23.0	21.6	24.4	August 17 at hour 15	1.6	SSE	23.3	August 18	96.1	96.1
Precipitation (mm)*	-	-	-	-	-	-	54.6	0.0	6.4	August 2 at hour	3.9	ESE	9.4	August 2	91.9	91.9
WSV (km/hr)	-	-	-	-	-	-	1.6	0.0	23.8	August 21 at hour 2	23.8	ESE	15.1	August 16	94.5	94.5
WDV (sector)	-	-	-	-	-	-	257 (WSW)	-	-	-	-	-	-	-	94.5	94.5

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

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	1	September 18 at hour 9	0.8	W	0.1	September 18	88.8	84.3
TRS (ppb)	10	3	-	-	-	-	0.77	0.20	3.34	September 13 at hour 3	5.4	SSE	1.36	September 3	83.2	78.7
THC (ppm)	-	-	-	-	-	-	1.99	1.89	2.27	September 29 at hour 21	13.1	SSE	2.07	September 29	87.4	82.8
CH4 (ppm)	-	-	-	-	-	-	1.99	1.89	2.27	September 29 at hour 21	13.1	SSE	2.07	September 29	87.4	82.8
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	September 1 at hour 0	7.8	ESE	0.00	September 1	87.4	82.8
RH (%)	-	-	-	-	-	-	79.7	35	100	September 1 at hour 5	4.5	E	97.7	September 26	89.0	88.9
BP (millibar)	-	-	-	-	-	-	942	931	959	September 28 at hour 9	5.8	N	958	September 28	89.0	88.9
Ext. Temp. (°C)	-	-	-	-	-	-	9.5	-5.5	22.2	September 3 at hour 16	9.9	WSW	15.2	September 3	89.0	88.9
Stn. Temp. (°C)	-	-	-	-	-	-	22.9	20.9	24.8	September 18 at hour 13	4.4	W	23.4	September 26	89.0	88.9
Precipitation (mm)*	-	-	-	-	-	-	58.0	0.0	9.0	September 15 at hour 20	5.5	NNE	19.4	September 15	84.0	83.9
WSV (km/hr)	-	-	-	-	-	-	4.6	0.3	24.4	September 21 at hour 12	24.4	WSW	16.8	September 21	89.0	89.0
WDV (sector)	-	-	-	-	-	-	202 (SSW)	-	-	-	-	-	-	-	89.0	89.0

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

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	1	October 1 at hour 0	14.3	S	0.0	October 1	100.0	94.7
TRS (ppb)	10	3	-	-	-	-	0.71	0.00	5.31	October 17 at hour 19	6.8	S	2.31	October 17	92.9	87.9
THC (ppm)	-	-	-	-	-	-	1.96	1.89	2.20	October 2 at hour 6	5.6	SE	2.05	October 1	99.9	94.7
CH4 (ppm)	-	-	-	-	-	-	1.96	1.89	2.20	October 2 at hour 6	5.6	SE	2.05	October 1	99.9	94.7
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.06	October 16 at hour 20	12	ENE	0.00	October 16	99.9	94.7
RH (%)	-	-	-	-	-	-	76.7	27	100	October 14 at hour 1	9.9	NNE	99.8	October 22	100.0	100.0
BP (millibar)	-	-	-	-	-	-	942	922	964	October 28 at hour 12	10.9	NNW	961	October 28	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	2.3	-14.5	17.6	October 3 at hour 15	4.9	WSW	9.0	October 6	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	21.9	20.5	26.9	October 2 at hour 16	9.9	S	23.4	October 5	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	25.0	0.0	1.4	October 7 at hour 8	14.3	WNNW	3.8	October 21	74.2	74.2
WSV (km/hr)	-	-	-	-	-	-	4.5	0.7	31.3	October 6 at hour 18	31.3	SW	21.3	October 6	100.0	100.0
WDV (sector)	-	-	-	-	-	-	231 (SW)	-	-	-	-	-	-	-	100.0	100.0

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

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



Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	1	November 1 at hour 0	8	SW	0.4	November 7	100.0	95.1
TRS (ppb)	10	3	-	-	-	-	0.47	0.00	2.15	November 2 at hour 18	2.4	N	0.72	November 2	100.0	95.0
THC (ppm)	-	-	-	-	-	-	2.01	1.92	2.13	November 11 at hour 8	15.9	SSW	2.09	November 11	100.0	95.2
CH4 (ppm)	-	-	-	-	-	-	2.01	1.92	2.13	November 11 at hour 8	15.9	SSW	2.09	November 11	100.0	95.2
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	November 1 at hour 0	8	SW	0.00	November 1	100.0	95.2
RH (%)	-	-	-	-	-	-	88.0	39	100	November 1 at hour 18	11.5	SW	99.8	November 19	100.0	100.0
BP (millibar)	-	-	-	-	-	-	944	924	967	November 10 at hour 5	6.2	WNW	964	November 10	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-5.5	-19.8	7.6	November 23 at hour 13	18.6	W	4.9	November 17	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	21.4	20.6	23.3	November 17 at hour 14	16.2	SW	22.0	November 17	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	16.8	0.0	2.4	November 18 at hour 2	15.9	WNW	7.8	November 15	29.7	29.7
WSV (km/hr)	-	-	-	-	-	-	4.0	0.9	35.5	November 22 at hour 18	35.5	SW	23.2	November 22	100.0	100.0
WDV (sector)	-	-	-	-	-	-	225 (SW)	-	-	-	-	-	-	-	100.0	100.0

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

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	1	December 1 at hour 5	18.6	SSW	0.2	December 1	100.0	95.0
TRS (ppb)	10	3	-	-	-	-	0.48	0.00	1.22	December 18 at hour 9	6.6	E	0.57	December 18	98.0	92.6
THC (ppm)	-	-	-	-	-	-	2.01	1.90	2.20	December 15 at hour 3	5.4	S	2.08	December 1	99.5	94.6
CH4 (ppm)	-	-	-	-	-	-	2.01	1.90	2.20	December 15 at hour 3	5.4	S	2.08	December 1	99.5	94.6
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.01	December 1 at hour 5	18.6	SSW	0.00	December 1	99.5	94.6
RH (%)	-	-	-	-	-	-	84.2	38	100	December 17 at hour 0	8.8	SW	95.3	December 21	100.0	100.0
BP (millibar)	-	-	-	-	-	-	938	920	950	December 9 at hour 6	6.4	E	949	December 9	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-9.8	-25.1	3.2	December 29 at hour 3	16.6	WSW	-0.2	December 29	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	21.4	20.6	23.0	December 11 at hour 17	9.3	ENE	21.7	December 31	100.0	100.0
Precipitation (mm)*	-	-	-	-	-	-	1.8	0.0	0.6	December 17 at hour 18	33	SW	1.8	December 17	11.6	11.6
WSV (km/hr)	-	-	-	-	-	-	5.0	0.1	33.0	December 17 at hour 18	33	SW	19.6	December 2	100.0	100.0
WDV (sector)	-	-	-	-	-	-	201 (SSW)	-	-	-	-	-	-	-	100.0	100.0

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

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

## 842b Station:

Monthly reports for August, September, October, November and December: An error was discovered on the Summary of Hourly Averages and Summary of Hourly Instantaneous Maximums for all parameters. Incorrect dates of Maximum Daily Value (Max. 24-hr) were displayed on the summary table. The error was due to an incorrect formula being setup on the report template, which was used for the report preparation. The correct dates of Max. 24-hr are presented on the revised Monitored Data Summaries, which are presented in the following pages.

Monthly reports for January to December: Errors were discovered on the Monitored Data Summary. The dates of maximum 24-hour average (Max. 24-hr) for all parameters incorrectly were referred to the minimum 24-hour average instead. The revised Monitored Data Summaries are presented in the following pages.

The revised monthly reports can be found on the PRAMP website.

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	WSV (km/hr)	WDV (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.1	0	2	January 19 at hour 6	11	E	1.4	January 19	100.0	94.6
TRS (ppb)	10	3	-	-	-	-	0.20	0.08	0.50	January 3 at hour 21	3.1	ESE	0.30	January 4	100.0	94.6
THC (ppm)	-	-	-	-	-	-	2.03	1.92	2.39	January 8 at hour 23	4.3	NE	2.09	January 21	100.0	94.7
CH4 (ppm)	-	-	-	-	-	-	2.03	1.92	2.39	January 8 at hour 23	4.3	NE	2.09	January 21	100.0	94.7
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	January 1 at hour 0	22.7	SSW	0.00	January 1	100.0	94.7
RH (%)	-	-	-	-	-	-	80.1	58	95	January 12 at hour 22	3.8	SE	93.0	January 13	100.0	100.0
BP (millibar)	-	-	-	-	-	-	942	922	960	January 27 at hour 22	6.7	NNW	959	January 28	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-10.3	-29.8	5.9	January 26 at hour 21	20.7	WSW	4.1	January 26	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	21.7	20.2	22.2	January 26 at hour 0	16.1	WSW	22.1	January 26	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.1	0.1	36.0	January 2 at hour 1	36	SW	16.9	January 26	100.0	99.9
WDV (sector)	-	-	-	-	-	-	235(SW)	-	-	-	-	-	-	-	100.0	99.9

1. Date/ Time given is the first minimum and maximum value that were recorded.

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.2	0	2	February 12 at hour 12	9.4	WSW	0.8	February 15	100.0	94.8
TRS (ppb)	10	3	-	-	-	-	0.32	0.10	0.65	February 14 at hour 2	3.2	ENE	0.415	February 14	100.0	94.8
THC (ppm)	-	-	-	-	-	-	2.05	1.93	2.80	February 12 at hour 3	1.5	E	2.26	February 6	98.4	93.3
CH4 (ppm)	-	-	-	-	-	-	2.05	1.93	2.80	February 12 at hour 3	1.5	E	2.26	February 6	98.4	93.3
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	February 1 at hour 0	8.2	N	0.00	February 1	98.4	93.3
RH (%)	-	-	-	-	-	-	70.6	39	92	February 19 at hour 18	4.8	SSW	81.8	February 19	100.0	100.0
BP (millibar)	-	-	-	-	-	-	950	931	971	February 8 at hour 22	0.9	E	965	February 8	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-22.0	-39.8	-1.7	February 27 at hour 15	10.4	W	-7.0	February 27	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	21.9	20.0	22.2	February 7 at hour 10	5.6	WSW	22.1	February 26	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	0.7	0.2	20.6	February 21 at hour 12	20.6	SSE	14.7	February 18	100.0	100.0
VDV (sector)	-	-	-	-	-	-	274(W)	-	-	-	-	-	-	-	100.0	100.0

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.2	0	2	March 21 at hour 2	8	E	0.9	March 4	100.0	94.9
TRS (ppb)	10	3	-	-	-	-	0.26	0.05	0.54	March 20 at hour 22	6.1	ENE	0.44	March 21	100.0	94.7
THC (ppm)	-	-	-	-	-	-	2.01	1.91	2.53	March 2 at hour 8	2	ESE	2.15	March 9	98.9	93.9
CH4 (ppm)	-	-	-	-	-	-	2.01	1.91	2.53	March 2 at hour 8	2	ESE	2.15	March 9	98.9	93.9
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.02	March 26 at hour 3	2.1	ENE	0.00	March 26	98.9	93.9
RH (%)	-	-	-	-	-	-	60.4	16	94	March 12 at hour 7	5	WSW	77.0	March 25	100.0	100.0
BP (millibar)	-	-	-	-	-	-	948	923	971	March 2 at hour 6	2.4	E	969	March 2	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-3.6	-36.4	18.4	March 21 at hour 16	5.6	W	7.3	March 23	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.3	20.7	23.5	March 21 at hour 16	5.6	W	22.6	March 19	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	3.7	0.3	24.0	March 10 at hour 14	24	SSW	14.2	March 10	100.0	100.0
VDV (sector)	-	-	-	-	-	-	202(SSW)	-	-	-	-	-	-	-	100.0	100.0

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	1	April 11 at hour 10	5.2	SW	0.1	April 27	100.0	94.6
TRS (ppb)	10	3	-	-	-	-	0.39	0.11	0.66	April 19 at hour 2	12.5	SW	0.50	April 28	96.5	91.1
THC (ppm)	-	-	-	-	-	-	2.00	1.95	2.22	April 11 at hour 3	3.3	E	2.04	April 26	99.6	94.6
CH4 (ppm)	-	-	-	-	-	-	2.00	1.95	2.22	April 11 at hour 3	3.3	E	2.04	April 26	99.6	94.6
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	April 1 at hour 1	1.8	SW	0.00	April 1	99.6	94.6
RH (%)	-	-	-	-	-	-	54.3	13	97	April 7 at hour 4	1.3	SE	81.8	April 6	100.0	100.0
BP (millibar)	-	-	-	-	-	-	941	925	955	April 28 at hour 5	4.2	NNW	955	April 28	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	3.3	-7.9	15.4	April 18 at hour 14	29.8	WSW	8.7	April 18	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.4	21.8	23.9	April 9 at hour 14	13.3	SW	22.9	April 9	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	3.5	0.1	29.8	April 18 at hour 14	29.8	WSW	17.4	April 18	100.0	100.0
WDV (sector)	-	-	-	-	-	-	241 (WSW)	-	-	-	-	-	-	-	100.0	100.0

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	2	May 22 at hour 9	6.2	NNE	0.1	May 28	100.0	95.3
TRS (ppb)	10	3	-	-	-	-	0.57	0.31	3.48	May 30 at hour 7	13.7	N	2.03	May 30	100.0	95.0
THC (ppm)	-	-	-	-	-	-	1.99	1.88	3.28	May 30 at hour 7	13.7	N	2.51	May 30	100.0	95.3
CH4 (ppm)	-	-	-	-	-	-	1.97	1.88	2.74	May 22 at hour 5	2.5	ENE	2.18	May 30	100.0	95.3
NMHC (ppm)	-	-	-	-	-	-	0.01	0.00	0.82	May 30 at hour 7	13.7	N	0.33	May 30	100.0	95.3
RH (%)	-	-	-	-	-	-	43.2	13	91	May 1 at hour 4	1.4	ESE	67.6	May 1	100.0	100.0
BP (millibar)	-	-	-	-	-	-	943	929	952	May 8 at hour 8	5.5	W	951	May 8	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	11.1	-8.7	29.5	May 28 at hour 16	15	SW	21.0	May 28	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.8	21.7	23.9	May 29 at hour 14	12.2	WSW	23.3	May 29	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.1	0.2	30.0	May 9 at hour 13	30	NW	14.1	May 18	100.0	100.0
WDV (sector)	-	-	-	-	-	-	109 (ESE)	-	-	-	-	-	-	-	100.0	100.0

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	1	June 1 at hour 2	13.1	SE	0.3	June 3	98.9	93.9
TRS (ppb)	10	3	-	-	-	-	0.53	0.31	2.47	June 9 at hour 1	1.4	ENE	0.79	June 9	98.9	93.7
THC (ppm)	-	-	-	-	-	-	1.95	1.87	2.46	June 27 at hour 4	3.1	ENE	2.06	June 27	98.8	93.7
CH4 (ppm)	-	-	-	-	-	-	1.95	1.87	2.46	June 27 at hour 4	3.1	ENE	2.06	June 27	98.8	93.7
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	June 1 at hour 0	3.2	E	0.00	June 1	98.8	93.7
RH (%)	-	-	-	-	-	-	63.1	19	95	June 9 at hour 3	1.4	SE	87.9	June 20	98.9	98.9
BP (millibar)	-	-	-	-	-	-	942	933	950	June 9 at hour 5	1.6	ESE	949	June 9	98.9	98.9
Ext. Temp. (°C)	-	-	-	-	-	-	13.8	1.8	28.3	June 17 at hour 15	15.7	S	20.5	June 17	98.9	98.9
Stn. Temp. (°C)	-	-	-	-	-	-	23.2	21.6	24.2	June 17 at hour 16	17.1	SSE	23.6	June 17	98.9	98.9
WSV (km/hr)	-	-	-	-	-	-	3.3	0.1	32.2	June 4 at hour 14	32.2	SSW	17.8	June 18	98.9	100.0
WDV (sector)	-	-	-	-	-	-	260 (WSW)	-	-	-	-	-	-	-	98.9	98.9

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Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	1	July 16 at hour 10	14.3	SW	0.2	July 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
CH4 (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

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Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	1	August 2 at hour 9	3.9	NNW	0.1	August 28	99.9	95.1
TRS (ppb)	10	3	-	-	-	-	0.43	0.10	1.26	August 17 at hour 7	1.5	SE	0.58	August 15	99.9	94.9
THC (ppm)	-	-	-	-	-	-	1.98	1.89	2.57	August 12 at hour 6	1.7	ENE	2.14	August 30	99.7	94.9
CH4 (ppm)	-	-	-	-	-	-	1.98	1.89	2.57	August 12 at hour 6	1.7	ENE	2.14	August 30	99.7	94.9
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	August 1 at hour 0	3.7	ENE	0.00	August 1	99.7	94.9
RH (%)	-	-	-	-	-	-	74.5	34	96	August 10 at hour 5	2.6	ESE	88.7	August 8	100.0	100.0
BP (millibar)	-	-	-	-	-	-	943	932	950	August 6 at hour 0	5.3	N	949	August 29	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	13.0	0.1	25.1	August 21 at hour 14	8.9	SSW	18.9	August 21	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	23.0	21.6	23.8	August 1 at hour 13	2.1	SE	23.5	August 1	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	2.1	0.2	22.3	August 22 at hour 6	22.3	WSW	13.5	August 22	100.0	99.7
WDV (sector)	-	-	-	-	-	-	253 (WSW)	-	-	-	-	-	-	-	100.0	99.7

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Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	1	September 19 at hour 9	17.8	S	0.0	September 19	97.9	93.0
TRS (ppb)	10	3	-	-	-	-	0.40	0.20	0.93	September 4 at hour 6	7.1	S	0.58	September 4	93.6	88.7
THC (ppm)	-	-	-	-	-	-	1.98	1.86	2.28	September 17 at hour 6	1.7	E	2.06	September 18	97.8	92.9
CH4 (ppm)	-	-	-	-	-	-	1.98	1.86	2.28	September 17 at hour 6	1.7	E	2.06	September 18	97.8	92.9
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	September 1 at hour 0	3.9	SE	0.00	September 1	97.8	92.9
RH (%)	-	-	-	-	-	-	73.3	34	96	September 17 at hour 5	3.9	ESE	90.3	September 26	97.9	97.9
BP (millibar)	-	-	-	-	-	-	942	930	959	September 29 at hour 8	5.2	SE	957	September 28	97.9	97.9
Ext. Temp. (°C)	-	-	-	-	-	-	9.6	-6.1	22.2	September 3 at hour 15	8.8	SW	15.1	September 3	97.9	97.9
Stn. Temp. (°C)	-	-	-	-	-	-	22.8	21.7	23.8	September 12 at hour 10	14.4	SSW	23.2	September 13	97.9	97.9
WSV (km/hr)	-	-	-	-	-	-	3.0	0.3	26.9	September 21 at hour 15	26.9	WSW	15.2	September 21	97.9	97.9
WDV (sector)	-	-	-	-	-	-	203 (SSW)	-	-	-	-	-	-	-	97.9	97.9

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Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	2	October 2 at hour 10	11.1	S	0.3	October 2	100.0	94.9
TRS (ppb)	10	3	-	-	-	-	0.40	0.24	1.19	October 17 at hour 6	8.2	SW	0.61	October 18	97.7	92.6
THC (ppm)	-	-	-	-	-	-	1.99	1.91	2.18	October 3 at hour 7	3.8	ESE	2.05	October 3	100.0	94.9
CH4 (ppm)	-	-	-	-	-	-	1.99	1.91	2.18	October 3 at hour 7	3.8	ESE	2.05	October 3	100.0	94.9
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	October 1 at hour 0	11.8	SSE	0.00	October 1	100.0	94.9
RH (%)	-	-	-	-	-	-	71.6	27	96	October 20 at hour 7	3.3	SSW	93.8	October 22	100.0	100.0
BP (millibar)	-	-	-	-	-	-	941	921	963	October 28 at hour 11	8.5	N	961	October 28	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	2.1	-14.3	16.9	October 3 at hour 15	8.5	SW	8.8	October 6	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.3	21.8	23.4	October 2 at hour 12	9	S	23.0	October 5	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	4.2	0.1	29.4	October 6 at hour 18	29.4	SW	19.5	October 6	100.0	100.0
WDV (sector)	-	-	-	-	-	-	227 (SW)	-	-	-	-	-	-	-	100.0	100.0

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Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.4	0	21	November 23 at hour 22	5.7	SW	2.1	November 17	100.0	95.0
TRS (ppb)	10	3	-	-	-	-	0.42	0.27	0.88	November 15 at hour 14	12.1	SSW	0.49	November 15	100.0	94.8
THC (ppm)	-	-	-	-	-	-	1.99	1.92	2.35	November 15 at hour 14	12.1	SSW	2.04	November 29	100.0	95.1
CH4 (ppm)	-	-	-	-	-	-	1.99	1.92	2.16	November 15 at hour 14	12.1	SSW	2.04	November 29	100.0	95.1
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.19	November 15 at hour 14	12.1	SSW	0.01	November 15	100.0	95.1
RH (%)	-	-	-	-	-	-	81.9	45	96	November 1 at hour 21	7.4	SW	93.0	November 13	100.0	100.0
BP (millibar)	-	-	-	-	-	-	944	923	967	November 10 at hour 8	4.5	SW	964	November 10	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-5.5	-19.7	7.2	November 17 at hour 15	12.1	SW	4.7	November 17	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.1	21.5	23.2	November 17 at hour 16	14.2	SW	22.5	November 17	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	3.4	0.3	30.4	November 22 at hour 19	30.4	WSW	19.2	November 22	100.0	100.0
WDV (sector)	-	-	-	-	-	-	215 (SSW)	-	-	-	-	-	-	-	100.0	100.0

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Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.2	0	3	December 15 at hour 3	4.8	SSE	0.7	December 6	100.0	95.0
TRS (ppb)	10	3	-	-	-	-	0.45	0.02	0.68	December 22 at hour 4	2.6	N	0.52	December 5	100.0	95.0
THC (ppm)	-	-	-	-	-	-	2.04	1.94	2.45	December 20 at hour 2	5	NE	2.12	December 21	100.0	95.1
CH4 (ppm)	-	-	-	-	-	-	2.04	1.94	2.45	December 20 at hour 2	5	NE	2.12	December 21	100.0	95.1
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	December 1 at hour 0	8.1	S	0.00	December 1	100.0	95.1
RH (%)	-	-	-	-	-	-	77.6	37	93	December 17 at hour 10	6.3	SE	87.1	December 21	100.0	100.0
BP (millibar)	-	-	-	-	-	-	937	919	950	December 9 at hour 9	3.8	E	948	December 9	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-9.7	-24.7	3.3	December 17 at hour 17	26.5	SSW	-0.4	December 29	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.1	20.8	22.4	December 2 at hour 8	13.7	SSW	22.3	December 3	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	4.3	0.1	30.2	December 2 at hour 20	30.2	WSW	17.0	December 2	100.0	100.0
WDV (sector)	-	-	-	-	-	-	195 (SSW)	-	-	-	-	-	-	-	100.0	100.0

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## Reno Station:

Monthly reports for August, September, October, November and December: An error was discovered on the Summary of Hourly Averages and Summary of Hourly Instantaneous Maximums for all parameters. Incorrect dates of Maximum Daily Value (Max. 24-hr) were displayed on the summary table. The error was due to an incorrect formula being setup on the report template, which was used for the report preparation. The correct dates of Max. 24-hr are presented on the revised Monitored Data Summaries, which are presented in the following pages.

Monthly reports for January to December: Errors were discovered on the Monitored Data Summary. The dates of maximum 24-hour average (Max. 24-hr) for all parameters incorrectly were referred to the minimum 24-hour average instead. The revised Monitored Data Summaries are presented in the following pages.

The revised monthly reports can be found on the PRAMP website.

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	WSV (km/hr)	WDV (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	2	January 19 at hour 11	7.3	SE	1.0	January 19	100.0	94.6
TRS (ppb)	10	3	-	-	-	-	0.41	0.32	1.33	January 29 at hour 6	3.2	S	0.619	January 29	100.0	94.6
THC (ppm)	-	-	-	-	-	-	2.03	1.91	3.28	January 3 at hour 23	1	ENE	2.16	January 4	99.6	94.2
CH4 (ppm)	-	-	-	-	-	-	2.03	1.91	3.28	January 3 at hour 23	1	ENE	2.16	January 4	99.6	94.2
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.01	January 14 at hour 3	5.9	S	0.00	January 1	99.6	94.2
RH (%)	-	-	-	-	-	-	72.3	53	92	January 13 at hour 20	5.2	S	87.2	January 13	100.0	100.0
BP (millibar)	-	-	-	-	-	-	937	916	955	January 27 at hour 22	5.3	NNW	954	January 28	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-9.5	-29.2	6.1	January 26 at hour 15	19	WSW	4.4	January 26	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.4	17.8	24.4	January 10 at hour 12	5.9	SE	23.7	January 12	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	0.8	0.3	21.7	January 26 at hour 20	21.7	WSW	12.9	January 26	100.0	100.0
WDV (sector)	-	-	-	-	-	-	242(WSW)	-	-	-	-	-	-	-	100.0	100.0

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Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.1	0	2	February 6 at hour 11	4.8	S	0.6	February 8	100.0	94.9
TRS (ppb)	10	3	-	-	-	-	0.44	0.23	3.57	February 10 at hour 22	1.2	SSW	0.717	February 10	100.0	94.5
THC (ppm)	-	-	-	-	-	-	2.18	1.93	10.23	February 24 at hour 21	1.5	SW	3.19	February 24	100.0	94.8
CH4 (ppm)	-	-	-	-	-	-	2.18	1.93	10.18	February 24 at hour 21	1.5	SW	3.19	February 24	100.0	94.8
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.05	February 24 at hour 21	1.5	SW	0.00	February 24	100.0	94.8
RH (%)	-	-	-	-	-	-	61.3	43	87	February 19 at hour 21	5.3	WSW	76.6	February 19	100.0	100.0
BP (millibar)	-	-	-	-	-	-	944	926	964	February 8 at hour 20	3.5	NNE	959	February 8	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-21.9	-38.1	-3.4	February 27 at hour 16	8.5	WSW	-7.5	February 27	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.4	18.3	23.2	February 6 at hour 1	-	-	22.7	February 19	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	0.9	0.8	18.1	February 28 at hour 19	18.1	NNE	9.7	February 1	95.4	95.4
WDV (sector)	-	-	-	-	-	-	330(NNW)	-	-	-	-	-	-	-	95.4	95.4

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Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS* (km/hr)	VWD* (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.4	0	3	March 22 at hour 8	5.2	SW	1.3	March 8	100.0	95.1
TRS (ppb)*	10	3	-	-	-	-	0.28	0.09	1.01	March 27 at hour 18	X	X	0.50	March 27	92.2	87.7
THC (ppm)	-	-	-	-	-	-	2.11	1.95	6.31	March 7 at hour 20	2	SSW	2.40	March 7	100.0	95.1
CH4 (ppm)	-	-	-	-	-	-	2.11	1.95	6.31	March 7 at hour 20	2	SSW	2.40	March 7	100.0	95.1
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.36	March 18 at hour 23	3.8	SSW	0.02	March 18	100.0	95.1
RH (%)	-	-	-	-	-	-	55.7	18	91	March 12 at hour 2	10.2	WSW	73.6	March 25	100.0	100.0
BP (millibar)	-	-	-	-	-	-	943	919	964	March 2 at hour 2	1.9	SSW	964	March 2	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-3.4	-33.6	17.3	March 21 at hour 15	4.4	S	6.8	March 23	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	23.0	21.3	26.3	March 14 at hour 16	5.9	SSE	23.6	March 11	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	2.6	0.3	15.3	March 23 at hour 10	15.3	ESE	11.8	March 23	96.4	96.4
WDV (sector)	-	-	-	-	-	-	215(SSW)	-	-	-	-	-	-	-	96.4	96.4

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

\* Flag of "X" is used if VWS and VWD data are not valid.



Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.2	0	1	April 1 at hour 6	7.4	WSW	0.8	April 14	99.9	94.6
TRS (ppb)	10	3	-	-	-	-	0.37	0.24	1.36	April 22 at hour 19	15.8	WSW	0.53	April 22	99.9	94.4
THC (ppm)	-	-	-	-	-	-	1.99	1.92	3.85	April 10 at hour 21	1.6	SSW	2.16	April 10	99.2	94.0
CH4 (ppm)	-	-	-	-	-	-	1.99	1.92	3.85	April 10 at hour 21	1.6	SSW	2.16	April 10	99.2	94.0
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.02	April 11 at hour 0	2.5	SSW	0.00	April 11	99.2	94.0
RH (%)	-	-	-	-	-	-	52.1	12	93	April 7 at hour 5	1.9	S	80.1	April 15	100.0	100.0
BP (millibar)	-	-	-	-	-	-	936	920	951	April 28 at hour 8	10.1	NNE	950	April 28	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	3.5	-6.8	15.0	April 18 at hour 15	12	W	8.4	April 18	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	23.5	22.3	25.4	April 17 at hour 12	11	W	23.9	April 18	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.9	0.4	17.6	April 17 at hour 13	17.6	WSW	11.4	April 23	100.0	99.9
WDV (sector)	-	-	-	-	-	-	260 (WSW)	-	-	-	-	-	-	-	100.0	99.9

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.1	0	2	May 29 at hour 6	4.5	SSW	0.8	May 29	99.7	94.7
TRS (ppb)	10	3	-	-	-	-	0.44	0.29	3.59	May 30 at hour 8	12.3	NNE	1.31	May 30	97.6	92.6
THC (ppm)	-	-	-	-	-	-	2.00	1.92	3.20	May 30 at hour 8	12.3	NNE	2.23	May 30	97.6	92.6
CH4 (ppm)	-	-	-	-	-	-	1.99	1.92	2.53	May 30 at hour 8	12.3	NNE	2.11	May 30	97.6	92.6
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.67	May 30 at hour 8	12.3	NNE	0.12	May 30	97.6	92.6
RH (%)	-	-	-	-	-	-	41.8	11	92	May 24 at hour 5	2.1	NE	73.1	May 1	100.0	100.0
BP (millibar)	-	-	-	-	-	-	938	926	948	May 8 at hour 8	5.2	WSW	947	May 8	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	11.3	-6.9	29.0	May 29 at hour 14	9.3	W	21.9	May 29	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	24.1	22.1	26.3	May 15 at hour 14	12	ENE	25.1	May 29	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.7	0.0	20.4	May 17 at hour 13	20.4	ESE	14.2	May 17	100.0	100.0
WDV (sector)	-	-	-	-	-	-	107 (ESE)	-	-	-	-	-	-	-	100.0	100.0

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	1	June 1 at hour 0	1.9	S	0.3	June 17	99.9	94.7
TRS (ppb)	10	3	-	-	-	-	0.46	0.19	3.50	June 16 at hour 5	1.4	SSW	0.94	June 17	99.7	94.4
THC (ppm)	-	-	-	-	-	-	1.94	1.87	2.30	June 21 at hour 21	0.3	SW	1.99	June 22	99.9	94.6
CH4 (ppm)	-	-	-	-	-	-	1.94	1.87	2.30	June 21 at hour 21	0.3	SW	1.99	June 22	99.9	94.6
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	June 1 at hour 0	1.9	S	0.00	June 1	99.9	94.6
RH (%)	-	-	-	-	-	-	62.4	17	100	June 25 at hour 3	4	W	87.6	June 20	100.0	100.0
BP (millibar)	-	-	-	-	-	-	938	929	946	June 9 at hour 6	3.4	SW	945	June 9	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	14.0	3.6	29.3	June 17 at hour 15	4.5	SSW	20.5	June 17	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	23.3	21.2	30.8	June 12 at hour 17	10	W	26.2	June 12	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	2.1	0.0	18.1	June 18 at hour 16	18.1	WSW	12.5	June 20	100.0	100.0
WDV (sector)	-	-	-	-	-	-	293 (WNW)	-	-	-	-	-	-	-	100.0	100.0

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	2	July 21 at hour 9	3.8	S	0.2	July 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
CH4 (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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	1	August 1 at hour 0	0.2	SW	0.4	August 21	100.0	95.1
TRS (ppb)	10	3	-	-	-	-	0.51	0.18	3.73	August 27 at hour 6	1.7	S	1.05	August 23	97.8	93.0
THC (ppm)	-	-	-	-	-	-	1.99	1.88	3.10	August 29 at hour 2	0.8	SW	2.18	August 29	97.7	93.0
CH4 (ppm)	-	-	-	-	-	-	1.99	1.88	3.10	August 29 at hour 2	0.8	SW	2.18	August 29	97.7	93.0
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.00	August 1 at hour 0	0.2	SW	0.00	August 1	97.7	93.0
RH (%)	-	-	-	-	-	-	73.2	30	97	August 1 at hour 5	0.8	SSW	89.0	August 8	97.8	97.8
BP (millibar)	-	-	-	-	-	-	939	928	945	August 6 at hour 4	3.6	NNE	944	August 29	97.8	97.8
Ext. Temp. (°C)	-	-	-	-	-	-	13.4	2.5	26.0	August 21 at hour 14	2.1	S	19.8	August 21	97.8	97.8
Stn. Temp. (°C)	-	-	-	-	-	-	22.6	21.1	23.5	August 21 at hour 9	4	S	23.2	August 23	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.3	0.0	13.9	August 16 at hour 11	13.9	N	8.1	August 16	97.8	97.8
WDV (sector)	-	-	-	-	-	-	270 (W)	-	-	-	-	-	-	-	97.8	97.8

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	6	September 11 at hour 13	4.6	SE	0.3	September 11	99.4	94.8
TRS (ppb)	10	3	-	-	-	-	0.53	0.24	4.95	September 17 at hour 5	1.5	SW	1.80	September 17	99.4	94.4
THC (ppm)	-	-	-	-	-	-	1.97	1.87	2.43	September 18 at hour 7	1.5	SW	2.08	September 18	99.3	94.4
CH4 (ppm)	-	-	-	-	-	-	1.97	1.87	2.43	September 18 at hour 7	1.5	SW	2.08	September 18	99.3	94.4
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.04	September 4 at hour 7	1.4	S	0.00	September 4	99.3	94.4
RH (%)	-	-	-	-	-	-	71.0	33	96	September 4 at hour 5	1.9	SSW	90.4	September 26	99.7	99.7
BP (millibar)	-	-	-	-	-	-	938	926	954	September 29 at hour 8	4.8	SE	952	September 28	99.7	99.7
Ext. Temp. (°C)	-	-	-	-	-	-	10.1	-4.0	23.1	September 3 at hour 15	4.3	W	15.9	September 3	99.7	99.7
Stn. Temp. (°C)	-	-	-	-	-	-	23.3	22.3	24.6	September 11 at hour 18	2	SSE	23.6	September 11	99.7	99.7
WSV (km/hr)	-	-	-	-	-	-	1.4	0.0	18.1	September 21 at hour 14	18.1	WSW	9.5	September 21	99.7	99.7
WDV (sector)	-	-	-	-	-	-	219 (SW)	-	-	-	-	-	-	-	99.7	99.7

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	1	October 3 at hour 6	4.9	SSE	0.1	October 30	98.1	93.0
TRS (ppb)	10	3	-	-	-	-	0.37	0.22	2.45	October 17 at hour 21	1.5	SSW	0.78	October 17	98.0	92.8
THC (ppm)	-	-	-	-	-	-	2.00	1.90	2.67	October 17 at hour 21	1.5	SSW	2.10	October 3	98.0	93.0
CH4 (ppm)	-	-	-	-	-	-	2.00	1.90	2.48	October 17 at hour 21	1.5	SSW	2.10	October 3	98.0	93.0
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.24	October 17 at hour 20	1	SSW	0.02	October 17	98.0	93.0
RH (%)	-	-	-	-	-	-	69.5	22	99	October 20 at hour 1	2.2	W	95.7	October 21	94.9	94.9
BP (millibar)	-	-	-	-	-	-	938	917	958	October 28 at hour 12	7.4	N	956	October 28	94.9	94.9
Ext. Temp. (°C)	-	-	-	-	-	-	2.0	-14.2	17.0	October 2 at hour 14	4.9	S	8.8	October 4	94.9	94.9
Stn. Temp. (°C)	-	-	-	-	-	-	23.0	19.7	24.0	October 22 at hour 1	9.7	SE	23.6	October 24	98.4	98.4
WSV (km/hr)	-	-	-	-	-	-	2.9	0.2	20.4	October 6 at hour 14	20.4	WSW	11.5	October 6	93.4	93.4
WDV (sector)	-	-	-	-	-	-	251 (WSW)	-	-	-	-	-	-	-	93.4	93.4

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	1	November 1 at hour 9	7.3	WSW	0.2	November 14	100.0	95.0
TRS (ppb)	10	3	-	-	-	-	0.35	0.25	0.62	November 11 at hour 9	4.2	S	0.45	November 16	100.0	94.7
THC (ppm)	-	-	-	-	-	-	2.00	1.90	2.72	November 5 at hour 21	1.2	SSW	2.08	November 11	100.0	95.0
CH4 (ppm)	-	-	-	-	-	-	2.00	1.90	2.72	November 5 at hour 21	1.2	SSW	2.08	November 11	100.0	95.0
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.03	November 5 at hour 22	0.9	S	0.00	November 5	100.0	95.0
RH (%)	-	-	-	-	-	-	77.9	49	98	November 1 at hour 23	4.6	WSW	91.6	November 2	100.0	100.0
BP (millibar)	-	-	-	-	-	-	939	920	962	November 10 at hour 8	1.4	WSW	959	November 10	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-5.1	-21.9	8.9	November 17 at hour 14	11.8	WSW	4.9	November 17	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.2	19.1	23.1	November 29 at hour 18	4.4	S	22.6	November 21	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.9	0.3	19.3	November 23 at hour 3	19.3	WSW	11.4	November 22	100.0	100.0
WDV (sector)	-	-	-	-	-	-	242 (WSW)	-	-	-	-	-	-	-	100.0	100.0

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Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.1	0	1	December 1 at hour 8	3.9	S	0.7	December 19	100.0	95.3
TRS (ppb)	10	3	-	-	-	-	0.40	0.01	0.95	December 3 at hour 23	1.8	S	0.53	December 21	100.0	95.3
THC (ppm)	-	-	-	-	-	-	2.05	1.91	2.54	December 25 at hour 6	4.5	S	2.22	December 22	100.0	95.4
CH4 (ppm)	-	-	-	-	-	-	2.05	1.91	2.54	December 25 at hour 6	4.5	S	2.21	December 22	100.0	95.4
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.02	December 14 at hour 1	5.5	SSW	0.00	December 22	100.0	95.4
RH (%)	-	-	-	-	-	-	72.0	38	89	December 31 at hour 20	2.6	SSW	79.7	December 21	100.0	100.0
BP (millibar)	-	-	-	-	-	-	932	915	944	December 9 at hour 6	2.7	NNE	943	December 9	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-9.7	-20.6	3.5	December 17 at hour 20	17.2	WSW	-0.7	December 3	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.4	20.4	23.8	December 16 at hour 21	3.8	S	23.5	December 16	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	2.5	0.0	17.3	December 2 at hour 21	17.3	WSW	9.8	December 2	100.0	100.0
WDV (sector)	-	-	-	-	-	-	206 (SSW)	-	-	-	-	-	-	-	100.0	100.0

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

## AQHI - Cadotte Lake Station:

Monthly reports for October, November and December: An error was discovered on the Summary of Hourly Averages and Summary of Hourly Instantaneous Maximums for all parameters. Incorrect dates of Maximum Daily Value (Max. 24-hr) were displayed on the summary table. The error was due to an incorrect formula being setup on the report template, which was used for the report preparation. The correct dates of Max. 24-hr are presented on the revised Monitored Data Summaries, which are presented in the following pages.

Monthly reports for October to December: Errors were discovered on the Monitored Data Summary. The dates of maximum 24-hour average (Max. 24-hr) for all parameters incorrectly were referred to the minimum 24-hour average instead. The revised Monitored Data Summaries are presented in the following pages.

The revised monthly reports can be found on the PRAMP website.

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	0	October 2 at hour 14	7.6	SE	0.0	October 3	98.7	89.4
TRS (ppb)	10	3	-	-	-	-	0.29	0.00	0.71	October 4 at hour 12	11.6	WSW	0.43	October 30	93.1	81.3
Nox (ppb)	-	-	-	-	-	-	0.6	0	10	October 3 at hour 6	1.5	SE	2.1	October 29	67.9	61.0
NO (ppb)	-	-	-	-	-	-	0.1	0	8	October 3 at hour 7	0.6	S	1.1	October 3	67.9	61.0
NO2 (ppb)	159	-	-	0	-	-	0.4	0	5	October 24 at hour 17	3.1	SW	1.8	October 29	67.9	61.0
O3 (ppb)	76	-	-	0	-	-	18.8	0	38	October 3 at hour 17	7.6	ESE	30.3	October 6	98.7	88.7
THC (ppm)	-	-	-	-	-	-	1.90	1.82	2.02	October 17 at hour 7	0.5	WNW	1.93	October 29	94.3	82.4
CH4 (ppm)	-	-	-	-	-	-	1.90	1.82	1.99	October 17 at hour 6	3.2	SE	1.93	October 29	94.3	82.4
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.03	October 17 at hour 6	3.2	SE	0.00	October 8	94.3	82.4
PM2.5 (µg/m3)	80	30	-	0	0	-	3.1	0.2	18.4	October 4 at hour 8	6.1	WSW	7.5	October 30	100.0	94.2
RH (%)	-	-	-	-	-	-	74.8	28	98	October 16 at hour 0	6.5	E	96.1	October 22	100.0	96.5
Ext. Temp. (°C)	-	-	-	-	-	-	1.5	-20.1	17.5	October 2 at hour 12	5.2	SSE	9.4	October 6	99.3	95.8
Stn. Temp. (°C)	-	-	-	-	-	-	22.4	19.8	24.7	October 2 at hour 11	4	SE	22.9	October 18	100.0	96.5
WSV (km/hr)	-	-	-	-	-	-	2.0	0.3	27.8	October 6 at hour 20	27.8	SW	14.7	October 6	100.0	96.5
WDV (sector)	-	-	-	-	-	-	269 (W)	-	-	-	-	-	-	-	100.0	96.5

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	0	November 1 at hour 0	3.6	WNW	0.0	November 1	100.0	95.0
TRS (ppb)	10	3	-	-	-	-	0.34	0.00	0.74	November 15 at hour 15	1.4	NW	0.46	November 13	97.5	92.3
Nox (ppb)	-	-	-	-	-	-	1.4	0	25	November 7 at hour 17	1.2	SSW	4.4	November 7	97.9	92.8
NO (ppb)	-	-	-	-	-	-	0.3	0	13	November 7 at hour 17	1.2	SSW	1.7	November 7	97.9	92.8
NO2 (ppb)	159	-	-	0	-	-	1.1	0	11	November 7 at hour 17	1.2	SSW	2.8	November 15	97.9	92.8
O3 (ppb)	76	-	-	0	-	-	20.2	0	43	November 23 at hour 9	11.2	WSW	37.5	November 22	98.3	92.9
THC (ppm)	-	-	-	-	-	-	1.90	1.85	1.97	November 1 at hour 13	1.7	SE	1.96	November 30	100.0	95.4
CH4 (ppm)	-	-	-	-	-	-	1.90	1.85	1.97	November 1 at hour 13	1.7	SE	1.96	November 30	100.0	95.4
NMHC (ppm)	-	-	-	-	-	-	0.00	0.00	0.01	November 6 at hour 8	2.4	W	0.00	November 6	100.0	95.4
PM2.5 (µg/m3)	80	30	-	0	0	-	5.0	0.4	48.1	November 5 at hour 1	8.1	NNW	18.5	November 2	99.4	98.9
RH (%)	-	-	-	-	-	-	81.4	36	98	November 15 at hour 17	4	WNW	93.8	November 15	100.0	100.0
Ext. Temp. (°C)	-	-	-	-	-	-	-7.1	-29.6	7.7	November 23 at hour 12	15.8	W	5.4	November 22	100.0	100.0
Stn. Temp. (°C)	-	-	-	-	-	-	22.1	20.9	23.4	November 5 at hour 15	7.1	NW	22.9	November 22	100.0	100.0
WSV (km/hr)	-	-	-	-	-	-	1.9	0.2	25.3	November 22 at hour 20	25.3	WSW	14.6	November 22	93.5	93.5
WDV (sector)	-	-	-	-	-	-	283 (W)	-	-	-	-	-	-	-	93.5	93.5

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

Parameter	Objectives/Guidelines			Exceedances			Monthly Avg.	Min. 1-hr	Max. 1-hr	Date/Time	VWS (km/hr)	VWD (sector)	Max. 24-hr	Date	Operational Uptime (%)	Valid Data (%)
	1-hr	24-hr	30-day	1-hr	24-hr	30-day										
SO2 (ppb)	172	48	11	0	0	0	0.0	0	0	December 1 at hour 0	0.8	WNW	0.0	December 1	99.9	94.9
TRS (ppb)	10	3	-	-	-	-	0.38	0.05	0.82	December 18 at hour 16	X*	X*	0.49	December 18	99.3	94.3
Nox (ppb)	-	-	-	-	-	-	2.2	0	18	December 19 at hour 16	2.8	SE	4.9	December 24	99.9	94.7
NO (ppb)	-	-	-	-	-	-	0.4	0	13	December 23 at hour 14	0.6	ENE	1.7	December 24	99.9	94.7
NO2 (ppb)	159	-	-	0	-	-	1.8	0	12	December 19 at hour 16	2.8	SE	3.5	December 13	99.9	94.7
O3 (ppb)	76	-	-	0	-	-	19.1	0	39	December 3 at hour 14	7.3	W	33.9	December 2	99.9	94.9
THC (ppm)	-	-	-	-	-	-	1.96	1.79	2.43	December 6 at hour 3	1.2	WNW	2.07	December 6	99.9	94.9
CH4 (ppm)	-	-	-	-	-	-	1.96	1.79	2.19	December 25 at hour 10	2.1	W	2.06	December 23	99.9	94.9
NMHC (ppm)	-	-	-	-	-	-	0.01	0.00	0.33	December 21 at hour 10	1.1	W	0.07	December 6	99.9	94.9
PM2.5 (µg/m3)	80	30	-	0	0	-	5.4	0.4	33.9	December 30 at hour 23	3.6	S	15.6	December 22	99.9	99.6
RH (%)	-	-	-	-	-	-	80.1	49	94	December 29 at hour 19	2.4	ENE	87.4	December 17	99.3	99.3
Ext. Temp. (°C)	-	-	-	-	-	-	-13.1	-27.4	4.0	December 31 at hour 13	5.4	WSW	-1.2	December 29	99.3	99.3
Stn. Temp. (°C)	-	-	-	-	-	-	21.9	21.0	23.4	December 17 at hour 14	6.8	ESE	22.5	December 29	99.9	99.9
WSV (km/hr)	-	-	-	-	-	-	0.5	0.1	19.5	December 17 at hour 19	19.5	SW	10.3	December 10	99.2	98.9
WDV (sector)	-	-	-	-	-	-	138 (SE)	-	-	-	-	-	-	-	99.2	98.9
1- Date/ Time given is the first minimum and maximum value that was recorded																
* Flag of "X" is used if VWS and VWD data are not valid.																

## Deviations from Authorized Monitoring Methods

At the 986b 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. The ambient air monitoring station was relocated on August 1 to address this non-conformance. The station at the new location is named the 986c station.

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.

## 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.



Michael Bisaga, Environmental Monitoring Program Manager, PRAMP Airshed

March 27, 2020



## 1. Summaries of Statistics and Data Qualifier Flag Summaries

### 1.1 986b / 986c Station

Data collected at the 986b station and the 986c stations were combined into one annual summary table per parameter. Data collected between January and July were from the 986b Station, and data collected August and December were from the 986c station.

Table 1 SO2 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	# of 30-day AAAQO Exceedances	Min. 1-hr (ppb)	Max. 1-hr (ppb)	# of 1-hr AAAQO Exceedances	Max. 24-hr (ppb)	# of 24-hr AAAQO Exceedances
January	99.2	699	0.8	0	0	4	0	3	0
February	99.9	639	0.1	0	0	8	0	1	0
March	100.0	707	0.3	0	0	2	0	2	0
April	100.0	683	0.7	0	0	3	0	1	0
May	100.0	706	0.9	0	0	4	0	3	0
June	98.8	673	0.1	0	0	2	0	1	0
July	95.3	676	0.0	0	0	0	0	0	0
August	95.0	671	0.0	0	0	2	0	0	0
September	88.8	607	0.0	0	0	1	0	0	0
October	100.0	705	0.0	0	0	1	0	0	0
November	100.0	685	0.0	0	0	1	0	0	0
December	100.0	707	0.0	0	0	1	0	0	0
Annual	98.1	8158	0.3	0	0	8	0	3	0

Table 2 SO2 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 10	11 -50	51 -100	101 - 172	>172
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 3 SO2 2019 Annual Frequency Distribution

P	X	Y	R	K	C	S	Q	C1	S1
87	6	14	3	57	60	274	3	0	1
Total Hours of Downtime		168	Total Hours of Calibration Time			432	Total Hours of Flagged		600

Table 4 TRS 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	Min. 1-hr (ppb)	Max. 1-hr (ppb)	Max. 24-hr (ppb)
January	97.6	687	0.6	0.2	1.1	0.9
February	99.9	637	0.1	0.0	0.8	0.3
March	100.0	708	0.2	0.1	1.0	0.4
April	100.0	682	0.2	0.1	0.7	0.2
May	100.0	706	0.3	0.1	3.7	2.2
June	93.5	640	0.6	0.0	3.0	0.8
July	98.9	698	0.7	0.0	2.2	1.0
August	92.3	651	0.7	0.0	2.6	1.0
September	83.2	567	0.8	0.2	3.3	1.4
October	92.9	654	0.7	0.0	5.3	2.3
November	100.0	684	0.5	0.0	2.2	0.7
December	98.0	689	0.5	0.0	1.2	0.6
Annual	96.3	8003	0.5	0.0	5.3	2.3

Table 5 TRS 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 2	3 - 5	6 - 10	11 - 50	>50
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	97.9%	2.1%	0.0%	0.0%	0.0%
June	99.8%	0.2%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	99.8%	0.2%	0.0%	0.0%	0.0%
September	98.4%	1.6%	0.0%	0.0%	0.0%
October	96.3%	3.7%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	99.4%	0.6%	0.0%	0.0%	0.0%

Table 6 TRS 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
87	99	78	3	38	68	272	3	10	0
Total Hours of Downtime		319	Total Hours of Calibration Time			436	Total Hours of Flagged		755

Table 7 THC 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	92.5	651	2.07	1.92	2.52	2.20
February	99.9	637	2.11	1.99	2.78	2.33
March	100.0	708	2.04	1.92	2.66	2.21
April	99.4	679	2.01	1.93	2.60	2.07
May	99.7	703	2.02	1.90	3.14	2.46
June	98.8	676	1.99	1.87	3.07	2.11
July	98.9	700	2.04	1.89	3.02	2.15
August	95.0	671	1.98	1.88	2.38	2.07
September	87.4	596	1.99	1.89	2.27	2.07
October	99.9	705	1.96	1.89	2.20	2.05
November	100.0	686	2.01	1.92	2.13	2.09
December	99.5	704	2.01	1.90	2.20	2.08
Annual	97.6	8116	2.02	1.87	3.14	2.46

Table 8 THC 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 2	3 - 5	6 - 10	11 - 40	>40
January	99.4%	0.6%	0.0%	0.0%	0.0%
February	96.5%	3.5%	0.0%	0.0%	0.0%
March	98.6%	1.4%	0.0%	0.0%	0.0%
April	99.6%	0.4%	0.0%	0.0%	0.0%
May	96.4%	3.6%	0.0%	0.0%	0.0%
June	99.3%	0.7%	0.0%	0.0%	0.0%
July	97.6%	2.4%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	98.9%	1.1%	0.0%	0.0%	0.0%

Table 9 THC 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
87	57	20	3	40	55	276	3	0	2
Total Hours of Downtime		213	Total Hours of Calibration Time			429	Total Hours of Flagged		642

Table 10 CH4 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	92.5	651	2.07	1.92	2.52	2.20
February	99.9	637	2.11	1.99	2.69	2.31
March	100.0	708	2.04	1.92	2.64	2.20
April	99.4	679	2.01	1.93	2.60	2.07
May	99.7	703	2.01	1.90	2.71	2.23
June	98.8	676	1.99	1.87	3.07	2.11
July	98.9	700	2.04	1.89	3.02	2.15
August	95.0	671	1.98	1.88	2.38	2.07
September	87.4	596	1.99	1.89	2.27	2.07
October	99.9	705	1.96	1.89	2.20	2.05
November	100.0	686	2.01	1.92	2.13	2.09
December	99.5	704	2.01	1.90	2.20	2.08
Annual	97.6	8116	2.02	1.87	3.07	2.31

Table 11 CH4 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 2	3 - 5	6 - 10	11 - 20	>20
January	99.4%	0.6%	0.0%	0.0%	0.0%
February	96.5%	3.5%	0.0%	0.0%	0.0%
March	98.6%	1.4%	0.0%	0.0%	0.0%
April	99.6%	0.4%	0.0%	0.0%	0.0%
May	98.6%	1.4%	0.0%	0.0%	0.0%
June	99.3%	0.7%	0.0%	0.0%	0.0%
July	97.6%	2.4%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	99.1%	0.9%	0.0%	0.0%	0.0%

Table 12 CH4 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
87	57	20	3	40	55	276	3	0	2
Total Hours of Downtime		213	Total Hours of Calibration Time			429	Total Hours of Flagged		642

Table 13 NMHC 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	92.5	651	0.00	0.00	0.05	0.00
February	99.9	637	0.00	0.00	0.09	0.02
March	100.0	708	0.00	0.00	0.05	0.01
April	99.4	679	0.00	0.00	0.01	0.00
May	99.7	703	0.01	0.00	0.57	0.23
June	98.8	676	0.00	0.00	0.05	0.00
July	98.9	700	0.00	0.00	0.04	0.00
August	95.0	671	0.00	0.00	0.00	0.00
September	87.4	596	0.00	0.00	0.00	0.00
October	99.9	705	0.00	0.00	0.06	0.00
November	100.0	686	0.00	0.00	0.00	0.00
December	99.5	704	0.00	0.00	0.01	0.00
Annual	97.6	8116	0.00	0.00	0.57	0.23

Table 14 NMHC 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 0.1	0.2 - 0.3	0.4 - 0.9	1 - 2	>2
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	97.2%	2.4%	0.4%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	99.8%	0.2%	0.0%	0.0%	0.0%

Table 15 NMHC 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
87	57	20	3	40	55	276	3	0	2
Total Hours of Downtime		213	Total Hours of Calibration Time			429	Total Hours of Flagged		642

Table 16 RH 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (%)	Min. 1-hr (%)	Max. 1-hr (%)	Max. 24-hr (%)
January	99.2	738	78.7	58	100	96
February	100.0	672	64.3	38	95	81
March	100.0	744	59.3	19	100	77
April	99.3	715	56.0	16	100	86
May	100.0	744	44.3	14	94	69
June	98.9	712	66.6	20	100	93
July	98.7	734	77.0	33	100	97
August	95.0	706	81.2	37	100	97
September	89.0	641	79.7	35	100	98
October	100.0	744	76.7	27	100	100
November	100.0	720	88.0	39	100	100
December	100.0	744	84.2	38	100	95
Annual	98.3	8614	71.3	14	100	100

Table 17 RH Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
87	6	22	0	30	0	0	0	0	0
Total Hours of Downtime		145	Total Hours of Calibration Time			0	Total Hours of Flagged		145

Table 18 BP 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (mb)	Min. 1-hr (mb)	Max. 1-hr (mb)	Max. 24-hr (mb)
January	99.2	738	941.0	921	959	958
February	100.0	672	949.4	930	974	965
March	100.0	744	947.0	923	973	970
April	99.3	715	939.7	924	955	954
May	100.0	744	942.4	929	951	950
June	98.9	712	941.0	933	949	948
July	98.7	734	941.4	927	954	953
August	95.0	706	944.3	934	951	950
September	89.0	641	942.3	931	959	958
October	100.0	744	942.4	922	964	961
November	100.0	720	944.3	924	967	964
December	100.0	744	937.7	920	950	949
Annual	98.3	8614	942.7	920	974	970

Table 19 BP Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
87	6	22	0	30	0	0	0	0	0
Total Hours of Downtime		145	Total Hours of Calibration Time			0	Total Hours of Flagged		145



Table 20 AT 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (°C)	Min. 1-hr (°C)	Max. 1-hr (°C)	Max. 24-hr (°C)
January	99.2	738	-10.5	-30.6	7.4	5.0
February	100.0	672	-22.2	-41.0	-1.3	-6.0
March	100.0	744	-2.7	-37.2	19.2	8.3
April	99.3	715	4.5	-8.4	16.5	10.4
May	100.0	744	11.1	-9.7	29.9	21.7
June	98.9	712	13.9	-0.4	27.8	20.4
July	98.7	734	15.2	1.0	28.2	21.1
August	95.0	706	12.7	-0.4	25.4	18.9
September	89.0	641	9.5	-5.5	22.2	15.2
October	100.0	744	2.3	-14.5	17.6	9.0
November	100.0	720	-5.5	-19.8	7.6	4.9
December	100.0	744	-9.8	-25.1	3.2	-0.2
Annual	98.3	8614	1.5	-41.0	29.9	21.7

Table 21 AT Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
87	6	22	0	30	0	0	0	0	0
Total Hours of Downtime		145	Total Hours of Calibration Time			0	Total Hours of Flagged		145

Table 22 Precipitation 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Total (mm)	Min. Total 1-hr (mm)	Max. Total 1-hr (mm)	Max. Total 24-hr (mm)
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	91.9	684	54.6	0.0	6.4	9.4
September	84.0	605	58.0	0.0	9.0	19.4
October	74.2	552	25.0	0.0	1.4	3.8
November	29.7	214	16.8	0.0	2.4	7.8
December	11.6	86	1.8	0.0	0.6	1.8
Annual	58.3	2141	31.2	0.0	9.0	19.4

Table 23 Precipitation Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
79	734	0	0	0	0	0	0	0	0
Total Hours of Downtime		813	Total Hours of Calibration Time			0	Total Hours of Flagged		813

Table 24 WS 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (kph)	Min. 1-hr (kph)	Max. 1-hr (kph)	Max. 24-hr (kph)
January	99.2	738	0.4	0.3	26.6	13.1
February	100.0	672	0.5	0.2	19.0	10.4
March	100.0	744	2.1	0.1	17.5	10.0
April	99.7	715	1.8	0.0	23.7	11.4
May	100.0	744	1.6	0.2	31.2	17.4
June	98.9	712	1.7	0.0	22.9	9.6
July	99.9	736	1.6	0.1	17.6	10.0
August	94.5	702	1.6	0.0	23.8	15.1
September	89.0	641	4.6	0.3	24.4	16.8
October	100.0	744	4.5	0.7	31.3	21.3
November	100.0	720	4.0	0.9	35.5	23.2
December	100.0	744	5.0	0.1	33.0	19.6
Annual	98.4	8612	2.5	0.0	35.5	23.2

Table 25 WS 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in kph)				
	0 - 6	7 - 15	16 - 29	30 -39	>39
January	59.1%	39.0%	1.9%	0.0%	0.0%
February	66.1%	33.3%	0.6%	0.0%	0.0%
March	70.7%	28.9%	0.4%	0.0%	0.0%
April	47.3%	49.5%	3.2%	0.0%	0.0%
May	54.3%	36.8%	8.7%	0.1%	0.0%
June	57.7%	41.2%	1.1%	0.0%	0.0%
July	69.4%	29.5%	1.1%	0.0%	0.0%
August	44.7%	48.5%	6.8%	0.0%	0.0%
September	28.9%	57.4%	13.7%	0.0%	0.0%
October	15.9%	61.6%	22.4%	0.1%	0.0%
November	21.3%	57.6%	20.4%	0.7%	0.0%
December	25.8%	52.8%	21.1%	0.3%	0.0%
Annual	46.8%	44.7%	8.5%	0.1%	0.0%

Table 26 WS Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
87	6	21	0	30	3	0	0	0	0
Total Hours of Downtime		144	Total Hours of Calibration Time			3	Total Hours of Flagged		147

## 1.2 842b Station

Table 27 SO2 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	# of 30-day AAAQO Exceedances	Min. 1-hr (ppb)	Max. 1-hr (ppb)	# of 1-hr AAAQO Exceedances	Max. 24-hr (ppb)	# of 24-hr AAAQO Exceedances
January	100.0	704	0.1	0	0	2	0	1	0
February	100.0	637	0.2	0	0	2	0	1	0
March	100.0	706	0.2	0	0	2	0	1	0
April	100.0	681	0.0	0	0	1	0	0	0
May	100.0	709	0.0	0	0	2	0	0	0
June	98.9	675	0.0	0	0	1	0	0	0
July	100.0	705	0.0	0	0	1	0	0	0
August	99.9	708	0.0	0	0	1	0	0	0
September	97.9	670	0.0	0	0	1	0	0	0
October	100.0	706	0.0	0	0	2	0	0	0
November	100.0	684	0.4	0	0	21	0	2	0
December	100.0	707	0.2	0	0	3	0	1	0
Annual	99.7	8292	0.1	0	0	21	0	2	0

Table 28 SO2 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 10	11 -50	51 -100	101 - 172	>172
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	99.4%	0.6%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 29 SO2 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
12	0	1	0	11	66	279	2	0	0
Total Hours of Downtime		24	Total Hours of Calibration Time			443	Total Hours of Flagged		467

Table 30 TRS 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	Min. 1-hr (ppb)	Max. 1-hr (ppb)	Max. 24-hr (ppb)
January	100.0	704	0.2	0.08	0.50	0.30
February	100.0	637	0.3	0.1	0.7	0.4
March	100.0	705	0.3	0.1	0.5	0.4
April	96.5	656	0.4	0.1	0.7	0.5
May	100.0	707	0.6	0.3	3.5	2.0
June	98.9	675	0.5	0.3	2.5	0.8
July	100.0	705	0.5	0.3	1.2	0.6
August	99.9	706	0.4	0.1	1.3	0.6
September	93.6	639	0.4	0.2	0.9	0.6
October	97.7	689	0.4	0.2	1.2	0.6
November	100.0	683	0.4	0.3	0.9	0.5
December	100.0	707	0.4	0.0	0.7	0.5
Annual	98.9	8213	0.4	0.0	3.5	2.0

Table 31 TRS 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 2	3 - 5	6 - 10	11 - 50	>50
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	98.4%	1.6%	0.0%	0.0%	0.0%
June	99.9%	0.1%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	99.9%	0.1%	0.0%	0.0%	0.0%

Table 32 TRS 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
12	45	29	0	11	75	277	2	0	0
Total Hours of Downtime		97	Total Hours of Calibration Time			450	Total Hours of Flagged		547

Table 33 THC 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	100.0	705	2.03	1.92	2.39	2.09
February	98.4	627	2.05	1.93	2.80	2.26
March	98.9	699	2.01	1.91	2.53	2.15
April	99.6	681	2.00	1.95	2.22	2.04
May	100.0	709	1.99	1.88	3.28	2.51
June	98.8	675	1.95	1.87	2.46	2.06
July	100.0	705	1.96	1.88	2.38	2.05
August	99.7	706	1.98	1.89	2.57	2.14
September	97.8	669	1.98	1.86	2.28	2.06
October	100.0	706	1.99	1.91	2.18	2.05
November	100.0	685	1.99	1.92	2.35	2.04
December	100.0	708	2.04	1.94	2.45	2.12
Annual	99.4	8275	2.00	1.86	3.28	2.51

Table 34 THC 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 2	3 - 5	6 - 10	11 - 40	>40
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	96.8%	3.2%	0.0%	0.0%	0.0%
March	99.0%	1.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	97.3%	2.7%	0.0%	0.0%	0.0%
June	99.7%	0.3%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	99.6%	0.4%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	99.9%	0.1%	0.0%	0.0%	0.0%
Annual	99.4%	0.6%	0.0%	0.0%	0.0%

Table 35 THC 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
36	0	8	2	11	58	280	2	8	8
Total Hours of Downtime		73	Total Hours of Calibration Time			436	Total Hours of Flagged		509

Table 36 CH4 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	100.0	705	2.03	1.92	2.39	2.09
February	98.4	627	2.05	1.93	2.80	2.26
March	98.9	699	2.01	1.91	2.53	2.15
April	99.6	681	2.00	1.95	2.22	2.04
May	100.0	709	1.97	1.88	2.74	2.18
June	98.8	675	1.95	1.87	2.46	2.06
July	100.0	705	1.96	1.88	2.38	2.05
August	99.7	706	1.98	1.89	2.57	2.14
September	97.8	669	1.98	1.86	2.28	2.06
October	100.0	706	1.99	1.91	2.18	2.05
November	100.0	685	1.99	1.92	2.16	2.04
December	100.0	708	2.04	1.94	2.45	2.12
Annual	99.4	8275	2.00	1.86	2.80	2.26

Table 37 CH4 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 2	3 - 5	6 - 10	11 - 20	>20
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	96.8%	3.2%	0.0%	0.0%	0.0%
March	99.0%	1.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	99.2%	0.8%	0.0%	0.0%	0.0%
June	99.7%	0.3%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	99.6%	0.4%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	99.9%	0.1%	0.0%	0.0%	0.0%
Annual	99.5%	0.5%	0.0%	0.0%	0.0%

Table 38 CH4 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
36	0	8	2	11	58	280	2	8	8
Total Hours of Downtime		73	Total Hours of Calibration Time			436	Total Hours of Flagged		509

Table 39 NMHC 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	100.0	705	0.00	0.00	0.00	0.00
February	98.4	627	0.00	0.00	0.00	0.00
March	98.9	699	0.00	0.00	0.02	0.00
April	99.6	681	0.00	0.00	0.00	0.00
May	100.0	709	0.01	0.00	0.82	0.33
June	98.8	675	0.00	0.00	0.00	0.00
July	100.0	705	0.00	0.00	0.02	0.00
August	99.7	706	0.00	0.00	0.00	0.00
September	97.8	669	0.00	0.00	0.00	0.00
October	100.0	706	0.00	0.00	0.00	0.00
November	100.0	685	0.00	0.00	0.19	0.01
December	100.0	708	0.00	0.00	0.00	0.00
Annual	99.4	8275	0.00	0.00	0.82	0.33

Table 40 NMHC 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 0.1	0.2 - 0.3	0.4 - 0.9	1 - 2	>2
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	97.6%	0.6%	1.8%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	99.9%	0.1%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	99.8%	0.1%	0.2%	0.0%	0.0%

Table 41 NMHC 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
36	0	8	2	11	58	280	2	8	8
Total Hours of Downtime		73	Total Hours of Calibration Time			436	Total Hours of Flagged		509



Table 42 RH 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (%)	Min. 1-hr (%)	Max. 1-hr (%)	Max. 24-hr (%)
January	100.0	744	80.1	58	95	93
February	100.0	672	70.6	39	92	82
March	100.0	744	60.4	16	94	77
April	100.0	720	54.3	13	97	82
May	100.0	744	43.2	13	91	68
June	98.9	711	63.1	19	95	88
July	100.0	744	73.4	34	95	91
August	100.0	744	74.5	34	96	89
September	97.9	705	73.3	34	96	90
October	100.0	744	71.6	27	96	94
November	100.0	720	81.9	45	96	93
December	100.0	744	77.6	37	93	87
Annual	99.7	8736	68.7	13	97	94

Table 43 RH Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
12	0	0	0	11	0	0	0	0	0
Total Hours of Downtime		23	Total Hours of Calibration Time			0	Total Hours of Flagged		23

Table 44 BP 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (mb)	Min. 1-hr (mb)	Max. 1-hr (mb)	Max. 24-hr (mb)
January	100.0	744	941.8	922	960	959
February	100.0	672	949.5	931	971	965
March	100.0	744	947.6	923	971	969
April	100.0	720	940.5	925	955	955
May	100.0	744	943.0	929	952	951
June	98.9	711	942.0	933	950	949
July	100.0	744	942.4	928	955	954
August	100.0	744	943.5	932	950	949
September	97.9	705	942.5	930	959	957
October	100.0	744	941.5	921	963	961
November	100.0	720	943.5	923	967	964
December	100.0	744	937.0	919	950	948
Annual	99.7	8736	942.9	919	971	969

Table 45 BP Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
12	0	0	0	11	0	0	0	0	0
Total Hours of Downtime		23	Total Hours of Calibration Time			0	Total Hours of Flagged		23

Table 46 AT 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (°C)	Min. 1-hr (°C)	Max. 1-hr (°C)	Max. 24-hr (°C)
January	100.0	744	-10.3	-29.8	5.9	4.1
February	100.0	672	-22.0	-39.8	-1.7	-7.0
March	100.0	744	-3.6	-36.4	18.4	7.3
April	100.0	720	3.3	-7.9	15.4	8.7
May	100.0	744	11.1	-8.7	29.5	21.0
June	98.9	711	13.8	1.8	28.3	20.5
July	100.0	744	15.1	1.6	27.8	21.1
August	100.0	744	13.0	0.1	25.1	18.9
September	97.9	705	9.6	-6.1	22.2	15.1
October	100.0	744	2.1	-14.3	16.9	8.8
November	100.0	720	-5.5	-19.7	7.2	4.7
December	100.0	744	-9.7	-24.7	3.3	-0.4
Annual	99.7	8736	1.4	-39.8	29.5	21.1

Table 47 AT Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
12	0	0	0	11	0	0	0	0	0
Total Hours of Downtime		23	Total Hours of Calibration Time			0	Total Hours of Flagged		23

Table 48 WS 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (kph)	Min. 1-hr (kph)	Max. 1-hr (kph)	Max. 24-hr (kph)
January	100.0	743	1.1	0.1	36.0	16.9
February	100.0	672	0.7	0.2	20.6	14.7
March	100.0	744	3.7	0.3	24.0	14.2
April	100.0	720	3.5	0.1	29.8	17.4
May	100.0	744	1.1	0.2	30.0	14.1
June	98.9	711	3.3	0.1	32.2	17.8
July	100.0	744	2.7	0.0	21.6	12.9
August	100.0	742	2.1	0.2	22.3	13.5
September	97.9	705	3.0	0.3	26.9	15.2
October	100.0	744	4.2	0.1	29.4	19.5
November	100.0	720	3.4	0.3	30.4	19.2
December	100.0	744	4.3	0.1	30.2	17.0
Annual	99.7	8733	2.8	0.0	36.0	19.5

Table 49 WS 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in kph)				
	0 - 6	7 - 15	16 - 29	30 -39	>39
January	37.7%	55.5%	6.7%	0.1%	0.0%
February	48.4%	47.8%	3.9%	0.0%	0.0%
March	46.1%	48.1%	5.8%	0.0%	0.0%
April	32.2%	50.8%	16.8%	0.1%	0.0%
May	43.5%	46.4%	9.9%	0.1%	0.0%
June	39.2%	47.5%	13.2%	0.1%	0.0%
July	52.7%	42.3%	5.0%	0.0%	0.0%
August	51.5%	45.1%	3.4%	0.0%	0.0%
September	44.4%	45.4%	10.2%	0.0%	0.0%
October	28.2%	60.2%	11.6%	0.0%	0.0%
November	39.4%	51.5%	8.9%	0.1%	0.0%
December	41.1%	49.5%	9.1%	0.3%	0.0%
Annual	42.0%	49.2%	8.7%	0.1%	0.0%

Table 50 WS Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
12	0	0	0	11	0	0	1	0	0
Total Hours of Downtime		23	Total Hours of Calibration Time			1	Total Hours of Flagged		24

## 1.3 Reno Station

Table 51 SO2 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	# of 30-day AAAQO Exceedances	Min. 1-hr (ppb)	Max. 1-hr (ppb)	# of 1-hr AAAQO Exceedances	Max. 24-hr (ppb)	# of 24-hr AAAQO Exceedances
January	100.0	704	0.0	0	0	2	0	1	0
February	100.0	638	0.1	0	0	2	0	1	0
March	100.0	708	0.4	0	0	3	0	1	0
April	99.9	681	0.2	0	0	1	0	1	0
May	99.7	705	0.1	0	0	2	0	1	0
June	99.9	682	0.0	0	0	1	0	0	0
July	100.0	706	0.0	0	0	2	0	0	0
August	100.0	708	0.0	0	0	1	0	0	0
September	99.4	683	0.0	0	0	6	0	0	0
October	98.1	692	0.0	0	0	1	0	0	0
November	100.0	684	0.0	0	0	1	0	0	0
December	100.0	709	0.1	0	0	1	0	1	0
Annual	99.8	8300	0.1	0	0	6	0	1	0

Table 52 SO2 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 10	11 -50	51 -100	101 - 172	>172
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	100.0%	0.0%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 53 SO2 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
14	0	2	4	0	61	281	3	0	2
Total Hours of Downtime		22	Total Hours of Calibration Time			439	Total Hours of Flagged		461

Table 54 TRS 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	Min. 1-hr (ppb)	Max. 1-hr (ppb)	Max. 24-hr (ppb)
January	100.0	704	0.4	0.3	1.3	0.6
February	100.0	635	0.4	0.2	3.6	0.7
March	92.2	653	0.3	0.1	1.0	0.5
April	99.9	680	0.4	0.2	1.4	0.5
May	97.6	689	0.4	0.3	3.6	1.3
June	99.7	680	0.5	0.2	3.5	0.9
July	100.0	705	0.5	0.2	4.6	1.2
August	97.8	692	0.5	0.2	3.7	1.1
September	99.4	680	0.5	0.2	5.0	1.8
October	98.0	691	0.4	0.2	2.5	0.8
November	100.0	682	0.4	0.3	0.6	0.5
December	100.0	709	0.4	0.0	1.0	0.5
Annual	98.7	8200	0.4	0.0	5.0	1.8

Table 55 TRS 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 2	3 - 5	6 - 10	11 - 50	>50
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	99.8%	0.2%	0.0%	0.0%	0.0%
March	100.0%	0.0%	0.0%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	99.6%	0.4%	0.0%	0.0%	0.0%
June	99.3%	0.7%	0.0%	0.0%	0.0%
July	98.6%	1.4%	0.0%	0.0%	0.0%
August	99.1%	0.9%	0.0%	0.0%	0.0%
September	98.7%	1.3%	0.0%	0.0%	0.0%
October	99.9%	0.1%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	99.6%	0.4%	0.0%	0.0%	0.0%

Table 56 TRS 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
14	58	18	4	16	72	277	3	0	3
Total Hours of Downtime		114	Total Hours of Calibration Time			446	Total Hours of Flagged		560

Table 57 THC 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (in ppm)	Min. 1-hr (in ppm)	Max. 1-hr (in ppm)	Max. 24-hr (in ppm)
January	99.6	701	2.03	1.91	3.28	2.16
February	100.0	637	2.18	1.93	10.23	3.19
March	100.0	708	2.11	1.95	6.31	2.40
April	99.2	677	1.99	1.92	3.85	2.16
May	97.6	689	2.00	1.92	3.20	2.23
June	99.9	681	1.94	1.87	2.30	1.99
July	100.0	706	1.97	1.88	2.60	2.08
August	97.7	692	1.99	1.88	3.10	2.18
September	99.3	680	1.97	1.87	2.43	2.08
October	98.0	692	2.00	1.90	2.67	2.10
November	100.0	684	2.00	1.90	2.72	2.08
December	100.0	710	2.05	1.91	2.54	2.22
Annual	99.3	8257	2.02	1.87	10.23	3.19

Table 58 THC 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 2	3 - 5	6 - 10	11 - 40	>40
January	98.9%	1.1%	0.0%	0.0%	0.0%
February	92.3%	7.1%	0.6%	0.0%	0.0%
March	94.1%	5.8%	0.1%	0.0%	0.0%
April	99.0%	1.0%	0.0%	0.0%	0.0%
May	98.4%	1.6%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	99.6%	0.4%	0.0%	0.0%	0.0%
August	99.0%	1.0%	0.0%	0.0%	0.0%
September	99.9%	0.1%	0.0%	0.0%	0.0%
October	99.7%	0.3%	0.0%	0.0%	0.0%
November	99.7%	0.3%	0.0%	0.0%	0.0%
December	99.2%	0.8%	0.0%	0.0%	0.0%
Annual	98.3%	1.6%	0.1%	0.0%	0.0%

Table 59 THC 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
2	20	6	2	16	47	187	3	0	4
Total Hours of Downtime		65	Total Hours of Calibration Time			438	Total Hours of Flagged		503

Table 60 CH4 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (in ppm)	Min. 1-hr (in ppm)	Max. 1-hr (in ppm)	Max. 24-hr (in ppm)
January	99.6	701	2.03	1.91	3.28	2.16
February	100.0	637	2.18	1.93	10.18	3.19
March	100.0	708	2.11	1.95	6.31	2.40
April	99.2	677	1.99	1.92	3.85	2.16
May	97.6	689	1.99	1.92	2.53	2.11
June	99.9	681	1.94	1.87	2.30	1.99
July	100.0	706	1.97	1.88	2.60	2.08
August	97.7	692	1.99	1.88	3.10	2.18
September	99.3	680	1.97	1.87	2.43	2.08
October	98.0	692	2.00	1.90	2.48	2.10
November	100.0	684	2.00	1.90	2.72	2.08
December	100.0	710	2.05	1.91	2.54	2.21
Annual	99.3	8257	2.02	1.87	10.18	3.19

Table 61 CH4 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 2	3 - 5	6 - 10	11 - 20	>20
January	98.9%	1.1%	0.0%	0.0%	0.0%
February	92.3%	7.1%	0.6%	0.0%	0.0%
March	94.2%	5.6%	0.1%	0.0%	0.0%
April	99.0%	1.0%	0.0%	0.0%	0.0%
May	99.1%	0.9%	0.0%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	99.6%	0.4%	0.0%	0.0%	0.0%
August	99.0%	1.0%	0.0%	0.0%	0.0%
September	99.9%	0.1%	0.0%	0.0%	0.0%
October	99.9%	0.1%	0.0%	0.0%	0.0%
November	99.7%	0.3%	0.0%	0.0%	0.0%
December	99.2%	0.8%	0.0%	0.0%	0.0%
Annual	98.4%	1.6%	0.1%	0.0%	0.0%

Table 62 CH4 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
2	20	6	2	16	47	187	3	0	4
Total Hours of Downtime		65	Total Hours of Calibration Time			438	Total Hours of Flagged		503



Table 63 NMHC 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (in ppm)	Min. 1-hr (in ppm)	Max. 1-hr (in ppm)	Max. 24-hr (in ppm)
January	99.6	701	0.00	0.00	0.01	0.00
February	100.0	637	0.00	0.00	0.05	0.00
March	100.0	708	0.00	0.00	0.36	0.02
April	99.2	677	0.00	0.00	0.02	0.00
May	97.6	689	0.00	0.00	0.67	0.12
June	99.9	681	0.00	0.00	0.00	0.00
July	100.0	706	0.00	0.00	0.00	0.00
August	97.7	692	0.00	0.00	0.00	0.00
September	99.3	680	0.00	0.00	0.04	0.00
October	98.0	692	0.00	0.00	0.24	0.02
November	100.0	684	0.00	0.00	0.03	0.00
December	100.0	710	0.00	0.00	0.02	0.00
Annual	99.3	8257	0.00	0.00	0.67	0.12

Table 64 NMHC 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 0.1	0.2 - 0.3	0.4 - 0.9	1 - 2	>2
January	100.0%	0.0%	0.0%	0.0%	0.0%
February	100.0%	0.0%	0.0%	0.0%	0.0%
March	99.9%	0.0%	0.1%	0.0%	0.0%
April	100.0%	0.0%	0.0%	0.0%	0.0%
May	99.0%	0.6%	0.4%	0.0%	0.0%
June	100.0%	0.0%	0.0%	0.0%	0.0%
July	100.0%	0.0%	0.0%	0.0%	0.0%
August	100.0%	0.0%	0.0%	0.0%	0.0%
September	100.0%	0.0%	0.0%	0.0%	0.0%
October	99.7%	0.3%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	99.9%	0.1%	0.0%	0.0%	0.0%

Table 65 NMHC 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
2	20	6	2	16	47	187	3	0	4
Total Hours of Downtime		65	Total Hours of Calibration Time			438	Total Hours of Flagged		503

Table 66 RH 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (%)	Min. 1-hr (%)	Max. 1-hr (%)	Max. 24-hr (%)
January	100.0	744	72.3	53	92	87
February	100.0	672	61.3	43	87	77
March	100.0	744	55.7	18	91	74
April	100.0	720	52.1	12	93	80
May	100.0	744	41.8	11	92	73
June	100.0	720	62.4	17	100	88
July	100.0	744	73.6	38	100	92
August	97.8	728	73.2	30	97	89
September	99.7	718	71.0	33	96	90
October	94.9	706	69.5	22	99	96
November	100.0	720	77.9	49	98	92
December	100.0	744	72.0	38	89	80
Annual	99.4	8704	65.2	11	100	96

Table 67 RH Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
14	26	0	0	16	0	0	0	0	0
Total Hours of Downtime		56	Total Hours of Calibration Time			0	Total Hours of Flagged		56

Table 68 BP 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (mb)	Min. 1-hr (mb)	Max. 1-hr (mb)	Max. 24-hr (mb)
January	100.0	744	936.8	916	955	954
February	100.0	672	944.0	926	964	959
March	100.0	744	943.1	919	964	964
April	100.0	720	936.2	920	951	950
May	100.0	744	938.5	926	948	947
June	100.0	720	937.6	929	946	945
July	100.0	744	938.1	925	950	949
August	97.8	728	939.3	928	945	944
September	99.7	718	937.8	926	954	952
October	94.9	706	937.9	917	958	956
November	100.0	720	938.9	920	962	959
December	100.0	744	932.2	915	944	943
Annual	99.4	8704	938.4	915	964	964

Table 69 BP Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
14	26	0	0	16	0	0	0	0	0
Total Hours of Downtime		56	Total Hours of Calibration Time			0	Total Hours of Flagged		56

Table 70 AT 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (°C)	Min. 1-hr (°C)	Max. 1-hr (°C)	Max. 24-hr (°C)
January	100.0	744	-9.5	-29.2	6.1	4.4
February	100.0	672	-21.9	-38.1	-3.4	-7.5
March	100.0	744	-3.4	-33.6	17.3	6.8
April	100.0	720	3.5	-6.8	15.0	8.4
May	100.0	744	11.3	-6.9	29.0	21.9
June	100.0	720	14.0	3.6	29.3	20.5
July	100.0	744	15.3	2.8	27.3	21.2
August	97.8	728	13.4	2.5	26.0	19.8
September	99.7	718	10.1	-4.0	23.1	15.9
October	94.9	706	2.0	-14.2	17.0	8.8
November	100.0	720	-5.1	-21.9	8.9	4.9
December	100.0	744	-9.7	-20.6	3.5	-0.7
Annual	99.4	8704	1.7	-38.1	29.3	21.9

Table 71 AT Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
14	26	0	0	16	0	0	0	0	0
Total Hours of Downtime		56	Total Hours of Calibration Time			0	Total Hours of Flagged		56

Table 72 WS 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (kph)	Min. 1-hr (kph)	Max. 1-hr (kph)	Max. 24-hr (kph)
January	100.0	744	0.8	0.3	21.7	12.9
February	100.0	641	0.9	0.8	18.1	9.7
March	100.0	717	2.6	0.3	15.3	11.8
April	100.0	719	1.9	0.4	17.6	11.4
May	100.0	744	1.7	0.0	20.4	14.2
June	100.0	720	2.1	0.0	18.1	12.5
July	100.0	744	1.9	0.0	14.4	9.3
August	100.0	728	1.3	0.0	13.9	8.1
September	99.7	718	1.4	0.0	18.1	9.5
October	93.4	695	2.9	0.2	20.4	11.5
November	100.0	720	1.9	0.3	19.3	11.4
December	100.0	744	2.5	0.0	17.3	9.8
Annual	99.4	8634	1.8	0.0	21.7	14.2

Table 73 WS 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in kph)				
	0 - 6	7 - 15	16 - 29	30 -39	>39
January	44.2%	53.6%	2.2%	0.0%	0.0%
February	64.6%	34.9%	0.5%	0.0%	0.0%
March	63.5%	36.5%	0.0%	0.0%	0.0%
April	47.0%	51.3%	1.7%	0.0%	0.0%
May	56.3%	41.1%	2.6%	0.0%	0.0%
June	63.6%	34.4%	1.9%	0.0%	0.0%
July	74.9%	25.1%	0.0%	0.0%	0.0%
August	76.4%	23.6%	0.0%	0.0%	0.0%
September	65.6%	34.1%	0.3%	0.0%	0.0%
October	49.8%	49.6%	0.6%	0.0%	0.0%
November	58.5%	40.4%	1.1%	0.0%	0.0%
December	64.1%	35.1%	0.8%	0.0%	0.0%
Annual	60.7%	38.3%	1.0%	0.0%	0.0%

Table 74 WS Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
14	95	0	0	16	1	0	0	0	0
Total Hours of Downtime		125	Total Hours of Calibration Time			1	Total Hours of Flagged		126

## 1.4 AQHI - Cadotte Lake Station

Table 75 SO2 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	# of 30-day AAAQO Exceedances	Min. 1-hr (ppb)	Max. 1-hr (ppb)	# of 1-hr AAAQO Exceedances	Max. 24-hr (ppb)	# of 24-hr AAAQO Exceedances
January	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-
October	98.7	665	0.0	0	0	0	0	0	0
November	100.0	684	0.0	0	0	0	0	0	0
December	99.9	706	0.0	0	0	0	0	0	0
Annual	99.5	2055	0.0	0	0	0	0	0	0

Table 76 SO2 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 10	11 -50	51 -100	101 - 172	>172
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May	-	-	-	-	-
June	-	-	-	-	-
July	-	-	-	-	-
August	-	-	-	-	-
September	-	-	-	-	-
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 77 SO2 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
0	0	6	0	0	16	93	0	4	0
Total Hours of Downtime		10	Total Hours of Calibration Time			109	Total Hours of Flagged		119

Table 78 TRS 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	Min. 1-hr (ppb)	Max. 1-hr (ppb)	Max. 24-hr (ppb)
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	93.1	605	0.3	0.0	0.7	0.4
November	97.5	665	0.3	0.0	0.7	0.5
December	99.3	702	0.4	0.1	0.8	0.5
Annual	96.7	1972	0.3	0.0	0.8	0.5

Table 79 TRS 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 2	3 - 5	6 - 10	11 - 50	>50
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May	-	-	-	-	-
June	-	-	-	-	-
July	-	-	-	-	-
August	-	-	-	-	-
September	-	-	-	-	-
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 80 TRS 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
0	58	2	0	0	17	90	0	10	0
Total Hours of Downtime		70	Total Hours of Calibration Time			107	Total Hours of Flagged		177

Table 81 NOx 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	Min. 1-hr (ppb)	Max. 1-hr (ppb)	Max. 24-hr (ppb)
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	67.9	454	0.6	0	10	2
November	97.9	668	1.4	0	25	4
December	99.9	705	2.2	0	18	5
Annual	88.6	1827	1.4	0	25	5

Table 82 NOx 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 30	31 - 50	51 - 82	83 - 159	>159
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May	-	-	-	-	-
June	-	-	-	-	-
July	-	-	-	-	-
August	-	-	-	-	-
September	-	-	-	-	-
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 83 NOx 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
0	221	9	0	0	20	83	0	14	0
Total Hours of Downtime		224	Total Hours of Calibration Time			103	Total Hours of Flagged		347



Table 84 NO 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	Min. 1-hr (ppb)	Max. 1-hr (ppb)	Max. 24-hr (ppb)
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	67.9	454	0.1	0	8	1
November	97.9	668	0.3	0	13	2
December	99.9	705	0.4	0	13	2
Annual	88.6	1827	0.3	0	13	2

Table 85 NO 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 30	31 - 50	51 - 82	83 - 159	>159
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May	-	-	-	-	-
June	-	-	-	-	-
July	-	-	-	-	-
August	-	-	-	-	-
September	-	-	-	-	-
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 86 NO 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
0	221	9	0	0	20	83	0	14	0
Total Hours of Downtime		224	Total Hours of Calibration Time			103	Total Hours of Flagged		347

Table 87 NO2 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	Min. 1-hr (ppb)	Max. 1-hr (ppb)	# of 1-hr AAAQO Exceedances	Max. 24-hr (ppb)
January	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-
October	67.9	454	0.4	0	5	0	2
November	97.9	668	1.1	0	11	0	3
December	99.9	705	1.8	0	12	0	3
Annual	88.6	1827	1.1	0	12	0	3

Table 88 NO2 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 30	31 - 50	51 - 82	83 - 159	>159
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May	-	-	-	-	-
June	-	-	-	-	-
July	-	-	-	-	-
August	-	-	-	-	-
September	-	-	-	-	-
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 89 NO2 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
0	221	9	0	0	20	83	0	14	0
Total Hours of Downtime		224	Total Hours of Calibration Time			103	Total Hours of Flagged		347

Table 90 O3 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppb)	Min. 1-hr (ppb)	Max. 1-hr (ppb)	# of 1-hr AAAQO Exceedances	Max. 24-hr (ppb)
January	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-
October	98.7	660	18.8	0.0	38.0	0	30.3
November	98.3	669	20.2	0.0	43.0	0	37.5
December	99.9	706	19.1	0.0	39.0	0	33.9
Annual	99.0	2035	19.4	0.0	43.0	0	37.5

Table 91 O3 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppb)				
	0 - 30	31 - 50	51 - 82	83 - 159	>159
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May	-	-	-	-	-
June	-	-	-	-	-
July	-	-	-	-	-
August	-	-	-	-	-
September	-	-	-	-	-
October	85.5%	14.5%	0.0%	0.0%	0.0%
November	77.1%	22.9%	0.0%	0.0%	0.0%
December	84.1%	15.9%	0.0%	0.0%	0.0%
Annual	82.2%	17.8%	0.0%	0.0%	0.0%

Table 92 O3 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
0	0	9	0	0	19	91	0	9	4
Total Hours of Downtime		22	Total Hours of Calibration Time			110	Total Hours of Flagged		132

Table 93 THC 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	94.3	613	1.90	1.82	2.02	1.93
November	100.0	687	1.90	1.85	1.97	1.96
December	99.9	706	1.96	1.79	2.43	2.07
Annual	98.1	2006	1.92	1.79	2.43	2.07

Table 94 THC 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 2	3 - 5	6 - 10	11 - 40	>40
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May	-	-	-	-	-
June	-	-	-	-	-
July	-	-	-	-	-
August	-	-	-	-	-
September	-	-	-	-	-
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	99.9%	0.1%	0.0%	0.0%	0.0%
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 95 THC 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
0	0	29	0	0	11	90	0	11	0
Total Hours of Downtime		40	Total Hours of Calibration Time			101	Total Hours of Flagged		141

Table 96 CH4 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	94.3	613	1.90	1.82	1.99	1.93
November	100.0	687	1.90	1.85	1.97	1.96
December	99.9	706	1.96	1.79	2.19	2.06
Annual	98.1	2006	1.92	1.79	2.19	2.06

Table 97 CH4 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 2	3 - 5	6 - 10	11 - 20	>20
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May	-	-	-	-	-
June	-	-	-	-	-
July	-	-	-	-	-
August	-	-	-	-	-
September	-	-	-	-	-
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 98 CH4 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
0	0	29	0	0	11	90	0	11	0
Total Hours of Downtime		40	Total Hours of Calibration Time			101	Total Hours of Flagged		141

Table 99 NMHC 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ppm)	Min. 1-hr (ppm)	Max. 1-hr (ppm)	Max. 24-hr (ppm)
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	94.3	613	0.00	0.00	0.03	0.00
November	100.0	687	0.00	0.00	0.01	0.00
December	99.9	706	0.01	0.00	0.33	0.07
Annual	98.1	2006	0.00	0.00	0.33	0.07

Table 100 NMHC 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ppm)				
	0 - 0.1	0.2 - 0.3	0.4 - 0.9	1 - 2	>2
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May	-	-	-	-	-
June	-	-	-	-	-
July	-	-	-	-	-
August	-	-	-	-	-
September	-	-	-	-	-
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	98.6%	1.4%	0.0%	0.0%	0.0%
Annual	99.5%	0.5%	0.0%	0.0%	0.0%

Table 101 NMHC 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
0	0	29	0	0	11	90	0	11	0
Total Hours of Downtime		40	Total Hours of Calibration Time			101	Total Hours of Flagged		141

Table 102 PM2.5 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (ug/m3)	Min. 1-hr (ug/m3)	Max. 1-hr (ug/m3)	# of 1-hr AAAQO Exceedances	Max. 24-hr (ug/m3)	# of 24-hr AAAQO Exceedances
January	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-
October	100.0	701	3.1	0	18	0	7	0
November	99.4	712	5.0	0	48	0	18	0
December	99.9	741	5.4	0	34	0	16	0
Annual	99.8	2154	4.5	0	48	0	18	0

Table 103 PM2.5 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in ug/m3)				
	0 - 50	51 - 80	81 - 120	121 - 240	>240
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May	-	-	-	-	-
June	-	-	-	-	-
July	-	-	-	-	-
August	-	-	-	-	-
September	-	-	-	-	-
October	100.0%	0.0%	0.0%	0.0%	0.0%
November	100.0%	0.0%	0.0%	0.0%	0.0%
December	100.0%	0.0%	0.0%	0.0%	0.0%
Annual	100.0%	0.0%	0.0%	0.0%	0.0%

Table 104 PM2.5 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
0	0	3	0	0	7	0	0	2	0
Total Hours of Downtime		5	Total Hours of Calibration Time			7	Total Hours of Flagged		12

Table 105 RH 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (%)	Min. 1-hr (%)	Max. 1-hr (%)	Max. 24-hr (%)
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	100.0	718	74.8	28	98	96
November	100.0	720	81.4	36	98	94
December	99.3	739	80.1	49	94	87
Annual	99.8	2177	78.8	28	98	96

Table 106 RH 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
0	0	5	0	0	0	0	0	0	0
Total Hours of Downtime		5	Total Hours of Calibration Time			0	Total Hours of Flagged		5



Table 107 AT 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (mb)	Min. 1-hr (mb)	Max. 1-hr (mb)	Max. 24-hr (mb)
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	99.3	713	1.5	-20.1	17.5	9.4
November	100.0	720	-7.1	-29.6	7.7	5.4
December	99.3	739	-13.1	-27.4	4.0	-1.2
Annual	99.5	2172	-6.2	-29.6	17.5	9.4

Table 108 AT 2019 Qualifier Flag Summary

P	X	Y	R	K	C	S	Q	C1	S1
0	0	10	0	0	0	0	0	0	0
Total Hours of Downtime		10	Total Hours of Calibration Time			0	Total Hours of Flagged		10

Table 109 WS 2019 Annual Continuous Data Summary

Month	Operational Uptime (%)	# of Reading	Monthly Avg. (kph)	Min. 1-hr (kph)	Max. 1-hr (kph)	Max. 24-hr (kph)
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	100.0	718	2.0	0.3	27.8	14.7
November	93.5	673	1.9	0.2	25.3	14.6
December	99.2	736	0.5	0.1	19.5	10.3
Annual	97.6	2127	1.5	0.1	27.8	14.7

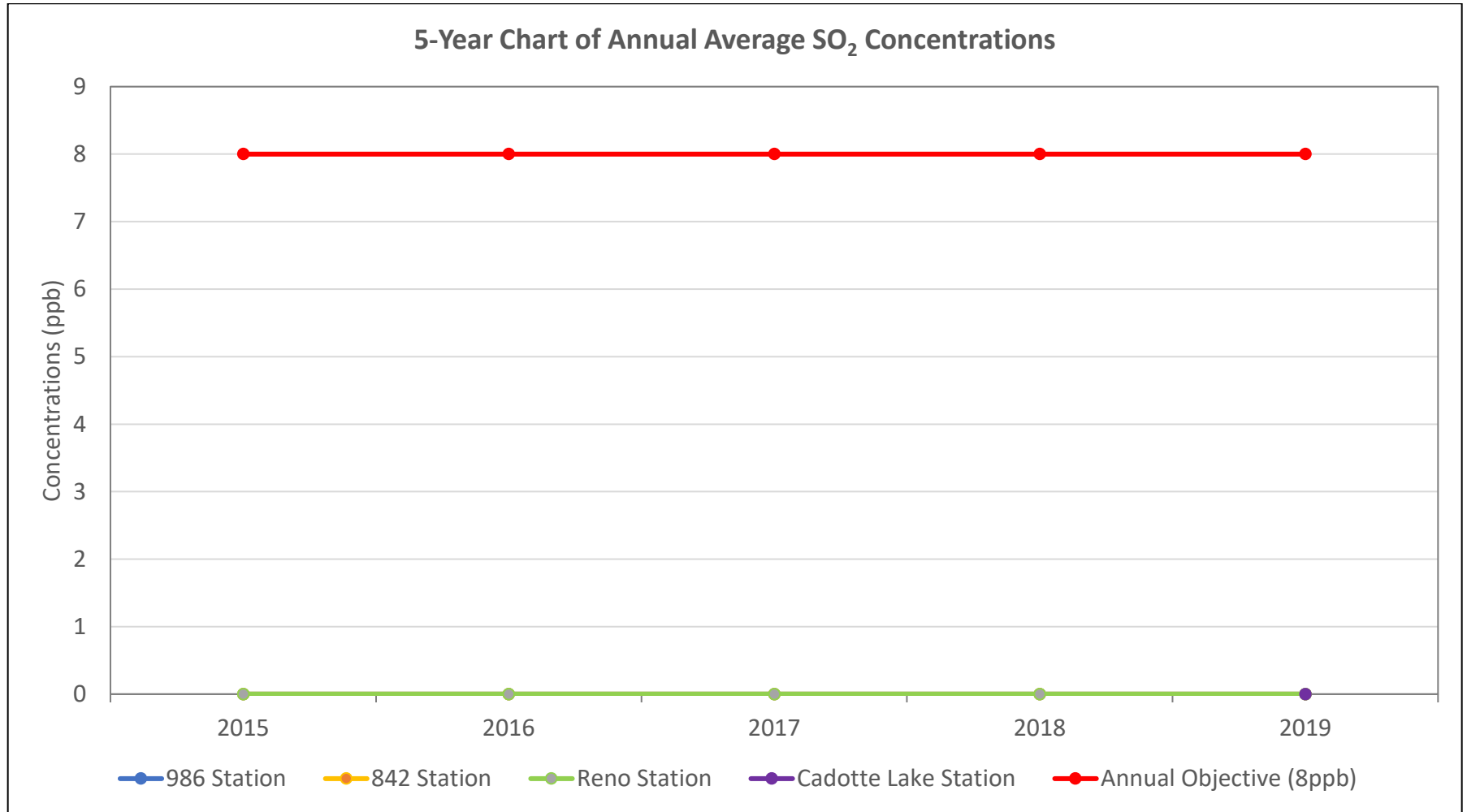
Table 110 WS 2019 Annual Frequency Distribution

Month	Percentage Readings in Concentration Range (in kph)				
	0 - 6	7 - 15	16 - 29	30 -39	>39
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May	-	-	-	-	-
June	-	-	-	-	-
July	-	-	-	-	-
August	-	-	-	-	-
September	-	-	-	-	-
October	51.3%	44.8%	3.9%	0.0%	0.0%
November	64.3%	33.7%	1.9%	0.0%	0.0%
December	75.7%	23.2%	1.1%	0.0%	0.0%
Annual	63.8%	33.9%	2.3%	0.0%	0.0%

Table 111 WS 2019 Qualifier Flag Summary

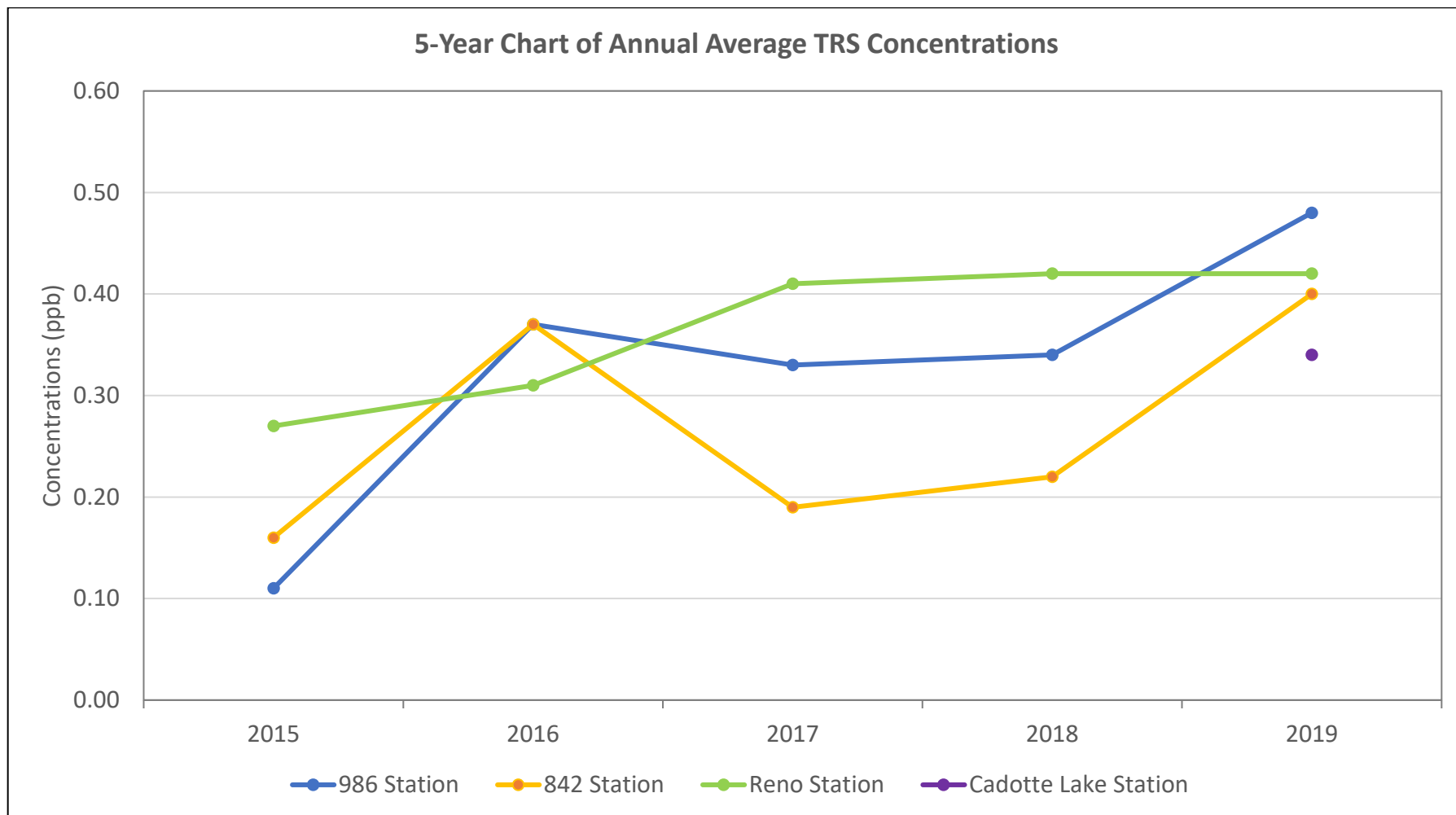
P	X	Y	R	K	C	S	Q	C1	S1
0	47	6	0	0	2	0	0	0	0
Total Hours of Downtime		53	Total Hours of Calibration Time			2	Total Hours of Flagged		55

## 2 5-Year Charts of Annual Average Concentrations



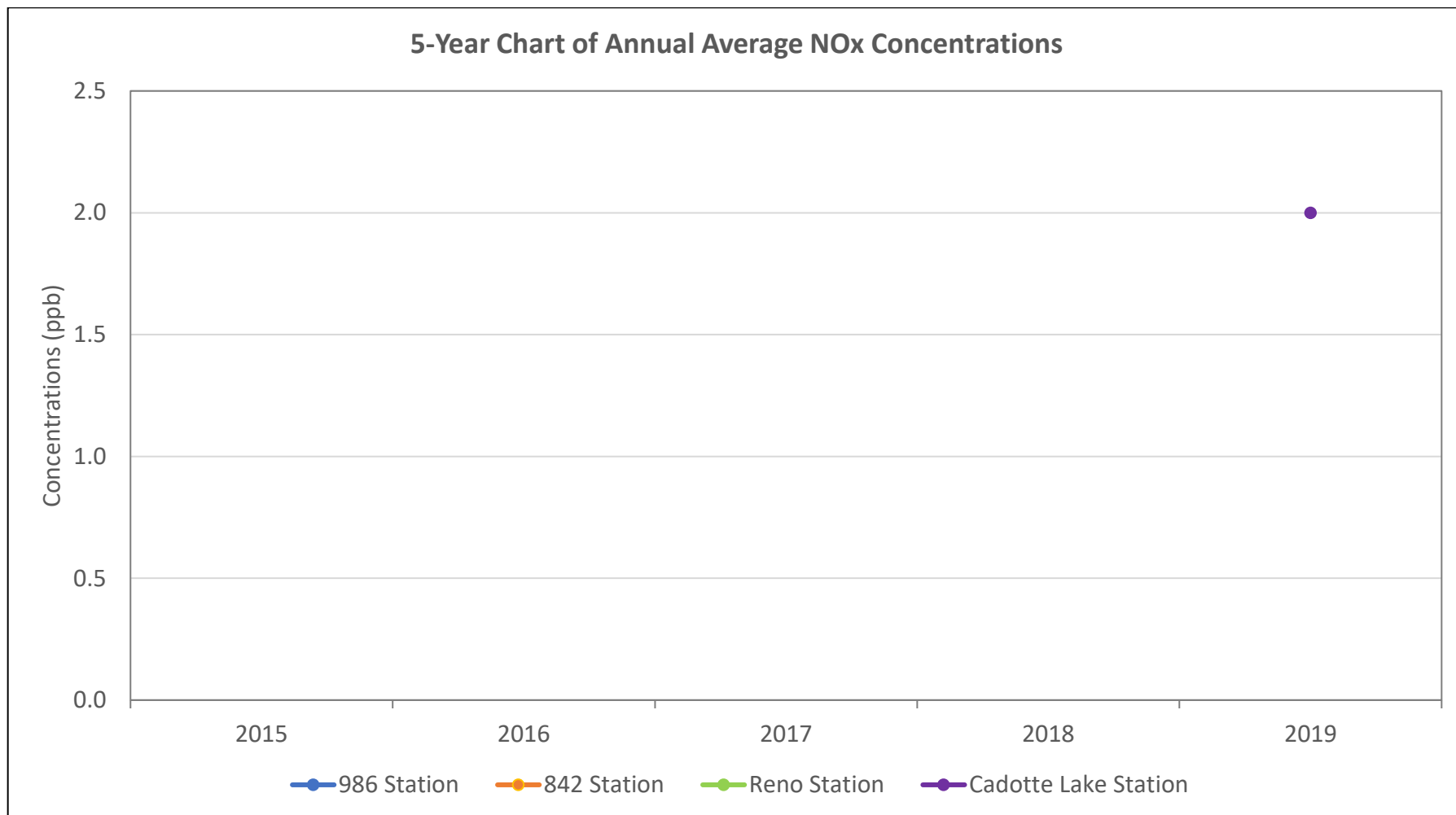
**Note:**

1. Cadotte Lake Station was installed in October 2019 – no previous data available. Annual average SO<sub>2</sub> concentrations for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
2. 2019 average for 986 Station was calculated using both 986b and 986c data.



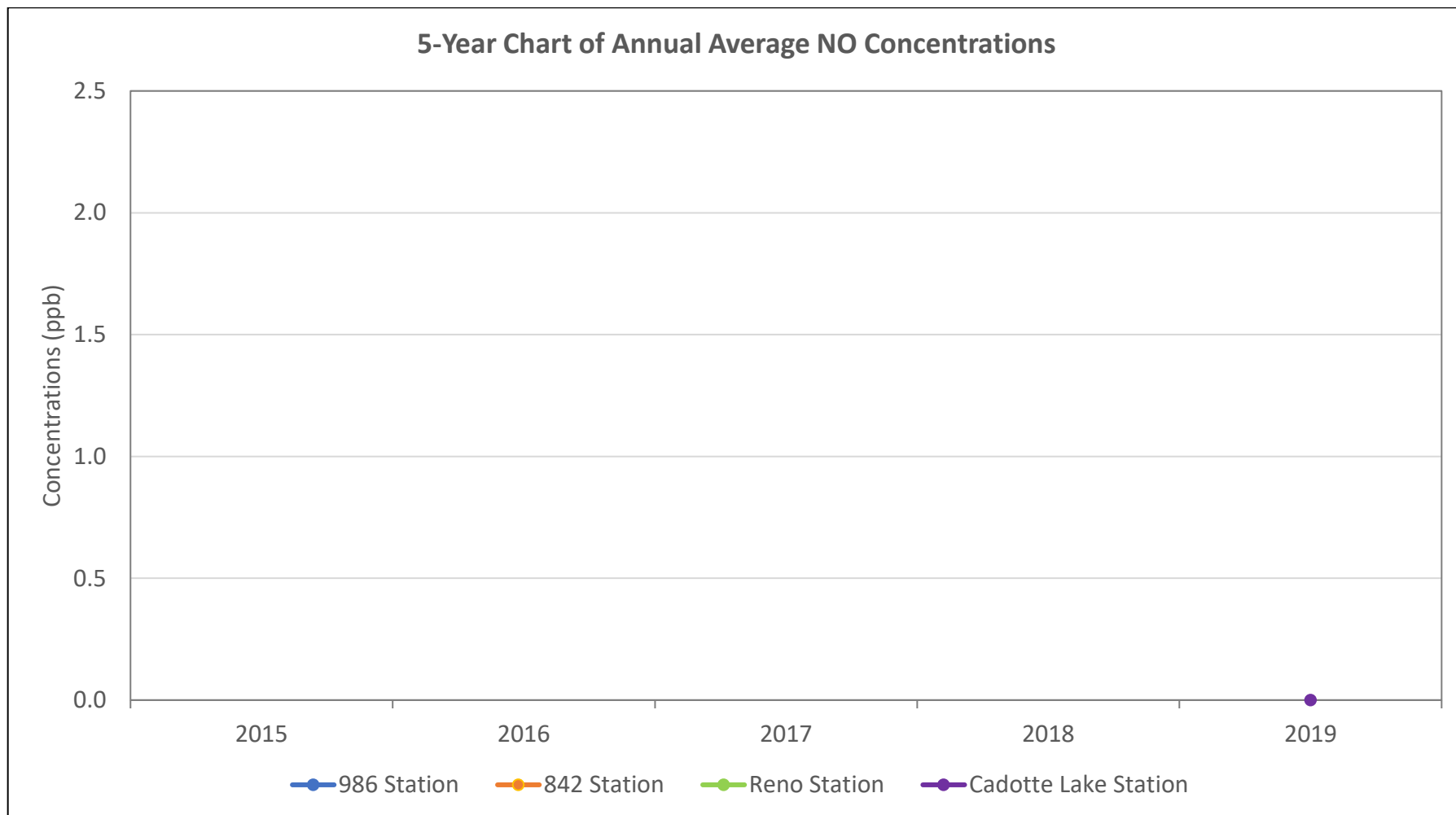
Note:

1. Cadotte Lake Station was installed in October 2019 – no previous data available. Annual average TRS concentrations for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
2. 2019 average for 986 Station was calculated using both 986b and 986c data.



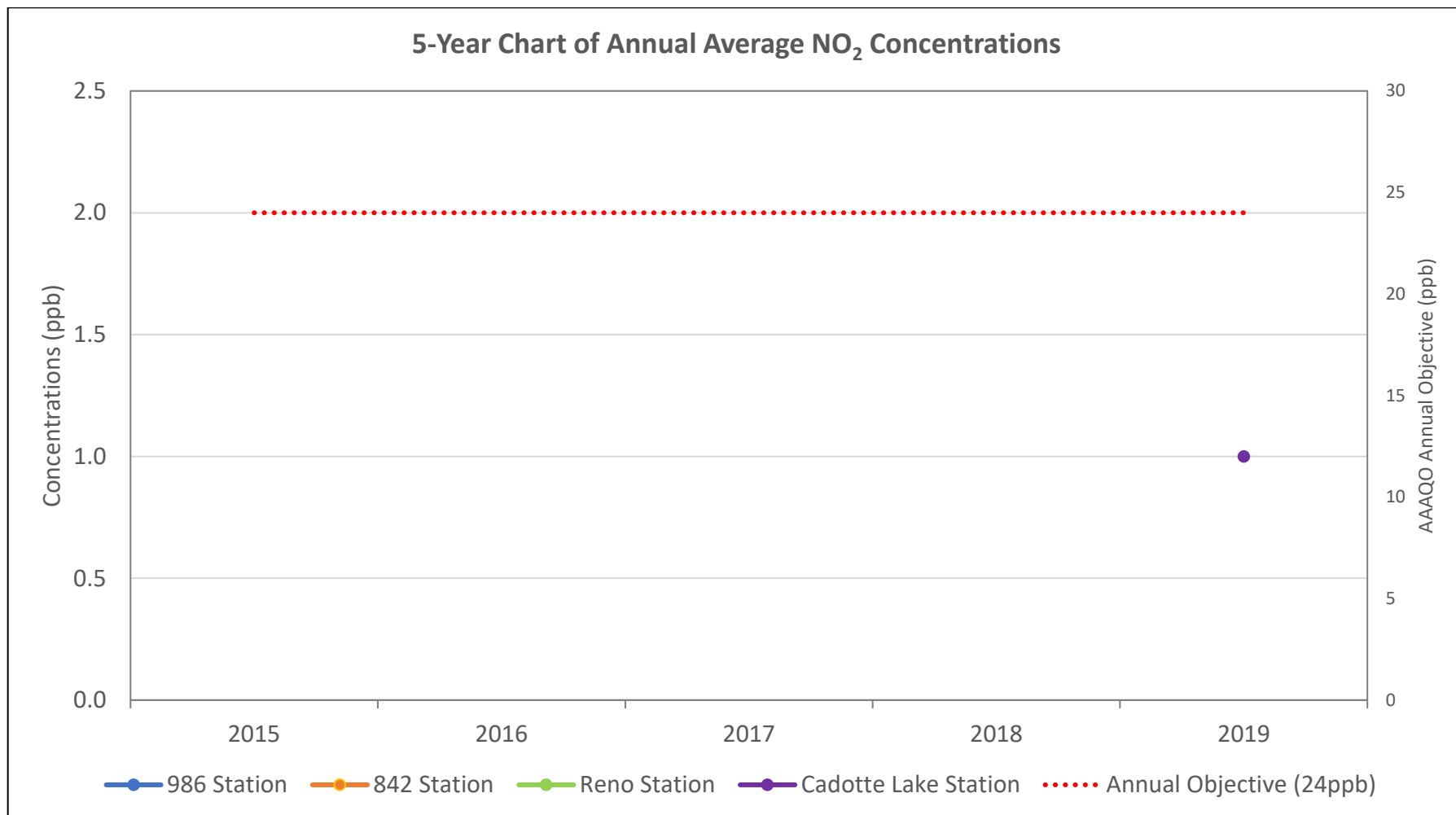
**Note:**

1. NOx is only monitored at the Cadotte Station Lake Station.
2. Cadotte Lake Station was installed in October 2019 – no previous data available. Annual average NOx concentrations for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.



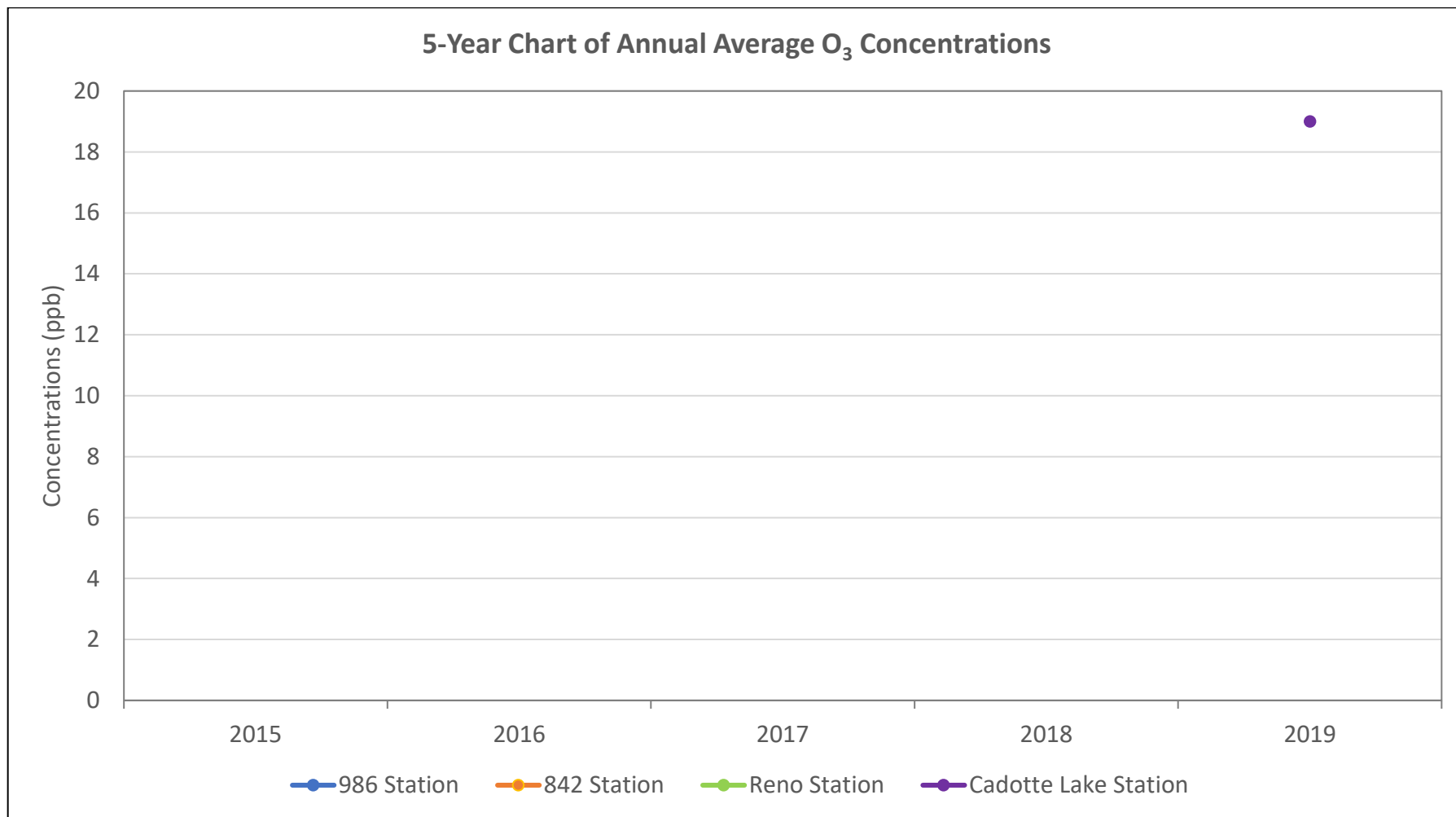
**Note:**

1. NO is only monitored at the Cadotte Station Lake Station.
2. Cadotte Lake Station was installed in October 2019 – no previous data available. Annual average No concentrations for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.



Note:

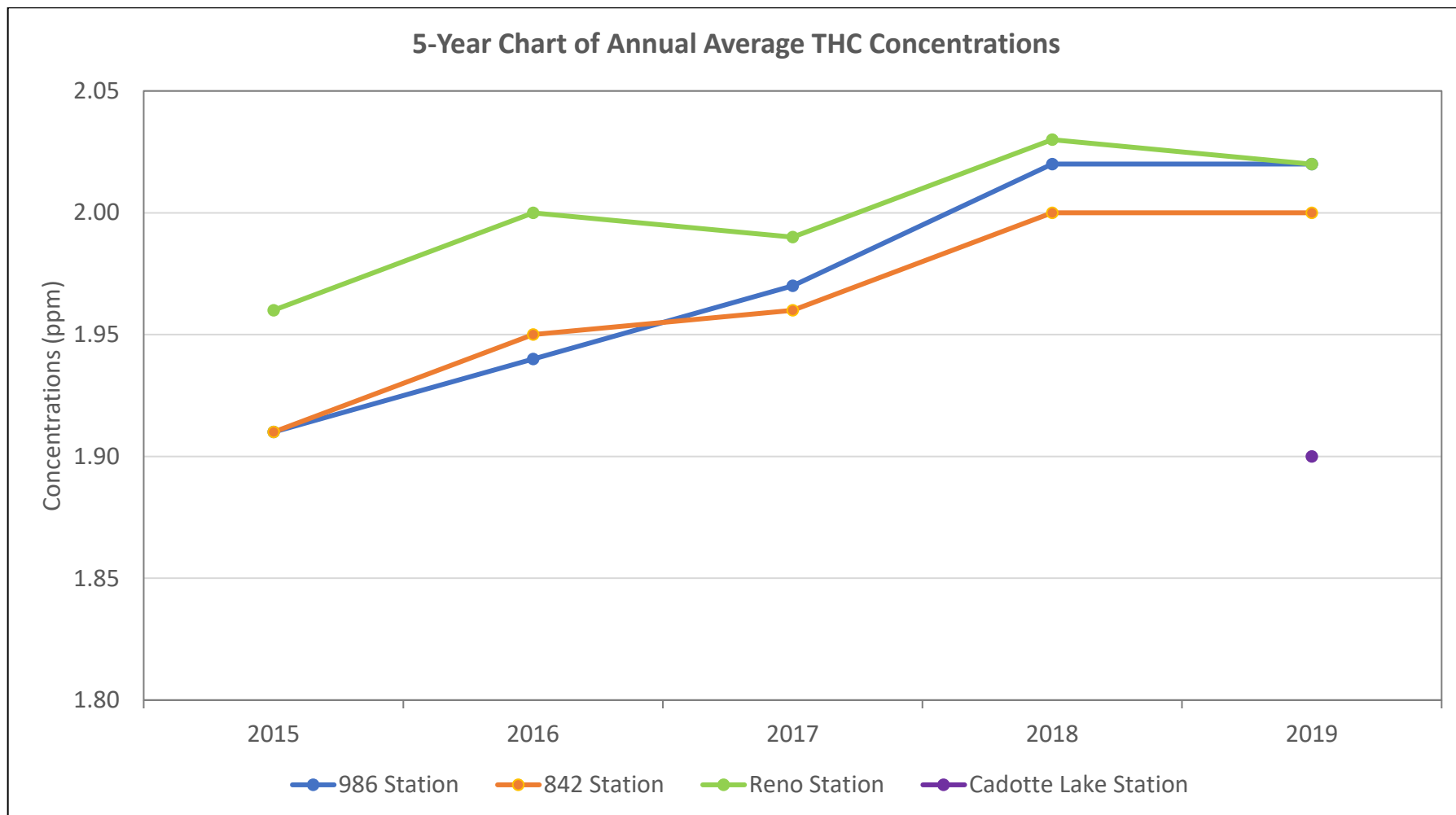
1. NO<sub>2</sub> is only monitored at the Cadotte Station Lake Station.
2. Cadotte Lake Station was installed in October 2019 – no previous data available. Annual average NO<sub>2</sub> concentrations for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.



Note:

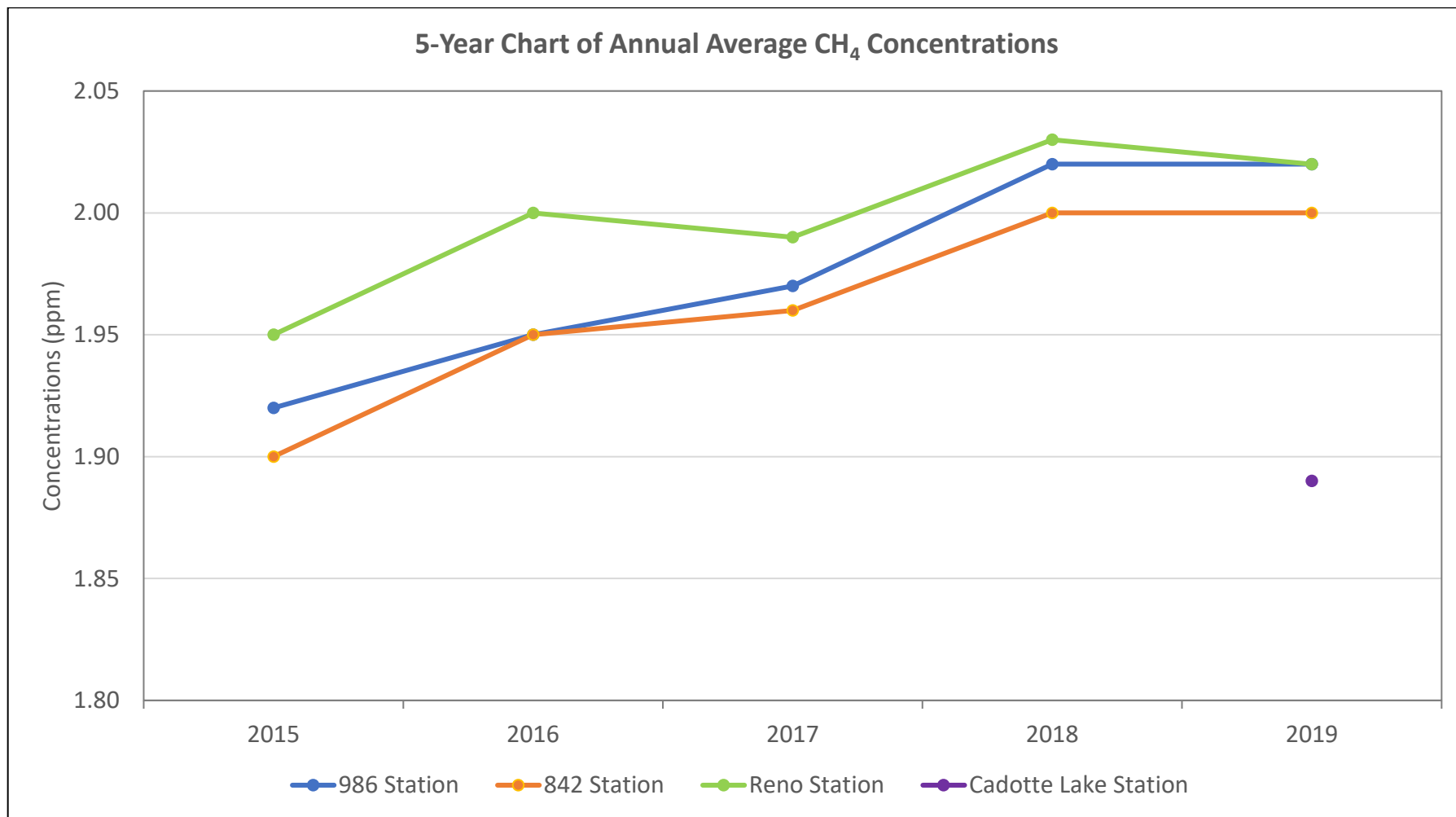
1. O<sub>3</sub> is only monitored at the Cadotte Lake Station.
2. Cadotte Lake Station was installed in October 2019 – no previous data available. Annual average O<sub>3</sub> concentrations for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.





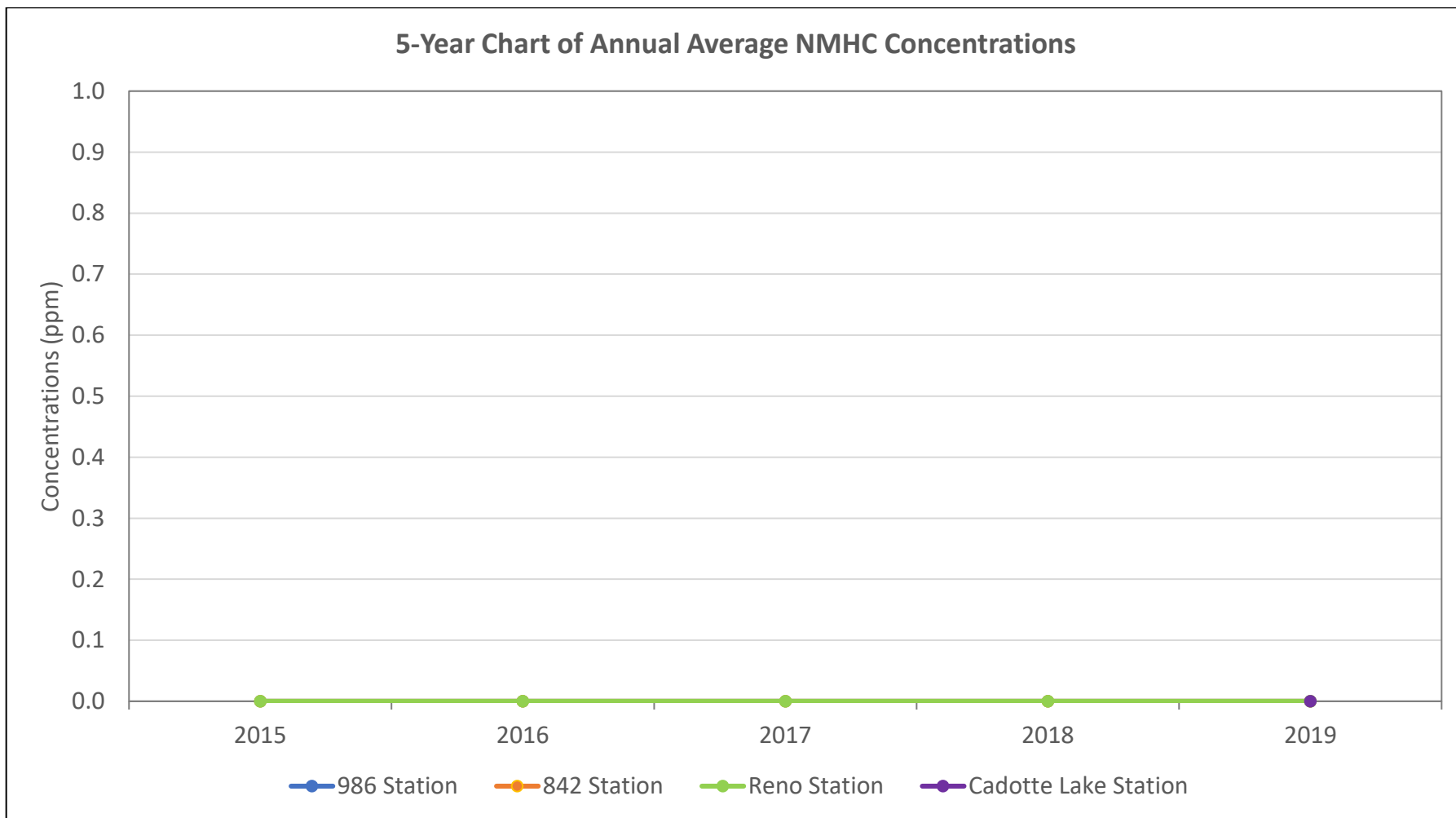
Note:

1. Cadotte Lake Station was installed in October 2019 – no previous data available. Annual average THC concentrations for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
2. 2019 average for 986 Station was calculated using both 986b and 986c data.



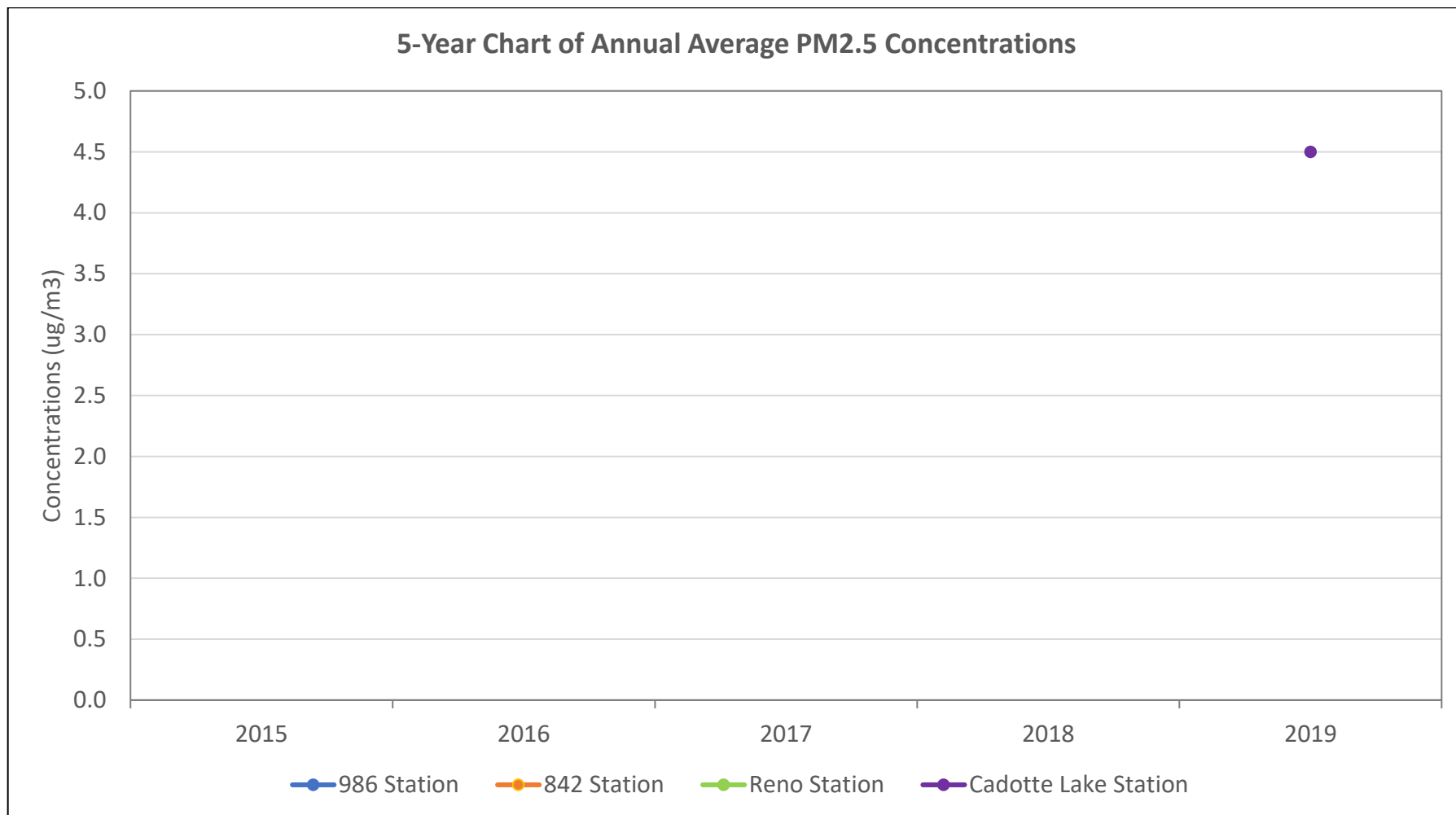
Note:

1. Cadotte Lake Station was installed in October 2019 – no previous data available. Annual average CH<sub>4</sub> concentrations for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
2. 2019 average for 986 Station was calculated using both 986b and 986c data.



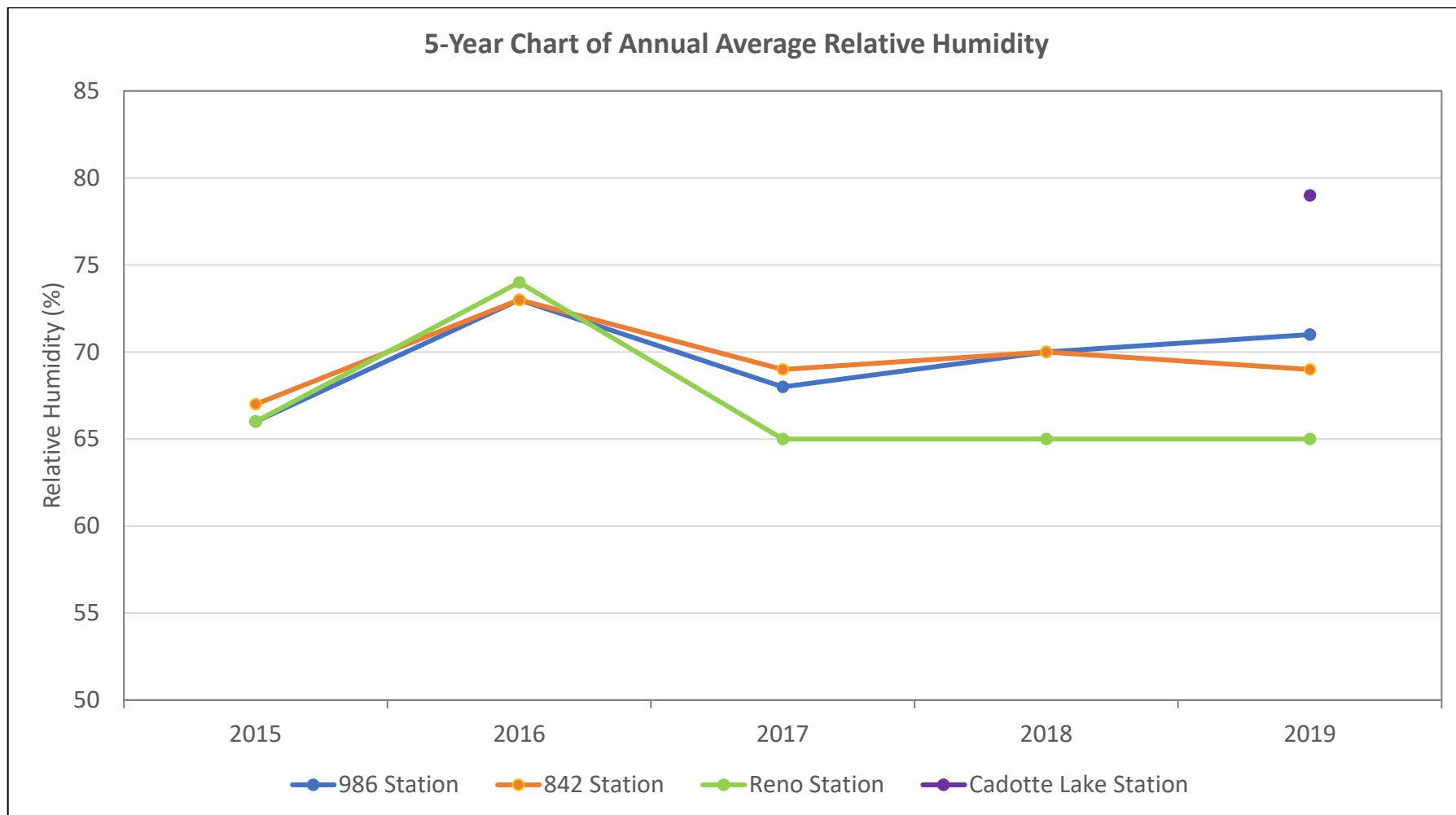
Note:

1. Cadotte Lake Station was installed in October 2019 – no previous data available. Annual average NMHC concentrations for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
2. 2019 average for 986 Station was calculated using both 986b and 986c data.



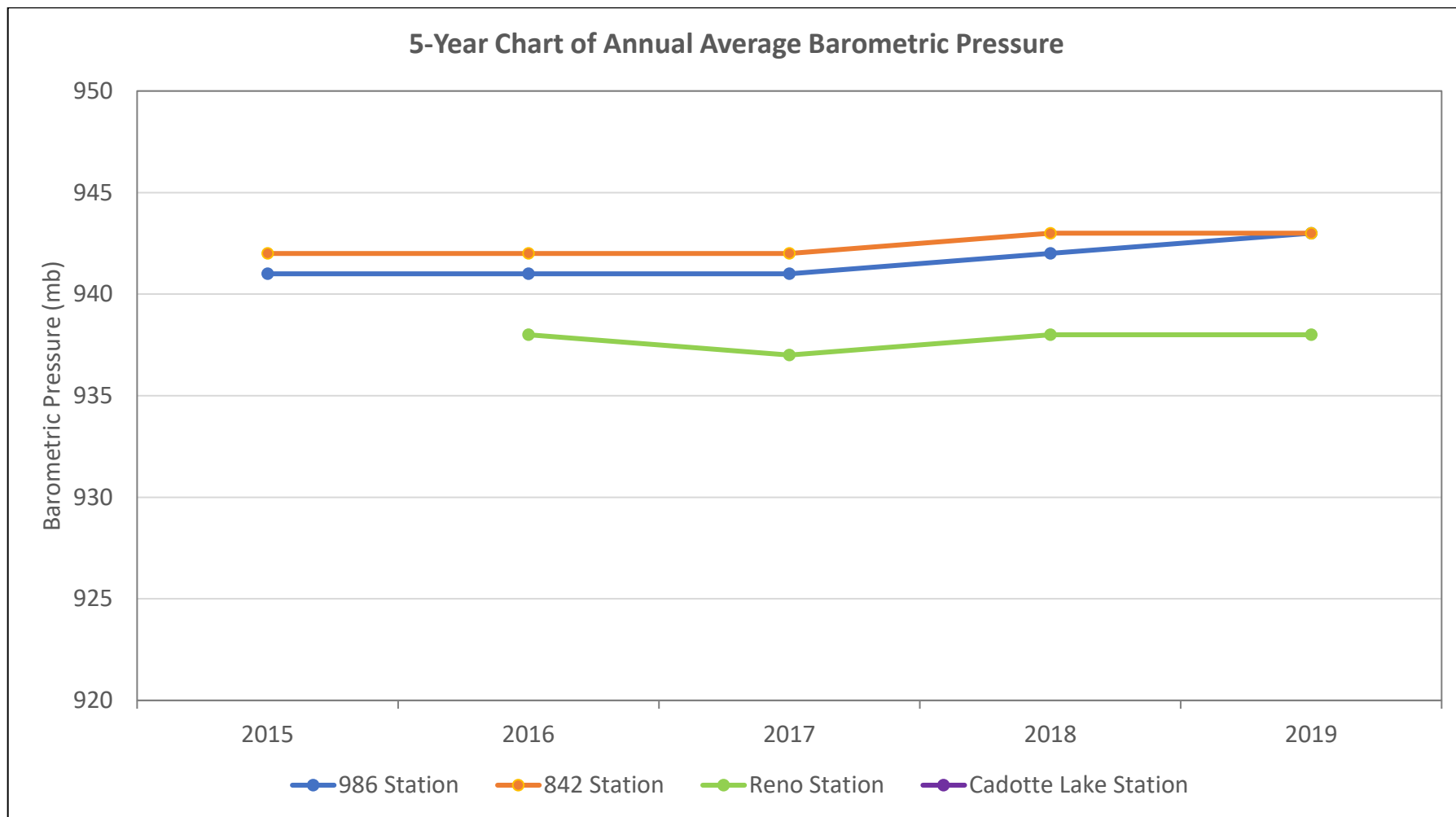
Note:

1. PM2.5 is only monitored at the Cadotte Station Lake Station.
2. Cadotte Lake Station was installed in October 2019 – no previous data available. Annual average PM2.5 concentrations for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.



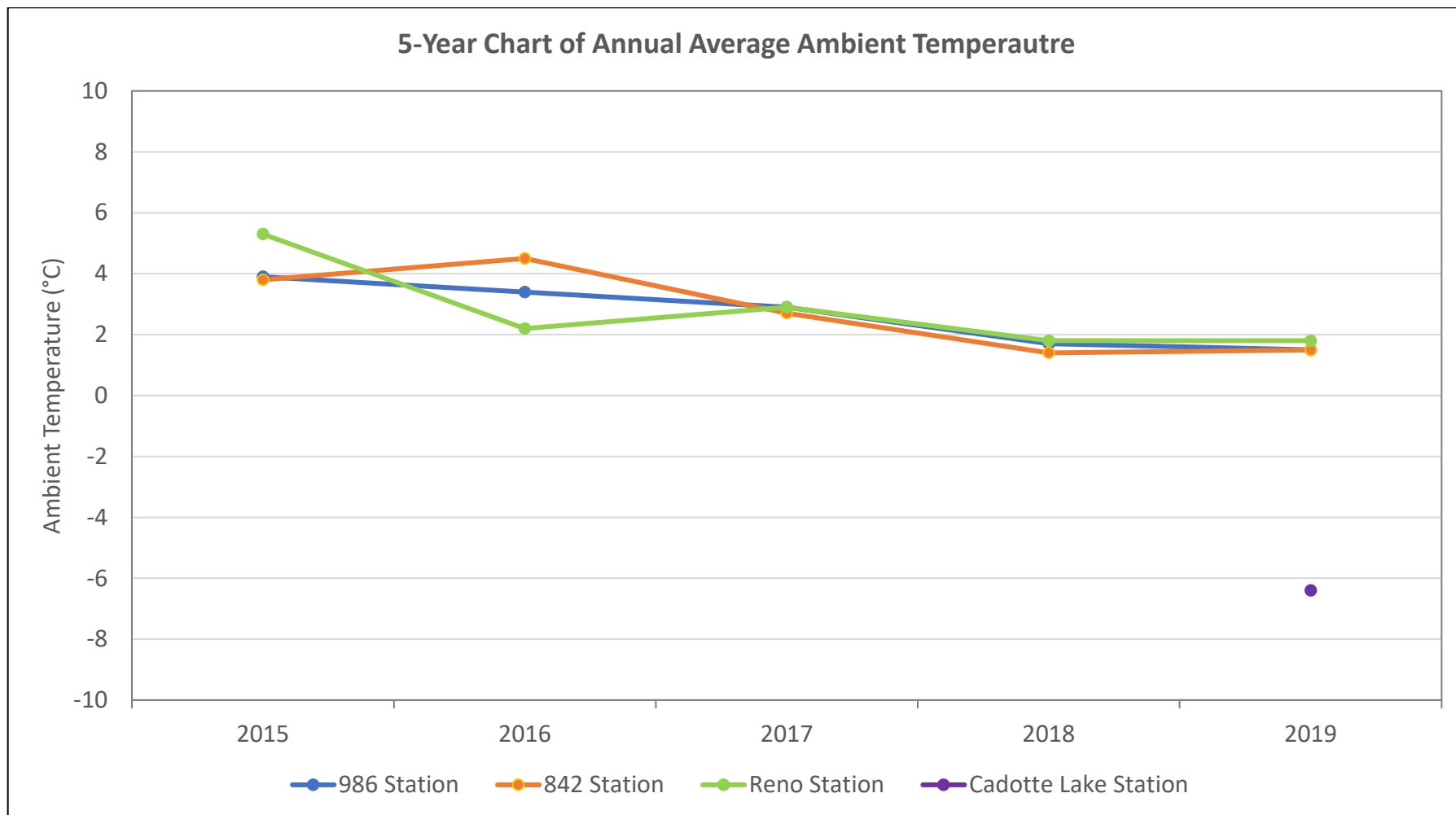
Note:

1. Cadotte Lake Station was installed in October 2019 – no previous data available. Annual average relative humidity for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
2. 2019 average for 986 Station was calculated using both 986b and 986c data.



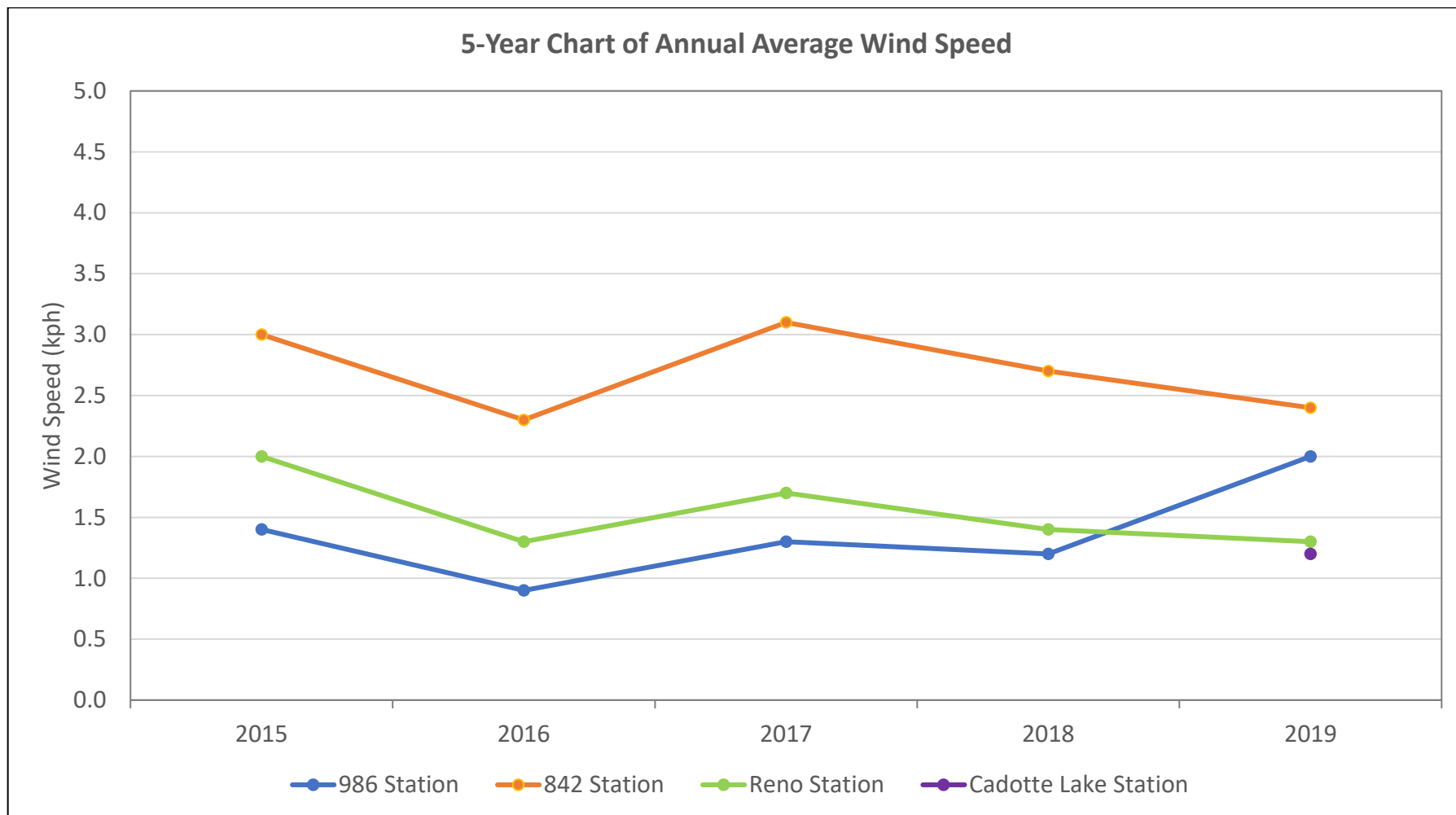
Note:

1. BP sensor was installed at Reno station in 2016 - no previous data available.
2. BP was not monitored at the Cadotte Lake Station.
3. 2019 average for 986 Station was calculated using both 986b and 986c data.



Note:

1. Cadotte Lake Station was installed in October 2019 – no previous data available. Annual average ambient temperature concentrations for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
2. 2019 average for 986 Station was calculated using both 986b and 986c data.

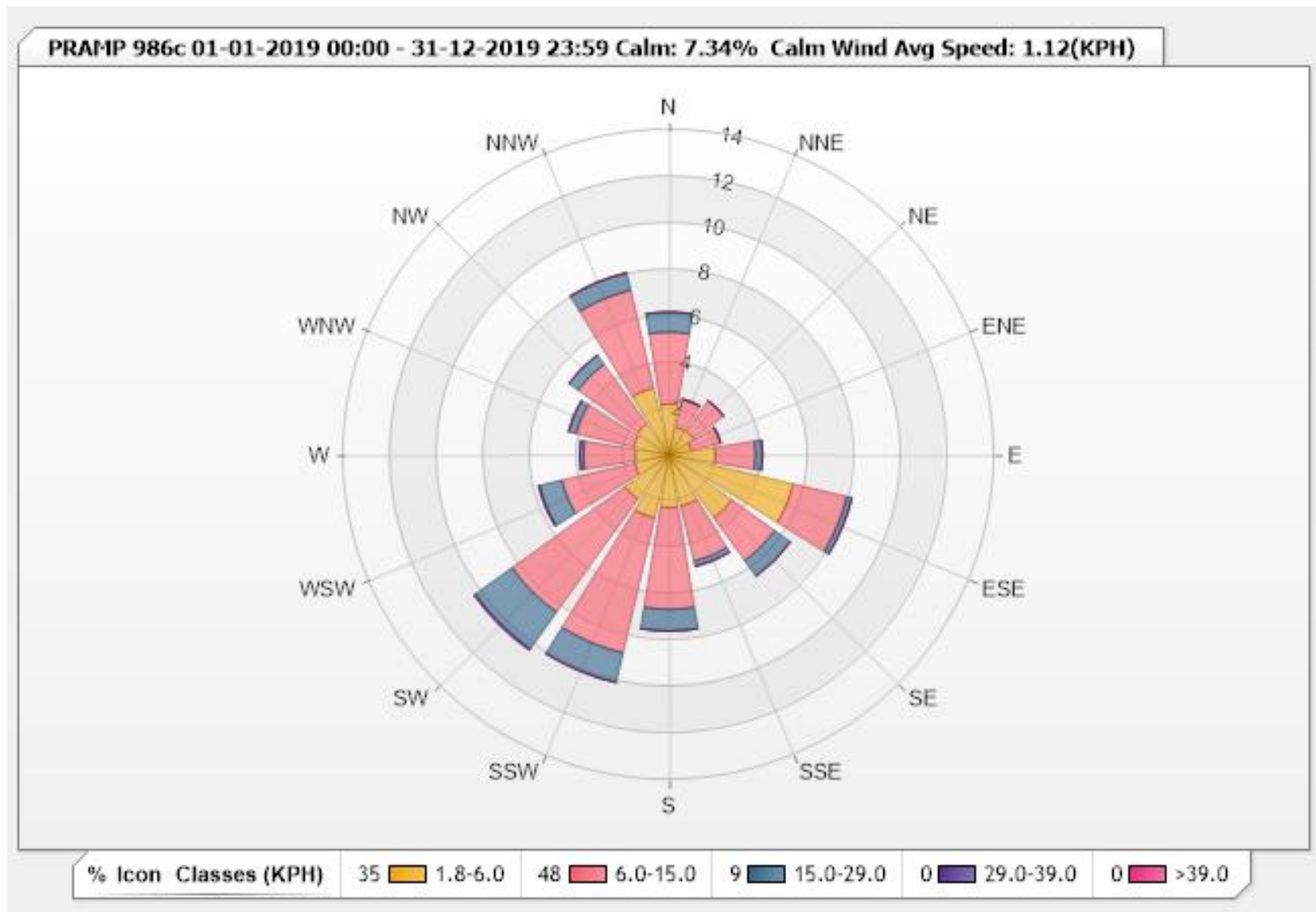


Note:

1. Cadotte Lake Station was installed in October 2019 – no previous data available. Annual average wind speed for Cadotte Lake Station was calculated based on the monthly averages of October, November and December.
2. 2019 average for 986 Station was calculated using both 986b and 986c data.

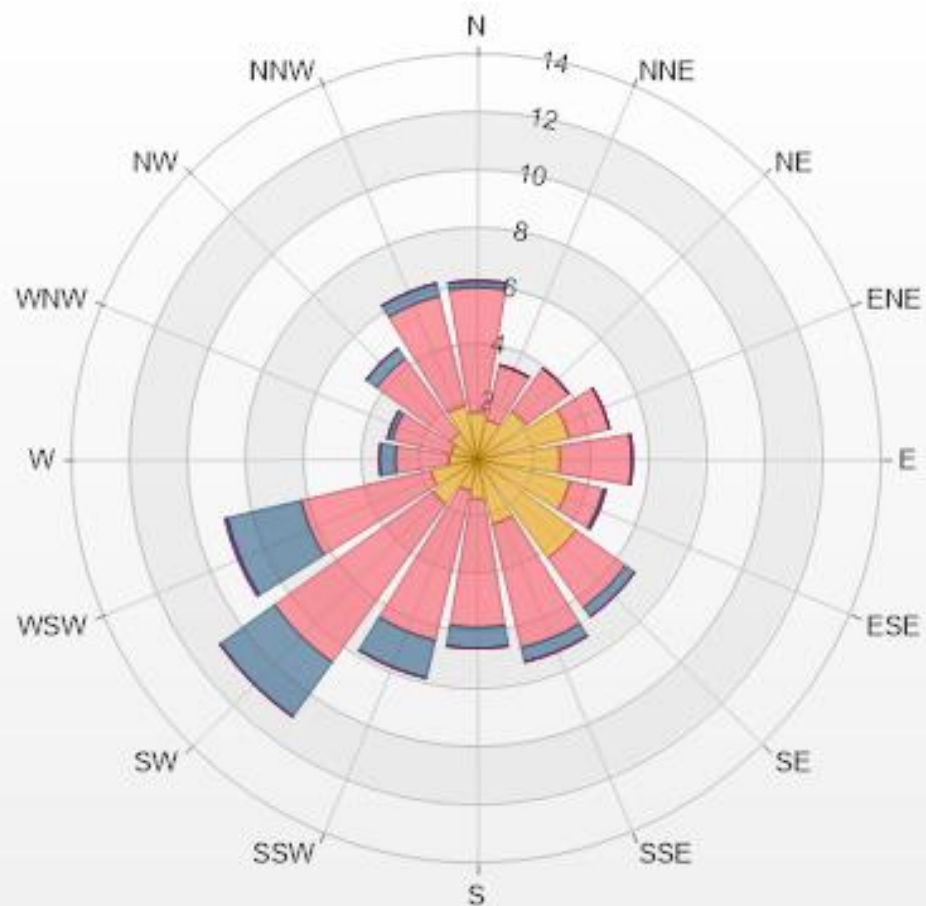


### 3 Annual Windrose Plots



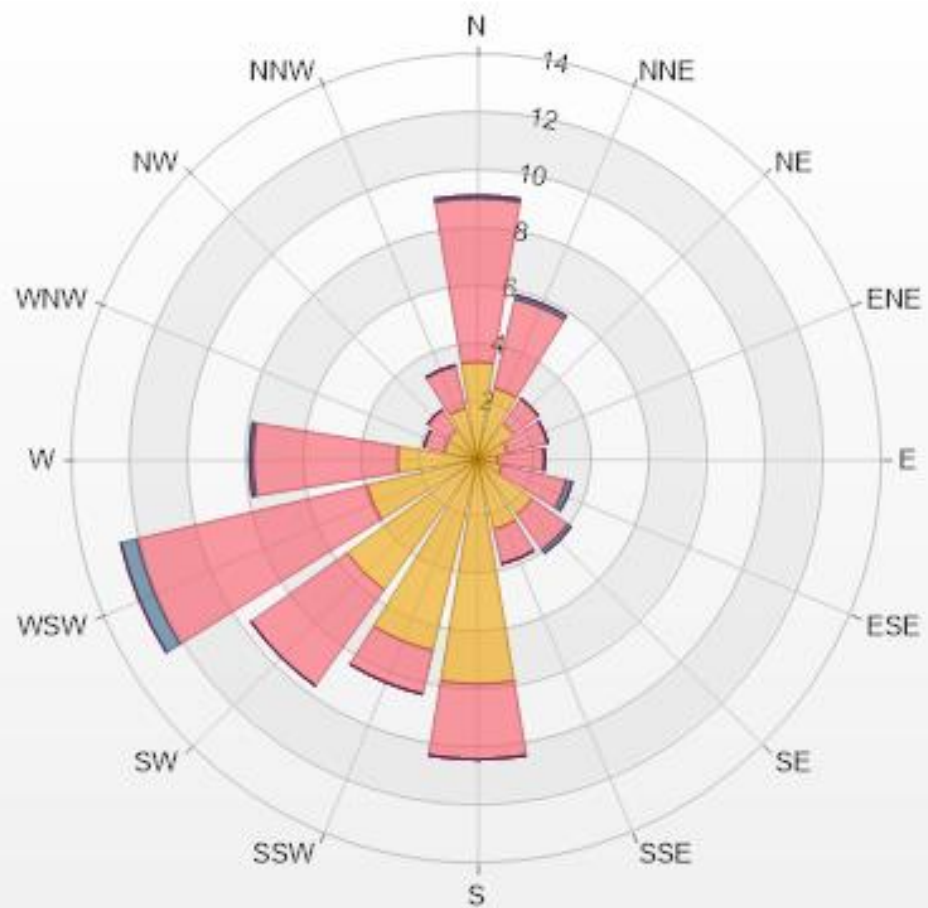
Note: Annual wind rose Chart was generated using both 986b and 986c data.

PRAMP 842b 01-01-2019 00:00 - 31-12-2019 23:59 Calm: 6.18% Calm Wind Avg Speed: 1.07(KPH)

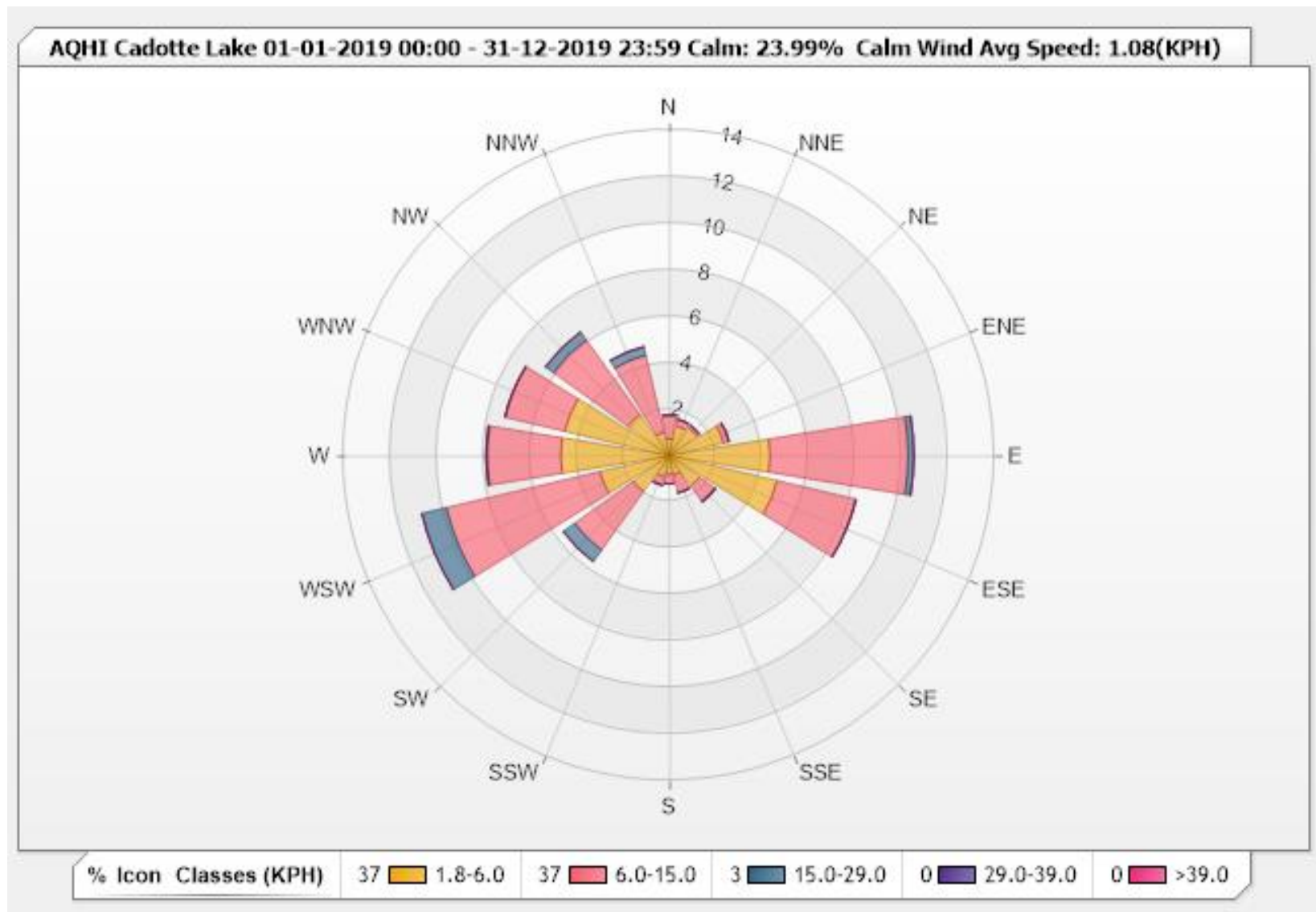


% Icon	Classes (KPH)
32	1.8-6.0
52	6.0-15.0
10	15.0-29.0
0	29.0-39.0
0	>39.0

PRAMP RENO 01-01-2019 00:00 - 31-12-2019 23:59 Calm: 10.24% Calm Wind Avg Speed: 1.04(KPH)



% Icon	Classes (KPH)
46	1.8-6.0
42	6.0-15.0
1	15.0-29.0
0	29.0-39.0
0	>39.0



Note: Annual wind rose chart was generated based on the data availability (October -December 2019).

**End of Report**

This page, 93 of 93, ends the 2019 Annual Ambient Air Quality Monitoring Report.