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AMBIENT AIR MONITORING MONTHLY DATA REPORT

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

RENO STATION

JOB #: 196-2018-07-93-C

July 2018

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: **August 20, 2018**

Prepared by:

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Project Team Lead, Customer Service, Air Services

Reviewed by:

on behalf of: Cheri Sinclair, B.Sc.
Supervisor, Customer Service, Air Services

SUMMARY

In July 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).

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

Canister System: One five-minute concentration of 2.10 ppm was recorded on July 2 at 08:10. This is not considered a valid canister event as the carrier gas (N_2) was being replaced at the time.

TRS: Two hours of downtime were incurred due to additional zero-span checks performed at hour 22:00 on July 3 and hour 06:00 on July 4, to assess a biased low drift in span response.

THC/CH_4/NMHC:

- Due to low carrier (N_2) gas pressure and the corrective actions performed to address it, seven hours of downtime were recorded on July 2.
- One hour of downtime was incurred on July 4 at hour 09:00, due to sample manifold cleaning.

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	6	7	3.5	SW	0	1	100.0
TRS (ppb)	-	-	-	-	0.50	4.06	15	5	1.6	SSW	0.81	15	99.7
THC (ppm)	-	-	-	-	1.97	2.93	28	7	1.9	SSW	2.20	28	98.9
CH_4 (ppm)	-	-	-	-	1.97	2.92	28	7	1.9	SSW	2.20	28	98.9
NMHC (ppm)	-	-	-	-	0.00	0.09	24	23	1.1	SW	0.00	1	98.9
RELATIVE HUMIDITY (%)	-	-	-	-	68	94	2	1	3.8	WNW	91	20	100.0
BAROMETRIC PRESSURE (millibar)	-	-	-	-	942	952	23	4	3	NNW	951	23	100.0
AMBIENT TEMPERATURE (°C)	-	-	-	-	16.5	28.3	28	16	5.9	SW	21.1	28	100.0
STATION TEMPERATURE (°C)	-	-	-	-	22.3	32.7	16	19	8.2	WSW	25.0	17	100.0
VECTOR WS (kph)	-	-	-	-	2.2	14.0	11	14	-	WSW	9.3	2	100.0
VECTOR WD (sec)	-	-	-	-	280 (W)	-	-	-	-	-	-	-	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	July

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	99.7	0.004 ppm	-	0.001 ppm	-
THC	98.9	2.93 ppm	-	2.20 ppm	-
CH_4	98.9	2.92 ppm	-	2.20 ppm	-
NMHC	98.9	0.09 ppm	-	0.00 ppm	-
RH	100.0	94 %	-	91 %	-
BP	100.0	952 mb	-	951 mb	-
Ambient TPX	100.0	28.3 °C	-	21.1 °C	-
Station TPX	100.0	32.7 °C	-	25.0 °C	-
Wind Speed	100.0	14.0 kph	-	9.3 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 July 4.

TOTAL REDUCED SULPHUR (TRS)

• Operational time for the monitoring period was 99.7%, equivalent to two hours of downtime.
• The analyzer spanned close to the lower acceptance limit on July 3. Two subsequent additional span response checks confirmed the drift. This prompted a site visit on July 4 where the routine monthly calibration was successfully completed. As span response never exceeded acceptance limits and the monthly calibration met AMD requirements, data quality was not impacted. However, two hours of downtime were incurred due to the additional quality checks.

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

• Operational time for the monitoring period was 98.9%, equivalent to eight hours of downtime.
• The carrier gas (N_2) pressure ran low on July 2, prompting an immediate site visit where the gas cylinder was replaced. An additional zero-span response check was completed afterwards as a quality check. Seven hours of downtime were recorded due to this event.
• The routine monthly calibration was performed on July 4. One hour of downtime as incurred at hour 09:00 due to sample manifold cleaning.
• On July 18, the channels were placed briefly in "maintenance" mode to prevent sample contamination while a wasp nest was being exterminated with a volatile aerosol insecticide. This did not impact the hourly average data completeness criteria. However, the corresponding maximum instantaneous data at hour 14:00 was invalid.
• During minute data review, 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 suspected poor injections. Impacted minute data include the following:

Date/Time	Conc (ppm)
July 27 10:34	1.77
July 28 11:41	1.67
July 28 13:31	1.57
July 28 13:35	1.63
July 28 15:34	1.78
July 28 19:56	1.67
July 28 19:57	1.77
July 28 20:06	1.61
July 29 09:16	1.78
July 29 14:11	1.76
July 31 14:58	1.72
July 31 21:36	1.72

• 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. One 5-minute concentration of 2.10 ppm was recorded on July 2 at 08:10. This is not considered a valid canister event as the carrier gas was being replaced at the time. A trigger test was performed during the routine monthly calibration on July 4 to assess the effectiveness of the canister system.

WIND SPEED (WS) and WIND DIRECTION (WD)

- Operational time for the monitoring period was 100%.
- An anemometer sensor check was conducted on July 4. The result was satisfactory.
- 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 July 4. The result was satisfactory.

BAROMETRIC PRESSURE (BP)

- Operational time for the monitoring period was 100%.
- A pressure sensor audit was conducted on July 4. The result was satisfactory.

AMBIENT TEMPERATURE (AmbTPX)

- Operational time for the monitoring period was 100%.
- A temperature sensor audit was conducted on July 4. The result was satisfactory.

STATION TEMPERATURE (StnTPX)

- Operational time for the monitoring period was 100%.
- The air conditioning unit was replaced on July 18 to address an instability in station temperature.

2.0 Project Personnel

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

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

4.0 Calculations and Results

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

5.0 Methods and Procedures

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

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

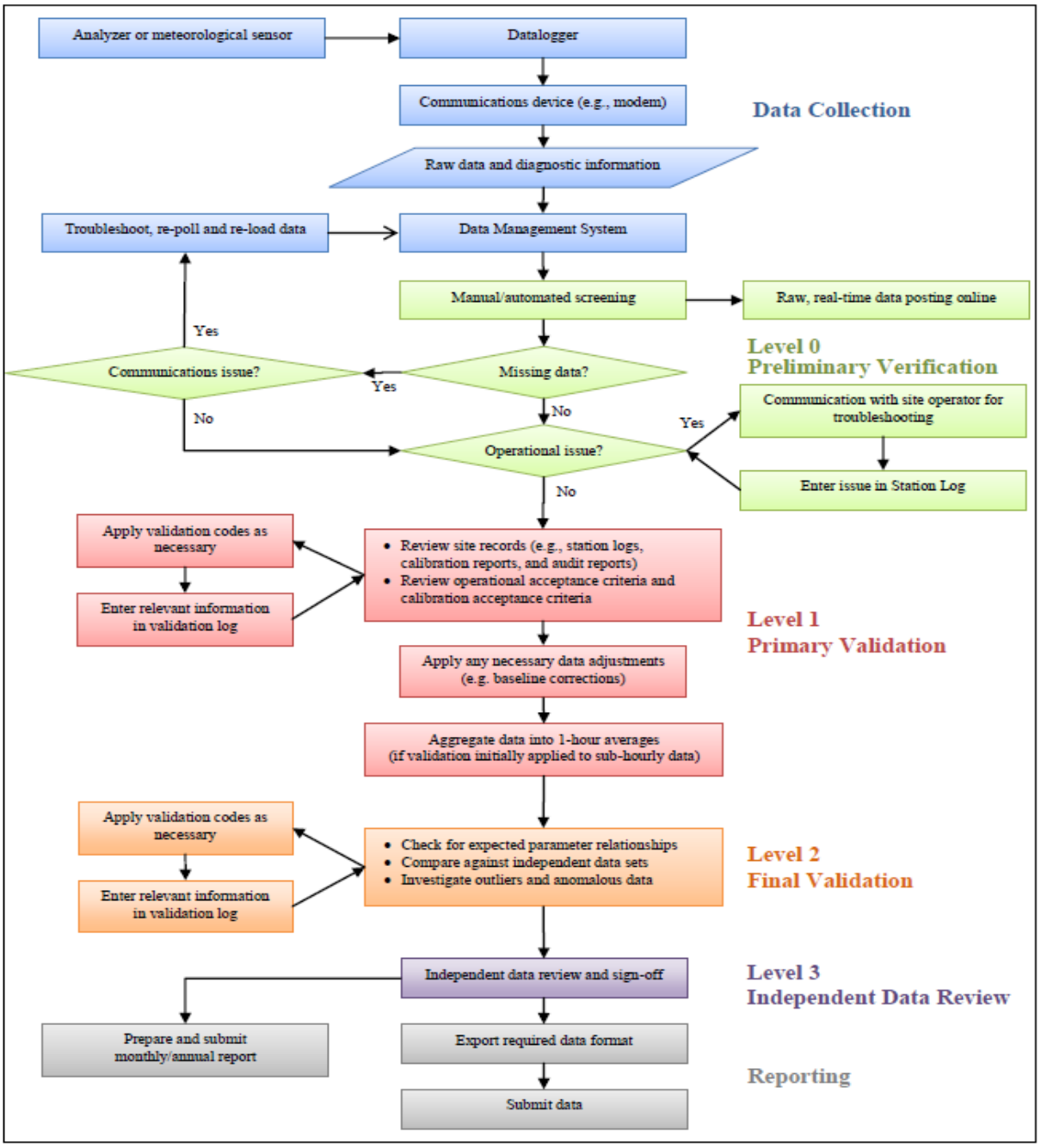
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

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)

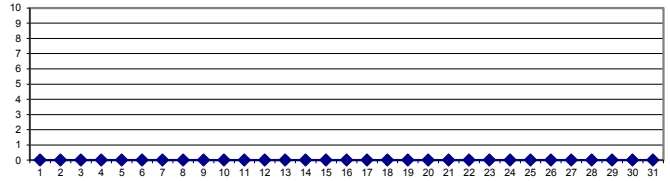
HR START (MST) / HR END (MST)	0:00 0:59	1:00 1:59	2:00 2:59	3:00 3:59	4:00 4:59	5:00 5:59	6:00 6:59	7:00 7:59	8:00 8:59	9:00 9:59	10:00 10:59	11:00 11:59	12:00 12:59	13:00 13:59	14:00 14:59	15:00 15:59	16:00 16:59	17:00 17:59	18:00 18:59	19:00 19:59	20:00 20:59	21:00 21:59	22:00 22:59	23:00 23:59	DAILY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

24 HR AVERAGES July 2018

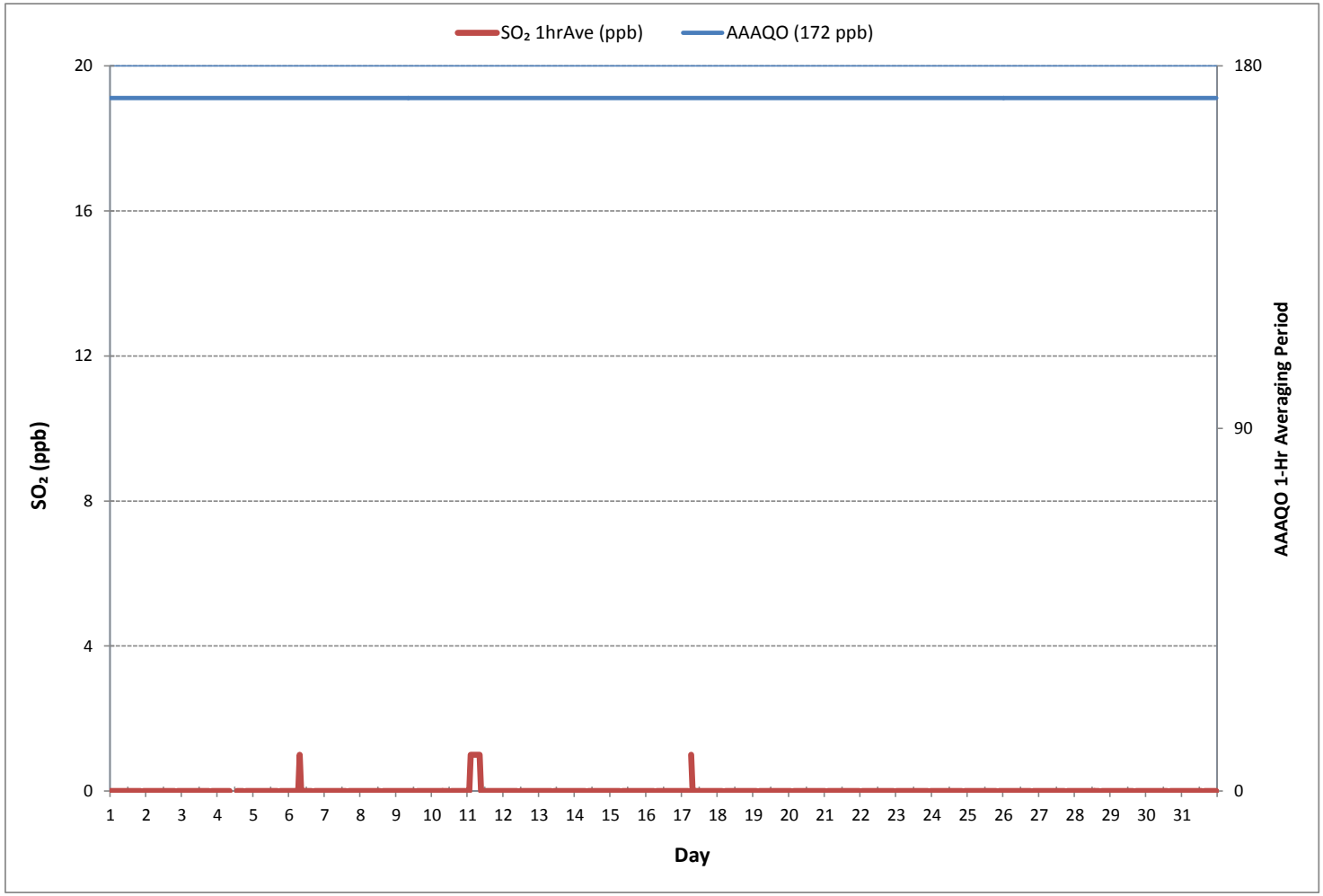


MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDANCES:	0					
NUMBER OF 24-HR EXCEEDANCES:	0					
NUMBER OF NON-ZERO READINGS:	9					
MINIMUM 1-HR AVERAGE	0	ppb	@ HOUR	0	ON DAY	1
MAXIMUM 1-HR AVERAGE:	1	ppb	@ HOUR	7	ON DAY	6
MAXIMUM 24-HR AVERAGE:	0	ppb			ON DAY	1

IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	744	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0		MONTHLY AVERAGE:	0	ppb

SULPHUR DIOXIDE Hourly Averages (SO_2 ppb)



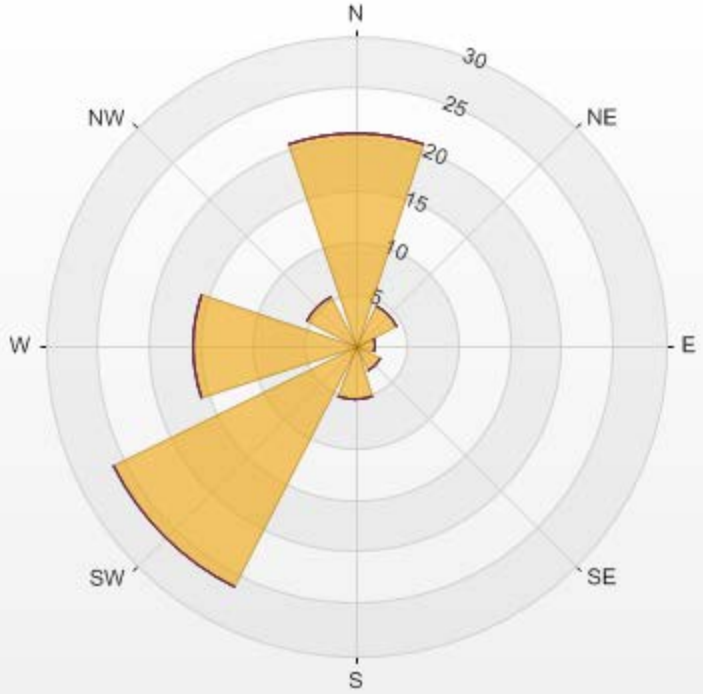
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-SO_2[ppb]
Monthly: 18/07
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 17.94% Calm Avg: 0.02 [ppb]

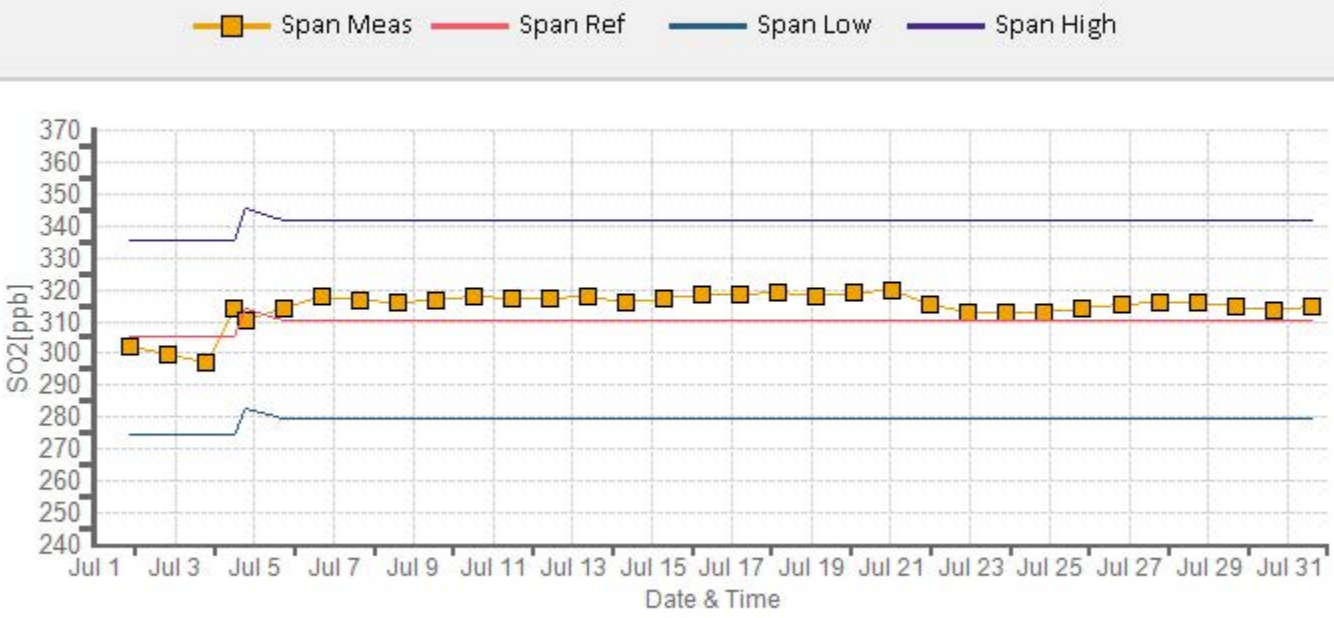
Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	20.6	0.0	0.0	0.0	0.0	20.6
NE	4.4	0.0	0.0	0.0	0.0	4.4
E	2.0	0.0	0.0	0.0	0.0	2.0
SE	2.7	0.0	0.0	0.0	0.0	2.7
S	5.2	0.0	0.0	0.0	0.0	5.2
SW	26.1	0.0	0.0	0.0	0.0	26.1
W	15.8	0.0	0.0	0.0	0.0	15.8
NW	5.2	0.0	0.0	0.0	0.0	5.2
Summary	82.1	0.0	0.0	0.0	0.0	82.1

% Icon	Classes (ppb)									
	82	0-3	0	3-10	0	10-85	0	85-170	0	>170.0

PRAMP_RENO Poll.: PRAMP_RENO-SO2[ppb] 2018/07/01 00:00 - 2018/07/31 23:00 Calm: 17.94% Calm Poll Avg: 0.02[ppb]



SO2[ppb] Calibration: PRAMP_RENO Monthly: 18/07 Type: Span



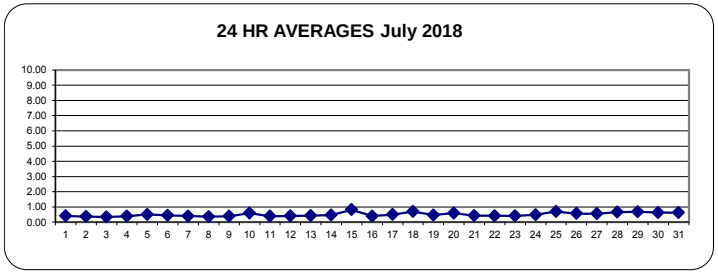
TOTAL REDUCED SULPHUR

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	0.41	0.40	0.42	0.49	0.52	0.51	0.50	0.44	0.41	0.39	0.37	0.38	0.36	0.35	0.35	0.35	0.34	0.33	0.36	0.36	0.37	S	0.46	0.47	0.33	0.52	0.41	24
2	0.68	0.64	0.41	0.37	0.34	0.35	0.37	0.36	0.34	0.34	0.34	0.34	0.35	0.32	0.31	0.30	0.34	0.33	0.33	0.32	S	0.32	0.31	0.32	0.30	0.68	0.37	24
3	0.32	0.31	0.32	0.36	0.35	0.36	0.36	0.34	0.34	0.34	0.32	0.31	0.32	0.31	0.31	0.30	0.32	0.31	0.32	S	0.35	0.35	S1	0.42	0.30	0.42	0.33	23
4	0.41	0.40	0.40	0.40	0.39	0.42	S1	0.39	0.35	C	C	C	C	0.34	0.32	0.32	0.32	0.32	S	0.34	0.37	0.40	0.47	0.52	0.32	0.52	0.38	23
5	0.80	0.64	0.49	0.43	0.40	0.96	0.48	0.71	0.65	0.38	0.38	0.39	0.37	0.35	0.37	0.36	0.38	S	0.38	0.43	0.46	0.48	0.63	0.61	0.35	0.96	0.50	24
6	0.48	0.44	0.42	0.68	0.63	0.58	0.77	1.10	0.49	0.36	0.37	0.33	0.32	0.33	0.33	0.33	S	0.34	0.34	0.33	0.32	0.32	0.39	0.40	0.32	1.10	0.45	24
7	0.43	0.45	0.38	0.44	0.42	0.41	0.38	0.44	0.42	0.47	0.42	0.44	0.42	0.39	0.37	S	0.34	0.34	0.33	0.34	0.35	0.41	0.40	0.40	0.33	0.47	0.40	24
8	0.39	0.37	0.39	0.40	0.42	0.41	0.36	0.35	0.36	0.40	0.37	0.34	0.30	0.29	S	0.29	**0.28**	0.29	0.28	0.31	0.40	0.56	0.43	0.36	**0.28**	0.56	0.36	24
9	0.37	0.35	0.35	0.39	0.41	0.44	0.36	0.34	0.36	0.34	0.33	0.32	0.31	S	0.34	0.32	0.33	0.35	0.35	0.43	0.55	0.53	0.49	0.53	0.31	0.55	0.39	24
10	0.51	0.52	0.66	0.71	0.73	2.45	1.58	0.54	0.42	0.40	0.40	0.38	S	0.37	0.36	0.35	0.35	0.34	0.34	0.35	0.36	0.44	0.49	0.52	0.34	2.45	0.59	24
11	0.46	0.50	0.49	0.50	0.43	0.42	0.41	0.40	0.38	0.34	0.33	S	0.34	0.33	0.32	0.33	0.34	0.34	0.35	0.34	0.40	0.41	0.42	0.41	0.32	0.50	0.39	24
12	0.44	0.42	0.46	0.46	0.45	0.53	0.55	0.44	0.39	0.37	S	0.36	0.36	0.35	0.33	0.33	0.33	0.32	0.32	0.32	0.37	0.38	0.50	0.54	0.32	0.55	0.41	24
13	0.61	0.45	0.47	0.44	0.46	0.46	0.48	0.50	0.41	S	0.38	0.36	0.34	0.33	0.32	0.34	0.34	0.34	0.34	0.36	0.37	0.37	0.49	0.83	0.32	0.83	0.43	24
14	0.66	0.45	0.71	0.89	0.80	0.66	0.60	0.51	S	0.43	0.37	0.35	0.34	0.34	0.34	0.33	0.33	0.32	0.34	0.33	0.36	0.39	0.44	0.46	0.32	0.89	0.47	24
15	0.46	0.64	0.61	0.65	3.58	**4.06**	2.44	S	0.39	0.34	0.35	0.35	0.33	0.34	0.34	0.35	0.33	0.33	0.35	0.37	0.44	0.47	0.61	0.54	0.33	**4.06**	**0.81**	24
16	0.51	0.58	0.49	0.45	0.52	0.46	S	0.44	0.38	0.34	0.32	0.33	0.33	0.34	0.34	0.34	0.35	0.35	0.34	0.35	0.36	0.37	0.39	0.45	0.32	0.58	0.40	24
17	0.48	0.45	0.51	0.50	0.47	S	0.66	0.61	0.58	0.47	0.42	0.40	0.41	0.40	0.37	0.38	0.38	0.38	0.41	0.44	0.50	0.56	0.57	0.99	0.37	0.99	0.49	24
18	2.07	2.57	0.68	0.55	S	0.57	0.53	0.53	1.44	0.56	0.45	0.48	0.43	0.39	0.41	0.44	0.41	0.39	0.38	0.42	0.49	0.68	0.49	0.51	0.38	2.57	0.69	24
19	0.57	0.71	0.56	S	0.70	0.61	0.50	0.48	0.45	0.43	0.41	0.39	0.40	0.39	0.39	0.38	0.38	0.36	0.40	0.41	0.41	0.43	0.50	0.51	0.36	0.71	0.47	24
20	0.65	0.68	S	0.55	0.58	0.80	0.66	0.57	0.61	0.56	0.48	0.45	0.51	0.52	0.94	0.48	0.65	0.68	0.44	1.06	0.47	0.47	0.40	0.49	0.40	1.06	0.60	24
21	0.44	S	0.52	0.58	0.44	0.44	0.63	0.66	0.61	0.43	0.33	0.32	0.34	0.37	0.37	0.41	0.37	0.35	0.39	0.36	0.35	0.35	0.38	0.45	0.32	0.66	0.43	24
22	S	0.75	0.63	0.44	0.56	0.38	0.38	0.40	0.40	0.35	0.34	0.35	0.34	0.36	0.33	0.33	0.34	0.35	0.36	0.43	0.41	0.47	0.45	S	0.33	0.75	0.42	24
23	0.47	0.48	0.45	0.48	0.55	0.54	0.47	0.43	0.39	0.34	0.31	0.30	0.31	0.29	0.30	0.30	0.31	0.30	0.35	0.42	0.44	0.39	S	0.90	0.29	0.90	0.41	24
24	0.92	0.70	1.04	0.90	0.73	0.57	0.92	0.37	0.37	0.33	0.31	0.32	0.32	0.30	0.29	0.30	0.30	0.32	0.32	0.31	0.33	S	0.44	0.54	0.29	1.04	0.49	24
25	0.60	0.96	0.64	0.53	1.05	2.09	0.99	1.27	2.16	0.83	0.49	0.37	0.32	0.32	0.31	0.32	0.31	0.33	0.34	0.33	S	0.42	0.55	0.56	0.31	2.16	0.70	24
26	0.54	0.59	0.62	0.60	0.67	0.69	0.70	1.43	0.84	0.43	0.38	0.38	0.37	0.36	0.38	0.38	0.35	0.35	0.37	S	0.51	0.67	0.66	0.66	0.35	1.43	0.56	24
27	0.65	0.68	0.83	1.11	0.84	0.72	0.59	0.50	0.45	0.43	0.41	0.41	0.44	0.37	0.35	0.35	0.33	0.35	S	0.40	0.52	0.62	0.78	0.76	0.33	1.11	0.56	24
28	0.86	1.11	0.98	0.87	0.79	0.79	0.73	0.60	0.53	0.44	0.46	0.45	0.46	0.43	0.42	0.43	0.43	S	0.50	0.57	0.69	0.83	0.80	0.81	0.42	1.11	0.65	24
29	0.74	0.84	0.81	0.82	0.58	0.84	0.64	0.60	0.58	0.56	0.56	0.58	0.56	0.54	0.53	0.50	S	0.50	0.59	0.70	0.83	0.90	0.80	1.15	0.50	1.15	0.68	24
30	0.83	1.02	0.65	0.66	0.63	0.71	1.10	0.59	0.64	0.66	0.54	0.45	0.50	0.46	0.45	S	0.46	0.44	0.48	0.53	0.66	0.62	0.61	0.72	0.44	1.10	0.63	24
31	0.78	0.65	0.88	0.72	0.57	0.66	0.77	0.91	0.88	0.85	0.75	0.49	0.45	0.44	S	0.38	0.39	0.41	0.43	0.48	0.48	0.49	0.65	0.79	0.38	0.91	0.62	24
HOURLY MAX	2.07	2.57	1.04	1.11	3.58	4.06	2.44	1.43	2.16	0.85	0.75	0.58	0.56	0.54	0.94	0.50	0.65	0.68	0.59	1.06	0.83	0.90	0.80	1.15				
HOURLY AVG	0.62	0.66	0.58	0.58	0.67	0.80	0.69	0.58	0.57	0.45	0.40	0.38	0.38	0.37	0.38	0.36	0.36	0.36	0.37	0.42	0.45	0.49	0.52	0.59				

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

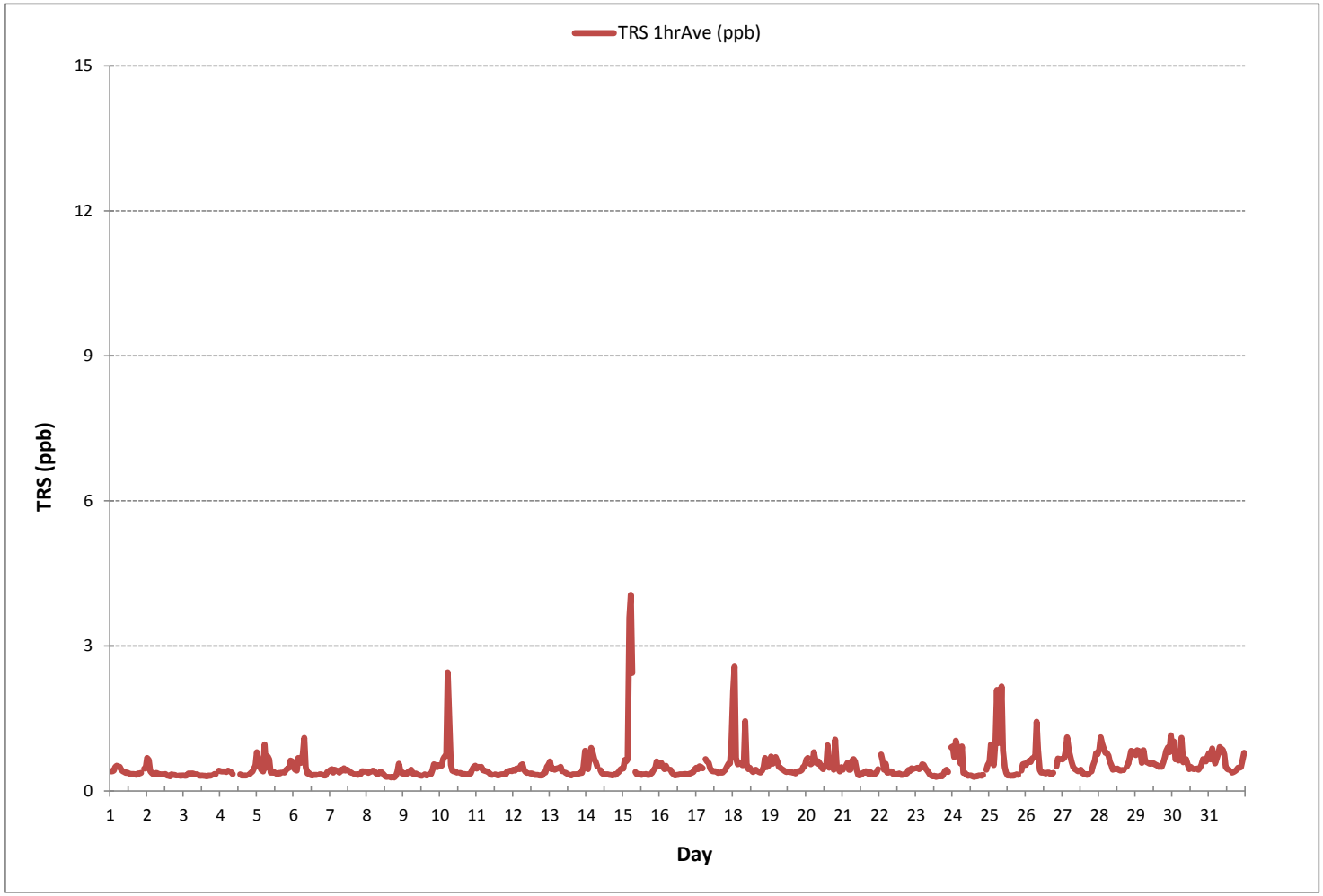


MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		706				
MINIMUM 1-HR AVERAGE	0.28	ppb	@ HOUR	16	ON DAY	8
MAXIMUM 1-HR AVERAGE:	4.06	ppb	@ HOUR	5	ON DAY	15
MAXIMUM 24-HR AVERAGE:	0.81	ppb			ON DAY	15

IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	742	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	99.7	%
STANDARD DEVIATION:	0.30		MONTHLY AVERAGE:	0.50	ppb

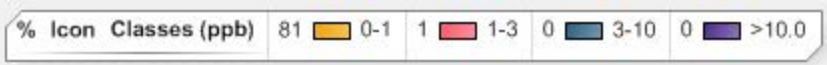
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)



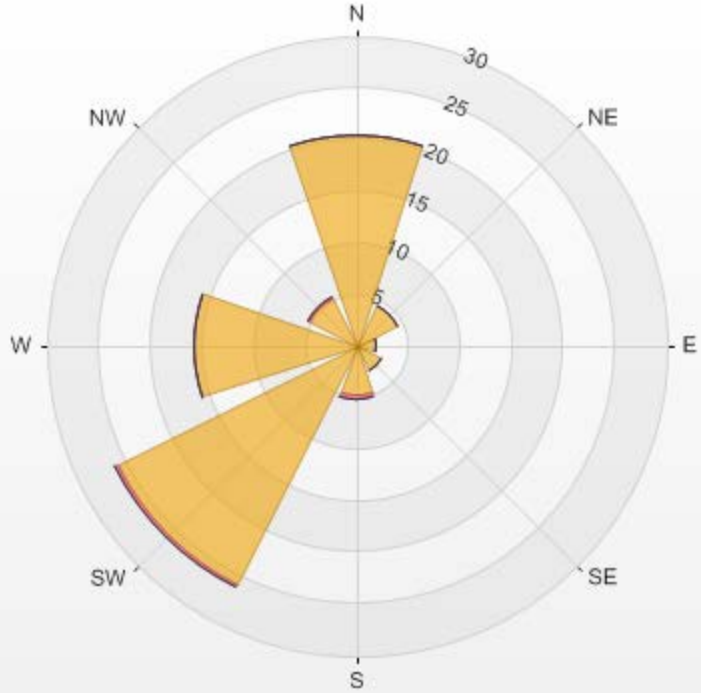
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-TRS[ppb]
Monthly: 18/07
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 17.99% Calm Avg: 0.75 [ppb]

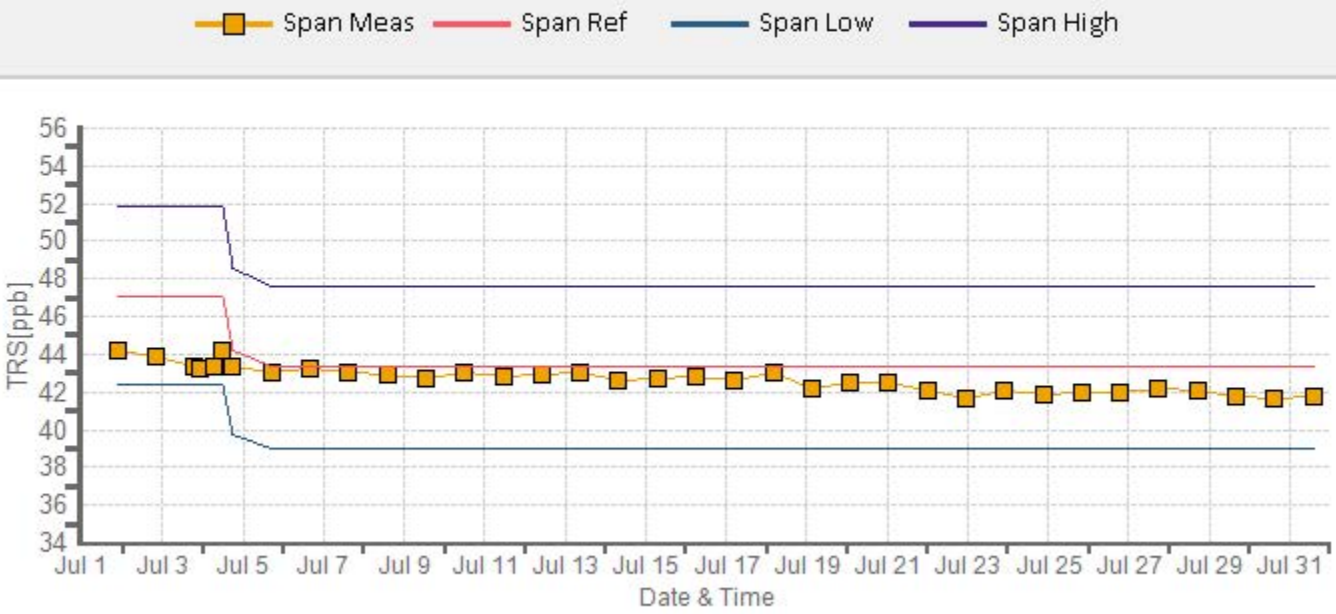
Direction	0-1	1-3	3-10	>10.0	Total
N	20.4	0.0	0.0	0.0	20.4
NE	4.4	0.0	0.0	0.0	4.4
E	2.0	0.0	0.0	0.0	2.0
SE	2.7	0.0	0.0	0.0	2.7
S	4.8	0.4	0.0	0.0	5.2
SW	25.9	0.3	0.0	0.0	26.2
W	15.7	0.1	0.0	0.0	15.9
NW	5.1	0.1	0.0	0.0	5.2
Summary	81.0	1.0	0.0	0.0	82.0



PRAMP_RENO Poll.: PRAMP_RENO-TRS[ppb] 2018/07/01 00:00 - 2018/07/31 23:00 Calm: 17.99% Calm Poll Avg: 0.75[ppb]



TRS[ppb] Calibration: PRAMP_RENO Monthly: 18/07 Type: Span



TOTAL HYDROCARBON

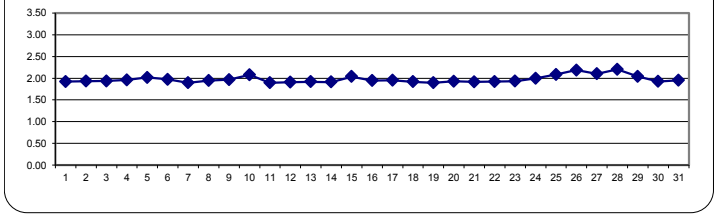
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

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	1.91	1.91	1.92	1.93	1.94	1.95	1.94	1.93	1.93	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.92	1.91	1.91	S	1.92	1.93	1.91	1.95	1.92	24
2	1.95	1.96	1.94	X	X	X	X	X	X	S1	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.93	1.93	S	1.93	1.93	1.93	1.92	1.96	1.93	17
3	1.93	1.93	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.93	S	1.92	1.93	1.93	1.93	1.92	1.95	1.93	24
4	1.94	1.94	1.94	1.94	1.94	1.95	1.94	1.94	1.94	Y	1.94	C	C	C	C	C	1.90	1.90	S	1.90	1.90	1.98	2.12	2.16	1.90	2.16	1.96	23
5	2.21	2.22	2.14	2.06	2.01	2.01	1.99	1.97	1.96	1.95	1.93	1.95	1.94	1.93	1.92	1.92	1.95	S	1.98	2.03	2.01	2.07	2.17	2.06	1.92	2.22	2.02	24
6	2.03	2.16	2.18	2.21	2.05	2.06	2.09	2.12	1.97	1.94	1.94	1.91	1.91	1.91	1.89	1.88	S	1.87	1.87	1.87	1.87	**1.86**	1.87	1.88	**1.86**	2.21	1.97	24
7	1.88	1.88	1.88	1.90	1.88	1.88	1.88	1.88	1.88	1.89	1.90	1.90	1.90	1.90	1.90	S	1.90	1.90	1.90	1.90	1.91	1.92	1.92	1.92	1.88	1.92	1.90	24
8	1.93	1.93	2.03	1.96	1.95	2.00	1.98	1.94	1.93	1.93	1.92	1.91	1.90	1.91	S	1.91	1.90	1.90	1.90	1.89	1.96	2.16	2.03	1.92	1.89	2.16	1.95	24
9	1.91	1.91	1.92	1.99	2.07	2.15	1.93	1.92	1.91	1.90	1.89	1.89	1.90	S	1.88	1.88	1.89	1.89	1.89	1.90	2.14	2.16	2.03	2.22	1.88	2.22	1.96	24
10	2.28	2.34	2.63	2.70	2.42	2.46	2.30	1.99	1.95	1.94	1.92	1.91	S	1.90	1.90	1.89	1.88	1.88	1.89	1.89	1.89	1.94	1.98	1.92	1.88	2.70	2.08	24
11	1.91	1.91	1.92	1.92	1.90	1.90	1.90	1.90	1.90	1.89	1.89	S	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.88	1.90	1.90	1.90	1.88	1.92	1.89	24
12	1.91	1.91	1.91	1.90	1.90	1.91	1.92	1.92	1.91	1.91	S	1.89	1.89	1.89	1.88	1.89	1.89	1.89	1.89	1.90	1.93	1.91	1.93	1.97	1.88	1.97	1.91	24
13	1.95	1.94	1.94	1.93	1.95	1.95	1.95	1.95	1.94	S	1.91	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.90	1.90	1.91	1.91	1.93	1.89	1.95	1.92	24
14	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	S	1.91	1.91	1.91	1.90	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.91	1.92	1.94	1.96	1.90	1.96	1.91	24
15	2.04	2.10	2.26	2.22	2.39	2.16	2.12	S	1.97	1.94	1.94	1.92	1.92	1.91	1.92	1.91	1.91	1.92	1.92	1.92	1.92	2.08	2.29	2.16	1.91	2.39	2.04	24
16	2.12	2.32	2.04	1.96	1.97	1.95	S	1.94	1.92	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.92	1.93	1.93	1.93	1.93	1.90	1.90	1.89	2.32	1.95	24
17	1.92	1.91	1.92	1.92	1.93	S	1.94	1.93	1.92	1.92	1.90	1.90	1.89	1.88	1.89	1.88	1.89	1.89	1.91	1.91	1.99	2.15	2.20	2.32	1.88	2.32	1.95	24
18	2.18	2.26	2.04	1.91	S	1.89	1.90	1.90	1.91	1.91	1.89	1.88	1.87	1.86	1.86	1.87	1.86	1.86	1.86	1.87	1.88	1.89	1.87	1.87	1.86	2.26	1.92	24
19	1.88	1.88	1.89	S	1.89	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.91	1.90	1.88	1.91	1.89	24
20	1.91	1.91	S	1.91	1.92	1.92	1.94	1.93	1.94	1.96	1.96	1.95	1.95	1.95	1.94	1.91	1.91	1.92	1.91	1.93	1.92	1.92	1.91	1.92	1.91	1.96	1.93	24
21	1.93	S	1.94	1.92	1.93	1.93	1.93	1.93	1.92	1.91	1.90	1.90	1.90	1.90	1.91	1.91	1.91	1.91	1.92	1.91	1.91	1.91	1.92	1.93	1.90	1.94	1.92	24
22	S	1.96	1.94	1.94	1.94	1.93	1.93	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.93	S	1.91	1.96	1.92	24
23	1.93	1.93	1.93	1.94	1.95	1.95	1.94	1.94	1.93	1.93	1.92	1.91	1.92	1.91	1.91	1.92	1.92	1.92	1.92	1.92	1.93	1.94	S	2.01	1.91	2.01	1.93	24
24	2.02	2.27	2.13	2.00	2.03	2.01	2.00	1.94	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.91	1.92	1.92	1.91	1.91	1.91	S	2.22	2.35	1.91	2.35	2.00	24
25	2.15	2.17	2.21	2.13	2.20	2.38	2.23	2.13	2.07	2.01	1.96	1.95	1.95	1.94	1.94	1.94	1.94	1.93	1.93	1.93	S	1.97	2.31	2.52	1.93	2.52	2.08	24
26	2.62	2.58	2.51	2.54	2.66	2.49	2.54	2.26	2.07	1.98	1.96	1.94	1.95	1.93	1.93	1.93	1.92	1.91	1.93	S	2.02	2.21	2.19	2.19	1.91	2.66	2.19	24
27	2.28	2.24	2.32	2.45	2.45	2.31	2.25	2.09	2.02	1.98	1.98	1.97	1.97	1.92	1.92	1.91	1.92	1.93	S	1.93	1.94	2.09	2.18	2.24	1.91	2.45	2.10	24
28	2.39	2.57	2.59	2.44	2.31	2.33	2.30	**2.93**	2.02	1.95	1.94	1.94	1.93	1.95	1.94	1.95	1.94	S	1.91	1.93	2.14	2.36	2.39	2.52	1.91	**2.93**	**2.20**	24
29	2.25	2.36	2.43	2.32	2.10	2.04	1.96	1.94	1.93	1.93	1.92	1.92	1.92	1.92	1.91	1.89	S	1.89	1.90	1.91	1.92	2.10	2.31	2.13	1.89	2.43	2.04	24
30	2.16	2.14	1.90	1.92	1.90	1.93	1.94	1.92	1.91	1.90	1.87	1.88	1.89	1.89	1.89	S	1.88	1.88	1.89	1.90	1.91	1.92	1.92	1.95	1.87	2.16	1.93	24
31	1.97	1.96	1.97	1.96	1.98	2.01	1.99	2.02	1.99	1.98	1.94	1.92	1.92	1.94	S	1.94	1.94	1.94	1.92	1.91	1.91	1.92	1.94	1.95	1.91	2.02	1.95	24
HOURLY MAX	2.62	2.58	2.63	2.70	2.66	2.49	2.54	2.93	2.07	2.01	1.98	1.97	1.97	1.95	1.94	1.95	1.95	1.94	1.98	2.03	2.14	2.36	2.39	2.52				
HOURLY AVG	2.05	2.08	2.07	2.06	2.05	2.04	2.02	2.00	1.95	1.93	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.90	1.91	1.91	1.94	1.99	2.03	2.05				

STATUS FLAG CODES

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

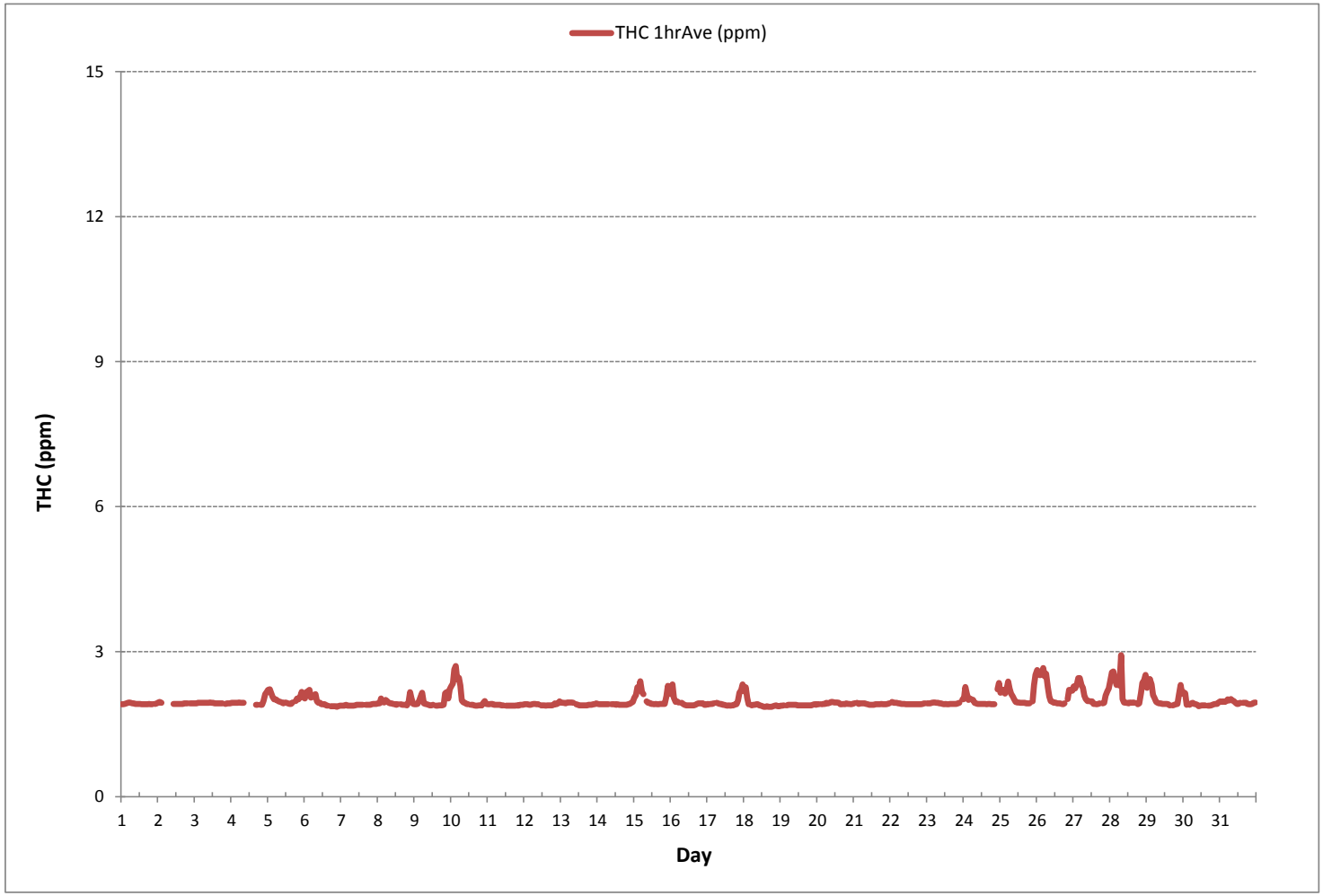
24 HR AVERAGES July 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			699				
MINIMUM 1-HR AVERAGE		1.86	ppm	@ HOUR	21	ON DAY	6
MAXIMUM 1-HR AVERAGE:		2.93	ppm	@ HOUR	7	ON DAY	28
MAXIMUM 24-HR AVERAGE:		2.20	ppm			ON DAY	28
IZS CALIBRATION TIME:	32	hrs		OPERATIONAL TIME:			736 hrs
MONTHLY CALIBRATION TIME:	5	hrs		AMD OPERATION UPTIME:			98.9 %
STANDARD DEVIATION:	0.14			MONTHLY AVERAGE:			1.97 ppm

TOTAL HYDROCARBONS Hourly Averages (THC ppm)



Wind: PRAMP_RENO
Poll.: PRAMP_RENO-THC55[ppm]
Monthly: 18/07
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

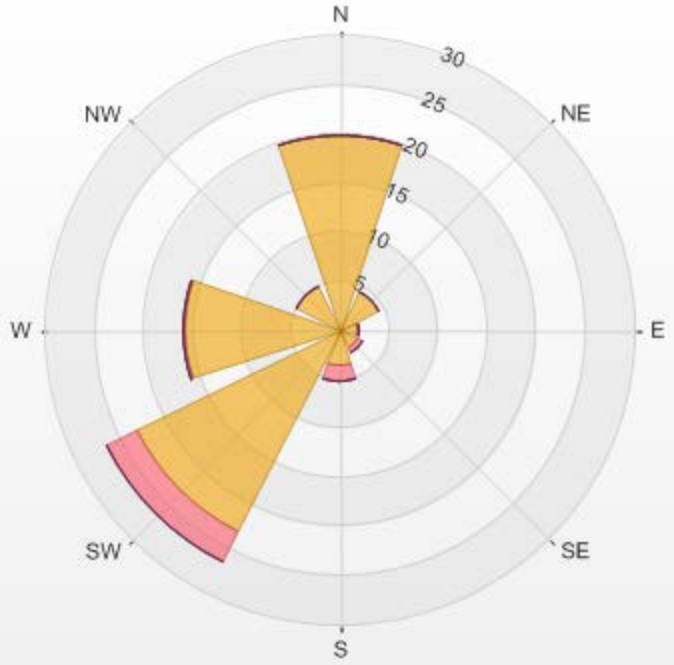
Calm: 18.17%

Calm Avg: 2.13 [ppm]

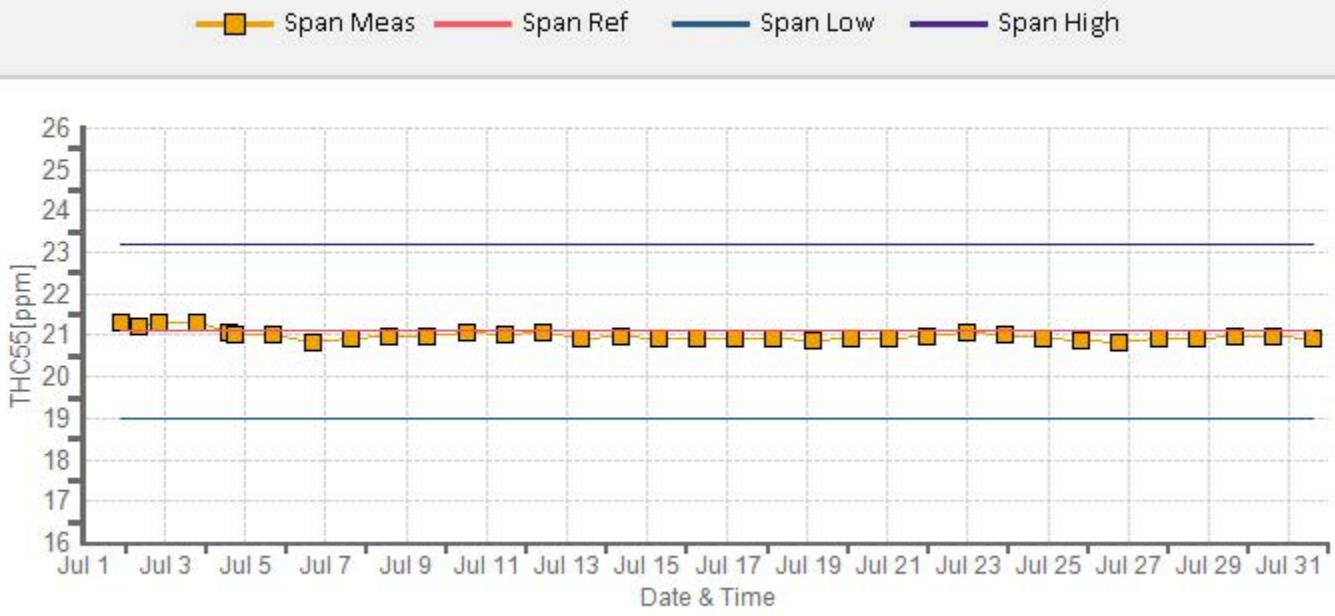
Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	19.9	0.0	0.0	0.0	0.0	19.9
NE	4.4	0.0	0.0	0.0	0.0	4.4
E	1.9	0.1	0.0	0.0	0.0	2.0
SE	2.0	0.7	0.0	0.0	0.0	2.7
S	3.7	1.6	0.0	0.0	0.0	5.3
SW	23.0	3.4	0.0	0.0	0.0	26.5
W	15.7	0.3	0.0	0.0	0.0	16.0
NW	5.0	0.0	0.0	0.0	0.0	5.0
Summary	75.7	6.2	0.0	0.0	0.0	81.8

% Icon Classes (ppm)	76 0-2	6 2-3	0 3-5	0 5-10	0 >10.0

PRAMP_RENO Poll.: PRAMP_RENO-THC55[ppm] 2018/07/01 00:00 - 2018/07/31 23:00 Calm: 18.17% Calm Poll Avg: 2.13 [ppm]



THC55[ppm] Calibration: PRAMP_RENO Monthly: 18/07 Type: Span



METHANE

Maxxam
A Bureau Veritas Group Company

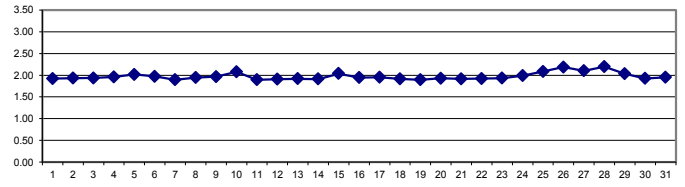
METHANE Hourly Averages (CH_4 ppm)

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	1.91	1.91	1.92	1.93	1.94	1.95	1.94	1.93	1.93	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.92	1.91	1.91	S	1.92	1.93	1.91	1.95	1.92	24
2	1.95	1.96	1.94	X	X	X	X	X	X	S1	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.93	1.93	S	1.93	1.93	1.93	1.92	1.96	1.93	17
3	1.93	1.93	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.93	S	1.92	1.93	1.93	1.93	1.92	1.95	1.93	24
4	1.94	1.94	1.94	1.94	1.94	1.95	1.94	1.94	1.94	Y	1.94	C	C	C	C	C	1.90	1.90	S	1.90	1.90	1.98	2.12	2.16	1.90	2.16	1.96	23
5	2.21	2.22	2.14	2.06	2.01	2.01	1.99	1.97	1.96	1.95	1.93	1.95	1.94	1.93	1.92	1.92	1.95	S	1.98	2.03	2.01	2.07	2.17	2.06	1.92	2.22	2.02	24
6	2.03	2.16	2.18	2.21	2.05	2.06	2.09	2.12	1.97	1.94	1.94	1.91	1.91	1.91	1.89	1.88	S	1.87	1.87	1.87	1.87	**1.86**	1.87	1.88	**1.86**	2.21	1.97	24
7	1.88	1.88	1.88	1.90	1.88	1.88	1.88	1.88	1.88	1.89	1.90	1.90	1.90	1.90	1.90	S	1.90	1.90	1.90	1.90	1.91	1.92	1.92	1.92	1.88	1.92	1.90	24
8	1.93	1.93	2.03	1.96	1.95	2.00	1.98	1.94	1.93	1.93	1.92	1.91	1.90	1.91	S	1.91	1.90	1.90	1.90	1.89	1.96	2.16	2.03	1.92	1.89	2.16	1.95	24
9	1.91	1.91	1.92	1.99	2.07	2.15	1.93	1.92	1.91	1.90	1.89	1.89	1.90	S	1.88	1.88	1.89	1.89	1.89	1.90	2.14	2.16	2.03	2.22	1.88	2.22	1.96	24
10	2.28	2.34	2.63	2.70	2.42	2.46	2.30	1.99	1.95	1.94	1.92	1.91	S	1.90	1.90	1.89	1.88	1.88	1.89	1.89	1.89	1.94	1.98	1.92	1.88	2.70	2.08	24
11	1.91	1.91	1.92	1.92	1.90	1.90	1.90	1.90	1.90	1.89	1.89	S	1.88	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.88	1.90	1.90	1.90	1.88	1.92	1.89	24
12	1.91	1.91	1.91	1.90	1.90	1.91	1.92	1.92	1.91	1.91	S	1.89	1.89	1.89	1.88	1.89	1.89	1.89	1.89	1.90	1.93	1.91	1.93	1.97	1.88	1.97	1.91	24
13	1.95	1.94	1.94	1.93	1.95	1.95	1.95	1.95	1.94	S	1.91	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.90	1.90	1.91	1.91	1.93	1.89	1.95	1.92	24
14	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	S	1.91	1.91	1.91	1.90	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.91	1.92	1.94	1.96	1.90	1.96	1.91	24
15	2.04	2.10	2.26	2.22	2.39	2.16	2.12	S	1.97	1.94	1.94	1.92	1.92	1.91	1.92	1.91	1.91	1.92	1.92	1.92	1.92	2.08	2.29	2.16	1.91	2.39	2.04	24
16	2.12	2.31	2.04	1.96	1.97	1.95	S	1.94	1.92	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.92	1.93	1.93	1.93	1.93	1.90	1.90	1.89	2.31	1.95	24
17	1.92	1.91	1.92	1.92	1.93	S	1.94	1.93	1.92	1.92	1.90	1.90	1.89	1.88	1.89	1.88	1.89	1.89	1.91	1.91	1.99	2.14	2.20	2.32	1.88	2.32	1.95	24
18	2.18	2.26	2.04	1.91	S	1.89	1.89	1.90	1.91	1.91	1.89	1.88	1.87	1.86	1.86	1.87	1.86	1.86	1.86	1.87	1.88	1.89	1.87	1.87	1.86	2.26	1.92	24
19	1.88	1.88	1.89	S	1.89	1.90	1.90	1.90	1.90	1.90	1.90	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.90	1.91	1.90	1.88	1.91	1.89	24
20	1.91	1.91	S	1.91	1.92	1.92	1.94	1.93	1.94	1.96	1.96	1.95	1.95	1.95	1.94	1.91	1.91	1.92	1.91	1.93	1.92	1.92	1.91	1.92	1.91	1.96	1.93	24
21	1.93	S	1.94	1.92	1.93	1.93	1.93	1.93	1.92	1.91	1.90	1.90	1.90	1.90	1.91	1.91	1.91	1.91	1.92	1.91	1.91	1.91	1.92	1.93	1.90	1.94	1.92	24
22	S	1.96	1.94	1.94	1.94	1.93	1.93	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.93	S	1.91	1.96	1.92	24
23	1.93	1.93	1.93	1.94	1.95	1.95	1.94	1.94	1.93	1.93	1.92	1.91	1.92	1.91	1.91	1.92	1.92	1.92	1.92	1.92	1.93	1.94	S	2.01	1.91	2.01	1.93	24
24	2.02	2.27	2.13	2.00	2.03	2.01	2.00	1.94	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.91	1.92	1.92	1.91	1.91	1.91	S	2.22	2.26	1.91	2.27	1.99	24
25	2.14	2.17	2.21	2.13	2.20	2.38	2.23	2.13	2.07	2.01	1.96	1.95	1.95	1.94	1.94	1.94	1.94	1.93	1.93	1.93	S	1.97	2.31	2.52	1.93	2.52	2.08	24
26	2.62	2.58	2.51	2.54	2.66	2.49	2.54	2.26	2.07	1.98	1.96	1.94	1.95	1.93	1.93	1.93	1.92	1.91	1.93	S	2.02	2.21	2.19	2.19	1.91	2.66	2.19	24
27	2.28	2.24	2.32	2.45	2.45	2.31	2.25	2.09	2.02	1.98	1.97	1.97	1.97	1.92	1.92	1.91	1.92	1.92	S	1.93	1.94	2.09	2.18	2.24	1.91	2.45	2.10	24
28	2.39	2.57	2.59	2.44	2.31	2.33	2.30	**2.92**	2.02	1.95	1.94	1.94	1.93	1.94	1.94	1.94	1.93	S	1.91	1.91	2.12	2.36	2.38	2.50	1.91	**2.92**	**2.20**	24
29	2.24	2.33	2.41	2.31	2.10	2.03	1.96	1.94	1.93	1.92	1.92	1.92	1.92	1.92	1.91	1.89	S	1.89	1.90	1.91	1.92	2.10	2.31	2.13	1.89	2.41	2.04	24
30	2.16	2.14	1.90	1.92	1.90	1.93	1.94	1.92	1.91	1.90	1.87	1.88	1.89	1.89	1.89	S	1.88	1.88	1.89	1.90	1.91	1.92	1.92	1.95	1.87	2.16	1.93	24
31	1.97	1.96	1.97	1.96	1.98	2.01	1.99	2.02	1.99	1.98	1.94	1.92	1.92	1.94	S	1.94	1.94	1.94	1.92	1.91	1.91	1.92	1.94	1.95	1.91	2.02	1.95	24
HOURLY MAX	2.62	2.58	2.63	2.70	2.66	2.49	2.54	2.92	2.07	2.01	1.97	1.97	1.97	1.95	1.94	1.94	1.95	1.94	1.98	2.03	2.14	2.36	2.38	2.52				
HOURLY AVG	2.05	2.08	2.07	2.06	2.05	2.04	2.02	2.00	1.95	1.93	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.90	1.91	1.91	1.94	1.99	2.03	2.05				

STATUS FLAG CODES

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

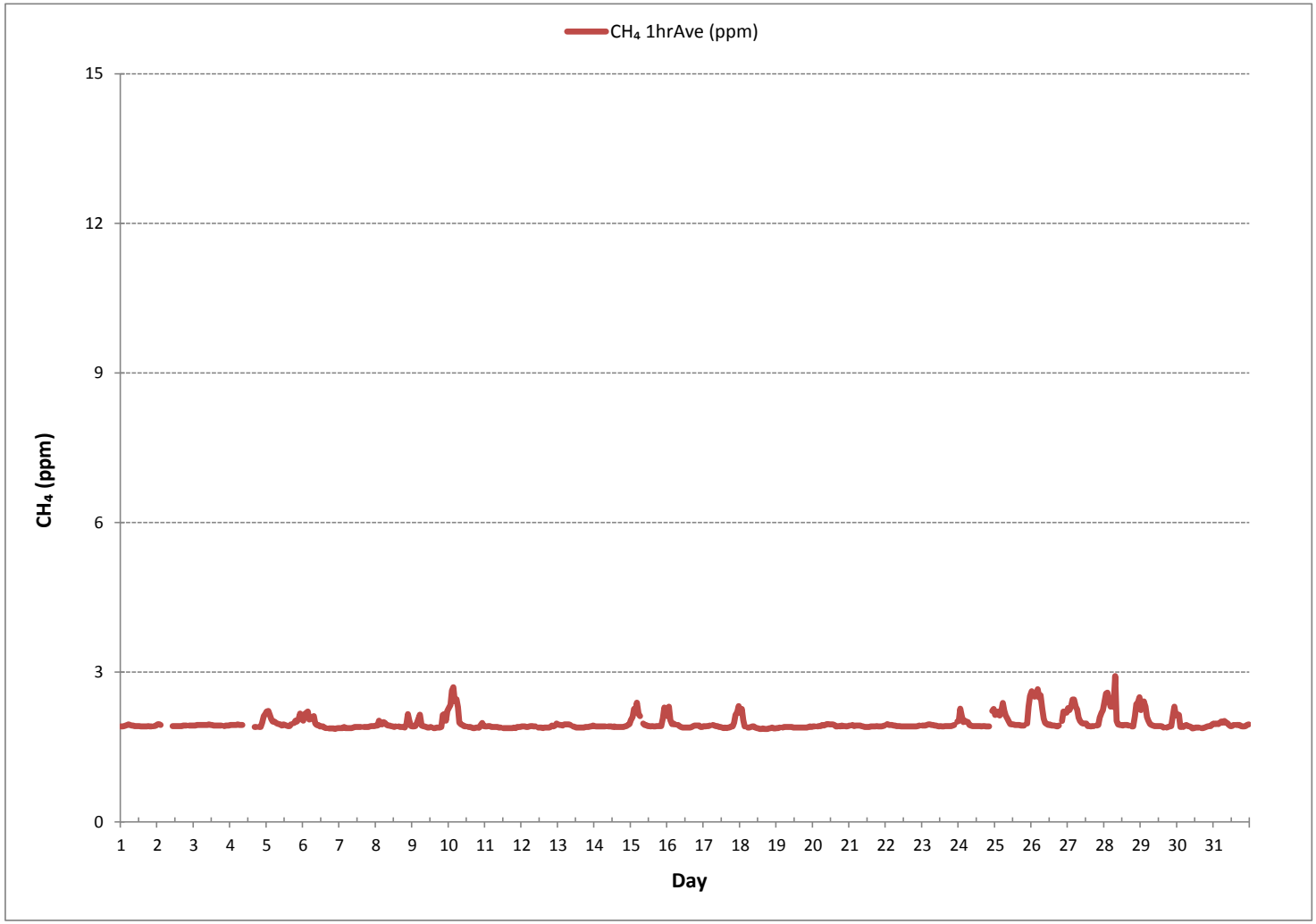
24 HR AVERAGES July 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			699				
MINIMUM 1-HR AVERAGE	1.86	ppm	@ HOUR	21	ON DAY	6	
MAXIMUM 1-HR AVERAGE:	2.92	ppm	@ HOUR	7	ON DAY	28	
MAXIMUM 24-HR AVERAGE:	2.20	ppm			ON DAY	28	
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:			736	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:			98.9	%
STANDARD DEVIATION:	0.14		MONTHLY AVERAGE:			1.97	ppm

METHANE Hourly Averages (CH_4 ppm)



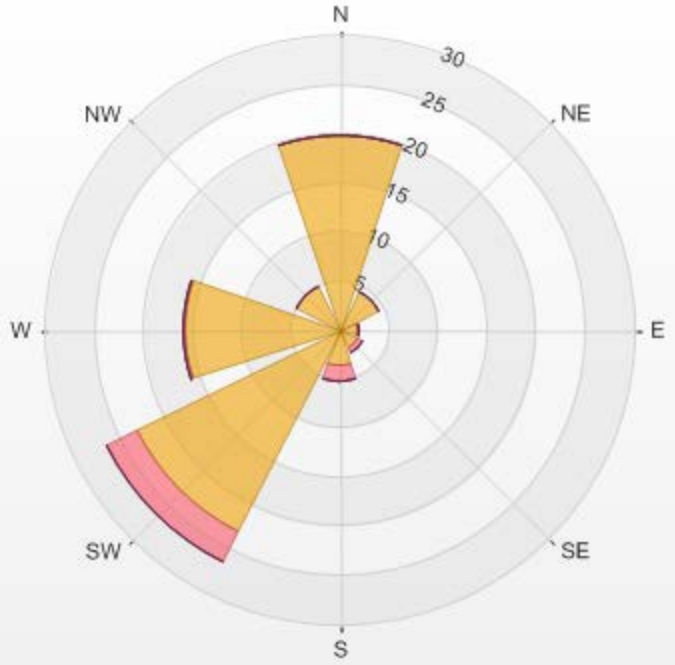
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-THC55[ppm]
Monthly: 18/07
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 18.17% Calm Avg: 2.13 [ppm]

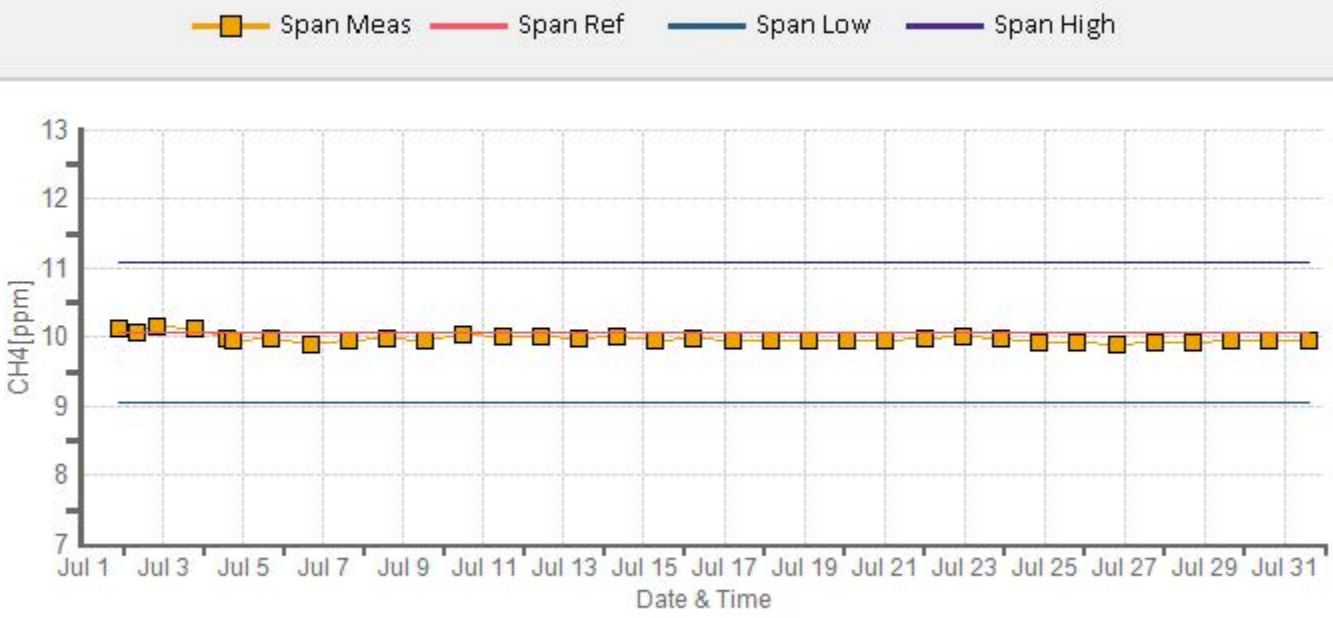
Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	19.9	0.0	0.0	0.0	0.0	19.9
NE	4.4	0.0	0.0	0.0	0.0	4.4
E	1.9	0.1	0.0	0.0	0.0	2.0
SE	2.0	0.7	0.0	0.0	0.0	2.7
S	3.7	1.6	0.0	0.0	0.0	5.3
SW	23.0	3.4	0.0	0.0	0.0	26.5
W	15.7	0.3	0.0	0.0	0.0	16.0
NW	5.0	0.0	0.0	0.0	0.0	5.0
Summary	75.7	6.2	0.0	0.0	0.0	81.8

% Icon Classes (ppm)	76 0-2	6 2-3	0 3-5	0 5-10	0 >10.0

PRAMP_RENO Poll.: PRAMP_RENO-THC55[ppm] 2018/07/01 00:00 - 2018/07/31 23:00 Calm: 18.17% Calm Poll Avg: 2.13 [ppm]



CH4[ppm] Calibration: PRAMP_RENO Monthly: 18/07 Type: Span



NON-METHANE HYDROCARBON

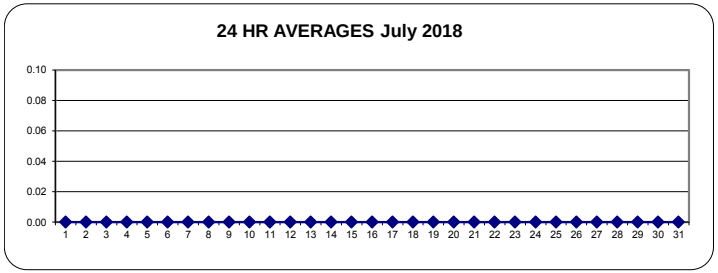
Maxxam
A Bureau Veritas Group Company

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	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
2	0.00	0.00	0.00	**X**	**X**	**X**	**X**	**X**	**X**	**S1**	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	17
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	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	**Y**	0.00	**C**	**C**	**C**	**C**	**C**	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
6	0.00	0.00	0.00	0.00	0.00	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	24
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
8	0.00	0.00	0.00	0.00	0.00	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
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	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
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	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
11	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
12	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
13	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
14	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
15	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
16	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
17	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
18	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
19	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
20	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
21	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
22	**S**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
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	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
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	**0.09**	0.00	**0.09**	0.00	24
25	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.00	0.00	0.00	0.01	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	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	24
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	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	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	0.00	0.01	0.01	0.00	0.01	0.02	0.00	0.02	0.00	24
29	0.01	0.03	0.02	0.01	0.00	0.01	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	0.03	0.00	24
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**S**	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	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
HOURLY MAX	0.01	0.03	0.02	0.01	0.00	0.01	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	0.01	0.00	0.01	0.09				
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

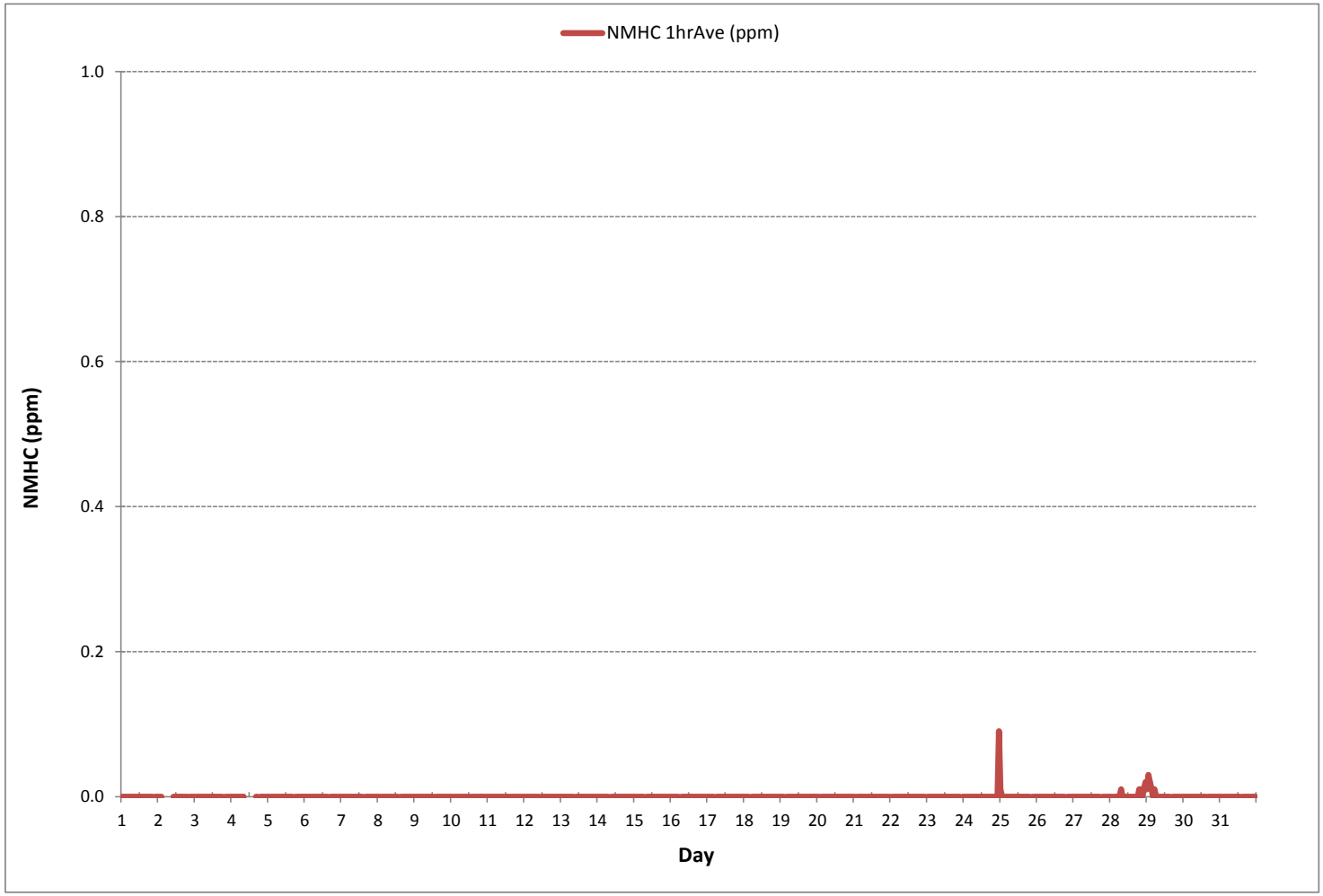
C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		12					
MINIMUM 1-HR AVERAGE	0.00	ppm	@ HOUR	0	ON DAY	1	
MAXIMUM 1-HR AVERAGE:	0.09	ppm	@ HOUR	23	ON DAY	24	
MAXIMUM 24-HR AVERAGE:	0.00	ppm			ON DAY	1	
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:			736	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:			98.9	%
STANDARD DEVIATION:	0.00		MONTHLY AVERAGE:			0.00	ppm

NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)



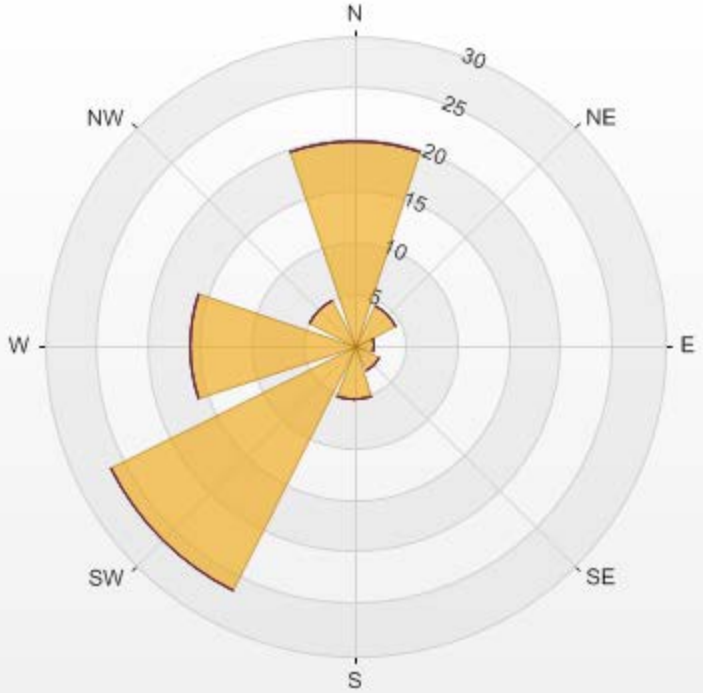
Wind: PRAMP_RENO
Poll.: PRAMP_RENO-NMHC[ppm]
Monthly: 18/07
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 18.17% Calm Avg: 0.00 [ppm]

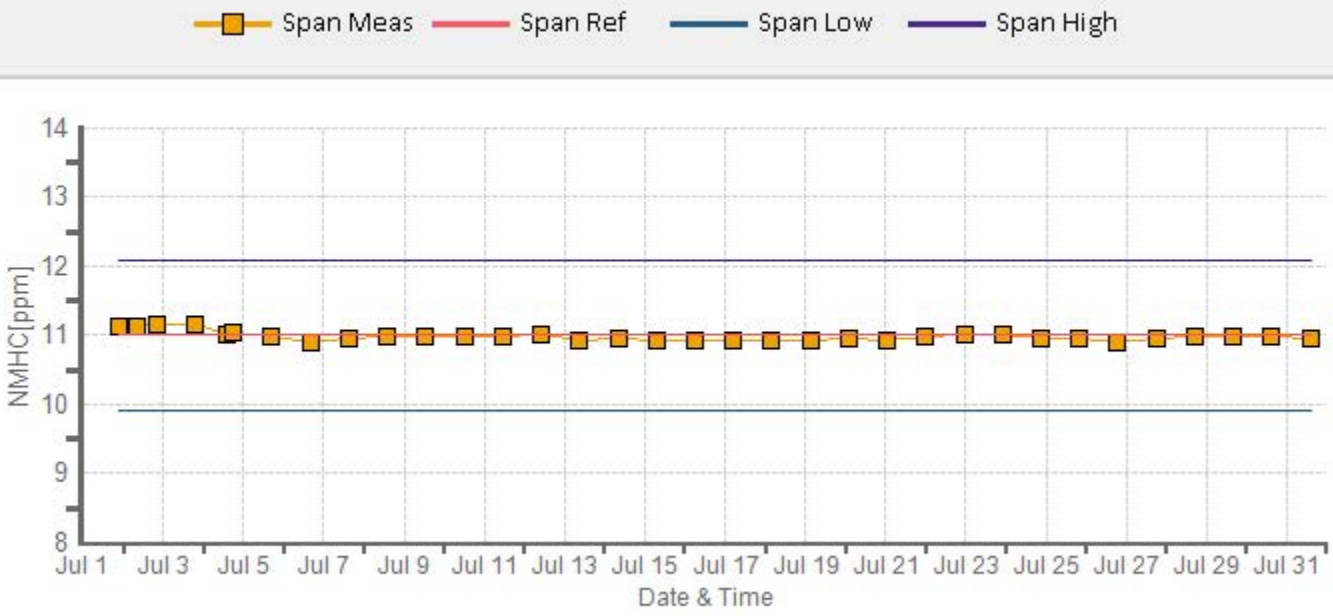
Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	19.9	0.0	0.0	0.0	0.0	19.9
NE	4.4	0.0	0.0	0.0	0.0	4.4
E	2.0	0.0	0.0	0.0	0.0	2.0
SE	2.7	0.0	0.0	0.0	0.0	2.7
S	5.3	0.0	0.0	0.0	0.0	5.3
SW	26.5	0.0	0.0	0.0	0.0	26.5
W	16.0	0.0	0.0	0.0	0.0	16.0
NW	5.0	0.0	0.0	0.0	0.0	5.0
Summary	81.8	0.0	0.0	0.0	0.0	81.8

% Icon Classes (ppm)	82 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] 2018/07/01 00:00 - 2018/07/31 23:00 Calm: 18.17% Calm Poll Avg: 0.00[ppm]



NMHC[ppm] Calibration: PRAMP_RENO Monthly: 18/07 Type: Span



WIND SPEED

Maxxam
A Bureau Veritas Group Company

WIND SPEED Hourly Averages (WS kph)

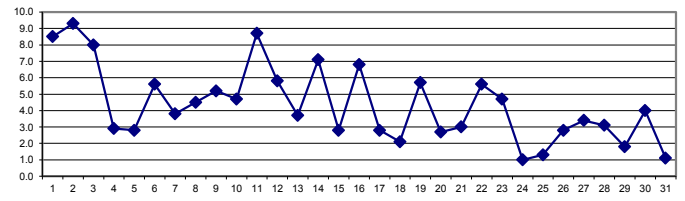
HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	6.5	6.1	7.3	6.3	8.6	7.5	8.1	7.8	7.0	7.9	8.4	10.7	13.0	11.2	10.8	9.2	11.4	11.6	9.1	9.6	9.2	8.5	6.9	4.5	4.5	13.0	8.5	24
2	3.9	3.8	7.4	8.9	9.0	7.3	7.9	10.4	11.6	12.0	12.7	12.0	11.9	10.9	12.7	12.3	10.0	12.0	12.3	10.0	8.3	7.9	7.3	8.2	3.8	12.7	**9.3**	24
3	7.8	7.1	8.1	8.5	8.2	8.5	9.4	10.3	9.9	9.7	10.2	10.3	9.5	10.3	11.6	11.4	9.4	7.8	6.6	7.2	5.6	2.1	3.3	3.5	2.1	11.6	8.0	24
4	3.8	5.1	5.3	5.1	4.3	4.0	5.5	5.5	5.2	2.6	3.6	4.7	4.8	5.2	4.1	4.7	4.1	2.7	2.3	2.2	0.3	**0.1**	0.4	0.9	**0.1**	5.5	2.9	24
5	1.0	1.3	1.1	1.6	2.5	2.5	3.7	4.4	5.0	7.4	6.7	4.8	3.8	4.1	4.4	4.8	3.8	3.8	2.1	0.4	0.2	0.4	1.4	2.5	0.2	7.4	2.8	24
6	1.9	1.7	1.4	1.5	1.7	2.6	1.3	3.5	7.3	5.8	4.9	7.4	11.5	9.2	9.8	7.9	8.7	6.8	9.4	9.1	7.1	6.4	6.8	6.6	1.3	11.5	5.6	24
7	6.5	4.5	5.1	5.8	5.8	5.1	4.9	4.6	6.9	7.8	11.9	10.4	8.8	7.8	9.3	7.1	6.3	5.2	6.4	6.6	4.9	5.7	5.1	5.1	4.5	11.9	3.8	24
8	4.8	4.2	1.5	2.4	2.9	1.7	3.0	4.9	5.4	5.8	6.9	6.6	8.2	8.6	8.3	8.5	6.8	5.7	4.7	3.0	0.2	0.7	2.8	3.8	0.2	8.6	4.5	24
9	4.3	4.5	3.7	3.0	3.2	3.0	5.1	6.1	7.6	7.0	7.4	7.9	8.4	7.8	9.3	8.4	7.9	6.1	5.2	2.6	1.2	2.3	2.6	2.1	1.2	9.3	5.2	24
10	2.4	2.1	2.3	1.2	1.9	2.5	2.1	3.9	6.4	6.1	7.6	5.9	8.3	7.5	6.7	8.3	8.8	8.8	8.5	6.6	2.4	1.1	1.8	3.4	1.1	8.8	4.7	24
11	4.3	5.6	9.3	9.7	8.6	8.4	7.3	9.0	12.2	10.7	8.9	11.8	12.9	12.7	**14.0**	12.6	11.6	9.2	7.0	5.7	4.9	5.6	5.2	4.7	4.3	**14.0**	8.7	24
12	3.9	4.8	5.3	5.2	6.2	6.2	5.4	9.2	7.5	8.5	8.1	6.9	6.8	7.4	9.3	7.9	8.8	8.3	7.9	3.1	1.5	2.1	2.2	1.1	1.1	9.3	5.8	24
13	1.4	2.1	3.3	2.6	3.0	3.9	4.9	5.4	5.1	7.2	5.2	4.2	8.0	8.9	7.9	7.2	6.4	5.9	6.8	3.6	5.1	5.0	4.0	4.2	1.4	8.9	3.7	24
14	4.6	4.7	5.6	7.5	7.0	9.4	10.6	13.6	11.8	10.7	11.2	10.5	9.7	9.0	8.3	7.3	7.6	4.0	3.7	5.4	4.3	3.2	3.2	2.7	2.7	13.6	7.1	24
15	2.2	1.0	1.9	1.5	1.3	1.6	2.5	2.3	4.0	3.8	4.6	5.5	5.8	5.8	6.5	8.9	7.0	5.1	0.4	0.4	0.1	0.6	0.6	0.6	0.1	8.9	2.8	24
16	1.0	2.0	3.5	3.2	3.7	5.4	5.2	6.7	8.9	8.9	7.3	8.5	11.0	10.6	11.6	11.1	12.1	10.4	11.7	8.2	6.4	3.8	3.1	2.4	1.0	12.1	6.8	24
17	4.3	3.1	3.3	3.2	2.4	2.9	3.4	1.8	0.9	2.9	4.8	5.4	6.0	6.2	5.4	4.5	5.9	3.6	1.6	1.2	0.8	0.3	0.8	1.0	0.3	6.2	2.8	24
18	0.8	1.5	2.5	3.8	4.4	6.3	6.5	5.0	3.1	3.9	5.6	8.1	8.3	5.8	6.4	0.7	3.2	5.1	6.4	5.9	4.3	3.0	4.6	4.5	0.7	8.3	2.1	24
19	3.0	3.3	4.2	4.0	4.5	5.2	6.0	6.1	7.0	6.8	6.4	7.3	7.3	7.5	7.2	7.0	7.3	8.2	7.7	6.4	6.1	4.1	6.1	3.4	3.0	8.2	5.7	24
20	2.7	7.9	8.1	4.8	3.8	4.2	1.4	2.8	5.8	6.1	6.4	3.6	4.9	4.1	6.9	5.5	4.8	3.7	1.9	4.4	3.3	6.1	10.2	6.6	1.4	10.2	2.7	24
21	4.9	6.7	7.5	5.3	4.4	5.0	5.9	6.4	6.0	4.2	3.0	2.0	2.2	4.5	3.9	6.4	7.8	7.0	7.1	6.4	6.7	4.7	4.5	4.2	2.0	7.8	3.0	24
22	3.2	3.5	4.1	4.8	3.6	6.0	7.8	8.8	7.4	9.6	8.3	7.2	7.7	5.9	9.2	8.9	8.6	5.7	3.9	4.3	5.4	2.8	2.8	5.2	2.8	9.6	5.6	24
23	3.1	4.0	5.0	4.0	3.0	4.7	4.4	5.0	6.8	7.6	9.5	8.5	8.9	8.1	7.7	6.2	6.1	6.0	3.0	1.6	1.6	1.7	1.8	0.4	0.4	9.5	4.7	24
24	0.5	0.4	0.5	0.1	0.2	0.2	0.5	1.7	2.0	2.7	5.4	3.9	3.4	3.5	2.8	3.0	2.3	3.3	3.6	1.8	0.2	0.5	0.6	1.1	0.1	5.4	1.0	24
25	1.0	1.0	1.4	1.0	0.6	1.2	1.2	0.8	1.6	2.2	2.4	3.0	2.9	3.4	2.7	2.4	2.1	2.0	0.9	0.4	0.1	0.2	0.9	1.6	0.1	3.4	1.3	24
26	1.5	1.9	1.5	2.0	2.3	2.2	1.1	1.4	3.6	3.7	4.0	4.4	4.2	5.7	5.2	5.6	4.3	4.1	4.1	2.7	1.6	1.0	1.2	1.3	1.0	5.7	2.8	24
27	1.6	1.1	1.2	1.6	1.6	1.5	2.0	2.7	3.6	4.1	6.1	6.7	7.2	7.1	6.0	6.2	7.4	5.2	4.6	2.9	0.2	0.4	0.9	1.1	0.2	7.4	3.4	24
28	1.4	1.7	1.7	2.0	1.6	1.6	1.1	1.9	2.8	4.2	4.4	4.7	5.2	6.1	6.5	6.7	5.9	6.1	3.3	1.8	0.6	1.7	1.3	1.6	0.6	6.7	3.1	24
29	2.3	1.7	1.8	1.6	2.5	3.0	6.9	7.0	6.9	7.0	3.6	0.2	2.6	2.0	6.8	4.6	3.6	3.2	2.3	0.5	1.7	1.9	0.8	0.6	0.2	7.0	1.8	24
30	0.3	5.6	1.7	7.3	5.1	1.4	1.7	2.9	1.7	3.7	7.9	8.8	9.3	9.1	9.1	9.5	7.2	6.2	5.1	4.5	2.6	1.9	2.5	2.1	0.3	9.5	4.0	24
31	2.3	1.4	2.6	0.9	3.5	4.3	3.3	2.6	2.1	2.1	1.8	2.3	2.3	2.4	3.0	2.6	2.3	1.9	1.2	0.4	0.7	1.2	1.5	2.0	0.4	4.3	1.1	24
HOURLY MAX	7.8	7.9	9.3	9.7	9.0	9.4	10.6	13.6	12.2	12.0	12.7	12.0	13.0	12.7	14.0	12.6	12.1	12.0	12.3	10.0	9.2	8.5	10.2	8.2				

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

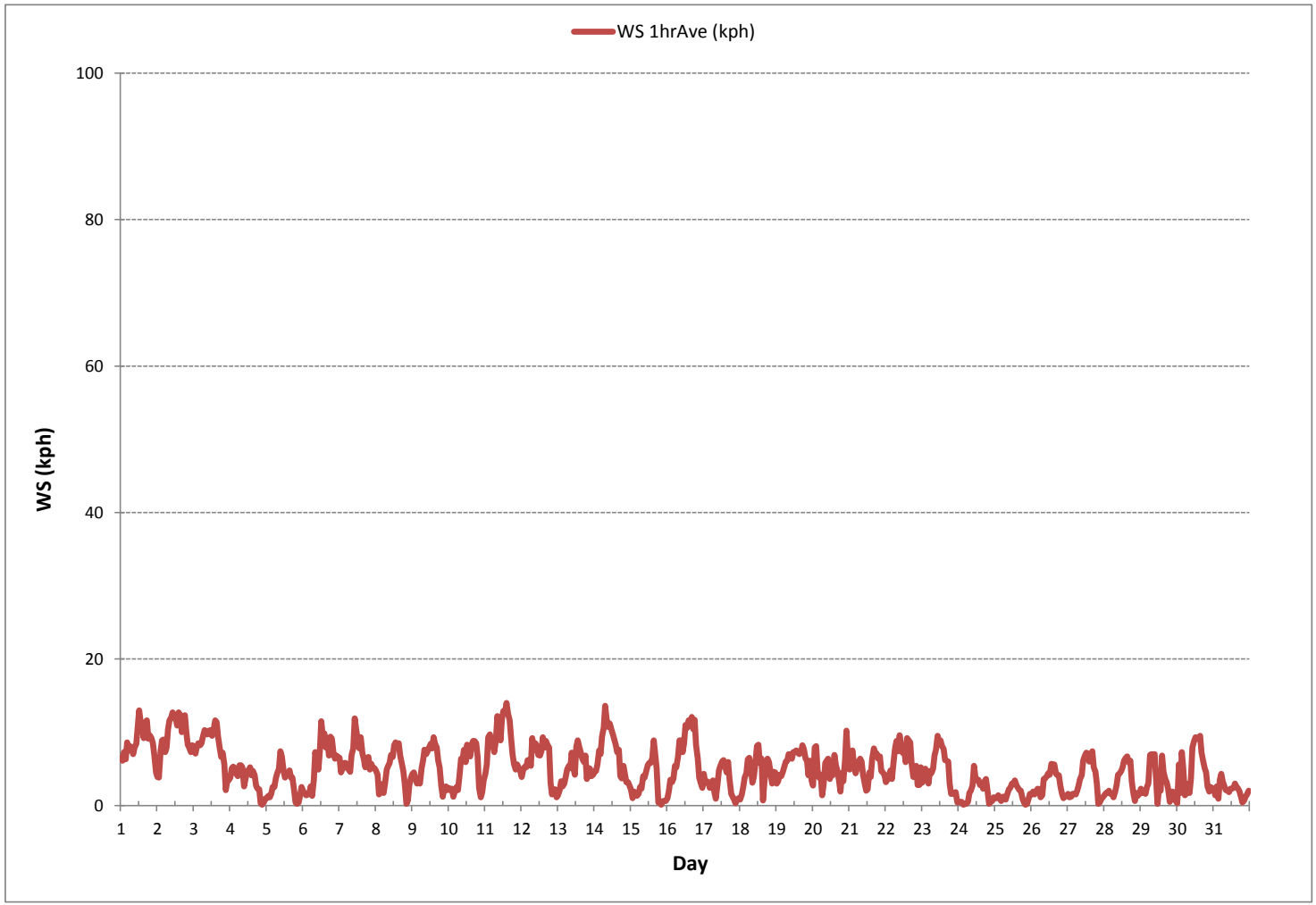
24 HR AVERAGES July 2018



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			744				
MINIMUM 1-HR AVERAGE	0.1	kph	@ HOUR	21	ON DAY	4	
MAXIMUM 1-HR AVERAGE:	14.0	kph	@ HOUR	14	ON DAY	11	
MAXIMUM 24-HR AVERAGE:	9.3	kph			ON DAY	2	
			OPERATIONAL TIME:			744	hrs
MONTHLY CALIBRATION TIME:	0	hrs	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	3.1		MONTHLY AVERAGE:			2.2	kph

WIND SPEED Hourly Averages (WS kph)



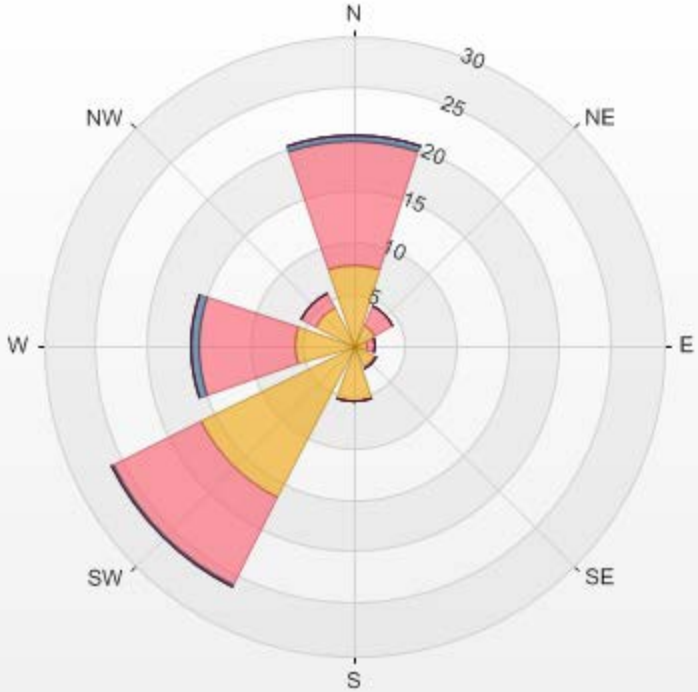
Wind: PRAMP_RENO
Monitor: WSP [kph]
Monthly: 18/07
Type: WindRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 17.47%

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	7.9	11.8	0.7	0.0	0.0	0.0	20.4
NE	2.3	2.0	0.0	0.0	0.0	0.0	4.3
E	1.3	0.8	0.0	0.0	0.0	0.0	2.2
SE	2.3	0.3	0.0	0.0	0.0	0.0	2.6
S	5.4	0.0	0.0	0.0	0.0	0.0	5.4
SW	16.5	9.4	0.3	0.0	0.0	0.0	26.2
W	5.7	9.4	0.8	0.0	0.0	0.0	15.9
NW	4.2	1.5	0.0	0.0	0.0	0.0	5.7
Summary	45.6	35.2	1.8	0.0	0.0	0.0	82.5

% Icon Classes (kph)	46	1.8-6.0	35	6.0-12.0	2	12.0-20.0	0	20.0-29.0	0	29.0-39.0	0	>39.0

PRAMP_RENO 2018/07/01 00:00 - 2018/07/31 23:00 Calm: 17.47% Calm Wind Avg Speed: 1.05(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	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW	WSW	WSW	WSW	W	WSW	W	W	W	W	W	W	WSW	24
2	WNW	WNW	NNW	N	N	NNE	N	N	N	N	N	N	N	NNW	N	N	N	N	N	N	N	NNW	NNW	NNW	N	24
3	NNW	NNW	N	N	N	N	N	N	NNE	NNE	NNE	NNE	NNE	NNE	N	NNE	NNE	NNE	N	NNE	NNE	N	N	NNW	N	24
4	NNW	NNW	NNW	NNW	N	N	N	NNE	N	N	WNW	NW	WNW	NW	WNW	NW	WNW	WNW	SW	SW	SSW	SW	SW	SW	NNW	24
5	SW	SW	SSW	SSE	SSE	SSE	SE	SE	SE	SE	SE	SSE	SSE	SE	SSW	SSW	S	SSW	S	S	S	SSE	S	SSE	SSE	24
6	SSE	S	SSW	SSW	SW	SE	SSE	SW	SW	SW	WSW	WSW	WSW	WSW	SW	SW	SW	SSW	SW	SW	SW	SW	SW	SW	SW	24
7	SW	SW	SW	SW	SW	SW	SW	WSW	WNW	N	N	NNW	NNW	NNW	NNW	NNW	NW	WNW	WSW	WSW	SW	WSW	SW	SW	WNW	24
8	SW	SW	S	SSW	SSW	SSW	SSW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	SW	S	SSW	SSW	SSW	SW	24
9	SSW	SSW	SSW	SSW	SSW	S	SSW	SSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW	SW	24
10	SSW	SW	SSW	SW	SW	SW	SSW	SSW	SW	SW	SW	SW	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SSW	SW	SW	SW	24
11	SW	WSW	WSW	WSW	WSW	SW	SW	WSW	WSW	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	WSW	24
12	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	WSW	24
13	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	W	NW	NW	NNW	NNW	N	NNW	WNW	NW	NW	WNW	NW	NW	NW	WNW	WNW	24
14	WNW	W	W	W	W	W	WSW	W	W	W	WNW	W	WNW	WNW	W	WNW	WNW	W	WNW	WNW	W	WSW	WSW	SW	W	24
15	SW	SW	SW	SSW	SW	SSW	S	S	SSW	SSW	SSW	SSW	SW	W	SW	WSW	WSW	WSW	WSW	SE	SSW	SW	SSW	SSW	SW	24
16	SSW	SSW	SSW	SSW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SSW	WSW	24
17	SW	SW	SW	SW	WSW	SW	WSW	NNW	NE	WNW	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	SSW	SSE	SE	SW	SSW	SSW	WSW	24
18	S	S	SSW	SW	NNE	ENE	ESE	SE	SSE	SSW	SW	W	W	W	WSW	W	W	W	W	WSW	WSW	W	N	N	WSW	24
19	N	NNE	N	N	N	NNE	NNE	NNE	NNE	NNE	NNE	N	N	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNW	NNW	NNE	24
20	N	ENE	E	E	ENE	ENE	WNW	NE	NE	NE	NNE	N	NNW	NW	W	W	WNW	NW	WSW	NNW	NNE	NNE	ENE	ESE	NNE	24
21	ESE	E	ESE	ENE	ENE	ENE	ENE	ENE	ENE	NE	ENE	NNW	WNW	W	WNW	NNW	N	N	N	NNW	NNW	NNW	NW	WNW	NNE	24
22	W	WNW	NW	NW	NW	NNW	N	N	N	N	N	N	N	N	NNE	NNE	NNE	NNE	NNE	N	NNE	N	NNW	N	N	24
23	N	N	N	N	NNW	N	N	N	NNE	N	NNW	N	N	N	N	NNE	NNE	NNE	NNE	NE	W	W	NW	W	N	24
24	SW	WNW	NW	NW	W	WSW	ENE	NE	ENE	NE	NE	NE	WNW	WNW	NW	W	N	NNE	NNE	ENE	WSW	SSW	SW	SW	N	24
25	SW	SW	SW	SW	SW	SW	SSW	SSW	S	SE	SE	SSE	S	SSE	SSE	SSW	SSW	SSW	SW	NW	W	SW	WSW	SSW	S	24
26	SSW	SSW	SSW	SSW	SSW	SSW	SW	SSW	SW	SSW	SSW	S	SSW	SW	SW	WSW	WSW	WSW	WSW	SW	SSW	SW	SW	SSW	SW	24
27	SSW	SW	SW	SW	SW	SW	SSW	SSW	SSW	SSW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	SW	SW	SSW	WSW	SW	WSW	SW	24
28	SW	SW	SSW	SSW	SW	SW	SSW	SSW	SSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SSW	SSW	SSW	SW	SW	SW	24
29	SSW	SW	SW	SW	SW	W	N	NNE	N	N	N	NNW	SSW	NNE	N	NNW	NW	NNE	NNE	SSE	NNE	SSW	SW	NE	N	24
30	SW	W	NW	NE	N	WSW	N	ESE	WSW	WNW	N	N	N	N	N	N	N	N	N	N	NNW	N	NNE	NNE	N	24
31	NNE	NNE	N	E	ESE	ESE	ENE	ESE	SE	SSE	SSE	SSE	SSE	SSE	SSW	SE	S	S	E	NNE	ENE	ENE	NE	W	SE	24

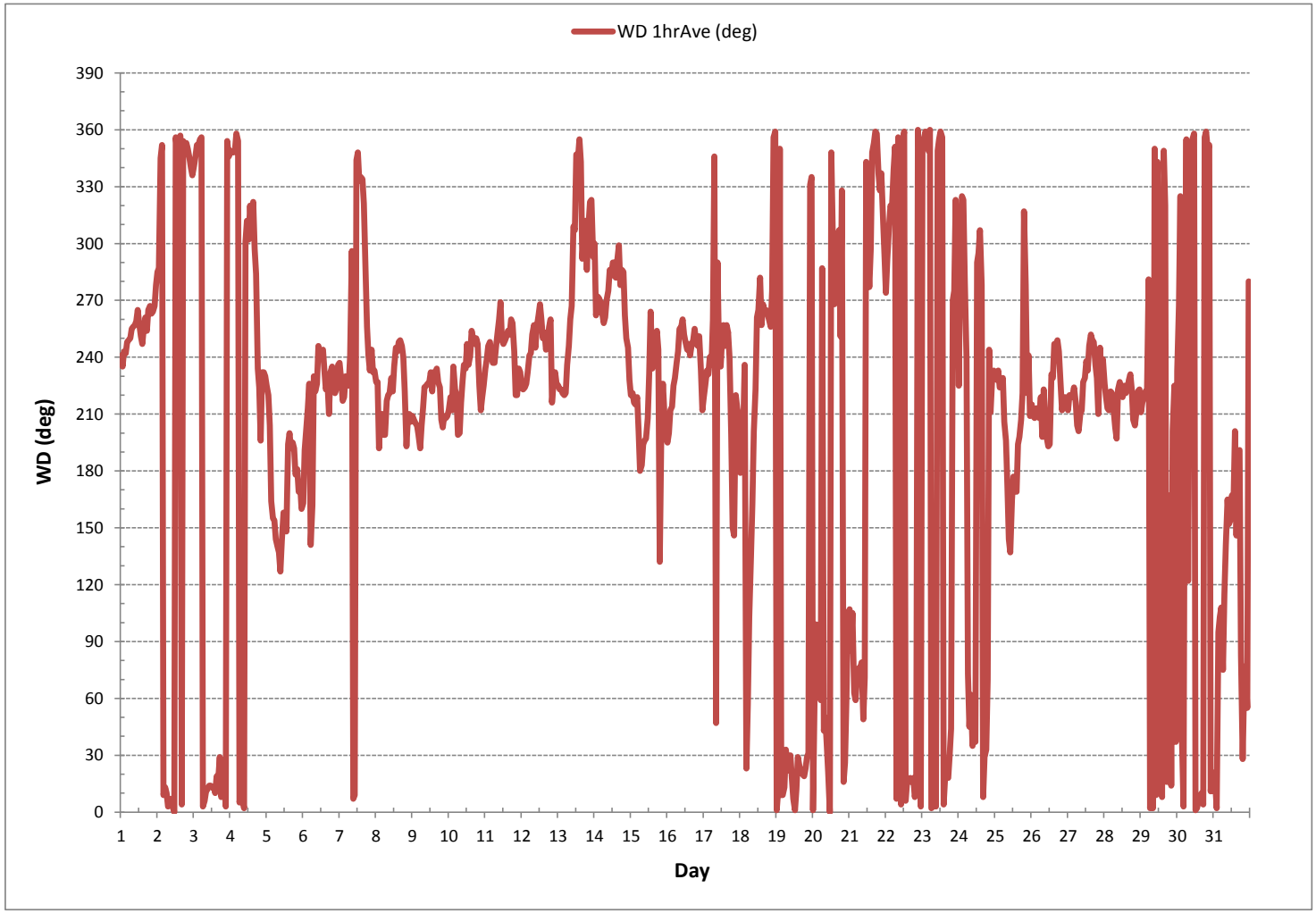
STATUS FLAG CODES

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:	100		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	280 (W)	

WIND DIRECTION Hourly Averages (WD)



RELATIVE HUMIDITY

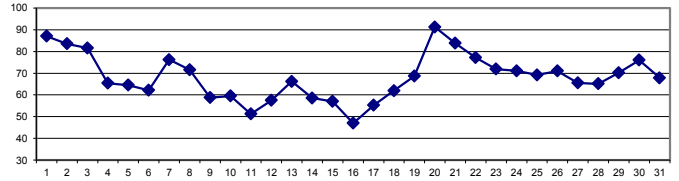
RELATIVE HUMIDITY Hourly Averages (RH %)

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

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

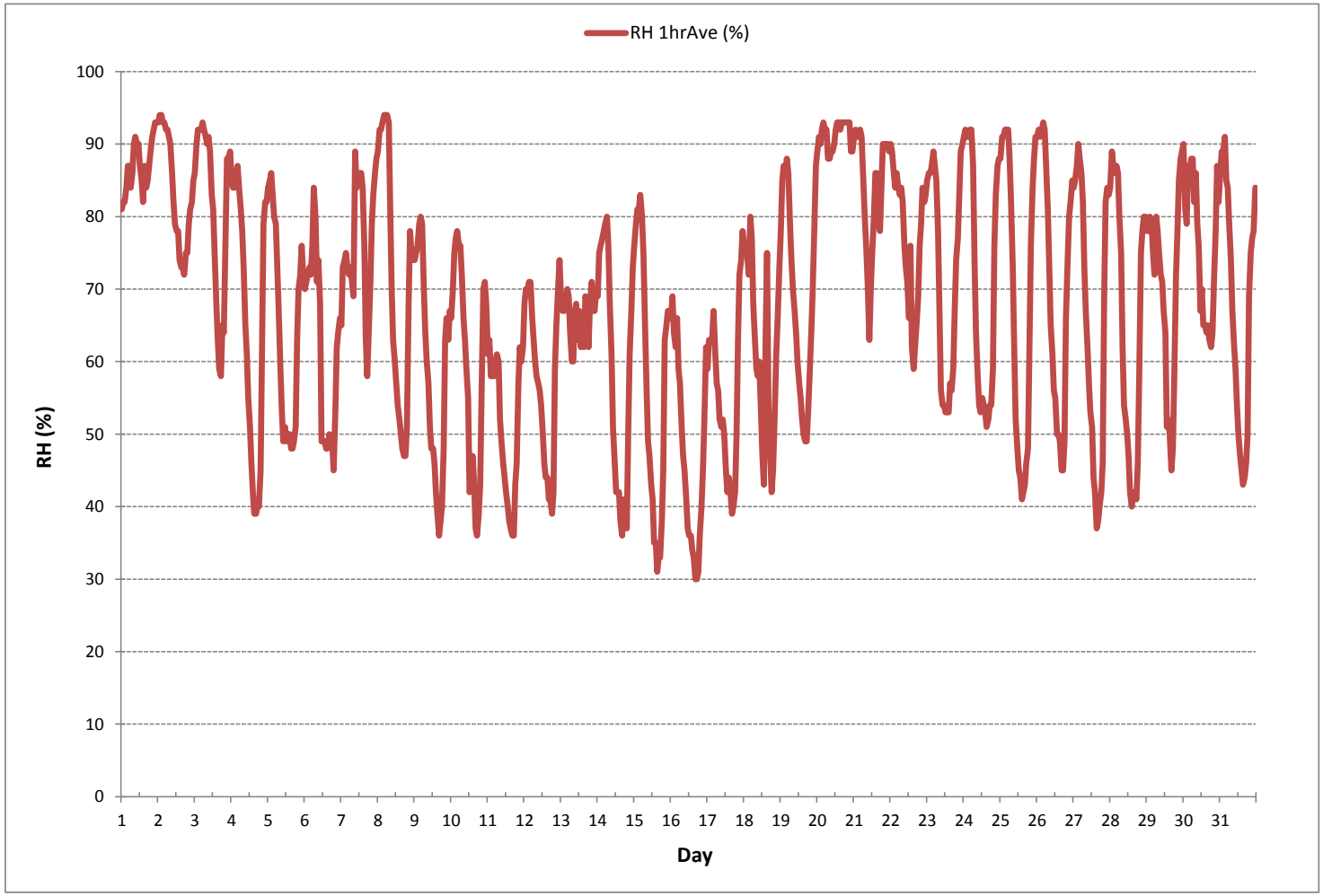
24 HR AVERAGES July 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	30	%	@ HOUR	16	ON DAY	16	
MAXIMUM 1-HR AVERAGE:	94	%	@ HOUR	1	ON DAY	2	
MAXIMUM 24-HR AVERAGE:	91	%			ON DAY	20	
			OPERATIONAL TIME:			744	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	17		MONTHLY AVERAGE:			68	%

RELATIVE HUMIDITY Hourly Averages (RH %)



BAROMETRIC PRESSURE

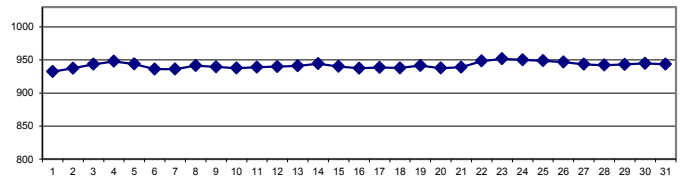
BAROMETRIC PRESSURE Hourly Averages (BP mbar)

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	**932**	932	932	932	932	932	932	932	932	933	932	932	932	932	932	932	933	933	933	933	933	933	933	933	**932**	933	932	24
2	933	933	933	933	934	934	934	935	935	936	936	937	938	938	939	939	940	940	941	941	941	942	942	942	933	942	937	24
3	942	942	942	942	942	942	942	942	943	943	943	943	944	943	944	944	943	944	944	944	945	946	946	946	942	946	943	24
4	946	947	947	947	947	948	948	949	949	949	949	949	948	948	948	948	948	947	947	947	948	948	948	948	946	949	948	24
5	948	947	947	947	947	947	946	946	946	945	944	944	944	943	943	943	942	942	941	941	941	941	940	940	940	948	944	24
6	940	939	939	938	938	938	938	937	938	938	937	936	936	936	935	934	934	934	933	933	933	933	932	932	932	940	936	24
7	932	932	932	932	932	932	932	932	932	933	935	936	937	938	939	939	940	940	940	940	941	941	941	941	932	941	936	24
8	941	941	942	942	942	942	942	942	942	942	942	942	942	942	941	941	941	941	940	941	940	941	941	941	940	942	941	24
9	941	941	941	940	940	941	941	940	941	940	940	940	940	939	939	939	939	938	938	938	938	938	938	938	938	941	940	24
10	938	938	938	938	938	938	938	938	938	938	938	938	938	938	937	937	937	937	937	937	937	938	938	938	937	938	938	24
11	937	937	938	938	938	939	939	939	940	940	939	939	939	939	939	939	939	939	939	939	939	939	939	940	937	940	939	24
12	940	940	939	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	939	940	940	940	940	939	940	940	24
13	940	940	939	939	939	940	940	940	939	940	940	940	940	940	941	941	942	942	942	942	943	943	944	944	939	944	941	24
14	944	944	944	944	944	945	945	944	944	944	944	945	944	944	944	944	944	944	944	944	944	944	944	944	944	945	944	24
15	943	943	943	942	942	942	941	941	941	941	940	940	940	940	939	939	939	939	938	938	938	938	938	938	938	943	940	24
16	938	937	937	937	937	938	938	938	938	938	938	938	938	938	938	937	937	937	936	936	937	937	938	938	936	938	937	24
17	938	938	938	938	938	939	939	939	939	939	939	940	939	940	940	939	939	938	938	938	938	938	938	938	938	940	939	24
18	938	937	937	938	938	937	937	937	937	937	937	937	937	937	938	938	938	938	938	938	938	939	940	940	937	940	938	24
19	941	941	942	942	942	942	943	943	943	943	943	942	942	942	942	941	941	940	940	940	939	940	940	940	939	943	941	24
20	939	939	939	939	938	938	938	938	938	938	938	938	938	938	938	938	937	937	937	936	936	935	935	935	935	939	938	24
21	936	936	936	936	937	937	938	938	938	938	938	939	939	939	940	940	940	940	941	941	942	942	943	943	936	943	939	24
22	944	944	945	945	946	946	947	947	948	948	949	949	949	949	949	949	950	950	950	950	950	951	951	951	944	951	948	24
23	951	951	951	951	**952**	952	952	952	952	952	952	952	952	951	952	952	951	951	951	951	951	951	951	951	951	**952**	**951**	24
24	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	949	949	949	950	950	950	949	950	950	24
25	950	949	949	949	949	949	949	950	949	949	949	949	949	949	949	949	948	948	948	948	948	948	948	948	948	950	949	24
26	948	948	947	947	947	947	948	947	948	947	947	947	947	947	947	946	946	946	945	945	946	945	945	945	945	948	947	24
27	945	945	944	945	944	944	944	944	944	944	944	944	944	943	943	943	942	942	942	942	942	942	942	942	942	945	943	24
28	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	24
29	942	942	942	943	943	943	944	944	944	944	944	944	944	944	944	944	944	943	943	942	942	943	942	942	942	944	943	24
30	942	943	942	941	942	942	944	944	944	944	945	945	945	946	946	946	946	946	946	946	946	946	946	947	941	947	945	24
31	947	946	946	946	946	946	946	946	945	945	945	944	944	943	943	942	942	941	940	940	939	939	939	939	939	947	943	24
HOURLY MAX	951	951	951	951	952	952	952	952	952	952	952	952	952	951	952	952	951	951	951	951	951	951	951	951				
HOURLY AVG	942	941	941	941	941	942	942	942	942	942	942	942	942	942	942	942	942	942	941	941	941	942	942	942				

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

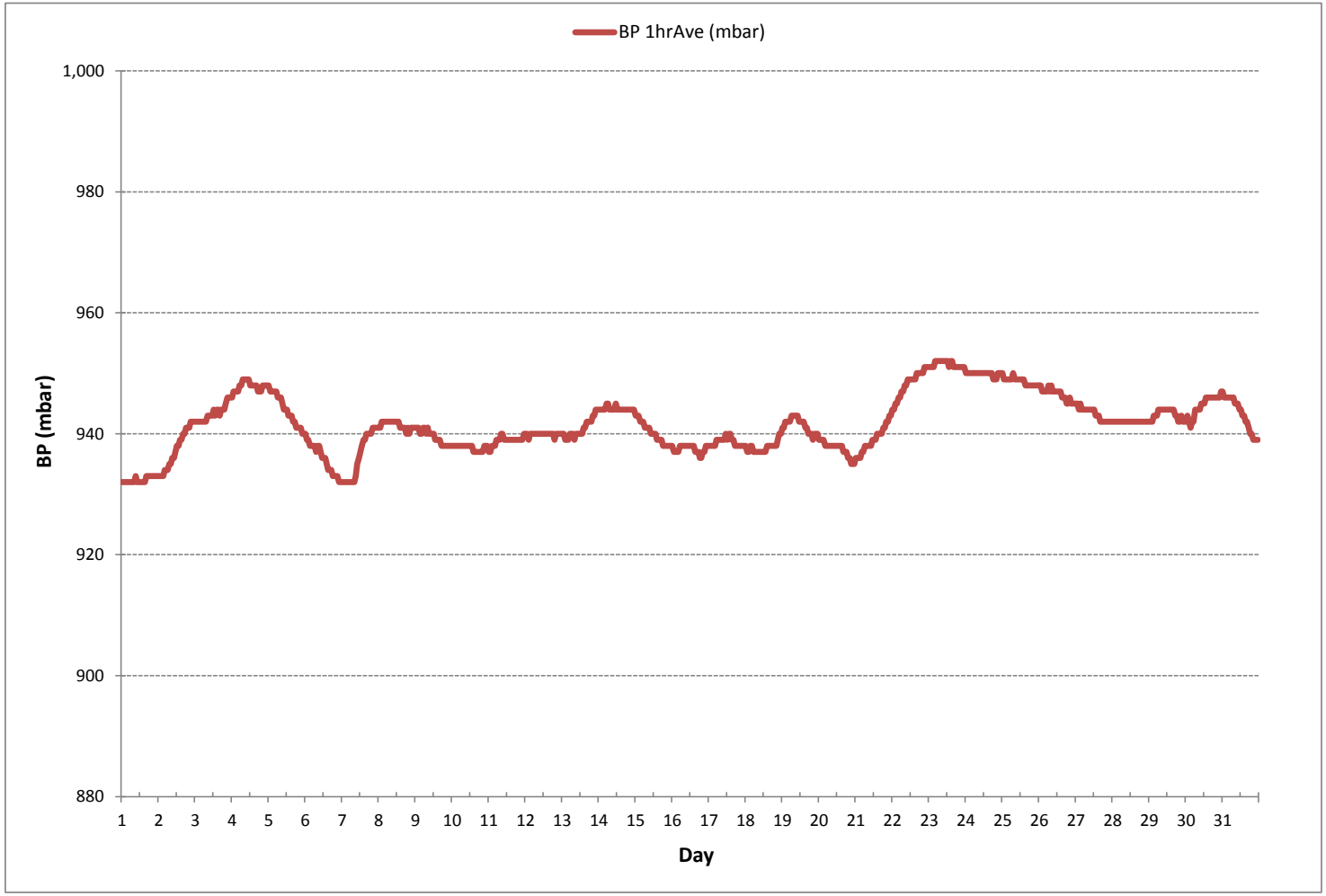
24 HR AVERAGES July 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	932	mbar	@ HOUR	0	ON DAY	1	
MAXIMUM 1-HR AVERAGE:	952	mbar	@ HOUR	4	ON DAY	23	
MAXIMUM 24-HR AVERAGE:	951	mbar			ON DAY	23	
			OPERATIONAL TIME:			744	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	5		MONTHLY AVERAGE:			942	mbar

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE

Maxxam
A Bureau Veritas Group Company

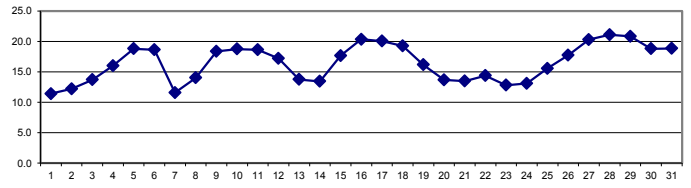
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

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	10.8	10.8	10.8	10.2	10.2	10.4	11.3	11.0	10.7	11.0	11.5	11.2	11.7	12.1	13.3	12.9	13.0	12.7	12.6	11.6	11.2	11.0	10.8	11.0	10.2	13.3	11.4	24
2	11.2	11.3	11.4	11.3	11.4	11.4	11.6	11.9	11.8	11.9	12.1	12.7	13.0	13.3	13.7	13.6	13.6	13.5	12.5	12.5	11.9	11.7	11.7	11.5	11.2	13.7	12.2	24
3	11.4	11.2	11.1	11.2	11.2	11.3	11.5	11.8	12.2	12.2	12.7	14.1	14.6	15.9	16.3	17.4	18.3	18.2	17.2	17.2	14.4	12.7	12.5	12.2	11.1	18.3	13.7	24
4	11.7	11.1	10.7	10.2	10.0	10.8	11.9	13.3	15.0	17.1	17.9	18.9	19.1	19.8	20.6	20.9	21.1	21.5	21.7	21.1	18.0	15.0	13.5	12.6	10.0	21.7	16.0	24
5	12.1	11.2	10.7	11.0	11.4	12.5	14.8	17.3	19.3	21.1	22.0	22.6	23.2	23.6	24.5	24.8	25.0	25.0	24.5	21.9	20.2	18.7	17.0	16.9	10.7	25.0	18.8	24
6	16.3	15.7	15.1	15.6	16.5	16.1	15.3	17.0	18.9	18.3	19.4	22.4	22.2	22.8	23.7	23.8	22.2	21.5	21.0	20.2	17.8	16.1	15.3	14.3	14.3	23.8	18.6	24
7	13.7	12.1	11.7	11.2	11.6	12.1	13.2	14.4	14.5	11.8	10.9	9.9	9.7	10.0	10.0	10.7	12.7	13.6	12.8	12.6	11.7	10.2	8.9	7.9	7.9	14.5	11.6	24
8	7.3	7.2	6.6	6.7	6.4	6.6	7.6	9.4	11.8	14.0	15.5	16.8	17.7	18.6	19.4	19.9	20.6	20.9	21.0	20.5	17.9	15.3	14.5	14.2	6.4	21.0	14.0	24
9	13.6	12.8	12.1	11.3	10.8	11.3	13.7	15.5	17.0	18.8	20.5	21.4	22.0	22.8	23.6	24.4	24.8	24.9	24.7	23.8	20.2	17.8	17.1	16.1	10.8	24.9	18.4	24
10	15.6	14.6	13.3	12.6	12.4	14.3	15.7	16.1	17.0	18.3	19.7	21.5	23.7	23.3	22.8	23.8	24.8	24.6	24.2	23.0	20.2	16.9	15.8	15.9	12.4	24.8	18.8	24
11	16.6	15.6	15.3	14.7	14.3	14.0	14.3	15.3	17.8	19.2	20.5	21.2	22.0	22.7	23.2	23.6	23.9	23.6	22.0	20.8	19.0	17.0	16.1	14.8	14.0	23.9	18.6	24
12	13.4	12.9	12.4	12.1	12.0	13.1	14.4	15.8	17.0	17.9	19.0	19.3	20.5	21.2	21.3	21.6	22.1	22.2	21.8	21.3	17.9	16.2	14.5	13.1	12.0	22.2	17.2	24
13	13.5	14.0	13.1	12.1	11.5	12.3	13.7	14.6	15.5	15.6	15.4	15.9	15.6	16.1	15.2	15.0	13.9	14.0	14.9	14.0	12.9	11.5	10.2	9.4	9.4	16.1	13.7	24
14	9.3	8.4	8.4	8.4	8.1	8.2	8.2	9.5	11.2	12.7	14.9	16.2	17.4	17.6	17.9	18.7	18.7	17.7	18.9	18.8	16.3	13.9	12.1	10.7	8.1	18.9	13.4	24
15	10.1	9.3	8.2	7.7	7.9	9.4	11.9	14.8	17.4	19.4	21.1	22.2	22.4	23.4	24.4	24.5	24.6	24.3	25.0	24.2	19.8	17.7	17.2	17.0	7.7	25.0	17.7	24
16	16.4	15.7	16.0	15.8	14.3	15.2	15.2	16.9	18.5	19.9	20.9	22.2	23.1	23.9	24.8	25.9	26.6	27.0	26.3	25.1	23.1	20.7	18.6	16.2	14.3	27.0	20.3	24
17	16.8	16.2	15.8	15.8	15.1	16.5	18.1	19.1	21.4	21.5	21.5	22.2	23.1	23.7	23.1	24.0	24.4	24.6	25.2	23.6	20.3	17.7	16.3	15.7	15.1	25.2	20.1	24
18	16.8	16.4	16.1	16.8	15.0	15.0	16.9	18.9	21.0	22.0	22.0	22.4	23.1	23.8	19.3	18.9	22.2	23.0	22.6	21.3	19.1	17.3	16.4	15.6	15.0	23.8	19.2	24
19	14.9	13.9	13.5	13.3	11.8	11.8	12.5	13.5	14.5	15.7	16.7	17.7	18.6	19.3	19.7	20.2	20.7	20.5	19.5	18.0	16.8	15.9	15.0	14.3	11.8	20.7	16.2	24
20	13.9	13.6	13.6	13.4	13.3	13.2	13.6	14.4	14.7	14.7	14.8	14.6	14.2	14.0	13.3	12.6	12.5	12.8	12.7	12.7	13.3	13.6	14.6	13.9	12.5	14.8	13.7	24
21	12.9	12.2	11.5	10.4	9.2	10.5	12.1	13.1	13.7	14.2	15.6	14.7	14.6	14.3	14.0	14.9	15.9	15.9	14.7	14.2	14.1	14.0	13.8	13.3	9.2	15.9	13.5	24
22	12.2	12.5	12.6	12.7	12.0	12.2	13.0	13.1	13.6	14.5	15.0	15.7	16.7	15.6	17.5	17.8	17.1	16.4	16.2	15.5	14.5	13.3	13.0	12.6	12.0	17.8	14.4	24
23	12.1	11.7	11.4	11.1	10.5	10.6	10.7	12.1	13.5	14.7	15.1	15.4	15.6	15.3	15.1	14.4	14.7	14.3	13.6	13.2	12.8	11.2	9.6	8.5	8.5	15.6	12.8	24
24	8.2	7.9	7.8	7.0	6.3	**6.2**	9.5	12.6	14.7	15.5	16.5	16.5	16.5	16.7	17.0	17.6	17.5	17.3	17.4	17.0	14.3	12.3	11.1	10.6	**6.2**	17.6	13.1	24
25	10.4	9.8	9.2	8.8	8.5	9.0	10.8	13.3	15.7	17.2	18.9	19.8	20.3	20.5	21.2	21.5	21.6	21.4	21.3	19.2	16.1	14.1	12.8	12.1	8.5	21.6	15.6	24
26	11.3	11.0	11.0	10.2	9.9	10.3	12.2	15.7	17.2	19.4	21.0	22.3	23.1	23.3	24.0	24.3	24.6	24.6	23.6	20.7	18.4	16.7	15.7	14.8	9.9	24.6	17.7	24
27	14.5	14.0	13.7	13.7	13.0	12.9	14.8	17.5	19.3	21.2	22.7	24.0	25.0	26.0	26.5	27.0	26.5	26.9	26.8	25.8	21.8	19.3	17.6	16.6	12.9	27.0	20.3	24
28	15.8	15.3	14.7	13.7	13.1	13.4	15.2	18.0	20.6	22.3	24.0	25.2	26.4	27.2	27.8	28.1	**28.3**	28.0	27.5	25.4	21.2	19.5	18.3	17.4	13.1	**28.3**	**21.1**	24
29	17.5	17.3	16.5	16.0	16.0	17.2	17.3	18.4	19.5	20.4	21.0	22.4	23.9	26.3	26.2	26.5	26.6	26.4	25.1	23.1	21.3	19.7	18.5	16.7	16.0	26.6	20.8	24
30	16.8	18.5	18.2	17.2	17.0	16.5	16.7	17.4	17.4	18.9	19.3	21.0	21.2	21.8	21.4	21.5	21.2	21.6	21.7	20.8	18.8	16.7	15.0	14.7	14.7	21.8	18.8	24
31	13.3	11.7	11.5	11.1	12.3	12.7	14.8	16.9	19.7	20.9	21.8	22.9	23.6	24.5	24.9	25.1	25.4	25.0	23.9	20.4	18.6	17.6	17.1	16.9	11.1	25.4	18.9	24
HOURLY MAX	17.5	18.5	18.2	17.2	17.0	17.2	18.1	19.1	21.4	22.3	24.0	25.2	26.4	27.2	27.8	28.1	28.3	28.0	27.5	25.8	23.1	20.7	18.6	17.4				
HOURLY AVG	13.2	12.8	12.4	12.0	11.7	12.2	13.3	14.8	16.2	17.2	18.1	18.9	19.5	20.0	20.2	20.5	20.8	20.8	20.4	19.3	17.2	15.5	14.5	13.8				

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

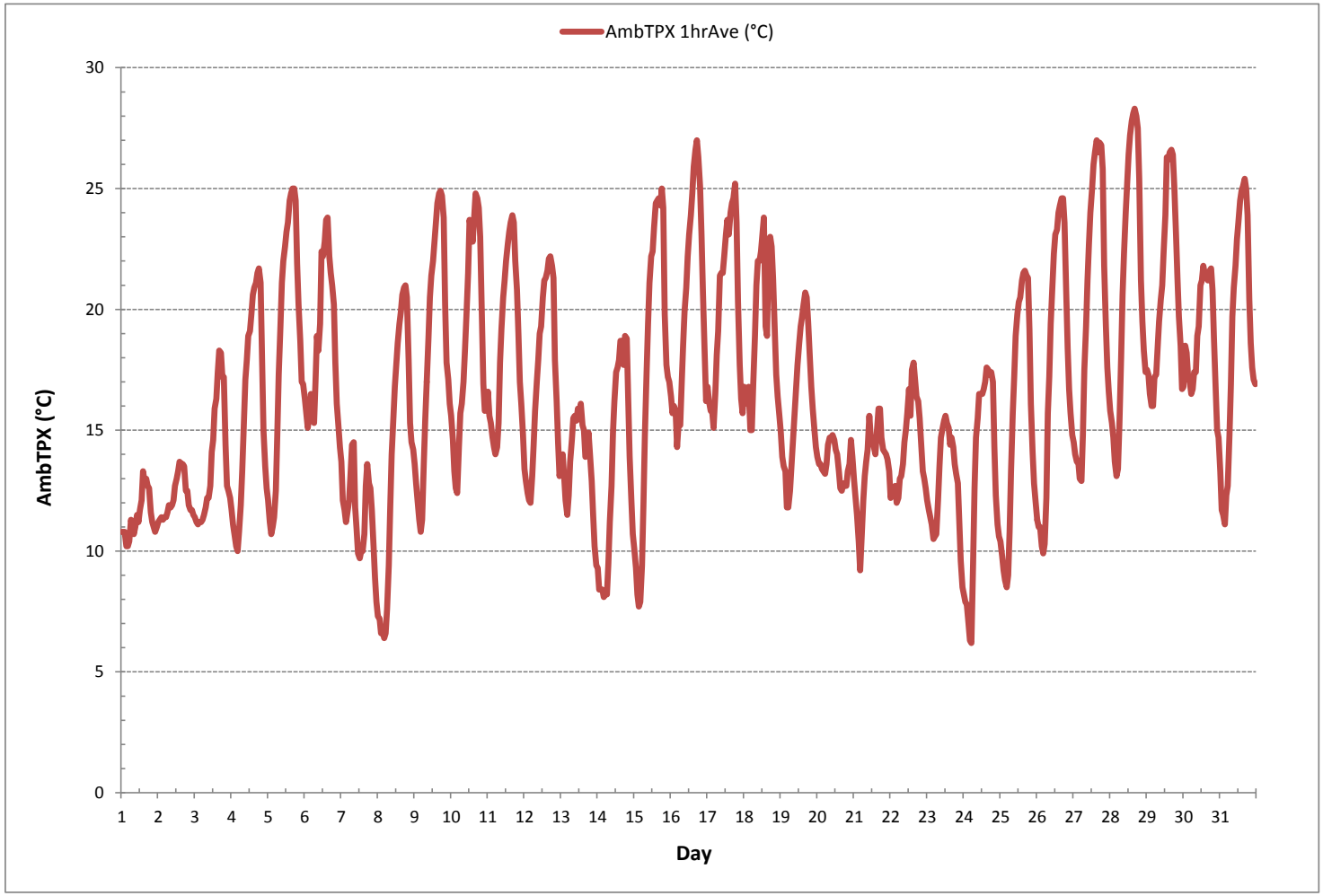
24 HR AVERAGES July 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	6.2	°C	@ HOUR	5	ON DAY	24	
MAXIMUM 1-HR AVERAGE:	28.3	°C	@ HOUR	16	ON DAY	28	
MAXIMUM 24-HR AVERAGE:	21.1	°C			ON DAY	28	
			OPERATIONAL TIME:			744	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	4.8		MONTHLY AVERAGE:			16.5	°C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



STATION TEMPERATURE

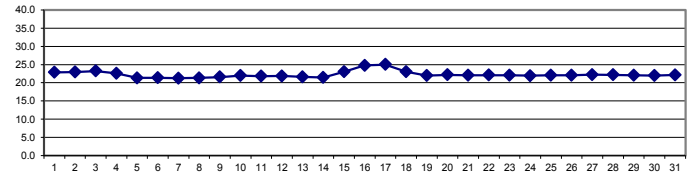
STATION TEMPERATURE Hourly Averages (StnTPX °C)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	22.8	22.9	22.9	22.9	22.8	22.8	23.0	22.8	22.8	22.8	22.9	22.9	22.8	22.8	23.0	22.9	22.9	22.8	22.9	22.9	22.9	22.9	22.8	22.8	22.8	23.0	22.9	24
2	22.8	22.9	22.8	22.8	22.8	22.8	22.8	22.8	22.6	22.8	22.8	22.9	22.9	22.9	22.9	23.1	23.3	23.2	23.3	23.2	23.2	23.3	23.2	23.1	22.6	23.3	23.0	24
3	23.2	23.2	23.1	23.1	23.2	23.2	23.1	23.1	23.2	23.1	23.1	23.3	23.1	23.3	23.3	23.3	23.3	23.4	23.4	23.4	23.5	23.2	23.3	23.2	23.1	23.5	23.2	24
4	23.2	23.2	23.2	23.2	23.1	23.2	23.3	23.1	23.0	23.4	23.3	23.6	23.1	23.0	23.1	22.1	21.4	21.4	21.5	21.7	21.6	21.6	21.5	21.4	21.4	23.6	22.6	24
5	21.3	21.1	21.1	21.2	21.2	21.1	21.1	21.3	21.4	21.3	21.4	21.2	21.1	21.3	21.1	21.2	21.3	21.7	21.7	21.4	21.6	21.7	21.5	21.4	21.1	21.7	21.3	24
6	21.5	21.3	21.5	21.3	21.4	21.3	21.4	21.3	21.3	21.3	21.4	21.2	21.2	21.2	21.2	21.3	21.3	21.4	21.1	21.6	21.6	21.5	21.4	21.4	21.1	21.6	21.4	24
7	21.3	21.4	21.2	21.1	21.1	21.2	21.1	21.3	21.3	21.2	21.1	21.1	21.1	21.2	21.1	21.1	21.3	21.5	21.5	21.5	21.6	21.1	21.2	21.3	21.1	21.6	21.2	24
8	21.3	21.2	21.1	21.3	21.1	21.2	21.3	21.1	21.2	21.3	21.4	21.3	21.3	21.5	21.4	21.3	21.1	21.5	21.3	21.5	21.6	21.6	21.5	21.4	21.1	21.6	21.3	24
9	21.4	21.2	21.0	21.2	21.2	21.1	21.2	21.3	21.5	21.4	21.2	21.0	**20.7**	20.8	21.3	21.9	22.5	23.0	23.3	23.1	21.9	21.6	21.6	21.5	**20.7**	23.3	21.6	24
10	21.3	21.4	21.3	21.3	21.2	21.3	21.3	21.3	21.4	21.3	21.4	21.1	21.4	21.9	22.0	22.3	23.1	24.0	24.5	24.4	22.9	21.6	21.5	21.6	21.1	24.5	22.0	24
11	21.5	21.5	21.5	21.3	21.4	21.5	21.4	21.4	21.6	21.2	21.4	20.9	21.1	21.4	21.8	22.4	23.1	23.6	23.7	22.7	21.7	21.7	21.7	21.7	20.9	23.7	21.8	24
12	21.6	21.6	21.5	21.4	21.3	21.4	21.6	21.6	21.6	21.5	21.3	20.9	21.0	21.4	21.8	22.1	22.7	23.4	23.8	23.6	21.9	21.9	21.7	21.8	20.9	23.8	21.9	24
13	21.7	21.5	21.7	21.5	21.5	21.3	21.5	21.6	21.7	21.6	21.6	21.6	21.6	21.6	21.6	21.6	21.7	21.6	21.8	22.0	21.8	21.6	21.7	21.5	21.3	22.0	21.6	24
14	21.2	21.3	21.3	21.3	21.4	21.4	21.4	21.1	21.3	21.2	21.1	21.5	21.5	21.6	21.5	21.5	21.7	21.6	21.5	21.7	21.7	21.8	21.8	21.5	21.1	21.8	21.5	24
15	21.5	21.3	21.4	21.4	21.5	21.3	21.4	21.6	21.5	21.4	21.4	21.6	22.2	22.9	23.7	24.7	26.1	27.4	27.7	27.7	25.8	23.4	21.5	21.7	21.3	27.7	23.0	24
16	21.5	21.6	21.4	21.5	21.5	21.4	21.5	21.3	21.2	20.8	21.1	21.8	22.9	24.4	25.8	27.6	29.1	30.7	32.2	**32.7**	31.8	29.7	27.0	24.0	20.8	**32.7**	24.8	24
17	21.9	21.9	22.0	21.8	21.8	21.8	21.6	21.5	21.6	22.0	22.8	23.5	25.2	26.6	27.5	28.3	29.7	30.4	31.6	32.0	30.3	27.3	24.6	22.4	21.5	32.0	**25.0**	24
18	21.8	21.9	22.0	21.8	22.0	22.0	21.8	21.4	21.4	22.3	23.7	24.7	26.2	27.3	27.5	25.4	23.2	22.6	22.5	22.5	22.3	22.1	21.9	21.8	21.4	27.5	23.0	24
19	21.8	21.7	21.9	21.9	22.0	22.2	22.1	21.8	21.7	21.7	21.7	21.7	21.8	21.9	22.0	22.2	22.2	22.3	22.5	22.1	22.1	22.0	21.8	21.8	21.7	22.5	22.0	24
20	21.7	22.0	21.8	22.0	22.4	22.1	22.0	22.0	21.7	21.7	21.7	21.8	21.8	21.7	22.5	22.6	22.5	22.6	22.5	22.6	22.6	22.6	22.5	22.6	21.7	22.6	22.2	24
21	22.6	22.7	22.4	22.3	22.1	22.2	21.9	22.0	22.3	22.5	21.8	21.9	21.9	21.8	21.8	21.9	21.8	21.8	21.9	21.8	21.8	22.1	21.8	22.4	21.8	22.7	22.1	24
22	22.1	22.2	22.3	22.0	22.2	22.2	22.0	22.5	22.7	22.9	21.8	21.8	21.8	21.9	21.9	22.0	22.1	22.0	21.9	21.9	21.8	22.1	21.9	22.5	21.8	22.9	22.1	24
23	22.2	22.3	22.0	22.2	22.2	22.0	22.3	22.1	22.4	22.6	21.7	21.7	21.8	21.7	21.7	21.8	21.8	21.8	22.5	21.9	22.0	22.0	22.2	22.0	21.7	22.6	22.0	24
24	22.0	22.2	21.9	22.0	22.0	21.7	22.0	21.8	22.1	22.3	21.7	21.7	21.7	21.8	21.9	21.9	22.0	21.8	21.9	21.9	21.8	22.1	22.4	21.9	21.7	22.4	21.9	24
25	22.1	22.1	22.1	22.1	22.2	21.9	22.0	22.2	21.6	21.7	21.6	21.7	21.8	22.0	22.1	22.2	22.2	22.4	22.4	22.3	22.1	22.0	22.6	22.6	21.6	22.6	22.1	24
26	22.3	22.0	22.1	22.1	22.1	22.0	22.1	21.6	21.6	21.6	21.8	21.9	21.9	22.0	22.1	22.2	22.3	22.4	22.4	22.3	22.1	21.9	21.8	22.7	21.6	22.7	22.1	24
27	22.5	22.4	22.6	22.6	22.5	22.4	22.4	22.5	21.8	21.8	21.8	21.9	22.0	22.0	22.2	22.2	22.4	22.3	22.4	22.4	22.3	22.1	22.0	21.9	21.8	22.6	22.2	24
28	21.7	21.7	22.3	22.4	22.4	22.3	22.4	22.2	21.7	21.8	21.9	21.9	22.0	22.1	22.1	22.4	22.7	22.7	22.7	22.5	22.4	22.2	22.0	21.8	21.7	22.7	22.2	24
29	21.8	21.8	22.5	22.7	22.8	22.2	21.7	21.8	21.7	21.9	21.8	21.9	21.9	22.0	22.1	22.1	22.3	22.2	22.4	22.2	22.1	22.0	21.9	21.8	21.7	22.8	22.1	24
30	21.8	21.8	21.7	21.7	21.7	22.4	22.8	21.7	21.7	21.8	21.7	21.8	21.9	21.9	22.0	22.0	22.0	22.1	22.1	22.2	22.1	21.9	21.7	22.4	21.7	22.8	22.0	24
31	22.6	22.5	22.2	22.2	22.1	22.1	22.2	22.5	21.7	21.8	21.9	21.8	21.9	22.0	22.2	22.3	22.3	22.4	22.3	22.3	22.1	21.9	21.8	21.8	21.7	22.6	22.1	24
HOURLY MAX	23.2	23.2	23.2	23.2	23.2	23.2	23.3	23.1	23.2	23.4	23.7	24.7	26.2	27.3	27.5	28.3	29.7	30.7	32.2	32.7	31.8	29.7	27.0	24.0				
HOURLY AVG	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.9	21.8	21.9	21.8	21.9	22.1	22.3	22.5	22.6	22.8	23.0	23.2	23.2	22.8	22.5	22.2	22.1				

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

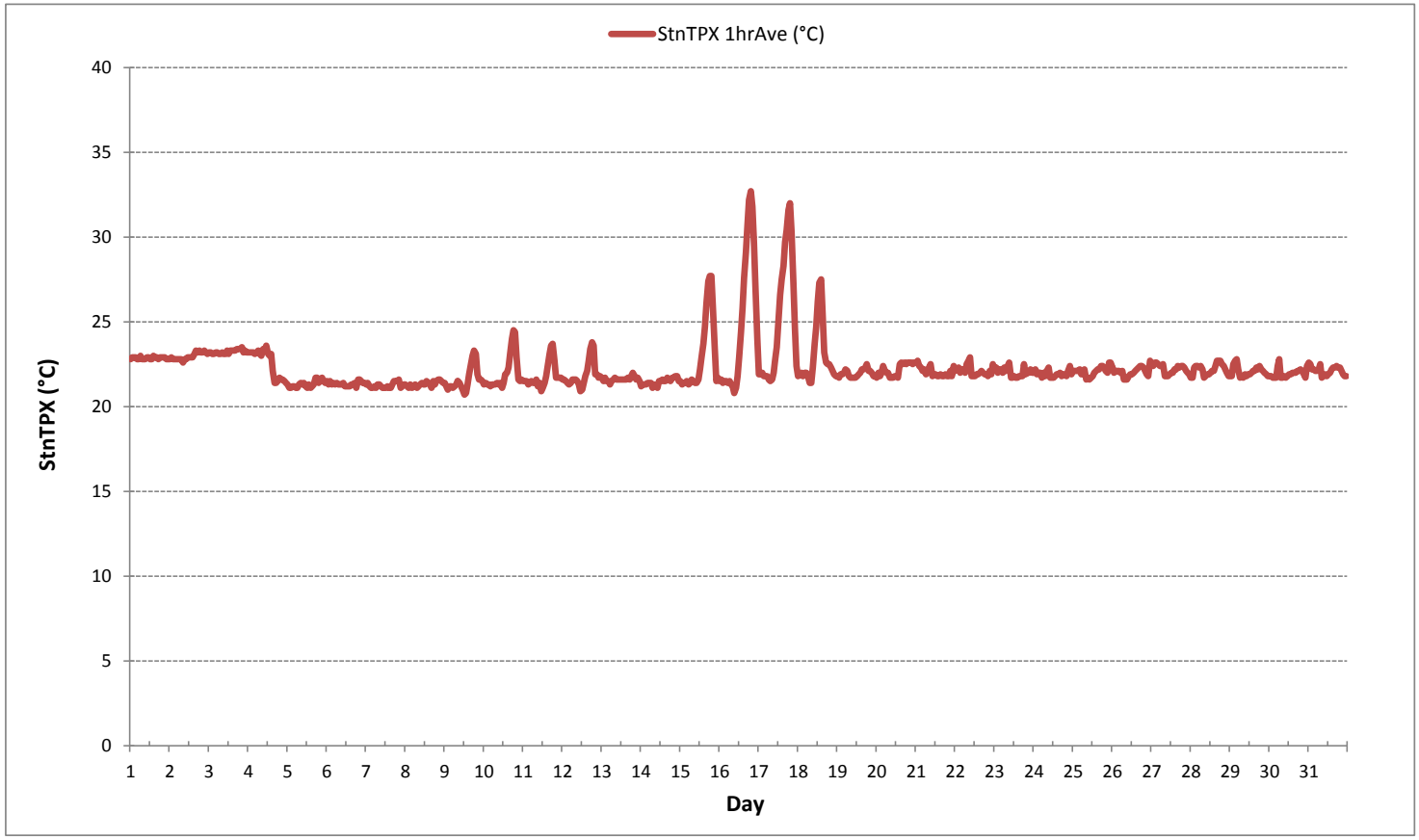
24 HR AVERAGES July 2018



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	20.7	°C	@ HOUR	12	ON DAY	9	
MAXIMUM 1-HR AVERAGE:	32.7	°C	@ HOUR	19	ON DAY	16	
MAXIMUM 24-HR AVERAGE:	25.0	°C			ON DAY	17	
			OPERATIONAL TIME:			744	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	1.5		MONTHLY AVERAGE:			22.3	°C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE

API 100A Sulphur Dioxide Analyzer Calibration

Date:	July 4, 2018	**Barometer/B.P./units:**	Brunton 05535 expires December 15, 2018	27.99	inHg
Company/Airshed:	PRAMP	**Thermometer/Station Temp:**	F.S. 160348895 expires June 19, 2020	23.9	°C
Location/Station Name:	RENO	**Weather Conditions:**	Mainly sunny		
Parameter:	Sulphur Dioxide	**Calibration Purpose:**	routine monthly		
Start Time 24 hr. (mst):	8:50	**Performed By/Reviewer:**	Limin Li	Rob Fisher	
End Time 24 hr. (mst):	12:28	**Cal Gas Expiry Date:**	December 2, 2019		
Calibration Method:	Gas Dilution	**Converter Model & s/n (if applicable):**	n/a		

Analyzer:

Serial Number/Owner:	841 Maxxam	**Range ppb:**	500
Last Calibration Date:	June 13, 2018	**As Found C.F.:**	1.071
Previous C.F.:	1.001	**New C.F.:**	1.000

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 156151 expires October 2, 2018
High Flow Meter ID/Expiry Date:	Defender High 156312 expires December 13, 2018
Calibrator ID/Expiry Date:	Environics id# 1991 expires March 15, 2019
Cal Gas Cylinder I.D. # :	LL119329
Cal Gas Conc. (ppm):	50.1

Standard Calibration Points for Ranges

Point	ppb
High	380
Mid	180
Low	90

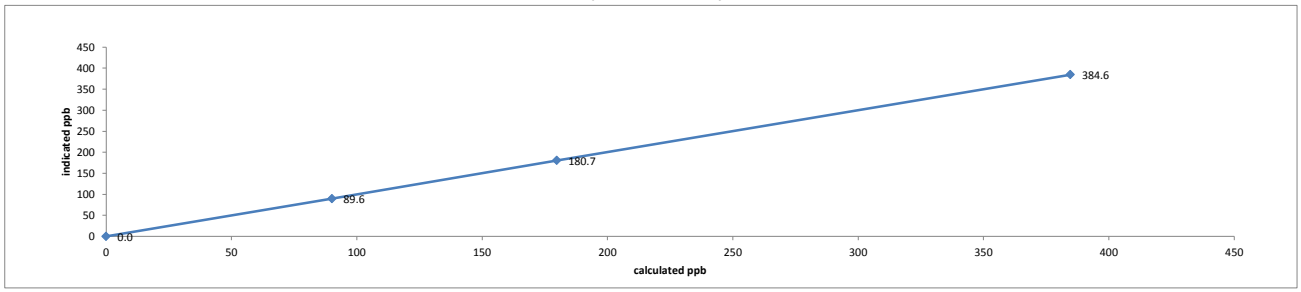
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration (ppb):	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	**Diluent**	**Cal Gas**	**Total**			
as found zero	6025	0.00	6025	0.0	-0.7	n/a
as found high	5960	46.11	6006	384.6	358.5	1.071
adjusted zero	6025	0.00	6025	0.0	0.0	n/a
adjusted high	5960	46.11	6006	384.6	384.6	1.000
mid	6022	21.69	6044	179.8	180.7	0.995
low	6021	10.85	6032	90.1	89.6	1.006
calibrator zero	6032	0.00	6032	0.0	0.2	n/a
					Average C.F.=	1.000

Linear Regression/Calibration Results:

		LIMITS
Correlation Coefficient =	**1.000**	**> or = 0.995**
Slope =	**0.999**	**0.95-1.05**
b (Intercept as % of full scale)=	**0.00%**	**± 3% F.S.**
% change in C.F. from last cal=	**-6.97%**	**± 10%**

API 100A Sulphur Dioxide Analyzer Calibration



	As found:		As left:
Slope:	1.073	Slope:	1.140
Offset:	46.7	Offset:	45.7
Hvps:	763	Hvps:	763
Dcps:	2558	Dcps:	2558
Rcell Temp:	49.9	Rcell Temp:	50
Box Temp:	31.9	Box Temp:	32.3
Pmt Temp:	7.1	Pmt Temp:	7.0
Izs Temp:	35.1	Izs Temp:	35.1
Pres:	25.2	Pres:	25.1
Samp Fl:	688	Samp Fl:	687
Pmt:	65.0	Pmt:	69.1
Uv Lamp:	2165	Uv Lamp:	2074
Lamp Ratio:	107.5	Lamp Ratio:	102.5
Str Lgt:	25.1	Str Lgt:	26.0
Drk Pmt:	25.1	Drk Pmt:	25.2
Drk Lmp:	-17.1	Drk Lmp:	-16.9
Expected Value:	305.1	Expected Value:	314.0

Comments:

The analyzer sample inlet filter was changed.

The manifold blower was found to be working normally.

SO2[ppb] Station: PRAMP_RENO Daily: 18/07/04 Type: AVG 1 Min. [1 Min.]

TOTAL REDUCED SULPHUR

Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration

Date:	July 4, 2018	**Barometer/B.P./units:**	Brunton 05535 expires December 15, 2018	27.99	inHg
Company/Airshed:	PRAMP	**Thermometer/Station Temp:**	F.S. 160348895 expires June 19, 2020	23.9	°C
Location/Station Name:	Reno	**Weather Conditions:**	Mainly sunny		
Parameter:	Total Reduced Sulphur	**Calibration Purpose:**	routine monthly		
Start Time 24 hr. (mst):	8:50	**Performed By/Reviewer:**	Limin Li	Rob Fisher	
End Time 24 hr. (mst):	12:47	**Cal Gas Expiry Date:**	August 23, 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:	June 13, 2018		**As Found C.F.:**	0.997	
Previous C.F.:	1.000		**New C.F.:**	1.000	

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 156151 expires October 2, 2018
High Flow Meter ID/Expiry Date:	Defender High 156312 expires December 13, 2018
Calibrator ID/Expiry Date:	API id# 627 expires January 31, 2019
Cal Gas Cylinder I.D. # :	LL119500
Cal Gas Conc. (ppm):	9.8

Standard Calibration Points for Ranges

Point	ppb
High	78
Mid	38
Low	19

SO2 Scrubber Check (10 minutes):

Start/End Time 24 hr.:	09:20/09:30
SO2 Analyzer Range:	500
Target Concentration (ppb):	380
As Found Zero:	0.0
Analyzer Response: (ppb):	0.0
Zero Corrected Result (ppb):	0.0

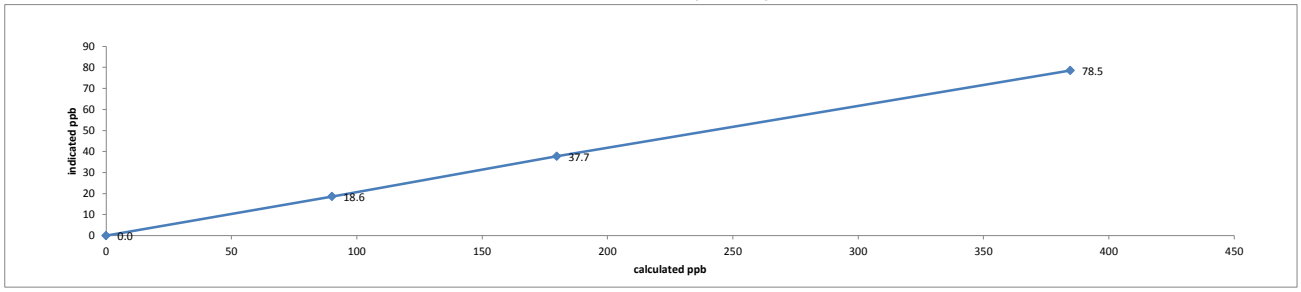
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration (ppb):	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	**Diluent**	**Cal Gas**	**Total**			
as found zero	7545	0.00	7545	0.0	0.0	n/a
as found high	7483	60.45	7543	78.5	78.8	0.997
adjusted zero	7545	0.00	7545	0.0	0.0	n/a
adjusted high	7483	60.45	7543	78.5	78.5	1.000
mid	7556	29.29	7585	37.8	37.7	1.004
low	7547	14.69	7562	19.0	18.6	1.024
calibrator zero	7562	0.00	7562	0.0	0.1	n/a
					Average C.F.=	1.009

Linear Regression/Calibration Results:

		LIMITS
Correlation Coefficient =	**1.000**	**> or = 0.995**
Slope =	**0.999**	**0.95-1.05**
b (Intercept as % of full scale)=	**0.20%**	**± 3% F.S.**
% change in C.F. from last cal=	**0.33%**	**± 10%**

Thermo 43I-TLE Total Reduced Sulphur Analyzer Calibration



As found:		As left:	
Bkg:	2.02	Bkg:	2.02
Coef:	0.945	Coef:	0.937
Pmt:	-706.7	Pmt:	-706.7
Flash:	986	Flash:	984
Internal:	32.9	Internal:	32.9
Chamber:	45.0	Chamber:	45.0
Perm Oven Gas:	35	Perm Oven Gas:	35
Perm Oven Heater:	34.15	Perm Oven Heater:	34.15
Pressure:	645.6	Pressure:	645.3
Sample Flow:	0.412	Sample Flow:	0.414
Lamp Intensity:	82	Lamp Intensity:	82
Converter:	825	Converter:	825
Converter Set:	825	Converter Set:	825
Averaging Time:	120	Averaging Time:	120
Expected Value:	47.1	Expected Value:	44.2

Comments:

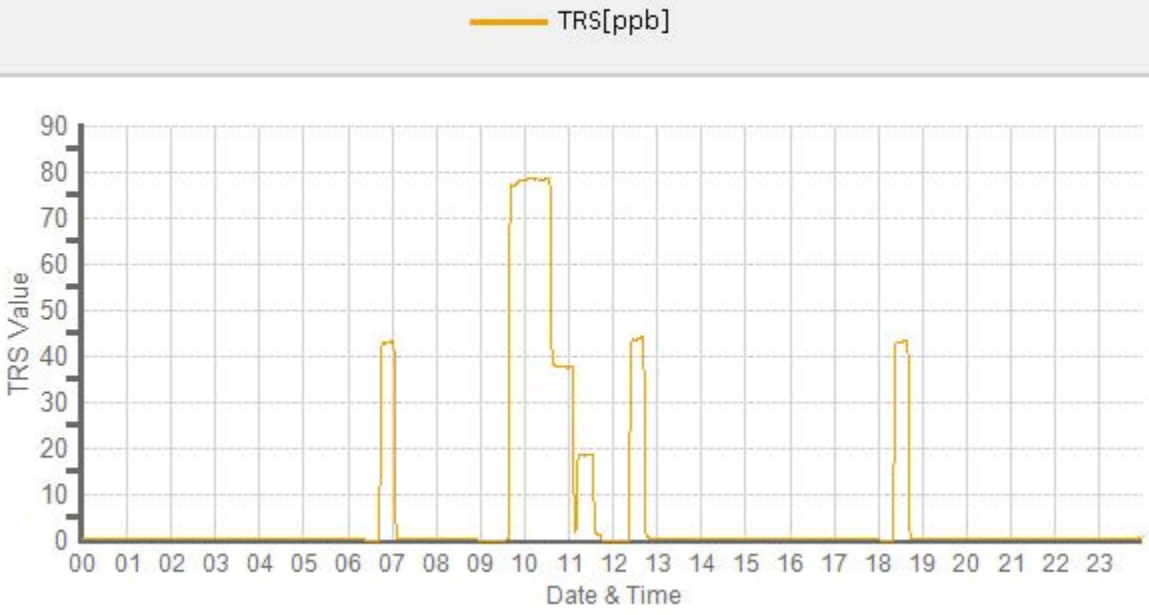
The analyzer sample inlet filter was changed.

The analyzer cooling fan filter(s) were cleaned.

The manifold blower was found to be working normally.

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

TRS[ppb] Station: PRAMP_RENO Daily: 18/07/04 Type: AVG 1 Min. [1 Min.]



TOTAL HYDROCARBON

Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	July 4, 2018	**Barometer/B.P./units:**	Brunton 05535 expires December 15, 2018	27.99	inHg
Company/Airshed:	PRAMP	**Thermometer/Station Temp:**	F.S. 160348895 expires June 19, 2020	23.9	°C
Location/Station Name:	RENO	**Weather Conditions:**	Mainly sunny		
Parameter:	CH4 / NMHC / THC	**Calibration Purpose:**	routine monthly		
Start/End Time 24 hr. (mst):	11:43/15:25	**Performed By/Reviewer:**	Limin Li	Rob Fisher	
Calibration Method:	Gas Dilution	**Cal Gas Expiry Date:**	October 18, 2025		

Analyzer:

Serial Number/Owner:	1314057759	Maxxam
Measured Flow:	1250 SCCM	
Last Calibration Date:	June 13, 2018	
Range ppm:	20 CH4/20 NMHC/40 THC	

Correction Factors:

	Previous C.F.:	As Found C.F.:	New C.F.:
CH_4 =	0.999	0.995	1.000
NMHC =	1.001	0.987	1.000
THC =	1.000	0.991	1.000

Calibration Standards:

Low Flow Meter ID/Expiry Date:	Defender Low 156151 expires October 2, 2018		
High Flow Meter ID/Expiry Date:	Defender High 156312 expires December 13, 2018		
Calibrator ID/Expiry Date:	Environics id# 1991 expires March 15, 2019		
Cal Gas Cylinder I.D. # :	LL168404		
CH4 Cylinder Conc.=	597.0	206.0	**=C_3H_8 Cylinder Conc.**
CH_4 expressed as C_3H_8=	566.5	1163.5	**=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	2523	0.00	2523	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
as found high	2463	60.64	2524	14.34	13.61	27.95	14.41	13.79	28.20	0.995	0.987	0.991
adjusted zero	2523	0.00	2523	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
adjusted high	2463	60.64	2524	14.34	13.61	27.95	14.34	13.61	27.95	1.000	1.000	1.000
mid	2479	30.11	2509	7.16	6.80	13.96	7.13	6.78	13.91	1.005	1.003	1.004
low	2494	15.06	2509	3.58	3.40	6.98	3.55	3.38	6.93	1.009	1.006	1.008
calibrator zero	2509	0.00	2509	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
									Average C.F.=	1.005	1.003	1.004

Linear Regression/Calibration Results:

	CH_4	NMHC	THC	LIMITS
Correlation Coefficient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**1.000**	**1.000**	**1.000**	**0.95-1.05**
b (Intercept as % of full scale)=	**-0.10%**	**-0.06%**	**-0.08%**	**± 3% F.S.**
% change in C.F. from last cal=	**0.36%**	**1.40%**	**0.87%**	**± 10%**

As Left Instrument Diagnostics:

Interface Board Voltages:	Bias Supply:	-289.9		Calibration History cnt'd:	NM Peak Area:	85231
Temperatures:	Detector Oven:	175		Crucial Settings:	Methane Start:	8
	Filter:	175			Methane End:	16
	Column Oven:	75			Backflush:	18
	Internal:	33.9			NMHV Start:	26
Cylinder Pressures/reg.:	Carrier:	2300	50		NMHC End:	56
	Fuel:	1200	50	Run History>1:	Date:	04Jul18
	Span Gas:	1100	22		Time:	11:24
	Zero Air Generator:	50			CH_4 PK HT:	2428
Internal Pressures:	Carrier:	31.3			CH_4 RT:	12.0
	Fuel:	41.6			CH_4 Baseline:	2160
	Air:	25.9			CH_4 LOD:	65
FID Status:	Status:	LIT			CH_4 SD:	21
	Counts:	25173			CH_4 CONC:	1.91
	Flame:	405			NM PK HT:	0
	Det Base:	175			NM Peak Area:	0
Flame and Power Stats:	Last Power On:	22JUn18 13:35			NM CONC:	0.00
	Flameouts:	1			NM Base Start:	2092
	Det Oven at Start:	36.3			NM Base End:	2089
	Col Oven at Start:	34.1			NM LOD:	10
Calibration History:	Time:	04Jul18 12:36			NM Start IDX:	32
	Type:	SPAN			NM End IDX:	51
	Status:	GOOD			NM Max Slope:	4.4e-01
	Check/Adjust:	ADJUST			NM Min Slope:	-7.0e-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	11.0
	CH_4 PK IDX:	20			Previous THC:	21.11
	CH_4 PK HT:	18402			New CH4:	10.08
	NM Span Conc:	13.61			New NMHC	11.00
	NM SP Ratio:	0.000160			New THC:	21.11

Comments:

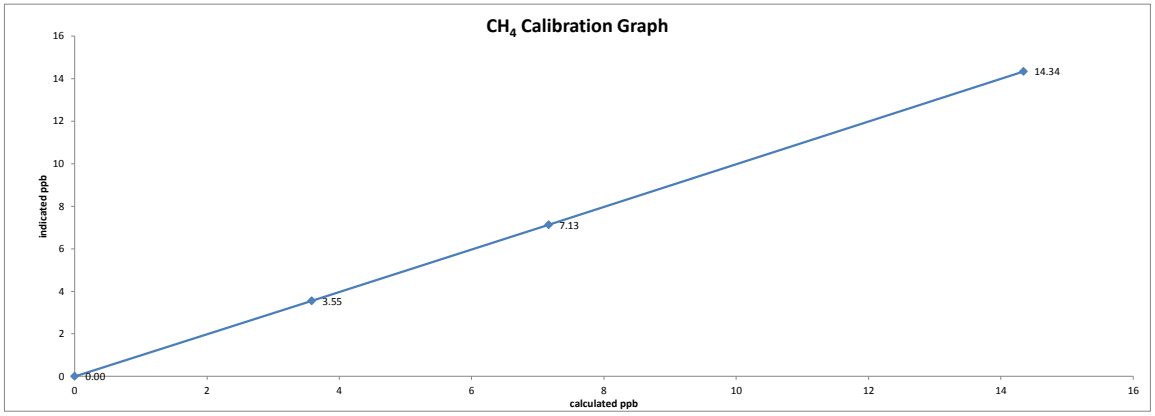
The analyzer sample inlet filter was changed.

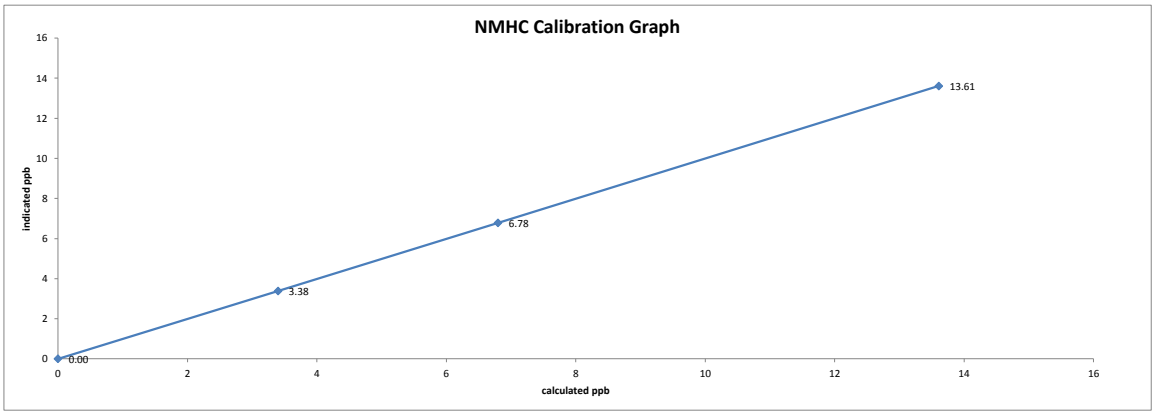
No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.

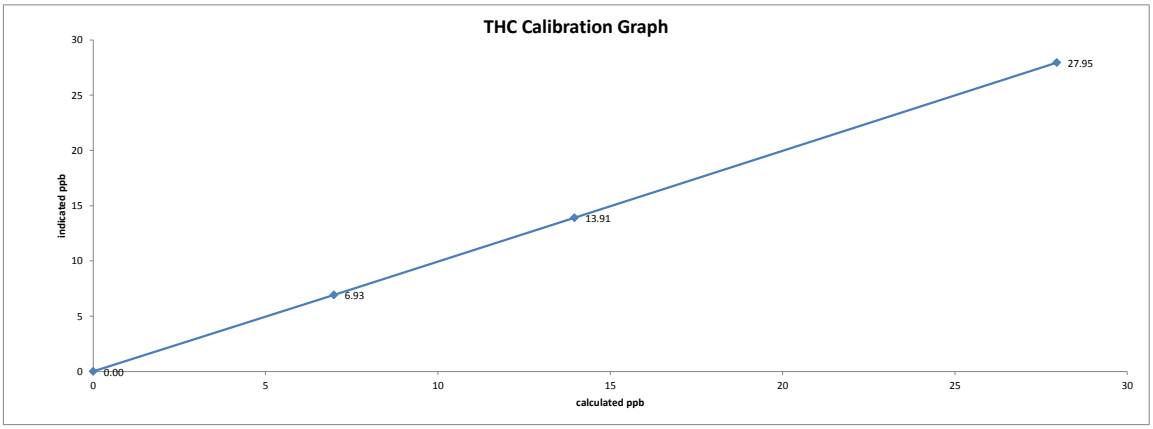
The analyzer cooling fan filter(s) were cleaned.

The manifold blower was found to be working normally.

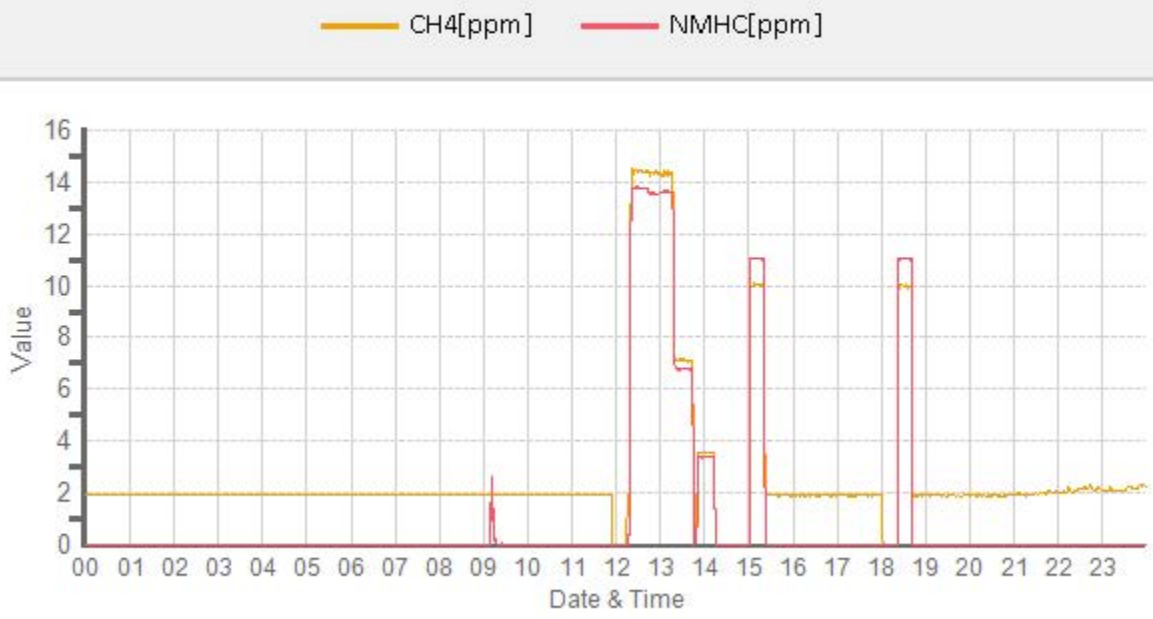
Date:	July 4, 2018	Start/End Time 24 hr. (mst):	11:43/15:25
Company/Airshed:	PRAMP	Calibration Purpose:	routine monthly
Location/Station Name:	RENO	Calibration Method:	Gas Dilution







Station: PRAMP_RENO Daily: 18/07/04 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:	July 4, 2018		
Technician:	Limin Li		
Reviewer:	Rob Fisher		
Station:	RENO		
Unit:	**Make:**	**Model:**	**Serial #:**
Temperature Sensor:	RM Young	43172VC	60837897
Barometric Pressure Sensor:	MetOne	92	R12877
Relative Humidity Sensor:	RM Young	43172VC	60837897
Anemometer:	RM Young	05305VK	149769
AMBIENT TEMPERATURE SENSOR CHECK			
Previous check date:	May 3, 2018		
Parameter:	Temperature @ 2 metres (1 C tolerance)		
Reference Thermometer ID:	F.S. 160348895 expires June 19, 2020		
Reference Temperature (^{o}C):	17.1		
Station - Ambient Temperature (^{o}C):	17.4		
Temperature Difference (^{o}C):	-0.4		
BAROMETRIC PRESSURE SENSOR CHECK			
Previous check date:	May 3, 2018		
Reference Barometer ID:	Brunton 05535 expires December 15, 2018		
Reference Pressure - Units/Reading:	mbar	947.9	
Station Pressure - Units/Reading:	mbar	948.9	
Pressure Tolerance +/- 15% of error:	806 - 1090	-0.11%	
RELATIVE HUMIDITY (HYGROMETER) SENSOR CHECK			
Previous check date:	May 3, 2018		
Reference Hygrometer ID:	F.S. id# 160348895 expires June 19, 2020		
Reference Hygrometer % RH- Reading:	70.34		
Station Hygrometer % RH- Reading:	64.20		
RH Tolerance +/- 15% of difference:	59.79 - 80.89	8.7%	
ANEMOMETER - WIND SPEED & WIND DIRECTION SENSOR CHECK			
WIND SPEED		WIND DIRECTION	
Previous check date:	May 3, 2018	Previous check date:	May 3, 2018
Wind Speed Observed (kph):	5	Wind Direction Observed:	NW
Wind speed on Data Logger (kph):	5	Wind Direction on Data Logger:	NW
Correction Factor: Tolerance +/-2%:	1.000	Wind Direction Pass/Fail?:	Pass

CALIBRATORS

Alberta Government

Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2018-521A

Company: Maxxam **Operator:** Christopher

Calibrator:				**Flow Measurement Device:**	
Make/Model	API 700			Make/Model	Mesa 530+
Serial Number	627			Serial Number	H-156312 L-156151
Last Verification Date	January 2017			Temperature (°C)	N/A
NO Cylinder S/N	EY0000715			Barometric Pressure	N/A
NO [PPM]	50.7	NOx [PPM]	50.8		
Expiry Date	May 2020				

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%	
4972	77.0	0.785	0.787	0.782	-0.001	0.781	0%	-1%
4979	37.4	0.381	0.382	0.377	0.000	0.377	-1%	-1%
4970	18.7	0.191	0.191	0.188	0.000		-2%	-100%
				Absolute Average Percent Difference			1%	34%

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)=	0.9969	**0.90-1.10**	m (Slope)=	0.9924
b (Intercept % of FS)=	-0.1435	**± 3% F.S.**	b (Intercept % of FS)=	-0.0716

Flow	O_3 Conc	NO Decrease	NO	NO2	NOX	% Diff. Vs Audit gas	
4972	0.000	0.000	0.778	-0.001	0.777	NO_2	% Diff. Limit
4972	0.500	0.492	0.286	0.488	0.774	-1%	± 10%
4972	0.280	0.278	0.500	0.276	0.776	0%	± 10%
4972	0.095	0.092	0.686	0.091	0.777	0%	± 10%
			Absolute Average Percent Difference			0%	± 10%

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

NO_2		**LIMITS**
Correlation=	1.0000	**≥ 0.995**
m (Slope)=	0.9937	**0.90-1.10**
b (Intercept % of FS)=	-0.0647	**± 3% F.S.**

AENV Standards		**NO_X Analyzer**	
Audit Calibrator		Make/Model	Teco 42i
Make/Model	Teco 146i	Serial/AMU Number	AMU 1868
Serial/AMU Number	AMU 1809	Last Calibration Date	January 31, 2018
SRM Gas Cylinder No.	APEX1170572	Full Scale (ppm)	1.0
Cylinder Conc. (ppm)	49.99	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

Oxides Of Nitrogen

File No. 2018-560A

Company: Maxxam **Operator:** Chris W

Calibrator:				**Flow Measurement Device:**	
Make/Model	Environics 2000			Make/Model	Mesa Defender 530
Serial Number	1991			Serial Number	L-153351 H-152571
Last Verification Date	March 2017			Temperature (°C)	25.0 C
NO Cylinder S/N	LL108015			Barometric Pressure	695 mmHg
NO [PPM]	52.2	NOx [PPM]	52.3		
Expiry Date	Oct 2020				

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%	
4988	75.1	0.786	0.787	0.785	-0.002	0.783	0%	-1%
4988	36.5	0.382	0.383	0.382	0.001	0.383	0%	0%
4988	18.3	0.192	0.192	0.190	0.000	0.190	-1%	-1%
						Absolute Average Percent Difference	0%	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)=	0.9996	**0.90-1.10**	m (Slope)=	0.9956
b (Intercept % of FS)=	-0.0599	**± 3% F.S.**	b (Intercept % of FS)=	-0.0005

Flow	O_3 Conc	NO Decrease	NO	NO2	NOX	% Diff. Vs Audit gas	
4988	0.000	0.000	0.788	-0.001	0.787	NO_2	% Diff. Limit
4988	0.350	0.519	0.269	0.512	0.780	-1%	± 10%
4988	0.160	0.231	0.557	0.229	0.786	0%	± 10%
4988	0.070	0.099	0.689	0.097	0.787	-1%	± 10%
					Absolute Average Percent Difference	1%	± 10%

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

NO_2		**LIMITS**
Correlation=	1.0000	**≥ 0.995**
m (Slope)=	0.9885	**0.90-1.10**
b (Intercept % of FS)=	-0.0567	**± 3% F.S.**

AENV Standards **Audit Calibrator**		**NO_X Analyzer**	
Make/Model	Teco 146i	Make/Model	Teco 42i
Serial/AMU Number	AMU 1809	Serial/AMU Number	AMU 1868
SRM Gas Cylinder No.	APEX1170572	Last Calibration Date	March 14, 2018
Cylinder Conc. (ppm)	49.99	Full Scale (ppm)	1.0
		Cylinder Gas Expiry Date	November 2020

COMMENTS: Cylinder contains 47.9 ppm SO2.

Auditor: Al Clark Date: March 15, 2018

Operator Signature: Location: McIntyre Center Edmonton

CALIBRATION GASES

aemera.org

Calibration Gas Audit

Single Component Cylinder Gas

File No. 2015-111CGA

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

Cylinder #: LL119329 Concentration PPM: 50.1 Tolerance(%) 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: Thermo146i
Serial Number: 1809
Last Verification Date: February 2, 2016
Gas Type: SO2 Conc. 98.07
Cylinder Number: CAL016625

Flow Measurement Device:

Make/Model: Bios DC-2
Serial Number: Bios D
Temp.°C: 24.5
B.P. 702mmHg

Reference Analyzer:

Make/Model: Thermo 43C Serial/AMU Number: 1623
Instrument Settings: Zero: 8.7 Span: 1.027 Range: 1.0
Last Calibration: Date: 1-Feb-16 C.F. 1.000 Done By: SB

Calibrator Flows (sccm)		Indicated	Gas Flow/	Concentration	Cylinder
Dilution	Gas	Concentration (PPM)	Dilution Flow	Factor	Concentration
4960	0.0	0.000			
4959	79.09	0.791	0.01595	62.701	49.6
4950	39.44	0.394	0.00797	125.507	49.4
4942	19.44	0.194	0.00393	254.218	49.3
				Average Cylinder Concentration:	**49.5**

Previous Stated Concentration PPM: 50.1

Percent variance from Stated: **1.3**

Meets Manufacturer Tolerance. Use manufacturers stated concentration [X] **COMMENTS:** SO2/NO blend 50.3ppm NO

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

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

Auditor: Shea Beaton Date: February 2, 2016

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

Single Component Cylinder Gas

File No. 2017-213CGA

Company: Maxxam **Operator's Name:** C. Wesson

Cylinder #: LL119500 Concentration PPM: 9.8 Tolerance(%) 2 Certified By: Praxair

Expiry Date: August 2020

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: September 22, 2017
Gas Type: H2S Conc. 20.43
Cylinder Number: CAL015272
Expiry Date: January 2019

Flow Measurement Device:

Make/Model: Mesa Definer 220
Serial Number: H-133034 L-132702
Temp.°C: 23.5 C
B.P. 705 mmhg

Reference Analyzer:

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

Instrument Settings: Zero: 22.4 Span: 1.091 Range: 0.1

Last Calibration: Date: Sep 22/17 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	0.0000			
5114	39.5	0.0734	0.00772	129.468	9.5
5096	18.5	0.0345	0.00363	275.459	9.5
5089	9.5	0.0178	0.00187	535.684	9.5
				Average Cylinder Concentration:	**9.5**

Previous Stated Concentration PPM: 9.8

Percent variance from Stated: **3**

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

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

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

Auditor: Al Clark Date: September 22, 2017

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

CH4 / C3H8 Cylinder Gas

File No. 2017-488CGA

Company: Maxxam **Operators name:** Mike

Cylinder #: LL168404 Conc CH4 (PPM) 597/206 Tolerance (%) 2 Certified By: Praxair

Expiry Date: October 2025

Reference Calibrator and Gas:

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

Flow Measurement Device:

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

Reference Analyzer:

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

Calibrator Flows (sccm)		Indicated Conc. (ppm)		Gas Flow/	Concentration	Cylinder Concentration	
Dilution	Gas	CH4	C3H8	Dilution Flow	Factor	CH4	C3H8
3500	0.0	0.00	0.00				
3618	80.4	13.22	12.69	0.02	45.00	595	208
3547	39.8	6.64	6.42	0.01	89.12	592	208
3560	19.8	3.33	3.23	0.01	179.80	599	211
					Average Cylinder Concentration:	**595**	**209**

	CH4	C3H8
Previous Stated Concentration PPM:	597	206
Percent variance from Stated:	**0**	**1**

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

STATUS FLAG CODES

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

MONTHLY SUMMARY

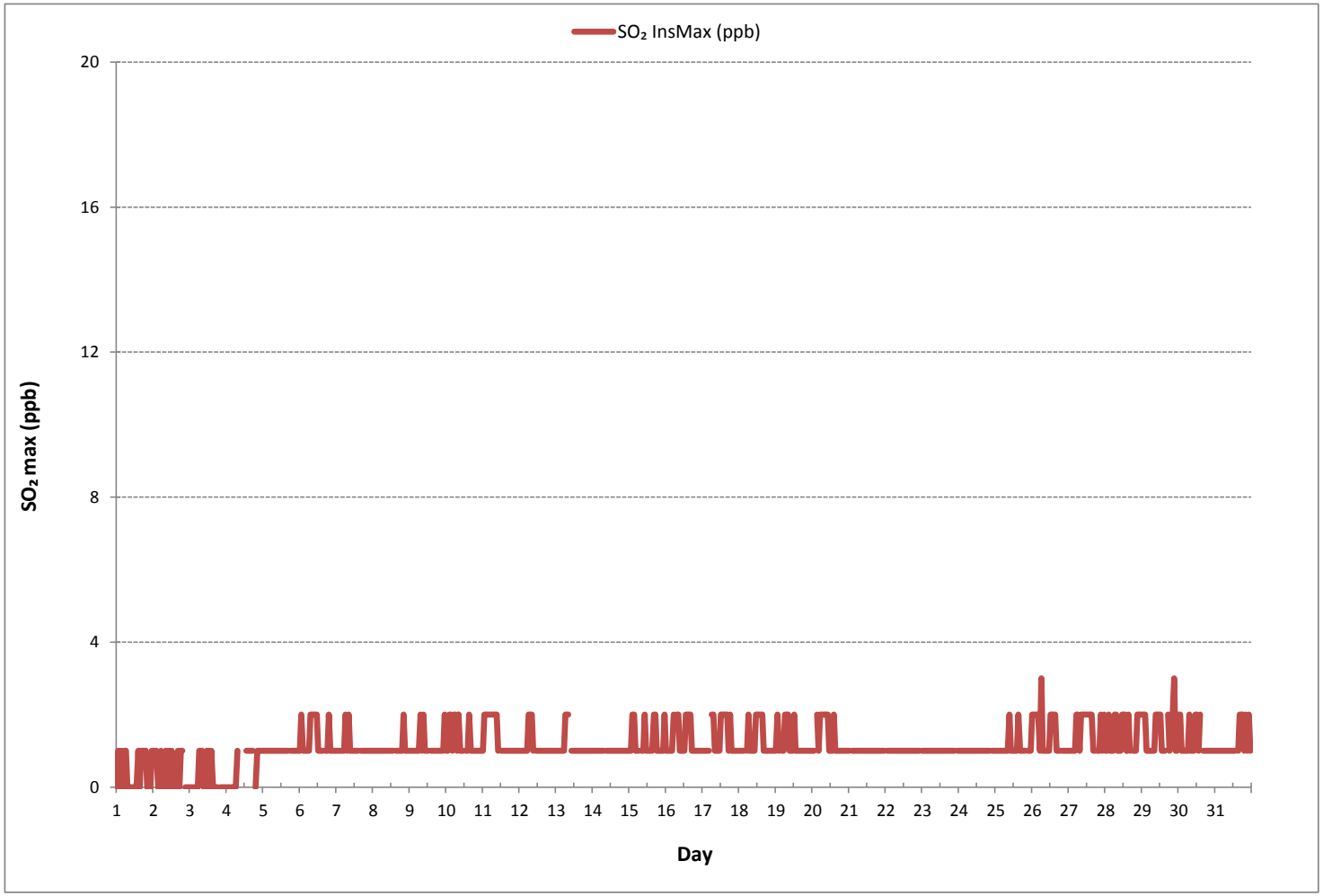
NUMBER OF NON-ZERO READINGS: 656

MAXIMUM INSTANTANEOUS VALUE: 3 ppb @ HOUR 6 ON DAY 26

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

OPERATIONAL TIME: 744 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	0.55	0.53	0.56	0.63	0.65	0.71	0.65	0.55	0.55	0.50	0.50	0.50	0.48	0.48	0.50	0.48	0.45	0.45	0.48	0.48	0.50	S	0.58	0.63	0.45	0.71	0.54	24
2	1.23	1.18	0.84	0.48	0.48	0.50	0.48	0.48	0.45	0.48	0.45	0.48	0.48	0.45	0.45	0.42	0.47	0.50	0.48	0.45	S	0.45	0.45	0.45	0.42	1.23	0.55	24
3	0.45	0.42	0.42	0.48	0.47	0.48	0.48	0.45	0.48	0.45	0.45	0.45	0.45	0.42	0.42	0.45	0.48	0.45	0.42	S	0.45	0.48	S1	S1	0.42	0.48	0.45	22
4	0.55	0.50	0.53	0.53	0.55	0.55	S1	S1	C	C	C	C	C	0.55	0.48	0.45	0.45	0.42	S	0.45	0.50	0.50	0.58	0.71	0.42	0.71	0.52	22
5	1.05	0.86	0.61	0.55	0.73	1.44	0.73	0.86	0.84	0.58	0.48	0.56	0.48	0.42	0.45	0.45	0.48	S	0.48	0.55	0.61	0.61	0.81	0.76	0.42	1.44	0.67	24
6	0.61	0.53	0.53	1.05	1.05	1.30	1.52	1.60	0.86	0.45	0.50	0.45	0.45	0.45	0.45	0.45	S	0.45	0.45	0.45	0.45	0.45	0.53	0.61	0.45	1.60	0.68	24
7	0.66	0.58	0.53	0.55	0.53	0.50	0.45	0.55	0.51	0.58	0.53	0.58	0.48	0.50	0.45	S	0.48	0.42	0.40	0.42	0.45	0.53	0.58	0.53	0.40	0.66	0.51	24
8	0.58	0.48	0.55	0.58	0.53	0.53	0.48	0.45	0.48	0.50	0.53	0.45	0.45	0.42	S	0.37	0.40	0.40	0.42	0.48	0.55	0.69	0.61	0.48	0.37	0.69	0.50	24
9	0.53	0.50	0.45	0.58	0.61	0.53	0.48	0.45	0.48	0.45	0.48	0.42	0.45	S	0.45	0.43	0.43	0.45	0.45	0.58	0.66	0.64	0.61	0.66	0.42	0.66	0.51	24
10	0.66	0.63	0.86	1.10	0.86	3.94	2.62	0.81	0.50	0.48	0.45	0.48	S	0.43	0.42	0.43	0.42	0.45	0.42	0.43	0.43	0.63	0.58	0.61	0.42	3.94	0.81	24
11	0.58	0.61	0.58	0.63	0.58	0.53	0.53	0.50	0.50	0.45	0.53	S	0.48	0.45	0.40	0.45	0.45	0.48	0.45	0.45	0.50	0.53	0.53	0.55	0.40	0.63	0.51	24
12	0.58	0.58	0.58	0.56	0.56	0.71	0.71	0.55	0.50	0.48	S	0.48	0.45	0.48	0.45	0.45	0.43	0.42	0.42	0.45	0.53	0.63	0.71	0.84	0.42	0.84	0.55	24
13	1.47	0.58	0.61	0.56	0.63	0.63	0.63	0.73	0.55	S	0.58	0.50	0.45	0.48	0.45	0.48	0.45	0.48	0.45	0.48	0.48	0.48	0.91	1.08	0.45	1.47	0.61	24
14	1.15	0.94	1.05	1.10	1.12	0.76	0.76	0.61	S	0.53	0.45	0.45	0.45	0.45	0.45	0.42	0.45	0.45	0.45	0.45	0.48	0.50	0.68	0.66	0.42	1.15	0.64	24
15	0.71	0.84	0.84	1.57	4.37	5.56	5.43	S	0.53	0.50	0.48	0.48	0.45	0.45	0.48	0.48	0.48	0.48	0.47	0.50	0.58	0.58	0.78	0.70	0.45	5.56	1.21	24
16	0.63	0.73	0.68	0.56	0.66	0.58	S	0.61	0.53	0.48	0.45	0.45	0.45	0.48	0.50	0.47	0.45	0.47	0.50	0.50	0.50	0.55	0.50	0.58	0.45	0.73	0.54	24
17	0.61	0.58	0.66	0.71	0.61	S	0.94	0.84	0.69	0.69	0.53	0.53	0.58	0.53	0.52	0.47	0.47	0.47	0.52	0.58	0.58	0.68	0.73	1.68	0.47	1.68	0.66	24
18	3.20	3.44	1.05	1.00	S	0.66	0.68	0.63	2.74	0.71	0.55	0.55	0.50	0.48	0.52	0.52	0.50	0.48	0.48	0.58	0.63	0.97	0.61	0.64	0.48	3.44	0.96	24
19	0.71	1.05	0.71	S	0.94	0.75	0.63	0.61	0.61	0.55	0.53	0.50	0.50	0.50	0.53	0.48	0.50	0.48	0.53	0.58	0.50	0.55	0.66	0.76	0.48	1.05	0.62	24
20	0.94	0.86	S	0.66	0.86	1.05	0.78	0.73	0.76	0.69	0.61	0.56	0.61	0.78	1.73	0.68	1.36	1.39	0.68	3.13	0.58	0.61	0.55	0.63	0.55	3.13	0.92	24
21	0.61	S	0.86	1.10	0.58	0.55	0.94	0.81	0.78	0.61	0.45	0.48	0.48	0.50	0.53	0.58	0.50	0.50	0.55	0.55	0.48	0.50	0.53	0.71	0.45	1.10	0.62	24
22	S	0.97	0.94	0.76	1.10	0.51	0.53	0.56	0.55	0.48	0.48	0.48	0.50	0.53	0.48	0.50	0.48	0.50	0.50	0.58	0.58	0.61	0.61	S	0.48	1.10	0.60	24
23	0.63	0.63	0.61	0.66	0.71	0.68	0.63	0.58	0.55	0.50	0.45	0.45	0.45	0.43	0.43	0.48	0.45	0.45	0.53	0.55	0.63	0.61	S	1.52	0.43	1.52	0.59	24
24	1.44	0.94	1.72	1.47	1.76	1.44	1.73	0.55	0.58	0.50	0.45	0.51	0.50	0.48	0.45	0.48	0.45	0.48	0.48	0.50	0.50	S	0.66	0.78	0.45	1.76	0.82	24
25	0.89	1.28	0.99	0.71	1.76	3.23	2.41	2.09	2.62	1.30	0.78	0.55	0.48	0.48	0.45	0.48	0.45	0.48	0.53	0.48	S	0.61	0.84	0.76	0.45	3.23	1.07	24
26	0.91	0.91	0.89	0.97	0.97	0.86	1.15	1.86	1.17	0.66	0.50	0.50	0.53	0.50	0.50	0.53	0.50	0.48	0.63	S	0.71	0.84	0.81	0.78	0.48	1.86	0.79	24
27	0.92	0.89	1.31	1.39	1.05	0.89	0.71	0.71	0.61	0.55	0.55	0.56	0.56	0.55	0.45	0.45	0.48	0.50	S	0.58	0.71	0.78	1.05	1.07	0.45	1.39	0.75	24
28	1.07	1.39	1.26	1.15	1.47	1.23	1.15	0.78	0.71	0.58	0.61	0.58	0.58	0.58	0.58	0.55	0.55	S	0.63	0.68	0.97	1.10	0.94	1.10	0.55	1.47	0.88	24
29	1.00	1.10	1.08	1.15	0.76	1.78	0.89	0.71	0.73	0.66	0.66	0.71	0.69	0.66	0.63	0.66	S	0.61	0.73	0.94	1.30	1.18	0.97	1.60	0.61	1.78	0.92	24
30	1.31	2.19	1.07	0.84	0.84	0.94	1.93	0.78	0.97	0.81	0.76	0.61	0.66	0.61	0.58	S	0.61	0.58	0.63	0.73	0.84	0.78	1.44	0.97	0.58	2.19	0.93	24
31	1.30	0.86	1.42	0.92	0.73	0.97	0.91	1.15	1.10	1.21	1.20	0.66	0.71	0.63	S	0.53	0.53	0.55	0.55	0.66	0.66	0.66	1.02	1.86	0.53	1.86	0.90	24
HOURLY MAX	3.20	3.44	1.72	1.57	4.37	5.56	5.43	2.09	2.74	1.30	1.20	0.71	0.71	0.78	1.73	0.68	1.36	1.39	0.73	3.13	1.30	1.18	1.44	1.86				
HOURLY AVG	0.92	0.92	0.83	0.83	0.95	1.16	1.10	0.78	0.79	0.60	0.55	0.52	0.51	0.51	0.52	0.49	0.50	0.51	0.51	0.63	0.60	0.65	0.72	0.85				

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

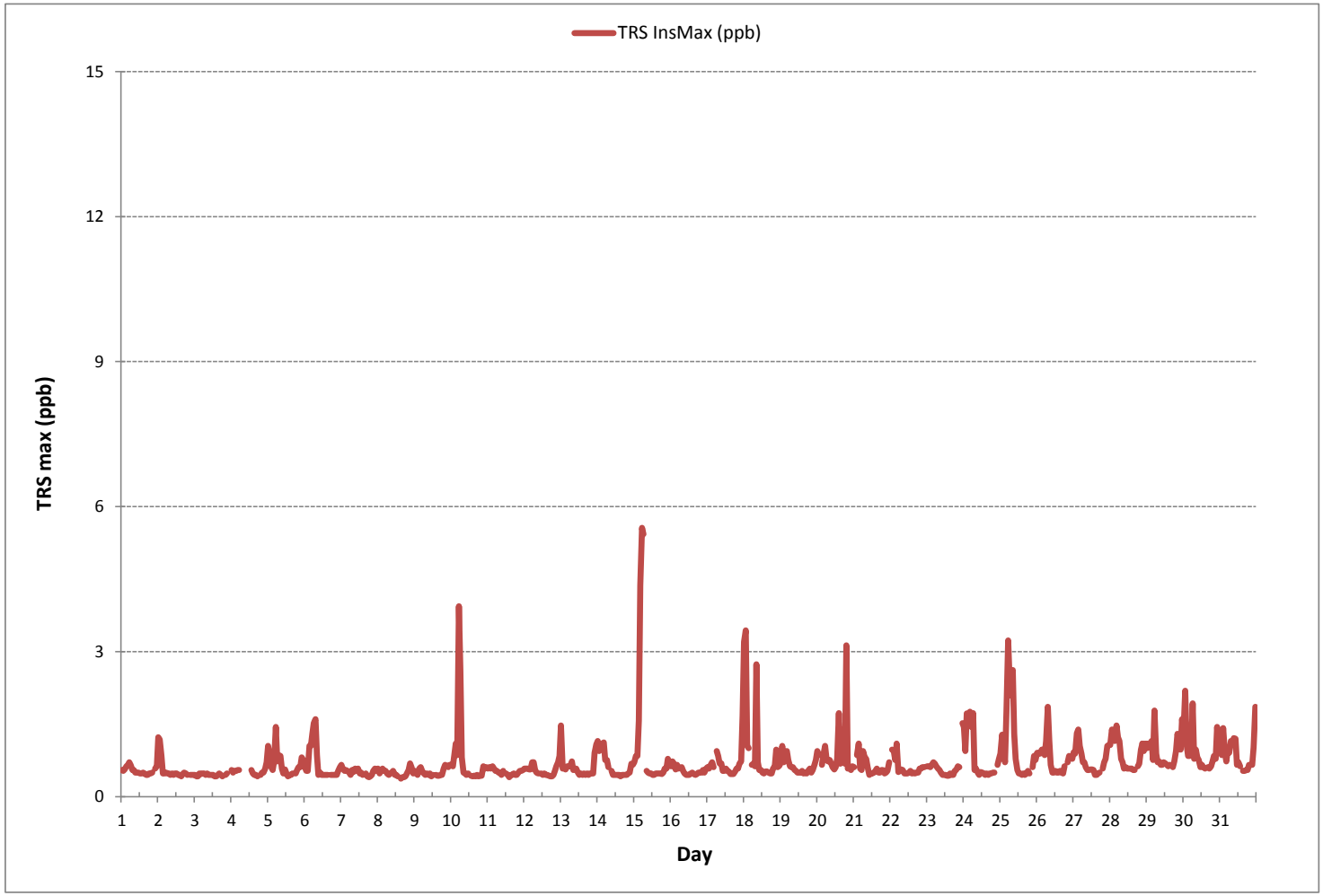
NUMBER OF NON-ZERO READINGS: 703

MAXIMUM INSTANTANEOUS VALUE: 5.56 ppb @ HOUR 5 ON DAY 15

IZS CALIBRATION TIME: 32 hrs
MONTHLY CALIBRATION TIME: 5 hrs
STANDARD DEVIATION: 0.49

OPERATIONAL TIME: 740 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	1.94	1.94	1.95	1.96	1.97	1.97	1.97	1.96	1.96	1.95	1.96	1.95	1.95	1.94	1.94	1.94	1.95	1.95	1.95	1.94	1.95	S	1.95	1.96	1.94	1.97	1.95	24
2	1.97	1.98	1.97	X	X	X	X	X	X	S1	1.94	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.96	S	1.96	1.96	1.95	1.94	1.98	1.96	17
3	1.96	1.97	1.96	1.96	1.97	1.97	1.97	1.97	1.97	1.96	1.97	1.97	1.97	1.96	1.96	1.95	1.96	1.96	1.96	S	1.96	1.96	1.96	1.95	1.95	1.97	1.96	24
4	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.97	1.97	Y	1.96	C	C	C	C	C	1.93	1.93	S	1.93	1.97	2.12	2.34	2.34	1.93	2.34	2.01	23
5	2.38	2.35	2.22	2.19	2.08	2.11	2.06	2.02	1.98	1.98	1.97	2.02	2.00	1.98	1.97	1.97	2.02	S	2.07	2.15	2.27	2.25	2.38	2.16	1.97	2.38	2.11	24
6	2.10	2.33	2.49	2.50	2.31	2.31	2.41	2.23	2.07	1.96	1.97	1.94	1.94	1.93	1.92	1.92	S	1.90	1.89	1.90	1.90	1.89	1.91	1.90	1.89	2.50	2.07	24
7	1.90	1.91	1.91	1.96	1.91	1.91	1.91	1.91	1.91	1.93	1.93	1.93	1.92	1.93	1.92	S	1.93	1.93	1.93	1.93	1.94	1.94	1.94	1.95	1.90	1.96	1.93	24
8	1.96	1.96	2.21	2.07	1.99	2.11	2.07	1.96	1.96	1.95	1.95	1.94	1.93	1.94	S	1.94	1.93	1.93	1.92	1.92	2.10	2.29	2.20	2.00	1.92	2.29	2.01	24
9	1.93	1.94	1.97	2.23	2.19	2.42	2.06	1.94	1.94	1.93	1.92	1.92	1.92	S	1.91	1.91	1.91	1.91	1.91	2.02	2.51	2.43	3.08	2.48	1.91	3.08	2.10	24
10	2.52	3.08	3.10	3.90	3.00	3.01	2.89	2.12	1.97	1.99	1.95	1.93	S	1.93	1.93	1.93	1.91	1.91	1.92	1.93	1.93	2.38	2.36	1.96	1.91	3.90	2.33	24
11	1.94	1.93	1.94	1.95	1.93	1.93	1.92	1.92	1.92	1.92	1.91	S	1.91	1.91	1.90	1.90	1.91	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.90	1.95	1.92	24
12	1.94	1.93	1.94	1.93	1.93	1.93	1.93	1.94	1.93	1.93	S	1.92	1.91	1.91	1.91	1.92	1.92	1.92	1.92	1.93	2.02	1.96	1.97	2.22	1.91	2.22	1.95	24
13	2.03	2.00	1.97	1.97	1.97	1.98	1.98	1.97	1.96	S	1.93	1.92	1.91	1.91	1.91	1.92	1.92	1.92	1.92	1.93	1.93	1.93	1.94	1.95	1.91	2.03	1.95	24
14	1.94	1.94	1.94	1.93	1.93	1.93	1.93	1.94	S	1.93	1.94	1.93	1.93	1.93	1.93	1.92	1.92	1.93	1.93	1.92	1.94	1.96	1.98	2.12	1.92	2.12	1.94	24
15	2.21	2.25	2.38	2.33	2.63	2.30	2.25	S	2.09	2.00	1.98	1.99	1.93	1.94	1.94	1.93	1.94	1.94	1.98	1.98	1.99	2.30	2.46	2.32	1.93	2.63	2.13	24
16	2.35	2.76	2.19	2.02	2.01	1.98	S	1.97	1.95	1.93	1.91	1.91	1.91	1.91	1.91	1.91	1.93	1.94	1.94	1.95	1.95	1.95	1.93	1.94	1.91	2.76	2.01	24
17	1.96	1.95	1.95	1.96	1.96	S	1.96	1.96	1.94	1.95	1.93	1.92	1.92	1.91	1.92	1.92	1.92	1.92	1.94	1.94	2.19	2.35	2.46	2.53	1.91	2.53	2.02	24
18	2.34	2.46	2.37	1.95	S	1.91	2.02	1.93	1.96	1.97	1.91	1.91	1.89	1.89	Y	1.89	1.89	1.88	1.89	1.89	1.91	1.93	1.90	1.90	1.88	2.46	1.98	23
19	1.91	1.90	1.91	S	1.92	1.92	1.93	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.93	1.92	1.90	1.93	1.92	24
20	1.93	1.94	S	1.96	2.00	1.94	1.96	1.96	1.97	1.98	1.98	1.97	1.97	1.97	1.97	1.94	1.95	1.95	2.02	1.98	1.94	1.94	1.94	1.97	1.93	2.02	1.96	24
21	1.97	S	1.97	1.95	1.95	1.95	1.95	1.94	1.94	1.93	1.93	1.92	1.93	1.93	1.94	1.93	1.93	1.93	1.94	1.93	1.93	1.93	1.95	1.96	1.92	1.97	1.94	24
22	S	1.98	1.97	1.96	1.96	1.95	1.95	1.94	1.95	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.94	1.93	1.93	1.93	1.94	1.94	1.95	S	1.93	1.98	1.94	24
23	1.95	1.95	1.95	1.96	1.97	1.97	1.96	1.96	1.95	1.94	1.94	1.94	1.94	1.93	1.93	1.93	1.94	1.94	1.94	1.94	1.96	2.01	S	2.10	1.93	2.10	1.96	24
24	2.13	2.97	2.35	2.10	2.12	2.17	2.09	1.96	1.95	1.94	1.94	1.94	1.95	1.94	1.94	1.93	1.94	1.93	1.93	1.95	1.94	S	2.37	2.58	1.93	2.97	2.09	24
25	2.38	2.29	2.36	2.29	2.51	2.55	2.41	2.24	2.12	2.06	2.05	1.98	1.99	1.99	2.00	1.99	1.97	1.96	1.95	1.96	S	2.09	2.91	3.59	1.95	3.59	2.25	24
26	3.53	3.55	2.86	2.89	3.29	2.93	3.30	2.56	2.16	2.04	2.02	1.98	1.98	1.96	1.95	1.95	1.94	1.94	1.95	S	2.29	2.48	2.41	2.36	1.94	3.55	2.45	24
27	2.48	2.45	2.59	2.59	2.62	2.45	2.58	2.20	2.13	2.04	2.00	2.00	1.99	1.96	1.95	1.93	1.94	1.95	S	1.95	2.02	2.34	2.36	2.80	1.93	2.80	2.23	24
28	2.67	2.75	2.99	2.66	2.53	2.57	2.60	**5.35**	2.12	1.97	1.96	1.96	1.95	1.97	1.97	1.98	2.01	S	2.00	2.07	2.41	2.51	2.53	2.86	1.95	**5.35**	2.45	24
29	2.60	2.66	2.68	2.55	2.29	2.33	2.01	1.96	1.96	1.95	1.94	1.97	2.02	1.96	1.95	1.92	S	1.92	1.94	2.02	2.01	2.41	2.51	2.42	1.92	2.68	2.17	24
30	2.73	2.73	1.94	1.95	1.93	2.11	2.00	2.02	1.97	1.97	1.92	1.91	1.91	1.91	1.91	S	1.91	1.91	1.92	1.92	1.94	1.98	1.98	1.98	1.91	2.73	2.02	24
31	2.03	2.02	2.03	1.99	2.07	2.11	2.09	2.09	2.03	2.02	1.99	1.97	1.95	1.97	S	2.03	2.01	2.00	1.99	2.02	1.95	1.97	2.05	2.09	1.95	2.11	2.02	24
HOURLY MAX	3.53	3.55	3.10	3.90	3.29	3.01	3.30	5.35	2.16	2.06	2.05	2.02	2.02	1.99	2.00	2.03	2.02	2.00	2.07	2.15	2.51	2.51	3.08	3.59				
HOURLY AVG	2.19	2.26	2.20	2.19	2.17	2.16	2.14	2.13	1.99	1.96	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.93	1.94	1.96	2.02	2.10	2.18	2.21				

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

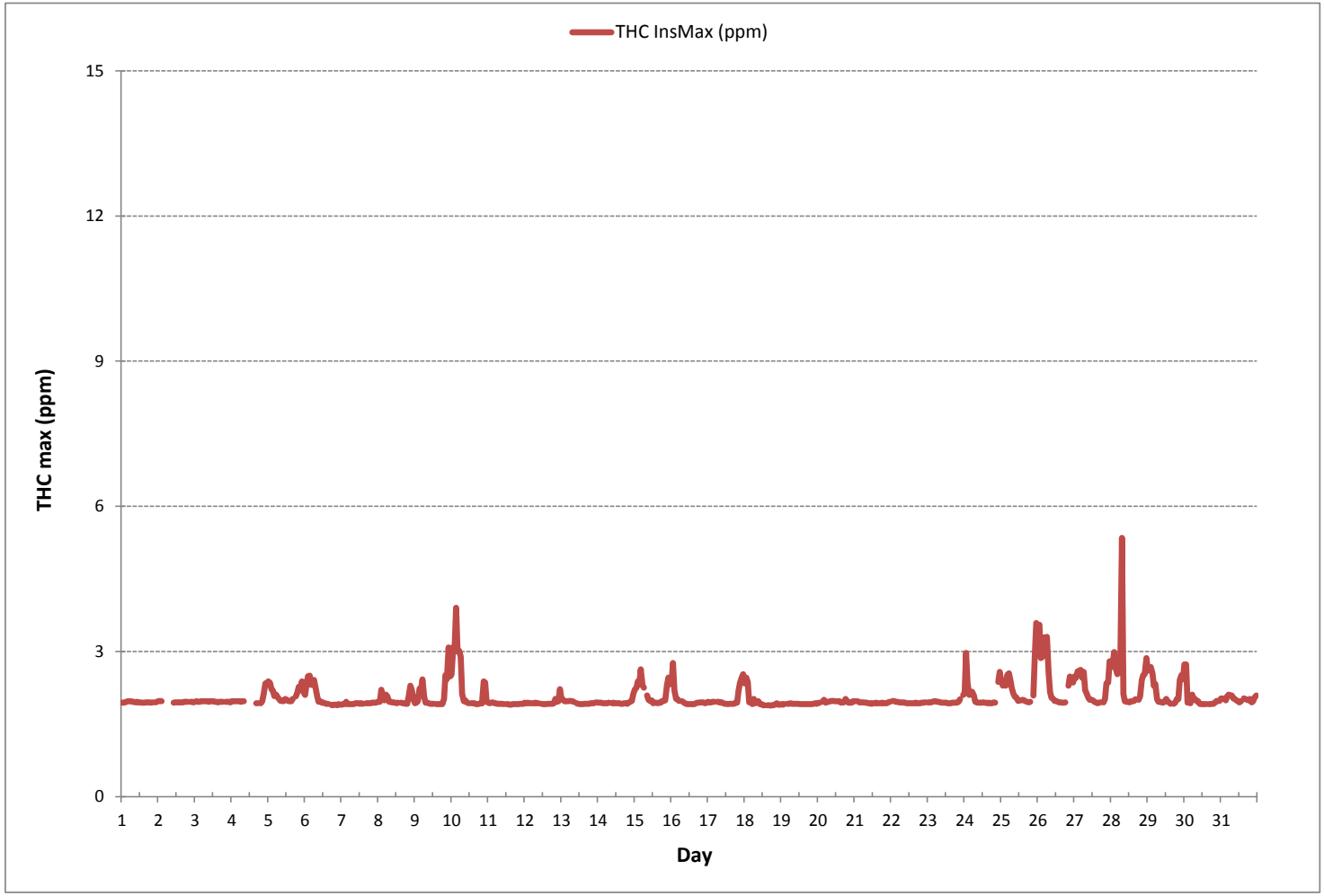
NUMBER OF NON-ZERO READINGS: 698

MAXIMUM INSTANTANEOUS VALUE: 5.35 ppm @ HOUR 7 ON DAY 28

IZS CALIBRATION TIME: 32 hrs
MONTHLY CALIBRATION TIME: 5 hrs
STANDARD DEVIATION: 0.29

OPERATIONAL TIME: 735 hrs

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)



Maxxam
A Bureau Veritas Group Company

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - July 2018

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	1.93	1.93	1.95	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.94	1.94	1.93	1.93	1.94	1.94	1.94	1.95	1.94	1.94	S	1.94	1.95	1.93	1.96	1.94	24
2	1.97	1.97	1.97	X	X	X	X	X	X	S1	1.94	1.94	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	S	1.95	1.95	1.95	1.94	1.97	1.95	17
3	1.95	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.95	S	1.95	1.95	1.95	1.95	1.95	1.96	1.96	24
4	1.96	1.96	1.96	1.96	1.96	1.97	1.96	1.96	1.96	Y	1.96	C	C	C	C	C	1.91	1.92	S	1.91	1.97	2.11	2.34	2.33	1.91	2.34	2.01	23
5	2.37	2.35	2.22	2.18	2.07	2.10	2.05	2.01	1.98	1.98	1.96	2.00	2.00	1.97	1.96	1.96	2.02	S	2.06	2.14	2.26	2.23	2.37	2.15	1.96	2.37	2.10	24
6	2.09	2.32	2.48	2.48	2.30	2.30	2.41	2.23	2.06	1.96	1.97	1.93	1.93	1.92	1.91	1.90	S	1.88	1.88	1.89	1.89	1.88	1.90	1.89	1.88	2.48	2.06	24
7	1.89	1.90	1.90	1.95	1.90	1.90	1.90	1.90	1.90	1.92	1.92	1.92	1.91	1.92	1.91	S	1.92	1.92	1.92	1.92	1.93	1.93	1.93	1.93	1.89	1.95	1.91	24
8	1.95	1.95	2.21	2.05	1.98	2.10	2.06	1.96	1.96	1.95	1.94	1.93	1.92	1.93	S	1.93	1.93	1.92	1.91	1.91	2.08	2.28	2.19	1.98	1.91	2.28	2.00	24
9	1.92	1.93	1.96	2.22	2.19	2.41	2.05	1.93	1.93	1.92	1.91	1.91	1.91	S	1.90	1.90	1.90	1.90	1.90	2.01	2.50	2.43	3.07	2.48	1.90	3.07	2.09	24
10	2.51	3.07	3.09	3.91	2.99	3.01	2.88	2.11	1.96	1.95	1.94	1.92	S	1.92	1.92	1.92	1.90	1.90	1.91	1.92	1.93	2.37	2.34	1.96	1.90	3.91	2.32	24
11	1.93	1.93	1.94	1.94	1.92	1.92	1.91	1.91	1.91	1.91	1.90	S	1.89	1.89	1.89	1.89	1.90	1.90	1.90	1.90	1.89	1.91	1.91	1.91	1.89	1.94	1.91	24
12	1.93	1.92	1.93	1.92	1.92	1.92	1.93	1.93	1.93	1.92	S	1.91	1.90	1.90	1.90	1.91	1.91	1.91	1.91	1.92	2.02	1.95	1.97	2.22	1.90	2.22	1.94	24
13	2.03	1.98	1.96	1.96	1.97	1.97	1.97	1.97	1.96	S	1.92	1.91	1.90	1.90	1.90	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.93	1.95	1.90	2.03	1.94	24
14	1.93	1.93	1.93	1.92	1.92	1.92	1.92	1.93	S	1.92	1.93	1.92	1.92	1.92	1.91	1.91	1.91	1.92	1.93	1.91	1.93	1.95	1.97	2.11	1.91	2.11	1.93	24
15	2.21	2.24	2.37	2.32	2.62	2.29	2.24	S	2.08	2.00	1.97	1.99	1.93	1.93	1.93	1.92	1.94	1.93	1.98	1.98	1.98	2.29	2.45	2.31	1.92	2.62	2.13	24
16	2.35	2.61	2.18	1.98	1.99	1.97	S	1.96	1.95	1.92	1.90	1.90	1.90	1.90	1.90	1.90	1.92	1.93	1.94	1.95	1.94	1.94	1.93	1.94	1.90	2.61	1.99	24
17	1.95	1.94	1.95	1.95	1.95	S	1.96	1.95	1.94	1.94	1.92	1.91	1.91	1.90	1.91	1.91	1.91	1.91	1.93	1.93	2.19	2.29	2.46	2.52	1.90	2.52	2.01	24
18	2.33	2.45	2.37	1.93	S	1.90	1.92	1.92	1.96	1.96	1.90	1.90	1.88	1.88	Y	1.88	1.88	1.87	1.88	1.88	1.90	1.92	1.89	1.89	1.87	2.45	1.97	23
19	1.90	1.89	1.90	S	1.91	1.91	1.92	1.91	1.91	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.91	1.92	1.91	1.89	1.92	1.91	24
20	1.92	1.93	S	1.95	2.00	1.94	1.95	1.95	1.96	1.97	1.97	1.97	1.96	1.96	1.96	1.93	1.94	1.95	2.02	1.98	1.93	1.93	1.93	1.96	1.92	2.02	1.95	24
21	1.97	S	1.97	1.94	1.94	1.94	1.94	1.94	1.93	1.92	1.91	1.91	1.91	1.92	1.93	1.92	1.92	1.92	1.93	1.92	1.92	1.92	1.94	1.96	1.91	1.97	1.93	24
22	S	1.97	1.96	1.95	1.96	1.95	1.94	1.93	1.94	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.92	1.92	1.92	1.93	1.93	1.94	S	1.92	1.97	1.93	24
23	1.94	1.95	1.95	1.96	1.97	1.97	1.96	1.95	1.95	1.94	1.93	1.93	1.93	1.93	1.92	1.93	1.93	1.93	1.93	1.93	1.95	1.97	S	2.09	1.92	2.09	1.95	24
24	2.12	2.96	2.35	2.09	2.11	2.17	2.08	1.95	1.95	1.94	1.93	1.93	1.94	1.93	1.93	1.92	1.93	1.93	1.93	1.94	1.93	S	2.37	2.38	1.92	2.96	2.07	24
25	2.23	2.28	2.35	2.28	2.50	2.54	2.41	2.24	2.11	2.05	2.04	1.98	1.98	1.98	1.99	1.98	1.97	1.96	1.95	1.95	S	2.08	2.90	3.58	1.95	3.58	2.23	24
26	3.53	3.55	2.85	2.88	3.28	2.92	3.29	2.55	2.15	2.04	2.00	1.97	1.98	1.95	1.95	1.94	1.93	1.93	1.94	S	2.28	2.48	2.40	2.35	1.93	3.55	**2.44**	24
27	2.47	2.44	2.58	2.58	2.61	2.45	2.57	2.20	2.12	2.04	1.99	1.99	1.99	1.95	1.93	1.92	1.93	1.94	S	1.95	2.01	2.33	2.36	2.79	1.92	2.79	2.22	24
28	2.66	2.74	2.98	2.65	2.52	2.56	2.59	**5.35**	2.11	1.96	1.96	1.95	1.95	1.97	1.97	1.97	1.95	S	1.92	1.97	2.41	2.50	2.52	2.73	1.92	**5.35**	2.43	24
29	2.59	2.54	2.61	2.47	2.28	2.32	2.01	1.96	1.95	1.95	1.93	1.96	2.01	1.95	1.94	1.91	S	1.91	1.93	1.99	1.96	2.40	2.50	2.41	1.91	2.61	2.15	24
30	2.73	2.73	1.93	1.95	1.92	2.10	2.00	2.00	1.96	1.97	1.91	1.90	1.90	1.90	1.90	S	1.90	1.90	1.91	1.91	1.93	1.97	1.97	1.97	1.90	2.73	2.01	24
31	2.02	2.00	2.03	1.99	2.06	2.10	2.08	2.08	2.03	2.01	1.99	1.96	1.95	1.96	S	2.02	2.00	1.99	1.99	1.94	1.94	1.96	2.04	2.08	1.94	2.10	2.01	24
HOURLY MAX	3.53	3.55	3.09	3.91	3.28	3.01	3.29	5.35	2.15	2.05	2.04	2.00	2.01	1.98	1.99	2.02	2.02	1.99	2.06	2.14	2.50	2.50	3.07	3.58				
HOURLY AVG	2.18	2.24	2.19	2.18	2.16	2.15	2.13	2.12	1.98	1.96	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.92	1.93	1.94	2.01	2.09	2.18	2.19				

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

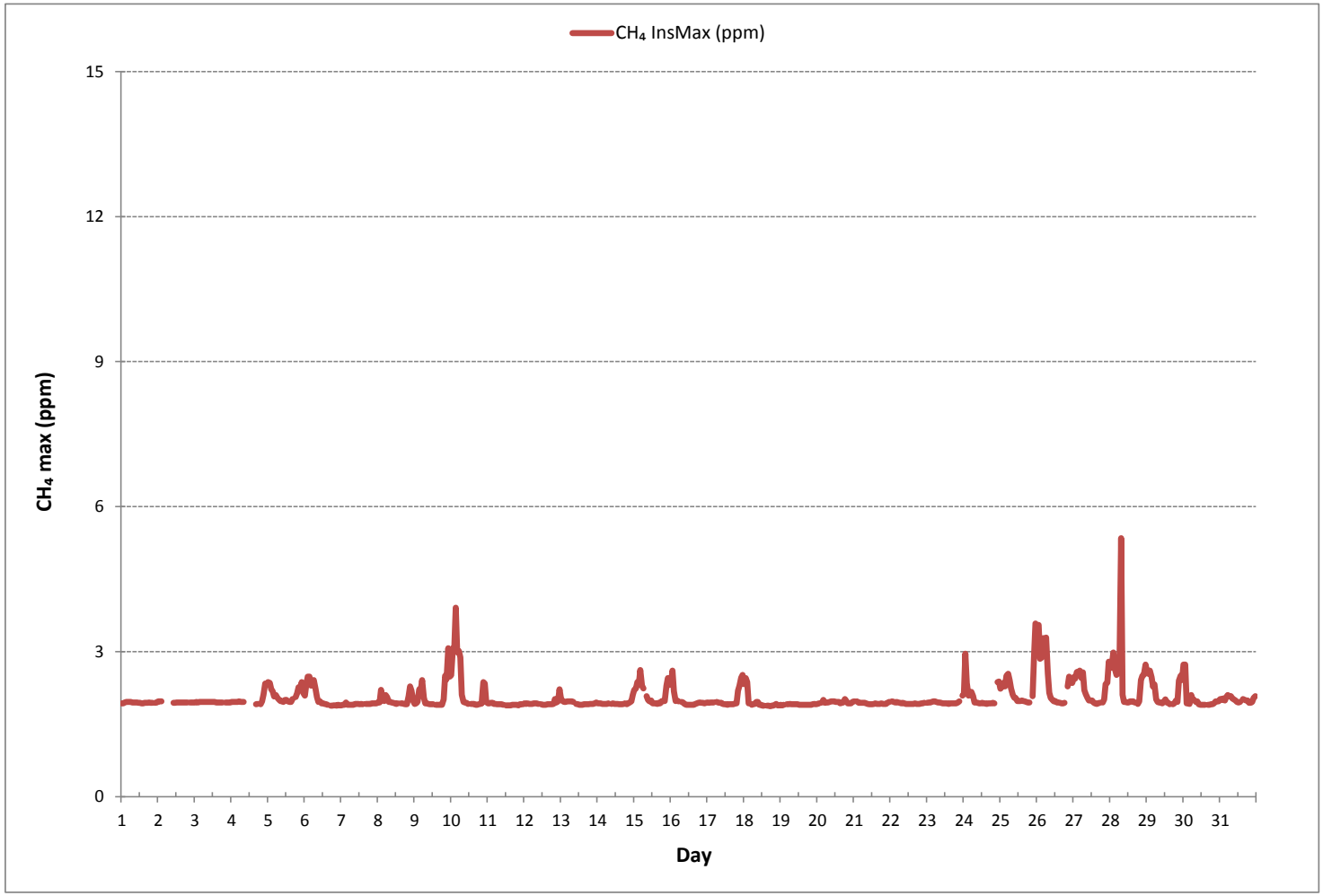
NUMBER OF NON-ZERO READINGS: 698

MAXIMUM INSTANTANEOUS VALUE: 5.35 ppm @ HOUR 7 ON DAY 28

IZS CALIBRATION TIME: 32 hrs
MONTHLY CALIBRATION TIME: 5 hrs
STANDARD DEVIATION: 0.28

OPERATIONAL TIME: 735 hrs

METHANE MAX Instantaneous Maximum (CH_4 ppm)



Maxxam
A Bureau Veritas Group Company

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	0.00	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
2	0.00	0.00	0.00	X	X	X	X	X	X	S1	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	17
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.01	0.00	0.00	0.01	0.00	24
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Y	0.00	C	C	C	C	C	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23
5	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.07	0.00	24
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	24
7	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.04	0.00	24
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.08	0.00	0.08	0.01	24
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.05	0.00	24
11	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
12	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
13	0.00	0.05	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	0.02	0.00	0.00	0.00	0.05	0.00	24
14	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
15	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	0.05	0.00	0.05	0.00	24
16	0.00	0.15	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	0.00	0.00	0.00	0.00	0.00	0.15	0.01	24
17	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.13	0.01	24
18	0.00	0.00	0.00	0.00	S	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Y	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	23
19	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
20	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
21	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
22	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	S	0.00	0.00	0.06	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	**0.38**	0.00	**0.38**	0.02	24
25	0.15	0.00	0.04	0.00	0.00	0.00	0.00	0.00	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	0.15	0.01	24
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.10	0.00	0.00	0.00	0.00	0.10	0.01	24
27	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.03	0.00	0.00	0.00	0.00	0.07	0.01	24
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07	S	0.08	0.13	0.09	0.11	0.12	0.16	0.00	0.22	0.04	24
29	0.12	0.15	0.16	0.12	0.12	0.11	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	0.07	0.07	0.00	0.05	0.00	0.00	0.16	0.04	24
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
31	0.00	0.00	0.00	0.00	0.00	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	0.07	0.00	0.00	0.05	0.00	0.00	0.07	0.01	24
HOURLY MAX	0.15	0.15	0.16	0.12	0.12	0.11	0.10	0.22	0.09	0.05	0.00	0.00	0.00	0.00	0.00	0.03	0.07	0.00	0.08	0.13	0.10	0.13	0.12	0.38				
HOURLY AVG	0.01	0.01	0.01	0.01	0.00	0.00	0.01	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	0.01	0.01	0.01	0.02				

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

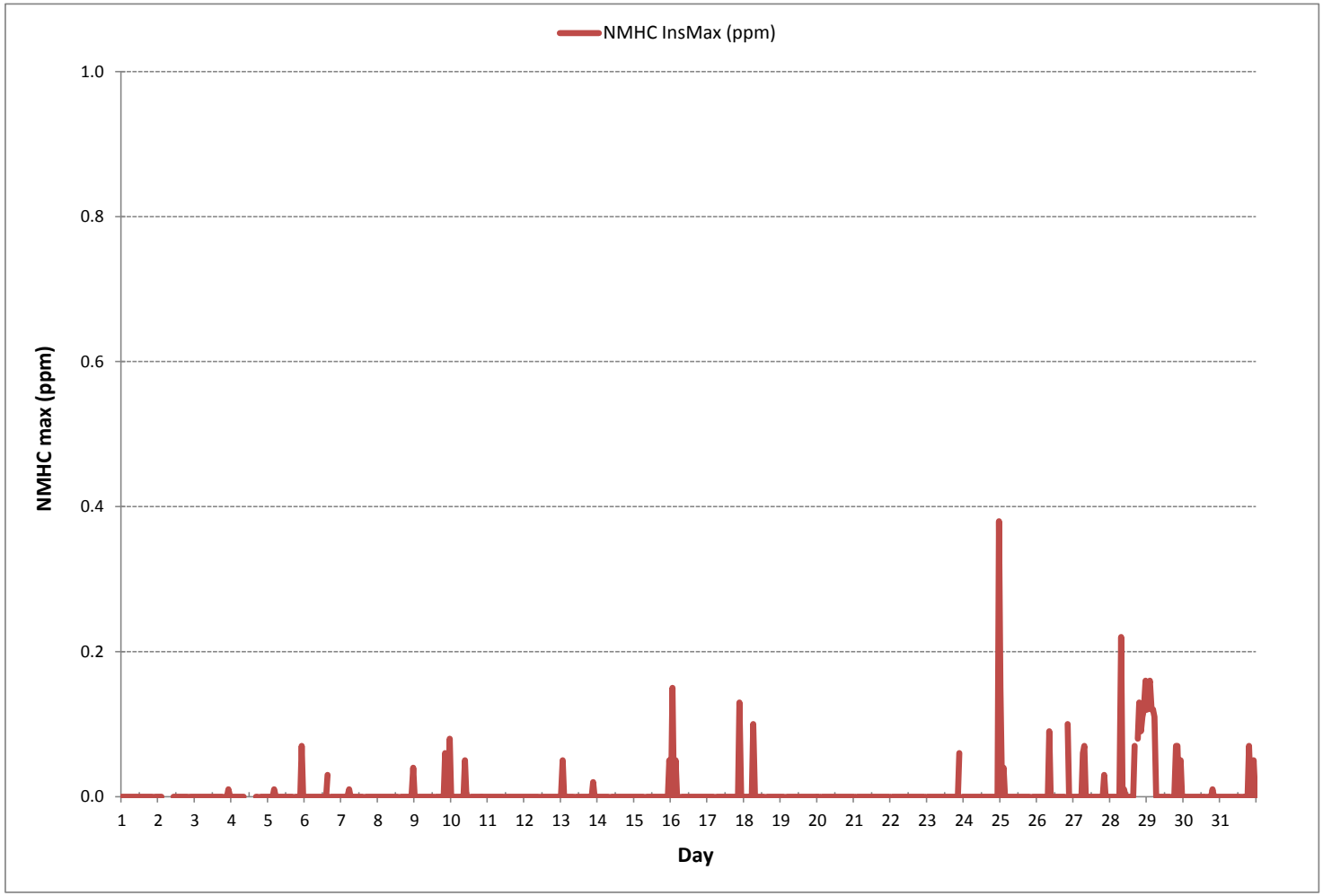
NUMBER OF NON-ZERO READINGS: 46

MAXIMUM INSTANTANEOUS VALUE: 0.38 ppm @ HOUR 23 ON DAY 24

IZS CALIBRATION TIME: 32 hrs
MONTHLY CALIBRATION TIME: 5 hrs
STANDARD DEVIATION: 0.03

OPERATIONAL TIME: 735 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	19.1	17.9	19.6	17.6	19.4	17.6	22.6	24.8	20.2	22.7	27.5	32.4	39.1	29.4	29.0	31.4	32.7	32.1	29.5	33.6	27.8	24.2	23.3	16.8	16.8	39.1	25.4	24
2	14.5	16.4	24.4	28.1	24.4	22.2	27.7	32.7	36.9	35.6	36.0	38.5	36.2	33.4	36.9	35.9	31.7	38.5	38.3	31.6	27.0	22.7	22.2	23.1	14.5	38.5	**29.8**	24
3	23.4	21.1	27.6	26.2	21.5	29.2	31.0	32.5	26.8	26.2	25.5	28.6	28.1	31.3	39.9	32.2	25.8	29.3	25.9	24.0	34.0	8.2	11.1	8.2	8.2	39.9	25.7	24
4	11.1	12.2	13.6	12.4	10.5	11.6	14.7	14.0	12.6	11.6	14.0	22.4	17.6	18.6	19.0	17.8	15.5	12.6	10.1	9.6	5.1	2.1	2.2	3.7	2.1	22.4	12.3	24
5	4.9	4.0	5.8	10.6	14.7	12.8	17.8	17.6	19.1	22.9	26.4	23.1	23.9	19.9	17.4	20.1	19.7	17.7	12.6	7.0	4.1	5.6	11.4	13.0	4.0	26.4	14.7	24
6	11.4	9.9	9.3	7.2	14.7	13.4	18.1	15.9	24.5	18.3	17.3	21.4	31.9	26.2	29.6	29.5	36.7	28.9	30.4	28.0	20.8	23.3	18.1	18.9	7.2	36.7	21.0	24
7	20.8	11.1	14.2	17.8	14.7	12.8	13.4	16.7	25.9	30.1	34.7	36.1	28.8	27.3	25.0	22.0	19.7	18.1	16.1	18.7	15.0	15.8	13.2	12.8	11.1	36.1	20.0	24
8	13.3	14.9	10.6	10.4	8.8	8.6	12.3	18.1	18.7	17.3	19.4	23.8	25.9	27.0	23.1	22.4	20.3	19.3	15.4	11.9	3.5	3.4	10.0	12.5	3.4	27.0	15.5	24
9	12.0	13.8	10.0	10.7	9.9	8.2	17.0	20.9	23.1	22.3	24.8	24.9	24.2	30.7	25.5	30.0	23.8	22.0	17.8	11.2	4.5	6.0	7.4	7.3	4.5	30.7	17.0	24
10	5.6	5.8	8.4	4.2	7.2	7.3	9.3	14.8	19.1	20.6	18.1	16.6	26.7	22.8	19.1	26.8	25.9	27.0	21.7	18.3	8.3	5.7	5.6	10.0	4.2	27.0	14.8	24
11	13.0	19.2	24.1	24.7	21.6	21.6	21.0	24.2	33.9	31.2	24.4	33.7	38.0	32.0	34.0	34.6	31.1	30.1	21.8	20.6	13.9	14.2	15.2	14.7	13.0	38.0	24.7	24
12	10.8	10.3	13.2	12.4	17.9	17.1	16.7	25.8	26.4	24.0	27.1	21.7	22.2	21.0	24.5	23.7	25.8	22.9	26.1	13.3	3.8	4.0	8.8	5.6	3.8	27.1	17.7	24
13	6.2	7.8	11.1	11.0	9.3	14.4	17.5	15.7	15.7	21.4	17.1	18.5	26.8	26.0	22.8	19.9	31.7	20.2	27.9	13.5	22.3	18.6	15.1	20.4	6.2	31.7	18.0	24
14	20.6	16.2	18.1	25.7	26.4	26.6	29.2	40.5	39.9	41.1	36.5	38.0	36.2	34.8	28.9	29.8	26.7	20.9	22.1	24.0	15.6	9.1	8.6	6.2	6.2	41.1	25.9	24
15	6.2	4.3	3.6	3.4	6.6	9.2	12.7	13.3	14.3	14.6	19.0	19.3	23.5	24.2	22.3	24.1	17.5	18.7	5.9	3.4	2.2	2.5	2.9	6.6	2.2	24.2	11.7	24
16	5.3	5.7	8.9	7.8	11.7	15.5	14.4	19.4	24.8	22.8	23.6	27.6	34.1	31.8	30.5	28.3	36.9	30.0	31.4	23.7	18.6	14.4	14.1	6.8	5.3	36.9	20.3	24
17	12.4	9.7	8.4	9.2	9.3	9.6	11.6	9.4	6.5	10.4	13.8	21.1	20.1	20.3	16.4	16.5	17.6	12.4	9.5	7.0	7.5	2.1	3.1	3.7	2.1	21.1	11.2	24
18	6.7	10.6	15.7	16.3	20.5	24.5	17.9	18.5	18.3	20.0	18.1	21.7	23.5	23.0	**49.4**	11.5	11.7	17.6	18.0	17.1	10.0	11.0	16.4	13.8	6.7	**49.4**	18.0	24
19	11.2	10.9	10.4	11.4	13.1	15.0	15.1	16.6	18.2	17.7	16.6	20.3	28.5	22.9	22.5	18.8	19.1	21.0	20.1	17.6	17.3	11.8	21.6	13.2	10.4	28.5	17.1	24
20	9.1	22.4	23.0	14.1	15.1	12.7	9.2	9.4	19.7	20.5	18.6	11.2	16.6	20.3	27.2	26.1	18.7	17.9	17.1	10.3	13.4	20.5	44.8	19.5	9.1	44.8	18.2	24
21	17.6	18.1	27.4	15.1	12.5	12.1	15.5	16.0	16.2	14.5	15.1	7.8	9.8	13.0	13.8	22.4	23.8	24.5	22.2	21.7	23.3	17.1	18.3	15.5	7.8	27.4	17.2	24
22	10.6	14.8	16.4	20.8	15.1	16.8	24.9	27.1	25.2	27.6	24.1	21.5	22.2	28.3	34.8	25.8	26.5	17.6	12.6	13.0	15.4	7.8	11.0	14.4	7.8	34.8	19.8	24
23	8.9	11.9	13.6	12.3	9.7	16.5	11.5	15.2	17.0	23.2	26.3	24.0	26.3	27.4	22.3	18.3	20.4	20.5	10.6	5.9	4.9	6.6	5.0	4.1	4.1	27.4	15.1	24
24	2.2	5.2	5.9	2.7	4.8	2.1	5.5	6.5	8.0	13.2	14.4	15.3	15.4	13.9	10.5	13.5	10.8	9.2	8.0	5.8	2.3	2.6	4.5	3.5	2.1	15.4	7.7	24
25	3.3	2.5	2.9	2.4	2.2	4.0	6.1	6.1	8.7	9.3	12.7	11.4	13.5	13.4	13.3	11.5	9.2	12.3	7.8	4.9	1.5	1.9	3.7	5.5	1.5	13.5	7.1	24
26	4.5	5.3	4.0	3.9	5.0	4.8	3.7	6.1	12.4	11.6	15.2	14.3	18.7	17.6	19.5	19.5	16.7	15.0	14.2	8.6	6.9	3.3	3.4	3.0	3.0	19.5	9.9	24
27	4.0	2.9	3.9	4.7	5.6	3.6	9.5	9.5	14.1	15.4	18.8	19.9	21.8	21.4	18.7	19.1	20.7	18.4	14.3	10.6	4.0	3.5	2.9	4.3	2.9	21.8	11.3	24
28	3.9	4.1	3.6	4.7	4.2	3.9	4.6	7.2	12.8	12.7	15.6	13.7	17.3	20.9	20.0	18.3	18.4	16.3	12.4	6.1	3.1	4.2	3.2	4.8	3.1	20.9	9.8	24
29	6.2	4.9	4.3	3.9	7.2	14.0	19.0	17.9	25.6	16.5	16.8	10.3	11.4	12.5	18.9	13.1	16.0	9.5	8.0	5.1	7.4	6.0	3.1	7.8	3.1	25.6	11.1	24
30	4.7	22.1	21.1	20.9	15.2	8.6	13.0	11.7	8.4	17.1	22.4	21.9	24.7	31.1	26.0	27.2	22.5	16.6	19.1	20.4	8.7	7.9	7.5	8.6	4.7	31.1	17.0	24
31	6.1	5.0	7.6	7.0	11.3	11.9	11.5	7.7	8.8	8.9	9.7	12.9	13.6	14.8	12.7	11.9	13.0	10.6	6.2	4.1	4.9	4.0	5.0	30.6	4.0	30.6	10.0	24
HOURLY MAX	23.4	22.4	27.6	28.1	26.4	29.2	31.0	40.5	39.9	41.1	36.5	38.5	39.1	34.8	49.4	35.9	36.9	38.5	38.3	33.6	34.0	24.2	44.8	30.6				
HOURLY AVG	10.0	11.0	12.6	12.2	12.6	13.2	15.3	17.2	19.4	20.0	21.0	21.7	24.1	23.8	24.3	22.6	22.1	20.2	17.8	14.5	11.5	9.4	11.1	10.9				

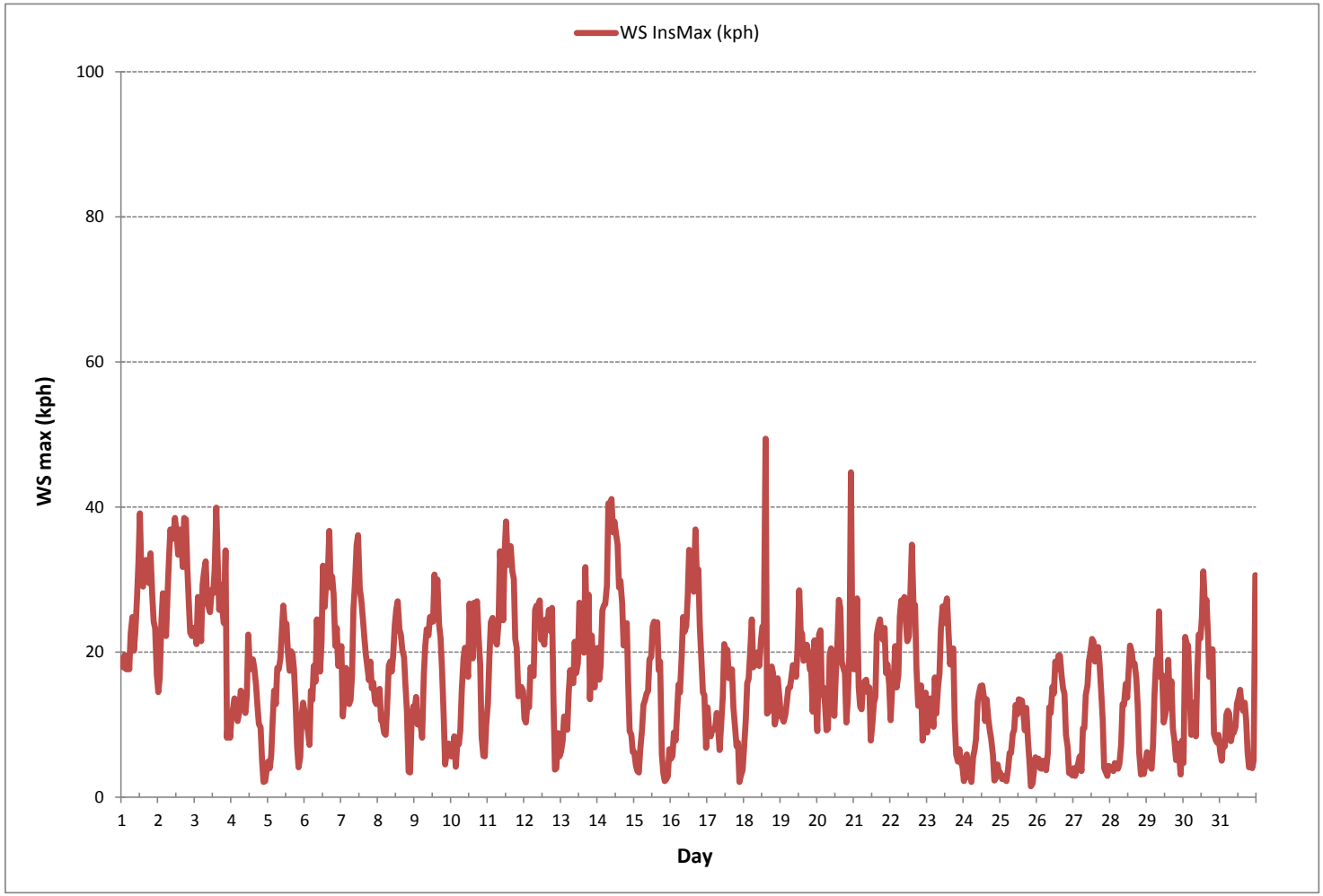
STATUS FLAG CODES

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:	49.4	kph	@ HOUR	14	ON DAY	18
OPERATIONAL TIME:					744	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

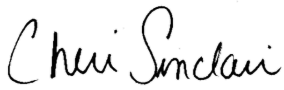
20-Aug-2018

Report Issued Date (dd-mon-yyyy)

APPENDIX V
DATA VALIDATION CERTIFICATION FORM

Validation Certificate Form

Client:	Peace River Area Monitoring Program Committee	**Project #:**	196-2018-07-93-C
Site:	Reno Station	**Contact:**	Karla Reesor

Level 0 Preliminary Verification		**Date**	16-Aug-2018
Level 1 Primary Validation		**Date**	16-Aug-2018
Level 2 Final Validation		**Date**	20-Aug-2018
Level 3 Independent Data Review		**Date**	20-Aug-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.