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**AMBIENT AIR MONITORING MONTHLY DATA REPORT**  
**PEACE RIVER AREA MONITORING PROGRAM COMMITTEE**  
**RENO STATION**

**JOB #: 196-2018-01-93-C**

**January 2018**

Prepared for:

**PEACE RIVER AREA MONITORING PROGRAM COMMITTEE**

**Attention: LILY LIN**

**DATE: February 21, 2018**

Prepared by:

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

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

Reviewed by:

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

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

## **SUMMARY**

In January 2018, Maxxam Analytics was contracted to manage the ambient air quality monitoring and maintenance activities at the Reno Station, near Peace River Oil Sands Area 1, Alberta. The monitoring station provides continuous meteorological measurements and air quality data for non-compliance parameters, as requested by the PRAMP Committee.

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

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

**TRS:** Two additional zero-span checks were performed on January 6 and January 7 to assess a biased high span response. A full multi-point calibration was completed on January 9 to correct the drift. The hour following the calibration was discarded due to the analyzer's slow recovery from the post-calibration internal zero-span check. Four hours of downtime were recorded due to this event.

**THC/CH<sub>4</sub>/NMHC:** The routine monthly calibration attempt on January 9 did not meet AMD requirements, due to contamination from the gas regulator. Column conditioning was run overnight and a successful post-repair calibration was completed on January 10. Twenty hours of downtime were recorded due to this event.

The summary of results is presented on the following pages.

Any deviations or modifications made to the sampling or analytical methods are outlined in Section 1.0, Discussion. On this basis, Maxxam Analytics is issuing this completed report to Peace River Area Monitoring Program Committee, Reno 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<br>TIME<br>(%) |
|-----------------------------------------------|------------|-------|-------------|-------|--------------------|----------------|-----|------|------------------------|-------------------------------|---------|-----|----------------------------|
| Reno Station                                  |            |       |             |       |                    | 1-HOUR         |     |      |                        |                               | 24-HOUR |     |                            |
| PARAMETER                                     | OBJECTIVES |       | EXCEEDANCES |       | MONTHLY<br>AVERAGE | READING        | DAY | HOUR | WIND<br>SPEED<br>(kph) | WIND<br>DIRECTION<br>(sector) | READING | DAY |                            |
|                                               | 1-hr       | 24-hr | 1-hr        | 24-hr |                    |                |     |      |                        |                               |         |     |                            |
| SO <sub>2</sub><br>(ppb)                      | 172        | 48    | 0           | 0     | 0                  | 2              | 16  | 11   | 5.0                    | SSW                           | 1       | 16  | 100.0                      |
| TRS<br>(ppb)                                  | -          | -     | -           | -     | 0.4                | 1.0            | 27  | 8    | 1.5                    | SSW                           | 0.6     | 23  | 99.5                       |
| THC<br>(ppm)                                  | -          | -     | -           | -     | 2.13               | 4.10           | 20  | 6    | 1.2                    | SE                            | 2.44    | 23  | 97.3                       |
| CH <sub>4</sub><br>(ppm)                      | -          | -     | -           | -     | 2.13               | 4.10           | 20  | 6    | 1.2                    | SE                            | 2.44    | 23  | 97.3                       |
| NMHC<br>(ppm)                                 | -          | -     | -           | -     | 0.00               | 0.07           | 13  | 8    | 3.7                    | S                             | 0.01    | 13  | 97.3                       |
| RELATIVE<br>HUMIDITY<br>(%)                   | -          | -     | -           | -     | 73                 | 88             | 4   | 7    | 3.3                    | S                             | 86      | 22  | 100.0                      |
| BAROMETRIC<br>PRESSURE<br>(millibar)          | -          | -     | -           | -     | 938                | 959            | 28  | 2    | 2.6                    | SSW                           | 955     | 28  | 100.0                      |
| AMBIENT<br>TEMPERATURE<br>(°C)                | -          | -     | -           | -     | -12.7              | 3.4            | 18  | 10   | 5.0                    | SW                            | 0.4     | 18  | 100.0                      |
| STATION<br>TEMPERATURE<br>(°C)                | -          | -     | -           | -     | 22.2               | 23.0           | 19  | 18   | 4.0                    | WSW                           | 22.7    | 18  | 100.0                      |
| VECTOR WS<br>(kph)                            | -          | -     | -           | -     | 0.7                | 17.7           | 8   | 10   | -                      | N                             | 10.7    | 21  | 100.0                      |
| VECTOR WD<br>(sec)                            | -          | -     | -           | -     | 194 (SSW)          | -              | -   | -    | -                      | -                             | -       | -   | 100.0                      |

**SOUR GAS PROCESSING INDUSTRY**  
**MONTHLY REPORT SUMMARY**

**Reno Station**

**Peace River Area Monitoring Program Committee**

Plant Name / Location

Company

| Licence Number | Report Date |         |
|----------------|-------------|---------|
|                | YEAR        | MONTH   |
| N/A            | 2018        | January |

| CONTINUOUS AMBIENT MONITORING |                    |                    |                           |  |                   |                           |
|-------------------------------|--------------------|--------------------|---------------------------|--|-------------------|---------------------------|
| PARAMETER                     | % TIME OPERATIONAL | ONE - HOUR AVERAGE |                           |  | 24 - HOUR AVERAGE |                           |
|                               |                    | MAXIMUM VALUES     | NO. READINGS > REGULATION |  | MAXIMUM VALUES    | NO. READINGS > REGULATION |
| SO <sub>2</sub>               | 100.0              | 0.002 ppm          | 0                         |  | 0.001 ppm         | 0                         |
| TRS                           | 99.5               | 0.001 ppm          | -                         |  | 0.001 ppm         | -                         |
| THC                           | 97.3               | 4.10 ppm           | -                         |  | 2.44 ppm          | -                         |
| CH <sub>4</sub>               | 97.3               | 4.10 ppm           | -                         |  | 2.44 ppm          | -                         |
| NMHC                          | 97.3               | 0.07 ppm           | -                         |  | 0.01 ppm          | -                         |
| RH                            | 100.0              | 88 %               | -                         |  | 86 %              | -                         |
| BP                            | 100.0              | 959 mb             | -                         |  | 955 mb            | -                         |
| Ambient TPX                   | 100.0              | 3.4 °C             | -                         |  | 0.4 °C            | -                         |
| Station TPX                   | 100.0              | 23.0 °C            | -                         |  | 22.7 °C           | -                         |
| Wind Speed                    | 100.0              | 17.7 kph           | -                         |  | 10.7 kph          | -                         |
| Wind Direction                | 100.0              | -                  | -                         |  | -                 | -                         |

|                                     |
|-------------------------------------|
|                                     |
| SIGNATURE OF COMPANY REPRESENTATIVE |

|                                  |
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## Exceedance Summary Report

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### SO<sub>2</sub> 1-Hour Exceedances

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

### SO<sub>2</sub> 24-Hour Exceedances

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

*In accordance with EPEA and the Substance Release Regulation.*

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

## TABLE OF CONTENTS

| <u>Title</u>                           | <u>Page</u>                           |
|----------------------------------------|---------------------------------------|
| SUMMARY                                | 2                                     |
| MONTHLY CONTINUOUS DATA SUMMARY REPORT | 3                                     |
| SOUR GAS SUMMARY REPORT                | 4                                     |
| EXCEEDANCE SUMMARY REPORT              | 5                                     |
| TABLE OF CONTENTS                      | 6                                     |
| <br>1.0 Discussion                     | <br>8                                 |
| .....                                  |                                       |
| 2.0 Project Personnel                  | 10                                    |
| .....                                  |                                       |
| 3.0 Plant Monthly Required AMD Summary | 10                                    |
| .....                                  |                                       |
| 4.0 Calculations and Results           | 10                                    |
| .....                                  |                                       |
| 5.0 Methods and Procedures             | 11                                    |
| .....                                  |                                       |
| Appendix I                             | Continuous Monitoring Data Results 14 |
| .....                                  |                                       |
|                                        | Sulphur Dioxide 15                    |
|                                        | Total Reduced Sulphur 21              |
|                                        | Total Hydrocarbon 27                  |
|                                        | Methane 33                            |
|                                        | Non-Methane Hydrocarbon 39            |
|                                        | Wind Speed 45                         |
|                                        | Wind Direction 50                     |
|                                        | Relative Humidity 53                  |
|                                        | Barometric Pressure 56                |
|                                        | Ambient Temperature 59                |
|                                        | Station Temperature 62                |
| Appendix II                            | Equipment Calibration Results 65      |
| .....                                  |                                       |
|                                        | Sulphur Dioxide 66                    |
|                                        | Total Reduced Sulphur 69              |
|                                        | Total Hydrocarbon 72                  |
|                                        | Wind System 79                        |
|                                        | Calibrators 81                        |
|                                        | Calibration Gases 84                  |

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|                     |                                           |            |
|---------------------|-------------------------------------------|------------|
| <b>Appendix III</b> | <b>Maximum Instantaneous Data</b>         | <b>88</b>  |
| <b>Appendix IV</b>  | <b>Report Certification Form</b>          | <b>101</b> |
| <b>Appendix V</b>   | <b>Data Validation Certification Form</b> | <b>103</b> |

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## 1.0 Discussion

This monthly report consists of continuous monitoring results for the following parameters: Sulphur Dioxide (SO<sub>2</sub>), Total Reduced Sulphur (TRS), Total Hydrocarbon (THC), Methane (CH<sub>4</sub>), Non-Methane Hydrocarbon (NMHC), Relative Humidity (RH), Barometric Pressure (BP), Ambient Temperature (AmbTPX), Station Temperature (StnTPX), Wind Speed (WS) and Wind Direction (WD).

The sample inlet filter for all continuous air analyzers are replaced before the calibration begins. The sample manifold is cleaned during the site visit each month.

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

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

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

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

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

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

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

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

#### **SULPHUR DIOXIDE (SO<sub>2</sub>)**

- Operational time, for the monitoring period, was 100%.
- The routine monthly calibration was performed on January 9.

#### **TOTAL REDUCED SULPHUR (TRS)**

- Operational time, for the monitoring period was 99.5%, equivalent to four hours of downtime.
- The analyzer spanned towards the upper acceptance limit on January 5. Scheduled and additional span checks performed afterwards were within acceptance limits but suggested a need for corrective action. The issue was addressed during the routine monthly calibration performed on January 9. The calibration met AMD requirements and the expected span value was subsequently updated. The hour following the calibration was discarded due to the analyzer's slow recovery from the post-calibration internal zero-span check. Four hours of downtime were recorded due to this event.

#### **TOTAL HYDROCARBONS (THC), METHANE (CH<sub>4</sub>) and NON-METHANE HYDROCARBONS (NMHC)**

- Operational time, for the monitoring period was 97.3%, equivalent to twenty hours of downtime.
- Upon arrival at the station on January 9 for the routine monthly calibration, the carrier (Nitrogen) gas was found running low even though it had only been replaced on December 30. Further investigation revealed a leak in the regulator. The regulator was swapped with a THC regulator and calibration was commenced. However, the low point did not meet AMD requirements. It was suspected that the alternate regulator might have been a source of contamination, compromising the calibration. Column conditioning was, therefore, run overnight to remove any possible contamination. A successful post-repair calibration was completed on January 10. Twenty hours of downtime were recorded due to this event.
- As the carrier gas leakage did not impact analyzer performance, as demonstrated by the daily QC and analyzer diagnostics which met AMD requirements, showing no drifts or anomaly, and the as-found portion of the calibration was successful, data collected between the last multi-point calibration on December 30 and the calibration attempt on January 9 are deemed valid.
- The canister sampler is programmed to draw in a whole air sample when the 5-minute average concentration of NMHC is above 0.30 ppm. A representative sample of ambient air is collected over a one-hour period when the canister event is triggered. No canister event was recorded this month.

#### **WIND SPEED (WS) and WIND DIRECTION (WD)**

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

#### **RELATIVE HUMIDITY (RH)**

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

#### **BAROMETRIC PRESSURE (BP)**

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

#### **AMBIENT TEMPERATURE (AmbTPX)**

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

#### **STATION TEMPERATURE (StnTPX)**

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

## **2.0 Project Personnel**

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

## **3.0 Plant Monthly Required AMD Summary**

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

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

## **4.0 Calculations and Results**

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

## 5.0 Methods and Procedures

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

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

Maxxam AIR SOP-00208: RM Young Wind Monitor Calibration

Maxxam AIR SOP-00209: Ambient Sulphur Monitoring

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

Sulphur Dioxide - API 100A UV Fluorescent Analyzer

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

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

Wind System - RM Young Unit

Relative Humidity - RM Young Unit

Barometric Pressure - Met One Unit

Ambient Temperature - RM Young Unit

Datalogger - ESC 8832

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

**Level 0 Preliminary Verification**

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

**Level 1 Primary Validation**

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

**Level 2 Final Validation**

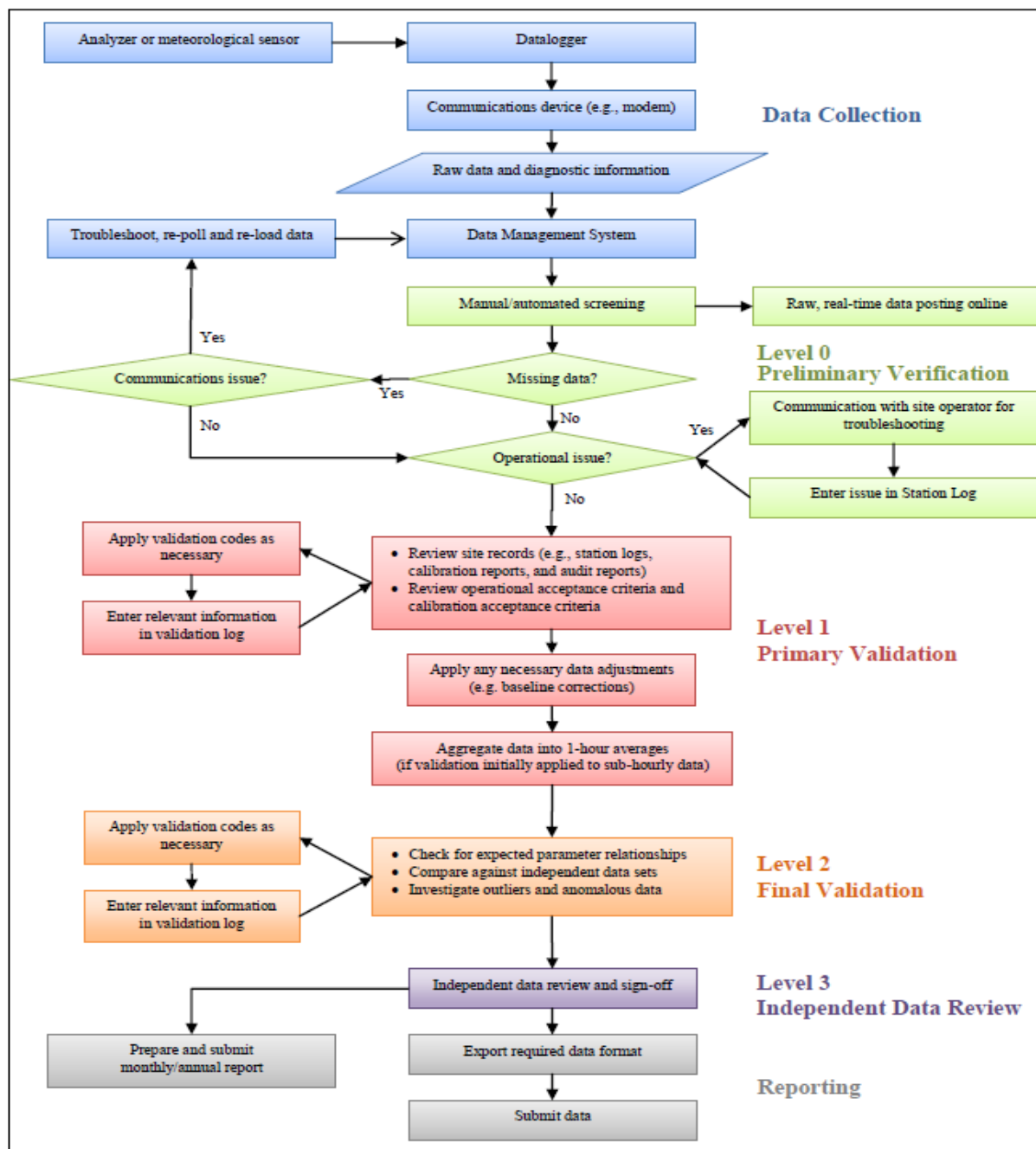
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

**Level 3 Independent Data Review**

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

**Post-Final Validation**

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



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

***APPENDIX I***  
***CONTINUOUS MONITORING DATA RESULTS***

## ***SULPHUR DIOXIDE***

**SULPHUR DIOXIDE Hourly Averages (SO<sub>2</sub> 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    | 1    | 0    | 0    | 0     | 0     | 0     | 0     | 1     | 0     | 0     | 1     | S     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 24 |
| 2              | 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     | 24 |
| 3              | 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     | 24 |
| 4              | 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     | 24 |
| 5              | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0     | 0     | 0     | 0     | S     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 24 |
| 6              | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 0     | 0     | S     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 0     | 0     | 0     | 1     | 0     | 24 |
| 7              | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | S     | 0     | 0     | 0     | 0     | 0     | 1     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 24 |
| 8              | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | S     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 24 |
| 9              | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | C     | C     | C     | C     | C     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 24 |
| 10             | 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     | 24 |
| 11             | 0    | 0    | 1    | 0    | 1    | 0    | 0    | 1    | S    | 1    | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 24 |
| 12             | 1    | 1    | 0    | 0    | 0    | 0    | 0    | S    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 1     | 1     | 1     | 1     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 24 |
| 13             | 0    | 0    | 0    | 0    | 0    | 0    | S    | 1    | 1    | 1    | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 24 |
| 14             | 0    | 0    | 0    | 0    | 0    | S    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 24 |
| 15             | 0    | 0    | 0    | 0    | S    | 0    | 1    | 1    | 1    | 0    | 0     | 0     | 0     | 0     | 1     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 24 |
| 16             | 0    | 0    | 0    | S    | 0    | 0    | 0    | 1    | 1    | 1    | 1     | 2     | 1     | 1     | 1     | 1     | 1     | 1     | 0     | 0     | 0     | 1     | 1     | 0     | 0     | 2     | 1     | 0     | 24 |
| 17             | 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     | 24 |
| 18             | 0    | 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     | 1     | 0     | 24 |
| 19             | S    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 1     | 1     | 0     | 1     | 1     | 0     | 0     | 0     | 0     | 1     | 0     | 0     | 0     | S     | 0     | 0     | 1     | 0     | 24 |
| 20             | 1    | 1    | 1    | 1    | 1    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | S     | 0     | 0     | 0     | 1     | 0     | 24 |
| 21             | 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     | 24 |
| 22             | 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     | 24 |
| 23             | 0    | 0    | 0    | 0    | 1    | 0    | 1    | 2    | 1    | 0    | 1     | 1     | 0     | 0     | 0     | 1     | 0     | 0     | S     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 2     | 0     | 24 |
| 24             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | S     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 24 |
| 25             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | S     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 24 |
| 26             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | S     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 24 |
| 27             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 0     | 0     | 0     | 0     | S     | 0     | S     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 24 |
| 28             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | S     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 24 |
| 29             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 1     | 1     | 1     | S     | 1     | 2     | 1     | 1     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 2     | 0     | 24 |
| 30             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0     | 0     | S     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 24 |
| 31             | 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     | 24 |
| HOURLY MAX     | 1    | 1    | 1    | 1    | 1    | 0    | 1    | 2    | 1    | 1    | 1     | 2     | 1     | 1     | 1     | 2     | 1     | 1     | 1     | 1     | 0     | 1     | 1     | 0     | 0     | 0     | 0     | 0     |    |
| HOURLY AVG     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |    |

**STATUS FLAG CODES**

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

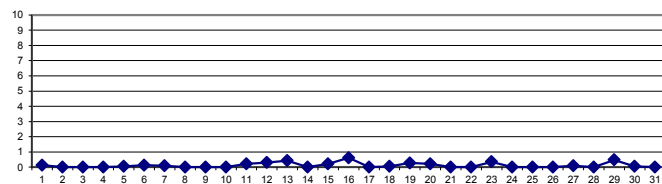
OBJECTIVE LIMIT:

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

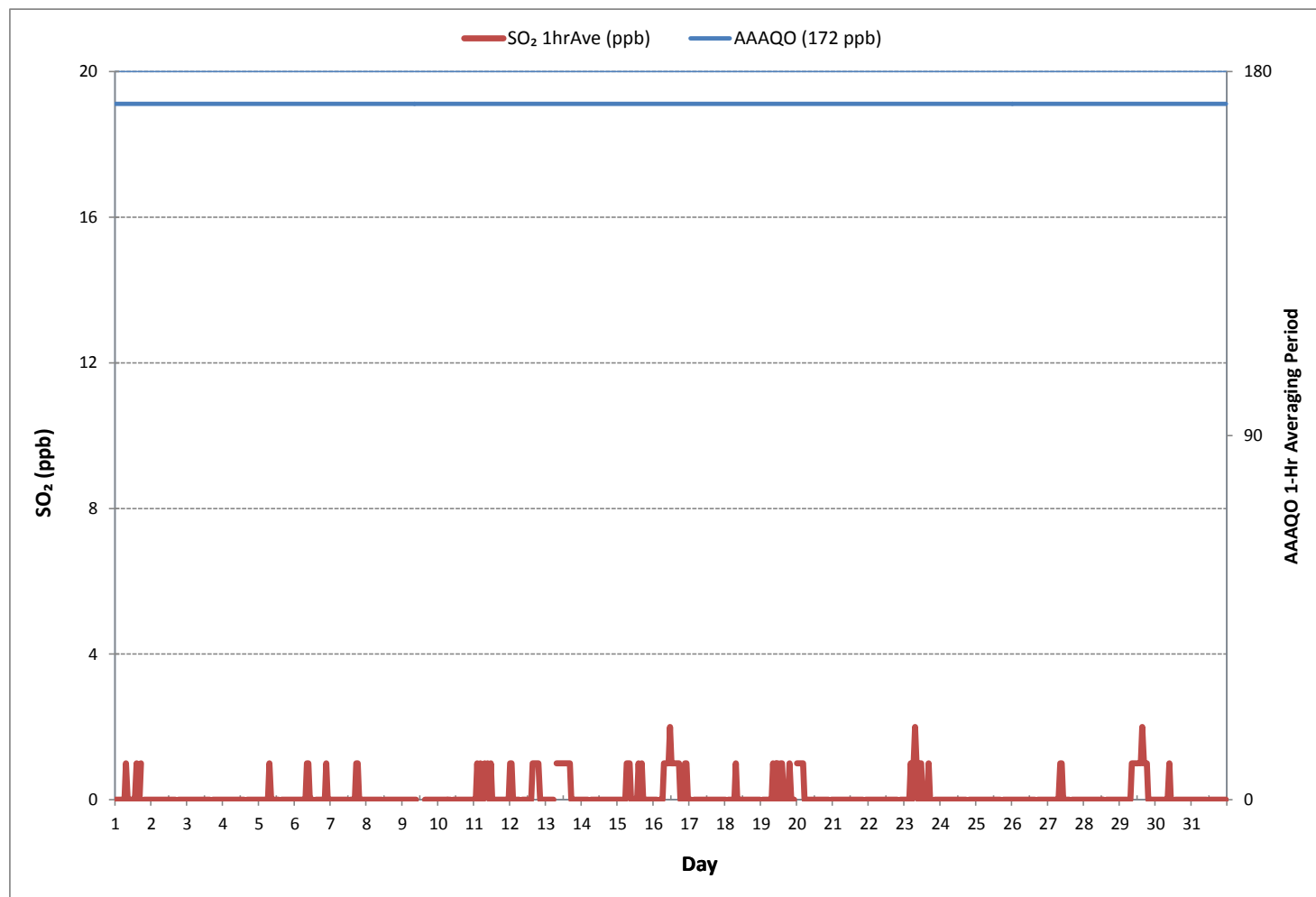
**MONTHLY SUMMARY**

|                              |                           |
|------------------------------|---------------------------|
| NUMBER OF 1-HR EXCEEDANCES:  | 0                         |
| NUMBER OF 24-HR EXCEEDANCES: | 0                         |
| NUMBER OF NON-ZERO READINGS: | 81                        |
| MINIMUM 1-HR AVERAGE:        | 0 ppb @ HOUR 0 ON DAY 1   |
| MAXIMUM 1-HR AVERAGE:        | 2 ppb @ HOUR 11 ON DAY 16 |
| MAXIMUM 24-HR AVERAGE:       | 1 ppb ON DAY 16           |
| IZS CALIBRATION TIME:        | 31 hrs                    |
| MONTHLY CALIBRATION TIME:    | 5 hrs                     |
| OPERATIONAL TIME:            | 744 hrs                   |
| AMD OPERATION UPTIME:        | 100.0 %                   |
| STANDARD DEVIATION:          | 0                         |
| MONTHLY AVERAGE:             | 0 ppb                     |

**24 HR AVERAGES January 2018**



SULPHUR DIOXIDE Hourly Averages (SO<sub>2</sub> ppb)



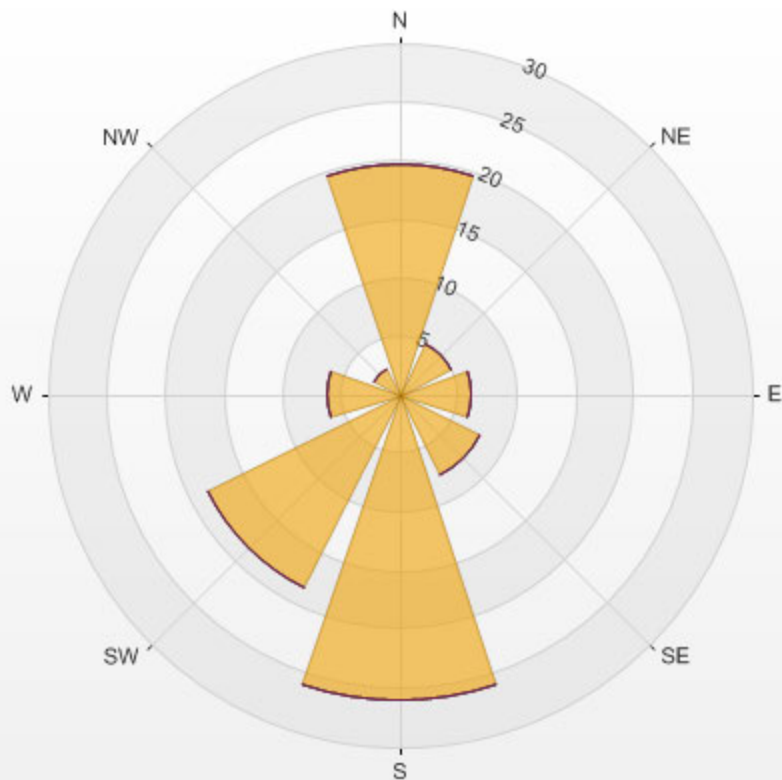
Wind: PRAMP\_RENO  
 Poll.: PRAMP\_RENO-SO<sub>2</sub>[ppb]  
 Monthly: 18/01  
 Type: PollutionRose  
 Direction: Blowing From (Wind Frequency)  
 Based On 1 Hr.

Calm: 8.33%

Calm Avg: 0.23 [ppb]

| Direction | 0-3  | 3-10 | 10-85 | 85-170 | >170.0 | Total |
|-----------|------|------|-------|--------|--------|-------|
| N         | 19.8 | 0.0  | 0.0   | 0.0    | 0.0    | 19.8  |
| NE        | 4.9  | 0.0  | 0.0   | 0.0    | 0.0    | 4.9   |
| E         | 6.2  | 0.0  | 0.0   | 0.0    | 0.0    | 6.2   |
| SE        | 7.6  | 0.0  | 0.0   | 0.0    | 0.0    | 7.6   |
| S         | 26.1 | 0.0  | 0.0   | 0.0    | 0.0    | 26.1  |
| SW        | 18.4 | 0.0  | 0.0   | 0.0    | 0.0    | 18.4  |
| W         | 6.2  | 0.0  | 0.0   | 0.0    | 0.0    | 6.2   |
| NW        | 2.4  | 0.0  | 0.0   | 0.0    | 0.0    | 2.4   |
| Summary   | 91.7 | 0.0  | 0.0   | 0.0    | 0.0    | 91.7  |

PRAMP\_RENO Poll.: PRAMP\_RENO-SO2[ppb] 2018/01/01 00:00 - 2018/01/31 23:00 Calm: 8.33% Calm Poll Avg: 0.23[ppb]



SO<sub>2</sub>[ppb] Calibration: PRAMP\_RENO Monthly: 18/01 Type: Span

Span Meas Span Ref Span Low Span High



***TOTAL REDUCED SULPHUR***

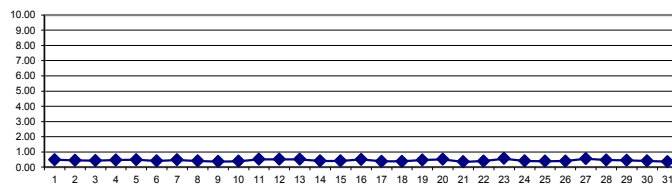
TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)

| HR START (MST) | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | DAILY | 24-HR | RDGS. |
|----------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| HR END (MST)   | 0:59 | 1:59 | 2:59 | 3:59 | 4:59 | 5:59 | 6:59 | 7:59 | 8:59 | 9:59 | 10:59 | 11:59 | 12:59 | 13:59 | 14:59 | 15:59 | 16:59 | 17:59 | 18:59 | 19:59 | 20:59 | 21:59 | 22:59 | 23:59 | MIN.  | MAX.  | AVG.  |       |
| DAY            |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 1              | 0.47 | 0.47 | 0.50 | 0.50 | 0.51 | 0.49 | 0.50 | 0.55 | 0.57 | 0.54 | 0.56  | 0.53  | 0.45  | 0.42  | 0.44  | 0.44  | 0.48  | 0.53  | S     | 0.48  | 0.41  | 0.42  | 0.43  | 0.42  | 0.41  | 0.57  | 0.48  | 24    |
| 2              | 0.42 | 0.42 | 0.41 | 0.44 | 0.43 | 0.44 | 0.45 | 0.46 | 0.46 | 0.49 | 0.50  | 0.54  | 0.38  | 0.40  | 0.40  | 0.39  | 0.39  | S     | 0.50  | 0.54  | 0.40  | 0.42  | 0.45  | 0.43  | 0.38  | 0.54  | 0.44  | 24    |
| 3              | 0.45 | 0.42 | 0.41 | 0.43 | 0.45 | 0.41 | 0.44 | 0.46 | 0.40 | 0.43 | 0.41  | 0.41  | 0.40  | 0.39  | 0.41  | 0.44  | S     | 0.54  | 0.54  | 0.54  | 0.40  | 0.37  | 0.41  | 0.40  | 0.37  | 0.54  | 0.43  | 24    |
| 4              | 0.41 | 0.40 | 0.43 | 0.42 | 0.43 | 0.40 | 0.41 | 0.46 | 0.61 | 0.63 | 0.59  | 0.55  | 0.46  | 0.46  | 0.49  | S     | 0.54  | 0.50  | 0.47  | 0.45  | 0.40  | 0.43  | 0.44  | 0.42  | 0.40  | 0.63  | 0.47  | 24    |
| 5              | 0.42 | 0.39 | 0.39 | 0.42 | 0.46 | 0.45 | 0.42 | 0.45 | 0.44 | 0.47 | 0.45  | 0.46  | 0.51  | 0.48  | S     | 0.53  | 0.53  | 0.52  | 0.55  | 0.54  | 0.51  | 0.54  | 0.55  | 0.54  | 0.39  | 0.55  | 0.48  | 24    |
| 6              | 0.52 | 0.57 | 0.53 | 0.46 | 0.45 | 0.42 | 0.42 | S1   | S1   | 0.35 | 0.34  | 0.35  | 0.36  | S     | 0.38  | 0.35  | 0.39  | 0.38  | 0.39  | 0.39  | 0.37  | 0.38  | 0.39  | 0.38  | 0.34  | 0.57  | 0.41  | 22    |
| 7              | 0.38 | 0.37 | 0.36 | 0.36 | 0.36 | 0.36 | 0.35 | S1   | 0.43 | 0.48 | 0.46  | 0.47  | S     | 0.61  | 0.60  | 0.56  | 0.51  | 0.70  | 0.66  | 0.67  | 0.50  | 0.45  | 0.44  | 0.44  | 0.35  | 0.70  | 0.48  | 23    |
| 8              | 0.51 | 0.44 | 0.42 | 0.42 | 0.37 | 0.38 | 0.43 | 0.37 | 0.36 | 0.37 | 0.36  | S     | 0.41  | 0.42  | 0.42  | 0.40  | 0.41  | 0.40  | 0.42  | 0.40  | 0.39  | 0.39  | 0.39  | 0.40  | 0.36  | 0.51  | 0.40  | 24    |
| 9              | 0.39 | 0.39 | 0.40 | 0.40 | 0.42 | 0.41 | 0.42 | 0.43 | 0.44 | 0.44 | C     | C     | C     | C     | C     | C     | R     | 0.33  | 0.30  | 0.29  | 0.29  | 0.28  | 0.27  | 0.29  | 0.27  | 0.44  | 0.36  | 23    |
| 10             | 0.32 | 0.31 | 0.31 | 0.32 | 0.32 | 0.34 | 0.38 | 0.35 | 0.37 | S    | 0.54  | 0.41  | 0.38  | 0.39  | 0.39  | 0.41  | 0.39  | 0.40  | 0.39  | 0.39  | 0.39  | 0.41  | 0.42  | 0.49  | 0.31  | 0.54  | 0.38  | 24    |
| 11             | 0.60 | 0.63 | 0.61 | 0.68 | 0.89 | 0.73 | 0.59 | 0.55 | S    | 0.60 | 0.49  | 0.51  | 0.47  | 0.46  | 0.39  | 0.38  | 0.38  | 0.36  | 0.38  | 0.40  | 0.40  | 0.36  | 0.40  | 0.57  | 0.36  | 0.89  | 0.51  | 24    |
| 12             | 0.85 | 0.74 | 0.60 | 0.56 | 0.46 | 0.49 | 0.51 | S    | 0.52 | 0.45 | 0.43  | 0.41  | 0.43  | 0.44  | 0.42  | 0.48  | 0.49  | 0.53  | 0.51  | 0.60  | 0.53  | 0.55  | 0.49  | 0.48  | 0.41  | 0.85  | 0.52  | 24    |
| 13             | 0.53 | 0.54 | 0.55 | 0.53 | 0.51 | 0.54 | S    | 0.60 | 0.69 | 0.66 | 0.63  | 0.53  | 0.53  | 0.52  | 0.43  | 0.43  | 0.44  | 0.43  | 0.46  | 0.50  | 0.55  | 0.47  | 0.42  | 0.43  | 0.42  | 0.69  | 0.52  | 24    |
| 14             | 0.51 | 0.48 | 0.47 | 0.45 | 0.53 | S    | 0.52 | 0.49 | 0.48 | 0.47 | 0.36  | 0.37  | 0.36  | 0.35  | 0.35  | 0.36  | 0.36  | 0.35  | 0.35  | 0.35  | 0.34  | 0.35  | 0.35  | 0.36  | 0.34  | 0.53  | 0.41  | 24    |
| 15             | 0.36 | 0.38 | 0.36 | 0.35 | S    | 0.39 | 0.38 | 0.37 | 0.38 | 0.38 | 0.38  | 0.41  | 0.42  | 0.45  | 0.43  | 0.41  | 0.43  | 0.45  | 0.45  | 0.44  | 0.44  | 0.44  | 0.41  | 0.46  | 0.35  | 0.46  | 0.41  | 24    |
| 16             | 0.44 | 0.47 | 0.48 | S    | 0.51 | 0.52 | 0.46 | 0.49 | 0.56 | 0.53 | 0.58  | 0.59  | 0.59  | 0.55  | 0.47  | 0.50  | 0.52  | 0.55  | 0.49  | 0.43  | 0.45  | 0.49  | 0.45  | 0.42  | 0.42  | 0.59  | 0.50  | 24    |
| 17             | 0.48 | 0.46 | S    | 0.40 | 0.39 | 0.35 | 0.34 | 0.35 | 0.35 | 0.41 | 0.37  | 0.40  | 0.42  | 0.40  | 0.39  | 0.37  | 0.38  | 0.37  | 0.36  | 0.33  | 0.34  | 0.34  | 0.33  | 0.33  | 0.33  | 0.48  | 0.38  | 24    |
| 18             | 0.34 | S    | 0.38 | 0.39 | 0.40 | 0.40 | 0.42 | 0.56 | 0.43 | 0.36 | 0.34  | 0.37  | 0.37  | 0.36  | 0.34  | 0.33  | 0.34  | 0.34  | 0.35  | 0.36  | 0.37  | 0.41  | 0.37  | 0.38  | 0.33  | 0.56  | 0.38  | 24    |
| 19             | S    | 0.40 | 0.39 | 0.39 | 0.39 | 0.37 | 0.38 | 0.39 | 0.41 | 0.46 | 0.64  | 0.66  | 0.50  | 0.56  | 0.49  | 0.50  | 0.40  | 0.39  | 0.40  | 0.63  | 0.50  | 0.42  | 0.54  | S     | 0.37  | 0.66  | 0.46  | 24    |
| 20             | 0.88 | 0.64 | 0.70 | 0.75 | 0.78 | 0.52 | 0.43 | 0.52 | 0.45 | 0.51 | 0.54  | 0.45  | 0.43  | 0.44  | 0.40  | 0.39  | 0.42  | 0.41  | 0.40  | 0.39  | 0.39  | 0.40  | S     | 0.43  | 0.39  | 0.88  | 0.51  | 24    |
| 21             | 0.38 | 0.37 | 0.34 | 0.34 | 0.36 | 0.35 | 0.36 | 0.39 | 0.38 | 0.37 | 0.35  | 0.34  | 0.32  | 0.32  | 0.34  | 0.33  | 0.35  | 0.33  | 0.33  | 0.32  | 0.33  | S     | 0.37  | 0.35  | 0.32  | 0.39  | 0.35  | 24    |
| 22             | 0.42 | 0.42 | 0.44 | 0.44 | 0.43 | 0.40 | 0.39 | 0.36 | 0.36 | 0.37 | 0.38  | 0.38  | 0.38  | 0.36  | 0.38  | 0.39  | 0.38  | 0.38  | 0.39  | 0.39  | S     | 0.42  | 0.41  | 0.46  | 0.36  | 0.46  | 0.40  | 24    |
| 23             | 0.46 | 0.47 | 0.52 | 0.54 | 0.79 | 0.57 | 0.71 | 0.95 | 0.72 | 0.64 | 0.67  | 0.81  | 0.57  | 0.52  | 0.42  | 0.44  | 0.56  | 0.50  | 0.44  | S     | 0.41  | 0.41  | 0.40  | 0.41  | 0.40  | 0.95  | 0.56  | 24    |
| 24             | 0.39 | 0.39 | 0.37 | 0.38 | 0.39 | 0.41 | 0.37 | 0.38 | 0.38 | 0.37 | 0.37  | 0.40  | 0.43  | 0.39  | 0.38  | 0.41  | 0.41  | 0.41  | S     | 0.47  | 0.44  | 0.42  | 0.42  | 0.43  | 0.37  | 0.47  | 0.40  | 24    |
| 25             | 0.43 | 0.42 | 0.42 | 0.40 | 0.38 | 0.37 | 0.42 | 0.42 | 0.42 | 0.40 | 0.39  | 0.39  | 0.39  | 0.39  | 0.38  | 0.38  | 0.38  | S     | 0.42  | 0.40  | 0.38  | 0.36  | 0.35  | 0.35  | 0.35  | 0.43  | 0.39  | 24    |
| 26             | 0.35 | 0.36 | 0.36 | 0.36 | 0.37 | 0.38 | 0.35 | 0.37 | 0.37 | 0.38 | 0.39  | 0.39  | 0.41  | 0.39  | 0.41  | 0.40  | S     | 0.45  | 0.43  | 0.42  | 0.47  | 0.48  | 0.44  | 0.43  | 0.35  | 0.48  | 0.40  | 24    |
| 27             | 0.44 | 0.42 | 0.63 | 0.84 | 0.60 | 0.87 | 0.76 | 0.72 | 1.00 | 0.97 | 0.53  | 0.42  | 0.40  | 0.41  | 0.40  | S     | 0.50  | 0.44  | 0.43  | 0.42  | 0.45  | 0.43  | 0.41  | 0.40  | 0.40  | 1.00  | 0.56  | 24    |
| 28             | 0.41 | 0.43 | 0.45 | 0.49 | 0.59 | 0.57 | 0.55 | 0.57 | 0.57 | 0.51 | 0.49  | 0.44  | 0.41  | 0.40  | S     | 0.49  | 0.43  | 0.42  | 0.43  | 0.42  | 0.44  | 0.44  | 0.44  | 0.43  | 0.40  | 0.59  | 0.47  | 24    |
| 29             | 0.43 | 0.44 | 0.43 | 0.43 | 0.44 | 0.47 | 0.45 | 0.46 | 0.45 | 0.45 | 0.46  | 0.46  | 0.47  | S     | 0.51  | 0.49  | 0.46  | 0.47  | 0.46  | 0.41  | 0.41  | 0.48  | 0.40  | 0.40  | 0.40  | 0.51  | 0.45  | 24    |
| 30             | 0.39 | 0.40 | 0.44 | 0.46 | 0.48 | 0.45 | 0.43 | 0.43 | 0.41 | 0.41 | 0.41  | 0.41  | S     | 0.42  | 0.39  | 0.37  | 0.36  | 0.35  | 0.37  | 0.40  | 0.38  | 0.39  | 0.42  | 0.39  | 0.35  | 0.48  | 0.41  | 24    |
| 31             | 0.38 | 0.36 | 0.38 | 0.37 | 0.36 | 0.36 | 0.35 | 0.35 | 0.34 | 0.33 | 0.35  | S     | 0.43  | 0.38  | 0.37  | 0.36  | 0.35  | 0.35  | 0.36  | 0.35  | 0.35  | 0.34  | 0.34  | 0.35  | 0.33  | 0.43  | 0.36  | 24    |
| HOURLY MAX     | 0.88 | 0.74 | 0.70 | 0.84 | 0.89 | 0.87 | 0.76 | 0.95 | 1.00 | 0.97 | 0.67  | 0.81  | 0.59  | 0.61  | 0.60  | 0.56  | 0.56  | 0.70  | 0.66  | 0.67  | 0.55  | 0.55  | 0.55  | 0.57  |       |       |       |       |
| HOURLY AVG     | 0.46 | 0.45 | 0.45 | 0.46 | 0.48 | 0.45 | 0.45 | 0.47 | 0.47 | 0.47 | 0.46  | 0.46  | 0.43  | 0.43  | 0.42  | 0.42  | 0.43  | 0.43  | 0.43  | 0.44  | 0.41  | 0.42  | 0.41  | 0.42  |       |       |       |       |

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       |

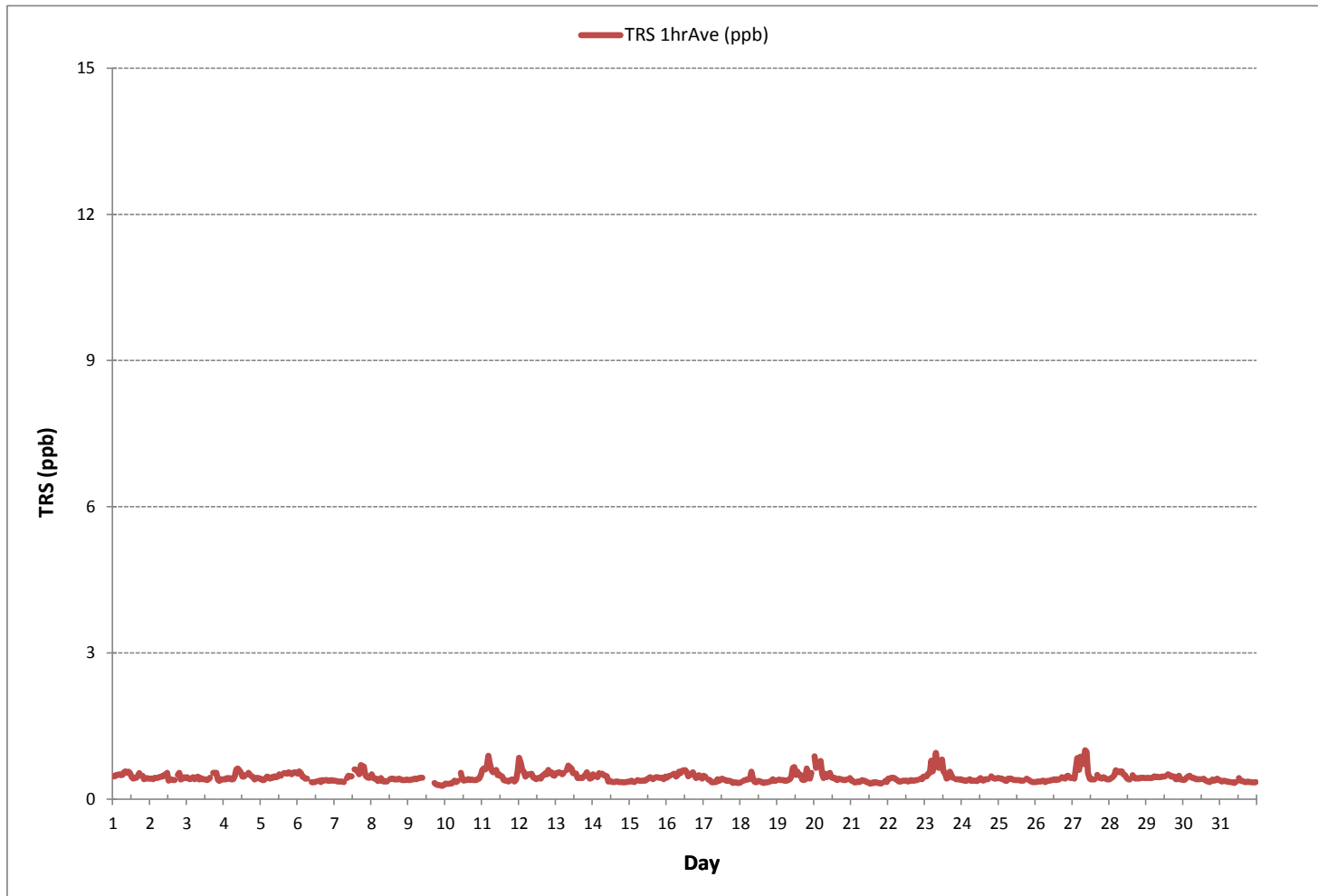
24 HR AVERAGES January 2018



MONTHLY SUMMARY

|                              |      |            |                       |           |
|------------------------------|------|------------|-----------------------|-----------|
| NUMBER OF NON-ZERO READINGS: | 703  |            |                       |           |
| MINIMUM 1-HR AVERAGE:        | 0.27 | ppb @ HOUR | 22                    | ON DAY 9  |
| MAXIMUM 1-HR AVERAGE:        | 1.00 | ppb @ HOUR | 8                     | ON DAY 27 |
| MAXIMUM 24-HR AVERAGE:       | 0.56 | ppb        |                       | ON DAY 23 |
|                              |      |            |                       |           |
| IZS CALIBRATION TIME:        | 31   | hrs        | OPERATIONAL TIME:     | 740 hrs   |
| MONTHLY CALIBRATION TIME:    | 6    | hrs        | AMD OPERATION UPTIME: | 99.5 %    |
|                              |      |            |                       |           |
| STANDARD DEVIATION:          | 0.10 |            | MONTHLY AVERAGE:      | 0.44 ppb  |

TOTAL REDUCED SULPHUR Hourly Averages (TRS ppb)



Wind: PRAMP\_RENO  
Poll.: PRAMP\_RENO-TRS[ppb]  
Monthly: 18/01  
Type: PollutionRose  
Direction: Blowing From (Wind Frequency)  
Based On 1 Hr.

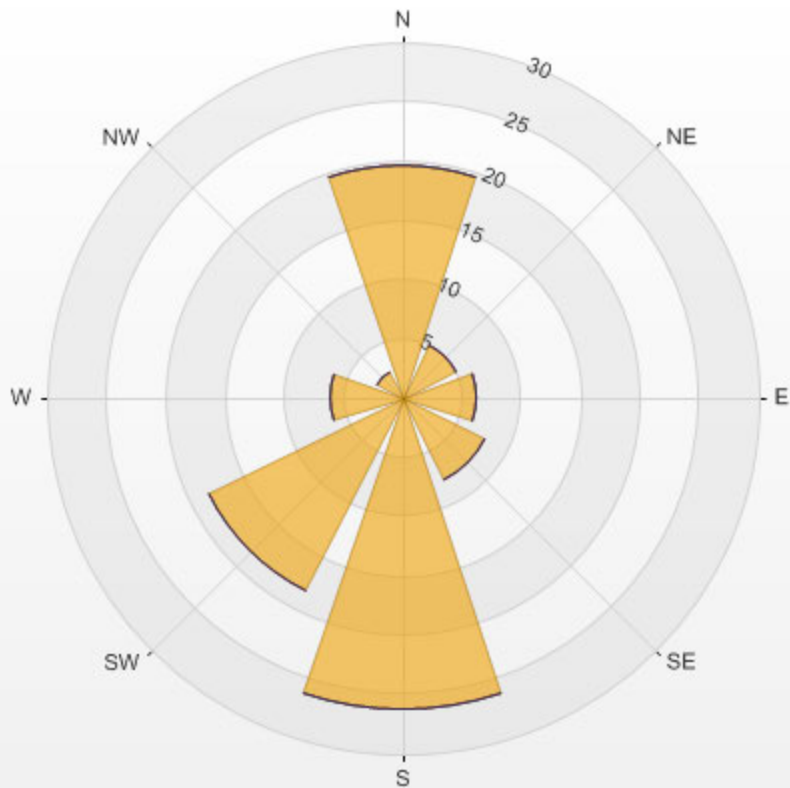
Calm: 8.39%

Calm Avg: 0.52 [ppb]

| Direction | 0-1  | 1-3 | 3-10 | >10.0 | Total |
|-----------|------|-----|------|-------|-------|
| N         | 19.6 | 0.0 | 0.0  | 0.0   | 19.6  |
| NE        | 5.0  | 0.0 | 0.0  | 0.0   | 5.0   |
| E         | 6.3  | 0.0 | 0.0  | 0.0   | 6.3   |
| SE        | 7.7  | 0.0 | 0.0  | 0.0   | 7.7   |
| S         | 26.3 | 0.0 | 0.0  | 0.0   | 26.3  |
| SW        | 18.2 | 0.0 | 0.0  | 0.0   | 18.2  |
| W         | 6.1  | 0.0 | 0.0  | 0.0   | 6.1   |
| NW        | 2.4  | 0.0 | 0.0  | 0.0   | 2.4   |
| Summary   | 91.6 | 0.0 | 0.0  | 0.0   | 91.6  |

| % Icon | Classes (ppb) | 92 | 0-1 | 0 | 1-3 | 0 | 3-10 | 0 | >10.0 |
|--------|---------------|----|-----|---|-----|---|------|---|-------|
|        |               |    |     |   |     |   |      |   |       |

PRAMP\_RENO Poll.: PRAMP\_RENO-TRS[ppb] 2018/01/01 00:00 - 2018/01/31 23:00 Calm: 8.39% Calm Poll Avg: 0.52[ppb]



TRS[ppb] Calibration: PRAMP\_RENO Monthly: 18/01 Type: Span

Span Meas Span Ref Span Low Span High



***TOTAL HYDROCARBON***

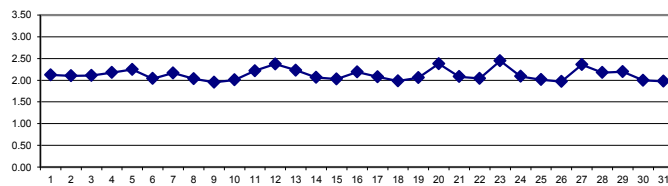
TOTAL HYDROCARBONS Hourly Averages (THC ppm)

| HR START (MST) | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | DAILY | 24-HR | RDGS. |
|----------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| HR END (MST)   | 0:59 | 1:59 | 2:59 | 3:59 | 4:59 | 5:59 | 6:59 | 7:59 | 8:59 | 9:59 | 10:59 | 11:59 | 12:59 | 13:59 | 14:59 | 15:59 | 16:59 | 17:59 | 18:59 | 19:59 | 20:59 | 21:59 | 22:59 | 23:59 | MIN.  | MAX.  | AVG.  |       |
| DAY            |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 1              | 2.12 | 2.12 | 2.11 | 2.13 | 2.16 | 2.15 | 2.13 | 2.27 | 2.24 | 2.20 | 2.23  | 2.16  | 2.05  | 2.02  | 2.05  | 2.05  | 2.22  | 2.47  | S     | 1.99  | 1.98  | 1.98  | 1.99  | 1.99  | 1.98  | 2.47  | 2.12  | 24    |
| 2              | 1.97 | 1.95 | 1.94 | 1.94 | 1.94 | 1.95 | 1.95 | 2.19 | 2.12 | 2.18 | 2.47  | 2.34  | 1.96  | 1.95  | 1.95  | 1.97  | 1.95  | S     | 2.38  | 2.66  | 2.08  | 2.00  | 2.23  | 2.27  | 1.94  | 2.66  | 2.10  | 24    |
| 3              | 2.28 | 2.12 | 1.98 | 2.07 | 2.12 | 1.98 | 2.45 | 2.33 | 2.01 | 2.08 | 1.99  | 1.98  | 1.98  | 1.97  | 1.96  | 2.03  | S     | 2.56  | 2.43  | 2.24  | 2.11  | 1.95  | 1.95  | 1.95  | 1.95  | 2.56  | 2.11  | 24    |
| 4              | 1.95 | 1.95 | 1.96 | 1.95 | 1.95 | 1.95 | 1.95 | 2.23 | 2.59 | 2.55 | 2.74  | 2.65  | 2.15  | 2.10  | 2.08  | S     | 2.37  | 2.18  | 2.19  | 2.18  | 1.99  | 2.06  | 2.13  | 2.15  | 1.95  | 2.74  | 2.17  | 24    |
| 5              | 2.03 | 1.97 | 1.99 | 2.03 | 2.16 | 2.10 | 2.07 | 2.07 | 2.12 | 2.23 | 2.16  | 2.21  | 2.23  | 2.18  | S     | 2.27  | 2.35  | 2.41  | 2.54  | 2.53  | 2.48  | 2.50  | 2.51  | 2.49  | 1.97  | 2.54  | 2.24  | 24    |
| 6              | 2.42 | 2.45 | 2.34 | 2.28 | 2.25 | 2.18 | 2.14 | 1.99 | 1.92 | 1.91 | 1.92  | 1.92  | 1.92  | S     | 1.92  | 1.92  | 1.92  | 1.92  | 1.92  | 1.92  | 1.92  | 1.92  | 1.93  | 1.92  | 1.91  | 2.45  | 2.04  | 24    |
| 7              | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.93 | 1.93 | 1.93 | 2.15 | 2.22  | 1.97  | S     | 2.15  | 2.14  | 2.20  | 2.50  | 2.81  | 2.82  | 2.54  | 2.37  | 2.18  | 2.14  | 2.33  | 1.92  | 2.82  | 2.17  | 24    |
| 8              | 2.59 | 2.28 | 2.22 | 2.37 | 2.16 | 1.99 | 1.96 | 1.95 | 1.96 | 1.97 | 1.97  | S     | 1.96  | 1.96  | 1.96  | 1.95  | 1.95  | 1.95  | 1.95  | 1.94  | 1.94  | 1.95  | 1.94  | 1.94  | 1.94  | 2.59  | 2.04  | 24    |
| 9              | 1.95 | 1.94 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 | S     | 1.95  | 1.95  | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | 1.94  | 1.95  | 1.95  | 13    |
| 10             | Y    | Y    | Y    | Y    | Y    | Y    | Y    | Y    | Y    | Y    | C     | C     | C     | C     | 1.99  | 2.00  | 2.00  | 2.00  | 1.98  | 1.98  | 1.98  | 2.10  | 1.99  | 2.07  | 1.98  | 2.10  | 2.01  | 15    |
| 11             | 2.53 | 2.51 | 2.38 | 2.39 | 2.50 | 2.37 | 2.17 | 2.17 | S    | 2.20 | 2.12  | 2.10  | 2.17  | 2.16  | 2.00  | 2.01  | 2.00  | 2.00  | 2.01  | 2.13  | 2.18  | 2.09  | 2.13  | 2.65  | 2.00  | 2.65  | 2.22  | 24    |
| 12             | 4.03 | 3.10 | 2.83 | 2.47 | 2.48 | 2.49 | 2.40 | S    | 2.10 | 2.18 | 2.12  | 2.06  | 2.09  | 2.12  | 2.06  | 2.17  | 2.17  | 2.21  | 2.18  | 2.34  | 2.27  | 2.28  | 2.20  | 2.19  | 2.06  | 4.03  | 2.37  | 24    |
| 13             | 2.28 | 2.26 | 2.30 | 2.26 | 2.23 | 2.27 | S    | 2.33 | 2.52 | 2.41 | 2.40  | 2.28  | 2.27  | 2.23  | 2.07  | 2.06  | 2.04  | 2.01  | 2.18  | 2.22  | 2.34  | 2.18  | 2.06  | 2.07  | 2.01  | 2.52  | 2.23  | 24    |
| 14             | 2.10 | 2.09 | 2.07 | 2.08 | 2.12 | S    | 2.08 | 2.09 | 2.09 | 2.08 | 2.00  | 2.24  | 1.99  | 2.16  | 2.18  | 2.12  | 2.00  | 2.02  | 2.02  | 1.97  | 2.06  | 1.98  | 1.98  | 1.98  | 1.97  | 2.24  | 2.07  | 24    |
| 15             | 1.97 | 1.96 | 1.97 | 1.96 | S    | 1.95 | 1.97 | 1.97 | 1.97 | 1.99 | 1.97  | 1.99  | 2.04  | 2.08  | 2.05  | 2.04  | 2.09  | 2.15  | 2.11  | 2.11  | 2.06  | 2.09  | 2.06  | 2.11  | 1.95  | 2.15  | 2.03  | 24    |
| 16             | 2.10 | 2.16 | 2.21 | S    | 2.16 | 2.14 | 2.14 | 2.29 | 2.29 | 2.33 | 2.17  | 2.13  | 2.19  | 2.17  | 2.15  | 2.16  | 2.23  | 2.34  | 2.32  | 2.13  | 2.15  | 2.17  | 2.15  | 2.10  | 2.10  | 2.34  | 2.19  | 24    |
| 17             | 2.25 | 2.21 | S    | 1.99 | 1.97 | 1.94 | 1.93 | 1.92 | 1.94 | 2.05 | 1.92  | 2.00  | 2.05  | 2.01  | 2.06  | 1.95  | 1.96  | 2.04  | 2.20  | 2.33  | 2.34  | 2.32  | 2.39  | 1.96  | 1.92  | 2.39  | 2.08  | 24    |
| 18             | 1.92 | S    | 2.00 | 2.11 | 2.07 | 2.09 | 2.12 | 2.40 | 2.03 | 1.93 | 1.91  | 1.92  | 1.95  | 1.94  | 1.89  | 1.89  | 1.89  | 1.90  | 1.91  | 1.93  | 1.93  | 1.94  | 1.93  | 1.93  | 1.89  | 2.40  | 1.98  | 24    |
| 19             | S    | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.94 | 1.93 | 1.93 | 1.95  | 1.94  | 1.93  | 1.92  | 1.92  | 1.93  | 1.94  | 1.93  | 1.94  | 2.78  | 2.30  | 2.53  | 2.94  | S     | 1.92  | 2.94  | 2.06  | 24    |
| 20             | 2.61 | 2.62 | 2.99 | 2.73 | 3.41 | 2.41 | 4.10 | 3.14 | 2.02 | 2.42 | 2.20  | 2.12  | 2.10  | 2.02  | 1.99  | 2.01  | 1.98  | 1.97  | 1.97  | 1.97  | 1.97  | 1.98  | S     | 2.00  | 1.97  | 4.10  | 2.38  | 24    |
| 21             | 1.99 | 1.99 | 1.97 | 2.04 | 1.95 | 1.96 | 1.96 | 1.98 | 1.98 | 1.96 | 1.96  | 2.16  | 2.13  | 2.06  | 2.17  | 2.21  | 1.99  | 2.20  | 2.31  | 2.41  | 2.46  | S     | 2.03  | 1.99  | 1.95  | 2.46  | 2.08  | 24    |
| 22             | 2.15 | 2.12 | 2.07 | 2.03 | 1.99 | 1.97 | 1.97 | 1.97 | 1.97 | 1.99 | 1.98  | 1.98  | 2.01  | 1.98  | 1.98  | 1.99  | 1.98  | 2.00  | 2.09  | 2.16  | S     | 2.10  | 2.08  | 2.39  | 1.97  | 2.39  | 2.04  | 24    |
| 23             | 2.36 | 2.43 | 2.46 | 2.65 | 3.14 | 2.58 | 2.76 | 2.65 | 2.52 | 2.59 | 2.43  | 2.34  | 2.10  | 2.04  | 1.94  | 2.04  | 2.48  | 3.23  | 2.39  | S     | 2.22  | 2.69  | 2.00  | 2.15  | 1.94  | 3.23  | 2.44  | 24    |
| 24             | 2.30 | 1.95 | 1.96 | 1.97 | 1.99 | 1.99 | 2.00 | 2.01 | 2.01 | 2.01 | 2.02  | 2.23  | 2.40  | 2.07  | 2.06  | 2.08  | 2.09  | 2.12  | S     | 2.18  | 2.16  | 2.14  | 2.14  | 2.15  | 1.95  | 2.40  | 2.09  | 24    |
| 25             | 2.17 | 2.15 | 2.13 | 2.11 | 2.07 | 2.01 | 1.99 | 1.99 | 1.99 | 1.98 | 1.99  | 1.99  | 1.99  | 1.98  | 1.98  | 1.97  | 1.98  | S     | 1.98  | 1.97  | 1.97  | 1.96  | 1.97  | 1.97  | 1.96  | 2.17  | 2.01  | 24    |
| 26             | 1.97 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96  | 1.96  | 1.97  | 1.97  | 1.97  | 1.97  | S     | 1.97  | 1.97  | 1.97  | 1.98  | 1.98  | 1.98  | 2.00  | 1.96  | 2.00  | 1.97  | 24    |
| 27             | 2.06 | 2.06 | 4.08 | 3.02 | 2.47 | 2.71 | 3.09 | 2.64 | 3.15 | 2.37 | 2.15  | 2.04  | 2.01  | 2.01  | 2.00  | S     | 2.02  | 2.02  | 2.04  | 2.04  | 2.04  | 2.03  | 2.03  | 2.09  | 2.00  | 4.08  | 2.36  | 24    |
| 28             | 2.07 | 2.06 | 2.26 | 2.47 | 2.57 | 2.36 | 2.21 | 2.27 | 2.23 | 2.15 | 2.09  | 2.12  | 2.16  | 1.98  | S     | 1.98  | 1.97  | 1.98  | 1.99  | 2.20  | 2.21  | 2.31  | 2.12  | 2.26  | 1.97  | 2.57  | 2.17  | 24    |
| 29             | 2.26 | 2.46 | 2.13 | 2.10 | 2.23 | 2.13 | 2.05 | 2.36 | 2.21 | 2.23 | 2.20  | 2.43  | 2.16  | S     | 2.16  | 2.47  | 2.19  | 2.13  | 2.11  | 2.10  | 2.04  | 2.03  | 2.04  | 2.05  | 2.03  | 2.47  | 2.20  | 24    |
| 30             | 2.05 | 2.03 | 2.01 | 2.01 | 2.00 | 2.01 | 2.00 | 1.99 | 1.99 | 1.99 | 1.99  | 2.00  | S     | 1.99  | 1.98  | 1.98  | 1.98  | 1.98  | 1.99  | 1.99  | 1.98  | 1.97  | 1.97  | 1.97  | 1.97  | 2.05  | 1.99  | 24    |
| 31             | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 | 1.98 | 1.98  | S     | 1.98  | 1.98  | 1.98  | 1.98  | 1.98  | 1.98  | 1.97  | 1.98  | 1.97  | 1.98  | 1.98  | 1.97  | 1.97  | 1.98  | 1.97  | 24    |
| HOURLY MAX     | 4.03 | 3.10 | 4.08 | 3.02 | 3.41 | 2.71 | 4.10 | 3.14 | 3.15 | 2.59 | 2.74  | 2.65  | 2.43  | 2.23  | 2.18  | 2.47  | 2.50  | 3.23  | 2.82  | 2.78  | 2.48  | 2.69  | 2.94  | 2.65  |       |       |       |       |
| HOURLY AVG     | 2.22 | 2.16 | 2.21 | 2.17 | 2.20 | 2.12 | 2.18 | 2.17 | 2.13 | 2.13 | 2.11  | 2.11  | 2.08  | 2.04  | 2.02  | 2.05  | 2.08  | 2.16  | 2.14  | 2.17  | 2.12  | 2.12  | 2.10  | 2.11  |       |       |       |       |

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       |

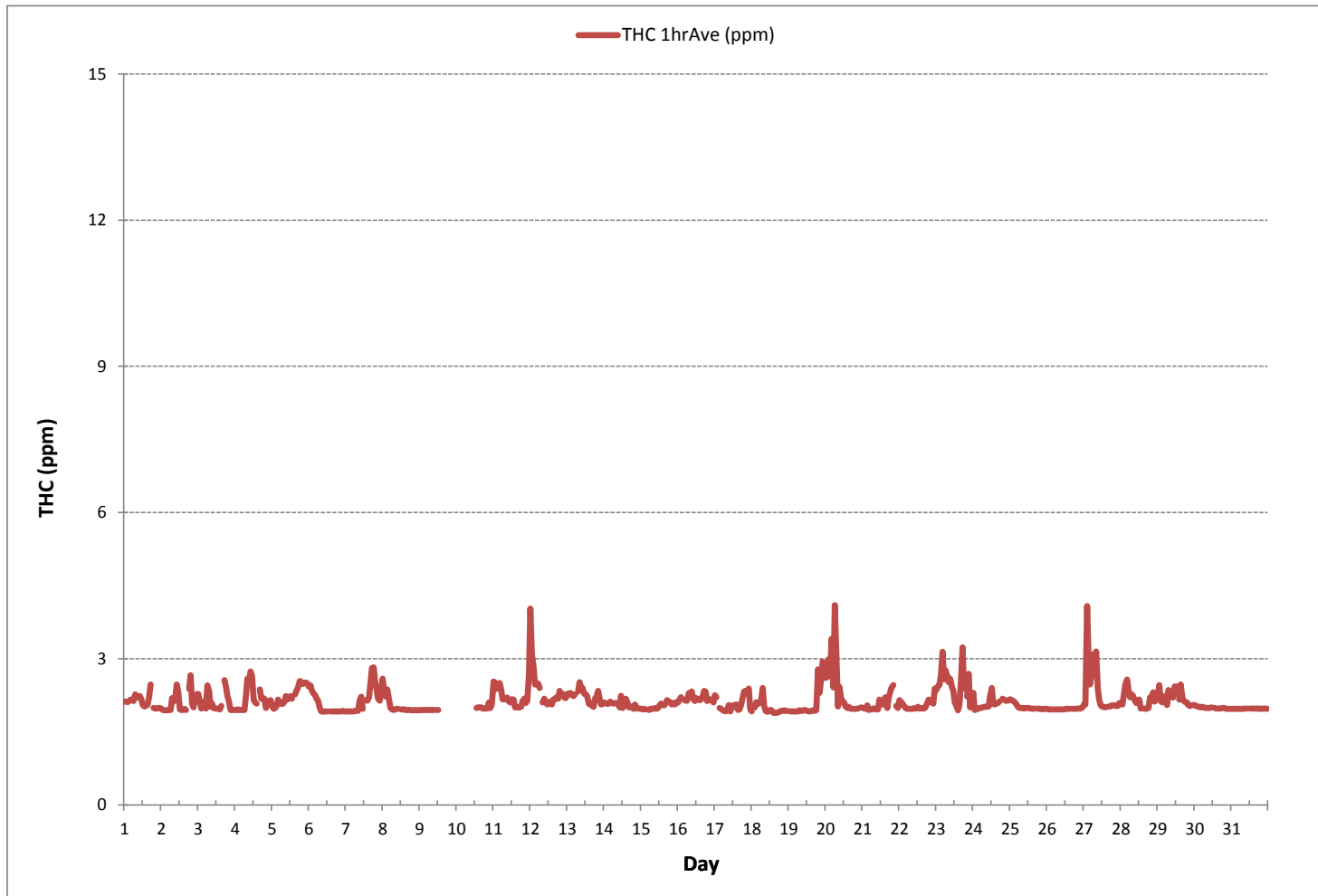
24 HR AVERAGES January 2018



MONTHLY SUMMARY

|                              |      |            |                       |           |
|------------------------------|------|------------|-----------------------|-----------|
| NUMBER OF NON-ZERO READINGS: | 689  |            |                       |           |
| MINIMUM 1-HR AVERAGE:        | 1.89 | ppm @ HOUR | 14                    | ON DAY 18 |
| MAXIMUM 1-HR AVERAGE:        | 4.10 | ppm @ HOUR | 6                     | ON DAY 20 |
| MAXIMUM 24-HR AVERAGE:       | 2.44 | ppm        |                       | ON DAY 23 |
| IZS CALIBRATION TIME:        | 31   | hrs        | OPERATIONAL TIME:     | 724 hrs   |
| MONTHLY CALIBRATION TIME:    | 4    | hrs        | AMD OPERATION UPTIME: | 97.3 %    |
| STANDARD DEVIATION:          | 0.26 |            | MONTHLY AVERAGE:      | 2.13 ppm  |

TOTAL HYDROCARBONS Hourly Averages (THC ppm)



Wind: PRAMP\_RENO  
Poll.: PRAMP\_RENO-THC55[ppm]  
Monthly: 18/01  
Type: PollutionRose  
Direction: Blowing From (Wind Frequency)  
Based On 1 Hr.

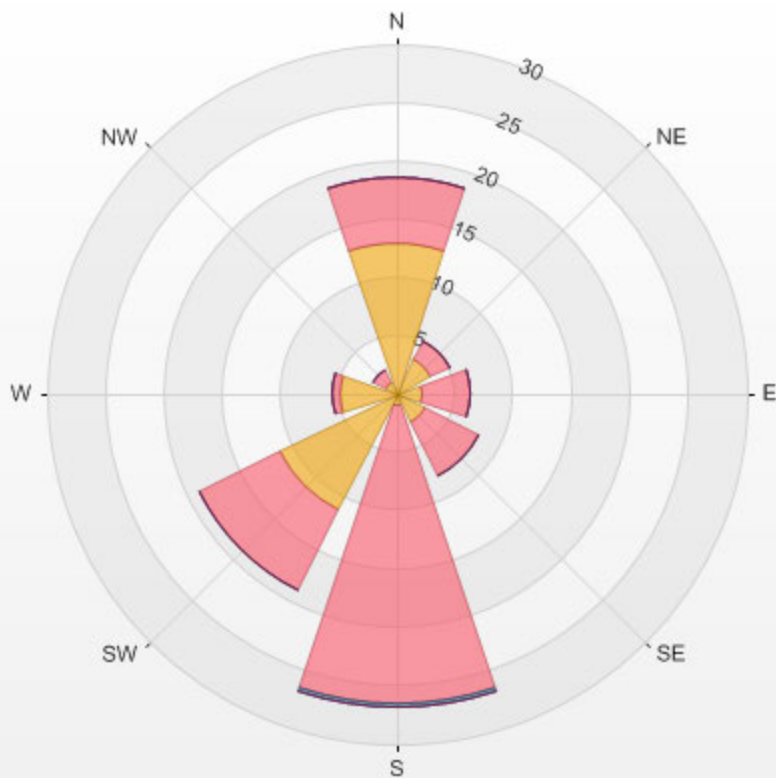
Calm: 8.56%

Calm Avg: 2.40 [ppm]

| Direction | 0-2  | 2-3  | 3-5 | 5-10 | >10.0 | Total |
|-----------|------|------|-----|------|-------|-------|
| N         | 12.9 | 5.7  | 0.0 | 0.0  | 0.0   | 18.6  |
| NE        | 3.3  | 1.7  | 0.0 | 0.0  | 0.0   | 5.1   |
| E         | 2.2  | 4.2  | 0.0 | 0.0  | 0.0   | 6.4   |
| SE        | 2.8  | 5.1  | 0.0 | 0.0  | 0.0   | 7.8   |
| S         | 1.0  | 25.5 | 0.3 | 0.0  | 0.0   | 26.9  |
| SW        | 11.2 | 7.7  | 0.0 | 0.0  | 0.0   | 18.9  |
| W         | 4.9  | 0.6  | 0.0 | 0.0  | 0.0   | 5.5   |
| NW        | 1.2  | 1.2  | 0.0 | 0.0  | 0.0   | 2.3   |
| Summary   | 39.5 | 51.7 | 0.3 | 0.0  | 0.0   | 91.4  |

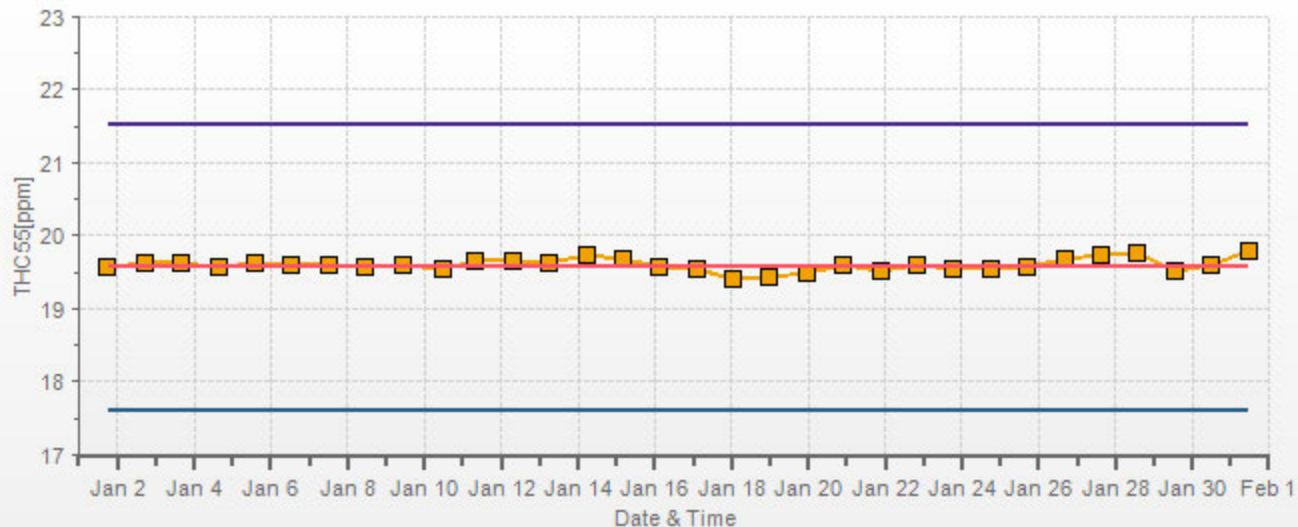
| %  | Icon                                                                              | Classes (ppm) |
|----|-----------------------------------------------------------------------------------|---------------|
| 39 |    | 0-2           |
| 52 |    | 2-3           |
| 0  |    | 3-5           |
| 0  |  | 5-10          |
| 0  |  | >10.0         |

PRAMP\_RENO Poll.: PRAMP\_RENO-THC55[ppm] 2018/01/01 00:00 - 2018/01/31 23:00 Calm: 8.56% Calm Poll Avg: 2.40[ppm]



THC55[ppm] Calibration: PRAMP\_RENO Monthly: 18/01 Type: Span

Span Meas Span Ref Span Low Span High



***METHANE***

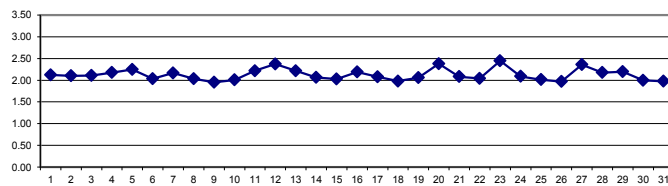
METHANE Hourly Averages (CH<sub>4</sub> ppm)

| 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              | 2.12 | 2.12 | 2.11 | 2.13 | 2.16 | 2.14 | 2.13 | 2.26 | 2.24 | 2.19 | 2.23  | 2.16  | 2.05  | 2.02  | 2.05  | 2.05  | 2.21  | 2.47  | \$    | 1.99  | 1.97  | 1.98  | 1.99  | 1.99  | 1.97  | 2.47  | 2.12  | 24    |
| 2              | 1.97 | 1.95 | 1.94 | 1.94 | 1.94 | 1.95 | 1.95 | 2.19 | 2.12 | 2.18 | 2.47  | 2.34  | 1.96  | 1.95  | 1.95  | 1.97  | 1.95  | \$    | 2.38  | 2.66  | 2.08  | 2.00  | 2.23  | 2.27  | 1.94  | 2.66  | 2.10  | 24    |
| 3              | 2.28 | 2.12 | 1.98 | 2.07 | 2.12 | 1.98 | 2.45 | 2.33 | 2.01 | 2.08 | 1.99  | 1.98  | 1.98  | 1.97  | 1.96  | 2.03  | \$    | 2.56  | 2.43  | 2.24  | 2.11  | 1.95  | 1.95  | 1.95  | 1.95  | 2.56  | 2.11  | 24    |
| 4              | 1.95 | 1.95 | 1.96 | 1.95 | 1.95 | 1.95 | 1.95 | 2.23 | 2.59 | 2.55 | 2.74  | 2.65  | 2.15  | 2.10  | 2.08  | \$    | 2.37  | 2.18  | 2.19  | 2.18  | 1.99  | 2.06  | 2.13  | 2.15  | 1.95  | 2.74  | 2.17  | 24    |
| 5              | 2.03 | 1.97 | 1.99 | 2.03 | 2.16 | 2.10 | 2.07 | 2.07 | 2.12 | 2.23 | 2.16  | 2.21  | 2.23  | 2.18  | \$    | 2.27  | 2.35  | 2.41  | 2.54  | 2.53  | 2.48  | 2.49  | 2.51  | 2.49  | 1.97  | 2.54  | 2.24  | 24    |
| 6              | 2.41 | 2.44 | 2.33 | 2.27 | 2.25 | 2.18 | 2.14 | 1.99 | 1.92 | 1.91 | 1.92  | 1.92  | 1.92  | \$    | 1.92  | 1.92  | 1.92  | 1.92  | 1.92  | 1.92  | 1.92  | 1.92  | 1.93  | 1.92  | 1.91  | 2.44  | 2.04  | 24    |
| 7              | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.93 | 1.93 | 1.93 | 2.15 | 2.22  | 1.97  | \$    | 2.15  | 2.14  | 2.20  | 2.50  | 2.81  | 2.82  | 2.54  | 2.37  | 2.18  | 2.14  | 2.33  | 1.92  | 2.82  | 2.17  | 24    |
| 8              | 2.59 | 2.28 | 2.22 | 2.37 | 2.16 | 1.99 | 1.96 | 1.95 | 1.96 | 1.97 | 1.97  | \$    | 1.96  | 1.96  | 1.96  | 1.95  | 1.95  | 1.95  | 1.95  | 1.94  | 1.94  | 1.95  | 1.94  | 1.94  | 1.94  | 2.59  | 2.04  | 24    |
| 9              | 1.95 | 1.94 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 | \$    | 1.95  | 1.95  | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | 1.94  | 1.95  | 1.95  | 13    |
| 10             | Y    | Y    | Y    | Y    | Y    | Y    | Y    | Y    | Y    | C    | C     | C     | C     | 1.99  | 2.00  | 2.00  | 1.99  | 1.98  | 1.98  | 1.98  | 1.97  | 2.10  | 1.99  | 2.07  | 1.97  | 2.10  | 2.00  | 15    |
| 11             | 2.52 | 2.51 | 2.38 | 2.39 | 2.50 | 2.37 | 2.17 | 2.17 | \$   | 2.20 | 2.12  | 2.10  | 2.17  | 2.16  | 2.00  | 2.01  | 2.00  | 2.00  | 2.01  | 2.13  | 2.18  | 2.09  | 2.13  | 2.65  | 2.00  | 2.65  | 2.22  | 24    |
| 12             | 4.03 | 3.10 | 2.83 | 2.47 | 2.48 | 2.49 | 2.40 | \$   | 2.10 | 2.18 | 2.12  | 2.06  | 2.09  | 2.12  | 2.06  | 2.17  | 2.17  | 2.21  | 2.18  | 2.34  | 2.27  | 2.27  | 2.20  | 2.19  | 2.06  | 4.03  | 2.37  | 24    |
| 13             | 2.28 | 2.26 | 2.30 | 2.26 | 2.23 | 2.27 | \$   | 2.27 | 2.45 | 2.38 | 2.36  | 2.25  | 2.23  | 2.21  | 2.07  | 2.06  | 2.04  | 2.01  | 2.18  | 2.22  | 2.34  | 2.18  | 2.06  | 2.07  | 2.01  | 2.45  | 2.22  | 24    |
| 14             | 2.10 | 2.09 | 2.07 | 2.08 | 2.12 | \$   | 2.08 | 2.08 | 2.09 | 2.08 | 2.00  | 2.24  | 1.99  | 2.16  | 2.18  | 2.12  | 2.00  | 2.02  | 2.02  | 1.97  | 2.05  | 1.98  | 1.98  | 1.98  | 1.97  | 2.24  | 2.06  | 24    |
| 15             | 1.97 | 1.96 | 1.97 | 1.96 | \$   | 1.95 | 1.97 | 1.97 | 1.97 | 1.99 | 1.97  | 1.99  | 2.04  | 2.08  | 2.05  | 2.04  | 2.09  | 2.15  | 2.11  | 2.11  | 2.06  | 2.09  | 2.06  | 2.11  | 1.95  | 2.15  | 2.03  | 24    |
| 16             | 2.10 | 2.16 | 2.21 | \$   | 2.16 | 2.14 | 2.14 | 2.29 | 2.29 | 2.33 | 2.16  | 2.13  | 2.18  | 2.16  | 2.15  | 2.15  | 2.21  | 2.33  | 2.31  | 2.13  | 2.15  | 2.16  | 2.15  | 2.10  | 2.10  | 2.33  | 2.19  | 24    |
| 17             | 2.25 | 2.21 | \$   | 1.99 | 1.97 | 1.94 | 1.93 | 1.92 | 1.94 | 2.05 | 1.92  | 2.00  | 2.05  | 2.01  | 2.06  | 1.95  | 1.96  | 2.04  | 2.20  | 2.33  | 2.34  | 2.32  | 2.39  | 1.96  | 1.92  | 2.39  | 2.08  | 24    |
| 18             | 1.92 | \$   | 2.00 | 2.11 | 2.07 | 2.09 | 2.12 | 2.39 | 2.03 | 1.93 | 1.91  | 1.92  | 1.95  | 1.94  | 1.89  | 1.89  | 1.89  | 1.90  | 1.91  | 1.93  | 1.93  | 1.94  | 1.93  | 1.93  | 1.89  | 2.39  | 1.98  | 24    |
| 19             | \$   | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.94 | 1.93 | 1.93 | 1.95  | 1.94  | 1.93  | 1.92  | 1.92  | 1.93  | 1.94  | 1.93  | 1.93  | 2.78  | 2.30  | 2.53  | 2.94  | \$    | 1.92  | 2.94  | 2.06  | 24    |
| 20             | 2.61 | 2.62 | 2.99 | 2.73 | 3.41 | 2.41 | 4.10 | 3.14 | 2.02 | 2.42 | 2.20  | 2.12  | 2.10  | 2.02  | 1.99  | 2.01  | 1.98  | 1.97  | 1.97  | 1.97  | 1.97  | 1.98  | \$    | 2.00  | 1.97  | 4.10  | 2.38  | 24    |
| 21             | 1.99 | 1.99 | 1.97 | 2.04 | 1.95 | 1.96 | 1.96 | 1.98 | 1.98 | 1.96 | 1.96  | 2.16  | 2.13  | 2.06  | 2.17  | 2.21  | 1.99  | 2.20  | 2.31  | 2.41  | 2.46  | \$    | 2.03  | 1.99  | 1.95  | 2.46  | 2.08  | 24    |
| 22             | 2.15 | 2.12 | 2.07 | 2.03 | 1.99 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 | 1.99  | 1.98  | 2.01  | 1.98  | 1.98  | 1.99  | 1.98  | 2.00  | 2.09  | 2.16  | \$    | 2.10  | 2.08  | 2.39  | 1.97  | 2.39  | 2.04  | 24    |
| 23             | 2.36 | 2.43 | 2.46 | 2.65 | 3.14 | 2.58 | 2.76 | 2.65 | 2.52 | 2.59 | 2.43  | 2.34  | 2.10  | 2.04  | 1.94  | 2.04  | 2.48  | 3.23  | 2.39  | \$    | 2.22  | 2.69  | 2.00  | 2.15  | 1.94  | 3.23  | 2.44  | 24    |
| 24             | 2.30 | 1.95 | 1.96 | 1.97 | 1.99 | 1.99 | 2.00 | 2.01 | 2.01 | 2.01 | 2.02  | 2.23  | 2.40  | 2.07  | 2.06  | 2.08  | 2.09  | 2.12  | \$    | 2.18  | 2.16  | 2.14  | 2.14  | 2.15  | 1.95  | 2.40  | 2.09  | 24    |
| 25             | 2.17 | 2.15 | 2.13 | 2.11 | 2.07 | 2.01 | 1.99 | 1.99 | 1.99 | 1.98 | 1.99  | 1.99  | 1.99  | 1.98  | 1.98  | 1.97  | 1.98  | \$    | 1.98  | 1.97  | 1.97  | 1.96  | 1.97  | 1.97  | 1.96  | 2.17  | 2.01  | 24    |
| 26             | 1.97 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96  | 1.96  | 1.97  | 1.97  | 1.97  | 1.97  | \$    | 1.97  | 1.97  | 1.97  | 1.98  | 1.98  | 1.98  | 2.00  | 1.96  | 2.00  | 1.97  | 24    |
| 27             | 2.06 | 2.06 | 4.08 | 3.02 | 2.47 | 2.71 | 3.09 | 2.64 | 3.15 | 2.37 | 2.15  | 2.04  | 2.01  | 2.01  | 2.00  | \$    | 2.02  | 2.02  | 2.04  | 2.04  | 2.04  | 2.03  | 2.03  | 2.09  | 2.00  | 4.08  | 2.36  | 24    |
| 28             | 2.07 | 2.06 | 2.26 | 2.47 | 2.57 | 2.36 | 2.21 | 2.27 | 2.23 | 2.15 | 2.09  | 2.12  | 2.16  | 1.98  | \$    | 1.98  | 1.97  | 1.98  | 1.99  | 2.20  | 2.21  | 2.31  | 2.12  | 2.26  | 1.97  | 2.57  | 2.17  | 24    |
| 29             | 2.26 | 2.46 | 2.13 | 2.10 | 2.23 | 2.13 | 2.05 | 2.36 | 2.21 | 2.23 | 2.20  | 2.43  | 2.43  | \$    | 2.16  | 2.47  | 2.19  | 2.13  | 2.11  | 2.10  | 2.04  | 2.03  | 2.04  | 2.05  | 2.03  | 2.47  | 2.20  | 24    |
| 30             | 2.05 | 2.03 | 2.01 | 2.01 | 2.00 | 2.01 | 2.00 | 1.99 | 1.99 | 1.99 | 1.99  | 2.00  | \$    | 1.99  | 1.98  | 1.98  | 1.98  | 1.98  | 1.99  | 1.99  | 1.98  | 1.97  | 1.97  | 1.97  | 1.97  | 2.05  | 1.99  | 24    |
| 31             | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 | 1.98 | 1.98  | \$    | 1.98  | 1.98  | 1.98  | 1.98  | 1.98  | 1.98  | 1.97  | 1.98  | 1.97  | 1.98  | 1.98  | 1.97  | 1.97  | 1.98  | 1.97  | 24    |
| HOURLY MAX     | 4.03 | 3.10 | 4.08 | 3.02 | 3.41 | 2.71 | 4.10 | 3.14 | 3.15 | 2.59 | 2.74  | 2.65  | 2.43  | 2.21  | 2.18  | 2.47  | 2.50  | 3.23  | 2.82  | 2.78  | 2.48  | 2.69  | 2.94  | 2.65  |       |       |       |       |
| HOURLY AVG     | 2.22 | 2.16 | 2.21 | 2.17 | 2.20 | 2.12 | 2.18 | 2.17 | 2.13 | 2.13 | 2.11  | 2.11  | 2.08  | 2.04  | 2.02  | 2.05  | 2.08  | 2.16  | 2.14  | 2.17  | 2.12  | 2.12  | 2.10  | 2.11  |       |       |       |       |

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       |

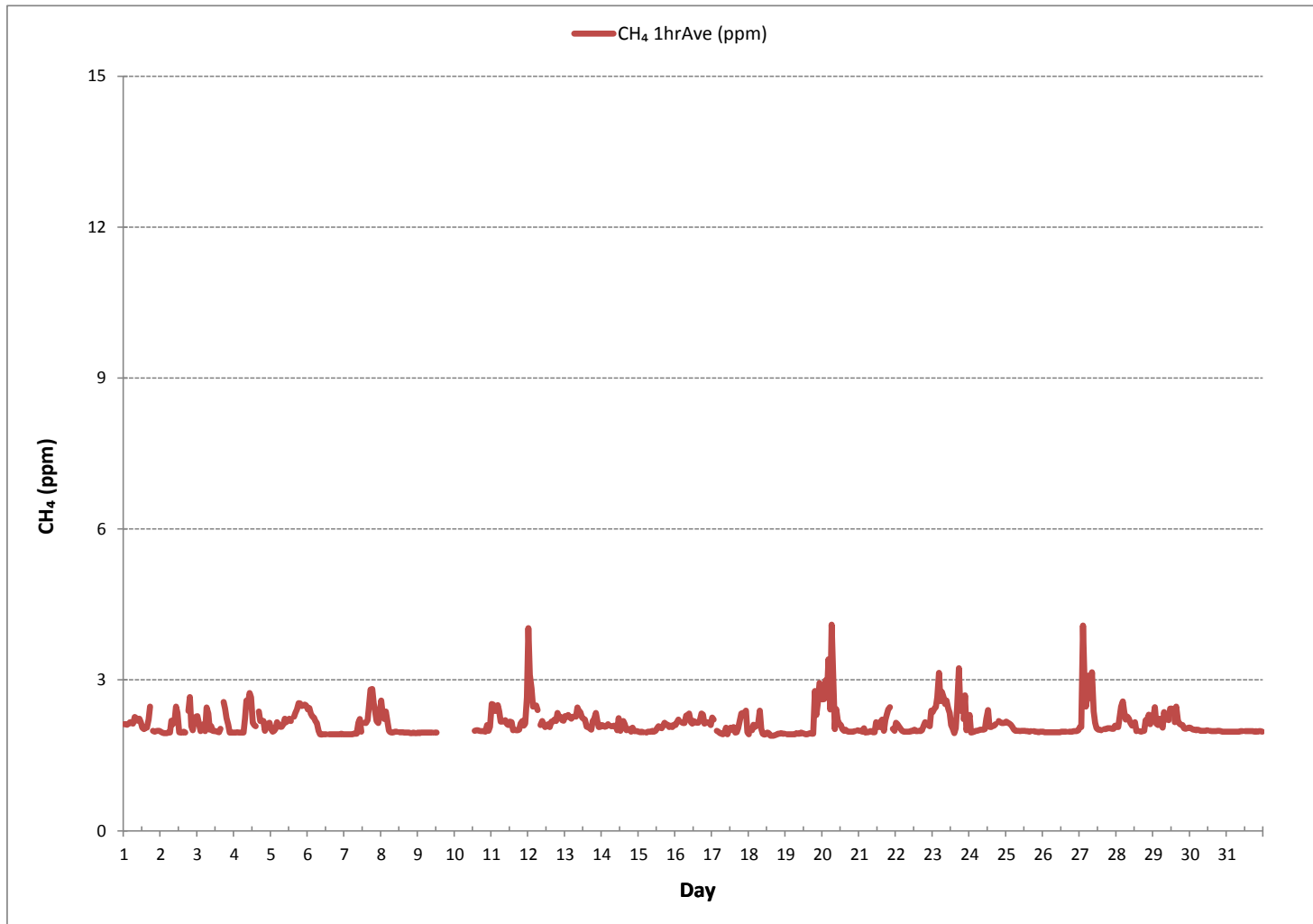
24 HR AVERAGES January 2018



MONTHLY SUMMARY

|                              |      |            |                       |           |
|------------------------------|------|------------|-----------------------|-----------|
| NUMBER OF NON-ZERO READINGS: | 689  |            |                       |           |
| MINIMUM 1-HR AVERAGE:        | 1.89 | ppm @ HOUR | 14                    | ON DAY 18 |
| MAXIMUM 1-HR AVERAGE:        | 4.10 | ppm @ HOUR | 6                     | ON DAY 20 |
| MAXIMUM 24-HR AVERAGE:       | 2.44 | ppm        |                       | ON DAY 23 |
| IZS CALIBRATION TIME:        | 31   | hrs        | OPERATIONAL TIME:     | 724 hrs   |
| MONTHLY CALIBRATION TIME:    | 4    | hrs        | AMD OPERATION UPTIME: | 97.3 %    |
| STANDARD DEVIATION:          | 0.26 |            | MONTHLY AVERAGE:      | 2.13 ppm  |

METHANE Hourly Averages (CH<sub>4</sub> ppm)



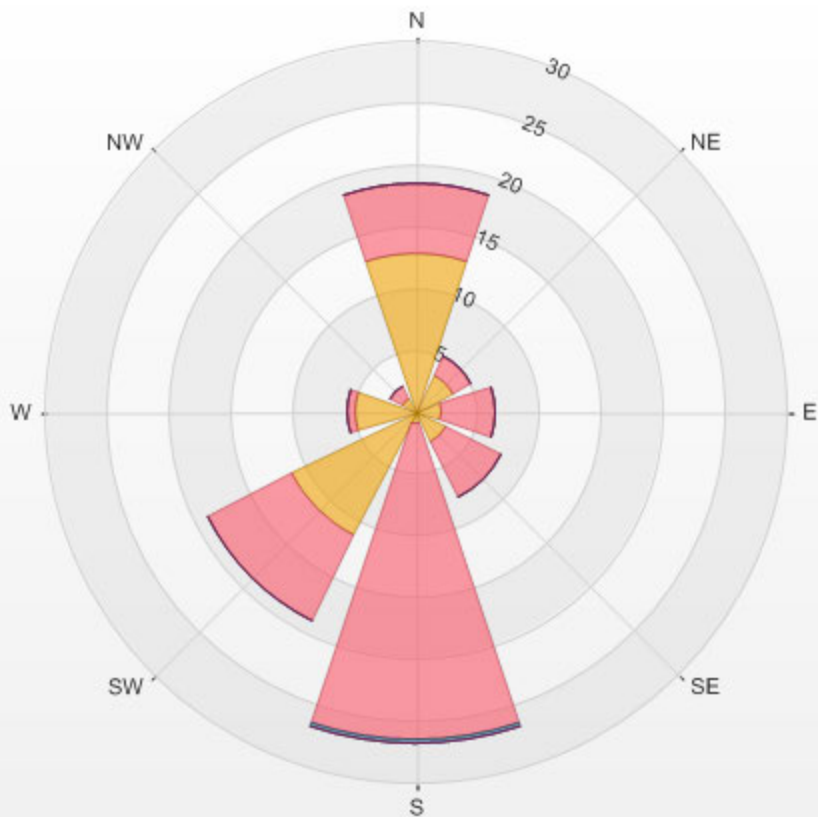
Wind: PRAMP\_RENO  
Poll.: PRAMP\_RENO-CH<sub>4</sub>[ppm]  
Monthly: 18/01  
Type: PollutionRose  
Direction: Blowing From (Wind Frequency)  
Based On 1 Hr.

Calm: 8.56%

Calm Avg: 2.40 [ppm]

| Direction | 0-2  | 2-3  | 3-5 | 5-10 | >10.0 | Total |
|-----------|------|------|-----|------|-------|-------|
| N         | 12.9 | 5.7  | 0.0 | 0.0  | 0.0   | 18.6  |
| NE        | 3.3  | 1.7  | 0.0 | 0.0  | 0.0   | 5.1   |
| E         | 2.2  | 4.2  | 0.0 | 0.0  | 0.0   | 6.4   |
| SE        | 2.8  | 5.1  | 0.0 | 0.0  | 0.0   | 7.8   |
| S         | 1.0  | 25.5 | 0.3 | 0.0  | 0.0   | 26.9  |
| SW        | 11.2 | 7.7  | 0.0 | 0.0  | 0.0   | 18.9  |
| W         | 4.9  | 0.6  | 0.0 | 0.0  | 0.0   | 5.5   |
| NW        | 1.2  | 1.2  | 0.0 | 0.0  | 0.0   | 2.3   |
| Summary   | 39.5 | 51.7 | 0.3 | 0.0  | 0.0   | 91.4  |

PRAMP\_RENO Poll.: PRAMP\_RENO-CH4[ppm] 2018/01/01 00:00 - 2018/01/31 23:00 Calm: 8.56% Calm Poll Avg: 2.40[ppm]



CH4[ppm] Calibration: PRAMP\_RENO Monthly: 18/01 Type: Span

Span Meas Span Ref Span Low Span High



## ***NON-METHANE HYDROCARBON***



## PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - January 2018

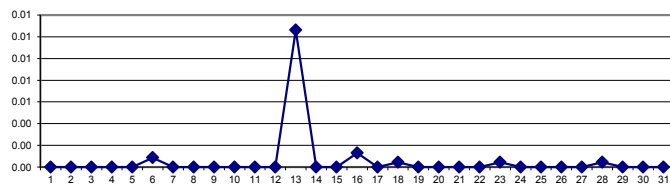
## NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)

| HR START (MST) | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | DAILY | 24-HR | RDGS. |
|----------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| HR END (MST)   | 0:59 | 1:59 | 2:59 | 3:59 | 4:59 | 5:59 | 6:59 | 7:59 | 8:59 | 9:59 | 10:59 | 11:59 | 12:59 | 13:59 | 14:59 | 15:59 | 16:59 | 17:59 | 18:59 | 19:59 | 20:59 | 21:59 | 22:59 | 23:59 | MIN.  | MAX.  | AVG.  |       |
| DAY            |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 1              | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 24    |
| 2              | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 24    |
| 3              | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 24    |
| 4              | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 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    |
| 5              | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 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    |
| 6              | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 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  | 0.01  | 24    |
| 7              | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 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    |
| 8              | 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    |
| 9              | 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  | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | 0.00  | 0.00  | 0.00  | 13    |
| 10             | Y    | Y    | Y    | Y    | Y    | Y    | Y    | Y    | Y    | C    | C     | C     | C     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 15    |
| 11             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | S    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 24    |
| 12             | 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    |
| 13             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | S    | 0.06 | 0.07 | 0.03 | 0.04  | 0.03  | 0.04  | 0.02  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.07  | 0.01  | 24    |
| 14             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | S    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 24    |
| 15             | 0.00 | 0.00 | 0.00 | 0.00 | 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    |
| 16             | 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    |
| 17             | 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    |
| 18             | 0.00 | S    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 24    |
| 19             | 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    |
| 20             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.00  | 24    |
| 21             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 24    |
| 22             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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    |
| 23             | 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  | S     | 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 | 0.00 | 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    |
| 25             | 0.00 | 0.00 | 0.00 | 0.00 | 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    |
| 26             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 24    |
| 27             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 24    |
| 28             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 24    |
| 29             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 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    |
| 30             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 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    |
| 31             | 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    |
| HOURLY MAX     | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.00 | 0.06 | 0.07 | 0.03 | 0.04  | 0.03  | 0.04  | 0.02  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| 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  | 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       |

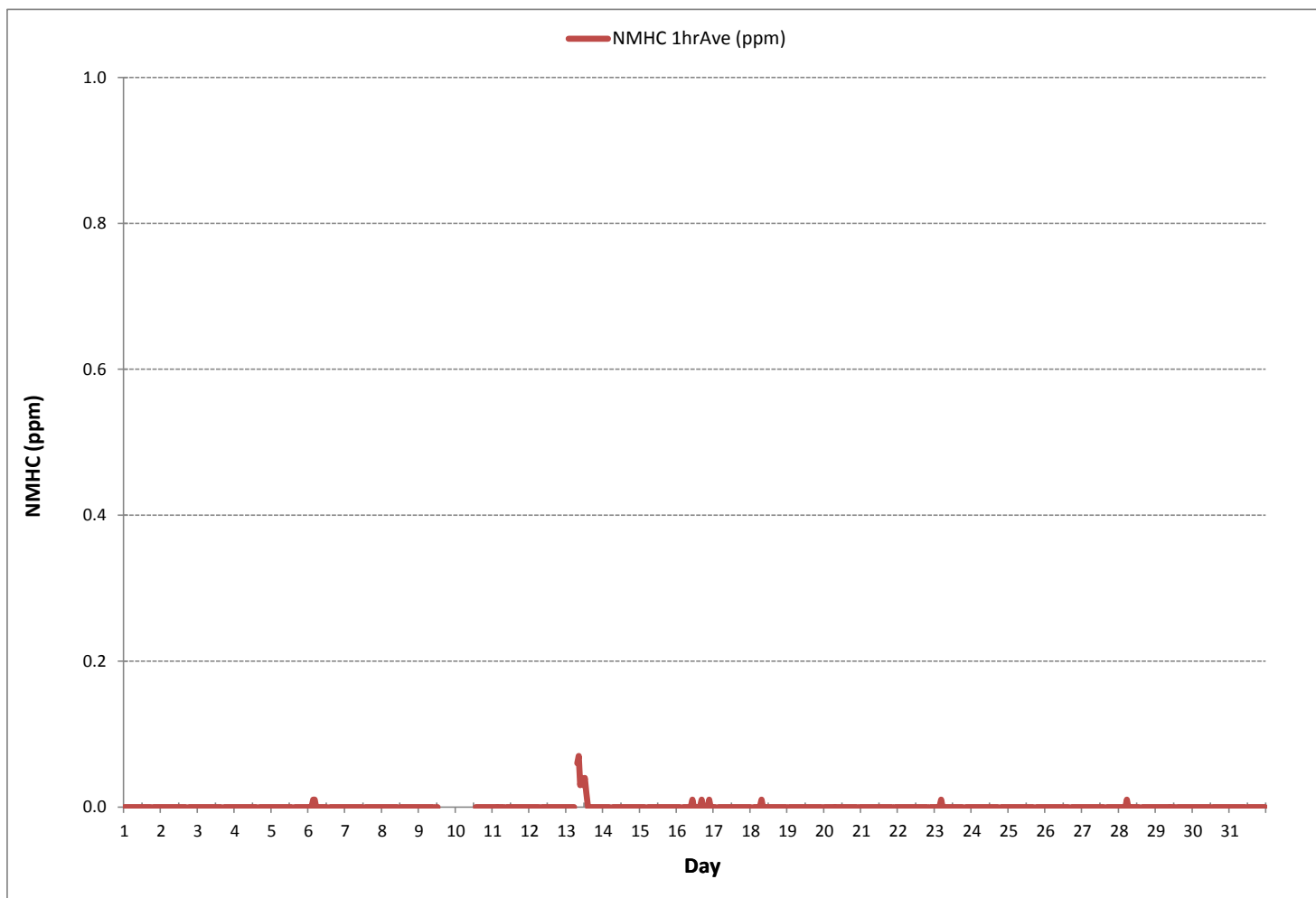
## 24 HR AVERAGES January 2018



## MONTHLY SUMMARY

|                              |      |     |                       |      |           |
|------------------------------|------|-----|-----------------------|------|-----------|
| NUMBER OF NON-ZERO READINGS: | 15   |     |                       |      |           |
| MINIMUM 1-HR AVERAGE:        | 0.00 | ppm | @ HOUR                | 0    | ON DAY 1  |
| MAXIMUM 1-HR AVERAGE:        | 0.07 | ppm | @ HOUR                | 8    | ON DAY 13 |
| MAXIMUM 24-HR AVERAGE:       | 0.01 | ppm |                       |      | ON DAY 13 |
| IZS CALIBRATION TIME:        | 31   | hrs | OPERATIONAL TIME:     | 724  | hrs       |
| MONTHLY CALIBRATION TIME:    | 4    | hrs | AMD OPERATION UPTIME: | 97.3 | %         |
| STANDARD DEVIATION:          | 0.00 |     | MONTHLY AVERAGE:      | 0.00 | ppm       |

NON-METHANE HYDROCARBONS Hourly Averages (NMHC ppm)



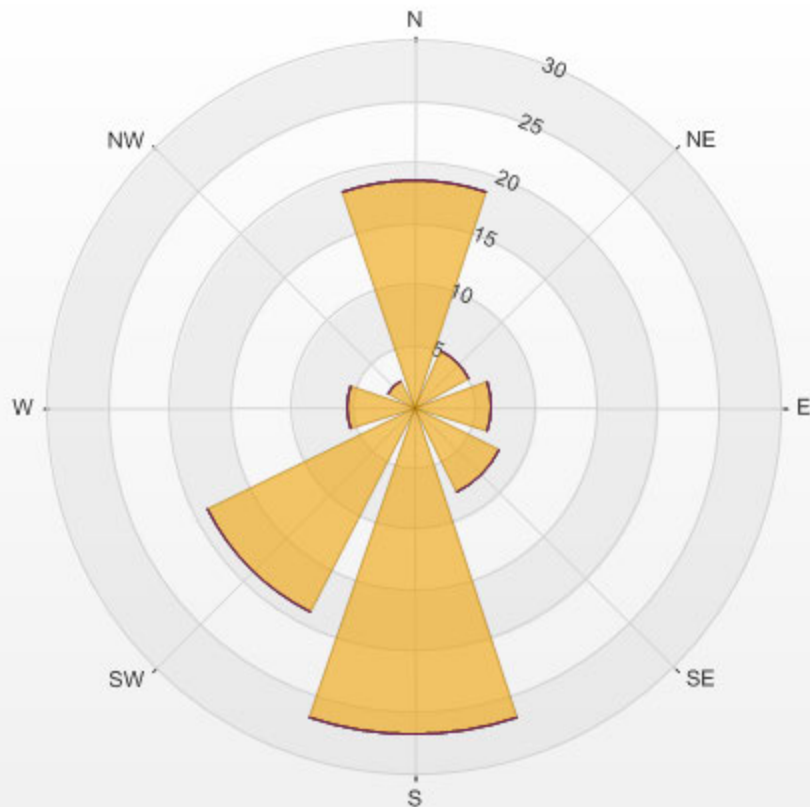
Wind: PRAMP\_RENO  
Poll.: PRAMP\_RENO-NMHC[ppm]  
Monthly: 18/01  
Type: PollutionRose  
Direction: Blowing From (Wind Frequency)  
Based On 1 Hr.

Calm: 8.56%

Calm Avg: 0.00 [ppm]

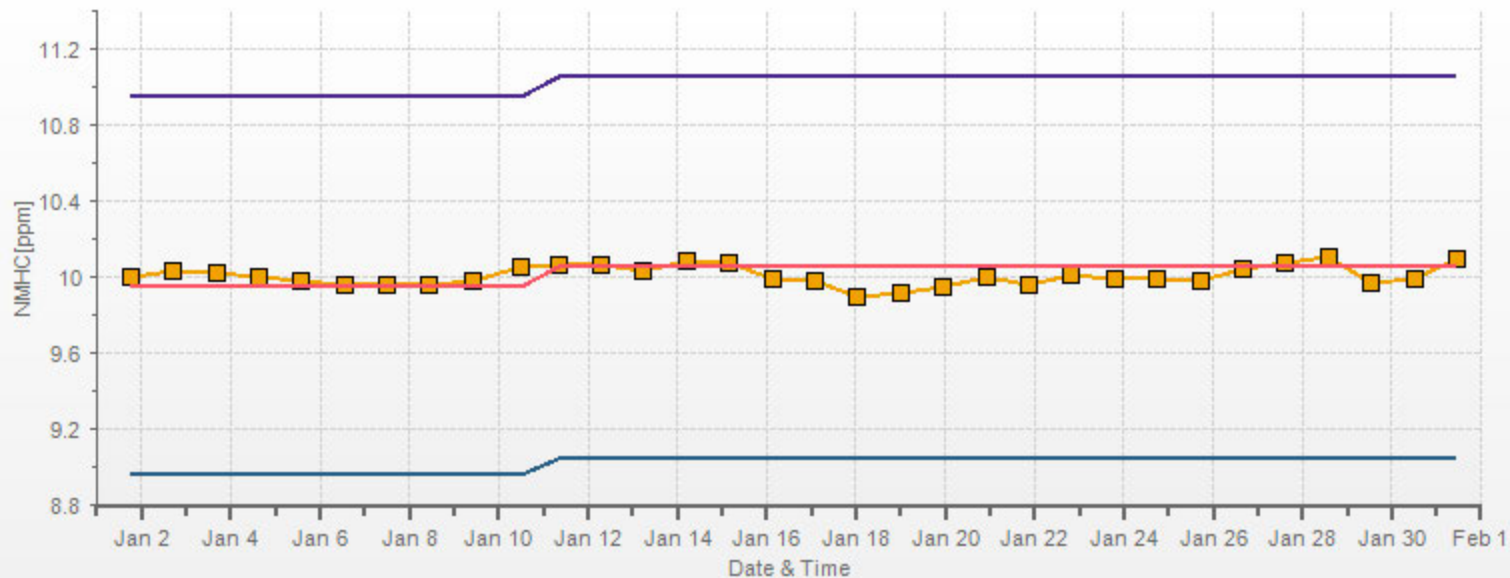
| Direction | 0-0.1 | 0.1-0.3 | 0.3-1 | 1-2 | >2.0 | Total |
|-----------|-------|---------|-------|-----|------|-------|
| N         | 18.6  | 0.0     | 0.0   | 0.0 | 0.0  | 18.6  |
| NE        | 5.1   | 0.0     | 0.0   | 0.0 | 0.0  | 5.1   |
| E         | 6.4   | 0.0     | 0.0   | 0.0 | 0.0  | 6.4   |
| SE        | 7.8   | 0.0     | 0.0   | 0.0 | 0.0  | 7.8   |
| S         | 26.9  | 0.0     | 0.0   | 0.0 | 0.0  | 26.9  |
| SW        | 18.9  | 0.0     | 0.0   | 0.0 | 0.0  | 18.9  |
| W         | 5.5   | 0.0     | 0.0   | 0.0 | 0.0  | 5.5   |
| NW        | 2.3   | 0.0     | 0.0   | 0.0 | 0.0  | 2.3   |
| Summary   | 91.5  | 0.0     | 0.0   | 0.0 | 0.0  | 91.5  |

PRAMP\_RENO Poll.: PRAMP\_RENO-NMHC[ppm] 2018/01/01 00:00 - 2018/01/31 23:00 Calm: 8.56% Calm Poll Avg: 0.00[ppm]



NMHC[ppm] Calibration: PRAMP\_RENO Monthly: 18/01 Type: Span

Span Meas Span Ref Span Low Span High



## ***WIND SPEED***

WIND SPEED Hourly Averages (WS kph)

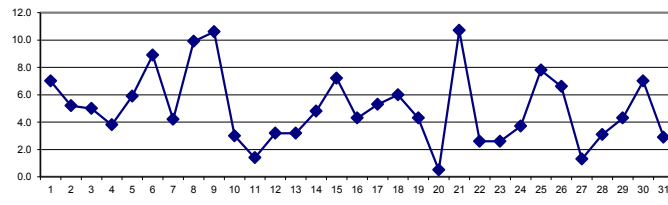
| HR START (MST) | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY MIN. | DAILY MAX. | 24-HR AVG. | RDGS. |
|----------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------|------------|------------|-------|
| 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              | 9.2  | 8.8  | 9.3  | 8.9  | 8.8  | 7.7  | 7.5  | 6.0  | 7.0  | 7.4  | 8.2   | 9.8   | 11.1  | 14.2  | 9.5   | 0.7   | 1.8   | 3.2   | 3.8   | 9.3   | 11.2  | 11.5  | 9.9   | 10.0  | 0.7        | 14.2       | 7.0        | 24    |
| 2              | 10.6 | 12.5 | 12.2 | 10.0 | 7.9  | 6.8  | 0.4  | 3.4  | 2.9  | 3.4  | 2.9   | 3.5   | 5.7   | 6.0   | 5.0   | 5.6   | 5.8   | 3.5   | 3.1   | 4.4   | 7.4   | 8.6   | 3.6   | 3.4   | 0.4        | 12.5       | 5.2        | 24    |
| 3              | 2.1  | 3.8  | 5.9  | 3.6  | 5.4  | 4.4  | 3.5  | 4.6  | 5.8  | 6.7  | 8.1   | 6.7   | 7.6   | 8.0   | 8.4   | 4.5   | 2.6   | 2.0   | 2.2   | 2.0   | 5.7   | 6.1   | 5.5   | 6.2   | 2.0        | 8.4        | 5.0        | 24    |
| 4              | 6.6  | 6.5  | 5.8  | 5.7  | 7.0  | 5.8  | 5.4  | 3.3  | 3.3  | 1.7  | 2.2   | 2.6   | 3.6   | 3.8   | 3.5   | 2.9   | 3.7   | 4.4   | 4.7   | 5.0   | 6.6   | 5.3   | 5.4   | 4.6   | 1.7        | 7.0        | 3.8        | 24    |
| 5              | 4.5  | 8.8  | 7.2  | 5.2  | 5.6  | 7.5  | 7.4  | 5.3  | 5.4  | 5.4  | 5.8   | 5.4   | 5.1   | 4.5   | 4.7   | 4.2   | 6.2   | 7.4   | 6.8   | 5.4   | 6.8   | 7.9   | 6.4   | 6.5   | 4.2        | 8.8        | 5.9        | 24    |
| 6              | 5.1  | 5.0  | 5.7  | 7.5  | 5.3  | 5.6  | 6.9  | 10.5 | 14.0 | 13.0 | 9.7   | 10.6  | 14.2  | 13.6  | 13.6  | 11.9  | 11.9  | 11.1  | 10.3  | 8.7   | 8.4   | 7.5   | 8.5   | 7.8   | 5.0        | 14.2       | 8.9        | 24    |
| 7              | 7.8  | 7.4  | 5.5  | 5.2  | 6.2  | 5.5  | 5.5  | 4.9  | 3.8  | 3.1  | 3.7   | 6.4   | 5.5   | 4.0   | 4.6   | 4.0   | 3.2   | 2.5   | 2.9   | 3.3   | 3.1   | 3.1   | 3.2   | 3.6   | 2.5        | 7.8        | 4.2        | 24    |
| 8              | 3.6  | 2.8  | 0.5  | 1.0  | 2.2  | 6.6  | 12.3 | 12.8 | 14.9 | 16.7 | 17.7  | 15.2  | 15.8  | 17.1  | 14.5  | 12.5  | 12.4  | 11.7  | 10.8  | 11.3  | 10.8  | 11.5  | 9.6   | 10.7  | 0.5        | 17.7       | 9.9        | 24    |
| 9              | 9.1  | 10.0 | 10.6 | 12.1 | 11.4 | 11.2 | 11.6 | 10.3 | 11.0 | 10.8 | 10.9  | 11.4  | 10.5  | 12.2  | 12.4  | 9.8   | 11.1  | 10.9  | 10.6  | 12.2  | 11.9  | 10.0  | 8.9   | 8.2   | 8.2        | 12.4       | 10.6       | 24    |
| 10             | 7.4  | 8.2  | 8.1  | 7.5  | 4.2  | 2.6  | 2.2  | 2.4  | 2.5  | 3.8  | 3.8   | 4.3   | 3.7   | 4.1   | 5.3   | 6.7   | 5.0   | 5.3   | 5.7   | 5.6   | 5.1   | 3.1   | 6.3   | 3.5   | 2.2        | 8.2        | 3.0        | 24    |
| 11             | 3.2  | 3.8  | 3.6  | 3.4  | 3.1  | 2.7  | 2.6  | 2.9  | 2.8  | 4.0  | 3.7   | 2.4   | 2.0   | 1.1   | 3.0   | 2.7   | 1.0   | 0.9   | 2.2   | 0.8   | 1.8   | 0.5   | 0.3   | 1.3   | 0.3        | 4.0        | 1.4        | 24    |
| 12             | 1.4  | 0.6  | 1.9  | 1.1  | 0.2  | 0.5  | 2.5  | 3.0  | 3.6  | 3.6  | 3.8   | 3.6   | 3.9   | 3.0   | 3.7   | 4.2   | 3.8   | 4.5   | 4.9   | 4.1   | 4.0   | 4.1   | 5.1   | 5.5   | 0.2        | 5.5        | 3.2        | 24    |
| 13             | 5.0  | 4.6  | 5.4  | 5.4  | 5.0  | 4.7  | 4.8  | 4.3  | 3.7  | 2.6  | 3.2   | 4.4   | 6.6   | 5.9   | 9.9   | 8.8   | 8.5   | 5.5   | 3.3   | 2.6   | 1.4   | 6.0   | 7.5   | 7.3   | 1.4        | 9.9        | 3.2        | 24    |
| 14             | 8.2  | 7.8  | 5.5  | 5.0  | 3.6  | 3.5  | 5.0  | 4.3  | 4.1  | 4.7  | 6.5   | 5.5   | 5.9   | 7.4   | 7.4   | 9.1   | 9.8   | 11.4  | 12.3  | 12.7  | 10.8  | 11.5  | 11.7  | 10.3  | 3.5        | 12.7       | 4.8        | 24    |
| 15             | 10.4 | 10.6 | 10.7 | 10.9 | 10.6 | 10.3 | 9.2  | 9.6  | 10.0 | 8.0  | 6.7   | 7.4   | 6.4   | 6.5   | 6.4   | 6.0   | 4.5   | 3.5   | 5.7   | 5.6   | 4.8   | 4.2   | 4.1   | 3.8   | 3.5        | 10.9       | 7.2        | 24    |
| 16             | 4.1  | 3.4  | 3.8  | 4.0  | 4.3  | 4.5  | 3.2  | 3.8  | 3.7  | 3.6  | 4.2   | 5.0   | 3.1   | 3.3   | 4.4   | 3.7   | 3.6   | 4.0   | 5.1   | 7.2   | 7.0   | 6.4   | 5.8   | 5.7   | 3.1        | 7.2        | 4.3        | 24    |
| 17             | 3.0  | 6.5  | 7.2  | 7.4  | 7.4  | 10.1 | 10.7 | 8.0  | 5.9  | 7.0  | 8.5   | 5.7   | 5.8   | 4.7   | 3.9   | 4.8   | 4.9   | 5.8   | 6.5   | 6.7   | 9.1   | 8.3   | 8.6   | 8.0   | 3.0        | 10.7       | 5.3        | 24    |
| 18             | 7.1  | 3.1  | 2.6  | 3.5  | 4.4  | 5.3  | 5.7  | 3.8  | 9.4  | 8.0  | 5.0   | 9.0   | 10.4  | 13.6  | 11.0  | 9.4   | 7.4   | 6.0   | 6.0   | 5.8   | 7.0   | 7.7   | 7.7   | 8.2   | 2.6        | 13.6       | 6.0        | 24    |
| 19             | 7.0  | 5.0  | 5.6  | 8.5  | 7.5  | 6.4  | 7.3  | 5.1  | 4.8  | 5.9  | 5.5   | 7.3   | 6.3   | 4.3   | 4.6   | 4.1   | 3.1   | 4.0   | 4.0   | 2.6   | 2.2   | 3.0   | 0.7   | 1.5   | 0.7        | 8.5        | 4.3        | 24    |
| 20             | 0.9  | 0.9  | 1.8  | 0.8  | 1.6  | 0.1  | 1.2  | 1.8  | 2.2  | 3.8  | 0.6   | 1.6   | 2.0   | 2.6   | 3.9   | 3.7   | 2.1   | 0.7   | 1.7   | 1.3   | 1.5   | 2.4   | 2.9   | 2.6   | 0.1        | 3.9        | 0.5        | 24    |
| 21             | 1.1  | 2.7  | 7.0  | 9.4  | 13.1 | 12.1 | 12.9 | 14.5 | 15.0 | 17.6 | 16.1  | 14.8  | 13.3  | 16.2  | 14.2  | 14.4  | 13.4  | 11.2  | 11.0  | 9.7   | 8.4   | 7.6   | 4.3   | 7.3   | 1.1        | 17.6       | 10.7       | 24    |
| 22             | 4.5  | 5.1  | 5.2  | 5.2  | 8.2  | 7.2  | 5.6  | 4.2  | 4.2  | 3.5  | 1.3   | 1.1   | 1.9   | 2.2   | 2.0   | 1.6   | 1.2   | 1.4   | 2.3   | 2.8   | 2.8   | 2.6   | 2.0   | 2.9   | 1.1        | 8.2        | 2.6        | 24    |
| 23             | 2.5  | 2.6  | 2.8  | 2.0  | 3.2  | 3.6  | 3.2  | 3.6  | 3.5  | 3.6  | 3.1   | 3.2   | 3.2   | 4.4   | 5.3   | 1.3   | 0.5   | 1.0   | 3.4   | 3.9   | 4.9   | 6.9   | 7.2   | 7.9   | 0.5        | 7.9        | 2.6        | 24    |
| 24             | 5.4  | 5.1  | 5.2  | 4.4  | 2.6  | 0.8  | 3.6  | 2.3  | 1.9  | 0.8  | 3.3   | 5.2   | 3.2   | 3.8   | 3.9   | 7.3   | 4.2   | 3.8   | 7.4   | 7.0   | 6.0   | 5.6   | 7.5   | 4.3   | 0.8        | 7.5        | 3.7        | 24    |
| 25             | 3.9  | 4.5  | 5.1  | 5.5  | 5.6  | 6.8  | 6.5  | 4.6  | 5.9  | 6.4  | 8.7   | 9.4   | 7.9   | 9.5   | 7.6   | 8.7   | 10.3  | 9.1   | 9.0   | 9.9   | 11.4  | 11.3  | 10.1  | 10.3  | 3.9        | 11.4       | 7.8        | 24    |
| 26             | 9.9  | 11.4 | 11.0 | 10.6 | 10.4 | 8.2  | 8.8  | 7.2  | 7.8  | 6.4  | 7.1   | 8.0   | 7.4   | 8.9   | 7.6   | 6.1   | 4.3   | 3.0   | 3.1   | 3.0   | 3.0   | 2.9   | 3.2   | 0.7   | 0.7        | 11.4       | 6.6        | 24    |
| 27             | 1.8  | 2.5  | 0.7  | 1.3  | 1.9  | 1.4  | 0.7  | 1.3  | 1.5  | 0.5  | 2.2   | 1.5   | 2.3   | 3.2   | 4.2   | 5.0   | 3.4   | 3.7   | 2.5   | 3.5   | 3.4   | 1.2   | 0.8   | 1.1   | 0.5        | 5.0        | 1.3        | 24    |
| 28             | 2.1  | 2.5  | 2.6  | 1.5  | 2.7  | 3.0  | 2.5  | 2.1  | 2.5  | 2.4  | 1.2   | 2.7   | 3.9   | 5.2   | 5.1   | 6.2   | 5.5   | 5.1   | 5.9   | 7.1   | 7.7   | 7.5   | 7.1   | 7.4   | 1.2        | 7.7        | 3.1        | 24    |
| 29             | 8.1  | 8.8  | 8.5  | 9.0  | 8.9  | 9.7  | 7.7  | 8.6  | 8.6  | 8.7  | 9.6   | 8.0   | 9.4   | 7.0   | 8.5   | 4.4   | 4.2   | 4.7   | 7.3   | 8.8   | 8.6   | 9.1   | 9.6   | 8.8   | 4.2        | 9.7        | 4.3        | 24    |
| 30             | 8.0  | 10.6 | 11.2 | 8.7  | 6.0  | 5.7  | 5.3  | 5.4  | 3.7  | 4.2  | 7.5   | 8.6   | 9.1   | 9.1   | 8.3   | 6.8   | 5.9   | 4.7   | 6.0   | 4.2   | 7.0   | 7.9   | 7.0   | 8.1   | 3.7        | 11.2       | 7.0        | 24    |
| 31             | 5.6  | 4.0  | 4.8  | 5.3  | 3.0  | 2.0  | 3.8  | 1.1  | 1.0  | 1.6  | 2.9   | 3.6   | 2.5   | 4.7   | 3.5   | 3.3   | 2.6   | 3.3   | 2.7   | 2.5   | 2.4   | 2.3   | 2.7   | 2.9   | 1.0        | 5.6        | 2.9        | 24    |
| HOURLY MAX     | 10.6 | 12.5 | 12.2 | 12.1 | 13.1 | 12.1 | 12.9 | 14.5 | 15.0 | 17.6 | 17.7  | 15.2  | 15.8  | 17.1  | 14.5  | 14.4  | 13.4  | 11.7  | 12.3  | 12.7  | 11.9  | 11.5  | 11.7  | 10.7  |            |            |            |       |
| HOURLY AVG     | 1.1  | 0.9  | 0.8  | 0.7  | 1.2  | 1.3  | 0.8  | 0.9  | 1.1  | 1.1  | 0.6   | 0.8   | 1.1   | 0.8   | 1.0   | 0.5   | 0.3   | 0.4   | 0.7   | 0.6   | 0.5   | 0.3   | 0.5   | 0.9   |            |            |            |       |

STATUS FLAG CODES

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

LAST CALIBRATION: April 6, 2017  
DECLINATION: MAGNETIC DECLINATION DEGREE EAST

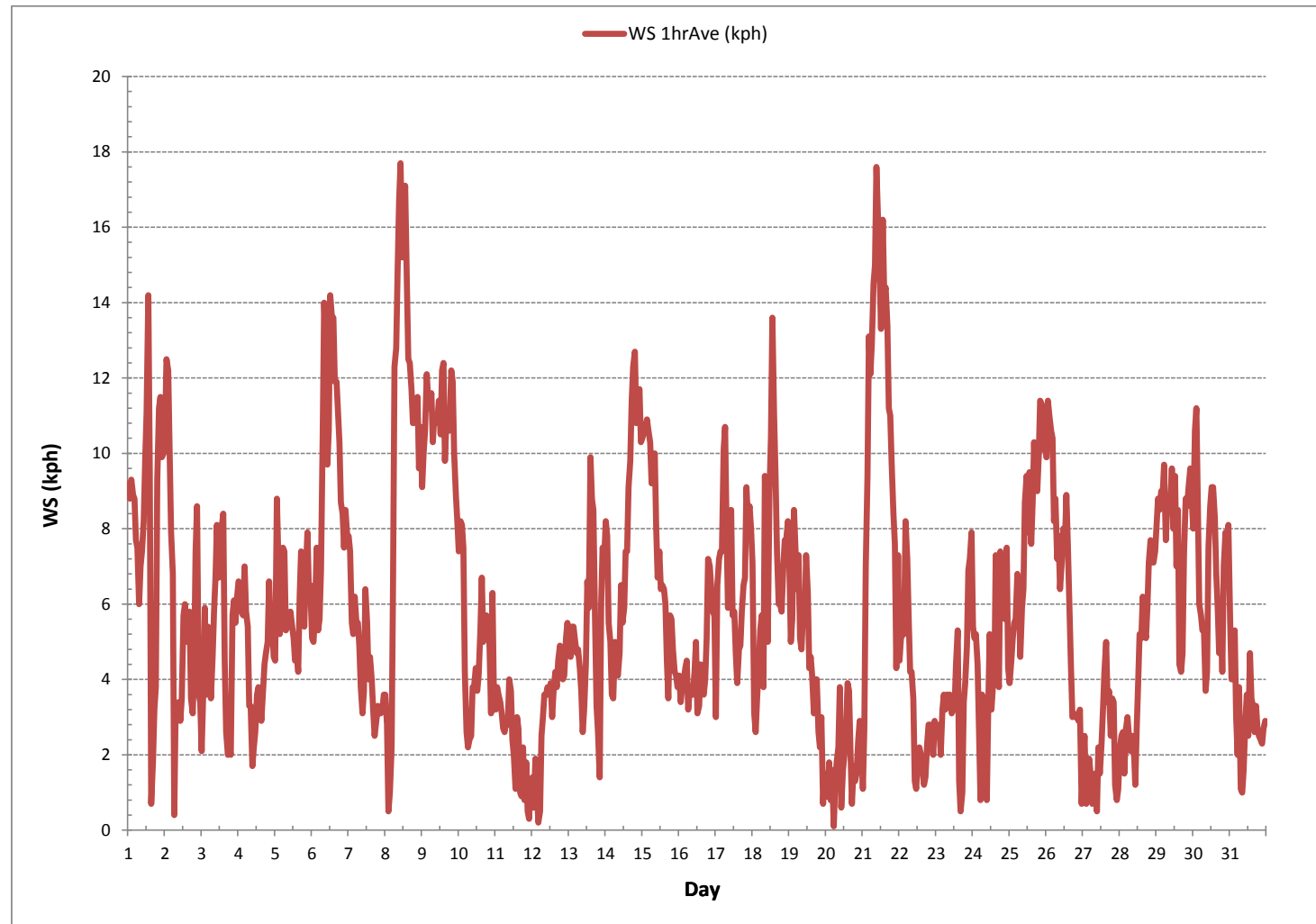
24 HR AVERAGES January 2018



MONTHLY SUMMARY

|                              |      |     |                       |    |        |     |
|------------------------------|------|-----|-----------------------|----|--------|-----|
| NUMBER OF NON-ZERO READINGS: |      | 744 |                       |    |        |     |
| MINIMUM 1-HR AVERAGE         | 0.1  | kph | @ HOUR                | 5  | ON DAY | 20  |
| MAXIMUM 1-HR AVERAGE:        | 17.7 | kph | @ HOUR                | 10 | ON DAY | 8   |
| MAXIMUM 24-HR AVERAGE:       | 10.7 | kph |                       |    | ON DAY | 21  |
|                              |      |     |                       |    |        |     |
| MONTHLY CALIBRATION TIME:    | 0    | hrs | OPERATIONAL TIME:     |    | 744    | hrs |
|                              |      |     | AMD OPERATION UPTIME: |    | 100.0  | %   |
| STANDARD DEVIATION:          | 3.4  |     | MONTHLY AVERAGE:      |    | 0.7    | kph |

WIND SPEED Hourly Averages (WS kph)



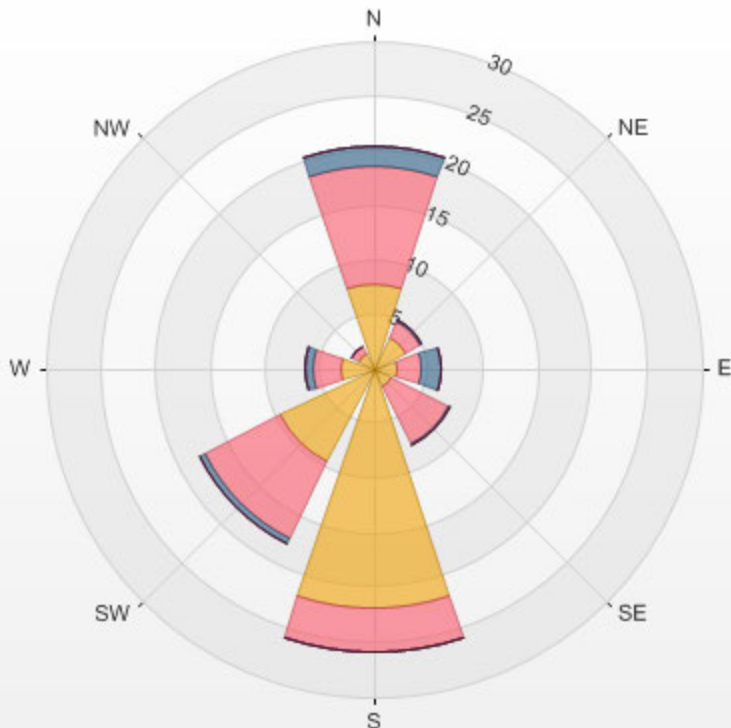
Wind: PRAMP\_RENO  
 Monitor: WSP [kph]  
 Monthly: 18/01  
 Type: WindRose  
 Direction: Blowing From (Wind Frequency)  
 Based On 1 Hr.

Calm: 8.06%

| Direction | 1.8-6.0 | 6.0-12.0 | 12.0-20.0 | 20.0-29.0 | 29.0-39.0 | >39.0 | Total |
|-----------|---------|----------|-----------|-----------|-----------|-------|-------|
| N         | 7.8     | 10.8     | 1.9       | 0.0       | 0.0       | 0.0   | 20.4  |
| NE        | 3.2     | 1.6      | 0.1       | 0.0       | 0.0       | 0.0   | 5.0   |
| E         | 2.2     | 2.3      | 1.8       | 0.0       | 0.0       | 0.0   | 6.2   |
| SE        | 1.8     | 5.9      | 0.3       | 0.0       | 0.0       | 0.0   | 7.9   |
| S         | 22.0    | 3.9      | 0.0       | 0.0       | 0.0       | 0.0   | 25.9  |
| SW        | 9.5     | 7.8      | 0.5       | 0.0       | 0.0       | 0.0   | 17.9  |
| W         | 3.1     | 2.6      | 0.7       | 0.0       | 0.0       | 0.0   | 6.3   |
| NW        | 1.6     | 0.7      | 0.0       | 0.0       | 0.0       | 0.0   | 2.3   |
| Summary   | 51.2    | 35.5     | 5.2       | 0.0       | 0.0       | 0.0   | 91.9  |

| %  | Icon                                                                              | Classes (kph) |
|----|-----------------------------------------------------------------------------------|---------------|
| 51 |    | 1.8-6.0       |
| 35 |    | 6.0-12.0      |
| 5  |    | 12.0-20.0     |
| 0  |    | 20.0-29.0     |
| 0  |  | 29.0-39.0     |
| 0  |  | >39.0         |

**PRAMP\_RENO 2018/01/01 00:00 - 2018/01/31 23:00** Calm: 8.06% Calm Wind Avg Speed: 1.03(kph)



## ***WIND DIRECTION***



PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - January 2018

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              | SSE  | SSE  | S    | S    | S    | S    | S    | S    | S    | S    | S     | S     | SSW   | SSW   | SW    | SW    | SSE   | SSW   | SSW   | WSW   | WSW   | WSW   | WSW   | WSW   | SSW         | SSW   | 24 |
| 2              | WSW  | WSW  | WSW  | W    | W    | W    | WNW  | S    | S    | S    | SSW   | SSW   | SW    | SW    | SW    | SSW   | SW    | S     | SSW   | SSW   | SSW   | SSW   | SSW   | SSW   | SSW         | SSW   | 24 |
| 3              | S    | SSW  | SW   | SSW  | SSW  | SSW  | SSW  | SSW  | SSW  | SSW  | SW    | SW    | SW    | SW    | SSW   | SSW   | SSW   | SSW   | SSW   | SW    | SSW   | SSW   | SW    | WSW   | SSW         | SSW   | 24 |
| 4              | WSW  | WSW  | SW   | WSW  | WSW  | WSW  | WSW  | S    | SSW  | SSW  | SSW   | S     | S     | S     | S     | S     | S     | S     | S     | S     | SSE   | SSE   | SSE   | SSE   | SSW         | SSW   | 24 |
| 5              | SE   | SE   | SSE  | S    | S    | S    | SSE  | SSE  | S    | S    | S     | S     | S     | SSE   | S     | S     | S     | S     | S     | S     | S     | S     | S     | S     | S           | S     | 24 |
| 6              | S    | S    | SSW  | SSW  | SSW  | SW   | SSW  | WSW  | WSW  | WSW  | WSW   | WSW   | WSW   | WSW   | WSW   | WSW   | WSW   | WSW   | WSW   | WSW   | SW    | SW    | SSW   | SSW   | SSW         | SSW   | 24 |
| 7              | SW   | SW   | WSW  | WSW  | WSW  | WSW  | SW   | WSW  | SW   | SSW  | SSW   | SSW   | SSW   | S     | SSW   | S     | SSW   | SSW   | SSW   | SSW   | SSW   | S     | S     | SSW   | SSW         | SSW   | 24 |
| 8              | S    | S    | NE   | N    | NE   | N    | N    | N    | N    | N    | N     | N     | N     | N     | N     | N     | N     | N     | NNE   | NE    | NNE   | NNE   | NNE   | NNE   | NNE         | NNE   | 24 |
| 9              | NE   | NNE  | NNE  | NNE  | NNE  | NNE  | NNE  | NNE  | NNE  | NNE  | NNE   | NNE   | N     | N     | N     | N     | N     | N     | N     | N     | N     | N     | N     | N     | N           | N     | 24 |
| 10             | NNW  | N    | N    | N    | NNW  | WNW  | WNW  | W    | WSW  | WSW  | W     | W     | W     | WSW   | WSW   | WSW   | SW    | WSW   | SW    | WSW   | SW    | SSW   | SW    | SSW   | SSW         | W     | 24 |
| 11             | S    | SSW  | S    | SSW  | SSW  | SSW  | S    | SSW  | SSW  | S    | S     | SSW   | SSW   | E     | NE    | NNE   | N     | NNE   | SW    | ENE   | NE    | N     | ESE   | SSW   | S           | SSW   | 24 |
| 12             | SSW  | SSW  | SW   | SSW  | SE   | S    | SSW  | SSW  | S    | S    | S     | S     | S     | S     | S     | S     | S     | S     | S     | S     | SSW   | S     | S     | S     | S           | S     | 24 |
| 13             | S    | S    | S    | S    | S    | S    | S    | SSW  | S    | S    | SSW   | SSW   | SSW   | SSW   | WSW   | WSW   | WSW   | WSW   | SW    | SSW   | SSW   | SSW   | N     | N     | SSW         | SSW   | 24 |
| 14             | N    | N    | NNE  | N    | N    | N    | NNE  | N    | NNE  | NE   | E     | ESE   | ESE   | SE    | ESE   | ESE   | SE    | SE    | SE    | SE    | SE    | SE    | SE    | SSE   | ESE         | ESE   | 24 |
| 15             | SSE  | SSE  | SSE  | SSE  | SE   | SE   | SSE  | SE   | SE   | SSE  | SSE   | SSE   | SSE   | S     | SSE   | SSE   | S     | SSE   | SSE   | SSE   | SSE   | SSE   | SSE   | S     | SSE         | SSE   | 24 |
| 16             | SSE  | S    | S    | S    | S    | S    | S    | S    | S    | S    | SSW   | SSW   | S     | S     | SSW   | SSW   | S     | SSW   | SSW   | SSW   | SSW   | SSW   | SSW   | SSW   | SSW         | SSW   | 24 |
| 17             | S    | SSW  | SSW  | SW   | SSW  | SSW  | SSW  | SSW  | SSW  | SSW  | SSW   | SSW   | S     | S     | S     | SSE   | SSE   | SE    | SE    | ESE   | ESE   | ESE   | ESE   | SE    | S           | SSW   | 24 |
| 18             | SE   | SE   | SSE  | S    | S    | S    | S    | SSW  | SW   | SSW  | SW    | SSW   | SSW   | SSW   | SW    | SW    | SW    | SW    | WSW   | WSW   | WSW   | WSW   | WSW   | WSW   | SSW         | SSW   | 24 |
| 19             | WSW  | WSW  | SW   | WSW  | WSW  | WSW  | WSW  | WSW  | WSW  | WSW  | WNW   | NW    | WNW   | W     | W     | W     | WSW   | WSW   | WSW   | SSW   | W     | N     | ENE   | SSW   | WSW         | WSW   | 24 |
| 20             | SSW  | WSW  | SSW  | SSW  | SSW  | S    | SE   | S    | SSW  | SSW  | SSW   | ENE   | ENE   | NNE   | NNE   | N     | NNW   | N     | NNW   | NNE   | N     | N     | NNE   | NE    | NNE         | NNE   | 24 |
| 21             | NE   | NE   | ENE  | E    | E    | E    | E    | ENE  | E    | E    | E     | ESE   | ESE   | ESE   | ESE   | ESE   | ESE   | ESE   | ESE   | ESE   | ESE   | SE    | SE    | SE    | E           | SSW   | 24 |
| 22             | S    | S    | SSW  | SSW  | SSW  | SW   | SW   | SW   | WSW  | SW   | SSE   | W     | SSE   | SSW   | SSW   | WSW   | NNE   | E     | SE    | ESE   | ESE   | SE    | SSE   | S     | SSW         | SSW   | 24 |
| 23             | SSW  | SSW  | SSW  | SSW  | SSW  | SSW  | SSW  | SSW  | SSW  | SSW  | SSW   | S     | S     | SSW   | SSW   | S     | SSE   | SE    | ESE   | E     | ESE   | ESE   | ESE   | ESE   | SSE         | SSW   | 24 |
| 24             | E    | E    | ENE  | NE   | NNE  | NNE  | NE   | NNE  | NNE  | NE   | ENE   | E     | ESE   | NNE   | N     | N     | NNE   | ENE   | ENE   | ENE   | ENE   | NNE   | NNE   | ENE   | NE          | SSW   | 24 |
| 25             | N    | N    | N    | NNE  | N    | NNW  | NNW  | N    | NNW  | NNW  | NNW   | N     | N     | N     | N     | NNW   | N     | N     | N     | N     | N     | N     | N     | N     | N           | N     | 24 |
| 26             | N    | N    | N    | N    | N    | N    | N    | N    | N    | NNW  | NNW   | NNW   | NNW   | N     | N     | NNW   | NNW   | NNW   | N     | NNW   | NNW   | NNW   | NNW   | NNW   | WSW         | N     | 24 |
| 27             | NW   | NW   | SSW  | SW   | SSW  | SSW  | S    | SSW  | SSW  | ENE  | NE    | N     | N     | NNW   | N     | N     | NNW   | NW    | W     | NW    | NW    | NNW   | NNW   | SW    | NW          | SSW   | 24 |
| 28             | SW   | SSW  | SSW  | S    | SSW  | SSW  | SSW  | SSW  | SSW  | S    | S     | SE    | ESE   | E     | E     | E     | E     | E     | E     | ESE   | ESE   | ESE   | ESE   | ESE   | ESE         | ESE   | 24 |
| 29             | ESE  | ESE  | ESE  | E    | ESE  | ESE  | SE   | ESE  | ESE  | ESE  | ESE   | ESE   | ESE   | ESE   | ESE   | ESE   | N     | NNE   | NNW   | NNW   | NNW   | NNW   | NNW   | NNW   | E           | SSW   | 24 |
| 30             | NNW  | N    | N    | N    | N    | N    | NNE  | N    | NNW  | NNW  | N     | N     | N     | N     | N     | N     | N     | N     | N     | NNW   | NNW   | NNW   | NNW   | NNW   | N           | SSW   | 24 |
| 31             | N    | N    | N    | N    | N    | N    | NE   | N    | NNW  | NE   | NE    | NE    | NE    | NE    | NNE   | N     | NNW   | N     | NNE   | NNE   | NNE   | N     | N     | NNW   | NNE         | SSW   | 24 |

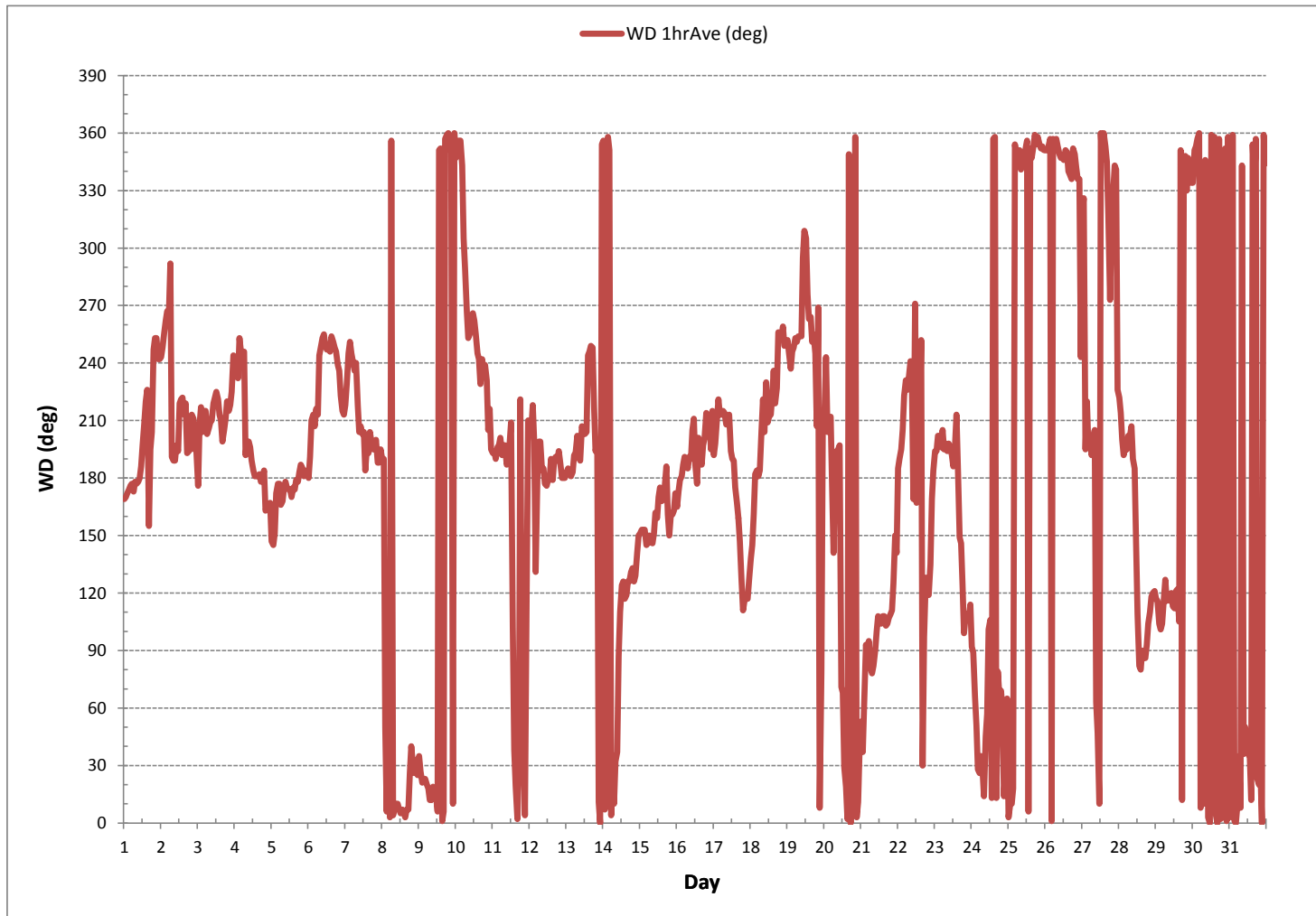
STATUS FLAG CODES

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

|                   |                                  |
|-------------------|----------------------------------|
| LAST CALIBRATION: | April 6, 2017                    |
| DECLINATION :     | MAGNETIC DECLINATION DEGREE EAST |

|                           |    |     |                       |           |     |
|---------------------------|----|-----|-----------------------|-----------|-----|
| MONTHLY CALIBRATION TIME: | 0  | hrs | OPERATIONAL TIME:     | 744       | hrs |
| STANDARD DEVIATION:       | 98 |     | AMD OPERATION UPTIME: | 100.0     | %   |
|                           |    |     | MONTHLY AVERAGE:      | 194 (SSW) |     |

WIND DIRECTION Hourly Averages (WD)



## ***RELATIVE HUMIDITY***

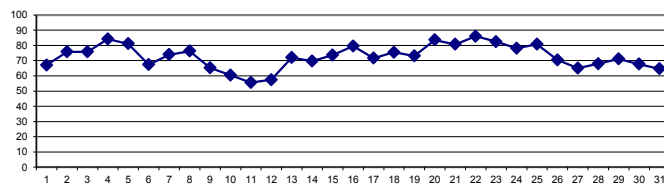
RELATIVE HUMIDITY Hourly Averages (RH %)

| HR START (MST) | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | DAILY | 24-HR | RDGS. |
|----------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| HR END (MST)   | 0:59 | 1:59 | 2:59 | 3:59 | 4:59 | 5:59 | 6:59 | 7:59 | 8:59 | 9:59 | 10:59 | 11:59 | 12:59 | 13:59 | 14:59 | 15:59 | 16:59 | 17:59 | 18:59 | 19:59 | 20:59 | 21:59 | 22:59 | 23:59 | MIN.  | MAX.  | AVG.  |       |
| DAY            |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 1              | 61   | 61   | 61   | 62   | 62   | 62   | 63   | 62   | 63   | 64   | 67    | 68    | 63    | 61    | 65    | 69    | 72    | 75    | 76    | 75    | 73    | 73    | 75    | 76    | 61    | 76    | 67    | 24    |
| 2              | 76   | 75   | 73   | 73   | 71   | 71   | 73   | 78   | 80   | 82   | 78    | 74    | 72    | 70    | 70    | 72    | 74    | 77    | 82    | 84    | 81    | 74    | 78    | 81    | 70    | 84    | 76    | 24    |
| 3              | 83   | 82   | 78   | 78   | 80   | 80   | 83   | 83   | 81   | 77   | 74    | 69    | 64    | 62    | 63    | 66    | 73    | 77    | 77    | 80    | 80    | 74    | 76    | 77    | 62    | 83    | 76    | 24    |
| 4              | 78   | 80   | 84   | 82   | 82   | 85   | 87   | 88   | 87   | 87   | 87    | 87    | 83    | 77    | 76    | 78    | 84    | 85    | 86    | 86    | 87    | 87    | 88    | 88    | 76    | 88    | 84    | 24    |
| 5              | 88   | 84   | 84   | 87   | 86   | 85   | 84   | 85   | 85   | 84   | 82    | 80    | 77    | 71    | 73    | 77    | 79    | 79    | 80    | 86    | 79    | 79    | 79    | 79    | 71    | 88    | 81    | 24    |
| 6              | 79   | 79   | 80   | 80   | 85   | 83   | 82   | 73   | 67   | 66   | 64    | 62    | 58    | 59    | 60    | 60    | 57    | 59    | 59    | 59    | 58    | 61    | 63    | 63    | 57    | 85    | 67    | 24    |
| 7              | 62   | 63   | 65   | 67   | 69   | 69   | 70   | 72   | 78   | 82   | 75    | 69    | 68    | 67    | 68    | 73    | 78    | 82    | 83    | 84    | 85    | 84    | 81    | 81    | 62    | 85    | 74    | 24    |
| 8              | 80   | 80   | 80   | 81   | 81   | 85   | 84   | 82   | 80   | 78   | 78    | 77    | 74    | 73    | 73    | 73    | 73    | 72    | 72    | 71    | 69    | 71    | 71    | 69    | 69    | 85    | 76    | 24    |
| 9              | 71   | 70   | 70   | 69   | 68   | 68   | 68   | 68   | 67   | 66   | 66    | 64    | 63    | 65    | 64    | 64    | 63    | 65    | 64    | 61    | 61    | 61    | 59    | 60    | 59    | 71    | 65    | 24    |
| 10             | 61   | 62   | 62   | 62   | 62   | 63   | 62   | 61   | 62   | 62   | 62    | 61    | 60    | 58    | 58    | 60    | 61    | 60    | 60    | 59    | 59    | 57    | 59    | 57    | 57    | 63    | 60    | 24    |
| 11             | 55   | 55   | 55   | 54   | 53   | 53   | 53   | 53   | 54   | 54   | 55    | 57    | 59    | 61    | 60    | 60    | 58    | 57    | 55    | 56    | 55    | 55    | 54    | 53    | 53    | 61    | 56    | 24    |
| 12             | 54   | 54   | 52   | 55   | 53   | 52   | 54   | 55   | 55   | 55   | 56    | 57    | 59    | 60    | 59    | 58    | 61    | 61    | 61    | 61    | 61    | 61    | 62    | 62    | 52    | 62    | 57    | 24    |
| 13             | 63   | 63   | 64   | 65   | 67   | 69   | 70   | 70   | 71   | 70   | 72    | 71    | 69    | 71    | 74    | 75    | 76    | 77    | 77    | 78    | 79    | 79    | 79    | 79    | 63    | 79    | 72    | 24    |
| 14             | 77   | 76   | 77   | 77   | 76   | 76   | 75   | 75   | 75   | 75   | 74    | 68    | 58    | 54    | 52    | 59    | 61    | 64    | 64    | 66    | 70    | 72    | 75    | 77    | 52    | 77    | 70    | 24    |
| 15             | 79   | 79   | 77   | 76   | 72   | 68   | 69   | 71   | 73   | 76   | 74    | 71    | 68    | 65    | 64    | 67    | 73    | 75    | 76    | 77    | 79    | 79    | 80    | 79    | 64    | 80    | 74    | 24    |
| 16             | 79   | 79   | 78   | 78   | 78   | 78   | 77   | 76   | 77   | 76   | 77    | 79    | 77    | 74    | 78    | 82    | 84    | 82    | 81    | 82    | 83    | 84    | 84    | 84    | 74    | 84    | 79    | 24    |
| 17             | 86   | 87   | 83   | 80   | 80   | 81   | 83   | 84   | 83   | 81   | 73    | 67    | 63    | 56    | 57    | 67    | 74    | 75    | 68    | 64    | 57    | 57    | 57    | 56    | 56    | 87    | 72    | 24    |
| 18             | 57   | 58   | 65   | 67   | 69   | 72   | 76   | 77   | 76   | 87   | 80    | 79    | 81    | 88    | 84    | 79    | 80    | 78    | 75    | 76    | 75    | 77    | 78    | 78    | 57    | 88    | 76    | 24    |
| 19             | 81   | 81   | 77   | 73   | 71   | 73   | 74   | 77   | 78   | 81   | 71    | 61    | 58    | 59    | 56    | 59    | 63    | 71    | 77    | 82    | 83    | 84    | 83    | 81    | 56    | 84    | 73    | 24    |
| 20             | 81   | 79   | 80   | 80   | 81   | 82   | 81   | 82   | 83   | 83   | 84    | 84    | 83    | 83    | 83    | 87    | 88    | 87    | 87    | 86    | 86    | 86    | 86    | 85    | 79    | 88    | 84    | 24    |
| 21             | 86   | 85   | 86   | 85   | 86   | 86   | 85   | 85   | 85   | 85   | 84    | 82    | 80    | 78    | 76    | 75    | 77    | 77    | 77    | 76    | 75    | 74    | 76    | 76    | 74    | 86    | 81    | 24    |
| 22             | 79   | 79   | 81   | 85   | 87   | 86   | 87   | 88   | 88   | 88   | 87    | 87    | 87    | 87    | 88    | 88    | 88    | 88    | 88    | 87    | 87    | 86    | 85    | 84    | 79    | 88    | 86    | 24    |
| 23             | 82   | 80   | 80   | 81   | 80   | 81   | 81   | 80   | 80   | 81   | 83    | 85    | 86    | 86    | 85    | 85    | 85    | 84    | 84    | 85    | 85    | 82    | 81    | 77    | 77    | 86    | 82    | 24    |
| 24             | 77   | 78   | 79   | 79   | 80   | 79   | 78   | 77   | 77   | 76   | 77    | 76    | 69    | 70    | 72    | 73    | 77    | 81    | 83    | 84    | 83    | 83    | 83    | 84    | 69    | 84    | 78    | 24    |
| 25             | 83   | 84   | 84   | 84   | 84   | 84   | 84   | 84   | 84   | 84   | 82    | 82    | 81    | 81    | 80    | 80    | 79    | 78    | 78    | 77    | 76    | 76    | 75    | 74    | 74    | 84    | 81    | 24    |
| 26             | 74   | 73   | 73   | 72   | 72   | 72   | 72   | 71   | 71   | 70   | 69    | 68    | 67    | 67    | 67    | 69    | 70    | 71    | 72    | 72    | 71    | 71    | 70    | 67    | 67    | 74    | 70    | 24    |
| 27             | 66   | 65   | 65   | 64   | 63   | 63   | 62   | 62   | 62   | 61   | 65    | 65    | 67    | 68    | 67    | 67    | 67    | 67    | 66    | 67    | 67    | 66    | 66    | 65    | 61    | 68    | 65    | 24    |
| 28             | 65   | 65   | 64   | 63   | 62   | 62   | 62   | 62   | 62   | 64   | 67    | 69    | 70    | 71    | 72    | 73    | 73    | 73    | 73    | 73    | 73    | 72    | 71    | 70    | 62    | 73    | 68    | 24    |
| 29             | 70   | 70   | 71   | 71   | 71   | 72   | 72   | 72   | 73   | 72   | 68    | 68    | 66    | 63    | 62    | 65    | 70    | 74    | 77    | 78    | 76    | 76    | 76    | 76    | 62    | 78    | 71    | 24    |
| 30             | 75   | 75   | 75   | 74   | 74   | 74   | 73   | 73   | 73   | 71   | 70    | 67    | 65    | 63    | 61    | 60    | 62    | 62    | 62    | 63    | 64    | 62    | 62    | 63    | 60    | 75    | 68    | 24    |
| 31             | 64   | 65   | 65   | 66   | 66   | 66   | 66   | 65   | 64   | 64   | 65    | 65    | 63    | 62    | 62    | 62    | 62    | 62    | 65    | 66    | 66    | 66    | 67    | 67    | 62    | 67    | 65    | 24    |
| HOURLY MAX     | 88   | 87   | 86   | 87   | 87   | 86   | 87   | 88   | 88   | 88   | 87    | 87    | 87    | 88    | 87    | 88    | 88    | 88    | 88    | 87    | 87    | 87    | 88    | 88    |       |       |       |       |
| HOURLY AVG     | 73   | 73   | 73   | 73   | 73   | 74   | 74   | 74   | 74   | 74   | 73    | 72    | 70    | 69    | 69    | 70    | 72    | 73    | 74    | 74    | 74    | 73    | 74    | 73    |       |       |       |       |

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       |

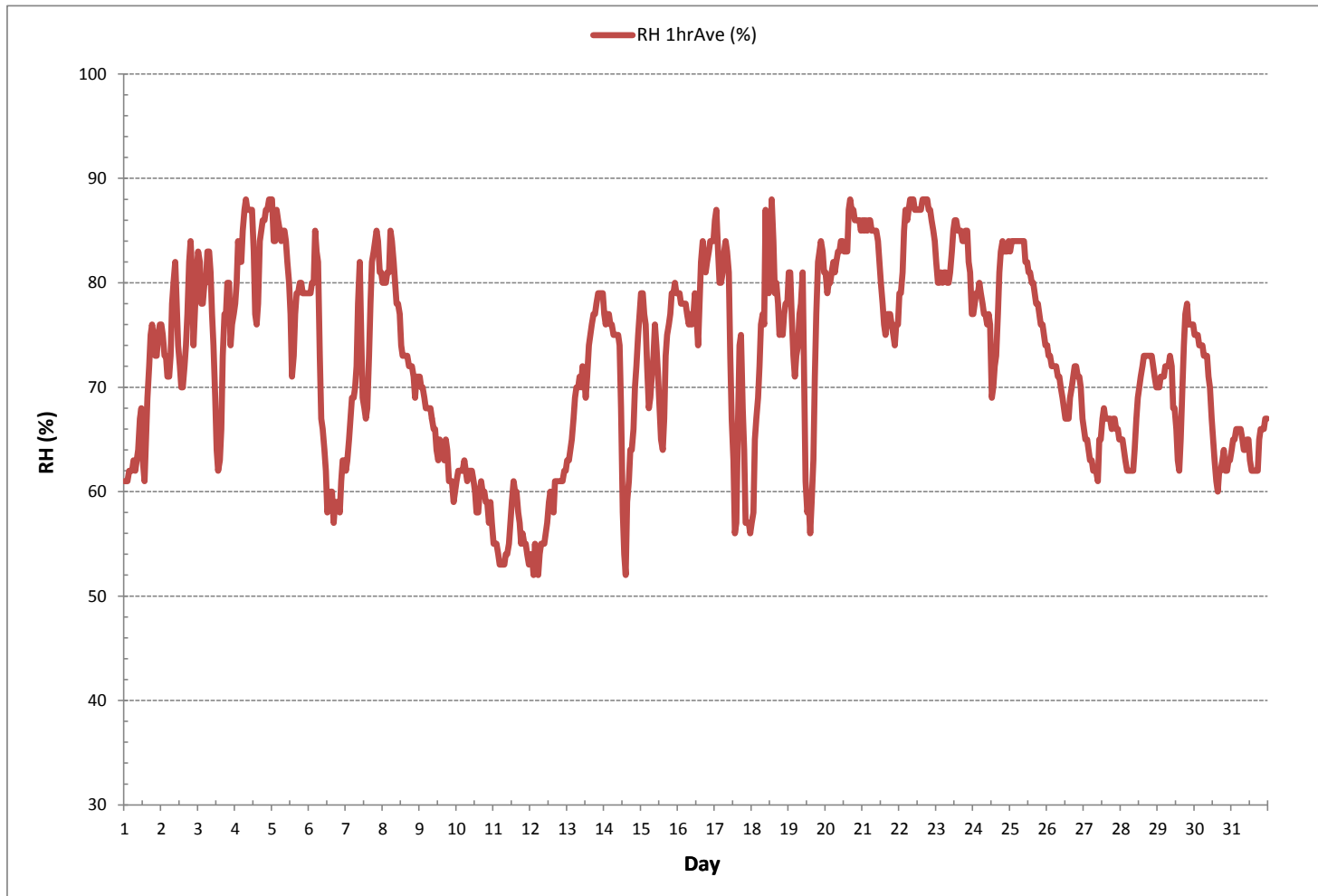
24 HR AVERAGES January 2018



MONTHLY SUMMARY

|                        |    |   |        |   |        |         |
|------------------------|----|---|--------|---|--------|---------|
| MINIMUM 1-HR AVERAGE:  | 52 | % | @ HOUR | 2 | ON DAY | 12      |
| MAXIMUM 1-HR AVERAGE:  | 88 | % | @ HOUR | 7 | ON DAY | 4       |
| MAXIMUM 24-HR AVERAGE: | 86 | % |        |   | ON DAY | 22      |
| OPERATIONAL TIME:      |    |   |        |   |        | 744 hrs |
| AMD OPERATION UPTIME:  |    |   |        |   |        | 100.0 % |
| STANDARD DEVIATION:    | 9  |   |        |   |        |         |
| MONTHLY AVERAGE:       |    |   |        |   |        | 73 %    |

RELATIVE HUMIDITY Hourly Averages (RH %)



## ***BAROMETRIC PRESSURE***



## PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - January 2018

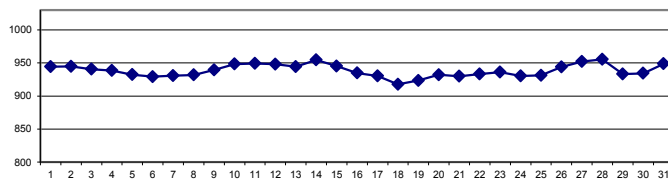
## BAROMETRIC PRESSURE Hourly Averages (BP mbar)

| HR START (MST) | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | DAILY | 24-HR | RDGS. |
|----------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| HR END (MST)   | 0:59 | 1:59 | 2:59 | 3:59 | 4:59 | 5:59 | 6:59 | 7:59 | 8:59 | 9:59 | 10:59 | 11:59 | 12:59 | 13:59 | 14:59 | 15:59 | 16:59 | 17:59 | 18:59 | 19:59 | 20:59 | 21:59 | 22:59 | 23:59 | MIN.  | MAX.  | AVG.  |       |
| DAY            |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 1              | 950  | 949  | 949  | 948  | 947  | 946  | 946  | 945  | 945  | 944  | 944   | 943   | 941   | 940   | 940   | 942   | 943   | 944   | 943   | 943   | 942   | 942   | 943   | 943   | 940   | 950   | 944   | 24    |
| 2              | 943  | 944  | 945  | 946  | 946  | 946  | 946  | 946  | 945  | 946  | 946   | 946   | 945   | 945   | 945   | 945   | 944   | 944   | 943   | 942   | 942   | 942   | 942   | 942   | 942   | 946   | 945   | 24    |
| 3              | 941  | 941  | 942  | 942  | 942  | 941  | 942  | 941  | 941  | 941  | 941   | 941   | 941   | 941   | 940   | 940   | 940   | 940   | 939   | 939   | 939   | 939   | 939   | 939   | 939   | 942   | 941   | 24    |
| 4              | 939  | 939  | 940  | 940  | 940  | 939  | 939  | 939  | 939  | 939  | 939   | 939   | 939   | 939   | 939   | 938   | 938   | 938   | 937   | 937   | 937   | 936   | 936   | 936   | 936   | 940   | 939   | 24    |
| 5              | 936  | 936  | 935  | 935  | 935  | 934  | 934  | 934  | 933  | 933  | 933   | 933   | 933   | 932   | 932   | 932   | 931   | 931   | 930   | 930   | 929   | 929   | 928   | 928   | 928   | 936   | 932   | 24    |
| 6              | 927  | 927  | 927  | 928  | 928  | 927  | 928  | 928  | 928  | 929  | 929   | 930   | 930   | 930   | 930   | 930   | 931   | 931   | 930   | 930   | 930   | 930   | 930   | 930   | 930   | 927   | 931   | 24    |
| 7              | 930  | 930  | 931  | 931  | 932  | 932  | 932  | 932  | 932  | 933  | 932   | 933   | 932   | 931   | 931   | 930   | 930   | 930   | 930   | 930   | 929   | 929   | 928   | 929   | 928   | 933   | 931   | 24    |
| 8              | 928  | 928  | 928  | 928  | 928  | 928  | 928  | 929  | 929  | 930  | 931   | 932   | 932   | 933   | 933   | 934   | 934   | 935   | 936   | 936   | 936   | 936   | 936   | 936   | 936   | 928   | 936   | 24    |
| 9              | 936  | 936  | 936  | 936  | 936  | 936  | 936  | 937  | 937  | 938  | 938   | 938   | 939   | 939   | 940   | 940   | 941   | 942   | 943   | 943   | 943   | 944   | 944   | 945   | 936   | 945   | 939   | 24    |
| 10             | 945  | 945  | 945  | 945  | 946  | 946  | 946  | 947  | 947  | 948  | 948   | 948   | 949   | 949   | 949   | 949   | 950   | 950   | 951   | 951   | 951   | 952   | 952   | 952   | 945   | 952   | 948   | 24    |
| 11             | 952  | 952  | 951  | 951  | 951  | 951  | 951  | 950  | 949  | 949  | 948   | 948   | 947   | 947   | 947   | 947   | 948   | 948   | 948   | 948   | 949   | 949   | 949   | 947   | 947   | 952   | 949   | 24    |
| 12             | 950  | 949  | 950  | 950  | 951  | 951  | 951  | 950  | 950  | 950  | 950   | 949   | 948   | 948   | 947   | 947   | 947   | 947   | 946   | 945   | 945   | 944   | 944   | 944   | 944   | 951   | 948   | 24    |
| 13             | 943  | 943  | 942  | 942  | 942  | 942  | 941  | 941  | 941  | 942  | 942   | 942   | 942   | 943   | 944   | 945   | 946   | 947   | 947   | 947   | 948   | 949   | 949   | 950   | 941   | 950   | 944   | 24    |
| 14             | 951  | 952  | 953  | 954  | 954  | 954  | 955  | 955  | 956  | 956  | 956   | 956   | 955   | 955   | 955   | 955   | 955   | 955   | 955   | 955   | 954   | 954   | 953   | 953   | 951   | 956   | 954   | 24    |
| 15             | 952  | 952  | 951  | 950  | 950  | 949  | 948  | 948  | 947  | 947  | 946   | 945   | 945   | 944   | 944   | 943   | 942   | 942   | 942   | 941   | 940   | 940   | 939   | 939   | 939   | 952   | 945   | 24    |
| 16             | 938  | 938  | 937  | 937  | 937  | 937  | 936  | 935  | 935  | 935  | 935   | 935   | 934   | 933   | 933   | 933   | 933   | 933   | 933   | 933   | 933   | 933   | 933   | 933   | 933   | 938   | 935   | 24    |
| 17             | 933  | 933  | 933  | 934  | 934  | 933  | 933  | 933  | 933  | 933  | 933   | 933   | 932   | 932   | 931   | 930   | 929   | 928   | 927   | 926   | 924   | 923   | 921   | 921   | 921   | 934   | 930   | 24    |
| 18             | 920  | 919  | 918  | 918  | 918  | 917  | 916  | 916  | 917  | 917  | 917   | 917   | 917   | 917   | 916   | 916   | 917   | 917   | 918   | 918   | 918   | 918   | 918   | 919   | 916   | 920   | 917   | 24    |
| 19             | 919  | 920  | 920  | 920  | 920  | 921  | 921  | 921  | 921  | 922  | 922   | 923   | 924   | 924   | 924   | 925   | 925   | 925   | 926   | 926   | 927   | 927   | 928   | 929   | 919   | 929   | 923   | 24    |
| 20             | 929  | 929  | 930  | 930  | 930  | 931  | 931  | 931  | 931  | 931  | 931   | 932   | 932   | 932   | 933   | 933   | 934   | 934   | 934   | 934   | 934   | 935   | 935   | 935   | 929   | 935   | 932   | 24    |
| 21             | 935  | 935  | 934  | 934  | 934  | 933  | 933  | 932  | 932  | 931  | 930   | 930   | 929   | 928   | 927   | 927   | 926   | 926   | 926   | 926   | 926   | 926   | 927   | 927   | 926   | 935   | 930   | 24    |
| 22             | 928  | 928  | 929  | 929  | 930  | 930  | 931  | 931  | 932  | 932  | 933   | 933   | 933   | 934   | 934   | 935   | 935   | 936   | 936   | 936   | 936   | 936   | 937   | 937   | 928   | 937   | 933   | 24    |
| 23             | 937  | 938  | 938  | 938  | 938  | 938  | 938  | 938  | 938  | 938  | 938   | 937   | 937   | 937   | 936   | 935   | 935   | 934   | 934   | 933   | 933   | 932   | 932   | 931   | 931   | 938   | 936   | 24    |
| 24             | 931  | 931  | 930  | 930  | 931  | 931  | 931  | 931  | 931  | 931  | 930   | 930   | 930   | 930   | 930   | 929   | 930   | 930   | 930   | 930   | 930   | 929   | 929   | 929   | 929   | 931   | 930   | 24    |
| 25             | 929  | 929  | 929  | 929  | 929  | 929  | 929  | 929  | 929  | 930  | 930   | 930   | 930   | 930   | 931   | 931   | 932   | 933   | 933   | 934   | 934   | 935   | 935   | 936   | 929   | 936   | 931   | 24    |
| 26             | 937  | 938  | 938  | 939  | 939  | 940  | 941  | 941  | 942  | 943  | 943   | 944   | 944   | 945   | 945   | 946   | 947   | 947   | 948   | 948   | 948   | 949   | 949   | 950   | 937   | 950   | 944   | 24    |
| 27             | 950  | 950  | 950  | 950  | 951  | 951  | 951  | 951  | 951  | 951  | 951   | 951   | 951   | 950   | 950   | 951   | 952   | 953   | 954   | 954   | 955   | 955   | 956   | 957   | 950   | 957   | 952   | 24    |
| 28             | 958  | 958  | 959  | 959  | 959  | 959  | 959  | 959  | 958  | 958  | 958   | 958   | 957   | 956   | 955   | 954   | 953   | 953   | 952   | 951   | 950   | 950   | 949   | 948   | 948   | 959   | 955   | 24    |
| 29             | 947  | 946  | 945  | 944  | 943  | 941  | 940  | 939  | 937  | 936  | 934   | 933   | 931   | 929   | 927   | 926   | 925   | 924   | 924   | 923   | 924   | 924   | 924   | 925   | 923   | 947   | 933   | 24    |
| 30             | 926  | 927  | 928  | 929  | 930  | 930  | 930  | 931  | 931  | 932  | 932   | 933   | 934   | 934   | 935   | 936   | 937   | 939   | 939   | 940   | 941   | 942   | 943   | 943   | 926   | 943   | 934   | 24    |
| 31             | 944  | 945  | 946  | 946  | 947  | 948  | 948  | 949  | 949  | 950  | 950   | 950   | 950   | 950   | 950   | 950   | 950   | 950   | 950   | 950   | 950   | 950   | 950   | 950   | 944   | 950   | 949   | 24    |
| HOURLY MAX     | 958  | 958  | 959  | 959  | 959  | 959  | 959  | 959  | 958  | 958  | 958   | 958   | 957   | 956   | 955   | 955   | 955   | 955   | 955   | 955   | 955   | 955   | 956   | 957   |       |       |       |       |
| HOURLY AVG     | 938  | 938  | 938  | 938  | 939  | 938  | 938  | 938  | 938  | 938  | 938   | 938   | 938   | 938   | 938   | 938   | 938   | 938   | 938   | 938   | 938   | 938   | 938   | 938   |       |       |       |       |

## 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       |

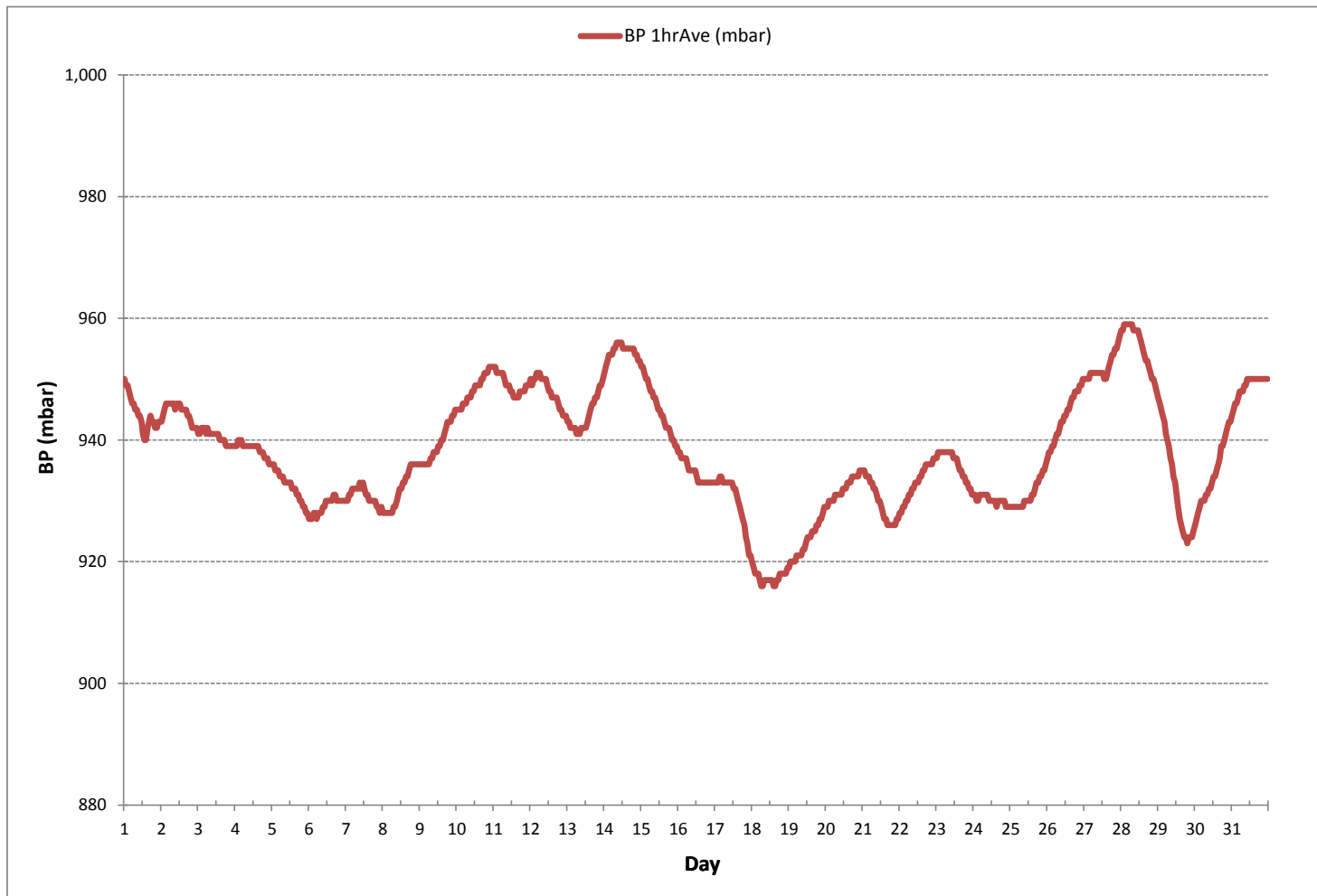
## 24 HR AVERAGES January 2018



## MONTHLY SUMMARY

|                        |     |      |        |   |        |          |
|------------------------|-----|------|--------|---|--------|----------|
| MINIMUM 1-HR AVERAGE:  | 916 | mbar | @ HOUR | 6 | ON DAY | 18       |
| MAXIMUM 1-HR AVERAGE:  | 959 | mbar | @ HOUR | 2 | ON DAY | 28       |
| MAXIMUM 24-HR AVERAGE: | 955 | mbar |        |   | ON DAY | 28       |
| OPERATIONAL TIME:      |     |      |        |   |        | 744 hrs  |
| AMD OPERATION UPTIME:  |     |      |        |   |        | 100.0 %  |
| STANDARD DEVIATION:    | 10  |      |        |   |        |          |
| MONTHLY AVERAGE:       |     |      |        |   |        | 938 mbar |

BAROMETRIC PRESSURE Hourly Averages (BP mbar)



## ***AMBIENT TEMPERATURE***



## PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - January 2018

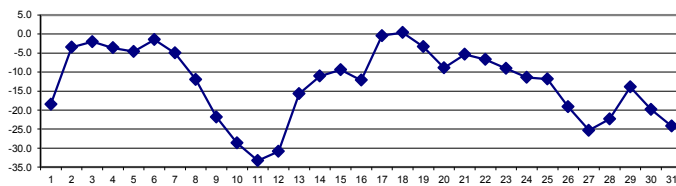
## AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)

| HR START (MST) | 0:00  | 1:00  | 2:00  | 3:00  | 4:00  | 5:00  | 6:00  | 7:00  | 8:00  | 9:00  | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | DAILY | 24-HR | RDGS. |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| HR END (MST)   | 0:59  | 1:59  | 2:59  | 3:59  | 4:59  | 5:59  | 6:59  | 7:59  | 8:59  | 9:59  | 10:59 | 11:59 | 12:59 | 13:59 | 14:59 | 15:59 | 16:59 | 17:59 | 18:59 | 19:59 | 20:59 | 21:59 | 22:59 | 23:59 | MIN.  | MAX.  | AVG.  |       |
| DAY            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 1              | -27.7 | -27.7 | -27.6 | -27.5 | -27.4 | -27.4 | -26.6 | -27.0 | -26.7 | -25.4 | -22.3 | -18.1 | -13.7 | -11.2 | -11.9 | -12.7 | -14.8 | -15.7 | -15.6 | -8.1  | -6.7  | -6.9  | -7.5  | -7.4  | -27.7 | -6.7  | -18.5 | 24    |
| 2              | -6.3  | -5.6  | -3.7  | -3.3  | -2.7  | -2.7  | -3.5  | -4.9  | -5.4  | -7.0  | -6.0  | -3.6  | -1.5  | -0.6  | -0.6  | -1.0  | -1.2  | -2.5  | -4.1  | -5.4  | -3.0  | -1.2  | -3.5  | -4.3  | -7.0  | -0.6  | -3.5  | 24    |
| 3              | -4.8  | -3.9  | -2.5  | -3.0  | -3.9  | -3.1  | -5.1  | -4.6  | -3.7  | -2.8  | -1.9  | -0.5  | 0.5   | 1.2   | 1.0   | 0.1   | -1.8  | -2.6  | -2.8  | -2.5  | -2.5  | 0.2   | 0.0   | 0.0   | -5.1  | 1.2   | -2.0  | 24    |
| 4              | -0.3  | -0.8  | -2.1  | -1.3  | -1.5  | -1.9  | -2.5  | -5.6  | -7.3  | -6.8  | -6.1  | -4.7  | -3.1  | -2.3  | -2.0  | -2.4  | -3.6  | -4.0  | -4.4  | -4.7  | -4.3  | -5.4  | -5.1  | -5.3  | -7.3  | -0.3  | -3.6  | 24    |
| 5              | -4.3  | -2.6  | -3.2  | -4.3  | -4.5  | -4.4  | -4.8  | -5.2  | -5.5  | -5.8  | -5.1  | -4.7  | -4.2  | -2.6  | -2.7  | -3.8  | -3.9  | -4.3  | -5.8  | -6.6  | -6.6  | -6.0  | -4.9  | -4.6  | -6.6  | -2.6  | -4.6  | 24    |
| 6              | -3.9  | -3.6  | -2.6  | -2.5  | -1.9  | -1.3  | -0.9  | 0.3   | 0.4   | -0.1  | -0.1  | 0.3   | 0.9   | 1.0   | 0.8   | 0.0   | -0.5  | -1.2  | -2.5  | -2.8  | -3.1  | -3.6  | -4.4  | -4.4  | -4.4  | 1.0   | -1.5  | 24    |
| 7              | -3.9  | -3.0  | -3.1  | -3.4  | -3.6  | -3.4  | -3.4  | -4.1  | -5.9  | -7.1  | -5.7  | -3.7  | -3.5  | -3.6  | -3.5  | -4.6  | -5.9  | -6.7  | -7.8  | -7.6  | -7.8  | -6.9  | -5.7  | -6.0  | -7.8  | -3.0  | -5.0  | 24    |
| 8              | -5.7  | -5.8  | -5.3  | -5.4  | -4.5  | -4.2  | -8.0  | -9.7  | -10.7 | -11.1 | -11.6 | -12.3 | -13.2 | -13.9 | -14.5 | -15.3 | -15.5 | -15.4 | -15.6 | -16.8 | -17.5 | -18.1 | -18.3 | -18.4 | -18.4 | -4.2  | -12.0 | 24    |
| 9              | -18.6 | -18.9 | -19.4 | -19.8 | -20.1 | -20.4 | -20.6 | -20.8 | -21.0 | -21.0 | -22.3 | -21.0 | -21.1 | -21.7 | -22.0 | -22.1 | -22.5 | -23.4 | -23.7 | -24.1 | -24.6 | -25.0 | -25.3 | -25.6 | -25.6 | -18.6 | -21.9 | 24    |
| 10             | -27.0 | -27.9 | -28.1 | -27.9 | -28.0 | -27.4 | -27.5 | -28.6 | -28.3 | -27.9 | -27.6 | -27.2 | -26.8 | -26.9 | -26.9 | -27.7 | -29.1 | -29.6 | -30.0 | -30.3 | -30.4 | -32.4 | -31.3 | -32.5 | -32.5 | -26.8 | -28.6 | 24    |
| 11             | -34.7 | -34.6 | -34.4 | -35.6 | -36.4 | -36.5 | -36.0 | -35.9 | -35.5 | -35.7 | -33.5 | -31.0 | -28.4 | -26.0 | -27.7 | -29.0 | -30.6 | -31.9 | -33.5 | -33.4 | -33.6 | -34.0 | -34.8 | -35.7 | -36.5 | -26.0 | -33.3 | 24    |
| 12             | -35.3 | -35.1 | -36.4 | -34.4 | -35.7 | -36.4 | -34.8 | -33.7 | -34.0 | -34.1 | -32.7 | -30.7 | -28.6 | -25.9 | -25.1 | -26.0 | -26.7 | -27.3 | -27.6 | -28.2 | -28.3 | -28.0 | -27.6 | -27.3 | -36.4 | -25.1 | -30.8 | 24    |
| 13             | -26.5 | -26.2 | -25.4 | -24.2 | -22.4 | -19.9 | -18.5 | -18.7 | -19.0 | -19.7 | -16.5 | -13.4 | -13.0 | -12.3 | -10.1 | -10.1 | -9.8  | -8.7  | -9.2  | -10.3 | -11.2 | -10.0 | -10.6 | -11.4 | -26.5 | -8.7  | -15.7 | 24    |
| 14             | -12.4 | -12.8 | -12.5 | -12.9 | -13.6 | -13.4 | -13.5 | -13.8 | -13.7 | -13.0 | -10.6 | -9.4  | -8.6  | -8.0  | -7.3  | -8.1  | -9.1  | -9.7  | -10.1 | -10.4 | -10.5 | -10.6 | -10.7 | -10.4 | -13.8 | -7.3  | -11.0 | 24    |
| 15             | -9.5  | -8.4  | -8.4  | -8.2  | -8.6  | -9.9  | -10.4 | -10.0 | -9.8  | -10.2 | -10.2 | -8.6  | -7.4  | -5.8  | -5.2  | -6.4  | -7.9  | -9.3  | -10.6 | -11.2 | -11.8 | -12.3 | -12.9 | -13.7 | -13.7 | -5.2  | -9.4  | 24    |
| 16             | -14.0 | -14.3 | -14.5 | -14.4 | -14.1 | -14.5 | -15.3 | -15.7 | -15.5 | -15.6 | -14.7 | -14.2 | -12.1 | -10.9 | -10.8 | -10.6 | -10.9 | -11.1 | -11.3 | -10.5 | -9.3  | -7.5  | -6.2  | -3.8  | -15.7 | -3.8  | -12.2 | 24    |
| 17             | -3.6  | -2.3  | 0.2   | 0.5   | 0.1   | 0.1   | -0.7  | -1.4  | -2.3  | -2.5  | -0.6  | -0.1  | 0.7   | 2.5   | 1.2   | -0.6  | -3.0  | -2.6  | -1.0  | 0.0   | 1.4   | 1.2   | 1.1   | 1.1   | -3.6  | 2.5   | -0.4  | 24    |
| 18             | 0.7   | 0.5   | -0.8  | -2.5  | -2.8  | -3.5  | -4.9  | -3.5  | -2.3  | 1.5   | 3.4   | 2.3   | 1.7   | 1.3   | 2.2   | 2.7   | 2.1   | 2.0   | 2.1   | 1.7   | 1.8   | 1.5   | 1.2   | 1.1   | -4.9  | 3.4   | 0.4   | 24    |
| 19             | 0.5   | 0.1   | 0.2   | 0.5   | 0.3   | 0.0   | -0.5  | -1.1  | -1.3  | -2.0  | -2.0  | -1.1  | -1.0  | -1.7  | -1.7  | -2.3  | -3.5  | -5.1  | -6.5  | -8.8  | -9.1  | -10.3 | -11.1 | -12.0 | -12.0 | 0.5   | -3.3  | 24    |
| 20             | -11.7 | -13.1 | -13.1 | -12.7 | -13.1 | -11.7 | -12.0 | -10.9 | -10.1 | -9.5  | -8.2  | -7.3  | -6.9  | -6.4  | -6.5  | -6.8  | -6.6  | -6.5  | -6.5  | -6.8  | -7.0  | -7.2  | -7.3  | -7.6  | -13.1 | -6.4  | -8.9  | 24    |
| 21             | -7.3  | -7.7  | -7.2  | -6.6  | -7.0  | -7.1  | -7.1  | -7.3  | -7.3  | -6.8  | -6.1  | -5.4  | -4.4  | -3.8  | -3.5  | -3.5  | -3.8  | -3.8  | -3.7  | -3.7  | -3.7  | -3.9  | -4.3  | -7.7  | -3.5  | -5.4  | 24    |       |
| 22             | -5.5  | -5.0  | -5.6  | -7.5  | -7.9  | -7.6  | -7.7  | -6.9  | -6.9  | -6.9  | -6.4  | -6.3  | -5.8  | -5.8  | -5.8  | -6.0  | -6.0  | -6.0  | -6.1  | -6.5  | -7.0  | -7.6  | -8.2  | -9.5  | -9.5  | -5.0  | -6.7  | 24    |
| 23             | -11.0 | -12.5 | -13.1 | -12.2 | -13.1 | -11.7 | -12.0 | -12.4 | -12.6 | -11.9 | -9.0  | -7.2  | -5.3  | -4.4  | -3.8  | -4.9  | -7.5  | -8.9  | -9.0  | -8.1  | -7.5  | -6.5  | -6.6  | -6.2  | -13.1 | -3.8  | -9.1  | 24    |
| 24             | -6.7  | -7.9  | -8.3  | -9.8  | -14.2 | -15.1 | -16.1 | -16.2 | -15.5 | -15.8 | -14.2 | -10.7 | -8.4  | -9.7  | -10.0 | -9.7  | -11.5 | -12.8 | -11.1 | -10.5 | -10.2 | -10.0 | -9.7  | -9.4  | -16.2 | -6.7  | -11.4 | 24    |
| 25             | -9.4  | -9.4  | -9.4  | -9.3  | -9.5  | -9.9  | -10.0 | -10.0 | -10.0 | -10.2 | -10.6 | -10.9 | -11.2 | -11.3 | -11.4 | -12.0 | -12.8 | -13.6 | -14.2 | -14.7 | -15.3 | -15.8 | -16.2 | -16.7 | -16.7 | -9.3  | -11.8 | 24    |
| 26             | -17.2 | -17.7 | -18.0 | -18.3 | -18.6 | -18.7 | -19.0 | -19.2 | -19.4 | -19.2 | -19.1 | -18.9 | -18.7 | -18.7 | -18.5 | -18.4 | -18.5 | -18.9 | -19.2 | -19.5 | -19.8 | -20.6 | -21.6 | -24.2 | -24.2 | -17.2 | -19.2 | 24    |
| 27             | -25.2 | -25.8 | -26.4 | -27.1 | -27.6 | -28.0 | -28.5 | -28.9 | -29.3 | -29.0 | -26.3 | -24.9 | -22.3 | -21.1 | -21.5 | -22.6 | -23.4 | -23.9 | -24.3 | -24.2 | -23.3 | -24.2 | -24.6 | -25.3 | -29.3 | -21.1 | -25.3 | 24    |
| 28             | -25.3 | -25.0 | -26.5 | -27.6 | -28.5 | -28.7 | -28.3 | -28.1 | -28.0 | -26.5 | -23.5 | -20.9 | -19.8 | -19.2 | -18.5 | -17.6 | -18.2 | -18.6 | -18.1 | -17.9 | -17.9 | -17.9 | -17.8 | -17.7 | -28.7 | -17.6 | -22.3 | 24    |
| 29             | -17.3 | -17.2 | -16.9 | -16.7 | -16.1 | -15.7 | -15.1 | -14.8 | -14.4 | -14.1 | -13.6 | -13.5 | -12.4 | -10.2 | -9.4  | -9.2  | -10.2 | -13.1 | -12.8 | -12.9 | -14.5 | -15.2 | -14.7 | -14.8 | -17.3 | -9.2  | -14.0 | 24    |
| 30             | -15.1 | -15.5 | -16.8 | -17.3 | -17.6 | -17.7 | -18.0 | -18.5 | -18.7 | -18.6 | -18.9 | -19.2 | -19.8 | -19.8 | -20.2 | -20.4 | -21.3 | -22.0 | -22.4 | -22.9 | -22.8 | -23.2 | -23.8 | -25.1 | -25.1 | -15.1 | -19.8 | 24    |
| 31             | -26.0 | -26.2 | -24.7 | -24.6 | -24.8 | -24.4 | -24.9 | -25.8 | -26.8 | -26.3 | -24.5 | -23.9 | -23.1 | -23.2 | -23.4 | -23.4 | -23.2 | -23.3 | -23.6 | -23.4 | -23.3 | -23.0 | -22.8 | -22.7 | -26.8 | -22.7 | -24.2 | 24    |
| HOURLY MAX     | 0.7   | 0.5   | 0.2   | 0.5   | 0.3   | 0.1   | -0.5  | 0.3   | 0.4   | 1.5   | 3.4   | 2.3   | 1.7   | 2.5   | 2.2   | 2.7   | 2.1   | 2.0   | 2.1   | 1.7   | 1.8   | 1.5   | 1.2   | 1.1   |       |       |       |       |
| HOURLY AVG     | -13.4 | -13.4 | -13.4 | -13.5 | -13.8 | -13.7 | -14.1 | -14.3 | -14.4 | -14.2 | -13.1 | -12.0 | -11.0 | -10.4 | -10.3 | -10.8 | -11.7 | -12.3 | -12.6 | -12.6 | -12.6 | -12.7 | -13.0 |       |       |       |       |       |

## STATUS FLAG CODES

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

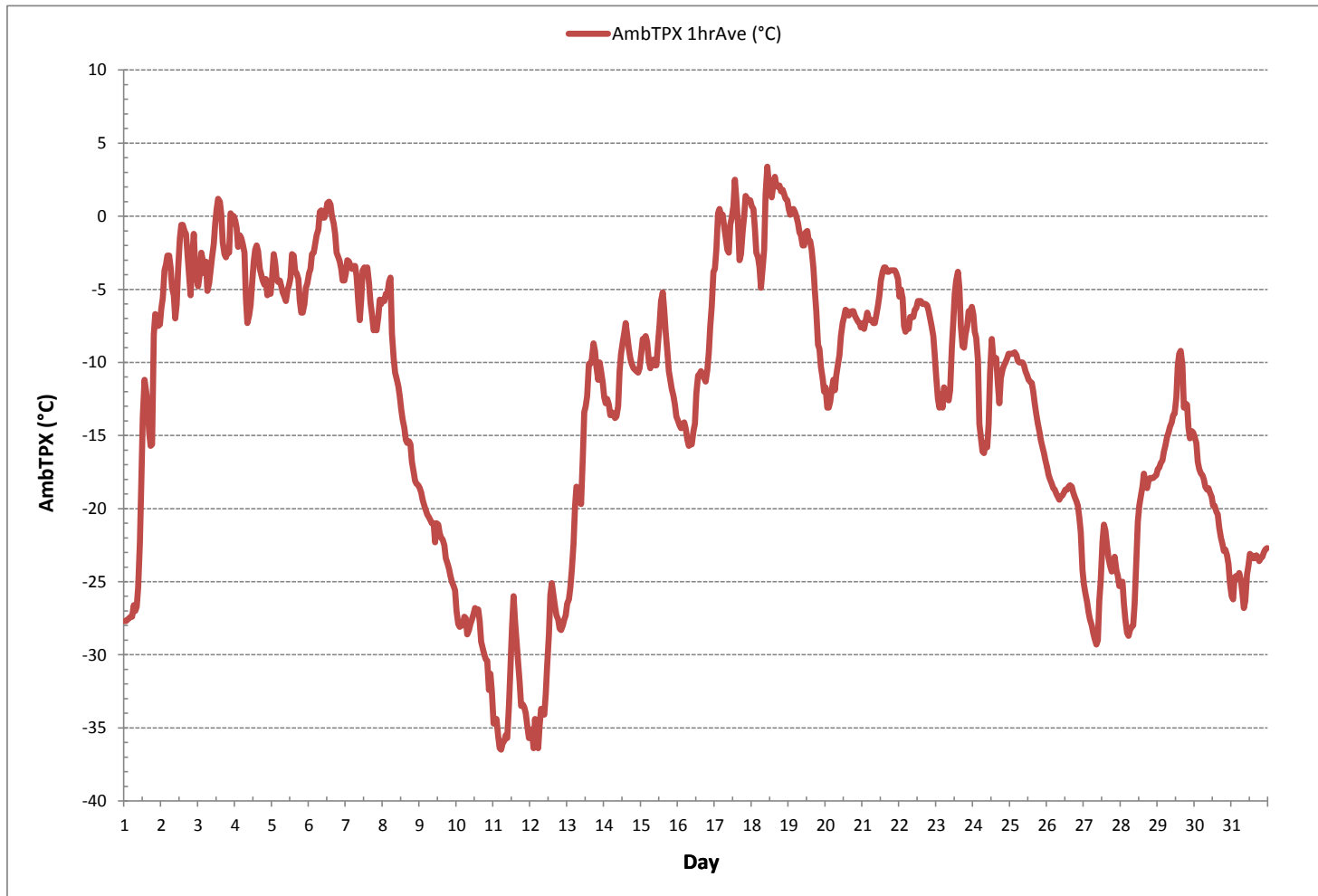
## 24 HR AVERAGES January 2018



## MONTHLY SUMMARY

|                        |          |                  |          |        |    |
|------------------------|----------|------------------|----------|--------|----|
| MINIMUM 1-HR AVERAGE:  | -36.5 °C | @ HOUR           | 5        | ON DAY | 11 |
| MAXIMUM 1-HR AVERAGE:  | 3.4 °C   | @ HOUR           | 10       | ON DAY | 18 |
| MAXIMUM 24-HR AVERAGE: | 0.4 °C   |                  |          | ON DAY | 18 |
| OPERATIONAL TIME:      |          |                  | 744      | hrs    |    |
| AMD OPERATION UPTIME:  |          |                  | 100.0    | %      |    |
| STANDARD DEVIATION:    | 9.8      | MONTHLY AVERAGE: | -12.7 °C |        |    |

AMBIENT TEMPERATURE Hourly Averages (AmbTPX °C)



## ***STATION TEMPERATURE***

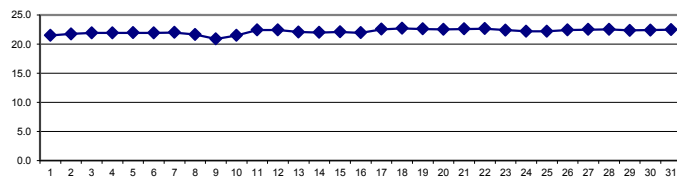
STATION TEMPERATURE Hourly Averages (StnTPX °C)

| HR START (MST) | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | DAILY | 24-HR | RDGS. |
|----------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| HR END (MST)   | 0:59 | 1:59 | 2:59 | 3:59 | 4:59 | 5:59 | 6:59 | 7:59 | 8:59 | 9:59 | 10:59 | 11:59 | 12:59 | 13:59 | 14:59 | 15:59 | 16:59 | 17:59 | 18:59 | 19:59 | 20:59 | 21:59 | 22:59 | 23:59 | MIN.  | MAX.  | AVG.  |       |
| DAY            |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 1              | 21.7 | 21.7 | 21.8 | 21.7 | 21.7 | 21.7 | 21.6 | 21.6 | 21.7 | 21.7 | 21.7  | 21.6  | 21.4  | 21.4  | 21.2  | 21.2  | 21.2  | 21.2  | 21.5  | 21.4  | 21.2  | 21.3  | 21.2  | 21.1  | 21.1  | 21.8  | 21.5  | 24    |
| 2              | 21.3 | 21.1 | 21.2 | 21.1 | 21.3 | 21.5 | 22.0 | 22.0 | 21.9 | 22.1 | 22.0  | 21.8  | 21.8  | 21.7  | 21.8  | 21.8  | 21.8  | 21.9  | 21.9  | 22.0  | 22.0  | 21.9  | 22.0  | 21.9  | 21.1  | 22.1  | 21.7  | 24    |
| 3              | 22.0 | 22.1 | 22.0 | 22.0 | 22.1 | 22.0 | 22.1 | 22.0 | 22.1 | 22.0 | 22.0  | 21.8  | 21.7  | 21.6  | 21.5  | 21.7  | 21.8  | 21.8  | 21.9  | 21.9  | 21.9  | 21.9  | 22.0  | 21.9  | 21.5  | 22.1  | 21.9  | 24    |
| 4              | 21.9 | 21.9 | 21.9 | 22.0 | 22.0 | 21.9 | 21.9 | 22.0 | 22.0 | 22.1 | 22.0  | 21.9  | 21.7  | 21.6  | 21.6  | 21.7  | 21.8  | 21.9  | 21.9  | 22.0  | 22.0  | 22.0  | 22.0  | 22.0  | 21.6  | 22.1  | 21.9  | 24    |
| 5              | 22.0 | 22.1 | 22.0 | 21.9 | 22.0 | 21.9 | 22.0 | 22.0 | 22.0 | 22.0 | 21.9  | 21.9  | 21.8  | 21.7  | 21.6  | 21.7  | 21.9  | 21.9  | 22.0  | 22.0  | 22.1  | 22.1  | 22.0  | 22.0  | 21.6  | 22.1  | 21.9  | 24    |
| 6              | 21.9 | 22.0 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 22.0 | 21.9 | 21.8  | 21.8  | 21.7  | 21.7  | 21.8  | 21.8  | 21.9  | 21.9  | 21.9  | 22.0  | 22.0  | 22.0  | 22.1  | 22.0  | 21.7  | 22.1  | 21.9  | 24    |
| 7              | 22.2 | 22.1 | 22.1 | 22.0 | 22.0 | 22.1 | 22.0 | 22.1 | 22.0 | 22.0 | 21.9  | 21.9  | 21.9  | 21.8  | 21.7  | 21.9  | 22.0  | 21.9  | 22.0  | 22.0  | 22.0  | 22.0  | 22.1  | 22.0  | 21.7  | 22.2  | 22.0  | 24    |
| 8              | 22.0 | 22.0 | 22.0 | 21.9 | 22.0 | 21.9 | 21.9 | 21.5 | 21.3 | 21.5 | 21.5  | 21.5  | 21.5  | 21.5  | 21.6  | 21.5  | 21.4  | 21.7  | 21.5  | 21.4  | 21.4  | 21.6  | 21.6  | 21.5  | 21.3  | 22.0  | 21.6  | 24    |
| 9              | 21.6 | 21.6 | 21.6 | 21.7 | 21.7 | 21.6 | 21.6 | 21.8 | 21.6 | 18.1 | 21.2  | 20.9  | 21.2  | 19.0  | 20.4  | 20.0  | 20.4  | 20.3  | 20.6  | 20.7  | 20.7  | 20.7  | 20.9  | 20.8  | 18.1  | 21.8  | 20.9  | 24    |
| 10             | 20.7 | 20.9 | 20.8 | 20.7 | 20.9 | 20.8 | 20.8 | 20.9 | 20.9 | 20.7 | 21.7  | 20.9  | 19.3  | 22.2  | 22.1  | 22.2  | 22.3  | 22.4  | 22.4  | 22.4  | 22.4  | 22.4  | 22.6  | 22.5  | 19.3  | 22.6  | 21.5  | 24    |
| 11             | 22.4 | 22.5 | 22.4 | 22.6 | 22.5 | 22.6 | 22.4 | 22.6 | 22.5 | 22.5 | 22.5  | 22.3  | 22.3  | 22.2  | 22.0  | 22.2  | 22.3  | 22.4  | 22.4  | 22.4  | 22.6  | 22.5  | 22.5  | 22.6  | 22.0  | 22.6  | 22.4  | 24    |
| 12             | 22.4 | 22.6 | 22.5 | 22.6 | 22.5 | 22.6 | 22.5 | 22.7 | 22.5 | 22.6 | 22.5  | 22.4  | 22.3  | 22.2  | 22.0  | 22.1  | 22.2  | 22.4  | 22.3  | 22.4  | 22.4  | 22.4  | 22.4  | 22.4  | 22.0  | 22.7  | 22.4  | 24    |
| 13             | 22.4 | 22.5 | 22.4 | 22.4 | 22.3 | 22.3 | 22.2 | 22.3 | 22.1 | 22.3 | 22.1  | 22.1  | 21.8  | 21.8  | 21.8  | 21.9  | 22.0  | 21.8  | 21.6  | 22.1  | 21.8  | 21.7  | 22.0  | 21.9  | 21.6  | 22.5  | 22.1  | 24    |
| 14             | 21.9 | 21.9 | 22.0 | 22.0 | 22.0 | 22.1 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0  | 21.6  | 21.6  | 21.7  | 21.9  | 22.0  | 21.8  | 22.1  | 22.4  | 22.2  | 22.4  | 22.2  | 22.3  | 22.1  | 21.6  | 22.4  | 22.0  | 24    |
| 15             | 22.1 | 22.1 | 22.1 | 22.1 | 21.8 | 22.1 | 22.1 | 22.2 | 22.2 | 22.1 | 21.8  | 21.6  | 21.8  | 22.2  | 22.2  | 22.4  | 22.4  | 22.6  | 22.5  | 22.1  | 21.7  | 22.0  | 22.0  | 22.0  | 21.6  | 22.6  | 22.1  | 24    |
| 16             | 22.0 | 22.2 | 22.0 | 22.0 | 22.2 | 22.0 | 22.1 | 22.0 | 22.2 | 22.2 | 22.0  | 22.1  | 21.7  | 21.5  | 21.6  | 21.7  | 21.6  | 21.8  | 21.9  | 22.0  | 21.9  | 22.0  | 21.9  | 22.1  | 21.5  | 22.2  | 21.9  | 24    |
| 17             | 22.5 | 22.7 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.7 | 22.6 | 22.7 | 22.7  | 22.4  | 22.2  | 22.0  | 21.7  | 22.1  | 22.5  | 22.7  | 22.8  | 22.8  | 22.8  | 22.7  | 22.8  | 22.8  | 21.7  | 22.8  | 22.6  | 24    |
| 18             | 22.7 | 22.8 | 22.7 | 22.8 | 22.8 | 22.7 | 22.8 | 22.9 | 22.9 | 22.8 | 22.7  | 22.6  | 22.6  | 22.6  | 22.6  | 22.6  | 22.7  | 22.6  | 22.6  | 22.6  | 22.6  | 22.7  | 22.7  | 22.7  | 22.6  | 22.9  | 22.7  | 24    |
| 19             | 22.6 | 22.7 | 22.6 | 22.7 | 22.7 | 22.7 | 22.7 | 22.7 | 22.8 | 22.7 | 22.8  | 22.6  | 22.5  | 22.5  | 22.5  | 22.5  | 22.6  | 22.8  | 23.0  | 22.8  | 22.6  | 22.2  | 22.0  | 22.3  | 22.0  | 23.0  | 22.6  | 24    |
| 20             | 22.3 | 22.3 | 22.5 | 22.3 | 22.3 | 22.3 | 22.2 | 22.1 | 21.8 | 22.5 | 22.1  | 22.3  | 22.6  | 22.8  | 22.8  | 22.8  | 22.8  | 22.8  | 22.8  | 22.8  | 22.8  | 22.9  | 22.9  | 22.9  | 21.8  | 22.9  | 22.5  | 24    |
| 21             | 23.0 | 22.9 | 22.9 | 22.9 | 22.7 | 22.5 | 22.4 | 22.2 | 22.0 | 21.8 | 22.3  | 22.1  | 22.1  | 22.3  | 22.4  | 22.7  | 22.8  | 22.9  | 23.0  | 23.0  | 22.9  | 23.0  | 22.8  | 23.0  | 21.8  | 23.0  | 22.6  | 24    |
| 22             | 22.8 | 22.9 | 22.9 | 22.8 | 22.7 | 22.4 | 22.2 | 22.1 | 22.0 | 22.1 | 22.3  | 22.6  | 22.8  | 22.7  | 22.8  | 22.7  | 22.8  | 22.8  | 22.8  | 22.9  | 22.8  | 22.9  | 23.0  | 22.9  | 22.0  | 23.0  | 22.7  | 24    |
| 23             | 22.7 | 22.3 | 22.2 | 22.2 | 22.3 | 22.3 | 22.3 | 22.3 | 22.3 | 22.5 | 22.2  | 22.3  | 22.4  | 22.3  | 22.2  | 22.3  | 22.8  | 22.9  | 22.7  | 22.6  | 22.5  | 22.4  | 22.3  | 22.2  | 22.2  | 22.9  | 22.4  | 24    |
| 24             | 22.2 | 22.2 | 22.0 | 21.8 | 22.3 | 22.3 | 22.4 | 22.4 | 22.2 | 22.5 | 22.2  | 22.2  | 21.9  | 22.1  | 22.4  | 22.3  | 22.4  | 22.1  | 22.0  | 22.2  | 22.0  | 22.1  | 22.0  | 22.1  | 21.8  | 22.5  | 22.2  | 24    |
| 25             | 22.2 | 21.9 | 21.8 | 22.4 | 22.0 | 22.2 | 21.9 | 22.3 | 22.2 | 22.1 | 22.2  | 22.2  | 22.1  | 22.2  | 22.1  | 22.3  | 22.2  | 22.2  | 22.5  | 22.3  | 22.4  | 22.4  | 22.5  | 22.4  | 21.8  | 22.5  | 22.2  | 24    |
| 26             | 22.4 | 22.4 | 22.6 | 22.4 | 22.6 | 22.5 | 22.4 | 22.6 | 22.5 | 22.5 | 22.4  | 22.5  | 22.4  | 22.3  | 22.3  | 22.3  | 22.3  | 22.3  | 22.3  | 22.4  | 22.4  | 22.5  | 22.5  | 22.4  | 22.3  | 22.6  | 22.4  | 24    |
| 27             | 22.6 | 22.6 | 22.6 | 22.7 | 22.7 | 22.6 | 22.8 | 22.7 | 22.8 | 22.7 | 22.6  | 22.5  | 22.3  | 22.1  | 21.8  | 22.0  | 22.1  | 22.4  | 22.4  | 22.5  | 22.6  | 22.6  | 22.6  | 22.6  | 21.8  | 22.8  | 22.5  | 24    |
| 28             | 22.5 | 22.5 | 22.6 | 22.7 | 22.7 | 22.6 | 22.7 | 22.7 | 22.7 | 22.7 | 22.7  | 22.5  | 22.4  | 22.3  | 22.3  | 22.3  | 22.3  | 22.3  | 22.4  | 22.5  | 22.5  | 22.5  | 22.6  | 22.6  | 22.3  | 22.7  | 22.5  | 24    |
| 29             | 22.5 | 22.5 | 22.6 | 22.6 | 22.5 | 22.6 | 22.5 | 22.5 | 22.4 | 22.5 | 22.5  | 22.2  | 22.2  | 21.9  | 22.0  | 22.3  | 22.4  | 22.1  | 22.2  | 22.2  | 22.1  | 22.4  | 22.2  | 22.4  | 21.9  | 22.6  | 22.3  | 24    |
| 30             | 22.1 | 22.4 | 22.4 | 22.4 | 22.4 | 22.4 | 22.3 | 22.4 | 22.4 | 22.4 | 22.4  | 22.4  | 22.4  | 22.5  | 22.4  | 22.1  | 22.3  | 22.3  | 22.6  | 22.4  | 22.6  | 22.4  | 22.6  | 22.6  | 22.1  | 22.6  | 22.4  | 24    |
| 31             | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.4 | 22.6 | 22.6 | 22.6 | 22.5 | 22.6  | 22.4  | 22.5  | 22.3  | 22.3  | 22.2  | 22.5  | 22.4  | 22.5  | 22.5  | 22.4  | 22.6  | 22.4  | 22.4  | 22.2  | 22.6  | 22.5  | 24    |
| HOURLY MAX     | 23.0 | 22.9 | 22.9 | 22.9 | 22.8 | 22.7 | 22.8 | 22.9 | 22.9 | 22.8 | 22.8  | 22.6  | 22.8  | 22.8  | 22.8  | 22.8  | 22.8  | 22.9  | 23.0  | 23.0  | 22.9  | 23.0  | 23.0  | 23.0  | 23.0  |       |       |       |
| HOURLY AVG     | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 22.1 | 22.2  | 22.1  | 22.0  | 22.0  | 22.0  | 22.0  | 22.1  | 22.2  | 22.2  | 22.2  | 22.2  | 22.2  | 22.2  | 22.2  | 22.2  |       |       |       |

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       |

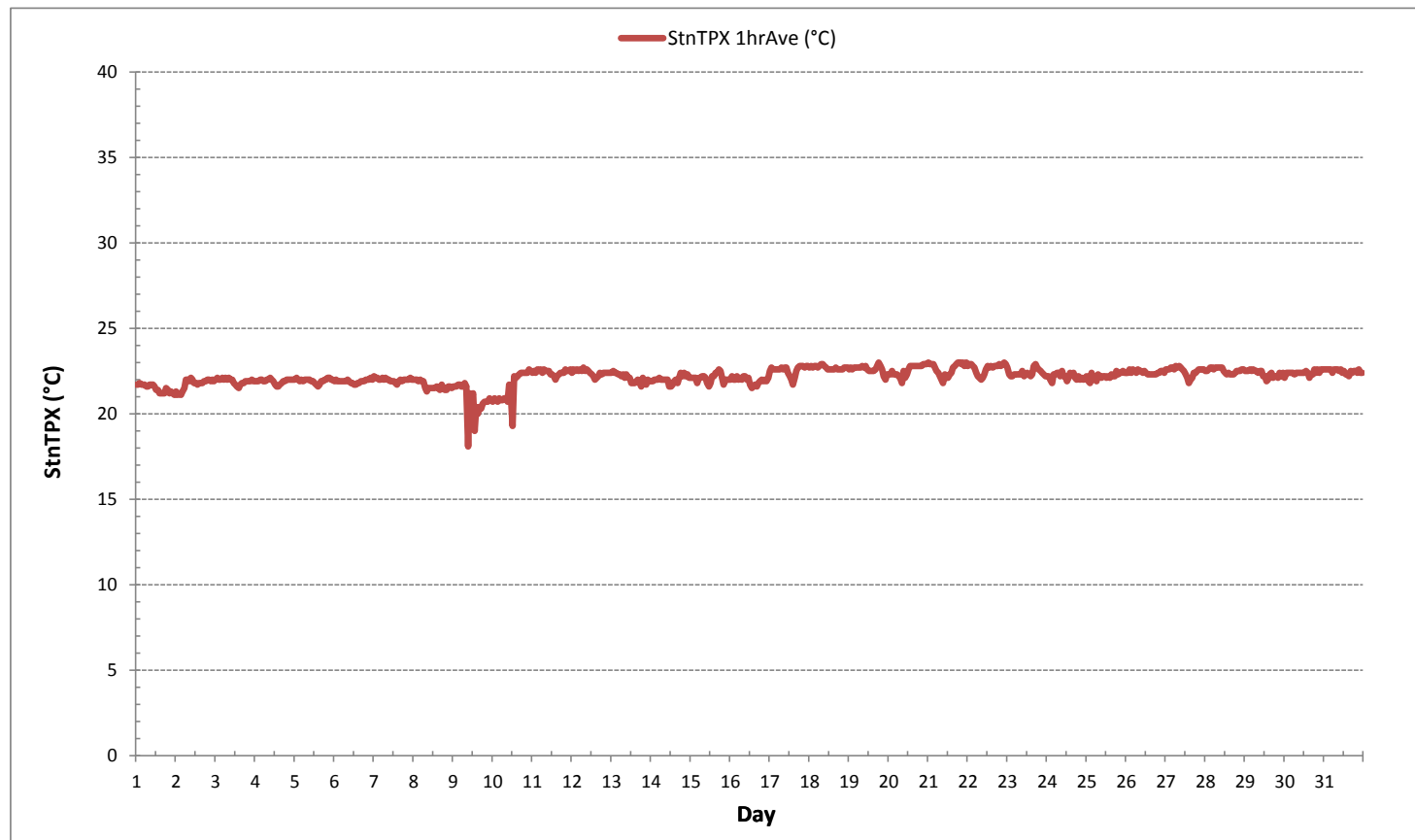
24 HR AVERAGES January 2018



MONTHLY SUMMARY

|                        |      |    |                  |    |        |         |
|------------------------|------|----|------------------|----|--------|---------|
| MINIMUM 1-HR AVERAGE:  | 18.1 | °C | @ HOUR           | 9  | ON DAY | 9       |
| MAXIMUM 1-HR AVERAGE:  | 23.0 | °C | @ HOUR           | 18 | ON DAY | 19      |
| MAXIMUM 24-HR AVERAGE: | 22.7 | °C |                  |    | ON DAY | 18      |
| OPERATIONAL TIME:      |      |    |                  |    |        | 744 hrs |
| AMD OPERATION UPTIME:  |      |    |                  |    |        | 100.0 % |
| STANDARD DEVIATION:    | 0.5  |    | MONTHLY AVERAGE: |    |        | 22.2 °C |

STATION TEMPERATURE Hourly Averages (StnTPX °C)



***APPENDIX II***  
***EQUIPMENT CALIBRATION RESULTS***

## ***SULPHUR DIOXIDE***



## API 100A Sulphur Dioxide Analyzer Calibration

|                          |                 |                                        |                                         |            |      |
|--------------------------|-----------------|----------------------------------------|-----------------------------------------|------------|------|
| Date:                    | January 9, 2018 | Barometer/B.P./units:                  | Brunton 05535 expires December 15, 2018 | 27.67      | inHg |
| Company/Airshed:         | PRAMP           | Thermometer/Station Temp:              | F.S. 160348895 expires April 8, 2018    | 21.6       | °C   |
| Location/Station Name:   | RENO            | Weather Conditions:                    | Light snow                              |            |      |
| Parameter:               | Sulphur Dioxide | Calibration Purpose:                   | routine monthly                         |            |      |
| Start Time 24 hr. (mst): | 10:30           | Performed By/Reviewer:                 | Limin Li                                | Rob Fisher |      |
| End Time 24 hr. (mst):   | 14:25           | Cal Gas Expiry Date:                   | October 24, 2020                        |            |      |
| Calibration Method:      | Gas Dilution    | Converter Model & s/n (if applicable): | n/a                                     |            |      |

|           |                        |                   |                |       |
|-----------|------------------------|-------------------|----------------|-------|
| Analyzer: | ID# or Serial Number:  | 841               | Range ppb:     | 500   |
|           | Last Calibration Date: | December 14, 2017 | As Found C.F.: | 1.002 |
|           | Previous C.F.:         | 1.000             | New C.F.:      | 0.999 |

|                                 |                                                |       |     |
|---------------------------------|------------------------------------------------|-------|-----|
| Calibration Standards:          | Standard Calibration Points for Ranges         |       |     |
| Low Flow Meter ID/Expiry Date:  | Defender Low 152019 expires December 13, 2018  | Point | ppb |
| High Flow Meter ID/Expiry Date: | Defender High 148944 expires December 13, 2018 | High  | 380 |
| Calibrator ID/Expiry Date:      | Sabio id# 17200415 expires May 16, 2018        | Mid   | 180 |
| Cal Gas Cylinder I.D. #:        | LL104225                                       | Low   | 90  |
| Cal Gas Conc. (ppm):            | 49.2                                           |       |     |

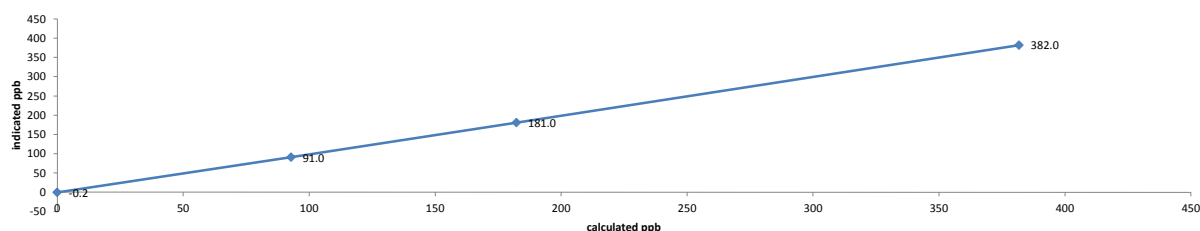
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

| Calibrator Flow Rates (cc/min) |         |         |       | Calculated Concentration (ppb): | Indicated Concentration (ppb): | Correction Factors (C.F.): |
|--------------------------------|---------|---------|-------|---------------------------------|--------------------------------|----------------------------|
| Point                          | Diluent | Cal Gas | Total |                                 |                                |                            |
| as found zero                  | 5908    | 0.00    | 5908  | 0.0                             | 0.8                            | n/a                        |
| as found high                  | 5862    | 45.85   | 5908  | 381.8                           | 382.0                          | 1.002                      |
| adjusted zero                  | 5908    | 0.00    | 5908  | 0.0                             | -0.2                           | n/a                        |
| adjusted high                  | 5862    | 45.85   | 5908  | 381.8                           | 382.0                          | 0.999                      |
| mid                            | 5889    | 21.90   | 5911  | 182.3                           | 181.0                          | 1.006                      |
| low                            | 5905    | 11.16   | 5916  | 92.8                            | 91.0                           | 1.018                      |
| calibrator zero                | 5908    | 0.00    | 5908  | 0.0                             | 0.7                            | n/a                        |
| Average C.F.=                  |         |         |       |                                 |                                | 1.008                      |

### Linear Regression/Calibration Results:

|                                   |        |        |              |
|-----------------------------------|--------|--------|--------------|
| Correlation Coefficient =         | 1.000  | LIMITS | > or = 0.995 |
| Slope =                           | 0.998  |        | 0.95-1.05    |
| b (Intercept as % of full scale)= | 0.23%  |        | ± 3% F.S.    |
| % change in C.F. from last cal=   | -0.16% |        | ± 10%        |

### API 100A Sulphur Dioxide Analyzer Calibration



| As found:       |              | As left:        |              |
|-----------------|--------------|-----------------|--------------|
| Slope:          | 1.18         | Slope:          | 1.183        |
| Offset:         | 41.1 MV      | Offset:         | 42.9 MV      |
| Hvps:           | 763 V        | Hvps:           | 763 V        |
| Dcps:           | 2561 MV      | Dcps:           | 2560 MV      |
| Rcell Temp:     | 49.5 °C      | Rcell Temp:     | 50.0 °C      |
| Box Temp:       | 32.4 °C      | Box Temp:       | 31.6 °C      |
| Pmt Temp:       | 7.0 °C       | Pmt Temp:       | 7.1 °C       |
| Izs Temp:       | 45.2 °C      | Izs Temp:       | 45.2 °C      |
| Pres:           | 25.0 IN-HG-A | Pres:           | 25.0 IN-HG-A |
| Samp Fl:        | 682 CC/M     | Samp Fl:        | 681 CC/M     |
| Pmt:            | 61.6 MV      | Pmt:            | 65.6 MV      |
| Uv Lamp:        | 1793 MV      | Uv Lamp:        | 1912 MV      |
| Lamp Ratio:     | 95.9 %       | Lamp Ratio:     | 102.3 %      |
| Str Lgt:        | 24.2 PPB     | Str Lgt:        | 25.4 PPB     |
| Drk Pmt:        | 28.2 MV      | Drk Pmt:        | 27.7 MV      |
| Drk Lmp:        | -17.2 MV     | Drk Lmp:        | -17.3 MV     |
| Expected Value: | 315.0        | Expected Value: | 315.0        |

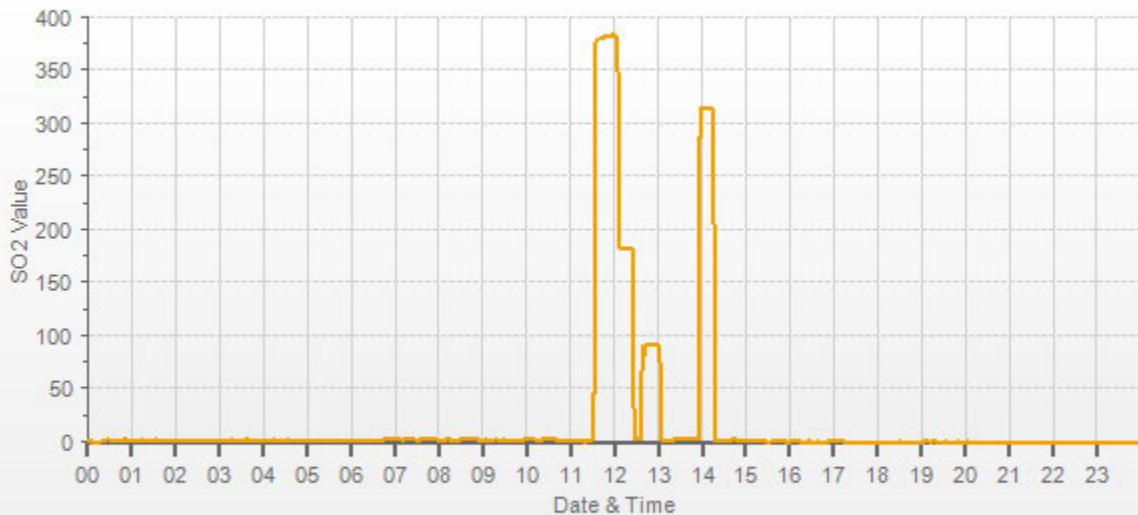
### Comments:

The analyzer sample inlet filter was changed.

The manifold blower was found to be working normally.

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

SO2[ppb] Station: PRAMP\_RENO Daily: 18/01/09 Type: AVG 1 Min. [1 Min.]



— SO2[ppb]

***TOTAL REDUCED SULPHUR***



## Thermo 431-TLE Total Reduced Sulphur Analyzer Calibration

|                          |                       |                                        |                                          |            |      |
|--------------------------|-----------------------|----------------------------------------|------------------------------------------|------------|------|
| Date:                    | January 9, 2018       | Barometer/B.P./units:                  | Bruntton 05535 expires December 15, 2018 | 27.67      | inHg |
| Company/Airshed:         | PRAMP                 | Thermometer/Station Temp:              | F.S. 160348895 expires April 8, 2018     | 21.6       | °C   |
| Location/Station Name:   | Reno                  | Weather Conditions:                    | Light snow                               |            |      |
| Parameter:               | Total Reduced Sulphur | Calibration Purpose:                   | routine monthly                          |            |      |
| Start Time 24 hr. (mst): | 10:40                 | Performed By/Reviewer:                 | Limin Li                                 | Rob Fisher |      |
| End Time 24 hr. (mst):   | 16:02                 | Cal Gas Expiry Date:                   | August 23, 2020                          |            |      |
| Calibration Method:      | Gas Dilution          | Converter Model & s/n (if applicable): | CD NOVA-CDN 101#534                      |            |      |

|           |                        |                   |                |       |
|-----------|------------------------|-------------------|----------------|-------|
| Analyzer: | ID# or Serial Number:  | 1162460022        | Range ppb:     | 100   |
|           | Last Calibration Date: | December 30, 2017 | As Found C.F.: | 0.944 |
|           | Previous C.F.:         | 1.003             | New C.F.:      | 1.000 |

|                                 |                                                |                                  |             |
|---------------------------------|------------------------------------------------|----------------------------------|-------------|
| Calibration Standards:          | Standard Calibration Points for Ranges         | SO2 Scrubber Check (10 minutes): |             |
| Low Flow Meter ID/Expiry Date:  | Defender Low 152019 expires December 13, 2018  | Start/End Time 24 hr.:           | 12:22/12:32 |
| High Flow Meter ID/Expiry Date: | Defender High 148944 expires December 13, 2018 | SO2 Analyzer Range:              | 500         |
| Calibrator ID/Expiry Date:      | API id# 690 expires March 17, 2018             | Target Concentration (ppb):      | 380         |
| Cal Gas Cylinder I.D. # :       | LL119500                                       | As Found Zero:                   | 0.0         |
| Cal Gas Conc. (ppm):            | 9.8                                            | Analyzer Response: (ppb):        | 0.0         |
|                                 |                                                | Zero Corrected Result (ppb):     | 0.0         |

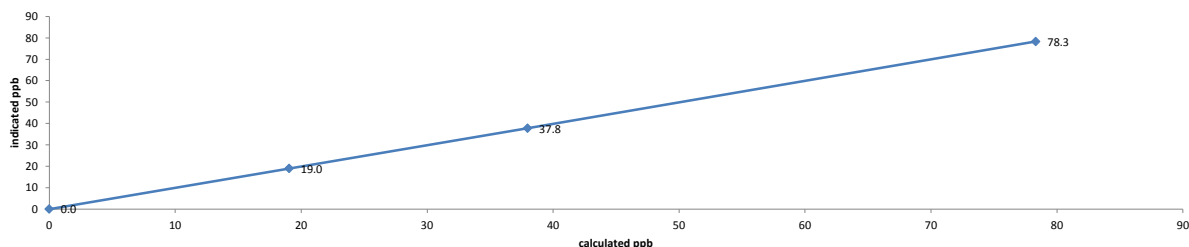
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

| Calibrator Flow Rates (cc/min) |         |         |       | Calculated           | Indicated Concentration (ppb): | Correction Factors (C.F.): |
|--------------------------------|---------|---------|-------|----------------------|--------------------------------|----------------------------|
| Point                          | Diluent | Cal Gas | Total | Concentration (ppb): |                                |                            |
| as found zero                  | 7481    | 0.00    | 7481  | 0.0                  | 0.1                            | n/a                        |
| as found high                  | 7409    | 59.65   | 7469  | 78.3                 | 83.0                           | 0.944                      |
| adjusted zero                  | 7481    | 0.00    | 7481  | 0.0                  | 0.0                            | n/a                        |
| adjusted high                  | 7415    | 59.74   | 7475  | 78.3                 | 78.3                           | 1.000                      |
| mid                            | 7439    | 28.94   | 7468  | 38.0                 | 37.8                           | 1.005                      |
| low                            | 7445    | 14.50   | 7459  | 19.1                 | 19.0                           | 1.003                      |
| calibrator zero                | 7481    | 0.00    | 7481  | 0.0                  | 0.0                            | n/a                        |
| Average C.F. =                 |         |         |       |                      |                                | 1.003                      |

### Linear Regression/Calibration Results:

|                                    |       |              |
|------------------------------------|-------|--------------|
|                                    |       | LIMITS       |
| Correlation Coefficient =          | 1.000 | > or = 0.995 |
| Slope =                            | 1.000 | 0.95-1.05    |
| b (Intercept as % of full scale) = | 0.05% | ± 3% F.S.    |
| % change in C.F. from last cal =   | 5.87% | ± 10%        |

## Thermo 431-TLE Total Reduced Sulphur Analyzer Calibration



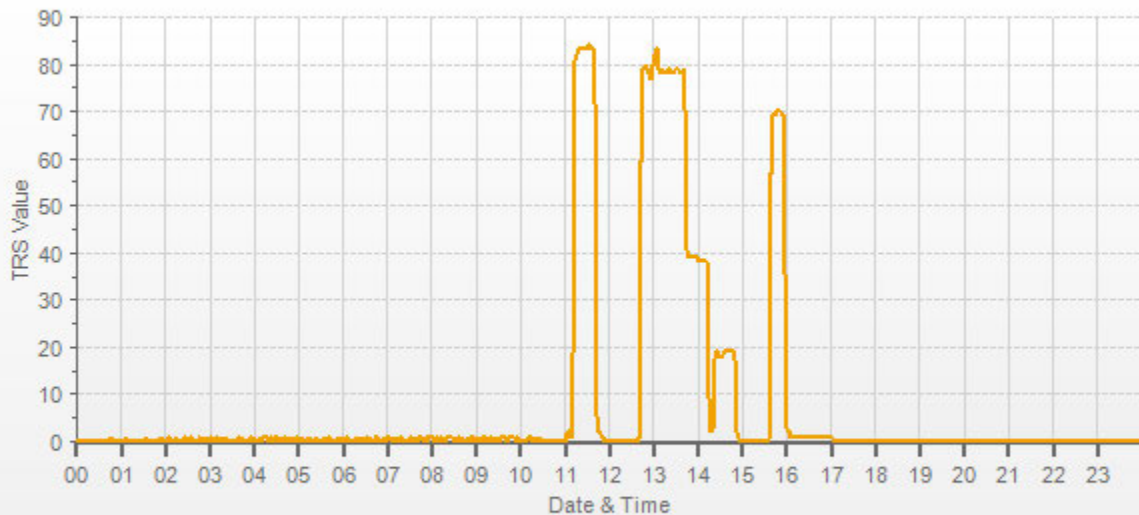
|                   |             |                   |             |
|-------------------|-------------|-------------------|-------------|
| As found:         |             | As left:          |             |
| Bkg:              | 2.26        | Bkg:              | 2.28        |
| Coef:             | 1.012       | Coef:             | 0.949       |
| Pmt:              | -706.3 V    | Pmt:              | -706.3 V    |
| Flash:            | 1005 V      | Flash:            | 1006 V      |
| Internal:         | 30.4 °C     | Internal:         | 31.5 °C     |
| Chamber:          | 44.9 °C     | Chamber:          | 44.9 °C     |
| Perm Oven Gas:    | 35.0 °C     | Perm Oven Gas:    | 35.0 °C     |
| Perm Oven Heater: | 34.12 °C    | Perm Oven Heater: | 34.14 °C    |
| Pressure:         | 639.8 mmHg  | Pressure:         | 639.8 mmHg  |
| Sample Flow:      | 0.411 L/Min | Sample Flow:      | 0.411 L/Min |
| Lamp Intensity:   | 83 %        | Lamp Intensity:   | 83 %        |
| Converter:        | 825 °C      | Converter:        | 825 °C      |
| Converter Set:    | 825 °C      | Converter Set:    | 825 °C      |
| Averaging Time:   | 120 Sec     | Averaging Time:   | 120 Sec     |
| Expected Value:   | 70.1        | Expected Value:   | 69.4        |

### Comments:

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

As-found completed before proceeding to multi-point.  
All points were assessed for stability, Maxxam's internal requirements were met.

TRS[ppb] Station: PRAMP\_RENO Daily: 18/01/09 Type: AVG 1 Min. [1 Min.]



— TRS[ppb]

***TOTAL HYDROCARBON***



## Thermo 55i Methane/Non-Methane Analyzer Calibration

|                                                 |  |                                                                       |  |                  |      |
|-------------------------------------------------|--|-----------------------------------------------------------------------|--|------------------|------|
| <b>Date:</b> January 9, 2018                    |  | <b>Barometer/B.P./units:</b> F.S. 05544 expires December 5, 2018      |  | 27.69            | inHg |
| <b>Company/Airshed:</b> PRAMP                   |  | <b>Thermometer/Station Temp:</b> F.S. 160348895 expires April 8, 2018 |  | 21.6             | °C   |
| <b>Location/Station Name:</b> RENO              |  | <b>Weather Conditions:</b> Light snow                                 |  |                  |      |
| <b>Parameter:</b> CH <sub>4</sub> / NMHC / THC  |  | <b>Calibration Purpose:</b> routine monthly                           |  |                  |      |
| <b>Start/End Time 24 hr. (mst):</b> 14:30/18:00 |  | <b>Performed By/Reviewer:</b> Limin Li                                |  | Rob Fisher       |      |
| <b>Calibration Method:</b> Gas Dilution         |  | <b>Cal Gas Expiry Date:</b>                                           |  | October 28, 2025 |      |

|                                                      |  |                               |                       |                  |
|------------------------------------------------------|--|-------------------------------|-----------------------|------------------|
| <b>Analyzer:</b>                                     |  | <b>Correction Factors:</b>    |                       |                  |
| <b>ID# or Serial Number:</b> 1314057759              |  | <b>Previous C.F.:</b>         | <b>As Found C.F.:</b> | <b>New C.F.:</b> |
| <b>Measured Flow:</b> 1292 sccm                      |  | <b>CH<sub>4</sub> =</b> 1.000 | 1.023                 | 0.997            |
| <b>Last Calibration Date:</b> December 14, 2017      |  | <b>NMHC =</b> 1.000           | 0.915                 | 1.000            |
| <b>Range ppm:</b> 20 CH <sub>4</sub> /20 NMHC/40 THC |  | <b>THC =</b> 1.000            | 0.968                 | 0.999            |

|                                                                                       |                                                     |                                                                       |                       |             |            |
|---------------------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------|-----------------------|-------------|------------|
| <b>Calibration Standards:</b>                                                         |                                                     | <b>Standard Calibration Points for Analyzer Range of 20/20/40 ppm</b> |                       |             |            |
| <b>Low Flow Meter ID/Expiry Date:</b> Defender Low 152019 expires December 13, 2018   |                                                     | <b>Point</b>                                                          | <b>CH<sub>4</sub></b> | <b>NMHC</b> | <b>THC</b> |
| <b>High Flow Meter ID/Expiry Date:</b> Defender High 148944 expires December 13, 2018 |                                                     | <b>High</b>                                                           | 13.00                 | 13.00       | 26.00      |
| <b>Calibrator ID/Expiry Date:</b> Sabio id# 17200415 expires May 16, 2018             |                                                     | <b>Mid</b>                                                            | 7.00                  | 7.00        | 14.00      |
| <b>Cal Gas Cylinder I.D. #:</b> LL119471                                              |                                                     | <b>Low</b>                                                            | 3.00                  | 3.00        | 6.00       |
| <b>CH<sub>4</sub> Cylinder Conc. =</b> 599.0                                          | 207.0 =C <sub>3</sub> H <sub>8</sub> Cylinder Conc. |                                                                       |                       |             |            |
| <b>CH<sub>4</sub> expressed as C<sub>3</sub>H<sub>8</sub> =</b> 569.3                 | 1168.3 =total CH <sub>4</sub> equivalent            |                                                                       |                       |             |            |

|                                                                        |                |                |                   |                                        |                              |                             |                                       |                             |                            |                       |             |            |
|------------------------------------------------------------------------|----------------|----------------|-------------------|----------------------------------------|------------------------------|-----------------------------|---------------------------------------|-----------------------------|----------------------------|-----------------------|-------------|------------|
| <b>ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015</b> |                |                |                   |                                        |                              |                             |                                       |                             |                            |                       |             |            |
| <b>Calibrator Flow Rates (cc/min)</b>                                  |                |                |                   | <b>Correction Factors:</b>             |                              |                             |                                       |                             |                            |                       |             |            |
| <b>Point</b>                                                           | <b>Diluent</b> | <b>Cal Gas</b> | <b>Total Flow</b> | <b>Calculated CH<sub>4</sub> (ppm)</b> | <b>Calculated NMHC (ppm)</b> | <b>Calculated THC (ppm)</b> | <b>Indicated CH<sub>4</sub> (ppm)</b> | <b>Indicated NMHC (ppm)</b> | <b>Indicated THC (ppm)</b> | <b>CH<sub>4</sub></b> | <b>NMHC</b> | <b>THC</b> |
| as found zero                                                          | 2459           | 0.00           | 2459              | 0.00                                   | 0.00                         | 0.00                        | 0.00                                  | 0.00                        | 0.00                       | n/a                   | n/a         | n/a        |
| as found high                                                          | 2400           | 60.54          | 2461              | 14.74                                  | 14.00                        | 28.74                       | 14.40                                 | 15.30                       | 29.70                      | 1.023                 | 0.915       | 0.968      |
| adjusted zero                                                          | 2459           | 0.00           | 2459              | 0.00                                   | 0.00                         | 0.00                        | 0.00                                  | 0.00                        | 0.00                       | n/a                   | n/a         | n/a        |
| adjusted high                                                          | 2400           | 60.54          | 2461              | 14.74                                  | 14.00                        | 28.74                       | 14.78                                 | 14.00                       | 28.78                      | 0.997                 | 1.000       | 0.999      |
| mid                                                                    | 2442           | 31.00          | 2473              | 7.51                                   | 7.14                         | 14.64                       | 7.43                                  | 7.40                        | 14.83                      | 1.011                 | 0.964       | 0.987      |
| low                                                                    | 2464           | 15.15          | 2479              | 3.66                                   | 3.48                         | 7.14                        | 3.53                                  | 3.92                        | 7.45                       | 1.037                 | 0.887       | 0.958      |
| calibrator zero                                                        | 2459           | 0.00           | 2459              | 0.00                                   | 0.00                         | 0.00                        |                                       |                             |                            | n/a                   | n/a         | n/a        |
| <b>Average C.F. =</b>                                                  |                |                |                   |                                        |                              |                             |                                       |                             |                            | 1.015                 | 0.951       | 0.981      |

|                                               |        |       |       |                        |  |
|-----------------------------------------------|--------|-------|-------|------------------------|--|
| <b>Linear Regression/Calibration Results:</b> |        |       |       | <b>LIMITS</b>          |  |
| <b>Correlation Coefficient =</b>              | 1.000  | 0.999 | 1.000 | <b>&gt; or = 0.995</b> |  |
| <b>Slope =</b>                                | 1.006  | 0.991 | 0.999 | <b>0.95-1.05</b>       |  |
| <b>b (Intercept as % of full scale) =</b>     | -0.38% | 1.15% | 0.38% | <b>± 3% F.S.</b>       |  |
| <b>% change in C.F. from last cal =</b>       | -2.33% | 8.47% | 3.24% | <b>± 10%</b>           |  |

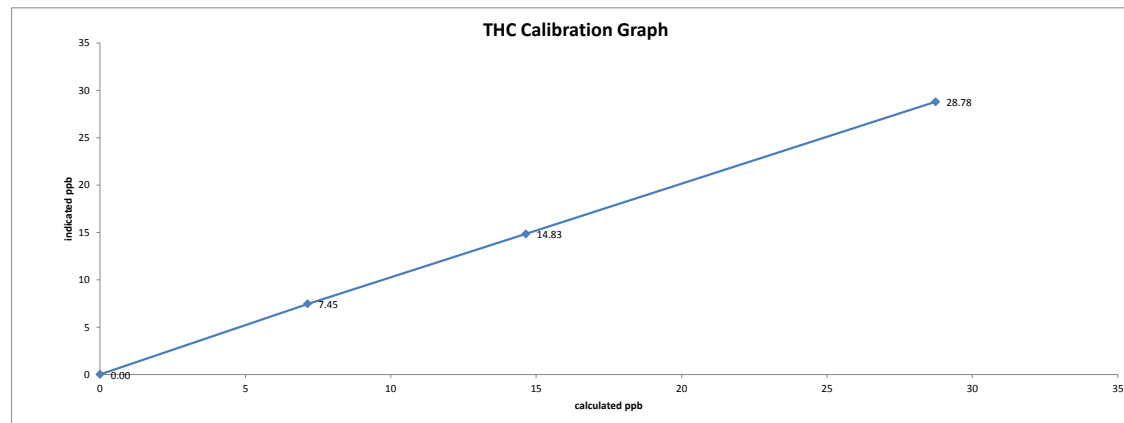
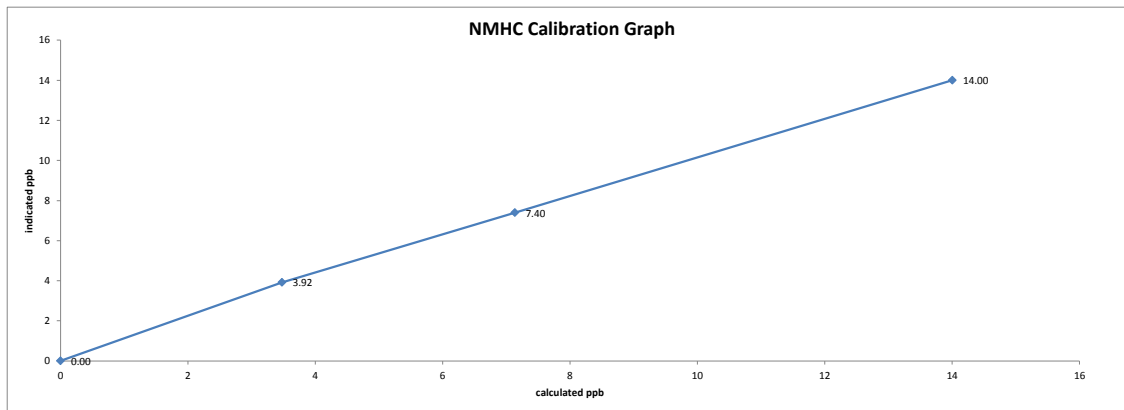
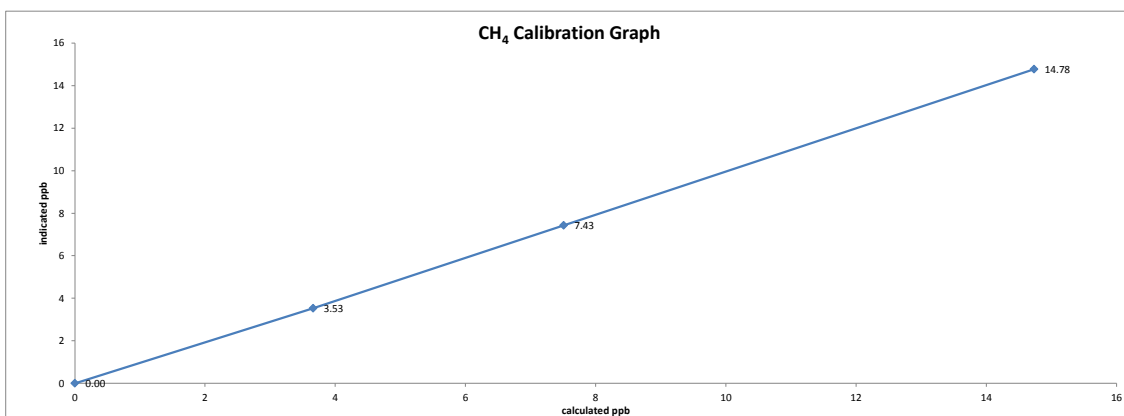
|                                        |  |                                      |  |                                   |  |                                      |  |  |  |  |  |
|----------------------------------------|--|--------------------------------------|--|-----------------------------------|--|--------------------------------------|--|--|--|--|--|
| <b>As Left Instrument Diagnostics:</b> |  |                                      |  |                                   |  |                                      |  |  |  |  |  |
| <b>Interface Board Voltages:</b>       |  | <b>Bias Supply:</b> -289 v           |  | <b>Calibration History cnt'd:</b> |  | <b>NM Peak Area:</b> n               |  |  |  |  |  |
| <b>Temperatures:</b>                   |  | <b>Detector Oven:</b> 175.1 °C       |  | <b>Crucial Settings:</b>          |  | <b>Methane Start:</b> 8              |  |  |  |  |  |
|                                        |  | <b>Filter:</b> 175.0 °C              |  |                                   |  | <b>Methane End:</b> 16               |  |  |  |  |  |
|                                        |  | <b>Column Oven:</b> 75.0 °C          |  |                                   |  | <b>Backflush:</b> 18                 |  |  |  |  |  |
|                                        |  | <b>Internal:</b> 31.1 °C             |  |                                   |  | <b>NMHV Start:</b> 26                |  |  |  |  |  |
| <b>Cylinder Pressures/reg.:</b>        |  | <b>Carrier:</b> 2400 50              |  |                                   |  | <b>NMHC End:</b> 56                  |  |  |  |  |  |
|                                        |  | <b>Fuel:</b> 1580 50                 |  |                                   |  | <b>Date:</b> 09JAN18                 |  |  |  |  |  |
|                                        |  | <b>Span Gas:</b> 550 20              |  | <b>Run History&gt;1:</b>          |  | <b>Time:</b> 14:28                   |  |  |  |  |  |
|                                        |  | <b>Zero Air Generator:</b> 48        |  |                                   |  | <b>CH<sub>4</sub> PK HT:</b> 0       |  |  |  |  |  |
| <b>Internal Pressures:</b>             |  | <b>Carrier:</b> 31.1 psi             |  |                                   |  | <b>CH<sub>4</sub> RT:</b> 8.0        |  |  |  |  |  |
|                                        |  | <b>Fuel:</b> 41.6 psi                |  |                                   |  | <b>CH<sub>4</sub> Baseline:</b> 2637 |  |  |  |  |  |
|                                        |  | <b>Air:</b> 25.9 psi                 |  |                                   |  | <b>CH<sub>4</sub> LOD:</b> 76        |  |  |  |  |  |
| <b>FID Status:</b>                     |  | <b>Status:</b> LIT                   |  |                                   |  | <b>CH<sub>4</sub> SD:</b> 25         |  |  |  |  |  |
|                                        |  | <b>Counts:</b> 30320                 |  |                                   |  | <b>CH<sub>4</sub> CONC:</b> 0        |  |  |  |  |  |
|                                        |  | <b>Flame:</b> 405 °C                 |  |                                   |  | <b>NM PK HT:</b> 0                   |  |  |  |  |  |
|                                        |  | <b>Det Base:</b> 175.1 °C            |  |                                   |  | <b>NM Peak Area:</b> 0               |  |  |  |  |  |
| <b>Flame and Power Stats:</b>          |  | <b>Last Power On:</b> 20DEC2017      |  |                                   |  | <b>NM CONC:</b> 0                    |  |  |  |  |  |
|                                        |  | <b>Flameouts:</b> 1                  |  |                                   |  | <b>NM Base Start:</b> 2538           |  |  |  |  |  |
|                                        |  | <b>Det Oven at Start:</b> 106.8      |  |                                   |  | <b>NM Base End:</b> 2631             |  |  |  |  |  |
|                                        |  | <b>Col Oven at Start:</b> 59.7       |  |                                   |  | <b>NM LOD:</b> 62                    |  |  |  |  |  |
| <b>Calibration History:</b>            |  | <b>Time:</b> n/a                     |  |                                   |  | <b>NM Start IDX:</b> 2               |  |  |  |  |  |
|                                        |  | <b>Type:</b> n/a                     |  |                                   |  | <b>NM End IDX:</b> 42                |  |  |  |  |  |
|                                        |  | <b>Status:</b> n/a                   |  |                                   |  | <b>NM Max Slope:</b> 1.0E+01         |  |  |  |  |  |
|                                        |  | <b>Check/Adjust:</b> n/a             |  |                                   |  | <b>NM Min Slope:</b> -3.8E-01        |  |  |  |  |  |
|                                        |  | <b>CH<sub>4</sub> Span Conc:</b> n/a |  |                                   |  | <b>NM PT Count:</b> 0                |  |  |  |  |  |
|                                        |  | <b>CH<sub>4</sub> SP Ratio:</b> n/a  |  | <b>Expected Values:</b>           |  | <b>Previous CH<sub>4</sub>:</b> 9.58 |  |  |  |  |  |
|                                        |  | <b>CH<sub>4</sub> RT:</b> n/a        |  |                                   |  | <b>Previous NMHC:</b> 9.95           |  |  |  |  |  |
|                                        |  | <b>CH<sub>4</sub> PK IDX:</b> n/a    |  |                                   |  | <b>Previous THC:</b> 19.57           |  |  |  |  |  |
|                                        |  | <b>CH<sub>4</sub> PK HT:</b> n/a     |  |                                   |  | <b>New CH<sub>4</sub>:</b>           |  |  |  |  |  |
|                                        |  | <b>NM Span Conc:</b> n/a             |  |                                   |  | <b>New NMHC:</b>                     |  |  |  |  |  |
|                                        |  | <b>NM SP Ratio:</b> n/a              |  |                                   |  | <b>New THC:</b>                      |  |  |  |  |  |

|                                                                                                                                                                                                                                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Comments:</b>                                                                                                                                                                                                                                                             |  |
| The analyzer sample inlet filter was changed.                                                                                                                                                                                                                                |  |
| A new nitrogen cylinder was installed.                                                                                                                                                                                                                                       |  |
| No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes.                                                                                                                                           |  |
| The manifold blower was found to be working normally.                                                                                                                                                                                                                        |  |
| The NMHC calibration failed at low point. Valid as-found response demonstrates analyzer functionality. The regulator was contaminated with CH <sub>4</sub> and C <sub>3</sub> H <sub>8</sub> and required more time to purge. Column conditioning to be performed overnight. |  |

Date: January 9, 2018  
Company/Airshed: PRAMP  
Location/Station Name: RENO

Start/End Time 24 hr. (mst): 14:30/18:00  
Calibration Purpose: routine monthly  
Calibration Method: Gas Dilution





CH4[ppm] NMHC[ppm]



## Thermo 55i Methane/Non-Methane Analyzer Calibration

|                              |                              |                           |                                          |            |      |
|------------------------------|------------------------------|---------------------------|------------------------------------------|------------|------|
| Date:                        | January 10, 2018             | Barometer/B.P./units:     | Bruntton 05535 expires December 15, 2018 | 27.95      | inHg |
| Company/Airshed:             | PRAMP                        | Thermometer/Station Temp: | F.S. 160348895 expires April 8, 2018     | 21         | °C   |
| Location/Station Name:       | RENO                         | Weather Conditions:       | A few clouds                             |            |      |
| Parameter:                   | CH <sub>4</sub> / NMHC / THC | Calibration Purpose:      | post repair                              |            |      |
| Start/End Time 24 hr. (mst): | 09:47/12:45                  | Performed By/Reviewer:    | Limin Li                                 | Rob Fisher |      |
| Calibration Method:          | Gas Dilution                 | Cal Gas Expiry Date:      | October 28, 2025                         |            |      |

|                        |                                    |                     |                |
|------------------------|------------------------------------|---------------------|----------------|
| Analyzer:              |                                    | Correction Factors: |                |
| ID# or Serial Number:  | 1314057759                         | Previous C.F.:      | As Found C.F.: |
| Measured Flow:         | 1292 sccm                          | CH <sub>4</sub> =   | 1.000          |
| Last Calibration Date: | December 14, 2017                  | NMHC =              | 1.000          |
| Range ppm:             | 20 CH <sub>4</sub> /20 NMHC/40 THC | THC =               | 1.000          |

|                                                              |                                                |                                                                |                 |       |       |
|--------------------------------------------------------------|------------------------------------------------|----------------------------------------------------------------|-----------------|-------|-------|
| Calibration Standards:                                       |                                                | Standard Calibration Points for Analyzer Range of 20/20/40 ppm |                 |       |       |
| Low Flow Meter ID/Expiry Date:                               | Defender Low 152019 expires December 13, 2018  | Point                                                          | CH <sub>4</sub> | NMHC  | THC   |
| High Flow Meter ID/Expiry Date:                              | Defender High 148944 expires December 13, 2018 | High                                                           | 13.00           | 13.00 | 26.00 |
| Calibrator ID/Expiry Date:                                   | Sabio id# 17200415 expires May 16, 2018        | Mid                                                            | 7.00            | 7.00  | 14.00 |
| Cal Gas Cylinder I.D. #:                                     | LL119471                                       | Low                                                            | 3.00            | 3.00  | 6.00  |
| CH <sub>4</sub> Cylinder Conc. =                             | 599.0                                          |                                                                |                 |       |       |
| CH <sub>4</sub> expressed as C <sub>3</sub> H <sub>8</sub> = | 569.3                                          |                                                                |                 |       |       |

| ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015 |         |         |            |                                  |                       |                      |                                 |                      |                     |                     |       |       |
|-----------------------------------------------------------------|---------|---------|------------|----------------------------------|-----------------------|----------------------|---------------------------------|----------------------|---------------------|---------------------|-------|-------|
| Calibrator Flow Rates (cc/min)                                  |         |         |            | Calculated CH <sub>4</sub> (ppm) | Calculated NMHC (ppm) | Calculated THC (ppm) | Indicated CH <sub>4</sub> (ppm) | Indicated NMHC (ppm) | Indicated THC (ppm) | Correction Factors: |       |       |
| Point                                                           | Diluent | Cal Gas | Total Flow |                                  |                       |                      |                                 |                      |                     | CH <sub>4</sub>     | NMHC  | THC   |
| adjusted zero                                                   | 2466    | 0.00    | 2466       | 0.00                             | 0.00                  | 0.00                 | 0.00                            | 0.00                 | 0.00                | n/a                 | n/a   | n/a   |
| adjusted high                                                   | 2405    | 60.58   | 2466       | 14.72                            | 13.98                 | 28.70                | 14.72                           | 13.98                | 28.70               | 1.000               | 1.000 | 1.000 |
| mid                                                             | 2437    | 30.48   | 2467       | 7.40                             | 7.03                  | 14.43                | 7.39                            | 7.00                 | 14.39               | 1.001               | 1.005 | 1.003 |
| low                                                             | 2453    | 15.49   | 2468       | 3.76                             | 3.57                  | 7.33                 | 3.75                            | 3.56                 | 7.31                | 1.003               | 1.004 | 1.003 |
| calibrator zero                                                 | 2466    | 0.00    | 2466       | 0.00                             | 0.00                  | 0.00                 | 0.00                            | 0.00                 | 0.00                | n/a                 | n/a   | n/a   |
| Average C.F. =                                                  |         |         |            |                                  |                       |                      |                                 |                      |                     | 1.001               | 1.003 | 1.002 |

|                                        |                 |        |        |              |  |
|----------------------------------------|-----------------|--------|--------|--------------|--|
| Linear Regression/Calibration Results: |                 |        | LIMITS |              |  |
| Correlation Coefficient =              | CH <sub>4</sub> | NMHC   | THC    | > or = 0.995 |  |
| Slope =                                | 1.000           | 1.000  | 1.000  | 0.95-1.05    |  |
| b (Intercept as % of full scale) =     | -0.03%          | -0.05% | -0.04% | ± 3% F.S.    |  |
| % change in C.F. from last cal =       | n/a             | n/a    | n/a    | n/a          |  |

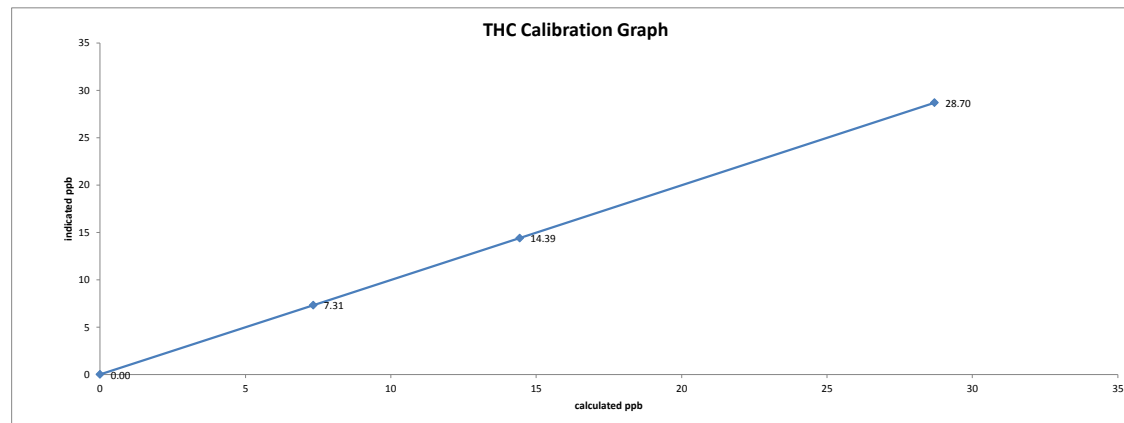
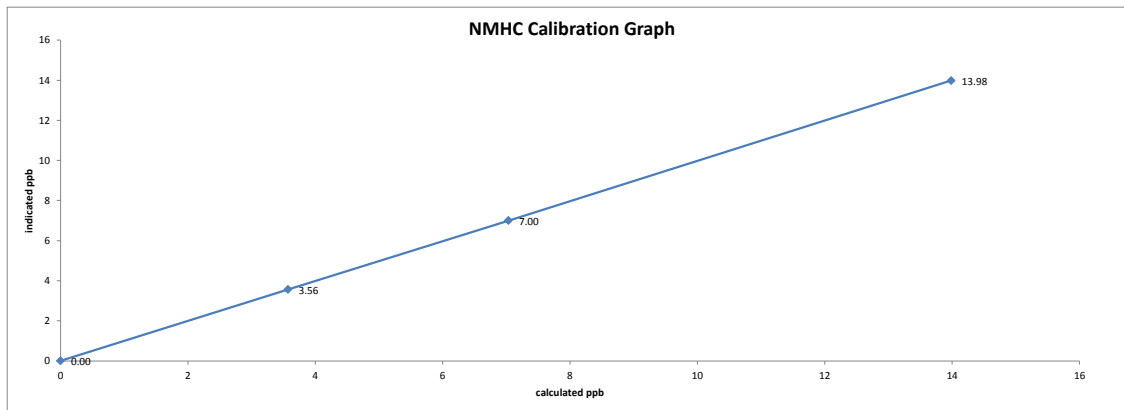
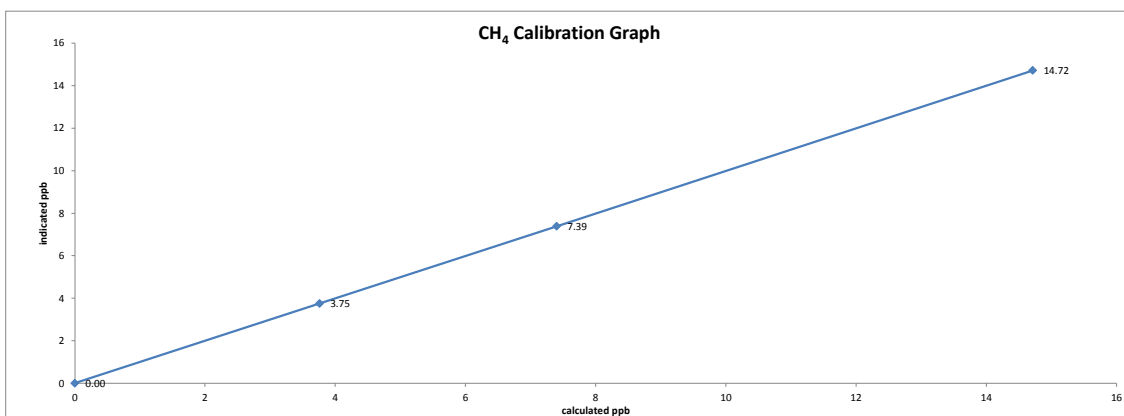
|                                 |                            |               |                            |                            |          |  |  |  |  |  |  |  |
|---------------------------------|----------------------------|---------------|----------------------------|----------------------------|----------|--|--|--|--|--|--|--|
| As Left Instrument Diagnostics: |                            |               |                            |                            |          |  |  |  |  |  |  |  |
| Interface Board Voltages:       | Bias Supply:               | -289 v        | Calibration History cnt'd: | NM Peak Area:              | 87913    |  |  |  |  |  |  |  |
| Temperatures:                   | Detector Oven:             | 175.1 °C      | Crucial Settings:          | Methane Start:             | 8        |  |  |  |  |  |  |  |
|                                 | Filter:                    | 175.0 °C      |                            | Methane End:               | 16       |  |  |  |  |  |  |  |
|                                 | Column Oven:               | 75.0 °C       |                            | Backflush:                 | 18       |  |  |  |  |  |  |  |
|                                 | Internal:                  | 31.1 °C       |                            | NMHV Start:                | 26       |  |  |  |  |  |  |  |
| Cylinder Pressures/reg.:        | Carrier:                   | 2550          | 50                         | NMHC End:                  | 56       |  |  |  |  |  |  |  |
|                                 | Fuel:                      | 1580          | 50                         | Date:                      | 10JAN18  |  |  |  |  |  |  |  |
|                                 | Span Gas:                  | 550           | 20                         | Time:                      | 11:51    |  |  |  |  |  |  |  |
|                                 | Zero Air Generator:        | 48            |                            | CH <sub>4</sub> PK HT:     | 0        |  |  |  |  |  |  |  |
| Internal Pressures:             | Carrier:                   | 31.1 psi      |                            | CH <sub>4</sub> RT:        | 8.0      |  |  |  |  |  |  |  |
|                                 | Fuel:                      | 41.6 psi      |                            | CH <sub>4</sub> Baseline:  | 2117     |  |  |  |  |  |  |  |
|                                 | Air:                       | 25.9 psi      |                            | CH <sub>4</sub> LOD:       | 82       |  |  |  |  |  |  |  |
| FID Status:                     | Status:                    | LIT           |                            | CH <sub>4</sub> SD:        | 27       |  |  |  |  |  |  |  |
|                                 | Counts:                    | 25433         |                            | CH <sub>4</sub> CONC:      | 0        |  |  |  |  |  |  |  |
|                                 | Flame:                     | 405 °C        |                            | NM PK HT:                  | 0        |  |  |  |  |  |  |  |
|                                 | Det Base:                  | 175.1 °C      |                            | NM Peak Area:              | 0        |  |  |  |  |  |  |  |
| Flame and Power Stats:          | Last Power On:             | 20DEC2017     |                            | NM CONC:                   | 0        |  |  |  |  |  |  |  |
|                                 | Flameouts:                 | 1             |                            | NM Base Start:             | 2086     |  |  |  |  |  |  |  |
|                                 | Det Oven at Start:         | 106.8         |                            | NM Base End:               | 2079     |  |  |  |  |  |  |  |
|                                 | Col Oven at Start:         | 59.7          |                            | NM LOD:                    | 13       |  |  |  |  |  |  |  |
| Calibration History:            | Time:                      | 10Jan18 10:09 |                            | NM Start IDX:              | 42       |  |  |  |  |  |  |  |
|                                 | Type:                      | SPAN          |                            | NM End IDX:                | 80       |  |  |  |  |  |  |  |
|                                 | Status:                    | GOOD          |                            | NM Max Slope:              | 4.0E-01  |  |  |  |  |  |  |  |
|                                 | Check/Adjust:              | ADJUSTED      |                            | NM Min Slope:              | -1.0E+00 |  |  |  |  |  |  |  |
|                                 | CH <sub>4</sub> Span Conc: | 14.72         |                            | NM PT Count:               | 0        |  |  |  |  |  |  |  |
|                                 | CH <sub>4</sub> SP Ratio:  | 0.00076       |                            | Previous CH <sub>4</sub> : | 9.58     |  |  |  |  |  |  |  |
|                                 | CH <sub>4</sub> RT:        | 11.6          |                            | Previous NMHC:             | 9.95     |  |  |  |  |  |  |  |
|                                 | CH <sub>4</sub> PK IDX:    | 18            |                            | Previous THC:              | 19.57    |  |  |  |  |  |  |  |
|                                 | CH <sub>4</sub> PK HT:     | 19376         |                            | New CH <sub>4</sub> :      | 9.58     |  |  |  |  |  |  |  |
|                                 | NM Span Conc:              | 13.98         |                            | New NMHC:                  | 9.95     |  |  |  |  |  |  |  |
|                                 | NM SP Ratio:               | 0.000159      |                            | New THC:                   | 19.57    |  |  |  |  |  |  |  |

|                                                       |                                                                                                                                    |  |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--|
| Comments:                                             |                                                                                                                                    |  |
| The analyzer sample inlet filter was changed.         | A new nitrogen cylinder was installed.                                                                                             |  |
|                                                       | A column conditioning was performed.                                                                                               |  |
|                                                       | No zero adjustment was required/made. As found zero values were copied to adjusted zero values for linearity calculation purposes. |  |
| The analyzer cooling fan filter(s) were cleaned.      |                                                                                                                                    |  |
| The manifold blower was found to be working normally. |                                                                                                                                    |  |

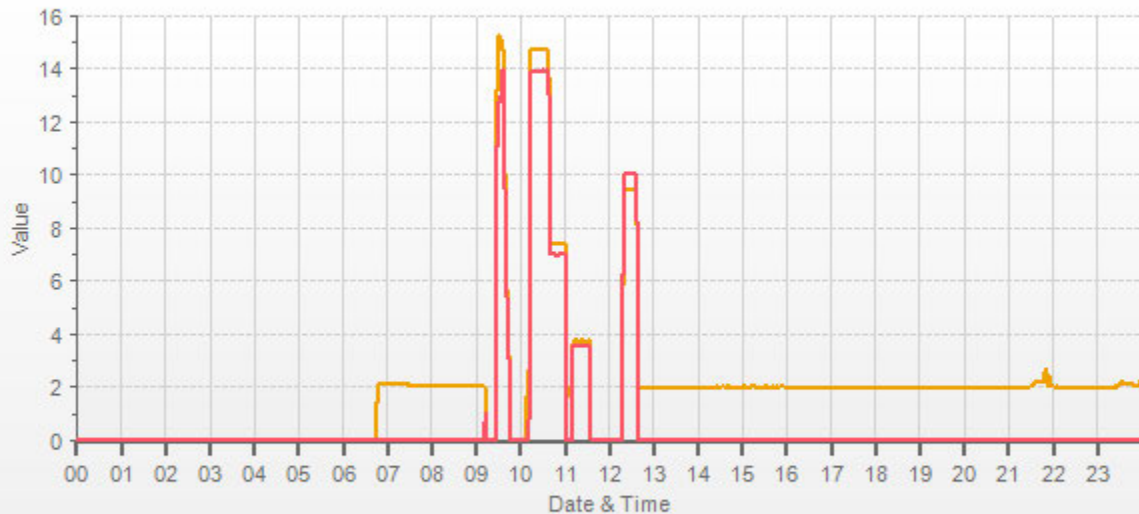
A column conditioning was performed overnight prior to the post repair calibration.

Date: January 10, 2018  
Company/Airshed: PRAMP  
Location/Station Name: RENO

Start/End Time 24 hr. (mst): 09:47/12:45  
Calibration Purpose: post repair  
Calibration Method: Gas Dilution



Station: PRAMP\_RENO Daily: 18/01/10 Type: AVG 1 Min. [1 Min.]



CH4[ppm] NMHC[ppm]

## ***WIND SYSTEM***



## Meteorological Sensor Audit/Calibration

### Location Information

Company: PRAMP  
Audit Location: Reno  
Audit Date: April 6, 2017

Performed By: Limin Li  
Reviewed By: Trina Whitsitt  
Start /EndTime (mst): 15:20/16:50

### Wind Sensor Information

| Sensor ID Data:          |                   | Sensor Outputs:                 |               |
|--------------------------|-------------------|---------------------------------|---------------|
| Sensor Make:             | RM Young          | Velocity Voltage Output Range:  | 0-1 V         |
| Sensor Model:            | 05305VK           | Velocity Unit Output Range:     | 0-200 km/h    |
| Serial #:                | 149769            | Direction Voltage Output Range: | 0-1 V         |
| Previous Cal/Audit Date: | February 16, 2017 | Direction Unit Output Range:    | 0-360 degrees |

### Wind Calibrator Information

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

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

| RPM                               | Wind Speed Generated kph | Clockwise Wind Speed kph | Counter Clockwise Wind Speed kph | Correction Factor |
|-----------------------------------|--------------------------|--------------------------|----------------------------------|-------------------|
| 0                                 | 0                        | 0.1                      | 0.1                              | -                 |
| 1000                              | 18.4                     | 18.4                     | 18.4                             | 0.999             |
| 2000                              | 36.9                     | 36.8                     | 36.8                             | 1.003             |
| 3000                              | 55.3                     | 55.1                     | 55.1                             | 1.003             |
| 4000                              | 73.7                     | 73.5                     | 73.5                             | 1.002             |
| 5000                              | 92.2                     | 92.0                     | 92.0                             | 1.003             |
| 6000                              | 110.6                    | 110.4                    | 110.4                            | 1.002             |
| 7000                              | 129.0                    | 128.9                    | 128.9                            | 1.001             |
| 8000                              | 147.4                    | 147.3                    | 147.3                            | 1.001             |
| 9000                              | 165.9                    | 165.9                    | 165.9                            | 1.000             |
| 10000                             | 184.3                    | 184.4                    | 184.4                            | 0.999             |
| The audit meets AMD requirements. |                          |                          | Average Correction Factor=       | 1.001             |

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

| Generated Wind Direction 0-360 (Up) | Generated Wind Direction 360-0 (Down) | Indicated Wind Direction 0-360 (Up) | Indicated Wind Direction 360-0 (Down) | Degrees Difference 0-360 (Up) | Degrees Difference 360-0 (Down) | Average Absolute Degrees Difference |
|-------------------------------------|---------------------------------------|-------------------------------------|---------------------------------------|-------------------------------|---------------------------------|-------------------------------------|
| 0                                   | 355                                   | 0                                   | 353                                   | 0.2                           | 1.7                             | 0.9                                 |
| 30                                  | 330                                   | 30                                  | 328                                   | 0.4                           | 2.1                             | 1.3                                 |
| 60                                  | 300                                   | 61                                  | 299                                   | -0.8                          | 1.2                             | 1.0                                 |
| 90                                  | 270                                   | 91                                  | 269                                   | -1.1                          | 0.9                             | 1.0                                 |
| 120                                 | 240                                   | 121                                 | 240                                   | -1.3                          | 0.2                             | 0.7                                 |
| 150                                 | 210                                   | 151                                 | 211                                   | -1.2                          | -0.7                            | 0.9                                 |
| 180                                 | 180                                   | 181                                 | 181                                   | -1.3                          | -1.2                            | 1.3                                 |
| 210                                 | 150                                   | 211                                 | 151                                   | -0.7                          | -1.4                            | 1.1                                 |
| 240                                 | 120                                   | 240                                 | 121                                   | 0.0                           | -1.4                            | 0.7                                 |
| 270                                 | 90                                    | 270                                 | 91                                    | 0.5                           | -1.1                            | 0.8                                 |
| 300                                 | 60                                    | 299                                 | 61                                    | 1.3                           | -0.9                            | 1.1                                 |
| 330                                 | 30                                    | 328                                 | 30                                    | 2.2                           | 0.3                             | 1.3                                 |
| 355                                 | 0                                     | 353                                 | 0                                     | 1.7                           | 0.2                             | 0.9                                 |
| The audit meets AMD requirements.   |                                       |                                     | Average Absolute Degrees Difference=  |                               |                                 | 1.0                                 |

Comments: Wind speed gain adjusted before calibration.

## ***CALIBRATORS***

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

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

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

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

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

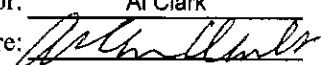
| Flow                                | O <sub>2</sub> Conc (LC) | NO Decrease | NO    | NO <sub>2</sub> | NOX   | % Diff. Vs Audit gas |               |
|-------------------------------------|--------------------------|-------------|-------|-----------------|-------|----------------------|---------------|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

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

|                                |               |
|--------------------------------|---------------|
| <b>NO<sub>2</sub></b>          | <b>LIMITS</b> |
| Correlation= 1.0000            | ≥ 0.995       |
| m (Slope)= 0.9998              | 0.90-1.10     |
| b (Intercept % of FS)= -1.1702 | ± 3% F.S.     |

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

COMMENTS: Contains 50.4 ppm SO<sub>2</sub>.

Auditor: Al Clark  
Operator Signature: 

Date: May 16, 2017  
Location: McIntyre Center Edmonton

|                              |                         |                                 |                           |
|------------------------------|-------------------------|---------------------------------|---------------------------|
| <b>Company</b> <u>Maxxam</u> |                         | <b>Operator:</b> <u>Mike</u>    |                           |
| <b>Calibrator:</b>           |                         | <b>Flow Measurement Device:</b> |                           |
| Make/Model                   | <u>API 700</u>          | Make/Model                      | <u>Bios Defender 530</u>  |
| Serial Number                | <u>690</u>              | Serial Number                   | <u>HI148944 Lo 152019</u> |
| Last Verification Date       | <u>March 30, 2016\</u>  | Temperature (°C)                | <u>23.3</u>               |
| NO Cylinder S/N              | <u>EY0000597</u>        | Barometric Pressure             | <u>704.3mmHg</u>          |
| NO [PPM]                     | <u>49.0 NOx [PPM]</u>   |                                 |                           |
| Expiry Date                  | <u>December 8, 2019</u> |                                 |                           |
| <b>Dilution Flow (sccm)</b>  |                         |                                 |                           |
| Pt. #1                       | <u>4898</u>             | Pt. #2                          | <u>4942</u>               |
|                              |                         | Pt. #3                          | <u>4953</u>               |
| <b>Gas Flow (sccm)</b>       |                         |                                 |                           |
| Pt. #1                       | <u>79.2</u>             | Pt. #2                          | <u>38.6</u>               |
|                              |                         | Pt. #3                          | <u>19.3</u>               |

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

| <b>LINEAR REGRESSION ANALYSIS</b> |        |                  |  | <i>y=mx+b (where x=calculated concentration, y=indicated concentration)</i> |        |
|-----------------------------------|--------|------------------|--|-----------------------------------------------------------------------------|--------|
| <b>NO</b>                         |        | <b>LIMITS</b>    |  | <b>NOx</b>                                                                  |        |
| Correlation=                      | 1.0000 | ≥ 0.990          |  | Correlation=                                                                | 1.0000 |
| m (Slope)=                        | 1.0056 | <b>0.90-1.10</b> |  | m (Slope)=                                                                  | 1.0073 |
| b (Intercept % of FS)=            | 0.0357 | ± 3% F.S.        |  | b (Intercept % of FS)=                                                      | 0.0304 |

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

| <b>LINEAR REGRESSION ANALYSIS</b> |        |                  |  | <i>y=mx+b (where x=calculated concentration, y=indicated concentration)</i> |  |
|-----------------------------------|--------|------------------|--|-----------------------------------------------------------------------------|--|
| <b>NO<sub>2</sub></b>             |        | <b>LIMITS</b>    |  |                                                                             |  |
| Correlation=                      | 1.0000 | ≥ 0.995          |  |                                                                             |  |
| m (Slope)=                        | 0.9894 | <b>0.90-1.10</b> |  |                                                                             |  |
| b (Intercept % of FS)=            | 0.0719 | ± 3% F.S.        |  |                                                                             |  |

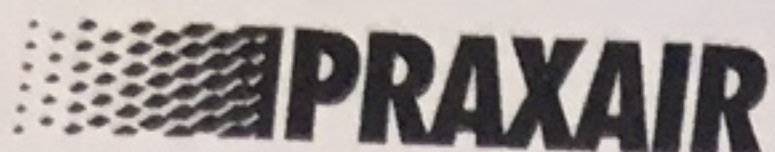
|                         |                    |                                |                       |
|-------------------------|--------------------|--------------------------------|-----------------------|
| <b>AENV Standards</b>   |                    | <b>NO<sub>x</sub> Analyzer</b> |       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

COMMENTS: Gas has ~50ppm SO2

Auditor: Shea Beaton  
Operator Signature: [Signature]

Date: March 17, 2017  
Location: McIntyre Center Edmonton

## ***CALIBRATION GASES***



Praxair

5700 South Alameda Street

Los Angeles, CA 90058

Tel: (323) 585-2154 Fax: (714) 542-6689

PGVPID: F22017

DocNumber: 000116115

## CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

### Customer & Order Information:

PRAXAIR PKG EDMONTON PLT 8  
9501 34TH ST  
EDMONTON AB T6B 2X

Praxair Order Number: 45314542  
Customer P. O. Number: 582-277  
Customer Reference Number:

Fill Date: 10/12/2017  
Part Number: NI NO50MS2E-AQ  
Lot Number: 70086728507  
Cylinder Style & Outlet: AQ CGA 660  
Cylinder Pressure & Volume: 2000 psig 82 cu. ft.

### Certified Concentration:

|                  |                |                         |
|------------------|----------------|-------------------------|
| Expiration Date: | 10/24/2020     | NIST Traceable          |
| Cylinder Number: | LL104225       | Analytical Uncertainty: |
| 51.5 ppm         | NITRIC OXIDE   | ± 0.7 %                 |
| 49.2 ppm         | SULFUR DIOXIDE | ± 1 %                   |
| Balance          | NITROGEN       |                         |

NOx = 51.6 ppm

NOx for Reference Only

Certification Information: Certification Date: 10/24/2017 Term: 36 Months Expiration Date: 10/24/2020

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Do Not Use this Standard if Pressure is less than 100 PSIG.

### Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

#### 1. Component: NITRIC OXIDE

Requested Concentration: 50 ppm  
Certified Concentration: 51.5 ppm  
Instrument Used: Thermo Electron 42i-LS S/N 1030645077  
Analytical Method: Chemiluminescence  
Last Multipoint Calibration: 10/14/2017

| First Analysis Data: |      |                  |            | Date: | 10/17/2017 |
|----------------------|------|------------------|------------|-------|------------|
| Z:                   | 0    | R:               | 50.8       | C:    | 51.5       |
| R:                   | 50.8 | Z:               | 0          | C:    | 51.6       |
| Z:                   | 0    | C:               | 51.6       | R:    | 50.8       |
| UOM:                 | ppm  | Mean Test Assay: | 51.557 ppm |       |            |

Reference Standard Type: GMIS  
Ref. Std. Cylinder #: CC363145  
Ref. Std. Conc: 50.79 ppm  
Ref. Std. Traceable to SRM #: vs. 1683b  
SRM Sample #: 45.-V-42  
SRM Cylinder #: CAL017897

| Second Analysis Data: |      |                  |            | Date: | 10/24/2017 |
|-----------------------|------|------------------|------------|-------|------------|
| Z:                    | 0    | R:               | 50.8       | C:    | 51.4       |
| R:                    | 50.8 | Z:               | 0          | C:    | 51.5       |
| Z:                    | 0    | C:               | 51.4       | R:    | 50.8       |
| UOM:                  | ppm  | Mean Test Assay: | 51.423 ppm |       |            |

#### 2. Component: SULFUR DIOXIDE

Requested Concentration: 50 ppm  
Certified Concentration: 49.2 ppm  
Instrument Used: Ametek 921CE S/N AW-921-S321  
Analytical Method: Ultraviolet Absorption  
Last Multipoint Calibration: 10/13/2017

| First Analysis Data: |      |                  |            | Date: | 10/17/2017 |
|----------------------|------|------------------|------------|-------|------------|
| Z:                   | 0    | R:               | 48.2       | C:    | 48.8       |
| R:                   | 48.2 | Z:               | 0          | C:    | 48.8       |
| Z:                   | 0    | C:               | 48.9       | R:    | 48.3       |
| UOM:                 | ppm  | Mean Test Assay: | 49.184 ppm |       |            |

Reference Standard Type: NTRM  
Ref. Std. Cylinder #: CC72593  
Ref. Std. Conc: 48.58 ppm  
Ref. Std. Traceable to SRM #: n/a  
SRM Sample #: 12070103  
SRM Cylinder #: N/A

| Second Analysis Data: |      |                  |            | Date: | 10/24/2017 |
|-----------------------|------|------------------|------------|-------|------------|
| Z:                    | 0    | R:               | 48.2       | C:    | 48.7       |
| R:                    | 48.2 | Z:               | 0          | C:    | 48.8       |
| Z:                    | 0    | C:               | 48.8       | R:    | 48.2       |
| UOM:                  | ppm  | Mean Test Assay: | 49.151 ppm |       |            |

Analyzed by:

Henry Koung

Certified by:

Amalia Real

Information contained herein has been prepared at your request by qualified experts within Praxair Distribution, Inc. While we believe that the information is accurate within the limits of the analytical methods employed and is complete to the extent of the specific analyses performed, we make no warranty or representation as to the suitability of the use of the information for any purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall the liability of Praxair Distribution, Inc., arising out of the use of the information contained herein exceed the fee established for providing such information.



# Calibration Gas Audit

## Single Component Cylinder Gas

File No. 2017-213CGA

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

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

**Expiry Date:** August 2020

### Reference Calibrator and Gas:

**Make/Model:** R&R MFC 201

**Serial Number:** AMU 1690

**Last Verification Date:** September 22, 2017

**Gas Type:** H2S **Conc.** 20.43

**Cylinder Number:** CAL015272

**Expiry Date:** January 2019

### Flow Measurement Device:

**Make/Model:** Mesa Definer 220

**Serial Number:** H-133034 L-132702

**Temp. °C:** 23.5 C

**B.P.** 705 mmhg

### Reference Analyzer:

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

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

**Last Calibration:** **Date:** Sep 22/17 **C.F.** 1.000 **Done By:** Al Clark

| Calibrator Flows (sccm) |      | Indicated<br>Concentration (PPM) | Gas Flow/<br>Dilution Flow | Concentration<br>Factor | Cylinder<br>Concentration |
|-------------------------|------|----------------------------------|----------------------------|-------------------------|---------------------------|
| Dilution                | Gas  |                                  |                            |                         |                           |
| 5000                    | 0.0  | 0.0000                           | <del>0.00772</del>         | <del>129.468</del>      | <del>9.5</del>            |
| 5114                    | 39.5 | 0.0734                           | 0.00772                    | 129.468                 | 9.5                       |
| 5096                    | 18.5 | 0.0345                           | 0.00363                    | 275.459                 | 9.5                       |
| 5089                    | 9.5  | 0.0178                           | 0.00187                    | 535.684                 | 9.5                       |

Average Cylinder Concentration: **9.5**

Previous Stated Concentration PPM: 9.8

Percent variance from Stated: 3

Meets Manufacturer Tolerance. Use manufacturers stated concentration ☐ **COMMENTS:** \_\_\_\_\_

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

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

**Auditor:** Al Clark

**Operator Signature:** *Al Clark*

**Date:** September 22, 2017

**Location:** McIntyre Center Edmonton



Praxair  
5700 South Alameda Street  
Los Angeles, CA 90058  
Tel: (323) 585-2154 Fax: (714) 542-6689  
PGVPID: F22017

DocNumber: 000116089

## CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

### Customer & Order Information:

MAXXAM ANALYTICS INC  
500 1919 MINNESOTA CRT  
MISSISSAUGA ON L5N 0C

Praxair Order Number: 44723832  
Customer P. O. Number: PO0000001677  
Customer Reference Number:

Fill Date: 10/13/2017  
Part Number: NI ME600P2E-AQ  
Lot Number: 70086728604  
Cylinder Style & Outlet: AQ CGA 350  
Cylinder Pressure & Volume: 2200 psig 82 cu. ft.

### Certified Concentration:

|                  |            |                         |
|------------------|------------|-------------------------|
| Expiration Date: | 10/18/2025 | NIST Traceable          |
| Cylinder Number: | LL119471   | Analytical Uncertainty: |
| 207 ppm          | PROPANE    | ± 0.6 %                 |
| 599 ppm          | METHANE    | ± 0.3 %                 |
| Balance          | NITROGEN   |                         |

Certification Information: Certification Date: 10/18/2017 Term: 96 Months Expiration Date: 10/18/2025

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Do Not Use this Standard if Pressure is less than 100 PSIG.

### Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

#### 1. Component: PROPANE

Requested Concentration: 200 ppm  
Certified Concentration: 207 ppm  
Instrument Used: MKS Multigas 2031 FTIR  
Analytical Method: Fourier Transform Infrared  
Last Multipoint Calibration: 10/15/2017

Reference Standard Type: GMIS  
Ref. Std. Cylinder #: CCY18142  
Ref. Std. Conc: 255.6 ppm  
Ref. Std. Traceable to SRM #: 2644a  
SRM Sample #: 101-C-45  
SRM Cylinder #: XF003829B

|                      |        |                  |            |
|----------------------|--------|------------------|------------|
| First Analysis Data: |        | Date:            | 10/18/2017 |
| Z:                   | 0      | R:               | 246.85     |
| R:                   | 246.89 | Z:               | 0          |
| C:                   | 199.66 | Conc:            | 206.7      |
| Z:                   | 0      | C:               | 199.66     |
| R:                   | 246.96 | Conc:            | 206.7      |
| UOM:                 | ppm    | Mean Test Assay: | 206.71 ppm |

|                       |     |                  |       |
|-----------------------|-----|------------------|-------|
| Second Analysis Data: |     | Date:            |       |
| Z:                    | 0   | R:               | 0     |
| R:                    | 0   | Z:               | 0     |
| C:                    | 0   | Conc:            | 0     |
| Z:                    | 0   | C:               | 0     |
| R:                    | 0   | Conc:            | 0     |
| UOM:                  | ppm | Mean Test Assay: | 0 ppm |

#### 2. Component: METHANE

Requested Concentration: 600 ppm  
Certified Concentration: 599 ppm  
Instrument Used: MKS Multigas 2031 FTIR  
Analytical Method: Fourier Transform Infrared  
Last Multipoint Calibration: 9/27/2017

Reference Standard Type: GMIS  
Ref. Std. Cylinder #: DT0010335  
Ref. Std. Conc: 990 ppm  
Ref. Std. Traceable to SRM #: RGM#DT00  
SRM Sample #: N/A  
SRM Cylinder #: DT0007710

|                      |        |                  |            |
|----------------------|--------|------------------|------------|
| First Analysis Data: |        | Date:            | 10/17/2017 |
| Z:                   | 0      | R:               | 934.60     |
| R:                   | 934.66 | Z:               | 0          |
| C:                   | 566.69 | Conc:            | 600.97     |
| Z:                   | 0      | C:               | 563.95     |
| R:                   | 931.33 | Conc:            | 598.06     |
| UOM:                 | ppm    | Mean Test Assay: | 599.12 ppm |

|                       |     |                  |       |
|-----------------------|-----|------------------|-------|
| Second Analysis Data: |     | Date:            |       |
| Z:                    | 0   | R:               | 0     |
| R:                    | 0   | Z:               | 0     |
| C:                    | 0   | Conc:            | 0     |
| Z:                    | 0   | C:               | 0     |
| R:                    | 0   | Conc:            | 0     |
| UOM:                  | ppm | Mean Test Assay: | 0 ppm |

Analyzed by:

Jenna Lockman

Certified by:

Jose Vasquez

Information contained herein has been prepared at your request by qualified experts within Praxair Distribution, Inc. While we believe that the information is accurate within the limits of the analytical methods employed and is complete to the extent of the specific analyses performed, we make no warranty or representation as to the suitability of the use of the information for any purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall the liability of Praxair Distribution, Inc., arising out of the use of the information contained herein exceed the fee established for providing such information.

***APPENDIX III***  
***MAXIMUM INSTANTANEOUS DATA***

**SULPHUR DIOXIDE Instantaneous Maximum (SO<sub>2</sub> ppb)**

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

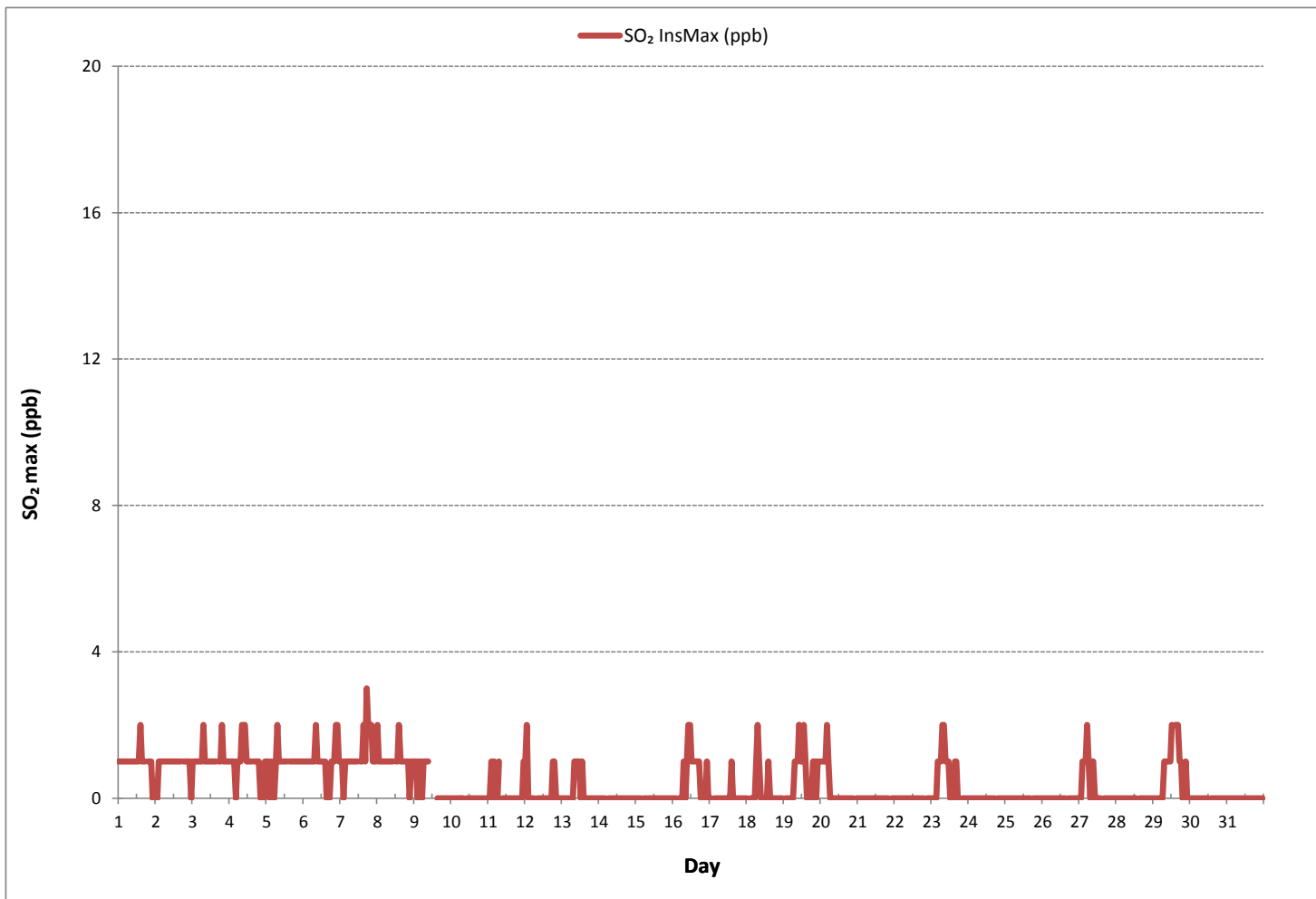
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

|                              |                          |
|------------------------------|--------------------------|
| NUMBER OF NON-ZERO READINGS: | 250                      |
| MAXIMUM INSTANTANEOUS VALUE: | 3 ppb @ HOUR 17 ON DAY 7 |
| IZS CALIBRATION TIME:        | 31 hrs                   |
| MONTHLY CALIBRATION TIME:    | 5 hrs                    |
| STANDARD DEVIATION:          | 1                        |
| OPERATIONAL TIME:            | 744 hrs                  |

SULPHUR DIOXIDE Instantaneous Maximum (SO<sub>2</sub> ppb)





## PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - January 2018

## 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              | 0.81 | 0.78 | 0.81 | 0.81 | 0.81 | 0.84 | 0.76 | 0.91 | 0.89 | 0.94 | 0.86  | 0.86  | 0.73  | 0.68  | 0.68  | 0.71  | 0.76  | 0.84  | S     | 0.86  | 0.68  | 0.76  | 0.71  | 0.71  | 0.68  | 0.94  | 0.79  | 24    |
| 2              | 0.68 | 0.71 | 0.71 | 0.71 | 0.73 | 0.73 | 0.76 | 0.86 | 0.76 | 0.78 | 0.81  | 1.07  | 0.65  | 0.68  | 0.71  | 0.68  | 0.71  | S     | 0.86  | 0.89  | 0.71  | 0.84  | 0.76  | 0.81  | 0.65  | 1.07  | 0.77  | 24    |
| 3              | 0.81 | 0.78 | 0.68 | 0.78 | 0.76 | 0.73 | 0.84 | 1.00 | 0.65 | 0.81 | 0.65  | 0.63  | 0.68  | 0.65  | 0.63  | 0.86  | S     | 0.84  | 0.89  | 1.33  | 0.70  | 0.60  | 0.63  | 0.63  | 0.60  | 1.33  | 0.76  | 24    |
| 4              | 0.65 | 0.60 | 0.65 | 0.65 | 0.65 | 0.58 | 0.60 | 0.65 | 0.97 | 1.02 | 0.84  | 0.94  | 0.65  | 0.65  | 0.65  | S     | 0.79  | 0.70  | 0.68  | 0.60  | 0.55  | 0.63  | 0.65  | 0.65  | 0.55  | 1.02  | 0.70  | 24    |
| 5              | 0.65 | 0.58 | 0.55 | 0.68 | 0.71 | 0.65 | 0.60 | 0.60 | 0.65 | 0.65 | 0.63  | 0.65  | 0.70  | 0.65  | S     | 0.73  | 0.71  | 0.71  | 0.73  | 0.76  | 0.73  | 0.73  | 0.76  | 0.78  | 0.55  | 0.78  | 0.68  | 24    |
| 6              | 0.73 | 0.81 | 0.81 | 0.68 | 0.71 | 0.65 | 0.63 | S1   | S1   | 0.52 | 0.55  | 0.57  | 0.55  | S     | 0.55  | 0.52  | 0.57  | 0.57  | 0.63  | 0.58  | 0.58  | 0.55  | 0.60  | 0.57  | 0.52  | 0.81  | 0.62  | 22    |
| 7              | 0.58 | 0.58 | 0.55 | 0.55 | 0.55 | 0.52 | 0.58 | S1   | S1   | 0.97 | 0.84  | 0.71  | S     | 0.81  | 0.86  | 1.13  | 0.73  | 1.36  | 1.20  | 1.36  | 0.71  | 0.63  | 0.65  | 0.68  | 0.52  | 1.36  | 0.79  | 22    |
| 8              | 0.86 | 0.65 | 0.58 | 0.60 | 0.58 | 0.58 | 0.62 | 0.52 | 0.55 | 0.55 | 0.55  | S     | 0.60  | 0.60  | 0.58  | 0.58  | 0.60  | 0.60  | 0.60  | 0.58  | 0.58  | 0.55  | 0.55  | 0.55  | 0.52  | 0.86  | 0.59  | 24    |
| 9              | 0.55 | 0.55 | 0.58 | 0.58 | 0.58 | 0.55 | 0.58 | 0.60 | 0.58 | 0.63 | C     | C     | C     | C     | C     | C     | R     | 0.58  | 0.43  | 0.40  | 0.43  | 0.37  | 0.37  | 0.40  | 0.37  | 0.63  | 0.52  | 23    |
| 10             | 0.42 | 0.43 | 0.37 | 0.40 | 0.40 | 0.37 | 0.43 | 0.40 | 0.43 | S    | 0.71  | 0.43  | 0.45  | 0.43  | 0.43  | 0.43  | 0.45  | 0.47  | 0.43  | 0.43  | 0.43  | 0.60  | 0.47  | 0.60  | 0.37  | 0.71  | 0.45  | 24    |
| 11             | 0.73 | 0.81 | 0.78 | 0.99 | 1.33 | 0.91 | 0.68 | 0.71 | S    | 0.84 | 0.58  | 0.63  | 0.55  | 0.55  | 0.43  | 0.45  | 0.45  | 0.43  | 0.76  | 0.52  | 0.47  | 0.47  | 0.65  | 1.23  | 0.43  | 1.33  | 0.69  | 24    |
| 12             | 1.20 | 1.36 | 1.23 | 0.91 | 0.68 | 0.73 | 0.76 | S    | 0.76 | 0.60 | 0.60  | 0.50  | 0.55  | 0.55  | 0.52  | 0.55  | 0.63  | 0.68  | 0.65  | 0.73  | 0.73  | 0.65  | 0.58  | 0.55  | 0.50  | 1.36  | 0.73  | 24    |
| 13             | 0.71 | 0.65 | 0.65 | 0.63 | 0.63 | 0.65 | S    | 0.78 | 0.81 | 0.84 | 0.76  | 0.65  | 0.60  | 0.63  | 0.50  | 0.55  | 0.55  | 0.50  | 0.60  | 0.63  | 0.73  | 0.65  | 0.52  | 0.52  | 0.50  | 0.84  | 0.64  | 24    |
| 14             | 0.65 | 0.60 | 0.58 | 0.57 | 0.68 | S    | 0.65 | 0.58 | 0.60 | 0.60 | 0.47  | 0.45  | 0.45  | 0.43  | 0.43  | 0.50  | 0.45  | 0.45  | 0.43  | 0.44  | 0.45  | 0.44  | 0.43  | 0.45  | 0.43  | 0.68  | 0.51  | 24    |
| 15             | 0.43 | 0.47 | 0.43 | 0.45 | S    | 0.47 | 0.45 | 0.44 | 0.47 | 0.50 | 0.47  | 0.50  | 0.52  | 0.50  | 0.50  | 0.50  | 0.52  | 0.55  | 0.55  | 0.50  | 0.52  | 0.58  | 0.52  | 0.50  | 0.43  | 0.58  | 0.49  | 24    |
| 16             | 0.52 | 0.60 | 0.58 | S    | 0.63 | 0.68 | 0.81 | 0.68 | 0.73 | 0.73 | 0.76  | 0.76  | 0.76  | 0.68  | 0.60  | 0.63  | 0.65  | 0.84  | 0.63  | 0.50  | 0.55  | 0.58  | 0.57  | 0.50  | 0.50  | 0.84  | 0.65  | 24    |
| 17             | 0.68 | 0.68 | S    | 0.47 | 0.47 | 0.44 | 0.40 | 0.42 | 0.40 | 0.52 | 0.45  | 0.55  | 0.55  | 0.58  | 0.58  | 0.43  | 0.45  | 0.40  | 0.47  | 0.35  | 0.37  | 0.35  | 0.37  | 0.37  | 0.35  | 0.68  | 0.47  | 24    |
| 18             | 0.40 | S    | 0.42 | 0.42 | 0.42 | 0.45 | 0.68 | 0.94 | 0.71 | 0.35 | 0.40  | 0.40  | 0.37  | 0.40  | 0.35  | 0.40  | 0.35  | 0.35  | 0.37  | 0.37  | 0.37  | 0.43  | 0.37  | 0.37  | 0.35  | 0.94  | 0.44  | 24    |
| 19             | S    | 0.43 | 0.37 | 0.43 | 0.37 | 0.37 | 0.35 | 0.37 | 0.47 | 0.78 | 0.97  | 1.05  | 1.10  | 1.23  | 0.71  | 0.73  | 0.50  | 0.35  | 0.33  | 0.86  | 0.73  | 0.37  | 1.88  | S     | 0.33  | 1.88  | 0.67  | 24    |
| 20             | 0.92 | 0.76 | 0.94 | 1.15 | 1.44 | 0.71 | 0.50 | 0.60 | 0.55 | 0.63 | 0.57  | 0.52  | 0.43  | 0.42  | 0.37  | 0.40  | 0.40  | 0.45  | 0.42  | 0.37  | 0.40  | 0.40  | S     | 0.47  | 0.37  | 1.44  | 0.60  | 24    |
| 21             | 0.45 | 0.35 | 0.35 | 0.37 | 0.40 | 0.35 | 0.35 | 0.43 | 0.43 | 0.37 | 0.35  | 0.37  | 0.35  | 0.37  | 0.37  | 0.35  | 0.37  | 0.37  | 0.35  | 0.35  | 0.37  | S     | 0.42  | 0.45  | 0.35  | 0.48  | 24    |       |
| 22             | 0.44 | 0.52 | 0.55 | 0.55 | 0.49 | 0.44 | 0.47 | 0.40 | 0.43 | 0.47 | 0.40  | 0.43  | 0.43  | 0.37  | 0.40  | 0.40  | 0.42  | 0.37  | 0.45  | 0.42  | S     | 0.47  | 0.45  | 0.50  | 0.37  | 0.55  | 0.45  | 24    |
| 23             | 0.47 | 0.55 | 0.84 | 0.76 | 1.00 | 0.91 | 0.94 | 1.18 | 1.10 | 0.89 | 1.15  | 1.05  | 0.71  | 0.68  | 0.45  | 0.52  | 0.65  | 0.55  | 0.58  | S     | 0.45  | 0.43  | 0.40  | 0.44  | 0.40  | 1.18  | 0.73  | 24    |
| 24             | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.52 | 0.37 | 0.37 | 0.40 | 0.45 | 0.37  | 0.43  | 0.45  | 0.43  | 0.40  | 0.43  | 0.43  | 0.44  | S     | 0.52  | 0.49  | 0.45  | 0.43  | 0.45  | 0.37  | 0.52  | 0.43  | 24    |
| 25             | 0.47 | 0.44 | 0.47 | 0.45 | 0.40 | 0.43 | 0.47 | 0.50 | 0.45 | 0.45 | 0.45  | 0.45  | 0.45  | 0.47  | 0.45  | 0.43  | 0.43  | S     | 0.52  | 0.45  | 0.45  | 0.43  | 0.40  | 0.43  | 0.40  | 0.52  | 0.45  | 24    |
| 26             | 0.37 | 0.40 | 0.43 | 0.43 | 0.43 | 0.44 | 0.43 | 0.44 | 0.47 | 0.43 | 0.43  | 0.44  | 0.43  | 0.47  | 0.45  | 0.45  | S     | 0.58  | 0.50  | 0.47  | 0.52  | 0.55  | 0.47  | 0.47  | 0.37  | 0.58  | 0.46  | 24    |
| 27             | 0.50 | 0.47 | 1.23 | 1.47 | 1.20 | 1.70 | 1.55 | 1.10 | 1.64 | 1.20 | 0.89  | 0.47  | 0.47  | 0.47  | 0.45  | S     | 0.63  | 0.50  | 0.50  | 0.47  | 0.50  | 0.47  | 0.45  | 0.45  | 0.45  | 1.70  | 0.82  | 24    |
| 28             | 0.47 | 0.47 | 0.58 | 0.60 | 0.81 | 0.68 | 0.65 | 0.65 | 0.71 | 0.60 | 0.55  | 0.52  | 0.47  | 0.45  | S     | 0.60  | 0.45  | 0.47  | 0.47  | 0.50  | 0.50  | 0.49  | 0.50  | 0.47  | 0.45  | 0.81  | 0.55  | 24    |
| 29             | 0.47 | 0.50 | 0.47 | 0.45 | 0.50 | 0.52 | 0.50 | 0.52 | 0.52 | 0.50 | 0.50  | 0.50  | 0.52  | S     | 0.60  | 0.55  | 0.52  | 0.50  | 0.52  | 0.47  | 0.50  | 0.52  | 0.44  | 0.45  | 0.44  | 0.60  | 0.50  | 24    |
| 30             | 0.45 | 0.45 | 0.52 | 0.58 | 0.55 | 0.50 | 0.50 | 0.50 | 0.44 | 0.45 | 0.45  | 0.50  | S     | 0.55  | 0.44  | 0.43  | 0.43  | 0.43  | 0.44  | 0.50  | 0.50  | 0.47  | 0.49  | 0.47  | 0.43  | 0.58  | 0.48  | 24    |
| 31             | 0.47 | 0.47 | 0.50 | 0.49 | 0.45 | 0.47 | 0.50 | 0.47 | 0.47 | 0.45 | 0.50  | S     | 0.68  | 0.52  | 0.47  | 0.50  | 0.47  | 0.50  | 0.47  | 0.47  | 0.50  | 0.45  | 0.47  | 0.52  | 0.45  | 0.68  | 0.49  | 24    |
| HOURLY MAX     | 1.20 | 1.36 | 1.23 | 1.47 | 1.44 | 1.70 | 1.55 | 1.18 | 1.64 | 1.20 | 1.15  | 1.07  | 1.10  | 1.23  | 0.86  | 1.13  | 0.79  | 1.36  | 1.20  | 1.36  | 0.73  | 0.84  | 1.88  | 1.23  |       |       |       |       |
| HOURLY AVG     | 0.60 | 0.60 | 0.62 | 0.63 | 0.66 | 0.62 | 0.61 | 0.63 | 0.64 | 0.65 | 0.62  | 0.61  | 0.57  | 0.57  | 0.52  | 0.55  | 0.54  | 0.56  | 0.57  | 0.59  | 0.54  | 0.53  | 0.57  | 0.55  |       |       |       |       |

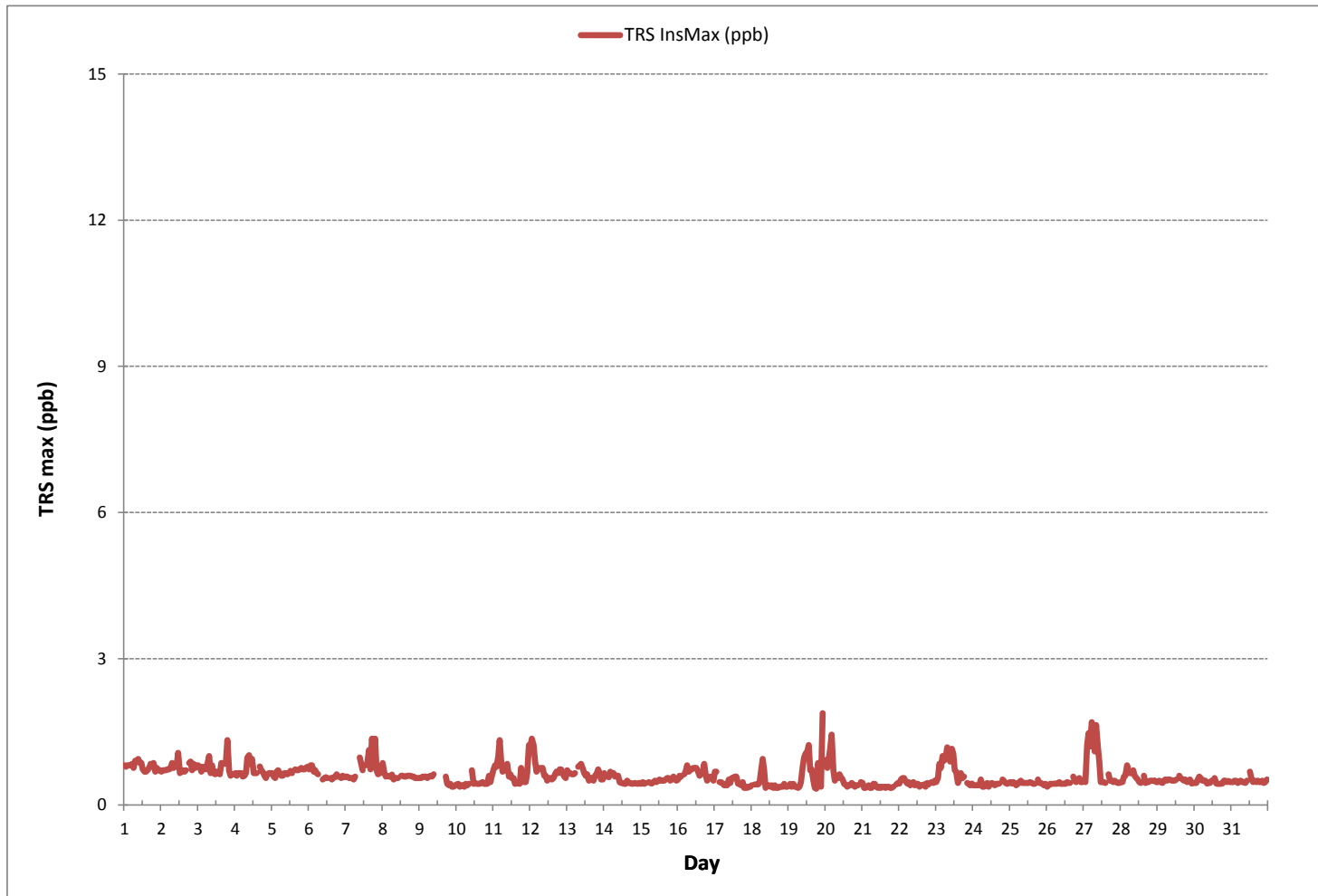
## STATUS FLAG CODES

|    |                          |   |                       |
|----|--------------------------|---|-----------------------|
| 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: | 702  |     |                   |     |           |
| MAXIMUM INSTANTANEOUS VALUE: | 1.88 | ppb | @ HOUR            | 22  | ON DAY 19 |
| IZS CALIBRATION TIME:        | 31   | hrs | OPERATIONAL TIME: | 739 | hrs       |
| MONTHLY CALIBRATION TIME:    | 6    | hrs |                   |     |           |
| STANDARD DEVIATION:          | 0.21 |     |                   |     |           |

TOTAL REDUCED SULPHUR Instantaneous Maximum (TRS ppb)





## PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - January 2018

## 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              | 2.24 | 2.27 | 2.19 | 2.25 | 2.38 | 2.30 | 2.16 | 2.53 | 2.53 | 2.51 | 2.39  | 2.32  | 2.10  | 2.05  | 2.07  | 2.10  | 2.81  | 3.48  | \$    | 2.06  | 2.02  | 2.02  | 2.03  | 2.03  | 2.02  | 2.02  | 3.48  | 2.30  | 24 |
| 2              | 2.01 | 1.99 | 1.97 | 1.96 | 1.97 | 1.99 | 1.99 | 3.22 | 2.32 | 2.36 | 3.05  | 3.22  | 2.02  | 1.97  | 1.97  | 2.19  | 1.98  | \$    | 2.95  | 2.98  | 2.48  | 2.44  | 2.83  | 2.97  | 1.96  | 3.22  | 2.38  | 24    |    |
| 3              | 3.09 | 2.72 | 2.00 | 2.48 | 2.50 | 2.00 | 3.90 | 3.17 | 2.12 | 2.40 | 2.02  | 2.02  | 2.00  | 2.01  | 1.99  | 2.48  | \$    | 3.60  | 2.85  | 3.30  | 3.42  | 1.98  | 1.97  | 1.98  | 1.97  | 3.90  | 2.52  | 24    |    |
| 4              | 1.98 | 1.97 | 1.99 | 1.98 | 1.97 | 1.98 | 2.07 | 2.63 | 3.24 | 2.81 | 4.04  | 4.12  | 2.50  | 2.35  | 2.82  | \$    | 3.75  | 2.36  | 2.48  | 2.39  | 2.33  | 2.28  | 2.29  | 2.42  | 1.97  | 4.12  | 2.55  | 24    |    |
| 5              | 2.15 | 2.04 | 2.06 | 2.28 | 2.49 | 2.25 | 2.20 | 2.11 | 2.31 | 2.44 | 2.37  | 2.46  | 2.45  | 2.28  | \$    | 2.53  | 2.61  | 2.61  | 2.69  | 2.76  | 2.74  | 2.78  | 2.74  | 2.68  | 2.04  | 2.78  | 2.44  | 24    |    |
| 6              | 2.65 | 2.76 | 2.49 | 2.41 | 2.51 | 2.31 | 2.16 | 2.12 | 1.94 | 1.94 | 1.96  | 1.95  | 1.95  | \$    | 1.94  | 1.95  | 1.94  | 1.94  | 1.94  | 1.94  | 1.94  | 1.94  | 1.95  | 1.95  | 1.94  | 2.76  | 2.11  | 24    |    |
| 7              | 1.94 | 1.95 | 1.94 | 1.94 | 1.94 | 1.95 | 1.95 | 1.96 | 1.96 | 3.26 | 2.78  | 2.04  | \$    | 2.26  | 2.25  | 2.71  | 3.21  | 3.86  | 3.53  | 3.22  | 2.69  | 2.35  | 2.31  | 2.89  | 1.94  | 3.86  | 2.47  | 24    |    |
| 8              | 3.48 | 2.50 | 2.41 | 2.73 | 2.50 | 2.06 | 1.99 | 1.97 | 1.98 | 1.99 | 1.99  | \$    | 1.98  | 1.98  | 1.98  | 1.98  | 1.97  | 1.97  | 1.97  | 1.96  | 1.96  | 1.96  | 1.96  | 1.97  | 1.96  | 3.48  | 2.14  | 24    |    |
| 9              | 1.96 | 1.96 | 1.96 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 | 1.97 | 1.98 | \$    | 1.97  | 1.97  | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | 1.96  | 1.98  | 1.97  | 13 |
| 10             | Y    | Y    | Y    | Y    | Y    | Y    | Y    | Y    | Y    | C    | C     | C     | C     | 2.02  | 2.03  | 2.03  | 2.02  | 2.02  | 2.00  | 2.00  | 2.00  | 2.80  | 2.03  | 2.24  | 2.00  | 2.80  | 2.11  | 15    |    |
| 11             | 3.04 | 2.86 | 2.56 | 3.10 | 3.00 | 2.69 | 2.23 | 2.25 | \$   | 2.30 | 2.25  | 2.26  | 2.37  | 2.63  | 2.04  | 2.03  | 2.03  | 2.03  | 2.29  | 2.71  | 2.29  | 2.21  | 2.66  | 3.93  | 2.03  | 3.93  | 2.51  | 24    |    |
| 12             | 6.50 | 4.09 | 4.60 | 3.62 | 3.16 | 3.19 | 2.79 | \$   | 2.35 | 2.40 | 2.46  | 2.28  | 2.30  | 2.29  | 2.25  | 2.39  | 2.38  | 2.51  | 2.31  | 2.74  | 2.74  | 2.45  | 2.42  | 2.37  | 2.25  | 6.50  | 2.90  | 24    |    |
| 13             | 2.43 | 2.49 | 2.43 | 2.52 | 2.42 | 2.47 | \$   | 2.79 | 2.76 | 2.72 | 2.62  | 2.46  | 2.38  | 2.42  | 2.13  | 2.09  | 2.07  | 2.04  | 2.81  | 2.44  | 2.57  | 2.56  | 2.10  | 2.11  | 2.04  | 2.81  | 2.43  | 24    |    |
| 14             | 2.15 | 2.18 | 2.09 | 2.13 | 2.15 | \$   | 2.17 | 2.12 | 2.11 | 2.11 | 2.49  | 2.62  | 2.47  | 2.70  | 3.04  | 2.65  | 2.26  | 2.27  | 2.34  | 1.99  | 2.36  | 2.02  | 2.02  | 2.03  | 1.99  | 3.04  | 2.28  | 24    |    |
| 15             | 1.99 | 2.00 | 1.99 | 1.99 | \$   | 1.98 | 2.02 | 2.00 | 2.03 | 2.04 | 2.02  | 2.02  | 2.20  | 2.20  | 2.17  | 2.22  | 2.32  | 2.30  | 2.30  | 2.18  | 2.17  | 2.33  | 2.25  | 2.28  | 1.98  | 2.33  | 2.13  | 24    |    |
| 16             | 2.24 | 2.50 | 2.50 | \$   | 2.40 | 2.31 | 2.56 | 2.57 | 2.53 | 2.57 | 2.48  | 2.28  | 2.39  | 2.30  | 2.29  | 2.31  | 2.59  | 2.61  | 2.56  | 2.15  | 2.23  | 2.30  | 2.45  | 2.17  | 2.15  | 2.61  | 2.40  | 24    |    |
| 17             | 2.70 | 2.68 | \$   | 2.02 | 2.00 | 1.97 | 1.96 | 1.95 | 2.06 | 2.36 | 1.95  | 2.25  | 2.30  | 2.36  | 2.40  | 2.13  | 2.10  | 2.38  | 3.03  | 4.02  | 3.31  | 3.09  | 3.26  | 2.55  | 1.95  | 4.02  | 2.47  | 24    |    |
| 18             | 2.08 | \$   | 2.16 | 2.41 | 2.38 | 2.42 | 2.68 | 3.01 | 2.37 | 2.19 | 2.05  | 1.95  | 1.98  | 1.98  | 1.93  | 1.92  | 1.92  | 1.93  | 1.94  | 1.95  | 1.95  | 1.96  | 1.95  | 1.95  | 1.92  | 3.01  | 2.13  | 24    |    |
| 19             | \$   | 1.95 | 1.95 | 1.94 | 1.95 | 1.94 | 1.95 | 1.97 | 1.96 | 1.95 | 2.02  | 1.97  | 1.96  | 1.95  | 1.96  | 1.97  | 2.32  | 1.96  | 2.18  | 4.12  | 3.01  | 4.70  | 5.57  | \$    | 1.94  | 5.57  | 2.42  | 24    |    |
| 20             | 3.14 | 3.39 | 5.53 | 3.66 | 5.48 | 3.78 | 7.16 | 4.82 | 2.23 | 9.31 | 2.35  | 2.71  | 2.14  | 2.10  | 2.02  | 2.03  | 2.02  | 1.99  | 1.99  | 1.99  | 2.00  | 2.02  | \$    | 2.02  | 1.99  | 9.31  | 3.30  | 24    |    |
| 21             | 2.02 | 2.02 | 2.02 | 2.57 | 1.97 | 1.98 | 1.98 | 2.00 | 2.00 | 1.99 | 2.02  | 2.30  | 2.25  | 2.24  | 2.39  | 2.42  | 2.28  | 2.54  | 2.61  | 2.71  | 2.77  | \$    | 2.29  | 2.28  | 1.97  | 2.77  | 2.25  | 24    |    |
| 22             | 2.53 | 2.46 | 2.38 | 2.40 | 2.02 | 1.99 | 1.99 | 1.98 | 1.99 | 2.11 | 2.06  | 2.03  | 2.20  | 2.03  | 2.07  | 2.10  | 2.00  | 2.16  | 2.58  | 3.14  | \$    | 2.40  | 2.45  | 2.67  | 1.98  | 3.14  | 2.25  | 24    |    |
| 23             | 2.73 | 2.59 | 3.01 | 3.09 | 3.53 | 3.06 | 3.35 | 2.83 | 3.15 | 3.06 | 2.71  | 2.53  | 2.22  | 2.22  | 1.96  | 2.41  | 3.36  | 4.25  | 3.51  | \$    | 2.76  | 3.61  | 2.11  | 2.79  | 1.96  | 4.25  | 2.91  | 24    |    |
| 24             | 3.28 | 1.97 | 1.98 | 2.02 | 2.02 | 2.02 | 2.06 | 2.03 | 2.03 | 2.03 | 2.05  | 2.79  | 2.78  | 2.17  | 2.10  | 2.10  | 2.11  | 2.17  | \$    | 2.20  | 2.20  | 2.16  | 2.16  | 2.23  | 1.97  | 3.28  | 2.20  | 24    |    |
| 25             | 2.32 | 2.17 | 2.16 | 2.14 | 2.12 | 2.04 | 2.02 | 2.02 | 2.02 | 2.00 | 2.02  | 2.02  | 2.02  | 2.01  | 2.00  | 1.99  | 2.00  | \$    | 2.00  | 1.99  | 1.99  | 1.98  | 1.99  | 1.98  | 1.98  | 2.32  | 2.04  | 24    |    |
| 26             | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 | 1.98 | 1.99 | 1.98  | 1.98  | 1.99  | 1.99  | 1.99  | 1.99  | \$    | 1.99  | 1.99  | 1.99  | 1.99  | 2.00  | 1.99  | 2.07  | 1.98  | 2.07  | 1.99  | 24    |    |
| 27             | 2.15 | 2.11 | 9.68 | 4.62 | 3.98 | 3.26 | 7.06 | 4.67 | 6.03 | 2.78 | 2.53  | 2.06  | 2.19  | 2.19  | 2.03  | \$    | 2.04  | 2.04  | 2.10  | 2.10  | 2.11  | 2.07  | 2.07  | 2.22  | 2.03  | 9.68  | 3.22  | 24    |    |
| 28             | 2.21 | 2.09 | 2.94 | 3.66 | 3.03 | 2.82 | 2.34 | 2.37 | 2.45 | 2.33 | 3.02  | 3.02  | 2.67  | 2.00  | \$    | 2.00  | 2.00  | 2.00  | 2.01  | 2.89  | 2.66  | 2.73  | 2.41  | 2.80  | 2.00  | 3.66  | 2.54  | 24    |    |
| 29             | 2.89 | 2.94 | 2.68 | 2.56 | 2.77 | 2.51 | 2.47 | 2.76 | 2.62 | 2.58 | 2.52  | 2.82  | 2.89  | \$    | 2.36  | 2.74  | 2.50  | 2.17  | 2.16  | 2.14  | 2.09  | 2.05  | 2.06  | 2.07  | 2.05  | 2.94  | 2.49  | 24    |    |
| 30             | 2.06 | 2.06 | 2.03 | 2.03 | 2.03 | 2.03 | 2.02 | 2.02 | 2.02 | 2.02 | 2.02  | 2.02  | \$    | 2.01  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.01  | 2.02  | 2.00  | 1.99  | 1.99  | 1.99  | 1.99  | 2.06  | 2.02  | 24 |
| 31             | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 | 2.00 | 1.99 | 2.01 | 2.00  | \$    | 2.02  | 2.00  | 1.99  | 2.02  | 2.00  | 2.00  | 2.00  | 1.99  | 1.99  | 1.99  | 2.00  | 1.99  | 2.00  | 1.99  | 2.02  | 2.00  | 24 |
| HOURLY MAX     | 6.50 | 4.09 | 9.68 | 4.62 | 5.48 | 3.78 | 7.16 | 4.82 | 6.03 | 9.31 | 4.04  | 4.12  | 2.89  | 2.70  | 3.04  | 2.74  | 3.75  | 4.25  | 3.53  | 4.12  | 3.42  | 4.70  | 5.57  | 3.93  |       |       |       |       |    |
| HOURLY AVG     | 2.55 | 2.37 | 2.68 | 2.50 | 2.50 | 2.32 | 2.59 | 2.48 | 2.38 | 2.55 | 2.35  | 2.37  | 2.24  | 2.17  | 2.15  | 2.20  | 2.31  | 2.40  | 2.40  | 2.49  | 2.37  | 2.39  | 2.36  | 2.33  |       |       |       |       |    |

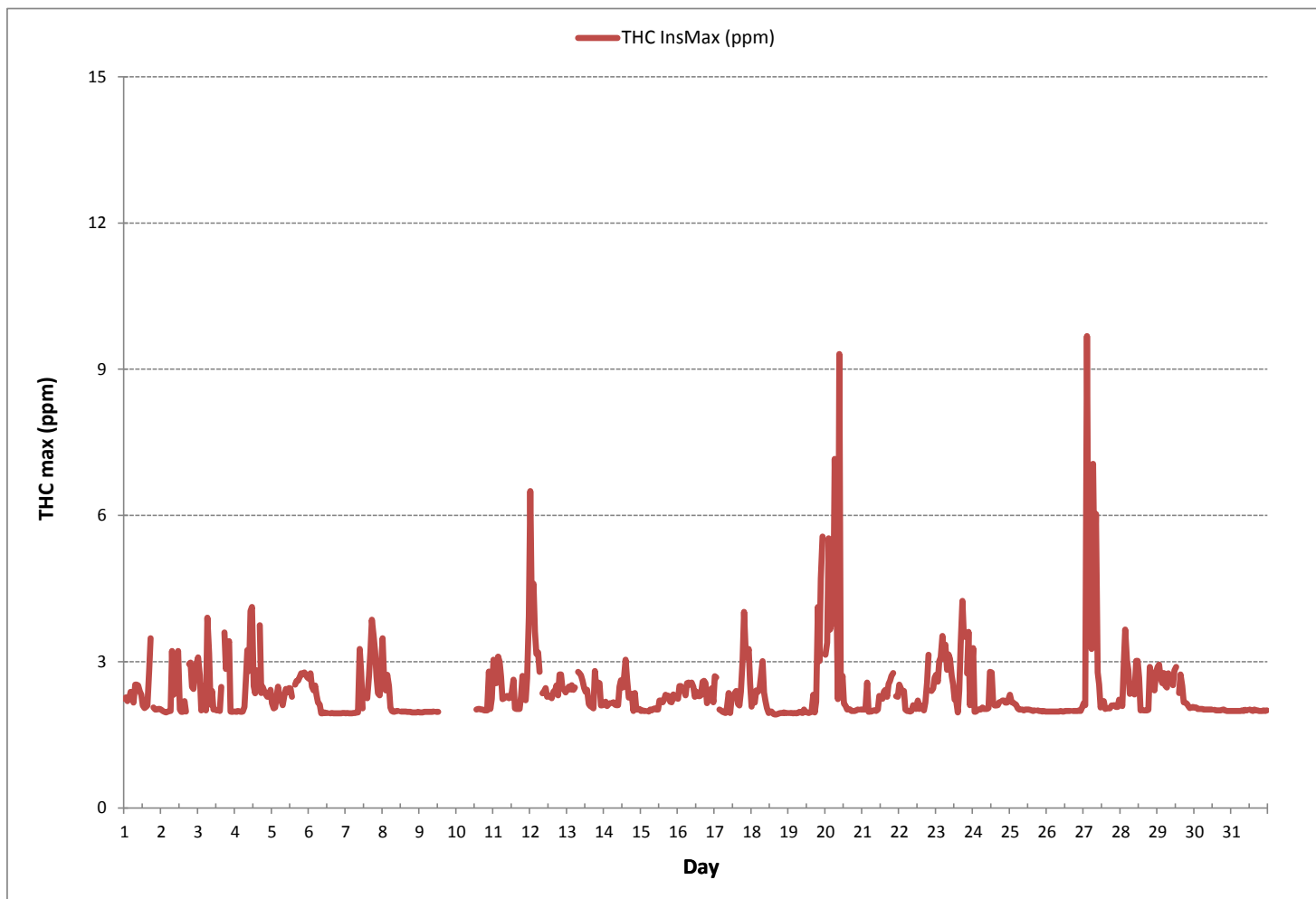
## STATUS FLAG CODES

|    |                          |   |                       |
|----|--------------------------|---|-----------------------|
| 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: | 689  |     |                   |     |           |
| MAXIMUM INSTANTANEOUS VALUE: | 9.68 | ppm | @ HOUR            | 2   | ON DAY 27 |
| IZS CALIBRATION TIME:        | 31   | hrs | OPERATIONAL TIME: | 724 | hrs       |
| MONTHLY CALIBRATION TIME:    | 4    | hrs |                   |     |           |
| STANDARD DEVIATION:          | 0.73 |     |                   |     |           |

TOTAL HYDROCARBONS Instantaneous Maximum (THC ppm)





## PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - January 2018

METHANE MAX Instantaneous Maximum (CH<sub>4</sub> 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              | 2.24 | 2.25 | 2.18 | 2.24 | 2.38 | 2.29 | 2.15 | 2.53 | 2.53 | 2.51 | 2.39  | 2.30  | 2.09  | 2.04  | 2.07  | 2.09  | 2.75  | 3.47  | S     | 2.06  | 2.01  | 2.01  | 2.02  | 2.02  | 2.01  | 3.47  | 2.29  | 24    |    |
| 2              | 2.00 | 1.99 | 1.96 | 1.96 | 1.96 | 1.98 | 1.98 | 3.22 | 2.31 | 2.35 | 3.05  | 3.22  | 2.00  | 1.97  | 1.97  | 2.18  | 1.97  | S     | 2.95  | 2.97  | 2.48  | 2.44  | 2.82  | 2.96  | 1.96  | 3.22  | 2.38  | 24    |    |
| 3              | 3.08 | 2.71 | 2.00 | 2.48 | 2.50 | 1.99 | 3.90 | 3.17 | 2.11 | 2.40 | 2.01  | 2.00  | 1.99  | 1.99  | 1.98  | 2.47  | S     | 3.60  | 2.84  | 3.29  | 3.42  | 1.97  | 1.97  | 1.97  | 1.97  | 3.90  | 2.51  | 24    |    |
| 4              | 1.97 | 1.97 | 1.98 | 1.98 | 1.97 | 1.97 | 2.07 | 2.62 | 3.24 | 2.79 | 4.04  | 4.11  | 2.50  | 2.34  | 2.80  | S     | 3.75  | 2.36  | 2.47  | 2.39  | 2.32  | 2.26  | 2.28  | 2.42  | 1.97  | 4.11  | 2.55  | 24    |    |
| 5              | 2.14 | 2.04 | 2.06 | 2.27 | 2.49 | 2.24 | 2.19 | 2.11 | 2.30 | 2.43 | 2.36  | 2.45  | 2.45  | 2.27  | S     | 2.53  | 2.60  | 2.60  | 2.69  | 2.75  | 2.73  | 2.76  | 2.72  | 2.64  | 2.04  | 2.76  | 2.43  | 24    |    |
| 6              | 2.64 | 2.74 | 2.48 | 2.31 | 2.45 | 2.21 | 2.15 | 2.11 | 1.93 | 1.92 | 1.95  | 1.94  | 1.94  | S     | 1.94  | 1.94  | 1.93  | 1.93  | 1.93  | 1.93  | 1.93  | 1.94  | 1.94  | 1.94  | 1.92  | 2.74  | 2.09  | 24    |    |
| 7              | 1.93 | 1.94 | 1.93 | 1.93 | 1.93 | 1.94 | 1.94 | 1.95 | 1.94 | 3.26 | 2.77  | 2.03  | S     | 2.26  | 2.25  | 2.50  | 3.20  | 3.85  | 3.53  | 3.22  | 2.68  | 2.34  | 2.30  | 2.88  | 1.93  | 3.85  | 2.46  | 24    |    |
| 8              | 3.47 | 2.49 | 2.40 | 2.72 | 2.49 | 2.06 | 1.98 | 1.96 | 1.97 | 1.98 | 1.99  | S     | 1.98  | 1.98  | 1.98  | 1.97  | 1.97  | 1.97  | 1.97  | 1.96  | 1.96  | 1.96  | 1.96  | 1.96  | 1.96  | 3.47  | 2.14  | 24    |    |
| 9              | 1.96 | 1.96 | 1.96 | 1.96 | 1.97 | 1.96 | 1.96 | 1.97 | 1.97 | 1.97 | S     | 1.96  | 1.97  | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | 1.96  | 1.97  | 1.96  | 13 |
| 10             | Y    | Y    | Y    | Y    | Y    | Y    | Y    | Y    | Y    | C    | C     | C     | C     | 2.01  | 2.01  | 2.01  | 2.00  | 2.00  | 1.99  | 1.99  | 1.99  | 2.79  | 2.02  | 2.24  | 1.99  | 2.79  | 2.10  | 15    |    |
| 11             | 3.04 | 2.85 | 2.56 | 3.09 | 3.00 | 2.68 | 2.23 | 2.23 | S    | 2.29 | 2.23  | 2.26  | 2.36  | 2.62  | 2.03  | 2.03  | 2.01  | 2.01  | 2.28  | 2.70  | 2.28  | 2.20  | 2.65  | 3.93  | 2.01  | 3.93  | 2.50  | 24    |    |
| 12             | 6.50 | 4.08 | 4.59 | 3.62 | 3.16 | 3.19 | 2.78 | S    | 2.34 | 2.39 | 2.46  | 2.26  | 2.29  | 2.27  | 2.25  | 2.38  | 2.38  | 2.51  | 2.30  | 2.73  | 2.73  | 2.42  | 2.42  | 2.32  | 2.25  | 6.50  | 2.89  | 24    |    |
| 13             | 2.43 | 2.48 | 2.43 | 2.50 | 2.41 | 2.46 | S    | 2.63 | 2.59 | 2.64 | 2.59  | 2.45  | 2.25  | 2.28  | 2.12  | 2.08  | 2.07  | 2.03  | 2.80  | 2.43  | 2.56  | 2.55  | 2.09  | 2.10  | 2.03  | 2.80  | 2.39  | 24    |    |
| 14             | 2.14 | 2.12 | 2.08 | 2.12 | 2.14 | S    | 2.11 | 2.10 | 2.10 | 2.10 | 2.48  | 2.61  | 2.47  | 2.69  | 3.04  | 2.64  | 2.24  | 2.27  | 2.33  | 1.99  | 2.35  | 2.01  | 2.01  | 2.01  | 1.99  | 3.04  | 2.27  | 24    |    |
| 15             | 1.98 | 1.99 | 1.99 | 1.99 | S    | 1.97 | 2.00 | 2.00 | 2.02 | 2.04 | 2.01  | 2.00  | 2.19  | 2.19  | 2.16  | 2.21  | 2.31  | 2.29  | 2.29  | 2.17  | 2.17  | 2.32  | 2.25  | 2.26  | 1.97  | 2.32  | 2.12  | 24    |    |
| 16             | 2.23 | 2.50 | 2.50 | S    | 2.39 | 2.30 | 2.55 | 2.56 | 2.52 | 2.56 | 2.48  | 2.25  | 2.39  | 2.29  | 2.28  | 2.30  | 2.52  | 2.60  | 2.55  | 2.14  | 2.16  | 2.17  | 2.45  | 2.12  | 2.12  | 2.60  | 2.38  | 24    |    |
| 17             | 2.69 | 2.67 | S    | 2.01 | 2.00 | 1.96 | 1.95 | 1.94 | 2.06 | 2.35 | 1.94  | 2.24  | 2.29  | 2.35  | 2.39  | 2.12  | 2.09  | 2.38  | 3.02  | 4.02  | 3.30  | 3.08  | 3.25  | 2.55  | 1.94  | 4.02  | 2.46  | 24    |    |
| 18             | 2.07 | S    | 2.15 | 2.41 | 2.38 | 2.41 | 2.67 | 3.01 | 2.36 | 2.18 | 2.05  | 1.94  | 1.97  | 1.98  | 1.92  | 1.91  | 1.91  | 1.92  | 1.93  | 1.94  | 1.94  | 1.96  | 1.94  | 1.94  | 1.91  | 3.01  | 2.13  | 24    |    |
| 19             | S    | 1.93 | 1.93 | 1.93 | 1.93 | 1.93 | 1.94 | 1.97 | 1.95 | 1.94 | 2.01  | 1.96  | 1.96  | 1.94  | 1.95  | 1.97  | 2.31  | 1.95  | 2.17  | 4.12  | 3.01  | 4.69  | 5.57  | S     | 1.93  | 5.57  | 2.41  | 24    |    |
| 20             | 3.13 | 3.38 | 5.52 | 3.66 | 5.47 | 3.79 | 7.16 | 4.81 | 2.23 | 9.30 | 2.34  | 2.70  | 2.13  | 2.09  | 2.01  | 2.03  | 2.00  | 1.98  | 1.99  | 1.98  | 1.99  | 2.00  | S     | 2.01  | 1.98  | 9.30  | 3.29  | 24    |    |
| 21             | 2.00 | 2.01 | 2.00 | 2.56 | 1.96 | 1.98 | 1.98 | 1.99 | 1.99 | 1.98 | 2.00  | 2.29  | 2.24  | 2.24  | 2.38  | 2.41  | 2.26  | 2.54  | 2.60  | 2.70  | 2.76  | S     | 2.29  | 2.28  | 1.96  | 2.76  | 2.24  | 24    |    |
| 22             | 2.53 | 2.46 | 2.37 | 2.40 | 2.01 | 1.99 | 1.98 | 1.98 | 1.98 | 1.99 | 2.06  | 2.02  | 2.19  | 2.02  | 2.07  | 2.09  | 1.99  | 2.15  | 2.57  | 3.13  | S     | 2.40  | 2.45  | 2.66  | 1.98  | 3.13  | 2.24  | 24    |    |
| 23             | 2.72 | 2.58 | 3.00 | 3.08 | 3.53 | 3.05 | 3.34 | 2.82 | 3.15 | 3.06 | 2.71  | 2.53  | 2.21  | 2.21  | 1.96  | 2.40  | 3.35  | 4.24  | 3.51  | S     | 2.75  | 3.61  | 2.11  | 2.77  | 1.96  | 4.24  | 2.90  | 24    |    |
| 24             | 3.28 | 1.97 | 1.98 | 2.00 | 2.01 | 2.00 | 2.01 | 2.02 | 2.02 | 2.03 | 2.05  | 2.78  | 2.77  | 2.16  | 2.09  | 2.09  | 2.11  | 2.17  | S     | 2.19  | 2.19  | 2.15  | 2.16  | 2.23  | 1.97  | 3.28  | 2.19  | 24    |    |
| 25             | 2.31 | 2.16 | 2.15 | 2.13 | 2.11 | 2.03 | 2.00 | 2.01 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  | 2.00  | 1.99  | 1.98  | 1.99  | S     | 1.99  | 1.99  | 1.99  | 1.98  | 1.98  | 1.98  | 1.98  | 2.31  | 2.03  | 24    |    |
| 26             | 1.98 | 1.98 | 1.98 | 1.98 | 1.97 | 1.98 | 1.98 | 1.97 | 1.98 | 1.98 | 1.98  | 1.98  | 1.98  | 1.98  | 1.98  | 1.98  | S     | 1.98  | 1.98  | 1.98  | 1.99  | 2.00  | 1.99  | 2.07  | 1.97  | 2.07  | 1.98  | 24    |    |
| 27             | 2.14 | 2.10 | 9.64 | 4.61 | 3.98 | 3.26 | 7.06 | 4.66 | 6.03 | 2.77 | 2.53  | 2.06  | 2.18  | 2.18  | 2.01  | S     | 2.03  | 2.03  | 2.09  | 2.09  | 2.10  | 2.06  | 2.06  | 2.22  | 2.01  | 9.64  | 3.21  | 24    |    |
| 28             | 2.20 | 2.08 | 2.93 | 3.67 | 3.03 | 2.74 | 2.33 | 2.36 | 2.44 | 2.32 | 3.02  | 3.02  | 2.66  | 1.99  | S     | 2.00  | 1.99  | 2.00  | 2.00  | 2.89  | 2.65  | 2.71  | 2.40  | 2.79  | 1.99  | 3.67  | 2.53  | 24    |    |
| 29             | 2.88 | 2.93 | 2.67 | 2.55 | 2.76 | 2.51 | 2.46 | 2.74 | 2.61 | 2.57 | 2.52  | 2.80  | 2.88  | S     | 2.35  | 2.72  | 2.50  | 2.17  | 2.15  | 2.12  | 2.08  | 2.05  | 2.06  | 2.07  | 2.05  | 2.93  | 2.48  | 24    |    |
| 30             | 2.06 | 2.06 | 2.02 | 2.02 | 2.02 | 2.02 | 2.01 | 2.01 | 2.01 | 2.01 | 2.00  | 2.01  | S     | 2.00  | 1.99  | 1.99  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 1.98  | 1.98  | 1.99  | 1.98  | 2.06  | 2.01  | 24    |    |
| 31             | 1.98 | 1.99 | 1.99 | 1.98 | 1.98 | 1.98 | 1.99 | 1.99 | 1.99 | 2.00 | 1.99  | S     | 2.01  | 1.99  | 1.99  | 2.01  | 2.00  | 1.99  | 1.99  | 1.99  | 1.99  | 1.99  | 1.99  | 1.99  | 1.98  | 2.01  | 1.99  | 24    |    |
| HOURLY MAX     | 6.50 | 4.08 | 9.64 | 4.61 | 5.47 | 3.79 | 7.16 | 4.81 | 6.03 | 9.30 | 4.04  | 4.11  | 2.88  | 2.69  | 3.04  | 2.72  | 3.75  | 4.24  | 3.53  | 4.12  | 3.42  | 4.69  | 5.57  | 3.93  |       |       |       |       |    |
| HOURLY AVG     | 2.54 | 2.36 | 2.67 | 2.49 | 2.50 | 2.31 | 2.58 | 2.46 | 2.37 | 2.54 | 2.35  | 2.36  | 2.23  | 2.15  | 2.14  | 2.18  | 2.29  | 2.39  | 2.39  | 2.48  | 2.36  | 2.37  | 2.35  | 2.32  |       |       |       |       |    |

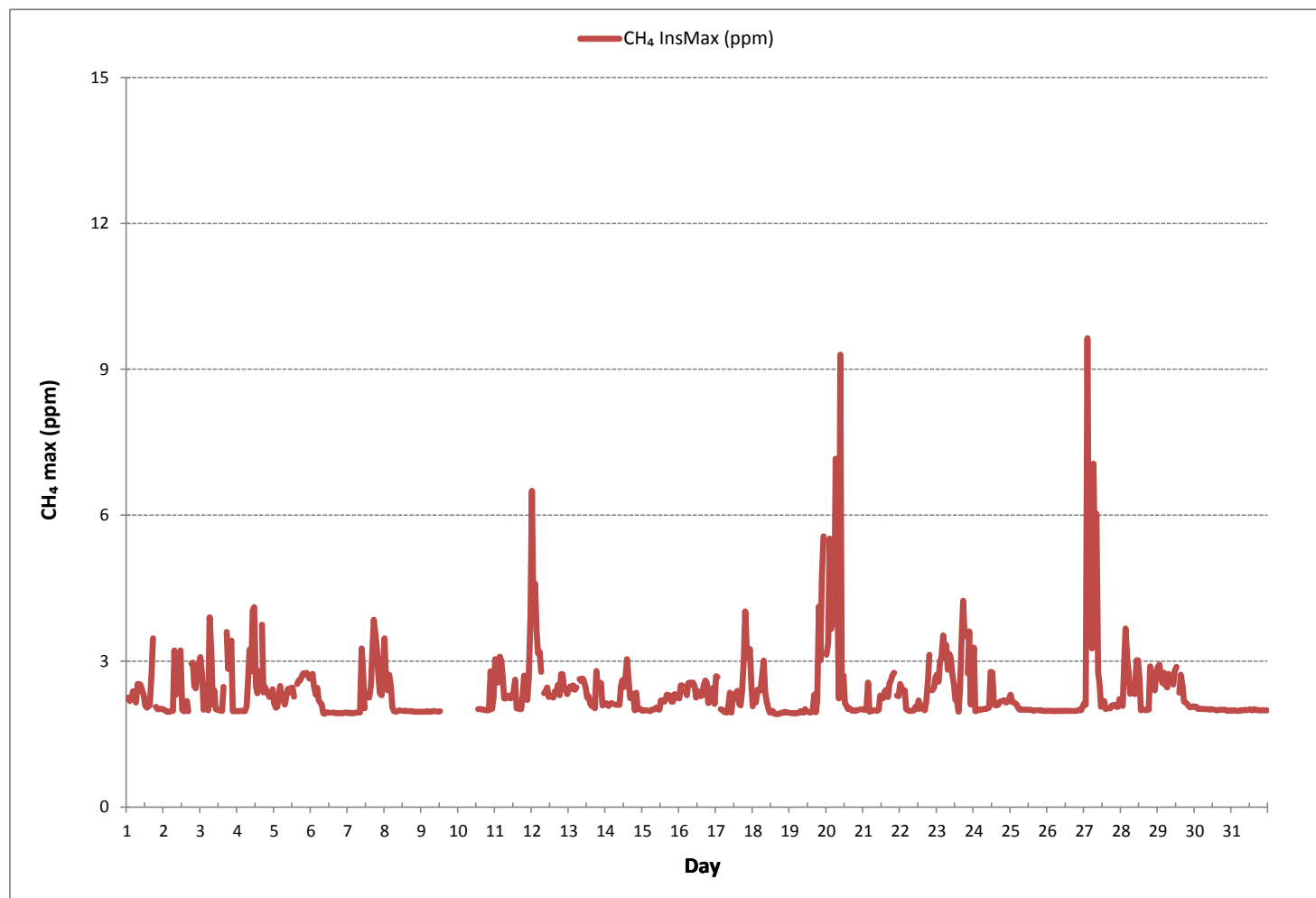
## STATUS FLAG CODES

|    |                          |   |                       |
|----|--------------------------|---|-----------------------|
| 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: | 689  |     |                   |     |           |
| MAXIMUM INSTANTANEOUS VALUE: | 9.64 | ppm | @ HOUR            | 2   | ON DAY 27 |
| IZS CALIBRATION TIME:        | 31   | hrs | OPERATIONAL TIME: | 724 | hrs       |
| MONTHLY CALIBRATION TIME:    | 4    | hrs |                   |     |           |
| STANDARD DEVIATION:          | 0.73 |     |                   |     |           |

METHANE MAX Instantaneous Maximum (CH<sub>4</sub> ppm)





## PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - January 2018

## NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)

| HR START (MST) | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | DAILY | DAILY | 24-HR | RDGS. |    |
|----------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| HR END (MST)   | 0:59 | 1:59 | 2:59 | 3:59 | 4:59 | 5:59 | 6:59 | 7:59 | 8:59 | 9:59 | 10:59 | 11:59 | 12:59 | 13:59 | 14:59 | 15:59 | 16:59 | 17:59 | 18:59 | 19:59 | 20:59 | 21:59 | 22:59 | 23:59 | MIN.  | MAX.  | AVG.  |       |    |
| DAY            |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |    |
| 1              | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.07 | 0.00 | 0.08 | 0.00  | 0.01  | 0.00  | 0.00  | 0.00  | 0.00  | 0.10  | 0.05  | S     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.10  | 0.01  | 24 |
| 2              | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 24 |
| 3              | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.09 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.03  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.09  | 0.01  | 24 |
| 4              | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 24 |
| 5              | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.04  | 0.00  | 0.06  | S     | 0.00  | 0.01  | 0.10  | 0.04  | 0.00  | 0.00  | 0.14  | 0.08  | 0.08  | 0.00  | 0.14  | 0.02  | 24    |    |
| 6              | 0.09 | 0.10 | 0.13 | 0.15 | 0.08 | 0.10 | 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  | 0.15  | 0.03  | 24 |
| 7              | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.20  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.20  | 0.01  | 24 |
| 8              | 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  | 0.00  | 24 |
| 9              | 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  | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | Y     | 0.00  | 0.00  | 0.00  | 13 |
| 10             | Y    | Y    | Y    | Y    | Y    | Y    | Y    | Y    | Y    | C    | C     | C     | C     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 15 |
| 11             | 0.08 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.02 | 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  | 0.08  | 0.00  | 24 |
| 12             | 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  | 0.05  | 0.09  | 0.00  | 0.05  | 0.00  | 0.00  | 0.09  | 0.01  | 24 |
| 13             | 0.00 | 0.09 | 0.00 | 0.08 | 0.00 | 0.10 | S    | 0.16 | 0.17 | 0.16 | 0.15  | 0.13  | 0.15  | 0.14  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.06  | 0.02  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.17  | 0.06  | 24 |
| 14             | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | S    | 0.08 | 0.02 | 0.00 | 0.01 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.08  | 0.01  | 24    |    |
| 15             | 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 |
| 16             | 0.00 | 0.00 | 0.00 | S    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.20  | 0.07  | 0.11  | 0.08  | 0.06  | 0.10  | 0.13  | 0.12  | 0.13  | 0.00  | 0.09  | 0.14  | 0.12  | 0.04  | 0.00  | 0.20  | 0.06  | 24    |    |
| 17             | 0.06 | 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  | 0.06  | 0.00  | 24    |    |
| 18             | 0.00 | S    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.38 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.38  | 0.02  | 24    |    |
| 19             | S    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.05  | 0.00  | 0.00  | 0.00  | 0.00  | S     | 0.00  | 0.05  | 0.00  | 24    |    |
| 20             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.00  | 0.00  | 24    |    |
| 21             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 24    |    |
| 22             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.11 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.11  | 0.00  | 24 |
| 23             | 0.01 | 0.00 | 0.00 | 0.05 | 0.09 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.09  | 0.00  | 0.00  | 0.00  | 0.00  | 0.03  | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.09  | 0.02  | 24    |    |
| 24             | 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  | S     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.06  | 0.00  | 24    |    |
| 25             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 |
| 26             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 24 |
| 27             | 0.00 | 0.00 | 0.03 | 0.05 | 0.00 | 0.04 | 0.00 | 0.01 | 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  | 0.05  | 0.01  | 24    |    |
| 28             | 0.00 | 0.00 | 0.00 | 0.00 | 0.06 | 0.11 | 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  | 0.11  | 0.01  | 24    |    |
| 29             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | S     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 24 |
| 30             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 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 |
| 31             | 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  | 0.00  | 24 |
| HOURLY MAX     | 0.09 | 0.10 | 0.13 | 0.15 | 0.09 | 0.11 | 0.08 | 0.38 | 0.17 | 0.16 | 0.20  | 0.13  | 0.15  | 0.14  | 0.06  | 0.20  | 0.13  | 0.12  | 0.13  | 0.06  | 0.09  | 0.14  | 0.12  | 0.08  |       |       |       |       |    |
| HOURLY AVG     | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.00 | 0.03 | 0.01 | 0.01 | 0.01  | 0.01  | 0.01  | 0.01  | 0.00  | 0.01  | 0.01  | 0.01  | 0.01  | 0.00  | 0.01  | 0.01  | 0.01  | 0.01  |       |       |       |       |    |

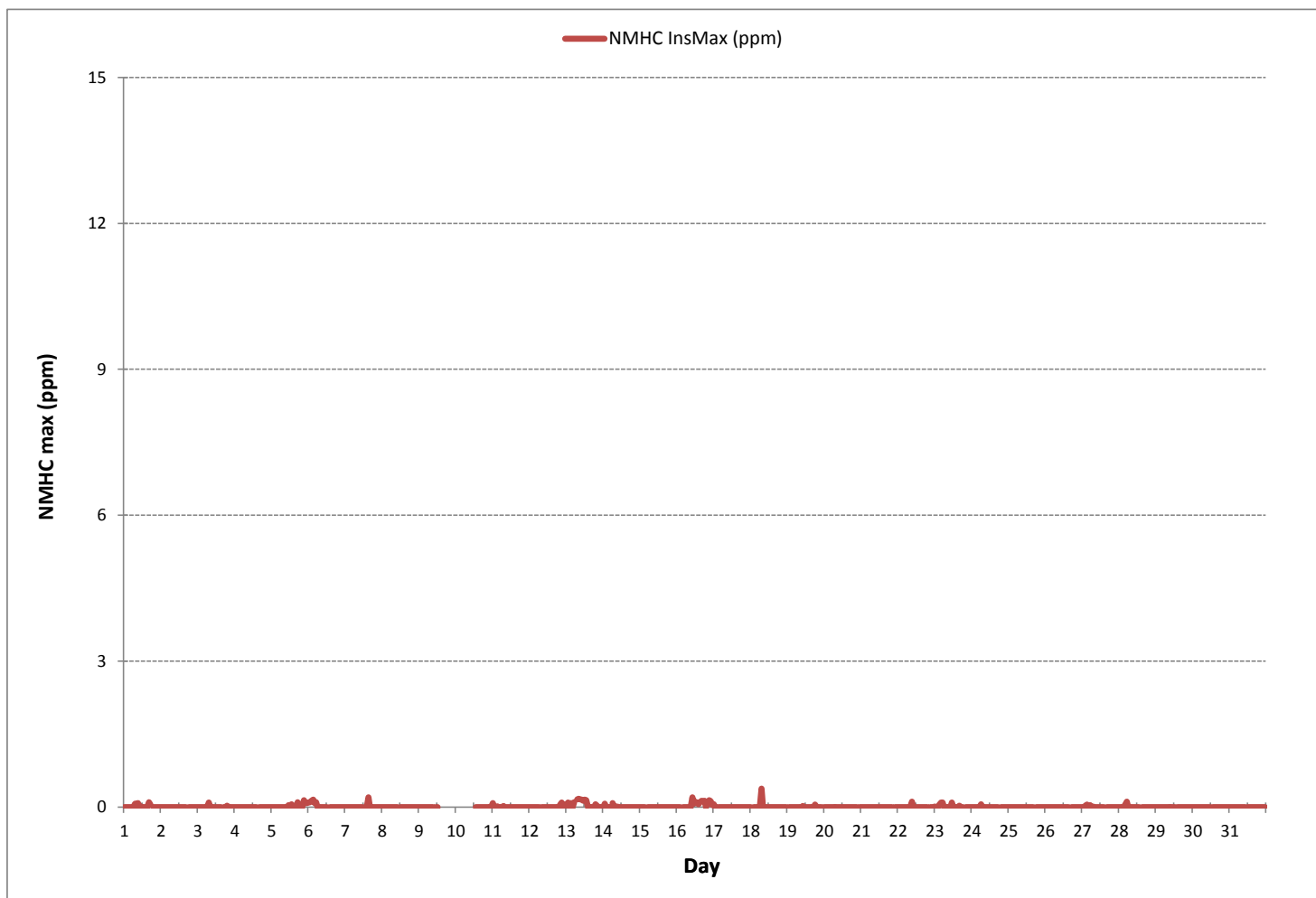
## STATUS FLAG CODES

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

## MONTHLY SUMMARY

|                              |                             |
|------------------------------|-----------------------------|
| NUMBER OF NON-ZERO READINGS: | 75                          |
| MAXIMUM INSTANTANEOUS VALUE: | 0.38 ppm @ HOUR 7 ON DAY 18 |
| IZS CALIBRATION TIME:        | 31 hrs                      |
| MONTHLY CALIBRATION TIME:    | 4 hrs                       |
| STANDARD DEVIATION:          | 0.03                        |
| OPERATIONAL TIME:            | 724 hrs                     |

NON-METHANE HYDROCARBONS Instantaneous Maximum (NMHC ppm)





PEACE RIVER AREA MONITORING PROGRAM COMMITTEE

Reno Station - January 2018

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              | 25.9 | 18.2 | 21.1 | 21.3 | 17.6 | 16.4 | 19.2 | 9.0  | 14.3 | 12.4 | 11.4  | 27.1  | 33.6  | 33.3  | 27.5  | 10.7  | 8.8   | 6.6   | 10.3  | 26.7  | 27.3  | 25.5  | 24.3  | 28.1  | 6.6   | 33.6  | 19.9  | 24    |
| 2              | 26.2 | 26.1 | 27.9 | 28.7 | 24.5 | 21.0 | 14.9 | 7.4  | 5.6  | 8.4  | 6.2   | 9.5   | 14.9  | 15.8  | 13.7  | 12.7  | 15.0  | 9.6   | 6.4   | 10.0  | 19.2  | 21.4  | 16.1  | 13.4  | 5.6   | 28.7  | 15.6  | 24    |
| 3              | 7.2  | 10.4 | 13.5 | 12.2 | 11.8 | 12.2 | 9.0  | 9.5  | 14.0 | 18.1 | 18.0  | 18.4  | 20.0  | 19.2  | 22.6  | 14.8  | 4.7   | 4.5   | 4.7   | 5.9   | 13.6  | 15.1  | 14.5  | 14.3  | 4.5   | 22.6  | 12.8  | 24    |
| 4              | 13.7 | 14.8 | 13.1 | 15.2 | 13.2 | 13.1 | 10.1 | 6.3  | 5.9  | 3.3  | 4.0   | 6.4   | 5.5   | 6.4   | 5.7   | 5.2   | 11.6  | 15.2  | 10.7  | 12.0  | 18.5  | 12.8  | 15.0  | 13.8  | 3.3   | 18.5  | 10.5  | 24    |
| 5              | 18.9 | 20.2 | 17.2 | 16.4 | 11.7 | 18.2 | 20.2 | 18.1 | 14.1 | 12.8 | 16.8  | 15.1  | 14.1  | 11.3  | 10.9  | 15.1  | 11.0  | 16.2  | 11.0  | 14.1  | 13.8  | 15.1  | 11.8  | 12.2  | 10.9  | 20.2  | 14.8  | 24    |
| 6              | 13.7 | 13.4 | 15.0 | 17.3 | 15.2 | 17.1 | 15.8 | 30.6 | 30.3 | 31.2 | 28.8  | 26.9  | 33.3  | 31.4  | 37.8  | 31.8  | 31.7  | 26.6  | 25.3  | 21.7  | 22.7  | 17.1  | 16.1  | 16.3  | 13.4  | 37.8  | 23.6  | 24    |
| 7              | 17.5 | 19.6 | 16.2 | 17.9 | 13.6 | 13.6 | 14.8 | 10.5 | 7.9  | 7.0  | 8.3   | 19.4  | 14.0  | 8.9   | 10.8  | 11.1  | 6.4   | 5.3   | 5.7   | 4.5   | 4.5   | 5.3   | 4.9   | 7.4   | 4.5   | 19.6  | 10.6  | 24    |
| 8              | 6.5  | 4.8  | 5.4  | 3.0  | 4.7  | 24.3 | 26.9 | 29.1 | 38.2 | 38.3 | 38.2  | 34.8  | 40.6  | 37.9  | 31.4  | 29.2  | 29.7  | 25.8  | 25.3  | 26.5  | 22.5  | 25.6  | 20.5  | 21.4  | 3.0   | 40.6  | 24.6  | 24    |
| 9              | 22.1 | 22.5 | 23.4 | 28.5 | 24.9 | 26.9 | 24.6 | 25.8 | 26.0 | 27.3 | X     | 26.2  | 24.8  | 29.4  | 28.5  | 26.4  | 29.0  | 28.6  | 29.1  | 31.4  | 27.7  | 24.0  | 23.1  | 21.7  | 21.7  | 31.4  | 26.2  | 23    |
| 10             | 21.5 | 20.3 | 18.2 | 14.8 | 11.5 | 9.7  | 8.3  | 6.8  | 5.5  | 10.2 | 10.7  | 12.6  | 10.7  | 12.5  | 13.8  | 14.8  | 13.2  | 14.7  | 15.1  | 13.4  | 15.4  | 9.2   | 15.0  | 12.0  | 5.5   | 21.5  | 12.9  | 24    |
| 11             | 5.8  | 8.3  | 7.4  | 6.4  | 6.5  | 4.1  | 4.5  | 7.0  | 6.9  | 7.8  | 8.8   | 8.9   | 5.7   | 7.5   | 6.3   | 7.0   | 5.0   | 4.9   | 4.9   | 3.8   | 5.3   | 4.0   | 3.2   | 4.8   | 3.2   | 8.9   | 6.0   | 24    |
| 12             | 3.1  | 3.5  | 3.6  | 3.4  | 3.3  | 3.2  | 7.9  | 7.8  | 15.8 | 11.2 | 15.9  | 17.5  | 9.7   | 8.7   | 11.9  | 9.2   | 11.3  | 10.4  | 11.6  | 10.8  | 9.9   | 8.0   | 8.8   | 8.8   | 3.1   | 17.5  | 9.0   | 24    |
| 13             | 8.3  | 11.2 | 9.5  | 9.1  | 11.0 | 13.4 | 13.9 | 12.1 | 8.1  | 12.9 | 15.4  | 15.0  | 18.2  | 15.1  | 24.9  | 22.3  | 19.7  | 13.0  | 9.4   | 9.0   | 5.4   | 16.0  | 18.8  | 15.2  | 5.4   | 24.9  | 13.6  | 24    |
| 14             | 18.1 | 17.6 | 12.7 | 14.0 | 11.0 | 8.7  | 11.4 | 10.5 | 9.3  | 10.7 | 20.7  | 13.2  | 14.4  | 19.5  | 19.0  | 21.2  | 22.9  | 27.2  | 29.8  | 29.5  | 25.7  | 27.1  | 28.9  | 28.9  | 8.7   | 29.8  | 18.8  | 24    |
| 15             | 25.3 | 29.1 | 27.2 | 30.0 | 28.7 | 23.9 | 19.2 | 20.6 | 22.1 | 19.3 | 19.6  | 19.0  | 18.7  | 17.7  | 16.4  | 16.5  | 11.9  | 8.3   | 21.4  | 22.1  | 16.0  | 15.6  | 14.2  | 12.9  | 8.3   | 30.0  | 19.8  | 24    |
| 16             | 15.9 | 11.9 | 12.5 | 11.3 | 12.4 | 8.8  | 9.0  | 6.7  | 7.3  | 7.3  | 12.9  | 14.1  | 9.4   | 10.1  | 10.9  | 11.9  | 11.6  | 8.5   | 13.1  | 20.3  | 18.5  | 16.9  | 16.0  | 14.5  | 6.7   | 20.3  | 12.2  | 24    |
| 17             | 6.7  | 13.2 | 17.8 | 22.6 | 16.1 | 25.3 | 23.2 | 16.8 | 14.7 | 21.7 | 20.5  | 14.0  | 14.2  | 12.5  | 7.4   | 13.3  | 15.4  | 15.4  | 14.5  | 13.9  | 21.2  | 19.8  | 21.7  | 20.3  | 6.7   | 25.3  | 16.8  | 24    |
| 18             | 17.5 | 10.3 | 13.2 | 9.6  | 9.4  | 9.6  | 8.5  | 10.0 | 30.0 | 31.3 | 26.0  | 21.9  | 25.2  | 33.8  | 28.8  | 26.8  | 18.5  | 16.1  | 14.3  | 14.0  | 18.6  | 16.9  | 18.4  | 20.3  | 8.5   | 33.8  | 18.7  | 24    |
| 19             | 16.1 | 11.9 | 18.4 | 23.2 | 21.3 | 16.4 | 16.8 | 16.2 | 12.3 | 13.5 | 19.4  | 19.6  | 19.9  | 14.8  | 13.9  | 14.1  | 7.6   | 9.3   | 9.1   | 4.6   | 9.7   | 10.1  | 6.4   | 3.7   | 3.7   | 23.2  | 13.7  | 24    |
| 20             | 3.7  | 4.2  | 6.2  | 3.1  | 5.2  | 6.0  | 5.9  | 5.4  | 5.1  | 5.9  | 3.8   | 6.1   | 4.5   | 5.9   | 8.3   | 7.5   | 5.4   | 4.4   | 5.5   | 4.2   | 4.0   | 6.7   | 7.4   | 8.5   | 3.1   | 8.5   | 5.5   | 24    |
| 21             | 6.8  | 8.3  | 17.1 | 20.6 | 28.0 | 25.8 | 26.6 | 28.8 | 28.6 | 37.4 | 35.1  | 35.6  | 35.4  | 38.2  | 32.0  | 32.8  | 27.2  | 24.9  | 24.8  | 24.7  | 18.8  | 19.2  | 14.3  | 20.9  | 6.8   | 38.2  | 25.5  | 24    |
| 22             | 12.3 | 14.4 | 14.2 | 14.0 | 20.1 | 18.6 | 13.2 | 15.3 | 16.1 | 10.7 | 6.5   | 6.9   | 5.7   | 7.6   | 7.6   | 6.9   | 5.1   | 5.6   | 6.8   | 9.2   | 9.6   | 8.0   | 8.0   | 8.0   | 5.1   | 20.1  | 10.4  | 24    |
| 23             | 4.2  | 3.9  | 6.5  | 4.1  | 7.2  | 8.7  | 7.7  | 8.7  | 7.7  | 7.6  | 6.7   | 7.6   | 7.3   | 12.2  | 14.4  | 6.8   | 4.7   | 5.5   | 9.5   | 7.4   | 13.3  | 16.5  | 18.9  | 17.1  | 3.9   | 18.9  | 8.9   | 24    |
| 24             | 17.9 | 12.7 | 13.8 | 12.4 | 10.0 | 6.9  | 13.1 | 9.5  | 6.4  | 3.8  | 6.7   | 13.4  | 8.5   | 11.9  | 11.6  | 17.4  | 13.2  | 14.4  | 16.6  | 15.1  | 13.8  | 13.8  | 18.0  | 16.6  | 3.8   | 18.0  | 12.4  | 24    |
| 25             | 10.0 | 9.9  | 12.3 | 13.4 | 12.3 | 14.6 | 15.0 | 12.3 | 13.1 | 17.4 | 22.8  | 23.7  | 19.3  | 24.6  | 18.8  | 22.4  | 25.6  | 24.7  | 22.1  | 23.4  | 25.7  | 26.6  | 23.2  | 26.6  | 9.9   | 26.6  | 19.2  | 24    |
| 26             | 25.8 | 25.0 | 28.1 | 29.3 | 23.7 | 21.8 | 23.7 | 18.2 | 18.5 | 17.9 | 18.6  | 23.8  | 20.5  | 21.2  | 19.9  | 14.5  | 12.7  | 9.1   | 7.9   | 8.9   | 7.5   | 8.2   | 7.8   | 3.0   | 3.0   | 29.3  | 17.3  | 24    |
| 27             | 6.6  | 6.4  | 3.6  | 4.2  | 6.7  | 3.0  | 3.2  | 4.6  | 3.4  | 2.7  | 4.3   | 4.3   | 8.1   | 8.0   | 9.4   | 11.2  | 11.1  | 10.6  | 7.7   | 8.7   | 8.0   | 5.5   | 4.3   | 8.7   | 2.7   | 11.2  | 6.4   | 24    |
| 28             | 5.5  | 5.5  | 6.5  | 5.9  | 6.0  | 5.3  | 4.2  | 4.0  | 4.9  | 6.9  | 8.5   | 8.7   | 9.9   | 11.3  | 12.0  | 14.1  | 15.2  | 11.0  | 15.9  | 17.3  | 18.8  | 19.7  | 18.9  | 18.6  | 4.0   | 19.7  | 10.6  | 24    |
| 29             | 18.2 | 20.7 | 19.3 | 20.6 | 25.2 | 25.4 | 17.4 | 19.9 | 21.3 | 22.4 | 23.1  | 19.2  | 24.4  | 21.6  | 22.8  | 16.8  | 12.6  | 22.6  | 18.5  | 25.1  | 21.7  | 25.8  | 27.3  | 22.8  | 12.6  | 27.3  | 21.4  | 24    |
| 30             | 22.8 | 28.9 | 31.1 | 24.0 | 16.0 | 13.5 | 12.3 | 12.7 | 9.5  | 13.9 | 17.6  | 20.2  | 23.2  | 21.4  | 18.8  | 19.8  | 14.9  | 12.9  | 15.9  | 10.9  | 19.9  | 19.4  | 20.5  | 16.0  | 9.5   | 31.1  | 18.2  | 24    |
| 31             | 13.0 | 11.4 | 12.9 | 11.5 | 8.3  | 5.9  | 8.5  | 5.2  | 3.0  | 4.0  | 8.7   | 8.5   | 6.9   | 9.5   | 8.7   | 6.5   | 6.8   | 7.5   | 7.7   | 5.5   | 5.6   | 6.3   | 6.4   | 8.4   | 3.0   | 13.0  | 7.8   | 24    |
| HOURLY MAX     | 26.2 | 29.1 | 31.1 | 30.0 | 28.7 | 26.9 | 26.9 | 30.6 | 38.2 | 38.3 | 38.2  | 35.6  | 40.6  | 38.2  | 37.8  | 32.8  | 31.7  | 28.6  | 29.8  | 31.4  | 27.7  | 27.1  | 28.9  | 28.9  |       |       |       |       |
| HOURLY AVG     | 14.1 | 14.1 | 15.0 | 15.1 | 14.1 | 14.2 | 13.8 | 13.1 | 13.7 | 14.7 | 15.5  | 16.7  | 16.8  | 17.4  | 17.0  | 15.8  | 14.2  | 13.5  | 13.9  | 14.7  | 15.6  | 15.5  | 15.2  | 15.0  |       |       |       |       |

STATUS FLAG CODES

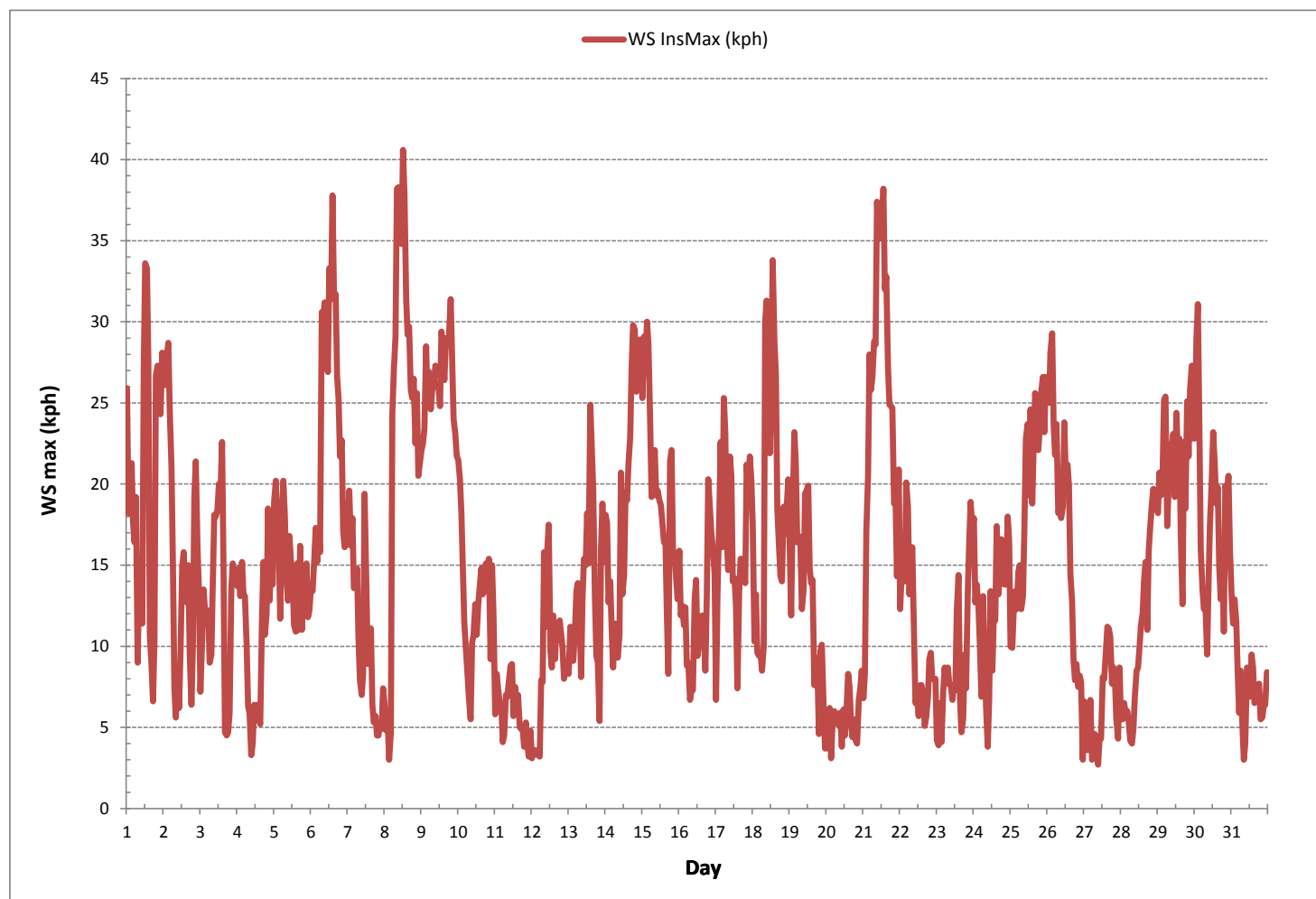
|    |                          |   |                       |
|----|--------------------------|---|-----------------------|
| C  | - MONTHLY CALIBRATION    | Q | - QUALITY ASSURANCE   |
| C1 | - REPEAT CALIBRATION     | R | - RECOVERY            |
| Y  | - MAINTENANCE            | X | - MACHINE MALFUNCTION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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE: 40.6 kph @ HOUR 12 ON DAY 8

OPERATIONAL TIME: 743 hrs

WIND SPEED Instantaneous Maximum (WS kph)



***APPENDIX IV***  
***REPORT CERTIFICATION FORM***

## Report Certification Form

|                                                                                                                     |                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Alberta Airshed</b> (if applicable)                                                                              | <b>EPA Approval or Code of Practice Registration #</b> (if applicable)                                           |
| YES                                                                                                                 | NA                                                                                                               |
| <b>Company Name</b> (if applicable)                                                                                 | <b>Industrial Operation Name</b> (if applicable)                                                                 |
| Peace River Area Monitoring Program Committee                                                                       | Reno Station                                                                                                     |
| <b>Name of the Representative of the Person Responsible</b><br>(Last, First, Middle)                                | <b>Position / Title of the Representative of the Person Responsible</b>                                          |
| Wunmi Adekanmbi                                                                                                     | Project Manager, Customer Service, Air Services                                                                  |
| <b>Is an External Party Certifying the Report?</b><br>(If 'Yes', fill in the fields below for the external person.) |                                                                                                                  |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                                 |                                                                                                                  |
| <b>Name of External Person Certifying the Report</b><br>(Last, First, Middle)                                       | <b>Position / Title of External Person Certifying the Report</b>                                                 |
| NA                                                                                                                  | NA                                                                                                               |
| <b>Company Name for the External Person Certifying the Report</b>                                                   | <b>Identification of Qualifications / Professional Designations of the External Person Certifying the Report</b> |
| 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

February 21, 2018

Report Issued Date (dd-mm-yyyy)

***APPENDIX V***  
***DATA VALIDATION CERTIFICATION FORM***

## Validation Certificate Form

|                                                                     |                                           |
|---------------------------------------------------------------------|-------------------------------------------|
| <b>Client:</b> <u>Peace River Area Monitoring Program Committee</u> | <b>Project #:</b> <u>196-2018-01-93-C</u> |
| <b>Site:</b> <u>Reno Station</u>                                    | <b>Contact:</b> <u>Karla Reesor</u>       |

Level 0 Preliminary Verification



Date February 12, 2018

Level 1 Primary Validation



Date February 12, 2018

Level 2 Final Validation



Date February 21, 2018

Level 3 Independent Data Review



Date February 21, 2018

Post-Final Validation

NA

Date NA

|                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Notes</b>                                                                                                                                                                                                 |
| 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. |
|                                                                                                                                                                                                              |
|                                                                                                                                                                                                              |
|                                                                                                                                                                                                              |