



MAXXAM ANALYTICS
#1 2080 39 Ave. NE, Calgary, AB
T2E 6P7

maxxam.ca
Toll Free 800-386-7247
Fax 403-219-3673

AMBIENT AIR MONITORING MONTHLY DATA REPORT
PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
THREE CREEKS 842B STATION

JOB #: 8449-2017-09-80-C

September 2017

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: **October 27, 2017**

Prepared by:

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

Reviewed by:

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

SUMMARY

In September 2017, Maxxam Analytics was contracted to manage the ambient air quality monitoring and maintenance activities at the Three Creeks 842b Station, near Peace River Oil Sands Area 2, Alberta. The monitoring station provides continuous meteorological measurements and air quality data for 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, with the exception of THC/CH₄/NMHC, were above the 90% requirement.

THC/CH₄/NMHC: 220 hours of downtime were recorded this month. Operational time was 69.4%.

- The analyzer malfunctioned on September 15, troubleshooting was completed, calibrations were attempted and the analyzer was subsequently replaced on September 18. Eighty-three hours of downtime were recorded.
- Fifteen hours of downtime were recorded on September 20 due to maintenance activities and additional quality checks performed to address an unstable span response.
- In response to a "low concentration" alarm on Sept 26, a shut-down calibration was attempted on Sept 27, but failed. The analyzer was replaced with the newly-repaired analyzer, originally removed on Sept 15. Data was invalidated to the point when a decline in concentrations was identified. 122 hours of downtime were incurred.
- The 90% operational time requirement was not met this month. AEP reference number: 329861.

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 403-219-3661 or toll-free at 1-800-386-7247.

Monthly Continuous Data Summary

Peace River Area Monitoring Program Committee						MAXIMUM VALUES							OPERATIONAL TIME (%)
Three Creeks 842b Station						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDANCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (kph)	WIND DIRECTION (sector)	READING	DAY	
	1-hr	24-hr	1-hr	24-hr									
SO ₂ (ppb)	172	48	0	0	0	1	7	9	14.2	SSW	0	1	100.0
TRS (ppb)	-	-	-	-	0.18	0.73	8	7	6.5	WNW	0.32	8	100.0
THC (ppm)	-	-	-	-	1.99	2.27	29	23	3	E	2.06	4	69.4
CH ₄ (ppm)	-	-	-	-	1.99	2.27	29	23	3	E	2.06	4	69.4
NMHC (ppm)	-	-	-	-	0.00	0.00	1	0	8.9	S	0.00	1	69.4
RELATIVE HUMIDITY (%)	-	-	-	-	70	96	2	22	5	SSE	86	19	100.0
BAROMETRIC PRESSURE (millibar)	-	-	-	-	942	958	4	5	2	E	956	4	100.0
AMBIENT TEMPERATURE (°C)	-	-	-	-	11.1	29.0	6	16	6	SSW	18.8	7	100.0
STATION TEMPERATURE (°C)	-	-	-	-	21.9	25.8	27	16	9.4	WSW	22.8	26	100.0
VECTOR WS (kph)	-	-	-	-	3.4	31.6	11	16	-	WSW	17.4	10	100.0
VECTOR WD (sec)	-	-	-	-	205 (SSW)	-	-	-	-	-	-	-	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	September

CONTINUOUS AMBIENT MONITORING						
PARAMETER	% TIME OPERATIONAL	ONE - HOUR AVERAGE			24 - HOUR AVERAGE	
		MAXIMUM VALUES	NO. READINGS > REGULATION	MAXIMUM VALUES	NO. READINGS > REGULATION	
SO ₂	100.0	0.001 ppm	0	0.000 ppm	0	
TRS	100.0	0.001 ppm	-	0.000 ppm	-	
THC	69.4	2.27 ppm	-	2.06 ppm	-	
CH ₄	69.4	2.27 ppm	-	2.06 ppm	-	
NMHC	69.4	0.00 ppm	-	0.00 ppm	-	
RH	100.0	96 %	-	86 %	-	
BP	100.0	958 mb	-	956 mb	-	
Ambient TPX	100.0	29.0 °C	-	18.8 °C	-	
Station TPX	100.0	25.8 °C	-	22.8 °C	-	
Wind Speed	100.0	31.6 kph	-	17.4 kph	-	
Wind Direction	100.0	-	-	-	-	

SIGNATURE OF COMPANY REPRESENTATIVE

FOR ALBERTA ENVIRONMENT USE ONLY

Exceedance Summary Report

SO₂ 1-Hour Exceedances

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

SO₂ 24-Hour Exceedances

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

In accordance with EPEA and the Substance Release Regulation.

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

TABLE OF CONTENTS

<u>Title</u>	<u>Page</u>
SUMMARY	1
MONTHLY CONTINUOUS DATA SUMMARY REPORT	2
SOUR GAS SUMMARY REPORT	3
EXCEEDANCE SUMMARY REPORT	4
TABLE OF CONTENTS	5
1.0 Discussion	7
2.0 Project Personnel	9
3.0 Plant Monthly Required AMD Summary	9
4.0 Calculations and Results	9
5.0 Methods and Procedures	10
Appendix I	
Continuous Monitoring Data Results	14
Sulphur Dioxide	15
Total Reduced Sulphur	23
Total Hydrocarbon	31
Methane	39
Non-Methane Hydrocarbon	47
Wind Speed	55
Wind Direction	62
Relative Humidity	65
Barometric Pressure	68
Ambient Temperature	71
Station Temperature	74
Appendix II	
Equipment Calibration Results	77
Sulphur Dioxide	78
Total Reduced Sulphur	81
Total Hydrocarbon	84
Wind System	94
Calibrators	96

	Calibration Gases	100
Appendix III	Report Certification Form	104
Appendix IV	Data Validation Certification Form	106

1.0 Discussion

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

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

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

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

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

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

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

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

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

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

SULPHUR DIOXIDE (SO₂)

- Operational time, for the monitoring period was 100%.
- The routine monthly calibration was performed on September 15.
- One instance of maximum instantaneous data was discarded on September 30 at 17:00 as it was considered an anomalous spike.

TOTAL REDUCED SULPHUR (TRS)

- Operational time, for the monitoring period was 100%.
- The routine monthly calibration was performed on September 15.
- Maximum instantaneous data collected after the calibration on September 15 appear to trend lower than hourly data collected at the same period. This is because for instantaneous data, negative readings were corrected to zero but baseline zero correction was not applied.

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

- Operational time, for the monitoring period was 69.4%, equivalent to 220 hours of downtime.
- Upon arrival at the station on September 15 for a scheduled monthly calibration, the analyzer (Thermo 55i, s/n: 1236656188) was found recording anomalous concentrations. Troubleshooting was completed and it was determined that the internal switching valve had failed. Data review revealed that this malfunction occurred after the daily zero/span check completed earlier that day. As these are very delicate components that should not be repaired in the field, arrangements were made to mobilize an alternate analyzer to the station. A replacement analyzer (Thermo 55i, s/n: 1505664392) was installed on September 16 and column conditioning was performed overnight. A post-repair calibration was attempted on September 17, however, the Methane component of the calibration did not stabilize at zero. The problem was traced to a slightly unstable baseline signal and changes were made to the processing to address this. A successful post-repair calibration was completed on September 18. The expected span value was updated after the daily zero/span check on September 19. Data was invalidated back to the last valid zero/span check on September 15. Eighty-three hours of downtime were incurred due to this event.
- Instability was noted in Methane's span response as evidenced by a sudden drift in the results of the scheduled and additional span checks of September 20. A shut-down calibration attempted later that day proved abortive, as a 15-minute stabilization was not achieved at as-found high point, due to intermittent anomalous injections. The actuator operation and alignment were checked, gas supply pressures were verified and adjusted and the zero chromatograph was reset. A successful post-repair calibration was subsequently completed. Data was invalidated to the point when anomalous injections were identified, determined to be hour 01:00 of September 20. Fifteen hours of downtime were recorded due to this event.
- In response to a "low-concentration" alarm triggered on September 26 at hour 23:00, a technician was dispatched to the site on September 27. A shut-down calibration attempt proved unsuccessful. The analyzer was therefore removed and the original analyzer (removed for maintenance on September 15 and now repaired) was re-installed. Column conditioning was performed overnight and a successful installation calibration was completed on September 28. Data was invalidated to the point when a decline in concentrations was identified, determined to be hour 07:00 of September 23. 122 hours of downtime were recorded due to this event.
- The 90% operational time requirement was not met this month. AEP reference number: 329861.

WIND SPEED (WS) and WIND DIRECTION (WD)

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

RELATIVE HUMIDITY (RH)

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

BAROMETRIC PRESSURE (BP)

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

AMBIENT TEMPERATURE (AmbTPX)

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

STATION TEMPERATURE (StnTPX)

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

2.0 Project Personnel

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

3.0 Plant Monthly Required AMD Summary

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

The operational time for all continuous ambient air analyzers, meteorological systems and data acquisition systems, with the exception of THC/CH₄/NMHC, 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 Fluorescent Analyzer

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

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

Wind System - RM Young Unit

Relative Humidity - RM Young Unit

Barometric Pressure - Met One Unit

Ambient Temperature - RM Young Unit

Datalogger - ESC 8832

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

Level 0 Preliminary Verification

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

Level 1 Primary Validation

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

Level 2 Final Validation

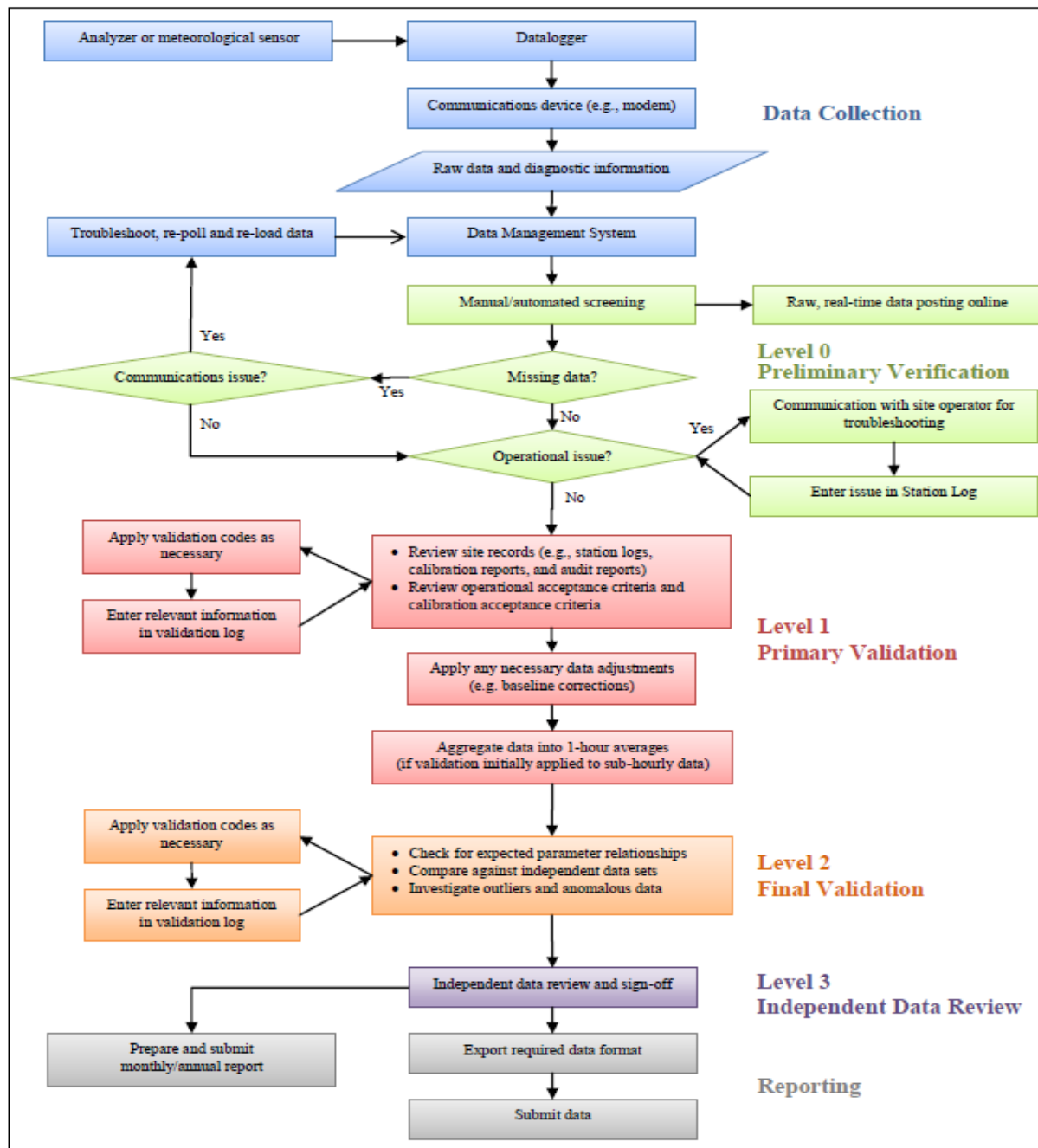
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

Level 3 Independent Data Review

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

Post-Final Validation

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



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

APPENDIX I
CONTINUOUS MONITORING DATA RESULTS

SULPHUR DIOXIDE



SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)

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

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

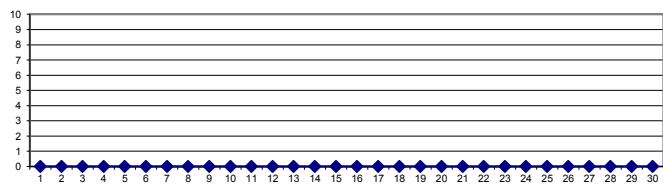
OBJECTIVE LIMIT:

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

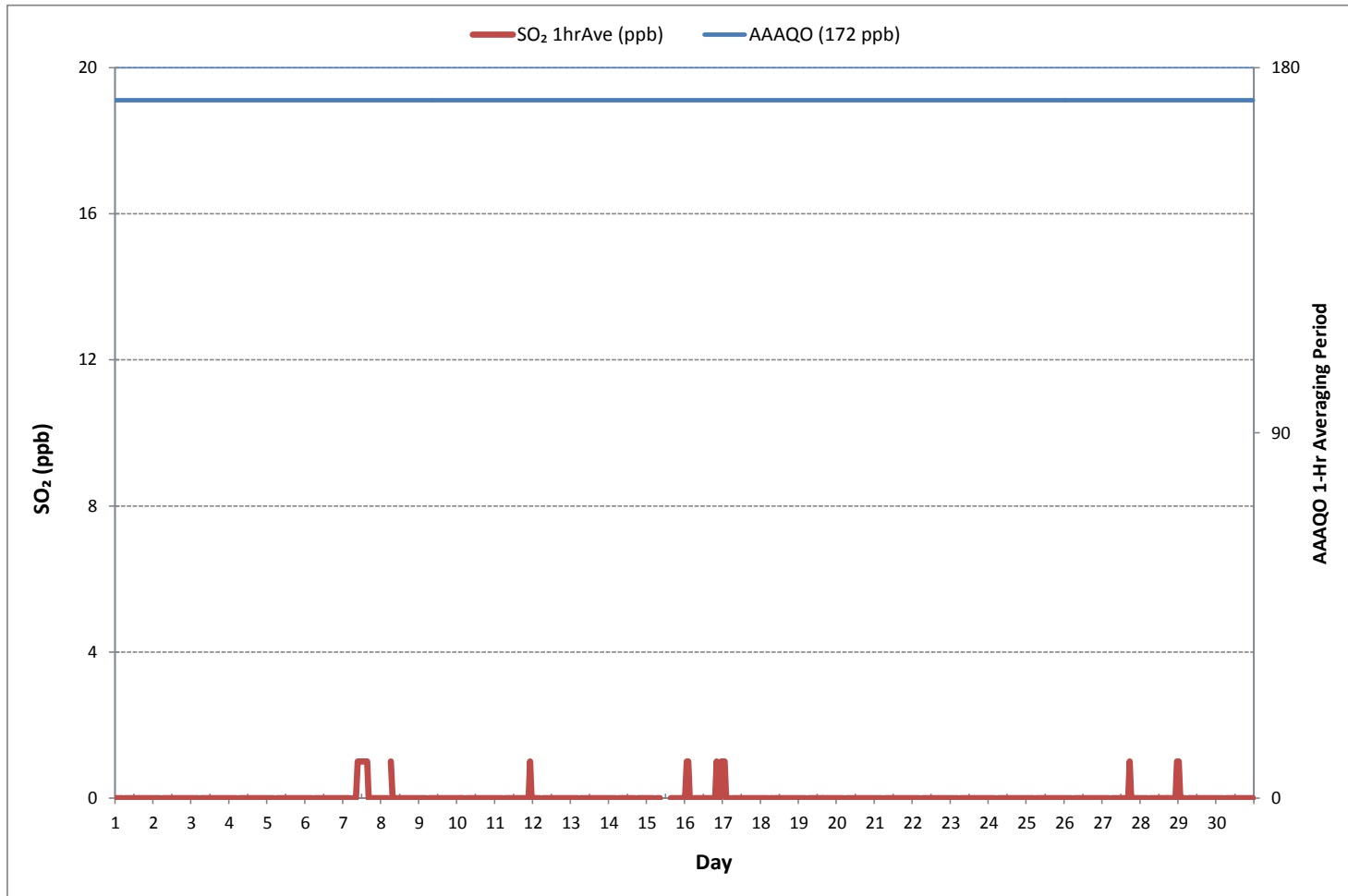
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDANCES:	0
NUMBER OF 24-HR EXCEEDANCES:	0
NUMBER OF NON-ZERO READINGS:	18
MINIMUM 1-HR AVERAGE:	0 ppb @ HOUR 0 ON DAY 1
MAXIMUM 1-HR AVERAGE:	1 ppb @ HOUR 9 ON DAY 7
MAXIMUM 24-HR AVERAGE:	0 ppb ON DAY 1
IZS CALIBRATION TIME:	30 hrs
MONTHLY CALIBRATION TIME:	6 hrs
OPERATIONAL TIME:	720 hrs
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0
MONTHLY AVERAGE:	0 ppb

24 HR AVERAGES September 2017



SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b Station - September 2017

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)

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

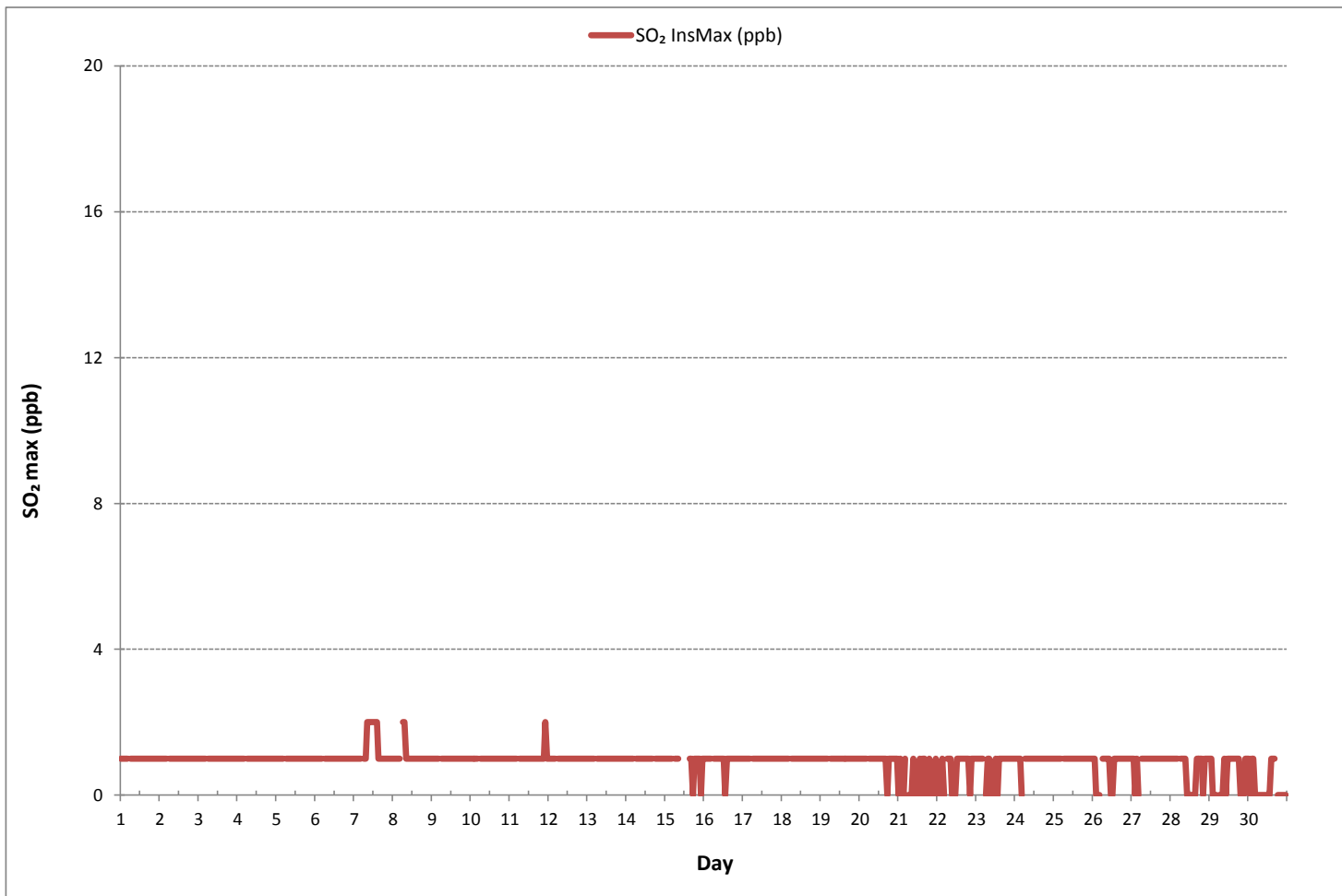
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	610
MAXIMUM INSTANTANEOUS VALUE:	2 ppb @ HOUR 8 ON DAY 7
IZS CALIBRATION TIME:	30 hrs
MONTHLY CALIBRATION TIME:	6 hrs
STANDARD DEVIATION:	0
OPERATIONAL TIME:	719 hrs

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)



Wind: PRAMP_842
 Poll.: PRAMP_842-SO2[ppb]
 Monthly: 17/09
 Type: PollutionRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

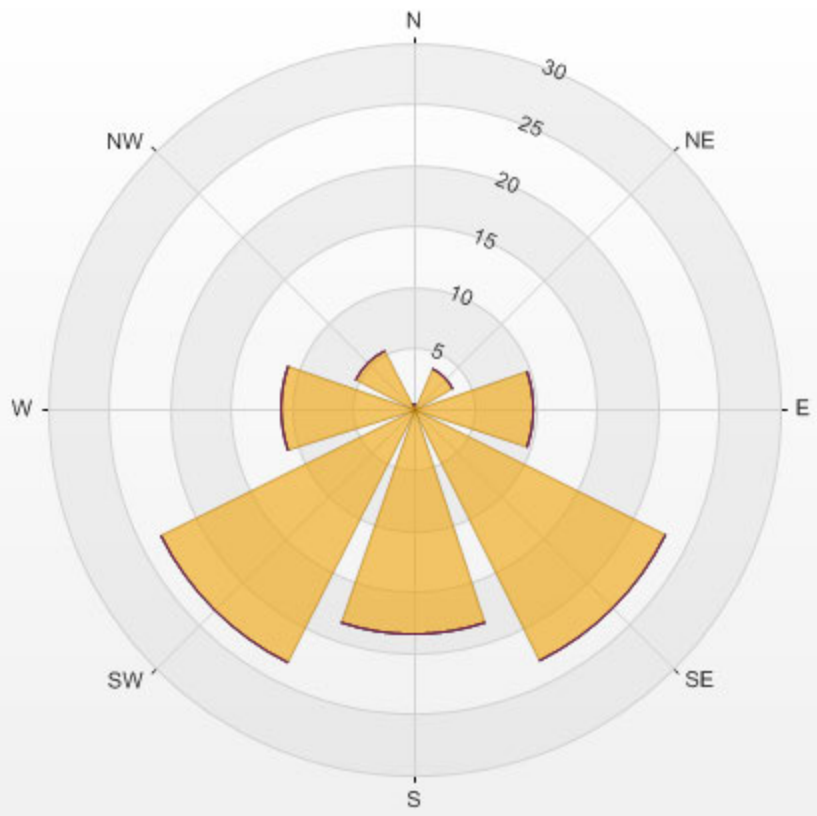
Calm: 5.12%

Calm Avg: 0.01 [ppb]

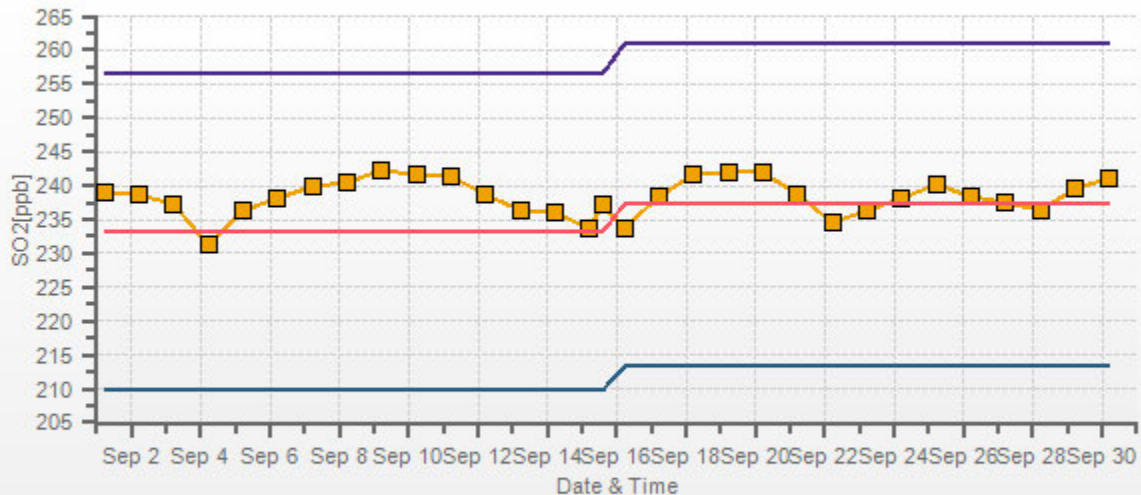
Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	0.4	0.0	0.0	0.0	0.0	0.4
NE	3.7	0.0	0.0	0.0	0.0	3.7
E	9.8	0.0	0.0	0.0	0.0	9.8
SE	23.1	0.0	0.0	0.0	0.0	23.1
S	18.6	0.0	0.0	0.0	0.0	18.6
SW	23.3	0.0	0.0	0.0	0.0	23.3
W	10.8	0.0	0.0	0.0	0.0	10.8
NW	5.3	0.0	0.0	0.0	0.0	5.3
Summary	94.9	0.0	0.0	0.0	0.0	94.9

% Icon Classes (ppb) 95 0-3 0 3-10 0 10-85 0 85-170 0 >170.0

PRAMP_842 Poll.: PRAMP_842-SO2[ppb] 2017/09/01 00:00 - 2017/09/30 23:00 Calm: 5.12% Calm Poll Avg: 0.01[ppb]



SO2[ppb] Calibration: PRAMP_842 Monthly: 17/09 Type: Span



Span Meas Span Ref Span Low Span High

TOTAL REDUCED SULPHUR



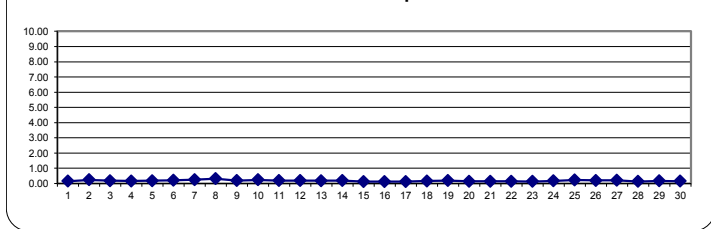
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY 1	0.20	0.28	0.20	0.17	0.19	S	0.21	0.18	0.15	0.13	0.12	0.11	0.11	0.11	0.12	0.10	0.11	0.12	0.13	0.14	0.14	0.18	0.16	0.18	0.10	0.28	0.15	24	
2	0.22	0.20	0.23	0.23	0.25	S	0.31	0.35	0.32	0.25	0.29	0.29	0.28	0.25	0.22	0.22	0.23	0.18	0.18	0.18	0.18	0.19	0.23	0.24	0.18	0.35	0.24	24	
3	0.27	0.24	0.25	0.23	0.26	S	0.38	0.34	0.27	0.23	0.16	0.12	0.12	0.12	0.11	0.13	0.12	0.09	0.11	0.11	0.15	0.16	0.14	0.14	0.09	0.38	0.18	24	
4	0.17	0.15	0.16	0.13	0.17	S	0.22	0.19	0.22	0.19	0.12	0.14	0.18	0.17	0.13	0.14	0.12	0.13	0.15	0.18	0.21	0.17	0.14	0.14	0.12	0.22	0.16	24	
5	0.14	0.14	0.14	0.14	0.15	S	0.23	0.25	0.23	0.19	0.20	0.28	0.23	0.17	0.16	0.14	0.14	0.14	0.17	0.20	0.19	0.21	0.22	0.20	0.14	0.28	0.19	24	
6	0.21	0.24	0.27	0.19	0.16	S	0.18	0.18	0.26	0.22	0.20	0.22	0.23	0.25	0.22	0.21	0.15	0.15	0.17	0.24	0.22	0.18	0.20	0.15	0.15	0.27	0.20	24	
7	0.15	0.15	0.16	0.16	0.16	S	0.19	0.19	0.20	0.23	0.30	0.26	0.25	0.26	0.24	0.24	0.26	0.29	0.32	0.30	0.31	0.32	0.32	0.35	0.15	0.35	0.24	24	
8	0.35	0.40	0.38	0.39	0.42	S	0.45	0.73	0.43	0.31	0.39	0.34	0.29	0.25	0.23	0.21	0.19	0.18	0.22	0.26	0.27	0.22	0.19	0.18	0.18	0.73	0.32	24	
9	0.21	0.18	0.17	0.20	0.17	S	0.22	0.18	0.17	0.18	0.18	0.19	0.23	0.22	0.19	0.18	0.20	0.19	0.19	0.19	0.19	0.20	0.19	0.21	0.17	0.23	0.19	24	
10	0.20	0.23	0.21	0.19	0.22	S	0.29	0.33	0.32	0.29	0.27	0.25	0.24	0.23	0.22	0.21	0.20	0.21	0.23	0.22	0.24	0.23	0.24	0.25	0.19	0.33	0.24	24	
11	0.24	0.23	0.25	0.31	0.26	S	0.21	0.19	0.19	0.22	0.24	0.16	0.14	0.15	0.15	0.12	0.12	0.12	0.14	0.15	0.16	0.39	0.19	0.12	0.39	0.20	24		
12	0.20	0.28	0.18	0.18	0.22	S	0.26	0.26	0.28	0.28	0.18	0.18	0.17	0.18	0.15	0.15	0.13	0.14	0.14	0.16	0.18	0.19	0.18	0.17	0.13	0.28	0.19	24	
13	0.18	0.16	0.15	0.20	0.16	S	0.22	0.21	0.20	0.21	0.20	0.17	0.16	0.15	0.12	0.13	0.12	0.13	0.14	0.35	0.22	0.19	0.26	0.22	0.12	0.35	0.18	24	
14	0.20	0.26	0.37	0.36	0.26	S	0.25	0.23	0.29	0.31	0.22	0.16	0.12	0.20	0.20	0.15	0.12	0.20	0.12	0.11	0.12	0.09	0.12	0.10	0.09	0.37	0.20	24	
15	0.09	0.08	0.11	0.11	0.10	S	0.27	0.24	0.20	0.17	0.18	C	C	C	C	C	0.10	0.06	0.06	0.07	0.07	0.08	0.11	0.11	0.06	0.27	0.12	24	
16	0.10	0.11	0.12	0.13	0.14	S	0.18	0.15	0.15	0.12	0.13	0.13	0.12	0.13	0.13	0.14	0.11	0.11	0.14	0.13	0.13	0.13	0.15	0.13	0.10	0.18	0.13	24	
17	0.13	0.14	0.13	0.13	0.14	S	0.16	0.15	0.15	0.14	0.13	0.12	0.12	0.10	0.11	0.09	0.10	0.12	0.12	0.13	0.14	0.13	0.11	0.11	0.09	0.16	0.13	24	
18	0.13	0.13	0.13	0.13	0.14	S	0.19	0.16	0.16	0.15	0.16	0.17	0.16	0.19	0.18	0.19	0.19	0.19	0.20	0.19	0.15	0.17	0.17	0.20	0.13	0.20	0.17	24	
19	0.20	0.21	0.20	0.20	0.21	S	0.21	0.21	0.19	0.14	0.13	0.13	0.12	0.13	0.13	0.18	0.24	0.21	0.21	0.20	0.23	0.22	0.21	0.17	0.12	0.24	0.19	24	
20	0.16	0.16	0.14	0.15	0.15	S	0.19	0.15	0.17	0.14	0.14	0.13	0.13	0.12	0.13	0.12	0.11	0.12	0.14	0.15	0.15	0.14	0.14	0.13	0.11	0.19	0.14	24	
21	0.14	0.15	0.17	0.15	0.16	S	0.18	0.17	0.16	0.16	0.16	0.15	0.15	0.14	0.14	0.13	0.14	0.13	0.13	0.14	0.13	0.12	0.13	0.14	0.12	0.18	0.15	24	
22	0.15	0.16	0.15	0.14	0.15	S	0.20	0.14	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.12	0.14	0.14	0.14	0.13	0.12	0.13	0.12	0.20	0.14	24	
23	0.12	0.13	0.12	0.11	0.11	S	0.14	0.12	0.13	0.14	0.15	0.13	0.14	0.13	0.14	0.12	0.14	0.13	0.14	0.14	0.13	0.15	0.15	0.14	0.11	0.15	0.13	24	
24	0.12	0.12	0.10	0.10	0.13	S	0.20	0.20	0.19	0.17	0.16	0.19	0.18	0.17	0.14	0.13	0.15	0.15	0.18	0.24	0.24	0.26	0.26	0.30	0.10	0.30	0.18	24	
25	0.30	0.34	0.32	0.31	0.30	S	0.35	0.29	0.25	0.24	0.21	0.19	0.17	0.15	0.16	0.13	0.12	0.13	0.17	0.23	0.20	0.24	0.21	0.19	0.12	0.35	0.23	24	
26	0.20	0.23	0.27	0.27	0.21	S	0.21	0.19	0.23	0.24	0.20	0.16	0.15	0.15	0.12	0.13	0.13	0.17	0.18	0.18	0.19	0.27	0.29	0.30	0.12	0.30	0.20	24	
27	0.32	0.35	0.26	0.24	0.29	S	0.32	0.28	0.30	0.30	0.26	0.20	0.18	0.15	0.14	0.14	0.14	0.13	0.16	0.16	0.16	0.16	0.15	0.15	0.13	0.35	0.21	24	
28	0.16	0.13	0.13	0.14	0.15	S	0.16	0.14	0.15	0.16	0.14	0.14	0.12	0.11	0.09	0.10	0.11	0.12	0.13	0.14	0.12	0.14	0.14	0.14	0.09	0.16	0.13	24	
29	0.14	0.13	0.17	0.18	0.16	S	0.21	0.17	0.21	0.23	0.23	0.22	0.21	0.24	0.15	0.11	0.13	0.13	0.16	0.15	0.14	0.15	0.20	0.22	0.11	0.24	0.18	24	
30	0.20	0.19	0.23	0.22	0.22	S	0.22	0.19	0.20	0.17	0.14	0.14	0.13	0.12	0.11	0.11	0.12	0.12	0.11	0.11	0.13	0.12	0.11	0.10	0.10	0.10	0.23	0.15	24
HOURLY MAX	0.35	0.40	0.38	0.39	0.42	NA	0.45	0.73	0.43	0.31	0.39	0.34	0.29	0.26	0.24	0.24	0.26	0.29	0.32	0.35	0.31	0.32	0.39	0.35					
HOURLY AVG	0.19	0.20	0.20	0.19	0.19	NA	0.23	0.23	0.22	0.20	0.19	0.18	0.17	0.17	0.15	0.15	0.15	0.15	0.16	0.18	0.17	0.18	0.19	0.18					

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

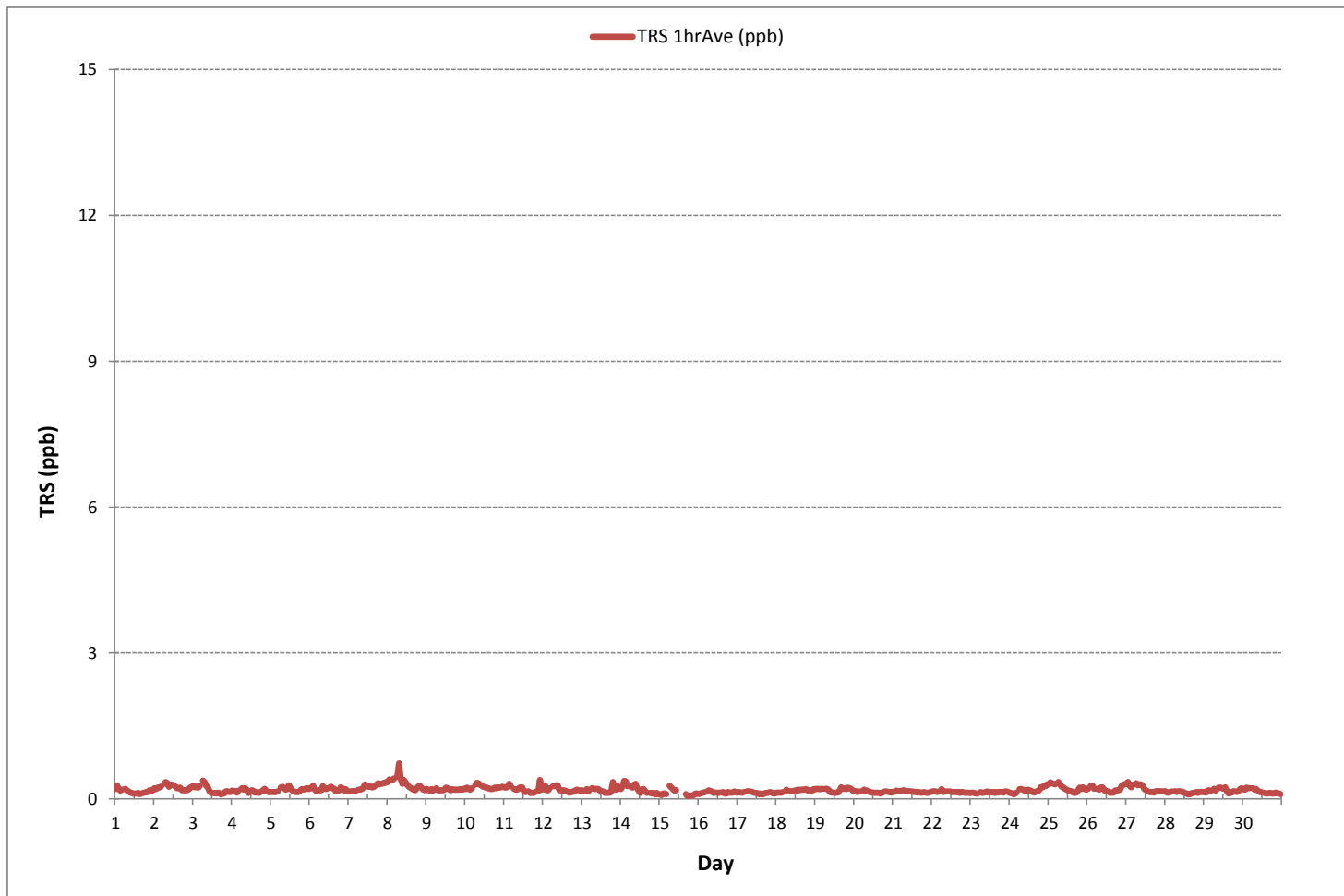
24 HR AVERAGES September 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	685				
MINIMUM 1-HR AVERAGE:	0.06	ppb @ HOUR	17	ON DAY 15	
MAXIMUM 1-HR AVERAGE:	0.73	ppb @ HOUR	7	ON DAY 8	
MAXIMUM 24-HR AVERAGE:	0.32	ppb		ON DAY 8	
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	720	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.07		MONTHLY AVERAGE:	0.18	ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b Station - September 2017

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	0.41	0.46	0.36	0.33	0.33	S	0.36	0.30	0.30	0.33	0.28	0.22	0.22	0.25	0.22	0.25	0.25	0.23	0.28	0.25	0.28	0.30	0.28	0.33	0.22	0.46	0.30	24	
2	0.43	0.33	0.33	0.33	0.41	S	0.54	0.54	0.43	0.41	0.41	0.41	0.41	0.38	0.36	0.36	0.38	0.33	0.28	0.30	0.30	0.33	0.36	0.38	0.28	0.54	0.38	24	
3	0.38	0.38	0.38	0.38	0.43	S	0.49	0.49	0.46	0.38	0.30	0.25	0.26	0.25	0.23	0.28	0.25	0.23	0.25	0.28	0.30	0.30	0.30	0.28	0.23	0.49	0.33	24	
4	0.30	0.30	0.33	0.30	0.36	S	0.44	0.33	0.38	0.33	0.28	0.28	0.36	0.38	0.28	0.28	0.25	0.28	0.28	0.30	0.33	0.30	0.28	0.28	0.25	0.44	0.31	24	
5	0.28	0.28	0.28	0.28	0.28	S	0.38	0.41	0.36	0.36	0.30	0.41	0.38	0.30	0.28	0.25	0.28	0.25	0.30	0.33	0.36	0.33	0.33	0.30	0.25	0.41	0.32	24	
6	0.36	0.36	0.38	0.33	0.30	S	0.28	0.30	0.38	0.36	0.30	0.38	0.38	0.36	0.36	0.33	0.28	0.28	0.33	0.36	0.36	0.30	0.33	0.28	0.28	0.38	0.33	24	
7	0.25	0.28	0.30	0.30	0.28	S	0.33	0.30	0.33	0.36	0.43	0.46	0.41	0.38	0.36	0.36	0.36	0.36	0.38	0.41	0.41	0.43	0.41	0.43	0.25	0.46	0.36	24	
8	0.43	0.46	0.49	0.47	0.51	S	0.80	0.98	0.59	0.41	0.46	0.44	0.38	0.36	0.33	0.28	0.25	0.25	0.33	0.33	0.33	0.33	0.30	0.28	0.25	0.98	0.43	24	
9	0.25	0.28	0.25	0.30	0.25	S	0.30	0.25	0.25	0.25	0.25	0.25	0.28	0.30	0.28	0.25	0.28	0.25	0.25	0.28	0.25	0.28	0.28	0.30	0.25	0.30	0.27	24	
10	0.30	0.30	0.33	0.22	0.28	S	0.36	0.41	0.41	0.36	0.33	0.30	0.33	0.30	0.30	0.30	0.28	0.30	0.36	0.33	0.33	0.36	0.36	0.43	0.22	0.43	0.33	24	
11	0.36	0.36	0.39	0.46	0.38	S	0.36	0.30	0.33	0.33	0.39	0.36	0.33	0.28	0.28	0.30	0.28	0.25	0.28	0.30	0.36	0.30	0.70	0.46	0.25	0.70	0.35	24	
12	0.46	0.64	0.33	0.33	0.38	S	0.41	0.46	0.43	0.49	0.30	0.33	0.33	0.36	0.30	0.30	0.28	0.28	0.30	0.33	0.33	0.36	0.36	0.30	0.28	0.64	0.36	24	
13	0.30	0.38	0.33	0.33	0.28	S	0.38	0.36	0.31	0.30	0.30	0.28	0.30	0.30	0.26	0.25	0.23	0.26	0.36	0.47	0.36	0.30	0.51	0.38	0.23	0.51	0.33	24	
14	0.36	0.38	0.54	0.49	0.41	S	0.39	0.39	0.46	0.46	0.39	0.33	0.28	0.56	0.41	0.30	0.30	0.30	0.30	0.30	0.28	0.30	0.30	0.30	0.28	0.56	0.37	24	
15	0.41	0.30	0.33	0.33	0.30	S	0.49	0.39	0.33	0.30	0.30	C	C	C	C	C	0.17	0.05	0.05	0.07	0.05	0.05	0.05	0.07	0.05	0.09	0.22	24	
16	0.05	0.05	0.05	0.07	0.09	S	0.09	0.05	0.07	0.02	0.05	0.05	0.05	0.05	0.05	0.07	0.02	0.02	0.02	0.05	0.07	0.05	0.05	0.07	0.07	0.02	0.09	0.25	24
17	0.05	0.05	0.07	0.05	0.05	S	0.09	0.09	0.07	0.05	0.09	0.07	0.05	0.02	0.05	0.02	0.02	0.09	0.05	0.05	0.09	0.05	0.02	0.05	0.02	0.09	0.06	24	
18	0.05	0.05	0.05	0.02	0.05	S	0.09	0.09	0.05	0.07	0.09	0.07	0.07	0.12	0.09	0.09	0.12	0.09	0.09	0.12	0.05	0.07	0.07	0.09	0.02	0.12	0.08	24	
19	0.09	0.07	0.09	0.09	0.09	S	0.12	0.09	0.09	0.02	0.02	0.02	0.02	0.00	0.00	0.09	0.12	0.12	0.07	0.07	0.07	0.07	0.07	0.02	0.00	0.12	0.07	24	
20	0.05	0.07	0.02	0.02	0.02	S	0.07	0.02	0.05	0.02	0.05	0.02	0.00	0.00	0.00	0.02	0.00	0.02	0.02	0.07	0.02	0.02	0.02	0.02	0.00	0.07	0.03	24	
21	0.02	0.07	0.09	0.05	0.07	S	0.07	0.07	0.05	0.07	0.09	0.05	0.07	0.07	0.05	0.05	0.05	0.05	0.07	0.09	0.07	0.05	0.07	0.07	0.02	0.09	0.06	24	
22	0.07	0.09	0.07	0.07	0.09	S	0.23	0.07	0.09	0.08	0.09	0.09	0.07	0.05	0.07	0.07	0.07	0.05	0.07	0.07	0.07	0.05	0.05	0.07	0.07	0.05	0.23	0.08	24
23	0.07	0.07	0.07	0.07	0.05	S	0.07	0.05	0.07	0.09	0.07	0.07	0.09	0.07	0.07	0.07	0.07	0.07	0.09	0.09	0.07	0.09	0.09	0.09	0.07	0.05	0.09	0.07	24
24	0.07	0.09	0.07	0.05	0.07	S	0.15	0.15	0.15	0.09	0.09	0.12	0.15	0.12	0.07	0.05	0.09	0.05	0.09	0.15	0.17	0.17	0.17	0.22	0.05	0.22	0.11	24	
25	0.22	0.25	0.20	0.22	0.17	S	0.28	0.20	0.15	0.17	0.09	0.12	0.09	0.07	0.07	0.07	0.05	0.07	0.15	0.18	0.09	0.20	0.17	0.09	0.05	0.28	0.15	24	
26	0.15	0.17	0.22	0.22	0.17	S	0.17	0.17	0.22	0.17	0.12	0.09	0.09	0.09	0.05	0.07	0.07	0.12	0.12	0.09	0.12	0.28	0.22	0.23	0.05	0.28	0.15	24	
27	0.30	0.28	0.33	0.15	0.22	S	0.30	0.20	0.23	0.25	0.18	0.17	0.09	0.07	0.07	0.07	0.07	0.07	0.07	0.09	0.09	0.07	0.07	0.09	0.07	0.33	0.15	24	
28	0.09	0.07	0.07	0.05	0.09	S	0.07	0.05	0.07	0.07	0.07	0.05	0.02	0.02	0.02	0.02	0.02	0.02	0.05	0.05	0.05	0.05	0.02	0.05	0.02	0.09	0.05	24	
29	0.05	0.05	0.09	0.09	0.05	S	0.12	0.09	0.12	0.12	0.15	0.15	0.12	0.17	0.07	0.02	0.05	0.05	0.05	0.07	0.05	0.07	0.09	0.17	0.02	0.17	0.09	24	
30	0.12	0.12	0.15	0.15	0.12	S	0.12	0.12	0.12	0.12	0.05	0.07	0.05	0.02	0.05	0.02	0.07	0.05	0.02	0.05	0.15	0.07	0.05	0.02	0.02	0.15	0.08	24	
HOURLY MAX	0.46	0.64	0.54	0.49	0.51	NA	0.80	0.98	0.59	0.49	0.46	0.46	0.41	0.56	0.41	0.36	0.38	0.38	0.41	0.47	0.41	0.43	0.70	0.46					
HOURLY AVG	0.22	0.23	0.23	0.22	0.22	NA	0.28	0.26	0.25	0.23	0.21	0.20	0.20	0.20	0.17	0.17	0.17	0.16	0.18	0.20	0.19	0.20	0.21	0.20					

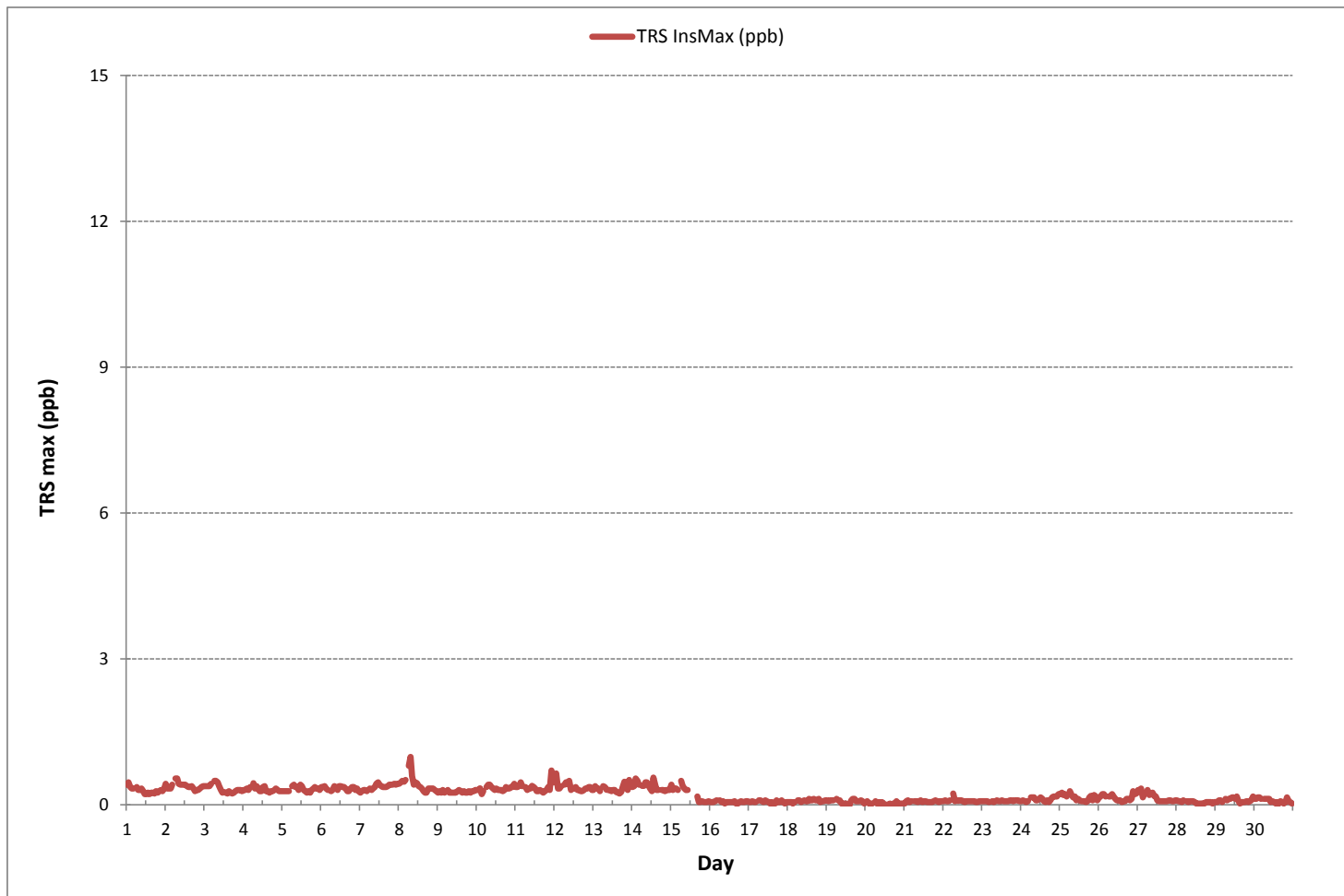
STATUS FLAG CODES

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:	679
MAXIMUM INSTANTANEOUS VALUE:	0.98 ppb @ HOUR 7 ON DAY 8
IZS CALIBRATION TIME:	30 hrs
MONTHLY CALIBRATION TIME:	5 hrs
STANDARD DEVIATION:	0.15
OPERATIONAL TIME:	720 hrs

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)



% Icon Classes (ppb)

95



0



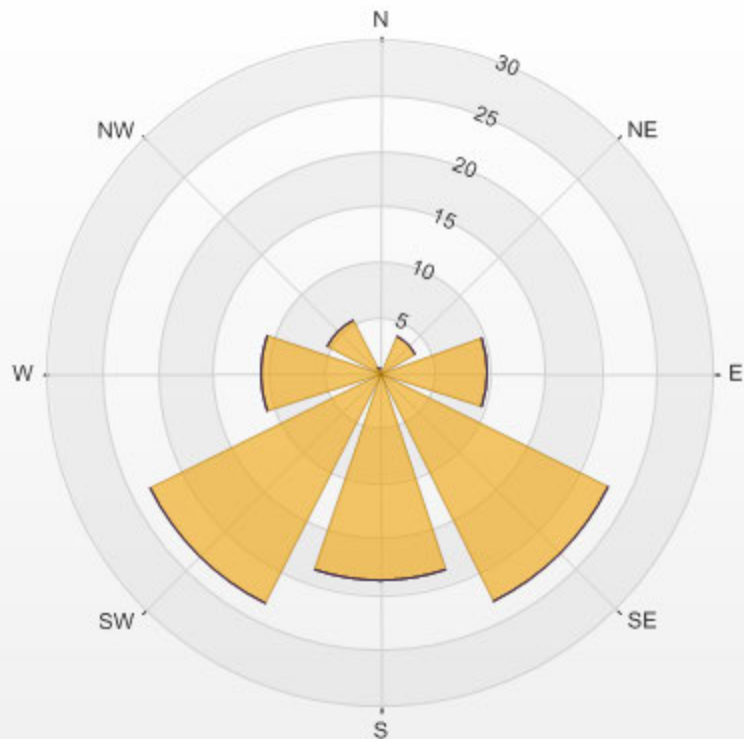
0



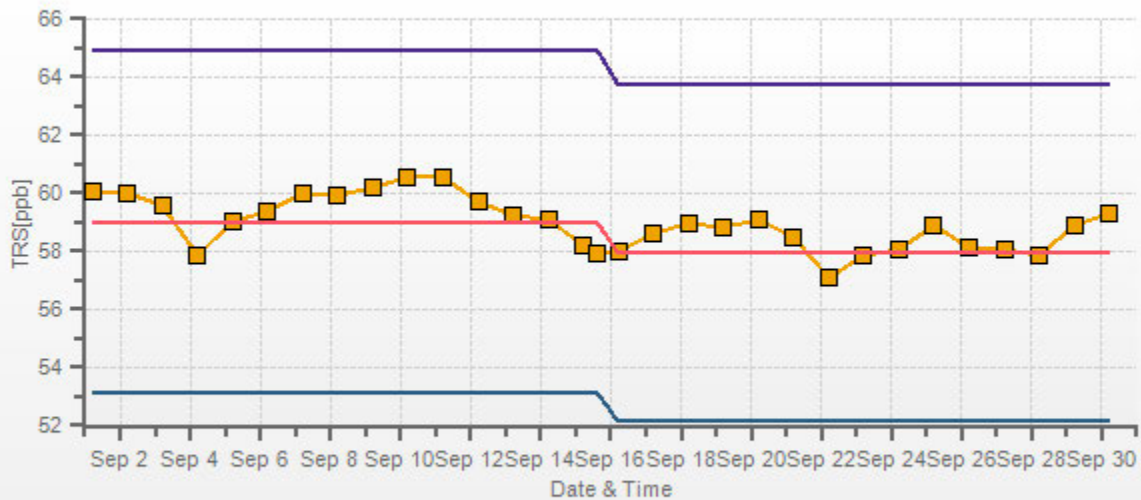
0



PRAMP_842 Poll.: PRAMP_842-TRS[ppb] 2017/09/01 00:00 - 2017/09/30 23:00 Calm: 5.11% Calm Poll Avg: 0.17[ppb]



TRS[ppb] Calibration: PRAMP_842 Monthly: 17/09 Type: Span



Span Meas Span Ref Span Low Span High

TOTAL HYDROCARBON



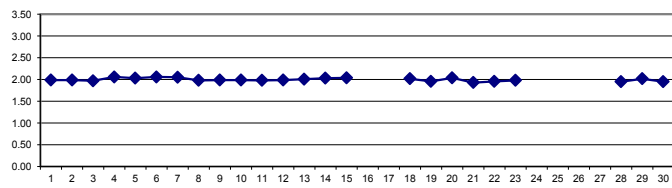
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY 1	1.99	2.00	1.99	1.99	1.99	S	2.00	1.99	2.00	1.99	1.98	1.98	1.99	1.99	2.00	2.00	1.96	1.99	1.99	1.98	1.98	1.99	1.99	2.01	1.96	2.01	1.99	24	
2	2.02	2.00	2.00	2.01	2.02	S	2.02	2.02	2.02	1.99	2.00	1.99	1.99	2.00	2.00	1.98	1.96	1.96	1.95	1.93	1.93	1.95	1.96	1.96	1.93	2.02	1.99	24	
3	1.97	1.97	1.97	1.97	1.97	S	1.99	1.99	1.98	1.97	1.96	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.97	1.97	1.99	2.00	2.00	2.00	1.96	2.00	1.97	24	
4	2.05	2.06	2.10	2.13	2.24	S	2.24	2.24	2.15	2.03	2.00	2.00	2.00	2.00	2.00	2.00	1.99	1.99	2.00	2.02	2.04	2.05	2.02	2.04	1.99	2.24	2.06	24	
5	2.02	2.03	2.02	2.03	2.04	S	2.02	2.05	2.05	2.04	2.04	2.04	2.03	2.02	2.02	2.00	2.01	2.00	2.00	2.01	2.01	2.02	2.06	2.12	2.00	2.12	2.03	24	
6	2.11	2.19	2.24	2.15	2.08	S	2.06	2.05	2.07	2.06	2.04	2.04	2.03	2.03	2.02	2.01	2.01	2.01	2.01	2.02	2.03	2.06	2.07	2.05	2.01	2.24	2.06	24	
7	2.05	2.04	2.03	2.03	2.04	S	2.06	2.05	2.05	2.05	2.07	2.07	2.07	2.06	2.04	2.03	2.03	2.04	2.05	2.04	2.04	2.06	2.07	2.07	2.03	2.07	2.05	24	
8	2.08	2.08	2.06	2.05	2.07	S	1.99	1.98	1.98	1.99	1.99	1.93	1.96	1.93	1.95	1.95	1.96	1.96	1.95	1.95	1.96	1.96	1.96	1.95	1.93	2.08	1.98	24	
9	1.96	1.98	1.98	1.99	2.00	S	2.03	2.03	2.00	1.98	1.99	2.00	2.00	2.01	1.99	1.99	2.00	2.00	1.99	1.98	1.98	1.95	1.97	1.96	1.95	2.03	1.99	24	
10	1.98	1.98	1.97	1.99	1.99	S	2.00	2.00	2.00	2.00	2.00	2.00	1.99	1.99	1.99	2.00	2.00	2.00	1.99	2.00	2.00	2.00	2.00	1.99	1.97	2.00	1.99	24	
11	1.98	1.98	1.99	1.99	2.01	S	2.00	1.98	1.99	1.98	2.01	2.00	1.96	1.97	1.98	1.98	1.98	1.96	1.97	1.98	1.98	1.98	1.98	1.98	1.96	2.01	1.98	24	
12	1.98	1.98	1.98	2.02	2.01	S	2.01	2.01	2.01	2.00	2.00	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.99	2.00	2.00	1.99	2.02	1.98	2.02	24	
13	2.03	2.02	2.01	2.01	2.02	S	2.01	2.00	2.00	2.00	1.99	1.99	2.00	2.00	2.01	2.00	2.01	2.00	2.00	2.03	2.01	2.01	2.02	2.01	1.99	2.03	2.01	24	
14	2.03	2.02	2.03	2.02	2.03	S	2.05	2.07	2.05	2.03	2.03	2.02	2.01	2.01	2.01	2.01	2.02	2.01	2.01	2.01	2.01	2.08	2.04	2.01	2.02	2.01	2.08	2.03	24
15	2.02	2.02	2.04	2.04	2.06	S	X	X	X	X	X	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2.02	2.06	2.04	6	
16	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-
17	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-
18	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	2.02	2.04	2.04	1.98	2.04	2.02	7
19	1.96	1.94	1.94	1.94	1.95	S	1.99	1.98	1.97	1.98	1.98	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.96	1.96	1.95	1.94	1.99	1.96	24	
20	1.95	1.95	X	X	X	X	X	X	Y	Y	Y	Y	Y	C1	C1	C1	C1	1.87	1.87	1.89	1.89	1.90	1.93	1.92	1.87	1.95	2.04	9	
21	1.92	1.93	1.92	1.93	1.93	S	1.93	1.93	1.93	1.93	1.93	1.93	1.92	1.93	1.93	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.94	2.00	1.91	2.00	1.93	24	
22	1.97	1.96	1.97	1.98	2.01	S	2.18	2.12	2.08	1.94	1.91	1.91	1.91	1.91	1.92	1.91	1.91	1.91	1.91	1.92	1.92	1.95	1.97	1.96	1.95	1.91	2.18	1.96	24
23	1.96	1.96	1.97	1.98	1.98	S	1.98	2.02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.96	2.02	1.98	8	
24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-
28	Y	Y	Y	Y	Y	Y	Y	C1	C1	C1	1.95	1.94	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.95	1.95	1.97	2.00	2.01	1.92	2.01	1.95	14
29	2.01	2.00	2.05	2.13	2.06	S	2.15	2.08	2.01	2.00	2.00	1.99	1.99	1.99	1.96	1.93	1.94	1.94	1.94	1.94	1.95	1.99	2.13	2.27	1.93	2.27	2.02	24	
30	2.09	1.99	1.97	1.95	1.93	S	1.94	1.95	1.94	1.94	1.93	1.93	1.94	1.93	1.93	1.93	1.93	1.91	1.93	1.94	1.95	1.95	1.95	1.95	1.91	2.09	1.95	24	
HOURLY MAX	2.11	2.19	2.24	2.15	2.24	NA	2.24	2.24	2.15	2.06	2.07	2.07	2.07	2.06	2.04	2.03	2.03	2.04	2.05	2.04	2.08	2.06	2.13	2.27					
HOURLY AVG	2.01	2.00	2.01	2.02	2.02	NA	2.03	2.03	2.01	1.99	1.99	1.98	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.97	1.98	1.99	2.00	2.01					

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

24 HR AVERAGES September 2017

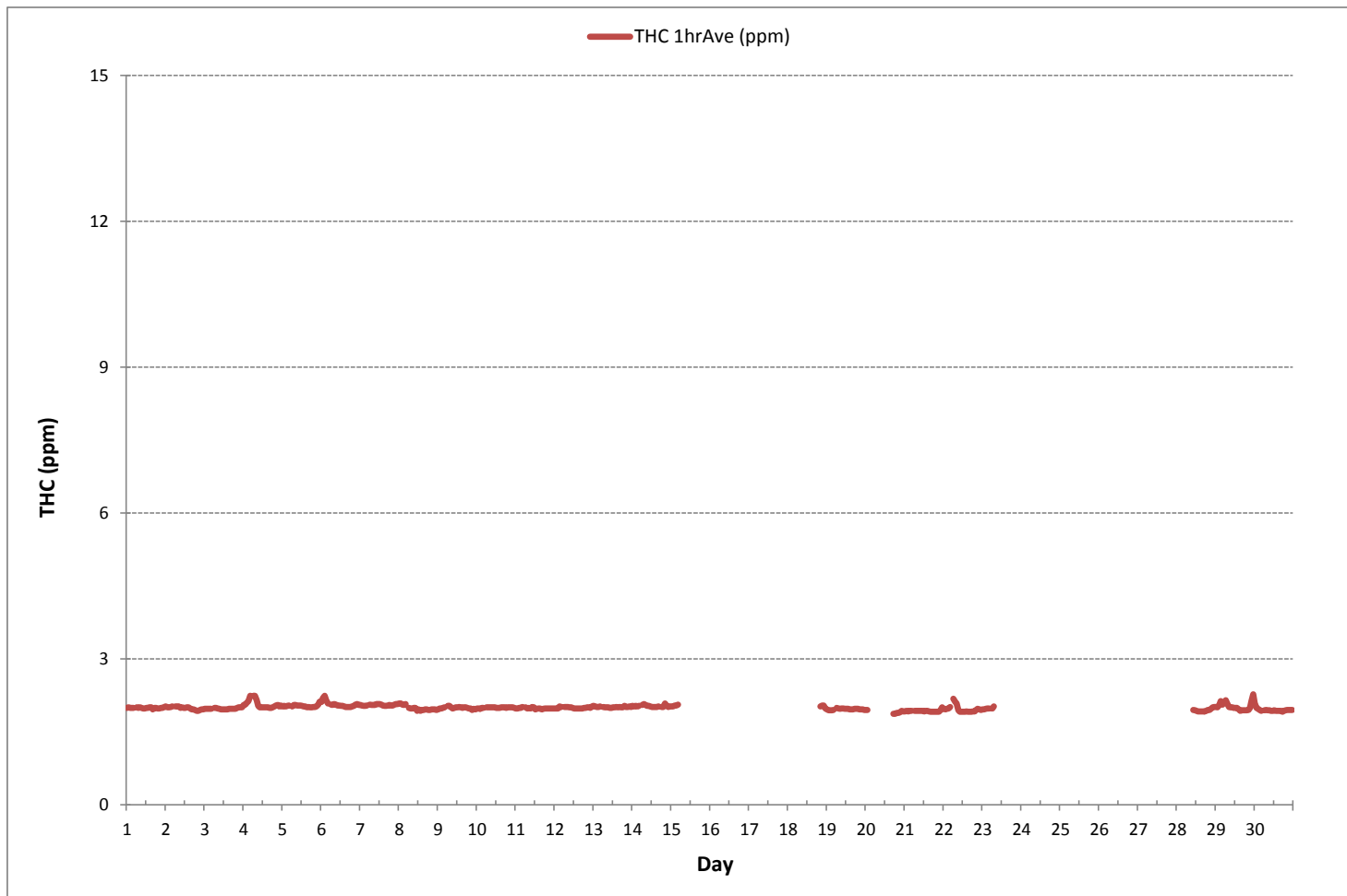


MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	476			
MINIMUM 1-HR AVERAGE:	1.87 ppm	@ HOUR	17	ON DAY 20
MAXIMUM 1-HR AVERAGE:	2.27 ppm	@ HOUR	23	ON DAY 29
MAXIMUM 24-HR AVERAGE:	2.06 ppm			ON DAY 4
IZS CALIBRATION TIME:	21 hrs	OPERATIONAL TIME:	500 hrs	
MONTHLY CALIBRATION TIME:	3 hrs	AMD OPERATION UPTIME:	69.4 %	
STANDARD DEVIATION:	0.05	MONTHLY AVERAGE:	1.99 ppm	



TOTAL HYDROCARBONS Hourly Averages (THC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b Station - September 2017

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	2.02	2.02	2.04	2.02	2.02	S	2.02	2.01	2.04	2.01	2.01	2.01	2.01	2.01	2.01	2.03	2.01	2.01	2.01	2.02	2.01	2.01	2.05	2.05	2.01	2.05	2.02	24	
2	2.07	2.02	2.02	2.02	2.05	S	2.06	2.04	2.04	2.03	2.03	2.03	2.03	2.04	2.06	2.03	2.01	2.01	2.01	2.00	1.99	2.02	2.02	2.02	1.99	2.07	2.03	24	
3	2.04	2.04	2.04	2.05	2.07	S	2.06	2.06	2.04	2.03	2.01	2.02	2.01	2.02	2.01	2.03	2.01	2.01	2.02	2.11	2.14	2.08	2.06	2.07	2.01	2.14	2.04	24	
4	2.09	2.14	2.19	2.23	2.35	S	2.29	2.32	2.21	2.09	2.02	2.22	2.03	2.03	2.02	2.01	2.03	2.01	2.08	2.09	2.07	2.08	2.06	2.07	2.01	2.35	2.12	24	
5	2.04	2.08	2.04	2.07	2.08	S	2.05	2.08	2.07	2.06	2.06	2.05	2.05	2.05	2.04	2.03	2.02	2.02	2.04	2.05	2.05	2.07	2.14	2.18	2.02	2.18	2.06	24	
6	2.21	2.27	2.36	2.28	2.18	S	2.12	2.08	2.10	2.08	2.07	2.06	2.06	2.04	2.11	2.04	2.03	2.03	2.03	2.05	2.08	2.09	2.17	2.08	2.03	2.36	2.11	24	
7	2.10	2.06	2.05	2.06	2.05	S	2.14	2.07	2.07	2.08	2.12	2.09	2.09	2.08	2.07	2.04	2.05	2.06	2.06	2.05	2.06	2.09	2.12	2.10	2.04	2.14	2.08	24	
8	2.11	2.09	2.08	2.07	2.11	S	2.03	1.99	2.00	2.01	2.01	1.99	1.98	1.97	1.97	1.97	1.97	1.98	1.97	1.98	1.98	1.98	1.98	1.97	1.97	2.11	2.01	24	
9	1.99	2.01	2.03	2.02	2.04	S	2.06	2.05	2.03	2.01	2.01	2.03	2.03	2.04	2.02	2.01	2.01	2.01	2.01	2.00	2.00	1.99	1.99	1.99	1.99	2.06	2.02	24	
10	1.99	2.00	2.01	2.02	2.01	S	2.03	2.01	2.04	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.18	2.01	2.03	2.03	2.03	2.05	2.04	1.99	2.18	2.02	24	
11	2.00	2.01	2.02	2.03	2.03	S	2.02	2.01	2.00	2.03	2.03	2.02	2.02	1.98	2.00	2.01	1.98	1.99	1.99	1.99	2.00	2.01	2.01	1.98	2.03	2.01	2.01	24	
12	2.01	2.01	2.01	2.17	2.04	S	2.10	2.10	2.03	2.02	2.02	2.09	2.01	2.01	2.01	2.01	2.00	2.00	2.03	2.02	2.03	2.06	2.11	2.06	2.00	2.17	2.04	24	
13	2.08	2.04	2.07	2.03	2.05	S	2.05	2.04	2.02	2.02	2.01	2.01	2.01	2.02	2.27	2.02	2.02	2.02	2.05	2.07	2.05	2.04	2.04	2.03	2.01	2.27	2.05	24	
14	2.06	2.04	2.06	2.03	2.06	S	2.11	2.12	2.11	2.07	2.04	2.04	2.23	2.03	2.03	2.02	2.06	2.03	2.03	2.06	2.14	2.09	2.03	2.03	2.02	2.23	2.07	24	
15	2.04	2.04	2.05	2.05	2.11	S	X	X	X	X	X	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2.04	2.11	2.06	6	
16	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	
17	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	
18	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	2.06	2.08	2.08	2.05	2.05	2.08	2.07	7	
19	2.03	1.99	1.97	1.97	1.99	S	2.03	2.01	2.00	2.01	2.01	2.00	2.00	2.00	2.00	1.99	2.00	2.00	2.00	2.00	2.00	1.99	1.99	1.99	1.97	2.03	2.00	24	
20	1.98	1.98	X	X	X	X	X	X	Y	Y	Y	Y	Y	C1	C1	C1	C1	1.90	1.91	1.93	1.93	1.93	1.97	1.95	1.90	1.98	1.94	9	
21	1.94	1.95	1.96	1.95	1.96	S	1.95	2.00	1.97	1.96	1.97	1.97	1.96	1.97	1.96	1.95	1.94	1.93	1.95	1.95	1.97	1.97	2.04	2.05	1.93	2.05	1.97	24	
22	2.03	2.05	2.02	2.02	2.06	S	2.31	2.21	2.22	2.00	1.95	1.94	1.94	1.94	1.94	1.94	1.93	1.93	1.97	1.99	1.99	2.01	1.99	1.99	1.93	2.31	2.02	24	
23	1.99	1.99	2.00	2.03	2.04	S	2.02	2.06	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.99	2.06	2.02	8	
24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	
28	Y	Y	Y	Y	Y	Y	Y	C1	C1	C1	1.97	1.96	1.95	1.95	1.94	1.93	1.94	1.93	1.96	1.97	1.96	2.01	2.02	2.02	1.93	2.02	1.97	14	
29	2.05	2.02	2.20	2.22	2.10	S	2.23	2.17	2.02	2.02	2.03	2.01	2.01	2.01	1.99	1.95	1.96	2.03	1.96	1.97	1.99	2.05	2.31	2.35	1.95	2.35	2.07	24	
30	2.30	2.02	2.05	1.98	1.96	S	1.98	2.02	1.99	1.97	1.96	1.96	1.95	1.94	1.93	1.96	1.95	1.92	1.95	1.96	1.97	1.97	1.97	1.96	1.92	2.30	1.98	24	
HOURLY MAX	2.30	2.27	2.36	2.28	2.35	NA	2.31	2.32	2.22	2.09	2.12	2.22	2.23	2.08	2.27	2.04	2.06	2.18	2.08	2.11	2.14	2.09	2.31	2.35					
HOURLY AVG	2.05	2.04	2.06	2.06	2.06	NA	2.08	2.07	2.05	2.03	2.02	2.03	2.02	2.01	2.02	2.00	2.00	2.00	2.00	2.01	2.02	2.03	2.05	2.05					

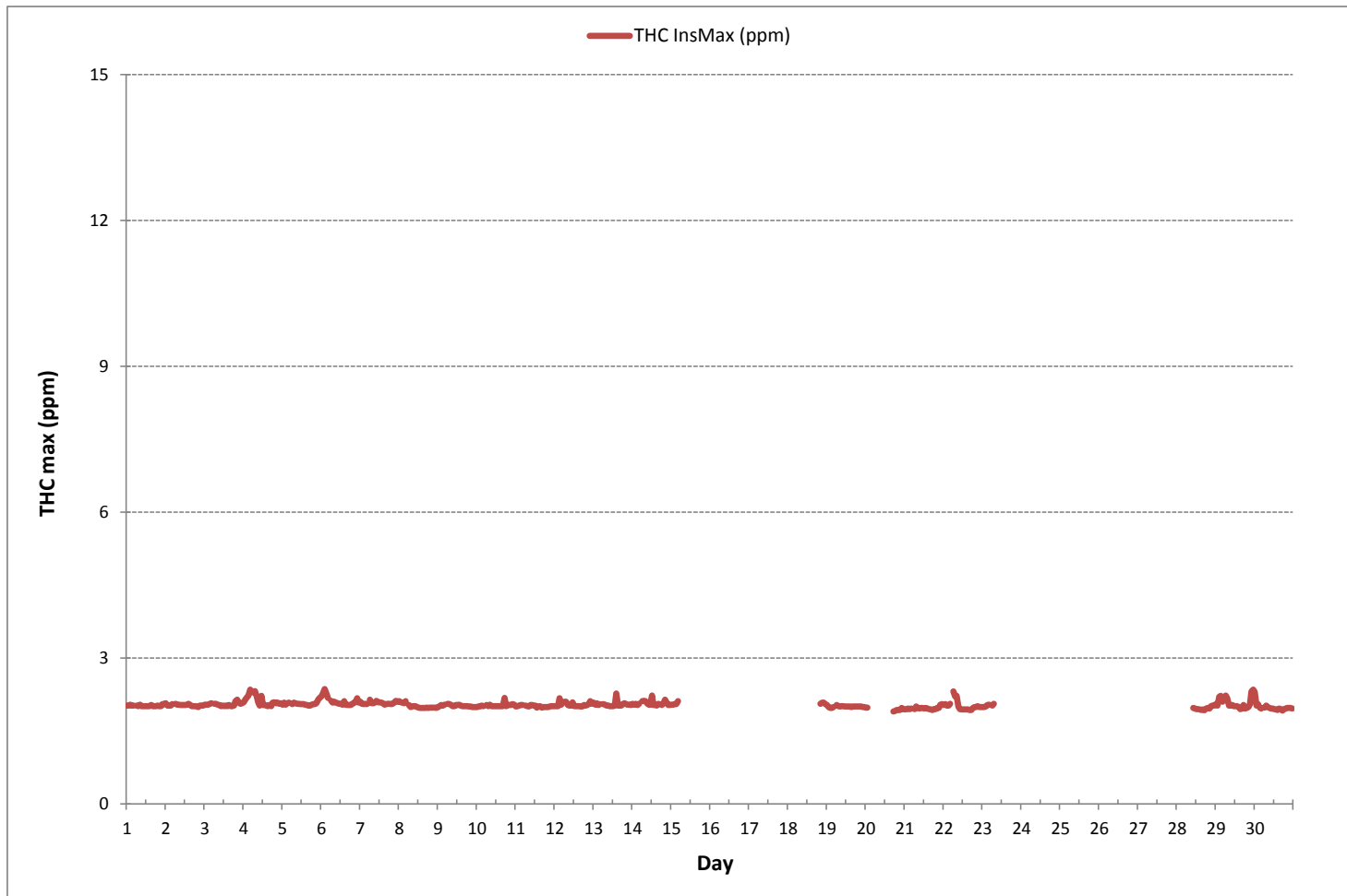
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	476
MAXIMUM INSTANTANEOUS VALUE:	2.36 ppm @ HOUR 2 ON DAY 6
IZS CALIBRATION TIME:	21 hrs
MONTHLY CALIBRATION TIME:	3 hrs
OPERATIONAL TIME:	500 hrs
STANDARD DEVIATION:	0.07

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)



Wind: PRAMP_842
 Poll.: PRAMP_842-THC55[ppm]
 Monthly: 17/09
 Type: PollutionRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

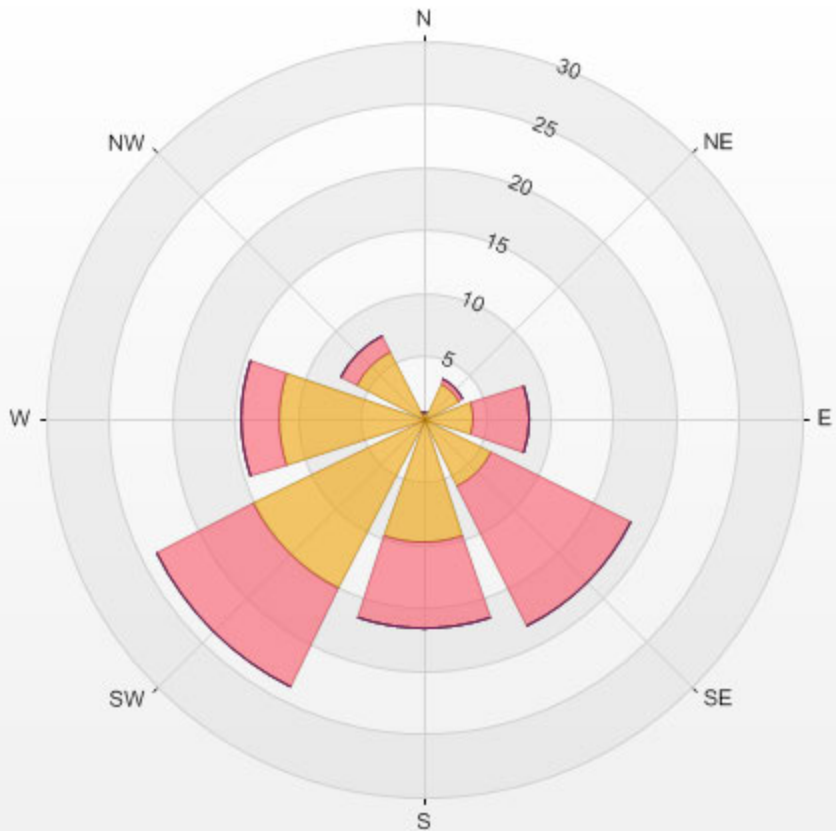
Calm: 6.72%

Calm Avg: 1.99 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	0.6	0.0	0.0	0.0	0.0	0.6
NE	3.2	0.4	0.0	0.0	0.0	3.6
E	4.0	4.4	0.0	0.0	0.0	8.4
SE	6.1	12.4	0.0	0.0	0.0	18.5
S	9.9	6.7	0.0	0.0	0.0	16.6
SW	15.1	8.6	0.0	0.0	0.0	23.7
W	11.6	2.9	0.0	0.0	0.0	14.5
NW	5.9	1.5	0.0	0.0	0.0	7.4
Summary	56.3	37.0	0.0	0.0	0.0	93.3

% Icon Classes (ppm) 56 0-2 37 2-3 0 3-5 0 5-10 0 >10.0

PRAMP_842 Poll.: PRAMP_842-THC55[ppm] 2017/09/01 00:00 - 2017/09/30 23:00 Calm: 6.72% Calm Poll Avg: 1.99[ppm]



THC55[ppm] Calibration: PRAMP_842 Monthly: 17/09 Type: Span



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

METHANE



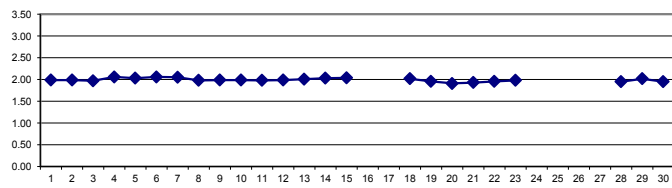
METHANE Hourly Averages (CH₄ ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY 1	1.99	2.00	1.99	1.99	1.99	S	2.00	1.99	2.00	1.99	1.98	1.98	1.99	1.99	2.00	2.00	1.96	1.99	1.99	1.98	1.98	1.99	1.99	2.01	1.96	2.01	1.99	24	
2	2.02	2.00	2.00	2.01	2.02	S	2.02	2.02	2.02	1.99	2.00	1.99	1.99	2.00	2.00	1.98	1.96	1.96	1.95	1.93	1.93	1.95	1.96	1.96	1.93	2.02	1.99	24	
3	1.97	1.97	1.97	1.97	1.97	S	1.98	1.99	1.98	1.97	1.96	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.97	1.97	1.99	2.00	1.99	2.00	1.96	2.00	1.97	24	
4	2.05	2.06	2.10	2.13	2.24	S	2.24	2.24	2.15	2.03	2.00	2.00	2.00	2.00	2.00	1.99	1.99	1.99	2.00	2.02	2.04	2.05	2.02	2.03	1.99	2.24	2.06	24	
5	2.02	2.03	2.02	2.03	2.03	S	2.02	2.05	2.05	2.03	2.04	2.03	2.02	2.02	2.00	2.00	2.00	2.00	2.01	2.01	2.02	2.06	2.12	2.00	2.12	2.03	24		
6	2.11	2.19	2.24	2.15	2.08	S	2.06	2.05	2.07	2.05	2.04	2.04	2.03	2.03	2.02	2.01	2.01	2.00	2.00	2.02	2.03	2.06	2.07	2.05	2.00	2.24	2.06	24	
7	2.05	2.04	2.03	2.03	2.04	S	2.06	2.05	2.05	2.05	2.07	2.07	2.07	2.06	2.04	2.03	2.03	2.04	2.05	2.04	2.04	2.06	2.07	2.07	2.03	2.07	2.05	24	
8	2.08	2.08	2.05	2.05	2.07	S	1.99	1.98	1.98	1.99	1.99	1.93	1.95	1.92	1.95	1.95	1.96	1.96	1.95	1.95	1.96	1.96	1.95	1.95	1.92	2.08	1.98	24	
9	1.96	1.98	1.98	1.99	2.00	S	2.03	2.03	2.00	1.98	1.99	2.00	2.00	2.01	2.00	1.99	2.00	2.00	1.99	1.98	1.98	1.95	1.97	1.96	1.95	2.03	1.99	24	
10	1.98	1.98	1.97	1.99	1.99	S	2.00	2.00	2.00	2.00	2.00	1.99	1.99	1.99	1.99	2.00	2.00	2.00	1.99	2.00	2.00	2.00	2.00	1.99	1.97	2.00	1.99	24	
11	1.98	1.98	1.99	1.99	2.01	S	2.00	1.98	1.99	1.98	2.00	2.00	1.96	1.97	1.98	1.98	1.96	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.96	2.01	1.98	24	
12	1.98	1.98	1.98	1.99	2.01	S	2.01	2.01	2.01	2.00	2.00	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.99	2.00	2.00	1.99	2.02	1.98	2.02	24	
13	2.03	2.02	2.01	2.01	2.02	S	2.01	2.00	2.00	2.00	1.99	1.99	2.00	2.00	2.01	2.00	2.01	2.00	2.00	2.00	2.03	2.01	2.01	2.02	2.01	1.99	2.03	2.01	24
14	2.03	2.02	2.03	2.02	2.03	S	2.05	2.07	2.05	2.03	2.03	2.02	2.01	2.01	2.01	2.01	2.02	2.01	2.01	2.01	2.01	2.08	2.04	2.01	2.02	2.01	2.08	2.03	24
15	2.02	2.02	2.04	2.04	2.06	S	X	X	X	X	X	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2.02	2.06	2.04	6	
16	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	
17	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	
18	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	2.02	2.04	2.04	1.98	2.04	2.02	7
19	1.96	1.94	1.94	1.94	1.95	S	1.99	1.98	1.97	1.98	1.98	1.97	1.97	1.97	1.96	1.96	1.96	1.96	1.97	1.97	1.97	1.96	1.96	1.95	1.94	1.99	1.96	24	
20	1.95	1.95	X	X	X	X	X	X	Y	Y	Y	Y	Y	C1	C1	C1	C1	1.87	1.87	1.89	1.89	1.90	1.93	1.92	1.87	1.95	1.91	9	
21	1.92	1.93	1.92	1.93	1.93	S	1.93	1.93	1.93	1.93	1.93	1.93	1.92	1.93	1.93	1.92	1.91	1.91	1.91	1.91	1.91	1.91	1.94	2.00	1.91	2.00	1.93	24	
22	1.97	1.96	1.97	1.98	2.01	S	2.18	2.12	2.08	1.94	1.91	1.91	1.91	1.91	1.92	1.91	1.91	1.91	1.91	1.92	1.92	1.95	1.97	1.96	1.95	1.91	2.18	1.96	24
23	1.96	1.96	1.97	1.98	1.98	S	1.98	2.02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.96	2.02	1.98	8	
24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	
28	Y	Y	Y	Y	Y	Y	Y	C1	C1	C1	1.95	1.94	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.95	1.95	1.97	2.00	2.01	1.92	2.01	1.95	14
29	2.01	2.00	2.05	2.13	2.06	S	2.15	2.08	2.01	2.00	2.00	1.99	1.99	1.99	1.96	1.93	1.94	1.94	1.94	1.94	1.95	1.99	2.13	2.27	1.93	2.27	2.02	24	
30	2.09	1.99	1.97	1.95	1.93	S	1.94	1.94	1.94	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.91	1.93	1.94	1.95	1.95	1.95	1.91	2.09	1.95	24	
HOURLY MAX	2.11	2.19	2.24	2.15	2.24	NA	2.24	2.24	2.15	2.05	2.07	2.07	2.07	2.06	2.04	2.03	2.03	2.04	2.05	2.04	2.08	2.06	2.13	2.27					
HOURLY AVG	2.01	2.00	2.01	2.02	2.02	NA	2.03	2.03	2.01	1.99	1.99	1.98	1.98	1.98	1.98	1.97	1.97	1.97	1.97	1.97	1.98	1.99	2.00	2.01					

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

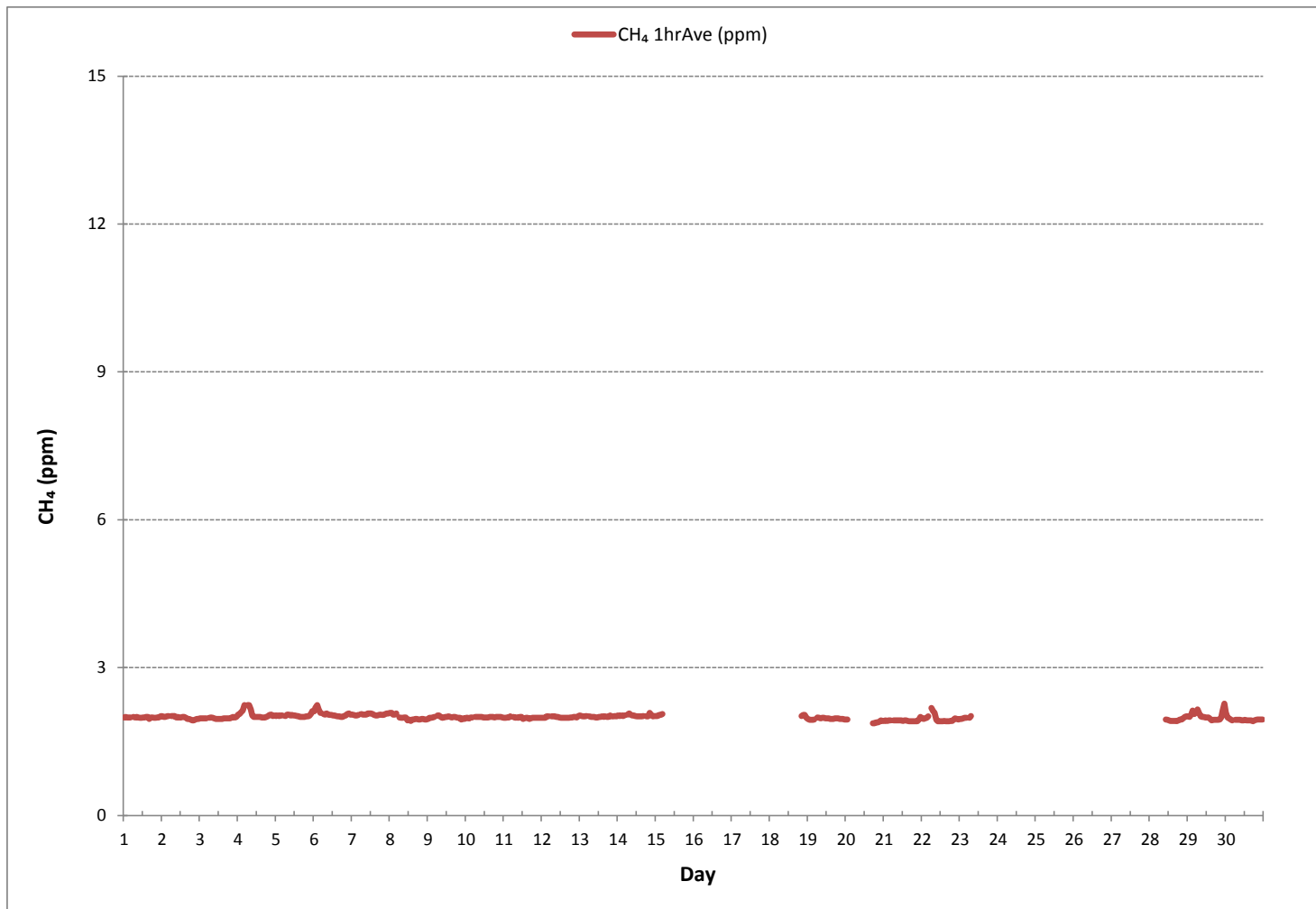
24 HR AVERAGES September 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	476			
MINIMUM 1-HR AVERAGE:	1.87 ppm	@ HOUR	17	ON DAY 20
MAXIMUM 1-HR AVERAGE:	2.27 ppm	@ HOUR	23	ON DAY 29
MAXIMUM 24-HR AVERAGE:	2.06 ppm			ON DAY 4
IZS CALIBRATION TIME:	21 hrs	OPERATIONAL TIME:	500 hrs	
MONTHLY CALIBRATION TIME:	3 hrs	AMD OPERATION UPTIME:	69.4 %	
STANDARD DEVIATION:	0.05	MONTHLY AVERAGE:	1.99 ppm	

METHANE Hourly Averages (CH₄ ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b Station - September 2017

METHANE MAX Instantaneous Maximum (CH₄ ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59					
DAY																													
1	2.02	2.01	2.01	2.02	2.01	S	2.02	2.00	2.03	2.01	2.01	2.00	2.00	2.01	2.00	2.00	2.00	2.00	2.00	1.99	2.00	2.01	2.04	2.04	1.99	2.04	2.01	24	
2	2.06	2.01	2.02	2.01	2.04	S	2.05	2.04	2.04	2.02	2.02	2.02	2.03	2.03	2.06	2.03	2.00	2.00	2.01	1.99	1.99	2.01	2.02	2.02	1.99	2.06	2.02	24	
3	2.04	2.03	2.04	2.04	2.07	S	2.06	2.05	2.04	2.02	2.01	2.01	2.00	2.01	2.00	2.03	2.00	2.00	2.01	2.11	2.14	2.07	2.05	2.06	2.00	2.14	2.04	24	
4	2.08	2.14	2.17	2.21	2.35	S	2.29	2.32	2.20	2.08	2.01	2.02	2.01	2.02	2.02	2.02	2.02	2.00	2.07	2.08	2.07	2.08	2.06	2.07	2.00	2.35	2.10	24	
5	2.04	2.07	2.03	2.06	2.07	S	2.04	2.07	2.06	2.05	2.05	2.05	2.05	2.04	2.03	2.03	2.02	2.01	2.03	2.04	2.05	2.06	2.13	2.18	2.01	2.18	2.05	24	
6	2.20	2.26	2.36	2.28	2.17	S	2.12	2.07	2.09	2.07	2.06	2.05	2.06	2.04	2.04	2.03	2.02	2.02	2.02	2.04	2.07	2.08	2.16	2.07	2.02	2.36	2.10	24	
7	2.07	2.06	2.04	2.05	2.05	S	2.14	2.06	2.07	2.07	2.12	2.08	2.08	2.07	2.06	2.04	2.05	2.05	2.05	2.05	2.09	2.12	2.09	2.04	2.04	2.14	2.07	24	
8	2.11	2.09	2.08	2.06	2.11	S	2.02	1.99	2.00	2.01	2.01	1.98	1.97	1.96	1.96	1.96	1.97	1.97	1.96	1.97	1.97	1.97	1.98	1.97	1.96	2.11	2.00	24	
9	1.99	2.00	2.02	2.02	2.03	S	2.05	2.05	2.02	2.00	2.00	2.02	2.03	2.03	2.01	2.00	2.01	2.01	2.00	1.99	1.99	1.98	1.98	1.98	1.98	2.05	2.01	24	
10	1.98	1.99	2.01	2.01	2.01	S	2.03	2.01	2.01	2.01	2.01	2.00	2.00	2.01	2.01	2.01	2.01	2.17	2.01	2.03	2.02	2.03	2.04	2.03	1.98	2.17	2.02	24	
11	1.99	2.00	2.01	2.02	2.02	S	2.02	2.01	2.00	2.02	2.03	2.01	2.01	1.98	2.00	2.00	1.98	1.98	1.98	1.99	1.99	2.00	2.00	2.00	1.98	2.03	2.00	24	
12	2.00	2.01	2.00	2.04	2.04	S	2.09	2.03	2.02	2.01	2.01	2.01	2.01	2.00	2.00	1.99	2.00	2.01	2.02	2.02	2.05	2.11	2.05	1.99	2.11	2.02	24		
13	2.07	2.03	2.06	2.02	2.05	S	2.05	2.04	2.02	2.02	2.01	2.00	2.01	2.01	2.27	2.01	2.01	2.01	2.04	2.06	2.04	2.04	2.02	2.02	2.00	2.27	2.04	24	
14	2.06	2.04	2.05	2.03	2.06	S	2.11	2.12	2.08	2.04	2.03	2.03	2.22	2.02	2.02	2.02	2.02	2.02	2.02	2.05	2.14	2.09	2.03	2.02	2.02	2.22	2.06	24	
15	2.04	2.03	2.04	2.04	2.11	S	X	X	X	X	X	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	2.03	2.11	2.05	6	
16	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	
17	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	
18	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C									
19	2.01	1.97	1.96	1.96	1.97	S	2.01	2.00	1.99	1.99	2.00	1.99	1.99	1.99	1.98	1.98	1.98	1.98	1.99	1.99	1.98	1.98	1.97	1.97	1.96	2.01	1.98	24	
20	1.97	1.97	X	X	X	X	X	X	Y	Y	Y	Y	Y	C1	C1	C1	C1		1.89	1.90	1.92	1.91	1.92	1.97	1.94	1.89	1.97	1.93	9
21	1.94	1.94	1.94	1.94	1.94	S	1.95	1.95	1.95	1.94	1.95	1.95	1.94	1.95	1.94	1.93	1.92	1.95	1.94	1.96	1.95	2.03	2.03	1.92	2.03	1.95	24		
22	2.02	2.04	2.01	2.01	2.05	S	2.30	2.20	2.20	1.98	1.93	1.92	1.93	1.93	1.93	1.92	1.92	1.96	1.98	1.98	1.99	1.98	1.98	1.98	1.92	2.30	2.00	24	
23	1.98	1.98	1.99	2.01	2.02	S	2.00	2.05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.98	2.05	2.00	8	
24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
27	X	X	X	X	X	X	X	X	X	X	X	X	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	
28	Y	Y	Y	Y	Y	Y	Y	C1	C1	C1		1.96	1.95	1.95	1.94	1.93	1.93	1.93	1.93	1.96	1.97	1.96	2.00	2.01	2.02	1.93	2.02	1.96	14
29	2.04	2.02	2.19	2.21	2.10	S	2.22	2.15	2.02	2.01	2.03	2.00	2.00	2.01	1.99	1.95	1.95	2.02	1.95	1.96	1.98	2.05	2.31	2.35	1.95	2.35	2.07	24	
30	2.29	2.02	2.04	1.97	1.95	S	1.97	2.01	1.98	1.96	1.94	1.95	1.95	1.94	1.94	1.94	1.94	1.92	1.94	1.95	1.96	1.96	1.96	1.96	1.92	2.29	1.98	24	
HOURLY MAX	2.29	2.26	2.36	2.28	2.35	NA	2.30	2.32	2.20	2.08	2.12	2.08	2.22	2.07	2.27	2.04	2.05	2.17	2.07	2.11	2.14	2.09	2.31	2.35					
HOURLY AVG	2.05	2.03	2.05	2.05	2.06	NA	2.08	2.06	2.04	2.02	2.01	2.00	2.01	2.00	2.01	1.99	1.99	1.99	1.99	2.01	2.01	2.02	2.05	2.04					

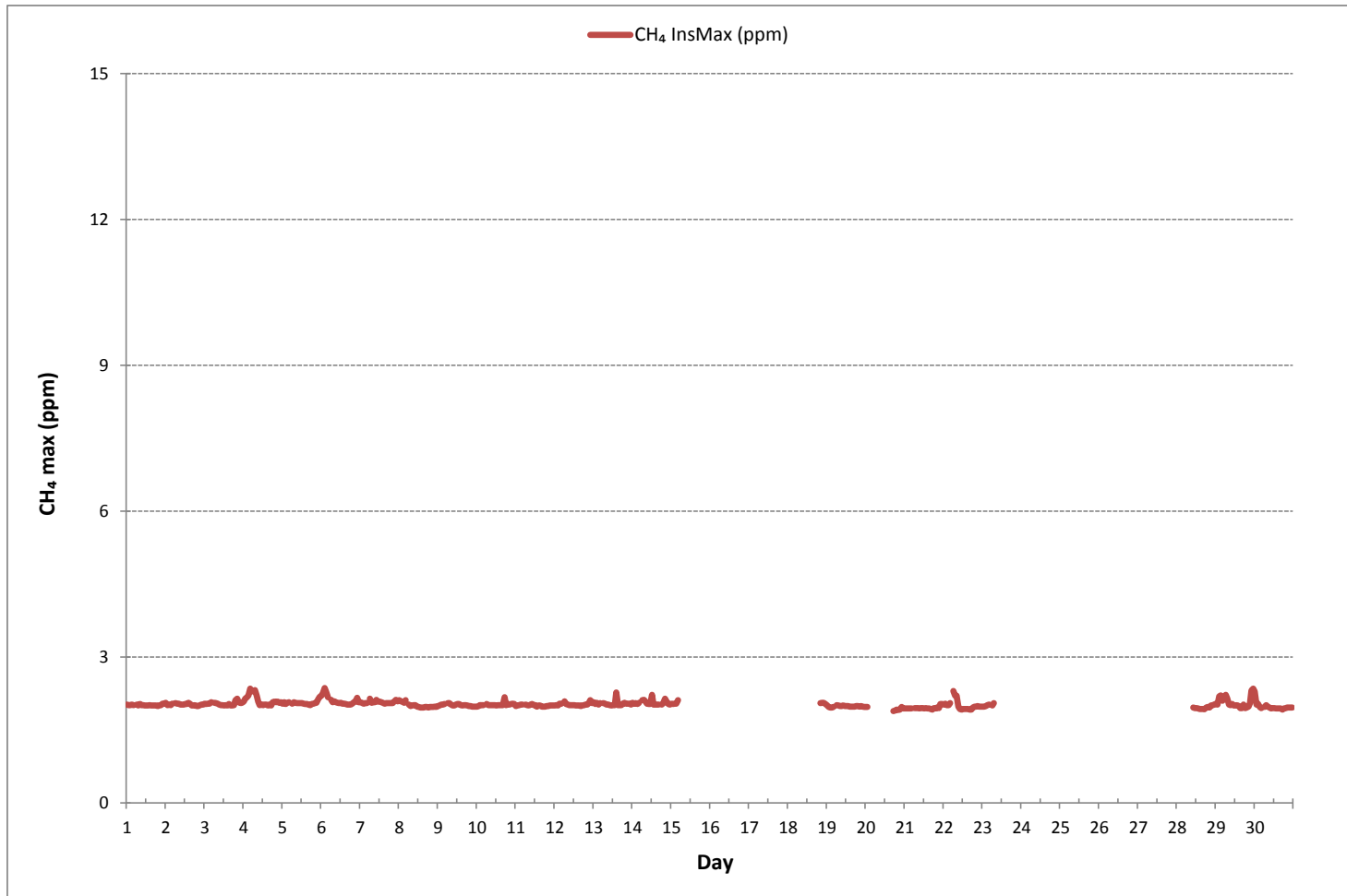
STATUS FLAG CODES

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:	476
MAXIMUM INSTANTANEOUS VALUE:	2.36 ppm @ HOUR 2 ON DAY 6
IZS CALIBRATION TIME:	21 hrs
MONTHLY CALIBRATION TIME:	3 hrs
STANDARD DEVIATION:	0.07
OPERATIONAL TIME:	500 hrs

METHANE MAX Instantaneous Maximum (CH₄ ppm)



Wind: PRAMP_842
 Poll.: PRAMP_842-CH4[ppm]
 Monthly: 17/09
 Type: PollutionRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

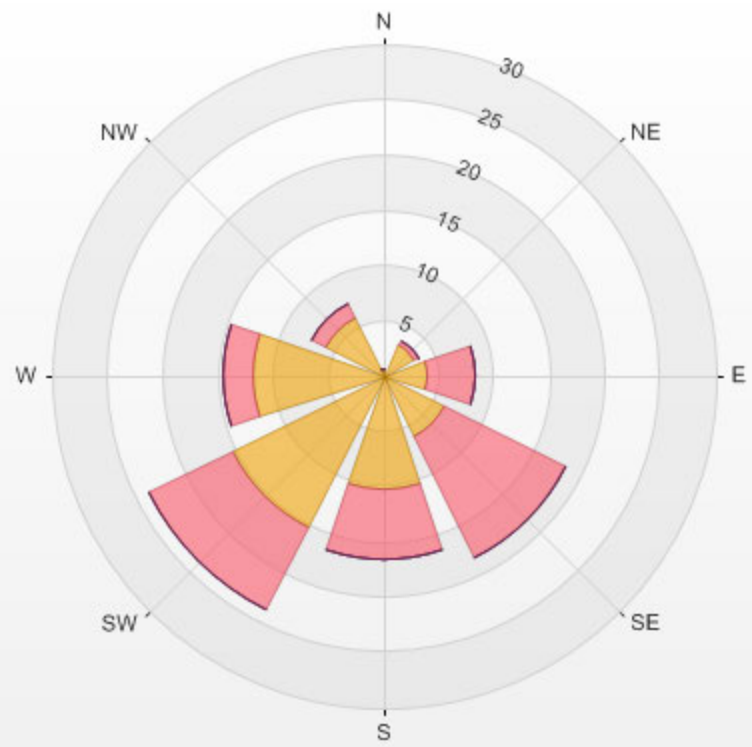
Calm: 6.72%

Calm Avg: 1.99 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	0.6	0.0	0.0	0.0	0.0	0.6
NE	3.2	0.4	0.0	0.0	0.0	3.6
E	4.0	4.4	0.0	0.0	0.0	8.4
SE	6.1	12.4	0.0	0.0	0.0	18.5
S	10.3	6.3	0.0	0.0	0.0	16.6
SW	15.3	8.4	0.0	0.0	0.0	23.7
W	11.8	2.7	0.0	0.0	0.0	14.5
NW	5.9	1.5	0.0	0.0	0.0	7.4
Summary	57.1	36.1	0.0	0.0	0.0	93.3

% Icon Classes (ppm) 57 0-2 36 2-3 0 3-5 0 5-10 0 >10.0

PRAMP_842 Poll.: PRAMP_842-CH4[ppm] 2017/09/01 00:00 - 2017/09/30 23:00 Calm: 6.72% Calm Poll Avg: 1.99[ppm]



CH4[ppm] Calibration: PRAMP_842 Monthly: 17/09 Type: Span



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

NON-METHANE HYDROCARBON



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b Station - September 2017

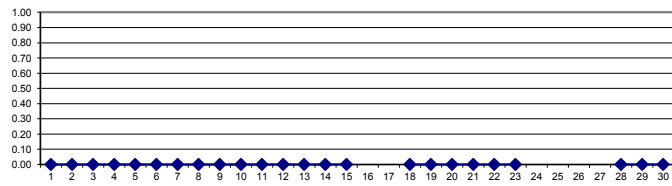
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

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

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 September 2017

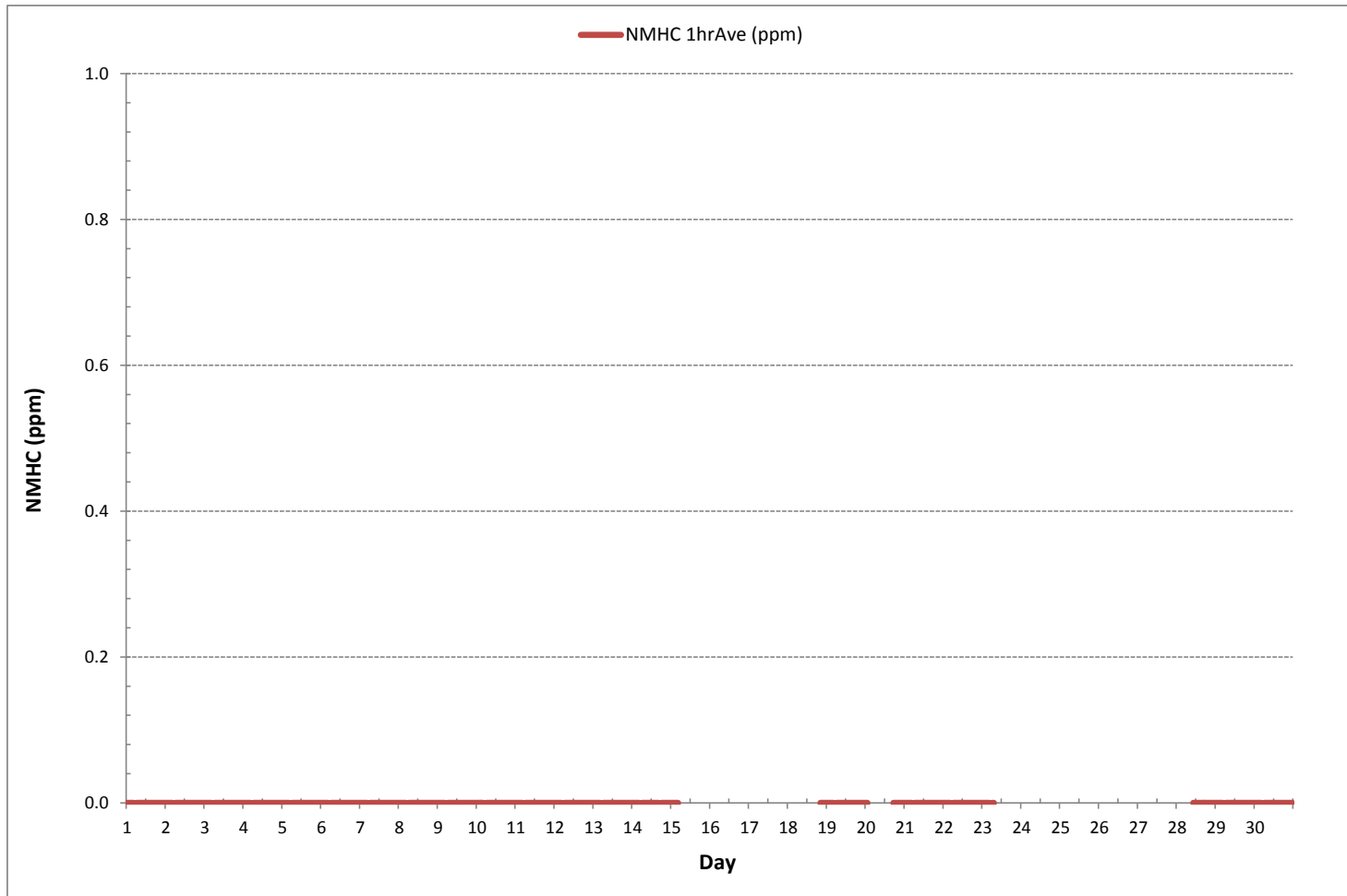


MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	0
MINIMUM 1-HR AVERAGE:	0.00 ppm @ HOUR 0 ON DAY 1
MAXIMUM 1-HR AVERAGE:	0.00 ppm @ HOUR 0 ON DAY 1
MAXIMUM 24-HR AVERAGE:	0.00 ppm ON DAY 1
IZS CALIBRATION TIME:	21 hrs
MONTHLY CALIBRATION TIME:	3 hrs
OPERATIONAL TIME:	500 hrs
AMD OPERATION UPTIME:	69.4 %
STANDARD DEVIATION:	0.00
MONTHLY AVERAGE:	0.00 ppm



NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b Station - September 2017

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)

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

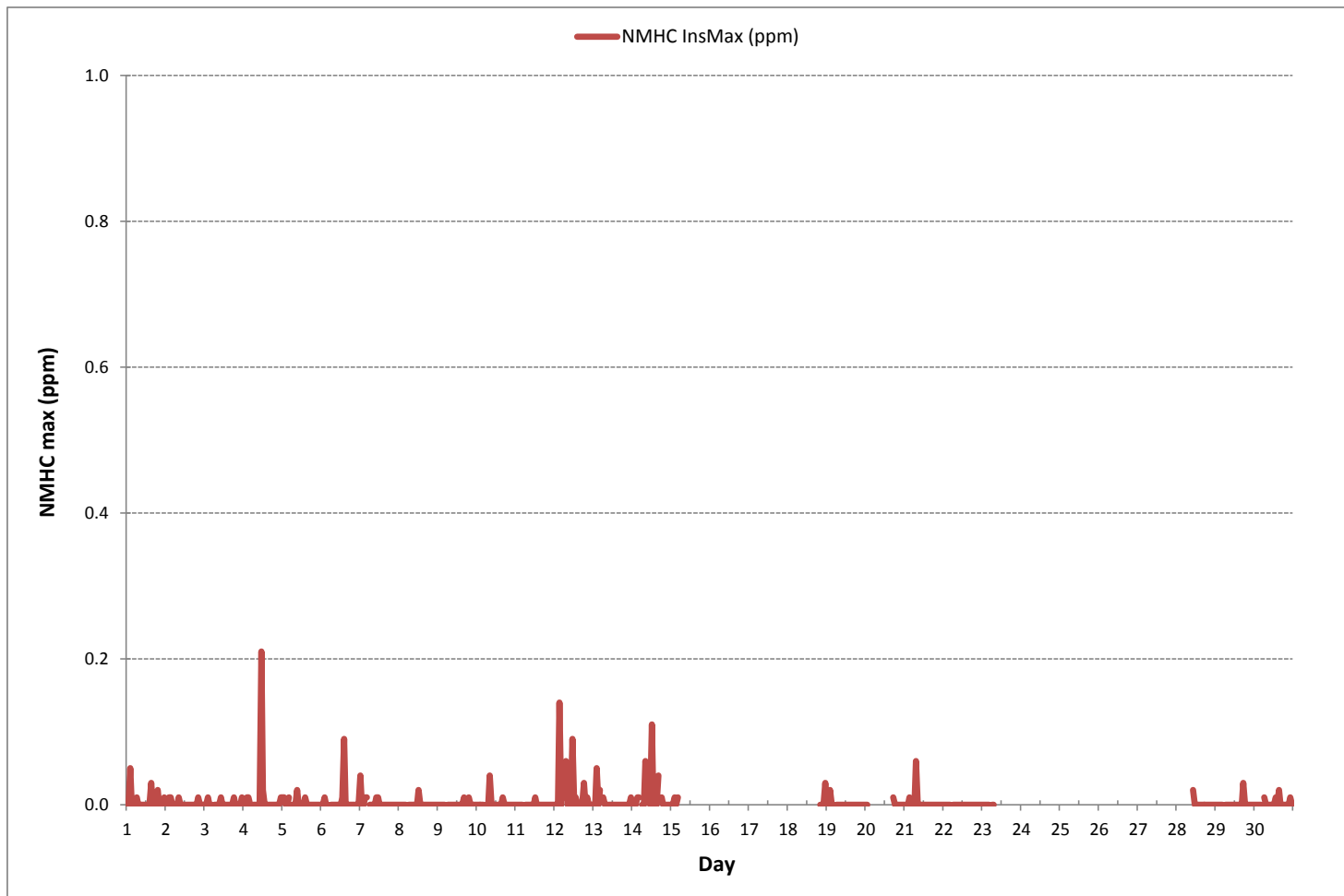
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	71
MAXIMUM INSTANTANEOUS VALUE:	0.21 ppm @ HOUR 11 ON DAY 4
IZS CALIBRATION TIME:	21 hrs
MONTHLY CALIBRATION TIME:	3 hrs
STANDARD DEVIATION:	0.02
OPERATIONAL TIME:	500 hrs

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)



Wind: PRAMP_842
 Poll.: PRAMP_842-NMHC[ppm]
 Monthly: 17/09
 Type: PollutionRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

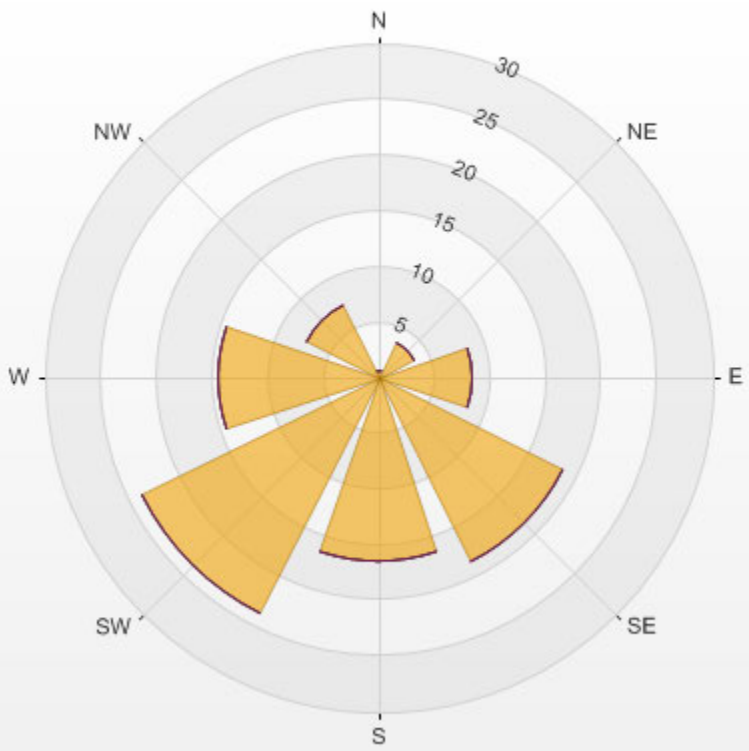
Calm: 6.72%

Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	0.6	0.0	0.0	0.0	0.0	0.6
NE	3.6	0.0	0.0	0.0	0.0	3.6
E	8.4	0.0	0.0	0.0	0.0	8.4
SE	18.5	0.0	0.0	0.0	0.0	18.5
S	16.6	0.0	0.0	0.0	0.0	16.6
SW	23.7	0.0	0.0	0.0	0.0	23.7
W	14.5	0.0	0.0	0.0	0.0	14.5
NW	7.4	0.0	0.0	0.0	0.0	7.4
Summary	93.3	0.0	0.0	0.0	0.0	93.3

% Icon Classes (ppm) 93 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] 2017/09/01 00:00 - 2017/09/30 23:00 Calm: 6.72% Calm Poll Avg: 0.00[ppm]



NMHC[ppm] Calibration: PRAMP_842 Monthly: 17/09 Type: Span



Span Meas Span Ref Span Low Span High

WIND SPEED



WIND SPEED Hourly Averages (WS kph)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	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	8.9	8.9	8.0	10.1	11.7	10.2	6.5	10.2	15.2	19.1	21.0	22.3	21.4	22.1	21.7	25.6	24.1	23.0	15.3	15.7	16.0	14.2	10.8	8.1	6.5	25.6	14.0	24
2	7.5	8.0	7.8	4.6	3.7	4.3	5.9	5.4	5.2	7.9	5.9	8.8	8.0	8.5	7.7	5.7	8.0	8.6	9.7	7.0	5.1	4.7	5.0	7.1	3.7	9.7	5.6	24
3	6.7	4.7	6.6	3.2	3.7	3.0	1.6	3.1	2.9	1.7	4.4	4.8	7.2	7.5	10.2	11.9	11.3	10.0	6.7	1.6	1.8	0.6	0.9	1.5	0.6	11.9	2.7	24
4	1.8	1.7	1.8	1.9	2.7	2.0	2.3	2.9	2.5	5.6	9.4	10.9	9.6	9.8	10.2	9.4	10.4	11.0	5.3	3.7	4.9	5.5	7.6	8.6	1.7	11.0	4.4	24
5	8.4	7.9	6.5	1.9	5.3	7.7	8.5	8.9	8.1	9.4	9.4	7.8	10.4	10.3	10.5	9.9	8.3	7.7	4.2	1.5	2.3	3.5	4.2	3.5	1.5	10.5	5.2	24
6	3.3	4.9	4.3	1.8	3.2	4.2	5.7	5.6	4.8	5.5	4.7	7.1	9.5	8.0	8.3	6.9	5.9	6.6	4.9	1.1	5.7	5.9	4.8	7.4	1.1	9.5	4.1	24
7	9.5	10.8	11.1	8.6	7.8	3.0	4.6	6.1	9.4	14.2	12.0	12.0	12.0	10.8	10.1	9.9	10.1	5.9	5.3	6.3	3.7	6.5	4.0	2.5	2.5	14.2	7.2	24
8	2.6	5.4	4.2	4.4	5.7	7.9	11.0	6.5	4.0	4.5	4.4	7.8	9.0	12.6	11.7	12.5	10.1	9.8	8.6	6.5	7.7	7.9	8.8	8.9	2.6	12.6	5.2	24
9	6.8	6.8	4.6	2.9	2.6	3.8	3.5	3.5	6.3	9.1	11.5	14.1	14.8	10.8	15.6	16.6	14.8	12.3	9.6	9.7	9.8	9.9	9.3	8.5	2.6	16.6	6.9	24
10	10.6	12.3	11.7	19.3	19.2	16.5	16.8	17.1	19.4	19.0	22.3	22.6	23.5	28.0	24.8	26.5	23.4	20.5	18.1	14.8	13.8	13.7	12.1	6.4	6.4	28.0	17.4	24
11	10.0	9.6	8.2	6.8	5.2	8.5	10.7	7.9	8.4	8.3	8.4	11.6	17.9	26.0	18.9	19.1	31.6	26.5	25.0	19.5	15.9	12.2	8.7	3.8	3.8	31.6	9.3	24
12	5.3	6.3	5.9	3.9	4.1	3.4	2.0	4.4	5.6	8.2	9.4	8.5	8.2	7.6	9.6	8.1	6.8	8.4	3.7	2.6	1.5	1.6	1.9	4.1	1.5	9.6	3.0	24
13	2.9	2.1	1.7	3.0	3.0	2.3	0.8	2.5	4.7	7.6	5.0	6.6	9.0	10.2	10.7	8.4	9.3	6.7	2.4	3.2	2.2	2.7	3.9	5.2	0.8	10.7	3.4	24
14	6.3	7.0	3.9	1.6	2.8	2.6	3.0	1.9	3.3	4.0	3.9	3.9	4.6	7.6	6.8	6.4	5.7	1.4	0.9	2.2	4.3	9.3	10.5	6.7	0.9	10.5	1.5	24
15	4.3	4.9	6.2	6.8	1.6	3.0	5.0	7.4	11.2	14.7	18.1	15.6	16.9	16.1	17.1	17.5	16.2	15.3	10.1	6.7	8.1	10.1	9.0	10.1	1.6	18.1	10.1	24
16	12.8	12.8	11.8	10.3	9.2	9.3	10.0	10.4	12.7	17.3	20.4	18.8	17.7	17.7	16.2	16.1	15.9	12.5	6.7	6.3	8.9	10.8	12.0	10.2	6.3	20.4	12.4	24
17	8.8	8.7	7.8	7.2	7.2	5.6	5.3	5.2	5.3	9.9	10.4	10.1	9.1	9.9	10.5	10.1	9.0	9.1	7.6	6.6	7.2	6.5	7.4	7.5	5.2	10.5	7.2	24
18	6.3	5.3	5.7	7.0	6.1	6.5	7.5	7.0	7.9	6.8	7.0	7.8	6.8	5.6	7.3	6.1	2.6	1.9	2.7	2.8	1.6	1.8	4.6	5.6	1.6	7.9	4.7	24
19	6.0	4.1	3.8	2.1	2.0	3.5	3.2	4.4	5.9	5.2	7.2	8.9	9.2	9.0	8.3	11.2	13.0	12.1	11.8	10.8	11.4	11.4	13.5	13.7	2.0	13.7	6.4	24
20	13.8	13.9	13.7	12.5	12.8	13.7	15.7	16.0	14.9	14.1	14.0	13.8	14.6	13.8	13.0	12.8	12.5	19.0	19.1	17.1	17.4	8.2	5.2	9.6	5.2	19.1	13.3	24
21	8.4	7.2	10.2	10.6	11.2	9.9	9.8	7.5	9.4	10.1	9.2	10.2	11.0	12.1	12.8	11.3	10.3	8.0	1.7	0.5	0.7	1.1	2.0	1.6	0.5	12.8	7.0	24
22	1.3	1.9	1.0	1.7	2.5	2.7	2.0	3.7	3.3	6.9	8.4	7.9	5.6	7.3	7.4	6.2	7.0	6.8	1.7	2.9	4.3	4.9	5.3	5.7	1.0	8.4	3.3	24
23	4.9	4.7	5.7	6.0	4.7	5.2	4.3	4.4	5.6	11.4	11.7	11.5	13.5	12.7	10.9	10.1	7.9	4.5	3.8	1.8	3.4	4.7	6.4	7.6	1.8	13.5	5.1	24
24	7.5	8.5	8.9	8.8	9.5	10.3	11.0	7.7	8.5	8.1	11.6	10.2	10.8	11.7	11.9	11.6	12.6	10.1	8.4	11.1	7.4	6.4	9.6	10.0	6.4	12.6	8.6	24
25	8.7	8.1	9.0	9.5	8.3	7.5	9.3	10.7	10.8	13.9	15.2	14.7	15.2	15.8	14.2	15.5	14.8	14.8	7.9	6.2	5.7	5.2	5.1	5.4	5.1	15.8	9.0	24
26	6.3	4.9	4.7	2.5	1.4	1.8	2.6	2.2	2.8	7.0	7.3	8.4	8.9	10.7	13.7	15.3	14.1	5.3	2.2	3.9	2.6	4.1	5.6	3.5	1.4	15.3	4.5	24
27	3.8	4.7	3.2	3.0	4.7	4.3	4.3	4.9	4.5	6.8	5.5	5.6	5.9	6.8	4.6	6.9	9.4	6.7	1.3	2.2	4.3	5.3	5.1	6.0	1.3	9.4	2.7	24
28	7.1	8.8	8.0	3.4	6.7	6.6	6.0	6.2	11.8	15.3	15.1	14.7	13.9	14.8	16.7	15.4	11.7	8.3	3.2	5.1	6.9	7.9	8.6	8.2	3.2	16.7	8.9	24
29	5.9	2.4	4.8	4.7	2.0	2.0	2.3	5.7	5.2	6.0	4.1	5.8	6.9	6.6	5.2	6.9	6.4	2.8	1.4	2.6	2.9	2.9	4.2	3.1	1.4	6.9	1.9	24
30	4.5	5.6	8.9	9.4	12.6	16.0	10.8	9.6	9.0	15.5	19.1	20.1	19.9	20.6	21.0	20.0	16.9	14.3	8.9	12.4	11.9	8.1	11.2	13.6	4.5	21.0	11.3	24
HOURLY MAX	13.8	13.9	13.7	19.3	19.2	16.5	16.8	17.1	19.4	19.1	22.3	22.6	23.5	28.0	24.8	26.5	31.6	26.5	25.0	19.5	17.4	14.2	13.5	13.7				
HOURLY AVG	3.2	3.6	3.3	2.5	2.4	2.1	2.2	2.4	3.4	5.2	5.8	6.1	6.6	7.4	7.3	7.8	7.1	4.7	2.5	1.8	1.5	2.1	2.7	2.7				

STATUS FLAG CODES

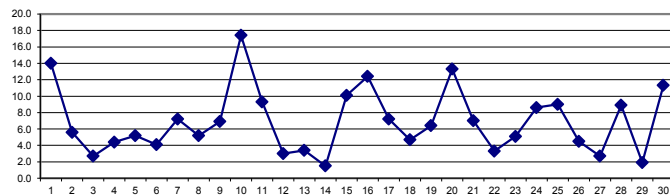
C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

LAST CALIBRATION:	August 30, 2017
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST

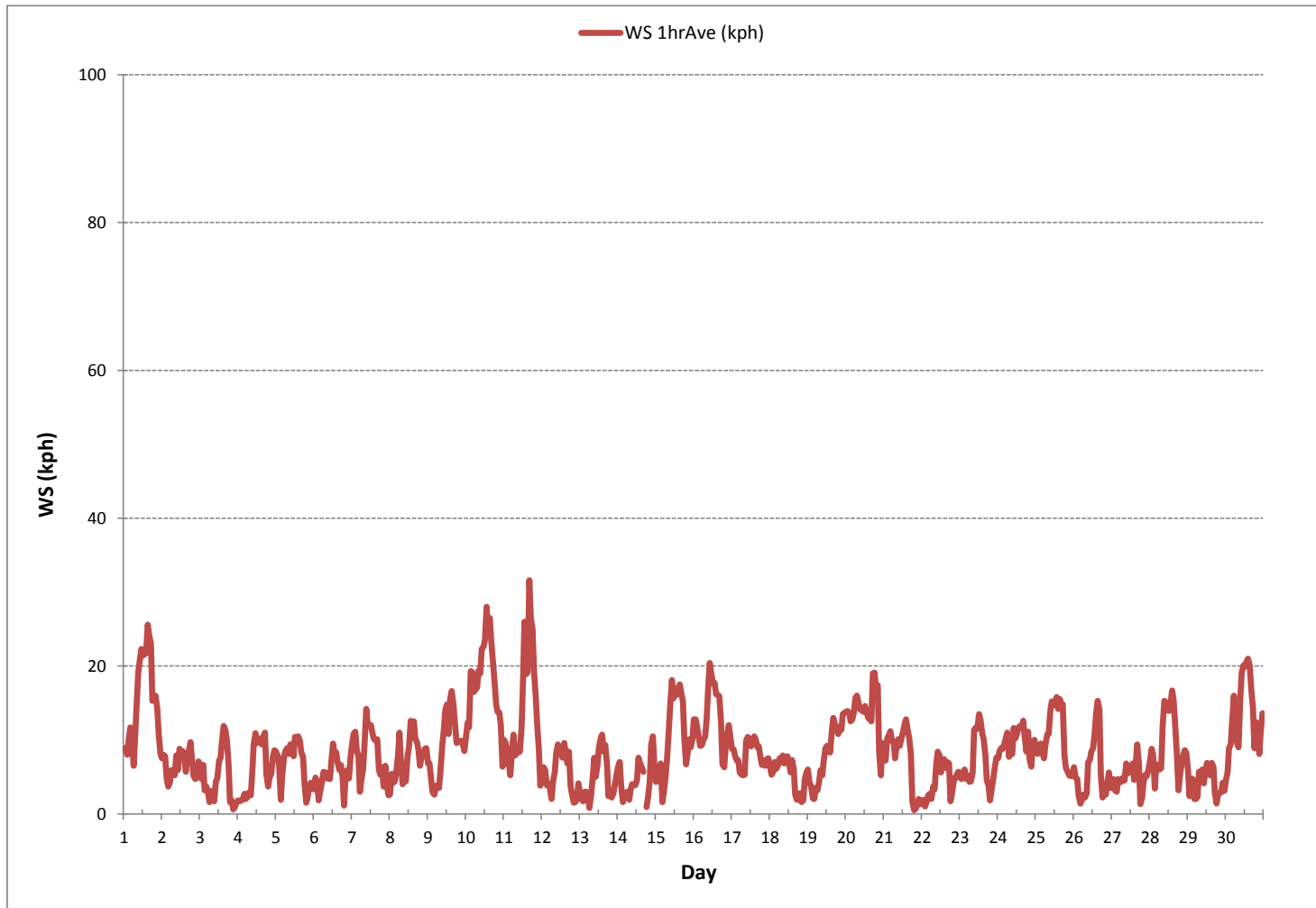
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	720
MINIMUM 1-HR AVERAGE	0.5 kph @ HOUR 19 ON DAY 21
MAXIMUM 1-HR AVERAGE:	31.6 kph @ HOUR 16 ON DAY 11
MAXIMUM 24-HR AVERAGE:	17.4 kph ON DAY 10
MONTHLY CALIBRATION TIME:	0 hrs
OPERATIONAL TIME:	720 hrs
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	5.1
MONTHLY AVERAGE:	3.4 kph

24 HR AVERAGES September 2017



WIND SPEED Hourly Averages (WS kph)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b Station - September 2017

WIND SPEED Instantaneous Maximum (WS kph)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY 1	18.6	15.0	14.3	20.9	22.6	18.9	15.7	22.0	30.0	45.3	36.5	42.3	44.3	43.6	44.8	59.6	49.9	48.9	34.2	36.7	29.6	25.3	24.6	16.6	14.3	59.6	31.7	24
2	17.1	15.1	14.4	9.8	7.2	10.8	11.3	10.3	11.0	14.8	11.3	17.3	13.8	14.5	13.8	9.6	15.7	16.4	17.0	12.5	9.3	10.3	11.1	13.1	7.2	17.3	12.8	24
3	14.3	9.8	12.4	6.5	9.5	8.5	4.2	8.9	6.9	5.6	12.1	12.3	17.1	18.2	24.9	25.5	22.9	22.2	15.8	5.5	6.0	3.6	2.7	3.9	2.7	25.5	11.6	24
4	5.5	3.9	3.9	4.1	4.9	4.4	4.7	5.5	6.2	11.5	18.2	21.6	23.2	22.2	22.2	23.8	21.3	20.1	9.8	8.0	9.9	11.5	14.2	17.4	3.9	23.8	12.4	24
5	15.9	16.1	13.9	8.9	11.9	14.0	16.4	15.3	14.4	17.5	15.8	15.2	18.3	18.7	20.9	20.0	15.5	12.9	9.3	3.5	6.0	6.8	7.5	7.1	3.5	20.9	13.4	24
6	7.4	7.7	8.4	6.0	7.2	7.2	11.4	11.7	10.4	10.2	14.2	14.6	16.6	16.8	13.4	14.1	10.5	12.9	12.1	4.2	13.4	13.4	11.4	15.6	4.2	16.8	11.3	24
7	15.7	17.9	18.0	16.6	15.9	14.5	12.4	17.3	22.3	28.2	23.0	21.7	21.1	17.8	17.0	17.7	18.4	14.4	9.7	10.3	11.7	11.6	10.5	6.5	6.5	28.2	16.3	24
8	6.8	9.2	7.8	7.9	12.9	13.8	22.6	20.9	9.4	11.2	13.2	17.2	17.0	22.4	21.5	21.8	22.9	20.4	17.4	11.2	13.2	12.6	14.4	15.1	6.8	22.9	15.1	24
9	13.3	13.2	11.0	6.9	8.8	8.3	7.5	9.2	14.1	17.8	23.1	27.5	30.0	21.3	32.9	32.8	28.8	24.1	19.0	20.2	18.3	17.6	17.5	17.5	6.9	32.9	18.4	24
10	20.6	21.7	31.9	39.7	40.5	32.5	33.4	34.7	40.7	37.3	44.3	47.5	45.8	55.4	47.4	51.9	50.9	39.9	38.4	31.3	27.3	25.3	21.4	12.0	12.0	55.4	36.3	24
11	18.8	16.8	12.8	14.4	12.6	19.9	23.3	17.7	17.6	18.6	16.8	24.7	42.5	53.1	41.2	41.5	64.4	56.3	53.6	43.4	30.0	31.7	18.5	11.8	11.8	64.4	29.3	24
12	10.7	11.7	12.2	11.0	10.5	7.4	7.7	10.5	13.0	18.9	19.8	19.4	21.8	19.3	49.3	30.2	24.0	28.1	10.5	5.0	4.5	5.3	5.2	9.9	4.5	49.3	15.2	24
13	8.6	6.2	6.6	7.3	9.5	6.3	5.4	7.3	14.1	17.5	12.4	18.3	20.8	27.1	24.0	17.0	21.0	22.0	6.3	9.0	5.2	6.1	10.8	16.5	5.2	27.1	12.7	24
14	17.9	16.3	9.9	3.7	5.7	5.9	8.5	6.6	7.5	9.1	9.0	11.7	14.0	20.3	16.0	21.4	12.3	7.2	3.3	8.8	12.9	16.2	17.0	14.8	3.3	21.4	11.5	24
15	11.4	11.3	12.9	14.7	5.2	7.7	11.6	16.8	24.1	25.8	29.5	25.7	28.9	31.4	32.3	32.2	30.6	29.2	18.6	14.5	16.7	18.1	17.6	22.6	5.2	32.3	20.4	24
16	23.0	23.9	21.1	20.1	18.9	19.5	20.5	20.7	27.4	32.0	36.8	34.0	33.0	34.7	30.9	34.8	30.3	26.2	19.9	15.9	18.2	22.2	21.9	21.8	15.9	36.8	25.3	24
17	17.9	16.9	16.3	16.7	15.5	12.6	11.5	12.4	13.2	19.4	19.3	21.4	23.3	20.4	23.9	24.2	21.6	21.8	21.5	19.6	21.5	18.3	22.8	19.8	11.5	24.2	18.8	24
18	14.9	15.5	16.8	18.1	16.3	19.6	18.1	17.9	18.6	20.7	17.7	18.3	20.3	14.4	20.3	15.6	8.9	7.1	5.9	10.0	8.6	7.0	9.9	14.1	5.9	20.7	14.8	24
19	10.6	7.2	9.4	6.0	7.8	7.7	6.4	10.5	12.2	11.1	19.9	20.5	27.6	21.7	17.9	31.6	30.9	29.0	32.9	26.7	26.3	30.5	34.3	35.0	6.0	35.0	19.7	24
20	38.3	35.3	36.1	31.3	38.3	30.7	42.8	38.5	33.7	33.7	33.7	34.3	36.6	34.8	34.1	35.8	37.5	58.7	49.6	51.1	55.1	44.1	22.9	21.3	21.3	58.7	37.8	24
21	23.5	19.2	23.9	26.4	25.9	24.0	21.4	23.5	24.1	27.0	22.6	27.4	25.7	27.5	25.8	26.3	23.1	19.5	5.1	3.2	2.6	3.9	4.6	3.9	2.6	27.5	19.2	24
22	2.8	3.6	4.1	3.7	6.3	4.2	3.3	9.1	8.6	12.7	16.0	16.8	14.4	19.5	17.2	15.9	16.3	15.0	6.1	9.3	9.3	10.7	13.2	12.1	2.8	19.5	10.4	24
23	10.5	11.6	12.2	12.7	11.9	11.1	8.9	8.5	16.0	20.9	24.0	25.5	28.0	24.5	21.8	21.5	15.9	9.8	7.2	5.6	8.0	10.5	13.5	14.2	5.6	28.0	14.8	24
24	15.3	15.9	16.9	13.9	14.5	19.3	18.9	14.4	17.0	17.5	20.7	19.6	21.4	22.9	24.6	25.2	24.1	21.0	16.5	22.7	15.0	12.3	23.0	17.6	12.3	25.2	18.8	24
25	16.4	13.2	14.2	15.4	22.2	14.8	16.2	19.9	21.6	25.0	26.5	26.6	29.5	29.0	29.4	29.5	28.2	33.6	16.8	11.6	12.7	9.1	10.3	9.6	9.1	33.6	20.1	24
26	10.4	9.8	7.9	7.4	4.4	4.3	5.1	4.6	7.2	13.7	12.9	16.1	18.2	25.9	28.3	27.0	28.5	15.9	4.1	19.7	7.5	11.2	14.5	8.7	4.1	28.5	13.1	24
27	8.4	8.4	6.3	6.9	8.3	8.1	8.8	8.4	9.8	11.6	12.1	13.3	17.2	16.8	15.2	16.3	21.4	14.2	6.6	4.5	8.4	10.1	12.5	10.6	4.5	21.4	11.0	24
28	13.6	16.2	15.8	11.5	14.5	13.0	12.8	15.9	18.7	26.9	27.3	25.5	24.5	29.9	31.3	31.4	28.3	16.6	10.7	13.3	14.9	15.7	16.4	16.7	10.7	31.4	19.2	24
29	14.9	7.3	8.1	11.1	7.0	5.0	6.0	9.9	10.4	11.4	10.3	15.5	14.5	13.0	12.0	14.2	13.7	7.9	3.4	5.6	5.5	7.6	7.0	9.2	3.4	15.5	9.6	24
30	18.3	13.1	21.7	15.7	24.5	30.0	20.2	18.4	18.7	30.5	34.0	35.2	36.6	38.7	38.9	39.8	36.7	29.9	21.2	28.3	29.1	19.2	26.1	34.1	13.1	39.8	27.5	24
HOURLY MAX	38.3	35.3	36.1	39.7	40.5	32.5	42.8	38.5	40.7	45.3	44.3	47.5	45.8	55.4	49.3	59.6	64.4	58.7	53.6	51.1	55.1	44.1	34.3	35.0				
HOURLY AVG	14.7	13.6	14.0	13.2	14.0	13.5	13.9	14.9	16.6	20.1	21.1	22.9	24.9	25.9	26.4	26.9	25.8	23.4	16.8	15.7	15.2	14.9	15.2	15.0				

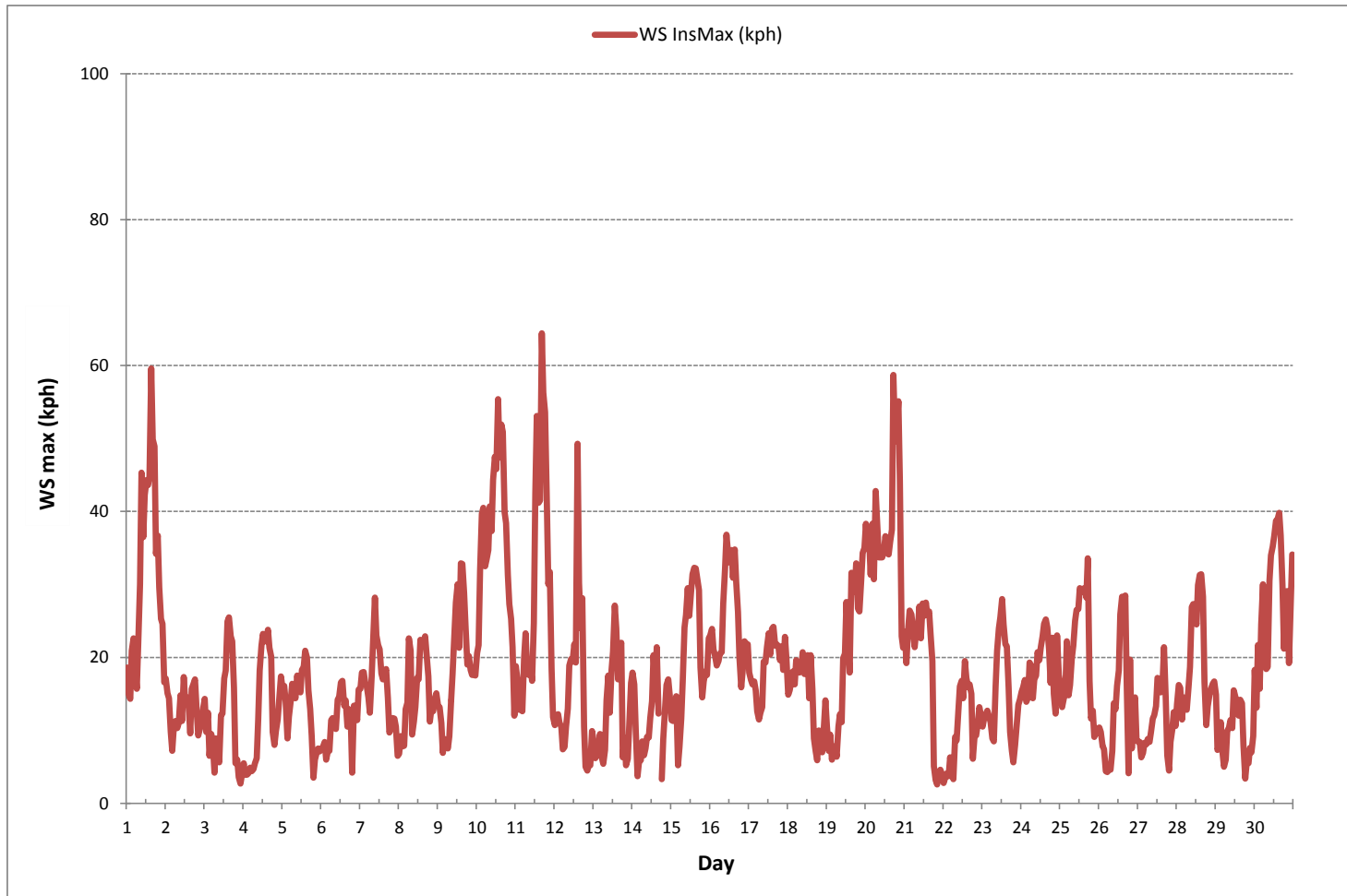
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS VALUE:	64.4	kph	@ HOUR	16	ON DAY	11	
OPERATIONAL TIME:						720	hrs

WIND SPEED Instantaneous Maximum (WS kph)



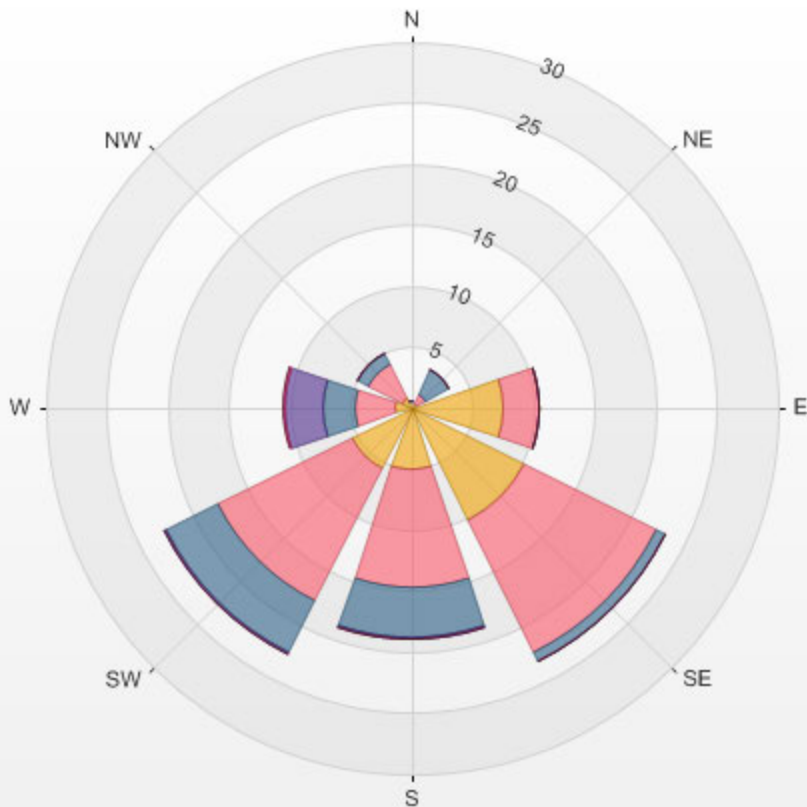
Wind: PRAMP_842
 Monitor: WSP [kph]
 Monthly: 17/09
 Type: WindRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

Calm: 5.00%

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	0.0	0.1	0.4	0.0	0.0	0.0	0.6
NE	0.4	0.8	2.2	0.0	0.0	0.0	3.5
E	7.5	2.9	0.0	0.0	0.0	0.0	10.4
SE	10.3	12.2	0.8	0.0	0.0	0.0	23.3
S	5.1	9.6	4.2	0.1	0.0	0.0	19.0
SW	5.6	12.2	4.7	0.1	0.0	0.0	22.6
W	1.4	3.3	2.6	3.1	0.1	0.0	10.6
NW	1.0	3.1	1.0	0.0	0.0	0.0	5.0
Summary	31.3	44.3	16.0	3.3	0.1	0.0	95.0

% Icon Classes (kph) 31 1.8-6.0 44 6.0-12.0 16 12.0-20.0 3 20.0-29.0 0 29.0-39.0 0 >39.0

PRAMP_842 2017/09/01 00:00 - 2017/09/30 23:00 Calm: 5.00% Calm Wind Avg Speed: 1.43(kph)



WIND DIRECTION



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b Station - September 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	S	SSE	S	SW	SW	SW	SW	SW	SW	WSW	WSW	W	W	WSW	W	W	W	W	W	WSW	WSW	WSW	WSW	SW	WSW	24	
2	SW	SW	SW	SW	ESE	SE	SSE	SSE	SSE	SSW	S	SSW	SW	SW	WSW	SW	SW	WSW	SW	SW	SW	SSW	SSE	S	SSW	24	
3	SW	S	S	SSE	SE	SSE	SSE	S	SW	SW	W	W	NW	WSW	W	WSW	W	W	WNW	WSW	ENE	ESE	E	ESE	WSW	24	
4	ESE	E	E	E	ESE	E	E	ESE	SE	SSW	S	SSW	SSW	S	SSW	SSW	SSW	SSW	SSW	SSW	SE	SE	SE	SE	S	24	
5	SE	SE	SE	SE	SE	SE	SSE	SSE	S	SSW	SW	SW	SW	SSW	SSW	SW	SW	SW	SW	ESE	ESE	ESE	SE	ESE	S	24	
6	ESE	ESE	ESE	ESE	SE	SE	SE	SSE	SSE	SSW	SW	SW	SSW	SSW	SSW	SSW	S	SE	ESE	ESE	SE	SE	SE	SE	SSE	24	
7	SE	SE	SE	SE	SE	SSE	SSE	SSE	SSE	SSW	SSW	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSE	SSE	S	SW	S	24	
8	SW	SW	SW	WSW	WSW	W	WNW	WNW	S	SSE	SW	SSW	SSW	SSW	SSW	SSW	SSW	S	S	SE	SSE	SSE	SSE	SSE	SSW	24	
9	SE	SE	E	E	E	E	E	ESE	SE	SSE	S	S	SSW	SSW	SSW	SW	SW	SSW	SSW	SSW	SSW	SSW	SW	SW	SSW	24	
10	SW	SSW	SW	SW	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	W	W	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	24	
11	SW	SW	S	SE	SE	SE	SE	SE	SSE	SSE	S	S	SSW	SW	WSW	WSW	WSW	W	W	WSW	W	NW	NW	NW	SW	24	
12	W	W	WSW	SW	SW	WSW	SW	WSW	W	WNW	W	WNW	W	WSW	W	WNW	SSW	NE	ENE	E	SE	E	ENE	NE	NW	24	
13	NE	SE	S	ESE	WNW	SSW	SSW	WNW	NW	NW	S	SSW	WNW	WNW	WNW	WNW	SW	WNW	W	WSW	SSW	SE	WNW	ESE	NNW	24	
14	E	WSW	WSW	SW	SE	E	ESE	ESE	SW	SSW	SE	SE	S	W	WNW	W	W	W	S	E	SE	SSE	SSE	SSE	S	24	
15	SSE	SE	SE	SSE	SE	SSE	SSE	SSE	SSE	S	SSE	S	SSE	SSE	SSE	S	S	SSE	SSE	SE	SE	SE	SE	SE	SSE	24	
16	SSE	SE	SE	SE	SE	SE	SE	SE	SE	SSE	SSE	SSE	S	S	SSE	SSE	SSE	SSE	SE	SE	SE	SE	SE	SE	SSE	24	
17	SE	SE	SE	ESE	SE	ESE	ESE	ESE	SE	SSE	S	SSE	SE	SSE	SSE	SSE	SE	SE	ESE	E	E	ESE	ESE	ESE	SE	24	
18	ESE	E	E	E	E	E	E	E	E	E	E	E	ESE	ESE	ESE	SE	ESE	ENE	E	ESE	E	E	SSE	S	ESE	24	
19	S	SSE	SSE	SE	ESE	ENE	ESE	NNW	NW	SW	WSW	WNW	WSW	WSW	ENE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	24	
20	NNE	NNE	NE	NNE	NNE	NNE	NNE	NE	NNE	NE	ESE	SE	SW	WSW	WNW	SW	ENE	NNE	NNE	NNE	NE	E	E	SSE	NNE	24	
21	SW	NW	NW	SW	SW	SW	ESE	S	SSW	WNW	SW	E	NW	NW	NW	WNW	WNW	NW	W	S	SE	E	ESE	ESE	NNW	24	
22	E	ESE	E	E	E	ENE	ENE	ESE	SE	S	S	SSW	S	S	SSW	SE	SSE	S	SE	ESE	ESE	SE	SE	ESE	SSE	24	
23	E	ESE	ESE	ESE	ESE	ESE	ESE	E	SE	SSE	S	S	S	SSW	SSW	SW	SW	SSW	S	SE	ESE	SE	SE	SE	SSE	24	
24	SE	SE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSW	S	SSW	S	SSW	SSW	SSW	S	S	SSW	SSW	SSW	SSW	SSW	SSW	24	
25	SSW	S	S	S	S	S	S	SSW	SSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW	WSW	SW	SW	SW	SSW	SSE	SW	24	
26	SSE	SSE	SE	SE	SSE	ESE	ESE	ESE	S	SW	SW	SW	SW	SSW	SW	WSW	WSW	SW	ESE	SE	SSE	SW	SW	SW	SSW	24	
27	SW	SW	SSE	SE	SE	SE	SSE	SSW	SSW	SW	SW	WSW	S	SSW	WSW	SW	WSW	SW	SE	E	ENE	E	ESE	ESE	SSW	24	
28	ESE	SE	SE	SE	SE	SE	SE	SE	SSE	SSE	S	S	SSE	S	S	SSE	SSE	ESE	SE	SE	SE	SE	SE	SE	SSE	24	
29	SE	E	E	ESE	ESE	E	ESE	SSE	S	SSW	SSW	SW	WSW	WSW	SW	WSW	WSW	SSW	ESE	ESE	ENE	E	ENE	E	S	24	
30	SW	SSE	WSW	WSW	SW	WSW	WSW	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	W	NW	WNW	NW	NW	NNW	NW	NW	NW	W	24	

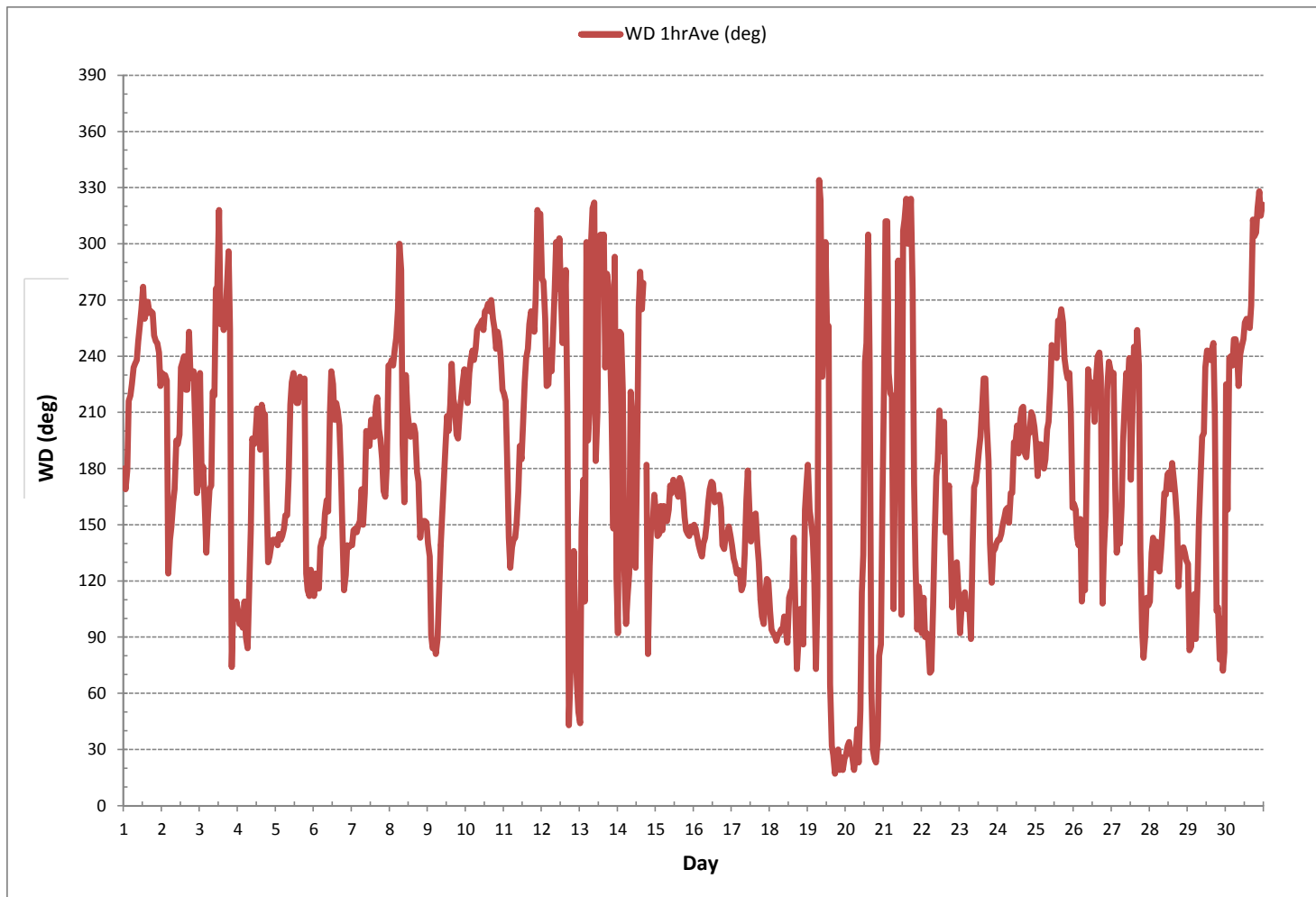
STATUS FLAG CODES

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:	August 30, 2017
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST

MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:	720	hrs
STANDARD DEVIATION:	67		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	205 (SSW)	

WIND DIRECTION Hourly Averages (WD)



RELATIVE HUMIDITY



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b Station - September 2017

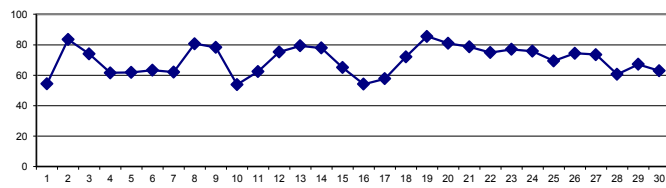
RELATIVE HUMIDITY Hourly Averages (RH %)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY 1	67	75	75	70	71	77	76	70	62	53	50	45	40	42	38	35	35	36	39	43	45	48	50	60	35	77	54	24	
2	64	70	70	70	76	80	80	79	75	73	82	82	86	90	91	91	92	90	90	92	94	95	96	96	64	96	84	24	
3	96	96	96	96	96	96	96	96	96	95	73	47	38	40	40	43	38	38	41	61	85	90	91	93	38	96	74	24	
4	93	94	95	95	95	96	96	87	65	45	33	31	30	30	30	28	28	30	45	65	73	65	63	65	28	96	62	24	
5	65	64	66	79	83	80	81	76	67	59	55	49	42	37	34	30	29	31	42	66	83	88	89	89	29	89	62	24	
6	90	91	91	91	84	83	84	77	76	68	56	50	43	34	29	28	27	30	36	66	76	68	76	64	27	91	63	24	
7	58	58	62	66	67	78	80	69	61	56	55	53	51	48	44	42	47	55	63	66	71	77	79	82	42	82	62	24	
8	85	81	77	79	84	76	75	83	91	91	92	91	84	78	73	65	61	63	72	79	84	90	91	91	61	92	81	24	
9	92	91	91	92	91	93	94	90	85	77	77	81	78	64	57	55	56	58	67	71	71	71	76	77	55	94	78	24	
10	81	80	75	66	64	67	69	66	63	61	52	47	40	35	32	31	32	35	37	42	47	51	57	62	31	81	54	24	
11	63	63	70	85	88	86	82	79	77	75	70	64	52	46	50	49	34	36	38	44	48	60	67	72	34	88	62	24	
12	79	78	84	89	90	91	94	87	72	55	52	49	46	44	58	68	76	63	67	86	93	94	95	95	44	95	75	24	
13	96	96	96	95	95	95	96	95	93	89	92	79	72	57	46	48	39	40	61	82	85	86	86	84	39	96	79	24	
14	84	86	91	91	93	94	95	96	95	91	76	66	52	54	65	52	48	58	64	80	84	83	84	86	48	96	78	24	
15	90	92	92	92	93	96	96	93	86	74	58	45	39	35	31	30	33	36	43	50	57	61	67	70	30	96	65	24	
16	72	74	76	78	79	80	79	73	63	52	44	38	34	32	31	27	26	29	36	45	53	57	59	61	26	80	54	24	
17	66	69	74	76	78	79	82	77	67	58	50	45	39	34	32	31	31	35	46	55	63	64	65	69	31	82	58	24	
18	73	77	79	80	81	82	82	80	77	72	66	61	56	55	56	56	58	61	74	80	76	79	80	89	55	89	72	24	
19	91	92	95	95	95	95	95	96	95	90	79	75	72	73	82	72	67	68	72	86	90	92	93	92	67	96	86	24	
20	92	92	92	92	93	93	93	93	91	89	86	84	79	73	65	52	58	52	58	82	79	69	64	73	67	52	93	81	24
21	71	75	80	83	85	88	89	87	78	77	76	71	70	68	66	60	55	61	75	90	94	95	96	96	55	96	79	24	
22	96	96	96	96	96	95	95	95	84	75	63	58	51	47	46	43	42	44	61	84	83	82	84	87	42	96	75	24	
23	91	93	93	93	93	94	93	94	86	77	69	62	56	52	50	47	50	50	63	84	91	91	88	88	47	94	77	24	
24	88	87	88	91	93	94	92	91	86	79	70	67	65	61	56	54	54	60	65	69	74	79	78	77	54	94	76	24	
25	80	84	84	85	87	90	89	85	78	71	65	61	55	51	48	44	44	46	57	63	69	71	74	83	44	90	69	24	
26	86	87	91	92	94	95	96	96	84	78	66	57	50	45	43	48	47	54	71	82	87	82	75	79	43	96	74	24	
27	81	85	88	92	94	93	93	91	86	79	68	60	52	48	43	41	40	45	66	80	85	86	83	85	40	94	74	24	
28	89	81	81	88	86	88	88	84	78	64	55	47	41	36	30	30	31	32	40	47	54	57	61	66	30	89	61	24	
29	68	84	90	92	92	93	94	94	77	67	59	51	47	40	30	27	27	33	55	73	75	78	82	83	27	94	67	24	
30	77	75	73	77	77	67	73	77	82	71	58	52	47	43	42	41	42	56	60	61	60	66	67	65	41	82	63	24	
HOURLY MAX	96	96	96	96	96	96	96	96	96	95	92	91	86	90	91	91	92	90	90	92	94	95	96	96					
HOURLY AVG	81	82	84	86	86	87	88	85	79	72	65	59	54	50	48	46	45	48	57	69	74	76	78	79					

STATUS FLAG CODES

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

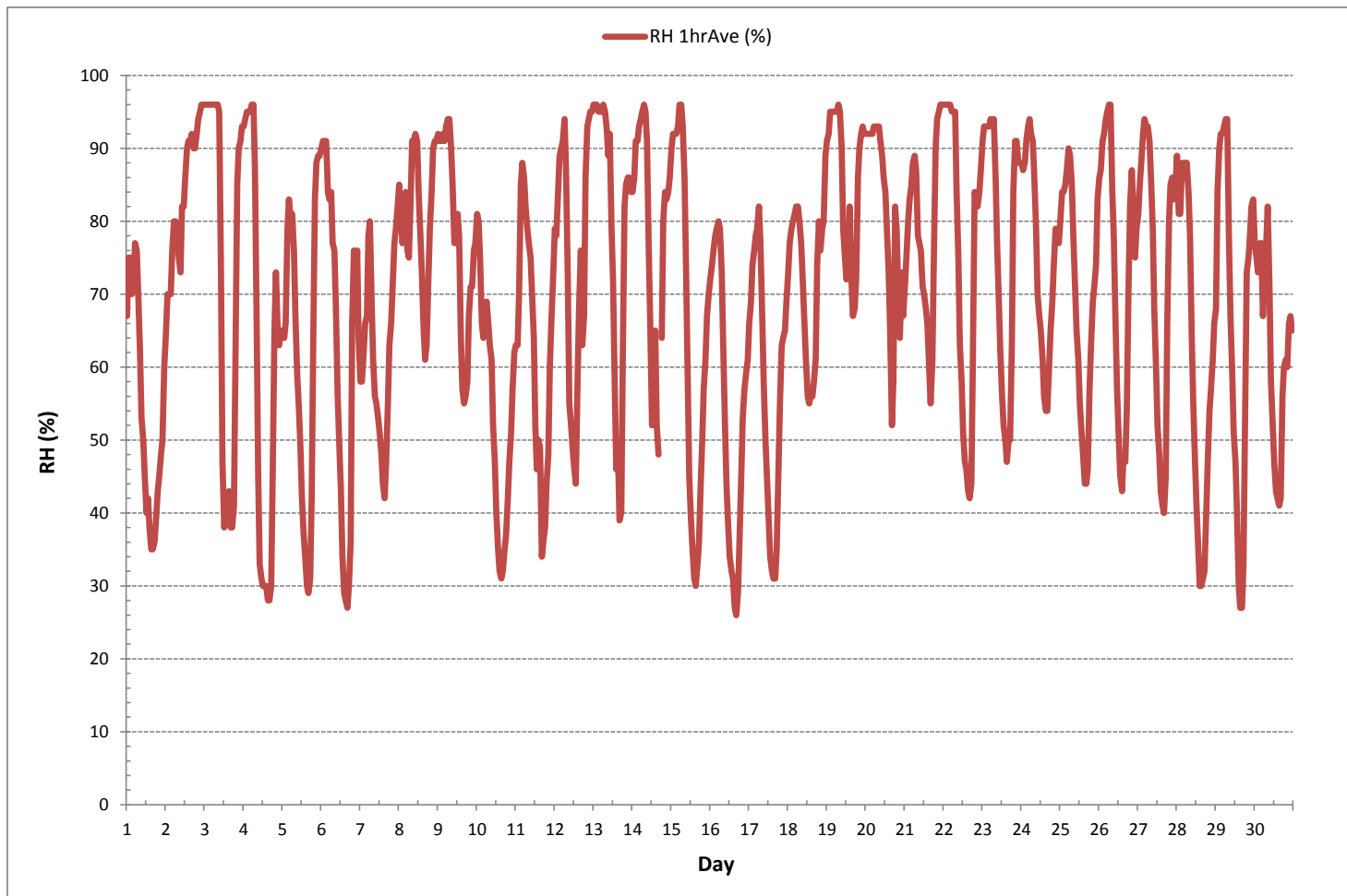
24 HR AVERAGES September 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	26	%	@ HOUR	16	ON DAY	16
MAXIMUM 1-HR AVERAGE:	96	%	@ HOUR	22	ON DAY	2
MAXIMUM 24-HR AVERAGE:	86	%			ON DAY	19
OPERATIONAL TIME:						720 hrs
AMD OPERATION UPTIME:						100.0 %
STANDARD DEVIATION:	20		MONTHLY AVERAGE:			70 %

RELATIVE HUMIDITY Hourly Averages (RH %)



BAROMETRIC PRESSURE



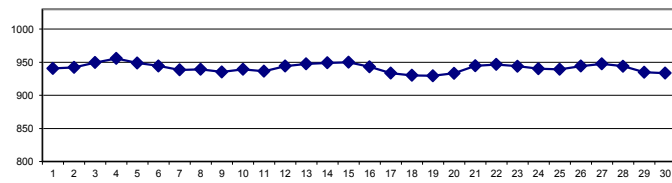
BAROMETRIC PRESSURE Hourly Averages (BP mbar)

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	941	941	941	941	941	941	941	941	941	940	940	940	940	940	940	940	940	940	940	941	941	942	942	942	940	942	941	24	
2	942	942	942	942	942	942	942	942	942	941	942	941	941	941	942	942	942	942	942	942	942	943	943	944	944	941	944	942	24
3	944	944	945	946	946	946	946	947	948	949	949	949	950	950	950	951	951	952	952	952	953	954	955	956	944	956	950	24	
4	956	956	957	957	957	958	958	958	958	958	958	957	957	956	956	955	955	954	954	953	953	953	952	952	952	952	958	956	24
5	952	952	951	951	951	950	950	950	950	949	949	949	949	948	948	948	947	947	946	947	946	947	947	946	946	946	952	949	24
6	946	946	946	946	946	946	946	946	946	946	946	945	945	945	944	944	943	943	942	942	942	942	942	942	942	942	946	944	24
7	942	941	941	940	940	940	939	939	939	939	939	938	938	938	938	937	937	937	937	936	937	937	937	937	937	936	942	938	24
8	937	937	938	938	938	939	940	941	940	941	941	941	940	940	940	939	939	939	939	939	939	939	939	939	939	937	941	939	24
9	938	938	938	937	937	937	936	936	936	935	935	935	934	934	934	934	934	934	934	934	934	934	934	934	934	934	938	935	24
10	935	936	936	936	937	937	938	939	939	940	940	940	940	941	941	941	941	941	942	942	942	942	941	941	941	935	942	939	24
11	941	940	939	939	938	937	936	936	935	935	935	935	934	934	934	934	934	935	935	936	937	939	940	941	934	941	937	24	
12	941	942	943	943	943	944	944	944	945	945	945	945	944	944	944	945	945	945	945	945	945	945	946	946	946	941	946	944	24
13	946	946	947	947	947	947	947	948	948	948	948	948	948	947	947	947	947	947	947	947	948	948	948	948	948	946	948	947	24
14	947	948	948	948	948	948	948	949	949	949	949	949	949	949	949	949	949	950	950	950	951	951	951	951	947	951	949	24	
15	951	951	951	951	951	951	952	952	952	952	952	952	951	951	950	950	949	949	948	948	948	948	947	947	947	947	952	950	24
16	947	946	946	946	945	945	945	945	945	944	944	944	943	943	942	941	941	941	940	940	940	940	939	939	939	947	943	24	
17	938	938	937	937	936	936	935	935	935	935	934	934	933	933	932	931	931	931	931	931	931	931	931	931	930	938	934	24	
18	930	930	929	929	929	929	929	929	929	930	930	930	930	930	930	931	931	931	931	931	931	931	931	931	931	929	931	930	24
19	932	931	931	931	931	931	931	931	931	931	930	930	929	928	928	928	928	928	928	929	929	929	928	928	928	928	932	930	24
20	928	928	929	930	930	931	931	932	932	932	933	933	933	933	933	934	934	934	936	937	937	938	938	939	939	928	939	933	24
21	939	940	940	941	941	942	942	943	944	944	945	945	946	946	946	947	947	947	947	948	948	948	948	948	948	939	948	945	24
22	948	948	948	948	948	948	948	948	948	948	948	947	947	946	946	945	945	945	945	945	945	945	944	944	944	948	947	24	
23	944	944	944	944	944	944	944	944	944	945	945	944	944	944	944	944	944	944	944	944	944	943	943	943	943	943	945	944	24
24	943	943	942	942	942	942	942	941	941	941	941	940	940	940	939	939	939	939	939	939	938	938	938	938	938	938	943	940	24
25	938	938	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939	940	940	940	941	941	938	941	939	24
26	941	942	942	942	943	943	944	944	945	945	945	945	945	945	945	945	944	944	944	945	945	945	945	945	941	945	944	24	
27	946	946	946	946	947	947	947	947	948	948	948	948	948	948	948	948	948	948	948	948	948	948	948	949	949	946	949	948	24
28	949	948	948	948	947	947	947	947	947	946	945	945	944	943	943	942	941	941	940	940	940	940	939	939	939	949	944	24	
29	938	938	938	937	937	937	937	937	937	936	936	935	935	934	934	933	933	933	933	933	932	932	931	931	931	931	938	935	24
30	931	931	931	932	932	933	933	933	933	933	933	933	933	933	933	933	933	934	934	935	936	936	937	938	931	938	933	24	
HOURLY MAX	956	956	957	957	957	958	958	958	958	958	958	957	957	956	956	955	955	954	954	953	953	954	955	956					
HOURLY AVG	942	942	942	942	942	942	942	942	942	942	942	942	942	942	941	941	941	941	941	941	941	941	942	942	942				

STATUS FLAG CODES

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

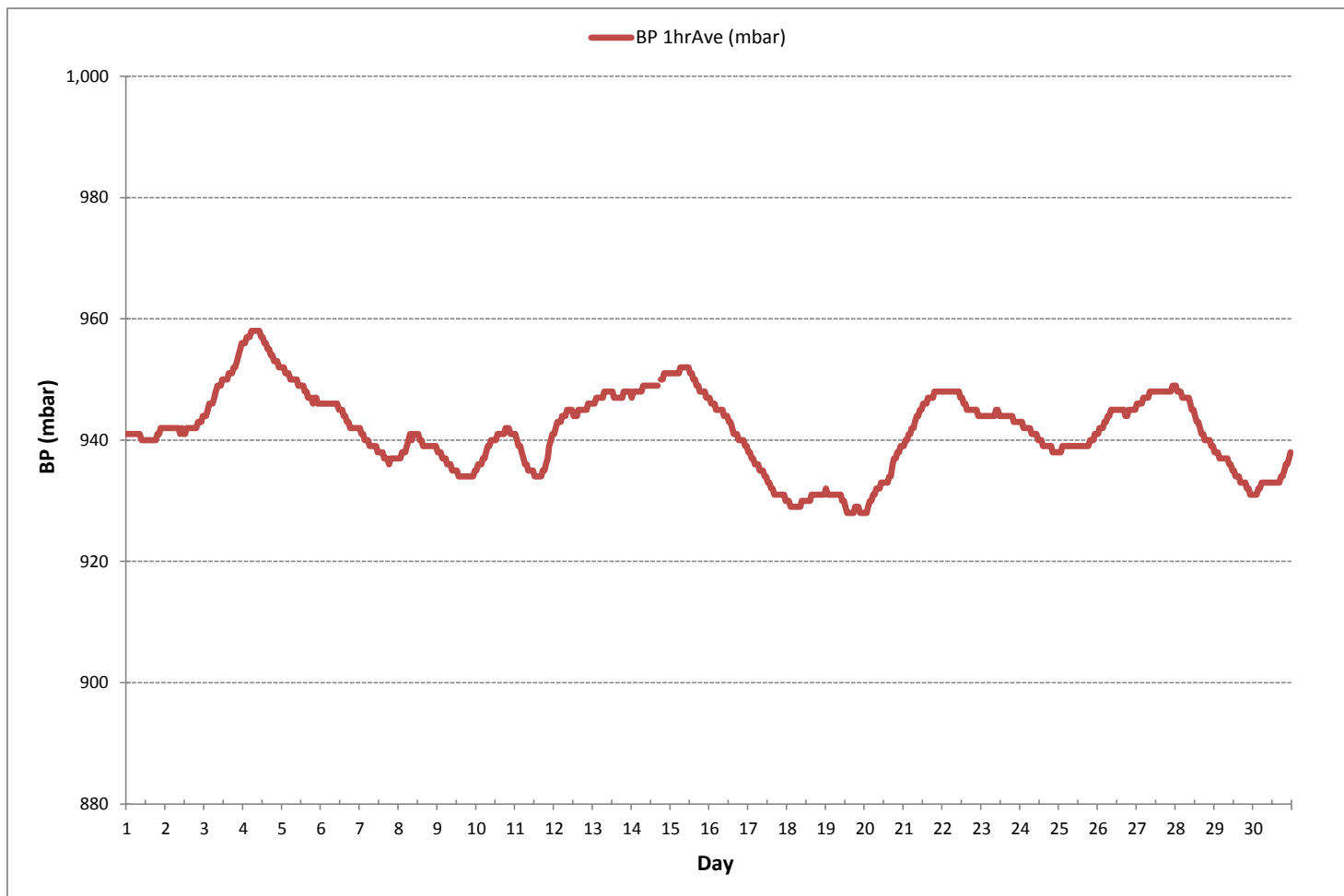
24 HR AVERAGES September 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	928	mbar	@ HOUR	13	ON DAY	19
MAXIMUM 1-HR AVERAGE:	958	mbar	@ HOUR	5	ON DAY	4
MAXIMUM 24-HR AVERAGE:	956	mbar			ON DAY	4
OPERATIONAL TIME:						720 hrs
AMD OPERATION UPTIME:						100.0 %
STANDARD DEVIATION:	7					
MONTHLY AVERAGE:						942 mbar

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE



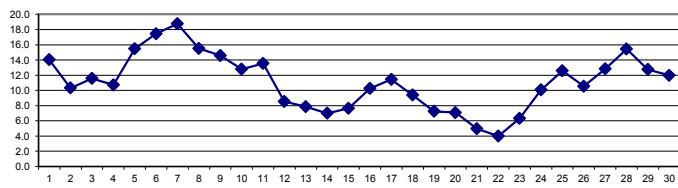
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

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	10.0	8.0	8.1	9.5	9.3	8.1	8.4	10.4	12.9	15.0	15.5	17.2	18.4	17.9	19.0	19.6	19.4	19.2	18.8	16.9	15.7	14.6	13.6	11.9	8.0	19.6	14.1	24
2	11.2	9.8	9.5	9.3	8.0	7.4	7.4	8.8	10.5	11.7	11.7	12.5	12.6	12.2	12.1	11.9	12.0	12.0	11.9	10.5	9.2	8.6	8.1	8.8	7.4	12.6	10.3	24
3	9.0	8.5	8.0	7.7	7.1	7.0	6.2	6.8	8.5	11.0	14.7	18.2	19.5	18.7	18.4	17.7	18.5	18.1	17.9	13.5	8.3	6.3	4.7	3.5	3.5	19.5	11.6	24
4	2.2	1.3	0.5	-0.2	-0.8	-1.1	-0.9	4.3	11.2	14.8	17.0	18.4	19.2	19.9	20.6	21.1	21.0	20.0	16.7	12.9	9.3	10.0	10.2	9.8	-1.1	21.1	10.7	24
5	9.5	9.8	9.8	7.1	6.8	7.9	8.2	10.2	13.5	16.3	18.4	20.6	22.6	24.2	25.1	25.7	26.1	25.6	23.7	17.7	12.5	10.9	9.8	9.7	6.8	26.1	15.5	24
6	8.5	7.9	8.4	8.6	9.7	9.5	9.6	12.5	14.1	16.7	20.5	22.6	24.5	26.4	27.7	28.4	29.0	28.2	26.2	19.0	14.7	16.5	13.8	15.4	7.9	29.0	17.4	24
7	15.7	15.4	15.8	15.3	14.7	12.1	11.4	14.7	17.5	19.4	20.8	21.8	23.0	24.3	25.7	25.9	25.0	23.3	21.3	19.4	17.8	17.0	16.3	16.4	11.4	25.9	18.8	24
8	15.4	16.2	16.3	15.5	14.3	15.9	16.2	14.9	13.9	13.7	14.3	14.6	15.6	16.4	17.2	19.0	19.5	18.8	17.1	15.5	14.4	13.0	12.4	12.4	12.4	19.5	15.5	24
9	12.3	12.7	13.1	12.6	12.6	11.2	11.6	12.7	14.6	15.7	17.4	17.1	16.3	16.7	18.1	18.3	18.7	18.4	17.4	14.9	13.8	12.6	11.1	10.4	10.4	18.7	14.6	24
10	9.6	9.6	9.5	10.6	10.2	9.3	8.9	9.7	10.5	11.6	13.5	14.3	16.3	16.8	17.6	17.8	17.2	16.1	15.4	14.1	13.2	12.8	11.7	10.7	8.9	17.8	12.8	24
11	11.0	11.4	10.4	8.8	8.7	8.9	9.2	9.7	10.4	11.6	13.1	14.9	18.3	19.7	19.1	19.8	20.8	19.7	18.4	16.2	14.8	11.5	9.9	8.4	8.4	20.8	13.5	24
12	7.0	7.4	5.6	4.3	3.9	3.5	2.0	5.6	9.8	13.7	14.5	15.6	16.1	16.3	13.0	11.6	10.2	13.0	11.3	6.4	4.2	3.8	3.5	2.8	2.0	16.3	8.5	24
13	2.4	2.7	3.8	4.5	3.3	3.4	3.3	4.3	6.7	7.0	6.7	11.8	12.8	14.8	15.5	14.0	15.3	15.3	11.5	6.5	5.7	5.5	5.5	6.0	2.4	15.5	7.8	24
14	6.0	5.8	4.9	4.3	3.3	2.0	0.8	0.7	3.6	5.1	8.6	10.4	13.1	13.5	11.1	13.4	13.7	11.6	11.2	6.2	5.2	5.3	4.6	3.6	0.7	13.7	7.0	24
15	2.2	2.2	2.5	2.3	0.0	0.1	1.1	2.2	5.0	8.1	10.4	12.3	13.3	14.2	14.6	14.9	14.9	14.3	12.6	9.6	7.8	7.0	6.1	5.7	0.0	14.9	7.6	24
16	6.0	5.8	5.3	4.7	4.2	3.6	3.6	5.2	8.0	10.7	12.5	14.2	15.5	16.3	17.1	17.4	17.4	16.6	14.2	11.5	10.2	9.4	8.8	8.1	3.6	17.4	10.3	24
17	7.1	6.2	5.2	4.7	4.4	3.9	3.6	5.1	8.3	11.0	13.5	15.4	17.4	19.2	19.9	20.0	19.8	18.6	15.6	13.0	11.3	10.8	10.6	10.0	3.6	20.0	11.4	24
18	8.9	7.7	7.1	6.6	6.2	6.0	5.8	5.9	6.9	8.6	10.5	12.5	13.2	13.3	13.2	13.0	13.3	13.4	11.2	9.3	8.9	8.2	8.0	7.6	5.8	13.4	9.4	24
19	7.2	6.3	6.1	6.0	6.1	5.4	4.7	4.2	4.6	5.8	6.9	7.7	9.0	9.5	8.4	9.5	10.0	10.0	9.4	7.9	7.1	7.1	7.4	7.5	4.2	10.0	7.2	24
20	7.6	7.6	7.4	7.0	6.8	6.4	6.4	6.6	6.8	6.7	7.1	7.2	7.2	7.3	8.0	8.8	9.0	8.0	5.5	5.9	6.6	7.4	6.3	6.6	5.5	9.0	7.1	24
21	5.7	5.5	5.9	5.4	4.8	4.2	4.1	4.6	6.1	6.0	5.7	6.7	6.9	7.5	8.2	8.9	10.0	8.3	5.1	1.4	0.3	-0.3	-0.5	-1.1	-1.1	10.0	5.0	24
22	-1.9	-2.5	-2.6	-3.4	-3.9	-4.2	-4.3	-2.6	2.7	5.8	8.1	9.4	10.9	11.6	11.8	12.7	12.1	11.6	8.4	3.3	3.1	3.3	3.3	3.1	-4.3	12.7	4.0	24
23	1.8	1.5	1.4	1.3	0.8	1.2	0.9	0.6	4.3	7.0	9.0	10.7	12.4	13.5	14.1	14.1	13.4	13.7	10.3	5.4	3.0	3.2	3.8	4.2	0.6	14.1	6.3	24
24	4.4	4.5	4.1	3.4	3.2	3.2	4.0	4.8	6.8	8.7	10.8	12.2	13.3	14.7	16.3	16.7	16.8	15.4	14.3	13.9	13.1	12.6	12.5	11.8	3.2	16.8	10.1	24
25	10.7	10.0	9.9	9.4	8.6	7.2	7.6	8.7	10.6	12.7	14.2	15.5	17.0	17.8	18.3	18.8	18.3	17.6	14.8	13.0	11.6	11.0	10.3	8.0	7.2	18.8	12.6	24
26	7.1	7.0	5.5	4.3	2.5	2.0	1.2	2.6	8.8	10.7	13.0	15.0	16.6	17.7	18.1	17.4	17.4	16.0	12.5	10.7	11.6	12.4	12.6	10.5	1.2	18.1	10.6	24
27	10.1	9.1	8.0	6.1	6.1	6.7	7.0	8.5	10.6	12.6	15.3	17.2	19.5	20.3	22.0	21.8	20.3	15.1	11.2	9.6	9.5	10.2	8.9	6.1	22.3	12.8	24	
28	8.4	10.4	10.2	7.1	8.1	7.9	7.7	9.1	10.7	15.0	17.6	19.9	22.0	23.3	24.2	24.4	24.3	23.5	20.5	18.1	15.9	15.1	14.2	13.2	7.1	24.4	15.5	24
29	12.3	7.5	5.5	4.7	4.6	3.4	2.5	4.7	10.9	13.8	16.5	19.2	20.5	22.3	24.1	24.2	24.1	22.9	16.4	11.4	10.2	9.1	8.1	7.4	2.5	24.2	12.8	24
30	8.8	9.8	10.6	11.1	11.8	12.3	11.1	10.4	10.0	11.1	11.9	13.0	14.7	15.7	16.3	16.8	16.4	14.6	13.2	12.4	10.9	8.9	8.3	7.3	7.3	16.8	12.0	24
HOURLY MAX	15.7	16.2	16.3	15.5	14.7	15.9	16.2	14.9	17.5	19.4	20.8	22.6	24.5	26.4	27.7	28.4	29.0	28.2	26.2	19.4	17.8	17.0	16.3	16.4				
HOURLY AVG	7.9	7.5	7.2	6.6	6.2	5.8	5.6	6.9	9.3	11.3	13.0	14.6	15.9	16.7	17.2	17.5	17.5	16.8	14.6	11.6	10.0	9.4	8.8	8.3				

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

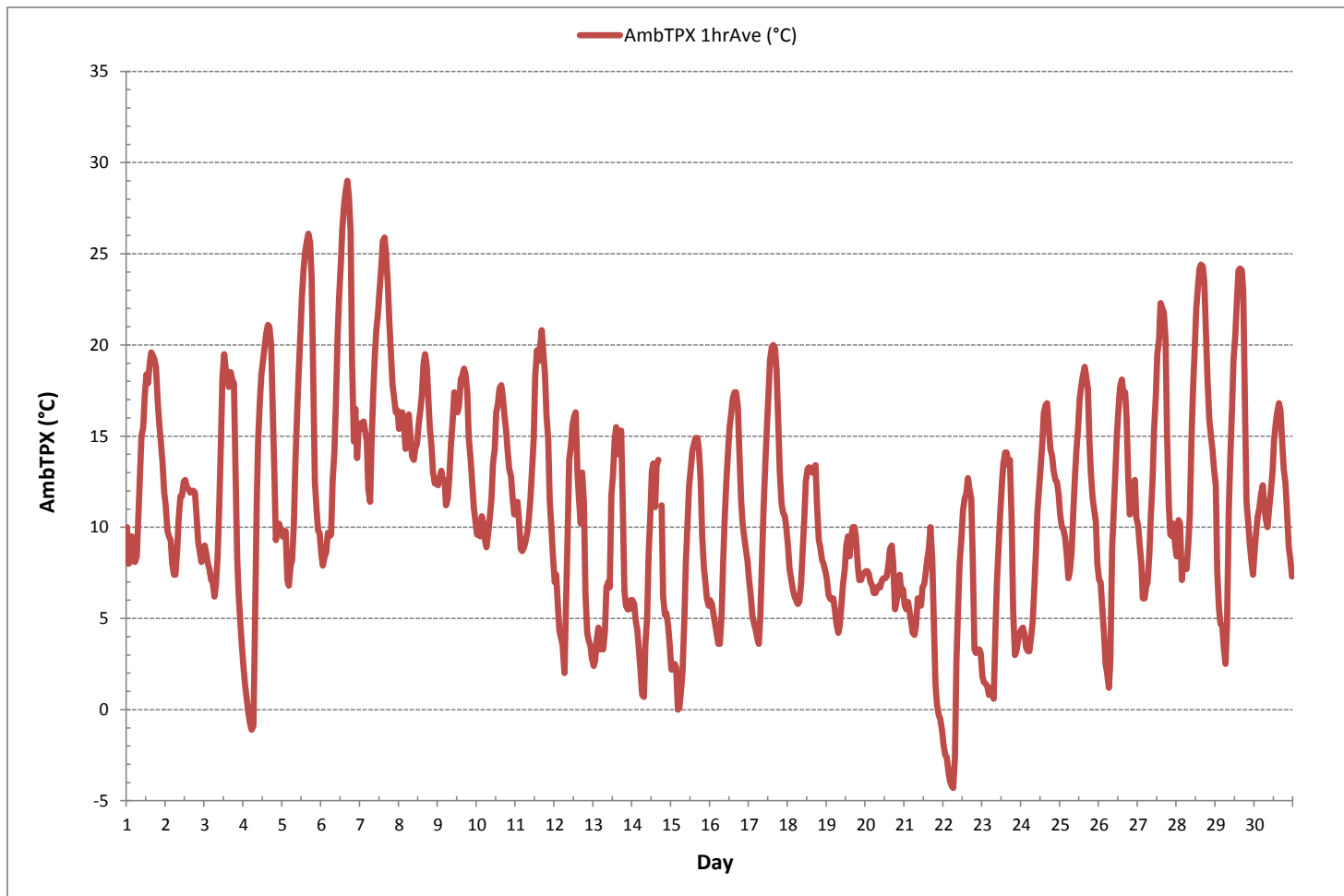
24 HR AVERAGES September 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-4.3 °C	@ HOUR	6	ON DAY	22
MAXIMUM 1-HR AVERAGE:	29.0 °C	@ HOUR	16	ON DAY	6
MAXIMUM 24-HR AVERAGE:	18.8 °C			ON DAY	7
OPERATIONAL TIME:					720 hrs
AMD OPERATION UPTIME:					100.0 %
STANDARD DEVIATION:	6.0	MONTHLY AVERAGE:			11.1 °C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



STATION TEMPERATURE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 842b Station - September 2017

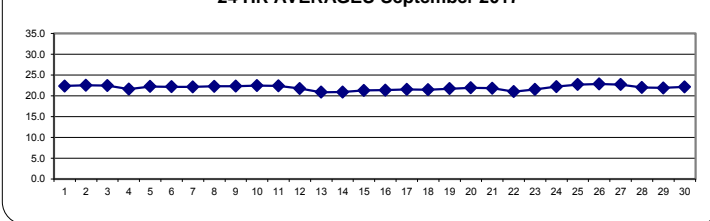
STATION TEMPERATURE Hourly Averages (StnTPX °C)

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	22.5	22.6	22.7	22.9	22.6	22.7	22.7	22.7	22.2	22.2	22.0	21.9	22.0	21.9	22.0	22.1	22.1	22.2	22.3	22.2	22.3	22.3	22.4	22.4	21.9	22.9	22.3	24		
2	22.5	22.5	22.7	22.7	22.6	22.7	22.9	22.5	22.7	22.4	22.5	22.4	22.3	22.3	22.4	22.3	22.3	22.3	22.3	22.4	22.5	22.7	22.7	22.7	22.3	22.9	22.5	24		
3	22.5	22.6	22.7	22.7	22.9	22.7	22.6	22.7	22.7	22.2	22.1	21.9	22.0	21.8	22.0	22.1	22.2	22.2	22.2	22.3	22.7	23.0	22.8	22.8	21.8	23.0	22.4	24		
4	22.3	21.9	21.3	20.8	20.3	19.9	19.5	19.4	20.2	21.8	22.2	22.0	21.9	21.9	22.0	22.1	22.2	22.1	22.1	22.2	22.4	22.5	22.5	22.7	19.4	22.7	21.6	24		
5	22.7	22.7	22.7	22.6	22.9	22.7	22.9	22.6	22.3	22.1	21.9	21.7	21.7	21.6	21.8	21.8	21.9	22.0	21.9	22.0	22.2	22.2	22.5	22.5	21.6	22.9	22.2	24		
6	22.6	22.5	22.6	22.7	22.6	22.6	22.7	22.5	22.3	22.1	21.8	21.8	21.6	21.7	21.5	21.7	21.6	21.8	21.9	21.9	22.1	22.2	22.3	22.4	21.5	22.7	22.1	24		
7	22.4	22.4	22.4	22.3	22.4	22.4	22.6	22.3	22.1	22.0	21.9	21.8	21.8	21.7	21.8	21.8	21.8	22.0	22.1	22.1	22.2	22.2	22.2	22.3	21.7	22.6	22.1	24		
8	22.3	22.4	22.3	22.2	22.4	22.3	22.3	22.2	22.4	22.3	22.4	22.2	22.2	22.2	22.1	22.1	22.1	22.0	22.0	22.2	22.3	22.4	22.6	22.4	22.0	22.6	22.3	24		
9	22.3	22.4	22.5	22.4	22.5	22.6	22.5	22.3	22.3	22.2	22.1	22.2	22.2	22.1	22.0	22.0	22.1	22.1	22.0	22.0	22.1	22.3	22.3	22.5	22.5	22.0	22.6	22.3	24	
10	22.7	22.7	22.7	22.9	22.9	22.6	22.8	22.7	22.8	22.4	22.4	22.2	22.2	22.1	22.3	22.1	22.2	22.1	22.3	22.3	22.4	22.5	22.4	22.5	22.1	22.9	22.5	24		
11	22.6	22.5	22.4	22.6	22.7	22.5	22.8	22.5	22.5	22.6	22.3	22.4	22.1	22.0	22.1	22.1	22.1	22.2	22.3	22.3	22.3	22.4	22.6	22.5	22.0	22.8	22.4	24		
12	22.7	22.7	22.9	22.8	22.4	22.1	21.6	21.3	21.7	22.5	22.3	21.9	22.0	22.1	22.1	22.2	20.5	21.0	20.9	20.2	20.5	20.8	21.0	21.1	20.2	22.9	21.7	24		
13	21.0	20.9	20.9	21.0	20.3	20.7	20.9	21.0	20.5	20.7	20.7	20.3	20.3	20.1	20.6	21.0	21.9	22.5	22.1	20.4	20.6	20.7	20.9	20.5	20.1	22.5	20.9	24		
14	20.7	20.8	20.6	20.9	21.0	21.1	21.0	20.7	20.6	20.9	20.2	20.2	20.4	20.8	20.7	21.2	22.2	21.6	21.3	20.4	20.6	21.0	21.1	20.9	20.2	22.2	20.9	24		
15	20.5	20.4	20.2	20.1	19.9	19.7	19.4	19.2	20.1	22.4	23.1	22.8	22.3	22.1	22.4	22.2	22.3	22.6	23.0	22.2	20.7	20.8	21.1	20.6	19.2	23.1	21.3	24		
16	20.8	21.0	21.0	21.0	20.9	20.8	20.7	20.7	20.9	20.1	20.4	21.1	21.9	22.7	22.2	22.2	22.1	22.2	23.2	22.7	21.3	20.2	20.9	21.0	20.1	23.2	21.3	24		
17	20.6	20.7	21.0	21.3	20.6	21.0	21.1	21.1	20.6	22.1	22.4	21.9	21.5	21.5	21.7	21.7	21.4	21.6	22.5	23.4	22.6	21.8	20.8	20.9	20.6	23.4	21.5	24		
18	20.8	20.9	21.0	20.9	20.8	20.8	21.1	20.7	20.8	20.6	20.7	20.9	21.7	22.2	22.4	22.5	22.1	22.1	22.7	21.8	21.5	21.7	22.0	21.5	20.6	22.7	21.4	24		
19	21.8	21.7	22.1	21.4	22.0	21.5	21.8	21.9	21.9	21.9	21.4	21.8	21.5	21.5	21.9	21.5	21.6	21.8	21.5	21.5	21.9	21.4	21.8	21.6	21.4	22.1	21.7	24		
20	21.6	21.9	21.4	22.0	21.4	21.7	21.9	22.0	21.4	21.7	22.2	22.3	22.1	22.1	22.4	21.8	21.1	22.1	22.0	22.1	22.2	22.3	21.7	21.1	22.4	21.9	24			
21	22.0	22.0	22.1	22.2	22.1	22.1	22.0	21.9	22.0	22.2	22.0	21.8	22.2	21.7	22.1	21.9	22.1	21.9	22.1	21.9	22.3	21.6	21.4	20.9	20.5	20.0	20.0	22.3	21.8	24
22	19.4	18.9	19.4	19.3	19.2	19.1	19.4	19.4	18.6	19.3	20.4	21.7	21.9	22.2	22.8	23.7	22.7	23.2	23.5	22.2	22.3	22.2	21.8	21.6	18.6	23.7	21.0	24		
23	21.3	21.0	20.7	20.4	20.1	20.0	19.9	19.7	19.8	20.6	21.7	22.0	22.1	22.7	23.0	22.5	23.4	22.5	23.2	22.1	22.2	22.2	21.9	21.8	19.7	23.4	21.5	24		
24	21.6	21.6	21.5	21.3	21.2	21.2	21.2	21.2	21.5	22.1	21.9	21.9	22.4	23.2	22.6	22.1	21.9	22.6	23.1	23.7	23.6	23.4	23.1	22.7	21.2	23.7	22.2	24		
25	22.2	21.8	22.3	22.0	22.0	22.3	21.9	22.3	21.6	21.7	22.5	23.5	22.3	22.7	23.9	23.0	23.5	23.7	24.8	24.4	23.5	22.6	22.0	22.2	21.6	24.8	22.7	24		
26	22.2	22.0	22.0	22.1	21.8	21.5	21.1	20.7	21.0	21.8	21.8	22.6	23.8	24.3	23.5	24.3	24.6	25.5	25.2	24.1	23.5	23.2	23.0	22.2	20.7	25.5	22.8	24		
27	22.1	22.0	22.4	21.8	22.0	22.3	22.1	22.2	21.9	22.3	22.8	24.2	21.9	23.9	24.8	25.4	25.8	21.1	22.5	23.3	22.6	21.8	21.7	21.7	21.1	25.8	22.7	24		
28	22.0	21.7	21.9	22.0	21.6	21.9	21.9	22.0	22.0	22.5	22.8	21.7	21.7	21.5	21.0	21.2	21.2	21.2	21.8	22.6	23.2	23.0	22.5	21.9	21.0	23.2	22.0	24		
29	22.0	21.7	22.1	22.2	22.1	22.0	21.7	21.4	21.8	21.9	22.5	22.3	21.7	21.8	21.2	21.0	21.3	21.7	22.2	22.7	21.8	22.1	21.9	21.8	21.0	22.7	21.9	24		
30	22.1	21.9	22.2	21.7	22.1	21.9	21.8	22.1	21.8	21.7	21.3	21.5	22.1	23.0	22.4	22.1	22.5	23.4	23.0	22.4	21.6	22.1	21.6	22.0	21.3	23.4	22.1	24		
HOURLY MAX	22.7	22.7	22.9	22.9	22.9	22.7	22.9	22.7	22.8	22.6	23.1	24.2	23.8	24.3	24.8	25.4	25.8	25.5	25.2	24.4	23.6	23.4	23.1	22.8						
HOURLY AVG	21.8	21.8	21.8	21.8	21.7	21.6	21.6	21.5	21.5	21.8	21.9	22.0	21.9	22.1	22.2	22.2	22.2	22.2	22.5	22.3	22.1	22.0	22.0	21.8						

STATUS FLAG CODES

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

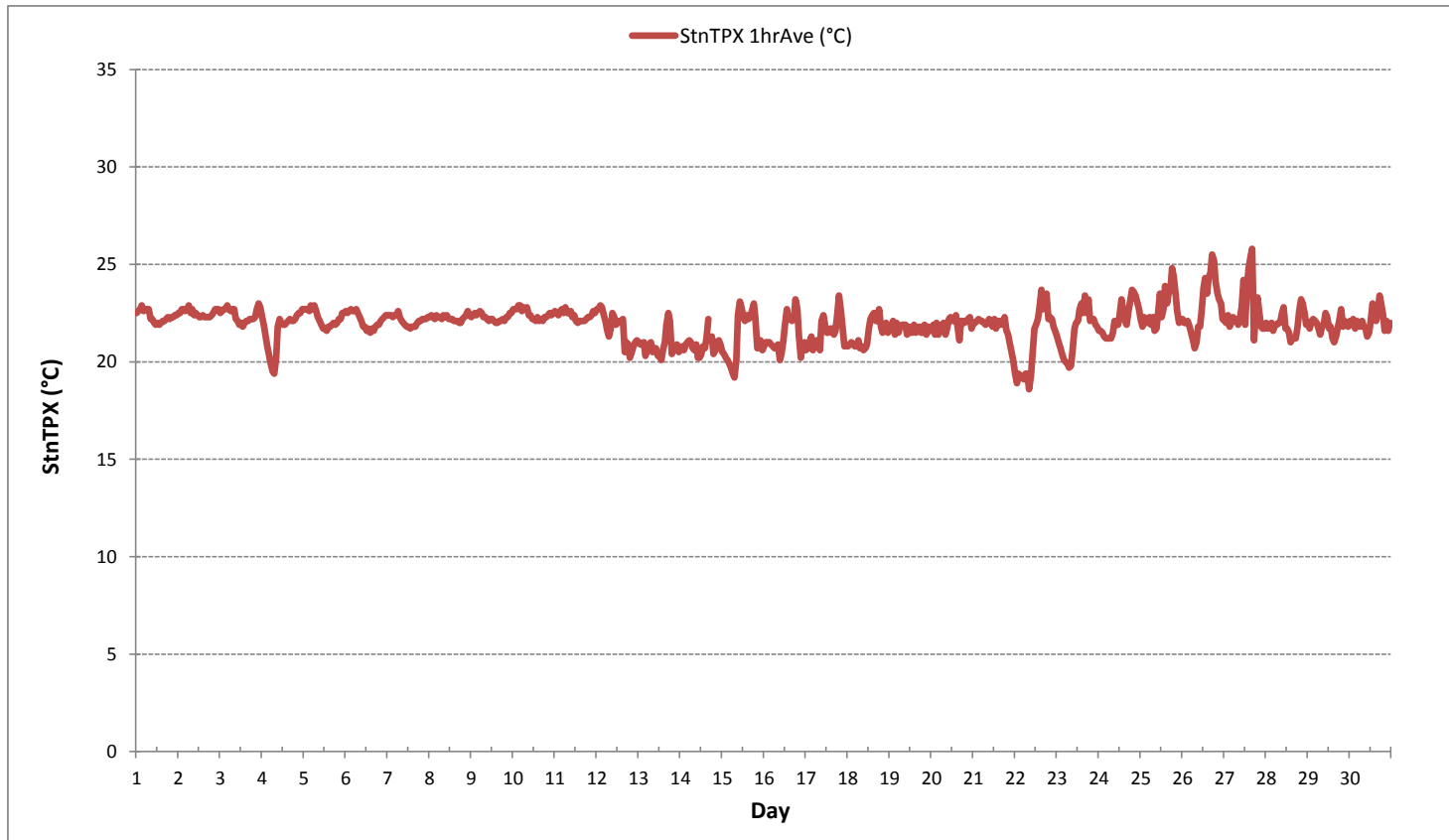
24 HR AVERAGES September 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	18.6 °C	@ HOUR	8	ON DAY	22
MAXIMUM 1-HR AVERAGE:	25.8 °C	@ HOUR	16	ON DAY	27
MAXIMUM 24-HR AVERAGE:	22.8 °C			ON DAY	26
OPERATIONAL TIME:				720	hrs
AMD OPERATION UPTIME:				100.0	%
STANDARD DEVIATION:	0.9	MONTHLY AVERAGE:			21.9 °C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE



API 100A Sulphur Dioxide Analyzer Calibration

Date: <u>September 15, 2017</u>	Barometer/B.P./units: <u>n/a</u> / <u>28.09</u> / <u>inHg</u>	Thermometer/Station Temp: <u>n/a</u> / <u>21.69</u> / <u>°C</u>
Company/Airshed: <u>PRAMP</u>	Weather Conditions: <u>Sunny</u>	
Location/Station Name: <u>842b</u>	Calibration Purpose: <u>routine monthly</u>	
Parameter: <u>Sulphur Dioxide</u>	Performed By/Reviewer: <u>Raja Abid</u> / <u>Tom Bourque</u>	
Start Time 24 hr. (mst): <u>9:44</u>	Cal Gas Expiry Date: <u>May 23, 2019</u>	
End Time 24 hr. (mst): <u>14:29</u>	Converter Model & s/n (if applicable): <u>n/a</u>	
Calibration Method: <u>Gas Dilution</u>		

Analyzer ID# or Serial Number: <u>838</u>	Range ppb: <u>500</u>	As Found C.F.: <u>1.011</u>
Last Calibration Date: <u>August 10, 2017</u>	As Found C.F.: <u>1.011</u>	New C.F.: <u>1.000</u>
Previous C.F.: <u>1.000</u>	New C.F.: <u>1.000</u>	

Calibration Standards: Low Flow Meter ID/Expiry Date: <u>Definer Low 129069 expires February 5, 2018</u> High Flow Meter ID/Expiry Date: <u>Definer High 128686 expires February 5, 2018</u> Calibrator ID/Expiry Date: <u>API id# 690 expires March 17, 2018</u> Cal Gas Cylinder I.D. #: <u>LL 119513</u> Cal Gas Conc. (ppm): <u>50.6</u>	Standard Calibration Points for Ranges <table border="1" style="margin: auto;"> <tr><th>Point</th><th>ppb</th></tr> <tr><td>High</td><td>380</td></tr> <tr><td>Mid</td><td>180</td></tr> <tr><td>Low</td><td>90</td></tr> </table>	Point	ppb	High	380	Mid	180	Low	90
Point	ppb								
High	380								
Mid	180								
Low	90								

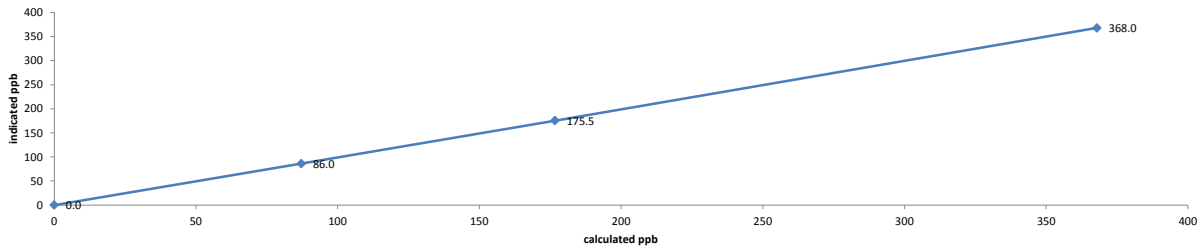
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration (ppb):	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total			
as found zero	5947	0.00	5947	0.0	0.2	n/a
as found high	5906	43.26	5949	367.9	364.0	1.011
adjusted zero	4900	0.00	4900	0.0	0.0	n/a
adjusted high	5906	43.26	5949	367.9	368.0	1.000
mid	5919	20.74	5940	176.7	175.5	1.007
low	5932	10.24	5942	87.2	86.0	1.014
calibrator zero	5947	0.00	5947	0.0	0.0	n/a
Average C.F. =						1.007

Linear Regression/Calibration Results:

LIMITS
Correlation Coefficient = <u>1.000</u> > or = 0.995
Slope = <u>0.999</u> 0.95-1.05
b (Intercept as % of full scale) = <u>0.15%</u> ± 3% F.S.
% change in C.F. from last cal = <u>-1.14%</u> ± 10%

API 100A Sulphur Dioxide Analyzer Calibration



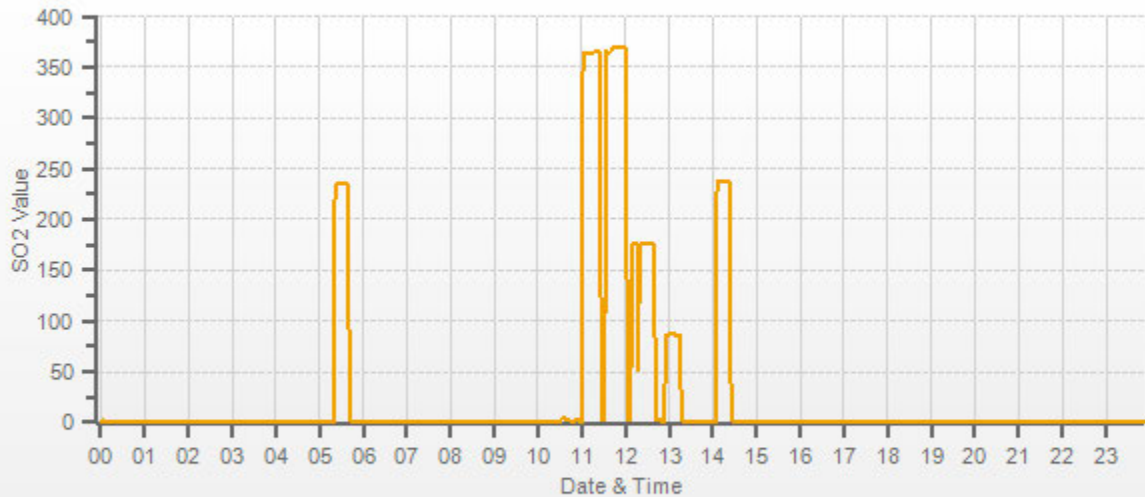
As found: Slope: <u>1.024</u> Offset: <u>19.6</u> Hvps: <u>685</u> Dcps: <u>2545</u> Rcell Temp: <u>49.5</u> Box Temp: <u>29.6</u> Pmt Temp: <u>7.3</u> Izs Temp: <u>60.1</u> Converter Temp: <u>n/a</u> Pres: <u>26.7</u> Samp Fl: <u>646</u> Pmt: <u>53.6</u> Uv Lamp: <u>2091.1</u> Lamp Ratio: <u>84.2</u> Expected Value: <u>233.0</u>	As left: Slope: <u>1.034</u> Offset: <u>19.9</u> Hvps: <u>686</u> Dcps: <u>2544</u> Rcell Temp: <u>49.5</u> Box Temp: <u>31.0</u> Pmt Temp: <u>7.2</u> Izs Temp: <u>60.2</u> Converter Temp: <u>n/a</u> Pres: <u>26.6</u> Samp Fl: <u>643</u> Pmt: <u>51.5</u> Uv Lamp: <u>2053.1</u> Lamp Ratio: <u>82.7</u> Expected Value: <u>237.1</u>
---	--

Comments:

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

Station temperature recorded from data logger.
 Barometric Pressure recorded from Environment Canada site.
 Sample line disconnected by mistake after as-found high. Adjusted high restarted at 11:39.
 Flow measurements after mid-point

SO2[ppb] Station: PRAMP_842 Daily: 17/09/15 Type: AVG 1 Min. [1 Min.]



— SO2[ppb]

TOTAL REDUCED SULPHUR



Thermo 431-TLE Total Reduced Sulphur Analyzer Calibration

Date: <u>September 15, 2017</u>	Barometer/B.P./units: <u>n/a</u> <u>28.09</u> <u>inHg</u>	Thermometer/Station Temp: <u>n/a</u> <u>21.69</u> <u>°C</u>
Company/Airshed: <u>PRAMP</u>	Weather Conditions: <u>Sunny</u>	
Location/Station Name: <u>842b</u>	Calibration Purpose: <u>routine monthly</u>	
Parameter: <u>Total Reduced Sulphur</u>	Performed By/Reviewer: <u>Raja Abid</u> <u>Tom Bourque</u>	
Start Time 24 hr. (mst): <u>11:07</u>	Cal Gas Expiry Date: <u>December 1, 2018</u>	
End Time 24 hr. (mst): <u>15:47</u>	Converter Model & s/n (if applicable): <u>CD NOVA-CDN 101s/n 534</u>	
Calibration Method: <u>Gas Dilution</u>		

Analyzer: ID# or Serial Number: <u>1162460023</u>	Range ppb: <u>100</u>
Last Calibration Date: <u>August 10, 2017</u>	As Found C.F.: <u>0.984</u>
Previous C.F.: <u>1.001</u>	New C.F.: <u>0.999</u>

Calibration Standards: Low Flow Meter ID/Expiry Date: <u>Definer Low 129069 expires February 5, 2018</u> High Flow Meter ID/Expiry Date: <u>Definer High 128686 expires February 5, 2018</u> Calibrator ID/Expiry Date: <u>API id# 829 expires January 27, 2018</u> Cal Gas Cylinder I.D. #: <u>BLM 001927</u> Cal Gas Conc. (ppm): <u>10.3</u>	Standard Calibration Points for Ranges <table border="1" style="margin: auto;"> <tr><td>Point</td><td>ppb</td></tr> <tr><td>High</td><td>78</td></tr> <tr><td>Mid</td><td>38</td></tr> <tr><td>Low</td><td>19</td></tr> </table>	Point	ppb	High	78	Mid	38	Low	19	SO2 Scrubber Check (10 minutes): Start/End Time 24 hr.: <u>11:51-12:07</u> SO2 Analyzer Range: <u>500</u> Target Concentration (ppb): <u>380</u> As Found Zero: <u>0.2</u> Analyzer Response: (ppb): <u>-0.2</u> Zero Corrected Result (ppb): <u>-0.4</u>
Point	ppb									
High	78									
Mid	38									
Low	19									

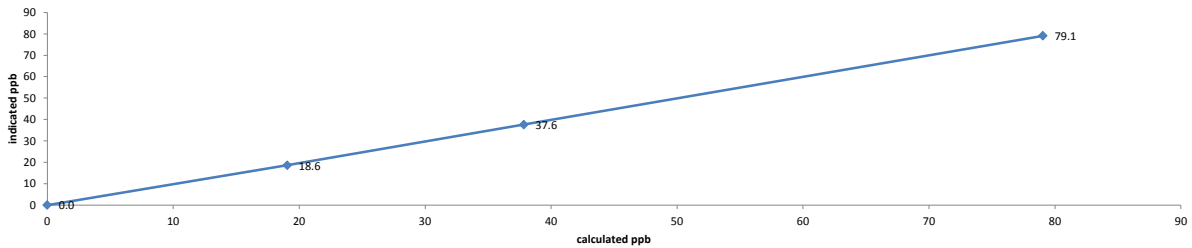
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	Concentration (ppb):		
as found zero	7434	0.00	7434	0.0	0.2	n/a
as found high	7408	57.30	7466	79.1	80.6	0.984
adjusted zero	7434	0.00	7434	0.0	0.0	n/a
adjusted high	7409	57.30	7466	79.1	79.1	0.999
mid	7446	27.45	7473	37.8	37.6	1.006
low	7456	13.82	7470	19.1	18.6	1.025
calibrator zero	7434	0.00	7434	0.0	0.0	n/a
Average C.F. =						1.010

Linear Regression/Calibration Results:

LIMITS	
Correlation Coefficient = <u>1.000</u>	> or = 0.995
Slope = <u>0.998</u>	0.95-1.05
b (Intercept as % of full scale) = <u>0.24%</u>	± 3% F.S.
% change in C.F. from last cal = <u>1.74%</u>	± 10%

Thermo 431-TLE Total Reduced Sulphur Analyzer Calibration



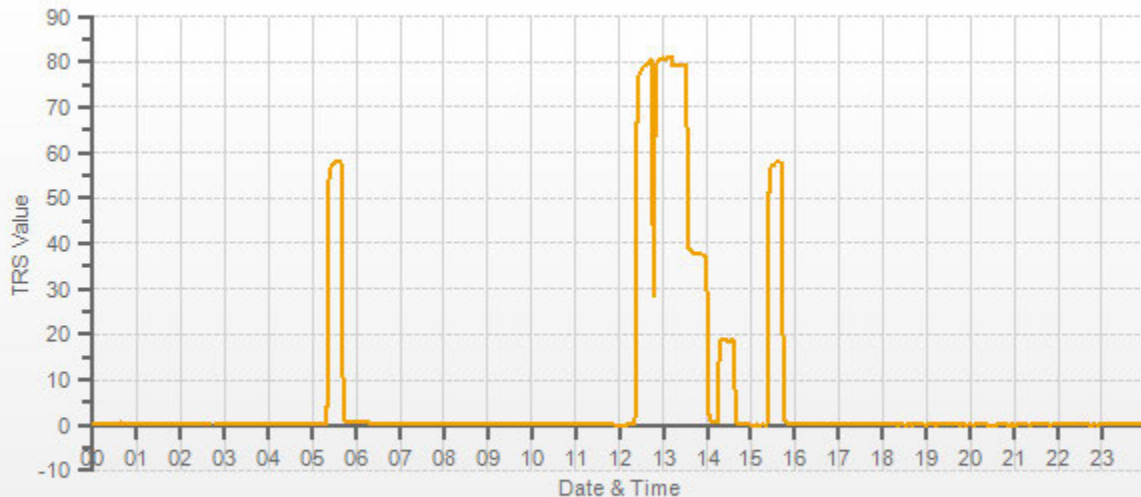
As found: Bkg: <u>2.50</u> Coef: <u>0.872</u> Pmt: <u>-725</u> Flash: <u>978</u> Internal: <u>30.3</u> Chamber: <u>44.8</u> Perm Oven Gas: <u>45.00</u> Perm Oven Heater: <u>44.11</u> Pressure: <u>666.3</u> Sample Flow: <u>0.408</u> Lamp Intensity: <u>89</u> Converter: <u>850</u> Converter Set: <u>850</u> Averaging Time: <u>120</u> Expected Value: <u>59.0</u>	As left: Bkg: <u>2.70</u> Coef: <u>0.853</u> Pmt: <u>-725.2</u> Flash: <u>976</u> Internal: <u>30.4</u> Chamber: <u>45.0</u> Perm Oven Gas: <u>45.00</u> Perm Oven Heater: <u>44.11</u> Pressure: <u>669.9</u> Sample Flow: <u>0.410</u> Lamp Intensity: <u>89</u> Converter: <u>850</u> Converter Set: <u>850</u> Averaging Time: <u>120</u> Expected Value: <u>57.9</u>
--	---

Comments:

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

Station temperature recorded from data logger.
 Barometric Pressure recorded from Environment Canada site.
 As-found restarted at 12:50 due to low gas pressure.
 Flow measurements after mid -point

TRS[ppb] Station: PRAMP_842 Daily: 17/09/15 Type: AVG 1 Min. [1 Min.]



— TRS[ppb]

TOTAL HYDROCARBON



Thermo 55i Methane/Non-Methane Analyzer Calibration

Date: September 18, 2017 Company/Airshed: PRAMP Location/Station Name: 842b Parameter: CH4 / NMHC / THC Start/End Time 24 hr. (mst): 17:07 / 19:52 Calibration Method: Gas Dilution	Barometer/B.P./units: Brunton 05535 expires December 5, 2017 929 millibars Thermometer/Station Temp: F.S. 160459244 expires May 18, 2018 22 °C Weather Conditions: Mix of sun and clouds Calibration Purpose: installation Performed By/Reviewer: Chris Wesson Tom Bourque Cal Gas Expiry Date: November 25, 2023
--	---

Analyzer: ID# or Serial Number: 1505664392 Measured Flow: 1.1 L/min Last Calibration Date: n/a Range ppm: 20 CH4/20 NMHC/40 THC	Correction Factors: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Previous C.F.:</th> <th>As Found C.F.:</th> <th>New C.F.:</th> </tr> </thead> <tbody> <tr> <td>CH₄ =</td> <td>n/a</td> <td>n/a</td> <td>0.999</td> </tr> <tr> <td>NMHC =</td> <td>n/a</td> <td>n/a</td> <td>0.995</td> </tr> <tr> <td>THC =</td> <td>n/a</td> <td>n/a</td> <td>0.997</td> </tr> </tbody> </table>		Previous C.F.:	As Found C.F.:	New C.F.:	CH ₄ =	n/a	n/a	0.999	NMHC =	n/a	n/a	0.995	THC =	n/a	n/a	0.997
	Previous C.F.:	As Found C.F.:	New C.F.:														
CH ₄ =	n/a	n/a	0.999														
NMHC =	n/a	n/a	0.995														
THC =	n/a	n/a	0.997														

Calibration Standards: Low Flow Meter ID/Expiry Date: Defender Low 153358 expires January 19, 2018 High Flow Meter ID/Expiry Date: Defender High 152571 expires January 19, 2018 Calibrator ID/Expiry Date: Sabio id# 17100415 expires May 16, 2018 Cal Gas Cylinder I.D. #: LL86139 CH4 Cylinder Conc. = 599.0 211.0 =C ₃ H ₈ Cylinder Conc. CH₄ expressed as C₃H₈ = 580.3 1179.3 =total CH4 equivalent	Standard Calibration Points for Analyzer Range of 20/20/40 ppm <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Point</th> <th>CH4</th> <th>NMHC</th> <th>THC</th> </tr> </thead> <tbody> <tr> <td>High</td> <td>13.00</td> <td>13.00</td> <td>26.00</td> </tr> <tr> <td>Mid</td> <td>7.00</td> <td>7.00</td> <td>14.00</td> </tr> <tr> <td>Low</td> <td>3.00</td> <td>3.00</td> <td>6.00</td> </tr> </tbody> </table>	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
Point	CH4	NMHC	THC														
High	13.00	13.00	26.00														
Mid	7.00	7.00	14.00														
Low	3.00	3.00	6.00														

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

Calibrator Flow Rates (cc/min)				Calculated						Correction Factors:		
Point	Diluent	Cal Gas	Total Flow	CH ₄ (ppm)	NMHC (ppm)	THC (ppm)	Indicated CH ₄ (ppm)	Indicated NMHC (ppm)	Indicated THC (ppm)	CH ₄	NMHC	THC
adjusted zero	2506	0.00	2506	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
adjusted high	2445	60.62	2506	14.49	14.04	28.53	14.50	14.10	28.60	0.999	0.995	0.997
mid	2476	30.62	2507	7.32	7.09	14.40	7.29	7.10	14.39	1.004	0.998	1.001
low	2494	15.85	2510	3.78	3.66	7.45	3.74	3.70	7.44	1.012	0.990	1.001
calibrator zero	2506	0.00	2506	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
Average C.F. =										1.005	0.995	1.000

Linear Regression/Calibration Results:

	CH ₄	NMHC	THC	LIMITS
Correlation Coefficient =	1.000	1.000	1.000	> or = 0.995
Slope =	1.002	1.004	1.003	0.95-1.05
b (Intercept as % of full scale) =	-0.12%	0.02%	-0.05%	± 3% F.S.
% change in C.F. from last cal =	n/a	n/a	n/a	n/a

As Left Instrument Diagnostics:

Interface Board Voltages: Bias Supply: -293.9 Temperatures: Detector Oven: 175.1 Filter: 175.0 Column Oven: 75.1 Internal: 33.4 Cylinder Pressures/reg.: Carrier: 650 50 Fuel: 900 50 Span Gas: 2000 14 Zero Air Generator: 45 Internal Pressures: Carrier: 35.1 Fuel: 46.4 Air: 23.7 FID Status: Status: LIT Counts: ~28000 Flame: 365.8 Det Base: 175.1 Flame and Power Stats: Last Power On: 18Sep2017@15:50 Flameouts: 1 Det Oven at Start: 114.2 Col Oven at Start: 61.2 Calibration History: Time: 01Jan1970@00:00 Type: n/a Status: n/a Check/Adjust: n/a CH ₄ Span Conc: n/a CH ₄ SP Ratio: n/a CH ₄ RT: n/a CH ₄ PK IDX: n/a CH ₄ PK HT: n/a NM Span Conc: n/a NM SP Ratio: n/a	Calibration History cont'd: Crucial Settings: NM Peak Area: n/a Methane Start: 8.0 Methane End: 16.0 Backflush: 18.0 NMHV Start: 25.0 NMHC End: 54.0 Date: 18Sep2017 Time: 16:50 CH ₄ PK HT: 0 CH ₄ RT: 13.4 CH ₄ Baseline: 50 CH ₄ LOD: 9 CH ₄ SD: 3 CH ₄ CONC: 0.00 NM PK HT: 0 NM Peak Area: 0 NM CONC: 0.00 NM Base Start: 48 NM Base End: 61 NM LOD: 11 NM Start IDX: 52 NM End IDX: 50 NM Max Slope: 1.4e+00 NM Min Slope: -7.0e-01 NM PT Count: 0 Previous CH ₄ : 10.32 Previous NMHC: 11.1 Previous THC: 21.44 New CH ₄ : 10.32 New NMHC: 11.10 New THC: 21.44	Run History>1: Time: 16:50 CH ₄ PK HT: 0 CH ₄ RT: 13.4 CH ₄ Baseline: 50 CH ₄ LOD: 9 CH ₄ SD: 3 CH ₄ CONC: 0.00 NM PK HT: 0 NM Peak Area: 0 NM CONC: 0.00 NM Base Start: 48 NM Base End: 61 NM LOD: 11 NM Start IDX: 52 NM End IDX: 50 NM Max Slope: 1.4e+00 NM Min Slope: -7.0e-01 NM PT Count: 0 Previous CH ₄ : 10.32 Previous NMHC: 11.1 Previous THC: 21.44 New CH ₄ : 10.32 New NMHC: 11.10 New THC: 21.44
--	---	--

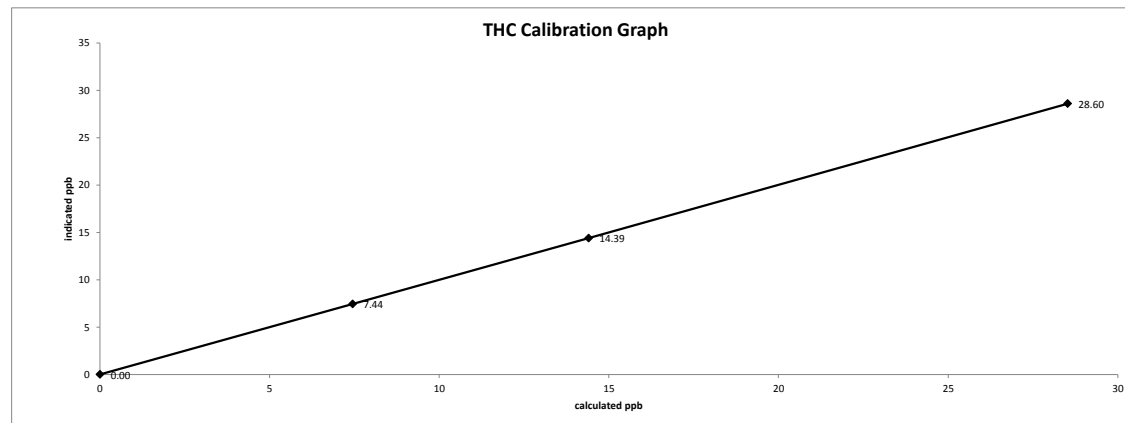
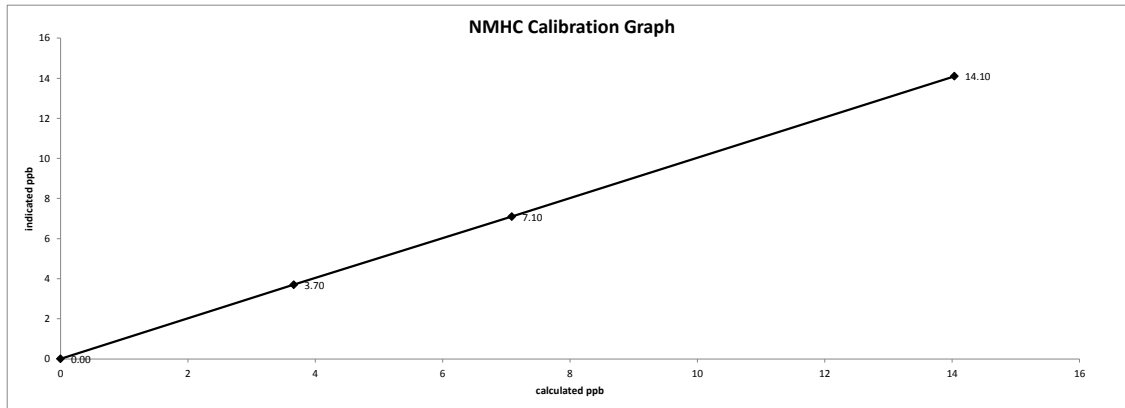
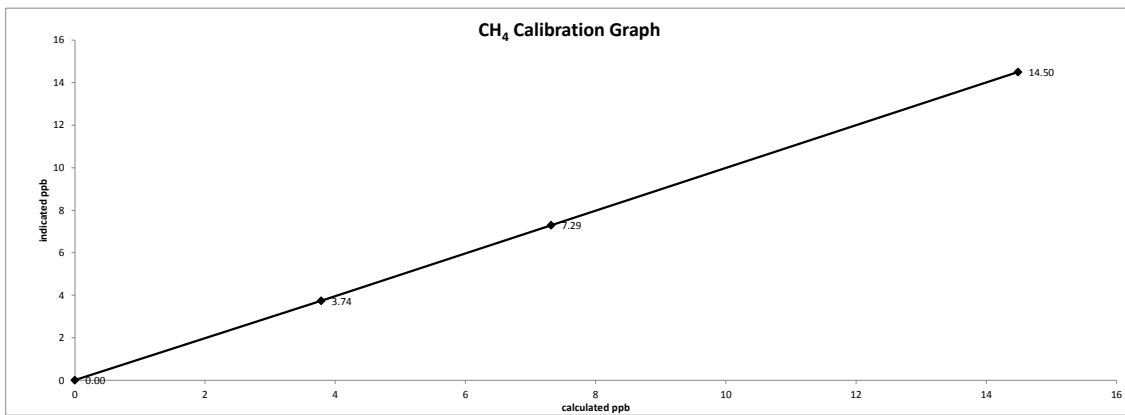
Comments:
 The analyzer sample inlet filter was changed.

The manifold blower was found to be working normally.

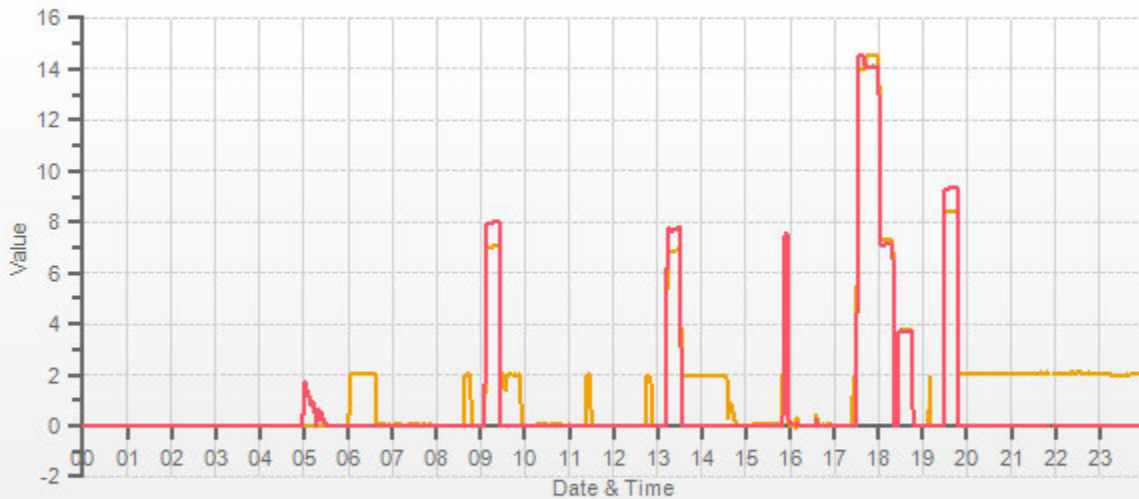
Flow measurements after mid -point

Date: September 18, 2017
Company/Airshed: PRAMP
Location/Station Name: 842b

Start/End Time 24 hr. (mst): 17:07 / 19:52
Calibration Purpose: installation
Calibration Method: Gas Dilution



Station: PRAMP_842 Daily: 17/09/18 Type: AVG 1 Min. [1 Min.]



— CH4[ppm] — NMHC[ppm]



Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	September 20, 2017	Barometer/B.P./units:	Brunton 05535 expires December 5, 2017	932	millibars
Company/Airshed:	PRAMP	Thermometer/Station Temp:	F.S. 160459244 expires May 18, 2018	22	°C
Location/Station Name:	842b	Weather Conditions:	Cloudy/Overcast		
Parameter:	CH4 / NMHC / THC	Calibration Purpose:	post repair		
Start/End Time 24 hr. (mst):	13:24 / 16:29	Performed By/Reviewer:	Chris Wesson	Tom Bourque	
Calibration Method:	Gas Dilution	Cal Gas Expiry Date:	November 25, 2023		

Analyzer:		Correction Factors:		
ID# or Serial Number:	1505664392	Previous C.F.:	As Found C.F.:	New C.F.:
Measured Flow:	1.2 L/min	CH ₄ =	n/a	1.003
Last Calibration Date:	n/a	NMHC =	n/a	1.001
Range ppm:	20 CH4/20 NMHC/40 THC	THC =	n/a	1.002

Calibration Standards:		Standard Calibration Points for Analyzer Range of 20/20/40 ppm			
Low Flow Meter ID/Expiry Date:	Defender Low 153358 expires January 19, 2018	Point	CH4	NMHC	THC
High Flow Meter ID/Expiry Date:	Defender High 152571 expires January 19, 2018	High	13.00	13.00	26.00
Calibrator ID/Expiry Date:	Sabio id# 17100415 expires May 16, 2018	Mid	7.00	7.00	14.00
Cal Gas Cylinder I.D. #:	LL86139	Low	3.00	3.00	6.00
CH4 Cylinder Conc. =	599.0 211.0 =C ₂ H ₆ Cylinder Conc.				
CH ₄ expressed as C ₂ H ₆ =	580.3 1179.3 =total CH4 equivalent				

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

Calibrator Flow Rates (cc/min)				Calculated						Correction Factors:		
Point	Diluent	Cal Gas	Total Flow	CH ₄ (ppm)	NMHC (ppm)	Calculated THC (ppm)	Indicated CH ₄ (ppm)	Indicated NMHC (ppm)	Indicated THC (ppm)	CH ₄	NMHC	THC
adjusted zero	2493	0.00	2493	0.00	0.00	0.00	0.02	0.00	0.03	n/a	n/a	n/a
adjusted high	2430	60.71	2491	14.60	14.14	28.74	14.58	14.12	28.71	1.003	1.001	1.002
mid	2466	30.54	2497	7.33	7.10	14.42	7.28	7.13	14.42	1.009	0.995	1.002
low	2483	15.82	2499	3.79	3.67	7.46	3.74	3.72	7.47	1.019	0.987	1.003
calibrator zero	2493	0.00	2493	0.00	0.00	0.00	0.01	0.00	0.02	n/a	n/a	n/a
Average C.F. =										1.010	0.995	1.003

Linear Regression/Calibration Results:

	CH ₄	NMHC	THC	LIMITS
Correlation Coefficient =	1.000	1.000	1.000	> or = 0.995
Slope =	0.998	0.998	0.998	0.95-1.05
b (Intercept as % of full scale) =	-0.07%	0.15%	0.06%	± 3% F.S.
% change in C.F. from last cal =	n/a	n/a	n/a	n/a

As Left Instrument Diagnostics:

Interface Board Voltages:	Bias Supply:	-293.9	Calibration History cmt'd:	NM Peak Area:	n/a
Temperatures:	Detector Oven:	175.0	Crucial Settings:	Methane Start:	n/a
	Filter:	175.0		Methane End:	n/a
	Column Oven:	75.1		Backflush:	n/a
Cylinder Pressures/reg.:	Internal:	32.5		NMHV Start:	n/a
	Carrier:	600 50		NMHC End:	n/a
	Fuel:	800 50	Run History>1:	Date:	20Sep2017
	Span Gas:	2000 15		Time:	13:01
Internal Pressures:	Zero Air Generator:	55		CH ₄ PK HT:	0
	Carrier:	35.1		CH ₄ RT:	13.6
	Fuel:	46.4		CH ₄ Baseline:	-2
FID Status:	Air:	23.7		CH ₄ LOD:	10
	Status:	LIT		CH ₂ SD:	3
	Counts:	~30000		CH ₄ CONC:	0.00
	Flame:	367.9		NM PK HT:	0
Flame and Power Stats:	Det Base:	175.0		NM Peak Area:	0
	Last Power On:	20Sep2017@10:41		NM CONC:	0.00
	Flameouts:	2		NM Base Start:	-2
	Det Oven at Start:	102.2		NM Base End:	8
Calibration History:	Col Oven at Start:	56.0		NM LOD:	11
	Time:	01Jan1970@00:00		NM Start IDX:	4
	Type:	n/a		NM End IDX:	54
	Status:	n/a		NM Max Slope:	8.8e-01
	Check/Adjust:	n/a		NM Min Slope:	-9.0e-01
	CH ₄ Span Conc:	n/a		NM PT Count:	0
	CH ₄ SP Ratio:	n/a	Expected Values:	Previous CH ₄ :	10.32
	CH ₄ RT:	n/a		Previous NMHC:	11.1
	CH ₄ PK IDX:	n/a		Previous THC:	21.44
	CH ₄ PK HT:	n/a		New CH ₄ :	8.76
NM Span Conc:	n/a		New NMHC:	10.08	
NM SP Ratio:	n/a		New THC:	18.85	

Comments:

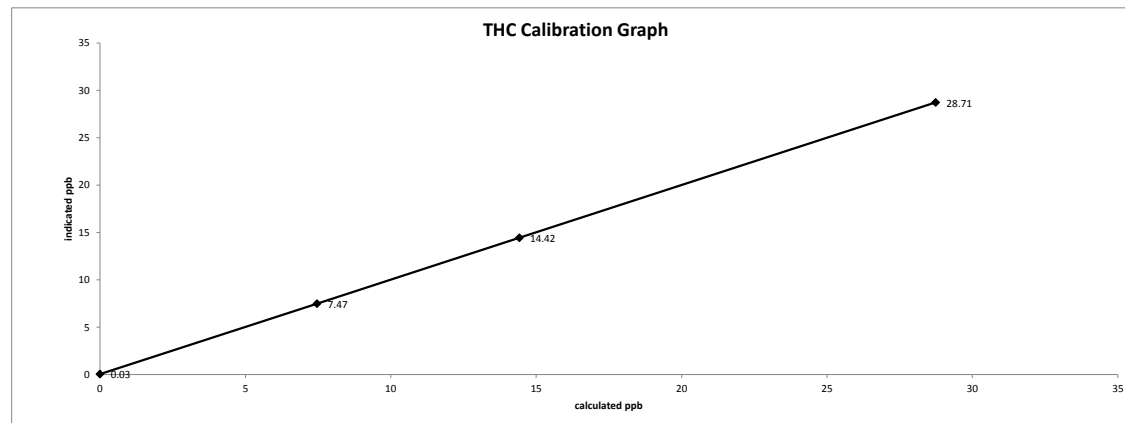
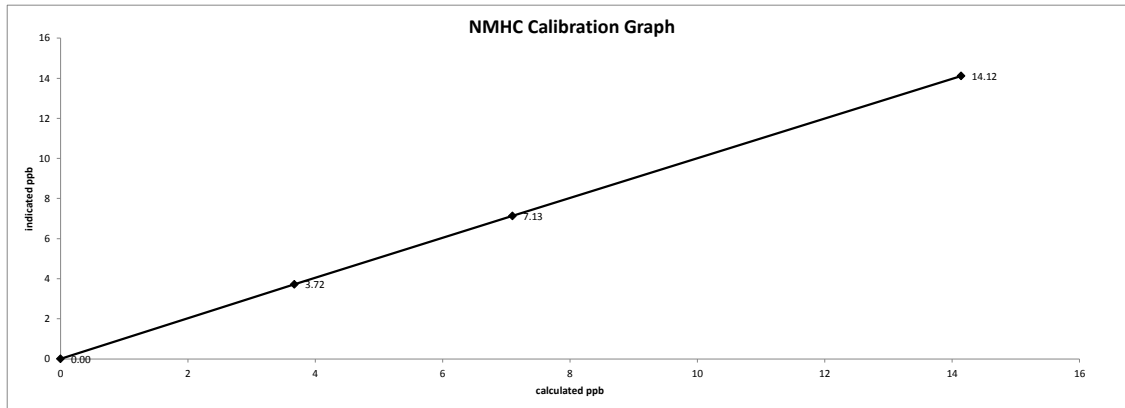
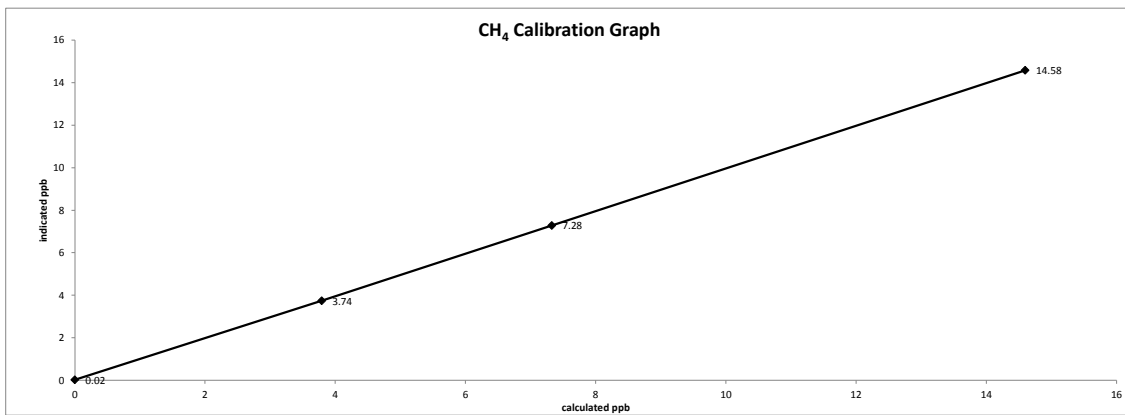
The manifold blower was found to be working normally.

Post-repair following verification of valve action and pressure adjustments

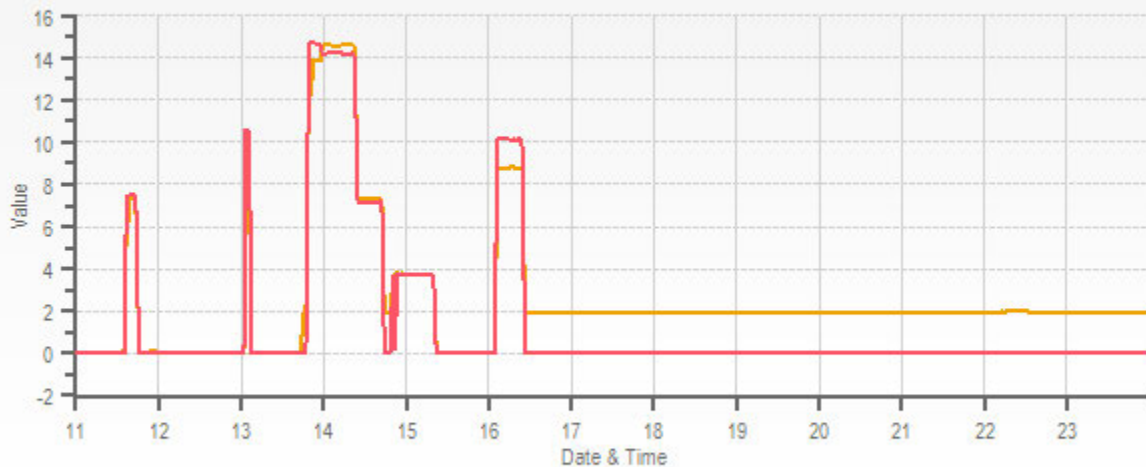
Flow measurements after mid -point

Date: September 20, 2017
Company/Airshed: PRAMP
Location/Station Name: 842b

Start/End Time 24 hr. (mst): 13:24 / 16:29
Calibration Purpose: post repair
Calibration Method: Gas Dilution



Station: PRAMP_842 Periodically: 2017/09/20 11:00-2017/09/20 23:59 Type: AVG 1 Min. [1 Min.] [RAW]



— CH4[ppm] — NMHC[ppm]



Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	September 28, 2017	Barometer/B.P./units:	Brunton 05535 expires December 5, 2017	947	millibars
Company/Airshed:	PRAMP	Thermometer/Station Temp:	F.S. 160459244 expires May 18, 2018	22	°C
Location/Station Name:	842b	Weather Conditions:	Clear		
Parameter:	CH4 / NMHC / THC	Calibration Purpose:	Installation		
Start/End Time 24 hr. (mst):	07:01 / 09:57	Performed By/Reviewer:	Chris Wesson	Tom Bourque	
Calibration Method:	Gas Dilution	Cal Gas Expiry Date:	November 25, 2023		

Analyzer:	ID# or Serial Number: 1236656188	Correction Factors:		
Measured Flow: 1.16 L/min	Last Calibration Date: n/a	Previous C.F.:	As Found C.F.:	New C.F.:
Range ppm: 20 CH4/20 NMHC/40 THC		CH ₄ = n/a	n/a	1.000
		NMHC = n/a	n/a	0.999
		THC = n/a	n/a	0.999

Calibration Standards:

Low Flow Meter ID/Expiry Date: Defender Low 153358 expires January 19, 2018
 High Flow Meter ID/Expiry Date: Defender High 152571 expires January 19, 2018
 Calibrator ID/Expiry Date: Sabio id# 17100415 expires May 16, 2018
 Cal Gas Cylinder I.D. #: LL86139
 CH₄ Cylinder Conc.: 599.0 211.0 =C₂H₆ Cylinder Conc.
 CH₄ expressed as C₂H₆: 580.3 1179.3 =total CH₄ equivalent

Point	CH ₄	NMHC	THC
High	13.00	13.00	26.00
Mid	7.00	7.00	14.00
Low	3.00	3.00	6.00

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

Calibrator Flow Rates (cc/min)				Calculated						Correction Factors:		
Point	Diluent	Cal Gas	Total Flow	CH ₄ (ppm)	NMHC (ppm)	THC (ppm)	Indicated CH ₄ (ppm)	Indicated NMHC (ppm)	Indicated THC (ppm)	CH ₄	NMHC	THC
adjusted zero	2497	0.00	2497	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
adjusted high	2437	60.95	2498	14.62	14.16	28.77	14.61	14.17	28.80	1.000	0.999	0.999
mid	2470	30.65	2501	7.34	7.11	14.45	7.37	7.03	14.43	0.996	1.011	1.001
low	2489	15.91	2505	3.80	3.69	7.49	3.82	3.58	7.41	0.996	1.029	1.011
calibrator zero	2497	0.00	2497	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
										Average C.F. =		
										0.997 1.013 1.004		

Linear Regression/Calibration Results:

	CH ₄	NMHC	THC	LIMITS
Correlation Coefficient =	1.000	1.000	1.000	> or = 0.995
Slope =	0.999	1.003	1.002	0.95-1.05
b (Intercept as % of full scale) =	0.07%	-0.30%	-0.10%	± 3% F.S.
% change in C.F. from last cal =	n/a	n/a	n/a	n/a

As Left Instrument Diagnostics:

Interface Board Voltages:	Bias Supply: -288.0	Calibration History cmt'd:	NM Peak Area: 88489
Temperatures:	Detector Oven: 175.0	Crucial Settings:	Methane Start: 8.0
	Filter: 175.1		Methane End: 16.0
	Column Oven: 75.0		Backflush: 18.0
	Internal: 31.5		NMHV Start: 24.0
Cylinder Pressures/reg.:	Carrier: 2500 50	Run History>1:	NMHC End: 56.0
	Fuel: 500 50		Date: 28Sep2017
	Span Gas: 1800 15		Time: 09:09
	Zero Air Generator: 45		CH ₄ PK HT: 0
Internal Pressures:	Carrier: 30.5		CH ₄ RT: 12.0
	Fuel: 40.0		CH ₄ Baseline: 1495
	Air: 24.9		CH ₄ LOD: 45
FID Status:	Status: LIT		CH ₄ SD: 15
	Counts: ~17500		CH ₄ CONC: 0.00
	Flame: 346.4		NM PK HT: 0
	Det Base: 175.0		NM Peak Area: 0
Flame and Power Stats:	Last Power On: 27Sep2017@15:41		NM CONC: 0.00
	Flameouts: 1		NM Base Start: 1408
	Det Oven at Start: 170.0		NM Base End: 1359
	Col Oven at Start: 74.5		NM LOD: 17
Calibration History:	Time: 28Sep2017@07:37	Expected Values:	NM Start IDX: 66
	Type: Span		NM End IDX: 37
	Status: Good		NM Max Slope: 2.0e-01
	Check/Adjust: Adjust		NM Min Slope: -1.2e+00
	CH ₄ Span Conc: 14.62		NM PT Count: 0
	CH ₄ SP Ratio: 0.000773		Previous CH ₄ : 8.76
	CH ₄ RT: 12.6		Previous NMHC: 10.08
	CH ₄ PK IDX: 23		Previous THC: 18.85
	CH ₄ PK HT: 18923		New CH ₄ : 9.04
	NM Span Conc: 14.16		New NMHC: 10.11
	NM SP Ratio: 0.00016		New THC: 19.15

Comments:

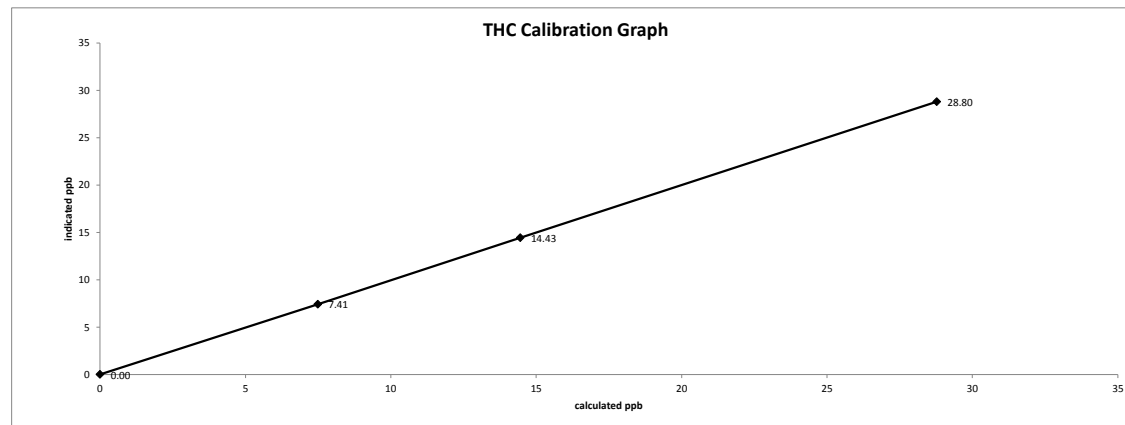
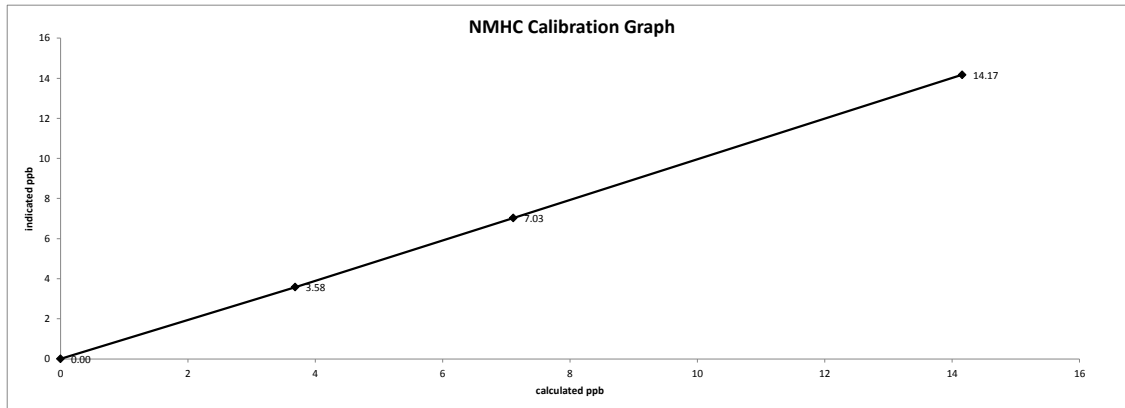
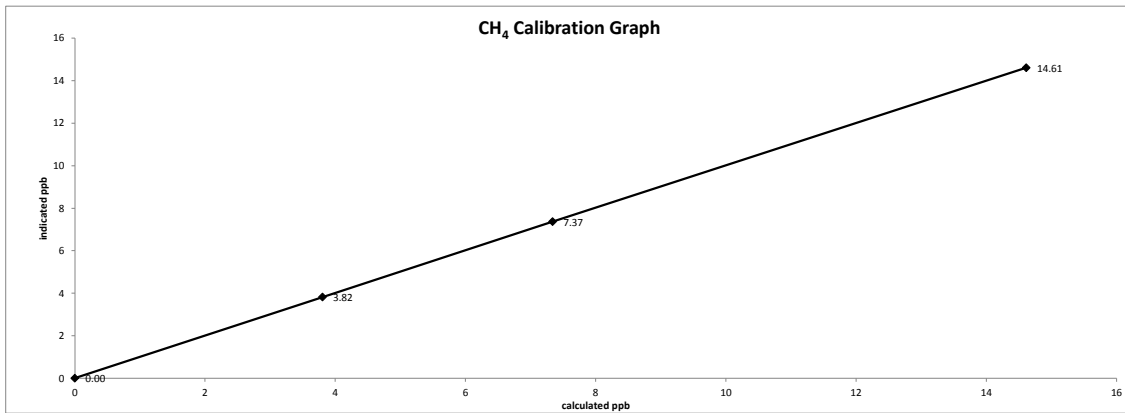
The manifold blower was found to be working normally.

Previous station 55i analyzer malfunctioned, this was a calibration on the new analyzer that replaced the failed analyzer.

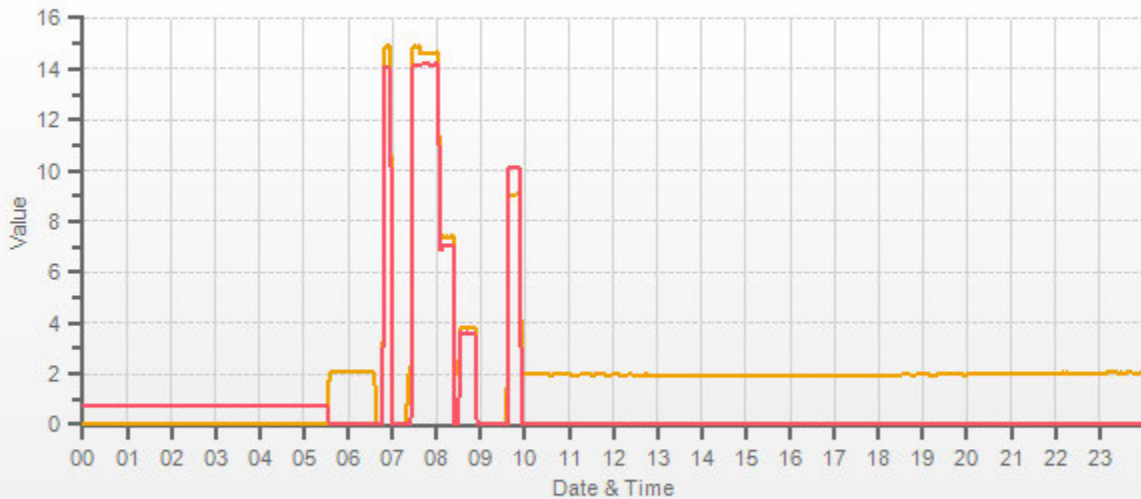
Flow measurements after mid-point

Date: September 28, 2017
Company/Airshed: PRAMP
Location/Station Name: 842b

Start/End Time 24 hr. (mst): 07:01 / 09:57
Calibration Purpose: installation
Calibration Method: Gas Dilution



Station: PRAMP_842 Daily: 17/09/28 Type: AVG 1 Min. [1 Min.]



— CH4[ppm]

— NMHC[ppm]

WIND SYSTEM

Meteorological Sensor Audit/Calibration

Location Information

Company: PRAMP	Performed By: Chris Wesson
Audit Location: 842b	Reviewed By: Tom Bourque
Audit Date: August 30, 2017	Start /EndTime (mst): 10:50 / 11:20
Calibration Purpose: installation	Weather Conditions: Cloudy/Overcast

Wind Sensor Information

Sensor ID Data:	Sensor Outputs:
Sensor Make: RM Young	Velocity Voltage Output Range: 0-1V
Sensor Model: 05305VK	Velocity Unit Output Range: 0-200kmh
Serial #: 124638	Direction Voltage Output Range: 0-1V
Previous Cal/Audit Date: n/a or unknown	Direction Unit Output Range: 0-360°

Wind Calibrator Information

Calibrator Make/ Model: RM Young	Serial #: CA 4039
Maxxam Unit ID #: n/a	Certification Date: February 24, 2017

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

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.1	0.1	-
1000	18.4	18.4	18.5	1.000
2000	36.9	36.7	36.7	1.004
3000	55.3	55.1	55.1	1.004
4000	73.7	73.4	73.4	1.004
5000	92.2	91.8	91.8	1.004
6000	110.6	110.2	110.2	1.003
7000	129.0	128.6	128.6	1.003
8000	147.4	147.1	147.0	1.003
9000	165.9	165.5	165.5	1.002
10000	184.3	184.2	184.1	1.001
The audit meets AMD requirements.			Average Correction Factor=	1.003

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	353	0.5	2.0	1.3
30	330	28	329	2.0	1.0	1.5
60	300	59	299	1.0	1.0	1.0
90	270	89	269	1.0	1.0	1.0
120	240	118	239	2.0	1.0	1.5
150	210	149	209	1.0	1.0	1.0
180	180	178	179	2.0	1.0	1.5
210	150	208	150	2.0	0.0	1.0
240	120	238	119	2.0	1.0	1.5
270	90	268	89	2.0	1.0	1.5
300	60	298	59	2.0	1.0	1.5
330	30	328	29	2.0	1.5	1.8
355	0	353	0	2.0	0.4	1.2
The audit meets AMD requirements.				Average Absolute Degrees Difference=		1.3

Comments:

CALIBRATORS

Company Maxxam Operator: Mike

Calibrator:		Flow Measurement Device:	
Make/Model	<u>API 700</u>	Make/Model	<u>Bios Defender 530</u>
Serial Number	<u>690</u>	Serial Number	<u>HI148944 Lo 152019</u>
Last Verification Date	<u>March 30, 2016\</u>	Temperature (°C)	<u>23.3</u>
NO Cylinder S/N	<u>EY0000597</u>	Barometric Pressure	<u>704.3mmHg</u>
NO [PPM]	<u>49.0 NOx [PPM]</u>		<u>49.0</u>
Expiry Date	<u>December 8, 2019</u>		

Dilution Flow (sccm)			
Pt. #1	<u>4898</u>	Pt. #2	<u>4942</u>
		Pt. #3	<u>4953</u>
Gas Flow (sccm)			
Pt. #1	<u>79.2</u>	Pt. #2	<u>38.6</u>
		Pt. #3	<u>19.3</u>

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
4977	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	Limit ± 10%	
4977	79.2	0.7792	0.7792	0.7841	0.0012	0.7854	1%	1%
4981	38.6	0.3797	0.3797	0.3813	0.0006	0.3819	0%	1%
492	19.3	0.1902	0.1902	0.1927	0.0002	0.1929	1%	1%
Absolute Average Percent Difference							1%	1%

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

NO		LIMITS		NOx	
Correlation=	1.0000	≥ 0.990		Correlation=	1.0000
m (Slope)=	1.0056	0.90-1.10		m (Slope)=	1.0073
b (Intercept % of FS)=	0.0357	± 3% F.S.		b (Intercept % of FS)=	0.0304

Flow	O ₃ Conc	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
4977	0.000	0.0000	0.7928	0.0014	0.7941	NO ₂	% Diff. Limit
4977	0.500	0.5448	0.2480	0.5391	0.7871	-1%	± 10%
4977	0.250	0.2862	0.5066	0.2861	0.7926	-1%	± 10%
4977	0.100	0.1221	0.6707	0.1193	0.7914	-3%	± 10%
Absolute Average Percent Difference						2%	± 10%

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

NO ₂		LIMITS	
Correlation=	1.0000	≥ 0.995	
m (Slope)=	0.9894	0.90-1.10	
b (Intercept % of FS)=	0.0719	± 3% F.S.	

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

COMMENTS: Gas has ~50ppm SO2

Auditor: Shea Beaton
Operator Signature: [Signature]

Date: March 17, 2017
Location: McIntyre Center Edmonton

Company Maxxam **Operator:** Chris

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

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

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

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

NO		LIMITS		NOx	
Correlation=	1.0000	≥ 0.990		Correlation=	1.0000
m (Slope)=	1.0010	0.90-1.10		m (Slope)=	1.0027
b (Intercept % of FS)=	-0.0604	± 3% F.S.		b (Intercept % of FS)=	-0.0652

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

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

NO ₂		LIMITS	
Correlation=	1.0000	≥ 0.995	
m (Slope)=	0.9931	0.90-1.10	
b (Intercept % of FS)=	0.1220	± 3% F.S.	

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

COMMENTS: _____

Auditor: Shea Beaton Date: January 27, 2017

Operator Signature: [Signature] Location: McIntyre Center Edmonton

Company <u>Maxxam</u>		Operator: <u>Micheal Espiritu</u>	
Calibrator:		Flow Measurement Device:	
Make/Model	<u>Sabio 2010</u>	Make/Model	<u>Mesa Defender 530</u>
Serial Number	<u>17100415</u>	Serial Number	<u>L-152019 H-148944</u>
Last Verification Date	<u>May 2016</u>	Temperature (°C)	<u>25.0 C</u>
NO Cylinder S/N	<u>EY0000597</u>	Barometric Pressure	<u>697 mmhg</u>
NO [PPM]	<u>49.0</u>	NOx [PPM]	<u>49.0</u>
Expiry Date	<u>December 2019</u>		

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

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
4996	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
5029	80.3	0.784	0.783	0.808	-0.013	0.794	3%	1%
5054	38.8	0.376	0.376	0.392	-0.006	0.386	4%	3%
5051	19.5	0.189	0.189	0.196	-0.003	0.193	4%	2%
Absolute Average Percent Difference							4%	2%

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

NO	LIMITS	NOx
Correlation= 1.0000	≥ 0.990	Correlation= 1.0000
m (Slope)= 1.0311	0.90-1.10	m (Slope)= 1.0140
b (Intercept % of FS)= 0.1350	± 3% F.S.	b (Intercept % of FS)= 0.1531

Flow	O ₂ Conc (LC)	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
5029	0.000	0.000	0.803	-0.013	0.790	NO ₂	% Diff. Limit
5029	1.508	0.568	0.235	0.552	0.787	-1%	± 10%
5029	0.882	0.312	0.491	0.298	0.789	0%	± 10%
5029	0.390	0.108	0.695	0.095	0.789	0%	± 10%
Absolute Average Percent Difference						0%	± 10%

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

NO₂	LIMITS
Correlation= 1.0000	≥ 0.995
m (Slope)= 0.9945	0.90-1.10
b (Intercept % of FS)= -1.2646	± 3% F.S.

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

COMMENTS: Contains 50.4 ppm SO₂.

Auditor: Al Clark
Operator Signature:

Date: May 16, 2017
Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2016-086CGA

Company: Maxxam Operator's Name: Chris Wesson
Cylinder #: LL119513 Concentration PPM: 50.6 Tolerance(%) 1 Certified By: Praxair

Reference Calibrator and Gas:

Make/Model: Teco 146i
Serial Number: AMU 1809
Last Verification Date: June 17, 2016
Gas Type: SO2 Conc. 98.07
Cylinder Number: CAL016625

Flow Measurement Device:

Make/Model: Bios DC2
Serial Number: AMU 1659
Temp. °C: 23.0 C
B.P. 700 mmhg

Reference Analyzer:

Make/Model: Teco 43C Serial/AMU Number: 1623
Instrument Settings: Zero: 8.7 Span: 1.027 Range: 1.0
Last Calibration: Date: June 17/16 C.F. 1.000 Done By: Al Clark

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5000	0.0	0.000	0.01654	60.462	50.1
4976	82.3	0.828	0.01654	60.462	50.1
4985	40.8	0.411	0.00818	122.181	50.2
4965	20.2	0.203	0.00407	245.792	49.9
Average Cylinder Concentration:					50.1

Previous Stated Concentration PPM: 50.6

Percent variance from Stated: 1.1

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

Auditor: Al Clark
Operator Signature: *Al Clark*

Date: June 17, 2016
Location: McIntyre Center Edmonton



Calibration Gas Audit

CH4 / C3H8 Cylinder Gas

File No. 2015-091CGA

Company: Maxxam Operators name: Chris Wesson
Cylinder #: LL86139 Conc CH4 (PPM) 599/211 Tolerance (%) 0.5 Certified By: Praxair

Reference Calibrator and Gas:

Make/Model R&R MFC 201
Serial Number AMU 1698
Last Verification Date January 18, 2016
Gas Type CH4 Conc. 999.2
Cylinder Number D751932
Gas Type C3H8 Conc. 246.5
Cylinder Number XF0037998

Flow Measurement Device:

Make/Model Bios DC-2
Serial Number Bios D
Temp. °C 23
B.P. 599mmHg

Reference Analyzer:

Make/Model Thermo 55C Serial/AMU Number: 1643
Instrument Settings Zero: NA Span: NA Range: 20.0
Last Calibration: Date: 18-Jan-16 C.F. 1,000 Done By: SB

Calibrator Flows (scm)		Indicated Conc. (ppm)		Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration	
Dilution	Gas	CH4	C3H8			CH4	C3H8
2583	0.00	0.00	0.00	0.02145	46.621	597	213
2635	56.52	12.80	12.59	0.02145	46.621	597	213
2592	19.72	4.54	4.49	0.00761	131.440	597	215
2584	9.69	2.25	2.24	0.00375	266.667	600	217
Average Cylinder Concentration:						598	215

	<u>CH4</u>	<u>C3H8</u>
Previous Stated Concentration PPM:	<u>599</u>	<u>211</u>
Percent variance from Stated:	<u>0.2</u>	<u>1.9</u>

Cylinder gas tolerances based on CH4 only

Meets Manufacturer Tolerance. Use manufacturers stated concentration COMMENTS: _____
 <=5% Outside Manufacturer Tolerance. Use manufacturers concentration C3H8 manufacturers tolerance 1.1%
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder

Auditor: Shea Beaton Date: January 19, 2016
Operator Signature: _____ Location: McIntyre Center Edmonton

***APPENDIX III
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
Wunmi Adekanmbi	Project Manager, Customer Service, Air Services
Is an External Party Certifying the Report? (If 'Yes', fill in the fields below for the external person.)	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Name of External Person Certifying the Report (Last, First, Middle)	Position / Title of External Person Certifying the Report
NA	NA
Company Name for the External Person Certifying the Report	Identification of Qualifications / Professional Designations of the External Person Certifying the Report
NA	NA

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



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

October 27, 2017





Report Issued Date (dd-mm-yyyy)

APPENDIX IV
DATA VALIDATION CERTIFICATION FORM



Validation Certificate Form

Client: <u>Peace River Area Monitoring Program Committee</u>	Project #: <u>8449-2017-09-80-C</u>
Site: <u>Three Creeks 842b Station</u>	Contact: <u>Karla Reesor</u>

Level 0 Preliminary Verification	<u></u>	Date <u>October 13, 2017</u>
Level 1 Primary Validation	<u></u>	Date <u>October 13, 2017</u>
Level 2 Final Validation	<u></u>	Date <u>October 27, 2017</u>
Level 3 Independent Data Review	<u></u>	Date <u>October 27, 2017</u>
Post-Final Validation	<u>NA</u>	Date <u>NA</u>

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.