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AMBIENT AIR MONITORING MONTHLY DATA REPORT
PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
THREE CREEKS 986B STATION

JOB #: 8449-2017-08-67-C

August 2017

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Attention: LILY LIN

DATE: **September 20, 2017**

Prepared by:

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

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

Reviewed by:

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

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

SUMMARY

In August 2017, Maxxam Analytics was contracted to manage the ambient air quality monitoring and maintenance activities at the Three Creeks 986b 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 were above the 90% requirement.

Power Failure: Downtime ranging from six to eight hours were recorded on gas analyzers and meteorological systems on August 24, due to a power failure and the subsequent recovery periods.

THC/CH₄/NMHC: One hour of downtime was recorded on August 10 due to sample manifold cleaning. An additional span check was conducted on August 11 to update the expected span value after a span gas exchange. Twenty hours of downtime were recorded between August 16 and August 17 due to a maintenance event.

The summary of results is presented on the following pages.

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

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

Monthly Continuous Data Summary

Peace River Area Monitoring Program Committee						MAXIMUM VALUES							OPERATIONAL TIME (%)
Three Creeks 986b 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	2	13	13	4.1	WSW	1	5	99.1
TRS (ppb)	-	-	-	-	0.41	1.21	10	4	1.5	ESE	0.56	10	99.1
THC (ppm)	-	-	-	-	1.99	2.65	10	1	1	E	2.17	5	96.0
CH ₄ (ppm)	-	-	-	-	1.99	2.65	10	1	1	E	2.17	5	96.0
NMHC (ppm)	-	-	-	-	0.00	0.08	13	21	3.8	SSW	0.01	13	96.0
RELATIVE HUMIDITY (%)	-	-	-	-	65	98	1	7	4.9	NW	86	6	99.2
BAROMETRIC PRESSURE (millibar)	-	-	-	-	943	958	1	12	2.8	NW	957	1	99.2
AMBIENT TEMPERATURE (°C)	-	-	-	-	16.7	30.4	11	16	13	SSE	21.5	11	99.2
STATION TEMPERATURE (°C)	-	-	-	-	21.3	22.8	10	15	6.4	WNW	21.6	21	99.2
VECTOR WS (kph)	-	-	-	-	2.8	23.8	19	10	-	WNW	10.9	12	99.2
VECTOR WD (sec)	-	-	-	-	215 (SSW)	-	-	-	-	-	-	-	99.2

SOUR GAS PROCESSING INDUSTRY
MONTHLY REPORT SUMMARY

Three Creeks 986b Station

Peace River Area Monitoring Program Committee

Plant Name / Location

Company

Licence Number	Report Date	
	YEAR	MONTH
N/A	2017	August

CONTINUOUS AMBIENT MONITORING							
		ONE - HOUR AVERAGE		24 - HOUR AVERAGE			
PARAMETER	% TIME OPERATIONAL	MAXIMUM VALUES		NO. READINGS > REGULATION	MAXIMUM VALUES		NO. READINGS > REGULATION
SO ₂	99.1	0.002	ppm	0	0.001	ppm	0
TRS	99.1	0.001	ppm	-	0.001	ppm	-
THC	96.0	2.65	ppm	-	2.17	ppm	-
CH ₄	96.0	2.65	ppm	-	2.17	ppm	-
NMHC	96.0	0.08	ppm	-	0.01	ppm	-
RH	99.2	98	%	-	86	%	-
BP	99.2	958	mb	-	957	mb	-
Ambient TPX	99.2	30.4	°C	-	21.5	°C	-
Station TPX	99.2	22.8	°C	-	21.6	°C	-
Wind Speed	99.2	23.8	kph	-	10.9	kph	-
Wind Direction	99.2	-		-	-		-

SIGNATURE OF COMPANY REPRESENTATIVE

FOR ALBERTA ENVIRONMENT USE ONLY

Exceedance Summary Report

SO₂ 1-Hour Exceedances

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

SO₂ 24-Hour Exceedances

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

In accordance with EPEA and the Substance Release Regulation.

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

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1.0 Discussion

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

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

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

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

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

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

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

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

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

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

SULPHUR DIOXIDE (SO₂)

- Operational time, for the monitoring period was 99.1%, equivalent to seven hours of downtime. These were incurred on August 24, due to a power failure and the subsequent recovery period of the analyzer.
- The routine monthly calibration was performed on August 10.

TOTAL REDUCED SULPHUR (TRS)

- Operational time, for the monitoring period was 99.1%, equivalent to seven hours of downtime. These were incurred on August 24, due to a power failure and the subsequent recovery period of the analyzer.
- The routine monthly calibration was performed on August 10.

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

- Operational time, for the monitoring period was 96.0%, equivalent to thirty hours of downtime.
- The channels were placed in "maintenance" mode on August 10 at hour 15:00 while the sample manifold was being cleaned, one hour of downtime was incurred.
- The fuel and span gas cylinders were exchanged during the site visit on August 10. A repeat zero/span check was conducted on August 11, to provide a reference for updating the expected span value, following the span gas change. One hour of downtime was recorded due to the additional zero/span check.
- Following a successful shut-down calibration on August 16, coulumn conditioning was conducted overnight. A successful post-repair calibration was completed on August 17. Twenty hours of downtime were recorded due to this maintenance event.
- Eight hours of downtime were incurred on August 24, due to a power failure and the subsequent recovery period of the analyzer.
- The canister sampler is programmed to draw in a whole air sample when the 5-minute average concentration of NMHC is above 0.30 ppm. A representative sample of ambient air is collected over a one-hour period when the canister event is triggered. No canister event was recorded this month.

WIND SPEED (WS) and WIND DIRECTION (WD)

- Operational time, for the monitoring period was 99.2%, equivalent to six hours of downtime. These were incurred due to a power failure that occurred on August 24.
- 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 99.2%, equivalent to six hours of downtime. These were incurred due to a power failure that occurred on August 24.

BAROMETRIC PRESSURE (BP)

- Operational time, for the monitoring period was 99.2%, equivalent to six hours of downtime. These were incurred due to a power failure that occurred on August 24.

AMBIENT TEMPERATURE (AmbTPX)

- Operational time, for the monitoring period was 99.2%, equivalent to six hours of downtime. These were incurred due to a power failure that occurred on August 24.

STATION TEMPERATURE (StnTPX)

- Operational time, for the monitoring period was 99.2%, equivalent to six hours of downtime. These were incurred due to a power failure that occurred on August 24.

2.0 Project Personnel

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

3.0 Plant Monthly Required AMD Summary

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

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

4.0 Calculations and Results

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

5.0 Methods and Procedures

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

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

Maxxam AIR SOP-00208: RM Young Wind Monitor Calibration

Maxxam AIR SOP-00209: Ambient Sulphur Monitoring

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

Sulphur Dioxide - Thermo 43C 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 - Campbell Scientific Unit

Barometric Pressure - Met One Unit

Ambient Temperature - Campbell Scientific 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

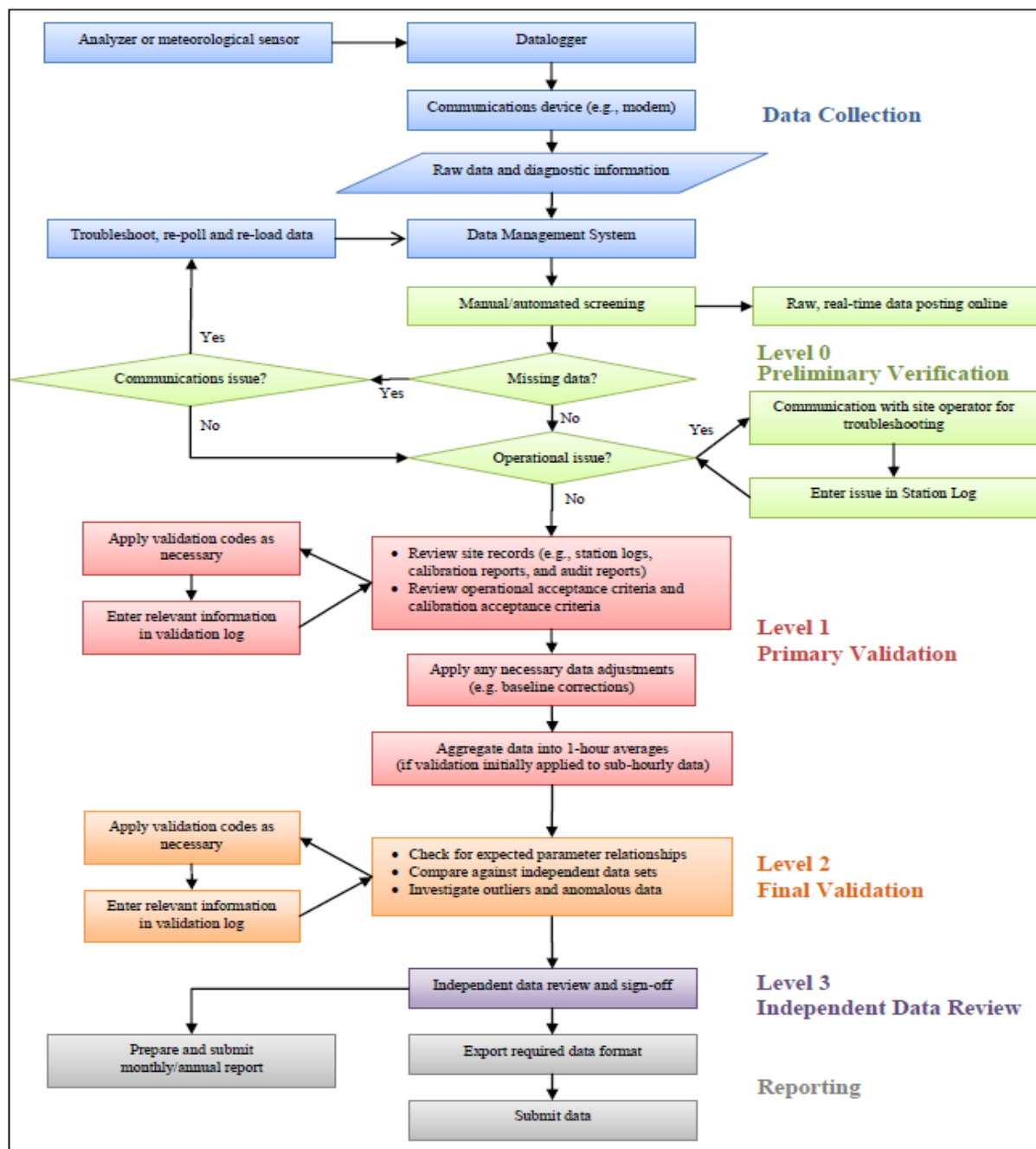
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

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	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	0	24
5	1	1	0	1	1	S	1	1	1	1	1	1	1	0	1	1	1	1	1	0	0	0	0	0	0	1	1	24
6	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
7	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	24
8	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	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	C	C	C	C	C	0	0	0	0	0	0	0	0	0	24
11	1	0	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
12	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
13	0	0	0	0	0	S	0	0	0	1	0	0	0	2	1	0	0	0	0	1	1	1	1	1	0	2	0	24
14	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	1	0	24
15	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	1	0	24
16	0	0	0	0	0	S	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
17	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	1	0	0	0	S	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	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	1	0	0	0	0	0	0	1	0	24
23	0	0	0	1	0	S	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
24	0	0	0	0	0	S	0	0	0	0	0	0	0	P	P	P	P	P	P	P	R	0	0	0	0	0	0	17
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	1	0	0	0	S	0	0	1	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	24
27	0	0	0	0	0	S	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
28	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	24
29	0	0	0	0	0	S	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	1	0	24
30	1	0	0	0	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1	1	24
31	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	1	1	NA	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	0	0	0
HOURLY AVG	0	0	0	0	0	NA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

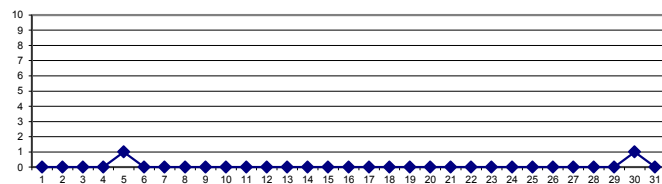
STATUS FLAG CODES

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

OBJECTIVE LIMIT:

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

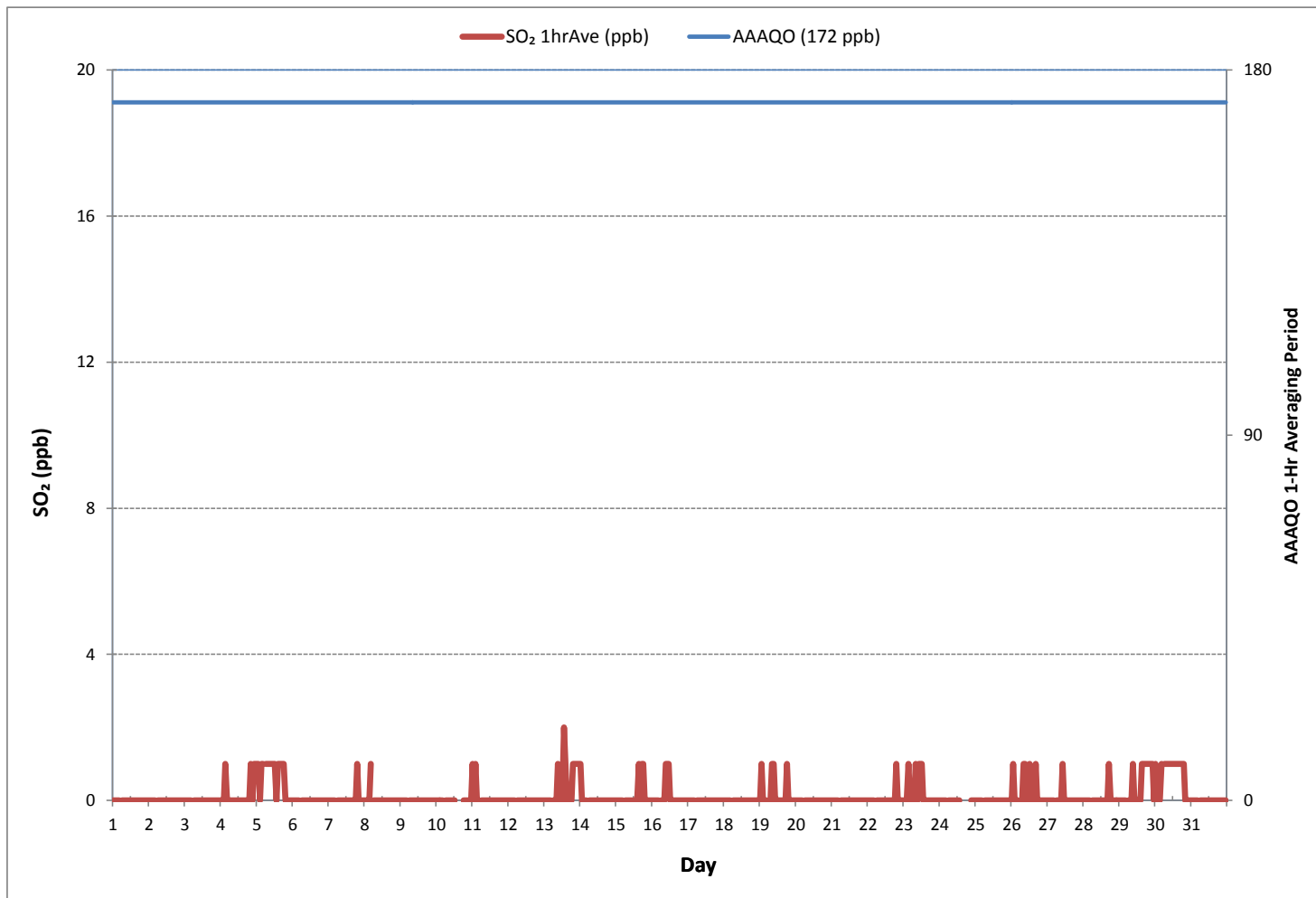
24 HR AVERAGES August 2017



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDANCES:	0
NUMBER OF 24-HR EXCEEDANCES:	0
NUMBER OF NON-ZERO READINGS:	81
MINIMUM 1-HR AVERAGE:	0 ppb @ HOUR 0 ON DAY 1
MAXIMUM 1-HR AVERAGE:	2 ppb @ HOUR 13 ON DAY 13
MAXIMUM 24-HR AVERAGE:	1 ppb ON DAY 5
IZS CALIBRATION TIME:	31 hrs
MONTHLY CALIBRATION TIME:	5 hrs
OPERATIONAL TIME:	737 hrs
AMD OPERATION UPTIME:	99.1 %
STANDARD DEVIATION:	0
MONTHLY AVERAGE:	0 ppb

SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - August 2017

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)

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

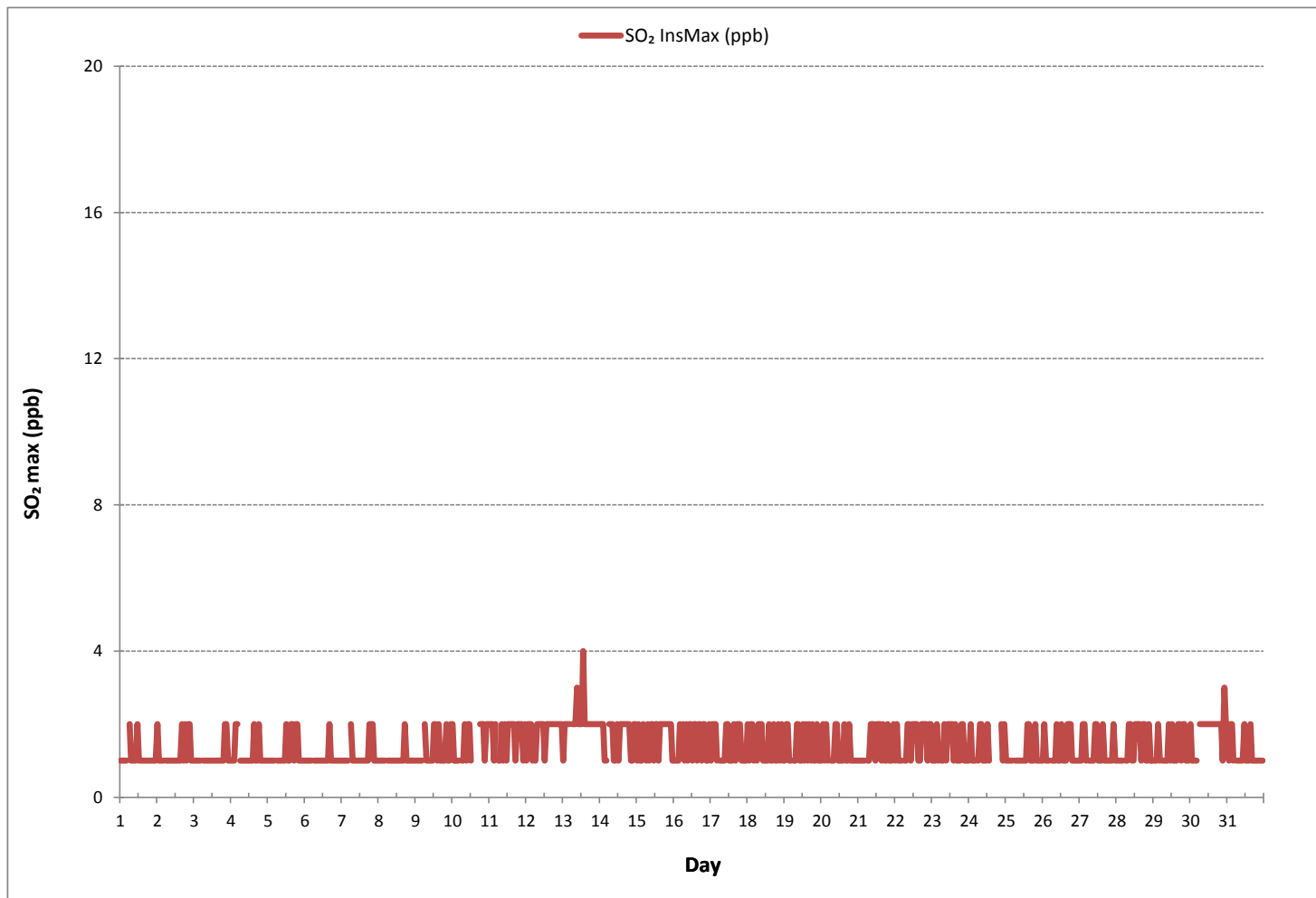
STATUS FLAG CODES

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:	701
MAXIMUM INSTANTANEOUS VALUE:	4 ppb @ HOUR 13 ON DAY 13
IZS CALIBRATION TIME:	31 hrs
MONTHLY CALIBRATION TIME:	5 hrs
STANDARD DEVIATION:	1
OPERATIONAL TIME:	737 hrs

SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)



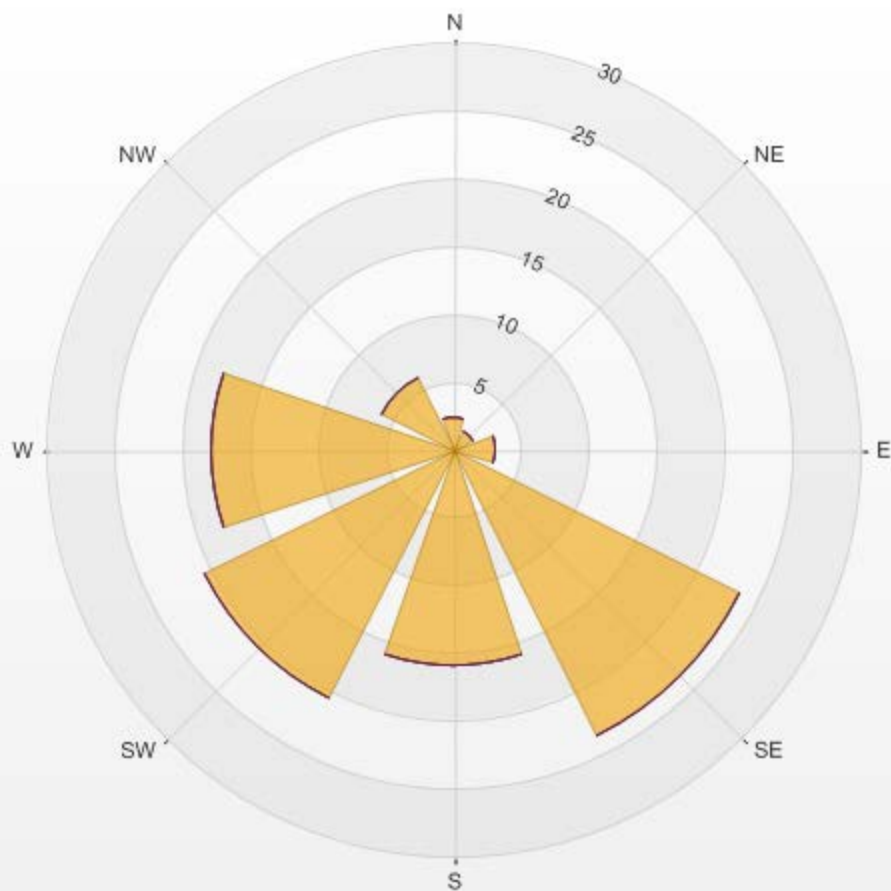
Wind: PRAMP_986
Poll.: PRAMP_986-SO2[ppb]
Monthly: 17/08
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 5.71%

Calm Avg: 0.29 [ppb]

Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	0.0	0.0	0.0	0.0	0.0	0.0
NE	1.3	0.0	0.0	0.0	0.0	1.3
E	5.1	0.0	0.0	0.0	0.0	5.1
SE	23.9	0.0	0.0	0.0	0.0	23.9
S	17.1	0.0	0.0	0.0	0.0	17.1
SW	24.3	0.0	0.0	0.0	0.0	24.3
W	18.9	0.0	0.0	0.0	0.0	18.9
NW	3.7	0.0	0.0	0.0	0.0	3.7
Summary	94.3	0.0	0.0	0.0	0.0	94.3

PRAMP_986 Poll.: PRAMP_986-SO2[ppb] 2017/08/01 00:00 - 2017/08/31 23:00 Calm: 8.84% Calm Poll Avg: 0.23[ppb]



SO2[ppb] Calibration: PRAMP_986 Monthly: 17/08 Type: Span



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

TOTAL REDUCED SULPHUR

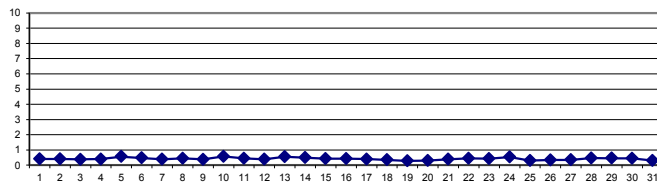
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	0.36	0.38	0.50	0.78	0.52	S	0.57	0.47	0.37	0.34	0.30	0.29	0.28	0.28	0.27	0.27	0.24	0.24	0.23	0.21	0.47	0.82	0.65	0.50	0.21	0.82	0.41	24	
2	0.55	0.42	0.49	0.56	0.64	S	0.81	0.44	0.33	0.27	0.28	0.27	0.30	0.29	0.26	0.22	0.20	0.21	0.24	0.34	0.75	0.54	0.59	0.20	0.81	0.40	24		
3	0.55	0.50	0.40	0.47	0.48	S	0.67	0.56	0.38	0.39	0.31	0.31	0.26	0.25	0.22	0.22	0.23	0.28	0.30	0.36	0.40	0.38	0.41	0.32	0.22	0.67	0.38	24	
4	0.35	0.61	0.38	0.48	0.54	S	0.46	0.43	0.33	0.31	0.32	0.30	0.28	0.28	0.28	0.28	0.29	0.27	0.25	0.25	0.39	0.55	0.71	0.83	0.25	0.83	0.40	24	
5	0.81	0.99	0.91	1.13	1.18	S	1.08	0.82	0.40	0.33	0.30	0.29	0.29	0.30	0.28	0.27	0.28	0.29	0.28	0.31	0.67	0.60	0.57	0.56	0.27	1.18	0.56	24	
6	0.66	0.64	0.63	0.77	0.51	S	1.16	0.80	0.37	0.44	0.39	0.43	0.38	0.38	0.35	0.33	0.32	0.32	0.33	0.33	0.33	0.31	0.36	0.34	0.31	1.16	0.47	24	
7	0.31	0.32	0.36	0.44	0.74	S	0.55	0.58	0.46	0.37	0.33	0.29	0.27	0.26	0.26	0.29	0.26	0.25	0.25	0.33	0.38	0.72	0.48	0.41	0.25	0.74	0.39	24	
8	0.46	0.45	0.53	0.54	0.58	S	1.00	0.67	0.51	0.39	0.37	0.38	0.42	0.39	0.29	0.26	0.25	0.26	0.25	0.32	0.44	0.53	0.42	0.40	0.25	1.00	0.44	24	
9	0.41	0.42	0.36	0.44	0.52	S	0.57	0.44	0.36	0.30	0.28	0.29	0.30	0.31	0.29	0.27	0.27	0.26	0.27	0.31	0.44	0.48	0.55	0.64	0.26	0.64	0.38	24	
10	0.77	0.81	0.74	0.89	1.21	S	1.13	0.69	0.44	0.39	0.34	0.29	0.23	C	C	C	C	C	C	0.24	0.22	0.32	0.38	0.52	0.55	0.22	1.21	0.56	24
11	0.60	0.69	0.74	0.74	0.92	S	1.07	0.80	0.53	0.35	0.30	0.29	0.27	0.25	0.26	0.26	0.25	0.25	0.25	0.27	0.28	0.30	0.31	0.35	0.25	1.07	0.45	24	
12	0.42	0.44	0.53	0.50	0.58	S	0.60	0.47	0.40	0.36	0.33	0.30	0.30	0.30	0.31	0.30	0.31	0.32	0.33	0.32	0.35	0.36	0.38	0.39	0.30	0.60	0.39	24	
13	0.37	0.38	0.41	0.44	0.43	S	0.66	0.53	0.50	0.47	0.62	0.65	0.61	0.60	0.58	0.57	0.57	0.44	0.45	0.50	0.60	0.80	0.81	0.82	0.37	0.82	0.56	24	
14	0.78	0.60	0.56	0.52	0.59	S	0.58	0.58	0.62	0.66	0.55	0.45	0.41	0.36	0.35	0.33	0.34	0.35	0.38	0.42	0.42	0.42	0.55	0.64	0.33	0.78	0.50	24	
15	0.44	0.45	0.47	0.42	0.40	S	0.46	0.49	0.55	0.57	0.46	0.37	0.38	0.35	0.34	0.35	0.34	0.36	0.34	0.32	0.37	0.59	0.60	0.57	0.32	0.60	0.43	24	
16	0.48	0.48	0.51	0.56	0.59	S	0.58	0.55	0.48	0.41	0.39	0.39	0.37	0.36	0.34	0.31	0.32	0.35	0.36	0.34	0.35	0.37	0.36	0.36	0.31	0.59	0.42	24	
17	0.38	0.47	0.56	0.46	0.48	S	0.52	0.45	0.47	0.47	0.41	0.40	0.39	0.37	0.37	0.33	0.33	0.30	0.30	0.33	0.33	0.34	0.34	0.37	0.30	0.56	0.40	24	
18	0.38	0.42	0.46	0.47	0.43	S	0.47	0.46	0.48	0.47	0.42	0.33	0.30	0.29	0.27	0.25	0.26	0.24	0.26	0.25	0.27	0.26	0.29	0.31	0.24	0.48	0.35	24	
19	0.31	0.37	0.49	0.35	0.38	S	0.39	0.34	0.35	0.32	0.26	0.25	0.26	0.25	0.22	0.22	0.22	0.22	0.23	0.22	0.22	0.24	0.24	0.23	0.22	0.49	0.29	24	
20	0.25	0.28	0.32	0.37	0.39	S	0.40	0.34	0.32	0.32	0.30	0.26	0.22	0.22	0.22	0.22	0.23	0.24	0.23	0.24	0.27	0.45	0.44	0.53	0.22	0.53	0.31	24	
21	0.50	0.42	0.42	0.46	0.47	S	0.53	0.43	0.34	0.31	0.31	0.31	0.29	0.31	0.31	0.30	0.31	0.32	0.36	0.41	0.45	0.52	0.39	0.45	0.29	0.53	0.39	24	
22	0.60	0.53	0.58	0.67	0.76	S	0.50	0.46	0.39	0.36	0.32	0.28	0.28	0.28	0.28	0.27	0.28	0.29	0.29	0.38	0.65	0.70	0.63	0.52	0.27	0.76	0.45	24	
23	0.46	0.46	0.45	0.42	0.47	S	0.73	0.59	0.45	0.42	0.41	0.38	0.35	0.30	0.28	0.26	0.25	0.26	0.28	0.42	0.55	0.65	0.50	0.61	0.25	0.73	0.43	24	
24	0.89	0.42	0.49	1.15	0.54	S	0.56	0.83	0.74	0.58	0.39	0.37	0.35	0.40	P	P	P	P	P	P	P	R	0.32	0.28	0.26	0.26	1.15	0.54	17
25	0.25	0.27	0.28	0.35	0.38	S	0.34	0.40	0.42	0.37	0.33	0.30	0.26	0.26	0.25	0.25	0.25	0.23	0.24	0.25	0.27	0.27	0.29	0.30	0.23	0.42	0.30	24	
26	0.32	0.33	0.34	0.31	0.32	S	0.36	0.36	0.35	0.36	0.34	0.32	0.32	0.32	0.31	0.29	0.31	0.30	0.31	0.33	0.37	0.39	0.35	0.35	0.29	0.39	0.33	24	
27	0.37	0.37	0.38	0.40	0.38	S	0.42	0.40	0.40	0.36	0.34	0.31	0.29	0.29	0.28	0.31	0.35	0.34	0.34	0.37	0.37	0.37	0.33	0.33	0.28	0.42	0.35	24	
28	0.39	0.36	0.41	0.60	0.54	S	0.78	0.59	0.43	0.39	0.33	0.30	0.30	0.26	0.26	0.25	0.25	0.26	0.25	0.26	0.65	0.96	0.95	0.83	0.25	0.96	0.46	24	
29	0.72	0.89	1.17	0.88	0.88	S	0.80	0.65	0.33	0.30	0.29	0.30	0.27	0.26	0.26	0.25	0.25	0.25	0.26	0.28	0.27	0.27	0.30	0.31	0.25	1.17	0.45	24	
30	0.30	0.31	0.34	0.36	0.41	S	0.47	0.47	0.42	0.43	0.42	0.42	0.46	0.42	0.40	0.40	0.39	0.41	0.41	0.56	0.65	0.73	0.67	0.47	0.30	0.73	0.45	24	
31	0.43	0.38	0.37	0.46	0.53	S	0.38	0.35	0.32	0.31	0.29	0.27	0.25	0.24	0.23	0.22	0.21	0.20	0.21	0.22	0.20	0.23	0.24	0.22	0.20	0.53	0.29	24	
HOURLY MAX	0.89	0.99	1.17	1.15	1.21	NA	1.16	0.83	0.74	0.66	0.62	0.65	0.61	0.60	0.58	0.57	0.57	0.44	0.45	0.56	0.67	0.96	0.95	0.83					
HOURLY AVG	0.48	0.48	0.50	0.56	0.57	NA	0.63	0.53	0.43	0.39	0.36	0.34	0.32	0.31	0.30	0.29	0.29	0.29	0.29	0.32	0.40	0.49	0.47	0.46					

STATUS FLAG CODES

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

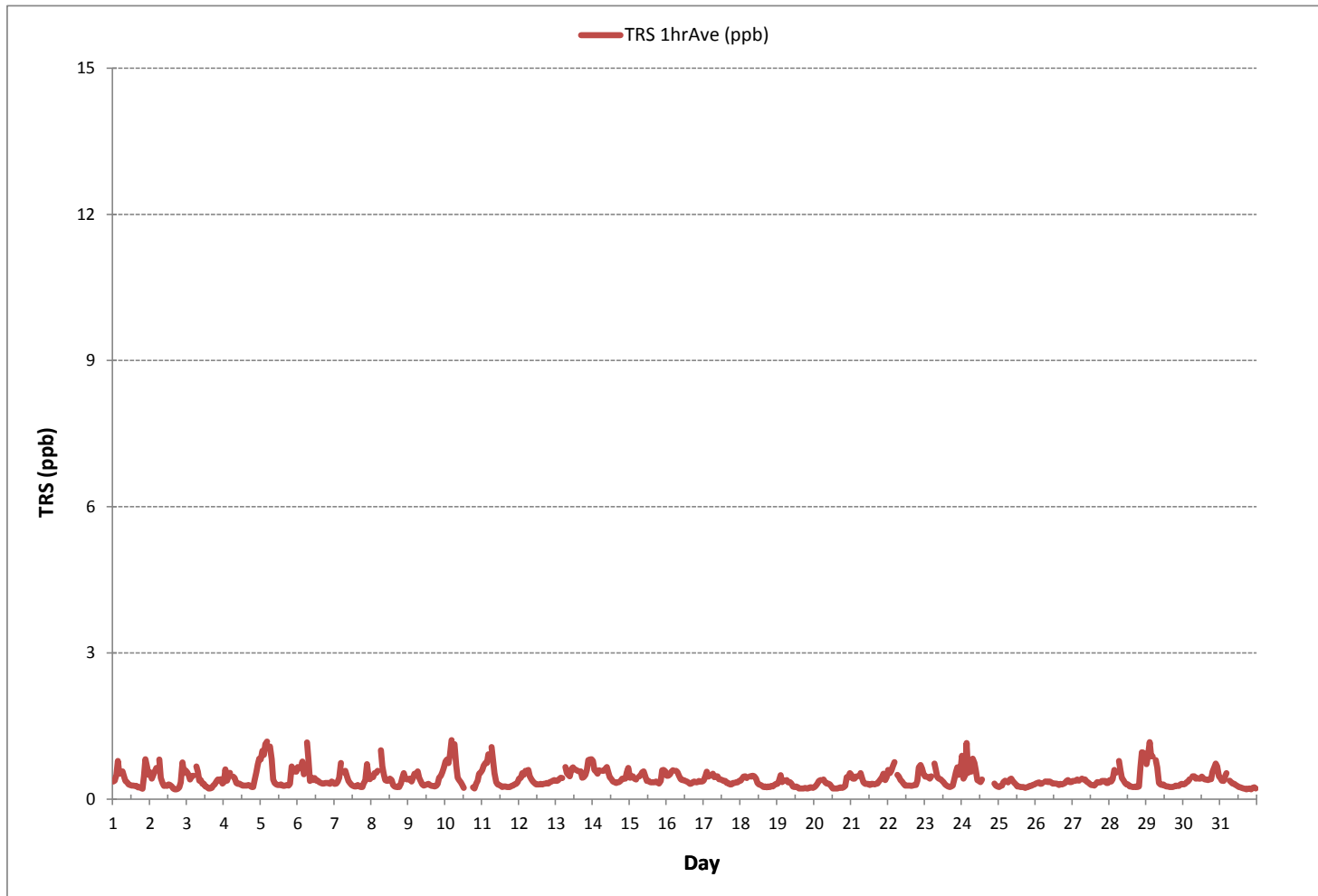
24 HR AVERAGES August 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	701				
MINIMUM 1-HR AVERAGE:	0.20	ppb @ HOUR	16	ON DAY	2
MAXIMUM 1-HR AVERAGE:	1.21	ppb @ HOUR	4	ON DAY	10
MAXIMUM 24-HR AVERAGE:	0.56	ppb		ON DAY	10
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	737	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:	99.1	%
STANDARD DEVIATION:	0		MONTHLY AVERAGE:	0.41	ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - August 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	1	1	1	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	24
2	1	1	1	1	1	S	1	1	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	24
3	1	1	1	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	24
4	1	1	1	1	1	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	1	24
5	1	1	1	1	1	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	24
6	1	1	1	2	1	S	2	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	24
7	0	0	1	1	1	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	24
8	1	1	1	1	1	S	2	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	2	1	24
9	1	1	0	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	24
10	1	1	1	1	2	S	1	1	1	0	0	0	0	C	C	C	C	C	0	0	0	1	1	1	0	2	1	24
11	1	1	1	1	1	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	24
12	1	1	1	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
13	0	0	0	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	24	
14	1	1	1	1	1	S	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	24
15	0	1	0	0	0	S	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	24
16	1	1	1	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
17	0	1	1	1	1	S	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
18	0	0	1	1	0	S	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
19	0	0	1	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
20	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	24
21	1	0	1	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	1	24
22	1	1	1	1	1	S	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	1	24
23	1	1	1	1	1	S	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	1	24
24	1	1	1	2	1	S	1	1	1	1	1	1	0	1	P	P	P	P	P	P	R	0	0	0	0	2	1	17
25	0	0	0	0	1	S	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	0	0	0	0	0	0	0	0	0	24
28	0	0	0	1	1	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	24
29	1	1	1	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	24
30	0	0	0	0	1	S	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	1	24
31	0	0	0	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24
HOURLY MAX	1	1	1	2	2	NA	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
HOURLY AVG	1	1	1	1	1	NA	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1			

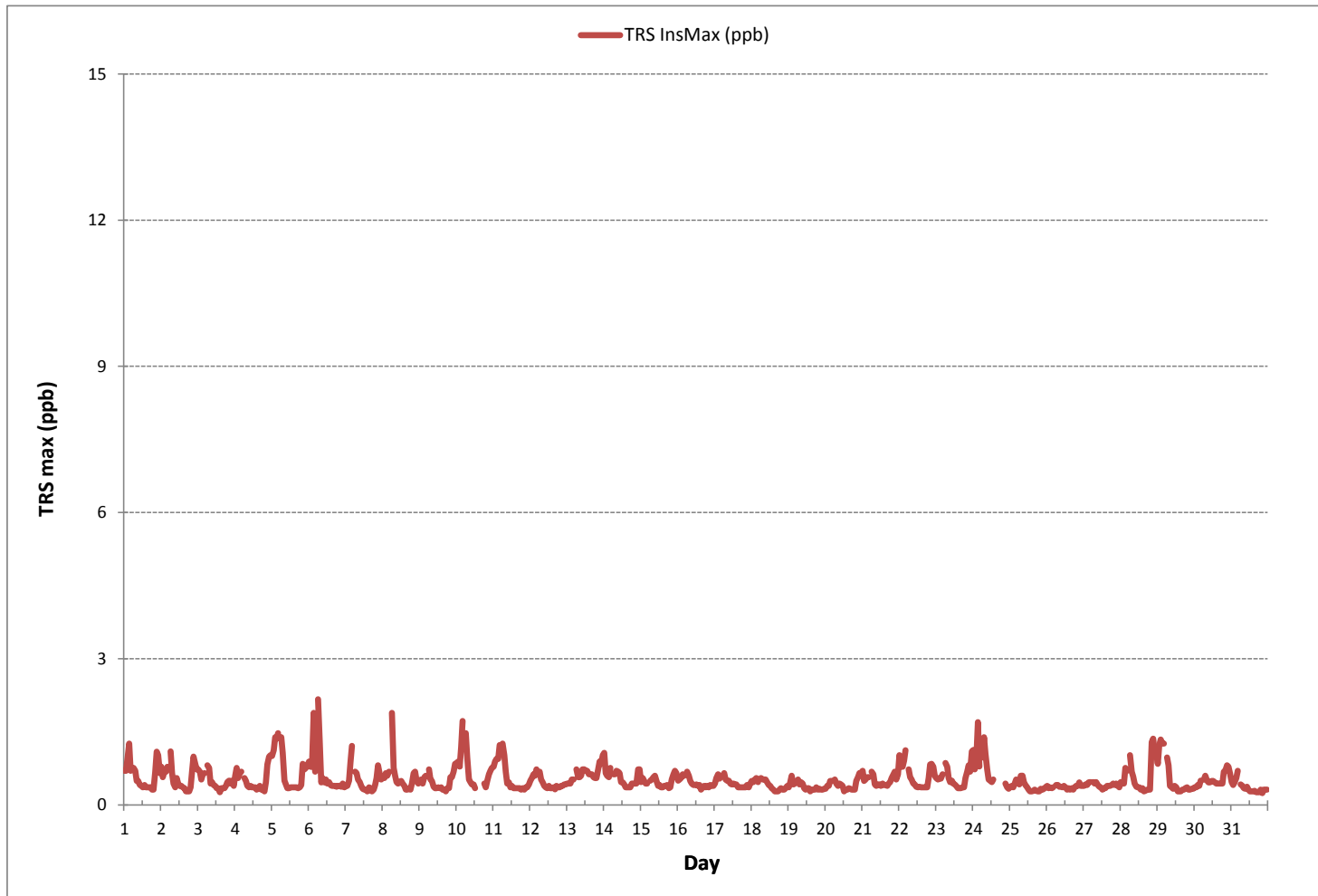
STATUS FLAG CODES

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:	701				
MAXIMUM INSTANTANEOUS VALUE:	2	ppb	@ HOUR	6	ON DAY 6
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	737	hrs
MONTHLY CALIBRATION TIME:	5	hrs			
STANDARD DEVIATION:	0				

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)



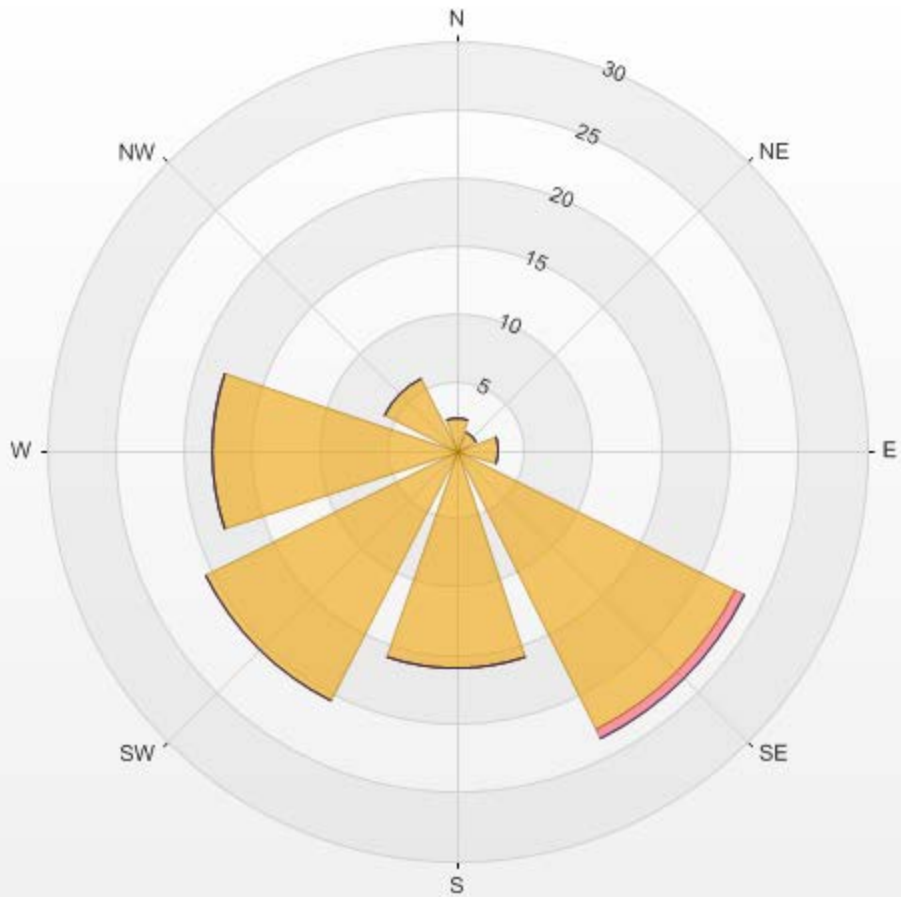
Wind: PRAMP_986
Poll.: PRAMP_986-TRS[ppb]
Monthly: 17/08
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 8.84%

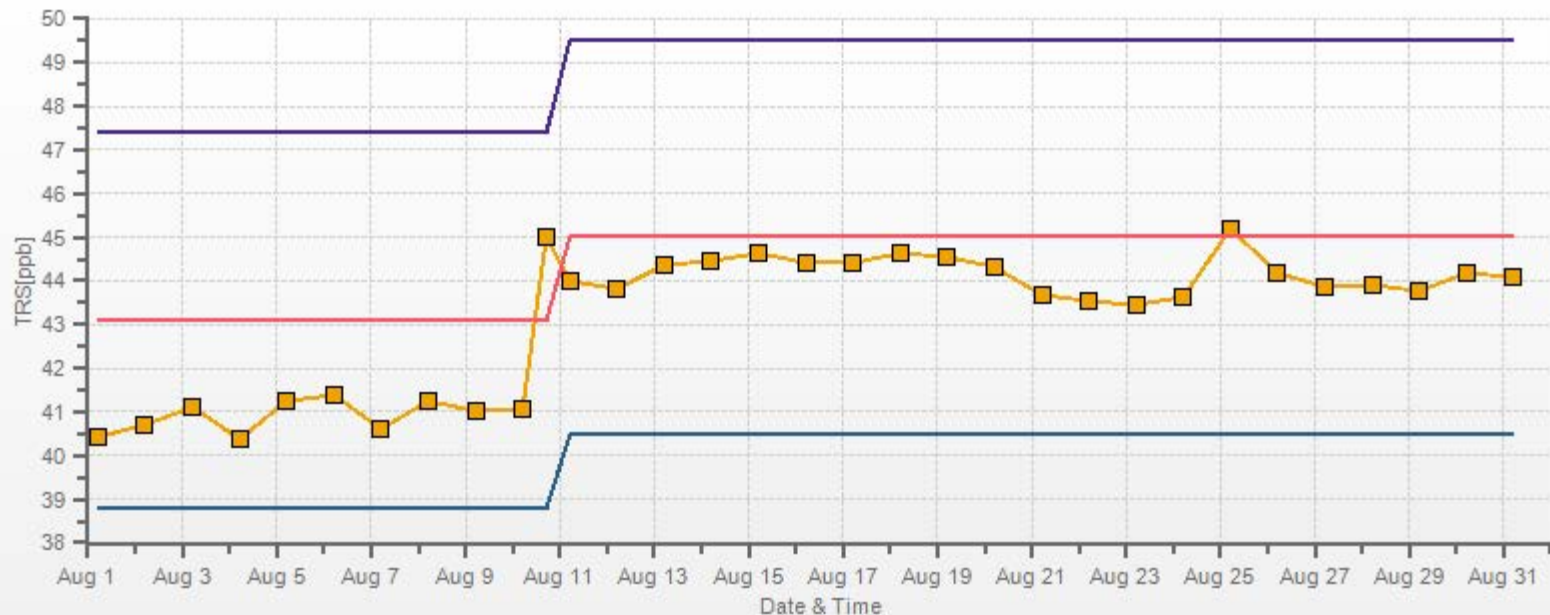
Calm Avg: 0.58 [ppb]

Direction	0-1	1-3	3-10	>10.0	Total
N	2.4	0.0	0.0	0.0	2.4
NE	1.6	0.0	0.0	0.0	1.6
E	3.1	0.0	0.0	0.0	3.1
SE	22.8	0.7	0.0	0.0	23.5
S	16.0	0.0	0.0	0.0	16.0
SW	20.5	0.0	0.0	0.0	20.5
W	18.0	0.0	0.0	0.0	18.0
NW	6.0	0.0	0.0	0.0	6.0
Summary	90.4	0.7	0.0	0.0	91.2

PRAMP_986 Poll.: PRAMP_986-TRS[ppb] 2017/08/01 00:00 - 2017/08/31 23:00 Calm: 8.84% Calm Poll Avg: 0.58[ppb]



TRS[ppb] Calibration: PRAMP_986 Monthly: 17/08 Type: Span



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

TOTAL HYDROCARBON



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 986b Station - August 2017

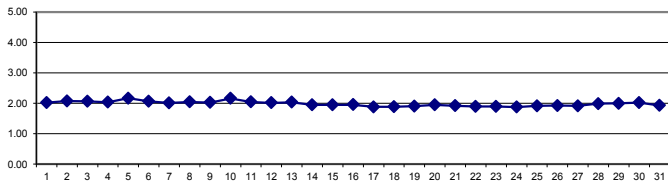
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

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	1.98	1.99	2.00	2.03	1.98	S	1.99	2.01	2.00	2.00	2.00	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	2.07	2.40	2.10	2.10	1.98	2.40	2.02	24	
2	2.26	2.18	2.19	2.20	2.24	S	2.25	2.07	2.01	1.98	1.98	1.97	1.98	1.97	1.97	1.97	1.97	1.97	1.98	2.09	2.12	2.06	2.24	1.97	2.26	2.07	24		
3	2.33	2.20	2.14	2.12	2.32	S	2.25	2.15	2.04	2.05	2.03	2.03	2.00	1.97	1.96	1.96	1.98	1.97	1.97	1.99	1.99	1.98	2.04	1.99	1.96	2.33	2.06	24	
4	2.01	2.16	2.05	2.18	2.04	S	1.98	1.95	1.94	1.93	1.94	1.94	1.94	1.94	1.94	1.95	1.96	1.95	1.96	1.97	2.02	2.13	2.59	2.31	1.93	2.59	2.03	24	
5	2.36	2.50	2.58	2.58	2.43	S	2.59	2.43	2.10	2.01	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.98	2.01	2.21	1.98	2.17	2.11	1.97	2.59	2.17	24	
6	2.24	2.35	2.19	2.23	2.30	S	2.29	2.14	2.05	2.06	2.06	2.04	2.01	1.98	1.97	1.95	1.95	1.95	1.95	1.96	1.97	1.97	1.97	1.98	1.95	2.35	2.07	24	
7	1.98	1.98	2.00	2.02	2.03	S	2.02	2.02	2.01	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.98	1.99	2.12	2.06	1.97	2.05	1.97	2.12	2.01	24	
8	2.09	2.07	2.20	2.27	2.49	S	2.21	2.04	2.01	1.98	1.98	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.98	2.05	1.98	1.98	2.00	1.96	2.49	2.04	24	
9	2.07	2.09	2.04	2.06	2.08	S	2.10	2.07	2.02	2.00	1.99	1.98	1.97	1.98	1.98	1.97	1.96	1.96	1.96	1.97	2.00	2.02	2.05	2.13	2.13	1.96	2.13	2.03	24
10	2.46	2.65	2.63	2.63	2.50	S	2.49	2.22	2.03	2.00	1.98	1.96	1.96	1.95	1.97	Y	1.98	2.00	1.95	2.00	2.01	1.99	2.04	2.15	1.95	2.65	2.16	23	
11	2.20	2.17	2.17	2.24	2.34	S	S1	2.19	2.05	2.01	1.98	1.96	1.95	1.96	1.96	1.95	1.95	1.95	1.97	1.99	2.00	1.99	1.99	2.00	1.95	2.34	2.04	23	
12	2.00	2.00	2.02	2.03	2.05	S	2.07	2.07	2.05	2.02	2.00	2.00	1.99	1.98	1.98	1.99	2.00	2.00	2.03	2.00	2.01	2.01	2.03	2.04	1.98	2.07	2.02	24	
13	2.02	2.03	2.03	2.04	2.06	S	2.10	2.11	2.08	2.05	2.05	2.05	2.04	2.02	2.02	1.99	1.98	1.92	1.94	1.96	2.01	2.16	2.13	2.03	1.92	2.16	2.04	24	
14	1.99	1.96	1.95	1.95	1.95	S	1.95	1.95	1.94	1.94	1.94	1.93	1.92	1.91	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.93	2.05	1.98	1.91	2.05	1.94	24	
15	1.93	1.94	1.95	1.95	1.94	S	1.95	1.95	1.95	1.95	1.94	1.93	1.92	1.92	1.92	1.92	1.93	1.93	1.93	1.94	2.04	1.98	2.02	2.00	1.92	2.04	1.95	24	
16	1.98	1.99	1.97	1.97	1.99	S	1.96	1.95	1.95	1.94	1.94	1.94	1.94	1.93	1.92	1.91	C	C	C	Y	Y	Y	Y	Y	1.91	1.99	1.95	19	
17	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	1.88	1.87	1.88	1.87	1.90	1.87	1.90	1.88	9
18	1.88	1.90	1.92	1.91	1.90	S	1.89	1.89	1.89	1.89	1.88	1.87	1.87	1.88	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.89	1.90	1.87	1.92	1.89	24	
19	1.90	1.90	1.91	1.90	1.91	S	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.91	1.91	1.91	1.91	1.90	1.91	1.90	24	
20	1.93	1.95	1.95	1.97	1.98	S	1.95	1.93	1.93	1.92	1.92	1.91	1.91	1.91	1.91	1.92	1.93	1.94	1.92	1.93	1.99	1.99	2.07	2.01	1.91	2.07	1.95	24	
21	1.98	1.95	1.96	1.95	1.95	S	1.96	1.95	1.93	1.93	1.92	1.92	1.91	1.90	1.89	1.89	1.89	1.89	1.89	1.90	1.90	1.92	1.89	1.92	1.89	1.98	1.92	24	
22	1.93	1.91	1.92	1.90	1.91	S	1.90	1.90	1.89	1.88	1.87	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.88	1.92	1.96	2.00	1.99	1.85	2.00	1.89	24	
23	2.00	1.90	1.92	1.89	1.94	S	1.94	1.92	1.87	1.87	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.84	1.85	1.85	1.91	1.87	1.92	1.94	2.02	1.84	2.02	1.89	24
24	1.96	1.87	1.87	1.88	1.87	S	1.87	1.86	1.86	1.86	1.85	1.85	1.86	1.87	P	P	P	P	P	P	R	R	1.90	1.90	1.85	1.96	1.88	16	
25	1.90	1.90	1.89	1.90	1.90	S	1.90	1.91	1.90	1.90	1.92	1.92	1.92	1.92	1.91	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.89	1.93	1.91	24	
26	1.93	1.93	1.93	1.93	1.94	S	1.93	1.94	1.94	1.94	1.93	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.90	1.90	1.91	1.91	1.90	1.94	1.92	24
27	1.91	1.91	1.91	1.91	1.92	S	1.92	1.92	1.93	1.94	1.93	1.93	1.92	1.91	1.92	1.91	1.90	1.90	1.90	1.92	1.91	1.91	1.91	1.91	1.91	1.90	1.94	1.92	24
28	1.92	1.91	1.95	1.93	2.02	S	2.00	1.95	1.94	1.94	1.93	1.93	1.94	1.93	1.94	1.94	1.94	1.95	1.95	1.95	2.25	2.11	2.22	2.12	1.91	2.25	1.99	24	
29	2.11	2.11	2.17	2.15	2.10	S	2.07	2.02	1.98	1.96	1.95	1.95	1.94	1.94	1.94	1.93	1.93	1.94	1.94	1.94	1.95	1.96	1.96	1.96	1.93	2.17	2.00	24	
30	1.97	1.99	2.00	2.02	2.04	S	2.05	2.08	2.07	2.05	2.02	2.02	2.02	2.01	2.01	2.00	2.00	1.98	1.98	2.02	2.03	2.01	2.02	2.02	1.97	2.08	2.02	24	
31	1.97	1.94	1.95	1.95	1.97	S	1.93	1.91	1.91	1.92	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.94	1.92	1.93	1.93	1.93	1.93	1.93	1.91	1.97	1.93	24	
HOURLY MAX	2.46	2.65	2.63	2.63	2.50	NA	2.59	2.43	2.10	2.06	2.06	2.05	2.04	2.02	2.02	2.00	2.00	2.00	2.03	2.02	2.25	2.40	2.59	2.31					
HOURLY AVG	2.04	2.04	2.05	2.06	2.07	NA	2.05	2.01	1.97	1.96	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.99	2.00	2.02	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

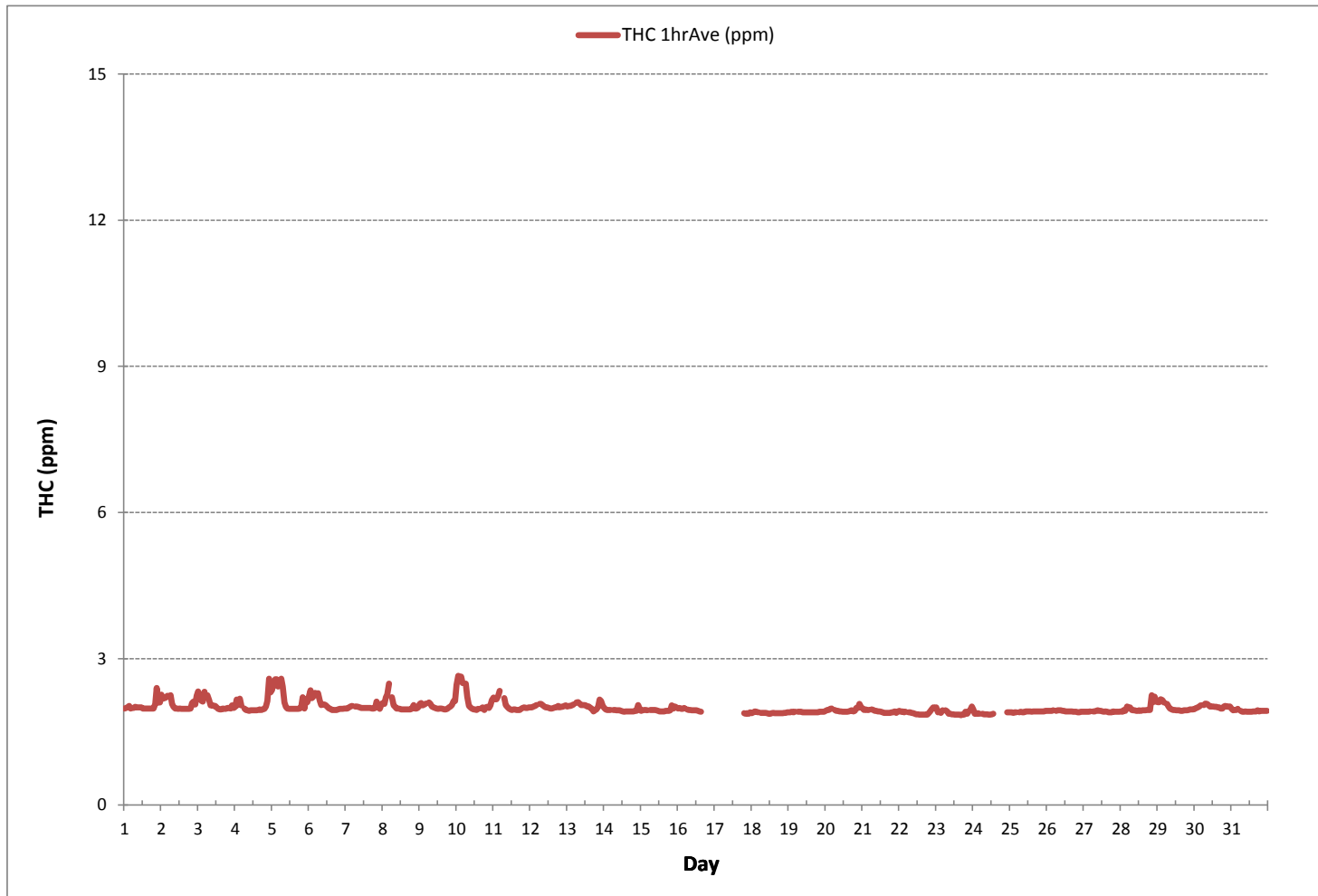
24 HR AVERAGES August 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	677			
MINIMUM 1-HR AVERAGE:	1.84	ppm @ HOUR	16	ON DAY 23
MAXIMUM 1-HR AVERAGE:	2.65	ppm @ HOUR	1	ON DAY 10
MAXIMUM 24-HR AVERAGE:	2.17	ppm		ON DAY 5
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	714 hrs
MONTHLY CALIBRATION TIME:	7	hrs	AMD OPERATION UPTIME:	96.0 %
STANDARD DEVIATION:	0.12		MONTHLY AVERAGE:	1.99 ppm

TOTAL HYDROCARBONS Hourly Averages (THC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 986b Station - August 2017

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	1.99	2.03	2.16	2.18	1.99	S	2.03	2.12	2.04	2.01	2.03	2.04	2.00	1.99	1.99	1.98	1.99	2.00	1.99	2.02	2.53	3.16	2.53	2.16	1.98	3.16	2.13	24
2	2.58	2.34	2.28	2.28	2.39	S	2.34	2.18	2.03	1.99	1.99	1.97	1.99	1.97	1.99	1.98	1.99	1.99	1.99	2.00	2.46	2.60	2.21	2.30	1.97	2.60	2.17	24
3	2.61	2.32	2.34	2.26	2.79	S	2.29	2.23	2.05	2.06	2.06	2.05	2.02	2.02	1.96	1.97	2.05	1.99	2.02	2.06	2.05	2.07	2.30	2.06	1.96	2.79	2.16	24
4	2.16	2.66	2.42	2.48	2.20	S	2.03	1.97	1.96	1.97	1.95	1.94	1.94	1.96	1.96	1.96	1.97	1.96	1.95	2.08	2.12	2.34	3.21	3.24	1.94	3.24	2.19	24
5	2.80	3.46	3.05	2.79	2.78	S	2.81	2.62	2.18	2.04	2.03	2.04	1.97	1.99	1.99	1.99	2.00	1.99	2.04	2.32	2.95	2.12	3.05	2.42	1.97	3.46	2.41	24
6	3.14	3.38	2.96	2.56	2.82	S	2.51	2.23	2.07	2.07	2.09	2.06	2.03	1.99	1.99	1.95	1.96	1.95	1.97	1.96	1.99	1.99	1.97	2.02	1.95	3.38	2.25	24
7	1.99	2.00	2.05	2.08	2.06	S	2.05	2.03	2.03	2.01	2.02	1.99	2.01	1.99	2.01	2.03	2.01	1.99	1.99	2.07	2.49	2.25	1.99	2.16	1.99	2.49	2.06	24
8	2.14	2.11	2.40	2.39	3.12	S	2.34	2.11	2.04	2.00	2.01	1.99	1.99	1.99	1.98	2.05	1.99	1.99	2.03	2.03	2.34	2.13	2.01	2.03	1.98	3.12	2.14	24
9	2.15	2.15	2.11	2.09	2.10	S	2.16	2.14	2.05	2.04	2.03	2.02	1.99	2.06	2.03	2.01	1.96	1.99	2.08	2.24	2.33	2.27	2.38	2.20	1.96	2.38	2.11	24
10	3.05	3.49	3.34	3.63	3.03	S	3.06	2.41	2.07	2.02	1.99	2.04	1.99	1.97	1.99	Y	Y	2.91	2.01	2.23	2.30	2.01	2.14	2.36	1.97	3.63	2.48	22
11	2.62	2.33	2.47	2.38	3.07	S	S1	S1	2.10	2.08	2.03	1.99	1.97	1.97	1.97	1.96	1.99	1.97	1.98	2.00	2.03	2.01	2.01	2.04	1.96	3.07	2.14	22
12	2.01	2.03	2.03	2.04	2.05	S	2.08	2.09	2.06	2.07	2.03	2.01	2.01	2.00	2.01	1.99	2.02	2.02	2.06	2.02	2.03	2.03	2.04	2.06	1.99	2.09	2.03	24
13	2.02	2.06	2.04	2.07	2.14	S	2.13	2.26	2.09	2.06	2.07	2.05	2.07	2.11	2.10	2.07	2.02	1.95	1.97	1.98	2.15	2.23	2.20	2.10	1.95	2.26	2.08	24
14	2.02	1.99	1.97	1.95	2.02	S	1.96	1.96	1.97	1.93	1.96	1.93	1.95	1.94	1.92	1.93	1.92	1.94	1.92	1.94	1.93	2.06	2.21	2.07	1.92	2.21	1.97	24
15	1.95	1.94	1.97	1.98	1.96	S	1.97	1.94	1.97	1.95	1.96	1.95	1.94	1.94	1.92	1.95	1.93	1.95	1.93	1.95	2.58	2.05	2.11	2.14	1.92	2.58	2.00	24
16	2.04	2.11	1.99	1.99	2.05	S	1.99	1.95	1.95	1.96	1.94	1.96	1.93	1.95	1.92	C	C	C	C	Y	Y	Y	Y	Y	1.92	2.11	1.98	19
17	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	C	1.90	1.88	1.88	1.89	1.99	1.88	1.99	9
18	1.93	1.94	1.97	1.94	1.90	S	1.89	1.91	1.89	1.92	1.88	1.89	1.89	1.88	1.91	1.90	1.90	1.88	1.90	1.88	1.91	1.91	1.90	1.92	1.88	1.97	1.91	24
19	1.90	1.92	1.92	1.91	1.91	S	1.90	1.93	1.93	1.90	1.92	1.89	1.92	1.90	1.92	1.89	1.92	1.92	1.91	1.92	1.93	1.94	1.92	1.94	1.89	1.94	1.92	24
20	1.95	2.01	2.01	2.10	2.02	S	1.96	1.92	1.94	1.93	1.94	1.92	1.91	1.91	1.94	1.94	2.02	2.07	1.95	1.99	2.39	2.17	2.30	2.27	1.91	2.39	2.02	24
21	2.12	1.96	1.99	1.97	1.97	S	2.02	1.99	1.95	1.93	1.95	1.93	1.91	1.92	1.89	1.90	1.89	1.90	1.90	1.97	1.93	1.99	1.93	1.99	1.89	2.12	1.95	24
22	2.17	1.94	2.03	1.93	1.96	S	1.98	1.91	1.89	1.90	1.89	1.87	1.87	1.87	1.87	1.87	1.87	1.87	1.88	1.97	2.03	2.11	2.13	2.10	1.87	2.17	1.95	24
23	2.12	1.92	1.97	1.91	2.23	S	2.03	2.07	1.88	1.89	1.87	1.88	1.86	1.87	1.87	1.92	1.87	1.85	1.87	2.26	1.92	2.14	2.04	2.36	1.85	2.36	1.98	24
24	2.09	1.93	1.90	1.94	1.89	S	1.90	1.89	1.87	1.88	1.88	1.86	1.89	1.91	P	P	P	P	P	P	R	R	1.90	1.92	1.86	2.09	1.91	16
25	1.89	1.90	1.89	1.96	1.92	S	1.94	1.96	1.94	1.91	1.94	1.92	1.94	1.95	1.94	1.96	1.97	1.95	1.95	1.94	1.92	1.94	1.92	1.93	1.89	1.97	1.93	24
26	1.93	1.95	1.93	1.95	1.96	S	1.93	1.93	1.95	1.93	1.95	1.96	1.94	1.96	1.95	1.95	1.95	1.92	1.93	1.93	1.92	1.92	1.92	1.93	1.92	1.96	1.94	24
27	1.95	1.91	1.93	1.91	1.91	S	1.94	1.92	1.96	2.03	1.97	1.96	1.97	1.94	2.01	1.96	1.92	1.96	1.96	2.03	1.95	1.95	1.93	1.99	1.91	2.03	1.95	24
28	1.95	1.93	1.99	1.98	2.41	S	2.19	1.98	2.04	2.05	1.93	1.99	1.99	1.97	1.98	1.97	2.00	2.03	2.10	2.20	2.96	3.23	2.87	2.89	1.93	3.23	2.20	24
29	2.27	2.19	2.64	2.35	2.50	S	2.22	2.07	1.99	1.97	2.00	1.99	1.96	1.96	1.96	1.98	1.95	1.93	1.96	1.93	1.96	1.96	1.98	1.96	1.93	2.64	2.07	24
30	1.98	2.00	2.00	2.05	2.09	S	2.07	2.09	2.11	2.08	2.04	2.03	2.05	2.02	2.01	2.01	2.03	1.99	2.01	2.08	2.17	2.04	2.20	2.24	1.98	2.24	2.06	24
31	1.99	1.96	2.04	2.07	2.03	S	2.04	1.95	1.93	2.00	1.94	2.01	1.96	1.94	1.94	1.94	1.94	2.00	1.95	1.95	1.93	1.95	1.95	1.95	1.93	2.07	1.97	24
HOURLY MAX	3.14	3.49	3.34	3.63	3.12	NA	3.06	2.62	2.18	2.08	2.09	2.06	2.07	2.11	2.10	2.07	2.05	2.91	2.10	2.32	2.96	3.23	3.21	3.24				
HOURLY AVG	2.18	2.20	2.19	2.17	2.24	NA	2.13	2.06	2.00	1.99	1.98	1.97	1.96	1.96	1.96	1.96	1.96	2.00	1.97	2.03	2.18	2.15	2.17	2.16				

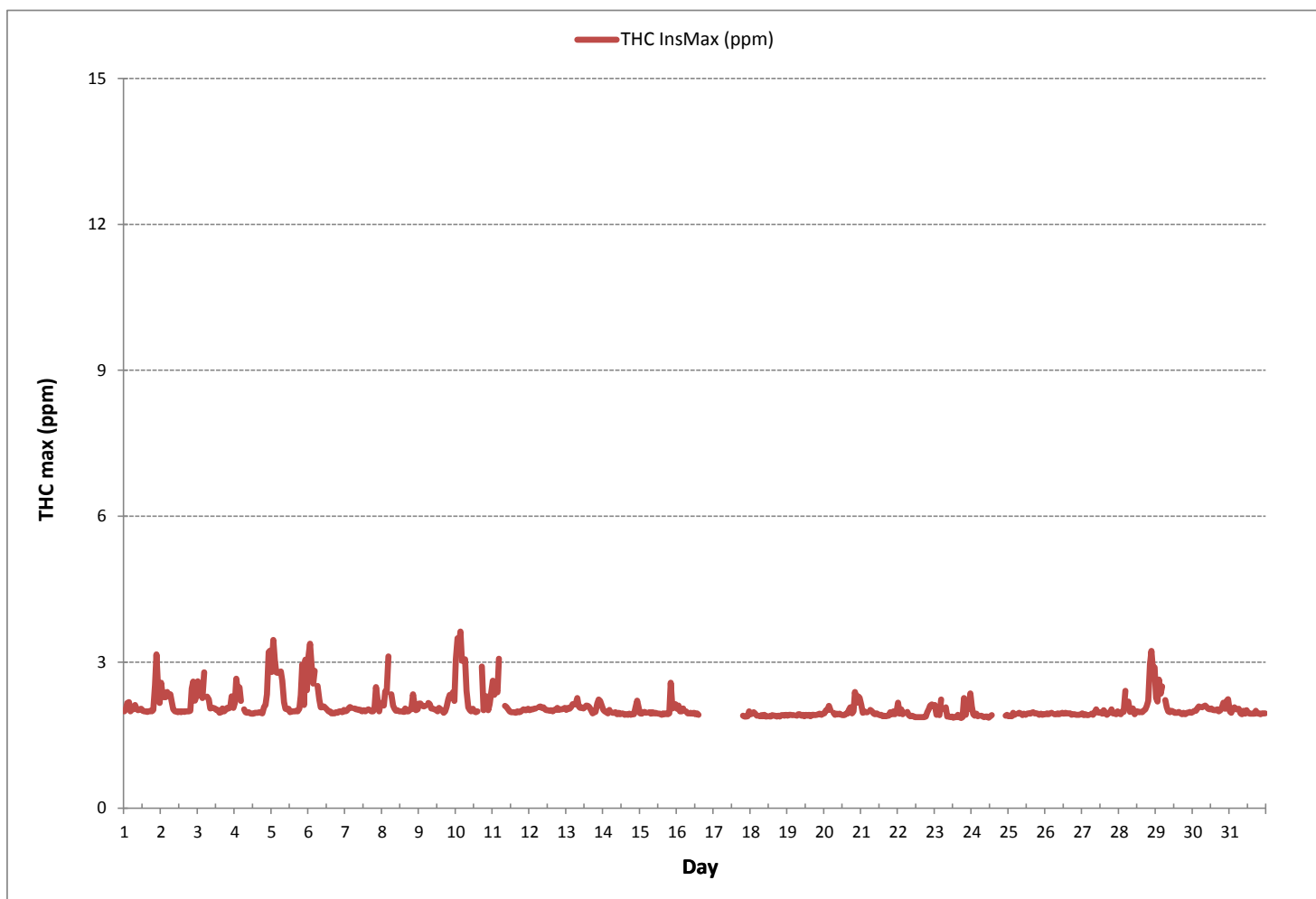
STATUS FLAG CODES

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:	674					
MAXIMUM INSTANTANEOUS VALUE:	3.63	ppm	@ HOUR	3	ON DAY	10
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	712	hrs	
MONTHLY CALIBRATION TIME:	8	hrs				
STANDARD DEVIATION:	0.26					

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)



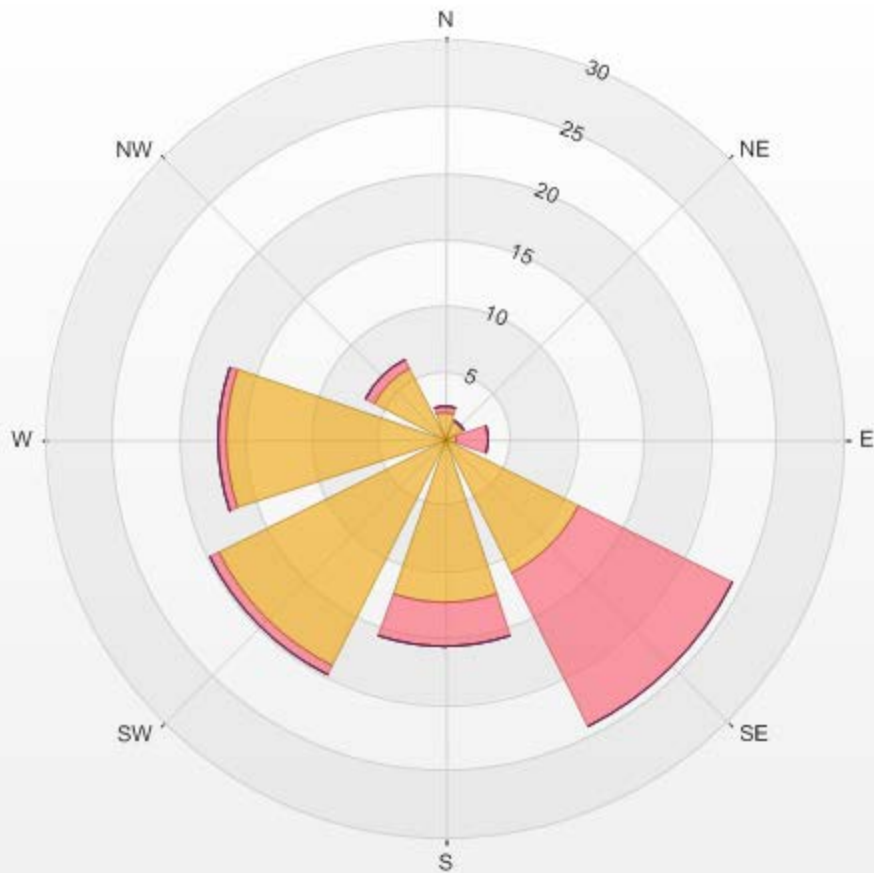
Wind: PRAMP_986
Poll.: PRAMP_986-THC55[ppm]
Monthly: 17/08
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 9.16%

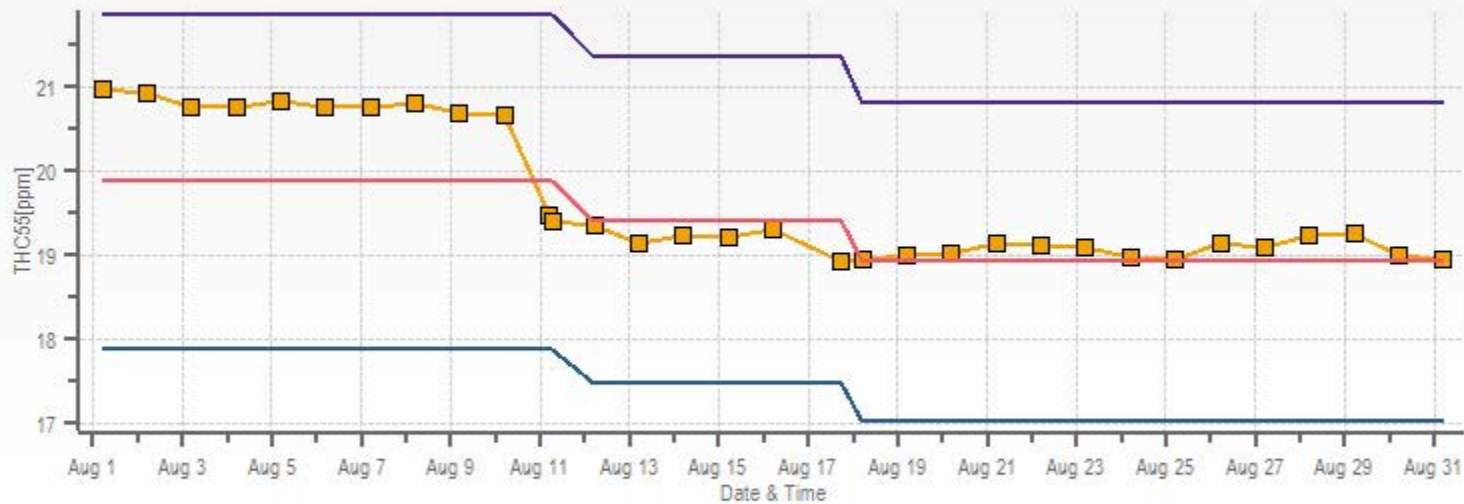
Calm Avg: 2.18 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	2.1	0.4	0.0	0.0	0.0	2.5
NE	1.5	0.2	0.0	0.0	0.0	1.6
E	0.9	2.4	0.0	0.0	0.0	3.3
SE	11.2	13.0	0.0	0.0	0.0	24.2
S	12.3	3.4	0.0	0.0	0.0	15.7
SW	19.1	0.7	0.0	0.0	0.0	19.8
W	16.4	0.7	0.0	0.0	0.0	17.1
NW	5.9	0.7	0.0	0.0	0.0	6.7
Summary	69.3	21.6	0.0	0.0	0.0	90.9

PRAMP_986 Poll.: PRAMP_986-THC55[ppm] 2017/08/01 00:00 - 2017/08/31 23:00 Calm: 9.16% Calm Poll Avg: 2.18[ppm]



THC55[ppm] Calibration: PRAMP_986 Monthly: 17/08 Type: Span



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

METHANE

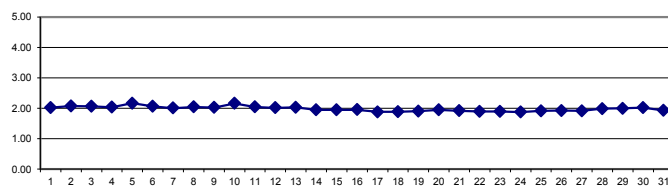
METHANE Hourly Averages (CH₄ ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	1.98	1.99	2.00	2.03	1.98	S	1.99	2.01	2.00	2.00	2.00	2.00	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	2.07	2.40	2.10	2.10	1.98	2.40	2.02	24
2	2.26	2.18	2.19	2.20	2.24	S	2.25	2.07	2.01	1.98	1.98	1.97	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.98	2.09	2.12	2.06	2.24	1.97	2.26	2.07	24
3	2.33	2.20	2.14	2.12	2.32	S	2.25	2.15	2.04	2.05	2.03	2.03	2.00	1.97	1.96	1.96	1.98	1.97	1.97	1.99	1.99	1.98	2.04	1.99	1.96	2.33	2.06	24
4	2.01	2.16	2.05	2.18	2.04	S	1.98	1.95	1.94	1.93	1.94	1.94	1.94	1.94	1.94	1.95	1.96	1.95	1.96	1.97	2.01	2.13	2.59	2.31	1.93	2.59	2.03	24
5	2.36	2.50	2.58	2.58	2.43	S	2.59	2.43	2.10	2.01	1.98	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.98	2.01	2.21	1.98	2.17	2.11	1.97	2.59	2.17	24
6	2.24	2.35	2.19	2.23	2.30	S	2.29	2.14	2.05	2.06	2.06	2.04	2.01	1.98	1.97	1.95	1.95	1.95	1.95	1.96	1.97	1.97	1.97	1.98	1.95	2.35	2.07	24
7	1.98	1.98	2.00	2.02	2.02	S	2.02	2.02	2.01	2.00	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.98	1.98	1.99	2.12	2.06	1.97	2.05	1.97	2.12	2.01	24
8	2.09	2.07	2.20	2.27	2.49	S	2.21	2.04	2.01	1.98	1.98	1.97	1.96	1.96	1.96	1.96	1.96	1.96	1.98	2.05	1.98	1.97	2.00	1.96	2.49	2.04	24	
9	2.07	2.09	2.04	2.06	2.08	S	2.10	2.07	2.02	2.00	1.99	1.98	1.97	1.98	1.98	1.97	1.96	1.96	1.97	1.98	2.02	2.05	2.13	2.13	1.96	2.13	2.03	24
10	2.46	2.65	2.63	2.63	2.50	S	2.49	2.22	2.03	2.00	1.98	1.96	1.96	1.95	1.97	Y	1.98	1.98	1.95	1.96	1.99	1.99	2.04	2.15	1.95	2.65	2.16	23
11	2.20	2.17	2.17	2.24	2.34	S	S1	2.19	2.05	2.01	1.98	1.96	1.95	1.96	1.96	1.95	1.95	1.95	1.97	1.99	2.00	1.99	1.99	2.00	1.95	2.34	2.04	23
12	2.00	2.00	2.02	2.03	2.05	S	2.07	2.07	2.05	2.02	2.00	2.00	1.99	1.98	1.98	1.99	2.00	2.00	2.03	2.00	2.01	2.01	2.03	2.04	1.98	2.07	2.02	24
13	2.02	2.03	2.03	2.04	2.06	S	2.10	2.11	2.08	2.05	2.05	2.05	2.04	2.02	2.02	1.99	1.98	1.92	1.94	1.96	2.01	2.08	2.07	2.02	1.92	2.11	2.03	24
14	1.99	1.96	1.95	1.95	1.95	S	1.95	1.95	1.94	1.94	1.94	1.93	1.92	1.91	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.93	2.05	1.98	1.91	2.05	1.94	24
15	1.93	1.94	1.95	1.95	1.94	S	1.95	1.95	1.95	1.95	1.94	1.93	1.92	1.92	1.92	1.92	1.93	1.93	1.93	1.94	2.04	1.98	2.02	2.00	1.92	2.04	1.95	24
16	1.98	1.99	1.97	1.97	1.99	S	1.96	1.95	1.95	1.94	1.94	1.94	1.94	1.93	1.92	1.91	C	C	C	Y	Y	Y	Y	Y	1.91	1.99	1.95	19
17	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	1.88	1.87	1.88	1.87	1.90	1.87	1.90	9
18	1.88	1.90	1.92	1.91	1.90	S	1.89	1.89	1.89	1.89	1.88	1.87	1.87	1.88	1.89	1.88	1.88	1.88	1.88	1.88	1.88	1.89	1.89	1.90	1.87	1.92	1.89	24
19	1.90	1.90	1.91	1.90	1.91	S	1.91	1.91	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.91	1.91	1.91	1.91	1.90	1.91	1.90	24
20	1.93	1.95	1.95	1.97	1.98	S	1.95	1.93	1.93	1.92	1.92	1.91	1.91	1.91	1.91	1.92	1.93	1.94	1.92	1.93	1.99	1.99	2.07	2.01	1.91	2.07	1.95	24
21	1.98	1.95	1.96	1.95	1.95	S	1.96	1.95	1.93	1.93	1.92	1.92	1.91	1.90	1.89	1.89	1.89	1.89	1.89	1.90	1.90	1.92	1.89	1.92	1.89	1.98	1.92	24
22	1.93	1.91	1.92	1.89	1.91	S	1.90	1.90	1.89	1.88	1.87	1.86	1.86	1.85	1.85	1.85	1.85	1.85	1.85	1.88	1.92	1.96	2.00	1.99	1.85	2.00	1.89	24
23	2.00	1.90	1.92	1.89	1.94	S	1.94	1.92	1.87	1.87	1.86	1.86	1.85	1.85	1.85	1.85	1.84	1.85	1.85	1.91	1.87	1.92	1.94	2.02	1.84	2.02	1.89	24
24	1.96	1.87	1.87	1.88	1.87	S	1.87	1.86	1.86	1.86	1.85	1.85	1.86	1.87	P	P	P	P	P	P	R	R	1.90	1.90	1.85	1.96	1.88	16
25	1.90	1.90	1.89	1.90	1.90	S	1.90	1.91	1.90	1.90	1.92	1.92	1.92	1.92	1.91	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.89	1.92	1.91	24
26	1.93	1.93	1.93	1.93	1.94	S	1.93	1.94	1.94	1.94	1.93	1.93	1.92	1.92	1.92	1.92	1.92	1.91	1.91	1.91	1.90	1.90	1.91	1.91	1.90	1.94	1.92	24
27	1.91	1.91	1.91	1.91	1.91	S	1.92	1.92	1.92	1.94	1.93	1.93	1.92	1.91	1.92	1.91	1.90	1.90	1.90	1.92	1.91	1.91	1.91	1.91	1.90	1.94	1.91	24
28	1.92	1.91	1.95	1.93	2.02	S	2.00	1.95	1.94	1.94	1.93	1.93	1.94	1.93	1.94	1.94	1.94	1.95	1.95	1.95	2.25	2.11	2.22	2.12	1.91	2.25	1.99	24
29	2.11	2.11	2.17	2.15	2.10	S	2.07	2.02	1.98	1.96	1.95	1.95	1.94	1.94	1.94	1.93	1.93	1.94	1.94	1.94	1.95	1.96	1.96	1.96	1.93	2.17	2.00	24
30	1.97	1.99	2.00	2.02	2.04	S	2.05	2.08	2.07	2.05	2.02	2.02	2.02	2.01	2.01	2.00	2.00	1.98	1.98	2.02	2.03	2.01	2.02	2.02	1.97	2.08	2.02	24
31	1.97	1.94	1.95	1.95	1.97	S	1.93	1.91	1.91	1.92	1.91	1.91	1.91	1.91	1.92	1.92	1.92	1.94	1.92	1.93	1.93	1.93	1.93	1.93	1.91	1.97	1.93	24
HOURLY MAX	2.46	2.65	2.63	2.63	2.50	NA	2.59	2.43	2.10	2.06	2.06	2.05	2.04	2.02	2.02	2.00	2.00	2.00	2.03	2.02	2.25	2.40	2.59	2.31				
HOURLY AVG	2.04	2.04	2.05	2.06	2.07	NA	2.05	2.01	1.97	1.96	1.95	1.95	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.99	2.00	2.02	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

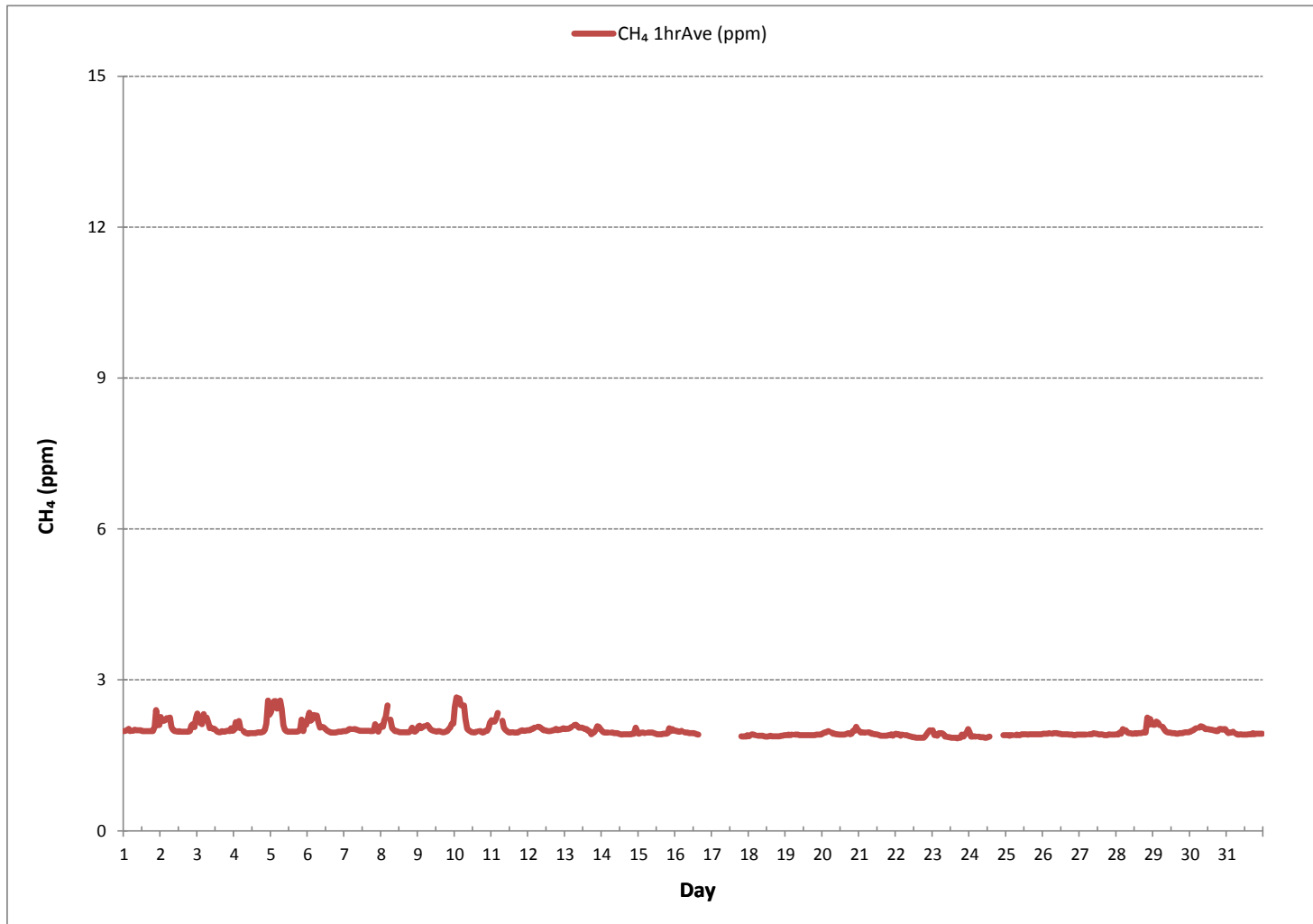
24 HR AVERAGES August 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	677			
MINIMUM 1-HR AVERAGE:	1.84	ppm @ HOUR	16	ON DAY 23
MAXIMUM 1-HR AVERAGE:	2.65	ppm @ HOUR	1	ON DAY 10
MAXIMUM 24-HR AVERAGE:	2.17	ppm		ON DAY 5
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	714 hrs
MONTHLY CALIBRATION TIME:	7	hrs	AMD OPERATION UPTIME:	96.0 %
STANDARD DEVIATION:	0.12		MONTHLY AVERAGE:	1.99 ppm

METHANE Hourly Averages (CH₄ ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - August 2017

METHANE MAX Instantaneous Maximum (CH₄ ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	2.00	2.04	2.17	2.19	2.00	S	2.03	2.13	2.04	2.02	2.03	2.05	2.01	2.00	2.01	2.00	2.00	2.02	2.00	2.03	2.55	3.18	2.55	2.17	2.00	3.18	2.14	24
2	2.59	2.35	2.29	2.29	2.40	S	2.35	2.20	2.04	2.00	2.00	1.98	2.00	1.98	2.00	2.00	2.00	2.00	2.00	2.01	2.47	2.61	2.22	2.32	1.98	2.61	2.18	24
3	2.62	2.33	2.35	2.28	2.82	S	2.30	2.24	2.06	2.07	2.06	2.06	2.03	2.00	1.97	1.98	2.05	2.00	2.02	2.07	2.05	2.07	2.32	1.97	2.82	2.17	24	
4	2.17	2.68	2.44	2.50	2.21	S	2.04	1.98	1.97	1.98	1.96	1.95	1.95	1.97	1.97	1.97	1.98	1.98	1.97	2.09	2.13	2.36	3.22	1.95	3.26	2.21	24	
5	2.82	3.48	3.08	2.82	2.80	S	2.84	2.63	2.19	2.05	2.04	2.05	1.99	2.01	2.00	2.00	2.01	2.00	2.05	2.33	2.97	2.14	3.07	2.43	1.99	3.48	2.43	24
6	3.16	3.40	2.98	2.57	2.84	S	2.51	2.24	2.07	2.08	2.10	2.06	2.03	2.00	2.00	1.96	1.97	1.96	1.98	1.97	2.00	2.00	1.99	2.02	1.96	3.40	2.26	24
7	1.99	2.02	2.06	2.09	2.07	S	2.05	2.04	2.03	2.01	2.03	2.01	2.02	2.00	2.02	2.03	2.01	2.00	2.01	2.07	2.51	2.27	2.00	2.17	1.99	2.51	2.07	24
8	2.15	2.12	2.42	2.40	3.13	S	2.36	2.13	2.05	2.01	2.02	2.01	2.01	2.00	1.98	2.06	2.01	2.00	2.04	2.04	2.36	2.14	2.02	2.04	1.98	3.13	2.15	24
9	2.16	2.16	2.12	2.11	2.11	S	2.17	2.15	2.06	2.05	2.03	2.03	2.00	2.07	2.03	2.01	1.98	2.00	2.09	2.26	2.34	2.28	2.39	2.21	1.98	2.39	2.12	24
10	3.07	3.51	3.36	3.65	3.05	S	3.09	2.42	2.07	2.03	2.01	2.05	2.00	1.99	1.99	Y	Y	2.05	1.97	2.15	2.22	2.02	2.15	2.37	1.97	3.65	2.44	22
11	2.59	2.34	2.48	2.39	3.10	S	S1	S1	2.11	2.09	2.04	2.01	1.98	1.98	1.98	1.97	1.99	1.99	2.00	2.01	2.03	2.01	2.02	2.05	1.97	3.10	2.15	22
12	2.02	2.04	2.04	2.05	2.06	S	2.09	2.10	2.06	2.07	2.03	2.02	2.02	2.01	2.02	2.01	2.03	2.02	2.07	2.03	2.04	2.04	2.05	2.07	2.01	2.10	2.04	24
13	2.03	2.06	2.05	2.07	2.17	S	2.14	2.28	2.11	2.07	2.08	2.07	2.08	2.03	2.05	2.03	2.03	1.96	1.98	1.99	2.06	2.11	2.09	2.07	1.96	2.28	2.07	24
14	2.03	1.99	1.99	1.96	2.03	S	1.97	1.97	1.98	1.95	1.97	1.94	1.96	1.95	1.93	1.95	1.93	1.95	1.93	1.95	1.94	2.07	2.22	2.08	1.93	2.22	1.98	24
15	1.97	1.95	1.98	1.99	1.98	S	1.99	1.96	1.98	1.96	1.97	1.96	1.95	1.95	1.93	1.96	1.94	1.96	1.94	1.96	2.59	2.06	2.11	2.15	1.93	2.59	2.01	24
16	2.05	2.11	2.01	2.00	2.06	S	2.01	1.96	1.96	1.97	1.95	1.97	1.95	1.96	1.94	C	C	C	C	Y	Y	Y	Y	Y	1.94	2.11	1.99	19
17	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	1.92	1.90	1.89	1.90	2.00	1.89	2.00	1.92	9
18	1.94	1.95	1.98	1.95	1.92	S	1.91	1.92	1.90	1.93	1.89	1.91	1.91	1.89	1.92	1.92	1.91	1.90	1.92	1.89	1.92	1.93	1.91	1.93	1.89	1.98	1.92	24
19	1.91	1.93	1.94	1.93	1.92	S	1.92	1.94	1.94	1.92	1.93	1.90	1.93	1.91	1.94	1.91	1.93	1.93	1.92	1.93	1.94	1.95	1.93	1.95	1.90	1.95	1.93	24
20	1.96	2.01	2.01	2.11	2.03	S	1.98	1.94	1.96	1.94	1.95	1.93	1.92	1.92	1.95	1.95	2.02	2.07	1.96	2.00	2.40	2.18	2.31	2.29	1.92	2.40	2.03	24
21	2.13	1.97	2.00	1.98	1.98	S	2.03	2.00	1.96	1.94	1.96	1.94	1.92	1.93	1.90	1.91	1.90	1.92	1.92	1.99	1.94	2.00	1.94	2.01	1.90	2.13	1.96	24
22	2.18	1.95	2.04	1.94	1.98	S	2.00	1.93	1.90	1.91	1.90	1.88	1.88	1.88	1.88	1.88	1.87	1.89	1.90	1.98	2.03	2.12	2.15	2.11	1.87	2.18	1.96	24
23	2.14	1.93	1.99	1.92	2.25	S	2.04	2.08	1.89	1.90	1.87	1.89	1.86	1.87	1.88	1.94	1.87	1.85	1.88	2.28	1.93	2.15	2.04	2.38	1.85	2.38	1.99	24
24	2.10	1.94	1.90	1.95	1.90	S	1.91	1.90	1.88	1.89	1.89	1.87	1.90	1.92	P	P	P	P	P	P	R	R	1.91	1.93	1.87	2.10	1.92	16
25	1.91	1.91	1.90	1.97	1.93	S	1.95	1.97	1.95	1.92	1.95	1.93	1.95	1.96	1.95	1.97	1.98	1.96	1.96	1.95	1.93	1.95	1.94	1.94	1.90	1.98	1.94	24
26	1.94	1.97	1.94	1.96	1.97	S	1.94	1.94	1.97	1.95	1.96	1.97	1.95	1.97	1.96	1.96	1.97	1.94	1.94	1.94	1.93	1.93	1.93	1.95	1.93	1.97	1.95	24
27	1.96	1.92	1.94	1.93	1.93	S	1.95	1.93	1.97	2.03	1.98	1.97	1.98	1.96	2.02	1.97	1.93	1.97	1.97	2.03	1.97	1.96	1.94	1.99	1.92	2.03	1.97	24
28	1.97	1.95	2.00	1.99	2.42	S	2.20	2.00	2.04	2.05	1.95	2.01	2.00	1.99	1.99	1.98	2.02	2.04	2.11	2.22	2.98	3.25	2.89	2.91	1.95	3.25	2.22	24
29	2.28	2.20	2.65	2.37	2.51	S	2.24	2.08	2.00	1.99	2.02	2.01	1.98	1.97	1.97	2.00	1.96	1.95	1.97	1.95	1.98	1.98	1.99	1.98	1.95	2.65	2.09	24
30	2.00	2.02	2.02	2.06	2.07	S	2.07	2.11	2.12	2.09	2.05	2.03	2.05	2.03	2.02	2.02	2.04	2.00	2.02	2.09	2.18	2.05	2.22	2.26	2.00	2.26	2.07	24
31	2.01	1.97	2.05	2.07	2.04	S	2.04	1.96	1.95	2.01	1.96	2.01	1.97	1.95	1.95	1.96	1.96	2.02	1.96	1.96	1.94	1.96	1.96	1.96	1.94	2.07	1.98	24
HOURLY MAX	3.16	3.51	3.36	3.65	3.13	NA	3.09	2.63	2.19	2.09	2.10	2.07	2.08	2.07	2.05	2.06	2.05	2.07	2.11	2.33	2.98	3.25	3.22	3.26				
HOURLY AVG	2.20	2.21	2.21	2.18	2.26	NA	2.14	2.07	2.01	2.00	1.99	1.98	1.97	1.97	1.97	1.97	1.97	1.98	1.98	2.04	2.18	2.16	2.18	2.17				

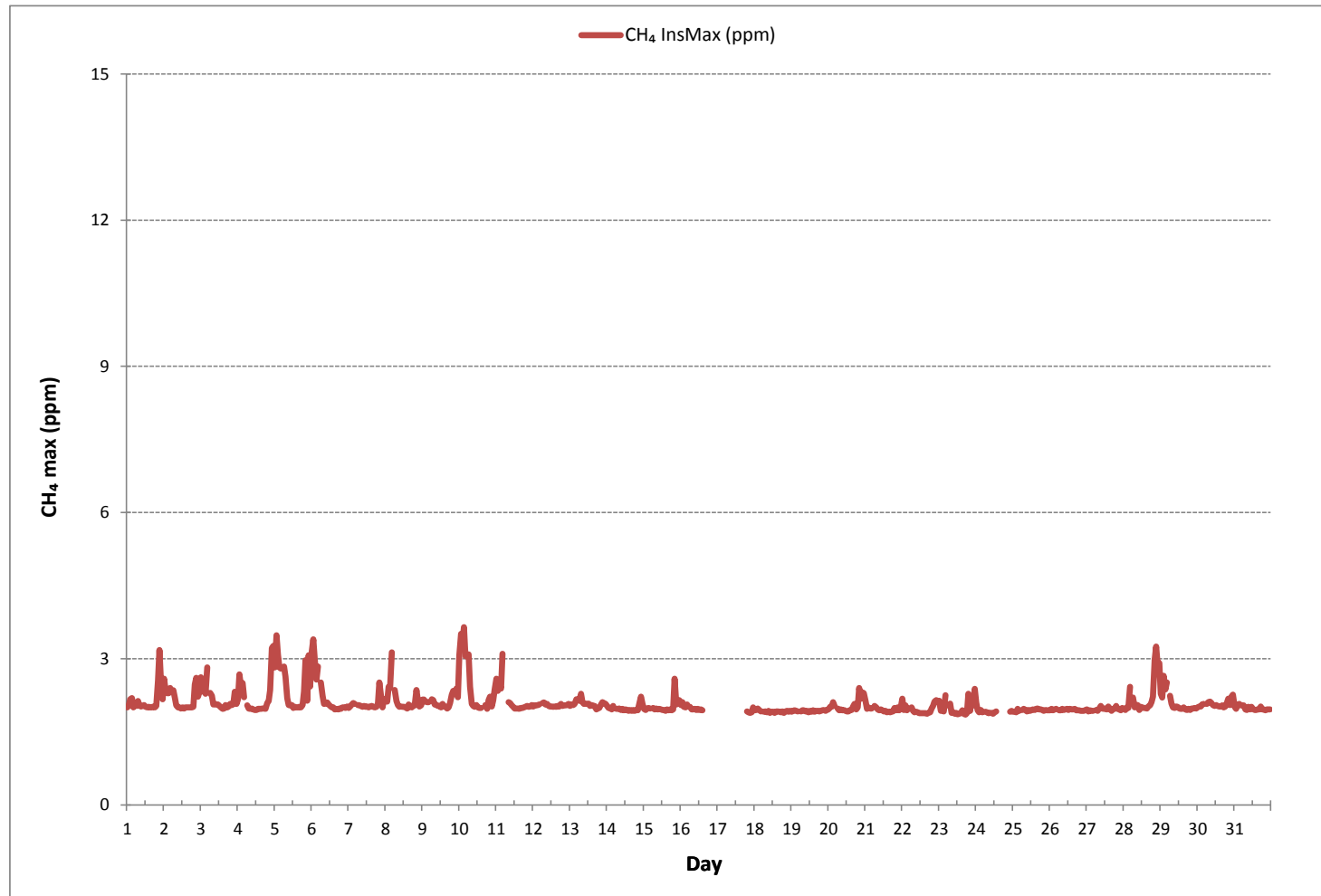
STATUS FLAG CODES

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:	674				
MAXIMUM INSTANTANEOUS VALUE:	3.65	ppm	@ HOUR	3	ON DAY 10
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	712	hrs
MONTHLY CALIBRATION TIME:	8	hrs			
STANDARD DEVIATION:	0.26				

METHANE MAX Instantaneous Maximum (CH₄ ppm)



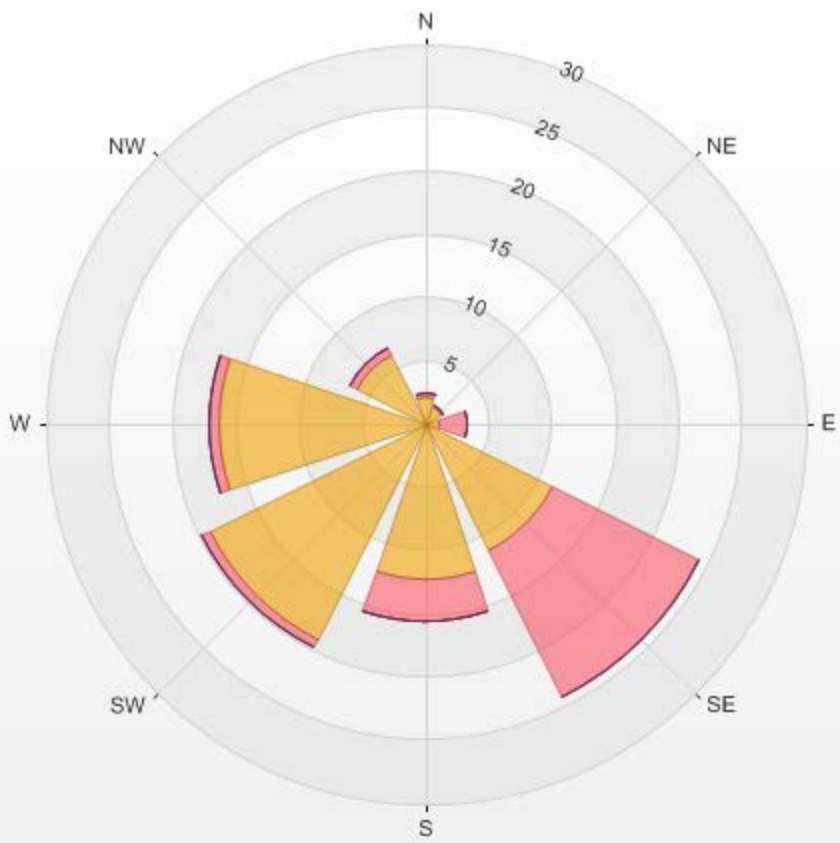
Wind: PRAMP_986
Poll.: PRAMP_986-CH4[ppm]
Monthly: 17/08
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 9.16%

Calm Avg: 2.18 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	2.1	0.4	0.0	0.0	0.0	2.5
NE	1.5	0.2	0.0	0.0	0.0	1.6
E	1.0	2.2	0.0	0.0	0.0	3.3
SE	11.2	13.0	0.0	0.0	0.0	24.2
S	12.3	3.4	0.0	0.0	0.0	15.7
SW	19.1	0.7	0.0	0.0	0.0	19.8
W	16.4	0.7	0.0	0.0	0.0	17.1
NW	6.1	0.6	0.0	0.0	0.0	6.7
Summary	69.6	21.3	0.0	0.0	0.0	90.9

PRAMP_986 Poll.: PRAMP_986-CH4[ppm] 2017/08/01 00:00 - 2017/08/31 23:00 Calm: 9.16% Calm Poll Avg: 2.18[ppm]



CH4[ppm] Calibration: PRAMP_986 Monthly: 17/08 Type: Span



Span Meas Span Ref Span Low Span High

NON-METHANE HYDROCARBON



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - August 2017

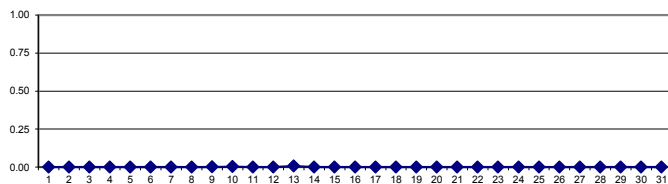
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.02	0.00	0.00	0.00	0.00	0.00	0.02	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	Y	0.00	0.02	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.04	0.00	23
11	0.00	0.00	0.00	0.00	0.00	S	S1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23
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	0.01	0.08	0.06	0.01	0.00	0.08	0.01	24
14	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
15	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	24
16	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	Y	Y	Y	Y	Y	0.00	0.00	0.00	19
17	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	0.00	0.00	0.00	0.00	9
18	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
19	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
20	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
21	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
22	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
23	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
24	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	P	P	P	P	P	P	R	R	0.00	0.00	0.00	0.00	0.00	16
25	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
26	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
27	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
28	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
29	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
30	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
31	0.00	0.00	0.00	0.00	0.00	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	0.02	0.00	0.04	0.02	0.08	0.06	0.01				
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

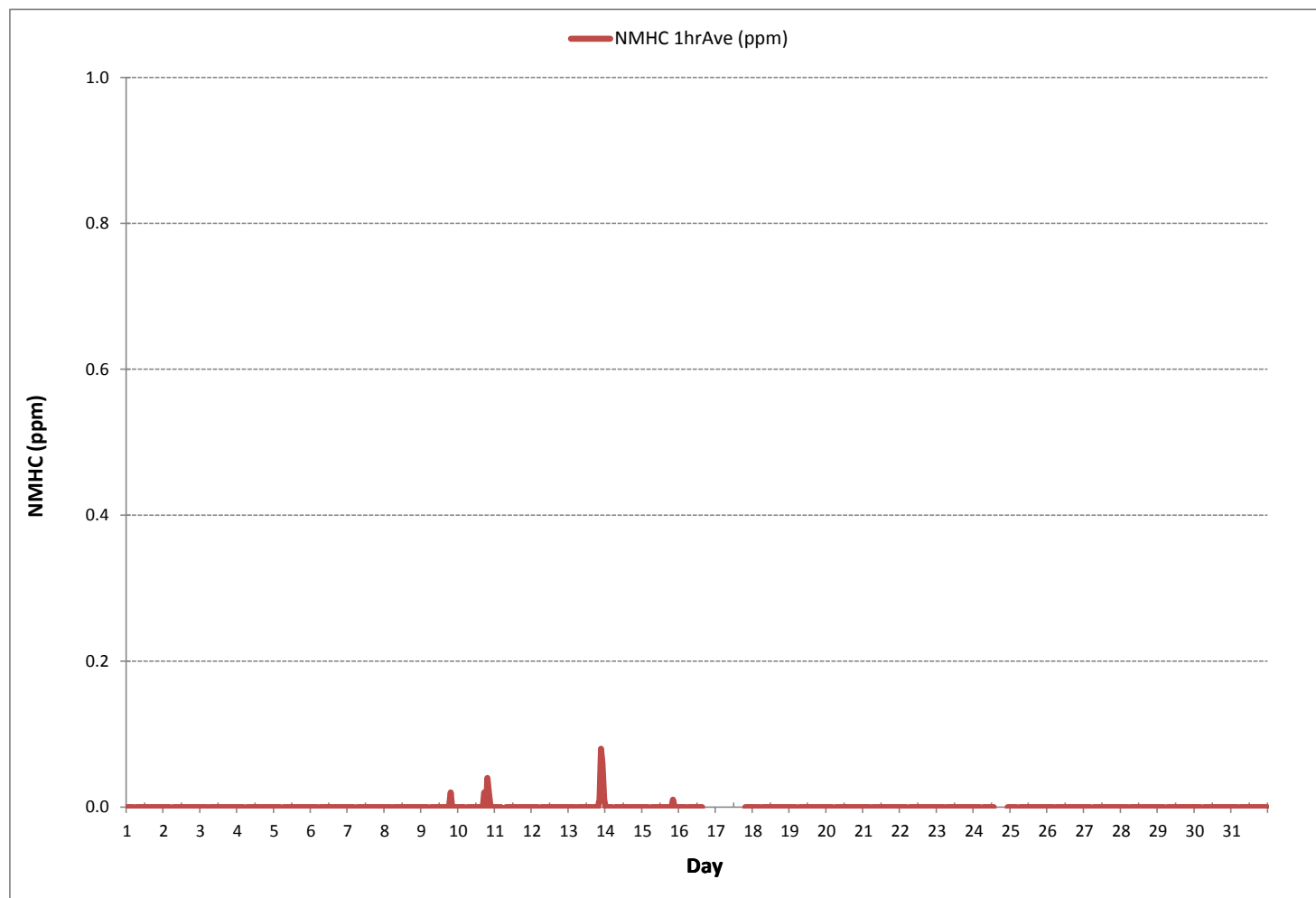
24 HR AVERAGES August 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	9				
MINIMUM 1-HR AVERAGE:	0.00	ppm	@ HOUR	0	ON DAY 1
MAXIMUM 1-HR AVERAGE:	0.08	ppm	@ HOUR	21	ON DAY 13
MAXIMUM 24-HR AVERAGE:	0.01	ppm			ON DAY 13
IZS CALIBRATION TIME:	30	hrs	OPERATIONAL TIME:	714	hrs
MONTHLY CALIBRATION TIME:	7	hrs	AMD OPERATION UPTIME:	96.0	%
STANDARD DEVIATION:	0.00		MONTHLY AVERAGE:	0.00	ppm

NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)



NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	0.00	0.00	0.13	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	0.13	0.01	24
2	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	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	0.05	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	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	0.00	24
5	0.00	0.00	0.00	0.06	0.00	S	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	24
6	0.00	0.00	0.08	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	0.08	0.00	24
7	0.00	0.01	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24	
8	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
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	0.09	0.04	0.00	0.00	0.00	0.00	0.09	0.01	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	Y	Y	0.88	0.06	0.11	0.11	0.00	0.05	0.00	0.00	0.88	0.06	22	
11	0.04	0.00	0.10	0.00	0.00	S	\$1	\$1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.01	22	
12	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.00	0.00	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	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	0.09	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.11	0.16	0.14	0.08	0.00	0.16	0.03	24
14	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
15	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.14	0.01	24
16	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	Y	Y	Y	Y	Y	0.00	0.00	0.00	0.00	19
17	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	0.00	0.00	0.00	0.00	0.00	0.00	9
18	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
19	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
20	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
21	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.07	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	0.00	24
23	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
24	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	P	P	P	P	P	P	R	R	0.00	0.00	0.00	0.00	0.00	16
25	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
26	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
27	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	24
28	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
29	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
30	0.00	0.00	0.00	0.00	0.06	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	0.00	0.06	0.00	24
31	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	0.00	0.00	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
HOURLY MAX	0.04	0.01	0.13	0.06	0.06	NA	0.01	0.03	0.04	0.01	0.01	0.01	0.01	0.09	0.09	0.03	0.88	0.06	0.11	0.14	0.16	0.14	0.08						
HOURLY AVG	0.00	0.00	0.01	0.00	0.00	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.03	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	

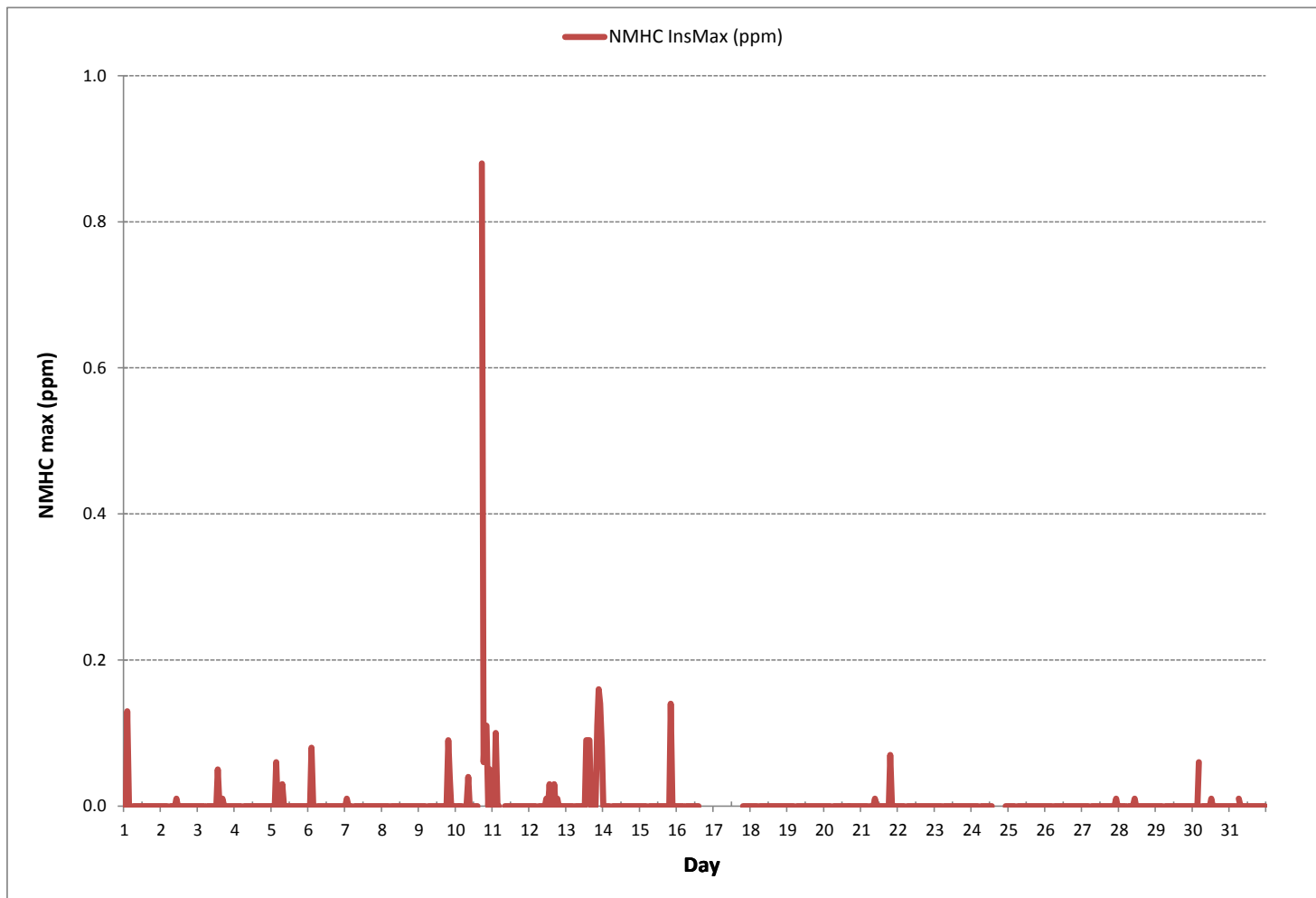
STATUS FLAG CODES

STATION CODES		STATION 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

MONTHLY SUMMARY						
NUMBER OF NON-ZERO READINGS:		37				
MAXIMUM INSTANTANEOUS VALUE:		0.88	ppm	@ HOUR	17	ON DAY 10
IZS CALIBRATION TIME:		30	hrs	OPERATIONAL TIME:		712 hrs
MONTHLY CALIBRATION TIME:		8	hrs			
STANDARD DEVIATION:		0.04				

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)



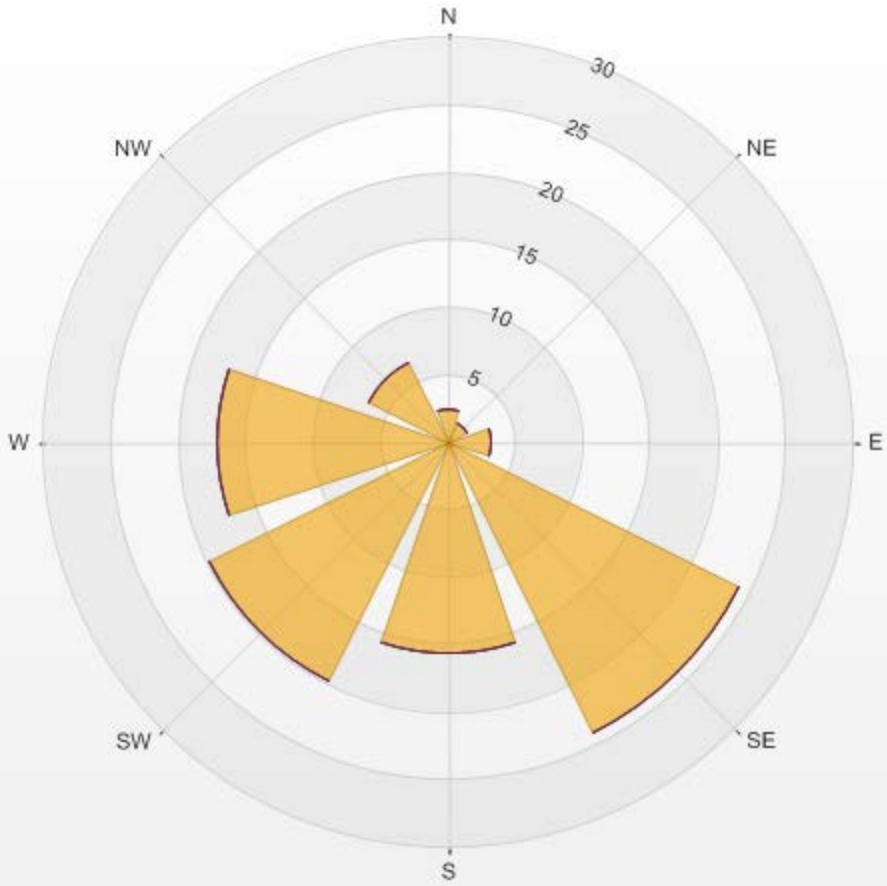
Wind: PRAMP_986
Poll.: PRAMP_986-NMHC[ppm]
Monthly: 17/08
Type: PollutionRose
Direction: Blowing From (Wind Frequency)
Based On 1 Hr.

Calm: 9.16%

Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	2.5	0.0	0.0	0.0	0.0	2.5
NE	1.6	0.0	0.0	0.0	0.0	1.6
E	3.3	0.0	0.0	0.0	0.0	3.3
SE	24.2	0.0	0.0	0.0	0.0	24.2
S	15.7	0.0	0.0	0.0	0.0	15.7
SW	19.8	0.0	0.0	0.0	0.0	19.8
W	17.1	0.0	0.0	0.0	0.0	17.1
NW	6.7	0.0	0.0	0.0	0.0	6.7
Summary	90.8	0.0	0.0	0.0	0.0	90.8

PRAMP_986 Poll.: PRAMP_986-NMHC[ppm] 2017/08/01 00:00 - 2017/08/31 23:00 Calm: 9.16% Calm Poll Avg: 0.00[ppm]



NMHC[ppm] Calibration: PRAMP_986 Monthly: 17/08 Type: Span



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

WIND SPEED

WIND SPEED Hourly Averages (WS kph)

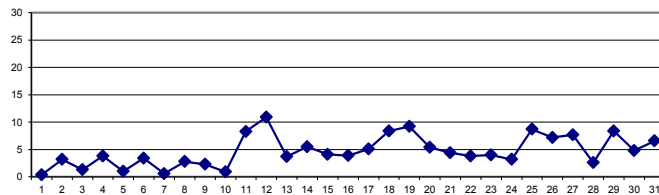
HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	2.3	3.3	1.4	2.4	1.8	1.4	3.7	4.9	2.7	3.7	2.3	2.4	2.8	1.3	4.0	1.6	2.6	2.1	1.6	1.5	2.9	1.3	2.0	4.5	1.3	4.9	0.4	24	
2	2.7	2.9	3.2	3.5	3.1	3.5	4.3	6.2	6.9	7.8	7.2	5.6	4.2	5.6	5.4	5.1	3.9	4.1	3.8	4.1	0.8	1.3	2.4	3.6	0.8	7.8	3.2	24	
3	2.9	4.6	4.6	1.9	1.2	1.5	2.1	2.5	3.8	3.8	0.9	3.5	4.1	6.2	9.9	7.4	3.4	6.2	3.0	2.7	5.4	1.7	2.6	5.1	0.9	9.9	1.3	24	
4	0.2	0.9	1.0	0.7	1.1	1.3	6.0	4.9	8.6	9.1	11.8	11.4	8.6	12.2	11.1	7.6	4.4	7.3	5.3	3.1	1.9	1.2	0.6	0.8	0.2	12.2	3.8	24	
5	1.3	1.0	1.7	1.3	3.0	2.0	0.2	1.9	3.0	2.5	3.6	1.1	5.9	6.1	9.5	5.3	5.4	4.3	3.4	1.3	1.9	1.5	1.3	1.2	0.2	9.5	1.0	24	
6	1.9	2.1	2.6	0.6	1.4	2.4	1.7	1.8	2.3	1.0	9.6	5.7	7.8	7.2	7.6	8.1	6.2	6.6	6.7	7.4	5.3	5.1	3.7	3.4	0.6	9.6	3.4	24	
7	3.7	3.1	2.3	1.5	1.9	1.8	2.6	2.0	3.0	4.1	4.5	3.3	2.8	1.2	3.2	3.1	5.9	5.8	5.3	4.4	0.5	2.1	1.7	2.1	0.5	5.9	0.6	24	
8	2.6	2.9	1.4	1.6	1.5	3.0	4.7	5.5	6.3	8.1	3.4	4.9	4.5	4.7	5.3	5.3	4.2	5.0	3.1	4.5	3.2	2.9	3.3	3.7	1.4	8.1	2.8	24	
9	3.8	2.6	5.8	5.3	5.3	3.0	4.2	5.8	6.7	8.0	8.7	3.8	4.6	4.3	4.0	0.7	2.6	6.1	2.2	1.3	3.2	2.7	2.6	2.6	0.7	8.7	2.3	24	
10	0.8	0.6	0.4	0.5	1.5	1.8	1.1	1.0	3.1	2.8	4.1	3.1	2.9	2.6	4.8	6.4	6.6	3.5	3.6	1.2	3.0	3.0	4.1	2.9	0.4	6.6	0.9	24	
11	2.0	2.7	1.5	2.5	2.8	4.6	3.1	4.9	4.9	7.3	12.7	13.1	11.7	13.2	11.2	12.8	13.4	13.9	16.4	14.3	10.3	10.5	10.6	7.8	1.5	16.4	8.3	24	
12	7.8	8.3	8.0	9.3	9.3	7.7	7.3	6.7	12.5	15.7	21.0	20.7	17.6	18.2	16.1	14.0	14.2	13.8	9.5	7.0	6.7	6.8	7.1	6.8	6.7	21.0	10.9	24	
13	8.4	7.4	6.8	6.1	4.1	4.3	4.0	2.1	3.6	7.4	5.4	5.0	5.0	4.1	6.0	8.3	8.3	9.0	6.2	5.3	5.7	3.8	3.4	7.5	2.1	9.0	3.7	24	
14	6.5	5.5	4.5	4.8	5.0	6.1	6.1	6.1	6.0	6.4	7.6	8.0	9.4	9.4	8.6	7.9	7.2	6.0	7.8	6.9	4.9	2.5	3.0	2.8	2.5	9.4	5.5	24	
15	4.2	4.4	4.5	5.2	5.2	5.0	5.7	5.3	5.5	9.3	12.7	10.7	10.3	8.0	8.8	7.7	8.5	8.1	7.5	4.4	0.8	2.3	3.2	4.1	0.8	12.7	4.1	24	
16	4.7	3.9	3.0	4.2	7.0	6.9	8.7	8.8	7.4	6.6	6.4	7.7	8.9	8.3	9.6	10.7	10.2	10.2	3.6	3.4	3.6	3.7	3.7	2.8	2.8	10.7	3.9	24	
17	3.0	4.4	4.5	4.2	3.5	4.7	5.2	5.6	5.9	6.8	7.4	8.2	10.6	8.0	8.9	9.0	9.1	9.8	7.0	3.3	5.0	4.6	5.9	5.0	3.0	10.6	5.1	24	
18	5.1	7.4	6.4	7.1	8.7	9.7	8.2	8.9	9.2	9.2	10.4	13.8	14.1	14.5	13.0	13.9	13.0	10.9	10.4	10.4	9.5	6.8	5.8	3.6	3.6	14.5	8.4	24	
19	4.0	4.5	5.3	4.4	5.8	5.4	4.5	5.7	9.6	17.3	23.8	18.8	15.8	16.5	13.6	14.2	12.0	12.7	13.5	7.1	5.8	4.4	7.8	6.5	4.0	23.8	9.2	24	
20	4.1	4.2	3.7	2.2	2.6	3.1	2.4	5.0	6.4	6.4	7.3	15.8	17.2	16.2	16.2	14.6	12.1	13.8	10.4	4.8	0.9	0.9	1.4	2.4	0.9	17.2	5.4	24	
21	4.0	4.2	3.9	4.8	6.4	5.4	5.8	6.4	7.3	8.8	7.0	8.4	8.5	7.3	6.8	6.6	5.5	4.3	5.9	4.5	4.8	2.0	3.6	1.4	1.4	8.8	4.4	24	
22	3.7	3.9	2.9	3.7	3.6	3.4	4.0	4.5	5.0	4.4	5.7	5.9	7.4	6.5	7.5	9.0	6.1	4.9	5.7	6.6	3.8	3.7	5.0	6.1	2.9	9.0	3.8	24	
23	4.2	4.0	5.9	5.6	4.3	3.2	4.5	9.4	10.3	10.1	8.5	6.3	7.1	7.5	7.2	7.3	4.6	5.9	3.7	3.6	4.1	4.0	1.2	1.9	1.2	10.3	4.0	24	
24	1.9	7.6	3.8	7.1	13.6	4.1	3.3	3.2	5.1	3.6	4.8	2.0	3.0	2.5	P	P	P	P	P	P	P	6.7	6.9	8.6	8.4	1.9	13.6	3.2	18
25	8.0	7.4	7.1	9.2	17.2	19.4	21.0	11.8	6.9	6.3	7.4	8.2	8.5	9.2	10.4	10.2	10.7	10.2	9.5	9.2	6.3	5.9	5.5	6.3	5.5	21.0	8.7	24	
26	6.0	5.9	5.8	4.7	4.8	4.8	5.7	6.3	7.2	9.3	8.8	8.9	9.8	11.3	12.3	10.9	10.3	10.4	6.5	7.3	7.2	5.3	5.8	6.3	4.7	12.3	7.2	24	
27	5.8	7.2	9.7	6.9	7.0	5.7	5.2	6.3	9.5	12.3	13.7	13.0	12.8	11.1	10.6	11.4	10.3	7.5	10.6	5.8	3.0	3.6	4.0	3.0	3.0	13.7	7.7	24	
28	4.0	3.0	2.4	2.8	1.4	2.5	2.1	2.2	2.8	3.5	4.6	6.6	8.5	8.1	11.3	9.5	7.8	6.7	3.7	1.3	0.8	2.1	2.0	1.6	0.8	11.3	2.6	24	
29	2.2	2.4	2.8	2.8	2.6	3.5	4.4	4.5	7.0	10.0	11.5	13.7	14.2	12.5	12.1	15.3	13.9	12.6	9.9	7.7	8.7	9.6	9.3	8.2	2.2	15.3	8.4	24	
30	9.9	9.9	6.2	5.3	3.7	3.3	3.1	5.2	7.3	8.7	10.3	8.5	5.9	9.5	8.8	6.9	6.1	4.2	2.5	3.8	2.5	3.8	2.5	4.4	2.5	10.3	4.8	24	
31	5.9	4.9	2.5	2.5	6.2	4.6	4.6	4.3	7.4	10.0	10.7	12.0	10.2	11.6	12.5	12.3	11.8	11.4	7.3	5.7	5.1	6.9	6.9	7.1	2.5	12.5	6.6	24	
HOURLY MAX	9.9	9.9	9.7	9.3	17.2	19.4	21.0	11.8	12.5	17.3	23.8	20.7	17.6	18.2	16.2	15.3	14.2	13.9	16.4	14.3	10.3	10.5	10.6	8.4					
HOURLY AVG	2.6	2.8	2.8	2.7	2.7	2.4	2.2	3.1	3.8	4.2	4.7	4.5	4.9	5.1	5.6	5.3	4.5	4.4	3.5	2.5	2.3	2.2	2.2	2.4					

STATUS FLAG CODES

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

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

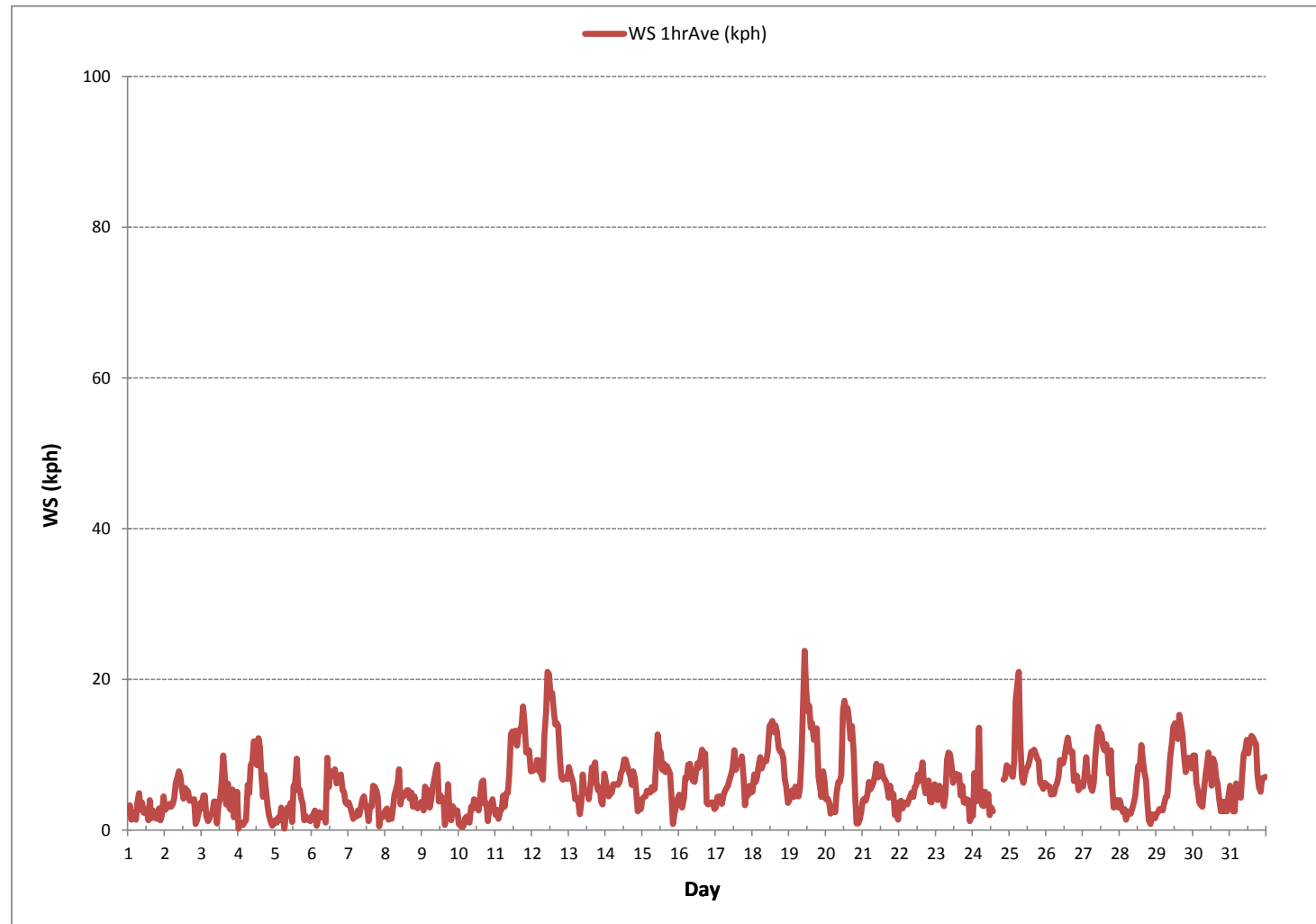
24 HR AVERAGES August 2017



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	738				
MINIMUM 1-HR AVERAGE:	0.2	kph	@ HOUR	0	ON DAY 4
MAXIMUM 1-HR AVERAGE:	23.8	kph	@ HOUR	10	ON DAY 19
MAXIMUM 24-HR AVERAGE:	10.9	kph			ON DAY 12
MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:	738	hrs
STANDARD DEVIATION:	3.8		AMD OPERATION UPTIME:	99.2	%
			MONTHLY AVERAGE:	2.8	kph

WIND SPEED Hourly Averages (WS kph)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - August 2017

WIND SPEED Instantaneous Maximum (WS kph)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	12.9	10.2	9.0	5.8	7.9	7.3	9.7	11.1	8.1	10.0	7.0	9.9	10.7	13.0	14.6	14.6	13.9	8.4	9.2	4.9	7.6	4.4	6.4	10.0	4.4	14.6	9.4	24	
2	8.1	6.7	6.7	8.2	7.9	10.1	9.1	12.9	13.0	17.9	18.4	20.3	17.1	19.1	15.6	18.3	15.3	14.1	11.3	12.9	3.6	4.5	7.1	8.0	3.6	20.3	11.9	24	
3	7.6	9.9	9.1	7.8	6.4	5.0	6.8	8.5	8.9	9.1	7.6	12.2	18.4	24.3	25.2	22.6	28.8	23.4	16.6	10.3	13.4	6.5	7.8	13.5	5.0	28.8	12.9	24	
4	6.6	5.0	5.2	4.2	4.6	5.6	15.0	14.4	20.3	21.0	27.3	27.8	27.7	26.0	32.2	26.2	19.7	20.8	19.7	10.4	11.2	4.6	2.9	3.9	2.9	32.2	15.1	24	
5	5.1	4.9	11.2	5.1	8.8	6.0	9.8	5.4	7.3	10.4	14.3	14.3	18.3	19.9	21.2	15.7	14.5	16.2	9.3	5.1	4.0	3.3	2.8	4.2	2.8	21.2	9.9	24	
6	12.3	12.4	6.3	15.6	4.9	9.4	7.9	5.9	7.3	8.0	25.3	16.0	22.7	24.8	23.2	24.1	19.1	18.1	22.8	22.2	17.5	15.1	14.1	11.2	4.9	25.3	15.3	24	
7	11.5	8.2	5.5	6.4	5.9	6.6	11.0	8.6	12.9	18.7	16.5	16.8	14.9	13.1	13.0	12.1	17.9	16.9	13.9	11.2	4.0	3.9	5.4	4.8	3.9	18.7	10.8	24	
8	6.7	7.6	5.8	7.3	5.5	7.5	9.9	9.9	12.6	19.0	14.5	15.6	21.9	19.3	20.6	21.1	17.9	14.5	12.5	9.7	6.7	6.4	7.5	8.2	5.5	21.9	12.0	24	
9	10.5	7.4	11.0	10.5	10.7	9.0	9.1	10.0	12.3	17.9	19.1	19.7	19.6	17.9	12.9	14.1	15.6	13.4	6.7	10.2	8.3	8.6	6.8	7.2	6.7	19.7	12.0	24	
10	3.7	2.8	3.1	2.7	3.8	4.3	4.6	5.8	7.9	8.9	9.6	13.7	22.9	19.3	18.5	21.3	18.6	14.4	13.2	6.3	10.9	8.1	11.0	8.5	2.7	22.9	10.2	24	
11	8.5	9.1	8.2	7.1	7.9	9.8	8.4	11.4	12.8	17.7	24.8	25.7	25.9	30.0	28.6	30.7	27.6	27.2	27.0	29.4	21.4	23.4	21.0	15.6	7.1	30.7	19.1	24	
12	14.9	17.2	16.4	20.0	19.9	21.5	14.7	13.0	26.9	29.6	37.0	35.9	32.3	30.4	27.9	26.3	27.0	26.1	24.6	16.3	17.6	18.2	15.7	17.3	13.0	37.0	22.8	24	
13	20.1	17.2	18.3	17.0	11.8	11.7	11.8	6.6	13.2	15.9	18.1	16.2	15.4	14.5	29.4	27.9	28.6	33.6	22.6	19.9	18.9	14.8	13.0	17.0	6.6	33.6	18.1	24	
14	13.0	16.8	14.0	13.0	12.2	14.3	14.2	17.2	21.0	20.5	23.5	28.0	35.4	27.7	30.6	25.8	25.1	21.0	24.3	13.6	13.9	17.8	6.7	8.3	6.7	35.4	19.1	24	
15	14.1	15.0	14.7	14.8	15.2	14.6	14.1	18.9	17.8	21.0	33.3	24.6	26.2	23.2	24.7	30.6	22.8	26.0	22.6	20.1	5.2	5.7	6.5	8.2	5.2	33.3	18.3	24	
16	9.0	8.8	7.5	9.7	11.7	11.2	13.4	16.3	20.6	23.3	24.2	28.4	28.3	30.9	30.4	33.8	29.5	30.6	16.0	15.5	11.4	11.9	12.3	11.1	7.5	33.8	18.6	24	
17	11.3	9.8	8.6	9.1	9.9	7.7	11.4	15.0	17.6	24.7	22.3	27.6	37.6	25.1	31.5	32.7	33.4	32.0	24.0	12.6	19.6	17.8	24.4	10.5	7.7	37.6	19.8	24	
18	14.8	13.7	11.7	19.2	23.8	25.6	23.6	24.3	31.2	37.2	33.2	47.9	42.4	44.9	43.6	57.3	47.6	38.0	39.7	38.6	31.1	26.8	19.6	12.0	11.7	57.3	31.2	24	
19	17.8	20.6	18.1	15.3	21.6	16.8	15.4	21.8	27.7	42.9	48.5	44.6	41.6	41.4	40.9	49.8	41.0	39.9	43.3	28.2	21.0	18.1	31.1	25.9	15.3	49.8	30.6	24	
20	10.2	8.7	6.6	6.2	5.8	6.4	11.4	15.6	18.9	18.7	22.9	41.4	40.3	36.7	40.2	37.0	29.9	30.9	26.0	12.9	6.1	5.9	5.7	5.5	5.5	41.4	18.7	24	
21	8.0	8.2	7.1	9.8	11.6	9.2	10.2	16.2	20.0	20.8	19.4	23.3	25.4	23.9	22.9	24.0	19.9	16.4	11.6	8.9	7.9	10.9	11.4	7.7	7.1	25.4	14.8	24	
22	10.2	8.5	7.5	6.5	7.7	8.1	13.1	14.7	15.2	13.5	16.5	21.4	23.9	24.6	25.0	32.2	23.7	19.9	18.2	13.5	9.5	8.3	13.4	12.5	6.5	32.2	15.3	24	
23	13.3	9.8	13.3	17.4	12.1	11.2	10.0	18.1	22.5	23.4	21.8	20.4	24.8	25.9	23.8	28.8	17.5	16.0	12.9	5.6	7.0	10.6	15.0	5.7	5.6	28.8	16.1	24	
24	16.2	27.1	17.8	24.2	33.2	34.7	22.4	12.3	12.0	9.6	12.8	10.6	11.1	12.8	P	P	P	P	P	P	P	P	27.0	32.3	25.5	9.6	34.7	20.1	17
25	26.2	25.7	22.9	28.5	35.9	43.3	46.8	30.0	24.6	21.3	23.7	27.2	25.3	28.9	36.7	33.7	35.5	31.3	34.2	30.0	23.0	18.9	15.5	19.7	15.5	46.8	28.7	24	
26	20.4	19.3	19.6	16.2	16.9	14.9	15.1	19.2	21.9	31.4	25.1	30.4	30.0	51.4	47.0	41.3	36.6	42.7	27.8	22.9	28.6	20.9	21.9	23.4	14.9	51.4	26.9	24	
27	21.7	23.8	37.0	25.5	22.0	19.9	16.9	18.5	29.9	30.5	31.7	37.3	35.5	32.5	31.6	40.7	37.0	24.4	36.9	23.4	13.6	13.3	12.2	9.9	9.9	40.7	26.1	24	
28	12.0	9.6	6.8	6.1	7.8	5.4	4.3	5.6	10.8	11.1	13.4	21.0	24.9	28.7	26.7	23.3	21.8	17.6	12.7	7.3	4.3	7.5	5.0	5.6	4.3	28.7	12.5	24	
29	8.7	7.9	8.0	7.6	8.4	7.5	9.2	10.9	20.4	25.3	34.0	32.5	43.0	33.5	33.0	37.3	34.1	34.8	27.7	19.4	22.8	21.7	23.4	22.9	7.5	43.0	22.3	24	
30	26.9	29.7	20.4	15.2	12.7	10.9	11.5	17.3	16.2	17.9	24.5	18.8	17.4	21.3	22.4	18.3	17.9	15.2	10.3	8.5	5.1	6.5	8.0	13.0	5.1	29.7	16.1	24	
31	15.5	16.6	11.5	7.1	12.6	12.9	12.6	15.7	26.5	32.7	37.7	39.8	30.7	38.2	34.6	39.0	34.9	33.0	26.4	21.9	19.4	24.7	25.7	25.1	7.1	39.8	24.8	24	
HOURLY MAX	26.9	29.7	37.0	28.5	35.9	43.3	46.8	30.0	31.2	42.9	48.5	47.9	43.0	51.4	47.0	57.3	47.6	42.7	43.3	38.6	31.1	27.0	32.3	25.9					
HOURLY AVG	12.8	12.8	11.9	11.9	12.5	12.5	13.0	13.9	17.4	20.3	22.8	24.8	26.2	26.6	27.6	28.7	25.8	23.9	20.8	15.7	13.2	12.8	13.3	12.3					

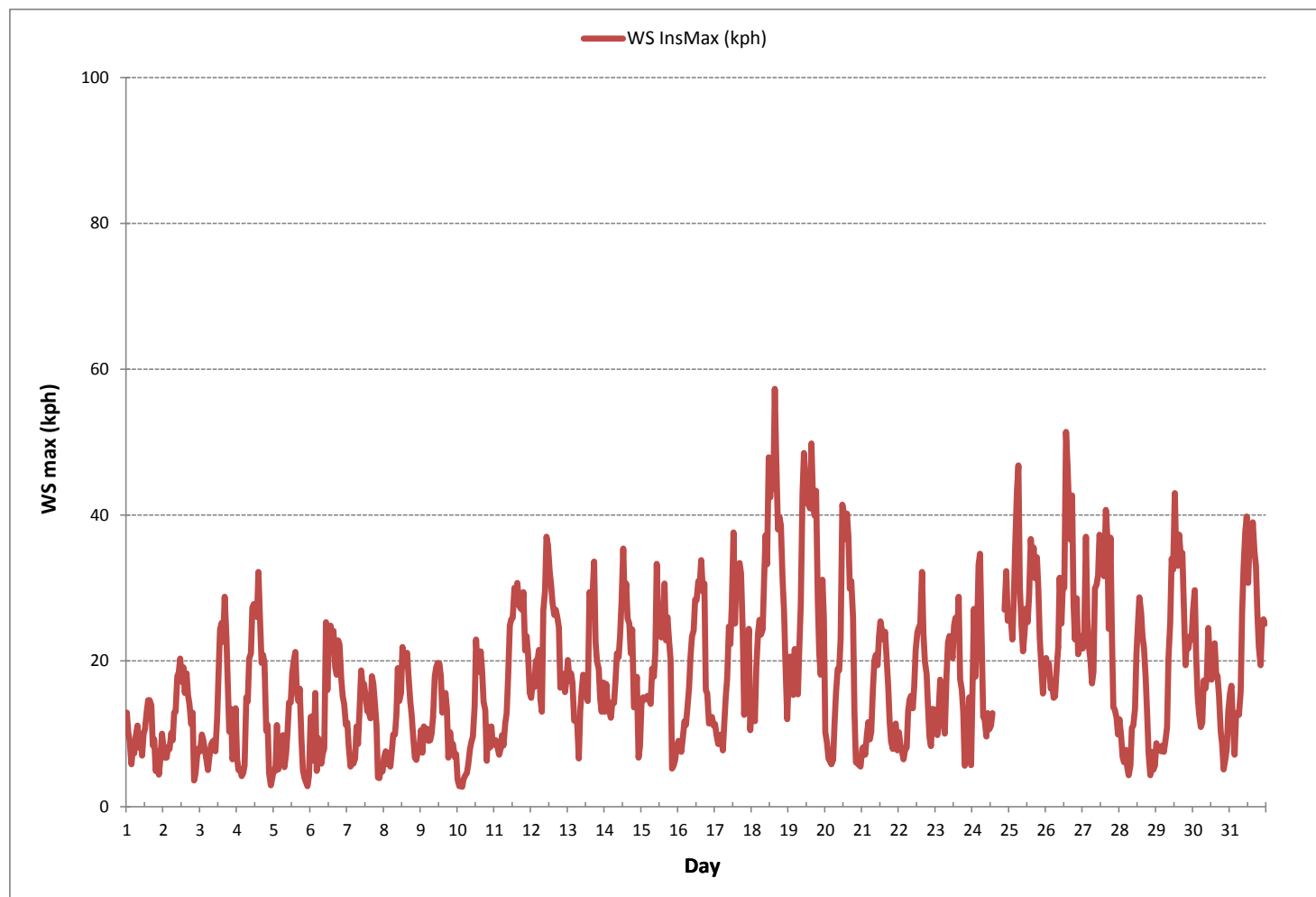
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	57.3	kph	@ HOUR	15	ON DAY	18
OPERATIONAL TIME:						737 hrs

WIND SPEED Instantaneous Maximum (WS kph)



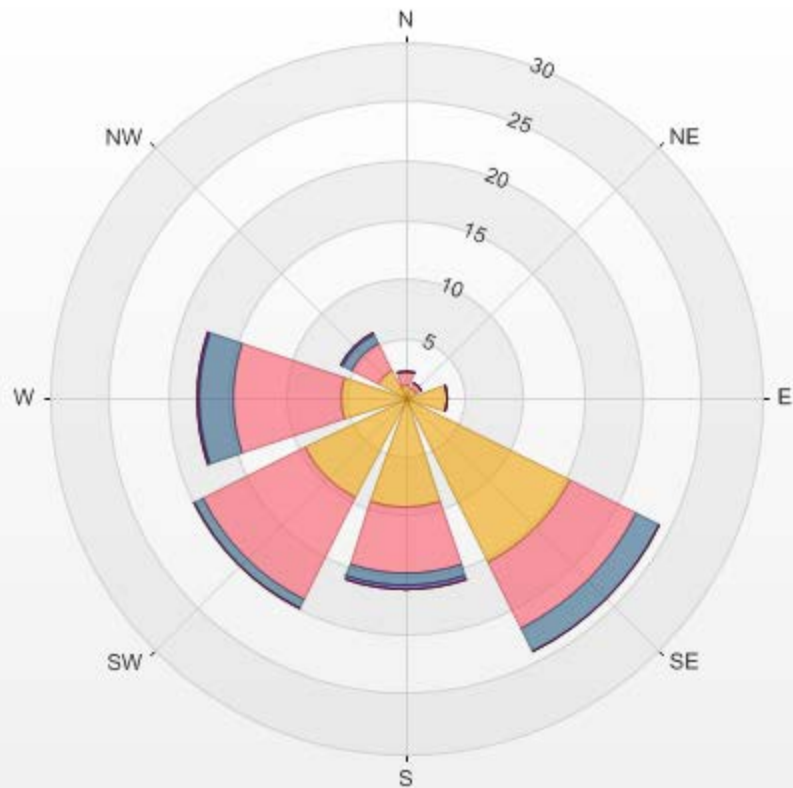
Wind: PRAMP_986
 Monitor: WSP [kph]
 Monthly: 17/08
 Type: WindRose
 Direction: Blowing From (Wind Frequency)
 Based On 1 Hr.

Calm: 0.41%

Direction	0.5-6.0	6.0-12.0	12.0-20.0	20.0-29.0	29.0-39.0	>39.0	Total
N	1.5	1.2	0.0	0.0	0.0	0.0	2.7
NE	1.2	0.5	0.0	0.0	0.0	0.0	1.8
E	6.0	0.0	0.0	0.0	0.0	0.0	6.0
SE	17.6	6.2	2.2	0.0	0.0	0.0	26.0
S	10.4	5.4	1.1	0.3	0.0	0.0	17.2
SW	9.8	9.6	0.8	0.0	0.0	0.0	20.2
W	6.5	9.1	2.9	0.1	0.0	0.0	18.6
NW	3.7	2.6	0.8	0.1	0.0	0.0	7.2
Summary	56.6	34.7	7.7	0.6	0.0	0.0	100.0

% Icon	Classes (kph)	48	1.8-6.0	35	6.0-12.0	8	12.0-20.0	1	20.0-29.0	0	29.0-39.0	0	>39.0
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PRAMP_986 2017/08/01 00:00 - 2017/08/31 23:00 Calm: 9.08% Calm Wind Avg Speed: 1.18(kph)



WIND DIRECTION



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 986b Station - August 2017

WIND DIRECTION Hourly Averages (WD)

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

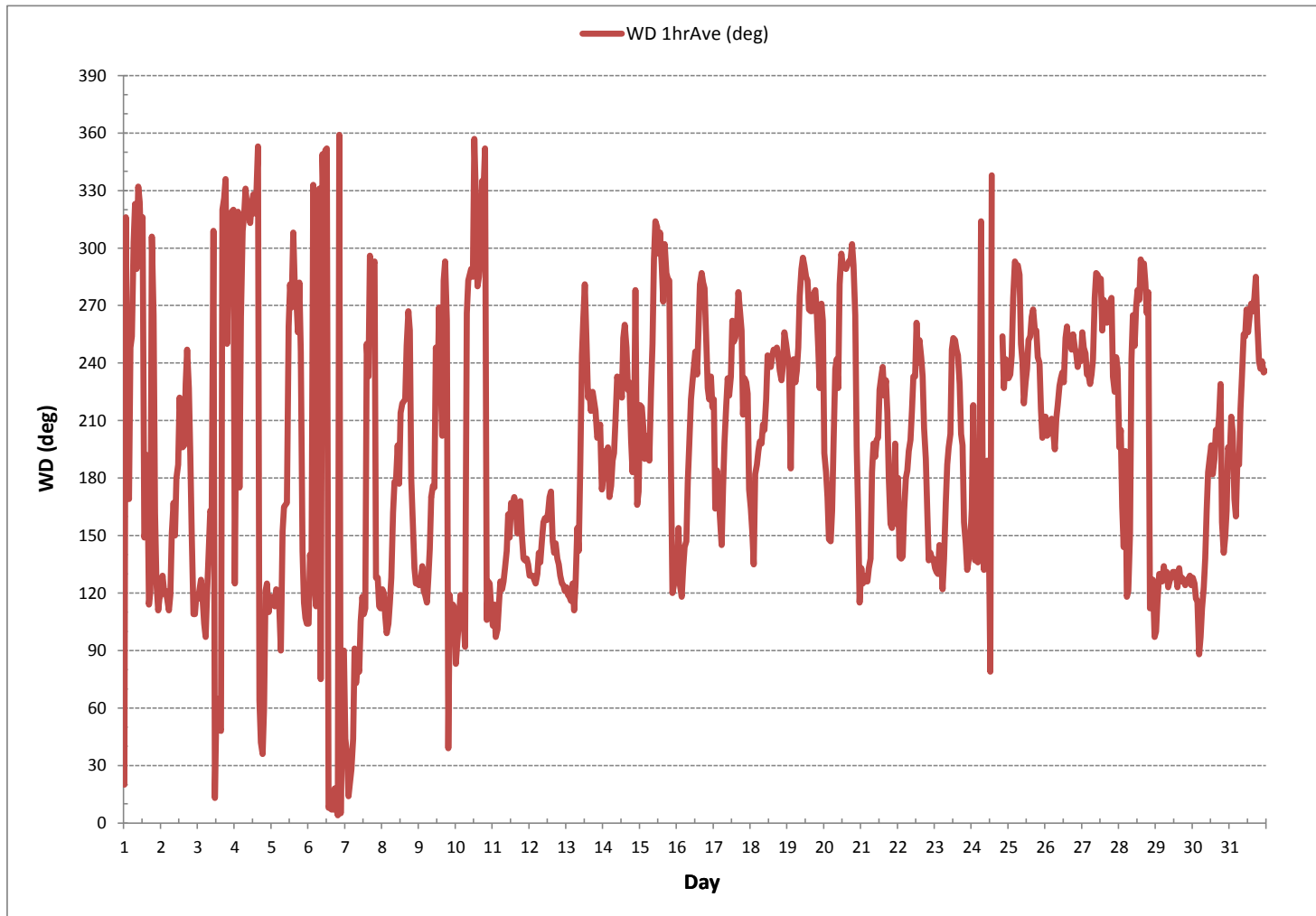
STATUS FLAG CODES

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

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

MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:	738	hrs
STANDARD DEVIATION:	72		AMD OPERATION UPTIME:	99.2	%
			MONTHLY AVERAGE:	215 (SSW)	

WIND DIRECTION Hourly Averages (WD)



RELATIVE HUMIDITY

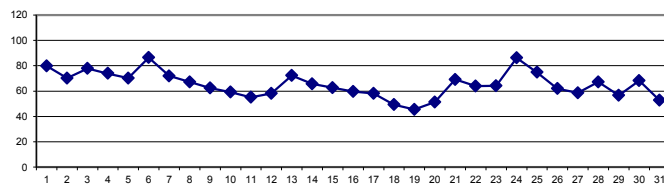
RELATIVE HUMIDITY Hourly Averages (RH %)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	94	96	95	96	96	96	97	98	98	97	93	86	77	68	58	55	53	50	41	42	58	84	92	93	41	98	80	24
2	94	96	96	97	97	97	97	84	74	62	59	57	61	52	46	42	38	38	39	42	56	81	89	91	38	97	70	24
3	90	92	92	93	95	96	95	81	74	71	65	63	50	39	38	42	50	87	89	91	91	94	96	94	38	96	78	24
4	95	96	97	97	97	97	92	87	80	74	66	57	55	50	45	42	69	49	46	47	67	84	90	94	42	97	74	24
5	94	95	96	96	97	97	96	83	76	66	56	51	49	49	41	38	38	38	40	51	75	83	88	90	38	97	70	24
6	93	94	95	95	96	96	96	94	86	81	80	81	86	85	80	73	72	72	74	85	89	91	90	88	72	96	86	24
7	87	91	94	96	97	96	96	91	79	71	61	55	51	47	48	52	48	44	45	47	65	84	89	92	44	97	72	24
8	93	94	95	95	95	96	96	81	75	64	57	52	48	43	41	39	40	39	37	41	59	77	77	79	37	96	67	24
9	80	84	82	84	88	91	89	79	68	57	49	45	40	40	43	40	34	33	35	48	57	69	77	83	33	91	62	24
10	88	90	92	93	94	94	95	77	70	63	53	41	34	32	30	26	24	24	25	33	45	59	67	71	24	95	59	24
11	76	78	78	85	86	86	83	68	61	51	43	35	32	32	32	30	28	29	34	40	50	56	62	70	28	86	55	24
12	77	79	84	86	88	86	83	73	62	51	43	38	35	33	33	34	34	36	41	48	54	58	66	73	33	88	58	24
13	76	76	77	77	80	82	85	80	72	65	66	66	62	56	55	54	56	57	64	70	84	91	92	92	54	92	72	24
14	92	88	87	86	89	91	88	81	75	64	59	52	48	43	42	41	43	42	47	55	59	58	70	77	41	92	66	24
15	68	71	72	79	79	77	79	67	63	59	58	64	60	54	49	45	47	42	37	37	55	76	82	83	37	83	63	24
16	81	81	85	86	87	88	84	70	62	56	52	48	45	43	39	38	39	38	41	46	52	57	55	59	38	88	60	24
17	64	76	83	85	87	90	89	72	66	59	53	46	41	39	37	37	35	34	36	44	50	53	54	65	34	90	58	24
18	67	71	74	70	66	62	63	60	59	60	52	44	36	34	27	28	27	31	32	35	41	44	46	52	27	74	49	24
19	56	70	84	70	63	61	61	58	52	43	38	35	33	31	29	29	29	29	29	32	38	44	39	40	29	84	46	24
20	56	66	72	74	77	74	71	58	54	50	41	34	31	31	30	31	30	31	34	47	64	68	77	30	77	51	24	
21	80	78	81	86	90	92	92	81	72	65	64	58	52	49	49	51	52	55	57	63	70	74	71	77	49	92	69	24
22	81	83	84	86	86	85	84	79	72	64	56	47	46	44	39	37	37	39	38	47	67	76	78	80	37	86	64	24
23	81	82	81	78	81	86	87	85	72	65	61	54	43	34	34	35	39	42	45	54	66	71	78	84	34	87	64	24
24	87	77	91	94	92	91	94	94	88	82	76	73	78	87	P	P	P	P	P	P	86	88	87	85	73	94	86	18
25	87	92	95	97	95	94	93	95	96	95	94	88	74	61	55	49	45	40	41	47	55	61	73	73	40	97	75	24
26	75	79	81	81	81	83	84	74	65	59	55	53	52	46	45	44	45	44	47	52	55	58	63	66	44	84	62	24
27	66	69	70	72	74	74	75	69	61	55	47	44	42	40	41	39	45	49	47	52	64	72	68	72	39	75	59	24
28	82	86	90	92	95	95	95	95	78	65	58	50	45	36	32	31	32	33	34	48	74	86	89	91	31	95	67	24
29	92	92	93	93	93	92	88	79	56	43	39	35	31	30	29	28	29	32	35	40	47	51	53	57	28	93	57	24
30	60	60	64	69	73	77	81	76	68	63	60	60	61	59	58	56	59	55	61	75	87	88	89	79	55	89	68	24
31	79	69	66	74	81	76	74	67	58	52	48	44	42	41	37	34	34	32	33	37	42	44	47	53	32	81	53	24
HOURLY MAX	95	96	97	97	97	97	97	98	98	97	94	88	86	87	80	73	72	87	89	91	91	94	96	94				
HOURLY AVG	80	82	85	86	87	87	87	79	71	64	58	53	50	46	42	41	42	42	43	49	61	70	74	77				

STATUS FLAG CODES

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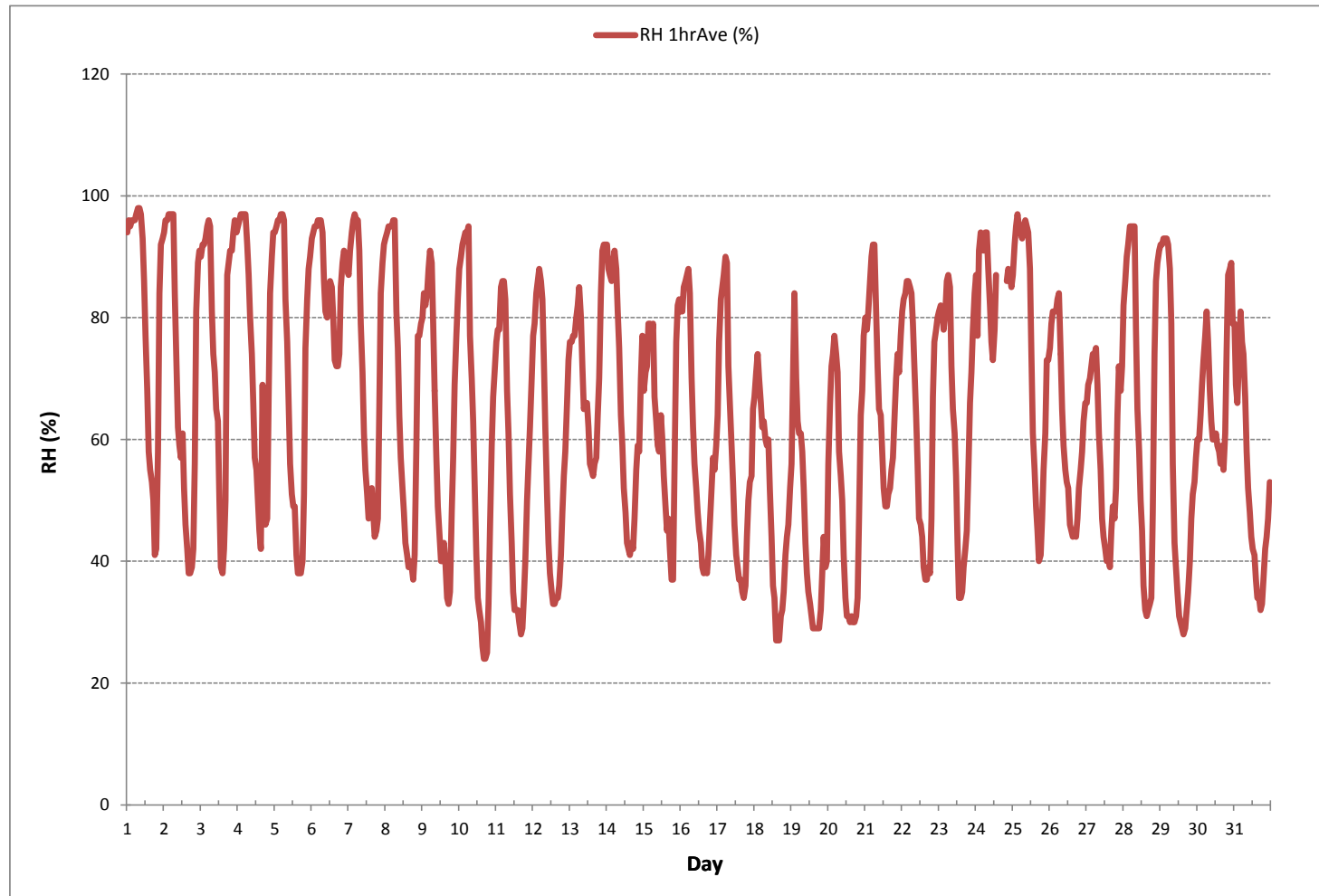
24 HR AVERAGES August 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	24	%	@ HOUR	16	ON DAY	10
MAXIMUM 1-HR AVERAGE:	98	%	@ HOUR	7	ON DAY	1
MAXIMUM 24-HR AVERAGE:	86	%			ON DAY	6
OPERATIONAL TIME:					738	hrs
AMD OPERATION UPTIME:					99.2	%
STANDARD DEVIATION:	21				MONTHLY AVERAGE:	65 %

RELATIVE HUMIDITY Hourly Averages (RH %)



BAROMETRIC PRESSURE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - August 2017

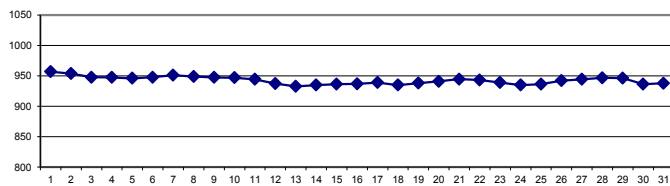
BAROMETRIC PRESSURE Hourly Averages (BP mbar)

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	956	956	956	956	956	956	957	957	957	957	957	957	958	958	957	957	957	956	956	956	957	957	956	956	956	956	958	957	24
2	956	956	956	956	956	956	956	956	956	955	955	955	955	954	954	953	952	952	951	951	951	951	950	950	950	950	956	954	24
3	950	949	949	949	949	948	948	948	948	948	947	947	947	947	946	946	947	947	946	947	947	947	948	948	946	950	948	24	
4	947	947	947	948	948	948	948	948	948	948	948	948	948	948	947	947	947	947	947	947	947	947	947	947	947	947	948	947	24
5	947	946	946	946	946	946	946	947	947	947	947	947	947	946	946	946	945	945	945	945	945	945	945	945	945	945	947	946	24
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7	951	951	951	951	951	951	951	952	952	952	952	952	952	951	951	951	951	950	950	950	950	950	950	950	950	950	952	951	24
8	950	950	950	950	950	950	950	950	950	950	950	949	949	949	948	948	947	947	947	947	947	947	947	947	947	947	950	949	24
9	947	947	947	947	947	947	947	948	948	948	948	948	948	948	948	947	947	947	947	947	947	947	947	947	947	947	948	947	24
10	947	947	947	947	947	947	948	948	948	948	948	948	948	948	947	947	946	946	946	946	946	946	946	946	946	946	948	947	24
11	946	946	946	946	946	946	946	946	946	946	946	946	945	945	944	943	942	942	942	942	942	942	942	941	941	946	944	24	
12	941	941	940	940	939	939	939	939	939	938	938	938	937	937	937	936	935	935	935	935	935	935	935	934	934	934	941	937	24
13	933	933	932	931	931	931	931	931	931	931	932	932	932	932	933	933	934	934	934	934	934	934	934	935	931	935	933	24	
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15	935	935	936	936	935	935	936	936	936	936	936	937	937	937	937	937	937	937	937	937	937	937	937	937	935	937	936	24	
16	937	937	937	937	937	937	937	937	937	937	937	937	937	937	936	936	936	936	937	937	937	937	938	938	936	938	937	24	
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20	939	939	939	939	940	940	940	941	941	941	941	941	941	941	941	941	941	942	942	942	942	943	943	943	939	943	941	24	
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23	940	940	939	939	939	939	940	940	940	940	940	940	940	940	939	939	939	939	938	938	938	938	937	938	937	940	939	24	
24	938	938	937	937	936	936	935	936	935	935	934	933	932	931	P	P	P	P	P	P	P	934	934	934	933	931	938	935	18
25	933	932	932	932	932	933	934	935	936	936	936	937	937	937	937	937	938	938	938	939	939	939	940	940	932	940	936	24	
26	940	941	941	941	942	942	942	943	943	943	943	943	943	943	943	942	942	942	942	942	942	942	943	943	940	943	942	24	
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29	948	948	948	948	948	948	949	949	949	949	949	948	948	947	946	945	944	944	944	943	943	943	942	941	941	949	946	24	
30	940	939	939	938	938	937	937	937	936	936	936	936	936	936	935	935	935	935	935	935	935	935	935	936	935	940	936	24	
31	936	936	936	936	936	937	937	937	938	938	938	938	938	939	939	938	938	938	938	939	939	939	939	940	936	940	938	24	
HOURLY MAX	956	956	956	956	956	956	957	957	957	957	957	957	958	958	957	957	957	956	956	956	957	957	956	956	956	956	956	956	
HOURLY AVG	943	943	942	942	942	943	943	943	943	943	943	943	943	943	943	943	942	942	942	942	942	942	942	942	942	940	938	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

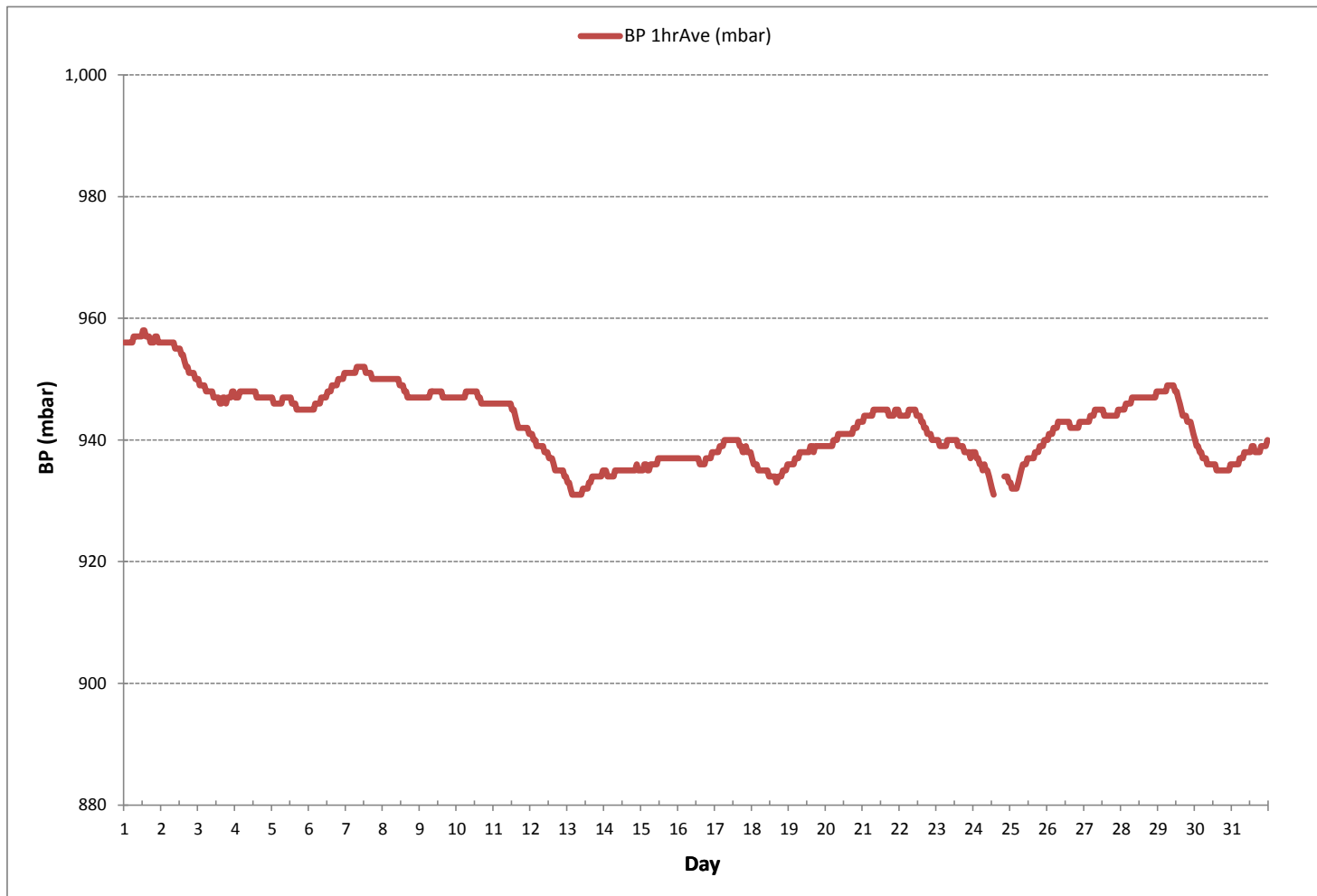
24 HR AVERAGES August 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	931	mbar	@ HOUR	3	ON DAY	13
MAXIMUM 1-HR AVERAGE:	958	mbar	@ HOUR	12	ON DAY	1
MAXIMUM 24-HR AVERAGE:	957	mbar			ON DAY	1
OPERATIONAL TIME:					738	hrs
AMD OPERATION UPTIME:					99.2	%
STANDARD DEVIATION:	6				MONTHLY AVERAGE:	943 mbar

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



AMBIENT TEMPERATURE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - August 2017

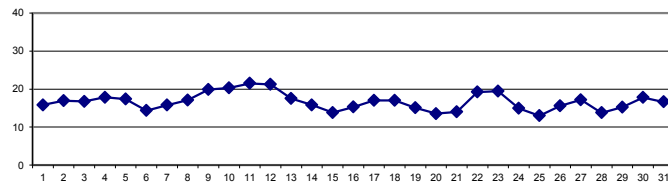
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	13.1	12.5	12.3	11.9	11.7	11.9	12.1	12.2	12.6	13.4	14.0	15.6	16.9	19.4	21.1	21.7	21.7	21.8	22.7	22.5	20.6	14.4	11.9	11.4	11.4	22.7	15.8	24
2	10.4	10.1	9.0	8.7	8.2	8.4	10.6	15.5	17.7	19.7	20.4	21.0	20.6	22.2	23.2	24.1	24.7	24.5	24.6	24.5	21.1	14.3	11.8	11.1	8.2	24.7	16.9	24
3	11.1	11.1	11.1	10.3	8.9	9.1	11.6	16.6	18.6	20.0	21.2	22.1	24.4	25.5	24.1	23.1	21.7	16.8	16.7	16.5	16.1	15.6	14.7	14.5	8.9	25.5	16.7	24
4	13.6	12.9	12.8	13.1	13.3	13.6	14.7	15.4	16.7	18.2	19.8	21.7	22.7	23.6	24.7	24.9	20.6	22.5	22.6	22.5	18.9	15.0	12.7	11.3	11.3	24.9	17.8	24
5	10.2	9.3	9.0	8.7	8.6	8.9	9.9	15.2	17.9	20.2	22.0	22.9	23.1	23.7	24.1	24.9	25.1	25.4	24.7	23.1	18.3	15.3	13.5	12.5	8.6	25.4	17.4	24
6	11.1	10.2	9.7	9.1	8.7	9.0	10.4	12.6	14.9	16.2	16.8	17.2	16.8	16.9	17.8	18.4	18.6	18.5	17.7	15.9	15.0	14.6	14.3	13.6	8.7	18.6	14.3	24
7	13.2	12.3	11.2	10.5	10.5	10.6	11.2	12.6	14.7	15.8	17.5	18.8	19.8	21.0	21.2	20.4	21.5	22.1	21.8	21.2	17.7	12.3	10.6	9.7	9.7	22.1	15.8	24
8	9.0	8.7	7.7	6.7	5.7	6.1	9.1	15.8	17.6	19.7	20.9	22.4	23.2	23.8	24.5	25.5	25.6	25.4	25.8	25.9	20.1	14.8	13.8	12.8	5.7	25.9	17.1	24
9	12.1	11.3	12.3	12.3	11.8	11.4	13.1	17.0	20.5	23.0	25.0	24.1	26.4	26.4	26.3	26.6	28.3	27.7	27.4	24.6	22.0	18.2	15.8	14.1	11.3	28.3	19.9	24
10	12.3	11.2	10.3	9.3	8.9	8.6	11.2	17.4	19.5	21.9	24.5	26.4	27.6	28.4	28.7	29.5	29.7	30.2	30.0	27.8	23.0	19.0	16.5	15.0	8.6	30.2	20.3	24
11	13.4	12.6	12.6	11.0	10.6	10.9	13.2	19.1	21.7	24.7	26.6	27.6	28.7	29.2	29.7	30.3	30.4	29.8	28.6	26.6	22.8	20.5	18.7	16.2	10.6	30.4	21.5	24
12	14.6	14.4	13.5	13.3	13.0	13.6	14.7	17.5	20.4	23.0	25.3	26.9	28.4	28.9	29.5	29.6	29.1	27.9	26.1	23.6	21.1	19.8	17.9	16.9	13.0	29.6	21.2	24
13	17.0	16.8	16.2	15.5	14.5	13.8	13.5	15.2	17.8	20.0	20.1	20.4	21.0	21.7	21.5	21.0	20.1	19.4	18.2	17.2	15.5	14.7	14.5	14.1	13.5	21.7	17.5	24
14	13.5	12.7	12.0	11.0	9.5	8.8	9.3	10.8	12.5	15.1	17.0	18.8	20.5	21.4	21.6	22.3	21.6	21.6	20.7	18.6	17.1	17.1	14.5	11.8	8.8	22.3	15.8	24
15	12.5	11.7	10.7	9.3	9.2	8.9	8.6	11.6	13.2	14.5	16.1	16.0	17.3	18.2	19.2	19.8	18.6	20.0	20.3	19.3	14.4	8.9	6.9	6.4	6.4	20.3	13.8	24
16	7.0	6.8	5.7	5.3	5.4	5.9	8.1	12.5	15.0	16.3	18.1	19.5	20.6	21.4	22.0	22.2	22.1	22.7	22.0	19.7	18.0	16.9	17.2	16.0	5.3	22.7	15.3	24
17	14.8	12.1	9.8	9.6	9.0	7.9	9.4	14.5	15.8	17.7	19.7	21.0	21.9	22.4	23.0	22.9	23.4	23.5	22.5	20.1	18.7	17.3	16.9	14.1	7.9	23.5	17.0	24
18	13.7	12.6	12.2	13.5	14.3	15.1	15.4	17.3	18.0	17.6	19.3	19.5	20.4	21.0	21.5	21.7	21.4	19.3	18.9	18.2	15.8	14.6	13.9	12.7	12.2	21.7	17.0	24
19	11.8	11.2	9.6	10.3	10.6	10.8	10.8	11.5	13.3	15.5	16.8	17.9	18.8	19.2	20.1	20.0	19.8	19.3	18.8	17.7	15.5	13.5	14.4	14.0	9.6	20.1	15.1	24
20	9.9	8.0	7.0	7.0	7.3	7.9	9.0	11.9	13.1	15.5	17.3	18.2	18.3	18.8	19.8	19.0	19.4	19.4	18.5	18.0	14.3	11.0	9.7	6.6	6.6	19.8	13.5	24
21	5.0	5.2	4.8	4.4	4.8	5.0	6.3	10.3	13.2	15.6	16.1	18.1	19.5	20.4	20.7	20.6	20.6	20.1	20.0	18.4	17.1	16.2	16.9	16.0	4.4	20.7	14.0	24
22	15.3	15.0	14.4	14.2	14.1	14.2	14.5	15.7	17.6	19.8	21.1	22.9	23.5	24.7	25.3	26.0	26.5	26.6	26.5	23.2	17.3	14.8	14.1	13.7	13.7	26.6	19.2	24
23	13.8	14.2	14.9	16.1	15.4	14.2	13.9	16.0	20.0	21.8	22.8	23.5	25.2	26.0	26.2	25.8	24.8	24.5	23.4	21.2	18.0	16.4	15.3	13.9	13.8	26.2	19.5	24
24	13.8	16.4	14.9	14.6	14.5	14.2	13.7	14.4	16.2	17.4	18.4	18.8	18.2	17.1	P	P	P	P	P	P	11.8	11.3	11.5	11.0	11.0	18.8	14.9	18
25	10.5	10.1	10.0	10.0	9.9	9.7	9.5	9.6	9.9	10.8	11.1	12.5	14.6	16.7	17.5	17.9	18.5	19.1	18.4	16.5	14.5	12.9	10.6	10.7	9.5	19.1	13.0	24
26	10.4	9.5	9.0	8.8	8.8	8.2	8.3	11.2	13.6	15.6	17.5	18.5	19.6	20.8	21.1	21.8	21.6	21.8	20.9	19.6	18.2	17.2	16.3	16.0	8.2	21.8	15.6	24
27	15.8	15.0	14.7	13.9	13.3	13.1	12.9	14.7	16.4	17.9	19.2	20.0	20.7	21.3	21.5	22.0	21.1	20.2	19.8	18.6	16.1	14.4	14.9	13.9	12.9	22.0	17.1	24
28	11.6	10.8	9.2	7.5	6.9	5.8	5.6	9.2	13.5	14.8	16.8	18.3	19.6	20.7	21.1	21.7	21.8	21.9	21.7	18.4	12.1	8.5	7.0	6.0	5.6	21.9	13.8	24
29	5.7	5.0	4.5	4.1	3.9	4.0	5.4	9.8	15.0	18.2	20.3	21.6	22.8	23.2	23.8	24.4	23.9	22.7	21.3	19.2	17.5	16.9	16.3	15.8	3.9	24.4	15.2	24
30	15.9	15.7	15.0	14.0	12.6	11.6	11.4	13.7	16.7	18.8	19.7	20.2	21.0	22.4	23.3	23.8	23.2	24.0	22.4	18.9	15.8	15.2	14.9	16.9	11.4	24.0	17.8	24
31	15.9	15.9	15.5	13.5	11.4	11.8	11.8	13.2	15.5	16.9	18.0	18.8	19.8	19.6	19.9	20.8	20.4	20.8	20.3	18.3	16.4	15.6	14.9	14.1	11.4	20.8	16.6	24
HOURLY MAX	17.0	16.8	16.2	16.1	15.4	15.1	15.4	19.1	21.7	24.7	26.6	27.6	28.7	29.2	29.7	30.3	30.4	30.2	30.0	27.8	23.0	20.5	18.7	16.9				
HOURLY AVG	12.2	11.7	11.0	10.6	10.2	10.1	10.9	13.9	16.1	17.9	19.3	20.4	21.4	22.1	22.8	23.1	22.9	22.7	22.1	20.5	17.4	15.1	14.0	13.0				

STATUS FLAG CODES

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

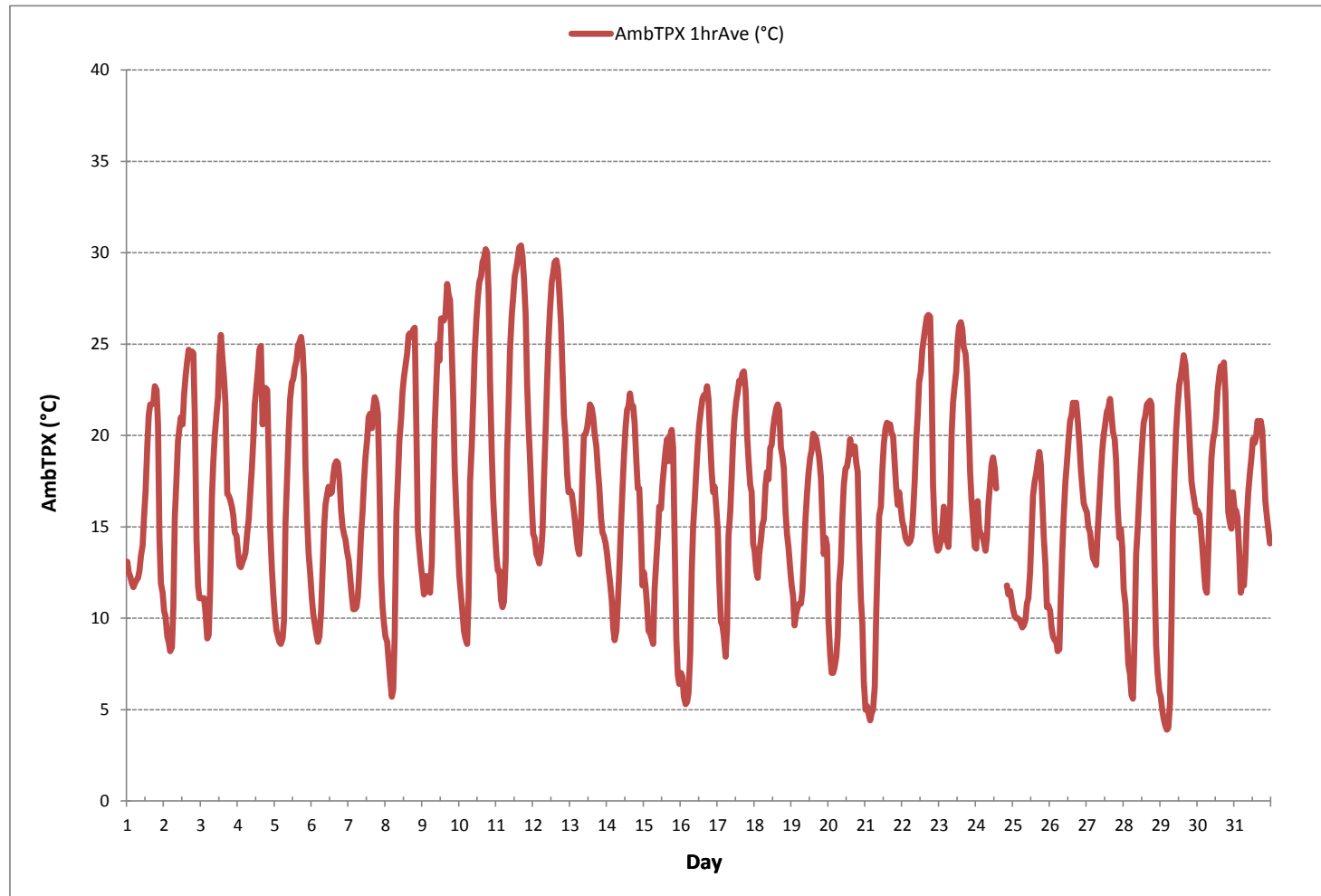
24 HR AVERAGES August 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	3.9	°C	@ HOUR	4	ON DAY	29
MAXIMUM 1-HR AVERAGE:	30.4	°C	@ HOUR	16	ON DAY	11
MAXIMUM 24-HR AVERAGE:	21.5	°C			ON DAY	11
OPERATIONAL TIME:					738	hrs
AMD OPERATION UPTIME:					99.2	%
STANDARD DEVIATION:	5.6				MONTHLY AVERAGE:	16.7 °C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



STATION TEMPERATURE

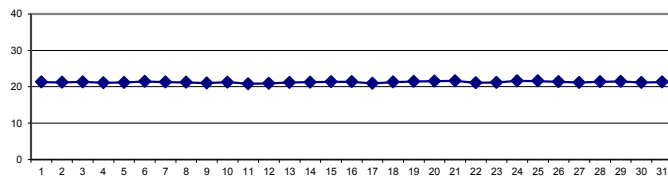
STATION TEMPERATURE Hourly Averages (StnTPX °C)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	21.6	21.7	21.8	21.8	21.7	21.7	21.7	21.9	21.8	21.6	21.6	21.6	21.2	21.3	21.1	20.7	20.5	20.9	20.6	20.4	20.4	20.8	21.2	21.6	20.4	21.9	21.3	21.3	24
2	21.6	21.8	22.2	21.9	22.1	22.3	22.1	22.0	21.5	21.6	21.0	20.9	21.0	20.8	20.6	20.8	20.4	20.5	20.4	20.1	20.4	20.6	21.3	21.5	20.1	22.3	21.2	21.4	24
3	21.7	21.9	22.0	21.8	22.2	21.8	22.3	21.9	21.4	21.5	20.9	21.0	20.5	20.5	20.3	20.3	20.8	20.7	21.2	21.4	21.4	21.4	21.4	21.5	20.3	22.3	21.3	21.4	24
4	21.5	21.7	21.8	21.6	21.6	21.7	21.8	21.5	21.5	21.4	20.9	21.1	20.4	20.7	20.3	20.2	20.7	20.6	20.6	20.6	20.6	20.9	21.3	21.6	20.2	21.8	21.1	21.4	24
5	21.6	21.8	22.0	22.0	22.0	22.3	21.9	22.1	21.6	21.5	20.9	20.7	20.7	20.2	20.3	20.5	20.1	20.4	20.4	20.4	20.8	21.0	21.3	21.5	20.1	22.3	21.2	21.4	24
6	21.6	21.7	22.0	21.9	22.1	21.9	22.2	21.7	21.7	21.5	21.3	21.3	21.3	21.3	21.1	21.3	21.0	20.8	21.0	21.1	21.2	21.5	21.5	21.6	20.8	22.2	21.5	21.4	24
7	21.6	21.6	21.6	22.0	21.7	21.9	22.0	21.7	21.7	21.5	21.5	21.0	21.0	20.9	20.6	20.7	21.0	20.6	20.6	20.7	20.4	21.0	21.4	21.7	20.4	22.0	21.3	21.4	24
8	22.0	21.8	22.1	22.2	22.2	22.3	22.4	22.3	21.6	21.5	21.1	21.1	20.6	20.7	20.1	20.6	20.0	20.4	20.2	20.2	20.4	20.7	21.2	21.5	20.0	22.4	21.2	21.4	24
9	21.7	22.0	21.7	21.7	22.1	21.7	22.0	21.8	21.4	21.4	20.7	20.5	20.3	20.5	20.1	20.3	20.2	20.0	20.2	20.3	20.3	21.0	21.1	21.3	20.0	22.1	21.0	21.4	24
10	21.6	21.7	21.6	21.8	22.0	22.0	22.0	21.9	21.7	21.0	20.8	20.3	20.5	20.4	22.4	22.8	22.8	21.6	19.6	19.3	19.9	20.5	20.9	21.2	19.3	22.8	21.3	21.4	24
11	21.3	21.4	21.6	21.7	21.9	21.8	21.7	21.8	21.2	21.1	20.5	20.4	20.3	20.1	20.0	20.0	20.0	19.8	20.0	20.0	20.2	20.6	20.9	21.1	19.8	21.9	20.8	21.4	24
12	21.4	21.6	21.5	21.6	21.6	21.7	21.6	21.4	21.5	21.0	20.9	20.6	20.4	20.2	20.2	20.1	20.0	20.1	20.2	20.4	20.6	20.8	21.3	21.2	20.0	21.7	20.9	21.4	24
13	21.3	21.4	21.5	21.4	21.5	21.6	21.6	21.6	21.4	21.3	21.1	20.7	20.9	20.7	20.6	20.8	20.8	20.6	21.0	21.1	21.1	21.2	21.3	21.4	20.6	21.6	21.2	21.4	24
14	21.4	21.5	21.6	21.7	21.6	21.7	22.1	21.7	21.7	21.7	21.4	21.2	20.8	20.9	20.7	20.5	20.5	20.8	20.8	20.8	20.8	21.2	21.2	21.6	20.5	22.1	21.2	21.4	24
15	21.6	21.7	21.7	21.7	22.0	21.9	22.2	21.8	21.8	21.5	21.0	21.3	20.9	21.1	20.7	20.8	20.8	20.7	20.9	20.8	20.7	21.3	21.6	21.7	20.7	22.2	21.3	21.4	24
16	22.2	22.2	22.2	22.2	22.1	22.3	22.5	21.8	21.8	21.4	21.4	20.8	21.1	20.6	20.8	20.5	20.2	20.5	20.5	20.7	20.6	21.1	21.3	21.4	20.2	22.5	21.3	21.4	24
17	21.3	21.6	21.6	21.6	21.8	22.0	21.9	21.9	21.4	20.9	20.6	20.2	20.4	19.9	20.0	20.1	20.2	20.2	20.2	20.5	20.9	21.3	21.3	21.3	19.9	22.0	21.0	21.4	24
18	21.7	21.7	21.6	21.8	21.8	21.8	21.7	21.4	21.5	21.2	21.1	21.3	20.9	20.9	20.9	20.6	21.0	20.7	20.8	21.1	20.9	21.4	21.3	21.6	20.6	21.8	21.3	21.4	24
19	21.8	21.8	21.9	21.9	22.1	22.0	21.8	21.9	21.8	21.6	21.4	21.3	20.9	21.2	20.8	21.1	20.7	21.1	20.8	21.0	21.2	21.4	21.4	21.6	20.7	22.1	21.4	21.4	24
20	21.8	22.2	22.0	22.4	22.3	22.1	22.4	22.0	21.0	21.3	21.4	21.2	20.8	21.2	21.1	20.8	21.2	20.8	21.2	20.9	21.3	21.6	21.7	21.8	20.8	22.4	21.5	21.4	24
21	22.2	22.4	22.4	22.8	22.3	22.7	22.4	22.4	22.2	21.7	21.3	21.5	21.1	21.1	20.7	20.9	20.8	20.7	21.0	21.1	21.0	21.5	21.2	21.6	20.7	22.8	21.6	21.4	24
22	21.3	21.7	21.6	21.5	21.8	21.7	21.5	21.7	21.5	21.4	21.0	20.8	20.8	20.4	20.5	20.4	20.4	20.4	20.1	20.4	20.6	21.3	21.3	21.7	20.1	21.8	21.1	21.4	24
23	21.7	21.6	21.7	21.8	21.6	21.6	21.7	21.8	21.4	21.4	21.1	20.8	20.4	20.6	20.2	20.5	20.1	20.7	20.7	20.7	21.0	21.4	21.5	21.6	20.1	21.8	21.2	21.4	24
24	21.6	21.8	21.5	21.5	21.6	21.6	21.6	21.6	21.8	21.3	21.5	21.2	21.0	21.1	P	P	P	P	P	P	22.7	22.1	21.5	21.8	21.0	22.7	21.6	18	
25	21.7	21.8	21.8	21.9	21.7	21.9	22.0	22.0	22.0	22.1	21.6	21.8	21.6	21.2	21.3	21.0	21.3	21.0	21.1	21.0	21.2	21.3	21.8	21.8	21.0	22.1	21.6	21.4	24
26	21.8	22.1	22.1	21.9	22.1	22.2	22.1	22.2	21.8	21.7	21.2	21.2	20.9	21.0	20.6	20.9	20.7	20.6	20.8	20.9	20.8	21.3	21.1	21.4	20.6	22.2	21.4	21.4	24
27	21.4	21.3	21.4	21.5	21.6	21.6	21.6	21.6	21.5	21.1	21.3	20.8	21.0	20.6	20.9	20.5	20.7	20.7	20.7	21.0	21.0	21.3	21.3	21.4	20.5	21.6	21.2	21.4	24
28	21.7	21.8	21.7	22.1	21.9	22.0	22.2	22.2	22.1	21.4	21.5	21.0	21.0	20.7	20.8	20.6	20.6	20.8	20.7	20.6	20.9	21.3	21.8	21.9	20.6	22.2	21.4	21.4	24
29	22.2	22.2	22.2	22.3	22.1	22.7	22.1	22.5	21.8	21.7	21.1	21.2	20.8	21.0	20.4	20.6	20.7	20.6	20.6	20.8	21.2	21.0	21.4	21.2	20.4	22.7	21.4	21.4	24
30	21.5	21.4	21.3	21.6	21.7	21.7	21.7	21.8	21.6	21.2	21.2	21.2	20.9	20.6	20.8	20.7	20.6	20.5	20.6	20.9	21.0	21.1	21.3	21.6	20.5	21.8	21.2	21.4	24
31	21.3	21.3	21.5	21.5	21.6	21.7	21.8	22.0	21.6	21.5	21.3	21.1	21.0	21.1	20.9	20.7	21.0	20.8	20.7	20.9	21.1	21.3	21.3	21.6	20.7	22.0	21.3	21.4	24
HOURLY MAX	22.2	22.4	22.4	22.8	22.3	22.7	22.5	22.5	22.2	22.1	21.6	21.8	21.6	21.3	22.4	22.8	22.8	21.6	21.2	21.4	22.7	22.1	21.8	21.9					
HOURLY AVG	21.6	21.7	21.8	21.8	21.9	21.9	22.0	21.9	21.6	21.4	21.1	21.0	20.8	20.8	20.7	20.7	20.7	20.6	20.6	20.7	20.9	21.2	21.3	21.5					

STATUS FLAG CODES

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

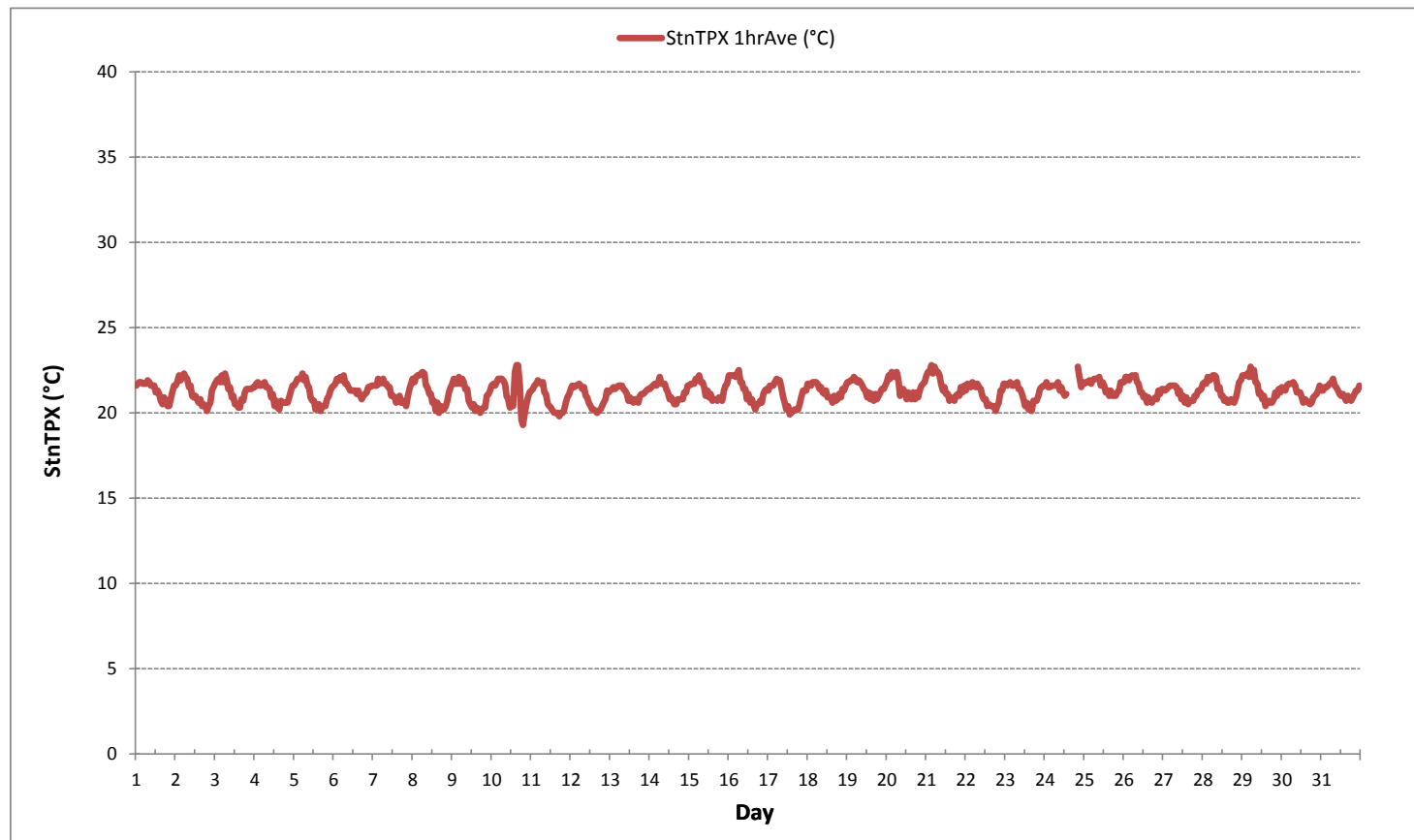
24 HR AVERAGES August 2017



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	19.3	°C	@ HOUR	19	ON DAY	10
MAXIMUM 1-HR AVERAGE:	22.8	°C	@ HOUR	15	ON DAY	10
MAXIMUM 24-HR AVERAGE:	21.6	°C			ON DAY	21
OPERATIONAL TIME:					738	hrs
AMD OPERATION UPTIME:					99.2	%
STANDARD DEVIATION:	0.6				MONTHLY AVERAGE:	21.3 °C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE

Thermo 43CSulphur Dioxide Analyzer Calibration

Date:	August 10, 2017	Barometer/B.P./units:	F.S. 05544 expires December 5, 2018	27.99	inHg
Company/Airshed:	PRAMP	Thermometer/Station Temp:	F.S. 16034889S expires April 8, 2018	20.3	°C
Location/Station Name:	986B	Weather Conditions:	Mainly sunny		
Parameter:	Sulphur Dioxide	Calibration Purpose:	routine monthly		
Start Time 24 hr. (mst):	13:50	Performed By/Reviewer:	Limin Li	Tom Bourque	
End Time 24 hr. (mst):	17:20	Cal Gas Expiry Date:	December 8, 2019		
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	n/a		

Analyzer:					
ID# or Serial Number:	43C-62339-335	Range ppb:	500		
Last Calibration Date:	July 18, 2017	As Found C.F.:	0.987		
Previous C.F.:	0.999	New C.F.:	1.000		

Calibration Standards:		Standard Calibration Points for Ranges	
Low Flow Meter ID/Expiry Date:	Defender Low 152019 expires November 21, 2017	Point	ppb
High Flow Meter ID/Expiry Date:	Defender High 148944 expires November 21, 2017	High	380
Calibrator ID/Expiry Date:	Sabio id# 17200415 expires May 16, 2018	Mid	180
Cal Gas Cylinder I.D. # :	EY0000769	Low	90
Cal Gas Conc. (ppm):	50.5		

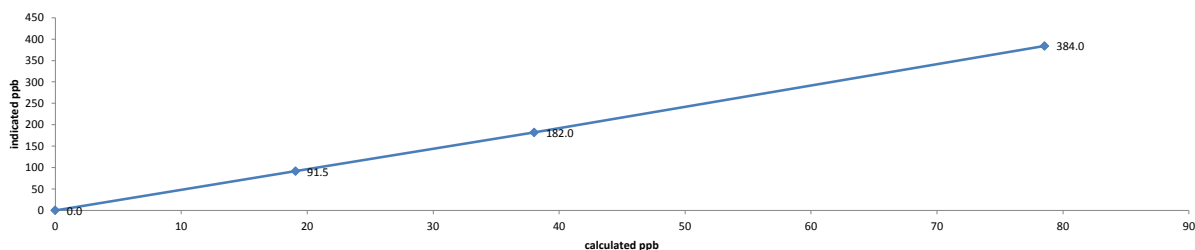
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	Concentration (ppb):		
as found zero	5904	0.00	5904	0.0	0.0	n/a
as found high	5869	44.97	5914	384.0	389.0	0.987
adjusted zero	5904	0.00	5904	0.0	0.0	n/a
adjusted high	5869	44.97	5914	384.0	384.0	1.000
mid	5929	21.39	5950	181.5	182.0	0.998
low	5942	10.83	5953	91.9	91.5	1.004
calibrator zero	5904	0.00	5904	0.0	0.3	n/a
Average C.F. =						1.001

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	> or = 0.995
Slope =	1.000	0.95-1.05	
b (Intercept as % of full scale)=	0.01%	± 3% F.S.	
% change in C.F. from last cal=	1.19%	± 10%	

Thermo 43CSulphur Dioxide Analyzer Calibration



As found:		As left:	
Bkg:	75.5	Bkg:	74.1
Coef:	0.885	Coef:	0.874
Pmt:	-654 VOLTS	Pmt:	-654 VOLTS
0	LAMP:849 V	0	LAMP:849 V
Battery:	3.3 V	Battery:	3.3 V
Internal:	33.3 °C	Internal:	31.7 °C
Chamber:	45.7 °C	Chamber:	45.6 °C
Pressure:	451.8 mmHg	Pressure:	451.8 mmHg
Flow:	0.791 lpm	Flow:	0.791 lpm
Intensity:	38065	Intensity:	38065
Converter:	820 °C	Converter:	820 °C
Converter Set:	820° C	Converter Set:	820° C
Averaging Time:	120 Second	Averaging Time:	120 Second
Expected Value:	301.0	Expected Value:	285.6

Comments:

The analyzer sample inlet filter was changed.

The manifold blower was found to be working normally.

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

Flow measurements after mid-point.



— SO2[ppb]

TOTAL REDUCED SULPHUR



Thermo 431-TLE Total Reduced Sulphur Analyzer Calibration

Date:	August 10, 2017	Barometer/B.P./units:	F.S. 05544 expires December 5, 2018	27.99	inHg
Company/Airshed:	PRAMP	Thermometer/Station Temp:	F.S. 160348895 expires April 8, 2018	20.3	°C
Location/Station Name:	9868	Weather Conditions:	Mainly sunny		
Parameter:	Total Reduced Sulphur	Calibration Purpose:	routine monthly		
Start Time 24 hr. (mst):	13:50	Performed By/Reviewer:	Limin Li	Tom Bourque	
End Time 24 hr. (mst):	17:45	Cal Gas Expiry Date:	January 6, 2018		
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	CD Nova-101 & #506		

Analyzer:	ID# or Serial Number:	1152940011	Range ppb:	100
	Last Calibration Date:	July 18, 2017	As Found C.F.:	1.047
	Previous C.F.:	1.000	New C.F.:	0.999

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

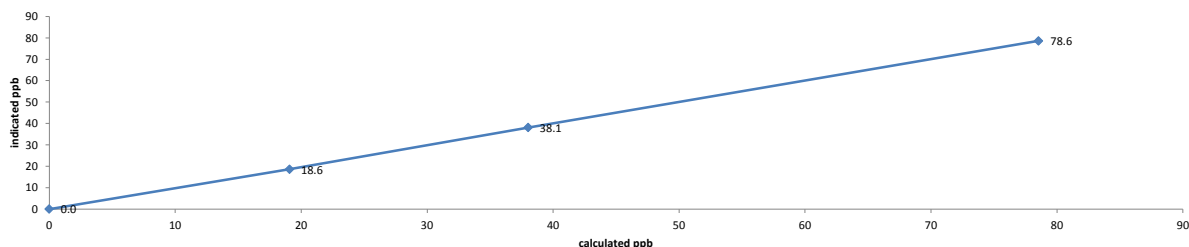
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated	Indicated Concentration (ppb):	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	Concentration (ppb):		
as found zero	7510	0.00	7510	0.0	0.0	n/a
as found high	7449	57.81	7507	78.5	75.0	1.047
adjusted zero	7510	0.00	7510	0.0	0.0	n/a
adjusted high	7449	57.81	7507	78.5	78.6	0.999
mid	7485	28.01	7513	38.0	38.1	0.998
low	7502	14.06	7516	19.1	18.6	1.026
calibrator zero	7510	0.00	7510	0.0	0.1	n/a
Average C.F. =						1.008

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	> or = 0.995
Slope =	0.997	0.95-1.05	
b (Intercept as % of full scale) =	0.19%	± 3% F.S.	
% change in C.F. from last cal =	-4.73%	± 10%	

Thermo 431-TLE Total Reduced Sulphur Analyzer Calibration



As found:		As left:	
Bkg:	1.71	Bkg:	1.80
Coef:	0.953	Coef:	1.013
Pmt:	-687.1 V	Pmt:	-687.1 V
Flash:	960 V	Flash:	960 V
Internal:	32.4 °C	Internal:	35.1 °C
Chamber:	44.9 °C	Chamber:	45.1 °C
Perm Oven Gas:	55.00 °C	Perm Oven Gas:	55.00 °C
Perm Oven Heater:	44.25 °C	Perm Oven Heater:	44.25 °C
Pressure:	656.2 mmHg	Pressure:	656.2 mmHg
Sample Flow:	0.469 L/MIN	Sample Flow:	0.469 L/MIN
Lamp Intensity:	90 %	Lamp Intensity:	90 %
Converter:	820 °C	Converter:	820 °C
Converter Set:	820 °C	Converter Set:	820 °C
Averaging Time:	120 Second	Averaging Time:	120 Second
Expected Value:	43.1	Expected Value:	45.0

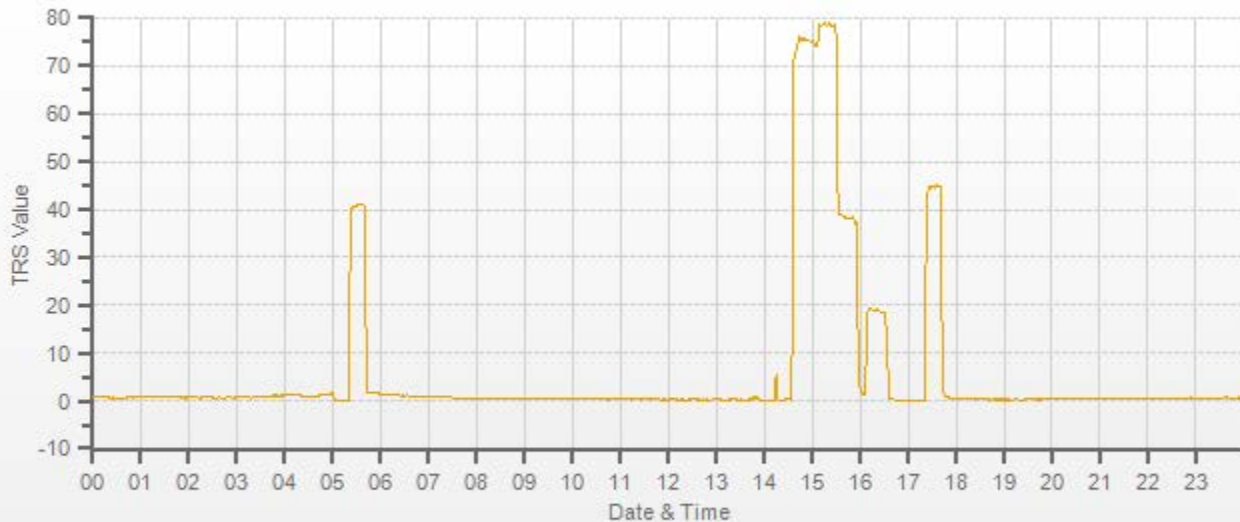
Comments:

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

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

Flow measurements after mid-point.

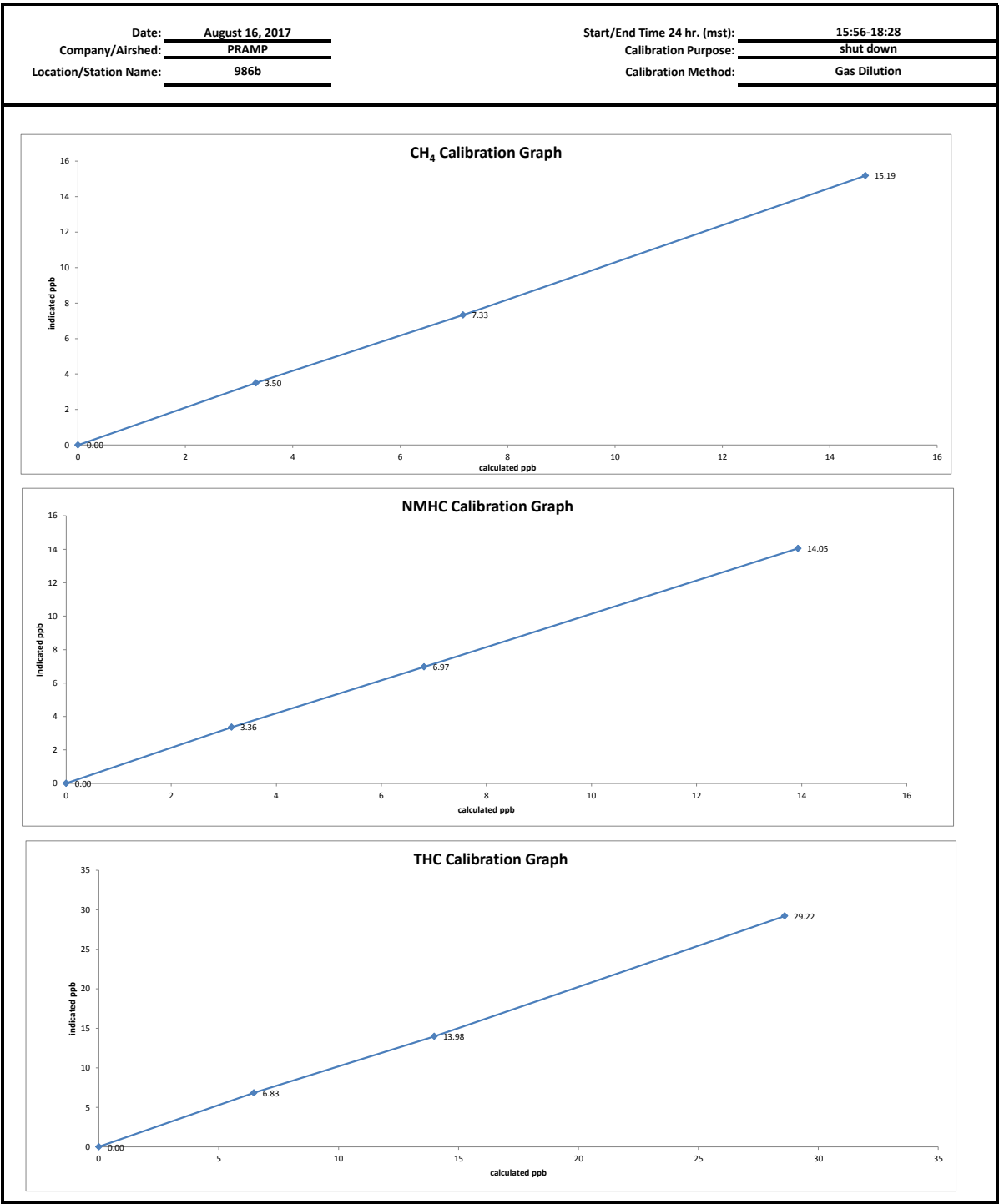
TRS[ppb] Station: PRAMP_986 Daily: 2017/08/10 Type: AVG 1 Min. [1 Min.]



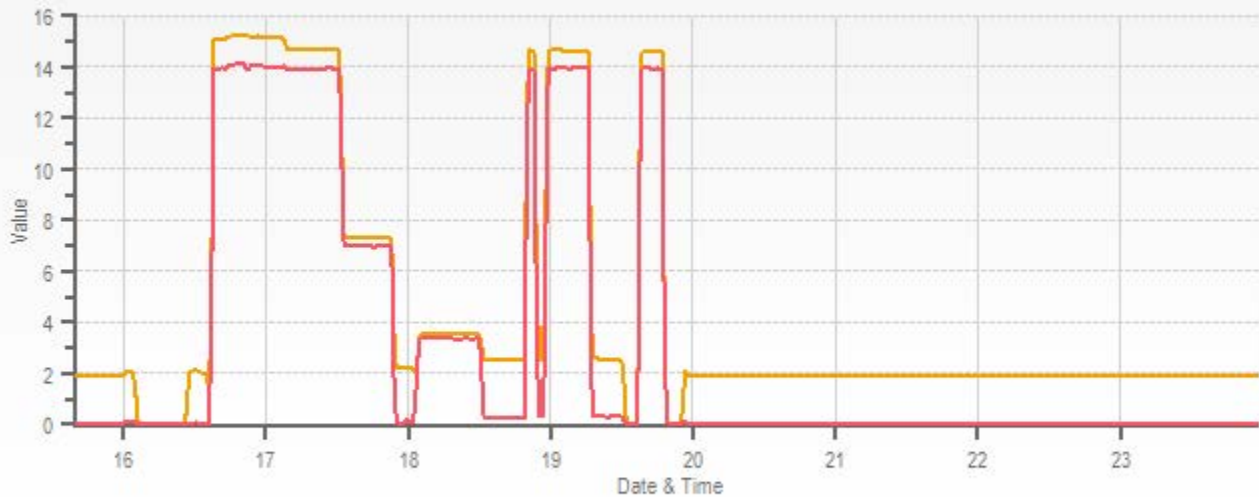
— TRS[ppb]

TOTAL HYDROCARBON

Thermo 55i Methane/Non-Methane Analyzer Calibration																																																																																																																			
Date: August 16, 2017 Company/Airshed: PRAMP Location/Station Name: 986b Parameter: CH ₄ / NMHC / THC Start/End Time 24 hr. (mst): 15:56-18:28 Calibration Method: Gas Dilution				Barometer Data/B.P.: n/a Thermometer Data/Station Temp °C: n/a Weather Conditions: Mix of sun and clouds Calibration Purpose: shut down Performed By/Reviewer: Raja Abid Cal Gas Expiry Date: June 9, 2021				27.60 inHg January 20, 1900																																																																																																											
Analyzer:																																																																																																																			
ID# or Serial Number: 1022143392 Measured Flow: 995.36 Last Calibration Date: July 18, 2017 Range ppm: 20 CH ₄ /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>0.998</td> <td>0.965</td> <td>n/a</td> </tr> <tr> <td>NMHC =</td> <td>0.999</td> <td>0.992</td> <td>n/a</td> </tr> <tr> <td>THC =</td> <td>0.999</td> <td>0.979</td> <td>n/a</td> </tr> </tbody> </table>									Previous C.F.:	As Found C.F.:	New C.F.:	CH ₄ =	0.998	0.965	n/a	NMHC =	0.999	0.992	n/a	THC =	0.999	0.979	n/a																																																																																								
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Low Flow Meter ID/Cert. Date: Definer 220 s/n 129069/ 5 Feb 2017 High Flow Meter ID/Cert. Date: Definer 220 s/n 128686/ 5 Feb 2017 Calibrator ID/Cert. Date: API 700 s/n 829/ Jan 25, 2019 Cal Gas Cylinder I.D. # : LL 19272 CH₄ Cylinder Conc. = 880.0 304.0 =C ₃ H ₈ Cylinder Conc. CH₄ as C₃H₈ = 836.0 1716.0 =total CH ₄ 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	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																																																																																								
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<table style="width:100%;"> <tr> <td style="width:50%; vertical-align: top;"> As found: Interface Board Voltages: Bias Supply: -311.9 Temperatures: Detector Oven: 175.1 Filter: 175.0 Column Oven: 75.5 Internal: 37.5 Cylinder Pressures/reg.: Carrier: 1600 50 Fuel: 1800 50 Span Gas: 1950 Zero Air Generator: 45 Internal Pressures: Carrier: 31.4 Fuel: 40.5 Air: 32.3 FID Status: Status: LIT Counts: 20283 Flame: 321.4 Det Base: 175.1 Flame and Power Stats: Last Power On: 30Jun2017@8:17 Flameouts: 2 Det Oven at Start: 70.5 Col Oven at Start: 51.2 Calibration History: Time: 18Jul17@14:05 Type: SPAN Status: GOOD Check/Adjust: ADJUST CH₄ Span Conc: 14.74 CH₄ SP Ratio: 0.00077 CH₄ RT: 12.4 CH₄ PK IDX: 22 CH₄ PK HT: 19152 NM Span Conc: 14.28 NM SP Ratio: 0.000192 </td> <td style="width:50%; vertical-align: top;"> As left: Calibration History cnt'd: NM Peak Area: 74290 Crucial Settings: Methane Start: n/a Methane End: n/a Backflush: n/a NMHV Start: n/a NMHC End: n/a Run History>1: Date: 16AUG2017 Time: 16:25 CH₄ PK HT: 0 CH₄ RT: 8.0 CH₄ Baseline: 1626 CH₄ LOD: 15 CH₄ SD: 5 CH₄ CONC: 0.00 NM PK HT: 0 NM Peak Area: 0 NM CONC: 0.00 NM Base Start: 1619 NM Base End: 1617 NM LOD: 9 NM Start IDX: 27 NM End IDX: 46 NM Max Slope: 3.4e-01 NM Min Slope: -5.7e-01 NM PT Count: 0 Previous CH₄: n/a Previous NMHC: n/a Previous THC: n/a New CH₄: n/a New NMHC: n/a New THC: n/a </td> </tr> </table>												As found: Interface Board Voltages: Bias Supply: -311.9 Temperatures: Detector Oven: 175.1 Filter: 175.0 Column Oven: 75.5 Internal: 37.5 Cylinder Pressures/reg.: Carrier: 1600 50 Fuel: 1800 50 Span Gas: 1950 Zero Air Generator: 45 Internal Pressures: Carrier: 31.4 Fuel: 40.5 Air: 32.3 FID Status: Status: LIT Counts: 20283 Flame: 321.4 Det Base: 175.1 Flame and Power Stats: Last Power On: 30Jun2017@8:17 Flameouts: 2 Det Oven at Start: 70.5 Col Oven at Start: 51.2 Calibration History: Time: 18Jul17@14:05 Type: SPAN Status: GOOD Check/Adjust: ADJUST CH ₄ Span Conc: 14.74 CH ₄ SP Ratio: 0.00077 CH ₄ RT: 12.4 CH ₄ PK IDX: 22 CH ₄ PK HT: 19152 NM Span Conc: 14.28 NM SP Ratio: 0.000192	As left: Calibration History cnt'd: NM Peak Area: 74290 Crucial Settings: Methane Start: n/a Methane End: n/a Backflush: n/a NMHV Start: n/a NMHC End: n/a Run History>1: Date: 16AUG2017 Time: 16:25 CH ₄ PK HT: 0 CH ₄ RT: 8.0 CH ₄ Baseline: 1626 CH ₄ LOD: 15 CH ₄ SD: 5 CH ₄ CONC: 0.00 NM PK HT: 0 NM Peak Area: 0 NM CONC: 0.00 NM Base Start: 1619 NM Base End: 1617 NM LOD: 9 NM Start IDX: 27 NM End IDX: 46 NM Max Slope: 3.4e-01 NM Min Slope: -5.7e-01 NM PT Count: 0 Previous CH ₄ : n/a Previous NMHC: n/a Previous THC: n/a New CH ₄ : n/a New NMHC: n/a New THC: n/a																																																																																																						
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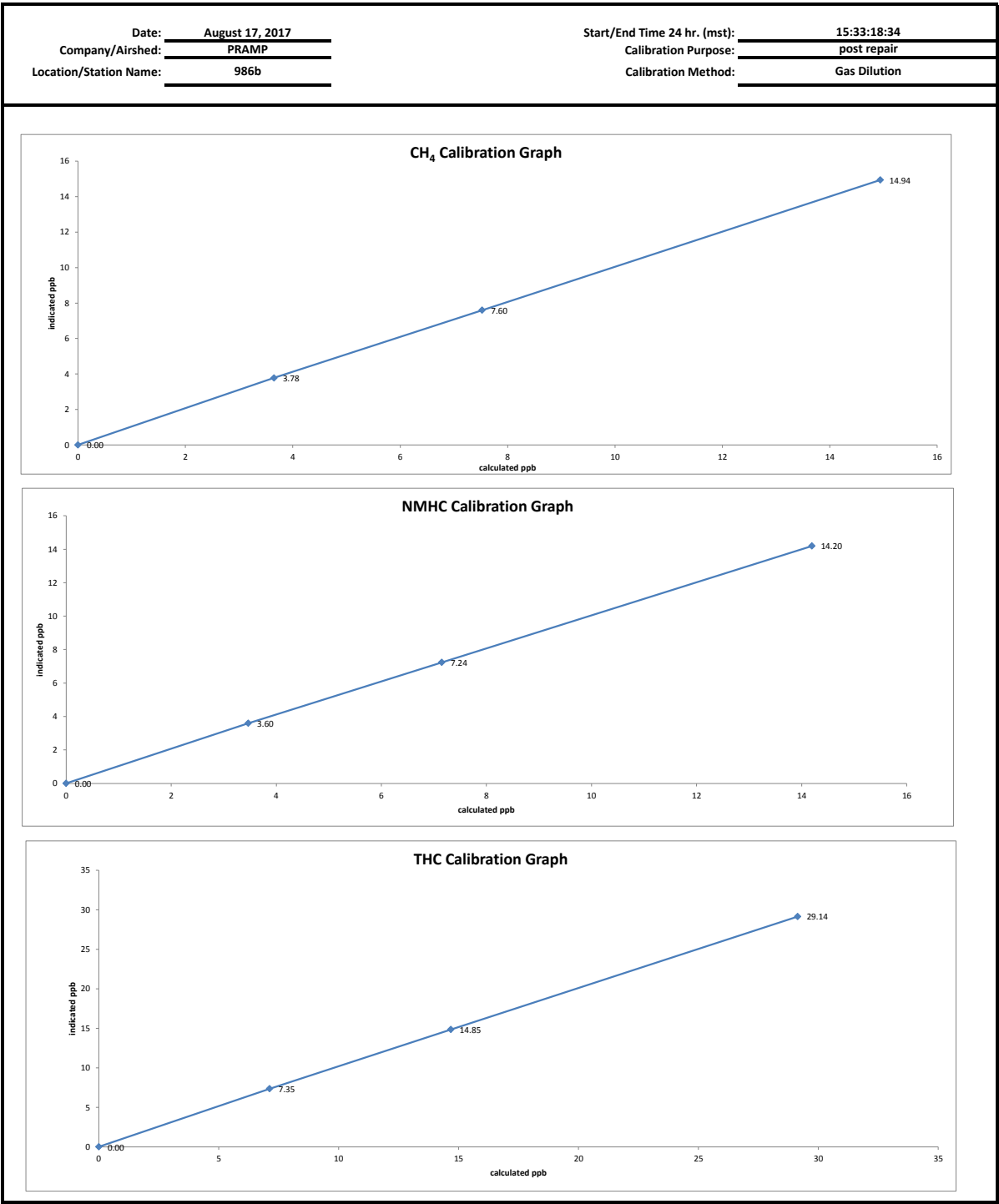


Station: PRAMP_986 Periodically: 2017/08/16 15:40-2017/08/16 23:59 Type: AVG 1 Min. [1 Min.]

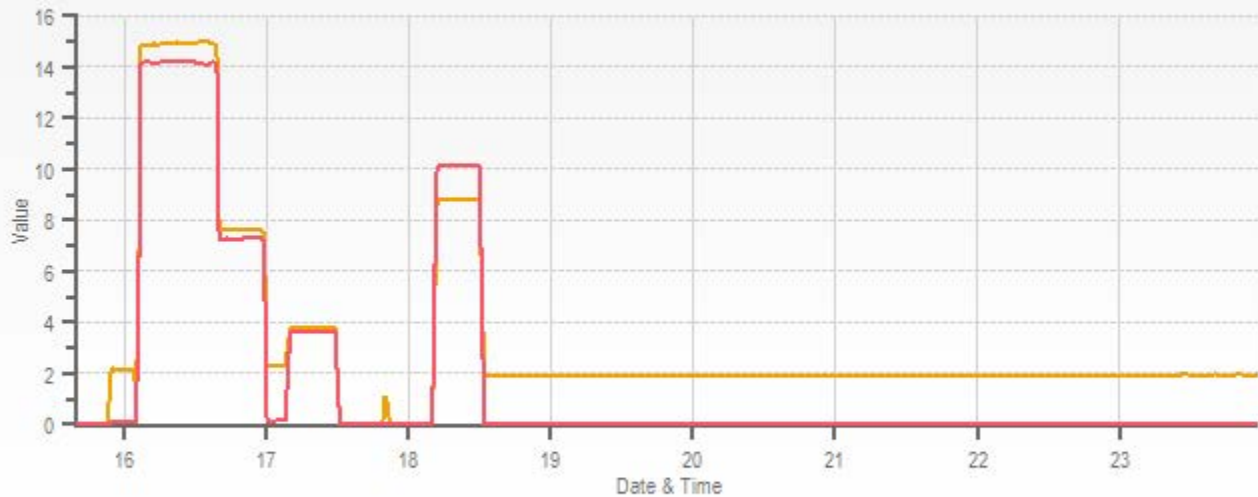


— CH4[ppm] — NMHC[ppm]

Thermo 55i Methane/Non-Methane Analyzer Calibration																																																																																																											
Date: August 17, 2017 Company/Airshed: PRAMP Location/Station Name: 986b Parameter: CH ₄ / NMHC / THC Start/End Time 24 hr. (mst): 15:33:18:34 Calibration Method: Gas Dilution				Barometer Data/B.P.: n/a 27.62 inHg Thermometer Data/Station Temp °C: n/a January 20, 1900 Weather Conditions: Mix of sun and clouds Calibration Purpose: post repair Performed By/Reviewer: Raja Abid Wunmi Adekanmbi Cal Gas Expiry Date: June 9, 2021																																																																																																							
Analyzer: ID# or Serial Number: 1022143392 Measured Flow: 1006.7 Last Calibration Date: July 18, 2017 Range ppm: 20 CH ₄ /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>1.000</td> </tr> <tr> <td>NMHC =</td> <td>n/a</td> <td>n/a</td> <td>1.000</td> </tr> <tr> <td>THC =</td> <td>n/a</td> <td>n/a</td> <td>1.000</td> </tr> </tbody> </table>									Previous C.F.:	As Found C.F.:	New C.F.:	CH ₄ =	n/a	n/a	1.000	NMHC =	n/a	n/a	1.000	THC =	n/a	n/a	1.000																																																																																
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Station: PRAMP_986 Periodically: 2017/08/17 15:40-2017/08/17 23:59 Type: AVG 1 Min. [1 Min.]



CH4[ppm] NMHC[ppm]

WIND SYSTEM



Meteorological Sensor Audit/Calibration

Location Information

Company: PRAMP
Audit Location: 986b
Audit Date: April 5, 2017

Performed By: Limin Li
Reviewed By: Trina Whitsitt
Start /EndTime (mst): 13:30/15:30

Wind Sensor Information

Sensor ID Data:		Sensor Outputs:	
Sensor Make:	RM Young	Velocity Voltage Output Range:	0-1 V
Sensor Model:	05305VK	Velocity Unit Output Range:	0-200 km/h
Serial #:	129612	Direction Voltage Output Range:	0-1 V
Previous Cal/Audit Date:	February 15, 2017	Direction Unit Output Range:	0-360 degrees

Wind Calibrator Information

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

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

RPM	Wind Speed Generated kph	Clockwise Wind Speed kph	Counter Clockwise Wind Speed kph	Correction Factor
0	0	0.1	0.1	-
1000	18.4	18.4	18.4	0.999
2000	36.9	36.8	36.8	1.003
3000	55.3	55.2	55.2	1.002
4000	73.7	73.6	73.6	1.002
5000	92.2	92.0	92.0	1.002
6000	110.6	110.5	110.5	1.001
7000	129.0	128.9	128.9	1.001
8000	147.4	147.4	147.4	1.000
9000	165.9	165.9	165.9	1.000
10000	184.3	184.5	184.5	0.999
The audit meets AMD requirements.			Average Correction Factor=	1.001

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

Generated Wind Direction 0-360 (Up)	Generated Wind Direction 360-0 (Down)	Indicated Wind Direction 0-360 (Up)	Indicated Wind Direction 360-0 (Down)	Degrees Difference 0-360 (Up)	Degrees Difference 360-0 (Down)	Average Absolute Degrees Difference
0	355	0	353	0.4	2.5	1.5
30	330	29	329	1.4	1.3	1.3
60	300	60	300	0.4	0.3	0.3
90	270	89	271	0.8	-1.2	1.0
120	240	120	242	0.5	-1.6	1.1
150	210	150	212	0.1	-1.8	1.0
180	180	181	181	-0.9	-1.1	1.0
210	150	212	151	-1.5	-0.8	1.2
240	120	241	120	-1.3	-0.2	0.8
270	90	271	90	-0.5	-0.1	0.3
300	60	300	60	0.2	0.5	0.3
330	30	329	29	1.4	0.7	1.1
355	0	353	0	2.5	0.3	1.4
The audit meets AMD requirements.			Average Absolute Degrees Difference=			0.9

Comments: Adjust wind speed gain before calibration.

CALIBRATORS

Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2017-073A

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

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

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

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

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

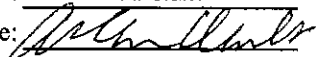
Flow	O ₂ Conc (LC)	NO Decrease	NO	NO ₂	NOx	% Diff. Vs Audit gas	
4930	0.000	0.000	0.806	-0.013	0.795	NO ₂	% Diff. Limit
4930	1.425	0.523	0.283	0.511	0.794	0%	± 10%
4930	0.825	0.278	0.528	0.266	0.795	0%	± 10%
4930	0.386	0.095	0.711	0.085	0.796	3%	± 10%
Absolute Average Percent Difference						1%	± 10%

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

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

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

COMMENTS: Contains 50.4 ppm SO₂.

Auditor: Al Clark
Operator Signature: 

Date: May 16, 2017
Location: McIntyre Center Edmonton

Company Maxxam		Operator: Mike	
Calibrator:		Flow Measurement Device:	
Make/Model	EnviroNics 2000	Make/Model	Bios Defender 530
Serial Number	1991	Serial Number	HI148944 Lo 152019
Last Verification Date	March 31, 2016	Temperature (°C)	24.5
NO Cylinder S/N	EY0000597	Barometric Pressure	699
NO [PPM]	49.0 NOx [PPM]		49.0
Expiry Date	December 8, 2019		

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

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

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

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

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

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

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

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

COMMENTS: Gas has ~50ppm SO₂

Auditor: Shea Beaton
Operator Signature: [Signature]

Date: March 16, 2017
Location: McIntyre Center Edmonton

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

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

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

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

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

LINEAR REGRESSION ANALYSIS				<i>y=mx+b (where x=calculated concentration, y=indicated concentration)</i>			
NO₂		LIMITS					
Correlation=	1.0000	≥ 0.995					
m (Slope)=	0.9931	0.90-1.10					
b (Intercept % of FS)=	0.1220	± 3% F.S.					

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

COMMENTS: _____

Auditor: Shana Beaton Date: January 27, 2017

Operator Signature: [Signature] Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2016-436CGA

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

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

Expiry Date: December 8, 2019

Reference Calibrator and Gas:

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

Flow Measurement Device:

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

Reference Analyzer:

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

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

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

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

Previous Stated Concentration PPM: 50.5

Percent variance from Stated: 0.2

Meets Manufacturer Tolerance. Use manufacturers stated concentration ☒ **COMMENTS:** _____

< =5% Outside Manufacturer Tolerance. Use manufacturers concentration ☐ _____

> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder ☐ _____

Auditor: Shea Beaton

Operator Signature: _____

Date: January 26, 2017

Location: McIntyre Center Edmonton



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2015-338CGA

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

Reference Calibrator and Gas:

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

Flow Measurement Device:

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

Reference Analyzer:

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

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

Previous Stated Concentration PPM: 10.2

Percent variance from Stated: 6.0

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

< =5% Outside Manufacturer Tolerance. Use manufacturers concentration ☒ _____

> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder ☐ _____

Auditor: Al Clark

Date: March 31, 2015

Operator Signature: *Al Clark*

Location: McIntyre Center Edmonton



Calibration Gas Audit

CH₄ / C₃H₈ Cylinder Gas

File No. 2015-031CGA

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

Reference Calibrator and Gas:

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

Flow Measurement Device:

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

Reference Analyzer:

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

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

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

Cylinder gas tolerances based on CH₄ only

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

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

APPENDIX 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 986b Station
Name of the Representative of the Person Responsible (Last, First, Middle)	Position / Title of the Representative of the Person Responsible
Wunmi Adekanmbi	Project Manager, Customer Service, Air Services
Is an External Party Certifying the Report? (If 'Yes', fill in the fields below for the external person.)	
☐ Yes ☒ No	
Name of External Person Certifying the Report (Last, First, Middle)	Position / Title of External Person Certifying the Report
NA	NA
Company Name for the External Person Certifying the Report	Identification of Qualifications / Professional Designations of the External Person Certifying the Report
NA	NA

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



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

September 20, 2017

Report Issued Date (dd-mm-yyyy)

APPENDIX IV
DATA VALIDATION CERTIFICATION FORM

Validation Certificate Form

Client: Peace River Area Monitoring Program Committee

Project #: 8449-2017-08-67-C

Site: Three Creeks 986b Station

Contact: Karla Reesor

Level 0 Preliminary Verification

Christina

Date September 14, 2017

Level 1 Primary Validation

Christina

Date September 14, 2017

Level 2 Final Validation

Christina

Date September 20, 2017

Level 3 Independent Data Review

Cheri Sinclair

Date September 20, 2017

Post-Final Validation

NA

Date NA

Notes

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