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

JOB #: 8449-2016-11-67-C

November 2016

Prepared for:

PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
SUITE #91, 305 - 4625 VARSITY DR. N.W.
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Attention: KARLA REESOR

DATE: **December 22, 2016**

Prepared by:

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Reviewed by:

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SUMMARY

In November 2016, 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 non-compliance parameters, as requested by the PRAMP Committee.

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

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

THC/CH₄/NMHC: Thirty-six hours of downtime were recorded between November 5 and November 6, as the analyzer ran out of gas.

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 403-219-3677 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	1.6	19	11	6.3	ENE	0.7	23	100.0
TRS (ppb)	-	-	-	-	0.3	1.2	25	7	0.7	ENE	0.4	VAR	100.0
THC (ppm)	-	-	-	-	1.99	2.38	22	6	2.2	E	2.12	25	95.0
CH ₄ (ppm)	-	-	-	-	1.99	2.38	22	6	2.2	E	2.12	25	95.0
NMHC (ppm)	-	-	-	-	0.00	0.13	9	2	3	SE	0.01	9	95.0
RELATIVE HUMIDITY (%)	-	-	-	-	80	99	13, 13	5, 6	5.9 5.6	SSW SSW	90	VAR	100.0
BAROMETRIC PRESSURE (inHg)	-	-	-	-	27.68	28.27	18, 18	3, 4	1.1 1.6	ESE E	28.21	18	100.0
AMBIENT TEMPERATURE (°C)	-	-	-	-	-2.0	16.5	8	14	2.7	WSW	8.7	8	100.0
STATION TEMPERATURE (°C)	-	-	-	-	21.4	23.1	6	8	5.7	SSW	21.9	2	100.0
VECTOR WS (kph)	-	-	-	-	2.2	15.7	3	17	-	SW	7.8	3	100.0
VECTOR WD (sec)	-	-	-	-	168 (SSE)	-	-	-	-	-	-	-	100.0

NA-NOT AVAILABLE VAR-VARIOUS

**SOUR GAS PROCESSING INDUSTRY
MONTHLY REPORT SUMMARY**

Three Creeks 986b Station

Plant Name / Location

Peace River Area Monitoring Program Committee

Company

Licence Number	Report Date	
	YEAR	MONTH
N/A	2016	November

CONTINUOUS AMBIENT MONITORING								
			ONE - HOUR AVERAGE		24 - HOUR AVERAGE			
PARAMETER	STN No.	% TIME OPERATIONAL	MAXIMUM VALUES		NO. READINGS > REGULATION	MAXIMUM VALUES		NO. READINGS > REGULATION
SO ₂	1	100.0	0.0016	ppm	0	0.0007	ppm	0
TRS	1	100.0	0.0012	ppm	-	0.0004	ppm	-
THC	1	95.0	2.38	ppm	-	2.12	ppm	-
CH ₄	1	95.0	2.38	ppm	-	2.12	ppm	-
NMHC	1	95.0	0.13	ppm	-	0.01	ppm	-
RH	1	100.0	99	%	-	90	%	-
BP	1	100.0	28.27	inHg	-	28.21	inHg	-
Ambient TPX	1	100.0	16.5	°C	-	8.7	°C	-
Station TPX	1	100.0	23.1	°C	-	21.9	°C	-
Wind Speed	1	100.0	15.7	kph	-	7.8	kph	-
Wind Direction	1	100.0	-		-	-		-

SIGNATURE OF COMPANY REPRESENTATIVE

FOR ALBERTA ENVIRONMENT USE ONLY

Exceedance Summary Report

SO₂ 1-Hour Exceedances

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

SO₂ 24-Hour Exceedances

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

In accordance with EPEA and the Substance Release Regulation.

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

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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 (August 3, 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.

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)

The routine monthly calibration was performed on November 7. There were no operational issues that impacted hourly data this month. Maximum instantaneous data collected on November 18 at 18:00 was invalidated due to a brief power outage.

TOTAL REDUCED SULPHUR (TRS)

The routine monthly calibration was performed on November 7. There were no operational issues that impacted hourly data this month. Maximum instantaneous data collected on November 18 at 18:00 was invalidated due to a brief power outage.

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

The analyzer ran out of gas on November 5. The gas cylinders were replaced on November 6 and a zero/span check was triggered afterwards. Thirty-six hours of downtime were recorded due to this event.

The routine monthly calibration was performed on November 7.

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)

The wind system is reported as vector wind speed and vector wind direction. The wind direction data included in this report represents where the wind was blowing from.

There were no operational issues that impacted hourly data this month. Maximum instantaneous data collected on November 18 at 18:00 was invalidated due to a brief power outage.

RELATIVE HUMIDITY (RH)

No operational issues were identified this month.

BAROMETRIC PRESSURE (BP)

No operational issues were identified this month.

AMBIENT TEMPERATURE (AmbTPX)

No operational issues were identified this month.

STATION TEMPERATURE (StnTPX)

No operational issues were identified this month.

2.0 Project Personnel

Karla Reesor was the contact for Peace River Area Monitoring Program Committee and the Maxxam field technician was 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 UV Fluorescent Analyzer
Total Hydrocarbons - Thermo 55i FID 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

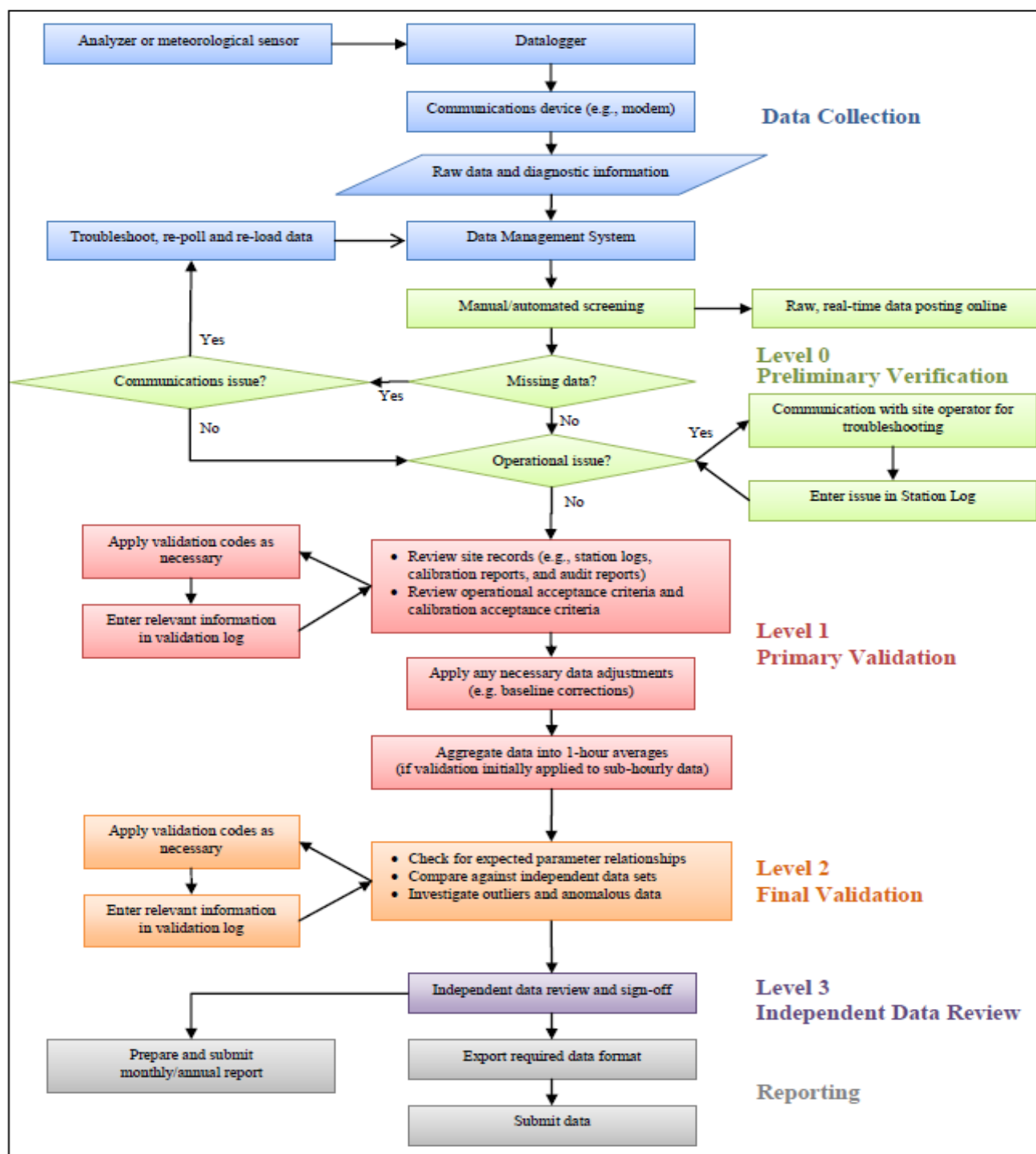
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

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 (Aug 3, 2016), Chapter 6, Ambient Data Quality; Figure 1 Data Collection and Management Process Flow Chart

APPENDIX I
CONTINUOUS MONITORING DATA RESULTS

SULPHUR DIOXIDE

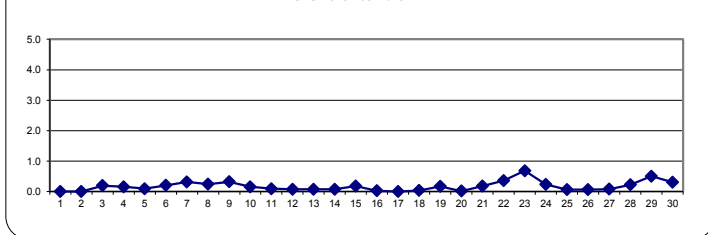
SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)

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	0.0	0.0	0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24
3	0.1	0.1	0.2	0.2	0.1	S	0.1	0.2	0.1	0.3	0.3	0.2	0.3	0.3	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.4	0.2	0.1	0.4	0.2	0.1	24
4	0.1	0.2	0.3	0.2	S	0.4	0.3	0.2	0.1	0.1	0.0	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.4	0.2	24
5	0.0	0.0	0.0	S	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.5	0.1	0.1	24
6	0.0	0.1	S	0.1	0.1	0.0	0.2	0.8	0.6	0.8	0.8	0.4	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.2	24
7	0.0	S	0.0	0.0	0.2	0.3	0.4	0.4	0.6	0.7	C	C	C	C	0.3	0.5	0.3	0.5	0.6	0.3	0.1	0.3	0.3	0.2	0.0	0.7	0.3	24	
8	S	0.2	0.3	0.0	0.1	0.3	0.5	0.3	0.3	0.5	0.1	0.2	0.3	0.2	0.1	0.0	0.2	0.3	0.4	0.2	0.2	0.2	0.3	S	0.0	0.5	0.2	24	
9	0.1	0.1	0.2	0.2	0.3	0.2	0.4	0.2	0.2	0.2	0.4	0.4	0.3	0.4	0.6	0.7	0.5	0.3	0.2	0.4	0.3	0.2	S	0.5	0.1	0.7	0.3	24	
10	0.2	0.4	0.3	0.1	0.2	0.2	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.7	0.6	0.0	S	0.0	0.0	0.0	0.7	0.2	24	
11	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.3	0.2	0.1	0.1	0.0	0.3	S	0.1	0.2	0.3	0.0	0.3	0.1	24	
12	0.3	0.0	0.2	0.3	0.2	0.1	0.0	0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	24
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.2	0.0	0.2	S	0.1	0.2	0.2	0.2	0.1	0.0	0.2	0.1	24	
14	0.3	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.2	0.0	S	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.3	0.1	24	
15	0.1	0.0	0.1	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.2	0.2	0.4	0.3	S	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.0	0.4	0.2	24	
16	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	24
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24
18	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	24
19	0.0	0.1	0.2	0.1	0.1	0.1	0.3	0.2	0.1	0.2	0.0	1.6	S	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.0	0.0	1.6	0.2	24	
20	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	24
21	0.1	0.0	0.0	0.0	0.2	0.0	0.2	0.2	0.2	0.3	S	0.3	0.3	0.2	0.2	0.1	0.2	0.1	0.3	0.2	0.3	0.1	0.3	0.2	0.0	0.3	0.2	24	
22	0.2	0.3	0.1	0.1	0.2	0.3	0.4	0.3	0.2	S	0.2	0.3	0.3	0.4	0.4	0.2	0.5	0.5	0.4	0.5	0.5	0.6	0.6	0.6	0.1	0.6	0.4	24	
23	0.7	0.6	0.6	0.7	1.1	0.9	1.0	0.8	S	0.9	0.8	1.0	0.7	0.7	0.7	0.6	0.5	0.6	0.7	0.4	0.5	0.3	0.4	0.4	0.3	1.1	0.7	24	
24	0.2	0.1	0.2	0.0	0.0	0.0	0.0	S	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.9	0.5	0.4	0.4	0.7	0.3	0.5	0.6	0.0	0.9	0.2	24	
25	0.4	0.5	0.0	0.0	0.0	0.2	S	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.5	0.1	24	
26	0.0	0.0	0.1	0.0	0.0	S	0.1	0.1	0.1	0.0	0.2	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.2	0.1	24	
27	0.0	0.0	0.0	0.0	S	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.3	0.2	0.1	0.2	0.0	0.2	0.0	0.3	0.1	24	
28	0.0	0.1	0.2	S	0.1	0.2	0.2	0.1	0.1	0.3	0.2	0.2	0.3	0.3	0.2	0.0	0.4	0.2	0.3	0.3	0.4	0.4	0.4	0.2	0.0	0.4	0.2	24	
29	0.5	0.2	S	0.2	0.3	0.3	0.4	0.4	0.3	0.5	0.5	0.4	0.4	0.7	0.9	0.9	0.7	0.6	0.7	0.5	0.5	0.5	0.6	0.5	0.2	0.9	0.5	24	
30	0.6	S	0.6	0.4	0.6	0.3	0.2	0.3	0.5	0.5	0.6	0.6	0.5	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.6	0.3	24	
HOURLY MAX	0.7	0.6	0.6	0.7	1.1	0.9	1.0	0.8	0.6	0.9	0.8	1.6	0.7	0.7	0.9	0.9	0.9	0.6	0.7	0.6	0.7	0.6	0.6	0.6					
HOURLY AVG	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2					

STATUS FLAG CODES

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

24 HR AVERAGES November 2016



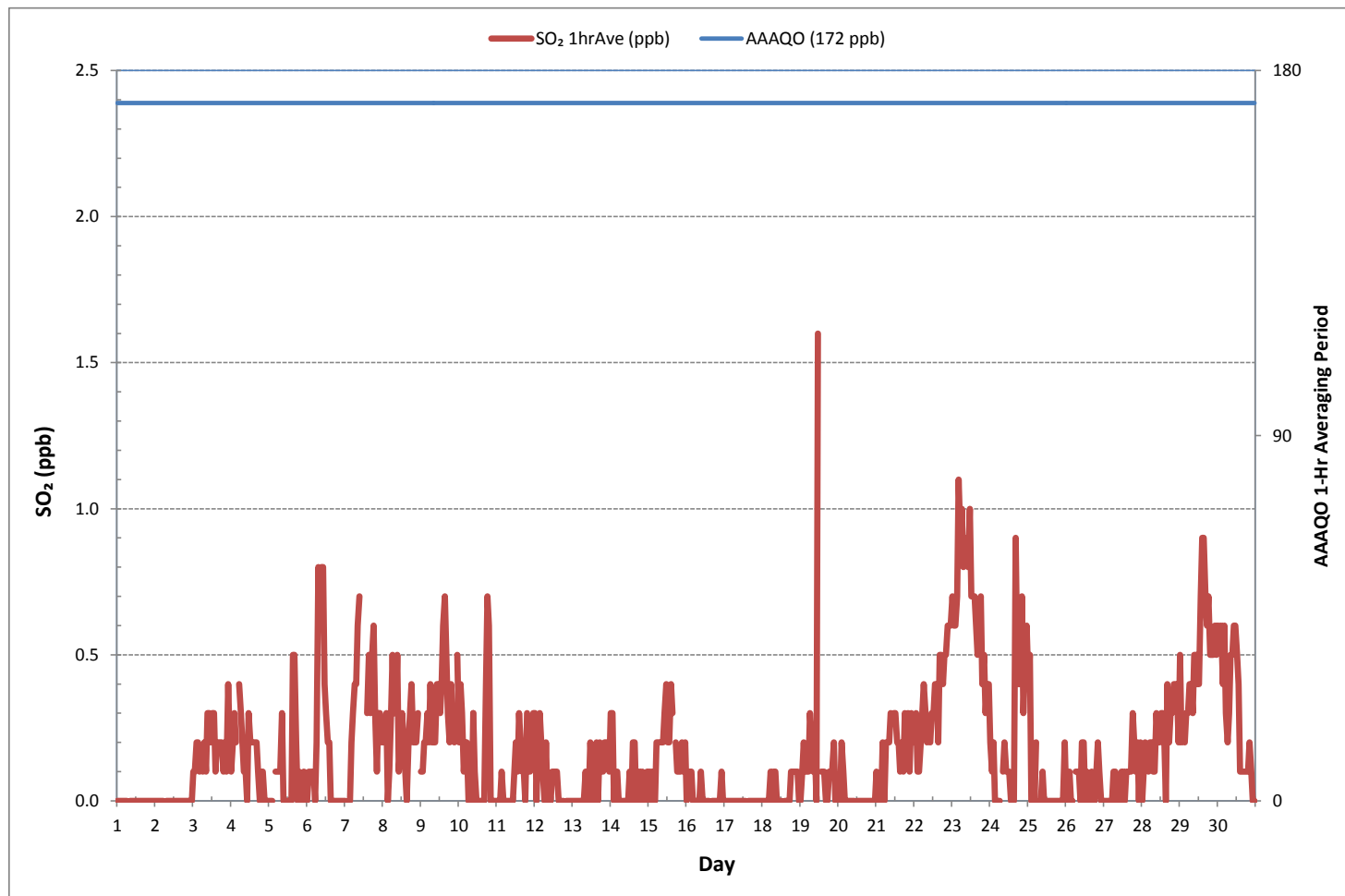
OBJECTIVE LIMIT:

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

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDANCES:	0
NUMBER OF 24-HR EXCEEDANCES:	0
NUMBER OF NON-ZERO READINGS:	402
MINIMUM 1-HR AVERAGE:	0.0 ppb @ HOUR(S)
MAXIMUM 1-HR AVERAGE:	1.6 ppb @ HOUR(S)
MAXIMUM 24-HR AVERAGE:	0.7 ppb
ON DAY(S)	VAR
ON DAY(S)	11
ON DAY(S)	19
ON DAY(S)	23
VAR-VARIOUS	
IZS CALIBRATION TIME:	31 hrs
MONTHLY CALIBRATION TIME:	4 hrs
OPERATIONAL TIME:	720 hrs
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.21
MONTHLY AVERAGE:	0.2 ppb

SULPHUR DIOXIDE Hourly Averages (SO₂ ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 986b Station - November 2016

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	1.6	1.1	0.6	1.0	1.1	1.1	S	0.6	1.6	0.6	1.6	1.1	1.1	1.1	1.0	1.1	1.1	0.6	1.1	1.1	1.6	1.6	1.1	0.6	1.6	1.1	24
2	1.6	2.1	1.6	1.6	1.1	1.6	S	1.6	1.6	1.6	1.1	1.1	1.1	1.1	1.6	1.6	1.6	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.1	1.4	24
3	1.6	1.6	1.6	1.6	1.6	S	1.1	1.6	1.6	1.6	1.1	1.6	1.6	1.6	1.6	1.6	1.6	1.1	1.1	1.6	1.1	1.6	1.6	1.6	1.1	1.6	1.5	24
4	1.1	1.6	1.1	1.6	S	1.6	1.1	1.6	1.1	1.6	1.1	1.6	1.6	1.6	1.1	1.6	1.6	1.6	1.1	1.6	1.6	1.6	1.1	1.6	1.1	1.6	1.4	24
5	1.6	1.6	1.1	S	1.6	1.6	1.6	1.1	1.6	1.1	1.6	1.1	1.6	1.1	1.6	2.6	2.1	1.6	1.6	1.6	1.1	1.1	1.1	1.1	1.1	2.6	1.5	24
6	1.6	1.6	S	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.1	1.6	2.1	1.6	1.6	1.6	1.1	1.6	1.5	1.1	1.6	1.6	1.6	1.6	1.1	2.1	1.7	24
7	1.6	S	1.6	1.1	1.1	1.6	1.6	1.6	1.6	1.6	C	C	C	C	C	1.6	1.0	1.0	1.6	1.6	1.0	1.0	1.0	1.0	1.0	1.6	1.3	24
8	S	1.0	1.1	1.0	1.1	1.0	2.1	1.6	1.0	1.0	1.0	1.0	1.0	1.1	1.1	0.6	0.6	1.6	2.1	1.0	1.0	1.6	1.1	S	0.6	2.1	1.2	24
9	1.0	1.0	1.1	1.6	1.1	1.1	1.6	1.0	1.0	1.1	1.6	1.6	1.6	2.1	1.1	1.6	2.0	1.0	1.0	1.6	1.0	1.1	S	1.6	1.0	2.1	1.3	24
10	1.1	1.1	1.6	1.1	1.1	2.1	1.0	1.1	1.0	1.6	2.1	1.6	1.1	1.0	1.6	1.0	1.0	2.1	2.6	2.6	2.1	S	1.6	1.6	1.0	2.6	1.5	24
11	1.1	1.6	1.6	1.6	1.6	1.6	2.1	1.0	1.6	1.1	1.6	1.6	1.0	1.0	1.6	2.1	1.0	1.1	1.0	1.0	S	1.1	1.6	1.6	1.0	2.1	1.4	24
12	1.6	1.0	1.6	1.6	2.1	1.6	1.6	1.1	1.6	1.6	1.6	1.1	1.6	1.6	1.6	1.1	1.6	1.6	1.6	S	1.1	1.0	1.0	1.1	1.0	2.1	1.4	24
13	1.0	1.1	1.6	1.6	1.0	1.0	1.1	1.0	1.1	1.6	1.0	1.6	1.6	1.0	1.1	1.6	1.6	1.6	S	1.0	1.6	1.6	1.6	1.0	1.0	1.6	1.3	24
14	1.6	1.6	1.0	1.0	1.0	1.6	1.0	1.0	1.0	1.0	1.6	1.0	1.6	1.6	1.6	1.6	1.6	S	1.1	1.6	1.6	1.0	1.1	1.6	1.0	1.6	1.3	24
15	1.6	1.0	1.1	1.0	1.6	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.1	1.6	1.6	1.0	S	1.6	1.0	1.1	1.6	1.6	1.6	1.1	1.0	1.6	1.4	24
16	1.1	1.1	1.1	1.0	1.1	1.0	1.6	1.1	1.6	1.1	1.6	0.6	1.1	1.0	1.1	S	1.0	1.1	1.0	1.0	1.0	1.6	1.1	1.0	0.6	1.6	1.1	24
17	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.0	1.0	0.6	S	1.1	1.0	1.0	0.6	1.0	0.6	1.1	1.0	1.1	0.6	1.1	1.0	24
18	P	1.0	1.0	1.0	1.6	1.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	S	1.0	1.6	1.0	1.0	1.0	1.0	1.6	1.6	1.0	1.0	1.0	1.6	1.1	23
19	1.0	1.0	1.0	1.6	1.0	0.6	1.1	1.1	1.0	1.0	0.6	3.6	S	1.1	0.6	1.0	1.1	1.0	1.6	1.6	1.1	1.6	1.6	1.0	0.6	3.6	1.2	24
20	1.6	1.6	1.6	1.6	1.1	1.6	1.6	1.1	1.0	1.6	1.0	S	1.0	1.1	1.0	1.0	1.6	1.6	1.6	1.0	1.0	1.0	1.0	1.0	1.0	1.6	1.3	24
21	1.1	1.1	1.0	1.1	1.0	1.0	1.6	1.0	1.0	1.0	S	1.0	1.0	1.6	1.6	1.6	1.0	1.0	1.6	1.0	1.0	1.0	1.6	1.0	1.0	1.6	1.2	24
22	1.0	1.6	1.0	1.0	1.0	1.1	1.0	1.6	0.6	S	1.1	1.1	1.0	1.6	1.0	1.0	1.0	1.0	1.0	1.6	1.0	1.6	1.6	1.6	0.6	1.6	1.2	24
23	1.0	1.0	1.0	1.0	1.6	1.0	1.0	0.6	S	1.6	1.0	1.6	1.6	1.0	1.0	1.0	1.0	1.0	1.6	1.0	1.6	1.0	2.0	1.6	0.6	2.0	1.2	24
24	1.6	1.0	1.6	1.6	1.6	1.0	2.0	S	1.6	1.6	2.1	1.6	1.6	1.6	1.6	1.0	2.6	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.0	2.6	1.8	24
25	2.1	2.1	1.6	1.0	1.6	1.6	S	1.1	1.6	1.6	1.6	1.0	1.6	1.6	1.0	1.0	2.0	2.0	1.6	1.0	1.0	1.6	1.6	1.0	1.0	2.1	1.5	24
26	1.0	1.0	1.0	1.6	1.6	S	1.6	1.6	1.0	1.5	1.6	1.6	1.0	1.0	1.0	1.0	1.1	0.6	1.1	1.0	1.6	1.0	1.0	1.0	0.6	1.6	1.2	24
27	1.0	1.6	0.6	0.6	S	1.1	1.0	1.6	1.0	0.6	0.6	1.6	1.0	1.1	1.0	1.0	0.6	1.0	1.1	1.0	1.6	1.6	1.0	1.0	0.6	1.6	1.1	24
28	1.0	1.6	1.5	S	1.6	1.0	1.0	1.0	1.0	1.0	1.5	1.0	1.0	1.0	1.0	1.0	1.6	1.0	1.1	1.0	1.6	1.0	1.0	1.0	1.0	1.6	1.2	24
29	1.0	0.6	S	1.6	1.0	1.5	1.6	1.0	1.1	1.6	1.6	1.0	1.0	1.6	1.6	1.6	1.0	1.1	1.6	1.0	1.6	1.0	1.6	1.6	0.6	1.6	1.3	24
30	1.6	S	1.6	1.0	1.6	1.0	1.1	1.6	1.6	1.0	2.1	1.6	1.6	1.6	1.0	1.1	1.0	1.1	1.0	1.0	1.6	1.1	1.0	1.1	1.0	2.1	1.3	24
HOURLY MAX	2.1	2.1	1.6	1.6	2.1	2.1	2.1	2.1	2.1	2.1	2.1	3.6	2.1	2.1	1.6	2.6	2.6	2.1	2.6	2.6	2.1	2.1	2.1	2.1	2.1			
HOURLY AVG	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.3	1.2	1.3	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3			

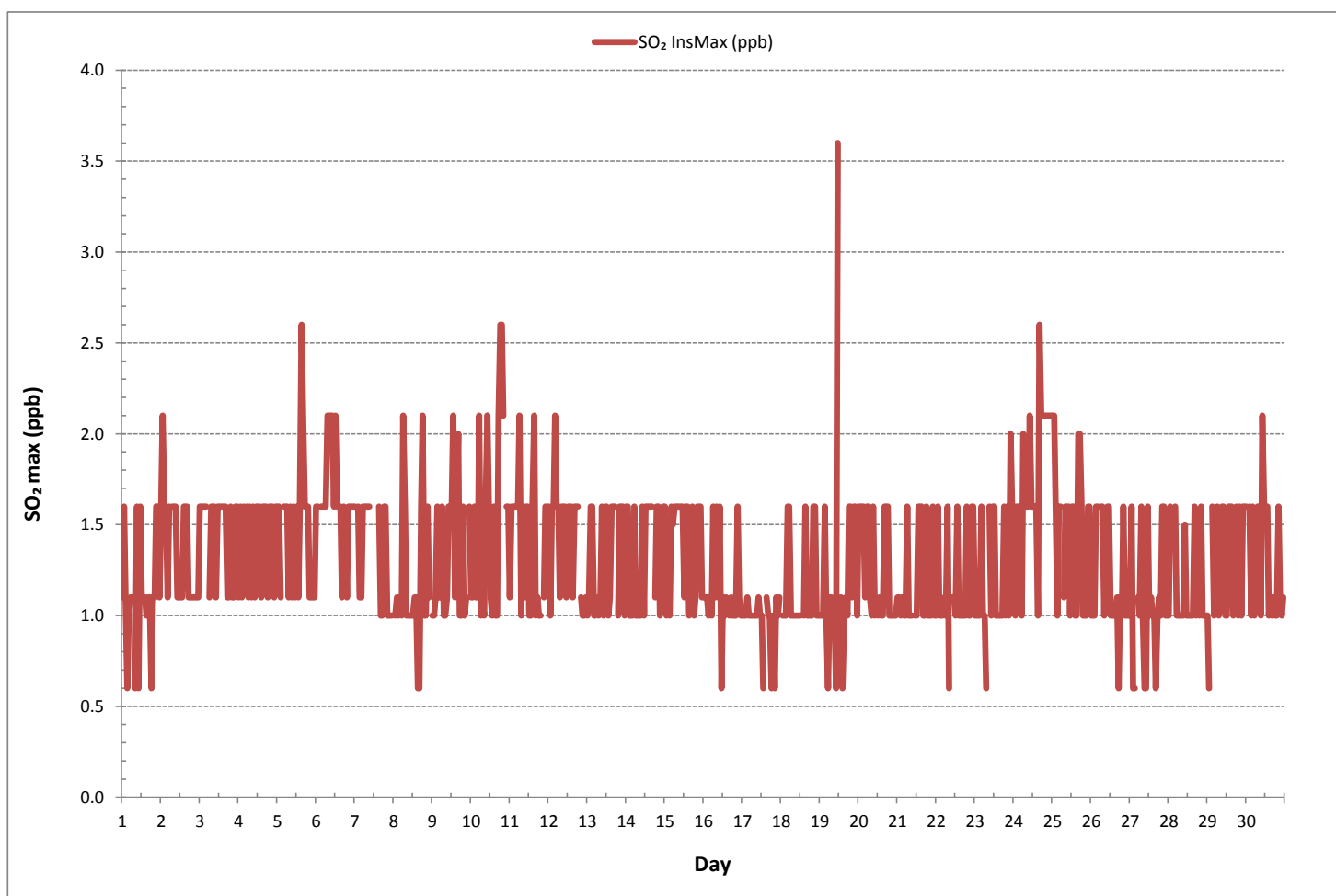
STATUS FLAG CODES

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

NUMBER OF NON-ZERO READINGS:	683
MAXIMUM INSTANTANEOUS VALUE:	3.6 ppb @ HOUR(S) 11 ON DAY(S) 19
	VAR-VARIOUS
I/S CALIBRATION TIME:	31 hrs
MONTHLY CALIBRATION TIME:	5 hrs
STANDARD DEVIATION:	0.37
OPERATIONAL TIME:	719 hrs

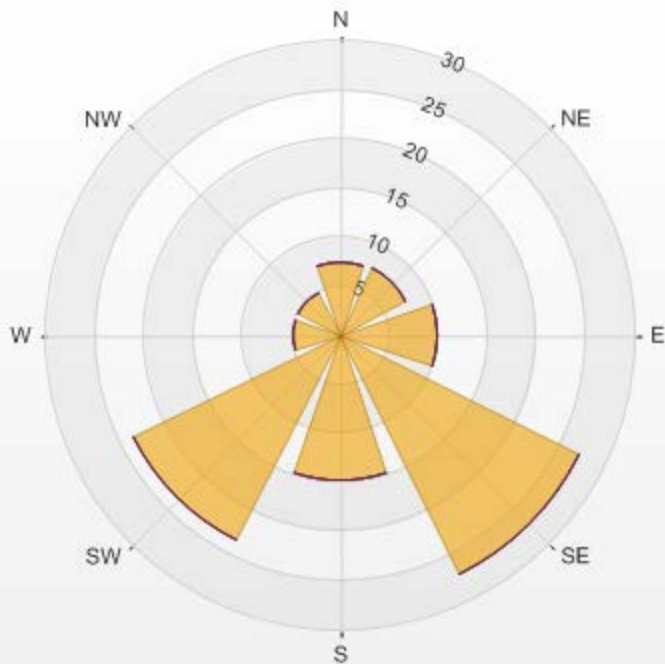
SULPHUR DIOXIDE Instantaneous Maximum (SO₂ ppb)



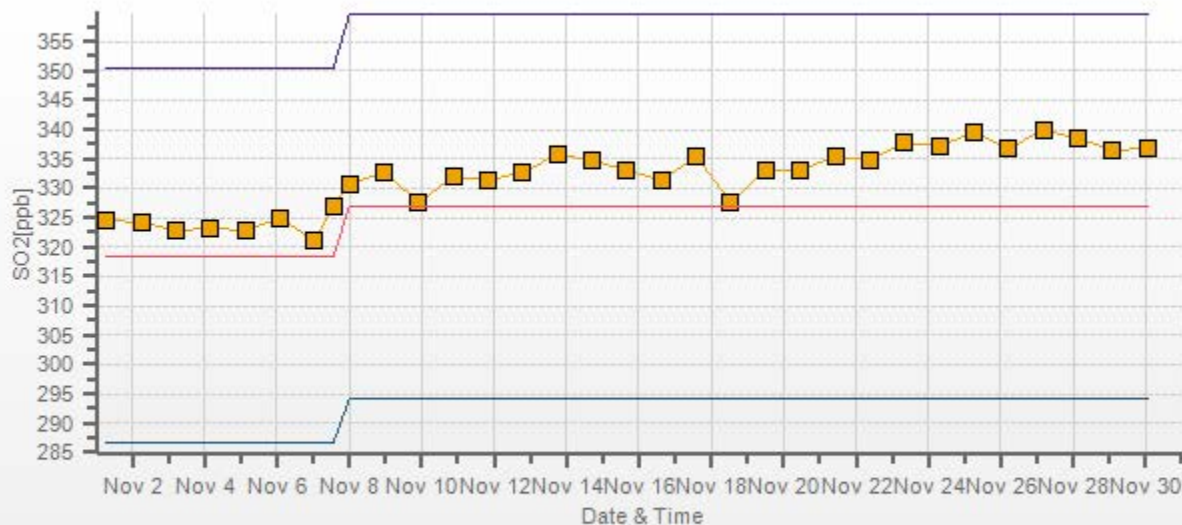
Wind: THREE CREEKS #986 TRAILER Poll.: THREE CREEKS #986 TRAILER-SO2[ppb] Monthly: 11/2016 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.86% Calm Avg: 0.00 [ppb]

Direction	0-3	3-10	10-85	85-170	>170.0	Total
N	7.47	0	0	0	0	7.47
NE	7.61	0	0	0	0	7.61
E	9.96	0	0	0	0	9.96
SE	27.23	0	0	0	0	27.23
S	14.79	0	0	0	0	14.79
SW	23.43	0	0	0	0	23.43
W	4.83	0	0	0	0	4.83
NW	4.69	0	0	0	0	4.69
Summary	100	0	0	0	0	100

THREE CREEKS #986 TRAILER Poll.: THREE CREEKS #986 TRAILER-SO2[ppb] 01/11/2016 00:00 - 30/11/2016 23:00
Calm: 0.00%



SO₂[ppb] Calibration: THREE CREEKS #986 TRAILER Monthly: 2016/11 Type: Span



Span Meas Span Ref Span Low Span High

TOTAL REDUCED SULPHUR

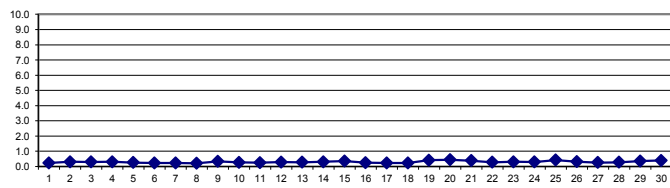
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)

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 MIN.	DAILY MAX.	24-HR AVG.	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59					
DAY																													
1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	S	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.3	24
2	0.3	0.3	0.3	0.3	0.3	0.2	S	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.4	0.3	24	
3	0.3	0.3	0.4	0.3	0.3	S	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.4	0.3	24	
4	0.3	0.3	0.4	0.4	S	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.4	0.3	24	
5	0.3	0.3	0.3	S	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.3	24	
6	0.2	0.3	S	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.1	0.3	0.2	24	
7	0.2	S	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.2	0.3	C	C	C	C	C	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.3	0.2	24	
8	S	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.4	0.3	0.2	0.2	0.2	S	0.1	0.4	0.2	24	
9	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.3	0.4	0.4	0.5	S	0.4	0.3	0.5	0.3	24	
10	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	S	0.2	0.2	0.2	0.4	0.3	24	
11	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	S	0.3	0.3	0.2	0.2	0.3	0.3	24	
12	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	S	0.3	0.3	0.3	0.3	0.2	0.4	0.3	24	
13	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.3	S	0.3	0.2	0.3	0.3	0.2	0.2	0.4	0.3	24	
14	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.1	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	S	0.4	0.3	0.3	0.3	0.4	0.4	0.1	0.4	0.3	24	
15	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.4	0.3	0.3	0.3	S	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.4	24	
16	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2	S	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.1	0.3	0.2	24	
17	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.2	S	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.2	24	
18	0.2	0.2	0.2	0.1	0.1	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.1	S	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.1	0.4	0.2	24
19	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.4	0.4	0.5	S	0.5	0.4	0.5	0.4	0.4	0.4	0.6	0.6	0.6	0.5	0.5	0.3	0.6	0.4	24	
20	0.4	0.5	0.6	0.5	0.4	0.4	0.3	0.4	0.4	0.4	0.4	S	0.4	0.5	0.5	0.5	0.4	0.5	0.6	0.4	0.5	0.5	0.4	0.3	0.3	0.6	0.4	24	
21	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	S	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.4	24	
22	0.3	0.3	0.2	0.2	0.3	0.4	0.4	0.4	0.3	S	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.4	0.3	24	
23	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	S	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.4	0.4	0.2	0.5	0.3	24	
24	0.4	0.4	0.4	0.4	0.4	0.4	0.4	S	0.5	0.4	0.4	0.4	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.3	0.2	0.2	0.1	0.1	0.5	0.3	24	
25	0.3	0.2	0.2	0.2	0.2	0.9	S	1.2	1.1	0.8	0.7	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.2	1.2	0.4	24
26	0.4	0.4	0.4	0.3	0.3	S	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.2	0.4	0.3	24	
27	0.3	0.3	0.3	0.3	S	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	24	
28	0.2	0.2	0.2	S	0.2	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.1	0.4	0.3	24	
29	0.3	0.3	S	0.3	0.4	0.4	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.2	0.4	0.4	24	
30	0.3	S	0.3	0.3	0.3	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.5	0.4	24	
HOURLY MAX	0.4	0.5	0.6	0.5	0.4	0.9	0.4	1.2	1.1	0.8	0.7	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5					
HOURLY AVG	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3					

STATUS FLAG CODES

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

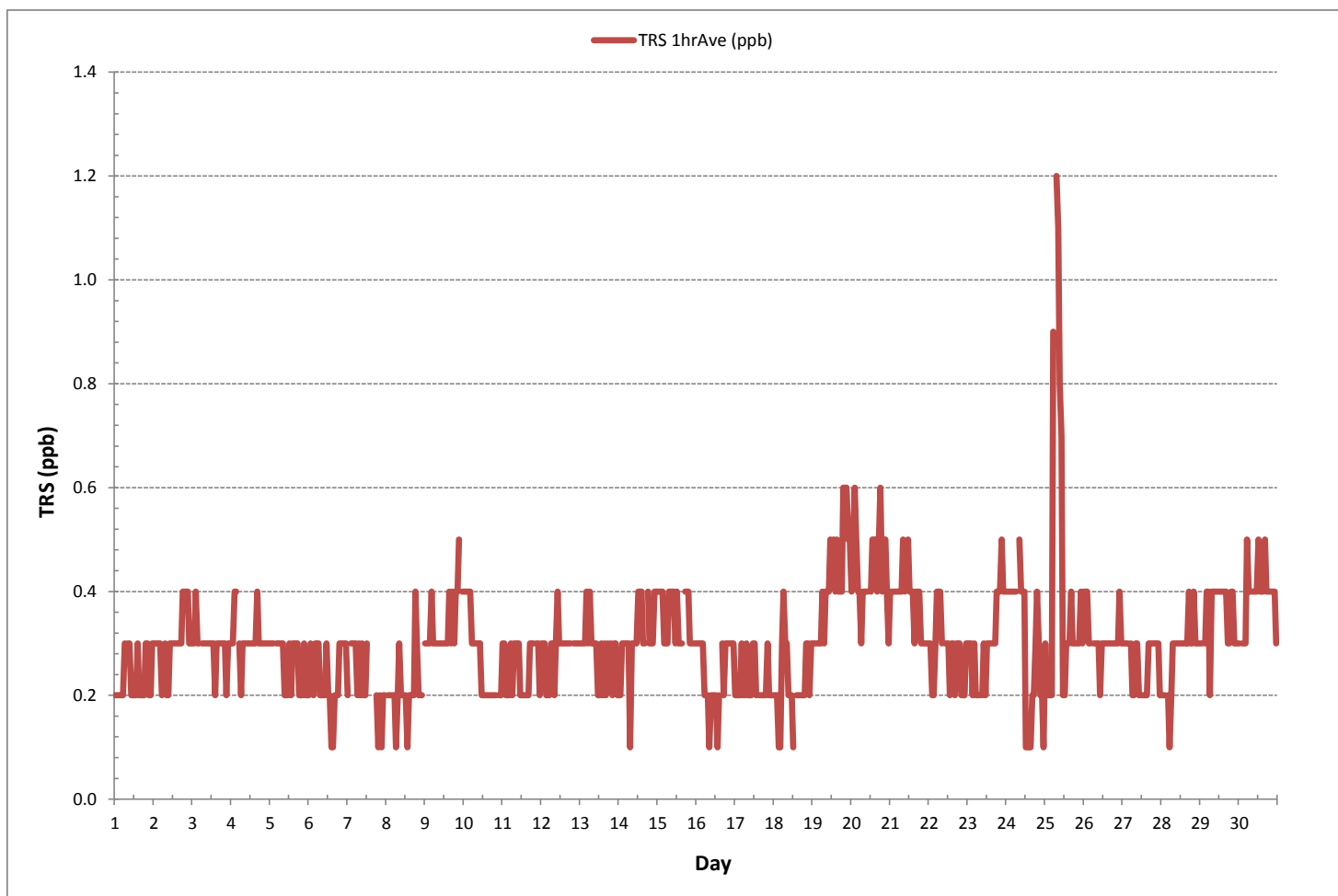
24 HR AVERAGES November 2016



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	684				
MINIMUM 1-HR AVERAGE:	0.1	ppb	@ HOUR(S)	VAR	ON DAY(S)
MAXIMUM 1-HR AVERAGE:	1.2	ppb	@ HOUR(S)	7	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	0.4	ppb			ON DAY(S)
					VAR-VARIOUS
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	720	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.10		MONTHLY AVERAGE:	0.3	ppb

TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 986b Station - November 2016

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.	
DAY																												
1	0.7	0.6	0.6	0.7	0.6	0.6	1.0	S	0.6	0.5	0.5	0.6	0.6	0.5	0.6	0.6	1.0	0.9	0.6	0.6	0.6	0.5	0.6	0.5	0.5	1.0	0.6	24
2	0.6	0.7	0.6	0.6	0.6	0.7	S	0.5	0.5	0.5	0.8	0.6	0.7	0.6	0.6	0.6	0.7	0.8	0.7	0.6	0.7	0.7	0.7	0.8	0.5	0.8	0.6	24
3	0.7	0.6	0.7	0.6	0.6	S	0.7	0.6	0.7	0.6	0.6	0.6	0.8	0.7	0.7	0.6	0.7	0.9	0.7	0.7	0.7	0.6	0.6	0.8	0.6	0.9	0.7	24
4	0.7	0.7	0.8	0.9	S	1.0	1.4	0.9	0.7	0.8	0.6	0.8	0.7	0.8	0.7	0.7	1.1	0.7	0.8	0.7	0.7	0.7	0.8	0.6	0.6	1.4	0.8	24
5	0.6	0.7	0.7	S	0.7	0.9	0.7	0.6	0.7	0.6	0.7	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.9	0.7	24
6	0.6	0.7	S	0.8	0.8	0.9	1.2	0.7	0.7	0.8	1.0	0.8	0.8	0.7	0.6	1.1	1.3	0.7	0.9	0.8	1.0	0.9	0.8	0.8	0.6	1.3	0.8	24
7	0.7	S	0.9	0.9	0.9	0.8	1.1	1.3	0.8	0.8	0.8	0.7	0.9	C	C	C	C	C	0.8	0.7	0.8	0.7	0.8	1.1	0.7	1.3	0.9	24
8	S	0.8	0.7	0.8	0.7	0.7	1.1	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.9	0.7	1.3	0.8	0.8	0.8	0.8	S	0.7	1.3	0.8	24
9	0.8	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.8	0.8	1.0	0.9	1.1	1.0	0.7	0.9	0.9	1.0	S	0.8	0.7	1.1	0.9	24
10	0.9	0.9	0.9	0.9	0.8	1.3	1.1	0.8	0.8	0.7	0.9	0.8	0.7	0.8	0.7	0.8	0.7	1.1	0.8	0.8	0.8	S	0.8	0.8	0.7	1.3	0.9	24
11	0.8	0.9	0.8	0.8	0.7	0.8	1.0	0.9	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.9	0.8	0.9	0.8	0.7	S	0.9	0.8	0.8	0.7	1.0	0.8	24
12	0.8	0.9	0.8	0.8	0.7	0.8	0.9	0.9	0.7	1.0	0.9	0.9	0.8	0.9	0.9	0.9	0.9	0.9	0.9	S	0.9	0.8	0.9	0.9	0.7	1.0	0.9	24
13	0.9	0.8	0.9	0.9	0.9	1.1	1.0	0.8	0.8	0.8	0.9	0.8	0.7	0.9	0.8	0.8	1.0	0.8	S	0.8	0.8	0.9	0.7	0.7	0.7	1.1	0.8	24
14	0.7	0.7	1.0	0.8	0.8	0.8	1.1	0.8	0.7	0.9	0.7	0.8	0.8	0.9	0.8	0.8	1.3	S	0.9	0.8	0.8	0.7	0.8	0.8	0.7	1.3	0.8	24
15	0.8	0.8	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.7	0.8	0.7	0.8	0.7	0.9	1.1	S	0.8	0.9	0.7	0.9	0.7	0.6	0.8	0.6	1.1	0.8	24
16	0.7	0.7	0.8	0.8	0.7	0.7	1.1	1.2	0.7	0.7	1.1	1.0	0.7	0.6	0.9	S	1.2	1.1	0.8	0.7	0.7	0.8	0.8	0.8	0.6	1.2	0.8	24
17	0.7	0.7	0.8	0.6	0.8	0.8	0.7	1.0	0.6	0.7	0.6	0.6	0.8	0.7	S	0.7	0.9	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.6	1.0	0.7	24
18	P	0.6	0.6	0.6	0.6	1.1	0.9	1.3	0.8	0.7	0.7	0.7	0.6	S	0.7	0.7	1.1	0.8	0.7	0.7	0.6	0.7	0.6	0.7	0.6	1.3	0.8	23
19	0.7	0.7	0.7	0.6	0.8	0.7	0.9	0.6	0.8	0.7	0.7	0.8	S	0.9	0.8	0.9	0.9	0.8	0.7	0.9	1.0	0.9	0.9	1.0	0.6	1.0	0.8	24
20	0.8	0.8	0.9	1.0	0.7	0.7	0.7	0.6	0.7	0.9	0.8	S	0.7	0.9	1.0	0.8	0.9	0.9	1.0	0.7	0.8	0.9	0.7	0.7	0.6	1.0	0.8	24
21	0.7	0.7	0.6	0.6	0.7	0.7	1.3	1.0	0.8	0.8	S	0.8	0.8	0.6	0.7	0.6	1.1	1.2	0.8	0.8	0.7	0.6	0.7	0.6	0.6	1.3	0.8	24
22	0.6	0.8	0.7	0.6	0.7	0.8	1.0	0.9	0.7	S	0.8	0.8	0.7	0.7	0.7	0.6	0.8	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.6	1.0	0.7	24
23	0.8	0.7	0.7	0.9	0.8	0.8	0.7	0.8	S	0.7	0.6	0.8	0.7	0.7	0.7	0.7	1.2	0.8	0.8	0.8	0.8	1.0	0.8	0.8	0.6	1.2	0.8	24
24	0.8	0.8	0.8	0.7	0.7	0.8	0.9	S	0.9	0.9	0.7	0.7	0.5	0.4	0.5	0.5	0.8	0.6	0.8	0.8	0.7	0.6	0.6	0.4	0.4	0.9	0.7	24
25	0.6	0.6	0.5	0.5	1.1	2.3	S	1.9	1.4	1.1	1.1	0.5	0.6	0.7	0.6	0.8	1.0	0.6	0.5	0.6	0.5	0.7	0.7	0.6	0.5	2.3	0.8	24
26	0.7	0.6	0.6	0.7	0.5	S	0.6	0.4	0.5	0.5	0.4	0.5	0.5	0.5	0.4	0.6	0.5	0.7	0.5	0.5	0.4	0.6	0.6	0.4	0.4	0.7	0.5	24
27	0.4	0.5	0.4	0.4	S	0.4	0.5	0.3	0.5	0.6	0.5	0.6	0.7	0.5	0.5	0.5	0.9	0.8	0.6	0.5	0.5	0.5	0.5	0.4	0.3	0.9	0.5	24
28	0.5	0.6	0.5	S	0.5	0.6	0.8	0.7	0.6	0.5	0.5	0.5	0.6	0.6	0.6	0.6	1.0	0.8	0.9	0.5	0.5	0.5	0.4	0.5	0.4	1.0	0.6	24
29	0.5	0.5	S	0.4	0.6	0.7	0.6	0.6	0.5	0.6	0.8	0.6	0.6	0.6	0.5	0.5	1.0	0.8	0.5	0.5	0.5	0.7	0.5	0.6	0.4	1.0	0.6	24
30	0.5	S	0.5	0.5	0.5	0.9	0.7	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.9	0.8	1.1	0.7	0.6	0.5	0.5	0.6	0.5	0.5	1.1	0.6	24
HOURLY MAX	0.9	0.9	1.0	1.0	1.1	2.3	1.4	1.9	1.4	1.1	1.1	1.0	0.9	0.9	1.0	1.1	1.3	1.2	1.3	0.9	1.0	1.0	0.9	1.1				
HOURLY AVG	0.7	0.7	0.7	0.7	0.7	0.9	0.9	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.9	0.8	0.8	0.7	0.7	0.7	0.7	0.7				

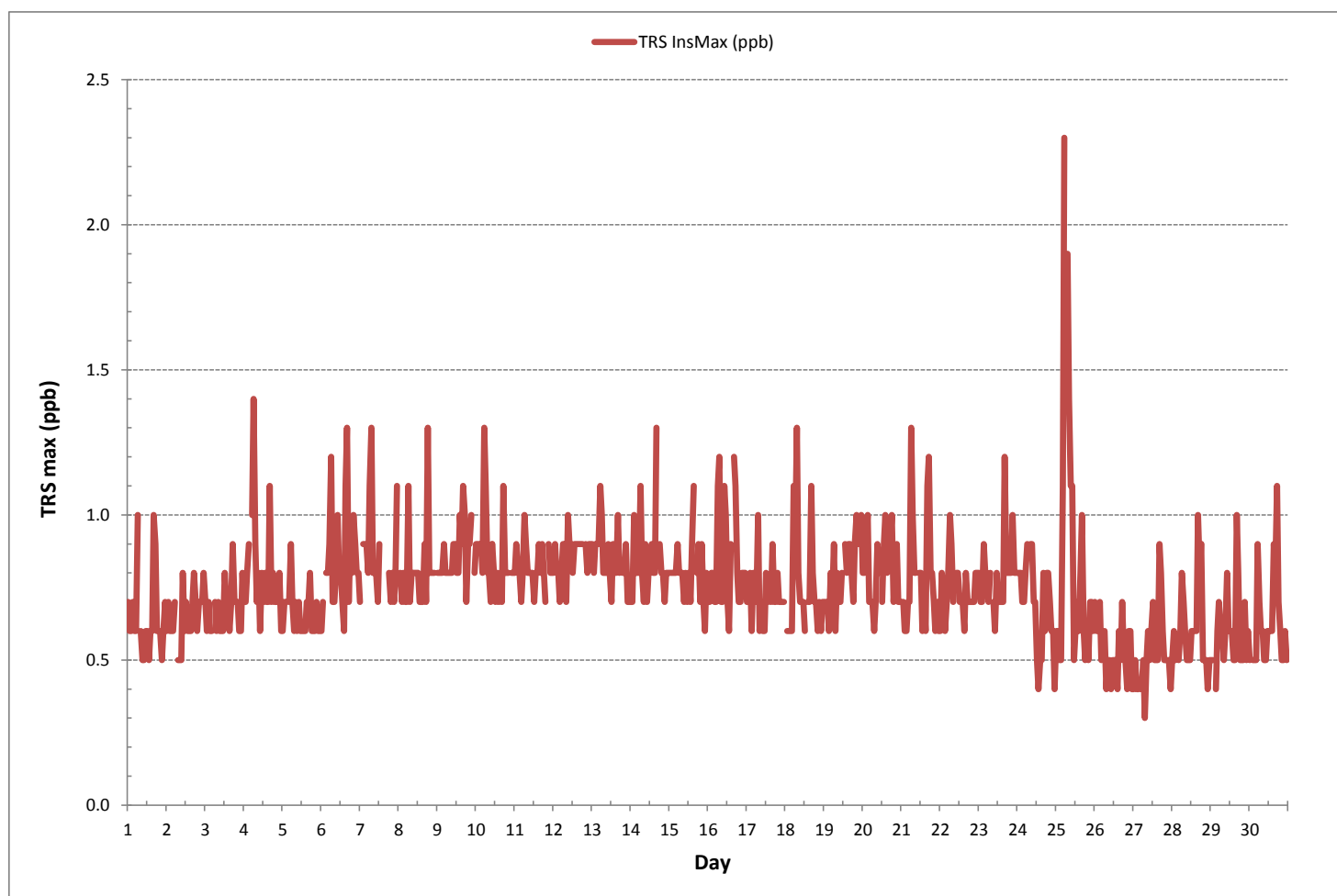
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	683
MAXIMUM INSTANTANEOUS VALUE:	2.3 ppb @ HOUR(S) 5 ON DAY(S) 25
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 hrs
MONTHLY CALIBRATION TIME:	5 hrs
STANDARD DEVIATION:	0.18
OPERATIONAL TIME:	719 hrs

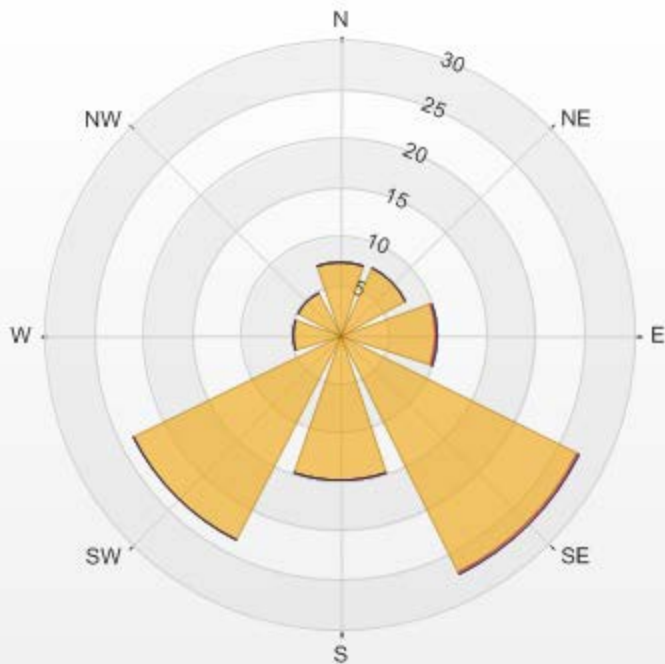
TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)



Wind: THREE CREEKS #986 TRAILER Poll.: THREE CREEKS #986 TRAILER-TRS[ppb] Monthly: 11/2016 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 94.86% Calm 0.00 [ppb]

Direction	0-1	1-3	3-10	>10.0	Total
N	7.47	0	0	0	7.47
NE	7.61	0	0	0	7.61
E	9.81	0.15	0	0	9.96
SE	27.09	0.15	0	0	27.24
S	14.79	0	0	0	14.79
SW	23.43	0	0	0	23.43
W	4.83	0	0	0	4.83
NW	4.69	0	0	0	4.69
Summary	100	0.3	0	0	100

THREE CREEKS #986 TRAILER Poll.: THREE CREEKS #986 TRAILER-TRS[ppb] 01/11/2016 00:00 - 30/11/2016 23:00 Calm: 0.00%



TRS[ppb] Calibration: THREE CREEKS #986 TRAILER Monthly: 2016/11 Type: Span



Span Meas Span Ref Span Low Span High

TOTAL HYDROCARBON



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - November 2016

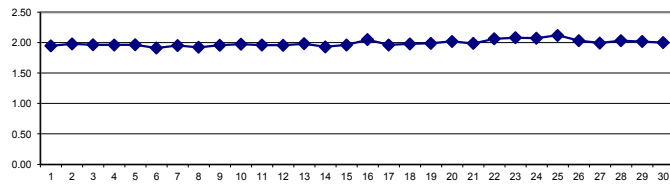
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

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	1.95	1.95	1.95	1.94	1.94	1.94	1.94	S	1.93	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.94	1.94	1.95	1.97	1.97	1.97	1.97	1.93	1.97	1.95	24	
2	1.98	1.99	1.97	1.97	1.97	1.98	S	2.00	1.99	1.99	2.00	2.00	1.98	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.98	1.98	1.99	2.00	1.96	2.00	1.98	24	
3	1.98	1.98	1.96	1.95	1.96	S	2.01	2.03	2.02	2.02	2.00	1.98	1.96	1.95	1.95	1.95	1.95	1.94	1.93	1.93	1.93	1.93	1.94	1.93	1.93	2.03	1.96	24	
4	1.97	1.99	2.01	1.99	S	2.00	1.97	1.96	1.96	1.95	1.96	1.95	1.95	1.95	1.96	1.96	1.97	1.97	1.96	1.95	1.95	1.94	1.94	1.95	1.94	2.01	1.96	24	
5	1.95	1.96	1.97	S	1.98	1.96	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.95	1.98	1.96	6	
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	S	1.90	1.91	1.91	1.92	1.92	1.90	1.92	1.91	6	
7	1.93	S	1.93	1.93	1.96	1.96	1.96	1.97	1.98	1.99	C	C	C	C	C	1.93	1.94	1.94	1.94	1.96	1.95	1.95	1.96	1.95	1.93	1.99	1.95	24	
8	S	1.95	1.94	1.93	1.94	1.92	1.91	1.91	1.93	1.95	1.94	1.92	1.91	1.90	1.90	1.89	1.90	1.92	1.92	1.93	1.94	1.95	1.94	S	1.89	1.95	1.92	24	
9	1.96	2.05	2.09	2.05	1.97	1.96	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.92	1.93	1.93	1.94	1.94	1.95	1.95	1.95	S	1.97	1.92	2.09	1.96	24		
10	1.96	1.97	1.97	1.98	1.99	1.99	1.99	2.00	2.00	1.99	1.99	1.98	1.96	1.95	1.94	1.95	1.98	2.00	1.95	1.96	1.95	S	1.98	1.99	1.94	2.00	1.97	24	
11	1.99	1.98	1.97	1.99	1.99	1.98	1.99	2.00	2.00	2.01	1.99	1.97	1.95	1.94	1.92	1.92	1.92	1.92	1.92	1.93	S	1.93	1.93	1.93	1.92	2.01	1.96	24	
12	1.94	1.94	1.93	1.94	1.94	1.95	1.96	1.95	1.97	1.98	1.97	1.96	1.95	1.95	1.95	1.94	1.95	1.95	1.97	S	1.98	1.98	1.98	1.99	1.93	1.99	1.96	24	
13	2.00	1.98	1.98	2.03	2.04	2.02	2.02	2.04	2.02	2.00	1.99	1.97	1.95	1.94	1.94	1.94	1.94	1.97	S	1.97	1.98	1.95	1.95	1.96	1.94	2.04	1.98	24	
14	1.96	1.95	1.96	1.93	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.93	1.92	1.92	1.93	1.93	S	1.93	1.94	1.94	1.94	1.94	1.94	1.92	1.96	1.93	24	
15	1.94	1.94	1.94	1.94	1.95	1.95	1.96	1.95	1.95	1.96	1.97	1.96	1.95	1.95	1.95	1.95	S	1.96	1.96	1.96	1.97	1.99	2.00	2.10	1.94	2.10	1.96	24	
16	2.10	2.13	2.21	2.24	2.16	2.15	2.21	2.20	2.18	2.08	2.02	1.96	1.96	1.95	1.96	S	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.95	1.95	1.95	2.24	2.05	24
17	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	S	1.96	1.96	1.97	1.96	1.96	1.97	1.96	1.98	1.99	1.96	1.99	1.96	24	
18	1.98	1.97	1.98	1.98	1.98	1.98	1.98	1.99	1.98	1.98	1.98	1.97	1.97	S	1.98	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.97	1.99	1.98	24	
19	1.98	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.97	1.97	1.97	S	1.98	1.98	1.98	1.98	1.99	2.00	2.00	2.01	2.02	2.02	2.02	1.97	2.02	1.99	24	
20	2.02	2.02	2.03	2.02	2.02	2.02	2.02	2.02	2.02	2.03	2.03	S	2.03	2.02	2.02	2.02	2.02	2.02	2.02	2.02	2.01	2.01	2.02	2.01	2.00	2.03	2.02	24	
21	2.00	2.01	2.00	1.99	2.01	2.01	2.00	2.01	2.00	1.98	S	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.98	1.98	1.99	1.99	1.98	1.98	1.97	2.01	1.99	24	
22	1.98	1.99	1.98	1.99	2.07	2.29	2.38	2.31	2.06	S	2.04	2.03	2.03	2.03	2.02	2.02	2.03	2.02	2.03	2.02	2.03	2.04	2.05	2.05	1.98	2.38	2.06	24	
23	2.04	2.05	2.10	2.08	2.09	2.08	2.07	2.08	S	2.06	2.12	2.13	2.09	2.06	2.07	2.07	2.06	2.06	2.07	2.07	2.09	2.10	2.11	2.09	2.04	2.13	2.08	24	
24	2.10	2.12	2.13	2.14	2.16	2.17	2.18	S	2.16	2.11	2.10	2.04	2.02	2.00	1.98	1.98	1.99	2.02	2.02	2.03	2.03	2.03	2.08	2.10	1.98	2.18	2.07	24	
25	2.12	2.13	2.13	2.14	2.13	2.14	S	2.17	2.17	2.15	2.14	2.08	2.10	2.13	2.14	2.13	2.12	2.10	2.08	2.08	2.09	2.09	2.09	2.10	2.08	2.17	2.12	24	
26	2.10	2.09	2.08	2.07	2.07	S	2.04	2.04	2.04	2.03	2.00	1.98	1.98	1.99	2.00	2.00	2.01	2.01	2.03	2.05	2.04	2.07	2.04	2.01	1.98	2.10	2.03	24	
27	2.00	1.99	1.99	1.99	S	1.99	1.99	1.99	1.99	1.98	1.96	1.95	1.95	1.96	1.98	2.00	2.01	2.01	2.01	2.02	2.02	2.02	2.03	2.01	1.95	2.03	1.99	24	
28	1.97	1.97	1.97	S	1.96	1.98	2.01	2.03	2.03	2.04	2.04	2.05	2.06	2.07	2.07	2.06	2.06	2.07	2.06	2.05	2.06	2.05	2.04	2.02	1.96	2.07	2.03	24	
29	2.02	2.01	S	2.03	2.04	2.02	2.00	2.00	1.99	2.00	2.02	2.04	2.05	2.05	2.03	2.02	2.00	2.01	2.02	2.03	2.02	2.02	2.02	1.97	1.97	2.05	2.02	24	
30	2.00	S	1.99	1.99	1.99	1.98	1.98	1.99	2.01	2.01	2.01	2.00	1.99	1.99	1.99	1.99	2.00	1.99	2.01	2.01	2.02	2.03	2.03	2.03	1.98	2.03	2.00	24	
HOURLY MAX	2.12	2.13	2.21	2.24	2.16	2.29	2.38	2.31	2.18	2.15	2.14	2.13	2.10	2.13	2.14	2.13	2.12	2.10	2.08	2.08	2.09	2.10	2.11	2.10					
HOURLY AVG	2.00	2.00	2.00	2.01	2.01	2.01	2.01	2.02	2.01	2.00	2.00	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.99	1.99	2.00					

STATUS FLAG CODES

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

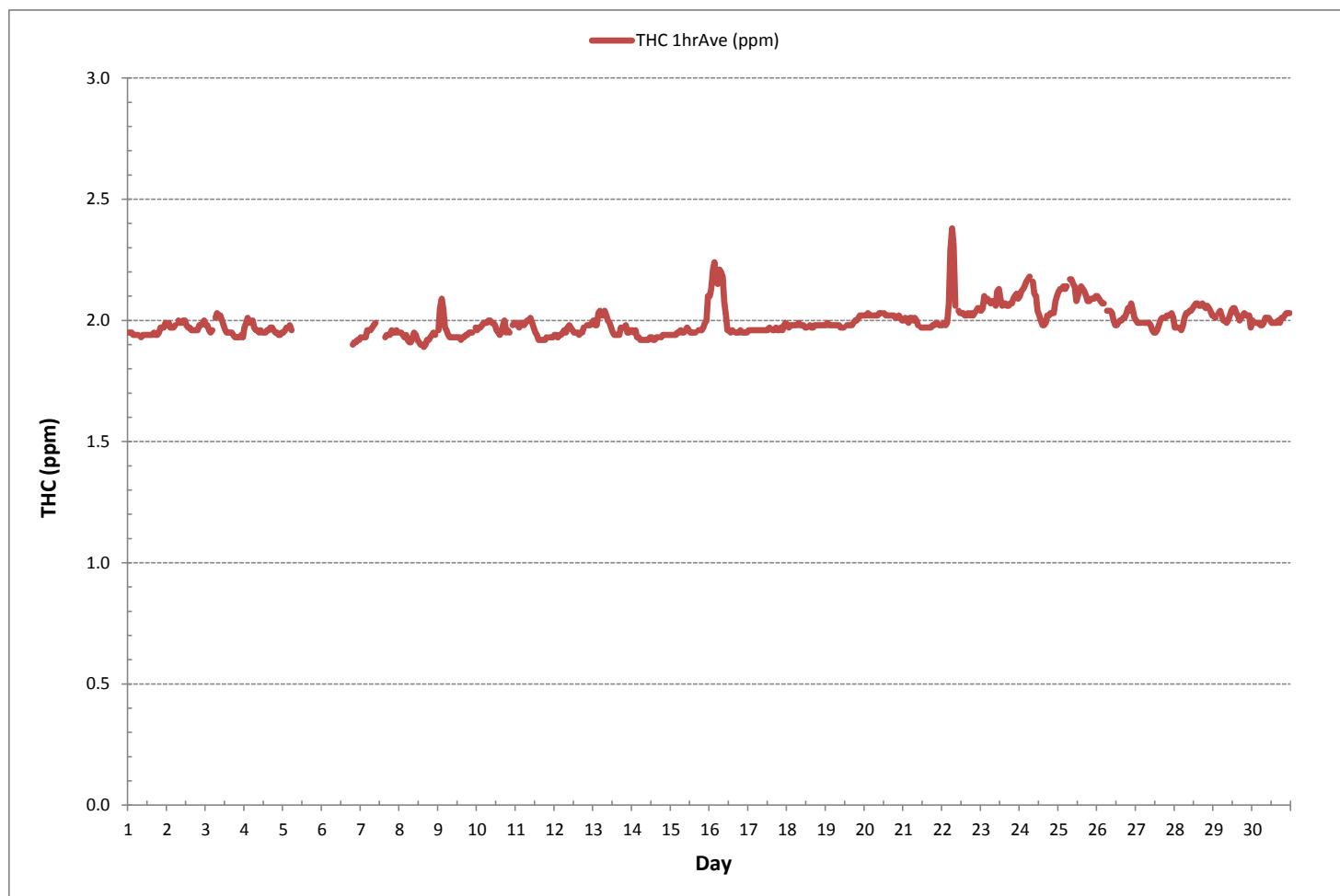
24 HR AVERAGES November 2016



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	648				
MINIMUM 1-HR AVERAGE:	1.89	ppm	@ HOUR(S)	15	ON DAY(S) 8
MAXIMUM 1-HR AVERAGE:	2.38	ppm	@ HOUR(S)	6	ON DAY(S) 22
MAXIMUM 24-HR AVERAGE:	2.12	ppm			ON DAY(S) 25
					VAR-VARIOUS
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	684	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:	95.0	%
STANDARD DEVIATION:	0.06		MONTHLY AVERAGE:	1.99	ppm

TOTAL HYDROCARBONS Hourly Averages (THC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - November 2016

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	2.02	1.97	1.94	1.94	1.94	1.94	1.94	S	1.94	1.94	1.94	1.95	1.94	1.94	1.94	1.95	1.95	1.95	1.95	1.96	1.97	1.97	1.99	1.97	1.94	2.02	1.95	24	
2	1.99	1.99	1.97	1.97	1.97	1.98	S	2.02	2.00	1.99	2.01	2.02	1.99	1.98	1.96	1.96	1.96	1.96	1.96	1.97	1.99	2.00	2.18	2.02	1.96	2.18	1.99	24	
3	2.01	1.98	1.98	1.96	2.03	S	2.03	2.04	2.03	2.02	2.06	1.98	1.96	1.95	1.95	1.95	1.95	1.94	1.93	1.93	1.93	1.93	1.94	1.94	1.93	2.06	1.97	24	
4	2.01	2.01	2.06	1.99	S	2.01	2.00	1.97	1.97	1.97	1.96	1.95	1.95	1.95	1.97	1.96	1.97	1.98	1.96	1.96	1.95	1.95	1.94	1.95	1.94	2.06	1.97	24	
5	1.95	1.96	1.98	S	S	1.98	1.97	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.95	1.98	1.97	6
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	S	S	1.91	1.91	1.92	1.92	1.91	1.92	1.92	6	
7	1.93	S	S	1.93	1.94	1.97	1.98	1.97	1.97	1.99	2.00	C	C	C	C	C	1.94	1.94	1.95	1.97	1.97	1.99	1.95	1.98	1.95	1.93	2.00	1.96	24
8	S	1.96	1.95	1.93	1.94	1.93	1.91	1.92	1.94	1.95	1.94	1.92	1.91	1.91	1.89	1.90	1.90	1.96	1.96	1.98	1.99	1.98	1.95	S	1.89	1.99	1.94	24	
9	2.02	2.24	2.25	2.14	2.10	1.96	1.95	1.93	1.93	1.93	1.93	1.92	1.93	1.93	1.93	1.93	1.93	1.94	1.94	1.95	1.94	1.95	S	1.98	1.92	2.25	1.98	24	
10	1.98	1.97	1.98	1.98	1.99	1.99	1.99	2.08	2.02	2.01	2.01	1.98	1.97	1.96	1.94	1.96	2.02	2.03	1.96	1.96	S	S	1.99	1.99	1.94	2.08	1.99	24	
11	2.01	1.99	1.98	1.99	1.99	1.99	1.99	2.00	2.00	2.02	2.00	1.97	1.96	1.94	1.92	1.92	1.92	1.92	1.93	1.93	S	S	1.93	1.93	1.94	1.92	2.02	1.96	24
12	1.94	1.95	1.93	1.94	1.94	1.95	1.97	1.97	2.04	2.00	1.98	1.96	1.95	1.95	1.95	1.96	1.95	1.95	1.97	S	1.97	1.99	1.99	1.99	1.93	2.04	1.96	24	
13	2.02	1.97	1.99	2.05	2.05	2.03	2.04	2.04	2.03	2.02	2.01	1.97	1.95	1.94	1.94	1.95	1.95	2.03	S	S	1.99	1.99	1.96	1.96	1.97	1.94	2.05	1.99	24
14	1.97	1.95	1.97	1.94	1.92	1.92	1.92	1.92	1.92	1.93	1.93	1.92	1.93	1.92	1.92	1.93	1.93	S	1.93	1.94	1.94	1.94	1.94	1.94	1.92	1.97	1.93	24	
15	1.94	1.94	1.94	1.94	1.95	1.95	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.95	1.94	1.96	S	2.02	1.96	1.99	2.06	2.02	2.02	2.22	1.94	2.22	1.98	24	
16	2.11	2.18	2.26	2.30	2.25	2.17	2.25	2.28	2.25	2.16	2.09	1.96	1.95	1.95	1.96	S	S	1.95	1.95	1.95	1.96	1.95	1.95	1.96	1.95	2.30	2.08	24	
17	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	S	1.96	1.96	1.97	1.96	1.96	1.96	1.96	1.97	2.14	2.02	1.96	2.14	1.97	24
18	P	1.98	1.99	1.99	2.08	1.99	1.99	1.99	2.01	1.97	1.97	1.97	1.98	S	1.98	1.98	1.97	1.99	1.99	1.99	1.99	1.99	1.99	1.97	1.99	2.08	1.99	23	
19	1.99	1.99	1.99	1.98	1.99	1.99	1.99	1.97	1.97	1.97	1.97	1.97	S	1.97	1.97	1.97	1.97	1.99	1.99	2.01	2.01	2.01	2.02	2.03	1.97	2.03	1.99	24	
20	2.02	2.03	2.03	2.03	2.02	2.02	2.03	2.03	2.03	2.03	2.03	S	2.03	2.03	2.02	2.03	2.02	2.03	2.02	2.02	2.02	2.02	2.02	2.02	2.01	2.01	2.03	2.02	24
21	2.01	2.01	2.00	2.00	2.01	2.01	2.01	2.02	2.01	2.01	S	1.97	1.97	1.97	1.97	1.98	1.97	1.97	1.99	1.98	2.00	1.99	1.99	1.99	1.97	2.02	1.99	24	
22	1.97	2.29	2.08	2.02	2.21	2.36	2.61	2.62	2.09	S	2.06	2.04	2.03	2.03	2.03	2.03	2.03	2.03	2.04	2.03	2.04	2.07	2.07	2.07	1.97	2.62	2.12	24	
23	2.05	2.09	2.13	2.09	2.10	2.09	2.08	2.14	S	2.08	2.17	2.18	2.17	2.09	2.09	2.07	2.24	2.06	2.07	2.07	2.10	2.10	2.11	2.09	2.05	2.24	2.11	24	
24	2.10	2.14	2.20	2.18	2.21	2.27	2.28	S	2.22	2.16	2.10	2.08	2.03	2.02	1.99	1.99	2.00	2.02	2.03	2.03	2.04	2.04	2.11	2.18	1.99	2.28	2.11	24	
25	2.18	2.17	2.22	2.22	2.13	2.15	S	2.22	2.25	2.20	2.21	2.09	2.18	2.18	2.19	2.14	2.18	2.11	2.08	2.08	2.09	2.09	2.09	2.09	2.08	2.25	2.15	24	
26	2.09	2.09	2.09	2.07	2.07	S	2.05	2.05	2.05	2.04	2.01	1.99	1.99	1.99	2.01	2.01	2.03	2.02	2.04	2.09	2.07	2.10	2.08	2.05	1.99	2.10	2.05	24	
27	2.03	2.01	1.99	2.00	S	1.99	1.99	1.99	1.99	1.99	1.97	1.95	1.95	1.95	2.00	2.01	2.02	2.02	2.02	2.03	2.03	2.03	2.04	2.03	1.95	2.04	2.00	24	
28	1.97	1.96	1.97	S	1.96	1.99	2.03	2.05	2.03	2.05	2.04	2.06	2.07	2.14	2.07	2.06	2.07	2.14	2.06	2.06	2.07	2.05	2.05	2.03	1.96	2.14	2.04	24	
29	2.02	2.02	S	2.03	2.05	2.04	2.01	2.01	2.00	2.01	2.04	2.05	2.06	2.06	2.06	2.04	2.01	2.02	2.05	2.05	2.04	2.04	2.03	1.98	1.98	2.06	2.03	24	
30	2.03	S	2.02	1.99	1.99	1.99	1.99	2.00	2.02	2.02	2.01	2.01	1.99	1.99	2.00	1.99	2.00	2.00	2.05	2.04	2.03	2.04	2.03	2.05	1.99	2.05	2.01	24	
HOURLY MAX	2.18	2.29	2.26	2.30	2.25	2.36	2.61	2.62	2.25	2.20	2.21	2.18	2.18	2.18	2.19	2.14	2.24	2.14	2.08	2.09	2.10	2.10	2.18	2.22					
HOURLY AVG	2.01	2.03	2.03	2.02	2.03	2.02	2.04	2.04	2.02	2.01	2.01	1.99	1.99	1.99	1.98	1.98	1.99	2.00	1.99	2.00	2.00	2.00	2.02	2.01					

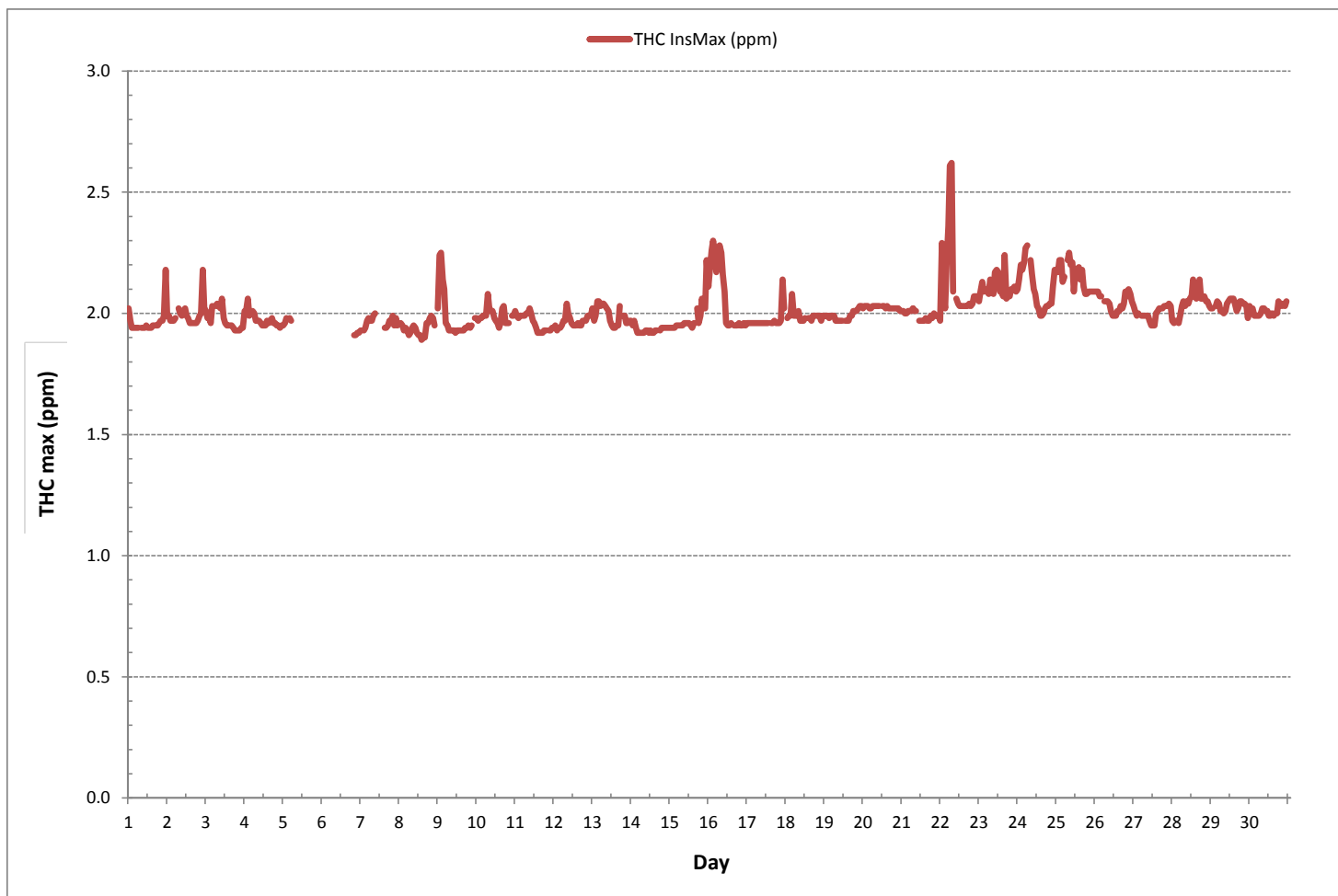
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	646				
MAXIMUM INSTANTANEOUS VALUE:	2.62	ppm	@ HOUR(S)	7	ON DAY(S) 22
				VAR-VARIOUS	
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	683	hrs
MONTHLY CALIBRATION TIME:	5	hrs			
STANDARD DEVIATION:	0.08				

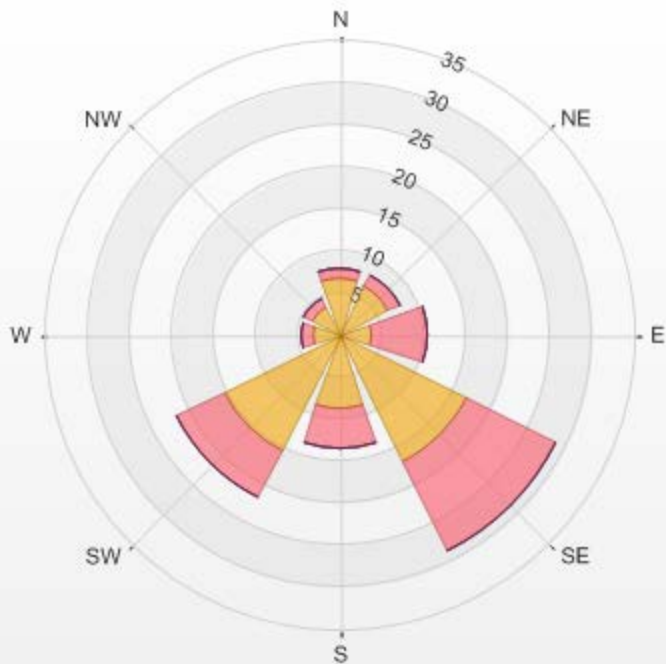
TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)



Wind: THREE CREEKS #986 TRAILER Poll.: THREE CREEKS #986 TRAILER-THC[ppm] Monthly: 11/2016 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 89.72% Calm Avg: 0.00 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	6.66	1.24	0	0	0	7.9
NE	6.5	1.55	0	0	0	8.05
E	3.72	6.81	0	0	0	10.53
SE	16.87	11.92	0	0	0	28.79
S	8.82	4.64	0	0	0	13.46
SW	15.33	6.35	0	0	0	21.68
W	3.25	1.39	0	0	0	4.64
NW	3.56	1.39	0	0	0	4.95
Summary	64.71	35.29	0	0	0	100

THREE CREEKS #986 TRAILER Poll.: THREE CREEKS #986 TRAILER-THC[ppm] 01/11/2016 00:00 - 30/11/2016 23:00 Calm: 0.00%





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

METHANE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - November 2016

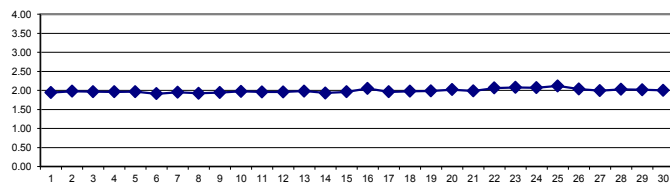
METHANE Hourly Averages (CH₄ ppm)

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	1.95	1.95	1.95	1.94	1.94	1.94	1.94	S	1.93	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.95	1.94	1.94	1.95	1.97	1.97	1.97	1.97	1.93	1.97	1.95	24	
2	1.98	1.99	1.97	1.97	1.97	1.98	S	2.00	1.99	1.99	2.00	2.00	1.98	1.97	1.97	1.96	1.96	1.96	1.96	1.96	1.98	1.98	1.99	2.00	1.96	2.00	1.98	24	
3	1.98	1.98	1.96	1.95	1.96	S	2.01	2.03	2.02	2.02	2.00	1.98	1.96	1.95	1.95	1.95	1.95	1.94	1.93	1.93	1.93	1.93	1.94	1.93	1.93	2.03	1.96	24	
4	1.97	1.99	2.01	1.99	S	2.00	1.97	1.96	1.96	1.95	1.96	1.95	1.95	1.95	1.96	1.96	1.97	1.97	1.96	1.95	1.95	1.94	1.94	1.95	1.94	2.01	1.96	24	
5	1.95	1.96	1.97	S	1.98	1.96	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.95	1.98	1.96	6	
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	S	1.90	1.91	1.91	1.92	1.92	1.90	1.92	1.91	6	
7	1.93	S	1.93	1.93	1.96	1.96	1.96	1.97	1.98	1.99	C	C	C	C	C	1.93	1.94	1.94	1.94	1.96	1.95	1.95	1.96	1.95	1.93	1.99	1.95	24	
8	S	1.95	1.94	1.93	1.94	1.92	1.91	1.91	1.93	1.95	1.94	1.92	1.91	1.90	1.90	1.89	1.90	1.92	1.92	1.93	1.94	1.95	1.94	S	1.89	1.95	1.92	24	
9	1.96	1.97	1.96	1.97	1.96	1.96	1.94	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.92	1.93	1.93	1.94	1.94	1.95	1.95	1.95	S	1.97	1.92	1.97	1.94	24	
10	1.96	1.97	1.97	1.98	1.99	1.99	1.99	2.00	2.00	1.99	1.99	1.98	1.96	1.95	1.94	1.95	1.98	2.00	1.95	1.96	1.95	S	1.98	1.99	1.94	2.00	1.97	24	
11	1.99	1.98	1.97	1.99	1.99	1.98	1.99	2.00	2.00	2.01	1.99	1.97	1.95	1.94	1.92	1.92	1.91	1.92	1.92	1.93	S	1.93	1.93	1.93	1.91	2.01	1.96	24	
12	1.94	1.94	1.93	1.94	1.94	1.94	1.96	1.95	1.97	1.98	1.97	1.96	1.95	1.95	1.95	1.94	1.95	1.95	1.97	S	1.98	1.98	1.98	1.99	1.93	1.99	1.96	24	
13	2.00	1.98	1.98	2.03	2.04	2.02	2.02	2.04	2.02	2.00	1.99	1.97	1.95	1.94	1.94	1.94	1.94	1.97	S	1.97	1.98	1.95	1.95	1.96	1.94	2.04	1.98	24	
14	1.96	1.95	1.96	1.93	1.93	1.92	1.92	1.92	1.92	1.92	1.92	1.93	1.93	1.92	1.92	1.93	1.93	S	1.93	1.94	1.94	1.94	1.94	1.94	1.92	1.96	1.93	24	
15	1.94	1.94	1.94	1.94	1.95	1.95	1.96	1.95	1.95	1.96	1.97	1.96	1.95	1.95	1.95	1.95	S	1.96	1.96	1.96	1.97	1.99	2.00	2.10	1.94	2.10	1.96	24	
16	2.10	2.13	2.21	2.24	2.16	2.15	2.21	2.20	2.18	2.08	2.02	1.96	1.96	1.95	1.96	S	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.95	1.95	1.95	2.24	2.05	24
17	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.97	S	1.96	1.96	1.97	1.96	1.96	1.97	1.96	1.98	1.99	1.96	1.99	1.96	24	
18	1.98	1.97	1.98	1.98	1.98	1.98	1.98	1.99	1.98	1.98	1.97	1.97	1.97	S	1.97	1.97	1.97	1.98	1.98	1.98	1.98	1.98	1.97	1.98	1.97	1.99	1.98	24	
19	1.98	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.97	1.97	1.97	S	1.98	1.98	1.98	1.98	1.99	2.00	2.00	2.01	2.01	2.02	2.02	1.97	2.02	1.99	24	
20	2.02	2.02	2.03	2.02	2.02	2.02	2.02	2.02	2.02	2.03	2.03	S	2.03	2.02	2.02	2.02	2.02	2.02	2.02	2.01	2.01	2.02	2.01	2.00	2.00	2.03	2.02	24	
21	2.00	2.01	2.00	1.99	2.01	2.01	2.00	2.01	2.00	1.98	S	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.98	1.98	1.99	1.99	1.98	1.98	1.97	2.01	1.99	24	
22	1.98	1.98	1.98	1.99	2.07	2.29	2.38	2.31	2.06	S	2.04	2.03	2.03	2.03	2.02	2.02	2.03	2.02	2.03	2.02	2.03	2.04	2.05	2.05	1.98	2.38	2.06	24	
23	2.04	2.05	2.10	2.08	2.09	2.08	2.07	2.08	S	2.06	2.12	2.13	2.09	2.06	2.07	2.07	2.06	2.06	2.07	2.07	2.09	2.10	2.11	2.09	2.04	2.13	2.08	24	
24	2.10	2.12	2.13	2.14	2.16	2.17	2.17	S	2.16	2.11	2.10	2.04	2.02	2.00	1.98	1.98	1.99	2.02	2.02	2.03	2.03	2.03	2.08	2.10	1.98	2.17	2.07	24	
25	2.12	2.13	2.13	2.14	2.13	2.14	S	2.17	2.17	2.15	2.14	2.08	2.10	2.12	2.14	2.13	2.12	2.10	2.08	2.08	2.09	2.09	2.09	2.10	2.08	2.17	2.12	24	
26	2.10	2.09	2.08	2.07	2.07	S	2.04	2.04	2.04	2.03	2.00	1.98	1.98	1.99	2.00	2.00	2.01	2.01	2.03	2.05	2.04	2.07	2.04	2.01	1.98	2.10	2.03	24	
27	2.00	1.99	1.99	1.99	S	1.99	1.99	1.99	1.99	1.98	1.96	1.95	1.95	1.96	1.98	2.00	2.01	2.01	2.01	2.02	2.02	2.02	2.03	2.01	1.95	2.03	1.99	24	
28	1.97	1.97	1.97	S	1.96	1.98	2.01	2.03	2.03	2.04	2.04	2.05	2.06	2.07	2.07	2.06	2.06	2.06	2.06	2.05	2.06	2.05	2.04	2.02	1.96	2.07	2.03	24	
29	2.02	2.01	S	2.03	2.04	2.02	2.00	2.00	1.99	2.00	2.02	2.04	2.05	2.05	2.03	2.02	2.00	2.01	2.02	2.03	2.02	2.02	2.02	1.97	1.97	2.05	2.02	24	
30	2.00	S	1.99	1.99	1.99	1.98	1.98	1.99	2.01	2.01	2.01	2.00	1.99	1.99	1.99	1.99	2.00	1.99	2.01	2.01	2.02	2.03	2.03	2.03	1.98	2.03	2.00	24	
HOURLY MAX	2.12	2.13	2.21	2.24	2.16	2.29	2.38	2.31	2.18	2.15	2.14	2.13	2.10	2.12	2.14	2.13	2.12	2.10	2.08	2.08	2.09	2.10	2.11	2.10					
HOURLY AVG	2.00	2.00	2.00	2.00	2.01	2.01	2.01	2.02	2.01	2.00	2.00	1.99	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.99	1.99	1.99	2.00					

STATUS FLAG CODES

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

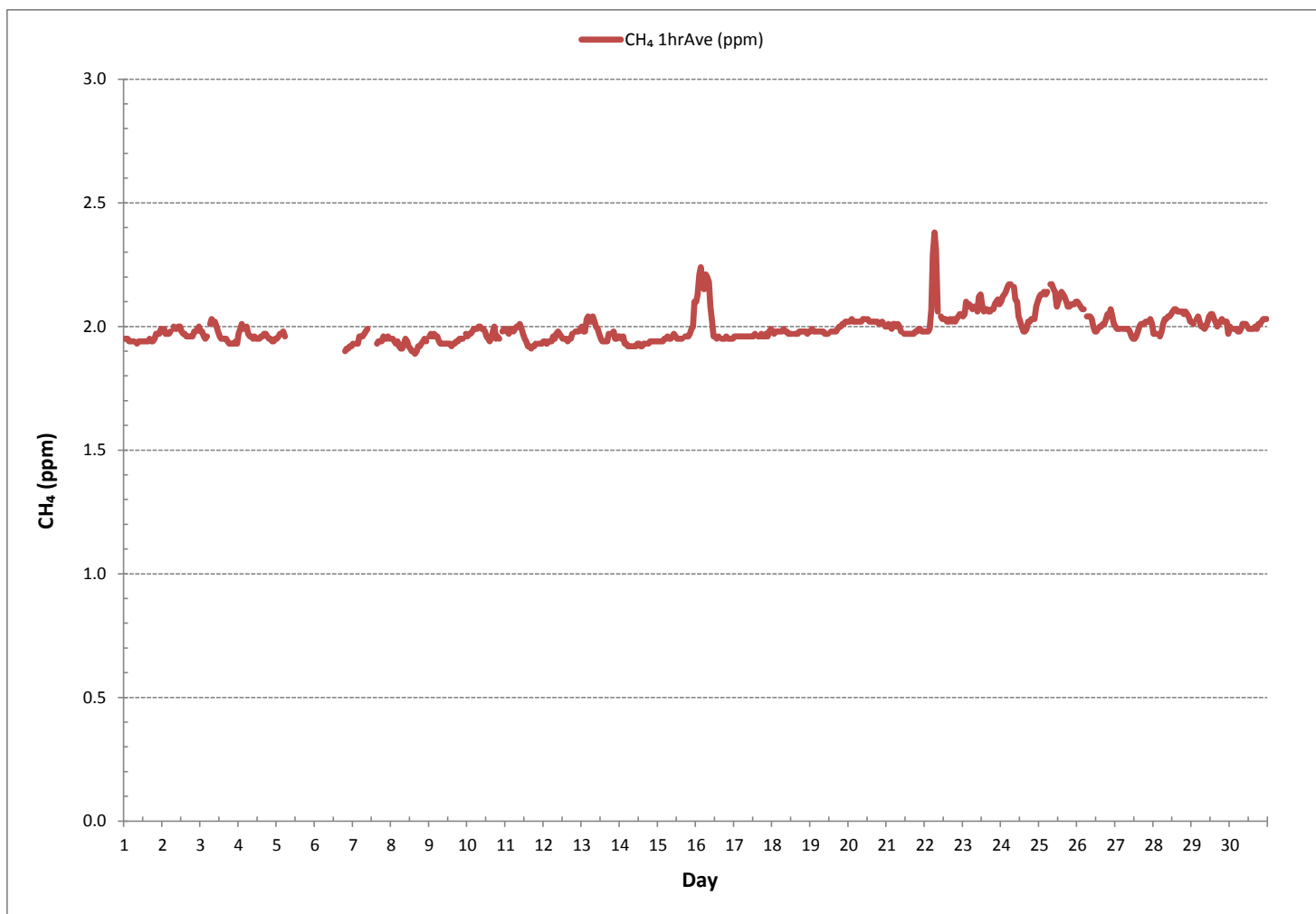
24 HR AVERAGES November 2016



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	648				
MINIMUM 1-HR AVERAGE:	1.89	ppm	@ HOUR(S)	15	ON DAY(S) 8
MAXIMUM 1-HR AVERAGE:	2.38	ppm	@ HOUR(S)	6	ON DAY(S) 22
MAXIMUM 24-HR AVERAGE:	2.12	ppm			ON DAY(S) 25
					VAR-VARIOUS
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	684	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:	95.0	%
STANDARD DEVIATION:	0.06		MONTHLY AVERAGE:	1.99	ppm

METHANE Hourly Averages (CH₄ ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - November 2016

METHANE MAX Instantaneous Maximum (CH₄ ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59				
DAY																												
1	2.03	1.98	1.95	1.95	1.95	1.95	1.95	S	1.95	1.95	1.95	1.96	1.95	1.95	1.95	1.96	1.96	1.96	1.96	1.97	1.99	1.99	1.99	1.99	1.95	2.03	1.96	24
2	1.99	2.00	1.98	1.99	1.98	1.99	S	2.02	2.01	2.01	2.02	2.02	2.00	1.98	1.97	1.97	1.98	1.97	1.97	1.98	2.00	2.00	2.00	2.02	1.97	2.02	1.99	24
3	2.01	1.99	1.98	1.96	2.03	S	2.04	2.04	2.04	2.03	2.02	1.99	1.98	1.96	1.96	1.96	1.96	1.96	1.95	1.94	1.94	1.94	1.96	1.95	1.94	2.04	1.98	24
4	2.02	2.02	2.07	2.01	S	2.02	2.02	1.98	1.98	1.97	1.97	1.96	1.96	1.96	1.98	1.98	1.99	1.99	1.97	1.97	1.96	1.96	1.95	1.97	1.95	2.07	1.99	24
5	1.97	1.97	1.99	S	2.00	1.98	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.97	2.00	1.98	6
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	S	S	1.93	1.93	1.93	1.93	1.93	1.93	1.93	6
7	1.94	S	1.94	1.95	1.98	1.99	1.97	1.99	1.99	2.01	C	C	C	C	C	1.95	1.95	1.96	1.98	1.99	2.00	1.96	2.00	1.96	1.94	2.01	1.97	24
8	S	1.97	1.96	1.95	1.95	1.94	1.93	1.93	1.95	1.96	1.95	1.94	1.92	1.92	1.90	1.92	1.92	1.97	1.97	2.00	2.00	1.99	1.96	S	1.90	2.00	1.95	24
9	2.02	2.01	1.99	2.01	1.99	1.97	1.97	1.94	1.94	1.95	1.95	1.94	1.94	1.94	1.94	1.95	1.94	1.95	1.95	1.97	1.96	1.96	S	1.99	1.94	2.02	1.96	24
10	1.98	1.98	1.99	1.99	2.01	2.00	2.00	2.03	2.03	2.01	2.01	2.00	1.98	1.97	1.95	1.97	2.03	2.04	1.97	1.97	1.98	S	2.00	2.00	1.95	2.04	2.00	24
11	2.01	2.00	1.99	2.00	2.01	2.00	2.00	2.02	2.01	2.03	2.01	1.98	1.97	1.95	1.93	1.93	1.93	1.93	1.94	1.95	S	1.94	1.94	1.95	1.93	2.03	1.97	24
12	1.95	1.96	1.95	1.95	1.95	1.96	1.98	1.98	2.05	2.01	1.99	1.97	1.97	1.96	1.96	1.97	1.96	1.96	1.98	S	1.99	1.99	1.99	2.01	1.95	2.05	1.98	24
13	2.02	1.99	2.00	2.06	2.06	2.03	2.05	2.05	2.04	2.03	2.01	1.99	1.96	1.95	1.95	1.97	1.96	2.04	S	1.99	2.01	1.97	1.97	1.98	1.95	2.06	2.00	24
14	1.98	1.97	1.98	1.95	1.94	1.94	1.93	1.93	1.94	1.94	1.94	1.94	1.94	1.94	1.93	1.94	1.94	S	1.94	1.96	1.96	1.95	1.95	1.95	1.93	1.98	1.95	24
15	1.95	1.95	1.95	1.95	1.96	1.96	1.97	1.96	1.96	1.97	1.97	1.97	1.96	1.96	1.96	1.97	S	2.03	1.97	2.01	2.06	2.03	2.03	2.23	1.95	2.23	1.99	24
16	2.13	2.19	2.27	2.31	2.26	2.18	2.27	2.30	2.27	2.17	2.09	1.97	1.97	1.96	1.97	S	1.96	1.96	1.96	1.97	1.96	1.96	1.97	1.97	1.96	2.31	2.09	24
17	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.98	S	1.98	1.98	1.98	1.97	1.98	1.98	1.98	2.15	2.03	1.97	2.15	1.98	24
18	P	1.99	2.00	1.99	2.08	2.01	2.00	2.01	2.02	1.99	1.98	1.98	1.98	S	1.99	1.98	1.98	2.01	2.00	1.99	1.99	2.01	1.98	1.99	1.98	2.08	2.00	23
19	1.99	2.00	1.99	1.99	1.99	2.00	1.99	1.99	1.99	1.98	1.98	1.98	S	1.98	1.98	1.99	2.00	2.01	2.01	2.02	2.02	2.03	2.03	2.04	1.98	2.04	2.00	24
20	2.03	2.04	2.04	2.03	2.03	2.03	2.03	2.04	2.03	2.04	2.04	S	2.04	2.04	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.02	2.02	2.02	2.04	2.03	24
21	2.02	2.02	2.02	2.01	2.02	2.02	2.02	2.03	2.02	2.02	S	1.98	1.98	1.98	1.98	1.99	1.98	1.99	2.00	2.00	2.02	2.01	2.00	2.00	1.98	2.03	2.00	24
22	1.99	2.01	2.00	2.03	2.22	2.37	2.62	2.63	2.11	S	2.07	2.05	2.04	2.04	2.03	2.04	2.04	2.04	2.04	2.04	2.05	2.07	2.07	2.08	1.99	2.63	2.12	24
23	2.05	2.10	2.15	2.10	2.12	2.10	2.09	2.15	S	2.09	2.18	2.20	2.18	2.11	2.11	2.08	2.08	2.07	2.08	2.08	2.10	2.11	2.12	2.10	2.05	2.20	2.11	24
24	2.11	2.13	2.15	2.16	2.18	2.18	2.19	S	2.19	2.14	2.12	2.08	2.04	2.02	2.00	2.00	2.02	2.03	2.04	2.04	2.05	2.05	2.12	2.12	2.00	2.19	2.09	24
25	2.14	2.14	2.15	2.16	2.15	2.18	S	2.22	2.21	2.18	2.20	2.10	2.13	2.14	2.17	2.16	2.13	2.13	2.09	2.09	2.10	2.09	2.10	2.11	2.09	2.22	2.14	24
26	2.11	2.10	2.09	2.08	2.08	S	2.05	2.06	2.06	2.05	2.02	2.00	1.99	2.01	2.02	2.02	2.04	2.03	2.05	2.10	2.07	2.11	2.09	2.06	1.99	2.11	2.06	24
27	2.04	2.02	2.01	2.00	S	2.01	2.00	2.01	2.01	2.00	1.99	1.96	1.97	1.97	2.02	2.02	2.02	2.02	2.03	2.03	2.04	2.04	2.05	2.04	1.96	2.05	2.01	24
28	1.98	1.98	1.98	S	1.98	1.99	2.03	2.05	2.04	2.06	2.05	2.07	2.07	2.07	2.08	2.07	2.08	2.08	2.07	2.06	2.07	2.06	2.05	2.04	1.98	2.08	2.04	24
29	2.03	2.03	S	2.04	2.05	2.05	2.01	2.01	2.00	2.01	2.05	2.06	2.06	2.07	2.05	2.05	2.02	2.02	2.05	2.05	2.04	2.05	2.04	1.99	1.99	2.07	2.04	24
30	2.03	S	2.02	2.01	2.00	2.01	1.99	2.01	2.03	2.03	2.02	2.02	2.01	2.00	2.01	2.01	2.01	2.01	2.05	2.05	2.04	2.04	2.04	2.06	1.99	2.06	2.02	24
HOURLY MAX	2.14	2.19	2.27	2.31	2.26	2.37	2.62	2.63	2.27	2.18	2.20	2.18	2.14	2.17	2.16	2.13	2.13	2.09	2.10	2.10	2.11	2.15	2.23					
HOURLY AVG	2.02	2.02	2.02	2.02	2.03	2.03	2.04	2.05	2.03	2.02	2.02	2.00	2.00	1.99	1.99	1.99	2.00	2.01	2.00	2.01	2.01	2.02	2.02					

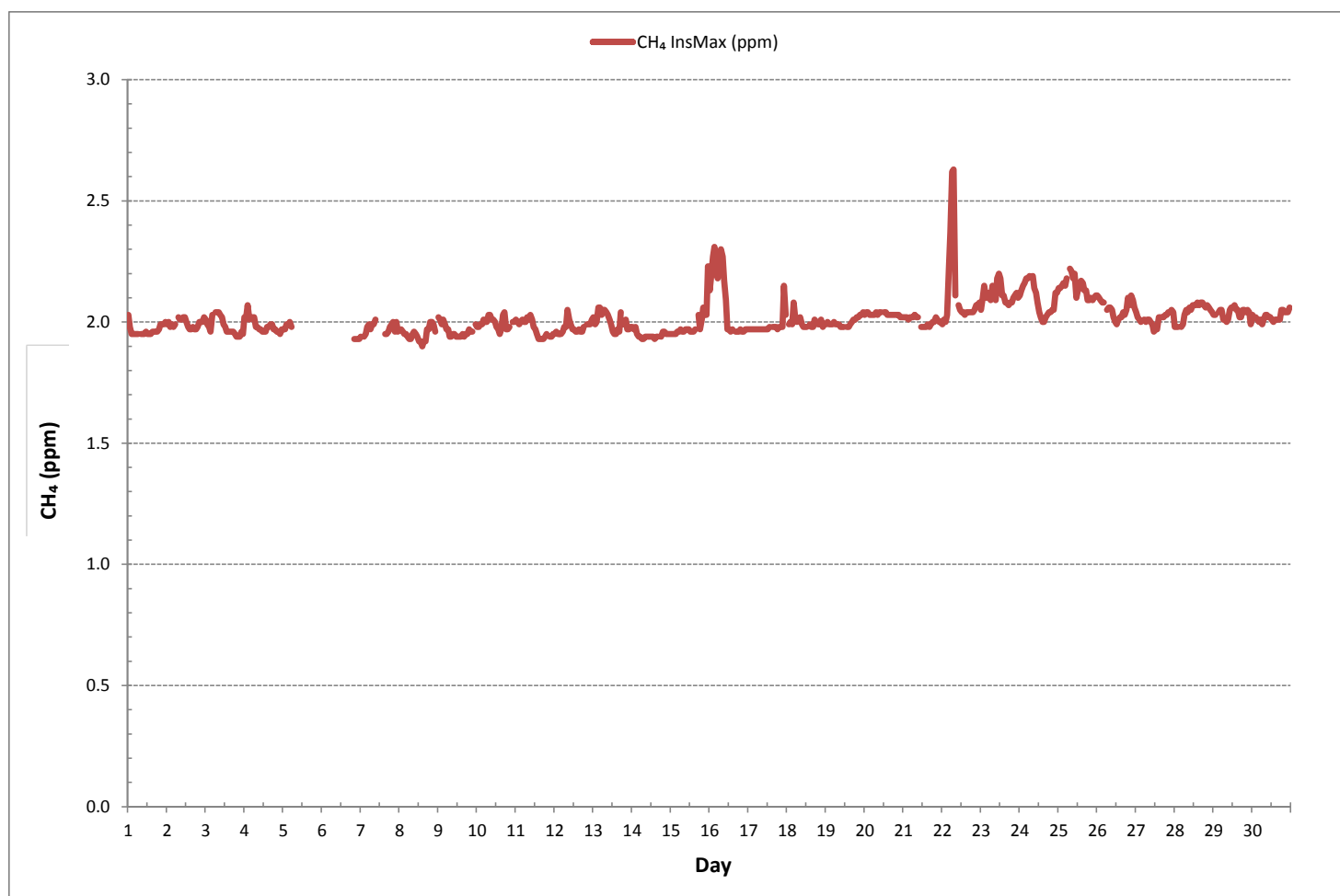
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	646				
MAXIMUM INSTANTANEOUS VALUE:	2.63	ppm	@ HOUR(S)	7	ON DAY(S) 22
					VAR-VARIOUS
IZS CALIBRATION TIME:	32	hrs	OPERATIONAL TIME:	683	hrs
MONTHLY CALIBRATION TIME:	5	hrs			
STANDARD DEVIATION:	0.07				

METHANE MAX Instantaneous Maximum (CH₄ ppm)

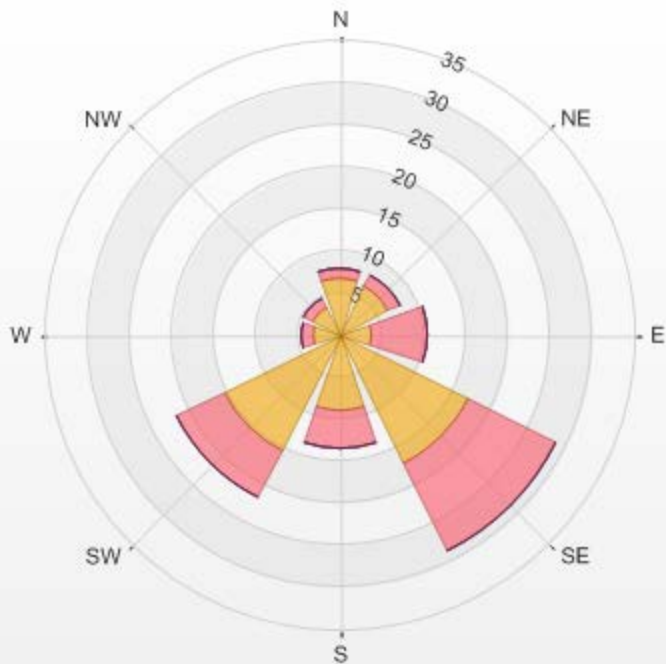


Wind: THREE CREEKS #986 TRAILER Poll.: THREE CREEKS #986 TRAILER-CH4[ppm] Monthly: 11/2016 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 89.72% Calm Avg: 0.00 [ppm]

Direction	0-2	2-3	3-5	5-10	>10.0	Total
N	6.66	1.24		0	0	7.9
NE	6.5	1.55		0	0	8.05
E	3.72	6.81		0	0	10.53
SE	17.18	11.61		0	0	28.79
S	8.98	4.49		0	0	13.47
SW	15.33	6.35		0	0	21.68
W	3.25	1.39		0	0	4.64
NW	3.72	1.24		0	0	4.96
Summary	65.34	34.68		0	0	100

% Icon	Classes (ppm)	65	0-2	35	2-3	0	3-5	0	5-10	0	>10.0

THREE CREEKS #986 TRAILER Poll.: THREE CREEKS #986 TRAILER-CH4[ppm] 01/11/2016 00:00 - 30/11/2016 23:00 Calm: 0.00%



CH4[ppm] Calibration: THREE CREEKS #986 TRAILER Monthly: 2016/11 Type: Span



Span Meas Span Ref Span Low Span High

NON-METHANE HYDROCARBON



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - November 2016

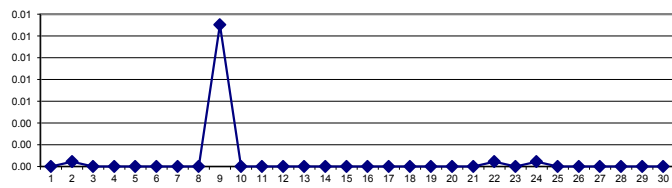
NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	24-HR	RDGS.	
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59	MIN.	MAX.	AVG.		
DAY																													
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
2	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	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	0.00	0.00	0.00	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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
5	0.00	0.00	0.00	S	0.00	0.00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.00	0.00	0.00	6	
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6	
7	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	C	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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	24	
9	0.00	0.08	0.13	0.08	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	S	0.00	0.00	0.13	0.01	24	
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	24	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	24	
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
22	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24	
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
24	0.00	0.00	0.00	0.00	0.00	0.01	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	0.01	0.00	24	
25	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
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	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	
28	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
29	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
30	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
HOURLY MAX	0.00	0.08	0.13	0.08	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00					
HOURLY AVG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					

STATUS FLAG CODES

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

24 HR AVERAGES November 2016



MONTHLY SUMMARY

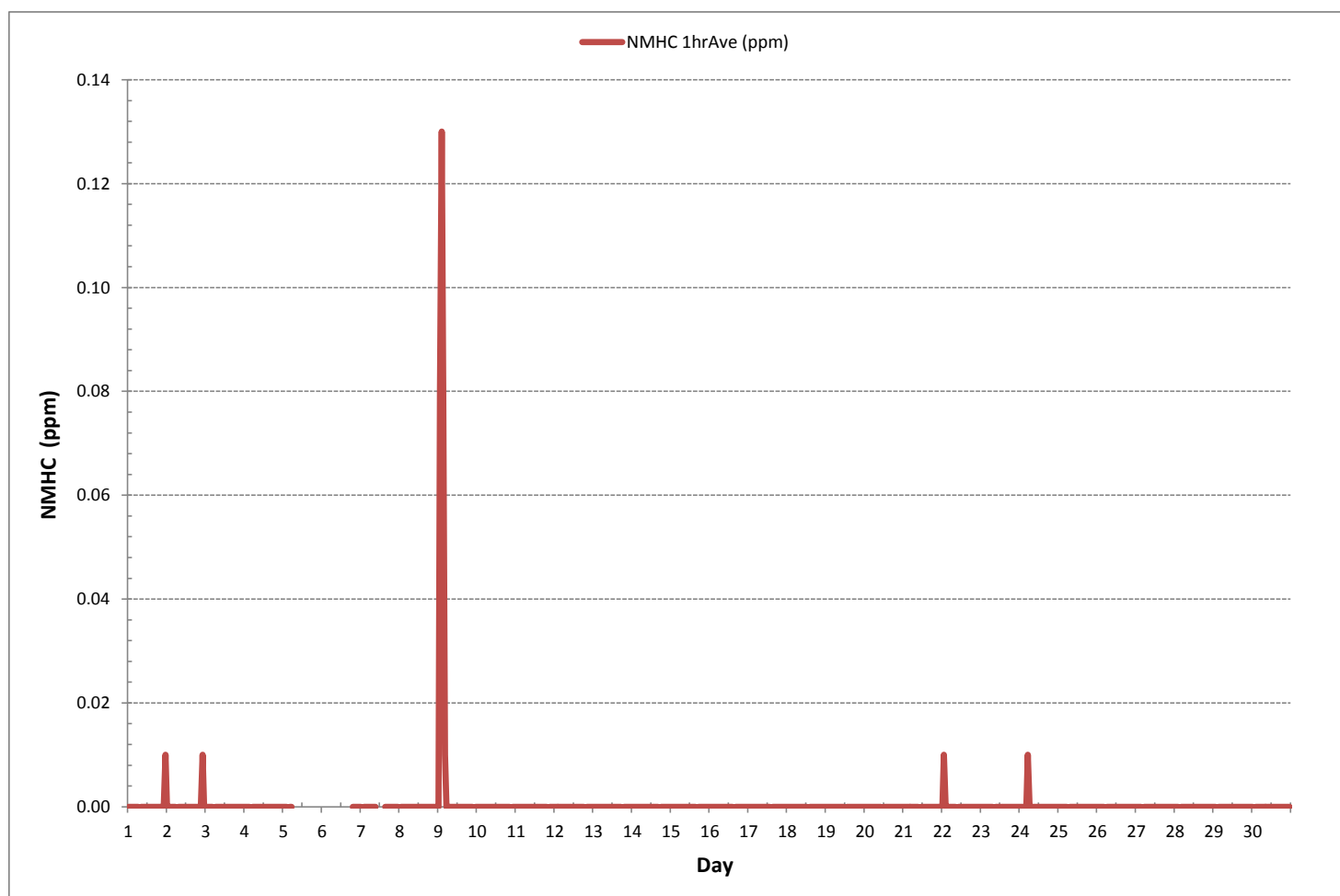
NUMBER OF NON-ZERO READINGS:	7				
MINIMUM 1-HR AVERAGE:	0.00	ppm	@ HOUR(S)	VAR	ON DAY(S)
MAXIMUM 1-HR AVERAGE:	0.13	ppm	@ HOUR(S)	2	9
MAXIMUM 24-HR AVERAGE:	0.01	ppm			9
					VAR-VARIOUS
IZS CALIBRATION TIME:	31	hrs	OPERATIONAL TIME:	684	hrs
MONTHLY CALIBRATION TIME:	5	hrs	AMD OPERATION UPTIME:	95.0	%
STANDARD DEVIATION:	0.01		MONTHLY AVERAGE:	0.00	ppm



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - November 2016

NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 986b Station - November 2016

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59				
DAY																												
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
2	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.20	0.01	24
3	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	24
4	0.00	0.00	0.00	0.00	S	0.02	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	0.00	0.00	0.00	0.00	0.00	0.02	0.00	24
5	0.00	0.00	0.00	S	0.00	0.00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.00	0.00	0.00	6
6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	S	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6
7	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	C	C	C	C	C	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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.01	0.00	24
9	0.00	0.28	0.29	0.18	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.29	0.04	24
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.06	0.00	24	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	24
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	24
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
18	P	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
22	0.01	0.32	0.11	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.02	24
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.01	24
24	0.00	0.01	0.08	0.04	0.07	0.11	0.12	S	0.07	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.09	0.00	0.12	0.03	24
25	0.06	0.06	0.09	0.08	0.01	0.00	S	0.07	0.07	0.06	0.06	0.00	0.07	0.07	0.03	0.00	0.06	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.09	0.04	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	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	24
28	0.01	0.00	0.00	S	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.01	24
29	0.00	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	24
30	0.00	S	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24
HOURLY MAX	0.06	0.32	0.29	0.18	0.12	0.11	0.12	0.07	0.07	0.06	0.06	0.01	0.07	0.09	0.03	0.00	0.18	0.07	0.00	0.00	0.00	0.02	0.20	0.09				
HOURLY AVG	0.00	0.02	0.02	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00				

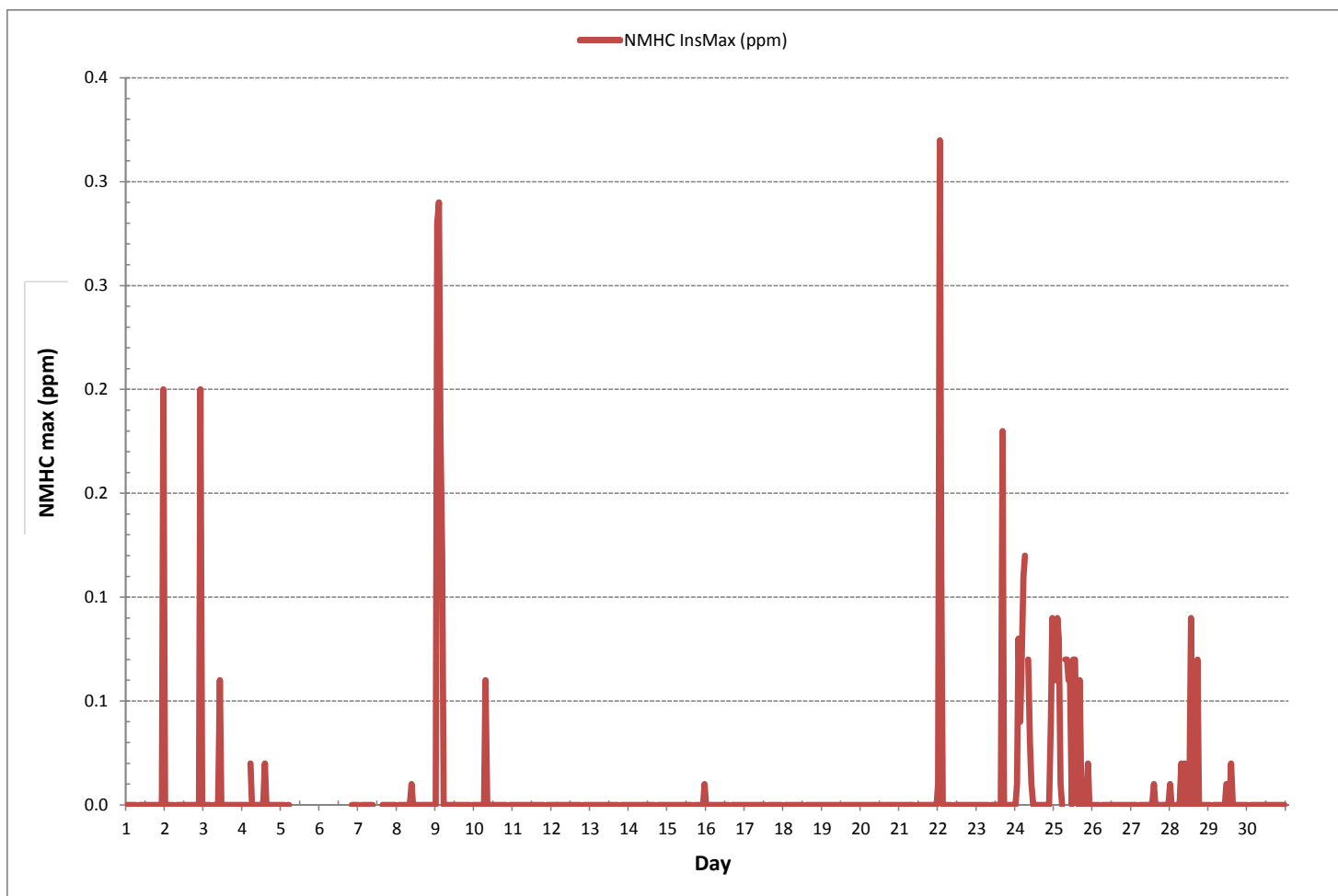
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	49
MAXIMUM INSTANTANEOUS VALUE:	0.32 ppm @ HOUR(S) 1 ON DAY(S) 22
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 hrs
MONTHLY CALIBRATION TIME:	5 hrs
STANDARD DEVIATION:	0.03
OPERATIONAL TIME:	683 hrs

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)



Wind: THREE CREEKS #986 TRAILER Poll.: THREE CREEKS #986 TRAILER-NMHC[ppm] Monthly: 11/2016 Type: PollutionRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 89.72% Calm Avg: 0.00 [ppm]

Direction	0-0.1	0.1-0.3	0.3-1	1-2	>2.0	Total
N	7.89	0	0	0	0	7.89
NE	8.05	0	0	0	0	8.05
E	10.53	0	0	0	0	10.53
SE	28.64	0.15	0	0	0	28.79
S	13.47	0	0	0	0	13.47
SW	21.67	0	0	0	0	21.67
W	4.64	0	0	0	0	4.64
NW	4.95	0	0	0	0	4.95
Summary	100	0.15	0	0	0	100

% Icon Classes (ppm)

100

0-0.1

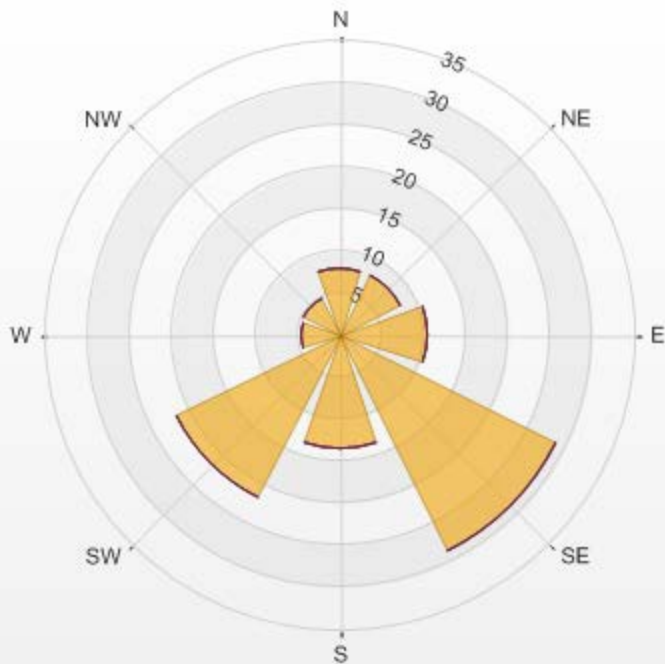
0 0.1-0.3

0 0.3-1

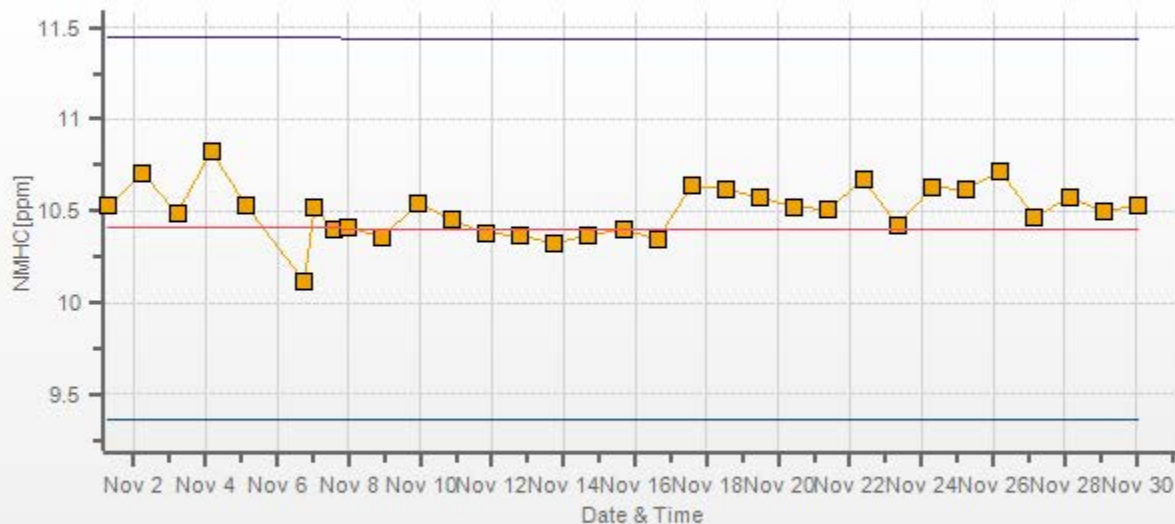
0 1-2

0 >2.0

THREE CREEKS #986 TRAILER Poll.: THREE CREEKS #986 TRAILER-NMHC[ppm] 01/11/2016 00:00 - 30/11/2016 23:00 Calm: 0.00%



NMHC[ppm] Calibration: THREE CREEKS #986 TRAILER Monthly: 2016/11 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	5.8	7.5	7.6	6.3	7.7	5.8	6.7	8.0	5.8	4.4	5.0	5.3	3.9	3.4	0.8	2.2	2.5	2.3	1.3	2.5	3.2	6.0	6.5	5.6	0.8	8.0	3.3	24
2	6.9	6.8	8.3	10.1	9.7	8.1	6.6	7.8	6.7	10.3	10.9	11.0	9.5	8.8	9.2	8.2	5.6	7.1	9.0	7.8	9.2	9.3	8.4	5.2	5.2	11.0	6.3	24
3	6.0	4.8	5.6	5.9	2.0	5.7	10.1	9.7	9.1	7.3	9.5	8.7	11.9	15.1	14.2	12.2	11.0	15.7	13.9	11.9	11.2	5.8	6.8	3.9	2.0	15.7	7.8	24
4	7.3	5.6	6.0	6.8	6.5	7.0	5.8	5.2	1.0	6.0	7.9	9.0	9.7	10.1	6.8	4.6	5.8	7.5	11.5	12.0	7.1	7.4	8.7	6.0	1.0	12.0	6.6	24
5	5.9	5.2	8.0	6.2	7.6	6.2	10.2	9.2	6.5	8.1	10.0	9.7	12.4	8.9	9.6	13.9	14.9	6.8	7.5	7.7	7.3	5.6	6.2	5.5	5.2	14.9	5.8	24
6	6.0	7.5	5.2	6.5	2.2	4.7	6.5	8.1	5.7	5.2	6.0	7.2	8.2	9.8	10.3	9.0	6.8	5.7	5.6	5.5	3.7	4.2	4.5	4.7	2.2	10.3	5.9	24
7	4.4	4.5	5.5	3.5	6.6	7.3	5.5	6.4	4.9	6.7	5.4	8.3	14.5	12.3	9.5	10.9	7.7	6.4	5.6	8.0	7.6	4.6	5.6	6.2	3.5	14.5	6.5	24
8	6.0	4.4	10.8	11.4	6.6	11.0	13.2	7.4	5.3	5.0	4.4	4.6	4.4	3.7	2.7	2.0	0.3	1.5	1.4	1.6	2.3	1.6	2.3	1.1	0.3	13.2	3.4	24
9	1.0	2.5	3.0	1.8	3.7	7.0	6.0	6.7	6.8	8.2	7.3	8.2	9.1	9.2	12.6	10.3	8.7	2.9	1.9	2.1	3.2	4.7	5.8	6.9	1.0	12.6	4.0	24
10	4.9	4.0	4.0	5.2	5.0	4.9	3.5	7.2	4.6	6.8	6.9	5.5	10.7	13.7	9.9	8.3	9.5	11.4	12.1	11.6	6.5	3.9	3.0	4.5	3.0	13.7	6.7	24
11	5.2	6.0	6.6	6.7	3.8	3.6	4.1	4.2	7.5	7.6	8.2	8.7	9.4	9.2	9.5	9.3	6.3	4.6	4.3	2.3	4.0	5.4	5.8	7.7	2.3	9.5	5.3	24
12	7.1	5.3	5.2	4.7	3.6	3.1	3.9	2.6	2.1	3.6	4.6	1.4	2.7	3.1	2.4	0.5	1.3	2.1	3.9	2.4	3.4	3.0	3.9	3.2	0.5	7.1	2.5	24
13	3.5	4.3	5.2	4.9	6.8	5.9	5.6	7.1	6.4	5.9	8.2	7.8	7.8	8.7	6.5	3.0	3.9	4.3	4.3	5.1	3.1	5.0	6.4	5.1	3.0	8.7	4.6	24
14	6.7	7.3	8.1	9.9	9.9	8.6	11.0	10.1	7.9	8.5	7.1	10.6	8.2	3.8	5.1	6.1	3.7	4.0	4.5	4.4	5.4	7.4	4.8	6.0	3.7	11.0	6.6	24
15	7.4	8.8	7.0	5.3	6.1	4.5	5.2	6.0	6.0	6.5	4.9	4.7	1.6	1.9	2.2	1.8	0.7	0.9	1.3	1.3	1.9	1.3	1.4	1.1	0.7	8.8	3.1	24
16	0.6	0.7	1.2	1.7	0.6	0.1	0.1	0.9	0.3	1.0	2.5	7.5	6.9	9.7	9.4	8.9	7.8	9.4	10.2	10.0	8.5	8.6	6.8	7.1	0.1	10.2	4.3	24
17	6.1	5.7	4.9	3.5	5.3	5.2	4.8	4.8	4.0	4.6	4.4	5.9	5.9	6.0	5.8	4.9	4.4	3.8	3.1	2.6	3.3	4.6	1.5	1.5	1.5	6.1	4.1	24
18	2.9	3.5	2.5	1.1	1.6	1.7	2.8	3.1	3.9	6.1	4.9	5.9	5.9	6.0	5.8	6.1	6.9	6.8	7.5	5.1	6.9	6.6	6.4	7.2	1.1	7.5	4.8	24
19	7.3	5.2	7.4	7.6	6.8	6.3	5.8	6.0	5.9	6.2	7.7	6.3	8.6	6.4	7.3	6.1	5.6	5.3	5.4	4.1	4.3	2.9	2.8	3.0	2.8	8.6	5.7	24
20	2.5	3.2	3.3	4.1	5.2	5.1	4.6	3.8	4.4	4.6	5.1	6.3	6.1	6.2	6.4	6.6	6.3	5.3	5.3	3.3	3.4	1.7	3.2	2.7	1.7	6.6	4.2	24
21	2.2	2.0	3.8	5.6	5.8	4.6	4.9	5.4	6.0	6.4	7.1	6.6	6.5	6.5	6.2	6.2	6.1	5.1	3.5	3.2	1.1	0.2	1.3	0.8	0.2	7.1	4.3	24
22	0.5	1.1	1.6	1.7	0.8	0.8	2.2	4.1	5.3	4.6	7.0	5.2	4.4	4.5	6.2	7.7	8.1	7.0	9.1	8.2	8.1	7.5	7.7	5.0	0.5	9.1	4.9	24
23	2.0	3.9	3.5	3.4	4.8	4.0	4.5	0.5	0.5	4.0	4.4	3.4	4.8	3.7	3.5	4.6	3.7	5.8	6.3	6.6	7.6	7.7	6.0	5.2	0.5	7.7	3.5	24
24	3.8	6.1	5.6	4.6	5.2	3.0	3.8	3.9	3.3	4.4	4.1	5.0	7.0	8.0	8.8	8.8	8.5	4.1	4.3	3.8	5.6	6.3	4.0	4.2	3.0	8.8	5.0	24
25	5.0	5.3	1.0	1.9	3.2	1.9	1.1	0.7	1.8	0.6	2.6	4.3	3.8	3.9	3.9	4.3	4.9	6.9	6.4	5.2	4.9	5.7	5.2	5.8	0.6	6.9	2.2	24
26	5.4	4.9	5.7	4.8	4.4	4.7	5.2	4.6	5.1	4.9	4.6	3.6	3.3	3.1	1.8	1.5	1.1	1.2	1.6	0.7	0.7	0.9	2.1	3.6	0.7	5.7	2.4	24
27	3.1	2.9	3.4	2.0	2.3	1.2	1.3	0.2	1.5	1.5	2.3	2.8	2.4	1.7	1.4	1.5	3.1	3.4	3.0	3.6	2.6	3.0	2.1	2.1	0.2	3.6	0.5	24
28	3.9	3.1	1.7	1.6	1.8	3.0	2.2	1.8	2.7	2.8	3.0	3.0	3.7	4.0	3.9	1.8	2.5	2.5	2.6	1.7	1.5	2.0	2.6	2.6	1.5	4.0	2.1	24
29	2.8	3.5	3.2	4.1	4.0	5.9	7.1	6.2	4.2	4.1	5.3	3.6	2.4	4.8	7.8	8.3	7.8	6.6	5.9	4.6	6.2	4.7	4.9	7.9	2.4	8.3	4.8	24
30	7.8	9.8	8.3	6.1	4.6	3.2	3.3	5.4	8.1	8.3	6.8	6.5	4.9	4.9	2.1	1.5	3.6	7.9	7.8	7.6	12.4	11.8	8.7	4.4	1.5	12.4	5.8	24
HOURLY MAX	7.8	9.8	10.8	11.4	9.9	11.0	13.2	10.1	9.1	10.3	10.9	11.0	14.5	15.1	14.2	13.9	14.9	15.7	13.9	12.0	12.4	11.8	8.7	7.9				
HOURLY AVG	2.1	2.2	2.5	2.6	2.2	2.6	2.6	2.6	2.0	2.6	2.7	2.0	2.5	2.5	2.0	1.4	1.3	1.9	2.7	2.6	2.6	2.7	2.6	2.1				

STATUS FLAG CODES

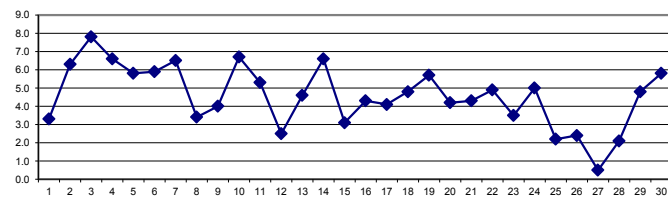
C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
Y	- MAINTENANCE	X	- MACHINE MALFUNCTION
S	- DAILY ZERO/SPAN CHECK	G	- OUT FOR REPAIR
S1	- REPEAT ZERO/SPAN CHECK	P	- POWER FAILURE

LAST CALIBRATION:	May 3, 2016
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST

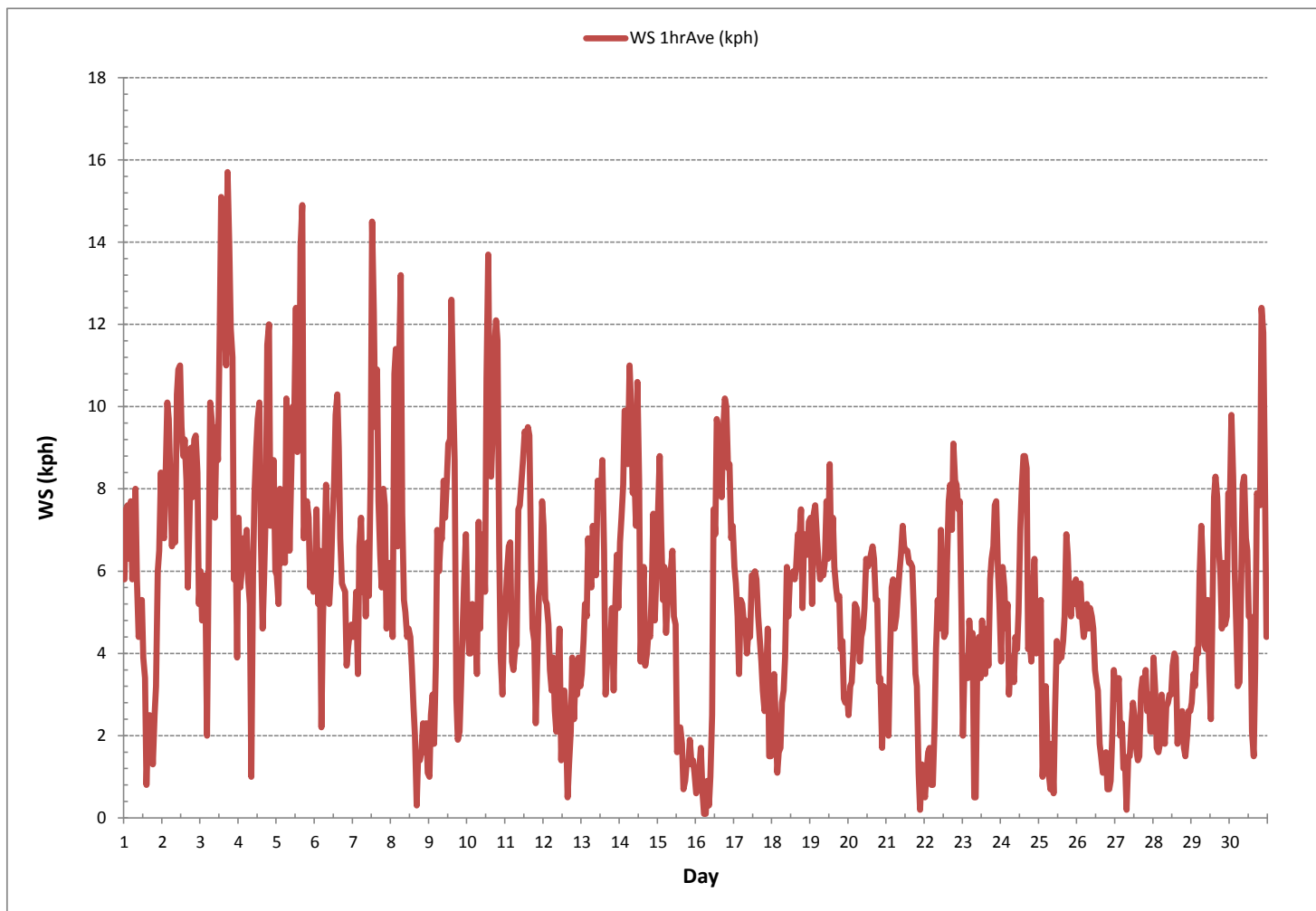
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		720				
MINIMUM 1-HR AVERAGE	0.1	kph	@ HOUR(S)	5 , 6	ON DAY(S)	16 , 16
MAXIMUM 1-HR AVERAGE:	15.7	kph	@ HOUR(S)	17	ON DAY(S)	3
MAXIMUM 24-HR AVERAGE:	7.8	kph			ON DAY(S)	3
					VAR-VARIOUS	
MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:			720 hrs
			AMD OPERATION UPTIME:			100.0 %
STANDARD DEVIATION:	2.80		MONTHLY AVERAGE:			2.2 kph

24 HR AVERAGES November 2016



WIND SPEED Hourly Averages (WS kph)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - November 2016

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	16.0	20.0	22.1	20.4	19.5	16.7	17.8	22.3	18.1	13.2	16.8	15.8	11.4	11.9	6.4	12.1	9.2	5.1	4.8	8.4	8.4	14.1	15.9	14.7	4.8	22.3	14.2	24
2	15.6	15.5	19.1	25.1	17.9	17.8	15.0	12.9	13.5	26.7	32.3	31.4	26.8	27.5	25.0	21.7	19.0	12.9	11.8	12.5	15.5	14.4	14.4	9.8	9.8	32.3	18.9	24
3	16.5	13.2	8.6	10.6	8.3	18.8	20.1	22.0	26.5	17.8	24.5	19.1	27.6	36.5	37.8	33.9	36.1	49.3	41.7	39.2	38.0	21.8	21.8	12.3	8.3	49.3	25.1	24
4	12.8	10.2	12.2	12.6	11.0	11.6	10.2	11.8	7.4	11.8	15.8	19.9	15.8	18.7	12.6	8.9	9.8	15.7	18.0	24.9	18.2	15.9	21.8	17.5	7.4	24.9	14.4	24
5	14.3	9.2	13.0	12.5	12.1	10.5	16.6	17.5	14.7	16.0	22.6	30.0	27.1	32.5	25.7	35.6	42.1	36.8	19.9	25.9	31.8	16.7	12.9	11.3	9.2	42.1	21.1	24
6	19.6	15.7	10.4	13.7	8.6	10.3	14.4	14.9	11.3	12.8	20.8	25.2	25.8	29.5	28.8	27.3	20.4	15.8	18.4	12.7	11.6	15.8	11.7	13.7	8.6	29.5	17.1	24
7	12.1	13.9	13.9	9.5	11.4	12.9	9.4	10.6	9.6	13.0	11.1	24.4	25.0	23.9	19.3	21.7	13.2	15.1	12.0	14.5	14.7	10.7	11.7	10.0	9.4	25.0	14.3	24
8	11.9	12.6	22.3	27.1	12.6	25.4	31.3	26.9	12.9	15.7	10.5	11.2	17.6	12.6	12.2	4.8	2.4	5.9	3.7	4.2	5.6	4.6	7.5	3.7	2.4	31.3	12.7	24
9	4.3	5.7	8.1	6.8	14.1	16.3	20.8	19.9	23.5	22.4	21.6	22.9	26.1	28.8	40.1	26.9	25.9	8.9	12.2	5.9	7.3	8.8	10.8	12.4	4.3	40.1	16.7	24
10	13.0	11.1	8.1	9.0	9.2	11.5	9.5	11.2	9.0	14.4	14.9	12.5	22.5	26.1	30.2	20.3	19.2	23.4	22.0	23.1	13.9	8.0	6.1	8.6	6.1	30.2	14.9	24
11	14.6	11.8	10.0	10.9	8.3	7.1	8.6	18.6	17.8	21.4	23.2	24.8	27.7	27.3	30.4	25.5	22.2	16.6	16.2	7.9	10.7	18.4	15.7	25.4	7.1	30.4	17.5	24
12	20.2	16.3	17.1	12.0	11.4	8.1	8.4	6.3	6.5	8.5	11.4	9.7	9.1	7.8	8.0	3.1	4.9	8.0	9.7	10.9	9.5	11.8	11.6	7.9	3.1	20.2	9.9	24
13	10.2	10.7	16.1	17.3	17.4	17.9	17.6	23.9	17.9	21.0	21.3	19.6	25.0	23.7	17.0	8.6	7.6	8.1	8.2	8.6	9.0	14.7	18.4	13.6	7.6	25.0	15.6	24
14	14.6	21.2	25.4	30.9	31.3	25.7	31.0	31.6	28.0	25.0	21.6	35.3	22.7	16.5	19.9	23.6	11.0	14.1	13.1	16.1	19.8	19.0	14.2	18.4	11.0	35.3	22.1	24
15	21.2	21.2	21.1	14.6	15.9	17.8	15.5	18.5	15.2	19.1	19.6	13.9	7.9	7.3	7.5	6.6	7.4	5.3	6.1	3.6	4.2	5.0	5.1	7.1	3.6	21.2	11.9	24
16	3.1	4.0	3.0	4.6	3.1	1.9	1.8	3.0	2.7	3.5	13.8	18.4	16.4	19.0	21.2	25.8	23.0	31.7	29.8	28.4	21.4	22.1	18.0	18.7	1.8	31.7	14.1	24
17	17.7	17.8	12.6	16.4	17.1	13.7	17.6	14.6	12.5	11.9	13.8	17.1	19.7	16.0	14.0	13.3	10.2	11.7	8.8	7.7	10.8	13.5	4.4	5.7	4.4	19.7	13.3	24
18	P	10.2	6.6	4.5	7.7	6.6	8.9	9.0	11.2	12.6	12.0	13.4	17.0	15.2	12.8	14.7	18.3	16.2	14.9	14.4	16.5	17.1	17.3	21.4	4.5	21.4	13.0	23
19	16.9	16.1	18.5	20.5	16.6	14.5	18.8	17.7	18.6	21.6	28.1	23.2	23.4	20.7	22.2	16.3	16.3	12.9	13.2	12.3	10.1	8.8	8.4	7.9	7.9	28.1	16.8	24
20	9.7	9.4	8.4	14.6	12.1	13.7	11.5	10.5	12.3	14.2	14.7	17.1	16.2	16.6	19.1	19.2	20.5	16.1	19.0	11.2	12.5	5.9	9.2	8.1	5.9	20.5	13.4	24
21	7.3	7.4	7.2	11.3	12.6	12.3	11.9	14.3	13.0	15.3	17.1	15.4	15.0	15.0	11.3	11.0	12.1	10.8	9.2	9.7	7.9	3.3	6.1	3.5	3.3	17.1	10.8	24
22	3.6	3.2	3.5	4.4	3.3	4.1	7.2	9.3	13.9	15.3	13.9	14.5	12.6	13.2	21.1	21.4	17.7	17.0	22.8	17.6	17.7	15.3	14.9	9.4	3.2	22.8	12.4	24
23	5.7	7.5	8.3	6.8	10.7	11.7	10.2	5.2	3.1	8.8	9.7	7.1	10.5	8.7	8.7	8.6	6.8	12.5	13.6	14.0	17.5	17.4	15.7	10.7	3.1	17.5	10.0	24
24	7.4	8.7	8.9	8.8	10.3	7.7	8.2	7.9	9.5	10.5	12.9	13.4	16.6	19.1	19.8	22.2	23.2	13.7	11.7	10.0	14.3	16.2	10.4	9.0	7.4	23.2	12.5	24
25	11.0	15.5	5.6	5.2	9.1	4.9	5.4	4.4	7.2	7.2	7.9	10.8	9.4	12.5	13.7	13.9	14.2	17.8	18.7	15.4	14.0	14.9	15.7	16.3	4.4	18.7	11.3	24
26	18.1	14.9	10.3	8.4	6.8	8.0	8.0	7.3	8.0	8.2	7.9	6.8	6.2	5.6	4.2	4.4	5.3	5.0	5.9	3.7	4.3	5.4	5.9	8.2	3.7	18.1	7.4	24
27	8.1	6.8	10.5	6.3	4.4	4.9	4.5	2.0	3.7	4.7	7.9	9.4	8.8	7.3	10.2	7.2	11.7	11.3	7.6	9.4	8.0	8.1	5.6	6.2	2.0	11.7	7.3	24
28	7.9	6.0	4.8	6.4	8.1	7.7	7.8	7.9	5.3	8.8	8.1	7.1	8.1	8.1	7.8	5.0	7.6	6.9	7.7	5.5	8.1	5.8	6.4	7.7	4.8	8.8	7.1	24
29	8.6	8.1	7.3	9.5	9.1	15.2	13.1	12.1	8.7	7.6	10.9	7.7	6.1	10.5	14.5	13.9	15.0	14.2	12.5	12.1	13.3	11.2	11.0	12.5	6.1	15.2	11.0	24
30	17.3	17.3	17.7	15.9	10.2	7.7	8.9	14.9	19.1	17.3	16.0	14.4	12.6	10.7	11.3	6.3	14.8	16.5	13.1	14.5	20.1	20.2	17.9	16.4	6.3	20.2	14.6	24
HOURLY MAX	21.2	21.2	25.4	30.9	31.3	25.7	31.3	31.6	28.0	26.7	32.3	35.3	27.7	36.5	40.1	35.6	42.1	49.3	41.7	39.2	38.0	22.1	21.8	25.4				
HOURLY AVG	12.3	12.0	12.0	12.5	11.6	12.1	13.0	13.6	12.6	14.2	16.0	17.0	17.2	17.6	17.7	16.1	15.5	15.1	14.2	13.4	13.8	12.8	12.2	11.6				

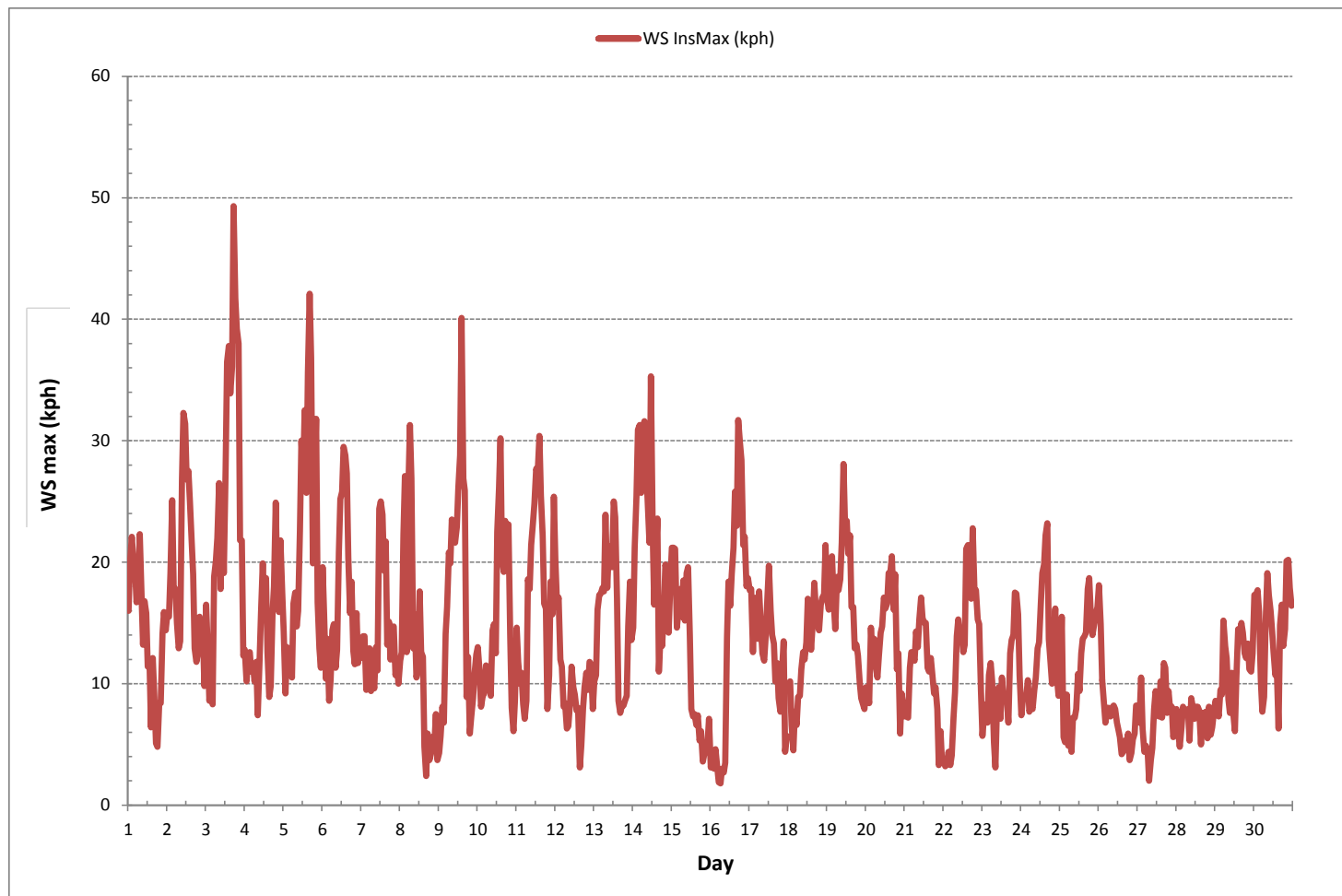
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	49.3	kph	@ HOUR(S)	17	ON DAY(S)	3
					VAR-VARIOUS	
OPERATIONAL TIME:					719	hrs

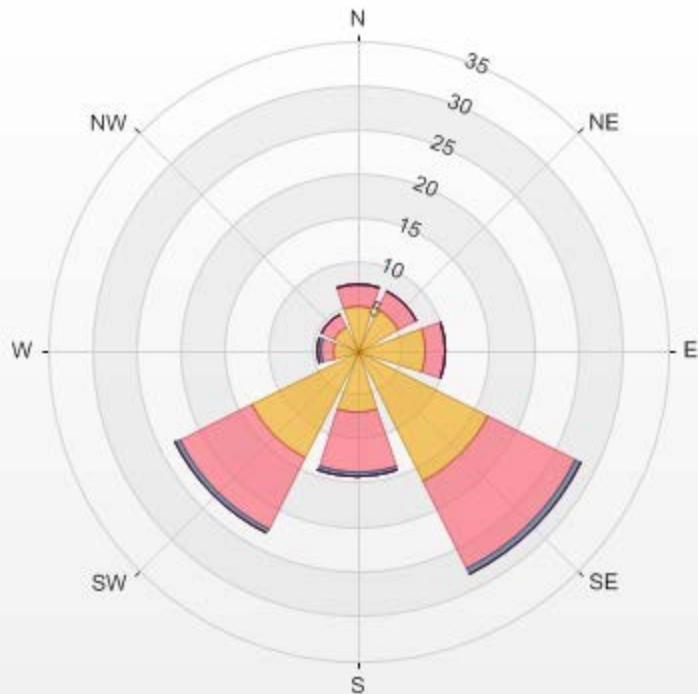
WIND SPEED Instantaneous Maximum (WS kph)



Wind: THREE CREEKS #986 TRAILER Monitor: WSP [kph] Monthly: 11/2016 Type: WindRose Direction: Blowing From (Wind Frequency) Based On 1 Hr.
 Calm: 0.00% Valid Data: 100.00% Calm Avg: 0.00 [kph]

Direction	0.0-6.0	6.0-12.0	12.0-20.0	20.0-29.0	29.0-39.0	>39.0	Total
N	5.14	2.5	0	0	0	0	7.64
NE	5.28	2.22	0	0	0	0	7.5
E	7.78	2.22	0	0	0	0	10
SE	16.39	11.11	0.69	0	0	0	28.19
S	7.08	6.67	0.56	0	0	0	14.31
SW	13.47	9.03	0.56	0	0	0	23.06
W	2.92	1.25	0.42	0	0	0	4.59
NW	3.06	1.67	0	0	0	0	4.73
Summary	61.12	36.67	2.23	0	0	0	100

THREE CREEKS #986 TRAILER 01/11/2016 00:00 - 30/11/2016 23:00 Calm: 0.00%



WIND DIRECTION



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE
Three Creeks 986b Station - November 2016

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

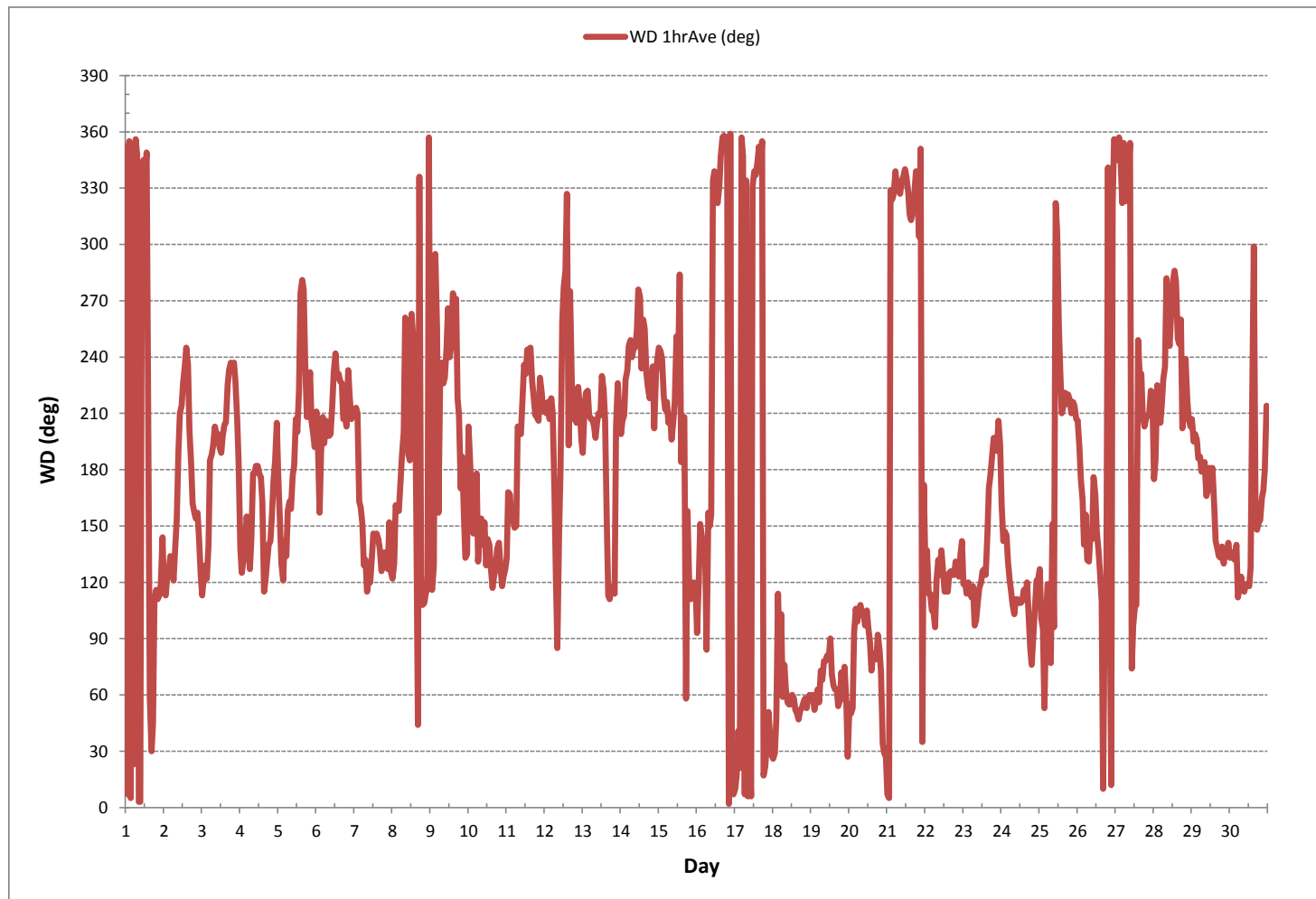
STATUS FLAG CODES

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

LAST CALIBRATION:	May 3, 2016
DECLINATION :	MAGNETIC DECLINATION 15 DEGREE EAST

MONTHLY CALIBRATION TIME:	0	hrs	OPERATIONAL TIME:	720	hrs
STANDARD DEVIATION:	81.68		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	168 (SSE)	

WIND DIRECTION Hourly Averages (WD)



RELATIVE HUMIDITY



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - November 2016

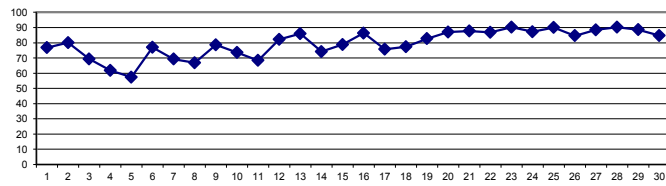
RELATIVE HUMIDITY Hourly Averages (RH %)

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	87	80	80	79	81	82	78	77	80	80	78	73	70	67	65	62	64	73	81	84	81	81	80	80	62	87	77	24
2	80	83	83	83	84	85	88	88	90	87	81	75	67	63	61	61	68	80	86	84	85	87	86	88	61	90	80	24
3	86	83	83	83	84	86	83	83	83	78	71	67	62	55	55	56	51	50	53	56	56	61	68	72	50	86	69	24
4	81	83	85	84	86	81	82	81	78	68	57	48	43	42	47	55	58	59	51	45	45	44	40	39	39	86	62	24
5	48	57	64	60	65	62	53	51	51	48	47	45	46	45	49	52	51	57	61	62	64	73	79	86	45	86	57	24
6	88	90	90	93	93	95	95	94	94	91	82	71	62	56	56	55	57	64	70	73	68	67	72	71	55	95	77	24
7	71	72	75	80	86	86	86	86	87	85	75	60	48	44	45	48	55	63	68	66	67	68	70	71	44	87	69	24
8	68	70	70	65	68	62	54	54	64	63	55	49	45	47	48	53	62	76	80	86	89	90	93	94	45	94	67	24
9	92	93	94	95	95	91	89	90	88	83	75	62	61	57	50	50	54	65	71	84	85	86	88	90	50	95	79	24
10	88	86	86	89	89	89	89	89	90	88	81	67	53	46	48	54	55	55	57	60	67	74	81	85	46	90	74	24
11	87	74	72	74	80	82	81	80	76	71	61	60	61	59	55	54	57	63	65	68	71	63	61	66	54	87	68	24
12	69	70	70	72	75	78	80	85	87	86	81	74	77	75	86	86	87	88	89	92	91	90	93	94	69	94	82	24
13	94	97	97	98	98	99	99	98	98	97	90	81	71	65	68	73	82	88	85	82	81	77	71	75	65	99	86	24
14	73	72	72	72	72	69	65	65	68	70	69	82	93	94	89	72	68	72	71	72	69	78	77	76	65	94	74	24
15	73	73	75	79	82	80	82	82	82	79	73	69	66	63	62	65	77	87	90	90	91	91	91	90	62	91	79	24
16	89	89	88	88	88	87	87	86	86	88	88	84	82	82	83	83	84	86	87	88	88	88	88	86	82	89	86	24
17	84	84	84	84	83	82	79	78	77	76	73	72	69	69	68	70	72	76	72	69	71	71	75	81	68	84	76	24
18	81	80	81	81	82	81	81	80	79	79	77	75	73	71	70	72	75	76	77	76	76	78	78	79	70	82	77	24
19	80	81	81	81	81	81	82	84	85	84	84	85	85	85	82	80	81	83	83	82	83	83	84	85	80	85	83	24
20	85	86	87	86	86	86	86	86	86	88	87	85	83	82	83	85	86	88	90	90	91	91	91	93	82	93	87	24
21	92	92	91	91	91	90	90	90	92	90	88	86	84	84	84	84	85	86	86	86	87	87	86	84	84	92	88	24
22	79	78	78	78	82	83	84	87	89	89	88	86	87	87	88	90	92	92	93	92	91	91	91	91	78	93	87	24
23	91	89	89	88	90	90	91	90	90	90	90	89	89	88	89	90	92	92	91	92	93	92	90	90	88	93	90	24
24	89	88	89	87	87	86	84	86	86	89	90	91	89	86	83	85	85	87	89	88	87	87	87	88	83	91	87	24
25	90	89	89	86	87	89	88	89	89	89	89	89	91	94	94	94	94	92	90	90	90	90	89	89	86	94	90	24
26	89	88	88	85	84	86	83	83	83	83	85	86	87	84	83	83	85	83	83	83	83	84	85	85	83	89	85	24
27	86	86	86	86	86	86	87	87	88	89	90	89	89	89	90	91	90	89	89	89	89	90	91	92	86	92	89	24
28	92	92	93	92	92	91	91	90	91	91	91	90	90	90	89	89	89	89	89	89	89	89	89	89	89	93	90	24
29	89	89	88	88	88	89	89	88	87	87	87	87	88	90	90	91	90	89	89	89	88	89	89	88	87	91	89	24
30	88	88	87	86	86	86	86	85	84	83	82	80	79	79	81	85	85	88	84	85	85	86	87	88	79	88	85	24
HOURLY MAX	94	97	97	98	98	99	99	98	98	97	91	91	93	94	94	94	94	92	93	92	93	92	93	94				
HOURLY AVG	83	83	83	83	84	84	83	83	84	82	79	75	73	71	71	72	74	78	79	80	80	81	82	83				

STATUS FLAG CODES

C	- MONTHLY CALIBRATION	Q	- QUALITY ASSURANCE
C1	- REPEAT CALIBRATION	R	- RECOVERY
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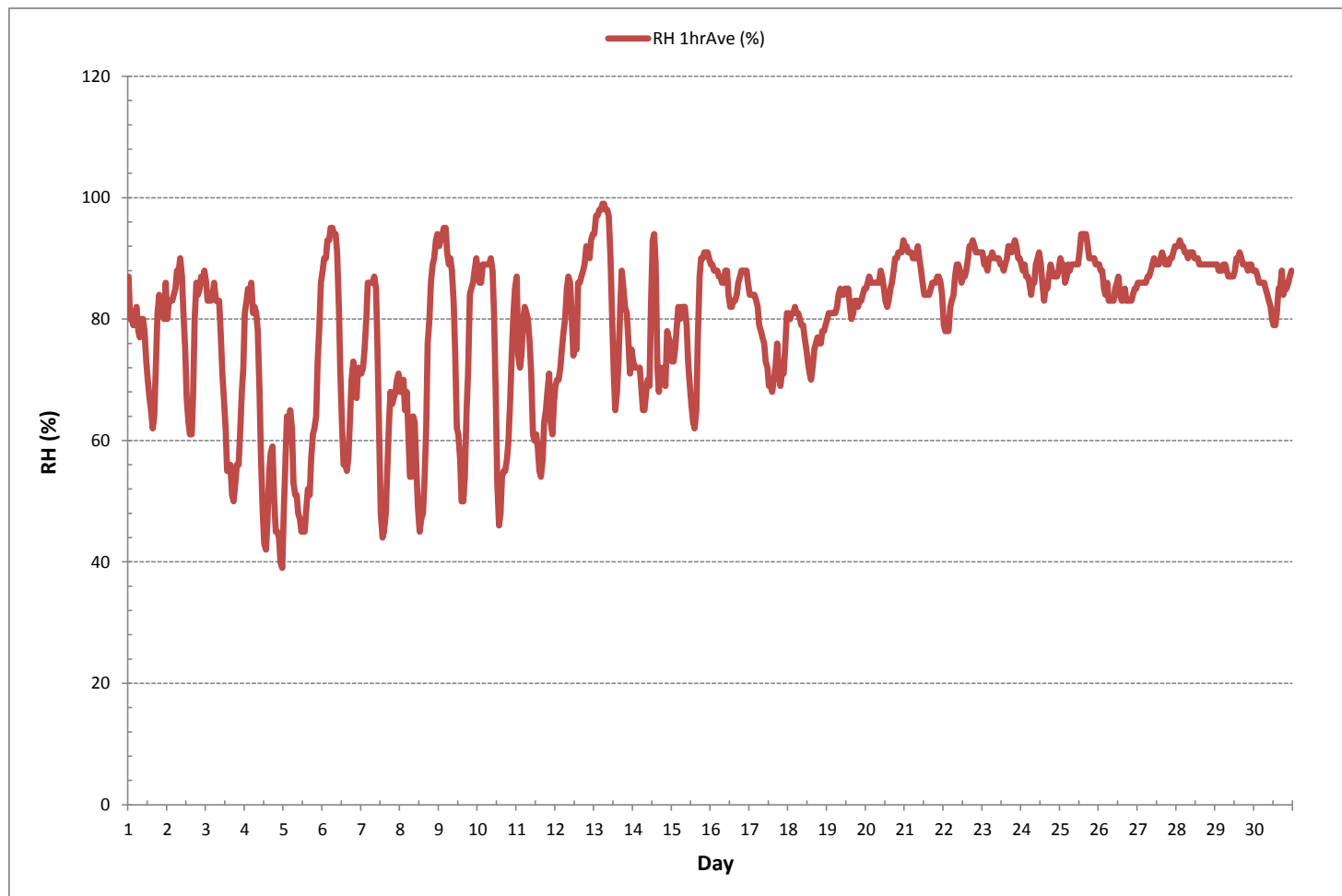
24 HOUR AVERAGES FOR November 2016



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	39	%	@ HOUR(S)	23	ON DAY(S)	4
MAXIMUM 1-HR AVERAGE:	99	%	@ HOUR(S)	5 , 6	ON DAY(S)	13 , 13
MAXIMUM 24-HR AVERAGE:	90	%			ON DAY(S)	VAR
					VAR-VARIOUS	
OPERATIONAL TIME:					720	hrs
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	12.40		MONTHLY AVERAGE:		80	%

RELATIVE HUMIDITY Hourly Averages (RH %)



BAROMETRIC PRESSURE



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Three Creeks 986b Station - November 2016

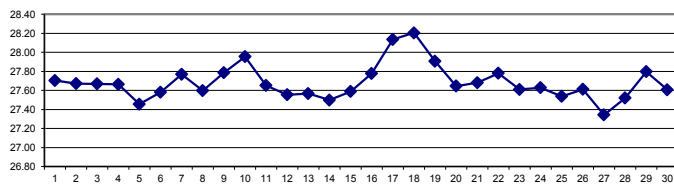
BAROMETRIC PRESSURE Hourly Averages (BP inHg)

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	27.59	27.60	27.62	27.64	27.65	27.66	27.67	27.69	27.70	27.72	27.72	27.73	27.74	27.73	27.74	27.74	27.74	27.75	27.76	27.76	27.75	27.74	27.73	27.72	27.59	27.76	27.70	24	
2	27.70	27.69	27.68	27.66	27.66	27.65	27.64	27.64	27.64	27.64	27.65	27.66	27.67	27.67	27.68	27.68	27.69	27.70	27.70	27.70	27.69	27.68	27.68	27.66	27.64	27.70	27.67	24	
3	27.63	27.61	27.60	27.59	27.60	27.61	27.63	27.65	27.66	27.66	27.68	27.68	27.66	27.65	27.66	27.66	27.69	27.69	27.71	27.72	27.73	27.75	27.75	27.76	27.59	27.76	27.67	24	
4	27.76	27.76	27.77	27.78	27.75	27.74	27.72	27.72	27.72	27.71	27.71	27.70	27.68	27.67	27.66	27.64	27.62	27.59	27.57	27.55	27.54	27.53	27.52	27.52	27.52	27.52	27.78	27.66	24
5	27.52	27.52	27.51	27.49	27.49	27.48	27.47	27.45	27.44	27.44	27.43	27.42	27.40	27.39	27.40	27.42	27.46	27.46	27.45	27.44	27.45	27.46	27.47	27.47	27.39	27.52	27.46	24	
6	27.47	27.48	27.49	27.49	27.49	27.50	27.50	27.51	27.52	27.53	27.55	27.57	27.57	27.58	27.60	27.61	27.63	27.64	27.66	27.68	27.69	27.71	27.72	27.74	27.47	27.74	27.58	24	
7	27.75	27.77	27.78	27.79	27.80	27.81	27.81	27.82	27.84	27.83	27.81	27.81	27.82	27.80	27.78	27.78	27.77	27.74	27.73	27.71	27.70	27.69	27.67	27.67	27.67	27.84	27.77	24	
8	27.65	27.64	27.62	27.60	27.59	27.58	27.57	27.58	27.59	27.61	27.62	27.63	27.63	27.62	27.61	27.60	27.60	27.59	27.58	27.57	27.57	27.57	27.57	27.57	27.57	27.65	27.60	24	
9	27.57	27.56	27.57	27.58	27.63	27.62	27.63	27.67	27.69	27.72	27.75	27.78	27.80	27.82	27.84	27.87	27.89	27.91	27.94	27.96	27.99	28.01	28.02	28.03	27.56	28.03	27.79	24	
10	28.06	28.08	28.09	28.09	28.08	28.08	28.09	28.08	28.07	28.06	28.05	28.04	28.01	27.99	27.94	27.90	27.87	27.83	27.81	27.78	27.76	27.73	27.71	27.69	27.69	28.09	27.95	24	
11	27.68	27.66	27.65	27.64	27.63	27.62	27.61	27.62	27.64	27.64	27.65	27.65	27.66	27.66	27.66	27.67	27.68	27.68	27.68	27.68	27.68	27.66	27.65	27.64	27.61	27.68	27.65	24	
12	27.62	27.62	27.61	27.60	27.59	27.57	27.55	27.54	27.54	27.54	27.53	27.52	27.51	27.51	27.52	27.51	27.52	27.53	27.54	27.55	27.55	27.57	27.58	27.59	27.51	27.62	27.55	24	
13	27.60	27.61	27.61	27.62	27.63	27.63	27.65	27.63	27.63	27.63	27.63	27.63	27.61	27.60	27.58	27.55	27.53	27.51	27.49	27.47	27.45	27.44	27.44	27.44	27.44	27.65	27.57	24	
14	27.42	27.41	27.41	27.41	27.41	27.42	27.43	27.43	27.43	27.44	27.46	27.48	27.50	27.52	27.53	27.54	27.55	27.56	27.57	27.59	27.60	27.61	27.62	27.62	27.41	27.62	27.50	24	
15	27.63	27.63	27.63	27.63	27.63	27.62	27.61	27.60	27.61	27.60	27.59	27.58	27.57	27.56	27.55	27.55	27.55	27.55	27.56	27.56	27.56	27.57	27.58	27.59	27.55	27.63	27.59	24	
16	27.60	27.61	27.62	27.63	27.65	27.67	27.68	27.69	27.71	27.73	27.74	27.76	27.78	27.79	27.81	27.83	27.85	27.88	27.91	27.92	27.94	27.95	27.97	27.98	27.60	27.98	27.78	24	
17	28.00	28.02	28.03	28.04	28.05	28.06	28.07	28.09	28.10	28.11	28.13	28.14	28.14	28.15	28.16	28.17	28.18	28.19	28.20	28.22	28.23	28.24	28.25	28.25	28.00	28.25	28.13	24	
18	28.26	28.26	28.26	28.27	28.27	28.26	28.26	28.25	28.25	28.24	28.24	28.24	28.22	28.19	28.19	28.18	28.17	28.16	28.15	28.14	28.13	28.12	28.11	28.10	28.10	28.27	28.21	24	
19	28.08	28.07	28.06	28.05	28.03	28.01	28.00	27.98	27.97	27.95	27.93	27.91	27.88	27.87	27.85	27.84	27.83	27.82	27.80	27.79	27.78	27.77	27.76	27.76	27.76	28.08	27.91	24	
20	27.76	27.75	27.74	27.73	27.72	27.71	27.70	27.70	27.69	27.68	27.67	27.66	27.64	27.63	27.62	27.60	27.60	27.59	27.57	27.56	27.55	27.54	27.54	27.54	27.54	27.76	27.65	24	
21	27.55	27.55	27.56	27.57	27.58	27.59	27.60	27.61	27.63	27.64	27.66	27.67	27.68	27.69	27.70	27.72	27.74	27.76	27.77	27.78	27.80	27.81	27.82	27.84	27.55	27.84	27.68	24	
22	27.85	27.86	27.87	27.87	27.87	27.87	27.87	27.86	27.86	27.86	27.85	27.82	27.81	27.79	27.76	27.74	27.73	27.70	27.68	27.66	27.65	27.63	27.62	27.63	27.62	27.87	27.78	24	
23	27.62	27.61	27.61	27.61	27.60	27.59	27.58	27.58	27.59	27.59	27.59	27.60	27.59	27.59	27.59	27.60	27.61	27.62	27.63	27.63	27.64	27.65	27.66	27.67	27.58	27.67	27.61	24	
24	27.68	27.69	27.69	27.70	27.70	27.71	27.71	27.71	27.69	27.69	27.68	27.67	27.65	27.63	27.61	27.59	27.57	27.57	27.55	27.54	27.52	27.51	27.51	27.50	27.50	27.71	27.63	24	
25	27.51	27.49	27.49	27.49	27.49	27.49	27.48	27.48	27.48	27.48	27.49	27.50	27.51	27.53	27.55	27.56	27.56	27.58	27.59	27.61	27.62	27.63	27.64	27.65	27.48	27.65	27.54	24	
26	27.65	27.65	27.66	27.67	27.67	27.68	27.67	27.66	27.66	27.66	27.65	27.63	27.62	27.61	27.60	27.58	27.56	27.57	27.57	27.55	27.54	27.53	27.51	27.51	27.51	27.68	27.61	24	
27	27.49	27.48	27.47	27.44	27.42	27.41	27.39	27.38	27.35	27.33	27.32	27.31	27.30	27.28	27.28	27.28	27.28	27.28	27.28	27.28	27.29	27.28	27.29	27.29	27.28	27.49	27.34	24	
28	27.30	27.32	27.34	27.35	27.37	27.38	27.40	27.42	27.44	27.46	27.48	27.50	27.52	27.54	27.57	27.59	27.62	27.64	27.66	27.68	27.71	27.72	27.74	27.76	27.30	27.76	27.52	24	
29	27.78	27.79	27.81	27.82	27.83	27.84	27.84	27.84	27.85	27.85	27.84	27.84	27.82	27.82	27.81	27.80	27.79	27.77	27.77	27.75	27.74	27.72	27.71	27.70	27.70	27.85	27.80	24	
30	27.69	27.68	27.66	27.64	27.62	27.61	27.60	27.60	27.59	27.59	27.59	27.58	27.58	27.57	27.57	27.58	27.59	27.59	27.59	27.60	27.60	27.60	27.61	27.62	27.57	27.69	27.61	24	
HOURLY MAX	28.26	28.26	28.26	28.27	28.27	28.26	28.26	28.25	28.25	28.24	28.24	28.24	28.22	28.19	28.19	28.18	28.18	28.19	28.20	28.22	28.23	28.24	28.25	28.25					
HOURLY AVG	27.68	27.68	27.68	27.68	27.68	27.68	27.68	27.68	27.69	27.69	27.69	27.69	27.68	27.68	27.68	27.68	27.68	27.68	27.68	27.68	27.68	27.68	27.68	27.68	27.68				

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

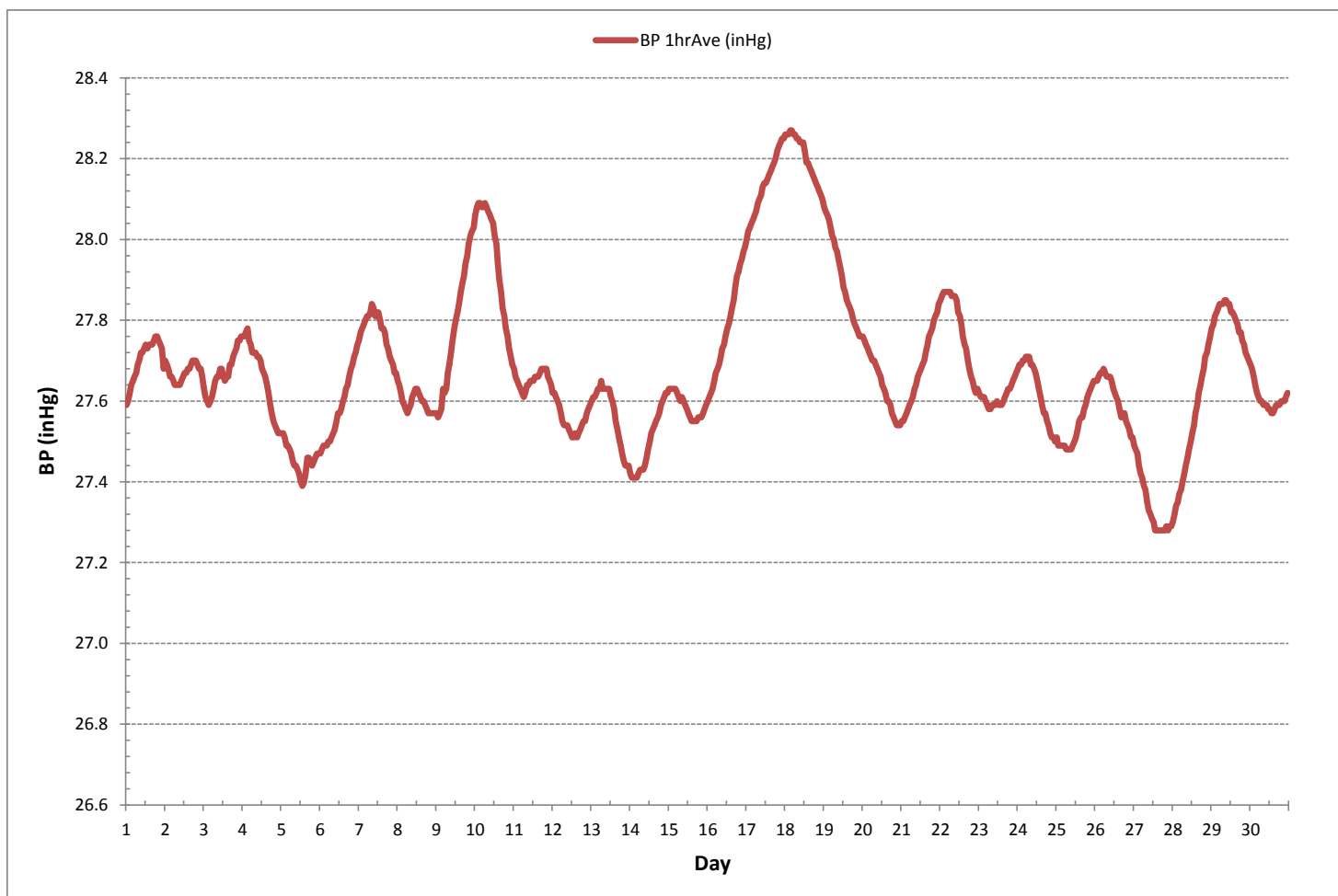
24 HR AVERAGES November 2016



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	27.28	inHg	@ HOUR(S)	VAR	ON DAY(S)	27
MAXIMUM 1-HR AVERAGE:	28.27	inHg	@ HOUR(S)	3 , 4	ON DAY(S)	18 , 18
MAXIMUM 24-HR AVERAGE:	28.21	inHg			ON DAY(S)	18
					VAR-VARIOUS	
				OPERATIONAL TIME:	720	hrs
				AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.20			MONTHLY AVERAGE:	27.68	inHg

BAROMETRIC PRESSURE Hourly Averages (BP inHg)



AMBIENT TEMPERATURE

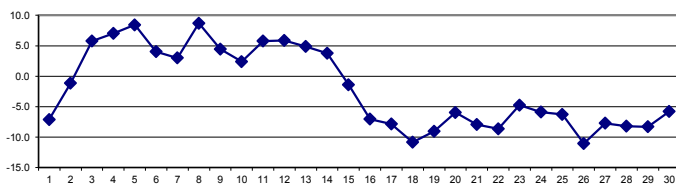
AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

HR START (MST)	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MIN.	DAILY MAX.	24-HR AVG.	RDGS.
HR END (MST)	0:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	13:59	14:59	15:59	16:59	17:59	18:59	19:59	20:59	21:59	22:59	23:59				
DAY																												
1	-5.0	-5.4	-5.7	-6.1	-6.6	-7.1	-7.0	-8.6	-8.9	-8.5	-8.1	-7.3	-6.6	-5.9	-5.4	-5.4	-6.1	-7.5	-8.9	-8.8	-8.4	-8.0	-7.8	-7.8	-8.9	-5.0	-7.1	24
2	-7.6	-7.8	-6.6	-5.8	-5.2	-4.5	-4.0	-3.2	-2.6	-0.4	1.2	2.6	3.6	4.5	4.8	4.9	3.5	0.8	-0.7	-0.7	-0.8	-0.9	-0.8	-2.0	-7.8	4.9	-1.2	24
3	-1.5	-0.2	0.3	0.2	0.8	2.2	3.0	3.5	3.3	4.7	6.8	8.5	9.7	11.1	11.1	10.3	10.4	9.8	9.2	8.8	8.8	7.6	5.9	4.5	-1.5	11.1	5.8	24
4	2.2	1.9	1.9	1.9	1.3	2.6	2.7	2.5	2.7	5.2	8.4	11.3	13.2	13.7	12.0	10.9	8.7	6.8	8.3	9.7	9.8	9.7	10.6	10.8	1.3	13.7	7.0	24
5	8.5	6.1	5.1	5.6	4.4	5.1	7.0	7.9	8.0	9.6	11.1	13.1	13.4	14.1	12.9	11.7	10.6	9.1	8.3	8.0	7.8	6.4	5.1	3.3	3.3	14.1	8.4	24
6	3.5	2.8	1.1	1.6	0.4	0.5	1.2	1.3	1.1	2.9	4.7	6.8	8.5	9.4	9.4	9.4	8.5	5.9	4.4	2.9	3.7	3.1	1.7	1.6	0.4	9.4	4.0	24
7	1.6	1.3	0.9	-0.8	-2.2	-2.0	-2.2	-2.0	-1.8	-0.3	2.8	6.7	9.6	10.6	10.2	9.1	6.9	4.6	3.1	3.6	3.2	2.9	2.8	3.1	-2.2	10.6	3.0	24
8	5.3	5.0	5.9	7.5	6.8	9.3	12.1	11.5	8.7	9.5	12.5	14.6	16.1	16.4	16.5	15.0	12.3	8.2	6.1	3.7	2.3	1.4	1.2	0.7	0.7	16.5	8.7	24
9	0.0	0.1	0.2	0.1	2.6	4.9	5.7	6.2	5.8	6.6	7.4	9.3	9.7	10.3	10.5	10.0	8.7	5.7	3.7	0.4	0.6	-0.1	-0.5	-1.3	-1.3	10.5	4.4	24
10	-0.2	-0.1	-1.1	-2.1	-1.7	-2.7	-2.3	-1.8	-2.3	-1.3	2.0	5.9	9.1	10.1	8.9	7.6	6.8	6.5	5.9	5.3	3.7	1.9	0.3	-1.1	-2.7	10.1	2.4	24
11	-0.4	3.6	3.9	3.3	1.6	1.7	2.3	2.4	3.8	4.3	7.5	8.8	9.5	11.1	11.5	10.8	9.4	7.5	6.6	5.3	4.2	6.0	6.9	6.8	-0.4	11.5	5.8	24
12	6.9	6.8	6.8	6.4	6.1	5.5	4.9	3.6	3.2	4.0	5.8	7.4	7.8	8.1	7.4	7.2	6.6	5.9	5.0	4.5	5.5	5.7	5.4	4.4	3.2	8.1	5.9	24
13	3.2	4.3	4.5	5.0	4.3	3.6	3.7	3.1	2.8	3.3	4.9	6.4	7.7	8.7	7.8	6.4	3.6	2.2	3.4	4.6	4.7	5.9	6.9	6.1	2.2	8.7	4.9	24
14	6.1	6.3	6.3	6.8	6.8	6.6	6.2	5.3	3.8	3.6	4.2	3.7	2.6	2.8	4.1	5.3	4.2	2.3	1.4	0.9	1.3	-0.2	0.0	0.2	-0.2	6.8	3.8	24
15	1.0	1.0	0.4	-0.6	-1.6	-1.4	-2.2	-2.2	-2.5	-1.6	0.1	1.4	2.6	3.6	3.9	3.0	0.0	-2.5	-4.3	-5.4	-5.9	-6.2	-6.9	-7.3	-7.3	3.9	-1.4	24
16	-8.1	-8.5	-9.2	-9.3	-9.5	-9.8	-10.2	-10.4	-10.4	-8.8	-5.8	-4.2	-3.8	-3.6	-3.6	-4.1	-5.0	-5.6	-6.4	-6.6	-6.6	-6.7	-6.7	-6.8	-10.4	-3.6	-7.1	24
17	-7.1	-7.3	-7.4	-7.2	-7.0	-7.0	-7.3	-7.5	-7.4	-7.3	-6.9	-6.7	-6.2	-6.2	-6.5	-6.7	-7.5	-8.6	-8.9	-8.8	-9.6	-10.1	-11.0	-12.1	-12.1	-6.2	-7.8	24
18	-12.2	-12.3	-12.8	-13.6	-14.2	-13.4	-12.8	-12.3	-12.1	-11.9	-11.0	-10.2	-9.4	-8.8	-8.6	-8.8	-9.2	-9.4	-9.6	-9.4	-9.4	-9.5	-9.5	-9.5	-14.2	-8.6	-10.8	24
19	-9.5	-9.5	-9.6	-9.7	-9.7	-9.6	-9.6	-9.7	-9.7	-9.7	-9.5	-9.2	-9.2	-8.9	-8.3	-8.3	-8.4	-8.5	-8.6	-8.4	-8.4	-8.5	-8.5	-8.5	-9.7	-8.3	-9.1	24
20	-8.5	-8.3	-8.4	-7.5	-7.2	-7.0	-6.8	-6.4	-6.8	-6.7	-5.9	-5.0	-4.4	-4.2	-4.5	-4.9	-5.2	-5.3	-5.3	-5.2	-5.1	-4.9	-4.9	-5.0	-8.5	-4.2	-6.0	24
21	-4.8	-4.8	-5.9	-6.6	-6.8	-7.2	-7.5	-7.6	-7.9	-8.2	-8.1	-7.9	-7.9	-8.0	-7.9	-8.1	-8.4	-8.4	-8.7	-9.7	-11.1	-9.4	-9.3	-10.7	-11.1	-4.8	-8.0	24
22	-14.6	-17.0	-18.0	-18.2	-15.0	-13.2	-11.8	-10.7	-10.8	-10.5	-9.4	-8.7	-7.8	-6.2	-5.3	-4.5	-3.7	-3.1	-2.5	-2.1	-2.1	-3.2	-3.9	-5.4	-18.2	-2.1	-8.7	24
23	-6.8	-8.6	-9.0	-9.5	-7.5	-6.8	-6.4	-6.7	-7.1	-6.2	-4.7	-3.5	-2.9	-2.4	-2.2	-2.2	-2.2	-2.4	-2.4	-2.5	-2.5	-2.5	-2.6	-4.9	-9.5	-2.2	-4.8	24
24	-8.0	-9.9	-9.9	-10.7	-10.5	-11.6	-12.5	-11.7	-11.4	-9.0	-6.7	-3.6	-2.0	-0.9	-0.5	-0.8	-1.0	-2.4	-2.9	-3.4	-3.3	-3.0	-2.4	-3.4	-12.5	-0.5	-5.9	24
25	-4.1	-3.5	-6.3	-10.3	-10.9	-8.7	-8.5	-8.3	-7.6	-6.9	-6.2	-5.1	-4.7	-4.4	-3.9	-3.6	-3.3	-3.8	-4.7	-6.5	-7.2	-7.4	-7.3	-7.7	-10.9	-3.3	-6.3	24
26	-7.8	-8.2	-9.3	-11.9	-13.2	-12.2	-13.2	-14.0	-14.2	-13.5	-10.7	-7.7	-6.7	-6.7	-7.7	-9.7	-11.1	-12.4	-12.8	-13.0	-13.0	-12.1	-12.0	-12.4	-14.2	-6.7	-11.1	24
27	-12.1	-12.3	-11.5	-11.2	-10.8	-10.3	-9.8	-9.3	-8.7	-7.8	-5.8	-4.9	-4.6	-4.3	-4.8	-5.8	-6.3	-6.4	-6.6	-6.5	-6.5	-6.5	-6.5	-6.5	-12.3	-4.3	-7.7	24
28	-6.4	-6.5	-6.8	-7.4	-7.7	-7.8	-8.1	-8.4	-8.7	-8.6	-8.6	-8.7	-8.8	-8.8	-8.9	-8.8	-8.6	-9.0	-8.9	-8.5	-8.4	-8.4	-8.4	-8.4	-9.0	-6.4	-8.2	24
29	-8.4	-8.7	-8.9	-9.1	-9.1	-9.1	-9.3	-9.7	-10.2	-10.4	-9.9	-8.7	-7.2	-5.4	-4.9	-5.2	-6.0	-8.0	-8.0	-8.7	-9.2	-9.1	-8.6	-7.5	-10.4	-4.9	-8.3	24
30	-8.3	-6.5	-6.0	-6.3	-6.3	-6.6	-7.3	-7.4	-7.3	-7.5	-7.3	-6.2	-4.9	-4.1	-4.1	-5.7	-8.0	-6.4	-4.5	-4.4	-3.9	-3.7	-3.4	-3.2	-8.3	-3.2	-5.8	24
HOURLY MAX	8.5	6.8	6.8	7.5	6.8	9.3	12.1	11.5	8.7	9.6	12.5	14.6	16.1	16.4	16.5	15.0	12.3	9.8	9.2	9.7	9.8	9.7	10.6	10.8				
HOURLY AVG	-3.4	-3.5	-3.8	-4.2	-4.3	-3.9	-3.7	-3.7	-3.8	-3.0	-1.5	0.0	0.9	1.5	1.5	1.0	0.0	-1.1	-1.6	-2.0	-2.2	-2.3	-2.5	-3.0				

STATUS FLAG CODES

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

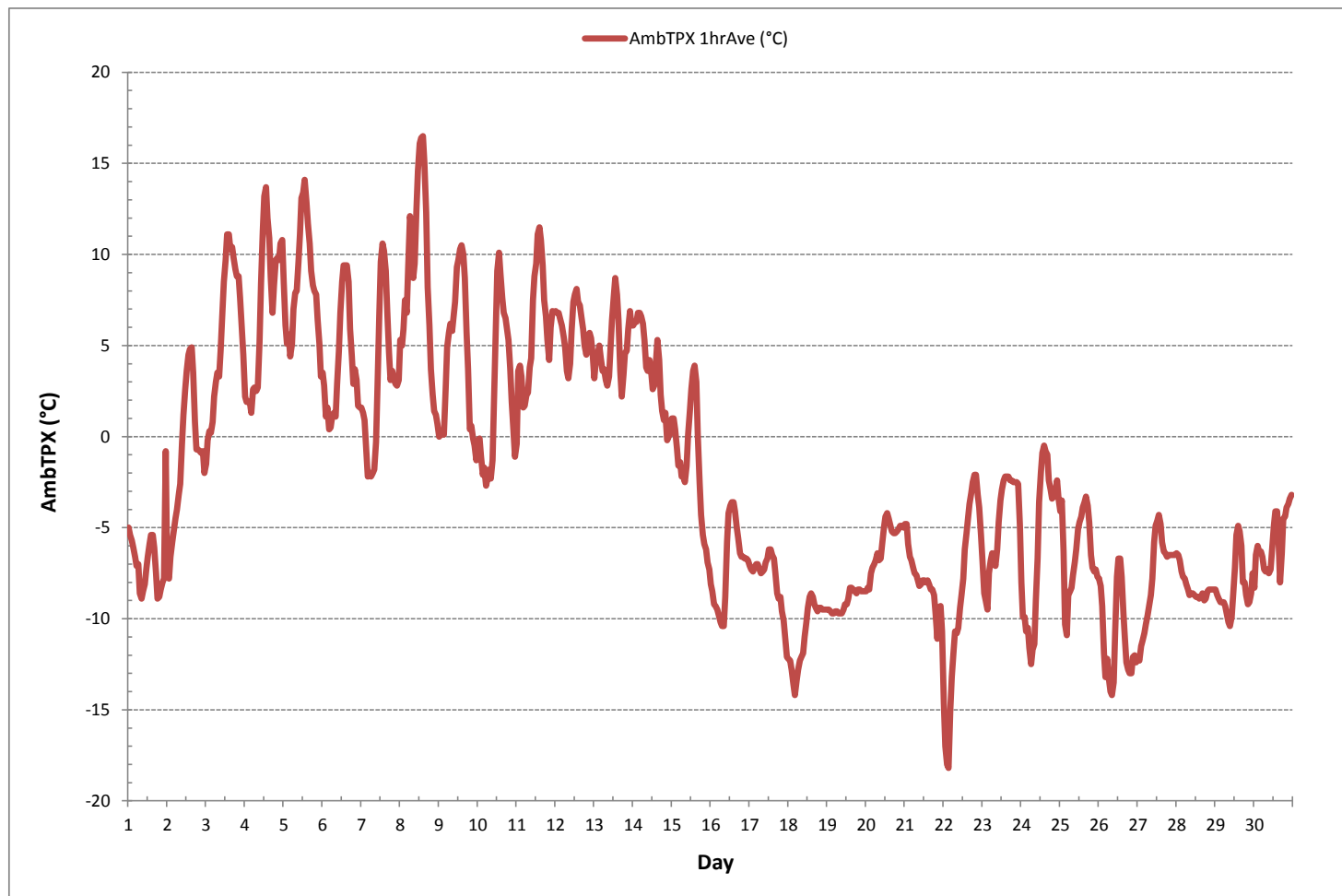
24 HR AVERAGES November 2016



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-18.2	°C	@ HOUR(S)	3	ON DAY(S)	22
MAXIMUM 1-HR AVERAGE:	16.5	°C	@ HOUR(S)	14	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:	8.7	°C			ON DAY(S)	8
					VAR-VARIOUS	
OPERATIONAL TIME:					720	hrs
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	7.09		MONTHLY AVERAGE:		-2.0	°C

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



STATION TEMPERATURE

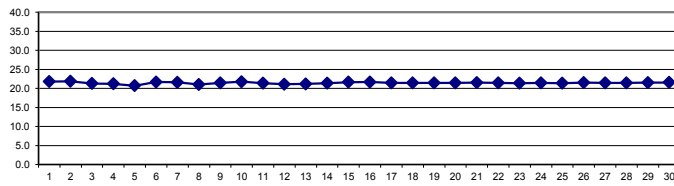
STATION TEMPERATURE Hourly Averages (StnTPX °C)

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	21.9	21.8	21.9	21.6	21.9	21.8	21.7	21.7	21.7	21.8	21.9	21.6	21.7	22.0	22.1	22.0	21.7	21.9	21.8	21.8	21.8	21.9	21.8	21.6	22.1	21.8	24	
2	21.7	21.9	21.8	22.0	21.9	21.9	21.6	21.9	21.7	21.7	22.1	22.6	22.3	20.5	20.5	20.3	20.1	21.9	22.6	22.7	22.7	22.7	22.7	22.7	20.1	22.7	21.9	24	
3	22.7	22.7	22.8	23.0	22.1	20.6	22.1	22.6	22.7	20.6	20.5	20.5	20.6	20.7	20.7	20.6	20.7	20.7	20.7	20.6	20.6	20.4	20.1	22.0	20.1	23.0	21.3	24	
4	22.6	20.4	21.9	22.5	22.9	20.6	21.7	22.5	22.8	21.4	20.6	20.7	20.8	20.7	20.7	20.8	20.7	20.7	20.7	20.8	20.7	20.7	20.7	20.7	20.4	22.9	21.2	24	
5	20.7	20.6	20.3	20.2	22.1	22.2	20.6	20.2	20.1	20.1	20.5	20.7	20.7	20.8	20.8	20.8	21.0	20.7	20.7	20.7	20.7	20.7	20.3	21.2	20.1	22.2	20.7	24	
6	22.5	22.3	20.6	22.1	22.5	22.7	22.9	23.0	23.1	20.6	21.5	22.7	20.9	20.8	20.7	20.7	20.7	20.6	20.0	21.9	22.2	21.0	22.1	22.4	20.0	23.1	21.7	24	
7	22.5	22.7	22.8	22.8	22.7	22.5	22.3	22.2	22.1	21.8	21.0	20.9	21.0	21.1	20.7	20.7	20.3	20.1	19.9	21.3	22.6	20.3	21.4	22.5	19.9	22.8	21.6	24	
8	21.2	20.0	21.8	22.6	20.6	20.6	20.6	20.6	20.6	20.3	21.1	20.8	20.8	20.8	20.8	20.8	20.7	20.7	20.8	21.0	21.0	20.7	22.2	22.8	20.0	22.8	21.0	24	
9	20.6	21.8	22.3	22.5	22.8	21.3	20.4	22.1	21.8	20.4	20.6	21.2	20.8	20.8	20.8	20.7	20.8	20.7	20.3	21.7	22.4	22.6	22.7	22.7	20.3	22.8	21.5	24	
10	22.6	22.6	22.5	22.4	22.3	22.1	22.0	21.9	21.7	21.7	22.0	22.6	21.8	20.9	20.8	20.7	20.9	20.5	21.1	22.4	21.6	20.5	22.0	22.4	20.5	22.6	21.8	24	
11	22.5	22.8	21.5	20.9	22.2	22.6	21.9	20.7	22.1	22.7	21.2	20.7	20.7	20.8	20.8	20.7	20.7	20.7	20.8	20.3	22.0	21.9	20.5	20.5	20.3	22.8	21.3	24	
12	22.2	21.4	20.5	20.2	22.0	21.6	20.3	21.3	22.5	21.0	20.0	20.9	22.0	20.7	20.6	20.7	20.5	20.2	20.9	22.2	20.6	20.1	21.8	21.8	20.0	22.5	21.1	24	
13	20.3	22.0	22.3	20.5	20.7	22.3	21.5	20.5	21.9	22.6	21.1	20.6	20.7	20.7	20.7	20.6	20.6	20.8	22.4	21.3	20.3	21.9	21.8	20.5	20.3	22.6	21.2	24	
14	20.3	22.0	21.6	20.5	20.1	21.9	21.6	20.3	21.3	22.2	22.1	20.5	21.2	22.2	21.5	20.3	21.0	22.3	22.6	20.7	21.5	21.8	21.9	21.9	20.1	22.6	21.4	24	
15	21.9	21.9	21.9	21.8	21.8	21.7	21.5	21.5	21.4	21.4	21.8	22.2	22.5	20.6	20.5	20.2	21.4	22.3	22.3	22.1	21.8	21.5	21.7	21.5	20.2	22.5	21.6	24	
16	21.8	21.7	21.7	21.7	21.8	21.7	21.6	21.6	21.7	21.6	21.8	21.8	21.9	21.7	21.8	22.0	21.9	21.7	21.4	21.4	21.4	21.5	21.5	21.2	21.5	21.2	22.0	21.7	24
17	21.5	21.5	21.4	21.3	21.5	21.6	21.5	21.3	21.3	21.6	21.6	21.5	21.5	21.3	20.8	21.0	21.5	21.4	21.4	21.4	21.5	21.5	21.5	21.5	20.8	21.6	21.4	24	
18	21.5	21.5	21.5	21.5	21.6	21.6	21.5	21.4	21.4	21.5	21.5	21.4	21.4	21.4	21.4	21.3	21.4	21.3	21.5	21.4	21.3	21.5	21.4	21.4	21.3	21.6	21.4	24	
19	21.4	21.5	21.4	21.3	21.4	21.5	21.4	21.3	21.5	21.5	21.4	21.4	21.5	21.5	21.4	21.4	21.4	21.5	21.3	21.5	21.4	21.4	21.6	21.5	21.3	21.6	21.4	24	
20	21.4	21.5	21.5	21.6	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.3	21.7	21.3	21.6	21.3	21.6	21.3	21.6	21.5	21.4	21.6	21.5	21.2	21.2	21.7	21.5	24	
21	21.9	21.5	21.2	21.7	21.3	21.6	21.5	21.5	21.6	21.5	21.4	21.6	21.5	21.5	21.5	21.5	21.4	21.5	21.4	21.5	21.5	21.4	21.4	21.6	21.2	21.9	21.5	24	
22	21.3	21.5	21.5	21.4	21.5	21.5	21.5	21.5	21.5	21.5	21.6	21.4	21.5	21.4	21.4	21.3	21.6	21.1	21.7	21.3	21.2	21.2	21.7	21.3	21.1	21.7	21.4	24	
23	21.4	21.3	21.5	21.5	21.6	21.6	21.5	21.4	21.5	21.5	21.5	21.4	21.3	21.3	21.1	21.2	21.2	21.3	21.3	21.3	21.3	21.3	21.4	21.3	21.1	21.6	21.4	24	
24	21.3	21.2	21.5	21.4	21.3	21.5	21.5	21.4	21.4	21.5	21.6	21.5	21.3	21.8	21.6	21.5	21.5	21.5	21.4	21.3	21.2	21.7	21.6	21.5	21.2	21.8	21.5	24	
25	21.4	21.3	21.3	21.5	21.3	21.6	21.3	21.5	21.5	21.5	21.5	21.5	21.4	21.2	21.2	21.1	21.1	21.1	21.8	21.2	21.4	21.4	21.4	21.4	21.1	21.8	21.4	24	
26	21.4	21.6	21.5	21.5	21.4	21.5	21.5	21.5	21.5	21.5	21.5	21.6	21.6	21.7	21.6	21.4	21.4	21.3	21.6	21.5	21.5	21.4	21.6	21.5	21.3	21.7	21.5	24	
27	21.5	21.5	21.5	21.5	21.6	21.5	21.6	21.5	21.5	21.5	21.6	21.5	21.5	21.2	21.1	21.8	21.3	21.3	21.5	21.5	21.3	21.6	21.4	21.5	21.1	21.8	21.5	24	
28	21.5	21.3	21.6	21.2	21.6	21.5	21.4	21.3	21.3	21.4	21.5	21.5	21.5	21.5	21.5	21.5	21.4	21.5	21.4	21.4	21.4	21.4	21.4	21.4	21.2	21.6	21.4	24	
29	21.4	21.5	21.2	21.5	21.5	21.5	21.6	21.5	21.3	21.6	21.4	21.5	21.5	21.9	21.7	21.6	21.3	21.6	21.5	21.4	21.3	21.6	21.4	21.6	21.2	21.9	21.5	24	
30	21.5	21.5	21.5	21.4	21.5	21.5	21.5	21.4	21.6	21.6	21.5	21.5	21.9	21.8	21.9	21.9	21.6	21.3	21.8	21.4	21.6	21.8	21.4	21.3	21.3	21.9	21.6	24	
HOURLY MAX	22.7	22.8	22.8	23.0	22.9	22.7	22.9	23.0	23.1	22.7	22.1	22.7	22.5	22.2	22.0	22.1	22.0	22.3	22.6	22.7	22.7	22.7	22.7	22.8					
HOURLY AVG	21.6	21.6	21.6	21.6	21.7	21.7	21.5	21.5	21.7	21.4	21.4	21.4	21.4	21.2	21.1	21.1	21.1	21.2	21.3	21.4	21.4	21.4	21.5	21.6					

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

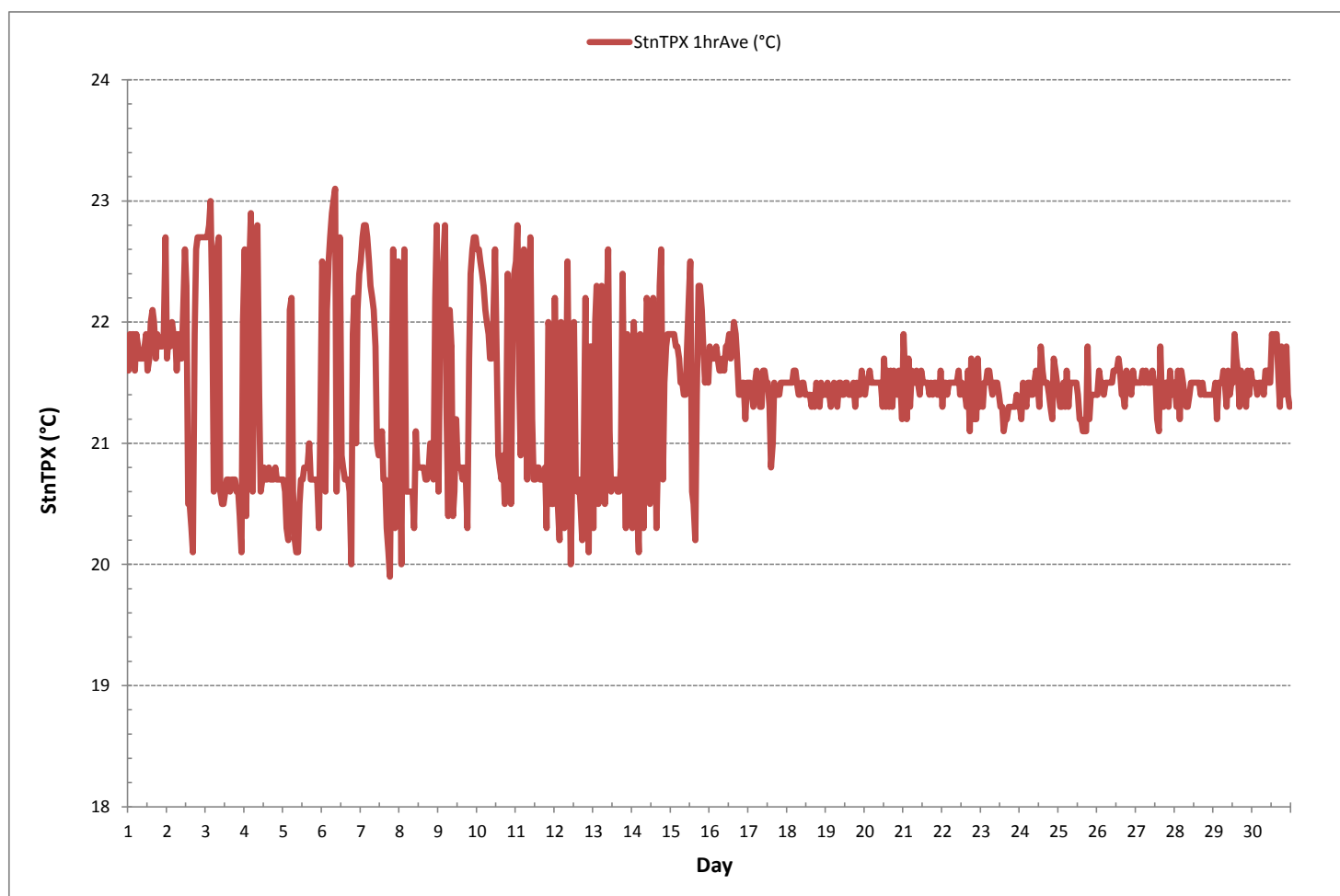
24 HR AVERAGES November 2016



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	19.9	°C	@ HOUR(S)	18	ON DAY(S)	7
MAXIMUM 1-HR AVERAGE:	23.1	°C	@ HOUR(S)	8	ON DAY(S)	6
MAXIMUM 24-HR AVERAGE:	21.9	°C			ON DAY(S)	2
					VAR-VARIOUS	
OPERATIONAL TIME:					720	hrs
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	0.59		MONTHLY AVERAGE:		21.4	°C

STATION TEMPERATURE Hourly Averages (StnTPX °C)



APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE



Thermo 43C Sulphur Dioxide Analyzer Calibration

Date:	November 7, 2016	Barometric Pressure:	27.82 inHg
Company/Airshed:	PRAMP	Station Temperature °C:	21
Location/Station Name:	986b	Weather Conditions:	Mix of sun and clouds
Parameter:	Sulphur Dioxide	Calibration Purpose:	routine monthly
Start Time 24 hr. (mst):	10:25	Performed By/Reviewer:	Raja Abid Trina Whitsitt
End Time 24 hr. (mst):	14:09	Cal Gas Expiry Date:	May 23, 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:	October 18, 2016	As Found C.F.:	1.022
Previous C.F.:	0.999	New C.F.:	0.999

Calibrator:

Flow Meter ID's:	n/a
Make & Model:	API 700
Serial #:	830
Cal Gas Cylinder I.D. #:	LL 119513
Cal Gas Conc. (ppm):	50.6

Standard Calibration Points for Ranges

Point	ppb
High	380
Mid	180
Low	90

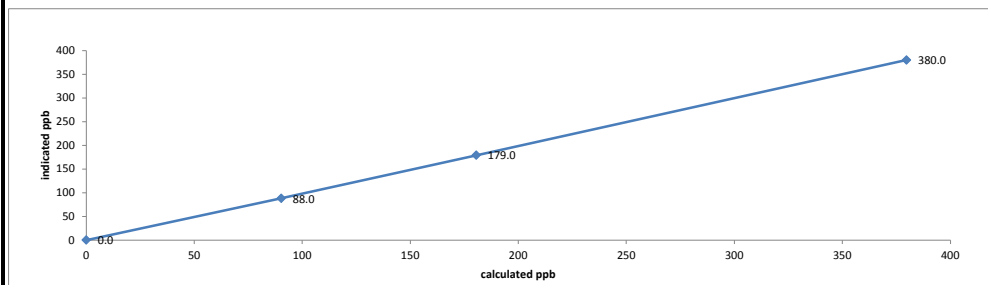
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5998	0.00	5998	0.0	-0.5	n/a
as found high	5952	45.00	5997	379.7	371.0	1.022
adjusted zero	5998	0.00	5998	0.0	0.0	n/a
adjusted high	5952	45.00	5997	379.7	380.0	0.999
mid	5977	21.40	5998	180.5	179.0	1.008
low	5987	10.70	5998	90.3	88.0	1.026
calibrator zero	5998	0.00	5998	0.0	0.0	n/a
Average C.F. =						1.011

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS
Slope =	0.997	> or = 0.995
b (Intercept as % of full scale) =	0.26%	.95-1.05
% change in C.F. from last cal =	-2.31%	± 3% F.S.
		± 10%

Thermo 43C Sulphur Dioxide Analyzer Calibration

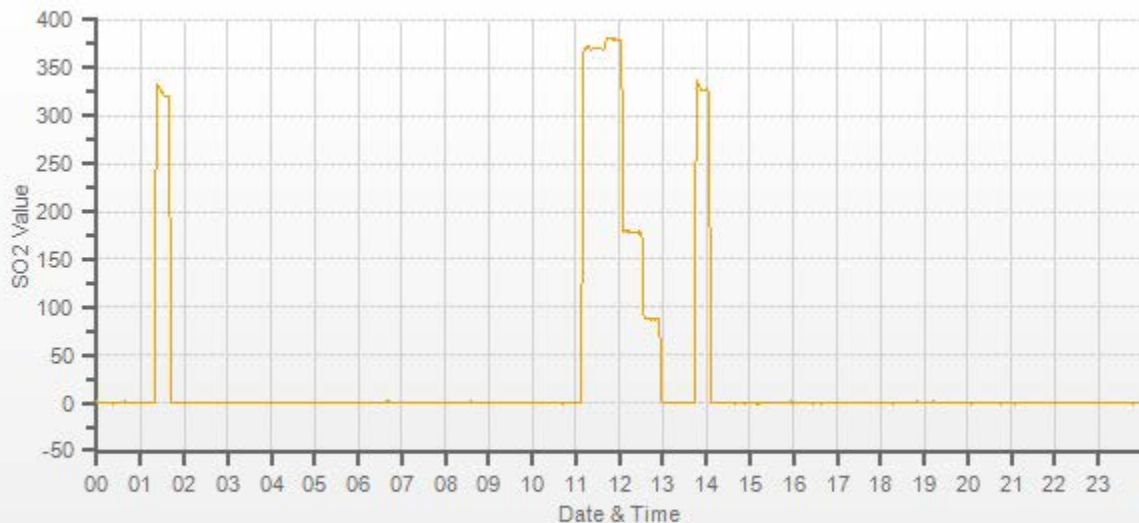


BKG:	66.4	BKG:	68.6
COEF:	0.887	COEF:	0.909
PMT:	-654	PMT:	-654
LAMP:	842	LAMP:	841
BATTERY:	3.2	BATTERY:	3.2
INTERNAL:	27.8	INTERNAL:	28.2
CHAMBER:	45.3	CHAMBER:	45.3
PRESSURE:	496.2	PRESSURE:	493.5
FLOW:	0.705	FLOW:	0.711
INTENSITY:	37669	INTENSITY:	38216
CONVERTER:	n/a	CONVERTER:	n/a
CONVERTER SET:	n/a	CONVERTER SET:	n/a
Expected Value:	318.5	Expected Value:	326.8

Comments:

The analyzer sample inlet filter was changed.

The analyzer cooling fan filter(s) were cleaned.



— SO2[ppb]

TOTAL REDUCED SULPHUR



Thermo 43i Total Reduced Sulphur Analyzer Calibration

Date:	November 7, 2016	Barometric Pressure:	27.82 inHg
Company/Airshed:	PRAMP	Station Temperature °C:	21
Location/Station Name:	986b	Weather Conditions:	Mix of sun and clouds
Parameter:	Total Reduced Sulphur	Calibration Purpose:	routine monthly
Start Time 24 hr. (mst):	13:27	Performed By/Reviewer:	Raja Abid Trina Whitsitt
End Time 24 hr. (mst):	17:43	Cal Gas Expiry Date:	December 1, 2018
Calibration Method:	Gas Dilution	Converter Model & s/n (if applicable):	CD NOVA CDN101#516

Analyzer:

ID# or Serial Number:	1314057760	Range ppb:	100	Station SO ₂ Analyzer Range?	
Last Calibration Date:	October 18, 2016	As Found C.F.:	1.032		500 ppb
Previous C.F.:	1.000	New C.F.:	1.001		

Calibrator:

Flow Meter ID's:	n/a
Make & Model:	API 700
Serial #:	830
Cal Gas Cylinder I.D. #:	BLM 002197
Cal Gas Conc. (ppm):	10.3

Standard Calibration Points for Ranges	
Point	ppb
High	78
Mid	38
Low	19

SO₂ Scrubber Check (10 mins.)

Start/End Time 24 hr.:	14:12-14:22
Target Concentration (ppb):	380
Result (ppb):	0.4
Zero Corrected Result (ppb):	0

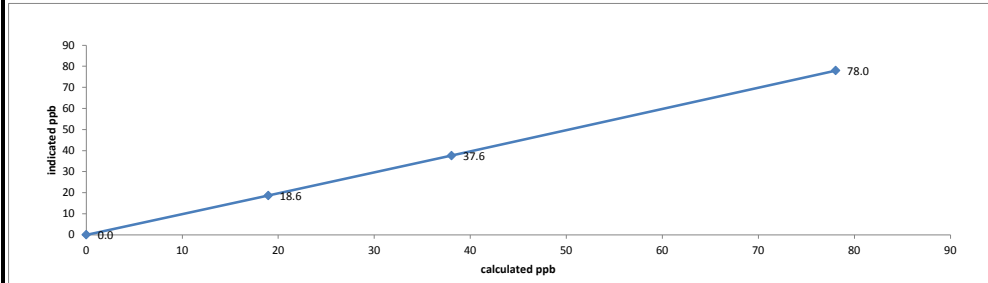
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	7497	0.00	7497	0.0	0.3	n/a
as found high	7439	56.80	7496	78.0	75.9	1.032
adjusted zero	7497	0.00	7497	0.0	0.0	n/a
adjusted high	7439	56.80	7496	78.0	78.0	1.001
mid	7470	27.70	7498	38.1	37.6	1.012
low	7482	13.80	7496	19.0	18.6	1.019
calibrator zero	7497	0.00	7497	0.0	0.3	n/a
Average C.F. =						1.011

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	> or = 0.995
Slope =	1.000		.95-1.05
b (Intercept as % of full scale) =	0.23%		± 3% F.S.
% change in C.F. from last cal =	-3.24%		± 10%

Thermo 43i Total Reduced Sulphur Analyzer Calibration

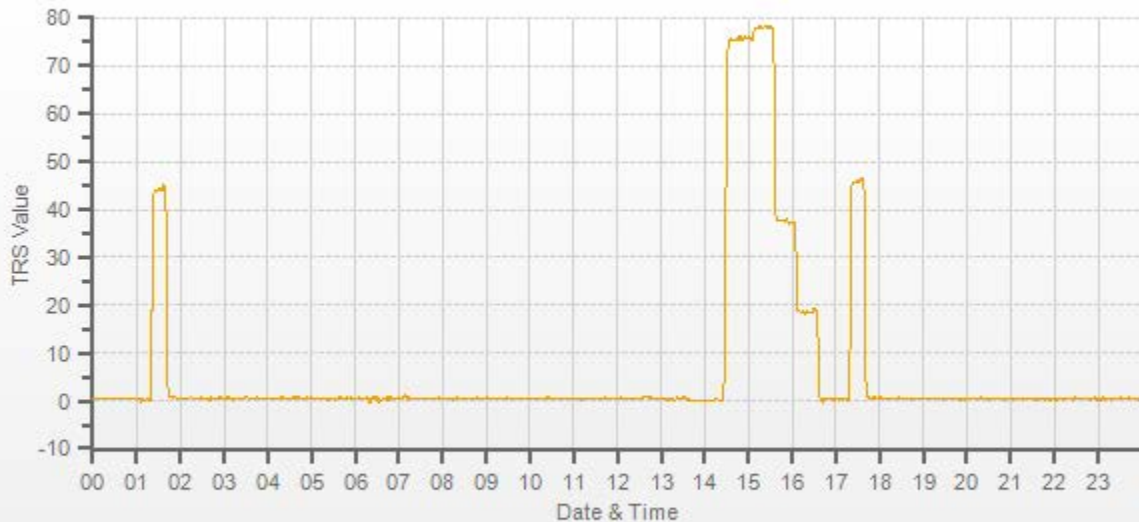


BKG:	11.0	BKG:	11.3
COEF:	0.979	COEF:	0.993
PMT:	-609.8	PMT:	-609.8
FLASH:	918	FLASH:	918
INTERNAL:	30.8	INTERNAL:	29.6
CHAMBER:	45.0	CHAMBER:	45.0
PERM OVEN GAS:	45.00	PERM OVEN GAS:	44.99
PERM OVEN HEATER:	44.96	PERM OVEN HEATER:	44.45
PRESSURE:	663.7	PRESSURE:	663.8
SAMPLE FLOW:	0.422	SAMPLE FLOW:	0.420
LAMP INTENSITY:	86	LAMP INTENSITY:	86
CONVERTER:	820	CONVERTER:	820
CONVERTER SET:	820	CONVERTER SET:	820
Expected Value:	44.6	Expected Value:	46.5

Comments:

The analyzer sample inlet filter was changed.

The analyzer cooling fan filter(s) were cleaned.



— TRS[ppb]

TOTAL HYDROCARBON



Thermo 55i Methane/Non-Methane Analyzer Calibration

Date:	November 7, 2016	Barometric Pressure:	27.82 inHg
Company/Airshed:	PRAMP	Station Temperature °C:	21
Location/Station Name:	986b	Weather Conditions:	Mainly cloudy with clear breaks
Parameter:	CH ₄ / NMHC / THC	Calibration Purpose:	routine monthly
Start/End Time 24 hr. (mst):	10:25/14:29	Performed By/Reviewer:	Raja Abid Trina Whitsitt
Calibration Method:	Gas Dilution	Cal Gas Expiry Date:	January 9, 2021

Analyzer:		Correction Factors:		
ID# or Serial Number:	1022143392	Previous C.F.:	As Found C.F.:	New C.F.:
Measured Flow:	1031	CH ₄ = NMHC = THC =	1.000	0.999
Last Calibration Date:	October 18, 2016		1.000	0.982
Range ppm:	20 CH ₄ /20 NMHC/40 THC		1.000	0.993
			1.000	0.999

Calibrator:		Standard Calibration Points for Analyzer Range of 20/20/40 ppm			
Flow Meter ID's:	n/a	Point	CH ₄	NMHC	THC
Make & Model:	EnviroNics 6100	High	13.00	13.00	26.00
Serial #:	5212	Mid	7.00	7.00	14.00
Cal Gas Cylinder I.D. #:	LL 19638	Low	3.00	3.00	6.00
CH ₄ Cylinder Conc. =	880.0	=C ₄ H ₈ Cylinder Conc.			
CH ₄ as C ₃ H ₈ =	836.0	=total CH ₄ equivalent			

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

Calibrator Flow Rates (cc/min)				Calculated CH ₄ (ppm)	Calculated NMHC (ppm)	Calculated THC (ppm)	Indicated CH ₄ (ppm)	Indicated NMHC (ppm)	Indicated THC (ppm)	Correction Factors:		
Point	Diluent	Cal Gas	Total Flow							CH ₄	NMHC	THC
as found zero	2997	0.00	2997	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
as found high	2946	49.96	2996	14.67	13.94	28.62	14.69	14.19	28.82	0.999	0.982	0.993
adjusted zero	2997	0.00	2997	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
adjusted high	2946	49.96	2996	14.67	13.94	28.62	14.67	13.94	28.63	1.000	1.000	0.999
mid	2972	24.95	2997	7.33	6.96	14.29	7.39	6.96	14.36	0.991	1.000	0.995
low	2986	11.98	2998	3.52	3.34	6.86	3.60	3.42	6.98	0.977	0.977	0.982
calibrator zero	2997	0.00	2997	0.00	0.00	0.00	0.00	0.00	0.00	n/a	n/a	n/a
Average C.F. =										0.989	0.992	0.992

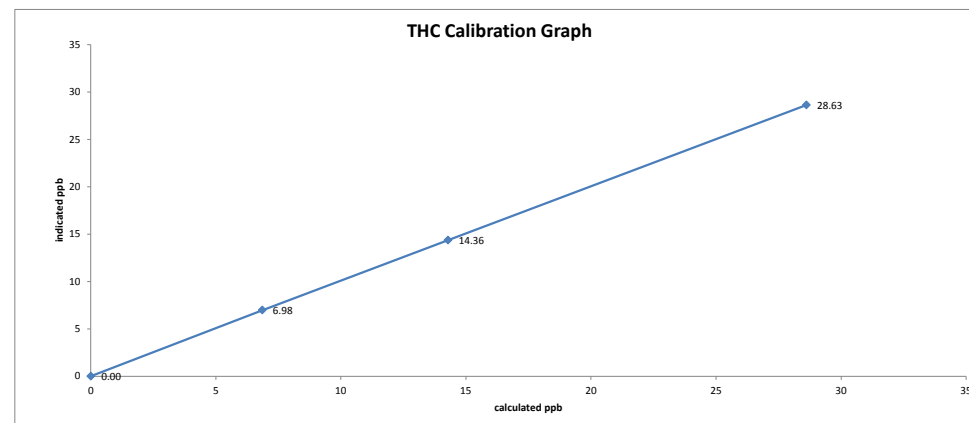
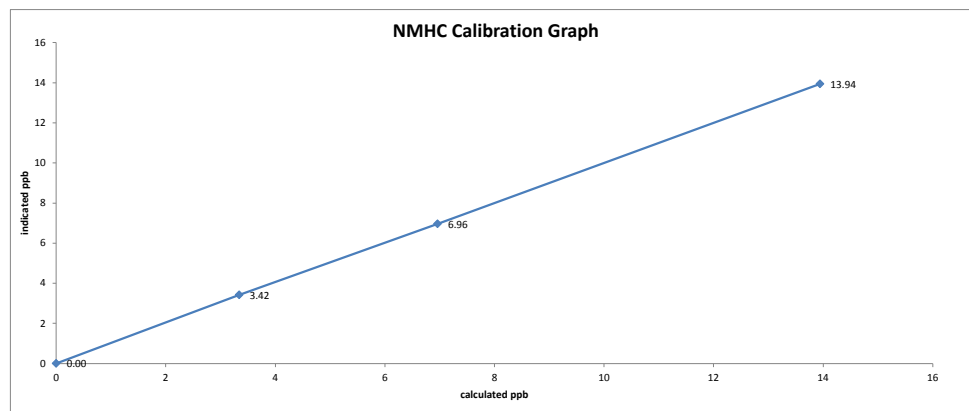
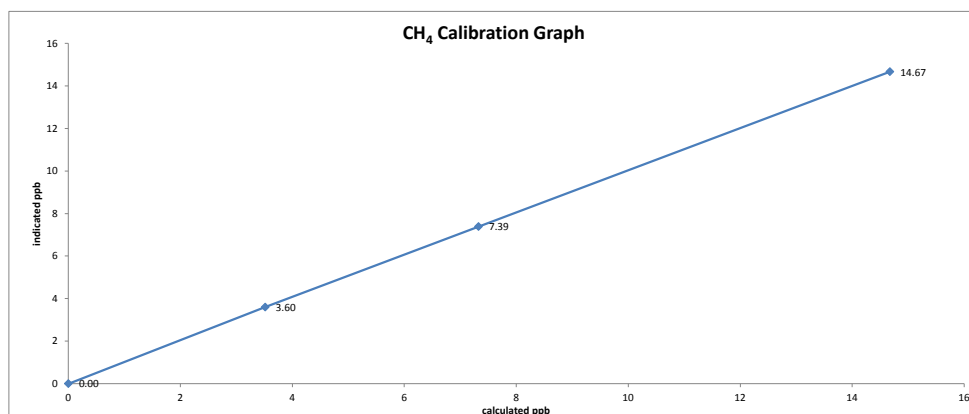
Linear Regression/Calibration Results:				LIMITS
Correlation Coefficient =	CH ₄	NMHC	THC	> or = 0.995
Slope =	0.998	0.998	0.999	.95-1.05
b (Intercept as % of full scale) =	0.24%	0.16%	0.15%	± 3% F.S.
% change in C.F. from last cal =	0.10%	1.76%	0.71%	± 10%

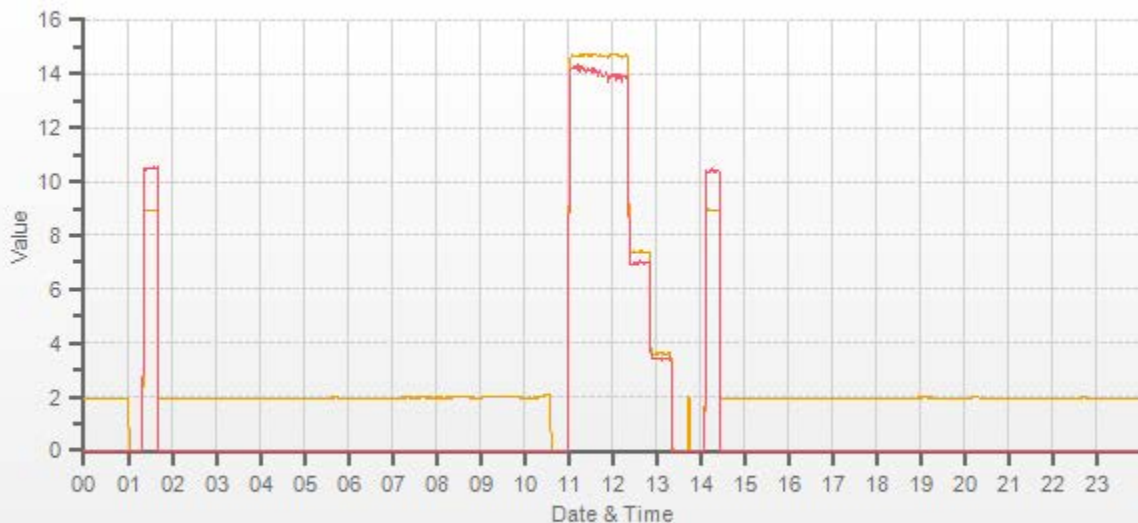
As found:			As left:			
Interface Board Voltages:	Bias Supply:	-311.4	Calibration History cnt'd:	NM Peak Area:	n/a	
Temperatures:	Detector Oven:	175.1	Crucial Settings:	Methane Start:	n/a	
	Filter:	175.0		Methane End:	n/a	
	Column Oven:	75.3		Backflush:	n/a	
	Internal:	35.5		NMHV Start:	n/a	
Cylinder Pressures/reg.:	Carrier:	2500	50	NMHC End:	n/a	
	Fuel:	1950	50	Run History>1:	Date:	07Nov16
	Span Gas:	1050	28		Time:	10:51
	Zero Air Generator:	45		CH ₄ PK HT:	0	
Internal Pressures:	Carrier:	31.4		CH ₄ RT:	8.0	
	Fuel:	40.5		CH ₄ Baseline:	1635	
	Air:	32.4		CH ₄ LOD:	21	
	FID Status:	Status:	LIT		CH ₄ SD:	7
	Counts:	20659		CH ₄ CONC:	0.00	
	Flame:	321.3		NM PK HT:	0	
	Det Base:	175.0		NM Peak Area:	0	
Flame and Power Stats:	Last Power On:	25Oct2016@10:59		NM CONC:	0.00	
	Flameouts:	2		NM Base Start:	1670	
	Det Oven at Start:	37.2		NM Base End:	1667	
	Col Oven at Start:	33.6		NM LOD:	9	
Calibration History:	Time:	n/a		NM Start IDX:	30	
	Type:	n/a		NM End IDX:	48	
	Status:	n/a		NM Max Slope:	4.4e-01	
	Check/Adjust:	n/a		NM Min Slope:	-5.9e-01	
	CH ₄ Span Conc:	n/a		NM PT Count:	0	
	CH ₄ SP Ratio:	n/a	Expected Values:	Previous CH ₄ :	9.04	
	CH ₄ RT:	n/a		Previous NMHC:	10.41	
	CH ₄ PK IDX:	n/a		Previous THC:	19.46	
	CH ₄ PK HT:	n/a		New CH ₄ :	8.95	
	NM Span Conc:	n/a		New NMHC:	10.40	
	NM SP Ratio:	n/a		New THC:	19.35	

Comments:	The analyzer sample inlet filter was changed.	A new nitrogen cylinder was installed.
	A new hydrogen cylinder was installed.	No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.
	The analyzer cooling fan filter(s) were cleaned.	

Flow measured 10:31-10:34. 10:25-13:42-Calibration performed. 13:43-13:47 drift in readings to disconnect calibrator, connect sample line and start IZS. IZS started at 13:48

Date:	November 7, 2016	Start/End Time 24 hr. (mst):	10:25/14:29
Company/Airshed:	PRAMP	Calibration Purpose:	routine monthly
Location/Station Name:	986b	Calibration Method:	Gas Dilution





CH4[ppm] NMHC[ppm]

WIND SYSTEM



Meteorological Sensor Audit

Station Information

Company:	Three Creeks	Performed By:	Chris Wesson
Location:	Three Creeks 986B	Reason:	Audit
Audit Date:	03-May-16	Start Time (mst):	08:33
Previous Audit Date:	NA	End Time (mst):	08:55

Wind Speed

Sensor make:	RM Young	Sensor height:	15
Sensor model:	5103VK	Serial Number:	43711
Calibrator:	RM Young	Variable speed motor:	CA 03309
Voltage range:	0-1	Output signal range:	0-200 kph

Wind Speed Audit Data

RPM	Wind Speed Actual	Indicated WS - CW	Indicated WS-CCW	Correction Factor
0	0.0	0.04	0.06	-
1000	17.6	17.76	17.67	0.99
2000	35.28	35.32	35.39	1.00
3000	52.92	52.98	53	1.00
4000	70.56	70.65	70.67	1.00
5000	88.2	88.32	88.34	1.00
6000	105.84	106	106	1.00
7000	123.48	123.6	123.6	1.00
8000	141.12	141.3	141.3	1.00
9000	158.76	158.9	159	1.00
10000	176.4	176.6	176.6	1.00
Average Correction Factor:				1.00

Wind Direction

Sensor make:	RM Young	Sensor height:	15
Sensor model:	5103VK	Serial Number:	43711
Calibrator:	RM Young	Variable speed motor:	NA
Voltage range:	0-1	Output signal range:	0-360 Deg

Wind Direction Audit Data

Wind Direction	Indicated	Correction Factor
0	0.1	NA
45	45.0	1.00
90	90.4	1.00
135	135.1	1.00
180	180.4	1.00
225	225.0	1.00
270	270.8	1.00
315	316.1	1.00
360	360.0	1.00
		NA
Average Correction Factor:		1.00

Remarks: The wind system was audited at Maxxam shop

Audit Performed by: Chris Wesson

CALIBRATORS

Company: Maxxam

Operator: Christopher Wesson
Calibrator:

Make/Model API 700
 Serial Number 830
 Last Verification Date December 2014
 SO₂ Cylinder Conc. 50.3
 SO₂ Cylinder S/N LL42475

Flow Measurement Device:

Make/Model N/A
 Serial Number N/A
 Temperature (°C) N/A
 Barometric Pressure N/A

Flow Measurements

Pt. No. 1 77.5 Pt. No. 2 37.8 Pt. No. 3 18.9

Calibrator Flow (scm)	Calculated Concentration (ppm)	Indicated Concentration (ppm)	% Difference	
			vs Audit Gas	% Diff. Limit
Zero Air	0.000	0.000		
4998	0.780	0.746	-4%	± 10%
5002	0.380	0.365	-4%	± 10%
4997	0.190	0.182	-4%	± 10%
Absolute Average Percent Difference			4%	± 10%

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

SO₂ **LIMITS**
 Correlation= 1.0000 **≥ 0.995**
 m (Slope)= 0.9565 **0.90-1.10**
 b (Intercept % of FS)= 0.0436 **± 3% F.S.**

AENV Standards
Audit Calibrator

Make/Model R&R MFC 201
 Serial/AMU Number AMU 1690

SO₂ Analyzer

Make/Model Teco 43C
 Serial/AMU Number AMU 1623
 Last Calibration Date January 19, 2016
 Full Scale (ppm) 1.0

COMMENTS:

Gas was check for accuracy - 1% low from stated cylinder gas concentration.
 Flows are not measured at each pt - AMD not being followed as per section 5.0.
 Checked SO₂ high pt using a Sabio 2010 - found a significantly higher response.
 Both MFC's need to be re-calibrated.

Auditor: Al Clark

Date: January 19, 2016

Operator Signature: 

Location: McIntyre Center Edmonton

Company <u>Maxxam</u>		Operator: <u>Chris Wesson</u>	
Calibrator:		Flow Measurement Device:	
Make/Model	<u>EnviroNics 6100</u>	Make/Model	<u>Bios Definer 220</u>
Serial Number	<u>5212</u>	Serial Number	<u>High - 128686, Low 129069</u>
Last Verification Date	<u>December 18, 2014</u>	Temperature (°C)	<u>NA</u>
NO Cylinder S/N	<u>LL119317</u>	Barometric Pressure	<u>NA</u>
NO/NOx Concentration	<u>50.3/50.3</u>		

Dilution Flow (sccm)			
Pt. #1	<u>77.4</u>	Pt. #2	<u>37.7</u>
Pt. #3	<u>18.9</u>		
Gas Flow (sccm)			
Pt. #1	<u>5000</u>	Pt. #2	<u>5000</u>
Pt. #3	<u>5000</u>		

Calibrator Flow (sccm)		Calculated Conc.(ppm)		Indicated Conc.(ppm)			% Difference vs Audit Gas	
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
4995	0.0	0.000	0.000	0.000	0.000	0.000	Limit ± 10%	
5000	77.4	0.780	0.780	0.785	0.001	0.786	1%	1%
4996	37.7	0.379	0.379	0.380	0.000	0.380	0%	0%
4991	18.9	0.190	0.190	0.190	0.000	0.190	0%	0%
Absolute Average Percent Difference							0%	0%

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)=	1.0068	0.90-1.10		m (Slope)=	1.0081
b (Intercept % of FS)=	-0.0783	± 3% F.S.		b (Intercept % of FS)=	-0.0981

Flow	O ₂ Conc	NO Decrease	NO	NO ₂	NOX	% Diff. Vs Audit gas	
5000	0	0.000	0.785	-0.001	0.784	NO ₂	% Diff. Limit
5000	0.5	0.500	0.285	0.499	0.784	0%	± 10%
5000	0.25	0.257	0.528	0.258	0.786	1%	± 10%
5000	0.1	0.101	0.684	0.104	0.788	4%	± 10%
Absolute Average Percent Difference						2%	± 10%

LINEAR REGRESSION ANALYSIS

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

NO₂		LIMITS
Correlation=	1.0000	≥ 0.995
m (Slope)=	0.9974	0.90-1.10
b (Intercept % of FS)=	0.1057	± 3% F.S.

AENV Standards		NO_x Analyzer	
Audit Calibrator		Make/Model <u>Thermo 42i</u>	
Make/Model	<u>Thermo 146i</u>	Serial/AMU Number	<u>1868</u>
Serial/AMU Number	<u>1809</u>	Last Calibration Date	<u>February 1, 2016</u>
		Full Scale (ppm)	<u>1</u>

COMMENTS: Flow values above were the calibrator displayed values; flows were also measured using certified flow meters (Maxxam-owned); the target concentrations were as follows: High 0.771ppm, Mid 0.377ppm, Low 0.189ppm; % Diff High 2%, Mid 1%, low 1%

Auditor: Shel Beaton
Operator Signature: [Signature]

Date: February 3, 2016
Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2016-086CGA

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

Reference Calibrator and Gas:

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

Flow Measurement Device:

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

Reference Analyzer:

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

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

Previous Stated Concentration PPM: 50.6

Percent variance from Stated: 1.1

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

Auditor: Al Clark
Operator Signature: [Signature]

Date: June 17, 2016
Location: McIntyre Center Edmonton



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2015-112CGA

Company: Maxxam Operator's Name: Chris Wesson
Cylinder #: BLM002197 Concentration PPM: 10.3 Tolerance(%): 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: February 2, 2016
Gas Type: H2S Conc. 20.43
Cylinder Number: CAL015584

Flow Measurement Device:

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

Reference Analyzer:

Make/Model: Thermo 450i Serial/AMU Number: 1980
Instrument Settings: Zero: 15.3 Span: 1.126 Range: 0.1
Last Calibration: Date: 1-Feb-16 C.F. 1.000 Done By: SB

Calibrator Flows (sccm)		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
Dilution	Gas				
5017	0.0	0.000	0.00751	133.140	10.4
5054	37.96	0.078	0.00751	133.140	10.4
5055	17.78	0.037	0.00352	284.308	10.4
5029	9.07	0.019	0.00180	554.465	10.3
Average Cylinder Concentration:					10.3

Previous Stated Concentration PPM: 10.3

Percent variance from Stated: 0.5

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: [Signature]

Date: February 2, 2016
Location: McIntyre Center Edmonton



Calibration Gas Audit

CH₄ / C₃H₈ Cylinder Gas

File No. 2013-298CGA

Company: Maxxam Operators name: Theo
Cylinder #: LL19638 Conc CH₄ (PPM) 880/304 Tolerance (%) 2 Certified By: Praxair

Reference Calibrator and Gas:

Make/Model R&R MFC 201
Serial Number AMU 1690
Last Verification Date October 17, 2013
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 1659
Temp. °C 21.0 C
B.P. 706 mmhg

Reference Analyzer:

Make/Model Teco 55C Serial/AMU Number: 1625
Instrument Settings Zero: N/A Span: N/A Range: 20
Last Calibration: Date: Oct 17/13 C.F. 1.000 Done By: Al Clark

Calibrator Flows (scm)		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
3500	0.0	0.04	0.00				
3505	51.9	13.16	12.58	0.01481	67.534	889	309
3487	22.2	5.64	5.43	0.00637	167.072	886	310
3458	10.8	2.80	2.73	0.00312	320.185	897	318
Average Cylinder Concentration:						890	312

CH₄
Previous Stated Concentration PPM: 880
Percent variance from Stated: 1.2

C₃H₈
304
2.7

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: October 17, 2013
Operator Signature: [Signature] Location: McIntyre Center Edmonton

APPENDIX III
REPORT CERTIFICATION FORM

Report Certification Form

Alberta Airshed (if applicable)	EPA Approval or Code of Practice Registration # (if applicable)
NO	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

22-12-2016

Report Issued Date (dd-mm-yyyy)

APPENDIX IV
DATA VALIDATION CERTIFICATION FORM

Validation Certificate Form

Client: Peace River Area Monitoring Program Committee

Project #: 8449-2016-11-67-C

Site: Three Creeks 986b Station

Contact: Karla Reesor

Level 0 Preliminary Verification



Date 09-Dec-2016

Level 1 Primary Validation



Date 09-Dec-2016

Level 2 Final Validation



Date 15-Dec-2016

Level 3 Independent Data Review



Date 15-Dec-2016

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.