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AMBIENT AIR MONITORING MONTHLY DATA REPORT
PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
RENO STATION

JOB #: 196-2017-08-93-C

August 2017

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: **September 20, 2017**

Prepared by:

A handwritten signature in blue ink, appearing to read "Wunmi Adekanmbi".

Wunmi Adekanmbi, M.Sc., EPT.
Project Manager, Customer Service, Air Services

Reviewed by:

A handwritten signature in black ink, appearing to read "Cheri Sinclair".

Cheri Sinclair, B.Sc.
Supervisor, Customer Service, Air Services

SUMMARY

In August 2017, Maxxam Analytics was contracted to manage the ambient air quality monitoring and maintenance activities at the Reno Station, near Peace River Oil Sands Area 1, Alberta. The monitoring station provides continuous meteorological measurements and air quality data for non-compliance parameters, as requested by the PRAMP Committee.

All data collected this month was compliant with the requirements outlined in the Air Monitoring Directive (Alberta Environment and Parks, 2016).

The operational time for all continuous ambient air analyzers, meteorological systems and data acquisition systems were above the 90% requirement.

TRS: A repeat calibration was performed on August 11 to assess slow response during, and span drift after, the calibration on August 9. Four hours of downtime were recorded.

THC/CH₄/NMHC: Eight hours of downtime were recorded this month.

- Four hours were attributed to low carrier gas pressure that occurred on August 1 and the subsequent corrective actions performed.
- A repeat calibration was completed on August 20 as a precaution, to assess an observed low concentration trend. Four more hours of downtime were incurred.

The summary of results is presented on the following pages.

Any deviations or modifications made to the sampling or analytical methods are outlined in Section 1.0, Discussion. On this basis, Maxxam Analytics is issuing this completed report to Peace River Area Monitoring Program Committee, Three Creeks 986b Station.

Should you have any questions concerning the results or if we can be of further assistance, please contact us at 403-219-3661 or toll-free at 1-800-386-7247.

Monthly Continuous Data Summary

Peace River Area Monitoring Program Committee						MAXIMUM VALUES							OPERATIONAL TIME (%)
Reno Station						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDANCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (kph)	WIND DIRECTION (sector)	READING	DAY	
	1-hr	24-hr	1-hr	24-hr									
SO ₂ (ppb)	172	48	0	0	0	1	7	10	3.3	N	0	1	100.0
TRS (ppb)	-	-	-	-	0.56	5.10	10	6	3.1	SSW	1.02	9	99.5
THC (ppm)	-	-	-	-	1.95	3.90	15	21	2	SSW	2.23	5	98.9
CH ₄ (ppm)	-	-	-	-	1.95	3.89	15	21	2	SSW	2.23	5	98.9
NMHC (ppm)	-	-	-	-	0.00	0.03	13	19	4.4	SSW	0.01	13	98.9
RELATIVE HUMIDITY (%)	-	-	-	-	63	94	2	2	1.7	SW	85	24	100.0
BAROMETRIC PRESSURE (millibar)	-	-	-	-	939	954	1	6	4.3	WSW	953	1	100.0
AMBIENT TEMPERATURE (°C)	-	-	-	-	16.2	29.1	12	14	9	SE	21.5	12	100.0
STATION TEMPERATURE (°C)	-	-	-	-	21.4	24.9	9	15	2.5	SSW	22.3	9	100.0
VECTOR WS (kph)	-	-	-	-	3.5	17.1	18	13	-	WSW	11.5	25	100.0
VECTOR WD (sec)	-	-	-	-	230 (SW)	-	-	-	-	-	-	-	100.0

SOUR GAS PROCESSING INDUSTRY
MONTHLY REPORT SUMMARY

Reno Station

Peace River Area Monitoring Program Committee

Plant Name / Location

Company

Licence Number	Report Date	
	YEAR	MONTH
N/A	2017	August

CONTINUOUS AMBIENT MONITORING						
PARAMETER	% TIME OPERATIONAL	ONE - HOUR AVERAGE			24 - HOUR AVERAGE	
		MAXIMUM VALUES		NO. READINGS > REGULATION	MAXIMUM VALUES	NO. READINGS > REGULATION
SO ₂	100.0	0.001 ppm		0	0.000 ppm	0
TRS	99.5	0.005 ppm		-	0.001 ppm	-
THC	98.9	3.90 ppm		-	2.23 ppm	-
CH ₄	98.9	3.89 ppm		-	2.23 ppm	-
NMHC	98.9	0.03 ppm		-	0.01 ppm	-
RH	100.0	94 %		-	85 %	-
BP	100.0	954 mb		-	953 mb	-
Ambient TPX	100.0	29.1 °C		-	21.5 °C	-
Station TPX	100.0	24.9 °C		-	22.3 °C	-
Wind Speed	100.0	17 kph		-	12 kph	-
Wind Direction	100.0	-		-	-	-

SIGNATURE OF COMPANY REPRESENTATIVE

FOR ALBERTA ENVIRONMENT USE ONLY

Exceedance Summary Report

SO₂ 1-Hour Exceedances

Measured concentrations of sulphur dioxide were below the 1-hour AAAQO of 172 ppb.

SO₂ 24-Hour Exceedances

Measured concentrations of sulphur dioxide were below the 24-hour AAAQO of 48.0 ppb.

In accordance with EPEA and the Substance Release Regulation.

In accordance with A Guide to Release Reporting and the Alberta Ambient Air Quality Objectives and Guidelines Summary.

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1.0 Discussion

This monthly report consists of continuous monitoring results for the following parameters: Sulphur Dioxide (SO₂), Total Reduced Sulphur (TRS), Total Hydrocarbon (THC), Methane (CH₄), Non-Methane Hydrocarbon (NMHC), Relative Humidity (RH), Barometric Pressure (BP), Ambient Temperature (AmbTPX), Station Temperature (StnTPX), Wind Speed (WS) and Wind Direction (WD).

Sample filters for all continuous air monitors are changed before the calibration begins. The sample manifold is cleaned during the site visit each month.

Control checks, consisting of a zero and span, are conducted daily on all continuous air monitors. In place of the air sample, zero air (from scrubbed air or gas cylinders) is used for zero checks, and a known concentration of the pollutant being analyzed is used for span checks. These checks are controlled by automatic timers and valves. The total zero span cycle is completed within an hour, the commencement of the zero span cycle is at the beginning of the hour.

Multipoint calibrations are done a minimum of once a month for each continuous air monitor. An additional calibration is required under the following conditions: 1) within three days after the initial start-up and stabilization of a newly installed instrument, 2) prior to shut-down or moving of an instrument which has been working to specification, and 3) when major repair has been done on the instrument.

Time during the first multi-point calibration is not considered downtime (Data is flagged as C). If more than one calibration is performed during the month, the time during the additional calibration is considered as downtime (Data is flagged as C1).

Only one zero/span check is run per day. Time during the zero/span check is not considered as downtime (Data is flagged as S). If an extra zero/span check is performed, the time during the additional check is considered as downtime (Data is flagged as S1).

The AMD requires each instrument and accompanying data recording system to be operational 90% of the time, at a minimum, for each monthly monitoring period.

All sampling, analysis, and QA/QC for this project was performed by Maxxam Analytics and complies with the Alberta Air Monitoring Directive.

Data contained in this monthly report has undergone the verification and validation based on the requirements of the AMD Chapter 6: Ambient Data Quality (December, 2016). The descriptions of the data verification and validation process can be found in Section 5 of this report. Instantaneous data, where applicable, is provided for reference purposes and has not undergone zero correction. The minimum and maximum statistics are highlighted in the data table and are for reference only. The highlighted cells are based on the software's interpretation of the exact position of the minimum or maximum value. The visual presentation of these statistics may not be the obvious choice in a data range due to rounding, truncating or analyzer specifications.

Hourly/minute data have been reviewed based on daily zero/span results and multi-point calibration results. Data may be considered invalid if a zero-corrected span check in excess of +/- 10% of the span concentration (established by the previous multi-point calibration) is encountered and/or significant differences in the calibration factor occurs (greater than 10%).

SULPHUR DIOXIDE (SO₂)

- Operational time, for the monitoring period, was 100%.
- The routine monthly calibration was performed on August 9.

TOTAL REDUCED SULPHUR (TRS)

- Operational time, for the monitoring period was 99.5%, equivalent to four hours of downtime.
- The routine monthly calibration was performed on August 9. The analyzer showed slow response (within acceptable response period) during the calibration. It was suspected that the calibration equipment might have been the cause of the slow response. A repeat calibration was performed on August 11, using an alternate calibration equipment. No issues were identified. Four hours of downtime were incurred due to the additional calibration.

TOTAL HYDROCARBONS (THC), METHANE (CH₄) and NON-METHANE HYDROCARBONS (NMHC)

- Operational time, for the monitoring period was 98.9%, equivalent to eight hours of downtime.
- The carrier gas pressure dropped on August 1, causing the analyzer to record lower than historical concentrations. This prompted an immediate site visit, where the cylinder was exchanged. A zero/span check was completed afterwards. Four hours of downtime were recorded due to this event.
- The routine monthly calibration was performed on August 9.
- A repeat calibration was completed on August 20 for precautionary reasons. This was to address an observed low concentration trend for THC, bordering on Maxxam's internal guidelines. The repeat calibration was successful, all data was considered valid. However, four hours of downtime were incurred due to the additional calibration.
- The canister sampler is programmed to draw in a whole air sample when the 5-minute average concentration of NMHC is above 0.30 ppm. A representative sample of ambient air is collected over a one-hour period when the canister event is triggered. No canister event was recorded this month.

WIND SPEED (WS) and WIND DIRECTION (WD)

- Operational time, for the monitoring period, was 100%.
- Wind data is reported as vector wind speed and vector wind direction. Wind direction is defined as the direction from which the wind is blowing from and is measured in degrees from true north.

RELATIVE HUMIDITY (RH)

- Operational time, for the monitoring period, was 100%.

BAROMETRIC PRESSURE (BP)

- Operational time, for the monitoring period, was 100%.

AMBIENT TEMPERATURE (AmbTPX)

- Operational time, for the monitoring period, was 100%.

STATION TEMPERATURE (StnTPX)

- Operational time, for the monitoring period, was 100%.

2.0 Project Personnel

Karla Reesor was the contact for Peace River Area Monitoring Program Committee and the Maxxam field technicians were Limin Li and Raja Ashraf.

3.0 Plant Monthly Required AMD Summary

All data collected this month was compliant with the requirements outlined in the Air Monitoring Directive (Alberta Environment and Parks, 2016).

The operational time for all continuous ambient air analyzers, meteorological systems and data acquisition systems were above the 90% requirement.

4.0 Calculations and Results

All calculations and reporting of results follow the methods described in the AMD, 2016.

5.0 Methods and Procedures

The following methods and procedures were used to complete the monitoring program:

Maxxam AIR SOP-00001: Methane, Non-Methane Hydrocarbon Analyzer Monitoring

Maxxam AIR SOP-00208: RM Young Wind Monitor Calibration

Maxxam AIR SOP-00209: Ambient Sulphur Monitoring

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

Sulphur Dioxide - API 100A UV Flourescent Analyzer

Total Reduced Sulphur - Thermo 43i-TLE UV Flourescent Analyzer

Methane, Non-Methane Hydrocarbon - Thermo 55i FID Analyzer

Wind System - RM Young Unit

Relative Humidity - Met One Unit

Barometric Pressure - Met One Unit

Ambient Temperature - Met One Unit

Datalogger - ESC 8832

The following steps were used to complete the data verification and validation process:

Level 0 Preliminary Verification

Level 0 data are raw data obtained directly from the data acquisition system (DAS). Under the step of Level 0, these data undergo a certain amount of manual or automated screening and flagging. It included a) identification of periods of missing data; b) verification of time stamps against reference time; c) verification that instrument diagnostics/datalogger flags indicate normal operation; d) comparison of data to upper and lower limits; e) rate of change flagging indicating that data changed too rapidly or not at all; and f) verification that zero, span and multipoint performance checks are within specifications. This level of verification is performed on a daily basis.

Level 1 Primary Validation

Validation actions under the step of Level 1 include a) review of all screening flags assigned during preliminary verification; b) review of all supporting site information and documentation; c) review of operational acceptance limits for each parameter/analyzer; d) review of daily zero/span and monthly calibration results for all gaseous parameters; and e) application of any necessary adjustments to data (e.g. baseline adjustments, below zero adjustments). This level of validation is performed on a monthly basis.

Level 2 Final Validation

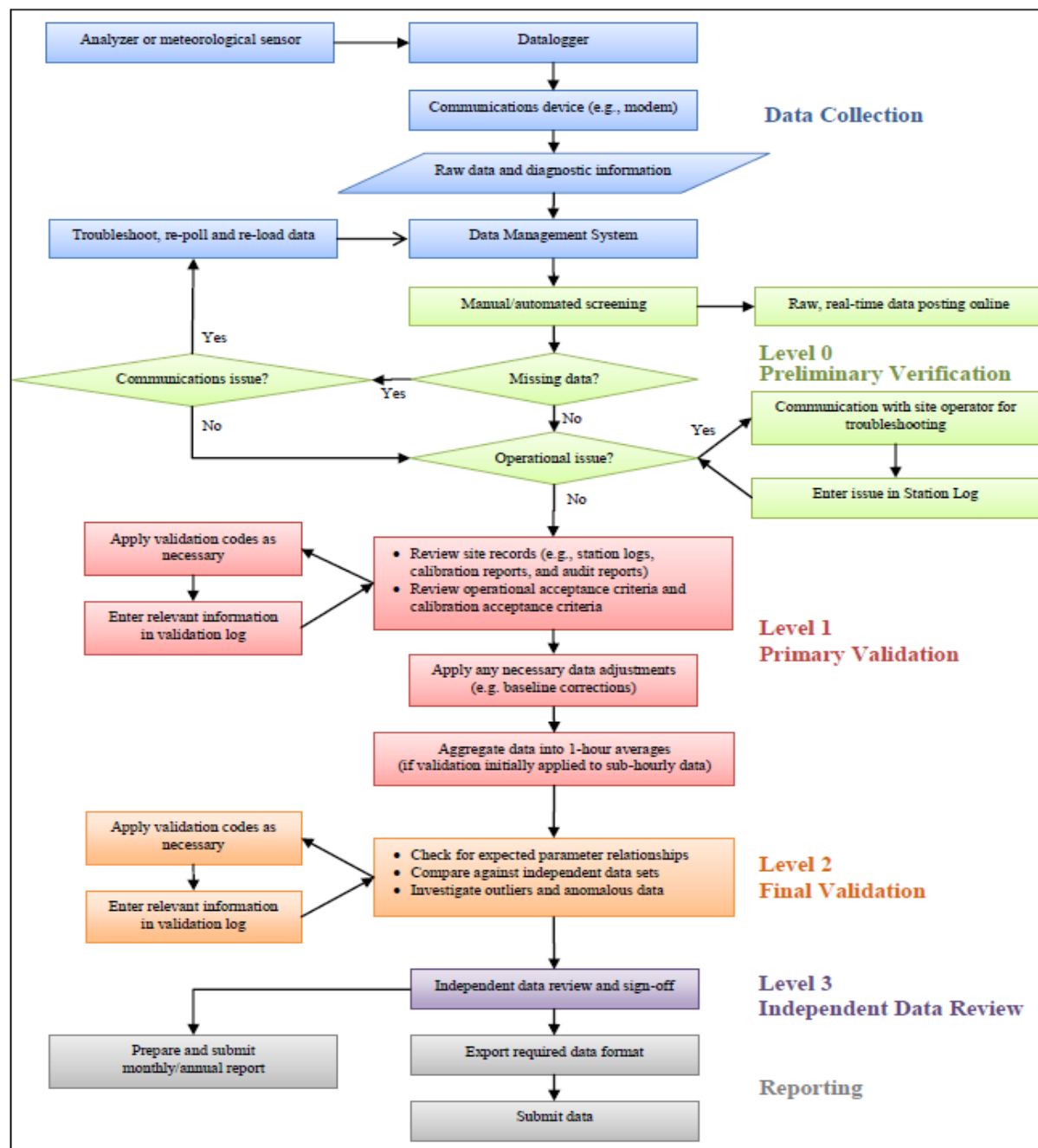
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

Level 3 Independent Data Review

Level 3 validation is the last step of data review, and it is completed by an individual that is independent of both field operations and primary data validation. A final independent QA review and endorsement is performed during this step before data is submitted to Alberta Environment.

Post-Final Validation

The Post-Final Validation step serves to re-evaluate the data that errors or omissions are discovered and/or suspected after the initial submittal of data. Any data issues or patterns which were not clear on a monthly basis are highlighted during this step. This validation is performed on an annual basis.



Source: Air Monitoring Directive (December 2016), Chapter 6, Ambient Data Quality; Figure 1 Data Collection and Management Process Flow Chart

APPENDIX I
CONTINUOUS MONITORING DATA RESULTS

SULPHUR DIOXIDE

SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59					
DAY																													
1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
2	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
3	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
4	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
5	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
6	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
7	0	0	0	0	0	S	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
8	0	0	0	0	0	S	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	24
9	0	0	0	0	0	S	1	1	1	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	1	0	24
10	0	0	0	0	0	S	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
11	0	0	0	0	0	S	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
12	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
13	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
14	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
15	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
16	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
17	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
18	0	0	0	0	0	S	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
19	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
20	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
21	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
22	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
23	0	0	0	0	0	S	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
24	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
25	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
26	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
27	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
28	0	0	0	0	0	S	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
29	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
30	0	0	0	0	0	S	0	1	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	24
31	0	0	0	0	0	S	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	24
HOURLY MAX	0	0	0	0	0	NA	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	24
HOURLY AVG	0	0	0	0	0	NA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

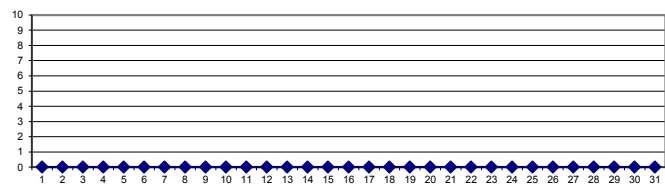
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 172 ppb 24-HR 48 ppb

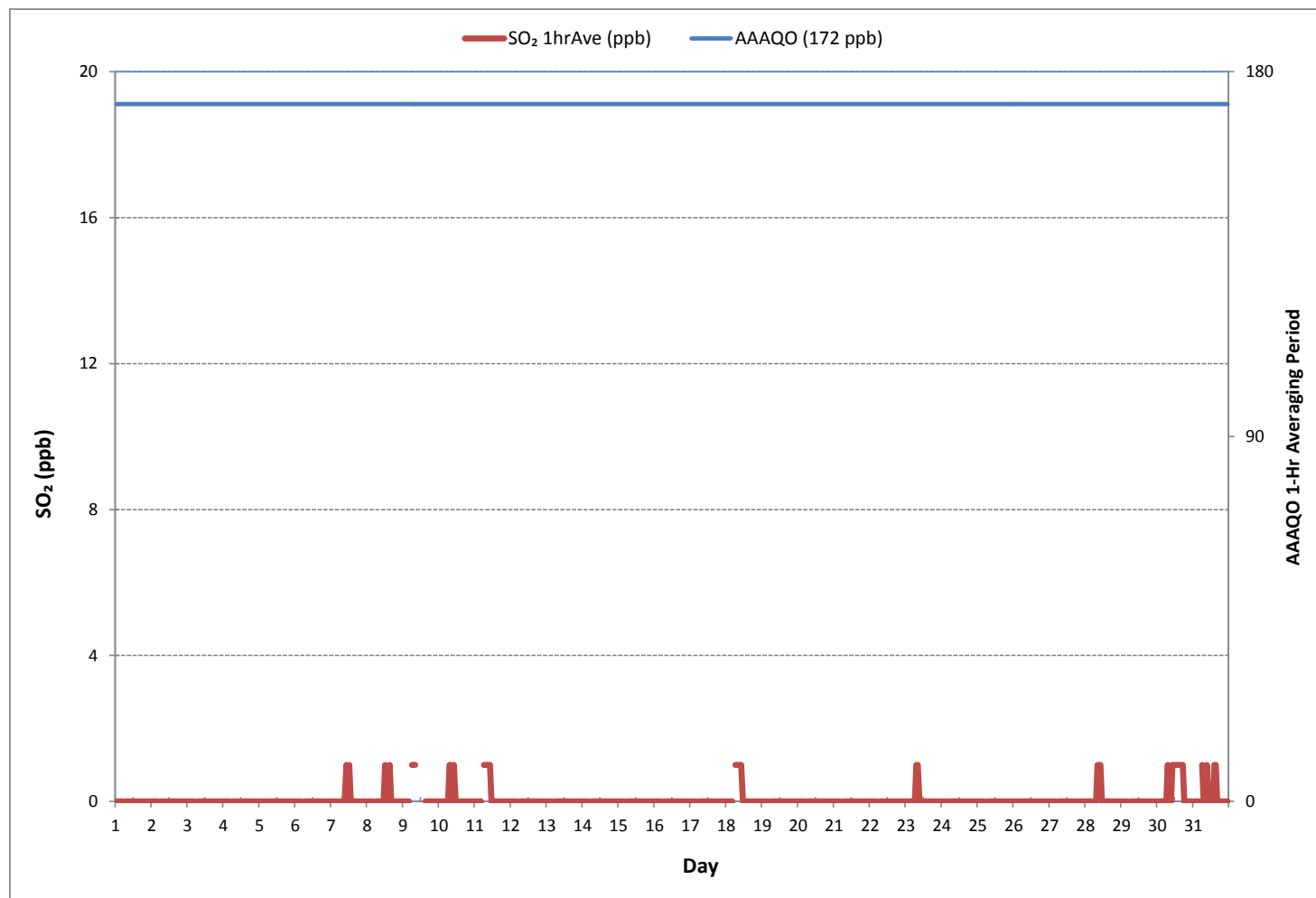
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDANCES:	0
NUMBER OF 24-HR EXCEEDANCES:	0
NUMBER OF NON-ZERO READINGS:	38
MINIMUM 1-HR AVERAGE:	0 ppb @ HOUR 0 ON DAY 1
MAXIMUM 1-HR AVERAGE:	1 ppb @ HOUR 10 ON DAY 7
MAXIMUM 24-HR AVERAGE:	0 ppb ON DAY 1
IZS CALIBRATION TIME:	31 hrs
MONTHLY CALIBRATION TIME:	6 hrs
OPERATIONAL TIME:	744 hrs
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0
MONTHLY AVERAGE:	0 ppb

24 HR AVERAGES August 2017



SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - August 2017

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24	
2	1	1	1	1	1	S	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	24
3	1	1	1	1	1	S	1	1	1	2	2	2	2	2	2	1	2	1	1	1	1	1	1	1	1	1	2	1	24
4	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	24	
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6	1	1	1	1	1	S	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	24
7	1	1	1	1	1	S	1	1	1	1	2	1	2	2	2	2	2	2	1	1	1	1	2	2	2	1	2	1	24
8	1	1	1	1	1	S	1	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	2	1	24
9	1	1	1	1	1	S	2	2	2	C	C	C	C	C	C	1	0	0	1	1	0	1	1	1	1	0	2	1	24
10	1	1	1	1	1	S	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	2	1	24	
11	1	1	0	1	1	S	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	24
12	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24
13	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24
14	1	1	1	1	1	S	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	2	1	24
15	1	1	1	1	1	S	1	1	2	1	1	2	2	2	1	1	1	1	1	1	1	1	2	1	1	1	2	1	24
16	1	1	1	1	1	S	2	1	1	1	1	1	2	1	2	2	1	1	1	1	1	1	1	1	1	1	2	1	24
17	1	1	1	1	1	S	1	1	1	2	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1	24
18	1	1	1	1	1	S	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	24
19	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24
20	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24
21	1	1	1	1	1	S	2	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1	24
22	1	1	1	1	1	S	1	2	2	2	2	1	2	2	1	2	1	1	1	1	1	1	1	1	1	1	2	1	24
23	1	1	1	1	1	S	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	24
24	1	1	1	1	1	S	1	2	2	2	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1	24
25	1	1	1	1	1	S	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	24
26	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24
27	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24
28	1	1	1	1	1	S	2	2	2	2	2	2	2	2	1	2	2	1	1	2	2	2	1	1	1	1	2	2	24
29	1	1	1	1	1	S	1	1	1	1	1	1	1	1	2	2	1	1	1	1	2	1	1	1	1	1	2	1	24
30	1	1	1	1	1	S	2	2	2	2	2	2	2	3	2	2	2	3	2	2	2	2	2	1	1	1	3	2	24
31	1	1	2	1	1	S	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	2	2	24
HOURLY MAX	1	1	2	1	1	NA	2	2	2	2	2	2	2	3	2	2	2	3	2	2	2	2	2	2	2				
HOURLY AVG	1	1	1	1	1	NA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				

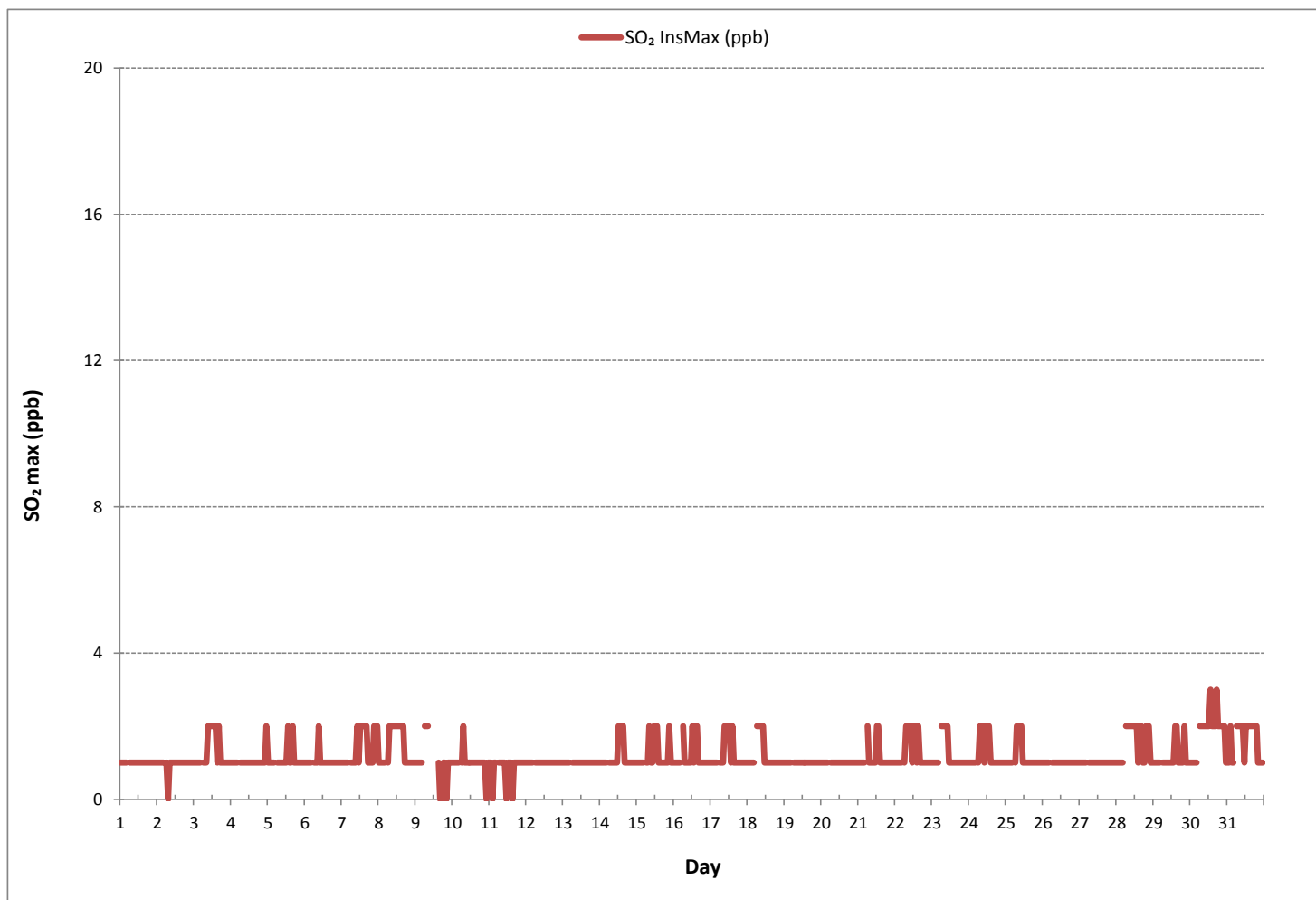
STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	699				
MAXIMUM INSTANTANEOUS VALUE:	3	ppb	@ HOUR	13	ON DAY 30
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	744	hrs
MONTHLY CALIBRATION TIME:	6	hrs			
STANDARD DEVIATION:	0				

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)



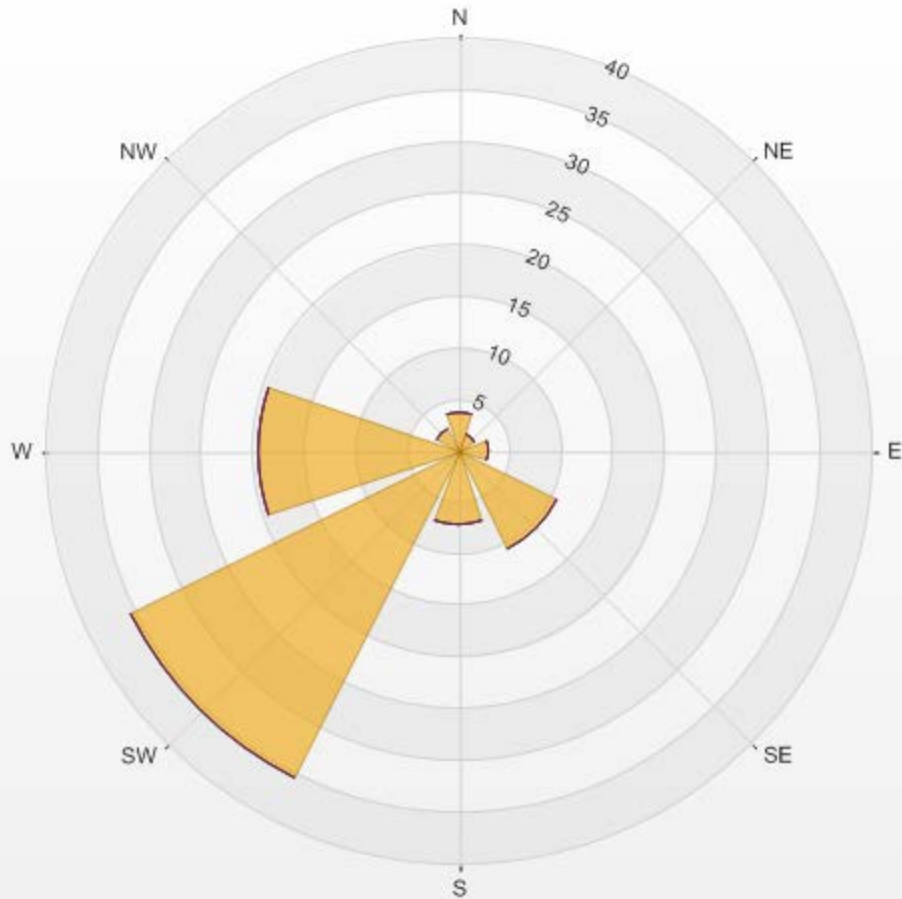
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-SO2[ppb]
Monthly: 17/08
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 15.98%

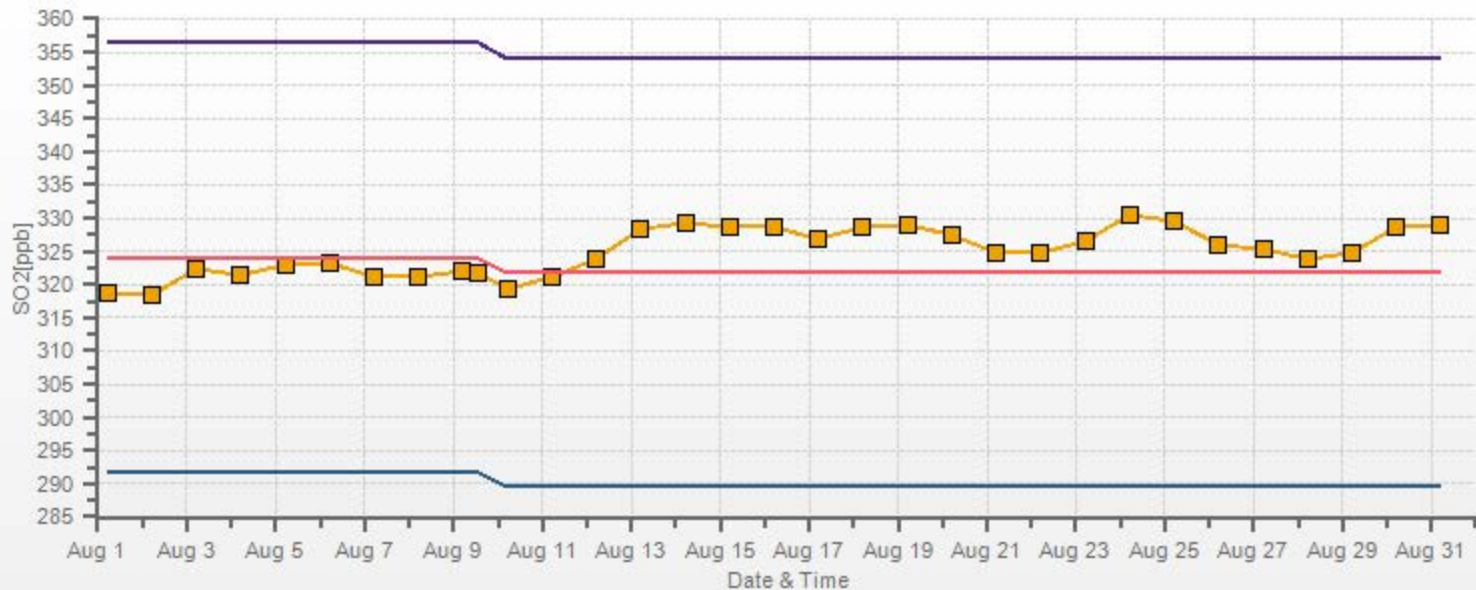
Calm Avg: 0.10 [ppb]

Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	3.8	0.0	0.0	0.0	0.0	3.8
NE	1.8	0.0	0.0	0.0	0.0	1.8
E	3.0	0.0	0.0	0.0	0.0	3.0
SE	10.8	0.0	0.0	0.0	0.0	10.8
S	7.2	0.0	0.0	0.0	0.0	7.2
SW	35.5	0.0	0.0	0.0	0.0	35.5
W	19.5	0.0	0.0	0.0	0.0	19.5
NW	2.4	0.0	0.0	0.0	0.0	2.4
Summary	84.0	0.0	0.0	0.0	0.0	84.0

PRAMP_RENO Poll.: PRAMP_RENO-SO2[ppb] 2017/08/01 00:00 - 2017/08/31 23:00 Calm: 15.98% Calm Poll Avg: 0.10[ppb]



SO2[ppb] Calibration: PRAMP_RENO Monthly: 17/08 Type: Span



Span Meas Span Ref Span Low Span High

TOTAL REDUCED SULPHUR

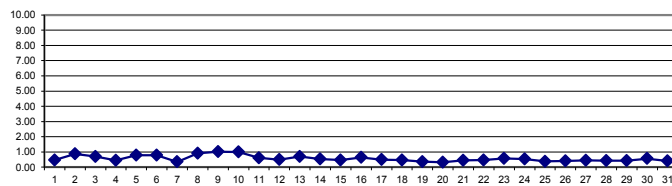
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	0.50	0.52	0.71	0.50	0.51	S	0.66	0.56	0.54	0.56	0.52	0.45	0.40	0.38	0.34	0.36	0.35	0.33	0.33	0.33	0.34	0.40	0.49	0.50	0.33	0.71	0.46	24
2	1.15	1.08	0.65	0.52	1.06	S	4.92	3.26	2.14	0.67	0.43	0.32	0.29	0.29	0.27	0.28	0.27	0.27	0.25	0.27	0.30	0.39	0.50	0.45	0.25	4.92	0.87	24
3	0.36	0.59	0.60	1.19	2.13	S	1.57	1.94	1.50	0.77	0.43	0.35	0.32	0.29	0.27	0.25	0.28	0.31	0.34	0.32	0.36	0.42	0.49	0.87	0.25	2.13	0.69	24
4	0.76	0.69	0.53	0.69	0.94	S	0.65	0.47	0.37	0.37	0.37	0.34	0.32	0.31	0.30	0.29	0.29	0.28	0.30	0.33	0.44	0.34	0.38	0.49	0.28	0.94	0.45	24
5	0.41	0.59	0.45	0.40	0.40	S	2.88	4.61	2.54	1.32	0.38	0.34	0.30	0.29	0.27	0.26	0.26	0.26	0.26	0.26	0.31	0.39	0.42	0.44	0.26	4.61	0.78	24
6	1.06	1.12	1.18	1.48	2.32	S	1.36	2.55	0.85	0.53	0.50	0.37	0.41	0.38	0.44	0.40	0.36	0.36	0.35	0.39	0.41	0.44	0.45	0.53	0.35	2.55	0.79	24
7	0.41	0.41	0.39	0.38	0.37	S	0.35	0.31	0.33	0.32	0.31	0.29	0.31	0.31	0.31	0.31	0.31	0.30	0.30	0.32	0.35	0.45	0.48	0.46	0.29	0.48	0.35	24
8	0.41	0.48	2.12	2.15	3.19	S	1.96	1.98	1.90	1.67	0.64	0.35	0.32	0.32	0.31	0.33	0.29	0.27	0.28	0.28	0.32	0.41	0.40	0.49	0.27	3.19	0.91	24
9	0.34	0.38	0.44	0.64	1.61	S	4.84	2.99	2.49	C	C	C	C	C	C	0.31	0.26	0.22	0.27	0.34	0.42	0.62	0.64	0.61	0.22	4.84	1.02	24
10	0.56	0.55	0.56	0.60	2.77	S	5.10	3.97	2.31	0.71	0.43	0.41	0.41	0.38	0.36	0.36	0.35	0.36	0.37	0.41	0.47	0.50	0.48	0.60	0.35	5.10	1.00	24
11	0.61	0.47	0.43	1.42	0.65	S	0.44	1.79	1.33	C1	C1	C1	C1	0.40	0.37	0.37	0.37	0.35	0.36	0.36	0.37	0.40	0.50	0.53	0.35	1.79	0.61	20
12	0.80	0.51	0.47	0.48	0.52	S	0.52	0.54	0.52	0.70	0.51	0.47	0.45	0.45	0.44	0.45	0.48	0.45	0.42	0.43	0.45	0.45	0.46	0.44	0.42	0.80	0.50	24
13	0.46	0.46	0.47	0.49	0.56	S	0.64	1.62	0.56	0.62	0.75	0.70	0.66	0.62	0.69	0.62	0.55	0.74	0.74	0.89	0.88	0.77	0.69	0.73	0.46	1.62	0.69	24
14	0.66	0.60	0.68	0.61	0.63	S	0.62	0.58	0.52	0.54	0.51	0.46	0.44	0.43	0.43	0.46	0.45	0.45	0.47	0.49	0.54	0.63	0.58	0.52	0.43	0.68	0.53	24
15	0.51	0.53	0.53	0.60	0.58	S	0.56	0.50	0.47	0.48	0.42	0.43	0.43	0.42	0.41	0.40	0.38	0.38	0.39	0.39	0.44	0.56	0.50	0.46	0.38	0.60	0.47	24
16	0.44	0.41	0.44	0.47	0.54	S	3.08	2.13	0.50	0.44	0.40	0.41	0.41	0.42	0.42	0.41	0.41	0.43	0.45	0.45	0.44	0.48	0.50	0.50	0.40	3.08	0.63	24
17	0.51	0.52	0.56	0.55	0.55	S	0.57	0.56	0.53	0.54	0.51	0.48	0.48	0.48	0.48	0.47	0.45	0.43	0.44	0.46	0.47	0.47	0.47	0.51	0.43	0.57	0.50	24
18	0.54	0.54	0.51	0.52	0.51	S	0.55	0.57	0.59	0.65	0.63	0.57	0.46	0.40	0.37	0.35	0.35	0.35	0.35	0.35	0.34	0.37	0.36	0.36	0.34	0.65	0.46	24
19	0.39	0.44	0.44	0.44	0.44	S	0.48	0.43	0.39	0.35	0.33	0.33	0.31	0.32	0.32	0.30	0.31	0.31	0.31	0.32	0.34	0.32	0.35	0.36	0.30	0.48	0.36	24
20	0.35	0.35	0.36	0.34	0.35	S	0.35	0.33	0.33	0.31	0.31	0.30	0.30	0.28	0.29	0.29	0.30	0.30	0.30	0.33	0.32	0.32	0.36	0.43	0.28	0.43	0.33	24
21	0.42	0.40	0.44	0.47	0.46	S	0.55	0.46	0.44	0.44	0.44	0.41	0.38	0.42	0.41	0.41	0.41	0.43	0.44	0.47	0.50	0.51	0.50	0.57	0.38	0.57	0.45	24
22	0.64	0.68	0.62	0.54	0.58	S	0.56	0.51	0.45	0.41	0.38	0.39	0.37	0.37	0.39	0.39	0.37	0.36	0.38	0.44	0.45	0.47	0.44	0.47	0.36	0.68	0.46	24
23	0.45	0.82	0.99	0.57	0.68	S	0.78	0.62	0.56	0.52	0.48	0.44	0.43	0.40	0.39	0.41	0.41	0.42	0.47	0.57	0.60	0.60	0.69	0.80	0.39	0.99	0.57	24
24	0.64	0.78	0.82	0.49	0.66	S	0.78	0.61	0.58	0.57	0.52	0.54	0.58	0.65	0.45	0.43	0.42	0.39	0.38	0.39	0.43	0.40	0.41	0.39	0.38	0.82	0.54	24
25	0.37	0.39	0.41	0.42	0.50	S	0.49	0.41	0.45	0.40	0.36	0.33	0.32	0.33	0.32	0.33	0.34	0.32	0.32	0.33	0.38	0.43	0.40	0.41	0.32	0.50	0.38	24
26	0.40	0.40	0.39	0.39	0.39	S	0.51	0.50	0.44	0.41	0.37	0.38	0.39	0.37	0.36	0.37	0.37	0.37	0.40	0.42	0.39	0.42	0.43	0.43	0.36	0.51	0.40	24
27	0.44	0.43	0.46	0.45	0.45	S	0.47	0.45	0.43	0.40	0.38	0.38	0.38	0.39	0.40	0.43	0.42	0.40	0.44	0.51	0.58	0.57	0.54	0.50	0.38	0.58	0.45	24
28	0.48	0.48	0.47	0.44	0.45	S	0.45	0.44	0.49	0.45	0.41	0.38	0.35	0.33	0.33	0.33	0.33	0.32	0.33	0.36	0.50	0.57	0.44	0.59	0.32	0.59	0.42	24
29	0.68	0.89	0.57	0.37	0.51	S	0.60	0.53	0.43	0.36	0.33	0.33	0.33	0.33	0.34	0.34	0.34	0.33	0.34	0.34	0.36	0.38	0.36	0.38	0.33	0.89	0.42	24
30	0.39	0.40	0.40	0.41	0.41	S	0.51	0.52	0.84	0.72	0.51	0.51	0.49	0.49	0.48	0.47	0.47	0.51	0.64	0.77	0.71	0.70	0.78	0.78	0.39	0.84	0.56	24
31	0.52	0.44	0.46	0.46	0.47	S	0.50	0.49	0.48	0.41	0.36	0.35	0.35	0.34	0.34	0.32	0.33	0.34	0.36	0.35	0.36	0.38	0.42	0.40	0.32	0.52	0.40	24
HOURLY MAX	1.15	1.12	2.12	2.15	3.19	NA	5.10	4.61	2.54	1.67	0.75	0.70	0.66	0.65	0.69	0.62	0.55	0.74	0.74	0.89	0.88	0.77	0.78	0.87				
HOURLY AVG	0.54	0.56	0.60	0.63	0.84	NA	1.24	1.20	0.85	0.57	0.45	0.41	0.39	0.39	0.38	0.37	0.36	0.37	0.38	0.41	0.44	0.47	0.48	0.52				

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

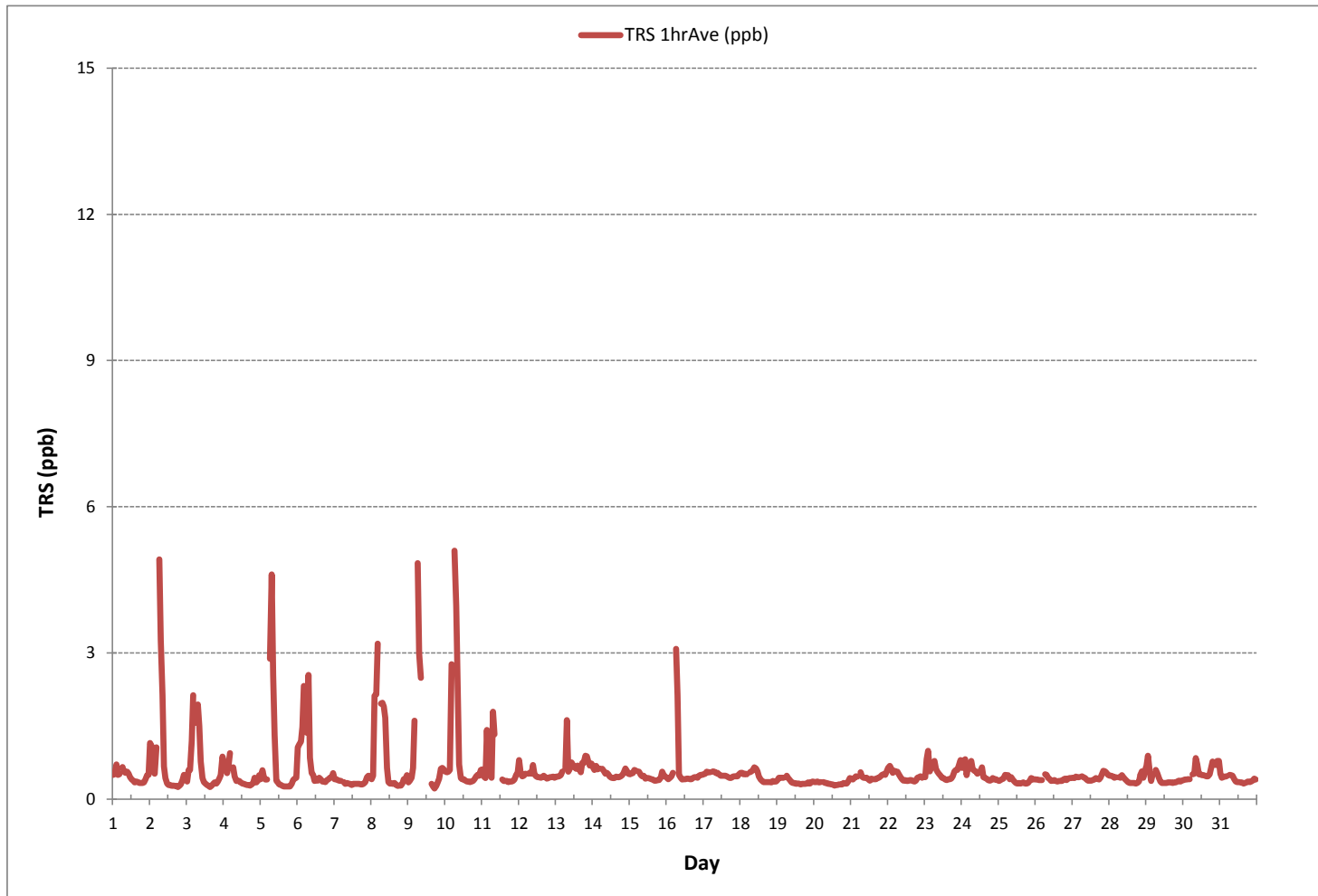
24 HR AVERAGES August 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	703				
MINIMUM 1-HR AVERAGE:	0.22	ppb @ HOUR	17	ON DAY	9
MAXIMUM 1-HR AVERAGE:	5.10	ppb @ HOUR	6	ON DAY	10
MAXIMUM 24-HR AVERAGE:	1.02	ppb		ON DAY	9
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	740	hrs
MONTHLY CALIBRATION TIME:	6	hrs	AMD OPERATION UPTIME:	99.5	%
STANDARD DEVIATION:	1		MONTHLY AVERAGE:	0.56	ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)



TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)

	HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
	HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																														
1		0.68	0.73	1.08	0.68	1.13	S	0.94	0.76	0.78	0.78	0.68	0.65	0.58	0.56	0.53	0.56	0.53	0.53	0.50	0.50	0.56	0.65	0.73	0.76	0.50	1.13	0.69	24	
2		1.75	1.39	1.02	0.76	2.41	S	6.40	4.45	3.62	1.17	0.68	0.53	0.50	0.50	0.45	0.48	0.48	0.45	0.45	0.50	0.50	0.68	0.81	0.65	0.45	6.40	1.33	24	
3		0.58	1.05	1.33	1.55	2.80	S	2.11	2.38	2.35	1.42	0.71	0.57	0.53	0.48	0.48	0.50	0.56	0.56	0.56	0.50	0.58	0.63	0.71	1.60	0.48	2.80	1.07	24	
4		1.23	0.97	0.76	1.08	2.33	S	1.36	0.78	0.63	0.60	0.57	0.56	0.53	0.55	0.50	0.53	0.50	0.48	0.53	0.57	0.68	0.58	0.71	0.91	0.48	2.33	0.78	24	
5		0.78	0.89	0.78	0.68	0.71	S	3.57	6.61	5.22	2.19	0.73	0.60	0.53	0.50	0.53	0.53	0.53	0.50	0.50	0.50	0.60	0.76	0.71	0.89	0.50	6.61	1.30	24	
6		1.44	1.60	1.98	2.06	3.10	S	1.96	4.24	2.25	0.78	0.91	0.60	0.65	0.63	0.71	0.65	0.57	0.60	0.56	0.63	0.60	0.63	0.65	0.73	0.56	4.24	1.24	24	
7		0.65	0.63	0.60	0.56	0.56	S	0.53	0.50	0.50	0.53	0.50	0.48	0.50	0.48	0.50	0.53	0.50	0.48	0.51	0.53	0.53	0.65	0.73	0.73	0.48	0.73	0.55	24	
8		0.60	0.73	3.88	3.72	3.78	S	2.87	3.15	2.84	2.38	1.23	0.53	0.50	0.50	0.50	0.50	0.48	0.45	0.50	0.48	0.55	0.63	0.89	0.89	0.45	3.88	1.42	24	
9		0.56	0.60	0.78	0.92	2.92	S	6.17	4.73	2.92	C	C	C	C	C	C	C	0.58	0.47	0.42	0.43	0.53	0.58	0.95	0.89	0.81	0.42	6.17	1.49	24
10		0.81	0.81	0.78	0.81	5.46	S	5.96	5.19	3.07	1.55	0.53	0.50	0.50	0.48	0.45	0.42	0.45	0.42	0.48	0.56	0.58	0.71	0.60	0.78	0.42	5.96	1.39	24	
11		0.84	0.60	0.68	2.12	1.13	S	0.60	2.51	C1	C1	C1	C1	C1	0.48	0.45	0.45	0.45	0.40	0.42	0.42	0.42	0.50	0.68	0.68	0.40	2.51	0.77	19	
12		0.97	0.76	0.55	0.50	0.60	S	0.60	0.60	0.58	0.91	0.65	0.55	0.51	0.53	0.50	0.48	0.53	0.50	0.48	0.50	0.58	0.48	0.53	0.48	0.48	0.97	0.58	24	
13		0.53	0.53	0.53	0.56	0.58	S	0.81	3.10	0.63	0.76	0.81	0.73	0.71	0.63	0.76	0.71	0.71	0.81	0.84	0.94	0.94	0.84	0.76	0.86	0.53	3.10	0.83	24	
14		0.76	0.71	0.76	0.71	0.71	S	0.78	0.65	0.60	0.58	0.60	0.56	0.53	0.50	0.48	0.50	0.51	0.50	0.50	0.53	0.60	0.71	0.68	0.60	0.48	0.78	0.61	24	
15		0.57	0.60	0.60	0.68	0.65	S	0.65	0.58	0.53	0.56	0.48	0.48	0.50	0.48	0.48	0.48	0.45	0.48	0.48	0.45	0.55	0.81	0.63	0.58	0.45	0.81	0.55	24	
16		0.55	0.50	0.53	0.55	0.68	S	7.37	6.45	0.63	0.50	0.50	0.50	0.48	0.53	0.50	0.50	0.53	0.53	0.53	0.55	0.50	0.55	0.58	0.60	0.48	7.37	1.09	24	
17		0.58	0.60	0.63	0.60	0.65	S	0.63	0.63	0.60	0.58	0.56	0.58	0.53	0.56	0.56	0.53	0.50	0.53	0.50	0.53	0.53	0.53	0.55	0.50	0.50	0.65	0.57	24	
18		0.60	0.60	0.58	0.60	0.58	S	0.60	0.63	0.71	0.73	0.70	0.63	0.55	0.50	0.45	0.42	0.42	0.42	0.43	0.40	0.42	0.50	0.45	0.50	0.40	0.73	0.54	24	
19		0.50	0.55	0.53	0.53	0.54	S	0.63	0.55	0.50	0.48	0.45	0.45	0.42	0.43	0.45	0.45	0.45	0.42	0.40	0.43	0.45	0.48	0.48	0.50	0.40	0.63	0.48	24	
20		0.48	0.50	0.50	0.48	0.50	S	0.55	0.48	0.50	0.45	0.45	0.45	0.42	0.42	0.45	0.45	0.42	0.45	0.43	0.43	0.45	0.45	0.45	0.48	0.58	0.42	0.58	0.47	24
21		0.55	0.55	0.60	0.60	0.60	S	0.68	0.58	0.55	0.58	0.55	0.58	0.53	0.53	0.53	0.55	0.55	0.60	0.57	0.60	0.68	0.65	0.65	0.71	0.53	0.71	0.59	24	
22		0.78	0.81	0.78	0.68	0.76	S	0.71	0.65	0.58	0.55	0.53	0.53	0.53	0.53	0.50	0.50	0.50	0.48	0.50	0.56	0.60	0.57	0.58	0.58	0.48	0.81	0.60	24	
23		0.63	1.02	1.39	0.84	0.86	S	1.02	0.76	0.68	0.63	0.58	0.56	0.56	0.50	0.45	0.48	0.51	0.50	0.60	0.73	0.71	0.68	0.94	1.00	0.45	1.39	0.72	24	
24		0.91	1.21	1.39	0.63	1.05	S	1.00	0.73	0.68	0.68	0.63	0.60	0.65	1.13	0.55	0.53	0.50	0.48	0.45	0.48	0.50	0.50	0.53	0.45	0.45	1.39	0.71	24	
25		0.45	0.50	0.50	0.53	0.65	S	0.58	0.50	0.58	0.50	0.48	0.40	0.45	0.45	0.42	0.42	0.43	0.40	0.37	0.42	0.48	0.50	0.48	0.48	0.37	0.65	0.48	24	
26		0.53	0.48	0.45	0.48	0.48	S	0.63	0.60	0.53	0.51	0.45	0.48	0.50	0.45	0.45	0.48	0.48	0.48	0.50	0.53	0.50	0.51	0.55	0.56	0.45	0.63	0.50	24	
27		0.55	0.56	0.56	0.63	0.55	S	0.63	0.58	0.53	0.53	0.53	0.48	0.48	0.50	0.50	0.53	0.51	0.53	0.53	0.65	0.71	0.65	0.73	0.63	0.48	0.73	0.57	24	
28		0.63	0.55	0.55	0.53	0.60	S	0.57	0.60	0.60	0.56	0.51	0.50	0.50	0.40	0.40	0.42	0.53	0.42	0.43	0.45	0.92	0.89	0.65	0.78	0.40	0.92	0.56	24	
29		0.94	1.10	0.89	0.53	0.68	S	0.76	0.71	0.63	0.48	0.40	0.40	0.40	0.43	0.45	0.45	0.45	0.43	0.43	0.43	0.45	0.48	0.42	0.50	0.40	1.10	0.56	24	
30		0.48	0.48	0.48	0.48	0.53	S	0.60	0.76	1.28	1.07	0.60	0.60	0.56	0.60	0.53	0.56	0.56	0.60	0.76	0.89	0.81	0.89	0.97	1.08	0.48	1.28	0.70	24	
31		0.60	0.53	0.53	0.53	0.53	S	0.58	0.55	0.56	0.56	0.45	0.42	0.45	0.42	0.42	0.45	0.42	0.40	0.45	0.43	0.45	0.48	0.50	0.53	0.40	0.60	0.49	24	
HOURLY MAX		1.75	1.60	3.88	3.72	5.46	NA	7.37	6.61	5.22	2.38	1.23	0.73	0.71	1.13	0.76	0.71	0.71	0.81	0.84	0.94	0.94	0.95	0.97	1.60					
HOURLY AVG		0.73	0.75	0.87	0.86	1.26	NA	1.70	1.81	1.22	0.81	0.60	0.53	0.52	0.52	0.50	0.50	0.50	0.49	0.50	0.54	0.58	0.63	0.65	0.71					

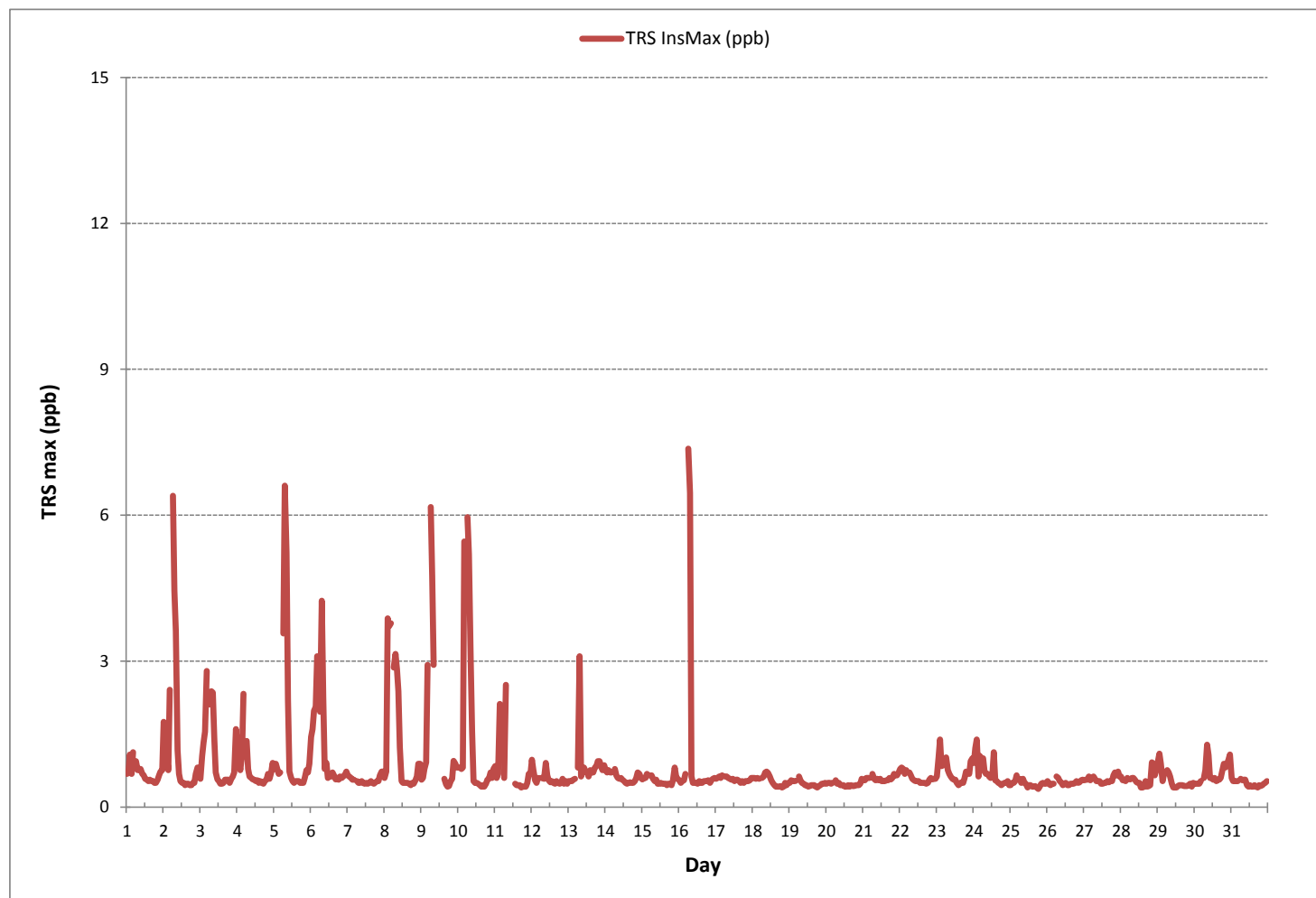
STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	702
MAXIMUM INSTANTANEOUS VALUE:	7.37 ppb @ HOUR 6 ON DAY 16
IZS CALIBRATION TIME:	31 hrs
MONTHLY CALIBRATION TIME:	6 hrs
STANDARD DEVIATION:	1
OPERATIONAL TIME:	739 hrs

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)



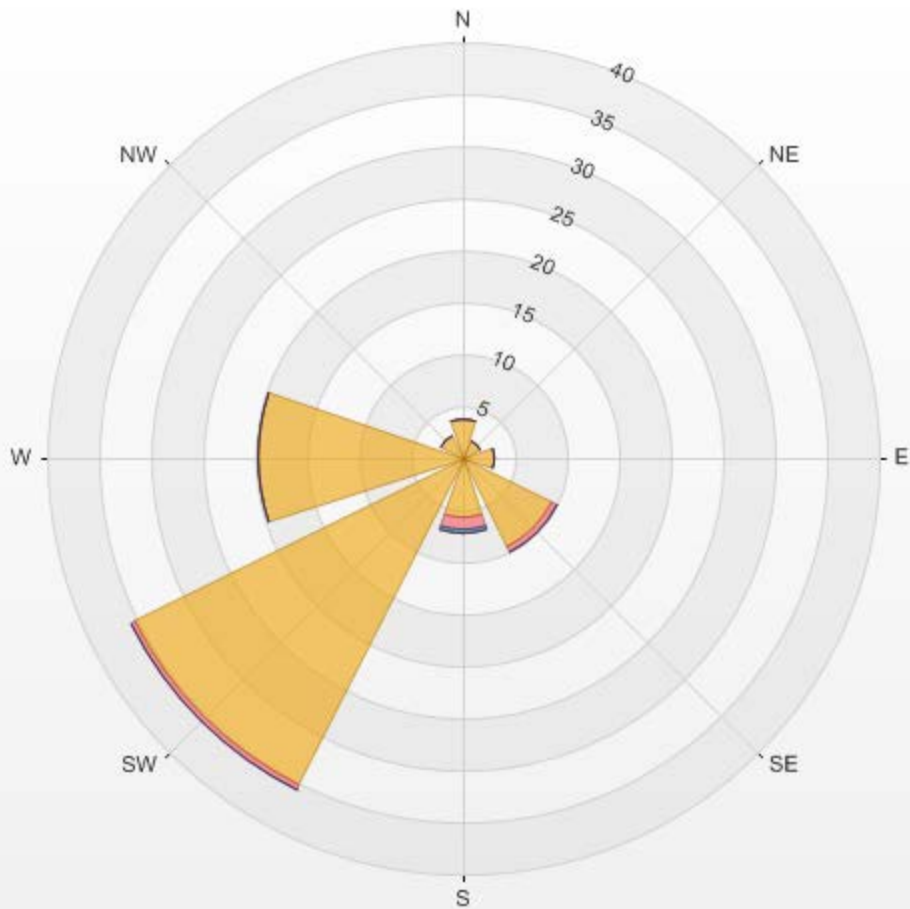
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-TRS[ppb]
Monthly: 17/08
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 16.07%

Calm Avg: 0.88 [ppb]

Direction	0-1	1-3	3-10	>10.0	Total
N	3.8	0.0	0.0	0.0	3.8
NE	1.9	0.0	0.0	0.0	1.9
E	3.0	0.0	0.0	0.0	3.0
SE	9.7	0.6	0.0	0.0	10.2
S	5.7	1.1	0.4	0.0	7.3
SW	35.3	0.4	0.0	0.0	35.7
W	19.6	0.0	0.0	0.0	19.6
NW	2.4	0.0	0.0	0.0	2.4
Summary	81.4	2.1	0.4	0.0	83.9

PRAMP_RENO Poll.: PRAMP_RENO-TRS[ppb] 2017/08/01 00:00 - 2017/08/31 23:00 Calm: 16.07% Calm Poll Avg: 0.88[ppb]



TRS[ppb] Calibration: PRAMP_RENO Monthly: 17/08 Type: Span



■ Span Meas
 — Span Ref
 — Span Low
 — Span High

TOTAL HYDROCARBON

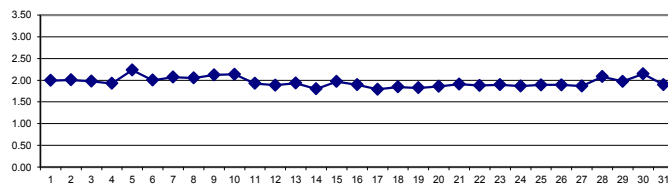
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	1.92	1.93	1.94	1.93	1.93	S	1.94	1.92	1.92	X	X	X	S1	1.91	1.90	1.89	1.89	1.89	1.90	1.90	1.90	2.51	2.74	1.99	1.89	2.74	1.99	20	
2	2.07	2.15	2.34	2.27	2.17	S	2.02	1.99	1.98	1.97	1.96	1.91	1.91	1.90	1.89	1.90	1.90	1.90	1.89	1.89	1.88	1.88	2.05	2.16	2.04	1.89	2.34	2.01	24
3	2.02	2.00	2.09	2.26	2.15	S	2.08	2.02	2.02	2.00	1.98	1.96	1.95	1.94	1.90	1.89	1.90	1.89	1.88	1.88	1.88	1.87	1.89	1.94	1.87	2.26	1.97	24	
4	1.94	2.10	1.91	1.92	1.95	S	1.94	1.90	1.88	1.87	1.86	1.86	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.87	1.87	1.87	2.03	2.46	1.86	2.46	1.93	24	
5	2.43	2.92	2.98	2.83	2.61	S	2.20	2.11	2.04	2.03	1.90	1.91	1.90	1.89	1.88	1.87	1.87	1.87	1.87	1.87	2.03	2.99	2.94	2.38	1.87	2.99	2.23	24	
6	2.31	2.26	2.17	2.15	2.27	S	2.19	2.15	1.98	1.96	1.93	1.91	1.92	1.93	1.94	1.92	1.90	1.88	1.87	1.86	1.87	1.87	1.87	1.89	1.86	2.31	2.00	24	
7	1.89	1.89	1.89	1.90	1.91	S	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.89	1.88	1.88	1.88	1.87	1.90	3.20	3.45	3.15	1.87	3.45	2.07	24	
8	2.48	2.16	2.17	2.20	2.21	S	2.01	1.96	1.99	1.98	1.94	1.90	1.89	1.88	1.87	1.87	1.87	1.86	1.88	1.87	1.97	2.75	2.43	2.05	1.86	2.75	2.05	24	
9	2.09	2.09	2.11	2.11	2.11	S	2.17	2.05	2.04	2.00	1.94	1.91	1.90	C	C	C	C	1.83	1.83	1.83	2.03	3.04	2.66	2.56	1.83	3.04	2.12	24	
10	2.91	2.85	3.02	2.87	2.31	S	2.29	2.19	1.91	1.86	1.85	1.83	1.83	1.82	1.81	1.81	1.81	1.81	1.81	1.83	1.87	2.25	2.19	2.35	1.81	3.02	2.13	24	
11	2.14	2.31	2.11	2.05	2.02	S	1.96	1.95	1.92	1.90	1.88	1.86	1.84	1.84	1.84	1.83	1.83	1.84	1.84	1.86	1.86	1.86	1.87	1.87	1.83	2.31	1.93	24	
12	1.88	1.89	1.89	1.89	1.90	S	1.92	1.92	1.91	1.90	1.89	1.88	1.87	1.86	1.86	1.86	1.87	1.87	1.86	1.87	1.87	1.89	1.89	1.92	1.86	1.92	1.89	24	
13	1.96	1.97	1.99	1.94	1.91	S	2.07	2.09	1.95	1.92	1.96	1.95	1.92	1.86	1.91	1.85	1.81	1.92	1.92	1.99	1.96	1.89	1.85	1.86	1.81	2.09	1.93	24	
14	1.86	1.81	1.82	1.82	1.83	S	1.82	1.81	1.80	1.80	1.79	1.79	1.79	1.78	1.78	1.78	1.78	1.79	1.79	1.78	1.79	1.81	1.80	1.80	1.78	1.86	1.80	24	
15	1.81	1.81	1.81	1.83	1.83	S	1.82	1.82	1.81	1.81	1.81	1.81	1.80	1.80	1.79	1.79	1.80	1.80	1.80	1.81	2.29	3.90	2.70	1.99	1.79	3.90	1.97	24	
16	1.82	1.82	1.97	2.20	2.90	S	2.13	1.91	1.86	1.82	1.81	1.81	1.81	1.81	1.80	1.79	1.79	1.78	1.79	1.79	1.78	1.78	1.79	1.80	1.78	2.90	1.89	24	
17	1.80	1.80	1.81	1.80	1.80	S	1.81	1.80	1.80	1.79	1.79	1.78	1.77	1.77	1.77	1.78	1.78	1.78	1.78	1.79	1.79	1.79	1.79	1.83	1.77	1.83	1.79	24	
18	1.86	1.92	1.85	1.88	1.91	S	1.87	1.84	1.95	1.97	1.83	1.80	1.79	1.80	1.81	1.81	1.81	1.81	1.81	1.82	1.82	1.81	1.82	1.82	1.79	1.97	1.84	24	
19	1.82	1.82	1.83	1.83	1.83	S	1.83	1.83	1.83	1.82	1.82	1.82	1.81	1.81	1.81	1.81	1.82	1.82	1.82	1.83	1.83	1.83	1.83	1.83	1.81	1.83	1.82	24	
20	1.83	1.83	1.83	1.83	1.84	S	1.84	1.84	1.84	1.83	1.83	C1	C1	C1	C1	1.88	1.88	1.88	1.89	1.89	1.89	1.89	1.89	1.89	1.83	1.90	1.86	20	
21	1.90	1.89	1.91	1.90	1.95	S	2.31	1.91	1.89	1.91	1.95	1.87	1.85	1.83	1.83	1.84	1.85	1.85	1.85	1.85	2.00	1.88	1.98	1.89	1.83	2.31	1.91	24	
22	1.90	2.02	2.17	1.88	1.88	S	2.08	1.89	1.85	1.83	1.82	1.81	1.81	1.81	1.82	1.82	1.81	1.81	1.85	1.85	1.89	1.85	1.87	1.86	1.81	2.17	1.88	24	
23	1.87	1.91	1.88	1.86	2.11	S	2.01	1.90	1.88	1.84	1.83	1.82	1.82	1.81	1.82	1.82	1.82	1.84	1.91	2.01	1.87	1.88	2.15	1.90	1.81	2.15	1.89	24	
24	1.84	1.85	1.86	1.85	1.84	S	1.85	1.84	1.87	1.85	1.85	1.85	1.84	1.87	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.88	1.89	1.89	1.84	1.89	1.86	24	
25	1.89	1.88	1.89	1.88	1.88	S	1.88	1.88	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.90	1.90	1.89	1.90	1.90	1.90	1.88	1.90	1.89	24	
26	1.90	1.90	1.90	1.90	1.91	S	1.96	1.97	1.91	1.90	1.89	1.89	1.90	1.89	1.88	1.89	1.88	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.97	1.89	24	
27	1.86	1.86	1.87	1.87	1.88	S	1.88	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.87	1.87	1.87	1.86	1.85	1.88	1.86	24	
28	1.86	1.87	1.87	1.87	1.87	S	2.06	1.90	1.87	1.87	1.87	1.87	1.86	1.87	1.87	1.87	1.87	1.87	1.87	1.87	3.24	3.39	2.81	2.67	1.86	3.39	2.08	24	
29	2.44	2.35	2.34	2.02	1.95	S	1.97	1.95	1.91	1.90	1.88	1.87	1.87	1.87	1.87	1.88	1.88	1.91	1.90	1.89	1.91	1.92	1.93	1.94	1.87	2.44	1.97	24	
30	1.94	1.94	1.97	1.97	1.98	S	2.00	2.01	2.01	2.06	2.03	1.99	2.01	1.99	1.97	1.95	1.95	1.94	2.19	3.06	2.25	2.78	2.95	2.41	1.94	3.06	2.15	24	
31	1.94	1.91	2.14	1.89	1.89	S	1.89	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.90	1.91	1.87	2.14	1.90	24	
HOURLY MAX	2.91	2.92	3.02	2.87	2.90	NA	2.31	2.19	2.04	2.06	2.03	1.99	2.01	1.99	1.97	1.95	1.95	1.94	2.19	3.06	3.24	3.90	3.45	3.15					
HOURLY AVG	2.01	2.02	2.04	2.01	2.02	NA	1.99	1.94	1.91	1.90	1.88	1.87	1.86	1.86	1.86	1.86	1.85	1.86	1.87	1.90	1.96	2.19	2.15	2.05					

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

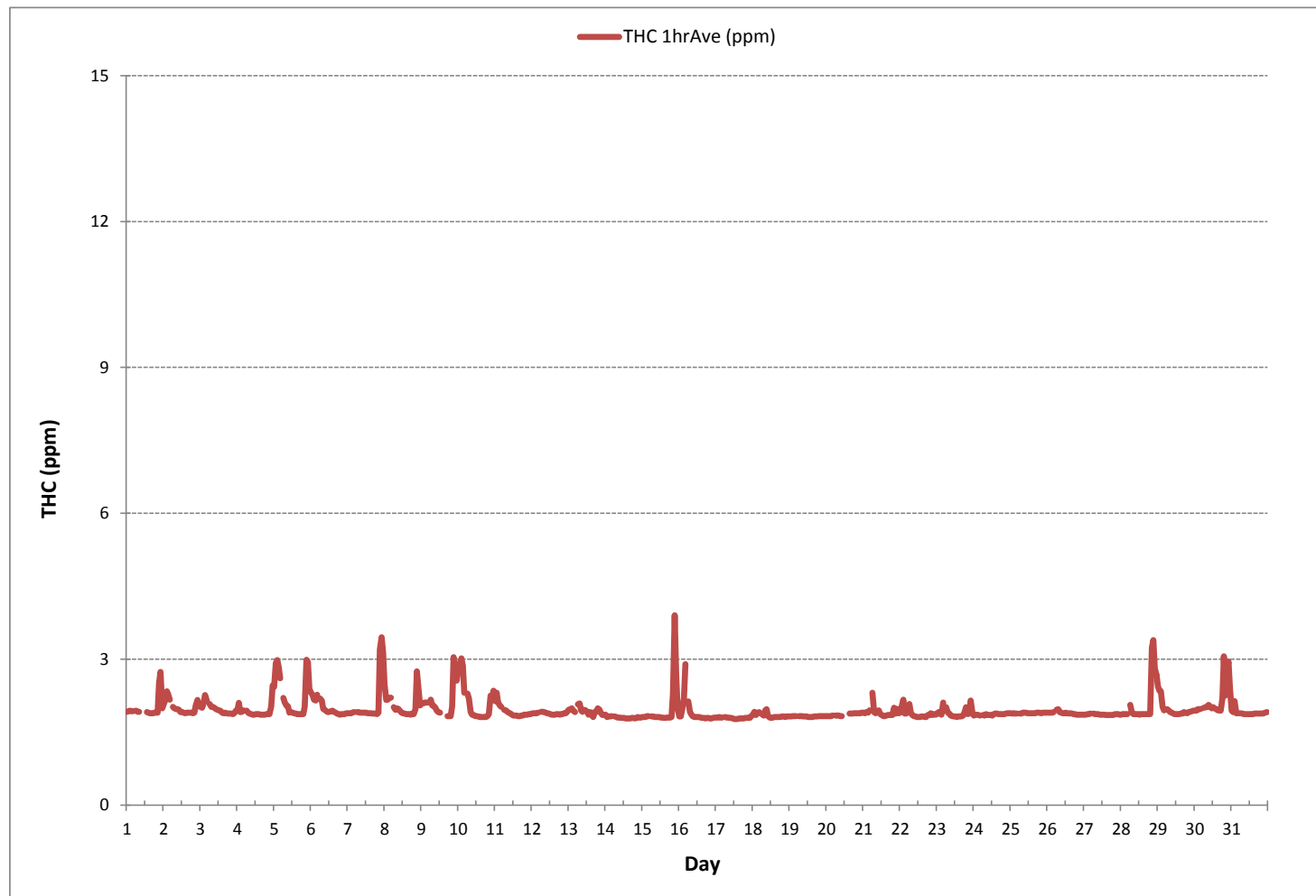
24 HR AVERAGES August 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	701			
MINIMUM 1-HR AVERAGE:	1.77	ppm @ HOUR	12	ON DAY 17
MAXIMUM 1-HR AVERAGE:	3.90	ppm @ HOUR	21	ON DAY 15
MAXIMUM 24-HR AVERAGE:	2.23	ppm		ON DAY 5
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	736 hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	98.9 %
STANDARD DEVIATION:	0.24		MONTHLY AVERAGE:	1.95 ppm

TOTAL HYDROCARBONS Hourly Averages (THC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - August 2017

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	1.94	1.96	1.96	1.95	1.95	S	1.96	1.95	1.95	X	X	X	S1	1.93	1.92	1.92	1.91	1.92	1.92	1.92	1.93	3.58	3.97	2.25	1.91	3.97	2.15	20	
2	2.33	2.61	2.86	2.86	2.28	S	2.10	2.02	2.06	2.02	2.04	1.98	1.95	1.93	1.92	1.94	1.95	1.97	1.98	1.92	1.95	2.28	2.36	2.17	1.92	2.86	2.15	24	
3	2.13	2.14	2.30	2.53	2.32	S	2.23	2.12	2.07	2.07	2.04	2.00	2.02	1.98	1.93	2.02	1.94	1.91	1.90	1.92	1.98	1.91	1.92	2.00	1.90	2.53	2.06	24	
4	1.97	2.43	1.99	1.95	2.01	S	1.98	1.95	1.91	1.90	1.90	1.89	1.89	1.90	1.89	1.89	1.89	1.90	1.90	1.90	1.93	1.92	3.33	3.25	1.89	3.33	2.06	24	
5	3.23	3.55	4.85	3.59	3.94	S	2.46	2.49	2.19	5.59	1.96	1.98	1.96	1.92	1.91	1.90	1.90	1.90	1.90	1.91	2.43	4.90	4.02	3.06	1.90	5.59	2.85	24	
6	2.61	2.64	2.30	2.36	2.55	S	2.88	2.80	2.05	2.07	1.96	1.94	1.95	1.98	1.96	1.95	1.92	1.92	1.90	1.89	1.89	1.89	1.90	1.92	1.89	2.88	2.14	24	
7	1.92	1.92	1.92	1.92	1.93	S	1.94	1.93	1.93	1.93	1.92	1.96	1.99	1.92	1.92	1.91	1.91	1.91	1.90	1.90	1.90	2.25	4.93	5.22	4.28	1.90	5.22	2.32	24
8	2.87	2.39	2.54	2.43	2.43	S	2.22	2.02	2.06	2.02	1.98	1.99	1.93	1.92	1.94	1.90	1.94	1.91	1.96	1.91	2.40	4.40	3.03	2.30	1.90	4.40	2.28	24	
9	2.25	2.19	2.33	2.30	2.35	S	2.35	2.11	2.07	2.06	2.03	1.93	1.95	C	C	C	C	C	1.91	1.88	2.54	4.48	6.55	2.97	1.88	6.55	2.57	24	
10	4.29	3.86	6.16	6.25	2.52	S	2.56	2.45	1.99	1.90	1.88	1.87	1.86	1.85	1.84	1.84	1.84	1.84	1.84	1.89	2.35	3.01	2.56	3.98	1.84	6.25	2.71	24	
11	2.40	3.39	2.39	2.27	2.29	S	2.16	1.98	1.96	1.94	1.92	1.92	1.91	1.88	1.90	1.88	1.87	1.87	1.87	1.89	1.89	1.93	1.94	1.90	1.87	3.39	2.06	24	
12	1.91	1.92	1.91	1.92	1.93	S	1.95	1.94	1.93	1.94	1.94	1.90	1.89	1.88	1.92	1.89	1.90	1.93	1.88	1.91	1.89	1.94	1.95	1.99	1.88	1.99	1.92	24	
13	2.02	2.02	2.07	2.04	1.98	S	2.45	2.28	2.08	1.94	2.11	2.11	2.08	1.96	2.09	2.01	1.87	2.11	2.13	2.20	2.16	2.06	1.95	1.99	1.87	2.45	2.07	24	
14	2.25	1.85	1.85	1.85	1.86	S	1.86	1.84	1.84	1.83	1.82	1.83	1.81	1.80	1.81	1.81	1.81	1.81	1.81	1.81	1.84	1.84	1.84	1.83	1.80	2.25	1.85	24	
15	1.84	1.84	1.85	1.86	1.85	S	1.85	1.85	1.84	1.84	1.84	1.84	1.84	1.83	1.83	1.82	1.83	1.83	1.83	1.85	4.35	6.52	3.54	2.62	1.82	6.52	2.26	24	
16	1.86	1.86	2.69	2.70	3.55	S	2.64	2.07	1.99	1.85	1.84	1.84	1.84	1.84	1.82	1.81	1.80	1.80	1.81	1.81	1.81	1.81	1.81	1.82	1.80	3.55	2.03	24	
17	1.82	1.83	1.87	1.83	1.83	S	1.83	1.83	1.82	1.81	1.81	1.80	1.80	1.80	1.79	1.80	1.80	1.80	1.81	1.80	1.81	1.81	1.81	1.81	1.91	1.79	1.91	1.82	24
18	1.99	2.28	1.98	2.07	2.07	S	2.07	1.88	2.28	2.30	1.87	1.83	1.81	1.83	1.84	1.83	1.83	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.81	2.30	1.94	24	
19	1.85	1.85	1.85	1.85	1.85	S	1.86	1.85	1.85	1.86	1.85	1.84	1.86	1.84	1.84	1.84	1.85	1.85	1.85	1.86	1.87	1.86	1.86	1.87	1.84	1.87	1.85	24	
20	1.86	1.86	1.87	1.87	1.87	S	1.87	1.87	1.87	1.87	1.86	C1	C1	C1	C1	C1	1.91	1.91	1.92	1.91	1.92	1.92	1.92	1.93	1.86	1.93	1.89	19	
21	1.93	1.92	2.01	1.92	2.08	S	2.48	2.06	1.92	2.02	2.07	1.94	1.88	1.87	1.87	1.87	1.87	1.88	1.88	1.88	2.39	2.08	2.99	1.98	1.87	2.99	2.03	24	
22	1.97	2.54	2.95	1.96	1.94	S	2.37	2.21	1.88	1.86	1.85	1.84	1.84	1.85	1.84	1.84	1.84	1.86	1.98	2.08	2.15	1.90	1.96	1.95	1.84	2.95	2.02	24	
23	1.99	2.03	1.93	1.91	2.48	S	2.21	2.15	2.01	1.87	1.87	1.87	1.85	1.84	1.84	1.84	1.84	1.94	2.34	2.41	2.00	1.97	2.51	2.27	1.84	2.51	2.04	24	
24	1.89	1.89	1.96	1.98	1.93	S	1.98	1.88	1.94	1.93	1.87	1.87	1.87	1.97	1.90	1.91	1.90	1.90	1.89	1.89	1.90	1.91	1.91	1.91	1.87	1.98	1.91	24	
25	1.91	1.91	1.91	1.91	1.90	S	1.90	1.91	1.92	1.93	1.93	1.92	1.91	1.91	1.91	1.91	1.95	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.90	1.95	1.92	24	
26	1.92	1.92	1.92	1.93	1.94	S	2.16	2.12	1.94	1.93	1.92	1.93	1.93	1.93	1.92	1.91	1.92	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	2.16	1.93	24	
27	1.89	1.90	1.90	1.90	1.91	S	1.91	1.90	1.90	1.90	1.90	1.89	1.88	1.89	1.88	1.88	1.88	1.88	1.88	1.89	1.90	1.91	1.90	1.89	1.88	1.91	1.89	24	
28	1.89	1.90	1.90	1.90	1.91	S	3.01	2.16	1.90	1.90	1.90	1.89	1.89	1.89	1.90	1.89	1.90	1.90	1.90	1.93	6.12	5.95	4.33	3.48	1.89	6.12	2.49	24	
29	2.78	2.67	2.55	2.25	2.05	S	2.17	2.17	1.96	1.94	1.91	1.91	1.91	1.90	1.91	1.91	1.93	1.94	1.95	1.92	1.94	1.96	1.95	1.98	1.90	2.78	2.07	24	
30	1.97	1.98	2.00	2.01	2.00	S	2.03	2.05	2.08	2.13	2.11	2.10	2.10	2.07	2.01	1.98	2.06	2.03	3.01	4.21	2.57	4.96	4.06	3.33	1.97	4.96	2.47	24	
31	1.98	1.95	3.22	1.94	1.92	S	1.94	1.91	1.91	1.89	1.90	1.90	1.90	1.89	1.91	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.94	2.07	1.89	3.22	1.98	24
HOURLY MAX	4.29	3.86	6.16	6.25	3.94	NA	3.01	2.80	2.28	5.59	2.11	2.11	2.10	2.07	2.09	2.02	2.06	2.11	3.01	4.21	6.12	6.52	6.55	4.28					
HOURLY AVG	2.18	2.23	2.38	2.26	2.17	NA	2.17	2.06	1.97	2.07	1.93	1.91	1.91	1.90	1.90	1.89	1.89	1.90	1.95	2.00	2.25	2.75	2.67	2.34					

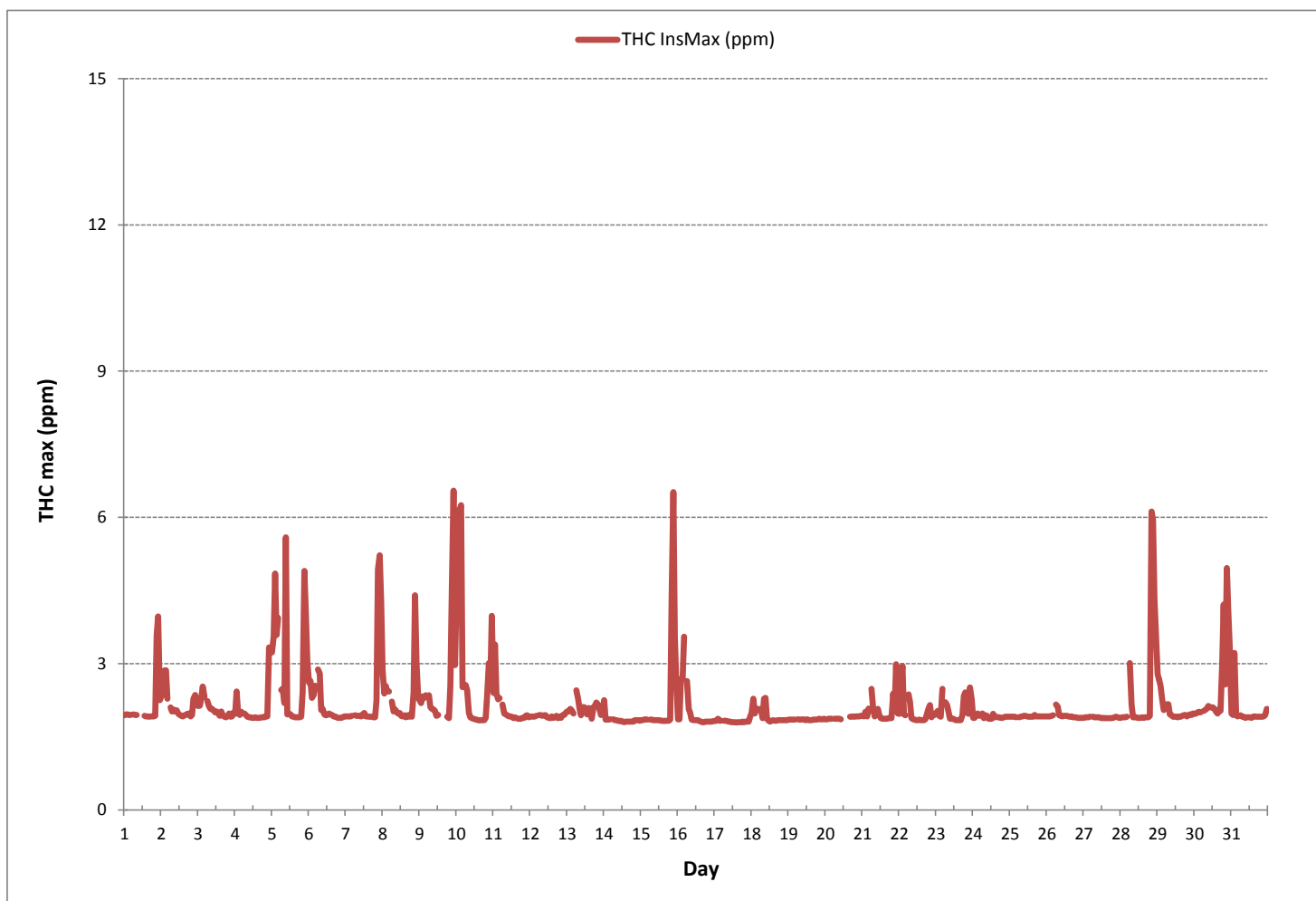
STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	699				
MAXIMUM INSTANTANEOUS VALUE:	6.55	ppm	@ HOUR	22	ON DAY 9
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	735	hrs
MONTHLY CALIBRATION TIME:	5	hrs			
STANDARD DEVIATION:	0.63				

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)



Wind: PRAMP_RENO
Poll.: PRAMP_RENO-THC55[ppm]
Monthly: 17/08
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

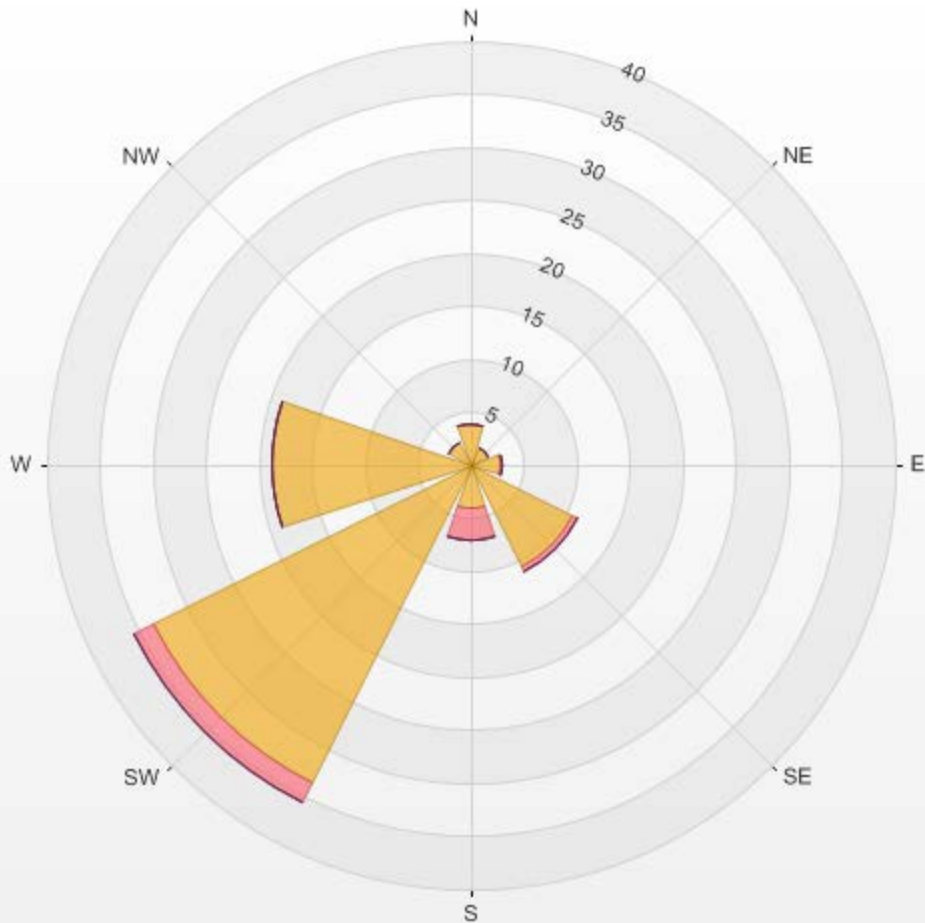
Calm: 16.12%

Calm Avg: 2.25 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	3.9	0.0	0.0	0.0	0.0	3.9
NE	1.9	0.0	0.0	0.0	0.0	1.9
E	2.9	0.1	0.0	0.0	0.0	3.0
SE	10.7	0.7	0.0	0.0	0.0	11.4
S	4.1	3.0	0.0	0.0	0.0	7.1
SW	33.5	2.1	0.0	0.0	0.0	35.7
W	18.7	0.0	0.0	0.0	0.0	18.7
NW	2.3	0.0	0.0	0.0	0.0	2.3
Summary	77.9	6.0	0.0	0.0	0.0	83.9

%	Icon	Classes (ppm)	78	6	0	0	0
			0-2	2-3	3-5	5-10	>10.0

PRAMP_RENO Poll.: PRAMP_RENO-THC55[ppm] 2017/08/01 00:00 - 2017/08/31 23:00 Calm: 16.12% Calm Poll Avg: 2.25[ppm]



THC55[ppm] Calibration: PRAMP_RENO Monthly: 17/08 Type: Span



—■— Span Meas — Span Ref — Span Low — Span High

METHANE

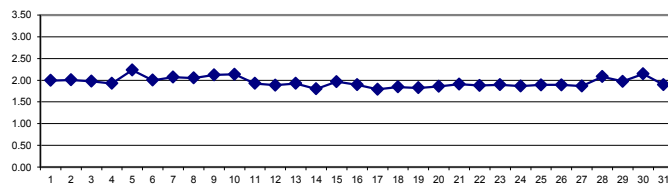
METHANE Hourly Averages (CH₄ ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	1.92	1.93	1.94	1.93	1.93	S	1.94	1.92	1.92	X	X	X	S1	1.91	1.90	1.89	1.89	1.89	1.90	1.90	1.90	2.51	2.74	1.99	1.89	2.74	1.99	20	
2	2.07	2.15	2.34	2.27	2.17	S	2.02	1.99	1.98	1.97	1.96	1.91	1.91	1.90	1.89	1.90	1.90	1.90	1.89	1.90	2.05	2.16	2.04	1.89	2.34	2.01	24		
3	2.02	2.00	2.09	2.26	2.15	S	2.08	2.02	2.02	2.00	1.98	1.96	1.95	1.94	1.90	1.89	1.90	1.89	1.88	1.88	1.88	1.87	1.89	1.94	1.87	2.26	1.97	24	
4	1.94	2.10	1.91	1.92	1.95	S	1.94	1.90	1.88	1.87	1.86	1.86	1.87	1.87	1.86	1.86	1.86	1.86	1.87	1.87	1.87	2.03	2.46	1.86	2.46	1.93	24		
5	2.43	2.92	2.98	2.83	2.61	S	2.20	2.11	2.04	2.03	1.90	1.91	1.90	1.89	1.88	1.87	1.87	1.87	1.87	2.03	2.99	2.94	2.38	1.87	2.99	2.23	24		
6	2.31	2.26	2.17	2.15	2.27	S	2.19	2.15	1.98	1.95	1.93	1.91	1.92	1.93	1.94	1.92	1.90	1.88	1.87	1.86	1.87	1.87	1.87	1.89	1.86	2.31	2.00	24	
7	1.89	1.89	1.89	1.90	1.91	S	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.89	1.88	1.88	1.88	1.87	1.90	3.20	3.45	3.15	1.87	3.45	2.07	24	
8	2.48	2.16	2.17	2.20	2.21	S	2.01	1.96	1.99	1.98	1.94	1.90	1.89	1.88	1.87	1.87	1.86	1.88	1.87	1.97	2.75	2.43	2.05	1.86	2.75	2.05	24		
9	2.09	2.09	2.11	2.11	2.11	S	2.17	2.05	2.04	2.00	1.94	1.91	1.90	C	C	C	C	1.83	1.83	1.83	2.03	3.04	2.66	2.56	1.83	3.04	2.12	24	
10	2.91	2.85	3.02	2.87	2.31	S	2.29	2.19	1.91	1.86	1.85	1.83	1.83	1.82	1.81	1.81	1.81	1.81	1.81	1.83	1.86	2.25	2.19	2.35	1.81	3.02	2.13	24	
11	2.14	2.31	2.11	2.04	2.02	S	1.96	1.95	1.92	1.90	1.88	1.86	1.84	1.84	1.84	1.83	1.83	1.84	1.84	1.86	1.86	1.86	1.87	1.87	1.83	2.31	1.92	24	
12	1.88	1.89	1.89	1.89	1.90	S	1.92	1.92	1.91	1.90	1.89	1.88	1.87	1.86	1.86	1.86	1.87	1.87	1.86	1.87	1.87	1.89	1.89	1.92	1.86	1.92	1.89	24	
13	1.96	1.97	1.99	1.94	1.91	S	2.07	2.09	1.95	1.92	1.95	1.94	1.91	1.86	1.89	1.85	1.81	1.90	1.91	1.96	1.93	1.88	1.85	1.86	1.81	2.09	1.93	24	
14	1.86	1.81	1.82	1.82	1.83	S	1.82	1.81	1.80	1.80	1.79	1.79	1.78	1.78	1.78	1.78	1.79	1.79	1.79	1.78	1.79	1.81	1.80	1.80	1.78	1.86	1.80	24	
15	1.81	1.81	1.81	1.83	1.83	S	1.82	1.82	1.81	1.81	1.81	1.81	1.80	1.80	1.79	1.79	1.80	1.80	1.80	1.81	2.29	3.89	2.70	1.99	1.79	3.89	1.97	24	
16	1.82	1.82	1.97	2.20	2.90	S	2.13	1.91	1.86	1.82	1.81	1.81	1.81	1.81	1.80	1.79	1.79	1.78	1.79	1.79	1.78	1.78	1.79	1.80	1.78	2.90	1.89	24	
17	1.80	1.80	1.81	1.80	1.80	S	1.81	1.80	1.80	1.79	1.79	1.78	1.77	1.77	1.77	1.78	1.78	1.78	1.78	1.79	1.79	1.79	1.79	1.83	1.77	1.83	1.79	24	
18	1.86	1.92	1.85	1.88	1.91	S	1.87	1.84	1.95	1.97	1.83	1.80	1.79	1.80	1.81	1.81	1.81	1.81	1.81	1.82	1.82	1.81	1.82	1.82	1.79	1.97	1.84	24	
19	1.82	1.82	1.83	1.83	1.83	S	1.83	1.83	1.83	1.82	1.82	1.82	1.81	1.81	1.81	1.81	1.82	1.82	1.82	1.83	1.83	1.83	1.83	1.83	1.81	1.83	1.82	24	
20	1.83	1.83	1.83	1.83	1.84	S	1.84	1.84	1.84	1.83	1.83	C1	C1	C1	C1	1.88	1.88	1.88	1.89	1.89	1.89	1.89	1.89	1.90	1.83	1.90	1.86	20	
21	1.90	1.89	1.91	1.90	1.95	S	2.30	1.91	1.89	1.91	1.95	1.87	1.85	1.83	1.83	1.84	1.85	1.85	1.85	1.85	2.00	1.88	1.98	1.89	1.83	2.30	1.91	24	
22	1.90	2.02	2.17	1.88	1.88	S	2.08	1.89	1.85	1.83	1.82	1.81	1.81	1.81	1.82	1.82	1.82	1.81	1.81	1.85	1.85	1.89	1.85	1.87	1.86	1.81	2.17	1.88	24
23	1.87	1.91	1.88	1.86	2.11	S	2.01	1.90	1.88	1.84	1.83	1.82	1.82	1.81	1.82	1.82	1.82	1.84	1.91	2.01	1.87	1.88	2.15	1.90	1.81	2.15	1.89	24	
24	1.84	1.85	1.86	1.85	1.84	S	1.85	1.84	1.87	1.85	1.85	1.85	1.84	1.87	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.88	1.89	1.89	1.84	1.89	1.86	24	
25	1.89	1.88	1.89	1.88	1.88	S	1.88	1.88	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.90	1.90	1.89	1.90	1.90	1.90	1.88	1.90	1.89	24	
26	1.90	1.90	1.90	1.90	1.91	S	1.96	1.97	1.91	1.90	1.89	1.89	1.90	1.89	1.88	1.89	1.88	1.87	1.87	1.86	1.86	1.86	1.86	1.86	1.86	1.97	1.89	24	
27	1.86	1.86	1.87	1.87	1.88	S	1.88	1.87	1.87	1.87	1.86	1.86	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.87	1.87	1.87	1.86	1.85	1.88	1.86	24	
28	1.86	1.87	1.87	1.87	1.87	S	2.06	1.90	1.87	1.87	1.87	1.87	1.86	1.87	1.87	1.87	1.87	1.87	1.87	1.87	3.24	3.39	2.81	2.67	1.86	3.39	2.08	24	
29	2.44	2.35	2.34	2.02	1.95	S	1.97	1.95	1.91	1.90	1.88	1.87	1.87	1.87	1.87	1.88	1.88	1.91	1.90	1.89	1.91	1.92	1.93	1.94	1.87	2.44	1.97	24	
30	1.94	1.94	1.97	1.97	1.98	S	2.00	2.01	2.01	2.06	2.03	1.99	2.01	1.99	1.97	1.95	1.95	1.94	2.19	3.06	2.24	2.78	2.94	2.41	1.94	3.06	2.14	24	
31	1.94	1.91	2.14	1.89	1.89	S	1.89	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.90	1.91	1.87	2.14	1.90	24	
HOURLY MAX	2.91	2.92	3.02	2.87	2.90	NA	2.30	2.19	2.04	2.06	2.03	1.99	2.01	1.99	1.97	1.95	1.95	1.94	2.19	3.06	3.24	3.89	3.45	3.15					
HOURLY AVG	2.01	2.02	2.04	2.01	2.02	NA	1.99	1.94	1.91	1.90	1.88	1.87	1.86	1.86	1.86	1.86	1.85	1.86	1.87	1.90	1.95	2.19	2.15	2.05					

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

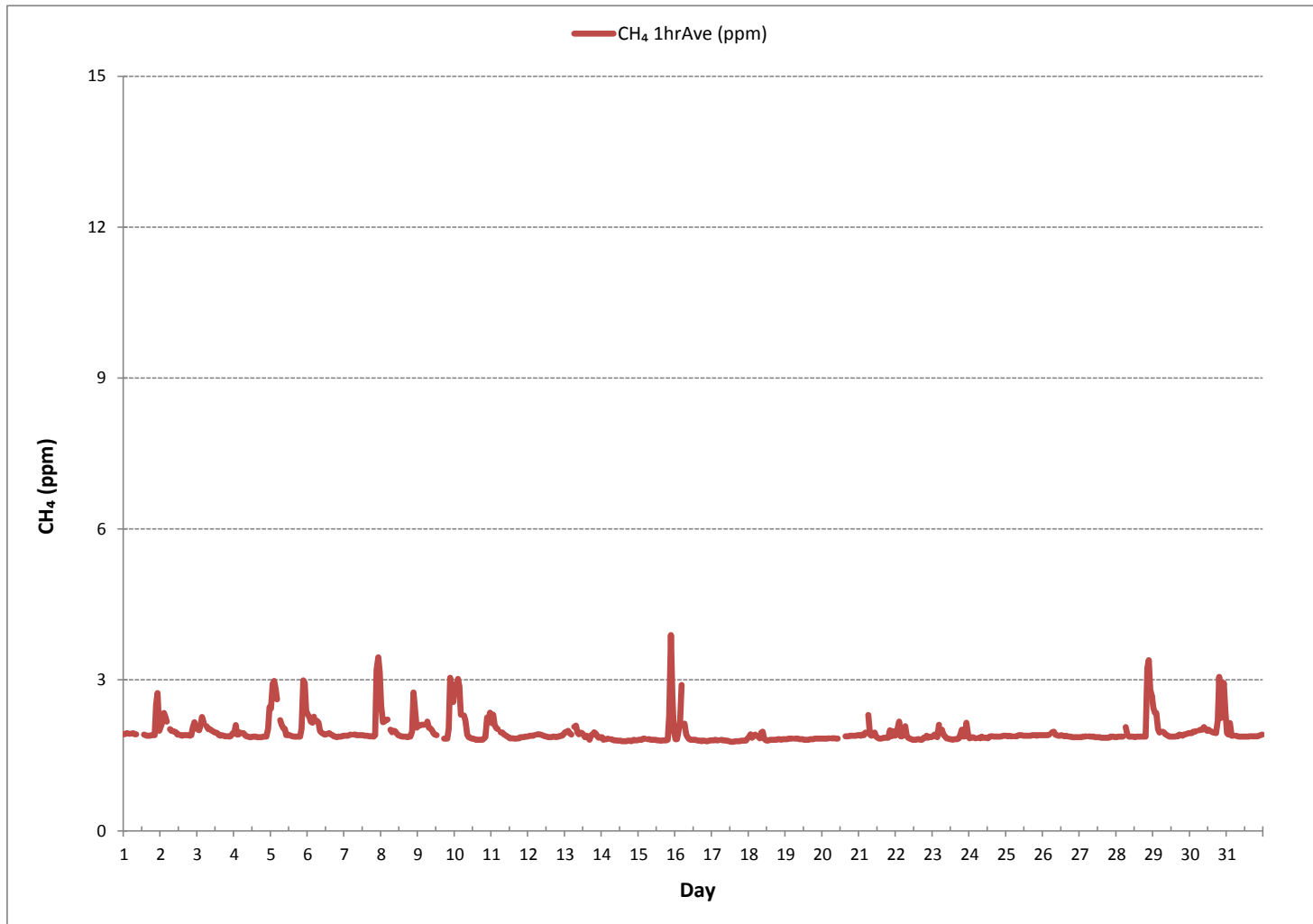
24 HR AVERAGES August 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	701			
MINIMUM 1-HR AVERAGE:	1.77	ppm @ HOUR	12	ON DAY 17
MAXIMUM 1-HR AVERAGE:	3.89	ppm @ HOUR	21	ON DAY 15
MAXIMUM 24-HR AVERAGE:	2.23	ppm		ON DAY 5
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	736 hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	98.9 %
STANDARD DEVIATION:	0.24		MONTHLY AVERAGE:	1.95 ppm

METHANE Hourly Averages (CH₄ ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - August 2017

METHANE MAX Instantaneous Maximum (CH₄ ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	1.94	1.96	1.96	1.95	1.94	S	1.96	1.94	1.95	X	X	X	S1	1.92	1.91	1.91	1.90	1.90	1.91	1.91	1.92	3.58	3.97	2.23	1.90	3.97	2.14	20
2	2.32	2.61	2.85	2.85	2.27	S	2.09	2.01	2.05	2.01	2.02	1.97	1.95	1.92	1.91	1.94	1.95	1.96	1.97	1.91	1.94	2.27	2.36	2.16	1.91	2.85	2.14	24
3	2.12	2.13	2.29	2.52	2.31	S	2.22	2.11	2.06	2.07	2.03	1.99	2.00	1.97	1.91	1.91	1.93	1.90	1.89	1.91	1.97	1.89	1.91	1.99	1.89	2.52	2.04	24
4	1.97	2.42	1.98	1.94	2.00	S	1.97	1.95	1.89	1.89	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.88	1.89	1.92	1.90	3.32	3.25	1.88	3.32	2.05	24
5	3.23	3.55	4.83	3.59	3.94	S	2.45	2.49	2.19	5.59	1.95	1.98	1.95	1.91	1.90	1.89	1.89	1.89	1.89	1.90	2.42	4.89	4.02	3.06	1.89	5.59	2.84	24
6	2.54	2.63	2.29	2.35	2.54	S	2.87	2.78	2.05	1.99	1.96	1.93	1.94	1.97	1.96	1.94	1.91	1.91	1.89	1.88	1.88	1.88	1.89	1.91	1.88	2.87	2.13	24
7	1.91	1.91	1.91	1.91	1.92	S	1.93	1.92	1.92	1.92	1.91	1.96	1.98	1.91	1.91	1.90	1.90	1.90	1.89	1.89	2.24	4.93	5.21	4.27	1.89	5.21	2.31	24
8	2.86	2.38	2.53	2.43	2.42	S	2.21	2.01	2.05	2.01	1.97	1.99	1.92	1.91	1.93	1.89	1.94	1.90	1.95	1.90	2.39	4.40	3.02	2.29	1.89	4.40	2.27	24
9	2.25	2.18	2.32	2.29	2.34	S	2.35	2.10	2.06	2.04	2.02	1.92	1.95	C	C	C	C	C	1.84	1.87	2.53	4.48	6.42	2.96	1.84	6.42	2.55	24
10	4.28	3.85	6.04	6.25	2.51	S	2.55	2.44	1.98	1.89	1.87	1.85	1.84	1.83	1.83	1.82	1.82	1.82	1.83	1.86	2.35	3.01	2.56	3.98	1.82	6.25	2.70	24
11	2.36	3.39	2.32	2.26	2.29	S	2.16	1.97	1.95	1.91	1.91	1.91	1.90	1.87	1.89	1.87	1.86	1.86	1.86	1.88	1.88	1.92	1.94	1.89	1.86	3.39	2.05	24
12	1.90	1.91	1.90	1.91	1.92	S	1.94	1.94	1.93	1.93	1.94	1.89	1.88	1.87	1.87	1.88	1.89	1.90	1.87	1.90	1.88	1.93	1.94	1.98	1.87	1.98	1.91	24
13	2.01	2.01	2.06	2.04	1.98	S	2.44	2.28	2.07	1.94	1.98	1.97	1.94	1.89	1.91	1.89	1.86	1.93	1.95	2.04	1.96	1.91	1.94	1.99	1.86	2.44	2.00	24
14	2.24	1.83	1.84	1.84	1.84	S	1.84	1.83	1.82	1.81	1.81	1.81	1.80	1.80	1.80	1.80	1.80	1.81	1.81	1.80	1.83	1.83	1.82	1.81	1.80	2.24	1.84	24
15	1.82	1.83	1.83	1.85	1.84	S	1.84	1.84	1.83	1.82	1.82	1.82	1.82	1.82	1.81	1.81	1.81	1.81	1.82	1.83	4.35	6.36	3.54	2.62	1.81	6.36	2.24	24
16	1.84	1.85	2.69	2.69	3.55	S	2.63	2.06	1.99	1.84	1.83	1.83	1.82	1.82	1.81	1.80	1.80	1.80	1.81	1.80	1.80	1.80	1.81	1.81	1.80	3.55	2.02	24
17	1.81	1.81	1.86	1.82	1.82	S	1.82	1.82	1.81	1.81	1.80	1.80	1.79	1.79	1.79	1.80	1.79	1.80	1.80	1.80	1.81	1.80	1.80	1.90	1.79	1.90	1.81	24
18	1.99	2.28	1.97	2.06	2.06	S	2.07	1.87	2.28	2.29	1.86	1.82	1.81	1.82	1.82	1.82	1.82	1.82	1.83	1.83	1.82	1.82	1.83	1.83	1.81	2.29	1.93	24
19	1.83	1.84	1.84	1.84	1.84	S	1.84	1.84	1.84	1.84	1.83	1.83	1.85	1.83	1.83	1.83	1.83	1.83	1.84	1.84	1.86	1.85	1.85	1.86	1.83	1.86	1.84	24
20	1.85	1.85	1.86	1.86	1.86	S	1.86	1.86	1.86	1.85	1.85	C1	C1	C1	C1	C1	1.90	1.90	1.90	1.90	1.91	1.91	1.92	1.85	1.92	1.88	19	
21	1.92	1.91	2.01	1.91	2.08	S	2.47	2.05	1.91	2.01	2.06	1.94	1.87	1.86	1.86	1.86	1.86	1.87	1.87	1.87	2.38	2.08	2.98	1.97	1.86	2.98	2.03	24
22	1.96	2.54	2.94	1.93	1.94	S	2.37	2.20	1.87	1.85	1.83	1.83	1.82	1.83	1.83	1.84	1.84	1.85	1.97	2.08	2.14	1.89	1.96	1.90	1.82	2.94	2.01	24
23	1.99	2.03	1.92	1.90	2.48	S	2.21	2.14	2.01	1.86	1.86	1.84	1.83	1.83	1.83	1.83	1.83	1.94	2.33	2.41	2.00	1.97	2.50	2.27	1.83	2.50	2.04	24
24	1.88	1.88	1.96	1.97	1.92	S	1.97	1.87	1.93	1.92	1.86	1.86	1.86	1.96	1.89	1.89	1.89	1.89	1.88	1.88	1.89	1.89	1.90	1.90	1.86	1.97	1.90	24
25	1.90	1.89	1.90	1.90	1.89	S	1.89	1.90	1.91	1.91	1.92	1.90	1.90	1.90	1.90	1.90	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.89	1.92	1.90	24
26	1.91	1.91	1.91	1.91	1.93	S	2.15	2.11	1.93	1.92	1.91	1.92	1.92	1.92	1.91	1.90	1.90	1.89	1.89	1.89	1.88	1.88	1.88	1.88	1.88	2.15	1.92	24
27	1.88	1.89	1.89	1.89	1.89	S	1.90	1.89	1.89	1.89	1.89	1.88	1.87	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.88	1.89	1.89	1.88	1.87	1.90	1.88	24
28	1.88	1.89	1.89	1.89	1.90	S	3.01	2.16	1.89	1.89	1.89	1.88	1.88	1.88	1.89	1.88	1.89	1.89	1.89	1.92	6.12	5.95	4.33	3.47	1.88	6.12	2.49	24
29	2.77	2.67	2.54	2.24	2.04	S	2.16	2.16	1.95	1.94	1.90	1.90	1.90	1.89	1.89	1.90	1.92	1.93	1.95	1.91	1.94	1.95	1.95	1.97	1.89	2.77	2.06	24
30	1.97	1.97	2.00	2.00	2.00	S	2.02	2.04	2.08	2.12	2.09	2.09	2.09	2.06	2.00	1.97	2.05	2.03	3.01	4.20	2.56	4.96	4.06	3.32	1.97	4.96	2.46	24
31	1.98	1.95	3.21	1.93	1.91	S	1.93	1.90	1.90	1.88	1.89	1.89	1.89	1.88	1.90	1.91	1.90	1.90	1.90	1.90	1.90	1.91	1.94	2.07	1.88	3.21	1.97	24
HOURLY MAX	4.28	3.85	6.04	6.25	3.94	NA	3.01	2.78	2.28	5.59	2.09	2.09	2.09	2.06	2.00	1.97	2.05	2.03	3.01	4.20	6.12	6.36	6.42	4.27				
HOURLY AVG	2.16	2.22	2.37	2.25	2.17	NA	2.17	2.05	1.96	2.05	1.91	1.90	1.89	1.88	1.88	1.87	1.88	1.88	1.93	1.98	2.23	2.73	2.66	2.33				

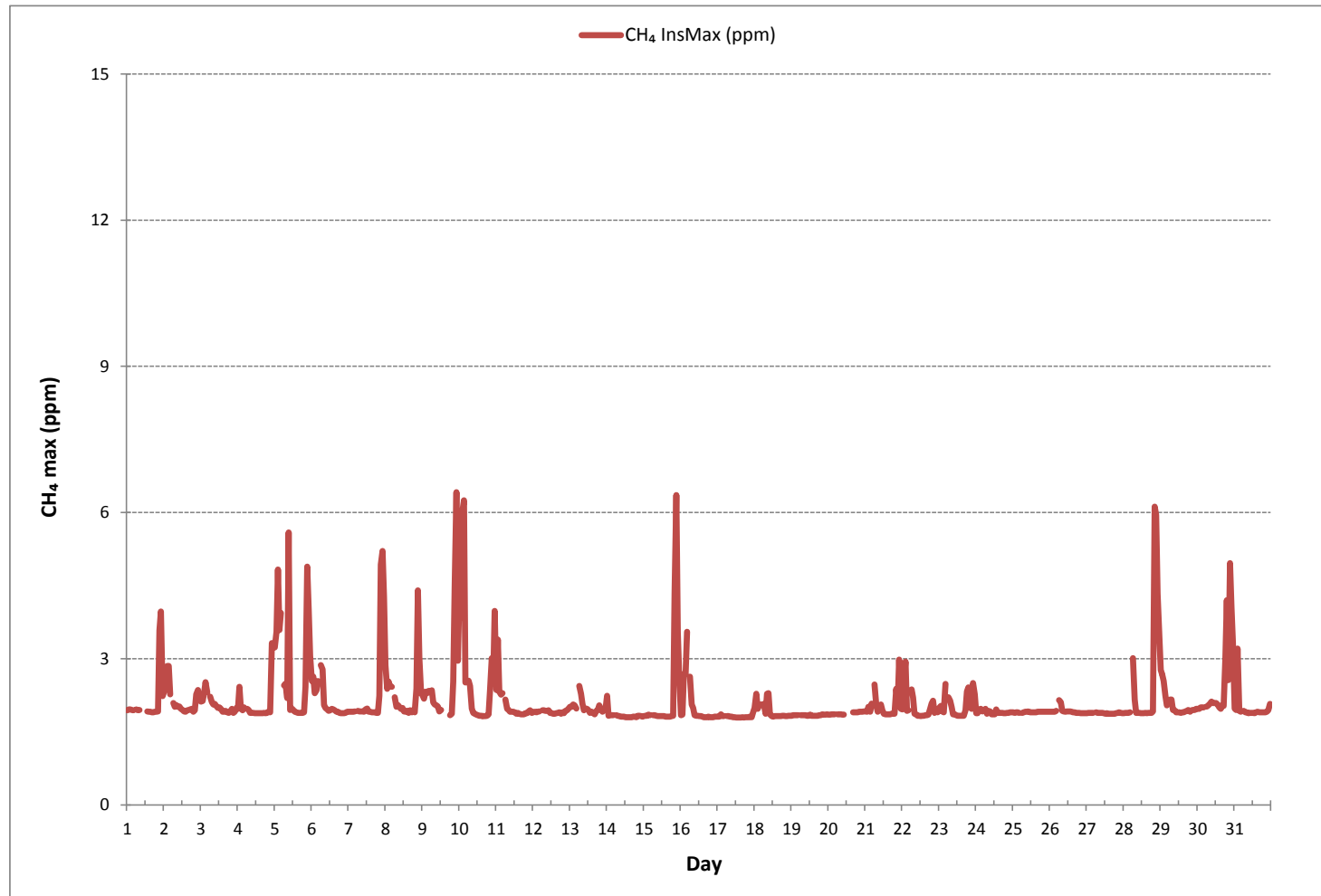
STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	699				
MAXIMUM INSTANTANEOUS VALUE:	6.42	ppm	@ HOUR	22	ON DAY 9
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	735	hrs
MONTHLY CALIBRATION TIME:	5	hrs			
STANDARD DEVIATION:	0.62				

METHANE MAX Instantaneous Maximum (CH₄ ppm)



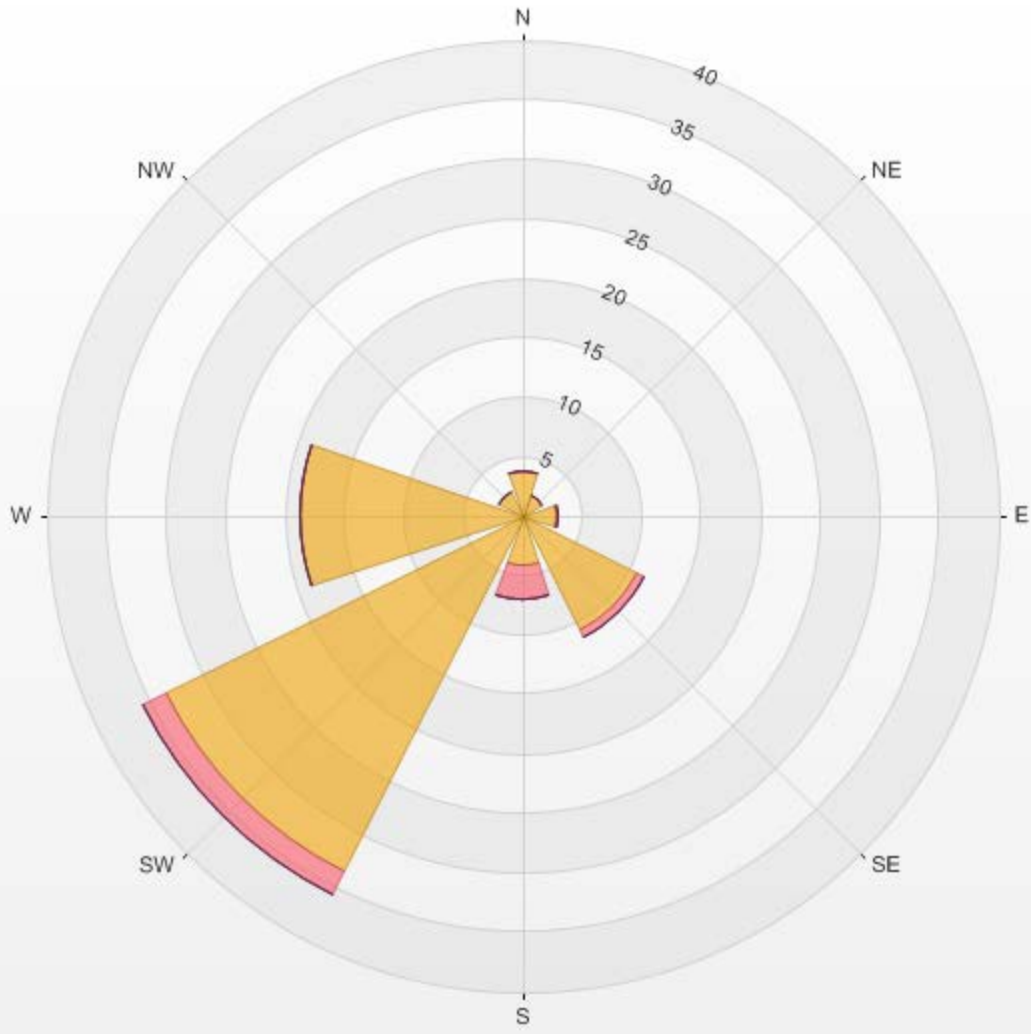
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-CH4[ppm]
Monthly: 17/08
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 16.12%

Calm Avg: 2.25 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	3.9	0.0	0.0	0.0	0.0	3.9
NE	1.9	0.0	0.0	0.0	0.0	1.9
E	2.9	0.1	0.0	0.0	0.0	3.0
SE	10.7	0.7	0.0	0.0	0.0	11.4
S	4.1	3.0	0.0	0.0	0.0	7.1
SW	33.5	2.1	0.0	0.0	0.0	35.7
W	18.7	0.0	0.0	0.0	0.0	18.7
NW	2.3	0.0	0.0	0.0	0.0	2.3
Summary	77.9	6.0	0.0	0.0	0.0	83.9

PRAMP_RENO Poll.: PRAMP_RENO-CH4[ppm] 2017/08/01 00:00 - 2017/08/31 23:00 Calm: 16.12% Calm Poll Avg: 2.25[ppm]



CH4[ppm] Calibration: PRAMP_RENO Monthly: 17/08 Type: Span



Span Meas Span Ref Span Low Span High

NON-METHANE HYDROCARBON



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - August 2017

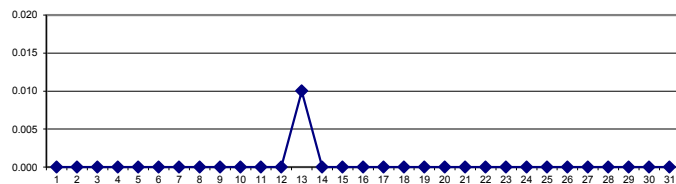
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	X	X	X	S1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20
2	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
3	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
4	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
5	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
6	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
7	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
8	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
9	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
10	0.00	0.00	0.01	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
11	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
12	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
13	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02	0.00	0.00	0.02	0.01	0.03	0.02	0.00	0.00	0.00	0.00	0.03	0.01	24
14	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
15	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
16	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
17	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
18	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
19	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
20	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	C1	C1	C1	C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20
21	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
22	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
23	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
24	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
25	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
26	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
27	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
28	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
29	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
30	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
31	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
HOURLY MAX	0.00	0.00	0.01	0.00	0.00	NA	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02	0.00	0.00	0.02	0.01	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HOURLY AVG	0.00	0.00	0.00	0.00	0.00	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

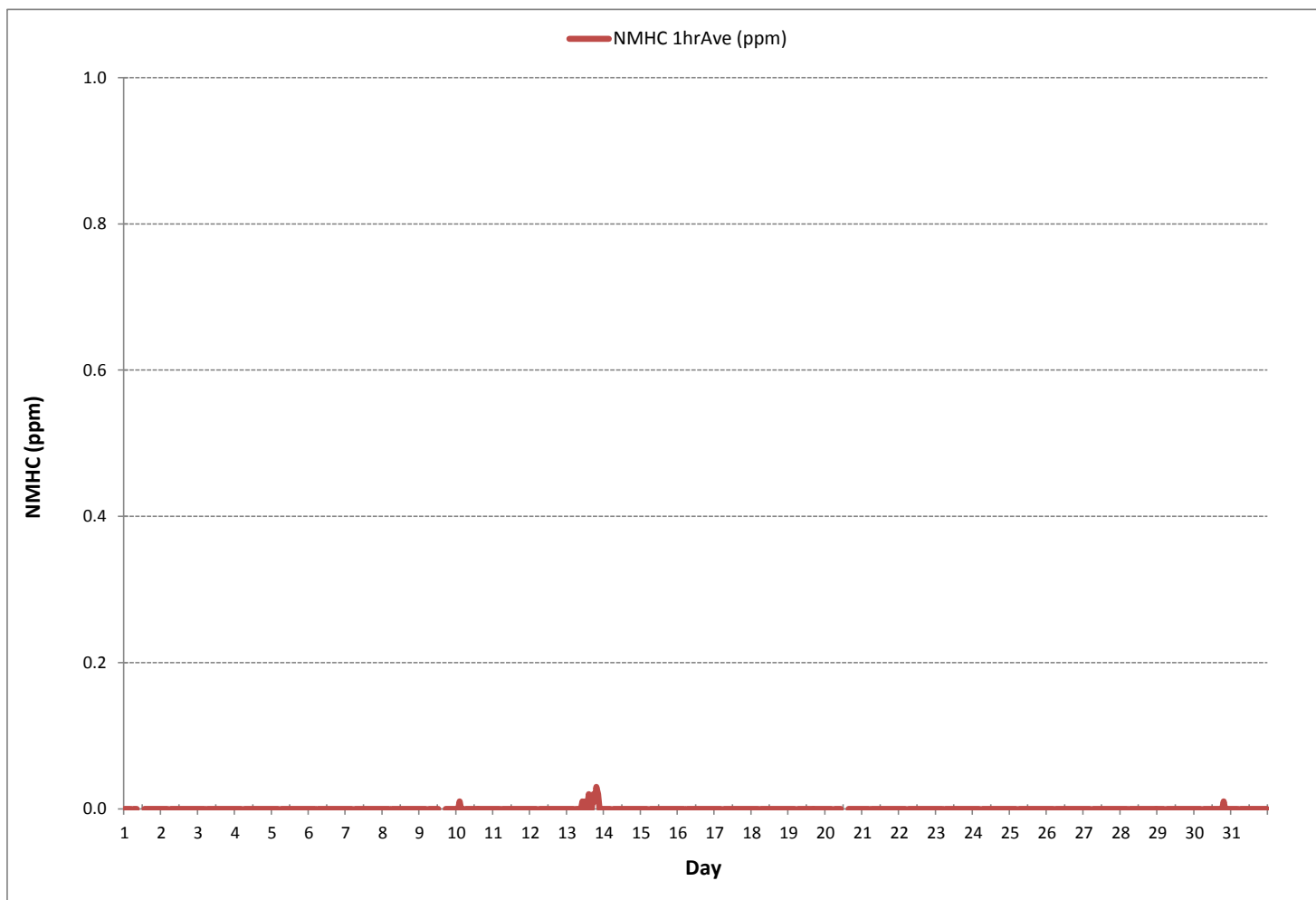
24 HR AVERAGES August 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	9				
MINIMUM 1-HR AVERAGE:	0.00	ppm	@ HOUR	0	ON DAY 1
MAXIMUM 1-HR AVERAGE:	0.03	ppm	@ HOUR	19	ON DAY 13
MAXIMUM 24-HR AVERAGE:	0.01	ppm			ON DAY 13
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	736	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	98.9	%
STANDARD DEVIATION:	0.00		MONTHLY AVERAGE:	0.00	ppm

NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - August 2017

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	X	X	X	S1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20
2	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
3	0.00	0.06	0.06	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.01	24
4	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
5	0.00	0.00	0.00	0.00	0.06	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	24
6	0.08	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.01	24
7	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
8	0.00	0.00	0.00	0.00	0.00	S	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	24
9	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	C	0.06	0.00	0.04	0.00	0.14	0.00	0.00	0.14	0.01	0.00	24
10	0.00	0.00	0.13	0.11	0.11	S	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.09	0.00	0.00	0.05	0.00	0.13	0.03	0.00	24
11	0.10	0.00	0.07	0.09	0.09	S	0.15	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.02	0.00	24
12	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	24
13	0.05	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.14	0.15	0.15	0.10	0.20	0.13	0.00	0.19	0.19	0.23	0.20	0.14	0.00	0.00	0.00	0.23	0.08	0.00	24
14	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
15	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.16	0.01	0.00	24
16	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
17	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	24
18	0.12	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.01	0.00	24
19	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
20	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	C1	C1	C1	C1	C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19
21	0.00	0.00	0.00	0.00	0.00	S	0.05	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	24
22	0.08	0.15	0.00	0.08	0.05	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.15	0.02	0.00	24
23	0.00	0.03	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.03	0.00	0.00	24
24	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
25	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	24
26	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
27	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
28	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.10	0.00	0.00	24
29	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
30	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.13	0.08	0.06	0.10	0.09	0.00	0.13	0.02	0.00	24
31	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
HOURLY MAX	0.12	0.15	0.13	0.11	0.11	NA	0.15	0.11	0.00	0.08	0.14	0.15	0.15	0.10	0.20	0.13	0.04	0.19	0.19	0.23	0.20	0.16	0.14	0.10					
HOURLY AVG	0.01	0.01	0.01	0.01	0.01	NA	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01					

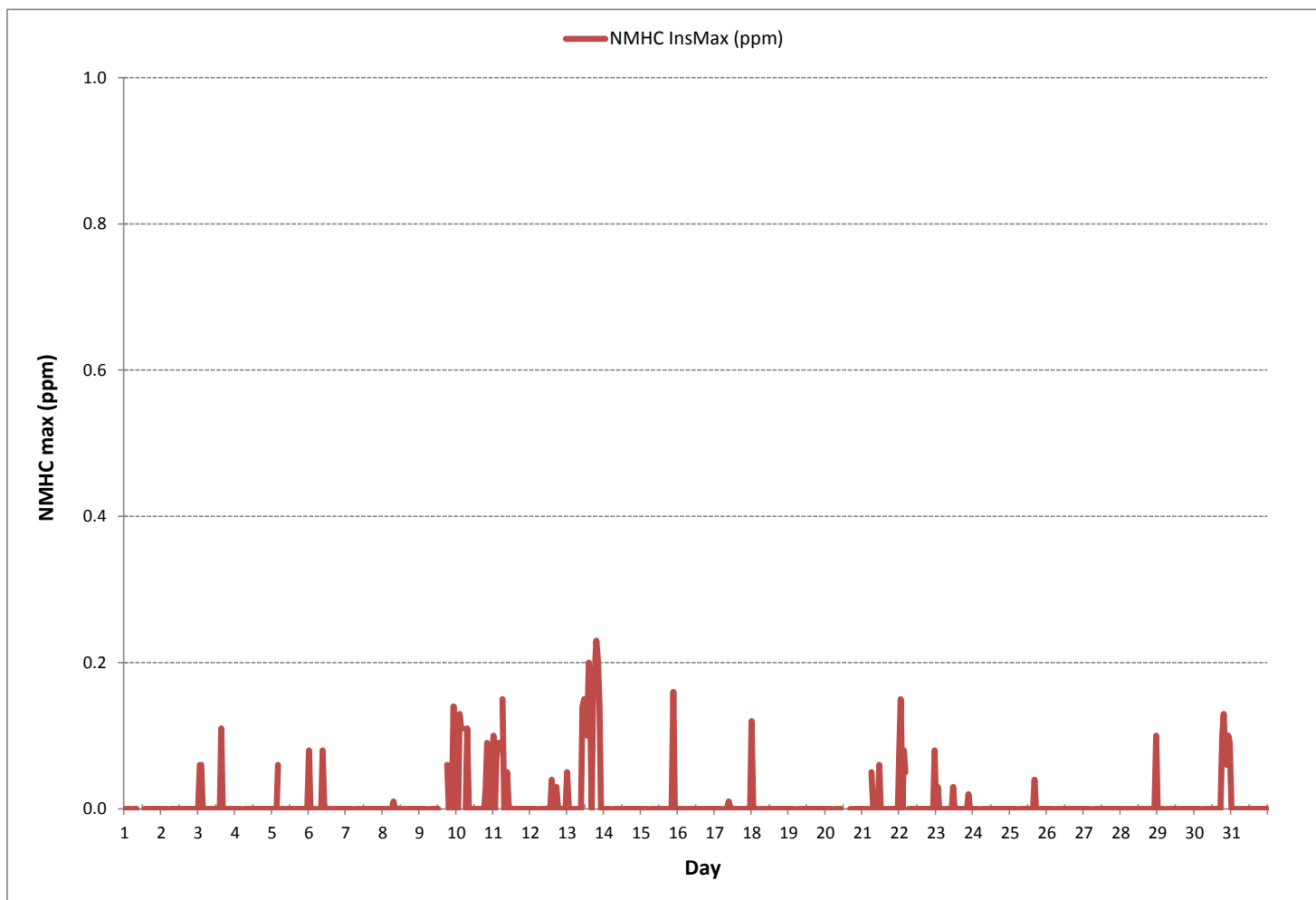
STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	58				
MAXIMUM INSTANTANEOUS VALUE:	0.23	ppm	@ HOUR	19	ON DAY 13
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	735	hrs
MONTHLY CALIBRATION TIME:	5	hrs			
STANDARD DEVIATION:	0.03				

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)



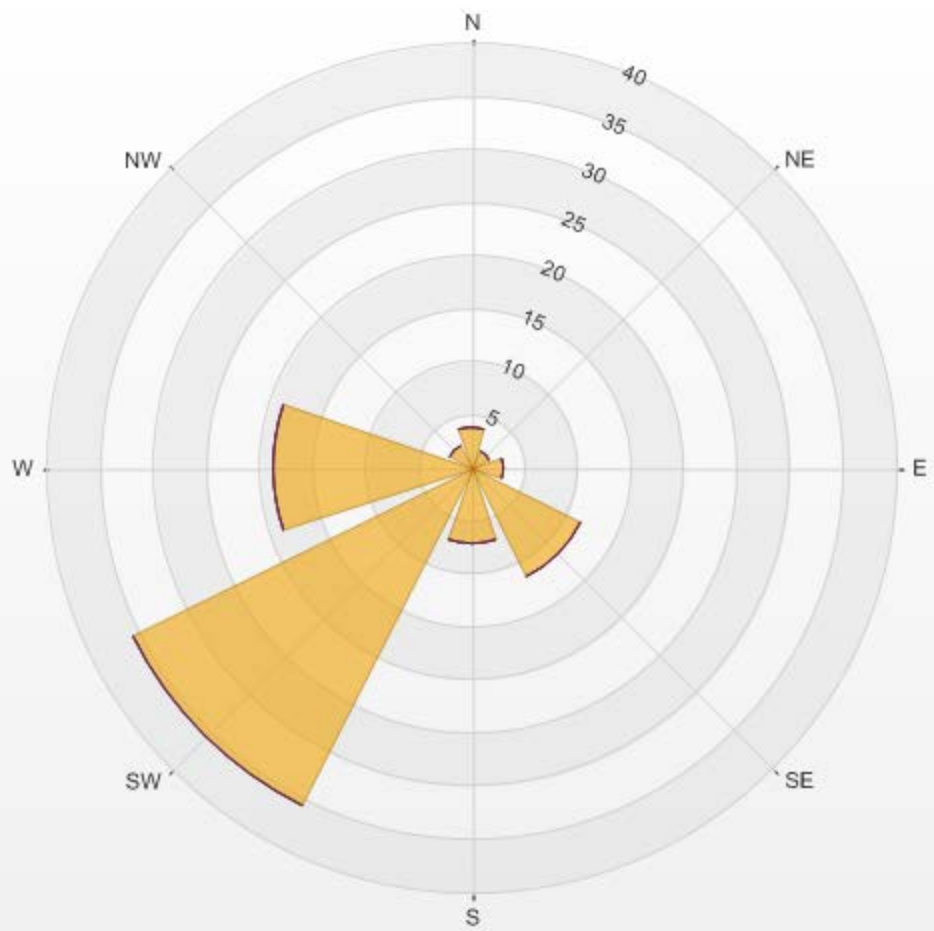
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-NMHC[ppm]
Monthly: 17/08
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 16.12%

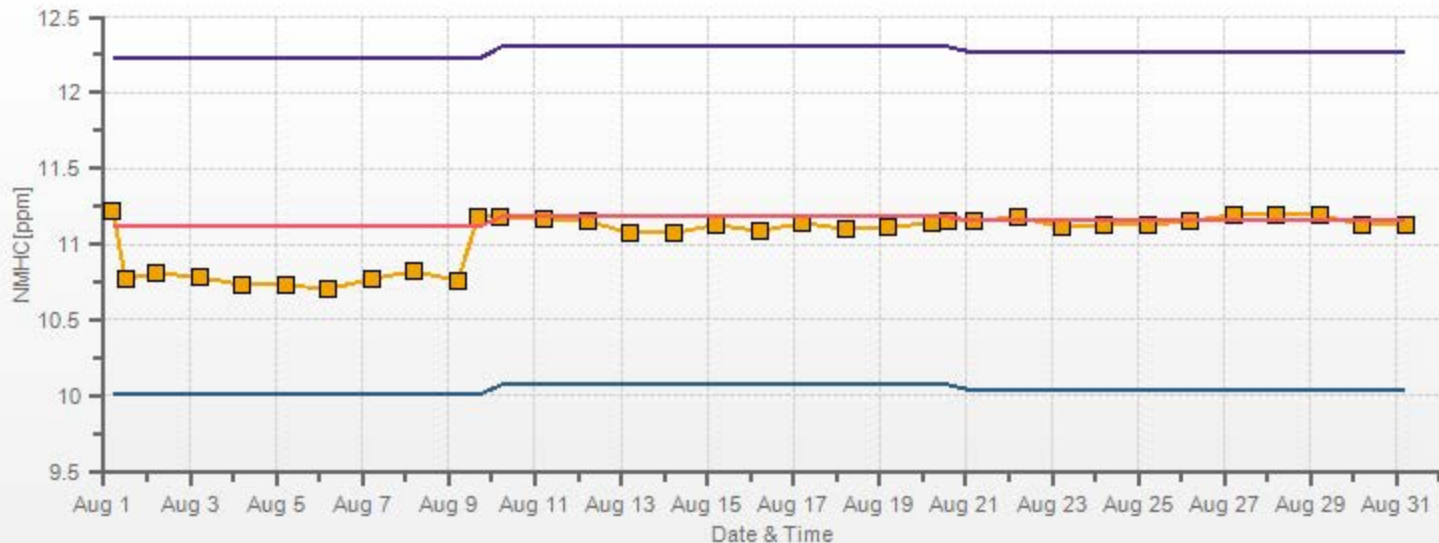
Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	3.9	0.0	0.0	0.0	0.0	3.9
NE	1.9	0.0	0.0	0.0	0.0	1.9
E	3.0	0.0	0.0	0.0	0.0	3.0
SE	11.4	0.0	0.0	0.0	0.0	11.4
S	7.1	0.0	0.0	0.0	0.0	7.1
SW	35.7	0.0	0.0	0.0	0.0	35.7
W	18.7	0.0	0.0	0.0	0.0	18.7
NW	2.3	0.0	0.0	0.0	0.0	2.3
Summary	83.9	0.0	0.0	0.0	0.0	83.9

PRAMP_RENO Poll.: PRAMP_RENO-NMHC[ppm] 2017/08/01 00:00 - 2017/08/31 23:00 Calm: 16.12% Calm Poll Avg: 0.00[ppm]



NMHC[ppm] Calibration: PRAMP_RENO Monthly: 17/08 Type: Span



■ Span Meas
 — Span Ref
 — Span Low
 — Span High

WIND SPEED

WIND SPEED Hourly Averages (WS kph)

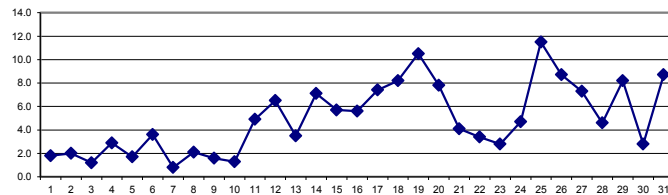
HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59				
DAY																												
1	4.3	2.5	4.3	3.9	2.7	1.0	4.3	5.4	5.3	6.0	4.2	3.4	2.6	1.4	3.3	3.4	2.0	2.6	2.2	1.5	0.7	1.1	0.9	1.4	0.7	6.0	1.8	24
2	0.9	1.5	1.7	1.6	1.6	1.7	1.3	1.6	2.8	3.2	3.0	3.6	3.3	3.6	3.9	3.3	3.9	3.0	3.3	1.2	0.1	0.7	0.8	0.9	0.1	3.9	2.0	24
3	1.1	2.1	1.5	1.6	1.6	1.9	1.7	1.4	1.9	2.9	3.2	4.1	3.5	5.1	7.6	5.5	2.8	10.4	5.1	5.9	3.3	1.6	2.5	2.1	1.1	10.4	1.2	24
4	1.3	2.5	5.1	5.7	1.6	2.3	2.3	4.3	4.6	4.3	6.1	6.9	7.7	7.4	8.3	8.4	8.7	9.4	6.4	3.7	1.0	0.3	0.7	0.3	0.3	9.4	2.9	24
5	0.7	1.2	1.0	0.2	1.9	2.0	2.1	1.7	2.5	3.3	2.8	3.8	2.9	3.7	5.3	5.0	4.1	3.7	2.0	0.1	0.9	2.1	1.3	1.6	0.1	5.3	1.7	24
6	1.8	1.6	1.7	1.7	1.8	0.7	0.5	1.2	1.5	4.0	3.6	7.3	7.4	7.8	7.4	9.1	9.4	9.7	6.7	6.0	6.2	3.6	2.8	3.4	0.5	9.7	3.6	24
7	4.5	3.9	3.7	4.4	4.0	3.9	3.3	4.8	4.9	4.7	3.3	1.9	2.2	4.2	3.5	5.7	2.7	4.6	3.4	2.1	0.5	0.4	0.8	0.6	0.4	5.7	0.8	24
8	1.0	1.1	1.4	1.3	0.9	0.9	1.1	2.1	2.8	3.8	3.3	4.2	3.8	3.5	3.8	3.8	4.0	3.1	1.3	0.1	0.6	2.3	1.4	2.1	0.1	4.2	2.1	24
9	1.2	1.6	1.7	2.1	2.2	2.0	1.4	1.3	2.6	2.9	3.7	4.9	3.4	3.9	3.8	2.5	4.1	2.5	1.4	0.4	0.6	1.6	1.2	1.3	0.4	4.9	1.6	24
10	1.6	1.8	1.6	1.5	1.3	2.9	3.1	2.7	2.5	3.5	4.5	4.2	2.6	3.2	4.5	3.3	3.4	2.5	2.0	1.2	1.2	0.8	0.3	0.9	0.3	4.5	1.3	24
11	1.9	1.7	1.8	1.8	2.1	2.1	2.4	4.1	7.0	7.1	6.4	7.5	5.7	5.4	6.2	7.2	7.2	7.7	8.1	8.3	7.1	4.6	4.1	5.0	1.7	8.3	4.9	24
12	5.0	5.2	5.7	5.1	5.3	5.7	5.5	6.3	7.0	5.5	6.8	8.0	9.9	6.8	8.8	7.6	6.3	7.3	6.6	5.6	5.5	5.9	7.6	9.1	5.0	9.9	6.5	24
13	9.1	7.8	8.2	7.0	5.5	6.4	2.4	2.4	4.1	8.3	7.5	5.6	6.3	8.1	9.6	10.3	8.9	6.2	4.9	4.4	5.0	4.5	2.8	2.8	2.4	10.3	3.5	24
14	4.0	4.1	5.4	5.1	5.9	5.8	5.6	7.4	10.4	10.9	10.2	9.5	10.4	11.9	12.5	9.7	7.6	9.8	5.4	3.3	3.4	5.2	6.1	5.8	3.3	12.5	7.1	24
15	5.4	4.6	5.4	5.6	5.3	4.8	5.5	8.0	10.0	10.7	10.4	8.9	8.3	7.3	8.4	5.9	10.1	8.4	5.6	1.7	1.8	1.8	2.0	3.4	1.7	10.7	5.7	24
16	3.0	2.6	2.4	2.6	2.2	1.9	2.0	2.6	4.6	6.6	10.3	11.2	10.8	8.7	11.4	11.6	6.7	4.7	5.3	6.5	4.4	4.5	6.3	6.4	1.9	11.6	5.6	24
17	4.7	4.0	4.2	5.0	5.6	5.9	4.8	5.8	10.6	11.5	10.8	10.5	12.1	10.2	10.8	10.0	10.6	10.0	7.5	7.0	6.1	5.9	4.8	3.5	3.5	12.1	7.4	24
18	4.5	3.7	4.4	3.6	3.3	3.7	4.4	4.7	4.0	4.2	5.6	7.7	11.8	17.1	16.5	14.2	14.5	13.5	14.8	13.1	10.1	8.6	8.8	8.3	3.3	17.1	8.2	24
19	7.6	6.0	5.3	7.8	11.5	11.6	11.0	12.7	12.5	13.7	14.1	13.5	14.0	14.5	15.6	14.8	13.3	12.6	13.0	8.7	6.2	5.6	5.1	5.5	5.1	15.6	10.5	24
20	6.4	8.9	10.6	9.1	9.1	7.7	7.4	8.7	8.6	8.8	9.6	8.8	9.1	9.5	11.6	8.9	9.1	9.2	8.3	5.5	4.6	3.0	3.2	4.5	3.0	11.6	7.8	24
21	4.3	4.5	3.8	4.1	3.6	2.9	2.5	4.1	5.5	3.5	3.4	4.8	8.4	7.5	7.8	6.8	7.1	3.9	2.7	2.1	1.5	2.1	1.2	2.5	1.2	8.4	4.1	24
22	2.6	1.9	2.4	2.6	3.2	2.7	2.6	4.8	5.7	6.9	6.9	7.4	8.9	6.5	4.2	5.9	5.8	3.0	1.2	2.4	3.9	4.2	3.1	4.6	1.2	8.9	3.4	24
23	3.9	1.6	3.4	1.1	0.6	1.8	1.5	1.9	4.3	7.5	6.9	6.7	5.4	6.0	6.9	5.6	4.9	2.3	0.2	1.0	2.8	2.1	1.3	5.1	0.2	7.5	2.8	24
24	9.5	5.6	2.9	9.2	1.4	5.5	6.7	3.2	1.4	1.7	3.3	4.1	4.1	15.7	14.6	13.9	11.6	12.3	8.9	6.6	7.0	8.0	8.2	6.3	1.4	15.7	4.7	24
25	9.8	10.7	12.0	15.4	14.6	12.1	9.7	10.7	10.2	11.5	13.4	14.6	15.1	16.0	14.6	13.6	12.6	13.8	13.6	8.7	6.5	7.4	7.9	6.3	6.3	16.0	11.5	24
26	5.9	6.3	5.2	4.7	3.5	4.2	4.3	4.2	6.7	8.5	9.9	12.5	12.7	12.5	14.7	13.7	16.3	14.6	12.3	11.1	9.7	6.4	6.0	6.1	3.5	16.3	8.7	24
27	6.2	6.6	5.1	5.1	6.9	5.7	5.5	5.8	8.8	8.4	9.6	11.4	12.3	12.9	10.9	12.3	10.8	10.3	7.4	4.3	3.9	5.7	1.4	2.4	1.4	12.9	7.3	24
28	2.3	2.8	4.0	6.0	6.2	1.8	2.4	5.8	7.9	6.7	6.8	8.8	8.5	8.1	9.3	6.7	6.2	4.6	2.0	0.6	1.0	1.7	2.5	2.6	0.6	9.3	4.6	24
29	2.4	2.3	1.4	1.9	4.3	4.5	2.9	6.6	7.6	8.9	10.8	13.3	14.0	14.6	14.9	15.1	13.6	12.1	10.6	9.6	8.9	9.8	7.7	6.9	1.4	15.1	8.2	24
30	7.7	8.7	7.3	7.3	6.3	5.8	5.9	3.4	3.5	3.3	3.6	4.3	4.0	4.5	4.4	3.6	1.5	0.8	0.3	0.1	0.2	0.9	1.5	3.3	0.1	8.7	2.8	24
31	3.1	2.6	2.5	4.5	3.5	5.3	4.6	5.3	9.4	15.1	16.8	15.3	14.6	14.5	13.7	14.6	13.4	14.1	11.1	9.9	6.1	6.0	4.6	5.3	2.5	16.8	8.7	24
HOURLY MAX	9.8	10.7	12.0	15.4	14.6	12.1	11.0	12.7	12.5	15.1	16.8	15.3	15.1	17.1	16.5	15.1	16.3	14.6	14.8	13.1	10.1	9.8	8.8	9.1				
HOURLY AVG	2.6	2.6	2.8	2.9	2.9	2.6	3.0	3.3	4.0	4.4	4.8	4.9	5.2	5.8	5.9	5.2	5.0	4.0	3.3	2.4	2.1	2.6	2.5	2.7				

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

LAST CALIBRATION: April 6, 2017
DECLINATION: MAGNETIC DECLINATION 15 DEGREE EAST

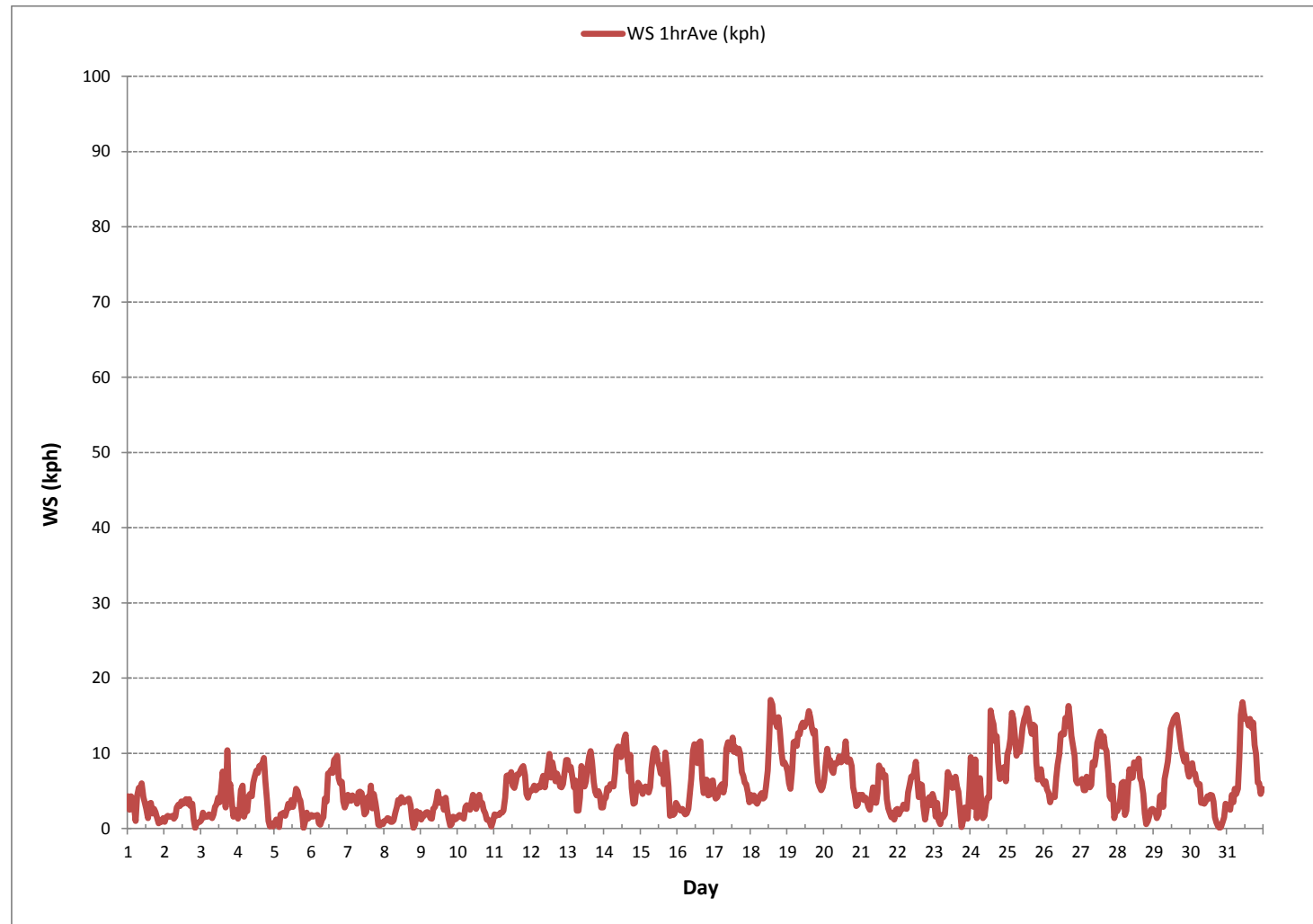
24 HR AVERAGES August 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	744				
MINIMUM 1-HR AVERAGE:	0.1 kph	@ HOUR	20	ON DAY	2
MAXIMUM 1-HR AVERAGE:	17.1 kph	@ HOUR	13	ON DAY	18
MAXIMUM 24-HR AVERAGE:	11.5 kph			ON DAY	25
MONTHLY CALIBRATION TIME:	0 hrs	OPERATIONAL TIME:	744 hrs		
		AMD OPERATION UPTIME:	100.0 %		
STANDARD DEVIATION:	3.8	MONTHLY AVERAGE:	3.5 kph		

WIND SPEED Hourly Averages (WS kph)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - August 2017

WIND SPEED Instantaneous Maximum (WS kph)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	13.3	16.3	13.2	10.3	12.0	7.6	13.5	13.5	12.5	15.2	11.3	10.4	8.9	10.7	14.6	16.0	10.3	10.8	8.1	6.2	3.7	6.0	4.3	9.6	3.7	16.3	10.8	24
2	3.2	8.4	4.5	4.1	5.4	8.0	8.1	11.8	14.7	14.0	14.5	18.0	16.8	20.5	18.8	15.5	14.8	12.6	12.0	6.4	2.5	5.6	7.0	8.2	2.5	20.5	10.6	24
3	11.4	11.7	6.7	6.5	7.4	6.7	9.5	10.6	12.9	14.5	12.5	15.5	17.7	17.5	19.6	19.9	31.1	38.2	13.7	17.4	16.0	12.9	8.0	8.3	6.5	38.2	14.4	24
4	8.4	9.9	13.0	16.5	8.9	9.6	7.8	13.4	15.4	14.7	18.5	23.7	25.5	24.5	27.6	30.8	23.4	18.9	11.8	6.7	2.5	3.5	2.9	2.5	30.8	15.1	24	
5	3.8	6.1	4.8	6.8	6.0	8.3	8.3	10.1	9.8	12.1	15.2	13.3	16.7	22.7	17.6	17.5	17.3	16.8	9.3	2.2	3.9	4.3	3.4	4.7	2.2	22.7	10.0	24
6	3.6	3.5	4.7	3.6	3.5	8.4	5.5	12.2	7.9	12.2	17.0	23.0	20.1	21.2	21.6	28.1	24.5	23.9	20.6	16.8	18.0	12.0	9.6	9.5	3.5	28.1	13.8	24
7	12.9	11.2	10.6	11.7	11.6	10.7	11.7	11.4	14.0	13.8	29.5	14.8	17.9	15.3	13.6	20.9	12.5	20.2	11.6	7.6	3.2	3.1	3.6	2.4	2.4	29.5	12.3	24
8	3.1	6.3	6.4	5.3	5.1	5.4	8.1	11.6	12.9	14.5	14.0	15.6	15.7	14.9	16.5	19.3	15.5	13.5	9.8	1.7	3.5	4.9	11.1	15.0	1.7	19.3	10.4	24
9	10.0	9.2	4.7	6.6	7.7	7.7	9.3	10.3	13.4	11.7	13.9	14.5	18.1	14.3	16.9	16.4	14.2	10.3	6.3	4.3	3.9	3.5	3.6	4.0	3.5	18.1	9.8	24
10	3.7	3.9	3.9	6.1	3.8	6.4	6.3	6.4	7.4	12.2	18.0	14.2	14.3	16.9	17.2	14.2	12.8	12.2	9.0	5.5	2.8	16.1	9.3	6.5	2.8	18.0	9.5	24
11	16.4	8.6	7.3	10.2	12.1	16.4	12.6	18.1	19.6	18.3	22.2	28.1	25.7	27.1	25.5	23.0	26.6	24.4	22.3	21.9	20.2	16.9	15.8	17.5	7.3	28.1	19.0	24
12	18.5	19.5	22.3	21.1	19.0	18.6	20.5	25.4	23.3	25.2	31.6	34.2	28.2	26.8	28.0	25.7	17.3	23.5	22.1	19.3	15.8	17.1	19.3	24.9	15.8	34.2	22.8	24
13	21.5	21.0	19.0	21.2	17.4	18.8	16.1	14.0	14.1	23.6	21.5	21.8	20.0	21.6	24.5	28.1	28.5	17.7	14.0	14.2	14.5	12.0	9.3	12.1	9.3	28.5	18.6	24
14	10.4	12.1	12.7	12.7	17.8	15.3	16.0	23.3	26.7	30.8	29.0	28.0	30.2	29.4	32.4	29.7	25.3	28.1	20.5	11.2	10.0	15.5	15.6	17.0	10.0	32.4	20.8	24
15	14.4	13.0	13.2	14.8	13.3	14.4	19.0	22.3	31.1	31.8	30.7	26.4	29.1	26.3	27.5	27.0	30.5	25.3	19.5	12.3	5.0	5.5	6.0	11.0	5.0	31.8	19.6	24
16	9.0	8.4	6.3	8.3	7.8	3.9	8.0	15.4	16.1	20.0	27.6	29.2	34.0	27.8	37.5	36.6	20.9	16.9	23.7	22.3	17.7	11.6	19.5	16.2	3.9	37.5	18.5	24
17	11.5	10.7	10.1	12.6	14.6	17.6	12.3	17.2	32.2	31.4	26.9	30.3	30.2	35.0	34.6	32.0	29.7	28.2	19.3	20.5	17.5	16.7	13.8	10.1	10.1	35.0	21.5	24
18	12.5	10.6	14.2	12.3	15.2	14.3	12.1	14.7	13.9	11.8	21.0	46.2	35.7	46.5	45.9	43.6	38.4	40.2	39.1	37.4	32.9	28.9	24.8	25.4	10.6	46.5	26.6	24
19	20.3	20.1	16.0	26.8	29.5	31.4	28.5	38.3	45.0	40.2	36.3	38.9	36.9	41.0	45.2	41.1	45.6	43.3	33.8	29.4	17.8	21.4	15.9	17.0	15.9	45.6	31.7	24
20	17.0	21.6	29.6	25.2	23.8	19.2	18.7	23.7	24.0	22.4	25.1	23.5	28.5	29.3	31.9	27.9	30.3	38.3	26.0	17.2	13.1	9.0	9.2	11.6	9.0	38.3	22.8	24
21	13.2	13.5	10.1	11.8	8.6	8.4	8.9	18.6	18.8	13.7	13.2	17.1	25.0	23.3	22.0	21.4	23.1	12.5	9.2	8.4	9.0	9.2	6.1	8.0	6.1	25.0	13.9	24
22	7.2	6.5	10.1	9.3	11.2	6.9	7.9	16.5	16.1	15.8	18.7	27.0	23.4	23.8	17.3	19.5	18.2	14.1	7.8	8.3	14.3	15.4	11.6	14.3	6.5	27.0	14.2	24
23	13.8	12.9	22.7	12.6	6.4	9.6	7.0	13.5	19.3	20.6	20.1	21.1	20.0	20.5	18.6	17.2	14.3	14.8	2.9	7.2	13.8	13.7	6.5	21.2	2.9	22.7	14.6	24
24	33.5	25.7	16.2	29.0	19.3	24.4	25.0	16.7	10.6	10.1	12.3	15.1	11.4	68.0	35.1	35.1	33.2	32.9	27.2	24.7	21.6	23.4	24.0	23.5	10.1	68.0	24.9	24
25	32.1	31.6	32.6	48.5	40.6	35.4	28.0	29.2	23.4	36.6	35.2	38.2	44.7	43.4	41.9	41.2	34.5	37.0	41.0	27.9	17.5	23.4	19.9	16.0	16.0	48.5	33.3	24
26	18.0	14.3	14.0	13.2	9.6	9.5	13.0	16.9	21.7	27.3	27.4	35.5	36.0	33.6	44.8	37.1	46.4	42.2	35.6	31.7	30.2	25.4	18.7	16.9	9.5	46.4	25.8	24
27	18.0	19.3	14.7	13.7	23.5	17.9	19.0	16.2	26.4	24.4	31.0	30.1	35.4	39.0	32.0	41.0	29.3	36.7	19.0	15.7	10.6	19.3	7.0	8.8	7.0	41.0	22.8	24
28	7.9	10.6	12.6	16.3	16.7	12.8	9.4	16.3	21.3	21.0	17.1	23.4	22.8	24.0	24.5	19.9	20.4	15.3	12.0	2.2	2.6	4.6	5.2	7.1	2.2	24.5	14.4	24
29	5.1	5.1	7.4	8.3	18.8	19.4	14.2	16.2	16.8	25.9	33.7	37.9	39.5	35.5	36.9	39.3	36.8	36.9	29.4	32.9	26.3	27.3	20.8	19.3	5.1	39.5	24.6	24
30	20.7	23.8	20.4	18.1	18.4	16.5	17.0	11.1	15.8	18.8	15.8	17.5	16.8	15.7	15.9	14.2	7.8	5.1	2.9	2.6	5.5	3.6	6.2	10.9	2.6	23.8	13.4	24
31	10.1	8.1	10.4	11.9	10.6	14.6	15.7	16.3	29.3	40.2	49.7	43.6	40.3	44.2	45.0	42.5	39.7	40.6	28.1	30.3	17.8	16.1	12.6	15.7	8.1	49.7	26.4	24
HOURLY MAX	33.5	31.6	32.6	48.5	40.6	35.4	28.5	38.3	45.0	40.2	49.7	46.2	44.7	68.0	45.9	43.6	46.4	43.3	41.0	37.4	32.9	28.9	24.8	25.4				
HOURLY AVG	13.0	13.0	12.7	14.0	13.7	13.7	13.5	16.5	18.9	20.8	22.9	25.0	25.3	27.8	27.4	27.0	25.2	24.4	18.5	15.4	12.8	13.1	11.3	12.8				

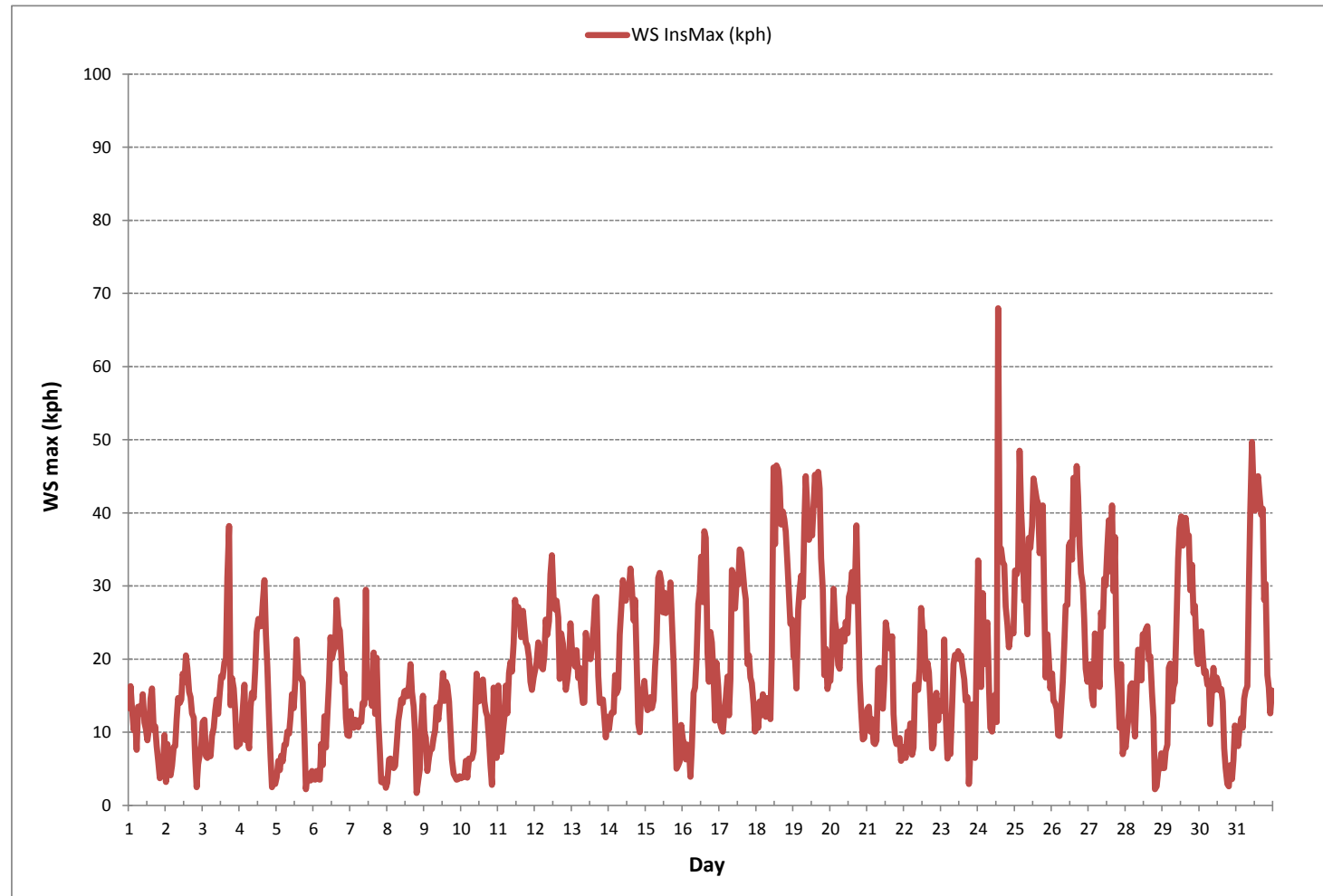
STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	68.0	kph	@ HOUR	13	ON DAY	24
OPERATIONAL TIME:	744	hrs				

WIND SPEED Instantaneous Maximum (WS kph)



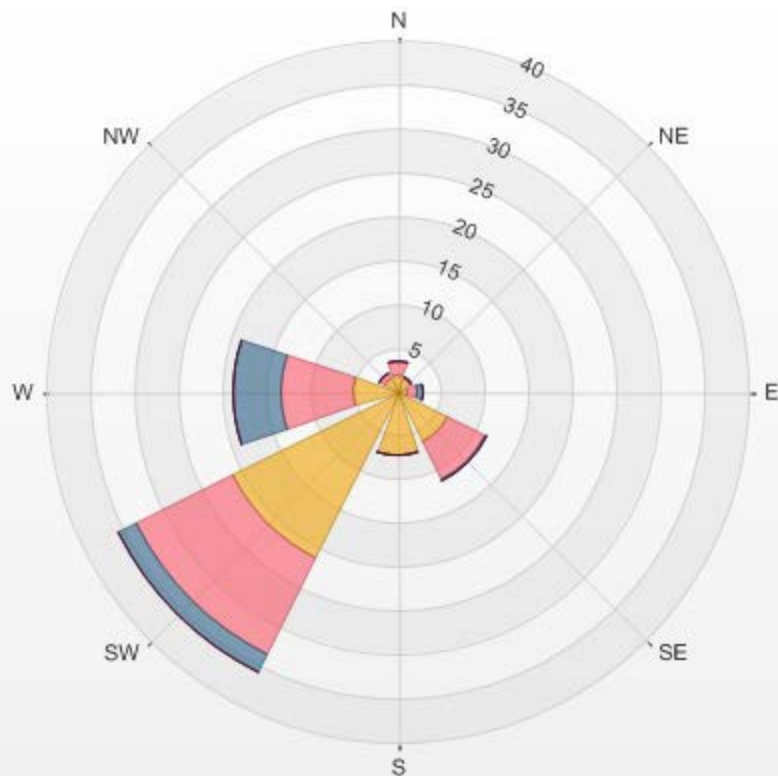
Wind: PRAMP_RENO
 Monitor: WSP [kph]
 Monthly: 17/08
 Type: WindRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

Calm: 15.86%

Direction	1.8-6.0	6.0-12.0	12.0-20.0	20.0-29.0	29.0-39.0	>39.0	Total
N	1.9	1.8	0.0	0.0	0.0	0.0	3.6
NE	1.6	0.3	0.0	0.0	0.0	0.0	1.9
E	1.1	1.2	0.7	0.0	0.0	0.0	3.0
SE	6.3	4.8	0.3	0.0	0.0	0.0	11.4
S	7.3	0.1	0.0	0.0	0.0	0.0	7.4
SW	21.1	12.4	2.3	0.0	0.0	0.0	35.8
W	5.1	8.3	5.4	0.0	0.0	0.0	18.8
NW	1.6	0.7	0.0	0.0	0.0	0.0	2.3
Summary	46.0	29.6	8.6	0.0	0.0	0.0	84.1

%	Icon	Classes (kph)	46		1.8-6.0	30		6.0-12.0	9		12.0-20.0	0		20.0-29.0	0		29.0-39.0	0		>39.0
---	------	---------------	----	---	---------	----	---	----------	---	---	-----------	---	--	-----------	---	---	-----------	---	---	-------

PRAMP_RENO 2017/08/01 00:00 - 2017/08/31 23:00 Calm: 15.86% Calm Wind Avg Speed: 1.17(kph)



WIND DIRECTION



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - August 2017

WIND DIRECTION Hourly Averages (WD)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR AVG	24-HR
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	QUADRANT	RDGS.
DAY																										
1	NNE	W	WSW	SW	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WNW	N	NW	NNE	N	NNE	NNE	W	WSW	SSW	SW	S	W	24
2	SSW	SW	SW	SW	SW	SW	S	SSE	SSE	SSE	S	S	SSW	SSW	S	SSW	SSW	SW	SW	SW	SSW	S	S	SSW	24	
3	SSE	SSE	SSW	S	SSW	SSW	SSW	S	S	SSE	S	SSE	SSE	SE	E	E	NW	N	E	ESE	N	NW	WSW	W	SE	24
4	WSW	SW	WSW	WSW	WNW	W	W	NW	NNW	NW	NW	WNW	NW	NNW	NW	NNW	NNE	ENE	ENE	NNE	NE	WNW	SW	WSW	NNW	24
5	SSW	SW	SSW	ESE	S	SW	SSW	SSE	S	SSE	S	SSE	SSW	SW	W	W	W	W	WSW	SW	SW	S	SW	SW	SW	24
6	SW	SW	SW	SW	SW	WNW	S	SSW	NNW	NNE	NNE	N	N	N	N	N	NNE	NNE	NNE	N	NNE	NNE	NE	NE	N	24
7	NE	NE	NNE	NNE	NE	ENE	ENE	ENE	ENE	E	N	NE	SW	WSW	W	WSW	SW	W	WSW	SW	SW	SW	SW	SW	NNE	24
8	SSW	SSW	SSW	SSW	S	S	S	SSE	SSE	SE	SSE	S	S	S	S	SSW	SSW	SW	SSW	SE	SW	S	S	SSE	S	24
9	S	SSW	SSW	SW	SW	SSW	SSW	S	S	SSE	SSE	SE	SSE	SSE	S	SSW	NW	NW	W	SW	SSW	SW	SW	SW	S	24
10	SSW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	WSW	W	W	NW	NNW	NNE	N	NNW	NNW	WNW	WSW	SW	S	S	SSW	W	24
11	SSE	SSW	SSW	SSW	S	SSE	SSE	SE	SE	SE	SE	SE	SSE	SE	SE	SE	SE	SE	ESE	ESE	ESE	SE	SE	SE	SE	24
12	SE	SE	SE	SE	SE	SE	SE	SE	SE	SSE	SSE	SE	SE	SE	SE	SE	SE	ESE	ESE	SE	SE	SE	SE	ESE	ESE	24
13	ESE	ESE	ESE	SE	SE	SE	SSE	S	SW	WSW	WSW	W	W	WSW	WSW	WSW	SW	SW	SW	SSW	SW	SW	SSW	SSW	SSW	24
14	SSW	SSW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	WSW	SW	SSW	SSW	SW	SW	SW	SW	24
15	SW	SW	SW	SW	SW	SW	SW	SW	WSW	W	W	W	WNW	WNW	W	WNW	W	W	W	WSW	SSW	SSW	SSW	SSW	SSW	24
16	SW	SW	SW	SSW	SSW	SSW	SSW	S	SSW	SW	SW	SW	WSW	WSW	WSW	WSW	SW	WSW	WSW	WSW	SW	SW	SW	SW	SW	24
17	SW	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SSW	WSW	24
18	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SW	24
19	SW	WSW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WSW	WSW	WSW	SW	SW	SW	WSW	24
20	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WSW	W	W	W	WSW	WSW	WSW	SW	SW	SW	WSW	24
21	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	S	SW	SW	SW	WSW	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	24
22	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	WSW	WSW	WSW	WSW	WSW	SW	SW	SSW	S	ESE	SE	SE	SE	SE	SW	24
23	SE	S	SSE	SSW	SSE	SE	S	S	SSW	SW	WSW	W	W	WSW	SW	SW	SW	SW	SSW	SSE	SE	SSE	S	WSW	SW	24
24	WSW	W	SE	E	SSE	ENE	SW	SW	SSW	SE	NE	NNE	NNE	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	WSW	SW	WSW	24
25	SW	WSW	WSW	WSW	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	WSW	24
26	SW	SW	SW	SW	SW	SSW	SSW	SSW	SW	SW	SW	WSW	WSW	SW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SW	SW	24
27	SW	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SSW	WSW	24
28	SW	SW	SW	WSW	WSW	SW	SW	WSW	WSW	WSW	WSW	WSW	W	W	WSW	W	W	W	W	SW	SW	SSW	SSW	SSW	WSW	24
29	SSW	SW	SSW	E	ESE	SE	SE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	E	E	ESE	ESE	ESE	ESE	ESE	24
30	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SSE	S	SSW	SSW	SSW	SSW	SW	SW	SSW	SE	SSW	WSW	NW	WSW	SSW	SW	SSE	24
31	WSW	SW	SSW	SW	SW	SW	SSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SSW	SSW	WSW	24

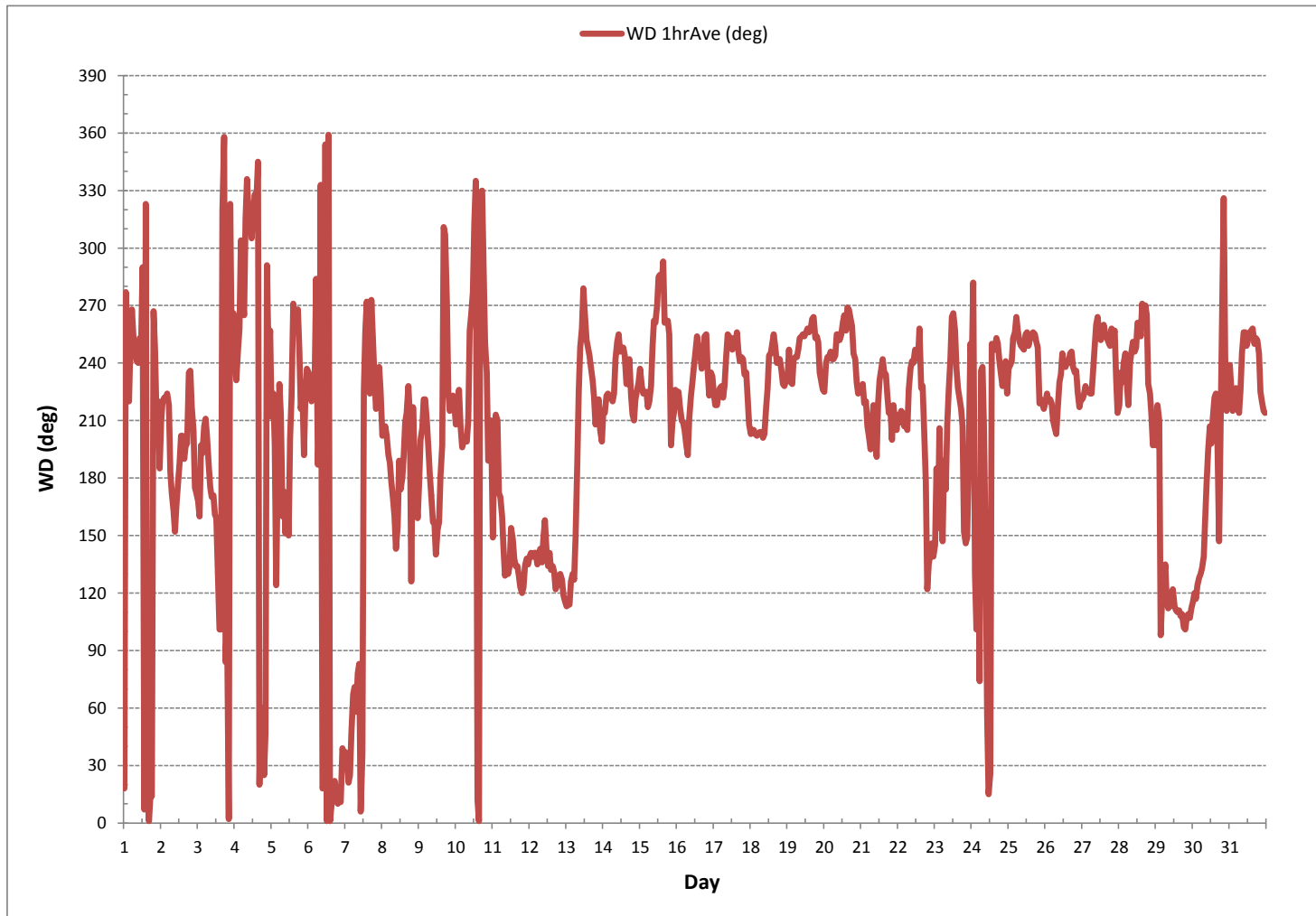
STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

LAST CALIBRATION:	April 6, 2017
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST

MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:	744	hrs
STANDARD DEVIATION:	64		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	230 (SW)	

WIND DIRECTION Hourly Averages (WD)



RELATIVE HUMIDITY

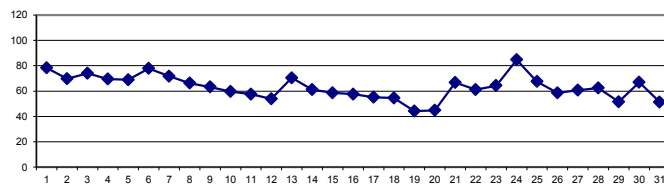
RELATIVE HUMIDITY Hourly Averages (RH %)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	85	89	92	93	93	92	92	92	92	91	88	81	76	69	60	54	52	49	48	57	73	85	90	88	48	93	78	24
2	92	93	94	94	94	94	94	92	83	73	68	55	50	45	41	39	39	37	39	48	67	79	81	84	37	94	70	24
3	87	86	90	90	92	92	89	84	76	66	56	52	46	39	35	34	47	84	88	87	86	87	92	91	34	92	74	24
4	91	93	93	94	93	92	88	80	75	70	64	57	54	47	41	36	38	48	45	50	68	78	85	89	36	94	70	24
5	90	92	93	93	93	92	91	85	73	64	57	54	50	49	44	40	39	40	42	55	75	79	82	82	39	93	69	24
6	87	89	91	91	92	91	88	82	69	66	59	61	71	67	74	76	71	68	66	73	80	84	87	87	59	92	78	24
7	88	89	89	91	91	90	89	86	81	71	64	56	54	50	51	47	49	46	47	58	74	84	87	89	46	91	72	24
8	88	87	89	93	93	93	86	79	74	69	60	51	48	44	39	39	37	36	36	51	68	76	75	79	36	93	66	24
9	82	84	85	86	89	91	88	81	73	62	50	44	42	38	38	36	33	33	38	53	64	74	77	76	33	91	63	24
10	78	80	84	83	90	90	85	73	62	53	50	45	42	38	35	31	29	28	30	45	63	68	73	75	28	90	60	24
11	76	77	82	86	90	89	83	76	68	55	45	36	30	31	33	33	33	36	39	44	50	59	66	64	30	90	58	24
12	67	73	75	77	76	75	70	63	53	47	41	39	37	32	31	31	36	40	44	51	55	60	60	59	31	77	54	24
13	61	63	65	69	73	73	76	74	71	72	72	63	58	54	55	52	57	68	75	85	89	89	89	86	52	89	70	24
14	82	81	81	82	82	81	80	73	64	54	52	47	44	40	39	43	44	40	42	52	61	65	67	69	39	82	61	24
15	70	73	76	78	78	80	77	70	58	54	53	50	49	46	42	42	35	34	35	44	61	67	66	66	34	80	59	24
16	69	72	76	77	80	82	80	69	59	52	47	44	41	42	39	38	41	43	44	43	51	60	64	67	38	82	58	24
17	72	76	79	79	80	78	76	69	60	52	48	44	38	35	35	34	33	35	39	44	47	51	56	61	33	80	55	24
18	63	66	65	64	63	66	64	65	78	77	73	65	52	33	29	36	34	33	36	39	46	51	55	54	29	78	54	24
19	57	57	60	60	56	57	57	55	52	43	38	35	31	29	28	27	26	27	29	34	39	47	55	61	26	61	44	24
20	61	57	54	55	57	59	61	61	54	49	42	36	31	27	25	24	24	25	28	35	42	51	57	61	24	61	45	24
21	69	72	79	82	85	86	83	76	69	65	63	57	48	49	49	51	52	55	59	62	68	72	76	76	48	86	67	24
22	79	82	82	81	81	86	84	75	67	59	53	48	43	43	41	41	35	33	38	51	57	65	73	70	33	86	61	24
23	72	78	77	76	83	84	87	81	77	66	57	45	41	37	36	40	41	42	52	60	69	79	84	79	36	87	64	24
24	82	87	86	88	89	89	91	89	87	82	73	75	79	88	91	89	85	83	84	83	86	84	80	82	73	91	85	24
25	81	86	91	92	91	89	91	92	88	82	73	60	52	43	41	37	38	35	41	49	61	67	69	72	35	92	68	24
26	73	74	77	79	81	81	77	70	62	51	45	44	44	41	37	39	38	40	44	50	55	62	69	71	37	81	59	24
27	72	71	75	78	74	76	72	66	55	51	47	43	41	40	41	44	49	52	56	63	68	64	76	83	40	83	61	24
28	83	86	84	81	82	85	88	78	71	66	56	44	35	35	35	33	31	31	37	56	70	78	75	78	31	88	62	24
29	73	76	74	77	65	68	69	61	56	48	37	34	32	31	33	34	35	38	41	43	47	51	54	58	31	77	51	24
30	60	58	60	63	67	72	73	72	67	65	59	57	56	56	55	57	53	55	68	77	87	90	90	89	53	90	67	24
31	77	71	71	66	70	67	72	68	50	41	40	41	39	33	30	29	31	32	34	37	48	56	63	64	29	77	51	24
HOURLY MAX	92	93	94	94	94	94	94	92	92	91	88	81	79	88	91	89	85	84	88	87	89	90	92	91				
HOURLY AVG	76	78	80	81	81	82	81	75	69	62	56	50	47	44	42	41	41	43	47	54	64	70	73	75				

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
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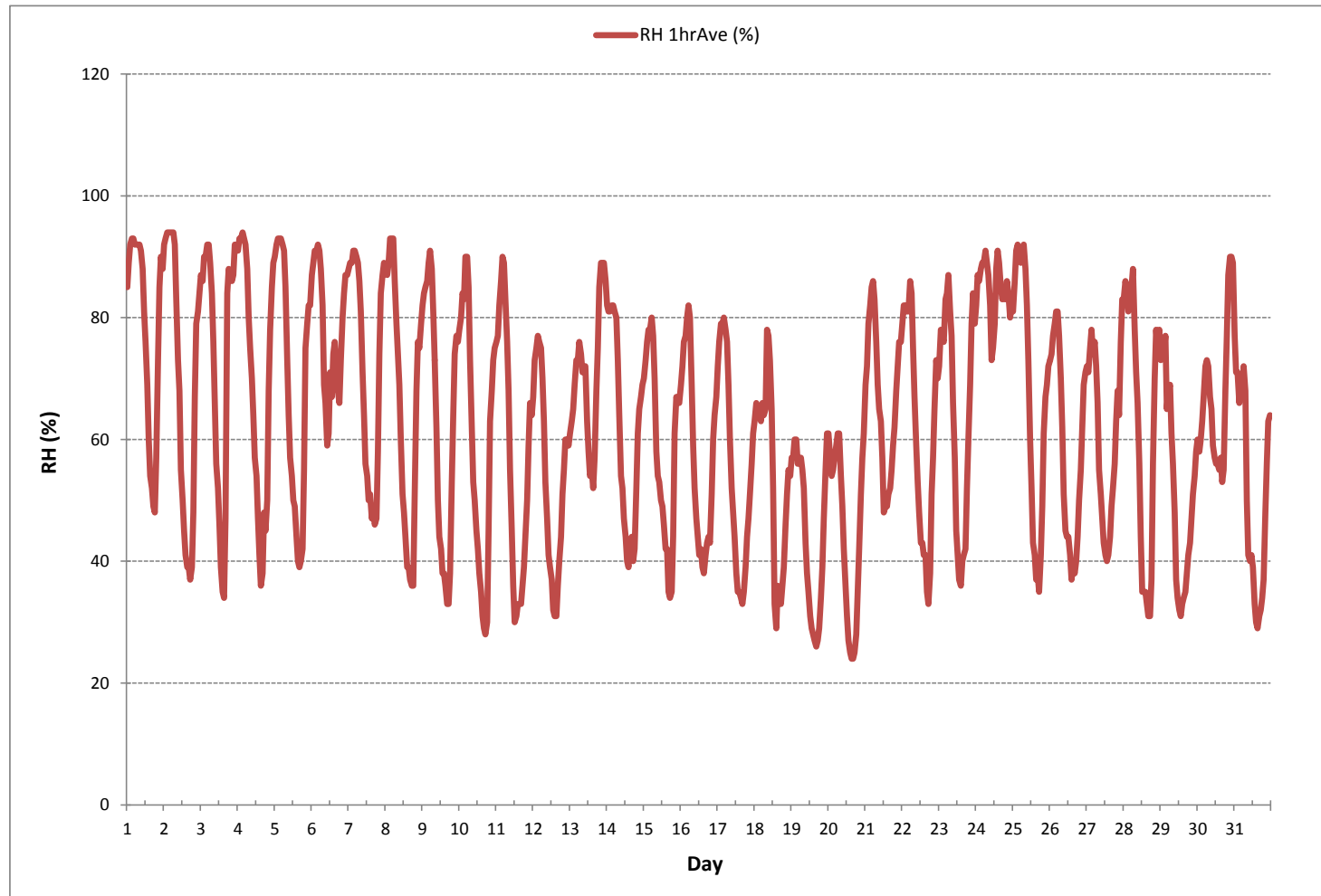
24 HR AVERAGES August 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	24	%	@ HOUR	15	ON DAY	20
MAXIMUM 1-HR AVERAGE:	94	%	@ HOUR	2	ON DAY	2
MAXIMUM 24-HR AVERAGE:	85	%			ON DAY	24
OPERATIONAL TIME:						744 hrs
AMD OPERATION UPTIME:						100.0 %
STANDARD DEVIATION:	19					MONTHLY AVERAGE: 63 %

RELATIVE HUMIDITY Hourly Averages (RH %)



BAROMETRIC PRESSURE

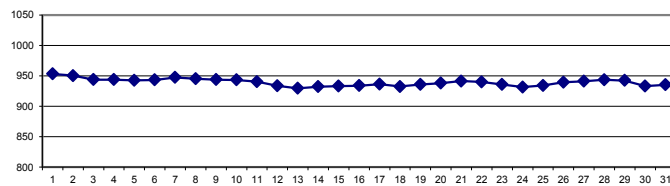
BAROMETRIC PRESSURE Hourly Averages (BP mbar)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	952	953	953	953	953	953	954	954	954	954	954	954	954	954	954	953	953	953	953	953	953	953	953	953	952	954	953	24	
2	953	953	953	953	953	952	952	952	952	952	951	951	951	950	950	949	949	948	948	947	947	947	947	947	947	947	953	950	24
3	947	946	946	945	945	945	945	945	944	944	944	943	943	942	942	942	942	943	944	944	943	943	944	944	944	942	947	944	24
4	944	944	944	944	944	945	944	944	945	945	944	945	944	944	943	943	943	943	943	943	944	944	944	943	943	943	945	944	24
5	943	943	943	943	943	943	943	943	943	943	943	943	943	943	942	942	942	942	942	942	942	942	942	942	942	942	943	943	24
6	942	942	942	942	942	942	942	942	942	942	942	943	943	943	944	944	944	944	945	945	945	946	946	947	947	942	947	943	24
7	947	947	947	947	947	947	948	948	948	948	948	948	948	948	948	947	947	947	947	947	947	947	947	947	947	947	948	947	24
8	947	947	947	947	946	946	946	946	946	946	946	946	945	945	945	944	944	944	944	944	944	944	944	944	944	944	947	945	24
9	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	943	943	943	943	943	944	944	944	944	943	944	944	24
10	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	943	943	943	942	942	942	942	942	942	942	942	944	943	24
11	942	942	942	942	942	942	942	942	942	942	942	941	941	941	940	940	939	939	938	938	938	938	938	938	938	938	942	940	24
12	938	937	937	936	936	935	935	935	935	934	934	934	933	933	933	933	932	932	931	931	931	931	930	930	930	930	938	934	24
13	929	929	928	928	928	927	928	928	928	928	929	929	929	930	930	930	931	931	931	931	932	932	931	932	932	927	932	930	24
14	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	933	933	933	933	932	933	932	24
15	933	933	933	933	933	933	933	933	933	933	933	933	933	933	934	934	933	933	933	933	933	934	934	934	934	933	934	933	24
16	934	934	934	934	934	934	934	934	934	934	934	933	933	933	933	933	933	933	933	933	934	934	935	935	935	933	935	934	24
17	936	936	936	936	936	937	937	937	937	937	937	937	937	936	936	936	936	936	936	936	936	936	936	935	935	935	937	936	24
18	934	934	934	933	933	933	932	932	932	933	932	932	932	932	931	932	931	931	932	932	932	932	933	933	933	931	934	932	24
19	934	934	934	934	934	935	935	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	937	937	937	934	937	936	24
20	936	936	936	937	937	937	937	938	938	938	938	938	938	938	938	938	938	938	938	939	939	940	940	941	936	941	938	24	
21	941	941	941	941	941	942	942	942	942	942	942	942	941	941	941	941	941	941	941	941	941	942	941	941	941	941	942	941	24
22	941	941	941	941	941	942	942	942	941	941	941	941	941	940	940	939	939	938	938	938	937	937	937	937	937	937	942	940	24
23	937	937	936	936	936	936	936	936	936	936	936	936	936	936	936	936	936	935	935	935	935	934	934	934	934	934	937	936	24
24	935	934	934	934	933	932	932	932	932	931	930	929	928	929	931	931	931	931	932	932	931	931	931	931	931	928	935	932	24
25	930	930	930	930	931	932	933	933	934	934	934	934	934	935	935	935	935	935	936	936	937	937	937	938	938	930	938	934	24
26	938	939	939	939	939	940	940	940	940	940	940	940	940	940	940	939	939	939	939	939	939	940	940	940	940	938	940	940	24
27	940	941	941	941	941	941	941	942	942	942	942	942	941	941	941	941	941	941	941	941	941	941	941	942	942	940	942	941	24
28	942	943	943	943	943	943	943	944	944	944	944	944	944	944	944	944	944	943	943	943	943	944	944	944	944	942	944	944	24
29	945	945	945	945	945	945	945	945	945	945	944	944	943	942	942	941	940	940	939	939	939	938	938	937	937	937	945	942	24
30	936	935	935	934	934	934	933	933	933	933	932	932	932	932	932	932	932	932	932	932	932	932	933	933	933	932	936	933	24
31	933	933	933	934	934	934	935	935	935	935	936	936	936	936	936	936	936	936	936	936	937	937	937	937	933	937	935	24	
HOURLY MAX	953	953	953	953	953	953	954	954	954	954	954	954	954	954	954	953	953	953	953	953	953	953	953	953	953	953	953		
HOURLY AVG	940	940	940	940	939	940	940	940	940	940	940	940	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939		

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

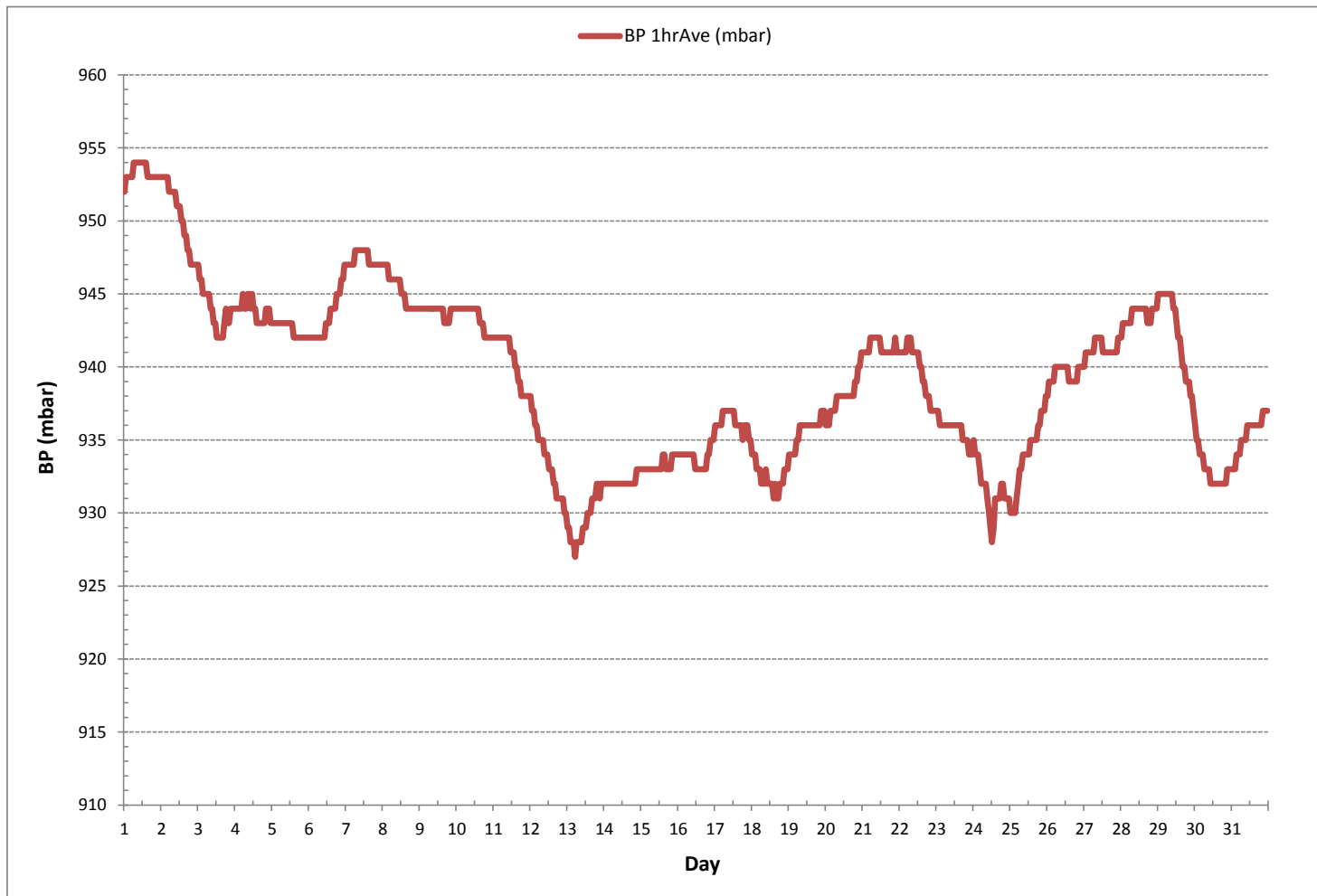
24 HR AVERAGES August 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	927	mbar	@ HOUR	5	ON DAY	13
MAXIMUM 1-HR AVERAGE:	954	mbar	@ HOUR	6	ON DAY	1
MAXIMUM 24-HR AVERAGE:	953	mbar			ON DAY	1
OPERATIONAL TIME:					744	hrs
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	6				MONTHLY AVERAGE:	939 mbar

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - August 2017

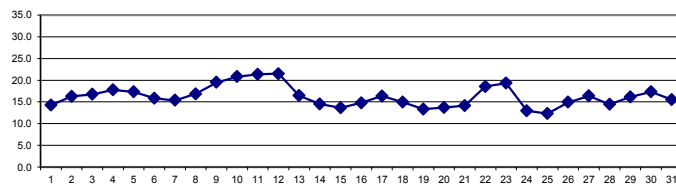
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	11.8	12.0	11.9	11.4	11.1	11.1	11.2	11.4	11.7	12.2	13.0	14.5	15.1	16.3	17.6	19.0	19.2	19.9	19.8	18.3	15.5	13.5	12.2	11.8	11.1	19.9	14.2	24
2	10.7	10.6	10.1	9.8	9.6	9.8	10.3	11.7	14.3	16.9	18.2	20.1	20.9	21.7	22.4	23.2	23.7	23.8	22.9	20.5	16.7	14.6	14.1	13.5	9.6	23.8	16.3	24
3	13.0	13.3	12.0	11.9	11.7	11.7	12.4	14.5	16.7	18.7	21.1	22.7	23.9	24.9	25.0	25.5	22.6	15.2	14.7	14.3	14.0	14.1	13.6	14.0	11.7	25.5	16.7	24
4	13.9	13.5	13.2	13.2	13.3	13.6	14.5	16.2	17.0	18.3	19.5	20.4	21.3	22.4	23.3	23.9	23.6	21.8	22.3	21.0	17.9	15.2	13.6	12.7	12.7	23.9	17.7	24
5	11.8	11.1	10.5	10.3	10.2	11.1	12.3	14.3	17.5	19.3	20.9	21.7	22.7	23.0	23.2	23.4	23.7	23.5	23.2	20.5	17.0	15.6	14.6	14.0	10.2	23.7	17.3	24
6	13.6	12.9	12.3	12.0	11.7	11.1	11.8	14.8	17.7	19.1	21.0	20.5	17.7	19.2	18.5	17.9	18.6	18.3	17.6	16.8	15.5	14.0	13.7	13.7	11.1	21.0	15.8	24
7	13.1	12.6	12.5	11.8	11.7	12.1	12.4	12.8	13.5	15.1	16.2	17.4	18.4	19.5	18.8	20.2	20.3	20.4	20.3	18.2	15.2	13.3	12.0	10.8	10.8	20.4	15.4	24
8	10.4	10.0	9.8	9.4	9.3	9.2	11.9	14.5	16.3	18.0	20.0	21.0	21.7	22.6	23.5	23.7	24.0	23.8	23.9	20.4	16.8	15.3	14.5	14.3	9.2	24.0	16.8	24
9	13.6	12.5	12.2	12.1	12.0	12.1	13.6	16.1	18.6	21.5	23.7	24.4	25.3	25.8	26.2	27.0	26.4	26.4	25.6	22.3	19.9	18.0	16.4	16.0	12.0	27.0	19.5	24
10	15.4	14.6	13.7	13.5	12.9	13.3	14.9	18.7	21.3	23.0	24.1	25.2	26.3	26.8	27.0	27.9	28.1	28.0	27.7	24.3	20.8	18.8	16.9	16.2	12.9	28.1	20.8	24
11	16.3	16.0	14.9	14.3	14.2	14.4	15.5	18.0	20.1	22.8	25.4	26.7	27.6	28.2	28.3	28.4	28.3	27.7	26.4	24.1	21.7	19.0	17.2	16.7	14.2	28.4	21.3	24
12	15.9	15.2	15.0	14.8	14.8	14.9	16.3	18.5	20.8	23.1	24.7	26.0	27.0	28.9	29.1	29.1	28.1	26.8	25.0	22.6	20.9	19.6	19.2	19.2	14.8	29.1	21.5	24
13	18.4	17.9	17.1	16.0	14.9	14.7	14.3	16.1	17.2	17.4	17.0	18.2	19.1	19.7	19.5	19.6	18.3	16.8	15.5	14.5	13.9	13.3	12.6	12.0	12.0	19.7	16.4	24
14	11.5	10.9	10.5	9.6	9.0	8.4	8.4	10.6	13.2	15.2	16.3	17.9	18.9	19.8	20.1	19.5	19.0	19.8	19.8	17.5	14.9	13.6	12.3	11.2	8.4	20.1	14.5	24
15	10.7	9.7	8.9	8.5	8.1	7.2	7.9	10.3	13.0	14.6	15.8	16.6	17.8	18.5	19.5	19.0	19.9	19.8	19.2	16.9	13.2	11.2	10.5	10.2	7.2	19.9	13.6	24
16	9.3	8.6	7.6	7.5	6.4	5.8	7.7	11.7	14.6	16.2	17.7	18.9	20.1	20.1	21.3	21.2	21.1	20.8	20.2	18.8	16.8	15.0	14.1	13.2	5.8	21.3	14.8	24
17	11.8	10.9	10.0	10.1	9.9	10.3	10.9	13.0	15.3	17.4	18.5	19.6	20.9	21.9	22.3	22.4	22.8	22.4	20.5	18.9	17.6	16.3	14.7	13.6	9.9	22.8	16.3	24
18	13.4	12.7	12.9	13.4	13.8	14.1	14.6	14.8	13.6	13.6	14.6	15.9	17.1	19.7	20.0	19.0	18.9	17.6	16.3	15.7	13.8	12.1	10.7	10.3	10.3	20.0	14.9	24
19	9.4	9.6	8.7	8.9	9.6	9.3	9.3	10.1	11.4	14.0	15.6	16.7	17.9	18.4	19.0	18.6	18.7	18.4	17.4	15.6	13.6	11.3	9.6	8.6	8.6	19.0	13.3	24
20	8.8	9.5	10.3	10.1	10.0	9.7	9.6	10.2	11.9	13.3	15.1	16.8	17.9	18.5	19.3	19.4	19.6	19.2	18.5	16.4	13.9	11.3	9.9	9.5	8.8	19.6	13.7	24
21	8.9	9.1	7.9	7.8	7.0	6.6	7.8	10.5	12.5	14.0	15.2	17.0	18.9	19.1	19.3	19.4	19.4	19.2	18.6	17.6	16.5	16.0	15.4	15.2	6.6	19.4	14.1	24
22	14.3	13.4	12.9	13.2	13.1	11.9	12.3	14.9	16.8	18.9	20.2	22.1	23.4	23.5	24.1	24.5	25.5	25.9	24.8	21.0	18.7	17.4	16.0	16.2	11.9	25.9	18.5	24
23	15.9	15.7	16.2	16.3	15.1	15.1	14.8	16.9	18.0	20.1	21.5	23.3	24.2	24.4	24.3	24.1	24.0	23.7	21.9	19.9	19.0	17.2	15.8	16.6	14.8	24.4	19.3	24
24	15.2	14.2	14.1	13.9	13.6	13.4	12.9	13.7	14.5	15.5	16.4	16.5	16.1	12.0	11.3	11.6	11.9	11.6	11.4	11.2	10.5	10.1	9.9	9.5	9.5	16.5	13.0	24
25	9.5	9.1	8.8	9.1	9.0	8.9	8.9	9.2	9.4	10.0	11.8	14.2	15.7	17.4	17.4	18.1	17.7	18.0	16.6	14.4	11.9	10.8	10.2	9.5	8.8	18.1	12.3	24
26	9.1	8.8	8.3	7.8	7.2	6.8	8.1	10.9	13.7	16.4	18.2	18.8	19.6	20.6	21.0	21.1	21.9	21.2	20.3	18.5	17.0	15.5	13.9	13.3	6.8	21.9	14.9	24
27	13.1	13.3	12.2	11.3	11.7	11.3	12.2	13.8	16.3	17.6	18.9	19.8	20.6	21.2	21.6	21.1	20.4	19.7	19.2	17.8	16.6	16.8	14.4	12.5	11.3	21.6	16.4	24
28	11.8	10.7	10.9	11.5	11.0	9.9	8.8	11.8	13.6	14.8	16.7	18.5	19.4	19.7	20.0	20.4	20.7	20.5	19.0	14.9	12.0	10.0	9.9	9.5	8.8	20.7	14.4	24
29	10.3	9.8	9.3	8.0	9.0	8.6	8.8	11.8	14.2	16.8	20.0	21.0	21.6	22.4	22.7	22.9	22.4	21.5	20.4	18.9	17.8	17.2	16.5	15.8	8.0	22.9	16.2	24
30	15.3	15.3	14.7	13.9	13.1	12.2	12.4	13.3	15.5	16.9	18.2	19.2	20.6	21.5	23.3	23.1	23.1	23.2	21.4	19.4	16.6	14.8	14.4	14.2	12.2	23.3	17.3	24
31	14.2	13.4	13.6	14.2	12.9	12.8	11.7	12.5	15.3	17.0	17.1	17.1	17.7	19.3	20.2	20.3	19.7	19.8	18.9	17.2	14.2	12.3	10.7	10.3	10.3	20.3	15.5	24
HOURLY MAX	18.4	17.9	17.1	16.3	15.1	15.1	16.3	18.7	21.3	23.1	25.4	26.7	27.6	28.9	29.1	29.1	28.3	28.0	27.7	24.3	21.7	19.6	19.2	19.2				
HOURLY AVG	12.6	12.2	11.7	11.5	11.2	11.0	11.6	13.5	15.3	17.0	18.5	19.6	20.5	21.2	21.6	21.8	21.7	21.1	20.3	18.3	16.1	14.6	13.5	13.0				

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

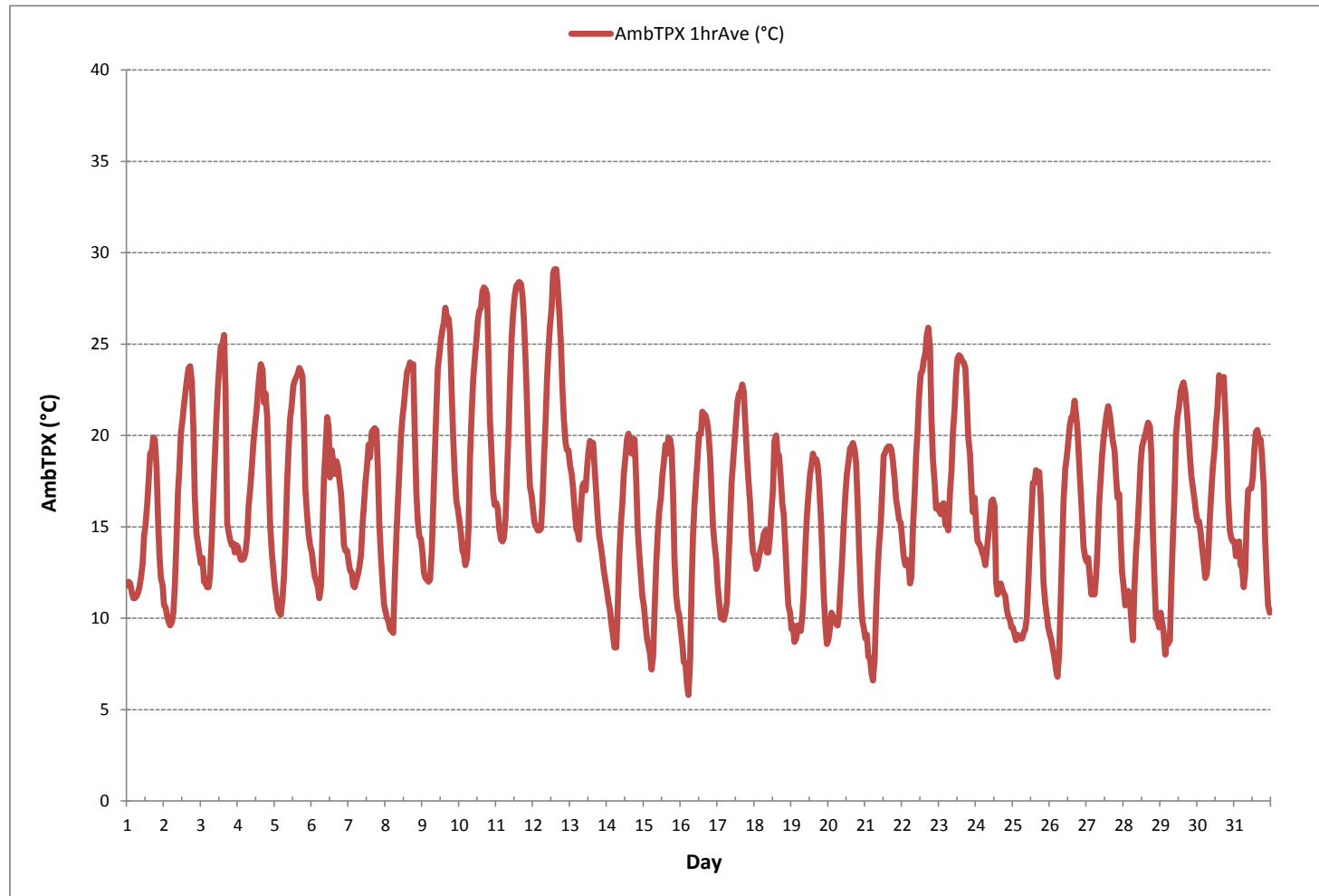
24 HR AVERAGES August 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	5.8	°C	@ HOUR	5	ON DAY	16
MAXIMUM 1-HR AVERAGE:	29.1	°C	@ HOUR	14	ON DAY	12
MAXIMUM 24-HR AVERAGE:	21.5	°C			ON DAY	12
OPERATIONAL TIME:					744	hrs
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	4.9				MONTHLY AVERAGE:	16.2 °C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



STATION TEMPERATURE

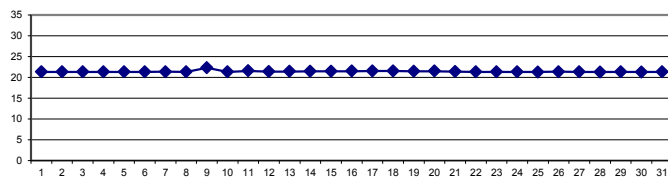
STATION TEMPERATURE Hourly Averages (StnTPX °C)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	21.4	21.3	21.3	21.3	21.4	21.5	21.4	21.3	21.3	21.3	21.3	21.3	21.2	21.3	21.1	21.1	21.1	21.3	21.4	21.4	21.3	21.4	21.5	21.5	21.1	21.5	21.3	24
2	21.5	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.3	21.2	21.1	21.0	21.0	21.0	21.3	21.0	21.5	21.4	21.5	21.5	21.6	21.5	21.4	21.0	21.6	21.3	24
3	21.4	21.4	21.4	21.4	21.4	21.5	21.4	21.4	21.4	21.3	21.1	20.9	21.2	21.1	21.3	21.1	21.4	21.2	21.4	21.5	21.5	21.4	21.4	21.3	20.9	21.5	21.3	24
4	21.4	21.4	21.4	21.4	21.4	21.5	21.4	21.3	21.3	21.2	21.1	21.1	21.0	20.9	21.1	21.2	21.1	21.3	21.3	21.5	21.4	21.5	21.5	21.5	20.9	21.5	21.3	24
5	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.3	21.0	21.1	21.1	20.9	21.3	21.0	21.5	21.2	21.6	21.5	21.5	21.4	21.4	21.5	20.9	21.6	21.3	24
6	21.5	21.5	21.5	21.4	21.4	21.4	21.4	21.3	21.3	21.2	21.1	21.0	21.1	21.2	21.1	21.3	21.3	21.3	21.4	21.4	21.3	21.3	21.4	21.5	21.0	21.5	21.3	24
7	21.5	21.4	21.4	21.3	21.4	21.4	21.4	21.4	21.4	21.2	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.3	21.5	21.6	21.5	21.4	21.4	21.5	21.1	21.6	21.4	24
8	21.5	21.5	21.4	21.4	21.4	21.5	21.4	21.4	21.3	21.2	21.1	21.1	21.1	21.0	21.1	21.2	21.3	21.2	21.7	21.5	21.5	21.4	21.4	21.5	21.0	21.7	21.3	24
9	21.5	21.5	21.4	21.4	21.4	21.4	21.4	21.4	21.5	22.1	23.0	23.3	24.2	24.7	24.7	24.9	24.3	21.3	21.7	21.6	21.5	21.4	21.5	21.6	21.3	24.9	22.3	24
10	21.5	21.5	21.5	21.5	21.4	21.5	21.4	21.4	21.4	21.2	21.2	21.0	20.8	21.1	21.0	21.0	21.1	21.4	21.6	21.5	21.6	21.6	21.5	21.5	20.8	21.6	21.3	24
11	21.5	21.5	21.5	21.5	21.5	21.5	21.6	21.5	21.5	22.0	22.7	22.2	21.4	20.9	21.3	21.3	21.3	21.4	21.5	21.6	21.5	21.5	21.6	21.5	20.9	22.7	21.6	24
12	21.5	21.5	21.5	21.4	21.4	21.5	21.4	21.4	21.4	21.3	21.1	21.2	21.1	21.3	21.1	21.2	21.4	21.4	21.5	21.4	21.5	21.5	21.5	21.5	21.1	21.5	21.4	24
13	21.4	21.4	21.4	21.4	21.5	21.5	21.4	21.4	21.3	21.3	21.4	21.3	21.3	21.3	21.4	21.4	21.4	21.4	21.5	21.5	21.5	21.5	21.5	21.5	21.3	21.5	21.4	24
14	21.4	21.5	21.6	21.4	21.4	21.7	21.4	21.6	21.3	21.3	21.2	21.2	21.2	21.2	21.2	21.3	21.4	21.5	21.6	21.6	21.6	21.6	21.6	21.5	21.2	21.7	21.4	24
15	21.5	21.5	21.6	21.4	21.7	21.4	21.6	21.5	21.4	21.2	21.2	21.2	21.2	21.2	21.3	21.3	21.4	21.5	21.6	21.6	21.6	21.6	21.6	21.7	21.2	21.7	21.5	24
16	21.7	21.5	21.7	21.6	21.5	21.7	21.6	21.4	21.4	21.4	21.4	21.3	21.3	21.4	21.4	21.4	21.5	21.5	21.5	21.5	21.5	21.6	21.6	21.6	21.3	21.7	21.5	24
17	21.7	21.6	21.5	21.6	21.7	21.5	21.7	21.6	21.5	21.4	21.4	21.3	21.3	21.3	21.3	21.3	21.5	21.6	21.5	21.6	21.6	21.6	21.6	21.6	21.3	21.7	21.5	24
18	21.6	21.6	21.7	21.7	21.5	21.6	21.5	21.5	21.5	21.6	21.6	21.5	21.4	21.4	21.4	21.4	21.4	21.5	21.5	21.5	21.6	21.5	21.4	21.7	21.4	21.7	21.5	24
19	21.5	21.5	21.6	21.5	21.4	21.7	21.3	21.5	21.4	21.5	21.2	21.2	21.2	21.3	21.3	21.4	21.4	21.5	21.5	21.5	21.5	21.5	21.5	21.7	21.2	21.7	21.4	24
20	21.4	21.6	21.3	21.5	21.4	21.5	21.4	21.5	21.3	21.3	21.0	21.9	22.0	21.9	21.8	21.3	21.3	21.4	21.5	21.5	21.5	21.5	21.6	21.5	21.0	22.0	21.5	24
21	21.4	21.5	21.6	21.3	21.6	21.5	21.3	21.6	21.2	21.3	21.2	21.2	21.2	21.2	21.3	21.3	21.3	21.3	21.4	21.4	21.5	21.5	21.5	21.5	21.2	21.6	21.4	24
22	21.5	21.5	21.4	21.4	21.4	21.5	21.4	21.4	21.3	21.2	21.1	21.1	21.0	20.9	21.3	21.1	21.4	21.1	21.6	21.4	21.4	21.4	21.4	21.4	20.9	21.6	21.3	24
23	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.3	21.2	21.1	20.9	21.1	20.9	21.1	21.4	21.3	21.2	21.4	21.4	21.4	21.4	21.4	21.4	20.9	21.4	21.3	24
24	21.4	21.3	21.4	21.4	21.4	21.4	21.5	21.4	21.3	21.3	21.2	21.1	21.2	21.2	21.3	21.3	21.2	21.2	21.3	21.4	21.3	21.2	21.5	21.2	21.1	21.5	21.3	24
25	21.4	21.3	21.4	21.1	21.3	21.4	21.2	21.4	21.3	21.2	21.2	21.2	21.0	21.1	21.1	21.2	21.2	21.2	21.3	21.4	21.4	21.4	21.5	21.3	21.0	21.5	21.3	24
26	21.6	21.3	21.6	21.3	21.6	21.3	21.5	21.4	21.4	21.2	21.0	21.1	21.2	21.2	21.2	21.3	21.3	21.4	21.4	21.4	21.4	21.4	21.5	21.4	21.0	21.6	21.4	24
27	21.4	21.4	21.4	21.6	21.4	21.4	21.4	21.5	21.4	21.2	21.1	21.0	21.0	21.1	21.2	21.2	21.3	21.3	21.4	21.4	21.4	21.4	21.4	21.4	21.0	21.6	21.3	24
28	21.4	21.4	21.5	21.5	21.3	21.4	21.5	21.3	21.3	21.1	21.0	20.9	20.9	21.0	21.1	21.1	21.2	21.2	21.4	21.5	21.5	21.4	21.4	21.6	20.9	21.6	21.3	24
29	21.4	21.4	21.4	21.5	21.2	21.5	21.4	21.3	21.3	21.4	21.1	21.0	21.1	21.1	21.1	21.2	21.3	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.0	21.5	21.3	24
30	21.4	21.4	21.3	21.3	21.3	21.4	21.4	21.5	21.3	21.2	21.2	21.1	21.1	21.1	21.0	21.0	21.3	21.3	21.3	21.3	21.4	21.4	21.4	21.4	21.0	21.5	21.3	24
31	21.4	21.4	21.4	21.3	21.3	21.4	21.5	21.3	21.2	21.1	21.1	21.2	21.2	21.2	21.2	21.2	21.3	21.4	21.4	21.4	21.5	21.4	21.4	21.4	21.1	21.5	21.3	24
HOURLY MAX	21.7	21.6	21.7	21.7	21.7	21.7	21.7	21.6	21.5	22.1	23.0	23.3	24.2	24.7	24.7	24.9	24.3	21.6	21.7	21.6	21.6	21.6	21.6	21.6	21.7			
HOURLY AVG	21.5	21.4	21.5	21.4	21.4	21.5	21.4	21.4	21.4	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.4	21.4	21.5	21.5	21.5	21.5	21.5	21.5				

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

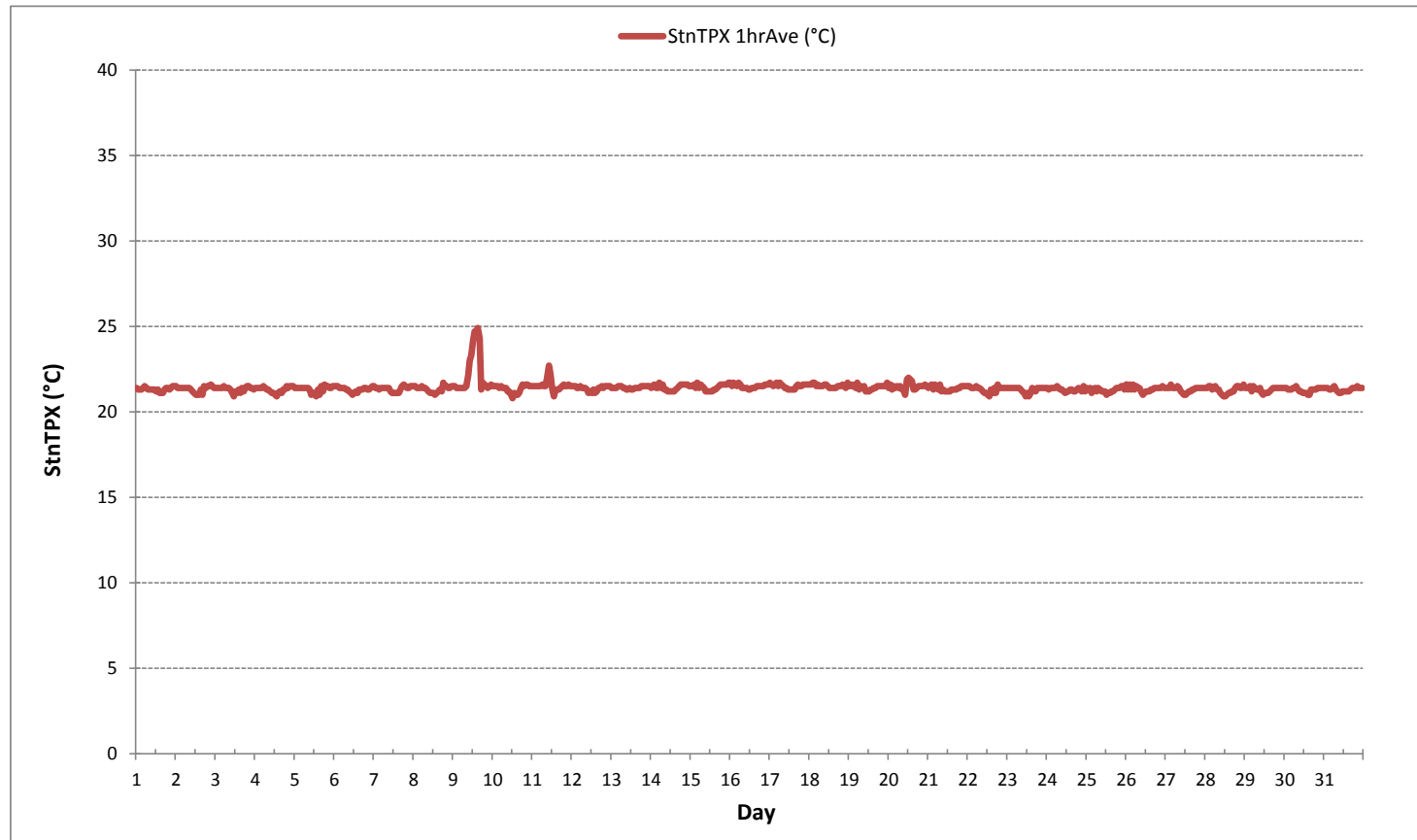
24 HR AVERAGES August 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	20.8	°C	@ HOUR	12	ON DAY	10
MAXIMUM 1-HR AVERAGE:	24.9	°C	@ HOUR	15	ON DAY	9
MAXIMUM 24-HR AVERAGE:	22.3	°C			ON DAY	9
OPERATIONAL TIME:					744	hrs
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	0.3				MONTHLY AVERAGE:	21.4 °C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX III
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE



API 100ASulphur Dioxide Analyzer Calibration

Date: August 9, 2017
Company/Airshed: PRAMP
Location/Station Name: RENO
Parameter: Sulphur Dioxide
Start Time 24 hr. (mst): 10:10
End Time 24 hr. (mst): 14:25
Calibration Method: Gas Dilution

Barometer/B.P./units: F.S. 05544 expires December 5, 2018 27.85 inHg
Thermometer/Station Temp: F.S. 160348895 expires April 8, 2018 22.5 °C
Weather Conditions: Mainly sunny
Calibration Purpose: routine monthly
Performed By/Reviewer: Limin Li Tom Bourque
Cal Gas Expiry Date: December 8, 2019
Converter Model & s/n (if applicable): n/a

Analyzer:

ID# or Serial Number: 841
Last Calibration Date: July 13, 2017
Previous C.F.: 1.000

Range ppb: 500
As Found C.F.: 0.993
New C.F.: 1.001

Calibration Standards:

Low Flow Meter ID/Expiry Date: Defender Low 152019 expires November 21, 2017
High Flow Meter ID/Expiry Date: Defender High 148944 expires November 21, 2017
Calibrator ID/Expiry Date: Sabio id# 17200415 expires May 16, 2018
Cal Gas Cylinder I.D. #: EY0000769
Cal Gas Conc. (ppm): 50.5

Standard Calibration Points for Ranges

Point	ppb
High	380
Mid	180
Low	90

ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

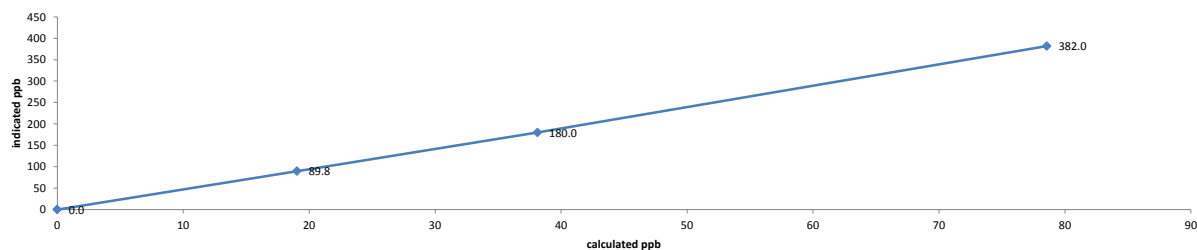
Calibrator Flow Rates (cc/min)				Calculated Concentration (ppb):	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total			
as found zero	5846	0.00	5846	0.0	1.0	n/a
as found high	5895	44.96	5940	382.2	385.9	0.993
adjusted zero	5846	0.00	5846	0.0	0.0	n/a
adjusted high	5895	44.96	5940	382.2	382.0	1.001
mid	5937	21.50	5958	182.2	180.0	1.012
low	5945	10.95	5956	92.8	89.8	1.034
calibrator zero	5846	0.00	5846	0.0	0.0	n/a
Average C.F.=						1.016

Linear Regression/Calibration Results:

Correlation Coefficient = 1.000 > or = 0.995
Slope = 0.998 0.95-1.05
b (Intercept as % of full scale) = 0.33% ± 3% F.S.
% change in C.F. from last cal = 0.69% ± 10%

LIMITS

API 100ASulphur Dioxide Analyzer Calibration



As found:
Slope: 0.975
Offset: 45.2 MV
Hvps: 763 VOLTS
Dcps: 2560 MV
Rcell Temp: 49.6 °C
Box Temp: 32.6 °C
Pmt Temp: 7.0 °C
Izs Temp: 45.0 °C
Pres: 25.0 IN-HG-A
Samp Fl: 684 CC/M
Pmt: 66.3 MV
Uv Lamp: 2236.4 MV
Lamp Ratio: 99.5 %
Str Lgt: 22.1 PPB
Drk Pmt: 26.3 MV
Drk Lmp: -16.8 MV
Expected Value: 324.0

As left:
Slope: 0.966
Offset: 47.3 MV
Hvps: 763 VOLTS
Dcps: 2560 MV
Rcell Temp: 50.1 °C
Box Temp: 36.1 °C
Pmt Temp: 6.9 °C
Izs Temp: 45.1 °C
Pres: 25.0 IN-HG-A
Samp Fl: 676 CC/M
Pmt: 63.1 MV
Uv Lamp: 2253.8 MV
Lamp Ratio: 100.3 %
Str Lgt: 22.9 PPB
Drk Pmt: 26.6 MV
Drk Lmp: -16.4 MV
Expected Value: 321.8

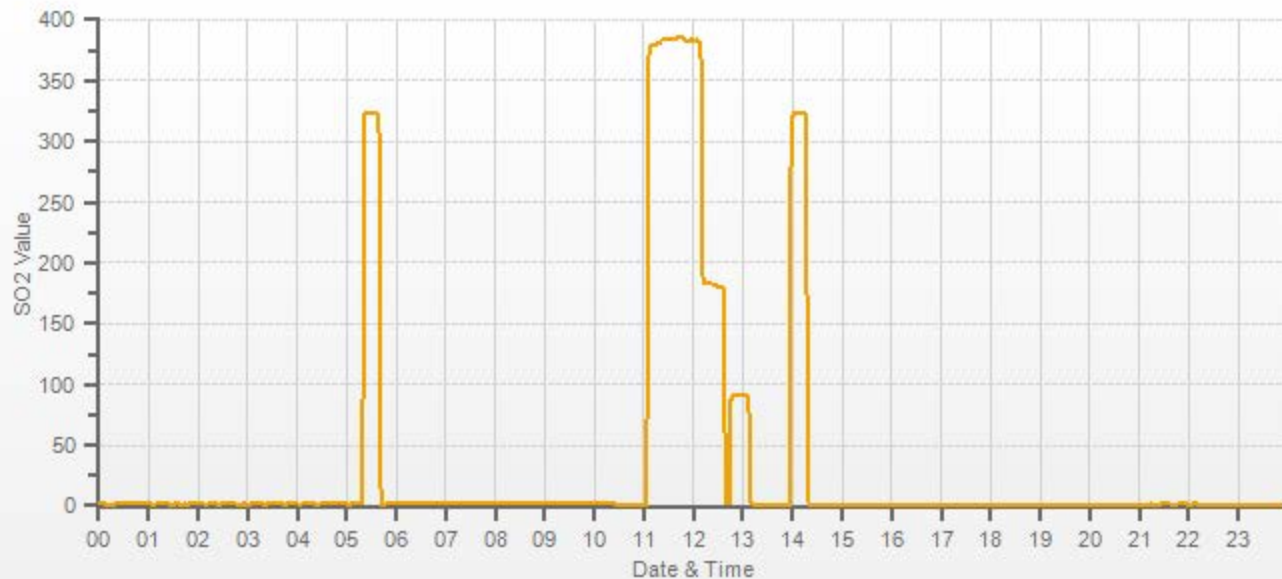
Comments:

The analyzer sample inlet filter was changed.

The manifold blower was found to be working normally.

Flow measurements after mid-point.

SO2[ppb] Station: PRAMP_RENO Daily: 17/08/09 Type: AVG 1 Min. [1 Min.]



— SO2[ppb]

TOTAL REDUCED SULPHUR



Thermo 431-TLE Total Reduced Sulphur Analyzer Calibration

Date:	August 9, 2017	Barometer/B.P./units:	F.S. 05544 expires December 5, 2018	27.85	inHg
Company/Airshed:	PRAMP	Thermometer/Station Temp:	F.S. 160348895 expires April 8, 2018	22.5	°C
Location/Station Name:	RENO	Weather Conditions:	Mainly sunny		
Parameter:	Total Reduced Sulphur	Calibration Purpose:	routine monthly		
Start Time 24 hr. (mst):	9:50	Performed By/Reviewer:	Limin Li	Tom Bourque	
End Time 24 hr. (mst):	14:25	Cal Gas Expiry Date:	January 6, 2018		
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	CD Nova-101 & #534		

Analyzer:	ID# or Serial Number:	1162460022	Range ppb:	100
	Last Calibration Date:	July 13, 2017	As Found C.F.:	1.039
	Previous C.F.:	1.000	New C.F.:	1.000

Calibration Standards:	Standard Calibration Points for Ranges	
Low Flow Meter ID/Expiry Date: Defender Low 152019 expires November 21, 2017	Point	ppb
High Flow Meter ID/Expiry Date: Defender High 148944 expires November 21, 2017	High	78
Calibrator ID/Expiry Date: EnviroNics id# 1991 expires March 16, 2018	Mid	38
Cal Gas Cylinder I.D. #: BLM002508	Low	19
Cal Gas Conc. (ppm): 10.2		

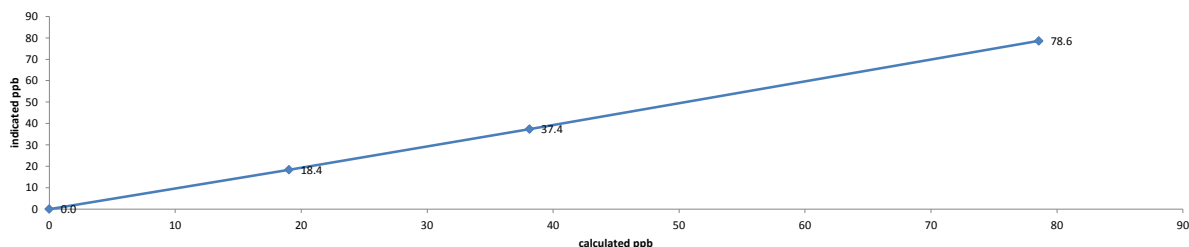
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	Concentration (ppb):		
as found zero	7534	0.00	7534	0.0	0.1	n/a
as found high	7472	58.00	7530	78.6	75.7	1.039
adjusted zero	7534	0.00	7534	0.0	0.0	n/a
adjusted high	7472	58.00	7530	78.6	78.6	1.000
mid	7500	28.14	7528	38.1	37.4	1.019
low	7509	14.04	7523	19.0	18.4	1.035
calibrator zero	7534	0.00	7534	0.0	0.1	n/a
Average C.F. =						1.018

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	> or = 0.995
Slope =	0.998		0.95-1.05
b (Intercept as % of full scale) =	0.42%		± 3% F.S.
% change in C.F. from last cal =	-3.91%		± 10%

Thermo 431-TLE Total Reduced Sulphur Analyzer Calibration



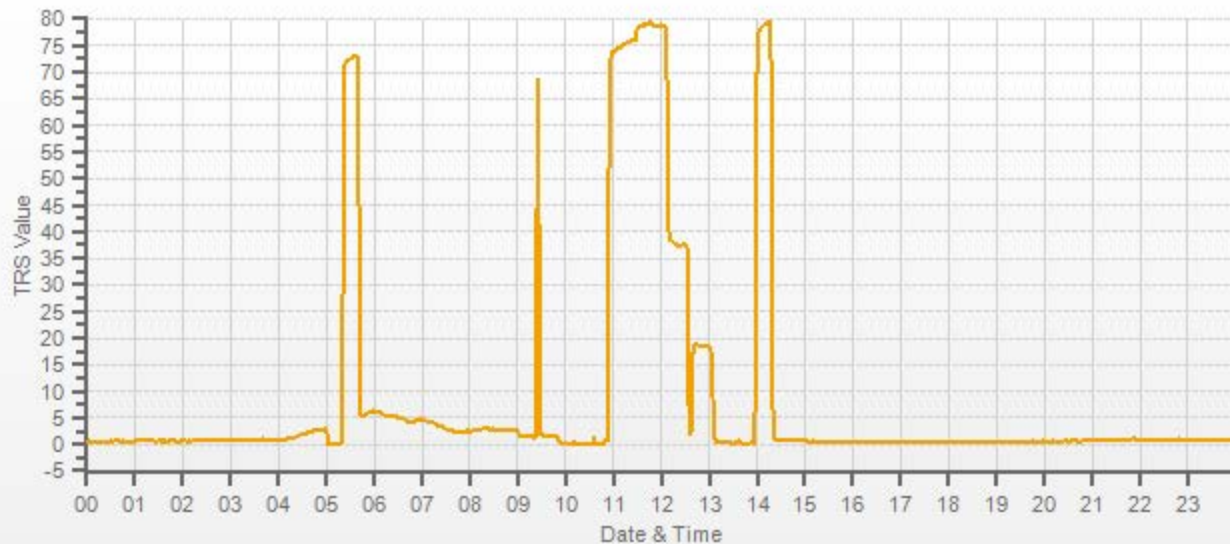
As found:		As left:	
Bkg:	1.96	Bkg:	2.06
Coef:	0.981	Coef:	0.998
Pmt:	-706.3 V	Pmt:	-706.3 V
Flash:	989V	Flash:	988 V
Internal:	33.6 °C	Internal:	36.5 °C
Chamber:	45°C	Chamber:	45.1 °C
Perm Oven Gas:	35.00°C	Perm Oven Gas:	36.18 °C
Perm Oven Heater:	34.16°C	Perm Oven Heater:	35.38 °C
Pressure:	641.9 mmHg	Pressure:	640.7 mmHg
Sample Flow:	0.413 L/MIN	Sample Flow:	0.414L/MIN
Lamp Intensity:	83 %	Lamp Intensity:	83%
Converter:	825°C	Converter:	825°C
Converter Set:	825°C	Converter Set:	825°C
Averaging Time:	120 Second	Averaging Time:	120 Second
Expected Value:	77.0	Expected Value:	74.7

Comments:

The analyzer sample inlet filter was changed. The analyzer cooling fan filter(s) were cleaned. The manifold blower was found to be working normally.

Manual check at 9:23-9:28.
Flow measurements after mid-point.

TRS[ppb] Station: PRAMP_RENO Daily: 17/08/09 Type: AVG 1 Min. [1 Min.]



— TRS[ppb]



Thermo 431-TLE Total Reduced Sulphur Analyzer Calibration

Date:	August 11, 2017	Barometer/B.P./units:	F.S. 05544 expires December 5, 2018	27.80	inHg
Company/Airshed:	PRAMP	Thermometer/Station Temp:	F.S. 160348895 expires April 8, 2018	22.3	°C
Location/Station Name:	RENO	Weather Conditions:	Mainly sunny		
Parameter:	Total Reduced Sulphur	Calibration Purpose:	repeat		
Start Time 24 hr. (mst):	8:50	Performed By/Reviewer:	Limin Li	Tom Bourque	
End Time 24 hr. (mst):	12:15	Cal Gas Expiry Date:	January 6, 2018		
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	CD Nova-101 & #534		

Analyzer:	ID# or Serial Number:	1162460022	Range ppb:	100
	Last Calibration Date:	August 9, 2017	As Found C.F.:	1.039
	Previous C.F.:	1.000	New C.F.:	1.000

Calibration Standards:	Standard Calibration Points for Ranges	
Low Flow Meter ID/Expiry Date: Defender Low 152019 expires November 21, 2017	Point	ppb
High Flow Meter ID/Expiry Date: Defender High 148944 expires November 21, 2017	High	78
Calibrator ID/Expiry Date: Sabio id# 17200415 expires May 16, 2018	Mid	38
Cal Gas Cylinder I.D. #: BLM002508	Low	19
Cal Gas Conc. (ppm): 10.2		

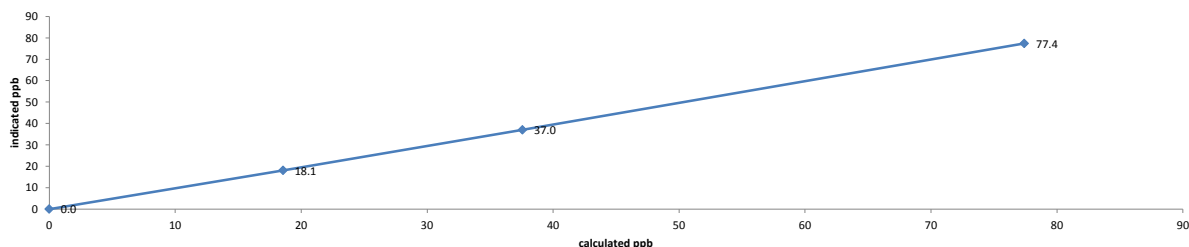
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	Concentration (ppb):		
as found zero	7356	0.00	7356	0.0	0.0	n/a
as found high	7300	55.83	7356	77.4	74.5	1.039
adjusted zero	7356	0.00	7356	0.0	0.0	n/a
adjusted high	7300	55.83	7356	77.4	77.4	1.000
mid	7401	27.36	7428	37.6	37.0	1.015
low	7393	13.48	7406	18.6	18.1	1.026
calibrator zero	7356	0.00	7356	0.0	0.0	n/a
Average C.F. =						1.014

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	> or = 0.995
Slope =	0.999		0.95-1.05
b (Intercept as % of full scale) =	0.30%		± 3% F.S.
% change in C.F. from last cal =	-3.91%		± 10%

Thermo 431-TLE Total Reduced Sulphur Analyzer Calibration



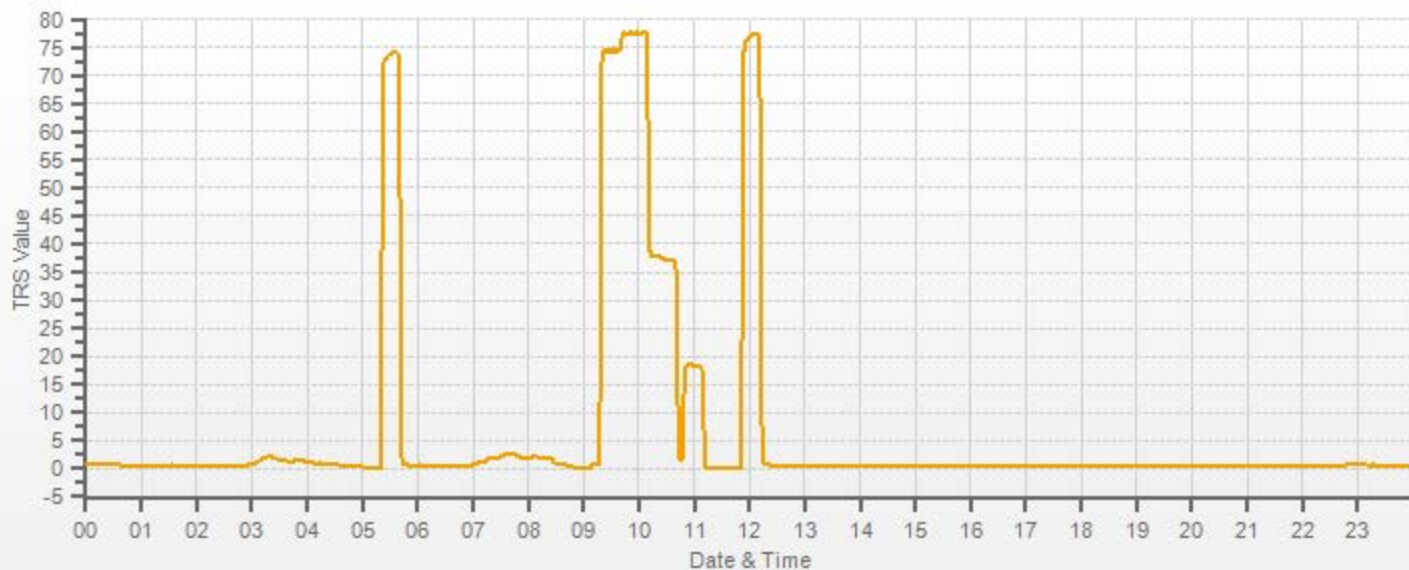
As found:		As left:	
Bkg:	2.07	Bkg:	2.09
Coef:	0.998	Coef:	1.012
Pmt:	-706.3 V	Pmt:	-706.3 V
Flash:	989V	Flash:	988 V
Internal:	33.4 °C	Internal:	33.9 °C
Chamber:	45°C	Chamber:	45.1 °C
Perm Oven Gas:	35.00°C	Perm Oven Gas:	35.00 °C
Perm Oven Heater:	34.16°C	Perm Oven Heater:	34.17 °C
Pressure:	639.8 mmHg	Pressure:	640.7 mmHg
Sample Flow:	0.412 L/MIN	Sample Flow:	0.414L/MIN
Lamp Intensity:	83 %	Lamp Intensity:	83%
Converter:	825°C	Converter:	825°C
Converter Set:	825°C	Converter Set:	825°C
Averaging Time:	120 Second	Averaging Time:	120 Second
Expected Value:	74.7	Expected Value:	74.7

Comments:

No zero adjustment was required/made. The "as found" zero value was copied to the adjusted zero value field for linearity calculation purposes.

TRS Repeat calibration due to slow response on Aug 09.
Flow measurements after mid-point.

TRS[ppb] Station: PRAMP_RENO Daily: 17/08/11 Type: AVG 1 Min. [1 Min.]



— TRS[ppb]

TOTAL HYDROCARBON



Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	August 9, 2017	Barometer/B.P./units:	F.S. 05544 expires December 5, 2018	27.85	inHg
Company/Airshed:	PRAMP	Thermometer/Station Temp:	F.S. 160348895 expires April 8, 2018	22.5	°C
Location/Station Name:	RENO	Weather Conditions:	Mainly sunny		
Parameter:	CH4 / NMHC / THC	Calibration Purpose:	routine monthly		
Start/End Time 24 hr. (mst):	13:36/17:05	Performed By/Reviewer:	Limin Li	Tom Bourque	
Calibration Method:	Gas Dilution	Cal Gas Expiry Date:	October 24, 2022		

Analyzer:		Correction Factors:		
ID# or Serial Number:	1314057759	Previous C.F.:	As Found C.F.:	New C.F.:
Measured Flow:	1.25LPM	CH ₄ = 0.997	0.945	0.999
Last Calibration Date:	July 13, 2017	NMHC = 1.000	0.997	1.000
Range ppm:	20 CH ₄ /20 NMHC/40 THC	THC = 0.998	0.970	0.999

Calibration Standards:		Standard Calibration Points for Analyzer Range of 20/20/40 ppm			
Low Flow Meter ID/Expiry Date:	Defender Low 152019 expires November 21, 2017	Point	CH ₄	NMHC	THC
High Flow Meter ID/Expiry Date:	Defender High 148944 expires November 21, 2017	High	13.00	13.00	26.00
Calibrator ID/Expiry Date:	Enviroconics id# 1991 expires March 16, 2018	Mid	7.00	7.00	14.00
Cal Gas Cylinder I.D. #:	LL165367	Low	3.00	3.00	6.00
CH ₄ Cylinder Conc.:	590.0				
	207.0				
	=C ₃ H ₈ Cylinder Conc.				
CH ₄ expressed as C ₃ H ₈ =	569.3				
	1159.3				
	=total CH ₄ equivalent				

ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015											Correction Factors:		
Calibrator Flow Rates (cc/min)				Calculated CH ₄ (ppm)	Calculated NMHC (ppm)	Calculated THC (ppm)	Indicated CH ₄ (ppm)	Indicated NMHC (ppm)	Indicated THC (ppm)		CH ₄	NMHC	THC
Point	Diluent	Cal Gas	Total Flow										
as found zero	2496	0.00	2496	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
as found high	2493	60.82	2554	14.05	13.56	27.61	14.86	13.59	28.45	0.945	0.997	0.970	
adjusted zero	2496	0.00	2496	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
adjusted high	2493	60.82	2554	14.05	13.56	27.61	14.06	13.56	27.62	0.999	1.000	0.999	
mid	2497	30.24	2527	7.06	6.81	13.87	7.02	6.80	13.82	1.006	1.002	1.004	
low	2495	13.99	2509	3.29	3.17	6.46	3.27	3.15	6.42	1.006	1.008	1.007	
calibrator zero	2496	0.00	2496	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
Average C.F. =											1.004	1.003	1.003

Linear Regression/Calibration Results:				LIMITS	
Correlation Coefficient =	1.000	1.000	1.000	> or = 0.995	
Slope =	1.001	1.001	1.001	0.95-1.05	
b (Intercept as % of full scale) =	-0.09%	-0.06%	-0.08%	± 3% F.S.	
% change in C.F. from last cal =	5.17%	0.25%	2.77%	± 10%	

As Left Instrument Diagnostics:									
Interface Board Voltages:	Bias Supply:	-290.8 V		Calibration History cnt'd:	NM Peak Area:	86193			
Temperatures:	Detector Oven:	175°C		Crucial Settings:	Methane Start:	8			
	Filter:	175°C			Methane End:	16			
	Column Oven:	75°C			Backflush:	18			
	Internal:	37.9°C			NMHV Start:	26			
Cylinder Pressures/reg.:	Carrier:	2300 psi	50 psi	Run History>1:	NMHC End:	56			
	Fuel:	1700 psi	50 psi		Date:	09Aug17 13:12			
	Span Gas:	1550 psi	18 psi		Time:	25			
	Zero Air Generator:	45 psi			CH ₄ PK HT:	2511			
Internal Pressures:	Carrier:	31.3 psi			CH ₄ RT:	11.6			
	Fuel:	41.6 psi			CH ₄ Baseline:	2117			
	Air:	25.9 psi			CH ₄ LOD:	82			
					CH ₄ SD:	27			
FID Status:	Status:	LIT			CH ₄ CONC:	1.96			
	Counts:	25570			NM PK HT:	0			
	Flame:	405.0 °C			NM Peak Area:	0			
	Det Base:	175 °C			NM CONC:	0.00			
Flame and Power Stats:	Last Power On:	29Jun2017 11:55:49			NM Base Start:	2103			
	Flameouts:	4			NM Base End:	2091			
	Det Oven at Start:	23.6			NM LOD:	13			
	Col Oven at Start:	23.6			NM Start IDX:	4			
Calibration History:	Time:	13Jul17 13:18		Expected Values:	NM End IDX:	49			
	Type:	SPAN			NM Max Slope:	1.4e+00			
	Status:	GOOD			NM Min Slope:	-1.4e+00			
	Check/Adjust:	ADJUST			NM PT Count:	0			
	CH ₄ Span Conc:	14.24			Previous CH ₄ :	10.27			
	CH ₄ SP Ratio:	0.000782			Previous NMHC:	11.11			
	CH ₄ RT:	11.6			Previous THC:	21.41			
	CH ₄ PK IDX:	18			New CH ₄ :	9.88			
	CH ₄ PK HT:	18207			New NMHC:	11.18			
	NM Span Conc:	13.79			New THC:	21.08			
	NM SP Ratio:	0.00016							

Comments:
The analyzer sample inlet filter was changed.

No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.

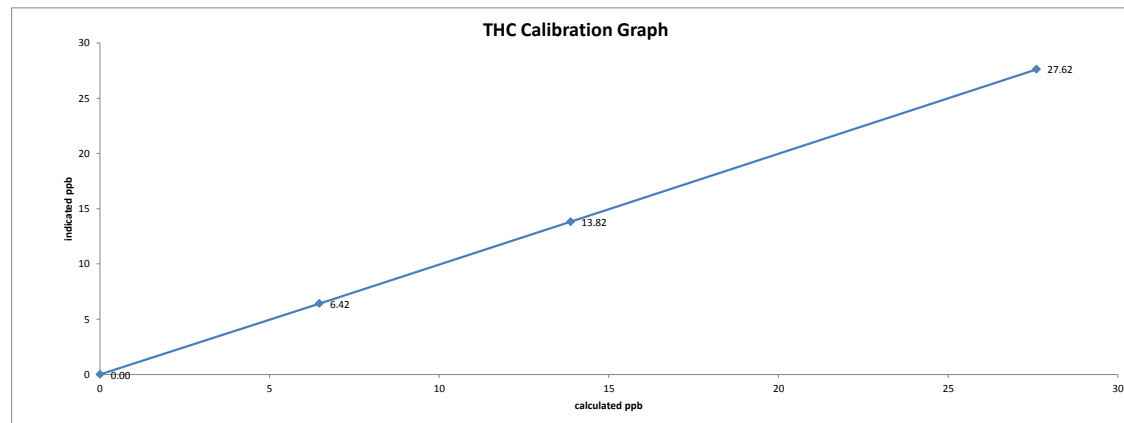
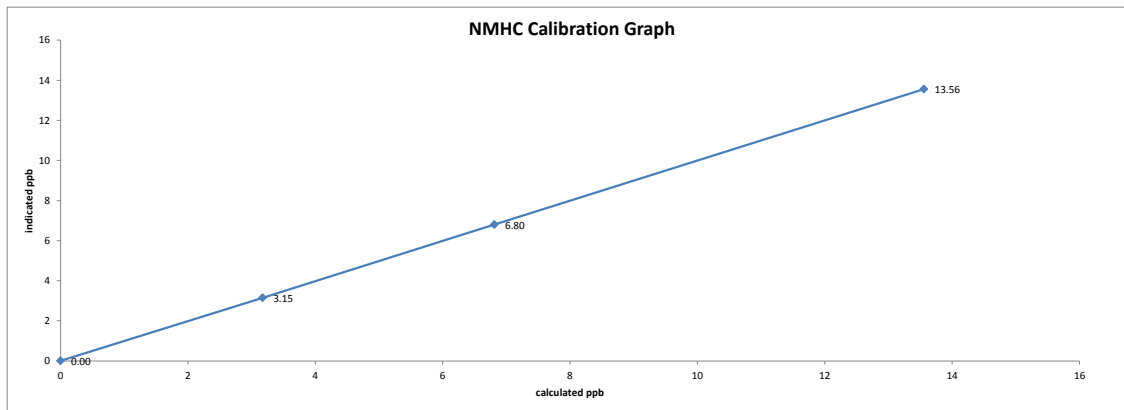
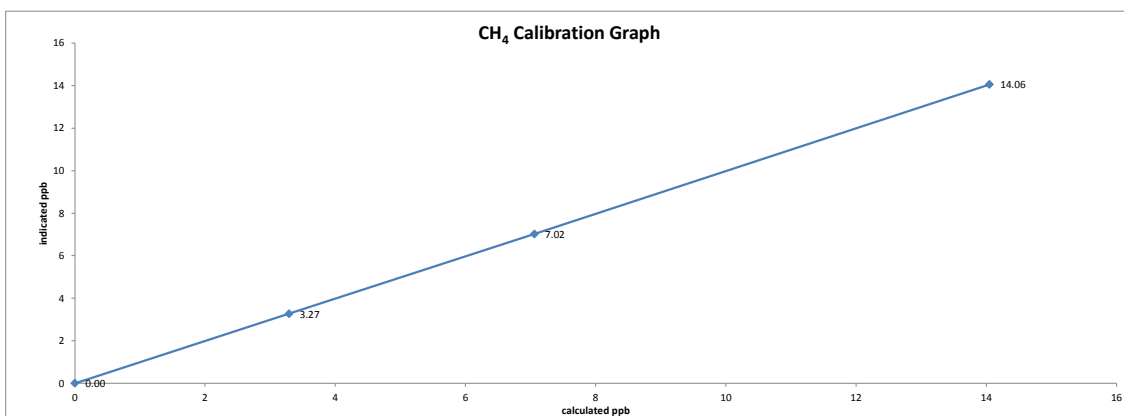
The analyzer cooling fan filter(s) were cleaned.

The manifold blower was found to be working normally.

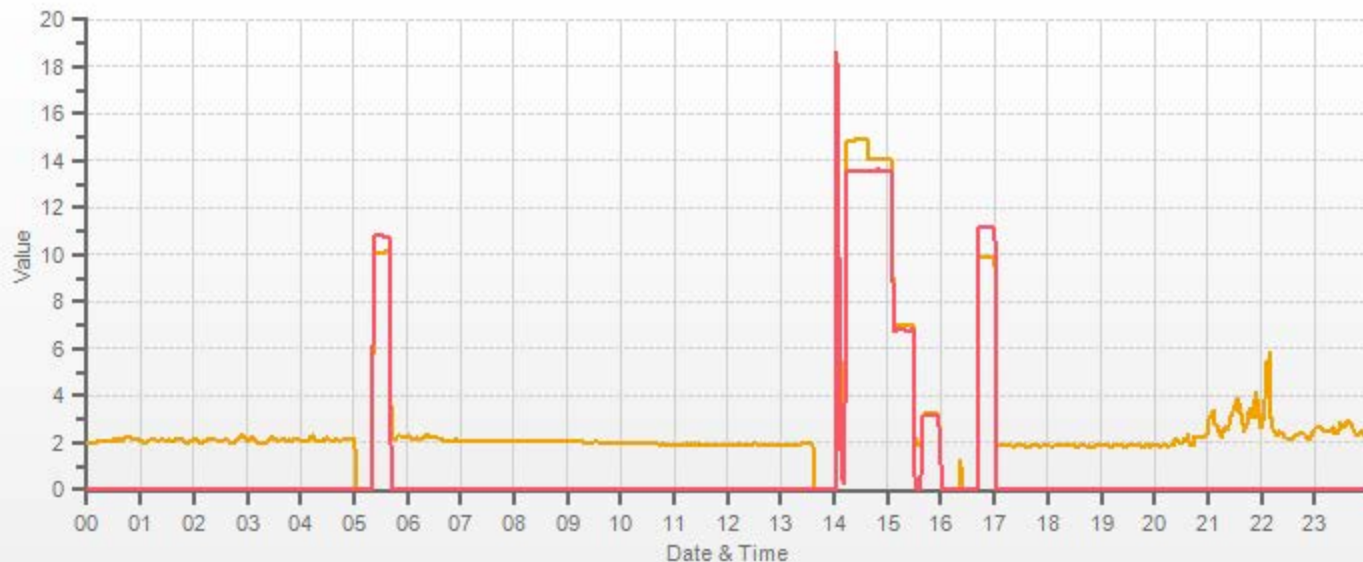
As-found restarted after correctly opening cylinder gas valve.
Flow measurements after mid-point.

Date: August 9, 2017
Company/Airshed: PRAMP
Location/Station Name: RENO

Start/End Time 24 hr. (mst): 13:36/17:05
Calibration Purpose: routine monthly
Calibration Method: Gas Dilution

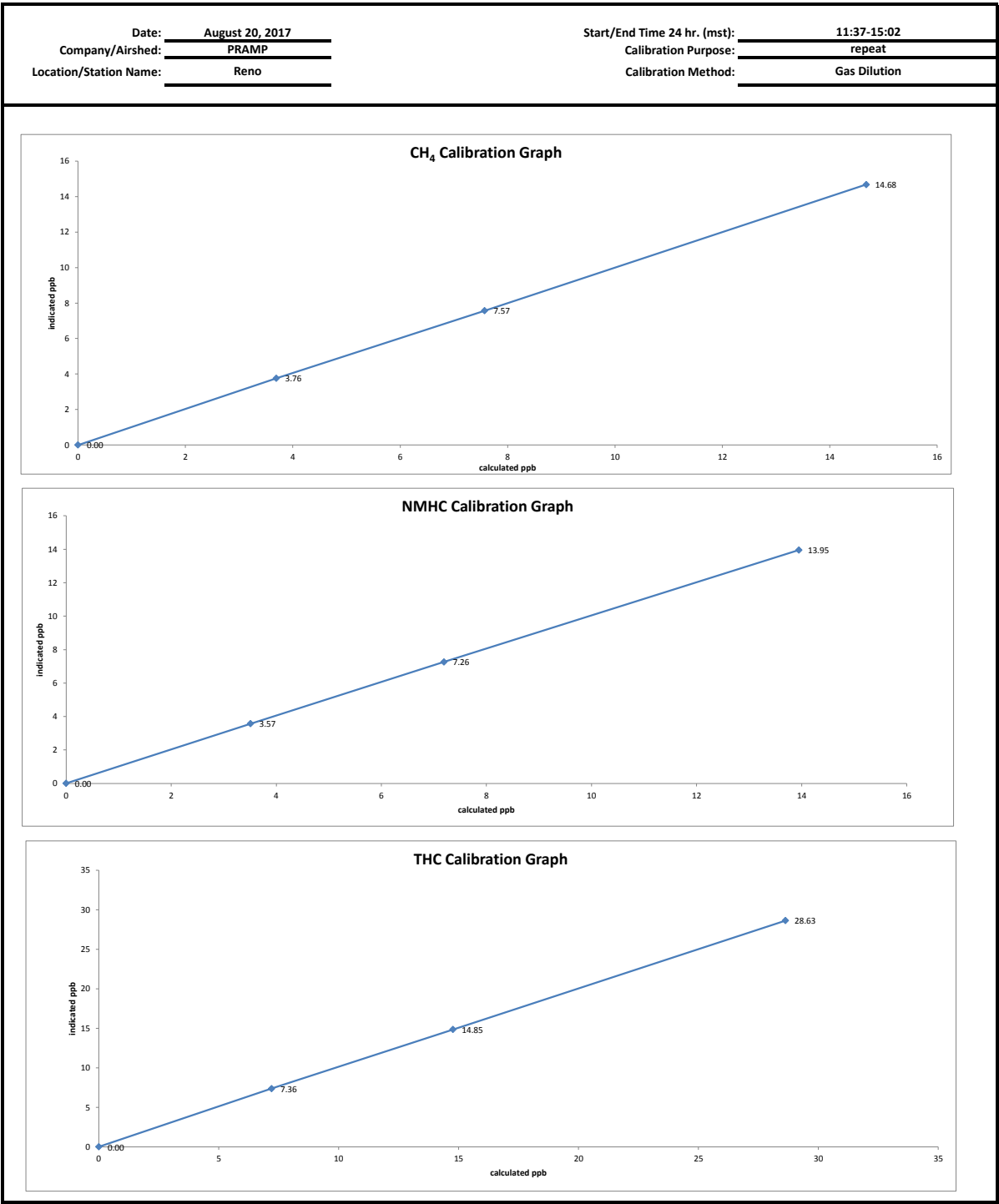


Station: PRAMP_RENO Daily: 17/08/09 Type: AVG 1 Min. [1 Min.]

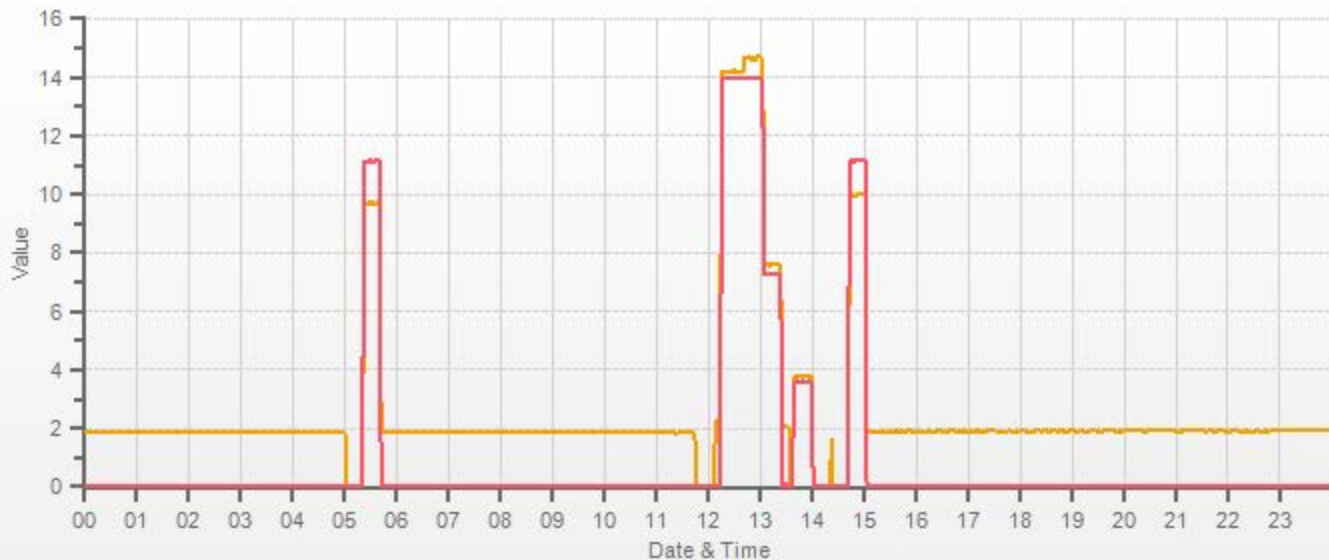


— CH4[ppm]

— NMHC[ppm]



Station: PRAMP_RENO Daily: 17/08/20 Type: AVG 1 Min. [1 Min.]



— CH4[ppm]

— NMHC[ppm]

WIND SYSTEM



Meteorological Sensor Audit/Calibration

Location Information

Company: PRAMP
 Audit Location: Reno
 Audit Date: April 6, 2017

Performed By: Limin Li
 Reviewed By: Trina Whitsitt
 Start /EndTime (mst): 15:20/16:50

Wind Sensor Information

Sensor ID Data:		Sensor Outputs:	
Sensor Make:	RM Young	Velocity Voltage Output Range:	0-1 V
Sensor Model:	05305VK	Velocity Unit Output Range:	0-200 km/h
Serial #:	149769	Direction Voltage Output Range:	0-1 V
Previous Cal/Audit Date:	February 16, 2017	Direction Unit Output Range:	0-360 degrees

Wind Calibrator Information

Calibrator Make/ Model: RM Young 18802
 Maxxam Unit ID #: 13-3357
 Serial #: CA 0309
 Certification Date: October 6, 2016

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

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.1	0.1	-
1000	18.4	18.4	18.4	0.999
2000	36.9	36.8	36.8	1.003
3000	55.3	55.1	55.1	1.003
4000	73.7	73.5	73.5	1.002
5000	92.2	92.0	92.0	1.003
6000	110.6	110.4	110.4	1.002
7000	129.0	128.9	128.9	1.001
8000	147.4	147.3	147.3	1.001
9000	165.9	165.9	165.9	1.000
10000	184.3	184.4	184.4	0.999
The audit meets AMD requirements.			Average Correction Factor=	1.001

Wind Direction Audit Data ****+/- 5° of the absolute average degrees difference for all points is the limit****

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	0	353	0.2	1.7	0.9
30	330	30	328	0.4	2.1	1.3
60	300	61	299	-0.8	1.2	1.0
90	270	91	269	-1.1	0.9	1.0
120	240	121	240	-1.3	0.2	0.7
150	210	151	211	-1.2	-0.7	0.9
180	180	181	181	-1.3	-1.2	1.3
210	150	211	151	-0.7	-1.4	1.1
240	120	240	121	0.0	-1.4	0.7
270	90	270	91	0.5	-1.1	0.8
300	60	299	61	1.3	-0.9	1.1
330	30	328	30	2.2	0.3	1.3
355	0	353	0	1.7	0.2	0.9
The audit meets AMD requirements.			Average Absolute Degrees Difference=			1.0

Comments: Wind speed gain adjusted before calibration.

CALIBRATORS

Company Maxxam		Operator: Micheal Espiritu	
Calibrator:		Flow Measurement Device:	
Make/Model	Sabio 2010	Make/Model	Mesa Defender 530
Serial Number	17200415	Serial Number	L-152019 H-148944
Last Verification Date	May 2016	Temperature (°C)	25.0 C
NO Cylinder S/N	EY0000597	Barometric Pressure	697 mmhg
NO [PPM]	49.0	NOx [PPM]	49.0
Expiry Date	December 2019		

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

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
5028	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
4930	78.7	0.783	0.783	0.809	-0.012	0.797	3%	2%
4936	38.6	0.383	0.383	0.396	-0.006	0.390	3%	2%
4935	19.4	0.193	0.193	0.199	-0.003	0.196	3%	2%
Absolute Average Percent Difference							3%	2%

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

NO	LIMITS	NOx
Correlation= 1.0000	≥ 0.990	Correlation= 1.0000
m (Slope)= 1.0334	0.90-1.10	m (Slope)= 1.0181
b (Intercept % of FS)= -0.0105	± 3% F.S.	b (Intercept % of FS)= -0.0148

Flow	O ₂ Conc (LC)	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
4930	0.000	0.000	0.806	-0.013	0.795	NO ₂	% Diff. Limit
4930	1.425	0.523	0.283	0.511	0.794	0%	± 10%
4930	0.825	0.278	0.528	0.266	0.795	0%	± 10%
4930	0.386	0.095	0.711	0.085	0.796	3%	± 10%
Absolute Average Percent Difference						1%	± 10%

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

NO₂	LIMITS
Correlation= 1.0000	≥ 0.995
m (Slope)= 0.9998	0.90-1.10
b (Intercept % of FS)= -1.1702	± 3% F.S.

AENV Standards		NO_x Analyzer	
Audit Calibrator			
Make/Model	Teco 146i	Make/Model	Teco 42i
Serial/AMU Number	AMU 1809	Serial/AMU Number	AMU 1868
SRM Gas Cylinder No.	CAL018101	Last Calibration Date	May 16, 2017
Cylinder Conc. (ppm)	48.79	Full Scale (ppm)	1.0
		Cylinder Gas Expiry Date	March 2019

COMMENTS: Contains 50.4 ppm SO₂.

Auditor: Al Clark
Operator Signature: 

Date: May 16, 2017
Location: McIntyre Center Edmonton

Company Maxxam		Operator: Mike	
Calibrator:		Flow Measurement Device:	
Make/Model	EnviroNics 2000	Make/Model	Bios Defender 530
Serial Number	1991	Serial Number	Hi148944 Lo 152019
Last Verification Date	March 31, 2016	Temperature (°C)	24.5
NO Cylinder S/N	EY0000597	Barometric Pressure	699
NO [PPM]	49.0 NOx [PPM]		49.0
Expiry Date	December 8, 2019		

Dilution Flow (sccm)			
Pt. #1	4902	Pt. #2	4935
Pt. #3	4957		
Gas Flow (sccm)			
Pt. #1	79.3	Pt. #2	38.7
Pt. #3	19.4		

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
4976	0.0	0.0000	0.0000	0.0001	0.0000	0.0001	Limit ± 10%	
4981	79.3	0.7801	0.7801	0.7898	0.0000	0.7898	1%	1%
4972	38.7	0.3814	0.3814	0.3841	0.0002	0.3843	1%	1%
4976	19.4	0.1910	0.1910	0.1913	0.0003	0.1916	0%	0%
Absolute Average Percent Difference							1%	1%

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

NO	LIMITS	NOx
Correlation= 1.0000	≥ 0.990	Correlation= 1.0000
m (Slope)= 1.0130	0.90-1.10	m (Slope)= 1.0129
b (Intercept % of FS)= -0.1190	± 3% F.S.	b (Intercept % of FS)= -0.1029

Flow	O ₃ Conc	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
4981	0.000	0.0000	0.7925	-0.0001	0.7924	NO ₂	% Diff. Limit
4981	0.400	0.5347	0.2578	0.5279	0.7857	-1%	± 10%
4981	0.200	0.2490	0.5435	0.2478	0.7913	0%	± 10%
4981	0.090	0.1090	0.6835	0.1095	0.7927	1%	± 10%
Absolute Average Percent Difference						0%	± 10%

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

NO₂	LIMITS	
Correlation= 1.0000	≥ 0.995	
m (Slope)= 0.9864	0.90-1.10	
b (Intercept % of FS)= 0.1136	± 3% F.S.	

AENV Standards	NO_x Analyzer
Audit Calibrator	
Make/Model	Thermo 146i
Serial/AMU Number	1809
SRM Gas Cylinder No.	CAL018140
Cylinder Conc. (ppm)	48.79
	Make/Model
	Thermo 42i
	Serial/AMU Number
	1868
	Last Calibration Date
	March 15, 2017
	Full Scale (ppm)
	1.0
	Cylinder Gas Expiry Date
	March 28, 2019

COMMENTS: Gas has ~50ppm SO₂

Auditor: Shea Beaton
Operator Signature: [Signature]

Date: March 16, 2017
Location: McIntyre Center Edmonton

Company <u>Maxxam</u>		Operator: <u>Chris</u>	
Calibrator:		Flow Measurement Device:	
Make/Model	<u>API 700</u>	Make/Model	<u>Definer 530</u>
Serial Number	<u>829</u>	Serial Number	<u>H-148944, L-152019</u>
Last Verification Date	<u>February 3, 2016</u>	Temperature (°C)	<u>23.5</u>
NO Cylinder S/N	<u>EY0000597</u>	Barometric Pressure	<u>707.1 mmHg</u>
NO [PPM]	<u>49.0</u> NOx [PPM] <u>49.0</u>		
Expiry Date	<u>December 8, 2019</u>		

Dilution Flow (sccm)			
Pt. #1 <u>4846</u>	Pt. #2 <u>4888</u>	Pt. #3 <u>4908</u>	
Gas Flow (sccm)			
Pt. #1 <u>80.6</u>	Pt. #2 <u>38.9</u>	Pt. #3 <u>18.4</u>	

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
	0.0	0.0000	0.0000	0.0000	0.0001	0.0001	Limit ± 10%	
4927	80.6	0.8016	0.8016	0.8021	0.0015	0.8036	0.1%	0.2%
4927	38.9	0.3867	0.3867	0.3862	0.0001	0.3863	-0.1%	-0.1%
4927	18.4	0.1830	0.1830	0.1820	0.0004	0.1824	-0.5%	-0.4%
Absolute Average Percent Difference							0.2%	0.1%

LINEAR REGRESSION ANALYSIS				<i>y=mx+b (where x=calculated concentration, y=indicated concentration)</i>			
NO		LIMITS		NOx			
Correlation=	1.0000	≥ 0.990		Correlation=	1.0000		
m (Slope)=	1.0010	0.90-1.10		m (Slope)=	1.0027		
b (Intercept % of FS)=	-0.0604	± 3% F.S.		b (Intercept % of FS)=	-0.0652		

Flow	O ₃ Conc	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
4927	0	0.0000	0.8016	0.0010	0.8020	NO ₂	% Diff. Limit
4927	500	0.5450	0.2566	0.5421	0.7987	-0.7%	± 10%
4927	250	0.2797	0.5219	0.2797	0.8016	-0.4%	± 10%
4927	80	0.0954	0.7062	0.0958	0.8026	-0.6%	± 10%
Absolute Average Percent Difference						1%	± 10%

LINEAR REGRESSION ANALYSIS				<i>y=mx+b (where x=calculated concentration, y=indicated concentration)</i>			
NO ₂		LIMITS					
Correlation=	1.0000	≥ 0.995					
m (Slope)=	0.9931	0.90-1.10					
b (Intercept % of FS)=	0.1220	± 3% F.S.					

AENV Standards		NO_x Analyzer	
Audit Calibrator			
Make/Model	<u>Thermo 146i</u>	Make/Model	<u>Thermo 42i</u>
Serial/AMU Number	<u>AMU1809</u>	Serial/AMU Number	<u>AMU 1868</u>
SRM Gas Cylinder No.	<u>CAL018140</u>	Last Calibration Date	<u>January 25, 2017</u>
Cylinder Conc. (ppm)	<u>48.79</u>	Full Scale (ppm)	<u>1.0</u>
		Cylinder Gas Expiry Date	<u>March 25, 2019</u>

COMMENTS: _____

Auditor: Shana Beaton Date: January 27, 2017

Operator Signature: [Signature] Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2016-436CGA

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

Cylinder #: EY0000769 Concentration PPM: 50.5 Tolerance(%) 1.6 Certified By: Praxair

Expiry Date: December 8, 2019

Reference Calibrator and Gas:

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

Flow Measurement Device:

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

Reference Analyzer:

Make/Model: Themro 43C Serial/AMU Number: AMU 1623
Instrument Settings: Zero: 9.5 Span: 1.023 Range: 1.0
Last Calibration: Date: 25-Jan-17 C.F. 1.000 Done By: SB

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
4911	0.0	0.000			
4918	77.4	0.801	0.01574	63.540	50.9
4918	38.5	0.398	0.00783	127.740	50.9
4915	19.2	0.196	0.00391	255.990	50.0
Average Cylinder Concentration:					50.6

Previous Stated Concentration PPM: 50.5

Percent variance from Stated: 0.2

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

Auditor: Shea Beaton
Operator Signature: _____

Date: January 26, 2017
Location: McIntyre Center Edmonton



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2015-338CGA

Company: Maxxam Operator's Name: Limin Li
Cylinder #: BLM002508 Concentration PPM: 10.2 Tolerance(%) 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU1690
Last Verification Date: March 31, 2015
Gas Type: H2S Conc. 20.43
Cylinder Number: CAL015106

Flow Measurement Device:

Make/Model: Bios DC2
Serial Number: AMU 1659
Temp. °C: 23.0 C
B.P. 689 mmhg

Reference Analyzer:

Make/Model: Teco 450i Serial/AMU Number: 1980
Instrument Settings: Zero: 14.5 Span: 1.035 Range: 0.1
Last Calibration: Date: Mar 31/15 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.0000	~~0.00752~~	~~132.984~~	~~9.6~~
5080	38.2	0.0725	0.00752	132.984	9.6
5078	17.9	0.0340	0.00353	283.687	9.6
5066	9.1	0.0170	0.00180	556.703	9.5
Average Cylinder Concentration:					9.6

Previous Stated Concentration PPM: 10.2

Percent variance from Stated: 6.0

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

Auditor: Al Clark
Operator Signature: *Al Clark*

Date: March 31, 2015
Location: McIntyre Center Edmonton



Calibration Gas Audit

CH₄ / C₃H₈ Cylinder Gas

File No. 2015-029CGA

Company: Maxxam **Operators name:** Limin Li
Cylinder #: LL165367 Conc CH₄ (PPM) 590/207 Tolerance (%) 2 Certified By: Praxair

Reference Calibrator and Gas:

Make/Model R&R MFC 201
Serial Number AMU 1691
Last Verification Date May 21, 2015
Gas Type CH₄ Conc. 999.2
Cylinder Number D751932
Gas Type C₃H₈ Conc. 246.5
Cylinder Number XF0037998

Flow Measurement Device:

Make/Model Bios DC2
Serial Number AMU 1650
Temp. °C 24.0 C
B.P. 703 mmhg

Reference Analyzer:

Make/Model Teco 55C Serial/AMU Number: 1643
Instrument Settings Zero: N/A Span: N/A Range: 20
Last Calibration: Date: May 21/15 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated Conc. (ppm)		Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration	
Dilution	Gas	CH ₄	C ₃ H ₈			CH ₄	C ₃ H ₈
2600	0.0	0.00	0.00	~~0.02005~~	~~49.883~~	~~602~~	~~206~~
2569	51.5	12.06	11.37	0.02005	49.883	602	206
3549	22.3	3.77	3.57	0.00628	159.148	600	207
3523	10.4	1.77	1.70	0.00295	338.750	600	209
Average Cylinder Concentration:						600	207

CH₄ **C₃H₈**
Previous Stated Concentration PPM: 590 207
Percent variance from Stated: 1.8 0.2

Cylinder gas tolerances based on CH₄ only

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

Auditor: Al Clark Date: May 21, 2015
Operator Signature: _____ Location: McIntyre Center Edmonton



Calibration Gas Audit

CH₄ / C₃H₈ Cylinder Gas

File No. 2015-031CGA

Company: Maxxam Operators name: Limin Li
Cylinder #: LL19272 Conc CH₄ (PPM) 880/304 Tolerance (%) 2 Certified By: Praxair

Reference Calibrator and Gas:

Make/Model R&R MFC 201
Serial Number AMU 1691
Last Verification Date May 21, 2015
Gas Type CH₄ Conc. 999.2
Cylinder Number D751932
Gas Type C₃H₈ Conc. 246.5
Cylinder Number XF0037998

Flow Measurement Device:

Make/Model Bios DC2
Serial Number AMU 1650
Temp. °C 24.0 C
B.P. 703 mmhg

Reference Analyzer:

Make/Model Teco 55C Serial/AMU Number: 1643
Instrument Settings Zero: N/A Span: N/A Range: 20
Last Calibration: Date: May 21/15 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated Conc. (ppm)		Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration	
Dilution	Gas	CH ₄	C ₃ H ₈			CH ₄	C ₃ H ₈
2600	0.0	0.00	0.00				
2569	51.5	17.77	16.76	0.02005	49.883	886	304
3549	22.3	5.56	5.27	0.00628	159.148	885	305
3523	10.4	2.63	2.49	0.00295	338.750	891	307
Average Cylinder Concentration:						887	305

CH₄ **C₃H₈**
Previous Stated Concentration PPM: 880 304
Percent variance from Stated: 0.8 0.4

Cylinder gas tolerances based on CH₄ only

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

Auditor: Al Clark Date: May 21, 2015
Operator Signature: *Al Clark* Location: McIntyre Center Edmonton

APPENDIX VI
REPORT CERTIFICATION FORM

Report Certification Form

Alberta Airshed (if applicable)	EPA Approval or Code of Practice Registration # (if applicable)
YES	NA
Company Name (if applicable)	Industrial Operation Name (if applicable)
Peace River Area Monitoring Program Committee	Reno Station
Name of the Representative of the Person Responsible (Last, First, Middle)	Position / Title of the Representative of the Person Responsible
Wunmi Adekanmbi	Project Manager, Customer Service, Air Services
Is an External Party Certifying the Report? (If 'Yes', fill in the fields below for the external person.)	
☐ Yes ☒ No	
Name of External Person Certifying the Report (Last, First, Middle)	Position / Title of External Person Certifying the Report
NA	NA
Company Name for the External Person Certifying the Report	Identification of Qualifications / Professional Designations of the External Person Certifying the Report
NA	NA

I certify that I have reviewed and verified the submitted report. I also certify that the report presented with this certification form is complete, accurate and representative of the monitoring results and timeframe.

Signature of the Representative of the Person
Responsible / External Person Certifying the Report

September 20, 2017

Report Issued Date (dd-mm-yyyy)

APPENDIX VII
DATA VALIDATION CERTIFICATION FORM

Validation Certificate Form

Client: Peace River Area Monitoring Program Committee

Project #: 196-2017-08-93-C

Site: Reno Station

Contact: Karla Reesor

Level 0 Preliminary Verification

Carla Reesor

Date September 12, 2017

Level 1 Primary Validation

Carla Reesor

Date September 12, 2017

Level 2 Final Validation

Carla Reesor

Date September 20, 2017

Level 3 Independent Data Review

Cheri Sinclair

Date September 20, 2017

Post-Final Validation

NA

Date NA

Notes

The Post-Final Validation step serves to re-evaluate the data that errors or omissions are discovered and/or suspected after the initial submittal of data. This validation is performed on an annual basis.