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AMBIENT AIR MONITORING MONTHLY DATA REPORT

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

THREE CREEKS 842B STATION

JOB #: 8449-2017-04-80-C

April 2017

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: **May 24, 2017**

Prepared by: Maram Ghaleb

Maram Ghaleb, B.Sc.
Project Manager, Customer Service, Air Services

Reviewed by:

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Project Manager, Customer Service, Air Services

SUMMARY

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

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

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

THC/CH_4/NMHC: Thirty-two hours of downtime were recorded this month.

• The analyzer malfunctioned on April 6. It was reset onsite on April 7, a successful zero-span check was completed afterwards. Twenty-five hours of downtime were recorded due to this event.

• The analyzer exhibited a biased high span response on April 21. As corrective actions, two additional span checks were triggered on April 22 and a successful repeat calibration was performed on April 23. Seven hours of downtime were recorded due to these additional quality checks.

The summary of results is presented on the following pages.

Any deviations or modifications made to the sampling or analytical methods are outlined in Section 1.0, Discussion. On this basis, Maxxam Analytics is issuing this completed report to Peace River Area Monitoring Program Committee, Three Creeks 842b Station.

Should you have any questions concerning the results or if we can be of further assistance, please contact us at 403-219-3678 or toll-free at 1-800-386-7247.

Monthly Continuous Data Summary

Peace River Area Monitoring Program Committee Three Creeks 842b 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	VAR	VAR	VAR	VAR	0	ALL	100.0
TRS (ppb)	-	-	-	-	0.15	0.41	11, 11	4, 5	8.7 9.9	N N	0.21	1, 11	100.0
THC (ppm)	-	-	-	-	1.97	2.58	25	6	1	ENE	2.00	VAR	95.6
CH_4 (ppm)	-	-	-	-	1.97	2.58	25	6	1	ENE	2.00	VAR	95.6
NMHC (ppm)	-	-	-	-	0.00	0.02	5	22	6.6	SE	0.00	ALL	95.6
RELATIVE HUMIDITY (%)	-	-	-	-	66	97	29	5	2.4	ESE	92	14	100.0
BAROMETRIC PRESSURE (millibar)	-	-	-	-	942	956	21, 22	VAR, VAR	VAR VAR	VAR VAR	955	21	100.0
AMBIENT TEMPERATURE (°C)	-	-	-	-	2.7	13.7	29	15	7	WSW	6.5	6	100.0
STATION TEMPERATURE (°C)	-	-	-	-	23.1	25.0	12	19	12.5	E	23.6	VAR	100.0
VECTOR WS (kph)	-	-	-	-	3	20	1	16	-	SSE	14	13	100.0
VECTOR WD (sec)	-	-	-	-	98 (E)	-	-	-	-	-	-	-	100.0

SOUR GAS PROCESSING INDUSTRY

MONTHLY REPORT SUMMARY

Three Creeks 842b Station	Peace River Area Monitoring Program Committee
Plant Name / Location	Company

Licence Number	Report Date	
	YEAR	MONTH
N/A	2017	April

CONTINUOUS AMBIENT MONITORING

			ONE - HOUR AVERAGE			24 - HOUR AVERAGE		
PARAMETER	STN No.	% TIME OPERATIONAL	MAXIMUM VALUES		NO. READINGS > REGULATION	MAXIMUM VALUES		NO. READINGS > REGULATION
SO_2	1	100.0	0.001	ppm	0	0.000	ppm	0
TRS	1	100.0	0.000	ppm	-	0.000	ppm	-
THC	1	95.6	2.58	ppm	-	2.00	ppm	-
CH_4	1	95.6	2.58	ppm	-	2.00	ppm	-
NMHC	1	95.6	0.02	ppm	-	0.00	ppm	-
RH	1	100.0	97	%	-	92	%	-
BP	1	100.0	956	mb	-	955	mb	-
Ambient TPX	1	100.0	13.7	°C	-	6.5	°C	-
Station TPX	1	100.0	25.0	°C	-	23.6	°C	-
Wind Speed	1	100.0	20	kph	-	14	kph	-
Wind Direction	1	100.0	-		-	-		-

SIGNATURE OF COMPANY REPRESENTATIVE

FOR ALBERTA ENVIRONMENT USE ONLY

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).

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

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

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

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

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

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

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

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

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

SULPHUR DIOXIDE (SO_2)

- Operational time, for the monitoring period, was 100%.
- The routine monthly calibration was performed on April 19.

TOTAL REDUCED SULPHUR (TRS)

- Operational time, for the monitoring period, was 100%.
- The routine monthly calibration was performed on April 19.

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

- Operational time, for the monitoring period, was 95.6%, equivalent to thirty-two hours of downtime.
- The routine monthly calibration was performed on April 19.
- The analyzer malfunctioned on April 6. It was reset onsite on April 7, a successful zero-span check was completed afterwards. Twenty-five hours of downtime were recorded due to this event.
- The NMHC span response drifted above the upper acceptance limit on April 21. Two additional span checks were triggered on April 22 to assess span response, the results confirmed the drift. A successful repeat calibration was performed on April 23 and the expected span value was subsequently updated.
- As the repeat calibration met AMD requirements, no data was discarded due to this event. However, seven hours of downtime were recorded due to the additional quality checks.
- Slight, sporadic noise was noted for the NMHC parameter when sampling ambient air and this is reflected in the NMHC instantaneous maximum data. With the exception of two isolated instances (April 5 at hour 23:00 - 0.23 ppm; and April 6 at hour 25:00 - 0.21 ppm) this noise remained below the acceptable threshold for this parameter based on AMD requirements (0.2 ppm) and, at all times, remained below a level that might trigger a VOC canister (0.3 ppm). This noise had minimal effect on hourly average data and given the analyzer was demonstrated to be operating within accepted limits, this noise is considered not to be significant. That said, these data are monitored on a daily basis and, should the data quality begin to deteriorate, the analyzer will be replaced.
- The canister sampler is programmed to draw in a whole air sample when the 5-minute average concentration of NMHC is above 0.30 ppm. A representative sample of ambient air is collected over a one-hour period when the canister event is triggered. No canister event was recorded this month.

WIND SPEED (WS) and WIND DIRECTION (WD)

- Operational time, for the monitoring period was 100%.
- Following the wind system upgrade in February 2017, it was discovered that the manufacturer had made an error in units that resulted in data being under-reported by 0.45%. The wind system was calibrated on April 5, during which the wind speed gain was adjusted. This offset was corrected for data collected between April 1 and April 5.
- Wind data is reported as vector wind speed and vector wind direction. Wind direction is defined as the direction from which the wind is blowing from and is measured in degrees from true north.

RELATIVE HUMIDITY (RH)

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

BAROMETRIC PRESSURE (BP)

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

AMBIENT TEMPERATURE (AmbTPX)

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

STATION TEMPERATURE (StnTPX)

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

2.0 Project Personnel

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

3.0 Plant Monthly Required AMD Summary

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

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

4.0 Calculations and Results

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

5.0 Methods and Procedures

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

Maxxam AIR SOP-00001: Methane, Non-Methane Hydrocarbon Analyzer Monitoring
Maxxam AIR SOP-00208: RM Young Wind Monitor Calibration
Maxxam AIR SOP-00209: Ambient Sulphur Monitoring

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

Sulphur Dioxide - API 100A UV Flourescent Analyzer
Total Reduced Sulphur - Thermo 43i UV Flourescent Analyzer
Total Hydrocarbons - Thermo 55i FID 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

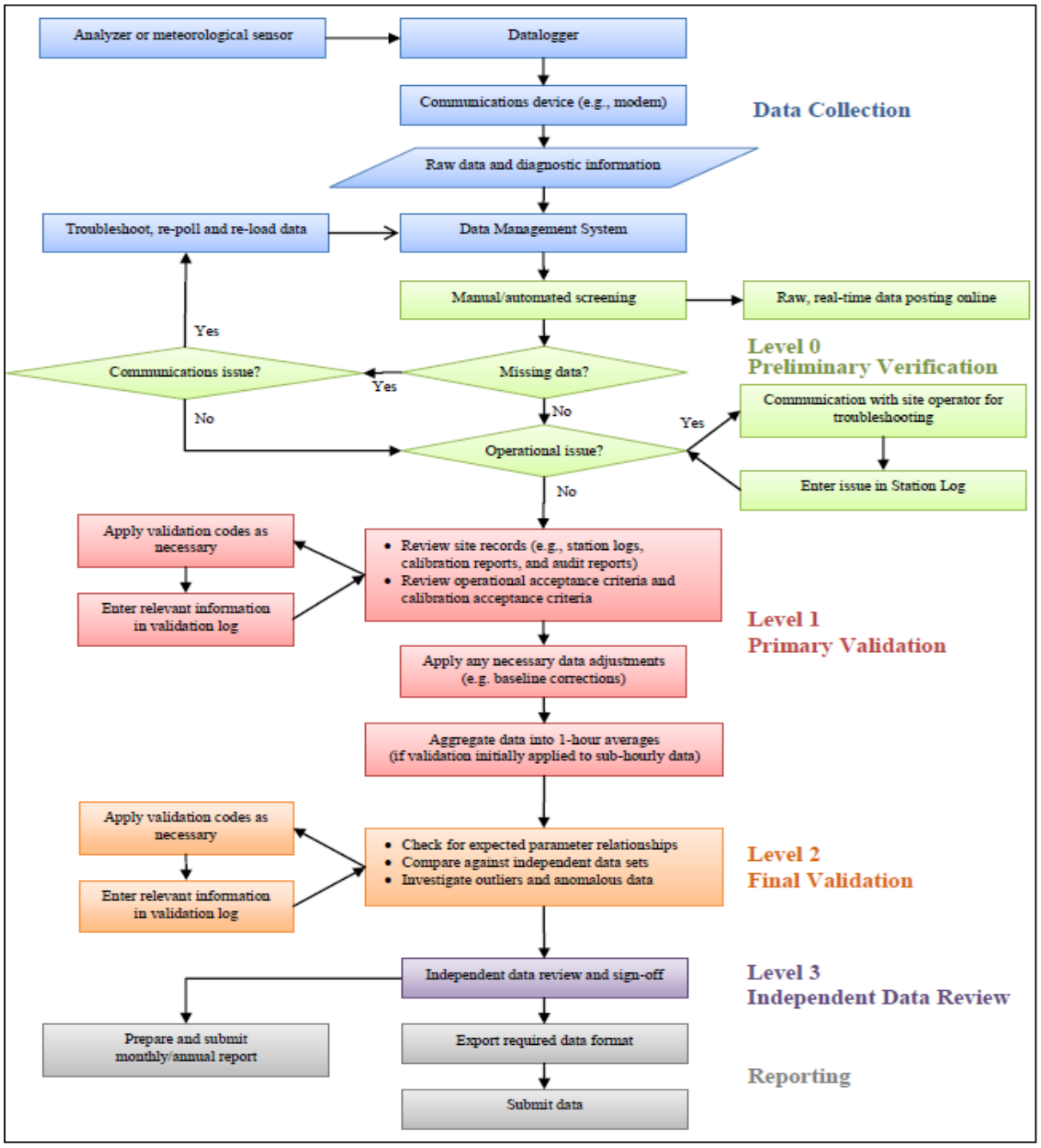
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

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

STATUS FLAG CODES

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

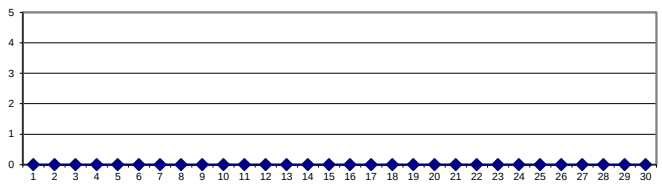
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 ppb | 24-HR 48 ppb

MONTHLY SUMMARY

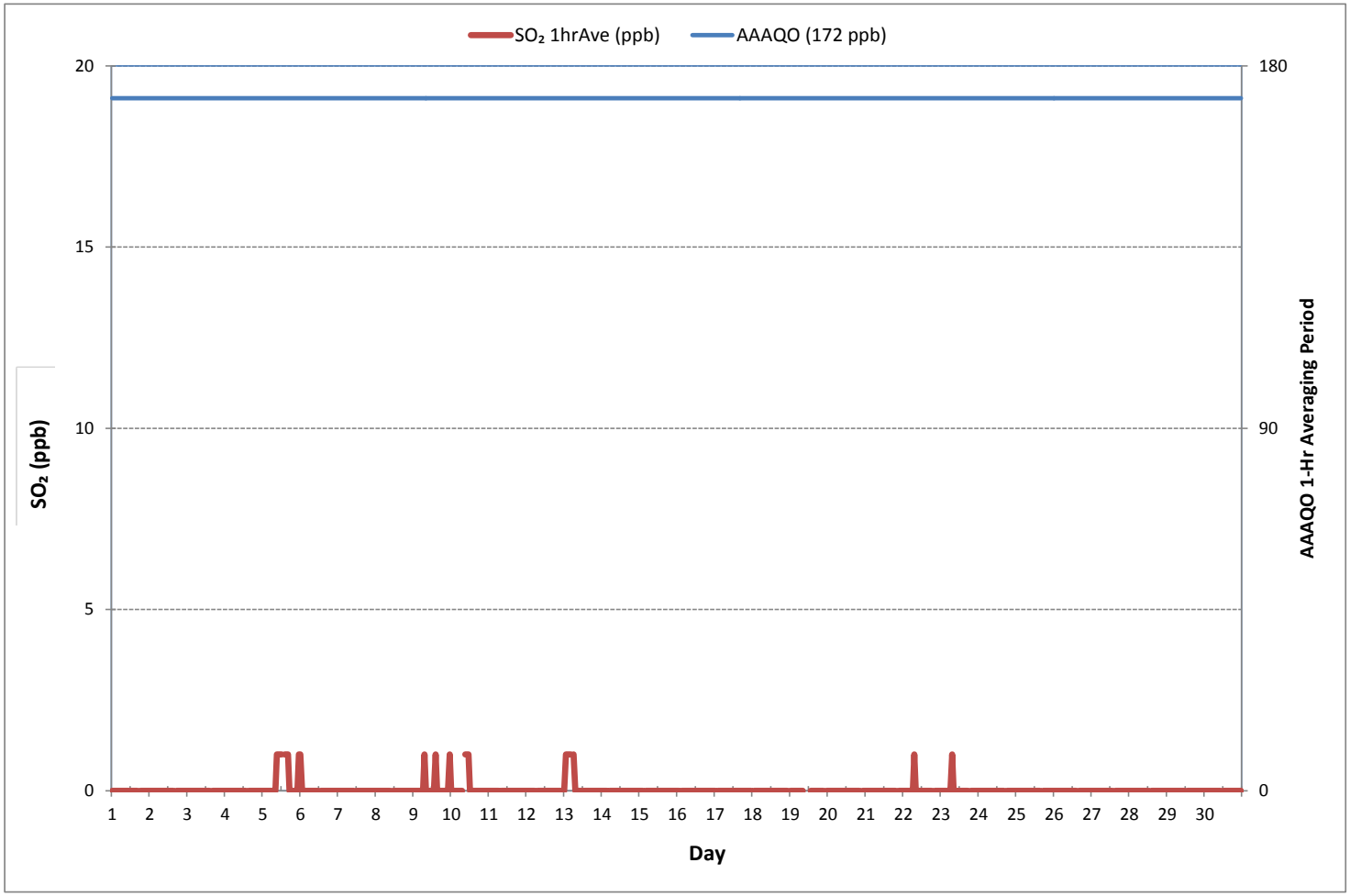
NUMBER OF 1-HR EXCEEDANCES:	0					
NUMBER OF 24-HR EXCEEDANCES:	0					
NUMBER OF NON-ZERO READINGS:	22					
MINIMUM 1-HR AVERAGE	0	ppb	@ HOUR	VAR	ON DAY	ALL
MAXIMUM 1-HR AVERAGE:	1	ppb	@ HOUR	VAR	ON DAY	VAR
MAXIMUM 24-HR AVERAGE:	0	ppb			ON DAY	ALL

IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	720	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0		MONTHLY AVERAGE:	0	ppb

24 HR AVERAGES April 2017



SULPHUR DIOXIDE Hourly Averages (SO_2 ppb)



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

STATUS FLAG CODES

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

MONTHLY SUMMARY

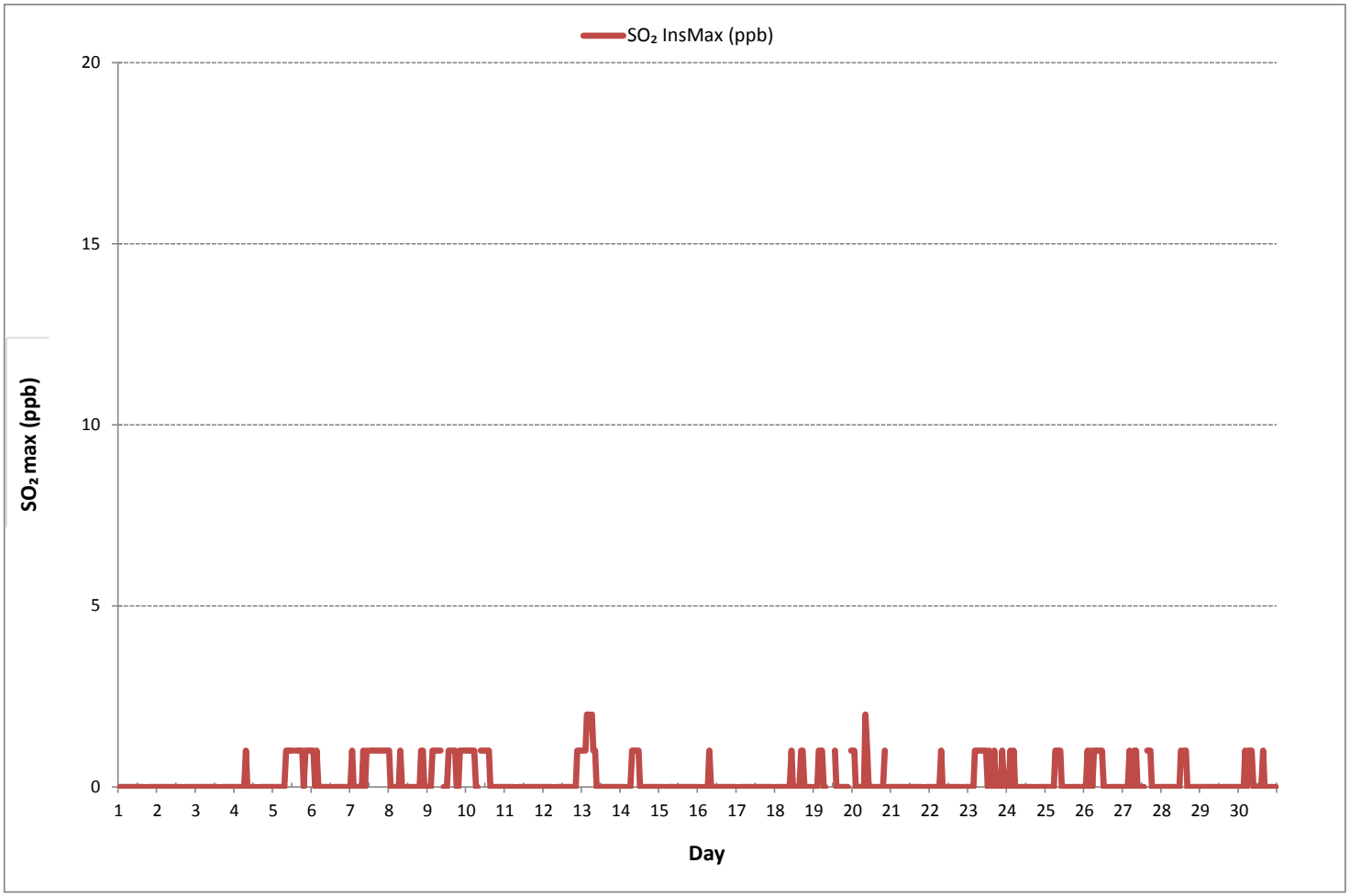
NUMBER OF NON-ZERO READINGS: 134

MAXIMUM INSTANTANEOUS VALUE: 2 ppb @ HOUR VAR, 8 ON DAY 13, 20

IZS CALIBRATION TIME: 31 hrs
MONTHLY CALIBRATION TIME: 5 hrs
STANDARD DEVIATION: 0

OPERATIONAL TIME: 720 hrs

SULPHUR DIOXIDE Instantaneous Maximum (SO_2 ppb)



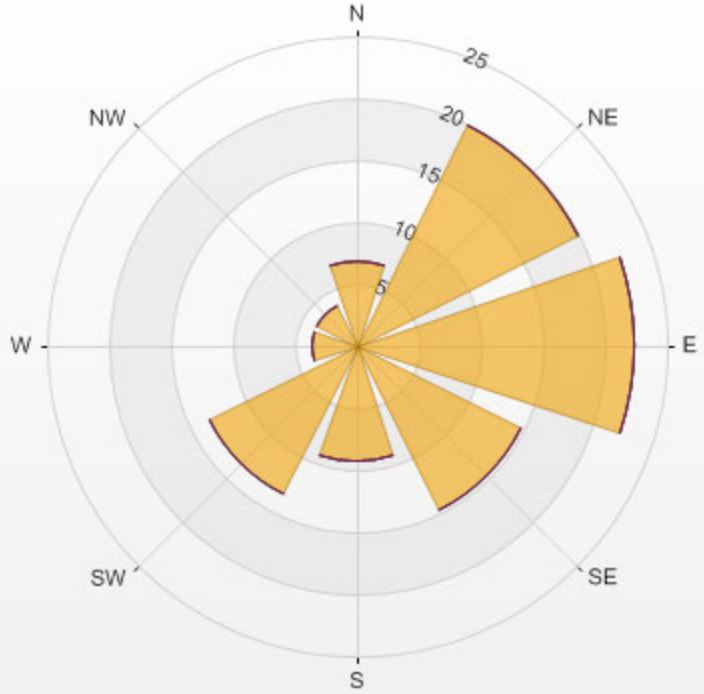
Wind: PRAMP_842
Poll.: PRAMP_842-SO2[ppb]
Monthly: 2017/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.73% Calm Avg: 0.03 [ppb]

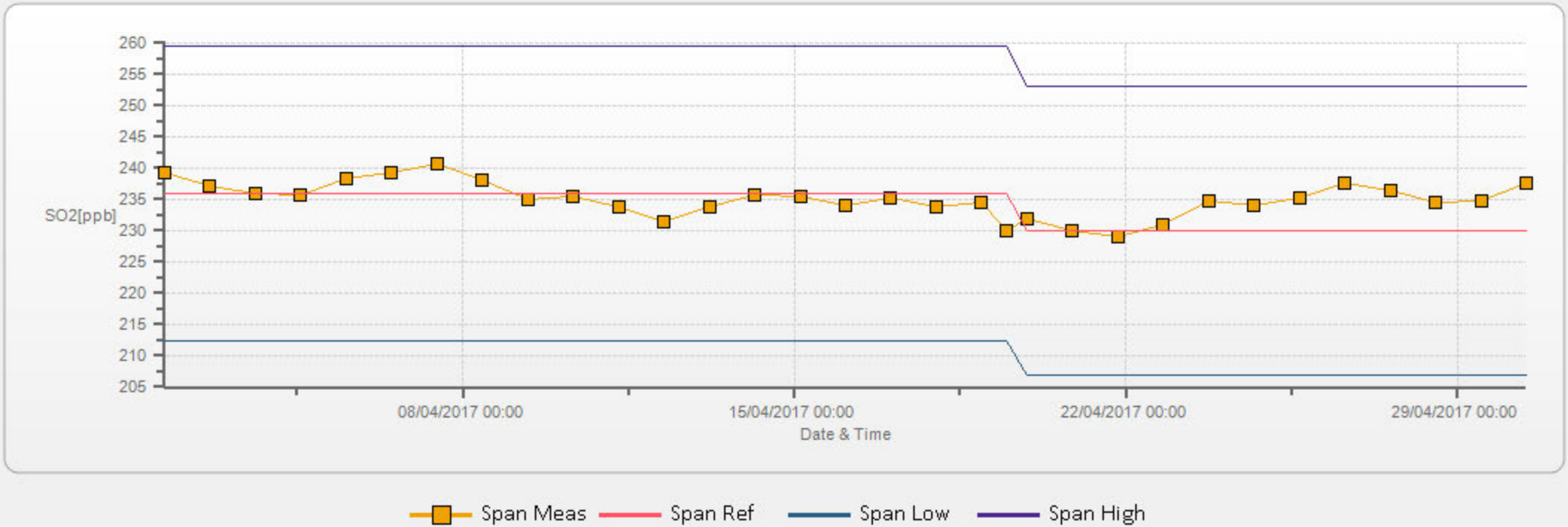
Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	6.9	0.0	0.0	0.0	0.0	6.9
NE	20.0	0.0	0.0	0.0	0.0	20.0
E	22.5	0.0	0.0	0.0	0.0	22.5
SE	14.8	0.0	0.0	0.0	0.0	14.8
S	9.4	0.0	0.0	0.0	0.0	9.4
SW	13.4	0.0	0.0	0.0	0.0	13.4
W	3.7	0.0	0.0	0.0	0.0	3.7
NW	3.7	0.0	0.0	0.0	0.0	3.7
Summary	94.3	0.0	0.0	0.0	0.0	94.3

% Icon Classes (ppb)	94 0-3	0 3-10	0 10-85	0 85-170	0 >170.0

PRAMP_842 Poll.: PRAMP_842-SO2[ppb] 2017/04/01 00:00 - 2017/04/30 23:00 Calm: 5.73% Calm Poll Avg: 0.03[ppb]



SO2[ppb] Calibration: PRAMP_842 Monthly: 17/04 Type: Span



TOTAL REDUCED SULPHUR

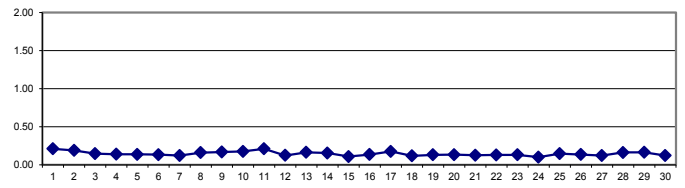
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)

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	0.19	0.19	0.19	0.19	0.19	0.17	0.17	0.18	0.20	0.21	0.21	0.23	0.22	0.22	0.22	0.24	0.23	S	0.25	0.23	0.22	0.23	0.22	0.22	0.17	0.25	**0.21**	24
2	0.21	0.21	0.20	0.20	0.19	0.19	0.20	0.20	0.20	0.18	0.21	0.20	0.20	0.18	0.17	0.17	S	0.19	0.17	0.19	0.17	0.18	0.19	0.17	0.17	0.21	0.19	24
3	0.16	0.19	0.17	0.15	0.15	0.16	0.15	0.16	0.16	0.13	0.13	0.12	0.12	0.13	0.13	S	0.14	0.14	0.14	0.14	0.16	0.15	0.15	0.14	0.12	0.19	0.15	24
4	0.15	0.15	0.14	0.13	0.15	0.15	0.18	0.22	0.15	0.12	0.12	0.12	0.13	0.11	S	0.13	0.13	0.12	0.12	0.14	0.13	0.12	0.13	0.12	0.11	0.22	0.14	24
5	0.12	0.12	0.11	0.12	0.11	0.11	0.11	0.12	0.12	0.14	0.15	0.16	0.15	S	0.17	0.16	0.15	0.14	0.13	0.15	0.14	0.14	0.16	0.15	0.11	0.17	0.14	24
6	0.16	0.15	0.15	0.15	0.15	0.15	0.14	0.15	0.14	0.14	0.14	0.13	S	0.13	0.11	0.12	0.11	0.12	0.11	0.14	0.13	0.12	0.10	0.12	0.10	0.16	0.13	24
7	0.11	0.11	0.12	0.11	0.11	0.13	0.12	0.12	0.14	0.17	0.12	S	0.13	0.11	0.11	0.11	0.10	0.11	0.11	0.12	0.12	0.12	0.12	0.14	0.10	0.17	0.12	24
8	0.16	0.16	0.17	0.19	0.19	0.19	0.18	0.19	0.17	0.16	S	0.16	0.15	0.14	0.13	0.12	0.12	0.13	0.15	0.16	0.16	0.16	0.17	0.17	0.12	0.19	0.16	24
9	0.15	0.15	0.16	0.16	0.16	0.17	0.19	0.18	0.19	S	0.17	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.16	0.17	0.15	0.15	0.19	0.17	24
10	0.16	0.17	0.18	0.19	0.17	0.17	0.19	0.18	S	0.18	0.17	0.19	0.18	0.17	0.16	0.16	0.19	0.16	0.16	0.17	0.17	0.17	0.21	0.18	0.16	0.21	0.18	24
11	0.17	0.18	0.19	0.31	0.38	**0.41**	**0.41**	S	0.25	0.23	0.22	0.20	0.18	0.18	0.18	0.18	0.17	0.16	0.15	0.15	0.14	0.14	0.11	0.11	0.11	**0.41**	**0.21**	24
12	0.11	0.12	0.12	0.11	0.13	0.17	S	0.17	0.11	0.12	0.11	0.10	0.10	0.11	0.13	0.13	0.12	0.11	0.11	0.12	0.14	0.14	0.12	0.13	0.10	0.17	0.12	24
13	0.12	0.14	0.15	0.16	0.18	S	0.21	0.17	0.17	0.16	0.17	0.18	0.15	0.16	0.16	0.17	0.19	0.17	0.16	0.16	0.17	0.16	0.17	0.17	0.12	0.21	0.17	24
14	0.20	0.18	0.20	0.18	S	0.20	0.19	0.19	0.20	0.21	0.22	0.17	0.13	0.13	0.14	0.12	0.11	0.11	0.12	0.11	0.11	0.11	0.10	0.13	0.10	0.22	0.15	24
15	0.14	0.11	0.09	S	0.10	0.09	0.08	0.08	0.09	0.09	0.10	0.09	0.10	0.10	0.10	0.10	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.11	0.08	0.14	0.11	24
16	0.11	0.15	S	0.14	0.11	0.10	0.11	0.12	0.13	0.12	0.13	0.13	0.13	0.16	0.16	0.16	0.15	0.14	0.15	0.16	0.14	0.12	0.13	0.14	0.10	0.16	0.13	24
17	0.21	S	0.27	0.21	0.19	0.18	0.17	0.18	0.22	0.18	0.16	0.16	0.15	0.16	0.16	0.15	0.14	0.16	0.12	0.18	0.20	0.21	0.12	0.12	0.12	0.27	0.17	24
18	S	0.14	0.12	0.12	0.11	0.10	0.13	0.13	0.12	0.13	0.13	0.11	0.11	0.12	0.11	0.12	0.12	0.10	0.11	0.11	0.11	0.10	0.11	S	0.10	0.14	0.12	24
19	0.10	0.08	0.10	0.10	0.12	0.14	0.12	0.11	0.12	C	C	C	C	0.16	0.15	0.14	0.14	0.15	0.14	0.14	0.15	0.14	S	0.17	0.08	0.17	0.13	24
20	0.14	0.12	0.11	0.14	0.12	0.13	0.14	0.14	0.15	0.16	0.12	0.12	0.12	0.11	0.14	0.17	0.14	0.12	0.13	0.13	0.14	S	0.13	0.12	0.11	0.17	0.13	24
21	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.13	0.13	0.13	0.14	0.13	0.13	0.13	0.11	0.11	0.11	0.12	0.11	S	0.13	0.12	0.13	0.11	0.14	0.13	24
22	0.12	0.14	0.11	0.13	0.13	0.13	0.12	0.14	0.12	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.13	S	0.15	0.14	0.14	0.13	0.11	0.15	0.13	24
23	0.15	0.13	0.13	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.13	0.12	0.11	0.12	0.11	0.12	0.11	S	0.13	0.11	0.12	0.11	0.10	0.10	0.15	0.13	24
24	0.10	0.10	0.11	0.10	0.09	0.11	0.12	0.10	0.10	0.09	0.09	0.09	0.08	0.09	0.09	0.09	0.08	S	0.10	0.10	0.10	0.10	0.11	0.13	0.08	0.13	0.10	24
25	0.13	0.13	0.13	0.11	0.17	0.18	0.25	0.16	0.13	0.13	0.15	0.14	0.13	0.13	0.14	0.14	S	0.13	0.12	0.13	0.16	0.17	0.15	0.15	0.11	0.25	0.15	24
26	0.16	0.14	0.14	0.16	0.14	0.14	0.14	0.15	0.14	0.15	0.14	0.14	0.13	0.12	0.11	S	0.14	0.14	0.12	0.13	0.11	0.11	0.11	0.12	0.11	0.16	0.13	24
27	0.12	0.12	0.13	0.14	0.15	0.12	0.11	0.11	0.13	0.13	0.12	0.11	0.11	0.11	S	0.12	0.11	0.11	0.11	0.13	0.11	0.13	0.12	0.14	0.11	0.15	0.12	24
28	0.12	0.13	0.13	0.13	0.15	0.15	0.15	0.15	0.14	0.14	0.15	0.16	0.16	S	0.17	0.15	0.15	0.15	0.15	0.14	0.17	0.16	0.23	0.38	0.12	0.38	0.16	24
29	0.28	0.29	0.29	0.31	0.24	0.20	0.18	0.18	0.17	0.16	0.16	0.14	S	0.13	0.12	0.10	0.10	0.09	0.08	0.12	0.11	0.10	0.10	0.09	0.08	0.31	0.16	24
30	0.10	0.08	0.09	0.10	0.11	0.11	0.11	0.12	0.10	0.08	0.08	S	0.11	0.09	0.08	0.10	0.09	0.14	0.24	0.23	0.17	0.19	0.16	0.13	0.08	0.24	0.12	24
HOURLY MAX	0.28	0.29	0.29	0.31	0.38	0.41	0.41	0.22	0.25	0.23	0.22	0.23	0.22	0.22	0.22	0.24	0.23	0.19	0.25	0.23	0.22	0.23	0.23	0.38				
HOURLY AVG	0.15	0.15	0.15	0.16	0.15	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.13	0.14	0.15	0.14	0.14	0.14	0.15				

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 April 2017

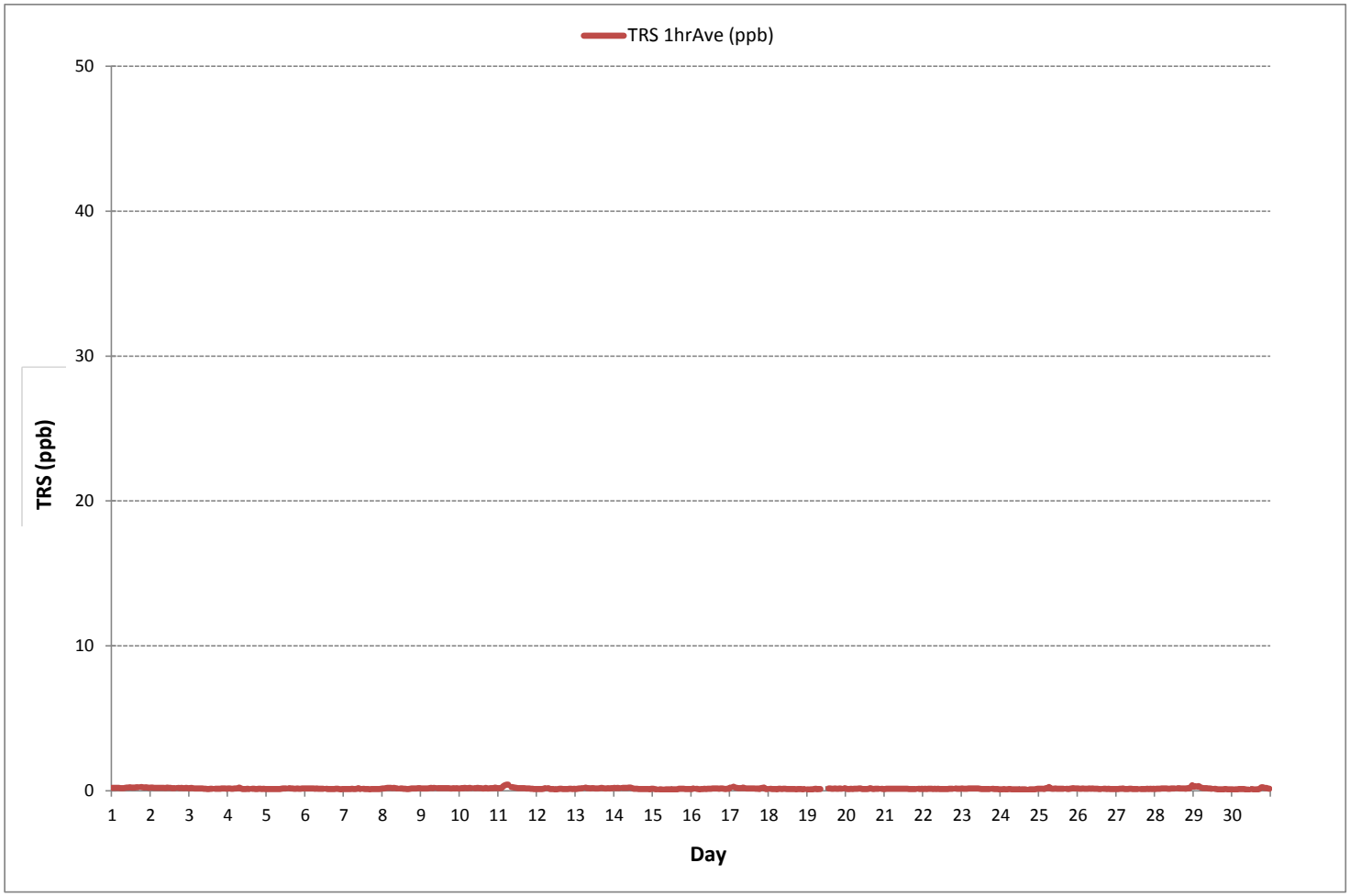


MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		685				
MINIMUM 1-HR AVERAGE	0.08	ppb	@ HOUR	VAR	ON DAY	VAR
MAXIMUM 1-HR AVERAGE:	0.41	ppb	@ HOUR	4, 5	ON DAY	11, 11
MAXIMUM 24-HR AVERAGE:	0.21	ppb			ON DAY	1, 11

IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	720	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0		MONTHLY AVERAGE:	0	ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS 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	0.17	0.17	0.17	0.17	0.20	0.17	0.15	0.17	0.17	0.20	0.22	0.22	0.20	0.22	0.22	0.25	0.20	S	0.26	0.23	0.23	0.23	0.22	0.22	0.15	0.26	0.20	24
2	0.22	0.22	0.22	0.17	0.20	0.22	0.22	0.22	0.22	0.17	0.20	0.20	0.20	0.20	0.17	0.17	S	0.20	0.20	0.20	0.17	0.17	0.22	0.20	0.17	0.22	0.20	24
3	0.17	0.22	0.20	0.15	0.15	0.17	0.17	0.20	0.15	0.15	0.15	0.15	0.15	0.17	0.15	S	0.17	0.17	0.17	0.15	0.20	0.20	0.20	0.15	0.15	0.22	0.17	24
4	0.17	0.17	0.15	0.17	0.17	0.20	0.25	0.28	0.17	0.17	0.15	0.17	0.20	0.17	S	0.17	0.17	0.17	0.17	0.20	0.20	0.15	0.20	0.17	0.15	0.28	0.18	24
5	0.15	0.17	0.15	0.17	0.17	0.15	0.15	0.15	0.15	0.23	0.23	0.20	0.20	S	0.20	0.23	0.18	0.17	0.17	0.17	0.15	0.17	0.20	0.20	0.15	0.23	0.18	24
6	0.20	0.17	0.20	0.17	0.20	0.20	0.17	0.17	0.15	0.15	0.15	0.15	S	0.15	0.15	0.15	0.12	0.15	0.12	0.17	0.15	0.15	0.12	0.20	0.12	0.20	0.16	24
7	0.15	0.18	0.15	0.15	0.17	0.15	0.20	0.17	0.22	1.69	0.20	S	0.20	0.12	0.15	0.15	0.12	0.15	0.15	0.15	0.15	0.15	0.12	0.17	0.12	1.69	0.23	24
8	0.17	0.17	0.17	0.23	0.22	0.23	0.23	0.17	0.17	0.17	S	0.17	0.17	0.15	0.17	0.12	0.12	0.15	0.15	0.15	0.15	0.20	0.20	0.17	0.12	0.23	0.17	24
9	0.17	0.17	0.17	0.20	0.15	0.20	0.22	0.20	0.20	S	0.20	0.23	0.20	0.17	0.20	0.17	0.17	0.20	0.17	0.15	0.20	0.17	0.17	0.17	0.15	0.23	0.18	24
10	0.17	0.20	0.20	0.23	0.20	0.23	0.25	0.23	S	0.20	0.17	0.23	0.20	0.20	0.17	0.23	0.23	0.17	0.12	0.15	0.17	0.20	0.20	0.17	0.12	0.25	0.20	24
11	0.17	0.20	0.20	0.33	0.38	0.43	0.43	S	0.25	0.22	0.22	0.20	0.20	0.17	0.17	0.18	0.17	0.17	0.17	0.20	0.23	0.18	0.15	0.17	0.15	0.43	0.23	24
12	0.15	0.17	0.17	0.17	0.15	0.20	S	0.25	0.15	0.15	0.15	0.12	0.12	0.15	0.18	0.20	0.15	0.15	0.15	0.15	0.20	0.17	0.23	0.17	0.12	0.25	0.17	24
13	0.17	0.20	0.20	0.23	0.23	S	0.25	0.22	0.20	0.20	0.23	0.20	0.17	0.20	0.22	0.22	0.22	0.20	0.20	0.17	0.23	0.17	0.20	0.17	0.17	0.25	0.20	24
14	0.25	0.22	0.25	0.22	S	0.25	0.23	0.23	0.25	0.25	0.25	0.20	0.17	0.15	0.17	0.15	0.12	0.15	0.15	0.15	0.12	0.15	0.12	0.17	0.12	0.25	0.19	24
15	0.20	0.20	0.12	S	0.12	0.12	0.12	0.12	0.15	0.15	0.15	0.09	0.12	0.17	0.15	0.12	0.15	0.17	0.15	0.15	0.12	0.17	0.12	0.12	0.09	0.20	0.14	24
16	0.15	0.17	S	0.15	0.12	0.12	0.15	0.12	0.15	0.12	0.12	0.12	0.15	0.17	0.17	0.17	0.15	0.17	0.20	0.20	0.17	0.12	0.15	0.17	0.12	0.20	0.15	24
17	0.23	S	0.30	0.25	0.20	0.22	0.23	0.26	0.28	0.22	0.20	0.22	0.20	0.22	0.20	0.20	0.17	0.22	0.15	0.28	0.28	0.25	0.17	0.15	0.15	0.30	0.22	24
18	S	0.20	0.15	0.17	0.17	0.15	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.17	0.20	0.20	0.20	0.17	0.17	0.17	0.20	S	0.15	0.20	0.19	24
19	0.20	0.17	0.22	0.17	0.25	0.25	0.22	0.20	C	C	C	C	C	0.25	0.25	0.20	0.20	0.28	0.20	0.23	0.20	0.17	S	0.20	0.17	0.28	0.21	24
20	0.22	0.15	0.15	0.17	0.17	0.17	0.20	0.20	0.20	0.20	0.17	0.15	0.15	0.15	0.22	0.22	0.17	0.15	0.15	0.15	0.17	S	0.17	0.17	0.15	0.22	0.17	24
21	0.15	0.20	0.20	0.17	0.20	0.17	0.17	0.17	0.17	0.20	0.17	0.22	0.17	0.17	0.17	0.15	0.15	0.17	0.15	0.17	S	0.17	0.17	0.20	0.15	0.22	0.18	24
22	0.17	0.20	0.15	0.17	0.17	0.20	0.17	0.20	0.17	0.15	0.17	0.17	0.17	0.17	0.17	0.20	0.20	0.20	0.17	S	0.20	0.20	0.20	0.20	0.15	0.20	0.18	24
23	0.20	0.20	0.20	0.17	0.20	0.20	0.20	0.22	0.22	0.25	0.22	0.17	0.25	0.17	0.20	0.22	0.20	0.17	S	0.17	0.17	0.18	0.17	0.15	0.15	0.25	0.20	24
24	0.17	0.17	0.20	0.17	0.18	0.20	0.23	0.20	0.17	0.20	0.15	0.17	0.17	0.20	0.20	0.18	0.15	S	0.20	0.23	0.20	0.17	0.20	0.25	0.15	0.25	0.19	24
25	0.22	0.20	0.20	0.17	0.25	0.28	0.36	0.22	0.20	0.20	0.20	0.20	0.17	0.17	0.20	0.20	S	0.20	0.17	0.17	0.23	0.23	0.18	0.20	0.17	0.36	0.21	24
26	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.22	0.20	0.20	0.20	0.20	0.17	0.17	0.17	S	0.20	0.20	0.15	0.18	0.15	0.15	0.15	0.17	0.15	0.22	0.19	24
27	0.17	0.20	0.17	0.20	0.22	0.17	0.18	0.15	0.18	0.18	0.17	0.17	0.17	0.17	S	0.20	0.17	0.15	0.17	0.17	0.15	0.20	0.17	0.17	0.15	0.22	0.18	24
28	0.15	0.17	0.17	0.17	0.20	0.20	0.17	0.20	0.20	0.17	0.17	0.20	0.20	S	0.20	0.20	0.17	0.17	0.17	0.17	0.23	0.20	0.36	0.49	0.15	0.49	0.21	24
29	0.33	0.33	0.33	0.38	0.28	0.22	0.22	0.20	0.22	0.20	0.20	0.20	S	0.17	0.17	0.15	0.14	0.12	0.15	0.15	0.17	0.17	0.15	0.17	0.12	0.38	0.21	24
30	0.17	0.12	0.15	0.17	0.17	0.17	0.17	0.20	0.15	0.12	0.15	S	0.20	0.15	0.15	0.17	0.15	0.28	0.41	0.36	0.25	0.23	0.28	0.28	0.12	0.41	0.20	24
HOURLY MAX	0.33	0.33	0.33	0.38	0.38	0.43	0.43	0.28	0.28	1.69	0.25	0.23	0.25	0.25	0.25	0.25	0.23	0.28	0.41	0.36	0.28	0.25	0.36	0.49				
HOURLY AVG	0.19	0.19	0.19	0.19	0.20	0.20	0.21	0.20	0.19	0.24	0.18	0.18	0.18	0.18	0.18	0.18	0.17	0.18	0.18	0.18	0.19	0.18	0.19	0.19				

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

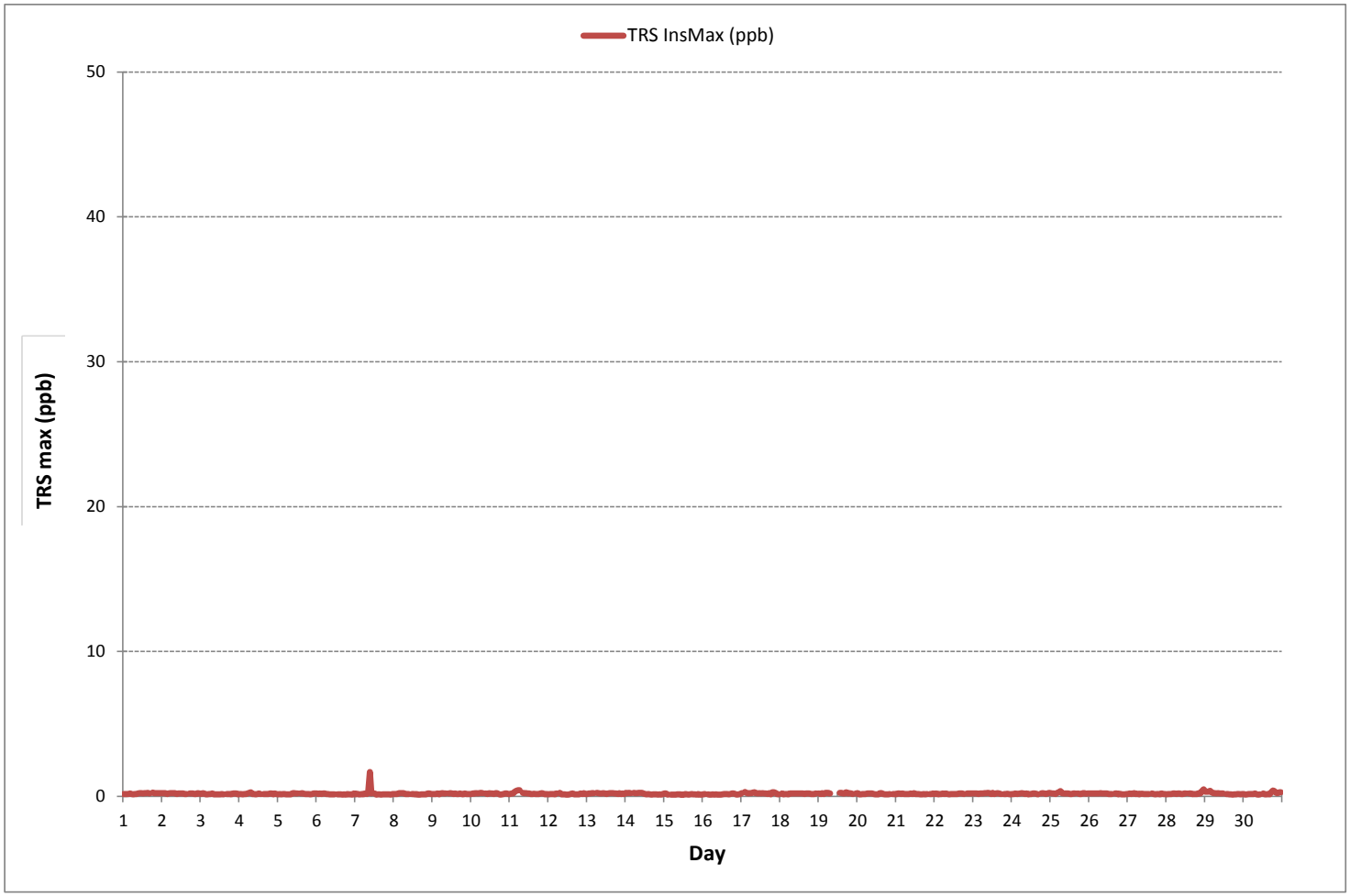
NUMBER OF NON-ZERO READINGS: 684

MAXIMUM INSTANTANEOUS VALUE: 1.69 ppb @ HOUR 9 ON DAY 7

IZS CALIBRATION TIME: 31 hrs
MONTHLY CALIBRATION TIME: 5 hrs
STANDARD DEVIATION: 0

OPERATIONAL TIME: 720 hrs

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)



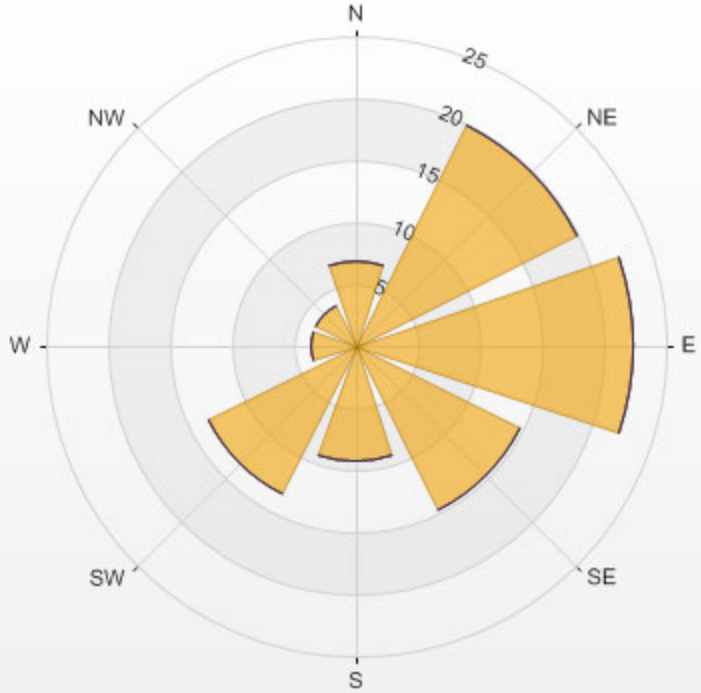
Wind: PRAMP_842
Poll.: PRAMP_842-TRS[ppb]
Monthly: 2017/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.73% Calm Avg: 0.13 [ppb]

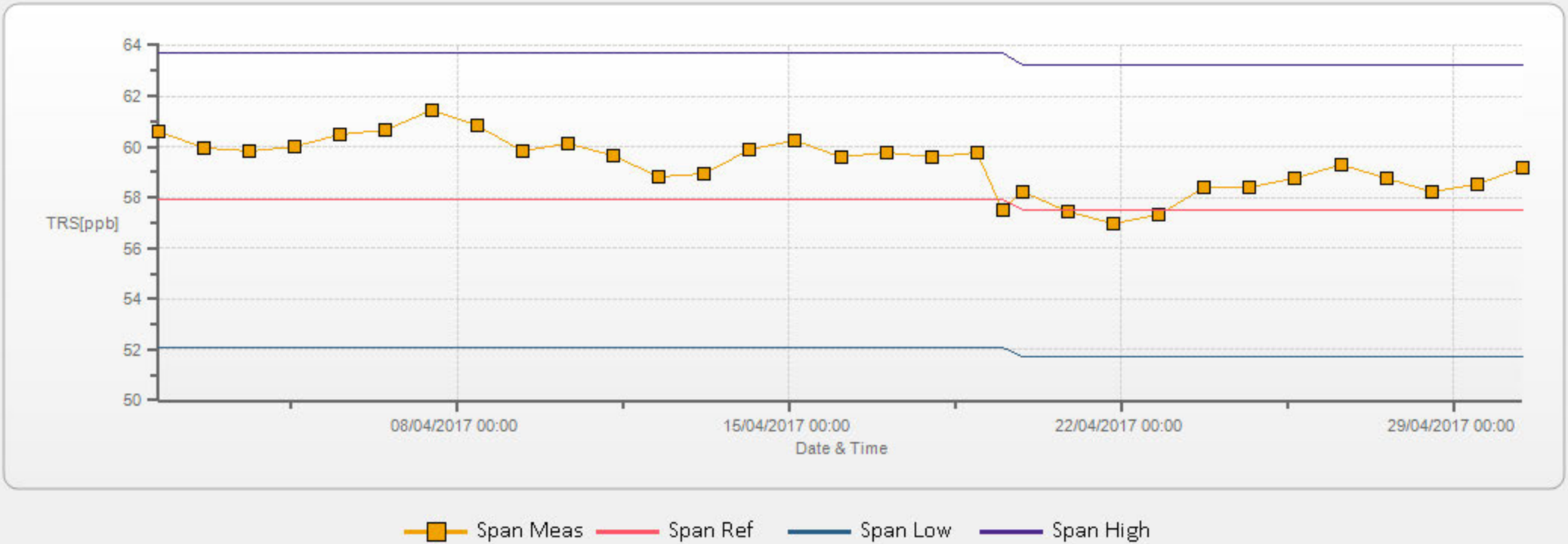
Direction	0-1	1-3	3-10	>10.0	Total
N	6.9	0.0	0.0	0.0	6.9
NE	20.0	0.0	0.0	0.0	20.0
E	22.5	0.0	0.0	0.0	22.5
SE	14.8	0.0	0.0	0.0	14.8
S	9.4	0.0	0.0	0.0	9.4
SW	13.4	0.0	0.0	0.0	13.4
W	3.7	0.0	0.0	0.0	3.7
NW	3.7	0.0	0.0	0.0	3.7
Summary	94.3	0.0	0.0	0.0	94.3

%	Icon	Classes (ppb)	94	0-1	0	1-3	0	3-10	0	>10.0

PRAMP_842 Poll.: PRAMP_842-TRS[ppb] 2017/04/01 00:00 - 2017/04/30 23:00 Calm: 5.73% Calm Poll Avg: 0.13[ppb]



TRS[ppb] Calibration: PRAMP_842 Monthly: 17/04 Type: Span



TOTAL HYDROCARBON

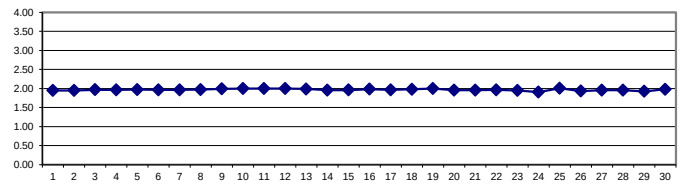
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

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	1.95	1.93	1.94	1.94	1.94	1.94	1.94	1.94	1.93	1.95	1.95	1.95	1.94	1.94	1.94	1.93	1.94	S	1.95	1.97	1.97	1.97	1.95	1.97	1.93	1.97	1.95	24
2	1.98	1.94	1.94	1.94	1.94	1.94	1.95	1.97	1.95	1.95	1.95	1.94	1.95	1.95	1.95	1.95	S	1.94	1.96	1.97	1.95	1.94	1.96	1.95	1.94	1.98	1.95	24
3	1.94	1.97	1.97	1.95	1.96	1.97	1.98	1.98	1.97	1.96	1.96	1.96	1.96	1.96	1.96	S	1.98	1.98	1.97	2.00	1.99	1.96	1.97	1.97	1.94	2.00	1.97	24
4	1.98	1.97	1.96	1.96	1.97	1.98	2.00	1.98	1.96	1.95	1.95	1.95	1.95	1.95	S	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.98	1.96	1.95	2.00	1.97	24
5	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.96	1.96	1.96	1.97	1.97	1.97	S	1.97	1.98	1.98	1.97	1.96	1.97	1.98	2.00	2.04	2.02	1.95	2.04	1.97	24
6	1.99	1.97	1.97	1.96	1.95	1.95	1.95	1.95	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.95	1.99	1.96	8
7	X	X	X	X	X	X	X	X	S1	1.93	1.93	S	1.95	1.95	1.95	1.96	1.97	1.97	1.96	1.99	1.99	1.97	1.97	1.97	1.93	1.99	1.96	15
8	1.97	1.97	1.96	1.95	1.96	1.96	1.97	1.98	1.97	1.96	S	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.98	1.97	1.98	2.05	2.03	1.97	1.95	2.05	1.97	24
9	1.97	1.98	1.98	1.99	1.99	2.00	2.00	2.00	2.00	S	1.99	1.96	1.97	1.98	1.99	2.00	1.99	1.99	1.99	2.00	2.03	2.03	2.00	1.98	1.96	2.03	1.99	24
10	1.98	1.98	1.99	1.99	1.99	2.02	2.03	2.05	S	1.99	1.99	1.99	2.00	1.99	1.99	1.99	1.98	1.98	1.97	1.98	1.98	2.03	2.02	2.01	1.97	2.05	2.00	24
11	2.04	2.22	2.08	1.98	1.97	1.98	1.98	S	1.98	1.98	1.98	1.98	1.98	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.01	1.99	1.99	1.98	1.97	2.22	2.00	24
12	1.98	1.99	1.99	1.99	2.01	2.03	S	2.04	2.00	1.99	1.98	1.98	1.98	1.98	1.99	1.99	1.99	1.98	1.99	1.99	2.03	2.04	2.02	2.01	1.98	2.04	2.00	24
13	2.00	2.02	2.01	2.01	2.01	S	2.01	2.01	2.00	2.00	1.99	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	2.02	1.99	24
14	1.96	1.96	1.96	1.95	S	1.96	1.96	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.96	1.96	24
15	1.95	1.95	1.95	S	1.96	1.96	1.96	1.96	1.96	1.96	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.96	1.96	1.97	1.97	1.95	1.97	1.96	24
16	1.97	1.97	S	1.97	1.96	1.96	1.97	1.97	1.97	1.98	1.99	1.99	1.99	1.99	2.00	2.00	1.99	2.00	2.01	2.01	2.01	2.00	1.97	1.96	1.96	2.01	1.98	24
17	1.97	S	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.96	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.95	1.97	1.97	24
18	S	1.97	1.97	1.97	1.97	1.97	1.98	1.98	1.98	1.98	1.99	1.99	1.98	1.98	1.98	1.97	1.97	1.98	1.99	1.99	1.98	1.97	1.96	S	1.96	1.99	1.98	24
19	1.97	1.97	1.97	2.02	2.08	2.11	2.17	2.06	1.99	1.98	1.99	C	C	C	C	1.94	1.93	1.94	1.94	1.94	1.95	1.94	S	2.09	1.93	2.17	2.00	24
20	1.96	1.95	1.97	2.00	2.04	2.01	2.00	1.96	1.96	1.95	1.94	1.94	1.94	1.94	1.94	1.93	1.94	1.94	1.94	1.94	1.94	S	1.95	1.94	1.93	2.04	1.96	24
21	1.94	1.94	1.96	1.98	1.96	1.95	1.96	1.96	1.96	1.95	1.96	1.96	1.96	1.96	1.95	1.94	1.94	1.94	1.95	1.95	S	2.00	1.97	1.96	1.94	2.00	1.96	24
22	2.00	2.04	2.01	2.01	1.99	1.98	S1	S1	S1	1.95	1.95	1.94	1.94	1.94	1.93	1.93	1.94	1.94	1.95	S	1.94	1.95	1.96	1.97	1.93	2.04	1.96	21
23	1.97	1.95	1.95	1.97	2.00	1.97	2.00	1.97	1.95	1.96	1.95	C1	C1	C1	C1	1.91	1.92	1.93	S	1.92	1.92	1.93	1.93	1.93	1.91	2.00	1.95	20
24	1.92	1.92	1.92	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	S	1.90	1.90	1.91	1.91	1.93	1.98	1.90	1.98	1.91	24
25	2.00	2.00	2.00	1.98	2.11	2.20	2.58	2.09	1.98	1.93	1.91	1.92	1.92	1.93	1.93	1.93	S	1.94	1.94	1.95	1.97	1.97	1.97	1.95	1.91	2.58	2.00	24
26	1.96	1.96	1.95	1.94	1.96	1.96	1.95	1.93	1.93	1.93	1.93	1.92	1.92	1.92	1.93	S	1.94	1.93	1.93	1.92	1.92	1.91	1.92	1.92	1.91	1.96	1.93	24
27	1.93	1.93	1.99	2.11	1.97	1.96	1.96	1.95	1.95	1.94	1.94	1.93	1.93	1.93	S	1.94	1.93	1.93	1.94	1.94	1.96	1.99	2.01	1.99	1.93	2.11	1.96	24
28	1.99	2.02	1.99	1.98	1.99	1.99	1.97	1.95	1.95	1.94	1.94	1.95	1.96	S	1.94	1.94	1.94	1.94	1.95	1.95	1.93	1.92	1.92	1.92	1.92	2.02	1.96	24
29	1.91	1.91	1.92	1.92	1.92	1.93	1.93	1.92	1.92	1.92	1.92	1.93	S	1.92	1.91	1.91	1.91	1.91	1.92	1.93	1.97	1.94	1.96	1.95	1.91	1.97	1.93	24
30	1.97	1.98	1.99	2.01	2.13	2.10	2.18	2.18	2.03	1.93	1.92	S	1.92	1.91	1.91	1.92	1.91	1.92	1.92	1.92	1.93	1.94	1.94	1.93	1.91	2.18	1.98	24
HOURLY MAX	2.04	2.22	2.08	2.11	2.13	2.20	2.58	2.18	2.03	2.00	1.99	1.99	2.00	1.99	2.00	2.00	1.99	2.00	2.01	2.01	2.03	2.05	2.04	2.09				
HOURLY AVG	1.97	1.98	1.97	1.98	1.98	1.99	2.01	1.98	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.97	1.97	1.97	1.97				

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 April 2017

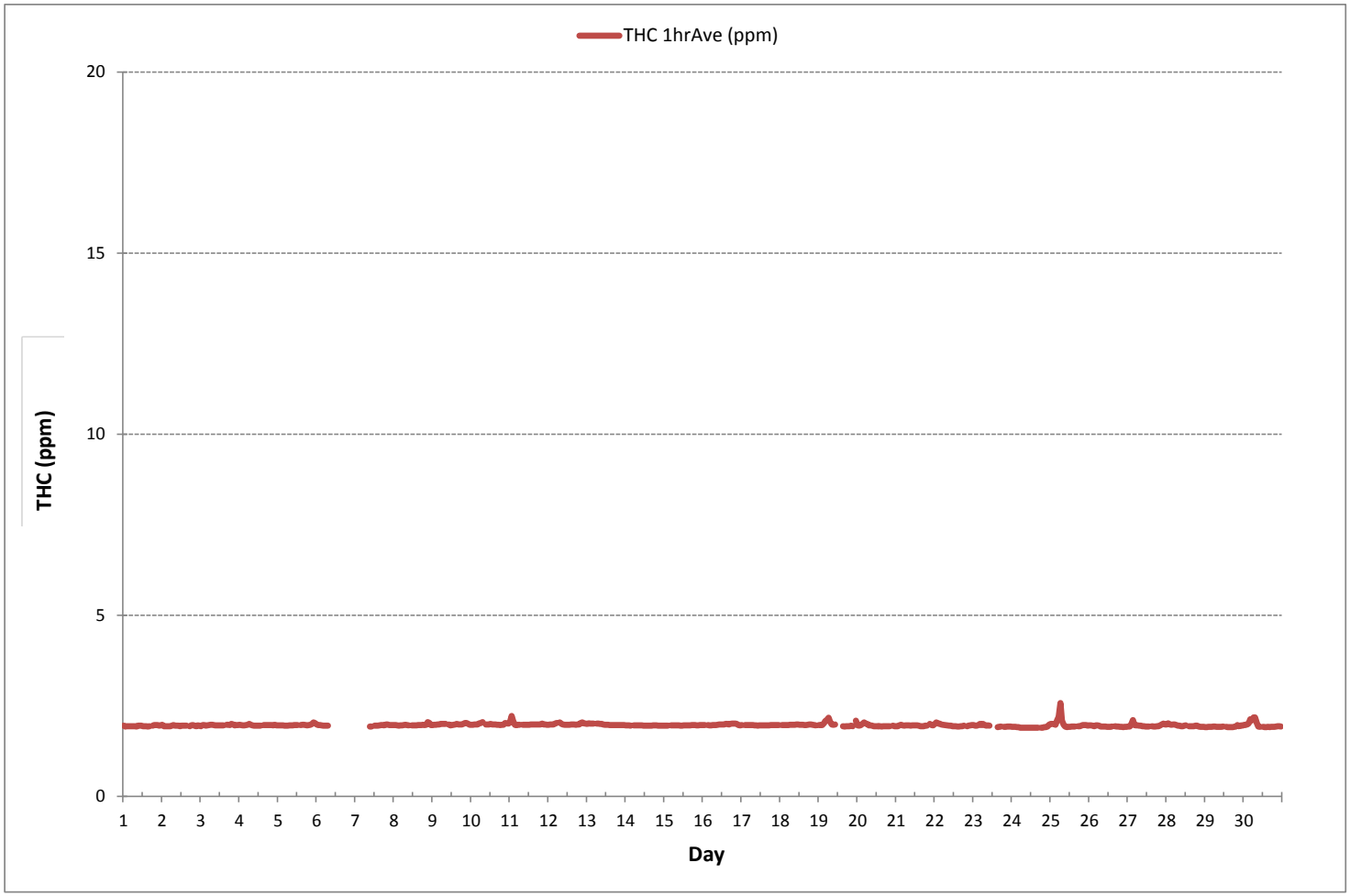


MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		654				
MINIMUM 1-HR AVERAGE	1.90	ppm	@ HOUR	VAR	ON DAY	24
MAXIMUM 1-HR AVERAGE:	2.58	ppm	@ HOUR	6	ON DAY	25
MAXIMUM 24-HR AVERAGE:	2.00	ppm			ON DAY	VAR

IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	688	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:	95.6	%
STANDARD DEVIATION:	0.04		MONTHLY AVERAGE:	1.97	ppm

TOTAL HYDROCARBONS Hourly Averages (THC ppm)



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	2.02	1.97	1.96	1.96	1.96	1.95	1.96	1.95	1.97	1.98	1.97	1.97	1.97	1.96	1.97	1.96	1.96	S	1.97	2.04	2.01	2.01	1.99	2.00	1.95	2.04	1.98	24
2	2.00	1.99	1.98	1.95	1.98	1.96	1.98	2.00	1.98	1.96	1.97	1.98	1.96	1.97	1.96	1.97	S	1.97	1.99	2.01	1.97	1.97	1.99	1.97	1.95	2.01	1.98	24
3	1.98	2.08	2.01	1.97	1.99	1.98	2.00	2.00	1.99	1.99	1.98	1.99	1.98	2.00	1.98	S	2.03	1.99	1.99	2.06	2.04	2.04	1.99	1.99	1.97	2.08	2.00	24
4	2.00	2.00	1.98	2.01	1.99	1.99	2.02	2.08	2.01	1.97	1.97	1.98	1.97	1.99	S	1.99	1.99	1.99	1.98	1.99	1.99	1.98	2.05	1.98	1.97	2.08	2.00	24
5	2.00	1.98	1.98	1.98	1.97	1.98	1.97	1.99	2.05	1.99	2.00	1.98	2.01	S	2.00	1.99	2.01	1.98	1.97	1.99	2.00	2.02	2.18	2.25	1.97	2.25	2.01	24
6	2.10	2.01	1.98	1.99	1.98	1.98	1.97	1.99	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.97	2.10	2.00	8
7	X	X	X	X	X	X	X	X	S1	S1	1.97	S	1.97	1.97	1.99	1.97	1.99	1.98	2.08	2.07	2.02	2.00	2.16	1.99	1.97	2.16	2.01	14
8	2.04	2.04	1.99	1.97	1.98	1.98	2.00	2.04	2.11	1.98	S	1.98	1.98	1.98	1.97	2.04	1.99	1.99	2.02	1.99	2.10	2.10	2.13	1.99	1.97	2.13	2.02	24
9	1.98	1.99	2.03	2.01	2.00	2.01	2.02	2.02	2.01	S	2.13	1.97	1.98	2.00	2.00	2.01	2.00	2.00	2.10	2.07	2.05	2.06	2.06	2.00	1.97	2.13	2.02	24
10	2.00	2.06	2.00	2.00	2.01	2.06	2.06	2.08	S	2.02	2.05	2.00	2.03	2.01	2.01	2.09	2.04	2.02	2.00	1.99	2.03	2.08	2.05	2.05	1.99	2.09	2.03	24
11	2.09	2.49	2.32	1.99	1.99	2.00	2.00	S	2.01	1.99	2.00	1.99	2.00	2.00	2.06	2.06	2.00	2.01	2.01	2.01	2.06	2.01	2.00	2.00	1.99	2.49	2.05	24
12	2.01	2.03	2.01	2.00	2.07	2.12	S	2.09	2.12	2.02	2.01	2.02	2.00	2.02	2.00	2.03	2.06	2.00	2.03	2.00	2.11	2.11	2.11	2.05	2.00	2.12	2.04	24
13	2.10	2.07	2.06	2.07	2.03	S	2.03	2.01	2.04	2.01	2.03	2.01	1.99	2.00	1.99	2.00	1.98	2.01	1.99	2.00	2.00	1.99	2.00	1.99	1.98	2.10	2.02	24
14	1.99	1.97	1.97	1.97	S	2.00	1.97	2.04	1.97	2.11	1.97	1.97	1.97	1.98	1.96	1.99	1.99	1.97	1.98	1.97	1.99	1.97	1.96	1.96	1.96	2.11	1.98	24
15	1.98	1.97	2.01	S	1.97	1.98	1.97	1.99	2.06	2.03	1.97	1.97	1.98	1.97	2.04	2.02	1.99	1.99	1.99	1.99	1.99	1.97	1.99	2.01	1.97	2.06	1.99	24
16	1.98	2.05	S	1.99	1.98	1.99	1.98	1.98	2.02	1.99	2.00	2.02	2.03	2.01	2.01	2.01	2.01	2.01	2.02	2.11	2.02	2.12	2.04	1.98	1.98	2.12	2.02	24
17	2.01	S	1.98	1.99	1.98	2.00	2.02	2.02	1.99	1.97	1.98	1.98	2.00	1.97	1.98	1.98	1.98	2.00	1.98	1.99	1.98	1.99	1.98	1.98	1.97	2.02	1.99	24
18	S	1.98	1.99	1.99	1.99	1.99	2.00	1.99	1.99	1.99	2.00	2.00	1.99	2.00	1.99	1.99	1.99	1.99	2.00	2.00	2.00	1.98	1.98	S	1.98	2.00	1.99	24
19	1.98	1.98	2.03	2.18	2.12	2.16	2.20	2.18	2.00	2.00	2.00	C	C	C	C	1.96	1.94	1.98	1.96	1.96	1.97	1.95	S	2.19	1.94	2.20	2.04	24
20	2.02	1.97	2.07	2.06	2.08	2.05	2.04	1.99	1.97	1.97	1.96	1.98	1.95	1.96	1.95	1.95	1.96	1.95	1.98	1.94	1.97	S	1.97	1.96	1.94	2.08	1.99	24
21	1.96	1.97	1.98	2.00	2.00	1.97	1.97	2.01	1.98	1.98	1.99	1.98	1.99	1.97	1.97	1.96	1.98	1.96	1.98	1.97	S	2.10	2.00	1.99	1.96	2.10	1.99	24
22	2.09	2.09	2.08	2.03	2.03	1.99	S1	S1	S1	S1	1.97	1.96	1.98	1.97	1.97	1.96	1.95	1.96	1.96	S	1.96	1.97	1.98	1.98	1.95	2.09	1.99	20
23	2.00	1.97	1.96	2.01	2.02	1.99	2.01	2.01	1.98	1.98	2.01	C1	C1	C1	C1	1.95	1.94	1.95	S	1.96	1.95	1.97	1.95	1.95	1.94	2.02	1.98	20
24	1.93	1.93	1.93	1.92	1.93	1.92	1.92	2.03	1.93	1.92	1.93	1.92	1.92	1.91	1.91	1.93	1.91	S	1.91	1.92	1.91	1.92	1.98	2.01	1.91	2.03	1.93	24
25	2.04	2.03	2.02	2.12	2.23	2.62	3.15	2.29	2.06	1.94	1.92	1.94	1.93	1.96	2.05	1.95	S	1.95	1.95	1.97	2.06	1.98	1.98	1.97	1.92	3.15	2.09	24
26	1.99	2.08	1.96	1.96	1.99	1.98	1.97	1.96	1.94	1.95	1.95	1.94	1.99	1.96	1.99	S	1.94	1.97	1.98	1.93	1.96	1.92	1.93	1.93	1.92	2.08	1.96	24
27	1.95	1.96	2.04	2.25	2.03	1.98	2.29	1.97	2.02	1.96	1.96	1.93	1.97	1.95	S	1.95	1.94	1.99	2.01	1.97	1.99	2.04	2.07	2.04	1.93	2.29	2.01	24
28	2.10	2.11	2.04	2.01	2.20	2.01	1.98	1.98	1.97	1.97	1.97	1.97	1.97	S	2.16	1.96	1.95	1.96	2.11	2.05	1.95	1.93	1.97	1.93	1.93	2.20	2.01	24
29	1.92	1.94	1.92	1.95	1.95	1.95	1.96	1.95	1.93	1.92	1.96	1.97	S	1.93	1.92	1.91	1.92	1.94	1.94	1.95	2.12	1.96	2.00	1.98	1.91	2.12	1.95	24
30	1.99	2.02	2.04	2.09	2.25	2.16	2.33	2.38	2.24	1.95	1.93	S	1.93	1.93	1.92	1.94	1.93	1.93	1.92	1.93	1.95	1.98	1.98	1.95	1.92	2.38	2.03	24
HOURLY MAX	2.10	2.49	2.32	2.25	2.25	2.62	3.15	2.38	2.24	2.11	2.13	2.02	2.03	2.02	2.16	2.09	2.06	2.02	2.11	2.11	2.12	2.12	2.18	2.25				
HOURLY AVG	2.01	2.03	2.01	2.02	2.03	2.03	2.07	2.04	2.01	1.98	1.98	1.98	1.98	1.97	1.99	1.98	1.98	1.98	1.99	1.99	2.01	2.00	2.02	2.00				

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

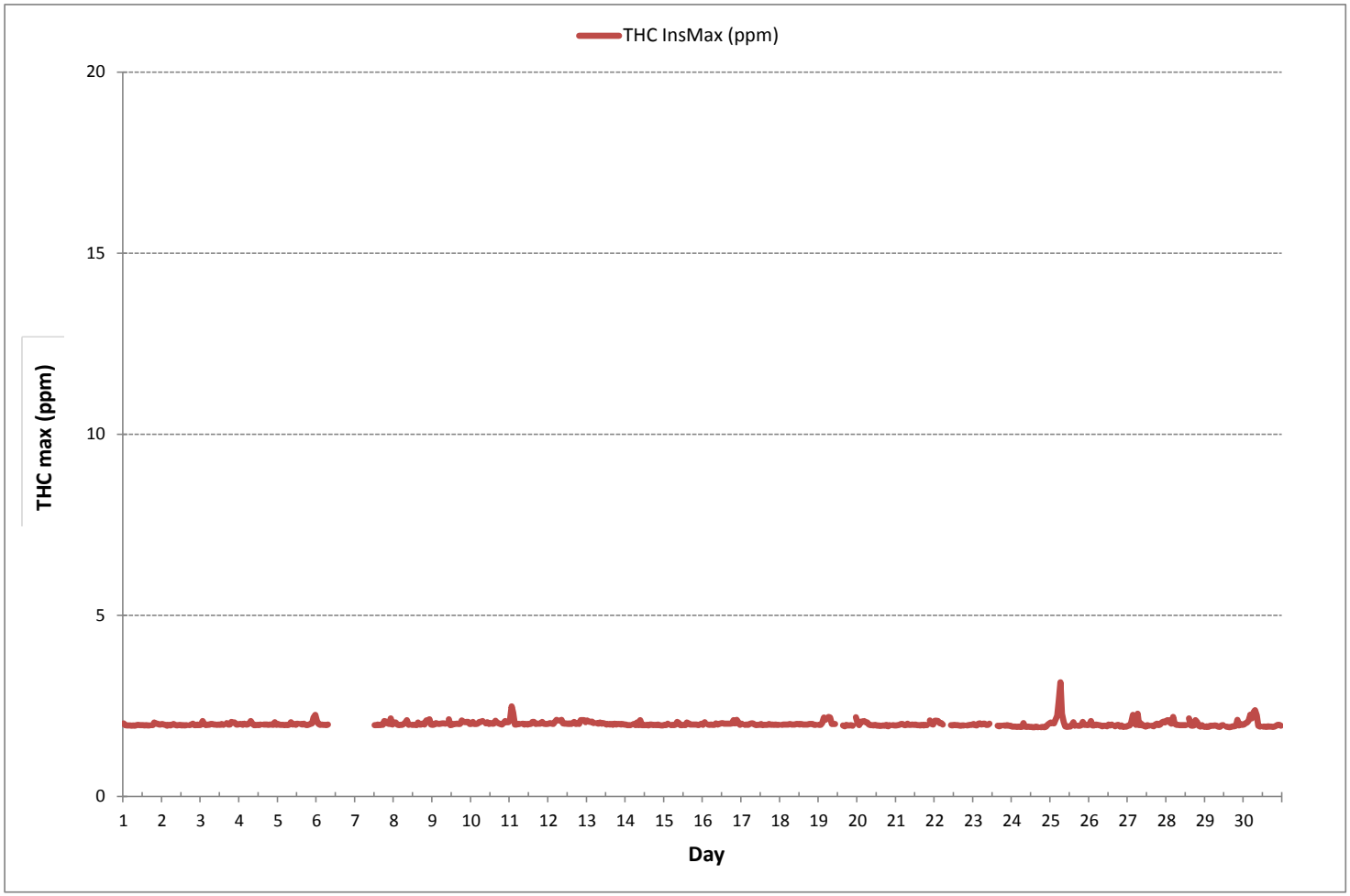
NUMBER OF NON-ZERO READINGS: 652

MAXIMUM INSTANTANEOUS VALUE: 3.15 ppm @ HOUR 6 ON DAY 25

IZS CALIBRATION TIME: 30 hrs
MONTHLY CALIBRATION TIME: 4 hrs
STANDARD DEVIATION: 0.08

OPERATIONAL TIME: 686 hrs

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)

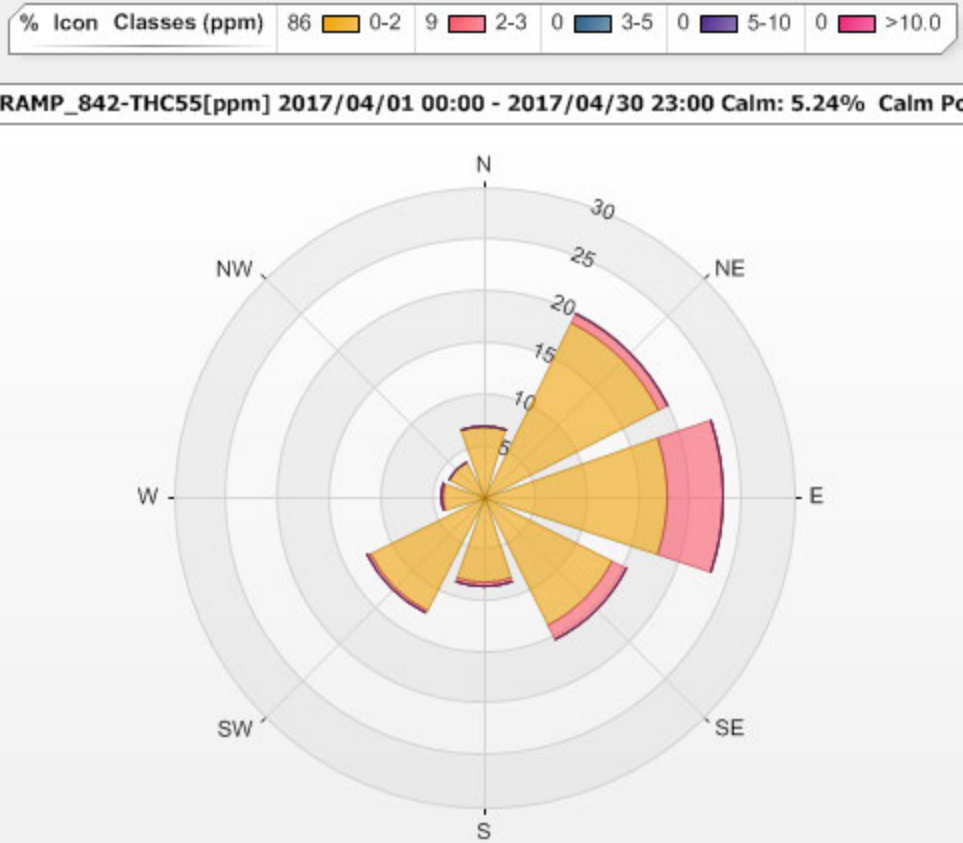


Wind: PRAMP_842
Poll.: PRAMP_842-THC55[ppm]
Monthly: 2017/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

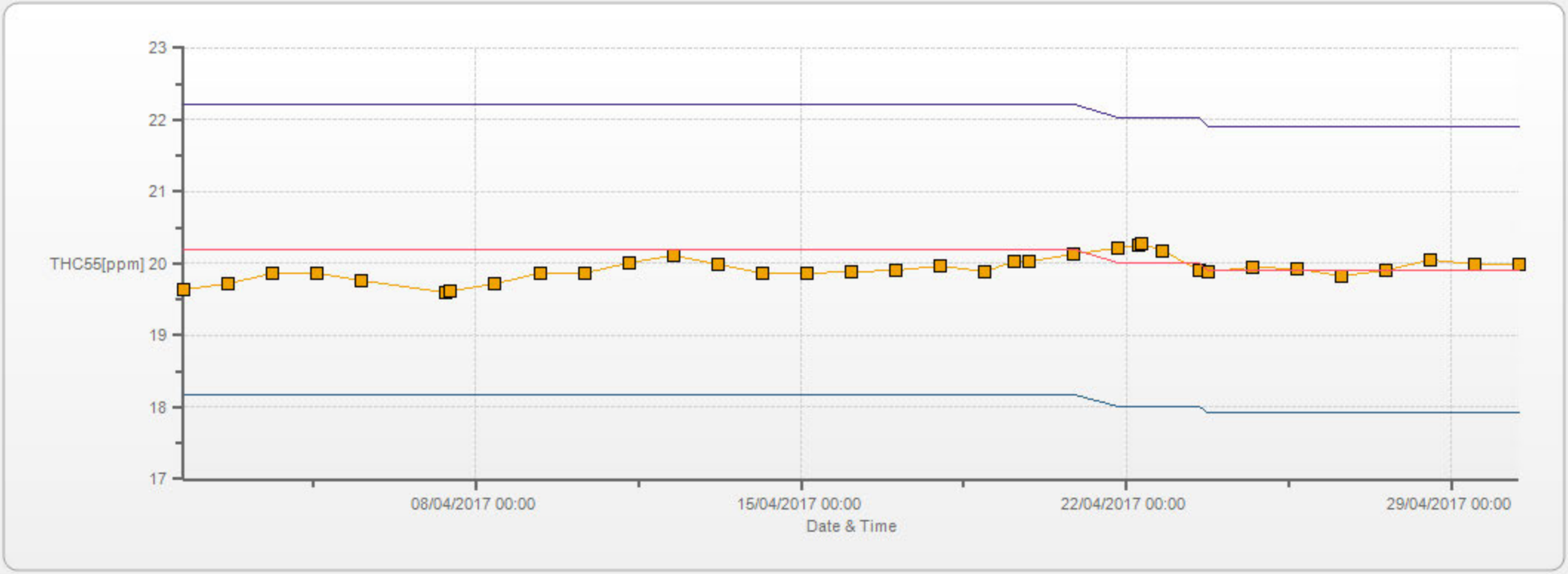
Calm: 5.24%

Calm Avg: 1.99 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	6.8	0.2	0.0	0.0	0.0	6.9
NE	19.0	0.9	0.0	0.0	0.0	19.9
E	17.9	5.4	0.0	0.0	0.0	23.3
SE	13.9	1.5	0.0	0.0	0.0	15.4
S	8.3	0.3	0.0	0.0	0.0	8.6
SW	12.3	0.3	0.0	0.0	0.0	12.6
W	4.0	0.2	0.0	0.0	0.0	4.2
NW	3.9	0.0	0.0	0.0	0.0	3.9
Summary	86.0	8.8	0.0	0.0	0.0	94.8


% Icon Classes (ppm)
86 0-2
9 2-3
0 3-5
0 5-10
0 >10.0
PRAMP_842 Poll.: PRAMP_842-THC55[ppm] 2017/04/01 00:00 - 2017/04/30 23:00 Calm: 5.24% Calm Poll Avg: 1.99[ppm]
N
NE
E
SE
S
SW
W
NW
30
25
20
15
10
5

THC55[ppm] Calibration: PRAMP_842 Monthly: 17/04 Type: Span



METHANE

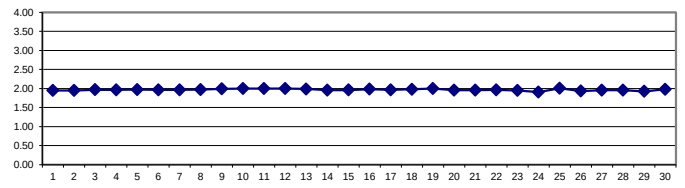
METHANE Hourly Averages (CH_4 ppm)

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	1.95	1.93	1.94	1.94	1.94	1.94	1.94	1.94	1.93	1.95	1.95	1.95	1.94	1.94	1.94	1.93	1.94	S	1.95	1.97	1.97	1.97	1.95	1.97	1.93	1.97	1.95	24
2	1.98	1.94	1.94	1.94	1.94	1.94	1.95	1.97	1.95	1.95	1.95	1.94	1.95	1.95	1.95	1.95	S	1.94	1.96	1.97	1.95	1.94	1.95	1.95	1.94	1.98	1.95	24
3	1.94	1.97	1.97	1.95	1.96	1.97	1.98	1.98	1.97	1.96	1.96	1.96	1.96	1.96	1.96	S	1.98	1.98	1.97	2.00	1.99	1.96	1.97	1.97	1.94	2.00	1.97	24
4	1.98	1.97	1.96	1.96	1.97	1.98	2.00	1.98	1.96	1.95	1.95	1.95	1.95	1.95	S	1.97	1.97	1.97	1.97	1.97	1.97	1.96	1.98	1.96	1.95	2.00	1.97	24
5	1.96	1.96	1.96	1.96	1.95	1.95	1.95	1.96	1.96	1.96	1.97	1.97	1.97	S	1.97	1.98	1.98	1.96	1.96	1.97	1.98	2.00	2.02	2.02	1.95	2.02	1.97	24
6	1.99	1.97	1.97	1.96	1.95	1.95	1.95	1.95	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.95	1.99	1.96	8
7	X	X	X	X	X	X	X	X	S1	1.93	1.93	S	1.95	1.95	1.95	1.96	1.97	1.97	1.96	1.99	1.99	1.97	1.97	1.97	1.93	1.99	1.96	15
8	1.97	1.97	1.96	1.95	1.96	1.96	1.97	1.98	1.97	1.96	S	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.98	1.97	1.98	2.05	2.03	1.97	1.95	2.05	1.97	24
9	1.97	1.98	1.98	1.99	1.99	2.00	2.00	2.00	2.00	S	1.99	1.96	1.97	1.98	1.99	2.00	1.99	1.99	1.99	2.00	2.03	2.03	2.00	1.98	1.96	2.03	1.99	24
10	1.98	1.98	1.99	1.99	1.99	2.02	2.03	2.05	S	1.99	1.99	1.99	2.00	1.99	1.99	1.99	1.98	1.98	1.97	1.98	1.98	2.03	2.02	2.01	1.97	2.05	2.00	24
11	2.04	2.22	2.08	1.98	1.97	1.98	1.98	S	1.98	1.98	1.98	1.98	1.98	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.01	1.99	1.99	1.98	1.97	2.22	2.00	24
12	1.98	1.99	1.99	1.99	2.01	2.03	S	2.04	2.00	1.99	1.98	1.98	1.98	1.98	1.99	1.98	1.99	1.98	1.99	1.99	2.03	2.04	2.02	2.01	1.98	2.04	2.00	24
13	2.00	2.02	2.01	2.01	2.01	S	2.01	2.01	2.00	2.00	1.99	1.98	1.98	1.98	1.97	1.97	1.96	1.97	1.96	1.97	1.97	1.97	1.97	1.97	1.96	2.02	1.99	24
14	1.96	1.96	1.96	1.95	S	1.96	1.96	1.96	1.96	1.95	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.95	1.95	1.95	1.95	1.95	1.96	1.95	24
15	1.95	1.95	1.95	S	1.96	1.96	1.96	1.96	1.96	1.96	1.95	1.95	1.96	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.96	1.96	1.97	1.97	1.95	1.97	1.96	24
16	1.97	1.97	S	1.97	1.96	1.96	1.97	1.97	1.97	1.98	1.99	1.99	1.99	1.99	2.00	2.00	1.99	2.00	2.01	2.01	2.01	2.00	1.97	1.96	1.96	2.01	1.98	24
17	1.97	S	1.97	1.97	1.97	1.96	1.96	1.97	1.96	1.96	1.95	1.96	1.96	1.95	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.97	1.97	1.97	1.95	1.97	1.96	24
18	S	1.97	1.97	1.97	1.97	1.97	1.98	1.98	1.98	1.98	1.99	1.99	1.98	1.98	1.98	1.97	1.97	1.98	1.99	1.99	1.98	1.97	1.96	S	1.96	1.99	1.98	24
19	1.97	1.97	1.97	2.02	2.08	2.11	2.17	2.06	1.99	1.98	1.99	C	C	C	C	1.94	1.93	1.94	1.94	1.94	1.95	1.94	S	2.09	1.93	2.17	2.00	24
20	1.96	1.95	1.97	2.00	2.04	2.01	2.00	1.96	1.96	1.95	1.94	1.94	1.94	1.94	1.94	1.93	1.94	1.94	1.94	1.94	1.94	S	1.95	1.94	1.93	2.04	1.96	24
21	1.94	1.94	1.96	1.98	1.96	1.95	1.96	1.96	1.96	1.95	1.96	1.96	1.96	1.96	1.95	1.94	1.94	1.94	1.95	1.95	S	2.00	1.97	1.96	1.94	2.00	1.96	24
22	2.00	2.04	2.01	2.01	1.99	1.98	S1	S1	S1	1.95	1.95	1.94	1.94	1.94	1.93	1.93	1.94	1.94	1.95	S	1.94	1.95	1.96	1.97	1.93	2.04	1.96	21
23	1.97	1.95	1.95	1.97	2.00	1.97	2.00	1.97	1.95	1.96	1.95	C1	C1	C1	C1	1.91	1.92	1.93	S	1.92	1.92	1.93	1.93	1.93	1.91	2.00	1.95	20
24	1.92	1.92	1.92	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	S	1.90	1.90	1.91	1.91	1.93	1.98	1.90	1.98	1.91	24
25	2.00	2.00	2.00	1.98	2.11	2.20	2.58	2.09	1.98	1.93	1.91	1.91	1.92	1.93	1.93	1.93	S	1.94	1.94	1.94	1.97	1.97	1.96	1.95	1.91	2.58	2.00	24
26	1.96	1.95	1.95	1.94	1.96	1.96	1.95	1.93	1.93	1.93	1.93	1.92	1.92	1.92	1.93	S	1.94	1.93	1.93	1.92	1.92	1.91	1.92	1.92	1.91	1.96	1.93	24
27	1.93	1.93	1.99	2.11	1.97	1.96	1.96	1.95	1.94	1.94	1.94	1.93	1.93	1.93	S	1.94	1.93	1.93	1.94	1.94	1.96	1.99	2.01	1.99	1.93	2.11	1.96	24
28	1.99	2.02	1.99	1.98	1.99	1.99	1.97	1.95	1.95	1.94	1.94	1.95	1.96	S	1.94	1.94	1.94	1.94	1.94	1.95	1.93	1.92	1.92	1.92	1.92	2.02	1.95	24
29	1.91	1.91	1.92	1.92	1.92	1.93	1.93	1.92	1.92	1.92	1.92	1.93	S	1.92	1.91	1.91	1.91	1.91	1.92	1.93	1.97	1.94	1.96	1.95	1.91	1.97	1.93	24
30	1.97	1.98	1.99	2.01	2.13	2.10	2.18	2.17	2.03	1.93	1.92	S	1.92	1.91	1.91	1.92	1.91	1.92	1.92	1.92	1.93	1.94	1.94	1.93	1.91	2.18	1.98	24
HOURLY MAX	2.04	2.22	2.08	2.11	2.13	2.20	2.58	2.17	2.03	2.00	1.99	1.99	2.00	1.99	2.00	2.00	1.99	2.00	2.01	2.01	2.03	2.05	2.03	2.09				
HOURLY AVG	1.97	1.98	1.97	1.98	1.98	1.99	2.01	1.98	1.96	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.97	1.97	1.97	1.97				

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

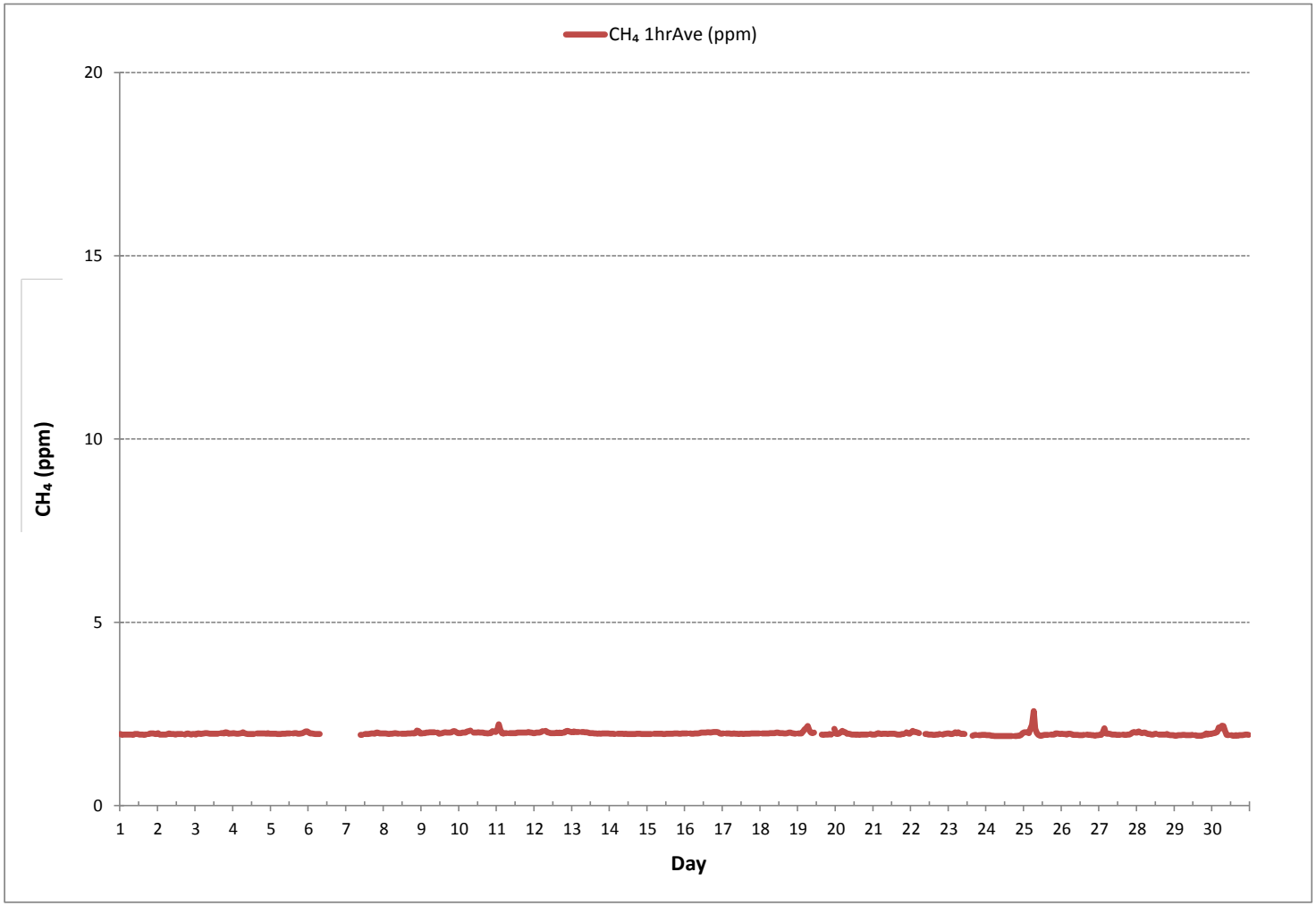
24 HR AVERAGES April 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			654				
MINIMUM 1-HR AVERAGE	1.90	ppm	@ HOUR	VAR	ON DAY	24	
MAXIMUM 1-HR AVERAGE:	2.58	ppm	@ HOUR	6	ON DAY	25	
MAXIMUM 24-HR AVERAGE:	2.00	ppm			ON DAY	VAR	
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:			688	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:			95.6	%
STANDARD DEVIATION:	0.04		MONTHLY AVERAGE:			1.97	ppm

METHANE Hourly Averages (CH_4 ppm)



METHANE MAX Instantaneous Maximum (CH_4 ppm)

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	2.02	1.97	1.96	1.96	1.96	1.96	1.96	1.95	1.97	1.98	1.97	1.97	1.97	1.95	1.97	1.96	1.95	S	1.97	2.04	2.02	2.01	1.99	2.00	1.95	2.04	1.98	24
2	2.01	2.00	1.98	1.95	1.98	1.96	1.98	2.01	1.98	1.96	1.97	1.98	1.96	1.97	1.96	1.97	S	1.97	1.99	2.01	1.96	1.97	1.99	1.97	1.95	2.01	1.98	24
3	1.98	2.07	2.01	1.96	1.99	1.98	2.00	2.01	1.99	1.98	1.98	2.00	1.98	2.01	1.98	S	1.99	1.99	1.99	2.05	2.05	2.05	2.00	1.99	1.96	2.07	2.00	24
4	2.00	2.01	1.98	2.01	1.99	2.00	2.03	2.01	1.98	1.97	1.97	1.99	1.97	1.99	S	1.99	1.99	1.99	1.98	1.99	1.99	1.99	2.01	1.98	1.97	2.03	1.99	24
5	2.00	1.99	1.98	1.97	1.97	1.98	1.97	1.99	1.98	1.99	2.00	1.98	2.01	S	2.00	1.99	1.99	1.98	1.97	1.98	2.01	2.02	2.05	2.05	1.97	2.05	1.99	24
6	2.03	2.01	1.98	2.00	1.97	1.97	1.97	1.99	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.97	2.03	1.99	8
7	X	X	X	X	X	X	X	X	S1	S1	1.97	S	1.97	1.96	1.99	1.98	1.99	1.98	1.97	2.01	2.02	2.01	2.16	2.00	1.96	2.16	2.00	14
8	2.04	2.04	1.99	1.97	1.98	1.97	2.00	2.02	1.99	1.98	S	1.98	1.98	1.98	1.97	1.98	1.99	1.99	2.02	1.98	2.09	2.09	2.07	2.00	1.97	2.09	2.00	24
9	1.99	1.99	2.00	2.01	2.00	2.01	2.02	2.03	2.01	S	2.13	1.97	1.98	2.00	2.00	2.02	2.01	2.00	2.01	2.05	2.05	2.06	2.06	2.00	1.97	2.13	2.02	24
10	2.00	2.05	2.00	2.01	2.01	2.05	2.06	2.07	S	2.03	2.06	2.01	2.03	2.01	2.01	2.01	2.00	2.02	2.00	1.99	1.99	2.07	2.04	2.04	1.99	2.07	2.02	24
11	2.09	2.49	2.32	1.99	1.99	2.01	2.00	S	2.01	1.99	2.00	1.99	2.00	2.00	2.01	2.00	2.00	2.01	2.01	2.01	2.06	2.01	2.01	2.01	1.99	2.49	2.04	24
12	2.01	2.04	2.01	2.00	2.07	2.11	S	2.09	2.02	2.01	2.01	2.02	2.01	2.01	2.00	2.01	2.05	2.00	2.01	2.01	2.11	2.11	2.06	2.05	2.00	2.11	2.04	24
13	2.10	2.06	2.06	2.06	2.04	S	2.03	2.02	2.04	2.01	2.00	2.02	2.00	2.00	1.99	2.00	1.98	2.01	1.99	2.00	2.00	1.99	2.00	1.99	1.98	2.10	2.02	24
14	1.99	1.97	1.97	1.96	S	1.97	1.97	2.04	1.97	1.99	1.97	1.97	1.96	1.97	1.96	1.99	1.99	1.97	1.99	1.97	1.98	1.96	1.96	1.96	1.96	2.04	1.98	24
15	1.98	1.97	2.01	S	1.97	1.98	1.97	1.99	1.97	1.99	1.97	1.98	1.98	1.97	1.97	1.97	1.99	2.00	1.99	1.98	1.99	1.97	1.99	2.01	1.97	2.01	1.98	24
16	1.98	2.04	S	1.99	1.97	1.99	1.98	1.98	2.02	2.00	2.01	2.02	2.03	2.00	2.02	2.02	2.01	2.01	2.02	2.03	2.03	2.02	2.04	1.97	1.97	2.04	2.01	24
17	1.98	S	1.99	2.00	1.98	2.00	1.99	2.03	2.00	1.97	1.97	1.98	1.99	1.97	1.99	1.98	1.98	2.00	1.98	1.99	1.98	1.99	1.97	1.99	1.97	2.03	1.99	24
18	S	1.99	1.99	1.99	1.99	1.99	2.01	2.00	2.00	2.00	2.01	2.00	2.00	2.00	1.99	1.99	1.99	2.00	2.00	2.00	1.99	1.99	1.98	S	1.98	2.01	2.00	24
19	1.99	1.99	2.03	2.17	2.12	2.16	2.20	2.18	2.00	2.00	2.00	C	C	C	C	1.96	1.94	1.96	1.96	1.96	1.96	1.95	S	2.19	1.94	2.20	2.04	24
20	2.02	1.97	2.06	2.05	2.07	2.05	2.04	1.99	1.97	1.97	1.96	1.97	1.95	1.96	1.95	1.96	1.96	1.95	1.98	1.95	1.97	S	1.97	1.96	1.95	2.07	1.99	24
21	1.96	1.96	1.98	2.01	2.00	1.97	1.97	2.01	1.97	1.98	1.99	1.98	1.99	1.97	1.97	1.95	1.98	1.95	1.99	1.97	S	2.09	1.99	1.99	1.95	2.09	1.98	24
22	2.08	2.08	2.07	2.03	2.03	1.99	S1	S1	S1	S1	1.97	1.95	1.98	1.97	1.97	1.95	1.96	1.95	1.96	S	1.96	1.97	1.98	1.98	1.95	2.08	1.99	20
23	2.00	1.96	1.96	2.02	2.02	1.99	2.02	2.01	1.98	1.98	2.02	C1	C1	C1	C1	1.94	1.94	1.95	S	1.96	1.95	1.96	1.95	1.96	1.94	2.02	1.98	20
24	1.94	1.93	1.94	1.93	1.94	1.92	1.93	1.92	1.94	1.93	1.94	1.92	1.92	1.92	1.93	1.93	1.92	S	1.92	1.92	1.92	1.93	1.98	2.01	1.92	2.01	1.93	24
25	2.04	2.03	2.02	2.11	2.23	2.61	3.10	2.29	2.05	1.94	1.93	1.94	1.94	1.95	2.04	1.96	S	1.96	1.95	1.97	1.98	1.98	1.98	1.97	1.93	3.10	2.09	24
26	1.99	1.97	1.95	1.96	1.99	1.98	1.97	1.95	1.94	1.95	1.95	1.95	1.98	1.96	1.94	S	1.95	1.95	1.98	1.94	1.95	1.92	1.94	1.94	1.92	1.99	1.96	24
27	1.95	1.95	2.04	2.25	2.03	1.99	2.29	1.97	1.96	1.96	1.96	1.94	1.97	1.95	S	1.95	1.95	1.95	1.96	1.96	1.99	2.05	2.06	2.04	1.94	2.29	2.01	24
28	2.09	2.09	2.05	2.01	2.03	2.02	1.98	1.98	1.97	1.96	1.97	1.97	1.97	S	2.16	1.95	1.95	1.95	1.96	2.06	1.95	1.94	1.97	1.94	1.94	2.16	2.00	24
29	1.93	1.95	1.93	1.95	1.95	1.95	1.96	1.95	1.94	1.93	1.95	1.95	S	1.94	1.92	1.92	1.93	1.93	1.93	1.95	2.11	1.96	2.00	1.98	1.92	2.11	1.95	24
30	1.99	2.02	2.04	2.08	2.25	2.15	2.33	2.37	2.13	1.95	1.94	S	1.94	1.93	1.92	1.95	1.94	1.94	1.93	1.94	1.95	1.98	1.97	1.95	1.92	2.37	2.03	24
HOURLY MAX	2.10	2.49	2.32	2.25	2.25	2.61	3.10	2.37	2.13	2.03	2.13	2.02	2.03	2.01	2.16	2.02	2.05	2.02	2.02	2.06	2.11	2.11	2.16	2.19				
HOURLY AVG	2.01	2.02	2.01	2.01	2.02	2.03	2.06	2.03	1.99	1.98	1.98	1.98	1.98	1.97	1.98	1.97	1.97	1.98	1.98	1.99	2.00	2.00	2.01	2.00				

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

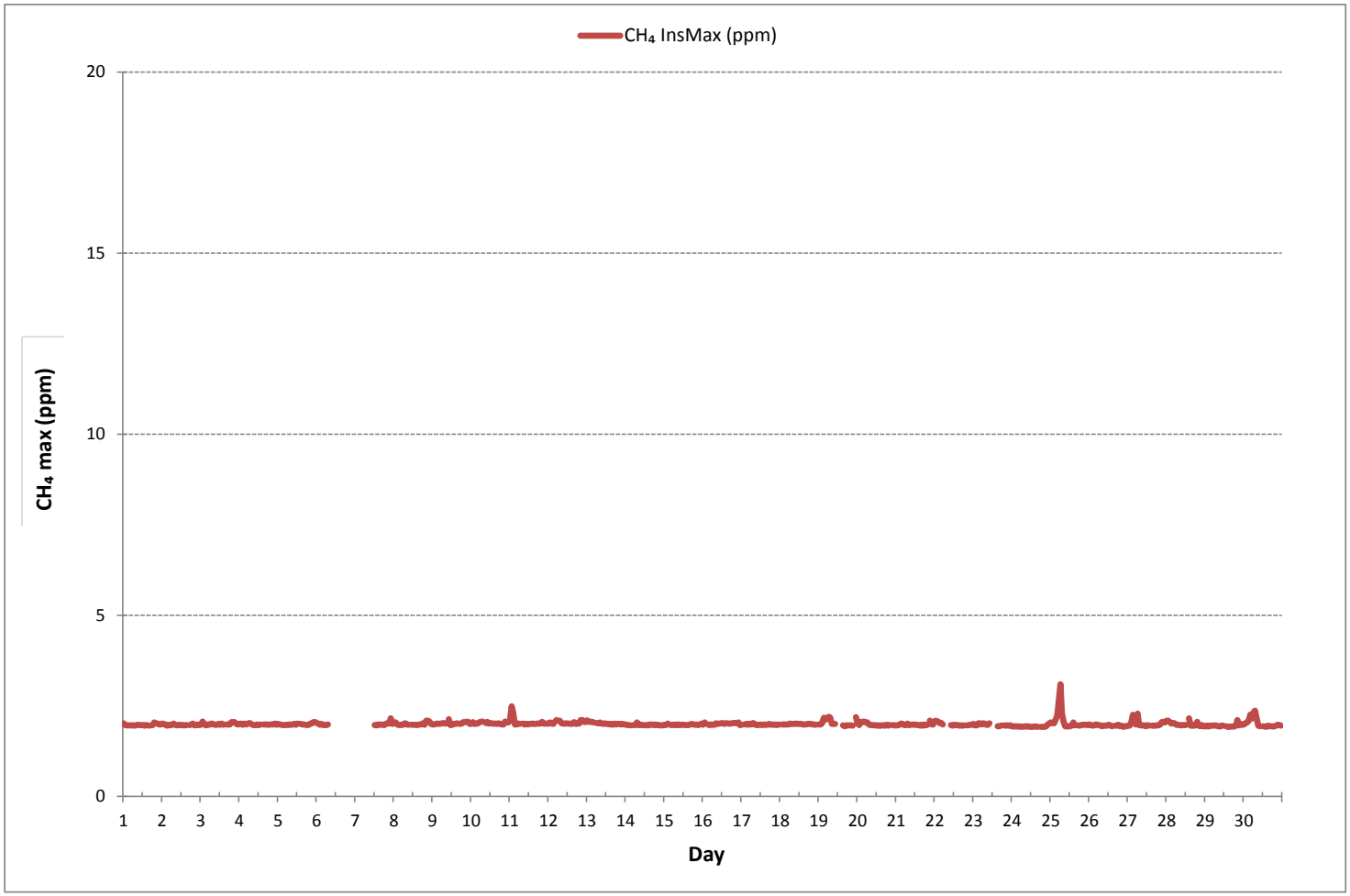
NUMBER OF NON-ZERO READINGS: 652

MAXIMUM INSTANTANEOUS VALUE: 3.10 ppm @ HOUR 6 ON DAY 25

IZS CALIBRATION TIME: 30 hrs
MONTHLY CALIBRATION TIME: 4 hrs
STANDARD DEVIATION: 0.08

OPERATIONAL TIME: 686 hrs

METHANE MAX Instantaneous Maximum (CH_4 ppm)



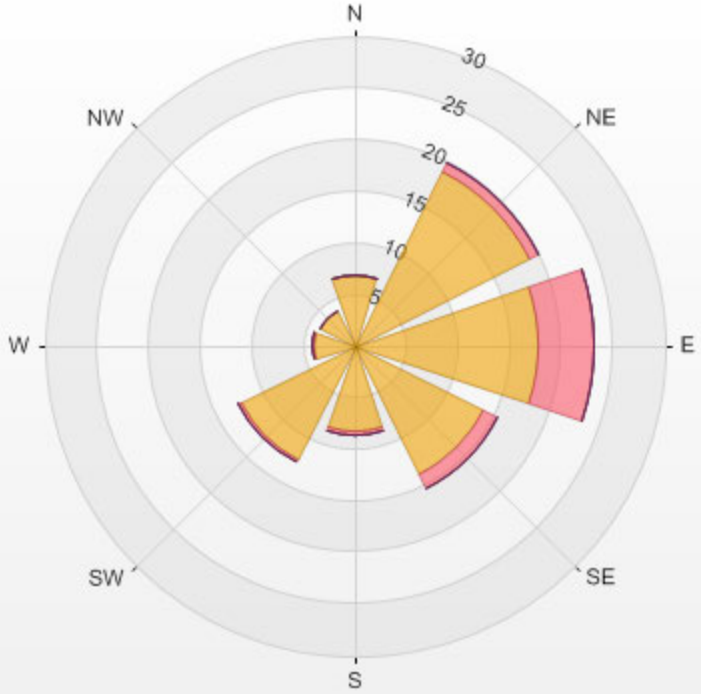
Wind: PRAMP_842
Poll.: PRAMP_842-CH4[ppm]
Monthly: 2017/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.24%

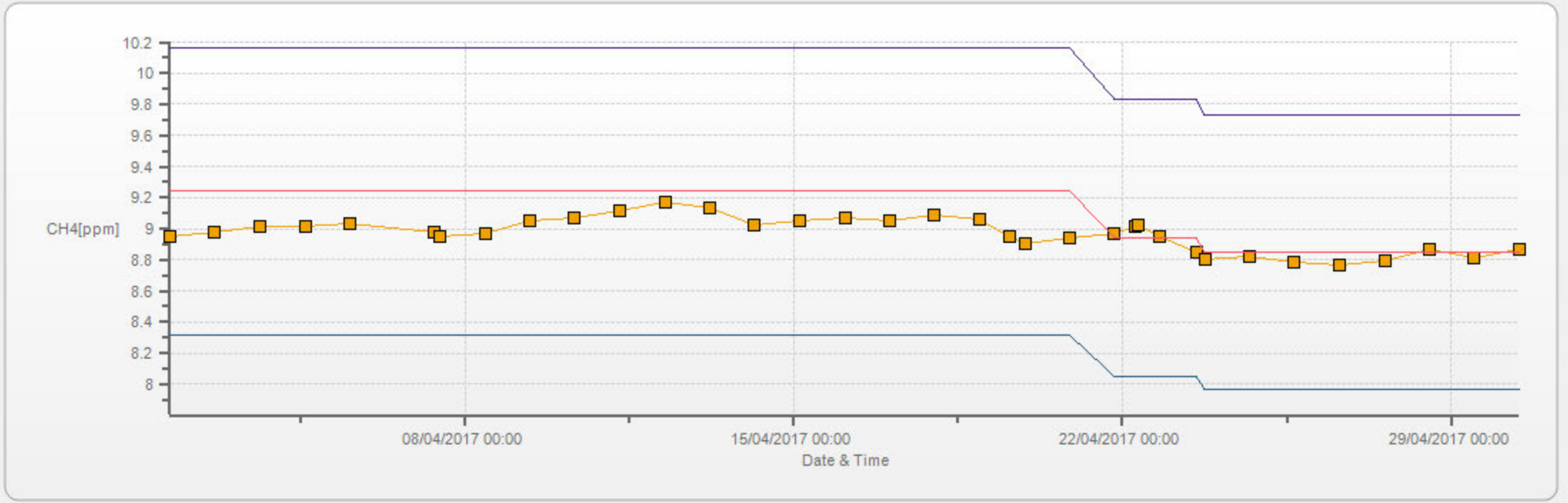
Calm Avg: 1.99 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	6.8	0.2	0.0	0.0	0.0	6.9
NE	19.0	0.9	0.0	0.0	0.0	19.9
E	17.9	5.4	0.0	0.0	0.0	23.3
SE	13.9	1.5	0.0	0.0	0.0	15.4
S	8.3	0.3	0.0	0.0	0.0	8.6
SW	12.3	0.3	0.0	0.0	0.0	12.6
W	4.0	0.2	0.0	0.0	0.0	4.2
NW	3.9	0.0	0.0	0.0	0.0	3.9
Summary	86.0	8.8	0.0	0.0	0.0	94.8

PRAMP_842 Poll.: PRAMP_842-CH4[ppm] 2017/04/01 00:00 - 2017/04/30 23:00 Calm: 5.24% Calm Poll Avg: 1.99[ppm]



CH4[ppm] Calibration: PRAMP_842 Monthly: 17/04 Type: Span



NON-METHANE HYDROCARBON

Maxxam
A Bureau Veritas Group Company

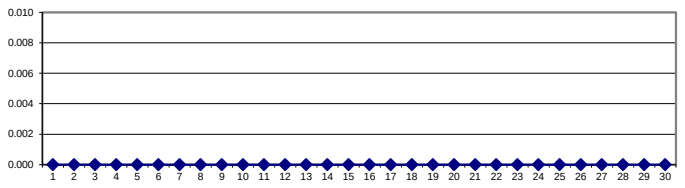
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

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	0.00	0.00	0.00	0.00	0.00	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
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.00	0.00	24
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.00	0.00	0.00	0.00	8
7	X	X	X	X	X	X	X	X	S1	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	15
8	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
9	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
10	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
11	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
12	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
13	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
14	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
15	0.00	0.00	0.00	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
16	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
17	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
18	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
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	24
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	24
22	0.00	0.00	0.00	0.00	0.00	0.00	S1	S1	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	0.00	21
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C1	C1	C1	C1	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20
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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
25	0.00	0.00	0.00	0.00	0.00	0.00	0.01	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	0.01	0.00	0.00	24
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
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	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
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
30	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
HOURLY MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00					
HOURLY AVG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					

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

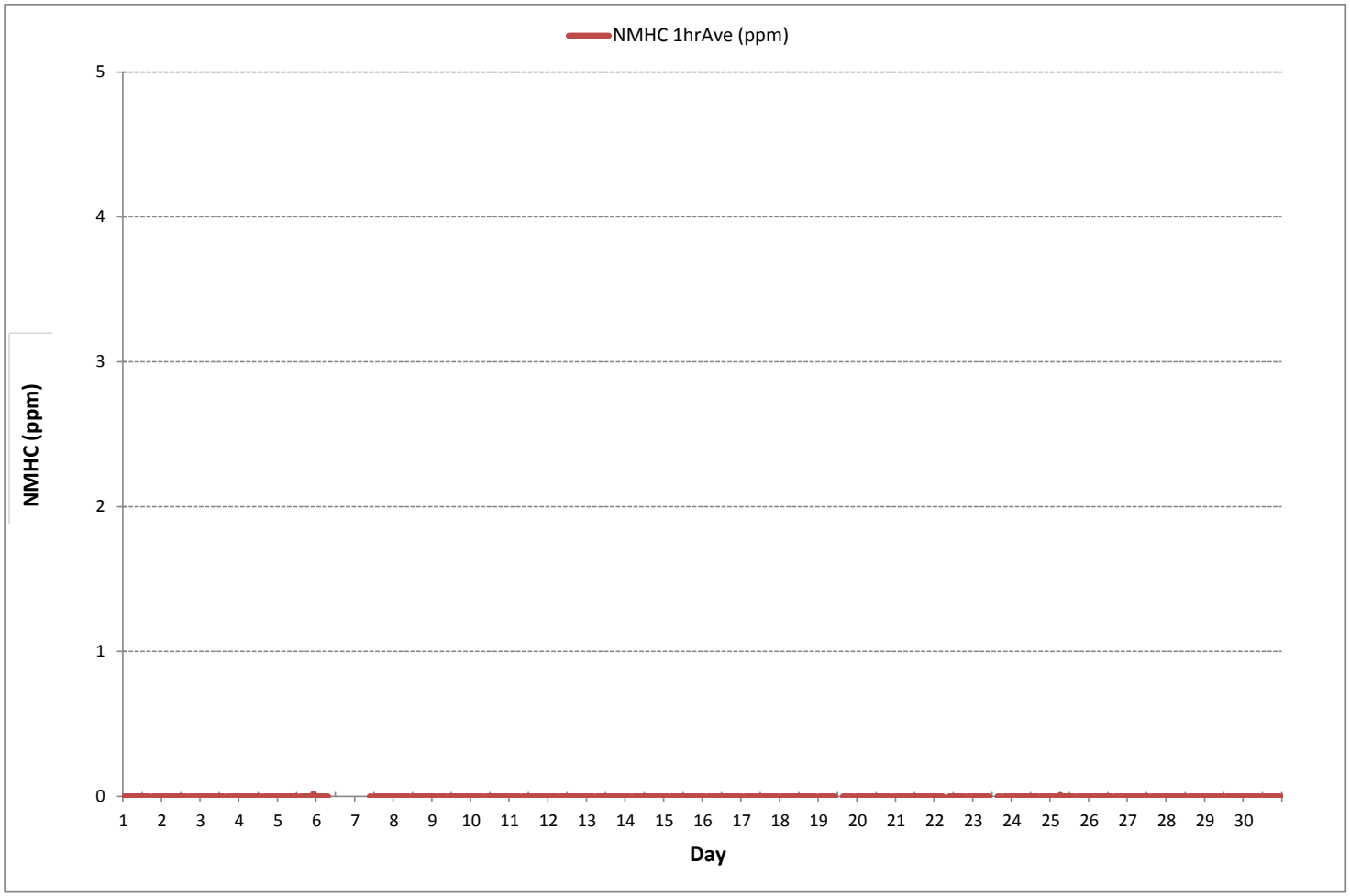
24 HR AVERAGES April 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			2				
MINIMUM 1-HR AVERAGE	0.00	ppm	@ HOUR	VAR	ON DAY	ALL	
MAXIMUM 1-HR AVERAGE:	0.02	ppm	@ HOUR	22	ON DAY	5	
MAXIMUM 24-HR AVERAGE:	0.00	ppm			ON DAY	ALL	
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:			688	hrs
MONTHLY CALIBRATION TIME:	4	hrs	AMD OPERATION UPTIME:			95.6	%
STANDARD DEVIATION:	0.00		MONTHLY AVERAGE:			0.00	ppm

NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)



NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	S	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.00	24
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.06	0.00	24
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04	0.01	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.09	0.01	24
5	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.07	0.00	0.00	0.00	0.00	S	0.00	0.00	0.04	0.00	0.00	0.01	0.00	0.00	0.16	**0.23**	0.00	**0.23**	0.02	24
6	0.11	0.03	0.00	0.00	0.01	0.01	0.01	0.00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.00	0.11	0.02	8
7	X	X	X	X	X	X	X	X	S1	S1	0.00	S	0.00	0.03	0.01	0.01	0.00	0.00	0.12	0.09	0.00	0.00	0.00	0.03	0.00	0.12	0.02	14
8	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.07	0.13	0.00	S	0.00	0.01	0.00	0.00	0.08	0.00	0.00	0.00	0.01	0.00	0.00	0.08	0.00	0.00	0.13	0.02	24
9	0.00	0.00	0.04	0.00	0.01	0.00	0.00	0.03	0.00	S	0.01	0.01	0.00	0.02	0.00	0.01	0.00	0.00	0.10	0.04	0.01	0.01	0.01	0.00	0.00	0.10	0.01	24
10	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.05	0.05	0.00	0.00	0.05	0.00	0.01	0.00	0.00	0.09	0.01	24
11	0.00	0.01	0.00	0.00	0.00	0.01	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.01	24
12	0.00	0.00	0.00	0.01	0.00	0.00	S	0.00	0.12	0.01	0.00	0.00	0.01	0.02	0.00	0.05	0.00	0.00	0.04	0.00	0.00	0.00	0.09	0.02	0.00	0.12	0.02	24
13	0.00	0.00	0.04	0.00	0.00	S	0.02	0.00	0.00	0.01	0.05	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.05	0.01	24
14	0.00	0.00	0.00	0.00	S	0.06	0.00	0.01	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.01	24
15	0.00	0.00	0.00	S	0.00	0.00	0.00	0.03	0.08	0.08	0.00	0.00	0.00	0.00	0.08	0.06	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.08	0.02	24
16	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	0.02	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.11	0.00	0.01	0.00	0.11	0.01	24
17	0.03	S	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	24
18	S	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00	S	0.00	0.03	0.00	24
19	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	C	C	C	C	0.00	0.00	0.05	0.00	0.00	0.00	0.00	S	0.00	0.00	0.05	0.00	24
20	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	S	0.00	0.02	0.00	0.02	0.00	24
21	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	S	0.00	0.00	0.00	0.00	0.02	0.00	24
22	0.00	0.00	0.01	0.00	0.00	0.00	S1	S1	S1	S1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	S	0.00	0.00	0.00	0.01	0.00	0.01	0.00	20
23	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	C1	C1	C1	C1	0.00	0.01	0.00	S	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	20
24	0.02	0.01	0.00	0.00	0.02	0.01	0.00	0.13	0.02	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	0.01	0.00	0.13	0.01	24
25	0.03	0.02	0.00	0.00	0.00	0.00	0.21	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.21	0.02	24
26	0.02	0.14	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	S	0.00	0.02	0.03	0.00	0.00	0.02	0.02	0.00	0.00	0.14	0.01	24
27	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	S	0.01	0.02	0.06	0.07	0.01	0.00	0.00	0.00	0.01	0.00	0.07	0.01	24
28	0.00	0.11	0.01	0.01	0.17	0.00	0.00	0.00	0.00	0.02	0.00	0.01	0.00	S	0.01	0.00	0.00	0.02	0.16	0.01	0.01	0.00	0.00	0.01	0.00	0.17	0.02	24
29	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.04	S	0.01	0.00	0.00	0.01	0.02	0.02	0.01	0.01	0.01	0.00	0.03	0.00	0.04	0.01	24
30	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.19	0.00	0.01	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.00	0.19	0.02	24
HOURLY MAX	0.11	0.14	0.04	0.01	0.17	0.06	0.21	0.13	0.19	0.15	0.05	0.04	0.01	0.03	0.08	0.09	0.06	0.06	0.16	0.10	0.08	0.11	0.16	0.23				
HOURLY AVG	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.03	0.01	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.02	0.01				

STATUS FLAG CODES

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

MONTHLY SUMMARY

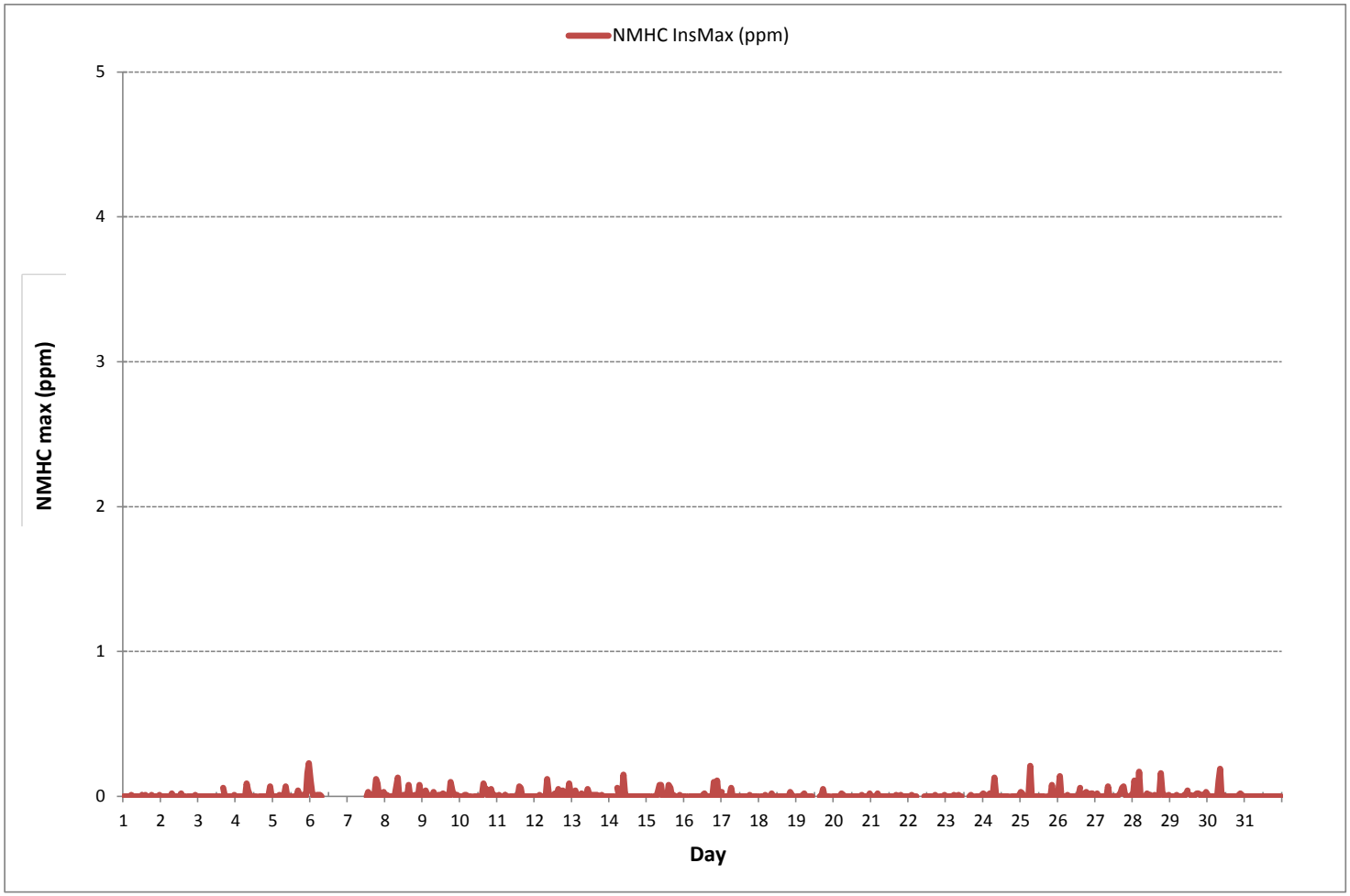
NUMBER OF NON-ZERO READINGS: 178

MAXIMUM INSTANTANEOUS VALUE: 0.23 ppm @ HOUR 23 ON DAY 5

IZS CALIBRATION TIME: 30 hrs
MONTHLY CALIBRATION TIME: 4 hrs
STANDARD DEVIATION: 0.03

OPERATIONAL TIME: 686 hrs

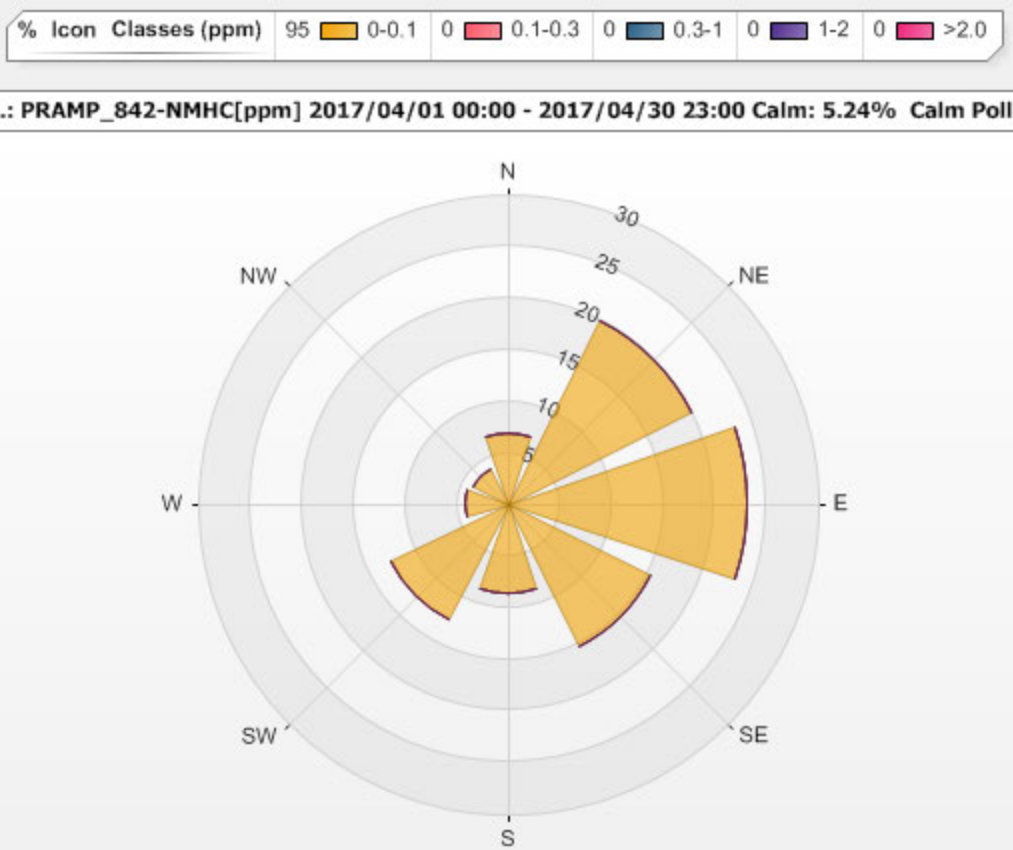
NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)



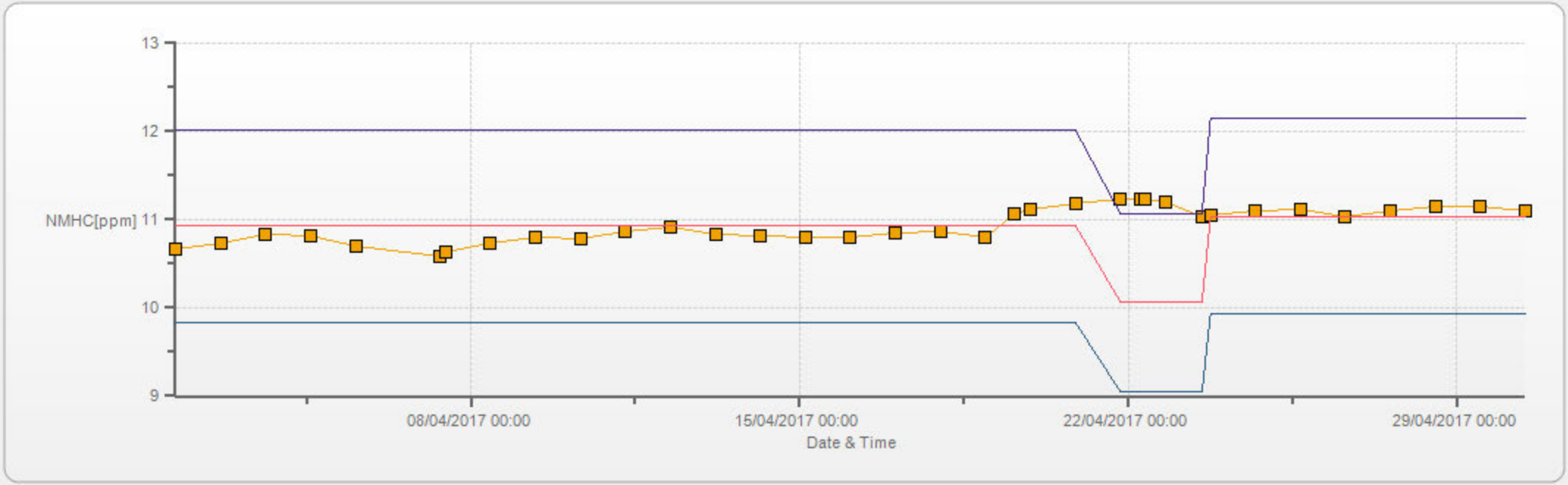
Wind: PRAMP_842
Poll.: PRAMP_842-NMHC[ppm]
Monthly: 2017/04
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.24% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	6.9	0.0	0.0	0.0	0.0	6.9
NE	19.9	0.0	0.0	0.0	0.0	19.9
E	23.3	0.0	0.0	0.0	0.0	23.3
SE	15.4	0.0	0.0	0.0	0.0	15.4
S	8.6	0.0	0.0	0.0	0.0	8.6
SW	12.6	0.0	0.0	0.0	0.0	12.6
W	4.2	0.0	0.0	0.0	0.0	4.2
NW	3.9	0.0	0.0	0.0	0.0	3.9
Summary	94.8	0.0	0.0	0.0	0.0	94.8


% Icon Classes (ppm)
95 0-0.1
0 0.1-0.3
0 0.3-1
0 1-2
0 >2.0
PRAMP_842 Poll.: PRAMP_842-NMHC[ppm] 2017/04/01 00:00 - 2017/04/30 23:00 Calm: 5.24% Calm Poll Avg: 0.00[ppm]
N
NE
E
SE
S
SW
W
NW
30
25
20
15
10
5

NMHC[ppm] Calibration: PRAMP_842 Monthly: 17/04 Type: Span



WIND SPEED

Maxxam
A Bureau Veritas Group Company

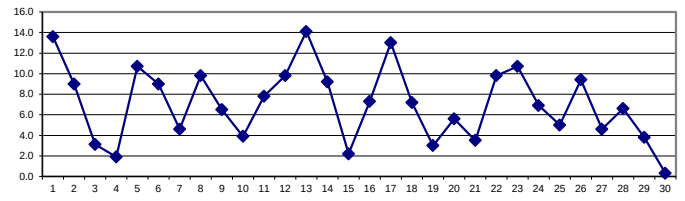
WIND SPEED Hourly Averages (WS kph)

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	12.4	14.0	9.2	7.1	8.8	13.1	13.7	12.0	14.0	13.4	13.3	16.9	18.7	18.5	17.8	18.1	**19.9**	18.8	14.0	9.9	8.2	8.4	11.5	11.5	7.1	**19.9**	13.6	24
2	11.7	11.8	8.9	10.0	11.8	11.1	9.7	10.0	12.3	8.7	8.5	9.9	13.4	11.0	4.4	10.4	6.7	5.6	9.5	8.6	7.9	8.1	7.5	8.1	4.4	13.4	9.0	24
3	2.8	3.3	4.5	1.4	1.5	0.7	2.3	1.2	3.2	8.9	9.1	5.2	7.8	8.1	9.7	8.6	8.9	11.7	10.2	4.8	2.5	2.7	4.6	4.0	0.7	11.7	3.1	24
4	0.5	8.7	5.8	1.4	1.6	1.3	2.6	3.8	8.1	5.5	6.4	7.2	7.5	9.1	6.9	8.4	4.6	5.2	1.5	3.1	3.6	6.0	6.0	6.5	0.5	9.1	1.9	24
5	6.1	8.4	9.0	10.9	12.2	11.8	12.5	12.7	15.6	17.4	16.7	15.1	14.2	12.6	13.9	10.5	**C**	**C**	11.3	8.4	6.2	6.6	7.4	6.7	6.1	17.4	10.7	24
6	6.5	9.1	7.0	6.1	8.0	8.8	9.2	11.6	13.7	15.0	14.0	15.3	17.1	16.9	15.7	14.1	12.3	13.9	7.9	3.6	1.9	9.5	7.1	1.1	1.1	17.1	9.0	24
7	1.5	2.7	2.9	2.6	1.5	3.5	1.1	1.9	0.8	5.4	8.8	10.6	9.4	9.5	9.3	8.3	7.8	9.6	8.7	8.8	7.3	5.9	5.1	9.0	0.8	10.6	4.6	24
8	11.7	10.0	9.2	9.0	10.2	9.0	10.2	10.6	13.6	13.6	9.9	10.1	11.1	10.7	8.9	8.5	7.8	9.6	9.0	7.2	8.0	10.3	9.0	11.1	7.2	13.6	9.8	24
9	11.3	10.4	10.0	8.9	5.8	4.8	6.6	7.2	6.7	3.8	2.1	4.0	10.2	13.7	16.7	14.8	13.0	11.2	6.7	4.5	4.2	7.1	9.7	9.3	2.1	16.7	6.5	24
10	8.5	8.8	11.0	9.9	9.2	5.3	2.7	1.4	4.8	8.6	5.1	5.4	4.7	5.4	4.9	9.6	3.1	7.3	10.8	5.5	1.4	1.9	2.9	2.7	1.4	11.0	3.9	24
11	0.5	3.5	4.7	8.5	8.7	9.9	8.8	9.8	10.2	10.4	8.9	7.2	8.3	11.8	13.9	15.3	12.0	11.8	12.6	10.5	10.4	7.7	7.2	6.6	0.5	15.3	7.8	24
12	6.3	7.1	7.6	8.0	7.3	7.6	7.7	8.3	9.8	10.5	12.6	11.8	12.4	14.8	12.5	13.6	13.1	13.5	12.5	8.8	5.4	6.5	9.3	9.8	5.4	14.8	9.8	24
13	10.3	9.5	10.3	10.2	10.8	11.2	12.8	13.3	13.1	16.0	17.9	17.3	15.6	14.9	16.8	16.1	15.8	15.0	16.7	17.6	16.2	14.0	15.4	12.9	9.5	17.9	**14.1**	24
14	14.7	12.8	11.3	7.6	7.8	8.5	8.7	10.5	9.4	8.2	8.8	7.6	8.0	9.2	10.8	9.3	8.7	9.0	7.8	9.1	9.9	9.7	10.2	9.5	7.6	14.7	9.2	24
15	9.4	7.3	6.8	7.4	8.1	7.6	8.0	6.9	7.6	6.3	5.6	8.0	7.4	8.5	7.0	6.7	9.6	6.7	6.1	6.4	5.5	7.7	7.8	5.7	5.5	9.6	2.2	24
16	9.7	10.5	10.3	10.8	11.1	11.8	12.3	14.7	14.1	12.4	13.3	12.4	13.6	14.7	13.9	13.9	12.3	9.9	7.5	2.5	0.3	0.5	6.3	9.5	0.3	14.7	7.3	24
17	12.4	12.9	12.1	11.9	11.0	10.6	11.8	11.4	15.8	16.1	16.3	15.8	16.6	15.6	15.7	15.5	13.4	14.0	13.1	12.6	12.7	12.2	11.3	11.1	10.6	16.6	13.0	24
18	11.1	11.0	11.6	9.3	10.5	9.3	9.1	10.8	11.1	9.6	8.8	9.5	7.7	7.4	6.7	6.6	6.2	5.5	4.3	3.5	1.7	3.0	3.2	1.2	1.2	11.6	7.2	24
19	0.8	0.6	1.3	3.6	1.0	0.3	2.4	2.7	5.5	7.0	7.5	8.0	6.8	7.7	10.8	10.3	11.4	8.7	9.1	2.9	3.7	5.0	4.9	5.9	0.3	11.4	3.0	24
20	4.3	5.0	4.7	3.1	2.3	2.7	3.5	2.7	3.7	7.7	16.3	14.5	14.0	11.2	12.2	11.6	12.0	10.8	10.4	8.1	8.7	6.7	4.6	5.1	2.3	16.3	5.6	24
21	5.0	4.8	4.5	4.8	4.2	2.9	4.0	2.6	2.9	0.6	1.2	3.2	2.4	3.7	4.4	4.4	6.3	5.5	6.5	4.9	4.3	5.7	5.4	4.9	0.6	6.5	3.5	24
22	4.4	5.6	5.8	5.2	6.0	5.6	6.6	7.0	9.7	12.4	13.9	12.9	14.0	13.3	13.2	12.7	11.8	11.6	11.4	9.8	8.8	10.1	12.1	12.3	4.4	14.0	9.8	24
23	11.7	12.8	12.5	10.8	10.6	10.0	9.8	8.2	9.4	10.0	11.3	12.0	12.5	13.1	14.0	11.8	12.6	11.4	11.0	11.8	9.7	8.3	8.4	7.9	7.9	14.0	10.7	24
24	7.7	9.0	7.7	7.6	8.0	6.4	7.4	8.9	11.0	10.6	11.6	10.9	9.7	9.9	8.9	8.2	8.7	6.6	6.8	2.6	1.2	0.8	1.0	1.0	0.8	11.6	6.9	24
25	0.9	**0.1**	0.7	0.7	2.3	1.4	2.3	3.3	5.8	4.7	6.7	4.6	8.1	8.9	6.9	7.0	8.8	10.2	9.5	7.0	8.6	8.2	9.7	9.3	**0.1**	10.2	5.0	24
26	7.9	7.6	7.1	7.1	6.7	7.0	8.0	11.0	10.6	13.4	10.9	13.8	11.4	13.3	13.3	10.4	9.9	8.6	9.9	11.2	9.9	8.4	7.9	7.3	6.7	13.8	9.4	24
27	6.9	4.6	3.4	4.2	3.7	3.8	5.2	6.2	5.9	5.2	5.5	4.4	4.5	4.7	2.7	5.1	5.2	6.0	5.8	7.5	3.9	3.3	4.0	7.7	2.7	7.7	4.6	24
28	6.3	6.9	6.6	5.2	3.9	4.1	9.3	7.9	10.9	12.4	12.4	12.3	12.9	9.5	8.2	8.3	7.2	8.7	2.2	5.9	14.3	9.9	8.5	6.7	2.2	14.3	6.6	24
29	6.5	5.3	3.4	2.9	2.4	3.1	2.5	6.7	7.0	7.5	7.7	9.4	12.4	9.9	6.7	4.7	9.7	2.3	6.8	5.3	3.6	2.3	3.8	3.9	2.3	12.4	3.8	24
30	4.3	4.5	4.8	4.7	5.8	3.1	4.8	4.0	0.7	4.6	4.7	2.8	10.1	2.5	8.2	8.2	7.3	5.6	5.4	4.0	2.9	1.7	1.1	4.2	0.7	10.1	0.3	24
HOURLY MAX	14.7	14.0	12.5	11.9	12.2	13.1	13.7	14.7	15.8	17.4	17.9	17.3	18.7	18.5	17.8	18.1	19.9	18.8	16.7	17.6	16.2	14.0	15.4	12.9				
HOURLY AVG	3.5	3.7	3.6	3.7	3.2	2.6	3.3	3.0	2.8	1.9	1.2	1.3	1.0	0.8	0.7	1.0	0.5	1.5	3.1	3.6	3.6	3.8	3.9	4.1				

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 April 2017

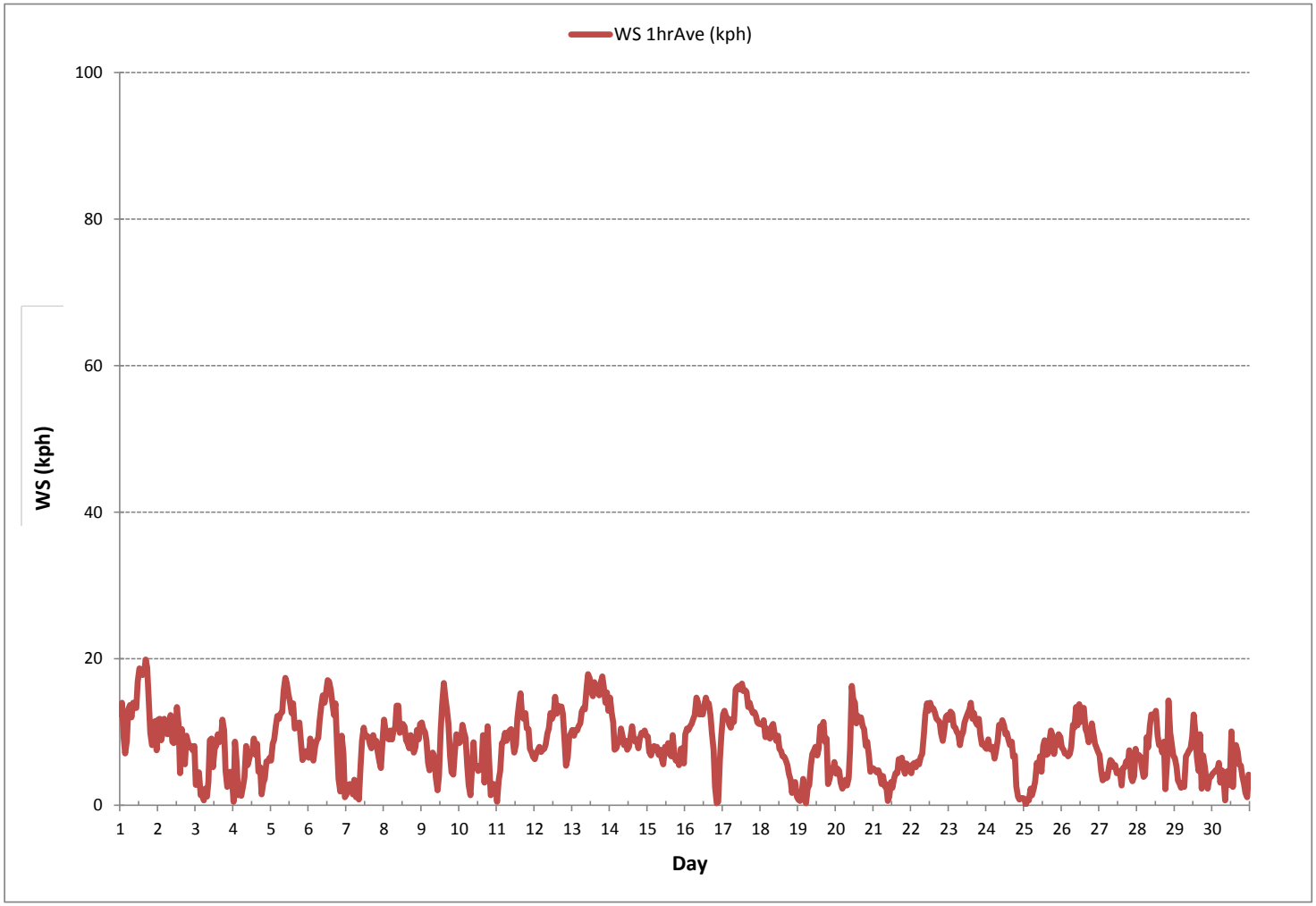


LAST CALIBRATION:	April 5, 2017
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		718					
MINIMUM 1-HR AVERAGE	0.1	kph	@ HOUR	1	ON DAY	25	
MAXIMUM 1-HR AVERAGE:	19.9	kph	@ HOUR	16	ON DAY	1	
MAXIMUM 24-HR AVERAGE:	14.1	kph			ON DAY	13	
			OPERATIONAL TIME:			720	hrs
MONTHLY CALIBRATION TIME:	2	hrs	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	4.0		MONTHLY AVERAGE:			2.5	kph

WIND SPEED Hourly Averages (WS kph)



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	22.3	26.6	20.9	16.8	22.7	25.4	28.4	21.2	28.0	27.9	26.5	33.5	30.5	31.8	31.6	32.9	42.5	37.6	30.1	18.1	16.3	15.7	22.3	23.4	15.7	42.5	26.4	24
2	19.8	21.0	19.0	19.4	20.9	22.4	18.1	17.4	21.0	15.8	17.6	25.2	33.9	30.9	30.4	18.3	35.6	14.8	19.1	17.0	23.2	24.0	14.0	14.9	14.0	35.6	21.4	24
3	11.0	8.3	7.9	5.7	5.2	5.7	5.6	7.1	13.3	22.6	20.2	16.1	17.6	19.9	21.9	22.1	23.9	23.4	20.9	9.7	5.1	5.1	7.3	6.8	5.1	23.9	13.0	24
4	30.1	24.2	19.5	8.8	4.4	4.6	6.7	12.1	16.2	12.7	18.4	18.2	22.8	25.4	19.4	20.7	17.3	15.9	12.0	11.3	10.0	17.0	18.1	16.1	4.4	30.1	15.9	24
5	15.5	23.8	21.9	28.4	28.6	26.1	31.5	29.9	36.2	38.5	36.2	29.5	27.0	26.0	24.6	25.7	C	C	C	18.2	10.0	12.8	12.7	14.7	10.0	38.5	24.7	24
6	13.6	20.0	16.9	9.5	18.4	18.5	19.1	23.4	23.9	25.8	25.4	29.4	30.8	29.6	31.5	29.7	24.5	25.9	14.1	8.1	5.5	24.4	21.5	5.5	5.5	31.5	20.6	24
7	9.5	10.7	6.3	7.9	4.5	12.0	8.2	8.3	4.3	14.4	27.3	26.0	23.3	24.0	24.1	20.4	21.3	24.5	22.6	21.7	19.0	14.3	11.6	23.3	4.3	27.3	16.2	24
8	28.2	29.0	25.4	26.6	23.8	20.0	23.2	27.1	30.9	28.5	22.7	24.1	26.4	30.6	30.6	25.5	25.4	25.7	22.7	17.5	20.3	23.6	19.7	22.9	17.5	30.9	25.0	24
9	24.1	23.2	22.0	25.2	14.7	14.2	14.6	15.9	15.6	10.9	22.5	17.2	27.9	30.4	31.1	29.0	31.7	25.3	18.1	7.8	7.4	14.3	18.3	14.7	7.4	31.7	19.8	24
10	15.1	16.2	16.2	16.6	15.0	10.9	7.9	4.3	12.8	14.6	12.2	12.4	16.7	17.2	17.8	19.7	25.4	23.9	22.1	12.6	13.3	9.1	7.1	9.0	4.3	25.4	14.5	24
11	8.0	8.9	17.6	18.9	18.3	21.5	20.4	23.4	22.2	20.0	21.7	20.4	27.9	27.1	32.2	34.7	32.6	29.2	30.2	27.0	23.1	18.4	18.5	12.4	8.0	34.7	22.3	24
12	11.7	11.7	13.3	13.9	14.0	16.1	16.4	19.4	23.7	25.4	28.1	28.8	31.7	38.8	37.1	37.9	32.2	34.3	30.9	22.5	14.4	22.0	27.2	27.1	11.7	38.8	24.1	24
13	25.0	25.0	24.4	24.5	26.9	24.4	30.7	29.6	33.9	44.5	41.2	41.3	39.5	40.5	38.8	36.5	42.2	41.7	41.7	42.8	**46.8**	39.5	38.6	28.7	24.4	**46.8**	35.4	24
14	31.1	28.2	31.4	21.3	17.2	22.6	18.9	28.1	22.4	19.4	22.3	17.1	19.4	23.1	24.9	26.8	18.4	19.1	19.5	24.6	22.0	21.7	21.8	20.1	17.1	31.4	22.6	24
15	26.0	19.2	16.4	17.8	18.1	15.5	17.2	17.5	16.1	14.7	13.3	13.0	14.3	14.2	12.8	12.2	14.5	14.4	9.6	9.9	10.8	11.4	12.3	9.9	9.6	26.0	14.6	24
16	16.6	17.2	17.3	17.4	18.1	18.9	20.3	23.7	24.0	20.6	23.5	22.3	22.4	22.1	23.0	22.5	20.0	17.2	15.5	7.9	3.1	2.7	17.4	20.8	2.7	24.0	18.1	24
17	28.6	28.5	27.7	28.2	24.7	23.0	26.2	30.3	38.6	38.7	35.5	40.3	37.1	32.7	40.7	40.7	33.5	32.5	30.5	27.3	29.0	25.7	27.6	26.5	23.0	40.7	31.4	24
18	24.5	28.1	28.1	21.2	24.7	20.2	19.2	24.9	25.3	21.3	19.3	20.2	19.5	17.6	18.9	14.7	14.9	11.7	10.2	8.5	4.5	6.2	6.5	4.1	4.1	28.1	17.3	24
19	2.8	2.2	5.7	7.5	3.3	3.2	4.1	6.2	11.9	15.9	15.5	18.5	19.6	17.8	22.6	23.4	21.2	16.7	16.1	9.4	7.3	7.7	15.5	18.5	2.2	23.4	12.2	24
20	11.4	11.9	14.7	8.5	5.3	8.2	7.9	14.7	12.5	19.9	27.8	28.1	27.6	28.2	26.5	25.8	27.8	24.6	22.9	20.6	22.4	17.1	13.6	10.2	5.3	28.2	18.3	24
21	10.8	11.4	10.3	11.2	11.9	8.5	9.1	7.3	9.9	6.3	8.2	10.9	8.6	11.9	12.4	15.4	18.9	14.7	18.3	12.1	11.0	17.3	13.6	11.0	6.3	18.9	11.7	24
22	10.2	12.4	13.0	10.6	12.1	10.8	14.8	16.0	27.1	32.2	35.8	32.5	33.8	35.3	34.3	33.6	28.2	25.2	24.5	23.5	19.3	22.3	25.9	28.6	10.2	35.8	23.4	24
23	26.3	29.0	28.3	24.8	24.0	23.0	24.9	18.7	19.6	22.0	27.2	27.2	28.7	31.1	32.7	29.4	33.7	27.4	26.9	27.6	24.5	21.1	23.0	18.4	18.4	33.7	25.8	24
24	17.4	20.6	18.3	19.3	19.0	15.1	17.4	21.3	23.5	24.1	24.3	26.9	27.3	28.5	22.9	20.3	23.7	25.2	17.4	7.6	3.8	3.7	3.8	2.9	2.9	28.5	18.1	24
25	4.1	2.1	2.5	3.2	4.4	3.4	7.6	8.4	12.3	15.6	19.6	14.0	23.3	19.8	16.9	17.0	20.5	22.5	21.7	22.1	24.5	20.0	22.6	23.1	2.1	24.5	14.6	24
26	17.5	16.4	15.3	14.7	13.2	15.8	16.7	23.2	26.9	31.6	24.0	30.8	33.4	28.8	29.1	26.5	32.6	24.3	23.2	27.4	26.9	20.3	19.4	16.7	13.2	33.4	23.1	24
27	18.0	16.9	8.5	9.0	7.9	7.9	13.8	14.0	13.5	16.8	19.3	22.2	18.5	22.4	15.0	13.1	18.8	17.4	14.4	19.8	7.6	7.7	11.7	14.1	7.6	22.4	14.5	24
28	10.5	12.1	12.2	12.9	10.9	11.3	17.7	19.6	18.1	24.6	26.5	29.0	25.7	23.8	21.8	20.3	21.1	24.4	15.5	34.7	31.7	17.4	15.1	13.4	10.5	34.7	19.6	24
29	11.7	10.1	8.2	7.0	4.3	5.4	6.1	13.4	13.8	16.2	19.6	21.9	28.8	30.1	36.7	26.0	21.3	23.7	17.9	10.6	8.0	5.3	9.3	8.5	4.3	36.7	15.2	24
30	9.2	8.4	10.2	9.9	9.7	7.7	7.6	8.4	9.9	12.8	13.2	16.2	25.5	24.3	22.8	36.2	35.0	20.5	11.4	7.6	6.7	5.2	3.7	9.2	3.7	36.2	13.8	24
HOURLY MAX	31.1	29.0	31.4	28.4	28.6	26.1	31.5	30.3	38.6	44.5	41.2	41.3	39.5	40.5	40.7	40.7	42.5	41.7	41.7	42.8	46.8	39.5	38.6	28.7				
HOURLY AVG	17.0	17.4	16.6	15.6	14.9	14.7	16.0	17.8	20.2	21.8	23.2	23.8	25.7	26.1	26.2	25.2	26.2	23.6	20.7	17.9	15.9	15.8	16.7	15.9				

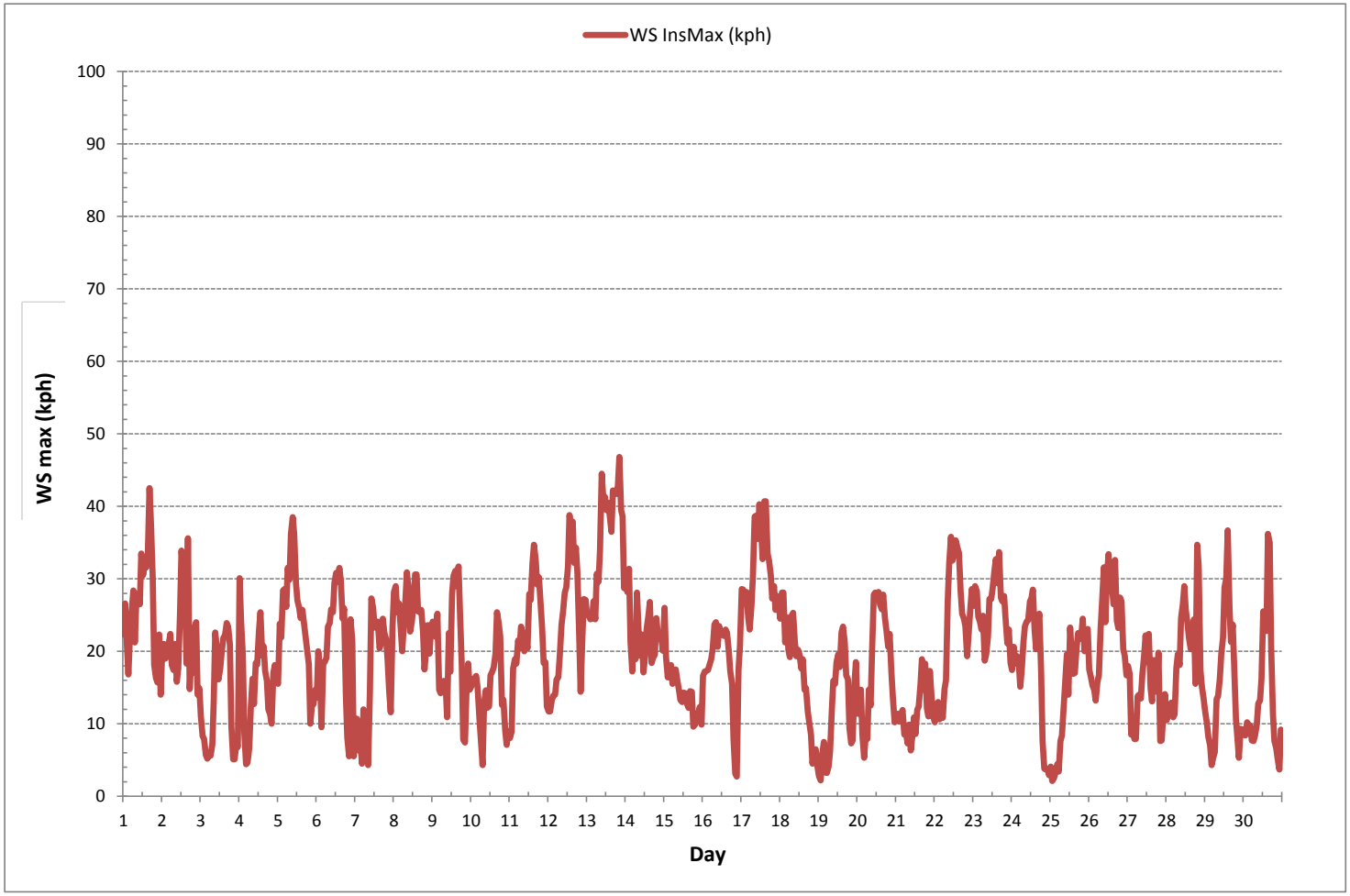
STATUS FLAG CODES

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:	46.8	kph	@ HOUR	20	ON DAY	13
OPERATIONAL TIME:					720	hrs

WIND SPEED Instantaneous Maximum (WS kph)



Wind: PRAMP_842
Monitor: WSP [kph]
Monthly: 2017/04
Type: WindRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

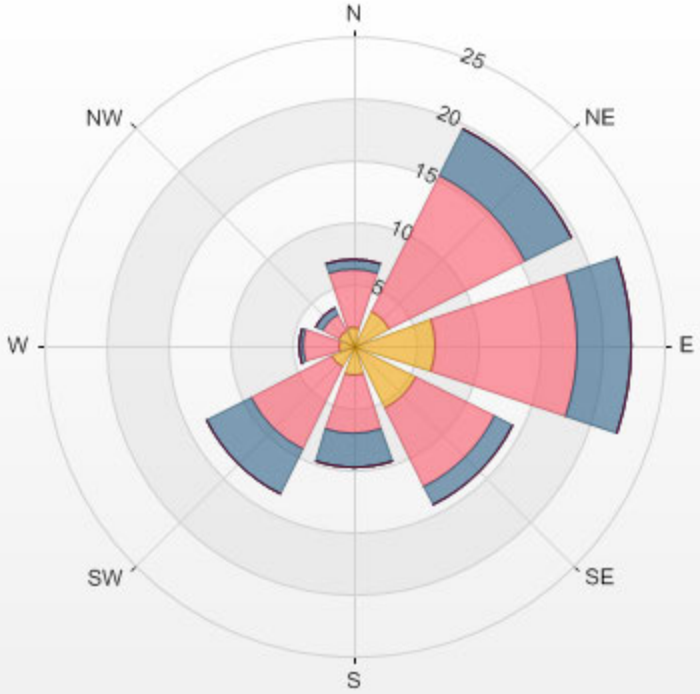
Calm: 5.57%

Calm Avg: 0.00 [kph]

Direction	1.8-6.0	6.0-12.0	12.0-20.0	20.0-29.0	29.0-39.0	>39.0	Total
N	1.5	4.6	0.8	0.0	0.0	0.0	7.0
NE	3.2	12.3	4.2	0.0	0.0	0.0	19.6
E	6.7	11.4	4.3	0.0	0.0	0.0	22.4
SE	5.6	7.2	1.5	0.0	0.0	0.0	14.3
S	2.4	4.7	2.7	0.0	0.0	0.0	9.8
SW	2.0	7.4	4.0	0.0	0.0	0.0	13.4
W	1.3	2.8	0.4	0.0	0.0	0.0	4.5
NW	1.4	1.4	0.7	0.0	0.0	0.0	3.5
Summary	24.0	51.8	18.7	0.0	0.0	0.0	94.5

%	Icon	Classes (kph)	24	1.8-6.0	52	6.0-12.0	19	12.0-20.0	0	20.0-29.0	0	29.0-39.0	0	>39.0

PRAMP_842 2017/04/01 00:00 - 2017/04/30 23:00 Calm: 5.57% Calm Wind Avg Speed: 1.03(kph)



WIND DIRECTION

Maxxam
A Bureau Veritas Group Company

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 842b Station - April 2017

WIND DIRECTION Hourly Averages (WD)

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

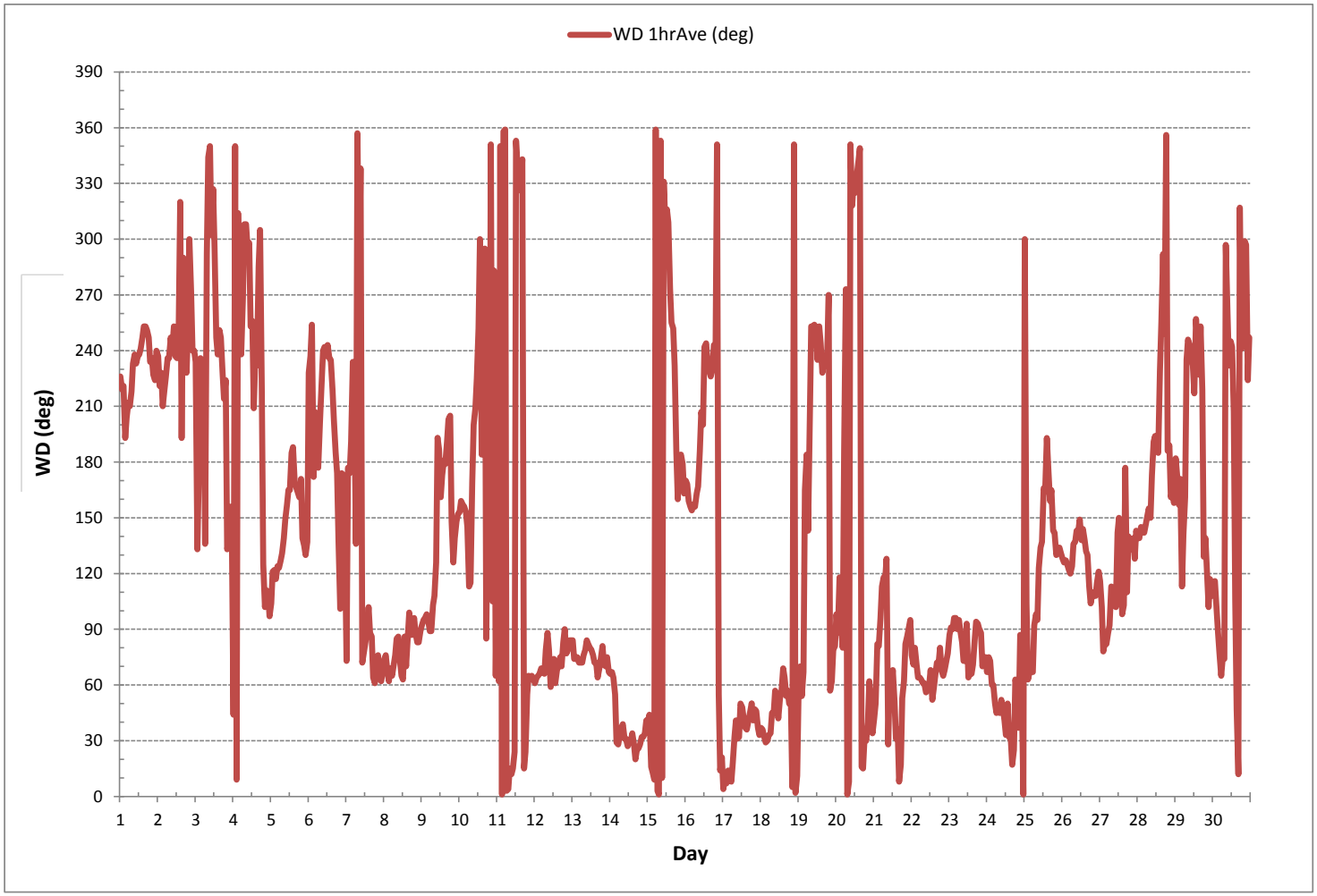
STATUS FLAG CODES

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, 2017
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST

MONTHLY CALIBRATION TIME:	2	hrs	OPERATIONAL TIME:	720	hrs
STANDARD DEVIATION:	88		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	98 (E)	

WIND DIRECTION Hourly Averages (WD)



RELATIVE HUMIDITY

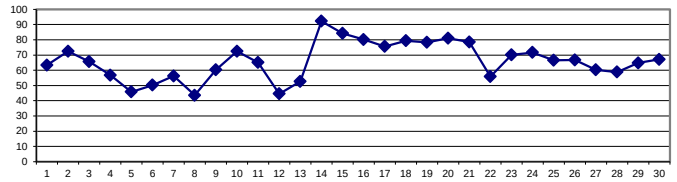
RELATIVE HUMIDITY Hourly Averages (RH %)

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	67	69	73	78	82	78	78	77	70	68	64	63	60	59	55	49	45	43	44	53	62	62	61	60	43	82	63	24
2	66	70	73	75	78	79	83	80	73	71	63	56	52	53	70	85	79	66	69	73	77	77	85	87	52	87	73	24
3	88	89	90	93	94	95	95	93	72	46	47	39	40	37	33	31	33	39	46	55	73	83	83	83	31	95	66	24
4	81	72	73	77	87	91	92	86	72	63	50	48	41	39	33	30	30	27	26	41	58	46	49	52	26	92	57	24
5	55	55	54	54	53	54	52	52	49	43	42	42	40	37	36	33	32	33	34	42	55	51	50	52	32	55	46	24
6	58	64	67	78	77	78	86	73	63	53	43	35	26	24	24	26	27	31	33	39	49	49	46	57	24	86	50	24
7	63	52	58	67	72	76	76	76	67	62	54	50	50	50	52	52	47	47	49	43	41	45	49	51	41	76	56	24
8	48	49	51	53	56	59	61	62	55	49	41	35	30	29	27	26	26	27	29	32	39	48	56	59	26	62	44	24
9	62	65	68	72	75	79	79	71	63	51	45	48	45	45	48	47	46	47	50	58	74	71	69	69	45	79	60	24
10	72	76	77	77	77	81	89	84	70	62	59	57	53	43	45	58	56	79	80	82	86	89	93	94	43	94	72	24
11	95	96	96	90	84	82	82	80	73	62	53	48	42	41	39	38	37	38	42	53	64	70	76	81	37	96	65	24
12	83	85	85	81	77	75	74	63	54	47	38	29	22	**18**	19	19	19	19	19	20	30	33	30	31	**18**	85	45	24
13	33	38	41	43	45	47	51	53	54	49	46	47	53	56	52	47	46	46	50	58	71	75	74	89	33	89	53	24
14	93	94	94	95	95	95	95	94	**92**	91	90	88	88	89	89	88	89	91	93	94	94	95	94	93	88	95	**92**	24
15	91	91	91	91	92	93	92	90	85	82	77	81	77	76	78	75	70	71	74	82	90	91	91	92	70	93	84	24
16	93	94	94	94	93	92	90	86	82	75	71	67	70	70	69	63	63	63	65	72	85	91	93	89	63	94	80	24
17	84	84	85	87	87	87	86	84	78	75	71	68	66	66	61	62	64	66	67	67	79	78	80	84	61	87	76	24
18	88	88	87	88	88	88	88	84	81	77	71	69	67	67	64	69	69	72	74	76	81	88	91	92	64	92	79	24
19	92	93	93	93	93	93	92	90	83	75	73	71	72	69	66	63	61	57	59	62	80	87	86	78	57	93	78	24
20	73	77	80	81	85	84	83	77	67	63	76	76	84	86	89	90	89	85	85	88	84	82	81	82	63	90	81	24
21	83	85	86	88	88	89	90	91	90	85	85	84	83	76	74	68	60	54	60	63	72	77	78	77	54	91	79	24
22	78	79	74	75	78	81	79	71	60	50	47	42	40	39	38	38	37	35	37	41	50	56	57	58	35	81	56	24
23	59	59	61	62	63	64	63	69	83	85	79	69	58	56	61	72	75	75	74	74	76	80	83	84	56	85	70	24
24	85	86	86	85	86	87	87	86	77	71	59	57	50	53	54	53	51	63	64	64	69	78	82	87	50	87	72	24
25	87	87	87	90	93	92	88	75	68	64	56	54	48	50	51	49	45	40	39	44	60	70	78	82	39	93	67	24
26	84	85	85	86	86	86	82	74	72	68	61	56	51	47	46	46	47	50	54	57	62	68	73	77	46	86	67	24
27	79	80	85	87	87	89	80	71	63	54	48	46	42	40	40	39	34	36	36	44	57	70	77	64	34	89	60	24
28	69	69	70	72	77	77	73	68	57	45	41	39	41	42	43	36	35	40	42	50	74	81	84	88	35	88	59	24
29	93	94	95	96	96	**97**	96	84	73	63	55	46	42	41	36	32	31	33	39	46	53	71	72	73	31	**97**	65	24
30	76	80	80	79	79	80	74	63	52	47	43	38	35	34	38	62	76	77	74	69	78	90	93	94	34	94	67	24
HOURLY MAX	95	96	96	96	96	97	96	94	92	91	90	88	88	89	89	90	89	91	93	94	94	95	94	94				
HOURLY AVG	76	77	78	80	81	82	81	77	70	63	58	55	52	51	51	52	51	52	54	58	67	72	74	75				

STATUS FLAG CODES

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

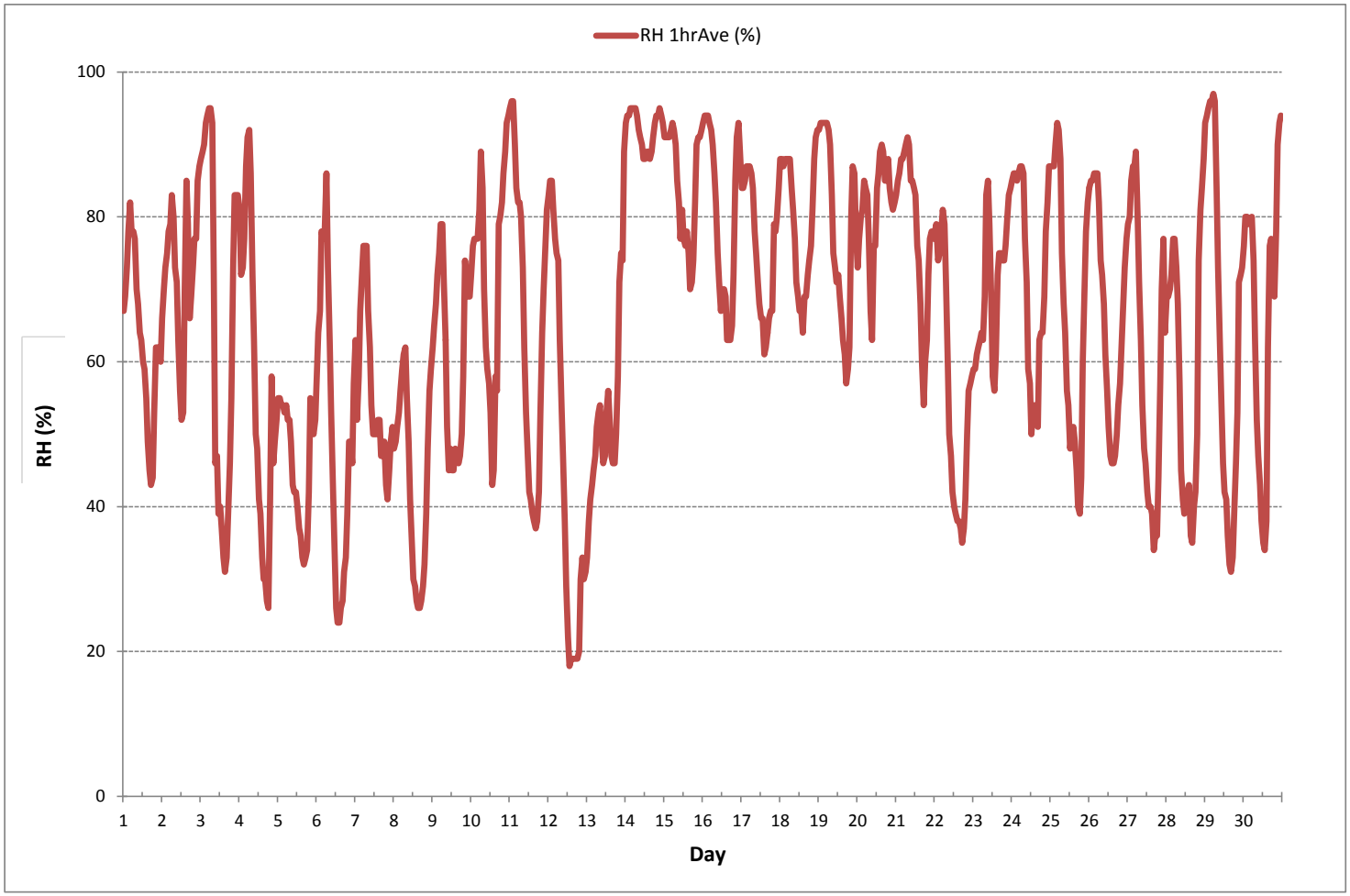
24 HR AVERAGES April 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	18	%	@ HOUR	13	ON DAY	12	
MAXIMUM 1-HR AVERAGE:	97	%	@ HOUR	5	ON DAY	29	
MAXIMUM 24-HR AVERAGE:	92	%			ON DAY	14	
			OPERATIONAL TIME:			720	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	19		MONTHLY AVERAGE:			66	%

RELATIVE HUMIDITY Hourly Averages (RH %)



BAROMETRIC PRESSURE

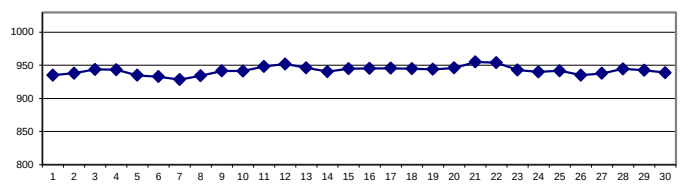
BAROMETRIC PRESSURE Hourly Averages (BP mbar)

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	937	937	937	936	936	935	935	935	935	935	935	935	935	935	935	934	934	934	934	934	934	934	935	935	934	937	935	24
2	935	935	935	935	936	936	936	937	937	938	938	938	938	938	939	939	939	939	940	940	941	941	941	941	935	941	938	24
3	942	942	942	942	943	943	944	944	945	945	946	945	945	945	944	944	944	944	944	943	943	943	943	943	942	946	944	24
4	943	943	943	944	944	944	944	945	945	945	945	945	944	944	944	943	943	942	942	942	941	941	941	940	940	945	943	24
5	940	939	939	938	937	936	935	935	935	934	934	934	934	934	934	934	934	933	933	933	933	933	933	933	933	940	935	24
6	933	933	934	934	934	935	935	935	935	935	935	934	934	933	932	932	932	932	931	931	931	931	930	930	930	935	933	24
7	930	930	930	930	929	930	930	929	929	929	928	928	928	928	928	928	928	**927**	**927**	**927**	928	928	928	928	**927**	930	929	24
8	929	929	929	930	930	931	932	932	933	934	934	935	935	935	935	935	936	936	937	937	938	938	939	939	929	939	934	24
9	940	940	940	941	941	941	942	942	943	943	943	942	942	942	942	942	942	942	942	941	941	941	941	941	940	943	942	24
10	941	941	941	941	941	941	941	941	941	941	941	941	941	940	940	940	941	942	942	942	942	943	943	943	940	943	941	24
11	943	944	944	945	945	946	947	947	948	949	949	949	949	949	949	949	949	949	950	950	951	951	952	952	943	952	948	24
12	952	952	952	952	952	953	953	953	953	954	954	953	953	952	952	951	951	951	950	950	951	951	950	950	950	954	952	24
13	950	950	949	949	949	948	948	948	947	947	946	946	946	945	945	944	944	944	944	944	944	943	943	943	943	950	946	24
14	942	941	941	941	941	940	940	940	940	940	940	940	940	940	940	940	940	940	940	941	941	941	941	941	940	942	940	24
15	942	942	942	942	943	943	943	944	944	944	945	945	946	946	946	947	947	947	947	947	947	947	947	947	942	947	945	24
16	947	947	947	946	946	946	946	946	946	946	946	946	945	945	945	945	944	944	944	944	944	944	944	944	944	947	945	24
17	944	944	944	944	945	945	945	945	945	945	945	946	946	946	946	946	946	946	946	946	947	947	947	947	944	947	946	24
18	947	947	946	946	946	946	946	945	945	945	945	945	945	944	944	944	944	944	944	944	944	944	944	944	944	947	945	24
19	944	944	944	944	944	944	944	944	945	945	945	945	945	945	944	944	944	943	943	943	943	943	943	943	943	945	944	24
20	943	942	942	942	942	942	943	943	943	943	944	944	945	946	947	948	948	949	950	950	951	952	952	953	942	953	946	24
21	954	954	954	954	954	955	955	955	955	955	955	**956**	**956**	**956**	**956**	**956**	**956**	**956**	**956**	955	955	955	**956**	**956**	954	**956**	**955**	24
22	**956**	**956**	**956**	**956**	**956**	**956**	**956**	**956**	**956**	**956**	**956**	**956**	**956**	955	954	954	953	952	952	951	951	950	950	949	949	**956**	954	24
23	949	948	947	946	946	945	945	944	944	943	943	942	942	941	941	941	941	941	940	940	940	940	940	940	940	949	943	24
24	939	939	939	939	939	939	939	939	939	939	939	940	940	940	940	941	941	941	941	942	942	942	942	942	939	942	940	24
25	943	943	942	943	943	943	943	943	943	943	943	943	943	942	942	942	941	941	940	940	939	939	939	938	938	943	942	24
26	938	937	937	936	936	936	935	935	935	935	935	935	935	935	934	934	934	934	934	935	935	935	935	935	934	938	935	24
27	935	935	935	935	935	936	936	936	937	937	937	937	938	938	938	938	939	939	940	940	941	941	942	942	935	942	938	24
28	943	943	943	943	944	944	945	945	945	945	945	945	945	945	945	945	944	945	945	945	946	946	946	945	943	946	945	24
29	945	945	945	945	945	945	945	945	945	945	944	944	943	942	942	941	941	940	939	939	939	938	938	937	937	945	942	24
30	937	937	936	936	936	936	937	937	937	938	938	938	938	938	939	940	941	941	942	942	942	942	943	943	936	943	939	24
HOURLY MAX	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	955	955	955	956	956				
HOURLY AVG	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	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 April 2017

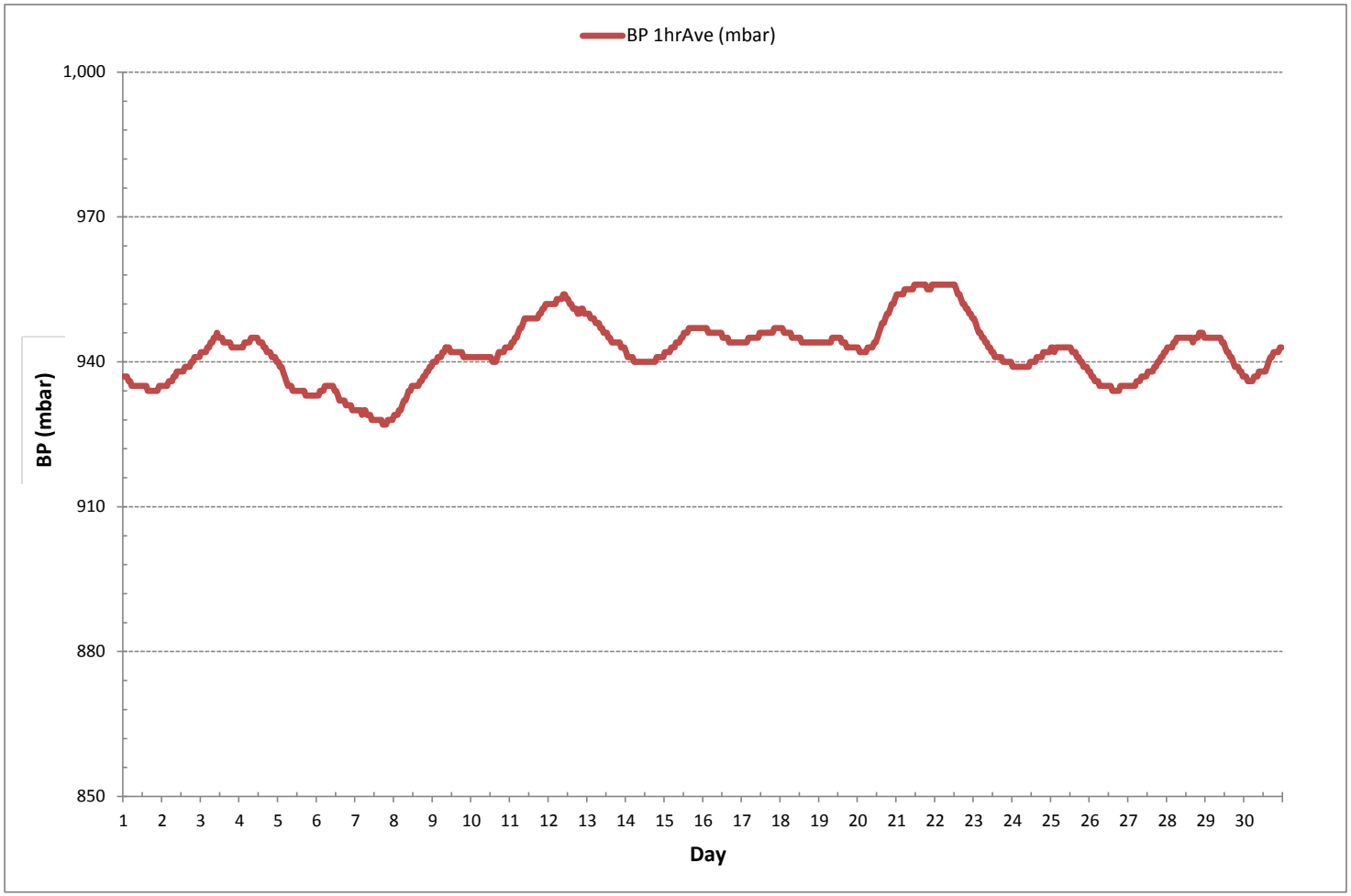


MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	927	mbar	@ HOUR	VAR	ON DAY	7
MAXIMUM 1-HR AVERAGE:	956	mbar	@ HOUR	VAR, VAR	ON DAY	21, 22
MAXIMUM 24-HR AVERAGE:	955	mbar			ON DAY	21

OPERATIONAL TIME:	720	hrs	
AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION: 6	MONTHLY AVERAGE:	942	mbar

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE

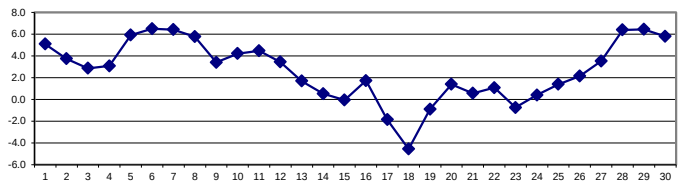
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

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	3.4	3.1	2.3	1.0	0.4	1.7	1.8	2.4	4.2	4.8	5.6	6.0	6.9	7.6	8.2	9.1	10.1	9.9	9.3	6.8	4.7	4.4	4.1	4.2	0.4	10.1	5.1	24
2	3.4	2.9	2.5	1.8	1.6	1.3	0.4	1.4	2.8	3.3	5.4	7.5	8.6	8.2	5.8	2.6	5.3	7.1	5.5	3.8	3.4	3.0	1.2	0.9	0.4	8.6	3.7	24
3	0.9	0.5	-0.2	-1.1	-2.0	-2.2	-2.7	-0.8	3.5	6.7	5.6	7.5	7.5	7.0	7.8	8.2	8.4	8.0	7.0	4.6	0.6	-1.8	-2.1	-2.3	-2.7	8.4	2.9	24
4	-1.5	1.0	0.8	-0.4	-2.8	-3.4	-2.1	-0.1	2.8	4.3	5.8	5.5	6.4	6.6	7.7	7.9	8.9	9.8	8.8	4.2	0.2	1.6	1.1	0.7	-3.4	9.8	3.1	24
5	0.0	0.2	0.8	1.1	1.8	1.9	2.2	3.2	4.9	6.3	6.6	6.8	7.8	8.6	9.4	11.2	12.2	12.2	11.9	9.5	5.6	6.1	6.2	5.4	0.0	12.2	5.9	24
6	4.0	3.5	3.4	0.9	1.6	1.4	-0.7	2.5	4.8	6.3	8.0	9.4	10.8	11.5	11.6	11.6	11.5	10.3	9.5	8.2	6.2	6.9	7.6	5.1	-0.7	11.6	**6.5**	24
7	4.2	5.7	5.0	4.4	3.5	3.1	3.7	4.2	5.7	6.9	7.8	8.2	8.4	8.4	8.3	8.3	9.1	8.7	8.1	7.7	7.4	6.3	5.5	5.2	3.1	9.1	6.4	24
8	5.7	5.4	4.7	4.0	3.4	2.7	2.1	2.1	3.9	5.0	6.7	9.1	10.7	9.4	10.8	10.9	10.6	9.7	8.4	6.2	3.9	2.3	0.8	-0.3	-0.3	10.9	5.8	24
9	-1.3	-1.9	-2.3	-2.6	-3.2	-4.0	-3.9	-2.0	0.2	4.0	7.2	8.2	8.9	8.9	8.7	9.7	9.8	9.6	9.3	7.0	2.6	3.1	3.1	2.4	-4.0	9.8	3.4	24
10	2.2	1.9	1.7	1.5	1.1	-0.4	-2.1	0.1	3.0	4.8	6.0	7.3	9.2	12.7	10.5	8.7	9.0	5.8	5.1	4.8	3.8	2.7	1.1	0.6	-2.1	12.7	4.2	24
11	-0.8	-1.2	-1.4	-0.2	-0.3	-0.6	-1.2	-1.2	0.4	4.2	7.3	9.1	11.4	11.8	12.4	12.3	12.7	12.0	10.5	6.9	3.4	1.4	-0.1	-1.5	-1.5	12.7	4.5	24
12	-2.2	-2.8	-2.8	-1.5	-0.8	-0.8	-1.2	0.9	2.4	4.2	6.1	6.7	7.4	8.9	9.3	9.7	9.3	9.2	8.0	5.8	2.2	1.0	2.1	1.5	-2.8	9.7	3.4	24
13	0.8	-0.2	-0.6	-0.9	-1.2	-1.4	-1.1	-0.5	0.3	0.9	2.2	3.8	3.8	3.7	4.3	4.5	4.4	4.3	3.9	3.1	1.9	1.6	2.0	0.8	-1.4	4.5	1.7	24
14	0.5	0.5	0.4	0.2	0.2	0.2	0.2	0.2	0.5	0.6	0.8	1.5	1.4	1.2	1.2	1.6	1.4	0.9	0.6	0.2	-0.1	-0.3	-0.6	-0.8	-0.8	1.6	0.5	24
15	-1.2	-1.5	-1.8	-2.0	-2.2	-2.4	-2.4	-1.8	-0.9	0.1	1.5	0.9	2.0	2.2	1.8	1.9	2.7	2.9	2.5	1.2	-0.6	-1.1	-1.4	-1.8	-2.4	2.9	-0.1	24
16	-2.1	-2.3	-2.5	-2.6	-2.9	-2.9	-2.3	-0.8	0.7	2.7	3.8	4.8	4.9	5.0	5.7	6.4	6.6	6.7	6.2	4.5	1.0	-0.6	-0.2	1.7	-2.9	6.7	1.7	24
17	1.2	-0.1	-0.9	-1.7	-2.1	-2.4	-2.4	-2.0	-2.1	-1.8	-1.1	-0.9	-0.5	-0.3	0.0	-0.8	-1.3	-1.8	-2.3	-2.6	-3.8	-4.4	-5.0	-5.5	-5.5	1.2	-1.9	24
18	-6.1	-6.6	-6.7	-6.8	-7.2	-7.4	-7.1	-6.5	-6.1	-5.2	-3.8	-3.2	-2.6	-2.2	-1.5	-2.2	-1.8	-2.0	-2.4	-2.7	-3.5	-4.3	-5.0	-6.5	-7.4	-1.5	-4.6	24
19	**-8.4**	-7.3	-6.0	-5.6	-5.6	-5.3	-5.2	-4.4	-3.6	-2.5	-1.8	-0.6	0.0	1.6	3.1	4.7	5.7	6.5	6.5	5.9	1.1	-0.7	-0.5	0.8	**-8.4**	6.5	-0.9	24
20	1.4	1.3	1.3	1.5	0.9	1.3	1.6	3.2	6.4	7.6	4.5	3.5	1.2	0.5	0.2	0.9	1.3	0.9	-0.2	-0.6	-1.1	-1.3	-1.5	-1.6	-1.6	7.6	1.4	24
21	-1.7	-1.9	-2.1	-2.2	-2.2	-2.2	-2.0	-1.7	-1.2	-0.1	0.5	1.3	1.9	2.9	3.6	4.5	6.1	6.5	4.2	3.0	0.5	-1.0	-1.6	-1.6	-2.2	6.5	0.6	24
22	-1.6	-1.8	-1.7	-1.9	-2.4	-2.9	-2.5	-1.2	0.6	2.8	3.9	5.0	5.5	6.2	6.0	5.1	4.9	4.3	2.7	1.0	-0.5	-1.5	-2.0	-2.3	-2.9	6.2	1.1	24
23	-2.5	-2.5	-2.6	-2.8	-3.0	-3.1	-2.9	-2.6	-2.8	-1.8	-0.2	1.5	3.0	2.6	2.2	1.2	0.7	0.6	0.4	-0.1	-0.4	-0.6	-1.0	-1.3	-3.1	3.0	-0.8	24
24	-1.6	-1.6	-1.7	-1.7	-2.0	-2.0	-1.8	-1.4	-0.1	0.7	3.1	2.9	4.4	2.8	2.6	3.4	3.6	1.9	1.5	1.3	0.5	-0.7	-1.5	-2.8	-2.8	4.4	0.4	24
25	-3.1	-3.1	-2.8	-3.8	-5.2	-5.7	-2.6	0.5	1.9	2.7	3.8	4.1	4.8	4.7	4.9	4.9	5.7	5.9	5.6	4.8	3.4	1.5	0.5	-0.2	-5.7	5.9	1.4	24
26	-1.0	-1.5	-1.8	-2.0	-2.3	-2.3	-1.0	1.3	1.7	2.7	4.2	4.9	6.0	6.0	6.4	6.2	6.4	5.9	5.0	4.0	2.7	1.0	-0.1	-1.1	-2.3	6.4	2.1	24
27	-1.4	-1.6	-2.9	-2.6	-2.9	-3.5	-1.0	1.4	3.5	5.6	7.3	6.9	8.1	8.5	8.6	8.9	10.3	10.1	9.3	7.3	3.7	0.5	-1.3	1.5	-3.5	10.3	3.5	24
28	0.2	0.3	0.0	-0.3	-1.0	-0.4	1.2	3.0	5.8	8.9	9.9	10.7	11.0	11.7	12.0	13.0	12.5	11.5	11.5	10.0	7.2	5.8	5.0	3.7	-1.0	13.0	6.4	24
29	2.4	2.1	1.0	0.2	-1.6	-2.0	0.8	4.0	5.9	8.0	10.0	11.5	12.0	11.8	12.5	**13.7**	13.2	12.8	11.7	9.9	7.5	3.2	2.2	1.7	-2.0	**13.7**	6.4	24
30	0.6	-0.2	0.0	0.5	0.6	0.0	2.1	4.9	8.4	9.1	10.1	12.3	13.1	13.4	12.4	9.7	7.4	7.6	7.7	8.2	5.8	2.6	1.1	1.4	-0.2	13.4	5.8	24
HOURLY MAX	5.7	5.7	5.0	4.4	3.5	3.1	3.7	4.9	8.4	9.1	10.1	12.3	13.1	13.4	12.5	13.7	13.2	12.8	11.9	10.0	7.5	6.9	7.6	5.4				
HOURLY AVG	-0.2	-0.3	-0.6	-0.9	-1.3	-1.5	-1.1	0.3	1.9	3.4	4.6	5.4	6.1	6.4	6.6	6.6	6.9	6.6	5.9	4.5	2.3	1.2	0.7	0.3				

STATUS FLAG CODES

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

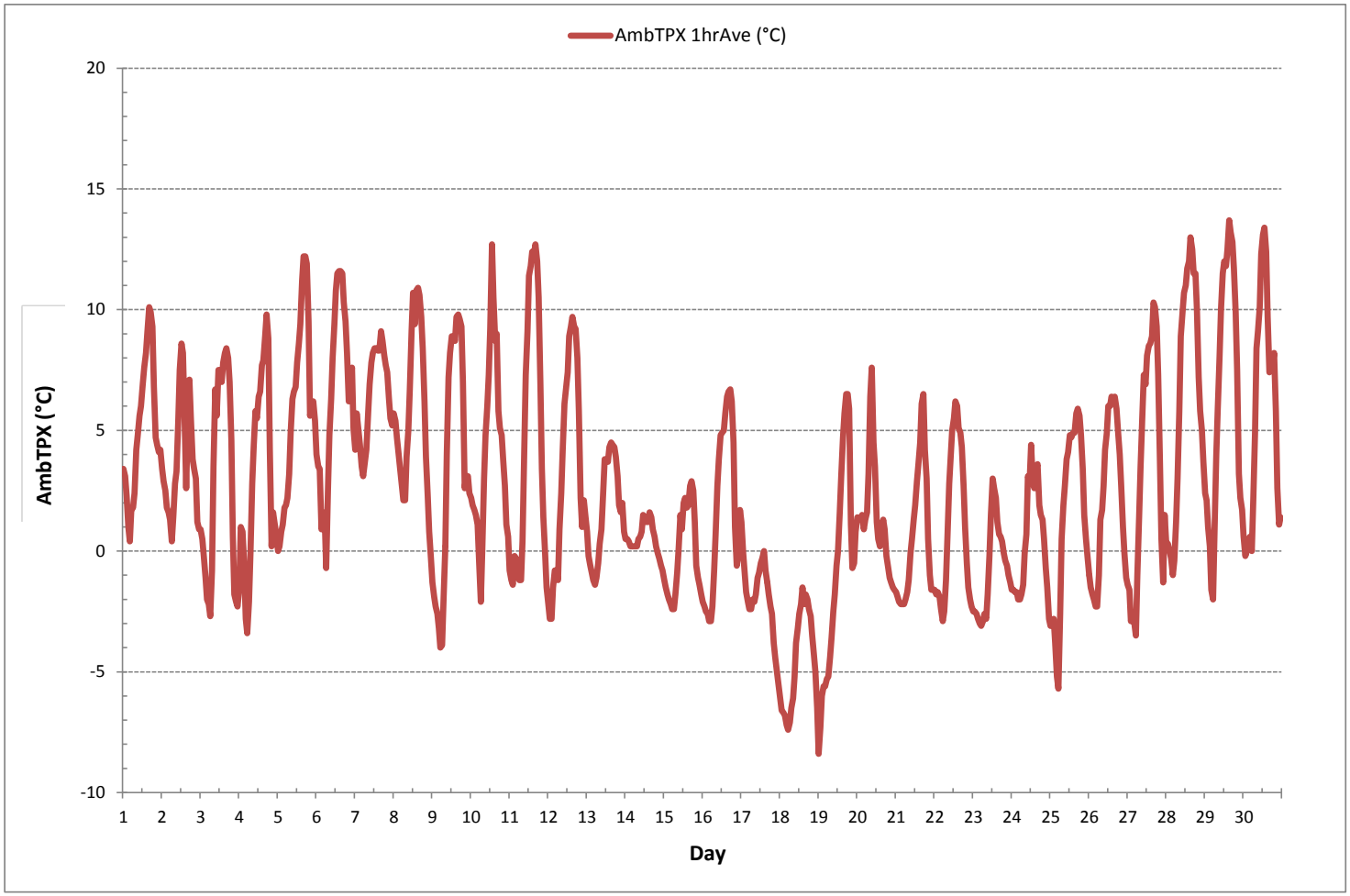
24 HR AVERAGES April 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-8.4	°C	@ HOUR	0	ON DAY	19	
MAXIMUM 1-HR AVERAGE:	13.7	°C	@ HOUR	15	ON DAY	29	
MAXIMUM 24-HR AVERAGE:	6.5	°C			ON DAY	6	
			OPERATIONAL TIME:			720	hrs
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	4.5		MONTHLY AVERAGE:			2.7	°C

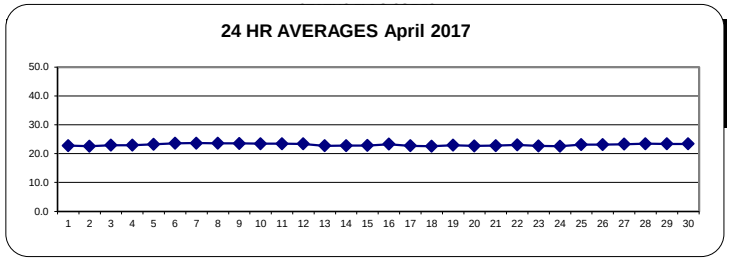
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



STATION TEMPERATURE

STATION TEMPERATURE Hourly Averages (StnTPX °C)

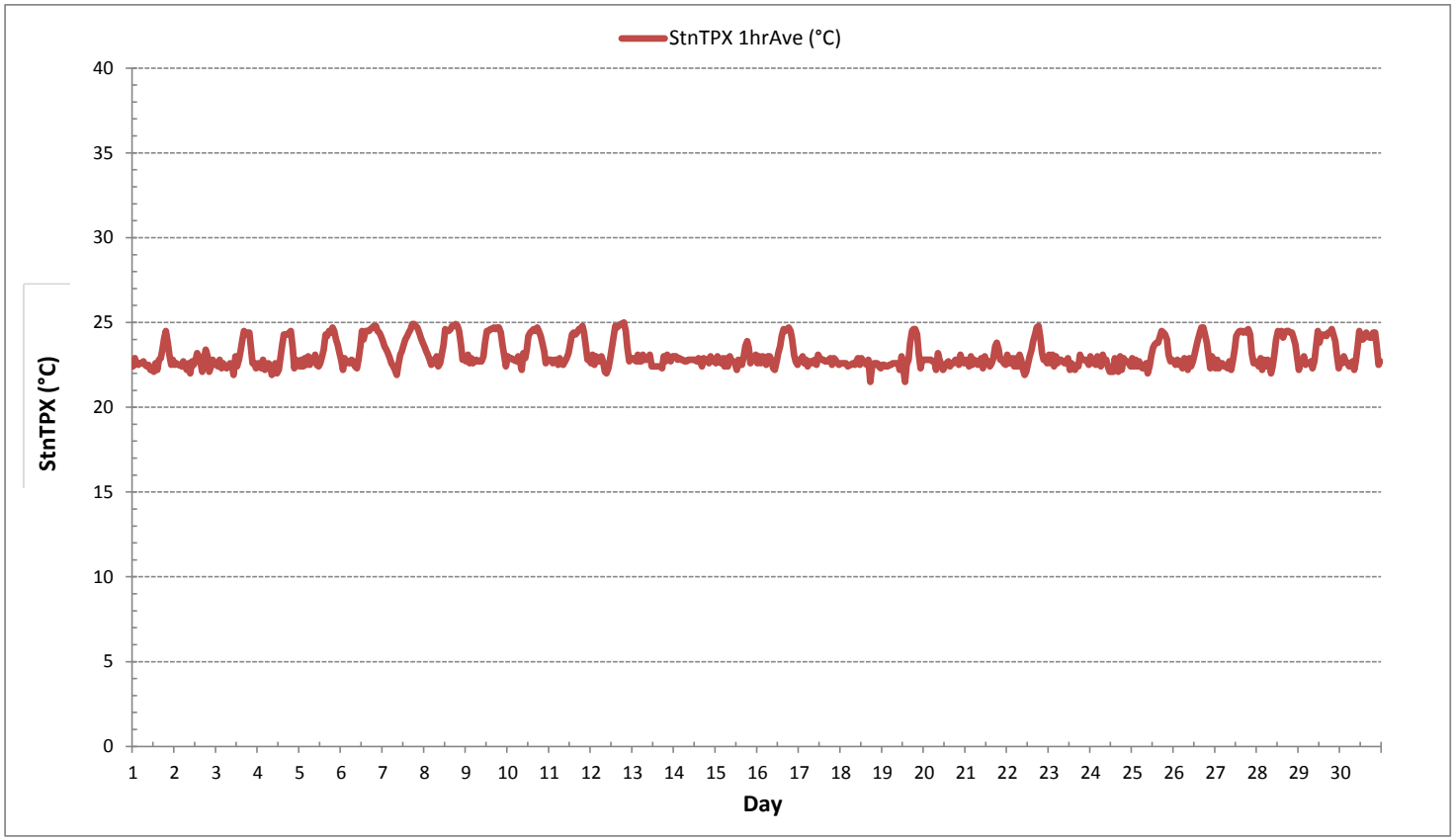
HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	22.4	22.9	22.6	22.5	22.6	22.6	22.7	22.5	22.4	22.5	22.2	22.3	22.1	22.6	22.2	22.8	22.9	23.4	24.1	24.5	23.8	23.1	22.5	22.6	22.1	24.5	22.8	24
2	22.5	22.6	22.5	22.5	22.4	22.7	22.4	22.2	22.6	22.0	22.7	22.5	22.8	23.2	23.0	22.6	22.1	22.9	23.4	23.0	22.1	22.4	22.8	22.6	22.0	23.4	22.6	24
3	22.5	22.4	22.8	22.3	22.6	22.4	22.3	22.4	22.6	22.5	21.9	23.0	22.4	22.8	23.3	24.0	24.5	24.3	24.4	24.4	23.5	22.6	22.6	22.3	21.9	24.5	23.0	24
4	22.6	22.5	22.3	22.8	22.2	22.3	22.6	22.5	21.9	22.2	22.6	22.0	22.2	22.9	23.7	24.3	24.3	24.3	24.4	24.5	23.5	22.3	22.8	22.7	21.9	24.5	22.9	24
5	22.4	22.8	22.4	22.9	22.5	23.0	22.5	22.8	22.7	23.1	22.5	22.4	22.6	23.0	23.4	24.3	24.2	24.5	24.4	24.7	24.5	24.0	23.7	23.2	22.4	24.7	23.3	24
6	22.8	22.2	22.9	22.6	22.7	22.6	22.8	22.7	22.4	22.3	22.8	23.6	24.5	24.0	24.5	24.5	24.5	24.6	24.7	24.8	24.8	24.5	24.4	24.2	22.2	24.8	23.6	24
7	23.9	**23.6**	23.4	23.2	22.9	22.6	22.4	22.2	21.9	22.5	23.1	23.3	23.7	24.0	24.2	24.4	24.6	24.9	24.9	24.8	24.7	24.4	24.1	23.8	21.9	24.9	23.6	24
8	23.6	23.3	23.1	22.8	22.5	22.8	22.6	23.0	22.4	22.6	23.1	23.7	24.6	24.5	24.5	24.6	24.8	24.8	24.9	24.8	24.5	23.7	22.8	22.9	22.4	24.9	23.6	24
9	22.7	23.1	22.6	22.9	22.6	22.7	22.8	22.7	22.7	22.7	23.0	23.8	24.5	24.5	24.6	24.6	24.7	24.6	24.7	24.7	24.4	23.7	23.0	22.4	22.4	24.7	23.5	24
10	23.0	22.9	22.9	22.8	22.8	22.7	23.0	22.7	22.2	23.2	22.9	23.4	24.2	24.4	24.5	24.6	24.5	24.7	24.5	24.2	23.8	23.3	22.6	22.8	22.2	24.7	23.4	24
11	22.8	22.8	22.6	22.8	22.8	22.5	22.9	22.6	22.5	22.7	22.9	23.2	23.7	24.3	24.4	24.3	24.4	24.6	24.6	24.8	24.4	23.7	22.8	22.8	22.5	24.8	23.4	24
12	22.6	23.1	22.5	23.0	22.7	22.7	23.0	22.7	22.1	22.0	22.3	22.8	23.5	24.1	24.8	24.7	24.8	24.9	24.9	**25.0**	24.5	23.5	22.7	22.9	22.0	**25.0**	23.4	24
13	22.9	22.8	22.7	23.1	22.7	22.7	23.1	22.8	22.8	22.9	23.1	22.4	22.4	22.4	22.4	22.4	22.4	22.3	23.0	22.7	23.1	22.8	22.7	23.0	22.3	23.1	22.7	24
14	23.0	23.0	22.8	22.9	22.8	22.8	22.7	22.7	22.8	22.8	22.8	22.8	22.8	22.7	22.9	22.7	22.4	22.9	22.8	22.8	22.6	23.0	22.8	22.7	22.4	23.0	22.8	24
15	22.6	23.0	22.7	22.6	22.9	22.4	22.9	22.4	23.0	22.7	22.7	22.6	22.2	22.8	22.5	22.5	23.0	23.6	23.9	23.5	22.6	22.8	22.8	23.1	22.2	23.9	22.8	24
16	22.6	23.0	22.6	23.0	22.8	22.5	23.0	23.0	22.8	22.3	22.2	22.7	23.2	23.6	24.2	24.6	24.5	24.6	24.7	24.5	24.0	23.1	22.7	22.5	22.2	24.7	23.3	24
17	22.8	22.8	23.0	22.6	22.8	22.4	22.7	22.7	22.6	22.8	22.5	23.1	22.9	22.8	22.8	22.7	22.7	22.8	22.9	22.5	22.9	22.8	22.6	22.5	22.4	23.1	22.7	24
18	22.6	22.6	22.6	22.6	22.4	22.5	22.5	22.6	22.5	22.7	22.9	22.5	22.9	22.7	22.6	22.5	22.8	**21.5**	22.3	22.6	22.6	22.6	22.4	22.3	**21.5**	22.9	22.5	24
19	22.5	22.5	22.4	22.4	22.5	22.5	22.6	22.6	22.6	22.6	22.2	23.0	22.3	**21.5**	22.5	22.8	23.8	24.5	24.6	24.6	24.3	23.2	22.3	22.8	**21.5**	24.6	22.9	24
20	22.8	22.8	22.8	22.8	22.8	22.7	22.7	22.2	23.2	22.8	22.5	22.2	22.4	22.6	22.7	22.4	22.6	22.6	22.8	22.8	22.5	23.1	22.7	22.6	22.2	23.2	22.7	24
21	22.8	22.7	22.4	23.0	22.5	22.8	22.7	22.5	22.7	22.9	22.3	23.0	22.7	22.7	22.4	22.6	22.9	23.6	23.8	23.4	22.8	22.8	22.6	22.5	22.3	23.8	22.8	24
22	23.1	22.6	22.6	22.9	22.4	22.9	22.4	23.1	22.8	22.2	21.9	22.1	22.6	23.0	23.4	23.9	24.3	24.7	24.8	24.2	23.2	22.8	22.8	22.6	21.9	24.8	23.1	24
23	23.1	22.6	23.1	22.4	23.0	22.6	22.8	22.8	22.7	22.6	22.7	22.9	22.2	22.6	22.4	22.2	22.5	22.4	23.1	22.8	22.8	22.8	22.7	22.5	22.2	23.1	22.7	24
24	23.0	22.7	22.6	22.5	23.0	22.6	22.4	23.1	22.7	22.8	22.4	22.1	22.1	22.1	22.9	22.4	22.1	23.0	22.2	22.9	22.7	22.7	22.6	22.4	22.1	23.1	22.6	24
25	22.9	22.4	22.8	22.4	22.7	22.4	22.3	22.4	22.6	22.0	22.4	23.0	23.5	23.7	23.8	23.8	24.2	24.5	24.4	24.3	24.0	23.1	22.7	22.8	22.0	24.5	23.1	24
26	22.7	22.5	22.8	22.5	22.7	22.3	22.9	22.7	22.2	22.9	22.4	22.7	23.1	23.6	24.0	24.4	24.7	24.7	24.3	23.8	23.1	22.3	23.0	22.8	22.2	24.7	23.1	24
27	22.3	22.8	22.3	22.6	22.6	22.4	22.4	22.3	22.7	22.2	22.7	23.4	24.2	24.4	24.5	24.5	24.4	24.5	24.4	24.6	24.3	23.2	22.6	22.7	22.2	24.6	23.3	24
28	22.6	22.4	22.9	22.2	22.8	22.4	22.8	22.7	22.0	22.4	23.2	24.0	24.5	24.3	24.5	24.1	24.4	24.5	24.5	24.4	24.4	24.1	23.7	23.0	22.0	24.5	23.5	24
29	22.2	22.7	22.6	23.0	22.5	22.6	22.6	22.7	22.3	22.7	23.5	24.5	23.8	24.3	24.2	24.3	24.2	24.4	24.4	24.6	24.3	23.9	23.1	22.3	22.2	24.6	23.4	24
30	22.7	22.6	23.0	22.7	22.6	22.4	22.6	22.7	22.2	22.7	23.6	24.5	24.0	24.0	24.1	24.4	24.2	24.1	24.1	24.4	24.4	23.6	22.5	22.7	22.2	24.5	23.4	24
HOURLY MAX	23.9	23.6	23.4	23.2	23.0	23.0	23.1	23.1	23.2	23.2	23.6	24.5	24.6	24.5	24.8	24.7	24.8	24.9	24.9	25.0	24.8	24.5	24.4	24.2				
HOURLY AVG	22.8	22.8	22.7	22.7	22.7	22.6	22.7	22.6	22.5	22.6	22.7	23.0	23.2	23.3	23.5	23.6	23.7	23.9	24.0	24.0	23.6	23.2	22.9	22.8				



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	21.5	°C	@ HOUR	17, 13	ON DAY	18, 19
MAXIMUM 1-HR AVERAGE:	25.0	°C	@ HOUR	19	ON DAY	12
MAXIMUM 24-HR AVERAGE:	23.6	°C			ON DAY	VAR
			OPERATIONAL TIME:			720 hrs
			AMD OPERATION UPTIME:			100.0 %
STANDARD DEVIATION:	0.8		MONTHLY AVERAGE:			23.1 °C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE

API 100A Sulphur Dioxide Analyzer Calibration

Date:	April 19, 2017	**Barometric Pressure:**	27.86 inHg
Company/Airshed:	PRAMP	**Station Temperature °C:**	23
Location/Station Name:	842b	**Weather Conditions:**	Mainly cloudy with clear breaks
Parameter:	Sulphur Dioxide	**Calibration Purpose:**	routine monthly
Start Time 24 hr. (mst):	8:55	**Performed By/Reviewer:**	Limin Li / Trina Whitsitt
End Time 24 hr. (mst):	12:10	**Cal Gas Expiry Date:**	December 8, 2019
Calibration Method:	Gas Dilution	**Converter Model & s/n (if applicable):**	n/a

Analyzer:

ID# or Serial Number:	838	**Range ppb:**	500
Last Calibration Date:	March 2, 2017	**As Found C.F.:**	0.994
Previous C.F.:	1.000	**New C.F.:**	1.000

Calibrator:

Flow Meter ID's:	sn: 108646 / sn: 4425
Make & Model:	Sabio 2010
Serial #:	17200415
Cal Gas Cylinder I.D. # :	EY0000769
Cal Gas Conc. (ppm):	50.5

Standard Calibration Points for Ranges

Point	ppb
High	380
Mid	180
Low	90

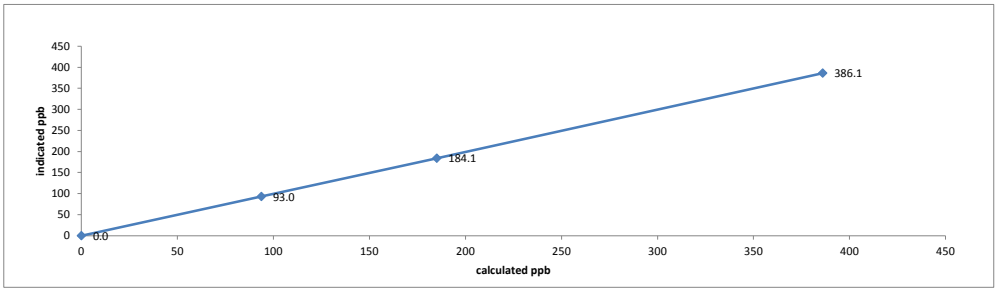
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
Point	**Diluent**	**Cal Gas**	**Total**	**(ppb)**	**(ppb)**	
as found zero	6358	0.00	6358	0.0	0.0	n/a
as found high	6319	48.68	6368	386.1	388.5	0.994
adjusted zero	6358	0.00	6358	0.0	0.0	n/a
adjusted high	6319	48.68	6368	386.1	386.1	1.000
mid	6363	23.41	6386	185.1	184.1	1.006
low	6381	11.87	6393	93.8	93.0	1.008
calibrator zero	6358	0.00	6358	0.0	0.0	n/a
					Average C.F.=	1.005

Linear Regression/Calibration Results:

		LIMITS
Correlation Coeffecient =	**1.000**	**> or = 0.995**
Slope =	**0.999**	**.95-1.05**
b (Intercept as % of full scale)=	**0.11%**	**± 3% F.S.**
% change in C.F. from last cal=	**0.63%**	**± 10%**

API 100A Sulphur Dioxide Analyzer Calibration

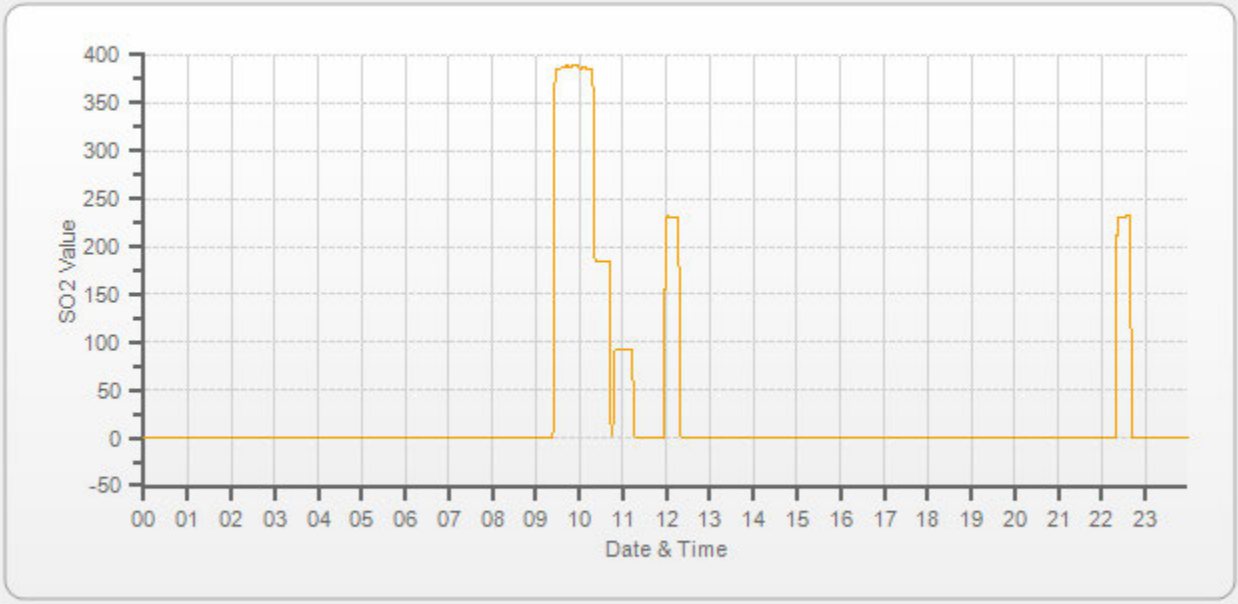


As found:		As left:	
SLOPE:	1.033	SLOPE:	1.027
OFFSET:	19.6	OFFSET:	19.3
HVPS:	686	HVPS:	686
DCPS:	2546	DCPS:	2545
RCELL TEMP:	51.1	RCELL TEMP:	50.6
BOX TEMP:	31.1	BOX TEMP:	29.8
PMT TEMP:	7.2	PMT TEMP:	7.3
IZS TEMP:	60.1	IZS TEMP:	60.1
Converter Temp:	n/a	Converter Temp:	n/a
PRES:	26.3	PRES:	26.5
SAMP FL:	634	SAMP FL:	641
PMT:	57.9	PMT:	59.2
UV LAMP:	2325	UV LAMP:	2338
LAMP RATIO:	93.5	LAMP RATIO:	94
STR. LGT	10.1	STR. LGT	9.9
DRK PMT:	34.2	DRK PMT:	34.1
DRK LMP:	-6.9	DRK LMP:	-6.9
Expected Value:	236.0	Expected Value:	230.0

Comments:

The analyzer sample inlet filter was changed.
Flow measurements done after mid point.

SO2[ppb] Station: PRAMP_842 Daily: 2017/04/19 Type: AVG 1 Min. [1 Min.]



TOTAL REDUCED SULPHUR

Thermo 43i Total Reduced Sulphur Analyzer Calibration

Date:	April 19, 2017	**Barometric Pressure:**	27.86 inHg
Company/Airshed:	PRAMP	**Station Temperature °C:**	23
Location/Station Name:	842b	**Weather Conditions:**	Mainly cloudy with clear breaks
Parameter:	Total Reduced Sulphur	**Calibration Purpose:**	routine monthly
Start Time 24 hr. (mst):	8:55	**Performed By/Reviewer:**	Limin Li / Trina Whitsitt
End Time 24 hr. (mst):	12:35 ☐ Skip	**Cal Gas Expiry Date:**	January 6, 2018
Calibration Method:	Gas Dilution	**Converter Model & s/n (if applicable):**	CDNOVA CDN-101 & s/n:553

Analyzer:

ID# or Serial Number:	1162460023	**Range ppb:**	100
Last Calibration Date:	March 2, 2017	**As Found C.F.:**	0.974
Previous C.F.:	1.000	**New C.F.:**	0.999

Calibrator:

Flow Meter ID's:	sn:108646/sn:4425
Make & Model:	Sabio 2010
Serial #:	17200415
Cal Gas Cylinder I.D. # :	BLM002508
Cal Gas Conc. (ppm):	10.2

Standard Calibration Points for Ranges

Point	ppb
High	78
Mid	38
Low	19

SO_2 Scrubber Check (10 mins.)

Start/End Time 24 hr.:	09:14/09:25
Target Concentration (ppb):	780
Result (ppb):	0.1
Zero Corrected Result (ppb):	**0**

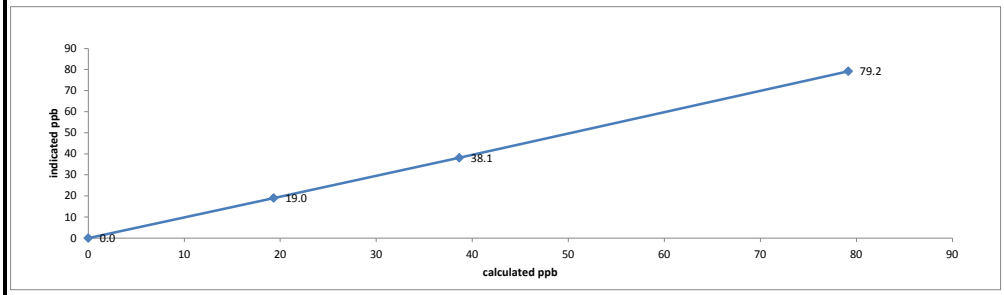
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
Point	**Diluent**	**Cal Gas**	**Total**	**(ppb)**	**(ppb)**	
as found zero	7492	0.00	7492	0.0	0.0	n/a
as found high	7438	58.17	7496	79.2	81.3	0.974
adjusted zero	7492	0.00	7492	0.0	0.0	n/a
adjusted high	7438	58.17	7496	79.2	79.2	0.999
mid	7484	28.46	7512	38.6	38.1	1.014
low	7484	14.20	7498	19.3	19.0	1.017
calibrator zero	7492	0.00	7492	0.0	0.0	n/a
					Average C.F.=	1.010

Linear Regression/Calibration Results:

		LIMITS
Correlation Coeffecient =	**1.000**	**> or = 0.995**
Slope =	**0.999**	**.95-1.05**
b (Intercept as % of full scale)=	**0.25%**	**± 3% F.S.**
% change in C.F. from last cal=	**2.64%**	**± 10%**

Thermo 43i Total Reduced Sulphur Analyzer Calibration

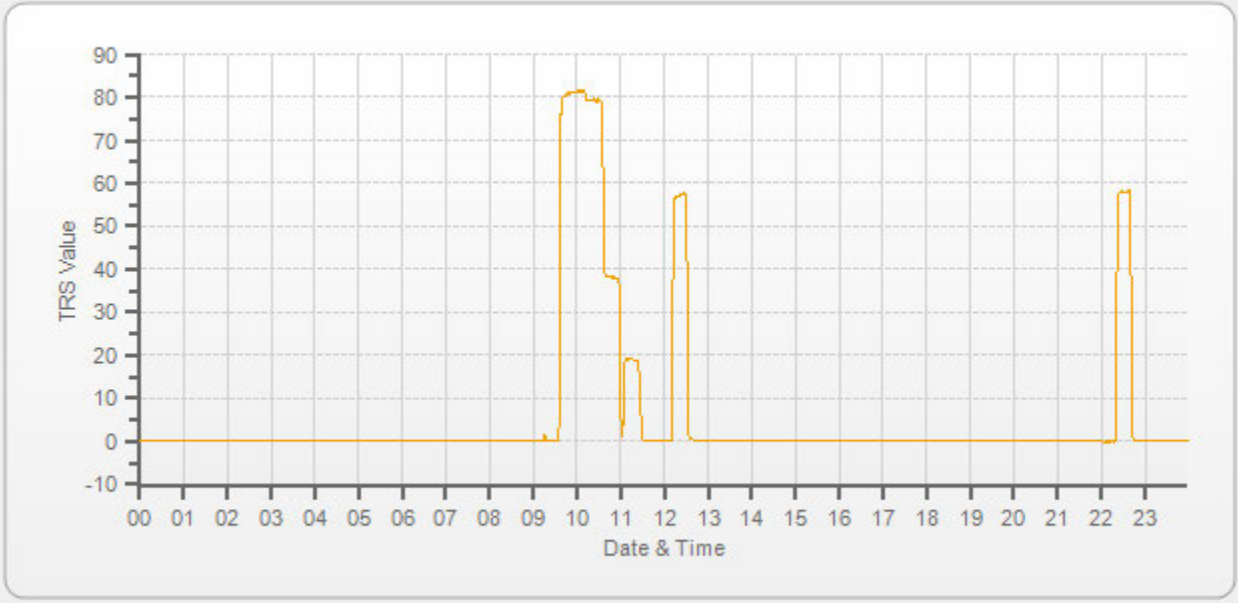


As found:		**As left:**	
BKG:	2.71	BKG:	2.61
COEF:	0.882	COEF:	0.855
PMT:	-725.2	PMT:	-725.2
FLASH:	989	FLASH:	990
INTERNAL:	31.4	INTERNAL:	31
CHAMBER:	45	CHAMBER:	44.8
PERM OVEN GAS:	45	PERM OVEN GAS:	45
PERM OVEN HEATER:	44.12	PERM OVEN HEATER:	44.1
PRESSURE:	664.8	PRESSURE:	671.7
SAMPLE FLOW:	0.408	SAMPLE FLOW:	0.415
LAMP INTENSITY:	89	LAMP INTENSITY:	89
CONVERTER:	850	CONVERTER:	850
CONVERTER SET:	850	CONVERTER SET:	850
Expected Value:	57.9	Expected Value:	57.5

Comments:

The analyzer sample inlet filter was changed.
Flow measurements done after mid point.

TRS[ppb] Station: PRAMP_842 Daily: 2017/04/19 Type: AVG 1 Min. [1 Min.]



TOTAL HYDROCARBON

Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	April 19, 2017	**Barometric Pressure:**	27.86 inHg
Company/Airshed:	PRAMP	**Station Temperature °C:**	23
Location/Station Name:	842b	**Weather Conditions:**	Mainly cloudy with clear breaks
Parameter:	CH_4 / NMHC / THC	**Calibration Purpose:**	routine monthly
Start/End Time 24 hr. (mst):	11:45/14:45	**Performed By/Reviewer:**	Limin Li / Trina Whitsitt
Calibration Method:	Gas Dilution	**Cal Gas Expiry Date:**	November 24, 2022

Analyzer:

ID# or Serial Number:	1433563261
Measured Flow:	1.247 LPM
Last Calibration Date:	March 2, 2017
Range ppm:	20 CH4/20 NMHC/40 THC

Correction Factors:

	Previous C.F.:	As Found C.F.:	New C.F.:
CH_4 =	0.999	0.976	0.999
NMHC =	0.999	1.022	0.998
THC =	0.999	0.998	0.999

Calibrator:

Flow Meter ID's:	n/a		
Make & Model:	Sabio 2010		
Serial #:	17200415		
Cal Gas Cylinder I.D. # :	LL165367		
CH4 Cylinder Conc.=	590.0	207.0	**=C_3H_8 Cylinder Conc.**
CH_4 as C_3H_8=	569.3	1159.3	**=total CH_4 equivilant**

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	2455	0.00	2455	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
as found high	2454	62.79	2517	14.72	14.20	28.92	15.08	13.90	28.98	0.976	1.022	0.998
adjusted zero	2455	0.00	2455	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
adjusted high	2454	62.79	2517	14.72	14.20	28.92	14.73	14.23	28.96	0.999	0.998	0.999
mid	2429	31.04	2460	7.44	7.18	14.63	7.46	7.19	14.65	0.998	0.999	0.998
low	2429	14.11	2443	3.41	3.29	6.70	3.45	3.36	6.81	0.988	0.978	0.983
calibrator zero	2455	0.00	2455	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
									Average C.F.=	0.995	0.992	0.993

Linear Regression/Calibration Results:

	CH_4	NMHC	THC	LIMITS
Correlation Coeffecient =	1.000	1.000	1.000	> or = 0.995
Slope =	1.000	1.000	1.000	.95-1.05
b (Intercept as % of full scale)=	0.09%	0.13%	0.11%	± 3% F.S.
% change in C.F. from last cal=	2.29%	-2.27%	0.10%	± 10%

		As found:				As left:
Interface Board Voltages:	Bias Supply:	-300.4		Calibration History cnt'd:	NM Peak Area:	0
Temperatures:	Detector Oven:	175		Crucial Settings:	Methane Start:	8
	Filter:	175			Methane End:	16
	Column Oven:	75.1			Backflush:	18
	Internal:	28			NMHV Start:	26
Cylinder Pressures/reg.:	Carrier:	2200	50		NMHC End:	56
	Fuel:	1800	50	Run History>1:	Date:	19APR17
	Span Gas:	800	14		Time:	10:07
	Zero Air Generator:	45			CH_4 PK HT:	2748
Internal Pressures:	Carrier:	28.6			CH_4 RT:	12.4
	Fuel:	37.6			CH_4 Baseline:	1751
	Air:	34.3			CH_4 LOD:	18
FID Status:	Status:	LIT			CH_4 SD:	6
	Counts:	21505			CH_4 CONC:	1.98
	Flame:	350.2			NM PK HT:	0
	Det Base:	175			NM Peak Area:	0
Flame and Power Stats:	Last Power On:	07Apr2017 07:56:39			NM CONC:	0.00
	Flameouts:	1			NM Base Start:	1767
	Det Oven at Start:	160.5			NM Base End:	1792
	Col Oven at Start:	72.5			NM LOD:	19
Calibration History:	Time:	01JAN70 00:00			NM Start IDX:	27
	Type:	ERROR			NM End IDX:	47
	Status:	ERROR			NM Max Slope:	1.8e+00
	Check/Adjust:	ADJUST			NM Min Slope:	-1.0e+00
	CH_4 Span Conc:	0			NM PT Count:	0
	CH_4 SP Ratio:	0		Expected Values:	Previous CH4:	9.24
	CH_4 RT:	0			Previous NMHC	10.93
	CH_4 PK IDX:	0			Previous THC:	20.19
	CH_4 PK HT:	0			New CH4:	8.94
	NM Span Conc:	0			New NMHC	11.06
	NM SP Ratio:	0			New THC:	20.02

Comments:

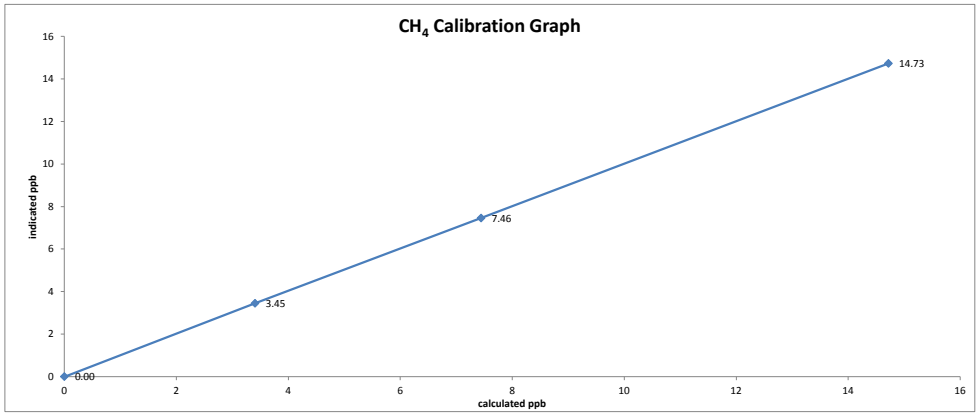
The analyzer sample inlet filter was changed.

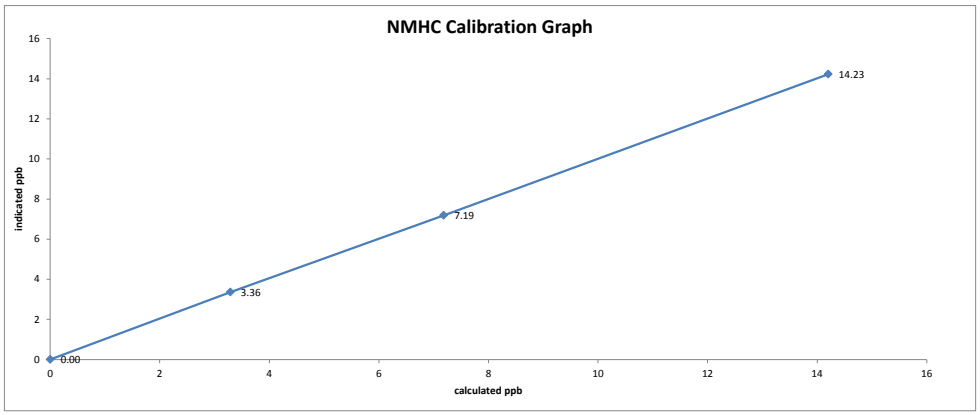
No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.

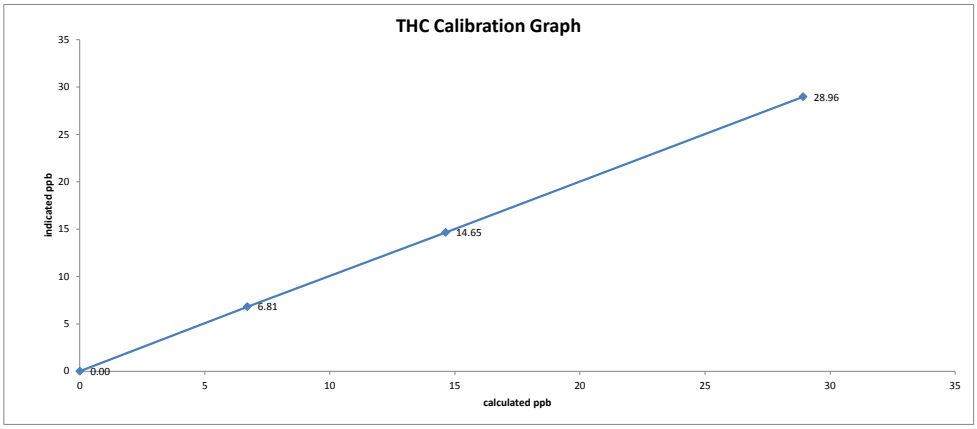
The analyzer cooling fan filter(s) were cleaned.

Flow measurements done after mid point.

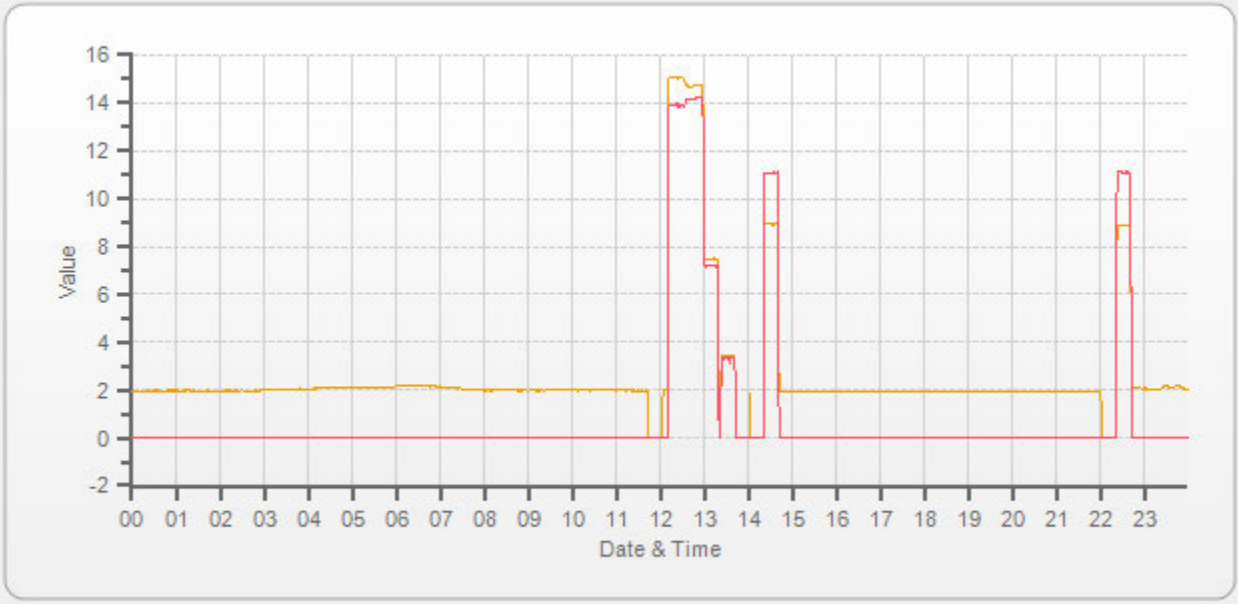
Date:	April 19, 2017	Start/End Time 24 hr. (mst):	11:45/14:45
Company/Airshed:	PRAMP	Calibration Purpose:	routine monthly
Location/Station Name:	842b	Calibration Method:	Gas Dilution







Station: PRAMP_842 Daily: 2017/04/19 Type: AVG 1 Min. [1 Min.]



Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	April 23, 2017	**Barometric Pressure:**	27.79 inHg
Company/Airshed:	PRAMP	**Station Temperature °C:**	23
Location/Station Name:	842b	**Weather Conditions:**	Mainly cloudy with clear breaks
Parameter:	CH_4 / NMHC / THC	**Calibration Purpose:**	repeat
Start/End Time 24 hr. (mst):	11:25/14:30	**Performed By/Reviewer:**	Limin Li / Trina Whitsitt
Calibration Method:	Gas Dilution	**Cal Gas Expiry Date:**	November 24, 2022

Analyzer:

ID# or Serial Number:	1433563261
Measured Flow:	1.247 LPM
Last Calibration Date:	April 19, 2017
Range ppm:	20 CH4/20 NMHC/40 THC

Correction Factors:

	Previous C.F.:	As Found C.F.:	New C.F.:
CH_4 =	0.999	0.993	1.001
NMHC =	0.998	0.997	1.000
THC =	0.999	0.995	1.000

Calibrator:

Flow Meter ID's:	n/a		
Make & Model:	Sabio 2010		
Serial #:	17200415		
Cal Gas Cylinder I.D. # :	LL165367		
CH4 Cylinder Conc.=	590.0	207.0	**=C_3H_8 Cylinder Conc.**
CH_4 as C_3H_8=	569.3	1159.3	**=total CH_4 equivilant**

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	2389	0.00	2389	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
as found high	2389	61.52	2451	14.81	14.29	29.10	14.92	14.33	29.25	0.993	0.997	0.995
adjusted zero	2389	0.00	2389	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
adjusted high	2389	61.52	2451	14.81	14.29	29.10	14.80	14.29	29.09	1.001	1.000	1.000
mid	2415	30.89	2446	7.45	7.19	14.64	7.46	7.20	14.66	0.999	0.999	0.999
low	2415	14.06	2429	3.42	3.29	6.71	3.46	3.35	6.81	0.987	0.984	0.985
calibrator zero	2415	0.00	2415	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
									Average C.F.=	0.996	0.994	0.995

Linear Regression/Calibration Results:

	CH_4	NMHC	THC	LIMITS
Correlation Coeffecient =	1.000	1.000	1.000	> or = 0.995
Slope =	0.998	0.999	0.998	.95-1.05
b (Intercept as % of full scale)=	0.11%	0.12%	0.12%	± 3% F.S.
% change in C.F. from last cal=	0.63%	0.07%	0.40%	± 10%

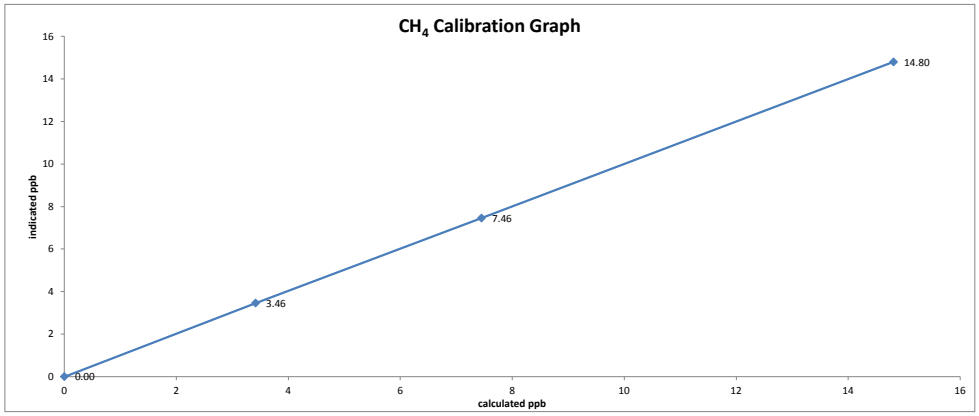
		As found:				As left:
Interface Board Voltages:	Bias Supply:	-300.4		Calibration History cnt'd:	NM Peak Area:	91334
Temperatures:	Detector Oven:	175		Crucial Settings:	Methane Start:	8
	Filter:	175			Methane End:	16
	Column Oven:	75.1			Backflush:	18
	Internal:	28.2			NMHV Start:	26
Cylinder Pressures/reg.:	Carrier:	2100	50		NMHC End:	56
	Fuel:	1500	50	Run History>1:	Date:	23APR17
	Span Gas:	750	14		Time:	11:00
	Zero Air Generator:	45			CH_4 PK HT:	2757
Internal Pressures:	Carrier:	28.6			CH_4 RT:	12.4
	Fuel:	37.6			CH_4 Baseline:	1750
	Air:	34.3			CH_4 LOD:	23
FID Status:	Status:	LIT			CH_4 SD:	7
	Counts:	21948			CH_4 CONC:	1.94
	Flame:	351.1			NM PK HT:	0
	Det Base:	175			NM Peak Area:	0
Flame and Power Stats:	Last Power On:	07Apr2017 07:56:39			NM CONC:	0.00
	Flameouts:	1			NM Base Start:	1778
	Det Oven at Start:	160.5			NM Base End:	1800
	Col Oven at Start:	72.5			NM LOD:	25
Calibration History:	Time:	19APR17 12:29			NM Start IDX:	4
	Type:	SPAN			NM End IDX:	60
	Status:	GOOD			NM Max Slope:	1.2e+00
	Check/Adjust:	ADJUST			NM Min Slope:	-9.7e-01
	CH_4 Span Conc:	14.72			NM PT Count:	0
	CH_4 SP Ratio:	0.000705		Expected Values:	Previous CH4:	8.94
	CH_4 RT:	12.4			Previous NMHC	10.06
	CH_4 PK IDX:	22			Previous THC:	20.02
	CH_4 PK HT:	20894			New CH4:	8.85
	NM Span Conc:	14.2			New NMHC	11.04
	NM SP Ratio:	0.000155			New THC:	19.91

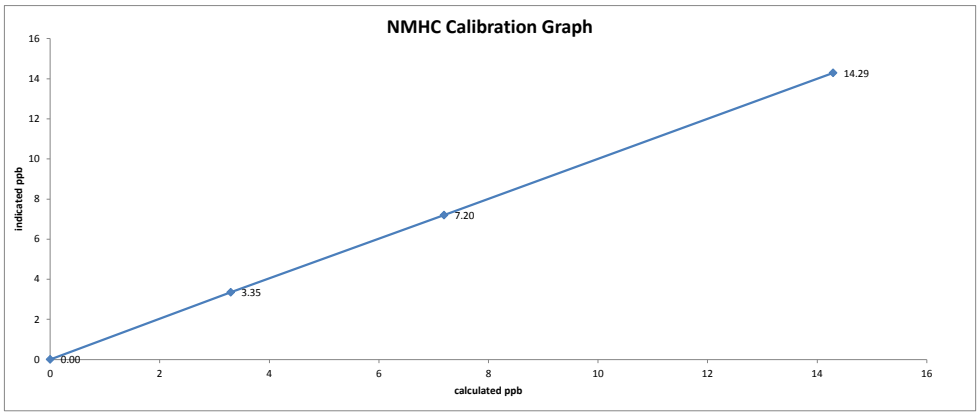
Comments:

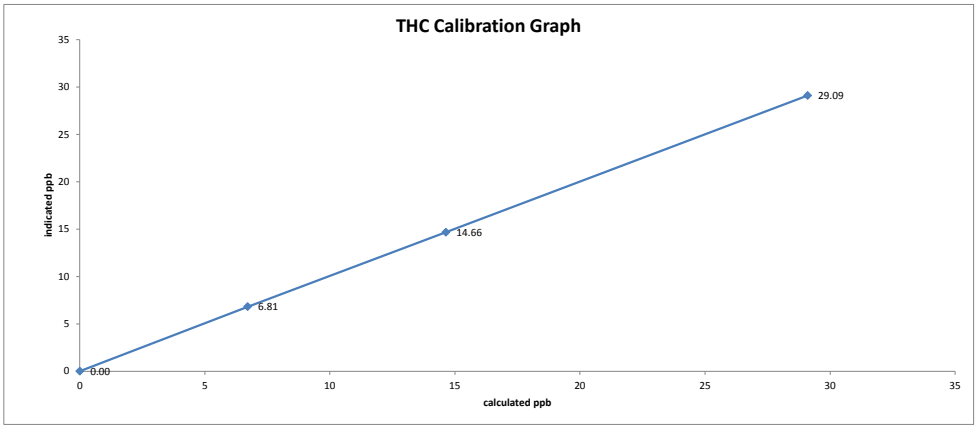
No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.

Flow measurements done after mid point.

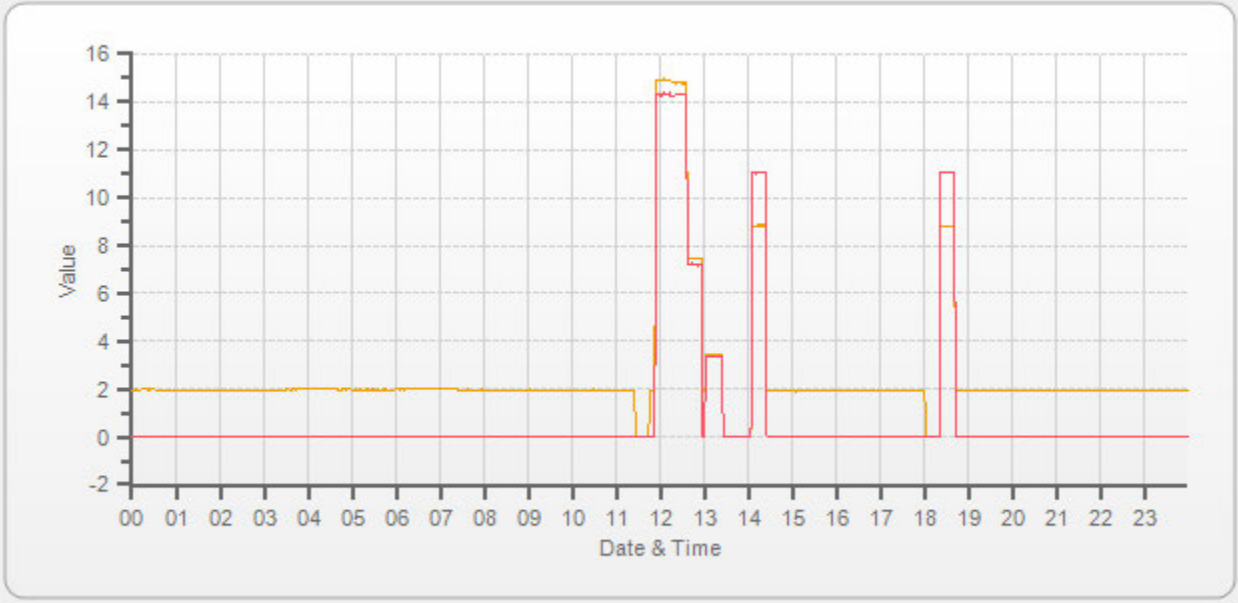
Date:	April 23, 2017	Start/End Time 24 hr. (mst):	11:25/14:30
Company/Airshed:	PRAMP	Calibration Purpose:	repeat
Location/Station Name:	842b	Calibration Method:	Gas Dilution







Station: PRAMP_842 Daily: 2017/04/23 Type: AVG 1 Min. [1 Min.]



WIND SYSTEM

Meteorological Sensor Audit/Calibration

Location Information

Company:	PRAMP	**Performed By:**	Chris Wesson
Audit Location:	842b	**Reviewed By:**	Trina Whitsitt
Audit Date:	February 14, 2017	**Start /EndTime (mst):**	11:37 / 11:58

Wind Sensor Information

Sensor ID Data:		**Sensor Outputs:**	
Sensor Make:	RM Young	**Velocity Voltage Output Range:**	0-1
Sensor Model:	05305VK	**Velocity Unit Output Range:**	0-200
Serial #:	92411	**Direction Voltage Output Range:**	0-1
Previous Cal/Audit Date:	October 12, 2016	**Direction Unit Output Range:**	0-360

Wind Calibrator Information

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

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

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.0	0.0	-
1000	17.6	17.6	17.7	1.001
2000	35.3	35.1	35.2	1.005
3000	52.9	52.6	52.6	1.006
4000	70.6	70.2	70.2	1.006
5000	88.2	87.7	87.7	1.006
6000	105.8	105.2	105.2	1.006
7000	123.5	122.7	122.7	1.006
8000	141.1	140.2	140.2	1.007
9000	158.8	157.6	157.6	1.007
10000	176.4	175.1	175.2	1.007
		The audit meets AMD requirements.	**Average Correction Factor=**	**1.006**

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

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	0	351	0.4	3.7	2.0
30	330	30	327	-0.1	3.0	1.5
60	300	60	298	-0.5	2.1	1.3
90	270	90	269	0.0	1.5	0.8
120	240	120	239	0.3	1.4	0.9
150	210	150	209	0.3	1.0	0.7
180	180	180	180	0.0	0.4	0.2
210	150	209	150	0.8	0.5	0.7
240	120	240	119	0.5	0.8	0.6
270	90	270	91	-0.1	-0.8	0.4
300	60	298	61	2.1	-0.6	1.3
330	30	328	31	1.7	-0.8	1.2
355	0	351	0	3.9	0.1	2.0
The audit meets AMD requirements.			**Average Absolute Degrees Difference=**			**1.0**

Comments:

Alignment with true north confirmed whilst remounting (magnetic declination = 15°)

Meteorological Sensor Audit/Calibration

Location Information

Company:	PRAMP	**Performed By:**	Limin Li
Audit Location:	842b	**Reviewed By:**	Trina Whitsitt
Audit Date:	April 5, 2017	**Start /EndTime (mst):**	16:35 / 18:10

Wind Sensor Information

Sensor ID Data:		**Sensor Outputs:**	
Sensor Make:	RM Young	**Velocity Voltage Output Range:**	0-1 V
Sensor Model:	05305VK	**Velocity Unit Output Range:**	0-200 km/h
Serial #:	92411	**Direction Voltage Output Range:**	0-1 V
Previous Cal/Audit Date:	February 14, 2017	**Direction Unit Output Range:**	0-360 degrees

Wind Calibrator Information

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

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

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.0	0.0	-
1000	18.4	18.5	18.5	0.995
2000	36.9	36.9	36.9	1.000
3000	55.3	55.4	55.4	0.999
4000	73.7	73.8	73.8	0.999
5000	92.2	92.2	92.2	1.000
6000	110.6	110.7	110.7	0.999
7000	129.0	129.1	129.1	0.999
8000	147.4	147.5	147.5	0.999
9000	165.9	165.9	165.9	1.000
10000	184.3	184.3	184.3	1.000
		The audit meets AMD requirements.	**Average Correction Factor=**	**0.999**

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

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	1	351	0.8	3.6	2.2
30	330	31	327	-1.3	2.9	2.1
60	300	62	297	-1.7	3.0	2.3
90	270	91	268	-1.1	1.9	1.5
120	240	121	239	-0.7	1.5	1.1
150	210	150	209	-0.2	0.7	0.4
180	180	181	180	-0.6	-0.2	0.4
210	150	210	150	0.1	0.3	0.2
240	120	239	120	0.9	-0.3	0.6
270	90	268	91	1.6	-0.7	1.2
300	60	297	61	3.1	-1.3	2.2
330	30	327	31	3.0	-1.1	2.1
355	0	351	1	3.6	0.6	2.1
The audit meets AMD requirements.			**Average Absolute Degrees Difference=**			**1.4**

Comments: Adjust wind speed gain before calibration.

CALIBRATORS

aemera.org

Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2016-076A

Company Maxxam **Operator:** Christopher Wesson

Calibrator:		**Flow Measurement Device:**	
Make/Model	Sabio 2010	Make/Model	N/A
Serial Number	17200415	Serial Number	N/A
Last Verification Date	May 2015	Temperature (°C)	N/A
NO Cylinder S/N	LL42475	Barometric Pressure	N/A
NO/NOX Concentration	48.5/48.5		

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
5029	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
5030	80.6	0.777	0.777	0.805	-0.005	0.800	4%	3%
5025	39.4	0.380	0.380	0.394	-0.002	0.392	4%	3%
5028	19.8	0.191	0.191	0.198	-0.001	0.197	4%	3%
						Absolute Average Percent Difference	3.65%	3.09%

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

NO		**LIMITS**	**NOx**	
Correlation=	1.0000	**≥ 0.990**	Correlation=	1.0000
m (Slope)=	1.0360	**0.90-1.10**	m (Slope)=	1.0295
b (Intercept % of FS)=	0.0110	**± 3% F.S.**	b (Intercept % of FS)=	0.0293

Flow	O_3 Conc	NO Decrease	NO	NO2	NOX	% Diff. Vs Audit gas	
5030	Lamp C.	0.000	0.804	-0.004	0.800	NO_2	% Diff. Limit
5030	1.388	0.495	0.309	0.491	0.800	0%	± 10%
5030	0.745	0.241	0.563	0.239	0.802	1%	± 10%
5030	0.367	0.091	0.713	0.089	0.801	2%	± 10%
					Absolute Average Percent Difference	1%	± 10%

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

NO_2		**LIMITS**
Correlation=	1.0000	**≥ 0.995**
m (Slope)=	0.9988	**0.90-1.10**
b (Intercept % of FS)=	-0.2760	**± 3% F.S.**

AENV Standards		**NO_X Analyzer**	
Audit Calibrator			
Make/Model	Teco 146i	Make/Model	Teco 42i
Serial/AMU Number	AMU 1809	Serial/AMU Number	AMU 1868
		Last Calibration Date	May 18, 2016
		Full Scale (ppm)	1.0

COMMENTS: Contains 50.3 ppm SO2. Flows not measured as per Chapter 7, Section 5 of AMD.

Auditor: Al Clark Date: May 18, 2016

Operator Signature: Location: McIntyre Center Edmonton

CALIBRATION GASES

Alberta Government

Calibration Gas Audit

Single Component Cylinder Gas

File No. 2016-436CGA

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

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

Expiry Date: December 8, 2019

Reference Calibrator and Gas:

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

Flow Measurement Device:

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

Reference Analyzer:

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

Instrument Settings: Zero: 9.5 Span: 1.023 Range: 1.0

Last Calibration: Date: 25-Jan-17 C.F. 1.000 Done By: SB

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

Previous Stated Concentration PPM: 50.5

Percent variance from Stated: **0.2**

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

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

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

Auditor: Shea Beaton Date: January 26, 2017

Operator Signature: Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

Single Component Cylinder Gas

File No. 2015-338CGA

Company: Maxxam **Operator's Name:** Limin Li

Cylinder #: BLM002508 Concentration PPM: 10.2 Tolerance(%) 2 Certified By: Air Liquide

Reference Calibrator and Gas:

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

Flow Measurement Device:

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

Reference Analyzer:

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

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

Previous Stated Concentration PPM: 10.2

Percent variance from Stated: **6.0**

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

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

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

Auditor: Al Clark Date: March 31, 2015

Operator Signature: Al Clark Location: McIntyre Center Edmonton

Alberta Government

Calibration Gas Audit

CH4 / C3H8 Cylinder Gas

File No. 2015-029CGA

Company: Maxxam **Operators name:** Limin Li

Cylinder #: LL165367 Conc CH4 (PPM) 590/207 Tolerance (%) 2 Certified By: Praxair

Reference Calibrator and Gas:

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

Flow Measurement Device:

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

Reference Analyzer:

Make/Model: Teco 55C Serial/AMU Number: 1643

Instrument Settings Zero: N/A Span: N/A Range: 20

Last Calibration: Date: May 21/15 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated Conc. (ppm)		Gas Flow/	Concentration	Cylinder Concentration	
Dilution	Gas	CH4	C3H8	Dilution Flow	Factor	CH4	C3H8
2600	0.0	0.00	0.00				
2569	51.5	12.06	11.37	0.02005	49.883	602	206
3549	22.3	3.77	3.57	0.00628	159.148	600	207
3523	10.4	1.77	1.70	0.00295	338.750	600	209
					Average Cylinder Concentration:	**600**	**207**

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

Cylinder gas tolerances based on CH4 only

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

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

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

Auditor: Al Clark Date: May 21, 2015

Operator Signature: Location: McIntyre Center Edmonton

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	**Three Creeks 842b Station**
Name of the Representative of the Person Responsible (Last, First, Middle)	**Position / Title of the Representative of the Person Responsible**
Maram Ghaleb	**Project Manager, Customer Service, Air Services**
Is an External Party Certifying the Report? (If 'Yes', fill in the fields below for the external person.	
☐ **Yes** ■ **No**	
Name of External Person Certifying the Report (Last, First, Middle)	**Position / Title of External Person Certifying the Report**
NA	**NA**
Company Name for the External Person Certifying the Report	**Identification of Qualifications / Professional Designations of the External Person Certifying the Report**
NA	**NA**

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

Maram Ghaleb

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

May 24, 2017

Report Issued Date (dd-mm-yyyy)

APPENDIX V
DATA VALIDATION CERTIFICATION FORM

Validation Certificate Form

Client:	Peace River Area Monitoring Program Committee	**Project #:**	8449-2017-04-80-C
Site:	Three Creeks 842b Station	**Contact:**	Lily Lin

Level 0 Preliminary Verification	Maram Ghaleb	**Date**	April 30, 2017
Level 1 Primary Validation	Maram Ghaleb	**Date**	May 17, 2017
Level 2 Final Validation	Maram Ghaleb	**Date**	May 24, 2017
Level 3 Independent Data Review	[signature]	**Date**	May 24, 2017
Post-Final Validation	**NA**	**Date**	**NA**

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