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AMBIENT AIR MONITORING MONTHLY DATA REPORT

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

RENO STATION

JOB #: 196-2018-08-93-C

August 2018

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: **September 19, 2018**

Prepared by:

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Reviewed by:

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

SUMMARY

In August 2018, 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).

With the exception of THC/CH_4/NMHC, the operational time for all continuous ambient air analyzers, meteorological systems and data acquisition systems were above the 90% requirement.

Non-Conformance: The 90% operational time requirement was not met for THC/CH_4/NMHC this month. This contravention was reported to AEP under reference number: 343123. Three events contributed to the downtime:

- Due to the depletion of the carrier gas (N_2) and the corrective actions performed to address it, thirty-seven hours of downtime were recorded between August 5 and August 7.
- Due to the depletion of the fuel gas (H_2) and the corrective actions performed to address it, twenty-three hours of downtime were recorded between August 8 and August 9.
- A calibration attempt on August 21 did not meet Maxxam's internal stability requirement due to poor sample injections. The rotor and actuator were replaced and a successful post-repair calibration was subsequently completed. Data was invalidated back to the point of failed performance, determined as August 18 at 00:00. Ninety-one hours of downtime were incurred due to this event.

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.

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 Reno Station						MAXIMUM VALUES							OPERATIONAL TIME (%)
						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	9	12	7	SW	0	1	100.0
TRS (ppb)	-	-	-	-	0.59	2.58	16	7	3.1	SE	0.91	10	100.0
THC (ppm)	-	-	-	-	1.96	2.57	10	2	2	S	2.09	10	79.7
CH_4 (ppm)	-	-	-	-	1.96	2.56	10	2	2	S	2.08	10	79.7
NMHC (ppm)	-	-	-	-	0.00	0.02	10	11	9.3	W	0.00	1	79.7
RELATIVE HUMIDITY (%)	-	-	-	-	69	94	1	4	0.2	S	89	26	100.0
BAROMETRIC PRESSURE (millibar)	-	-	-	-	937	951	20	4	2.6	SW	949	19	100.0
AMBIENT TEMPERATURE (°C)	-	-	-	-	15.2	28.5	9	16	4	SW	20.9	9	100.0
STATION TEMPERATURE (°C)	-	-	-	-	23.1	27.9	9	15	8.2	SW	24.0	9	100.0
VECTOR WS (kph)	-	-	-	-	2.9	13.9	31	13	-	W	7.8	14	100.0
VECTOR WD (sec)	-	-	-	-	245 (WSW)	-	-	-	-	-	-	-	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	2018	August

CONTINUOUS AMBIENT MONITORING

		ONE - HOUR AVERAGE		24 - HOUR AVERAGE	
PARAMETER	% TIME OPERATIONAL	MAXIMUM VALUES	NO. READINGS > REGULATION	MAXIMUM VALUES	NO. READINGS > REGULATION
SO_2	100.0	0.001 ppm	0	0.000 ppm	0
TRS	100.0	0.003 ppm	-	0.001 ppm	-
THC	79.7	2.57 ppm	-	2.08 ppm	-
CH_4	79.7	2.56 ppm	-	2.08 ppm	-
NMHC	79.7	0.02 ppm	-	0.00 ppm	-
RH	100.0	94 %	-	89 %	-
BP	100.0	951 mb	-	949 mb	-
Ambient TPX	100.0	28.5 °C	-	20.9 °C	-
Station TPX	100.0	27.9 °C	-	24.0 °C	-
Wind Speed	100.0	13.9 kph	-	7.8 kph	-
Wind Direction	100.0	-	-	-	-

SIGNATURE OF COMPANY REPRESENTATIVE

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Exceedance Summary Report

SO_2 1-Hour Exceedances

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

SO_2 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.

TABLE OF CONTENTS

1.0 Discussion

This monthly report consists of continuous monitoring results for the following parameters: Sulphur Dioxide (SO_2), Total Reduced Sulphur (TRS), Total Hydrocarbon (THC), Methane (CH_4), Non-Methane Hydrocarbon (NMHC), Relative Humidity (RH), Barometric Pressure (BP), Ambient Temperature (AmbTPX), Station Temperature (StnTPX), Wind Speed (WS) and Wind Direction (WD).

The sample inlet filter for all continuous air analyzers are replaced 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 (SO_2)

• Operational time for the monitoring period was 100%.
• The routine monthly calibration was performed on August 9.
• One instance of maximum instantaneous data was lost on August 24 at hour 04:00, as the data could not be retrieved from the data logger.

TOTAL REDUCED SULPHUR (TRS)

• Operational time for the monitoring period was 100%.
• The routine monthly calibration was performed on August 9.
• One instance of maximum instantaneous data was lost on August 24 at hour 04:00, as the data could not be retrieved from the data logger.

TOTAL HYDROCARBONS (THC), METHANE (CH_4) and NON-METHANE HYDROCARBONS (NMHC)

• Operational time for the monitoring period was 79.7%, equivalent to 151 hours of downtime. The AMD's 90% operational time requirement was not met this month. This contravention was reported to AEP under reference number: 343123.
• The carrier gas (N_2) pressure ran low on August 5, prompting a site visit on August 7 where the gas cylinder was replaced. A zero-span response check was completed afterwards as a quality check. Thirty-seven hours of downtime were recorded due to this event.
• The fuel gas (H_2) pressure ran low on August 8, prompting a site visit on August 9 where both the fuel and span gas cylinders were replaced and the routine monthly calibration was successfully completed. Twenty-three hours of downtime were recorded due to this event.
• Beginning on August 18, frequent poor sample injections were observed. This prompted a site visit on August 21 where a shut-down calibration was attempted prior to maintenance. However, the As-Found High point did not meet requirements as there were poor sample injections that impacted the stability criteria. The rotor and actuator were replaced and a successful post-repair calibration was subsequently completed. Data was invalidated back to the point of failed performance, determined as August 18 at 00:00. Ninety-one hours of downtime were incurred due to this event.
• Minute data for the month was reviewed. CH_4 minute concentrations recorded lower than 1.80 ppm, along with the corresponding THC and NMHC values, were excluded and the corresponding hourly average recalculated, due to poor injections. Impacted minute data include the following:

Date	Time	Conc. (ppm)
2018/08/01	00:42	1.73
2018/08/01	00:43	1.79
2018/08/01	02:19	1.64
2018/08/02	07:24	1.72
2018/08/02	13:07	1.69
2018/08/02	15:26	1.75
2018/08/02	15:27	1.75
2018/08/02	21:35	1.73
2018/08/03	07:54	1.74
2018/08/03	07:55	1.68
2018/08/03	09:18	1.78
2018/08/03	09:19	1.62
2018/08/03	09:24	1.54
2018/08/03	09:27	1.53
2018/08/03	09:34	1.64
2018/08/03	09:35	1.77
2018/08/03	09:55	1.57
2018/08/03	10:00	1.68
2018/08/03	10:01	1.77
2018/08/03	18:07	1.62
2018/08/11	03:56	1.67
2018/08/13	23:07	1.62
2018/08/13	23:14	1.72
2018/08/13	23:35	1.59
2018/08/13	23:54	1.54
2018/08/13	23:56	1.51
2018/08/14	00:53	1.6
2018/08/14	01:04	1.77
2018/08/14	01:05	1.74
2018/08/14	01:16	1.72
2018/08/14	01:40	1.6
2018/08/14	01:49	1.62
2018/08/14	02:11	1.55
2018/08/14	03:46	1.68
2018/08/14	03:51	1.78
2018/08/14	03:52	1.72
2018/08/17	01:04	1.58
2018/08/17	01:27	1.58
2018/08/17	01:29	1.56
2018/08/29	18:52	1.78
2018/08/29	18:53	0.71

• One instance of maximum instantaneous data was lost on August 24 at hour 04:00, as the data could not be retrieved from the data logger.

• 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. A trigger test was performed during the routine monthly calibration on August 9 to assess the effectiveness of the canister system. No deficiencies were found.

WIND SPEED (WS) and WIND DIRECTION (WD)

- Operational time for the monitoring period was 100%.
- An anemometer sensor check was conducted on August 9. The result was satisfactory.
- One instance of maximum instantaneous data was lost on August 24 at hour 04:00, as the data could not be retrieved from the data logger.
- 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%.
- A humidity sensor audit was conducted on August 9. The result was satisfactory.

BAROMETRIC PRESSURE (BP)

- Operational time for the monitoring period was 100%.
- A pressure sensor audit was conducted on August 9. The result was satisfactory.

AMBIENT TEMPERATURE (AmbTPX)

- Operational time for the monitoring period was 100%.
- A temperature sensor audit was conducted on August 9. The result was satisfactory.

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 technician was Christopher Wesson.

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).

With the exception of THC/CH_4/NMHC, the operational time for all continuous ambient air analyzers, meteorological systems and data acquisition systems were above the 90% requirement.

Non-Conformance: The 90% operational time requirement was not met for THC/CH_4/NMHC this month. This contravention was reported to AEP under reference number: 343123.

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-00013: 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 Fluorescent Analyzer
Total Reduced Sulphur - Thermo 43i - TLE UV Fluorescent Analyzer
Methane, Non-Methane Hydrocarbon - Thermo 55i FID Analyzer
Wind System - RM Young Unit
Relative Humidity - RM Young Unit
Barometric Pressure - Met One Unit
Ambient Temperature - RM Young 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

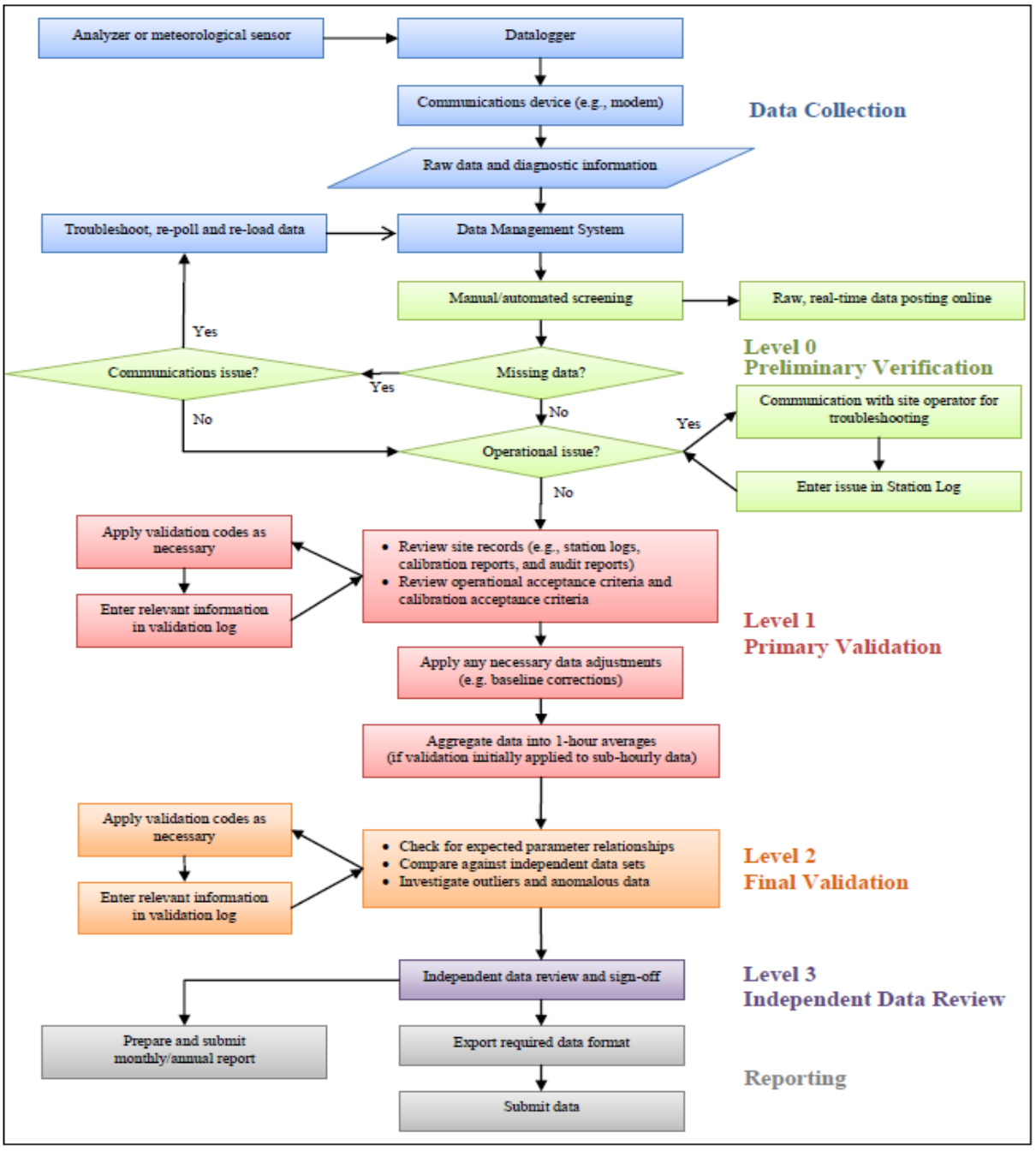
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

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

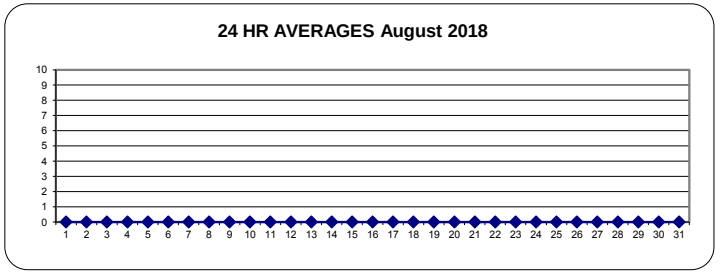
SULPHUR DIOXIDE

SULPHUR DIOXIDE Hourly Averages (SO_2 ppb)

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

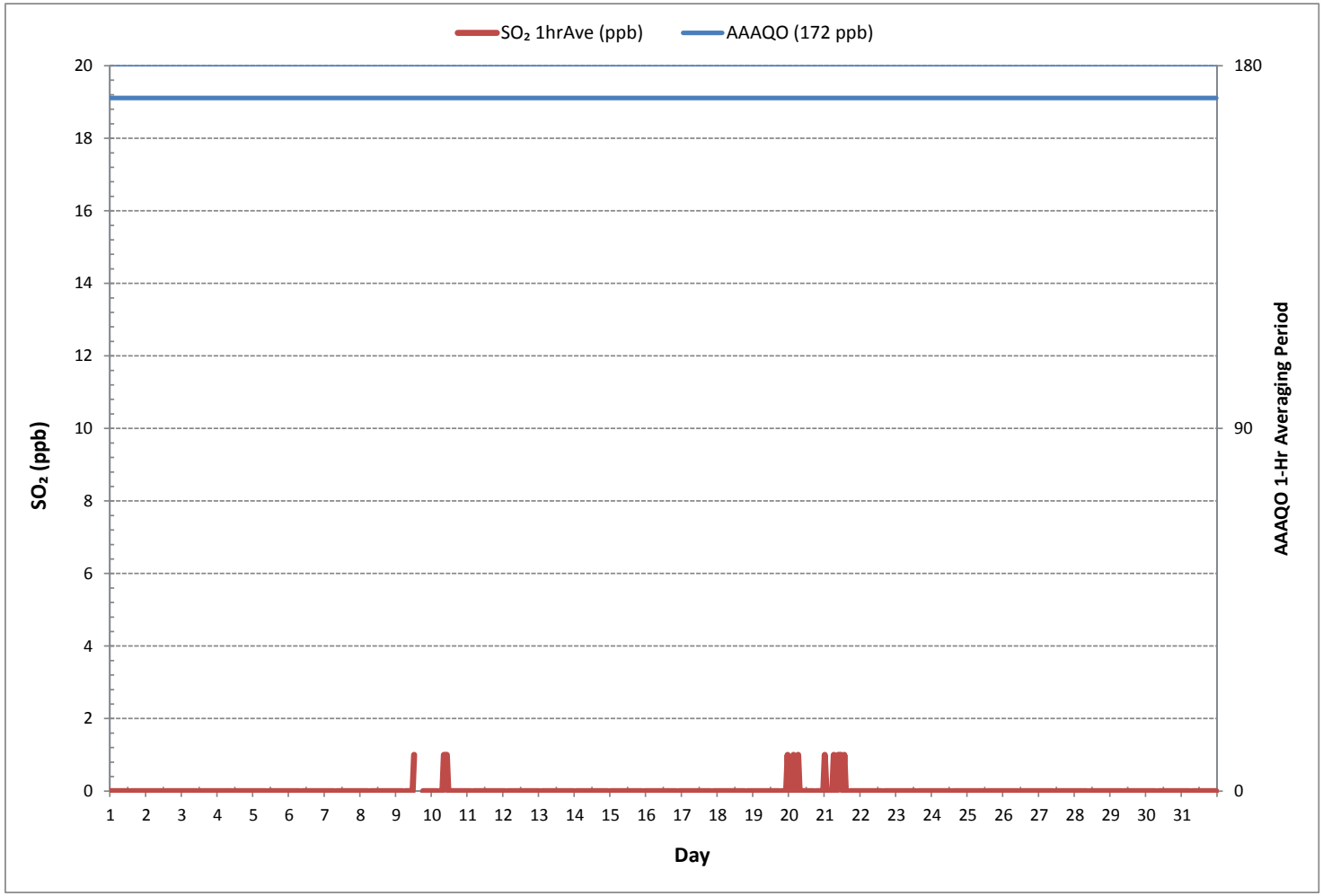


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 ppb | 24-HR 48 ppb

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDANCES:			0				
NUMBER OF 24-HR EXCEEDANCES:			0				
NUMBER OF NON-ZERO READINGS:			13				
MINIMUM 1-HR AVERAGE	0	ppb	@ HOUR	0	ON DAY	1	
MAXIMUM 1-HR AVERAGE:	1	ppb	@ HOUR	12	ON DAY	9	
MAXIMUM 24-HR AVERAGE:	0	ppb			ON DAY	1	
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:			744	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	0		MONTHLY AVERAGE:			0	ppb

SULPHUR DIOXIDE Hourly Averages (SO_2 ppb)



Wind: PRAMP_RENO
Poll.: PRAMP_RENO-SO_2[ppb]
Monthly: 18/08
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

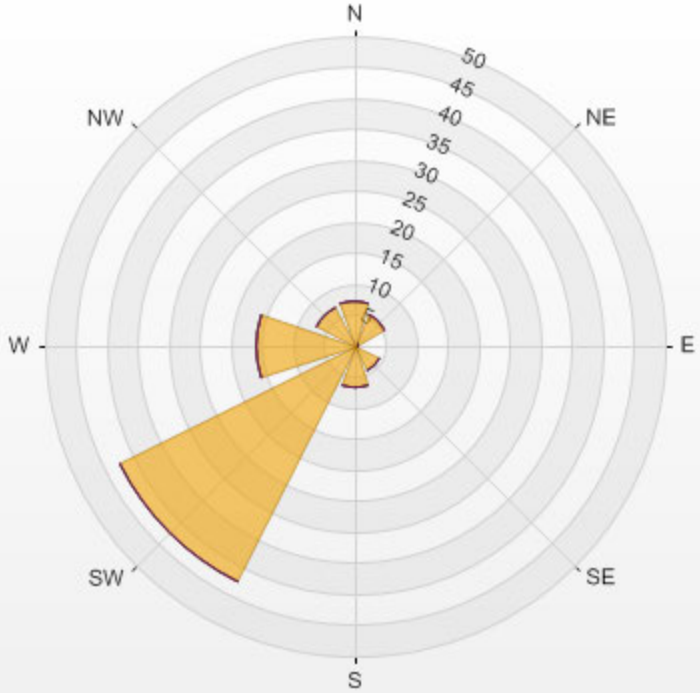
Calm: 10.18%

Calm Avg: 0.05 [ppb]

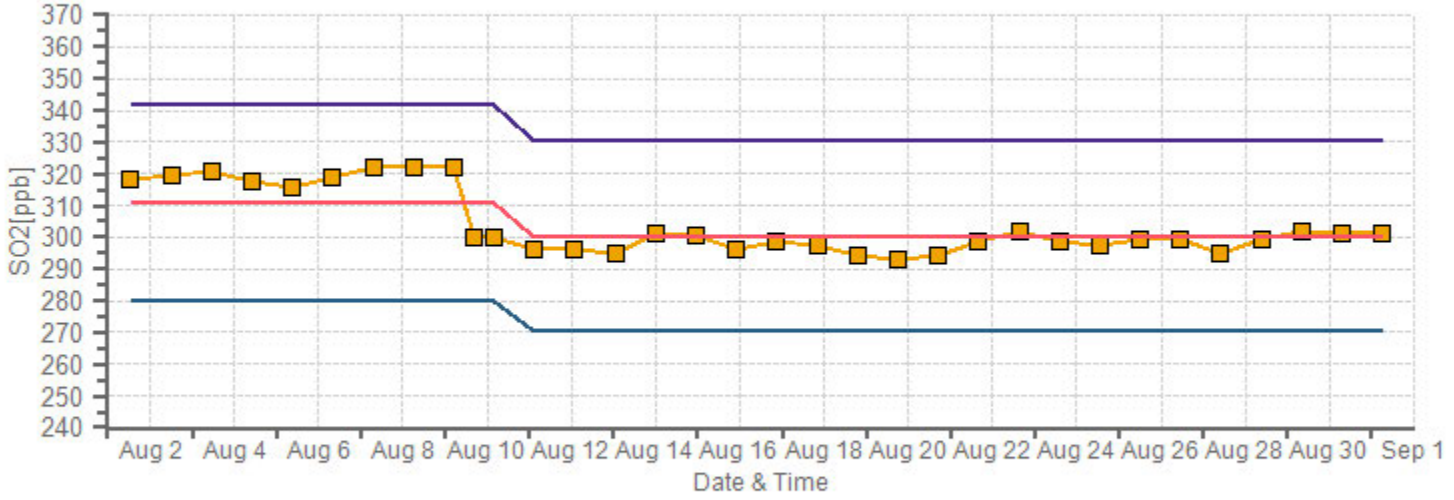
Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	7.2	0.0	0.0	0.0	0.0	7.2
NE	5.5	0.0	0.0	0.0	0.0	5.5
E	0.7	0.0	0.0	0.0	0.0	0.7
SE	4.4	0.0	0.0	0.0	0.0	4.4
S	6.7	0.0	0.0	0.0	0.0	6.7
SW	42.6	0.0	0.0	0.0	0.0	42.6
W	16.0	0.0	0.0	0.0	0.0	16.0
NW	6.8	0.0	0.0	0.0	0.0	6.8
Summary	89.8	0.0	0.0	0.0	0.0	89.8

% Icon Classes (ppb)	90 0-3	0 3-10	0 10-85	0 85-170	0 >170.0

PRAMP_RENO Poll.: PRAMP_RENO-SO2[ppb] 2018/08/01 00:00 - 2018/08/31 23:00 Calm: 10.18% Calm Poll Avg: 0.05[ppb]



SO2[ppb] Calibration: PRAMP_RENO Monthly: 18/08 Type: Span



TOTAL REDUCED SULPHUR

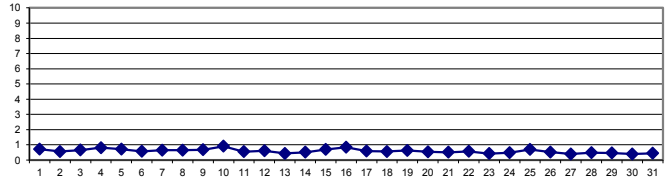
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)

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	0.70	0.99	1.08	1.12	0.85	0.75	1.22	1.15	0.55	0.54	0.54	0.52	S	0.45	0.45	0.49	0.49	0.59	0.76	0.76	0.74	0.69	0.68	0.45	1.22	0.72	24
2	0.74	0.68	0.72	0.68	0.64	0.60	0.64	0.64	0.55	0.47	0.49	0.49	S	0.47	0.44	0.42	0.42	0.43	0.42	0.46	0.66	0.62	0.64	0.66	0.42	0.74	0.56	24
3	0.71	0.72	0.61	0.62	0.64	0.65	0.71	0.69	0.65	0.53	0.46	S	0.43	0.43	0.43	0.41	0.45	0.50	0.55	0.58	0.59	0.68	1.84	1.24	0.41	1.84	0.66	24
4	0.90	0.91	0.79	0.92	1.11	1.58	1.73	1.10	0.94	0.75	S	0.62	0.50	0.47	0.46	0.46	0.49	0.53	0.58	0.67	0.70	0.53	0.76	1.15	0.46	1.73	0.81	24
5	1.13	1.03	1.34	1.27	1.15	1.22	0.82	0.65	0.57	S	0.53	0.56	0.49	0.42	0.42	0.41	0.44	0.43	0.47	0.50	0.65	0.61	0.60	0.56	0.41	1.34	0.71	24
6	0.59	0.68	0.69	0.73	0.70	0.68	0.58	0.59	S	0.54	0.51	0.47	0.44	0.41	0.44	0.42	0.47	0.48	0.47	0.51	0.60	0.71	0.80	0.66	0.41	0.80	0.57	24
7	0.68	0.88	0.89	0.85	0.68	0.74	0.67	S	0.75	0.64	0.50	0.47	0.48	0.46	0.48	0.48	0.48	0.50	0.49	0.57	0.67	0.73	0.81	0.96	0.46	0.96	0.65	24
8	0.80	0.88	0.89	0.92	0.64	0.65	S	0.61	0.57	0.60	0.59	0.57	0.54	0.50	0.50	0.51	0.58	0.57	0.66	0.69	0.68	0.65	0.61	0.65	0.50	0.92	0.65	24
9	0.75	0.70	0.79	0.77	0.69	S	0.75	0.63	0.63	C	C	C	C	C	0.60	0.48	0.46	0.53	0.73	0.80	0.70	0.63	0.64	0.70	0.46	0.80	0.67	24
10	1.31	1.88	2.00	1.85	S	1.68	1.09	0.80	0.88	0.79	0.86	0.85	0.70	0.55	0.45	0.40	0.42	0.46	0.50	0.59	0.61	0.77	0.81	0.63	0.40	2.00	**0.91**	24
11	0.62	0.57	0.60	S	0.74	0.71	0.72	0.65	0.44	0.38	0.35	0.33	**0.31**	0.33	0.41	0.49	0.47	0.57	0.50	0.79	0.88	0.73	0.60	0.43	**0.31**	0.88	0.55	24
12	1.31	2.15	S	0.49	0.49	0.57	0.62	0.51	0.56	0.57	0.56	0.61	0.41	0.35	0.35	0.43	0.37	0.39	0.41	0.45	0.48	0.52	0.60	0.52	0.35	2.15	0.60	24
13	0.57	S	0.47	0.39	0.43	0.44	0.36	0.35	0.35	0.32	0.34	0.32	0.34	0.35	0.36	0.37	0.35	0.42	0.53	0.58	0.54	0.54	0.54	0.55	0.32	0.58	0.43	24
14	S	0.53	0.55	0.57	0.59	0.61	0.62	0.60	0.60	0.51	0.46	0.44	0.41	0.42	0.41	0.41	0.44	0.50	0.42	0.43	0.48	0.59	0.70	S	0.41	0.70	0.51	24
15	0.80	0.73	0.84	0.88	0.91	1.26	1.60	0.99	0.73	0.74	0.72	0.55	0.46	0.41	0.40	0.39	0.42	0.51	0.57	0.55	0.54	0.48	S	0.49	0.39	1.60	0.69	24
16	0.46	0.47	0.89	1.73	0.58	0.71	2.05	**2.58**	2.39	1.42	0.52	0.47	0.44	0.41	0.45	0.42	0.43	0.44	0.52	0.59	0.50	S	0.45	0.47	0.41	**2.58**	0.84	24
17	0.46	0.48	0.53	0.57	0.63	0.65	0.67	0.68	0.68	0.67	0.66	0.61	0.65	0.67	0.68	0.59	0.58	0.63	0.57	0.51	S	0.43	0.50	0.55	0.43	0.68	0.59	24
18	0.59	0.57	0.48	0.48	1.06	1.28	0.76	0.76	0.57	0.55	0.46	0.44	0.43	0.42	0.39	0.37	0.36	0.39	0.41	S	0.58	0.61	0.42	0.40	0.36	1.28	0.56	24
19	0.44	0.49	0.53	0.56	0.84	0.74	0.67	1.64	1.30	0.57	0.49	0.46	0.39	0.36	0.35	0.37	0.36	0.39	S	0.48	0.55	0.65	0.68	0.86	0.35	1.64	0.62	24
20	0.65	0.65	0.71	0.73	0.69	0.70	0.68	0.60	0.48	0.44	0.45	0.46	0.45	0.39	0.39	0.40	0.39	S	0.41	0.45	0.56	0.71	0.55	0.54	0.39	0.73	0.54	24
21	0.63	0.55	0.68	0.66	0.61	0.56	0.56	0.57	0.44	0.45	0.49	0.42	0.39	0.39	0.38	0.39	S	0.43	0.50	0.59	0.55	0.53	0.58	0.44	0.38	0.68	0.51	24
22	0.45	0.50	0.51	0.51	0.53	0.54	0.53	0.49	0.49	0.58	0.65	0.67	0.66	0.62	0.56	S	0.52	0.52	0.49	0.52	0.61	0.82	0.69	0.61	0.45	0.82	0.57	24
23	0.59	0.52	0.41	0.42	0.46	0.45	0.40	0.38	0.37	0.40	0.38	0.39	0.39	0.39	S	0.38	0.39	0.39	0.39	0.41	0.43	0.47	0.43	0.44	0.37	0.59	0.42	24
24	0.46	0.38	0.47	0.58	0.47	0.51	0.51	0.52	0.44	0.44	0.40	0.35	0.36	S	0.37	0.34	0.35	0.33	0.36	0.39	0.46	0.43	0.36	1.72	0.33	1.72	0.48	24
25	1.36	1.11	2.19	1.24	0.91	0.39	0.43	0.43	0.67	0.64	0.58	0.45	S	0.43	0.39	0.41	0.43	0.47	0.56	0.58	0.64	0.64	0.55	0.47	0.39	2.19	0.69	24
26	0.52	0.51	0.48	0.55	0.62	0.63	0.78	0.67	0.71	0.67	0.60	S	0.46	0.43	0.42	0.43	0.51	0.40	0.37	0.36	0.36	0.50	0.50	0.50	0.36	0.78	0.52	24
27	0.48	0.49	0.41	0.33	0.32	0.32	0.34	0.35	0.36	0.35	S	0.38	0.36	0.34	0.36	0.36	0.36	0.38	0.41	0.42	0.39	0.41	0.49	0.46	0.32	0.49	0.39	24
28	0.50	0.52	0.53	0.55	0.55	0.55	0.53	0.59	0.52	S	0.42	0.40	0.40	0.39	0.40	0.40	0.40	0.43	0.52	0.43	0.52	0.54	0.58	0.57	0.39	0.59	0.49	24
29	0.52	0.52	0.54	0.54	0.56	0.53	0.51	0.50	S	0.45	0.40	0.40	0.38	0.38	0.37	0.37	0.36	0.40	0.41	0.45	0.60	0.52	0.55	0.54	0.36	0.60	0.47	24
30	0.53	0.49	0.42	0.42	0.48	0.42	0.45	S	0.39	0.35	0.36	0.34	0.33	0.33	0.33	0.34	0.36	0.34	0.37	0.39	0.41	0.38	0.39	0.39	0.33	0.53	0.39	24
31	0.46	0.46	0.44	0.44	0.53	0.43	S	0.39	0.40	0.45	0.41	0.40	0.42	0.40	0.41	0.42	0.41	0.45	0.49	0.48	0.47	0.48	0.42	0.44	0.39	0.53	0.44	24
HOURLY MAX	1.36	2.15	2.19	1.85	1.15	1.68	2.05	2.58	2.39	1.42	0.86	0.85	0.70	0.67	0.68	0.59	0.58	0.63	0.73	0.80	0.88	0.82	1.84	1.72				
HOURLY AVG	0.68	0.73	0.75	0.74	0.68	0.72	0.74	0.73	0.68	0.57	0.51	0.48	0.45	0.43	0.43	0.42	0.43	0.46	0.49	0.53	0.57	0.59	0.63	0.64				

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

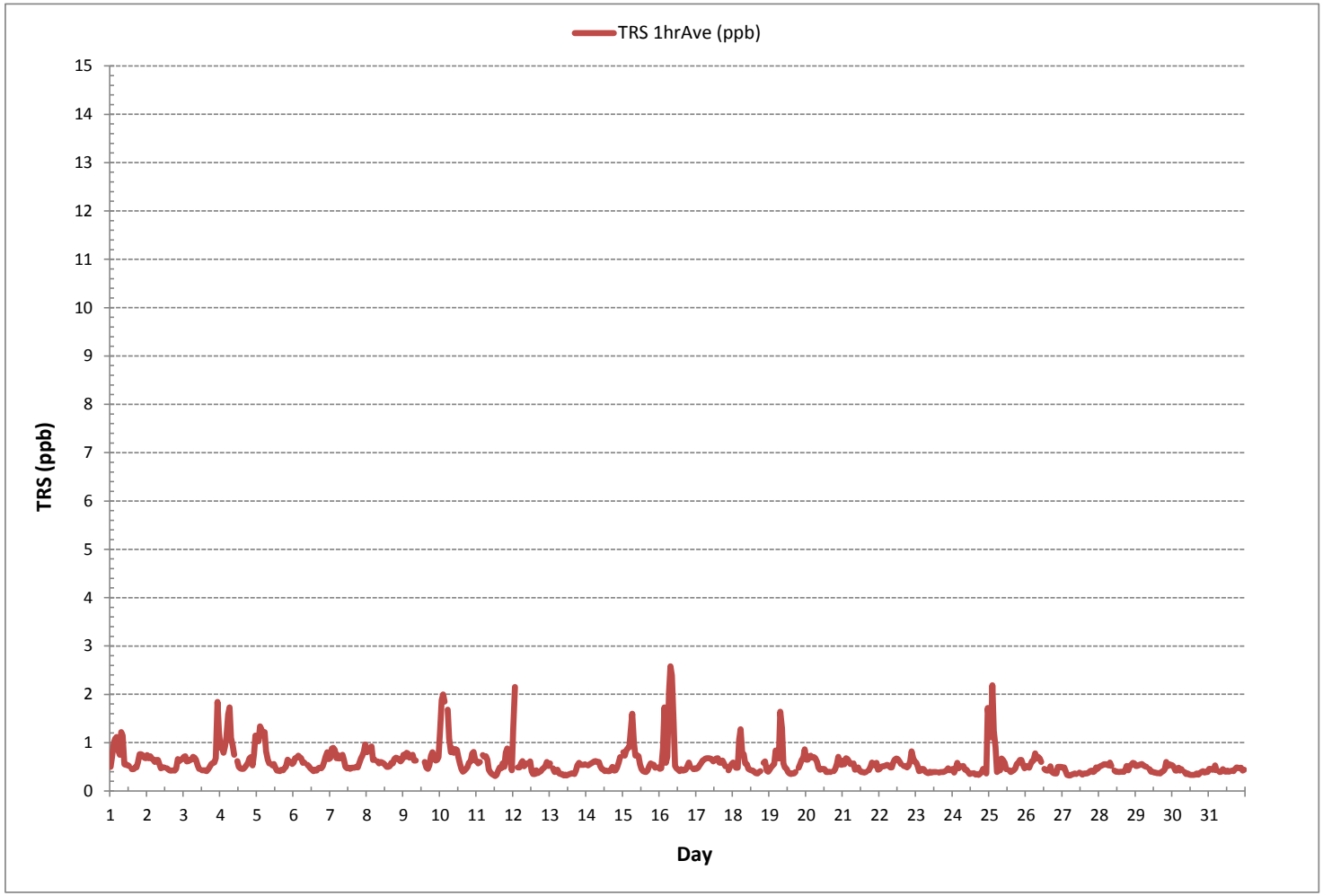
24 HR AVERAGES August 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		707					
MINIMUM 1-HR AVERAGE	0.31	ppb	@ HOUR	12	ON DAY	11	
MAXIMUM 1-HR AVERAGE:	2.58	ppb	@ HOUR	7	ON DAY	16	
MAXIMUM 24-HR AVERAGE:	0.91	ppb			ON DAY	10	
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:			744	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	0.28		MONTHLY AVERAGE:			0.59	ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)



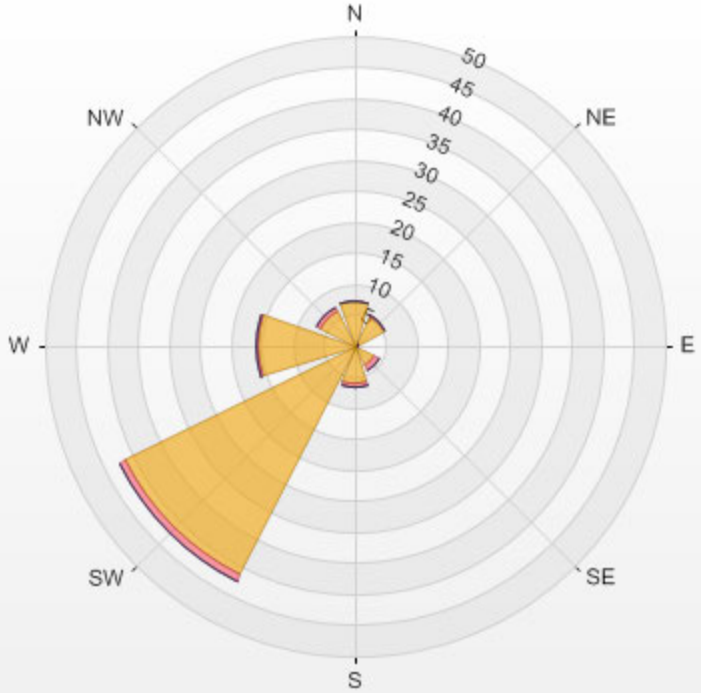
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-TRS[ppb]
Monthly: 18/08
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 10.18% Calm Avg: 0.80 [ppb]

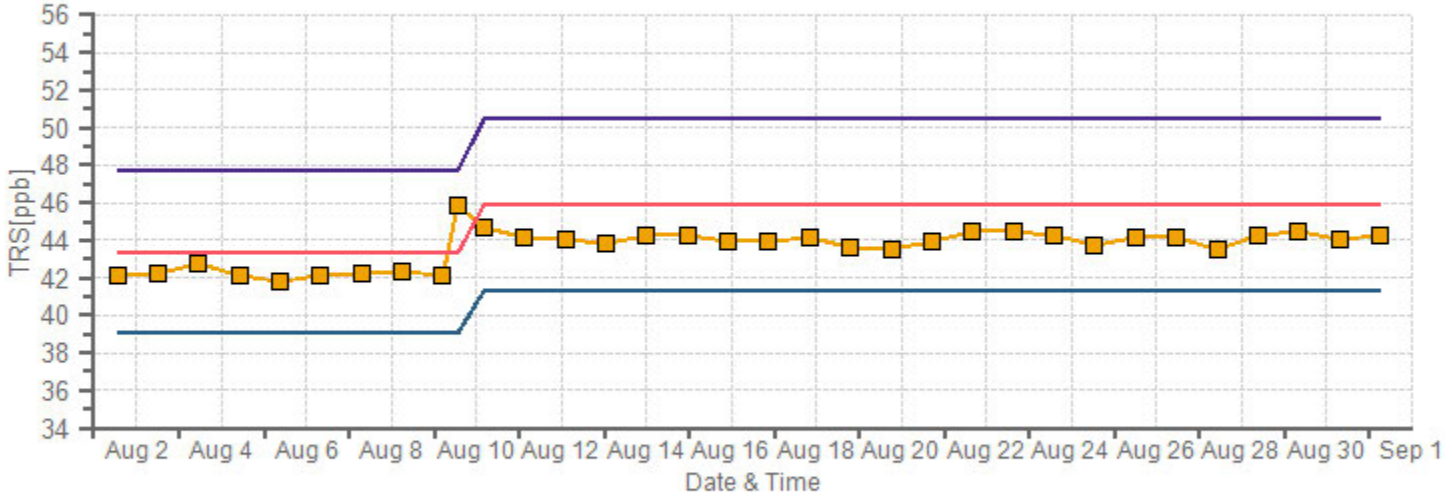
Direction	0-1	1-3	3-10	>10.0	Total
N	7.2	0.0	0.0	0.0	7.2
NE	5.4	0.1	0.0	0.0	5.5
E	0.7	0.0	0.0	0.0	0.7
SE	3.5	0.9	0.0	0.0	4.4
S	6.2	0.4	0.0	0.0	6.6
SW	41.3	1.3	0.0	0.0	42.6
W	15.6	0.4	0.0	0.0	16.0
NW	6.4	0.4	0.0	0.0	6.8
Summary	86.3	3.5	0.0	0.0	89.8

%	Icon	Classes (ppb)	86	0-1	4	1-3	0	3-10	0	>10.0

PRAMP_RENO Poll.: PRAMP_RENO-TRS[ppb] 2018/08/01 00:00 - 2018/08/31 23:00 Calm: 10.18% Calm Poll Avg: 0.80[ppb]



TRS[ppb] Calibration: PRAMP_RENO Monthly: 18/08 Type: Span



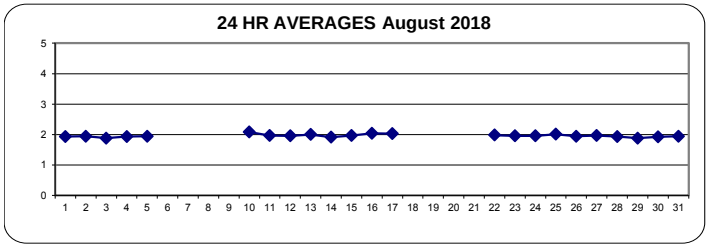
TOTAL HYDROCARBON

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	1.88	1.90	1.92	1.92	1.96	2.09	2.04	2.03	1.98	1.92	1.94	1.92	1.91	S	1.89	1.89	1.90	1.87	1.87	1.88	1.91	1.99	1.91	1.92	1.87	2.09	1.93	24
2	1.94	2.00	2.06	2.07	2.03	1.97	1.99	1.98	1.95	1.93	1.93	1.93	S	1.90	1.89	1.89	1.88	1.88	1.89	1.88	1.96	1.91	1.90	1.91	1.88	2.07	1.94	24
3	1.90	1.89	1.89	1.90	1.91	1.91	1.91	1.91	1.89	1.90	1.88	S	**1.86**	1.86	1.86	1.87	1.87	1.87	1.88	1.88	1.88	1.89	1.90	1.91	**1.86**	1.91	1.89	24
4	1.93	1.96	1.91	1.92	1.92	1.96	1.97	1.96	1.96	1.94	S	1.90	1.88	1.88	1.88	1.88	1.87	1.87	1.87	1.89	1.88	1.93	2.05	2.14	1.87	2.14	1.93	24
5	2.01	1.98	2.04	2.07	2.06	2.05	2.03	1.96	1.94	S	1.90	1.90	1.87	1.86	1.88	1.88	1.86	1.86	1.86	X	X	X	X	X	1.86	2.07	1.95	19
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
7	X	X	X	X	X	X	X	X	S	1.88	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.88	1.88	1.89	1.94	1.90	1.89	1.91	1.87	1.94	1.89	16
8	1.88	1.92	1.92	1.93	1.94	2.00	S	1.94	1.91	1.88	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.88	2.00	1.92	10
9	X	X	X	X	X	X	X	X	X	C	C	C	C	C	1.95	1.94	1.92	1.92	1.95	2.12	2.06	2.07	2.16	2.20	1.92	2.20	2.03	15
10	2.44	2.47	**2.57**	2.52	S	2.42	2.36	2.07	2.05	2.00	2.03	2.06	2.01	1.93	1.90	1.89	1.89	1.90	1.90	1.91	1.91	1.93	1.93	1.91	1.89	**2.57**	**2.09**	24
11	1.91	1.91	1.93	S	1.94	1.95	1.97	1.99	1.94	1.93	1.93	1.92	1.92	1.92	1.95	1.99	1.99	2.09	2.07	2.05	2.05	2.03	2.03	2.05	1.91	2.09	1.98	24
12	2.07	2.10	S	1.97	1.96	1.98	1.96	1.95	1.94	1.94	1.95	1.98	1.95	1.94	1.94	1.94	1.94	1.94	1.93	1.95	1.95	1.97	1.98	1.97	1.93	2.10	1.97	24
13	2.07	S	2.08	2.00	2.11	2.12	2.04	2.08	2.05	2.03	2.00	1.99	1.99	1.97	1.98	1.96	1.94	1.94	1.99	2.03	1.98	1.95	1.95	1.96	1.94	2.12	2.01	24
14	S	1.98	1.97	1.96	1.95	1.95	1.95	1.94	1.93	1.92	1.91	1.89	1.89	1.88	1.87	1.87	1.88	1.91	1.88	1.88	1.89	1.92	1.98	S	1.87	1.98	1.92	24
15	2.00	2.00	2.02	2.01	2.01	2.04	2.11	2.07	1.96	1.97	1.96	1.92	1.92	1.91	1.92	1.92	1.91	1.91	1.91	1.91	1.95	1.99	S	2.06	1.91	2.11	1.97	24
16	2.05	2.04	2.17	2.16	2.20	2.17	2.10	2.10	2.10	2.06	2.01	2.01	1.99	1.97	1.98	1.97	1.97	1.98	1.98	2.04	1.98	S	1.99	2.00	1.97	2.20	2.04	24
17	2.01	2.05	2.04	2.06	2.06	2.07	2.08	2.07	2.06	2.05	2.03	2.02	2.05	2.09	2.08	2.05	2.06	2.05	2.00	1.95	S	1.93	1.96	1.97	1.93	2.09	2.03	24
18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
21	X	X	X	X	X	X	X	X	X	Y	Y	Y	Y	Y	Y	Y	C1	C1	C1	2.10	2.01	2.04	2.14	1.97	1.97	2.14	2.05	5
22	1.96	2.04	1.99	2.00	1.99	2.00	2.00	2.00	2.01	2.01	2.03	2.03	2.00	1.99	1.94	S	1.91	1.91	1.89	1.91	1.95	2.02	2.00	1.96	1.89	2.04	1.98	24
23	1.98	1.98	1.96	1.97	1.97	1.96	1.96	1.96	1.95	1.95	1.96	1.96	1.96	1.96	S	1.96	1.97	1.96	1.96	1.95	1.95	1.94	1.94	1.94	1.94	1.98	1.96	24
24	1.94	1.94	1.95	1.95	1.95	1.96	1.96	1.95	1.95	1.94	1.93	1.92	1.93	S	1.92	1.92	1.92	1.92	1.92	1.93	2.15	2.01	2.00	2.12	1.92	2.15	1.96	24
25	2.06	2.06	2.09	2.04	2.05	2.01	2.01	2.00	2.00	1.99	2.00	2.01	S	2.01	2.00	2.00	2.01	2.01	2.05	1.99	2.02	2.05	1.96	1.93	1.93	2.09	2.02	24
26	1.90	1.91	1.91	1.92	1.96	1.98	1.99	1.96	1.97	1.95	1.96	S	1.94	1.94	1.94	1.94	1.94	1.93	1.93	1.92	1.92	1.95	1.95	1.93	1.90	1.99	1.94	24
27	1.93	1.93	1.95	1.95	1.95	1.96	1.96	1.95	1.96	1.95	S	1.96	1.95	1.95	1.95	1.96	1.95	2.00	2.00	2.00	2.01	2.03	2.09	2.03	1.93	2.09	1.97	24
28	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.98	1.97	S	1.93	1.91	1.89	1.89	1.89	1.89	1.89	1.90	1.89	1.87	1.91	1.96	1.97	1.97	1.87	1.98	1.93	24
29	1.88	1.89	1.89	1.90	1.91	1.91	1.90	1.89	S	1.88	1.87	1.87	1.87	1.87	1.86	1.86	1.87	1.87	1.88	1.88	1.87	1.90	1.89	1.90	1.86	1.91	1.88	24
30	1.91	1.93	1.94	1.93	1.93	1.93	1.93	S	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.93	1.93	1.94	1.94	1.91	1.94	1.93	24
31	1.94	1.95	1.97	2.07	2.09	2.03	S	1.97	1.95	1.95	1.93	1.91	1.91	1.90	1.89	1.89	1.89	1.89	1.90	1.90	1.91	1.91	1.90	1.90	1.89	2.09	1.94	24
HOURLY MAX	2.44	2.47	2.57	2.52	2.20	2.42	2.36	2.10	2.10	2.06	2.03	2.06	2.05	2.09	2.08	2.05	2.06	2.09	2.07	2.12	2.15	2.07	2.16	2.20				
HOURLY AVG	1.98	1.99	2.01	2.01	1.99	2.02	2.01	1.99	1.97	1.95	1.95	1.95	1.93	1.93	1.92	1.92	1.92	1.93	1.93	1.95	1.96	1.96	1.98	1.98				

STATUS FLAG CODES

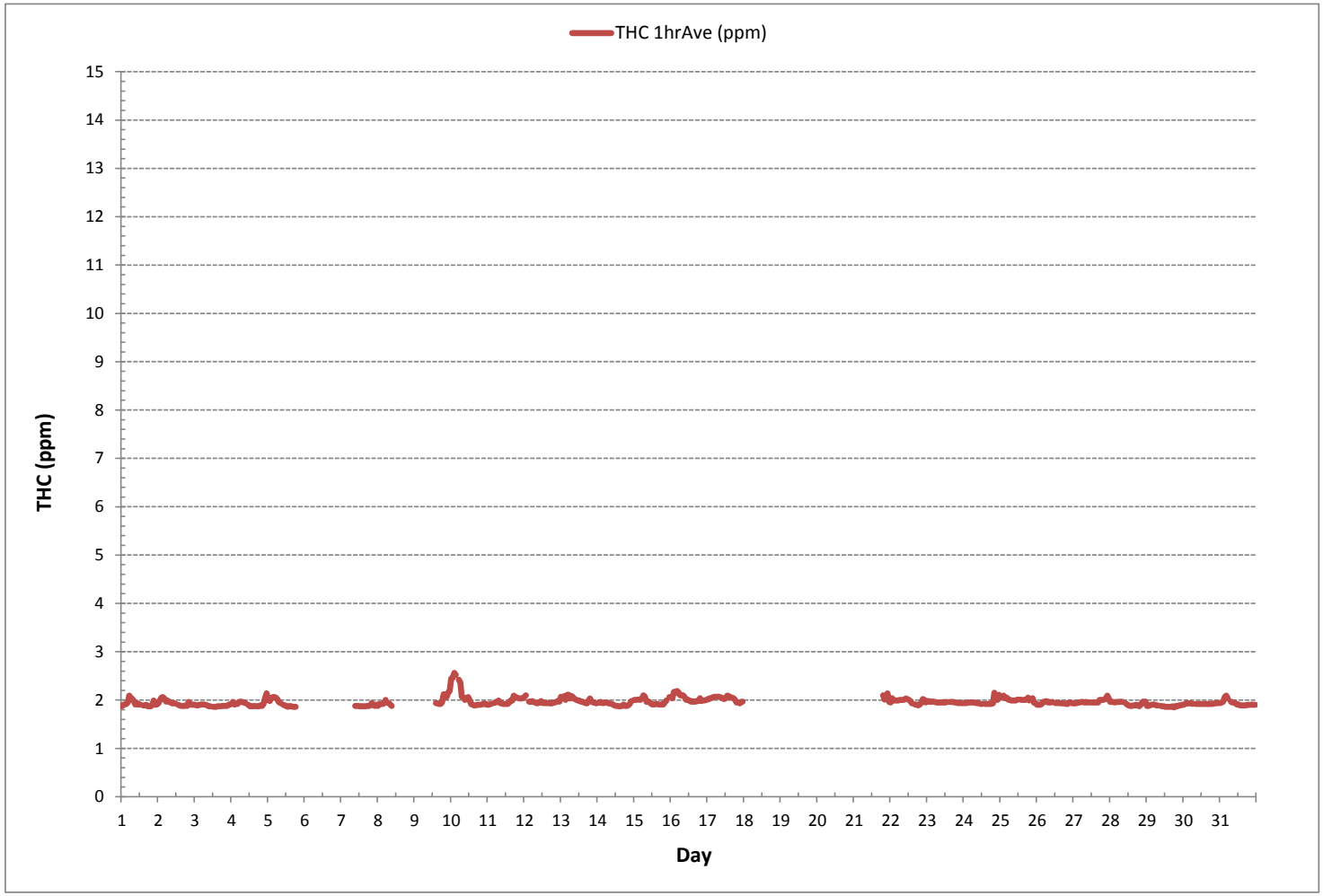
C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			562				
MINIMUM 1-HR AVERAGE	1.86	ppm	@ HOUR	12	ON DAY	3	
MAXIMUM 1-HR AVERAGE:	2.57	ppm	@ HOUR	2	ON DAY	10	
MAXIMUM 24-HR AVERAGE:	2.09	ppm			ON DAY	10	
IZS CALIBRATION TIME:	26	hrs	OPERATIONAL TIME:			593	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:			79.7	%
STANDARD DEVIATION:	0.08		MONTHLY AVERAGE:			1.96	ppm

TOTAL HYDROCARBONS Hourly Averages (THC ppm)



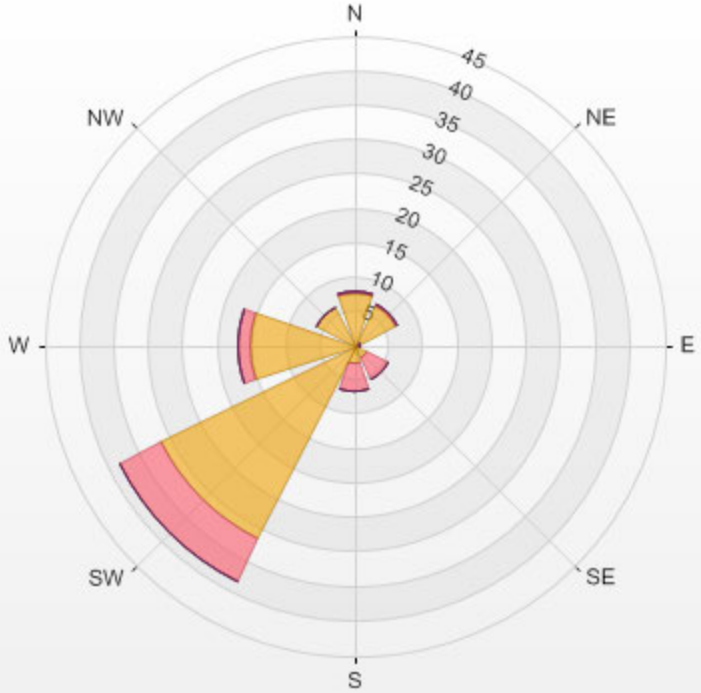
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-THC55[ppm]
Monthly: 18/08
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 10.32% Calm Avg: 2.05 [ppm]

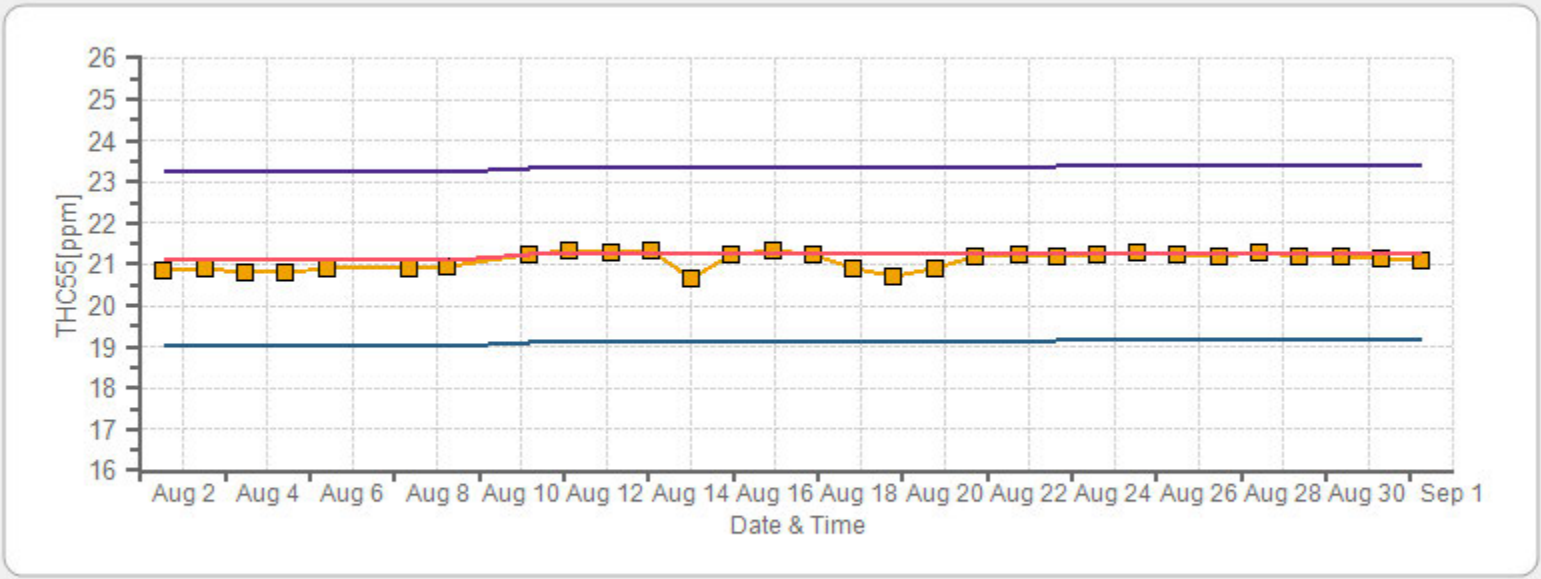
Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	7.8	0.2	0.0	0.0	0.0	8.0
NE	6.6	0.4	0.0	0.0	0.0	6.9
E	0.7	0.2	0.0	0.0	0.0	0.9
SE	2.1	3.4	0.0	0.0	0.0	5.5
S	2.7	4.1	0.0	0.0	0.0	6.8
SW	31.5	6.8	0.0	0.0	0.0	38.3
W	15.3	1.8	0.0	0.0	0.0	17.1
NW	6.2	0.0	0.0	0.0	0.0	6.2
Summary	73.0	16.7	0.0	0.0	0.0	89.7

%	Icon	Classes (ppm)	73	0-2	17	2-3	0	3-5	0	5-10	0	>10.0

PRAMP_RENO Poll.: PRAMP_RENO-THC55[ppm] 2018/08/01 00:00 - 2018/08/31 23:00 Calm: 10.32% Calm Poll Avg: 2.05[ppm]



THC55[ppm] Calibration: PRAMP_RENO Monthly: 18/08 Type: Span



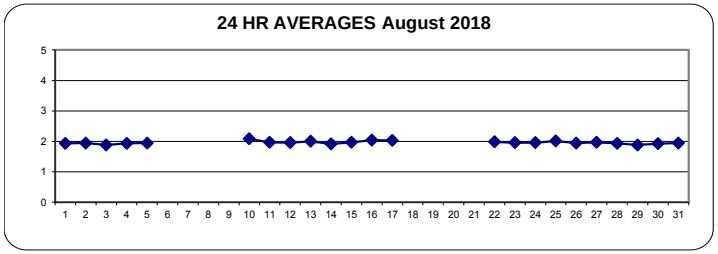
METHANE

METHANE Hourly Averages (CH_4 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	1.88	1.90	1.92	1.92	1.96	2.09	2.04	2.03	1.98	1.92	1.94	1.92	1.91	S	1.89	1.89	1.90	1.87	1.87	1.88	1.91	1.99	1.91	1.92	1.87	2.09	1.93	24
2	1.94	2.00	2.06	2.07	2.03	1.97	1.99	1.98	1.95	1.93	1.93	1.93	S	1.90	1.89	1.89	1.88	1.88	1.89	1.88	1.96	1.91	1.90	1.91	1.88	2.07	1.94	24
3	1.90	1.89	1.89	1.90	1.91	1.91	1.91	1.91	1.89	1.90	1.88	S	1.86	1.86	1.86	1.87	1.87	1.87	1.88	1.88	1.88	1.89	1.90	1.91	1.86	1.91	1.89	24
4	1.93	1.96	1.91	1.92	1.92	1.96	1.97	1.96	1.96	1.94	S	1.90	1.88	1.88	1.88	1.88	1.87	1.87	1.87	1.89	1.88	1.93	2.05	2.14	1.87	2.14	1.93	24
5	2.01	1.98	2.04	2.06	2.06	2.05	2.03	1.96	1.94	S	1.90	1.90	1.87	1.86	1.88	1.87	1.86	1.86	1.86	X	X	X	X	X	1.86	2.06	1.94	19
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
7	X	X	X	X	X	X	X	X	S	1.88	1.88	1.88	1.87	1.87	1.87	1.87	1.87	1.88	1.88	1.89	1.94	1.90	1.89	1.91	1.87	1.94	1.89	16
8	1.88	1.92	1.92	1.93	1.94	2.00	S	1.94	1.91	1.88	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.88	2.00	1.92	10
9	X	X	X	X	X	X	X	X	X	C	C	C	C	C	1.94	1.93	1.92	1.91	1.94	2.11	2.06	2.07	2.16	2.20	1.91	2.20	2.02	15
10	2.44	2.46	**2.56**	2.51	S	2.42	2.35	2.07	2.05	2.00	2.03	2.04	1.99	1.93	1.90	1.89	1.89	1.90	1.90	1.91	1.91	1.93	1.93	1.91	1.89	**2.56**	**2.08**	24
11	1.91	1.91	1.93	S	1.94	1.95	1.97	1.99	1.94	1.93	1.93	1.92	1.92	1.92	1.95	1.99	1.99	2.09	2.07	2.05	2.05	2.03	2.03	2.05	1.91	2.09	1.98	24
12	2.07	2.10	S	1.97	1.96	1.98	1.96	1.95	1.94	1.94	1.95	1.98	1.95	1.94	1.94	1.94	1.94	1.94	1.93	1.95	1.95	1.97	1.98	1.97	1.93	2.10	1.97	24
13	2.07	S	2.08	2.00	2.11	2.12	2.04	2.08	2.05	2.03	2.00	1.99	1.99	1.97	1.98	1.96	1.94	1.94	1.99	2.03	1.97	1.95	1.95	1.96	1.94	2.12	2.01	24
14	S	1.98	1.97	1.96	1.95	1.95	1.95	1.94	1.93	1.92	1.91	1.89	1.88	1.88	1.87	1.87	1.88	1.91	1.88	1.88	1.89	1.92	1.98	S	1.87	1.98	1.92	24
15	2.00	2.00	2.01	2.01	2.01	2.04	2.11	2.07	1.96	1.97	1.96	1.92	1.92	1.91	1.92	1.92	1.91	1.91	1.91	1.91	1.95	1.99	S	2.06	1.91	2.11	1.97	24
16	2.05	2.04	2.17	2.16	2.20	2.17	2.10	2.10	2.10	2.06	2.01	2.01	1.99	1.97	1.98	1.97	1.97	1.98	1.98	2.04	1.98	S	1.99	2.00	1.97	2.20	2.04	24
17	2.01	2.05	2.03	2.05	2.06	2.07	2.08	2.07	2.06	2.05	2.03	2.02	2.05	2.09	2.08	2.05	2.06	2.04	2.00	1.95	S	1.93	1.96	1.97	1.93	2.09	2.03	24
18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
21	X	X	X	X	X	X	X	X	X	Y	Y	Y	Y	Y	Y	Y	C1	C1	C1	2.10	2.01	2.04	2.14	1.96	1.96	2.14	2.05	5
22	1.96	2.04	1.99	2.00	1.99	2.00	2.00	2.00	2.01	2.01	2.03	2.02	2.00	1.98	1.94	S	1.91	1.91	1.89	1.91	1.95	2.02	2.00	1.96	1.89	2.04	1.98	24
23	1.98	1.98	1.96	1.97	1.97	1.96	1.96	1.96	1.95	1.95	1.96	1.96	1.96	1.96	S	1.96	1.97	1.96	1.96	1.95	1.95	1.94	1.94	1.94	1.94	1.98	1.96	24
24	1.94	1.94	1.95	1.95	1.95	1.96	1.96	1.95	1.95	1.94	1.93	1.92	1.93	S	1.92	1.92	1.92	1.92	1.92	1.93	2.15	2.01	2.00	2.12	1.92	2.15	1.96	24
25	2.06	2.06	2.09	2.04	2.05	2.01	2.01	2.00	2.00	1.99	2.00	2.01	S	2.01	2.00	2.00	2.01	2.01	2.05	1.99	2.02	2.05	1.96	1.93	1.93	2.09	2.02	24
26	1.90	1.91	1.91	1.92	1.96	1.98	1.99	1.96	1.97	1.95	1.96	S	1.94	1.94	1.94	1.94	1.94	1.93	1.93	1.92	1.92	1.95	1.95	1.93	1.90	1.99	1.94	24
27	1.93	1.93	1.95	1.95	1.95	1.96	1.96	1.95	1.96	1.95	S	1.96	1.95	1.95	1.95	1.96	1.95	2.00	2.00	2.00	2.01	2.03	2.09	2.03	1.93	2.09	1.97	24
28	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.98	1.97	S	1.93	1.91	1.89	1.89	1.89	1.89	1.89	1.90	1.89	1.87	1.91	1.96	1.97	1.97	1.87	1.98	1.93	24
29	1.88	1.89	1.89	1.90	1.91	1.91	1.90	1.89	S	1.88	1.87	1.87	1.87	1.87	1.86	1.86	1.87	1.87	1.88	1.88	1.87	1.90	1.89	1.90	1.86	1.91	1.88	24
30	1.91	1.93	1.94	1.93	1.93	1.93	1.93	S	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.93	1.93	1.94	1.94	1.91	1.94	1.93	24
31	1.94	1.95	1.97	2.07	2.09	2.03	S	1.97	1.95	1.95	1.93	1.91	1.91	1.90	1.89	1.89	1.89	1.89	1.90	1.90	1.91	1.91	1.90	1.90	1.89	2.09	1.94	24
HOURLY MAX	2.44	2.46	2.56	2.51	2.20	2.42	2.35	2.10	2.10	2.06	2.03	2.04	2.05	2.09	2.08	2.05	2.06	2.09	2.07	2.11	2.15	2.07	2.16	2.20				
HOURLY AVG	1.98	1.99	2.00	2.01	1.99	2.02	2.01	1.99	1.97	1.95	1.95	1.94	1.93	1.93	1.92	1.92	1.92	1.93	1.93	1.95	1.96	1.96	1.98	1.98				

STATUS FLAG CODES

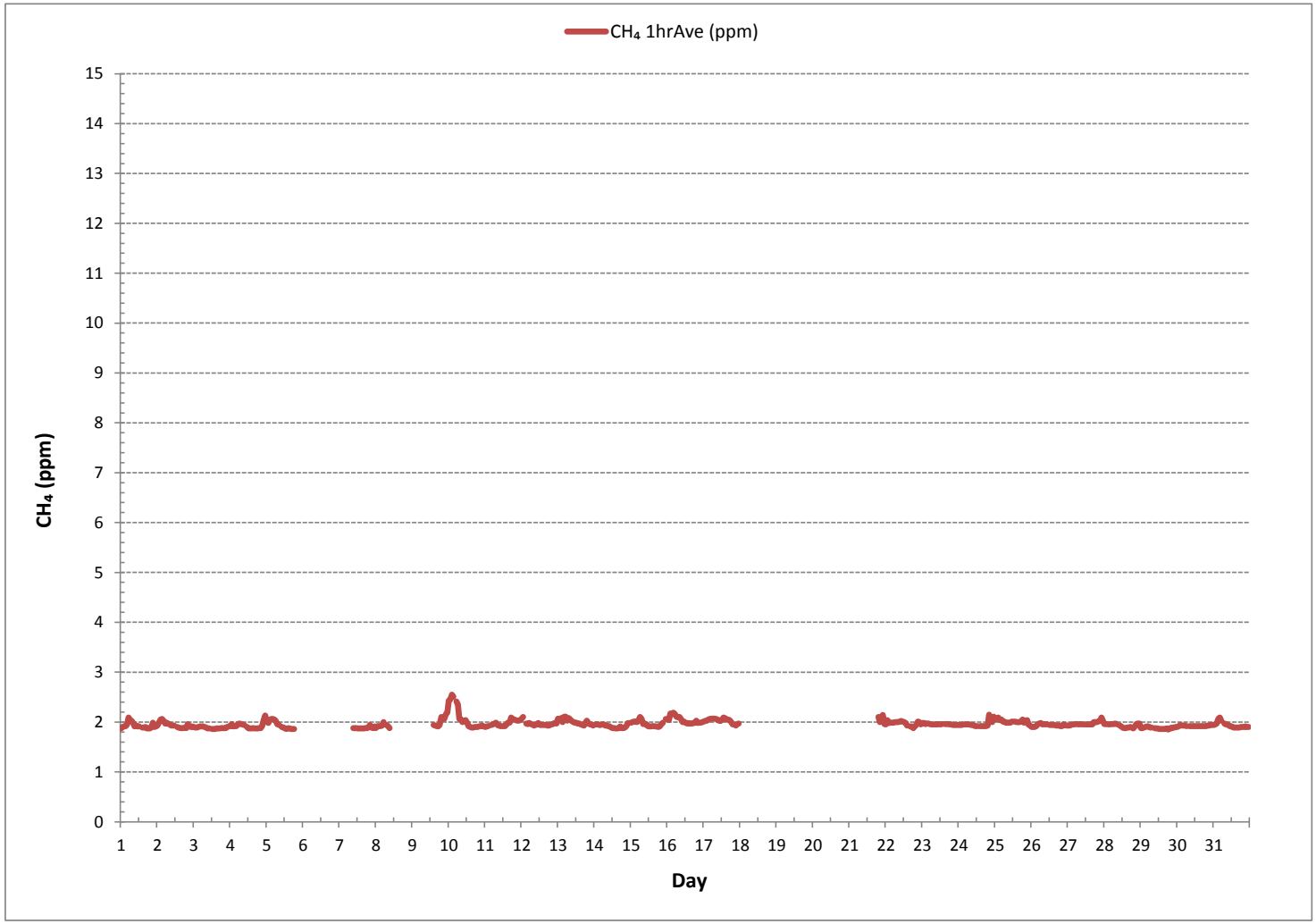
C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			562				
MINIMUM 1-HR AVERAGE	1.86	ppm	@ HOUR	12	ON DAY	3	
MAXIMUM 1-HR AVERAGE:	2.56	ppm	@ HOUR	2	ON DAY	10	
MAXIMUM 24-HR AVERAGE:	2.08	ppm			ON DAY	10	
IZS CALIBRATION TIME:	26	hrs	OPERATIONAL TIME:			593	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:			79.7	%
STANDARD DEVIATION:	0.08		MONTHLY AVERAGE:			1.96	ppm

METHANE Hourly Averages (CH_4 ppm)



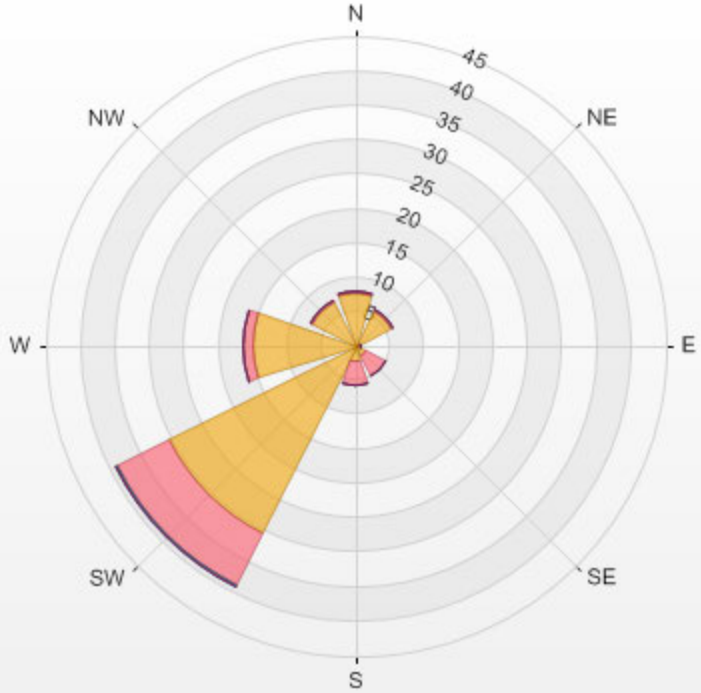
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-CH_4[ppm]
Monthly: 18/08
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 11.23% Calm Avg: 2.09 [ppm]

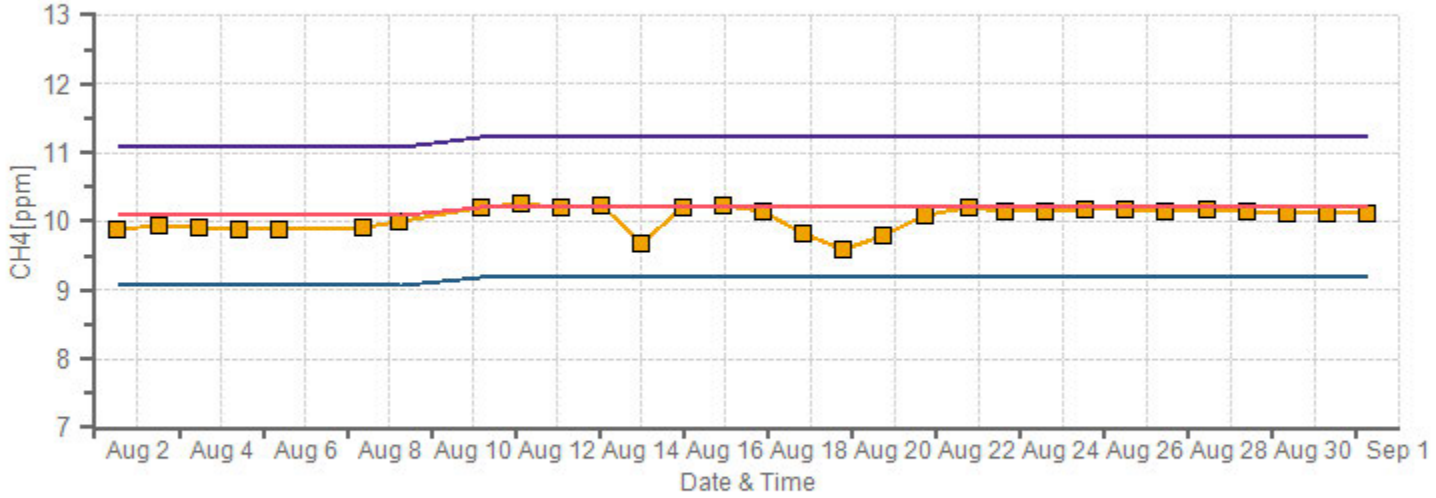
Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	7.6	0.3	0.0	0.0	0.0	8.0
NE	5.8	0.3	0.0	0.0	0.0	6.1
E	0.6	0.2	0.0	0.0	0.0	0.8
SE	1.9	3.0	0.0	0.0	0.0	4.8
S	2.3	3.6	0.0	0.0	0.0	5.9
SW	30.4	8.4	0.3	0.0	0.0	39.2
W	14.8	1.7	0.0	0.0	0.0	16.5
NW	7.2	0.3	0.0	0.0	0.0	7.5
Summary	70.7	17.8	0.3	0.0	0.0	88.8

%	Icon	Classes (ppm)	71	0-2	18	2-3	0	3-5	0	5-10	0	>10.0

PRAMP_RENO Poll.: PRAMP_RENO-CH4[ppm] 2018/08/01 00:00 - 2018/08/31 23:00 Calm: 11.23% Calm Poll Avg: 2.09[ppm]



CH4[ppm] Calibration: PRAMP_RENO Monthly: 18/08 Type: Span



NON-METHANE HYDROCARBON

Maxxam
A Bureau Veritas Group Company

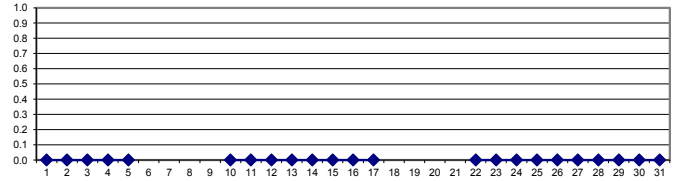
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**	0.00	**0.00**	24
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**X**	**X**	**X**	**X**	**X**	0.00	0.00	0.00	19
6	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	-	-	-	0
7	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**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	16
8	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	0.00	0.00	0.00	10
9	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**C**	**C**	**C**	**C**	**C**	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	15
10	0.00	0.00	0.01	0.01	**S**	0.00	0.00	0.00	0.00	0.00	0.00	**0.02**	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.02**	0.00	24
11	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
12	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
13	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
14	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	24
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	24
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	24
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	24
18	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	-	-	-	0
19	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	-	-	-	0
20	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	-	-	-	0
21	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**C1**	**C1**	**C1**	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	5
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
31	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
HOURLY MAX	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00				
HOURLY AVG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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

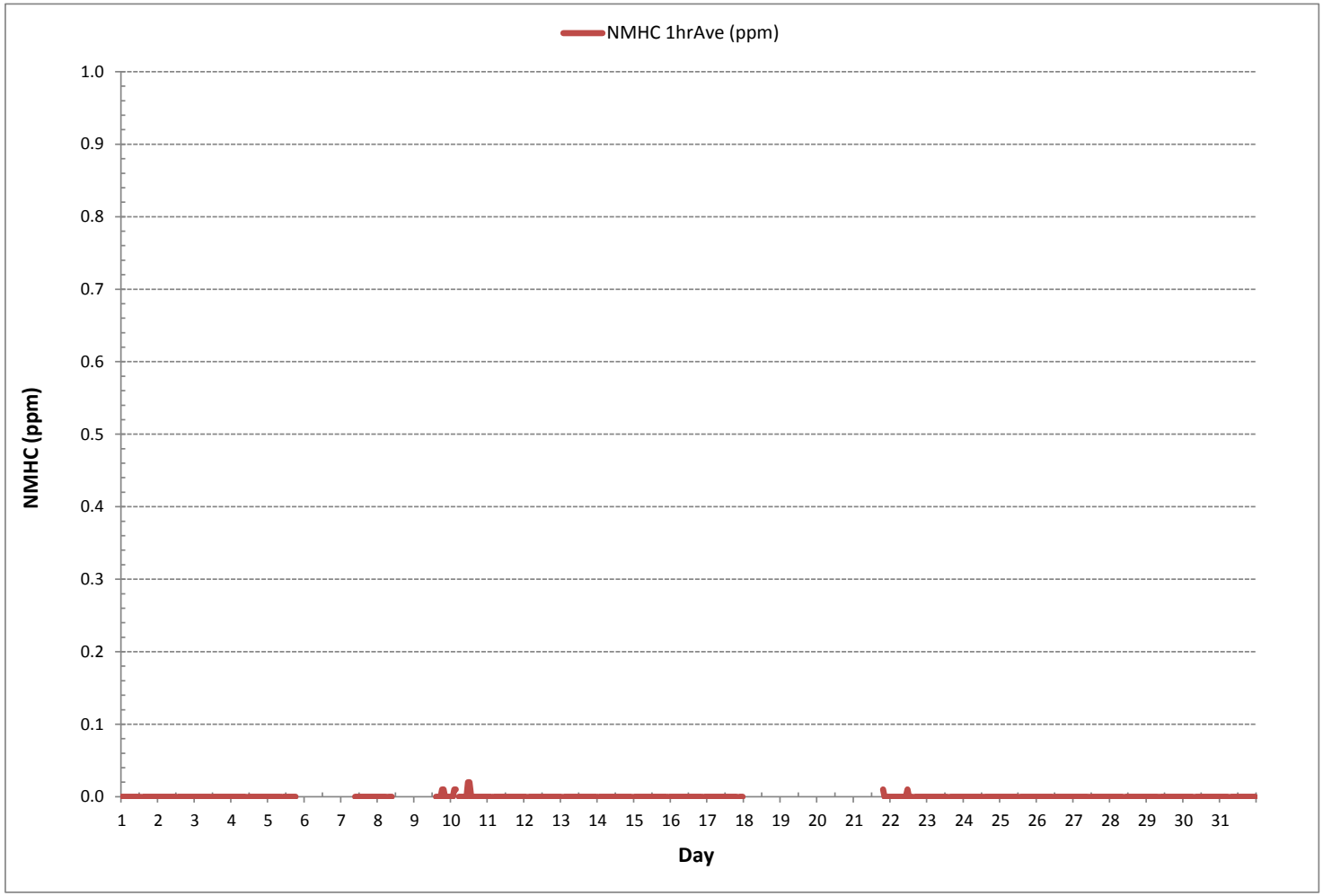
24 HR AVERAGES August 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			8				
MINIMUM 1-HR AVERAGE	0.00	ppm	@ HOUR	0	ON DAY	1	
MAXIMUM 1-HR AVERAGE:	0.02	ppm	@ HOUR	11	ON DAY	10	
MAXIMUM 24-HR AVERAGE:	0.00	ppm			ON DAY	1	
IZS CALIBRATION TIME:	26	hrs	OPERATIONAL TIME:			593	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:			79.7	%
STANDARD DEVIATION:	0.00		MONTHLY AVERAGE:			0.00	ppm

NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)



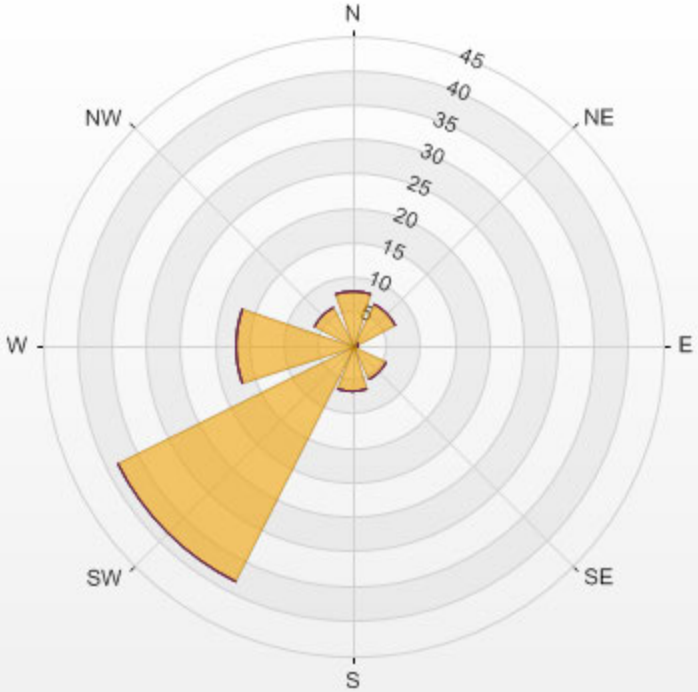
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-NMHC[ppm]
Monthly: 18/08
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 10.32% Calm Avg: 0.00 [ppm]

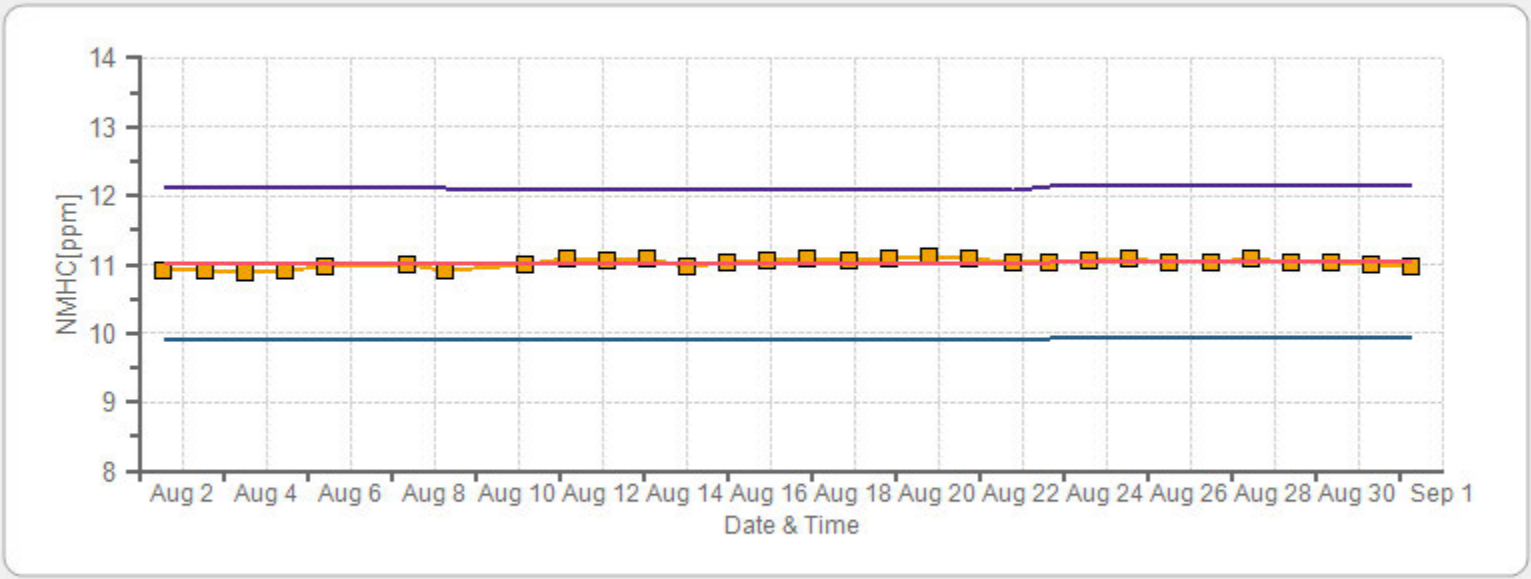
Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	8.0	0.0	0.0	0.0	0.0	8.0
NE	6.9	0.0	0.0	0.0	0.0	6.9
E	0.9	0.0	0.0	0.0	0.0	0.9
SE	5.5	0.0	0.0	0.0	0.0	5.5
S	6.8	0.0	0.0	0.0	0.0	6.8
SW	38.3	0.0	0.0	0.0	0.0	38.3
W	17.1	0.0	0.0	0.0	0.0	17.1
NW	6.2	0.0	0.0	0.0	0.0	6.2
Summary	89.7	0.0	0.0	0.0	0.0	89.7

% Icon Classes (ppm)	90 0-0.1	0 0.1-0.3	0 0.3-1	0 1-2	0 >2.0

PRAMP_RENO Poll.: PRAMP_RENO-NMHC[ppm] 2018/08/01 00:00 - 2018/08/31 23:00 Calm: 10.32% Calm Poll Avg: 0.00[ppm]



NMHC[ppm] Calibration: PRAMP_RENO Monthly: 18/08 Type: Span



WIND SPEED

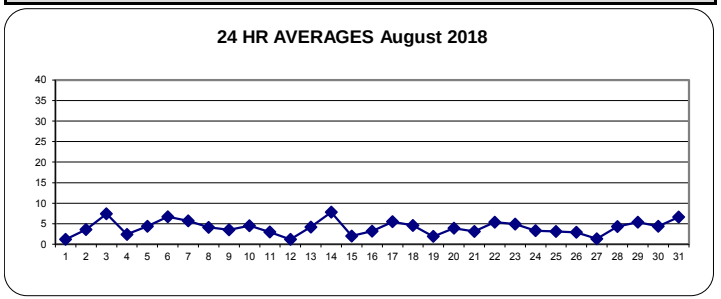
Maxxam
A Bureau Veritas Group Company

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	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	3.9	1.9	0.9	1.9	0.2	**0.1**	0.5	1.1	3.2	3.5	3.5	4.6	3.4	2.0	3.4	6.3	5.9	4.3	3.6	2.4	0.6	2.8	4.9	3.6	**0.1**	6.3	1.2	24
2	3.7	2.0	1.7	1.6	3.6	4.0	3.2	3.4	4.6	3.6	3.2	3.6	3.7	3.3	4.3	4.5	5.1	5.5	5.4	3.6	1.8	3.4	3.9	4.9	1.6	5.5	3.6	24
3	5.4	6.2	5.6	5.7	6.0	6.7	6.5	7.6	11.3	10.0	10.6	11.3	13.0	12.6	12.3	10.7	9.2	5.2	9.8	8.9	7.3	2.1	2.2	3.1	2.1	13.0	7.4	24
4	1.1	2.9	1.6	3.0	5.0	4.7	4.9	3.8	2.6	3.8	5.1	4.2	5.2	5.9	6.3	5.3	5.3	4.7	4.4	3.4	4.5	0.4	0.9	1.4	0.4	6.3	2.4	24
5	2.2	1.0	1.1	1.3	2.9	2.9	2.6	3.5	4.4	3.7	4.5	6.2	8.0	7.4	7.2	7.7	8.0	8.5	5.8	4.0	3.1	4.1	4.7	4.6	1.0	8.5	4.4	24
6	4.6	3.8	4.6	4.8	5.4	5.5	6.3	8.0	7.9	7.6	7.6	10.4	11.9	11.7	11.3	7.7	7.7	7.4	7.0	5.8	5.3	4.2	3.8	4.3	3.8	11.9	6.7	24
7	4.2	5.9	6.5	4.5	2.7	4.3	5.3	7.9	8.9	9.4	10.0	8.2	9.5	7.0	6.0	9.5	8.1	5.9	4.6	1.8	1.7	2.6	3.2	2.4	1.7	10.0	5.7	24
8	3.7	4.0	3.4	3.3	3.2	2.7	2.8	4.6	6.7	4.2	4.5	5.3	6.2	5.9	5.1	4.0	3.5	3.3	2.3	3.5	3.8	4.3	5.1	4.2	2.3	6.7	4.1	24
9	3.3	3.2	2.2	3.4	3.1	2.0	2.4	3.6	2.7	3.2	4.9	4.5	7.0	7.1	8.4	8.2	4.0	2.9	1.5	1.7	3.3	2.4	1.1	1.9	1.1	8.4	3.5	24
10	1.7	1.6	1.5	1.4	1.1	2.1	4.2	5.0	9.6	9.2	9.7	9.3	10.6	9.5	7.6	6.8	6.4	3.0	3.2	4.0	3.4	2.8	3.2	6.2	1.1	10.6	4.5	24
11	6.2	5.6	4.7	5.1	4.5	1.5	1.9	1.5	5.9	7.7	5.3	6.9	7.8	4.0	1.4	1.4	1.1	2.6	1.2	2.0	2.3	1.8	2.7	3.4	1.1	7.8	3.0	24
12	2.0	1.4	6.9	3.5	3.0	3.8	4.2	2.3	4.9	3.8	3.7	3.9	4.2	4.0	2.7	2.5	4.3	5.9	5.0	4.9	3.3	2.9	3.2	2.9	1.4	6.9	1.2	24
13	2.1	2.1	3.3	4.0	2.4	1.8	2.3	2.6	3.5	4.0	5.2	5.8	4.9	5.5	6.5	6.8	7.6	3.7	2.2	3.2	5.0	6.3	7.1	5.7	1.8	7.6	4.2	24
14	6.4	5.6	6.6	6.4	6.3	5.2	5.2	5.9	8.8	10.1	11.0	11.6	13.8	11.9	11.7	11.4	11.3	8.0	5.3	5.5	3.4	5.7	7.9	7.2	3.4	13.8	**7.8**	24
15	6.7	5.9	5.0	3.4	4.8	1.6	1.3	0.8	3.9	4.6	8.0	11.3	11.7	10.0	6.7	4.4	5.0	3.2	1.9	0.4	0.4	3.8	2.3	2.9	0.4	11.7	2.0	24
16	2.5	3.5	0.9	2.8	2.4	1.4	2.1	3.1	2.0	2.7	3.9	4.1	4.2	5.5	6.8	6.2	5.8	4.1	3.3	2.8	4.8	4.5	4.6	4.8	0.9	6.8	3.2	24
17	4.2	4.0	3.8	4.1	5.2	4.6	5.1	5.0	4.9	4.8	4.9	7.0	5.9	6.2	7.5	9.8	8.1	6.0	5.6	5.1	5.0	5.0	5.6	6.8	3.8	9.8	5.5	24
18	6.3	6.4	10.5	5.7	2.4	3.6	6.1	6.1	6.1	7.0	8.2	8.0	8.1	8.4	7.8	8.2	7.4	7.7	3.7	0.4	1.7	2.4	4.1	5.3	0.4	10.5	4.6	24
19	3.1	3.3	4.2	4.7	2.8	0.9	2.2	1.7	2.5	3.8	3.1	4.8	4.4	6.2	5.5	4.6	2.3	1.2	0.3	1.1	2.1	2.1	1.2	1.5	0.3	6.2	1.9	24
20	1.9	2.1	2.3	3.4	2.6	3.0	2.1	1.8	4.3	5.4	6.8	7.0	7.9	8.5	8.0	7.2	6.0	6.0	3.4	0.1	0.4	0.5	1.3	2.2	0.1	8.5	3.9	24
21	2.2	1.5	1.6	2.0	2.4	2.4	2.4	1.7	3.2	3.6	3.6	3.6	4.2	4.5	4.4	4.3	3.8	3.4	2.6	2.4	3.3	2.7	3.3	6.3	1.5	6.3	3.1	24
22	4.9	3.8	4.8	5.6	5.9	7.0	7.1	7.5	8.2	8.8	10.8	10.5	11.0	9.4	9.0	8.0	8.4	6.2	2.9	1.7	2.1	5.7	6.1	6.8	1.7	11.0	5.4	24
23	7.1	5.8	6.4	4.4	4.9	6.4	8.8	8.7	7.9	8.9	5.8	4.1	4.6	4.9	4.3	3.6	4.7	4.0	3.1	3.5	4.3	4.3	4.0	4.6	3.1	8.9	4.9	24
24	5.1	6.0	4.3	4.3	4.1	4.7	5.4	5.9	5.4	6.3	6.2	7.0	5.8	5.8	5.3	2.1	4.0	3.2	3.3	2.3	0.9	0.7	1.2	1.6	0.7	7.0	3.3	24
25	2.5	1.6	4.2	3.4	2.9	4.4	5.7	4.7	4.7	3.9	6.0	5.2	3.1	6.1	4.6	3.4	4.1	1.7	2.0	2.4	1.4	1.0	6.8	3.7	1.0	6.8	3.1	24
26	5.2	4.9	7.3	4.3	3.6	3.1	3.5	4.2	3.2	4.3	4.9	6.3	7.1	7.2	8.1	6.0	6.2	7.6	7.2	4.7	2.2	2.0	2.1	3.9	2.0	8.1	2.9	24
27	4.1	3.4	5.5	4.2	3.0	0.8	2.3	3.6	2.6	3.9	3.8	3.8	5.4	4.2	4.6	4.2	3.8	2.3	1.3	1.4	1.5	1.3	1.9	2.9	0.8	5.5	1.3	24
28	3.5	3.8	4.7	5.1	3.9	3.0	4.4	6.1	5.6	4.8	4.4	4.1	6.1	5.9	6.6	4.1	6.6	3.7	4.5	6.2	2.9	2.5	1.9	3.0	1.9	6.6	4.3	24
29	4.2	6.1	5.7	5.3	5.4	4.8	5.1	5.9	8.4	8.7	10.2	9.8	8.4	8.1	9.0	6.0	6.8	5.4	5.0	2.9	1.1	1.8	3.3	4.9	1.1	10.2	5.4	24
30	5.5	7.5	9.0	9.2	8.2	7.5	4.8	4.9	6.8	6.0	5.8	5.4	4.2	4.7	5.0	3.5	4.3	4.9	4.0	3.4	4.3	2.8	2.4	1.7	1.7	9.2	4.4	24
31	2.4	3.3	3.9	1.9	1.8	1.6	2.3	4.3	4.5	6.7	8.2	9.9	10.7	**13.9**	13.8	11.5	10.3	11.1	8.1	8.2	9.9	10.0	2.8	4.3	1.6	**13.9**	6.6	24
HOURLY MAX	7.1	7.5	10.5	9.2	8.2	7.5	8.8	8.7	11.3	10.1	11.0	11.6	13.8	13.9	13.8	11.5	11.3	11.1	9.8	8.9	9.9	10.0	7.9	7.2				

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

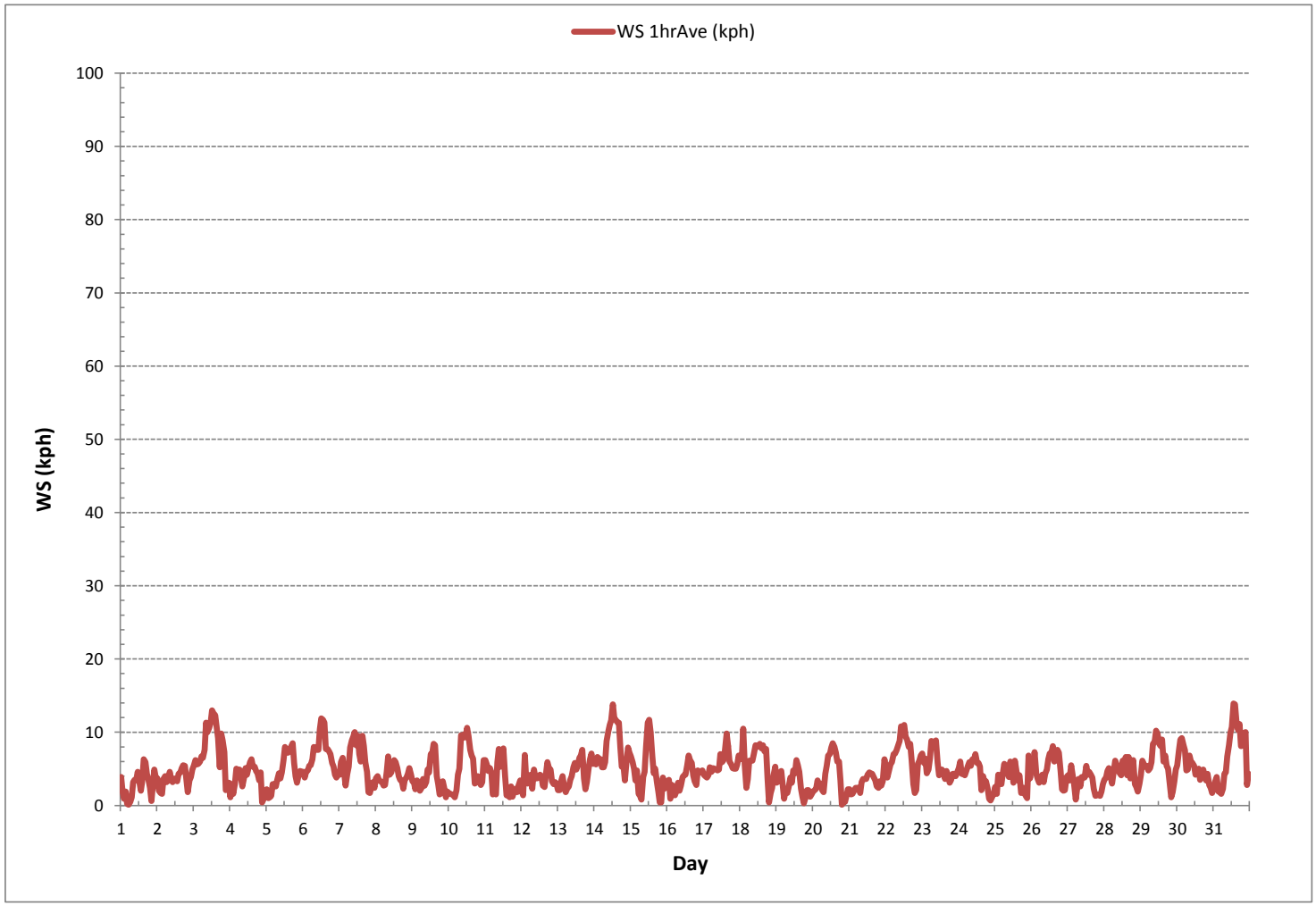


LAST CALIBRATION:	April 5, 2018
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			744				
MINIMUM 1-HR AVERAGE	0.1	kph	@ HOUR	5	ON DAY	1	
MAXIMUM 1-HR AVERAGE:	13.9	kph	@ HOUR	13	ON DAY	31	
MAXIMUM 24-HR AVERAGE:	7.8	kph			ON DAY	14	
			OPERATIONAL TIME:			744	hrs
MONTHLY CALIBRATION TIME:	0	hrs	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	2.6		MONTHLY AVERAGE:			2.9	kph

WIND SPEED Hourly Averages (WS kph)



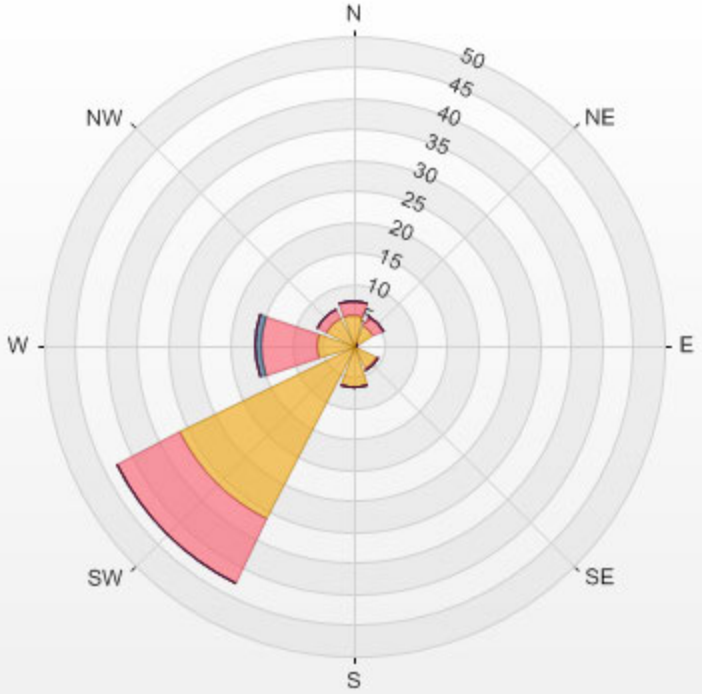
Wind: PRAMP_RENO
Monitor: WSP [kph]
Monthly: 18/08
Type: WindRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 10.08%

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	5.0	2.2	0.0	0.0	0.0	0.0	7.1
NE	3.6	1.8	0.0	0.0	0.0	0.0	5.4
E	0.7	0.0	0.0	0.0	0.0	0.0	0.7
SE	4.2	0.4	0.0	0.0	0.0	0.0	4.6
S	6.7	0.0	0.0	0.0	0.0	0.0	6.7
SW	31.5	11.4	0.0	0.0	0.0	0.0	42.9
W	6.1	9.0	0.8	0.0	0.0	0.0	15.9
NW	5.1	1.6	0.0	0.0	0.0	0.0	6.7
Summary	62.8	26.3	0.8	0.0	0.0	0.0	89.9

% Icon Classes (kph)	63 1.8-6.0	26 6.0-12.0	1 12.0-20.0	0 20.0-29.0	0 29.0-39.0	0 >39.0

PRAMP_RENO 2018/08/01 00:00 - 2018/08/31 23:00 Calm: 10.08% Calm Wind Avg Speed: 1.20(kph)



WIND DIRECTION

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	E	NE	N	NE	S	SW	E	SW	NW	NW	NW	N	N	W	W	W	W	N	NE	NE	S	SW	SW	SW	NW	24
2	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	S	SW	S	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	24
3	SW	SW	SW	SW	SW	SW	SW	SW	W	W	W	W	W	W	W	W	NW	W	W	W	W	NW	SW	SW	W	24
4	SW	SW	SW	SW	SW	W	SW	W	W	SW	W	W	N	N	NW	NW	N	N	N	NW	NW	S	SW	SW	W	24
5	SW	SW	SW	SW	SW	SW	S	SW	SW	SW	SW	SW	SW	SW	SW	W	SW	SW	SW	SW	SW	SW	SW	SW	SW	24
6	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	W	W	W	W	SW	SW	W	W	SW	SW	SW	SW	SW	24
7	SW	SW	SW	SW	SW	SW	SW	SW	SW	W	W	W	W	W	W	W	W	W	W	SW	SW	SW	SW	SW	W	24
8	SW	SW	SW	SW	SW	SW	S	SW	SW	SW	SW	SW	SW	SW	SW	SW	S	S	S	SW	SW	SW	SW	SW	SW	24
9	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	S	SW	SW	S	S	S	SW	24
10	S	S	S	SW	SW	SW	SW	SW	W	W	W	W	W	W	W	W	W	W	SW	SW	SW	SW	SW	N	W	24
11	N	N	NE	N	NE	NE	N	SE	E	NE	E	NE	NE	NE	E	S	SE	SE	E	NE	NE	NE	E	SE	NE	24
12	SE	S	SE	SE	SE	SE	SE	E	NE	NE	N	NE	NE	SE	SE	SW	SW	SW	SW	W	SW	SW	SW	SW	S	24
13	S	SW	S	S	S	S	S	S	S	S	S	S	S	S	SW	SW	SW	SW	S	S	SW	SW	SW	SW	S	24
14	SW	SW	SW	SW	SW	SW	SW	SW	W	W	W	W	W	W	SW	SW	SW	SW	W	W	SW	SW	SW	SW	SW	24
15	SW	W	W	W	W	W	SW	N	N	NW	N	N	N	NE	NE	NE	NE	NE	NE	NE	SW	SE	SE	SE	N	24
16	SE	SE	S	SE	SE	S	S	SE	S	S	S	S	S	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	S	24
17	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	24
18	SW	NW	N	N	NW	W	W	W	W	NW	NW	NW	W	NW	W	W	W	W	SW	SW	SW	SW	SW	SW	W	24
19	SW	SW	SW	SW	W	SW	W	NW	NW	N	NW	N	N	NW	NW	NW	N	N	NW	N	NW	NW	SW	SW	NW	24
20	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	24
21	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	S	S	S	S	SW	SW	S	S	S	SW	SW	SW	SW	SW	SW	24
22	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	W	W	W	W	W	W	SW	SW	SW	W	N	N	N	SW	24
23	N	NE	NE	NE	NE	N	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	N	N	N	N	NW	N	N	N	NE	24
24	N	N	NW	NW	N	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	SW	SW	SW	SW	SW	S	S	S	NW	24
25	SE	S	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	S	S	S	S	SW	SW	SE	24
26	SW	SW	W	W	NW	NW	W	W	W	W	NW	N	N	N	NE	N	N	NE	NE	NE	N	NW	N	N	N	24
27	N	N	N	N	N	N	SW	W	SW	SW	SW	SW	SW	SW	S	S	SW	S	S	SE	S	S	SW	SW	SW	24
28	SW	SW	SW	SW	SW	SW	SW	W	W	W	SW	W	W	SW	W	SW	SW	SW	SW	W	S	S	S	S	SW	24
29	SW	SW	SW	SW	SW	SW	SW	SW	SW	W	W	W	W	W	W	W	W	W	W	N	NE	SW	SW	W	SW	24
30	SW	SW	SW	SW	W	W	NW	NW	NW	NW	NW	NW	NW	NW	W	NW	W	W	W	W	W	W	SW	SW	W	24
31	SW	SW	SW	S	S	S	S	S	SW	SW	SW	SW	SW	W	W	W	SW	SW	SW	SW	SW	W	W	SW	SW	24

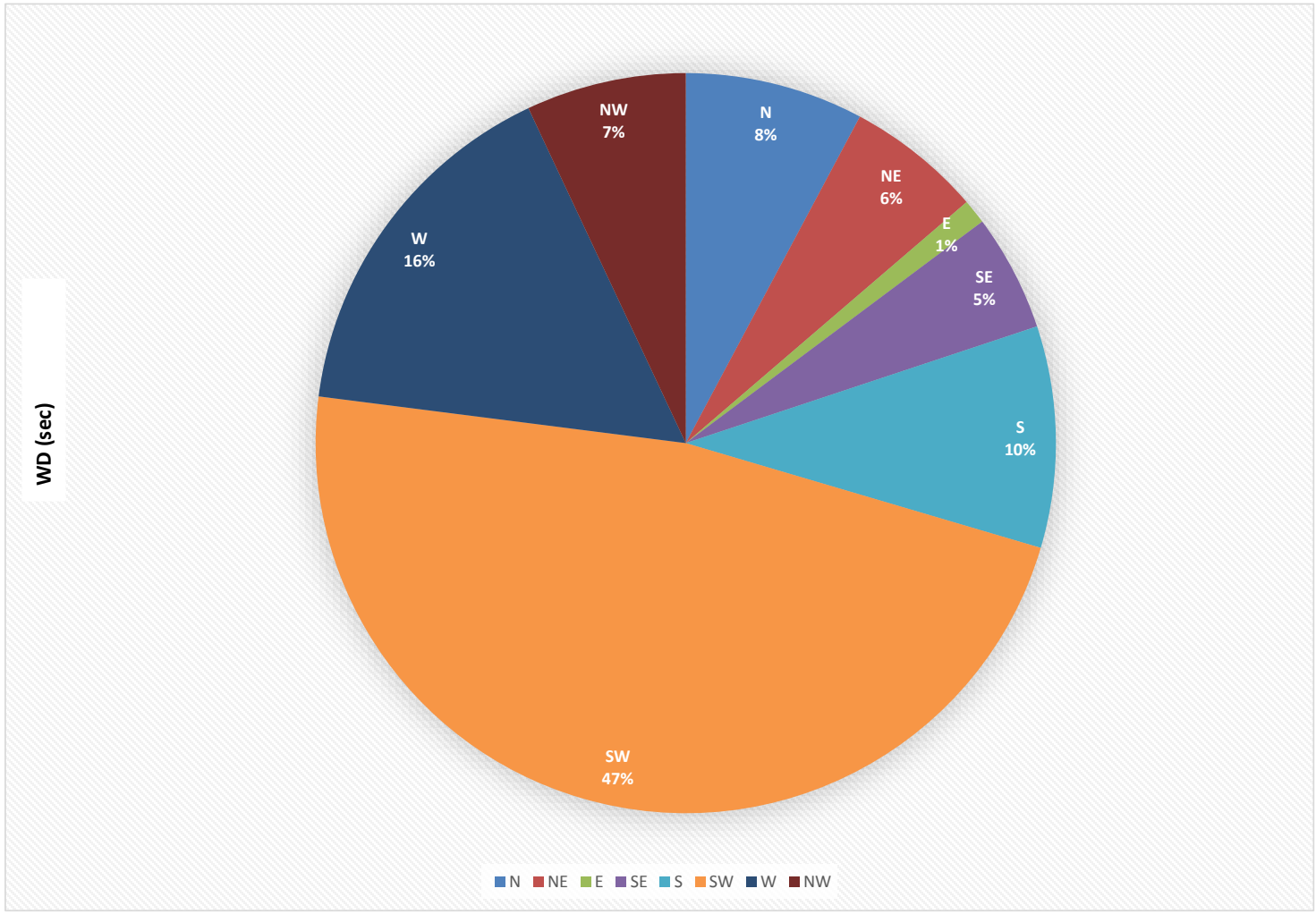
STATUS FLAG CODES

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

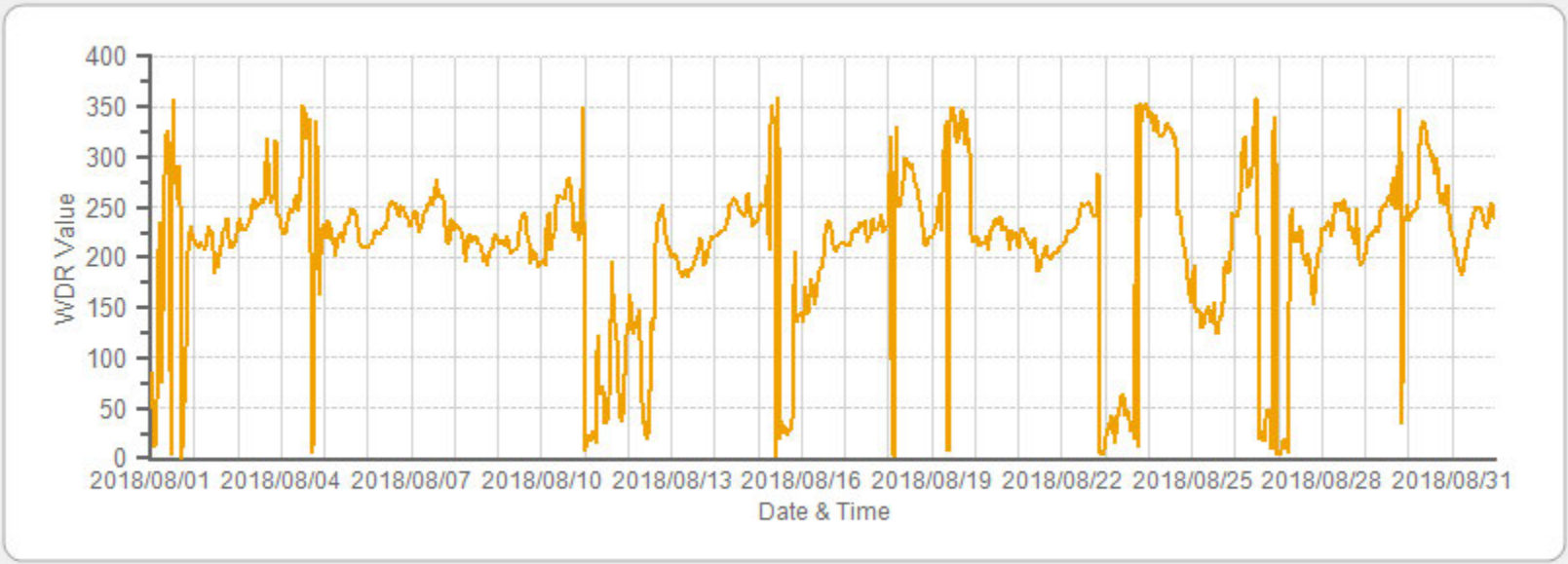
LAST CALIBRATION:	April 5, 2018
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST

MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:	744	hrs
STANDARD DEVIATION:	78		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	245 (WSW)	

WIND DIRECTION Hourly Averages (WD)



WDR[degwdr] Station: PRAMP_RENO Monthly: 18/08 Type: AVG 1 Hr. [1 Hr.]



RELATIVE HUMIDITY

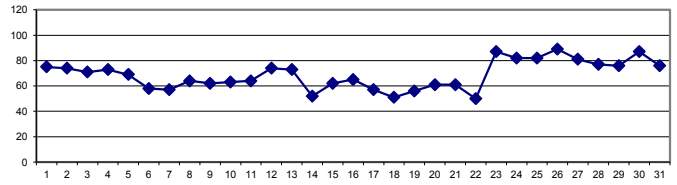
RELATIVE HUMIDITY Hourly Averages (RH %)

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

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

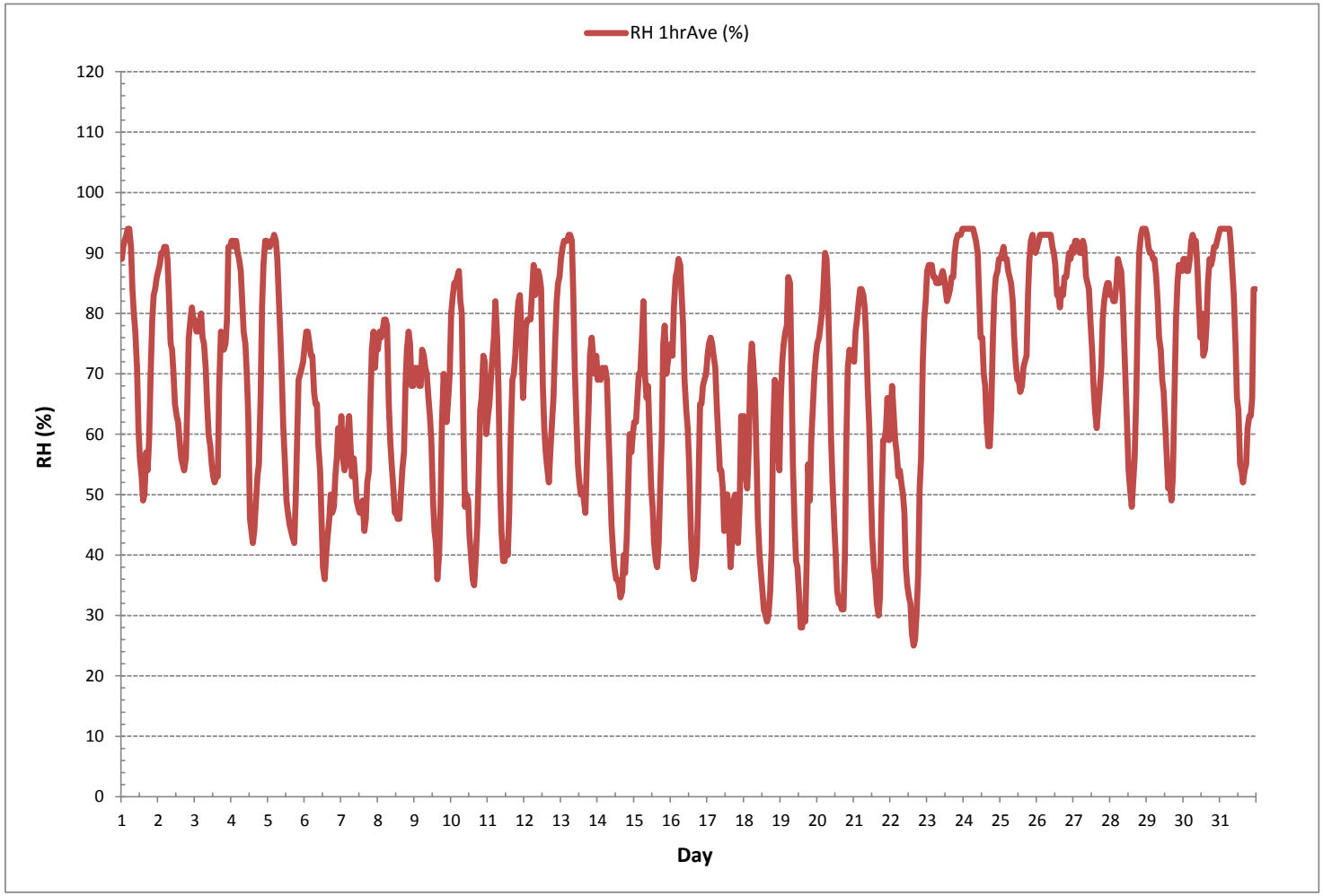
24 HR AVERAGES August 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	25	%	@ HOUR	15	ON DAY	22	
MAXIMUM 1-HR AVERAGE:	94	%	@ HOUR	4	ON DAY	1	
MAXIMUM 24-HR AVERAGE:	89	%			ON DAY	26	
			OPERATIONAL TIME:			744	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	18		MONTHLY AVERAGE:			69	%

RELATIVE HUMIDITY Hourly Averages (RH %)



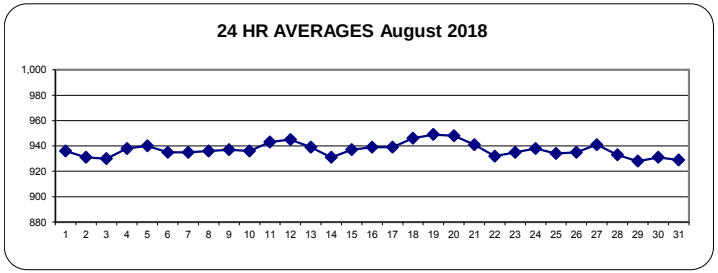
BAROMETRIC PRESSURE

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	938	938	938	937	937	937	937	936	936	936	936	936	936	935	935	935	935	935	934	934	934	934	934	934	934	938	936	24
2	934	934	933	933	933	933	933	933	932	932	932	932	932	931	931	930	930	930	929	929	929	929	929	929	929	934	931	24
3	929	929	928	928	928	928	929	929	929	929	929	929	930	930	930	930	932	932	933	933	934	934	935	935	928	935	930	24
4	935	935	935	935	935	936	936	937	937	937	937	938	938	938	938	938	938	938	939	939	940	940	940	940	935	940	938	24
5	941	941	941	941	941	941	941	941	941	941	941	941	940	940	940	939	939	939	938	938	938	938	938	938	938	941	940	24
6	937	937	937	937	936	936	936	936	935	935	935	934	934	934	934	934	934	934	934	934	934	934	934	934	934	937	935	24
7	934	934	934	934	935	935	935	935	935	935	936	936	935	936	936	936	936	936	936	936	936	937	937	937	934	937	935	24
8	937	937	937	937	937	937	937	937	937	937	937	936	936	936	936	935	935	935	934	934	935	935	936	936	934	937	936	24
9	937	937	937	937	937	937	937	937	938	937	937	937	937	937	937	937	937	936	936	936	936	936	936	935	935	938	937	24
10	935	935	935	935	935	935	935	936	935	935	935	936	936	936	936	935	935	935	936	936	937	937	938	939	935	939	936	24
11	940	941	941	942	942	943	944	944	944	944	945	944	944	944	944	944	943	943	943	943	943	943	944	944	940	945	943	24
12	944	944	944	944	944	945	945	945	945	945	946	946	945	945	945	945	945	945	945	945	945	945	945	945	944	946	945	24
13	945	945	944	944	944	943	943	943	942	941	941	940	939	938	937	937	936	935	935	934	934	933	933	932	932	945	939	24
14	932	932	932	932	932	932	932	932	932	932	931	931	931	931	930	930	929	929	929	930	930	931	931	931	929	932	931	24
15	932	932	932	933	933	934	934	935	935	936	937	938	938	939	939	939	939	940	940	940	940	941	941	941	932	941	937	24
16	941	941	941	941	940	940	940	940	940	940	939	939	939	938	938	938	938	938	938	938	938	939	939	939	938	941	939	24
17	939	939	939	939	939	939	939	939	939	939	939	939	939	938	938	938	938	938	938	938	939	939	939	940	938	940	939	24
18	940	941	942	944	945	946	946	947	947	948	948	948	948	948	947	947	947	947	946	946	946	947	947	947	940	948	946	24
19	947	947	947	947	948	948	948	949	949	949	949	949	949	949	949	949	948	948	949	949	949	950	950	950	947	950	**949**	24
20	950	950	950	950	**951**	951	951	951	951	950	950	950	949	948	948	947	946	946	945	945	945	945	945	944	944	**951**	948	24
21	944	944	944	944	944	943	943	943	943	943	943	942	941	941	940	940	939	938	938	937	936	936	936	935	935	944	941	24
22	935	934	934	933	933	933	933	933	933	932	932	932	932	931	931	931	930	930	930	930	931	931	932	932	930	935	932	24
23	932	933	933	933	934	934	934	935	935	935	935	935	935	935	936	936	936	936	936	936	937	937	937	937	932	937	935	24
24	936	937	937	937	937	937	938	938	938	938	938	938	938	939	939	938	938	938	938	938	937	937	937	936	936	939	938	24
25	936	936	935	935	935	934	934	934	934	934	934	934	934	934	934	934	933	933	933	933	933	933	932	932	932	936	934	24
26	932	931	931	931	931	931	931	932	932	932	933	934	934	935	936	936	937	938	939	940	941	942	942	943	931	943	935	24
27	944	944	944	944	944	944	944	945	944	944	944	943	942	941	940	939	939	938	937	937	936	936	935	935	935	945	941	24
28	935	935	934	934	934	934	934	934	934	934	934	934	933	933	933	932	932	931	931	932	931	930	930	930	930	935	933	24
29	929	929	929	929	929	928	928	928	928	928	928	928	928	928	928	**927**	927	928	928	928	929	929	929	929	**927**	929	928	24
30	929	929	929	929	929	929	929	930	930	931	931	931	932	932	932	932	933	933	933	934	934	934	934	934	929	934	931	24
31	933	933	932	931	931	930	930	930	930	929	929	929	928	928	928	928	927	927	927	927	927	928	928	928	927	933	929	24
HOURLY MAX	950	950	950	950	951	951	951	951	951	950	950	950	949	949	949	949	948	948	949	949	949	950	950	950				
HOURLY AVG	937	937	937	937	937	937	937	938	937	937	937	937	937	937	937	937	936	936	936	936	937	937	937	937				

STATUS FLAG CODES

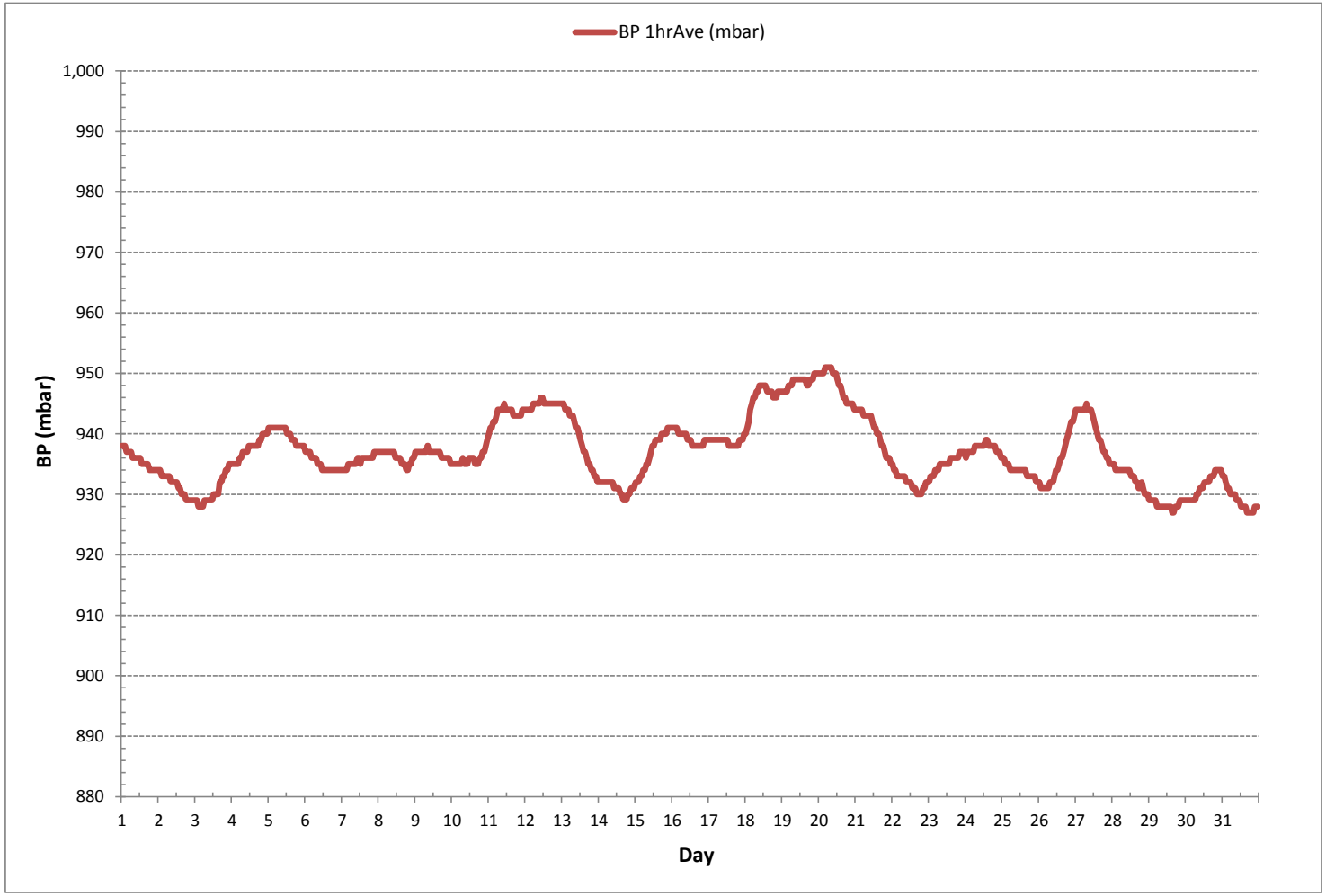
C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	927	mbar	@ HOUR	15	ON DAY	29	
MAXIMUM 1-HR AVERAGE:	951	mbar	@ HOUR	4	ON DAY	20	
MAXIMUM 24-HR AVERAGE:	949	mbar			ON DAY	19	
			OPERATIONAL TIME:			744	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	6		MONTHLY AVERAGE:			937	mbar

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE

Maxxam
A Bureau Veritas Group Company

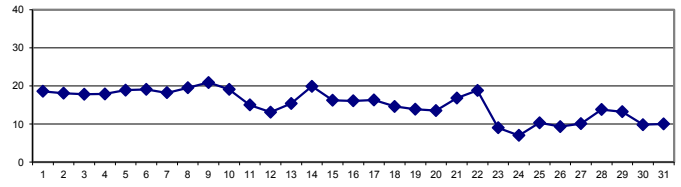
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

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	15.3	14.8	13.9	13.2	12.9	13.2	15.5	17.8	19.0	19.4	20.2	21.7	23.1	23.9	24.2	24.4	23.7	21.8	21.8	20.4	18.6	17.5	16.2	15.0	12.9	24.4	18.6	24
2	14.2	13.5	12.8	12.4	12.2	12.2	13.6	15.8	17.9	18.2	19.7	21.3	21.8	22.3	23.5	23.7	23.7	23.1	22.9	21.1	18.8	17.5	16.7	16.3	12.2	23.7	18.1	24
3	16.1	15.7	14.6	14.3	13.5	14.1	14.5	16.1	17.8	19.2	20.4	21.6	22.4	22.9	23.4	23.9	19.2	17.6	17.4	17.6	16.9	16.5	15.3	15.3	13.5	23.9	17.8	24
4	15.1	15.0	14.8	14.3	14.0	13.1	13.3	14.6	17.0	18.5	20.0	21.3	22.4	22.7	23.2	22.8	22.6	22.5	21.9	19.8	15.7	14.7	14.7	14.4	13.1	23.2	17.9	24
5	14.0	13.6	12.6	12.1	12.1	11.9	13.3	15.3	17.3	19.4	21.2	22.5	23.5	24.2	24.7	24.9	25.3	25.2	24.6	22.4	19.7	18.6	18.0	17.2	11.9	25.3	18.9	24
6	16.3	15.4	15.1	14.8	14.8	14.5	15.8	16.7	17.9	19.9	21.6	23.5	24.4	24.5	23.7	22.4	22.5	22.3	21.5	20.7	19.3	17.7	16.4	16.5	14.5	24.5	19.1	24
7	15.4	15.9	15.6	14.9	13.4	12.6	14.1	16.2	16.5	17.9	19.4	20.4	21.5	22.0	22.5	23.4	23.1	22.7	22.7	20.6	18.5	16.8	16.5	15.2	12.6	23.4	18.2	24
8	14.9	14.4	14.1	13.5	13.0	13.1	13.8	16.6	18.0	20.2	22.0	23.4	23.9	23.6	24.9	25.4	25.9	25.1	23.1	22.2	20.4	19.2	19.3	18.3	13.0	25.9	19.5	24
9	16.7	16.2	15.7	15.9	16.1	15.0	15.5	16.7	18.0	19.9	21.0	23.3	25.4	26.5	27.2	28.3	**28.5**	27.8	26.2	22.6	21.0	20.2	19.1	18.0	15.0	**28.5**	**20.9**	24
10	17.7	17.5	17.1	17.0	15.7	14.7	15.2	16.3	18.2	20.0	20.1	21.0	22.5	23.2	24.0	24.0	23.6	23.2	21.8	19.7	18.0	16.0	15.3	16.3	14.7	24.0	19.1	24
11	14.7	13.8	12.3	11.0	9.6	8.3	10.0	13.2	16.2	17.7	19.1	19.0	19.0	19.5	19.4	18.3	16.7	16.0	15.5	15.1	14.6	14.1	13.8	14.3	8.3	19.5	15.0	24
12	13.5	12.7	12.1	11.5	11.2	10.3	9.8	10.2	10.8	11.0	11.3	12.1	14.4	16.1	16.7	17.4	17.6	16.7	16.2	15.5	14.0	12.1	10.7	9.8	9.8	17.6	13.1	24
13	8.6	8.1	8.3	8.4	7.5	7.0	7.6	9.5	12.2	15.1	17.1	19.0	20.6	21.5	22.2	22.9	22.8	22.2	21.8	19.4	18.0	17.6	17.2	15.9	7.0	22.9	15.4	24
14	15.8	15.3	15.1	14.5	14.3	13.7	14.3	16.2	18.5	20.7	22.3	23.4	24.2	25.2	26.0	26.7	26.7	25.3	25.0	22.1	19.4	17.6	17.8	16.7	13.7	26.7	19.9	24
15	15.9	15.7	14.8	13.7	13.7	12.6	11.8	15.4	16.9	16.3	17.3	18.0	18.4	19.6	20.3	20.8	20.5	19.6	18.6	16.0	14.0	13.6	12.8	12.1	11.8	20.8	16.2	24
16	11.5	11.5	10.2	10.5	10.5	9.4	10.4	12.8	15.5	17.1	17.8	18.9	20.6	21.7	22.2	22.6	22.7	22.3	20.3	17.1	16.3	15.4	14.7	14.3	9.4	22.7	16.1	24
17	13.6	13.1	12.7	12.0	11.8	11.1	11.6	13.2	15.1	16.0	17.2	18.7	18.9	19.4	21.2	22.2	21.9	21.3	20.4	18.4	16.9	15.6	14.3	14.0	11.1	22.2	16.3	24
18	13.3	14.2	13.7	12.2	10.7	9.9	10.3	11.7	13.2	14.7	16.0	16.9	18.0	18.6	19.2	19.6	19.5	18.9	17.7	14.6	12.2	11.0	11.8	12.8	9.9	19.6	14.6	24
19	11.1	10.1	9.8	9.3	9.2	7.2	7.5	11.0	13.8	15.5	17.1	18.1	19.1	19.8	20.3	19.5	20.4	19.2	17.2	15.6	12.9	10.9	9.3	8.4	7.2	20.4	13.9	24
20	7.3	6.9	6.5	6.4	6.3	5.4	5.9	8.3	12.0	14.6	16.4	18.3	19.6	20.8	21.0	21.8	21.9	21.5	20.3	16.2	13.3	11.8	11.5	10.7	5.4	21.9	13.5	24
21	11.1	10.0	9.5	8.7	8.0	8.2	8.9	10.9	13.0	15.4	17.7	20.8	22.8	24.3	25.2	26.0	26.5	25.9	23.1	19.4	17.9	16.9	15.4	16.5	8.0	26.5	16.8	24
22	15.2	13.6	13.4	13.4	13.4	13.7	13.5	14.7	16.4	18.4	21.0	23.1	24.5	25.9	27.1	27.5	27.4	26.5	24.3	20.3	18.6	15.1	12.7	11.5	11.5	27.5	18.8	24
23	10.5	10.2	10.2	10.3	10.8	10.4	10.0	9.8	9.6	9.1	8.9	8.9	9.1	9.3	9.3	9.3	8.9	8.8	8.4	7.8	7.2	6.8	6.5	6.2	6.2	10.8	9.0	24
24	5.9	5.6	5.5	5.2	5.0	4.9	4.7	4.7	5.0	5.3	6.5	7.3	7.5	8.3	8.7	10.7	11.8	12.5	11.1	8.9	7.1	6.0	5.6	5.3	4.7	12.5	7.0	24
25	5.8	5.7	5.9	6.2	6.5	6.6	6.7	7.6	9.0	10.6	11.7	12.7	13.1	13.8	14.4	14.4	15.0	15.0	13.6	12.0	11.2	10.7	10.3	9.8	5.7	15.0	10.3	24
26	9.6	9.2	9.3	9.5	9.7	9.4	9.6	9.4	9.6	9.6	10.1	9.7	10.1	10.9	10.1	10.3	10.0	9.3	8.8	8.2	7.9	7.6	8.0	7.8	7.6	10.9	9.3	24
27	7.5	7.2	7.0	6.9	6.8	6.3	6.0	6.5	8.1	8.8	9.3	10.3	11.4	12.8	14.0	14.9	14.3	14.1	13.7	12.3	11.1	10.8	10.8	11.0	6.0	14.9	10.1	24
28	11.3	11.0	11.1	11.2	10.4	9.1	9.4	9.8	11.4	12.9	15.2	17.2	18.8	19.3	20.1	19.7	18.7	17.4	15.1	13.0	12.4	12.4	12.2	12.2	9.1	20.1	13.8	24
29	12.1	12.2	12.0	11.3	10.7	10.0	10.0	11.2	12.8	14.1	15.1	15.5	16.6	17.6	18.2	17.9	18.1	17.5	14.5	11.7	10.6	9.4	9.1	9.5	9.1	18.2	13.2	24
30	9.5	9.7	9.6	9.2	9.1	9.2	9.3	9.2	9.2	9.3	10.6	11.0	10.8	11.6	11.9	11.6	9.9	9.8	10.0	9.7	9.5	8.9	8.3	7.8	7.8	11.9	9.8	24
31	6.5	5.7	5.5	4.8	4.2	4.0	4.5	7.1	8.7	9.9	11.5	12.7	13.3	14.5	14.9	15.2	14.6	14.1	13.0	12.3	12.3	12.0	9.2	8.8	**4.0**	15.2	10.0	24
HOURLY MAX	17.7	17.5	17.1	17.0	16.1	15.0	15.8	17.8	19.0	20.7	22.3	23.5	25.4	26.5	27.2	28.3	28.5	27.8	26.2	22.6	21.0	20.2	19.3	18.3				
HOURLY AVG	12.5	12.0	11.6	11.2	10.9	10.4	10.9	12.4	14.0	15.3	16.6	17.8	18.8	19.6	20.1	20.4	20.1	19.5	18.5	16.5	15.0	13.9	13.2	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

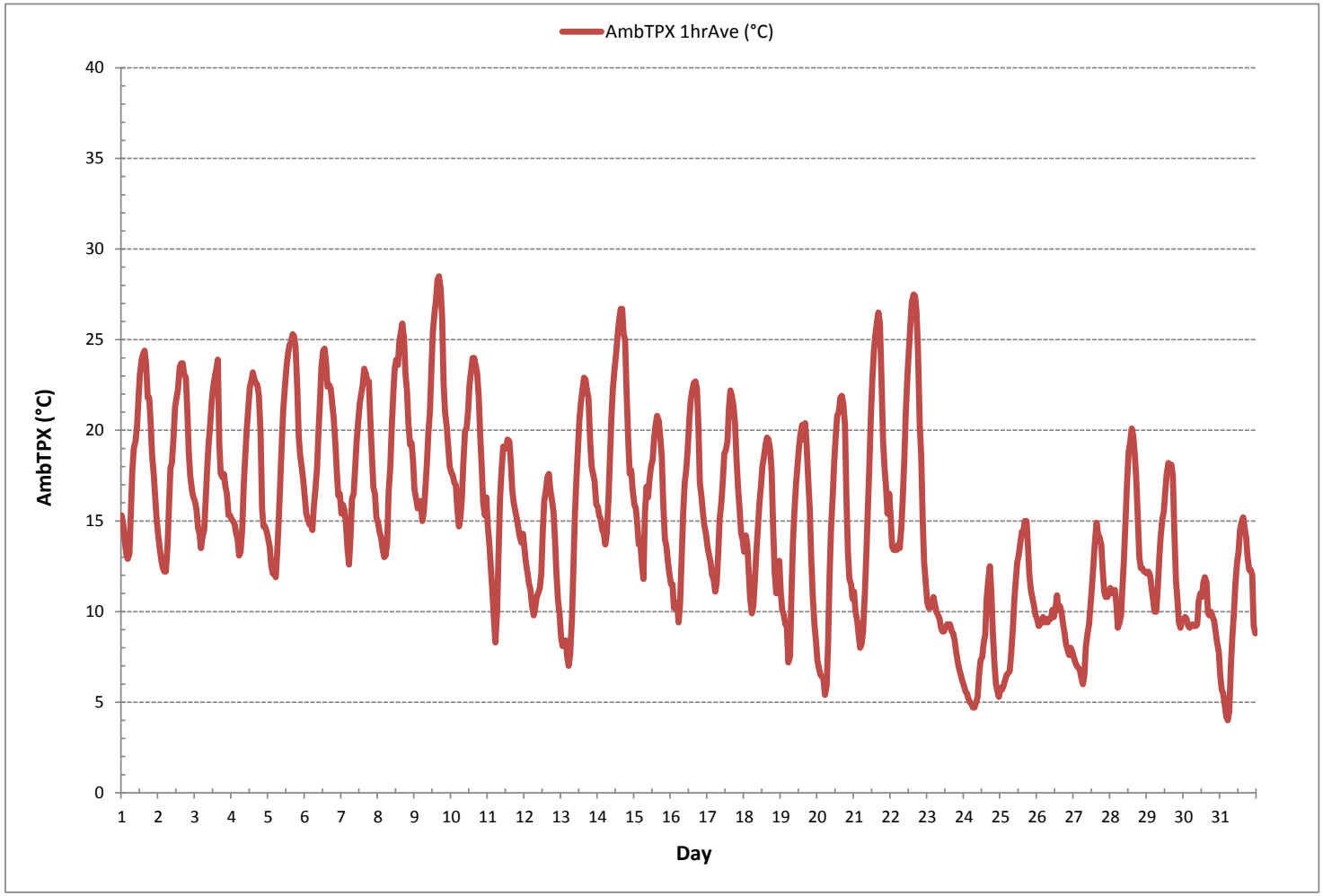
24 HR AVERAGES August 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	4.0	°C	@ HOUR	######	ON DAY	31	
MAXIMUM 1-HR AVERAGE:	28.5	°C	@ HOUR	16	ON DAY	9	
MAXIMUM 24-HR AVERAGE:	20.9	°C			ON DAY	9	
			OPERATIONAL TIME:			744	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	5.4		MONTHLY AVERAGE:			15.2	°C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



STATION TEMPERATURE

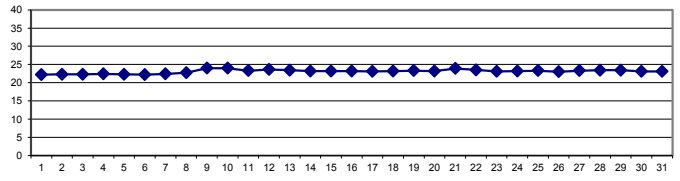
STATION TEMPERATURE Hourly Averages (StnTPX °C)

HR START (MST) / HR END (MST)	0:00 0:59	1:00 1:59	2:00 2:59	3:00 3:59	4:00 4:59	5:00 5:59	6:00 6:59	7:00 7:59	8:00 8:59	9:00 9:59	10:00 10:59	11:00 11:59	12:00 12:59	13:00 13:59	14:00 14:59	15:00 15:59	16:00 16:59	17:00 17:59	18:00 18:59	19:00 19:59	20:00 20:59	21:00 21:59	22:00 22:59	23:00 23:59	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.
DAY																											
1	22.1	22.8	22.8	22.8	22.7	22.5	22.6	22.1	**21.7**	21.8	21.8	21.8	22.3	22.1	22.0	22.3	22.3	22.2	22.2	22.2	22.1	21.9	21.9	22.8	**21.7**	22.8	22.2	24
2	22.9	22.9	22.8	22.6	22.5	22.2	22.2	22.5	21.9	21.8	21.8	21.9	21.9	22.0	22.2	22.2	22.3	22.4	22.4	22.4	22.2	21.9	22.0	22.8	21.8	22.9	22.3	24
3	23.0	23.0	22.9	22.8	22.7	22.5	22.5	22.6	22.1	21.7	21.8	21.9	21.9	22.0	22.2	22.2	22.0	22.0	21.9	21.9	21.7	22.8	23.0	22.4	21.7	23.0	22.3	24
4	22.9	23.0	23.1	23.0	22.9	22.8	22.6	22.7	22.6	21.8	21.9	22.2	21.9	22.4	22.0	22.1	22.1	22.2	22.2	22.1	22.0	22.8	22.6	22.9	21.8	23.1	22.4	24
5	23.0	23.0	22.8	22.6	22.0	22.2	22.3	22.5	22.4	21.8	21.9	21.8	21.9	22.0	22.1	22.2	22.4	22.4	22.4	22.3	22.2	22.0	21.8	22.0	21.8	23.0	22.3	24
6	22.7	22.7	22.7	22.6	22.5	22.4	22.4	22.7	21.8	21.8	21.8	22.0	22.0	22.0	22.0	22.1	22.0	22.1	22.0	21.9	21.8	21.8	22.8	22.9	21.8	22.9	22.2	24
7	22.9	22.8	22.7	22.6	22.4	23.7	22.8	22.3	21.9	22.0	22.4	22.1	22.1	22.2	22.2	22.4	22.4	22.3	22.3	22.3	22.7	22.3	22.2	22.5	21.9	23.7	22.4	24
8	22.8	23.2	23.0	23.1	23.4	23.1	22.9	22.8	22.2	22.2	22.2	22.3	22.4	22.5	22.6	22.8	22.8	22.9	22.9	22.8	22.6	22.4	22.3	22.3	22.2	23.4	22.7	24
9	22.2	22.2	22.1	22.1	22.1	22.1	22.1	22.1	22.3	22.2	23.7	25.2	25.7	26.6	27.4	**27.9**	27.3	24.7	24.1	23.9	24.2	24.8	24.7	24.7	22.1	**27.9**	**24.0**	24
10	25.0	24.6	24.9	24.7	25.2	25.2	25.1	25.1	24.4	24.2	23.5	23.2	22.7	22.7	22.9	23.2	23.3	23.4	23.2	23.8	24.0	24.4	24.4	23.3	22.7	25.2	24.0	24
11	23.6	23.6	23.9	23.9	23.7	23.5	23.2	23.3	23.4	22.5	22.2	22.4	22.4	22.4	22.5	22.6	23.2	23.7	23.8	23.8	24.3	24.0	24.3	23.7	22.2	24.3	23.3	24
12	23.7	24.1	24.0	24.1	24.1	24.0	23.8	23.8	23.7	23.8	23.9	24.0	23.5	22.8	22.9	22.6	22.7	22.7	22.5	23.6	23.7	24.5	24.5	24.2	22.5	24.5	23.6	24
13	23.8	23.5	23.2	23.3	23.6	23.5	23.1	23.7	23.4	23.6	22.8	22.4	22.6	23.0	23.2	23.1	23.3	23.3	23.2	23.5	23.9	24.1	24.1	24.0	22.4	24.1	23.4	24
14	24.0	23.8	23.8	23.9	23.8	23.9	23.8	22.9	22.3	22.4	22.7	23.2	23.5	23.3	22.6	22.5	23.2	22.9	22.8	23.3	23.1	22.9	22.5	23.3	22.3	24.0	23.2	24
15	23.0	23.2	23.3	23.9	23.5	23.8	23.7	23.1	22.3	22.9	22.4	22.4	22.4	22.8	23.2	23.5	23.4	23.6	23.4	22.9	23.8	23.3	23.7	23.7	22.3	23.9	23.2	24
16	23.9	24.0	23.9	23.8	23.6	23.4	23.4	23.8	23.1	22.5	22.5	22.6	22.9	23.3	23.2	22.9	23.0	22.9	23.5	23.3	22.7	22.9	23.3	23.4	22.5	24.0	23.2	24
17	23.4	23.5	23.8	23.5	23.9	24.0	23.9	22.9	22.5	22.2	22.1	22.4	22.8	23.1	23.4	22.9	22.9	23.1	23.4	23.5	23.1	22.6	22.9	22.8	22.1	24.0	23.1	24
18	23.2	23.2	22.7	23.3	23.6	23.8	23.6	23.5	23.0	22.8	22.8	22.4	22.5	22.9	23.3	23.5	23.5	23.5	23.6	23.3	23.0	23.4	23.4	23.2	22.4	23.8	23.2	24
19	23.5	23.7	23.7	23.7	23.7	23.7	23.6	23.5	23.0	22.2	22.5	23.0	23.3	23.5	23.1	23.2	23.2	23.3	23.5	23.1	22.9	23.4	24.0	24.0	22.2	24.0	23.3	24
20	23.8	23.4	23.8	23.8	23.8	23.4	24.0	23.7	23.3	22.7	22.3	22.7	23.3	23.2	23.1	22.5	22.5	22.6	23.1	23.5	22.9	22.9	23.7	23.5	22.3	24.0	23.2	24
21	23.3	23.7	23.8	23.6	23.4	24.0	23.5	23.5	22.6	23.1	23.7	25.4	23.8	23.8	24.0	24.9	24.5	23.9	24.1	24.2	24.4	24.2	24.8	24.2	22.6	25.4	23.9	24
22	24.5	24.4	24.2	24.0	23.8	23.6	23.4	23.5	23.0	22.9	22.2	22.2	22.4	23.0	23.5	24.1	24.1	24.2	24.0	23.3	22.6	23.5	24.0	23.9	22.2	24.5	23.5	24
23	23.8	23.6	23.5	23.3	23.3	23.4	23.2	22.9	22.8	22.8	22.9	22.6	23.3	22.9	22.8	22.8	22.9	22.8	22.6	23.2	22.6	23.2	23.0	23.4	22.6	23.8	23.1	24
24	23.0	23.5	23.0	23.4	23.1	23.3	23.1	23.1	23.1	23.3	23.6	22.8	23.4	23.0	23.0	23.3	23.3	23.3	23.8	24.0	23.6	23.0	22.5	22.7	22.5	24.0	23.2	24
25	23.0	23.1	23.0	22.9	22.9	22.8	23.1	23.0	22.8	22.7	23.1	23.5	23.6	23.3	23.3	23.4	23.4	23.5	23.6	24.3	24.2	24.1	23.8	23.5	22.7	24.3	23.3	24
26	23.2	23.0	22.8	22.8	22.9	22.9	23.1	22.8	22.7	22.7	22.8	23.0	22.9	23.0	23.2	23.4	23.5	23.3	23.0	22.8	22.6	23.1	23.2	23.0	22.6	23.5	23.0	24
27	22.8	23.2	23.2	23.0	22.8	23.1	23.2	22.8	23.0	22.9	23.0	23.2	23.3	23.7	23.4	23.5	23.5	23.4	23.4	23.8	23.8	23.8	23.7	23.6	22.8	23.8	23.3	24
28	23.5	23.5	23.4	23.2	23.1	22.9	22.7	22.8	22.8	23.2	23.4	23.0	23.1	22.5	22.6	22.6	23.1	23.5	24.1	24.1	24.4	24.4	24.3	24.3	22.5	24.4	23.4	24
29	24.2	24.1	24.0	23.8	23.6	23.3	23.0	22.9	23.3	23.8	23.4	23.5	23.0	23.0	22.9	22.9	22.6	23.0	23.7	23.9	24.1	23.9	23.5	23.2	22.6	24.2	23.4	24
30	22.9	22.8	22.8	22.6	22.4	22.6	23.0	22.8	23.1	22.8	23.0	23.2	23.4	23.6	23.9	23.8	24.0	23.7	23.6	23.5	23.3	23.1	22.9	22.7	22.4	24.0	23.1	24
31	22.8	23.1	23.0	23.0	22.9	22.9	23.0	23.0	22.5	22.6	22.9	23.4	23.7	23.1	23.1	23.0	23.0	23.4	23.1	23.6	23.7	23.6	23.3	23.1	22.5	23.7	23.1	24
HOURLY MAX	25.0	24.6	24.9	24.7	25.2	25.2	25.1	25.1	24.4	24.2	23.9	25.4	25.7	26.6	27.4	27.9	27.3	24.7	24.1	24.3	24.4	24.8	24.8	24.7				
HOURLY AVG	23.3	23.4	23.3	23.3	23.2	23.2	23.2	23.1	22.7	22.6	22.7	22.8	22.9	23.0	23.0	23.1	23.2	23.1	23.1	23.2	23.2	23.3	23.3	23.3				

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

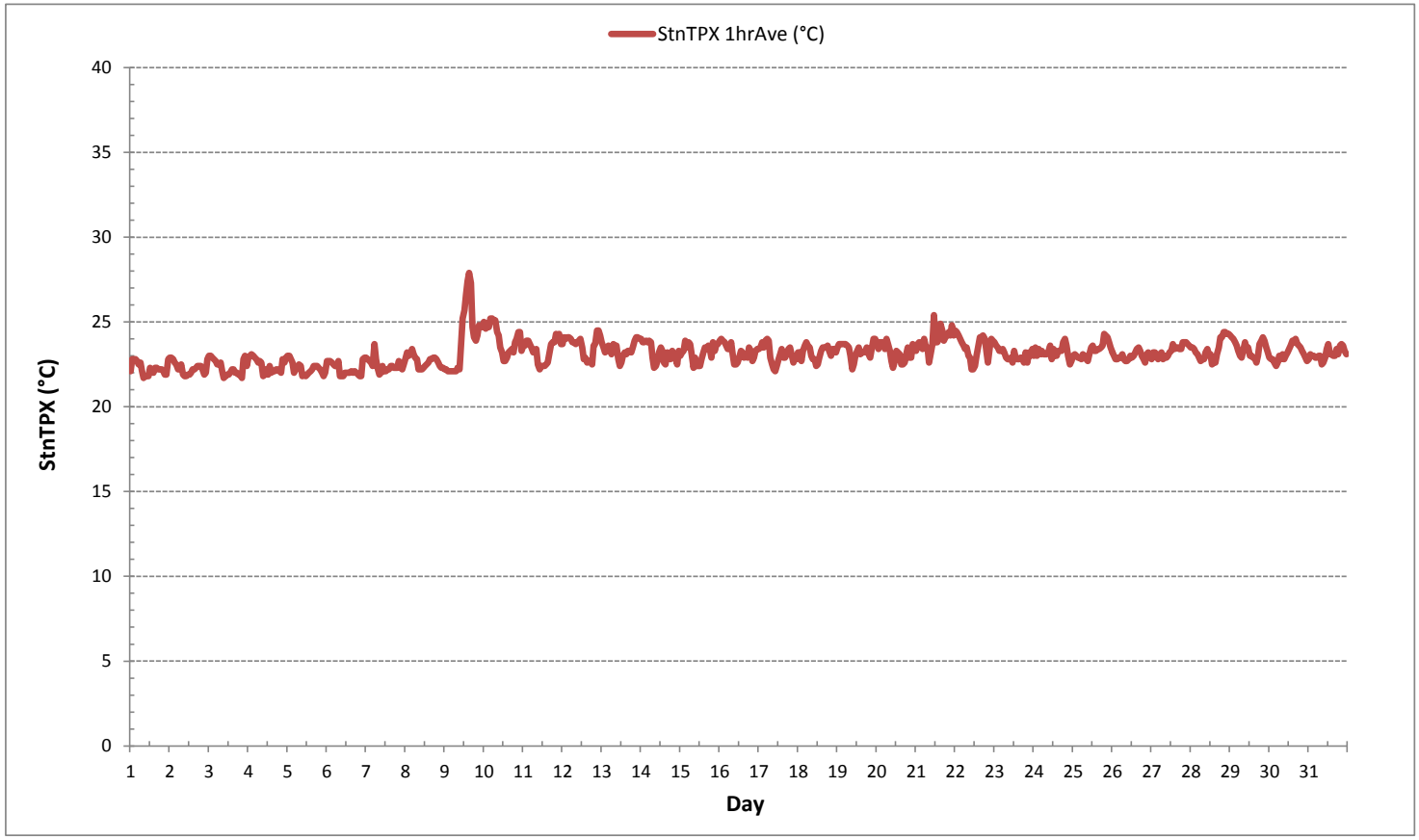
24 HR AVERAGES August 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	21.7	°C	@ HOUR	8	ON DAY	1	
MAXIMUM 1-HR AVERAGE:	27.9	°C	@ HOUR	15	ON DAY	9	
MAXIMUM 24-HR AVERAGE:	24.0	°C			ON DAY	9	
			OPERATIONAL TIME:			744	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	0.8		MONTHLY AVERAGE:			23.1	°C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE

API 100A Sulphur Dioxide Analyzer Calibration

Date:	August 9, 2018	**Barometer/B.P./units:**	Brunton 05490 expires December 11, 2018	937	millibars
Company/Airshed:	PRAMP	**Thermometer/Station Temp:**	F.S. 160459244 expires June 19, 2020	24	°C
Location/Station Name:	Reno	**Weather Conditions:**	Smoke		
Parameter:	Sulphur Dioxide	**Calibration Purpose:**	routine monthly		
Start Time 24 hr. (mst):	13:20	**Performed By/Reviewer:**	Chris Wesson	Rob Fisher	
End Time 24 hr. (mst):	17:18	**Cal Gas Expiry Date:**	October 24, 2020		
Calibration Method:	Gas Dilution	**Converter Model & s/n (if applicable):**	n/a		

Analyzer:

Serial Number/Owner:	841	Maxxam	**Range ppb:**	500
Last Calibration Date:	July 4, 2018		**As Found C.F.:**	0.950
Previous C.F.:	1.000		**New C.F.:**	0.999

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 152020 expires November 22, 2018
High Flow Meter ID/Expiry Date:	Defender High 148943 expires November 21, 2018
Calibrator ID/Expiry Date:	API id# 829 expires January 31, 2019
Cal Gas Cylinder I.D. # :	LL108015
Cal Gas Conc. (ppm):	47.9

Standard Calibration Points for Ranges

Point	ppb
High	380
Mid	180
Low	90

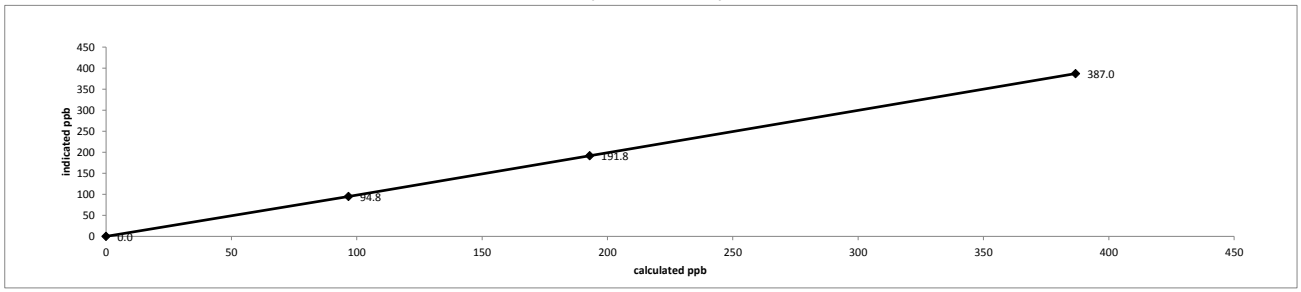
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration (ppb):	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	**Diluent**	**Cal Gas**	**Total**			
as found zero	6029	0.00	6029	0.0	1.7	n/a
as found high	5959	48.50	6007	386.8	409.0	0.950
adjusted zero	6029	0.00	6029	0.0	0.0	n/a
adjusted high	5959	48.50	6007	386.8	387.0	0.999
mid	5987	24.21	6011	192.9	191.8	1.006
low	5993	12.12	6005	96.7	94.8	1.020
calibrator zero	6029	0.00	6029	0.0	0.0	n/a
					Average C.F.=	1.008

Linear Regression/Calibration Results:

		LIMITS
Correlation Coefficient =	**1.000**	**> or = 0.995**
Slope =	**0.998**	**0.95-1.05**
b (Intercept as % of full scale)=	**0.21%**	**± 3% F.S.**
% change in C.F. from last cal=	**5.04%**	**± 10%**

API 100A Sulphur Dioxide Analyzer Calibration



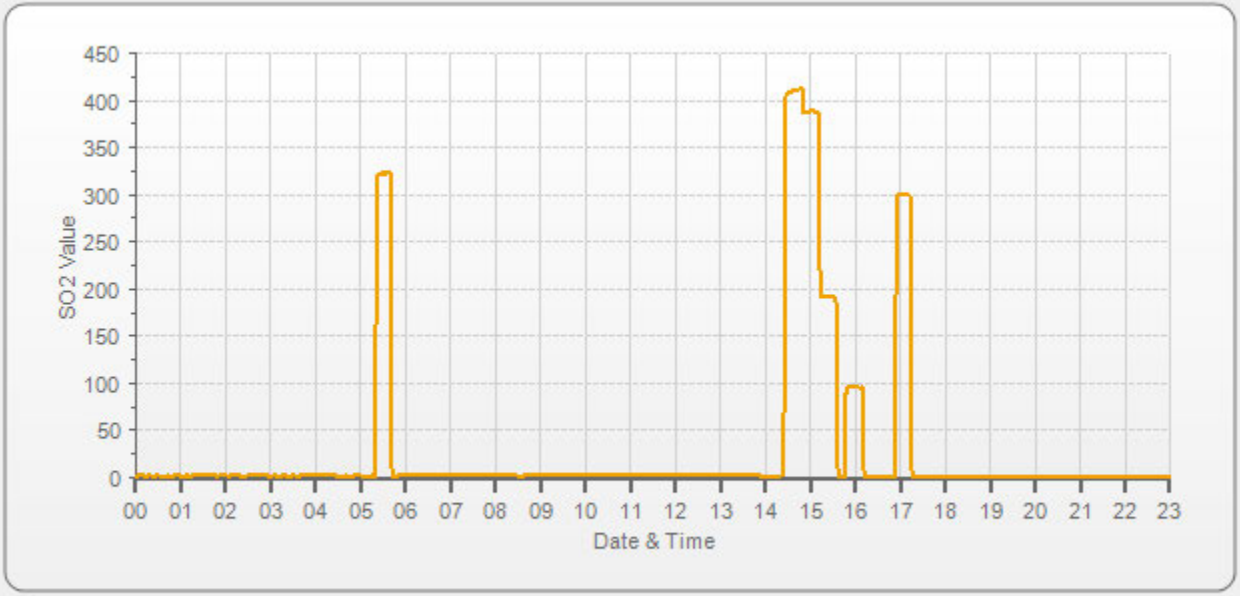
	As found:	As left:	
Slope:	1.140	1.073	Slope:
Offset:	45.7	48.6	Offset:
Hvps:	763	763	Hvps:
Dcps:	2558	2558	Dcps:
Rcell Temp:	51.0	50.6	Rcell Temp:
Box Temp:	35.1	36.7	Box Temp:
Pmt Temp:	7.0	6.9	Pmt Temp:
Izs Temp:	35.0	35.1	Izs Temp:
Pres:	24.9	24.8	Pres:
Samp Fl:	676	673	Samp Fl:
Pmt:	66.5	67.1	Pmt:
Uv Lamp:	1897.3	2049.3	Uv Lamp:
Lamp Ratio:	93.8	100	Lamp Ratio:
Str Lgt:	26.0	26.1	Str Lgt:
Drk Pmt:	25.3	25.4	Drk Pmt:
Drk Lmp:	16.8	16.6	Drk Lmp:
Expected Value:	310.5	300.0	Expected Value:

Comments:

The analyzer sample inlet filter was changed.

The manifold blower was found to be working normally.

SO2 [ppb] Station: PRAMP_RENO Daily: 18/08/09 Type: AVG 1 Min. [1 Min.]



TOTAL REDUCED SULPHUR

Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration

Date:	August 9, 2018	**Barometer/B.P./units:**	Brunton 05490 expires December 11, 2018	937	millibars
Company/Airshed:	PRAMP	**Thermometer/Station Temp:**	F.S. 160459244 expires June 19, 2020	22	°C
Location/Station Name:	Reno	**Weather Conditions:**	Smoke		
Parameter:	Total Reduced Sulphur	**Calibration Purpose:**	routine monthly		
Start Time 24 hr. (mst):	9:22	**Performed By/Reviewer:**	Chris Wesson	Rob Fisher	
End Time 24 hr. (mst):	13:59	**Cal Gas Expiry Date:**	November 7, 2020		
Calibration Method:	Gas Dilution	**Converter Model & s/n (if applicable):**	CD Nova CDN-101 #534		

Analyzer:

Serial Number/Owner:	1162460022 Maxxam	**Range ppb:**	100
Last Calibration Date:	July 4, 2018	**As Found C.F.:**	1.046
Previous C.F.:	1.000	**New C.F.:**	1.000

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 152020 expires November 22, 2018
High Flow Meter ID/Expiry Date:	Defender High 148943 expires November 21, 2018
Calibrator ID/Expiry Date:	API id# 830 expires January 31, 2019
Cal Gas Cylinder I.D. # :	LL119432
Cal Gas Conc. (ppm):	10.3

Standard Calibration Points for Ranges

Point	ppb
High	78
Mid	38
Low	19

SO2 Scrubber Check (10 minutes):

Start/End Time 24 hr.:	10:24/10:34
SO2 Analyzer Range:	500
Target Concentration (ppb):	380
As Found Zero:	0.0
Analyzer Response: (ppb):	0.0
Zero Corrected Result (ppb):	0.0

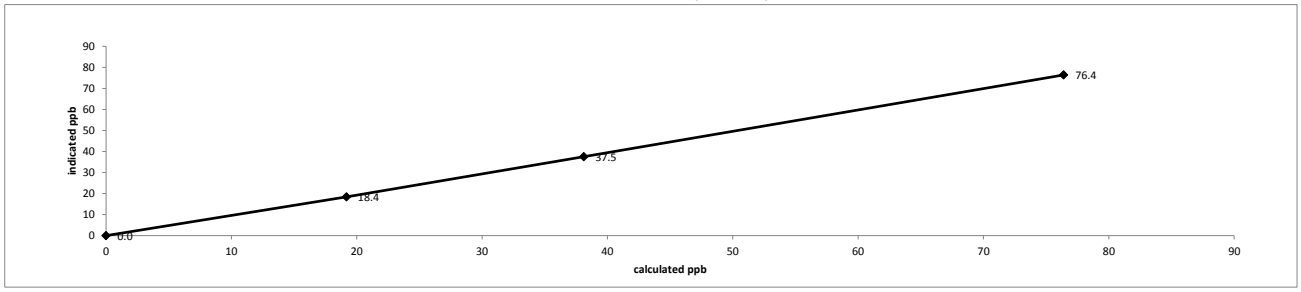
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	**Diluent**	**Cal Gas**	**Total**	**Concentration (ppb):**		
as found zero	7536	0.00	7536	0.0	0.0	n/a
as found high	7468	55.92	7524	76.4	73.0	1.046
adjusted zero	7536	0.00	7536	0.0	0.0	n/a
adjusted high	7468	55.92	7524	76.4	76.4	1.000
mid	7502	27.92	7530	38.1	37.5	1.017
low	7501	14.02	7515	19.2	18.4	1.042
calibrator zero	7536	0.00	7536	0.0	0.1	n/a
					Average C.F.=	1.020

Linear Regression/Calibration Results:

		LIMITS
Correlation Coefficient =	**1.000**	**> or = 0.995**
Slope =	**0.997**	**0.95-1.05**
b (Intercept as % of full scale)=	**0.44%**	**± 3% F.S.**
% change in C.F. from last cal=	**-4.63%**	**± 10%**

Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration



	As found:		As left:
Bkg:	2.05	Bkg:	2.12
Coef:	0.937	Coef:	0.976
Pmt:	-706.7	Pmt:	-706.7
Flash:	983	Flash:	983
Internal:	30.4	Internal:	33.8
Chamber:	44.9	Chamber:	45.0
Perm Oven Gas:	35.00	Perm Oven Gas:	35.01
Perm Oven Heater:	34.14	Perm Oven Heater:	34.17
Pressure:	638.3	Pressure:	638.9
Sample Flow:	0.408	Sample Flow:	410
Lamp Intensity:	83	Lamp Intensity:	83
Converter:	825	Converter:	825
Converter Set:	825	Converter Set:	825
Averaging Time:	120	Averaging Time:	120
Expected Value:	43.3	Expected Value:	45.9

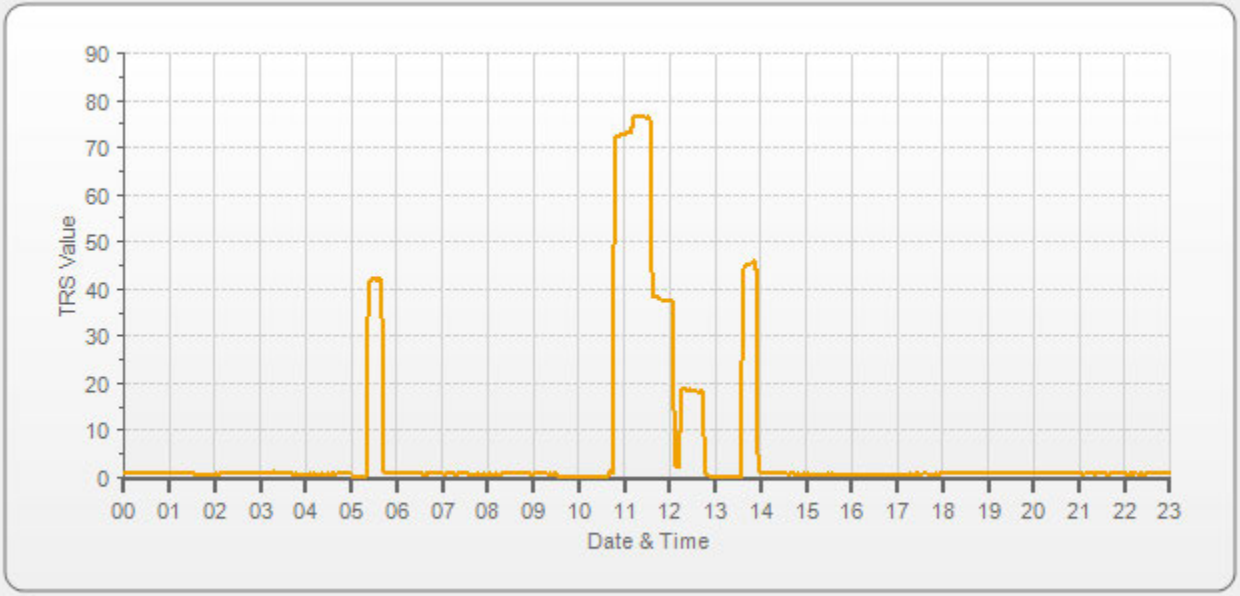
Comments:

The analyzer sample inlet filter was changed.

The analyzer cooling fan filter(s) were cleaned.

The manifold blower was found to be working normally.

TRS [ppb] Station: PRAMP_RENO Daily: 18/08/09 Type: AVG 1 Min. [1 Min.]



TOTAL HYDROCARBON

Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	August 9, 2018	**Barometer/B.P./units:**	Brunton 05490 expires December 11, 2018	937	millibars
Company/Airshed:	PRAMP	**Thermometer/Station Temp:**	F.S. 160459244 expires June 19, 2020	22	°C
Location/Station Name:	Reno	**Weather Conditions:**	Smoke		
Parameter:	CH4 / NMHC / THC	**Calibration Purpose:**	routine monthly		
Start/End Time 24 hr. (mst):	09:22/13:59	**Performed By/Reviewer:**	Chris Wesson	Rob Fisher	
Calibration Method:	Gas Dilution	**Cal Gas Expiry Date:**	October 18, 2025		

Analyzer:

Serial Number/Owner:	1314057759	Maxxam
Measured Flow:	1.2 L/min	
Last Calibration Date:	July 4, 2018	
Range ppm:	20 CH4/20 NMHC/40 THC	

Correction Factors:

	Previous C.F.:	As Found C.F.:	New C.F.:
CH_4 =	1.000	1.012	0.997
NMHC =	1.000	1.008	1.001
THC =	1.000	1.010	0.999

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 152020 expires November 22, 2018		
High Flow Meter ID/Expiry Date:	Defender High 148943 expires November 21, 2018		
Calibrator ID/Expiry Date:	API id# 829 expires January 31, 2019		
Cal Gas Cylinder I.D. # :	LL107207		
CH4 Cylinder Conc.=	600.0	207.0	**=C_3H_8 Cylinder Conc.**
CH_4 expressed as C_3H_8=	569.3	1169.3	**=total CH4 equivalent**

Standard Calibration Points for Analyzer Range of 20/20/40 ppm

Point	CH4	NMHC	THC
High	**13.00**	**13.00**	**26.00**
Mid	**7.00**	**7.00**	**14.00**
Low	**3.00**	**3.00**	**6.00**

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

Calibrator Flow Rates (cc/min)										Correction Factors:		
Point	**Diluent**	**Cal Gas**	**Total Flow**	**Calculated CH_4 (ppm)**	**Calculated NMHC (ppm)**	**Calculated THC (ppm)**	**Indicated CH_4 (ppm)**	**Indicated NMHC (ppm)**	**Indicated THC (ppm)**	**CH_4**	**NMHC**	**THC**
as found zero	2512	0.00	2512	0.00	0.00	0.00	0.00	0.00	0.01	n/a	n/a	n/a
as found high	2445	60.45	2505	14.48	13.73	28.21	14.30	13.63	27.94	1.012	1.008	1.010
adjusted zero	2512	0.00	2512	0.00	0.00	0.00	0.00	0.00	0.01	n/a	n/a	n/a
adjusted high	2445	60.45	2505	14.48	13.73	28.21	14.52	13.72	28.25	0.997	1.001	0.999
mid	2479	30.32	2510	7.25	6.88	14.13	7.25	6.85	14.11	1.000	1.004	1.002
low	2491	14.64	2505	3.51	3.33	6.83	3.51	3.34	6.86	0.999	0.996	0.997
calibrator zero	2512	0.00	2512	0.00	0.00	0.00	0.00	0.00	0.01	n/a	n/a	n/a
									Average C.F.=	0.999	1.000	0.999

Linear Regression/Calibration Results:

	CH_4	NMHC	THC	LIMITS
Correlation Coefficient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**1.003**	**0.998**	**1.001**	**0.95-1.05**
b (Intercept as % of full scale)=	**-0.03%**	**0.01%**	**0.01%**	**± 3% F.S.**
% change in C.F. from last cal=	**-1.23%**	**-0.77%**	**-1.01%**	**± 10%**

As Left Instrument Diagnostics:

Interface Board Voltages:	Bias Supply:	-290.6		Calibration History cnt'd:	NM Peak Area:	85670
Temperatures:	Detector Oven:	175.1		Crucial Settings:	Methane Start:	n/a
	Filter:	175.1			Methane End:	n/a
	Column Oven:	75.0			Backflush:	n/a
	Internal:	35.8			NMHV Start:	n/a
Cylinder Pressures/reg.:	Carrier:	2300	50		NMHC End:	n/a
	Fuel:	2000	50	Run History>1:	Date:	09Aug18
	Span Gas:	400/2000	20		Time:	12:21
	Zero Air Generator:	50			CH_4 PK HT:	0
Internal Pressures:	Carrier:	31.3			CH_4 RT:	8.0
	Fuel:	41.6			CH_4 Baseline:	2210
	Air:	25.9			CH_4 LOD:	53
FID Status:	Status:	LIT			CH_4 SD:	17
	Counts:	24810			CH_4 CONC:	0.00
	Flame:	405.0			NM PK HT:	0
	Det Base:	175.0			NM Peak Area:	0
Flame and Power Stats:	Last Power On:	22Jun2018 23:35			NM CONC:	0.00
	Flameouts:	16			NM Base Start:	2055
	Det Oven at Start:	36.3			NM Base End:	2050
	Col Oven at Start:	34.1			NM LOD:	9
Calibration History:	Time:	04July18 12:22			NM Start IDX:	19
	Type:	SPAN			NM End IDX:	36
	Status:	GOOD			NM Max Slope:	5.0e-01
	Check/Adjust:	ADJUST			NM Min Slope:	-5.3e-01
	CH_4 Span Conc:	14.34			NM PT Count:	0
	CH_4 SP Ratio:	0.000779		Expected Values:	Previous CH4:	10.08
	CH_4 RT:	12.0			Previous NMHC	11.00
	CH_4 PK IDX:	20			Previous THC:	21.11
	CH_4 PK HT:	18404			New CH4:	10.21
	NM Span Conc:	13.61			New NMHC	10.99
	NM SP Ratio:	0.000159			New THC:	21.23

Comments:

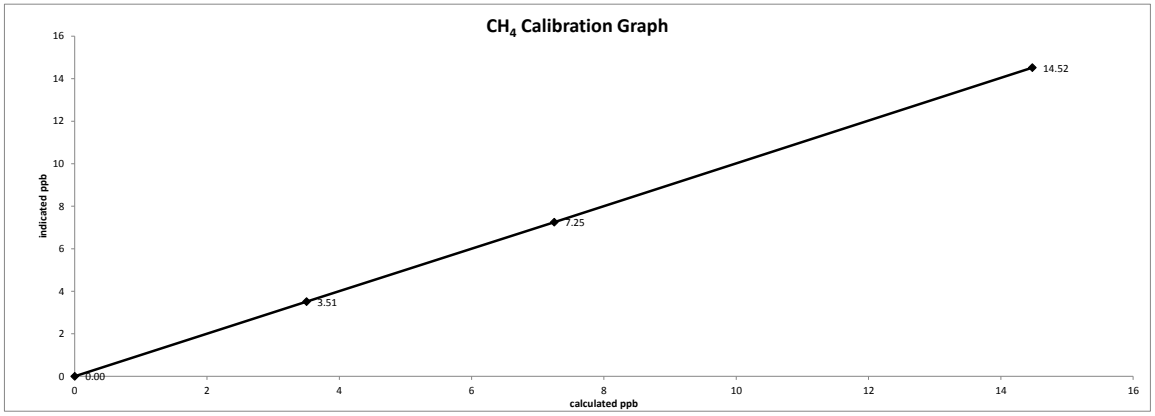
The analyzer sample inlet filter was changed.

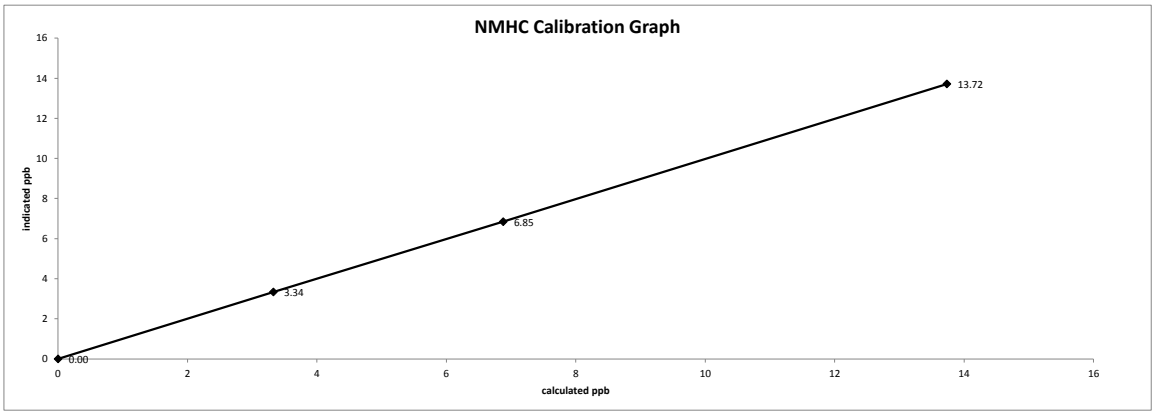
A new hydrogen cylinder was installed.
A new span gas cylinder was installed.
The analyzer cooling fan filter(s) were cleaned.
The manifold blower was found to be working normally.

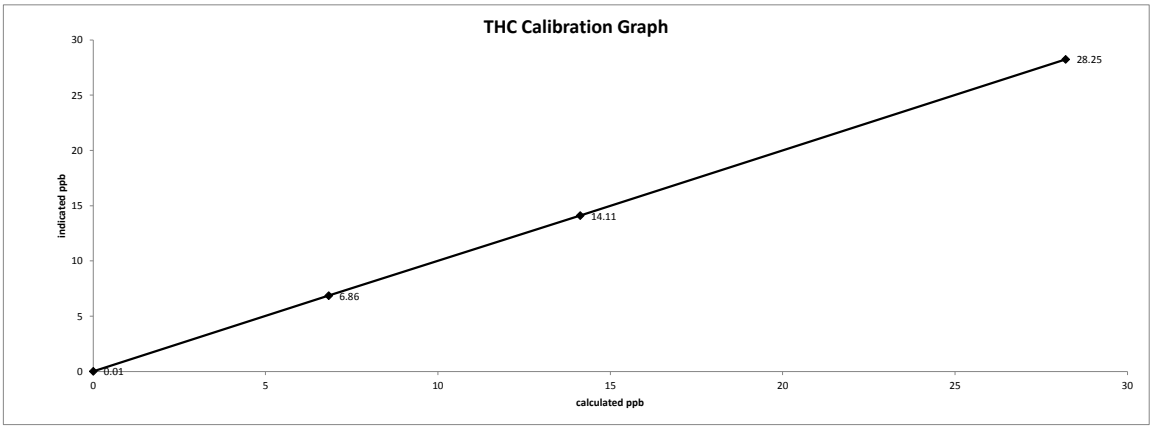
No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.

11:21-11:29: Operator error (incorrect target). Mid-point restarted.

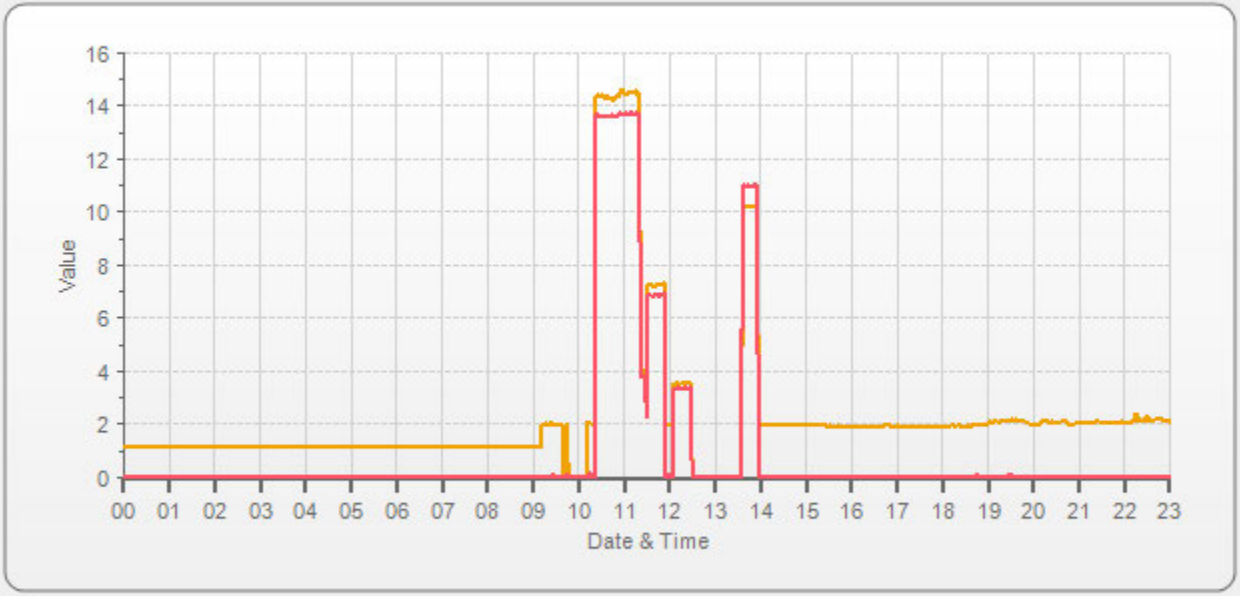
Date:	August 9, 2018	Start/End Time 24 hr. (mst):	09:22/13:59
Company/Airshed:	PRAMP	Calibration Purpose:	routine monthly
Location/Station Name:	Reno	Calibration Method:	Gas Dilution







Station: PRAMP_RENO Daily: 18/08/09 Type: AVG 1 Min. [1 Min.]



Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	August 21, 2018	**Barometer/B.P./units:**	Brunton 05490 expires December 11, 2018	942.7	millibars
Company/Airshed:	PRAMP	**Thermometer/Station Temp:**	F.S. 160459244 expires June 19, 2020	22	°C
Location/Station Name:	Reno	**Weather Conditions:**	Smoke		
Parameter:	CH4 / NMHC / THC	**Calibration Purpose:**	post repair		
Start/End Time 24 hr. (mst):	15:56	**Performed By/Reviewer:**	Chris Wesson	Rob Fisher	
Calibration Method:	Gas Dilution	**Cal Gas Expiry Date:**	October 18, 2025		

Analyzer:

Serial Number/Owner:	13140457759	Maxxam
Measured Flow:	1.18 L/min	
Last Calibration Date:	n/a	
Range ppm:	20 CH4/20 NMHC/40 THC	

Correction Factors:

	Previous C.F.:	As Found C.F.:	New C.F.:
CH_4 =	n/a	n/a	1.000
NMHC =	n/a	n/a	1.001
THC =	n/a	n/a	1.001

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 152020 expires November 22, 2018		
High Flow Meter ID/Expiry Date:	Defender High 148943 expires November 21, 2018		
Calibrator ID/Expiry Date:	API id# 830 expires January 31, 2019		
Cal Gas Cylinder I.D. # :	LL107207		
CH4 Cylinder Conc.=	600.0	207.0	**=C_3H_8 Cylinder Conc.**
CH_4 expressed as C_3H_8=	569.3	1169.3	**=total CH4 equivalent**

Standard Calibration Points for Analyzer Range of 20/20/40 ppm

Point	CH4	NMHC	THC
High	**13.00**	**13.00**	**26.00**
Mid	**7.00**	**7.00**	**14.00**
Low	**3.00**	**3.00**	**6.00**

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

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)	Correction Factors:		
Point	**Diluent**	**Cal Gas**	**Total Flow**							**CH_4**	**NMHC**	**THC**
adjusted zero	2523	0.00	2523	0.00	0.00	0.00	0.00	0.00	0.01	n/a	n/a	n/a
adjusted high	2455	60.07	2515	14.33	13.60	27.93	14.33	13.58	27.92	1.000	1.001	1.001
mid	2465	29.81	2495	7.17	6.80	13.97	7.16	6.78	13.95	1.001	1.003	1.002
low	2493	15.49	2508	3.70	3.51	7.22	3.68	3.50	7.19	1.007	1.004	1.005
calibrator zero	2523	0.00	2523	0.00	0.00	0.00	0.00	0.00	0.01	n/a	n/a	n/a
									Average C.F.=	1.003	1.003	1.003

Linear Regression/Calibration Results:

	CH_4	NMHC	THC	LIMITS
Correlation Coefficient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**1.000**	**0.999**	**1.000**	**0.95-1.05**
b (Intercept as % of full scale)=	**-0.06%**	**-0.03%**	**-0.02%**	**± 3% F.S.**
% change in C.F. from last cal=	**n/a**	**n/a**	**n/a**	**n/a**

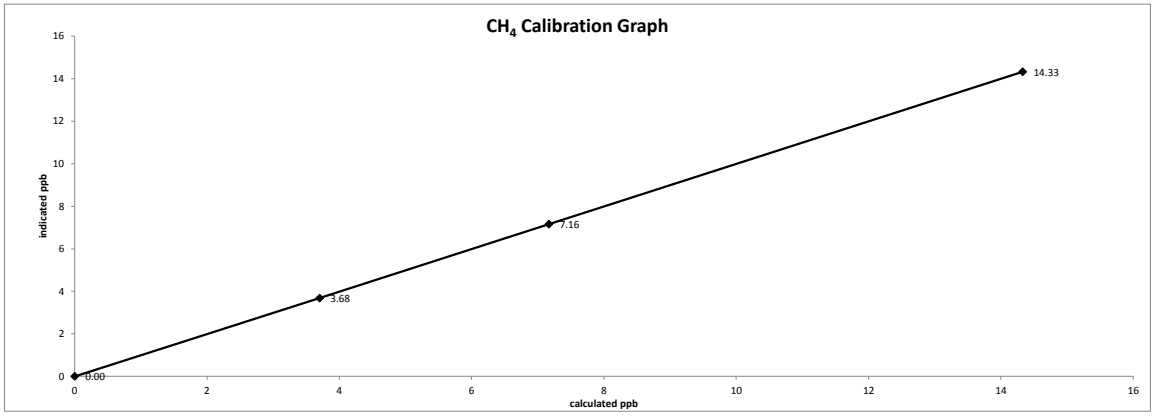
As Left Instrument Diagnostics:

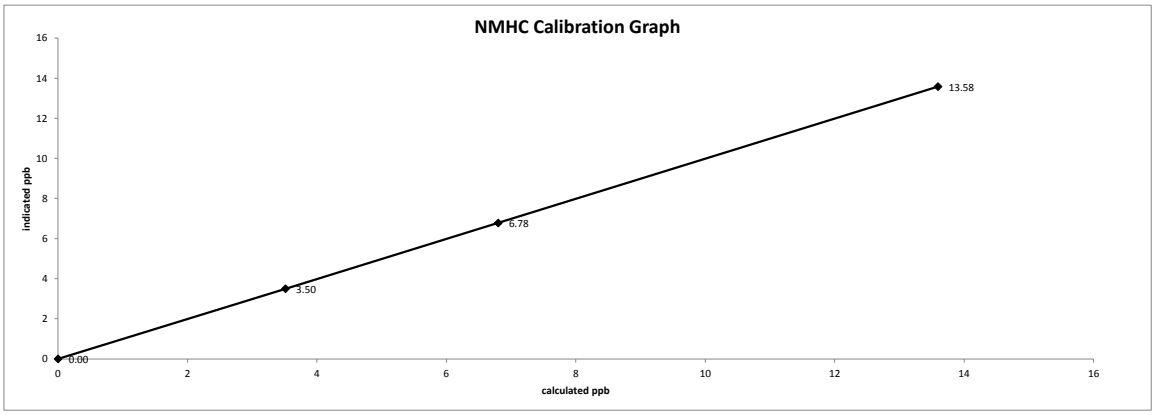
Interface Board Voltages:	Bias Supply:	-290.3		Calibration History cnt'd:	NM Peak Area:	85930
Temperatures:	Detector Oven:	175.0		Crucial Settings:	Methane Start:	n/a
	Filter:	175.0			Methane End:	n/a
	Column Oven:	75.2			Backflush:	n/a
	Internal:	35.1			NMHV Start:	n/a
Cylinder Pressures/reg.:	Carrier:	1900	50		NMHC End:	n/a
	Fuel:	1500	50	Run History>1:	Date:	21Aug18
	Span Gas:	1700	20		Time:	17:41
	Zero Air Generator:	51			CH_4 PK HT:	0
Internal Pressures:	Carrier:	31.3			CH_4 RT:	8.0
	Fuel:	41.6			CH_4 Baseline:	2018
	Air:	25.9			CH_4 LOD:	93
FID Status:	Status:	LIT			CH_4 SD:	31
	Counts:	24109			CH_4 CONC:	0.00
	Flame:	405.0			NM PK HT:	0
	Det Base:	175.0			NM Peak Area:	0
Flame and Power Stats:	Last Power On:	21Aug2018			NM CONC:	0.00
	Flameouts:	5			NM Base Start:	1986
	Det Oven at Start:	38.7			NM Base End:	1976
	Col Oven at Start:	30.6			NM LOD:	18
Calibration History:	Time:	21Aug2018 12:59			NM Start IDX:	17
	Type:	SPAN			NM End IDX:	65
	Status:	GOOD			NM Max Slope:	4.9e-01
	Check/Adjust:	ADJUST			NM Min Slope:	-7.4e-01
	CH_4 Span Conc:	14.33			NM PT Count:	0
	CH_4 SP Ratio:	0.000755		Expected Values:	Previous CH4:	10.21
	CH_4 RT:	11.6			Previous NMHC	10.99
	CH_4 PK IDX:	18			Previous THC:	21.23
	CH_4 PK HT:	18988			New CH4:	10.19
	NM Span Conc:	13.6			New NMHC	11.04
	NM SP Ratio:	0.000158			New THC:	21.26

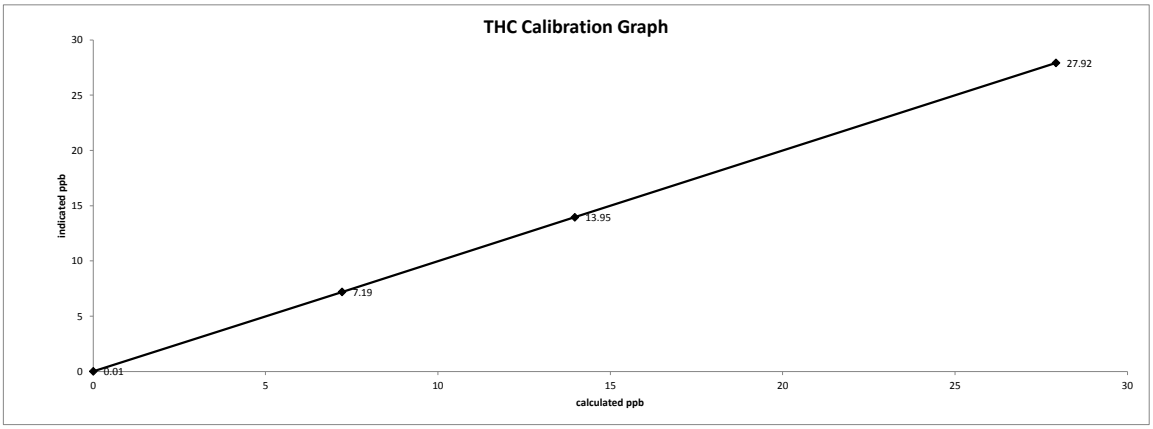
Comments:

A Post-repair calibration was performed following the replacment of rotor and actuator.

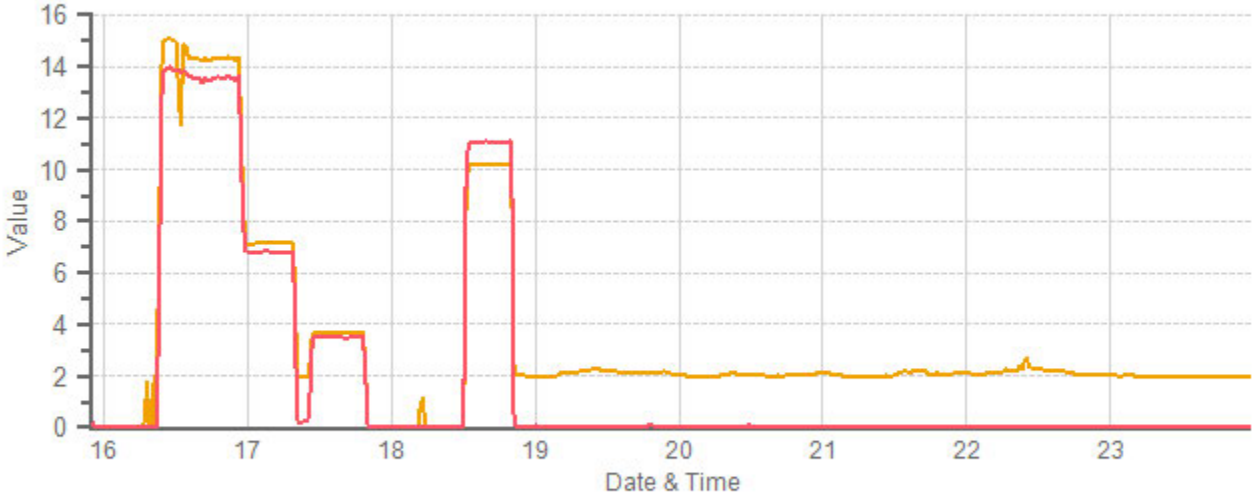
Date:	**August 21, 2018**	**Start/End Time 24 hr. (mst):**	**15:56**
Company/Airshed:	**PRAMP**	**Calibration Purpose:**	**post repair**
Location/Station Name:	**Reno**	**Calibration Method:**	**Gas Dilution**







Station: PRAMP_RENO Periodically: 2018/08/21 15:55-2018/08/21 23:59 Type: AVG 1 Min. [1 Min.]



WIND SYSTEM

Meteorological Sensor Audit/Calibration

Location Information

Company:	PRAMP	**Performed By:**	Limin Li
Audit Location:	RENO	**Reviewed By:**	Rob Fisher
Audit Date:	April 5, 2018	**Start/End Time (mst):**	16:00/16:30
Calibration Purpose:	routine annual	**Weather Conditions:**	Mainly sunny

Wind Sensor Information

Sensor ID Data:		**Sensor Outputs:**	
Sensor Make:	RM Young	**Velocity Voltage Output Range:**	0-1V
Sensor Model:	5305VK	**Velocity Unit Output Range:**	0-200 KPH
Serial #:	149769	**Direction Voltage Output Range:**	0-1 V
Previous Cal/Audit Date:	April 6, 2017	**Direction Unit Output Range:**	0-360 DEG

Wind Calibrator Information

Calibrator I.D. and Expiry Date: RM Young 18802 id# CA03309 expires September 25, 2018

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	18.5	0.998
2000	36.9	36.9	36.8	1.001
3000	55.3	55.2	55.2	1.001
4000	73.7	73.7	73.7	1.000
5000	92.2	92.1	92.1	1.001
6000	110.6	110.6	110.6	1.000
7000	129.0	129.0	129.1	1.000
8000	147.4	147.6	147.6	0.999
9000	165.9	166.2	166.2	0.998
10000	184.3	184.7	184.7	0.998
		The audit meets AMD requirements.	**Average Correction Factor=**	**1.000**

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

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	0	353	0.2	1.6	0.9
30	330	30	328	-0.5	2.4	1.4
60	300	61	299	-1.0	0.9	0.9
90	270	91	269	-1.1	1.4	1.2
120	240	120	239	0.4	0.9	0.7
150	210	150	210	-0.1	0.1	0.1
180	180	181	180	-0.6	-0.2	0.4
210	150	210	151	-0.4	-0.9	0.7
240	120	240	120	0.3	-0.4	0.4
270	90	269	91	1.4	-0.5	1.0
300	60	299	61	1.0	-0.8	0.9
330	30	328	30	2.3	0.2	1.3
355	0	353	0	2.5	0.2	1.4
The audit meets AMD requirements.			**Average Absolute Degrees Difference=**			**0.9**

Comments:

METEOROLOGICAL SYSTEMS CHECK

Meteorological System Checklist

Date:	August 9, 2018		
Technician:	Chris Wesson		
Reviewer:	Rob Fisher		
Station:	PRAMP Reno		
Unit:	**Make:**	**Model:**	**Serial #:**
Temperature Sensor:	RM Young	43172VC	60837897
Barometric Pressure Sensor:	MetOne	92	R12877
Relative Humidity Sensor:	RM Young	43172VC	6837897
Anemometer:	RM Young	05305VK	149769
AMBIENT TEMPERATURE SENSOR CHECK			
Previous check date:	July 4, 2018		
Parameter:	Temperature @ 2 metres (1 C tolerance)		
Reference Thermometer ID:	F.S. 160459244 expires June 19, 2020		
Reference Temperature (^{o}C):	27.7		
Station - Ambient Temperature (^{o}C):	26.7		
Temperature Difference (^{o}C):	1.0		
BAROMETRIC PRESSURE SENSOR CHECK			
Previous check date:	July 4, 2018		
Reference Barometer ID:	Brunton 05490 expires December 11, 2018		
Reference Pressure - Units/Reading:	mbar	937	
Station Pressure - Units/Reading:	mbar	937.3	
Pressure Tolerance +/- 15% of error:	796 - 1078	-0.03%	
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Previous check date:	July 4, 2018		
Reference Hygrometer ID:	F.S. id# 160459244 expires June 19, 2020		
Reference Hygrometer % RH- Reading:	42.80		
Station Hygrometer % RH- Reading:	41.80		
RH Tolerance +/- 15% of difference:	36.38 - 49.22	2.3%	
ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK			
WIND SPEED		WIND DIRECTION	
Previous check date:	July 4, 2018	Previous check date:	July 4, 2018
Wind Speed Observed (kph):	0-10	Wind Direction Observed:	W
Wind speed on Data Logger (kph):	8.5	Wind Direction on Data Logger:	W

CALIBRATORS

Alberta Government

Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2018-520A

Company Maxxam **Operator:** Christopher

Calibrator:

Make/Model	API 700
Serial Number	829
Last Verification Date	January 2017
NO Cylinder S/N	EY0000715
NO [PPM]	50.7 NOx [PPM] 50.8
Expiry Date	May 2020

Flow Measurement Device:

Make/Model	Mesa 530+
Serial Number	H-156312 L-156151
Temperature (°C)	N/A
Barometric Pressure	N/A

Dilution Flow (sccm)

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

Gas Flow (sccm)

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

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO_2	NOx	NO	NOx
5000	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
4950	79.8	0.787	0.788	0.783	-0.001	0.781	-1%	-1%
4958	37.2	0.380	0.381	0.378	-0.001	0.377	-1%	-1%
4960	18.5	0.189	0.189	0.188	-0.001	0.187	-1%	-1%
						Absolute Average Percent Difference	1%	1%

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

NO		LIMITS	NOx	
Correlation=	1.0000	**≥ 0.990**	Correlation=	1.0000
m (Slope)=	0.9949	**0.90-1.10**	m (Slope)=	0.9912
b (Intercept % of FS)=	-0.0030	**± 3% F.S.**	b (Intercept % of FS)=	-0.0257

Flow	O_3 Conc	NO Decrease	NO	NO2	NOX	% Diff. Vs Audit gas	
						NO_2	% Diff. Limit
4950	0.000	0.000	0.776	0.000	0.776	0%	± 10%
4950	0.500	0.476	0.300	0.474	0.775	0%	± 10%
4950	0.290	0.277	0.499	0.278	0.778	0%	± 10%
4950	0.095	0.090	0.686	0.093	0.779	3%	± 10%
					Absolute Average Percent Difference	1%	± 10%

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

NO_2		LIMITS
Correlation=	1.0000	**≥ 0.995**
m (Slope)=	0.9938	**0.90-1.10**
b (Intercept % of FS)=	0.1802	**± 3% F.S.**

AENV Standards

Audit Calibrator

Make/Model	Teco 146i
Serial/AMU Number	AMU 1809
SRM Gas Cylinder No.	APEX1170572
Cylinder Conc. (ppm)	49.99

NO_X Analyzer

Make/Model	Teco 42i
Serial/AMU Number	AMU 1868
Last Calibration Date	January 31, 2018
Full Scale (ppm)	1.0
Cylinder Gas Expiry Date	November 2020

COMMENTS:

Auditor: Al Clark Date: January 31, 2018

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibrator Performance Audit

Sulphur Dioxide (by Cylinder Dilution)

File No. 2018-519A

Company: Maxxam **Operator:** Christopher

Calibrator:		Flow Measurement Device:	
Make/Model	API 700	Make/Model	Mesa 530+
Serial Number	830	Serial Number	H-156312 L-156151
Last Verification Date	February 2017	Temperature (°C)	N/A
SO_2 Cylinder Conc.	47.9	Barometric Pressure	N/A
SO_2 Cylinder S/N	LL108015		
Expiry Date	October 2020		

Flow Measurements

Pt. No. 1 80.0 **Pt. No. 2** 38.1 **Pt. No. 3** 19.4

Calibrator Flow (sccm)	Calculated Concentration (ppm)	Indicated Concentration (ppm)	% Difference vs Audit Gas	% Difference Limit
Zero Air	0.000	0.000		
4998	0.767	0.779	2%	± 10%
$4,999	0.365	0.368	1%	± 10%
$5,003	0.186	0.184	-1%	± 10%
		Absolute Average Percent Difference	0%	± 10%

LINEAR REGRESSION ANALYSIS

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

SO_2		LIMITS
Correlation=	1.0000	**≥ 0.995**
m (Slope)=	1.0175	**0.90-1.10**
b (Intercept % of FS)=	-0.2528	**± 3% F.S.**

AENV Standards		SO_2 Analyzer	
Audit Calibrator		Make/Model	Teco 43C
Make/Model	Sabio 2010	Serial/AMU Number	AMU 1623
Serial/AMU Number	AMU 2092	Last Calibration Date	Janaury 31, 2018
SO_2		Full Scale (ppm)	1.0
SRM Gas Cylinder No.	CAL016625		
Cylinder Conc. (ppm)	98.07	Expiry Date	January 2019

COMMENTS:

Auditor: Al Clark Date: January 31, 2018

Operator Signature: Location: McIntyre Center Edmonton

CALIBRATION GASES

Alberta Government

Calibration Gas Audit

Single Component Cylinder Gas

File No. 2017-486CGA

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

Cylinder #: LL108015 Concentration PPM: 47.9 Tolerance(%) 2 Certified By: Praxair

Expiry Date: October 2020

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: December 13, 2017
Gas Type: SO2 Conc. 98.07
Cylinder Number: CAL016625
Expiry Date: January 2019

Flow Measurement Device:

Make/Model: Mesa Definer 220
Serial Number: H-133034 / L-132702
Temp.°C: 23.4 C
B.P. 707 mmHg

Reference Analyzer:

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

Instrument Settings: Zero: 10.0 Span: 1.006 Range: 1.0

Last Calibration: Date: Dec12/17 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated	Gas Flow/	Concentration	Cylinder
Dilution	Gas	Concentration (PPM)	Dilution Flow	Factor	Concentration
5000	0.0	0.000			
4989	79.5	0.760	0.01594	62.755	47.7
4995	39.6	0.374	0.00793	126.136	47.2
4992	19.6	0.183	0.00393	254.694	46.6
				Average Cylinder Concentration:	**47.2**

Previous Stated Concentration PPM: 47.9

Percent variance from Stated: **2**

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

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

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

Auditor: Al Clark Date: December 13, 2017

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

Single Component Cylinder Gas

File No. 2017-137CGA

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

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

Expiry Date: May 16, 2020

Reference Calibrator and Gas:

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

Flow Measurement Device:

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

Reference Analyzer:

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

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

Previous Stated Concentration PPM: 10.3

Percent variance from Stated: **75**

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

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

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

Auditor: Al Clark Date: July 27, 2017

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

CH4 / C3H8 Cylinder Gas

File No. 2017-484CGA

Company: Maxxam **Operators name:** Mike

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

Expiry Date: October 2025

Reference Calibrator and Gas:

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

Flow Measurement Device:

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

Reference Analyzer:

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

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

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

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

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

Cylinder gas tolerances based on CH4 only

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

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

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

Auditor: Al Clark Date: December 13, 2017

Operator Signature: Location: McIntyre Center Edmonton

APPENDIX III
MAXIMUM INSTANTANEOUS DATA

SULPHUR DIOXIDE Instantaneous Maximum (SO_2 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	1	1	2	2	2	2	2	2	S	2	2	2	1	1	1	1	1	1	1	1	2	2	24
2	1	2	2	2	2	1	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2	1	2	2	24
3	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	1	2	2	1	1	2	2	24
4	1	2	2	2	2	1	1	2	2	2	S	2	2	2	2	2	2	2	2	1	1	2	1	1	1	2	2	24
5	1	1	1	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	24
6	2	2	2	2	2	2	2	2	S	2	2	3	3	2	2	2	2	2	2	2	2	2	2	2	2	3	2	24
7	2	2	2	2	2	2	3	S	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	24
8	2	3	2	2	2	2	S	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	3	2	24
9	2	2	2	3	2	S	3	3	3	3	3	3	3	C	C	C	C	C	0	0	0	0	0	0	0	3	2	24
10	1	0	0	0	S	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
11	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
12	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
13	0	S	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
14	S	0	0	0	0	0	1	1	0	1	0	1	1	0	1	1	1	0	0	0	0	0	0	S	0	1	0	24
15	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0	24
16	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	2	2	0	2	0	24
20	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0	1	0	1	0	24
21	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	0	S	0	0	0	0	0	1	0	0	1	1	24
22	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1	S	1	0	0	0	0	0	0	1	0	1	1	24
23	1	1	0	0	1	1	1	1	0	1	1	1	0	1	S	1	1	0	0	0	0	0	0	0	0	1	0	24
24	0	0	0	0	X	0	0	0	0	1	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0	23
25	0	0	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
26	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
27	0	0	0	0	0	0	0	0	0	0	S	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	24
28	0	0	0	0	0	0	1	1	1	S	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	24
29	1	0	1	1	0	0	1	1	S	1	1	1	1	1	1	1	0	0	0	1	1	1	0	1	0	1	1	24
30	1	0	0	1	0	0	1	S	1	1	0	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	24
31	0	0	0	1	0	1	S	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
HOURLY MAX	2	3	2	3	2	2	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2				
HOURLY AVG	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	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

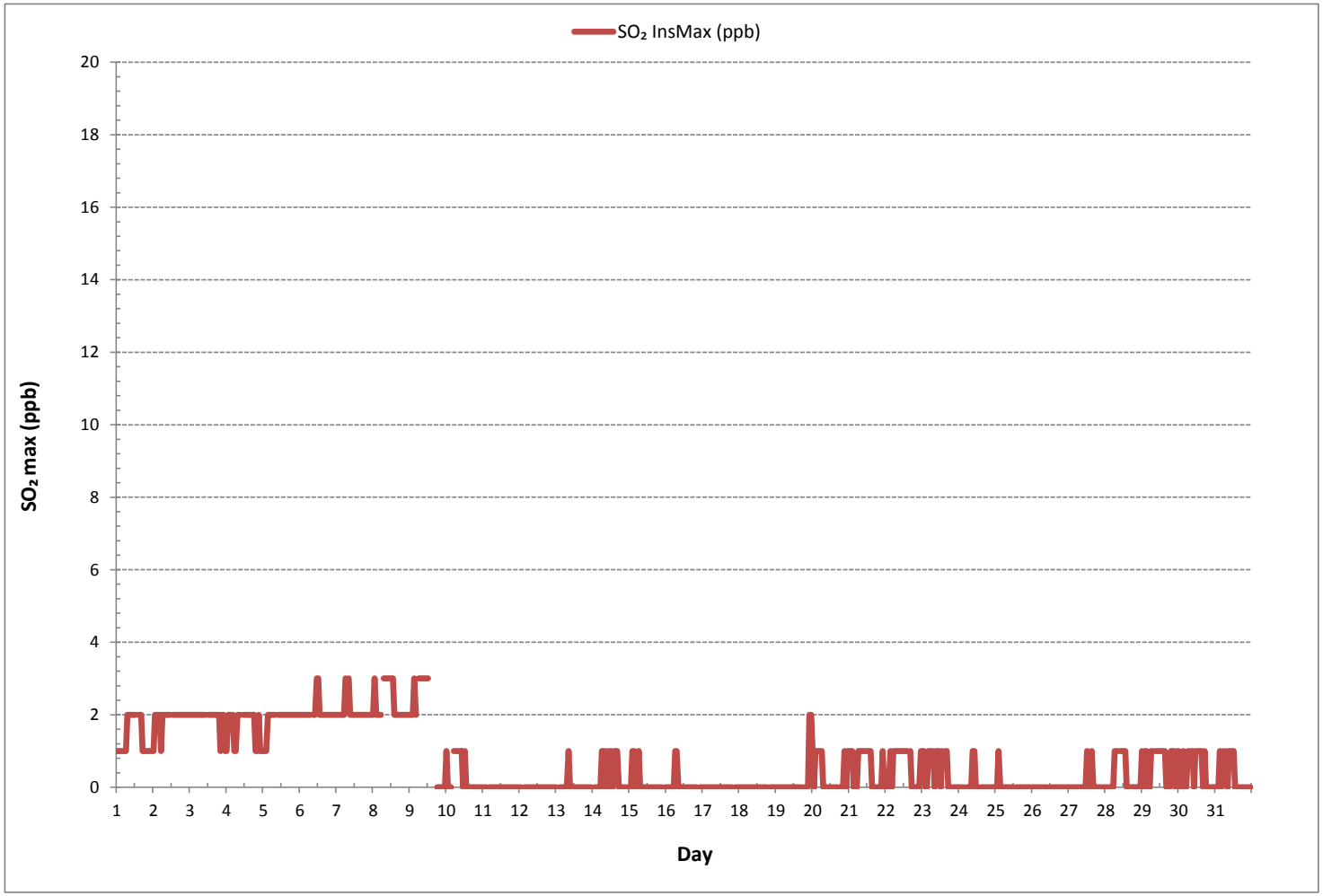
NUMBER OF NON-ZERO READINGS: 312

MAXIMUM INSTANTANEOUS VALUE: 3 ppb @ HOUR 11 ON DAY 6

IZS CALIBRATION TIME: 32 hrs
MONTHLY CALIBRATION TIME: 5 hrs
STANDARD DEVIATION: 1

OPERATIONAL TIME: 743 hrs

SULPHUR DIOXIDE Instantaneous Maximum (SO_2 ppb)



Maxxam
A Bureau Veritas Group Company

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	0.71	1.02	1.21	1.73	2.58	1.31	1.05	1.60	1.36	0.68	0.61	0.61	0.63	S	0.55	0.53	0.61	0.58	0.76	0.89	0.89	0.91	0.86	0.91	0.53	2.58	0.98	24
2	0.84	0.81	0.95	0.81	0.76	0.73	0.73	0.73	0.66	0.61	0.61	0.58	S	0.56	0.53	0.50	0.53	0.51	0.53	0.56	0.89	0.73	0.73	0.76	0.50	0.95	0.68	24
3	0.84	0.94	0.73	0.73	0.78	0.76	0.84	0.84	0.73	0.73	0.55	S	0.50	0.53	0.50	0.50	0.55	0.63	0.66	0.68	0.73	1.00	**4.30**	1.70	0.50	**4.30**	0.90	24
4	1.76	1.76	1.13	1.13	1.42	2.06	2.28	1.52	1.07	0.94	S	0.76	0.66	0.55	0.53	0.61	0.63	0.61	0.71	0.81	1.47	0.71	1.33	1.86	0.53	2.28	1.14	24
5	3.02	1.55	1.83	1.60	1.63	1.83	1.12	0.86	0.71	S	0.66	0.66	0.63	0.50	0.53	0.50	0.55	0.53	0.58	0.63	0.76	0.73	0.68	0.68	0.50	3.02	0.99	24
6	0.68	0.84	0.81	0.81	0.84	0.78	0.76	0.71	S	0.63	0.61	0.55	0.55	0.53	0.53	0.50	0.58	0.55	0.58	0.64	0.73	0.91	1.00	0.81	0.50	1.00	0.69	24
7	0.81	1.02	1.08	1.02	0.86	1.02	0.81	S	0.89	0.78	0.66	0.58	0.61	0.58	0.58	0.58	0.58	0.61	0.61	0.76	0.84	1.10	1.02	1.39	0.58	1.39	0.82	24
8	0.99	1.15	1.33	1.55	0.81	0.76	S	0.86	0.66	0.73	0.68	0.66	0.68	0.66	0.61	0.61	0.66	0.68	0.73	0.78	0.86	0.76	0.71	0.81	0.61	1.55	0.82	24
9	0.89	0.84	1.05	1.15	0.91	S	1.00	0.76	0.81	C	C	C	C	C	1.10	0.73	0.68	0.81	0.91	1.10	0.94	0.81	0.81	0.89	0.68	1.15	0.90	24
10	1.70	2.06	2.27	2.19	S	2.11	1.70	0.97	1.08	0.94	0.97	1.00	0.86	0.68	0.58	0.53	0.53	0.61	0.63	0.71	0.81	1.17	1.15	1.02	0.53	2.27	1.14	24
11	0.86	0.73	0.81	S	0.91	0.97	1.42	0.89	0.61	0.50	0.50	0.43	0.40	0.45	0.58	0.63	0.61	0.68	0.68	1.15	1.18	0.86	0.81	0.53	0.40	1.42	0.75	24
12	2.80	3.36	S	0.61	0.61	0.68	0.81	0.63	0.71	0.76	0.67	0.76	0.58	0.48	0.50	0.55	0.50	0.53	0.55	0.58	0.63	0.68	0.86	0.65	0.48	3.36	0.85	24
13	0.78	S	0.71	0.55	0.65	0.62	0.53	0.53	0.53	0.42	0.48	0.45	0.48	0.50	0.45	0.50	0.48	0.61	0.73	0.71	0.65	0.65	0.65	0.65	0.42	0.78	0.58	24
14	S	0.65	0.65	0.71	0.73	0.73	0.71	0.71	0.71	0.63	0.58	0.53	0.55	0.53	0.55	0.55	0.58	0.63	0.61	0.58	0.61	0.81	0.84	S	0.53	0.84	0.65	24
15	0.91	0.89	1.02	1.13	1.18	2.72	1.93	1.60	1.26	1.02	0.94	0.70	0.58	0.55	0.53	0.53	0.55	0.68	0.73	0.68	0.73	0.65	S	0.73	0.53	2.72	0.97	24
16	0.63	0.61	1.80	2.66	0.73	1.02	3.49	3.42	3.39	2.11	0.63	0.66	0.61	0.58	0.58	0.55	0.61	0.58	0.68	0.71	0.63	S	0.55	0.63	0.55	3.49	1.21	24
17	0.58	0.61	0.68	0.68	0.76	0.81	0.81	0.89	0.86	0.81	0.76	0.78	0.81	0.78	0.84	0.73	0.68	0.78	0.70	0.63	S	0.55	0.66	0.68	0.55	0.89	0.73	24
18	0.71	0.76	0.58	0.65	3.26	2.67	0.99	0.91	0.73	0.71	0.58	0.55	0.58	0.55	0.55	0.53	0.50	0.53	0.55	S	0.91	0.86	0.58	0.53	0.50	3.26	0.86	24
19	0.61	0.62	0.68	0.73	1.31	0.89	0.84	3.34	2.99	0.73	0.63	0.61	0.55	0.50	0.48	0.53	0.50	0.50	S	0.61	0.91	0.91	1.42	1.28	0.48	3.34	0.96	24
20	1.23	0.91	1.15	1.10	0.91	0.97	1.02	0.73	0.61	0.55	0.55	0.55	0.58	0.50	0.50	0.53	0.48	S	0.53	0.58	0.68	0.91	0.71	0.84	0.48	1.23	0.75	24
21	0.91	0.84	0.89	0.89	0.78	0.81	0.78	0.71	0.61	0.53	0.61	0.53	0.50	0.50	0.50	0.50	S	0.56	0.63	0.73	0.68	0.68	0.84	0.58	0.50	0.91	0.68	24
22	0.56	0.65	0.62	0.65	0.63	0.65	0.65	0.60	0.65	0.73	0.81	0.78	0.81	0.73	0.76	S	0.68	0.65	0.60	0.65	0.84	1.05	0.86	0.73	0.56	1.05	0.71	24
23	0.73	0.71	0.53	0.55	0.55	0.55	0.53	0.50	0.48	0.53	0.50	0.53	0.53	0.53	S	0.50	0.48	0.50	0.50	0.53	0.61	0.63	0.53	0.55	0.48	0.73	0.55	24
24	0.61	0.53	0.71	0.78	X	0.63	0.65	0.73	0.61	0.58	0.58	0.50	0.50	S	0.48	0.50	0.47	0.48	0.48	0.56	0.65	0.55	0.55	2.97	0.47	2.97	0.69	23
25	2.17	1.60	2.72	2.14	1.26	0.65	0.68	0.63	0.91	0.91	0.81	0.63	S	0.60	0.53	0.55	0.60	0.63	0.78	0.81	0.84	0.76	0.78	0.63	0.53	2.72	0.98	24
26	0.63	0.65	0.61	0.68	0.78	0.86	1.15	0.78	0.94	0.76	0.84	S	0.55	0.53	0.53	0.50	0.63	0.50	0.50	0.45	0.48	0.60	0.61	0.70	0.45	1.15	0.66	24
27	0.63	0.58	0.58	0.45	0.45	0.42	0.48	0.48	0.48	0.50	S	0.53	0.50	0.50	0.53	0.48	0.50	0.53	0.53	0.58	0.55	0.56	0.65	0.65	0.42	0.65	0.53	24
28	0.65	0.68	0.68	0.73	0.68	0.73	0.71	0.73	0.68	S	0.58	0.55	0.58	0.53	0.55	0.55	0.53	0.58	0.68	0.60	0.68	0.65	0.73	0.71	0.53	0.73	0.64	24
29	0.63	0.63	0.68	0.68	0.65	0.62	0.63	0.58	S	0.55	0.50	0.53	0.45	0.45	0.50	0.45	0.45	0.48	0.50	0.55	0.78	0.65	0.65	0.68	0.45	0.78	0.58	24
30	0.65	0.61	0.53	0.55	0.55	0.53	0.71	S	0.50	0.45	0.45	0.42	0.42	0.42	0.42	0.42	0.45	0.42	0.45	0.48	0.50	0.45	0.48	0.50	0.42	0.71	0.49	24
31	0.53	0.55	0.50	0.53	0.61	0.53	S	0.48	0.50	0.53	0.48	0.47	0.50	0.48	0.48	0.50	0.55	0.55	0.58	0.58	0.58	0.60	0.60	0.58	0.47	0.61	0.53	24
HOURLY MAX	3.02	3.36	2.72	2.66	3.26	2.72	3.49	3.42	3.39	2.11	0.97	1.00	0.86	0.78	1.10	0.73	0.68	0.81	0.91	1.15	1.47	1.17	4.30	2.97				
HOURLY AVG	1.00	0.97	0.98	1.01	0.99	1.01	1.03	0.99	0.92	0.73	0.64	0.60	0.58	0.55	0.56	0.54	0.56	0.58	0.62	0.68	0.77	0.76	0.90	0.89				

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

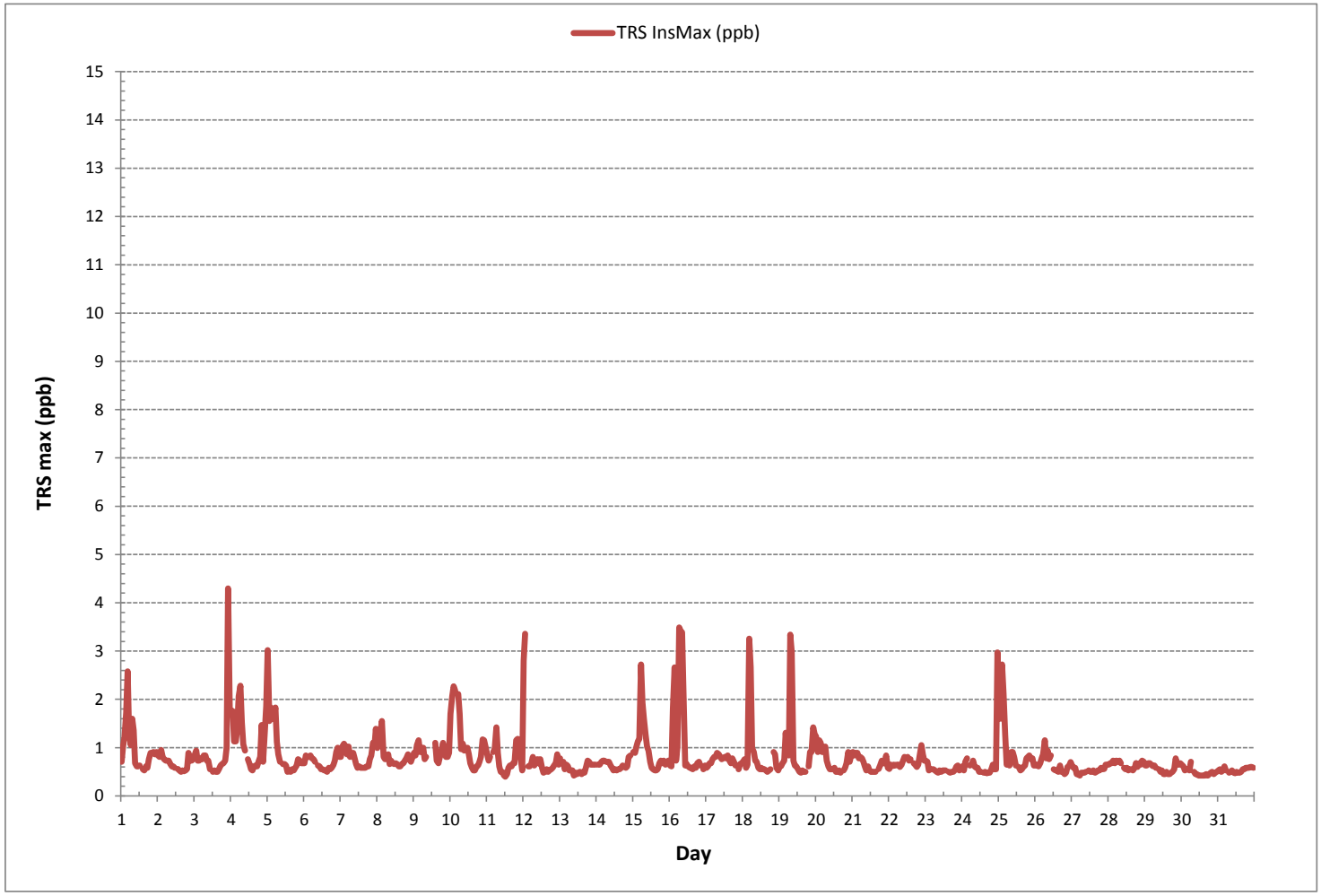
NUMBER OF NON-ZERO READINGS: 706

MAXIMUM INSTANTANEOUS VALUE: 4.30 ppb @ HOUR 22 ON DAY 3

IZS CALIBRATION TIME: 32 hrs
MONTHLY CALIBRATION TIME: 5 hrs
STANDARD DEVIATION: 0.46

OPERATIONAL TIME: 743 hrs

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)



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	1.91	1.92	2.00	2.03	2.06	2.36	2.22	2.15	2.02	1.94	2.02	1.95	1.94	S	1.92	1.92	1.93	1.90	1.90	1.90	2.00	2.15	1.93	1.95	1.90	2.36	2.00	24
2	1.97	2.21	2.19	2.16	2.26	2.09	2.06	2.02	1.99	1.96	1.97	2.00	S	1.97	1.95	1.93	1.91	1.91	1.92	1.91	2.22	2.18	1.93	1.94	1.91	2.26	2.03	24
3	1.93	1.93	1.92	1.93	1.93	1.95	1.94	1.94	1.95	1.92	1.91	S	1.89	1.89	1.89	1.90	1.90	1.90	1.93	1.92	1.91	1.91	1.95	1.94	1.89	1.95	1.92	24
4	2.05	2.27	1.94	1.96	1.96	1.99	2.00	1.98	1.97	1.97	S	1.93	1.90	1.90	1.90	1.91	1.91	1.90	1.90	1.95	1.92	2.15	2.39	2.34	1.90	2.39	2.00	24
5	2.34	2.08	2.14	2.20	2.19	2.13	2.09	2.06	1.97	S	1.93	1.92	1.91	1.90	1.91	1.90	1.89	1.89	1.88	X	X	X	X	X	1.88	2.34	2.02	19
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
7	X	X	X	X	X	X	X	X	S	S	1.91	1.91	1.90	1.90	1.90	1.90	1.89	1.91	1.92	2.13	2.14	1.96	1.94	1.99	1.89	2.14	1.95	15
8	1.91	1.97	1.97	1.97	1.97	2.19	S	2.01	1.94	1.91	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.91	2.19	1.98	10
9	X	X	X	X	X	X	X	X	X	C	C	C	C	C	2.01	2.02	2.05	2.03	2.12	2.30	2.18	2.12	2.43	2.41	2.01	2.43	2.17	15
10	2.64	2.65	**2.86**	2.76	S	2.84	2.81	2.18	2.19	2.14	2.16	2.27	2.20	1.96	1.93	1.91	1.92	1.99	1.97	1.94	1.95	1.96	2.01	1.96	1.91	**2.86**	2.23	24
11	1.93	1.94	1.96	S	1.97	1.98	2.04	2.13	2.02	1.95	1.95	1.95	1.95	1.95	2.11	2.10	2.05	2.23	2.13	2.09	2.08	2.07	2.06	2.13	1.93	2.23	2.03	24
12	2.14	2.22	S	2.04	2.02	2.09	2.02	2.01	1.96	1.96	1.98	2.01	2.00	1.97	1.98	1.99	1.97	1.96	1.96	1.99	1.97	2.01	2.04	2.00	1.96	2.22	2.01	24
13	2.25	S	2.24	2.15	2.23	2.25	2.15	2.13	2.13	2.08	2.11	2.02	2.03	2.02	2.00	2.00	1.97	1.98	2.07	2.14	2.07	1.99	1.97	2.01	1.97	2.25	2.09	24
14	S	2.01	2.04	2.00	1.97	1.98	1.97	1.96	2.06	1.95	1.93	1.92	1.91	1.91	1.91	1.89	1.93	1.93	1.93	1.90	1.93	2.02	2.02	S	1.89	2.06	1.96	24
15	2.13	2.05	2.15	2.07	2.11	2.11	2.51	2.51	2.09	2.02	1.98	1.96	1.94	1.94	1.94	1.94	1.94	1.93	1.95	1.97	2.08	2.11	S	2.20	1.93	2.51	2.07	24
16	2.22	2.12	2.35	2.34	2.51	2.25	2.24	2.15	2.18	2.15	2.05	2.06	2.04	2.00	2.03	2.00	2.02	2.02	2.02	2.25	2.07	S	2.03	2.08	2.00	2.51	2.14	24
17	2.12	2.17	2.18	2.20	2.09	2.10	2.10	2.11	2.13	2.09	2.07	2.05	2.10	2.19	2.18	2.18	2.09	2.17	2.04	1.99	S	1.97	1.99	2.02	1.97	2.20	2.10	24
18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
21	X	X	X	X	X	X	X	X	X	Y	Y	Y	Y	Y	Y	Y	C1	C1	C1	2.28	2.20	2.21	2.72	2.08	2.08	2.72	2.30	5
22	1.98	2.22	2.08	2.03	2.02	2.02	2.02	2.03	2.03	2.04	2.16	2.17	2.13	2.10	1.97	S	1.93	1.94	2.02	2.04	2.02	2.10	2.04	1.98	1.93	2.22	2.05	24
23	2.01	2.01	1.98	1.98	1.99	1.98	1.97	1.97	1.97	1.96	1.97	1.97	1.97	1.97	S	1.98	1.98	1.97	1.97	1.97	1.97	1.95	1.95	1.95	1.95	2.01	1.97	24
24	1.96	1.96	1.96	1.97	X	1.97	1.97	1.97	1.96	1.95	1.95	1.94	1.94	S	1.94	1.93	1.93	1.94	1.94	2.01	2.33	2.15	2.16	2.27	1.93	2.33	2.00	23
25	2.16	2.20	2.15	2.11	2.13	2.10	2.08	2.08	2.04	2.05	2.02	2.04	S	2.04	2.03	2.02	2.04	2.11	2.14	2.10	2.15	2.12	2.13	2.10	2.02	2.20	2.09	24
26	1.92	1.94	1.92	1.95	1.98	2.00	2.02	1.98	1.99	1.97	1.98	S	1.96	1.96	1.96	1.96	1.96	1.95	1.95	1.94	1.94	1.97	1.97	1.96	1.92	2.02	1.96	24
27	1.95	1.95	1.96	1.96	1.97	1.97	1.98	1.96	2.06	1.97	S	1.97	1.97	1.98	1.98	1.99	2.02	2.07	2.08	2.04	2.12	2.20	2.26	2.21	1.95	2.26	2.03	24
28	2.08	1.98	1.97	1.97	1.97	1.98	1.98	1.99	1.98	S	1.95	1.93	1.92	1.90	1.90	1.91	1.90	1.92	1.92	1.91	2.06	2.05	2.07	2.06	1.90	2.08	1.97	24
29	1.92	1.91	1.91	1.92	1.93	1.93	1.92	1.91	S	1.90	1.89	1.89	1.89	1.88	1.88	1.89	1.88	1.89	1.90	1.90	1.95	1.94	1.93	1.92	1.88	1.95	1.91	24
30	1.92	1.95	1.96	1.95	1.95	1.94	1.95	S	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.95	1.96	1.97	1.92	1.97	1.95	24
31	1.96	1.98	1.99	2.25	2.36	2.14	S	2.08	2.00	1.96	1.95	1.93	1.93	1.92	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.93	1.93	1.92	1.91	2.36	1.98	24
HOURLY MAX	2.64	2.65	2.86	2.76	2.51	2.84	2.81	2.51	2.19	2.15	2.16	2.27	2.20	2.19	2.18	2.18	2.09	2.23	2.14	2.30	2.33	2.21	2.72	2.41				
HOURLY AVG	2.06	2.07	2.08	2.08	2.07	2.10	2.09	2.06	2.02	1.99	1.99	1.99	1.97	1.96	1.96	1.96	1.95	1.97	1.98	2.02	2.05	2.05	2.08	2.06				

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

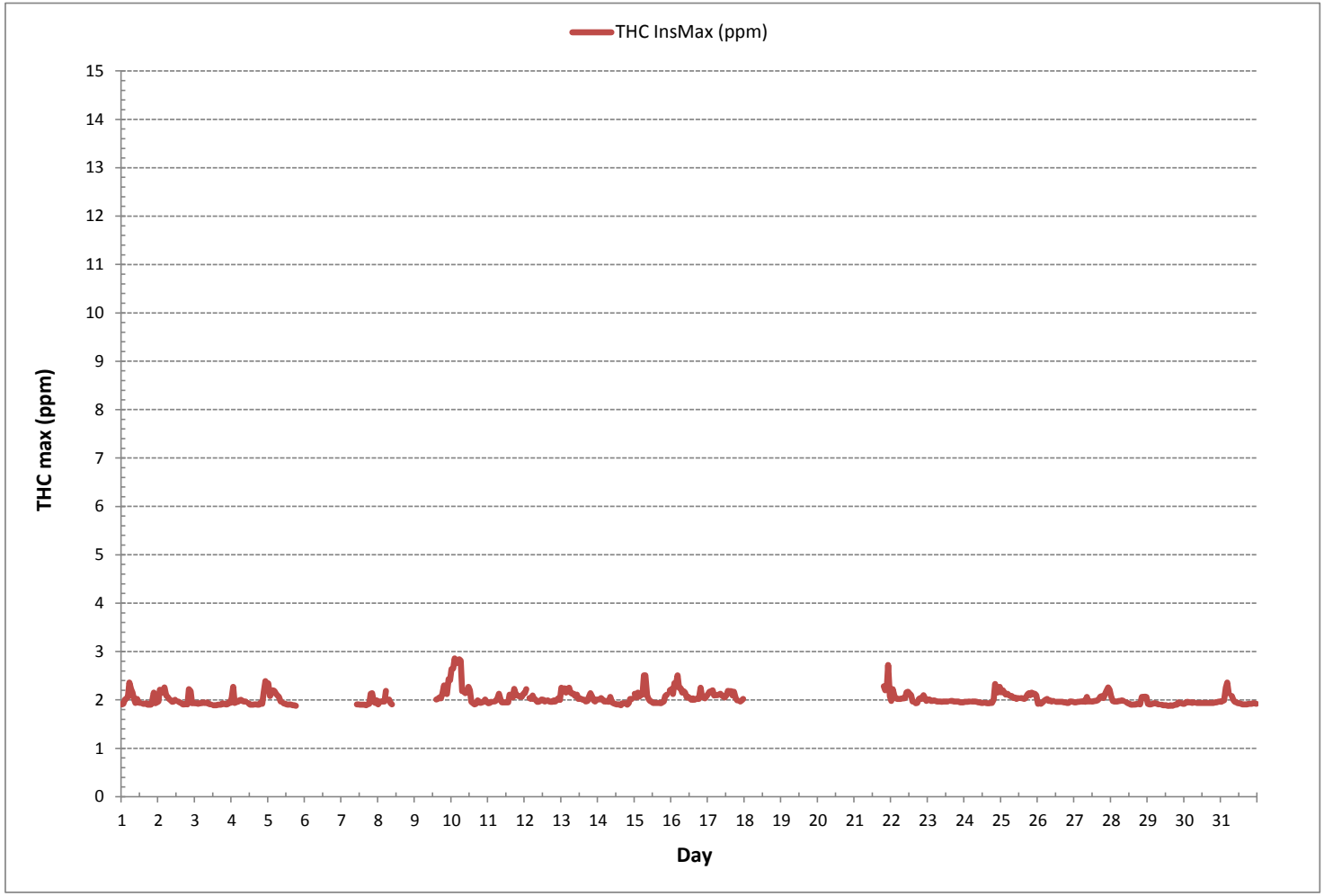
NUMBER OF NON-ZERO READINGS: 560

MAXIMUM INSTANTANEOUS VALUE: 2.86 ppm @ HOUR 2 ON DAY 10

IZS CALIBRATION TIME: 26 hrs
MONTHLY CALIBRATION TIME: 5 hrs
STANDARD DEVIATION: 0.14

OPERATIONAL TIME: 591 hrs

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)



METHANE MAX Instantaneous Maximum (CH_4 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	1.90	1.91	1.99	2.02	2.04	2.35	2.22	2.14	2.01	1.93	1.96	1.95	1.93	S	1.91	1.91	1.92	1.89	1.89	1.89	2.00	2.14	1.92	1.95	1.89	2.35	1.99	24
2	1.96	2.20	2.19	2.15	2.25	2.08	2.05	2.01	1.99	1.96	1.97	2.00	S	1.96	1.95	1.92	1.90	1.90	1.91	1.90	2.22	2.17	1.92	1.93	1.90	2.25	2.02	24
3	1.92	1.92	1.91	1.92	1.92	1.92	1.93	1.93	1.91	1.91	1.90	S	1.88	1.88	1.88	1.89	1.89	1.89	1.91	1.91	1.90	1.90	1.95	1.94	1.88	1.95	1.91	24
4	2.03	2.26	1.93	1.95	1.95	1.98	2.00	1.98	1.97	1.96	S	1.93	1.89	1.89	1.89	1.90	1.90	1.89	1.89	1.91	1.91	2.14	2.38	2.33	1.89	2.38	1.99	24
5	2.34	2.07	2.13	2.19	2.19	2.12	2.08	2.00	1.96	S	1.92	1.91	1.90	1.89	1.90	1.89	1.88	1.88	1.87	X	X	X	X	X	1.87	2.34	2.01	19
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
7	X	X	X	X	X	X	X	X	S	S	1.90	1.90	1.89	1.89	1.89	1.89	1.88	1.90	1.91	2.12	2.13	1.95	1.93	1.97	1.88	2.13	1.94	15
8	1.90	1.97	1.96	1.96	1.96	2.19	S	1.98	1.93	1.90	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.90	2.19	1.97	10
9	X	X	X	X	X	X	X	X	X	C	C	C	C	C	1.97	1.96	1.95	1.95	2.08	2.19	2.17	2.11	2.42	2.40	1.95	2.42	2.12	15
10	2.62	2.64	**2.79**	2.74	S	2.77	2.76	2.09	2.07	2.03	2.05	2.06	2.03	1.96	1.92	1.90	1.91	1.92	1.92	1.93	1.95	1.96	2.00	1.96	1.90	**2.79**	2.17	24
11	1.92	1.94	1.95	S	1.97	1.97	2.02	2.12	2.00	1.94	1.94	1.94	1.94	1.94	2.09	2.09	2.04	2.23	2.12	2.08	2.07	2.06	2.05	2.12	1.92	2.23	2.02	24
12	2.13	2.22	S	2.03	2.01	2.08	2.00	1.99	1.96	1.96	1.98	2.00	1.99	1.97	1.97	1.98	1.97	1.95	1.95	1.99	1.97	2.00	2.03	1.99	1.95	2.22	2.01	24
13	2.23	S	2.24	2.15	2.23	2.24	2.15	2.12	2.12	2.07	2.10	2.01	2.02	2.00	2.00	1.99	1.97	1.96	2.06	2.13	2.03	1.98	1.96	2.00	1.96	2.24	2.08	24
14	S	2.00	2.02	2.00	1.97	1.97	1.96	1.95	1.94	1.94	1.92	1.91	1.90	1.90	1.89	1.88	1.92	1.93	1.92	1.89	1.92	1.98	2.01	S	1.88	2.02	1.94	24
15	2.01	2.02	2.05	2.06	2.05	2.10	2.50	2.50	2.08	2.00	1.98	1.95	1.93	1.93	1.93	1.93	1.92	1.93	1.94	1.96	2.07	2.10	S	2.20	1.92	2.50	2.05	24
16	2.22	2.11	2.35	2.33	2.50	2.25	2.24	2.15	2.17	2.14	2.04	2.05	2.03	1.99	2.01	1.99	2.00	2.00	2.01	2.25	2.00	S	2.02	2.02	1.99	2.50	2.13	24
17	2.08	2.08	2.06	2.07	2.08	2.09	2.09	2.10	2.09	2.08	2.06	2.04	2.09	2.10	2.11	2.08	2.08	2.07	2.03	1.99	S	1.97	1.99	2.01	1.97	2.11	2.06	24
18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
21	X	X	X	X	X	X	X	X	X	Y	Y	Y	Y	Y	Y	Y	C1	C1	C1	2.24	2.11	2.20	2.71	2.00	2.00	2.71	**2.25**	5
22	1.97	2.21	2.01	2.02	2.00	2.00	2.01	2.01	2.02	2.03	2.04	2.03	2.01	1.99	1.96	S	1.92	1.94	1.91	2.04	2.01	2.05	2.03	1.98	1.91	2.21	2.01	24
23	2.00	2.00	1.97	1.98	1.98	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.96	S	1.97	1.97	1.97	1.97	1.96	1.96	1.95	1.95	1.95	1.95	2.00	1.97	24
24	1.95	1.95	1.95	1.97	X	1.96	1.96	1.96	1.95	1.95	1.95	1.94	1.93	S	1.94	1.93	1.93	1.93	1.93	1.99	2.32	2.14	2.15	2.26	1.93	2.32	2.00	23
25	2.15	2.19	2.14	2.10	2.12	2.09	2.07	2.07	2.03	2.04	2.01	2.03	S	2.03	2.01	2.01	2.03	2.10	2.13	2.09	2.15	2.11	2.12	2.09	2.01	2.19	2.08	24
26	1.91	1.93	1.91	1.94	1.97	1.99	2.01	1.97	1.98	1.97	1.97	S	1.95	1.96	1.95	1.95	1.96	1.94	1.94	1.93	1.94	1.96	1.96	1.95	1.91	2.01	1.95	24
27	1.95	1.95	1.96	1.96	1.96	1.97	1.97	1.96	2.02	1.96	S	1.96	1.97	1.97	1.98	1.99	2.00	2.06	2.06	2.03	2.11	2.19	2.26	2.21	1.95	2.26	2.02	24
28	2.07	1.97	1.97	1.97	1.97	1.97	1.97	1.99	1.98	S	1.94	1.93	1.91	1.89	1.89	1.90	1.89	1.91	1.91	1.90	2.05	2.04	2.06	2.05	1.89	2.07	1.96	24
29	1.91	1.90	1.90	1.91	1.92	1.92	1.91	1.90	S	1.89	1.88	1.87	1.88	1.87	1.87	1.87	1.87	1.88	1.89	1.89	1.94	1.93	1.93	1.91	1.87	1.94	1.90	24
30	1.92	1.94	1.95	1.94	1.94	1.94	1.94	S	1.94	1.93	1.94	1.93	1.94	1.93	1.93	1.93	1.94	1.93	1.93	1.94	1.94	1.95	1.96	1.96	1.92	1.96	1.94	24
31	1.95	1.98	1.98	2.24	2.35	2.13	S	2.06	1.99	1.96	1.95	1.92	1.92	1.90	1.90	1.90	1.90	1.90	1.91	1.91	1.91	1.92	1.92	1.91	1.90	2.35	1.97	24
HOURLY MAX	2.62	2.64	2.79	2.74	2.50	2.77	2.76	2.50	2.17	2.14	2.10	2.06	2.09	2.10	2.11	2.09	2.08	2.23	2.13	2.25	2.32	2.20	2.71	2.40				
HOURLY AVG	2.05	2.06	2.06	2.07	2.06	2.09	2.08	2.04	2.00	1.98	1.97	1.96	1.95	1.95	1.95	1.94	1.94	1.95	1.96	2.00	2.03	2.04	2.07	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

MONTHLY SUMMARY

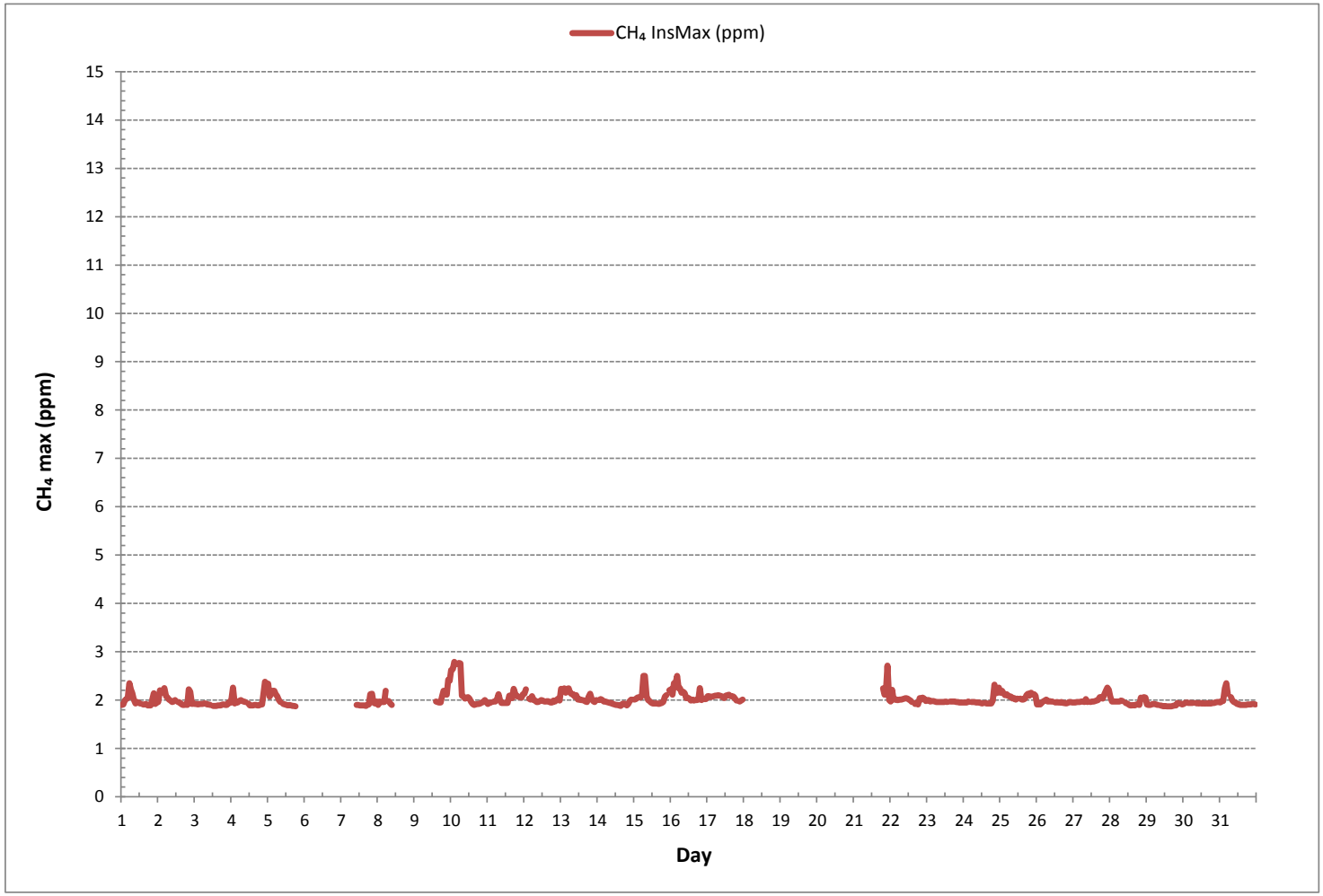
NUMBER OF NON-ZERO READINGS: 560

MAXIMUM INSTANTANEOUS VALUE: 2.79 ppm @ HOUR 2 ON DAY 10

IZS CALIBRATION TIME: 26 hrs
MONTHLY CALIBRATION TIME: 5 hrs
STANDARD DEVIATION: 0.13

OPERATIONAL TIME: 591 hrs

METHANE MAX Instantaneous Maximum (CH_4 ppm)



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	0.00	0.00	0.00	0.00	0.00	0.07	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	0.07	0.00	24
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
3	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.05	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	0.05	0.00	24
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.07	0.00	0.00	0.12	0.00	0.00	0.12	0.01	24
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	X	X	X	X	0.00	0.08	0.01	19
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
7	X	X	X	X	X	X	X	X	S	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.00	15
8	0.00	0.00	0.00	0.00	0.00	0.00	S	0.05	0.00	0.00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.00	0.05	0.01	10
9	X	X	X	X	X	X	X	X	X	C	C	C	C	C	0.06	0.09	0.11	0.11	0.16	0.16	0.00	0.00	0.03	0.00	0.00	0.16	0.07	15
10	0.13	0.08	0.11	0.11	S	0.08	0.13	0.10	0.12	0.13	0.13	0.24	0.18	0.00	0.00	0.00	0.00	0.10	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.07	24
11	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
12	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
13	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	0.03	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.09	0.01	24
14	S	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	0.00	0.00	0.05	0.00	S	0.00	0.11	0.01	24
15	0.12	0.01	0.13	0.00	0.09	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	0.00	S	0.00	0.00	0.13	0.02	24
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09	S	0.00	0.07	0.00	0.09	0.01	24
17	0.10	0.10	0.15	0.14	0.00	0.00	0.00	0.00	0.05	0.02	0.00	0.01	0.00	0.11	0.11	0.11	0.00	0.11	0.00	0.00	S	0.00	0.00	0.00	0.00	0.15	0.04	24
18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	0
21	X	X	X	X	X	X	X	X	X	Y	Y	Y	Y	Y	Y	Y	C1	C1	C1	0.16	0.14	0.00	0.00	0.08	0.00	0.16	0.08	5
22	0.00	0.13	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.15	0.12	0.11	0.00	S	0.00	0.00	0.11	0.00	0.04	0.11	0.00	0.00	0.00	0.15	0.04	24
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
24	0.00	0.00	0.00	0.00	X	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.08	0.00	24
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	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	0.10	0.01	24
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
31	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
HOURLY MAX	0.13	0.13	0.15	0.14	0.09	0.08	0.13	0.10	0.12	0.13	0.13	0.24	0.18	0.11	0.11	0.11	0.11	0.11	0.16	0.16	0.14	0.11	0.12	0.08				
HOURLY AVG	0.02	0.01	0.02	0.01	0.00	0.00	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.02	0.02	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

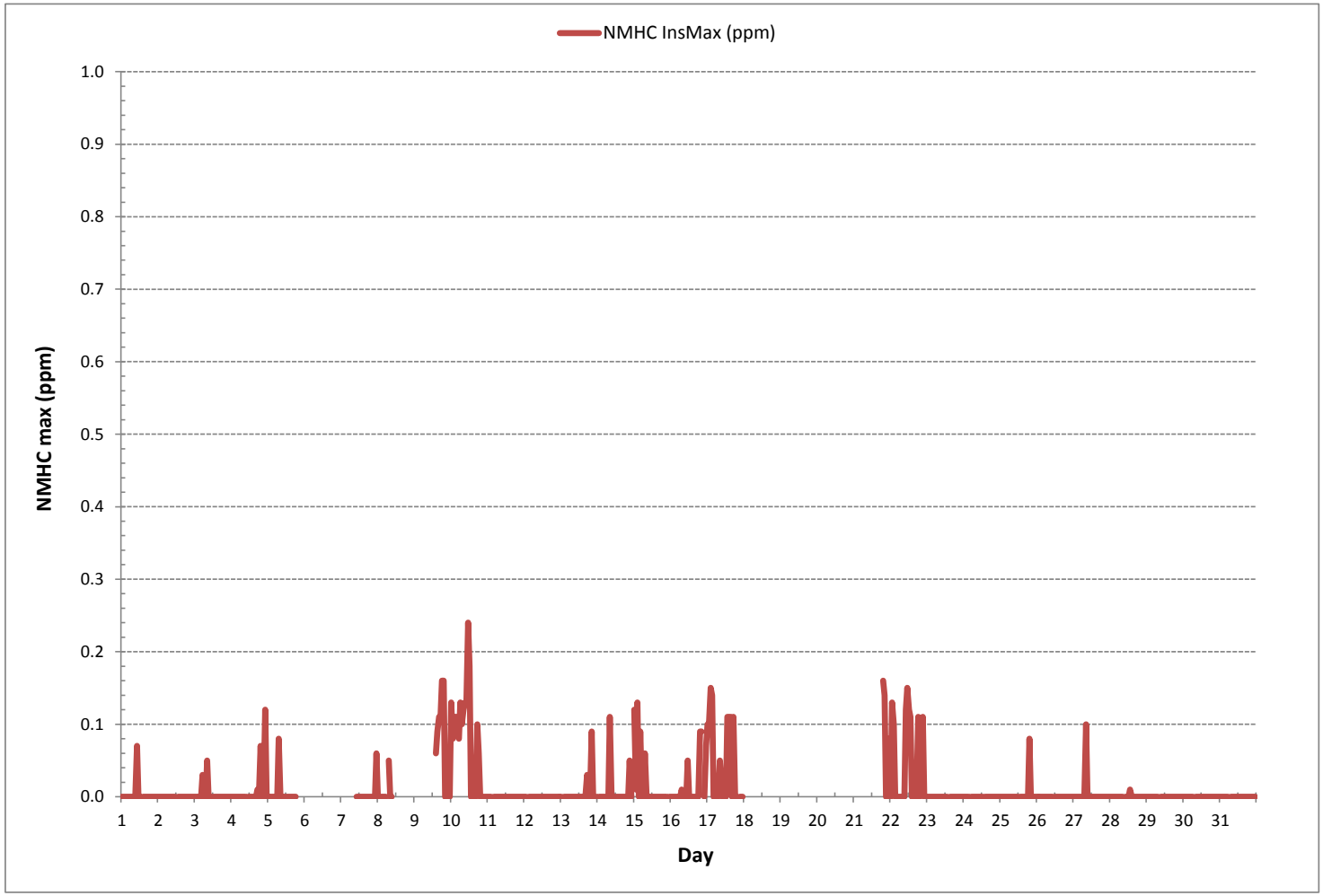
NUMBER OF NON-ZERO READINGS: 70

MAXIMUM INSTANTANEOUS VALUE: 0.24 ppm @ HOUR 11 ON DAY 10

IZS CALIBRATION TIME: 26 hrs
MONTHLY CALIBRATION TIME: 5 hrs
STANDARD DEVIATION: 0.03

OPERATIONAL TIME: 591 hrs

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)



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	18.9	6.5	7.8	8.6	4.3	2.3	3.4	7.0	10.7	10.8	13.0	13.8	13.2	12.8	14.2	21.8	22.1	17.4	9.4	7.3	4.8	14.6	13.1	12.6	2.3	22.1	11.3	24
2	11.6	7.3	5.8	7.2	9.8	11.1	12.0	12.8	14.2	11.6	12.9	14.9	15.5	15.8	16.3	18.4	18.0	15.9	16.6	12.6	5.5	10.3	9.5	12.8	5.5	18.4	12.4	24
3	14.2	16.1	16.4	16.8	16.5	17.7	17.7	22.4	31.2	26.5	29.5	32.4	32.1	34.0	32.1	32.1	**56.1**	22.5	24.6	28.6	21.0	22.2	6.1	9.3	6.1	**56.1**	**24.1**	24
4	4.9	10.9	9.0	8.7	12.4	11.5	12.3	10.6	8.1	11.6	15.8	16.3	17.5	19.3	22.6	19.1	16.9	14.5	13.6	30.5	27.9	6.6	4.4	4.2	4.2	30.5	13.7	24
5	10.8	3.7	3.5	4.5	7.0	6.4	8.5	11.8	13.6	13.1	19.7	19.8	23.5	23.0	23.5	23.6	24.9	25.1	21.7	12.6	9.3	10.3	11.8	12.3	3.5	25.1	14.3	24
6	13.7	9.6	11.0	11.6	15.7	14.9	21.8	25.6	21.9	21.9	25.7	32.9	43.0	31.7	28.7	25.2	21.4	25.4	19.6	16.4	17.0	13.1	11.0	10.9	9.6	43.0	20.4	24
7	13.4	16.0	17.6	14.9	12.4	11.8	15.4	19.6	21.4	24.0	24.5	24.4	27.4	24.9	21.6	27.9	24.5	17.8	14.2	10.9	5.0	8.3	10.5	7.8	5.0	27.9	17.3	24
8	7.7	9.3	9.1	9.2	8.7	7.3	9.6	18.2	19.8	17.7	16.5	20.0	22.0	21.0	21.4	19.0	12.5	14.5	11.8	12.0	10.9	13.6	15.2	15.5	7.3	22.0	14.3	24
9	9.5	11.5	6.3	13.4	10.4	6.2	6.1	10.4	8.9	13.1	17.9	15.1	21.3	24.7	22.0	24.5	12.9	11.2	7.8	7.8	9.7	9.8	8.1	8.1	6.1	24.7	12.4	24
10	9.4	6.8	6.0	4.9	7.2	6.9	11.9	17.0	27.6	26.0	22.9	25.8	30.9	30.9	24.1	27.2	22.2	12.4	9.6	12.7	11.4	6.1	9.4	27.4	4.9	30.9	16.5	24
11	19.3	21.1	14.0	17.4	14.1	8.1	6.4	6.5	15.8	16.8	18.7	19.7	20.7	12.9	8.6	9.1	5.4	7.8	5.2	7.1	8.3	5.8	7.9	10.1	5.2	21.1	11.9	24
12	14.7	11.1	21.8	18.6	17.5	14.2	16.5	17.2	14.5	11.4	9.4	11.8	11.5	13.0	13.0	13.0	15.2	20.3	15.5	12.6	10.5	8.3	9.1	8.7	8.3	21.8	13.7	24
13	6.0	8.1	10.7	19.3	9.4	8.6	11.9	15.2	15.4	20.1	22.2	23.4	24.9	22.9	25.4	27.1	24.9	13.4	11.6	12.0	14.2	20.9	22.5	17.1	6.0	27.1	17.0	24
14	16.9	14.5	17.8	15.2	14.7	14.4	13.2	15.8	23.8	25.9	30.8	32.4	37.5	40.6	32.9	30.3	35.5	30.2	18.8	20.0	10.7	16.1	25.2	20.3	10.7	40.6	23.1	24
15	17.3	16.0	14.8	10.3	11.4	8.0	6.3	6.6	9.1	13.3	24.8	33.2	32.0	27.9	20.1	14.3	14.4	16.2	6.3	2.5	5.8	11.8	10.7	13.0	2.5	33.2	14.4	24
16	11.3	11.5	10.6	12.6	11.8	10.7	11.8	15.7	16.9	18.4	18.2	16.0	15.0	20.6	19.8	17.7	18.6	16.3	13.2	11.5	13.9	13.3	13.4	14.7	10.6	20.6	14.7	24
17	12.6	10.6	10.5	11.2	13.8	13.5	13.1	13.8	16.5	16.6	16.1	21.1	22.1	20.9	24.4	27.1	22.2	18.3	14.2	15.1	14.3	15.4	17.0	18.2	10.5	27.1	16.6	24
18	17.0	38.5	35.4	21.5	13.9	10.8	15.3	17.2	20.3	25.1	29.5	25.8	30.2	33.8	26.2	31.6	25.4	20.2	14.5	4.9	6.2	6.8	10.7	15.4	4.9	38.5	20.7	24
19	14.3	8.0	9.6	9.0	17.0	5.0	6.6	6.6	9.9	11.1	11.3	16.1	14.4	20.2	20.9	22.3	15.0	8.2	3.9	10.8	7.0	7.3	3.0	2.8	2.8	22.3	10.8	24
20	3.7	5.5	4.1	6.2	5.6	6.4	5.3	9.4	15.9	17.1	20.4	19.4	24.0	24.1	24.1	22.7	23.9	20.2	13.1	2.5	2.3	2.7	2.7	6.2	2.3	24.1	12.0	24
21	6.1	5.3	3.9	4.3	5.1	5.8	7.3	5.5	11.2	13.6	12.5	15.0	16.9	18.4	17.8	20.5	17.7	20.9	10.3	7.8	10.7	9.5	12.9	15.0	3.9	20.9	11.4	24
22	14.3	11.5	13.6	14.9	15.4	19.6	17.5	19.5	26.0	21.9	26.5	29.4	27.0	24.2	26.4	25.5	25.0	18.4	13.7	7.1	24.2	17.9	16.0	19.0	7.1	29.4	19.8	24
23	19.5	15.7	19.3	12.8	16.5	20.6	24.0	24.2	18.2	20.9	14.7	12.5	11.4	13.0	11.9	12.7	14.9	13.0	8.5	11.8	14.3	12.9	11.6	14.0	8.5	24.2	15.4	24
24	15.6	18.1	14.9	13.2	**X**	14.6	17.6	19.2	18.7	18.0	18.8	20.2	19.4	17.4	17.9	13.3	16.8	14.2	11.3	10.5	3.8	4.8	8.1	9.4	3.8	20.2	14.6	23
25	12.7	8.7	17.1	16.2	11.7	13.4	15.4	14.8	17.9	18.6	20.0	17.3	14.7	16.8	13.8	12.7	12.9	10.5	11.6	10.9	9.2	5.5	29.7	42.5	5.5	42.5	15.6	24
26	19.5	19.0	23.4	15.6	11.9	10.5	13.6	13.8	10.4	14.7	19.8	19.5	18.3	23.1	24.2	17.0	17.2	19.3	17.6	17.3	6.6	6.0	9.2	15.2	6.0	24.2	15.9	24
27	11.6	10.3	16.4	13.3	10.0	9.6	8.4	10.8	12.5	12.5	14.0	15.1	18.9	19.2	19.3	21.2	16.3	12.5	12.0	8.2	12.2	10.6	6.7	8.2	6.7	21.2	12.9	24
28	9.0	9.4	12.0	13.4	12.3	9.3	14.9	15.4	14.7	12.9	16.2	18.5	23.5	21.2	17.9	14.3	24.4	19.1	20.0	24.1	14.7	13.6	10.7	12.2	9.0	24.4	15.6	24
29	11.8	19.5	16.2	14.4	18.4	12.4	16.4	18.8	24.4	22.8	34.0	26.6	22.6	22.9	35.5	21.8	20.9	15.2	27.1	13.9	6.9	6.9	10.5	13.6	6.9	35.5	18.9	24
30	15.6	21.1	26.7	23.2	20.0	19.4	17.9	17.9	25.1	21.2	22.1	19.0	14.3	17.0	16.6	12.1	18.1	14.2	13.5	11.2	15.5	10.7	6.9	5.7	5.7	26.7	16.9	24
31	6.0	10.3	11.3	7.3	8.7	8.9	9.4	14.6	16.0	20.3	26.8	26.1	29.0	40.6	38.8	30.2	29.1	31.7	24.2	21.2	27.1	34.4	22.1	17.5	6.0	40.6	21.3	24
HOURLY MAX	19.5	38.5	35.4	23.2	20.0	20.6	24.0	25.6	31.2	26.5	34.0	33.2	43.0	40.6	38.8	32.1	56.1	31.7	27.1	30.5	27.9	34.4	29.7	42.5				

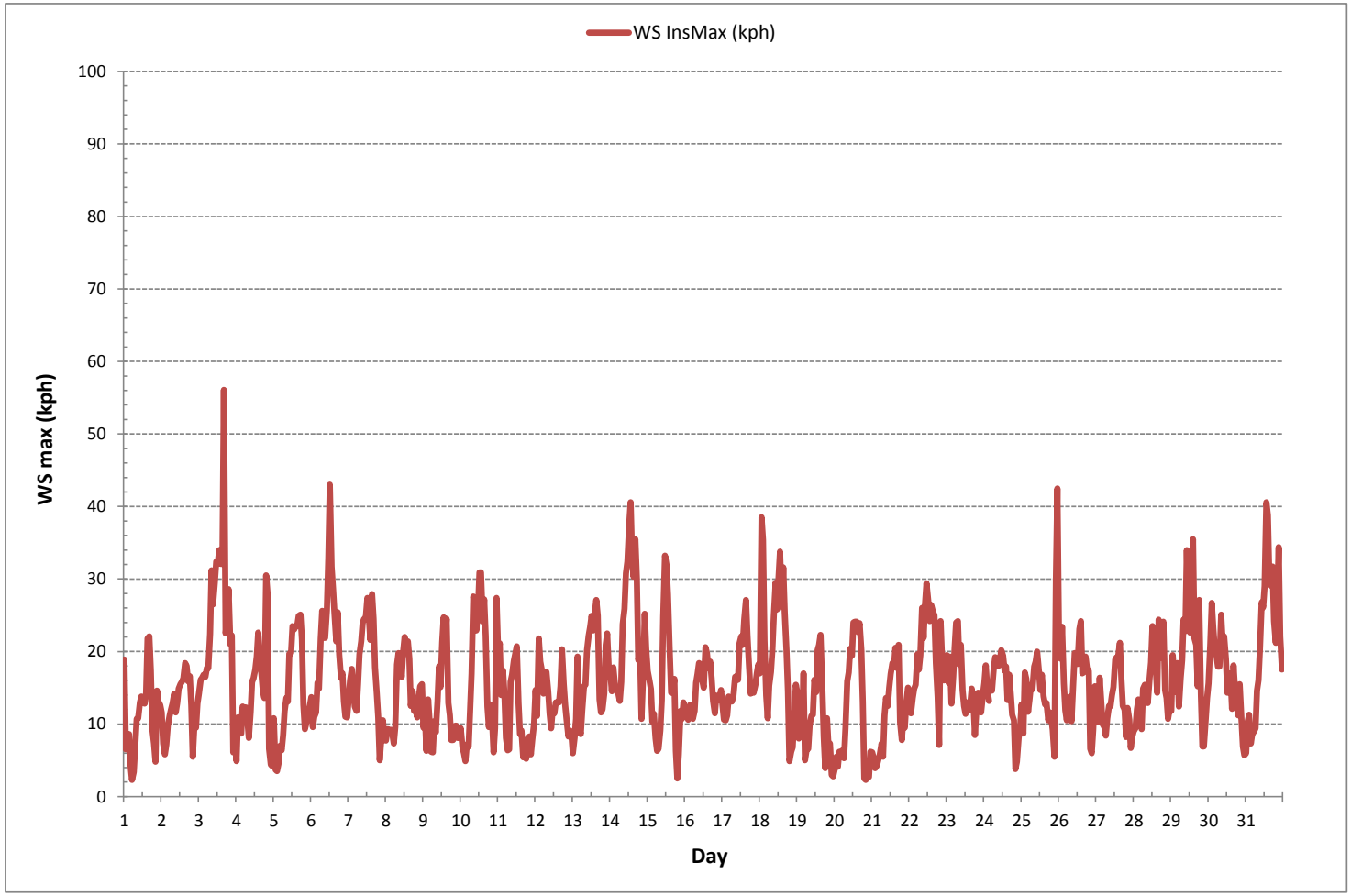
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	56.1	kph	@ HOUR	16	ON DAY	3	
OPERATIONAL TIME:						743	hrs

WIND SPEED Instantaneous Maximum (WS kph)



APPENDIX IV
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	**Position / Title of the Representative of the Person Responsible**
Mike Bisaga / Lily Lin	**Technical Program Managers**
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	**Position / Title of External Person Certifying the Report**
Cheri Sinclair	**Supervisor, Customer Service, Air Services**
Company Name for the External Person Certifying the Report	**Identification of Qualifications / Professional Designations of the External Person Certifying the Report**
Maxxam Analytics, A Bureau Veritas Group Company	**B.Sc.**

Maxxam Analytics is the designated contractor conducting monitoring and reporting activities. I certify that the submitted data has been (a) reviewed and validated as per the AMD Chapter 6: Ambient Data Quality. I certify that the submitted report (b) accurately reflects the monitoring results and reporting timeframe and (c) meets the specified analysis, summarization and reporting requirements as per the AMD Chapter 9: Reporting.

Cheri Sinclair

Signature of the External Person Certifying the Report

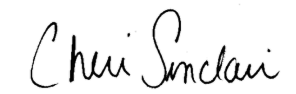
19-Sep-2018

Report Issued Date (dd-mon-yyyy)

APPENDIX V
DATA VALIDATION CERTIFICATION FORM

Validation Certificate Form

Client:	Peace River Area Monitoring Program Committee	**Project #:**	196-2018-08-93-C
Site:	Reno Station	**Contact:**	Karla Reesor

Level 0 Preliminary Verification		**Date**	18-Sep-2018
Level 1 Primary Validation		**Date**	18-Sep-2018
Level 2 Final Validation		**Date**	19-Sep-2018
Level 3 Independent Data Review		**Date**	19-Sep-2018
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.