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April 22, 2016

RE: February 2016 Ambient Air Monitoring Monthly Reports

Attached are the monthly continuous ambient air monitoring reports for the LICA Airshed Zone's Cold Lake South, Maskwa, St. Lina, and Portable Air Monitoring System (located at Elk Point) stations. These reports also contain complete data tables, sample log sheets, and chain of custody documents for the integrated monitoring programs including volatile organic compounds, polycyclic aromatic hydrocarbons, Partisol sampler (particulate matter mass), and passive samplers.

Should you have any questions, please don't hesitate to contact me directly at (780) 266-7068.

Respectfully,

A handwritten signature in blue ink that reads "Michael Bisaga".

Michael Bisaga

Airshed Program Manager
Lakeland Industry and Community Association

cc (email): LICA Office

AMBIENT AIR MONITORING MONTHLY DATA REPORT
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
COLD LAKE SOUTH SITE

JOB #:2833-2016-02-1- C

FEBRUARY 2016


Prepared for:

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
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Attention: MIKE BISAGA

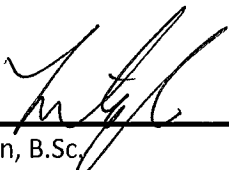
DATE: **March 15, 2016**

Prepared by:



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Reviewed by:



Lily Lin, B.Sc.
Senior Project Manager, Customer Service, Air Services

SUMMARY

In FEBRUARY 2016, the Air Services Group of Maxxam Analytics conducted an ambient air monitoring program on the Cold Lake South Site at Lakeland Industry & Community Association, near Cold Lake. Sampling was carried out to determine the concentrations of non-compliance parameters as requested by the Project Coordinator.

All data collected this month were within the objectives outlined in the AMD1989, AMD2006 and AMD2015.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

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 is issuing this completed report to Lakeland Industry & Community Association, Cold Lake South Site.

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

| Lakeland Industry & Community Association Cold Lake South Site | | | | | MAXIMUM VALUES | | | | | | | | OPERATIONAL TIME (%) |
|---|------------|-------|-------------|-------|--------------------|---------|-----|------|------------------------|--------------------------------|---------|-----|----------------------------|
| PARAMETER | OBJECTIVES | | EXCEEDENCES | | MONTHLY AVERAGE | 1-HOUR | | | | | 24-HOUR | | |
| | 1-HR | 24-HR | 1-HR | 24-HR | | READING | DAY | HOUR | WIND SPEED (KPH) | WIND DIRECTION (DEGREES) | READING | DAY | |
| SO2 (PPB) | 172 | 48 | 0 | 0 | 0.1 | 1.6 | 26 | 6 | 7.3 | WSW | 0.6 | 26 | 100.0 |
| TRS (PPB) | - | - | - | - | 0.2 | 0.4 | VAR | VAR | VAR | VAR | 0.3 | VAR | 100.0 |
| THC (PPM) | - | - | - | - | 2.24 | 3.41 | 5 | 5 | 0.5 | NE | 2.85 | 5 | 99.9 |
| NO2 (PPB) | 159 | - | 0 | - | 5.7 | 26.4 | 21 | 22 | 0.6 | SE | 13.2 | 5 | 100.0 |
| NO (PPB) | - | - | - | - | 1.1 | 45.9 | 17 | 9 | 0.9 | ESE | 5.2 | 17 | 100.0 |
| NOX (PPB) | - | - | - | - | 6.7 | 71.8 | 17 | 9 | 0.9 | ESE | 16.9 | 5 | 100.0 |
| O3 (PPB) | 82 | - | 0 | - | 26.4 | 44.8 | 26 | 14 | 10.4 | WSW | 36.5 | 26 | 100.0 |
| PM2.5 (UG/M3) | - | 30 | - | 0 | 10.3 | 59.9 | 24 | 0 | 4.5 | W | 15.9 | 24 | 92.5 |
| RELATIVE HUMIDITY (%) | - | - | - | - | 74.1 | 98 | 19 | 2 | 3.9 | NW | 90.2 | 16 | 100.0 |
| AMBIENT TEMPERATURE (DEG C) | - | - | - | - | -6.6 | 9.4 | 26 | 13 | 10.5 | WSW | 3.0 | 26 | 100.0 |
| VECTOR WS (KPH) | - | - | - | - | 5.5 | 27.8 | 6 | 19 | - | NW | 14.2 | 6 | 100.0 |
| VECTOR WD (DEG) | - | - | - | - | WSW | - | - | - | - | - | - | - | 100.0 |

NA-NOT AVAILABLE VAR-VARIOUS

Exceedence Summary Report

SO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

SO₂ 24- Hour Exceedences

No Exceedences Recorded During the Month

NO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

PM_{2.5} 24- Hour Exceedences

No Exceedences Recorded During the Month

O₃ 1- Hour Exceedences

No Exceedences Recorded During the Month

Volatile Organics (VOCs) Data Summary

| Sample Collected Date | Maximum reading (PPB) | Volatile Organic Compound |
|-----------------------|-----------------------|---------------------------|
| FEBRUARY 6, 2016 | 1.83 | N-BUTANE |
| FEBRUARY 12, 2016 | 1.1 | ACETONE |
| FEBRUARY 18, 2016 | 4.8 | ACETONE |
| FEBRUARY 24, 2016 | 1.30 | N-DODECANE |

Note: NA

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

| Sample Collected Date | Maximum reading (ug) | Semi-Volatile Organic |
|-----------------------|----------------------|-----------------------|
| FEBRUARY 6, 2016 | 0.24 | PHENANTHRENE |
| FEBRUARY 12, 2016 | 0.22 | NAPHTHALENE |
| FEBRUARY 18, 2016 | 0.17 | PHENANTHRENE |
| FEBRUARY 24, 2016 | 0.71 | NAPHTHALENE |

Note: NA

Partisol Sampler Summary

| Sample Collected Date | Concentration (mg) |
|-----------------------|--------------------|
| FEBRUARY 6, 2016 | 0.066 |
| FEBRUARY 12, 2016 | 0.046 |
| FEBRUARY 18, 2016 | 0.084 |
| FEBRUARY 24, 2016 | 0.041 |

Note: NA

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Appendix IV

Analytical Results

VOCs Samples

PAHs Samples

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Data Validation Certification Form

1.0 Discussion

This monthly report consists of data for parameters Sulphur Dioxide (SO₂), Total Reduced Sulphur (TRS), Total Hydrocarbon (THC), Oxides of Nitrogen (NO_x), Nitric Oxide (NO), Nitrogen Dioxide (NO₂), Ozone (O₃), Particulate Matter 2.5 (PM_{2.5}), Relative Humidity (RH), Ambient Temperature (AmbTPX), Wind Speed (WS), Wind Direction (WD) and Standard Deviation Wind Direction (STDWD). The non-continuous monitoring results for Partisol, VOCs and PAHs are also included in this report.

Sample filters for all continuous air monitors are changed before the calibration is started. The sample manifold is cleaned during the site visit on a monthly basis.

Control checks, consisting of zero and span of the analyzer are conducted on a daily basis on all continuous air monitors. In place of the air sample, zero air (from scrubbed air or gas cylinder) 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 calibration is done a minimum of once a month for each continuous air monitor. In addition 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 a downtime (Data is flagged as C). If more than one calibration is performed during the month, the time during the 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 a downtime (Data is flagged as S). If extra zero/span check is performed, the time during the check is considered as a downtime (Data is flagged as S1).

The AMD requires each instrument and accompanying data recording system to be operational 90% of the time (minimum), on a monthly basis.

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 for verification and validation of continuous ambient air quality data. The descriptions of the data verification and validation process can be found in Section 5 of this report.

Hourly/minute data have been reviewed based on daily zero/span results and multi-points calibration results. Data may be considered as 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 (greater than 10%).

SULPHUR DIOXIDE (SO₂)

The analyzer was working well throughout the month. The routine monthly calibration was performed on February 9.

TOTAL REDUCED SULPHUR (TRS)

The analyzer was working well throughout the month. The routine monthly calibration was performed on February 10. Hourly maximum data collected on February 9 at hour 9 was invalidated as the analyzer was recovering from a short power outage.

TOTAL HYDROCARBONS (THC)

The analyzer was working well throughout the month. The routine monthly calibration was performed on February 9.

NITROGEN DIOXIDE (NO₂)

The analyzer was working well throughout the month. The routine monthly calibration was performed on February 9.

OZONE (O₃)

The analyzer was working well throughout the month. The routine monthly calibration was performed on February 10. Hourly maximum data collected on February 9 at hour 9 was invalidated as the analyzer was recovering from a short power outage.

PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM_{2.5})

Two Teom audits were performed this month: one was completed on February 10, and the other audit was performed on February 22. Both the inlet filter and the FDMS filter were replaced during the audits. Data was corrected using Alberta air quality guideline. If the data was between 0 to -3 ug/m³, the data was corrected to 0 ug/m³. If the data was below -3ug/m³, the data was invalidated. Fifty-two hours of data were invalidated as the data were below -3 ug/m³ this month.

WIND SPEED (WS), WIND DIRECTION (WD) and STANDARD DEVIATION WIND DIRECTION (STDWD)

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

The wind system was working well throughout the month. Hourly maximum data collected on February 9 at hour 9 was invalidated as the analyzer was recovering from a short power outage.

RELATIVE HUMIDITY (RH)

The humidity sensor was working well throughout the month.

AMBIENT TEMPERATURE (TPX)

The temperature sensor was working well throughout the month.

VOC SAMPLES

The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle.

Samples were collected on February 6, 12, 18 and 24. Analytical results are included in this report. The values for the VOCs are reported in ppb.

PAH SAMPLES

The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle.

Samples were collected on February 6, 12, 18 and 24. Analytical results are included in this report. The values for the PAHs are reported in µg.

PARTISOL SAMPLES

The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle.

Samples were collected on February 6, 12, 18 and 24. Analytical results are included in this report. The values for the Partisol are reported in mg.

The routine monthly audit was performed on February 26.

PASSIVE SAMPLES

No samples were collected this month as the samples are scheduled to be collected every two months.

2.0 Project Personnel

Mike Bisaga was the contact for Lakeland Industry & Community Association, and the Maxxam field sampling technician was Alexander Yakupov.

3.0 Plant Monthly Required AMD Summary

All data collected this month were within the objectives outlined in the AMD1989, AMD2006 and AMD 2015.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

4.0 Calculations and Results

All calculations and reporting of results follow the method described in the Air Monitoring Directive, 1989, 2006 Amendments to the Air Monitoring Directive, 1989 (AMD 2006) as well as AMD 2015.

5.0 Methods and Procedures

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

- Maxxam AIR SOP-00210: Ambient TRS Monitoring
- Maxxam AIR SOP-00211: Ambient SO₂ Monitoring
- Maxxam AIR SOP-00212: Ambient O₃ Monitoring
- Maxxam AIR SOP-00213: Ambient NO/NO₂/NO_x Monitoring
- Maxxam AIR SOP-00214: Ambient Hydrocarbon (THC) Monitoring
- Maxxam AIR SOP-00215: Teom Operation
- Maxxam AIR SOP-00225: The Collection of VOCs in Ambient Air Using Canister and Xontech

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

- Sulphur Dioxide - Thermo 43i UV Fluorescent Analyzer
- Total Reduced Sulphur - Thermo 450i UV Fluorescent Analyzer
- Total Hydrocarbons - Thermo 51C FID Analyzer
- Oxides of Nitrogen - Thermo 42i Chemiluminescent Analyzer
- Ozone - Thermo 49i Photometric Analyzer
- Particulate Matter (PM_{2.5}) - R&P 1405F Teom Unit
- Wind System - Met One Unit
- Relative Humidity - Met One Unit
- Ambient Temperature - Met One Unit
- Datalogger - ESC 8832
- Partisol - R&P 2000H Unit

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

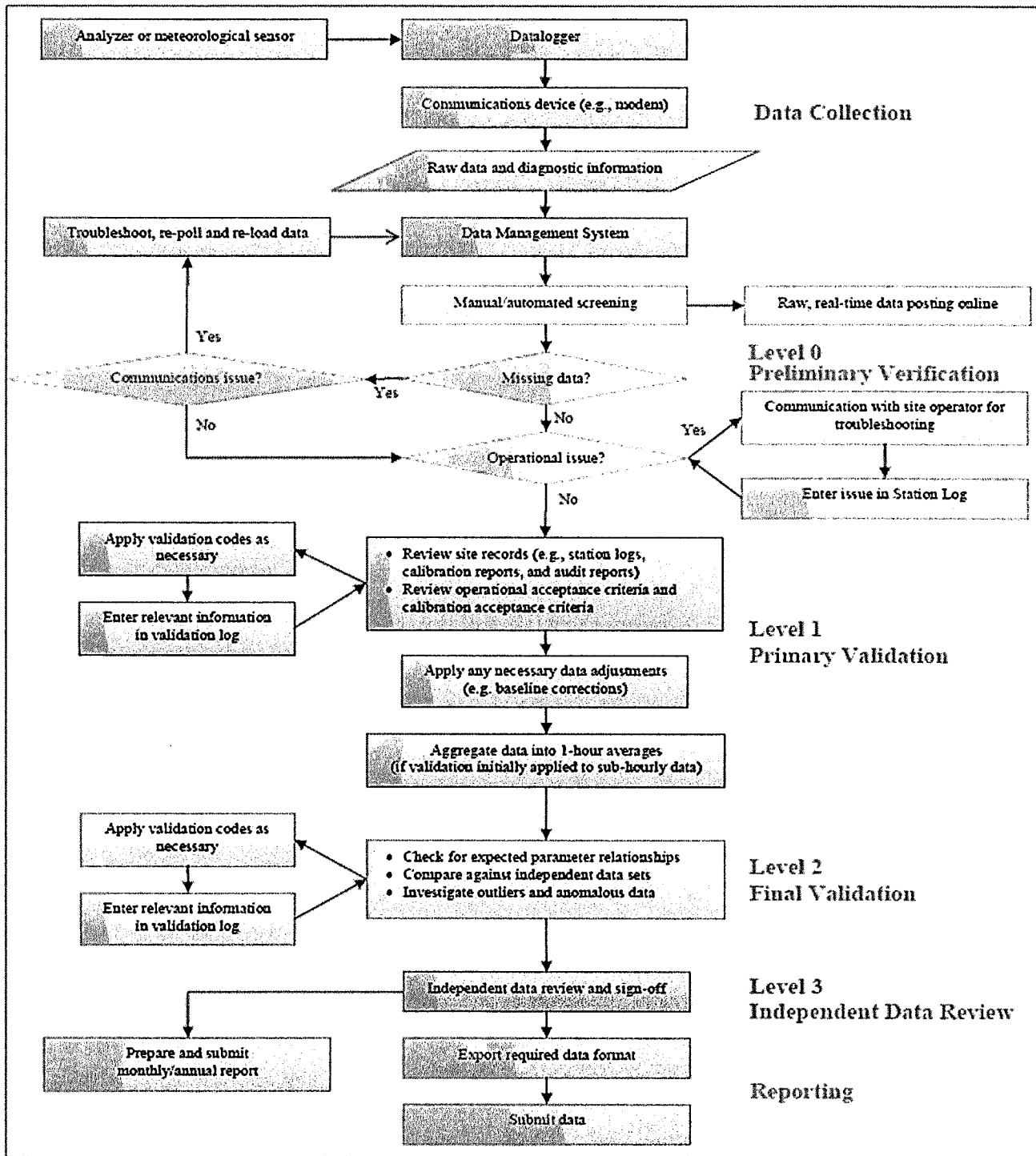
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

Level 3 Independent Data Review

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

Post-Final Validation

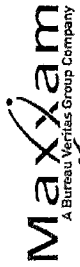
The Post-Final Validation step serves to re-evaluate the data that errors or omissions are discovered and/or suspected after the initial submittal of data. Any data issues or patterns which were not clear on a monthly basis are highlighted during this step. This validation is performed on an annual basis.



Source: AMD Chapter 6: Ambient Data Quality for verification and validation of continuous ambient air quality data; Figure 1 Data Collection and Management Process Flow Chart

APPENDIX I
CONTINUOUS MONITORING DATA RESULTS

SULPHUR DIOXIDE



SULPHUR DIOXIDE (SO2) hourly averages in ppb

MST

| DAY | 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 | 24:00 |
|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| HR | 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 | 24:59 | 25:59 |
| AVG. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0.1 | 0.2 | 0.2 | 0.4 | \$ | 0.5 | 0.4 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 2 | 0.1 | 0.1 | 0.1 | \$ | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 3 | 0.1 | 0.1 | \$ | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 4 | \$ | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 5 | \$ | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 6 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 7 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 8 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 9 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 10 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 11 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 12 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 13 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.2 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.1 | 0.1 | \$ | 0.1 | 0.0 | 0.1 | 0.0 | 0.3 |
| 14 | 0.1 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | \$ | 0.0 | 0.1 | 0.0 | 0.0 | 0.3 |
| 15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 |
| 16 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 17 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| 18 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 19 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.4 | 0.2 | 0.2 | 0.5 | 0.5 | 0.4 | \$ | 0.7 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 20 | 0.1 | 0.1 | 0.2 | 0.3 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 21 | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 22 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.2 | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 23 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| 24 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 26 | 0.1 | 0.2 | 0.4 | 0.8 | 1.2 | \$ | 1.6 | 1.4 | 1.3 | 1.4 | 1.1 | 0.7 | 0.4 | 0.3 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| 27 | 0.2 | 0.2 | 0.3 | 0.2 | \$ | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 28 | 0.0 | 0.0 | 0.0 | \$ | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 29 | 0.0 | 0.0 | \$ | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30 | 0.2 | 0.2 | 0.4 | 0.8 | 1.2 | 0.5 | 1.6 | 1.4 | 1.3 | 1.4 | 1.1 | 1.0 | 1.0 | 0.9 | 0.8 | 0.6 | 0.5 | 0.4 | 0.3 | 0.4 | 0.3 | 0.4 | 0.3 | 0.4 | 0.2 |
| 31 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 32 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

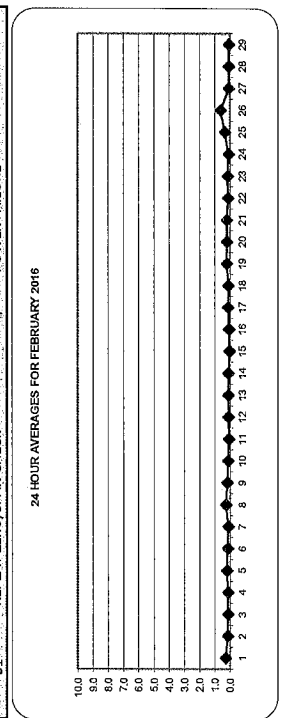
STATUS FLAG CODES

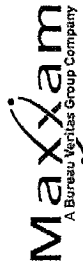
| | | | |
|-----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | O | QUALITY ASSURANCE |
| CI | REPEAT CALIBRATION | R | RECOVERY |
| T | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | OUT FOR REPAIR |
| \$1 | REPEAT ZERO/SPAN CHECK | P | POWER FAILURE |

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

OBJECTIVE LIMIT:

| | |
|-----------------------------|---------|
| NUMBER OF 1-HR EXCEEDENCES | 0 |
| NUMBER OF 24-HR EXCEEDENCES | 0 |
| NUMBER OF NON-ZERO READINGS | 490 |
| MINIMUM 1-HR AVERAGE | 0.0 |
| MAXIMUM 1-HR AVERAGE | 1.6 |
| MINIMUM 24-HR AVERAGE | 0.6 |
| MAXIMUM 24-HR AVERAGE | 1.6 |
| OPERATION TIME | 30 HRS |
| MONTHLY CALIBRATION TIME | 4 HRS |
| STANDARD DEVIATION | 0.18 |
| OPERATIONAL TIME | 696 HRS |
| AMD OPERATION UPTIME | 100.0 % |
| MONTHLY AVERAGE | 0.1 |





SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

| HOUR START | 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 | 24:00 | ROGS. | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|----|
| HOUR END | 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 | | MAX. | AVG. | |
| DAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0.7 | 0.9 | 1.0 | 1.0 | 1.0 | 1.1 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.9 | 24 |
| 2 | 0.7 | 0.8 | 0.7 | \$ | 0.5 | 0.6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.7 | 24 |
| 3 | 0.7 | 0.5 | \$ | 0.7 | 0.8 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.6 | 24 |
| 4 | 0.5 | \$ | 0.5 | 0.6 | 0.5 | 0.5 | 0.5 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.7 | 24 |
| 5 | \$ | 0.5 | 0.5 | 0.7 | 0.8 | 0.5 | 0.8 | 0.7 | 0.5 | 0.5 | 0.7 | 1.0 | 0.8 | 1.0 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.7 | 24 |
| 6 | 1.0 | 0.7 | 0.8 | 0.8 | 0.5 | 0.5 | 0.5 | 0.7 | 0.5 | 0.7 | 0.5 | 0.7 | 0.6 | 0.7 | 0.6 | 0.7 | 0.6 | 0.9 | 0.7 | 0.8 | 0.7 | 0.5 | \$ | \$ | \$ | 0.8 | 24 | |
| 7 | 0.7 | 0.7 | 0.5 | 0.8 | 0.7 | 0.5 | 0.5 | 0.7 | 0.5 | 0.7 | 0.7 | 0.5 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | \$ | \$ | \$ | 0.8 | 24 | |
| 8 | 0.7 | 0.5 | 0.7 | 0.7 | 0.4 | 0.8 | 0.8 | 0.5 | 0.5 | 0.8 | 0.7 | 1.3 | 1.3 | 1.3 | 1.2 | 1.2 | 1.0 | 1.0 | 1.0 | 0.8 | 0.7 | 0.8 | 0.7 | \$ | \$ | 0.8 | 24 | |
| 9 | 0.7 | 0.7 | 0.7 | 0.7 | 0.5 | 0.7 | 0.7 | 0.8 | 0.5 | C | C | C | C | C | 1.0 | 1.0 | 0.9 | 0.9 | 0.9 | 0.7 | 0.7 | 0.5 | 0.8 | \$ | \$ | 0.7 | 24 | |
| 10 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 0.7 | 0.6 | 0.7 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.5 | 0.6 | \$ | \$ | \$ | 0.7 | 24 | |
| 11 | 0.6 | 0.9 | 0.6 | 0.7 | 0.6 | 0.5 | 0.6 | 0.7 | 0.6 | 0.6 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.9 | \$ | \$ | \$ | 0.5 | 24 | |
| 12 | 0.6 | 0.7 | 0.7 | 0.6 | 0.7 | 0.5 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.9 | \$ | \$ | \$ | 0.5 | 24 | |
| 13 | 0.6 | 0.7 | 0.6 | 0.4 | 0.7 | 0.9 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.9 | \$ | \$ | \$ | 0.5 | 24 | |
| 14 | 0.4 | 0.6 | 0.6 | 0.6 | 0.7 | 0.6 | 0.6 | 0.5 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.6 | 24 | |
| 15 | 0.7 | 0.7 | 0.6 | 0.4 | 0.6 | 0.6 | 0.6 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 24 |
| 16 | 0.7 | 0.6 | 0.9 | 0.6 | 0.7 | 0.6 | 0.6 | 0.7 | 0.6 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 24 |
| 17 | 0.5 | 0.5 | 0.7 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 24 |
| 18 | 0.7 | 0.7 | 0.7 | 0.7 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 24 |
| 19 | 0.5 | 0.5 | 0.5 | 0.8 | 0.8 | 1.0 | 0.7 | 1.0 | 1.4 | 1.2 | 1.2 | 1.0 | \$ | 1.4 | 0.7 | 0.7 | 0.8 | 0.8 | 0.5 | 0.7 | 0.7 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 24 |
| 20 | 0.7 | 0.8 | 0.7 | 1.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 0.7 | 0.8 | 0.8 | \$ | 0.8 | 0.7 | 0.5 | 0.7 | 0.7 | 0.8 | 0.8 | 0.7 | 0.8 | 0.7 | 0.5 | 0.5 | 0.5 | 0.5 | 24 |
| 21 | 0.7 | 0.8 | 0.7 | 0.7 | 0.7 | 0.5 | 0.8 | 0.5 | 0.7 | 0.7 | \$ | 1.2 | 1.2 | 1.0 | 1.0 | 0.8 | 0.8 | 0.8 | 0.7 | 0.5 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.6 | 24 |
| 22 | 0.7 | 0.6 | 0.5 | 0.6 | 0.6 | 0.4 | 0.7 | 0.6 | 0.7 | \$ | 0.9 | 1.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 24 |
| 23 | 0.8 | 0.8 | 0.7 | 0.8 | 0.6 | 0.6 | 0.7 | 0.7 | 0.5 | \$ | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 24 |
| 24 | 0.5 | 0.8 | 0.5 | 0.7 | 0.5 | 0.6 | 0.5 | 0.6 | 0.5 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 24 |
| 25 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.7 | \$ | 1.0 | 0.7 | 1.0 | 1.3 | 1.6 | 1.6 | 1.9 | 1.4 | 1.3 | 1.0 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 24 |
| 26 | 0.7 | 0.8 | 1.0 | 1.4 | 1.8 | \$ | 2.4 | 2.1 | 1.9 | 1.9 | 1.3 | 1.2 | 0.7 | 0.7 | 0.9 | 0.9 | 1.0 | 0.9 | 1.0 | 0.9 | 1.0 | 0.9 | 0.9 | 0.9 | 0.8 | 0.8 | 24 | |
| 27 | 0.7 | 0.8 | 0.8 | 1.0 | \$ | 0.7 | 0.7 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.5 | 0.4 | 0.5 | 0.4 | 0.5 | 0.7 | 0.7 | 0.5 | 0.7 | 0.5 | 0.4 | 0.5 | 0.5 | 24 | |
| 28 | 0.5 | 0.4 | 0.7 | \$ | 0.8 | 0.5 | 0.8 | 0.5 | 0.5 | 1.7 | 0.7 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 0.5 | 0.4 | 0.5 | 0.7 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 24 |
| 29 | 1.0 | 0.9 | 1.0 | 1.4 | 1.8 | 1.1 | 2.4 | 2.1 | 1.9 | 1.9 | 1.9 | 1.6 | 1.6 | 1.9 | 1.4 | 1.3 | 1.0 | 1.0 | 0.9 | 1.0 | 0.9 | 1.0 | 1.1 | 1.0 | 1.0 | 0.7 | 24 | |
| HOURLY MAX | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 | 0.6 | 0.8 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.6 | 24 |
| HOURLY AVG | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 | 0.6 | 0.8 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.6 | 24 |

STATUS FLAG CODES

| | | | |
|-----|--------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION | R | RECOVERY |
| M | MAINTENANCE | K | MACHINE MALFUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | DUPLICATE REPAIR |
| \$1 | - REPEAT ZERO/SPAN CHECK | P | POWER FAILURE |

MONTHLY SUMMARY

| | | | | | | |
|------------------------------|------|-----|-------------------|-----|--------------|----|
| NUMBER OF NON-ZERO READINGS: | 662 | PPB | @ HOUR(S) | 6 | ON DAY(S) | 26 |
| MAXIMUM INSTANTANEOUS VALUE: | 2.4 | PPB | @ HOUR(S) | 6 | VAR- VARIOUS | |
| IZS CALIBRATION TIME: | 30 | HRS | OPERATIONAL TIME: | 696 | HRS | |
| MONTHLY CALIBRATION TIME: | 4 | HRS | | | | |
| STANDARD DEVIATION: | 0.23 | | | | | |

01 Hour Averages

| 500 | 500 | 500 | 500 | 500 | 500 |
|-----|-----|-----|-----|-----|-----|
| 375 | 375 | 375 | 375 | 375 | 375 |
| 250 | 250 | 250 | 250 | 250 | 250 |
| 125 | 125 | 125 | 125 | 125 | 125 |
| 0 | 0 | 0 | 0 | 0 | 0 |

02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA SO2MAX PPB

SO2_ / WDR Joint Frequency Distribution (Percent)

LICA

February 2016

Distribution By % Of Samples

Logger Id : 01
 Site Name : LICA
 Parameter : SO2
 Units : PPF

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | NNW | Freq |
|----------|-----------|------|------|------|------|------|-------|------|------|------|------|-------|-------|------|------|------|--------|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | | |
| < 20.0 | 2.11 | 4.07 | 8.00 | 4.98 | 7.25 | 8.00 | 11.48 | 2.41 | 1.96 | 2.26 | 7.40 | 19.78 | 11.93 | 3.77 | 3.17 | 1.35 | 100.00 | |
| < 60.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | |
| < 110.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | |
| < 170.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | |
| < 340.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | |
| >= 340.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | |
| Totals | 2.11 | 4.07 | 8.00 | 4.98 | 7.25 | 8.00 | 11.48 | 2.41 | 1.96 | 2.26 | 7.40 | 19.78 | 11.93 | 3.77 | 3.17 | 1.35 | | |

Calm : .00 %

Total # Operational Hours : 662

Distribution By Samples

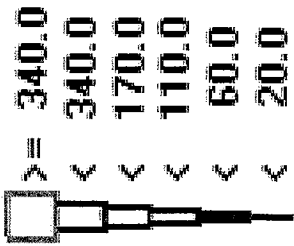
| Limit | Direction | | | | | | | | | | | | | | | | NNW | Freq |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | | |
| < 20.0 | 14 | 27 | 53 | 33 | 48 | 53 | 76 | 16 | 13 | 15 | 49 | 131 | 79 | 25 | 21 | 9 | 662 | |
| < 60.0 | | | | | | | | | | | | | | | | | | |
| < 110.0 | | | | | | | | | | | | | | | | | | |
| < 170.0 | | | | | | | | | | | | | | | | | | |
| < 340.0 | | | | | | | | | | | | | | | | | | |
| >= 340.0 | | | | | | | | | | | | | | | | | | |
| Totals | 14 | 27 | 53 | 33 | 48 | 53 | 76 | 16 | 13 | 15 | 49 | 131 | 79 | 25 | 21 | 9 | | |

Calm : .00 %

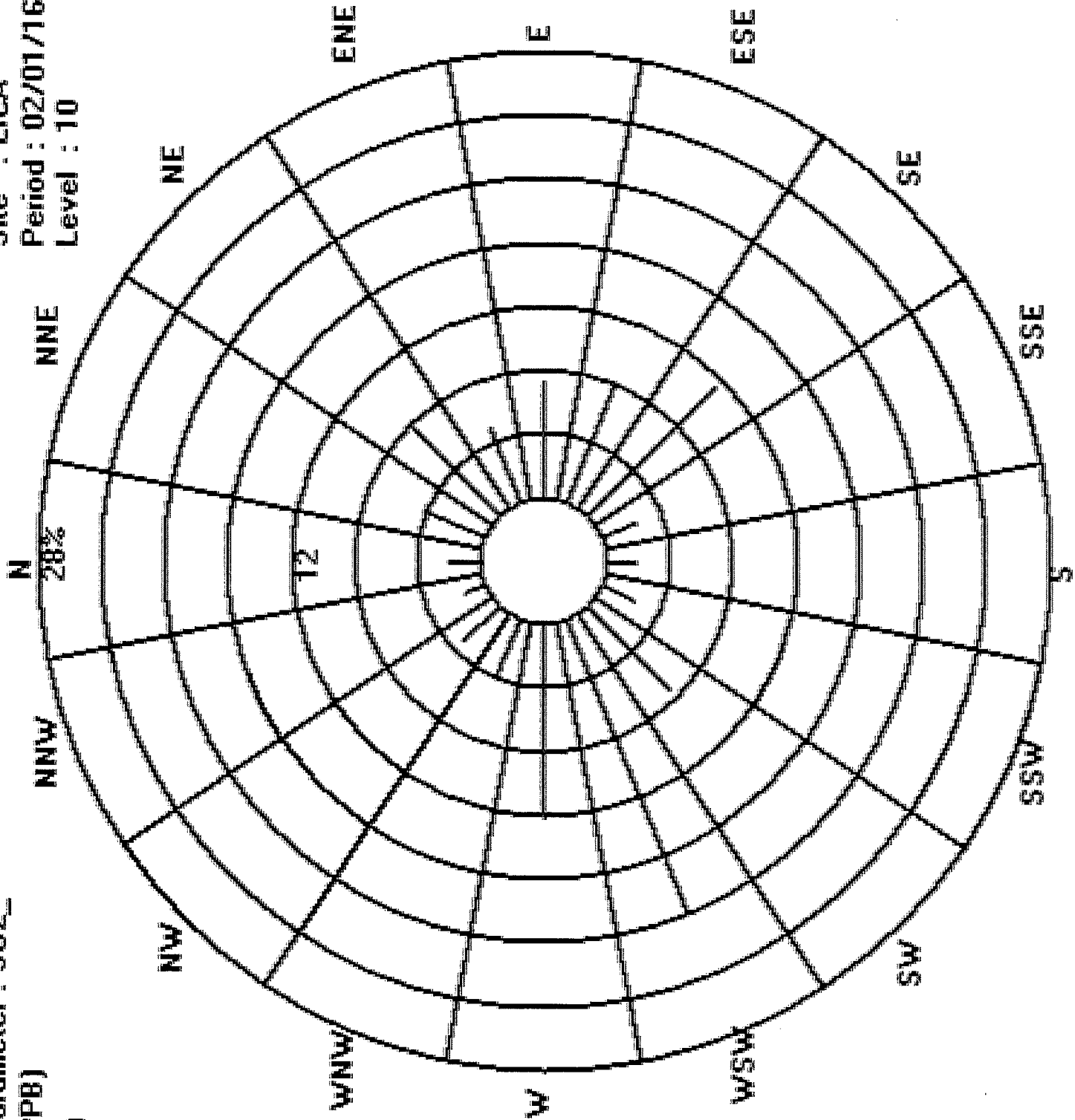
Total # Operational Hours : 662

Logger : 01 Parameter : SO2_

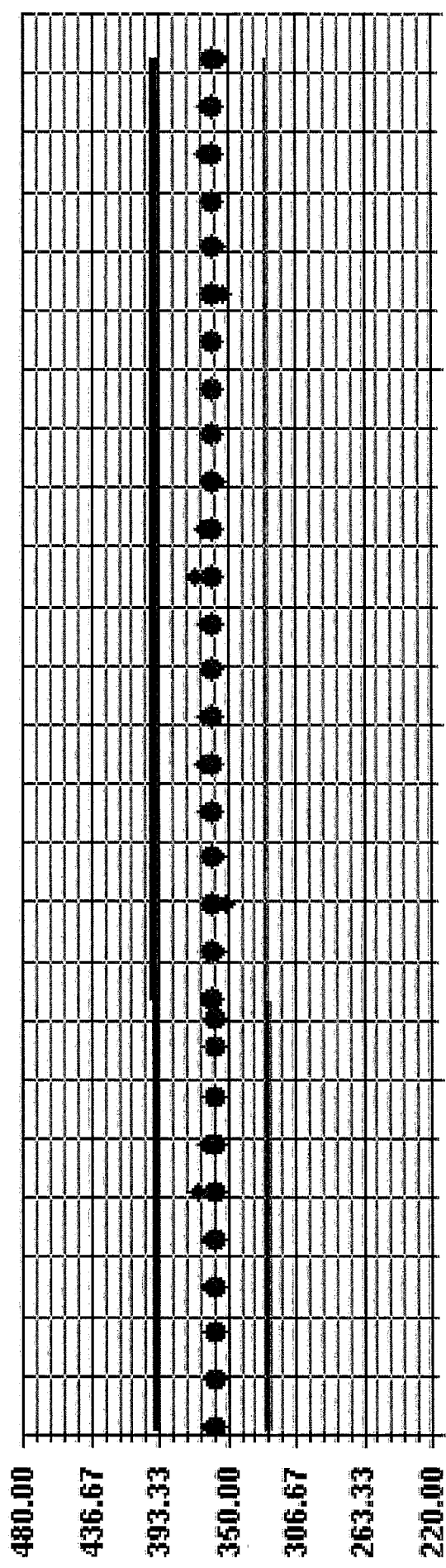
Class Limits (PPB)



Site : LICA
Period : 02/01/16-02/29/16
Level : 10



Calibration Graph for Site: LICA Parameter: S02_ Sequence: S02 Phase: SPAN



2/1/16 2/8/16 2/15/16 2/22/16 3/1/16
 + Cal Value ● Exp Value — Exp Value +10% — Exp Value -10%

TOTAL REDUCED SULPHUR



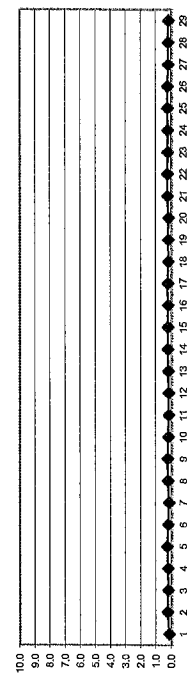
TOTAL REDUCED SULPHUR (TRS) hourly averages in ppb

| DAY | 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 | 24:00 | |
| HR START | 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 | RDGS. | |
| 1 | 0.0 | 0.1 | 0.0 | 0.1 | S | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 2 | 0.2 | 0.2 | 0.2 | S | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 24 |
| 3 | 0.4 | 0.3 | S | 0.4 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 4 | 0.2 | S | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 5 | S | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 24 |
| 6 | 0.3 | 0.3 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 7 | 0.1 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.3 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 8 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 24 |
| 9 | 0.3 | 0.4 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 24 |
| 10 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | C | C | C | C | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 11 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 12 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 13 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 14 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.3 | 0.4 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 15 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 16 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 17 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 24 |
| 18 | 0.1 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 19 | 0.3 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 20 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 21 | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 24 |
| 22 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 23 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 24 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | S | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 24 |
| 25 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 26 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 27 | 0.3 | 0.2 | 0.3 | 0.2 | S | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 28 | 0.1 | 0.2 | 0.3 | S | 0.3 | 0.3 | 0.4 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 29 | 0.2 | 0.2 | S | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 30 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 24 |
| HOURLY MAX | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| HOURLY AVG | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |

STATUS FLAG CODES

| | | | |
|-----|----------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CT | REPEAT CALIBRATION | R | RECOVERY |
| M | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO / SPAN CHECK | G | OUT FOR REPAIR |
| \$1 | REPEATER ZERO / SPAN CHECK | P | POWER FAILURE |

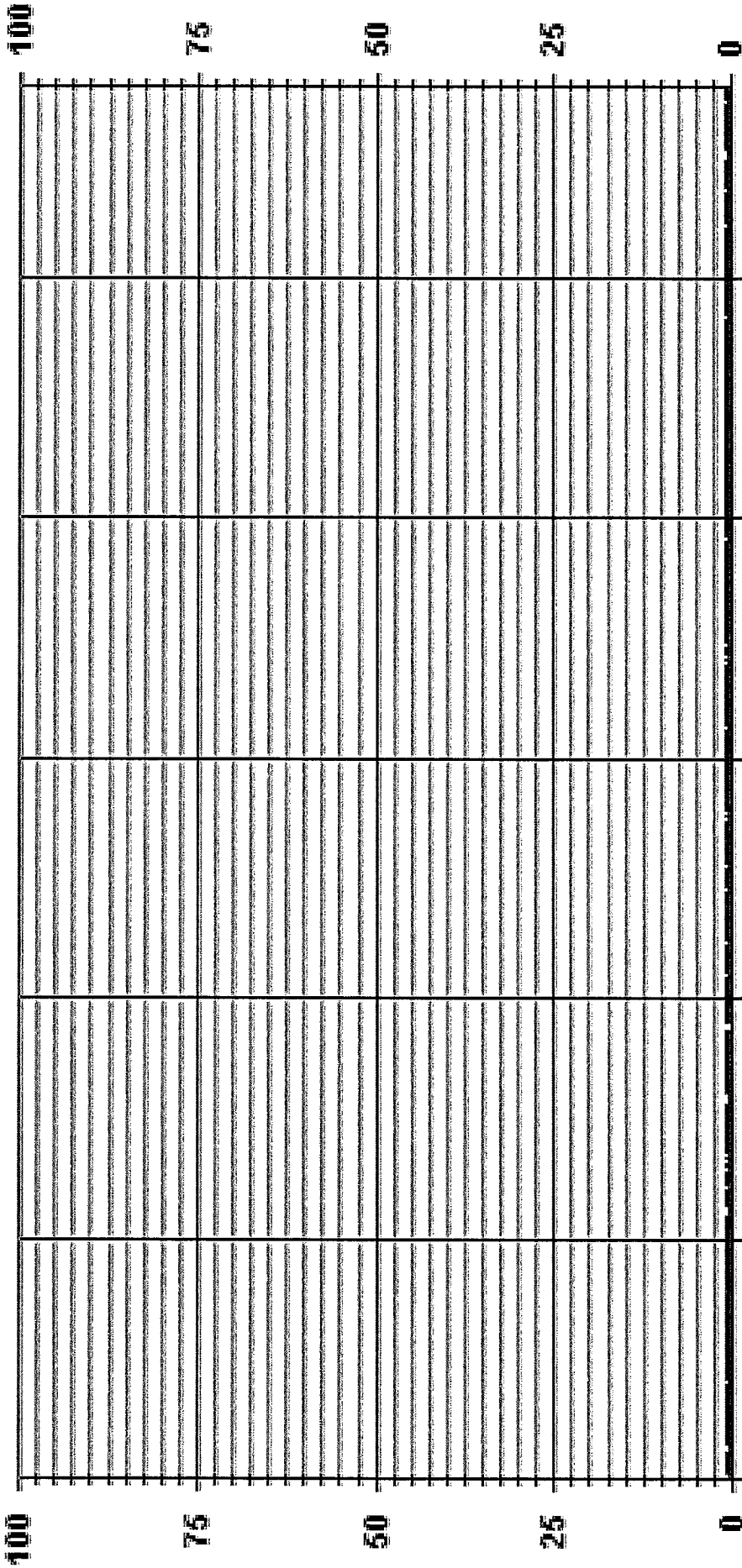
24 HOUR AVERAGES FOR FEBRUARY 2016



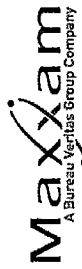
MONTHLY SUMMARY

| | | | | | |
|------------------------------|------|---------------|-----------------------|-----------|------|
| NUMBER OF NON-ZERO READINGS: | 660 | PPB @ HOUR(S) | 0, 2 | ON DAY(S) | 1, 1 |
| MINIMUM 1-HR AVERAGE: | 0.0 | PPB @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MAXIMUM 1-HR AVERAGE: | 0.4 | PPB @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MAXIMUM 24-HR AVERAGE: | 0.3 | PPB | VAR-VARIOUS | ON DAY(S) | VAR |
| IZS CALIBRATION TIME: | 30 | HRS | OPERATIONAL TIME: | 696 | HRS |
| MONTHLY CALIBRATION TIME: | 4 | HRS | AMD OPERATION UPTIME: | 100.0 | % |
| STANDARD DEVIATION: | 0.06 | | MONTHLY AVERAGE: | 0.2 | PPB |

01 Hour Averages



— LICA TRS_ PPB



TOTAL REDUCED SULPHUR MAX instantaneous maximum in ppb

| DAY | 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 MAX. | 24-HOUR AVG. | ROGS. | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------|--------------|-------|-----|
| 1 | 0.7 | 0.8 | 0.9 | 0.7 | \$ | 1.1 | 1.1 | 0.9 | 0.8 | 0.9 | 0.9 | 0.8 | 1.0 | 1.0 | 0.7 | 1.2 | 0.9 | 1.0 | 0.9 | 0.9 | 0.9 | 1.1 | 1.0 | 1.1 | 1.0 | 1.1 | 0.9 | 24 |
| 2 | 0.9 | 0.8 | 0.8 | \$ | 0.8 | 1.0 | 1.0 | 0.8 | 1.1 | 0.9 | 0.9 | 0.8 | 0.8 | 0.7 | 1.0 | 0.9 | 0.9 | 0.9 | 1.0 | 0.9 | 0.9 | 0.8 | 1.0 | 0.7 | 1.1 | 0.9 | 24 | |
| 3 | 1.0 | 1.0 | \$ | 1.1 | 1.0 | 0.9 | 0.9 | 0.9 | 1.0 | 0.9 | 0.7 | 0.8 | 0.8 | 0.7 | 1.0 | 0.9 | 0.9 | 0.9 | 1.0 | 0.9 | 0.9 | 0.8 | 1.0 | 0.7 | 1.1 | 0.9 | 24 | |
| 4 | 0.9 | \$ | 1.0 | 0.9 | 0.8 | 1.1 | 0.9 | 1.1 | 1.0 | 1.2 | 1.0 | 0.9 | 0.9 | 1.1 | 1.0 | 1.0 | 0.9 | 0.9 | 0.9 | 1.1 | 0.9 | 0.9 | \$ | 1.2 | 1.0 | 0.9 | 24 | |
| 5 | \$ | 0.9 | 0.9 | 0.8 | 1.1 | 0.9 | 1.1 | 1.0 | 1.0 | 1.2 | 1.0 | 0.9 | 0.9 | 1.1 | 1.0 | 1.0 | 0.9 | 0.9 | 0.9 | 1.1 | 0.9 | 0.9 | \$ | 1.2 | 1.0 | 0.9 | 24 | |
| 6 | 1.1 | 1.2 | 1.0 | 0.9 | 1.0 | 0.9 | 0.9 | 1.1 | 1.0 | 1.0 | 0.9 | 1.0 | 1.0 | 0.7 | 1.0 | 0.9 | 0.8 | 0.7 | 1.0 | 1.0 | 0.9 | 0.7 | \$ | 0.9 | 1.2 | 0.9 | 24 | |
| 7 | 0.7 | 0.7 | 0.9 | 0.9 | 0.7 | 0.8 | 0.9 | 1.0 | 0.9 | 0.9 | 0.7 | 1.0 | 0.8 | 0.9 | 0.9 | 1.1 | 0.9 | 0.9 | 1.0 | 0.9 | 0.8 | \$ | 0.7 | 0.7 | 1.1 | 0.9 | 24 | |
| 8 | 1.0 | 1.0 | 0.9 | 0.9 | 1.1 | 1.1 | 0.9 | 0.8 | 1.0 | 1.2 | 0.9 | 0.9 | 1.0 | 1.0 | 0.8 | 1.2 | 1.0 | 0.8 | 1.1 | 0.7 | 0.9 | \$ | 1.2 | 1.0 | 1.0 | 0.9 | 24 | |
| 9 | 1.1 | 1.1 | 0.8 | 0.9 | 0.9 | 1.0 | 0.8 | 1.0 | 0.8 | 1.0 | R | 0.9 | 0.8 | 0.9 | 0.9 | 0.9 | 0.8 | 0.8 | 0.9 | 0.8 | 0.9 | 1.1 | \$ | 1.1 | 1.1 | 0.9 | 23 | |
| 10 | 1.1 | 0.9 | 0.9 | 1.1 | 0.8 | 0.8 | 0.9 | 0.8 | 0.9 | 0.8 | C | 0.9 | 0.8 | 1.2 | 0.8 | 0.9 | 1.1 | 1.1 | 1.0 | \$ | 0.8 | 0.8 | 1.2 | 0.9 | 1.1 | 0.9 | 24 | |
| 11 | 0.9 | 0.8 | 1.0 | 0.9 | 1.0 | 0.8 | 1.0 | 0.9 | 0.9 | 0.8 | 0.9 | 0.8 | 0.9 | 0.9 | 0.7 | 0.8 | 0.7 | 0.9 | 0.9 | 0.9 | \$ | 0.9 | 0.8 | 0.8 | 1.0 | 0.9 | 24 | |
| 12 | 0.7 | 0.9 | 0.7 | 0.8 | 0.7 | 0.7 | 1.0 | 0.9 | 0.9 | 0.8 | 1.1 | 0.8 | 1.1 | 0.8 | 0.9 | 1.0 | 0.8 | 0.8 | \$ | 0.8 | 0.8 | \$ | 0.8 | 1.3 | 0.9 | 0.9 | 24 | |
| 13 | 1.0 | 0.9 | 0.8 | 0.9 | 1.1 | 0.8 | 1.0 | 0.9 | 0.8 | 1.2 | 1.1 | 1.0 | 0.8 | 0.8 | 0.9 | 0.9 | 0.8 | 0.9 | 0.8 | \$ | 0.8 | 1.0 | 0.8 | 0.9 | 0.9 | 1.2 | 0.9 | 24 |
| 14 | 0.9 | 1.0 | 0.9 | 0.9 | 0.9 | 1.0 | 0.9 | 1.0 | 1.0 | 1.0 | 1.1 | 0.9 | 1.0 | 0.8 | 1.0 | 1.1 | 0.8 | \$ | 0.8 | 1.0 | 0.9 | 0.8 | 0.7 | 0.8 | 1.1 | 0.9 | 24 | |
| 15 | 0.8 | 0.9 | 1.1 | 1.0 | 0.8 | 1.0 | 0.9 | 1.1 | 0.7 | 1.0 | 1.0 | 1.0 | 1.0 | 0.7 | 0.9 | 0.8 | 1.0 | \$ | 0.8 | 0.9 | 0.9 | 0.8 | 0.8 | 0.9 | 0.9 | 1.1 | 0.9 | 24 |
| 16 | 1.0 | 0.8 | 0.8 | 0.9 | 1.0 | 0.8 | 0.9 | 1.0 | 0.8 | 0.8 | 0.9 | 1.0 | 1.1 | 1.0 | 0.9 | \$ | 0.9 | 1.0 | 1.0 | 1.1 | 1.0 | 1.0 | 1.0 | 0.9 | 1.0 | 1.1 | 0.9 | 24 |
| 17 | 1.2 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 | 0.9 | 1.1 | 1.2 | 1.2 | 0.9 | 0.9 | 0.9 | 0.9 | \$ | 1.0 | 0.8 | 0.9 | 0.8 | 0.7 | 1.1 | 0.9 | 1.0 | 0.9 | 1.1 | 0.9 | 24 | |
| 18 | 0.7 | 0.9 | 0.9 | 1.0 | 0.8 | 0.8 | 0.7 | 0.8 | 0.8 | 0.7 | 0.8 | 0.8 | 0.8 | \$ | 0.8 | 0.9 | 1.1 | 0.9 | 0.9 | 0.9 | 1.1 | 0.9 | 1.0 | 0.9 | 1.1 | 0.9 | 24 | |
| 19 | 0.9 | 0.8 | 1.0 | 0.9 | 1.0 | 0.8 | 0.8 | 1.0 | 1.0 | 1.0 | 0.7 | 0.9 | 0.9 | \$ | 0.8 | 0.8 | 0.9 | 0.8 | 0.9 | 0.7 | 0.8 | 0.8 | 0.9 | 1.0 | 1.0 | 0.9 | 24 | |
| 20 | 1.1 | 0.9 | 0.9 | 1.0 | 0.8 | 0.8 | 0.8 | 0.8 | 1.0 | 0.8 | \$ | 0.9 | 0.9 | 0.8 | 1.1 | 0.9 | 0.8 | 0.8 | 0.9 | 1.1 | 0.9 | 1.0 | 0.9 | 1.0 | 1.1 | 0.9 | 24 | |
| 21 | 1.1 | 0.9 | 0.8 | 0.9 | 1.0 | 1.1 | 1.0 | 0.9 | 1.1 | 0.9 | \$ | 1.0 | 0.9 | 0.9 | 1.0 | 0.9 | 0.7 | 0.9 | 0.9 | 1.0 | 0.9 | 1.1 | 1.0 | 0.8 | 1.1 | 0.9 | 24 | |
| 22 | 1.0 | 0.9 | 1.0 | 1.1 | 1.1 | 1.0 | 0.9 | 0.9 | 1.0 | \$ | 1.1 | 0.8 | 0.9 | 0.9 | 1.1 | 1.3 | 0.8 | 1.1 | 0.9 | 1.0 | 0.9 | 0.8 | 0.8 | 1.0 | 1.3 | 1.0 | 0.9 | 24 |
| 23 | 1.0 | 0.9 | 1.0 | 0.9 | 0.9 | 1.2 | 0.9 | 1.1 | \$ | 0.8 | 0.9 | 0.9 | 1.0 | 0.8 | 1.0 | 0.8 | 0.9 | 1.1 | 1.1 | 0.8 | 0.9 | 1.0 | 0.8 | 1.0 | 1.1 | 0.9 | 24 | |
| 24 | 0.9 | 0.9 | 0.9 | 0.8 | 0.9 | 0.8 | 0.9 | 1.1 | \$ | 1.0 | 0.9 | 0.9 | 0.9 | 1.0 | 0.8 | 0.9 | 1.1 | 0.8 | 0.9 | 1.0 | 0.8 | 0.9 | 1.0 | 0.8 | 1.0 | 1.1 | 0.9 | 24 |
| 25 | 1.0 | 0.9 | 0.8 | 0.9 | 0.8 | 1.1 | \$ | 1.0 | 0.9 | 0.9 | 0.9 | 0.8 | 0.8 | 0.9 | 1.1 | 0.9 | 1.1 | 1.1 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.8 | 1.1 | 0.9 | 24 | |
| 26 | 1.0 | 0.8 | 1.0 | 0.9 | 0.8 | 1.0 | \$ | 1.2 | 0.9 | 1.2 | 1.0 | 0.8 | 1.0 | 0.8 | 1.0 | 0.8 | 1.0 | 0.8 | 1.0 | 0.8 | 0.7 | 0.9 | 0.7 | 0.9 | 0.9 | 1.2 | 0.9 | 24 |
| 27 | 0.9 | 0.8 | 1.0 | 0.9 | \$ | 0.9 | 0.8 | 1.1 | 0.9 | 0.8 | 1.0 | 0.9 | 1.0 | 0.9 | 1.0 | 0.7 | 0.9 | 0.8 | 0.7 | 0.9 | 0.9 | 0.9 | 0.8 | 1.1 | 0.7 | 1.1 | 0.9 | 24 |
| 28 | 0.8 | 0.9 | 1.0 | \$ | 0.8 | 1.0 | 1.3 | 1.0 | 0.9 | 1.0 | 0.9 | 0.7 | 0.8 | 0.9 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 0.7 | 0.8 | 0.7 | 1.3 | 0.9 | 24 |
| 29 | 0.7 | 0.8 | \$ | 1.1 | 0.8 | 0.9 | 0.7 | 0.9 | 1.0 | 0.8 | 0.9 | 0.9 | 0.8 | 1.0 | 0.9 | 0.7 | 0.9 | 0.9 | 0.9 | 1.1 | 0.8 | 0.9 | 0.8 | 0.8 | 0.8 | 1.1 | 0.9 | 24 |
| HOURLY MAX | 1.2 | 1.2 | 1.1 | 1.1 | 1.1 | 1.2 | 1.3 | 1.1 | 1.2 | 1.2 | 1.2 | 1.1 | 1.1 | 1.1 | 1.1 | 1.0 | 1.2 | 1.3 | 1.1 | 1.2 | 1.1 | 1.1 | 1.3 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| HOURLY AVG | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |

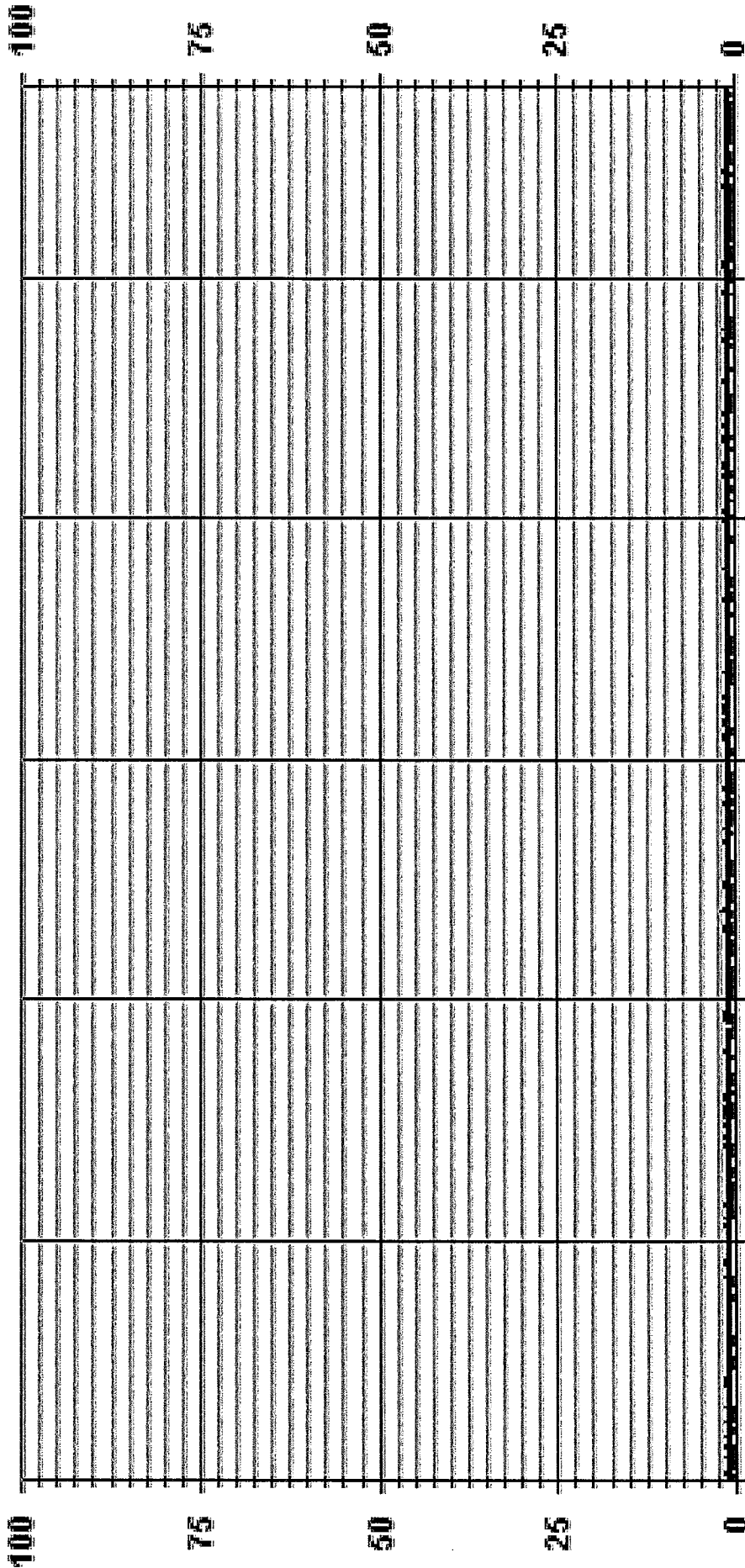
STATUS FLAG CODES

| | | | |
|----|--------------------------|---|----------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CT | REPEAT CALIBRATION | R | RECOVERY |
| M | MAINTENANCE | X | MACHINE MALFUNCTIONS |
| S | DAILY ZERO / SPAN CHECK | G | OUT FOR REPAIR |
| SI | REPEAT ZERO / SPAN CHECK | P | POWER FAILURE |

MONTHLY SUMMARY

| | |
|------------------------------|---------|
| NUMBER OF NON-ZERO READINGS: | 661 |
| MAXIMUM INSTANTANEOUS VALUE: | 1.3 |
| PPB @ HOUR(S) | VAR |
| ON DAY(S) | VAR |
| OPERATIONAL TIME: | 695 HRS |
| STANDARD DEVIATION: | 0.12 |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

-- LICA TRSMAX PPB

LIICA
 TRS_ / WDR Joint Frequency Distribution (Percent)

February 2016

Distribution By % Of Samples

Logger Id : 01
 Site Name : LIICA
 Parameter : TRS_
 Units : PPS

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | |
|---------|-----------|------|------|------|------|------|-------|------|------|------|------|-------|-------|------|------|------|--------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 3.0 | 2.11 | 4.07 | 7.55 | 4.83 | 7.25 | 8.00 | 11.78 | 2.41 | 2.11 | 2.26 | 7.40 | 19.78 | 12.08 | 3.77 | 3.17 | 1.35 | 100.00 |
| < 10.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 50.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 50.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.11 | 4.07 | 7.55 | 4.83 | 7.25 | 8.00 | 11.78 | 2.41 | 2.11 | 2.26 | 7.40 | 19.78 | 12.08 | 3.77 | 3.17 | 1.35 | |

Calm : .00 %

Total # Operational Hours : 662

Distribution By Samples

Direction

| Limit | Direction | | | | | | | | | | | | | | | | |
|---------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 3.0 | 14 | 27 | 50 | 32 | 48 | 53 | 78 | 16 | 14 | 15 | 49 | 131 | 80 | 25 | 21 | 9 | 662 |
| < 10.0 | | | | | | | | | | | | | | | | | |
| < 50.0 | | | | | | | | | | | | | | | | | |
| >= 50.0 | | | | | | | | | | | | | | | | | |
| Totals | 14 | 27 | 50 | 32 | 48 | 53 | 78 | 16 | 14 | 15 | 49 | 131 | 80 | 25 | 21 | 9 | |

Calm : .00 %

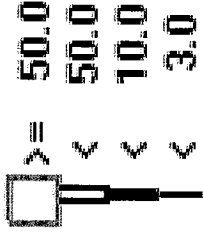
Total # Operational Hours : 662

Logger : 01 Parameter : TRS_

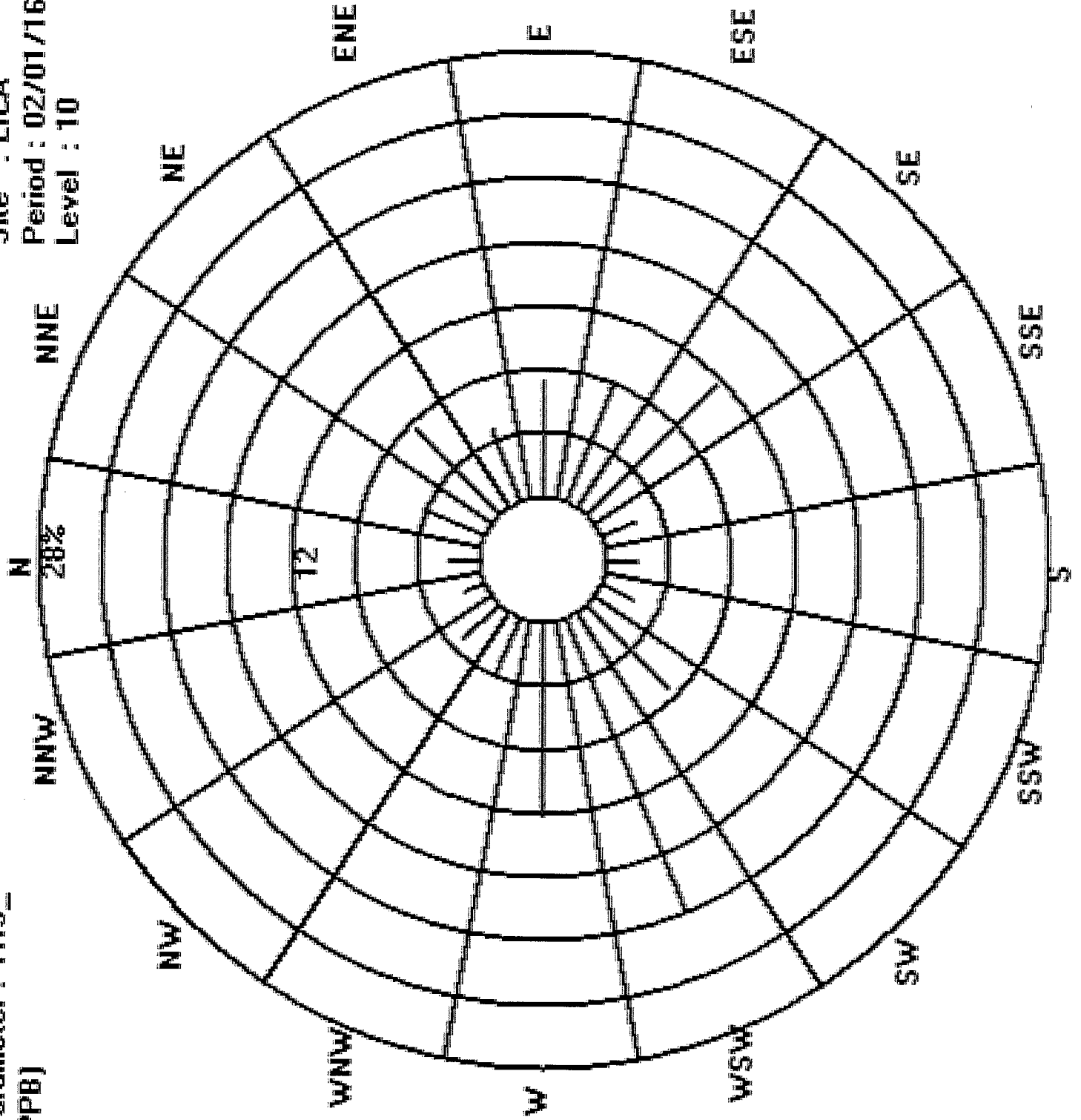
Site : LICA

Class Limits (PPB)

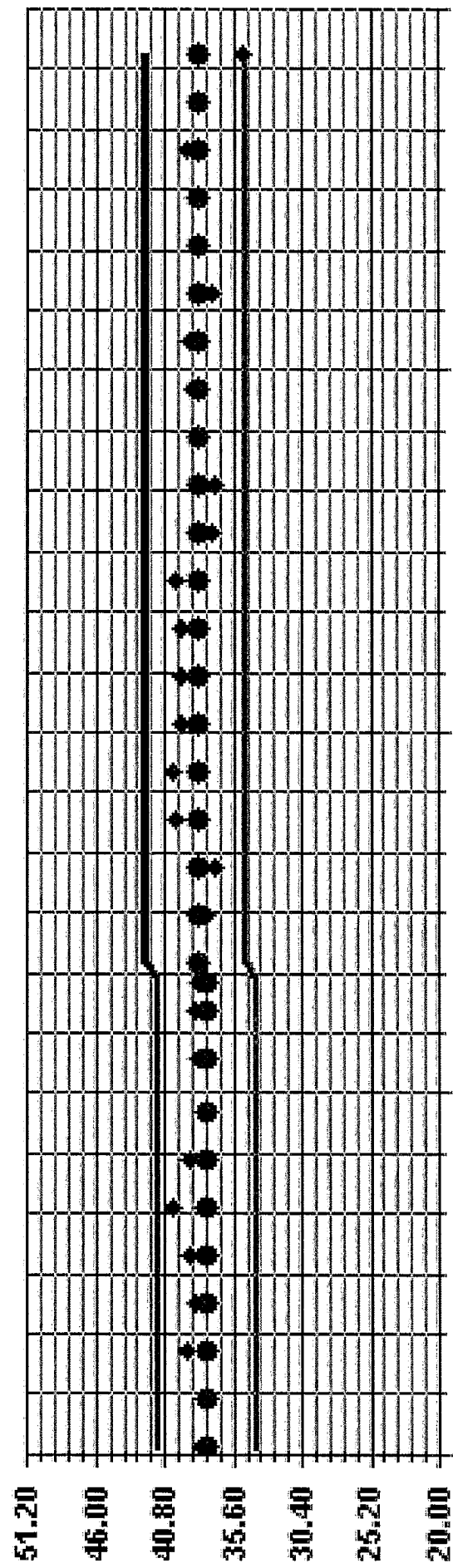
Period : 02/01/16-02/29/16



Level : 10



Calibration Graph for Site: LICA Parameter: TRS_ Sequence: TRS Phase: SPAN



2/1/16 2/8/16 2/15/16 2/22/16 3/1/16
 → Cal Value ● Exp Value — Exp Value +10% — Exp Value -10%

TOTAL HYDROCARBON



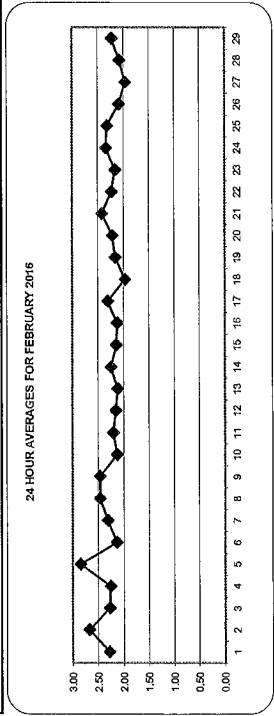
TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST

| DAY | 24-HOUR | | | | | | | | | | | | | | | | | | | | | | | | RODS | | |
|------------|---------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|----|
| | 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 | | 24:00 | |
| 1 | 2.18 | 2.19 | 2.21 | 2.22 | \$ | 2.12 | 2.13 | 2.24 | 2.11 | 5.1 | 2.20 | 2.21 | 2.23 | 2.25 | 2.27 | 2.29 | 2.29 | 2.40 | 2.44 | 2.48 | 2.45 | 2.52 | 2.54 | 2.54 | 2.28 | 23 | |
| 2 | 2.41 | 2.37 | 2.35 | \$ | 2.46 | 2.51 | 2.47 | 2.54 | 2.67 | 2.73 | 2.79 | 2.74 | 2.76 | 2.75 | 2.73 | 2.78 | 2.82 | 2.83 | 2.83 | 2.85 | 2.86 | 2.87 | 2.91 | 2.91 | 2.88 | 24 | |
| 3 | 3.02 | 3.00 | \$ | 2.49 | 2.39 | 2.13 | 2.09 | 2.12 | 2.10 | 2.17 | 2.23 | 2.24 | 2.19 | 2.14 | 2.11 | 2.15 | 2.16 | 2.14 | 2.19 | 2.17 | 2.24 | 2.39 | 3.02 | 2.27 | 24 | | |
| 4 | 2.54 | \$ | 2.39 | 2.45 | 2.39 | 2.34 | 2.43 | 2.37 | 2.39 | 2.36 | 2.15 | 2.12 | 2.13 | 2.12 | 2.11 | 2.13 | 2.14 | 2.16 | 2.14 | 2.14 | 2.20 | 2.22 | 2.30 | 2.54 | 2.25 | 24 | |
| 5 | \$ | 2.44 | 2.48 | 2.59 | 3.10 | 3.41 | 3.20 | 3.01 | 3.08 | 2.90 | 2.84 | 2.79 | 2.75 | 2.77 | 2.70 | 2.67 | 2.70 | 2.75 | 2.78 | 2.90 | 2.99 | 2.93 | 2.86 | \$ | 3.41 | 2.85 | 24 |
| 6 | 2.45 | 2.48 | 2.38 | 2.36 | 2.48 | 2.47 | 2.53 | 2.63 | 2.65 | 2.45 | 1.88 | 1.78 | 1.73 | 1.71 | 1.73 | 1.75 | 1.82 | 1.92 | 2.00 | 2.00 | \$ | 2.10 | 2.65 | 2.13 | 24 | | |
| 7 | 2.13 | 2.14 | 2.16 | 2.19 | 2.23 | 2.24 | 2.25 | 2.26 | 2.30 | 2.33 | 2.34 | 2.30 | 2.31 | 2.32 | 2.33 | 2.35 | 2.38 | 2.42 | 2.47 | 2.52 | \$ | 2.35 | 2.41 | 2.52 | 2.31 | 24 | |
| 8 | 2.43 | 2.36 | 2.39 | 2.43 | 2.48 | 2.48 | 2.54 | 2.55 | 2.61 | 2.71 | 2.50 | 2.54 | 2.47 | 2.32 | 2.35 | 2.43 | 2.44 | 2.45 | 2.44 | 2.41 | 2.43 | 2.41 | 2.44 | \$ | 2.71 | 2.46 | 24 |
| 9 | 2.52 | 2.59 | 2.52 | 2.51 | 2.73 | 2.46 | 2.39 | 2.37 | 2.44 | C | C | C | 2.41 | 2.37 | 2.35 | 2.33 | 2.31 | 2.36 | 2.36 | 2.42 | 2.81 | \$ | 2.49 | 2.81 | 2.46 | 24 | |
| 10 | 2.29 | 2.10 | 2.06 | 2.07 | 2.11 | 2.06 | 2.07 | 2.12 | 2.14 | 2.19 | 2.17 | 2.21 | 2.13 | 2.11 | 2.10 | 2.11 | 2.13 | 2.15 | 2.14 | 2.12 | 2.11 | \$ | 2.10 | 2.10 | 2.29 | 2.13 | 24 |
| 11 | 2.08 | 2.09 | 2.10 | 2.10 | 2.12 | 2.14 | 2.15 | 2.16 | 2.14 | 2.14 | 2.16 | 2.19 | 2.18 | 2.17 | 2.18 | 2.21 | 2.23 | 2.27 | 2.29 | 2.35 | \$ | 2.36 | 2.35 | 2.34 | 2.36 | 2.20 | 24 |
| 12 | 2.29 | 2.17 | 2.18 | 2.19 | 2.18 | 2.19 | 2.20 | 2.22 | 2.21 | 2.18 | 2.19 | 2.20 | 2.18 | 2.14 | 2.13 | 2.09 | 2.05 | 2.04 | 2.04 | \$ | 2.09 | 2.09 | 2.06 | 2.09 | 2.29 | 2.15 | 24 |
| 13 | 2.08 | 2.04 | 2.07 | 2.03 | 2.04 | 2.05 | 2.07 | 2.07 | 2.05 | 2.06 | 2.07 | 2.20 | 2.26 | 2.28 | 2.24 | 2.15 | 2.12 | 2.12 | \$ | 2.13 | 2.15 | 2.14 | 2.09 | 2.03 | 2.28 | 2.11 | 24 |
| 14 | 2.12 | 2.23 | 2.42 | 2.51 | 2.32 | 2.38 | 2.28 | 2.25 | 2.34 | 2.48 | 2.71 | 2.51 | 2.18 | 2.02 | 1.96 | 1.92 | 1.90 | \$ | 2.06 | 2.12 | 2.19 | 2.23 | 2.18 | 2.18 | 2.71 | 2.24 | 24 |
| 15 | 2.21 | 2.57 | 2.61 | 2.44 | 2.45 | 2.42 | 2.25 | 2.03 | 1.97 | 1.95 | 1.97 | 2.02 | 2.03 | 2.03 | 2.04 | 2.05 | \$ | 1.98 | 1.99 | 2.01 | 2.03 | 2.02 | 2.00 | 1.98 | 2.61 | 2.14 | 24 |
| 16 | 2.01 | 2.01 | 2.07 | 2.00 | 2.00 | 1.99 | 2.03 | 1.97 | 1.95 | 1.97 | 2.02 | 2.00 | 2.03 | 2.12 | 2.14 | 2.14 | \$ | 2.21 | 2.23 | 2.31 | 2.30 | 2.29 | 2.30 | 2.38 | 2.12 | 24 | |
| 17 | 2.60 | 2.67 | 2.53 | 2.47 | 2.49 | 2.50 | 2.62 | 2.67 | 2.86 | 2.77 | 2.41 | 2.24 | 2.18 | 2.19 | \$ | 2.07 | 1.99 | 2.04 | 1.96 | 1.95 | 1.94 | 1.92 | 1.94 | 1.89 | 2.86 | 2.30 | 24 |
| 18 | 1.92 | 1.93 | 1.90 | 1.87 | 1.87 | 1.86 | 1.84 | 1.83 | 1.83 | 1.83 | 1.82 | 1.81 | 2.09 | \$ | 1.99 | 2.03 | 2.08 | 2.09 | 2.11 | 2.10 | 2.06 | 2.10 | 2.11 | 2.11 | 1.96 | 24 | |
| 19 | 2.09 | 2.09 | 2.13 | 2.25 | 2.19 | 2.17 | 2.18 | 2.19 | 2.20 | 2.22 | 2.23 | 2.22 | \$ | 2.00 | 2.08 | 2.06 | 2.09 | 2.13 | 2.19 | 2.23 | 2.22 | 2.26 | 2.11 | 2.09 | 2.26 | 24 | |
| 20 | 2.11 | 2.13 | 2.14 | 2.15 | 2.18 | 2.20 | 2.21 | 2.21 | 2.21 | 2.24 | 2.25 | 2.26 | \$ | 2.15 | 2.16 | 2.16 | 2.17 | 2.18 | 2.24 | 2.23 | 2.24 | 2.24 | 2.26 | 2.49 | 2.21 | 24 | |
| 21 | 2.52 | 2.45 | 2.49 | 2.50 | 2.70 | 2.59 | 2.57 | 2.56 | 2.57 | 2.61 | \$ | 2.38 | 2.30 | 2.25 | 2.22 | 2.17 | 2.17 | 2.17 | 2.23 | 2.18 | 2.27 | 2.55 | 2.68 | 2.42 | 2.70 | 2.42 | 24 |
| 22 | 2.23 | 2.20 | 2.30 | 2.38 | 2.37 | 2.38 | 2.52 | 2.54 | 2.45 | \$ | 2.10 | 2.07 | 2.14 | 2.14 | 2.14 | 2.13 | 2.11 | 2.14 | 2.16 | 2.12 | 2.11 | 2.16 | 2.16 | 2.54 | 2.23 | 24 | |
| 23 | 2.15 | 2.16 | 2.14 | 2.20 | 2.24 | 2.26 | 2.30 | 2.26 | \$ | 2.16 | 2.17 | 2.15 | 2.09 | 2.03 | 2.01 | 2.04 | 2.10 | 2.13 | 2.14 | 2.18 | 2.17 | 2.15 | 2.13 | 2.15 | 2.30 | 2.15 | 24 |
| 24 | 2.21 | 2.30 | 2.29 | 2.33 | 2.38 | 2.40 | 2.49 | \$ | 2.50 | 2.55 | 2.49 | 2.47 | 2.39 | 2.17 | 2.14 | 2.11 | 2.14 | 2.22 | 2.20 | 2.18 | 2.18 | 2.35 | 2.51 | 2.59 | 2.33 | 24 | |
| 25 | 2.65 | 2.44 | 2.63 | 2.52 | 2.44 | 2.30 | \$ | 2.41 | 2.47 | 2.44 | 2.39 | 2.30 | 2.25 | 2.24 | 2.21 | 2.19 | 2.18 | 2.24 | 2.18 | 2.24 | 2.18 | 2.15 | 2.14 | 2.65 | 2.31 | 24 | |
| 26 | 2.13 | 2.12 | 2.14 | 2.15 | 2.16 | \$ | 2.17 | 2.16 | 2.15 | 2.16 | 2.10 | 2.01 | 1.99 | 1.95 | 1.94 | 1.94 | 1.94 | 1.93 | 2.01 | 2.02 | 2.03 | 2.07 | 2.24 | 2.28 | 2.08 | 24 | |
| 27 | 2.09 | 1.93 | 1.94 | 1.91 | \$ | 1.94 | 1.94 | 1.93 | 1.92 | 1.93 | 1.94 | 1.92 | 1.91 | 1.90 | 1.91 | 1.92 | 1.94 | 1.95 | 1.99 | 1.99 | 1.99 | 2.00 | 2.01 | 2.11 | 1.96 | 24 | |
| 28 | 2.08 | 2.04 | 2.04 | \$ | 2.09 | 2.11 | 2.12 | 1.96 | 2.00 | 2.02 | 2.02 | 2.02 | 2.02 | 2.04 | 2.05 | 2.06 | 2.07 | 2.09 | 2.10 | 2.09 | 2.12 | 2.11 | 2.12 | 2.17 | 2.07 | 24 | |
| 29 | 2.19 | 2.22 | \$ | 2.15 | 2.17 | 2.18 | 2.21 | 2.21 | 2.21 | 2.17 | 2.18 | 2.19 | 2.20 | 2.15 | 2.14 | 2.22 | 2.33 | 2.36 | 2.35 | 2.29 | 2.25 | 2.22 | 2.26 | 2.36 | 2.22 | 24 | |
| 30 | 3.02 | 3.00 | 2.63 | 2.59 | 3.10 | 3.41 | 3.20 | 3.01 | 3.08 | 2.90 | 2.84 | 2.79 | 2.75 | 2.77 | 2.75 | 2.73 | 2.78 | 2.82 | 2.83 | 2.90 | 2.99 | 2.93 | 2.87 | 2.91 | 2.87 | 24 | |
| HOURLY MAX | 2.28 | 2.27 | 2.26 | 2.28 | 2.32 | 2.30 | 2.30 | 2.32 | 2.31 | 2.29 | 2.29 | 2.22 | 2.20 | 2.18 | 2.16 | 2.15 | 2.17 | 2.19 | 2.22 | 2.24 | 2.24 | 2.27 | 2.27 | 2.27 | 2.26 | 24 | |

STATUS FLAG CODES

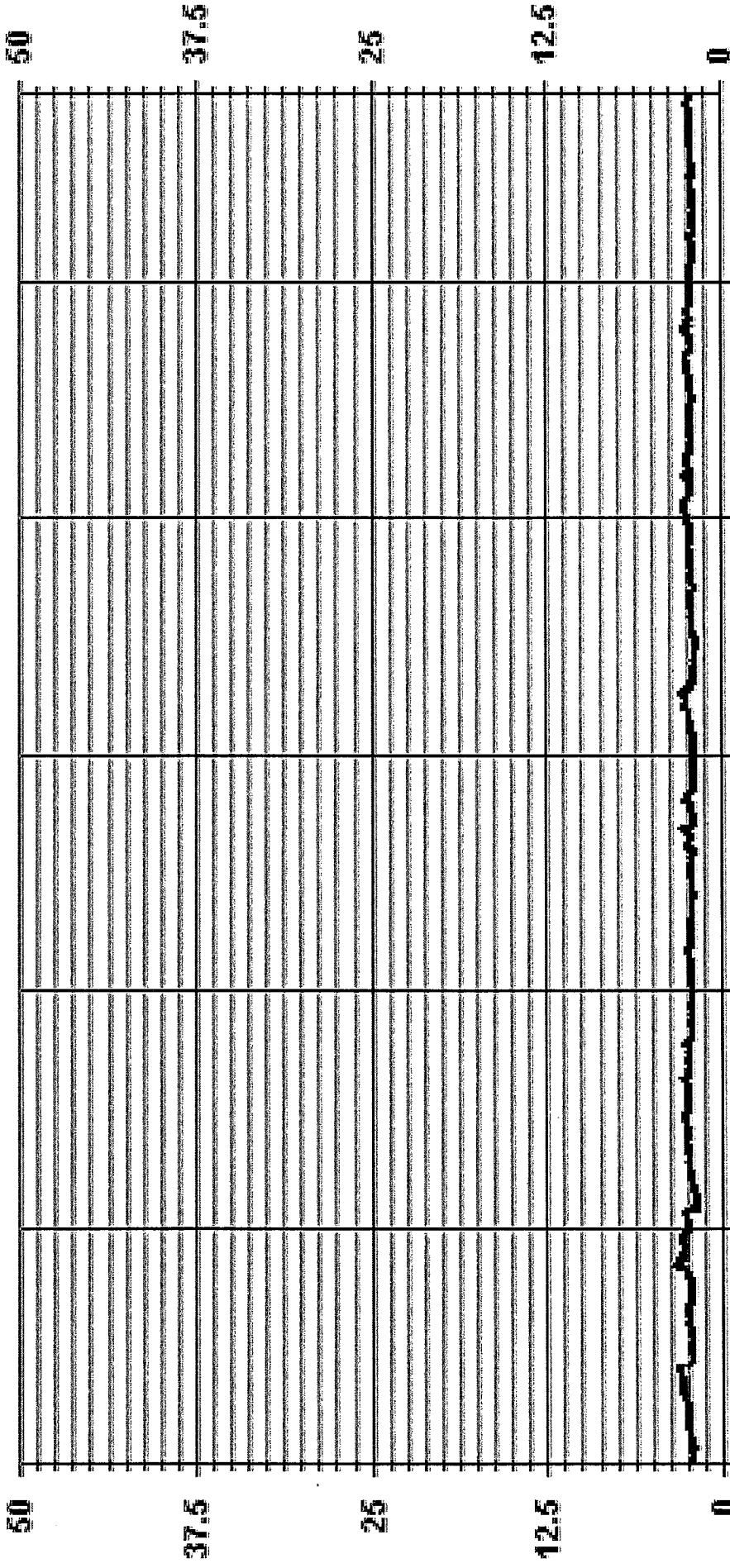
| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | O | QUALITY ASSURANCE |
| CU | REPEAT CALIBRATION | R | RECOVERY |
| V | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO/SPAN/CHECK | G | OUT FOR REPAIR |
| SI | REPEAT ZERO/SPAN CHECK | P | POWER FAILURE |



MONTHLY SUMMARY

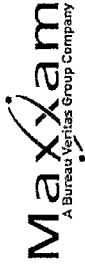
| | | | |
|------------------------------|----------|-----------------------|----------|
| NUMBER OF NON-ZERO READINGS: | 661 | ON DAY(S) | 6 |
| MINIMUM 1-HR AVERAGE: | 1.71 PPM | @ HOUR(S) | 13 |
| MAXIMUM 1-HR AVERAGE: | 3.41 PPM | @ HOUR(S) | 5 |
| MAXIMUM 24-HR AVERAGE: | 2.85 PPM | VAR-VARIOUS | 5 |
| IS CALIBRATION TIME: | 30 HRS | OPERATION TIME: | 695 HRS |
| MONTHLY CALIBRATION TIME: | 4 HRS | AMD OPERATION UPTIME: | 99.9 % |
| STANDARD DEVIATION: | 0.24 | MONTHLY AVERAGE: | 2.24 PPM |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA - - - - THC PPM



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Cold Lake South Site - FEBRUARY 2016
JOB # 2833-2016-02-1-C

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

Table with columns: HOUR START, HOUR END, 0:00-1:00, 1:00-2:00, 2:00-3:00, 3:00-4:00, 4:00-5:00, 5:00-6:00, 6:00-7:00, 7:00-8:00, 8:00-9:00, 9:00-10:00, 10:00-11:00, 11:00-12:00, 12:00-13:00, 13:00-14:00, 14:00-15:00, 15:00-16:00, 16:00-17:00, 17:00-18:00, 18:00-19:00, 19:00-20:00, 20:00-21:00, 21:00-22:00, 22:00-23:00, 23:00-24:00, DAILY MAX, 24-HOUR AVG, RIDGS. Rows 1-29.

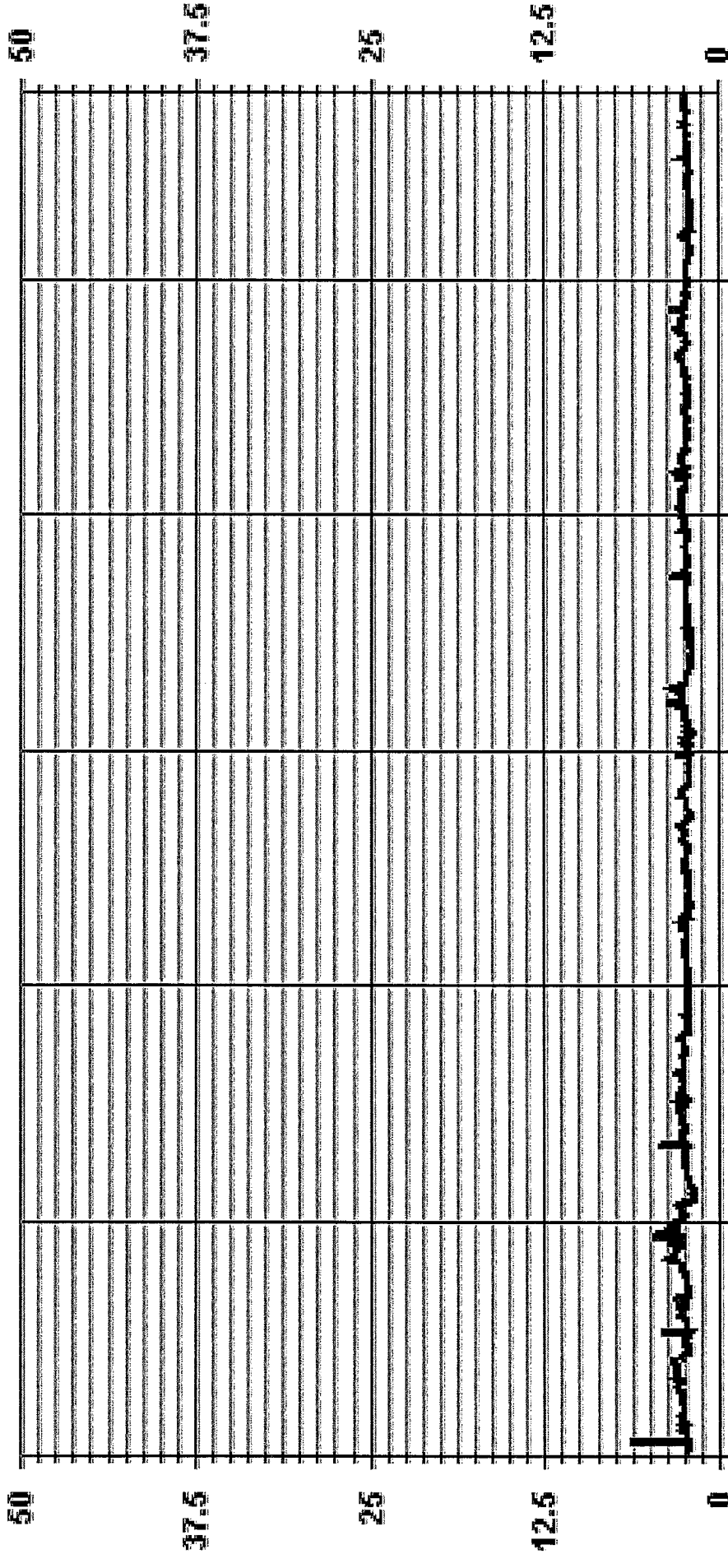
STATUS FLAG CODES

Legend for status flags: C - MONTHLY CALIBRATION, CL - REPEAT CALIBRATION, Y - MAINTENANCE, S - DAILY/ZERO/SPAN CHECK, 51 - REPEAT ZERO/SPAN CHECK, O - QUALITY ASSURANCE, IN - RECOVERY, X - MACHINE/VALEFUNCTION, G - OUT FOR REPAIR, P - POWER FAILURE.

MONTHLY SUMMARY

Summary statistics: NUMBER OF NON-ZERO READINGS: 661, MAXIMUM INSTANTANEOUS VALUE: 6.29 PPM @ HOUR(S) 8 ON DAY(S) 1, IZS CALIBRATION TIME: 30 HRS, MONTHLY CALIBRATION TIME: 4 HRS, STANDARD DEVIATION: 0.37, OPERATIONAL TIME: 695 HRS, VAR-VARIOUS.

01 Hour Averages



— LICA THCMAX PPM

IICA
THC / WD Joint Frequency Distribution (Percent)

February 2016

Distribution By % Of Samples

Logger Id : 01
Site Name : IICA
Parameter : THC
Units : PPM

Wind Parameter : WD
Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | NNW | NW | NNW | Freq |
|----------|-----------|------|------|------|------|------|-------|------|------|------|------|-------|-------|------|------|------|-------|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | | | | |
| < 3.00 | 2.11 | 4.08 | 7.86 | 4.84 | 6.95 | 8.01 | 11.34 | 2.42 | 1.96 | 2.11 | 7.41 | 19.81 | 11.54 | 3.78 | 3.17 | 1.36 | 98.94 | | | |
| < 10.00 | .00 | .00 | .15 | .15 | .30 | .00 | .00 | .00 | .00 | .15 | .00 | .00 | .30 | .00 | .00 | .00 | 1.05 | | | |
| < 50.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | | | |
| >= 50.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | | | |
| Totals | 2.11 | 4.08 | 8.01 | 4.99 | 7.26 | 8.01 | 11.34 | 2.42 | 1.96 | 2.26 | 7.41 | 19.81 | 11.95 | 3.78 | 3.17 | 1.36 | | | | |

Calm : .00 %

Total # Operational Hours : 661

Distribution By Samples

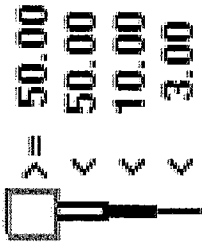
| Limit | Direction | | | | | | | | | | | | | | | | NNW | NW | NNW | Freq |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | | | | |
| < 3.00 | 14 | 27 | 52 | 32 | 46 | 53 | 75 | 16 | 13 | 14 | 49 | 131 | 77 | 25 | 21 | 9 | 654 | | | |
| < 10.00 | | | 1 | 1 | 2 | | | | | 1 | | | 2 | | | | 7 | | | |
| < 50.00 | | | | | | | | | | | | | | | | | | | | |
| >= 50.00 | | | | | | | | | | | | | | | | | | | | |
| Totals | 14 | 27 | 53 | 33 | 48 | 53 | 75 | 16 | 13 | 15 | 49 | 131 | 79 | 25 | 21 | 9 | | | | |

Calm : .00 %

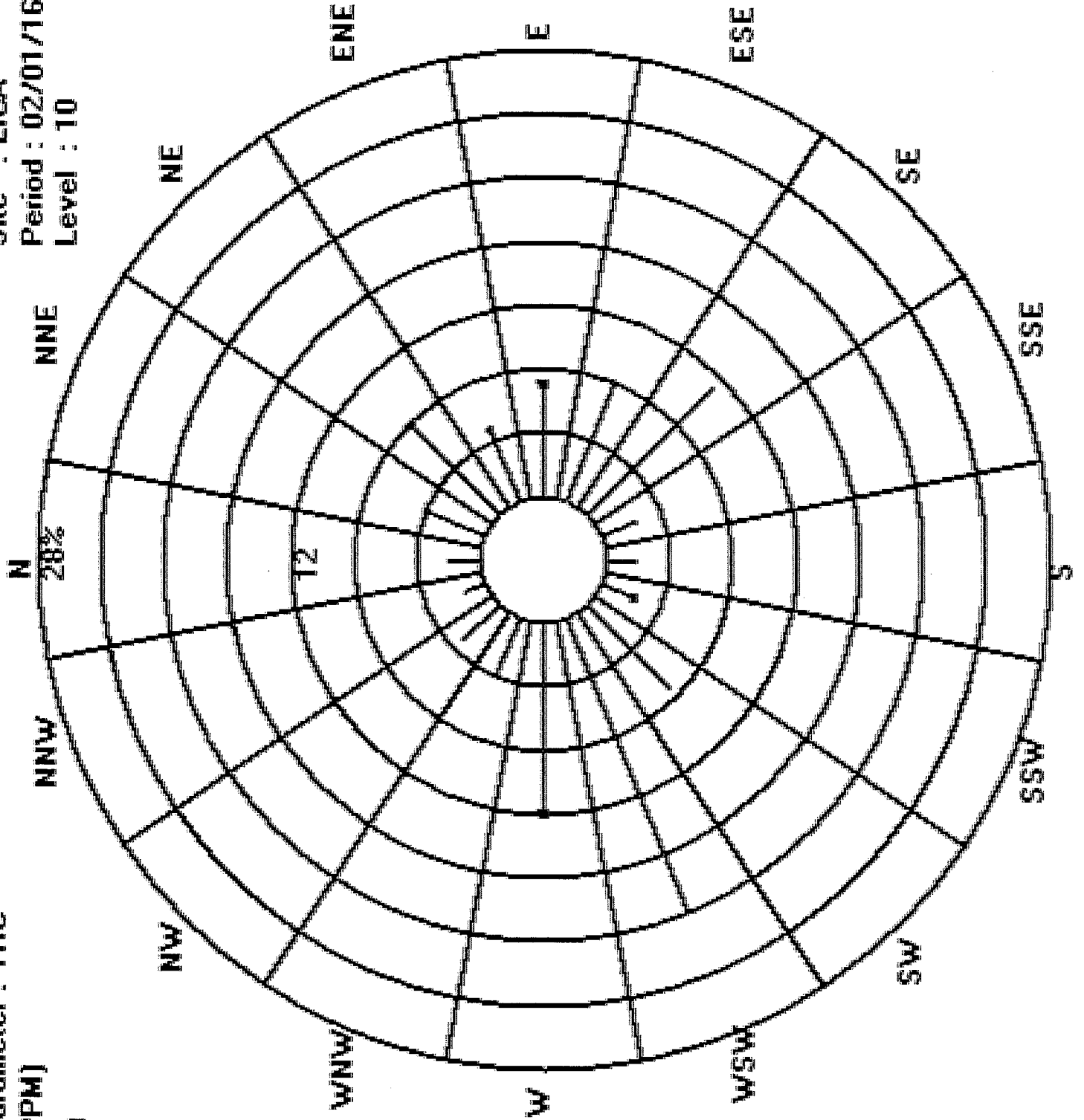
Total # Operational Hours : 661

Logger : 01 Parameter : THC

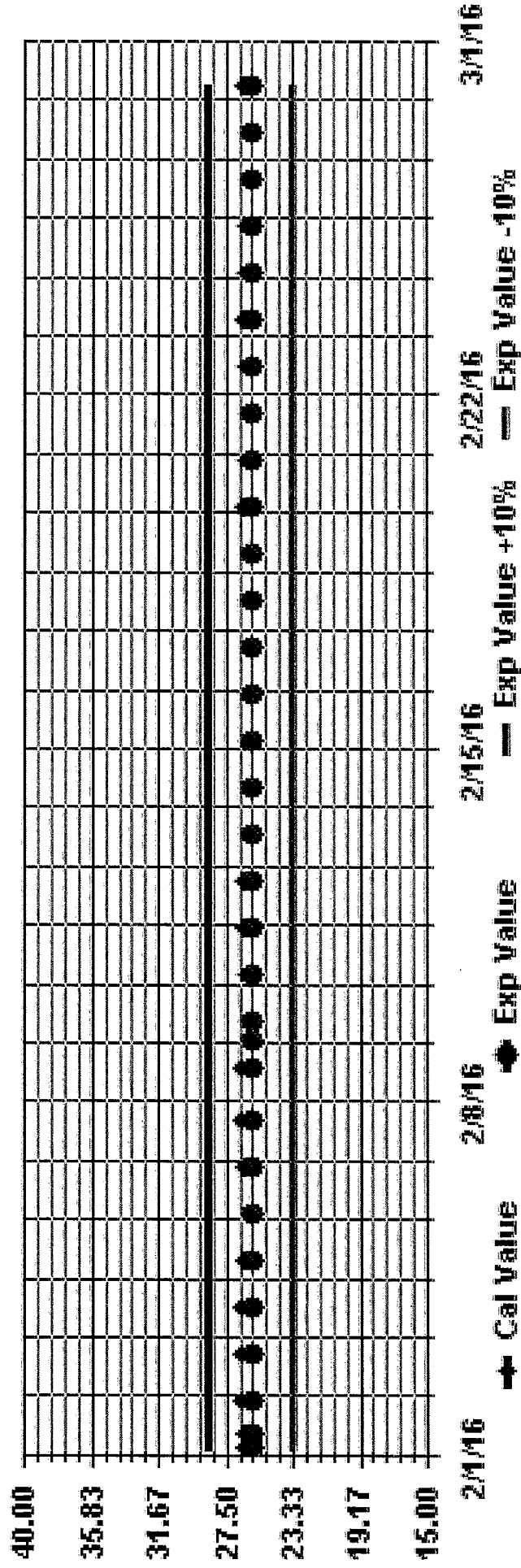
Class Limits (PPM)



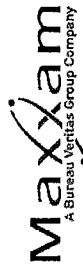
Site : LICA
Period : 02/01/16-02/29/16
Level : 10



Calibration Graph for Site: LICA Parameter: THC Sequence: THC Phase: SPAN



OXIDES OF NITROGEN



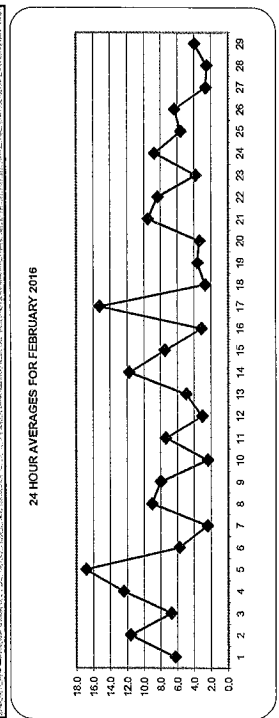
OXIDES OF NITROGEN (NOx) hourly averages in ppb

MST

| DAY | HOUR | | | | | | | | | | | | | | | | | | | | | | | | 24-HOUR AVG. | ROGS. | | | | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------|-------|------|------|------|----|----|
| | 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 | | | | | | | |
| 1 | 1.8 | 2.5 | 2.9 | 3.9 | 5.2 | 4.7 | 4.1 | 4.5 | 3.0 | 4.6 | 4.0 | 5.0 | 2.6 | 2.8 | 2.9 | 2.8 | 2.9 | 2.8 | 2.9 | 2.8 | 2.9 | 2.8 | 2.9 | 2.8 | 2.9 | 17.9 | 13.5 | 17.9 | 6.3 | 24 | |
| 2 | 4.0 | 6.1 | 8.4 | S | 3.1 | 3.3 | 3.9 | 5.2 | 11.2 | 12.3 | 12.1 | 14.6 | 11.6 | 11.9 | 14.0 | 17.0 | 21.1 | 16.6 | 19.5 | 15.8 | 15.6 | 13.8 | 14.5 | 21.1 | 21.1 | 11.6 | 24 | 24 | 11.6 | 24 | |
| 3 | 17.7 | 20.8 | S | 11.9 | 10.6 | 4.4 | 3.2 | 4.4 | 5.0 | 4.1 | 6.4 | 6.3 | 4.6 | 4.7 | 3.9 | 3.1 | 4.5 | 5.3 | 8.2 | 5.2 | 7.1 | 20.8 | 6.7 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | |
| 4 | 20.8 | S | 13.2 | 10.1 | 8.2 | 12.1 | 20.1 | 32.7 | 37.0 | 29.6 | 17.7 | 13.8 | 3.7 | 4.6 | 4.5 | 7.1 | 12.8 | 9.3 | 7.5 | 4.1 | 3.2 | 4.2 | 4.9 | 4.7 | 37.0 | 12.4 | 24 | 24 | 24 | 24 | |
| 5 | S | 6.0 | 4.6 | 5.4 | 19.0 | 27.2 | 33.8 | 24.2 | 27.4 | 16.0 | 11.0 | 12.2 | 13.2 | 10.5 | 10.9 | 11.6 | 16.9 | 13.1 | 12.7 | 25.6 | 26.3 | 26.7 | 16.6 | S | 33.8 | 16.9 | 24 | 24 | 24 | 24 | |
| 6 | 8.7 | 6.8 | 6.3 | 10.8 | 16.9 | 7.8 | 14.4 | 17.4 | 14.3 | 12.9 | 3.4 | 2.1 | 1.5 | 1.1 | 0.9 | 0.9 | 0.8 | 1.0 | 1.2 | 0.9 | 0.6 | S | 1.3 | 17.4 | 5.8 | 24 | 24 | 24 | 24 | 24 | |
| 7 | 0.9 | 1.2 | 1.2 | 0.9 | 1.9 | 2.6 | 2.4 | 1.8 | 2.2 | 2.3 | 1.7 | 0.5 | 0.4 | 0.7 | 0.5 | 0.9 | 1.9 | 4.2 | 5.3 | 6.2 | 5.0 | S | 5.0 | 6.6 | 6.6 | 2.4 | 24 | 24 | 24 | 24 | |
| 8 | 4.3 | 3.9 | 3.5 | 3.1 | 3.5 | 4.8 | 7.2 | 10.7 | 16.8 | 26.4 | 8.4 | 12.3 | 7.4 | 7.4 | 9.1 | 10.3 | 10.0 | 12.5 | 9.6 | 8.5 | 11.6 | 8.8 | 8.1 | S | 26.4 | 9.1 | 24 | 24 | 24 | 24 | |
| 9 | 7.5 | 6.4 | 8.3 | 5.0 | 11.0 | 7.2 | 3.5 | 3.6 | 3.5 | C | C | C | C | C | C | 10.5 | 14.1 | 9.8 | 9.2 | 8.3 | 7.0 | 11.6 | S | 9.8 | 14.1 | 8.0 | 24 | 24 | 24 | 24 | |
| 10 | 6.8 | 3.9 | 2.8 | 3.2 | 3.7 | 1.6 | 1.5 | 1.5 | 2.4 | 2.0 | 1.3 | 1.5 | 1.4 | 1.2 | 1.0 | 1.4 | 2.8 | 2.9 | 3.3 | 2.9 | 1.9 | S | 2.3 | 2.3 | 6.8 | 2.4 | 24 | 24 | 24 | 24 | |
| 11 | 1.6 | 1.9 | 2.0 | 2.3 | 2.4 | 3.3 | 3.4 | 3.8 | 3.8 | 3.2 | 2.7 | 2.6 | 2.7 | 2.8 | 2.7 | 4.4 | 5.6 | 10.6 | 16.7 | 22.6 | S | 20.7 | 26.7 | 21.3 | 26.7 | 7.4 | 24 | 24 | 24 | 24 | |
| 12 | 12.4 | 2.8 | 2.4 | 3.7 | 3.4 | 4.4 | 4.4 | 4.5 | 5.5 | 2.6 | 2.2 | 3.2 | 2.7 | 1.4 | 1.5 | 1.6 | 1.2 | 1.7 | 2.1 | S | 2.0 | 1.5 | 1.5 | 1.4 | 12.4 | 3.0 | 24 | 24 | 24 | 24 | |
| 13 | 1.8 | 2.0 | 1.5 | 4.3 | 3.7 | 6.2 | 2.0 | 1.6 | 2.0 | 2.9 | 2.7 | 4.0 | 4.7 | 6.2 | 6.4 | 6.1 | 5.1 | 9.9 | S | 10.1 | 9.6 | 9.4 | 6.2 | 5.3 | 10.1 | 4.9 | 24 | 24 | 24 | 24 | |
| 14 | 9.5 | 18.1 | 28.4 | 29.8 | 16.0 | 22.0 | 13.0 | 9.8 | 12.9 | 16.3 | 18.8 | 14.5 | 7.5 | 4.8 | 3.7 | 3.0 | 2.5 | S | 8.6 | 7.1 | 6.8 | 6.7 | 4.7 | 5.5 | 29.8 | 11.7 | 24 | 24 | 24 | 24 | |
| 15 | 4.8 | 16.0 | 22.2 | 17.9 | 15.4 | 23.0 | 12.7 | 4.4 | 3.3 | 10.3 | 2.8 | 2.5 | 2.5 | 1.9 | 1.9 | S | 5.0 | 4.8 | 5.3 | 5.0 | 6.0 | 2.6 | 1.5 | 23.0 | 7.5 | 24 | 24 | 24 | 24 | 24 | |
| 16 | 1.0 | 1.1 | 2.1 | 1.5 | 1.7 | 1.8 | 3.4 | 3.4 | 2.7 | 3.0 | 1.9 | 2.4 | 3.6 | 4.1 | 5 | 4.2 | 4.5 | 3.7 | 3.8 | 4.2 | 4.2 | 5.5 | 6.6 | 6.6 | 3.1 | 24 | 24 | 24 | 24 | 24 | |
| 17 | 17.4 | 15.1 | 10.1 | 10.5 | 8.4 | 7.6 | 17.8 | 24.9 | 57.0 | 71.8 | 21.4 | 13.1 | 10.2 | 7.4 | S | 8.2 | 6.3 | 9.4 | 6.4 | 5.4 | 4.2 | 4.9 | 9.8 | 3.5 | 71.8 | 15.3 | 24 | 24 | 24 | 24 | |
| 18 | 2.1 | 2.2 | 2.1 | 1.6 | 1.7 | 1.9 | 2.2 | 2.7 | 3.3 | 2.8 | 2.1 | 1.9 | 2.3 | S | 3.1 | 4.9 | 3.8 | 3.3 | 2.2 | 2.1 | 2.6 | 3.9 | 4.8 | 2.8 | 4.9 | 2.7 | 24 | 24 | 24 | 24 | |
| 19 | 2.3 | 2.2 | 2.2 | 4.9 | 3.1 | 3.8 | 2.3 | 2.2 | 3.0 | 2.8 | 2.9 | 1.9 | S | 3.8 | 2.2 | 4.1 | 3.4 | 7.2 | 4.9 | 6.3 | 6.6 | 7.7 | 2.7 | 2.4 | 7.7 | 3.6 | 24 | 24 | 24 | 24 | |
| 20 | 1.9 | 2.3 | 2.6 | 2.8 | 2.7 | 4.2 | 3.5 | 5.0 | 6.7 | 3.3 | 2.7 | S | 2.4 | 2.1 | 3.3 | 2.9 | 2.7 | 3.2 | 3.4 | 3.1 | 3.7 | 3.8 | 3.9 | 5.6 | 6.7 | 3.4 | 24 | 24 | 24 | 24 | |
| 21 | 4.3 | 3.4 | 3.4 | 3.7 | 5.6 | 4.7 | 6.0 | 5.5 | 7.6 | 11.6 | S | 7.3 | 5.5 | 4.8 | 4.1 | 4.0 | 3.6 | 6.6 | 14.9 | 6.8 | 14.7 | 31.5 | 37.9 | 21.4 | 37.9 | 9.5 | 24 | 24 | 24 | 24 | |
| 22 | 4.4 | 4.7 | 4.6 | 4.5 | 4.7 | 5.1 | 5.4 | 6.7 | S | 6.8 | 4.0 | 6.0 | 5.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.1 | 4.6 | 4.0 | 4.1 | 4.7 | 5.0 | 3.7 | 22.3 | 8.3 | 24 | 24 | 24 | |
| 23 | 4.9 | 5.5 | 4.4 | 4.7 | 8.3 | 8.9 | 11.2 | S | 18.9 | 18.5 | 13.9 | 11.9 | 10.3 | 5.4 | 3.1 | 2.2 | 2.7 | 7.3 | 7.1 | 5.9 | 7.2 | 10.5 | 12.3 | 16.0 | 18.9 | 8.7 | 24 | 24 | 24 | 24 | |
| 24 | 25 | 10.5 | 6.7 | 9.9 | 7.4 | 7.1 | 2.9 | S | 3.6 | 4.5 | 5.4 | 5.1 | 5.3 | 5.6 | 5.9 | 6.3 | 6.1 | 5.3 | 5.5 | 4.5 | 4.1 | 4.9 | 5.2 | 3.7 | 4.0 | 10.5 | 5.6 | 24 | 24 | 24 | |
| 26 | 4.0 | 3.5 | 4.6 | 4.9 | 5.4 | S | 6.7 | 6.2 | 8.1 | 8.0 | 7.9 | 6.6 | 4.6 | 3.9 | 3.8 | 4.2 | 4.1 | 4.7 | 4.8 | 5.2 | 5.2 | 6.9 | 16.0 | 17.1 | 17.1 | 6.4 | 24 | 24 | 24 | 24 | |
| 27 | 9.5 | 4.5 | 4.3 | 2.0 | S | 3.9 | 5.0 | 3.5 | 2.9 | 2.8 | 1.8 | 1.4 | 1.7 | 1.2 | 1.0 | 0.7 | 0.8 | 1.6 | 2.7 | 1.5 | 1.5 | 1.2 | 1.8 | 2.9 | 9.5 | 2.6 | 24 | 24 | 24 | 24 | |
| 28 | 3.2 | 3.2 | 4.2 | S | 3.3 | 4.2 | 4.7 | 1.3 | 2.4 | 3.5 | 0.8 | 0.7 | 0.7 | 1.1 | 0.9 | 0.8 | 1.0 | 1.6 | 2.3 | 1.9 | 2.7 | 3.0 | 4.1 | 7.7 | 7.7 | 2.5 | 24 | 24 | 24 | 24 | |
| 29 | 4.6 | 6.7 | S | 4.6 | 3.7 | 4.5 | 10.3 | 10.0 | 8.4 | 2.6 | 1.5 | 2.8 | 4.3 | 2.5 | 1.9 | 1.6 | 2.1 | 3.1 | 3.1 | 3.1 | 2.8 | 2.5 | 2.3 | 2.5 | 2.7 | 10.3 | 4.0 | 24 | 24 | 24 | 24 |
| HOURLY MAX | 20.8 | 20.8 | 28.4 | 29.8 | 19.0 | 27.2 | 33.8 | 32.7 | 57.0 | 71.8 | 21.4 | 14.6 | 13.2 | 11.6 | 11.9 | 14.0 | 17.0 | 21.1 | 16.7 | 25.6 | 26.3 | 31.5 | 37.9 | 21.4 | | | | | | | |
| HOURLY AVG | 6.5 | 6.1 | 6.6 | 6.7 | 6.8 | 7.2 | 7.9 | 7.9 | 10.7 | 10.6 | 6.3 | 5.8 | 4.8 | 4.1 | 3.8 | 4.4 | 5.1 | 6.2 | 6.5 | 6.9 | 6.6 | 8.4 | 8.5 | 7.2 | | | | | | | |

STATUS FLAG CODES

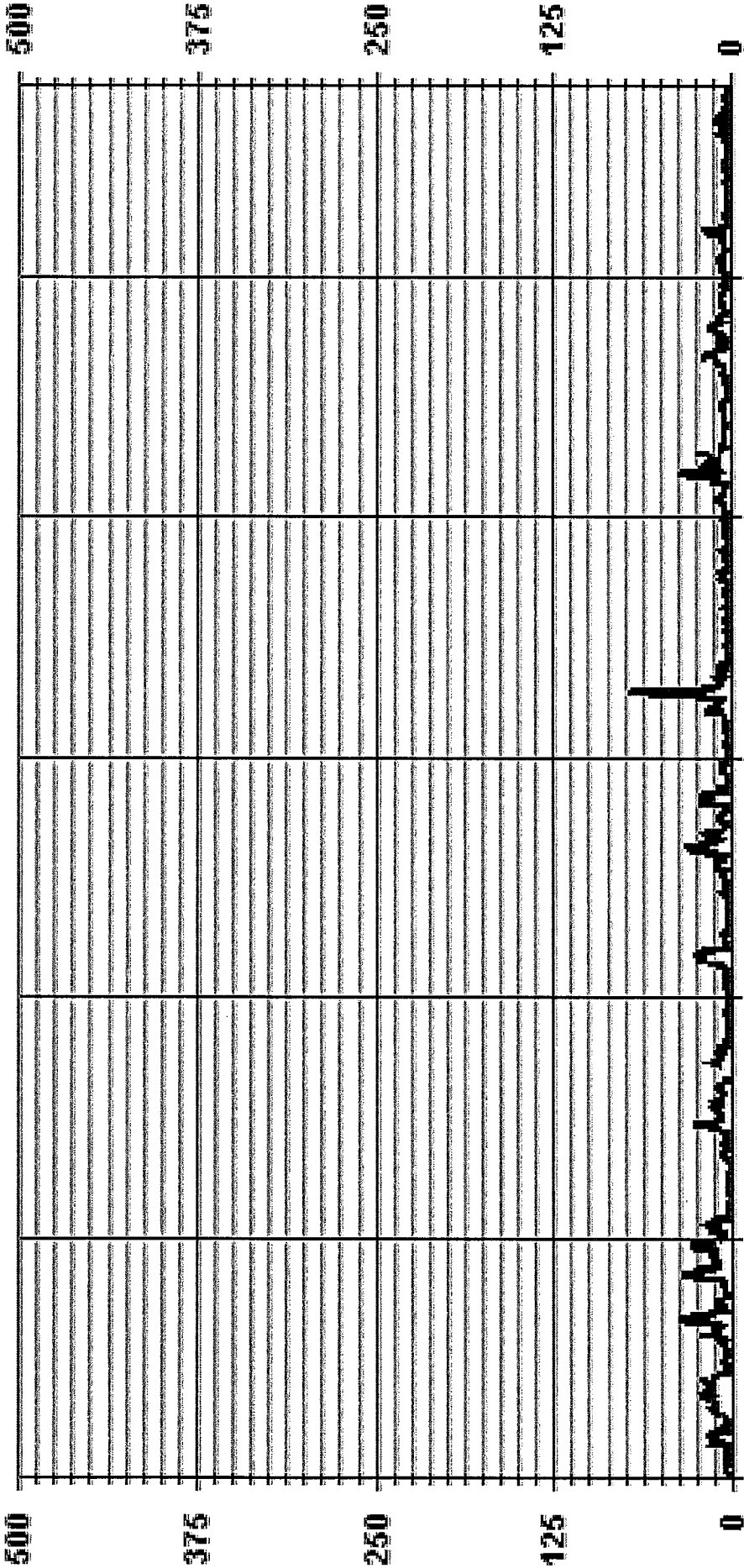
| | | | |
|----|--------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION | R | RECOVERY |
| V | MAINTENANCE | X | WAGHEIM MAINTENANCE |
| S | DAILY ZERO / SPAN CHECK | G | OUT FOR REPAIR |
| S1 | REPEAT ZERO / SPAN CHECK | P | POWER FAILURE |



MONTHLY SUMMARY

| | | | | | |
|------------------------------|------|-----------------------|---------|-----------|----|
| NUMBER OF NON-ZERO READINGS: | 660 | @ HOUR(S) | 12 | ON DAY(S) | 7 |
| MINIMUM 1-HR AVERAGE: | 0.4 | @ HOUR(S) | 9 | ON DAY(S) | 17 |
| MAXIMUM 1-HR AVERAGE: | 71.8 | @ HOUR(S) | VARIOUS | ON DAY(S) | 5 |
| MAXIMUM 24-HR AVERAGE: | 16.9 | OPERATIONAL TIME: | 696 | HRS | |
| | | AMD OPERATION UPTIME: | 100.0 | % | |
| IS CALIBRATION TIME: | 30 | MONTHLY AVERAGE: | 6.7 | PPB | |
| MONTHLY CALIBRATION TIME: | 6 | STANDARD DEVIATION: | 6.81 | | |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA NOX_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Cold Lake South Site - FEBRUARY 2016
JOB # 2833-2016-02-1-C

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

| DAY | HOUR START | | | | | | | | | | | | | | | | | | | | | | | | DAILY MAX | 24-HOUR AVG | |
|------------|------------|------|------|------|------|-------|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|-------------|-------|
| | 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 | | | 24:00 |
| 1 | 3.3 | 4.3 | 5.2 | 9.0 | 5 | 10.3 | 8.5 | 6.2 | 23.1 | 6.4 | 14.0 | 23.9 | 6.4 | 7.8 | 7.8 | 13.9 | 19.4 | 41.3 | 18.1 | 26.4 | 17.5 | 28.1 | 24.0 | 41.3 | 14.6 | 24 | |
| 2 | 6.5 | 11.3 | 14.5 | 5 | 4.6 | 4.8 | 8.9 | 19.9 | 16.2 | 18.0 | 14.8 | 15.3 | 15.5 | 28.3 | 22.6 | 30.5 | 27.3 | 30.1 | 19.5 | 16.0 | 17.7 | 30.5 | 16.9 | 30.5 | 16.9 | 24 | |
| 3 | 21.5 | 23.9 | 5 | 20.3 | 18.2 | 6.8 | 6.5 | 9.1 | 8.8 | 6.3 | 16.6 | 13.0 | 11.2 | 7.5 | 6.8 | 12.7 | 4.9 | 26.2 | 8.7 | 9.2 | 7.9 | 13.0 | 7.2 | 15.1 | 28.2 | 24 | |
| 4 | 39.1 | 5 | 21.4 | 24.2 | 14.3 | 29.6 | 35.4 | 45.2 | 59.8 | 65.5 | 47.7 | 39.3 | 6.7 | 18.7 | 11.8 | 12.4 | 13.2 | 21.2 | 5.1 | 7.2 | 12.0 | 8.7 | 65.5 | 25.0 | 24 | | |
| 5 | 5 | 16.9 | 15.2 | 9.3 | 45.5 | 39.3 | 135.5 | 28.3 | 40.4 | 34.2 | 13.3 | 25.6 | 17.4 | 14.3 | 13.6 | 17.1 | 25.8 | 27.9 | 17.1 | 45.2 | 36.4 | 41.1 | 21.4 | 135.5 | 30.9 | 24 | |
| 6 | 15.6 | 11.2 | 9.8 | 15.5 | 32.5 | 16.4 | 25.6 | 28.1 | 22.3 | 21.7 | 7.7 | 3.3 | 2.1 | 1.5 | 2.1 | 1.5 | 1.0 | 1.7 | 1.8 | 1.4 | 0.9 | 5 | 2.0 | 32.5 | 9.9 | 24 | |
| 7 | 1.3 | 3.1 | 2.7 | 2.0 | 3.0 | 3.9 | 4.4 | 3.0 | 4.3 | 3.6 | 2.4 | 0.9 | 0.6 | 1.3 | 1.2 | 2.5 | 3.0 | 9.1 | 8.3 | 9.1 | 6.7 | 5 | 7.0 | 10.2 | 4.1 | 24 | |
| 8 | 5.2 | 8.1 | 4.9 | 4.5 | 5.7 | 20.2 | 14.4 | 14.6 | 32.6 | 40.6 | 18.5 | 21.4 | 8.6 | 11.3 | 11.4 | 17.2 | 14.4 | 86.0 | 13.6 | 12.6 | 22.8 | 11.5 | 10.6 | 86.0 | 17.9 | 24 | |
| 9 | 13.1 | 12.7 | 13.3 | 6.4 | 21.5 | 14.8 | 5.2 | 5.8 | 5.1 | C | C | C | C | C | C | 12.3 | 25.6 | 14.3 | 12.3 | 10.4 | 8.9 | 15.6 | 13.3 | 25.6 | 12.4 | 24 | |
| 10 | 13.4 | 5.6 | 5.0 | 3.7 | 5.2 | 3.6 | 4.0 | 7.2 | 6.4 | 5.2 | 8.5 | 8.3 | 4.6 | 6.1 | 3.0 | 5.0 | 24.0 | 7.5 | 6.3 | 10.2 | 4.7 | 5 | 4.6 | 4.9 | 24.0 | 6.8 | 24 |
| 11 | 3.3 | 4.3 | 6.8 | 5.0 | 6.3 | 7.9 | 32.6 | 6.9 | 23.1 | 6.8 | 5.2 | 8.0 | 6.8 | 7.6 | 21.7 | 19.9 | 27.6 | 26.2 | 32.6 | 5 | 27.0 | 40.4 | 31.8 | 40.4 | 15.8 | 24 | |
| 12 | 19.3 | 6.3 | 4.1 | 7.7 | 7.6 | 9.8 | 6.6 | 7.8 | 10.6 | 6.3 | 5.9 | 19.1 | 6.2 | 2.5 | 5.2 | 10.4 | 2.0 | 9.2 | 4.7 | 5 | 6.5 | 2.4 | 2.3 | 3.3 | 19.3 | 7.2 | 24 |
| 13 | 3.9 | 3.3 | 3.7 | 6.4 | 10.8 | 12.5 | 5.8 | 2.8 | 4.2 | 8.8 | 4.7 | 6.0 | 6.5 | 8.0 | 9.4 | 10.2 | 7.8 | 25.1 | 5 | 17.4 | 15.4 | 17.1 | 17.4 | 14.0 | 25.1 | 9.6 | 24 |
| 14 | 25.9 | 32.0 | 43.4 | 54.5 | 35.0 | 119.8 | 22.6 | 12.5 | 20.4 | 23.2 | 20.3 | 18.0 | 14.3 | 6.5 | 4.5 | 3.8 | 3.3 | 5 | 12.9 | 10.5 | 12.3 | 9.3 | 8.3 | 11.1 | 119.8 | 22.8 | 24 |
| 15 | 12.0 | 23.6 | 35.9 | 23.9 | 20.9 | 62.3 | 21.4 | 7.7 | 14.3 | 38.7 | 5.5 | 5.1 | 5.2 | 3.6 | 3.9 | 4.5 | 5 | 9.5 | 9.7 | 10.1 | 9.2 | 14.0 | 15.2 | 5.1 | 62.3 | 15.7 | 24 |
| 16 | 1.8 | 3.0 | 3.8 | 2.8 | 4.3 | 4.2 | 6.9 | 8.8 | 16.5 | 16.5 | 3.6 | 5.2 | 10.5 | 22.3 | 93.5 | 5 | 12.3 | 12.3 | 4.2 | 4.4 | 5.2 | 6.7 | 11.7 | 12.4 | 93.5 | 11.9 | 24 |
| 17 | 30.2 | 20.2 | 14.7 | 18.4 | 17.8 | 10.6 | 38.2 | 52.6 | 95.2 | 99.5 | 40.0 | 16.8 | 15.9 | 9.5 | 5 | 18.8 | 15.5 | 19.5 | 16.6 | 9.1 | 7.2 | 15.3 | 22.4 | 10.1 | 99.5 | 26.7 | 24 |
| 18 | 4.3 | 3.9 | 4.6 | 2.6 | 3.4 | 2.9 | 3.5 | 4.8 | 11.8 | 5.1 | 3.9 | 3.8 | 3.9 | 5 | 5.6 | 10.7 | 6.7 | 19.9 | 10.7 | 4.3 | 5.8 | 6.9 | 10.1 | 4.8 | 19.9 | 6.3 | 24 |
| 19 | 3.9 | 3.5 | 3.8 | 6.4 | 4.4 | 4.3 | 3.4 | 3.0 | 4.4 | 4.0 | 3.9 | 2.8 | 5 | 9.9 | 9.8 | 5.1 | 5.2 | 57.1 | 6.7 | 9.3 | 9.7 | 14.3 | 4.4 | 5.6 | 57.1 | 8.0 | 24 |
| 20 | 3.2 | 3.3 | 3.5 | 3.7 | 5.4 | 16.2 | 6.3 | 8.0 | 11.0 | 6.2 | 5.2 | 5 | 3.5 | 3.6 | 27.9 | 8.0 | 4.9 | 12.9 | 6.7 | 3.7 | 8.1 | 5.6 | 6.2 | 7.7 | 27.9 | 7.4 | 24 |
| 21 | 5.1 | 4.6 | 4.8 | 5.3 | 6.5 | 15.2 | 15.5 | 9.3 | 11.5 | 15.7 | 5 | 9.7 | 15.6 | 7.1 | 5.8 | 25.8 | 4.9 | 14.8 | 46.5 | 10.2 | 41.3 | 43.6 | 54.1 | 35.2 | 54.1 | 17.7 | 24 |
| 22 | 16.7 | 17.8 | 23.8 | 23.3 | 11.1 | 17.5 | 19.9 | 21.9 | 42.3 | 5 | 12.1 | 6.9 | 37.9 | 7.7 | 32.3 | 7.3 | 7.0 | 6.2 | 9.0 | 6.2 | 7.7 | 9.1 | 8.5 | 4.9 | 42.3 | 15.5 | 24 |
| 23 | 6.1 | 6.9 | 6.0 | 7.4 | 6.2 | 7.7 | 7.5 | 7.5 | 5 | 6.9 | 6.5 | 6.1 | 6.1 | 3.2 | 2.7 | 1.7 | 2.7 | 3.8 | 4.2 | 6.1 | 6.2 | 6.2 | 7.1 | 11.5 | 5.9 | 24 | |
| 24 | 7.5 | 9.6 | 5.3 | 7.1 | 15.1 | 30.1 | 15.2 | 5 | 25.3 | 40.9 | 23.3 | 23.1 | 15.5 | 12.2 | 8.0 | 4.8 | 12.3 | 29.1 | 17.1 | 8.7 | 16.2 | 20.2 | 22.0 | 54.2 | 18.4 | 24 | |
| 25 | 18.4 | 24.2 | 17.0 | 12.6 | 12.6 | 5.3 | 5 | 4.7 | 5.6 | 7.0 | 6.5 | 6.3 | 6.6 | 8.2 | 11.6 | 8.9 | 7.5 | 18.1 | 6.9 | 6.1 | 10.3 | 12.0 | 5.7 | 5.4 | 24.2 | 9.9 | 24 |
| 26 | 8.0 | 5.2 | 6.8 | 7.5 | 7.1 | 5 | 62.5 | 8.3 | 9.3 | 10.3 | 11.0 | 8.5 | 6.6 | 10.5 | 13.8 | 7.7 | 7.6 | 6.5 | 6.6 | 7.3 | 6.8 | 13.5 | 24.6 | 23.2 | 62.5 | 12.1 | 24 |
| 27 | 18.6 | 8.9 | 13.5 | 3.9 | 5 | 8.1 | 11.9 | 10.2 | 12.3 | 7.7 | 6.2 | 2.5 | 5.1 | 4.1 | 5.3 | 1.3 | 1.6 | 11.3 | 7.4 | 3.9 | 2.9 | 2.2 | 2.2 | 4.4 | 18.6 | 6.8 | 24 |
| 28 | 4.9 | 4.8 | 3.6 | 5 | 20.0 | 5.6 | 7.5 | 2.5 | 4.0 | 11.1 | 1.8 | 2.1 | 4.0 | 2.5 | 1.7 | 2.2 | 3.4 | 8.5 | 4.5 | 10.7 | 6.4 | 9.1 | 20.3 | 6.2 | 24 | | |
| 29 | 10.9 | 14.9 | 5 | 6.7 | 7.1 | 12.8 | 32.0 | 22.4 | 17.2 | 8.1 | 5.4 | 5.2 | 8.1 | 6.0 | 12.7 | 2.9 | 6.1 | 5.6 | 4.0 | 3.6 | 2.9 | 2.8 | 3.1 | 4.7 | 32.0 | 8.9 | 24 |
| HOURLY MAX | 39.1 | 32.0 | 43.4 | 54.5 | 45.5 | 119.8 | 135.5 | 52.6 | 95.2 | 99.5 | 47.7 | 39.3 | 37.9 | 22.3 | 93.5 | 28.3 | 25.8 | 86.0 | 46.5 | 45.2 | 41.3 | 43.6 | 54.1 | 54.2 | | | |
| HOURLY AVG | 11.5 | 10.6 | 11.0 | 11.1 | 13.0 | 17.9 | 19.3 | 13.7 | 19.5 | 20.0 | 11.7 | 11.0 | 9.9 | 8.1 | 12.4 | 9.7 | 10.4 | 18.8 | 12.6 | 11.5 | 12.0 | 13.4 | 14.1 | 13.5 | | | |

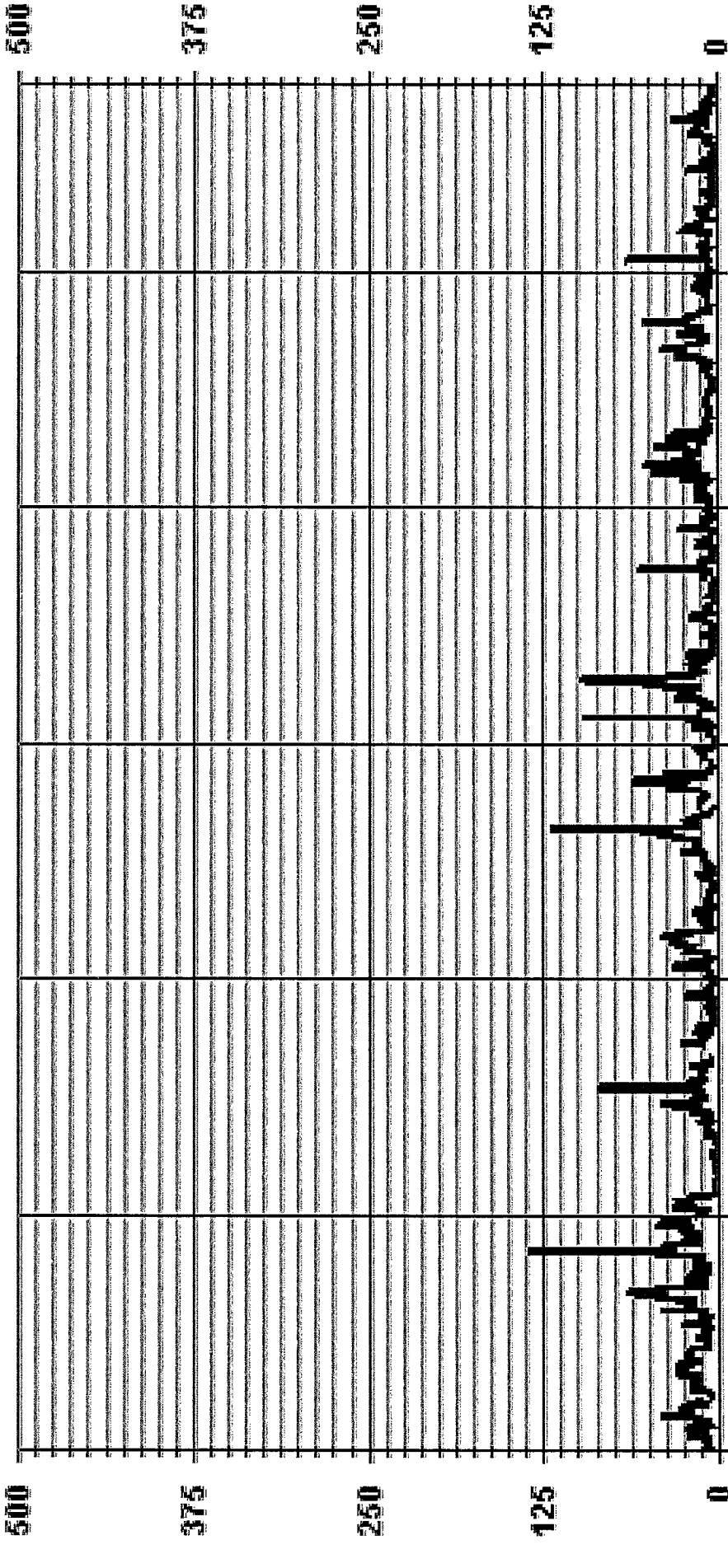
STATUS FLAG CODES

| | | | |
|----|------------------------|----|----------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CT | REPEAT CALIBRATION | R | RECOVERY |
| Y | MAINTENANCE | XC | MACHINE/MALEFUNCTION |
| S | FAULT/ZERO/SPAN/CHECK | G | OUT-OF-REPAIR |
| SE | REPEAT/ZERO/SPAN/CHECK | P | POWER FAILURE |

MONTHLY SUMMARY

| | |
|------------------------------|-----------------------------------|
| NUMBER OF NON-ZERO READINGS: | 660 |
| MAXIMUM INSTANTANEOUS VALUE: | 135.5 PPB @ HOUR(S) 6 ON DAY(S) 5 |
| IZS CALIBRATION TIME: | 30 HRS |
| MONTHLY CALIBRATION TIME: | 6 HRS |
| OPERATIONAL TIME: | 696 HRS |
| STANDARD DEVIATION: | 13.95 |
| VARIOUS | |

01 Hour Averages



— LICA NOXMAX PPB

LIICA
NOX_ / WD Joint Frequency Distribution (Percent)

February 2016

Distribution By % Of Samples

Logger Id : 01
Site Name : LIICA
Parameter : NOX
Units : PPF

Wind Parameter : WD
Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|------|------|------|------|------|-------|------|------|------|------|-------|-------|------|------|------|-------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 50.0 | 2.12 | 4.09 | 7.87 | 5.00 | 7.27 | 7.87 | 11.51 | 2.42 | 1.96 | 2.27 | 7.42 | 19.84 | 11.66 | 3.78 | 3.18 | 1.36 | 99.69 |
| < 110.0 | .00 | .00 | .15 | .00 | .00 | .15 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .30 |
| < 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.12 | 4.09 | 8.03 | 5.00 | 7.27 | 8.03 | 11.51 | 2.42 | 1.96 | 2.27 | 7.42 | 19.84 | 11.66 | 3.78 | 3.18 | 1.36 | |

Calm : .00 %

Total # Operational Hours : 660

Distribution By Samples

Direction

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 50.0 | 14 | 27 | 52 | 33 | 48 | 52 | 76 | 16 | 13 | 15 | 49 | 131 | 77 | 25 | 21 | 9 | 658 |
| < 110.0 | | | 1 | | | 1 | | | | | | | | | | | 2 |
| < 210.0 | | | | | | | | | | | | | | | | | |
| >= 210.0 | | | | | | | | | | | | | | | | | |
| Totals | 14 | 27 | 53 | 33 | 48 | 53 | 76 | 16 | 13 | 15 | 49 | 131 | 77 | 25 | 21 | 9 | |

Calm : .00 %

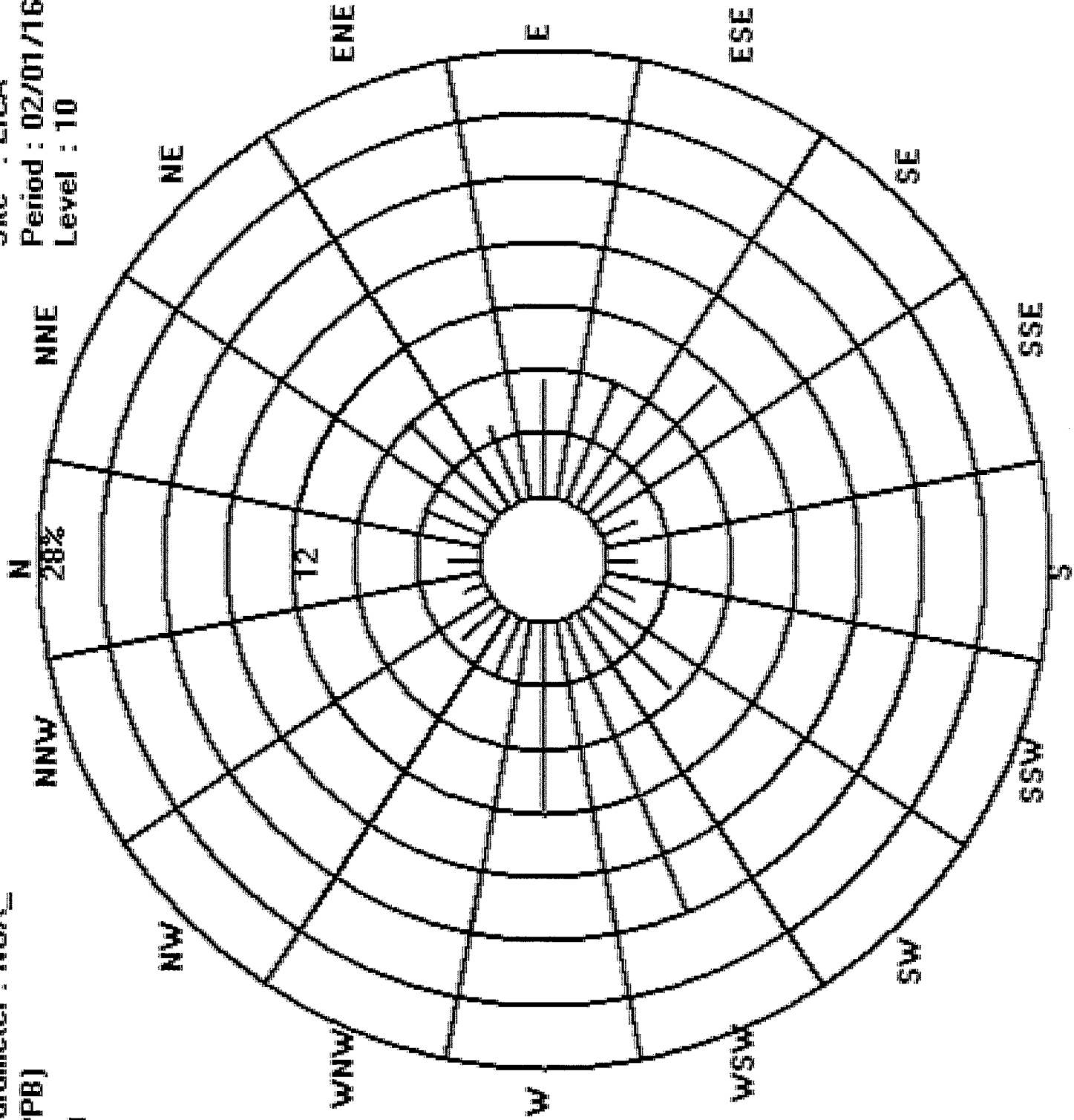
Total # Operational Hours : 660

Logger : 01 Parameter : NOX_

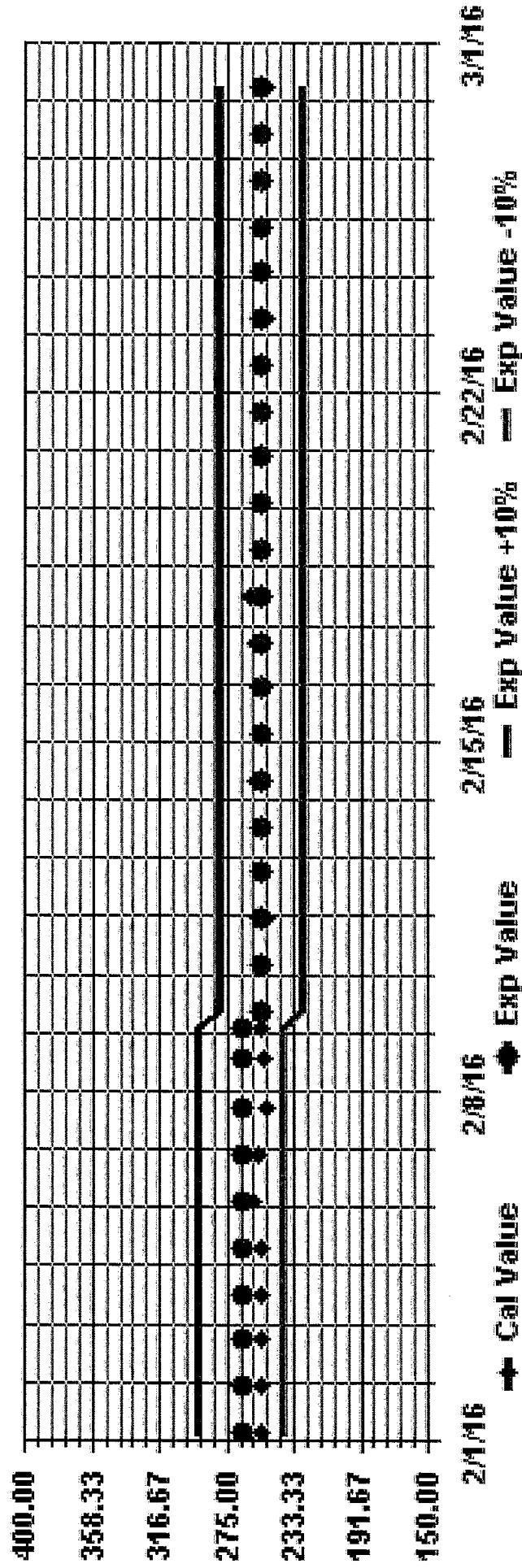
Class Limits (PPB)

-  >= 210.0
-  < 210.0
-  < 110.0
-  < 50.0

Site : LICA
Period : 02/01/16-02/29/16
Level : 10



Calibration Graph for Site: LICA Parameter: NOX_ Sequence: NO2 Phase: SPAM



NITRIC OXIDES



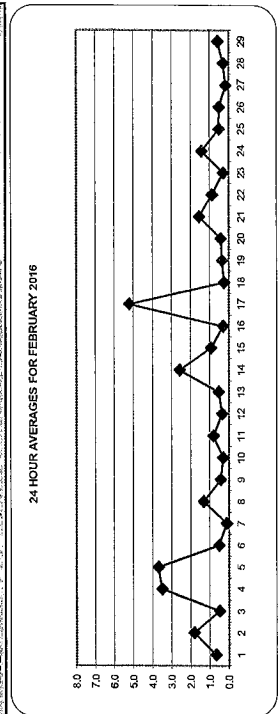
NITRIC OXIDE (NO) hourly averages in ppb

MST

| DAY | 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 | 24:00 | | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|----|
| HR START | 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 | 24:00 | | | |
| HR END | 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 | RDGS. | | | |
| 1 | 0.0 | 0.1 | 0.1 | 0.3 | S | 0.4 | 0.1 | 0.1 | 1.2 | 0.5 | 1.3 | 1.3 | 2.0 | 0.8 | 0.7 | 0.5 | 0.3 | 0.3 | 1.2 | 0.6 | 0.7 | 0.4 | 1.8 | 1.0 | 2.0 | 0.7 | 24 | |
| 2 | 0.1 | 0.3 | 0.7 | S | 0.0 | 0.1 | 0.0 | 0.0 | 1.3 | 3.2 | 4.2 | 6.6 | 4.3 | 4.6 | 4.6 | 4.3 | 2.6 | 1.3 | 0.5 | 1.1 | 0.9 | 0.8 | 0.3 | 0.4 | 6.6 | 1.8 | 24 | |
| 3 | 0.6 | 0.8 | S | 0.2 | 0.2 | 0.1 | 0.0 | 0.1 | 0.2 | 0.5 | 1.3 | 1.5 | 1.3 | 1.3 | 1.3 | 0.7 | 0.2 | 0.6 | 0.1 | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 1.5 | 0.5 | 24 | |
| 4 | 2.4 | S | 0.4 | 0.5 | 0.3 | 1.4 | 4.6 | 12.3 | 18.3 | 16.4 | 8.2 | 6.3 | 1.3 | 2.1 | 1.7 | 1.5 | 2.2 | 0.3 | 0.4 | 0.3 | 0.0 | 0.0 | 0.1 | 0.0 | 18.3 | 3.5 | 24 | |
| 5 | S | 0.5 | 0.2 | 0.2 | 0.2 | 3.9 | 6.6 | 12.7 | 8.1 | 8.5 | 3.3 | 4.5 | 4.6 | 3.6 | 3.0 | 2.7 | 3.2 | 1.0 | 0.4 | 4.9 | 3.4 | 5.4 | 0.6 | S | 12.7 | 3.7 | 24 | |
| 6 | 0.4 | 0.1 | 0.2 | 0.5 | 1.5 | 0.1 | 0.1 | 1.7 | 2.9 | 1.7 | 2.1 | 0.4 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.0 | 2.9 | 0.5 | 24 | |
| 7 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.4 | 0.3 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | S | 0.2 | 0.3 | 0.4 | 0.1 | 24 | |
| 8 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 2.5 | 7.4 | 2.6 | 4.0 | 2.0 | 2.2 | 2.2 | 2.2 | 1.0 | 2.3 | 0.1 | 0.2 | 0.4 | 0.2 | 0.2 | S | 7.4 | 1.3 | 24 | |
| 9 | 0.2 | 0.4 | 0.1 | 0.1 | 0.6 | 0.3 | 0.2 | 0.2 | 0.4 | C | C | C | C | C | C | 1.8 | 2.1 | 0.5 | 0.1 | 0.0 | 0.0 | 0.2 | S | 0.2 | 2.1 | 0.4 | 24 | |
| 10 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 0.2 | 0.5 | 0.7 | 0.2 | 0.7 | 0.4 | 0.3 | 0.2 | 0.3 | 1.0 | 0.5 | 0.7 | 0.3 | 0.2 | S | 0.2 | 0.3 | 1.0 | 0.3 | 24 | |
| 11 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.4 | 0.6 | 0.7 | 1.0 | 0.7 | 0.7 | 0.8 | 0.9 | 0.8 | 1.1 | 0.8 | 0.4 | 0.5 | 2.5 | S | 1.0 | 3.4 | 0.9 | 3.4 | 0.8 | 24 | |
| 12 | 0.8 | 0.3 | 0.1 | 0.3 | 0.4 | 0.6 | 0.3 | 0.3 | 0.6 | 0.7 | 0.6 | 1.0 | 0.7 | 0.2 | 0.3 | 0.4 | 0.1 | 0.2 | 0.2 | S | 0.1 | 0.0 | 0.0 | 0.0 | 1.0 | 0.4 | 0.4 | 24 |
| 13 | 0.1 | 0.0 | 0.4 | 0.3 | 0.4 | 0.3 | 0.4 | 0.0 | 0.1 | 0.6 | 0.7 | 1.2 | 1.3 | 1.5 | 1.5 | 1.1 | 0.5 | 0.7 | S | 0.4 | 0.6 | 0.4 | 0.2 | 0.4 | 1.5 | 0.5 | 24 | |
| 14 | 0.7 | 2.1 | 7.5 | 10.4 | 2.5 | 6.2 | 1.3 | 0.1 | 2.8 | 6.1 | 8.0 | 5.4 | 2.1 | 1.3 | 0.9 | 0.5 | 0.2 | S | 0.0 | 0.0 | 0.5 | 0.3 | 0.2 | 0.4 | 10.4 | 2.6 | 24 | |
| 15 | 0.1 | 1.3 | 3.1 | 1.1 | 0.4 | 3.9 | 1.1 | 0.3 | 0.6 | 5.5 | 0.8 | 0.7 | 0.8 | 0.3 | 0.2 | 0.3 | S | 0.4 | 0.1 | 0.1 | 0.0 | 0.2 | 0.4 | 0.0 | 5.5 | 0.9 | 24 | |
| 16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.6 | 0.8 | 0.4 | 0.7 | 1.1 | 2.4 | S | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.4 | 0.3 | 24 | |
| 17 | 1.4 | 0.4 | 0.2 | 0.6 | 0.2 | 0.0 | 5.2 | 9.2 | 35.8 | 45.9 | 7.0 | 4.1 | 3.1 | 1.9 | S | 1.7 | 0.9 | 0.5 | 0.4 | 0.2 | 0.2 | 0.4 | 0.9 | 0.2 | 45.9 | 5.2 | 24 | |
| 18 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.5 | 0.5 | 0.3 | 0.4 | 0.4 | 0.4 | S | 0.5 | 1.1 | 0.5 | 0.2 | 0.1 | 0.0 | 0.1 | 0.1 | 0.0 | 1.1 | 0.3 | 24 | |
| 19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.6 | 0.6 | S | 1.3 | 0.7 | 0.5 | 0.6 | 1.9 | 0.0 | 0.1 | 0.2 | 0.1 | 0.2 | 0.1 | 0.2 | 0.4 | 1.9 | 0.4 | 24 |
| 20 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.4 | 0.2 | 0.6 | 1.7 | 1.0 | 1.0 | S | 0.8 | 0.6 | 1.5 | 0.6 | 0.4 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.7 | 0.4 | 24 | |
| 21 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 1.2 | 4.3 | S | 2.7 | 2.0 | 1.5 | 1.1 | 0.8 | 0.3 | 0.3 | 0.7 | 0.0 | 1.4 | 5.2 | 11.5 | 2.5 | 11.5 | 1.6 | 24 | |
| 22 | 0.6 | 0.4 | 0.4 | 0.6 | 0.0 | 0.3 | 0.4 | 1.1 | 5.6 | S | 2.1 | 1.2 | 2.7 | 1.7 | 1.3 | 0.8 | 0.5 | 0.1 | 0.0 | 0.3 | 0.3 | 0.1 | 0.0 | 0.0 | 5.6 | 0.9 | 24 | |
| 23 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.3 | 0.2 | 0.1 | S | 1.2 | 1.3 | 1.3 | 1.0 | 0.5 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 1.3 | 0.3 | 24 | |
| 24 | 0.1 | 0.2 | 0.0 | 0.0 | 0.2 | 0.6 | 0.2 | S | 4.8 | 6.9 | 5.4 | 4.7 | 4.0 | 1.7 | 0.8 | 0.3 | 0.4 | 0.5 | 0.1 | 0.0 | 0.0 | 0.5 | 0.2 | 1.3 | 6.9 | 1.4 | 24 | |
| 25 | 0.2 | 0.5 | 0.1 | 0.1 | 0.1 | 0.1 | S | 0.0 | 0.3 | 1.1 | 1.4 | 1.6 | 1.6 | 1.6 | 1.5 | 1.1 | 0.5 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 1.6 | 0.5 | 24 | | |
| 26 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | S | 0.9 | 0.1 | 1.0 | 1.6 | 1.9 | 1.7 | 1.0 | 0.8 | 0.7 | 0.7 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 1.9 | 0.5 | 24 | |
| 27 | 0.2 | 0.1 | 0.1 | 0.0 | S | 0.3 | 0.4 | 0.2 | 0.3 | 0.6 | 0.3 | 0.2 | 0.4 | 0.2 | 0.1 | 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.2 | 24 | |
| 28 | 0.1 | 0.1 | 0.0 | S | 0.2 | 0.0 | 0.0 | 0.0 | 0.3 | 0.6 | 0.1 | 0.1 | 0.1 | 0.4 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.5 | 0.3 | 0.5 | 0.8 | 1.0 | 1.0 | 0.3 | 24 | |
| 29 | 0.2 | 0.6 | S | 0.5 | 0.3 | 0.2 | 0.6 | 1.3 | 2.7 | 1.0 | 0.7 | 1.3 | 2.0 | 0.9 | 0.6 | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.7 | 0.6 | 24 | |
| HOURLY MAX | 2.4 | 2.1 | 7.5 | 10.4 | 3.9 | 6.6 | 12.7 | 12.3 | 35.8 | 45.9 | 8.2 | 6.6 | 4.6 | 4.6 | 4.6 | 4.3 | 3.2 | 2.3 | 1.2 | 4.9 | 3.4 | 5.4 | 11.5 | 2.5 | | | | |
| HOURLY AVG | 0.3 | 0.3 | 0.5 | 0.6 | 0.4 | 0.8 | 1.1 | 1.2 | 3.4 | 4.3 | 2.0 | 2.0 | 1.5 | 1.2 | 1.1 | 0.9 | 0.7 | 0.5 | 0.2 | 0.4 | 0.3 | 0.6 | 0.8 | 0.4 | | | | |

STATUS FLAG CODES

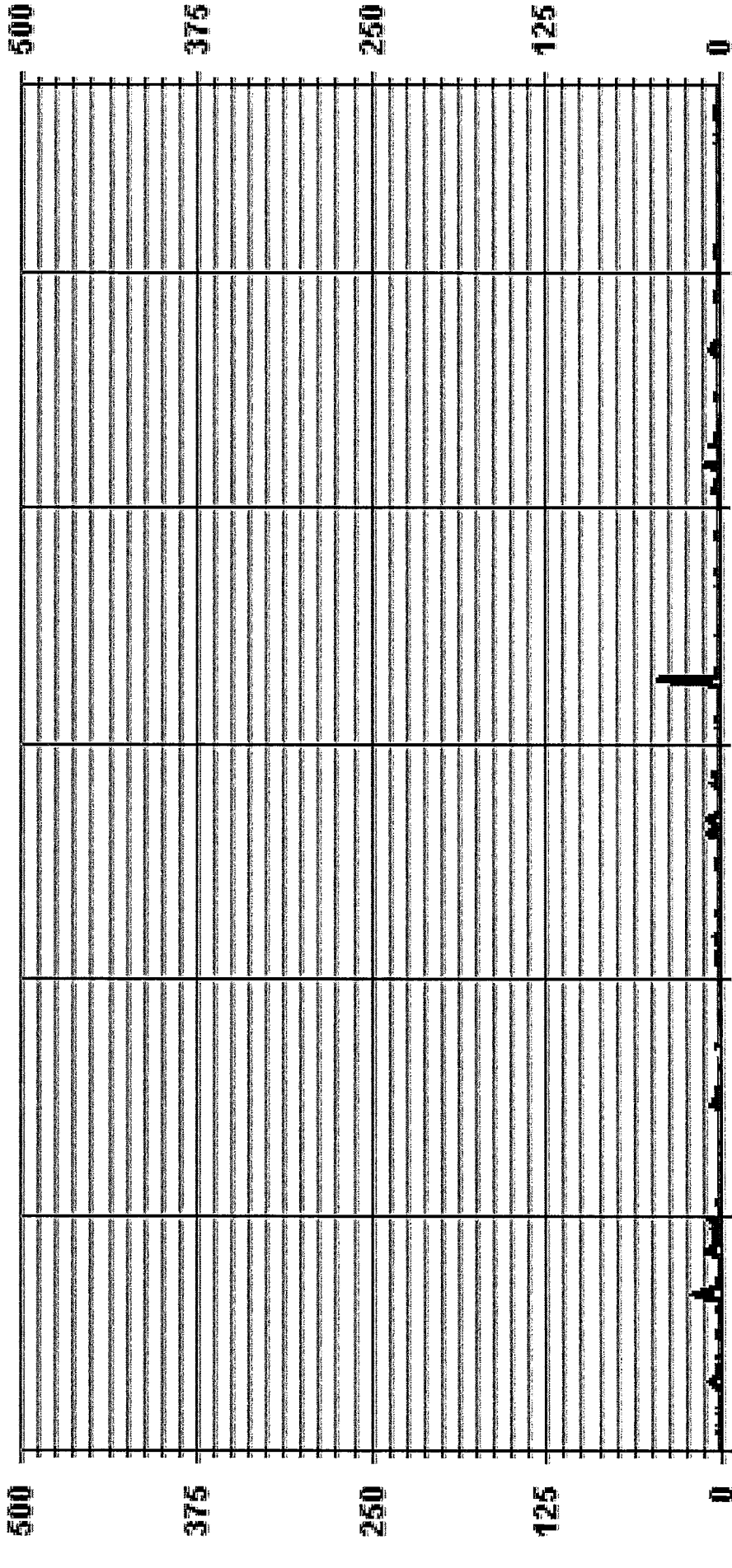
| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION | R | RECOVERY |
| S | MAINTENANCE | X | MACHINE MALFUNCTION |
| Y | DAILY ZERO/SPAN CHECK | G | OUT FOR REPAIR |
| ST | REPEAT ZERO/SPAN CHECK | P | POWER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



MONTHLY SUMMARY

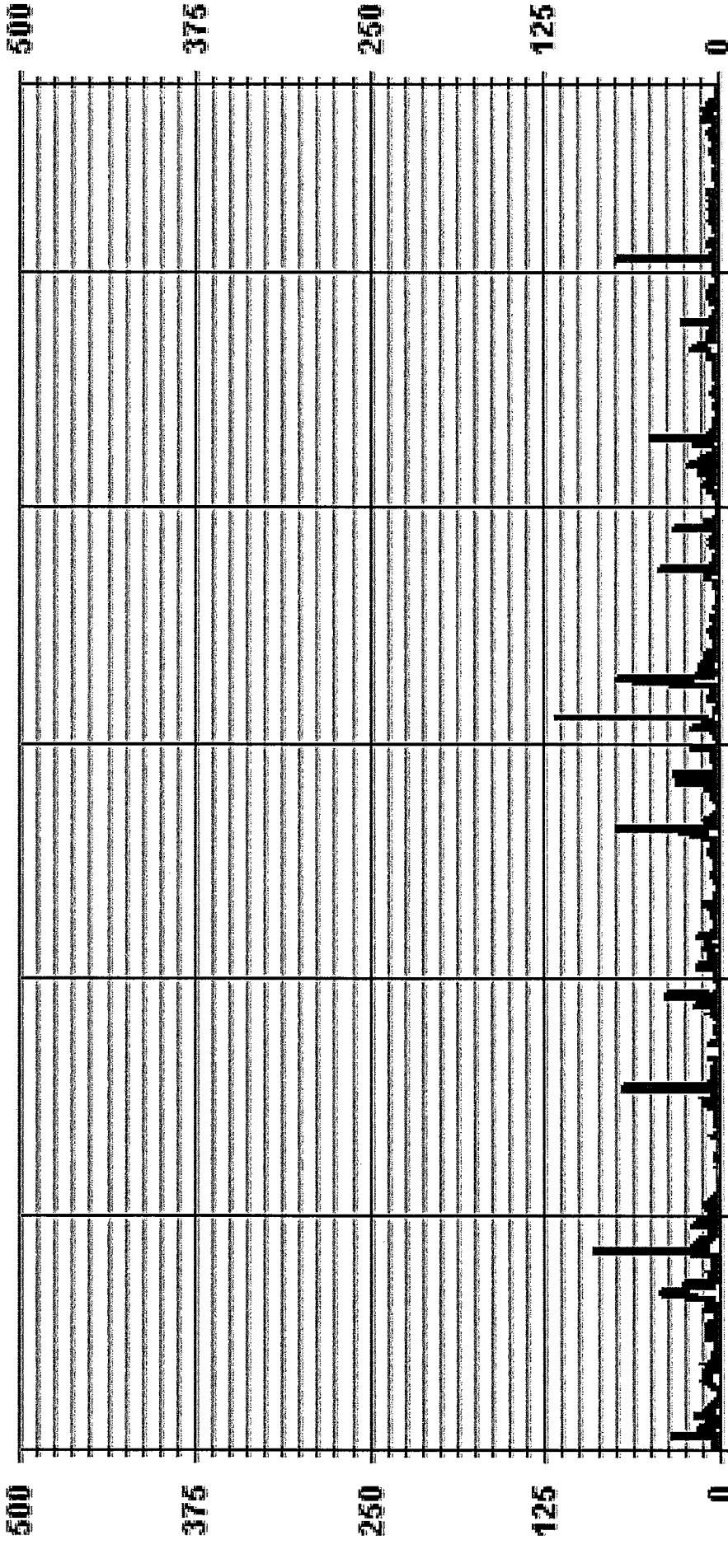
| | | | | | |
|------------------------------|------|---------------|-----------------------|-------------|-----|
| NUMBER OF NON-ZERO READINGS: | 541 | PPB @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MINIMUM 1-HR AVERAGE: | 0.0 | PPB @ HOUR(S) | 9 | ON DAY(S) | 17 |
| MAXIMUM 1-HR AVERAGE: | 45.9 | PPB | | ON DAY(S) | 17 |
| MAXIMUM 24-HR AVERAGE: | 5.2 | PPB | | VAR-VARIOUS | |
| IS CALIBRATION TIME: | 30 | HRS | OPERATIONAL TIME: | 696 | HRS |
| MONTHLY CALIBRATION TIME: | 6 | HRS | AMD OPERATION UPTIME: | 100.0 | % |
| STANDARD DEVIATION: | 2.89 | | MONTHLY AVERAGE: | 1.1 | PPB |

01 Hour Averages



— LICA NO_ PPB

01 Hour Averages



— LICA NOMAX PPB

LIICA
 NO_ / WD Joint Frequency Distribution (Percent)
 February 2016

Distribution By % Of Samples

Logger Id : 01
 Site Name : LIICA
 Parameter : NO
 Units : PFB

Wind Parameter : WD
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | NNW | Freq |
|----------|-----------|------|------|------|------|------|-------|------|------|------|------|-------|-------|------|------|------|--------|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | | |
| < 50.0 | 2.12 | 4.09 | 8.03 | 5.00 | 7.27 | 8.03 | 11.51 | 2.42 | 1.96 | 2.27 | 7.42 | 19.84 | 11.66 | 3.78 | 3.18 | 1.36 | 100.00 | |
| < 110.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | |
| < 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | |
| >= 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | |
| Totals | 2.12 | 4.09 | 8.03 | 5.00 | 7.27 | 8.03 | 11.51 | 2.42 | 1.96 | 2.27 | 7.42 | 19.84 | 11.66 | 3.78 | 3.18 | 1.36 | | |

Calm : .00 %

Total # Operational Hours : 660

Distribution By Samples





| Limit | Direction | | | | | | | | | | | | | | | | NNW | Freq |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | | |
| < 50.0 | 14 | 27 | 53 | 33 | 48 | 53 | 76 | 16 | 13 | 15 | 49 | 131 | 77 | 25 | 21 | 9 | 660 | |
| < 110.0 | | | | | | | | | | | | | | | | | | |
| < 210.0 | | | | | | | | | | | | | | | | | | |
| >= 210.0 | | | | | | | | | | | | | | | | | | |
| Totals | 14 | 27 | 53 | 33 | 48 | 53 | 76 | 16 | 13 | 15 | 49 | 131 | 77 | 25 | 21 | 9 | | |

Calm : .00 %

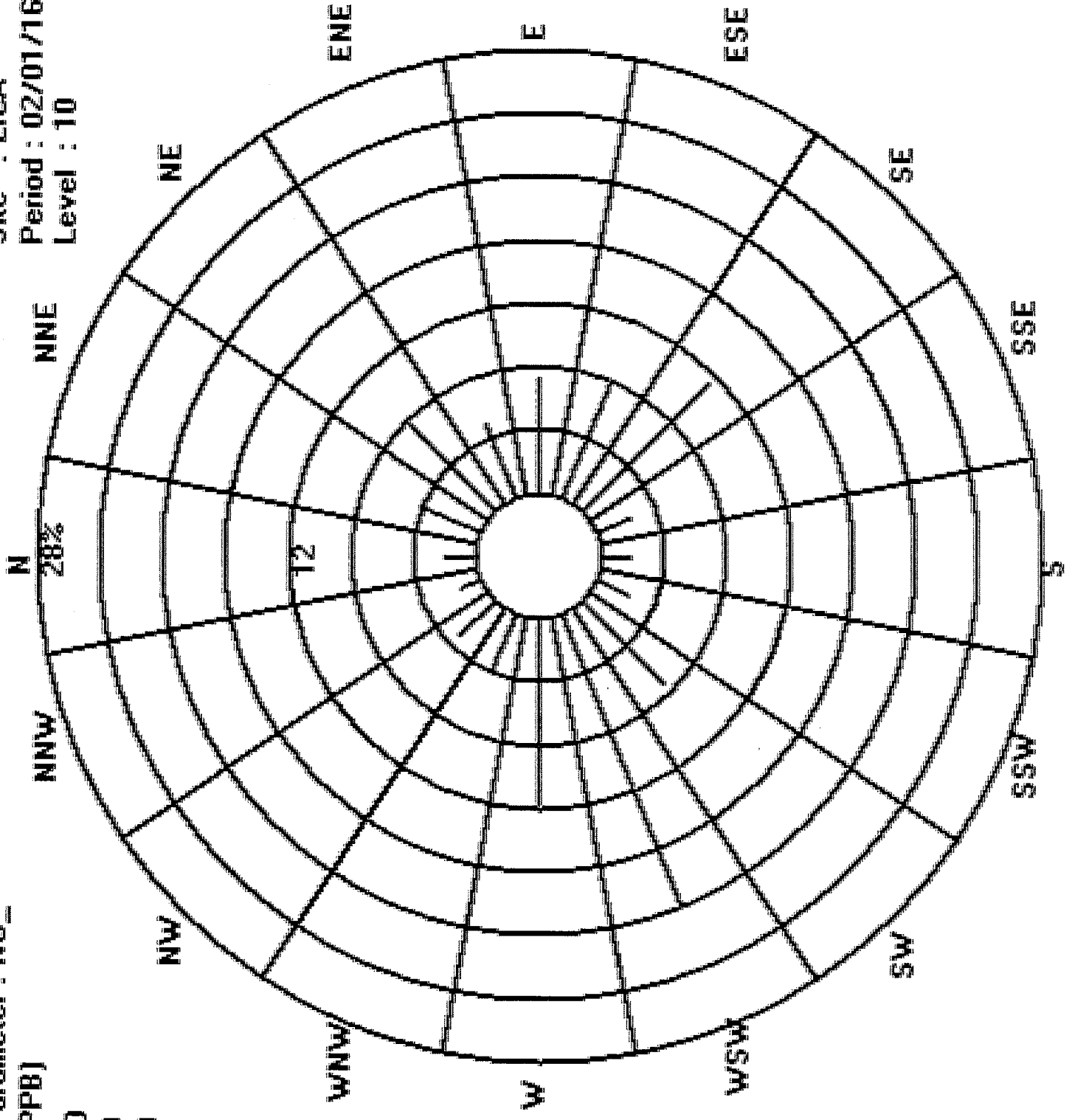
Total # Operational Hours : 660

Logger : 01 Parameter : NO_

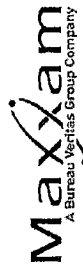
Class Limits (PPB)

-  >= 210.0
-  < 210.0
-  < 110.0
-  < 50.0

Site : LICA
 Period : 02/01/16-02/29/16
 Level : 10



NITROGEN DIOXIDE



NITROGEN DIOXIDE (NO2) hourly averages in ppb

MST

| DAY | 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 | 24:00 | | | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-----|-----|-----|
| HR | 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 | RDGS. | | | | |
| 1 | 1.8 | 2.4 | 2.8 | 3.6 | 4.8 | 4.6 | 4.0 | 3.3 | 2.5 | 3.3 | 2.7 | 3.0 | 1.8 | 2.1 | 2.4 | 2.5 | 4.9 | 11.6 | 10.1 | 14.9 | 11.4 | 16.1 | 12.5 | 16.1 | 5.6 | 24 | | | |
| 2 | 3.9 | 5.8 | 7.7 | 5 | 3.1 | 3.2 | 3.9 | 5.2 | 9.9 | 9.1 | 7.9 | 8.0 | 7.2 | 7.0 | 7.3 | 9.7 | 14.4 | 19.8 | 16.1 | 18.4 | 14.9 | 14.8 | 13.5 | 14.1 | 19.8 | 9.8 | 24 | | |
| 3 | 17.1 | 20.0 | 5 | 11.7 | 10.4 | 4.3 | 3.2 | 4.3 | 4.8 | 3.6 | 5.1 | 4.8 | 3.2 | 2.9 | 3.2 | 2.9 | 3.9 | 4.4 | 5.1 | 5.3 | 5.0 | 7.0 | 20.0 | 6.2 | 24 | 24 | | | |
| 4 | 18.4 | 5 | 12.8 | 9.6 | 7.9 | 10.7 | 15.5 | 20.4 | 18.7 | 13.2 | 9.5 | 7.5 | 2.4 | 2.5 | 2.8 | 5.6 | 10.6 | 7.1 | 3.8 | 3.2 | 4.2 | 4.8 | 4.7 | 20.4 | 8.9 | 24 | 24 | | |
| 5 | 5 | 5.5 | 4.4 | 5.2 | 15.1 | 20.6 | 21.1 | 21.1 | 18.9 | 10.7 | 7.7 | 7.7 | 8.6 | 6.9 | 7.9 | 8.9 | 13.7 | 12.1 | 12.3 | 20.7 | 22.9 | 21.3 | 16.0 | 5 | 22.9 | 13.2 | 24 | | |
| 6 | 8.3 | 6.7 | 6.1 | 10.3 | 15.4 | 7.7 | 12.7 | 14.5 | 12.6 | 10.8 | 3.0 | 1.9 | 1.3 | 1.0 | 0.9 | 0.9 | 0.8 | 1.0 | 1.2 | 0.9 | 0.6 | 5 | 1.3 | 15.4 | 5.3 | 24 | 24 | | |
| 7 | 0.9 | 1.1 | 1.1 | 0.8 | 1.8 | 2.5 | 2.3 | 1.7 | 2.0 | 1.9 | 1.4 | 0.4 | 0.4 | 0.4 | 0.6 | 0.4 | 0.8 | 1.8 | 4.0 | 5.2 | 6.2 | 5.0 | 5 | 4.8 | 6.3 | 2.3 | 24 | | |
| 8 | 4.2 | 3.7 | 3.4 | 3.0 | 3.4 | 4.6 | 7.0 | 10.5 | 14.3 | 19.0 | 5.8 | 8.3 | 5.4 | 5.4 | 6.9 | 8.1 | 9.0 | 10.2 | 9.5 | 8.3 | 11.2 | 8.6 | 7.9 | 5 | 19.0 | 7.7 | 24 | | |
| 9 | 7.3 | 6.0 | 8.2 | 4.9 | 10.4 | 6.9 | 3.3 | 3.4 | 3.1 | C | C | C | C | C | C | 8.7 | 12.0 | 9.3 | 9.1 | 8.3 | 7.0 | 11.4 | 5 | 9.6 | 12.0 | 7.6 | 24 | | |
| 10 | 6.6 | 3.9 | 2.8 | 3.2 | 3.7 | 1.5 | 1.2 | 1.3 | 1.9 | 1.3 | 1.1 | 0.8 | 1.0 | 0.9 | 0.8 | 1.1 | 1.8 | 2.4 | 2.6 | 2.6 | 1.7 | 5 | 2.1 | 2.0 | 6.6 | 2.1 | 24 | | |
| 11 | 1.4 | 1.7 | 1.8 | 2.0 | 2.1 | 2.9 | 3.0 | 3.2 | 3.1 | 2.2 | 2.0 | 1.9 | 1.9 | 1.9 | 1.9 | 3.3 | 4.8 | 10.2 | 16.2 | 20.1 | 5 | 19.7 | 23.3 | 20.4 | 23.3 | 6.6 | 24 | | |
| 12 | 11.6 | 2.5 | 2.3 | 3.4 | 3.0 | 3.8 | 4.1 | 4.2 | 4.9 | 1.6 | 2.2 | 2.0 | 1.2 | 1.2 | 1.2 | 1.1 | 1.5 | 1.9 | 5 | 1.9 | 1.5 | 1.5 | 1.4 | 11.6 | 2.7 | 24 | 24 | | |
| 13 | 1.7 | 2.0 | 1.5 | 3.9 | 3.4 | 5.8 | 2.0 | 1.6 | 1.9 | 2.3 | 2.0 | 2.8 | 3.4 | 4.7 | 4.9 | 5.0 | 4.6 | 9.2 | 5 | 9.7 | 9.0 | 6.0 | 4.9 | 9.7 | 4.4 | 24 | 24 | | |
| 14 | 8.8 | 16.0 | 20.9 | 19.4 | 13.5 | 15.8 | 11.7 | 9.7 | 10.1 | 10.2 | 10.8 | 9.1 | 5.4 | 3.5 | 2.8 | 2.5 | 2.3 | 5 | 8.6 | 7.1 | 6.3 | 6.4 | 4.5 | 5.1 | 20.9 | 9.2 | 24 | 24 | |
| 15 | 4.7 | 14.7 | 19.1 | 16.8 | 15.0 | 19.1 | 11.6 | 4.1 | 2.7 | 4.8 | 2.0 | 1.8 | 1.7 | 1.3 | 1.3 | 1.6 | 5 | 4.6 | 4.7 | 5.2 | 5.0 | 5.8 | 2.2 | 1.5 | 19.1 | 6.6 | 24 | 24 | |
| 16 | 1.0 | 1.1 | 2.1 | 1.5 | 1.7 | 1.8 | 3.2 | 3.1 | 2.1 | 2.2 | 2.1 | 1.3 | 5 | 2.5 | 1.5 | 1.6 | 2.3 | 3.3 | 4.9 | 6.2 | 6.4 | 7.6 | 2.5 | 2.0 | 7.6 | 3.2 | 24 | 24 | |
| 17 | 16.0 | 14.7 | 9.9 | 9.9 | 8.2 | 7.6 | 12.6 | 15.7 | 21.2 | 25.9 | 14.4 | 9.0 | 7.1 | 5.5 | 5 | 6.5 | 5.4 | 8.9 | 6.0 | 5.2 | 4.0 | 4.5 | 8.9 | 3.3 | 25.9 | 10.0 | 24 | 24 | |
| 18 | 2.0 | 2.1 | 2.0 | 1.5 | 1.6 | 1.8 | 2.0 | 2.5 | 2.8 | 2.3 | 1.8 | 1.5 | 1.9 | 5 | 2.6 | 3.8 | 3.8 | 3.1 | 2.1 | 2.1 | 2.5 | 3.8 | 4.7 | 2.8 | 4.7 | 2.5 | 24 | 24 | |
| 19 | 2.3 | 2.2 | 2.2 | 4.9 | 3.1 | 3.8 | 2.3 | 2.2 | 2.7 | 2.2 | 2.1 | 1.3 | 5 | 2.5 | 1.5 | 1.6 | 2.3 | 5.3 | 4.9 | 6.2 | 6.4 | 7.6 | 2.5 | 2.0 | 7.6 | 3.2 | 24 | 24 | |
| 20 | 1.8 | 2.2 | 2.5 | 2.8 | 2.6 | 3.8 | 3.3 | 4.4 | 5.0 | 2.3 | 1.7 | 5 | 1.6 | 1.5 | 1.8 | 2.3 | 2.3 | 2.9 | 3.2 | 3.1 | 3.7 | 3.8 | 3.9 | 5.6 | 5.6 | 3.0 | 24 | 24 | |
| 21 | 4.3 | 3.4 | 3.4 | 3.7 | 5.6 | 4.7 | 5.9 | 5.2 | 6.4 | 7.3 | 5 | 4.6 | 3.5 | 3.0 | 3.2 | 3.3 | 6.3 | 14.2 | 6.8 | 13.3 | 26.3 | 26.4 | 18.9 | 26.4 | 8.0 | 24 | 24 | 24 | |
| 22 | 8.5 | 10.7 | 17.2 | 14.8 | 8.4 | 11.3 | 13.3 | 15.4 | 16.7 | 5 | 4.7 | 2.8 | 3.3 | 3.7 | 3.9 | 3.4 | 3.7 | 4.0 | 4.6 | 4.0 | 3.8 | 4.4 | 4.9 | 3.7 | 17.2 | 7.4 | 24 | 24 | 24 |
| 23 | 4.4 | 4.7 | 4.6 | 4.4 | 4.5 | 4.8 | 5.2 | 6.6 | 5 | 4.1 | 3.5 | 3.0 | 2.5 | 1.7 | 1.1 | 0.9 | 1.5 | 2.2 | 2.4 | 3.9 | 3.6 | 4.1 | 3.2 | 4.1 | 6.6 | 3.5 | 24 | 24 | 24 |
| 24 | 4.3 | 5.3 | 4.4 | 4.7 | 8.1 | 8.3 | 11.0 | 5 | 14.1 | 11.6 | 8.5 | 7.2 | 6.3 | 3.7 | 2.3 | 1.9 | 2.3 | 6.8 | 7.0 | 5.9 | 7.2 | 10.0 | 12.1 | 14.7 | 14.7 | 7.3 | 24 | 24 | 24 |
| 25 | 10.3 | 6.2 | 9.8 | 7.3 | 7.0 | 2.9 | 5 | 3.6 | 4.2 | 4.3 | 3.7 | 3.7 | 4.0 | 4.3 | 4.8 | 5.0 | 4.8 | 5.0 | 4.8 | 5.2 | 6.9 | 15.8 | 16.8 | 16.8 | 16.8 | 5.9 | 24 | 24 | 24 |
| 26 | 3.9 | 3.5 | 4.5 | 4.8 | 5.3 | 5 | 5.8 | 6.1 | 7.1 | 6.4 | 6.0 | 4.9 | 3.6 | 3.1 | 3.1 | 3.5 | 3.7 | 4.6 | 4.8 | 5.2 | 6.9 | 15.8 | 16.8 | 16.8 | 16.8 | 5.9 | 24 | 24 | 24 |
| 27 | 9.3 | 4.4 | 4.2 | 2.0 | 5 | 3.6 | 4.6 | 3.9 | 2.6 | 2.2 | 1.5 | 1.2 | 1.3 | 1.0 | 0.9 | 0.7 | 0.8 | 1.4 | 2.5 | 1.5 | 1.6 | 1.2 | 1.8 | 2.9 | 9.3 | 2.5 | 24 | 24 | 24 |
| 28 | 3.1 | 3.1 | 2.2 | 5 | 3.1 | 4.2 | 4.7 | 1.3 | 2.1 | 2.9 | 0.7 | 0.6 | 0.5 | 0.7 | 0.5 | 0.6 | 0.8 | 1.4 | 1.8 | 1.4 | 2.4 | 2.4 | 3.3 | 6.7 | 2.2 | 24 | 24 | 24 | |
| 29 | 4.4 | 6.1 | 5 | 4.1 | 3.4 | 4.3 | 9.7 | 8.7 | 5.7 | 1.6 | 0.8 | 1.5 | 2.3 | 1.6 | 1.3 | 1.4 | 1.9 | 3.0 | 3.1 | 2.8 | 2.5 | 2.3 | 2.5 | 2.7 | 9.7 | 3.4 | 24 | 24 | 24 |
| HOURLY MAX | 18.4 | 20.0 | 20.9 | 19.4 | 15.4 | 20.6 | 21.1 | 21.1 | 21.2 | 25.9 | 14.4 | 9.1 | 8.6 | 7.0 | 7.9 | 9.7 | 14.4 | 19.8 | 16.2 | 20.7 | 22.9 | 26.3 | 26.4 | 20.4 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 |
| HOURLY AVG | 6.2 | 5.8 | 6.1 | 6.1 | 6.3 | 6.8 | 6.7 | 7.3 | 6.3 | 6.3 | 4.2 | 3.8 | 3.2 | 2.9 | 2.7 | 3.5 | 4.4 | 5.8 | 6.3 | 6.5 | 6.2 | 7.8 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 |

STATUS FLAG CODES

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

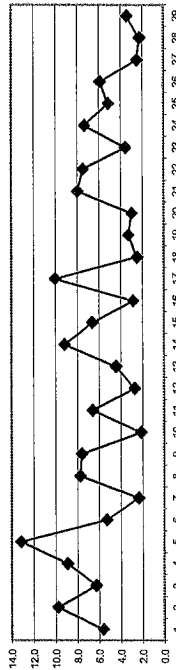
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: L-HR: 159 PPB

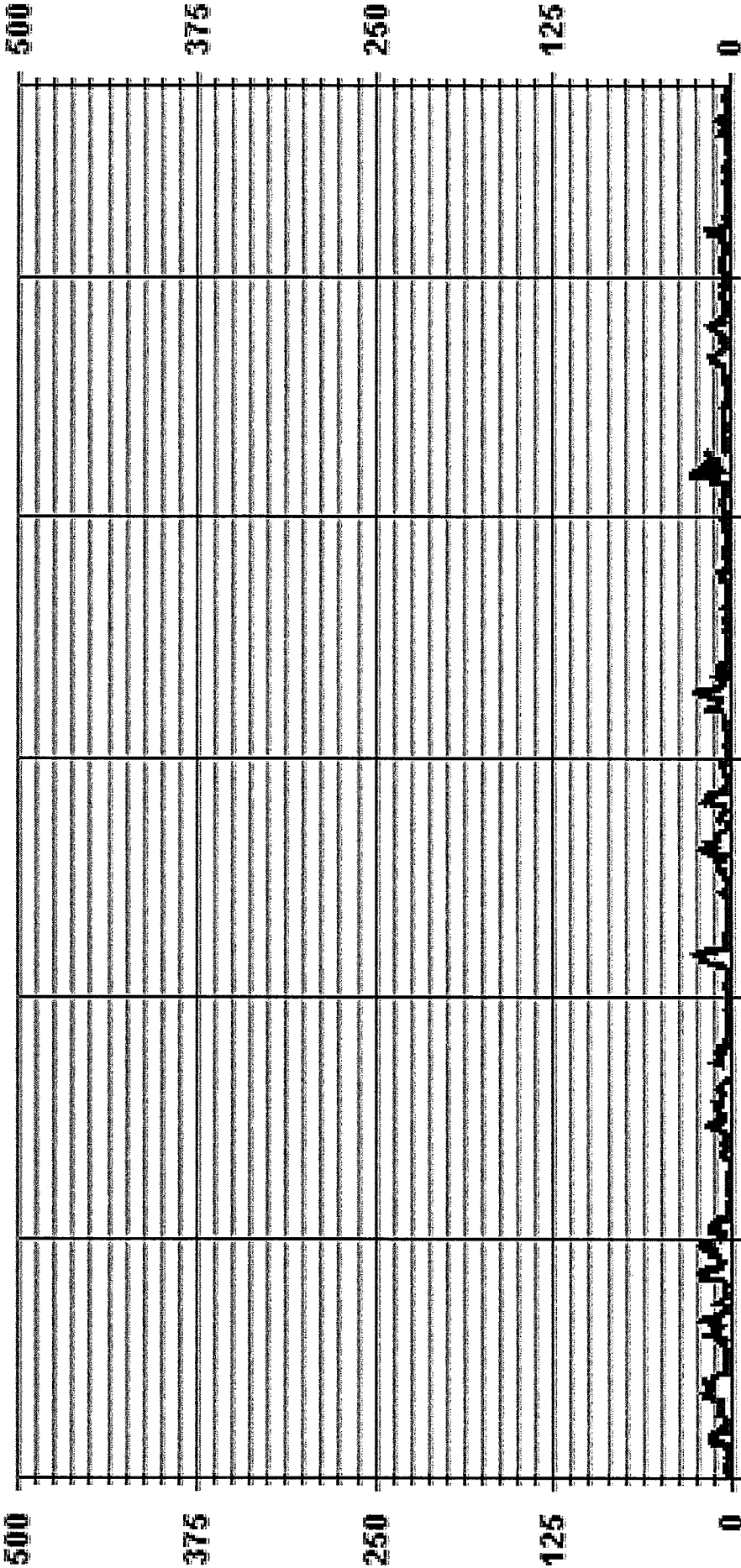
MONTHLY SUMMARY

| | |
|------------------------------|---------|
| NUMBER OF 1-HR EXCEEDENCES: | 0 |
| NUMBER OF NON-ZERO READINGS: | 660 |
| MINIMUM 1-HR AVERAGE: | 0.4 |
| MAXIMUM 1-HR AVERAGE: | 26.4 |
| MAXIMUM 24-HR AVERAGE: | 13.2 |
| 12S CALIBRATION TIME: | 30 HRS |
| MONTHLY CALIBRATION TIME: | 6 HRS |
| STANDARD DEVIATION: | 4.88 |
| VAR @ HOUR(S) | 22 |
| ON DAY(S) | 7 |
| ON DAY(S) | 21 |
| VAR- VARIOUS | 5 |
| OPERATIONAL TIME: | 696 HRS |
| AMD OPERATION UPTIME: | 100.0 % |
| MONTHLY AVERAGE: | 5.7 PPB |

24 HOUR AVERAGES FOR FEBRUARY 2016



01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA NO2_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Cold Lake South Site - FEBRUARY 2016
JOB # 2833-2016-02-1-C

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

| DAY | 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 | 24:00 | 24-HOUR AVG. | ROGS. | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|-------|----|----|
| 1 | 3.0 | 3.9 | 4.3 | 5.6 | 5 | 7.7 | 8.0 | 5.8 | 12.2 | 5.2 | 6.6 | 9.3 | 8.9 | 4.1 | 5.3 | 5.9 | 5.6 | 14.9 | 18.8 | 13.9 | 18.8 | 17.3 | 21.2 | 19.7 | 24.5 | 10.3 | 24 | | |
| 2 | 6.5 | 10.2 | 12.6 | 5 | 4.0 | 4.4 | 6.4 | 8.6 | 16.5 | 11.3 | 9.8 | 8.5 | 10.0 | 9.7 | 19.1 | 18.2 | 24.0 | 20.5 | 22.6 | 22.2 | 17.3 | 15.4 | 16.3 | 24.0 | 13.3 | 24 | 24 | | |
| 3 | 19.0 | 21.8 | 5 | 18.1 | 17.7 | 6.9 | 5.8 | 7.1 | 7.1 | 5.3 | 9.9 | 9.1 | 7.7 | 5.4 | 4.8 | 5.9 | 4.2 | 19.8 | 7.7 | 8.2 | 6.7 | 11.4 | 6.5 | 13.9 | 21.8 | 10.0 | 24 | | |
| 4 | 29.9 | 5 | 18.3 | 14.7 | 11.6 | 23.4 | 19.7 | 25.2 | 27.3 | 24.4 | 28.8 | 16.4 | 6.0 | 6.3 | 8.4 | 18.2 | 11.7 | 12.4 | 15.3 | 4.6 | 6.0 | 9.1 | 8.0 | 29.9 | 15.2 | 24 | 24 | | |
| 5 | 5 | 12.4 | 13.5 | 8.2 | 24.1 | 26.1 | 49.5 | 22.9 | 23.6 | 19.1 | 9.2 | 13.8 | 10.4 | 9.3 | 9.7 | 12.4 | 19.5 | 23.0 | 16.0 | 27.8 | 27.0 | 26.4 | 20.0 | 5 | 49.5 | 19.3 | 24 | | |
| 6 | 12.8 | 10.6 | 8.9 | 14.0 | 29.4 | 16.2 | 19.5 | 21.1 | 17.1 | 16.8 | 6.5 | 2.6 | 1.7 | 1.2 | 1.9 | 1.0 | 1.1 | 1.0 | 1.6 | 1.7 | 1.3 | 0.8 | 5 | 2.0 | 23.4 | 8.0 | 24 | | |
| 7 | 1.3 | 2.4 | 1.9 | 1.6 | 2.4 | 3.7 | 2.8 | 3.7 | 3.1 | 1.8 | 0.6 | 0.6 | 1.1 | 0.9 | 2.2 | 2.8 | 7.3 | 8.0 | 9.2 | 6.4 | 5 | 10.4 | 5 | 9.4 | 3.6 | 24 | 24 | | |
| 8 | 5.1 | 7.3 | 4.1 | 3.9 | 5.7 | 19.1 | 13.0 | 14.5 | 25.6 | 28.3 | 13.6 | 13.5 | 6.1 | 8.3 | 8.9 | 13.2 | 11.7 | 32.5 | 13.5 | 12.2 | 17.3 | 11.7 | 10.4 | 5 | 32.5 | 13.0 | 24 | | |
| 9 | 12.1 | 10.8 | 12.2 | 6.4 | 17.0 | 13.5 | 5.0 | 4.8 | 4.7 | C | C | C | C | C | C | 10.1 | 18.4 | 11.9 | 12.2 | 9.7 | 8.7 | 14.0 | 5 | 12.4 | 18.4 | 10.8 | 24 | | |
| 10 | 10.7 | 5.1 | 4.8 | 3.6 | 4.8 | 3.3 | 2.7 | 3.7 | 4.4 | 2.9 | 5.2 | 2.3 | 2.7 | 2.7 | 2.0 | 2.9 | 7.9 | 5.1 | 5.0 | 7.9 | 4.0 | 5 | 3.8 | 4.0 | 10.7 | 4.4 | 24 | | |
| 11 | 2.7 | 3.6 | 5.8 | 4.0 | 3.3 | 4.8 | 5.2 | 19.1 | 5.6 | 15.3 | 5.0 | 4.0 | 3.7 | 4.1 | 4.1 | 14.4 | 14.6 | 25.2 | 22.1 | 26.6 | 5 | 24.3 | 27.8 | 28.0 | 28.0 | 11.9 | 24 | 24 | |
| 12 | 18.8 | 4.9 | 3.3 | 6.7 | 5.7 | 7.6 | 6.0 | 6.9 | 9.2 | 4.0 | 4.1 | 15.9 | 4.3 | 2.0 | 3.1 | 3.0 | 1.4 | 7.7 | 3.9 | 5 | 5.2 | 1.9 | 1.6 | 2.9 | 18.8 | 5.7 | 24 | 24 | |
| 13 | 2.7 | 2.8 | 2.9 | 5.7 | 6.7 | 10.5 | 5.6 | 2.2 | 3.4 | 6.0 | 3.3 | 3.7 | 4.6 | 6.1 | 6.7 | 7.1 | 6.4 | 19.1 | 5 | 14.6 | 12.0 | 15.0 | 15.2 | 11.5 | 19.1 | 7.6 | 24 | 24 | |
| 14 | 15.9 | 22.6 | 23.8 | 27.2 | 23.0 | 62.2 | 17.4 | 11.9 | 14.1 | 11.5 | 10.7 | 10.9 | 4.6 | 3.3 | 3.1 | 2.8 | 5 | 12.9 | 10.2 | 9.8 | 9.0 | 7.6 | 8.6 | 62.2 | 14.7 | 24 | 24 | | |
| 15 | 10.5 | 19.6 | 26.7 | 21.0 | 20.1 | 32.9 | 18.3 | 7.2 | 11.5 | 23.7 | 4.3 | 2.9 | 2.9 | 2.1 | 2.9 | 3.4 | 5 | 7.7 | 7.9 | 7.9 | 8.2 | 10.6 | 4.4 | 4.2 | 32.9 | 11.3 | 24 | 24 | |
| 16 | 1.5 | 1.9 | 3.3 | 2.1 | 2.8 | 3.4 | 6.0 | 5.7 | 3.6 | 5.7 | 2.5 | 2.7 | 4.5 | 13.0 | 27.2 | 5 | 10.0 | 9.6 | 4.1 | 4.3 | 4.9 | 6.2 | 10.0 | 12.2 | 27.2 | 6.4 | 24 | 24 | |
| 17 | 23.3 | 17.1 | 12.9 | 15.7 | 13.1 | 10.6 | 19.5 | 23.3 | 34.9 | 33.1 | 20.3 | 11.5 | 11.1 | 6.5 | 5 | 4.8 | 7.1 | 5.0 | 15.9 | 9.1 | 3.7 | 5.0 | 5.4 | 7.4 | 4.8 | 15.5 | 24 | 24 | |
| 18 | 3.3 | 3.0 | 3.4 | 2.0 | 2.4 | 2.4 | 3.0 | 3.7 | 7.8 | 3.3 | 3.3 | 2.7 | 2.9 | 5 | 4.5 | 5.4 | 3.3 | 3.7 | 18.9 | 6.7 | 8.2 | 7.5 | 10.0 | 3.3 | 4.8 | 18.9 | 5.1 | 24 | 24 |
| 19 | 3.1 | 3.0 | 3.7 | 6.3 | 4.3 | 4.1 | 3.1 | 2.9 | 3.5 | 3.1 | 2.5 | 1.6 | 5 | 2.0 | 2.1 | 13.9 | 6.0 | 3.8 | 6.9 | 5.3 | 3.4 | 6.9 | 5.1 | 5.5 | 7.1 | 18.9 | 5.3 | 24 | 24 |
| 20 | 2.2 | 3.0 | 2.9 | 3.3 | 4.0 | 11.7 | 5.3 | 5.9 | 7.7 | 4.1 | 2.9 | 5 | 6.2 | 8.7 | 5.0 | 3.5 | 17.5 | 4.3 | 13.3 | 33.0 | 10.0 | 30.2 | 32.0 | 28.9 | 33.0 | 13.2 | 24 | 24 | |
| 21 | 5.2 | 4.2 | 4.3 | 5.0 | 6.4 | 14.1 | 14.7 | 7.5 | 7.9 | 9.1 | 5 | 8.1 | 4.6 | 14.0 | 4.9 | 25.9 | 5.7 | 5.9 | 6.1 | 9.0 | 5.5 | 6.7 | 6.7 | 7.9 | 4.9 | 27.3 | 12.2 | 24 | 24 |
| 22 | 14.8 | 16.9 | 22.9 | 20.2 | 11.1 | 16.0 | 17.9 | 18.0 | 27.3 | 5 | 8.1 | 4.6 | 14.0 | 4.9 | 25.9 | 5.7 | 5.9 | 6.1 | 9.0 | 5.5 | 6.7 | 6.7 | 7.9 | 4.9 | 27.3 | 12.2 | 24 | 24 | |
| 23 | 5.5 | 6.4 | 5.9 | 6.7 | 5.3 | 5.8 | 6.4 | 7.4 | 5 | 5.3 | 4.3 | 3.5 | 3.8 | 2.3 | 2.0 | 1.4 | 2.1 | 3.3 | 3.5 | 5.5 | 5.0 | 5.4 | 5.7 | 9.5 | 9.5 | 4.9 | 24 | 24 | |
| 24 | 7.1 | 7.8 | 5.3 | 7.3 | 15.1 | 21.5 | 14.2 | 5 | 18.2 | 28.0 | 13.0 | 14.3 | 9.2 | 9.1 | 3.3 | 3.5 | 7.5 | 23.2 | 11.1 | 8.8 | 15.4 | 16.9 | 20.3 | 36.7 | 36.7 | 13.8 | 24 | 24 | |
| 25 | 16.4 | 18.8 | 16.0 | 12.3 | 11.6 | 5.3 | 5 | 4.5 | 5.0 | 5.3 | 5.0 | 4.3 | 4.8 | 5.4 | 7.3 | 6.9 | 6.4 | 14.7 | 5.8 | 5.4 | 9.9 | 12.2 | 5.3 | 5.0 | 18.8 | 8.4 | 24 | 24 | |
| 26 | 7.0 | 4.2 | 6.1 | 6.7 | 6.7 | 5 | 18.9 | 7.4 | 7.9 | 7.7 | 8.6 | 6.2 | 4.8 | 6.6 | 6.7 | 4.3 | 7.0 | 6.3 | 6.6 | 6.9 | 6.6 | 12.9 | 22.0 | 21.6 | 22.0 | 8.7 | 24 | 24 | |
| 27 | 16.4 | 7.9 | 8.8 | 3.4 | 5 | 6.4 | 9.0 | 7.0 | 7.3 | 5.5 | 4.0 | 1.8 | 2.4 | 2.2 | 3.4 | 0.9 | 1.2 | 6.4 | 5.8 | 3.5 | 2.8 | 2.1 | 2.1 | 3.5 | 16.4 | 4.9 | 24 | 24 | |
| 28 | 3.8 | 4.0 | 3.4 | 5 | 19.9 | 5.6 | 7.1 | 2.2 | 2.9 | 8.6 | 1.3 | 1.4 | 0.8 | 3.0 | 1.4 | 0.9 | 1.4 | 2.5 | 7.3 | 2.8 | 8.8 | 4.5 | 6.4 | 14.5 | 19.9 | 5.0 | 24 | 24 | |
| 29 | 8.3 | 13.4 | 5 | 5.5 | 5.5 | 11.5 | 19.6 | 19.2 | 10.8 | 5.4 | 2.2 | 2.8 | 4.6 | 3.5 | 7.5 | 2.0 | 4.2 | 4.5 | 3.9 | 3.4 | 2.8 | 2.6 | 2.9 | 4.1 | 19.6 | 6.5 | 24 | 24 | |
| HOURLY MAX | 29.9 | 22.6 | 26.7 | 27.2 | 24.1 | 62.2 | 49.5 | 25.2 | 34.9 | 33.1 | 28.8 | 16.4 | 14.0 | 13.0 | 27.2 | 19.1 | 19.5 | 32.5 | 33.0 | 27.8 | 30.2 | 32.0 | 32.4 | 36.7 | | | | | |
| HOURLY AVG | 9.6 | 8.9 | 9.0 | 8.8 | 10.3 | 12.9 | 11.8 | 9.9 | 11.8 | 11.2 | 7.4 | 6.6 | 5.6 | 5.0 | 6.7 | 6.6 | 7.4 | 12.8 | 10.4 | 9.5 | 9.7 | 11.0 | 11.0 | 11.4 | | | | | |

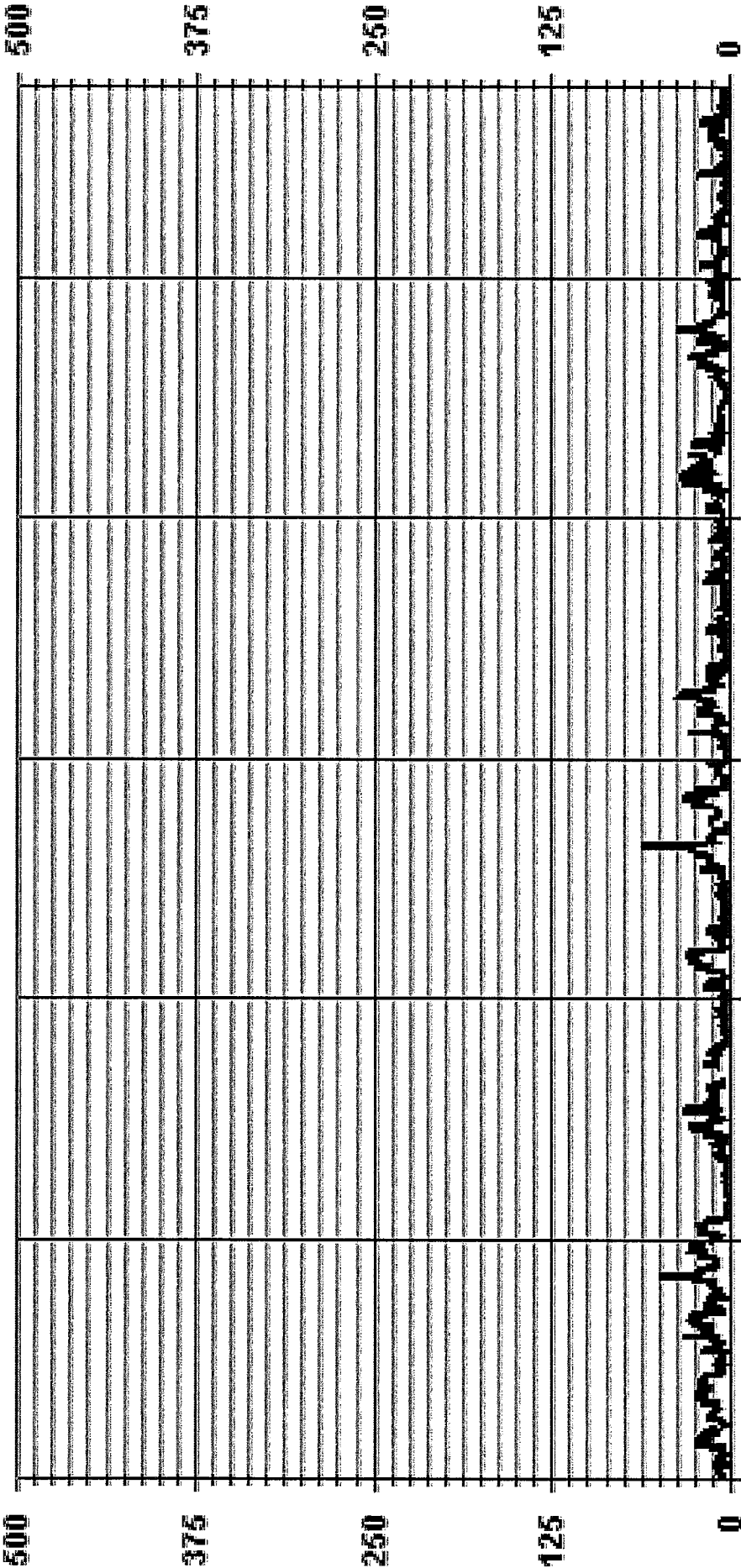
STATUS FLAG CODES

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

MONTHLY SUMMARY

| | |
|------------------------------|-----------------------------------|
| NUMBER OF NON-ZERO READINGS: | 660 |
| MAXIMUM INSTANTANEOUS VALUE: | 62.2 PPB @ HOUR(S) 5 ON DAY(S) 14 |
| IZS CALIBRATION TIME: | 30 HRS |
| MONTHLY CALIBRATION TIME: | 6 HRS |
| OPERATIONAL TIME: | 696 HRS |
| STANDARD DEVIATION: | 7.59 |
| VAR-VARIOUS | |

01 Hour Averages



02/04/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA NO2MAX PPB

LICA
NO2_ / WD Joint Frequency Distribution (Percent)
February 2016

Distribution By % Of Samples

Logger Id : 01
Site Name : LICA
Parameter : NO2
Units : PPF

Wind Parameter : WD
Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | NNW | NW | NNW | Freq |
|----------|-----------|------|------|------|------|------|-------|------|------|------|------|-------|-------|------|------|------|--------|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | | | | |
| < 50.0 | 2.12 | 4.09 | 8.03 | 5.00 | 7.27 | 8.03 | 11.51 | 2.42 | 1.96 | 2.27 | 7.42 | 19.84 | 11.66 | 3.78 | 3.18 | 1.36 | 100.00 | | | |
| < 110.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | | | |
| < 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | | | |
| >= 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | | | |
| Totals | 2.12 | 4.09 | 8.03 | 5.00 | 7.27 | 8.03 | 11.51 | 2.42 | 1.96 | 2.27 | 7.42 | 19.84 | 11.66 | 3.78 | 3.18 | 1.36 | | | | |

Calm : .00 %

Total # Operational Hours : 660

Distribution By Samples





| Limit | Direction | | | | | | | | | | | | | | | | NNW | NW | NNW | Freq |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | | | | |
| < 50.0 | 14 | 27 | 53 | 33 | 48 | 53 | 76 | 16 | 13 | 15 | 49 | 131 | 77 | 25 | 21 | 9 | 660 | | | |
| < 110.0 | | | | | | | | | | | | | | | | | | | | |
| < 210.0 | | | | | | | | | | | | | | | | | | | | |
| >= 210.0 | | | | | | | | | | | | | | | | | | | | |
| Totals | 14 | 27 | 53 | 33 | 48 | 53 | 76 | 16 | 13 | 15 | 49 | 131 | 77 | 25 | 21 | 9 | 660 | | | |

Calm : .00 %

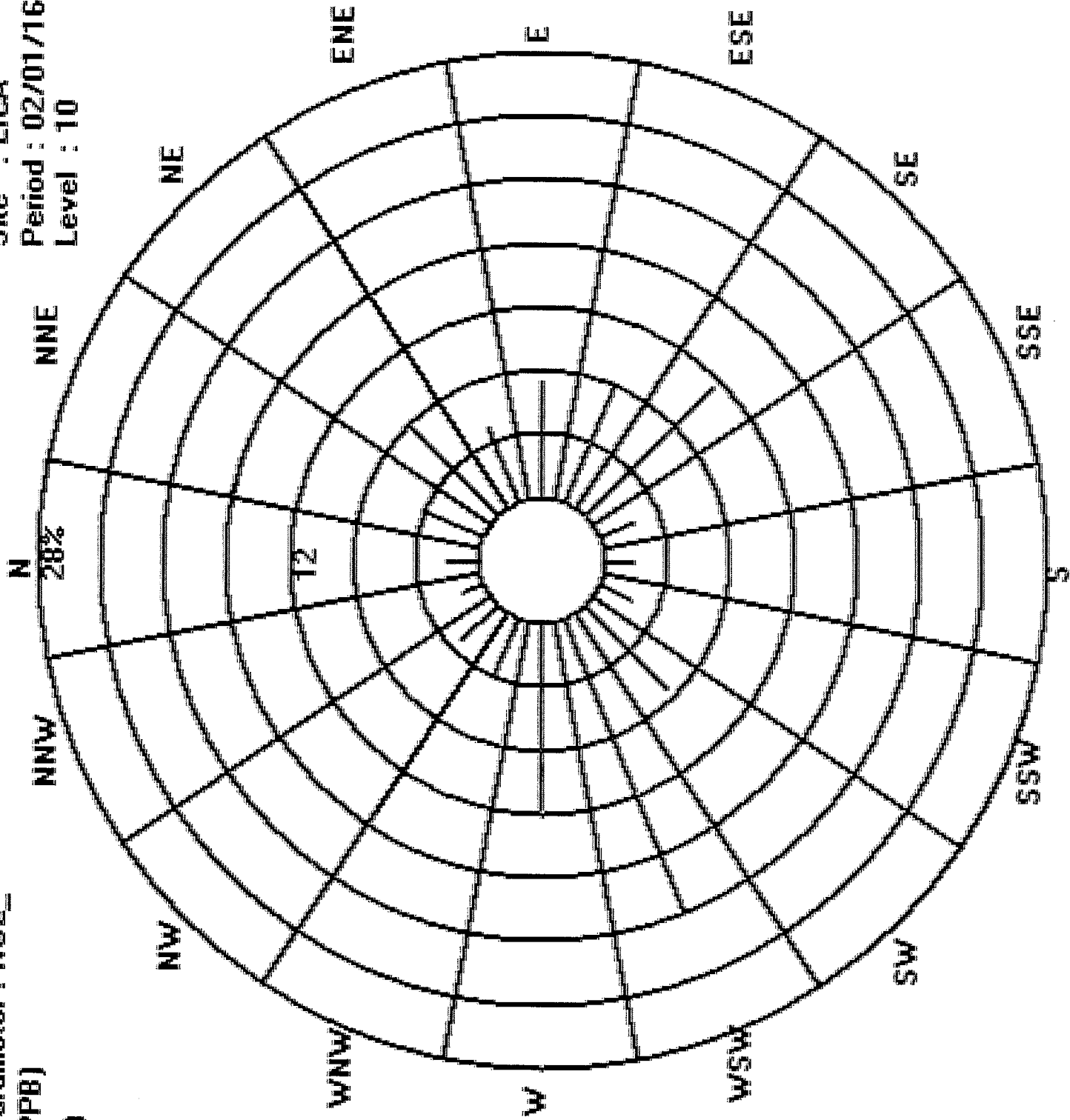
Total # Operational Hours : 660

Logger : 01 Parameter : ND2_

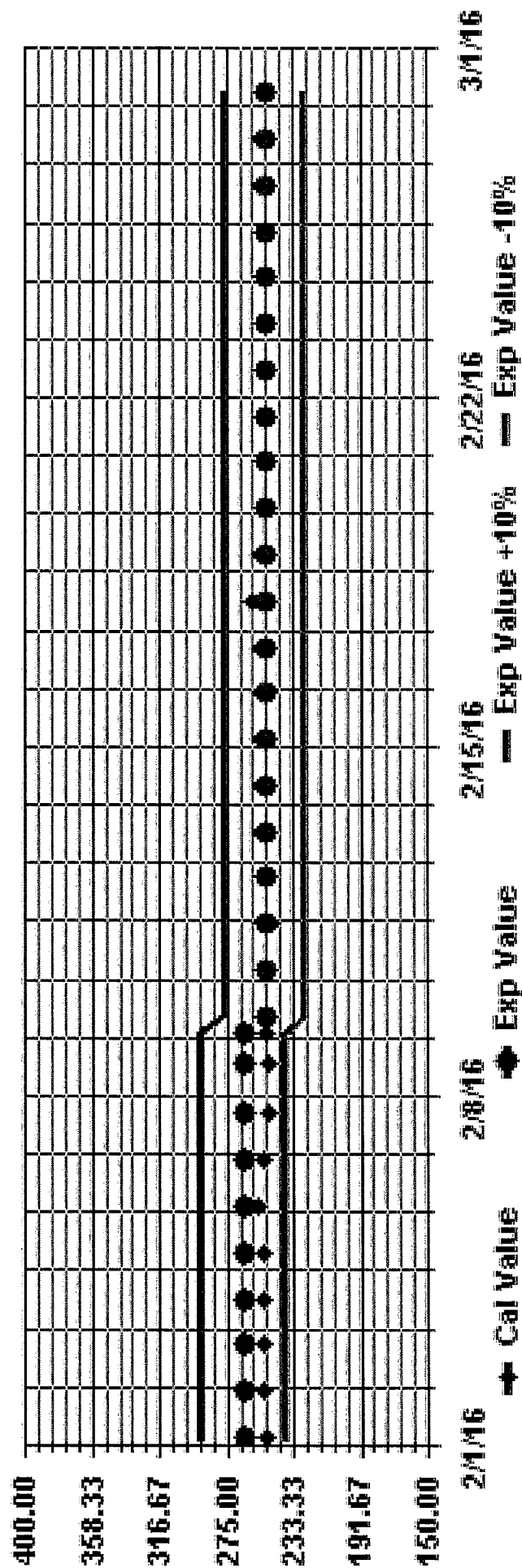
Class Limits (PPB)

-  \geq 210.0
-  $<$ 210.0
-  $<$ 110.0
-  $<$ 50.0

Site : LICA
Period : 02/01/16-02/29/16
Level : 10

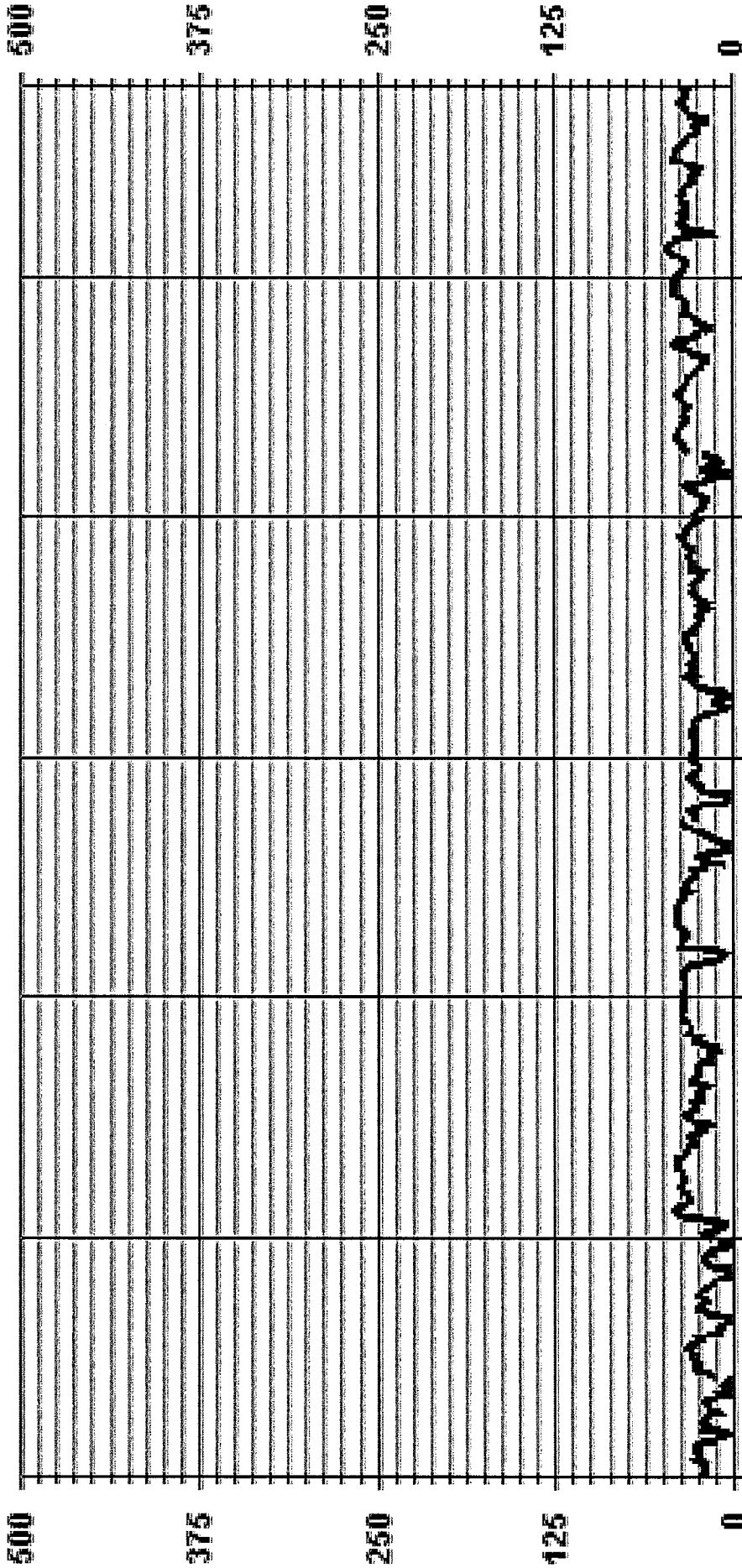


Calibration Graph for Site: LICA Parameter: NO2_ Sequence: NO2 Phase: SPAN

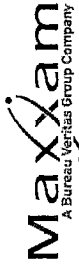


OZONE

01 Hour Averages



— LICA 03_ PFB



OZONE MAX instantaneous maximum in ppb

MST

Table with columns: HOUR START, HOUR END, DAY, and 24-HOUR AVG. Rows show hourly data for 29 days. Includes a summary row for HOURLY MAX and HOURLY AVG.

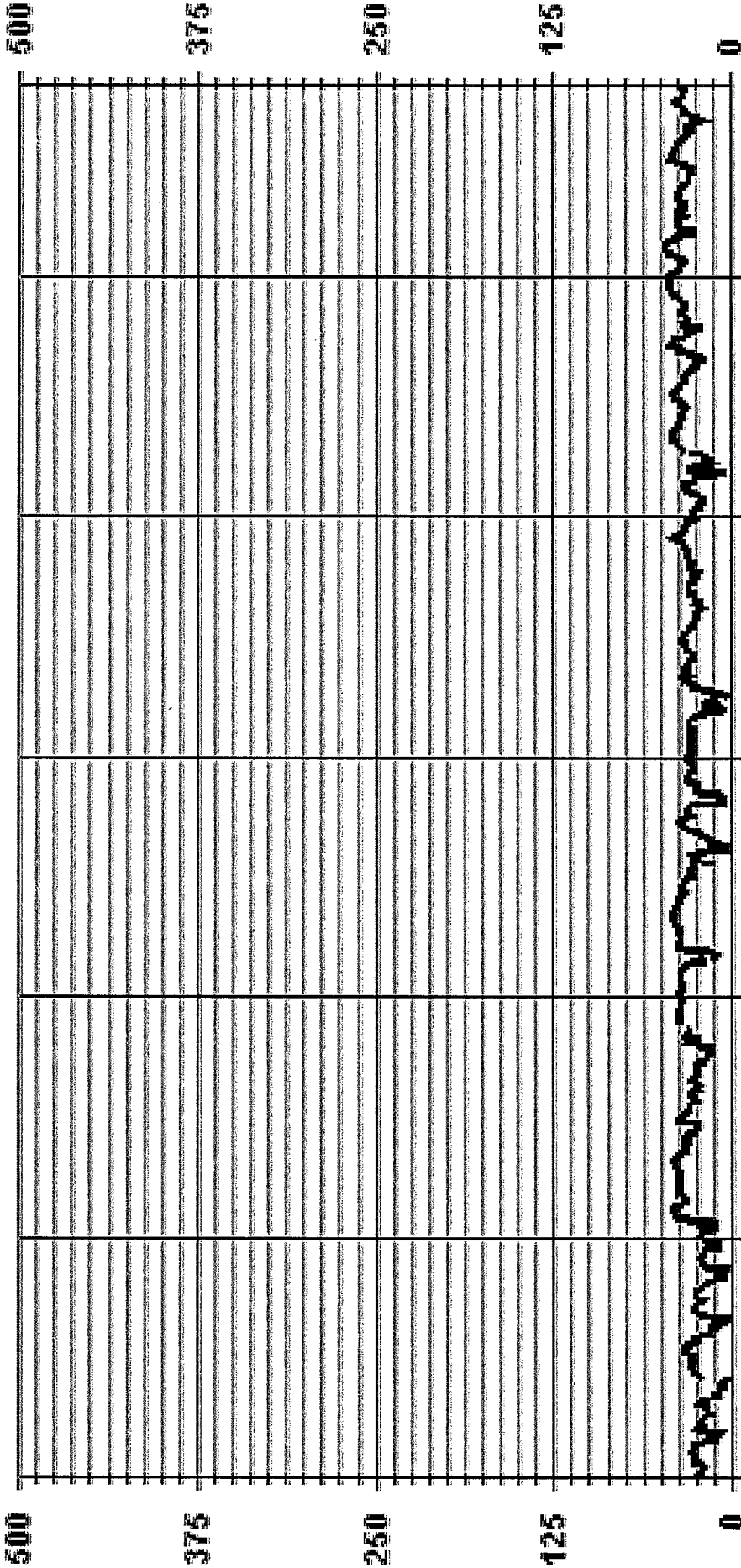
STATUS FLAG CODES

Legend table for status flag codes: C - MONTHLY CALIBRATION, O - QUALITY ASSURANCE, Q - REPEAT CALIBRATION, R - RECOVERY, CL - CALIBRATION, X - MACHINE/MAINTENANCE, Y - MAINTENANCE, S - DAILY ZERO/SKIP/CHECK, G - OUTDOOR REPAIR, P - POWER FAILURE, S1 - REPEAT ZERO/SKIP/CHECK.

MONTHLY SUMMARY

Summary table with fields: NUMBER OF NON-ZERO READINGS (661), MAXIMUM INSTANTANEOUS VALUE (45.8 PPB), OPERATIONAL TIME (30 HRS), MONTHLY CALIBRATION TIME (4 HRS), STANDARD DEVIATION (8.75), and ON DAY(S) (14). Includes a VAR-VARIOUS label.

01 Hour Averages



— LICA O3MAX PPB

IICA
 03_ / WD Joint Frequency Distribution (Percent)
 February 2016

Distribution By % Of Samples

Logger Id : 01
 Site Name : IICA
 Parameter : 03
 Units : PPS

Wind Parameter : WD
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|------|------|------|------|------|-------|------|------|------|------|-------|-------|------|------|------|--------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 50.0 | 2.11 | 4.07 | 7.69 | 4.82 | 7.23 | 7.99 | 11.76 | 2.41 | 2.11 | 2.26 | 7.39 | 19.75 | 12.06 | 3.77 | 3.16 | 1.35 | 100.00 |
| < 110.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.11 | 4.07 | 7.69 | 4.82 | 7.23 | 7.99 | 11.76 | 2.41 | 2.11 | 2.26 | 7.39 | 19.75 | 12.06 | 3.77 | 3.16 | 1.35 | |

Calm : .00 %

Total # Operational Hours : 663

Distribution By Samples





| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 50.0 | 14 | 27 | 51 | 32 | 48 | 53 | 78 | 16 | 14 | 15 | 49 | 131 | 80 | 25 | 21 | 9 | 663 |
| < 110.0 | | | | | | | | | | | | | | | | | |
| < 210.0 | | | | | | | | | | | | | | | | | |
| >= 210.0 | | | | | | | | | | | | | | | | | |
| Totals | 14 | 27 | 51 | 32 | 48 | 53 | 78 | 16 | 14 | 15 | 49 | 131 | 80 | 25 | 21 | 9 | |

Calm : .00 %

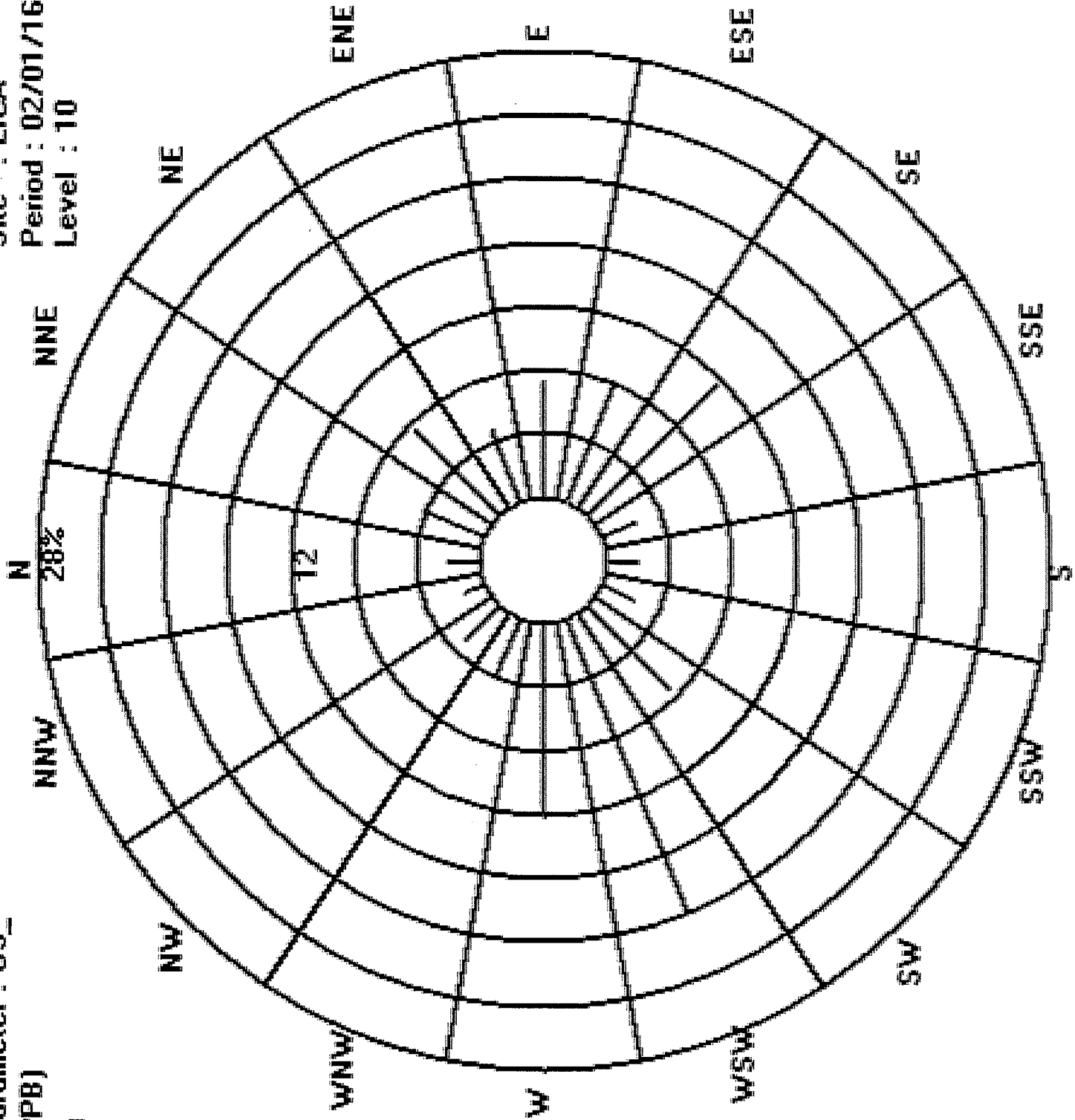
Total # Operational Hours : 663

Logger : 01 Parameter : O3_

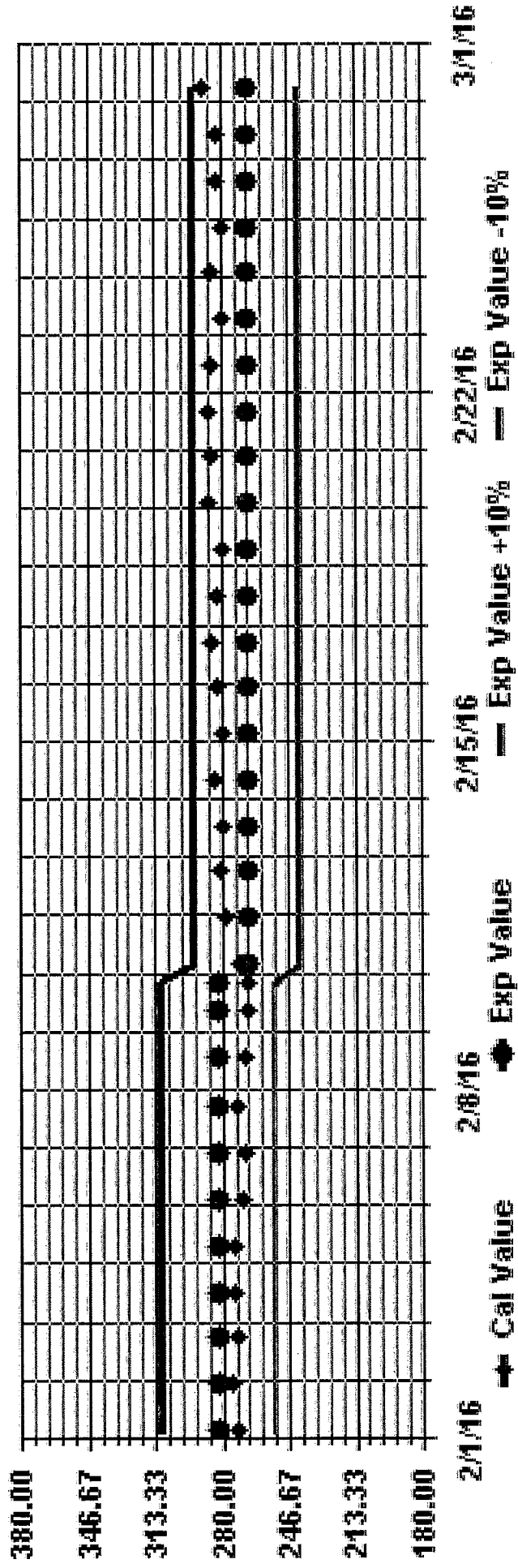
Class Limits (PPB)

-  \geq 210.0
-  $<$ 210.0
-  $<$ 110.0
-  $<$ 50.0

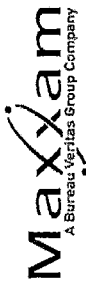
Site : LICA
Period : 02/01/16-02/29/16
Level : 10



Calibration Graph for Site: LICA Parameter: O3_ Sequence: O3_ Phase: SPAM



PARTICULATE MATTER 2.5



PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5) hourly averages in ug/m3

MST

| DAY | HOUR | | | | | | | | | | | | | | | | | | | | | | | | DAILY MAX | 24-HOUR AVG. | RDGS. |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|--------------|-------|
| | 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 | | | |
| 1 | 14 | 7 | 0 | 3 | 10 | 11 | 14 | 14 | 7 | 1 | 6 | 3 | 0 | 3 | 6 | 12 | 7 | 6 | 10 | 5 | 3 | 10 | 13 | 14 | 7.3 | 23 | |
| 2 | 1 | 13 | 13 | 17 | 12 | 5 | 14 | 10 | 9 | 9 | 13 | 2 | X | 0 | 29 | 12 | 21 | 21 | 11 | 22 | 10 | 19 | 17 | 12 | 29 | 12.8 | 23 |
| 3 | 22 | 15 | 18 | 14 | 16 | 0 | 5 | 9 | 12 | 8 | 24 | 18 | 10 | 6 | 17 | 2 | 1 | 0 | 11 | 11 | 15 | 11 | 3 | 10 | 24 | 10.9 | 24 |
| 4 | 9 | 14 | 1 | 3 | X | 8 | 8 | 8 | 24 | 31 | 13 | 0 | 8 | 13 | 11 | 13 | 5 | 13 | 12 | 6 | 7 | 5 | 14 | 12 | 31 | 10.5 | 23 |
| 5 | 2 | 0 | 10 | 2 | 19 | 8 | 18 | 23 | 16 | 14 | 20 | 8 | 24 | 49 | 7 | 57 | 4 | 14 | 9 | 19 | 8 | 15 | 14 | 7 | 57 | 15.4 | 24 |
| 6 | 20 | 9 | 7 | 11 | 12 | 11 | 14 | 18 | 7 | X | X | 10 | X | 0 | X | X | 1 | X | 42 | 8 | 2 | 6 | 8 | 42 | 11.0 | 18 | |
| 7 | 11 | X | X | 5 | 6 | 1 | 7 | 4 | 18 | X | 2 | 5 | 18 | 0 | 4 | 9 | 13 | 24 | 11 | 7 | 2 | 8 | 8 | 7 | 24 | 8.0 | 22 |
| 8 | X | X | X | X | 22 | 16 | 2 | 10 | 17 | 11 | 8 | 18 | 5 | 8 | 12 | 10 | 12 | 14 | 14 | 14 | 12 | 12 | 8 | 13 | 22 | 12.0 | 20 |
| 9 | 13 | 8 | 6 | 8 | 7 | 14 | 12 | 17 | 9 | 19 | 9 | 1 | 9 | 19 | 18 | 0 | 7 | 1 | 12 | 19 | 18 | 20 | 21 | 16 | 21 | 11.9 | 24 |
| 10 | 19 | 7 | 4 | 8 | 11 | 16 | 11 | 6 | 10 | 0 | 0 | 6 | C | 0 | 17 | 8 | 0 | 11 | 1 | 9 | 3 | 3 | 9 | 5 | 19 | 7.3 | 24 |
| 11 | 11 | 2 | 2 | 9 | 3 | 11 | 4 | 8 | 8 | 0 | 1 | 1 | 0 | 11 | 0 | X | 0 | X | 10 | 0 | X | X | 4 | 4 | 11 | 4.7 | 19 |
| 12 | 5 | 2 | 0 | 24 | 37 | 43 | 13 | X | 32 | X | X | X | X | X | X | 0 | 1 | 2 | 5 | 5 | 0 | 0 | 3 | 0 | 43 | 11.4 | 18 |
| 13 | 4 | 3 | 0 | 7 | X | 3 | 6 | X | 10 | 13 | 19 | 23 | 21 | 11 | 4 | 7 | 10 | 13 | 0 | 16 | 32 | 15 | 12 | 14 | 32 | 11.0 | 22 |
| 14 | 13 | 23 | 34 | 13 | 34 | 16 | 25 | 17 | 10 | 8 | 8 | 1 | 8 | 7 | 2 | 8 | 17 | 6 | 0 | 14 | 11 | 11 | 20 | 22 | 34 | 13.6 | 24 |
| 15 | 15 | 12 | 5 | 6 | 9 | 10 | 13 | 3 | 2 | 0 | 8 | 1 | 0 | 0 | 2 | 11 | 10 | 9 | 17 | 3 | 3 | 2 | 0 | 3 | 17 | 6.1 | 24 |
| 16 | 3 | 5 | 3 | 9 | 6 | 8 | 8 | 10 | 10 | 0 | X | X | 11 | 4 | 9 | 9 | 5 | 11 | 11 | 9 | 9 | 11 | 14 | 14 | 14 | 8.1 | 22 |
| 17 | 24 | 15 | 25 | 18 | 18 | 20 | 19 | 14 | 14 | 14 | 13 | 14 | 10 | 6 | 8 | 6 | 5 | 10 | 4 | 6 | 9 | 9 | 2 | 25 | 12.1 | 24 | |
| 18 | 7 | 7 | 3 | 6 | 3 | 0 | 8 | 9 | 0 | 6 | 10 | 5 | 2 | 2 | 10 | 12 | 6 | 6 | 8 | 5 | 10 | 13 | 8 | 8 | 13 | 6.4 | 24 |
| 19 | 14 | 15 | 17 | 7 | 8 | 13 | 12 | 9 | 7 | 7 | 10 | 10 | 4 | 4 | X | 11 | 12 | 3 | 10 | 4 | 5 | 9 | 8 | 5 | 17 | 9.0 | 23 |
| 20 | 11 | 2 | 5 | 9 | 7 | 7 | 9 | 10 | 3 | 6 | 4 | 11 | 9 | 9 | 5 | 2 | 3 | 1 | 6 | 8 | 6 | 4 | 1 | 3 | 11 | 5.9 | 24 |
| 21 | 6 | 0 | 7 | 2 | 7 | 4 | 7 | 2 | 14 | 16 | 4 | 10 | 12 | 17 | 13 | 10 | 11 | 14 | 18 | 14 | 18 | 14 | 15 | 11 | 18 | 9.2 | 24 |
| 22 | 12 | 10 | 9 | 14 | 8 | 6 | 9 | 7 | 5 | 9 | 0 | C | 1 | 20 | X | X | X | 19 | 51 | 4 | 6 | X | 15 | 23 | 51 | 12.1 | 20 |
| 23 | X | 1 | X | 18 | 22 | 8 | 16 | 0 | 9 | 7 | 14 | X | X | 22 | X | 9 | 13 | X | 21 | 18 | 1 | X | 10 | 21 | 22 | 12.5 | 17 |
| 24 | 60 | 21 | X | 21 | X | 1 | 2 | 22 | 4 | 12 | 1 | X | 10 | 16 | 1 | X | 21 | 23 | 39 | X | X | 4 | 13 | 12 | 60 | 15.9 | 18 |
| 25 | 14 | 10 | 9 | 7 | 18 | X | 16 | 12 | X | 2 | 13 | 21 | 14 | 12 | 27 | 14 | 8 | 21 | 12 | 12 | 12 | 29 | 15 | 0 | 29 | 13.6 | 22 |
| 26 | 23 | 16 | 30 | 8 | 19 | 10 | 21 | 16 | 9 | X | 0 | 18 | 2 | 4 | 17 | 3 | 24 | 21 | 14 | 11 | 21 | 11 | 27 | 22 | 30 | 15.0 | 23 |
| 27 | 16 | 9 | 20 | 5 | 2 | 10 | 7 | 6 | 13 | 7 | 15 | 11 | 3 | 11 | 6 | 8 | 23 | 11 | X | 25 | X | 0 | 7 | 0 | 25 | 9.8 | 22 |
| 28 | 8 | 7 | 4 | 7 | 7 | 11 | 14 | 5 | 13 | 12 | 15 | 24 | 7 | 9 | 20 | 30 | 0 | 2 | 0 | 3 | 1 | 6 | 6 | 8 | 30 | 9.2 | 24 |
| 29 | 15 | 9 | 0 | 7 | 5 | 13 | 0 | 7 | 5 | 12 | 14 | 0 | 11 | 11 | 6 | 0 | 0 | 16 | 7 | 1 | 9 | 10 | 18 | 12 | 18 | 8.0 | 24 |
| HOURLY MAX | 60 | 23 | 34 | 24 | 37 | 43 | 25 | 23 | 31 | 32 | 24 | 24 | 24 | 49 | 29 | 57 | 24 | 23 | 51 | 25 | 32 | 29 | 27 | 23 | | | |
| HOURLY AVG | 13.9 | 8.9 | 9.2 | 9.6 | 12.6 | 10.4 | 10.7 | 10.8 | 10.0 | 9.5 | 10.0 | 9.6 | 9.6 | 7.3 | 9.8 | 11.2 | 10.7 | 9.5 | 10.5 | 13.1 | 9.7 | 9.2 | 9.7 | 11.0 | 10.0 | | |

STATUS FLAG CODES

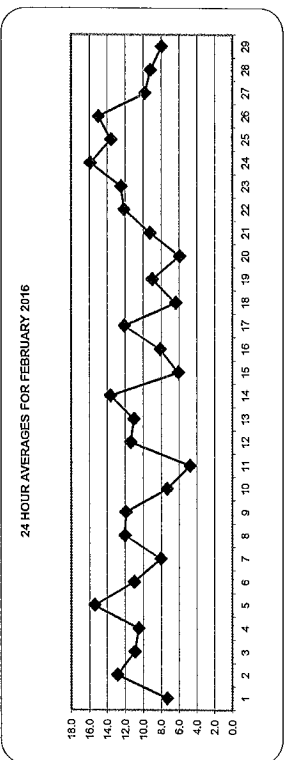
| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION | R | RECOVERY |
| Y | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO/Span CHECK | G | OUT FOR REPAIR |
| SL | REPEAT ZERO/Span CHECK | P | POWER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

OBJECTIVE LIMIT:

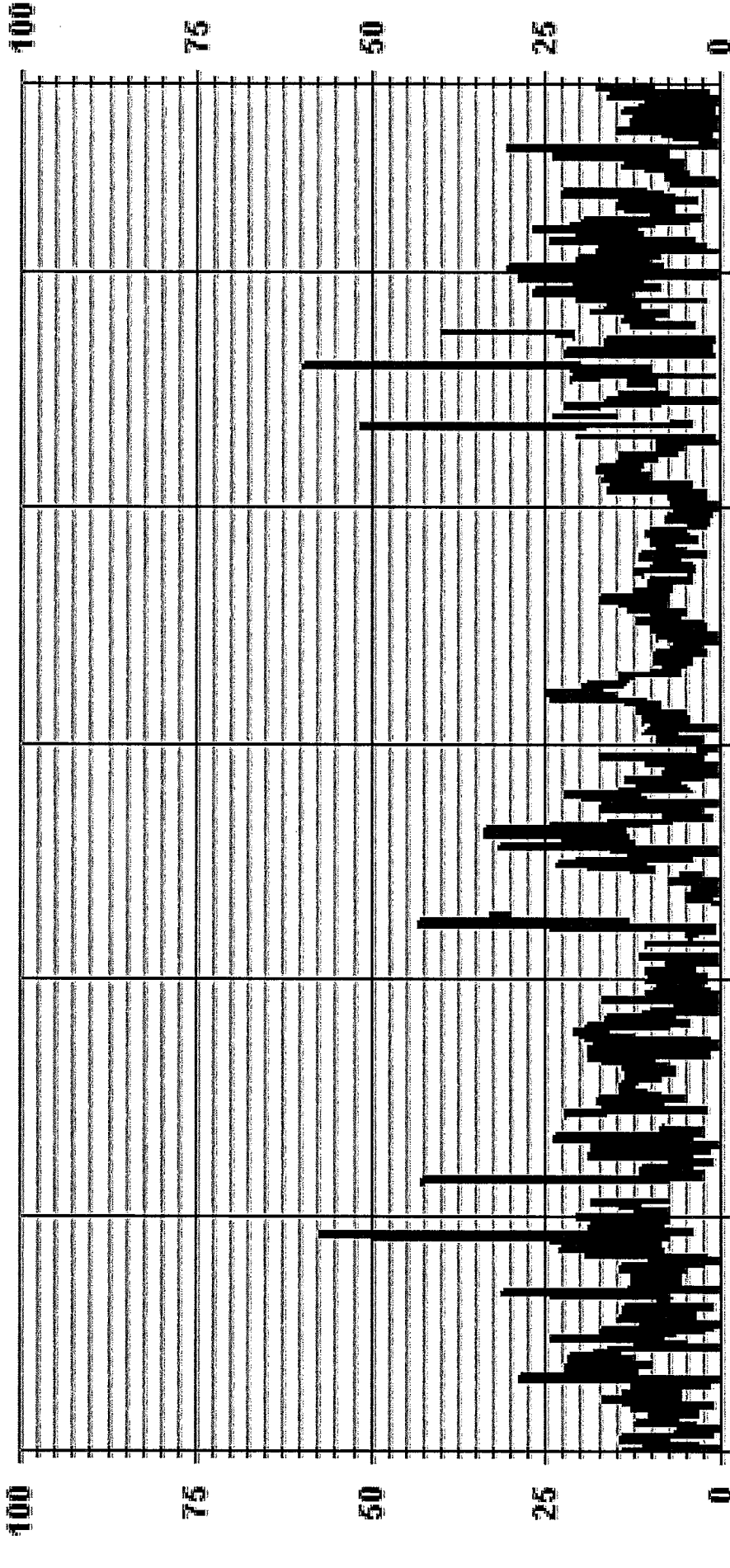
ALBERTA ENVIRONMENT: 24-HR 30 ug/m3

MONTHLY SUMMARY

| | |
|------------------------------|------------|
| NUMBER OF 24-HR EXCEEDENCES: | 0 |
| NUMBER OF NON-ZERO READINGS: | 602 |
| MINIMUM 1-HR AVERAGE: | 0 ug/m3 |
| MAXIMUM 1-HR AVERAGE: | 60 ug/m3 |
| MAXIMUM 24-HR AVERAGE: | 15.9 ug/m3 |
| MONTHLY CALIBRATION TIME: | 2 HRS |
| STANDARD DEVIATION: | 7.97 |
| OPERATIONAL TIME: | 644 HRS |
| AMD OPERATIONAL UPTIME: | 92.5 % |
| MONTHLY AVERAGE: | 10.3 ug/m3 |
| VAR | 24 |
| ON DAY(S) | 24 |
| ON DAY(S) | 24 |
| VAR-VARIOUS | |



01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA - - - PM2 . . . UGM3

LICA
PM2 / WD Joint Frequency Distribution (Percent)

February 2016

Distribution By % Of Samples

Logger Id : 01
Site Name : LICA
Parameter : PM2
Units : UG/M3

Wind Parameter : WD
Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|------|------|------|------|------|-------|------|------|------|------|-------|-------|------|------|------|-------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 30.0 | 2.18 | 4.04 | 8.41 | 4.98 | 7.63 | 7.32 | 10.90 | 2.64 | 2.33 | 2.33 | 6.07 | 19.93 | 11.05 | 3.11 | 3.11 | 1.40 | 97.50 |
| < 60.0 | .00 | .15 | .15 | .00 | .15 | .46 | .46 | .00 | .00 | .00 | .31 | .15 | .31 | .15 | .15 | .00 | 2.49 |
| < 80.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 120.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 240.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 240.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.18 | 4.20 | 8.56 | 4.98 | 7.78 | 7.78 | 11.37 | 2.64 | 2.33 | 2.33 | 6.38 | 20.09 | 11.37 | 3.27 | 3.27 | 1.40 | |

Calm : .00 %

Total # Operational Hours : 642

Distribution By Samples

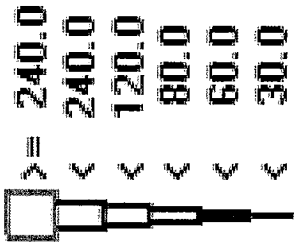
| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 30.0 | 14 | 26 | 54 | 32 | 49 | 47 | 70 | 17 | 15 | 15 | 39 | 128 | 71 | 20 | 20 | 9 | 626 |
| < 60.0 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 16 |
| < 80.0 | | | | | | | | | | | | | | | | | |
| < 120.0 | | | | | | | | | | | | | | | | | |
| < 240.0 | | | | | | | | | | | | | | | | | |
| >= 240.0 | | | | | | | | | | | | | | | | | |
| Totals | 14 | 27 | 55 | 32 | 50 | 50 | 73 | 17 | 15 | 15 | 41 | 129 | 73 | 21 | 21 | 9 | |

Calm : .00 %

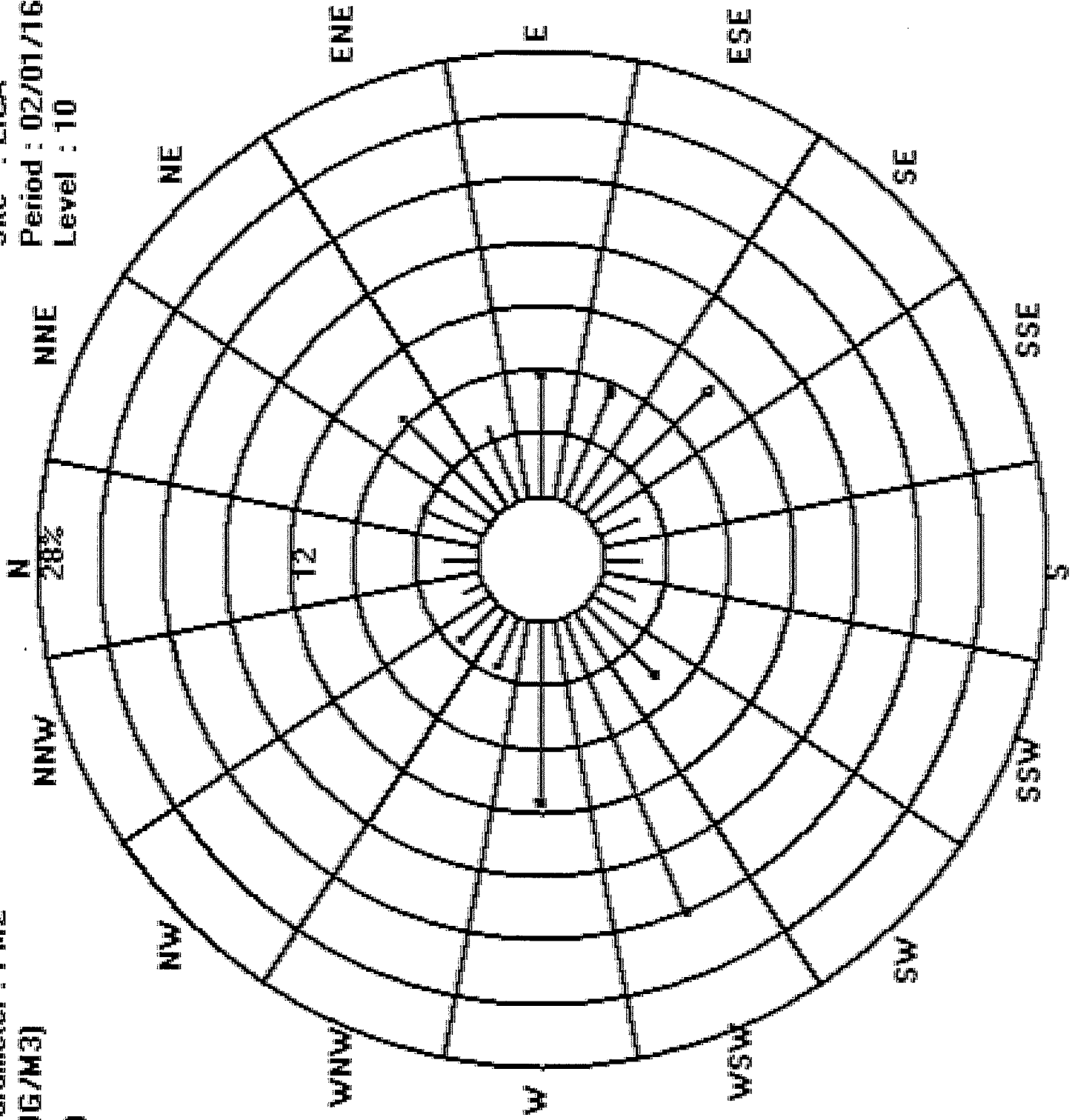
Total # Operational Hours : 642

Logger : 01 Parameter : PM2

Class Limits (UG/M3)



Site : LICA
Period : 02/01/16-02/29/16
Level : 10



WIND SPEED



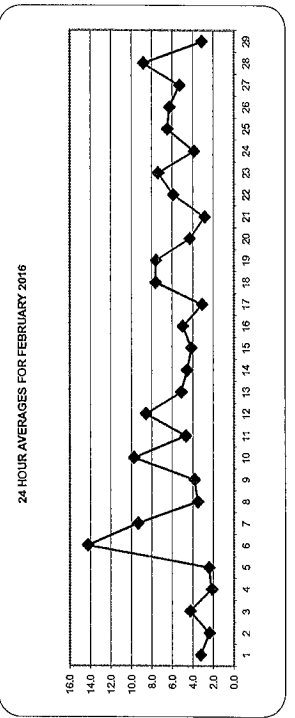
WIND SPEED (WS) hourly averages in km/hr

| MST DAY | WIND SPEED (WS) hourly averages in km/hr | | | | | | | | | | | | | | | | | | | | | | | | DAILY MAX | 24-HOUR AVG | RDGS | |
|------------|--|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|-------------|------|----|
| | 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 | | | | |
| 1 | 5.6 | 5.5 | 4.5 | 4.5 | 3.7 | 2.2 | 1.8 | 3.2 | 3.9 | 5.2 | 5.2 | 2.9 | 1.9 | 4.4 | 6.5 | 4.5 | 4.7 | 1.5 | 1.0 | 1.0 | 0.4 | 0.3 | 1.5 | 1.6 | 6.5 | 3.2 | 24 | |
| 2 | 1.6 | 2.7 | 3.2 | 3.8 | 4.2 | 2.6 | 0.5 | 0.3 | 0.5 | 1.2 | 1.9 | 2.7 | 4.8 | 4.0 | 4.9 | 6.1 | 3.9 | 1.3 | 0.8 | 1.0 | 0.9 | 0.3 | 0.7 | 2.8 | 6.1 | 2.4 | 24 | |
| 3 | 2.7 | 3.2 | 5.6 | 4.4 | 3.5 | 5.3 | 4.4 | 2.1 | 1.7 | 3.0 | 4.0 | 6.0 | 6.1 | 5.4 | 5.1 | 6.5 | 5.3 | 5.1 | 4.1 | 5.1 | 3.0 | 3.6 | 4.6 | 2.3 | 6.5 | 4.3 | 24 | |
| 4 | 2.0 | 1.5 | 0.6 | 0.3 | 0.4 | 0.5 | 0.9 | 0.4 | 0.6 | 1.0 | 3.6 | 3.1 | 4.0 | 4.3 | 3.5 | 4.1 | 3.2 | 0.9 | 4.6 | 5.1 | 4.5 | 0.9 | 0.3 | 1.0 | 5.1 | 2.1 | 24 | |
| 5 | 0.7 | 0.8 | 0.4 | 0.1 | 1.1 | 0.5 | 3.0 | 2.0 | 0.3 | 5.4 | 6.0 | 4.3 | 4.7 | 5.5 | 2.6 | 3.0 | 3.5 | 2.2 | 0.6 | 0.7 | 1.6 | 0.7 | 2.8 | 6.0 | 2.4 | 24 | | |
| 6 | 3.1 | 1.4 | 4.0 | 0.7 | 1.2 | 0.7 | 1.2 | 0.7 | 1.2 | 10.6 | 18.6 | 18.3 | 19.0 | 27.0 | 27.5 | 24.6 | 21.9 | 26.9 | 27.8 | 22.1 | 18.5 | 17.6 | 18.5 | 27.8 | 14.2 | 24 | | |
| 7 | 16.5 | 9.0 | 6.5 | 11.4 | 9.4 | 9.0 | 8.8 | 10.1 | 9.0 | 10.7 | 11.9 | 14.4 | 14.9 | 14.2 | 13.2 | 9.8 | 7.4 | 6.0 | 5.7 | 4.6 | 5.8 | 6.0 | 5.3 | 5.4 | 16.5 | 9.4 | 24 | |
| 8 | 2.6 | 4.0 | 4.3 | 3.9 | 0.7 | 2.0 | 0.8 | 0.3 | 0.7 | 1.6 | 3.2 | 5.7 | 7.7 | 7.0 | 7.2 | 6.2 | 4.3 | 4.9 | 4.3 | 4.2 | 1.8 | 2.5 | 3.5 | 0.9 | 7.7 | 3.5 | 24 | |
| 9 | 3.6 | 4.6 | 0.8 | 1.3 | 2.9 | 3.8 | 6.2 | 6.8 | 7.5 | 7.4 | 5.3 | 2.6 | 4.6 | 6.1 | 3.2 | 2.2 | 3.4 | 3.1 | 0.7 | 1.1 | 1.6 | 2.3 | 4.8 | 6.1 | 7.5 | 3.8 | 24 | |
| 10 | 6.0 | 5.6 | 9.7 | 13.8 | 8.3 | 14.8 | 14.2 | 10.4 | 9.4 | 10.4 | 10.9 | 11.7 | 13.2 | 11.6 | 11.3 | 9.5 | 7.1 | 8.3 | 6.9 | 6.0 | 8.0 | 9.7 | 8.6 | 8.9 | 14.8 | 9.8 | 24 | |
| 11 | 9.6 | 8.7 | 8.1 | 7.9 | 6.8 | 6.4 | 7.4 | 5.2 | 7.4 | 6.8 | 5.7 | 4.5 | 5.2 | 5.1 | 4.4 | 3.1 | 2.0 | 0.4 | 0.2 | 1.7 | 1.5 | 1.2 | 2.1 | 1.4 | 9.6 | 4.7 | 24 | |
| 12 | 2.8 | 5.4 | 4.7 | 4.4 | 6.0 | 5.8 | 6.8 | 5.6 | 5.8 | 9.3 | 9.3 | 8.5 | 9.5 | 14.2 | 11.2 | 12.9 | 14.7 | 12.3 | 8.6 | 7.0 | 9.2 | 12.7 | 10.6 | 9.1 | 14.7 | 8.6 | 24 | |
| 13 | 8.2 | 7.5 | 7.1 | 5.3 | 4.3 | 3.0 | 5.4 | 4.6 | 6.0 | 6.0 | 3.2 | 4.3 | 6.0 | 6.9 | 7.4 | 6.7 | 6.9 | 1.3 | 1.2 | 2.0 | 4.5 | 4.6 | 6.0 | 5.5 | 8.2 | 5.1 | 24 | |
| 14 | 4.2 | 1.2 | 0.4 | 0.0 | 1.1 | 0.3 | 0.6 | 2.0 | 4.9 | 4.8 | 5.3 | 6.0 | 8.3 | 10.0 | 10.1 | 9.1 | 7.5 | 4.7 | 3.7 | 4.2 | 5.7 | 5.3 | 5.6 | 4.5 | 10.1 | 4.6 | 24 | |
| 15 | 3.2 | 0.7 | 0.9 | 0.7 | 0.4 | 1.7 | 4.5 | 6.4 | 7.3 | 6.8 | 8.6 | 7.2 | 8.1 | 8.5 | 7.4 | 6.4 | 3.7 | 3.1 | 1.9 | 0.7 | 0.2 | 1.6 | 4.6 | 4.9 | 8.6 | 4.1 | 24 | |
| 16 | 6.5 | 4.7 | 4.0 | 5.1 | 5.9 | 6.2 | 3.8 | 6.0 | 6.3 | 6.8 | 8.2 | 7.9 | 6.6 | 6.0 | 7.4 | 7.1 | 3.9 | 3.8 | 5.6 | 3.2 | 2.1 | 1.5 | 0.5 | 0.8 | 8.2 | 5.0 | 24 | |
| 17 | 2.1 | 1.6 | 2.2 | 4.5 | 2.3 | 1.7 | 0.6 | 0.4 | 1.1 | 0.9 | 1.5 | 2.2 | 3.0 | 4.1 | 2.9 | 4.4 | 4.7 | 3.8 | 4.3 | 3.8 | 6.1 | 4.9 | 3.6 | 7.2 | 7.2 | 3.1 | 24 | |
| 18 | 10.0 | 9.1 | 9.4 | 11.8 | 9.6 | 10.2 | 8.5 | 9.3 | 8.2 | 8.5 | 8.5 | 9.3 | 7.7 | 8.1 | 8.5 | 7.4 | 6.4 | 3.7 | 3.1 | 1.9 | 0.7 | 0.2 | 1.6 | 4.6 | 4.9 | 8.6 | 4.1 | 24 |
| 19 | 4.2 | 3.2 | 3.9 | 9.6 | 15.5 | 15.5 | 13.3 | 12.8 | 13.6 | 11.5 | 9.2 | 8.0 | 7.5 | 7.6 | 6.6 | 5.8 | 5.1 | 3.3 | 4.5 | 3.0 | 2.4 | 2.2 | 6.6 | 8.0 | 15.5 | 7.6 | 24 | |
| 20 | 8.1 | 6.5 | 5.3 | 6.1 | 6.3 | 5.3 | 5.4 | 4.5 | 5.2 | 5.9 | 6.2 | 2.6 | 1.1 | 2.6 | 4.9 | 4.9 | 4.6 | 4.3 | 3.5 | 2.5 | 1.8 | 1.4 | 2.1 | 2.5 | 8.1 | 4.3 | 24 | |
| 21 | 2.7 | 2.6 | 2.5 | 1.6 | 0.4 | 0.4 | 1.1 | 2.5 | 1.2 | 2.9 | 3.3 | 4.9 | 6.8 | 7.4 | 7.5 | 6.8 | 4.4 | 0.7 | 1.7 | 1.1 | 0.9 | 0.4 | 0.6 | 3.2 | 7.5 | 2.8 | 24 | |
| 22 | 4.9 | 3.3 | 3.1 | 2.1 | 2.0 | 2.6 | 3.9 | 5.1 | 3.2 | 3.5 | 5.3 | 7.8 | 7.9 | 8.0 | 11.0 | 9.1 | 9.2 | 7.3 | 4.8 | 8.6 | 8.7 | 9.3 | 6.4 | 5.3 | 11.0 | 5.9 | 24 | |
| 23 | 5.8 | 5.6 | 6.5 | 6.7 | 7.0 | 7.1 | 6.8 | 5.9 | 7.6 | 9.2 | 9.1 | 8.7 | 9.0 | 10.9 | 16.2 | 13.4 | 8.5 | 6.9 | 4.9 | 3.6 | 4.6 | 5.2 | 4.0 | 4.9 | 16.2 | 7.4 | 24 | |
| 24 | 4.5 | 4.2 | 3.0 | 4.5 | 4.9 | 3.5 | 4.1 | 4.1 | 4.2 | 3.5 | 4.0 | 5.2 | 7.6 | 9.9 | 6.8 | 5.8 | 4.7 | 2.0 | 1.9 | 1.0 | 0.2 | 2.7 | 0.8 | 0.4 | 9.9 | 3.9 | 24 | |
| 25 | 1.3 | 0.5 | 1.3 | 2.2 | 2.5 | 6.6 | 5.8 | 4.6 | 8.4 | 7.6 | 9.9 | 11.4 | 11.3 | 10.3 | 10.3 | 9.0 | 6.2 | 6.3 | 6.7 | 5.5 | 6.3 | 5.3 | 11.4 | 6.5 | 24 | 6.3 | 24 | |
| 26 | 4.9 | 3.5 | 4.6 | 6.2 | 7.0 | 6.7 | 7.3 | 6.9 | 6.4 | 8.6 | 7.7 | 10.6 | 10.9 | 10.5 | 10.4 | 9.7 | 7.8 | 4.3 | 5.1 | 4.5 | 2.2 | 1.1 | 1.3 | 2.6 | 10.9 | 6.3 | 24 | |
| 27 | 3.5 | 3.2 | 4.7 | 5.5 | 6.3 | 3.3 | 2.8 | 4.2 | 6.8 | 7.3 | 6.9 | 8.0 | 8.6 | 9.1 | 9.1 | 9.7 | 8.1 | 6.2 | 4.6 | 1.7 | 0.3 | 1.0 | 2.2 | 4.5 | 9.7 | 5.3 | 24 | |
| 28 | 5.6 | 7.6 | 4.1 | 1.2 | 4.5 | 4.1 | 4.9 | 8.7 | 12.3 | 14.2 | 14.5 | 13.8 | 13.0 | 13.2 | 13.0 | 12.6 | 10.5 | 8.8 | 10.2 | 13.1 | 8.0 | 6.7 | 4.8 | 2.8 | 14.5 | 8.8 | 24 | |
| 29 | 1.3 | 2.0 | 4.0 | 6.5 | 3.1 | 0.5 | 0.2 | 1.4 | 2.2 | 6.5 | 4.3 | 2.5 | 3.6 | 3.9 | 5.3 | 4.3 | 5.8 | 2.5 | 3.6 | 2.6 | 2.5 | 2.8 | 2.1 | 2.0 | 6.5 | 3.1 | 24 | |
| HOURLY MAX | 16.5 | 9.1 | 9.7 | 13.8 | 15.5 | 15.5 | 14.2 | 12.8 | 13.6 | 14.2 | 18.6 | 18.3 | 19.0 | 27.0 | 27.5 | 24.6 | 21.9 | 24.3 | 26.9 | 27.8 | 22.1 | 18.5 | 17.6 | 18.5 | | | | |
| HOURLY AVG | 4.8 | 4.1 | 4.1 | 4.7 | 4.5 | 4.6 | 4.6 | 4.8 | 5.4 | 6.5 | 6.9 | 7.1 | 7.7 | 8.5 | 8.5 | 7.8 | 6.6 | 5.1 | 4.9 | 4.6 | 4.2 | 4.1 | 4.2 | 4.5 | | | | |

STATUS FLAG CODES

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

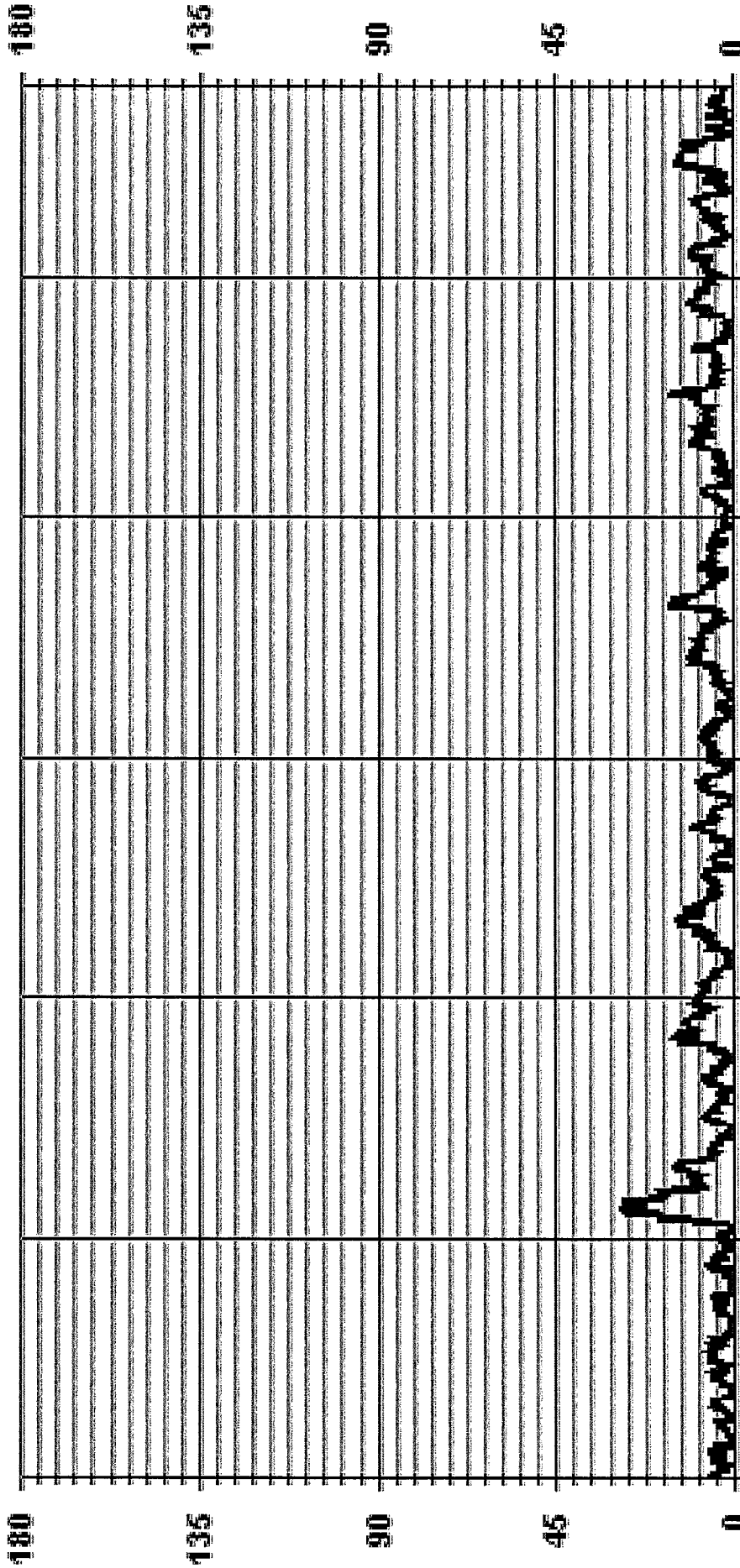
LAST CALIBRATION: April 1, 2015
 DECLINATION: MAGNETIC DECLINATION 19 DEGREE EAST



MONTHLY SUMMARY

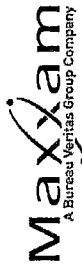
| | |
|------------------------------|----------|
| NUMBER OF NON-ZERO READINGS: | 695 |
| MINIMUM 1-HR AVERAGE: | 0.0 KPH |
| MAXIMUM 1-HR AVERAGE: | 27.8 KPH |
| MAXIMUM 24-HR AVERAGE: | 14.2 KPH |
| MONTHLY CALIBRATION TIME: | 0 HRS |
| STANDARD DEVIATION: | 4.16 |
| OPERATIONAL TIME: | 696 HRS |
| AMD OPERATION UPTIME: | 100.0 % |
| MONTHLY AVERAGE: | 5.5 KPH |
| ON DAY(S) | 14 |
| ON DAY(S) | 6 |
| ON DAY(S) | 6 |
| VAR-VARIOUS | |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA WSP KPH



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Cold Lake South Site - FEBRUARY 2016
JOB # 2833-2016-02-1-C

VECTOR WIND SPEED MAX Instantaneous maximum in km/hr

MST

| HOUR START | 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 | 24:00 | | | |
|------------|-------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|----|
| HOUR END | 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 | 24:59 | | | |
| DAY | RDDS. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 8.8 | 9.1 | 8.0 | 9.8 | 7.0 | 5.6 | 6.8 | 6.9 | 8.4 | 10.0 | 9.6 | 7.9 | 5.5 | 10.0 | 10.5 | 8.7 | 9.2 | 5.3 | 2.7 | 2.8 | 3.4 | 1.6 | 2.9 | 5.4 | 10.5 | 6.9 | 24 | |
| 2 | 5.0 | 5.0 | 5.5 | 7.3 | 7.8 | 5.4 | 1.8 | 2.3 | 2.3 | 3.1 | 4.5 | 5.7 | 8.3 | 7.5 | 9.2 | 9.7 | 5.7 | 5.7 | 4.5 | 3.7 | 3.6 | 2.8 | 3.2 | 6.1 | 9.7 | 5.1 | 24 | |
| 3 | 6.0 | 5.1 | 10.0 | 8.0 | 5.8 | 8.8 | 8.7 | 5.6 | 4.4 | 5.4 | 7.5 | 11.3 | 10.4 | 8.5 | 9.0 | 9.6 | 9.4 | 8.0 | 5.9 | 8.3 | 5.4 | 6.0 | 6.5 | 5.8 | 11.3 | 7.5 | 24 | |
| 4 | 5.2 | 5.8 | 2.6 | 2.6 | 2.7 | 2.9 | 3.3 | 3.6 | 2.2 | 5.2 | 5.9 | 9.1 | 8.8 | 9.9 | 6.7 | 7.2 | 6.0 | 5.1 | 9.3 | 9.3 | 7.3 | 5.4 | 3.8 | 4.1 | 9.9 | 5.6 | 24 | |
| 5 | 3.5 | 2.5 | 2.9 | 3.3 | 2.9 | 5.1 | 6.1 | 6.5 | 4.6 | 10.1 | 9.0 | 8.8 | 10.6 | 9.4 | 10.3 | 6.8 | 7.2 | 5.7 | 5.5 | 3.4 | 4.4 | 5.2 | 2.5 | 5.6 | 10.6 | 5.9 | 24 | |
| 6 | 7.3 | 5.1 | 8.5 | 4.7 | 5.0 | 3.4 | 5.3 | 6.7 | 12.9 | 19.0 | 28.7 | 27.0 | 28.3 | 38.3 | 41.1 | 32.6 | 41.6 | 46.5 | 47.4 | 46.5 | 47.4 | 32.3 | 32.2 | 29.3 | 28.0 | 47.4 | 23.8 | 24 |
| 7 | 28.2 | 18.0 | 12.9 | 15.1 | 13.3 | 14.9 | 14.3 | 16.5 | 13.1 | 15.5 | 18.2 | 21.3 | 24.7 | 20.1 | 21.5 | 17.5 | 12.0 | 8.0 | 8.5 | 7.8 | 8.1 | 8.5 | 6.8 | 7.4 | 28.2 | 14.7 | 24 | |
| 8 | 5.2 | 7.5 | 5.6 | 6.0 | 2.2 | 4.3 | 2.9 | 2.2 | 2.8 | 5.1 | 7.6 | 10.2 | 12.4 | 12.0 | 11.8 | 9.1 | 8.1 | 7.2 | 6.3 | 5.9 | 3.4 | 4.9 | 6.1 | 5.8 | 12.4 | 6.4 | 24 | |
| 9 | 6.8 | 7.6 | 4.4 | 3.3 | 5.2 | 7.6 | 8.7 | 10.9 | 10.5 | R | 10.4 | 6.7 | 9.2 | 9.9 | 5.8 | 5.3 | 6.6 | 6.3 | 5.8 | 5.4 | 3.8 | 4.0 | 6.9 | 10.1 | 10.9 | 7.0 | 23 | |
| 10 | 10.1 | 8.5 | 16.4 | 24.8 | 16.6 | 23.5 | 24.4 | 15.4 | 14.0 | 15.6 | 14.7 | 17.0 | 19.4 | 21.8 | 16.9 | 13.7 | 12.2 | 12.6 | 11.5 | 11.3 | 13.0 | 17.3 | 13.5 | 15.8 | 24.8 | 15.8 | 24 | |
| 11 | 14.8 | 16.7 | 13.1 | 12.9 | 11.2 | 11.4 | 13.1 | 8.0 | 12.2 | 13.0 | 9.8 | 9.4 | 9.4 | 8.8 | 7.4 | 8.0 | 4.4 | 5.0 | 5.7 | 4.4 | 4.5 | 5.3 | 4.7 | 5.0 | 16.7 | 9.1 | 24 | |
| 12 | 6.9 | 9.6 | 7.3 | 6.8 | 9.6 | 11.0 | 10.8 | 9.5 | 13.0 | 16.1 | 17.5 | 13.7 | 22.4 | 21.7 | 20.1 | 21.2 | 22.6 | 19.6 | 16.7 | 12.8 | 16.8 | 22.0 | 17.2 | 14.7 | 22.6 | 15.0 | 24 | |
| 13 | 14.7 | 15.2 | 13.0 | 9.4 | 7.6 | 5.5 | 8.4 | 9.3 | 7.5 | 8.3 | 7.9 | 8.9 | 9.8 | 11.3 | 11.3 | 13.3 | 13.8 | 4.0 | 3.2 | 5.7 | 7.0 | 6.5 | 8.0 | 7.1 | 15.2 | 9.0 | 24 | |
| 14 | 6.2 | 4.4 | 2.8 | 1.4 | 4.3 | 2.4 | 4.1 | 4.1 | 8.2 | 9.1 | 7.7 | 8.8 | 13.8 | 15.4 | 17.3 | 13.9 | 10.7 | 9.0 | 6.6 | 6.4 | 8.3 | 7.1 | 7.8 | 7.3 | 17.3 | 7.8 | 24 | |
| 15 | 5.5 | 3.9 | 2.8 | 3.3 | 2.5 | 4.6 | 7.0 | 10.7 | 10.2 | 13.3 | 12.7 | 11.8 | 11.0 | 11.4 | 12.3 | 10.9 | 8.3 | 11.7 | 11.2 | 6.5 | 6.4 | 5.2 | 5.5 | 3.2 | 13.3 | 9.4 | 24 | |
| 16 | 9.7 | 8.7 | 6.5 | 8.6 | 9.5 | 11.5 | 7.6 | 10.0 | 12.3 | 10.9 | 14.1 | 11.1 | 12.2 | 16.5 | 11.9 | 10.6 | 6.7 | 5.5 | 5.2 | 3.3 | 3.1 | 5.0 | 8.5 | 8.0 | 16.5 | 7.7 | 24 | |
| 17 | 9.6 | 4.6 | 4.9 | 6.3 | 4.8 | 4.1 | 5.0 | 2.9 | 4.8 | 4.9 | 5.8 | 7.0 | 5.6 | 7.6 | 5.5 | 9.1 | 10.3 | 6.3 | 9.1 | 6.3 | 9.5 | 7.0 | 5.9 | 13.4 | 13.4 | 6.7 | 24 | |
| 18 | 17.9 | 15.8 | 15.3 | 16.4 | 14.7 | 14.9 | 13.7 | 16.3 | 13.4 | 16.0 | 11.9 | 18.2 | 12.6 | 11.8 | 10.9 | 15.2 | 11.4 | 10.5 | 14.8 | 11.1 | 8.5 | 4.9 | 4.6 | 6.5 | 18.2 | 12.8 | 24 | |
| 19 | 6.8 | 5.2 | 6.1 | 16.8 | 28.9 | 22.7 | 19.6 | 19.5 | 18.0 | 18.1 | 14.9 | 12.6 | 13.4 | 13.5 | 11.2 | 9.9 | 8.3 | 7.6 | 7.8 | 6.1 | 5.0 | 7.6 | 10.0 | 14.4 | 28.9 | 12.7 | 24 | |
| 20 | 12.0 | 10.7 | 8.9 | 10.8 | 9.8 | 9.1 | 7.5 | 7.4 | 8.1 | 8.8 | 10.2 | 5.9 | 6.2 | 7.5 | 10.1 | 7.9 | 6.9 | 7.3 | 7.3 | 5.2 | 4.6 | 3.1 | 4.0 | 7.0 | 12.0 | 7.8 | 24 | |
| 21 | 5.3 | 4.8 | 3.8 | 3.3 | 1.8 | 2.6 | 5.6 | 5.4 | 4.4 | 5.9 | 6.5 | 9.0 | 10.9 | 12.1 | 10.7 | 10.3 | 8.1 | 3.2 | 3.0 | 2.6 | 3.5 | 3.6 | 4.3 | 5.0 | 12.1 | 5.7 | 24 | |
| 22 | 6.8 | 5.5 | 5.7 | 4.6 | 3.9 | 3.9 | 6.7 | 7.2 | 5.1 | 6.7 | 9.3 | 11.3 | 13.0 | 12.7 | 15.2 | 14.8 | 12.4 | 11.8 | 8.2 | 13.4 | 15.6 | 15.8 | 10.3 | 7.4 | 15.8 | 9.5 | 24 | |
| 23 | 7.8 | 7.6 | 8.4 | 9.5 | 9.0 | 10.1 | 10.2 | 8.4 | 11.3 | 13.0 | 13.6 | 13.3 | 15.5 | 14.8 | 17.2 | 22.9 | 15.9 | 10.8 | 9.1 | 6.1 | 8.2 | 9.6 | 6.3 | 7.6 | 27.2 | 11.5 | 24 | |
| 24 | 5.6 | 5.7 | 3.9 | 5.6 | 6.9 | 5.3 | 6.1 | 5.9 | 6.3 | 6.4 | 7.2 | 8.0 | 11.4 | 14.8 | 11.0 | 10.0 | 7.1 | 5.7 | 3.9 | 3.9 | 2.4 | 7.3 | 5.6 | 3.5 | 14.8 | 6.6 | 24 | |
| 25 | 3.3 | 2.4 | 2.9 | 5.4 | 6.4 | 12.1 | 11.6 | 8.9 | 13.1 | 12.5 | 16.0 | 14.3 | 17.1 | 15.1 | 14.3 | 13.2 | 14.4 | 13.0 | 11.7 | 11.8 | 9.6 | 7.5 | 10.3 | 7.5 | 17.1 | 10.6 | 24 | |
| 26 | 7.7 | 6.0 | 7.2 | 9.3 | 10.2 | 9.2 | 10.4 | 9.7 | 8.9 | 12.0 | 12.0 | 17.4 | 16.7 | 15.2 | 13.9 | 15.8 | 10.7 | 6.9 | 7.2 | 6.7 | 4.4 | 3.9 | 3.3 | 4.9 | 17.4 | 9.6 | 24 | |
| 27 | 6.4 | 5.1 | 8.7 | 8.7 | 10.8 | 8.5 | 5.1 | 8.8 | 12.4 | 11.5 | 11.3 | 10.9 | 11.8 | 14.3 | 14.9 | 14.6 | 14.2 | 9.9 | 10.0 | 3.7 | 4.1 | 3.1 | 6.1 | 8.0 | 14.9 | 9.3 | 24 | |
| 28 | 9.1 | 13.6 | 7.9 | 5.0 | 7.7 | 9.7 | 10.8 | 20.4 | 22.7 | 21.6 | 21.9 | 22.2 | 18.7 | 19.4 | 17.8 | 18.8 | 17.8 | 13.2 | 14.4 | 18.4 | 16.0 | 11.4 | 8.2 | 5.8 | 22.7 | 14.7 | 24 | |
| 29 | 3.9 | 4.3 | 7.6 | 10.3 | 7.1 | 3.1 | 3.1 | 3.2 | 7.9 | 10.1 | 8.1 | 5.9 | 7.1 | 7.7 | 9.3 | 9.9 | 11.0 | 4.9 | 9.2 | 6.3 | 6.5 | 5.5 | 5.0 | 4.6 | 11.0 | 6.7 | 24 | |
| HOURLY MAX | 28.2 | 18.0 | 16.4 | 24.8 | 28.9 | 23.5 | 24.4 | 20.4 | 22.7 | 21.6 | 28.7 | 27.0 | 28.3 | 38.3 | 39.3 | 41.1 | 32.6 | 41.6 | 46.5 | 47.4 | 46.5 | 47.4 | 32.2 | 29.3 | 28.0 | | | |
| HOURLY AVG | 8.5 | 7.7 | 7.4 | 8.3 | 8.1 | 8.4 | 8.6 | 8.7 | 9.5 | 11.0 | 11.5 | 11.9 | 13.0 | 13.8 | 13.6 | 13.1 | 11.2 | 9.3 | 9.3 | 8.5 | 7.9 | 7.9 | 7.5 | 8.1 | | | | |

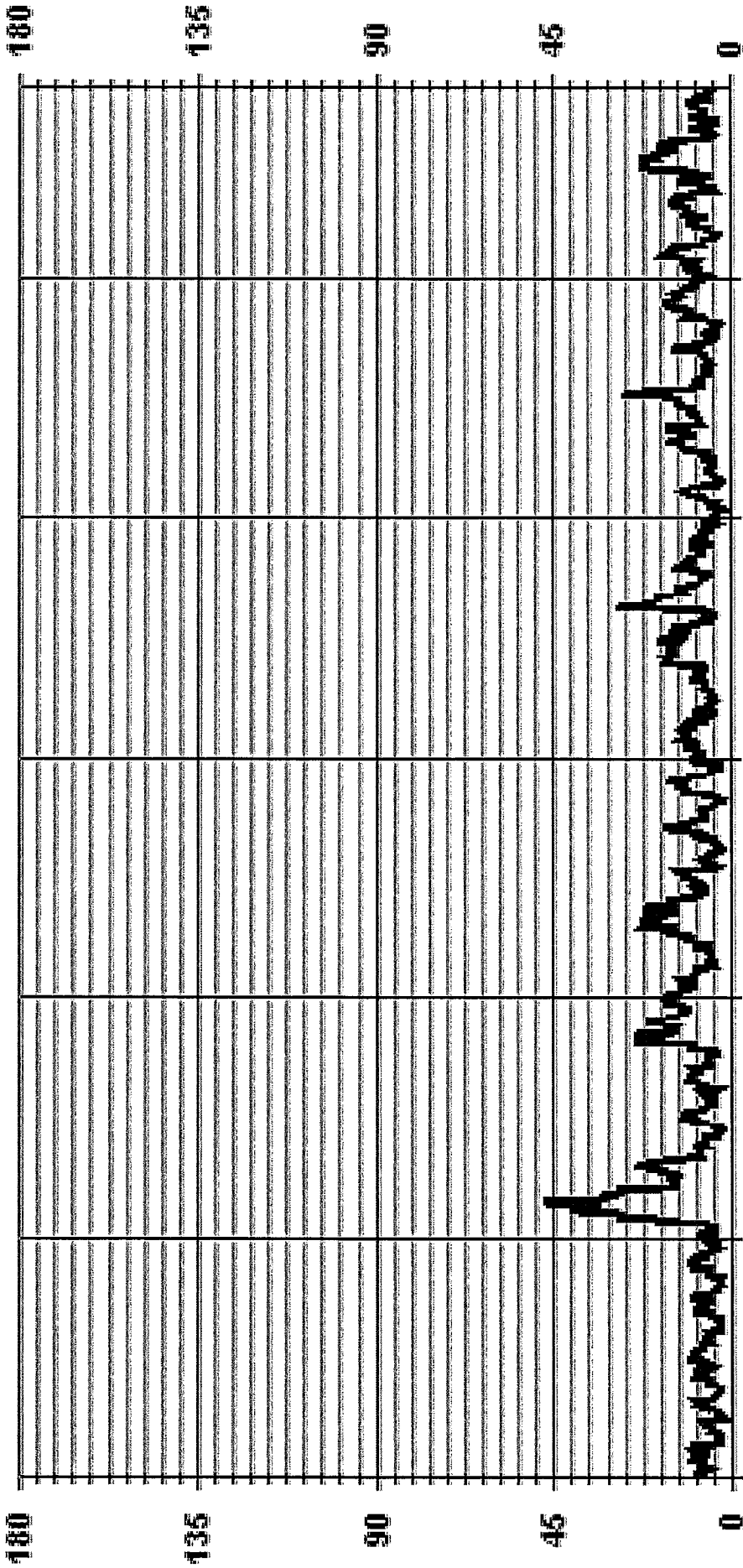
STATUS FLAG CODES

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

MONTHLY SUMMARY

| | | | | | | |
|------------------------------|------|-----|-----------|----|-----------|-----|
| MAXIMUM INSTANTANEOUS VALUE: | 47.4 | KPH | @ HOUR(S) | 19 | ON DAY(S) | 6 |
| OPERATIONAL TIME: | | | | | | 695 |
| VAR-VARIOUS | | | | | | HRS |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA WSMAX KPH

LICA
WSP / WD Joint Frequency Distribution (Percent)

February 2016

Distribution By % Of Samples

Logger Id : 01
Site Name : LICA
Parameter : WSP
Units : KPH

Wind Parameter : WD
Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | NNW | Freq | | |
|---------|-----------|------|------|------|------|------|-------|------|------|------|------|-------|-------|------|------|------|-------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | | | WNW | NW |
| < 6.0 | 1.29 | 1.72 | 4.02 | 3.87 | 3.87 | 5.31 | 6.03 | 2.15 | 2.01 | 2.01 | 4.74 | 12.50 | 7.32 | .86 | 1.14 | .71 | 59.62 |
| < 12.0 | .43 | 1.58 | 3.44 | .71 | 3.30 | 2.29 | 4.59 | .14 | .00 | .00 | 2.15 | 7.47 | 3.87 | 1.29 | .28 | .28 | 31.89 |
| < 20.0 | .14 | .57 | .86 | .28 | .00 | .00 | .71 | .00 | .00 | .00 | .00 | .00 | .14 | 1.00 | 1.14 | .28 | 5.17 |
| < 29.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .57 | .57 | .00 | 1.14 |
| < 39.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 39.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 1.86 | 3.87 | 8.33 | 4.88 | 7.18 | 7.61 | 11.35 | 2.29 | 2.01 | 2.01 | 6.89 | 19.97 | 11.35 | 3.73 | 3.16 | 1.29 | |

Calm : 2.15 %

Total # Operational Hours : 696

Distribution By Samples

| Limit | Direction | | | | | | | | | | | | | NNW | Freq | | |
|---------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|------|-----|-----|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | | | WNW | NW |
| < 6.0 | 9 | 12 | 28 | 27 | 27 | 37 | 42 | 15 | 14 | 14 | 33 | 87 | 51 | 6 | 8 | 5 | 415 |
| < 12.0 | 3 | 11 | 24 | 5 | 23 | 16 | 32 | 1 | | | 15 | 52 | 27 | 9 | 2 | 2 | 222 |
| < 20.0 | 1 | 4 | 6 | 2 | | | | | | | | | 1 | 7 | 8 | 2 | 36 |
| < 29.0 | | | | | | | | | | | | | | 4 | 4 | | 8 |
| < 39.0 | | | | | | | | | | | | | | | | | |
| >= 39.0 | | | | | | | | | | | | | | | | | |
| Totals | 13 | 27 | 58 | 34 | 50 | 53 | 79 | 16 | 14 | 14 | 48 | 139 | 79 | 26 | 22 | 9 | |

Calm : 2.15 %

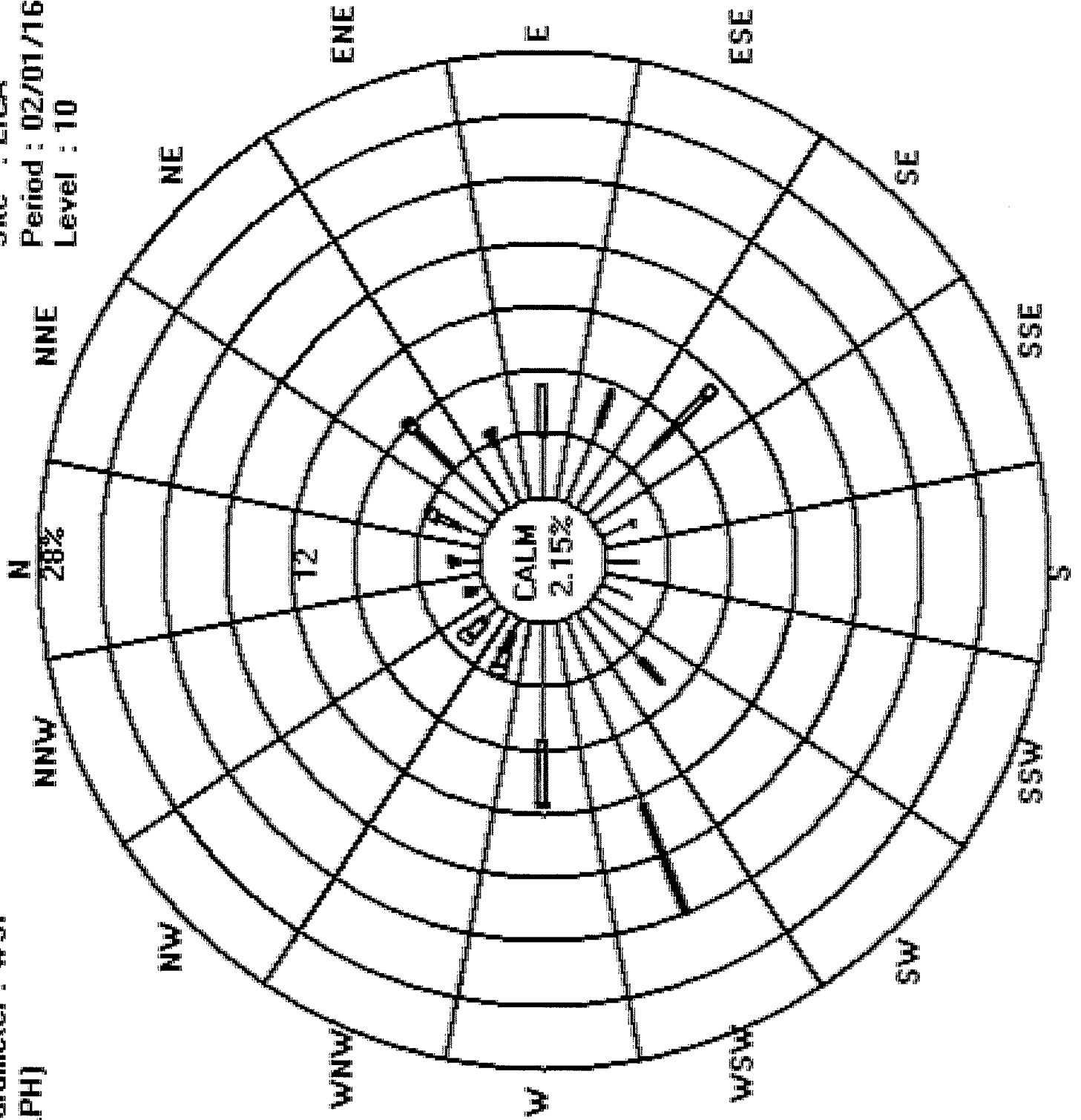
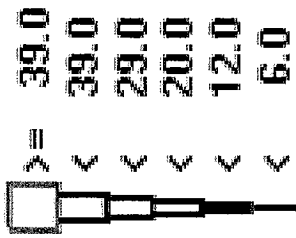
Total # Operational Hours : 696

Logger : 01 Parameter : WSP

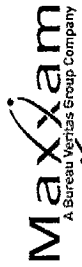
Site : LICA

Class Limits (KPH)

Period : 02/01/16-02/29/16
Level : 10



WIND DIRECTION



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Cold Lake South Site - FEBRUARY 2016
JOB # 2833-2016-02-1 - C

WIND DIRECTION (WD) hourly averages

| DAY | 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 | | |
|-----|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|-----|----|
| HR | 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 | | |
| 1 | ENE | N | N | NE | N | NNE | N | NNW | N | N | E | ENE | WSW | WSW | SW | WSW | SW | SSE | SSE | ESE | ENE | E | ESE | ENE | NNE | 24 | |
| 2 | ESE | ESE | SE | SE | SE | SSW | W | NNW | W | W | W | W | WSW | WSW | WSW | WSW | WSW | W | W | WSW | SW | SW | SW | W | W | SW | 24 |
| 3 | W | NW | NW | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | 24 |
| 4 | E | NE | SE | ESE | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | 24 |
| 5 | S | ESE | SSW | WSW | ENE | NE | E | S | ESE | SSW | SE | SE | ESE | E | ESE | E | ESE | E | ESE | E | ESE | ESE | ESE | ESE | ESE | ESE | 24 |
| 6 | SE | SSE | SE | NE | E | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | 24 |
| 7 | NW | WNW | WNW | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | 24 |
| 8 | SW | WSW | WSW | SW | W | SSW | ESE | SE | ESE | SE | SE | SE | W | WSW | WSW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | 24 |
| 9 | WSW | WSW | SSE | ESE | E | ESE | E | SE | ESE | E | SE | SE | W | WSW | WSW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | 24 |
| 10 | NNW | NNW | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | 24 |
| 11 | ESE | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | 24 |
| 12 | E | ESE | ESE | ESE | E | ESE | E | ESE | E | ESE | E | ESE | E | ESE | E | ESE | E | ESE | E | ESE | E | ESE | ESE | ESE | ESE | ESE | 24 |
| 13 | SE | SE | E | ESE | E | ESE | E | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | 24 |
| 14 | WSW | WSW | ESE | SE | WNW | WSW | WSW | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | 24 |
| 15 | W | E | ENE | E | N | ENE | E | N | ENE | E | N | ENE | E | N | ENE | E | N | ENE | E | N | ENE | E | N | ENE | E | N | 24 |
| 16 | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | 24 |
| 17 | ENE | S | SW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | 24 |
| 18 | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | 24 |
| 19 | NNE | NNE | NW | NW | NW | NW | NW | NNW | NW | NW | NNW | NNW | NNW | NNW | NNW | NNW | NNW | NNW | NNW | NNW | NNW | NNW | NNW | NNW | NNW | NNW | 24 |
| 20 | NE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | 24 |
| 21 | S | SSE | SSE | SSE | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | 24 |
| 22 | WSW | W | W | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | 24 |
| 23 | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | 24 |
| 24 | W | W | W | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | 24 |
| 25 | SSE | SE | ESE | SE | SE | SW | SW | SSW | SW | SW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | 24 |
| 26 | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | 24 |
| 27 | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | 24 |
| 28 | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | 24 |
| 29 | ENE | NE | ENE | E | ESE | NW | N | NE | E | SE | SE | E | E | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | 24 |

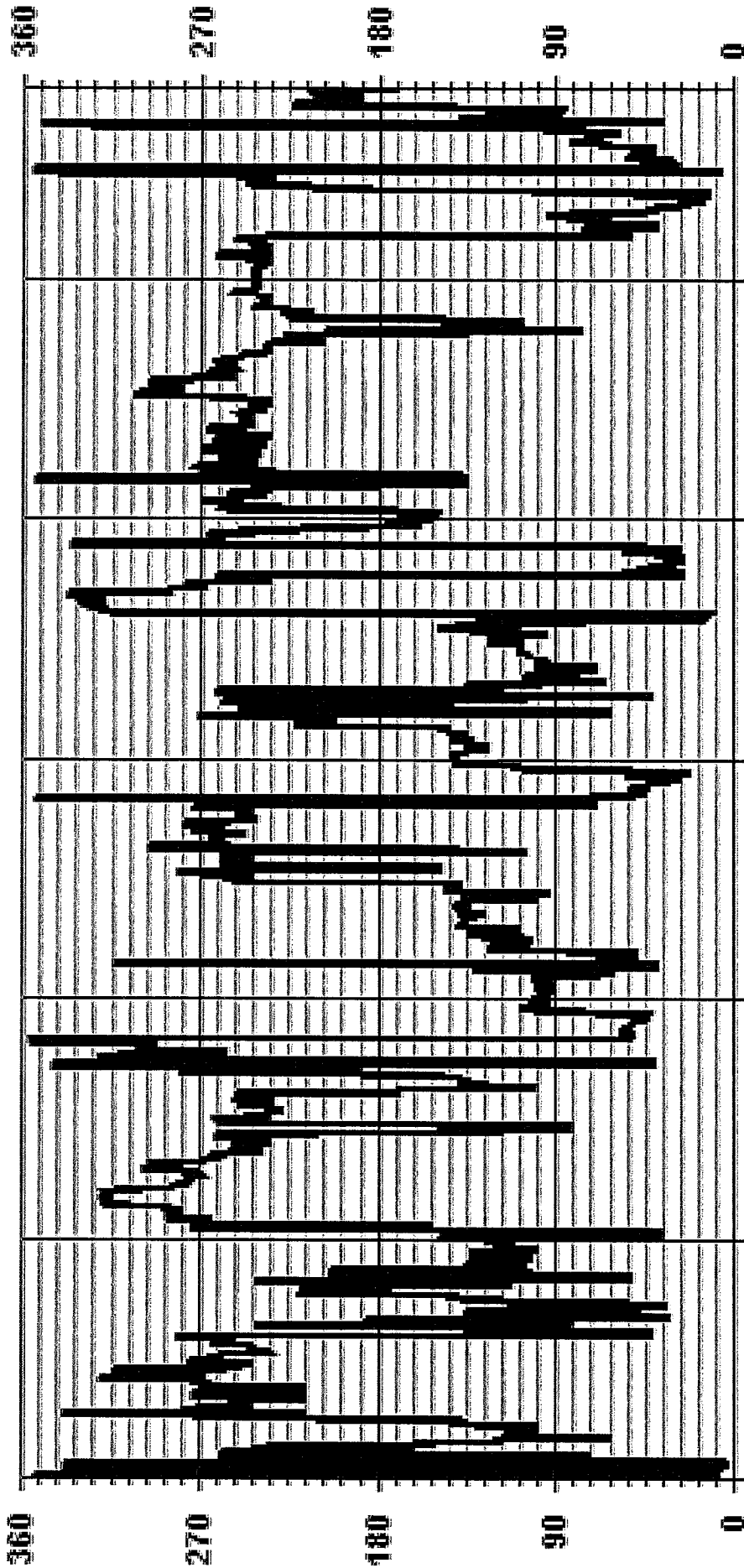
STATUS FLAG CODES

| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | O | QUALITY ASSURANCE |
| CL | REPAIR CALIBRATION | R | RECOVERY |
| M | MAINTENANCE | M | MACHINE MALFUNCTION |
| S | DAILY ZERO/SPAN CHECK | C | COUNTER REPAIR |
| SS | REPAIR ZERO/SPAN CHECK | P | POWER FAILURE |

LAST CALIBRATION: April 1, 2015
DECLINATION: MAGNETIC DECLINATION 19 DEGREE EAST

MONTHLY CALIBRATION TIME: 0 HRS
STANDARD DEVIATION: 90.72
OPERATIONAL TIME: 696 HRS
MONTHLY AVERAGE: 100.0 %
AMD OPERATION UPTIME: WSW

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA - - - WDR . . . DEG

STANDARD DEVIATION WIND DIRECTION



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Cold Lake South Site - FEBRUARY 2016
JOB # 2833-2016-02-1-C

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST

| DAY | 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 |
|-----|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 18 | 16 | 17 | 20 | 23 | 36 | 30 | 23 | 17 | 28 | 21 | 33 | 60 | 34 | 21 | 22 | 22 | 30 | 30 | 30 | 40 | 66 | 29 | 30 |
| 2 | 37 | 24 | 19 | 17 | 17 | 56 | 63 | 56 | 48 | 29 | 41 | 21 | 27 | 23 | 18 | 17 | 40 | 38 | 51 | 71 | 53 | 32 | 21 | 21 |
| 3 | 18 | 17 | 13 | 19 | 17 | 15 | 19 | 31 | 24 | 25 | 20 | 22 | 22 | 22 | 23 | 19 | 18 | 17 | 15 | 13 | 16 | 16 | 12 | 20 |
| 4 | 26 | 38 | 50 | 57 | 40 | 48 | 54 | 46 | 46 | 42 | 20 | 44 | 33 | 29 | 29 | 23 | 26 | 51 | 21 | 20 | 22 | 44 | 50 | 37 |
| 5 | 55 | 57 | 52 | 63 | 38 | 72 | 27 | 24 | 49 | 14 | 16 | 24 | 21 | 21 | 21 | 47 | 29 | 22 | 33 | 41 | 50 | 56 | 54 | 22 |
| 6 | 23 | 64 | 29 | 45 | 39 | 77 | 55 | 62 | 52 | 18 | 19 | 20 | 21 | 20 | 20 | 20 | 20 | 18 | 14 | 15 | 16 | 16 | 15 | 15 |
| 7 | 14 | 19 | 19 | 19 | 17 | 17 | 19 | 18 | 17 | 17 | 18 | 19 | 19 | 20 | 21 | 18 | 17 | 13 | 12 | 11 | 9 | 9 | 9 | 9 |
| 8 | 29 | 15 | 11 | 16 | 48 | 27 | 50 | 48 | 26 | 52 | 21 | 20 | 21 | 20 | 17 | 17 | 20 | 13 | 12 | 11 | 24 | 24 | 16 | 56 |
| 9 | 11 | 14 | 17 | 22 | 18 | 17 | 18 | 18 | 17 | 17 | 18 | 18 | 18 | 23 | 21 | 25 | 28 | 22 | 23 | 62 | 49 | 32 | 22 | 12 |
| 10 | 16 | 14 | 17 | 22 | 18 | 17 | 18 | 18 | 17 | 17 | 18 | 18 | 18 | 18 | 19 | 18 | 19 | 18 | 20 | 21 | 22 | 18 | 21 | 19 |
| 11 | 20 | 19 | 19 | 18 | 18 | 20 | 19 | 23 | 19 | 21 | 22 | 27 | 24 | 22 | 21 | 25 | 51 | 52 | 78 | 41 | 49 | 39 | 35 | 40 |
| 12 | 36 | 23 | 22 | 24 | 21 | 21 | 22 | 24 | 25 | 19 | 20 | 22 | 22 | 15 | 19 | 17 | 15 | 16 | 20 | 22 | 18 | 15 | 16 | 15 |
| 13 | 17 | 19 | 19 | 22 | 24 | 23 | 19 | 16 | 17 | 13 | 45 | 29 | 20 | 20 | 18 | 21 | 20 | 24 | 37 | 50 | 13 | 13 | 10 | 10 |
| 14 | 9 | 61 | 60 | 60 | 46 | 79 | 57 | 21 | 15 | 16 | 19 | 18 | 18 | 19 | 18 | 19 | 14 | 12 | 14 | 12 | 9 | 11 | 13 | 13 |
| 15 | 29 | 52 | 45 | 58 | 59 | 31 | 18 | 18 | 19 | 19 | 17 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 40 | 53 | 61 | 43 | 23 | 18 |
| 16 | 15 | 22 | 24 | 16 | 16 | 22 | 24 | 18 | 19 | 21 | 17 | 17 | 20 | 20 | 20 | 14 | 28 | 30 | 25 | 35 | 47 | 45 | 50 | 39 |
| 17 | 36 | 44 | 29 | 14 | 29 | 40 | 68 | 51 | 29 | 56 | 37 | 26 | 25 | 23 | 24 | 19 | 19 | 19 | 21 | 18 | 18 | 16 | 13 | 19 |
| 18 | 20 | 20 | 20 | 19 | 23 | 22 | 23 | 22 | 24 | 23 | 23 | 24 | 22 | 23 | 21 | 19 | 23 | 23 | 21 | 17 | 22 | 28 | 18 | 14 |
| 19 | 16 | 16 | 16 | 12 | 13 | 14 | 14 | 15 | 14 | 16 | 15 | 22 | 29 | 22 | 27 | 23 | 21 | 21 | 19 | 29 | 21 | 40 | 18 | 17 |
| 20 | 18 | 20 | 19 | 17 | 19 | 18 | 18 | 18 | 19 | 17 | 19 | 50 | 38 | 47 | 24 | 20 | 19 | 18 | 19 | 26 | 42 | 38 | 31 | 37 |
| 21 | 36 | 32 | 29 | 35 | 53 | 43 | 38 | 38 | 26 | 24 | 24 | 26 | 20 | 20 | 19 | 17 | 43 | 16 | 38 | 26 | 52 | 37 | 19 | 19 |
| 22 | 11 | 18 | 16 | 20 | 28 | 12 | 13 | 13 | 18 | 17 | 21 | 21 | 19 | 19 | 17 | 19 | 17 | 16 | 22 | 16 | 16 | 16 | 13 | 13 |
| 23 | 12 | 10 | 11 | 13 | 13 | 13 | 14 | 12 | 16 | 15 | 16 | 18 | 20 | 20 | 17 | 19 | 19 | 18 | 20 | 18 | 17 | 16 | 16 | 11 |
| 24 | 11 | 13 | 11 | 7 | 9 | 9 | 11 | 10 | 18 | 22 | 23 | 18 | 18 | 18 | 21 | 19 | 17 | 16 | 17 | 47 | 30 | 29 | 49 | 66 |
| 25 | 52 | 64 | 23 | 30 | 45 | 24 | 21 | 32 | 18 | 18 | 19 | 17 | 19 | 19 | 18 | 18 | 18 | 17 | 16 | 16 | 18 | 14 | 15 | 16 |
| 26 | 17 | 20 | 15 | 15 | 15 | 14 | 15 | 14 | 16 | 16 | 20 | 19 | 19 | 19 | 18 | 15 | 18 | 15 | 11 | 14 | 30 | 34 | 45 | 18 |
| 27 | 21 | 14 | 16 | 21 | 34 | 23 | 21 | 24 | 18 | 19 | 23 | 19 | 19 | 19 | 20 | 17 | 18 | 19 | 21 | 31 | 41 | 49 | 37 | 20 |
| 28 | 17 | 18 | 20 | 41 | 18 | 21 | 15 | 16 | 20 | 19 | 19 | 19 | 19 | 19 | 19 | 18 | 18 | 20 | 19 | 16 | 15 | 17 | 21 | 24 |
| 29 | 52 | 35 | 24 | 22 | 31 | 56 | 65 | 38 | 44 | 21 | 28 | 42 | 37 | 30 | 23 | 32 | 28 | 36 | 33 | 38 | 40 | 51 | 46 | 36 |

STATUS FLAG CODES

| | | | |
|----|------------------------|----|---------------------|
| C | MONTHLY CALIBRATION | C | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION | R | RECOVERY |
| Y | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | OUT FOR REPAIR |
| 51 | REPEAT ZERO/SPAN CHECK | PF | POWER FAILURE |

LAST CALIBRATION:

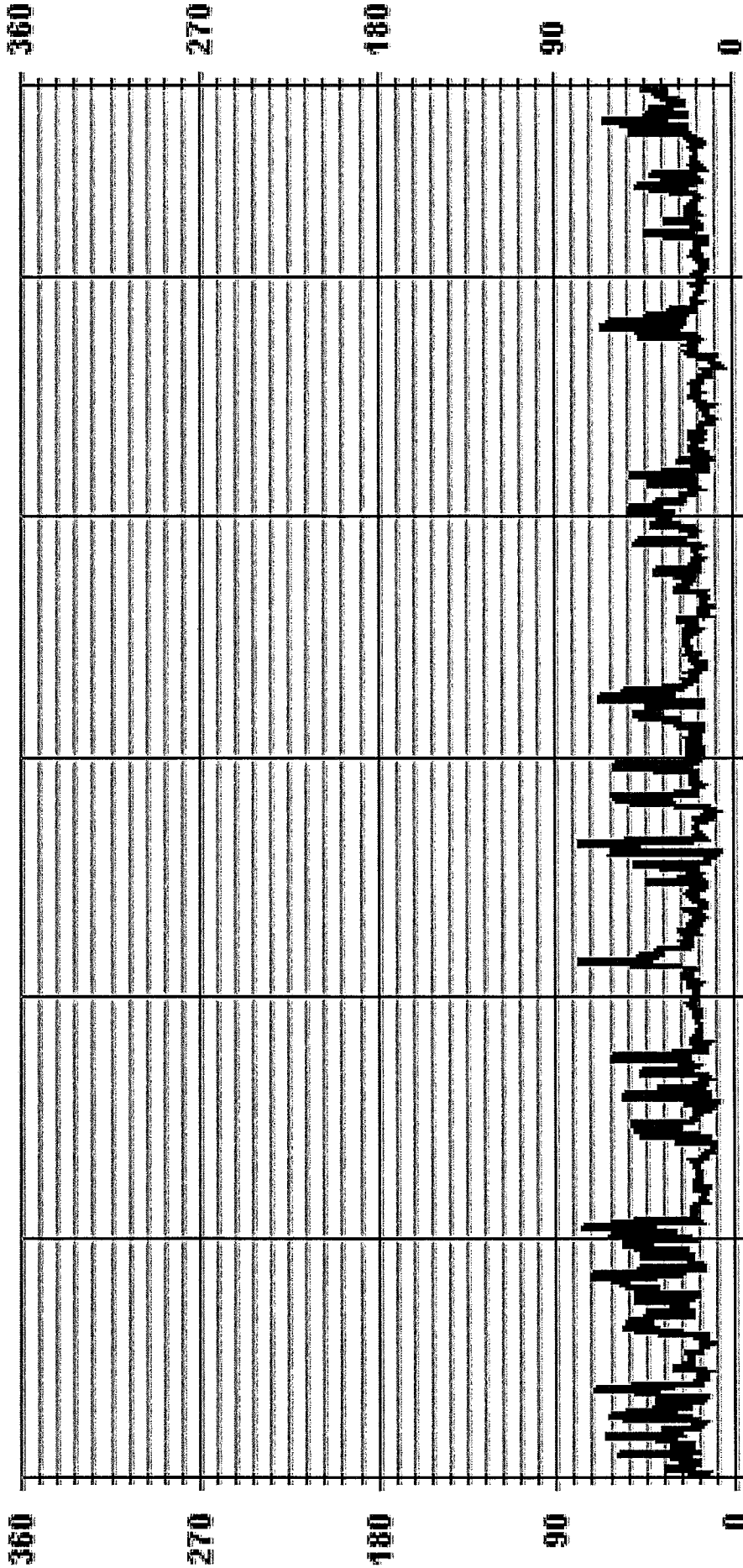
April 1, 2015

CALIBRATION TIME:

0 HRS

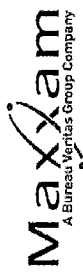
OPERATIONAL TIME: 696 HRS

01 Hour Averages



— LICA STOWDIR DEG

RELATIVE HUMIDITY



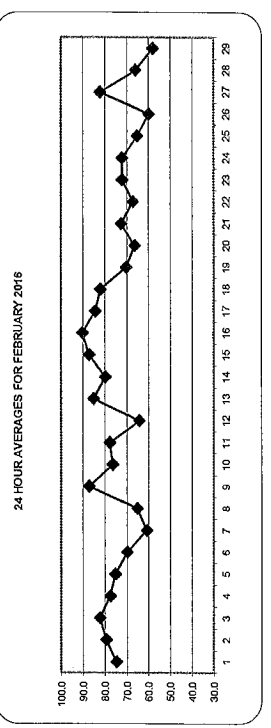
RELATIVE HUMIDITY (RH) hourly averages in %

MST

| DAY | 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 | 24:00 | | |
|-------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| HR START | 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 | | | |
| HR END | 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 | 24:00 | | | |
| 1 | 77 | 74 | 74 | 76 | 78 | 78 | 77 | 76 | 74 | 72 | 75 | 72 | 70 | 67 | 66 | 69 | 68 | 71 | 76 | 81 | 82 | 80 | 81 | 82 | 82 | 82 | |
| 2 | 81 | 82 | 82 | 83 | 82 | 83 | 83 | 83 | 83 | 81 | 79 | 75 | 74 | 70 | 66 | 69 | 72 | 76 | 79 | 82 | 84 | 84 | 85 | 86 | 86 | 86 | |
| 3 | 86 | 86 | 86 | 85 | 85 | 82 | 80 | 82 | 82 | 85 | 83 | 79 | 75 | 78 | 76 | 79 | 80 | 80 | 84 | 84 | 84 | 83 | 84 | 84 | 87 | 84 | |
| 4 | 86 | 84 | 81 | 77 | 77 | 77 | 77 | 77 | 76 | 75 | 77 | 75 | 72 | 70 | 72 | 76 | 79 | 80 | 78 | 78 | 78 | 77 | 77 | 78 | 82 | 86 | |
| 5 | 83 | 82 | 80 | 79 | 81 | 83 | 85 | 85 | 83 | 83 | 79 | 71 | 67 | 63 | 62 | 60 | 65 | 64 | 68 | 75 | 77 | 77 | 76 | 75 | 85 | 75.1 | |
| 6 | 74 | 76 | 79 | 84 | 83 | 86 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | |
| 7 | 65 | 66 | 69 | 70 | 70 | 72 | 73 | 71 | 69 | 63 | 59 | 42 | 40 | 47 | 58 | 62 | 63 | 64 | 62 | 64 | 61 | 65 | 70 | 70 | 73 | 60.7 | |
| 8 | 71 | 72 | 71 | 70 | 72 | 74 | 74 | 73 | 74 | 66 | 54 | 52 | 51 | 48 | 45 | 44 | 46 | 51 | 60 | 64 | 67 | 71 | 73 | 73 | 76 | 65.0 | |
| 9 | 77 | 78 | 87 | 90 | 94 | 95 | 96 | 97 | 97 | 96 | 94 | 88 | 77 | 74 | 72 | 80 | 87 | 90 | 90 | 87 | 87 | 91 | 94 | 97 | 97 | 87.0 | |
| 10 | 91 | 90 | 85 | 78 | 76 | 81 | 79 | 81 | 80 | 79 | 76 | 74 | 71 | 72 | 72 | 80 | 87 | 90 | 90 | 87 | 87 | 91 | 94 | 97 | 97 | 87.0 | |
| 11 | 78 | 79 | 79 | 80 | 80 | 79 | 78 | 79 | 79 | 76 | 75 | 75 | 76 | 75 | 72 | 73 | 78 | 82 | 83 | 81 | 81 | 79 | 79 | 78 | 83 | 77.7 | |
| 12 | 79 | 74 | 74 | 74 | 74 | 75 | 76 | 74 | 71 | 69 | 68 | 63 | 55 | 51 | 48 | 47 | 49 | 50 | 53 | 54 | 58 | 61 | 67 | 79 | 64.2 | 85.0 | |
| 13 | 81 | 82 | 83 | 83 | 83 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | |
| 14 | 88 | 86 | 84 | 83 | 83 | 83 | 83 | 82 | 86 | 86 | 81 | 77 | 75 | 67 | 64 | 61 | 60 | 68 | 79 | 82 | 86 | 88 | 91 | 91 | 91 | 79.7 | |
| 15 | 90 | 88 | 87 | 88 | 88 | 90 | 91 | 90 | 88 | 88 | 88 | 89 | 86 | 84 | 84 | 83 | 86 | 87 | 88 | 88 | 88 | 89 | 90 | 91 | 92 | 85.0 | |
| 16 | 88 | 91 | 91 | 91 | 92 | 91 | 92 | 93 | 93 | 93 | 92 | 92 | 86 | 83 | 87 | 89 | 89 | 88 | 88 | 88 | 89 | 91 | 92 | 92 | 92 | 93 | 90.2 |
| 17 | 93 | 92 | 90 | 89 | 87 | 86 | 85 | 84 | 84 | 85 | 88 | 88 | 85 | 82 | 76 | 75 | 76 | 79 | 79 | 81 | 81 | 83 | 87 | 87 | 87 | 84.3 | |
| 18 | 88 | 88 | 87 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | |
| 19 | 93 | 96 | 98 | 97 | 83 | 74 | 71 | 71 | 70 | 67 | 64 | 60 | 58 | 56 | 55 | 53 | 54 | 58 | 62 | 64 | 65 | 67 | 72 | 80 | 98 | 70.3 | |
| 20 | 82 | 78 | 79 | 80 | 79 | 77 | 75 | 75 | 73 | 68 | 65 | 58 | 53 | 49 | 48 | 55 | 58 | 61 | 62 | 63 | 63 | 65 | 66 | 68 | 68 | 66.3 | |
| 21 | 89 | 71 | 76 | 76 | 77 | 77 | 78 | 76 | 70 | 68 | 67 | 66 | 63 | 61 | 57 | 56 | 65 | 76 | 80 | 83 | 84 | 85 | 84 | 85 | 84 | 72.5 | |
| 22 | 83 | 84 | 86 | 84 | 83 | 82 | 82 | 85 | 84 | 73 | 63 | 57 | 53 | 49 | 46 | 45 | 50 | 58 | 62 | 63 | 61 | 63 | 67 | 86 | 67.2 | 86.0 | |
| 23 | 70 | 73 | 72 | 73 | 74 | 76 | 77 | 80 | 73 | 65 | 58 | 53 | 49 | 46 | 48 | 66 | 86 | 86 | 85 | 86 | 83 | 81 | 83 | 87 | 87 | 72.1 | |
| 24 | 90 | 88 | 87 | 90 | 89 | 88 | 86 | 86 | 86 | 77 | 67 | 58 | 53 | 49 | 46 | 48 | 66 | 86 | 86 | 85 | 86 | 83 | 81 | 83 | 87 | 72.1 | |
| 25 | 81 | 79 | 82 | 84 | 81 | 71 | 70 | 70 | 70 | 66 | 60 | 57 | 54 | 51 | 48 | 48 | 51 | 55 | 59 | 63 | 64 | 66 | 67 | 68 | 84 | 65.2 | |
| 26 | 67 | 69 | 70 | 69 | 67 | 68 | 68 | 68 | 64 | 57 | 50 | 44 | 42 | 41 | 42 | 43 | 45 | 51 | 57 | 59 | 68 | 73 | 77 | 74 | 77 | 59.7 | |
| 27 | 70 | 72 | 69 | 71 | 79 | 90 | 95 | 96 | 93 | 92 | 91 | 89 | 86 | 86 | 84 | 80 | 77 | 76 | 78 | 77 | 78 | 79 | 80 | 81 | 96 | 82.0 | |
| 28 | 84 | 85 | 85 | 84 | 86 | 89 | 84 | 83 | 74 | 67 | 58 | 51 | 46 | 48 | 45 | 44 | 44 | 48 | 51 | 51 | 55 | 55 | 57 | 62 | 89 | 65.9 | |
| 29 | 68 | 72 | 71 | 65 | 66 | 70 | 73 | 73 | 67 | 57 | 51 | 46 | 42 | 39 | 35 | 31 | 40 | 51 | 55 | 60 | 62 | 64 | 65 | 67 | 73 | 57.9 | |
| 30 | 93 | 96 | 98 | 97 | 94 | 95 | 96 | 97 | 97 | 96 | 94 | 88 | 77 | 74 | 72 | 80 | 87 | 90 | 90 | 87 | 87 | 91 | 94 | 97 | 97 | 87.0 | |
| 31 | 80.4 | 80.6 | 80.7 | 80.5 | 80.6 | 80.8 | 81.0 | 81.1 | 79.9 | 76.0 | 72.9 | 69.1 | 65.8 | 62.3 | 60.8 | 61.1 | 63.9 | 67.6 | 71.3 | 73.4 | 75.3 | 76.5 | 77.7 | 79.0 | | | |
| HOURLY MAX | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HOURLY AVG | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DAILY MAX | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DAILY AVG | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24-HOUR AVG | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STATUS FLAG CODES

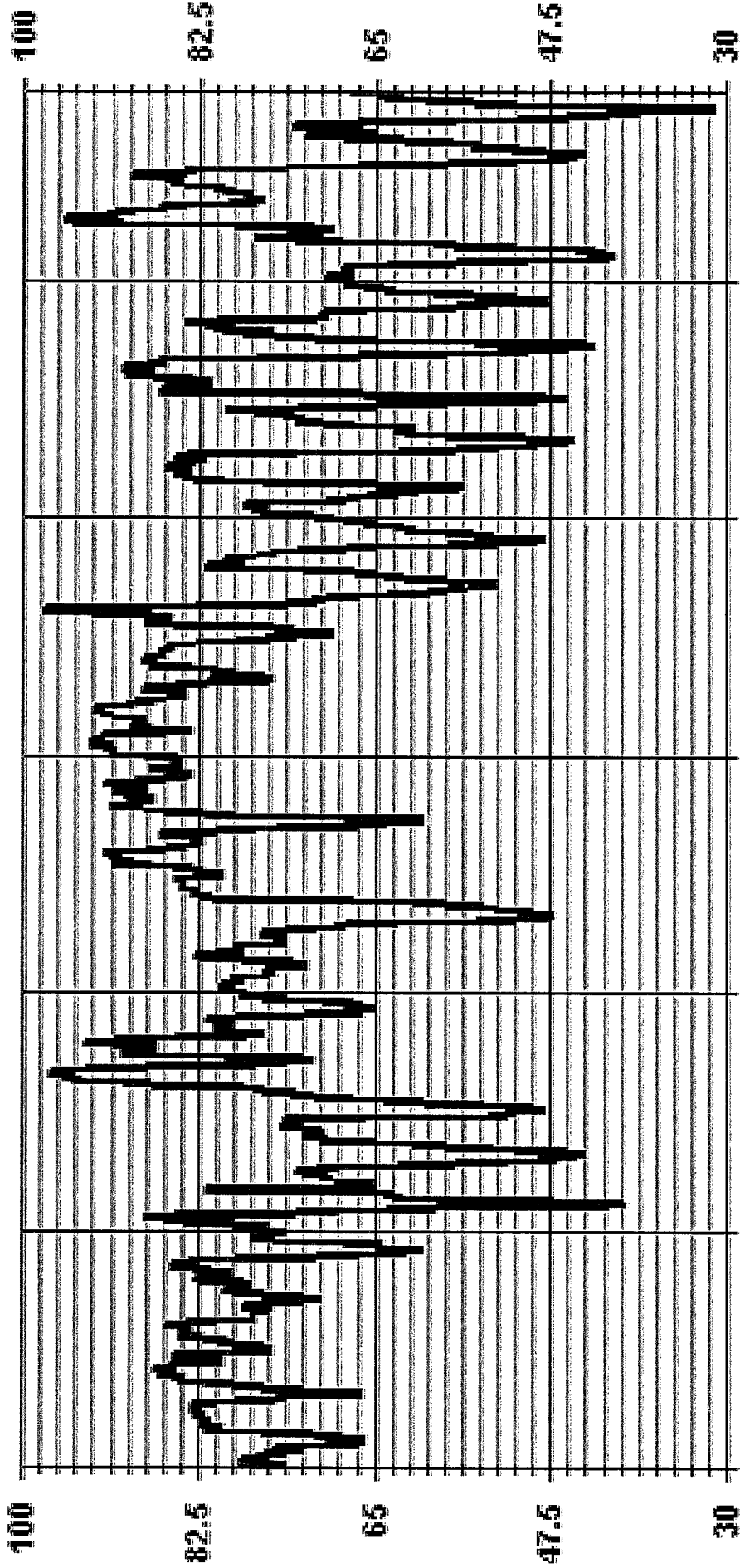
| | | | |
|----|------------------------|---|--------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CI | REPEAT CALIBRATION | R | RECOVERY |
| Y | MAINTENANCE | V | MACHINEMANFUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | OUT FOR REPAIR |
| S1 | REPEAT ZERO/SPAN CHECK | P | POWER FAILURE |



MONTHLY SUMMARY

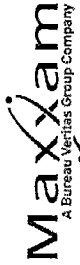
| | | | | | | |
|------------------------|-------|-----|-----------|----|-------------|----|
| MINIMUM 1-HR AVERAGE: | 31 | % | @ HOUR(S) | 15 | ON DAY(S) | 29 |
| MAXIMUM 1-HR AVERAGE: | 98 | % | @ HOUR(S) | 2 | ON DAY(S) | 19 |
| MAXIMUM 24-HR AVERAGE: | 90.2 | % | | | VAR-VARIOUS | 16 |
| STANDARD DEVIATION: | 12.96 | | | | | |
| OPERATIONAL TIME: | 696 | HRS | | | | |
| AMID OPERATION UPTIME: | 100.0 | % | | | | |
| MONTHLY AVERAGE: | 74 | % | | | | |

01 Hour Averages



— LICA RH %FS

AMBIENT TEMPERATURE



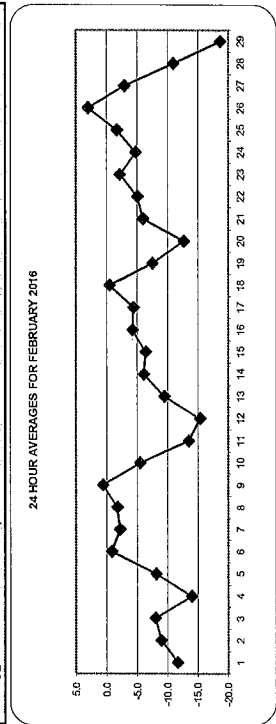
AMBIENT TEMPERATURE (AmbTPX) hourly averages in Degrees Celsius

MST

| DAY | 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. | | | |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|-------|-------|----|
| 1 | -10.3 | -10.5 | -10.7 | -11.2 | -11.9 | -11.9 | -11.7 | -11.7 | -11.7 | -11.8 | -12.3 | -11.8 | -11.0 | -10.0 | -9.9 | -9.6 | -9.9 | -10.3 | -11.8 | -14.2 | -15.0 | -15.1 | -14.0 | -12.4 | -9.6 | -11.7 | 24 | |
| 2 | -11.3 | -11.0 | -10.9 | -10.8 | -10.6 | -10.9 | -11.2 | -11.2 | -11.1 | -10.6 | -9.5 | -8.1 | -7.5 | -6.1 | -5.0 | -5.1 | -5.9 | -6.6 | -7.2 | -8.4 | -9.3 | -9.5 | -9.6 | -9.0 | -5.0 | -9.0 | 24 | |
| 3 | -8.7 | -8.5 | -8.0 | -7.8 | -7.7 | -7.7 | -7.8 | -7.8 | -7.8 | -7.8 | -7.8 | -7.8 | -7.8 | -7.8 | -7.8 | -7.8 | -7.8 | -7.8 | -7.8 | -7.8 | -7.8 | -7.8 | -7.8 | -7.8 | -7.8 | -7.8 | 24 | |
| 4 | -14.3 | -15.4 | -16.6 | -18.6 | -18.7 | -18.6 | -18.7 | -19.2 | -19.6 | -20.2 | -17.0 | -14.7 | -13.4 | -12.0 | -11.3 | -10.7 | -11.0 | -11.7 | -11.4 | -10.8 | -10.4 | -10.2 | -9.6 | -9.5 | -11.3 | -9.5 | -14.0 | 24 |
| 5 | -13.9 | -15.5 | -16.4 | -16.9 | -15.0 | -12.7 | -11.0 | -11.4 | -12.2 | -10.4 | -8.2 | -6.2 | -4.6 | -3.5 | -2.8 | -1.7 | -2.1 | -2.3 | -3.7 | -5.8 | -6.1 | -5.7 | -4.5 | -3.7 | -1.7 | -8.2 | 24 | |
| 6 | -3.5 | -4.0 | -4.0 | -4.6 | -3.9 | -3.0 | -3.4 | -3.7 | -3.9 | -3.9 | -4.1 | -3.0 | -1.7 | -0.4 | 0.2 | 0.5 | 1.2 | 1.7 | 0.8 | -0.6 | -1.2 | -2.3 | -3.3 | -4.2 | -5.8 | -6.1 | -2.2 | 24 |
| 7 | -1.4 | -2.2 | -3.0 | -3.0 | -3.4 | -3.7 | -3.9 | -4.1 | -4.1 | -4.1 | -4.1 | -4.1 | -4.1 | -4.1 | -4.1 | -4.1 | -4.1 | -4.1 | -4.1 | -4.1 | -4.1 | -4.1 | -4.1 | -4.1 | -4.1 | -4.1 | -2.2 | 24 |
| 8 | -5.7 | -5.7 | -5.2 | -4.9 | -4.9 | -5.0 | -4.6 | -4.3 | -4.3 | -4.3 | -4.3 | -4.3 | -4.3 | -4.3 | -4.3 | -4.3 | -4.3 | -4.3 | -4.3 | -4.3 | -4.3 | -4.3 | -4.3 | -4.3 | -4.3 | -4.3 | -1.8 | 24 |
| 9 | -0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -1.8 | 24 |
| 10 | 1.1 | 1.2 | 1.2 | 0.5 | 0.1 | -2.0 | -3.7 | -4.6 | -5.1 | -5.5 | -5.7 | -6.1 | -6.6 | -7.0 | -7.4 | -7.5 | -7.8 | -7.9 | -8.1 | -8.4 | -9.1 | -10.3 | 0.0 | -0.4 | 0.6 | 0.6 | 0.6 | 24 |
| 11 | -12.3 | -12.6 | -12.9 | -13.1 | -13.2 | -13.4 | -13.6 | -13.6 | -13.6 | -13.6 | -13.6 | -13.6 | -13.6 | -13.6 | -13.6 | -13.6 | -13.6 | -13.6 | -13.6 | -13.6 | -13.6 | -13.6 | -13.6 | -13.6 | -13.6 | -13.6 | -13.6 | 24 |
| 12 | -17.3 | -16.3 | -17.5 | -18.4 | -18.8 | -19.4 | -19.9 | -20.5 | -20.3 | -19.0 | -17.3 | -15.4 | -13.2 | -11.7 | -11.3 | -11.3 | -11.8 | -12.1 | -12.6 | -13.1 | -13.2 | -13.1 | -13.0 | -13.0 | -11.3 | -15.4 | 24 | |
| 13 | -13.3 | -13.2 | -13.1 | -13.8 | -14.4 | -14.4 | -14.1 | -14.0 | -13.7 | -13.0 | -10.4 | -8.5 | -7.8 | -6.3 | -4.8 | -3.1 | -2.1 | -3.8 | -6.2 | -8.3 | -8.0 | -7.6 | -7.5 | -6.7 | -2.1 | -9.5 | 24 | |
| 14 | -10.5 | -11.8 | -12.8 | -13.6 | -14.7 | -14.9 | -14.8 | -14.7 | -11.7 | -6.5 | -2.6 | -0.7 | 0.0 | 1.8 | 2.7 | 3.5 | 3.1 | 0.2 | -2.9 | -4.0 | -4.3 | -5.1 | -5.0 | -7.2 | 3.5 | -6.1 | 24 | |
| 15 | -8.7 | -8.6 | -8.2 | -7.4 | -6.6 | -5.8 | -5.7 | -6.5 | -7.5 | -7.3 | -6.6 | -5.2 | -4.9 | -5.1 | -5.3 | -5.6 | -6.0 | -6.4 | -6.2 | -6.0 | -6.1 | -6.2 | -6.3 | -6.4 | -6.4 | -6.4 | 24 | |
| 16 | -6.6 | -6.7 | -6.3 | -6.1 | -6.1 | -6.1 | -6.3 | -6.4 | -6.4 | -6.3 | -5.9 | -5.1 | -3.9 | -2.9 | -2.3 | -1.7 | -1.0 | -0.9 | -1.2 | -1.2 | -1.2 | -1.7 | -2.1 | -4.3 | -5.4 | -4.3 | 24 | |
| 17 | -4.5 | -5.7 | -8.0 | -8.6 | -9.5 | -11.1 | -12.3 | -12.6 | -11.4 | -7.8 | -5.0 | -2.3 | -1.3 | -0.4 | 0.7 | 0.9 | 0.4 | -0.1 | 0.0 | -0.2 | -0.4 | -1.3 | -2.7 | -2.6 | 0.9 | -4.4 | 24 | |
| 18 | -2.4 | -2.0 | -1.7 | -1.9 | -1.9 | -1.8 | -1.9 | -2.0 | -1.9 | -1.7 | -0.9 | 0.0 | 1.0 | 1.9 | 2.3 | 1.3 | 0.6 | 0.5 | 0.4 | 0.0 | 0.0 | 0.0 | -0.2 | -0.5 | 2.3 | -0.5 | 24 | |
| 19 | -0.8 | -0.8 | -0.8 | -0.5 | -0.7 | -3.3 | -5.2 | -6.9 | -9.4 | -10.6 | -10.6 | -10.2 | -9.8 | -9.5 | -9.1 | -8.5 | -8.6 | -9.7 | -10.8 | -10.9 | -10.9 | -10.7 | -10.8 | -11.8 | -0.5 | -7.5 | 24 | |
| 20 | -12.7 | -13.3 | -13.8 | -14.2 | -14.6 | -14.9 | -15.2 | -16.3 | -16.5 | -15.5 | -14.7 | -13.1 | -11.7 | -10.4 | -10.1 | -10.6 | -10.9 | -11.2 | -11.5 | -11.4 | -11.3 | -11.0 | -10.5 | -9.9 | -9.9 | -12.7 | 24 | |
| 21 | -9.5 | -9.1 | -8.9 | -8.6 | -8.3 | -8.5 | -8.3 | -8.4 | -8.3 | -8.3 | -8.3 | -8.3 | -8.3 | -8.3 | -8.3 | -8.3 | -8.3 | -8.3 | -8.3 | -8.3 | -8.3 | -8.3 | -8.3 | -8.3 | -8.3 | -8.3 | -6.0 | 24 |
| 22 | -9.1 | -11.0 | -12.9 | -13.7 | -14.1 | -14.8 | -15.1 | -12.4 | -9.6 | -5.5 | -2.6 | -0.7 | 0.3 | 1.6 | 1.4 | 2.6 | 2.6 | 1.3 | -1.0 | -1.6 | -1.5 | -1.0 | -1.8 | -3.1 | 2.6 | -5.1 | 24 | |
| 23 | -3.3 | -4.5 | -4.0 | -4.4 | -4.7 | -5.2 | -5.5 | -6.3 | -5.1 | -3.6 | -1.7 | -0.1 | 1.6 | 3.1 | 2.7 | 0.8 | -0.6 | -0.7 | -0.9 | -1.2 | -1.1 | -1.4 | -2.5 | -3.6 | 3.1 | -2.2 | 24 | |
| 24 | -5.0 | -4.3 | -5.3 | -7.4 | -8.0 | -9.3 | -10.8 | -11.4 | -9.0 | -5.2 | -2.5 | -0.5 | 0.5 | 0.8 | 1.9 | 2.3 | 2.2 | -0.4 | -3.7 | -5.7 | -7.4 | -8.3 | -8.0 | -9.8 | 2.3 | -4.8 | 24 | |
| 25 | -9.6 | -8.0 | -8.6 | -8.9 | -7.3 | -4.5 | -3.7 | -3.8 | -3.9 | -2.6 | -1.3 | -0.6 | 0.4 | 1.8 | 3.5 | 4.6 | 4.4 | 3.3 | 1.9 | 0.8 | 0.7 | 0.0 | 0.0 | -0.1 | 4.6 | -1.7 | 24 | |
| 26 | 0.2 | -0.6 | -0.9 | -0.9 | -0.9 | -1.7 | -1.6 | -1.7 | -0.8 | 1.2 | 3.7 | 6.7 | 8.5 | 9.4 | 9.3 | 9.0 | 8.5 | 6.8 | 5.0 | 4.7 | 3.2 | 1.9 | 1.4 | 1.8 | 9.4 | 3.0 | 24 | |
| 27 | 2.6 | 2.2 | 2.4 | 1.9 | 0.6 | -0.1 | -0.3 | -0.5 | -1.2 | -1.4 | 2.4 | -3.4 | -3.9 | -4.8 | -4.8 | -5.3 | -6.4 | -6.8 | -7.1 | -7.0 | -6.9 | -6.6 | -6.1 | -5.0 | 2.6 | -2.9 | 24 | |
| 28 | -4.6 | -4.6 | -4.6 | -3.8 | -3.5 | -3.6 | -3.4 | -3.5 | -3.6 | -3.5 | -3.6 | -3.5 | -3.6 | -3.5 | -3.6 | -3.5 | -3.6 | -3.5 | -3.6 | -3.5 | -3.6 | -3.5 | -3.6 | -3.5 | -3.6 | -3.4 | -11.0 | 24 |
| 29 | -22.8 | -24.3 | -23.9 | -23.6 | -24.4 | -26.6 | -28.1 | -28.5 | -24.9 | -22.3 | -20.5 | -18.0 | -16.0 | -14.3 | -13.0 | -11.6 | -12.1 | -12.7 | -13.2 | -13.2 | -13.7 | -13.8 | -13.6 | -13.5 | -11.6 | -18.7 | 24 | |
| HOURLY MAX | 2.6 | 2.2 | 2.4 | 1.9 | 0.6 | 0.0 | 0.0 | -0.4 | -0.6 | 1.2 | 3.7 | 6.7 | 8.5 | 9.4 | 9.3 | 9.0 | 8.5 | 6.8 | 5.0 | 4.7 | 3.2 | 1.9 | 1.4 | 1.8 | | | | |
| HOURLY AVG | -7.5 | -7.8 | -8.1 | -8.4 | -8.6 | -8.9 | -9.2 | -9.4 | -9.1 | -7.8 | -6.4 | -5.2 | -4.3 | -3.5 | -3.1 | -2.9 | -3.4 | -4.3 | -5.4 | -6.2 | -6.5 | -6.8 | -7.1 | -7.4 | | | | |

STATUS FLAG CODES

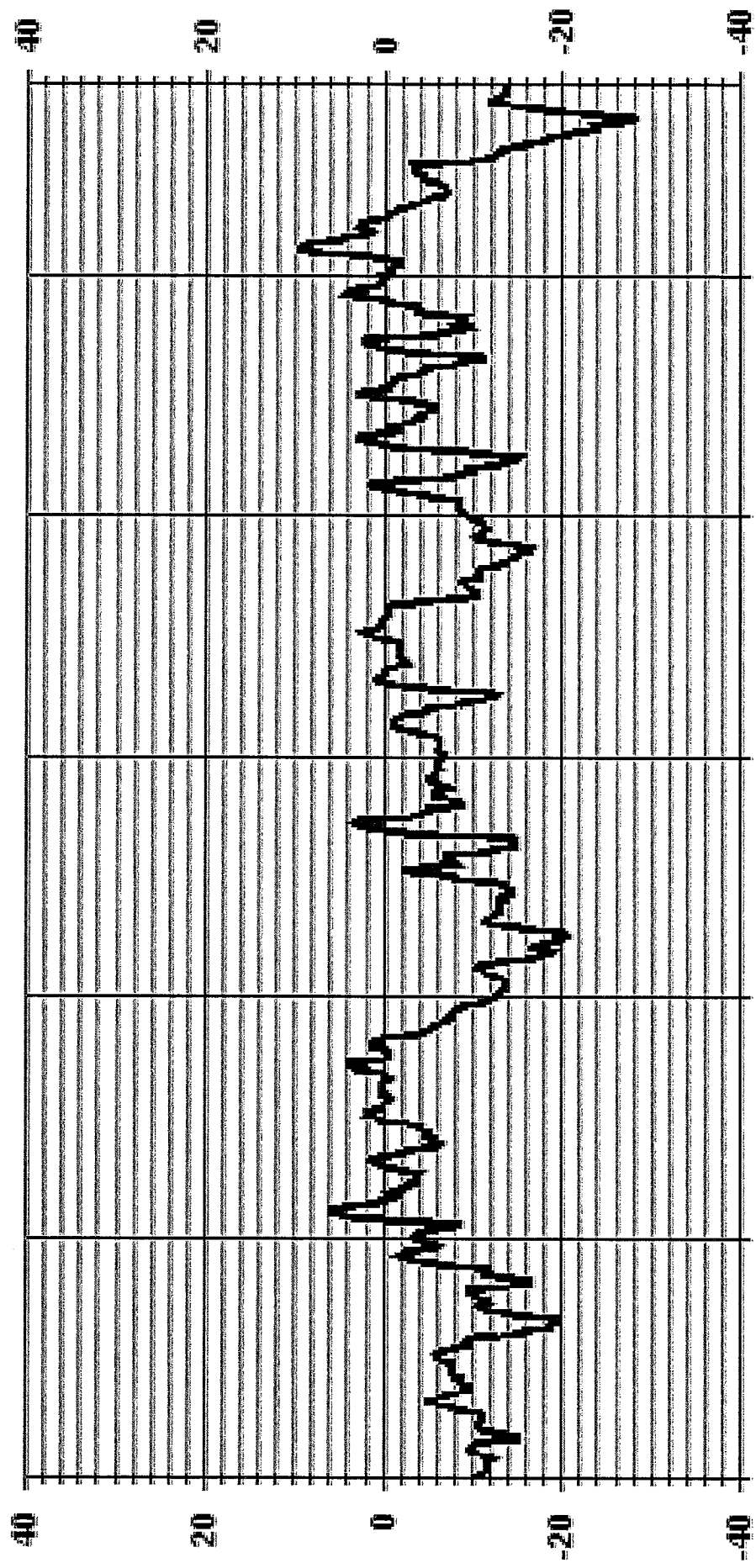
| | | | |
|----|--------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION | R | RECOVERY |
| M | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | - DAILY ZERO/SPAN CHECK | G | - OUT FOR REPAIR |
| S1 | - REPEAT ZERO/SPAN CHECK | P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



MONTHLY SUMMARY

| | | | | | | |
|------------------------|-------|----|-----------------------|-------|-------------|----|
| MINIMUM 1-HR AVERAGE: | -28.5 | °C | @ HOURS(S) | 7 | ON DAY(S) | 29 |
| MAXIMUM 1-HR AVERAGE: | 9.4 | °C | @ HOURS(S) | 13 | ON DAY(S) | 26 |
| MAXIMUM 24-HR AVERAGE: | 3.0 | °C | | | VAR-VARIOUS | 26 |
| STANDARD DEVIATION: | 6.33 | | OPERATIONAL TIME: | 696 | HRS | |
| | | | AMD OPERATION UPTIME: | 100.0 | % | |
| | | | MONTHLY AVERAGE: | -6.6 | °C | |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA TPX DGC

APPENDIX II
NON-CONTINUOUS MONITORING DATA RESULTS

VOC RESULTS

Sample ID: 16020060-003

Customer ID: LICA

Cust Samp ID: LICAVOC/CLS/feb 6, 2016

Priority: Normal

Maxxam

VOC Sample Collection Data Sheet

Client: LICA
 Location: Gold Lake South
 Station ID: LICA 01
 Field Sample ID: LICA/VOC/CLS/feb 6, 2016

Sampler S/N: 6167
 Canister ID: 55647
 Canister Installation Date/Time: Feb 4, 2016 / 09:18
 Canister Removal Date/Time: Feb 8, 2016 / 10:16

| Date and Time Information | | |
|---------------------------|------------------|----------------------|
| Sample Date | Start Time (MST) | End Time (MST) |
| Feb 6, 2016 | 00:00 | 00:00 |
| | Feb 6, 2016 | Feb 7, 2016 |
| | | Elapsed Time (Hours) |
| | | 24.0 |

| Flow Settings | | |
|----------------------|------------|------------------------------|
| Meter Reading (sccm) | Pot Set Pt | Pump Pressure Setting (psig) |
| 10.0 | 6.52 | 24 |

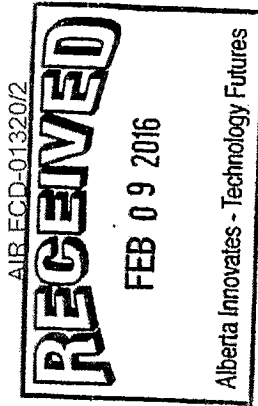
| Canister Information | |
|--------------------------------|--------------------------------|
| Initial Canister Vacuum (inHg) | Final Canister Pressure (psig) |
| -28.0 | +22.5 |

Canister valve open prior to sampling?: YES / NO
 Timer set to 0.00 minutes prior to sampling? YES / NO
 Canister valve closed prior to disconnection?: YES / NO

Comments: n/a

Technician Signature: Sample in - by Alex Yakupov
Sample out - by Alex Yakupov

Date: Feb 8, 2016



AIR ECD-01320/2

Volatile Organics Data Results

Date: FEBRUARY 6 , 2016
Canister ID: S5647

| PARAMETERS | CONCENTRATION (PPB) |
|---------------------------|---------------------|
| 1,1,1-Trichloroethane | < 0.02 |
| 1,1,2,2-Tetrachloroethane | < 0.02 |
| 1,1,2-Trichloroethane | < 0.02 |
| 1,1-Dichloroethane | < 0.02 |
| 1,1-Dichloroethylene | < 0.04 |
| 1,2,3-Trimethylbenzene | < 0.05 |
| 1,2,4-Trichlorobenzene | < 0.8 |
| 1,2,4-Trimethylbenzene | < 0.03 |
| 1,2-Dibromoethane | < 0.02 |
| 1,2-Dichlorobenzene | < 0.03 |
| 1,2-Dichloroethane | 0.02 |
| 1,2-Dichloropropane | < 0.01 |
| 1,3,5-Trimethylbenzene | < 0.02 |
| 1,3-Butadiene | < 0.02 |
| 1,3-Dichlorobenzene | < 0.3 |
| 1,4-Dichlorobenzene | < 0.4 |
| 1,4-Dioxane | < 0.4 |
| 1-Butene | 0.10 |
| 1-Hexene | < 0.02 |
| 1-Pentene | < 0.01 |
| 2,2,4-Trimethylpentane | < 0.01 |
| 2,2-Dimethylbutane | 0.02 |
| 2,3,4-Trimethylpentane | < 0.01 |
| 2,3-Dimethylbutane | 0.06 |
| 2,3-Dimethylpentane | 0.04 |
| 2,4-Dimethylpentane | 0.04 |
| 2-Methylheptane | 0.02 |
| 2-Methylhexane | 0.05 |
| 2-Methylpentane | 0.19 |
| 3-Methylheptane | < 0.02 |
| 3-Methylhexane | 0.05 |
| 3-Methylpentane | 0.10 |
| Acetone | 1.2 |
| Acrolein | < 0.3 |
| Benzene | 0.15 |
| Benzyl chloride | < 0.4 |
| Bromodichloromethane | < 0.02 |
| Bromoform | < 0.02 |
| Bromomethane | < 0.01 |
| Carbon disulfide | < 0.01 |
| Carbon tetrachloride | 0.09 |
| Chlorobenzene | < 0.02 |
| Chloroethane | < 0.02 |
| Chloroform | 0.03 |
| Chloromethane | 0.73 |
| cis-1,2-Dichloroethene | < 0.01 |
| cis-1,3-Dichloropropene | < 0.04 |
| cis-2-Butene | < 0.02 |
| cis-2-Pentene | < 0.02 |
| Cyclohexane | 0.10 |
| Cyclopentane | 0.05 |
| Dibromochloromethane | < 0.01 |
| Ethanol | 1.1 |
| Ethyl acetate | < 0.4 |
| Ethylbenzene | 0.01 |
| Freon-11 | 0.28 |

Volatile Organics Data Results

Date: FEBRUARY 6 , 2016
Canister ID: S5647

| PARAMETERS | CONCENTRATION (PPB) |
|-----------------------------|---------------------|
| Freon-113 | 0.07 |
| Freon-114 | 0.02 |
| Freon-12 | 0.64 |
| Hexachloro-1,3-butadiene | < 0.50 |
| Isobutane | 1.08 |
| Isopentane | 0.86 |
| Isoprene | < 0.01 |
| Isopropyl alcohol | < 0.4 |
| Isopropylbenzene | < 0.01 |
| m,p-Xylene | 0.05 |
| m-Diethylbenzene | < 0.04 |
| m-Ethyltoluene | < 0.08 |
| Methyl butyl ketone | < 0.50 |
| Methyl ethyl ketone | < 0.3 |
| Methyl isobutyl ketone | < 0.4 |
| Methyl methacrylate | < 0.07 |
| Methyl tert butyl ether | < 0.03 |
| Methylcyclohexane | 0.16 |
| Methylcyclopentane | 0.12 |
| Methylene chloride | < 0.3 |
| n-Butane | 1.83 |
| n-Decane | < 0.06 |
| n-Dodecane | < 0.4 |
| n-Heptane | 0.06 |
| n-Hexane | 0.19 |
| n-Nonane | < 0.01 |
| n-Octane | 0.02 |
| n-Pentane | 0.5 |
| n-Propylbenzene | < 0.05 |
| n-Undecane | < 0.5 |
| Naphthalene | < 0.5 |
| o-Ethyltoluene | < 0.01 |
| o-Xylene | 0.01 |
| p-Diethylbenzene | < 0.04 |
| p-Ethyltoluene | < 0.07 |
| Styrene | < 0.04 |
| Tetrachloroethylene | < 0.04 |
| Tetrahydrofuran | < 0.4 |
| Toluene | 0.11 |
| trans-1,2-Dichloroethylene | < 0.01 |
| trans-1,3-Dichloropropylene | < 0.04 |
| trans-2-Butene | < 0.01 |
| trans-2-Pentene | < 0.02 |
| Trichloroethylene | < 0.04 |
| Vinyl acetate | < 0.4 |
| Vinyl chloride | < 0.02 |

Sample ID: 16020158-003

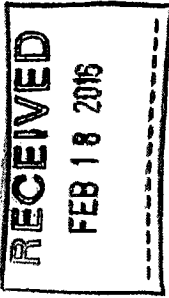
Customer ID: LICA

Cust Samp ID: LICAVOC/CLS/Feb 12, 2016

AIR FCD-01320/2

Maxxam

VOC Sample Collection Data Sheet



Client: LICA
 Location: Cold Lake South
 Station ID: LICA 01
 Field Sample ID: LICA/VOC/CLS/R612, 2016
 A.Y.

Sampler S/N: 6167
 Canister ID: 55652
 Canister Installation Date/Time: Feb 8, 2016 / 10:17
 Canister Removal Date/Time: Feb 16, 2016 / 09:56

| Date and Time Information | | | |
|---------------------------|-----------------------|-----------------------|----------------------|
| Sample Date | Start Time (MST) | End Time (MST) | Elapsed Time (Hours) |
| Feb 12, 2016 | 00:00 Feb 12, 2016 | 00:00 Feb 13, 2016 | 24.0 |

| Flow Settings | | |
|----------------------|-------------|------------------------------|
| Meter Reading (sccm) | Pot Set Pt. | Pump Pressure Setting (psig) |
| 10.0 | 6.52 | 24 |

| Canister Information | |
|--------------------------------|--------------------------------|
| Initial Canister Vacuum (inHg) | Final Canister Pressure (psig) |
| -28.0 | +23.3 |

Canister valve open prior to sampling? YES NO
 Timer set to 0.00 minutes prior to sampling? YES NO
 Canister valve closed prior to disconnection? YES NO

Comments:

Technician Signature: Sample in - by Alex Yakupov
Sample out - by Alex Yakupov

Date: Feb 16, 2016

Volatile Organics Data Results

Date: FEBRUARY 12, 2016
Canister ID: S5652

| PARAMETERS | CONCENTRATION (PPB) |
|---------------------------|---------------------|
| 1,1,1-Trichloroethane | < 0.02 |
| 1,1,1,2-Tetrachloroethane | < 0.02 |
| 1,1,2-Trichloroethane | < 0.02 |
| 1,1-Dichloroethane | < 0.02 |
| 1,1-Dichloroethylene | < 0.04 |
| 1,2,3-Trimethylbenzene | < 0.05 |
| 1,2,4-Trichlorobenzene | < 0.8 |
| 1,2,4-Trimethylbenzene | < 0.03 |
| 1,2-Dibromoethane | < 0.02 |
| 1,2-Dichlorobenzene | < 0.03 |
| 1,2-Dichloroethane | 0.02 |
| 1,2-Dichloropropane | < 0.01 |
| 1,3,5-Trimethylbenzene | < 0.02 |
| 1,3-Butadiene | < 0.02 |
| 1,3-Dichlorobenzene | < 0.3 |
| 1,4-Dichlorobenzene | < 0.4 |
| 1,4-Dioxane | < 0.4 |
| 1-Butene | 0.04 |
| 1-Hexene | < 0.02 |
| 1-Pentene | < 0.01 |
| 2,2,4-Trimethylpentane | 0.02 |
| 2,2-Dimethylbutane | 0.01 |
| 2,3,4-Trimethylpentane | < 0.01 |
| 2,3-Dimethylbutane | < 0.02 |
| 2,3-Dimethylpentane | < 0.02 |
| 2,4-Dimethylpentane | < 0.01 |
| 2-Methylheptane | < 0.01 |
| 2-Methylhexane | 0.01 |
| 2-Methylpentane | 0.05 |
| 3-Methylheptane | < 0.02 |
| 3-Methylhexane | < 0.02 |
| 3-Methylpentane | 0.03 |
| Acetone | 1.1 |
| Acrolein | < 0.3 |
| Benzene | 0.15 |
| Benzyl chloride | < 0.4 |
| Bromodichloromethane | < 0.02 |
| Bromoform | < 0.02 |
| Bromomethane | < 0.01 |
| Carbon disulfide | < 0.01 |
| Carbon tetrachloride | 0.10 |
| Chlorobenzene | < 0.02 |
| Chloroethane | < 0.02 |
| Chloroform | 0.02 |
| Chloromethane | 0.82 |
| cis-1,2-Dichloroethene | < 0.01 |
| cis-1,3-Dichloropropene | < 0.04 |
| cis-2-Butene | < 0.02 |
| cis-2-Pentene | < 0.02 |
| Cyclohexane | < 0.02 |
| Cyclopentane | < 0.01 |
| Dibromochloromethane | < 0.01 |
| Ethanol | < 0.3 |
| Ethyl acetate | < 0.4 |
| Ethylbenzene | < 0.01 |
| Freon-11 | 0.32 |

Volatile Organics Data Results

Date: FEBRUARY 12, 2016
Canister ID: S5652

| PARAMETERS | CONCENTRATION (PPB) |
|-----------------------------|---------------------|
| Freon-113 | 0.09 |
| Freon-114 | 0.03 |
| Freon-12 | 0.71 |
| Hexachloro-1,3-butadiene | < 0.50 |
| Isobutane | 0.37 |
| Isopentane | 0.24 |
| Isoprene | < 0.01 |
| Isopropyl alcohol | < 0.4 |
| Isopropylbenzene | < 0.01 |
| m,p-Xylene | < 0.03 |
| m-Diethylbenzene | < 0.04 |
| m-Ethyltoluene | < 0.08 |
| Methyl butyl ketone | < 0.50 |
| Methyl ethyl ketone | < 0.3 |
| Methyl isobutyl ketone | < 0.4 |
| Methyl methacrylate | < 0.07 |
| Methyl tert butyl ether | < 0.03 |
| Methylcyclohexane | 0.01 |
| Methylcyclopentane | 0.02 |
| Methylene chloride | < 0.3 |
| n-Butane | 0.67 |
| n-Decane | < 0.06 |
| n-Dodecane | < 0.4 |
| n-Heptane | 0.02 |
| n-Hexane | 0.04 |
| n-Nonane | < 0.01 |
| n-Octane | < 0.02 |
| n-Pentane | 0.1 |
| n-Propylbenzene | < 0.05 |
| n-Undecane | < 0.5 |
| Naphthalene | < 0.5 |
| o-Ethyltoluene | < 0.01 |
| o-Xylene | < 0.01 |
| p-Diethylbenzene | < 0.04 |
| p-Ethyltoluene | < 0.07 |
| Styrene | < 0.04 |
| Tetrachloroethylene | < 0.04 |
| Tetrahydrofuran | < 0.4 |
| Toluene | 0.05 |
| trans-1,2-Dichloroethylene | < 0.01 |
| trans-1,3-Dichloropropylene | < 0.04 |
| trans-2-Butene | < 0.01 |
| trans-2-Pentene | < 0.02 |
| Trichloroethylene | < 0.04 |
| Vinyl acetate | < 0.4 |
| Vinyl chloride | < 0.02 |

Sample ID: 16020201-001

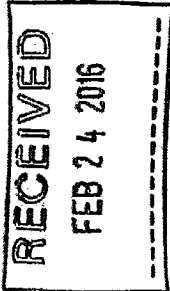
Customer ID: LICA
Cust Samp ID: LICAVOC/CLS/feb 18, 2016

Maxxam

VOC Sample Collection Data Sheet

Client: LICA
Location: Cold Lake South
Station ID: LICA 01
Field Sample ID: LICA/VOC/CLS/feb 18, 2016

Sampler S/N: 6167
Canister ID: 7155
Canister Installation Date/Time: Feb 16, 2016 / 09:57
Canister Removal Date/Time: Feb 22, 2016 / 10:14



| Date and Time Information | | | |
|---------------------------|--------------------|--------------------|----------------------|
| Sample Date | Start Time (MST) | End Time (MST) | Elapsed Time (Hours) |
| Feb 18, 2016 | 00:00 Feb 18, 2016 | 00:00 Feb 19, 2016 | 24.0 |

| Flow Settings | | |
|----------------------|------------|------------------------------|
| Meter Reading (sccm) | Pot Set Pt | Pump Pressure Setting (psig) |
| 10.0 | 6.52 | 24 |

| Canister Information | |
|--------------------------------|--------------------------------|
| Initial Canister Vacuum (inHg) | Final Canister Pressure (psig) |
| - 28.0 | + 23.2 |

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: n/a

Technician Signature: Sample in - by Alex Yakupov
Sample out by Alex Yakupov
Date: Feb 22, 2016

Volatile Organics Data Results

Date: FEBRUARY 18 , 2016
Canister ID: 7155

| PARAMETERS | CONCENTRATION (PPB) |
|---------------------------|---------------------|
| 1,1,1-Trichloroethane | < 0.02 |
| 1,1,2,2-Tetrachloroethane | < 0.02 |
| 1,1,2-Trichloroethane | < 0.02 |
| 1,1-Dichloroethane | < 0.02 |
| 1,1-Dichloroethylene | < 0.04 |
| 1,2,3-Trimethylbenzene | < 0.05 |
| 1,2,4-Trichlorobenzene | < 0.8 |
| 1,2,4-Trimethylbenzene | 0.04 |
| 1,2-Dibromoethane | < 0.02 |
| 1,2-Dichlorobenzene | < 0.03 |
| 1,2-Dichloroethane | 0.02 |
| 1,2-Dichloropropane | < 0.01 |
| 1,3,5-Trimethylbenzene | < 0.02 |
| 1,3-Butadiene | < 0.02 |
| 1,3-Dichlorobenzene | < 0.3 |
| 1,4-Dichlorobenzene | < 0.4 |
| 1,4-Dioxane | < 0.4 |
| 1-Butene | < 0.02 |
| 1-Hexene | < 0.02 |
| 1-Pentene | < 0.01 |
| 2,2,4-Trimethylpentane | 0.03 |
| 2,2-Dimethylbutane | 0.01 |
| 2,3,4-Trimethylpentane | < 0.01 |
| 2,3-Dimethylbutane | 0.05 |
| 2,3-Dimethylpentane | 0.03 |
| 2,4-Dimethylpentane | 0.03 |
| 2-Methylheptane | 0.01 |
| 2-Methylhexane | < 0.01 |
| 2-Methylpentane | 0.15 |
| 3-Methylheptane | < 0.02 |
| 3-Methylhexane | 0.04 |
| 3-Methylpentane | 0.14 |
| Acetone | 4.8 |
| Acrolein | < 0.3 |
| Benzene | 0.15 |
| Benzyl chloride | < 0.4 |
| Bromodichloromethane | < 0.02 |
| Bromoform | < 0.02 |
| Bromomethane | 0.01 |
| Carbon disulfide | 0.05 |
| Carbon tetrachloride | 0.09 |
| Chlorobenzene | < 0.02 |
| Chloroethane | < 0.02 |
| Chloroform | 0.02 |
| Chloromethane | 0.75 |
| cis-1,2-Dichloroethene | < 0.01 |
| cis-1,3-Dichloropropene | < 0.04 |
| cis-2-Butene | < 0.02 |
| cis-2-Pentene | < 0.02 |
| Cyclohexane | 0.04 |
| Cyclopentane | 0.03 |
| Dibromochloromethane | < 0.01 |
| Ethanol | 1.2 |
| Ethyl acetate | < 0.4 |
| Ethylbenzene | 0.01 |
| Freon-11 | 0.29 |

Volatile Organics Data Results

Date: FEBRUARY 18 , 2016
Canister ID: 7155

| PARAMETERS | CONCENTRATION (PPB) |
|-----------------------------|---------------------|
| Freon-113 | 0.08 |
| Freon-114 | 0.02 |
| Freon-12 | 0.64 |
| Hexachloro-1,3-butadiene | < 0.50 |
| Isobutane | 1.15 |
| Isopentane | 0.75 |
| Isoprene | < 0.01 |
| Isopropyl alcohol | < 0.4 |
| Isopropylbenzene | < 0.01 |
| m,p-Xylene | 0.05 |
| m-Diethylbenzene | < 0.04 |
| m-Ethyltoluene | < 0.08 |
| Methyl butyl ketone | < 0.50 |
| Methyl ethyl ketone | < 0.3 |
| Methyl isobutyl ketone | < 0.4 |
| Methyl methacrylate | < 0.07 |
| Methyl tert butyl ether | < 0.03 |
| Methylcyclohexane | 0.04 |
| Methylcyclopentane | 0.15 |
| Methylene chloride | < 0.3 |
| n-Butane | 2.52 |
| n-Decane | < 0.06 |
| n-Dodecane | < 0.4 |
| n-Heptane | 0.04 |
| n-Hexane | 0.48 |
| n-Nonane | 0.01 |
| n-Octane | < 0.02 |
| n-Pentane | 0.3 |
| n-Propylbenzene | < 0.05 |
| n-Undecane | < 0.5 |
| Naphthalene | < 0.5 |
| o-Ethyltoluene | < 0.01 |
| o-Xylene | 0.02 |
| p-Diethylbenzene | < 0.04 |
| p-Ethyltoluene | < 0.07 |
| Styrene | < 0.04 |
| Tetrachloroethylene | < 0.04 |
| Tetrahydrofuran | < 0.4 |
| Toluene | 0.20 |
| trans-1,2-Dichloroethylene | < 0.01 |
| trans-1,3-Dichloropropylene | < 0.04 |
| trans-2-Butene | 0.03 |
| trans-2-Pentene | < 0.02 |
| Trichloroethylene | < 0.04 |
| Vinyl acetate | < 0.4 |
| Vinyl chloride | < 0.02 |

Sample ID: 16030001-003

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/FEB 24, 2016

Maxxam

VOC Sample Collection Data Sheet

Client: LICA
Location: Goat Lake South
Station ID: LICA 01
Field Sample ID: LICA/VOC/CLS/FEB 24, 2016

Sampler S/N: 6167
Canister ID: 14712
Canister Installation Date/Time: Feb 22, 2016 / 10:15
Canister Removal Date/Time: Feb 26, 2016 / 11:06
P.Y.

| Date and Time Information | | | |
|---------------------------|-----------------------|-----------------------|----------------------|
| Sample Date | Start Time (MST) | End Time (MST) | Elapsed Time (Hours) |
| Feb 24, 2016 | 00:00 Feb 24, 2016 | 00:00 Feb 25, 2016 | 24.0 |

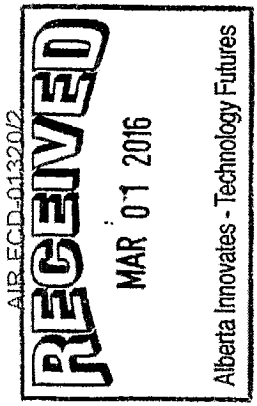
| Flow Settings | | |
|----------------------|-------------|------------------------------|
| Meter Reading (sccm) | Pot Set Pt. | Pump Pressure Setting (psig) |
| 10.0 | 6.52 | 24 |

| Canister Information | |
|--------------------------------|--------------------------------|
| Initial Canister Vacuum (inHg) | Final Canister Pressure (psig) |
| - 28.0 | + 23.0 |

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: n/a

Technician Signature: Sample in - by Alex Yakupov
Sample out - by Alex Yakupov
Date: Feb 26, 2016



Volatile Organics Data Results

Date: FEBRUARY 24, 2016
Canister ID: 14712

| PARAMETERS | CONCENTRATION (PPB) |
|-------------------------|---------------------|
| 1,1,1-Trichloroethane | < 0.02 |
| 1,1,2-Tetrachloroethane | < 0.02 |
| 1,1,2-Trichloroethane | < 0.02 |
| 1,1-Dichloroethane | < 0.02 |
| 1,1-Dichloroethylene | < 0.04 |
| 1,2,3-Trimethylbenzene | < 0.05 |
| 1,2,4-Trichlorobenzene | < 0.8 |
| 1,2,4-Trimethylbenzene | 0.03 |
| 1,2-Dibromoethane | < 0.02 |
| 1,2-Dichlorobenzene | < 0.03 |
| 1,2-Dichloroethane | 0.02 |
| 1,2-Dichloropropane | < 0.01 |
| 1,3,5-Trimethylbenzene | < 0.02 |
| 1,3-Butadiene | < 0.02 |
| 1,3-Dichlorobenzene | < 0.3 |
| 1,4-Dichlorobenzene | < 0.4 |
| 1,4-Dioxane | < 0.4 |
| 1-Butene | 0.06 |
| 1-Hexene | < 0.02 |
| 1-Pentene | < 0.01 |
| 2,2,4-Trimethylpentane | < 0.01 |
| 2,2-Dimethylbutane | 0.03 |
| 2,3,4-Trimethylpentane | 0.03 |
| 2,3-Dimethylbutane | 0.07 |
| 2,3-Dimethylpentane | 0.08 |
| 2,4-Dimethylpentane | 0.04 |
| 2-Methylheptane | 0.03 |
| 2-Methylhexane | 0.04 |
| 2-Methylpentane | 0.15 |
| 3-Methylheptane | < 0.02 |
| 3-Methylhexane | 0.05 |
| 3-Methylpentane | 0.06 |
| Acetone | 0.5 |
| Acrolein | < 0.3 |
| Benzene | 0.17 |
| Benzyl chloride | < 0.4 |
| Bromodichloromethane | < 0.02 |
| Bromoform | < 0.02 |
| Bromomethane | < 0.01 |
| Carbon disulfide | < 0.01 |
| Carbon tetrachloride | 0.08 |
| Chlorobenzene | < 0.02 |
| Chloroethane | < 0.02 |
| Chloroform | 0.02 |
| Chloromethane | 0.44 |
| cis-1,2-Dichloroethene | < 0.01 |
| cis-1,3-Dichloropropene | < 0.04 |
| cis-2-Butene | < 0.02 |
| cis-2-Pentene | < 0.02 |
| Cyclohexane | 0.16 |
| Cyclopentane | 0.06 |
| Dibromochloromethane | < 0.01 |
| Ethanol | < 0.3 |
| Ethyl acetate | < 0.4 |
| Ethylbenzene | 0.03 |
| Freon-11 | 0.17 |

Volatile Organics Data Results

Date: FEBRUARY 24 , 2016
Canister ID: 14712

| PARAMETERS | CONCENTRATION (PPB) |
|-----------------------------|---------------------|
| Freon-113 | 0.07 |
| Freon-114 | < 0.02 |
| Freon-12 | 0.40 |
| Hexachloro-1,3-butadiene | < 0.50 |
| Isobutane | 0.29 |
| Isopentane | 0.16 |
| Isoprene | 0.01 |
| Isopropyl alcohol | < 0.4 |
| Isopropylbenzene | < 0.01 |
| m,p-Xylene | 0.08 |
| m-Diethylbenzene | < 0.04 |
| m-Ethyltoluene | < 0.08 |
| Methyl butyl ketone | < 0.50 |
| Methyl ethyl ketone | < 0.3 |
| Methyl isobutyl ketone | < 0.4 |
| Methyl methacrylate | < 0.07 |
| Methyl tert butyl ether | < 0.03 |
| Methylcyclohexane | 0.18 |
| Methylcyclopentane | 0.16 |
| Methylene chloride | < 0.3 |
| n-Butane | 0.48 |
| n-Decane | < 0.06 |
| n-Dodecane | 1.3 |
| n-Heptane | 0.06 |
| n-Hexane | 0.10 |
| n-Nonane | 0.02 |
| n-Octane | 0.03 |
| n-Pentane | 0.2 |
| n-Propylbenzene | < 0.05 |
| n-Undecane | < 0.5 |
| Naphthalene | < 0.5 |
| o-Ethyltoluene | 0.01 |
| o-Xylene | 0.04 |
| p-Diethylbenzene | < 0.04 |
| p-Ethyltoluene | < 0.07 |
| Styrene | < 0.04 |
| Tetrachloroethylene | < 0.04 |
| Tetrahydrofuran | < 0.4 |
| Toluene | 0.15 |
| trans-1,2-Dichloroethylene | < 0.01 |
| trans-1,3-Dichloropropylene | < 0.04 |
| trans-2-Butene | < 0.01 |
| trans-2-Pentene | < 0.02 |
| Trichloroethylene | < 0.04 |
| Vinyl acetate | < 0.4 |
| Vinyl chloride | < 0.02 |

PAH RESULTS

Sample ID: 16020060-004

Customer ID: LICA

Cust Samp ID: LICA/PUF/CLS/feb 6, 2016

Priority: Normal

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FEB 09 2016

Alberta Innovates - Technology Futures

TISCH PUF PLUS Sample Collection Data Sheet

Client: LICA Puff S/N: TE-03
 Location: Cold Lake South Motor S/N: 1138/100-1020
 Station ID: LICA 01 Installation Date/Time: Feb 4, 2016/09:28
 Field Sample ID: LICA/PUF/CLS/feb 6, 2016 Removal Date/Time: Feb 8, 2016/10:11

Sample Data Collection Information

Sample Date: Feb 6, 2016 Average Pressure (mmHg) 703
 Start Time (mst): 00:00 Average Flow (Q_{ad}) 229
 End Time (mst): 00:00 / Feb 7, 2016 Average Temperature (°C) -0.5°
 Elapsed Time (Hours): 24.0 Volume (Vstd m³) 330.17

Sample Recovery Checklist

(circle one)

Flow Rate 250 slpm +/- 0.2 slpm? YES NO
 Average temperature appears correct? YES NO
 Average pressure appears correct? YES NO
 Any error messages? (if yes list below) YES NO
 Sample duration 24 hours? YES NO
 Date of last calibration/audit: Dec 22, 2015
 Other observations? n/a

Deployed By: Alex Yakupov

Collected By: Alex Yakupov Date: Feb. 8, 2016

Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: FEBRUARY 6, 2016
PUF S/N: TE03

| PARAMETERS | CONCENTRATION (UG) |
|--------------------------------|--------------------|
| 1-Methylnaphthalene | 0.04 |
| 2-Methylnaphthalene | 0.07 |
| 3-Methylcholanthrene | < 0.01 |
| 7,12-Dimethylbenz(a)anthracene | < 0.01 |
| Acenaphthene | 0.04 |
| Acenaphthylene | 0.02 |
| Acridine | 0.02 |
| Anthracene | 0.01 |
| Benzo(a)anthracene | < 0.01 |
| Benzo(a)pyrene | < 0.01 |
| Benzo(b,j,k)fluoranthene | 0.03 |
| Benzo(c)phenanthrene | 0.01 |
| Benzo(e)pyrene | < 0.01 |
| Benzo(ghi)perylene | < 0.01 |
| Chrysene | 0.01 |
| Dibenzo(a,h)pyrene | < 0.01 |
| Dibenzo(a,i)pyrene | < 0.01 |
| Dibenzo(a,l)pyrene | < 0.01 |
| Dibenzo(ah)anthracene | < 0.01 |
| Fluoranthene | 0.11 |
| Fluorene | 0.13 |
| Indeno(1,2,3-cd)pyrene | < 0.01 |
| Naphthalene | 0.07 |
| Perylene | < 0.01 |
| Phenanthrene | 0.24 |
| Pyrene | 0.05 |
| Retene | 0.05 |

Sample ID: 16020158-004

Customer ID: LICA

Cust Samp ID: LICA/PUF/CLS/feb 12, 2016

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FEB 18 2016

TISCH PUF PLUS Sample Collection Data Sheet

Client: LICA Puff S/N: TE-08
 Location: Cold Lake South Motor S/N: 1138/100-1020
 Station ID: LICA 01 Installation Date/Time: Feb 8, 2016/10:12
 Field Sample ID: LICA/PUF/CLS/feb 12, 2016 Removal Date/Time: Feb 16, 2016/10:05

Sample Data Collection Information

Sample Date: Feb 12, 2016 Average Pressure (mmHg) 72.4
 Start Time (mst): 00:00 Average Flow (Q_{ad}) 2.29
 End Time (mst): 00:00 / Feb 13, 2016 Average Temperature (°C) -15.4
 Elapsed Time (Hours): 24.0 Volume (Vstd m³) 330.16

Sample Recovery Checklist

(circle one)

Flow Rate 230 slpm +/- 0.2 slpm? YES NO
 Average temperature appears correct? YES NO
 Average pressure appears correct? YES NO
 Any error messages? (if yes list below) YES NO
 Sample duration 24 hours? YES NO
 Date of last calibration/audit: Dec 22, 2015
 Other observations? n/a

Deployed By: Alex Yakupov
 Collected By: Alex Yakupov Date: Feb 16, 2016

Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: FEBRUARY 12, 2016
PUF S/N: TE08

| PARAMETERS | CONCENTRATION (UG) |
|--------------------------------|--------------------|
| 1-Methylnaphthalene | 0.13 |
| 2-Methylnaphthalene | 0.19 |
| 3-Methylcholanthrene | < 0.01 |
| 7,12-Dimethylbenz(a)anthracene | < 0.01 |
| Acenaphthene | 0.05 |
| Acenaphthylene | 0.03 |
| Acridine | 0.01 |
| Anthracene | < 0.01 |
| Benzo(a)anthracene | < 0.01 |
| Benzo(a)pyrene | < 0.01 |
| Benzo(b,j,k)fluoranthene | 0.03 |
| Benzo(c)phenanthrene | < 0.01 |
| Benzo(e)pyrene | < 0.01 |
| Benzo(ghi)perylene | < 0.01 |
| Chrysene | 0.01 |
| Dibenzo(a,h)pyrene | < 0.01 |
| Dibenzo(a,l)pyrene | < 0.01 |
| Dibenzo(a,l)pyrene | < 0.01 |
| Dibenzo(ah)anthracene | < 0.01 |
| Fluoranthene | 0.08 |
| Fluorene | 0.08 |
| Indeno(1,2,3-cd)pyrene | < 0.01 |
| Naphthalene | 0.22 |
| Perylene | < 0.01 |
| Phenanthrene | 0.16 |
| Pyrene | 0.04 |
| Retene | 0.03 |

Sample ID: 16020201-002

Customer ID: LICA

Cust Samp ID: LICA/PUF/CLS/feb 18, 2016

RECEIVED
FEB 24 2016

TISCH PUF PLUS Sample Collection Data Sheet

Client: LICA Puff S/N: TE-02
 Location: Gold Lake South Motor S/N: 1138/100-1020
 Station ID: LICA 01 Installation Date/Time: Feb 16, 2016/10:06
 Field Sample ID: LICA/PUF/CLS/feb 18, 2016 Removal Date/Time: Feb 22, 2016/10:05

Sample Data Collection Information

Sample Date: Feb 18, 2016 Average Pressure (mmHg) 697
 Start Time (mst): 00:00 Average Flow (Q_{std}) 22.9
 End Time (mst): 00:00/feb 19, 2016 Average Temperature (°C) -0.1°
 Elapsed Time (Hours): 24.0 Volume (V_{std} m³) 330.19

Sample Recovery Checklist

(circle one)

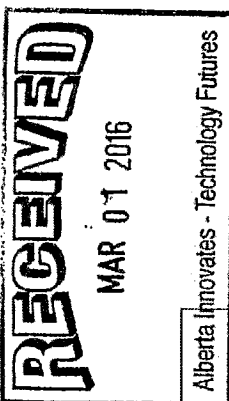
Flow Rate 230 slpm +/- 0.2 slpm? YES NO
 Average temperature appears correct? YES NO
 Average pressure appears correct? YES NO
 Any error messages? (if yes list below) YES NO
 Sample duration 24 hours? YES NO
 Date of last calibration/audit: Dec 22, 2015
 Other observations? n/a

Deployed By: Alex Yakupov
 Collected By: Alex Yakupov Date: Feb 22, 2016

Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: FEBRUARY 18 , 2016
PUF S/N: TE02

| PARAMETERS | CONCENTRATION (UG) |
|--------------------------------|--------------------|
| 1-Methylnaphthalene | 0.07 |
| 2-Methylnaphthalene | 0.12 |
| 3-Methylcholanthrene | < 0.01 |
| 7,12-Dimethylbenz(a)anthracene | < 0.01 |
| Acenaphthene | 0.03 |
| Acenaphthylene | 0.02 |
| Acridine | < 0.01 |
| Anthracene | 0.02 |
| Benzo(a)anthracene | 0.01 |
| Benzo(a)pyrene | < 0.01 |
| Benzo(b,j,k)fluoranthene | 0.04 |
| Benzo(c)phenanthrene | < 0.01 |
| Benzo(e)pyrene | < 0.01 |
| Benzo(ghi)perylene | < 0.01 |
| Chrysene | 0.01 |
| Dibenzo(a,h)pyrene | < 0.01 |
| Dibenzo(a,l)pyrene | < 0.01 |
| Dibenzo(a,l)pyrene | < 0.01 |
| Dibenzo(ah)anthracene | < 0.01 |
| Fluoranthene | 0.08 |
| Fluorene | 0.09 |
| Indeno(1,2,3-cd)pyrene | < 0.01 |
| Naphthalene | 0.12 |
| Perylene | < 0.01 |
| Phenanthrene | 0.17 |
| Pyrene | 0.04 |
| Retene | 0.03 |



Sample ID: 16030001-004
Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/FEB 24, 2016

TISCH PUF PLUS Sample Collection Data Sheet

Client: LICA PUF+ S/N: TE-06
 Location: Cold Lake South Motor S/N: 1133/100-1020
 Station ID: LICA 01 Installation Date/Time: Feb 22, 2016/10:06
 Field Sample ID: LICA/PUF/CLS/Feb 24, 2016 Removal Date/Time: Feb 26, 2016/11:16

Sample Data Collection Information

Sample Date: Feb 24, 2016 Average Pressure (mmHg) 721
 Start Time (mst): 00:00 Average Flow (Q_{avg}) 229
 End Time (mst): 00:00/feb 25, 2016 Average Temperature (°C) 3.6
 Elapsed Time (Hours): 24.0 Volume (Vstd m³) 330.18

Sample Recovery Checklist

(circle one)

Flow Rate 230 slpm +/- 0.2 slpm? YES NO
 Average temperature appears correct? YES NO
 Average pressure appears correct? YES NO
 Any error messages? (if yes list below) YES NO
 Sample duration 24 hours? YES NO
 Date of last calibration/audit: Dec 22, 2015
 Other observations? n/a

Deployed By: Alex Yakupov
 Collected By: Alex Yakupov Date: Feb 26, 2016

Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: FEBRUARY 24 , 2016
PUFS/N: TE06

| PARAMETERS | CONCENTRATION (UG) |
|--------------------------------|--------------------|
| 1-Methylnaphthalene | 0.35 |
| 2-Methylnaphthalene | 0.63 |
| 3-Methylcholanthrene | < 0.01 |
| 7,12-Dimethylbenz(a)anthracene | < 0.01 |
| Acenaphthene | 0.22 |
| Acenaphthylene | 0.07 |
| Acridine | < 0.01 |
| Anthracene | 0.02 |
| Benzo(a)anthracene | 0.01 |
| Benzo(a)pyrene | < 0.01 |
| Benzo(b,j,k)fluoranthene | 0.05 |
| Benzo(c)phenanthrene | < 0.01 |
| Benzo(e)pyrene | 0.01 |
| Benzo(ghi)perylene | < 0.01 |
| Chrysene | 0.02 |
| Dibenzo(a,h)pyrene | < 0.01 |
| Dibenzo(a,l)pyrene | < 0.01 |
| Dibenzo(a,l)pyrene | < 0.01 |
| Dibenzo(ah)anthracene | < 0.01 |
| Fluoranthene | 0.10 |
| Fluorene | 0.24 |
| Indeno(1,2,3-cd)pyrene | < 0.01 |
| Naphthalene | 0.71 |
| Perylene | < 0.01 |
| Phenanthrene | 0.26 |
| Pyrene | 0.05 |
| Retene | 0.03 |

PARTISOL RESULTS



Partisol Sampler Results

| Date | Filter NO. | Concentration (mg) |
|-------------|------------|--------------------|
| FEBRUARY 6 | P5012648 | 0.066 |
| FEBRUARY 12 | P5012649 | 0.046 |
| FEBRUARY 18 | P5012650 | 0.084 |
| FEBRUARY 24 | P5012647 | 0.041 |

Sample ID: 16020059-001

Customer ID: LICA
Cust Samp ID: LICA P5012648

AIR FCD-01318/2

Partisol Sample Data Sheet

Priority: Normal

Date Sampled: Feb 6, 2016
Location: Cold Lake South
Parameter: TSP PM10
Filter #: LICA P5012648

PM2.5

Start Time 00:00 Feb 6, 2016
End Time 00:00 Feb 7, 2016
Status OK
Std Vol 24.404
Valid Time 24:00
Total Time 24.0



Comments: Weather Conditions, etc.

n/a

Technician Signature: Alex Yakupov

Date: Feb. 8, 2016

Programming

- 1) Make sure system is in "Stop Mode"
- 2) "ESC" to Time Screen then "Program"
- 3) Enter Beg 1 0:00
- 4) Enter Dur 24:00:00
- 5) Enter Beg D dd-Aug
- 6) Enter End D dd-Aug
- 7) "Stop/Run"

Note: Beginning & End Date should be same date

Sample ID: 16020157-001

Customer ID: LICA

Cust Samp ID: LICA P5012649

AIR FCD-01318/2

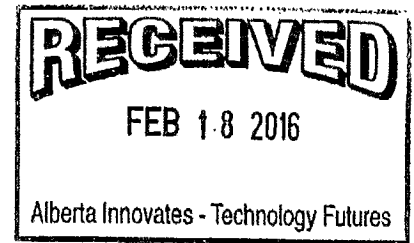
Partisol Sample Data Sheet

Priority: Normal

Date Sampled: Feb 12, 2016
 Location: Cold Lake South
 Parameter: TSP PM10
 Filter #: LICA P5012649

PM2.5

Start Time 00:00 Feb 12, 2016
 End Time 00:00 Feb 13, 2016
 Status OK
 Std Vol 26.484
 Valid Time 24:00
 Total Time 24.0



Comments: Weather Conditions, etc.

n/a

Technician Signature: Alex Yakupov

Date: Feb 16, 2016

Programming

- 1) Make sure system is in "Stop Mode"
- 2) "ESC" to Time Screen then "Program"
- 3) Enter Beg 1 0:00
- 4) Enter Dur 24:00:00
- 5) Enter Beg D dd-Aug
- 6) Enter End D dd-Aug
- 7) "Stop/Run"

Note: Beginning & End
 Date should be same date

Sample ID: 16020199-001

Customer ID: LICA

AIR FCD-01318/2

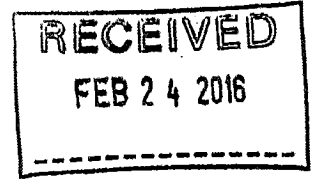
Cust Samp ID: LICA P5012650

Partisol Sample Data Sheet

Priority: Normal

Date Sampled: Feb 18, 2016
 Location: Cold Lake South
 Parameter: TSP PM10
 Filter #: LICA P5012650

PM2.5



Start Time 00:00 Feb 18, 2016
 End Time 00:00 Feb 19, 2016
 Status OK
 Std Vol 24.168
 Valid Time 24:00
 Total Time 24.0

Comments: Weather Conditions, etc.

n/a

Technician Signature: Alex Yakupov

Date: Feb 22, 2016

- Programming
- 1) Make sure system is in "Stop Mode"
 - 2) "ESC" to Time Screen then "Program"
 - 3) Enter Beg 1 0:00
 - 4) Enter Dur 24:00:00
 - 5) Enter Beg D dd-Aug
 - 6) Enter End D dd-Aug
 - 7) "Stop/Run"

Note: Beginning & End
 Date should be same date

Sample ID: 16030002-001

Customer ID: LICA

AIR FCD-01318/2

Cust Samp ID: LICA Fil #P5012647

Partisol Sample Data Sheet

Priority: Normal

Date Sampled: Feb 24, 2016

Location: Cold Lake South

Parameter: TSP PM10

PM2.5

Filter #: LICA P5012647

Start Time 00:00 Feb 24, 2016

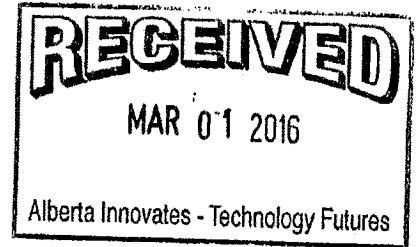
End Time 00:00 Feb 25, 2016

Status OK

Std Vol 25.384

Valid Time 24:00

Total Time 24.0



Comments: Weather Conditions, etc.

n/a

Technician Signature: Alex Yakupov

Date:


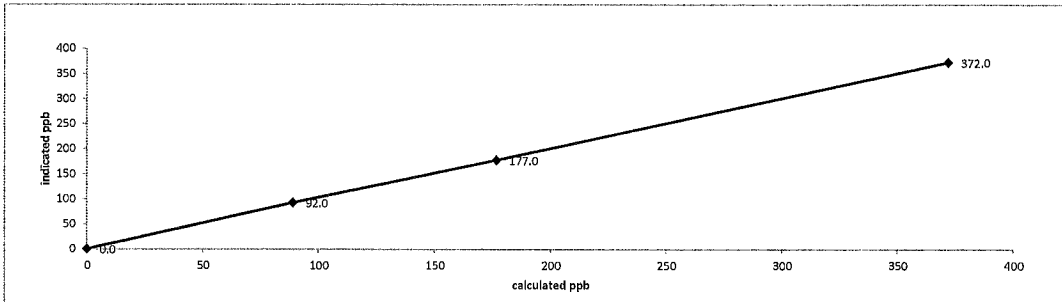
Programming

- 1) Make sure system is in "Stop Mode"
- 2) "ESC" to Time Screen then "Program"
- 3) Enter Beg 1 0:00
- 4) Enter Dur 24:00:00
- 5) Enter Beg D dd-Aug
- 6) Enter End D dd-Aug
- 7) "Stop/Run"

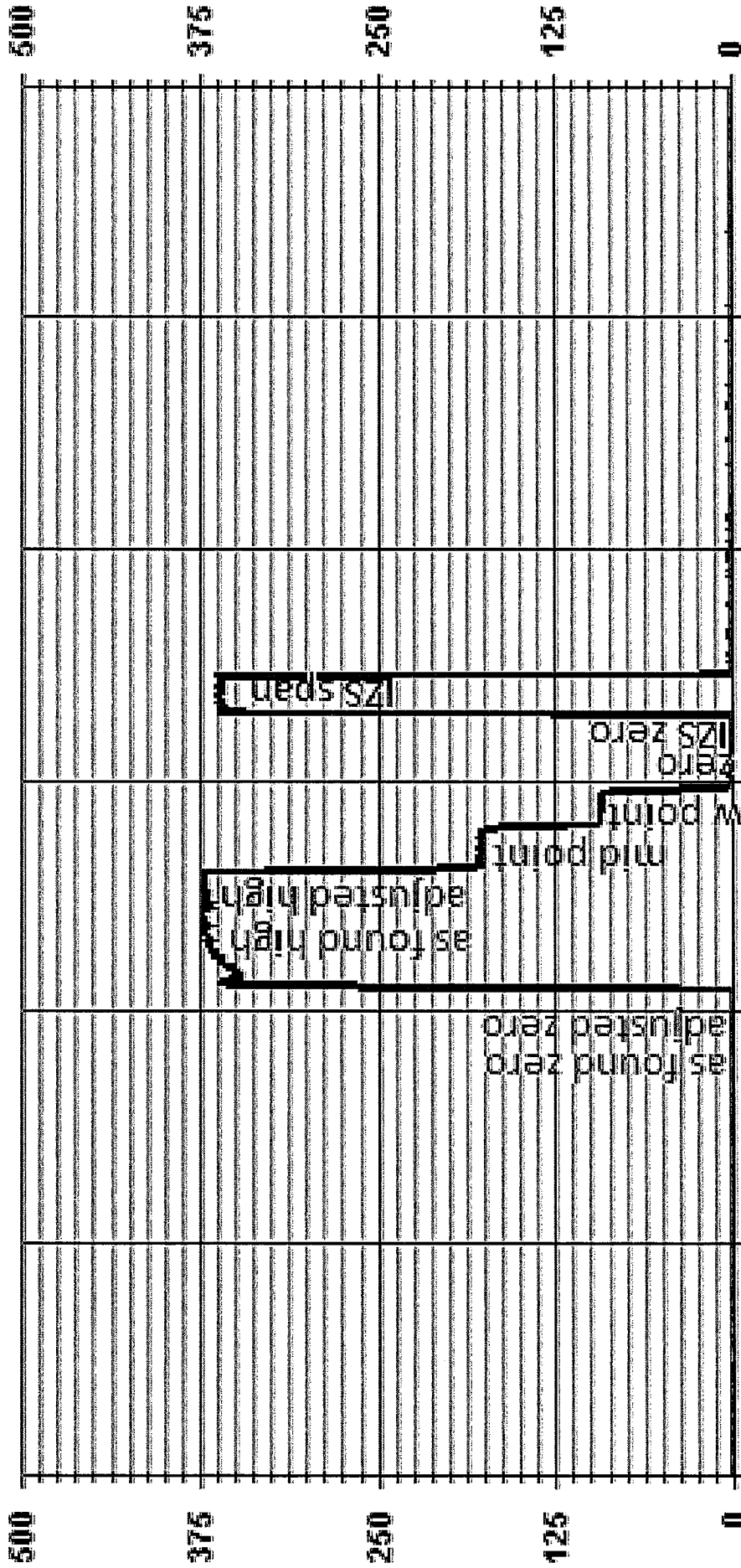
Note: Beginning & End Date should be same date

APPENDIX III
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE

|  Thermo 43i Sulphur Dioxide Analyzer Calibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|---------|---|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----|---------|---------|-------|-------|-------|--|---------------|------|------|------|-----|-----|-----|---------------|------|-------|------|-------|-------|-------|---------------|------|------|------|-----|-----|-----|---------------|------|-------|------|-------|-------|-------|-----|------|-------|------|-------|-------|-------|-----|------|------|------|------|------|-------|-----------------|------|------|------|-----|-----|-----|---------------|--|--|--|--|--|-------|
| Date: February 9, 2016 Company/Alrshed: LICA Location/Station Name: Cold Lake South Parameter: Sulphur Dioxide Start Time 24 hr. (mst): 9:03 End Time 24 hr. (mst): 12:49 Calibration Method: Gas Dilution | Barometric Pressure: 0.941 atm Station Temperature °C: 22 Weather Conditions: A few clouds Calibration Purpose: routine monthly Performed By/Reviewer: Alex Yakupov Trina Whitsitt Cal Gas Expiry Date: March 12, 2019 Converter Model & s/n (if applicable): n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analyzer: Serial Number: 806528242 Last Calibration Date: January 11, 2016 Previous C.F.: 1.001 | Range ppb: 500 As Found C.F.: 1.003 New C.F.: 1.001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibrator: Flow Meter ID's: n/a Make & Model: SABIO 2010 D Serial #: 11900613 Cal Gas Cylinder I.D. #: BLM002073 Cal Gas Conc. (ppm): 49.5 | Standard Calibration Points for Ranges <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Point</th> <th>Sulphur Dioxide Standard Calibration Points</th> </tr> </thead> <tbody> <tr> <td>High</td> <td>380</td> </tr> <tr> <td>Mid</td> <td>180</td> </tr> <tr> <td>Low</td> <td>90</td> </tr> </tbody> </table> | Point | Sulphur Dioxide Standard Calibration Points | High | 380 | Mid | 180 | Low | 90 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Point | Sulphur Dioxide Standard Calibration Points | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| High | 380 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mid | 180 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low | 90 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Point</th> <th colspan="3">Calibrator Flow Rates (cc/min)</th> <th>Calculated Concentration:</th> <th>Indicated Concentration:</th> <th>Correction Factors (C.F.):</th> </tr> <tr> <th></th> <th>Diluent</th> <th>Cal Gas</th> <th>Total</th> <th>(ppb)</th> <th>(ppb)</th> <th></th> </tr> </thead> <tbody> <tr> <td>as found zero</td> <td>5012</td> <td>0.00</td> <td>5012</td> <td>0.0</td> <td>0.0</td> <td>N/A</td> </tr> <tr> <td>as found high</td> <td>4976</td> <td>37.70</td> <td>5014</td> <td>372.2</td> <td>371.0</td> <td>1.003</td> </tr> <tr> <td>adjusted zero</td> <td>5012</td> <td>0.00</td> <td>5012</td> <td>0.0</td> <td>0.0</td> <td>n/a</td> </tr> <tr> <td>adjusted high</td> <td>4976</td> <td>37.70</td> <td>5014</td> <td>372.2</td> <td>372.0</td> <td>1.001</td> </tr> <tr> <td>mid</td> <td>4997</td> <td>17.90</td> <td>5015</td> <td>176.7</td> <td>177.0</td> <td>0.998</td> </tr> <tr> <td>low</td> <td>5004</td> <td>9.00</td> <td>5013</td> <td>88.9</td> <td>92.0</td> <td>0.966</td> </tr> <tr> <td>calibrator zero</td> <td>5012</td> <td>0.00</td> <td>5012</td> <td>0.0</td> <td>0.0</td> <td>n/a</td> </tr> <tr> <td colspan="6" style="text-align: right;">Average C.F.=</td> <td>0.988</td> </tr> </tbody> </table> | | Point | Calibrator Flow Rates (cc/min) | | | Calculated Concentration: | Indicated Concentration: | Correction Factors (C.F.): | | Diluent | Cal Gas | Total | (ppb) | (ppb) | | as found zero | 5012 | 0.00 | 5012 | 0.0 | 0.0 | N/A | as found high | 4976 | 37.70 | 5014 | 372.2 | 371.0 | 1.003 | adjusted zero | 5012 | 0.00 | 5012 | 0.0 | 0.0 | n/a | adjusted high | 4976 | 37.70 | 5014 | 372.2 | 372.0 | 1.001 | mid | 4997 | 17.90 | 5015 | 176.7 | 177.0 | 0.998 | low | 5004 | 9.00 | 5013 | 88.9 | 92.0 | 0.966 | calibrator zero | 5012 | 0.00 | 5012 | 0.0 | 0.0 | n/a | Average C.F.= | | | | | | 0.988 |
| Point | Calibrator Flow Rates (cc/min) | | | Calculated Concentration: | Indicated Concentration: | Correction Factors (C.F.): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Diluent | Cal Gas | Total | (ppb) | (ppb) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found zero | 5012 | 0.00 | 5012 | 0.0 | 0.0 | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found high | 4976 | 37.70 | 5014 | 372.2 | 371.0 | 1.003 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| adjusted zero | 5012 | 0.00 | 5012 | 0.0 | 0.0 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| adjusted high | 4976 | 37.70 | 5014 | 372.2 | 372.0 | 1.001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mid | 4997 | 17.90 | 5015 | 176.7 | 177.0 | 0.998 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| low | 5004 | 9.00 | 5013 | 88.9 | 92.0 | 0.966 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| calibrator zero | 5012 | 0.00 | 5012 | 0.0 | 0.0 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average C.F.= | | | | | | 0.988 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Linear Regression/Calibration Results: Correlation Coefficient = 1.000 > or = 0.995 Slope = 1.003 .95-1.05 b (intercept as % of full scale) = -0.27% ± 3% F.S. % change in C.F. from last cal = -0.23% ± 10% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thermo 43i Sulphur Dioxide Analyzer Calibration  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| As found: BKG: 7.0 COEF: 1.092 PMT: -632.0 FLASH: 710 INTERNAL: 28.4 CHAMBER: 45.0 PERM OVEN GAS: 45.0 PERM OVEN HEATER: 44.19 PRESSURE: 682.8 SAMPLE FLOW: 0.478 LAMP INTENSITY: 77 CONVERTER: n/a CONVERTER SET: n/a Internal Span: 359 | As left: BKG: 7.0 COEF: 1.087 PMT: -632.0 FLASH: 710 INTERNAL: 28.9 CHAMBER: 45.0 PERM OVEN GAS: 45.0 PERM OVEN HEATER: 44.19 PRESSURE: 681.9 SAMPLE FLOW: 0.478 LAMP INTENSITY: 77 CONVERTER: n/a CONVERTER SET: n/a Internal Span: 360.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: <p style="text-align: center;">Sample filter changed.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

01 Minute Averages



— LICA SO2_ PPB

TOTAL REDUCED SULPHUR



Thermo 450i Total Reduced Sulphur Analyzer Calibration

| | | | |
|--------------------------|-----------------------|--|-------------------------------|
| Date: | February 10, 2016 | Barometric Pressure: | 0.942 atm |
| Company/Airshed: | LICA | Station Temperature °C: | 23 |
| Location/Station Name: | Cold Lake South | Weather Conditions: | A few clouds |
| Parameter: | Total Reduced Sulphur | Calibration Purpose: | routine monthly |
| Start Time 24 hr. (mst): | 9:00 | Performed By/Reviewer: | Alex Yakupov Trina Whitsitt |
| End Time 24 hr. (mst): | 12:33 | Cal Gas Expiry Date: | July 15, 2017 |
| Calibration Method: | Gas Dilution | Converter Model & s/n (if applicable): | CDNova CDN-101 #501 |

| | | |
|-----------|---|----------------------|
| Analyzer: | Serial Number: 812728560 | Range ppb: 100 |
| | Last Calibration Date: January 11, 2016 | As Found C.F.: 1.013 |
| | Previous C.F.: 1.000 | New C.F.: 1.000 |

| Calibrator: | Flow Meter ID's: n/a | <table border="1"> <caption>Standard Calibration Points for Ranges</caption> <thead> <tr> <th>Point</th> <th>Total Reduced Sulphur Standard Calibration Points</th> </tr> </thead> <tbody> <tr> <td>High</td> <td>78</td> </tr> <tr> <td>Mld</td> <td>38</td> </tr> <tr> <td>Low</td> <td>19</td> </tr> </tbody> </table> | Point | Total Reduced Sulphur Standard Calibration Points | High | 78 | Mld | 38 | Low | 19 |
|-------------|---|---|-------|---|------|----|-----|----|-----|----|
| Point | Total Reduced Sulphur Standard Calibration Points | | | | | | | | | |
| High | 78 | | | | | | | | | |
| Mld | 38 | | | | | | | | | |
| Low | 19 | | | | | | | | | |
| | Make & Model: API 700 | | | | | | | | | |
| | Serial #: 830 | | | | | | | | | |
| | Cal Gas Cylinder I.D. #: LL36837 | | | | | | | | | |
| | Cal Gas Conc. (ppm): 10.0 | | | | | | | | | |

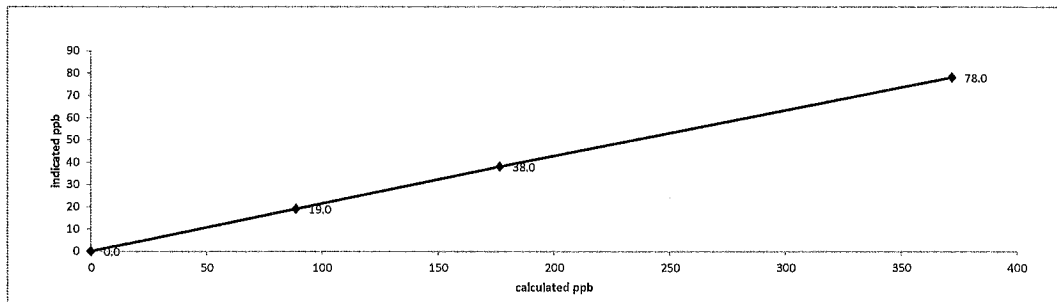
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

| Point | Calibrator Flow Rates (cc/min) | | | Calculated Concentration: (ppb) | Indicated Concentration: (ppb) | Correction Factors (C.F.): |
|-----------------|--------------------------------|---------|-------|---------------------------------|--------------------------------|----------------------------|
| | Diluent | Cal Gas | Total | | | |
| as found zero | 7498 | 0.00 | 7498 | 0.0 | 0.0 | N/A |
| as found high | 7441 | 58.50 | 7500 | 78.0 | 77.0 | 1.013 |
| adjusted zero | 7498 | 0.00 | 7498 | 0.0 | 0.0 | n/a |
| adjusted high | 7441 | 58.50 | 7500 | 78.0 | 78.0 | 1.000 |
| mld | 7472 | 28.50 | 7501 | 38.0 | 38.0 | 1.000 |
| low | 7483 | 14.30 | 7497 | 19.1 | 19.0 | 1.004 |
| calibrator zero | 7498 | 0.00 | 7498 | 0.0 | 0.0 | n/a |
| Average C.F. = | | | | | | 1.001 |

Linear Regression/Calibration Results:

| | | | |
|------------------------------------|--------|--------|--------------|
| Correlation Coefficient = | 1.000 | LIMITS | > or = 0.995 |
| Slope = | 1.000 | | .95-1.05 |
| b (Intercept as % of full scale) = | 0.03% | | ± 3% F.S. |
| % change in C.F. from last cal = | -1.31% | | ± 10% |

Thermo 450i Total Reduced Sulphur Analyzer Calibration

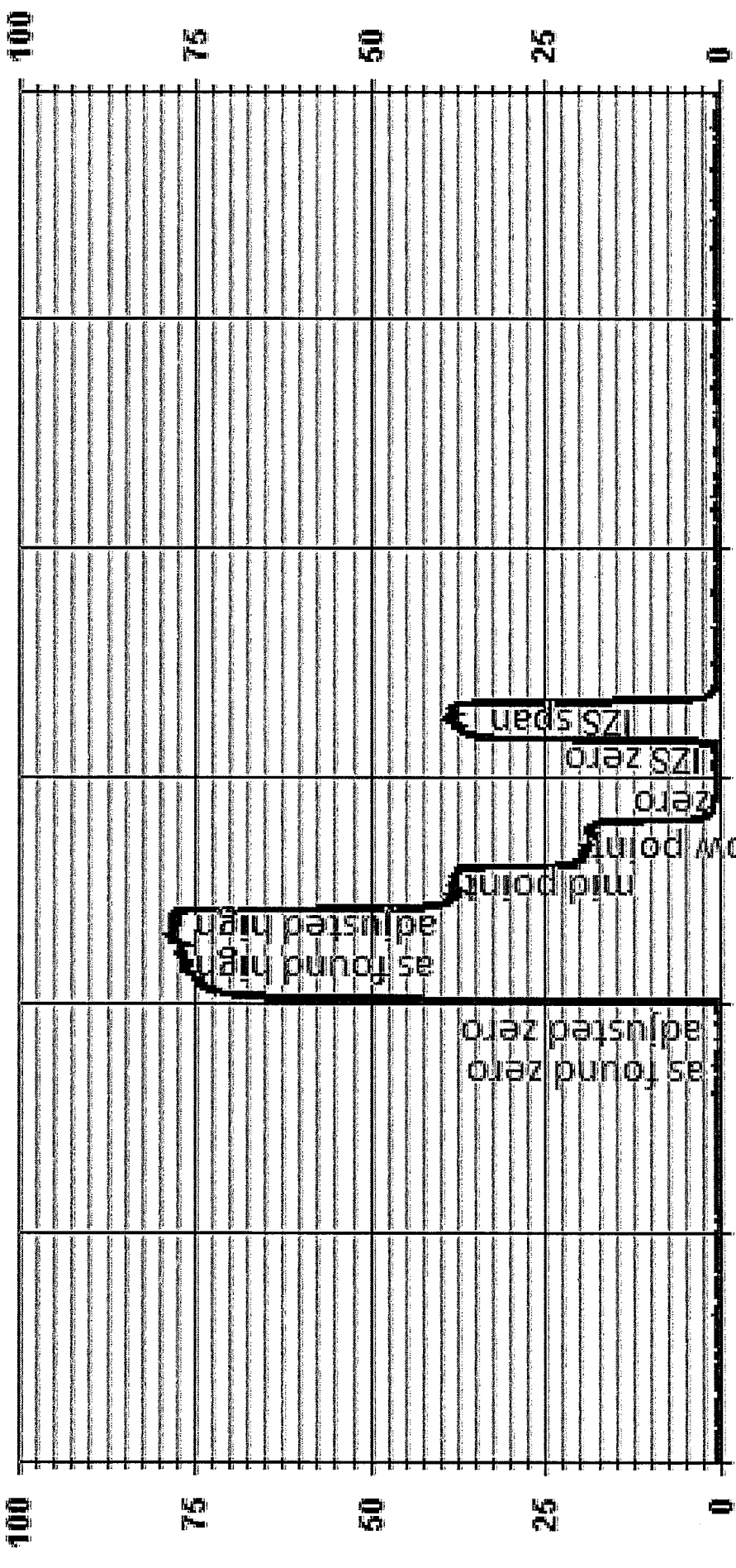


| | | | |
|----------------------|-----------------------|----------------------|-----------------------|
| As found: | BKG: 14.1 | As left: | BKG: 14.2 |
| COEF: 1.010 | PMT: -650.5 | COEF: 1.021 | PMT: -650.5 |
| FLASH: 742 | INTERNAL: 30.1 | FLASH: 743 | INTERNAL: 31.1 |
| CHAMBER: 44.9 | CONVERTER TEMP: 327.0 | CHAMBER: 45.0 | CONVERTER TEMP: 324.4 |
| CONVERTER SET: 325.0 | PERM OVEN GAS: 44.98 | CONVERTER SET: 325.0 | PERM OVEN GAS: 45.0 |
| PERM OVEN HTR: 44.36 | PRESSURE: 663.0 | PERM OVEN HTR: 44.38 | PRESSURE: 663.9 |
| SAMPLE FLOW: 0.511 | LAMP INTENSITY: 92 | SAMPLE FLOW: 0.511 | LAMP INTENSITY: 93 |
| Internal Span: 37.6 | | Internal Span: 38.4 | |

Comments:

Sample filter changed, 09:43 - 09:48 - SO2 converter efficiency tested (SO2 Concentration - 20 ppb, Analyzer Response - 0.0 ppb)

01 Minute Averages

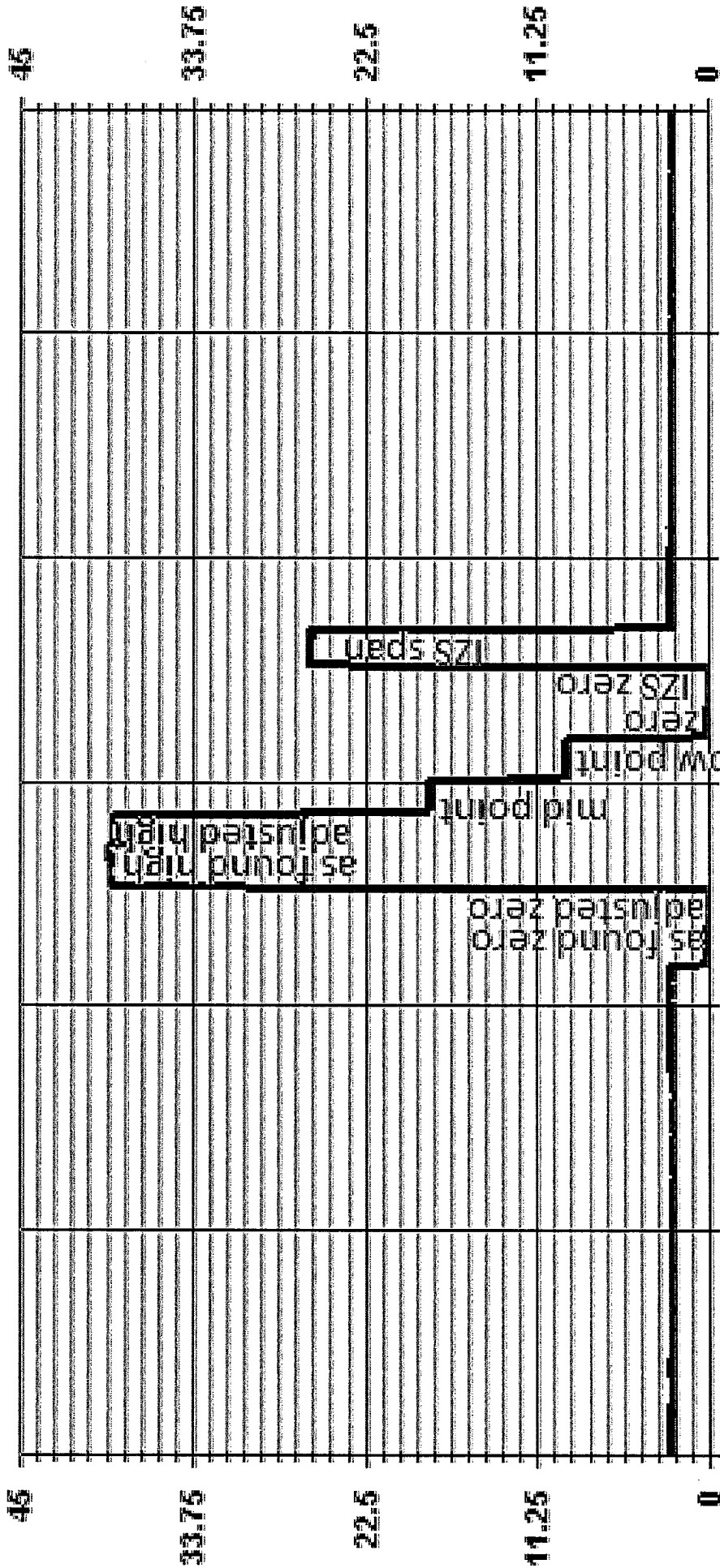


— LICA TRS_ PPB

TOTAL HYDROCARBON


| Maxxam | | Thermo 51C Total Hydrocarbon Analyzer Calibration | | | | | | | | | |
|---|------------|--|-------|---------------------------------|-------------------------------|---------------------------------|----|-----|----|-----|---|
| Date: February 9, 2016 | | Barometric Pressure: 0.941 atm | | | | | | | | | |
| Company/Alrshed: LICA | | Station Temperature °C: 22 | | | | | | | | | |
| Location/Station Name: Cold Lake South | | Weather Conditions: Mainly cloudy with snow | | | | | | | | | |
| Parameter: Total Hydrocarbon | | Calibration Purpose: routine monthly | | | | | | | | | |
| Start/End Time 24 hr. (mst): 9:03/ 12:28 | | Performed By/Reviewer: Alex Yakupov Trina Whitsett | | | | | | | | | |
| Calibration Method: Gas Dilution | | Cal Gas Expiry Date: November 25, 2023 | | | | | | | | | |
| Analyzer: | | | | | | | | | | | |
| Serial Number: 427408718 | | Range ppm: 50 | | | | | | | | | |
| Last Calibration Date: January 12, 2016 | | As Found C.F.: 0.992 | | | | | | | | | |
| Previous Cal High Point C.F.: 1.000 | | New C.F.: 0.998 | | | | | | | | | |
| Calibrator: | | | | | | | | | | | |
| Flow Meter ID's: n/a | | Standard Calibration Points for a Range of: 60 ppm | | | | | | | | | |
| Make & Model: API 700 | | <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Point</th> <th>Target ppm</th> </tr> </thead> <tbody> <tr> <td>High</td> <td>38</td> </tr> <tr> <td>Mld</td> <td>18</td> </tr> <tr> <td>Low</td> <td>9</td> </tr> </tbody> </table> | | Point | Target ppm | High | 38 | Mld | 18 | Low | 9 |
| Point | Target ppm | | | | | | | | | | |
| High | 38 | | | | | | | | | | |
| Mld | 18 | | | | | | | | | | |
| Low | 9 | | | | | | | | | | |
| Serial #: 830 | | | | | | | | | | | |
| Cal Gas Cylinder I.D. #: LL165372 | | | | | | | | | | | |
| CH ₄ /C ₃ H ₈ Cylinder Conc. (ppm): 606.0 212.0 | | | | | | | | | | | |
| CH ₄ as propane/total CH ₄ equivalents (ppm): 583.0 1189.0 | | | | | | | | | | | |
| <i>ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015</i> | | | | | | | | | | | |
| Callibrator Flow Rates (cc/min) | | | | | | | | | | | |
| Point | Diluent | Cal Gas | Total | Calculated Concentration (ppm) | Indicated Concentration (ppm) | Correction Factors: | | | | | |
| as found zero | 1999 | 0.00 | 1999 | 0.0 | 0.14 | n/a | | | | | |
| as found high | 1931 | 65.00 | 1996 | 38.72 | 39.18 | 0.992 | | | | | |
| adjusted zero | 1999 | 0.00 | 1999 | 0.00 | 0.00 | n/a | | | | | |
| adjusted high | 1931 | 65.00 | 1996 | 38.72 | 38.80 | 0.998 | | | | | |
| mld | 1969 | 31.00 | 2000 | 18.43 | 18.40 | 1.002 | | | | | |
| low | 1984 | 16.00 | 2000 | 9.51 | 9.40 | 1.012 | | | | | |
| callibrator zero | 1999 | 0.00 | 1999 | 0.0 | 0.00 | n/a | | | | | |
| Average C.F. = | | | | | | 1.004 | | | | | |
| Linear Regression/Calibration Results: | | | | LIMITS | | | | | | | |
| Correlation Coefficient = 1.000 | | | | > or = 0.995 | | | | | | | |
| Slope = 0.997 | | | | .95-1.05 | | | | | | | |
| b (Intercept as % of full scale) = 0.13% | | | | ± 3% F.S. | | | | | | | |
| % change in C.F. from last cal = 0.82% | | | | ± 10% | | | | | | | |
| Thermo 51C Total Hydrocarbon Analyzer Calibration | | | | | | | | | | | |
| | | | | | | | | | | | |
| As found: | | | | As left: | | | | | | | |
| H2 cylinder (psi): 1250 | | H2 cylinder (psi): 1250 | | H2 cylinder (psi): 1250 | | H2 cylinder (psi): 1250 | | | | | |
| H2 cylinder reg set (psi): 22 | | H2 cylinder reg set (psi): 22 | | H2 cylinder reg set (psi): 22 | | H2 cylinder reg set (psi): 22 | | | | | |
| Span Cylinder (psi): 1900 | | Span Cylinder (psi): 1900 | | Span Cylinder (psi): 1900 | | Span Cylinder (psi): 1900 | | | | | |
| Span Cylinder Reg Set (psi): 22 | | Span Cylinder Reg Set (psi): 22 | | Span Cylinder Reg Set (psi): 22 | | Span Cylinder Reg Set (psi): 22 | | | | | |
| Zero Air Gen Pressure: 34 | | Zero Air Gen Pressure: 34 | | Zero Air Gen Pressure: 34 | | Zero Air Gen Pressure: 34 | | | | | |
| measurement alarms: None | | measurement alarms: None | | measurement alarms: None | | measurement alarms: None | | | | | |
| service alarms: None | | service alarms: None | | service alarms: None | | service alarms: None | | | | | |
| cnt: 1440 | | cnt: 1458 | | cnt: 1458 | | cnt: 1458 | | | | | |
| rng: 1 | | rng: 1 | | rng: 1 | | rng: 1 | | | | | |
| try: 0 | | try: 0 | | try: 0 | | try: 0 | | | | | |
| flm: 183.6 | | flm: 183.8 | | flm: 183.8 | | flm: 183.8 | | | | | |
| det: 125.8 | | det: 125.3 | | det: 125.3 | | det: 125.3 | | | | | |
| Flame: 183 | | Flame: 183 | | Flame: 183 | | Flame: 183 | | | | | |
| Filter: 125 | | Filter: 125 | | Filter: 125 | | Filter: 125 | | | | | |
| Base: 125 | | Base: 125 | | Base: 125 | | Base: 125 | | | | | |
| Sample psi: 06.53 | | Sample psi: 06.52 | | Sample psi: 06.52 | | Sample psi: 06.52 | | | | | |
| Internal Air Pressure: 20 | | Internal Air Pressure: 20 | | Internal Air Pressure: 20 | | Internal Air Pressure: 20 | | | | | |
| Internal Fuel Pressure: 14 | | Internal Fuel Pressure: 14 | | Internal Fuel Pressure: 14 | | Internal Fuel Pressure: 14 | | | | | |
| Internal Pressure Gauge psi: 27 | | Internal Pressure Gauge psi: 27 | | Internal Pressure Gauge psi: 27 | | Internal Pressure Gauge psi: 27 | | | | | |
| Internal Span: 25.9 | | Internal Span: 25.9 | | Internal Span: 25.9 | | Internal Span: 25.9 | | | | | |
| Comments: | | | | | | | | | | | |
| Sample filter changed. EV has not changed after calibration. | | | | | | | | | | | |

01 Minute Averages



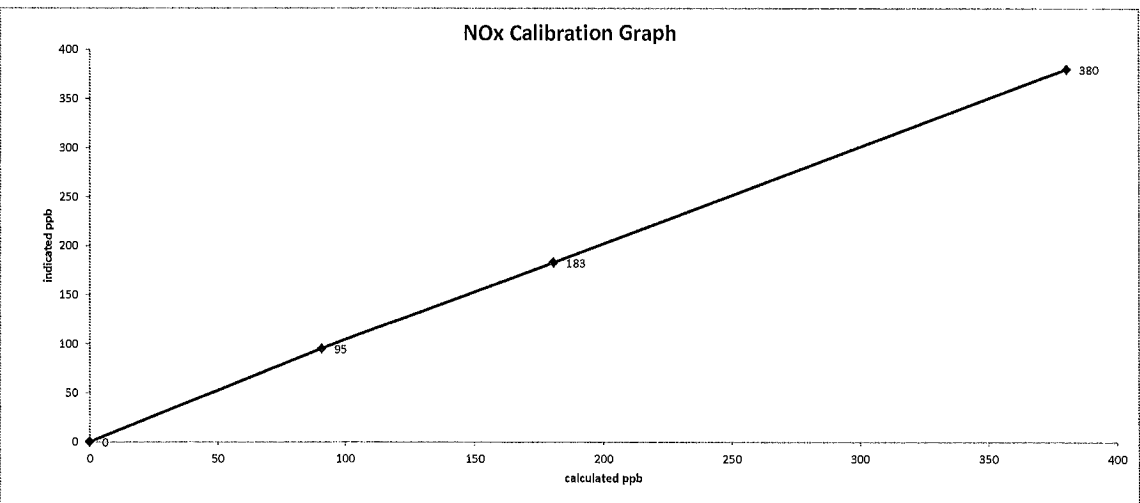
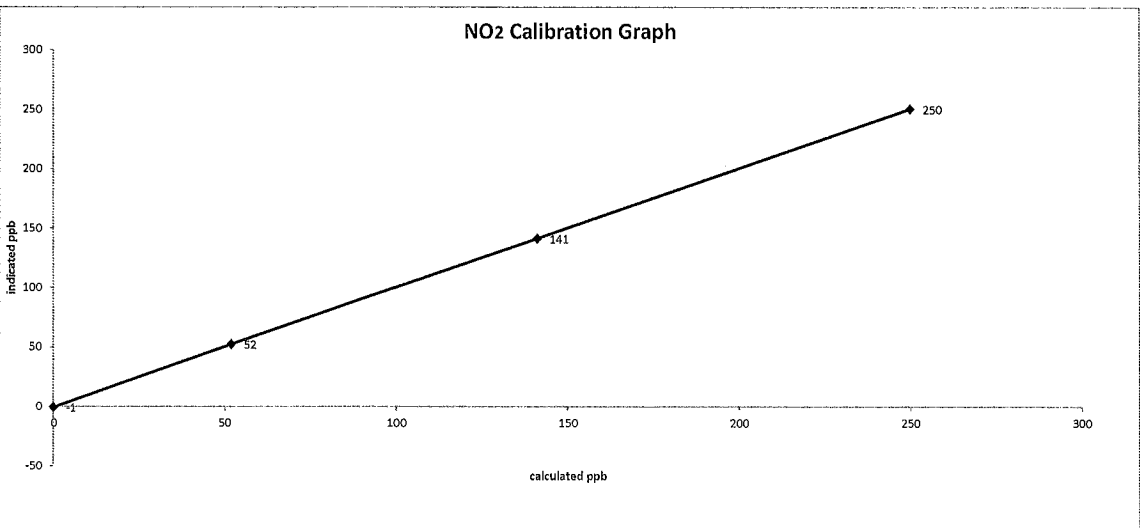
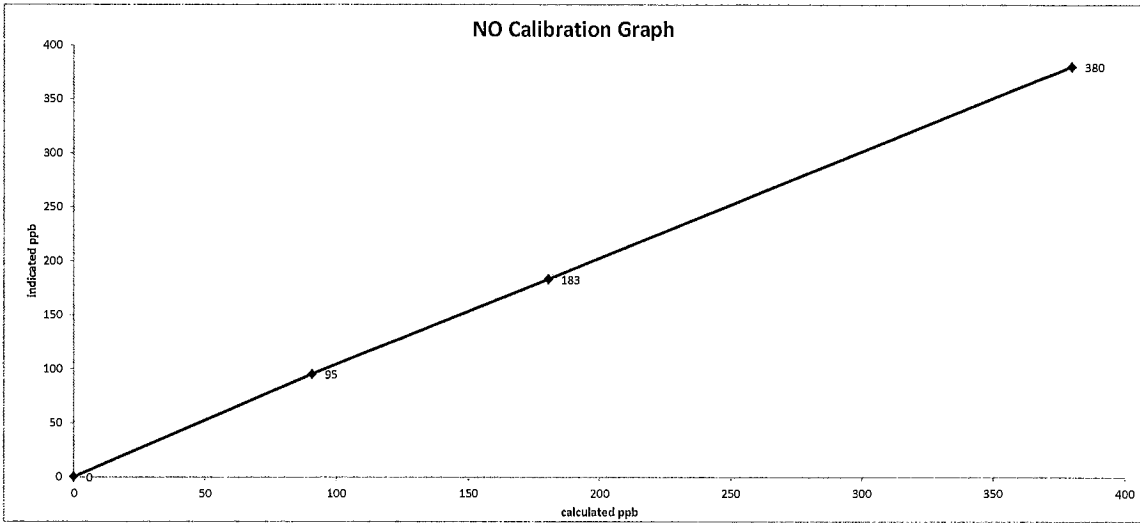
— LICA - - - - THC PPM

NITROGEN DIOXIDE

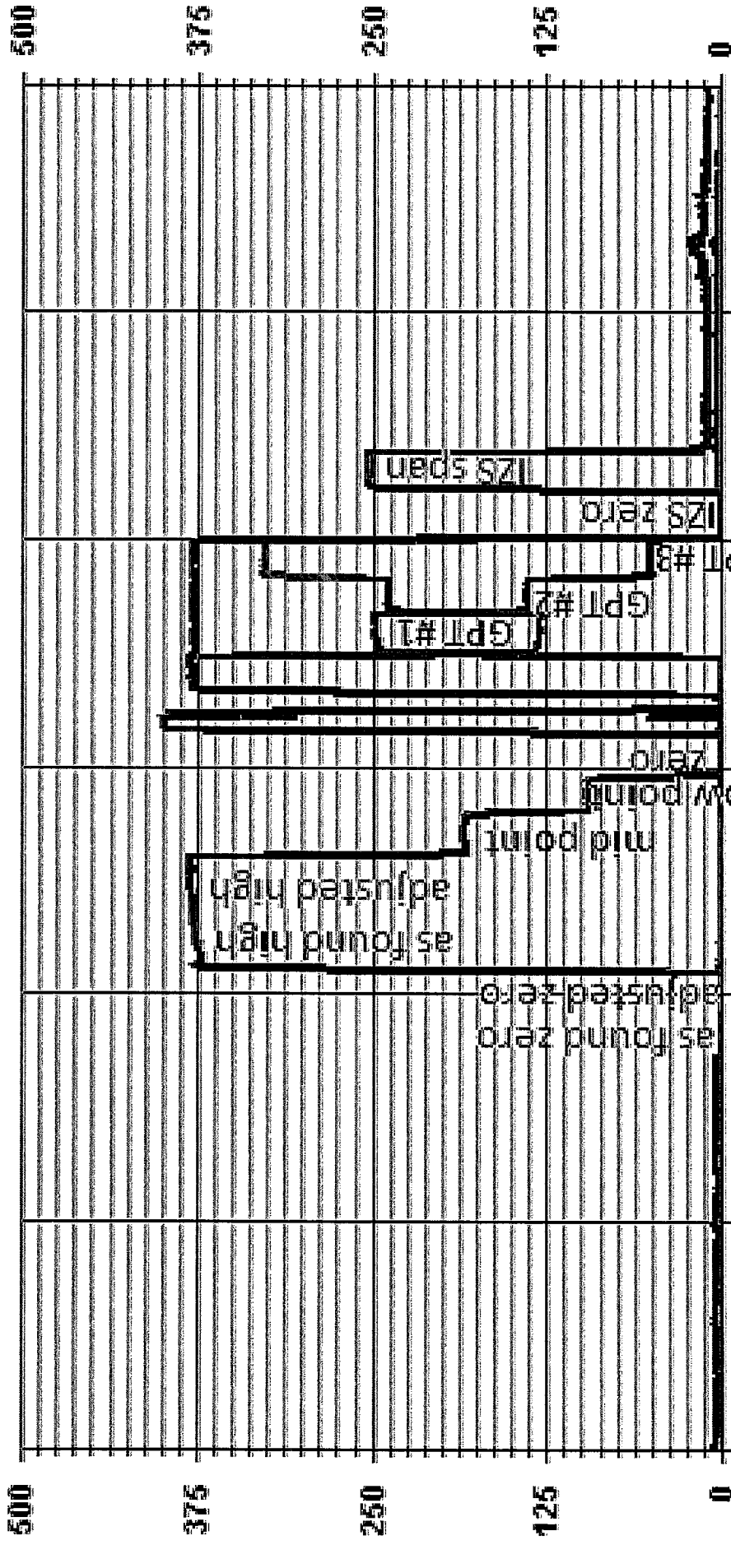
|  | | <h2 style="margin: 0;">Thermo 42i NO-NO2-NOx Analyzer Calibration</h2> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------|---|-----------------|--------------------------------|-----------------|------------------------------|---------------------------|--------------------|---------------------------|----------------------|---------------------------|-------------------|----------------------|----------------------|---------|---------|------------|------------|------------------------------------|----------------|-------|--------|-----------|----------------------------------|--------|---------------|-------|-------|--------------------------|-----|-------|-------|--------------|---------------|------|------|-------------------|-------|-------|-------|-------|-------|-------|---------------|-------|-------|-------|---------|------|-------|------|-------|-------|---------------|-------|-------|-------|-------|---------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|--------------------------------|-------|-------|-------|-----|------|------|------|------|-------|------|------|-------|-------|-----------------|------|------|------|---|---|-----|-----|-----|-----|----------------|--|--|--|--|--|--|--|-------|-------|
| Date: February 9, 2016 Company/Alrshed: LICA Location/Station Name: Cold Lake South Start/End Time 24 hr. (mst): 9:03 / 14:41 G.P.T. to be used for Ozone?: No Calibration Method: Gas Dilution & Varying UV Lamp Power | | Barometric Pressure: 0.941 atm Station Temperature °C: 22 Weather Conditions: A few clouds Calibration Purpose: routine monthly Performed By/Reviewer: Alex Yakupov Trina Whitsitt Cal Gas Expiry Date: March 12, 2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analyzer: Serial Number: 1505664393 Last Calibration Date: January 11, 2016 Range ppb: 500 | | Correction Factors: <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Previous C.F.:</th> <th>As Found C.F.:</th> <th>New C.F.:</th> </tr> </thead> <tbody> <tr> <td>NO =</td> <td>0.999</td> <td>1.004</td> <td>1.001</td> </tr> <tr> <td>NO₂ =</td> <td>1.000</td> <td>1.000</td> <td>1.000</td> </tr> <tr> <td>NOx =</td> <td>0.999</td> <td>1.004</td> <td>1.001</td> </tr> </tbody> </table> | | | Previous C.F.: | As Found C.F.: | New C.F.: | NO = | 0.999 | 1.004 | 1.001 | NO ₂ = | 1.000 | 1.000 | 1.000 | NOx = | 0.999 | 1.004 | 1.001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Previous C.F.: | As Found C.F.: | New C.F.: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NO = | 0.999 | 1.004 | 1.001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NO ₂ = | 1.000 | 1.000 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NOx = | 0.999 | 1.004 | 1.001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibrator: Flow Meter ID's: n/a Make & Model: SABIO 2010 D Serial #: 11900613 Cal Gas Cylinder I.D. #: BLM002073 NO/NOx Gas Conc. (ppm): 50.6 50.6 | | Standard Calibration Points for a Range of: 500 ppb <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Point</th> <th>Target NO (ppb)</th> <th>Target NO₂ (ppb)</th> <th>Cc Ozone ?</th> </tr> </thead> <tbody> <tr> <td>High</td> <td>380</td> <td>260</td> <td>n/a</td> </tr> <tr> <td>Mld</td> <td>180</td> <td>145</td> <td>n/a</td> </tr> <tr> <td>Low</td> <td>90</td> <td>50</td> <td>n/a</td> </tr> <tr> <td>Extra Point #1</td> <td>n/a</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td>Extra Point #2</td> <td>n/a</td> <td>n/a</td> <td>n/a</td> </tr> </tbody> </table> | | Point | Target NO (ppb) | Target NO ₂ (ppb) | Cc Ozone ? | High | 380 | 260 | n/a | Mld | 180 | 145 | n/a | Low | 90 | 50 | n/a | Extra Point #1 | n/a | n/a | n/a | Extra Point #2 | n/a | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Point | Target NO (ppb) | Target NO ₂ (ppb) | Cc Ozone ? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| High | 380 | 260 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mld | 180 | 145 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low | 90 | 50 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extra Point #1 | n/a | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extra Point #2 | n/a | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">Calibrator Flow Rates (cc/min)</th> <th>Calculated NO</th> <th>Calculated NOx</th> <th>Indicated NO</th> <th>Indicated NOx</th> <th>NO C.F.</th> <th>NO₂ C.F.</th> </tr> <tr> <th>Point</th> <th>Diluent</th> <th>Cal Gas</th> <th>Total Flow</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>as found zero</td> <td>5012</td> <td>0.0</td> <td>5012</td> <td>0</td> <td>0</td> <td>0.0</td> <td>-0.1</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td>as found high</td> <td>4976</td> <td>37.7</td> <td>5014</td> <td>380.5</td> <td>380.5</td> <td>379.0</td> <td>379.0</td> <td>1.004</td> <td>1.004</td> </tr> <tr> <td>adjusted zero</td> <td>5012</td> <td>0.00</td> <td>5012</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td>adjusted high</td> <td>4976</td> <td>37.70</td> <td>5014</td> <td>380.5</td> <td>380.5</td> <td>380.0</td> <td>380.0</td> <td>1.001</td> <td>1.001</td> </tr> <tr> <td>mld</td> <td>4997</td> <td>17.90</td> <td>5015</td> <td>180.6</td> <td>180.6</td> <td>183.0</td> <td>183.0</td> <td>0.987</td> <td>0.987</td> </tr> <tr> <td>low</td> <td>5009</td> <td>9.00</td> <td>5018</td> <td>90.8</td> <td>90.8</td> <td>95.0</td> <td>95.0</td> <td>0.955</td> <td>0.955</td> </tr> <tr> <td>calibrator zero</td> <td>5012</td> <td>0.00</td> <td>5012</td> <td>0</td> <td>0</td> <td>0.0</td> <td>0.0</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td colspan="8" style="text-align: right;">Average C.F. =</td> <td>0.981</td> <td>0.981</td> </tr> </tbody> </table> | | | | Calibrator Flow Rates (cc/min) | | | | Calculated NO | Calculated NOx | Indicated NO | Indicated NOx | NO C.F. | NO ₂ C.F. | Point | Diluent | Cal Gas | Total Flow | (ppb) | (ppb) | (ppb) | (ppb) | | | as found zero | 5012 | 0.0 | 5012 | 0 | 0 | 0.0 | -0.1 | n/a | n/a | as found high | 4976 | 37.7 | 5014 | 380.5 | 380.5 | 379.0 | 379.0 | 1.004 | 1.004 | adjusted zero | 5012 | 0.00 | 5012 | 0.0 | 0.0 | 0.0 | 0.0 | n/a | n/a | adjusted high | 4976 | 37.70 | 5014 | 380.5 | 380.5 | 380.0 | 380.0 | 1.001 | 1.001 | mld | 4997 | 17.90 | 5015 | 180.6 | 180.6 | 183.0 | 183.0 | 0.987 | 0.987 | low | 5009 | 9.00 | 5018 | 90.8 | 90.8 | 95.0 | 95.0 | 0.955 | 0.955 | calibrator zero | 5012 | 0.00 | 5012 | 0 | 0 | 0.0 | 0.0 | n/a | n/a | Average C.F. = | | | | | | | | 0.981 | 0.981 |
| Calibrator Flow Rates (cc/min) | | | | Calculated NO | Calculated NOx | Indicated NO | Indicated NOx | NO C.F. | NO ₂ C.F. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Point | Diluent | Cal Gas | Total Flow | (ppb) | (ppb) | (ppb) | (ppb) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found zero | 5012 | 0.0 | 5012 | 0 | 0 | 0.0 | -0.1 | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found high | 4976 | 37.7 | 5014 | 380.5 | 380.5 | 379.0 | 379.0 | 1.004 | 1.004 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| adjusted zero | 5012 | 0.00 | 5012 | 0.0 | 0.0 | 0.0 | 0.0 | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| adjusted high | 4976 | 37.70 | 5014 | 380.5 | 380.5 | 380.0 | 380.0 | 1.001 | 1.001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mld | 4997 | 17.90 | 5015 | 180.6 | 180.6 | 183.0 | 183.0 | 0.987 | 0.987 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| low | 5009 | 9.00 | 5018 | 90.8 | 90.8 | 95.0 | 95.0 | 0.955 | 0.955 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| calibrator zero | 5012 | 0.00 | 5012 | 0 | 0 | 0.0 | 0.0 | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average C.F. = | | | | | | | | 0.981 | 0.981 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">Calibrator Flow Rates (cc/min)</th> <th>Calibrator Setting</th> <th>Indicated NO</th> <th>Indicated NOx</th> <th>Indicated NO₂</th> <th>NO drop</th> <th>NO₂ gain</th> <th>NO₂ C.F.</th> </tr> <tr> <th>Point</th> <th>Diluent</th> <th>Cal Gas</th> <th>Total Flow</th> <th>volts or ppb</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> </tr> </thead> <tbody> <tr> <td>NOx reference</td> <td>4976</td> <td>37.70</td> <td>5014</td> <td>0.0</td> <td>380.0</td> <td>379.0</td> <td>-1.0</td> <td>0.0</td> <td>-1.0</td> <td></td> </tr> <tr> <td>as found high NO2</td> <td>4976</td> <td>37.70</td> <td>5014</td> <td>255.0</td> <td>130.0</td> <td>378.0</td> <td>249.0</td> <td>250.0</td> <td>250.0</td> <td>1.000</td> </tr> <tr> <td>gpt mld</td> <td>4976</td> <td>37.70</td> <td>5014</td> <td>140.0</td> <td>239.0</td> <td>378.0</td> <td>140.0</td> <td>141.0</td> <td>141.0</td> <td>1.000</td> </tr> <tr> <td>gpt low</td> <td>4976</td> <td>37.70</td> <td>5014</td> <td>50.0</td> <td>328.0</td> <td>378.0</td> <td>51.0</td> <td>52.0</td> <td>52.0</td> <td>1.000</td> </tr> <tr> <td colspan="9" style="text-align: right;">Average NO₂ C.F. =</td> <td>1.000</td> </tr> </tbody> </table> | | | | Calibrator Flow Rates (cc/min) | | | | Calibrator Setting | Indicated NO | Indicated NOx | Indicated NO ₂ | NO drop | NO ₂ gain | NO ₂ C.F. | Point | Diluent | Cal Gas | Total Flow | volts or ppb | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) | NOx reference | 4976 | 37.70 | 5014 | 0.0 | 380.0 | 379.0 | -1.0 | 0.0 | -1.0 | | as found high NO2 | 4976 | 37.70 | 5014 | 255.0 | 130.0 | 378.0 | 249.0 | 250.0 | 250.0 | 1.000 | gpt mld | 4976 | 37.70 | 5014 | 140.0 | 239.0 | 378.0 | 140.0 | 141.0 | 141.0 | 1.000 | gpt low | 4976 | 37.70 | 5014 | 50.0 | 328.0 | 378.0 | 51.0 | 52.0 | 52.0 | 1.000 | Average NO ₂ C.F. = | | | | | | | | | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibrator Flow Rates (cc/min) | | | | Calibrator Setting | Indicated NO | Indicated NOx | Indicated NO ₂ | NO drop | NO ₂ gain | NO ₂ C.F. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Point | Diluent | Cal Gas | Total Flow | volts or ppb | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NOx reference | 4976 | 37.70 | 5014 | 0.0 | 380.0 | 379.0 | -1.0 | 0.0 | -1.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found high NO2 | 4976 | 37.70 | 5014 | 255.0 | 130.0 | 378.0 | 249.0 | 250.0 | 250.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| gpt mld | 4976 | 37.70 | 5014 | 140.0 | 239.0 | 378.0 | 140.0 | 141.0 | 141.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| gpt low | 4976 | 37.70 | 5014 | 50.0 | 328.0 | 378.0 | 51.0 | 52.0 | 52.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average NO ₂ C.F. = | | | | | | | | | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Linear Regression/Calibration Results: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>NO</th> <th>NOx</th> <th>NO₂</th> <th>LIMITS</th> </tr> </thead> <tbody> <tr> <td>Correlation Coefficient =</td> <td>1.000</td> <td>1.000</td> <td>1.000</td> <td>> or = 0.995</td> </tr> <tr> <td>Slope =</td> <td>1.005</td> <td>1.005</td> <td>0.997</td> <td>.95-1.05</td> </tr> <tr> <td>b (Intercept as % of full scale) =</td> <td>0.46%</td> <td>0.46%</td> <td>-0.12%</td> <td>± 3% F.S.</td> </tr> <tr> <td>% change in C.F. from last cal =</td> <td>-0.49%</td> <td>-0.46%</td> <td>0.00%</td> <td>± 10%</td> </tr> <tr> <td>NO2 converter efficiency</td> <td></td> <td></td> <td>1.00</td> <td>0.96 to 1.04</td> </tr> </tbody> </table> | | | | | NO | NOx | NO ₂ | LIMITS | Correlation Coefficient = | 1.000 | 1.000 | 1.000 | > or = 0.995 | Slope = | 1.005 | 1.005 | 0.997 | .95-1.05 | b (Intercept as % of full scale) = | 0.46% | 0.46% | -0.12% | ± 3% F.S. | % change in C.F. from last cal = | -0.49% | -0.46% | 0.00% | ± 10% | NO2 converter efficiency | | | 1.00 | 0.96 to 1.04 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | NO | NOx | NO ₂ | LIMITS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Correlation Coefficient = | 1.000 | 1.000 | 1.000 | > or = 0.995 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Slope = | 1.005 | 1.005 | 0.997 | .95-1.05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| b (Intercept as % of full scale) = | 0.46% | 0.46% | -0.12% | ± 3% F.S. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % change in C.F. from last cal = | -0.49% | -0.46% | 0.00% | ± 10% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NO2 converter efficiency | | | 1.00 | 0.96 to 1.04 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| As found: NO Bkg: 3.1 NOx Bkg: 3.5 NO Coef: 0.965 NO ₂ Coef: 1.000 NOx Coef: 0.998 PMT: -854.7 Internal: 25.3 Chamber: 50.1 Cooler: -3.0 NO ₂ Converter: 326.8 NO ₂ Converter Set: 325.0 Pressure: 186.2 Flow: 0.800 Ozonator Flow: OK Internal Span NO: 1.9 Internal Span NO ₂ : 264 Internal Span NOx: 266 | | As left: NO Bkg: 3.3 NOx Bkg: 3.3 NO Coef: 0.969 NO ₂ Coef: 1.000 NOx Coef: 0.994 PMT: -854.7 Internal: 25.8 Chamber: 50.7 Cooler: -3.2 NO ₂ Converter: 326.8 NO ₂ Converter Set: 325.0 Pressure: 185.9 Flow: 0.800 Ozonator Flow: OK Internal Span NO: 1.9 Internal Span NO ₂ : 250.9 Internal Span NOx: 253.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: <p style="text-align: center;">Sample filter changed. No NO₂ adjustment made. GPT starts at 12:34.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Date: February 9, 2016
Company/Airshed: LICA
Location/Station Name: Cold Lake South

Start/End Time 24 hr. (mst): 9:03 / 14:41
Calibration Purpose: routine monthly
Calibration Method: Gas Dilution & Varying UV Lamp Power



01 Minute Averages

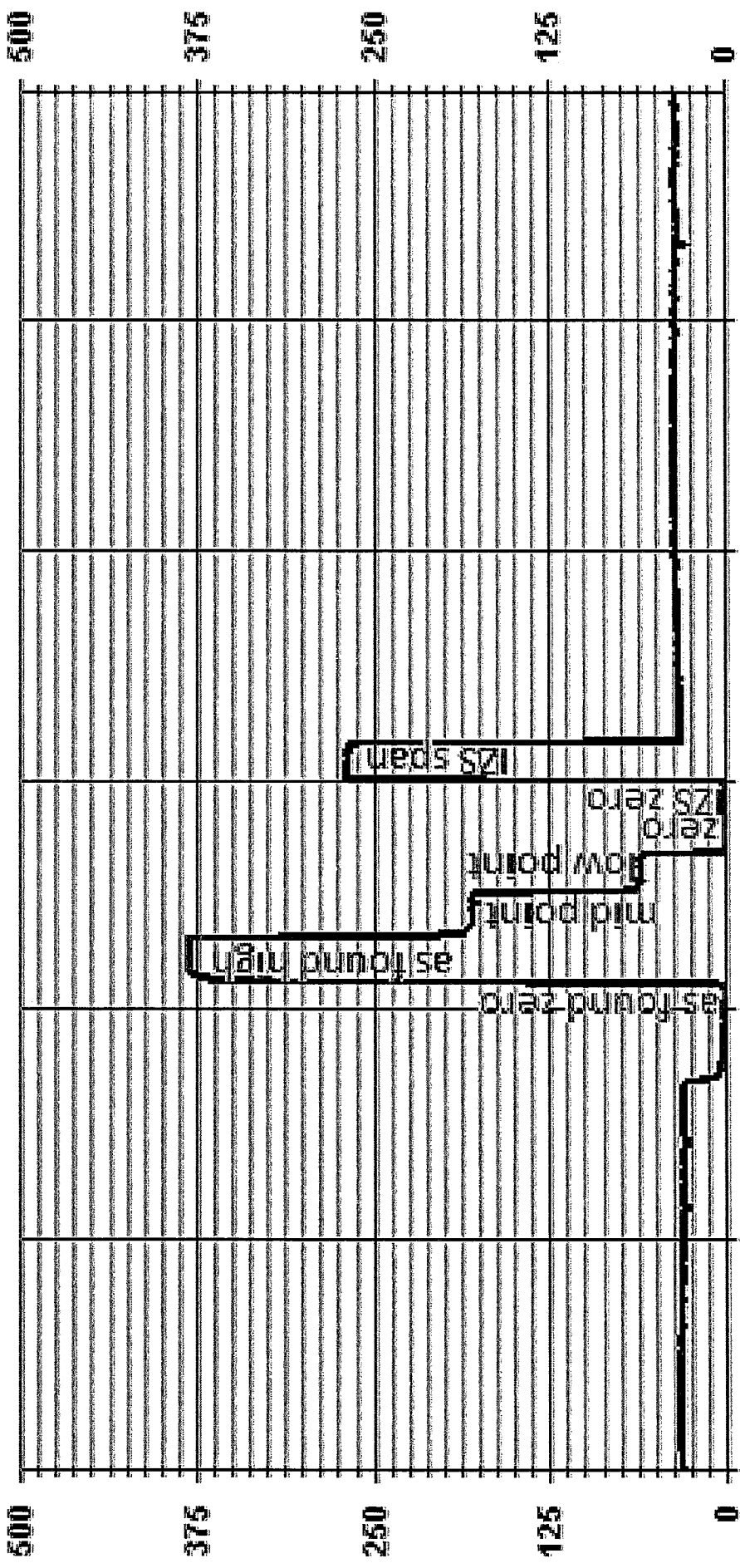


— LICA NOX_ PPB — LICA NO_ LICA NO2_ PPB

OZONE

| Thermo 49i Ozone Analyzer Calibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---|--|-------------------------------------|---------------------------|-------------------------------------|--------------------------|---------------------|--------------------------|---------------------------|-------|-------|-------|---------------|------|------|-----|-----|-----|-----|---------------|------|------|-------|-------|-------|-------|-----|------|------|-------|-------|-------|-------|-----|------|------|------|------|------|-------|------------------|------|------|-----|-----|-----|-----|---------------|--|--|--|--|--|-------|
| Date: February 10, 2016 Company/Alrshed: LICA Location/Station Name: Cold Lake South Start/End Time 24 hr. (mst): 9:00 / 12:05 Ozone Calibration Method: Varying UV Lamp Power G.P.T. Date: n/a-done by Varying UV Lamp Power | Barometric Pressure: 0.942 atm Station Temperature °C: 23 Weather Conditions: A few clouds Calibration Purpose: routine monthly Performed By/Reviewer: Alex Yakupov Trina Whitsitt Cal Gas Expiry Date: n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analyzer: Serial Number: 700419951 Ozone Range ppb: 500 Last Calibration Date: January 12, 2016 As Found C.F.: 1.000 Previous Cal High Point C.F.: 1.000 New C.F.: 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibrator: Flow Meter ID's: n/a Make & Model: SABIO 2010 D Serial #: 11900613 Cal Gas Cylinder I.D. #: n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Point</th> <th colspan="2">Callibrator Flow Rate (cc/min)</th> <th>Calculated Concentration:</th> <th>Corrected Calculated Concentration:</th> <th>Indicated Concentration:</th> <th rowspan="2">Correction Factors:</th> </tr> <tr> <th>Total Flow @ Point Start</th> <th>Total Flow @ Point Finish</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> </tr> </thead> <tbody> <tr> <td>as found zero</td> <td>5013</td> <td>5013</td> <td>0.0</td> <td>n/a</td> <td>0.0</td> <td>n/a</td> </tr> <tr> <td>as found high</td> <td>5013</td> <td>5013</td> <td>380.0</td> <td>380.0</td> <td>380.0</td> <td>1.000</td> </tr> <tr> <td>mid</td> <td>5013</td> <td>5013</td> <td>180.0</td> <td>180.0</td> <td>180.0</td> <td>1.000</td> </tr> <tr> <td>low</td> <td>5013</td> <td>5013</td> <td>60.0</td> <td>60.0</td> <td>60.0</td> <td>1.000</td> </tr> <tr> <td>callibrator zero</td> <td>5013</td> <td>5013</td> <td>0.0</td> <td>n/a</td> <td>0.0</td> <td>n/a</td> </tr> <tr> <td colspan="6" style="text-align: right;">Average C.F.=</td> <td>1.000</td> </tr> </tbody> </table> | | Point | Callibrator Flow Rate (cc/min) | | Calculated Concentration: | Corrected Calculated Concentration: | Indicated Concentration: | Correction Factors: | Total Flow @ Point Start | Total Flow @ Point Finish | (ppb) | (ppb) | (ppb) | as found zero | 5013 | 5013 | 0.0 | n/a | 0.0 | n/a | as found high | 5013 | 5013 | 380.0 | 380.0 | 380.0 | 1.000 | mid | 5013 | 5013 | 180.0 | 180.0 | 180.0 | 1.000 | low | 5013 | 5013 | 60.0 | 60.0 | 60.0 | 1.000 | callibrator zero | 5013 | 5013 | 0.0 | n/a | 0.0 | n/a | Average C.F.= | | | | | | 1.000 |
| Point | Callibrator Flow Rate (cc/min) | | Calculated Concentration: | Corrected Calculated Concentration: | Indicated Concentration: | Correction Factors: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Total Flow @ Point Start | Total Flow @ Point Finish | (ppb) | (ppb) | (ppb) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found zero | 5013 | 5013 | 0.0 | n/a | 0.0 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found high | 5013 | 5013 | 380.0 | 380.0 | 380.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mid | 5013 | 5013 | 180.0 | 180.0 | 180.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| low | 5013 | 5013 | 60.0 | 60.0 | 60.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| callibrator zero | 5013 | 5013 | 0.0 | n/a | 0.0 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average C.F.= | | | | | | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Linear Regression/Calibration Results: Correlation Coefficient = 1.000 LIMITS > or = 0.995 Slope = 1.000 .95-1.05 b (Intercept as % of full scale) = 0.00% ± 3% F.S. % change in C.F. from last cal = 0.00% ± 10% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thermo 49i Ozone Analyzer Calibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width:100%;"> <tr> <td style="width:50%; vertical-align: top;"> As found: O3 Bkg: 0.2 O3 Coef: 1.005 Photo Lamp: 8.7 O3 Lamp: 9.0 Bench: 27.5 Bench Lamp: 53.4 O3 Lamp: 67.3 Pressure: 711.0 Cell A lpm: 0.718 Cell B lpm: 0.758 O3 ppb: 0.0 Cell A ppb: -15.2 Cell B ppb: 15.1 Cell A Int: 56940 Cell B Int: 55729 Internal Span: 282 </td> <td style="width:50%; vertical-align: top;"> As left: O3 Bkg: 0.2 O3 Coef: 1.005 Photo Lamp: 8.7 O3 Lamp: 9.0 Bench: 27.5 Bench Lamp: 53.4 O3 Lamp: 67.3 Pressure: 711.3 Cell A lpm: 0.718 Cell B lpm: 0.758 O3 ppb: 0.2 Cell A ppb: 8.5 Cell B ppb: -8.1 Cell A Int: 56966 Cell B Int: 55744 Internal Span: 267 </td> </tr> </table> | | As found: O3 Bkg: 0.2 O3 Coef: 1.005 Photo Lamp: 8.7 O3 Lamp: 9.0 Bench: 27.5 Bench Lamp: 53.4 O3 Lamp: 67.3 Pressure: 711.0 Cell A lpm: 0.718 Cell B lpm: 0.758 O3 ppb: 0.0 Cell A ppb: -15.2 Cell B ppb: 15.1 Cell A Int: 56940 Cell B Int: 55729 Internal Span: 282 | As left: O3 Bkg: 0.2 O3 Coef: 1.005 Photo Lamp: 8.7 O3 Lamp: 9.0 Bench: 27.5 Bench Lamp: 53.4 O3 Lamp: 67.3 Pressure: 711.3 Cell A lpm: 0.718 Cell B lpm: 0.758 O3 ppb: 0.2 Cell A ppb: 8.5 Cell B ppb: -8.1 Cell A Int: 56966 Cell B Int: 55744 Internal Span: 267 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Comments: Sample filter changed. No ZERO adjustment made. No High Point adjustment made. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

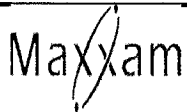
01 Minute Averages



02/10/16 05:40 02/10/16 07:40 02/10/16 09:40 02/10/16 11:40 02/10/16 13:40 02/10/16 15:40

— LICA 03_ PPB

PARTICULATE MATTER



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: February 10, 2016
 Company: LICA
 Station Name/Location: Cold Lake South
 Previous Audit Date: January 26, 2016
 Parameter: PM 2.5

Performed By/Reviewer: Alex Yakupov | Trina Whatsitt
 Start Time (mst): 12:24
 End Time (mst): 13:18
 Calibration Purpose: Bi-monthly #1
 Weather Conditions: A few clouds

1400A Information and Status:

| | | | |
|-------------------------|-----------------------|----------------------------|--------------|
| Serial Number: | <u>1405A201620804</u> | As Found Filter Loading %: | <u>31.24</u> |
| Ko Factor: | <u>14578</u> | As Left Filter Loading %: | <u>19.21</u> |
| Ambient Temperature °C: | <u>-6.74</u> | As Found Noise: | <u>0.007</u> |
| Ambient Pressure atm: | <u>0.942</u> | As Left Noise: | <u>0.000</u> |
| Main Flow Reading lpm: | <u>3.00</u> | Pump Vacuum: | <u>0.32</u> |
| Aux Flow Reading lpm: | <u>16.67</u> | Warnings: | <u>None</u> |

Reference Standards:

| | | | |
|-------------------|---------------------|------------------|------------------|
| | Flow: | Pressure: | Temperature: |
| Make: | <u>Dwyer</u> | <u>Fisher</u> | <u>Fisher</u> |
| Model: | <u>475 Mark III</u> | <u>FB 1291</u> | <u>FB 1291</u> |
| Serial Number: | <u>#1</u> | <u>130168457</u> | <u>130168457</u> |
| Calibration Date: | <u>28-Jan-16</u> | <u>18-Mar-15</u> | <u>18-Mar-15</u> |

As found leak check:

| | | Base | Zero | Reference | Zero |
|-------------|--------|------|-----------------|-----------|-----------------|
| PM 2.5 Flow | actual | 0.02 | 0.15 | 0.01 | 0.15 |
| | limit | 0.15 | 0.15 | 0.15 | 0.15 |
| Bypass Flow | actual | 0.08 | -0.09 | 0.04 | -0.09 |
| | limit | 0.60 | 0.60 | 0.60 | 0.60 |

As left leak check (same as above if as found passes):

| | | Base | Zero | Reference | Zero |
|-------------|--------|------|-----------------|-----------|-----------------|
| PM 2.5 Flow | actual | 0.02 | 0.15 | 0.01 | 0.15 |
| | limit | 0.15 | 0.15 | 0.15 | 0.15 |
| Bypass Flow | actual | 0.08 | -0.09 | 0.04 | -0.09 |
| | limit | 0.60 | 0.60 | 0.60 | 0.60 |

As found temperature and pressure:

| | | | |
|---------------------------|-------------|------------------------|--------------|
| 1405F temperature °C: | <u>-6.7</u> | 1405F pressure atm: | <u>0.942</u> |
| reference temperature °C: | <u>-6.8</u> | reference pressure: | <u>0.941</u> |
| tolerance +/- 2.0°C | | tolerance +/- 0.01 atm | |
| difference °C: | <u>-0.1</u> | difference : | <u>0.001</u> |

As left temperature and pressure (same as above if as found adequate):

| | | | |
|---------------------------|-------------|------------------------|--------------|
| 1405F temperature °C: | <u>-6.8</u> | 1405F pressure atm: | <u>0.941</u> |
| reference temperature °C: | <u>-6.8</u> | reference pressure: | <u>0.941</u> |
| tolerance +/- 2.0°C | | tolerance +/- 0.01 atm | |
| difference °C: | <u>0.0</u> | difference : | <u>0.000</u> |

As found flows:

| | |
|---|--|
| main flow tolerance 3.00 lpm +/- 0.20 lpm | total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7% |
| 1405F main flow lpm: <u>3.00</u> | 1400A total/aux flow lpm: <u>16.67</u> |
| reference main flow lpm: <u>2.96</u> | reference total/aux flow lpm: <u>16.85</u> |
| difference lpm: <u>-0.04</u> | difference lpm: <u>0.18</u> |

As left flows (same as above if as found adequate):

| | |
|---|--|
| main flow tolerance 3.00 lpm +/- 0.20 lpm | total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7% |
| 1405F main flow lpm: <u>3.00</u> | 1400A total/aux flow lpm: <u>16.67</u> |
| reference main flow lpm: <u>2.96</u> | reference total/aux flow lpm: <u>16.85</u> |
| difference lpm: <u>-0.04</u> | difference lpm: <u>0.18</u> |

K_o Audit:

Last K_o audit date: 10-Feb-16
 1405F K_o factor: 14578
 Measured K_o factor: 14752.6000
 % difference: 1.20

Comments:

47 mm FDMS filter changed and TEOM sample filter was changed. Main flow was calculated by use of Total and Auxiliary flows measurements with orifice#1 only. Ko Audit performed.



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: February 22, 2016
 Company: LICA
 Station Name/Location: Cold Lake South
 Previous Audit Date: February 10, 2016
 Parameter: PM 2.5

Performed By/Reviewer: Alex Yakupov | Trina Whatsitt
 Start Time (mst): 11:03
 End Time (mst): 11:44
 Calibration Purpose: Bi-monthly #2
 Weather Conditions: Clear

1400A Information and Status:

| | | | |
|-------------------------|----------------|----------------------------|-------|
| Serial Number: | 1405A201620804 | As Found Filter Loading %: | 24.51 |
| Ko Factor: | 14578 | As Left Filter Loading %: | 19.26 |
| Ambient Temperature °C: | -1.21 | As Found Noise: | 0.006 |
| Ambient Pressure atm: | 0.934 | As Left Noise: | 0.000 |
| Main Flow Reading lpm: | 3.00 | Pump Vacuum: | 0.31 |
| Aux Flow Reading lpm: | 16.67 | Warnings: | None |

Reference Standards:

| | Flow: | Pressure: | Temperature: |
|-------------------|--------------|-----------|--------------|
| Make: | Dwyer | Fisher | Fisher |
| Model: | 475 Mark III | FB 1291 | FB 1291 |
| Serial Number: | #1 | 130168457 | 130168457 |
| Calibration Date: | 28-Jan-16 | 18-Mar-15 | 18-Mar-15 |

As found leak check:

| | | Base | Zero | Reference | Zero |
|-------------|--------|------|-----------------|-----------|-----------------|
| PM 2.5 Flow | actual | 0.02 | 0.16 | 0.02 | 0.16 |
| | limit | 0.15 | 0.15 | 0.15 | 0.15 |
| Bypass Flow | actual | 0.07 | -0.09 | 0.05 | -0.09 |
| | limit | 0.60 | 0.60 | 0.60 | 0.60 |

As left leak check (same as above if as found passes):

| | | Base | Zero | Reference | Zero |
|-------------|--------|------|-----------------|-----------|-----------------|
| PM 2.5 Flow | actual | 0.02 | 0.16 | 0.02 | 0.16 |
| | limit | 0.15 | 0.15 | 0.15 | 0.15 |
| Bypass Flow | actual | 0.07 | -0.09 | 0.05 | -0.09 |
| | limit | 0.60 | 0.60 | 0.60 | 0.60 |

As found temperature and pressure:

| | | | |
|---------------------------|------|------------------------|--------|
| tolerance +/- 2.0°C | | tolerance +/- 0.01 atm | |
| 1405F temperature °C: | -1.2 | 1405F pressure atm: | 0.934 |
| reference temperature °C: | -0.8 | reference pressure: | 0.937 |
| difference °C: | 0.4 | difference : | -0.003 |

As left temperature and pressure (same as above if as found adequate):

| | | | |
|---------------------------|------|------------------------|-------|
| tolerance +/- 2.0°C | | tolerance +/- 0.01 atm | |
| 1405F temperature °C: | -0.8 | 1405F pressure atm: | 0.937 |
| reference temperature °C: | -0.8 | reference pressure: | 0.937 |
| difference °C: | 0.0 | difference : | 0.000 |

As found flows:

| | |
|---|--|
| main flow tolerance 3.00 lpm +/- 0.20 lpm | total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7% |
| 1405F main flow lpm: 3.00 | 1400A total/aux flow lpm: 16.67 |
| reference main flow lpm: 3.03 | reference total/aux flow lpm: 17.04 |
| difference lpm: 0.03 | difference lpm: 0.37 |

As left flows (same as above if as found adequate):

| | |
|---|--|
| main flow tolerance 3.00 lpm +/- 0.20 lpm | total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7% |
| 1405F main flow lpm: 3.00 | 1400A total/aux flow lpm: 16.67 |
| reference main flow lpm: 3.03 | reference total/aux flow lpm: 17.04 |
| difference lpm: 0.03 | difference lpm: 0.37 |

K_o Audit:

Last K_o audit date: 10-Feb-16
 1405F K_o factor: 14578
 Measured K_o factor: 14752.6000
 % difference: 1.20

Comments:

47 mm FDMS filter changed and TEOM sample filter changed. Main flow was calculated using Total and Auxiliary flows measured with orifice#1.

WIND SYSTEM



Met One Instruments
1600 NW Washington Blvd.
Grants Pass, Oregon 97526
Telephone 541-471-7111
Facsimile 541-471-7116

Regional Service
3206 Main St. Suite 106
Rowlett, Texas 75088
Telephone 972-412-4715
Facsimile 972-412-4716

Sonic Wind Sensor Certificate of Calibration

Sensor Model No: 50.5H Sonic Sensor Serial No: F1644
 Customer: _____ P.O. No: _____ Sales Order: _____
 Final Calibration By: Kevin Ricks Calibration Date: 04-01-15
 Quality Control Inspected By: AJR Inspection Date: APR 03 2015
 New Unit Repair/Adjust Re-Calibration As Found
 Unit Within Tolerance as Found Unit Within Tolerance as Left

Calibration Equipment

| Equipment | Manufacturer | Model No. | Serial No. | Cal. Due |
|----------------------|--------------|---------------|------------|-----------|
| Digital Multimeter 1 | Agilent/HIP | 34401A | MY41039534 | 4/11/2015 |
| Digital Multimeter 2 | Agilent/HIP | 34401A | US36094551 | 8/26/2015 |
| Frequency Counter | Agilent/HIP | 53131A | MY40009285 | 5/22/2015 |
| Standard Sensor | MOI | 010C-1 | P22383 | 7/11/2017 |
| Temperature Probe | MOI | 920005/PC8340 | E3402 | 9/03/2015 |

Test 1: Average Wind Tunnel Speed: 3.08 Meters per Second Firmware Version: 3194-01 R2.62

| WD Setting (Deg) | WD Output (Volts) | WD Indication (Deg) | WD Error (+/- 3 Deg) | WS Standard (m/s) | WS Output (Volts) | WS Indication (m/s) | WS Error (+/- .20 m/s) | Output Type: |
|------------------|-------------------|---------------------|----------------------|-------------------|-------------------|---------------------|------------------------|---|
| 30 | .084 | 30.3 | .3 | 3.06 | .059 | 2.96 | -.1 | 0 to 1 volt <input checked="" type="checkbox"/> |
| 60 | .165 | 59.3 | -.7 | 3.07 | .059 | 2.94 | -.13 | 0 to 2.5 volt <input type="checkbox"/> |
| 120 | .334 | 120.2 | .2 | 3.08 | .059 | 2.94 | -.14 | 0 to 5 volt <input type="checkbox"/> |
| 150 | .415 | 149.5 | -.5 | 3.07 | .059 | 2.94 | -.13 | RS-232 <input checked="" type="checkbox"/> |
| 210 | .583 | 210 | 0 | 3.08 | .059 | 2.95 | -.12 | SDI-12 <input type="checkbox"/> |
| 240 | .668 | 240.3 | .3 | 3.08 | .06 | 2.98 | -.1 | RS-422 <input type="checkbox"/> |
| 300 | .834 | 300.4 | .4 | 3.07 | .06 | 3.02 | -.04 | RS-485 <input type="checkbox"/> |
| 330 | .916 | 329.8 | -.2 | 3.09 | .059 | 2.97 | -.12 | <input type="checkbox"/> |

Test 2: Average Wind Tunnel Speed: 11.85 Meters per Second Output Range: 0-50 m/s

| WD Setting (Deg) | WD Output (Volts) | WD Indication (Deg) | WD Error (+/- 3 Deg) | WS Standard (m/s) | WS Output (Volts) | WS Indication (m/s) | WS Error (+/- .24 m/s) | Test Items: |
|------------------|-------------------|---------------------|----------------------|-------------------|-------------------|---------------------|------------------------|---|
| 30 | .081 | 29.3 | -.7 | 11.79 | .235 | 11.76 | -.04 | Array Alignment <input checked="" type="checkbox"/> |
| 60 | .165 | 59.5 | -.5 | 11.85 | .237 | 11.87 | .01 | Jumper Config <input checked="" type="checkbox"/> |
| 120 | .331 | 119.1 | -.9 | 11.85 | .236 | 11.81 | -.03 | Firmware Config <input checked="" type="checkbox"/> |
| 150 | .415 | 149.3 | -.7 | 11.88 | .236 | 11.8 | -.08 | Zero Calibration <input checked="" type="checkbox"/> |
| 210 | .582 | 209.5 | -.5 | 11.81 | .236 | 11.79 | -.02 | Low Speed Test OK <input checked="" type="checkbox"/> |
| 240 | .666 | 239.9 | -.1 | 11.88 | .235 | 11.73 | -.16 | High Speed Test OK <input checked="" type="checkbox"/> |
| 300 | .833 | 299.7 | -.3 | 11.87 | .235 | 11.73 | -.13 | Sensor Function <input checked="" type="checkbox"/> |
| 330 | .915 | 329.6 | -.4 | 11.84 | .238 | 11.9 | .06 | Physical Inspection <input checked="" type="checkbox"/> |

The standards used for this calibration have accuracies equal to or greater than the instruments tested. These standards are on record and traceable to NIST to the extent allowed by the institute's calibration facility. Unless otherwise stated hereon, all instruments are calibrated to meet the manufacturer's published specifications. The calibration system complies with MIL-STD-45662A. Calibration performed by direct comparison to the above standard following test procedure: 50.5-6100 Rev E

PARTISOL SAMPLER

PARTISOL 2000

| | | | |
|----------------------|-------------------|-------------------------|-------------------------------|
| Date: | February 26, 2016 | Reference Standard: | Streamline FTS / #1 |
| Company: | LICA | Reference Standard s/n: | Orifice #1 |
| Station: | Cold Lake South | Weather Conditions: | Clear |
| Parameter: | PM 2.5 | Start/End Time (mst): | 11:56 / 12:38 |
| Calibration Purpose: | routine monthly | Performed By/Reviewer: | Alex Yakupov Trina Whitsitt |

| Sampler | | Instrument Data | |
|-------------|----------------|------------------|-------|
| Make/Model: | R & P | Temperature (°C) | 6.9 |
| Unit # | # 2873 | Pressure (ATM) | 0.933 |
| S/N: | 2000B206140102 | Set Flow (l/min) | 16.7 |

| Calibration Constants | | | | | | |
|-----------------------|------------|-------|-----------------------|-----------------------|---------|-------|
| Item | Calculated | | Offset | | Span | |
| | Initial | Final | Initial | Final | Initial | Final |
| Analog Input | 0.000 | n/a | -0.0019 | n/a | 0.9987 | n/a |
| Temperature | 6.9 | n/a | XXXXXXXXXX | XXXXXXXXXX | 0.9967 | n/a |
| Pressure | 0.933 | n/a | XXXXXXXXXX | XXXXXXXXXX | 1.0003 | n/a |
| Flow | 0.10 | n/a | -0.0098 | n/a | 1.0028 | n/a |

| Interface Board Calibration | | | |
|-----------------------------|-----------------------|-----------------|------------------|
| Item | Acceptable | Pre Calibration | Post Calibration |
| R21 | 6.000 VDC (±0.05 V) | n/a | n/a |
| R44 | 10.000 VDC (±0.002 V) | n/a | n/a |

| Analog Input Calibration | | | |
|--------------------------|-------------------------------|-----------------|------------------|
| Item | Acceptable | Pre Calibration | Post Calibration |
| "AO" Offset | 0.050 - 0.150 VDC (±0.005 V) | n/a | n/a |
| "AO" Span | 4.800 - 4.900 VDC (±0.002 V) | n/a | n/a |

| Temperature/Pressure Calibration | | | |
|----------------------------------|-------|-------|-------|
| Reference Temperature: (±2 °C) | 7.2 | Δ °C | 0.3 |
| Reference Pressure: (±0.02 ATM) | 0.935 | Δ ATM | 0.002 |

| Leak Check | | | | |
|------------|---|---|-----------------|---|
| Unit | Flow Controller Valve Closed (V1) in Hg | Pump Valve Closed after 10 Secs. (V2) in Hg | VL=1/2*V1 in Hg | Leakage Calculation (V2 > VL) After 10 Secs in Hg |
| Hub | 23.0 | 23.0 | 11.5 | 11.5 |

| Flow Calibration | | | |
|------------------|-------------------------|------------|--------|
| Item | Acceptable | Calculated | Actual |
| "Zero" Offset | 0.1 lpm to -0.1 lpm | 0.0 | 0.1 |
| "Flow" Span | ±7.0 % Adjust to 16.7 L | 16.7 | 16.40 |

| Other Checks: | | | | | | | |
|---------------|-----------|--------|-----------|----------------|-----------|---------|-----------|
| | Condition | | Condition | | Condition | | Condition |
| Rubber Seals: | OK | Inlet: | OK | Inline Filter: | OK | Status: | OK |

Comments:

Monthly audit performed.

Calibration Performed By: Alex Yakupov

CALIBRATORS

Company: Maxxam Operator: Limin Li

| Calibrator: | | Flow Measurement Device: | |
|------------------------|--------------------|--------------------------|------------|
| Make/Model | <u>Sabio 2010D</u> | Make/Model | <u>N/A</u> |
| Serial Number | <u>11900613</u> | Serial Number | <u>N/A</u> |
| Oven Temperature | <u>N/A</u> | Temperature (°C) | <u>N/A</u> |
| Last Verification Date | <u>N/A</u> | Barometric Pressure | <u>N/A</u> |

Flow Measurements

Pt. No. 1 5000 Pt. No. 2 5000 Pt. No. 3 5000

| Calibrator Flow (sccm) | Calculated Concentration (ppm) | Indicated Concentration (ppm) | % Difference | |
|-------------------------------------|-----------------------------------|----------------------------------|--------------|---------------|
| | | | vs Audit Gas | % Diff. Limit |
| 5013 | 0.000 | 0.001 | | |
| 5013 | 0.400 | 0.407 | 1% | ± 10% |
| 5013 | 0.200 | 0.204 | 1% | ± 10% |
| 5014 | 0.100 | 0.101 | 0% | ± 10% |
| Absolute Average Percent Difference | | | 1% | ± 10% |

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

| <u>O₃</u> | | <u>LIMITS</u> |
|------------------------|--------|---------------|
| Correlation= | 1.0000 | ≥ 0.995 |
| m (Slope)= | 1.0163 | 0.90-1.10 |
| b (Intercept % of FS)= | 0.0800 | ± 3% F.S. |

| AENV Standards | | Ozone Analyzer | |
|-------------------------|--------------------|-----------------------|---------------------|
| Audit Calibrator | | Make/Model | <u>Teco 49i</u> |
| Make/Model | <u>Teco 49i PS</u> | Serial/AMU Number | <u>AMU 1843</u> |
| Serial/AMU Number | <u>AMU 1808</u> | Last Calibration Date | <u>May 21, 2015</u> |
| Ozone Standard | <u>Primary</u> | Full Scale (ppm) | <u>0.5</u> |

COMMENTS: _____

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

Company: Maxxam Operator: Limin Li

| Calibrator: | | Flow Measurement Device: | |
|--------------------------------|-----------------|--------------------------|------------|
| Make/Model | <u>API 700</u> | Make/Model | <u>N/A</u> |
| Serial Number | <u>830</u> | Serial Number | <u>N/A</u> |
| Last Verification Date | <u>Oct 2013</u> | Temperature (°C) | <u>N/A</u> |
| SO ₂ Cylinder Conc. | <u>50.3</u> | Barometric Pressure | <u>N/A</u> |
| SO ₂ Cylinder S/N | <u>LL42475</u> | | |

Flow Measurements

Pt. No. 1 79.5 Pt. No. 2 39.8 Pt. No. 3 19.9

| Calibrator Flow (sccm) | Calculated Concentration (ppm) | Indicated Concentration (ppm) | % Difference | |
|-------------------------------------|--------------------------------|-------------------------------|--------------|---------------|
| | | | vs Audit Gas | % Diff. Limit |
| Zero Air | 0.000 | 0.000 | | |
| 4918 | 0.800 | 0.798 | 0% | ± 10% |
| 4960 | 0.400 | 0.398 | -1% | ± 10% |
| 4977 | 0.200 | 0.200 | 0% | ± 10% |
| Absolute Average Percent Difference | | | 0% | ± 10% |

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

| SO ₂ | | LIMITS |
|------------------------|--------|-----------|
| Correlation= | 1.0000 | ≥ 0.995 |
| m (Slope)= | 0.9971 | 0.90-1.10 |
| b (Intercept % of FS)= | 0.0000 | ± 3% F.S. |

| AENV Standards | | SO ₂ Analyzer | |
|-------------------------|------------------------|--------------------------|------------------|
| Audit Calibrator | | Make/Model | <u>Teco 43C</u> |
| Make/Model | <u>R&R MFC 201</u> | Serial/AMU Number | <u>AMU 1623</u> |
| Serial/AMU Number | <u>AMU 1690</u> | Last Calibration Date | <u>Dec 15/14</u> |
| | | Full Scale (ppm) | <u>1.0</u> |

COMMENTS: H2S gas was slow to move through the calibrator. Check for contamination inside calibrator. SO2 moves through quickly.

Auditor: Al Clark Date: December 16, 2014
Operator Signature: _____ Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2015-344CGA

Company: Maxxam Operator's Name: Limin Li
Cylinder #: BLM002073 Concentration PPM: 49.5 Tolerance(%) 2 Certified By: Alr Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: March 31, 2015
Gas Type: SO2 Conc. 98.57
Cylinder Number: CAL016720

Flow Measurement Device:

Make/Model: Bios DC2
Serial Number: AMU 1659
Temp. °C: 22.5 C
B.P. 690 mmhg

Reference Analyzer:

Make/Model: Teco 43C Serial/AMU Number: 1623
Instrument Settings: Zero: 7.9 Span: 1.028 Range: 1.0
Last Calibration: Date: Mar 31/15 C.F. 1.000 Done By: Al Clark

| Calibrator Flows (sccm) | | Indicated Concentration (PPM) | Gas Flow/ Dilution Flow | Concentration Factor | Cylinder Concentration |
|---------------------------------|------|-------------------------------|----------------------------|----------------------|------------------------|
| Dilution | Gas | | | | |
| 5000 | 0.0 | 0.000 | 0.01660 | 60.242 | 48.3 |
| 4976 | 82.6 | 0.801 | 0.01660 | 60.242 | 48.3 |
| 4993 | 41.0 | 0.396 | 0.00821 | 121.780 | 48.2 |
| 4977 | 20.2 | 0.193 | 0.00406 | 246.386 | 47.6 |
| Average Cylinder Concentration: | | | | | 48.0 |

Previous Stated Concentration PPM: 49.5

Percent variance from Stated: 3.0

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

Auditor: Al Clark
Operator Signature: *Al Clark*

Date: March 31, 2015
Location: McIntyre Center Edmonton



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2014-251CGA

Company: Maxxam Operator's Name: Limin Li
 Cylinder #: LL36837 Concentration PPM: 10.0 Tolerance(%) 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
 Serial Number: AMU 1690
 Last Verification Date: December 15, 2014
 Gas Type: H2S Conc. 20.43
 Cylinder Number: CAL015106

Flow Measurement Device:

Make/Model: Bios DC2
 Serial Number: AMU 1659
 Temp. °C: 23.0 C
 B.P. 702 mmhg

Reference Analyzer:

Make/Model: Teco 45C Serial/AMU Number: 1624
 Instrument Settings: Zero: 6.4 Span: 1.160 Range: 0.1
 Last Calibration: Date: Dec15/14 C.F. 1.000 Done By: Al Clark

| Calibrator Flows (sccm) | | Indicated Concentration (PPM) | Gas Flow/ Dilution Flow | Concentration Factor | Cylinder Concentration |
|---------------------------------|------|-------------------------------|----------------------------|----------------------|------------------------|
| Dilution | Gas | | | | |
| 5000 | 0.0 | 0.0000 | 0.00755 | 132.442 | 10.0 |
| 5099 | 38.5 | 0.0754 | 0.00755 | 132.442 | 10.0 |
| 5092 | 18.0 | 0.0349 | 0.00353 | 282.889 | 9.9 |
| 5066 | 9.2 | 0.0178 | 0.00182 | 550.652 | 9.8 |
| Average Cylinder Concentration: | | | | | 9.9 |

Previous Stated Concentration PPM: 10.0
 Percent variance from Stated: 1.1

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

Auditor: Al Clark Date: December 16, 2014
 Operator Signature: *Al Clark* Location: McIntyre Center Edmonton



Calibration Gas Audit

CH4 / C3H8 Cylinder Gas

File No. 2015-002CGA

Company: Maxxam Operators name: Chris Wesson
Cylinder #: LL168372 Conc CH4 (PPM) 606/212 Tolerance (%) 0.5 Certified By: Praxair

Reference Calibrator and Gas:

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

Flow Measurement Device:

Make/Model Bios DC-2
Serial Number Bios D
Temp. °C 24.5
B.P. 688mmHg

Reference Analyzer:

Make/Model Thermo 55C Serial/AMU Number: 1643
Instrument Settings Zero: NA Span: NA Range: 20.0
Last Calibration: Date: 18-Jan-16 C.F. 1.000 Done By: SB

| Calibrator Flows (scm) | | Indicated Conc. (ppm) | | Gas Flow/ Dilution Flow | Concentration Factor | Cylinder Concentration | |
|---------------------------------|-------|-----------------------|-------|----------------------------|-------------------------|------------------------|----------------|
| Dilution | Gas | CH4 | C3H8 | | | CH4 | C3H8 |
| 2588 | 0.00 | 0.00 | 0.00 | 0.00140 | 131.171 | 607 | 214 |
| 2680 | 56.29 | 12.99 | 12.62 | 0.02140 | 48.722 | 607 | 214 |
| 2588 | 19.73 | 4.62 | 4.50 | 0.00762 | 131.171 | 606 | 215 |
| 2580 | 9.69 | 2.29 | 2.24 | 0.00376 | 266.254 | 610 | 217 |
| Average Cylinder Concentration: | | | | | | 608 | 215 |

| | | |
|------------------------------------|------------|-------------|
| | <u>CH4</u> | <u>C3H8</u> |
| Previous Stated Concentration PPM: | <u>606</u> | <u>212</u> |
| Percent variance from Stated: | <u>0.3</u> | <u>1.6</u> |

Cylinder gas tolerances based on CH4 only

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

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



Calibration Gas Audit

NO Cylinder Gas

File No. 2015-345CGA

Company: Maxxam Operators name: Limin Li
Cylinder #: BLM002073 Conc (PPM) 50.6/50.6 Tolerance (%) 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model Teco 146I
Serial Number AMU 1809
Last Verification Date March 31, 2015
Gas Type NO Conc. 48.79
Cylinder Number CAL018024

Flow Measurement Device:

Make/Model Bios DC2
Serial Number AMU 1659
Temp. °C 22.5 C
B.P. 690 mmhg

Reference Analyzer:

Make/Model Teco 42i Serial/AMU Number: 1868
Instrument Settings Zero: 4.2 Span: 1.008 Range: 1.0
Last Calibration: Date: Mar 31/15 C.F. 1.000 Done By: Al Clark

| Calibrator Flows (sccm) | | Indicated Conc. (ppm) | | Gas Flow/ Dilution Flow | Concentration Factor | Cylinder Concentration | |
|---------------------------------|------|-----------------------|-------|----------------------------|-------------------------|------------------------|-----------------|
| Dilution | Gas | NO | NOX | | | NO | NOX |
| 5000 | 0.0 | 0.000 | 0.000 | 0.01660 | 60.242 | 51.5 | 51.1 |
| 4976 | 82.6 | 0.855 | 0.848 | 0.01660 | 60.242 | 51.5 | 51.1 |
| 4993 | 41.0 | 0.427 | 0.421 | 0.00821 | 121.780 | 52.0 | 51.3 |
| 4977 | 20.2 | 0.213 | 0.209 | 0.00406 | 246.386 | 52.5 | 51.5 |
| Average Cylinder Concentration: | | | | | | 52.0 | 51.3 |

NO NOx

Previous Stated Concentration PPM: 50.6 50.6

Percent variance from Stated: 2.8 1.4

Cylinder gas tolerances based on NO only

Meets Manufacturer Tolerance. Use manufacturers stated concentration COMMENTS: _____

<=5% Outside Manufacturer Tolerance. Use manufacturers concentration Contains 49.5 ppm SO2 in cylinder

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

Auditor: Al Clark Date: March 31, 2015
Operator Signature: *Al Clark* Location: McIntyre Center Edmonton

APPENDIX IV
ANALYTICAL RESULTS

VOCS SAMPLES

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | | |
|------------------------------|---------------------------|-------------|----------------|------------|------|--------|---------------|
| LICA/VOC/CLS/Feb 6, 2016 | S5647 | Ambient Air | 06-Feb-16 0:00 | Version 01 | | | |
| DESCRIPTION: Cold Lake South | | | | | | | |
| REPORT NUMBER: 16020060 | REPORT CREATED: 24-Feb-16 | | | | | | |
| Lab ID | Parameter | Qualifier | Result | Units | RDL | Method | Analysis Date |
| 16020060-003 | 1,1,1-Trichloroethane | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1,1,2,2-Tetrachloroethane | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1,1,2-Trichloroethane | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1,1-Dichloroethane | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1,1-Dichloroethylene | K, T, U | < 0.04 | ppbv | 0.04 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1,2,3-Trimethylbenzene | K, T, U | < 0.05 | ppbv | 0.05 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1,2,4-Trichlorobenzene | K, T, U | < 0.8 | ppbv | 0.8 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1,2,4-Trimethylbenzene | K, T, U | < 0.03 | ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1,2-Dibromoethane | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1,2-Dichlorobenzene | K, T, U | < 0.03 | ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1,2-Dichloroethane | I | 0.02 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1,2-Dichloropropane | K, T, U | < 0.01 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1,3,5-Trimethylbenzene | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1,3-Butadiene | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1,3-Dichlorobenzene | K, T, U | < 0.3 | ppbv | 0.3 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1,4-Dichlorobenzene | K, T, U | < 0.4 | ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1,4-Dioxane | K, T, U | < 0.4 | ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1-Butene | I | 0.10 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1-Hexene | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | 1-Pentene | K, T, U | < 0.01 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | 2,2,4-Trimethylpentane | K, T, U | < 0.01 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | 2,2-Dimethylbutane | I | 0.02 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | 2,3,4-Trimethylpentane | K, T, U | < 0.01 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | 2,3-Dimethylbutane | I | 0.06 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | 2,3-Dimethylpentane | I | 0.04 | ppbv | 0.02 | AC-058 | 09-Feb-16 |

Report certified by: Graham Knox, Team Lead

Date: February 24, 2016

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Inquiries: (780) 632 8455

E-mail: EAS.Results@albertainnovates.ca

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | | |
|--------------------------|-------------------------|-----------------|----------------|------------|------|--------|---------------|
| LICA/VOC/CLS/Feb 6, 2016 | S5647 | Ambient Air | 06-Feb-16 0:00 | Version 01 | | | |
| DESCRIPTION: | Cold Lake South | | | | | | |
| REPORT NUMBER: | 16020060 | REPORT CREATED: | 24-Feb-16 | | | | |
| Lab ID | Parameter | Qualifier | Result | Units | RDL | Method | Analysis Date |
| 16020060-003 | 2,4-Dimethylpentane | I | 0.04 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | 2-Methylheptane | I | 0.02 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | 2-Methylhexane | I | 0.05 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | 2-Methylpentane | I | 0.19 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | 3-Methylheptane | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | 3-Methylhexane | I | 0.05 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | 3-Methylpentane | I | 0.10 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | Acetone | | 1.2 | ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-003 | Acrolein | K, T, U | < 0.3 | ppbv | 0.3 | AC-058 | 09-Feb-16 |
| 16020060-003 | Benzene | I | 0.15 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | Benzyl chloride | K, T, U | < 0.4 | ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-003 | Bromodichloromethane | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | Bromoform | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | Bromomethane | K, T, U | < 0.01 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | Carbon disulfide | K, T, U | < 0.01 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | Carbon tetrachloride | K, T, U | < 0.01 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | Chlorobenzene | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | Chloroethane | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | Chloroform | I | 0.03 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | Chloromethane | | 0.73 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | cis-1,2-Dichloroethene | K, T, U | < 0.01 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | cis-1,3-Dichloropropene | K, T, U | < 0.04 | ppbv | 0.04 | AC-058 | 09-Feb-16 |
| 16020060-003 | cis-2-Butene | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | cis-2-Pentene | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | Cyclohexane | I | 0.10 | ppbv | 0.02 | AC-058 | 09-Feb-16 |

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|--------------------------|--------------------------|-----------------|----------------|------------|--------|---------------|
| LICA/VOC/CLS/Feb 6, 2016 | S5647 | Ambient Air | 06-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: | | Cold Lake South | | | | |
| REPORT NUMBER: | 16020060 | REPORT CREATED: | 24-Feb-16 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020060-003 | Cyclopentane | I | 0.05 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | Dibromochloromethane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | Ethanol | | 1.1 ppbv | 0.3 | AC-058 | 09-Feb-16 |
| 16020060-003 | Ethyl acetate | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-003 | Ethylbenzene | I | 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | Freon-11 | I | 0.28 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | Freon-113 | I | 0.07 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | Freon-114 | I | 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | Freon-12 | | 0.64 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | Hexachloro-1,3-butadiene | K, T, U | < 0.50 ppbv | 0.50 | AC-058 | 09-Feb-16 |
| 16020060-003 | Isobutane | | 1.08 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | Isopentane | | 0.86 ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-003 | Isoprene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | Isopropyl alcohol | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-003 | Isopropylbenzene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | m,p-Xylene | I | 0.05 ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-003 | m-Diethylbenzene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 09-Feb-16 |
| 16020060-003 | m-Ethyltoluene | K, T, U | < 0.08 ppbv | 0.08 | AC-058 | 09-Feb-16 |
| 16020060-003 | Methyl butyl ketone | K, T, U | < 0.50 ppbv | 0.50 | AC-058 | 09-Feb-16 |
| 16020060-003 | Methyl ethyl ketone | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 09-Feb-16 |
| 16020060-003 | Methyl isobutyl ketone | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-003 | Methyl methacrylate | K, T, U | < 0.07 ppbv | 0.07 | AC-058 | 09-Feb-16 |
| 16020060-003 | Methyl tert butyl ether | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-003 | Methylcyclohexane | I | 0.16 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | Methylcyclopentane | I | 0.12 ppbv | 0.02 | AC-058 | 09-Feb-16 |

Report certified by: Graham Knox, Team Lead

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: February 24, 2016

Inquiries: (780) 632 8455

E-mail: EAS.Results@albertainnovates.ca

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|------------------------------|-----------------------------|-------------|----------------|------------|--------|---------------|
| LICA/VOC/CLS/Feb 6, 2016 | S5647 | Ambient Air | 06-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Cold Lake South | | | | | | |
| REPORT NUMBER: 16020060 | REPORT CREATED: 24-Feb-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020060-003 | Methylene chloride | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 09-Feb-16 |
| 16020060-003 | n-Butane | | 1.83 ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-003 | n-Decane | K, T, U | < 0.06 ppbv | 0.06 | AC-058 | 09-Feb-16 |
| 16020060-003 | n-Dodecane | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-003 | n-Heptane | I | 0.06 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | n-Hexane | I | 0.19 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | n-Octane | I | 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | n-Pentane | | 0.5 ppbv | 0.1 | AC-058 | 09-Feb-16 |
| 16020060-003 | n-Propylbenzene | K, T, U | < 0.05 ppbv | 0.05 | AC-058 | 09-Feb-16 |
| 16020060-003 | n-Undecane | K, T, U | < 0.5 ppbv | 0.5 | AC-058 | 09-Feb-16 |
| 16020060-003 | Naphthalene | K, T, U | < 0.5 ppbv | 0.5 | AC-058 | 09-Feb-16 |
| 16020060-003 | n-Nonane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | o-Ethyltoluene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | o-Xylene | I | 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | p-Diethylbenzene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 09-Feb-16 |
| 16020060-003 | p-Ethyltoluene | K, T, U | < 0.07 ppbv | 0.07 | AC-058 | 09-Feb-16 |
| 16020060-003 | Styrene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 09-Feb-16 |
| 16020060-003 | Tetrachloroethylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 09-Feb-16 |
| 16020060-003 | Tetrahydrofuran | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-003 | Toluene | I | 0.11 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | trans-1,2-Dichloroethylene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | trans-1,3-Dichloropropylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 09-Feb-16 |
| 16020060-003 | trans-2-Butene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-003 | trans-2-Pentene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-003 | Trichloroethylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 09-Feb-16 |



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID: LICA/VOC/CLS/Feb 6, 2016
 CANISTER ID: S5647
 Matrix: Ambient Air
 DATE SAMPLED: 06-Feb-16 0:00
 DESCRIPTION: Cold Lake South
 REPORT NUMBER: 16020060
 REPORT CREATED: 24-Feb-16
 VERSION: Version 01

| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
|--------------|----------------|-----------|--------------|------|--------|---------------|
| 16020060-003 | Vinyl acetate | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-003 | Vinyl chloride | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |

Report certified by: Graham Knox, Team Lead
 Date: February 24, 2016
 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services
 Inquiries: (780) 632 8455
 E-mail: EAS.Results@albertainnovates.ca

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|------------------------------|---------------------------|-------------|----------------|------------|--------|---------------|
| LICA/VOC/CLS/Feb 12, 2016 | S5652 | Ambient Air | 12-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Cold Lake South | | | | | | |
| REPORT NUMBER: 16020158 | REPORT CREATED: 24-Feb-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020158-003 | 1,1,1-Trichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1,1,2,2-Tetrachloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1,1,2-Trichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1,1-Dichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1,1-Dichloroethylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1,2,3-Trimethylbenzene | K, T, U | < 0.05 ppbv | 0.05 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1,2,4-Trichlorobenzene | K, T, U | < 0.8 ppbv | 0.8 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1,2,4-Trimethylbenzene | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1,2-Dibromoethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1,2-Dichlorobenzene | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1,2-Dichloroethane | I | 0.02 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1,2-Dichloropropane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1,3,5-Trimethylbenzene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1,3-Butadiene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1,3-Dichlorobenzene | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1,4-Dichlorobenzene | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1,4-Dioxane | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1-Butene | I | 0.04 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1-Hexene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | 1-Pentene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | 2,2,4-Trimethylpentane | I | 0.02 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | 2,2-Dimethylbutane | I | 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | 2,3,4-Trimethylpentane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | 2,3-Dimethylbutane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | 2,3-Dimethylpentane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |

Report certified by: Graham Knox, Team Lead

Date: February 24, 2016

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Inquiries: (780) 632 8455

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| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|------------------------------|---------------------------|-------------|----------------|------------|--------|---------------|
| LICA/VOC/CLS/Feb 12, 2016 | S5652 | Ambient Air | 12-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Cold Lake South | | | | | | |
| REPORT NUMBER: 16020158 | REPORT CREATED: 24-Feb-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020158-003 | 2,4-Dimethylpentane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | 2-Methylheptane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | 2-Methylhexane | I | 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | 2-Methylpentane | I | 0.05 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | 3-Methylheptane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | 3-Methylhexane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | 3-Methylpentane | I | 0.03 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | Acetone | | 1.1 ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-003 | Acrolein | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 19-Feb-16 |
| 16020158-003 | Benzene | I | 0.15 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | Benzyl chloride | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-003 | Bromodichloromethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | Bromoform | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | Bromomethane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | Carbon disulfide | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | Carbon tetrachloride | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | Chlorobenzene | I | 0.10 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | Chloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | Chloroform | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | Chloromethane | I | 0.82 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | cis-1,2-Dichloroethene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | cis-1,3-Dichloropropene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 19-Feb-16 |
| 16020158-003 | cis-2-Butene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | cis-2-Pentene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | Cyclohexane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |

Report certified by: Graham Knox, Team Lead

Date: February 24, 2016

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Inquiries: (780) 632-8455

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| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|---------------------------|--------------------------|-----------------|----------------|------------|--------|---------------|
| LICA/VOC/CLS/Feb 12, 2016 | S5652 | Ambient Air | 12-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: | Cold Lake South | | | | | |
| REPORT NUMBER: | 16020158 | REPORT CREATED: | 24-Feb-16 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020158-003 | Cyclopentane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | Dibromochloromethane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | Ethanol | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 19-Feb-16 |
| 16020158-003 | Ethyl acetate | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-003 | Ethylbenzene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | Freon-11 | | 0.32 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | Freon-113 | I | 0.09 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | Freon-114 | I | 0.03 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | Freon-12 | | 0.71 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | Hexachloro-1,3-butadiene | K, T, U | < 0.50 ppbv | 0.50 | AC-058 | 19-Feb-16 |
| 16020158-003 | Isobutane | | 0.37 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | Isopentane | I | 0.24 ppbv | 0.03 | AC-058 | 19-Feb-16 |
| 16020158-003 | Isoprene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | Isopropyl alcohol | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-003 | Isopropylbenzene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | m,p-Xylene | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 19-Feb-16 |
| 16020158-003 | m-Diethylbenzene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 19-Feb-16 |
| 16020158-003 | m-Ethyltoluene | K, T, U | < 0.08 ppbv | 0.08 | AC-058 | 19-Feb-16 |
| 16020158-003 | Methyl butyl ketone | K, T, U | < 0.50 ppbv | 0.50 | AC-058 | 19-Feb-16 |
| 16020158-003 | Methyl ethyl ketone | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 19-Feb-16 |
| 16020158-003 | Methyl isobutyl ketone | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-003 | Methyl methacrylate | K, T, U | < 0.07 ppbv | 0.07 | AC-058 | 19-Feb-16 |
| 16020158-003 | Methyl tert butyl ether | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 19-Feb-16 |
| 16020158-003 | Methylcyclohexane | I | 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | Methylcyclopentane | I | 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | | |
|------------------------------|-----------------------------|-------------|----------------|------------|------|--------|---------------|
| LICA/VOC/CLS/Feb 12, 2016 | S5652 | Ambient Air | 12-Feb-16 0:00 | Version 01 | | | |
| DESCRIPTION: Cold Lake South | | | | | | | |
| REPORT NUMBER: 16020158 | REPORT CREATED: 24-Feb-16 | | | | | | |
| Lab ID | Parameter | Qualifier | Result | Units | RDL | Method | Analysis Date |
| 16020158-003 | Methylene chloride | K, T, U | < 0.3 | ppbv | 0.3 | AC-058 | 19-Feb-16 |
| 16020158-003 | n-Butane | | 0.67 | ppbv | 0.03 | AC-058 | 19-Feb-16 |
| 16020158-003 | n-Decane | K, T, U | < 0.06 | ppbv | 0.06 | AC-058 | 19-Feb-16 |
| 16020158-003 | n-Dodecane | K, T, U | < 0.4 | ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-003 | n-Heptane | I | 0.02 | ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | n-Hexane | I | 0.04 | ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | n-Octane | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | n-Pentane | I | 0.1 | ppbv | 0.1 | AC-058 | 19-Feb-16 |
| 16020158-003 | n-Propylbenzene | K, T, U | < 0.05 | ppbv | 0.05 | AC-058 | 19-Feb-16 |
| 16020158-003 | n-Undecane | K, T, U | < 0.5 | ppbv | 0.5 | AC-058 | 19-Feb-16 |
| 16020158-003 | Naphthalene | K, T, U | < 0.5 | ppbv | 0.5 | AC-058 | 19-Feb-16 |
| 16020158-003 | n-Nonane | K, T, U | < 0.01 | ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | o-Ethyltoluene | K, T, U | < 0.01 | ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | o-Xylene | K, T, U | < 0.01 | ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | p-Diethylbenzene | K, T, U | < 0.04 | ppbv | 0.04 | AC-058 | 19-Feb-16 |
| 16020158-003 | p-Ethyltoluene | K, T, U | < 0.07 | ppbv | 0.07 | AC-058 | 19-Feb-16 |
| 16020158-003 | Styrene | K, T, U | < 0.04 | ppbv | 0.04 | AC-058 | 19-Feb-16 |
| 16020158-003 | Tetrachloroethylene | K, T, U | < 0.04 | ppbv | 0.04 | AC-058 | 19-Feb-16 |
| 16020158-003 | Tetrahydrofuran | K, T, U | < 0.04 | ppbv | 0.04 | AC-058 | 19-Feb-16 |
| 16020158-003 | Toluene | K, T, U | < 0.4 | ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-003 | trans-1,2-Dichloroethylene | I | 0.05 | ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | trans-1,3-Dichloropropylene | K, T, U | < 0.01 | ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | trans-2-Butene | K, T, U | < 0.04 | ppbv | 0.04 | AC-058 | 19-Feb-16 |
| 16020158-003 | trans-2-Pentene | K, T, U | < 0.01 | ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-003 | Trichloroethylene | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-003 | | K, T, U | < 0.04 | ppbv | 0.04 | AC-058 | 19-Feb-16 |



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID LICA/VOC/CLS/Feb 12, 2016 **CANISTER ID** S5652 **Matrix** Ambient Air **DATE SAMPLED** 12-Feb-16 0:00
DESCRIPTION: Cold Lake South
REPORT NUMBER: 16020158 **REPORT CREATED:** 24-Feb-16 **VERSION:** Version 01

| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
|--------------|----------------|-----------|--------------|------|--------|---------------|
| 16020158-003 | Vinyl acetate | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-003 | Vinyl chloride | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |

Report certified by: Graham Knox, Team Lead **On behalf of:** PJ Pretorius, Manager, Analysis and Testing Services
Date: February 24, 2016 **Inquiries:** (780) 632 8455 **E-mail:** EAS.Results@albertainnovates.ca

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|------------------------------|---------------------------|-------------|----------------|------------|--------|---------------|
| LICA/VOC/CLS/Feb 18, 2016 | 7155 | Ambient Air | 18-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Cold Lake South | | | | | | |
| REPORT NUMBER: 16020201 | REPORT CREATED: 22-Mar-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020201-001 | 1,1,1-Trichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1,1,2,2-Tetrachloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1,1,2-Trichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1,1-Dichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1,1-Dichloroethylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1,2,3-Trimethylbenzene | K, T, U | < 0.05 ppbv | 0.05 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1,2,4-Trichlorobenzene | K, T, U | < 0.8 ppbv | 0.8 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1,2,4-Trimethylbenzene | I | 0.04 ppbv | 0.03 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1,2-Dibromoethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1,2-Dichlorobenzene | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1,2-Dichloroethane | I | 0.02 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1,2-Dichloropropane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1,3,5-Trimethylbenzene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1,3-Butadiene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1,3-Dichlorobenzene | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1,4-Dichlorobenzene | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1,4-Dioxane | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1-Butene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1-Hexene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | 1-Pentene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | 2,2,4-Trimethylpentane | I | 0.03 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | 2,2-Dimethylbutane | I | 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | 2,3,4-Trimethylpentane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | 2,3-Dimethylbutane | I | 0.05 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | 2,3-Dimethylpentane | I | 0.03 ppbv | 0.02 | AC-058 | 24-Feb-16 |

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|---------------------------|-------------------------|-----------------|----------------|------------|--------|---------------|
| LICA/VOC/CLS/Feb 18, 2016 | 7155 | Ambient Air | 18-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: | Cold Lake South | | | | | |
| REPORT NUMBER: | 16020201 | REPORT CREATED: | 22-Mar-16 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020201-001 | 2,4-Dimethylpentane | I | 0.03 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | 2-Methylheptane | I | 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | 2-Methylhexane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | 2-Methylpentane | I | 0.15 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | 3-Methylheptane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | 3-Methylhexane | I | 0.04 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | 3-Methylpentane | I | 0.14 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | Acetone | | 4.8 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-001 | Acrolein | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 24-Feb-16 |
| 16020201-001 | Benzene | I | 0.15 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | Benzyl chloride | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-001 | Bromodichloromethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | Bromoform | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | Bromomethane | I | 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | Carbon disulfide | I | 0.05 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | Carbon tetrachloride | I | 0.09 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | Chlorobenzene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | Chloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | Chloroform | I | 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | Chloromethane | | 0.75 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | cis-1,2-Dichloroethene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | cis-1,3-Dichloropropene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 24-Feb-16 |
| 16020201-001 | cis-2-Butene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | cis-2-Pentene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | Cyclohexane | I | 0.04 ppbv | 0.02 | AC-058 | 24-Feb-16 |

Report certified by: Graham Knox, Team Lead

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: March-22-16

Inquiries: (780) 632 8455

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| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|------------------------------|---------------------------|-------------|----------------|------------|--------|---------------|
| LICA/VOC/CLS/Feb 18, 2016 | 7155 | Ambient Air | 18-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Cold Lake South | | | | | | |
| REPORT NUMBER: 16020201 | REPORT CREATED: 22-Mar-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020201-001 | Cyclopentane | I | 0.03 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | Dibromochloromethane | K, T, U | <0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | Ethanol | | 1.2 ppbv | 0.3 | AC-058 | 24-Feb-16 |
| 16020201-001 | Ethyl acetate | K, T, U | <0.4 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-001 | Ethylbenzene | I | 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | Freon-11 | I | 0.29 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | Freon-113 | I | 0.08 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | Freon-114 | I | 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | Freon-12 | I | 0.64 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | Hexachloro-1,3-butadiene | K, T, U | <0.50 ppbv | 0.50 | AC-058 | 24-Feb-16 |
| 16020201-001 | Isobutane | | 1.15 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | Isopentane | | 0.75 ppbv | 0.03 | AC-058 | 24-Feb-16 |
| 16020201-001 | Isoprene | K, T, U | <0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | Isopropyl alcohol | K, T, U | <0.4 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-001 | Isopropylbenzene | K, T, U | <0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | m,p-Xylene | I | 0.05 ppbv | 0.03 | AC-058 | 24-Feb-16 |
| 16020201-001 | m-Diethylbenzene | K, T, U | <0.04 ppbv | 0.04 | AC-058 | 24-Feb-16 |
| 16020201-001 | m-Ethyltoluene | K, T, U | <0.08 ppbv | 0.08 | AC-058 | 24-Feb-16 |
| 16020201-001 | Methyl butyl ketone | K, T, U | <0.50 ppbv | 0.50 | AC-058 | 24-Feb-16 |
| 16020201-001 | Methyl ethyl ketone | K, T, U | <0.3 ppbv | 0.3 | AC-058 | 24-Feb-16 |
| 16020201-001 | Methyl isobutyl ketone | K, T, U | <0.4 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-001 | Methyl methacrylate | K, T, U | <0.07 ppbv | 0.07 | AC-058 | 24-Feb-16 |
| 16020201-001 | Methyl tert butyl ether | K, T, U | <0.03 ppbv | 0.03 | AC-058 | 24-Feb-16 |
| 16020201-001 | Methylcyclohexane | I | 0.04 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | Methylcyclopentane | I | 0.15 ppbv | 0.02 | AC-058 | 24-Feb-16 |

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|---------------------------|-----------------------------|-----------------|----------------|------------|--------|---------------|
| LICA/VOC/CLS/Feb 18, 2016 | 7155 | Ambient Air | 18-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: | | Cold Lake South | | | | |
| REPORT NUMBER: | 16020201 | REPORT CREATED: | 22-Mar-16 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020201-001 | Methylene chloride | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 24-Feb-16 |
| 16020201-001 | n-Butane | | 2.52 ppbv | 0.03 | AC-058 | 24-Feb-16 |
| 16020201-001 | n-Decane | K, T, U | < 0.06 ppbv | 0.06 | AC-058 | 24-Feb-16 |
| 16020201-001 | n-Dodecane | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-001 | n-Heptane | I | 0.04 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | n-Hexane | | 0.48 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | n-Octane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | n-Pentane | I | 0.3 ppbv | 0.1 | AC-058 | 24-Feb-16 |
| 16020201-001 | n-Propylbenzene | K, T, U | < 0.05 ppbv | 0.05 | AC-058 | 24-Feb-16 |
| 16020201-001 | n-Undecane | K, T, U | < 0.5 ppbv | 0.5 | AC-058 | 24-Feb-16 |
| 16020201-001 | Naphthalene | K, T, U | < 0.5 ppbv | 0.5 | AC-058 | 24-Feb-16 |
| 16020201-001 | n-Nonane | I | 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | o-Ethyltoluene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | o-Xylene | I | 0.02 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | p-Diethylbenzene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 24-Feb-16 |
| 16020201-001 | p-Ethyltoluene | K, T, U | < 0.07 ppbv | 0.07 | AC-058 | 24-Feb-16 |
| 16020201-001 | Styrene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 24-Feb-16 |
| 16020201-001 | Tetrachloroethylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 24-Feb-16 |
| 16020201-001 | Tetrahydrofuran | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-001 | Toluene | I | 0.20 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | trans-1,2-Dichloroethylene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | trans-1,3-Dichloropropylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 24-Feb-16 |
| 16020201-001 | trans-2-Butene | I | 0.03 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-001 | trans-2-Pentene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-001 | Trichloroethylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 24-Feb-16 |

| | | | |
|---------------------------|------------------------|------------------|----------------------|
| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED |
| LICA/VOC/CLS/Feb 18, 2016 | 7155 | Ambient Air | 18-Feb-16 0:00 |
| DESCRIPTION: | Cold Lake South | | |
| REPORT NUMBER: | REPORT CREATED: | VERSION: | Version 01 |
| 16020201 | 22-Mar-16 | | |
| Lab ID | Parameter | Qualifier | Result Units |
| 16020201-001 | Vinyl acetate | K, T, U | < 0.4 ppbv |
| 16020201-001 | Vinyl chloride | K, T, U | < 0.02 ppbv |
| | | | RDL |
| | | | 0.4 |
| | | | 0.02 |
| | | | Method |
| | | | AC-058 |
| | | | AC-058 |
| | | | Analysis Date |
| | | | 24-Feb-16 |
| | | | 24-Feb-16 |

Report certified by: Graham Knox, Team Lead
Date: March-22-16
On behalf of: PJ Pretorius, Manager, Analysis and Testing Services
Inquiries: (780) 632 8455
E-mail: EAS.Results@albertainnovates.ca

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|---------------------------|---------------------------|-----------------|----------------|------------|--------|---------------|
| LICA/VOC/CLS/FEB 24, 2016 | 14712 | Ambient Air | 24-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: | Cold Lake South | | | | | |
| REPORT NUMBER: | 16030001 | REPORT CREATED: | 22-Mar-16 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16030001-003 | 1,1,1-Trichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1,1,2,2-Tetrachloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1,1,2-Trichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1,1-Dichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1,1-Dichloroethylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1,2,3-Trimethylbenzene | K, T, U | < 0.05 ppbv | 0.05 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1,2,4-Trichlorobenzene | K, T, U | < 0.8 ppbv | 0.8 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1,2,4-Trimethylbenzene | I | 0.03 ppbv | 0.03 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1,2-Dibromoethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1,2-Dichlorobenzene | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1,2-Dichloroethane | I | 0.02 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1,2-Dichloropropane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1,3,5-Trimethylbenzene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1,3-Butadiene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1,3-Dichlorobenzene | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1,4-Dichlorobenzene | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1,4-Dioxane | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1-Butene | I | 0.06 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1-Hexene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | 1-Pentene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | 2,2,4-Trimethylpentane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | 2,2-Dimethylbutane | I | 0.03 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | 2,3,4-Trimethylpentane | I | 0.03 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | 2,3-Dimethylbutane | I | 0.07 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | 2,3-Dimethylpentane | I | 0.08 ppbv | 0.02 | AC-058 | 03-Mar-16 |

Report certified by: Graham Knox, Team Lead

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: March-22-16

Inquiries: (780) 632 8455

E-mail: EAS.Results@albertainnovates.ca

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|---------------------------|-------------------------|-----------------|----------------|------------|--------|---------------|
| LICA/VOC/CLS/FEB 24, 2016 | 14712 | Ambient Air | 24-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: | Cold Lake South | | | | | |
| REPORT NUMBER: | 16030001 | REPORT CREATED: | 22-Mar-16 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16030001-003 | 2,4-Dimethylpentane | I | 0.04 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | 2-Methylheptane | I | 0.03 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | 2-Methylhexane | I | 0.04 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | 2-Methylpentane | I | 0.15 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | 3-Methylheptane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | 3-Methylhexane | I | 0.05 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | 3-Methylpentane | I | 0.06 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | Acetone | | 0.5 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-003 | Acrolein | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 03-Mar-16 |
| 16030001-003 | Benzene | I | 0.17 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | Benzyl chloride | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-003 | Bromodichloromethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | Bromoform | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | Bromomethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | Carbon disulfide | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | Carbon tetrachloride | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | Chlorobenzene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | Chloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | Chloroform | I | 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | Chloromethane | | 0.44 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | cis-1,2-Dichloroethene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | cis-1,3-Dichloropropene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 03-Mar-16 |
| 16030001-003 | cis-2-Butene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | cis-2-Pentene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | Cyclohexane | I | 0.16 ppbv | 0.02 | AC-058 | 03-Mar-16 |

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | Analysis Date | |
|------------------------------|---------------------------|-------------|----------------|----------|---------------|---------------|
| LICA/VOC/CLS/FEB 24, 2016 | 14712 | Ambient Air | 24-Feb-16 0:00 | | | |
| DESCRIPTION: Cold Lake South | | | | | | |
| REPORT NUMBER: 16030001 | REPORT CREATED: 22-Mar-16 | | | | Version 01 | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16030001-003 | Cyclopentane | I | 0.06 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | Dibromochloromethane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | Ethanol | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 03-Mar-16 |
| 16030001-003 | Ethyl acetate | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-003 | Ethylbenzene | I | 0.03 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | Freon-11 | I | 0.17 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | Freon-113 | I | 0.07 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | Freon-114 | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | Freon-12 | | 0.40 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | Hexachloro-1,3-butadiene | K, T, U | < 0.50 ppbv | 0.50 | AC-058 | 03-Mar-16 |
| 16030001-003 | Isobutane | I | 0.29 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | Isopentane | I | 0.16 ppbv | 0.03 | AC-058 | 03-Mar-16 |
| 16030001-003 | Isoprene | I | 0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | Isopropyl alcohol | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-003 | Isopropylbenzene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | m,p-Xylene | I | 0.08 ppbv | 0.03 | AC-058 | 03-Mar-16 |
| 16030001-003 | m-Diethylbenzene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 03-Mar-16 |
| 16030001-003 | m-Ethyltoluene | K, T, U | < 0.08 ppbv | 0.08 | AC-058 | 03-Mar-16 |
| 16030001-003 | Methyl butyl ketone | K, T, U | < 0.50 ppbv | 0.50 | AC-058 | 03-Mar-16 |
| 16030001-003 | Methyl ethyl ketone | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 03-Mar-16 |
| 16030001-003 | Methyl isobutyl ketone | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-003 | Methyl methacrylate | K, T, U | < 0.07 ppbv | 0.07 | AC-058 | 03-Mar-16 |
| 16030001-003 | Methyl tert butyl ether | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 03-Mar-16 |
| 16030001-003 | Methylcyclohexane | I | 0.18 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | Methylcyclopentane | I | 0.16 ppbv | 0.02 | AC-058 | 03-Mar-16 |

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|---------------------------|-----------------------------|-----------------|----------------|------------|--------|---------------|
| LICA/VOC/CLS/FEB 24, 2016 | 14712 | Ambient Air | 24-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: | Cold Lake South | | | | | |
| REPORT NUMBER: | 16030001 | REPORT CREATED: | 22-Mar-16 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16030001-003 | Methylene chloride | K, T, U | <0.3 ppbv | 0.3 | AC-058 | 03-Mar-16 |
| 16030001-003 | n-Butane | | 0.48 ppbv | 0.03 | AC-058 | 03-Mar-16 |
| 16030001-003 | n-Decane | K, T, U | <0.06 ppbv | 0.06 | AC-058 | 03-Mar-16 |
| 16030001-003 | n-Dodecane | | 1.3 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-003 | n-Heptane | I | 0.06 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | n-Hexane | I | 0.10 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | n-Octane | I | 0.03 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | n-Pentane | I | 0.2 ppbv | 0.1 | AC-058 | 03-Mar-16 |
| 16030001-003 | n-Propylbenzene | K, T, U | <0.05 ppbv | 0.05 | AC-058 | 03-Mar-16 |
| 16030001-003 | n-Undecane | K, T, U | <0.5 ppbv | 0.5 | AC-058 | 03-Mar-16 |
| 16030001-003 | Naphthalene | K, T, U | <0.5 ppbv | 0.5 | AC-058 | 03-Mar-16 |
| 16030001-003 | n-Nonane | I | 0.02 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | o-Ethyltoluene | I | 0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | o-Xylene | I | 0.04 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | p-Diethylbenzene | K, T, U | <0.04 ppbv | 0.04 | AC-058 | 03-Mar-16 |
| 16030001-003 | p-Ethyltoluene | K, T, U | <0.07 ppbv | 0.07 | AC-058 | 03-Mar-16 |
| 16030001-003 | Styrene | K, T, U | <0.04 ppbv | 0.04 | AC-058 | 03-Mar-16 |
| 16030001-003 | Tetrachloroethylene | K, T, U | <0.04 ppbv | 0.04 | AC-058 | 03-Mar-16 |
| 16030001-003 | Tetrahydrofuran | K, T, U | <0.4 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-003 | Toluene | I | 0.15 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | trans-1,2-Dichloroethylene | K, T, U | <0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | trans-1,3-Dichloropropylene | K, T, U | <0.04 ppbv | 0.04 | AC-058 | 03-Mar-16 |
| 16030001-003 | trans-2-Butene | K, T, U | <0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-003 | trans-2-Pentene | K, T, U | <0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-003 | Trichloroethylene | K, T, U | <0.04 ppbv | 0.04 | AC-058 | 03-Mar-16 |



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID: LICA/VOC/CLS/FEB 24, 2016 CANISTER ID: 14712 Matrix: Ambient Air DATE SAMPLED: 24-Feb-16 0:00
 DESCRIPTION: Cold Lake South
 REPORT NUMBER: 16030001 REPORT CREATED: 22-Mar-16 VERSION: Version 01

| Lab ID | Parameter | Qualifier | Result | Units | RDL | Method | Analysis Date |
|--------------|----------------|-----------|--------|-------|------|--------|---------------|
| 16030001-003 | Vinyl acetate | K, T, U | < 0.4 | ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-003 | Vinyl chloride | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 03-Mar-16 |

Report certified by: Graham Knox, Team Lead On behalf of: PJ Pretorius, Manager, Analysis and Testing Services
 Date: March-22-16 Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca

PAHS SAMPLES

| RESULTS: Adewunmi Adekanmbi Lakeland Industry and Community Assn 4000, 19 St NE Calgary AB T2E 6P8 INVOICE: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5 | | CLIENT SAMPLE ID CANISTER ID LICA/PUF/CLS/Feb 6, 2016 TE-03 DESCRIPTION: Cold Lake South DATE SAMPLED: 06-Feb-16 0:00 DATE RECEIVED: 09-Feb-16 REPORT CREATED: 24-Feb-16 REPORT NUMBER: 16020060 VERSION: Version 01 | | Matrix Air Filter Priority Normal | | | |
|--|--------------------------------|--|--------|--|------|--|---------------|
| Lab ID | Parameter | Qualifier | Result | Units | RDL | Method | Analysis Date |
| 16020060-004 | 1-Methylnaphthalene | | 0.04 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | 2-Methylnaphthalene | | 0.07 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | 3-Methylcholanthrene | K, T, U | < 0.01 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | 7,12-Dimethylbenz(a)anthracene | K, T, U | < 0.01 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Acenaphthene | | 0.04 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Acenaphthylene | | 0.02 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Acridine | | 0.02 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Anthracene | | 0.01 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Benzo(a)anthracene | K, T, U | < 0.01 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Benzo(a)pyrene | K, T, U | < 0.01 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Benzo(b,j,k)fluoranthene | | 0.03 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Benzo(c)phenanthrene | | 0.01 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Benzo(e)pyrene | K, T, U | < 0.01 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Benzo(ghi)perylene | K, T, U | < 0.01 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Chrysene | | 0.01 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Dibenzo(a,h)pyrene | K, T, U | < 0.01 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Dibenzo(a,i)pyrene | K, T, U | < 0.01 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Dibenzo(a,j)pyrene | K, T, U | < 0.01 | ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| Report certified by: Graham Knox, Team Lead | | On behalf of: PJ Pretorius, Manager, Analysis and Testing Services | | Inquiries: (780) 632 8455 | | E-mail: EAS.Results@albertainnovates.ca | |
| Date: February 24, 2016 | | | | | | | |

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|------------------------------|---------------------------|------------|------------------|------------|--------|---------------|
| LICA/PUF/CLS/Feb 6, 2016 | TE-03 | Air Filter | 06-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Cold Lake South | | | | | | |
| REPORT NUMBER: 16020060 | REPORT CREATED: 24-Feb-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020060-004 | Dibenzo(ah)anthracene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Fluoranthene | | 0.11 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Fluorene | | 0.13 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Indeno(1,2,3-cd)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Naphthalene | | 0.07 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Perylene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Phenanthrene | | 0.24 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Pyrene | | 0.05 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-004 | Retene | | 0.05 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |

| RESULTS: Adewunmi Adekanmbi Lakeland Industry and Community Assn 4000, 19 St NE Calgary AB T2E 6P8 INVOICE: Charmaine Code PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5 | | CLIENT SAMPLE ID CANISTER ID LICA/PUF/CLS/Feb 12, 2016 TE-08 | | Matrix Air Filter | | Priority Normal | |
|---|--------------------------------|---|------------------|-----------------------------|--------|---------------------------|--|
| DESCRIPTION: Cold Lake South DATE SAMPLED: 12-Feb-16 0:00 REPORT CREATED: 24-Feb-16 | | DATE RECEIVED: 18-Feb-16 REPORT NUMBER: 16020158 VERSION: Version 01 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date | |
| 16020158-004 | 1-Methylnaphthalene | | 0.13 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |
| 16020158-004 | 2-Methylnaphthalene | | 0.19 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |
| 16020158-004 | 3-Methylcholanthrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |
| 16020158-004 | 7,12-Dimethylbenz(a)anthracene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |
| 16020158-004 | Acenaphthene | | 0.05 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |
| 16020158-004 | Acenaphthylene | | 0.03 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |
| 16020158-004 | Acridine | | 0.01 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |
| 16020158-004 | Anthracene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |
| 16020158-004 | Benzo(a)anthracene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |
| 16020158-004 | Benzo(a)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |
| 16020158-004 | Benzo(b,j,k)fluoranthene | | 0.03 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |
| 16020158-004 | Benzo(c)phenanthrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |
| 16020158-004 | Benzo(e)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |
| 16020158-004 | Benzo(ghi)perylene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |
| 16020158-004 | Chrysene | | 0.01 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |
| 16020158-004 | Dibenzo(a,h)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |
| 16020158-004 | Dibenzo(a,i)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |
| 16020158-004 | Dibenzo(a,l)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 20-Feb-16 | |

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|------------------------------|---------------------------|------------|------------------|------------|--------|---------------|
| LICA/PUF/CLS/Feb 12, 2016 | TE-08 | Air Filter | 12-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Cold Lake South | | | | | | |
| REPORT NUMBER: 16020158 | REPORT CREATED: 24-Feb-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020158-004 | Dibenzo(ah)anthracene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 20-Feb-16 |
| 16020158-004 | Fluoranthene | | 0.08 ug/Filter | 0.01 | NA-017 | 20-Feb-16 |
| 16020158-004 | Fluorene | | 0.08 ug/Filter | 0.01 | NA-017 | 20-Feb-16 |
| 16020158-004 | Indeno(1,2,3-cd)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 20-Feb-16 |
| 16020158-004 | Naphthalene | | 0.22 ug/Filter | 0.01 | NA-017 | 20-Feb-16 |
| 16020158-004 | Perylene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 20-Feb-16 |
| 16020158-004 | Phenanthrene | | 0.16 ug/Filter | 0.01 | NA-017 | 20-Feb-16 |
| 16020158-004 | Pyrene | | 0.04 ug/Filter | 0.01 | NA-017 | 20-Feb-16 |
| 16020158-004 | Retene | | 0.03 ug/Filter | 0.01 | NA-017 | 20-Feb-16 |

| | |
|--|--|
| <p>RESULTS: Adewunmi Adekanmbi Lakeland Industry and Community Assn 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE: Charmaine Code PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p> | <p>CLIENT SAMPLE ID CAVISTER ID LICA/PUF/CLS/Feb 18, 2016 TE-02</p> <p>DESCRIPTION: Cold Lake South</p> <p>DATE SAMPLED: 18-Feb-16 0:00 REPORT CREATED: 22-Mar-16</p> <p>DATE RECEIVED: 24-Feb-16 REPORT NUMBER: 16020201 VERSION: Version 01</p> <p>Matrix Air Filter</p> <p>Priority Normal</p> |
|--|--|

| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
|--------------|--------------------------------|-----------|---------------|------|--------|---------------|
| 16020201-002 | 1-Methylnaphthalene | | 0.07 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | 2-Methylnaphthalene | | 0.12 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | 3-Methylcholanthrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | 7,12-Dimethylbenz(a)anthracene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Acenaphthene | | 0.03 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Acenaphthylene | | 0.02 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Acridine | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Anthracene | | 0.02 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Benzo(a)anthracene | | 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Benzo(a)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Benzo(b,j,k)fluoranthene | | 0.04 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Benzo(c)phenanthrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Benzo(e)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Benzo(ghi)perylene | | 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Chrysene | | 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Dibenzo(a,h)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Dibenzo(a,i)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Dibenzo(a,l)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|------------------------------|---------------------------|------------|----------------|------------|--------|---------------|
| LICA/PUF/CLS/Feb 18, 2016 | TE-02 | Air Filter | 18-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Cold Lake South | | | | | | |
| REPORT NUMBER: 16020201 | REPORT CREATED: 22-Mar-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020201-002 | Dibenzo(ah)anthracene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Fluoranthene | | 0.08 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Fluorene | | 0.09 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Indeno(1,2,3-cd)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Naphthalene | | 0.12 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Perylene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Phenanthrene | | 0.17 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Pyrene | | 0.04 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-002 | Retene | | 0.03 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |

| | |
|---|--|
| <p>RESULTS: Adewunmi Adekanmbi Lakeland Industry and Community Assn 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE: Charmaine Code PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p> | <p>CLIENT SAMPLE ID CANISTER ID LICA/PUF/CLS/FEB 24, 2016 TE-06</p> <p>DESCRIPTION: Cold Lake South</p> <p>DATE SAMPLED: 24-Feb-16 0:00 REPORT CREATED: 22-Mar-16</p> <p>DATE RECEIVED: 01-Mar-16 REPORT NUMBER: 16030001 VERSION: Version 01</p> <p>Matrix Air Filter</p> <p>Priority Normal</p> |
|---|--|

| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
|--------------|--------------------------------|-----------|---------------|------|--------|---------------|
| 16030001-004 | 1-Methylnaphthalene | | 0.35 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | 2-Methylnaphthalene | | 0.63 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | 3-Methylcholanthrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | 7,12-Dimethylbenz(a)anthracene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Acenaphthene | | 0.22 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Acenaphthylene | | 0.07 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Acridine | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Anthracene | | 0.02 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Benzo(a)anthracene | | 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Benzo(a)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Benzo(b,j,k)fluoranthene | | 0.05 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Benzo(c)phenanthrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Benzo(e)pyrene | | 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Benzo(ghi)perylene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Chrysene | | 0.02 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Dibenzo(a,h)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Dibenzo(a,i)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Dibenzo(a,l)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |

| CLIENT SAMPLE ID | | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | |
|---------------------------|------------------------|------------------------|---------------|---------------------|-----------------|---------------|
| LICA/PUF/CLS/FEB 24, 2016 | | TE-06 | Air Filter | 24-Feb-16 0:00 | Version 01 | |
| DESCRIPTION: | | Cold Lake South | | | | |
| REPORT NUMBER: | | REPORT CREATED: | | | | |
| 16030001 | | 22-Mar-16 | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16030001-004 | Dibenzo(ah)anthracene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Fluoranthene | | 0.10 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Fluorene | | 0.24 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Indeno(1,2,3-cd)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Naphthalene | | 0.71 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Perylene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Phenanthrene | | 0.26 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Pyrene | | 0.05 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-004 | Retene | | 0.03 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |

PARTISOL SAMPLES



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Vegreville, Alberta
Canada T9C 1T4
(780) 632-8211

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

Page 1 of 7

| | | | | | | | | | |
|--|--------------------|--|---------------------|--------------------------|---------------|-----------------------------|--|---------------------------|--|
| RESULTS: Adewunmi Adekanmbi Lakeland Industry and Community Assn 4000, 19 St NE | | CLIENT SAMPLE ID LICA P5012648 | | CANISTER ID | | MATRIX Air Filter | | PRIORITY Normal | |
| Calgary AB T2E 6P8 | | Cold Lake South | | | | | | | |
| INVOICE: Charmaine Code PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5 | | DATE SAMPLED: 06-Feb-16 0:00 | | DATE RECEIVED: 09-Feb-16 | | REPORT NUMBER: 16020059 | | VERSION: Version 01 | |
| | | REPORT CREATED: 17-Feb-16 | | | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date | | | |
| 16020059-001 | Particulate Weight | | 0.066 mg | 0.004 | AC-029 | 12-Feb-16 | | | |

Report certified by: Graham Knox, Team Lead

Date: February 17, 2016

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Inquiries: (780) 632 8455

E-mail: EAS.Results@albertainnovates.ca

| | |
|---|--|
| <p>RESULTS: Adewunmi Adekanmbi Lakeland Industry and Community Assn 4000, 19 St NE Calgary AB T2E 6P8 INVOICE: Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p> | <p>CLIENT SAMPLE ID CANISTER ID LICA P5012649</p> <p>DESCRIPTION: Cold Lake South</p> <p>DATE SAMPLED: 12-Feb-16 0:00 DATE RECEIVED: 18-Feb-16</p> <p>REPORT CREATED: 08-Mar-16 REPORT NUMBER: 16020157 VERSION: Version 01</p> |
|---|--|

| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
|--------------|--------------------|-----------|--------------|-------|--------|---------------|
| 16020157-001 | Particulate Weight | | 0.046 mg | 0.004 | AC-029 | 01-Mar-16 |



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

| | |
|---|---|
| <p>RESULTS: Adewunmi Adekanmbi Lakeland Industry and Community Assn 4000, 19 St NE</p> <p>Calgary AB T2E 6P8</p> <p>INVOICE: Charmaine Code PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5</p> | <p>CLIENT SAMPLE ID LICA P5012650</p> <p>DESCRIPTION: Cold Lake South</p> <p>DATE SAMPLED: 18-Feb-16 REPORT CREATED: 08-Mar-16</p> <p>CANISTER ID</p> <p>DATE RECEIVED: 24-Feb-16 REPORT NUMBER: 16020199 VERSION: Version 01</p> <p>Matrix Air Filter</p> <p>Priority Normal</p> |
|---|---|

| Lab ID | Parameter | Qualifier | Result | Units | RDL | Method | Analysis Date |
|--------------|--------------------|-----------|--------|-------|-------|--------|---------------|
| 16020199-001 | Particulate Weight | | 0.084 | mg | 0.004 | AC-029 | 01-Mar-16 |

Report certified by: Graham Knox, Team Lead
Date: March 8, 2016
On behalf of: PJ Pretorius, Manager, Analysis and Testing Services
Inquiries: (780) 632 8455
E-mail: EAS.Results@albertainnovates.ca



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Canada T9C 1T4
(780) 632-8211

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

| | | | | | | |
|---|--|--|--|---|-------------------------|-----------------------------------|
| RESULTS: Adewunmi Adekanmbi Lakeland Industry and Community Assn 4000, 19 St NE Calgary AB T2E 6P8 INVOICE: Charmaine Code PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5 | | CLIENT SAMPLE ID LICA Flt #P5012647 DESCRIPTION: Cold Lake South DATE SAMPLED: 24-Feb-16 0:00 REPORT CREATED: 21-Mar-16 DATE RECEIVED: 01-Mar-16 REPORT NUMBER: 16030002 VERSION: Version 01 | MATRIX Air Filter PRIORITY Normal | | | |
| Lab ID 16030002-001 | Parameter Particulate Weight | Qualifier 0.041 mg | Result Units 0.004 | RDL 0.004 | Method AC-029 | Analysis Date 04-Mar-16 |
| Report certified by: Graham Knox, Team Lead | | On behalf of: PJ Pretorius, Manager, Analysis and Testing Services | | Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca | | |
| Date: March 21, 2016 | | | | | | |

APPENDIX V
REPORT CERTIFICATION FORM

Report Certification Form

| | |
|--|--|
| Alberta Airshed (if applicable) | EPA Approval or Code of Practice Registration # (if applicable) |
| YES | NA |
| Company Name (if applicable) | Industrial Operation Name (if applicable) |
| Lakeland Industry & Community Association | Cold Lake South Site |
| Name of the Representative of the Person Responsible (Last, First, Middle) | Position / Title of the Representative of the Person Responsible |
| Wunmi Adekanmbi | Project Manager Assistant, Customer Service, Air Services |
| Is an External Party Certifying the Report? (If Yes, fill in the fields below for the external person.) | |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Name of External Person Certifying the Report (Last, First, Middle) | Position / Title of External Person Certifying the Report |
| NA | NA |
| Company Name for the External Person Certifying the Report | Identification of Qualifications / Professional Designations of the External Person Certifying the Report |
| NA | NA |

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

Wunmi Adekanmbi

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

22-March-2016

Report Issued Date (dd-mm-yyyy)

APPENDIX VI
DATA VALIDATION CERTIFICATION FORM



Validation Certificate Form

| | |
|---|--|
| Client: <u>Lakeland Industry & Community Association</u> | Project #: <u>2833-2016-02-1- C</u> |
| Site: <u>Cold Lake South Site</u> | Contact: <u>Mike Bisaga</u> |

Level 0 Preliminary Verification

msdmbey

Date 07 - March - 2016

Level 1 Primary Validation

msdmbey

Date 07 - March - 2016

Level 2 Final Validation

msdmbey

Date 22 - March - 2016

Level 3 Independent Data Review

[Signature]

Date 22 - Mar - 16

Post-Final Validation

NA

Date NA

Notes

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

| |
|--|
| |
| |
| |



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

Toll Free 800-386-7247
Fax 403-219-3673

**AMBIENT AIR MONITORING MONTHLY DATA REPORT
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
MASKWA SITE**

JOB #:2833-2016-02-30- C

FEBRUARY 2016

Prepared for:

**LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
BOX 8237, 5107W - 50 STREET
BONNYVILLE, ALBERTA
T9N 2J5**

Attention: MIKE BISAGA

DATE: **March 14, 2016**

Prepared by:



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

Reviewed by:



Lily Lin, B.Sc.
Senior Project Manager, Customer Service, Air Services

SUMMARY

In FEBRUARY 2016, the Air Services Group of Maxxam Analytics conducted an ambient air monitoring program on the Maskwa Site at Lakeland Industry & Community Association, near Cold Lake. Sampling was carried out to determine the concentrations of non-compliance parameters as requested by the Project Coordinator.

All data collected this month were within the objectives outlined in the AMD1989, AMD2006 and AMD2015.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

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 is issuing this completed report to Lakeland Industry & Community Association, Maskwa Site.

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

| Lakeland Industry & Community Association Maskwa Site | | | | | MAXIMUM VALUES | | | | | | | | OPERATIONAL TIME (%) |
|--|------------|-------|-------------|-------|--------------------|---------|--------|-------|------------------------|--------------------------------|---------|--------|----------------------------|
| PARAMETER | OBJECTIVES | | EXCEEDENCES | | MONTHLY AVERAGE | 1-HOUR | | | | | 24-HOUR | | |
| | 1-HR | 24-HR | 1-HR | 24-HR | | READING | DAY | HOUR | WIND SPEED (KPH) | WIND DIRECTION (DEGREES) | READING | DAY | |
| SO2 (PPB) | 172 | 48 | 0 | 0 | 0.7 | 13.4 | 7 | 1 | 7.6 | NW | 2.5 | 22 | 99.7 |
| H2S (PPB) | 10 | 3 | 0 | 0 | 0.4 | 1.4 | 6, 17 | VAR | VAR | VAR | 1.0 | 6 | 98.9 |
| THC (PPM) | - | - | - | - | 2.20 | 2.71 | 5, 17 | 20, 5 | 1.7 4.3 | NNE SW | 2.62 | 5 | 100.0 |
| NO2 (PPB) | 159 | - | 0 | - | 3.3 | 19.9 | 7 | 1 | 7.6 | NW | 6.8 | 17 | 100.0 |
| NO (PPB) | - | - | - | - | 0.5 | 11.7 | 4 | 8 | 0.8 | NNE | 1.4 | 21 | 100.0 |
| NOX (PPB) | - | - | - | - | 3.8 | 27.8 | 7 | 1 | 7.6 | NW | 7.5 | 5 | 100.0 |
| RELATIVE HUMIDITY (%) | - | - | - | - | 70.2 | 89 | 9 | VAR | VAR | VAR | 85.8 | 9 | 100.0 |
| BAROMETRIC PRESSURE (MILIBAR) | - | - | - | - | 938 | 958 | 12 | 3 | 1.9 | NE | 951 | 11, 12 | 100.0 |
| AMBIENT TEMPERATURE (DEG C) | - | - | - | - | -6.2 | 12.3 | 26 | 13 | 9.6 | WNW | 4.4 | 26 | 100.0 |
| PRECIPITATION (MM) | - | - | - | - | 0.0 | 0.6 | 13, 27 | VAR | VAR | VAR | 0.1 | VAR | 100.0 |
| VECTOR WS (KPH) | - | - | - | - | 5.0 | 19.7 | 6 | 13 | - | WNW | 10.1 | 6 | 100.0 |
| VECTOR WD (DEG) | - | - | - | - | W | - | - | - | - | - | - | - | 100.0 |

NA-NOT AVAILABLE VAR-VARIOUS

Exceedence Summary Report

SO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

SO₂ 24- Hour Exceedences

No Exceedences Recorded During the Month

H₂S 1- Hour Exceedences

No Exceedences Recorded During the Month

H₂S 24- Hour Exceedences

No Exceedences Recorded During the Month

NO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

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1.0 Discussion

This monthly report consists of data for parameters Sulphur Dioxide (SO₂), Hydrogen Sulphide (H₂S), Total Hydrocarbon (THC), Oxides of Nitrogen (NO_x), Nitric Oxides (NO), Nitrogen Dioxide (NO₂), Relative Humidity (RH), Barometric Pressure (BP), Precipitation, Ambient Temperature (AmbTPX), Wind Speed (WS), Wind Direction (WD) and Standard Deviation Wind Direction (STDWD).

Sample filters for all continuous air monitors are changed before the calibration is started. The sample manifold is cleaned during the site visit on a monthly basis.

Control checks, consisting of zero and span of the analyzer are conducted on a daily basis on all continuous air monitors. In place of the air sample, zero air (from scrubbed air or gas cylinder) 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 calibration is done a minimum of once a month for each continuous air monitor. In addition 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 a downtime (Data is flagged as C). If more than one calibration is performed during the month, the time during the 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 a downtime (Data is flagged as S). If extra zero/span check is performed, the time during the check is considered as a downtime (Data is flagged as S1).

The AMD requires each instrument and accompanying data recording system to be operational 90% of the time (minimum), on a monthly basis.

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 for verification and validation of continuous ambient air quality data. The descriptions of the data verification and validation process can be found in Section 5 of this report.

Hourly/minute data have been reviewed based on daily zero/span results and multi-points calibration results. Data may be considered as 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 (greater than 10%).

Trailer inspection was completed on February 17. No issues were identified.

SULPHUR DIOXIDE (SO₂)

An as found points check was performed prior to maintenance on February 23. The UV lamp, PMT and analog output calibrations were performed. A full calibration was completed afterwards. The result was good.

HYDROGEN SULPHIDE (H₂S)

An as found points check was performed prior to maintenance on February 23. The UV lamp, PMT and analog output calibrations were performed. A full calibration was completed afterwards. The result was good.

TOTAL HYDROCARBONS (THC)

The analyzer was working well throughout the month. The routine monthly calibration was performed on February 17.

NITROGEN DIOXIDE (NO₂)

The analyzer was working well throughout the month. The routine monthly calibration was performed on February 17.

WIND SPEED (WS), WIND DIRECTION (WD) and STANDARD DEVIATION WIND DIRECTION (STDWD)

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

The wind system was working well throughout the month.

RELATIVE HUMIDITY (RH)

The humidity sensor was working well throughout the month.

BAROMETRIC PRESSURE (BP)

The pressure sensor was working well throughout the month.

PRECIPITATION

Both the rain gauge system and heating system were working well throughout the month. A rain gauge system audit was completed on February 26. The result was good.

AMBIENT TEMPERATURE (TPX)

The temperature sensor was working well throughout the month.

2.0 Project Personnel

Mike Bisaga was the contact for Lakeland Industry & Community Association, and the Maxxam field sampling technicians were Alexander Yakupov and Michael Espiritu.

3.0 Plant Monthly Required AMD Summary

All data collected this month were within the objectives outlined in the AMD1989, AMD2006 and AMD 2015.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

4.0 Calculations and Results

All calculations and reporting of results follow the method described in the Air Monitoring Directive, 1989, 2006 Amendments to the Air Monitoring Directive, 1989 (AMD 2006) as well as AMD 2015.

5.0 Methods and Procedures

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

- Maxxam AIR SOP-00209: Ambient H₂S Monitoring
- Maxxam AIR SOP-00211: Ambient SO₂ Monitoring
- Maxxam AIR SOP-00213: Ambient NO/NO₂/NO_x Monitoring
- Maxxam AIR SOP-00214: Ambient Hydrocarbon (THC) Monitoring
- Maxxam AIR SOP-00242: Precipitation Collector Installation /Maintenance

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

- Sulphur Dioxide - API 100E UV Fluorescent Analyzer
- Hydrogen Sulphide - API 101E UV Fluorescent Analyzer
- Total Hydrocarbons - Thermo 51C FID Analyzer
- Oxides of Nitrogen - API 200A Chemiluminescent Analyzer
- Wind System - Met One Unit
- Relative Humidity - Met One Unit
- Barometric Pressure - Met One Unit
- Ambient Temperature - Met One Unit
- Precipitation - Met One 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

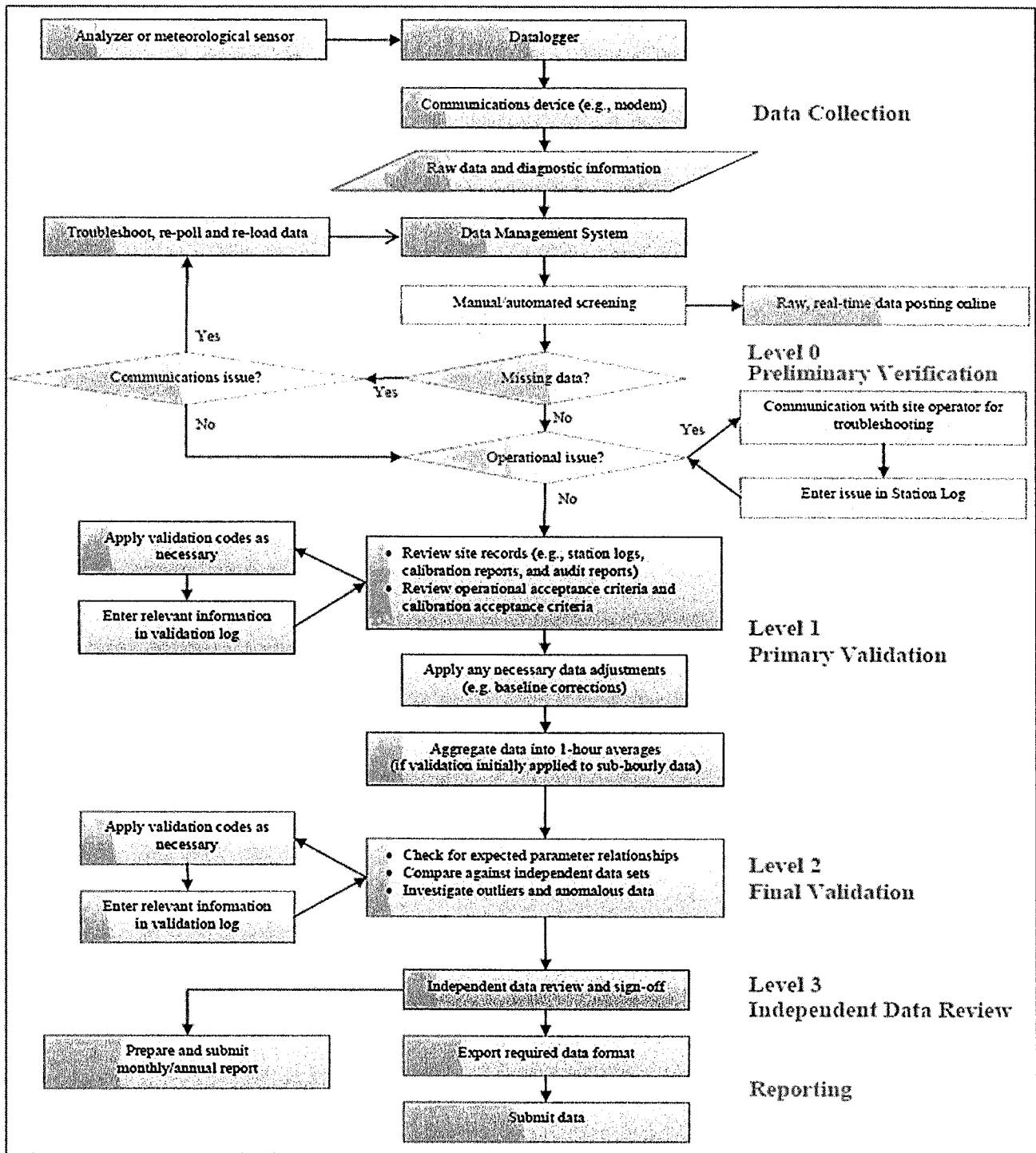
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

Level 3 Independent Data Review

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

Post-Final Validation

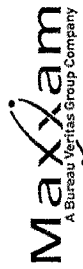
The Post-Final Validation step serves to re-evaluate the data that errors or omissions are discovered and/or suspected after the initial submittal of data. Any data issues or patterns which were not clear on a monthly basis are highlighted during this step. This validation is performed on an annual basis.



Source: AMD Chapter 6: Ambient Data Quality for verification and validation of continuous ambient air quality data; Figure 1 Data Collection and Management Process Flow Chart

APPENDIX I
CONTINUOUS MONITORING DATA RESULTS

SULPHUR DIOXIDE



SULPHUR DIOXIDE (SO2) hourly averages in ppb

MST

| DAY | 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 | 24:00 | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|--|
| HR START | 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 | 24:00 | | |
| HR END | 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 | 24:59 | | |
| ROGS. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.2 | 1.5 | 2.2 | 1.3 | 1.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 3 | 0.9 | 0.4 | 0.6 | 0.2 | 1.7 | 0.5 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.7 | 1.0 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | |
| 4 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.0 | 0.3 | 1.4 | 1.4 | 0.8 | 0.8 | 0.4 | 0.5 | 0.7 | 0.4 | 0.6 | 0.6 | 0.2 | 0.3 | 0.2 | 1.4 | 0.4 | |
| 5 | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.3 | 0.3 | 0.4 | 0.4 | 0.5 | 0.9 | 0.9 | 1.1 | 0.8 | 0.8 | 1.4 | 1.4 | 1.9 | 0.8 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 1.9 | 0.6 | |
| 6 | 0.4 | 0.4 | 0.4 | 0.5 | 0.6 | 0.5 | 0.5 | 0.9 | 1.5 | 0.7 | 0.5 | 0.4 | 0.5 | 0.4 | 0.4 | 0.4 | 1.1 | 7.8 | 3.5 | 2.7 | 3.9 | 4.8 | 4.4 | 0.9 | 1.6 | 2.4 | |
| 7 | 6.5 | 13.4 | 3.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.2 | 0.5 | 0.7 | 2.0 | 5.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 13.4 | 1.4 | |
| 8 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 1.1 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 2.4 | |
| 9 | 0.3 | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.6 | 1.0 | 0.8 | 1.6 | 1.1 | 0.6 | 0.5 | 0.6 | 0.9 | 5.7 | 2.3 | 3.5 | 5.7 | 0.9 | |
| 10 | 2.0 | 0.7 | 0.6 | 0.4 | 0.3 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 2.4 | |
| 11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 13 | 0.1 | 0.3 | 0.3 | 0.4 | 0.5 | 0.7 | 0.8 | 0.6 | 0.7 | 0.9 | 0.0 | 0.2 | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 14 | 0.6 | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.0 | 0.3 | 0.1 | 0.2 | 0.3 | 0.3 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.5 | 0.4 | 0.5 | 0.4 | 0.6 | |
| 15 | 0.5 | 0.4 | 0.6 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | |
| 16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 19 | 0.3 | 0.4 | 0.5 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 20 | 0.6 | 0.8 | 0.7 | 0.8 | 0.6 | 0.5 | 0.4 | 0.3 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 1.6 | 0.6 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 21 | 0.4 | 0.3 | 0.3 | 0.4 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.9 | 2.5 | 0.9 | 0.9 | 1.0 | 1.2 | 0.9 | 0.9 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | |
| 22 | 0.3 | 0.1 | 0.6 | 3.2 | 6.3 | 5.4 | 2.0 | 0.1 | 1.9 | 5.1 | 9.7 | 7.2 | 2.4 | 0.2 | 0.8 | 0.7 | 0.8 | 0.7 | 0.8 | 0.7 | 0.8 | 0.7 | 0.8 | 0.7 | 0.8 | 0.7 | |
| 23 | 5.3 | 0.2 | 0.8 | 0.0 | 0.6 | 0.8 | 0.6 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | |
| 24 | 2.5 | 2.8 | 6.1 | 6.7 | 2.9 | 4.3 | 1.0 | 1.8 | 2.4 | 4.3 | 0.7 | 0.3 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 25 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.1 | 0.3 | 0.4 | 0.5 | 0.7 | 1.7 | 1.8 | 1.9 | 1.8 | 1.3 | 0.7 | 0.6 | 0.8 | 1.5 | 0.8 | 1.5 | 0.8 | 1.5 | 0.8 | 1.9 | 0.7 | |
| 26 | 0.3 | 0.0 | 0.6 | 1.1 | 1.8 | 2.1 | 1.4 | 1.6 | 2.0 | 0.9 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 27 | 0.5 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | |
| 28 | 0.8 | 0.9 | 0.1 | 0.0 | 0.9 | 0.9 | 0.8 | 0.4 | 0.4 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | |
| 29 | 6.5 | 13.4 | 6.1 | 6.7 | 6.3 | 5.4 | 3.9 | 2.8 | 3.0 | 5.1 | 9.7 | 7.2 | 2.6 | 3.0 | 5.5 | 4.8 | 5.2 | 7.8 | 3.5 | 2.7 | 3.9 | 5.7 | 4.4 | 6.7 | 6.7 | | |
| HOURLY MAX | 0.8 | 0.8 | 0.7 | 0.6 | 0.6 | 0.7 | 0.5 | 0.4 | 0.5 | 0.8 | 1.0 | 0.9 | 0.8 | 0.7 | 0.9 | 0.6 | 0.5 | 0.8 | 0.5 | 0.5 | 0.6 | 0.6 | 0.9 | 0.5 | 1.0 | | |
| HOURLY AVG | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STATUS FLAG CODES

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

OBJECTIVE LIMIT:

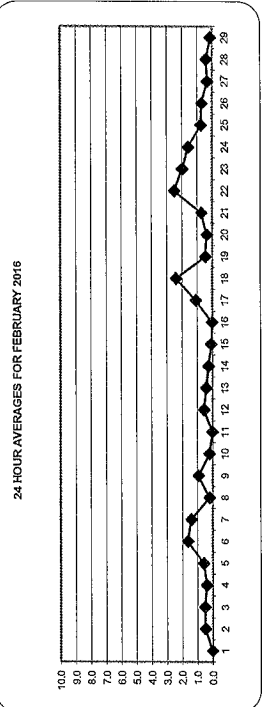
| | | |
|-------|-----|-----|
| 1-HR | 372 | PPB |
| 24-HR | 48 | PPB |

ALBERTA ENVIRONMENT:

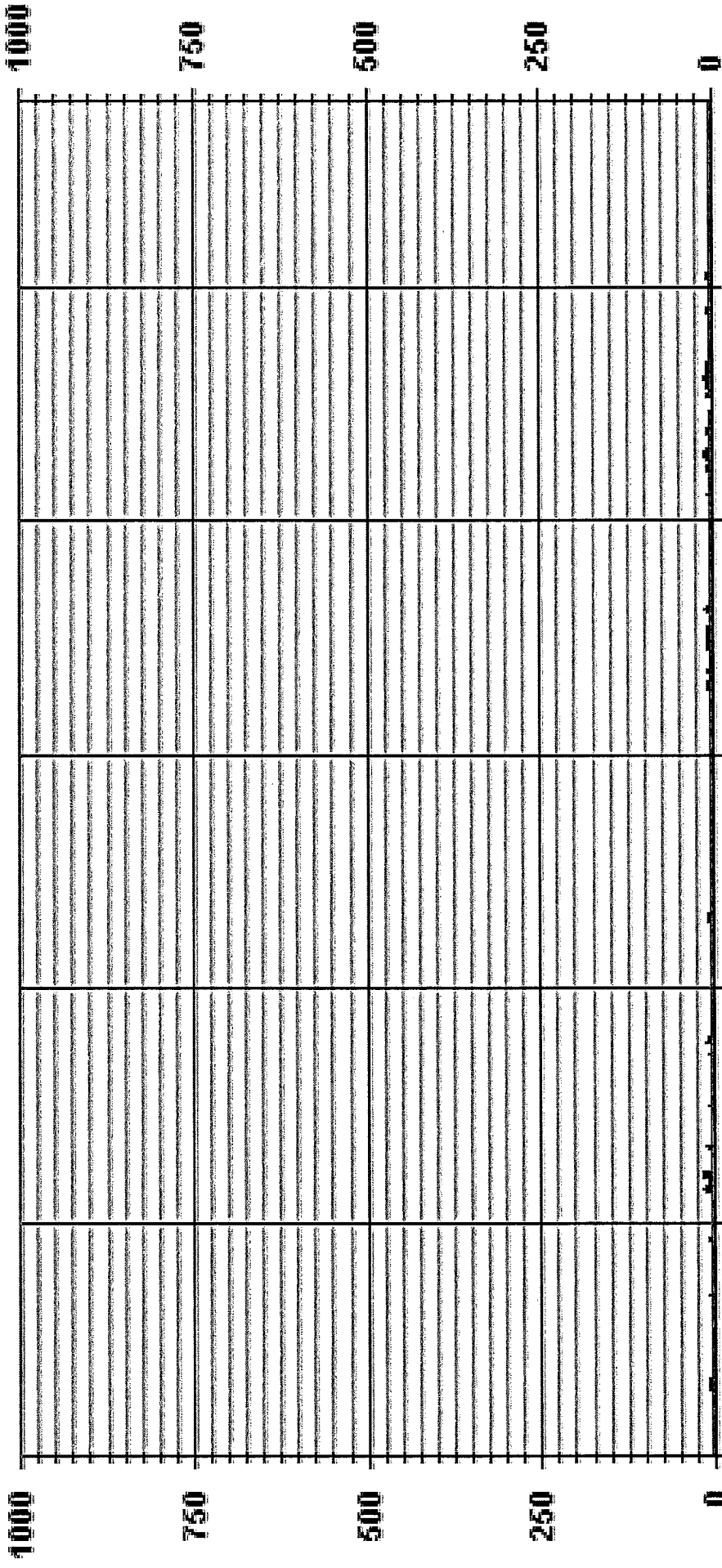
| | | |
|-------|-----|-----|
| 1-HR | 372 | PPB |
| 24-HR | 48 | PPB |

MONTHLY SUMMARY

| | | |
|-----------------------------|------|-------------|
| NUMBER OF 1-HR EXCEEDENCES | 0 | |
| NUMBER OF 24-HR EXCEEDENCES | 0 | |
| NUMBER OF NON-ZERO READINGS | 429 | |
| MINIMUM 1-HR AVERAGE | 0.0 | |
| MAXIMUM 1-HR AVERAGE | 13.4 | |
| MAXIMUM 24-HR AVERAGE | 2.5 | |
| 125 CALIBRATION TIME | 30 | HRS |
| MONTHLY CALIBRATION TIME | 6 | HRS |
| STANDARD DEVIATION | 1.34 | |
| OPERATIONAL TIME | 694 | HRS |
| AMD OPERATION UPTIME | 99.7 | % |
| MONTHLY AVERAGE | 0.7 | PPB |
| VAR | 7 | ON DAY(S) |
| VAR | 1 | @ HOUR(S) |
| VAR | 1 | @ HOUR(S) |
| VAR | 22 | VAR-VARIOUS |

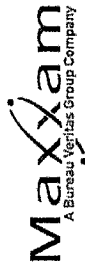


01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

-- LICA30 SO2_ PPB



SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

| DAY | 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 MAX. | 24-HOUR AVG. | ROGS. | | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------|--------------|-------|----|-----|----|
| 1 | 0.3 | 0.3 | 0.5 | 0.4 | 0.5 | 2.9 | 2.5 | 4.0 | 0.0 | 0.0 | 1.9 | 0.1 | 0.3 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.6 | 0.7 | 0.7 | 0.6 | 0.7 | 0.8 | 4.0 | 0.8 | 24 | | | |
| 2 | 0.7 | 0.7 | 0.9 | 0.7 | 0.7 | 0.7 | 0.7 | 0.9 | 0.7 | 1.0 | 1.3 | 3.9 | 4.6 | 3.2 | 3.2 | 2.6 | 0.9 | 0.9 | 1.1 | 1.0 | 1.0 | 1.0 | 1.7 | 1.7 | 4.6 | 1.6 | 24 | | | |
| 3 | 3.4 | 1.3 | 1.4 | 1.2 | 8.7 | 2.5 | 1.0 | 1.0 | 0.9 | 1.0 | 1.3 | 2.6 | 2.1 | 1.1 | 1.0 | 0.9 | 0.9 | 0.9 | 1.1 | 1.1 | 1.8 | 1.9 | 4.8 | 8.7 | 1.9 | 24 | | | | |
| 4 | 1.5 | 0.7 | 0.6 | 0.6 | 0.8 | 0.7 | 0.8 | 0.7 | 1.8 | 0.7 | 2.4 | 3.3 | 3.1 | 1.8 | 0.9 | 1.3 | 2.0 | 1.0 | 2.1 | 1.8 | 1.1 | 1.1 | 1.1 | 3.3 | 1.4 | 24 | | | | |
| 5 | 1.0 | 0.9 | 1.0 | 0.9 | 1.1 | 1.1 | 1.3 | 1.3 | 1.3 | 2.0 | 3.1 | 3.1 | 0.9 | 2.3 | 2.6 | 2.5 | 2.7 | 2.1 | 1.0 | 0.8 | 0.8 | 1.0 | 1.0 | 3.1 | 1.6 | 24 | | | | |
| 6 | 1.0 | 1.2 | 1.3 | 1.2 | 1.5 | 1.3 | 1.3 | 2.3 | 4.3 | 1.7 | 1.3 | 1.0 | 0.9 | 1.0 | 2.1 | 1.9 | 7.3 | 14.3 | 8.4 | 7.9 | 9.9 | 11.0 | 11.4 | 4.0 | 14.3 | 4.3 | 24 | | | |
| 7 | 13.4 | 19.5 | 10.5 | 0.9 | 0.0 | 0.6 | 2.5 | 1.0 | 2.8 | 3.7 | 2.0 | 0.9 | 4.2 | 9.7 | 14.0 | 0.4 | 0.7 | 0.5 | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 19.5 | 3.8 | 24 | | | |
| 8 | 0.4 | 0.7 | 1.0 | 2.1 | 1.6 | 1.2 | 0.8 | 0.5 | 0.6 | 0.5 | 0.6 | 1.0 | 2.4 | 2.3 | 1.1 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.9 | 1.8 | 2.4 | 1.0 | 24 | | | | |
| 9 | 1.1 | 1.3 | 0.8 | 0.7 | 1.0 | 0.9 | 0.9 | 0.9 | 0.8 | 0.8 | 1.0 | 1.2 | 1.5 | 1.8 | 1.6 | 2.9 | 2.3 | 1.3 | 1.3 | 2.9 | 10.9 | 7.2 | 8.3 | 10.9 | 2.3 | 24 | | | | |
| 10 | 5.6 | 1.5 | 1.3 | 1.2 | 1.2 | 1.2 | 1.3 | 0.7 | 0.2 | 0.1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.4 | 5.6 | 0.9 | 24 | | | |
| 11 | 0.4 | 0.7 | 0.4 | 0.4 | 0.5 | 0.4 | 0.3 | 0.5 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.2 | 24 | | | |
| 12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.2 | 24 | | |
| 13 | 0.9 | 0.9 | 0.9 | 1.3 | 1.2 | 0.5 | 0.5 | 0.5 | 0.3 | 0.4 | 0.7 | 1.1 | 1.3 | 1.4 | 1.5 | 1.1 | 0.9 | 0.9 | 0.8 | 0.6 | 1.3 | 2.4 | 2.3 | 1.1 | 2.4 | 1.1 | 24 | | | |
| 14 | 1.6 | 0.9 | 0.8 | 0.9 | 0.5 | 0.8 | 0.9 | 0.9 | 0.8 | 0.8 | 1.3 | 0.9 | 1.1 | 1.1 | 1.0 | 0.9 | 0.8 | 1.0 | 1.0 | 1.3 | 1.3 | 1.3 | 1.3 | 1.2 | 1.6 | 1.0 | 24 | | | |
| 15 | 1.3 | 1.1 | 1.0 | 0.9 | 0.5 | 1.1 | 1.9 | 0.7 | 0.9 | 1.8 | 0.7 | 1.9 | 1.6 | 1.1 | 1.0 | 1.1 | 1.2 | 0.8 | 1.0 | 0.9 | 0.9 | 1.0 | 1.2 | 1.9 | 1.0 | 1.0 | 24 | | | |
| 16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | | |
| 17 | 1.5 | 0.9 | 1.0 | 1.3 | 1.3 | 1.8 | 1.8 | 1.1 | 3.1 | 3.7 | 3.2 | 3.8 | 2.7 | 4.6 | 5.2 | 1.7 | 2.6 | 1.4 | 8.1 | 7.5 | 2.4 | 1.3 | 1.0 | 8.1 | 2.7 | 24 | | | | |
| 18 | 0.9 | 1.3 | 13.0 | 2.0 | 2.6 | 0.9 | 0.7 | 0.3 | 0.1 | 0.3 | 6.7 | 4.6 | 6.3 | 3.7 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | | |
| 19 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.8 | 0.9 | 6.0 | 5.7 | 0.6 | 0.8 | 0.0 | 0.8 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.0 | 24 | | |
| 20 | 1.1 | 0.9 | 1.1 | 1.0 | 1.1 | 1.1 | 1.0 | 1.2 | 1.3 | 3.4 | 7.1 | 2.0 | 1.7 | 2.1 | 1.8 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.0 | 24 | | |
| 21 | 1.3 | 1.1 | 1.7 | 5.7 | 9.0 | 8.7 | 7.1 | 1.1 | 3.8 | 9.1 | 16.0 | 13.0 | 9.1 | 1.6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 1.0 | 24 | | |
| 22 | 10.7 | 2.0 | 2.8 | 2.9 | 0.4 | 0.6 | 0.9 | 0.2 | 0.1 | C | Y | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | 1.0 | 24 | | |
| 23 | 11.8 | 10.7 | 15.9 | 13.7 | 8.8 | 10.4 | 6.1 | 5.8 | 3.9 | 8.1 | 3.4 | 1.3 | 0.6 | 0.7 | 1.3 | 1.3 | 0.5 | 0.7 | 0.7 | 0.4 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 24 | | |
| 24 | 1.0 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.2 | 1.3 | 1.7 | 2.7 | 2.7 | 2.9 | 2.4 | 1.5 | 1.6 | 1.3 | 2.6 | 2.6 | 0.8 | 1.2 | 0.9 | 1.0 | 2.9 | 1.6 | 24 | | | |
| 25 | 1.3 | 1.3 | 1.5 | 2.3 | 2.8 | 3.4 | 2.5 | 2.5 | 4.6 | 1.1 | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 | 0.8 | 0.8 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 1.8 | 24 | | |
| 26 | 1.1 | 1.1 | 0.8 | 0.8 | 0.9 | 0.7 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.8 | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 1.1 | 24 | | |
| 27 | 0.6 | 0.8 | 1.0 | 0.7 | 0.8 | 0.6 | 0.6 | 1.6 | 1.7 | 0.4 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.9 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 24 | | |
| 28 | 0.7 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 1.0 | 1.5 | 1.3 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 24 | | |
| 29 | 13.4 | 19.5 | 15.9 | 13.7 | 9.0 | 10.4 | 7.1 | 5.8 | 5.8 | 9.1 | 16.0 | 13.0 | 9.1 | 9.7 | 14.0 | 8.2 | 8.4 | 14.3 | 8.4 | 8.1 | 9.9 | 12.4 | 11.4 | 19.0 | 11.4 | 19.0 | 0.8 | 24 | | |
| HOURLY MAX | 2.3 | 1.9 | 2.3 | 1.6 | 1.9 | 1.7 | 1.6 | 1.3 | 1.5 | 1.8 | 2.3 | 2.5 | 2.2 | 2.3 | 1.7 | 1.6 | 2.0 | 2.0 | 1.5 | 1.7 | 1.8 | 2.3 | 1.7 | 2.4 | 2.4 | 2.4 | 0.8 | 24 | | |
| HOURLY AVG | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.8 | 24 |

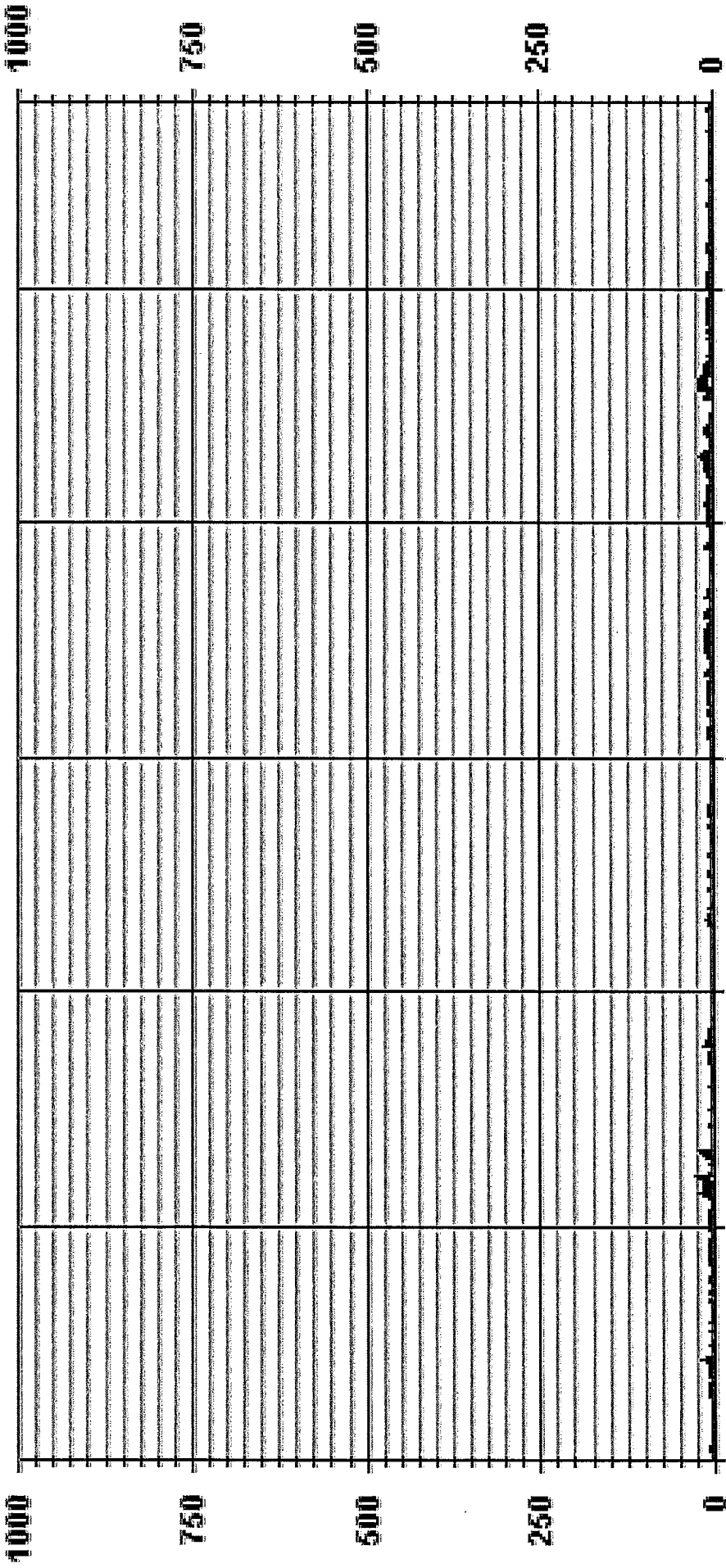
STATUS FLAG CODES

| | |
|-----|--------------------------|
| C | MONTHLY CALIBRATION |
| CL | REPEAT CALIBRATION |
| M | MAINTENANCE |
| S | DAILY ZERO / SPAN CHECK |
| S-L | REPEAT ZERO / SPAN CHECK |
| O | QUALITY ASSURANCE |
| R | RECOVERY |
| X | MACHINE MAINTENANCE |
| G | OUT FOR REPAIR |
| P | POWER FAILURE |

MONTHLY SUMMARY

| | |
|------------------------------|---------|
| NUMBER OF NON-ZERO READINGS: | 606 |
| MAXIMUM INSTANTANEOUS VALUE: | 19.5 |
| PPB @ HOUR(S) | 1 |
| ON DAY(S) | 7 |
| OPERATIONAL TIME: | 694 HRS |
| IZS CALIBRATION TIME: | 30 HRS |
| MONTHLY CALIBRATION TIME: | 6 HRS |
| STANDARD DEVIATION: | 2.72 |
| VAR-VARIOUS | |

01 Hour Averages



— LICA30 SO2MAX PPB

LICA30
SO2_ / WDR Joint Frequency Distribution (Percent)

February 2016

Distribution By % Of Samples

Logger Id : 30
Site Name : LICA30
Parameter : SO2
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|------|-------|------|------|------|------|------|------|-------|-------|------|------|------|------|------|--------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 20.0 | 2.12 | 5.01 | 12.15 | 8.05 | 2.88 | 5.01 | 4.55 | 1.97 | 3.19 | 13.82 | 13.06 | 5.16 | 5.62 | 9.42 | 3.79 | 4.10 | 100.00 |
| < 60.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 110.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 170.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 340.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 340.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.12 | 5.01 | 12.15 | 8.05 | 2.88 | 5.01 | 4.55 | 1.97 | 3.19 | 13.82 | 13.06 | 5.16 | 5.62 | 9.42 | 3.79 | 4.10 | |

Calm : .00 %

Total # Operational Hours : 658

Distribution By Samples

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 20.0 | 14 | 33 | 80 | 53 | 19 | 33 | 30 | 13 | 21 | 91 | 86 | 34 | 37 | 62 | 25 | 27 | 658 |
| < 60.0 | | | | | | | | | | | | | | | | | |
| < 110.0 | | | | | | | | | | | | | | | | | |
| < 170.0 | | | | | | | | | | | | | | | | | |
| < 340.0 | | | | | | | | | | | | | | | | | |
| >= 340.0 | | | | | | | | | | | | | | | | | |
| Totals | 14 | 33 | 80 | 53 | 19 | 33 | 30 | 13 | 21 | 91 | 86 | 34 | 37 | 62 | 25 | 27 | |

Calm : .00 %

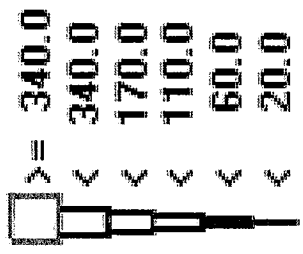
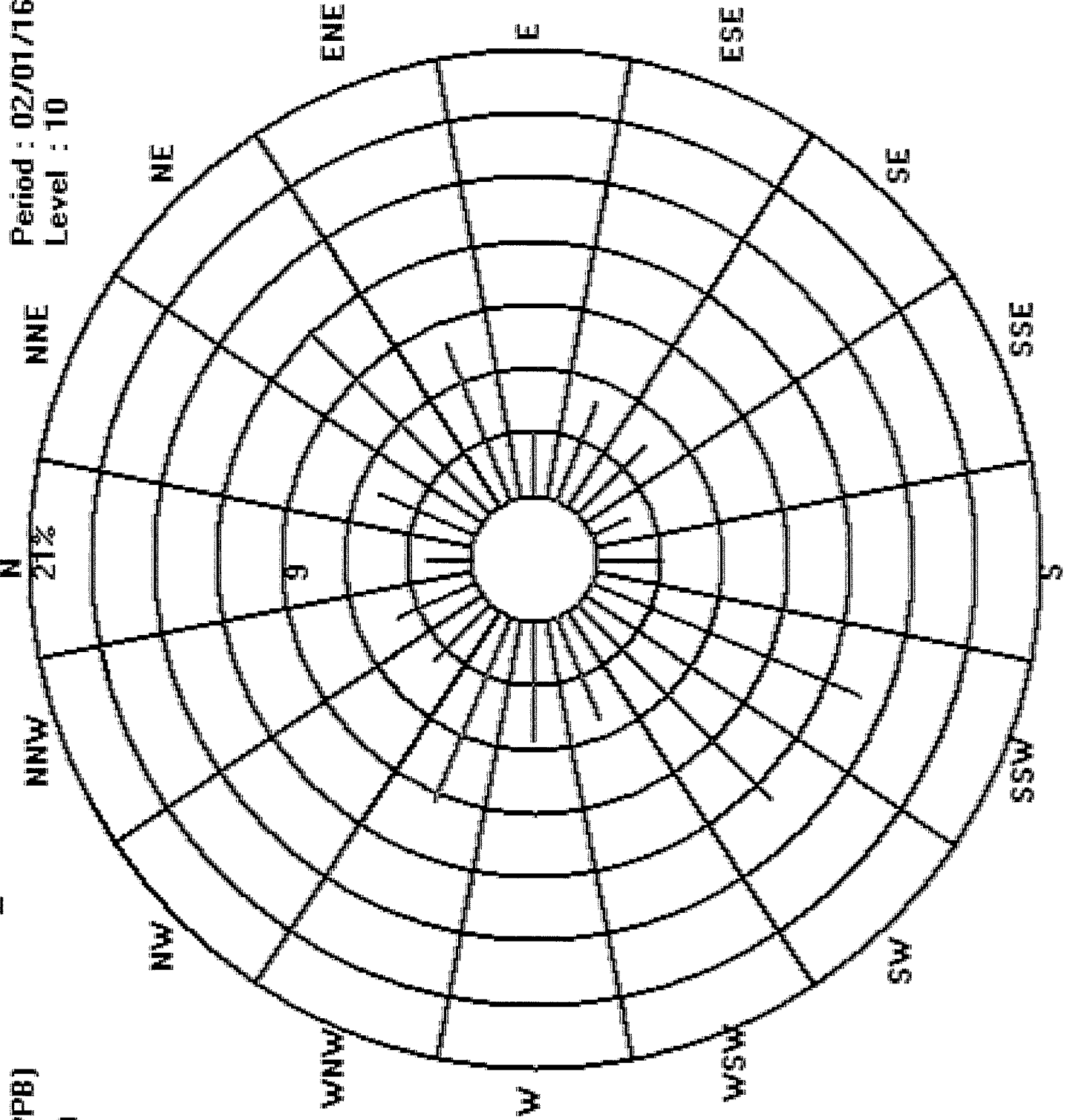
Total # Operational Hours : 658

Logger : 30 Parameter : SO2_

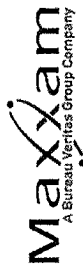
Site : LICA30

Period : 02/01/16-02/29/16

Level : 10



HYDROGEN SULPHIDE



HYDROGEN SULPHIDE (H2S) hourly averages in ppb

MST

| DAY | 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 | 24:00 | | |
|------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|
| HR START | 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 | | | |
| HR END | 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 | | | | |
| ROGS. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0.3 | 0.0 | 0.2 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.3 | 0.0 | 0.0 | \$ | 0.1 | 0.3 | 0.5 | 0.6 | 0.7 | 0.8 | 0.8 | 0.2 | 24 |
| 2 | 1.2 | 0.6 | 0.6 | 0.2 | 0.3 | 0.6 | 0.2 | 0.4 | 0.3 | 0.8 | 1.1 | 0.6 | 1.0 | 0.3 | 0.5 | \$ | 0.6 | 0.4 | 0.3 | 0.7 | 0.7 | 0.9 | 1.1 | 1.2 | 0.6 | 0.6 | 24 |
| 3 | 0.5 | 0.0 | 0.2 | 0.5 | 0.3 | 0.2 | 0.6 | 0.6 | 0.5 | 0.4 | 0.4 | 0.2 | 0.1 | 0.6 | \$ | 0.5 | 0.5 | 0.3 | 0.5 | 0.3 | 0.4 | 0.6 | 0.8 | 0.8 | 0.4 | 0.4 | 24 |
| 4 | 0.4 | 0.4 | 0.1 | 0.2 | 0.5 | 0.5 | 0.4 | 0.0 | 0.4 | 0.7 | 0.4 | 0.5 | 0.6 | 0.2 | \$ | 0.1 | 0.7 | 0.6 | 0.7 | 0.7 | 0.6 | 0.2 | 0.8 | 0.5 | 0.8 | 0.4 | 24 |
| 5 | 0.4 | 0.5 | 0.6 | 0.6 | 0.6 | 0.5 | 1.3 | 0.7 | 0.6 | 1.0 | 0.7 | 1.0 | 0.9 | \$ | 1.0 | 0.7 | 0.9 | 0.8 | 0.5 | 0.7 | 1.1 | 0.8 | 0.5 | 1.1 | 1.3 | 0.8 | 24 |
| 6 | 1.3 | 1.3 | 1.4 | 1.2 | 1.1 | 1.1 | 1.1 | 1.4 | 1.4 | 0.9 | 0.7 | \$ | 1.0 | 0.9 | 0.9 | 1.2 | 0.8 | 0.9 | 0.8 | 0.7 | 0.4 | 1.4 | 1.0 | 1.4 | 1.0 | 0.4 | 24 |
| 7 | 0.5 | 1.0 | 0.1 | 0.0 | 0.0 | 0.6 | 0.8 | 0.5 | 0.3 | 0.8 | 0.9 | \$ | 0.6 | 0.1 | 0.4 | 0.1 | 0.0 | 0.2 | 0.1 | 0.0 | 0.2 | 0.1 | 0.2 | 0.3 | 1.0 | 0.3 | 24 |
| 8 | 0.3 | 0.0 | 0.2 | 0.5 | 0.4 | 0.7 | 0.2 | 0.1 | 0.1 | 0.1 | \$ | 0.0 | 0.4 | 0.4 | 0.7 | 0.3 | 0.0 | 0.7 | 0.7 | 0.5 | 0.1 | 0.3 | 0.3 | 0.7 | 0.3 | 0.3 | 24 |
| 9 | 0.7 | 0.5 | 0.2 | 0.1 | 0.6 | 0.7 | 0.4 | 0.7 | 0.7 | \$ | 0.2 | 0.5 | 0.6 | 0.5 | 0.3 | 0.5 | 0.7 | 0.6 | 0.3 | 0.6 | 0.7 | 1.1 | 0.8 | 0.7 | 1.1 | 0.6 | 24 |
| 10 | 0.4 | 0.7 | 0.5 | 0.4 | 0.2 | 0.3 | 0.4 | 0.5 | \$ | 0.5 | 0.2 | 0.3 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.4 | 0.2 | 0.4 | 0.4 | 0.1 | 0.7 | 0.3 | 24 |
| 11 | 0.0 | 0.2 | 0.0 | 0.0 | 0.3 | 0.4 | 0.1 | \$ | 0.1 | 0.1 | 0.4 | 0.0 | 0.4 | 0.3 | 0.6 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.6 | 0.2 | 24 |
| 12 | 0.0 | 0.0 | 0.0 | 0.4 | 0.2 | 0.3 | \$ | 0.6 | 0.1 | 0.0 | 0.1 | 0.0 | 0.7 | 0.7 | 0.3 | 0.0 | 0.4 | 0.3 | 0.4 | 0.1 | 0.0 | 0.7 | 0.2 | 0.1 | 0.7 | 0.2 | 24 |
| 13 | 0.2 | 0.7 | 0.8 | 0.7 | 0.7 | \$ | 0.7 | 0.7 | 0.9 | 0.8 | 0.8 | 0.4 | 0.3 | 0.9 | 0.8 | 0.5 | 0.8 | 0.6 | 0.7 | 0.8 | 0.9 | 0.9 | 0.5 | 0.5 | 0.9 | 0.7 | 24 |
| 14 | 0.9 | 0.8 | 0.0 | 0.9 | \$ | 0.9 | 0.0 | 0.8 | 0.9 | 0.6 | 0.6 | 0.6 | 0.7 | 0.0 | 0.0 | 0.7 | 0.7 | 0.4 | 0.1 | 0.9 | 0.8 | 0.7 | 0.0 | 0.0 | 0.9 | 0.5 | 24 |
| 15 | 0.0 | 0.6 | 0.9 | \$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.1 | 24 |
| 16 | 0.0 | 0.0 | \$ | 0.8 | 0.8 | 1.2 | 1.2 | 1.1 | 0.7 | 0.3 | 0.9 | 1.0 | 0.9 | 0.6 | 0.6 | 0.8 | 0.6 | 0.7 | 0.8 | 0.1 | 0.7 | 0.9 | 0.4 | 0.6 | 1.2 | 0.7 | 24 |
| 17 | 0.6 | \$ | 1.0 | 1.0 | 1.1 | 0.6 | 0.8 | 0.9 | 1.0 | 1.4 | 0.8 | 1.3 | 1.3 | 1.3 | 1.3 | 0.9 | 0.7 | 1.0 | 1.0 | 1.2 | 1.2 | 0.8 | 0.9 | 0.8 | 1.4 | 1.0 | 24 |
| 18 | \$ | 0.1 | 0.7 | 0.3 | 0.1 | 0.2 | 0.4 | 0.2 | 0.4 | 0.5 | 0.4 | 0.2 | 0.3 | 0.5 | 0.4 | 0.3 | 1.0 | 0.7 | 1.0 | 0.6 | 0.7 | \$ | 1.0 | 0.4 | 0.4 | 0.4 | 22 |
| 19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$1 | 0.0 | 1.0 | 1.0 | 0.9 | 0.6 | 0.8 | 0.3 | 0.8 | 0.7 | 0.5 | 0.3 | 0.6 | 0.6 | \$ | 0.6 | 1.0 | 0.4 | 0.4 | 0.4 | 22 |
| 20 | 0.7 | 0.5 | 0.6 | 0.7 | 0.4 | 0.4 | 0.1 | 0.3 | 0.6 | 0.1 | 0.3 | 0.4 | 0.1 | 0.3 | 0.1 | 0.0 | 0.1 | 0.4 | 0.0 | 0.3 | 0.4 | \$ | 0.0 | 0.4 | 0.7 | 0.3 | 24 |
| 21 | 0.6 | 0.6 | 0.7 | 0.1 | 0.0 | 0.6 | 0.3 | 0.5 | 0.3 | 0.2 | 0.2 | 0.9 | 0.8 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.6 | 0.6 | \$ | 0.6 | 0.8 | 0.6 | 0.9 | 0.5 | 24 |
| 22 | 0.4 | 0.7 | 0.9 | 0.9 | 0.8 | 1.2 | 1.0 | 0.6 | 0.6 | 0.9 | 1.3 | 1.3 | 0.7 | 0.7 | 0.4 | 0.5 | 0.3 | 0.4 | 0.6 | \$ | 0.6 | 0.7 | 0.9 | 1.0 | 1.3 | 0.8 | 24 |
| 23 | 1.2 | 1.0 | 0.8 | 0.7 | 0.6 | 0.5 | 0.6 | 0.8 | 0.5 | \$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 18 |
| 24 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 0.0 | 0.2 | 0.0 | 0.0 | 24 |
| 25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 24 |
| 26 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.1 | 0.4 | 0.2 | 0.3 | 0.3 | 0.1 | 0.2 | 0.3 | 0.0 | \$ | 0.3 | 0.3 | 0.2 | 0.1 | 0.6 | 0.1 | 24 |
| 27 | 0.0 | 0.0 | 0.3 | 0.2 | 0.2 | 0.1 | 0.0 | 0.4 | 0.6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.4 | 0.3 | 0.0 | \$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.6 | 0.1 | 24 |
| 28 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 24 |
| 29 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 30 | 1.3 | 1.3 | 1.4 | 1.2 | 1.2 | 1.2 | 1.3 | 1.4 | 1.2 | 1.4 | 1.4 | 1.3 | 1.3 | 1.3 | 1.3 | 0.9 | 0.9 | 1.2 | 1.0 | 1.2 | 1.2 | 1.1 | 0.9 | 1.1 | 0.9 | 1.1 | 24 |
| HOURLY MAX | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.4 | 0.4 | 0.5 | 0.4 | 0.4 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| HOURLY AVG | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STATUS FLAG CODES

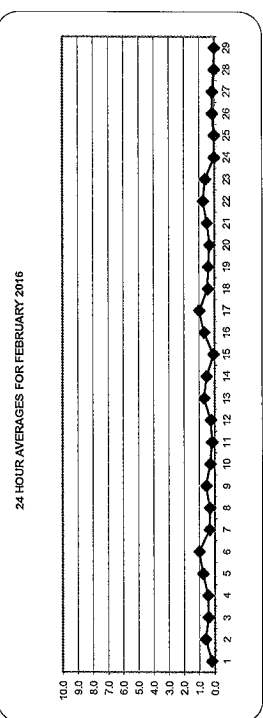
| | |
|-----|------------------------|
| C | MONTHLY CALIBRATION |
| CI | REPEAT CALIBRATION |
| Y | MAINTENANCE |
| S | DAILY ZERO/SPAN CHECK |
| \$1 | REPEAT ZERO/SPAN CHECK |
| G | QUALITY ASSURANCE |
| R | RECOVERY |
| X | IMAGINE MALFUNCTION |
| G | OUT FOR REPAIR |
| P | POWER FAILURE |

OBJECTIVE LIMIT:

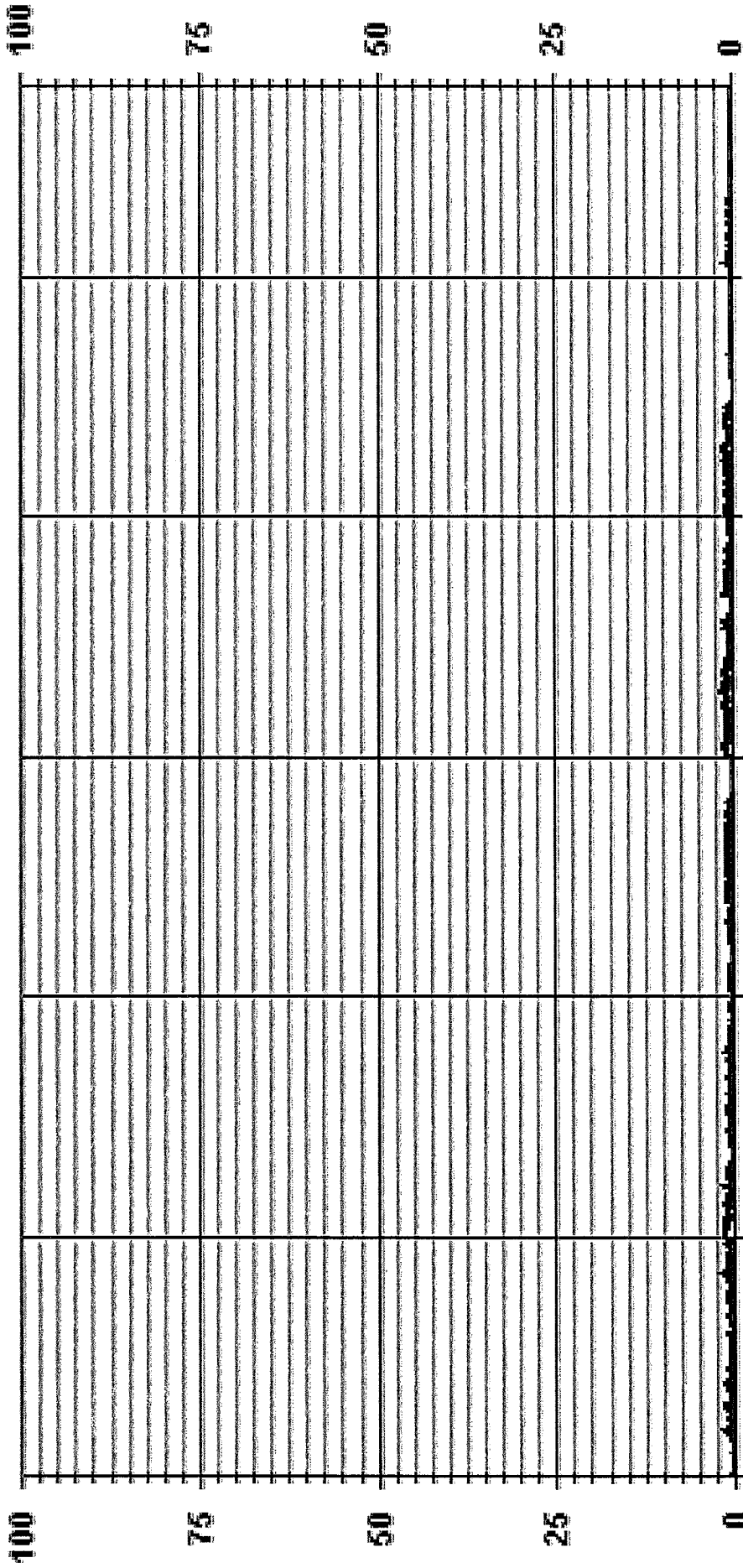
| | | | | | | |
|----------------------|------|----|-----|-------|---|-----|
| ALBERTA ENVIRONMENT: | 1-HR | 30 | PPB | 24-HR | 3 | PPB |
|----------------------|------|----|-----|-------|---|-----|

MONTHLY SUMMARY

| | |
|------------------------------|-------------|
| NUMBER OF 1-HR EXCEEDENCES: | 0 |
| NUMBER OF 24-HR EXCEEDENCES: | 0 |
| NUMBER OF NON-ZERO READINGS: | 458 |
| MINIMUM 1-HR AVERAGE: | 0.0 |
| MAXIMUM 1-HR AVERAGE: | 1.4 |
| MINIMUM 24-HR AVERAGE: | 1.0 |
| MAXIMUM 24-HR AVERAGE: | PPB |
| IS CALIBRATION TIME: | 30 |
| MONTHLY CALIBRATION TIME: | 6 |
| STANDARD DEVIATION: | 0.37 |
| OPERATIONAL TIME: | 688 |
| AMD OPERATION UPTIME: | 98.9 |
| MONTHLY AVERAGE: | 0.4 |
| VAR @ HOUR(S) | VAR |
| VAR @ HOUR(S) | VAR |
| ON DAY(S) | ON DAY(S) |
| ON DAY(S) | ON DAY(S) |
| VAR-VARIOUS | VAR-VARIOUS |
| VAR | 6 |
| VAR | 17 |
| VAR | 6 |
| HRS | 688 |
| % | 98.9 |
| PPB | 0.4 |



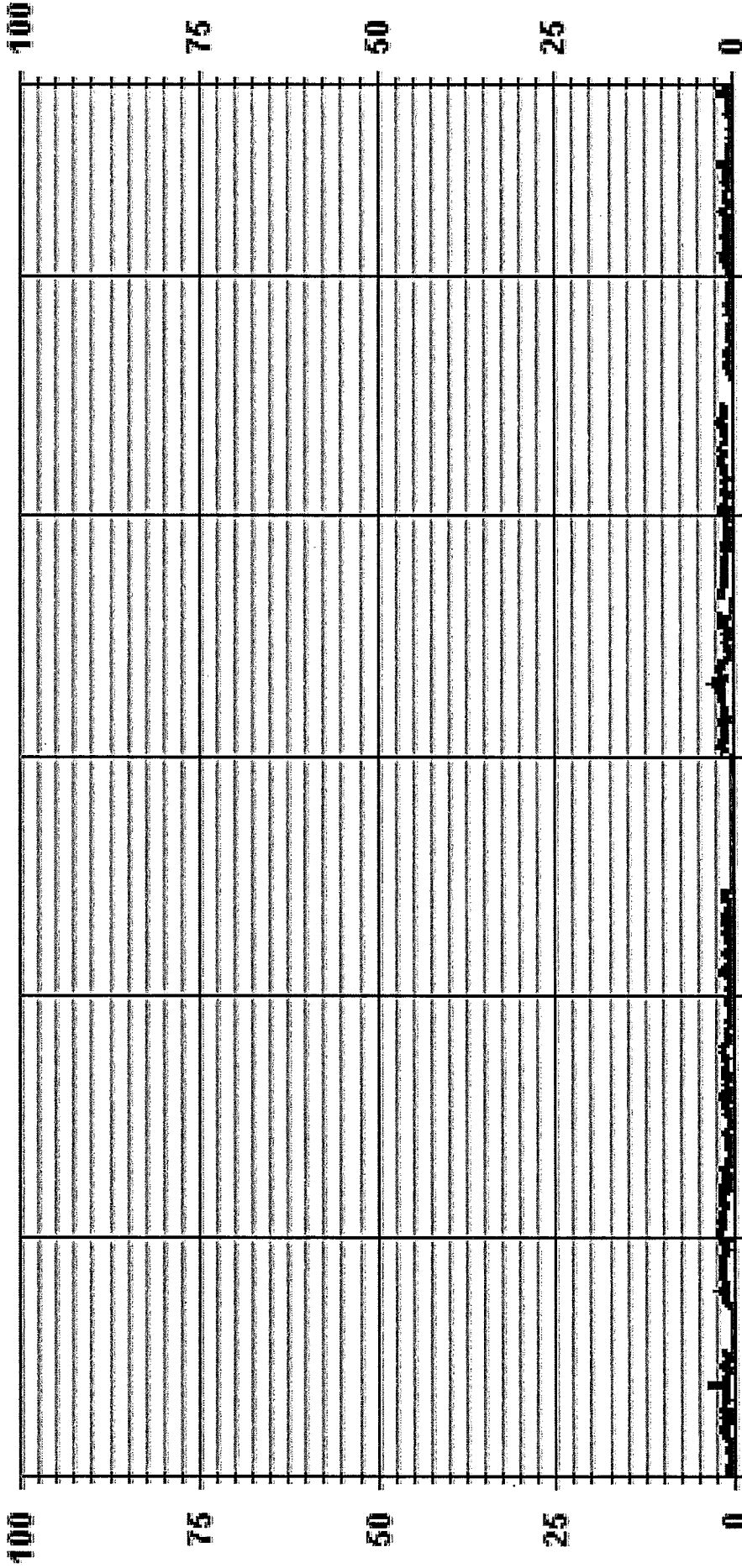
01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA30 H2S_ PPB

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA30 H2SMAX PPB

LICA30
H2S / WDR Joint Frequency Distribution (Percent)
February 2016

Distribution By % Of Samples

Logger Id : 30
Site Name : LICA30
Parameter : H2S
Units : PPM

Wind Parameter : WDR
Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | NNW | NW | NNW | Freq |
|---------|-----------|------|-------|------|------|------|------|------|------|-------|-------|------|------|------|------|------|--------|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | W | WNW | | | | |
| < 3.0 | 2.14 | 5.06 | 12.26 | 8.12 | 2.91 | 5.06 | 4.60 | 1.99 | 3.22 | 13.95 | 13.19 | 5.21 | 5.67 | 9.20 | 3.68 | 3.68 | 100.00 | | | |
| < 10.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | | | |
| < 50.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | | | |
| >= 50.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | | | |
| Totals | 2.14 | 5.06 | 12.26 | 8.12 | 2.91 | 5.06 | 4.60 | 1.99 | 3.22 | 13.95 | 13.19 | 5.21 | 5.67 | 9.20 | 3.68 | 3.68 | 3.68 | | | |

Calm : .00 %

Total # Operational Hours : 652

Distribution By Samples

| Limit | Direction | | | | | | | | | | | | | | | | NNW | NW | NNW | Freq |
|---------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | W | WNW | | | | |
| < 3.0 | 14 | 33 | 80 | 53 | 19 | 33 | 30 | 13 | 21 | 91 | 86 | 34 | 37 | 60 | 24 | 24 | 652 | | | |
| < 10.0 | | | | | | | | | | | | | | | | | | | | |
| < 50.0 | | | | | | | | | | | | | | | | | | | | |
| >= 50.0 | | | | | | | | | | | | | | | | | | | | |
| Totals | 14 | 33 | 80 | 53 | 19 | 33 | 30 | 13 | 21 | 91 | 86 | 34 | 37 | 60 | 24 | 24 | 652 | | | |

Calm : .00 %

Total # Operational Hours : 652

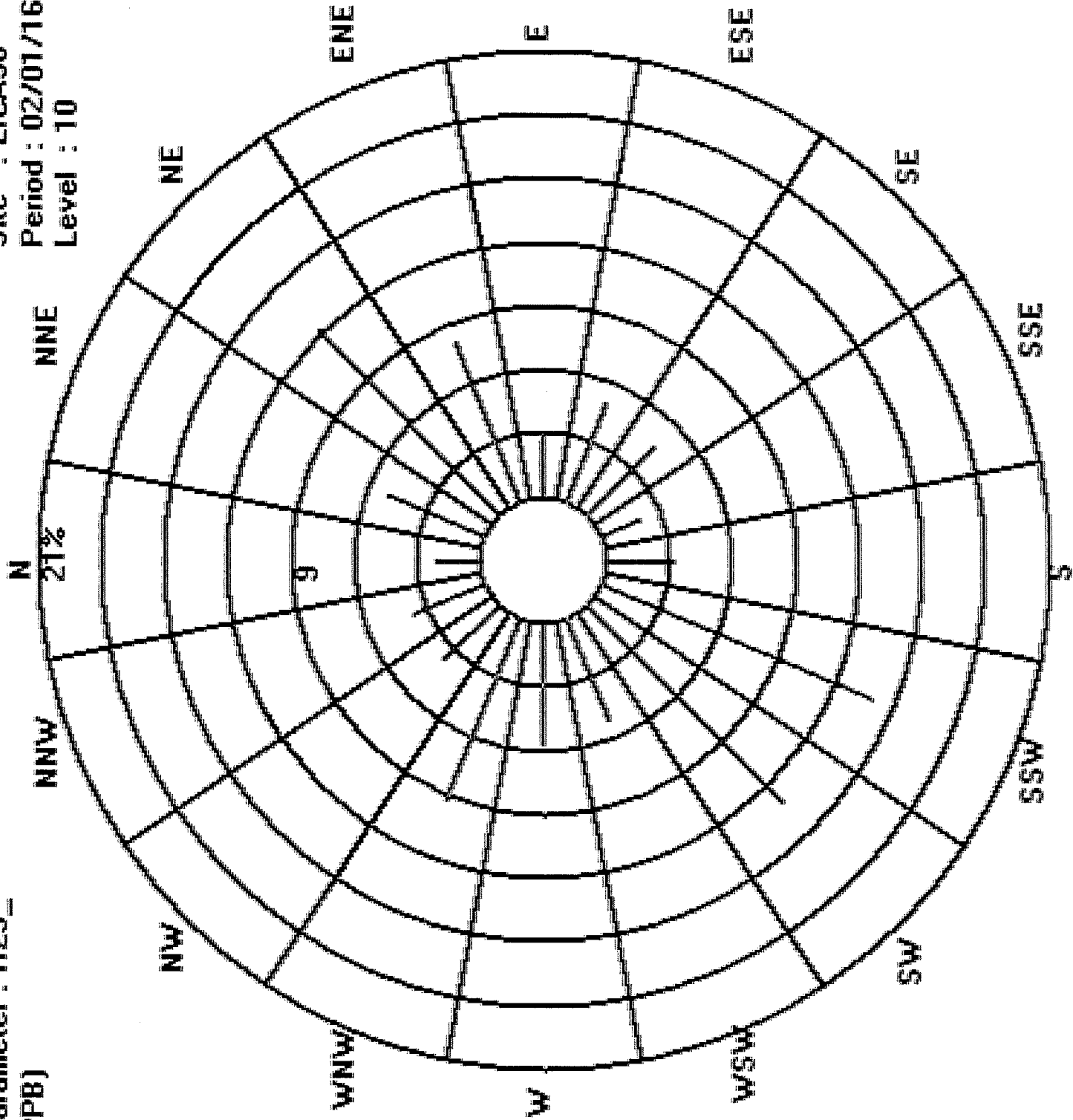
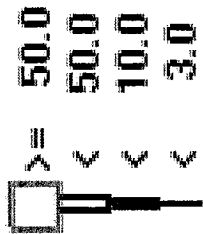
Logger : 30 Parameter : H2S_

Site : LICA30

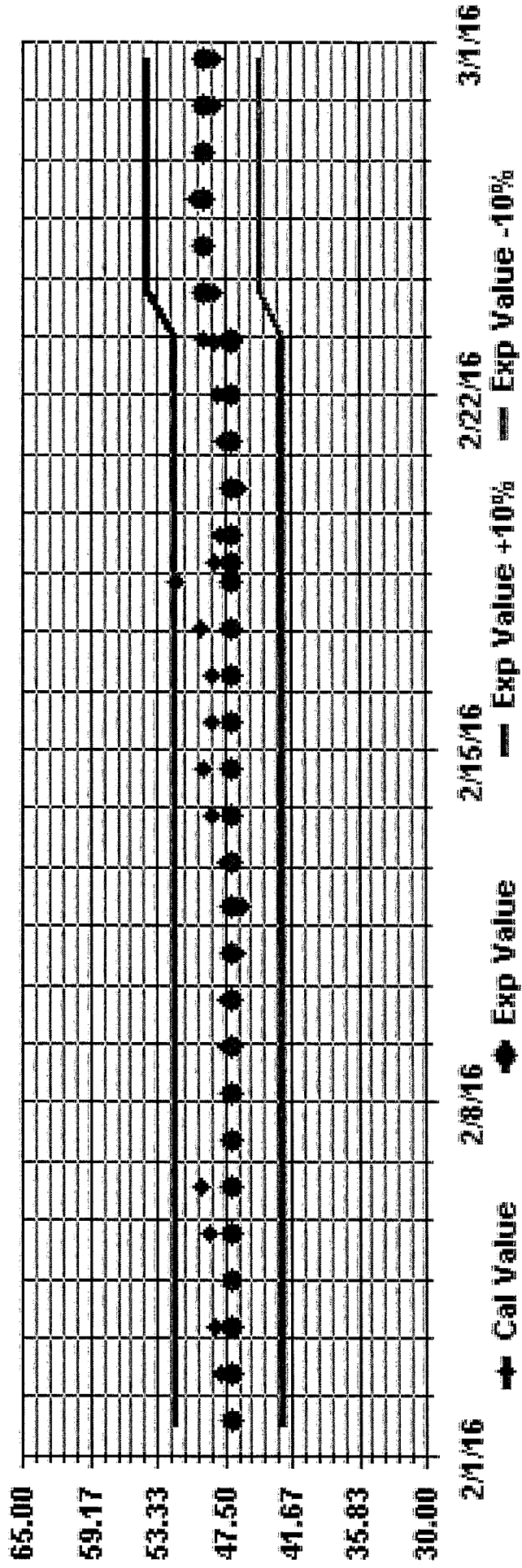
Period : 02/01/16-02/29/16

Level : 10

Class Limits (PPB)



Calibration Graph for Site: LICA30 Parameter: H2S_ Sequence: H2S Phase: SPAN



TOTAL HYDROCARBON

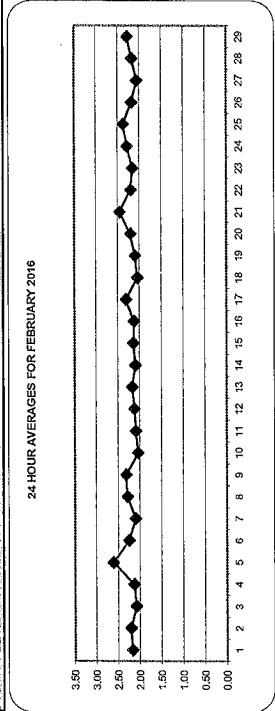


TOTAL HYDROCARBONS (THC) hourly averages in ppm

| DAY | 0:00 | 0:59 | 1:58 | 2:57 | 3:56 | 4:55 | 5:54 | 6:53 | 7:52 | 8:51 | 9:50 | 10:49 | 11:48 | 12:47 | 13:46 | 14:45 | 15:44 | 16:43 | 17:42 | 18:41 | 19:40 | 20:39 | 21:38 | 22:37 | 23:36 | 24:35 | ROGS | | |
|------------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|----|
| 1 | 2.16 | 2.19 | 2.18 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.16 | 2.16 | 2.17 | 2.16 | 2.16 | 2.17 | 2.21 | 2.26 | 2.27 | 5 | 2.12 | 2.11 | 2.10 | 2.12 | 2.19 | 2.22 | 2.17 | 2.17 | 24 |
| 2 | 2.20 | 2.19 | 2.18 | 2.17 | 2.18 | 2.17 | 2.18 | 2.17 | 2.18 | 2.17 | 2.16 | 2.16 | 2.17 | 2.16 | 2.16 | 2.17 | 2.21 | 2.26 | 2.27 | 5 | 2.09 | 2.07 | 2.08 | 2.12 | 2.19 | 2.22 | 2.17 | 2.17 | 24 |
| 3 | 2.10 | 2.08 | 2.05 | 2.04 | 2.05 | 2.04 | 2.04 | 2.04 | 2.04 | 2.05 | 2.05 | 2.05 | 2.07 | 2.07 | 2.07 | 2.09 | 2.10 | 2.12 | 2.13 | 2.09 | 2.08 | 2.10 | 2.12 | 2.18 | 2.22 | 2.22 | 2.09 | 24 | |
| 4 | 2.12 | 2.10 | 2.09 | 2.11 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 | 2.18 | 2.11 | 2.07 | 2.07 | 2.07 | 2.09 | 2.10 | 2.12 | 2.13 | 2.09 | 2.08 | 2.10 | 2.12 | 2.18 | 2.22 | 2.22 | 2.48 | 24 | |
| 5 | 2.48 | 2.57 | 2.58 | 2.57 | 2.58 | 2.61 | 2.62 | 2.55 | 2.56 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 24 | |
| 6 | 2.64 | 2.63 | 2.61 | 2.61 | 2.56 | 2.57 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 2.69 | 24 | |
| 7 | 2.11 | 2.15 | 2.17 | 2.12 | 2.11 | 2.12 | 2.15 | 2.13 | 2.17 | 2.17 | 2.18 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 2.19 | 24 | |
| 8 | 2.12 | 2.19 | 2.36 | 2.67 | 2.59 | 2.52 | 2.43 | 2.49 | 2.45 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 | 2.36 | 24 | |
| 9 | 2.49 | 2.52 | 2.49 | 2.44 | 2.35 | 2.31 | 2.14 | 2.19 | 2.17 | 2.17 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 | 2.29 | 24 | |
| 10 | 1.99 | 1.97 | 2.02 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 24 | |
| 11 | 2.06 | 2.06 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 2.07 | 24 | |
| 12 | 2.14 | 2.15 | 2.16 | 2.17 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 | 24 | |
| 13 | 2.05 | 2.04 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 24 | |
| 14 | 2.26 | 2.24 | 2.18 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 24 | |
| 15 | 2.42 | 2.40 | 2.44 | 2.49 | 2.42 | 2.14 | 2.03 | 2.04 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 | 2.05 | 24 | |
| 16 | 2.10 | 2.13 | 2.00 | 2.03 | 2.07 | 2.05 | 2.03 | 2.02 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 2.04 | 24 | |
| 17 | 2.29 | 2.37 | 2.44 | 2.53 | 2.71 | 2.70 | 2.46 | 2.36 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 24 | |
| 18 | 2.09 | 2.09 | 2.07 | 2.09 | 2.08 | 2.11 | 2.09 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 2.08 | 24 | |
| 19 | 2.06 | 2.09 | 2.15 | 2.09 | 2.10 | 2.09 | 2.07 | 2.08 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 24 | |
| 20 | 2.16 | 2.17 | 2.17 | 2.17 | 2.19 | 2.20 | 2.21 | 2.24 | 2.20 | 2.21 | 2.24 | 2.20 | 2.21 | 2.24 | 2.20 | 2.21 | 2.24 | 2.20 | 2.21 | 2.24 | 2.20 | 2.21 | 2.24 | 2.20 | 2.21 | 2.24 | 2.20 | 24 | |
| 21 | 2.54 | 2.56 | 2.55 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 2.56 | 24 | |
| 22 | 2.34 | 2.30 | 2.32 | 2.38 | 2.29 | 2.26 | 2.19 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 | 2.16 | 24 | |
| 23 | 2.40 | 2.12 | 2.14 | 2.13 | 2.13 | 2.13 | 2.14 | 2.12 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 2.15 | 24 | |
| 24 | 2.19 | 2.27 | 2.35 | 2.36 | 2.29 | 2.38 | 2.28 | 2.32 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 24 | |
| 25 | 2.57 | 2.62 | 2.61 | 2.63 | 2.61 | 2.57 | 2.53 | 2.51 | 2.48 | 2.40 | 2.34 | 2.33 | 2.31 | 2.31 | 2.31 | 2.31 | 2.31 | 2.31 | 2.31 | 2.31 | 2.31 | 2.31 | 2.31 | 2.31 | 2.31 | 2.31 | 2.31 | 24 | |
| 26 | 2.24 | 2.23 | 2.31 | 2.31 | 2.40 | 2.42 | 2.36 | 2.35 | 2.40 | 2.28 | 2.19 | 2.11 | 2.05 | 2.00 | 2.02 | 2.01 | 2.02 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 2.03 | 24 | |
| 27 | 2.04 | 2.03 | 2.03 | 2.04 | 2.03 | 2.04 | 2.02 | 2.03 | 2.05 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 | 2.06 | 24 | |
| 28 | 2.08 | 2.16 | 2.35 | 2.35 | 2.31 | 2.17 | 2.09 | 2.10 | 2.15 | 2.16 | 2.12 | 2.14 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 | 24 | |
| 29 | 2.21 | 2.22 | 2.22 | 2.23 | 2.22 | 2.24 | 2.24 | 2.25 | 2.26 | 2.27 | 2.24 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 24 | |
| HOURLY MAX | 2.64 | 2.63 | 2.61 | 2.67 | 2.61 | 2.71 | 2.70 | 2.69 | 2.61 | 2.56 | 2.56 | 2.60 | 2.70 | 2.54 | 2.68 | 2.67 | 2.66 | 2.66 | 2.66 | 2.66 | 2.66 | 2.66 | 2.66 | 2.66 | 2.66 | 2.66 | 2.66 | 24 | |
| HOURLY AVG | 2.23 | 2.23 | 2.26 | 2.25 | 2.26 | 2.27 | 2.24 | 2.22 | 2.22 | 2.22 | 2.19 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 2.17 | 24 | |

STATUS FLAG CODES

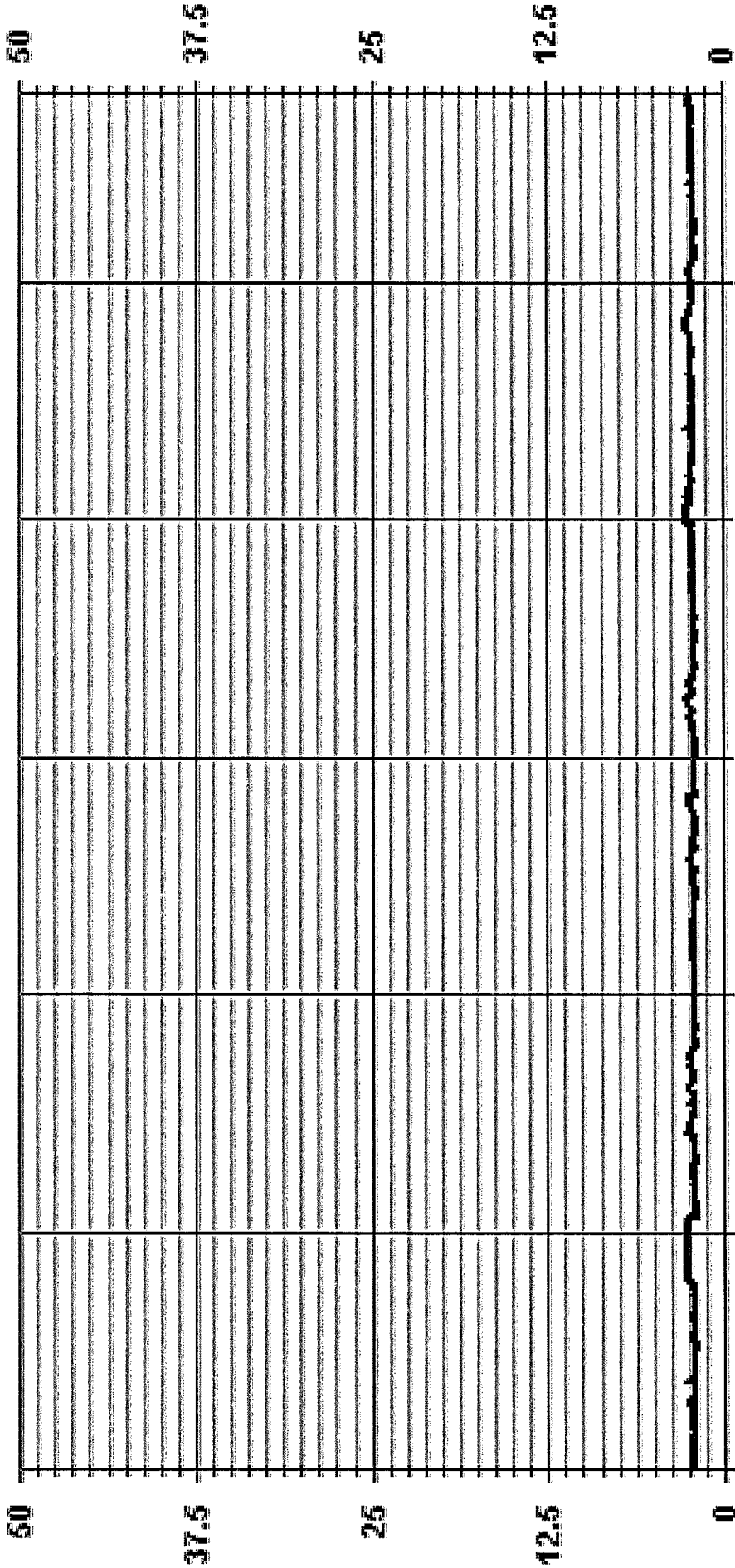
| | | | |
|----|--------------------------|----|---------------------|
| C | MONTHLY CALIBRATION | O | QUALITY ASSURANCE |
| CI | REPEAT CALIBRATION | R | RECOVERY |
| M | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO / SPAN CHECK | G | SOOT FOR REPAIR |
| SL | REPEAT ZERO / SPAN CHECK | BP | POWER FAILURE |



MONTHLY SUMMARY

| | | | | | |
|------------------------------|------|-----|-----------------------|-------|-------------|
| NUMBER OF NON-ZERO READINGS: | 652 | | | | |
| MINIMUM 1-HR AVERAGE: | 1.95 | PPM | @ HOUR(S) | VAR | ON DAY(S) |
| MAXIMUM 1-HR AVERAGE: | 2.71 | PPM | @ HOUR(S) | 20 | 5 |
| MAXIMUM 24-HR AVERAGE: | 2.62 | PPM | | | VAR-VARIOUS |
| ISZ CALIBRATION TIME: | 30 | HRS | OPERATIONAL TIME: | 696 | HRS |
| MONTHLY CALIBRATION TIME: | 4 | HRS | AMD OPERATION UPTIME: | 100.0 | % |
| STANDARD DEVIATION: | 0.17 | | MONTHLY AVERAGE: | 2.20 | PPM |

01 Hour Averages



— LICA30 - - - THC . . . PPM



TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MS

| DAY | 0100 | 1100 | 2100 | 3100 | 4100 | 5100 | 6100 | 7100 | 8100 | 9100 | 10100 | 11100 | 12100 | 13100 | 14100 | 15100 | 16100 | 17100 | 18100 | 19100 | 20100 | 21100 | 22100 | 23100 | 24100 | DAILY MAX | 24-HOUR AVG | RDGS |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|-------------|------|
| 1 | 2.17 | 2.17 | 2.19 | 2.20 | 2.22 | 2.24 | 2.20 | 2.22 | 2.19 | 2.19 | 2.17 | 2.20 | 2.19 | 2.23 | 2.25 | 2.28 | 2.30 | \$ | 2.15 | 2.12 | 2.12 | 2.12 | 2.19 | 2.24 | 2.25 | 2.30 | 2.20 | 24 |
| 2 | 2.22 | 2.21 | 2.19 | 2.19 | 2.19 | 2.19 | 2.28 | 2.25 | 2.56 | 2.43 | 2.43 | 2.31 | 2.22 | 2.19 | \$ | 2.12 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.50 | 2.62 | 2.53 | 2.27 | 2.62 | 2.28 | 24 |
| 3 | 2.19 | 2.09 | 2.07 | 2.06 | 2.15 | 2.10 | 2.06 | 2.09 | 2.07 | 2.06 | 2.06 | 2.07 | 2.03 | 2.04 | \$ | 2.09 | 2.19 | 2.19 | 2.18 | 2.22 | 2.24 | 2.22 | 2.24 | 2.22 | 2.31 | 2.31 | 2.12 | 24 |
| 4 | 2.16 | 2.15 | 2.10 | 2.22 | 2.17 | 2.21 | 2.15 | 2.17 | 2.17 | 2.21 | 2.18 | 2.12 | 2.09 | 2.12 | \$ | 2.12 | 2.16 | 2.16 | 2.12 | 2.09 | 2.12 | 2.28 | 2.37 | 2.53 | 2.53 | 2.53 | 2.18 | 24 |
| 5 | 2.53 | 2.59 | 2.59 | 2.59 | 2.62 | 2.65 | 2.65 | 2.59 | 2.56 | 2.60 | 2.59 | 2.71 | 2.77 | \$ | 2.72 | 2.69 | 2.66 | 2.68 | 2.72 | 2.77 | 2.84 | 2.75 | 2.74 | 2.70 | 2.84 | 2.67 | 24 | |
| 6 | 2.68 | 2.63 | 2.72 | 2.63 | 2.60 | 2.69 | 3.01 | 2.90 | 2.63 | 2.29 | 2.07 | 1.98 | \$ | 1.98 | 2.04 | 2.03 | 2.07 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.33 | 24 |
| 7 | 2.19 | 2.23 | 2.22 | 2.14 | 2.13 | 2.16 | 2.20 | 2.22 | 2.22 | 2.29 | 2.20 | \$ | 2.13 | 2.15 | 2.15 | 2.06 | 2.07 | 2.07 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.13 | 2.29 | 2.15 | 24 | |
| 8 | 2.16 | 2.25 | 2.52 | 2.77 | 2.65 | 2.56 | 2.46 | 2.56 | 2.55 | 2.40 | \$ | 2.28 | 2.31 | 2.25 | 2.18 | 2.10 | 2.13 | 2.44 | 2.40 | 2.31 | 2.22 | 2.16 | 2.19 | 2.37 | 2.77 | 2.96 | 24 | |
| 9 | 2.59 | 2.59 | 2.52 | 2.50 | 2.46 | 2.37 | 2.19 | 2.21 | 2.19 | \$ | 2.33 | 2.36 | 2.34 | 2.33 | 2.34 | 2.37 | 2.36 | 2.41 | 2.53 | 2.55 | 2.28 | 2.37 | 2.59 | 2.39 | 2.4 | 2.39 | 24 | |
| 10 | 2.09 | 1.98 | 2.09 | 2.06 | 2.06 | 2.06 | 2.06 | 2.04 | \$ | 2.07 | 2.09 | 2.07 | 2.06 | 2.09 | 2.06 | 2.09 | 2.09 | 2.09 | 2.08 | 2.08 | 2.07 | 2.08 | 2.07 | 2.08 | 2.09 | 2.07 | 24 | |
| 11 | 2.08 | 2.08 | 2.09 | 2.09 | 2.08 | 2.09 | 2.08 | 2.09 | \$ | 2.09 | 2.09 | 2.10 | 2.09 | 2.09 | 2.09 | 2.09 | 2.10 | 2.12 | 2.13 | 2.14 | 2.15 | 2.15 | 2.17 | 2.17 | 2.17 | 2.11 | 24 | |
| 12 | 2.17 | 2.17 | 2.17 | 2.19 | 2.20 | 2.20 | \$ | 2.20 | 2.18 | 2.18 | 2.18 | 2.22 | 2.19 | 2.19 | 2.19 | 2.12 | 2.09 | 2.09 | 2.09 | 2.09 | 2.06 | 2.06 | 2.06 | 2.06 | 2.22 | 2.15 | 24 | |
| 13 | 2.06 | 2.06 | 2.05 | 2.06 | 2.05 | \$ | 2.05 | 2.06 | 2.09 | 2.16 | 2.21 | 2.24 | 2.22 | 2.25 | 2.25 | 2.25 | 2.13 | 2.30 | 2.33 | 2.31 | 2.38 | 2.53 | 2.50 | 2.37 | 2.53 | 2.21 | 24 | |
| 14 | 2.31 | 2.28 | 2.25 | 2.09 | \$ | 2.49 | 2.44 | 2.16 | 2.14 | 2.10 | 2.07 | 2.04 | 2.03 | 2.05 | 2.04 | 2.01 | 2.01 | 2.04 | 2.07 | 2.11 | 2.11 | 2.23 | 2.26 | 2.41 | 2.49 | 2.16 | 24 | |
| 15 | 2.44 | 2.47 | 2.49 | \$ | 2.54 | 2.52 | 2.23 | 2.07 | 2.07 | 2.07 | 2.06 | 2.06 | 2.04 | 2.07 | 2.07 | 2.10 | 2.10 | 2.10 | 2.10 | 2.11 | 2.11 | 2.10 | 2.10 | 2.08 | 2.18 | 2.16 | 24 | |
| 16 | 2.13 | 2.16 | \$ | 2.00 | 2.09 | 2.10 | 2.06 | 2.04 | 2.04 | 2.01 | 2.04 | 2.09 | 2.09 | 2.12 | 2.13 | 2.15 | 2.13 | 2.16 | 2.25 | 2.37 | 2.37 | 2.37 | 2.36 | 2.37 | 2.16 | 24 | | |
| 17 | 2.39 | \$ | 2.41 | 2.50 | 2.60 | 2.78 | 2.81 | 2.68 | 2.66 | C | C | C | C | C | 2.55 | 2.50 | 2.33 | 2.25 | 2.21 | 2.22 | 2.19 | 2.09 | 2.04 | 2.06 | 2.40 | 24 | | |
| 18 | \$ | 2.10 | 2.10 | 2.09 | 2.13 | 2.13 | 2.13 | 2.12 | 2.12 | 2.12 | 2.12 | 2.10 | 2.09 | 2.03 | 2.03 | 2.06 | 2.06 | 2.06 | 2.06 | 2.07 | 2.06 | 2.09 | 2.07 | \$ | 2.15 | 2.08 | 24 | |
| 19 | 2.09 | 2.13 | 2.25 | 2.12 | 2.12 | 2.10 | 2.09 | 2.09 | 2.09 | 2.12 | 2.12 | 2.15 | 2.18 | 2.16 | 2.16 | 2.15 | 2.12 | 2.14 | 2.15 | 2.16 | 2.17 | 2.17 | \$ | 2.16 | 2.25 | 2.14 | 24 | |
| 20 | 2.18 | 2.18 | 2.19 | 2.19 | 2.19 | 2.19 | 2.22 | 2.25 | 2.27 | 2.21 | 2.19 | 2.22 | 2.21 | 2.19 | 2.22 | 2.22 | 2.22 | 2.24 | 2.24 | 2.24 | 2.30 | 2.30 | \$ | 2.31 | 2.50 | 2.23 | 24 | |
| 21 | 2.56 | 2.58 | 2.56 | 2.58 | 2.56 | 2.56 | 2.77 | 2.70 | 2.65 | 2.65 | 2.50 | 2.44 | 2.71 | 2.69 | 2.49 | 2.43 | 2.41 | 2.40 | 2.34 | 2.33 | \$ | 2.27 | 2.31 | 2.37 | 2.77 | 2.52 | 24 | |
| 22 | 2.37 | 2.34 | 2.43 | 2.55 | 2.49 | 2.31 | 2.34 | 2.17 | 2.19 | 2.28 | 2.25 | 2.27 | 2.21 | 2.16 | 2.09 | 2.15 | 2.12 | 2.19 | 2.16 | \$ | 2.13 | 2.19 | 2.34 | 3.89 | 3.89 | 2.33 | 24 | |
| 23 | 3.80 | 2.15 | 2.25 | 2.18 | 2.15 | 2.16 | 2.16 | 2.15 | 2.22 | 2.16 | 2.16 | 2.13 | 2.12 | 2.16 | 2.22 | 2.28 | 2.33 | 2.34 | 2.36 | 2.15 | 2.88 | 2.31 | \$ | 2.31 | 3.80 | 2.31 | 24 | |
| 24 | 2.25 | 2.46 | 2.53 | 2.46 | 2.40 | 2.49 | 2.42 | 2.47 | 2.31 | 2.36 | 2.31 | 2.28 | 2.22 | 2.22 | 2.25 | 2.40 | 2.31 | 2.31 | 2.30 | 2.43 | \$ | 2.40 | 2.59 | 2.59 | 2.37 | 24 | | |
| 25 | 2.59 | 2.68 | 2.65 | 2.67 | 2.65 | 2.59 | 2.56 | 2.53 | 2.47 | 2.34 | 2.36 | 2.33 | 2.39 | 2.34 | 2.12 | 2.13 | 2.15 | 2.16 | 2.24 | \$ | 2.37 | 2.37 | 2.28 | 2.68 | 2.41 | 24 | | |
| 26 | 2.28 | 2.28 | 2.33 | 2.34 | 2.43 | 2.46 | 2.43 | 2.40 | 2.50 | 2.33 | 2.25 | 2.13 | 2.09 | 2.08 | 2.07 | 2.04 | 2.04 | 2.04 | \$ | 2.18 | 2.12 | 2.19 | 2.12 | 2.50 | 2.22 | 24 | | |
| 27 | 2.06 | 2.04 | 2.05 | 2.04 | 2.06 | 2.05 | 2.03 | 2.05 | 2.07 | 2.07 | 2.08 | 2.07 | 2.08 | 2.07 | 2.09 | 2.09 | \$ | 2.16 | 2.19 | 2.15 | 2.12 | 2.12 | 2.19 | 2.19 | 2.08 | 24 | | |
| 28 | 2.12 | 2.22 | 2.40 | 2.37 | 2.34 | 2.31 | 2.10 | 2.15 | 2.18 | 2.14 | 2.14 | 2.15 | 2.15 | 2.15 | 2.17 | 2.18 | \$ | 2.20 | 2.20 | 2.20 | 2.20 | 2.21 | 2.23 | 2.40 | 2.21 | 24 | | |
| 29 | 2.23 | 2.23 | 2.24 | 2.24 | 2.24 | 2.26 | 2.26 | 2.26 | 2.30 | 2.41 | 2.26 | 2.26 | 2.25 | 2.24 | 2.27 | \$ | 2.37 | 2.42 | 2.45 | 2.43 | 2.37 | 2.40 | 2.43 | 2.45 | 2.31 | 24 | | |
| HOURLY MAX | 3.80 | 2.68 | 2.72 | 2.77 | 2.65 | 2.78 | 3.01 | 2.90 | 2.66 | 2.65 | 2.59 | 2.71 | 2.77 | 2.69 | 2.72 | 2.69 | 2.66 | 2.68 | 2.72 | 2.77 | 2.88 | 2.75 | 2.74 | 3.89 | | | | |
| HOURLY AVG | 2.32 | 2.27 | 2.31 | 2.29 | 2.32 | 2.30 | 2.27 | 2.27 | 2.27 | 2.23 | 2.21 | 2.20 | 2.21 | 2.18 | 2.20 | 2.20 | 2.18 | 2.21 | 2.21 | 2.22 | 2.27 | 2.25 | 2.26 | 2.34 | | | | |

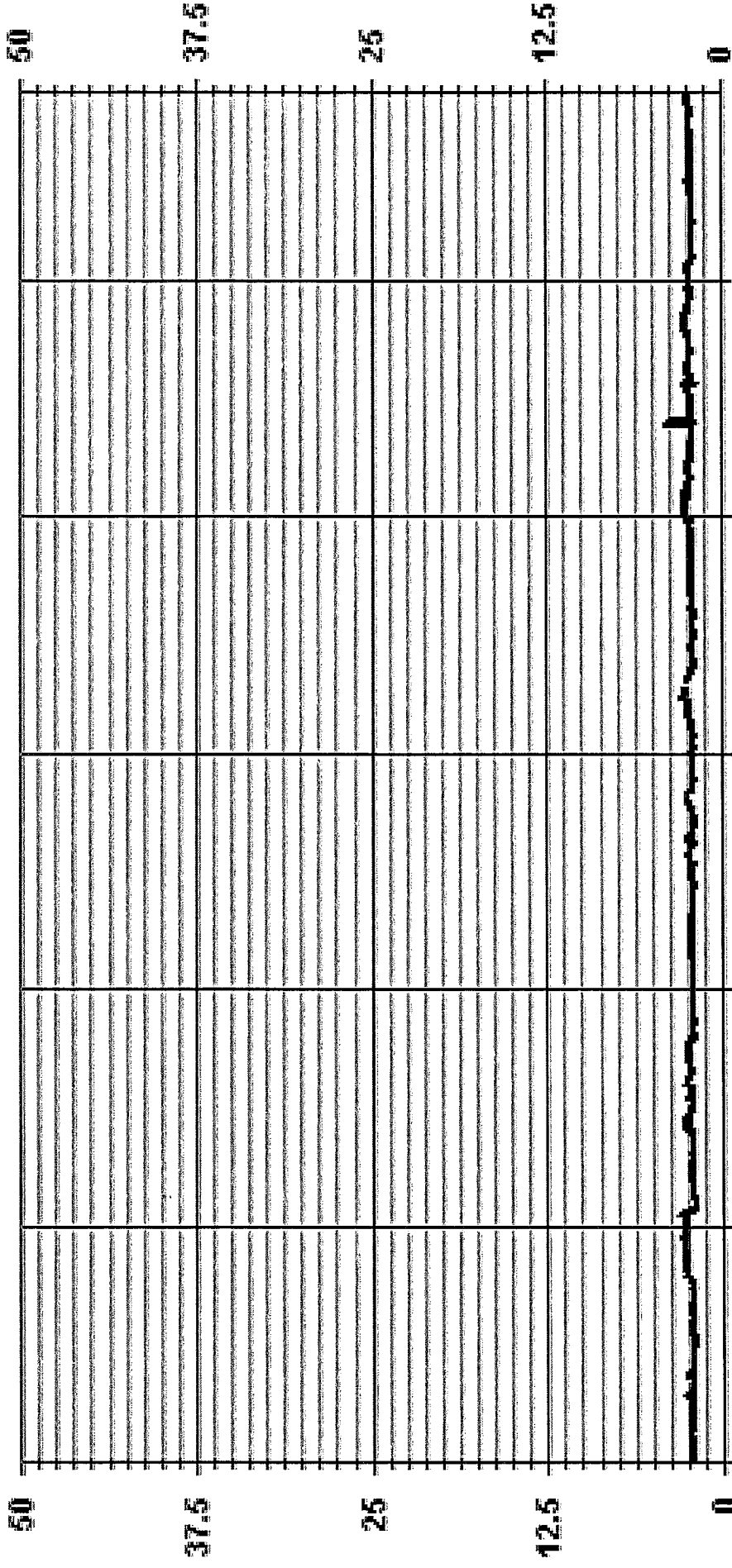
STATUS FLAG CODES

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

MONTHLY SUMMARY

| | |
|------------------------------|------------------------------------|
| NUMBER OF NON-ZERO READINGS: | 661 |
| MAXIMUM INSTANTANEOUS VALUE: | 3.89 PPM @ HOUR(S) 23 ON DAY(S) 22 |
| OPERATIONAL TIME: | 686 HRS |
| MONTHLY CALIBRATION TIME: | 5 HRS |
| STANDARD DEVIATION: | 0.21 |
| VAR-VARIOUS | |

01 Hour Averages



— LICA30 THC MAX PPM

LICA30
 THC / WDR Joint Frequency Distribution (Percent)
 February 2016

Distribution By % Of Samples

| Limit | N | NNE | NE | ENE | E | Direction | | | | | | | | NNW | Freq | | |
|----------|------|------|-------|------|------|-----------|------|------|------|-------|-------|------|------|-------|------|------|--------|
| | | | | | | ESE | SE | SSE | S | SSW | SW | WSW | W | | | WNW | NW |
| < 3.00 | 2.11 | 4.98 | 12.08 | 8.00 | 2.87 | 4.98 | 4.53 | 1.96 | 3.17 | 13.44 | 12.68 | 5.13 | 5.58 | 10.57 | 3.77 | 4.07 | 100.00 |
| < 10.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 50.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 50.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.11 | 4.98 | 12.08 | 8.00 | 2.87 | 4.98 | 4.53 | 1.96 | 3.17 | 13.44 | 12.68 | 5.13 | 5.58 | 10.57 | 3.77 | 4.07 | |

Logger Id : 30
 Site Name : LICA30
 Parameter : THC
 Units : PPM

Wind Parameter : WDR
 Instrument Height : 10 Meters

Calm : .00 %

Total # Operational Hours : 662

Distribution By Samples

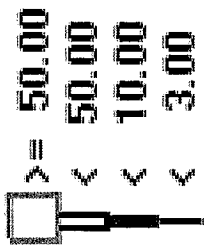
| Limit | N | NNE | NE | ENE | E | Direction | | | | | | | | NNW | Freq | | |
|----------|----|-----|----|-----|----|-----------|----|-----|----|-----|----|-----|----|-----|------|-----|-----|
| | | | | | | ESE | SE | SSE | S | SSW | SW | WSW | W | | | WNW | NW |
| < 3.00 | 14 | 33 | 80 | 53 | 19 | 33 | 30 | 13 | 21 | 89 | 84 | 34 | 37 | 70 | 25 | 27 | 662 |
| < 10.00 | | | | | | | | | | | | | | | | | |
| < 50.00 | | | | | | | | | | | | | | | | | |
| >= 50.00 | | | | | | | | | | | | | | | | | |
| Totals | 14 | 33 | 80 | 53 | 19 | 33 | 30 | 13 | 21 | 89 | 84 | 34 | 37 | 70 | 25 | 27 | 662 |

Calm : .00 %

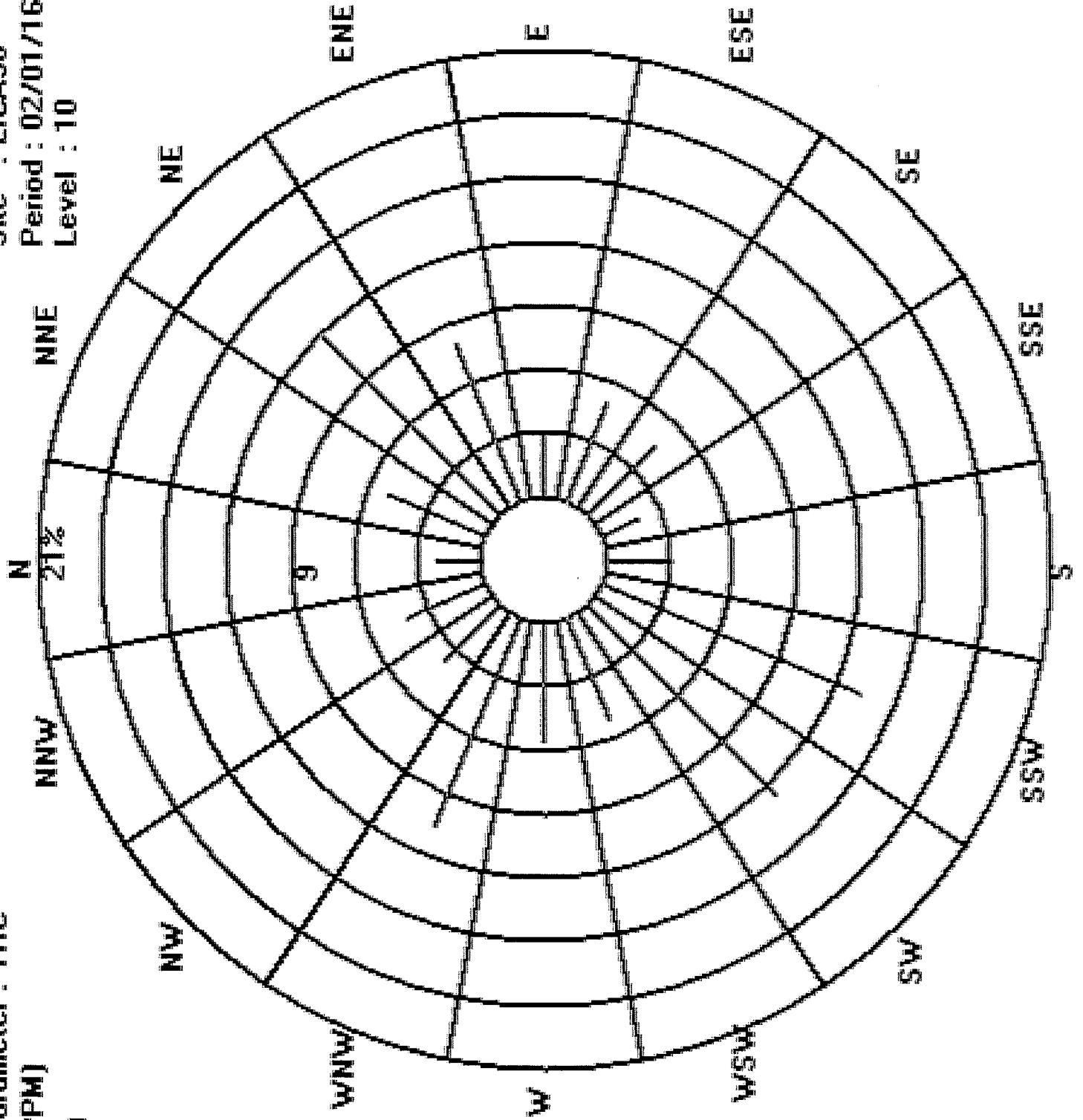
Total # Operational Hours : 662

Logger : 30 Parameter : THC

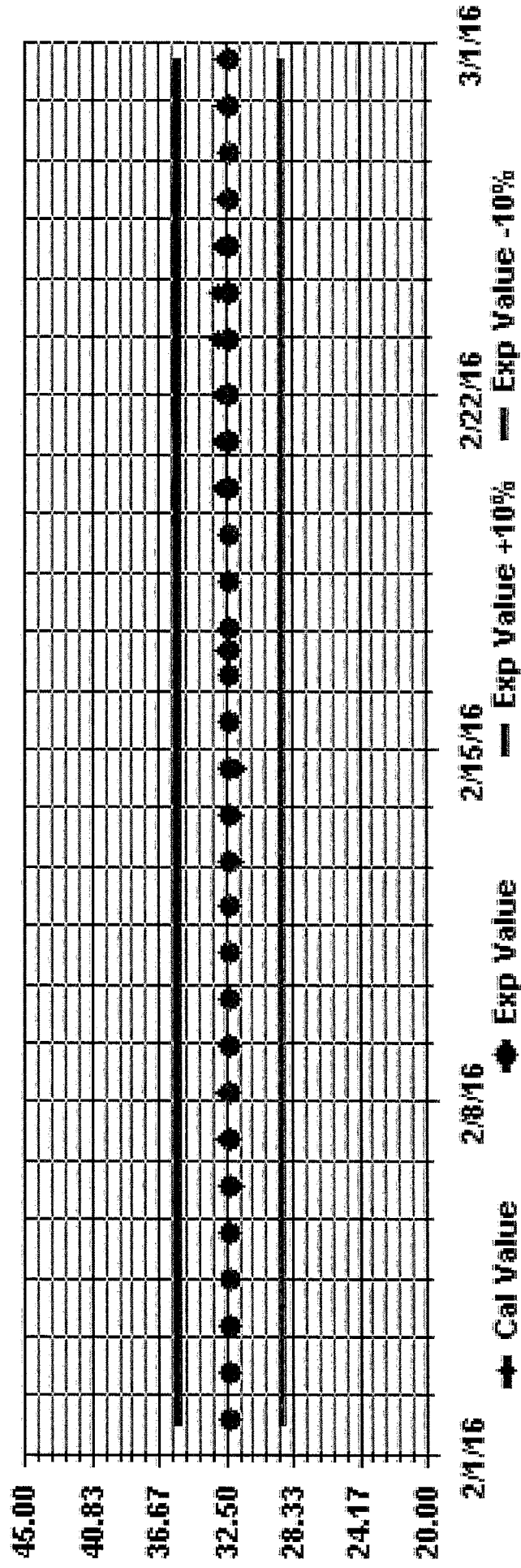
Class Limits (PPM)



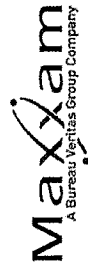
Site : LICA30
Period : 02/01/16-02/29/16
Level : 10



Calibration Graph for Site: LICA30 Parameter: THC Sequence: THC Phase: SPAN



OXIDES OF NITROGEN

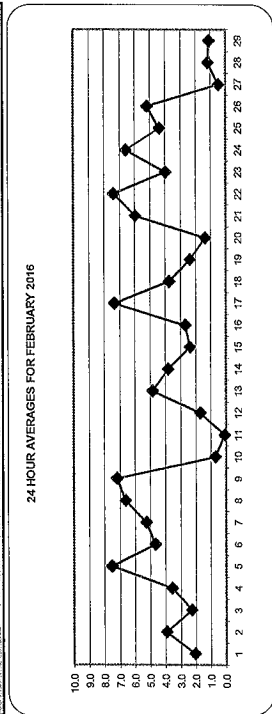


OXIDES OF NITROGEN (NOx) hourly averages in ppb

| DAY | HOUR | | | | | | | | | | | | | | | | | | | | | | | | DAILY MAX | 24-HOUR AVG | RODS | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|-------------|------|-----|----|
| | 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 | | | | | |
| 1 | 1.2 | 1.9 | 2.2 | 2.4 | 2.9 | 2.5 | 2.8 | 0.2 | 3.2 | 0.7 | 2.6 | 1.9 | 3.6 | 4.2 | 3.6 | 5 | 3.2 | 1.4 | 1.1 | 0.8 | 1.1 | 0.8 | 0.8 | 1.1 | 4.2 | 2.1 | 24 | | |
| 2 | 1.2 | 1.6 | 1.4 | 1.2 | 0.8 | 0.7 | 2.2 | 4.0 | 1.5 | 8.4 | 10.9 | 10.0 | 6.3 | 4.7 | 4.7 | 5 | 3.6 | 1.2 | 2.0 | 2.4 | 9.1 | 6.2 | 4.8 | 10.9 | 3.9 | 24 | 24 | | |
| 3 | 3.0 | 0.7 | 0.4 | 0.0 | 2.7 | 0.0 | 3.1 | 1.0 | 0.8 | 0.5 | 0.3 | 1.6 | 0.0 | 0.0 | 5 | 5.2 | 5.2 | 3.8 | 3.2 | 3.8 | 3.9 | 4.2 | 8.7 | 8.7 | 2.3 | 24 | 24 | | |
| 4 | 2.8 | 1.9 | 0.7 | 0.6 | 0.6 | 0.5 | 1.7 | 21.5 | 5.6 | 1.8 | 3.6 | 2.4 | 4.7 | 4.1 | 5.3 | 2.1 | 1.9 | 2.1 | 2.8 | 5.5 | 6.3 | 21.5 | 3.5 | 24 | 24 | 24 | | | |
| 5 | 6.1 | 7.4 | 7.1 | 6.2 | 5.5 | 6.2 | 7.4 | 6.5 | 7.2 | 8.2 | 9.7 | 12.6 | 14.1 | 5 | 10.6 | 8.9 | 8.1 | 7.3 | 8.7 | 6.2 | 4.4 | 3.5 | 3.0 | 14.1 | 7.5 | 24 | 24 | | |
| 6 | 2.3 | 2.0 | 1.6 | 1.4 | 1.1 | 0.9 | 1.9 | 9.1 | 13.5 | 2.7 | 0.0 | 0.0 | 5 | 2.3 | 1.0 | 0.6 | 2.9 | 16.3 | 7.2 | 5.3 | 9.8 | 11.9 | 11.1 | 2.2 | 16.3 | 4.7 | 24 | | |
| 7 | 14.0 | 27.8 | 9.1 | 0.6 | 0.0 | 1.4 | 10.1 | 1.5 | 7.6 | 9.4 | 8.8 | 5 | 6.3 | 5.9 | 11.6 | 0.6 | 2.7 | 0.4 | 0.5 | 0.4 | 0.2 | 0.5 | 0.5 | 0.9 | 27.8 | 5.9 | 24 | | |
| 8 | 1.1 | 3.6 | 9.0 | 10.6 | 7.6 | 5.9 | 7.8 | 7.4 | 7.4 | 5 | 6.7 | 9.8 | 10.8 | 5.2 | 2.6 | 6.6 | 8.5 | 8.2 | 3.9 | 1.8 | 1.7 | 2.3 | 7.0 | 17.6 | 6.6 | 24 | 24 | | |
| 9 | 10.6 | 10.7 | 8.8 | 6.8 | 4.3 | 4.7 | 2.3 | 2.5 | 2.0 | 5 | 6.6 | 5.5 | 6.0 | 6.7 | 6.8 | 8.9 | 9.0 | 6.1 | 5.0 | 6.1 | 7.2 | 19.3 | 9.6 | 9.8 | 19.3 | 7.2 | 24 | | |
| 10 | 4.0 | 0.8 | 2.1 | 2.2 | 1.8 | 1.3 | 0.4 | 0.1 | 5 | 2.1 | 0.8 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | 0.7 | 24 | | |
| 11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5 | 1.2 | 0.5 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 24 | | |
| 12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5 | 1.6 | 1.2 | 0.6 | 1.2 | 6.4 | 4.9 | 6.6 | 5.9 | 5.3 | 1.9 | 0.5 | 0.2 | 1.0 | 0.5 | 0.1 | 0.3 | 0.6 | 1.7 | 24 |
| 13 | 0.6 | 0.5 | 0.6 | 0.6 | 0.5 | 5 | 2.5 | 1.8 | 2.1 | 2.4 | 2.5 | 3.6 | 4.9 | 6.0 | 7.5 | 5.8 | 4.8 | 4.8 | 5.9 | 7.3 | 6.6 | 7.8 | 13.4 | 15.3 | 7.8 | 4.8 | 24 | | |
| 14 | 9.7 | 6.1 | 4.5 | 1.8 | 5 | 4.1 | 2.9 | 3.9 | 5.1 | 4.5 | 5.3 | 1.7 | 1.2 | 1.7 | 0.8 | 0.8 | 1.1 | 1.2 | 1.4 | 5.2 | 7.3 | 8.2 | 8.4 | 9.7 | 3.8 | 24 | 24 | | |
| 15 | 10.8 | 7.4 | 11.5 | 5 | 11.0 | 8.0 | 2.7 | 0.6 | 0.5 | 0.5 | 0.5 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.5 | 2.4 | 24 | | |
| 16 | 1.3 | 2.3 | 5 | 2.4 | 2.5 | 3.0 | 1.6 | 1.5 | 1.3 | 2.8 | 2.5 | 2.8 | 2.1 | 2.3 | 2.4 | 2.5 | 2.5 | 2.5 | 2.8 | 3.5 | 3.7 | 3.8 | 4.2 | 6.5 | 6.5 | 2.7 | 24 | | |
| 17 | 7.0 | 5 | 6.3 | 6.8 | 10.7 | 14.8 | 16.5 | 10.7 | 6.9 | 15.5 | C | C | C | C | C | 11.6 | 5.5 | 4.1 | 2.8 | 5.4 | 6.4 | 0.9 | 0.0 | 0.0 | 16.5 | 7.3 | 24 | | |
| 18 | 1.6 | 0.6 | 0.5 | 2.3 | 3.2 | 7.6 | 5.4 | 5.2 | 8.6 | 7.1 | 6.2 | 4.4 | 4.1 | 5.1 | 5.6 | 6.2 | 3.8 | 0.8 | 1.8 | 0.7 | 0.7 | 0.5 | 5 | 8.6 | 3.7 | 24 | 24 | | |
| 19 | 5 | 2.0 | 14.4 | 2.2 | 2.4 | 1.2 | 1.5 | 0.3 | 0.7 | 1.5 | 1.4 | 4.3 | 6.1 | 3.0 | 4.9 | 1.1 | 0.0 | 1.0 | 0.9 | 0.4 | 0.9 | 0.4 | 5 | 15 | 14.4 | 2.4 | 24 | | |
| 20 | 0.6 | 0.9 | 1.2 | 1.2 | 0.8 | 0.6 | 0.6 | 0.5 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.4 | 24 | | |
| 21 | 4.9 | 4.6 | 4.2 | 3.8 | 4.6 | 4.0 | 5.1 | 7.2 | 6.9 | 8.6 | 11.6 | 5.8 | 4.8 | 10.0 | 7.0 | 7.1 | 5.7 | 5.3 | 2.8 | 2.9 | 5 | 4.1 | 4.5 | 6.5 | 11.6 | 5.9 | 24 | | |
| 22 | 5.6 | 3.6 | 4.8 | 8.2 | 17.7 | 20.0 | 12.3 | 4.4 | 11.1 | 14.4 | 16.4 | 12.3 | 4.8 | 1.4 | 0.0 | 0.0 | 0.5 | 0.9 | 2.0 | 5 | 1.8 | 5.6 | 5.1 | 16.8 | 20.0 | 7.4 | 24 | | |
| 23 | 12.9 | 1.4 | 0.2 | 1.5 | 0.0 | 0.4 | 0.8 | 1.6 | 0.8 | 0.2 | 0.5 | 1.1 | 0.1 | 0.7 | 1.1 | 13.2 | 8.0 | 7.5 | 7.4 | 0.8 | 0.3 | 13.0 | 5 | 17.6 | 17.6 | 4.0 | 24 | | |
| 24 | 7.1 | 6.8 | 13.6 | 16.9 | 9.2 | 13.9 | 8.5 | 14.8 | 10.7 | 12.5 | 6.0 | 3.7 | 1.0 | 0.6 | 1.5 | 2.6 | 2.1 | 3.3 | 2.1 | 2.8 | 3.8 | 5 | 4.0 | 3.8 | 16.9 | 6.6 | 24 | | |
| 25 | 4.0 | 4.0 | 3.4 | 3.7 | 3.9 | 3.5 | 4.1 | 4.0 | 5.2 | 5.6 | 6.3 | 6.9 | 6.7 | 7.0 | 5.3 | 1.3 | 1.5 | 1.1 | 1.0 | 5.4 | 5 | 7.6 | 6.0 | 2.9 | 7.6 | 4.4 | 24 | | |
| 26 | 4.2 | 2.7 | 6.6 | 8.9 | 12.4 | 13.7 | 11.7 | 12.0 | 15.7 | 7.2 | 4.6 | 1.9 | 0.7 | 0.3 | 0.8 | 0.4 | 0.7 | 0.2 | 0.2 | 5 | 6.4 | 3.6 | 2.8 | 1.0 | 15.7 | 5.2 | 24 | | |
| 27 | 0.5 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 24 | | |
| 28 | 0.2 | 1.9 | 5.9 | 5.2 | 3.9 | 2.3 | 0.4 | 0.5 | 3.2 | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 24 | | |
| 29 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 24 | |
| HOURLY MAX | 14.0 | 27.8 | 14.4 | 17.6 | 17.7 | 20.0 | 16.5 | 14.8 | 21.5 | 15.5 | 16.4 | 12.6 | 14.1 | 10.8 | 11.6 | 13.2 | 9.0 | 16.3 | 8.2 | 8.7 | 9.8 | 19.3 | 15.3 | 17.6 | 17.6 | 4.4 | 24 | | |
| HOURLY AVG | 4.2 | 3.7 | 4.3 | 3.7 | 4.0 | 4.3 | 3.9 | 3.9 | 5.1 | 4.5 | 4.0 | 3.7 | 3.8 | 3.2 | 3.3 | 3.4 | 3.1 | 3.5 | 2.7 | 2.7 | 3.0 | 4.4 | 3.7 | 4.4 | 4.4 | 3.7 | 4.4 | 24 | |

STATUS FLAG CODES

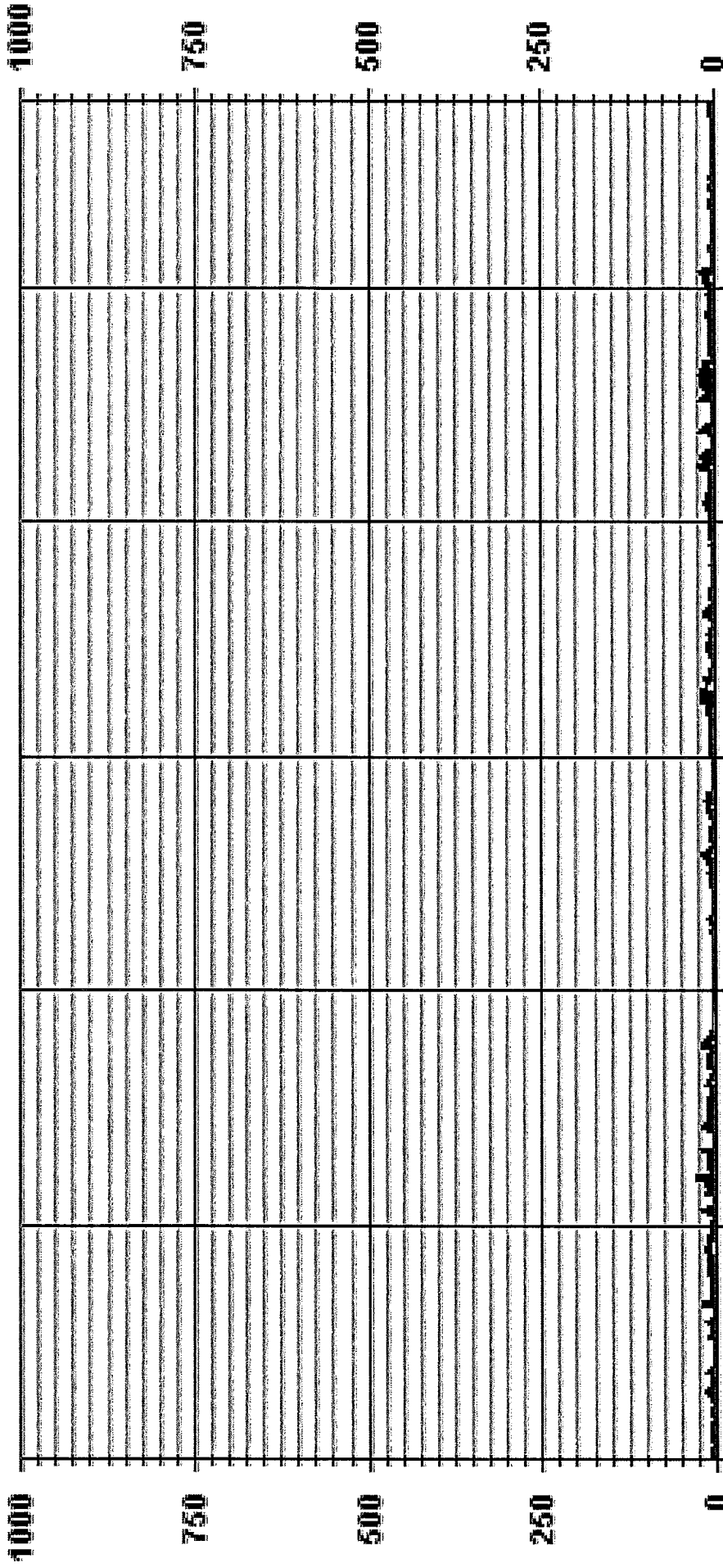
| | | | |
|----|------------------------|---|------------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CI | REPEAT CALIBRATION | R | RECOVERY |
| Y | MAINTENANCE | X | MACHINE/VALVE/FUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | OUT FOR REPAIR |
| S1 | REPEAT ZERO/SPAN CHECK | P |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



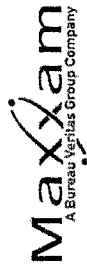
MONTHLY SUMMARY

| | | | | | |
|------------------------------|------|---------------|-----------------------|-----------|-----|
| NUMBER OF NON-ZERO READINGS: | 564 | PPB @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MINIMUM 1-HR AVERAGE: | 0.0 | PPB @ HOUR(S) | 1 | ON DAY(S) | 7 |
| MAXIMUM 1-HR AVERAGE: | 27.8 | PPB @ HOUR(S) | 5 | ON DAY(S) | 5 |
| MAXIMUM 24-HR AVERAGE: | 7.5 | PPB | VAR-VARIOUS | ON DAY(S) | 5 |
| IS CALIBRATION TIME: | 30 | HRS | OPERATIONAL TIME: | 696 | HRS |
| MONTHLY CALIBRATION TIME: | 5 | HRS | AMD OPERATION UPTIME: | 100.0 | % |
| STANDARD DEVIATION: | 4.11 | | MONTHLY AVERAGE: | 3.8 | PPB |

01 Hour Averages



-- LICA30 NOX_ PPB



OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

| DAY | 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 MAX. | 24-HOUR AVG. | ROGS. | | | |
|------------|------|------|------|------|------|------|------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------|--------------|-------|------|-----|----|
| 1 | 1.8 | 2.4 | 3.0 | 3.0 | 3.0 | 7.0 | 7.0 | 10.0 | 1.8 | 0.6 | 4.6 | 4.1 | 4.6 | 4.6 | 4.1 | 4.6 | 4.6 | 4.6 | 5 | 6.5 | 1.9 | 1.3 | 1.3 | 1.3 | 1.3 | 33.4 | 4.8 | 24 | | |
| 2 | 1.3 | 1.9 | 1.7 | 1.3 | 1.3 | 1.3 | 1.3 | 8.9 | 9.5 | 2.9 | 15.8 | 13.6 | 11.8 | 7.1 | 5.9 | 5 | 6.5 | 4.7 | 7.7 | 8.3 | 10.1 | 8.9 | 6.5 | 15.8 | 6.7 | 24 | | | | |
| 3 | 8.3 | 1.2 | 0.7 | 0.1 | 14.6 | 3.5 | 0.7 | 8.9 | 4.1 | 4.1 | 1.3 | 2.9 | 3.5 | 1.2 | 0.7 | 5 | 10.5 | 5.8 | 4.6 | 4.6 | 5.8 | 5.8 | 12.3 | 14.6 | 4.8 | 24 | | | | |
| 4 | 4.0 | 4.6 | 2.9 | 0.6 | 0.6 | 1.2 | 0.6 | 6.4 | 104.9 | 8.8 | 4.0 | 6.4 | 4.0 | 3.0 | 5 | 7.0 | 5.8 | 6.4 | 3.0 | 2.9 | 3.0 | 4.0 | 7.0 | 104.9 | 8.6 | 24 | | | | |
| 5 | 7.0 | 7.6 | 7.6 | 7.0 | 5.8 | 7.0 | 8.8 | 7.0 | 7.6 | 9.9 | 10.5 | 16.9 | 14.6 | 5 | 14.0 | 10.0 | 8.2 | 8.8 | 8.2 | 10.6 | 7.1 | 5.9 | 4.7 | 4.1 | 16.9 | 8.6 | 24 | | | |
| 6 | 2.3 | 2.3 | 1.7 | 1.7 | 1.1 | 1.1 | 3.5 | 18.8 | 32.3 | 8.8 | 0.6 | 0.0 | 5 | 5.7 | 2.7 | 2.2 | 12.2 | 26.8 | 13.3 | 18.0 | 21.5 | 23.3 | 5.7 | 32.3 | 9.5 | 24 | | | | |
| 7 | 26.2 | 37.3 | 28.0 | 9.8 | 0.0 | 10.4 | 22.7 | 13.3 | 17.5 | 17.5 | 12.2 | 5 | 13.4 | 13.4 | 21.6 | 1.1 | 8.1 | 1.1 | 1.1 | 1.1 | 0.5 | 0.5 | 0.5 | 1.7 | 37.3 | 11.3 | 24 | | | |
| 8 | 1.7 | 4.6 | 14.6 | 19.8 | 15.1 | 11.0 | 6.3 | 9.3 | 9.3 | 9.3 | 5 | 10.7 | 11.3 | 13.7 | 7.8 | 3.6 | 27.7 | 9.6 | 9.0 | 6.0 | 2.6 | 2.0 | 3.1 | 9.6 | 27.7 | 9.5 | 24 | | | |
| 9 | 11.3 | 11.9 | 9.6 | 7.8 | 5.4 | 4.8 | 3.6 | 2.6 | 2.6 | 5 | 8.7 | 6.9 | 7.5 | 6.9 | 10.5 | 11.6 | 6.9 | 5.7 | 6.9 | 10.5 | 29.8 | 21.0 | 17.4 | 29.8 | 9.4 | 24 | | | | |
| 10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.6 | 1.5 | 24 | |
| 11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.6 | 0.2 | 24 | |
| 12 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 12.9 | 3.4 | 24 |
| 13 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 12.9 | 3.4 | 24 |
| 14 | 13.0 | 6.5 | 5.9 | 3.1 | 5 | 7.3 | 4.9 | 6.1 | 6.1 | 5.5 | 10.8 | 2.7 | 2.1 | 4.3 | 1.5 | 1.5 | 3.2 | 3.2 | 3.2 | 3.2 | 8.5 | 9.1 | 9.7 | 10.2 | 13.0 | 5.6 | 24 | | | |
| 15 | 12.0 | 10.8 | 14.9 | 5 | 12.8 | 10.5 | 4.5 | 1.1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 14.9 | 3.2 | 24 | |
| 16 | 1.7 | 4.5 | 5 | 5.0 | 3.8 | 3.8 | 2.2 | 2.2 | 2.7 | 1.6 | 4.4 | 3.3 | 3.3 | 3.3 | 2.2 | 2.8 | 2.8 | 2.8 | 2.8 | 3.3 | 3.8 | 3.8 | 5.0 | 7.4 | 7.4 | 3.5 | 24 | | | |
| 17 | 8.6 | 5 | 9.1 | 9.1 | 11.5 | 17.3 | 20.3 | 13.9 | 8.5 | C | C | C | C | C | C | C | 7.6 | 5.2 | 3.5 | 11.1 | 11.1 | 1.2 | 1.2 | 0.6 | 5 | 10.6 | 5.9 | 24 | | |
| 18 | 5 | 3.5 | 1.2 | 0.6 | 5.8 | 6.4 | 10.6 | 9.4 | 8.2 | 10.0 | 8.8 | 7.0 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 9.3 | 1.2 | 3.0 | 1.2 | 1.2 | 0.6 | 5 | 10.6 | 5.9 | 24 | |
| 19 | 4.3 | 3.8 | 24.9 | 7.3 | 4.3 | 2.7 | 2.7 | 0.9 | 1.5 | 2.7 | 2.1 | 12.1 | 11.4 | 12.0 | 12.6 | 2.1 | 0.3 | 1.5 | 2.1 | 1.5 | 1.5 | 0.9 | 5 | 3.5 | 24.9 | 5.2 | 24 | | | |
| 20 | 0.6 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 0.6 | 0.6 | 0.6 | 0.6 | 0.0 | 0.0 | 10.0 | 10.0 | 2.9 | 1.2 | 1.8 | 1.8 | 1.8 | 3.0 | 3.0 | 5 | 4.4 | 4.4 | 10.0 | 2.3 | 24 | | | |
| 21 | 5.0 | 5.0 | 4.4 | 4.4 | 8.6 | 8.6 | 8.0 | 11.5 | 9.2 | 13.3 | 26.7 | 7.4 | 12.1 | 12.1 | 8.0 | 7.4 | 6.8 | 7.4 | 3.8 | 3.4 | 5 | 7.3 | 5.5 | 7.3 | 26.7 | 8.4 | 24 | | | |
| 22 | 6.7 | 4.3 | 7.3 | 11.4 | 27.2 | 23.1 | 25.5 | 10.3 | 27.8 | 19.0 | 26.0 | 28.4 | 10.3 | 3.2 | 0.9 | 2.1 | 3.2 | 4.3 | 5 | 4.5 | 11.6 | 9.3 | 24.5 | 28.4 | 12.7 | 24 | | | | |
| 23 | 26.8 | 4.5 | 5.1 | 8.1 | 0.0 | 1.7 | 2.3 | 4.5 | 1.7 | 1.1 | 2.3 | 3.9 | 4.5 | 8.1 | 3.9 | 26.2 | 13.3 | 14.0 | 15.1 | 9.2 | 9.8 | 25.7 | 5 | 33.7 | 33.7 | 9.8 | 24 | | | |
| 24 | 30.2 | 19.1 | 28.4 | 27.2 | 18.4 | 23.7 | 25.5 | 20.8 | 11.4 | 19.7 | 11.4 | 5.5 | 2.1 | 1.5 | 3.3 | 3.8 | 3.8 | 4.3 | 2.7 | 3.8 | 5.5 | 5 | 5.2 | 4.0 | 30.2 | 12.2 | 24 | | | |
| 25 | 4.0 | 4.6 | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.0 | 6.4 | 6.4 | 7.6 | 8.2 | 7.0 | 8.2 | 2.4 | 3.5 | 2.9 | 4.0 | 7.6 | 5 | 8.7 | 8.1 | 4.5 | 8.7 | 5.5 | 24 | | | | |
| 26 | 5.7 | 5.7 | 7.5 | 11.0 | 12.8 | 16.8 | 14.5 | 14.0 | 22.2 | 9.3 | 6.3 | 2.3 | 1.7 | 0.5 | 16.2 | 1.1 | 1.7 | 0.5 | 0.5 | 5 | 8.2 | 5.2 | 4.6 | 1.2 | 22.2 | 7.4 | 24 | | | |
| 27 | 0.6 | 0.6 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.6 | 0.0 | 3.5 | 5 | 6.5 | 9.5 | 4.1 | 0.7 | 9.5 | 1.2 | 24 | | | |
| 28 | 0.7 | 3.1 | 7.7 | 5.9 | 4.7 | 4.7 | 1.3 | 1.8 | 4.8 | 4.7 | 0.7 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 5 | 1.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 7.7 | 1.8 | 24 | | |
| 29 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 1.3 | 0.7 | 1.9 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.8 | 1.8 | 5 | 5.0 | 3.8 | 2.8 | 2.2 | 2.2 | 2.2 | 5.0 | 1.5 | 24 | | | |
| HOURLY MAX | 30.2 | 37.3 | 28.4 | 27.2 | 23.7 | 23.7 | 25.5 | 20.8 | 104.9 | 19.7 | 26.7 | 28.4 | 33.4 | 13.7 | 21.6 | 26.2 | 27.7 | 26.8 | 15.1 | 13.3 | 18.0 | 29.8 | 23.3 | 33.7 | | | | | | |
| HOURLY AVG | 7.0 | 5.5 | 7.0 | 5.5 | 5.9 | 6.5 | 6.7 | 6.9 | 11.1 | 6.2 | 6.4 | 6.2 | 7.1 | 5.6 | 5.7 | 4.6 | 5.9 | 5.3 | 4.1 | 4.6 | 5.1 | 6.8 | 5.5 | 6.5 | | | | | | |

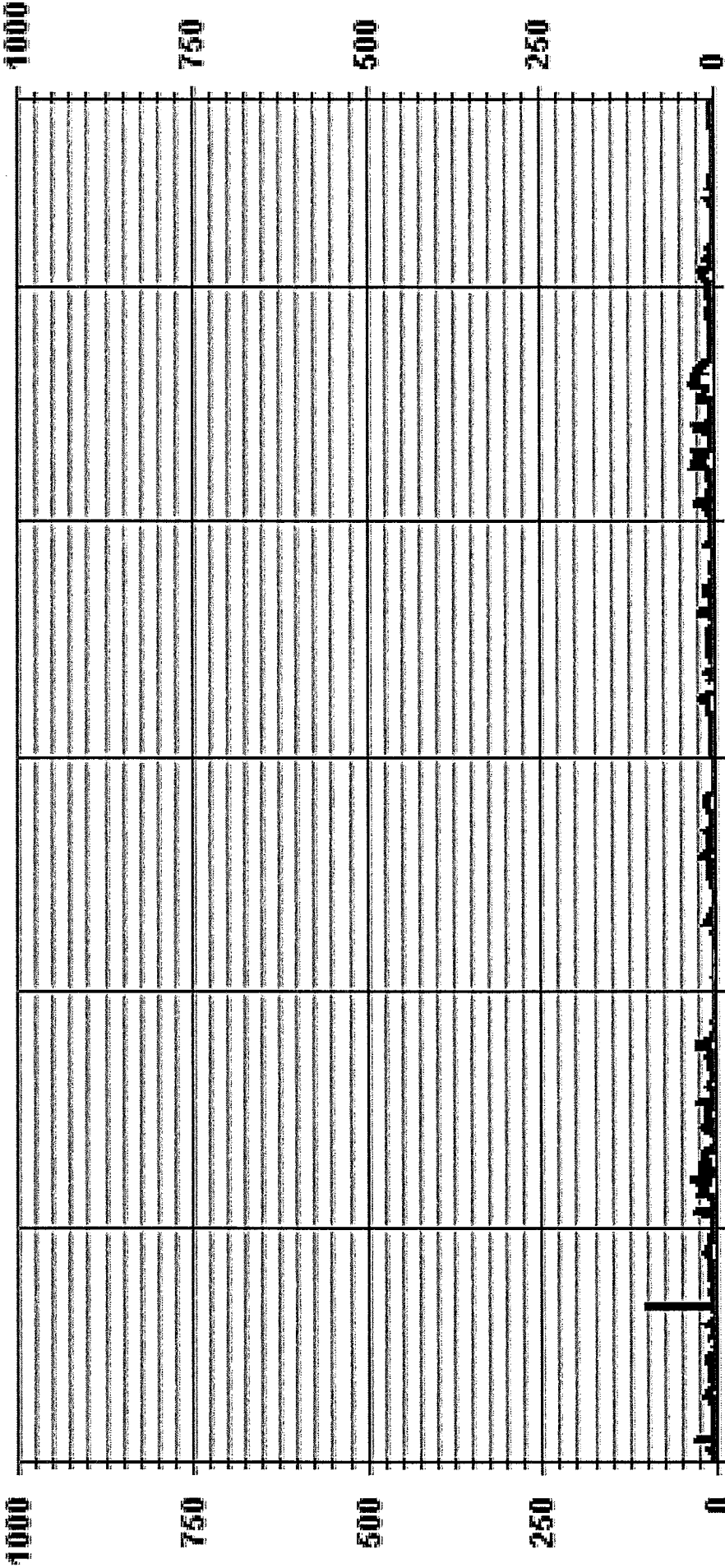
STATUS FLAG CODES

| | | | |
|----|--------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CD | 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: | 586 |
| MAXIMUM INSTANTANEOUS VALUE: | 104.9 |
| PPB | 8 |
| ON DAY(S) | 4 |
| VARIOUS | |
| OPERATIONAL TIME: | 696 |
| HRS | |
| ISZ CALIBRATION TIME: | 30 |
| HRS | |
| MONTHLY CALIBRATION TIME: | 7 |
| HRS | |
| STANDARD DEVIATION: | 7.56 |

01 Hour Averages



— LICA30 NOXMAX PPB

LiCA30
 NOX_ / WDR Joint Frequency Distribution (Percent)
 February 2016

Distribution By % Of Samples

Logger Id : 30
 Site Name : LiCA30
 Parameter : NOX
 Units : PPF

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|------|-------|------|------|------|------|------|------|-------|-------|------|------|-------|------|------|--------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 50.0 | 2.11 | 4.99 | 12.10 | 8.01 | 2.87 | 4.99 | 4.53 | 1.81 | 3.17 | 13.46 | 12.70 | 5.14 | 5.59 | 10.59 | 3.78 | 4.08 | 100.00 |
| < 110.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.11 | 4.99 | 12.10 | 8.01 | 2.87 | 4.99 | 4.53 | 1.81 | 3.17 | 13.46 | 12.70 | 5.14 | 5.59 | 10.59 | 3.78 | 4.08 | |

Calm : .00 %

Total # Operational Hours : 661

Distribution By Samples





| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 50.0 | 14 | 33 | 80 | 53 | 19 | 33 | 30 | 12 | 21 | 89 | 84 | 34 | 37 | 70 | 25 | 27 | 661 |
| < 110.0 | | | | | | | | | | | | | | | | | |
| < 210.0 | | | | | | | | | | | | | | | | | |
| >= 210.0 | | | | | | | | | | | | | | | | | |
| Totals | 14 | 33 | 80 | 53 | 19 | 33 | 30 | 12 | 21 | 89 | 84 | 34 | 37 | 70 | 25 | 27 | 661 |

Calm : .00 %

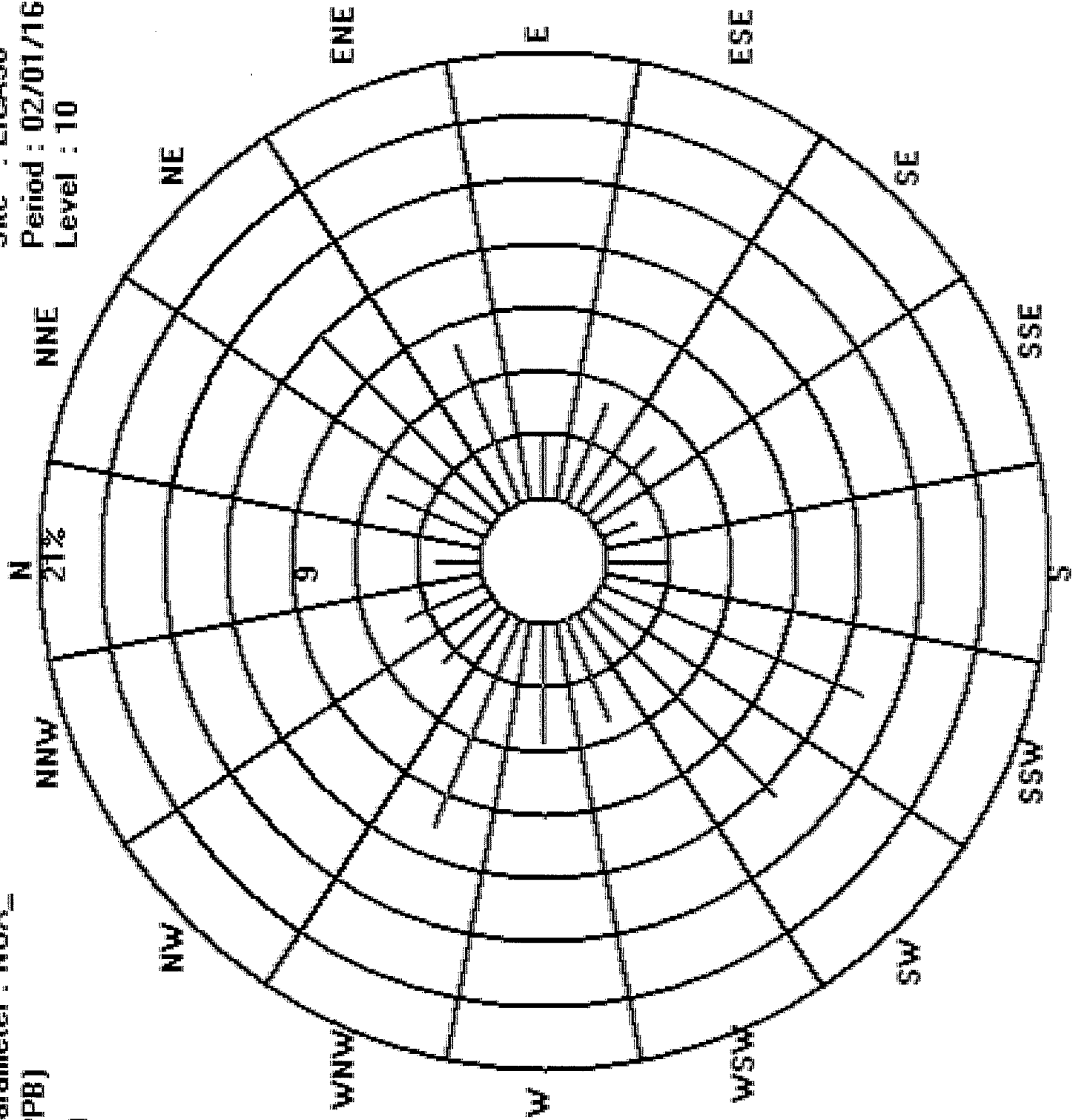
Total # Operational Hours : 661

Logger : 30 Parameter : NOX_

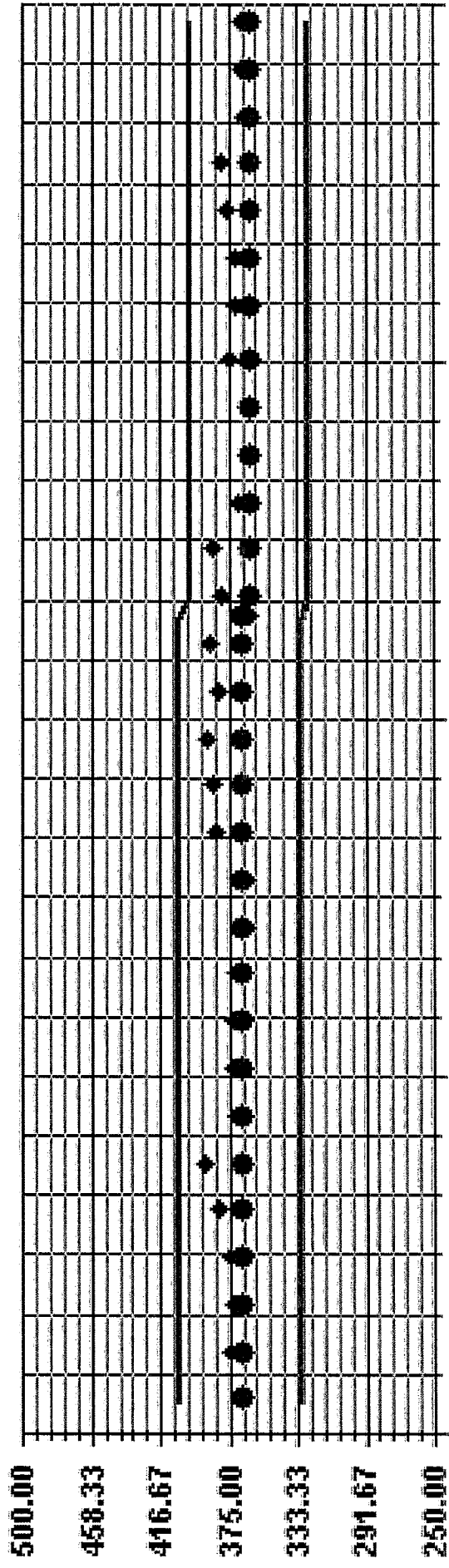
Class Limits (PPB)

-  >= 210.0
-  < 210.0
-  < 110.0
-  < 50.0

Site : LICA30
Period : 02/01/16-02/29/16
Level : 10

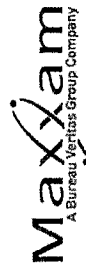


Calibration Graph for Site: LICA30 Parameter: NOX_ Sequence: NO2 Phase: SPAN



2/1/16 2/8/16 2/15/16 2/22/16 3/1/16
 + Cal Value ● Exp Value — Exp Value +10% — Exp Value -10%

NITRIC OXIDES



NITRIC OXIDE (NO) hourly averages in ppb

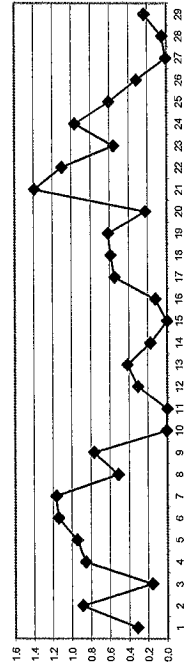
MST

| DAY | 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 | 24:00 |
|--------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| HOURLY START | 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 | 24:00 |
| HOURLY END | 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 | 24:00 |
| HOURLY MAX | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7 | 3.8 | 7.9 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 21 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 22 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 23 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 24 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 26 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 27 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 29 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30 | 3.8 | 7.9 | 3.7 | 2.7 | 0.8 | 1.1 | 0.8 | 1.1 | 11.7 | 5.2 | 7.5 | 5.8 | 5.0 | 5.0 | 4.0 | 3.7 | 1.4 | 5.6 | 3.0 | 2.1 | 3.4 | 6.5 | 3.7 | 2.6 | 2.6 |
| 31 | 0.2 | 0.3 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 1.0 | 1.1 | 1.0 | 1.1 | 1.0 | 0.7 | 0.4 | 0.3 | 0.1 | 0.1 | 0.2 | 0.5 | 0.2 | 0.2 | 0.2 |

STATUS FLAG CODES

| | | | |
|----|--------------------------|---|-----------------------|
| C | - MONTHLY CALIBRATION | Q | - QUALITY ASSURANCE |
| CL | - 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 |

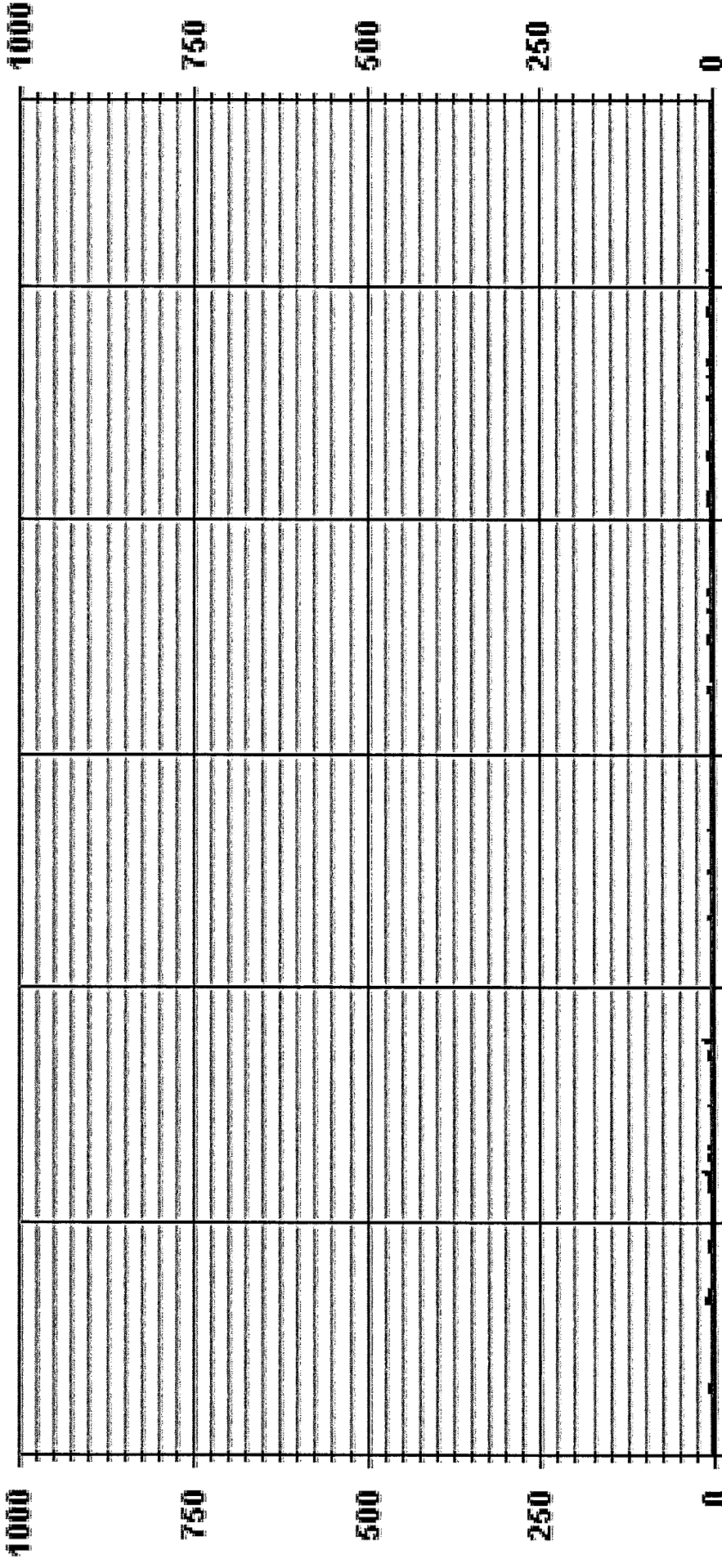
24-HOUR AVERAGES FOR FEBRUARY 2016



MONTHLY SUMMARY

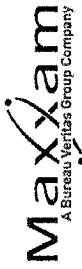
| | | | | | | |
|------------------------------|------|-----|-----------------------|-------|-------------|-----|
| NUMBER OF NON-ZERO READINGS: | 245 | PPB | @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MINIMUM 1-HR AVERAGE: | 0.0 | PPB | @ HOUR(S) | 8 | ON DAY(S) | 4 |
| MAXIMUM 1-HR AVERAGE: | 11.7 | PPB | @ HOUR(S) | | ON DAY(S) | 21 |
| MAXIMUM 24-HR AVERAGE: | 1.4 | PPB | | | VAR-VARIOUS | |
| 12S CALIBRATION TIME: | 30 | HRS | OPERATIONAL TIME: | 696 | HRS | |
| MONTHLY CALIBRATION TIME: | 5 | HRS | AMD OPERATION UPTIME: | 100.0 | % | |
| STANDARD DEVIATION: | 1.18 | | MONTHLY AVERAGE: | 0.5 | PPB | |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA30 NO_ PPB



NITRIC OXIDE MAX instantaneous maximum in ppb

| DAY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
|-------------|------|-----|-----|-----|------|-----|-----|-----|-----|------|-----|------|------|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| HOURLY MAX | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| HOURLY AVG | 0.7 | 0.5 | 0.9 | 0.3 | 0.5 | 4.0 | 3.5 | 4.0 | 3.5 | 10.5 | 4.6 | 91.4 | 2.9 | 5.2 | 4.0 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |
| 24-HOUR AVG | 1.3 | 1.9 | 2.4 | 0.9 | 4.6 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| DAILY MAX | 14.6 | 8.7 | 1.3 | 2.8 | 91.4 | 7.5 | 1.3 | 2.8 | 3.0 | 12.3 | 3.0 | 24 | 11.1 | 1.2 | 24 | 14.6 | 1.6 | 24 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| DAILY 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 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

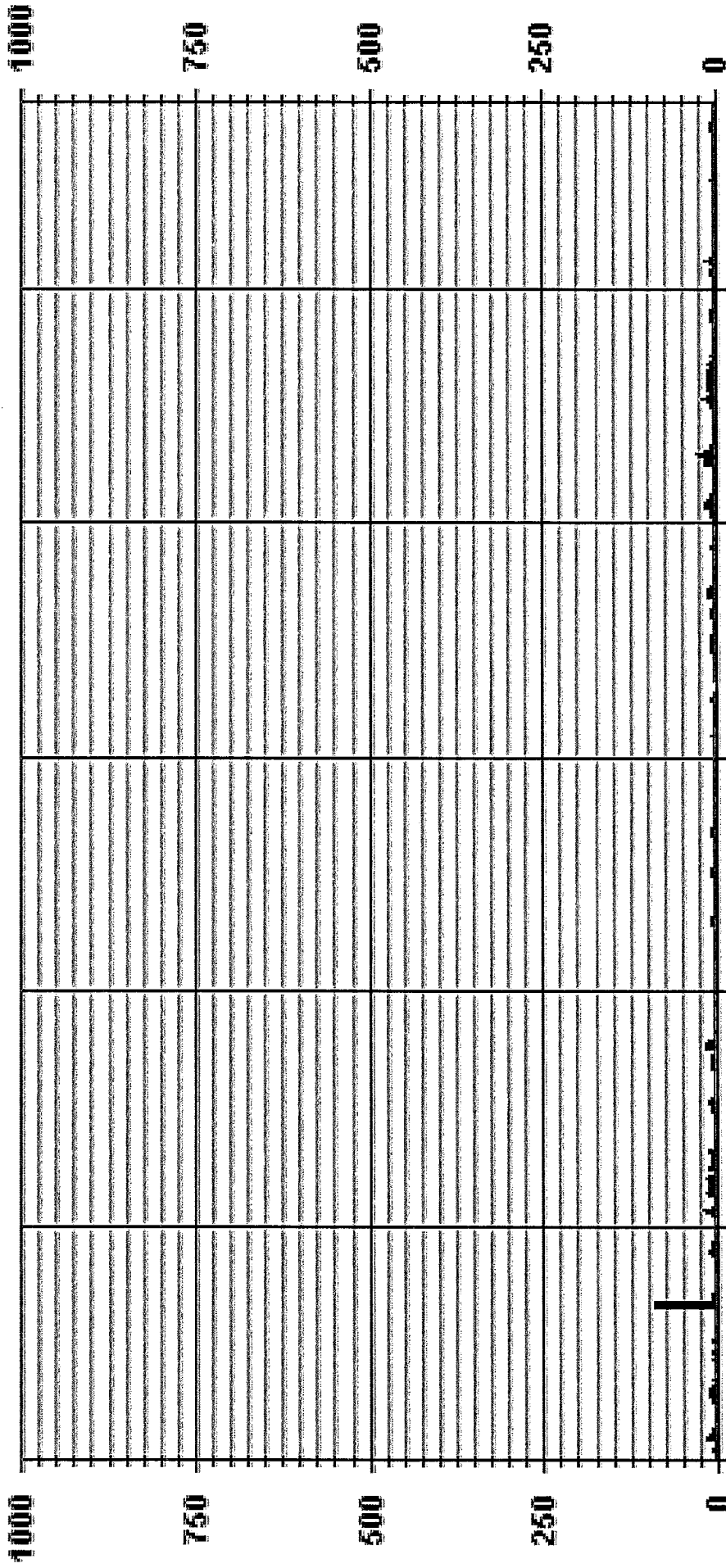
STATUS FLAG CODES

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

MONTHLY SUMMARY

| | |
|------------------------------|----------------------------------|
| NUMBER OF NON-ZERO READINGS: | 300 |
| MAXIMUM INSTANTANEOUS VALUE: | 91.4 PPB @ HOUR(S) 8 ON DAY(S) 4 |
| IS CALIBRATION TIME: | 30 HRS |
| MONTHLY CALIBRATION TIME: | 7 HRS |
| STANDARD DEVIATION: | 4.22 |
| OPERATIONAL TIME: | 696 HRS |
| VAR- VARIOUS | |

01 Hour Averages



— LICA30 NOMAX PPB

LICA30
 NO_ / WDR Joint Frequency Distribution (Percent)
 February 2016

Distribution By % Of Samples

Logger Id : 30
 Site Name : LICA30
 Parameter : NO
 Units : PPF

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|------|-------|------|------|------|------|------|------|-------|-------|------|------|-------|------|------|--------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 50.0 | 2.11 | 4.99 | 12.10 | 8.01 | 2.87 | 4.99 | 4.53 | 1.81 | 3.17 | 13.46 | 12.70 | 5.14 | 5.59 | 10.59 | 3.78 | 4.08 | 100.00 |
| < 110.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.11 | 4.99 | 12.10 | 8.01 | 2.87 | 4.99 | 4.53 | 1.81 | 3.17 | 13.46 | 12.70 | 5.14 | 5.59 | 10.59 | 3.78 | 4.08 | |

Calm : .00 %

Total # Operational Hours : 661

Distribution By Samples

| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 50.0 | 14 | 33 | 80 | 53 | 19 | 33 | 30 | 12 | 21 | 89 | 84 | 34 | 37 | 70 | 25 | 27 | 661 |
| < 110.0 | | | | | | | | | | | | | | | | | |
| < 210.0 | | | | | | | | | | | | | | | | | |
| >= 210.0 | | | | | | | | | | | | | | | | | |
| Totals | 14 | 33 | 80 | 53 | 19 | 33 | 30 | 12 | 21 | 89 | 84 | 34 | 37 | 70 | 25 | 27 | |

Calm : .00 %

Total # Operational Hours : 661


Logger : 30 Parameter : NO_

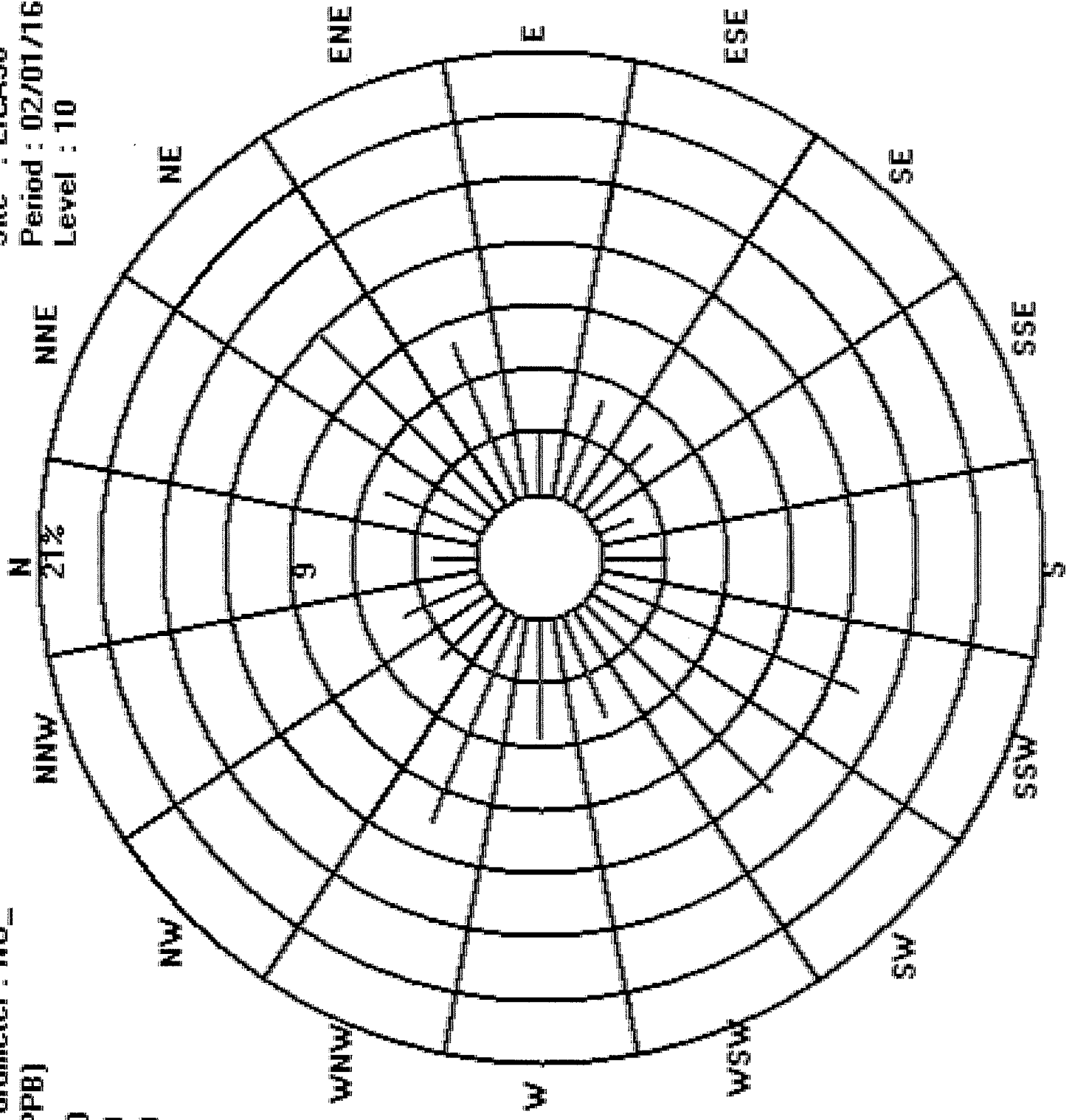
Site : LICA30

Period : 02/01/16-02/29/16

Level : 10

Class Limits (PPB)

-  >= 210.0
-  < 210.0
-  < 110.0
-  < 50.0



NITROGEN DIOXIDE



NITROGEN DIOXIDE (NO2) hourly averages in ppb

MST

| DAY | 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 MAX | DAILY AVG | 24-HOUR AVG | ROGS | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|-----------|-------------|------|-----|-----|
| 1 | 1.2 | 1.9 | 2.2 | 2.4 | 2.9 | 2.9 | 2.1 | 2.2 | 0.2 | 0.0 | 4.3 | 1.1 | 1.1 | 3.3 | 3.3 | 3.1 | \$ | 3.2 | 1.4 | 1.4 | 1.1 | 0.8 | 1.1 | 0.8 | 1.1 | 3.3 | 1.7 | 2.4 | | |
| 2 | 1.2 | 1.6 | 1.4 | 1.2 | 1.2 | 0.8 | 0.7 | 1.9 | 0.3 | 1.0 | 4.4 | 5.9 | 3.3 | 2.8 | 3.8 | \$ | 3.6 | 1.2 | 1.9 | 2.4 | 9.1 | 6.2 | 4.8 | 9.1 | 6.2 | 4.8 | 9.1 | 3.0 | 2.4 | |
| 3 | 3.0 | 0.7 | 0.4 | 0.0 | 1.9 | 0.0 | 0.0 | 2.7 | 0.9 | 0.6 | 0.2 | 0.0 | 0.6 | 0.0 | 0.0 | \$ | 4.8 | 5.2 | 3.8 | 3.2 | 3.8 | 3.9 | 4.2 | 8.5 | 8.5 | 2.1 | 2.1 | 2.4 | | |
| 4 | 2.8 | 1.9 | 0.7 | 0.6 | 0.6 | 0.6 | 0.5 | 1.2 | 9.8 | 3.4 | 0.9 | 2.3 | 1.3 | 1.2 | \$ | 4.2 | 3.8 | 5.3 | 2.1 | 1.9 | 2.1 | 2.8 | 5.5 | 6.3 | 9.8 | 2.7 | 2.4 | 2.4 | | |
| 5 | 6.1 | 7.4 | 7.1 | 6.2 | 5.5 | 6.2 | 7.4 | 6.5 | 6.5 | 5.9 | 6.4 | 7.9 | 9.5 | \$ | 7.7 | 6.8 | 7.0 | 8.2 | 7.3 | 8.7 | 6.2 | 4.4 | 3.5 | 3.0 | 9.5 | 6.6 | 2.4 | 2.4 | | |
| 6 | 2.3 | 2.0 | 1.6 | 1.4 | 1.1 | 0.9 | 1.9 | 8.2 | 11.0 | 2.4 | 0.0 | 0.0 | \$ | 2.3 | 0.9 | 0.6 | 2.6 | 10.7 | 4.2 | 3.2 | 6.4 | 7.9 | 7.4 | 1.7 | 11.0 | 3.5 | 2.4 | 2.4 | | |
| 7 | 10.2 | 19.9 | 7.8 | 0.6 | 0.0 | 1.4 | 9.6 | 1.5 | 7.0 | 7.1 | 5.8 | \$ | 4.9 | 4.0 | 7.6 | 0.5 | 2.5 | 0.4 | 0.5 | 0.4 | 0.2 | 0.5 | 0.5 | 0.9 | 19.9 | 4.1 | 2.4 | 2.4 | | |
| 8 | 1.1 | 3.6 | 9.0 | 17.6 | 10.0 | 7.6 | 5.9 | 7.8 | 7.3 | 6.2 | \$ | 5.2 | 7.1 | 7.4 | 4.0 | 2.1 | 5.3 | 8.5 | 8.2 | 3.9 | 1.8 | 1.7 | 2.3 | 7.0 | 17.6 | 6.1 | 2.4 | 2.4 | | |
| 9 | 10.6 | 10.7 | 8.8 | 6.8 | 4.3 | 4.7 | 2.3 | 2.5 | 2.0 | \$ | 6.1 | 4.8 | 4.6 | 5.3 | 5.4 | 7.1 | 7.8 | 6.0 | 5.0 | 6.1 | 7.0 | 12.8 | 8.3 | 8.6 | 12.8 | 6.4 | 2.4 | 2.4 | | |
| 10 | 3.8 | 0.8 | 2.1 | 2.2 | 1.8 | 1.3 | 0.4 | 0.1 | \$ | 2.1 | 0.8 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.8 | 0.7 | 2.4 | | |
| 11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 1.2 | 0.5 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 0.1 | 2.4 | |
| 12 | 0.6 | 0.6 | 0.6 | 0.6 | 0.5 | \$ | 2.5 | 1.8 | 2.1 | 2.1 | 1.8 | 2.2 | 3.2 | 4.3 | 5.3 | 4.8 | 4.2 | 5.9 | 7.3 | 6.6 | 7.8 | 13.4 | 15.3 | 7.8 | 15.3 | 4.4 | 2.4 | 2.4 | | |
| 13 | 0.6 | 0.6 | 0.6 | 0.6 | 0.5 | \$ | 2.5 | 1.8 | 2.1 | 2.1 | 1.8 | 2.2 | 3.2 | 4.3 | 5.3 | 4.8 | 4.2 | 5.9 | 7.3 | 6.6 | 7.8 | 13.4 | 15.3 | 7.8 | 15.3 | 4.4 | 2.4 | 2.4 | | |
| 14 | 9.7 | 6.1 | 4.5 | 1.8 | \$ | 4.1 | 2.9 | 3.9 | 4.7 | 3.4 | 3.7 | 1.4 | 1.0 | 1.2 | 0.8 | 0.8 | 1.1 | 1.2 | 1.4 | 5.2 | 7.3 | 8.2 | 8.4 | 9.7 | 3.6 | 2.4 | 2.4 | 2.4 | | |
| 15 | 10.8 | 7.4 | 11.5 | \$ | 11.0 | 8.0 | 2.7 | 0.6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 11.5 | 2.4 | 2.4 | 2.4 | | |
| 16 | 1.3 | 2.3 | \$ | 2.4 | 2.5 | 3.0 | 1.6 | 1.5 | 1.5 | 1.3 | 2.4 | 1.8 | 2.2 | 1.6 | 1.8 | 2.3 | 2.5 | 2.5 | 2.8 | 3.5 | 3.7 | 3.8 | 4.2 | 6.5 | 6.5 | 2.6 | 2.4 | 2.4 | | |
| 17 | 7.0 | \$ | 6.3 | 6.8 | 10.7 | 14.7 | 15.8 | 10.6 | 6.0 | 10.3 | C | C | C | C | C | C | 9.5 | 4.9 | 4.1 | 2.8 | 5.4 | 6.2 | 0.9 | 0.0 | 15.8 | 6.8 | 2.4 | 2.4 | | |
| 18 | 5 | 1.6 | 0.6 | 0.5 | 2.1 | 3.0 | 6.8 | 4.9 | 4.7 | 7.3 | 5.6 | 4.4 | 3.3 | 2.9 | 3.7 | 4.3 | 5.2 | 3.6 | 0.8 | 1.8 | 0.7 | 0.7 | 0.5 | \$ | 7.3 | 3.1 | 2.4 | 2.4 | | |
| 19 | 2.6 | 2.0 | 10.7 | 2.2 | 2.3 | 1.2 | 1.5 | 0.3 | 0.5 | 1.1 | 0.9 | 2.0 | 3.1 | 1.5 | 2.9 | 0.7 | 0.0 | 0.9 | 0.9 | 0.9 | 0.9 | 0.4 | \$ | 1.5 | 10.7 | 1.8 | 2.4 | 2.4 | | |
| 20 | 0.9 | 1.2 | 1.2 | 0.8 | 0.6 | 0.6 | 0.6 | 0.6 | 0.5 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.4 | 2.4 | |
| 21 | 4.9 | 4.6 | 4.2 | 3.8 | 4.4 | 4.0 | 5.0 | 6.7 | 5.4 | 5.0 | 5.7 | 3.0 | 4.5 | 5.0 | 3.8 | 4.4 | 4.5 | 5.0 | 2.8 | 2.9 | \$ | 4.1 | 4.5 | 6.5 | 6.7 | 4.6 | 2.4 | 2.4 | 2.4 | |
| 22 | 5.6 | 3.6 | 4.7 | 8.2 | 17.3 | 19.8 | 12.1 | 4.1 | 8.6 | 9.4 | 8.9 | 6.5 | 2.6 | 0.5 | 0.0 | 0.0 | 0.4 | 0.8 | 2.0 | \$ | 1.8 | 5.6 | 5.1 | 16.7 | 19.8 | 6.3 | 2.4 | 2.4 | 2.4 | |
| 23 | 12.9 | 1.4 | 0.2 | 1.5 | 0.4 | 0.8 | 1.5 | 0.4 | 0.8 | 1.5 | 0.3 | 0.6 | 0.1 | 0.5 | 0.8 | 9.5 | 6.6 | 6.5 | 7.0 | 0.8 | 0.1 | 11.0 | \$ | 15.0 | 15.0 | 5.6 | 2.4 | 2.4 | 2.4 | |
| 24 | 6.2 | 6.5 | 11.8 | 14.2 | 8.8 | 12.8 | 7.8 | 13.7 | 8.6 | 7.7 | 3.5 | 2.2 | 0.5 | 0.4 | 1.1 | 1.9 | 1.7 | 3.2 | 2.1 | 2.8 | 3.8 | \$ | 4.0 | 3.8 | 14.2 | 5.6 | 2.4 | 2.4 | 2.4 | |
| 25 | 4.0 | 4.0 | 3.4 | 3.7 | 3.9 | 3.5 | 4.1 | 4.0 | 4.5 | 4.3 | 4.1 | 4.4 | 4.2 | 4.4 | 3.6 | 1.1 | 1.2 | 1.1 | 1.0 | 5.4 | \$ | 7.6 | 6.0 | 2.9 | 7.6 | 3.8 | 2.4 | 2.4 | 2.4 | |
| 26 | 4.2 | 2.7 | 6.6 | 8.9 | 12.4 | 13.7 | 11.6 | 11.8 | 12.8 | 5.5 | 3.2 | 0.6 | 0.3 | 0.5 | 0.4 | 0.2 | 0.2 | 0.2 | 0.0 | \$ | 3.2 | 4.2 | 1.7 | 0.4 | 0.2 | 4.2 | 0.5 | 2.4 | 2.4 | 2.4 |
| 27 | 0.5 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 2.4 | 2.4 |
| 28 | 0.2 | 1.9 | 5.9 | 5.2 | 3.9 | 2.3 | 0.4 | 0.5 | 2.7 | 2.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 2.4 | 2.4 |
| 29 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 3.2 | 3.2 | 2.7 | 2.5 | 2.1 | 2.1 | 2.6 | 0.9 | 2.4 | 2.4 |
| HOURLY MAX | 12.9 | 19.9 | 11.8 | 17.6 | 17.3 | 19.8 | 15.8 | 13.7 | 12.8 | 10.3 | 8.9 | 7.9 | 9.5 | 7.4 | 7.7 | 9.5 | 7.8 | 10.7 | 8.2 | 8.7 | 7.8 | 13.4 | 15.3 | 16.7 | | | | | | |
| HOURLY AVG | 4.1 | 3.4 | 4.0 | 3.6 | 3.9 | 4.2 | 3.8 | 3.7 | 4.1 | 3.2 | 2.5 | 2.3 | 2.4 | 2.0 | 2.2 | 2.6 | 2.7 | 3.3 | 2.5 | 2.6 | 2.9 | 3.9 | 3.5 | 4.3 | | | | | | |

STATUS FLAG CODES

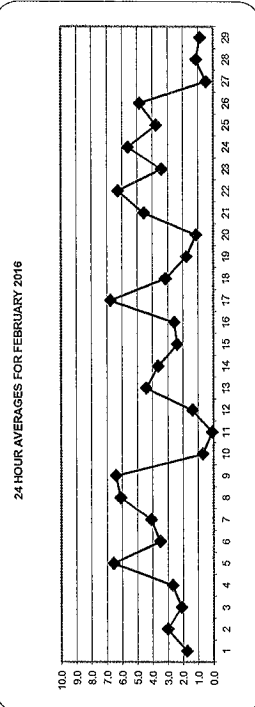
- C - MONTHLY CALIBRATION
- CI - REPEAT CALIBRATION
- Y - MAINTENANCE
- S - DAILY ZERO/SPAN CHECK
- S1 - REPEAT ZERO/SPAN CHECK
- Q - QUALITY ASSURANCE
- R - RECOVERY
- X - MACHINE FAILURE
- G - OUTFOR REPAIR
- P - POWER FAILURE

OBJECTIVE LIMIT:

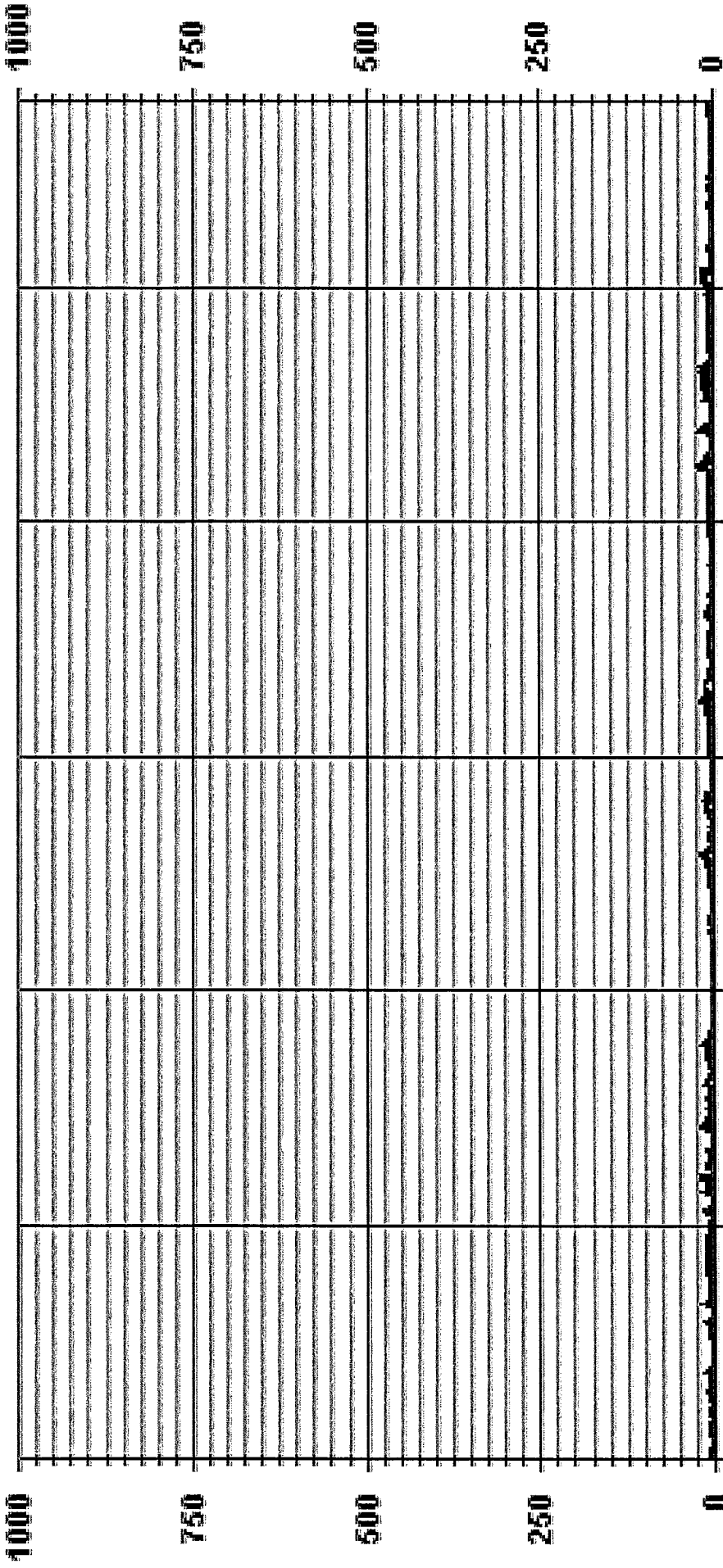
ALBERTA ENVIRONMENT: 1-HR: 159 PPB

MONTHLY SUMMARY

| | |
|------------------------------|----------|
| NUMBER OF 1-HR EXCEEDENCES | 0 |
| NUMBER OF NON-ZERO READINGS: | 559 |
| MINIMUM 1-HR AVERAGE | 0.0 PPB |
| MAXIMUM 1-HR AVERAGE | 19.9 PPB |
| MAXIMUM 24-HR AVERAGE | 6.8 PPB |
| 12S CALIBRATION TIME: | 30 HRS |
| MONTHLY CALIBRATION TIME: | 5 HRS |
| STANDARD DEVIATION: | 3.49 |
| OPERATIONAL TIME: | 696 HRS |
| AMD OPERATION UPTIME: | 100.0 % |
| MONTHLY AVERAGE: | 3.3 PPB |
| ON DAY(S) | 7 |
| ON DAY(S) | 17 |
| VARIOUS | |



01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA30 NO2_ PPB



NITROGEN DIOXIDE MAX instantaneous maximum in ppb

| DAY | 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 | 24:00 | | | |
|------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-----|----|
| HR | 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 | 24:59 | RODS | | | |
| 1 | 1.1 | 1.7 | 2.3 | 2.8 | 2.8 | 5.2 | 5.2 | 7.6 | 7.1 | 1.1 | 0.6 | 3.4 | 1.1 | 20.5 | 2.3 | 2.3 | 3.4 | 3.5 | \$ | 6.5 | 2.4 | 1.8 | 1.2 | 1.2 | 1.2 | 20.5 | 3.5 | 24 |
| 2 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.2 | 1.8 | 7.1 | 7.1 | 2.9 | 7.1 | 8.9 | 8.3 | 6.5 | 4.1 | 5.3 | \$ | 6.7 | 3.8 | 6.2 | 8.6 | 10.3 | 8.6 | 6.1 | 10.3 | 5.2 | 24 | |
| 3 | 7.9 | 0.9 | 0.9 | 0.0 | 10.9 | 2.6 | 0.3 | 6.7 | 2.7 | 2.6 | 0.9 | 1.5 | 1.5 | 0.3 | 0.0 | \$ | 9.1 | 6.2 | 5.0 | 4.4 | 5.0 | 5.6 | 6.2 | 12.1 | 12.1 | 4.1 | 24 | |
| 4 | 4.4 | 5.0 | 3.2 | 0.4 | 1.0 | 1.0 | 3.3 | 22.1 | 6.2 | 2.1 | 4.4 | 2.1 | 4.4 | 2.1 | 1.5 | \$ | 6.4 | 5.3 | 2.9 | 2.4 | 2.4 | 3.5 | 7.1 | 22.1 | 4.4 | 24 | | |
| 5 | 6.5 | 7.7 | 7.7 | 6.5 | 5.9 | 7.1 | 8.3 | 7.1 | 7.1 | 6.4 | 6.5 | 10.1 | 10.1 | \$ | 10.8 | 7.3 | 8.5 | 7.9 | 10.2 | 6.7 | 6.1 | 4.9 | 3.7 | 10.8 | 7.4 | 24 | | |
| 6 | 2.5 | 2.5 | 1.9 | 1.9 | 1.4 | 1.3 | 3.7 | 14.9 | 22.5 | 7.8 | 0.7 | 0.0 | \$ | 5.8 | 2.3 | 1.8 | 9.4 | 17.6 | 7.7 | 8.3 | 11.8 | 13.5 | 14.7 | 4.1 | 22.5 | 6.9 | 24 | |
| 7 | 19.4 | 25.8 | 20.0 | 10.0 | 0.0 | 10.6 | 15.3 | 13.0 | 14.1 | 14.1 | 8.3 | \$ | 9.5 | 8.2 | 13.6 | 0.7 | 6.5 | 1.3 | 1.2 | 1.2 | 0.0 | 0.7 | 0.7 | 1.8 | 25.8 | 8.5 | 24 | |
| 8 | 1.8 | 4.7 | 14.2 | 20.0 | 14.7 | 11.3 | 5.9 | 9.5 | 9.4 | 7.1 | \$ | 9.3 | 8.0 | 8.6 | 5.7 | 3.3 | 20.4 | 9.9 | 9.3 | 6.3 | 2.8 | 2.2 | 3.4 | 9.9 | 20.4 | 8.6 | 24 | |
| 9 | 11.6 | 12.2 | 9.9 | 8.1 | 5.7 | 5.1 | 3.9 | 2.8 | 2.2 | \$ | 7.6 | 4.6 | 5.2 | 5.8 | 5.2 | 8.1 | 9.3 | 6.4 | 5.8 | 7.0 | 8.7 | 15.8 | 15.8 | 14.1 | 15.8 | 7.9 | 24 | |
| 10 | 9.9 | 1.7 | 4.0 | 4.0 | 2.3 | 2.3 | 1.2 | 0.6 | \$ | 4.1 | 1.3 | 0.7 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 9.9 | 1.5 | 24 |
| 11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 3.0 | 0.7 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 24 | |
| 12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 2.5 | 1.4 | 0.8 | 1.4 | 9.0 | 7.2 | 9.0 | 7.8 | 6.6 | 6.6 | 0.2 | 0.8 | 3.1 | 2.5 | 0.2 | 0.8 | 0.8 | 9.0 | 2.6 | 24 | |
| 13 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | \$ | 3.7 | 1.9 | 2.5 | 2.5 | 1.9 | 3.6 | 4.8 | 5.4 | 6.4 | 5.4 | 7.2 | 7.8 | 7.2 | 10.2 | 18.3 | 18.3 | 10.4 | 18.3 | 5.4 | 24 | | |
| 14 | 12.5 | 6.6 | 6.0 | 2.5 | \$ | 7.6 | 4.6 | 5.8 | 5.8 | 4.6 | 7.6 | 2.3 | 1.2 | 2.9 | 1.2 | 1.2 | 3.4 | 3.4 | 8.4 | 8.4 | 8.7 | 8.8 | 10.0 | 12.5 | 5.3 | 24 | | |
| 15 | 11.7 | 10.5 | 14.6 | \$ | 12.3 | 10.6 | 4.0 | 1.2 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.6 | 0.6 | 0.5 | 14.6 | 3.0 | 24 |
| 16 | 1.7 | 4.1 | \$ | 4.5 | 4.0 | 4.0 | 1.6 | 1.6 | 2.8 | 1.6 | 3.3 | 2.2 | 2.8 | 1.6 | 2.2 | 2.8 | 2.2 | 2.8 | 3.3 | 3.9 | 3.9 | 4.0 | 5.1 | 7.5 | 3.2 | 24 | | |
| 17 | 8.0 | \$ | 9.4 | 9.3 | 11.1 | 16.4 | 17.0 | 13.5 | 7.6 | C | C | C | C | C | C | C | 6.4 | 4.6 | 3.4 | 10.6 | 10.6 | 1.7 | 0.0 | 0.0 | 17.0 | 8.1 | 24 | |
| 18 | \$ | 3.8 | 1.0 | 1.0 | 5.0 | 6.2 | 9.2 | 8.5 | 7.4 | 8.6 | 7.4 | 7.4 | 6.2 | 4.4 | 5.0 | 6.8 | 7.4 | 8.0 | 1.6 | 2.7 | 1.6 | 1.6 | 0.4 | \$ | 9.2 | 5.1 | 24 | |
| 19 | 4.4 | 3.8 | 16.2 | 6.2 | 3.3 | 2.1 | 2.7 | 0.4 | 1.0 | 1.6 | 1.0 | 5.0 | 5.0 | 6.2 | 7.4 | 1.0 | 0.0 | 1.6 | 1.6 | 1.0 | 1.0 | 1.0 | \$ | 3.7 | 16.2 | 3.4 | 24 | |
| 20 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 2.0 | 2.0 | 1.5 | 3.2 | 3.2 | \$ | 4.2 | 4.7 | 4.9 | 1.8 | 24 | |
| 21 | 5.3 | 4.7 | 4.2 | 4.2 | 6.5 | 6.5 | 7.7 | 8.8 | 6.5 | 7.1 | 12.4 | 3.6 | 5.9 | 5.3 | 4.2 | 4.7 | 4.7 | 7.1 | 3.6 | 3.0 | \$ | 7.0 | 5.2 | 7.0 | 12.4 | 5.9 | 24 | |
| 22 | 7.0 | 4.6 | 7.0 | 10.6 | 25.8 | 23.5 | 24.1 | 8.2 | 14.1 | 11.7 | 14.1 | 13.5 | 5.8 | 1.7 | 0.6 | 1.2 | 1.2 | 2.3 | 4.1 | \$ | 4.0 | 11.2 | 9.3 | 24.1 | 25.8 | 10.0 | 24 | |
| 23 | 26.3 | 4.0 | 4.6 | 8.2 | 0.0 | 1.2 | 2.3 | 3.5 | 1.2 | 0.6 | 1.1 | 1.7 | 2.3 | 5.2 | 2.8 | 17.0 | 10.5 | 11.2 | 12.9 | 8.1 | 2.3 | 21.1 | \$ | 24.4 | 26.3 | 7.5 | 24 | |
| 24 | 22.6 | 17.3 | 20.8 | 19.6 | 15.5 | 19.6 | 19.0 | 19.0 | 9.7 | 11.5 | 6.1 | 3.2 | 0.9 | 0.2 | 2.0 | 2.0 | 3.2 | 3.7 | 2.0 | 3.2 | 4.9 | \$ | 5.4 | 4.3 | 22.6 | 9.4 | 24 | |
| 25 | 4.3 | 4.3 | 3.7 | 3.7 | 4.2 | 3.7 | 4.3 | 4.3 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.3 | 5.4 | 4.8 | 1.9 | 2.5 | 2.5 | 4.2 | 7.2 | \$ | 8.9 | 8.3 | 4.7 | 8.9 | 4.6 | 24 |
| 26 | 5.9 | 5.9 | 7.7 | 10.7 | 13.0 | 16.5 | 14.2 | 13.0 | 17.7 | 6.5 | 4.7 | 1.8 | 0.7 | 0.7 | 9.4 | 0.7 | 1.3 | 0.7 | 0.7 | \$ | 8.4 | 5.4 | 4.8 | 1.4 | 17.7 | 6.6 | 24 | |
| 27 | 0.8 | 0.8 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.8 | 0.8 | 0.0 | 3.1 | \$ | 6.1 | 8.5 | 3.8 | 0.9 | 8.5 | 1.2 | 24 |
| 28 | 0.9 | 3.2 | 7.9 | 5.5 | 4.4 | 4.4 | 1.5 | 1.5 | 3.8 | 3.8 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 1.7 | 0.0 | 0.0 | 0.0 | 0.0 | 7.9 | 1.7 | 24 |
| 29 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 1.1 | 0.0 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 1.7 | \$ | 4.7 | 3.6 | 3.0 | 2.4 | 2.4 | 2.4 | 2.4 | 4.7 | 1.2 | 24 | |
| HOURLY MAX | 26.3 | 25.8 | 20.8 | 20.0 | 25.8 | 23.5 | 24.1 | 19.0 | 22.5 | 14.1 | 14.1 | 13.5 | 20.5 | 9.0 | 13.6 | 17.0 | 20.4 | 17.6 | 12.9 | 10.6 | 11.8 | 21.1 | 18.3 | 24.4 | | | | |
| HOURLY AVG | 6.4 | 5.0 | 6.1 | 5.1 | 5.5 | 6.1 | 5.9 | 6.0 | 6.4 | 4.4 | 3.9 | 3.7 | 4.3 | 3.4 | 3.7 | 3.4 | 4.6 | 4.8 | 3.8 | 4.2 | 4.4 | 5.7 | 5.1 | 6.0 | | | | |

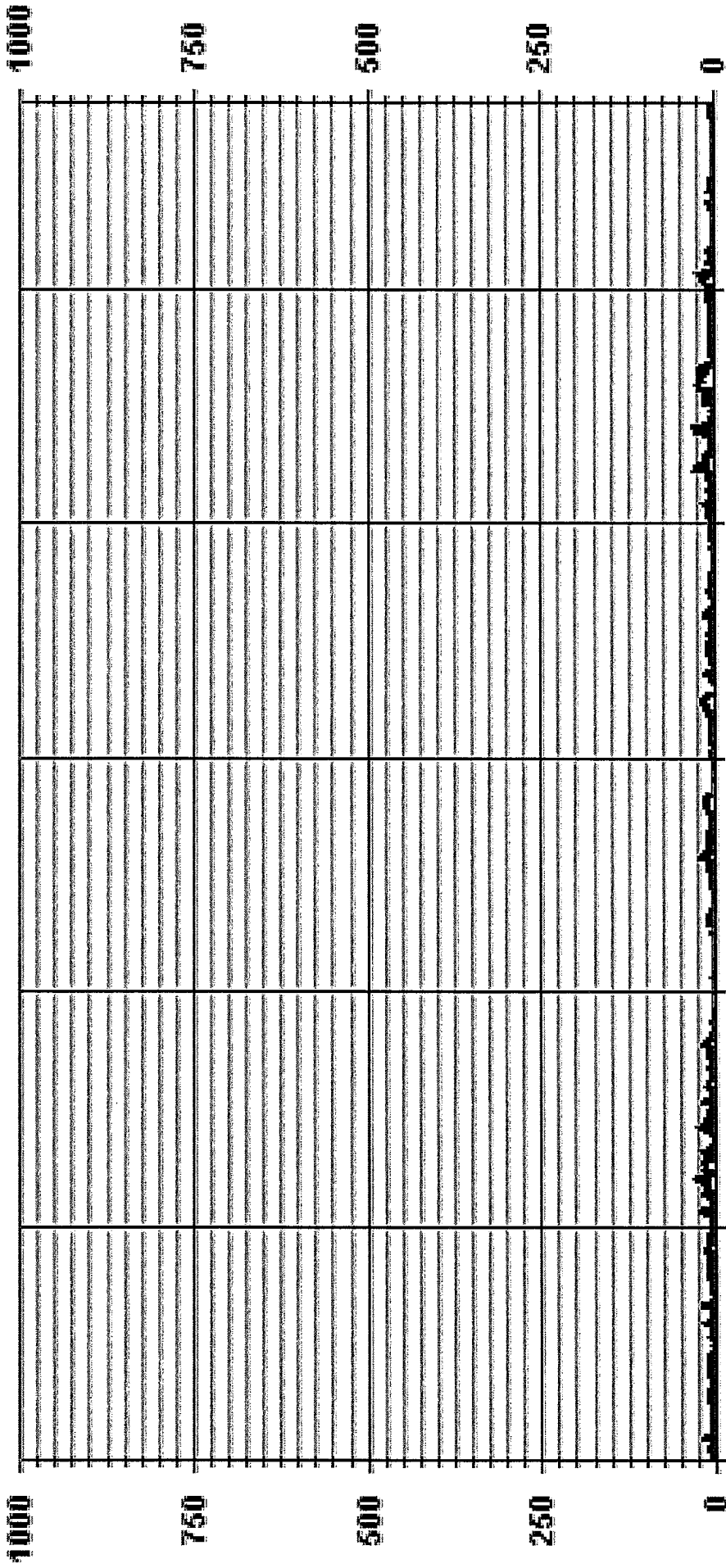
STATUS FLAG CODES

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

MONTHLY SUMMARY

| | | | | | | |
|------------------------------|------|-----|---------------------|------|-----------|-------------|
| NUMBER OF NON-ZERO READINGS: | 590 | PPB | @ HOUR(S) | 0 | ON DAY(S) | 23 |
| MAXIMUM INSTANTANEOUS VALUE: | 26.3 | PPB | | | | VAR-VARIOUS |
| IZS CALIBRATION TIME: | 30 | HRS | OPERATIONAL TIME: | 696 | HRS | |
| MONTHLY CALIBRATION TIME: | 7 | HRS | STANDARD DEVIATION: | 5.07 | | |

01 Hour Averages



— LICA30 NO2MAX PPB

LIC30
 NO2_ / WDR Joint Frequency Distribution (Percent)

February 2016

Distribution By % Of Samples

Logger Id : 30
 Site Name : LIC30
 Parameter : NO2
 Units : PPS

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|------|-------|------|------|------|------|------|------|-------|-------|------|------|-------|------|------|--------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 50.0 | 2.11 | 4.99 | 12.10 | 8.01 | 2.87 | 4.99 | 4.53 | 1.81 | 3.17 | 13.46 | 12.70 | 5.14 | 5.59 | 10.59 | 3.78 | 4.08 | 100.00 |
| < 110.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.11 | 4.99 | 12.10 | 8.01 | 2.87 | 4.99 | 4.53 | 1.81 | 3.17 | 13.46 | 12.70 | 5.14 | 5.59 | 10.59 | 3.78 | 4.08 | |

Calm : .00 %

Total # Operational Hours : 661

Distribution By Samples

| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 50.0 | 14 | 33 | 80 | 53 | 19 | 33 | 30 | 12 | 21 | 89 | 84 | 34 | 37 | 70 | 25 | 27 | 661 |
| < 110.0 | | | | | | | | | | | | | | | | | |
| < 210.0 | | | | | | | | | | | | | | | | | |
| >= 210.0 | | | | | | | | | | | | | | | | | |
| Totals | 14 | 33 | 80 | 53 | 19 | 33 | 30 | 12 | 21 | 89 | 84 | 34 | 37 | 70 | 25 | 27 | |


Calm : .00 %

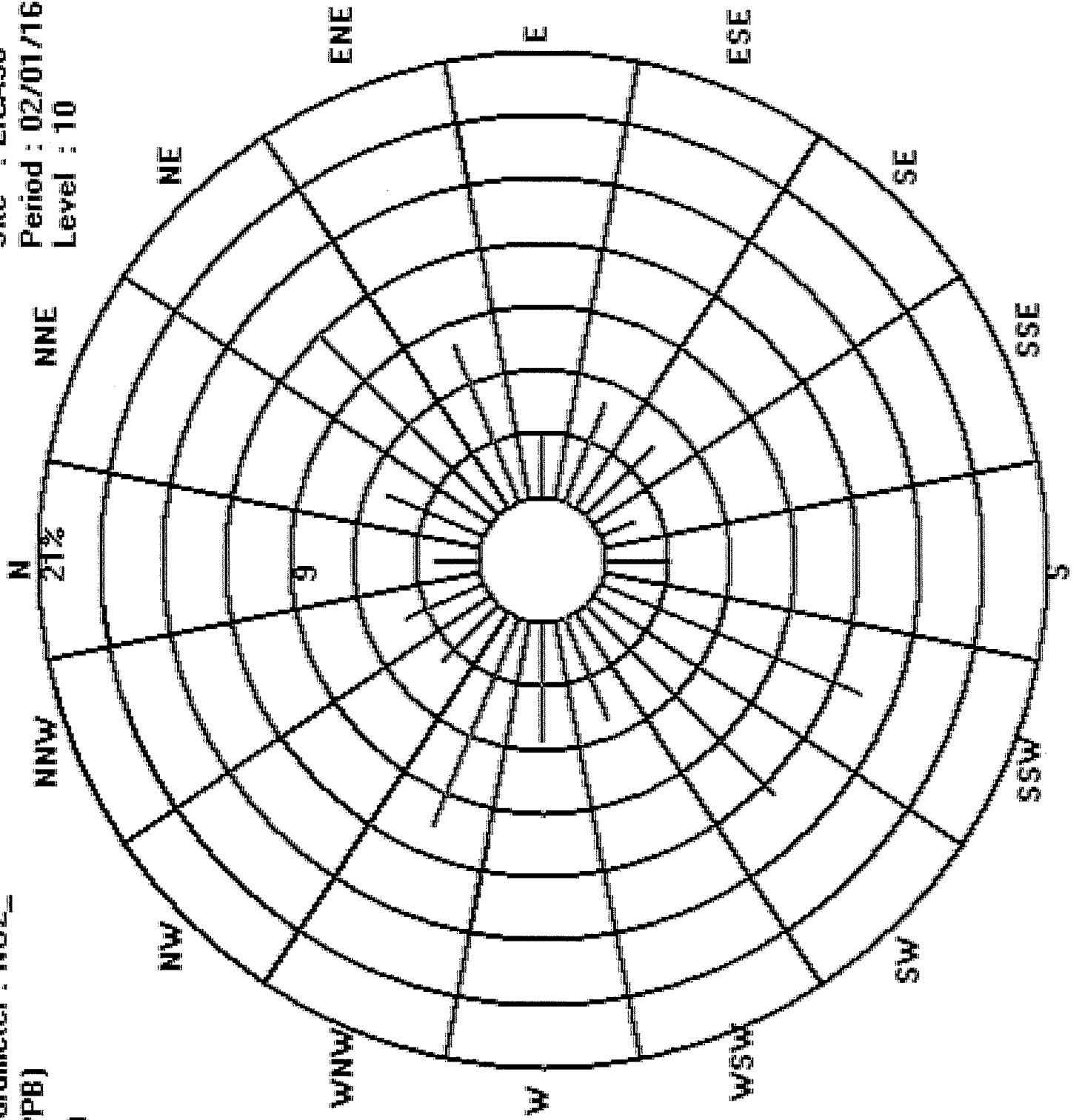
Total # Operational Hours : 661

Site : LICA30
Period : 02/01/16-02/29/16
Level : 10

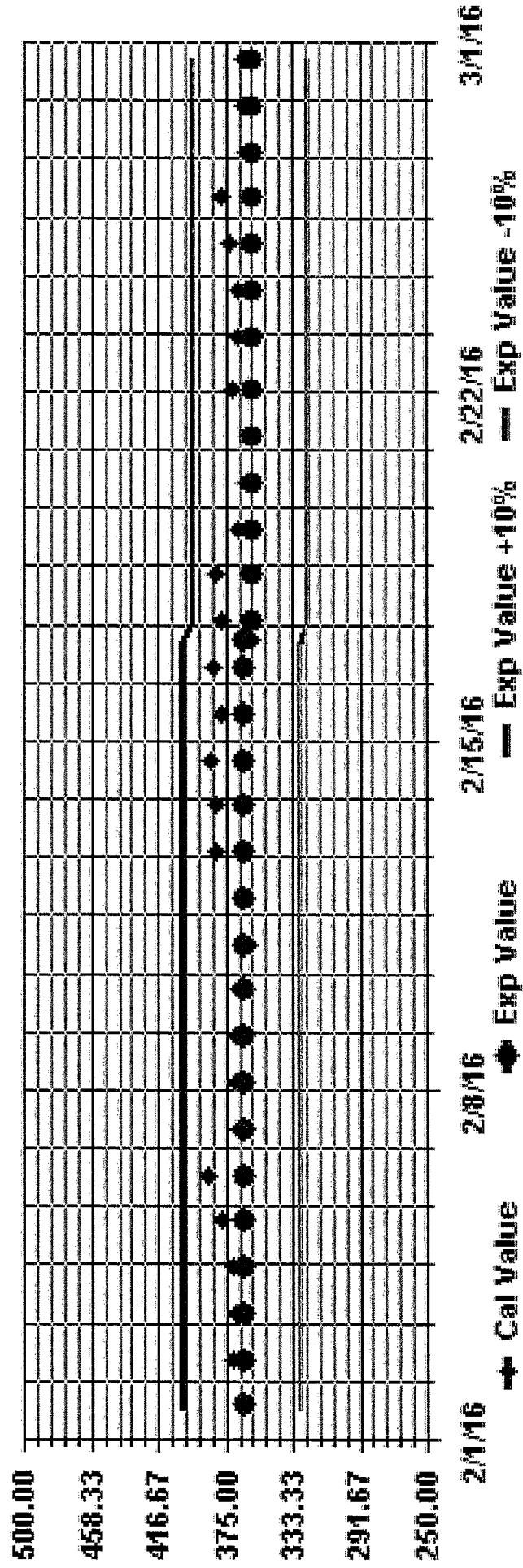
Logger : 30 Parameter : NO2_

Class Limits (PPB)

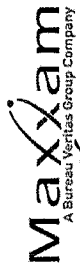
-  >= 210.0
-  < 210.0
-  < 110.0
-  < 50.0



Calibration Graph for Site: LICA30 Parameter: NO2_ Sequence: NO2 Phase: SPAN



WIND SPEED



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Maskwa Site - FEBRUARY 2016
JOB # 2833-2016-02-30-C

WIND SPEED (WS) hourly averages in km/hr

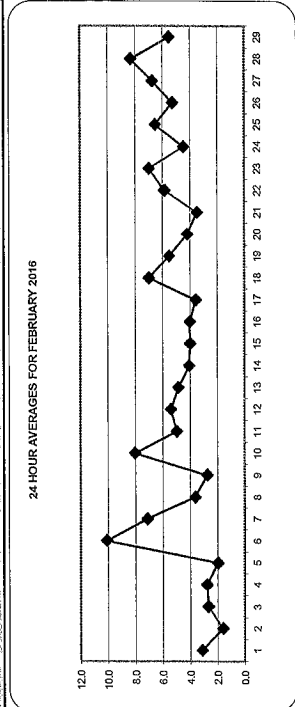
MIST

| DAY | 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 | 24:00 | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|----|
| HR | 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 | 24:00 | | |
| HR | 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 | 24:00 | | |
| 1 | 3.0 | 3.4 | 4.5 | 4.9 | 2.5 | 3.5 | 4.3 | 4.2 | 4.6 | 1.6 | 2.5 | 3.1 | 2.9 | 4.6 | 4.3 | 4.4 | 5.5 | 4.6 | 2.4 | 0.4 | 0.1 | 0.6 | 1.7 | 1.3 | 5.5 | 3.1 | |
| 2 | 1.9 | 2.5 | 2.1 | 1.4 | 1.3 | 1.0 | 0.6 | 0.6 | 0.3 | 1.3 | 1.1 | 0.9 | 1.7 | 2.2 | 2.0 | 2.8 | 2.7 | 3.0 | 0.9 | 0.9 | 2.3 | 1.8 | 1.8 | 1.4 | 3.0 | 1.6 | |
| 3 | 2.5 | 3.1 | 3.5 | 2.9 | 5.1 | 3.9 | 1.4 | 1.3 | 1.5 | 1.2 | 2.1 | 3.4 | 4.8 | 3.0 | 3.2 | 3.7 | 3.9 | 2.7 | 3.9 | 2.1 | 2.1 | 1.6 | 1.2 | 2.2 | 5.1 | 2.6 | |
| 4 | 4.1 | 2.0 | 1.0 | 2.0 | 2.1 | 2.8 | 2.1 | 1.9 | 0.8 | 3.6 | 2.6 | 3.1 | 3.0 | 3.4 | 3.9 | 1.7 | 1.9 | 3.7 | 3.3 | 2.1 | 3.3 | 3.3 | 2.3 | 3.9 | 5.0 | 2.7 | |
| 5 | 3.5 | 5.2 | 3.5 | 1.3 | 0.9 | 0.6 | 2.6 | 2.3 | 0.8 | 1.1 | 1.5 | 1.4 | 2.5 | 1.9 | 2.2 | 3.7 | 3.3 | 1.7 | 1.2 | 0.3 | 1.7 | 1.3 | 0.9 | 1.7 | 5.2 | 2.0 | |
| 6 | 1.2 | 1.3 | 1.6 | 1.0 | 0.8 | 1.6 | 1.6 | 3.3 | 5.1 | 12.9 | 13.9 | 14.2 | 16.0 | 19.7 | 17.1 | 16.9 | 16.0 | 15.6 | 14.9 | 13.1 | 12.7 | 13.3 | 11.4 | 19.7 | 10.1 | 24 | |
| 7 | 9.2 | 7.6 | 9.6 | 7.9 | 7.3 | 8.3 | 7.7 | 9.1 | 9.8 | 9.5 | 8.3 | 7.7 | 9.1 | 8.0 | 8.7 | 9.7 | 7.0 | 5.0 | 3.9 | 3.2 | 3.4 | 3.0 | 3.1 | 2.1 | 10.0 | 7.1 | |
| 8 | 3.1 | 4.5 | 5.6 | 3.9 | 3.9 | 5.6 | 3.6 | 2.6 | 2.9 | 4.4 | 1.6 | 6.6 | 4.3 | 4.5 | 3.8 | 3.4 | 2.9 | 4.3 | 2.5 | 1.9 | 1.5 | 2.1 | 3.5 | 3.3 | 3.4 | 6.6 | |
| 9 | 4.0 | 2.5 | 1.7 | 1.6 | 1.8 | 1.6 | 3.4 | 3.5 | 3.0 | 3.6 | 4.9 | 4.5 | 2.6 | 3.9 | 2.7 | 1.8 | 1.0 | 1.3 | 1.1 | 1.5 | 2.1 | 3.5 | 3.3 | 4.8 | 4.9 | 2.7 | |
| 10 | 5.1 | 6.0 | 11.6 | 10.0 | 6.1 | 14.0 | 11.2 | 8.8 | 7.8 | 7.7 | 5.7 | 7.7 | 8.2 | 10.0 | 10.9 | 8.4 | 7.8 | 8.3 | 7.9 | 5.6 | 6.1 | 5.8 | 5.9 | 5.7 | 14.0 | 8.0 | |
| 11 | 5.5 | 4.8 | 5.6 | 4.4 | 4.0 | 4.2 | 4.7 | 4.1 | 4.8 | 4.7 | 5.6 | 5.4 | 6.2 | 7.6 | 6.4 | 5.6 | 5.7 | 3.8 | 4.1 | 4.5 | 4.9 | 4.1 | 4.2 | 4.2 | 7.6 | 5.0 | |
| 12 | 4.2 | 3.9 | 3.0 | 1.9 | 2.4 | 3.3 | 3.8 | 3.6 | 4.0 | 5.5 | 6.3 | 6.7 | 7.1 | 5.9 | 6.1 | 5.8 | 7.9 | 7.8 | 7.3 | 6.5 | 7.1 | 6.2 | 6.5 | 6.2 | 7.9 | 5.4 | |
| 13 | 5.7 | 5.0 | 5.0 | 3.9 | 3.8 | 2.8 | 1.5 | 3.3 | 4.5 | 5.6 | 5.8 | 5.9 | 7.5 | 5.6 | 5.2 | 3.7 | 3.4 | 5.3 | 4.3 | 7.4 | 6.0 | 5.7 | 5.1 | 4.3 | 7.5 | 4.8 | |
| 14 | 5.5 | 3.3 | 2.1 | 1.1 | 2.6 | 2.7 | 2.6 | 3.0 | 2.7 | 3.2 | 2.4 | 5.3 | 6.6 | 8.2 | 7.6 | 6.9 | 5.6 | 2.9 | 3.6 | 3.5 | 4.5 | 4.2 | 3.6 | 3.3 | 8.2 | 4.0 | |
| 15 | 3.6 | 1.2 | 2.9 | 0.3 | 0.0 | 3.0 | 5.4 | 6.3 | 8.1 | 8.5 | 8.0 | 6.0 | 7.3 | 6.6 | 4.0 | 3.8 | 3.0 | 2.5 | 1.9 | 1.7 | 2.0 | 3.0 | 3.0 | 3.1 | 8.5 | 4.0 | |
| 16 | 3.6 | 3.4 | 5.3 | 3.7 | 4.5 | 3.6 | 3.6 | 3.8 | 3.7 | 4.4 | 4.0 | 4.8 | 4.0 | 4.2 | 4.4 | 3.2 | 2.7 | 2.3 | 2.5 | 6.0 | 7.9 | 5.1 | 3.6 | 1.4 | 7.9 | 4.0 | |
| 17 | 3.0 | 5.4 | 5.3 | 4.6 | 4.2 | 4.3 | 2.2 | 2.0 | 0.8 | 1.4 | 2.1 | 2.9 | 1.5 | 1.6 | 4.1 | 4.5 | 3.6 | 3.2 | 2.7 | 3.7 | 5.8 | 5.7 | 4.7 | 5.8 | 3.5 | 24 | |
| 18 | 7.9 | 8.1 | 8.3 | 8.1 | 8.8 | 9.1 | 8.4 | 9.0 | 7.5 | 8.6 | 8.2 | 9.3 | 9.0 | 7.9 | 7.7 | 7.1 | 6.5 | 4.7 | 3.5 | 2.9 | 2.4 | 3.3 | 3.7 | 9.3 | 7.0 | 24 | |
| 19 | 2.3 | 1.2 | 4.4 | 8.4 | 9.4 | 9.6 | 9.7 | 8.7 | 7.1 | 7.1 | 6.0 | 5.4 | 4.9 | 5.0 | 4.0 | 3.9 | 2.6 | 2.3 | 4.2 | 3.0 | 4.1 | 6.3 | 6.3 | 9.7 | 5.5 | 24 | |
| 20 | 7.1 | 4.9 | 3.5 | 4.2 | 3.4 | 3.6 | 2.3 | 1.8 | 4.7 | 5.9 | 3.5 | 3.2 | 0.5 | 2.0 | 5.9 | 6.4 | 5.2 | 5.5 | 3.9 | 4.3 | 4.6 | 4.5 | 4.5 | 7.1 | 4.2 | 24 | |
| 21 | 2.5 | 1.6 | 1.1 | 0.3 | 0.2 | 0.5 | 2.7 | 2.2 | 2.6 | 1.9 | 1.6 | 5.5 | 6.2 | 7.3 | 7.0 | 6.1 | 6.0 | 4.0 | 4.1 | 0.1 | 5.7 | 5.4 | 4.4 | 3.7 | 7.3 | 3.4 | |
| 22 | 2.2 | 2.5 | 3.1 | 3.9 | 4.9 | 3.8 | 3.6 | 4.4 | 5.1 | 6.8 | 6.6 | 7.2 | 8.2 | 8.0 | 7.2 | 7.2 | 3.9 | 4.7 | 4.5 | 8.7 | 10.9 | 9.5 | 6.2 | 10.9 | 5.8 | 24 | |
| 23 | 7.4 | 7.3 | 7.6 | 7.4 | 7.8 | 8.5 | 6.8 | 5.1 | 5.4 | 8.7 | 9.2 | 9.4 | 8.7 | 9.1 | 9.5 | 7.4 | 7.9 | 6.7 | 4.8 | 4.1 | 5.0 | 4.5 | 5.0 | 3.9 | 9.5 | 7.0 | |
| 24 | 4.8 | 4.0 | 4.6 | 4.6 | 2.9 | 1.8 | 1.8 | 2.5 | 3.0 | 3.2 | 4.9 | 4.9 | 5.4 | 3.9 | 5.6 | 7.5 | 6.2 | 6.0 | 3.7 | 4.4 | 5.5 | 5.8 | 4.2 | 5.3 | 7.5 | 4.4 | |
| 25 | 5.5 | 6.7 | 6.1 | 5.7 | 6.3 | 7.2 | 8.9 | 9.1 | 7.3 | 7.6 | 5.8 | 6.1 | 5.4 | 6.7 | 8.7 | 9.6 | 11.0 | 6.7 | 5.9 | 4.0 | 2.5 | 1.3 | 4.5 | 11.0 | 5.3 | 24 | |
| 26 | 3.4 | 4.4 | 6.3 | 5.5 | 6.6 | 6.0 | 5.8 | 6.7 | 6.1 | 5.4 | 6.7 | 8.7 | 9.6 | 11.0 | 10.4 | 11.0 | 9.6 | 7.6 | 6.0 | 4.6 | 3.5 | 3.1 | 2.5 | 2.8 | 3.6 | 11.7 | 24 |
| 27 | 5.9 | 6.7 | 8.1 | 8.6 | 7.1 | 5.2 | 5.2 | 5.2 | 6.5 | 11.3 | 11.4 | 11.7 | 10.4 | 11.0 | 11.0 | 9.6 | 7.6 | 6.0 | 4.6 | 3.5 | 3.7 | 3.1 | 2.5 | 2.8 | 3.6 | 11.7 | 24 |
| 28 | 3.9 | 3.9 | 2.3 | 2.8 | 1.9 | 3.6 | 6.7 | 12.1 | 14.2 | 13.1 | 16.1 | 14.5 | 12.4 | 12.7 | 13.7 | 11.3 | 9.5 | 7.5 | 8.6 | 5.9 | 5.1 | 5.7 | 4.0 | 16.1 | 8.3 | 24 | |
| 29 | 3.8 | 4.4 | 4.6 | 2.1 | 2.1 | 1.0 | 1.4 | 8.5 | 18.6 | 1.9 | 5.9 | 4.4 | 5.8 | 6.8 | 7.5 | 7.7 | 6.5 | 5.3 | 4.8 | 5.9 | 6.3 | 4.7 | 5.6 | 18.6 | 5.5 | 24 | |
| HOURLY MAX | 9.2 | 8.1 | 11.6 | 10.0 | 9.4 | 14.0 | 11.2 | 12.1 | 18.6 | 13.1 | 16.1 | 14.5 | 16.0 | 19.7 | 17.1 | 16.7 | 16.9 | 16.0 | 15.6 | 14.9 | 13.1 | 12.7 | 13.3 | 11.4 | 11.4 | 4.2 | |
| HOURLY AVG | 4.3 | 4.2 | 4.6 | 4.1 | 4.0 | 4.4 | 4.3 | 4.8 | 5.2 | 5.6 | 5.7 | 6.2 | 6.4 | 6.7 | 6.7 | 6.0 | 5.6 | 4.8 | 4.2 | 4.0 | 4.6 | 4.4 | 4.4 | 4.2 | 4.2 | 4.2 | |

STATUS FLAG CODES

| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | O | QUALITY ASSURANCE |
| CT | REPEAT CALIBRATION | R | RECOVERY |
| M | MAINTENANCE | X | MACHINE MAINTENANCE |
| S | DAILY ZERO/SPAN CHECK | G | OUT FOR REPAIR |
| ST | REPEAT ZERO/SPAN CHECK | P | POWER FAILURE |

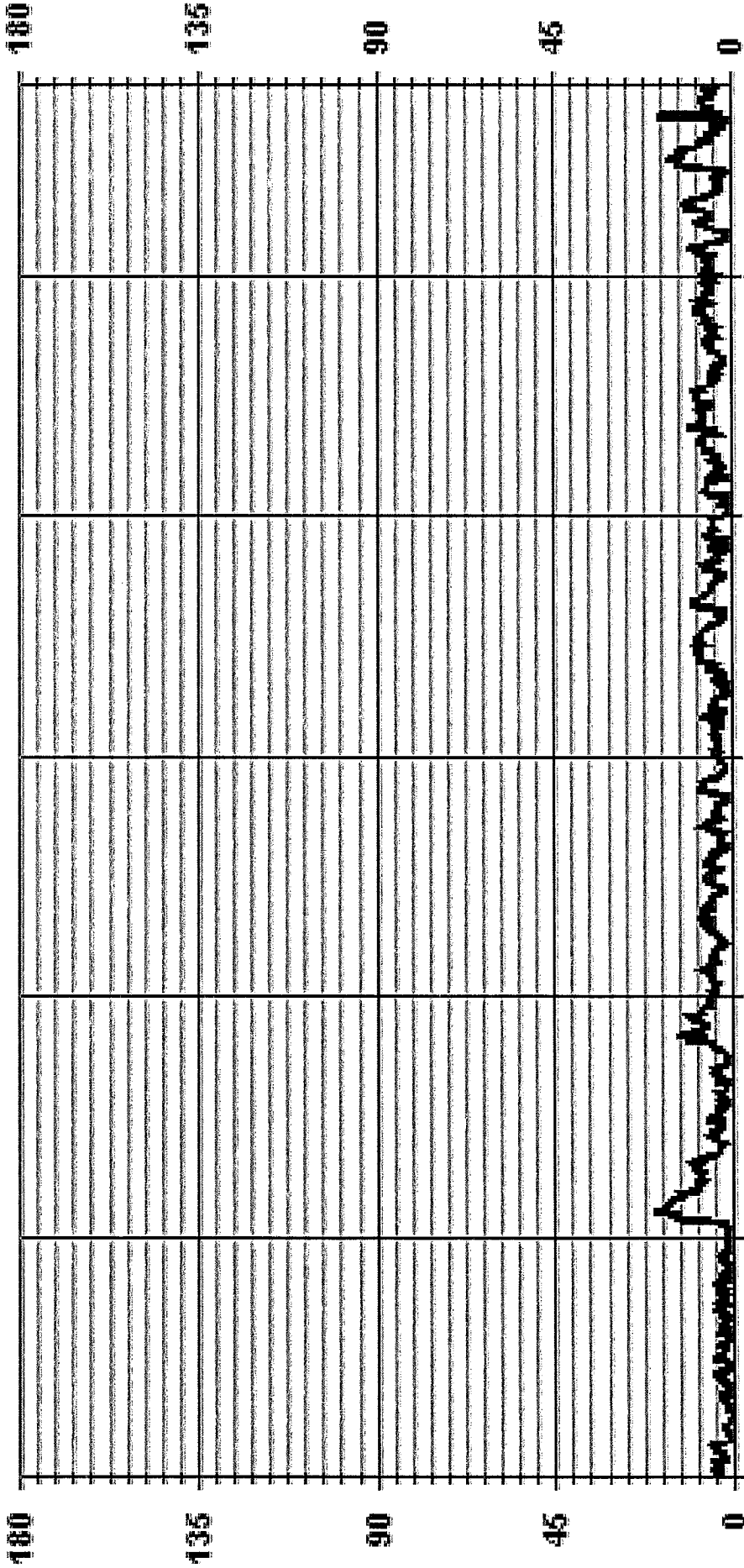
LAST CALIBRATION: March 4, 2014
DECLINATION: MAGNETIC DECLINATION 19 DEGREE EAST



MONTHLY SUMMARY

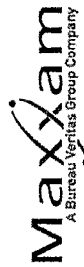
| | |
|------------------------------|----------|
| NUMBER OF NON-ZERO READINGS: | 695 |
| MINIMUM 1-HR AVERAGE: | 0.0 KPH |
| MAXIMUM 1-HR AVERAGE: | 19.7 KPH |
| MAXIMUM 24-HR AVERAGE: | 10.1 KPH |
| MONTHLY CALIBRATION TIME: | 0 HRS |
| STANDARD DEVIATION: | 3.07 |
| OPERATIONAL TIME: | 696 HRS |
| AMD OPERATION UPTIME: | 100.0 % |
| MONTHLY AVERAGE: | 5.0 KPH |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

-- LICA30 WSP KPH



VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

| DAY | 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 | 24:00 | DAILY MAX. | 24-HOUR AVG. | RDGS. |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------|--------------|-------|
| 1 | 12.8 | 13.3 | 13.5 | 14.1 | 18.1 | 16.3 | 20.1 | 16.6 | 14.1 | 13.9 | 14.6 | 17.0 | 17.9 | 13.9 | 14.6 | 12.0 | 11.8 | 12.0 | 7.3 | 16.3 | 10.4 | 22.7 | 16.3 | 15.7 | 22.7 | 14.8 | 24 | |
| 2 | 13.9 | 12.4 | 42.7 | 45.7 | 16.8 | 18.8 | 10.2 | 9.1 | 18.2 | 10.8 | 13.5 | 11.5 | 15.9 | 12.6 | 12.2 | 16.9 | 14.2 | 11.5 | 10.2 | 9.3 | 10.0 | 11.1 | 15.5 | 28.4 | 45.7 | 16.3 | 24 | |
| 3 | 12.2 | 16.3 | 14.6 | 13.7 | 18.5 | 17.3 | 13.7 | 11.7 | 10.8 | 12.6 | 13.0 | 14.1 | 18.1 | 13.3 | 17.4 | 13.0 | 10.0 | 9.5 | 10.8 | 10.2 | 20.7 | 19.6 | 24.0 | 26.0 | 15.0 | 24 | 24 | |
| 4 | 13.7 | 14.9 | 65.1 | 24.9 | 19.2 | 14.1 | 23.2 | 16.1 | 14.4 | 14.4 | 11.3 | 12.8 | 13.9 | 15.9 | 12.2 | 10.4 | 10.7 | 12.4 | 29.3 | 11.9 | 11.1 | 13.3 | 17.1 | 10.6 | 65.1 | 17.2 | 24 | |
| 5 | 16.8 | 11.3 | 12.0 | 34.4 | 14.6 | 42.7 | 13.3 | 15.2 | 18.6 | 10.4 | 19.9 | 12.6 | 12.4 | 12.8 | 11.3 | 11.7 | 13.2 | 5.6 | 5.2 | 10.2 | 11.1 | 11.7 | 14.3 | 10.8 | 42.7 | 14.7 | 24 | |
| 6 | 12.4 | 4.3 | 10.3 | 17.2 | 16.3 | 14.4 | 12.4 | 16.3 | 20.1 | 40.0 | 49.7 | 69.9 | 57.5 | 70.2 | 70.0 | 52.5 | 63.2 | 62.8 | 55.3 | 59.1 | 50.7 | 42.4 | 53.4 | 41.4 | 70.2 | 40.1 | 24 | |
| 7 | 35.0 | 29.3 | 36.1 | 24.7 | 23.3 | 29.7 | 25.5 | 24.9 | 31.5 | 36.1 | 30.4 | 31.2 | 36.9 | 32.8 | 32.8 | 28.4 | 18.3 | 13.3 | 13.0 | 15.9 | 13.2 | 10.2 | 10.2 | 36.9 | 25.4 | 24 | | |
| 8 | 7.1 | 10.0 | 12.4 | 10.3 | 13.0 | 14.6 | 10.8 | 10.0 | 10.8 | 10.4 | 11.3 | 16.3 | 14.1 | 14.9 | 12.8 | 13.9 | 12.4 | 10.0 | 10.8 | 11.1 | 12.4 | 8.0 | 10.0 | 10.6 | 16.3 | 11.6 | 24 | |
| 9 | 9.8 | 10.9 | 4.7 | 4.7 | 10.8 | 8.0 | 14.8 | 11.7 | 12.2 | 10.2 | 12.8 | 11.9 | 11.4 | 11.4 | 7.8 | 6.2 | 4.5 | 5.1 | 10.8 | 11.1 | 11.7 | 12.6 | 14.8 | 24.3 | 24.3 | 10.6 | 24 | |
| 10 | 22.1 | 21.1 | 41.7 | 33.7 | 17.4 | 31.9 | 31.2 | 21.8 | 19.8 | 18.5 | 16.3 | 27.5 | 26.4 | 26.0 | 27.1 | 22.7 | 18.1 | 19.3 | 26.4 | 15.5 | 13.9 | 16.3 | 20.9 | 20.2 | 41.7 | 23.2 | 24 | |
| 11 | 15.5 | 13.7 | 14.1 | 14.4 | 14.0 | 13.0 | 14.8 | 15.0 | 14.1 | 14.8 | 16.0 | 13.9 | 16.6 | 14.4 | 14.4 | 17.4 | 15.7 | 12.4 | 17.2 | 14.1 | 13.5 | 28.9 | 13.5 | 13.9 | 28.9 | 15.2 | 24 | |
| 12 | 15.2 | 13.1 | 41.2 | 15.7 | 17.2 | 16.2 | 17.2 | 12.2 | 12.0 | 11.7 | 14.8 | 14.6 | 19.0 | 20.9 | 16.3 | 12.8 | 15.4 | 19.8 | 12.4 | 11.7 | 24.1 | 24.1 | 20.5 | 23.4 | 20.3 | 82.4 | 24 | |
| 13 | 18.8 | 14.8 | 14.4 | 13.3 | 15.0 | 15.7 | 12.2 | 12.0 | 11.7 | 14.8 | 14.6 | 19.0 | 20.9 | 16.3 | 12.8 | 15.4 | 19.8 | 12.4 | 11.7 | 24.1 | 24.1 | 14.4 | 14.4 | 13.5 | 14.1 | 12.8 | 24 | |
| 14 | 16.1 | 13.0 | 12.8 | 6.0 | 5.6 | 12.2 | 7.8 | 13.3 | 12.6 | 12.8 | 14.1 | 22.2 | 20.6 | 27.5 | 27.3 | 21.3 | 22.0 | 12.6 | 10.4 | 10.0 | 13.5 | 11.9 | 10.6 | 10.7 | 27.5 | 14.5 | 24 | |
| 15 | 10.7 | 10.6 | 14.1 | 16.1 | 10.6 | 15.5 | 15.0 | 16.0 | 21.7 | 23.6 | 20.5 | 19.4 | 19.4 | 19.0 | 12.8 | 13.1 | 12.2 | 11.5 | 11.3 | 10.0 | 11.1 | 13.3 | 12.4 | 12.6 | 23.6 | 14.7 | 24 | |
| 16 | 12.6 | 12.6 | 16.8 | 11.5 | 15.9 | 12.8 | 11.6 | 12.9 | 14.3 | 11.7 | 13.0 | 13.3 | 10.4 | 13.3 | 13.2 | 12.6 | 9.5 | 11.3 | 9.5 | 15.4 | 21.1 | 15.0 | 11.7 | 11.5 | 21.1 | 13.1 | 24 | |
| 17 | 13.7 | 17.5 | 13.5 | 14.6 | 11.5 | 12.4 | 15.0 | 11.3 | 9.2 | 10.1 | 9.1 | 8.9 | 10.4 | 11.3 | 13.0 | 11.3 | 8.7 | 10.4 | 11.1 | 13.9 | 21.0 | 16.3 | 15.7 | 23.1 | 23.1 | 13.0 | 24 | |
| 18 | 29.3 | 28.4 | 28.6 | 33.7 | 37.2 | 30.8 | 33.1 | 35.3 | 27.3 | 30.6 | 25.3 | 26.8 | 27.9 | 25.3 | 28.8 | 24.0 | 27.3 | 17.9 | 14.0 | 12.2 | 10.0 | 10.0 | 11.1 | 8.7 | 37.2 | 24.3 | 24 | |
| 19 | 10.4 | 12.2 | 15.7 | 37.7 | 36.6 | 33.9 | 38.3 | 35.6 | 25.3 | 23.1 | 21.5 | 19.2 | 19.6 | 17.6 | 21.8 | 17.2 | 12.6 | 18.4 | 12.8 | 14.4 | 12.8 | 12.4 | 14.4 | 19.0 | 38.3 | 20.9 | 24 | |
| 20 | 22.0 | 26.2 | 15.7 | 14.8 | 15.5 | 15.7 | 16.1 | 18.3 | 25.1 | 18.8 | 17.4 | 15.5 | 17.0 | 16.8 | 14.2 | 16.9 | 11.1 | 12.6 | 9.3 | 10.0 | 11.5 | 12.2 | 11.5 | 12.4 | 26.2 | 15.7 | 24 | |
| 21 | 21.0 | 10.6 | 19.9 | 8.9 | 16.1 | 18.1 | 10.4 | 10.0 | 8.4 | 11.8 | 9.7 | 13.0 | 14.8 | 17.9 | 17.4 | 14.8 | 16.5 | 8.7 | 9.7 | 9.4 | 14.1 | 11.5 | 10.6 | 9.7 | 21.0 | 13.0 | 24 | |
| 22 | 10.2 | 14.3 | 18.3 | 14.2 | 20.3 | 17.2 | 18.1 | 21.1 | 20.1 | 24.4 | 21.1 | 21.4 | 22.5 | 20.9 | 23.3 | 25.5 | 33.9 | 17.2 | 15.4 | 19.4 | 33.4 | 35.6 | 32.8 | 21.6 | 35.6 | 21.8 | 24 | |
| 23 | 25.1 | 21.8 | 26.2 | 23.6 | 25.8 | 35.6 | 27.7 | 19.0 | 20.4 | 27.7 | 32.1 | 28.6 | 29.9 | 33.0 | 29.7 | 29.0 | 28.8 | 21.6 | 19.0 | 16.1 | 19.5 | 17.5 | 22.7 | 16.3 | 35.6 | 24.9 | 24 | |
| 24 | 17.2 | 14.3 | 16.1 | 20.3 | 14.9 | 18.0 | 10.6 | 12.4 | 12.8 | 13.9 | 11.3 | 14.6 | 15.0 | 16.0 | 15.3 | 19.0 | 16.3 | 13.2 | 8.4 | 9.7 | 10.4 | 15.0 | 11.3 | 12.9 | 20.3 | 14.1 | 24 | |
| 25 | 14.1 | 15.2 | 13.0 | 14.3 | 17.9 | 19.8 | 22.0 | 19.4 | 18.4 | 22.0 | 20.7 | 15.7 | 24.2 | 24.6 | 21.6 | 26.0 | 31.4 | 15.0 | 13.2 | 14.6 | 14.9 | 14.9 | 13.0 | 12.2 | 31.4 | 18.3 | 24 | |
| 26 | 9.1 | 11.9 | 12.8 | 13.3 | 20.7 | 15.0 | 16.5 | 14.6 | 17.0 | 19.4 | 24.4 | 24.0 | 32.1 | 33.2 | 31.6 | 22.7 | 20.7 | 17.0 | 11.5 | 9.1 | 4.9 | 4.5 | 11.1 | 11.7 | 33.2 | 17.0 | 24 | |
| 27 | 16.5 | 20.1 | 22.8 | 21.4 | 20.1 | 15.2 | 12.8 | 13.9 | 17.4 | 26.4 | 26.2 | 25.8 | 26.1 | 24.0 | 19.0 | 16.3 | 17.4 | 14.3 | 12.6 | 15.7 | 14.8 | 15.2 | 14.1 | 18.3 | 26.4 | 18.6 | 24 | |
| 28 | 14.6 | 16.6 | 11.5 | 13.8 | 13.1 | 16.8 | 27.1 | 37.8 | 42.6 | 35.0 | 38.5 | 39.2 | 29.3 | 29.7 | 30.6 | 29.7 | 28.2 | 25.2 | 26.7 | 23.2 | 20.1 | 18.6 | 20.5 | 29.5 | 42.6 | 25.7 | 24 | |
| 29 | 38.1 | 51.0 | 17.0 | 51.6 | 26.0 | 27.3 | 45.5 | 56.8 | 34.6 | 86.0 | 14.8 | 14.1 | 15.0 | 15.9 | 17.5 | 20.4 | 19.4 | 15.7 | 13.3 | 12.8 | 12.8 | 17.7 | 12.2 | 13.3 | 86.0 | 27.0 | 24 | |
| HOURLY MAX | 38.1 | 51.0 | 65.1 | 51.6 | 37.2 | 42.7 | 45.5 | 82.4 | 42.6 | 86.0 | 49.7 | 69.9 | 57.5 | 70.2 | 70.0 | 52.5 | 63.2 | 62.8 | 55.3 | 59.1 | 50.7 | 42.4 | 53.4 | 41.4 | 86.0 | 41.4 | | |
| HOURLY AVG | 16.8 | 16.6 | 20.6 | 20.1 | 18.0 | 19.6 | 18.9 | 21.1 | 18.8 | 21.3 | 19.6 | 20.6 | 21.1 | 21.5 | 20.9 | 19.5 | 19.4 | 15.9 | 15.2 | 15.1 | 15.9 | 16.5 | 16.6 | 16.9 | 16.9 | 16.9 | | |

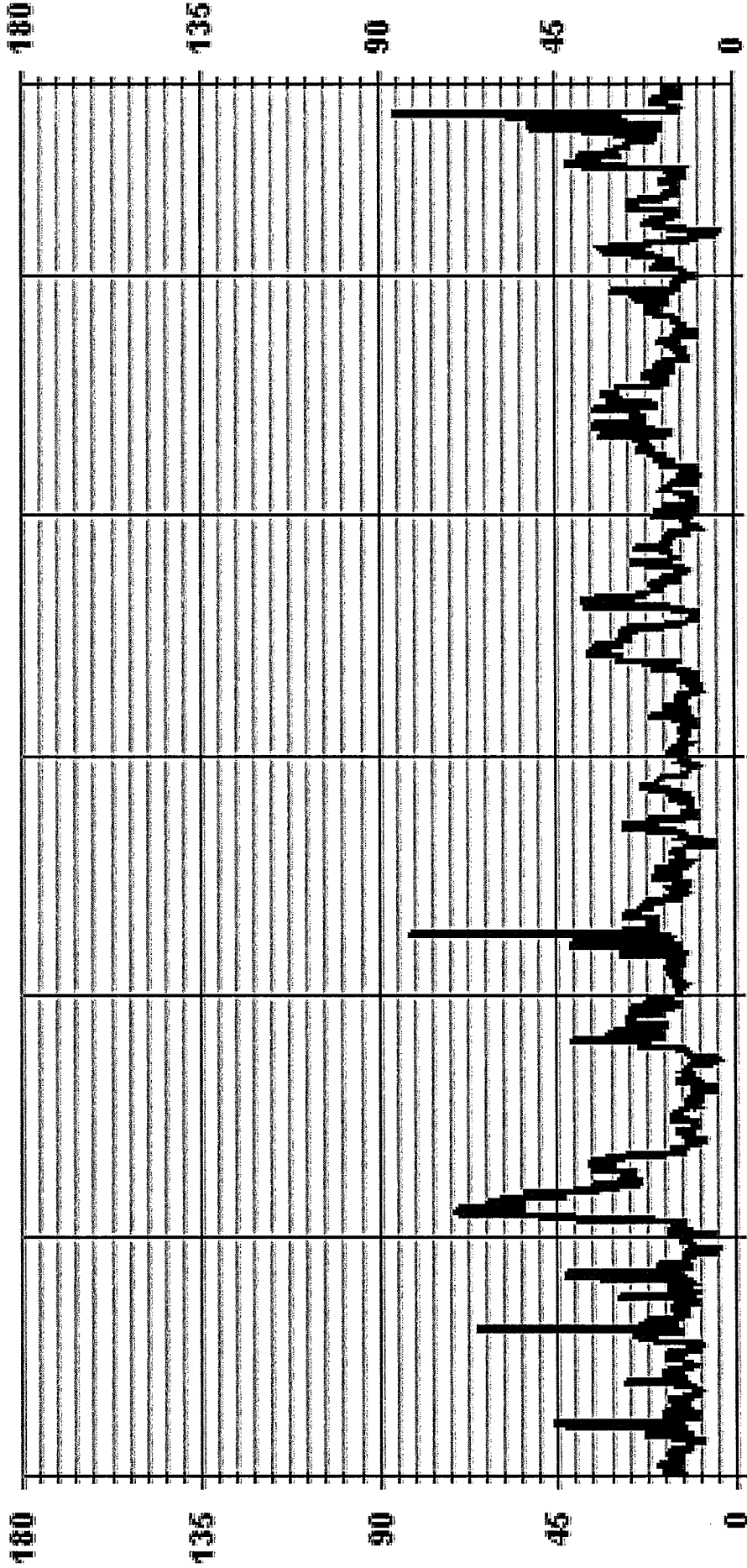
STATUS FLAG CODES

| | | | |
|----|------------------------|---|--------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION | R | RECOVERY |
| V | MAINTENANCE | X | MACHINE W/ALERTING |
| S | DAILY ZERO/SPAN CHECK | G | OUT-OF-REPAIR |
| SL | REPEAT ZERO/SPAN CHECK | P | POWER FAILURE |

MONTHLY SUMMARY

| | | | | | | | |
|------------------------------|------|-----|-----------|---|-----------|-------------|-----|
| MAXIMUM INSTANTANEOUS VALUE: | 86.0 | KPH | @ HOUR(S) | 9 | ON DAY(S) | 29 | |
| OPERATIONAL TIME: | | | | | | 696 | HRS |
| | | | | | | VAR-VARIOUS | |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA30 WSMAX KPH

LICA30
WSP / WDR Joint Frequency Distribution (Percent)
February 2016

Distribution By % Of Samples

Logger Id : 30
Site Name : LICA30
Parameter : WSP
Units : KPH
Wind Parameter : WDR
Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | |
|---------|-----------|------|-------|------|------|------|------|------|------|-------|-------|------|------|-------|------|------|-------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 6.0 | 1.58 | 2.72 | 7.04 | 7.04 | 1.72 | 2.58 | 3.73 | 2.01 | 3.16 | 10.34 | 10.48 | 4.88 | 4.45 | 2.58 | 2.44 | 2.87 | 69.68 |
| < 12.0 | .43 | 1.29 | 4.45 | .86 | 1.14 | 2.29 | .86 | .00 | .14 | 3.73 | 2.01 | .14 | 1.00 | 6.60 | .57 | 1.14 | 26.72 |
| < 20.0 | .00 | 1.29 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .14 | .00 | .00 | 1.14 | .86 | .00 | 3.44 |
| < 29.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 39.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 39.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.01 | 5.31 | 11.49 | 7.90 | 2.87 | 4.88 | 4.59 | 2.01 | 3.30 | 14.08 | 12.64 | 5.02 | 5.45 | 10.34 | 3.87 | 4.02 | |

Calm : .14 %

Total # Operational Hours : 696

Distribution By Samples

| Limit | Direction | | | | | | | | | | | | | | | | |
|---------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 6.0 | 11 | 19 | 49 | 49 | 12 | 18 | 26 | 14 | 22 | 72 | 73 | 34 | 31 | 18 | 17 | 20 | 485 |
| < 12.0 | 3 | 9 | 31 | 6 | 8 | 16 | 6 | | 1 | 26 | 14 | 1 | 7 | 46 | 4 | 8 | 186 |
| < 20.0 | | | | | | | | | | | | | | 8 | 6 | | 24 |
| < 29.0 | | | | | | | | | | | | | | | | | |
| < 39.0 | | | | | | | | | | | | | | | | | |
| >= 39.0 | | | | | | | | | | | | | | | | | |
| Totals | 14 | 37 | 80 | 55 | 20 | 34 | 32 | 14 | 23 | 98 | 88 | 35 | 38 | 72 | 27 | 28 | |

Calm : .14 %

Total # Operational Hours : 696

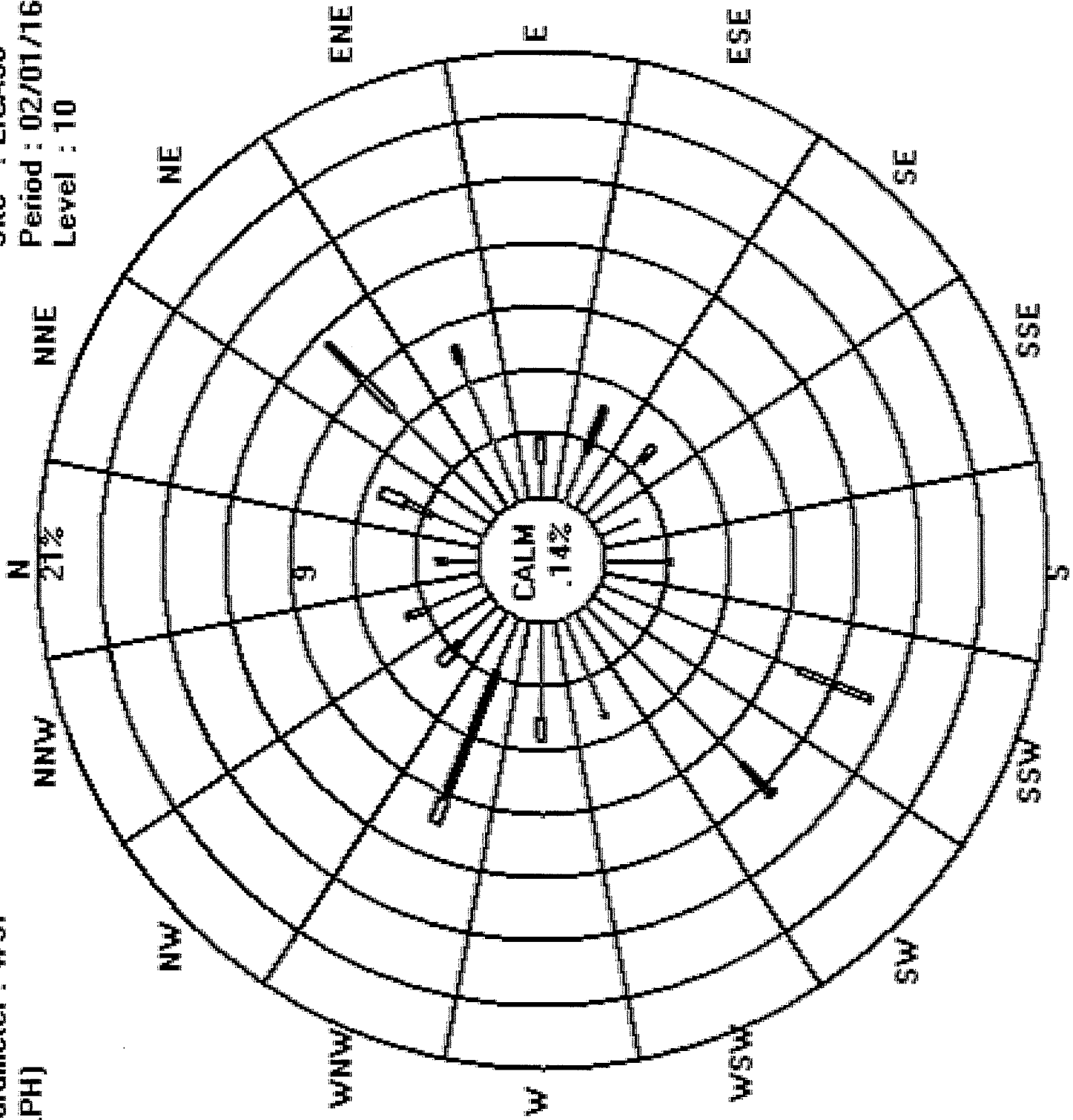
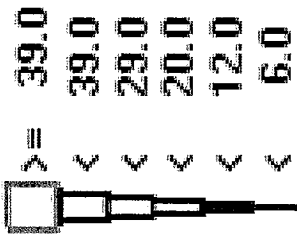
Logger : 30 Parameter : WSP

Site : LICA30

Period : 02/01/16-02/29/16

Level : 10

Class Limits (KPH)



WIND DIRECTION



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
 Maskwa Site - FEBRUARY 2016
 JOB # 2833-2016-02-30-C

WIND DIRECTION (WD) hourly averages

MST

| DAY | 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 | 24:00 |
|-----|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | N | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW |
| 2 | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| 3 | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW |
| 4 | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW |
| 5 | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW |
| 6 | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE |
| 7 | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW |
| 8 | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW |
| 9 | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW |
| 10 | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW |
| 11 | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE |
| 12 | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE |
| 13 | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE | SE |
| 14 | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW |
| 15 | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW |
| 16 | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 17 | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 18 | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E |
| 19 | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| 20 | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| 21 | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW |
| 22 | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW |
| 23 | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW |
| 24 | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW |
| 25 | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW |
| 26 | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW |
| 27 | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE |
| 28 | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW |
| 29 | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE |

24-HOUR AVG
 QUADRANT

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 24:00

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 24:59

RDGS

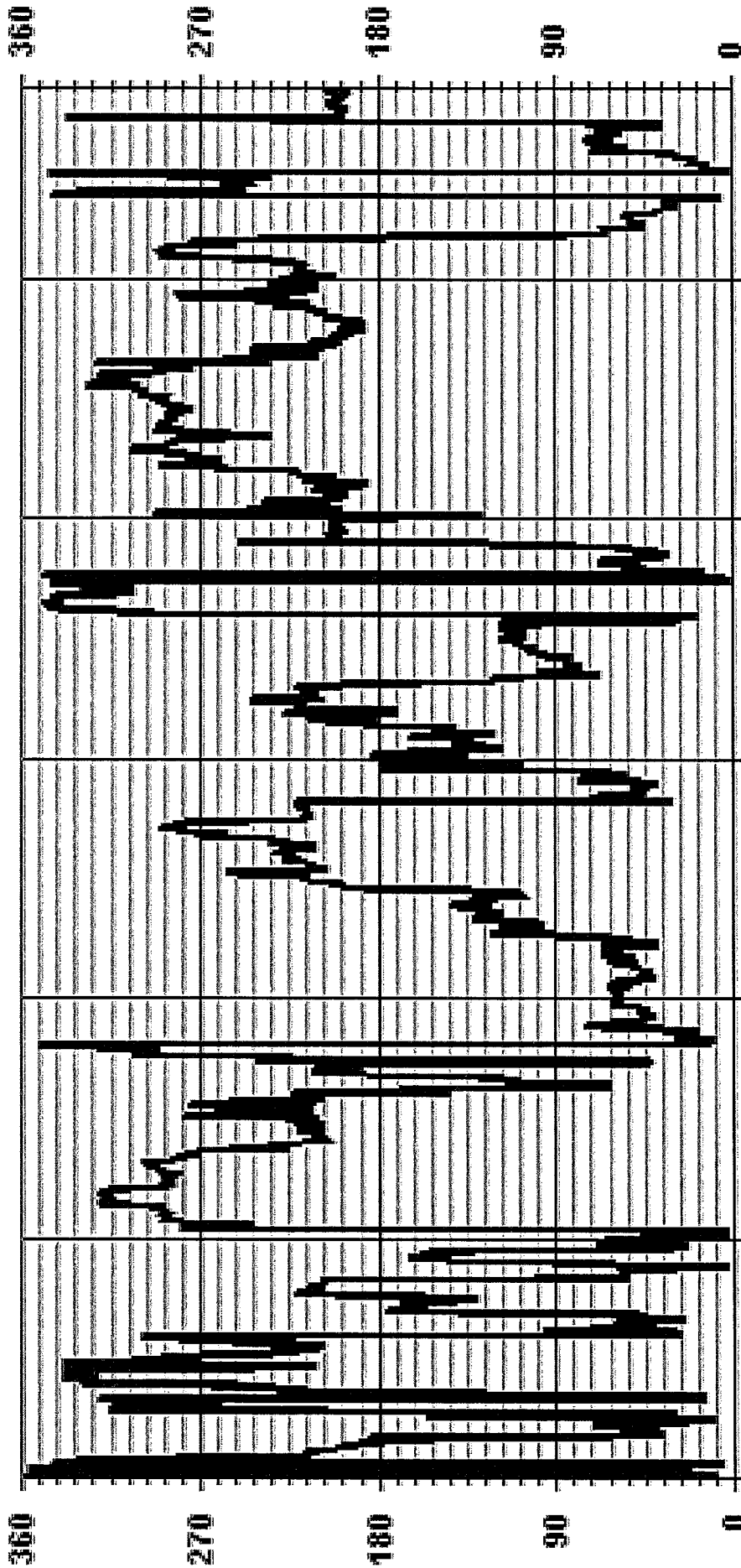
STATUS FLAG CODES

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

LAST CALIBRATION: March 4, 2014
 DECLINATION: MAGNETIC DECLINATION 19 DEGREE EAST

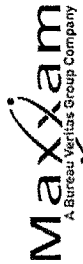
MONTHLY CALIBRATION TIME: 0 HRS
 STANDARD DEVIATION: 97.99
 MONTHLY AVERAGE: W
 OPERATIONAL TIME: 696 HRS
 AMD OPERATION UPTIME: 100.0 %

01 Hour Averages



— LICA30 WDR DEG

STANDARD DEVIATION WIND DIRECTION



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
 Maskwa Site - FEBRUARY 2016
 JOB # 2833-2016-02-30-C

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST

| DAY | 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 | 24:00 |
|-----|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 30 | 32 | 21 | 17 | 31 | 36 | 37 | 33 | 29 | 56 | 49 | 44 | 47 | 30 | 34 | 22 | 19 | 17 | 18 | 55 | 53 | 51 | 27 | 41 | |
| 2 | 40 | 27 | 24 | 51 | 30 | 53 | 47 | 47 | 54 | 33 | 55 | 64 | 45 | 33 | 45 | 35 | 36 | 37 | 26 | 38 | 20 | 28 | 30 | 36 | |
| 3 | 36 | 32 | 38 | 40 | 31 | 37 | 40 | 46 | 48 | 58 | 48 | 38 | 28 | 40 | 42 | 39 | 30 | 23 | 17 | 54 | 25 | 31 | 42 | 27 | |
| 4 | 19 | 30 | 42 | 27 | 25 | 17 | 35 | 36 | 48 | 16 | 30 | 35 | 27 | 42 | 30 | 56 | 44 | 25 | 33 | 32 | 30 | 37 | 31 | 15 | |
| 5 | 18 | 12 | 16 | 44 | 35 | 64 | 20 | 35 | 62 | 37 | 39 | 43 | 38 | 47 | 38 | 37 | 31 | 40 | 37 | 80 | 29 | 39 | 52 | 22 | |
| 6 | 59 | 36 | 35 | 60 | 50 | 48 | 26 | 29 | 25 | 24 | 27 | 31 | 28 | 27 | 28 | 25 | 28 | 31 | 33 | 35 | 34 | 31 | 36 | 37 | |
| 7 | 34 | 35 | 24 | 23 | 25 | 22 | 23 | 21 | 23 | 25 | 26 | 25 | 29 | 29 | 31 | 26 | 23 | 25 | 22 | 25 | 24 | 26 | 18 | 21 | |
| 8 | 12 | 13 | 13 | 15 | 20 | 14 | 24 | 28 | 21 | 16 | 48 | 19 | 32 | 35 | 31 | 94 | 22 | 13 | 20 | 34 | 35 | 20 | 28 | 22 | |
| 9 | 16 | 23 | 30 | 22 | 34 | 41 | 25 | 28 | 29 | 28 | 24 | 22 | 30 | 25 | 40 | 52 | 61 | 50 | 47 | 59 | 29 | 28 | 26 | 27 | |
| 10 | 34 | 32 | 20 | 21 | 22 | 14 | 18 | 16 | 16 | 18 | 25 | 25 | 24 | 21 | 23 | 20 | 18 | 22 | 22 | 20 | 21 | 23 | 26 | 26 | |
| 11 | 22 | 23 | 21 | 24 | 23 | 22 | 22 | 23 | 22 | 22 | 25 | 20 | 20 | 21 | 24 | 20 | 17 | 18 | 17 | 18 | 17 | 16 | 18 | 18 | |
| 12 | 23 | 17 | 19 | 21 | 29 | 17 | 23 | 36 | 28 | 27 | 27 | 28 | 26 | 27 | 24 | 29 | 26 | 28 | 27 | 30 | 27 | 25 | 25 | 25 | |
| 13 | 27 | 27 | 27 | 34 | 28 | 44 | 30 | 20 | 20 | 23 | 29 | 24 | 26 | 21 | 31 | 32 | 14 | 18 | 13 | 16 | 13 | 19 | 21 | 21 | |
| 14 | 17 | 27 | 24 | 43 | 10 | 22 | 17 | 24 | 25 | 30 | 36 | 32 | 32 | 25 | 25 | 25 | 27 | 26 | 19 | 18 | 15 | 14 | 13 | 16 | |
| 15 | 14 | 35 | 48 | 50 | 39 | 25 | 18 | 21 | 20 | 21 | 25 | 30 | 23 | 24 | 32 | 26 | 22 | 24 | 30 | 36 | 38 | 29 | 31 | 25 | |
| 16 | 28 | 30 | 26 | 28 | 37 | 31 | 30 | 27 | 33 | 32 | 31 | 32 | 34 | 29 | 31 | 39 | 34 | 35 | 43 | 19 | 17 | 23 | 27 | 38 | |
| 17 | 46 | 32 | 21 | 21 | 14 | 20 | 36 | 25 | 61 | 45 | 46 | 31 | 57 | 48 | 29 | 25 | 22 | 23 | 26 | 29 | 26 | 26 | 23 | 25 | |
| 18 | 25 | 27 | 28 | 27 | 28 | 29 | 30 | 27 | 26 | 27 | 25 | 26 | 29 | 28 | 30 | 27 | 28 | 26 | 27 | 22 | 29 | 28 | 16 | 15 | |
| 19 | 22 | 43 | 29 | 38 | 35 | 31 | 31 | 37 | 37 | 33 | 35 | 33 | 32 | 33 | 35 | 35 | 35 | 38 | 49 | 29 | 34 | 23 | 15 | 23 | |
| 20 | 21 | 25 | 25 | 25 | 21 | 24 | 31 | 27 | 14 | 24 | 42 | 47 | 70 | 58 | 24 | 21 | 18 | 18 | 22 | 18 | 18 | 19 | 18 | 19 | |
| 21 | 60 | 52 | 37 | 44 | 52 | 52 | 24 | 20 | 20 | 46 | 37 | 23 | 20 | 21 | 22 | 23 | 18 | 14 | 13 | 62 | 23 | 12 | 16 | 15 | |
| 22 | 16 | 25 | 29 | 24 | 25 | 30 | 26 | 26 | 27 | 26 | 32 | 31 | 30 | 25 | 28 | 31 | 31 | 31 | 22 | 30 | 29 | 23 | 21 | 25 | |
| 23 | 20 | 23 | 24 | 27 | 29 | 24 | 26 | 30 | 32 | 27 | 28 | 27 | 28 | 28 | 27 | 31 | 28 | 27 | 30 | 35 | 36 | 30 | 35 | 39 | |
| 24 | 32 | 29 | 23 | 23 | 32 | 43 | 36 | 31 | 29 | 30 | 24 | 29 | 32 | 47 | 31 | 20 | 21 | 13 | 15 | 12 | 11 | 18 | 16 | 16 | |
| 25 | 17 | 16 | 18 | 18 | 18 | 18 | 17 | 16 | 20 | 22 | 31 | 23 | 21 | 26 | 26 | 33 | 28 | 24 | 13 | 12 | 15 | 24 | 17 | 17 | |
| 26 | 19 | 19 | 12 | 15 | 15 | 15 | 17 | 15 | 20 | 27 | 35 | 33 | 33 | 26 | 22 | 31 | 26 | 28 | 31 | 46 | 23 | 32 | 45 | 18 | |
| 27 | 19 | 23 | 23 | 23 | 24 | 27 | 24 | 27 | 23 | 19 | 17 | 17 | 16 | 14 | 14 | 17 | 18 | 24 | 33 | 42 | 40 | 37 | 37 | 32 | |
| 28 | 35 | 31 | 43 | 37 | 31 | 35 | 24 | 19 | 20 | 19 | 18 | 21 | 21 | 17 | 17 | 22 | 26 | 22 | 21 | 22 | 22 | 22 | 24 | 21 | |
| 29 | 17 | 19 | 17 | 39 | 26 | 53 | 44 | 59 | 32 | 42 | 28 | 38 | 31 | 25 | 27 | 24 | 19 | 17 | 17 | 18 | 19 | 16 | 19 | 19 | |

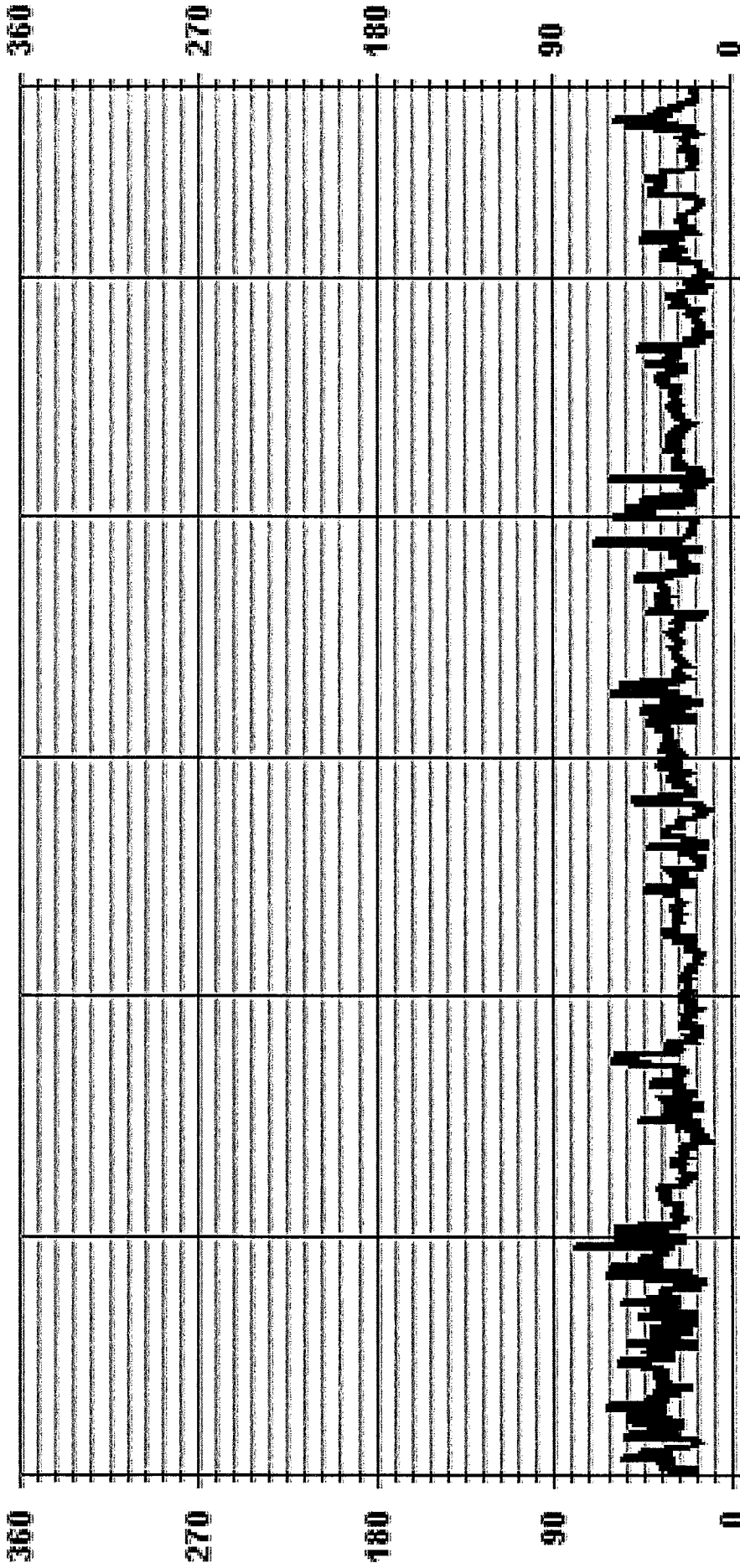
STATUS FLAG CODES

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

LAST CALIBRATION: March 4, 2014

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 696 HRS

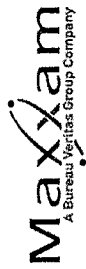
01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA30 STDWDIR DEG

RELATIVE HUMIDITY



RELATIVE HUMIDITY (RH) hourly averages in %

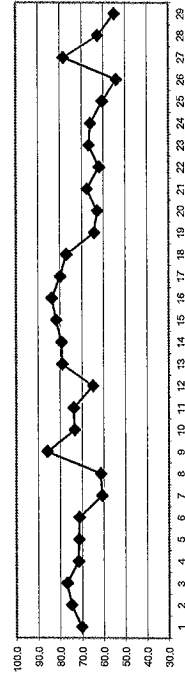
MST

| DAY | HOUR | | | | | | | | | | | | | | | | | | | | | | | | 24-HOUR AVG. | RDGS. | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------|-------|----|
| | 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 | | | |
| 1 | 72 | 71 | 72 | 73 | 73 | 70 | 70 | 68 | 68 | 65 | 65 | 64 | 63 | 63 | 64 | 67 | 70 | 75 | 79 | 77 | 76 | 75 | 74 | 79 | 70.3 | 24 | |
| 2 | 75 | 76 | 76 | 76 | 77 | 78 | 79 | 78 | 73 | 71 | 71 | 66 | 67 | 64 | 61 | 68 | 72 | 75 | 79 | 82 | 83 | 81 | 83 | 83 | 83 | 75.0 | 24 |
| 3 | 83 | 82 | 80 | 78 | 77 | 78 | 79 | 80 | 78 | 74 | 74 | 69 | 66 | 68 | 65 | 70 | 74 | 80 | 81 | 81 | 82 | 81 | 81 | 83 | 83 | 76.9 | 24 |
| 4 | 79 | 77 | 75 | 74 | 74 | 74 | 74 | 72 | 72 | 73 | 73 | 72 | 69 | 61 | 58 | 61 | 67 | 73 | 74 | 74 | 74 | 74 | 76 | 79 | 71.8 | 24 | |
| 5 | 80 | 81 | 80 | 77 | 77 | 78 | 78 | 78 | 75 | 72 | 72 | 65 | 60 | 55 | 56 | 59 | 64 | 73 | 76 | 75 | 75 | 75 | 75 | 81 | 71.5 | 24 | |
| 6 | 75 | 78 | 78 | 80 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 71.4 | 24 |
| 7 | 69 | 70 | 71 | 72 | 72 | 74 | 75 | 75 | 73 | 65 | 57 | 52 | 47 | 46 | 43 | 42 | 47 | 51 | 55 | 57 | 60 | 63 | 64 | 75 | 60.7 | 24 | |
| 8 | 62 | 62 | 63 | 65 | 65 | 66 | 67 | 68 | 68 | 64 | 53 | 49 | 45 | 46 | 47 | 58 | 63 | 68 | 70 | 69 | 69 | 68 | 69 | 70 | 61.4 | 24 | |
| 9 | 70 | 77 | 86 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 85.8 | 24 | |
| 10 | 84 | 81 | 83 | 80 | 78 | 77 | 76 | 75 | 74 | 75 | 74 | 73 | 72 | 70 | 66 | 63 | 69 | 72 | 73 | 72 | 74 | 76 | 74 | 78 | 73.8 | 24 | |
| 11 | 78 | 78 | 77 | 78 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 73.8 | 24 |
| 12 | 74 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 73.4 | 24 |
| 13 | 74 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 73.8 | 24 |
| 14 | 87 | 87 | 87 | 86 | 85 | 85 | 85 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 79.3 | 24 |
| 15 | 84 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 81.7 | 24 |
| 16 | 84 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 81.7 | 24 |
| 17 | 87 | 86 | 86 | 86 | 87 | 85 | 85 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 81.7 | 24 |
| 18 | 82 | 83 | 82 | 82 | 82 | 81 | 82 | 83 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 81.7 | 24 |
| 19 | 84 | 85 | 86 | 83 | 75 | 71 | 71 | 69 | 67 | 64 | 61 | 51 | 50 | 49 | 48 | 50 | 55 | 58 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 77.0 | 24 |
| 20 | 73 | 74 | 75 | 74 | 74 | 74 | 74 | 75 | 73 | 65 | 55 | 47 | 43 | 40 | 49 | 53 | 56 | 58 | 59 | 61 | 62 | 64 | 64 | 65 | 65 | 62.8 | 24 |
| 21 | 67 | 69 | 70 | 71 | 72 | 72 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 67.5 | 24 |
| 22 | 81 | 83 | 82 | 80 | 79 | 80 | 82 | 81 | 77 | 66 | 58 | 41 | 38 | 34 | 36 | 42 | 51 | 56 | 59 | 55 | 55 | 55 | 57 | 61 | 61.8 | 24 | |
| 23 | 63 | 65 | 65 | 66 | 66 | 67 | 69 | 70 | 65 | 55 | 49 | 44 | 44 | 47 | 52 | 76 | 79 | 77 | 80 | 79 | 81 | 82 | 81 | 82 | 82 | 66.7 | 24 |
| 24 | 80 | 80 | 82 | 84 | 85 | 85 | 84 | 84 | 82 | 71 | 61 | 54 | 43 | 37 | 37 | 38 | 41 | 55 | 63 | 66 | 67 | 66 | 68 | 85 | 68.9 | 24 | |
| 25 | 69 | 70 | 70 | 70 | 68 | 67 | 65 | 63 | 58 | 48 | 41 | 36 | 35 | 36 | 37 | 39 | 45 | 49 | 52 | 55 | 60 | 61 | 61 | 73 | 54.0 | 24 | |
| 26 | 70 | 70 | 70 | 70 | 68 | 67 | 65 | 63 | 58 | 48 | 41 | 36 | 35 | 36 | 37 | 39 | 45 | 49 | 52 | 55 | 60 | 61 | 61 | 73 | 54.0 | 24 | |
| 27 | 64 | 66 | 70 | 78 | 84 | 86 | 87 | 87 | 87 | 84 | 81 | 80 | 79 | 77 | 76 | 75 | 74 | 75 | 76 | 77 | 77 | 78 | 80 | 80 | 87 | 78.3 | 24 |
| 28 | 81 | 83 | 82 | 82 | 83 | 82 | 82 | 80 | 74 | 66 | 62 | 50 | 42 | 42 | 39 | 41 | 43 | 48 | 52 | 54 | 56 | 58 | 60 | 83 | 62.5 | 24 | |
| 29 | 64 | 65 | 66 | 67 | 67 | 66 | 64 | 61 | 50 | 45 | 37 | 35 | 36 | 34 | 35 | 40 | 51 | 55 | 58 | 61 | 64 | 65 | 66 | 67 | 54.9 | 24 | |
| HOURLY MAX | 87 | 87 | 87 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 89 | |
| HOURLY AVG | 75.7 | 76.6 | 77.0 | 77.2 | 77.1 | 77.1 | 77.2 | 77.1 | 75.9 | 71.2 | 67.1 | 62.4 | 59.7 | 57.0 | 56.3 | 58.3 | 61.6 | 66.4 | 69.5 | 71.3 | 72.0 | 72.9 | 73.9 | 74.7 | 74.7 | | |

STATUS FLAG CODES

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

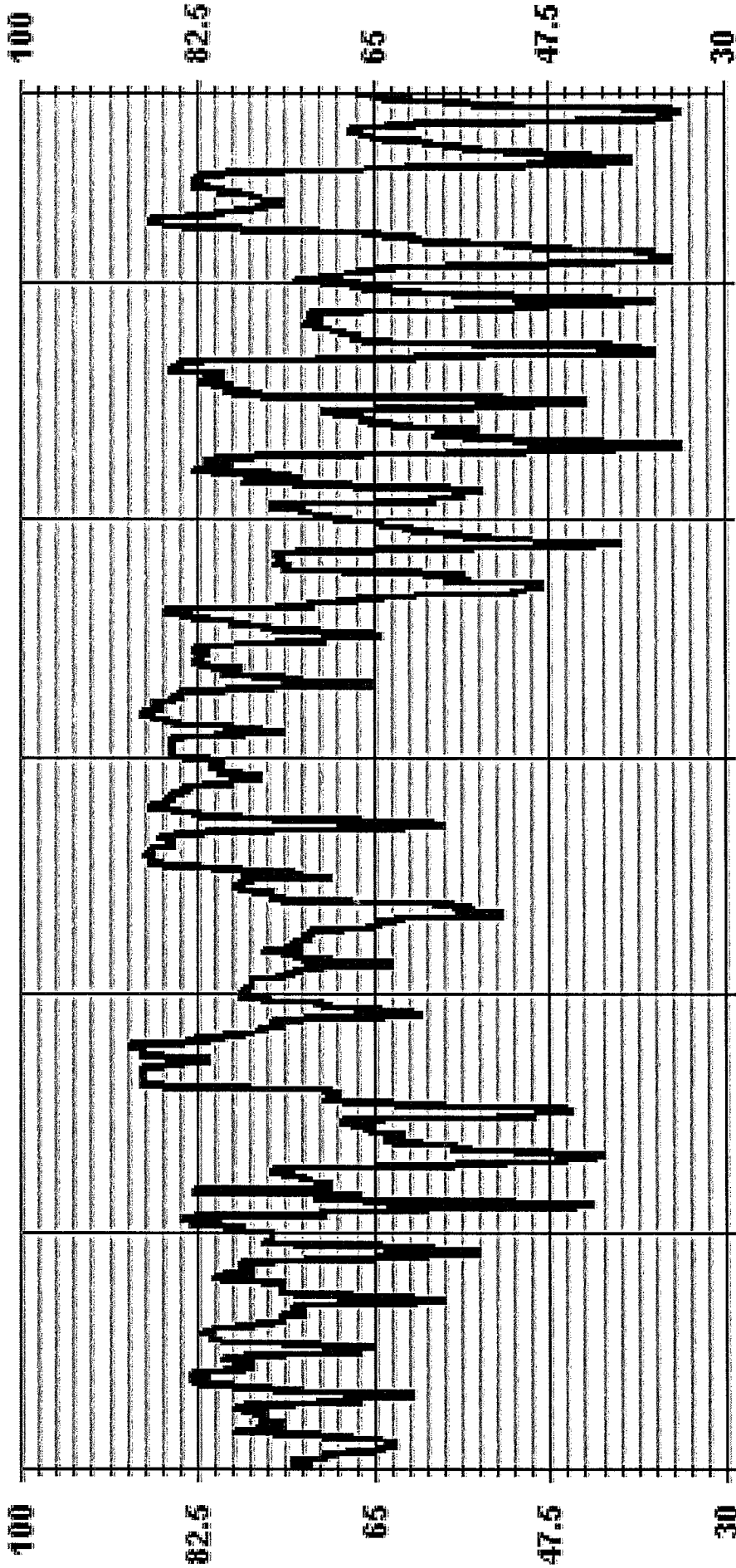
24 HOUR AVERAGES FOR FEBRUARY 2016



MONTHLY SUMMARY

| | | | | | | |
|------------------------|-------|-----|-----------|--------|-------------|--------|
| MINIMUM 1-HR AVERAGE: | 34 | % | @ HOUR(S) | 14, 14 | ON DAY(S) | 22, 29 |
| MAXIMUM 1-HR AVERAGE: | 89 | % | @ HOUR(S) | VAR | ON DAY(S) | 9 |
| MAXIMUM 24-HR AVERAGE: | 85.8 | % | | | ON DAY(S) | 9 |
| STANDARD DEVIATION: | 12.64 | | | | VAR-VARIOUS | |
| OPERATIONAL TIME: | 696 | HRS | | | | |
| AMD OPERATION UPTIME: | 100.0 | % | | | | |
| MONTHLY AVERAGE: | 70 | % | | | | |

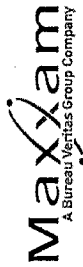
01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA30 RH %

BAROMETRIC PRESSURE



BAROMETRIC PRESSURE (BP) hourly averages in millibar

MST

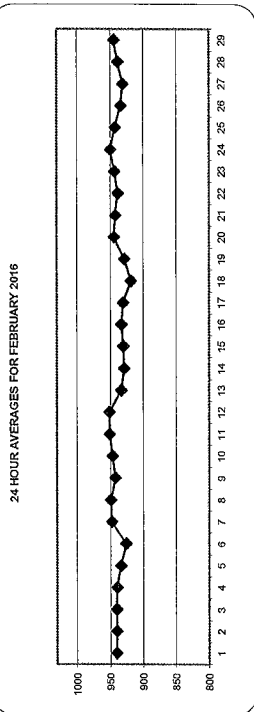
| DAY | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 24:00 | ROGS. | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|----|
| HR | 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 | MAX. | AVG. | | |
| 1 | 938 | 939 | 939 | 939 | 940 | 940 | 940 | 940 | 941 | 941 | 941 | 941 | 941 | 941 | 941 | 941 | 941 | 941 | 941 | 941 | 941 | 941 | 940 | 940 | 940 | 940 | 24 | |
| 2 | 940 | 940 | 940 | 940 | 940 | 940 | 939 | 939 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 939 | 939 | 940 | 24 | |
| 3 | 940 | 940 | 940 | 941 | 941 | 941 | 941 | 941 | 941 | 941 | 941 | 941 | 941 | 941 | 941 | 941 | 941 | 940 | 940 | 939 | 939 | 939 | 939 | 939 | 941 | 940 | 24 | |
| 4 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 940 | 939 | 939 | 939 | 939 | 939 | 941 | 24 | |
| 5 | 939 | 939 | 939 | 939 | 939 | 938 | 937 | 937 | 937 | 936 | 936 | 936 | 934 | 933 | 933 | 933 | 932 | 931 | 931 | 930 | 929 | 928 | 926 | 925 | 925 | 934 | 24 | |
| 6 | 924 | 923 | 922 | 921 | 919 | 919 | 921 | 922 | 924 | 924 | 925 | 926 | 927 | 927 | 926 | 926 | 926 | 926 | 926 | 926 | 926 | 926 | 926 | 926 | 926 | 926 | 24 | |
| 7 | 939 | 940 | 942 | 943 | 944 | 944 | 945 | 946 | 947 | 948 | 949 | 949 | 949 | 948 | 948 | 948 | 949 | 949 | 948 | 948 | 948 | 948 | 948 | 947 | 947 | 948 | 24 | |
| 8 | 951 | 950 | 951 | 951 | 951 | 950 | 949 | 949 | 949 | 949 | 949 | 949 | 949 | 948 | 948 | 948 | 949 | 949 | 948 | 948 | 948 | 948 | 948 | 947 | 947 | 949 | 24 | |
| 9 | 947 | 947 | 947 | 946 | 946 | 945 | 945 | 945 | 944 | 944 | 943 | 943 | 943 | 942 | 941 | 940 | 939 | 939 | 938 | 938 | 938 | 938 | 938 | 937 | 937 | 940 | 24 | |
| 10 | 940 | 941 | 942 | 943 | 944 | 944 | 945 | 946 | 947 | 948 | 948 | 948 | 948 | 948 | 948 | 948 | 948 | 948 | 948 | 948 | 948 | 948 | 948 | 947 | 947 | 949 | 24 | |
| 11 | 947 | 946 | 947 | 947 | 947 | 947 | 948 | 948 | 948 | 948 | 949 | 949 | 950 | 951 | 951 | 951 | 952 | 953 | 953 | 954 | 955 | 955 | 956 | 956 | 957 | 951 | 24 | |
| 12 | 957 | 957 | 957 | 958 | 957 | 957 | 956 | 956 | 955 | 955 | 954 | 954 | 953 | 952 | 951 | 950 | 949 | 948 | 947 | 946 | 945 | 944 | 943 | 942 | 941 | 958 | 24 | |
| 13 | 940 | 938 | 937 | 937 | 936 | 935 | 934 | 934 | 934 | 933 | 933 | 932 | 932 | 932 | 932 | 932 | 932 | 932 | 931 | 931 | 930 | 929 | 929 | 929 | 929 | 933 | 24 | |
| 14 | 929 | 928 | 928 | 928 | 928 | 927 | 927 | 927 | 927 | 928 | 929 | 930 | 930 | 930 | 930 | 930 | 930 | 930 | 929 | 929 | 928 | 928 | 927 | 927 | 927 | 930 | 24 | |
| 15 | 927 | 926 | 926 | 926 | 926 | 926 | 926 | 926 | 926 | 927 | 928 | 929 | 930 | 931 | 931 | 931 | 932 | 933 | 934 | 935 | 935 | 935 | 935 | 935 | 935 | 930 | 24 | |
| 16 | 935 | 934 | 934 | 934 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 932 | 932 | 932 | 932 | 931 | 931 | 930 | 929 | 929 | 929 | 933 | 24 | |
| 17 | 930 | 930 | 930 | 930 | 930 | 930 | 930 | 930 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 930 | 930 | 930 | 929 | 929 | 929 | 929 | 930 | 24 | |
| 18 | 926 | 926 | 925 | 924 | 923 | 922 | 921 | 921 | 920 | 919 | 918 | 917 | 916 | 916 | 915 | 914 | 914 | 914 | 914 | 914 | 914 | 914 | 915 | 916 | 916 | 928 | 24 | |
| 19 | 916 | 917 | 918 | 919 | 921 | 922 | 923 | 925 | 927 | 928 | 929 | 930 | 931 | 931 | 931 | 931 | 932 | 933 | 933 | 933 | 933 | 934 | 935 | 936 | 936 | 928 | 24 | |
| 20 | 937 | 938 | 939 | 940 | 941 | 941 | 942 | 943 | 943 | 944 | 945 | 946 | 946 | 946 | 946 | 946 | 946 | 946 | 946 | 947 | 946 | 946 | 946 | 946 | 947 | 944 | 24 | |
| 21 | 945 | 945 | 945 | 944 | 944 | 944 | 944 | 944 | 944 | 944 | 944 | 944 | 944 | 944 | 943 | 942 | 941 | 940 | 939 | 938 | 938 | 937 | 936 | 936 | 945 | 942 | 24 | |
| 22 | 936 | 935 | 935 | 935 | 936 | 936 | 937 | 937 | 937 | 938 | 939 | 940 | 940 | 940 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 940 | 940 | 940 | 940 | 938 | 24 | |
| 23 | 941 | 941 | 942 | 942 | 942 | 943 | 943 | 943 | 942 | 942 | 943 | 943 | 943 | 942 | 942 | 942 | 943 | 943 | 944 | 944 | 944 | 945 | 945 | 946 | 946 | 943 | 24 | |
| 24 | 947 | 948 | 948 | 948 | 948 | 949 | 949 | 949 | 949 | 950 | 951 | 952 | 952 | 952 | 952 | 952 | 951 | 951 | 950 | 950 | 949 | 949 | 948 | 948 | 950 | 950 | 24 | |
| 25 | 948 | 947 | 947 | 946 | 946 | 945 | 944 | 944 | 943 | 943 | 942 | 942 | 942 | 941 | 941 | 941 | 941 | 941 | 940 | 940 | 939 | 939 | 938 | 938 | 942 | 24 | | |
| 26 | 938 | 937 | 937 | 936 | 936 | 935 | 935 | 934 | 934 | 934 | 934 | 934 | 934 | 934 | 934 | 934 | 933 | 933 | 932 | 931 | 930 | 930 | 930 | 930 | 934 | 24 | | |
| 27 | 930 | 929 | 930 | 929 | 929 | 928 | 928 | 928 | 928 | 928 | 928 | 928 | 929 | 929 | 929 | 929 | 929 | 929 | 929 | 928 | 928 | 928 | 928 | 928 | 934 | 24 | | |
| 28 | 933 | 934 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 934 | 934 | 934 | 934 | 934 | 934 | 935 | 931 | 24 | |
| 29 | 945 | 945 | 946 | 946 | 946 | 946 | 946 | 946 | 945 | 945 | 945 | 944 | 944 | 944 | 943 | 943 | 942 | 942 | 942 | 942 | 942 | 941 | 941 | 941 | 941 | 944 | 24 | |
| 30 | 957 | 957 | 957 | 958 | 957 | 957 | 956 | 956 | 955 | 955 | 954 | 953 | 952 | 952 | 952 | 952 | 952 | 953 | 953 | 954 | 955 | 955 | 956 | 956 | 957 | 944 | 24 | |
| HOURLY MAX | 957 | 957 | 957 | 958 | 957 | 957 | 956 | 956 | 955 | 955 | 954 | 953 | 952 | 952 | 952 | 952 | 952 | 953 | 953 | 954 | 955 | 955 | 956 | 956 | 957 | 944 | 24 | |
| HOURLY AVG | 938 | 938 | 938 | 938 | 938 | 938 | 938 | 938 | 938 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 938 | 938 | 938 | 938 | 938 | 24 |

STATUS FLAG CODES

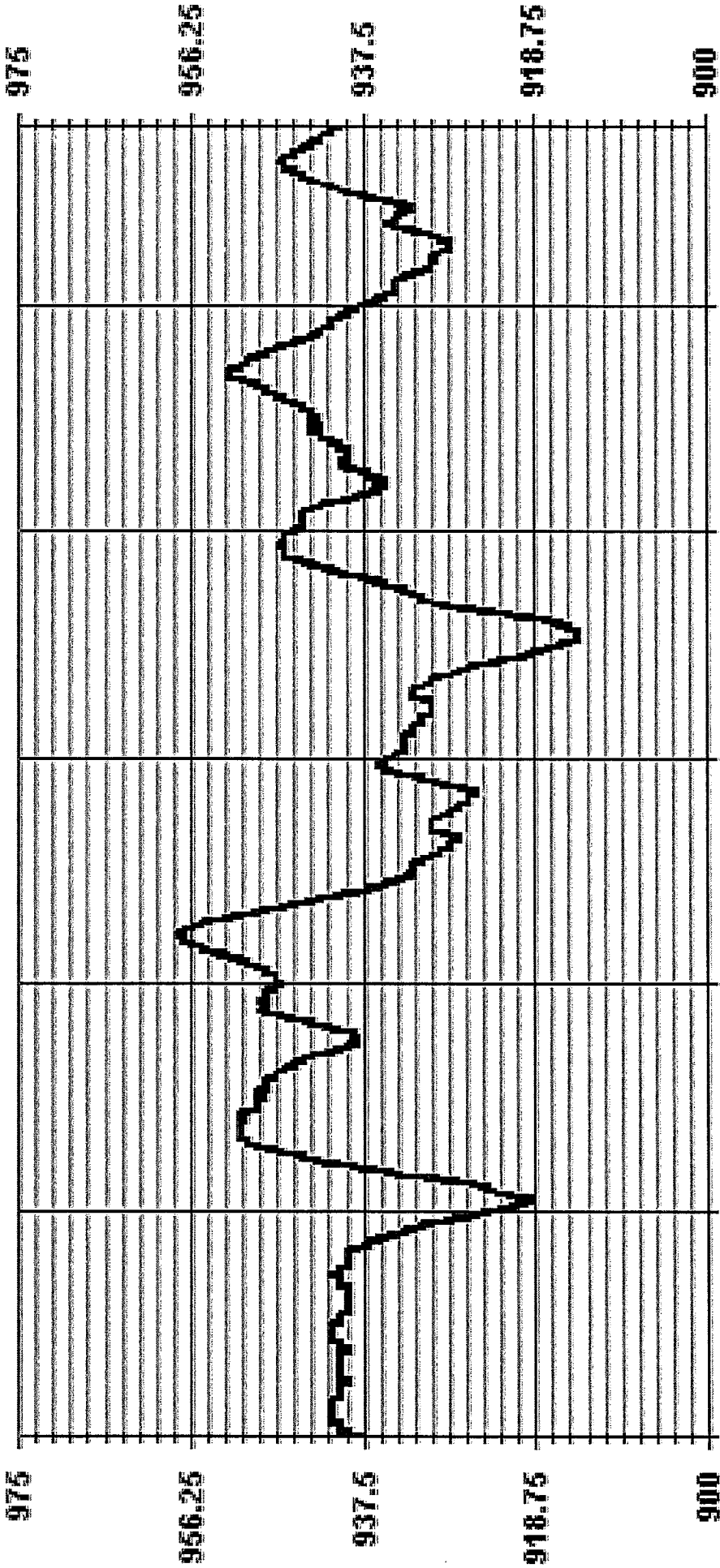
| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION | R | RECOVERY |
| Y | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | OUT FOR REPAIR |
| SL | REPEAT ZERO/SPAN CHECK | P | POWER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

MONTHLY SUMMARY

| | | | | | | |
|------------------------|------|----|-----------|-----|-------------|---------|
| MINIMUM 1-HR AVERAGE: | 914 | MB | @ HOUR(S) | VAR | ON DAY(S) | 18 |
| MAXIMUM 1-HR AVERAGE: | 958 | MB | @ HOUR(S) | 3 | ON DAY(S) | 12 |
| MAXIMUM 24-HR AVERAGE: | 951 | MB | | | VAR-VARIOUS | 11, 12 |
| STANDARD DEVIATION: | 8.69 | | | | | |
| OPERATIONAL TIME: | | | | | | 696 HRS |
| AMD OPERATION UPTIME: | | | | | | 100.0 % |
| MONTHLY AVERAGE: | | | | | | 938 MB |



01 Hour Averages



— LICA30 BP MB

AMBIENT TEMPERATURE



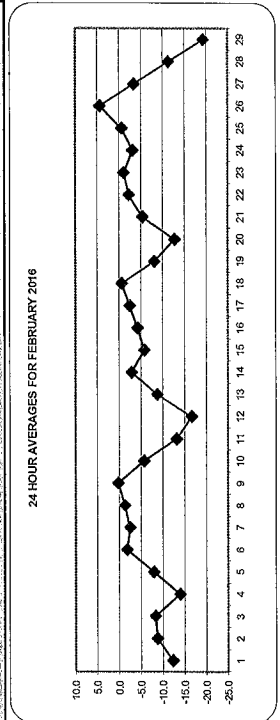
AMBIENT TEMPERATURE (AmbTPX) hourly averages in Degrees Celsius

MST

| DAY | 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 | 24:00 | RODS | |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| HR START | 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 | 24:00 | AVG. | |
| HR END | 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 | 24:00 | MAX. | |
| 1 | -11.0 | -11.2 | -11.5 | -11.8 | -12.2 | -12.3 | -12.4 | -12.6 | -12.9 | -12.4 | -11.7 | -10.9 | -10.2 | -9.8 | -9.6 | -10.4 | -11.2 | -13.6 | -15.9 | -16.6 | -16.1 | -15.0 | -13.6 | -9.6 | -12.3 | 24 | |
| 2 | -13.1 | -12.8 | -12.3 | -11.8 | -11.4 | -11.7 | -12.9 | -12.7 | -12.2 | -10.5 | -8.8 | -5.7 | -4.8 | -3.5 | -1.9 | -4.0 | -5.0 | -6.0 | -7.2 | -8.5 | -8.6 | -8.0 | -7.8 | -8.1 | -1.9 | -8.7 | 24 |
| 3 | -7.7 | -8.3 | -8.0 | -7.9 | -8.0 | -8.2 | -8.4 | -8.5 | -8.5 | -7.9 | -7.0 | -6.0 | -5.7 | -5.4 | -4.9 | -6.0 | -7.4 | -8.5 | -8.9 | -9.4 | -9.2 | -11.8 | -13.6 | -14.0 | -4.9 | -8.3 | 24 |
| 4 | -15.2 | -17.1 | -18.8 | -19.5 | -18.5 | -18.7 | -19.3 | -20.9 | -21.3 | -17.6 | -13.8 | -11.5 | -10.5 | -8.5 | -8.4 | -9.2 | -9.9 | -10.9 | -11.1 | -10.9 | -10.8 | -10.5 | -10.2 | -11.2 | -8.4 | -13.9 | 24 |
| 5 | -13.0 | -12.9 | -13.7 | -15.5 | -13.9 | -12.3 | -12.4 | -12.7 | -13.1 | -10.4 | -7.7 | -4.3 | -2.7 | -1.0 | -1.0 | -1.3 | -1.7 | -1.0 | -0.8 | -1.4 | -2.2 | -2.3 | -1.8 | -1.9 | 6.0 | -1.8 | 24 |
| 6 | -5.6 | -6.4 | -6.3 | -7.3 | -8.4 | -9.6 | -10.1 | -8.1 | -3.7 | 1.4 | 3.1 | 4.3 | 4.3 | 6.0 | 6.0 | 4.5 | 2.4 | 0.6 | -0.8 | -1.4 | -2.2 | -2.3 | -1.8 | -1.9 | 6.0 | -1.8 | 24 |
| 7 | -2.7 | -3.3 | -3.6 | -4.3 | -4.3 | -4.5 | -4.8 | -5.2 | -5.4 | -3.3 | -1.1 | 0.2 | 1.8 | 1.6 | 2.6 | 2.2 | 0.0 | -1.3 | -2.3 | -3.2 | -3.4 | -4.3 | -5.2 | 2.6 | -2.5 | 24 | |
| 8 | -4.6 | -4.6 | -4.7 | -4.7 | -4.4 | -4.2 | -4.2 | -4.2 | -4.1 | -2.9 | 1.4 | 1.9 | 1.7 | 4.0 | 3.9 | 4.6 | 1.0 | -0.8 | -1.9 | -1.8 | -0.9 | -0.8 | -0.3 | -0.1 | 4.6 | -1.3 | 24 |
| 9 | 0.0 | -0.1 | -0.3 | -0.1 | 0.2 | 0.0 | -0.3 | -0.3 | -0.3 | 0.0 | 0.1 | 0.4 | 1.3 | 1.4 | 1.8 | 2.3 | 1.7 | -0.6 | -1.2 | -0.5 | -0.6 | 0.0 | -0.3 | 0.9 | 2.3 | 0.2 | 24 |
| 10 | 1.7 | 1.8 | 0.5 | -0.9 | -1.1 | -1.9 | -3.4 | -4.0 | -4.3 | -4.2 | -4.6 | -5.4 | -5.6 | -6.4 | -7.2 | -7.7 | -8.7 | -9.5 | -10.0 | -10.2 | -10.7 | -11.1 | -11.4 | -11.8 | 1.8 | -5.7 | 24 |
| 11 | -12.3 | -12.6 | -13.0 | -13.2 | -13.3 | -13.7 | -13.6 | -13.5 | -13.5 | -12.7 | -11.9 | -11.0 | -10.7 | -10.3 | -9.9 | -9.6 | -11.0 | -12.7 | -13.6 | -14.9 | -15.7 | -16.9 | -18.2 | -18.1 | -9.6 | -13.2 | 24 |
| 12 | -17.9 | -19.1 | -20.8 | -22.8 | -22.9 | -23.0 | -22.4 | -21.8 | -21.0 | -17.7 | -16.4 | -15.2 | -14.4 | -13.7 | -12.4 | -12.1 | -11.9 | -12.2 | -13.1 | -13.7 | -13.8 | -13.8 | -13.5 | -13.6 | -11.9 | -16.6 | 24 |
| 13 | -13.8 | -13.7 | -13.9 | -13.8 | -14.2 | -14.3 | -13.9 | -13.5 | -13.2 | -12.3 | -10.2 | -5.9 | -6.7 | -6.3 | -4.6 | -3.7 | -2.7 | -4.3 | -5.9 | -5.2 | -4.6 | -4.4 | -4.4 | -4.5 | -2.7 | -8.8 | 24 |
| 14 | -4.3 | -4.3 | -6.3 | -6.9 | -8.5 | -7.9 | -8.7 | -7.1 | -5.9 | -3.3 | -1.0 | 0.7 | 2.0 | 4.1 | 5.0 | 4.7 | 2.1 | -0.9 | -2.1 | -3.2 | -3.2 | -3.9 | -4.5 | -5.8 | 5.0 | -2.9 | 24 |
| 15 | -5.1 | -5.6 | -5.1 | -5.4 | -5.5 | -5.2 | -6.1 | -7.3 | -7.7 | -6.9 | -6.2 | -5.0 | -4.9 | -5.1 | -4.4 | -4.8 | -5.0 | -5.6 | -5.7 | -6.1 | -6.5 | -6.7 | -6.6 | -4.4 | -5.8 | 24 | |
| 16 | -6.7 | -6.6 | -6.6 | -6.5 | -6.3 | -6.2 | -6.2 | -6.2 | -6.1 | -5.5 | -4.9 | -4.0 | -3.4 | -2.2 | -2.0 | -2.2 | -2.0 | -2.5 | -2.6 | -2.4 | -2.3 | -2.6 | -3.3 | -3.1 | -2.0 | -4.3 | 24 |
| 17 | -2.9 | -3.2 | -4.4 | -5.6 | -6.5 | -6.9 | -8.3 | -8.9 | -8.1 | -4.5 | -1.2 | 0.7 | 2.4 | 3.8 | 1.9 | 1.7 | 0.9 | -0.3 | -1.0 | -1.1 | -0.9 | -1.1 | -2.2 | -2.3 | 3.8 | -2.4 | 24 |
| 18 | -1.7 | -1.6 | -1.6 | -1.7 | -1.8 | -2.0 | -2.3 | -2.5 | -2.3 | -2.0 | -1.8 | -0.5 | 0.9 | 1.1 | 3.0 | 2.8 | 2.1 | 0.6 | -0.6 | -0.7 | -0.8 | -0.7 | -1.1 | -1.1 | 3.0 | -0.6 | 24 |
| 19 | -1.0 | -1.1 | -0.8 | -1.1 | -3.7 | -6.0 | -7.5 | -10.1 | -12.1 | -12.0 | -11.7 | -8.4 | -8.4 | -8.4 | -7.4 | -7.5 | -8.5 | -10.3 | -11.1 | -10.8 | -10.9 | -11.0 | -11.5 | -12.4 | -0.8 | -8.1 | 24 |
| 20 | -13.4 | -13.9 | -14.0 | -14.6 | -15.1 | -15.1 | -17.1 | -19.7 | -17.9 | -15.0 | -12.0 | -9.5 | -8.0 | -6.1 | -9.0 | -10.6 | -11.3 | -11.8 | -12.1 | -12.2 | -12.1 | -11.9 | -11.7 | -11.3 | -6.1 | -12.7 | 24 |
| 21 | -10.6 | -10.1 | -9.8 | -9.5 | -9.9 | -9.6 | -10.0 | -10.1 | -6.3 | -3.0 | -2.2 | 0.7 | 2.2 | 4.1 | 1.9 | 0.9 | -2.0 | -3.5 | -5.9 | -5.3 | -4.3 | -4.9 | -5.7 | 1.9 | -5.4 | 24 | |
| 22 | -7.4 | -8.6 | -8.8 | -8.7 | -8.3 | -8.8 | -9.6 | -9.4 | -7.5 | -3.6 | -0.6 | 2.4 | 4.7 | 5.4 | 6.3 | 6.0 | 3.6 | 0.7 | -0.5 | -0.8 | 0.4 | 0.5 | -0.2 | -1.4 | 6.3 | -2.3 | 24 |
| 23 | -2.0 | -2.3 | -2.4 | -2.6 | -2.6 | -3.1 | -3.5 | -4.0 | -2.5 | 0.4 | 2.2 | 3.9 | 4.4 | 3.4 | 2.2 | -0.1 | -0.8 | -0.8 | -1.7 | -1.8 | -1.8 | -2.9 | -3.4 | -3.8 | 4.4 | -1.1 | 24 |
| 24 | -3.6 | -4.5 | -5.6 | -6.5 | -7.6 | -8.8 | -9.7 | -9.8 | -7.4 | -3.6 | -0.8 | 1.2 | 3.8 | 5.0 | 4.5 | 3.5 | 2.3 | -0.9 | -3.2 | -4.0 | -4.3 | -4.4 | -5.2 | -5.7 | 5.0 | -3.1 | 24 |
| 25 | -5.8 | -5.4 | -5.3 | -5.6 | -5.6 | -5.4 | -5.5 | -5.4 | -5.0 | -3.1 | -0.3 | 1.7 | 2.8 | 4.8 | 6.9 | 8.6 | 6.9 | 3.7 | 1.9 | 1.1 | 0.3 | -0.4 | -0.5 | -0.1 | 8.6 | -0.6 | 24 |
| 26 | -1.1 | -2.1 | -1.4 | -1.5 | -1.3 | -1.3 | -1.1 | -0.9 | 0.6 | 4.2 | 7.7 | 10.4 | 11.9 | 12.3 | 12.1 | 11.9 | 10.6 | 8.1 | 6.4 | 5.6 | 4.5 | 3.2 | 2.9 | 3.2 | 12.3 | 4.4 | 24 |
| 27 | 2.6 | 2.1 | 1.3 | -0.1 | -1.1 | -1.6 | -1.7 | -1.9 | -2.2 | -3.6 | -4.8 | -5.6 | -5.7 | -5.9 | -5.5 | -5.3 | -5.4 | -5.6 | -5.6 | -5.6 | -5.6 | -5.2 | -4.7 | 2.6 | -3.4 | 24 | |
| 28 | -4.5 | -4.5 | -4.4 | -4.2 | -4.0 | -3.8 | -3.9 | -5.2 | -8.9 | -10.4 | -11.4 | -11.5 | -10.9 | -11.1 | -11.3 | -11.9 | -13.3 | -16.0 | -17.4 | -18.5 | -19.6 | -20.7 | -21.4 | -22.6 | -3.8 | -11.3 | 24 |
| 29 | -24.4 | -25.3 | -26.3 | -27.2 | -29.3 | -30.5 | -30.9 | -30.9 | -26.6 | -19.7 | -17.4 | -14.2 | -12.6 | -13.1 | -12.2 | -12.3 | -12.8 | -13.7 | -14.0 | -14.1 | -14.1 | -14.2 | -14.3 | -14.1 | -12.2 | -19.3 | 24 |
| HOURLY MAX | 2.6 | 2.1 | 1.3 | -0.1 | 0.2 | 0.0 | 0.0 | -0.3 | 0.6 | 4.2 | 7.7 | 10.4 | 11.9 | 12.3 | 12.1 | 11.9 | 10.6 | 8.1 | 6.4 | 5.6 | 4.5 | 3.2 | 2.9 | 3.2 | | | |
| HOURLY AVG | -7.1 | -7.5 | -7.9 | -8.3 | -8.6 | -8.8 | -9.3 | -9.6 | -9.1 | -7.1 | -5.3 | -3.7 | -2.9 | -2.1 | -1.9 | -2.2 | -3.3 | -4.8 | -5.8 | -6.3 | -6.4 | -6.7 | -6.9 | -7.0 | | | |

STATUS FLAG CODES

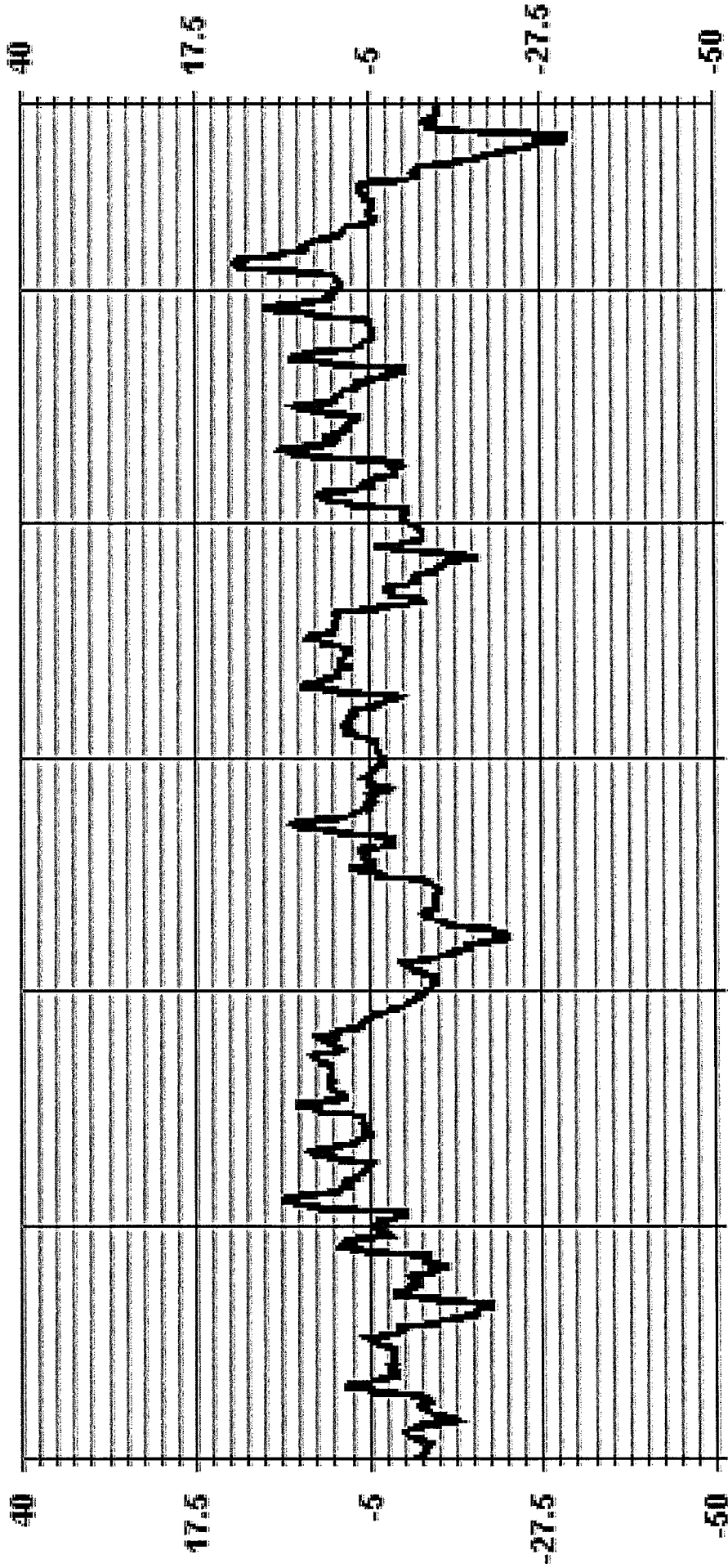
| | | | |
|-----|------------------------|---|------------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CT | REPEAT CALIBRATION | R | RECOVERY |
| S | MAINTENANCE | X | MACHINE/VALVE/JUNCTION |
| S | DAILY ZERO/SPAN/CHECK | G | OUT-OF-REPAIR |
| SSU | REPEAT ZERO/SPAN/CHECK | P | POWER FAILURE |



MONTHLY SUMMARY

| | | | | | | |
|------------------------|-------|-----|-----------|------|-------------|--------|
| MINIMUM 1-HR AVERAGE: | -30.9 | °C | @ HOUR(S) | 6, 7 | ON DAY(S) | 29, 29 |
| MAXIMUM 1-HR AVERAGE: | 12.3 | °C | @ HOUR(S) | 13 | ON DAY(S) | 26 |
| MAXIMUM 24-HR AVERAGE: | 4.4 | °C | | | VAR-VARIOUS | 26 |
| STANDARD DEVIATION: | 6.72 | | | | | |
| OPERATIONAL TIME: | 696 | HRS | | | | |
| AMD OPERATION UPTIME: | 100.0 | % | | | | |
| MONTHLY AVERAGE: | -6.72 | °C | | | | |

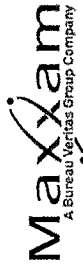
01 Hour Averages



02/04/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA30 - - - TPX . . . DGC

PRECIPITATION

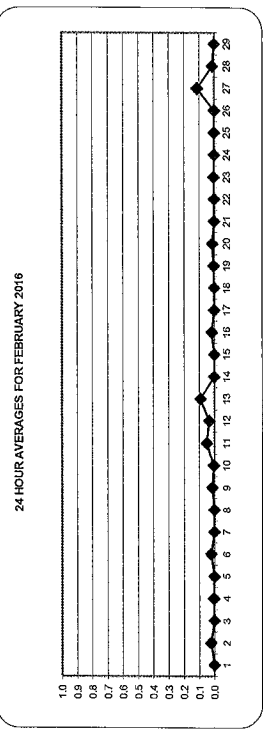


PRECIPITATION hourly averages (mm)

| DAY | 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 | 24:00 | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| HR START | 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 | 24:00 | |
| HR END | 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 | 24:00 | |
| RDGS. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11 | 0.0 | 0.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.0 | 0.2 | 0.0 | 0.1 | 0.0 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13 | 0.4 | 0.6 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.4 | 0.1 | 0.1 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 21 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 22 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 23 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 24 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 26 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 27 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 28 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 29 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| HOURLY MAX | 0.4 | 0.6 | 0.2 | 0.2 | 0.2 | 0.5 | 0.5 | 0.6 | 0.6 | 0.2 | 0.1 | 0.4 | 0.1 | 0.2 | 0.5 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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 | 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

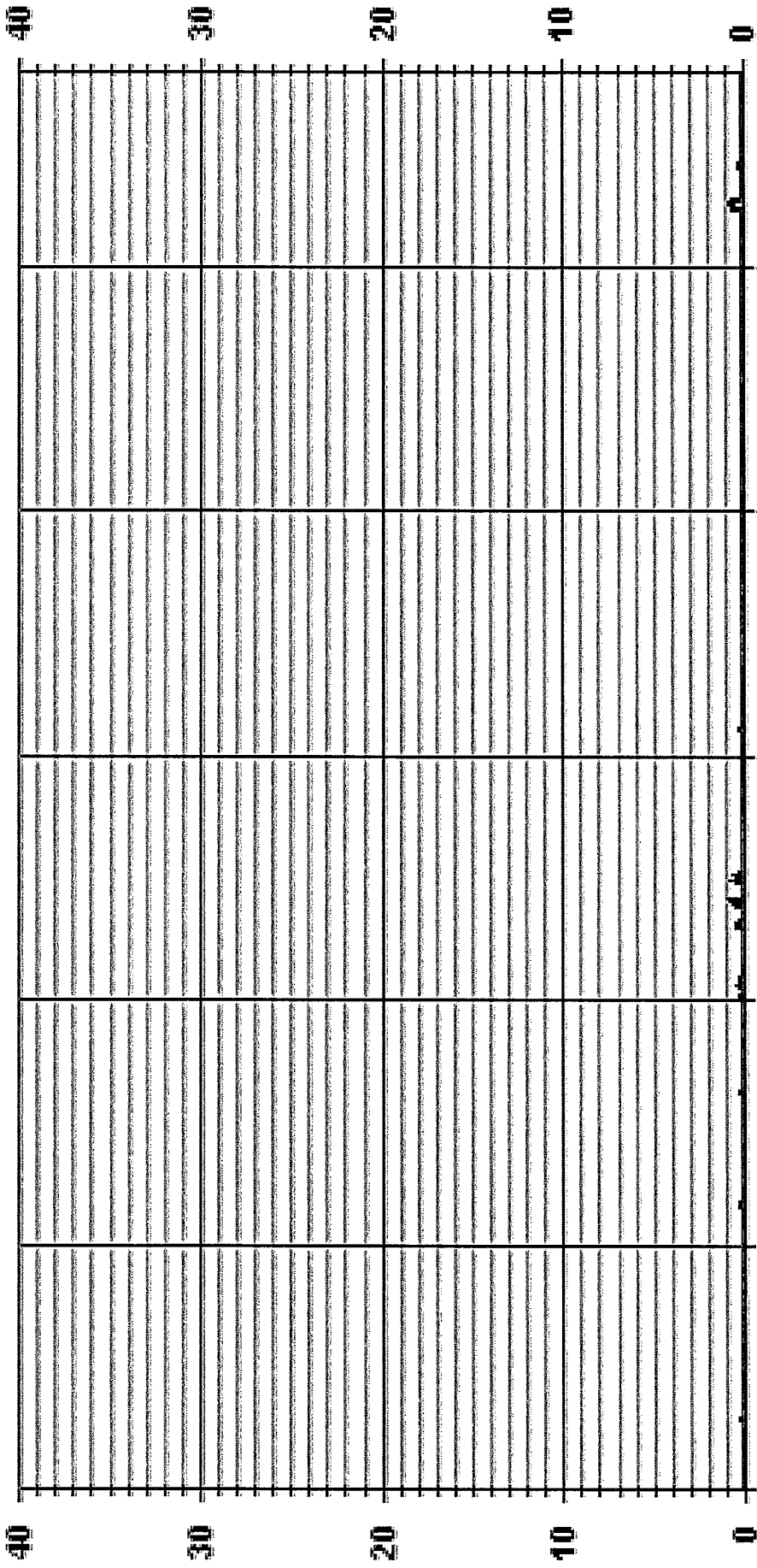
| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION | R | RECOVERY |
| Y | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | OUT FOR REPAIR |
| SL | REPEAT ZERO/SPAN CHECK | P | POWER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



MONTHLY SUMMARY

| | | | | | | |
|------------------------|-------|-----|-----------|-----|-------------|--------|
| MINIMUM 1-HR AVERAGE: | 0.0 | MM | @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MAXIMUM 1-HR AVERAGE: | 0.6 | MM | @ HOUR(S) | VAR | ON DAY(S) | 13, 27 |
| MAXIMUM 24-HR AVERAGE: | 0.1 | MM | | | ON DAY(S) | VAR |
| MONTHLY TOTAL | 9.6 | MM | | | VAR-VARIOUS | |
| STANDARD DEVIATION: | 0.06 | | | | | |
| OPERATIONAL TIME: | 696 | HRS | | | | |
| AMID OPERATION UPTIME: | 100.0 | % | | | | |
| MONTHLY AVERAGE: | 0.0 | MM | | | | |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

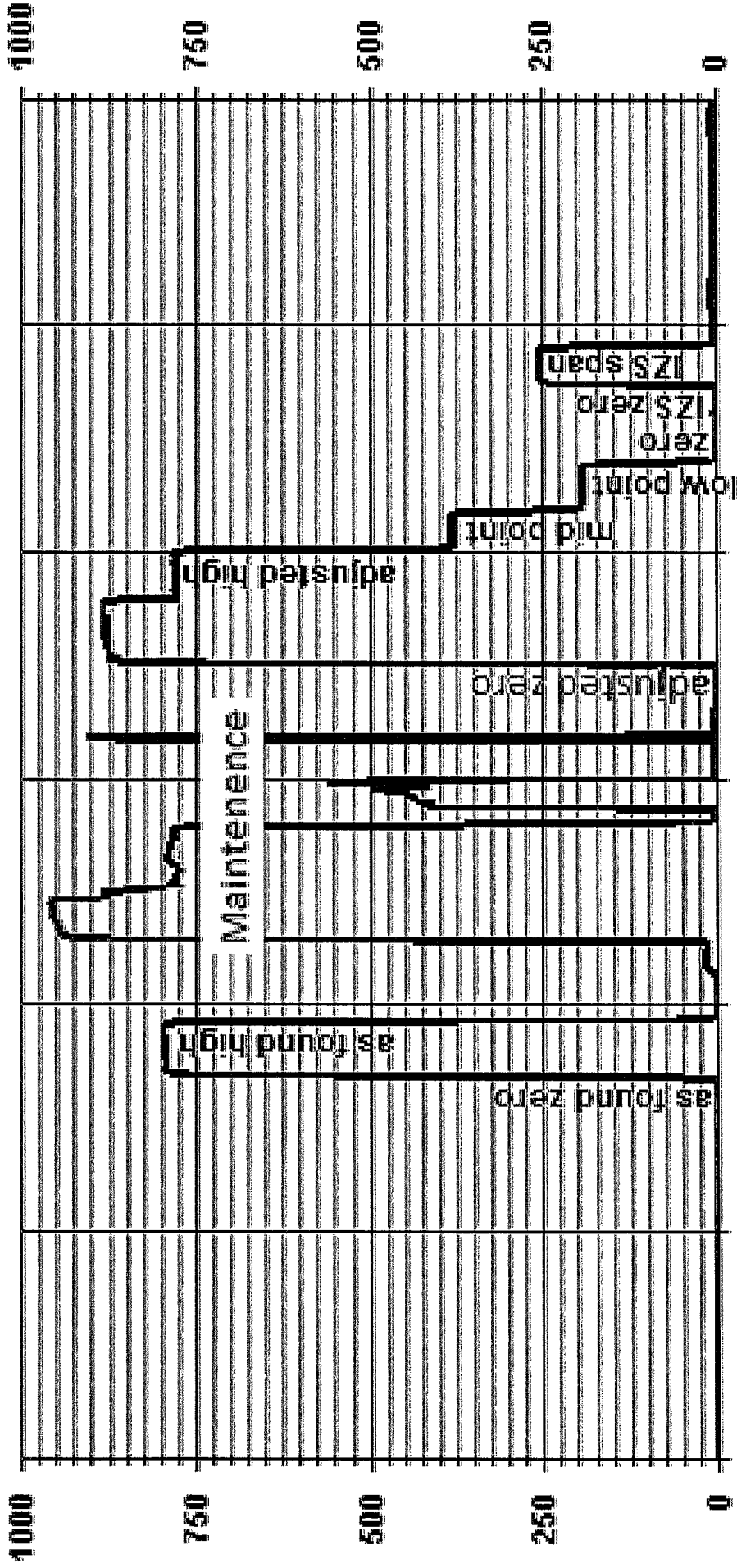
— LICA30 PRECIP MM

APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE

| API 100E Sulphur Dioxide Analyzer Calibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|--|---|---------------------------------|--------------------------------|---------------------------------|--------------------------------|----------------------------|----------------------------|---------|-------|---------------|------|------|------|-----|-----|-----|---------------|------|-------|------|-------|-------|-------|---------------|------|------|------|-----|-----|-----|---------------|------|-------|------|-------|-------|-------|-----|------|-------|------|-------|-------|-------|-----|------|-------|------|-------|-------|-------|-----------------|------|------|------|-----|-----|-----|----------------|--|--|--|--|--|-------|
| Date: February 23, 2016 Company/Airshed: LICA Location/Station Name: Maskwa Parameter: Sulphur Dioxide Start Time 24 hr. (mst): 9:18 End Time 24 hr. (mst): 16:53 Calibration Method: Gas Dilution | Barometric Pressure: 0.930 atm Station Temperature °C: 20 Weather Conditions: Clear Calibration Purpose: routine monthly Performed By/Reviewer: Michael Espritu Trina Whitsitt Cal Gas Expiry Date: December 2, 2023 Converter Model & s/n (if applicable): n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analyzer: Serial Number: 508 Range ppb: 1000 Last Calibration Date: January 5, 2016 As Found C.F.: 0.985 Previous C.F.: 1.000 New C.F.: 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibrator: Flow Meter ID's: n/a Make & Model: SABIO 2010 D Serial #: 11900613 Cal Gas Cylinder I.D. #: LL119346 Cal Gas Conc. (ppm): 50.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Standard Calibration Points for Ranges | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Point</th> <th>Sulphur Dioxide Standard Calibration Points</th> </tr> </thead> <tbody> <tr> <td>High</td> <td>780</td> </tr> <tr> <td>Mid</td> <td>380</td> </tr> <tr> <td>Low</td> <td>190</td> </tr> </tbody> </table> | | Point | Sulphur Dioxide Standard Calibration Points | High | 780 | Mid | 380 | Low | 190 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Point | Sulphur Dioxide Standard Calibration Points | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| High | 780 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mid | 380 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low | 190 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Point</th> <th colspan="3">Callibrator Flow Rates (cc/min)</th> <th rowspan="2">Calculated Concentration: (ppb)</th> <th rowspan="2">Indicated Concentration: (ppb)</th> <th rowspan="2">Correction Factors (C.F.):</th> </tr> <tr> <th>Diluent</th> <th>Cal Gas</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>as found zero</td> <td>5013</td> <td>0.00</td> <td>5013</td> <td>0.0</td> <td>0.0</td> <td>N/A</td> </tr> <tr> <td>as found high</td> <td>4935</td> <td>78.10</td> <td>5013</td> <td>779.0</td> <td>791.0</td> <td>0.985</td> </tr> <tr> <td>adjusted zero</td> <td>5013</td> <td>0.00</td> <td>5013</td> <td>0.0</td> <td>0.0</td> <td>n/a</td> </tr> <tr> <td>adjusted high</td> <td>4935</td> <td>78.10</td> <td>5013</td> <td>779.0</td> <td>779.0</td> <td>1.000</td> </tr> <tr> <td>mid</td> <td>4976</td> <td>38.10</td> <td>5014</td> <td>379.9</td> <td>382.0</td> <td>0.995</td> </tr> <tr> <td>low</td> <td>4994</td> <td>19.10</td> <td>5013</td> <td>190.5</td> <td>192.0</td> <td>0.992</td> </tr> <tr> <td>calibrator zero</td> <td>5013</td> <td>0.00</td> <td>5013</td> <td>0.0</td> <td>0.0</td> <td>n/a</td> </tr> <tr> <td colspan="6" style="text-align: right;">Average C.F. =</td> <td>0.996</td> </tr> </tbody> </table> | | Point | Callibrator Flow Rates (cc/min) | | | Calculated Concentration: (ppb) | Indicated Concentration: (ppb) | Correction Factors (C.F.): | Diluent | Cal Gas | Total | as found zero | 5013 | 0.00 | 5013 | 0.0 | 0.0 | N/A | as found high | 4935 | 78.10 | 5013 | 779.0 | 791.0 | 0.985 | adjusted zero | 5013 | 0.00 | 5013 | 0.0 | 0.0 | n/a | adjusted high | 4935 | 78.10 | 5013 | 779.0 | 779.0 | 1.000 | mid | 4976 | 38.10 | 5014 | 379.9 | 382.0 | 0.995 | low | 4994 | 19.10 | 5013 | 190.5 | 192.0 | 0.992 | calibrator zero | 5013 | 0.00 | 5013 | 0.0 | 0.0 | n/a | Average C.F. = | | | | | | 0.996 |
| Point | Callibrator Flow Rates (cc/min) | | | Calculated Concentration: (ppb) | Indicated Concentration: (ppb) | | | | Correction Factors (C.F.): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Diluent | Cal Gas | Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found zero | 5013 | 0.00 | 5013 | 0.0 | 0.0 | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found high | 4935 | 78.10 | 5013 | 779.0 | 791.0 | 0.985 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| adjusted zero | 5013 | 0.00 | 5013 | 0.0 | 0.0 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| adjusted high | 4935 | 78.10 | 5013 | 779.0 | 779.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mid | 4976 | 38.10 | 5014 | 379.9 | 382.0 | 0.995 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| low | 4994 | 19.10 | 5013 | 190.5 | 192.0 | 0.992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| calibrator zero | 5013 | 0.00 | 5013 | 0.0 | 0.0 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average C.F. = | | | | | | 0.996 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Linear Regression/Calibration Results: Correlation Coefficient = 1.000 LIMITS > or = 0.995 Slope = 1.000 .95-1.05 b (Intercept as % of full scale) = -0.10% ± 3% F.S. % change in C.F. from last cal = 1.52% ± 10% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| API 100E Sulphur Dioxide Analyzer Calibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width:100%;"> <tr> <td style="width:50%; vertical-align: top;"> As found: SLOPE: 1.130 OFFSET: 86.1 HVPS: 479 RCELL TEMP: 50.0 BOX TEMP: 30.6 PMT TEMP: 7.7 IZS TEMP: 45.0 PRES: 24.8 SAMP FL: 593 NORM PMT: 85.6 UV LAMP: 4141.3 LAMP RATIO: 118.3 STR. LGT: 48.6 DRK PMT: 12.4 DRK LMP: -1.3 Internal Span: 261.8 </td> <td style="width:50%; vertical-align: top;"> As left: SLOPE: 1.002 OFFSET: 92.2 HVPS: 479 RCELL TEMP: 50 BOX TEMP: 30.8 PMT TEMP: 7.7 IZS TEMP: 45 PRES: 24.8 SAMP FL: 594 NORM PMT: 91.4 UV LAMP: 3515 LAMP RATIO: 100.4 STR. LGT: 46.2 DRK PMT: 10.3 DRK LMP: -0.8 Internal Span: 252.7 </td> </tr> </table> | | As found: SLOPE: 1.130 OFFSET: 86.1 HVPS: 479 RCELL TEMP: 50.0 BOX TEMP: 30.6 PMT TEMP: 7.7 IZS TEMP: 45.0 PRES: 24.8 SAMP FL: 593 NORM PMT: 85.6 UV LAMP: 4141.3 LAMP RATIO: 118.3 STR. LGT: 48.6 DRK PMT: 12.4 DRK LMP: -1.3 Internal Span: 261.8 | As left: SLOPE: 1.002 OFFSET: 92.2 HVPS: 479 RCELL TEMP: 50 BOX TEMP: 30.8 PMT TEMP: 7.7 IZS TEMP: 45 PRES: 24.8 SAMP FL: 594 NORM PMT: 91.4 UV LAMP: 3515 LAMP RATIO: 100.4 STR. LGT: 46.2 DRK PMT: 10.3 DRK LMP: -0.8 Internal Span: 252.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| As found: SLOPE: 1.130 OFFSET: 86.1 HVPS: 479 RCELL TEMP: 50.0 BOX TEMP: 30.6 PMT TEMP: 7.7 IZS TEMP: 45.0 PRES: 24.8 SAMP FL: 593 NORM PMT: 85.6 UV LAMP: 4141.3 LAMP RATIO: 118.3 STR. LGT: 48.6 DRK PMT: 12.4 DRK LMP: -1.3 Internal Span: 261.8 | As left: SLOPE: 1.002 OFFSET: 92.2 HVPS: 479 RCELL TEMP: 50 BOX TEMP: 30.8 PMT TEMP: 7.7 IZS TEMP: 45 PRES: 24.8 SAMP FL: 594 NORM PMT: 91.4 UV LAMP: 3515 LAMP RATIO: 100.4 STR. LGT: 46.2 DRK PMT: 10.3 DRK LMP: -0.8 Internal Span: 252.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: Sample inlet filter changed. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

01 Minute Averages



02/23/16 07:00 02/23/16 09:00 02/23/16 11:00 02/23/16 13:00 02/23/16 15:00 02/23/16 17:00

— LICA30 SO2_ PPB

HYDROGEN SULPHIDE



API 101E Hydrogen Sulphide Analyzer Calibration

| | | | |
|--------------------------|-------------------|--|-----------------------------------|
| Date: | February 23, 2016 | Barometric Pressure: | 0.930 atm |
| Company/Airshed: | LICA | Station Temperature °C: | 20 |
| Location/Station Name: | Maskwa | Weather Conditions: | clear |
| Parameter: | Hydrogen Sulphide | Calibration Purpose: | routine monthly |
| Start Time 24 hr. (mst): | 9:18 | Performed By/Reviewer: | Michael Espiritu Trina Whitsitt |
| End Time 24 hr. (mst): | 20:03 | Cal Gas Expiry Date: | July 15, 2017 |
| Calibration Method: | Gas Dilution | Converter Model & s/n (if applicable): | n/a |

| | | | | |
|-----------|------------------------|-----------------|----------------|-------|
| Analyzer: | Serial Number: | 511 | Range ppb: | 100 |
| | Last Calibration Date: | January 4, 2016 | As Found C.F.: | 1.061 |
| | Previous C.F.: | 0.999 | New C.F.: | 1.005 |

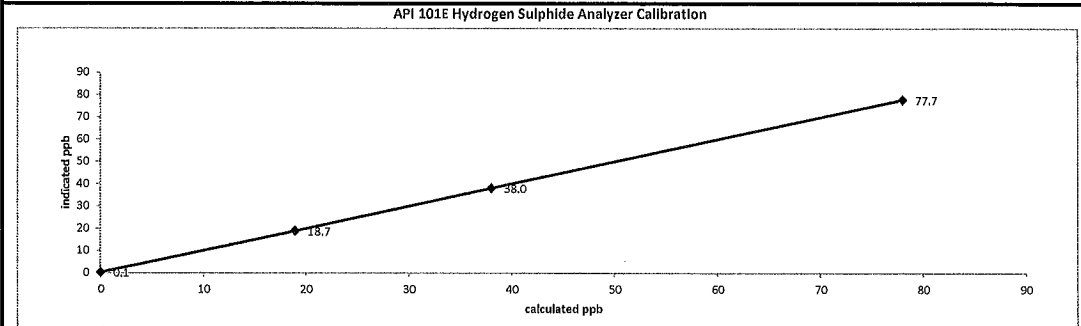
| | | | | |
|--------------|--------------------------|---------|--|---|
| Callibrator: | Flow Meter ID's: | n/a | Standard Calibration Points for Ranges | |
| | Make & Model: | API 700 | Point | Hydrogen Sulphide Standard Calibration Points |
| | Serial #: | 830 | High | 78 |
| | Cal Gas Cylinder I.D. #: | LL36837 | Mid | 38 |
| | Cal Gas Conc. (ppm): | 10.0 | Low | 19 |

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

| Callibrator Flow Rates (cc/min) | | | | Calculated Concentration: | Indicated Concentration: | Correction Factors (C.F.): |
|---------------------------------|---------|---------|-------|---------------------------|--------------------------|----------------------------|
| Point | Diluent | Cal Gas | Total | (ppb) | (ppb) | |
| as found zero | 7498 | 0.00 | 7498 | 0.0 | 0.3 | N/A |
| as found high | 7441 | 58.50 | 7500 | 78.0 | 73.8 | 1.061 |
| adjusted zero | 7498 | 0.00 | 7498 | 0.0 | 0.1 | n/a |
| adjusted high | 7441 | 58.50 | 7500 | 78.0 | 77.7 | 1.005 |
| mid | 7470 | 28.50 | 7499 | 38.0 | 38.0 | 1.003 |
| low | 7481 | 14.20 | 7495 | 18.9 | 18.7 | 1.019 |
| callibrator zero | 7498 | 0.00 | 7498 | 0.0 | 0.2 | n/a |
| Average C.F. = | | | | | | 1.009 |

Linear Regression/Calibration Results:

| | | | |
|------------------------------------|--------|--------|--------------|
| Correlation Coefficient = | 1.000 | LIMITS | > or = 0.995 |
| Slope = | 1.004 | | .95-1.05 |
| b (Intercept as % of full scale) = | -0.02% | | ± 3% F.S. |
| % change in C.F. from last cal = | -6.24% | | ± 10% |

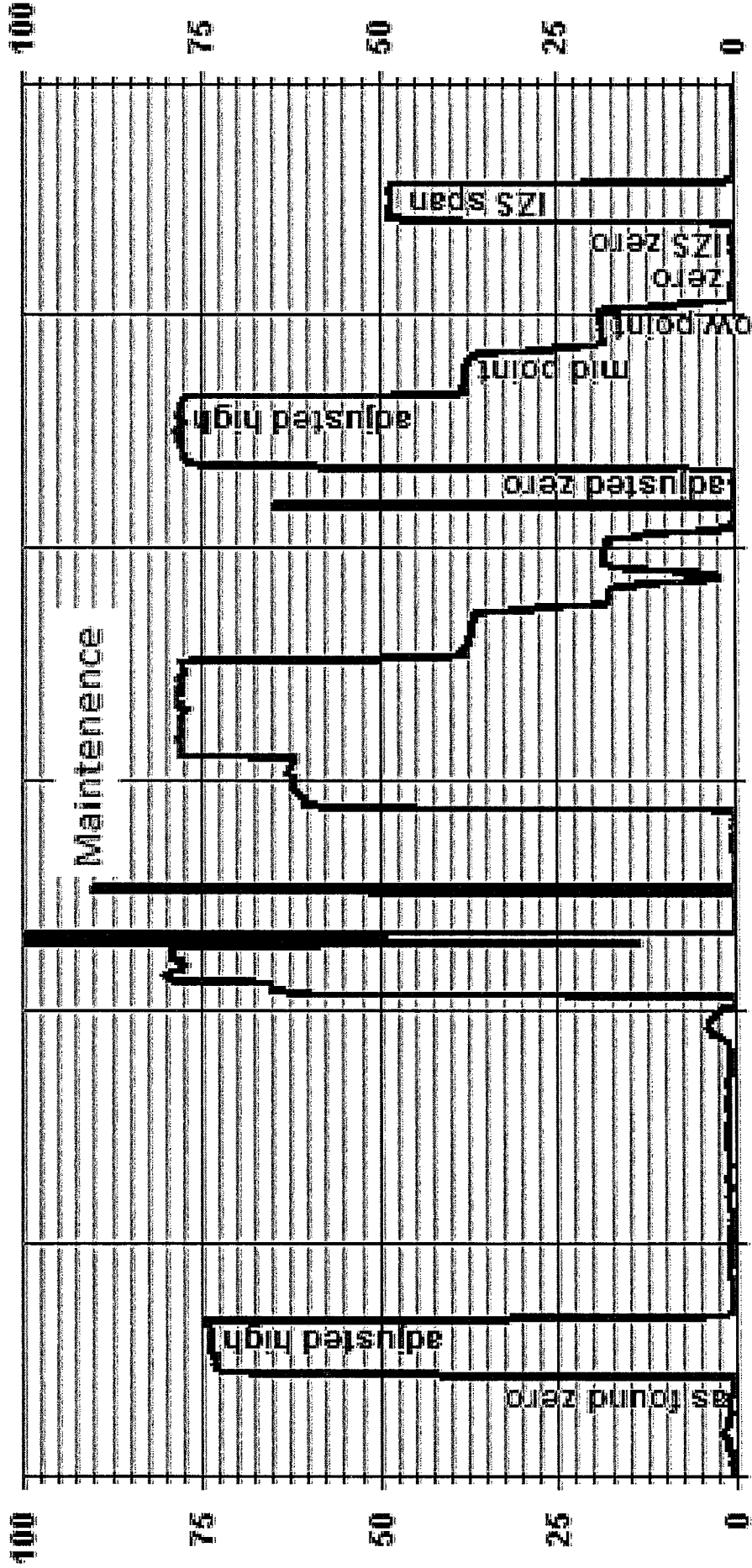


| As found: | | As left: | |
|-----------------|--------|-----------------|-------|
| SLOPE: | 0.789 | SLOPE: | 0.953 |
| OFFSET: | 54.1 | OFFSET: | 48.5 |
| HVPS: | 616 | HVPS: | 616 |
| RCELL TEMP: | 50.0 | RCELL TEMP: | 50 |
| BOX TEMP: | 31.6 | BOX TEMP: | 31.9 |
| PMT TEMP: | 7.9 | PMT TEMP: | 7.9 |
| IZS TEMP: | 45.0 | IZS TEMP: | 45 |
| Converter Temp: | 315.6 | Converter Temp: | 315 |
| PRES: | 7.4 | PRES: | 27.5 |
| SAMP FL: | 645 | SAMP FL: | 647 |
| UV LAMP: | 2466.2 | UV LAMP: | 3206 |
| LAMP RATIO: | 79.3 | LAMP RATIO: | 100.2 |
| STR. LGT | 21.3 | STR. LGT | 23.1 |
| DRK PMT: | 33.8 | DRK PMT: | 36.6 |
| DRK LMP: | 5.4 | DRK LMP: | 7.2 |
| Internal Span: | 47.0 | Internal Span: | 49.3 |

Comments:

Sample Inlet filter changed.

01 Minute Averages



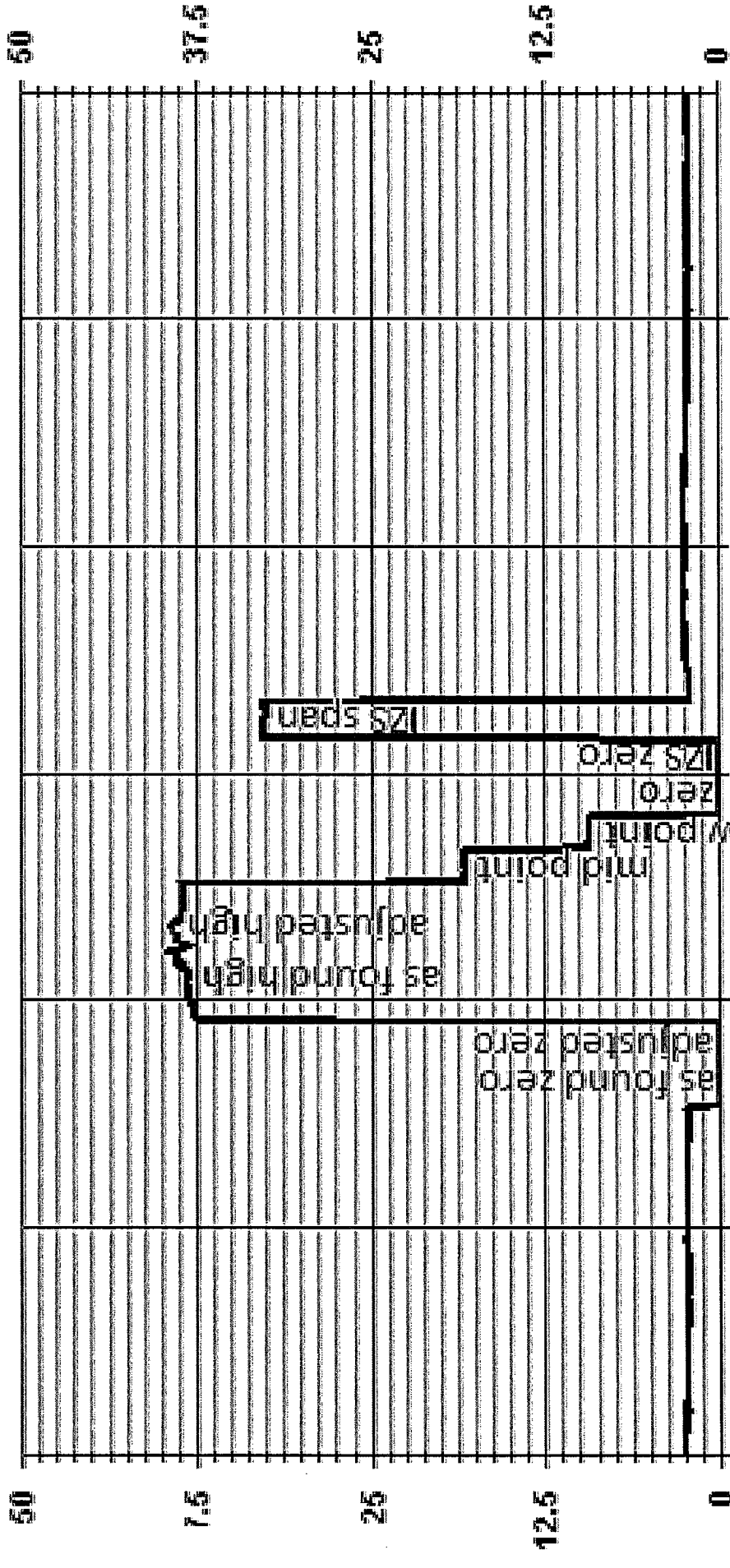
02/23/16 09:30 02/23/16 11:30 02/23/16 13:30 02/23/16 15:30 02/23/16 17:30 02/23/16 19:30

— LICA30 H2S_ PPB

TOTAL HYDROCARBON


| Maxxam <small>ANALYTICAL SYSTEMS</small> | | Thermo 51C Total Hydrocarbon Analyzer Calibration | | | | | | | | | | | |
|---|------------|---|-------|--|--------------------------------|---------------------|------------|------|----|-----|----|-----|---|
| Date: February 17, 2016 | | Barometric Pressure: 0.920 atm | | | | | | | | | | | |
| Company/Alrshed: LICA | | Station Temperature °C: 20 | | | | | | | | | | | |
| Location/Station Name: Maskwa | | Weather Conditions: A few clouds | | | | | | | | | | | |
| Parameters: Total Hydrocarbon | | Calibration Purpose: routine monthly | | | | | | | | | | | |
| Start/End Time 24 hr. (met): 9:57 / 13:44 | | Performed By/Reviewer: Alex Yakupov / Trina Whitsett | | | | | | | | | | | |
| Calibration Method: Gas Dilution | | Cal Gas Expiry Date: November 25, 2023 | | | | | | | | | | | |
| Analyzer: | | | | | | | | | | | | | |
| Serial Number: 436609738 | | Range ppm: 50 | | | | | | | | | | | |
| Last Calibration Date: January 16, 2016 | | As Found C.F.: 1.014 | | | | | | | | | | | |
| Previous Cal High Point C.F.: 1.000 | | New C.F.: 1.007 | | | | | | | | | | | |
| Calibrator: | | | | | | | | | | | | | |
| Flow Meter ID's: n/a | | <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Standard Calibration Points for a Range of: 50 ppm</th> </tr> <tr> <th>Point</th> <th>Target ppm</th> </tr> </thead> <tbody> <tr> <td>High</td> <td>38</td> </tr> <tr> <td>Mid</td> <td>18</td> </tr> <tr> <td>Low</td> <td>9</td> </tr> </tbody> </table> | | Standard Calibration Points for a Range of: 50 ppm | | Point | Target ppm | High | 38 | Mid | 18 | Low | 9 |
| Standard Calibration Points for a Range of: 50 ppm | | | | | | | | | | | | | |
| Point | Target ppm | | | | | | | | | | | | |
| High | 38 | | | | | | | | | | | | |
| Mid | 18 | | | | | | | | | | | | |
| Low | 9 | | | | | | | | | | | | |
| Make & Model: API 700 | | | | | | | | | | | | | |
| Serial #: 830 | | | | | | | | | | | | | |
| Cal Gas Cylinder I.D. #: LL165372 | | | | | | | | | | | | | |
| CH ₄ /C ₂ H ₆ Cylinder Conc. (ppm): 606.0 212.0 | | | | | | | | | | | | | |
| CH ₄ as propane/total CH ₄ equivalents (ppm): 583.0 1189.0 | | | | | | | | | | | | | |
| <i>ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015</i> | | | | | | | | | | | | | |
| Calibrator Flow Rates (cc/min) | | | | | | | | | | | | | |
| Point | Diluent | Cal Gas | Total | Calculated Concentration: (ppm) | Indicated Concentration: (ppm) | Correction Factors: | | | | | | | |
| as found zero | 1999 | 0.00 | 1999 | 0.0 | -0.09 | n/a | | | | | | | |
| as found high | 1931 | 65.00 | 1996 | 38.72 | 38.10 | 1.014 | | | | | | | |
| adjusted zero | 1999 | 0.00 | 1999 | 0.00 | 0.00 | n/a | | | | | | | |
| adjusted high | 1931 | 65.00 | 1996 | 38.72 | 38.45 | 1.007 | | | | | | | |
| mid | 1969 | 31.00 | 2000 | 18.43 | 18.38 | 1.003 | | | | | | | |
| low | 1984 | 16.00 | 2000 | 9.51 | 9.32 | 1.021 | | | | | | | |
| calibrator zero | 1999 | 0.00 | 1999 | 0.0 | 0.00 | n/a | | | | | | | |
| Average C.F.= | | | | | | 1.010 | | | | | | | |
| Linear Regression/Calibration Results: | | | | | | | | | | | | | |
| Correlation Coefficient = 1.000 | | | | LIMITS > or = 0.995 | | | | | | | | | |
| Slope = 1.006 | | | | .95-1.05 | | | | | | | | | |
| b (Intercept as % of full scale) = 0.07% | | | | ± 3% F.S. | | | | | | | | | |
| % change in C.F. from last cal = -1.39% | | | | ± 10% | | | | | | | | | |
| Thermo 51C Total Hydrocarbon Analyzer Calibration | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| As found: | | | | As left: | | | | | | | | | |
| H2 cylinder (psi): 1000 | | | | H2 cylinder (psi): 1000 | | | | | | | | | |
| H2 cylinder reg set (psi): 25 | | | | H2 cylinder reg set (psi): 25 | | | | | | | | | |
| Span Cylinder (psi): 1500 | | | | Span Cylinder (psi): 1500 | | | | | | | | | |
| Span Cylinder Reg Set (psi): 22 | | | | Span Cylinder Reg Set (psi): 22 | | | | | | | | | |
| Zero Air Gen Pressure: 35 | | | | Zero Air Gen Pressure: 35 | | | | | | | | | |
| measurement alarms: None | | | | measurement alarms: None | | | | | | | | | |
| service alarms: None | | | | service alarms: None | | | | | | | | | |
| cnt: 1085 | | | | cnt: 1106 | | | | | | | | | |
| rng: 1 | | | | rng: 1 | | | | | | | | | |
| try: 0 | | | | try: 0 | | | | | | | | | |
| flm: 187.3 | | | | flm: 186.1 | | | | | | | | | |
| det: 125.8 | | | | det: 125.7 | | | | | | | | | |
| Flame: 187 | | | | Flame: 186 | | | | | | | | | |
| Filter: 125 | | | | Filter: 125 | | | | | | | | | |
| Base: 125 | | | | Base: 125 | | | | | | | | | |
| Sample psi: 07.48 | | | | Sample psi: 07.49 | | | | | | | | | |
| Internal Air Pressure: 18 | | | | Internal Air Pressure: 18 | | | | | | | | | |
| Internal Fuel Pressure: 12 | | | | Internal Fuel Pressure: 12 | | | | | | | | | |
| Internal Pressure Gauge psi: 28 | | | | Internal Pressure Gauge psi: 28 | | | | | | | | | |
| Internal Span: 32.2 | | | | Internal Span: 32.5 | | | | | | | | | |
| Comments: | | | | | | | | | | | | | |
| Sample filter changed. | | | | | | | | | | | | | |

01 Minute Averages



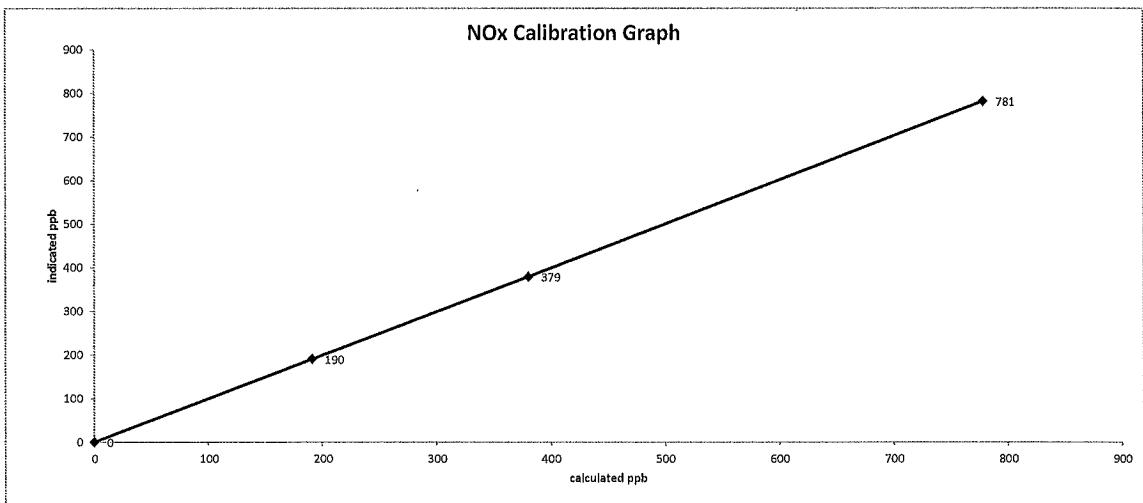
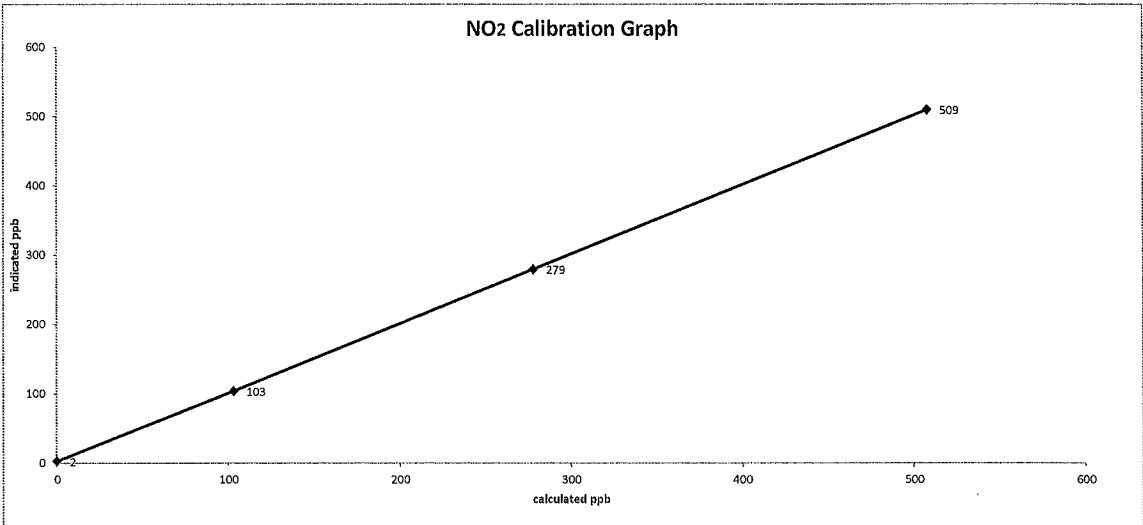
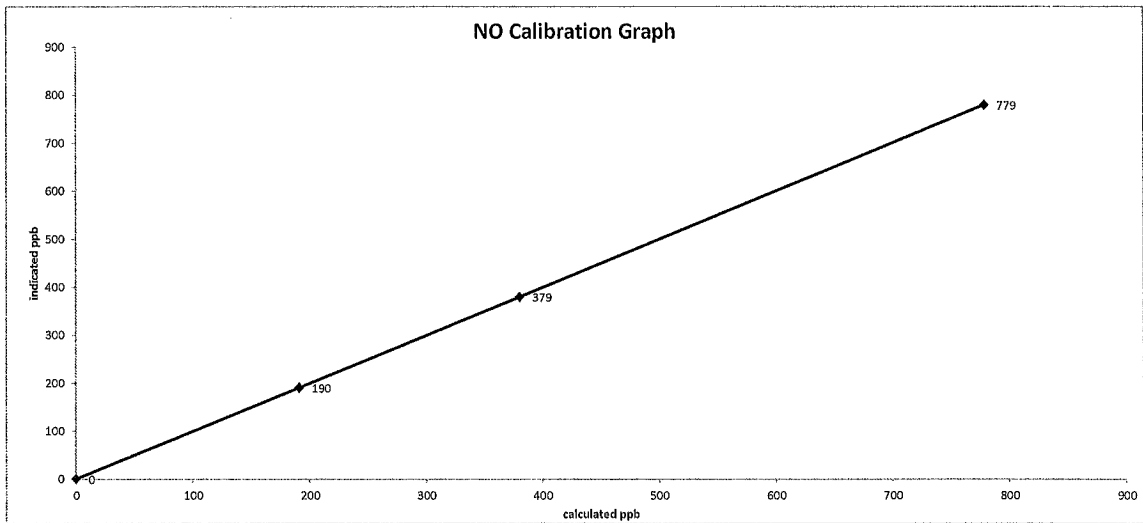
— LICA30 - - - - - THC PPM

NITROGEN DIOXIDE

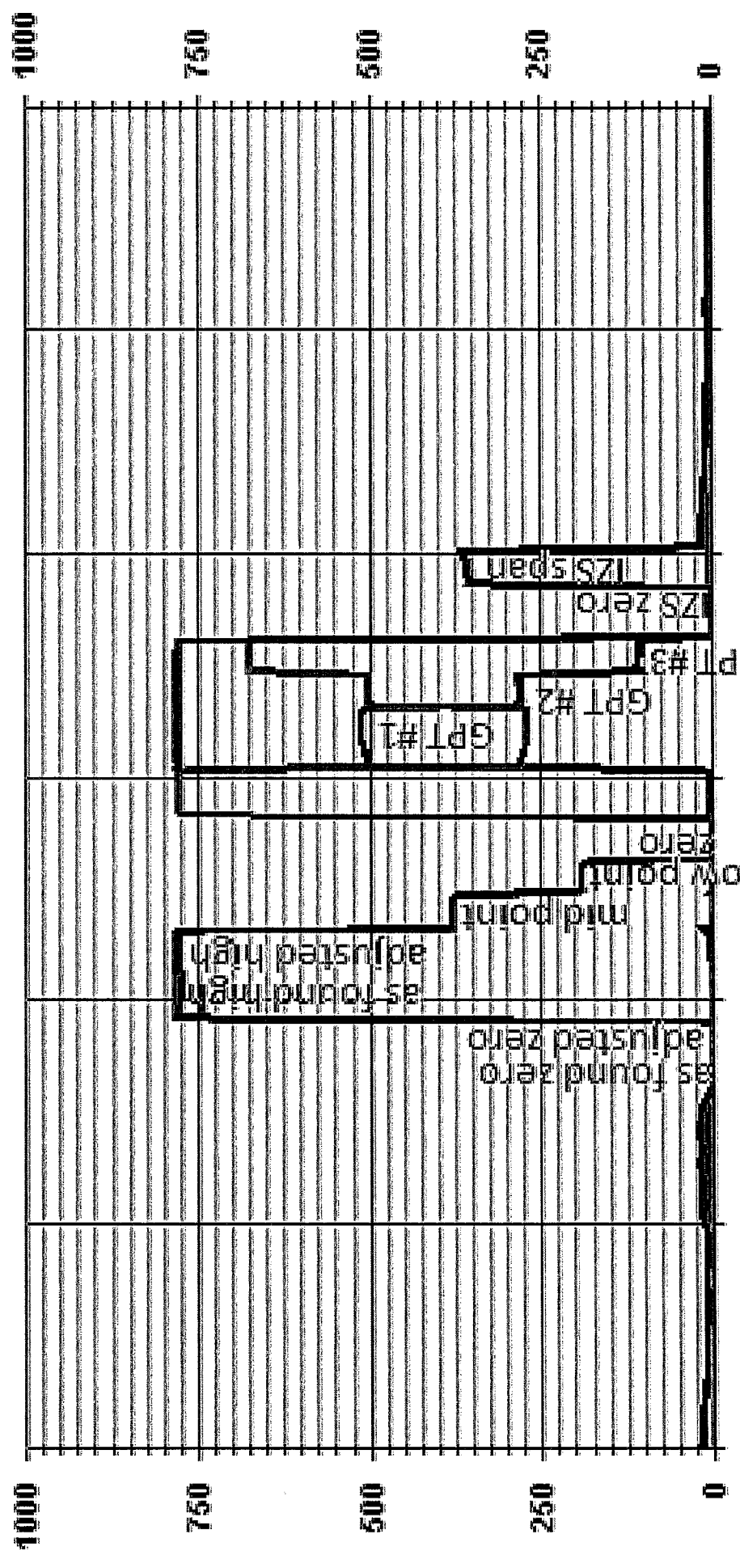
|  API 200A NO-NO2-NOx Analyzer Calibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---------------------------------|------------------------------------|---------------------------------|---------------------|---------------------------------|----------------------------|----------------------------|----------------------------|-------------------|---------------|---------------|---------------|--------------|--------------|----------------|---------------|-------------------|-------------|-----------|-----------|----------------|---------------|-------------|-------------|----------------|----------------|----------------|----------------|------------------|------------------|-----------|-----------|------------|------------|-----------------------|-----------------------|------------------------|------------------------|--------------------------|------------------------|-------------------------------|-------|-----|-------|-------|-------|-------|-------|-------|------------------|---|---|-----|-----|-----|-----|---------------|--|--|--|--|--|-------|-------|
| Date: February 17, 2016 Company/Alrshed: LICA Location/Station Name: Maskwa Start/End Time 24 hr. (mst): 9:57 / 15:07 G.P.T. to be used for Ozone? No Calibration Method: Gas Dilution & Varying UV Lamp Power | Barometric Pressure: 0.920 atm Station Temperature °C: 20 Weather Conditions: A few clouds Calibration Purpose: routine monthly Performed By/Reviewer: Alex Yakupov / Trina Whitsitt Cal Gas Expiry Date: March 12, 2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analyzer: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Serial Number: 1899 Last Calibration Date: January 29, 2016 Range ppb: 1000 | Correction Factors: <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Previous C.F.:</th> <th>As Found C.F.:</th> <th>New C.F.:</th> </tr> </thead> <tbody> <tr> <td>NO =</td> <td>0.999</td> <td>1.000</td> <td>1.000</td> </tr> <tr> <td>NO₂ =</td> <td>1.002</td> <td>0.998</td> <td>0.998</td> </tr> <tr> <td>NOx =</td> <td>0.999</td> <td>1.010</td> <td>0.997</td> </tr> </tbody> </table> | | Previous C.F.: | As Found C.F.: | New C.F.: | NO = | 0.999 | 1.000 | 1.000 | NO ₂ = | 1.002 | 0.998 | 0.998 | NOx = | 0.999 | 1.010 | 0.997 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Previous C.F.: | As Found C.F.: | New C.F.: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NO = | 0.999 | 1.000 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NO ₂ = | 1.002 | 0.998 | 0.998 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NOx = | 0.999 | 1.010 | 0.997 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibrator: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flow Meter ID's: n/a Make & Model: SABIO 2010 D Serial #: 11900613 Cal Gas Cylinder I.D. #: BLM002073 NO/NOx Gas Conc. (ppm): 50.6 50.6 | Standard Calibration Points for a Range of: 1000 ppb <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Point</th> <th>Target NO (ppb)</th> <th>Target NO₂ (ppb)</th> <th>Cc Ozone ?</th> </tr> </thead> <tbody> <tr> <td>High</td> <td>780</td> <td>500</td> <td>n/a</td> </tr> <tr> <td>Mid</td> <td>380</td> <td>275</td> <td>n/a</td> </tr> <tr> <td>Low</td> <td>190</td> <td>100</td> <td>n/a</td> </tr> <tr> <td>Extra Point #1</td> <td>n/a</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td>Extra Point #2</td> <td>n/a</td> <td>n/a</td> <td>n/a</td> </tr> </tbody> </table> | Point | Target NO (ppb) | Target NO ₂ (ppb) | Cc Ozone ? | High | 780 | 500 | n/a | Mid | 380 | 275 | n/a | Low | 190 | 100 | n/a | Extra Point #1 | n/a | n/a | n/a | Extra Point #2 | n/a | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Point | Target NO (ppb) | Target NO ₂ (ppb) | Cc Ozone ? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| High | 780 | 500 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mid | 380 | 275 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low | 190 | 100 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extra Point #1 | n/a | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extra Point #2 | n/a | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Callibrator Flow Rates (cc/min)</th> <th>Calculated NO (ppb)</th> <th>Calculated NOx (ppb)</th> <th>Indicated NO (ppb)</th> <th>Indicated NOx (ppb)</th> <th>NO C.F.</th> <th>NOx C.F.</th> </tr> </thead> <tbody> <tr> <td>as found zero</td> <td>0</td> <td>0</td> <td>0.0</td> <td>0.6</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td>as found high</td> <td>778.9</td> <td>778.9</td> <td>779.0</td> <td>772.0</td> <td>1.000</td> <td>1.010</td> </tr> <tr> <td>adjusted zero</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td>adjusted high</td> <td>778.9</td> <td>778.9</td> <td>779.0</td> <td>781.0</td> <td>1.000</td> <td>0.997</td> </tr> <tr> <td>mid</td> <td>380.5</td> <td>380.5</td> <td>379.0</td> <td>379.0</td> <td>1.004</td> <td>1.004</td> </tr> <tr> <td>low</td> <td>190.8</td> <td>190.8</td> <td>190.0</td> <td>190.0</td> <td>1.004</td> <td>1.004</td> </tr> <tr> <td>callibrator zero</td> <td>0</td> <td>0</td> <td>0.0</td> <td>0.0</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td colspan="6" style="text-align: right;">Average C.F.=</td> <td>1.003</td> <td>1.002</td> </tr> </tbody> </table> | | Callibrator Flow Rates (cc/min) | Calculated NO (ppb) | Calculated NOx (ppb) | Indicated NO (ppb) | Indicated NOx (ppb) | NO C.F. | NOx C.F. | as found zero | 0 | 0 | 0.0 | 0.6 | n/a | n/a | as found high | 778.9 | 778.9 | 779.0 | 772.0 | 1.000 | 1.010 | adjusted zero | 0.0 | 0.0 | 0.0 | 0.0 | n/a | n/a | adjusted high | 778.9 | 778.9 | 779.0 | 781.0 | 1.000 | 0.997 | mid | 380.5 | 380.5 | 379.0 | 379.0 | 1.004 | 1.004 | low | 190.8 | 190.8 | 190.0 | 190.0 | 1.004 | 1.004 | callibrator zero | 0 | 0 | 0.0 | 0.0 | n/a | n/a | Average C.F.= | | | | | | 1.003 | 1.002 |
| Callibrator Flow Rates (cc/min) | Calculated NO (ppb) | Calculated NOx (ppb) | Indicated NO (ppb) | Indicated NOx (ppb) | NO C.F. | NOx C.F. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found zero | 0 | 0 | 0.0 | 0.6 | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found high | 778.9 | 778.9 | 779.0 | 772.0 | 1.000 | 1.010 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| adjusted zero | 0.0 | 0.0 | 0.0 | 0.0 | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| adjusted high | 778.9 | 778.9 | 779.0 | 781.0 | 1.000 | 0.997 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mid | 380.5 | 380.5 | 379.0 | 379.0 | 1.004 | 1.004 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| low | 190.8 | 190.8 | 190.0 | 190.0 | 1.004 | 1.004 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| callibrator zero | 0 | 0 | 0.0 | 0.0 | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average C.F.= | | | | | | 1.003 | 1.002 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Callibrator Flow Rates (cc/min)</th> <th>Callibrator Setting (volts or ppb)</th> <th>Indicated NO (ppb)</th> <th>Indicated NOx (ppb)</th> <th>Indicated NO₂ (ppb)</th> <th>NO drop (ppb)</th> <th>NO₂ gain (ppb)</th> <th>NO₂ C.F. (ppb)</th> </tr> </thead> <tbody> <tr> <td>NOx reference</td> <td>0.0</td> <td>777.0</td> <td>779.0</td> <td>2.0</td> <td>0.0</td> <td>2.0</td> <td></td> </tr> <tr> <td>as found high NO2</td> <td>520.0</td> <td>269.0</td> <td>780.0</td> <td>511.0</td> <td>508.0</td> <td>509.0</td> <td>0.998</td> </tr> <tr> <td>gpt mid</td> <td>275.0</td> <td>499.0</td> <td>781.0</td> <td>281.0</td> <td>278.0</td> <td>279.0</td> <td>0.996</td> </tr> <tr> <td>gpt low</td> <td>98.0</td> <td>674.0</td> <td>779.0</td> <td>105.0</td> <td>103.0</td> <td>103.0</td> <td>1.000</td> </tr> <tr> <td colspan="7" style="text-align: right;">Average NO₂ C.F.=</td> <td>0.998</td> </tr> </tbody> </table> | | Callibrator Flow Rates (cc/min) | Callibrator Setting (volts or ppb) | Indicated NO (ppb) | Indicated NOx (ppb) | Indicated NO ₂ (ppb) | NO drop (ppb) | NO ₂ gain (ppb) | NO ₂ C.F. (ppb) | NOx reference | 0.0 | 777.0 | 779.0 | 2.0 | 0.0 | 2.0 | | as found high NO2 | 520.0 | 269.0 | 780.0 | 511.0 | 508.0 | 509.0 | 0.998 | gpt mid | 275.0 | 499.0 | 781.0 | 281.0 | 278.0 | 279.0 | 0.996 | gpt low | 98.0 | 674.0 | 779.0 | 105.0 | 103.0 | 103.0 | 1.000 | Average NO ₂ C.F.= | | | | | | | 0.998 | | | | | | | | | | | | | | | | |
| Callibrator Flow Rates (cc/min) | Callibrator Setting (volts or ppb) | Indicated NO (ppb) | Indicated NOx (ppb) | Indicated NO ₂ (ppb) | NO drop (ppb) | NO ₂ gain (ppb) | NO ₂ C.F. (ppb) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NOx reference | 0.0 | 777.0 | 779.0 | 2.0 | 0.0 | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found high NO2 | 520.0 | 269.0 | 780.0 | 511.0 | 508.0 | 509.0 | 0.998 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| gpt mid | 275.0 | 499.0 | 781.0 | 281.0 | 278.0 | 279.0 | 0.996 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| gpt low | 98.0 | 674.0 | 779.0 | 105.0 | 103.0 | 103.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average NO ₂ C.F.= | | | | | | | 0.998 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Linear Regression/Calibration Results: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Correlation Coefficient = 1.000 Slope = 1.000 b (Intercept as % of full scale) = -0.06% % change in C.F. from last cal = -0.09% NO2 converter efficiency | <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>NO</th> <th>NOx</th> <th>NO₂</th> </tr> </thead> <tbody> <tr> <td>1.000</td> <td>1.000</td> <td>1.000</td> </tr> <tr> <td>1.000</td> <td>0.997</td> <td>1.001</td> </tr> <tr> <td>-0.06%</td> <td>-0.10%</td> <td>0.12%</td> </tr> <tr> <td>-0.09%</td> <td>-1.07%</td> <td>0.40%</td> </tr> <tr> <td></td> <td></td> <td>1.00</td> </tr> </tbody> </table> | NO | NOx | NO ₂ | 1.000 | 1.000 | 1.000 | 1.000 | 0.997 | 1.001 | -0.06% | -0.10% | 0.12% | -0.09% | -1.07% | 0.40% | | | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NO | NOx | NO ₂ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.000 | 1.000 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.000 | 0.997 | 1.001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -0.06% | -0.10% | 0.12% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -0.09% | -1.07% | 0.40% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LIMITS > or = 0.995 .95-1.05 ± 3% F.S. ± 10% 0.96 to 1.04 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width:100%;"> <thead> <tr> <th style="width:50%; text-align: left;">As found:</th> <th style="width:50%; text-align: left;">As left:</th> </tr> </thead> <tbody> <tr><td>NOx SLOPE: 0.921</td><td>NOx SLOPE: 0.931</td></tr> <tr><td>NOx OFFS: -0.0</td><td>NOx OFFS: 0.5</td></tr> <tr><td>NO SLOPE: 0.939</td><td>NO SLOPE: 0.939</td></tr> <tr><td>NO OFFS: -1.4</td><td>NO OFFS: -1.8</td></tr> <tr><td>SAMP FLW: 550</td><td>SAMP FLW: 549</td></tr> <tr><td>OZONE FL: 77</td><td>OZONE FL: 77</td></tr> <tr><td>NORM PMT: -0.9</td><td>NORM PMT: 0.4</td></tr> <tr><td>AZERO: 23.0</td><td>AZERO: 23.6</td></tr> <tr><td>HVPS: 682</td><td>HVPS: 682</td></tr> <tr><td>DCPS: 2574</td><td>DCPS: 2580</td></tr> <tr><td>RCELL: 50.5</td><td>RCELL: 50.7</td></tr> <tr><td>BOX TEMP: 27.5</td><td>BOX TEMP: 31.0</td></tr> <tr><td>IZS TEMP: 40.0</td><td>IZS TEMP: 40.2</td></tr> <tr><td>MOLY TEMP: 315.3</td><td>MOLY TEMP: 315.3</td></tr> <tr><td>RCEL: 5.4</td><td>RCEL: 5.4</td></tr> <tr><td>SAMP: 25.8</td><td>SAMP: 25.8</td></tr> <tr><td>Internal Span NO: 3.2</td><td>Internal Span NO: 2.8</td></tr> <tr><td>Internal Span NO2: 368</td><td>Internal Span NO2: 359</td></tr> <tr><td>Internal Span NOx: 364.8</td><td>Internal Span NOx: 362</td></tr> </tbody> </table> | | As found: | As left: | NOx SLOPE: 0.921 | NOx SLOPE: 0.931 | NOx OFFS: -0.0 | NOx OFFS: 0.5 | NO SLOPE: 0.939 | NO SLOPE: 0.939 | NO OFFS: -1.4 | NO OFFS: -1.8 | SAMP FLW: 550 | SAMP FLW: 549 | OZONE FL: 77 | OZONE FL: 77 | NORM PMT: -0.9 | NORM PMT: 0.4 | AZERO: 23.0 | AZERO: 23.6 | HVPS: 682 | HVPS: 682 | DCPS: 2574 | DCPS: 2580 | RCELL: 50.5 | RCELL: 50.7 | BOX TEMP: 27.5 | BOX TEMP: 31.0 | IZS TEMP: 40.0 | IZS TEMP: 40.2 | MOLY TEMP: 315.3 | MOLY TEMP: 315.3 | RCEL: 5.4 | RCEL: 5.4 | SAMP: 25.8 | SAMP: 25.8 | Internal Span NO: 3.2 | Internal Span NO: 2.8 | Internal Span NO2: 368 | Internal Span NO2: 359 | Internal Span NOx: 364.8 | Internal Span NOx: 362 | | | | | | | | | | | | | | | | | | | | | | | | |
| As found: | As left: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NOx SLOPE: 0.921 | NOx SLOPE: 0.931 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NOx OFFS: -0.0 | NOx OFFS: 0.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NO SLOPE: 0.939 | NO SLOPE: 0.939 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NO OFFS: -1.4 | NO OFFS: -1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SAMP FLW: 550 | SAMP FLW: 549 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OZONE FL: 77 | OZONE FL: 77 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NORM PMT: -0.9 | NORM PMT: 0.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AZERO: 23.0 | AZERO: 23.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HVPS: 682 | HVPS: 682 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DCPS: 2574 | DCPS: 2580 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RCELL: 50.5 | RCELL: 50.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BOX TEMP: 27.5 | BOX TEMP: 31.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IZS TEMP: 40.0 | IZS TEMP: 40.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MOLY TEMP: 315.3 | MOLY TEMP: 315.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RCEL: 5.4 | RCEL: 5.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SAMP: 25.8 | SAMP: 25.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Internal Span NO: 3.2 | Internal Span NO: 2.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Internal Span NO2: 368 | Internal Span NO2: 359 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Internal Span NOx: 364.8 | Internal Span NOx: 362 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample filter changed. No NO2 adustment made. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Date: February 17, 2016
Company/Airshed: LICA
Location/Station Name: Maskwa

Start/End Time 24 hr. (mst): 9:57 / 15:07
Calibration Purpose: routine monthly
Calibration Method: Gas Dilution & Varying UV Lamp Power



01 Minute Averages



— LICA30 NOX PPB — LICA30 NO2 PPB — LICA30 PPB — LICA30 NO PPB

METEOROLOGICAL SYSTEM CHECK

Meteorological System Checklist

Date: 26/02/2016
 Performed by: Alex Yakupov
 Station: Maskwa
 Start: 14:10 End: 14:40

PRECIPITATION SENSOR CHECK

Previous check date: February 26, 2016

| | YES | NO |
|---|------|----|
| Is the sensor Level? | YES | |
| Is the heater operating properly? | YES | |
| Are the bucket drain holes clean? | YES | |
| Is the inner screen on the housing? (screen should be on between July and September) | n/a | |
| Is the upper screen on the housing? (screen should be on between July and September) | n/a | |
| Is the housing clean? | YES | |
| Is the area around the housing clean and free from obstacle? | YES | |
| Is the tipping sensor working properly? (14:19 - 14:22 - live test / water (test sequence 2.0 - 0.0 - 1.0 - 0.1 mm) | YES | |
| | PASS | |

Comments: the rain gauge has been tested with water. Response is timely and accurate. No issues.

Field Technician: Alexander Yakupov February 26, 2016

WIND SYSTEM

**Met One Instruments Inc.
Certificate of Calibration**

Instrument: Sonic Wind Sensor Model No.: 50.5H
 Manufacturer: Met One Instruments Inc. Serial No.: H10703

Sales Order No.: 101530

Customer: Maxxam Analytics Tested per P.O. No.: 35-54786

Instrument Condition Within Tolerance: As Found () As Left (X)
 Corrective Action: No Adjustment () Adjust (X) Repair ()
 Preventative Maintenance ()

Quality Control Manual Revision: September 16, 2013 MP42201 Rev. G
 All Work Performed per Customers Purchase Order Requirements
 Calibration Document No. 50.5-8100

Date (As Found): n/a Date (As Left Test): 3/4/2014

Calibrated by: Dan Fied Date: 3/4/14

Test Equipment Used for Calibration of Instruments

| Description | Manufacturer | Model No. | Serial No. | Cal Date | Cal Due | Accuracy |
|-----------------------|---------------------|-----------|------------|-----------|-----------|-------------------|
| Digital Multimeter | Keithley | 197A | 490833 | 3/8/2013 | 3/8/2014 | +/- .02% of input |
| Counter | Hewlett Packard | 5245L | 71616181 | 3/8/2013 | 3/8/2014 | +/- 0.0001% |
| Standard Cup Assembly | Met One Instruments | 170.41 | 3309 | 4/24/2012 | 4/24/2017 | < .15mph or 1% ws |

Environmental Data: Temperature 65 to 80 DegF Vibration none
 Humidity 20 to 70% Radiation none

The standards used for calibration have accuracies equal to or greater than the instruments tested. These standards are on record and are traceable to NIST to the extent allowed by the Institute's calibration facility. Unless otherwise stated hereon, all instruments are calibrated to meet the manufacturer's published specifications. The calibration system complies with MIL-STD-45662A (8/1/88). Instruments accuracy meets the requirements of Regulatory Guide 1.23 (2/72). Compliant with ISO 9001:2008 requirements.

QC Inspector by: Byron Paulsen Date: 3/10/14

CALIBRATORS

Company: Maxxam Operator: Limin Li

| Calibrator: | | Flow Measurement Device: | |
|------------------------|--------------------|--------------------------|------------|
| Make/Model | <u>Sabio 2010D</u> | Make/Model | <u>N/A</u> |
| Serial Number | <u>11900613</u> | Serial Number | <u>N/A</u> |
| Oven Temperature | <u>N/A</u> | Temperature (°C) | <u>N/A</u> |
| Last Verification Date | <u>N/A</u> | Barometric Pressure | <u>N/A</u> |

Flow Measurements

Pt. No. 1 5000 Pt. No. 2 5000 Pt. No. 3 5000

| Calibrator Flow (sccm) | Calculated Concentration (ppm) | Indicated Concentration (ppm) | % Difference | |
|-------------------------------------|-----------------------------------|----------------------------------|--------------|---------------|
| | | | vs Audit Gas | % Diff. Limit |
| 5013 | 0.000 | 0.001 | | |
| 5013 | 0.400 | 0.407 | 1% | ± 10% |
| 5013 | 0.200 | 0.204 | 1% | ± 10% |
| 5014 | 0.100 | 0.101 | 0% | ± 10% |
| Absolute Average Percent Difference | | | 1% | ± 10% |

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

| <u>O₃</u> | | <u>LIMITS</u> |
|------------------------|--------|---------------|
| Correlation= | 1.0000 | ≥ 0.995 |
| m (Slope)= | 1.0163 | 0.90-1.10 |
| b (Intercept % of FS)= | 0.0800 | ± 3% F.S. |

| AENV Standards | | Ozone Analyzer | |
|-------------------------|--------------------|-----------------------|---------------------|
| Audit Calibrator | | Make/Model | <u>Teco 49i</u> |
| Make/Model | <u>Teco 49i PS</u> | Serial/AMU Number | <u>AMU 1843</u> |
| Serial/AMU Number | <u>AMU 1808</u> | Last Calibration Date | <u>May 21, 2015</u> |
| Ozone Standard | <u>Primary</u> | Full Scale (ppm) | <u>0.5</u> |

COMMENTS: _____

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

Company: Maxxam Operator: Limin Li

| Calibrator: | | Flow Measurement Device: | |
|--------------------------------|-----------------|--------------------------|------------|
| Make/Model | <u>API 700</u> | Make/Model | <u>N/A</u> |
| Serial Number | <u>830</u> | Serial Number | <u>N/A</u> |
| Last Verification Date | <u>Oct 2013</u> | Temperature (°C) | <u>N/A</u> |
| SO ₂ Cylinder Conc. | <u>50.3</u> | Barometric Pressure | <u>N/A</u> |
| SO ₂ Cylinder S/N | <u>LL42475</u> | | |

Flow Measurements

Pt. No. 1 79.5 Pt. No. 2 39.8 Pt. No. 3 19.9

| Calibrator Flow (sccm) | Calculated Concentration (ppm) | Indicated Concentration (ppm) | % Difference | |
|-------------------------------------|--------------------------------|-------------------------------|--------------|---------------|
| | | | vs Audit Gas | % Diff. Limit |
| Zero Air | 0.000 | 0.000 | | |
| 4918 | 0.800 | 0.798 | 0% | ± 10% |
| 4960 | 0.400 | 0.398 | -1% | ± 10% |
| 4977 | 0.200 | 0.200 | 0% | ± 10% |
| Absolute Average Percent Difference | | | 0% | ± 10% |

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

| <u>SO₂</u> | | <u>LIMITS</u> | |
|------------------------|--------|---------------|-----------|
| Correlation= | 1.0000 | ≥ | 0.995 |
| m (Slope)= | 0.9971 | | 0.90-1.10 |
| b (Intercept % of FS)= | 0.0000 | ± | 3% F.S. |

| AENV Standards | | SO ₂ Analyzer | |
|-------------------------|------------------------|--------------------------|------------------|
| Audit Calibrator | | Make/Model | <u>Teco 43C</u> |
| Make/Model | <u>R&R MFC 201</u> | Serial/AMU Number | <u>AMU 1623</u> |
| Serial/AMU Number | <u>AMU 1690</u> | Last Calibration Date | <u>Dec 15/14</u> |
| | | Full Scale (ppm) | <u>1.0</u> |

COMMENTS: H2S gas was slow to move through the calibrator. Check for contamination inside calibrator. SO2 moves through quickly.

Auditor: Al Clark Date: December 16, 2014
Operator Signature: _____ Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2015-116CGA

Company: Maxxam Operator's Name: Chris Wesson
 Cylinder #: LL119346 Concentration PPM: 50.0 Tolerance(%): 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: Thermo146i
 Serial Number: 1809
 Last Verification Date: February 2, 2016
 Gas Type: SO2 Conc. 98.07
 Cylinder Number: CAL016625

Flow Measurement Device:

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

Reference Analyzer:

Make/Model: Thermo 43C Serial/AMU Number: 1623
 Instrument Settings: Zero: 8.7 Span: 1.027 Range: 1.0
 Last Calibration: Date: 1-Feb-16 C.F. 1.000 Done By: SB

| Calibrator Flows (sccm) | | Indicated Concentration (PPM) | Gas Flow/ Dilution Flow | Concentration Factor | Cylinder Concentration |
|---------------------------------|-------|-------------------------------|----------------------------|----------------------|------------------------|
| Dilution | Gas | | | | |
| 4952 | 0.0 | 0.000 | 0.01608 | 62.183 | 49.3 |
| 4946 | 79.54 | 0.793 | 0.01608 | 62.183 | 49.3 |
| 4941 | 39.35 | 0.396 | 0.00796 | 125.565 | 49.7 |
| 4940 | 19.57 | 0.195 | 0.00396 | 252.427 | 49.2 |
| Average Cylinder Concentration: | | | | | 49.4 |

Previous Stated Concentration PPM: 50.0

Percent variance from Stated: 1.2

Meets Manufacturer Tolerance, Use manufacturers stated concentration COMMENTS: SO2/NO blend 50.0ppm NO
 <=5% Outside Manufacturer Tolerance, Use manufacturers concentration
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder

Auditor: Shea Beaton
 Operator Signature: [Signature]

Date: February 2, 2016
 Location: McIntyre Center Edmonton



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2014-251CGA

Company: Maxxam Operator's Name: Limin Li
Cylinder #: LL36837 Concentration PPM: 10.0 Tolerance(%) 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: December 15, 2014
Gas Type: H2S Conc. 20.43
Cylinder Number: CAL015106

Flow Measurement Device:

Make/Model: Bios DC2
Serial Number: AMU 1659
Temp. °C: 23.0 C
B.P. 702 mmhg

Reference Analyzer:

Make/Model: Teco 45C Serial/AMU Number: 1624
Instrument Settings: Zero: 6.4 Span: 1.160 Range: 0.1
Last Calibration: Date: Dec15/14 C.F. 1.000 Done By: Al Clark

| Calibrator Flows (sccm) | | Indicated Concentration (PPM) | Gas Flow/ Dilution Flow | Concentration Factor | Cylinder Concentration |
|---------------------------------|------|-------------------------------|----------------------------|----------------------|------------------------|
| Dilution | Gas | | | | |
| 5000 | 0.0 | 0.0000 | 0.00755 | 132.442 | 10.0 |
| 5099 | 38.5 | 0.0754 | 0.00755 | 132.442 | 10.0 |
| 5092 | 18.0 | 0.0349 | 0.00353 | 282.889 | 9.9 |
| 5066 | 9.2 | 0.0178 | 0.00182 | 550.652 | 9.8 |
| Average Cylinder Concentration: | | | | | 9.9 |

Previous Stated Concentration PPM: 10.0

Percent variance from Stated: 1.1

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

Auditor: Al Clark
Operator Signature: *Al Clark*

Date: December 16, 2014
Location: McIntyre Center Edmonton



Calibration Gas Audit

CH4 / C3H8 Cylinder Gas

File No. 2015-092CGA

Company: Maxxam Operators name: Chris Wesson
 Cylinder #: LL165372 Conc CH4 (PPM) 606/212 Tolerance (%) 0.5 Certified By: Praxair

| Reference Calibrator and Gas: | | | | Flow Measurement Device: | |
|-------------------------------|-------------------------|-------|--------------|--------------------------|------------------|
| Make/Model | <u>R&R MFC 201</u> | | | Make/Model | <u>Elos DC-2</u> |
| Serial Number | <u>AMU 1698</u> | | | Serial Number | <u>Elos D</u> |
| Last Verification Date | <u>January 18, 2016</u> | | | Temp. °C | <u>24.5</u> |
| Gas Type | <u>CH4</u> | Conc. | <u>999.2</u> | B.P. | <u>688mmHg</u> |
| Cylinder Number | <u>D761932</u> | | | | |
| Gas Type | <u>C3H8</u> | Conc. | <u>246.5</u> | | |
| Cylinder Number | <u>XF0037998</u> | | | | |

Reference Analyzer:
 Make/Model: Thermo 56C Serial/AMU Number: 1643
 Instrument Settings: Zero: NA Span: NA Range: 20.0
 Last Calibration: Date: 18-Jan-16 C.F.: 1.000 Done By: SB

| Calibrator Flows (scm) | | Indicated Conc. (ppm) | | Gas Flow/ Dilution Flow | Concentration Factor | Cylinder Concentration | |
|---------------------------------|-------|-----------------------|-------|----------------------------|-------------------------|------------------------|----------------|
| Dilution | Gas | CH4 | C3H8 | | | CH4 | C3H8 |
| 2568 | 0.00 | 0.00 | 0.00 | 0.02140 | 46.722 | 607 | 214 |
| 2630 | 56.29 | 12.99 | 12.62 | 0.02140 | 46.722 | 607 | 214 |
| 2588 | 19.73 | 4.62 | 4.50 | 0.00762 | 131.171 | 606 | 215 |
| 2580 | 9.69 | 2.29 | 2.24 | 0.00376 | 266.254 | 610 | 217 |
| Average Cylinder Concentration: | | | | | | 608 | 215 |

| | | | |
|------------------------------------|------------|--|-------------|
| | CH4 | | C3H8 |
| Previous Stated Concentration PPM: | <u>606</u> | | <u>212</u> |
| Percent variance from Stated: | <u>0.3</u> | | <u>1.6</u> |

Cylinder gas tolerances based on CH4 only

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

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



Calibration Gas Audit

NO Cylinder Gas

File No. 2015-345CGA

Company: Maxxam **Operators name:** Limin Li
Cylinder #: BLM002073 **Conc (PPM)** 50.6/50.6 **Tolerance (%)** 2 **Certified By:** Air Liquide

| Reference Calibrator and Gas: | | | | Flow Measurement Device: | |
|-------------------------------|-----------------------|-------|--------------|--------------------------|-----------------|
| Make/Model | <u>Teco 146I</u> | | | Make/Model | <u>Bios DC2</u> |
| Serial Number | <u>AMU 1809</u> | | | Serial Number | <u>AMU 1659</u> |
| Last Verification Date | <u>March 31, 2015</u> | | | Temp. °C | <u>22.5 C</u> |
| Gas Type | <u>NO</u> | Conc. | <u>48.79</u> | B.P. | <u>690 mmhg</u> |
| Cylinder Number | <u>CAL018024</u> | | | | |

Reference Analyzer:
 Make/Model Teco 42I Serial/AMU Number: 1868
 Instrument Settings Zero: 4.2 Span: 1.008 Range: 1.0
 Last Calibration: Date: Mar 31/15 C.F. 1.000 Done By: Al Clark

| Calibrator Flows (scm) | | Indicated Conc. (ppm) | | Gas Flow/ Dilution Flow | Concentration Factor | Cylinder Concentration | |
|---------------------------------|------|-----------------------|-------|----------------------------|-------------------------|------------------------|-------------|
| Dilution | Gas | NO | NOX | | | NO | NOX |
| 5000 | 0.0 | 0.000 | 0.000 | | | | |
| 4976 | 82.6 | 0.855 | 0.848 | 0.01660 | 60.242 | 51.5 | 51.1 |
| 4993 | 41.0 | 0.427 | 0.421 | 0.00821 | 121.780 | 52.0 | 51.3 |
| 4977 | 20.2 | 0.213 | 0.209 | 0.00406 | 246.386 | 52.5 | 51.5 |
| Average Cylinder Concentration: | | | | | | 52.0 | 51.3 |

| | |
|--|-------------|
| <u>NO</u> | <u>NOx</u> |
| Previous Stated Concentration PPM: <u>50.6</u> | <u>50.6</u> |
| Percent variance from Stated: <u>2.8</u> | <u>1.4</u> |

Cylinder gas tolerances based on NO only

Meets Manufacturer Tolerance. Use manufacturers stated concentration **COMMENTS:** _____
 <=5% Outside Manufacturer Tolerance. Use manufacturers concentration Contains 49.5 ppm SO2 in cylinder
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder

Auditor: Al Clark Date: March 31, 2015
 Operator Signature: *Al Clark* Location: McIntyre Center Edmonton

APPENDIX III
REPORT CERTIFICATION FORM

Report Certification Form

| | |
|--|--|
| Alberta Airshed (if applicable) | EPA Approval or Code of Practice Registration # (if applicable) |
| YES | NA |
| Company Name (if applicable) | Industrial Operation Name (if applicable) |
| Lakeland Industry & Community Association | Maskwa Site |
| Name of the Representative of the Person Responsible (Last, First, Middle) | Position / Title of the Representative of the Person Responsible |
| Wunmi Adekanmbi | Project Manager Assistant, Customer Service, Air Services |
| Is an External Party Certifying the Report? (If Yes, fill in the fields below for the external person.) | |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Name of External Person Certifying the Report (Last, First, Middle) | Position / Title of External Person Certifying the Report |
| NA | NA |
| Company Name for the External Person Certifying the Report | Identification of Qualifications / Professional Designations of the External Person Certifying the Report |
| NA | NA |

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

Wunmi Adekanmbi

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

14 - March - 2016

Report Issued Date (dd-mm-yyyy)

APPENDIX IV
DATA VALIDATION CERTIFICATION FORM



Validation Certificate Form

| | |
|---|---|
| Client: <u>Lakeland Industry & Community Association</u> | Project #: <u>2833-2016-02-30- C</u> |
| Site: <u>Maskwa Site</u> | Contact: <u>Mike Bisaga</u> |

Level 0 Preliminary Verification

msdmbq

Date 08-March-2016

Level 1 Primary Validation

msdmbq

Date 08-March-2016

Level 2 Final Validation

msdmbq

Date 14-March-2016

Level 3 Independent Data Review

[Signature]

Date 15-Mar-16

Post-Final Validation

NA

Date NA

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



maxxam.ca

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

Toll Free 800-386-7247
Fax 403-219-3673

**AMBIENT AIR MONITORING MONTHLY DATA REPORT
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
ST. LINA SITE**

JOB #:2833-2016-02-31- C

FEBRUARY 2016

Prepared for:

**LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
BOX 8237, 5107W - 50 STREET
BONNYVILLE, ALBERTA
T9N 2J5**

Attention: MIKE BISAGA

DATE: **March 14, 2016**

Prepared by:

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

Reviewed by:

Lily Lin, B.Sc.
Senior Project Manager, Customer Service, Air Services

SUMMARY

In FEBRUARY 2016, the Air Services Group of Maxxam Analytics conducted an ambient air monitoring program on the St. Lina Site at Lakeland Industry & Community Association, near St. Paul. Sampling was carried out to determine the concentrations of non-compliance parameters as requested by the Project Coordinator.

All data collected this month were within the objectives outlined in the AMD1989, AMD2006 and AMD2015.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

For all parameters (except H₂S and Ozone), hourly maximum data collected on February 12 at hour 9 was invalidated as the analyzer was recovering from a short power outage.

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 is issuing this completed report to Lakeland Industry & Community Association, St. Lina Site.

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

| Lakeland Industry & Community Association | | | | | | MAXIMUM VALUES | | | | | | | OPERATIONAL TIME (%) |
|---|------------|-------|-------------|-------|-----------------|----------------|-------|--------|------------------|--------------------------|---------|-----|----------------------|
| St. Lina Site | | | | | | 1-HOUR | | | | | 24-HOUR | | |
| PARAMETER | OBJECTIVES | | EXCEEDENCES | | MONTHLY AVERAGE | READING | DAY | HOUR | WIND SPEED (KPH) | WIND DIRECTION (DEGREES) | READING | DAY | |
| | 1-HR | 24-HR | 1-HR | 24-HR | | | | | | | | | |
| SO2 (PPB) | 172 | 48 | 0 | 0 | 0.3 | 5.0 | 26 | 2 | 10.7 | SW | 1.7 | 26 | 99.3 |
| H2S (PPB) | 10 | 3 | 0 | 0 | 0.3 | 0.9 | VAR | VAR | VAR | VAR | 0.6 | VAR | 99.7 |
| THC (PPM) | - | - | - | - | 2.00 | 2.59 | 4 | 16 | 7.3 | SE | 2.33 | 4 | 100.0 |
| NO2 (PPB) | 159 | - | 0 | - | 2.3 | 24.3 | 5 | 2 | 8.9 | SSW | 9.8 | 5 | 100.0 |
| NO (PPB) | - | - | - | - | 0.2 | 3.1 | 5, 15 | 10, 11 | 9.8 6.4 | S NE | 0.7 | 5 | 100.0 |
| NOX (PPB) | - | - | - | - | 2.6 | 24.5 | 5 | 2 | 8.9 | SSW | 10.6 | 5 | 100.0 |
| O3 (PPB) | 82 | - | 0 | - | 33.1 | 48.5 | 26 | 17 | 12.7 | SW | 41.3 | 26 | 99.9 |
| PM2.5 (UG/M3) | - | 30 | - | 0 | 4.7 | 29.4 | 5 | 2 | 8.9 | SSW | 13.0 | 5 | 91.8 |
| RELATIVE HUMIDITY (%) | - | - | - | - | 68.5 | 88 | VAR | VAR | VAR | VAR | 84.8 | 18 | 100.0 |
| BAROMETRIC PRESSURE (MILIBAR) | - | - | - | - | 925 | 940 | VAR | VAR | VAR | VAR | 937 | 24 | 100.0 |
| AMBIENT TEMPERATURE (DEG C) | - | - | - | - | -4.5 | 10.1 | 26 | 14 | 15 | WSW | 4.0 | 26 | 100.0 |
| PRECIPITATION (MM) | - | - | - | - | 0.0 | 1.1 | 15 | 6 | 2.3 | E | 0.2 | 15 | 100.0 |
| VECTOR WS (KPH) | - | - | - | - | 11.0 | 35.9 | 6 | 14 | - | W | 22.2 | 6 | 100.0 |
| VECTOR WD (DEG) | - | - | - | - | WSW | - | - | - | - | - | - | - | 100.0 |

NA-NOT AVAILABLE VAR-VARIOUS

Exceedence Summary Report

SO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

SO₂ 24- Hour Exceedences

No Exceedences Recorded During the Month

H₂S 1- Hour Exceedences

No Exceedences Recorded During the Month

H₂S 24- Hour Exceedences

No Exceedences Recorded During the Month

NO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

PM_{2.5} 24- Hour Exceedences

No Exceedences Recorded During the Month

O₃ 1- Hour Exceedences

No Exceedences Recorded During the Month

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1.0 Discussion

This monthly report consists of data for parameters Sulphur Dioxide (SO₂), Hydrogen Sulphide (H₂S), Total Hydrocarbon (THC), Oxides of Nitrogen (NO_x), Nitric Oxides (NO), Nitrogen Dioxide (NO₂), Ozone (O₃), Particulate Matter 2.5 (PM_{2.5}), Relative Humidity (RH), Barometric Pressure (BP), Precipitation, Ambient Temperature (AmbTPX), Wind Speed (WS), Wind Direction (WD) and Standard Deviation Wind Direction (STDWD).

Sample filters for all continuous air monitors are changed before the calibration is started. The sample manifold is cleaned during the site visit on a monthly basis.

Control checks, consisting of zero and span of the analyzer are conducted on a daily basis on all continuous air monitors. In place of the air sample, zero air (from scrubbed air or gas cylinder) 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 calibration is done a minimum of once a month for each continuous air monitor. In addition 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 a downtime (Data is flagged as C). If more than one calibration is performed during the month, the time during the 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 a downtime (Data is flagged as S). If extra zero/span check is performed, the time during the check is considered as a downtime (Data is flagged as S1).

The AMD requires each instrument and accompanying data recording system to be operational 90% of the time (minimum), on a monthly basis.

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 for verification and validation of continuous ambient air quality data. The descriptions of the data verification and validation process can be found in Section 5 of this report.

Hourly/minute data have been reviewed based on daily zero/span results and multi-points calibration results. Data may be considered as 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 (greater than 10%).

Trailer inspection was completed on February 11.

SULPHUR DIOXIDE (SO₂)

The routine monthly calibration was performed on February 11. The analyzer showed a high zero drift on February 18. Following an as found zero check on February 19, the zero air pathway was checked, connections were tightened, the charcoal was renewed, the zero air generator was cross-checked and the exit connector tubing of the zero air generator was replaced. A full calibration was then performed. The result was good. No further issues were identified. As the zero drift was within acceptance limits, no data was discarded due to this event. Hourly maximum data collected on February 12 at hour 9 was invalidated as the analyzer was recovering from a short power outage.

HYDROGEN SULPHIDE (H₂S)

The analyzer was working well throughout the month. The routine monthly calibration was performed on February 12.

TOTAL HYDROCARBONS (THC)

The analyzer was working well throughout the month. The routine monthly calibration was performed on February 11. Hourly maximum data collected on February 12 at hour 9 was invalidated as the analyzer was recovering from a short power outage.

NITROGEN DIOXIDE (NO₂)

The analyzer was working well throughout the month. The routine monthly calibration was performed on February 11. Hourly maximum data collected on February 12 at hour 9 was invalidated as the analyzer was recovering from a short power outage.

OZONE (O₃)

The analyzer was working well throughout the month. The routine monthly calibration was performed on February 12. Hourly maximum data collected on February 2 at hour 17 was invalidated due to a spike.

PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM_{2.5})

Two Teom audits were performed this month: one was completed on February 12, and the other audit was performed on February 23. Both the inlet filter and the FDMS filter were replaced during the audits. Data was corrected using Alberta air quality guideline. If the data was between 0 to -3 ug/m³, the data was corrected to 0 ug/m³. If the data was below -3ug/m³, the data was invalidated. Fifty-seven hours of data were invalidated as the data were below -3 ug/m³ this month.

WIND SPEED (WS), WIND DIRECTION (WD) and STANDARD DEVIATION WIND DIRECTION (STDWD)

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

The wind system was working well throughout the month. Hourly maximum data collected on February 12 at hour 9 was invalidated as the analyzer was recovering from a short power outage. Hourly maximum data collected on February 3 at hour 22 was invalidated due to a spike.

RELATIVE HUMIDITY (RH)

The humidity sensor was working well throughout the month.

BAROMETRIC PRESSURE (BP)

The pressure sensor was working well throughout the month.

PRECIPITATION

Both the rain gauge system and heating system were working well throughout the month. A rain gauge system audit was completed on February 29. The result was good.

AMBIENT TEMPERATURE (TPX)

The temperature sensor was working well throughout the month.

2.0 Project Personnel

Mike Bisaga was the contact for Lakeland Industry & Community Association, and the Maxxam field sampling technician was Alexander Yakupov.

3.0 Plant Monthly Required AMD Summary

All data collected this month were within the objectives outlined in the AMD1989, AMD2006 and AMD 2015.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

4.0 Calculations and Results

All calculations and reporting of results follow the method described in the Air Monitoring Directive, 1989, 2006 Amendments to the Air Monitoring Directive, 1989 (AMD 2006) as well as AMD 2015.

5.0 Methods and Procedures

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

- Maxxam AIR SOP-00209: Ambient H2S Monitoring
- Maxxam AIR SOP-00211: Ambient SO2 Monitoring
- Maxxam AIR SOP-00212: Ambient O3 Monitoring
- Maxxam AIR SOP-00213: Ambient NO/NO2/NOx Monitoring
- Maxxam AIR SOP-00214: Ambient Hydrocarbon (THC) Monitoring
- Maxxam AIR SOP-00215: Teom Operation
- Maxxam AIR SOP-00242: Precipitation Collector Installation /Maintenance

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

- Sulphur Dioxide - API 100E UV Fluorescent Analyzer
- Hydrogen Sulphide - API 101E UV Fluorescent Analyzer
- Total Hydrocarbons - Thermo 51C FID Analyzer
- Oxides of Nitrogen - API 200E Chemiluminescent Analyzer
- Ozone - Thermo 49i Photometric Analyzer
- Particulate Matter (PM2.5) - R&P 1405F Teom Unit
- Wind System - Met One Unit
- Relative Humidity - Met One Unit
- Barometric Pressure - Met One Unit
- Ambient Temperature - Met One Unit
- Precipitation - Met One 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

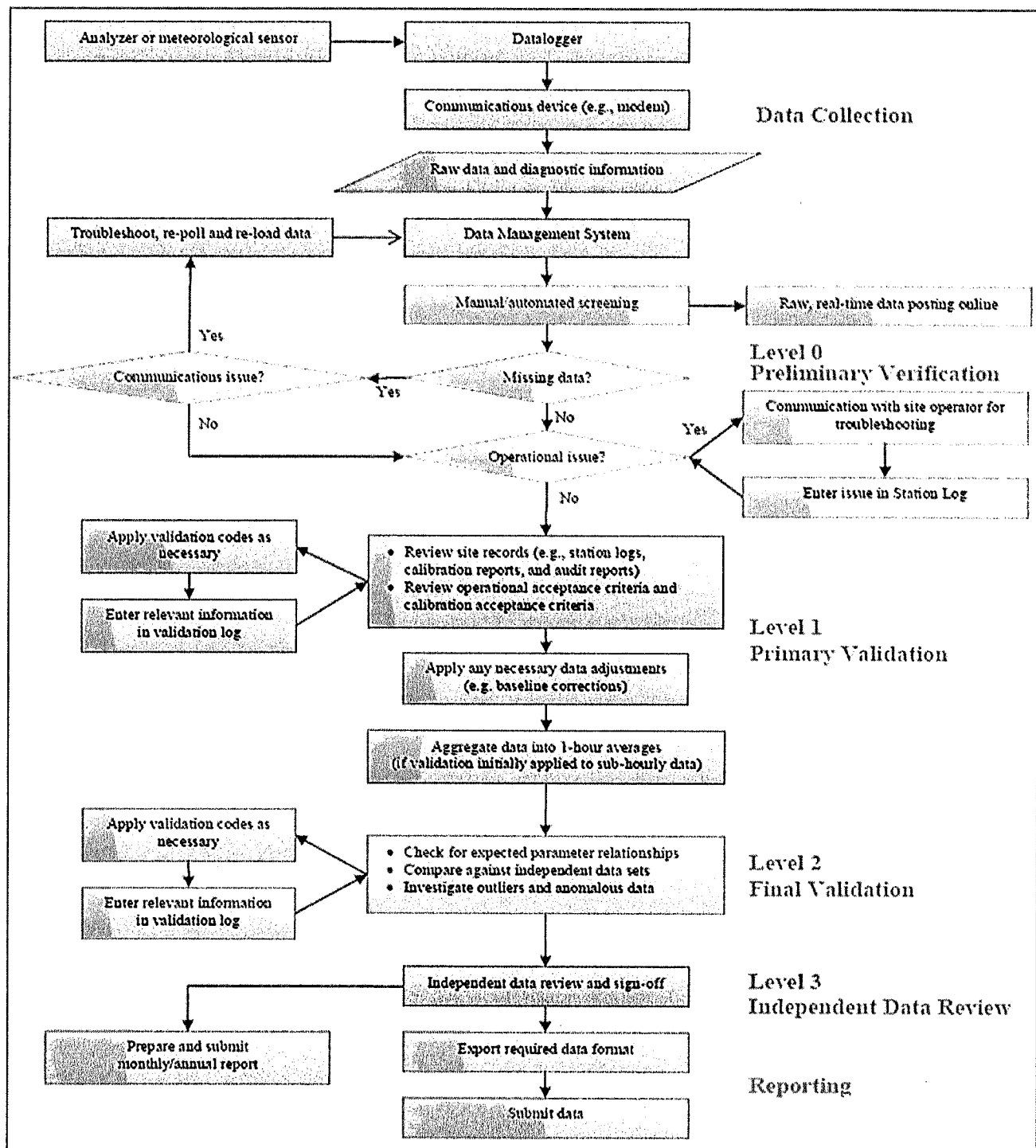
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

Level 3 Independent Data Review

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

Post-Final Validation

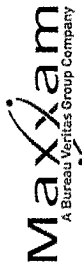
The Post-Final Validation step serves to re-evaluate the data that errors or omissions are discovered and/or suspected after the initial submittal of data. Any data issues or patterns which were not clear on a monthly basis are highlighted during this step. This validation is performed on an annual basis.



Source: AMD Chapter 6: Ambient Data Quality for verification and validation of continuous ambient air quality data; Figure 1 Data Collection and Management Process Flow Chart

APPENDIX I
CONTINUOUS MONITORING DATA RESULTS

SULPHUR DIOXIDE



SULPHUR DIOXIDE (SO2) hourly averages in ppb

MST

| DAY | 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 MAX | 24-HOUR AVG | RNGS | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|-------------|------|-----|-----|
| 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 5 | 1.3 | 1.5 | 1.5 | 1.1 | 1.0 | 0.6 | 0.4 | 0.4 | 0.2 | 0.5 | 0.4 | 0.5 | 0.6 | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 24 |
| 6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 13 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.3 | 0.2 | 0.3 | 0.3 | 0.5 | 0.4 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 23 |
| 14 | 2.0 | 2.3 | 2.2 | 1.6 | 1.2 | 0.7 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 15 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 16 | 0.5 | 0.4 | 0.6 | 0.7 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 24 |
| 17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 18 | 0.3 | 0.3 | 0.4 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | 1.4 | 1.8 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 24 |
| 19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 20 | 0.4 | 0.3 | 0.2 | 0.3 | 0.2 | 0.5 | 0.4 | 0.6 | 0.6 | 0.8 | 0.9 | 0.8 | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 20 |
| 21 | 0.0 | 0.0 | 0.4 | 0.7 | 0.4 | 0.4 | 0.4 | 0.4 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |
| 22 | 2.6 | 1.9 | 1.2 | 0.8 | 0.6 | 0.6 | 0.5 | 0.4 | 0.5 | 0.3 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 24 |
| 23 | 0.1 | 0.0 | 0.0 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 24 |
| 24 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 25 | 0.0 | 0.1 | 0.5 | 0.7 | 0.5 | 0.5 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 24 |
| 26 | 3.9 | 4.6 | 5.0 | 4.7 | 4.5 | 4.3 | 3.6 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 24 |
| 27 | 0.6 | 0.7 | 0.8 | 0.5 | 0.6 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 24 |
| 28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 29 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 24 |
| HOURLY MAX | 3.9 | 4.6 | 5.0 | 4.7 | 4.5 | 4.3 | 3.6 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 24 |
| HOURLY AVG | 0.4 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.4 |

STATUS FLAG CODES

| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | O | QUALITY ASSURANCE |
| CI | REPEAT CALIBRATION | R | RECOVERY |
| Y | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | OUTFORREPAIR |
| S1 | REPEAT ZERO/SPAN CHECK | P | POWER FAILURE |

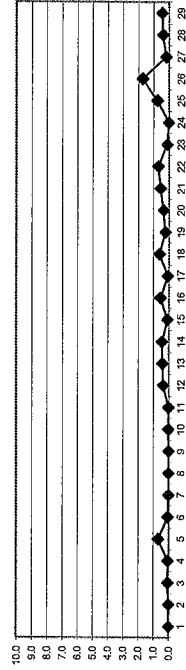
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR: 1.7Z PPB 24-HR: 48 PPB

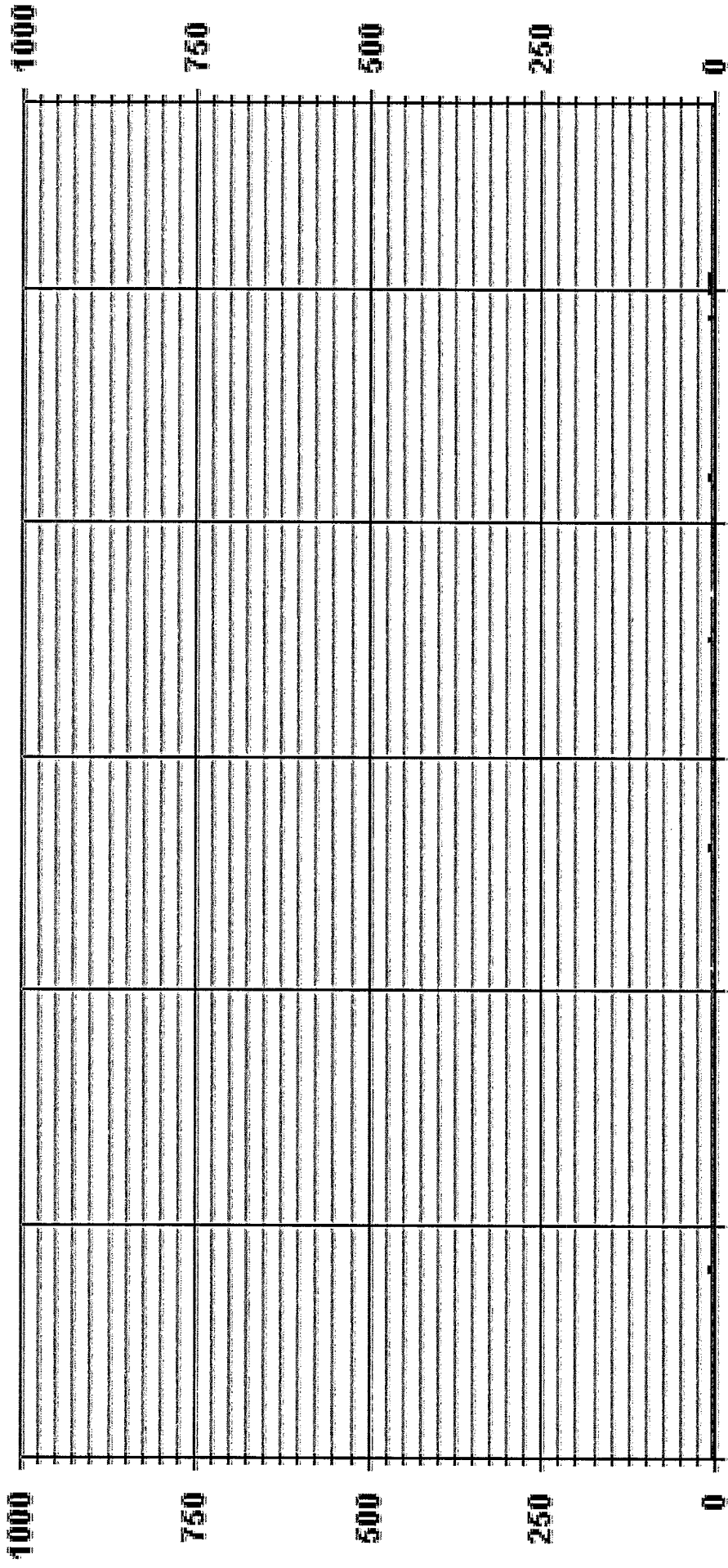
MONTHLY SUMMARY

| | |
|------------------------------|-------------|
| NUMBER OF 1-HR EXCEEDENCES: | 0 |
| NUMBER OF 24-HR EXCEEDENCES: | 0 |
| NUMBER OF NON-ZERO READINGS: | 292 |
| MINIMUM 1-HR AVERAGE: | 0.0 PPB |
| MAXIMUM 1-HR AVERAGE: | 5.0 PPB |
| MAXIMUM 24-HR AVERAGE: | 1.7 PPB |
| 12S CALIBRATION TIME: | 30 HRS |
| MONTHLY CALIBRATION TIME: | 4 HRS |
| STANDARD DEVIATION: | 0.59 |
| OPERATIONAL TIME: | 691 HRS |
| AMTD OPERATION UPTIME: | 99.3 % |
| MONTHLY AVERAGE: | 0.3 PPB |
| VAR | ON DAY(S) |
| 2 | ON DAY(S) |
| 26 | ON DAY(S) |
| 26 | VAR-VARIOUS |

24 HOUR AVERAGES FOR FEBRUARY 2016

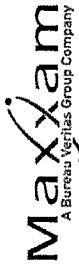


01 Hour Averages



02/04/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA31 SO2_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
 St. Lina Site - FEBRUARY 2016
 JOB # 2833-2016-02-31-C

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

| DAY | 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 MAX. | 24-HOUR AVG. | RDGS. | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------|--------------|-------|-----|----|
| 1 | 0.1 | 0.0 | \$ | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 0.5 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.5 | 24 | |
| 2 | 0.9 | 0.7 | 0.6 | 0.7 | 0.9 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 0.8 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 | 1.0 | 1.0 | 0.8 | 24 |
| 3 | \$ | 0.6 | 0.6 | 0.8 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.8 | 0.8 | 0.9 | 1.7 | 2.4 | 2.1 | \$ | 2.4 | 0.9 | 24 | |
| 4 | 0.8 | 0.8 | 1.0 | 1.1 | 1.4 | 1.1 | 1.0 | 0.9 | 1.0 | 0.8 | 0.9 | 0.8 | 1.0 | 1.2 | 1.1 | 0.9 | 0.8 | 1.0 | 1.2 | 1.1 | 0.9 | 0.8 | 0.9 | 1.6 | \$ | 2.1 | 2.1 | 1.0 | 24 |
| 5 | 2.4 | 2.4 | 2.5 | 2.2 | 2.2 | 1.9 | 1.4 | 1.3 | 1.1 | 1.4 | 1.5 | 1.4 | 1.6 | 1.5 | 1.6 | 1.8 | 1.7 | 1.8 | 1.7 | 1.9 | 1.9 | \$ | \$ | 1.0 | 1.1 | 2.5 | 1.7 | 24 | |
| 6 | 1.0 | 1.1 | 1.1 | 1.1 | 1.5 | 2.0 | 1.9 | 1.3 | 0.9 | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 0.8 | 0.8 | 0.7 | 0.4 | 0.4 | 0.3 | \$ | 0.9 | 1.0 | 1.1 | 2.0 | 1.0 | 1.0 | 24 | |
| 7 | 0.9 | 0.8 | 0.7 | 0.8 | 0.6 | 0.6 | 0.6 | 0.6 | 0.5 | 0.4 | 0.5 | 0.4 | 0.3 | 0.4 | 0.6 | 0.5 | 0.4 | 0.4 | 0.4 | 0.3 | \$ | 0.2 | 0.5 | 0.5 | 0.4 | 0.9 | 0.5 | 24 | |
| 8 | 0.5 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.8 | 0.8 | 1.3 | 1.1 | 1.4 | 1.4 | 1.0 | 0.8 | 0.9 | 0.8 | 0.9 | 0.8 | \$ | 0.6 | 1.0 | 0.6 | 0.8 | 0.8 | 1.4 | 0.8 | 0.8 | 24 | |
| 9 | 0.9 | 0.8 | 1.1 | 1.2 | 1.6 | 1.6 | 1.6 | 1.7 | 1.6 | 1.4 | 1.4 | 1.3 | 1.3 | 1.7 | 1.8 | 1.7 | 1.8 | \$ | 1.5 | 1.7 | 1.7 | 1.4 | 1.5 | 1.4 | 1.8 | 1.5 | 24 | | |
| 10 | 1.4 | 1.2 | 1.1 | 1.2 | 1.1 | 1.1 | 1.3 | 1.7 | 1.3 | 1.1 | 1.0 | 1.0 | 1.2 | 1.1 | 1.0 | 1.1 | \$ | 1.0 | 1.0 | 1.2 | 1.0 | 0.9 | 1.2 | 1.7 | 1.1 | 1.1 | 24 | | |
| 11 | 1.0 | 1.0 | 1.0 | 1.2 | 1.0 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | C | C | C | C | C | C | C | C | 1.1 | 1.0 | 0.9 | 1.0 | 1.1 | 0.9 | 0.9 | \$ | 1.2 | 0.9 | 24 |
| 12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.5 | 0.5 | \$1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | \$ | 1.1 | 1.1 | 0.1 | 22 | |
| 13 | 0.9 | 1.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.3 | 1.4 | 1.3 | 1.5 | 1.8 | 1.7 | 1.8 | 1.8 | 1.6 | 1.6 | 1.6 | 1.5 | 1.5 | 1.7 | 1.5 | \$ | 1.7 | 2.5 | 2.5 | 1.5 | 24 | | |
| 14 | 3.2 | 3.2 | 2.7 | 2.3 | 2.0 | 1.2 | 1.0 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.9 | 0.6 | 0.6 | 0.8 | 0.7 | 0.8 | \$ | 0.9 | 0.9 | 1.1 | 3.2 | 1.3 | 24 | |
| 15 | 1.4 | 1.3 | 1.2 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.8 | 0.8 | 1.2 | 1.1 | 0.9 | 0.7 | 0.7 | 0.7 | 0.6 | \$ | 1.5 | 1.4 | 1.4 | 1.7 | 1.7 | 1.1 | 24 | | |
| 16 | 1.3 | 1.5 | 1.6 | 1.9 | 1.7 | 1.5 | 1.8 | 1.9 | 1.7 | 1.8 | 1.7 | 1.9 | 1.8 | 2.0 | 1.9 | 1.9 | 1.8 | 2.0 | \$ | 0.8 | 1.0 | 1.1 | 1.1 | 1.4 | 1.6 | 1.2 | 24 | | |
| 17 | 1.2 | 1.4 | 1.5 | 1.5 | 1.6 | 1.3 | 1.0 | 1.2 | 1.2 | 1.0 | 1.0 | 1.3 | 1.0 | 1.1 | 1.2 | 1.3 | \$ | 1.2 | 1.1 | 1.2 | 1.1 | 1.1 | 1.1 | 1.4 | 1.6 | 1.2 | 24 | | |
| 18 | 1.4 | 1.4 | 1.4 | 1.5 | 1.6 | 1.7 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 2.1 | 2.5 | 2.8 | 2.9 | 2.5 | \$ | 1.1 | 1.2 | 1.2 | 1.2 | 1.2 | 1.1 | 1.0 | 2.9 | 1.7 | 24 | | |
| 19 | 1.0 | 0.9 | 0.8 | 0.7 | 0.6 | 0.6 | 0.4 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 19 | |
| 20 | 0.5 | 0.4 | 0.3 | 0.3 | 0.3 | 0.6 | 0.5 | 0.6 | 0.8 | 1.0 | 0.8 | 0.7 | 0.6 | 0.5 | \$ | 1.1 | 1.3 | 1.1 | 1.2 | 1.1 | 1.1 | 1.1 | 1.0 | 0.9 | 1.3 | 0.8 | 24 | | |
| 21 | 1.0 | 1.1 | 1.7 | 1.7 | 1.4 | 1.5 | 1.3 | 1.2 | 1.3 | 1.2 | 1.3 | 1.2 | 1.3 | \$ | 1.3 | 1.5 | 1.5 | 1.5 | 1.6 | 2.2 | 3.0 | 2.2 | 1.8 | 4.5 | 4.5 | 1.7 | 24 | | |
| 22 | 4.0 | 3.0 | 2.3 | 2.0 | 1.6 | 1.7 | 1.5 | 1.2 | 1.5 | 1.5 | 1.6 | 1.5 | \$ | 1.7 | 1.5 | 1.6 | 1.5 | 1.5 | 1.5 | 1.5 | 1.3 | 1.4 | 1.2 | 1.3 | 4.0 | 1.7 | 24 | | |
| 23 | 1.1 | 1.2 | 0.9 | 1.2 | 1.2 | 1.1 | 1.1 | 1.1 | 1.2 | 1.2 | 1.2 | \$ | 1.2 | 1.2 | 1.2 | 1.2 | 1.3 | 1.2 | 1.1 | 1.0 | 1.0 | 0.9 | 1.1 | 0.9 | 1.3 | 1.1 | 24 | | |
| 24 | 0.9 | 0.9 | 0.9 | 0.9 | 0.7 | 0.7 | 0.7 | 0.7 | 0.6 | 0.7 | \$ | 0.9 | 0.7 | 0.9 | 0.9 | 0.8 | 1.0 | 0.7 | 0.9 | 1.0 | 0.9 | 0.9 | 0.9 | 1.0 | 0.8 | 24 | | | |
| 25 | 1.2 | 1.1 | 1.5 | 1.5 | 1.7 | 1.5 | 1.4 | 1.7 | \$ | 2.6 | 2.4 | 1.9 | 1.8 | 1.9 | 1.8 | 1.9 | 1.8 | 1.6 | 1.6 | 1.6 | 1.8 | 1.8 | 2.3 | 4.4 | 4.4 | 1.8 | 24 | | |
| 26 | 5.1 | 6.2 | 6.4 | 6.1 | 5.4 | 5.5 | 4.7 | 4.0 | 1.8 | 2.3 | 2.6 | 2.4 | 2.5 | 2.8 | 2.9 | 2.5 | 1.8 | 2.0 | 1.7 | 2.2 | 3.0 | 2.4 | 2.3 | 4.5 | 4.5 | 1.0 | 0.8 | 24 | |
| 27 | 1.7 | 1.9 | 1.8 | 1.8 | 1.6 | 1.5 | 1.5 | \$ | 0.3 | 0.3 | 0.6 | 0.4 | 0.5 | 0.3 | 0.5 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 0.3 | 0.2 | 1.9 | 0.7 | 24 | | |
| 28 | 0.2 | 0.4 | 0.5 | 0.6 | 0.3 | 0.5 | \$ | 0.9 | 1.0 | 0.9 | 1.3 | 0.9 | 0.7 | 0.8 | 0.7 | 0.5 | 0.8 | 0.7 | 0.5 | 0.6 | 0.5 | 0.3 | 0.6 | 0.5 | 1.3 | 0.6 | 24 | | |
| 29 | 0.5 | 0.5 | 0.5 | 0.6 | 0.5 | \$ | 0.4 | 0.2 | 0.4 | 0.5 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.6 | 0.6 | 0.7 | 0.8 | 0.7 | 0.8 | 1.0 | 1.1 | 1.0 | 1.1 | 1.0 | 0.6 | 24 | |
| HOURLY MAX | 5.1 | 6.2 | 6.4 | 6.1 | 5.4 | 5.5 | 4.7 | 4.0 | 1.8 | 2.3 | 2.6 | 2.4 | 2.5 | 2.8 | 2.9 | 2.5 | 1.8 | 2.0 | 1.7 | 2.2 | 3.0 | 2.4 | 2.3 | 4.5 | 4.5 | 1.0 | 0.8 | 24 | |
| HOURLY AVG | 1.3 | 1.3 | 1.4 | 1.3 | 1.3 | 1.3 | 1.2 | 1.1 | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.0 | 1.0 | 0.9 | 1.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.3 | |

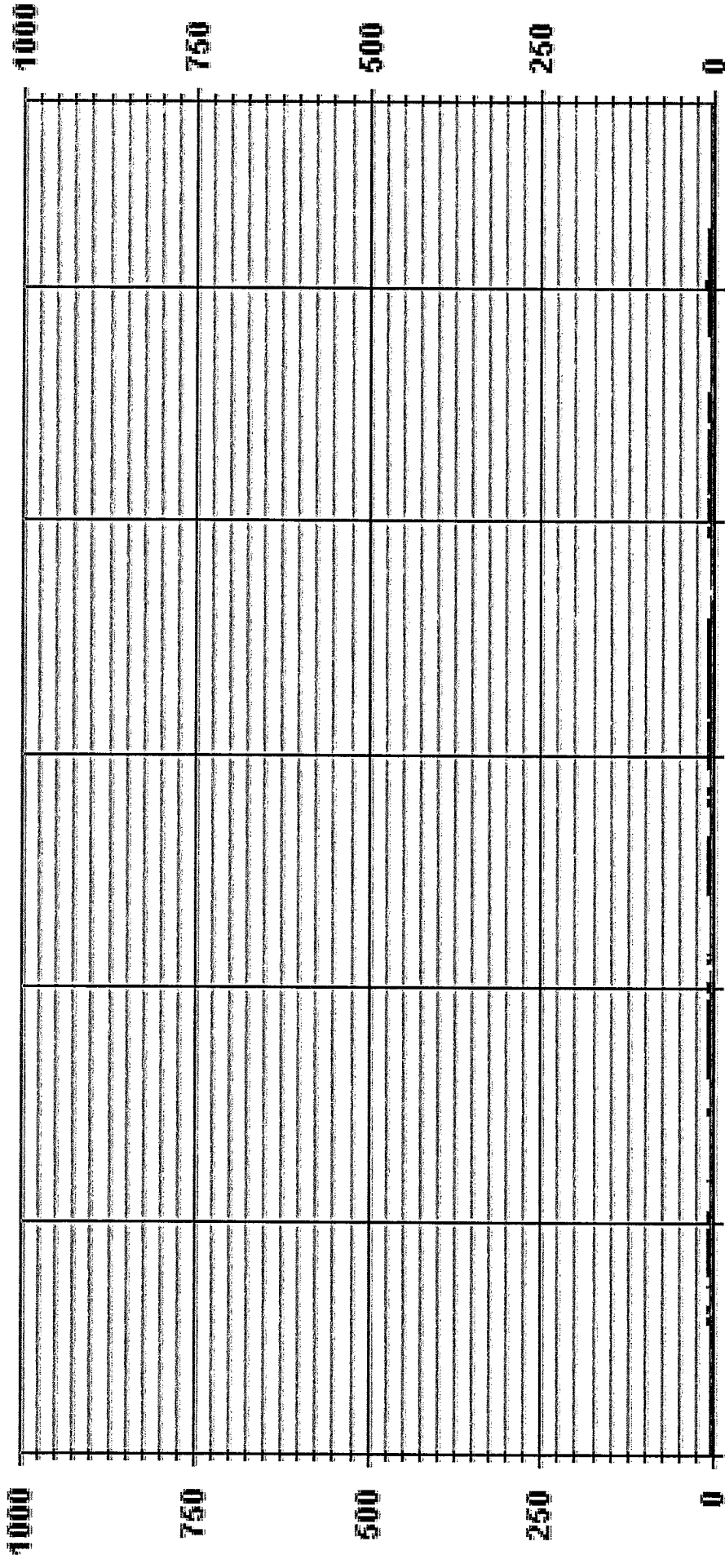
STATUS FLAG CODES

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

MONTHLY SUMMARY

| | |
|------------------------------|----------------------------------|
| NUMBER OF NON-ZERO READINGS: | 639 |
| MAXIMUM INSTANTANEOUS VALUE: | 6.4 PPB @ HOUR(S) 2 ON DAY(S) 26 |
| IZS CALIBRATION TIME: | 29 HRS |
| MONTHLY CALIBRATION TIME: | 5 HRS |
| OPERATIONAL TIME: | 689 HRS |
| STANDARD DEVIATION: | 0.77 |
| VAR-VARIOUS | |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA31 SO2MAX PPB

LICA31
 SO2_ / WDR Joint Frequency Distribution (Percent)
 February 2016

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : SO2
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|------|------|--------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 20.0 | 2.43 | 2.43 | 3.80 | 8.37 | 4.26 | 5.93 | 1.67 | 3.04 | 9.28 | 9.13 | 12.02 | 10.95 | 9.43 | 8.82 | 5.78 | 2.58 | 100.00 |
| < 60.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 110.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 170.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 340.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 340.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.43 | 2.43 | 3.80 | 8.37 | 4.26 | 5.93 | 1.67 | 3.04 | 9.28 | 9.13 | 12.02 | 10.95 | 9.43 | 8.82 | 5.78 | 2.58 | |

Calm : .00 %

Total # Operational Hours : 657

Distribution By Samples

| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 20.0 | 16 | 16 | 25 | 55 | 28 | 39 | 11 | 20 | 61 | 60 | 79 | 72 | 62 | 58 | 38 | 17 | 657 |
| < 60.0 | | | | | | | | | | | | | | | | | |
| < 110.0 | | | | | | | | | | | | | | | | | |
| < 170.0 | | | | | | | | | | | | | | | | | |
| < 340.0 | | | | | | | | | | | | | | | | | |
| >= 340.0 | | | | | | | | | | | | | | | | | |
| Totals | 16 | 16 | 25 | 55 | 28 | 39 | 11 | 20 | 61 | 60 | 79 | 72 | 62 | 58 | 38 | 17 | |

Calm : .00 %

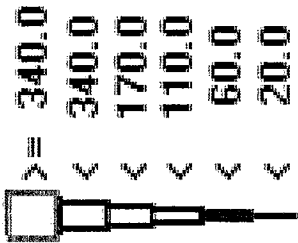
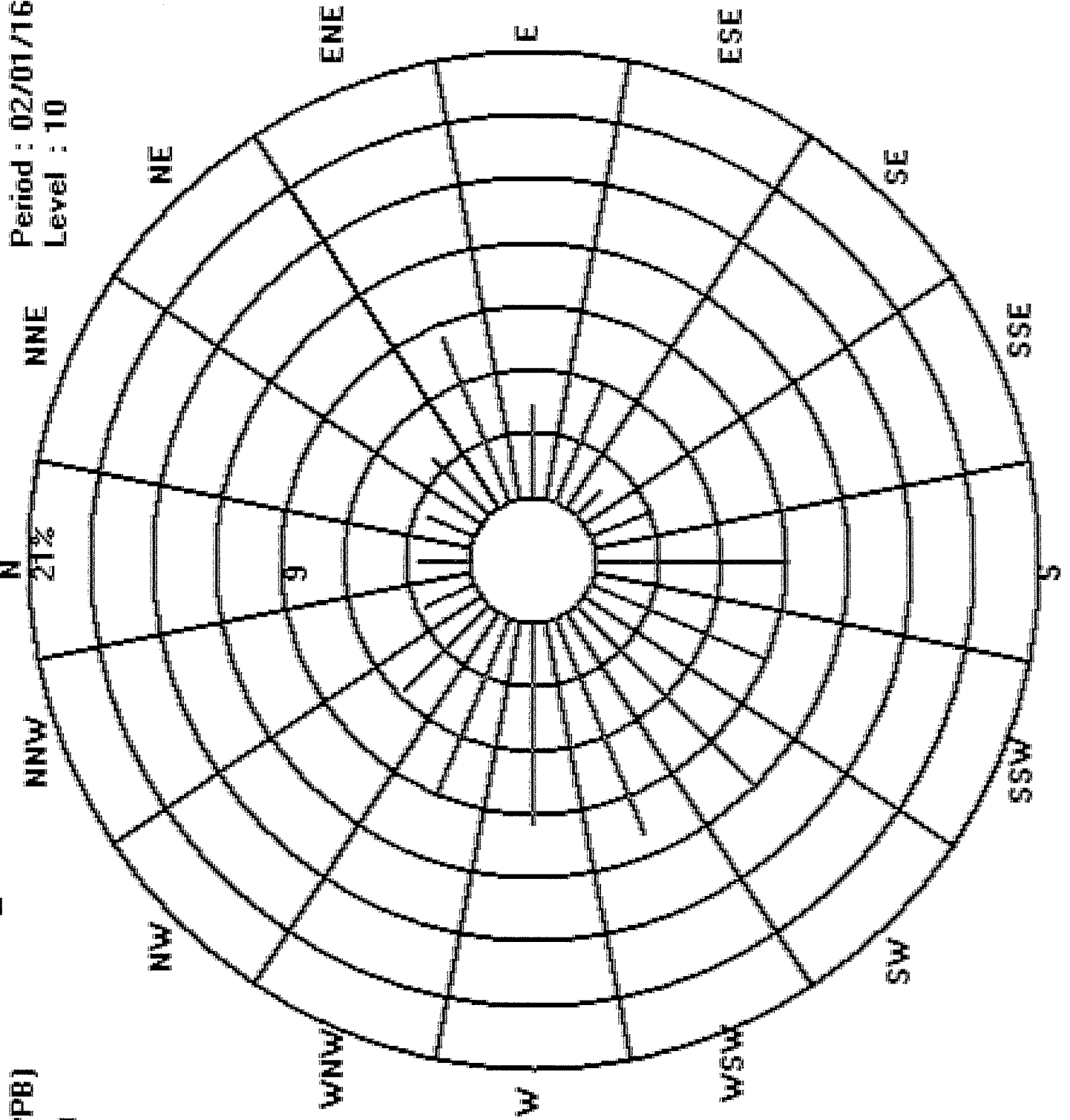
Total # Operational Hours : 657

Logger : 31 Parameter : SO2_

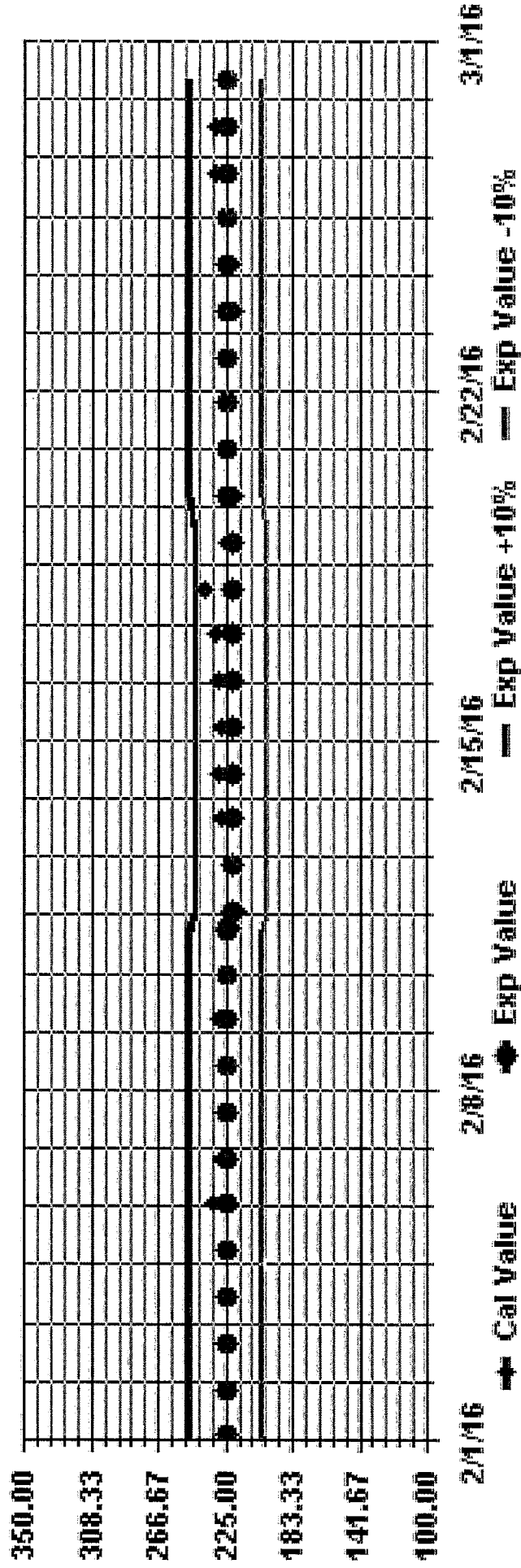
Site : LICA31

Period : 02/01/16-02/29/16

Level : 10



Calibration Graph for Site: LICA31 Parameter: SO2_ Sequence: SO2 Phase: SPAN



HYDROGEN SULPHIDE



HYDROGEN SULPHIDE (H2S) hourly averages in ppb

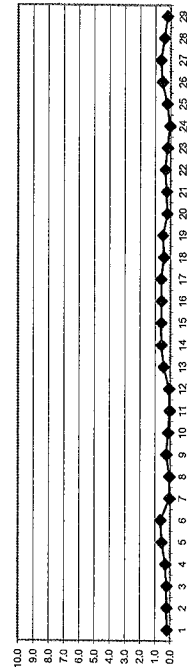
MST

| HOUR START | 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 MAX. | 24-HOUR AVG. | ROGS. | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------|--------------|-------|-----|-----|
| DAY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 0:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 14:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 15:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 16:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 17:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 18:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 19:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 21:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 22:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 23:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 24:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 25:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 26:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 27:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 28:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 29:00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| HOURLY MAX | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.8 | 0.7 | 0.7 | 0.6 | 0.7 | 0.6 | 0.7 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| HOURLY AVG | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |

STATUS FLAG CODES

| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CI | 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-HOUR AVERAGES FOR FEBRUARY 2016



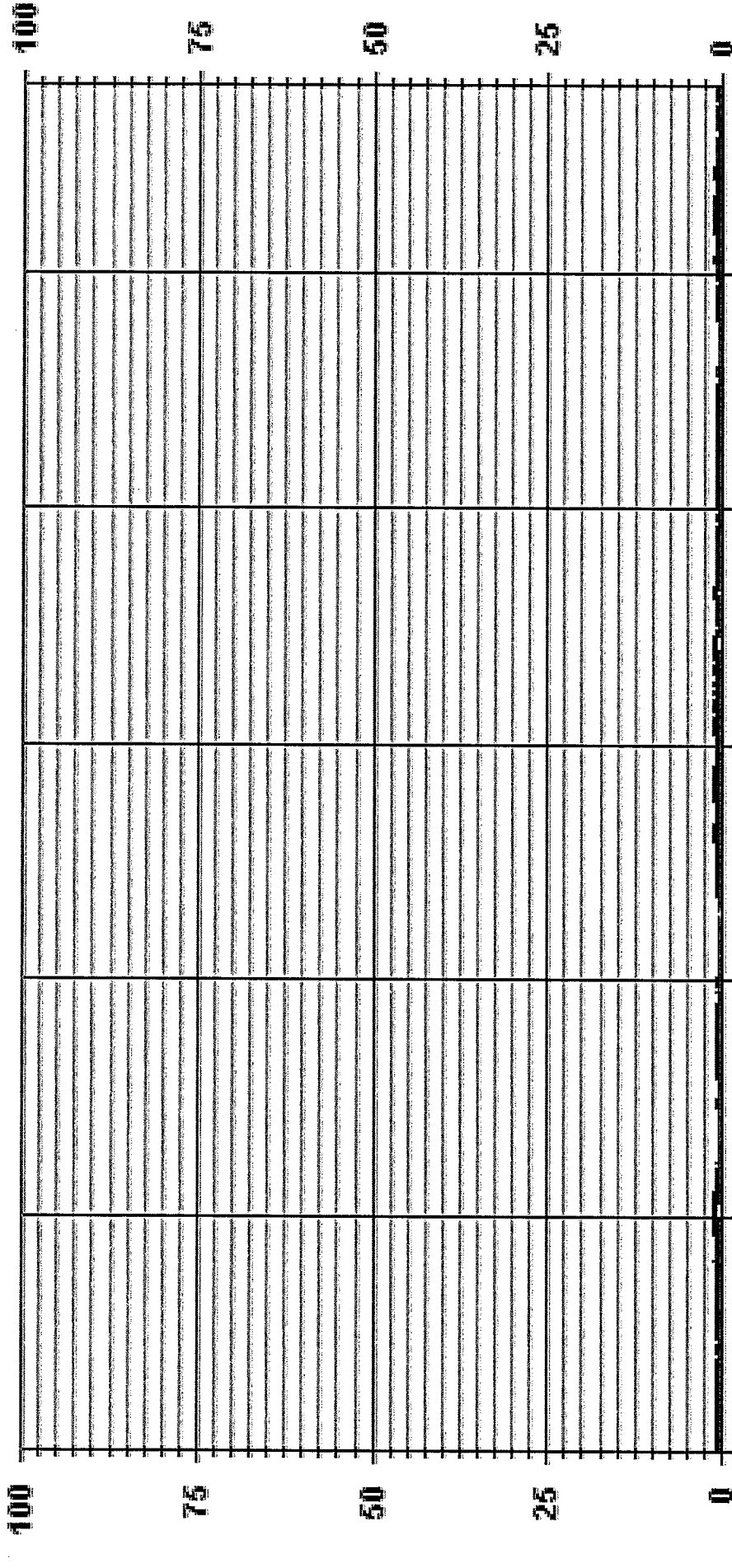
OBJECTIVE LIMIT:

| | | | | | | |
|----------------------|------|----|-----|-------|---|-----|
| ALBERTA ENVIRONMENT: | 1-HR | 10 | PPB | 24-HR | 3 | PPB |
|----------------------|------|----|-----|-------|---|-----|

MONTHLY SUMMARY

| | | | | | |
|------------------------------|------|---------------|-----------------------|-----------|-----|
| NUMBER OF 1-HR EXCEEDENCES: | 0 | | | | |
| NUMBER OF 24-HR EXCEEDENCES: | 0 | | | | |
| NUMBER OF NON-ZERO READINGS: | 566 | | | | |
| MINIMUM 1-HR AVERAGE: | 0.0 | PPB @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MAXIMUM 1-HR AVERAGE: | 0.9 | PPB @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MAXIMUM 24-HR AVERAGE: | 0.6 | PPB | VAR-VARIOUS | ON DAY(S) | VAR |
| ISZ CALIBRATION TIME: | 30 | HRS | OPERATION TIME: | 694 | HRS |
| MONTHLY CALIBRATION TIME: | 4 | HRS | AMD OPERATION UPTIME: | 99.7 | % |
| STANDARD DEVIATION: | 0.23 | | MONTHLY AVERAGE: | 0.3 | PPB |

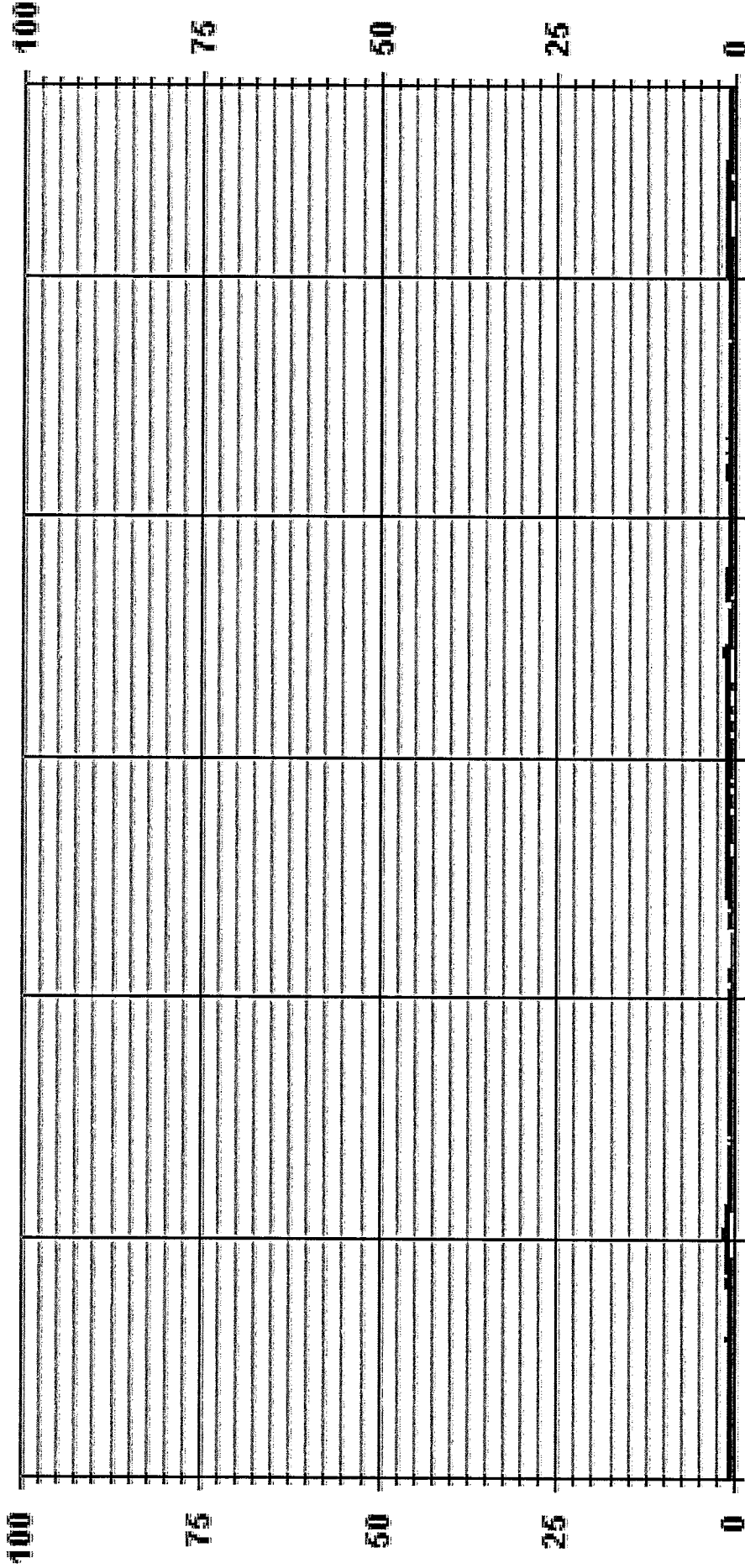
01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA31 H2S_ PPB

01 Hour Averages



02/01/16 00:00 02:06/16 00:00 02/11/16 00:00 02:16/16 00:00 02/21/16 00:00 02:26/16 00:00

— LICA31 H25MAX PPB

LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

February 2016

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
Parameter : H2S
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | |
|---------|-----------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|------|------|--------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 3.0 | 2.42 | 2.42 | 4.24 | 8.48 | 4.24 | 5.45 | 1.66 | 3.03 | 9.24 | 9.09 | 11.96 | 10.90 | 9.39 | 9.39 | 5.45 | 2.57 | 100.00 |
| < 10.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 50.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 50.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.42 | 2.42 | 4.24 | 8.48 | 4.24 | 5.45 | 1.66 | 3.03 | 9.24 | 9.09 | 11.96 | 10.90 | 9.39 | 9.39 | 5.45 | 2.57 | |

Calm : .00 %

Total # Operational Hours : 660

Distribution By Samples

| Limit | Direction | | | | | | | | | | | | | | | | |
|---------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 3.0 | 16 | 16 | 28 | 56 | 28 | 36 | 11 | 20 | 61 | 60 | 79 | 72 | 62 | 62 | 36 | 17 | 660 |
| < 10.0 | | | | | | | | | | | | | | | | | |
| < 50.0 | | | | | | | | | | | | | | | | | |
| >= 50.0 | | | | | | | | | | | | | | | | | |
| Totals | 16 | 16 | 28 | 56 | 28 | 36 | 11 | 20 | 61 | 60 | 79 | 72 | 62 | 62 | 36 | 17 | |

Calm : .00 %

Total # Operational Hours : 660

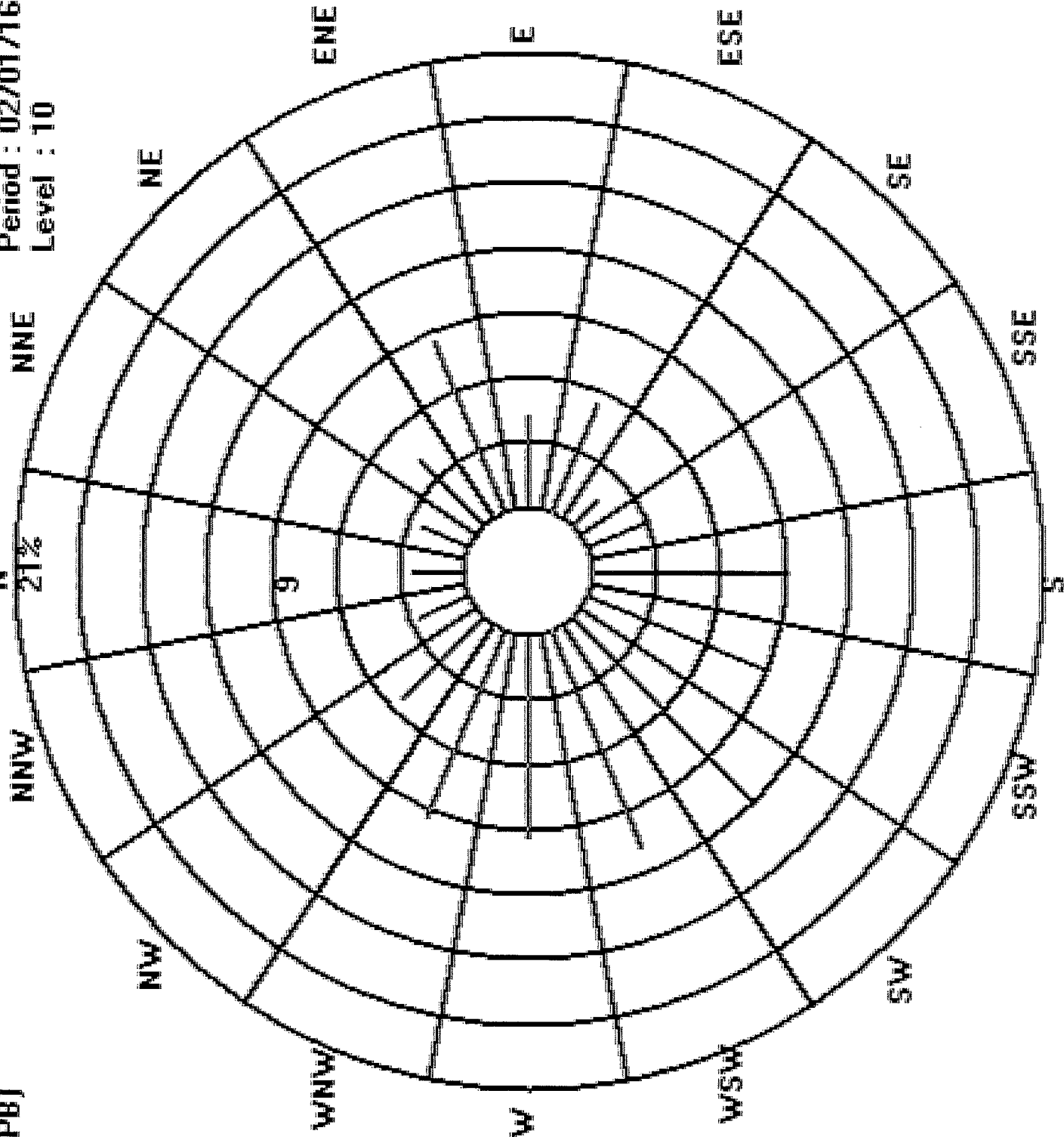
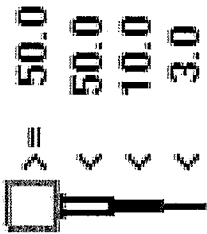
Logger : 31 Parameter : H2S_

Site : LICA31

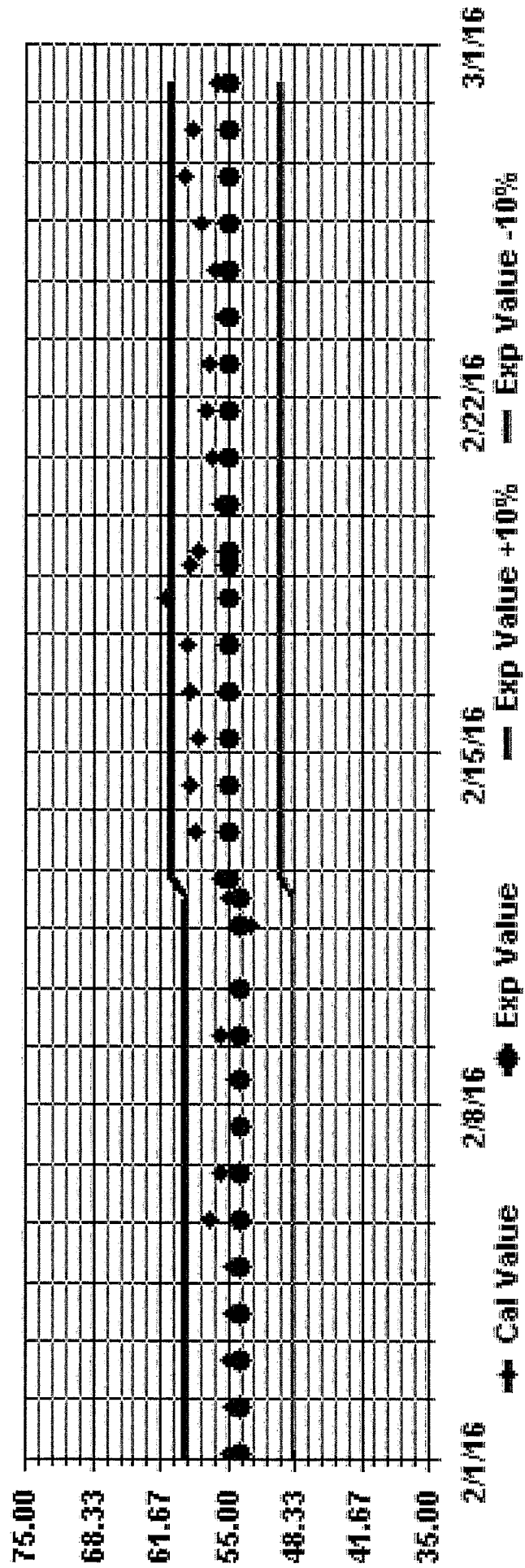
Period : 02/01/16-02/29/16

Level : 10

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: H2S_ Sequence: H2S Phase: SPAN



TOTAL HYDROCARBON

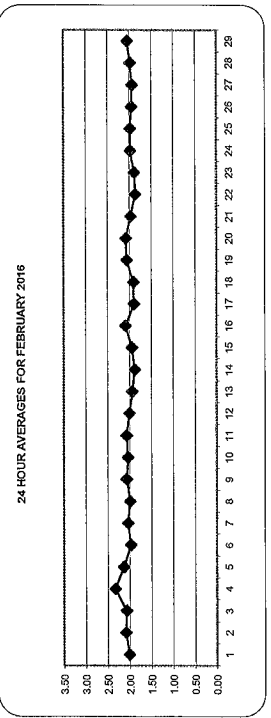


TOTAL HYDROCARBONS (THC) hourly averages in ppm

| DAY | 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 | 24:00 | | | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|----|
| HR | 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 | RDGS. | | | | |
| 1 | 2.14 | 2.16 | S | 1.96 | 1.95 | 1.96 | 1.96 | 1.98 | 1.98 | 1.98 | 1.98 | 1.97 | 1.99 | 1.99 | 1.99 | 1.99 | 2.02 | 2.06 | 2.05 | 2.05 | 2.05 | 2.03 | 2.03 | 2.16 | 2.01 | 24 | | | |
| 2 | 2.01 | S | 2.08 | 2.10 | 2.12 | 2.13 | 2.16 | 2.16 | 2.21 | 2.21 | 2.21 | 2.20 | 2.16 | 2.06 | 2.04 | 2.00 | 2.01 | 1.99 | 2.00 | 2.00 | 2.02 | 2.04 | 2.03 | 2.09 | 2.21 | 2.08 | 24 | | |
| 3 | S | 2.05 | 2.06 | 2.06 | 2.05 | 2.06 | 2.07 | 2.06 | 2.07 | 2.06 | 2.05 | 2.07 | 2.06 | 2.07 | 2.08 | 2.07 | 2.08 | 2.08 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | S | 2.11 | 2.07 | 24 | | |
| 4 | 2.04 | 2.10 | 2.28 | 2.33 | 2.26 | 2.26 | 2.27 | 2.25 | 2.26 | 2.26 | 2.22 | 2.27 | 2.32 | 2.32 | 2.37 | 2.47 | 2.55 | 2.59 | 2.57 | 2.58 | 2.41 | 2.33 | 2.30 | S | 2.22 | 2.59 | 24 | | |
| 5 | 2.28 | 2.33 | 2.36 | 2.33 | 2.23 | 2.28 | 2.33 | 2.33 | 2.32 | 2.29 | 2.25 | 2.16 | 2.08 | 2.00 | 1.96 | 1.94 | 1.90 | 1.91 | 1.93 | 1.88 | 1.87 | S | 2.00 | 2.05 | 2.36 | 2.13 | 24 | | |
| 6 | 2.03 | 2.03 | 2.01 | 2.00 | 1.98 | 2.00 | 2.00 | 1.99 | 1.92 | 1.92 | 1.92 | 1.92 | 1.93 | 1.93 | 1.93 | 1.96 | 1.97 | 2.00 | 2.01 | 2.02 | S | 1.93 | 1.95 | 1.96 | 2.03 | 1.97 | 24 | | |
| 7 | 1.98 | 1.97 | 1.98 | 2.00 | 2.02 | 2.03 | 2.04 | 2.05 | 2.06 | 2.07 | 2.09 | 2.09 | 2.10 | 2.09 | 2.09 | 2.11 | 2.12 | 2.12 | S | 1.90 | 1.91 | 1.93 | 1.94 | 2.12 | 2.03 | 2.03 | 24 | | |
| 8 | 1.97 | 1.97 | 1.98 | 2.00 | 2.00 | 2.04 | 2.06 | 2.04 | 1.99 | 1.98 | 2.00 | 2.02 | 1.97 | 1.90 | 1.86 | 1.85 | 1.87 | 1.89 | S | 2.06 | 2.06 | 2.05 | 2.06 | 2.10 | 2.10 | 1.99 | 24 | | |
| 9 | 2.12 | 2.16 | 2.12 | 2.10 | 2.06 | 2.07 | 2.11 | 2.16 | 2.16 | 2.15 | 2.16 | 2.17 | 2.11 | 2.05 | 2.02 | 1.99 | 1.94 | S | 1.98 | 1.97 | 1.95 | 1.95 | 1.96 | 1.97 | 2.17 | 2.06 | 24 | | |
| 10 | 1.96 | 1.96 | 1.97 | 1.98 | 1.98 | 2.03 | 2.03 | 2.05 | 2.11 | 2.14 | 2.11 | 2.09 | 2.07 | 2.09 | 2.08 | 2.08 | S | 1.97 | 1.98 | 1.99 | 1.99 | 2.01 | 2.00 | 2.03 | 2.14 | 2.03 | 24 | | |
| 11 | 2.04 | 2.06 | 2.07 | 2.00 | 2.06 | 2.07 | 2.05 | 2.08 | 2.09 | 2.11 | 2.10 | C | C | C | C | C | C | C | C | C | 2.08 | 2.07 | 2.11 | 2.08 | 2.10 | S | 2.11 | 2.07 | 24 |
| 12 | 2.04 | 2.04 | 2.06 | 2.06 | 2.05 | 2.07 | 2.00 | 2.09 | 2.11 | 2.20 | 2.10 | 2.06 | 2.06 | 2.05 | 2.06 | 2.05 | 2.06 | 2.06 | 2.05 | 2.06 | 1.88 | 1.85 | 1.84 | 1.80 | S | 2.00 | 2.20 | 2.00 | 24 |
| 13 | 2.03 | 2.04 | 2.06 | 2.06 | 2.10 | 2.11 | 2.10 | 2.06 | 2.00 | 1.95 | 1.92 | 1.93 | 1.91 | 1.87 | 1.78 | 1.76 | 1.80 | 1.80 | 1.80 | 1.79 | 1.77 | S | 1.87 | 1.89 | 2.11 | 1.93 | 24 | | |
| 14 | 1.90 | 1.95 | 1.98 | 1.99 | 1.98 | 1.96 | 1.91 | 1.88 | 1.86 | 1.85 | 1.84 | 1.82 | 1.81 | 1.82 | 1.82 | 1.82 | 1.83 | 1.84 | 1.84 | 1.83 | S | 1.85 | 1.84 | 1.86 | 1.99 | 1.87 | 24 | | |
| 15 | 1.89 | 1.92 | 1.87 | 1.87 | 1.84 | 1.81 | 1.91 | 1.92 | 1.89 | 1.88 | 2.06 | 2.32 | 2.01 | 1.99 | 2.01 | 1.98 | 2.01 | 2.03 | 2.00 | S | 1.91 | 1.83 | 1.91 | 1.92 | 1.90 | 2.50 | 2.08 | 24 | |
| 16 | 1.94 | 1.86 | 1.86 | 1.89 | 2.01 | 2.13 | 2.17 | 2.21 | 2.21 | 2.39 | 2.45 | 2.50 | 2.41 | 2.33 | 2.21 | 1.97 | 1.90 | 1.90 | S | 1.91 | 1.81 | 1.88 | 1.88 | 1.84 | 1.94 | 1.89 | 24 | | |
| 17 | 1.90 | 1.89 | 1.92 | 1.94 | 1.93 | 1.88 | 1.91 | 1.93 | 1.93 | 1.92 | 1.90 | 1.92 | 1.82 | 1.80 | 1.84 | 1.88 | 1.82 | S | 1.88 | 1.91 | 1.88 | 1.88 | 1.88 | 1.86 | 1.84 | 1.94 | 1.89 | 24 | |
| 18 | 1.83 | 1.84 | 1.85 | 1.85 | 1.85 | 1.83 | 1.82 | 1.81 | 1.81 | 1.79 | 1.79 | 1.80 | 1.81 | 1.80 | 1.81 | 1.81 | S | 1.94 | 1.95 | 1.95 | 1.95 | 1.95 | 1.95 | 1.96 | 2.01 | 2.18 | 2.05 | 24 | |
| 19 | 2.09 | 2.09 | 2.05 | 2.04 | 2.04 | 2.04 | 2.06 | 2.08 | 2.12 | 2.12 | 2.18 | 2.15 | 2.15 | 2.13 | 2.12 | S | 2.03 | 2.05 | 2.09 | 2.12 | 2.13 | 2.11 | 2.10 | 2.13 | 1.90 | 2.04 | 2.05 | 24 | |
| 20 | 2.06 | 2.02 | 1.99 | 2.00 | 2.03 | 2.12 | 2.15 | 2.14 | 2.17 | 2.20 | 2.11 | 2.11 | 2.09 | 2.11 | S | 2.01 | 2.03 | 2.01 | 2.02 | 2.03 | 2.03 | 2.04 | 2.07 | 2.09 | 2.20 | 2.07 | 2.04 | 24 | |
| 21 | 2.07 | 2.03 | 2.05 | 2.06 | 2.06 | 2.04 | 2.03 | 2.02 | 2.06 | 2.11 | 2.05 | 1.97 | 1.93 | S | 1.89 | 1.88 | 1.87 | 1.87 | 1.86 | 1.84 | 1.85 | 1.85 | 1.89 | 1.91 | 2.11 | 1.96 | 2.04 | 24 | |
| 22 | 1.92 | 1.88 | 1.84 | 1.83 | 1.83 | 1.83 | 1.85 | 1.86 | 1.85 | 1.86 | 1.84 | 1.85 | 1.86 | S | 1.84 | 1.84 | 1.84 | 1.88 | 1.88 | 1.88 | 1.86 | 1.86 | 1.85 | 1.92 | 1.86 | 2.04 | 24 | | |
| 23 | 1.85 | 1.85 | 1.85 | 1.86 | 1.85 | 1.86 | 1.89 | 1.90 | 1.88 | 1.89 | 1.89 | S | 1.88 | 1.88 | 1.87 | 1.88 | 1.89 | 1.91 | 1.88 | 1.88 | 1.88 | 1.88 | 1.88 | 1.90 | 1.91 | 1.88 | 2.04 | 24 | |
| 24 | 1.91 | 1.91 | 1.92 | 1.92 | 1.94 | 1.95 | 1.97 | 1.97 | 1.96 | 1.96 | S | 2.00 | 1.99 | 1.96 | 1.96 | 1.96 | 1.97 | 1.97 | 1.97 | 2.00 | 2.00 | 2.00 | 2.02 | 2.04 | 2.04 | 1.97 | 2.04 | 24 | |
| 25 | 2.07 | 2.06 | 2.04 | 2.02 | 2.00 | 2.00 | 2.00 | 2.01 | 2.01 | S | 2.02 | 1.99 | 1.99 | 1.99 | 1.98 | 1.94 | 1.93 | 1.92 | 1.91 | 1.89 | 1.89 | 1.89 | 1.88 | 1.92 | 2.07 | 1.97 | 2.04 | 24 | |
| 26 | 1.96 | 1.95 | 1.93 | 1.95 | 1.97 | 1.97 | 1.96 | 1.98 | S | 2.00 | 2.02 | 1.99 | 1.96 | 1.96 | 1.93 | 1.92 | 1.91 | 1.91 | 1.91 | 1.92 | 1.90 | 1.91 | 1.88 | 1.87 | 1.88 | 2.02 | 1.94 | 24 | |
| 27 | 1.86 | 1.85 | 1.87 | 2.01 | 2.25 | 2.04 | 1.99 | S | 2.03 | 1.93 | 1.86 | 1.89 | 1.86 | 1.86 | 1.86 | 1.86 | 1.87 | 1.88 | 1.89 | 1.89 | 1.89 | 1.90 | 1.91 | 1.93 | 2.25 | 1.92 | 2.04 | 24 | |
| 28 | 1.92 | 1.92 | 1.91 | 1.93 | 1.92 | 1.94 | S | 1.87 | 1.88 | 1.90 | 1.94 | 1.94 | 1.94 | 1.94 | 1.95 | 1.99 | 2.00 | 2.01 | 2.05 | 2.07 | 2.08 | 2.06 | 2.07 | 2.08 | 2.08 | 1.97 | 2.04 | 24 | |
| 29 | 2.09 | 2.09 | 2.10 | 2.12 | 2.14 | S | 2.04 | 2.02 | 2.10 | 2.14 | 2.11 | 2.11 | 2.07 | 2.02 | 1.96 | 1.93 | 1.94 | 1.94 | 1.94 | 1.94 | 1.95 | 1.97 | 1.98 | 2.00 | 2.00 | 2.14 | 2.03 | 24 | |
| 30 | 2.28 | 2.33 | 2.36 | 2.33 | 2.26 | 2.28 | 2.33 | 2.33 | 2.32 | 2.39 | 2.45 | 2.50 | 2.41 | 2.37 | 2.47 | 2.55 | 2.59 | 2.57 | 2.58 | 2.41 | 2.33 | 2.30 | 2.11 | 2.22 | 2.22 | 2.03 | 2.03 | 24 | |
| HOURLY MAX | 2.00 | 2.00 | 2.01 | 2.02 | 2.02 | 2.02 | 2.03 | 2.03 | 2.04 | 2.04 | 2.04 | 2.05 | 2.01 | 1.99 | 1.98 | 1.96 | 1.96 | 1.98 | 1.98 | 1.98 | 1.97 | 1.97 | 1.97 | 1.96 | 1.98 | 2.00 | 2.00 | 24 | |
| HOURLY AVG | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 24 |

STATUS FLAG CODES

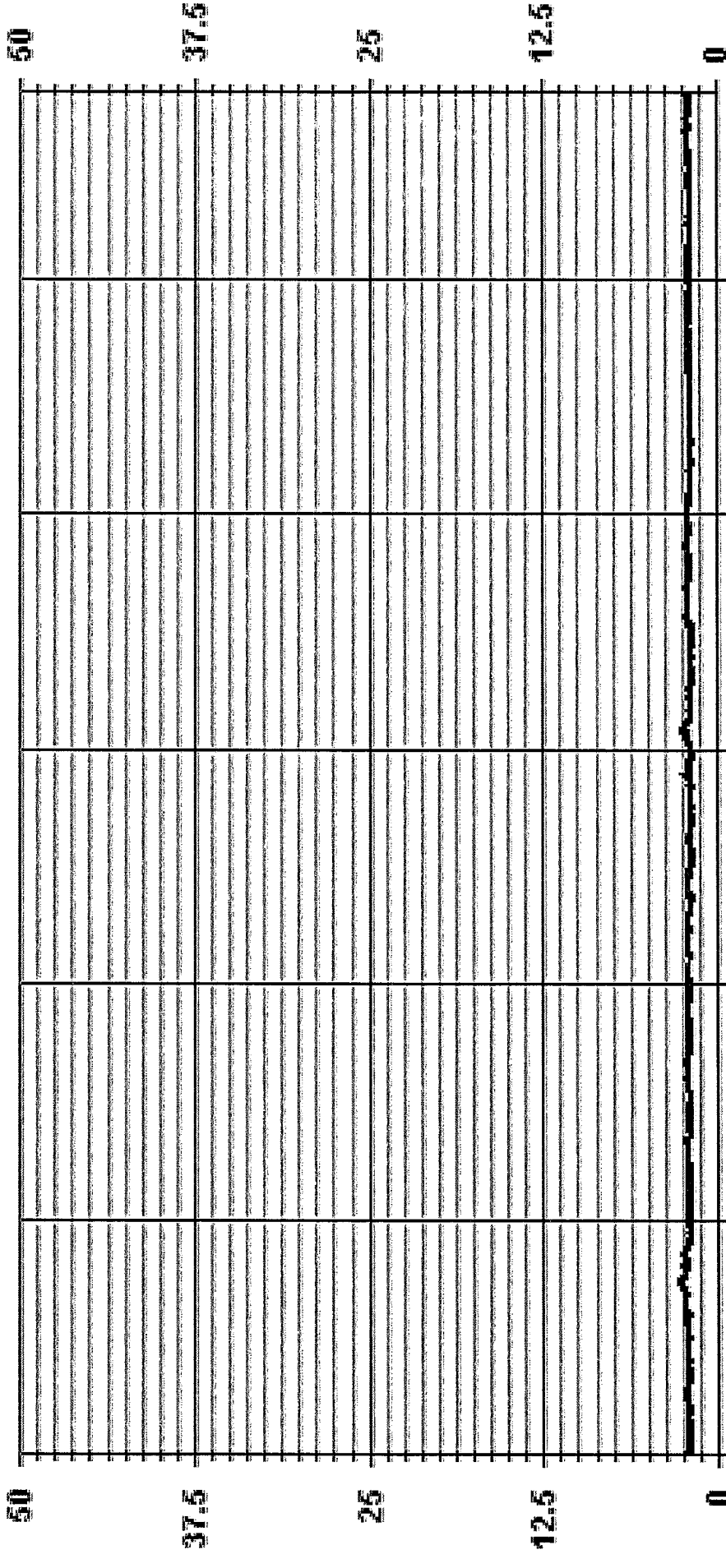
| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CI | REPEAT CALIBRATION | R | RECOVERY |
| V | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | OUT-OF-REPAIR |
| SI | REPEAT ZERO/SPAN CHECK | P | POWER FAILURE |



MONTHLY SUMMARY

| | | | |
|------------------------------|----------|------------------------|----------|
| NUMBER OF NON-ZERO READINGS: | 663 | ON DAY(S) | 13 |
| MINIMUM 1-HR AVERAGE: | 1.76 PPM | ON DAY(S) | 4 |
| MAXIMUM 1-HR AVERAGE: | 2.59 PPM | ON DAY(S) | 4 |
| MAXIMUM 24-HR AVERAGE: | 2.33 PPM | VAR- VARIOUS | |
| ISZ CALIBRATION TIME: | 30 HRS | OPERATIONAL TIME: | 696 HRS |
| MONTHLY CALIBRATION TIME: | 3 HRS | AMTD OPERATION UPTIME: | 100.0 % |
| STANDARD DEVIATION: | 0.13 | MONTHLY AVERAGE: | 2.00 PPM |

01 Hour Averages



— LICA31 - - - - THC PPM



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
 St. Linda Site - FEBRUARY 2016
 JOB # 2833-2016-02-31-C

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

| DAY | 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 MAX. | 24-HOUR AVG. | ROGS | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------|--------------|------|----|
| 1 | 2.16 | 2.19 | \$ | 1.99 | 1.99 | 1.99 | 1.99 | 2.01 | 2.02 | 2.01 | 2.02 | 2.02 | 2.02 | 2.02 | 2.02 | 2.02 | 2.01 | 2.06 | 2.17 | 2.10 | 2.08 | 2.08 | 2.07 | 2.06 | 2.19 | 2.05 | 24 | |
| 2 | 2.05 | \$ | 2.12 | 2.12 | 2.17 | 2.18 | 2.20 | 2.24 | 2.27 | 2.27 | 2.27 | 2.27 | 2.27 | 2.27 | 2.27 | 2.27 | 2.09 | 2.08 | 2.03 | 2.06 | 2.05 | 2.06 | 2.07 | 2.15 | 2.27 | 2.12 | 24 | |
| 3 | \$ | 2.06 | 2.09 | 2.09 | 2.08 | 2.09 | 2.09 | 2.11 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.09 | 2.11 | 2.12 | 2.12 | 2.14 | 2.15 | 2.14 | 2.15 | \$ | 2.15 | 2.10 | 24 | |
| 4 | 2.06 | 2.21 | 2.38 | 2.41 | 2.49 | 2.49 | 2.49 | 2.69 | 2.58 | 2.51 | 2.24 | 2.32 | 2.41 | 2.49 | 2.72 | 2.61 | 2.67 | 2.64 | 2.67 | 2.55 | 2.39 | 2.33 | \$ | 2.28 | 2.72 | 2.46 | 24 | |
| 5 | 2.32 | 2.36 | 2.39 | 2.39 | 2.28 | 2.36 | 2.36 | 2.36 | 2.36 | 2.35 | 2.33 | 2.29 | 2.23 | 2.14 | 2.05 | 1.99 | 1.98 | 1.94 | 1.96 | 1.91 | 1.91 | \$ | 2.08 | 2.06 | 2.39 | 2.17 | 24 | |
| 6 | 2.06 | 2.07 | 2.05 | 2.03 | 2.00 | 2.03 | 2.03 | 2.03 | 1.96 | 1.96 | 1.96 | 1.96 | 1.97 | 2.00 | 1.97 | 2.00 | 2.00 | 2.03 | 2.03 | 2.06 | \$ | 1.96 | 2.00 | 2.00 | 2.07 | 2.01 | 24 | |
| 7 | 2.01 | 2.00 | 2.02 | 2.02 | 2.05 | 2.06 | 2.06 | 2.08 | 2.09 | 2.12 | 2.12 | 2.12 | 2.12 | 2.12 | 2.12 | 2.14 | 2.15 | 2.15 | 2.15 | \$ | 1.94 | 1.94 | 1.95 | 1.98 | 2.15 | 2.07 | 24 | |
| 8 | 1.98 | 2.00 | 2.00 | 2.03 | 2.03 | 2.10 | 2.10 | 2.07 | 2.07 | 2.04 | 2.01 | 2.04 | 2.06 | 2.03 | 1.95 | 1.92 | 1.88 | 1.92 | 1.92 | \$ | 2.11 | 2.10 | 2.08 | 2.11 | 2.60 | 2.05 | 24 | |
| 9 | 3.47 | 2.20 | 2.17 | 2.16 | 2.11 | 2.11 | 2.17 | 2.20 | 2.20 | 2.19 | 2.25 | 2.22 | 2.16 | 2.08 | 2.08 | 2.02 | 1.99 | \$ | 2.01 | 2.00 | 1.99 | 1.98 | 2.00 | 2.01 | 3.47 | 2.16 | 24 | |
| 10 | 2.00 | 2.01 | 2.01 | 2.02 | 2.02 | 2.06 | 2.06 | 2.08 | 2.18 | 2.21 | 2.23 | 2.23 | 2.23 | 2.24 | 2.20 | 2.26 | \$ | 2.10 | 2.13 | 2.11 | 2.14 | 2.19 | 2.14 | 2.23 | 2.26 | 2.13 | 24 | |
| 11 | 2.17 | 2.20 | 2.14 | 2.22 | 2.20 | 2.31 | 2.16 | 2.26 | 2.33 | 2.36 | C | C | C | C | C | C | 2.27 | 2.09 | 2.15 | 2.24 | 2.23 | 2.30 | 2.26 | 2.21 | \$ | 2.36 | 2.23 | 24 |
| 12 | 2.20 | 2.35 | 2.26 | 2.17 | 2.10 | 2.17 | 2.17 | 2.16 | 2.45 | R | 2.08 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 24 |
| 13 | 2.06 | 2.08 | 2.09 | 2.10 | 2.61 | 2.16 | 2.15 | 2.11 | 2.03 | 2.00 | 1.95 | 1.96 | 1.95 | 1.92 | 1.81 | 1.80 | 1.84 | 1.83 | 1.84 | 1.81 | 1.80 | \$ | 1.90 | 1.93 | 2.61 | 1.99 | 24 | |
| 14 | 1.96 | 1.99 | 2.02 | 2.02 | 2.02 | 1.99 | 1.96 | 1.91 | 1.91 | 1.90 | 1.90 | 1.87 | 1.85 | 1.84 | 1.87 | 1.86 | 1.87 | 1.88 | 1.87 | 1.87 | \$ | 1.88 | 1.88 | 1.87 | 2.02 | 1.91 | 24 | |
| 15 | 1.93 | 1.96 | 1.91 | 1.90 | 1.89 | 1.84 | 2.52 | 2.15 | 2.00 | 1.97 | 2.13 | 2.68 | 2.29 | 2.10 | 2.15 | 2.02 | 2.03 | 2.28 | 2.04 | \$ | 1.83 | 2.43 | 1.89 | 2.37 | 2.68 | 2.10 | 24 | |
| 16 | 2.43 | 1.89 | 1.93 | 2.19 | 2.11 | 2.18 | 2.22 | 2.27 | 2.43 | 2.67 | 2.59 | 2.55 | 2.46 | 2.37 | 2.33 | 2.10 | 1.95 | 1.93 | \$ | 1.94 | 1.97 | 1.97 | 1.97 | 1.93 | 2.67 | 2.19 | 24 | |
| 17 | 1.93 | 1.92 | 1.94 | 1.96 | 1.94 | 1.92 | 1.92 | 1.97 | 2.00 | 1.99 | 1.99 | 2.16 | 2.03 | 1.97 | 2.10 | 2.00 | 1.97 | \$ | 1.99 | 2.04 | 2.03 | 2.00 | 1.96 | 1.94 | 2.16 | 1.99 | 24 | |
| 18 | 1.96 | 1.91 | 1.94 | 1.93 | 1.93 | 1.91 | 1.94 | 1.91 | 1.99 | 1.81 | 1.81 | 1.84 | 1.85 | 1.84 | 1.84 | 1.87 | \$ | 2.07 | 2.10 | 2.32 | 2.33 | 2.38 | 2.14 | 2.13 | 2.38 | 1.99 | 24 | |
| 19 | 2.13 | 2.13 | 2.10 | 2.07 | 2.06 | 2.07 | 2.08 | 2.10 | 2.16 | 2.16 | 2.16 | 2.36 | 2.29 | 2.19 | 2.14 | 2.16 | \$ | 1.97 | 1.99 | 1.97 | 1.99 | 1.99 | 1.99 | 2.08 | 2.36 | 2.09 | 24 | |
| 20 | 2.10 | 2.12 | 2.03 | 2.02 | 2.13 | 2.16 | 2.20 | 2.18 | 2.19 | 2.32 | 2.40 | 2.24 | 2.17 | 2.26 | \$ | 2.05 | 2.06 | 2.03 | 2.04 | 2.06 | 2.06 | 2.06 | 2.11 | 2.11 | 2.40 | 2.14 | 24 | |
| 21 | 2.09 | 2.08 | 2.08 | 2.08 | 2.11 | 2.08 | 2.07 | 2.07 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 2.11 | 24 |
| 22 | 1.95 | 1.93 | 1.89 | 1.86 | 1.86 | 1.86 | 1.86 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 | 24 | |
| 23 | 1.89 | 1.89 | 1.87 | 1.89 | 1.89 | 1.89 | 1.89 | 1.93 | 1.92 | 1.90 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 24 | |
| 24 | 1.93 | 1.93 | 1.94 | 1.96 | 1.96 | 1.96 | 2.02 | 2.02 | 1.97 | 1.99 | \$ | 2.08 | 2.05 | 1.99 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 24 |
| 25 | 2.11 | 2.11 | 2.08 | 2.05 | 2.02 | 2.03 | 2.03 | 2.04 | 2.05 | \$ | 2.05 | 2.03 | 2.02 | 2.02 | 2.00 | 1.97 | 1.96 | 1.95 | 1.96 | 1.92 | 1.92 | 1.92 | 1.92 | 1.92 | 2.11 | 2.01 | 24 | |
| 26 | 1.99 | 1.99 | 1.97 | 2.00 | 2.00 | 2.00 | 2.00 | 1.99 | 2.03 | \$ | 2.10 | 2.09 | 2.03 | 2.00 | 1.97 | 1.96 | 1.96 | 1.94 | 1.96 | 1.93 | 1.93 | 1.93 | 1.93 | 1.93 | 2.10 | 1.98 | 24 | |
| 27 | 1.90 | 1.88 | 1.90 | 2.56 | 2.50 | 2.28 | 2.07 | \$ | 2.10 | 2.04 | 1.93 | 1.93 | 1.94 | 1.94 | 2.02 | 2.00 | 1.90 | 1.93 | 1.91 | 1.91 | 1.91 | 1.93 | 1.94 | 1.96 | 2.56 | 2.02 | 24 | |
| 28 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 | 1.96 | 1.97 | \$ | 1.90 | 1.91 | 1.93 | 1.99 | 1.97 | 1.99 | 1.99 | 1.99 | 2.07 | 2.06 | 2.16 | 2.25 | 2.20 | 2.20 | 2.18 | 2.22 | 2.25 | 2.03 | 24 | |
| 29 | 2.26 | 2.21 | 2.25 | 2.23 | 2.35 | \$ | 2.28 | 2.10 | 2.19 | 2.16 | 2.13 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 | 1.97 | 1.98 | 1.98 | 1.98 | 2.00 | 2.02 | 2.03 | 2.03 | 2.35 | 2.11 | 24 | |
| HOURLY MAX | 3.47 | 2.36 | 2.39 | 2.56 | 2.61 | 2.49 | 2.52 | 2.69 | 2.58 | 2.67 | 2.59 | 2.68 | 2.46 | 2.49 | 2.72 | 2.61 | 2.67 | 2.64 | 2.67 | 2.55 | 2.39 | 2.43 | 2.21 | 2.60 | | | | |
| HOURLY AVG | 2.11 | 2.06 | 2.05 | 2.08 | 2.10 | 2.08 | 2.11 | 2.10 | 2.12 | 2.11 | 2.11 | 2.12 | 2.08 | 2.06 | 2.04 | 2.02 | 2.00 | 2.03 | 2.04 | 2.04 | 2.04 | 2.03 | 2.05 | 2.01 | 2.06 | | | |

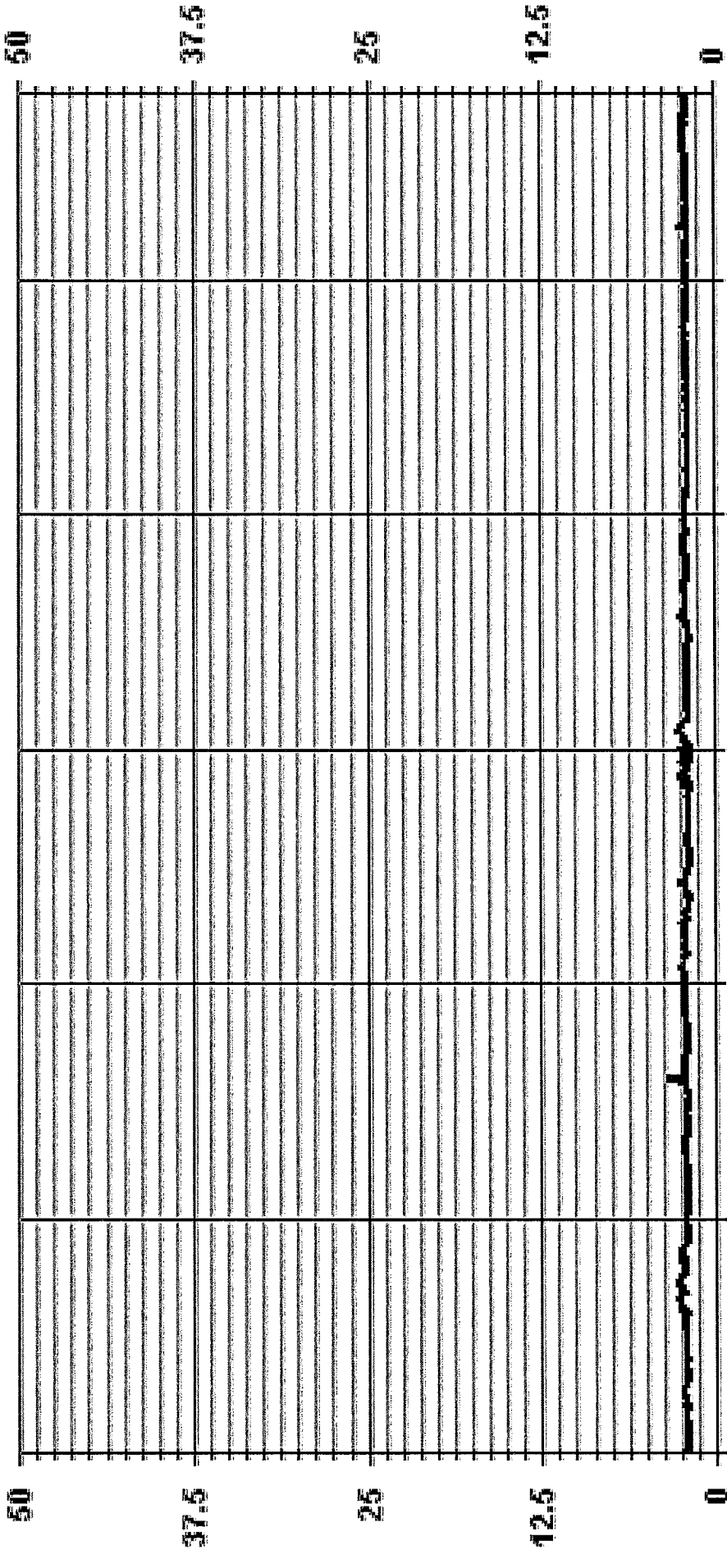
STATUS FLAG CODES

| | | | |
|----|------------------------|---|-------------------|
| C | MONTHLY CALIBRATION | O | QUALITY ASSURANCE |
| CI | REPEAT CALIBRATION | P | RECOVERY |
| Y | MAINTENANCE | X | MACHINE/WARNING |
| S | DAILY ZERO/SPAN CHECK | G | OUT FOR REPAIR |
| S1 | REPEAT ZERO/SPAN CHECK | P | POWER FAILURE |

MONTHLY SUMMARY

| | | | | | |
|------------------------------|--------|---------------------|---------|-----------|---|
| NUMBER OF NON-ZERO READINGS: | 660 | PPM @ HOUR(S) | 0 | ON DAY(S) | 9 |
| MAXIMUM INSTANTANEOUS VALUE: | 3.47 | VAR-VARIOUS | | | |
| HZS CALIBRATION TIME: | 30 HRS | OPERATIONAL TIME: | 695 HRS | | |
| MONTHLY CALIBRATION TIME: | 5 HRS | STANDARD DEVIATION: | 0.17 | | |

01 Hour Averages



— LICA31 THCMAX PPM

LICA31
 THC / WDR Joint Frequency Distribution (Percent)
 February 2016

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : THC
 Units : PPM

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | NNW | NW | NNW | Freq |
|----------|-----------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|------|------|--------|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | W | WNW | | | | |
| < 3.00 | 2.41 | 2.41 | 3.77 | 8.44 | 4.22 | 6.03 | 1.65 | 3.01 | 9.20 | 9.04 | 11.91 | 10.85 | 9.35 | 9.35 | 5.73 | 2.56 | 100.00 | | | |
| < 10.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | | | |
| < 50.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | | | |
| >= 50.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | | | |
| Totals | 2.41 | 2.41 | 3.77 | 8.44 | 4.22 | 6.03 | 1.65 | 3.01 | 9.20 | 9.04 | 11.91 | 10.85 | 9.35 | 9.35 | 5.73 | 2.56 | | | | |

Calm : .00 %

Total # Operational Hours : 663

Distribution By Samples

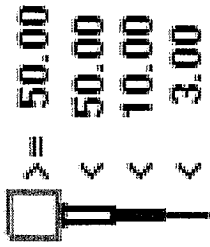
| Limit | Direction | | | | | | | | | | | | | | | | NNW | NW | NNW | Freq |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | W | WNW | | | | |
| < 3.00 | 16 | 16 | 25 | 56 | 28 | 40 | 11 | 20 | 61 | 60 | 79 | 72 | 62 | 62 | 38 | 17 | 663 | | | |
| < 10.00 | | | | | | | | | | | | | | | | | | | | |
| < 50.00 | | | | | | | | | | | | | | | | | | | | |
| >= 50.00 | | | | | | | | | | | | | | | | | | | | |
| Totals | 16 | 16 | 25 | 56 | 28 | 40 | 11 | 20 | 61 | 60 | 79 | 72 | 62 | 62 | 38 | 17 | | | | |

Calm : .00 %

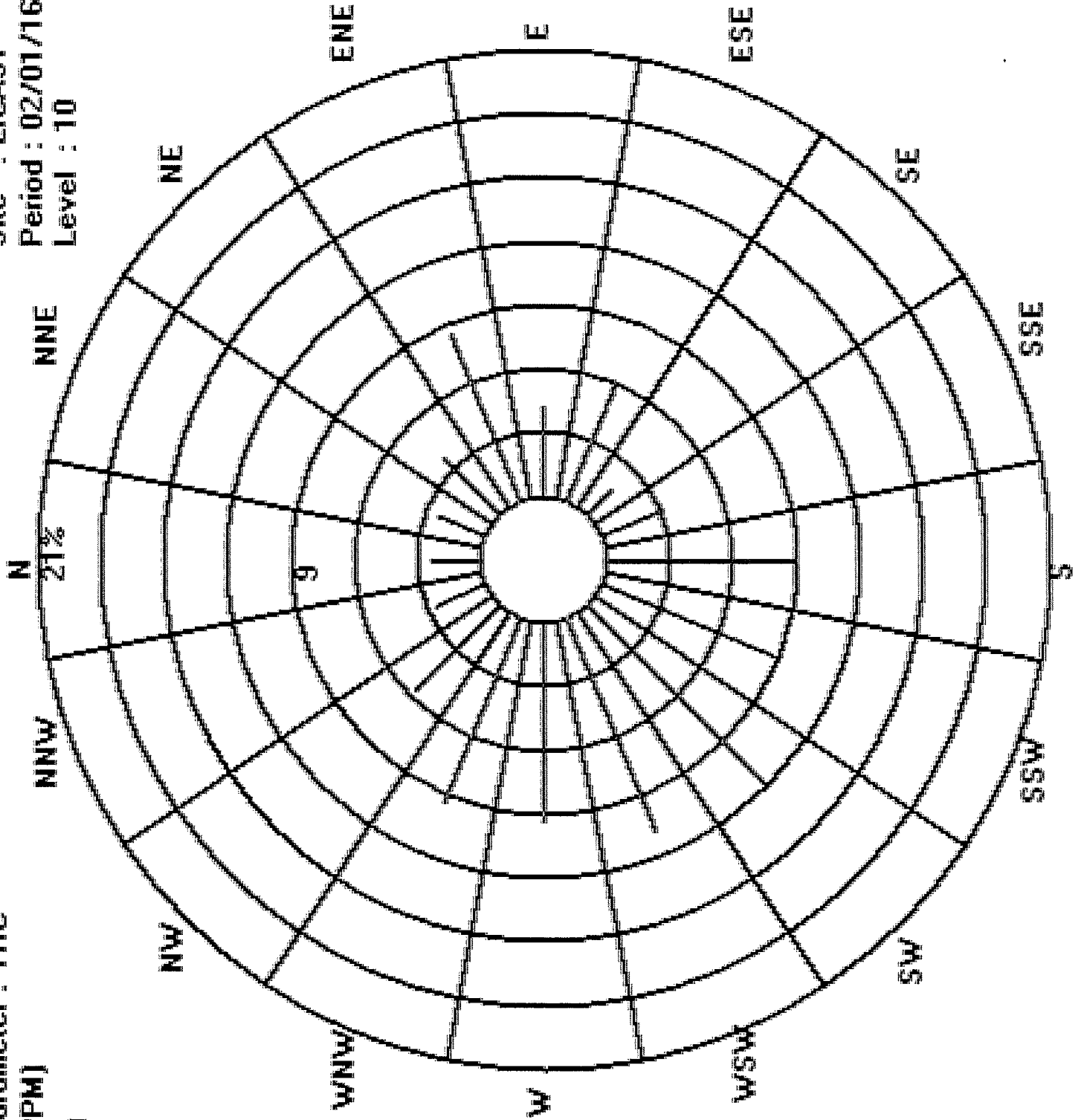
Total # Operational Hours : 663

Logger : 31 Parameter : THC

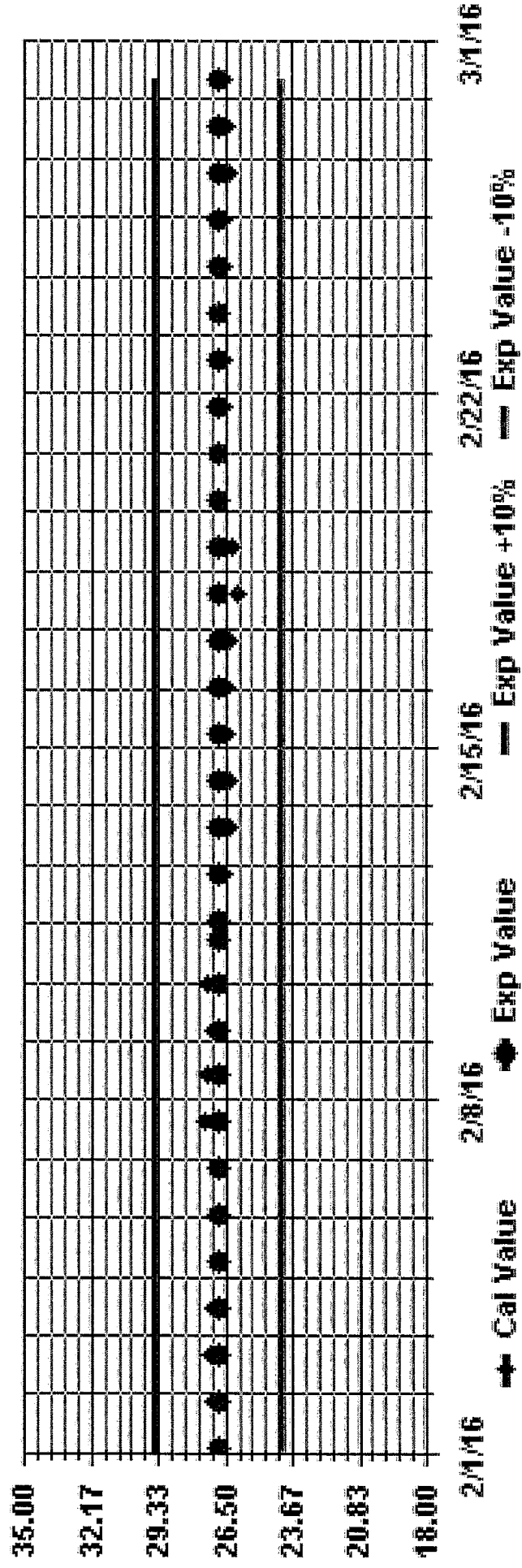
Class Limits (PPM)



Site : LICA31
Period : 02/01/16-02/29/16
Level : 10



Calibration Graph for Site: LICA31 Parameter: THC Sequence: THC Phase: SPAN



OXIDES OF NITROGEN



OXIDES OF NITROGEN (NOx) hourly averages in ppb

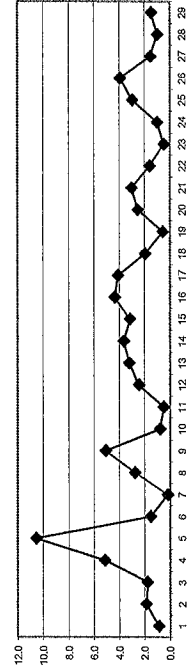
MST

| DAY | 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 | 24:00 | | | |
|-----|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-----|----|
| HR | 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 | 24:00 | | | |
| HR | 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 | 24:00 | | | |
| 1 | 0.6 | 0.4 | S | 0.2 | 0.2 | 0.3 | 0.1 | 0.4 | 0.2 | 0.4 | 0.2 | 0.4 | 0.7 | 0.8 | 1.0 | 1.8 | 1.2 | 1.1 | 2.6 | 2.3 | 1.9 | 1.9 | 1.4 | 2.6 | 0.9 | 24 | | |
| 2 | 1.2 | S | 1.0 | 1.1 | 1.5 | 1.4 | 2.0 | 3.1 | 3.8 | 4.2 | 4.9 | 4.9 | 2.3 | 1.9 | 1.6 | 1.9 | 1.2 | 1.6 | 0.5 | 0.4 | 0.4 | 0.6 | 0.6 | 0.7 | 4.9 | 19 | | |
| 3 | S | 1.3 | 1.0 | 0.9 | 0.4 | 0.3 | 0.1 | 0.6 | 0.3 | 0.3 | 0.3 | 0.2 | 0.4 | 0.8 | 1.4 | 1.5 | 2.0 | 1.7 | 1.5 | 4.5 | 4.8 | 7.4 | 7.2 | S | 7.4 | 18 | | |
| 4 | S | 1.0 | 1.3 | 5.0 | 5.8 | 4.9 | 4.0 | 3.7 | 3.7 | 3.8 | 3.3 | 3.8 | 4.8 | 5.6 | 7.0 | 7.8 | 7.7 | 7.6 | 6.9 | 4.2 | 4.2 | 5.4 | S | 12.9 | 5.1 | 24 | | |
| 5 | 17.8 | 21.0 | 24.5 | 23.0 | 11.8 | 11.3 | 12.5 | 11.5 | 11.0 | 11.3 | 10.9 | 8.4 | 6.9 | 6.3 | 6.3 | 7.1 | 6.9 | 6.7 | 6.3 | 5.5 | 5.6 | S | 5.5 | 4.8 | 24.5 | 10.6 | 24 | |
| 6 | 4.7 | 4.4 | 4.6 | 4.1 | 3.6 | 4.3 | 3.7 | 2.5 | 1.2 | 0.5 | 0.8 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | S | 0.1 | 0.1 | 0.0 | 4.7 | 15 | | |
| 7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.8 | 0.6 | 1.1 | 1.1 | 24 | |
| 8 | 1.5 | 1.4 | 1.3 | 2.1 | 2.2 | 2.3 | 3.6 | 4.8 | 5.0 | 4.7 | 5.4 | 5.7 | 4.2 | 2.3 | 1.1 | 0.6 | 0.8 | 1.1 | S | 2.6 | 3.0 | 2.8 | 2.6 | 2.7 | 5.7 | 2.8 | 24 | |
| 9 | 2.7 | 3.1 | 6.3 | 7.6 | 6.7 | 7.0 | 7.7 | 9.4 | 9.3 | 8.7 | 7.6 | 7.3 | 5.6 | 4.9 | 5.6 | 4.9 | 3.9 | S | 2.3 | 1.7 | 1.3 | 1.1 | 1.2 | 1.1 | 9.4 | 5.1 | 24 | |
| 10 | 0.5 | 0.1 | 0.2 | 0.0 | 0.4 | 1.0 | 1.0 | 0.7 | 1.9 | 2.6 | 1.2 | 0.9 | 0.8 | 1.3 | C | C | C | S | 1.2 | 0.5 | 0.5 | 0.7 | 0.5 | 0.0 | 0.1 | 2.6 | 0.8 | 24 |
| 11 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.3 | 0.2 | 0.7 | 0.5 | 1.0 | 1.4 | C | C | C | C | C | C | S | 1.3 | 1.1 | 0.5 | 0.6 | 0.2 | 0.0 | 0.2 | 1.4 | 0.5 | 24 |
| 12 | 1.7 | 1.5 | 1.4 | 1.6 | 1.8 | 1.8 | 2.1 | 2.4 | 2.8 | 3.0 | 2.9 | 3.4 | 3.7 | 3.7 | 3.2 | 2.4 | 2.1 | 1.9 | 2.2 | 2.3 | 2.4 | 2.5 | S | 3.6 | 3.7 | 2.5 | 24 | |
| 13 | 3.6 | 2.9 | 3.4 | 3.4 | 4.0 | 4.2 | 3.8 | 3.4 | 2.4 | 2.1 | 2.5 | 3.9 | 5.2 | 5.1 | 2.9 | 2.2 | 2.2 | 2.9 | 2.8 | 2.2 | 1.8 | S | 2.6 | 4.2 | 5.2 | 3.2 | 24 | |
| 14 | 6.5 | 10.1 | 12.5 | 12.9 | 12.5 | 9.6 | 6.2 | 4.1 | 2.0 | 1.2 | 0.6 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.3 | S | 1.7 | 1.5 | 1.9 | 12.9 | 3.7 | 24 |
| 15 | 2.7 | 3.9 | 3.1 | 2.4 | 2.2 | 1.7 | 1.4 | 1.8 | 1.2 | 1.3 | 5.3 | 9.4 | 4.3 | 3.8 | 4.3 | 3.7 | 4.2 | 5.5 | 4.7 | S | 1.5 | 1.6 | 1.2 | 1.2 | 9.4 | 3.1 | 24 | |
| 16 | 1.9 | 2.3 | 2.2 | 2.4 | 3.7 | 3.4 | 3.7 | 5.0 | 5.0 | 6.1 | 6.6 | 7.2 | 5.1 | 4.1 | 3.6 | 3.3 | 3.6 | 3.7 | S | 6.0 | 5.0 | 5.0 | 5.4 | 5.8 | 7.2 | 4.4 | 24 | |
| 17 | 5.4 | 5.5 | 6.1 | 7.2 | 6.7 | 5.9 | 5.4 | 5.6 | 5.2 | 5.6 | 5.0 | 4.8 | 3.6 | 1.6 | 3.0 | 4.5 | 3.1 | S | 3.4 | 2.6 | 1.9 | 1.0 | 0.5 | 0.6 | 7.2 | 4.1 | 24 | |
| 18 | 0.8 | 1.0 | 1.2 | 0.7 | 0.9 | 0.8 | 1.0 | 1.5 | 1.6 | 2.0 | 2.5 | 2.0 | 2.3 | 3.0 | 3.1 | 2.8 | S | 2.9 | 3.0 | 2.5 | 2.7 | 2.2 | 2.0 | 1.7 | 3.1 | 1.9 | 24 | |
| 19 | 1.4 | 1.2 | 1.4 | 1.5 | 1.0 | 0.5 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.1 | S | 0.4 | 0.5 | 1.2 | 0.8 | 0.4 | 0.1 | 0.2 | 1.1 | 1.5 | 0.6 | 24 | |
| 20 | 2.2 | 1.1 | 0.4 | 0.0 | 0.8 | 3.6 | 3.7 | 3.4 | 4.4 | 6.7 | 3.6 | 3.2 | 2.7 | 3.1 | S | 2.7 | 2.1 | 2.1 | 2.4 | 1.6 | 1.6 | 2.0 | 1.9 | 2.7 | 6.7 | 2.5 | 24 | |
| 21 | 2.1 | 2.5 | 3.9 | 5.9 | 5.8 | 4.4 | 3.7 | 3.2 | 3.3 | 4.1 | 3.9 | 3.3 | 2.7 | S | 1.7 | 1.5 | 1.0 | 0.7 | 0.9 | 1.7 | 3.1 | 2.4 | 2.5 | 5.0 | 5.9 | 3.0 | 24 | |
| 22 | 5.7 | 4.2 | 2.4 | 1.6 | 1.0 | 0.7 | 0.3 | 0.6 | 0.9 | 0.8 | 1.0 | 0.5 | S | 0.8 | 0.5 | 0.6 | 1.0 | 1.6 | 1.7 | 1.9 | 4.8 | 3.0 | 0.5 | 0.2 | 5.7 | 1.6 | 24 | |
| 23 | 0.2 | 0.3 | 0.2 | 0.3 | 0.3 | 0.3 | 0.4 | 0.7 | 0.5 | 0.4 | 0.4 | S | 0.5 | 0.6 | 0.6 | 0.4 | 1.2 | 1.3 | 0.4 | 0.3 | 0.5 | 0.3 | 0.1 | 0.6 | 1.3 | 0.5 | 24 | |
| 24 | 0.4 | 0.4 | 0.1 | 0.5 | 0.5 | 0.6 | 0.8 | 1.1 | 0.9 | 1.0 | S | 1.1 | 1.1 | 0.8 | 0.5 | 0.7 | 0.8 | 1.5 | 1.6 | 2.3 | 1.3 | 1.5 | 1.8 | 1.4 | 2.3 | 1.0 | 24 | |
| 25 | 1.4 | 1.4 | 1.8 | 1.9 | 2.1 | 1.9 | 2.4 | 2.3 | 3.1 | S | 6.4 | 6.2 | 5.6 | 4.9 | 4.0 | 2.9 | 2.2 | 1.6 | 1.5 | 1.7 | 1.7 | 1.7 | 2.2 | 7.1 | 7.1 | 3.0 | 24 | |
| 26 | 7.8 | 5.9 | 5.5 | 6.2 | 7.0 | 7.3 | 7.9 | 8.8 | S | 7.3 | 4.7 | 3.7 | 2.4 | 1.8 | 1.3 | 1.0 | 1.8 | 1.5 | 1.9 | 1.4 | 1.9 | 1.2 | 0.6 | 1.4 | 8.8 | 3.9 | 24 | |
| 27 | 0.9 | 1.0 | 1.8 | 2.5 | 3.8 | 2.3 | 1.5 | S | 3.1 | 2.5 | 1.3 | 1.4 | 1.4 | 0.9 | 3.1 | 0.6 | 0.3 | 0.3 | 0.4 | 0.6 | 0.8 | 0.9 | 0.7 | 1.0 | 5.8 | 1.5 | 24 | |
| 28 | 0.8 | 0.8 | 0.7 | 1.9 | 3.2 | 3.5 | S | 0.8 | 0.3 | 0.2 | 2.4 | 1.4 | 0.8 | 0.6 | 0.9 | 1.1 | 0.7 | 0.8 | 0.5 | 0.2 | 0.3 | 0.0 | 0.1 | 0.3 | 3.5 | 1.0 | 24 | |
| 29 | 0.2 | 0.4 | 0.4 | 0.8 | 0.7 | S | 1.2 | 1.6 | 2.7 | 2.7 | 1.8 | 1.7 | 1.5 | 1.2 | 1.0 | 1.2 | 1.3 | 1.0 | 1.0 | 2.3 | 2.3 | 1.9 | 2.2 | 2.4 | 2.7 | 1.5 | 24 | |
| 30 | 17.8 | 21.0 | 24.5 | 23.0 | 11.8 | 11.3 | 12.5 | 11.5 | 11.0 | 11.3 | 10.9 | 9.4 | 6.9 | 6.3 | 7.0 | 7.8 | 7.7 | 7.6 | 6.9 | 6.0 | 5.6 | 7.4 | 7.2 | 12.9 | 12.9 | 2.5 | 24 | |
| 31 | 2.7 | 2.8 | 3.3 | 3.4 | 3.2 | 3.0 | 2.9 | 3.0 | 2.7 | 3.0 | 3.1 | 3.2 | 2.5 | 2.2 | 2.2 | 2.1 | 2.0 | 2.1 | 1.9 | 1.8 | 2.0 | 2.1 | 1.8 | 1.7 | 2.5 | 2.5 | 24 | |
| 32 | 2.7 | 2.8 | 3.3 | 3.4 | 3.2 | 3.0 | 2.9 | 3.0 | 2.7 | 3.0 | 3.1 | 3.2 | 2.5 | 2.2 | 2.2 | 2.1 | 2.0 | 2.1 | 1.9 | 1.8 | 2.0 | 2.1 | 1.8 | 1.7 | 2.5 | 2.5 | 24 | |

STATUS FLAG CODES

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

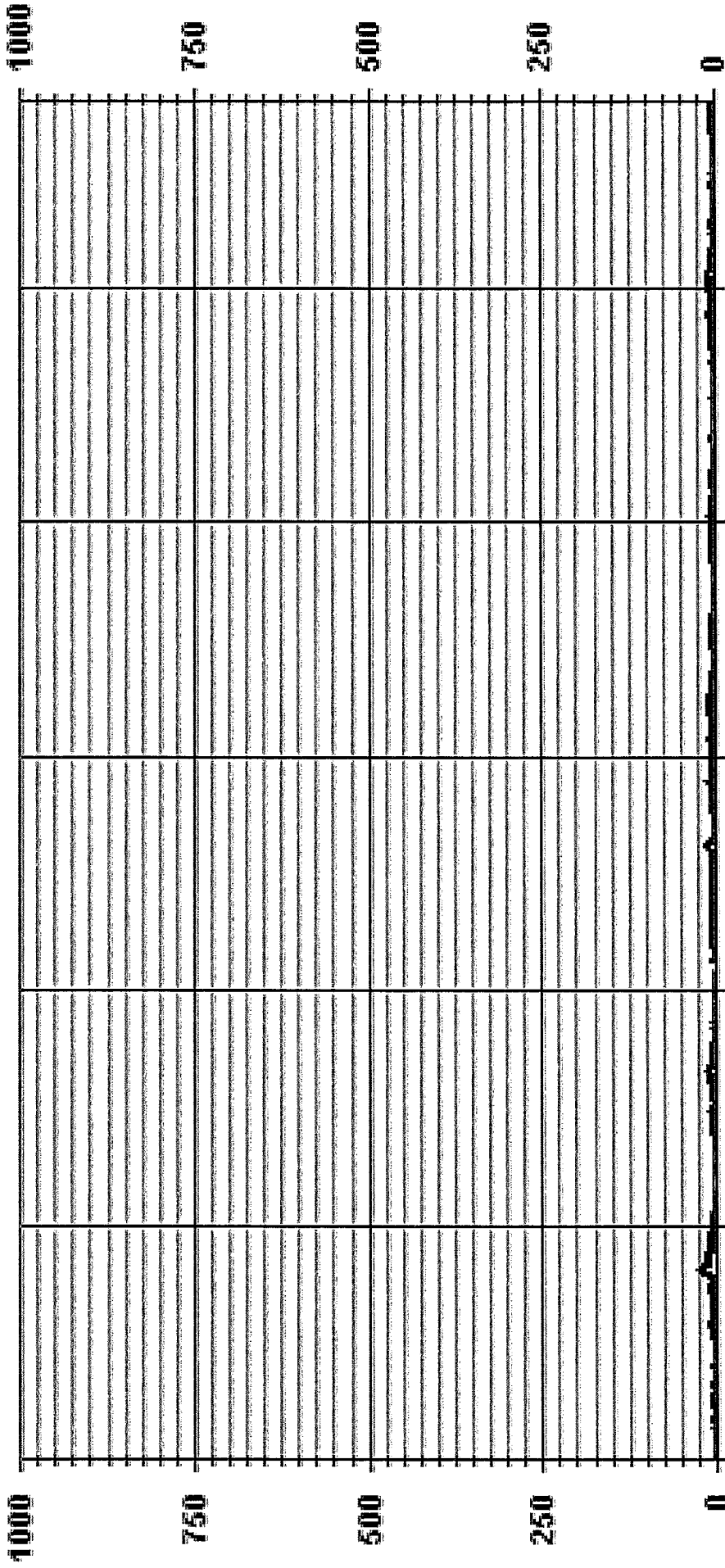
24 HOUR AVERAGES FOR FEBRUARY 2016



MONTHLY SUMMARY

| | | | | | | |
|------------------------------|------|---------------|-----|-----------------------|-------|-----|
| NUMBER OF NON-ZERO READINGS: | 620 | PPB @ HOUR(S) | VAR | ON DAY(S) | VAR | |
| MINIMUM 1-HR AVERAGE: | 0.0 | PPB @ HOUR(S) | 2 | ON DAY(S) | 5 | |
| MAXIMUM 1-HR AVERAGE: | 24.5 | PPB @ HOUR(S) | | ON DAY(S) | 5 | |
| MAXIMUM 24-HR AVERAGE: | 10.6 | PPB | | VAR-VARIOUS | | |
| ISZ CALIBRATION TIME: | 30 | HRS | | OPERATIONAL TIME: | 696 | HRS |
| MONTHLY CALIBRATION TIME: | 5 | HRS | | AMD OPERATION UPTIME: | 100.0 | % |
| STANDARD DEVIATION: | 2.84 | | | MONTHLY AVERAGE: | 2.6 | PPB |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA31 NOX_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
 St. Lina Site - FEBRUARY 2016
 JOB # 2833-2016-02-31-C

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

| DAY | HOURS | | | | | | | | | | | | | | | | | | | | | | | | DAILY MAX. | 24-HOUR AVG. | RDGS. | | |
|------------|-------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------|--------------|-------|-------|----|
| | 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 | | | | 24:00 | |
| 1 | 1.6 | 1.2 | 5 | 1.1 | 0.8 | 0.9 | 0.8 | 0.8 | 2.0 | 2.0 | 2.4 | 0.7 | 1.3 | 18.5 | 2.8 | 1.6 | 5.5 | 1.9 | 2.9 | 1.3 | 3.6 | 2.9 | 2.6 | 2.4 | 2.1 | 18.5 | 2.7 | 24 | |
| 2 | 1.8 | 5 | 1.6 | 1.8 | 2.1 | 2.0 | 2.9 | 6.4 | 4.9 | 5.3 | 6.4 | 7.9 | 2.9 | 2.6 | 4.0 | 4.0 | 2.6 | 29.9 | 1.3 | 1.2 | 1.2 | 1.2 | 1.4 | 1.2 | 1.4 | 1.2 | 29.9 | 4.2 | 24 |
| 3 | 5 | 2.1 | 1.6 | 1.0 | 1.0 | 1.0 | 1.0 | 1.8 | 1.1 | 1.5 | 1.5 | 1.0 | 1.3 | 1.0 | 2.1 | 2.4 | 37.5 | 2.9 | 3.1 | 41.5 | 6.0 | 9.1 | 8.9 | 5 | 41.5 | 6.0 | 24 | | |
| 4 | 1.9 | 4.0 | 6.6 | 6.8 | 5.9 | 5.0 | 4.8 | 4.6 | 4.2 | 4.7 | 4.1 | 4.5 | 6.2 | 6.3 | 8.3 | 8.5 | 8.6 | 8.5 | 13.4 | 5.3 | 29.1 | 11.3 | 5 | 17.0 | 29.1 | 7.8 | 24 | | |
| 5 | 20.2 | 22.2 | 27.4 | 27.4 | 16.2 | 13.2 | 12.3 | 11.9 | 12.9 | 12.9 | 9.9 | 7.7 | 7.3 | 6.8 | 8.8 | 8.8 | 7.9 | 7.9 | 7.1 | 6.3 | 8.1 | 5 | 6.6 | 5.4 | 27.4 | 12.2 | 24 | | |
| 6 | 5.4 | 5.1 | 5.2 | 4.8 | 4.3 | 5.0 | 4.6 | 3.3 | 2.2 | 1.1 | 11.3 | 1.2 | 0.6 | 0.7 | 0.5 | 0.5 | 0.6 | 0.7 | 0.8 | 0.4 | 5 | 0.5 | 0.8 | 0.3 | 11.3 | 2.6 | 24 | | |
| 7 | 0.3 | 0.3 | 0.5 | 0.5 | 0.2 | 0.5 | 0.3 | 0.5 | 0.3 | 0.4 | 0.5 | 0.4 | 0.5 | 0.6 | 0.6 | 0.2 | 0.5 | 1.3 | 0.9 | 0.9 | 5 | 1.5 | 1.2 | 1.6 | 1.9 | 1.9 | 0.7 | 24 | |
| 8 | 2.4 | 1.9 | 2.0 | 2.7 | 2.8 | 2.9 | 4.9 | 6.1 | 6.5 | 6.2 | 22.8 | 6.5 | 5.8 | 3.6 | 2.6 | 16.3 | 2.0 | 2.3 | 5 | 3.1 | 3.7 | 3.4 | 3.2 | 3.7 | 22.8 | 5.1 | 24 | | |
| 9 | 3.3 | 4.1 | 7.9 | 8.3 | 7.4 | 7.9 | 9.4 | 10.5 | 20.8 | 32.3 | 8.6 | 8.3 | 8.0 | 6.1 | 14.4 | 20.3 | 13.0 | 5 | 3.2 | 2.3 | 2.0 | 1.7 | 1.7 | 1.7 | 32.3 | 8.8 | 24 | | |
| 10 | 1.2 | 0.8 | 0.6 | 1.0 | 1.1 | 1.5 | 1.8 | 1.3 | 3.4 | 4.2 | 2.0 | 1.6 | 1.7 | 2.0 | 1.4 | 1.9 | 5 | 1.8 | 1.3 | 1.0 | 1.5 | 1.3 | 0.7 | 0.7 | 4.2 | 1.6 | 24 | | |
| 11 | 0.7 | 0.8 | 0.6 | 1.0 | 1.1 | 0.9 | 0.9 | 1.4 | 1.1 | 1.8 | C | C | C | C | C | C | C | C | C | 1.9 | 1.1 | 1.3 | 1.0 | 0.5 | 1.0 | 5 | 1.9 | 11 | 24 |
| 12 | 2.2 | 2.1 | 2.1 | 2.4 | 2.7 | 2.5 | 2.7 | 3.1 | 3.7 | R | 3.5 | 4.2 | 4.3 | 4.4 | 4.0 | 3.5 | 2.9 | 2.6 | 2.9 | 2.9 | 2.9 | 3.8 | 5 | 4.4 | 4.4 | 3.2 | 23 | 23 | |
| 13 | 4.6 | 3.6 | 4.1 | 4.1 | 5.1 | 5.4 | 4.5 | 4.3 | 3.5 | 20.8 | 3.6 | 5.2 | 5.8 | 6.0 | 4.5 | 13.3 | 5.7 | 3.7 | 3.6 | 3.2 | 2.3 | 5 | 3.8 | 5.2 | 20.8 | 5.5 | 24 | | |
| 14 | 9.3 | 12.6 | 13.4 | 13.6 | 13.7 | 11.4 | 9.8 | 5.6 | 3.3 | 2.1 | 1.5 | 0.7 | 1.3 | 0.6 | 0.4 | 0.6 | 0.6 | 1.1 | 0.7 | 1.2 | 5 | 2.3 | 3.0 | 2.9 | 13.7 | 4.9 | 24 | | |
| 15 | 4.0 | 4.4 | 3.9 | 2.8 | 3.1 | 2.3 | 2.0 | 2.4 | 2.0 | 3.0 | 6.9 | 14.5 | 9.5 | 5.2 | 5.4 | 4.3 | 5.3 | 7.7 | 6.6 | 5 | 2.3 | 2.5 | 2.5 | 2.0 | 14.5 | 4.5 | 24 | | |
| 16 | 2.9 | 2.9 | 2.7 | 3.4 | 4.6 | 4.5 | 4.5 | 6.6 | 6.5 | 7.0 | 8.0 | 8.0 | 6.4 | 4.7 | 4.4 | 4.4 | 6.6 | 4.8 | 5 | 10.3 | 6.1 | 6.1 | 6.2 | 6.5 | 10.3 | 5.6 | 24 | | |
| 17 | 6.0 | 6.6 | 7.0 | 7.8 | 7.6 | 6.9 | 7.0 | 7.0 | 6.5 | 6.5 | 8.7 | 8.8 | 9.8 | 2.4 | 4.4 | 5.8 | 3.8 | 5 | 4.5 | 3.4 | 2.8 | 1.9 | 1.5 | 1.4 | 9.8 | 5.6 | 24 | | |
| 18 | 1.3 | 1.7 | 1.7 | 1.5 | 1.5 | 1.4 | 1.7 | 2.3 | 2.4 | 3.0 | 3.3 | 3.3 | 3.1 | 3.9 | 4.5 | 3.9 | 3.9 | 3.8 | 3.8 | 3.8 | 3.8 | 2.6 | 2.7 | 2.5 | 4.5 | 2.8 | 24 | | |
| 19 | 2.1 | 1.9 | 2.0 | 2.0 | 2.4 | 1.2 | 0.8 | 1.2 | 0.8 | 1.2 | 0.5 | 0.6 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 0.8 | 4.1 | 2.7 | 5.2 | 4.8 | 3.4 | 2.3 | 3.0 | 2.6 | 32.4 | 5.1 | 24 |
| 20 | 3.6 | 3.7 | 1.3 | 0.6 | 3.3 | 4.8 | 4.7 | 3.9 | 5.8 | 7.7 | 5.6 | 3.9 | 3.4 | 3.7 | 5 | 4.1 | 2.7 | 5.2 | 4.8 | 3.4 | 2.3 | 3.0 | 2.6 | 32.4 | 32.4 | 5.1 | 24 | | |
| 21 | 2.7 | 3.1 | 6.2 | 6.5 | 6.5 | 5.5 | 4.3 | 3.9 | 4.3 | 5.1 | 4.9 | 4.6 | 3.6 | 5 | 2.1 | 2.1 | 1.6 | 1.5 | 2.3 | 2.8 | 4.0 | 3.1 | 3.8 | 6.8 | 6.8 | 4.0 | 24 | | |
| 22 | 6.8 | 5.5 | 3.4 | 2.4 | 1.8 | 1.4 | 0.8 | 2.2 | 3.1 | 1.5 | 20.4 | 1.2 | 5 | 1.3 | 1.0 | 2.6 | 25.4 | 12.9 | 2.4 | 3.8 | 6.7 | 5.0 | 1.1 | 1.0 | 25.4 | 4.9 | 24 | | |
| 23 | 0.8 | 1.2 | 1.0 | 1.0 | 1.0 | 0.8 | 1.9 | 1.7 | 1.3 | 1.3 | 1.0 | 5 | 1.8 | 1.5 | 10.4 | 1.1 | 2.7 | 2.4 | 1.1 | 1.1 | 1.1 | 1.3 | 1.1 | 0.8 | 2.3 | 10.4 | 1.8 | 24 | |
| 24 | 1.0 | 1.1 | 0.8 | 1.1 | 1.3 | 1.1 | 1.6 | 1.7 | 1.6 | 1.9 | 5 | 2.2 | 2.3 | 1.5 | 1.0 | 1.6 | 2.9 | 7.7 | 3.3 | 4.0 | 2.0 | 2.5 | 2.9 | 2.0 | 17.4 | 2.8 | 24 | | |
| 25 | 1.8 | 1.9 | 2.3 | 2.7 | 2.7 | 2.7 | 3.4 | 3.2 | 3.9 | 5 | 21.2 | 7.0 | 6.6 | 5.7 | 5.0 | 3.7 | 9.5 | 2.1 | 3.6 | 3.6 | 2.3 | 2.5 | 4.9 | 10.2 | 21.2 | 4.9 | 24 | | |
| 26 | 10.2 | 7.2 | 6.6 | 7.1 | 7.9 | 8.2 | 8.7 | 17.5 | 5 | 8.9 | 7.3 | 5.1 | 3.6 | 2.6 | 2.1 | 1.7 | 12.2 | 2.3 | 2.5 | 2.0 | 2.8 | 2.4 | 1.1 | 2.2 | 17.5 | 5.7 | 24 | | |
| 27 | 1.9 | 4.5 | 4.4 | 10.7 | 10.4 | 3.8 | 2.5 | 5 | 3.9 | 4.5 | 4.0 | 2.0 | 2.6 | 2.4 | 4.5 | 4.8 | 1.0 | 1.3 | 1.6 | 1.9 | 1.5 | 1.7 | 1.5 | 1.8 | 10.7 | 3.4 | 24 | | |
| 28 | 1.3 | 1.4 | 1.3 | 3.2 | 5.3 | 5.3 | 5 | 1.8 | 1.1 | 0.8 | 5.1 | 2.3 | 1.7 | 1.2 | 1.5 | 1.8 | 1.3 | 1.7 | 1.7 | 1.1 | 1.5 | 0.4 | 0.7 | 1.0 | 5.3 | 1.9 | 24 | | |
| 29 | 0.7 | 1.0 | 1.2 | 1.6 | 1.4 | 5 | 1.9 | 2.5 | 4.2 | 4.3 | 2.5 | 2.4 | 2.2 | 2.1 | 1.8 | 2.3 | 2.9 | 2.0 | 2.8 | 12.5 | 7.3 | 2.9 | 2.9 | 12.5 | 3.0 | 24 | | | |
| HOURLY MAX | 20.2 | 22.2 | 27.4 | 27.4 | 16.2 | 13.2 | 13.2 | 17.5 | 20.8 | 32.3 | 22.8 | 14.5 | 9.8 | 18.5 | 14.4 | 20.3 | 37.5 | 29.9 | 13.4 | 41.5 | 29.1 | 11.3 | 8.9 | 32.4 | 4.6 | 4.6 | | | |
| HOURLY AVG | 3.6 | 3.9 | 4.3 | 4.5 | 4.3 | 3.9 | 3.8 | 4.9 | 4.1 | 5.6 | 6.7 | 4.4 | 3.9 | 3.8 | 3.8 | 4.7 | 6.5 | 4.6 | 3.2 | 4.8 | 4.1 | 2.9 | 2.6 | 2.6 | 4.6 | | | | |

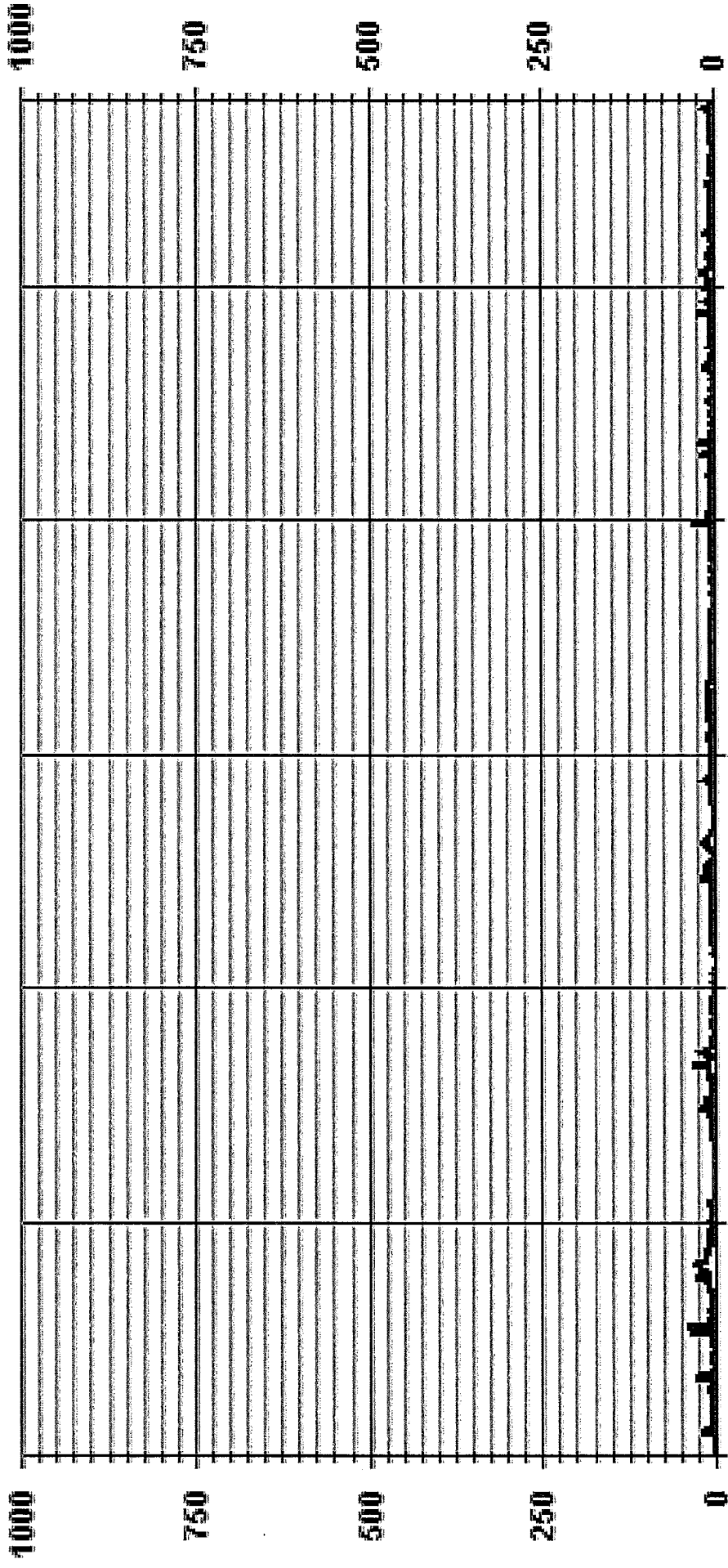
STATUS FLAG CODES

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

MONTHLY SUMMARY

| | | | | | | |
|------------------------------|------|-----|-------------------|-----|-----------|---|
| NUMBER OF NON-ZERO READINGS: | 658 | PPB | @ HOUR(S) | 19 | ON DAY(S) | 3 |
| MAXIMUM INSTANTANEOUS VALUE: | 41.5 | PPB | | | | |
| IZS CALIBRATION TIME: | 30 | HRS | OPERATIONAL TIME: | 695 | HRS | |
| MONTHLY CALIBRATION TIME: | 7 | HRS | | | | |
| STANDARD DEVIATION: | 4.88 | | | | | |
| | | | VAR:VARIOUS | | | |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA31 NOXMAX PPB

LICA31
 NOX_ / WDR Joint Frequency Distribution (Percent)
 February 2016

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : NOX
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | NNW Freq |
|----------|-----------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|------|------|----------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 50.0 | 2.42 | 2.42 | 3.63 | 8.32 | 4.23 | 6.05 | 1.66 | 3.02 | 9.22 | 9.07 | 11.95 | 10.89 | 9.37 | 9.37 | 5.74 | 2.57 | 100.00 |
| < 110.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.42 | 2.42 | 3.63 | 8.32 | 4.23 | 6.05 | 1.66 | 3.02 | 9.22 | 9.07 | 11.95 | 10.89 | 9.37 | 9.37 | 5.74 | 2.57 | |

Calm : .00 %

Total # Operational Hours : 661

Distribution By Samples

| Limit | Direction | | | | | | | | | | | | | | | | NNW Freq |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 50.0 | 16 | 16 | 24 | 55 | 28 | 40 | 11 | 20 | 61 | 60 | 79 | 72 | 62 | 62 | 38 | 17 | 661 |
| < 110.0 | | | | | | | | | | | | | | | | | |
| < 210.0 | | | | | | | | | | | | | | | | | |
| >= 210.0 | | | | | | | | | | | | | | | | | |
| Totals | 16 | 16 | 24 | 55 | 28 | 40 | 11 | 20 | 61 | 60 | 79 | 72 | 62 | 62 | 38 | 17 | |

Calm : .00 %

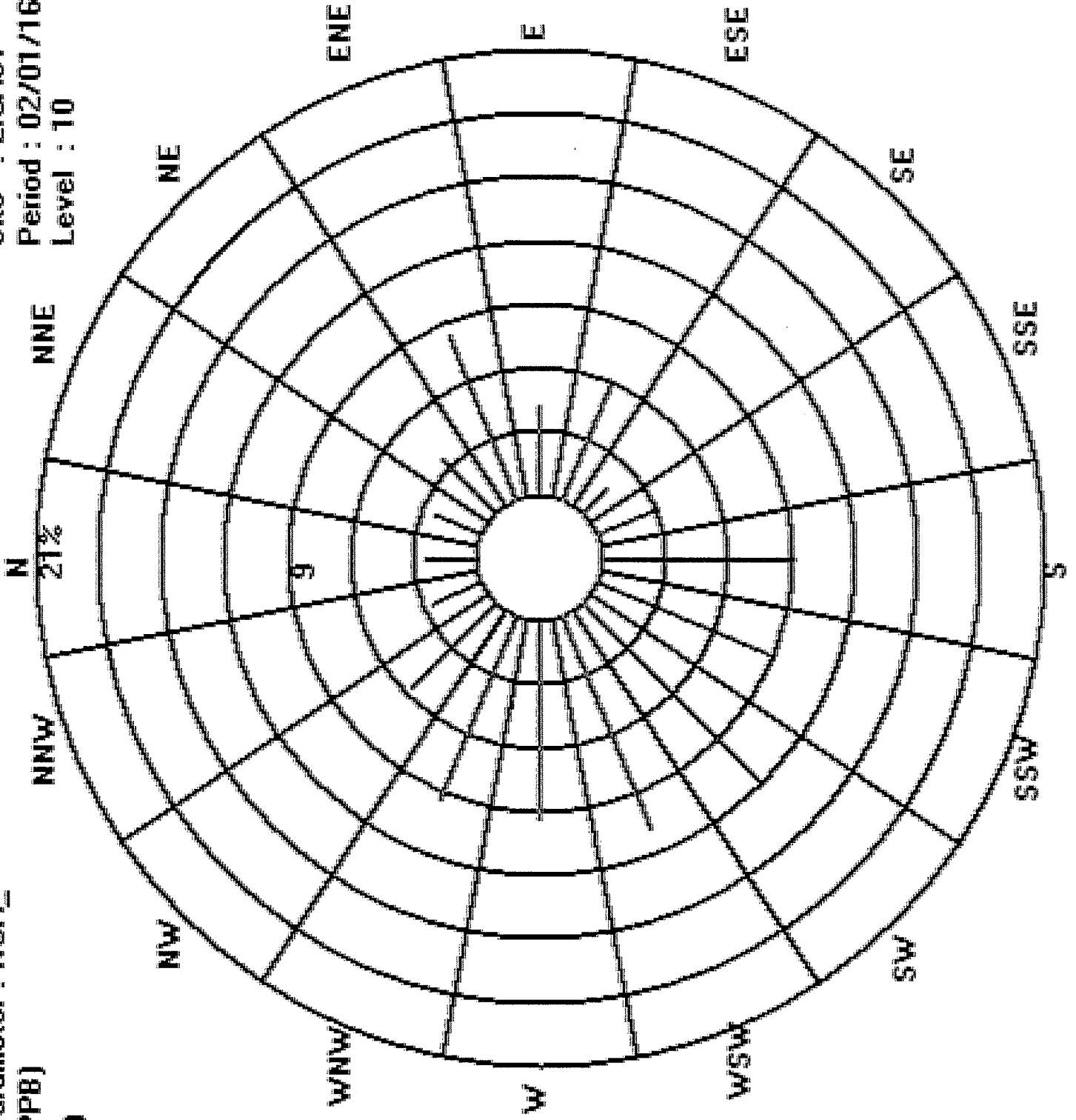
Total # Operational Hours : 661

Logger : 31 Parameter : NOX_

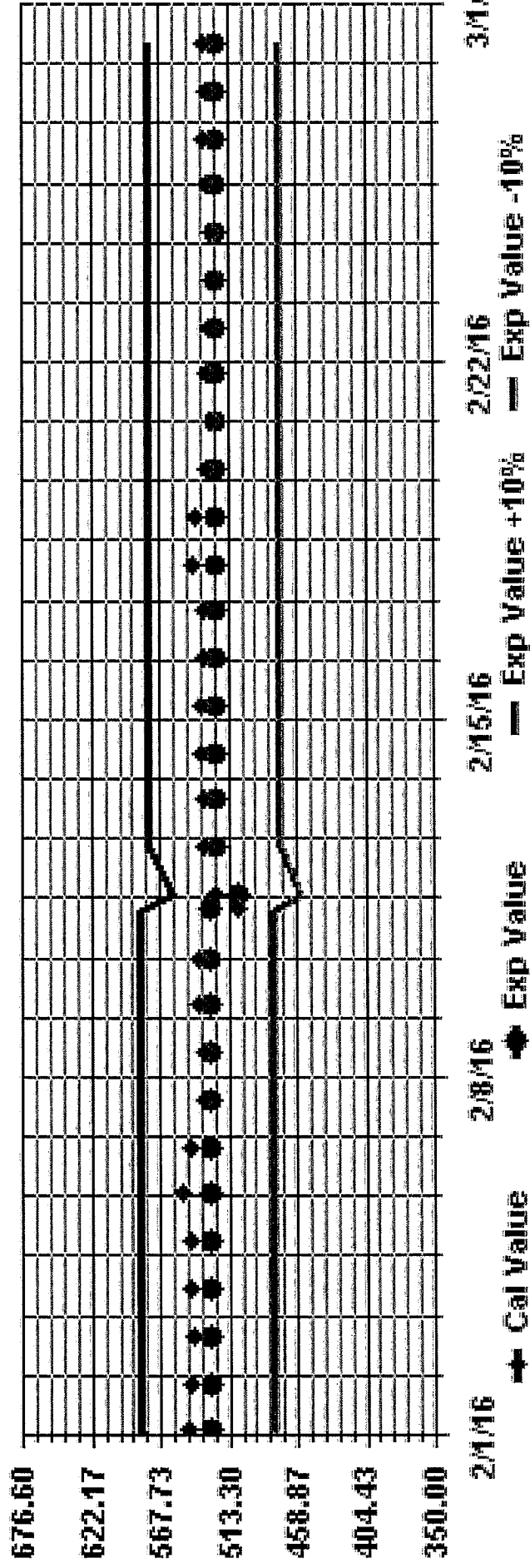
Site : LICA31

Class Limits (PPB)

Period : 02/01/16-02/29/16

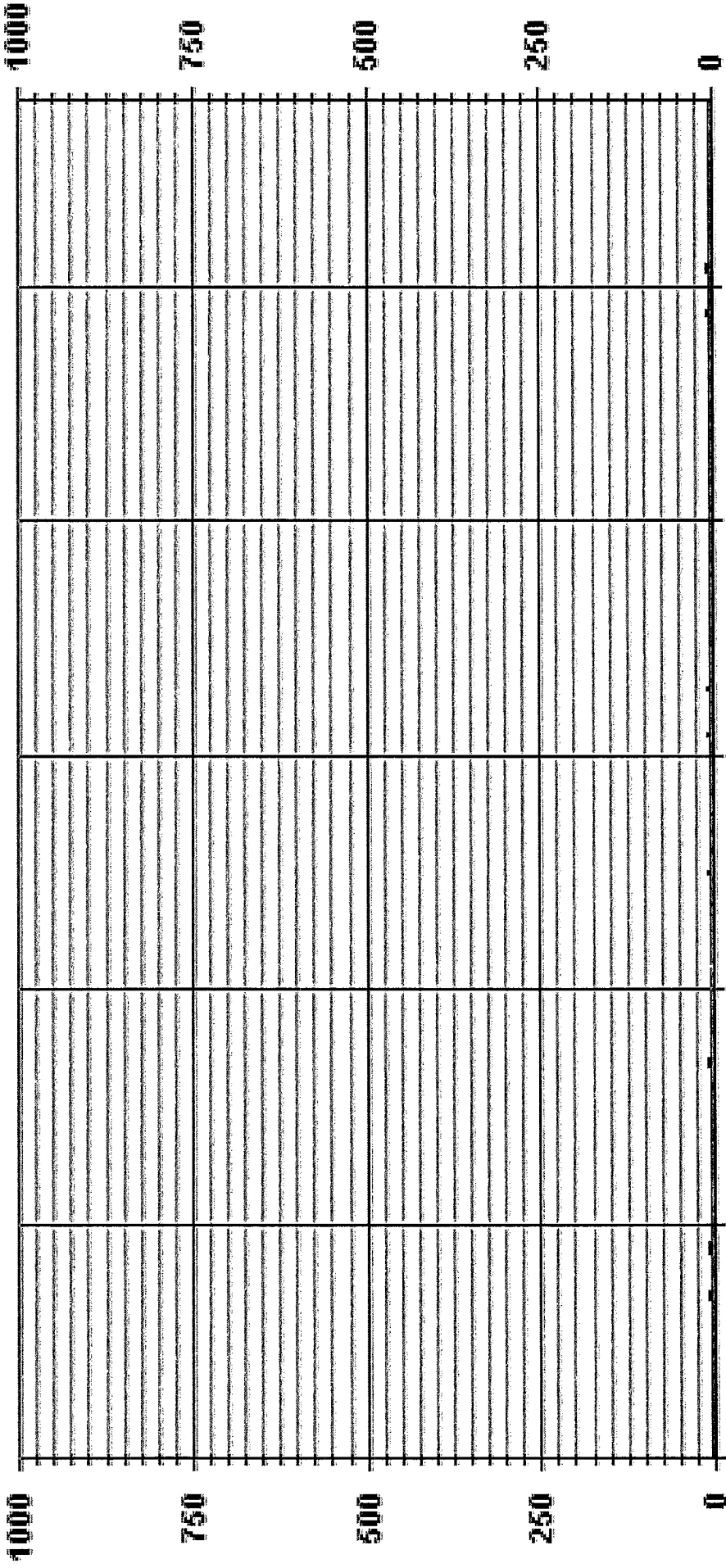


Calibration Graph for Site: LICA31 Parameter: MOX_ Sequence: MO2 Phase: SPAN

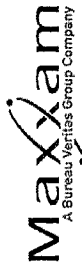


NITRIC OXIDES

01 Hour Averages



— LICA31 NO_ PPB



NITRIC OXIDE MAX instantaneous maximum in ppb

| DAY | MST | | | | | | | | | | | | | | | | | | | | | | | | 24-HOUR AVG. | ROGS. | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|-------|-----|----|
| | 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 | | | | |
| 1 | 0.7 | 0.8 | S | 0.5 | 0.4 | 0.3 | 0.5 | 0.7 | 0.4 | 0.2 | 1.1 | 0.5 | 0.6 | 15.4 | 1.2 | 0.6 | 2.0 | 0.4 | 0.3 | 0.2 | 0.2 | 0.3 | 0.2 | 0.4 | 0.2 | 15.4 | 1.2 | 24 |
| 2 | 0.3 | S | 0.3 | 0.6 | 0.5 | 0.4 | 0.1 | 2.4 | 0.5 | 0.7 | 1.6 | 2.4 | 0.8 | 1.0 | 2.9 | 1.4 | 1.2 | 18.8 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 18.8 | 1.6 | 24 |
| 3 | S | 0.7 | 0.5 | 0.5 | 0.5 | 0.7 | 0.6 | 0.9 | 0.5 | 0.6 | 0.7 | 0.7 | 3.0 | 1.5 | 0.9 | 0.9 | 18.2 | 0.6 | 0.7 | 16.2 | 0.7 | 0.9 | 0.7 | S | 18.2 | 2.3 | 24 | |
| 4 | 0.6 | 0.6 | 0.6 | 0.6 | 0.9 | 0.5 | 0.6 | 0.8 | 0.8 | 1.3 | 1.5 | 2.1 | 2.8 | 3.2 | 3.5 | 2.4 | 1.8 | 0.8 | 8.4 | 0.5 | 10.2 | 2.1 | S | 0.8 | 10.2 | 2.1 | 24 | |
| 5 | 0.8 | 0.8 | 1.0 | 0.9 | 0.7 | 1.0 | 0.7 | 1.0 | 1.7 | 3.8 | 3.9 | 3.3 | 2.7 | 2.5 | 2.0 | 2.0 | 1.8 | 0.6 | 0.5 | 0.4 | 0.7 | S | 1.1 | 0.8 | 3.9 | 1.5 | 24 | |
| 6 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 1.0 | 0.5 | 0.7 | 1.5 | 0.6 | 10.3 | 1.0 | 0.9 | 0.8 | 1.0 | 1.0 | 0.7 | 0.6 | 1.0 | 0.7 | S | 0.6 | 0.6 | 0.7 | 10.3 | 1.2 | 24 | |
| 7 | 0.2 | 0.5 | 0.6 | 0.1 | 0.4 | 0.4 | 0.4 | 0.6 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.4 | 0.4 | 0.9 | 0.4 | 0.6 | S | 0.4 | 0.1 | 0.0 | 0.1 | 0.9 | 0.4 | 24 | |
| 8 | 0.3 | 0.1 | 0.0 | 0.2 | 0.3 | 0.1 | 0.2 | 0.2 | 1.1 | 1.1 | 4.5 | 1.7 | 2.1 | 0.6 | 0.8 | 14.9 | 0.7 | 0.3 | S | 0.4 | 0.5 | 0.4 | 0.4 | 0.5 | 14.9 | 1.4 | 24 | |
| 9 | 0.5 | 0.4 | 0.2 | 0.2 | 0.4 | 0.4 | 0.4 | 0.7 | 12.4 | 27.9 | 2.9 | 3.0 | 2.6 | 1.7 | 12.5 | 15.0 | 4.9 | S | 1.1 | 0.9 | 1.1 | 0.9 | 0.9 | 0.8 | 27.9 | 3.9 | 24 | |
| 10 | 0.8 | 0.4 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | 1.1 | 0.9 | 1.0 | 1.1 | 1.3 | 0.9 | 1.0 | S | 0.7 | 0.4 | 0.6 | 0.5 | 0.4 | 0.4 | 0.4 | 1.3 | 0.8 | 24 | |
| 11 | 0.5 | 0.5 | 0.4 | 0.7 | 0.6 | 0.6 | 0.7 | 0.6 | 0.5 | 0.6 | C | C | C | C | C | C | C | C | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.7 | 0.4 | 24 | |
| 12 | 0.5 | 0.6 | 0.5 | 0.5 | 0.7 | 0.6 | 0.4 | 0.4 | 0.6 | R | 1.0 | 1.0 | 1.4 | 1.4 | 1.4 | 1.4 | 1.0 | 0.5 | 0.5 | 0.3 | 0.3 | S | 0.8 | 1.4 | 0.7 | 23 | | |
| 13 | 1.0 | 0.6 | 0.8 | 0.8 | 1.0 | 0.7 | 0.6 | 0.8 | 0.8 | 12.6 | 1.3 | 2.2 | 3.0 | 2.2 | 1.4 | 3.2 | 4.1 | 0.7 | 0.7 | 0.4 | 0.4 | S | 0.6 | 0.8 | 12.6 | 1.8 | 24 | |
| 14 | 0.3 | 0.6 | 0.5 | 0.4 | 0.5 | 0.5 | 0.5 | 0.6 | 0.8 | 0.6 | 0.5 | 0.8 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.3 | 0.3 | S | 0.4 | 1.1 | 0.6 | 1.1 | 0.6 | 24 |
| 15 | 0.6 | 0.4 | 0.5 | 0.4 | 0.3 | 0.5 | 0.4 | 0.6 | 0.4 | 0.6 | 0.4 | 0.5 | 1.9 | 5.3 | 3.4 | 1.8 | 1.3 | 1.1 | 1.3 | 0.8 | S | 0.3 | 0.5 | 0.4 | 0.3 | 5.3 | 1.1 | 24 |
| 16 | 0.6 | 0.4 | 0.4 | 0.2 | 0.6 | 0.7 | 0.4 | 0.6 | 0.7 | 1.3 | 2.5 | 3.2 | 2.7 | 1.7 | 1.2 | 1.4 | 2.1 | 0.6 | S | 1.9 | 0.8 | 1.2 | 0.9 | 1.0 | 3.2 | 1.2 | 24 | |
| 17 | 0.5 | 0.8 | 0.3 | 0.8 | 0.5 | 0.8 | 0.5 | 0.8 | 0.9 | 1.4 | 1.7 | 3.0 | 4.3 | 4.7 | 0.9 | 1.4 | 1.7 | 1.1 | S | 0.4 | 0.3 | 0.5 | 0.3 | 0.5 | 0.1 | 4.7 | 1.2 | 24 |
| 18 | 0.2 | 0.4 | 0.2 | 0.0 | 0.5 | 0.2 | 0.2 | 0.2 | 0.4 | 0.2 | 0.7 | 0.7 | 0.7 | 0.7 | 1.0 | 1.1 | 0.9 | S | 0.4 | 0.3 | 0.6 | 0.3 | 0.1 | 0.2 | 0.3 | 1.1 | 0.4 | 24 |
| 19 | 0.2 | 0.2 | 0.1 | 0.2 | 0.9 | 0.1 | 0.1 | 0.3 | 0.3 | 0.2 | 0.6 | 0.8 | 1.2 | 1.1 | 0.6 | S | 0.7 | 0.0 | 0.4 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 1.2 | 0.4 | 24 | |
| 20 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.2 | 1.0 | 2.4 | 1.8 | 1.3 | 1.5 | 1.6 | S | 1.6 | 0.5 | 0.9 | 0.7 | 0.1 | 0.0 | 0.2 | 0.2 | 21.6 | 1.6 | 24 | | |
| 21 | 0.0 | 0.3 | 0.3 | 0.1 | 0.4 | 0.5 | 0.0 | 0.2 | 0.9 | 1.3 | 1.1 | 1.5 | 1.0 | S | 1.2 | 1.1 | 0.8 | 0.6 | 0.7 | 0.8 | 0.5 | 0.5 | 1.1 | 0.5 | 1.5 | 0.7 | 24 | |
| 22 | 0.9 | 0.7 | 0.7 | 0.7 | 0.4 | 0.6 | 0.4 | 0.4 | 0.7 | 0.7 | 0.6 | S | 0.7 | 1.0 | 7.1 | 0.3 | 0.8 | 0.4 | 0.4 | 0.4 | 0.4 | 0.6 | 0.5 | 0.2 | 0.2 | 7.1 | 0.8 | 24 |
| 23 | 0.5 | 0.4 | 0.6 | 0.6 | 0.4 | 0.4 | 0.4 | 0.4 | 0.7 | 0.7 | 0.7 | S | 1.2 | 1.1 | 1.2 | 0.8 | 0.9 | 0.9 | 2.2 | 0.4 | 0.5 | 0.3 | 0.6 | 0.4 | 12.0 | 1.1 | 24 | |
| 24 | 0.3 | 0.5 | 0.0 | 0.3 | 0.2 | 0.3 | 0.3 | 12.0 | 0.5 | 0.7 | S | 6.8 | 2.7 | 2.7 | 2.3 | 1.4 | 1.1 | 7.8 | 0.5 | 1.0 | 1.0 | 0.3 | 0.6 | 0.9 | 0.6 | 7.8 | 1.5 | 24 |
| 25 | 0.6 | 0.5 | 0.8 | 0.5 | 0.4 | 0.7 | 0.4 | 1.1 | S | 2.7 | 2.5 | 2.3 | 2.3 | 1.7 | 1.7 | 0.9 | 8.3 | 0.8 | 0.8 | 0.9 | 0.9 | 0.6 | 0.6 | 0.6 | 8.3 | 1.6 | 24 | |
| 26 | 0.5 | 0.3 | 0.6 | 0.7 | 0.5 | 0.3 | 0.3 | 5.7 | S | 1.1 | 1.4 | 1.1 | 0.8 | 0.8 | 0.5 | 0.9 | 1.1 | 0.6 | 0.7 | 0.8 | 1.1 | 0.4 | 0.3 | 0.3 | 0.4 | 1.4 | 0.7 | 24 |
| 27 | 0.8 | 0.8 | 0.6 | 0.8 | 0.5 | 0.7 | 0.6 | S | 1.1 | 1.4 | 1.1 | 0.8 | 0.8 | 0.5 | 0.9 | 1.1 | 0.6 | 0.7 | 0.8 | 1.1 | 0.4 | 0.3 | 0.3 | 0.4 | 1.4 | 0.6 | 24 | |
| 28 | 0.4 | 0.4 | 0.4 | 0.3 | 0.6 | 0.4 | S | 0.5 | 0.6 | 0.6 | 1.4 | 0.8 | 0.8 | 0.7 | 0.8 | 1.0 | 0.4 | 0.4 | 0.2 | 0.2 | 0.3 | 0.3 | 0.2 | 0.7 | 0.5 | 1.4 | 0.6 | 24 |
| 29 | 0.5 | 0.5 | 0.4 | 0.5 | 0.6 | S | 0.8 | 0.9 | 1.6 | 1.6 | 1.5 | 1.5 | 1.3 | 1.3 | 1.2 | 1.5 | 1.8 | 0.9 | 0.7 | 4.1 | 1.5 | 1.2 | 0.7 | 0.9 | 4.1 | 1.2 | 24 | |
| HOURLY MAX | 1.0 | 0.8 | 1.0 | 0.9 | 1.0 | 1.0 | 0.8 | 12.0 | 12.4 | 27.9 | 10.3 | 5.3 | 4.7 | 15.4 | 12.5 | 14.9 | 18.2 | 18.8 | 8.4 | 16.2 | 10.2 | 2.1 | 1.1 | 21.6 | | | | |
| HOURLY AVG | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 | 1.3 | 1.3 | 2.5 | 2.4 | 1.7 | 1.7 | 1.9 | 1.9 | 2.2 | 2.8 | 1.6 | 0.9 | 1.3 | 0.8 | 0.5 | 0.5 | 1.3 | | | | |

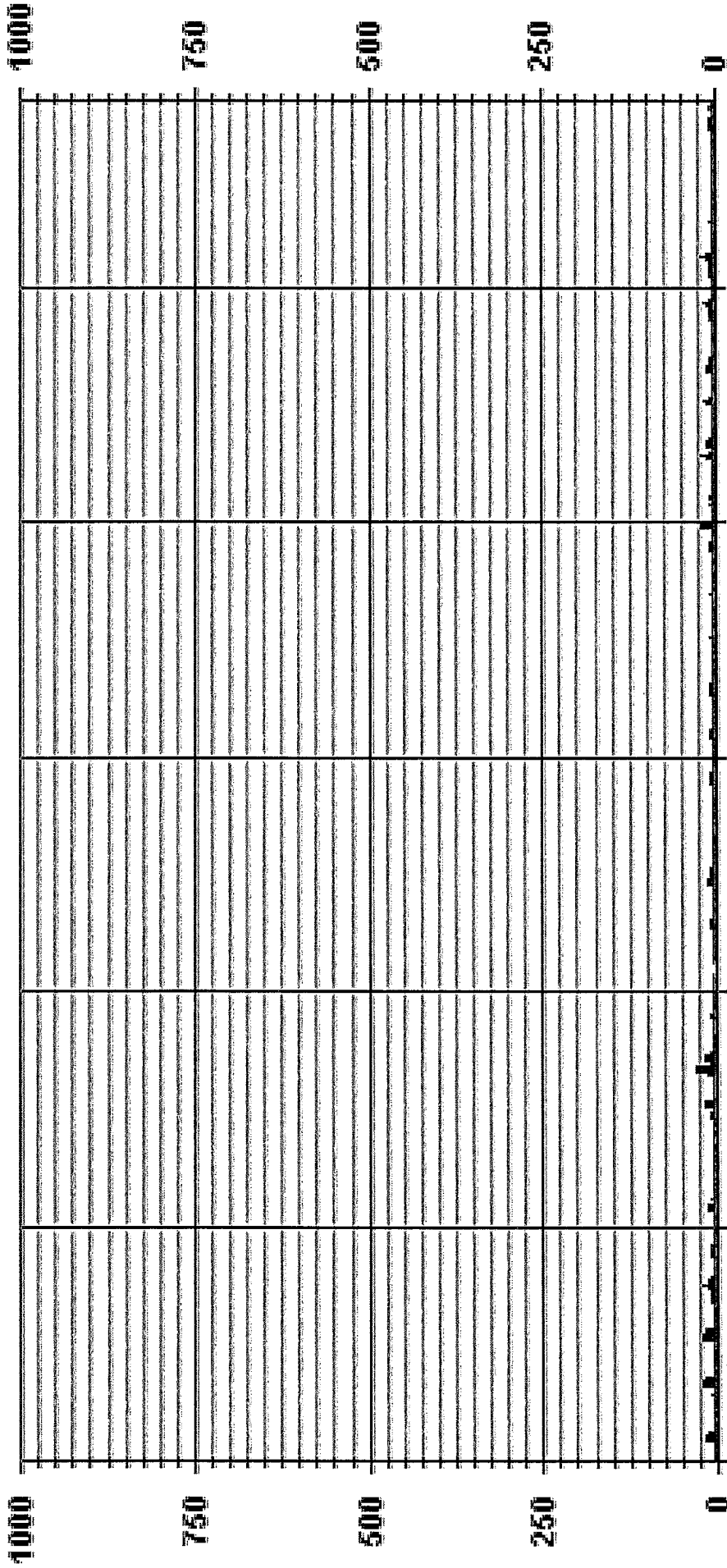
STATUS FLAG CODES

| | | | |
|----|----------------------------|---|-----------------------|
| C | - MONTHLY CALIBRATION | Q | - QUALITY ASSURANCE |
| CT | - REPEAT CALIBRATION | R | - RECOVERY |
| Y | - MAINTENANCE | X | - MACHINE MAINTENANCE |
| S | - DAILY ZERO / SPAN CHECK | G | - OUTFORREPAIR |
| S1 | - REPEAT ZERO / SPAN CHECK | P | - POWER FAILURE |

MONTHLY SUMMARY

| | | | | | | | | |
|------------------------------|-------------|-----|-------------------|-----------|---|-----------|---|-----|
| NUMBER OF NON-ZERO READINGS: | 636 | PPB | 27.9 | @ HOUR(S) | 9 | ON DAY(S) | 9 | |
| MAXIMUM INSTANTANEOUS VALUE: | VAR-VARIOUS | | | | | | | |
| IZS CALIBRATION TIME: | 30 | HRS | OPERATIONAL TIME: | | | | | 695 |
| MONTHLY CALIBRATION TIME: | 7 | HRS | ON DAY(S) | | | | | 9 |
| STANDARD DEVIATION: | 2.46 | | | | | | | |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA31 NOMAX PPB

LIIA31
NO_ / WDR Joint Frequency Distribution (Percent)

February 2016

Distribution By % Of Samples

Logger Id : 31
Site Name : LIIA31
Parameter : NO
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | NNW | NW | NNW | Freq |
|----------|-----------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|------|------|--------|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | | | | |
| < 50.0 | 2.42 | 2.42 | 3.63 | 8.32 | 4.23 | 6.05 | 1.66 | 3.02 | 9.22 | 9.07 | 11.95 | 10.89 | 9.37 | 9.37 | 5.74 | 2.57 | 100.00 | | | |
| < 110.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | | | |
| < 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | | | |
| >= 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | | | |
| Totals | 2.42 | 2.42 | 3.63 | 8.32 | 4.23 | 6.05 | 1.66 | 3.02 | 9.22 | 9.07 | 11.95 | 10.89 | 9.37 | 9.37 | 5.74 | 2.57 | | | | |

Calm : .00 %

Total # Operational Hours : 661

Distribution By Samples

| Limit | Direction | | | | | | | | | | | | | | | | NNW | NW | NNW | Freq |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | | | | |
| < 50.0 | 16 | 16 | 24 | 55 | 28 | 40 | 11 | 20 | 61 | 60 | 79 | 72 | 62 | 62 | 38 | 17 | 661 | | | |
| < 110.0 | | | | | | | | | | | | | | | | | | | | |
| < 210.0 | | | | | | | | | | | | | | | | | | | | |
| >= 210.0 | | | | | | | | | | | | | | | | | | | | |
| Totals | 16 | 16 | 24 | 55 | 28 | 40 | 11 | 20 | 61 | 60 | 79 | 72 | 62 | 62 | 38 | 17 | | | | |

Calm : .00 %

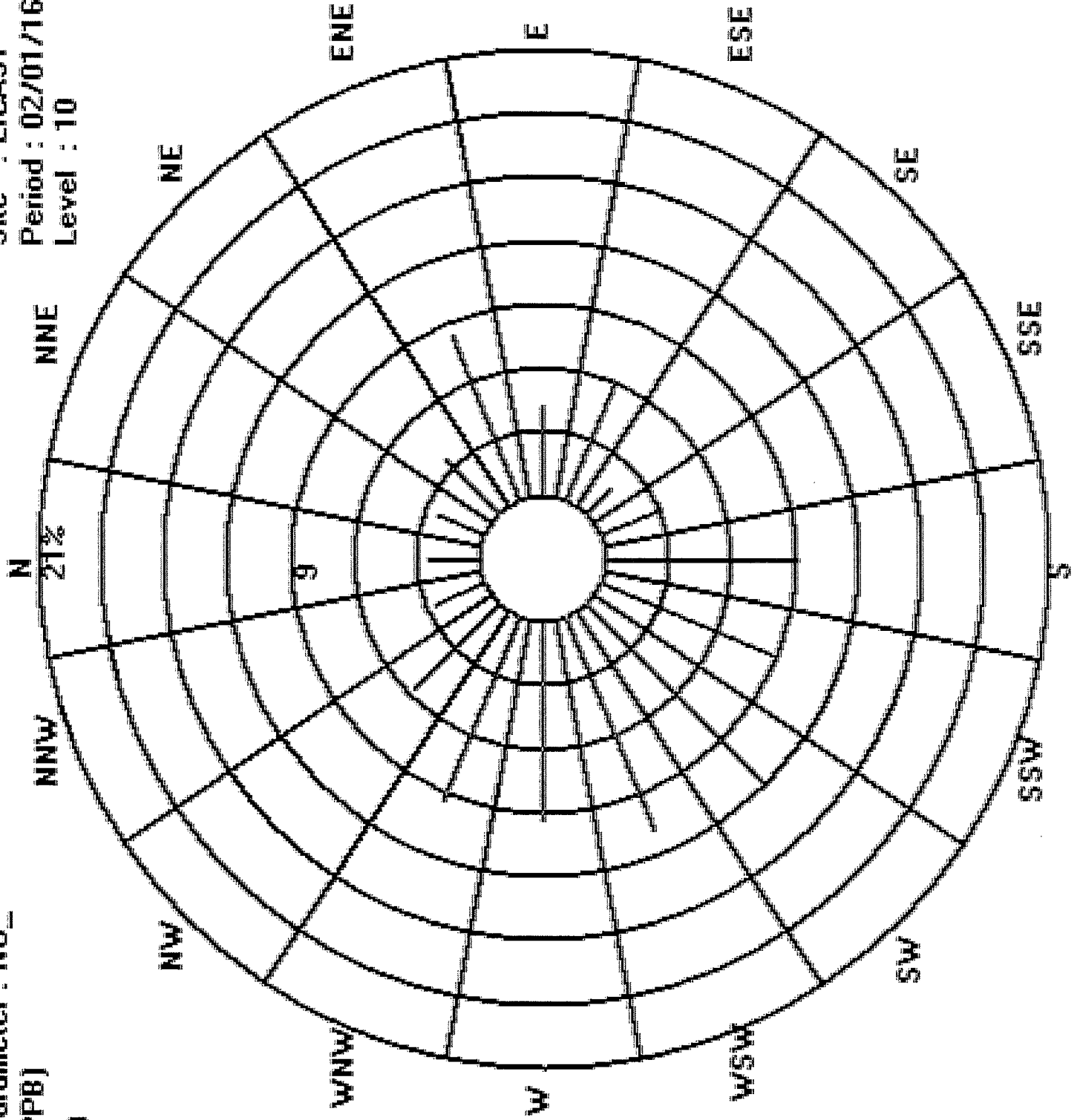
Total # Operational Hours : 661

Logger : 31 Parameter : NO_x

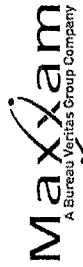
Class Limits (PPB)



Site : LICA31
Period : 02/01/16-02/29/16
Level : 10



NITROGEN DIOXIDE



NITROGEN DIOXIDE (NO2) hourly averages in ppb

MST

| HOUR START | 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 | 24:00 | RDGS. | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|----|
| HOUR END | 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 | 24:59 | AVG. | | |
| DAY | 1 | 0.5 | 0.3 | \$ | 0.2 | 0.2 | 0.3 | 0.1 | 0.4 | 0.3 | 0.2 | 0.4 | 0.2 | 0.4 | 0.7 | 0.7 | 1.0 | 1.7 | 1.2 | 1.1 | 2.6 | 2.3 | 1.9 | 1.9 | 1.4 | 2.6 | 0.9 | |
| 2 | 1.2 | \$ | 1.0 | 1.1 | 1.5 | 1.4 | 2.0 | 3.0 | 3.8 | 4.1 | 4.2 | 3.9 | 2.1 | 1.6 | 1.4 | 1.8 | 1.2 | 1.5 | 0.5 | 0.4 | 0.4 | 0.6 | 0.6 | 0.7 | 4.2 | 1.7 | 24 | |
| 3 | 1.0 | 1.2 | 1.0 | 0.9 | 0.4 | 0.3 | 0.1 | 0.6 | 0.3 | 0.3 | 0.2 | 0.3 | 0.2 | 0.3 | 0.5 | 1.0 | 1.2 | 1.6 | 1.5 | 4.2 | 4.8 | 7.3 | 7.1 | \$ | 7.3 | 1.7 | 24 | |
| 4 | 1.0 | 1.3 | 5.0 | 5.8 | 4.9 | 4.0 | 4.0 | 3.7 | 3.6 | 3.1 | 2.2 | 2.3 | 2.9 | 3.0 | 4.3 | 6.0 | 6.8 | 7.4 | 6.7 | 4.2 | 4.1 | 5.4 | \$ | 12.7 | 12.7 | 4.5 | 24 | |
| 5 | 17.7 | 20.8 | 24.3 | 22.7 | 11.8 | 11.2 | 12.3 | 11.4 | 10.4 | 9.2 | 7.8 | 5.9 | 4.8 | 4.7 | 5.0 | 5.8 | 6.3 | 6.7 | 6.3 | 5.5 | 5.6 | \$ | 5.1 | 4.7 | 24.3 | 9.8 | 24 | |
| 6 | 4.7 | 4.3 | 4.5 | 4.0 | 3.6 | 4.0 | 3.7 | 2.5 | 1.0 | 0.5 | 0.5 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 0.1 | 0.0 | 0.0 | 4.7 | 1.5 | 24 | |
| 7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 0.8 | 0.6 | 1.1 | 1.1 | 0.2 | 24 | |
| 8 | 1.5 | 1.4 | 1.3 | 2.1 | 2.2 | 2.3 | 3.6 | 4.8 | 5.0 | 4.5 | 4.6 | 4.6 | 3.5 | 2.3 | 1.1 | 0.6 | 0.8 | 1.1 | \$ | 2.6 | 3.0 | 2.8 | 2.6 | 2.7 | 5.0 | 2.7 | 24 | |
| 9 | 2.7 | 3.1 | 6.3 | 7.6 | 7.7 | 7.7 | 9.4 | 8.8 | 5.8 | 5.2 | 4.2 | 3.9 | 4.4 | 4.3 | 3.6 | \$ | 1.7 | 1.4 | 0.9 | 0.9 | 0.9 | 0.8 | 0.9 | 0.8 | 9.4 | 4.5 | 24 | |
| 10 | 0.4 | 0.1 | 0.0 | 0.0 | 0.1 | 1.0 | 0.9 | 0.6 | 1.5 | 2.3 | 0.8 | 0.6 | 0.5 | 0.6 | 0.3 | 0.6 | \$ | 1.1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.1 | 2.3 | 0.6 | 24 | |
| 11 | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 0.3 | 0.2 | 0.7 | 0.5 | 0.8 | 1.3 | C | C | C | C | C | C | 1.3 | 1.1 | 0.5 | 0.6 | 0.2 | 0.0 | 0.2 | \$ | 1.3 | 0.5 | 24 |
| 12 | 1.7 | 1.5 | 1.4 | 1.6 | 1.8 | 1.8 | 2.1 | 2.4 | 2.8 | 2.8 | 2.6 | 2.9 | 2.9 | 2.8 | 2.6 | 2.2 | 2.1 | 1.9 | 2.2 | 2.3 | 2.4 | 2.5 | \$ | 3.4 | 3.4 | 2.3 | 24 | |
| 13 | 3.4 | 2.8 | 3.4 | 3.3 | 3.9 | 4.1 | 3.7 | 3.2 | 2.2 | 1.6 | 1.7 | 2.5 | 3.4 | 3.7 | 2.2 | 1.7 | 1.9 | 2.9 | 2.8 | 2.2 | 1.8 | \$ | 2.6 | 4.1 | 4.1 | 2.8 | 24 | |
| 14 | 6.5 | 10.1 | 12.5 | 12.9 | 12.5 | 9.6 | 6.2 | 4.1 | 2.0 | 1.2 | 0.6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.3 | \$ | 1.7 | 1.5 | 1.9 | 12.9 | 24 | |
| 15 | 2.7 | 3.9 | 3.1 | 2.4 | 2.2 | 1.7 | 1.4 | 1.8 | 1.2 | 1.3 | 4.3 | 6.3 | 3.2 | 3.1 | 3.5 | 3.0 | 3.8 | 5.3 | 4.6 | \$ | 1.5 | 1.6 | 1.2 | 1.2 | 6.3 | 2.8 | 24 | |
| 16 | 1.9 | 2.3 | 2.2 | 2.4 | 3.6 | 3.4 | 3.7 | 5.0 | 4.9 | 5.3 | 5.2 | 4.8 | 3.5 | 3.1 | 3.1 | 2.7 | 3.1 | 3.7 | \$ | 5.5 | 4.9 | 4.8 | 5.1 | 5.5 | 5.5 | 3.9 | 24 | |
| 17 | 5.4 | 5.4 | 6.1 | 7.1 | 6.7 | 5.8 | 5.4 | 5.4 | 4.8 | 4.4 | 3.7 | 3.2 | 2.4 | 1.3 | 2.2 | 3.5 | 2.7 | \$ | 3.4 | 2.6 | 1.9 | 1.0 | 0.5 | 0.6 | 7.1 | 3.7 | 24 | |
| 18 | 0.8 | 1.0 | 1.2 | 0.7 | 0.9 | 0.8 | 1.0 | 1.5 | 1.6 | 2.0 | 2.4 | 2.3 | 2.2 | 2.5 | 2.7 | 2.7 | \$ | 2.9 | 3.0 | 2.5 | 2.7 | 2.2 | 2.0 | 1.7 | 3.0 | 1.9 | 24 | |
| 19 | 1.4 | 1.2 | 1.4 | 1.5 | 1.0 | 0.5 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.3 | 0.1 | \$ | 0.4 | 0.5 | 1.2 | 0.8 | 0.4 | 0.1 | 0.2 | 1.1 | 1.5 | 0.5 | 24 | |
| 20 | 2.2 | 1.1 | 0.4 | 0.0 | 0.8 | 3.6 | 3.7 | 3.4 | 4.3 | 5.2 | 2.6 | 2.4 | 1.9 | 2.2 | \$ | 2.2 | 2.1 | 2.1 | 2.1 | 2.4 | 1.6 | 1.6 | 2.0 | 1.9 | 2.7 | 5.2 | 2.3 | 24 |
| 21 | 2.1 | 2.5 | 3.9 | 5.9 | 5.8 | 4.4 | 3.7 | 3.2 | 3.3 | 3.5 | 3.5 | 2.7 | 2.3 | \$ | 1.1 | 1.1 | 0.9 | 0.7 | 0.9 | 1.7 | 3.1 | 2.4 | 2.5 | 5.0 | 5.9 | 2.9 | 24 | |
| 22 | 5.5 | 4.2 | 2.4 | 1.6 | 1.0 | 0.7 | 0.3 | 0.6 | 0.7 | 0.6 | 0.5 | 0.3 | \$ | 0.6 | 0.5 | 0.4 | 0.8 | 1.4 | 1.7 | 1.9 | 4.8 | 3.0 | 0.5 | 0.2 | 5.5 | 1.5 | 24 | |
| 23 | 0.2 | 0.3 | 0.2 | 0.3 | 0.3 | 0.3 | 0.4 | 0.7 | 0.5 | 0.3 | 0.3 | \$ | 0.7 | 0.8 | 0.5 | 0.5 | 0.6 | 0.7 | 1.2 | 1.6 | 2.3 | 1.3 | 1.5 | 1.8 | 1.4 | 2.3 | 0.9 | 24 |
| 24 | 0.4 | 0.4 | 0.1 | 0.5 | 0.5 | 0.6 | 0.8 | 1.1 | 0.9 | 1.0 | \$ | 0.7 | 0.8 | 0.5 | 0.5 | 0.6 | 0.7 | 1.2 | 1.6 | 2.3 | 1.3 | 1.5 | 1.8 | 1.4 | 2.3 | 0.9 | 24 | |
| 25 | 1.4 | 1.4 | 1.8 | 1.9 | 2.1 | 1.9 | 2.4 | 2.3 | 2.8 | \$ | 4.2 | 4.1 | 3.9 | 3.5 | 3.2 | 2.4 | 2.0 | 1.6 | 1.5 | 1.7 | 1.7 | 2.2 | 7.1 | 7.1 | 2.6 | 2.4 | 24 | |
| 26 | 7.8 | 5.9 | 5.5 | 6.2 | 7.0 | 7.3 | 7.9 | 8.6 | \$ | 5.1 | 3.0 | 2.1 | 1.1 | 0.9 | 0.6 | 0.7 | 1.1 | 1.2 | 1.6 | 1.2 | 1.6 | 1.2 | 0.6 | 1.4 | 8.6 | 3.5 | 24 | |
| 27 | 0.8 | 1.0 | 1.8 | 2.4 | 5.8 | 2.3 | 1.4 | \$ | 2.6 | 2.1 | 1.3 | 1.3 | 1.2 | 0.9 | 2.9 | 0.6 | 0.3 | 0.4 | 0.6 | 0.8 | 0.9 | 0.7 | 1.0 | 0.8 | 1.5 | 0.5 | 24 | |
| 28 | 0.8 | 0.8 | 0.7 | 1.9 | 3.2 | 3.5 | \$ | 0.8 | 0.3 | 0.2 | 2.0 | 1.1 | 0.7 | 0.4 | 0.5 | 0.9 | 0.7 | 0.8 | 0.5 | 0.2 | 0.3 | 0.0 | 0.1 | 0.3 | 3.5 | 0.9 | 24 | |
| 29 | 0.2 | 0.4 | 0.4 | 0.8 | 0.7 | \$ | 1.1 | 1.2 | 1.9 | 1.8 | 1.0 | 0.9 | 0.7 | 0.6 | 0.4 | 0.6 | 0.7 | 0.7 | 1.0 | 1.9 | 2.0 | 1.6 | 2.0 | 2.1 | 2.1 | 1.1 | 24 | |
| HOURLY MAX | 17.7 | 20.8 | 24.3 | 22.7 | 12.5 | 11.2 | 12.3 | 11.4 | 10.4 | 9.2 | 7.8 | 6.3 | 4.8 | 4.7 | 5.0 | 6.0 | 6.8 | 7.4 | 6.7 | 7.4 | 5.5 | 5.6 | 7.3 | 7.1 | 12.7 | | | |
| HOURLY AVG | 2.7 | 2.8 | 3.3 | 3.4 | 3.2 | 3.0 | 2.9 | 2.9 | 2.6 | 2.5 | 2.4 | 2.3 | 1.8 | 1.6 | 1.7 | 1.7 | 1.8 | 1.9 | 1.8 | 1.9 | 2.1 | 1.8 | 1.7 | 1.7 | 2.4 | | | |

STATUS FLAG CODES

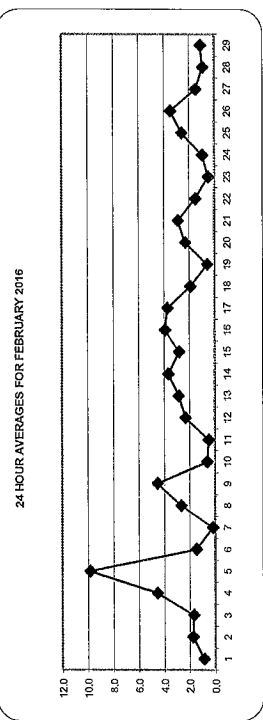
| | | | |
|----|--------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| G1 | REPEAT CALIBRATION | R | RECOVERY |
| V | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO / SPAN CHECK | G | OUT OF REPAIR |
| ST | REPEAT ZERO / SPAN CHECK | P | POWER FAILURE |

OBJECTIVE LIMIT:

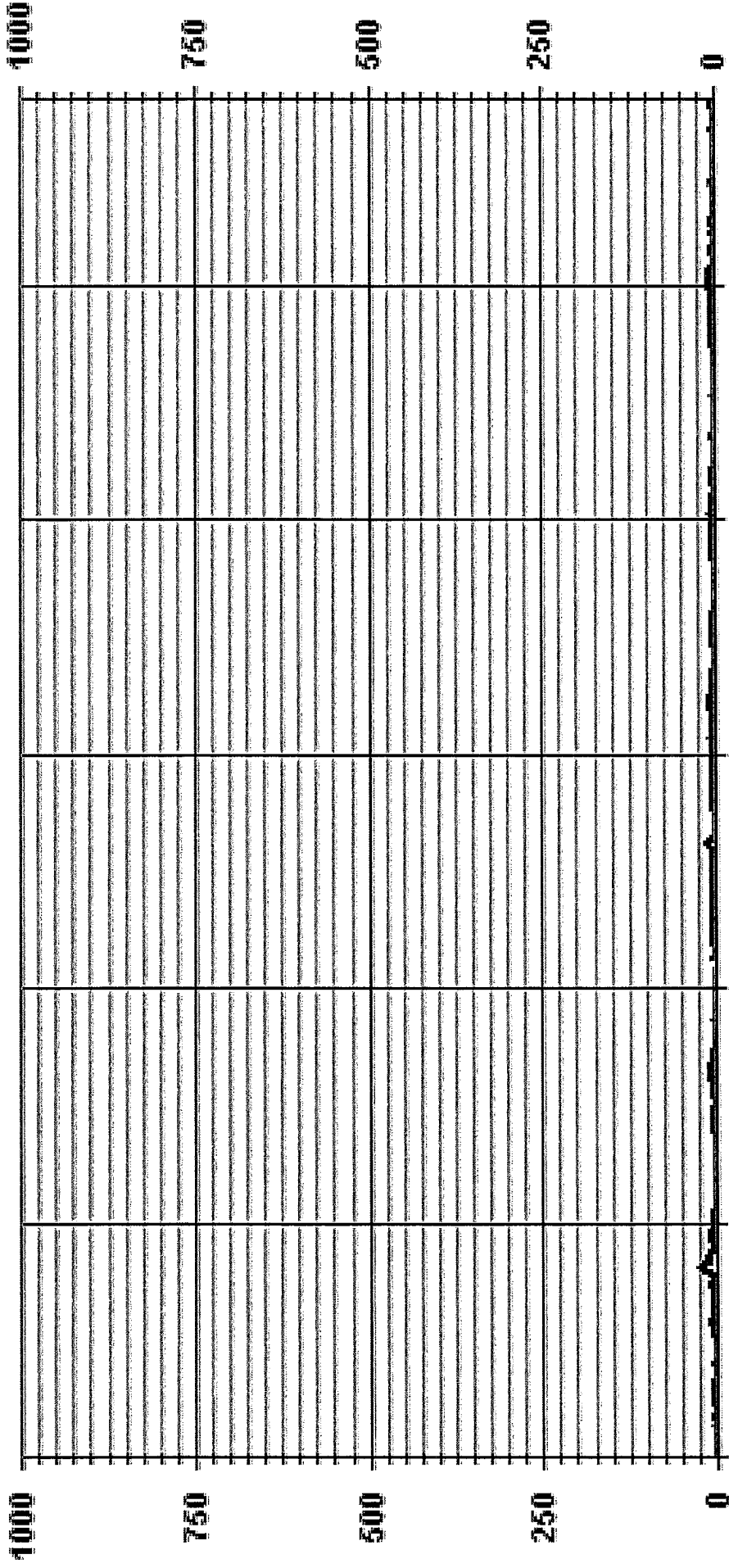
ALBERTA ENVIRONMENT: 1-HR: 559 PPB

MONTHLY SUMMARY

| | |
|------------------------------|----------|
| NUMBER OF 1-HR EXCEEDENCES: | 0 |
| NUMBER OF NON-ZERO READINGS: | 618 |
| MINIMUM 1-HR AVERAGE: | 0.0 PPB |
| MAXIMUM 1-HR AVERAGE: | 24.3 PPB |
| MAXIMUM 24-HR AVERAGE: | 9.8 PPB |
| IS CALIBRATION TIME: | 30 HRS |
| MONTHLY CALIBRATION TIME: | 5 HRS |
| STANDARD DEVIATION: | 2.70 |
| OPERATION TIME: | 696 HRS |
| AMD OPERATION UPTIME: | 100.0 % |
| MONTHLY AVERAGE: | 2.3 PPB |
| VAR | 5 |
| ON DAY(S) | 5 |
| VAR-VARIOUS | |

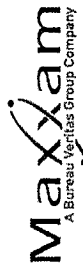


01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA31 NO2_ PPB



NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

| HOUR START | 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 | 24-HOUR | ROGS. |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-------|
| HOUR END | 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 | MAX. | AVG. | |
| DAY | 1 | 1.4 | 1.0 | 0.9 | 0.7 | 1.0 | 1.2 | 1.4 | 0.9 | 1.1 | 1.5 | 0.7 | 1.1 | 5.6 | 1.8 | 1.5 | 4.0 | 2.3 | 2.8 | 4.0 | 3.3 | 2.7 | 2.5 | 2.2 | 5.6 | 2.0 | 24 |
| 2 | 2.0 | \$ | 1.8 | 2.0 | 2.3 | 2.3 | 3.3 | 4.6 | 5.3 | 4.9 | 4.9 | 6.1 | 2.8 | 2.2 | 2.2 | 3.0 | 1.9 | 14.8 | 1.4 | 1.4 | 1.6 | 1.5 | 1.5 | 1.6 | 14.8 | 3.3 | 24 |
| 3 | \$ | 1.6 | 1.6 | 1.5 | 0.8 | 0.7 | 0.9 | 1.5 | 1.0 | 1.1 | 0.9 | 0.7 | 1.5 | 1.8 | 1.8 | 2.1 | 20.4 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 26.2 | 4.3 | 24 |
| 4 | 1.5 | 3.7 | 6.9 | 6.7 | 5.7 | 5.0 | 4.8 | 4.6 | 4.2 | 3.9 | 2.6 | 2.8 | 3.7 | 3.4 | 6.1 | 6.6 | 7.5 | 8.6 | 10.0 | 5.4 | 19.4 | 10.0 | \$ | 16.3 | 19.4 | 6.5 | 24 |
| 5 | 20.0 | 22.0 | 26.7 | 26.5 | 15.5 | 12.9 | 13.0 | 12.3 | 11.2 | 10.3 | 9.2 | 6.8 | 5.4 | 5.2 | 5.6 | 6.8 | 6.8 | 7.6 | 7.0 | 6.2 | 7.3 | \$ | 5.7 | 5.2 | 26.7 | 11.1 | 24 |
| 6 | 5.1 | 4.8 | 5.0 | 4.5 | 4.2 | 4.5 | 4.4 | 3.6 | 1.6 | 0.7 | 1.6 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 0.3 | 0.5 | 0.5 | 1.8 | 24 |
| 7 | 0.5 | 0.3 | 0.5 | 0.5 | 0.3 | 0.5 | 0.4 | 0.5 | 0.6 | 0.5 | 0.5 | 0.3 | 0.1 | 0.3 | 0.1 | 0.3 | 0.9 | 1.0 | 0.8 | \$ | 1.4 | 1.7 | 1.9 | 2.1 | 2.1 | 0.7 | 24 |
| 8 | 2.4 | 2.2 | 2.4 | 3.0 | 3.1 | 3.3 | 5.0 | 6.1 | 5.8 | 5.4 | 18.5 | 5.2 | 4.3 | 3.0 | 2.4 | 7.1 | 1.9 | 2.7 | \$ | 2.9 | 3.2 | 3.2 | 3.0 | 3.0 | 18.5 | 4.3 | 24 |
| 9 | 3.0 | 4.3 | 7.7 | 8.4 | 7.3 | 7.6 | 9.1 | 10.0 | 13.1 | 8.0 | 6.3 | 5.9 | 5.5 | 4.6 | 4.7 | 9.5 | 10.3 | \$ | 2.5 | 1.7 | 1.5 | 1.5 | 1.3 | 1.2 | 13.1 | 5.9 | 24 |
| 10 | 1.1 | 0.7 | 0.4 | 0.2 | 0.6 | 1.4 | 1.4 | 1.0 | 2.9 | 3.7 | 1.3 | 1.3 | 1.0 | 1.0 | 1.0 | 0.9 | \$ | 1.8 | 1.4 | 1.3 | 1.4 | 1.5 | 0.7 | 0.7 | 3.7 | 1.2 | 24 |
| 11 | 0.7 | 0.6 | 0.7 | 1.0 | 1.1 | 1.1 | 0.9 | 1.6 | 1.3 | 1.5 | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | 2.5 | 1.4 | 24 |
| 12 | 1.9 | 1.7 | 1.7 | 2.4 | 2.1 | 2.3 | 2.6 | 2.9 | 3.4 | R | 3.1 | 3.3 | 3.1 | 3.2 | 2.9 | 2.7 | 2.5 | 2.4 | 2.8 | 2.8 | 3.0 | 3.7 | \$ | 3.9 | 3.9 | 2.7 | 23 |
| 13 | 4.4 | 3.3 | 3.9 | 3.8 | 4.7 | 4.9 | 4.1 | 3.8 | 2.7 | 10.4 | 2.3 | 3.1 | 4.0 | 4.2 | 3.3 | 10.2 | 4.1 | 3.5 | 3.1 | 3.2 | 2.4 | \$ | 4.0 | 5.2 | 10.4 | 4.3 | 24 |
| 14 | 9.5 | 12.6 | 13.3 | 13.7 | 13.4 | 11.5 | 9.6 | 5.0 | 3.2 | 2.1 | 1.3 | 0.7 | 1.1 | 0.6 | 0.3 | 0.4 | 0.5 | 1.0 | 0.8 | 1.1 | \$ | 2.1 | 2.4 | 2.4 | 13.7 | 4.7 | 24 |
| 15 | 3.6 | 4.5 | 3.9 | 2.8 | 2.9 | 2.2 | 2.1 | 2.2 | 1.9 | 2.6 | 5.1 | 9.1 | 6.1 | 3.9 | 3.7 | 3.3 | 4.9 | 6.4 | 6.2 | \$ | 1.8 | 2.2 | 2.3 | 1.9 | 9.1 | 3.7 | 24 |
| 16 | 2.5 | 2.8 | 2.7 | 3.3 | 4.1 | 3.9 | 4.3 | 6.9 | 6.1 | 5.9 | 5.6 | 5.5 | 4.4 | 3.6 | 3.4 | 3.0 | 4.3 | 4.6 | \$ | 4.3 | 3.3 | 2.7 | 1.9 | 1.4 | 7.7 | 4.7 | 24 |
| 17 | 6.0 | 6.0 | 7.1 | 7.7 | 7.3 | 6.5 | 6.2 | 6.8 | 5.5 | 5.7 | 6.0 | 4.8 | 5.6 | 1.7 | 3.3 | 4.4 | 3.3 | \$ | 4.3 | 3.3 | 2.7 | 1.9 | 1.4 | 1.4 | 7.7 | 4.7 | 24 |
| 18 | 1.5 | 1.9 | 2.1 | 1.8 | 1.6 | 1.6 | 2.1 | 2.3 | 2.2 | 2.8 | 2.9 | 2.7 | 2.5 | 3.1 | 3.4 | 3.7 | \$ | 3.8 | 4.5 | 3.8 | 4.3 | 3.0 | 2.8 | 2.5 | 4.5 | 2.7 | 24 |
| 19 | 2.2 | 2.2 | 2.3 | 2.4 | 1.8 | 1.5 | 0.9 | 1.1 | 0.6 | 0.4 | 0.9 | 0.9 | 0.7 | \$ | 1.2 | 2.5 | 4.1 | 4.0 | 3.1 | 2.6 | 2.9 | 2.9 | 2.9 | 10.8 | 10.8 | 3.7 | 24 |
| 20 | 3.7 | 3.8 | 1.5 | 0.9 | 3.9 | 4.9 | 4.9 | 4.1 | 4.9 | 5.7 | 3.7 | 2.6 | 2.2 | 2.5 | \$ | 2.6 | 2.5 | 4.1 | 4.0 | 3.1 | 2.6 | 2.9 | 2.9 | 10.8 | 10.8 | 3.7 | 24 |
| 21 | 3.3 | 3.4 | 6.4 | 6.8 | 6.8 | 5.4 | 4.7 | 4.0 | 3.6 | 4.1 | 4.0 | 3.3 | 2.7 | \$ | 1.6 | 1.4 | 1.4 | 1.1 | 1.9 | 2.6 | 3.6 | 3.1 | 2.9 | 6.8 | 6.8 | 3.7 | 24 |
| 22 | 6.8 | 5.3 | 3.2 | 2.1 | 1.9 | 1.2 | 1.0 | 1.3 | 1.8 | 1.0 | 11.5 | 1.0 | \$ | 0.9 | 0.9 | 1.4 | 16.6 | 8.1 | 2.2 | 3.8 | 6.3 | 4.9 | 1.0 | 0.9 | 16.6 | 3.7 | 24 |
| 23 | 0.9 | 1.2 | 0.6 | 0.8 | 0.9 | 1.1 | 1.7 | 1.0 | 1.1 | 0.7 | 0.9 | \$ | 0.8 | 0.9 | 5.8 | 1.0 | 2.0 | 2.3 | 1.0 | 1.1 | 1.0 | 1.2 | 0.9 | 2.2 | 5.8 | 1.4 | 24 |
| 24 | 0.7 | 1.2 | 0.7 | 0.9 | 0.9 | 1.0 | 1.3 | 5.4 | 1.6 | 1.2 | \$ | 1.2 | 1.4 | 0.9 | 0.9 | 0.9 | 2.0 | 5.5 | 3.0 | 3.9 | 2.0 | 2.2 | 2.5 | 1.9 | 5.5 | 1.9 | 24 |
| 25 | 2.0 | 2.0 | 2.1 | 2.4 | 2.6 | 2.5 | 2.8 | 2.8 | 3.1 | \$ | 13.9 | 4.6 | 4.2 | 3.8 | 3.5 | 2.6 | 2.3 | 2.1 | 2.2 | 2.3 | 2.3 | 2.3 | 4.3 | 9.9 | 13.9 | 3.6 | 24 |
| 26 | 10.2 | 7.0 | 6.3 | 7.1 | 7.7 | 8.3 | 8.5 | 11.5 | \$ | 6.2 | 4.9 | 3.3 | 2.2 | 1.5 | 1.0 | 1.1 | 4.5 | 1.9 | 2.1 | 1.7 | 2.2 | 2.3 | 1.0 | 2.4 | 11.5 | 4.6 | 24 |
| 27 | 1.7 | 4.1 | 4.2 | 10.4 | 10.2 | 3.5 | 2.3 | \$ | 3.2 | 3.1 | 2.7 | 1.6 | 1.9 | 2.0 | 3.9 | 3.8 | 0.7 | 0.7 | 0.9 | 1.3 | 1.3 | 1.4 | 1.8 | 1.4 | 10.4 | 3.0 | 24 |
| 28 | 1.4 | 1.4 | 1.4 | 2.9 | 4.8 | 5.5 | \$ | 1.2 | 0.7 | 0.6 | 3.7 | 1.6 | 1.3 | 0.9 | 1.0 | 1.3 | 1.4 | 1.5 | 1.8 | 0.9 | 1.2 | 0.6 | 0.6 | 0.9 | 5.5 | 1.7 | 24 |
| 29 | 0.6 | 1.0 | 1.1 | 1.4 | 1.3 | \$ | 1.4 | 2.0 | 2.9 | 2.8 | 1.2 | 1.5 | 1.3 | 1.1 | 0.9 | 1.5 | 1.5 | 1.3 | 2.5 | 8.7 | 6.2 | 2.1 | 2.4 | 2.6 | 8.7 | 2.1 | 24 |
| HOURLY MAX | 20.0 | 22.0 | 26.7 | 26.5 | 15.5 | 12.9 | 13.0 | 12.3 | 13.1 | 10.4 | 18.5 | 9.1 | 6.1 | 5.6 | 6.1 | 10.2 | 20.4 | 14.8 | 10.0 | 26.2 | 19.4 | 10.0 | 8.6 | 16.3 | | | |
| HOURLY AVG | 3.6 | 3.8 | 4.2 | 4.4 | 4.2 | 5.9 | 3.7 | 4.0 | 3.4 | 3.6 | 4.5 | 3.0 | 2.7 | 2.3 | 2.5 | 3.1 | 4.2 | 3.6 | 2.9 | 3.9 | 3.6 | 2.8 | 2.5 | 3.7 | | | |

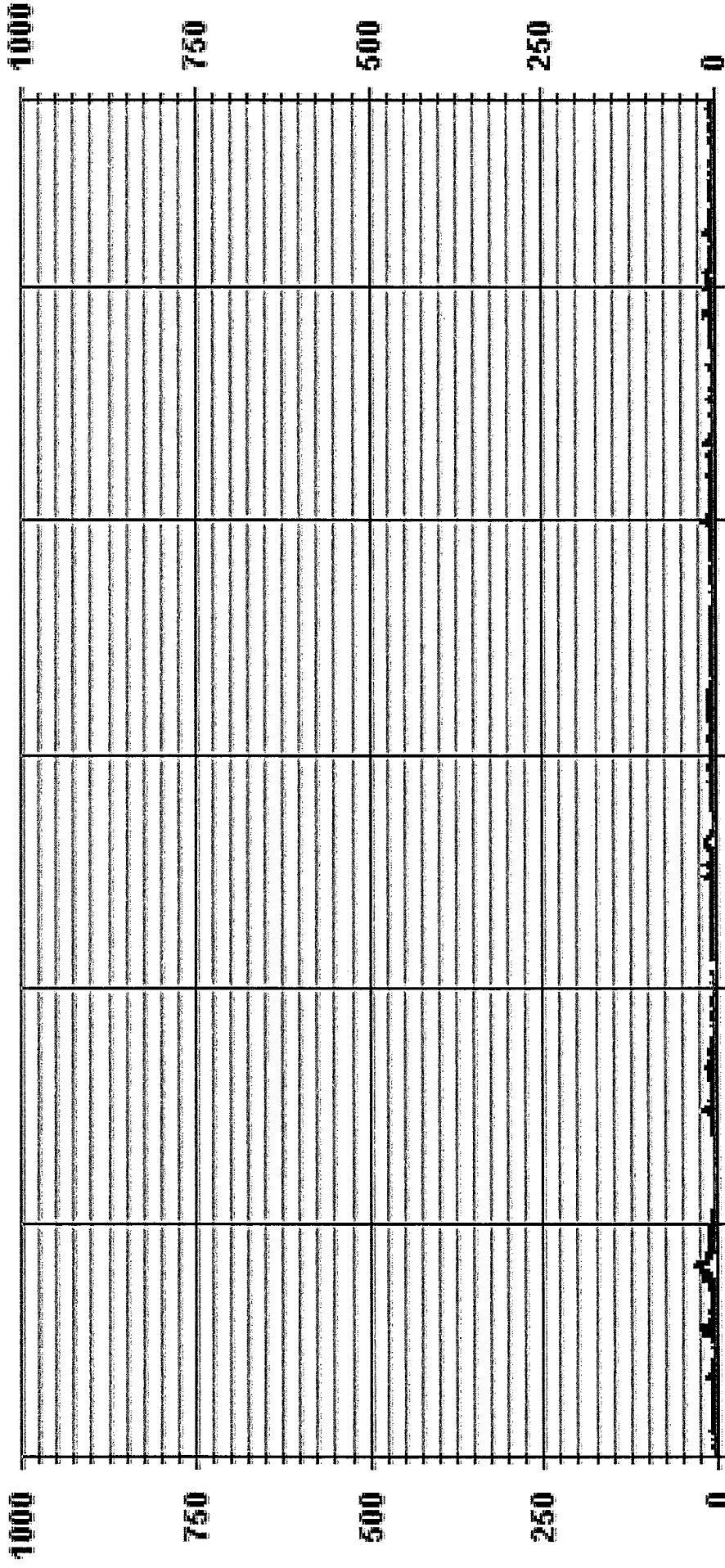
STATUS FLAG CODES

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

MONTHLY SUMMARY

| | |
|------------------------------|----------------------------------|
| NUMBER OF NON-ZERO READINGS: | 651 |
| MAXIMUM INSTANTANEOUS VALUE: | 26.7 PPB @ HOUR(S) 2 ON DAY(S) 5 |
| IS CALIBRATION TIME: | 30 HRS |
| MONTHLY CALIBRATION TIME: | 7 HRS |
| STANDARD DEVIATION: | 3.49 |
| OPERATIONAL TIME: | 695 HRS |
| VAR- VARIOUS | |

01 Hour Averages



— LICA31 NO2MAX PPB

LICA31
 NO2_ / WDR Joint Frequency Distribution (Percent)
 February 2016

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : NO2
 Units : PPS

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|------|------|--------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 50.0 | 2.42 | 2.42 | 3.63 | 8.32 | 4.23 | 6.05 | 1.66 | 3.02 | 9.22 | 9.07 | 11.95 | 10.89 | 9.37 | 9.37 | 5.74 | 2.57 | 100.00 |
| < 110.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.42 | 2.42 | 3.63 | 8.32 | 4.23 | 6.05 | 1.66 | 3.02 | 9.22 | 9.07 | 11.95 | 10.89 | 9.37 | 9.37 | 5.74 | 2.57 | |

Calm : .00 %

Total # Operational Hours : 661

Distribution By Samples

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 50.0 | 16 | 16 | 24 | 55 | 28 | 40 | 11 | 20 | 61 | 60 | 79 | 72 | 62 | 62 | 38 | 17 | 661 |
| < 110.0 | | | | | | | | | | | | | | | | | |
| < 210.0 | | | | | | | | | | | | | | | | | |
| >= 210.0 | | | | | | | | | | | | | | | | | |
| Totals | 16 | 16 | 24 | 55 | 28 | 40 | 11 | 20 | 61 | 60 | 79 | 72 | 62 | 62 | 38 | 17 | |

Calm : .00 %

Total # Operational Hours : 661

Logger : 31 Parameter : NO2_

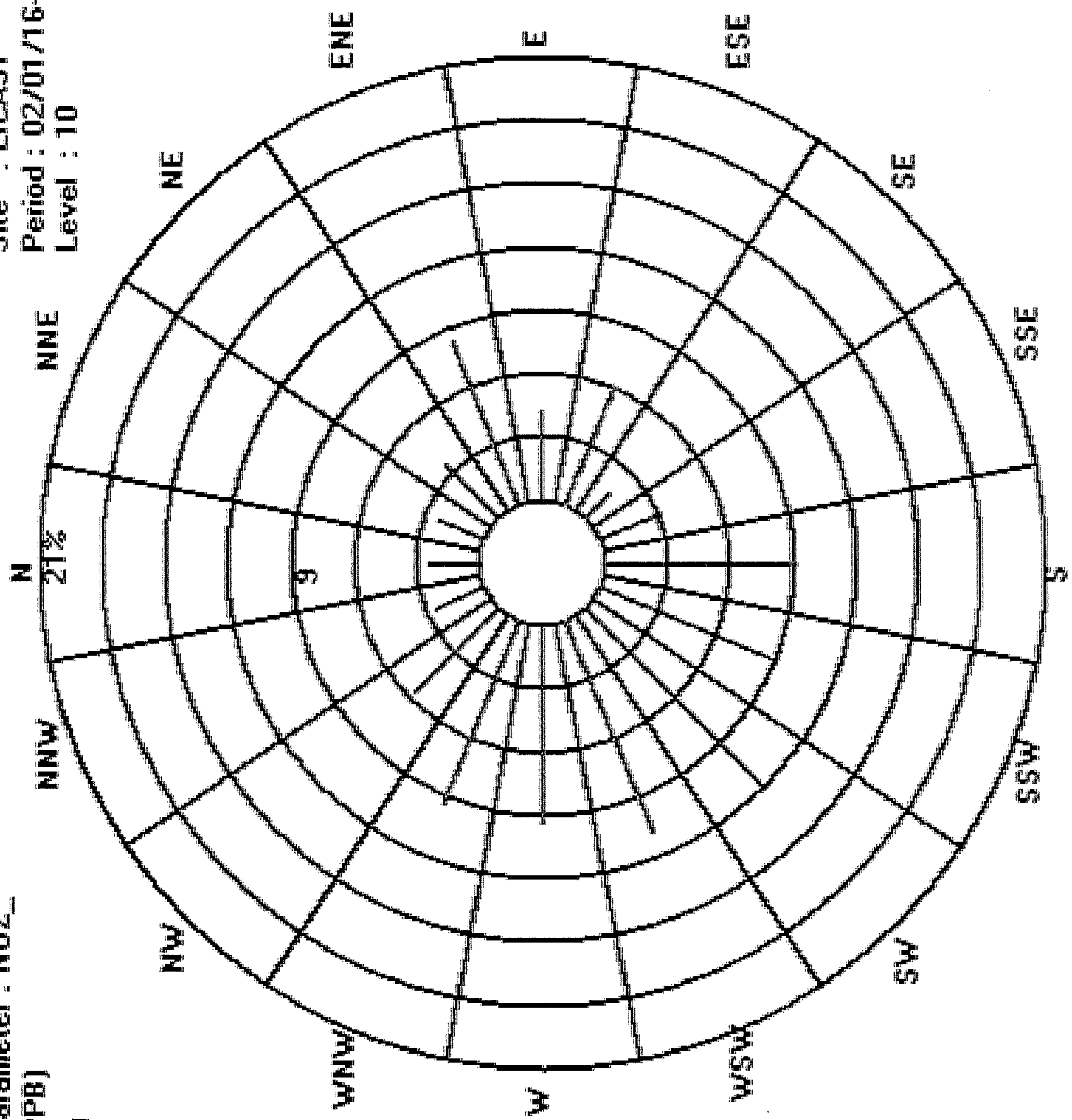
Site : LICA31

Class Limits (PPB)

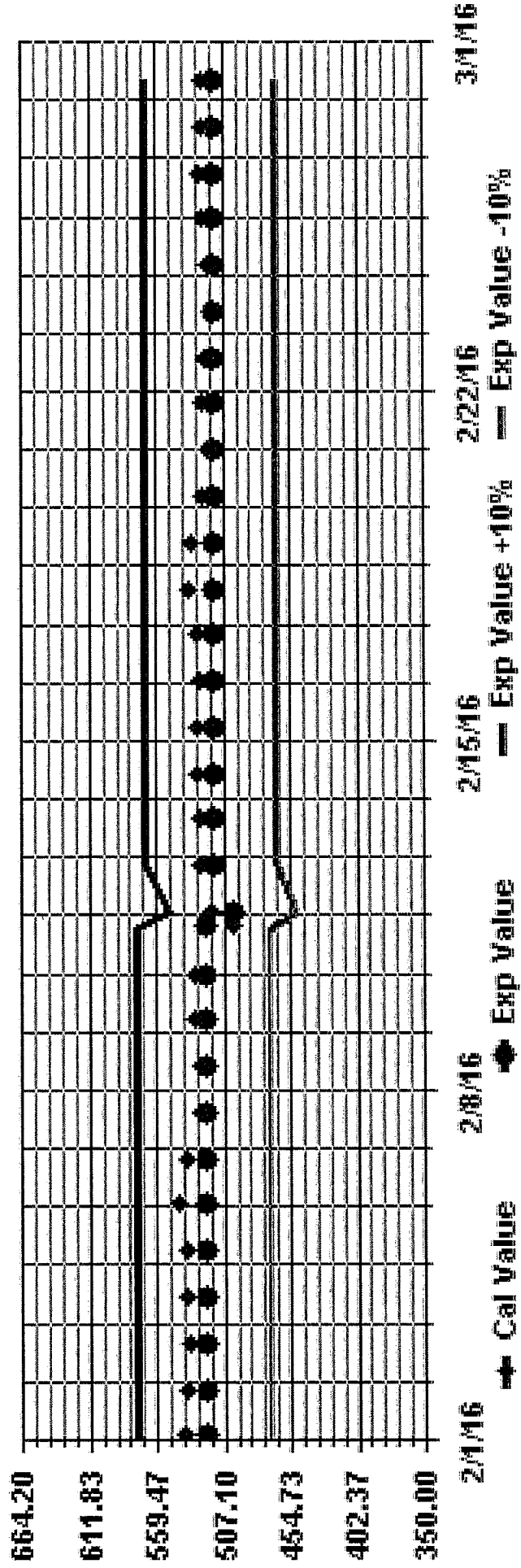
Period : 02/01/16-02/29/16



Level : 10



Calibration Graph for Site: LICA31 Parameter: NO2 Sequence: NO2 Phase: SPAN



OZONE



OZONE (O3) hourly averages in ppb

MST

| DAY | 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 | 24:00 | ROGS. | |
|--------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| HOURLY START | 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 | 24:00 | AVG. | |
| HOURLY END | 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 | 24:00 | MAX. | |
| 1 | 29.0 | 29.5 | \$ | 29.7 | 29.2 | 28.8 | 28.6 | 27.8 | 27.1 | 26.9 | 27.1 | 27.0 | 27.0 | 27.0 | 27.1 | 27.1 | 27.1 | 28.3 | 28.2 | 25.7 | 26.1 | 27.2 | 27.0 | 28.1 | 29.7 | 27.7 | 24 |
| 2 | 30.0 | \$ | 31.4 | 30.5 | 29.6 | 29.0 | 27.4 | 25.2 | 23.5 | 22.7 | 24.7 | 27.6 | 29.4 | 30.7 | 31.0 | 33.8 | 35.5 | 34.0 | 35.0 | 34.2 | 35.0 | 34.2 | 33.2 | 30.4 | 35.5 | 29.8 | 24 |
| 3 | \$ | 30.5 | 30.4 | 29.2 | 34.6 | 35.8 | 35.6 | 34.4 | 35.5 | 36.1 | 36.5 | 36.7 | 36.6 | 34.3 | 31.3 | 34.6 | 35.1 | 35.3 | 35.4 | 31.3 | 30.5 | 27.9 | 28.1 | \$ | 36.7 | 33.6 | 24 |
| 4 | 38.6 | 31.6 | 25.1 | 28.4 | 23.4 | 23.3 | 22.9 | 23.5 | 25.4 | 26.4 | 26.7 | 27.0 | 24.7 | 23.9 | 24.0 | 23.7 | 23.9 | 28.0 | 28.6 | 26.1 | \$ | 16.6 | \$ | 16.6 | 33.6 | 25.1 | 24 |
| 5 | 11.7 | 8.9 | 6.4 | 8.1 | 16.3 | 16.5 | 17.6 | 18.6 | 20.8 | 24.6 | 29.1 | 31.4 | 32.8 | 33.2 | 33.3 | 33.5 | 31.9 | 29.8 | 30.1 | 29.7 | \$ | 29.7 | 30.0 | 33.5 | 23.5 | 24 | |
| 6 | 29.8 | 30.1 | 29.3 | 29.7 | 30.8 | 31.4 | 33.4 | 35.9 | 39.8 | 39.8 | 41.0 | 42.5 | 43.3 | 42.4 | 41.9 | 38.6 | 36.0 | 37.3 | 38.1 | \$ | 40.1 | 40.5 | 40.6 | 43.3 | 37.0 | 24 | |
| 7 | 40.5 | 39.8 | 39.4 | 39.3 | 40.0 | 40.3 | 40.2 | 39.9 | 40.0 | 40.4 | 41.0 | 41.5 | 41.9 | 42.3 | 42.5 | 41.4 | 40.1 | 40.0 | \$ | 39.5 | 39.3 | 38.8 | 38.0 | 42.5 | 40.3 | 24 | |
| 8 | 36.3 | 36.1 | 35.2 | 34.4 | 33.7 | 32.5 | 29.4 | 26.9 | 28.9 | 31.1 | 31.7 | 33.1 | 36.2 | 38.8 | 40.3 | 40.8 | 39.9 | 38.8 | \$ | 35.0 | 34.1 | 34.1 | 33.2 | 31.2 | 40.8 | 34.4 | 24 |
| 9 | 30.5 | 27.5 | 22.8 | 22.0 | 22.7 | 21.0 | 18.9 | 18.0 | 20.1 | 23.4 | 24.4 | 26.7 | 31.8 | 34.7 | 34.2 | 34.5 | 35.8 | \$ | 37.9 | 38.1 | 37.2 | 33.0 | 28.7 | 28.5 | 38.1 | 28.4 | 24 |
| 10 | 29.5 | 35.2 | 35.8 | 36.5 | 35.1 | 32.2 | 31.9 | 32.6 | 29.6 | 26.8 | 30.8 | 34.5 | 36.4 | 33.1 | 31.7 | 32.0 | \$ | 35.4 | 36.1 | 36.2 | 35.6 | 35.6 | 36.4 | 36.5 | 36.5 | 33.7 | 24 |
| 11 | 36.7 | 36.7 | 35.3 | 35.1 | 34.8 | 35.0 | 35.1 | 34.7 | 34.8 | 34.5 | 34.3 | 34.3 | 34.5 | 35.2 | \$1 | 35.4 | 36.2 | 37.5 | 37.2 | 35.8 | 36.3 | 37.0 | 37.2 | \$ | 37.5 | 35.6 | 23 |
| 12 | 35.2 | 35.2 | 35.1 | 36.6 | 37.3 | 37.2 | 36.1 | 35.0 | 34.4 | C | C | C | C | 36.2 | 37.2 | 36.2 | 38.4 | 38.6 | 38.1 | 37.8 | 37.4 | 36.7 | \$ | 35.0 | 38.6 | 36.6 | 24 |
| 13 | 34.4 | 34.2 | 33.0 | 32.6 | 31.5 | 31.0 | 31.4 | 31.6 | 32.6 | 33.0 | 31.8 | 28.9 | 27.1 | 27.8 | 32.6 | 33.7 | 33.6 | 31.8 | 33.1 | 35.3 | 36.8 | \$ | 34.9 | 32.2 | 36.8 | 32.4 | 24 |
| 14 | 28.3 | 24.2 | 21.0 | 19.9 | 20.2 | 23.7 | 28.3 | 30.8 | 33.4 | 35.6 | 37.2 | 39.1 | 39.4 | 39.7 | 40.2 | 40.6 | 40.3 | 39.2 | 38.3 | 38.0 | \$ | 37.0 | 36.4 | 38.9 | 40.6 | 33.3 | 24 |
| 15 | 31.3 | 29.0 | 31.1 | 30.3 | 30.9 | 31.4 | 28.2 | 26.9 | 24.4 | 28.9 | 28.7 | 23.5 | 29.6 | 28.4 | 26.4 | 26.1 | 24.8 | 22.8 | 22.4 | \$ | 25.1 | 24.9 | 24.8 | 24.3 | 31.4 | 27.1 | 24 |
| 16 | 23.8 | 23.2 | 24.1 | 23.6 | 22.5 | 24.0 | 25.1 | 23.2 | 24.2 | 24.0 | 24.0 | 24.6 | 26.7 | 28.5 | 29.7 | 31.2 | 31.1 | 29.9 | \$ | 26.8 | 25.9 | 26.0 | 25.1 | 26.5 | 31.2 | 25.8 | 24 |
| 17 | 27.2 | 28.1 | 27.3 | 27.6 | 28.6 | 31.1 | 30.3 | 31.1 | 32.0 | 32.8 | 35.5 | 35.4 | 37.5 | 40.0 | 39.8 | 36.7 | 36.2 | \$ | 34.3 | 33.9 | 34.2 | 35.0 | 34.9 | 34.7 | 40.0 | 33.2 | 24 |
| 18 | 34.0 | 33.1 | 32.2 | 32.6 | 32.4 | 33.1 | 32.3 | 31.7 | 31.6 | 30.9 | 30.3 | 30.2 | 30.1 | 30.3 | 30.5 | \$ | 31.5 | 31.2 | 30.9 | 30.0 | 30.1 | 29.8 | 28.6 | 26.9 | 25.8 | 29.8 | 24 |
| 19 | 21.9 | 21.6 | 22.9 | 22.5 | 23.0 | 24.1 | 26.7 | 27.4 | 28.5 | 30.0 | 30.3 | 30.2 | 30.1 | 30.3 | 30.5 | \$ | 24.1 | 22.8 | 22.1 | 20.8 | 20.0 | 20.2 | 21.2 | 34.0 | 27.7 | 24 | |
| 20 | 30.7 | 32.5 | 33.2 | 33.3 | 31.6 | 26.7 | 26.6 | 27.7 | 27.5 | 26.5 | 30.1 | 30.7 | 31.5 | 31.4 | \$ | 31.9 | 31.7 | 30.9 | 30.0 | 30.1 | 29.8 | 28.6 | 26.9 | 25.8 | 33.3 | 29.8 | 24 |
| 21 | 25.4 | 24.8 | 22.2 | 19.4 | 19.3 | 21.4 | 21.7 | 22.0 | 22.0 | 21.9 | 24.8 | 29.8 | 33.7 | \$ | 40.3 | 42.4 | 43.4 | 43.9 | 43.9 | 38.8 | 40.2 | 39.9 | 34.6 | 43.9 | 31.2 | 24 | |
| 22 | 38.7 | 35.6 | 38.3 | 39.5 | 39.7 | 39.9 | 39.7 | 39.3 | 38.8 | 39.1 | 39.4 | 40.9 | \$ | 43.1 | 43.5 | 43.7 | 43.1 | 42.8 | 43.2 | 42.2 | 39.1 | 40.3 | 42.6 | 42.6 | 43.7 | 40.4 | 24 |
| 23 | 42.3 | 41.9 | 41.5 | 40.5 | 39.2 | 38.6 | 37.7 | 36.9 | 37.1 | 38.0 | 38.7 | \$ | 41.0 | 40.9 | 40.5 | 40.1 | 40.1 | 40.5 | 40.9 | 40.3 | 40.1 | 40.0 | 39.5 | 38.9 | 42.3 | 39.8 | 24 |
| 24 | 39.4 | 39.1 | 39.3 | 38.9 | 38.6 | 38.6 | 38.1 | 37.9 | 37.9 | 38.1 | \$ | 38.0 | 39.8 | 41.8 | 42.6 | 42.3 | 42.5 | 41.8 | 42.0 | 40.9 | 40.4 | 39.3 | 38.6 | 38.9 | 42.6 | 39.8 | 24 |
| 25 | 38.5 | 38.1 | 37.2 | 37.6 | 38.0 | 36.9 | 35.4 | 34.1 | 32.6 | \$ | 31.7 | 34.2 | 37.1 | 39.4 | 42.5 | 45.8 | 47.2 | 46.9 | 47.2 | 46.6 | 45.8 | 44.7 | 37.0 | 47.8 | 40.1 | 24 | |
| 26 | 34.6 | 35.4 | 36.8 | 36.2 | 34.3 | 33.0 | 31.3 | 30.8 | \$ | 35.8 | 40.5 | 42.2 | 43.8 | 45.5 | 47.1 | 47.9 | 48.4 | 48.5 | 47.2 | 47.1 | 46.1 | 46.3 | 46.5 | 44.4 | 48.5 | 41.3 | 24 |
| 27 | 45.6 | 44.9 | 43.5 | 40.5 | 31.7 | 34.6 | 34.1 | \$ | 31.4 | 32.6 | 32.9 | 31.9 | 32.2 | 31.4 | 30.3 | 32.6 | 33.5 | 34.0 | 33.0 | 33.5 | 32.4 | 31.0 | 29.7 | 29.0 | 45.6 | 34.2 | 24 |
| 28 | 28.5 | 28.6 | 29.4 | 26.4 | 24.3 | 25.3 | \$ | 31.8 | 32.8 | 35.0 | 32.9 | 37.7 | 42.2 | 43.7 | 41.5 | 40.3 | 40.7 | 40.4 | 39.8 | 38.9 | 38.0 | 37.3 | 36.5 | 35.9 | 43.7 | 35.1 | 24 |
| 29 | 35.4 | 34.5 | 33.6 | 32.9 | 32.5 | \$ | 31.9 | 31.5 | 31.4 | 32.9 | 34.0 | 34.6 | 35.2 | 36.0 | 36.9 | 37.6 | 37.7 | 37.2 | 36.2 | 34.5 | 34.2 | 34.1 | 33.1 | 32.4 | 37.7 | 34.4 | 24 |
| HOURLY MAX | 45.6 | 44.9 | 43.5 | 40.5 | 40.0 | 40.3 | 40.3 | 40.2 | 39.9 | 40.0 | 40.5 | 42.2 | 43.8 | 45.5 | 47.1 | 47.9 | 48.4 | 48.5 | 47.2 | 47.2 | 46.6 | 46.6 | 45.3 | 44.4 | 44.4 | 44.4 | 24 |
| HOURLY AVG | 32.1 | 31.8 | 31.2 | 30.6 | 30.5 | 30.6 | 30.2 | 30.4 | 31.2 | 31.8 | 32.8 | 34.3 | 35.3 | 35.8 | 36.2 | 36.7 | 36.7 | 35.8 | 35.7 | 35.4 | 34.5 | 34.4 | 34.1 | 32.6 | 32.6 | 32.6 | 24 |

STATUS FLAG CODES

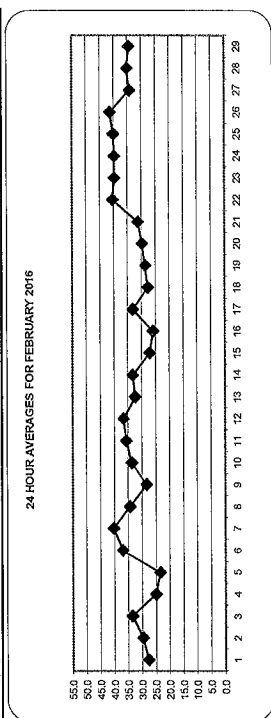
| | |
|----|------------------------|
| C | MONTHLY CALIBRATION |
| CT | REPEAT CALIBRATION |
| Y | MAINTENANCE |
| S | DAILY ZERO/SPAN CHECK |
| SL | REPEAT ZERO/SPAN CHECK |
| Q | QUALITY ASSURANCE |
| R | RECOVERY |
| X | MACHINEMAIN-FUNCTION |
| G | OUT FOR REPAIR |
| P | POWER FAILURE |

OBJECTIVE LIMIT:

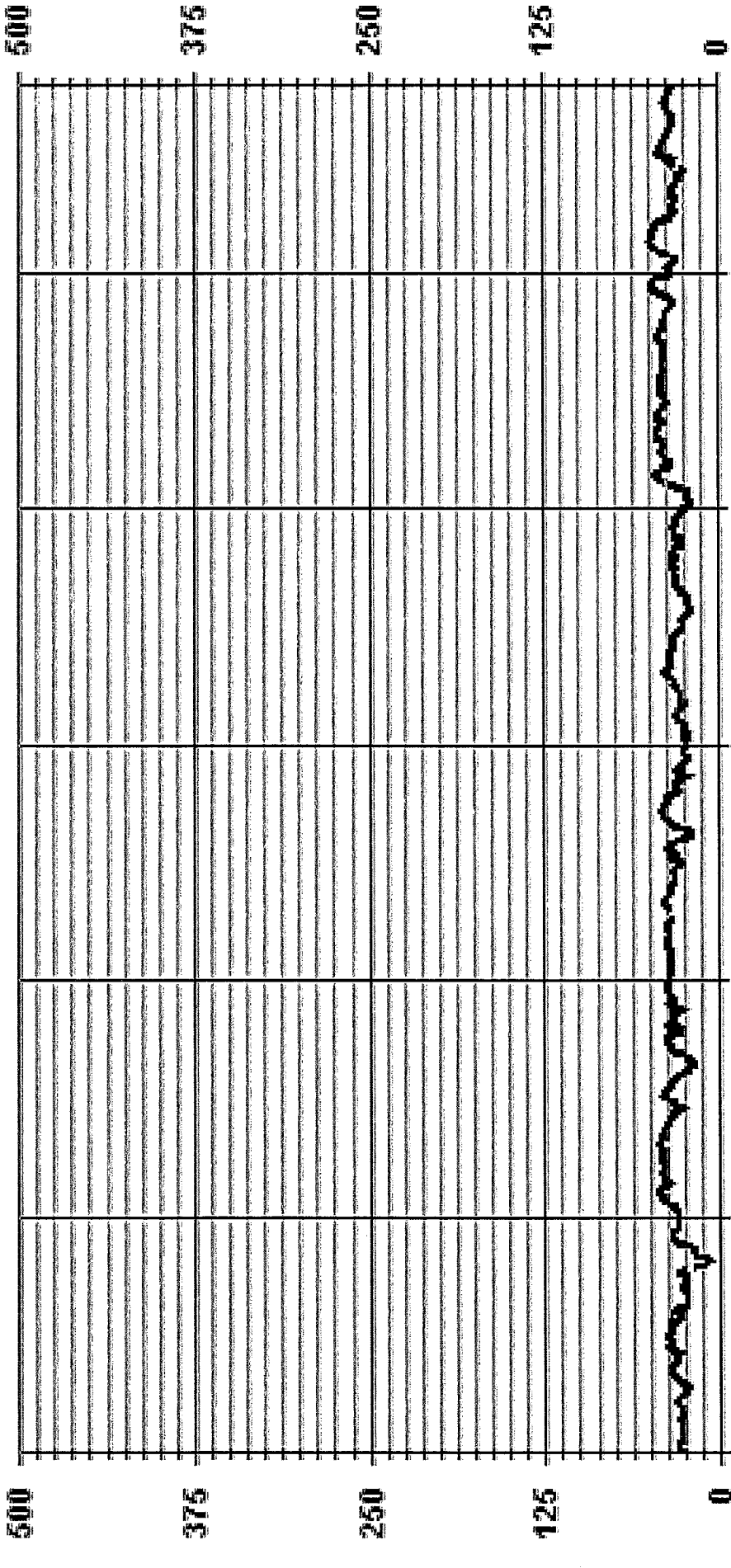
ALBERTA ENVIRONMENT: 1-HR: 82 PPB

MONTHLY SUMMARY

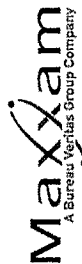
| | |
|------------------------------|----------|
| NUMBER OF 1-HR EXCEEDENCES: | 0 |
| NUMBER OF NON-ZERO READINGS: | 661 |
| MINIMUM 1-HR AVERAGE: | 6.4 |
| MAXIMUM 1-HR AVERAGE: | 48.5 |
| MAXIMUM 24-HR AVERAGE: | 41.3 |
| IS CALIBRATION TIME: | 30 HRS |
| MONTHLY CALIBRATION TIME: | 4 HRS |
| STANDARD DEVIATION: | 6.63 |
| OPERATIONAL TIME: | 695 HRS |
| AMD OPERATION UPTIME: | 99.9 % |
| MONTHLY AVERAGE: | 33.1 PPB |
| ON DAY(S): | 5 |
| ON DAY(S): | 26 |
| ON DAY(S): | 26 |
| VAR- VARIOUS | |



01 Hour Averages



— LICA31 03_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
 St. Lina Site - FEBRUARY 2016
 JOB # 2833-2016-02-31- C

OZONE MAX instantaneous maximum in ppb

| DAY | HOUR | | | | | | | | | | | | | | | | | | | | | | | | 24-HOUR AVG. | | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|------------|------|----|
| | 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 MAX. | | |
| 1 | 29.7 | 30.2 | S | 30.2 | 29.8 | 29.4 | 29.1 | 28.6 | 27.9 | 27.6 | 27.4 | 27.5 | 27.6 | 27.5 | 28.4 | 28.4 | 29.7 | 26.8 | 27.1 | 27.6 | 27.6 | 27.6 | 27.6 | 27.6 | 27.6 | 30.2 | 28.4 | 24 |
| 2 | 31.5 | S | 32.0 | 31.4 | 30.3 | 29.7 | 28.9 | 28.5 | 24.9 | 25.2 | 23.9 | 27.6 | 29.3 | 30.2 | 32.2 | 34.0 | 35.1 | X | 35.1 | 37.4 | 37.4 | 35.8 | 34.0 | 33.7 | 32.8 | 37.4 | 31.0 | 23 |
| 3 | S | 33.0 | 32.8 | 32.7 | 35.9 | 36.5 | 36.3 | 36.5 | 34.9 | 36.5 | 36.7 | 37.3 | 37.1 | 37.6 | 35.8 | 35.4 | 35.6 | 35.9 | 36.3 | 33.6 | 31.4 | 29.9 | 32.1 | S | 37.6 | 35.0 | 24 | |
| 4 | 34.3 | 33.3 | 28.2 | 24.1 | 24.0 | 24.0 | 23.7 | 23.2 | 23.4 | 24.9 | 26.8 | 27.0 | 27.5 | 28.4 | 25.8 | 24.5 | 25.3 | 25.3 | 25.7 | 30.3 | 29.8 | 27.9 | S | 20.3 | 34.3 | 26.4 | 24 | |
| 5 | 13.8 | 10.3 | 8.2 | 13.9 | 18.3 | 18.3 | 17.6 | 18.3 | 19.4 | 22.7 | 27.3 | 30.6 | 32.8 | 33.6 | 33.7 | 34.2 | 34.4 | 35.1 | 31.1 | 30.6 | 30.3 | S | 30.2 | 33.1 | 34.4 | 25.0 | 24 | |
| 6 | 30.6 | 30.7 | 30.2 | 30.8 | 31.9 | 32.0 | 34.9 | 38.1 | 40.3 | 40.2 | 40.4 | 42.2 | 43.7 | 44.0 | 43.4 | 42.5 | 41.2 | 36.6 | 38.1 | 39.4 | S | 40.7 | 40.9 | 44.0 | 38.0 | 24 | | |
| 7 | 41.1 | 40.5 | 40.0 | 39.9 | 40.5 | 40.8 | 40.8 | 40.7 | 40.3 | 40.5 | 41.1 | 41.9 | 42.0 | 42.5 | 42.9 | 42.8 | 40.5 | 40.4 | S | 35.9 | 34.7 | 34.6 | 34.2 | 32.5 | 41.3 | 35.5 | 24 | |
| 8 | 36.9 | 36.9 | 35.8 | 35.0 | 34.6 | 34.0 | 30.7 | 28.6 | 31.2 | 31.7 | 32.6 | 34.7 | 37.7 | 40.0 | 41.3 | 41.1 | 39.9 | S | 38.7 | 38.7 | 38.1 | 35.8 | 30.8 | 29.8 | 38.7 | 30.0 | 24 | |
| 9 | 32.3 | 30.0 | 24.9 | 23.6 | 23.7 | 22.1 | 20.8 | 18.7 | 22.3 | 26.1 | 25.1 | 30.4 | 34.7 | 35.4 | 35.0 | 35.6 | 37.1 | S | 36.1 | 36.6 | 36.6 | 36.3 | 36.6 | 36.9 | 36.8 | 37.3 | 35.1 | 24 |
| 10 | 32.5 | 36.3 | 36.3 | 37.3 | 36.4 | 33.8 | 33.7 | 34.0 | 31.2 | 29.9 | 32.0 | 36.9 | 36.9 | 36.5 | 32.8 | 34.4 | S | 36.1 | 36.6 | 36.6 | 36.3 | 36.6 | 36.9 | 36.8 | 37.3 | 35.1 | 24 | |
| 11 | 35.7 | 35.8 | 35.8 | 38.2 | 38.1 | 37.7 | 37.1 | 35.5 | 35.3 | C | C | C | C | 37.2 | 37.8 | 39.0 | 38.8 | 39.2 | 38.9 | 38.3 | 37.9 | 37.9 | S | 35.8 | 39.2 | 37.4 | 24 | |
| 12 | 35.2 | 34.7 | 33.7 | 33.1 | 32.7 | 31.6 | 31.9 | 32.4 | 33.3 | 34.9 | 33.1 | 30.3 | 27.8 | 30.3 | 33.5 | 35.8 | 36.4 | 33.2 | 33.8 | 36.4 | 37.7 | S | 36.6 | 39.3 | 37.7 | 33.6 | 24 | |
| 13 | 32.0 | 25.9 | 21.7 | 20.8 | 22.5 | 25.7 | 31.1 | 33.2 | 35.5 | 37.0 | 39.2 | 39.5 | 39.9 | 40.1 | 41.0 | 41.1 | 41.1 | 40.3 | 38.8 | 38.7 | S | 37.7 | 37.2 | 35.4 | 41.1 | 34.6 | 24 | |
| 14 | 33.1 | 30.3 | 32.1 | 32.7 | 32.4 | 32.4 | 31.1 | 29.1 | 28.1 | 29.8 | 32.5 | 30.3 | 32.4 | 31.5 | 27.1 | 26.8 | 25.9 | 23.9 | 24.0 | S | 25.7 | 25.8 | 25.5 | 25.4 | 33.1 | 29.0 | 24 | |
| 15 | 24.8 | 24.6 | 24.5 | 24.5 | 23.7 | 25.7 | 25.8 | 25.5 | 25.0 | 24.6 | 24.5 | 25.9 | 27.9 | 29.5 | 30.6 | 32.0 | 31.0 | S | 34.8 | 34.5 | 35.1 | 35.4 | 35.4 | 35.2 | 41.5 | 34.8 | 24 | |
| 16 | 29.1 | 29.4 | 27.9 | 28.2 | 29.8 | 33.4 | 32.3 | 33.5 | 33.8 | 35.5 | 37.8 | 40.8 | 39.5 | 40.9 | 41.5 | 39.0 | 37.2 | S | 34.8 | 34.5 | 35.1 | 35.4 | 35.4 | 35.2 | 41.5 | 34.8 | 24 | |
| 17 | 34.6 | 34.0 | 32.8 | 33.1 | 33.0 | 33.6 | 33.1 | 32.3 | 32.2 | 31.9 | 30.2 | 29.4 | 28.1 | 26.2 | 27.4 | 27.0 | S | 25.3 | 24.0 | 23.0 | 22.1 | 21.1 | 21.3 | 22.1 | 34.6 | 28.6 | 24 | |
| 18 | 22.7 | 22.4 | 24.3 | 33.3 | 24.0 | 25.8 | 27.9 | 27.9 | 30.7 | 31.1 | 30.8 | 30.5 | 31.0 | 31.1 | S | 32.1 | 31.9 | 32.2 | 33.7 | 34.4 | 34.5 | 33.7 | 33.1 | 34.5 | 29.5 | 24 | | |
| 19 | 31.5 | 34.2 | 33.7 | 33.8 | 33.3 | 27.8 | 27.6 | 28.2 | 28.2 | 28.9 | 30.8 | 31.4 | 32.2 | 32.3 | S | 32.8 | 32.4 | 31.5 | 31.1 | 30.7 | 30.4 | 29.5 | 27.9 | 26.7 | 34.2 | 30.7 | 24 | |
| 20 | 25.9 | 25.7 | 24.2 | 19.9 | 20.4 | 22.1 | 22.8 | 23.2 | 22.5 | 22.5 | 27.4 | 32.4 | 35.6 | S | 41.9 | 43.5 | 44.0 | 44.5 | 44.7 | 43.4 | 40.4 | 41.1 | 40.9 | 39.1 | 44.7 | 32.5 | 24 | |
| 21 | 34.6 | 37.8 | 39.4 | 40.0 | 40.3 | 40.4 | 40.2 | 40.0 | 39.4 | 39.8 | 40.4 | 42.1 | S | 43.7 | 44.1 | 44.4 | 43.9 | 43.6 | 43.7 | 43.6 | 41.2 | 42.8 | 43.2 | 43.3 | 44.4 | 41.4 | 24 | |
| 22 | 42.8 | 42.4 | 42.2 | 41.3 | 39.8 | 39.2 | 38.8 | 37.4 | 37.7 | 38.7 | 39.2 | S | 41.4 | 41.4 | 41.2 | 40.5 | 41.2 | 41.3 | 41.5 | 41.1 | 40.7 | 40.6 | 40.4 | 40.1 | 42.8 | 40.5 | 24 | |
| 23 | 39.1 | 38.6 | 37.7 | 38.1 | 38.4 | 38.1 | 36.3 | 35.3 | 33.6 | S | 32.5 | 36.1 | 38.6 | 40.9 | 44.2 | 46.9 | 48.6 | 47.8 | 47.4 | 47.9 | 47.1 | 46.6 | 46.0 | 41.8 | 48.6 | 41.2 | 24 | |
| 24 | 46.4 | 46.1 | 44.8 | 44.4 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 24 |
| 25 | 36.1 | 36.2 | 37.7 | 37.3 | 35.2 | 34.2 | 32.0 | 31.5 | S | 37.0 | 41.9 | 43.6 | 45.6 | 47.8 | 48.6 | 49.2 | 49.2 | 48.1 | 47.8 | 47.3 | 47.0 | 46.6 | 46.4 | 46.4 | 46.4 | 46.4 | 46.4 | 24 |
| 26 | 46.4 | 46.1 | 44.8 | 44.4 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 24 |
| 27 | 29.1 | 30.1 | 30.0 | 28.7 | 25.1 | 28.1 | S | 33.5 | 34.1 | 35.5 | 36.3 | 40.5 | 43.8 | 44.5 | 42.8 | 41.4 | 41.6 | 41.4 | 40.5 | 39.7 | 38.6 | 38.2 | 37.3 | 36.4 | 44.5 | 36.4 | 24 | |
| 28 | 36.2 | 35.2 | 34.5 | 33.4 | 32.9 | S | 32.4 | 32.0 | 32.2 | 34.0 | 34.5 | 35.4 | 35.8 | 36.9 | 37.5 | 36.2 | 38.2 | 37.8 | 37.4 | 35.9 | 35.1 | 34.9 | 33.8 | 33.1 | 38.2 | 35.1 | 24 | |
| 29 | 46.4 | 46.1 | 44.8 | 44.4 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 24 |
| HOURLY MAX | 46.4 | 46.1 | 44.8 | 44.4 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 44.2 | 24 |
| HOURLY AVG | 33.2 | 32.9 | 32.2 | 31.9 | 31.5 | 31.7 | 31.7 | 31.3 | 31.5 | 32.4 | 33.1 | 34.6 | 35.5 | 36.5 | 37.0 | 37.2 | 37.7 | 36.7 | 36.6 | 36.5 | 35.4 | 35.5 | 35.0 | 34.0 | | | | |

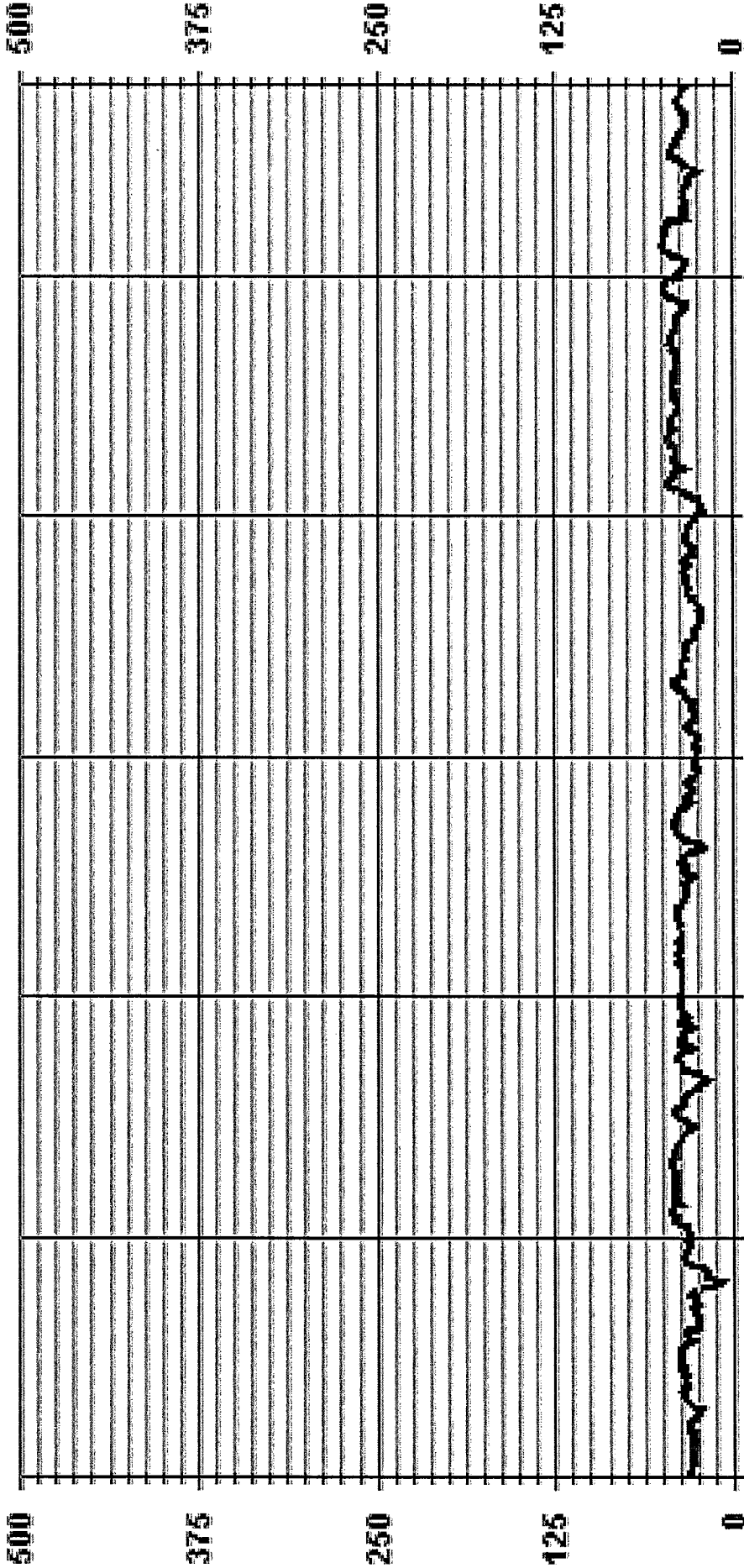
STATUS FLAG CODES

| | | | |
|----|--------------------------|---|----------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION | R | RECOVERY |
| M | MAINTENANCE | X | MACHINE MALEFUNCTION |
| S | SPAN ZERO / SPAN CHECK | G | OUT FOR REPAIR |
| SL | REPEAT ZERO / SPAN CHECK | P | POWER FAILURE |

MONTHLY SUMMARY

| | | | | | |
|------------------------------|------|-----------|--------|-----------|--------|
| NUMBER OF NON-ZERO READINGS: | 659 | @ HOUR(S) | 16, 17 | ON DAY(S) | 26, 26 |
| MAXIMUM INSTANTANEOUS VALUE: | 49.2 | PPB | | | |
| IS CALIBRATION TIME: | 30 | HRS | | | |
| MONTHLY CALIBRATION TIME: | 4 | HRS | | | |
| STANDARD DEVIATION: | 6.48 | | | | |
| OPERATIONAL TIME: | 693 | HRS | | | |
| VAR-VARIOUS | | | | | |

01 Hour Averages



— LIC31 O3MAX PPB

LICA31
 O3_ / WDR Joint Frequency Distribution (Percent)
 February 2016

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : O3
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|------|------|--------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 50.0 | 2.42 | 2.42 | 4.23 | 8.32 | 4.23 | 5.44 | 1.66 | 3.02 | 9.22 | 9.07 | 11.95 | 10.89 | 9.37 | 9.37 | 5.74 | 2.57 | 100.00 |
| < 110.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.42 | 2.42 | 4.23 | 8.32 | 4.23 | 5.44 | 1.66 | 3.02 | 9.22 | 9.07 | 11.95 | 10.89 | 9.37 | 9.37 | 5.74 | 2.57 | |

Calm : .00 %

Total # Operational Hours : 661

Distribution By Samples

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 50.0 | 16 | 16 | 28 | 55 | 28 | 36 | 11 | 20 | 61 | 60 | 79 | 72 | 62 | 62 | 38 | 17 | 661 |
| < 110.0 | | | | | | | | | | | | | | | | | |
| < 210.0 | | | | | | | | | | | | | | | | | |
| >= 210.0 | | | | | | | | | | | | | | | | | |
| Totals | 16 | 16 | 28 | 55 | 28 | 36 | 11 | 20 | 61 | 60 | 79 | 72 | 62 | 62 | 38 | 17 | |

Calm : .00 %


Total # Operational Hours : 661

Logger : 31 Parameter : 03_

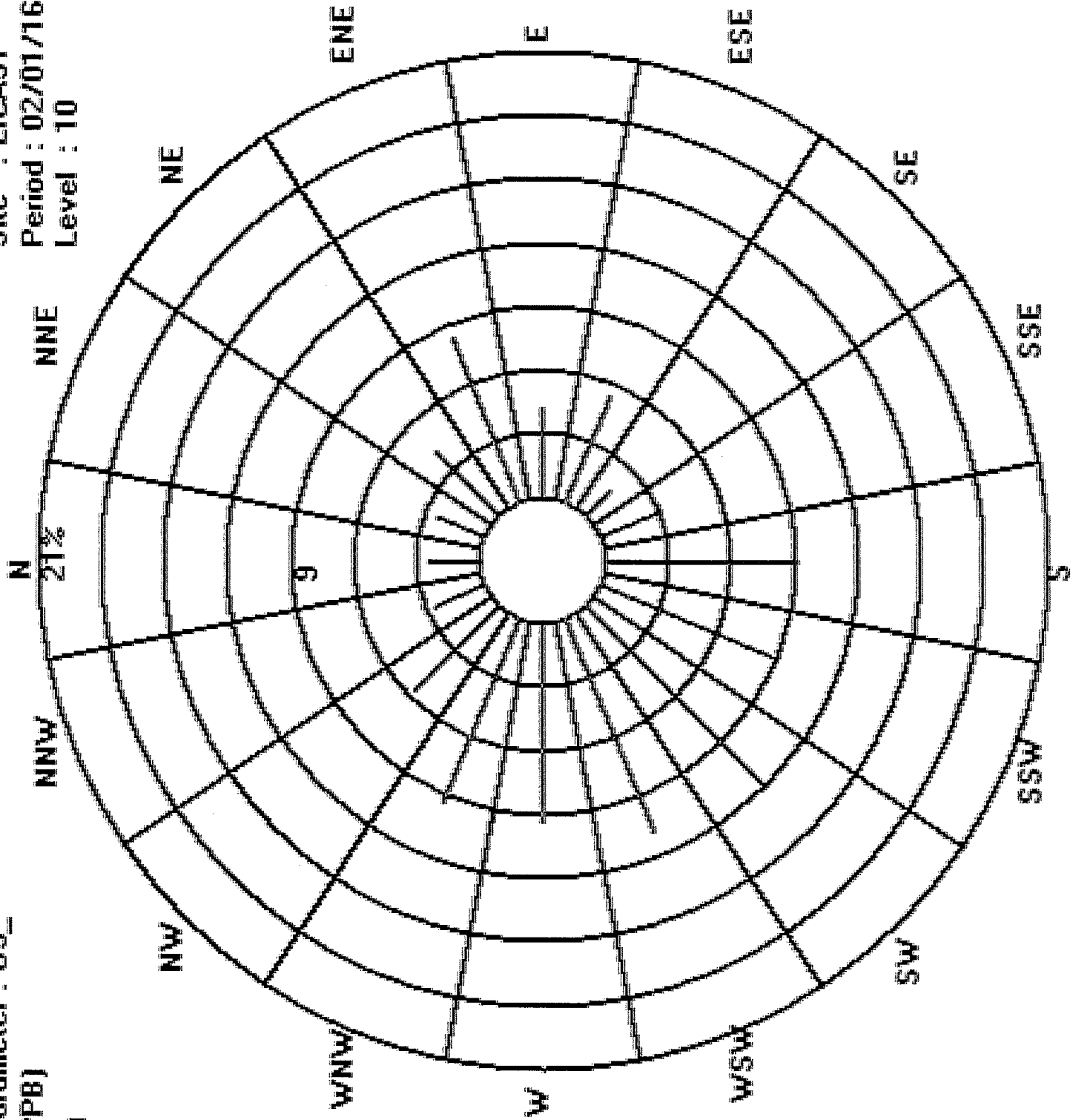
Site : LICA31

Class Limits (PPB)

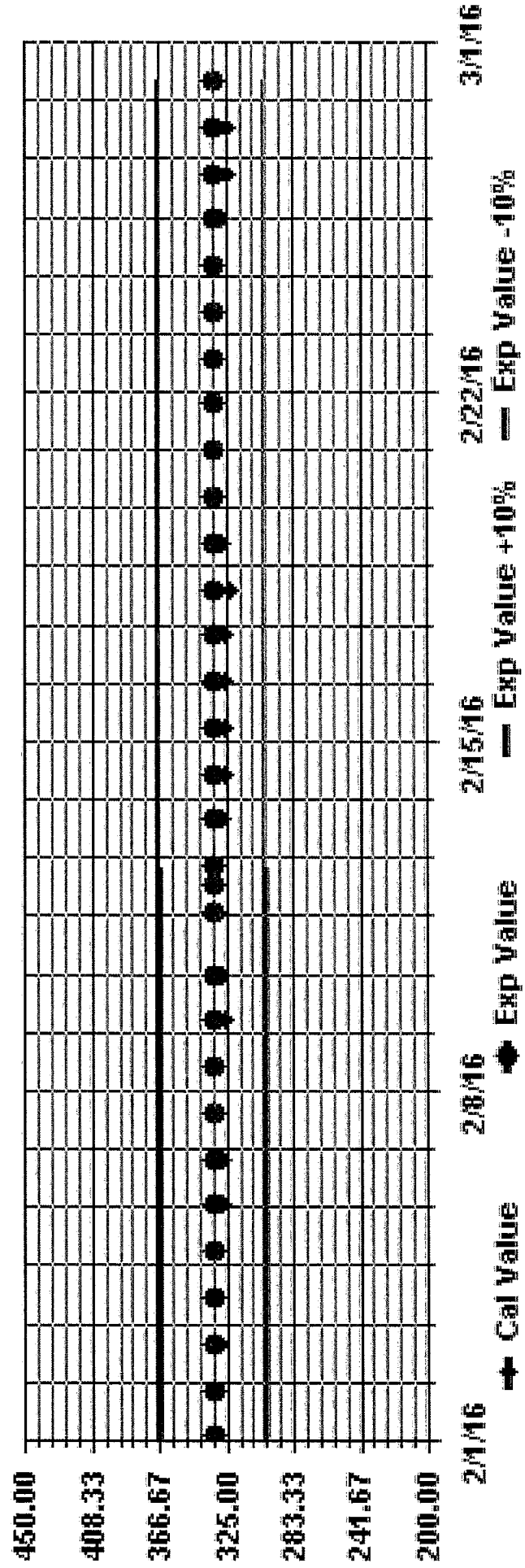
Period : 02/01/16-02-29/16

-  >= 210.0
-  < 210.0
-  < 110.0
-  < 50.0

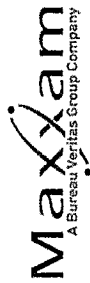
Level : 10



Calibration Graph for Site: LICA31 Parameter: O3_ Sequence: 03 Phase: SPAN



PARTICULATE MATTER 2.5



PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5) hourly averages in ug/m3

MST

| DAY | HOUR START | | | | | | | | | | | | | | | | | | | | | | | | DAILY MAX | 24-HOUR AVG. | RDGS. | |
|------------|------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|--------------|-------|----|
| | 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 | | | | |
| 1 | 2 | 5 | 1 | 0 | 6 | 0 | 1 | 2 | 1 | 1 | 4 | 5 | 0 | 4 | 1 | 0 | 0 | 6 | 3 | 0 | 7 | 13 | 0 | X | 13 | 2.8 | 23 | |
| 2 | 3 | 1 | 3 | 4 | 0 | 9 | 8 | 7 | 9 | 15 | 10 | 11 | 5 | 6 | 4 | 0 | 0 | 1 | 3 | 3 | 1 | 3 | 0 | X | 15 | 4.9 | 24 | |
| 3 | 7 | 4 | 11 | 7 | 2 | 0 | 6 | 2 | 0 | X | 3 | X | 0 | 0 | 4 | 5 | 3 | 1 | 5 | 3 | 5 | 11 | 19 | 10 | 19 | 5.0 | 22 | |
| 4 | 3 | 5 | 4 | 2 | 3 | 1 | 0 | 9 | 0 | X | 3 | 0 | 4 | 7 | 9 | 3 | 6 | 8 | 9 | 13 | 10 | 11 | 13 | 23 | 6.5 | 23 | | |
| 5 | 18 | 27 | 29 | 23 | 21 | 24 | 28 | 24 | 17 | 16 | 13 | 12 | 7 | 9 | 8 | 5 | 3 | 4 | 4 | 6 | 2 | 0 | 2 | 8 | 29 | 13.0 | 24 | |
| 6 | X | 12 | 6 | 3 | 1 | X | X | 12 | 2 | X | X | 0 | X | 14 | 1 | 2 | 0 | 0 | X | X | 5 | 0 | X | 5 | 14 | 4.0 | 15 | |
| 7 | 1 | 2 | 2 | 0 | X | 0 | 1 | 0 | 0 | 2 | 8 | 2 | 1 | 0 | 4 | 2 | 4 | 0 | X | 8 | 3 | 3 | 5 | 0 | 8 | 2.4 | 22 | |
| 8 | 1 | 5 | 7 | 6 | 7 | 2 | 3 | 1 | 2 | 7 | 2 | 0 | 7 | 0 | 4 | 3 | 4 | 2 | X | 8 | 12 | 10 | 12 | 10 | 12 | 4.4 | 22 | |
| 9 | 0 | 10 | 10 | 14 | 6 | 5 | 25 | 26 | 27 | 17 | 16 | 11 | 5 | 3 | 0 | 4 | 1 | 5 | 1 | 5 | 1 | 3 | 7 | 5 | 0 | 27 | 8.6 | 24 |
| 10 | 2 | 3 | 0 | X | 5 | 7 | 0 | 0 | 8 | 10 | 3 | 12 | X | X | 3 | 0 | X | 0 | X | X | 0 | 2 | 0 | 0 | 12 | 3.2 | 18 | |
| 11 | 0 | 2 | 2 | 0 | 4 | 0 | 0 | 4 | 5 | 0 | 10 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 3 | 7 | 10 | 1.9 | 24 | | |
| 12 | 12 | 14 | 10 | X | 1 | X | 0 | 0 | 5 | 0 | 0 | 4 | C | 0 | 0 | 4 | 3 | 3 | 4 | 4 | 0 | 4 | 5 | 2 | 14 | 3.7 | 22 | |
| 13 | X | 2 | 13 | 12 | 6 | 4 | 10 | 15 | 9 | 1 | 7 | 13 | 13 | 3 | 5 | 5 | 8 | 8 | 5 | 3 | 4 | 2 | 4 | 15 | 7.3 | 23 | | |
| 14 | 12 | 11 | 11 | 18 | 16 | 19 | 12 | 9 | 3 | 0 | 0 | 0 | 2 | 1 | 0 | X | 0 | X | 0 | 2 | 2 | 0 | 5 | 19 | 5.8 | 22 | | |
| 15 | 6 | 3 | 4 | 4 | 0 | X | 1 | 13 | 7 | 0 | 0 | 4 | 0 | 1 | 0 | 3 | 2 | X | 8 | 0 | 1 | 2 | 0 | 4 | 13 | 3.0 | 22 | |
| 16 | 4 | 5 | 8 | 2 | 3 | 7 | 4 | 6 | 10 | 11 | 8 | 4 | 7 | 9 | 4 | 7 | 4 | 2 | 2 | 9 | 5 | 13 | 16 | 12 | 16 | 6.9 | 24 | |
| 17 | 12 | 8 | 13 | 15 | 11 | 12 | 9 | 12 | 9 | 10 | 0 | 5 | 6 | 0 | 2 | 6 | 2 | 5 | 7 | 5 | 0 | 2 | 2 | 0 | 15 | 6.6 | 24 | |
| 18 | 5 | 3 | 1 | 7 | 8 | 4 | 2 | 3 | 5 | 8 | 3 | 5 | 6 | 3 | 6 | 6 | 3 | 3 | 2 | 2 | 2 | 3 | 0 | 4 | 8 | 4.2 | 24 | |
| 19 | 4 | 4 | 5 | 1 | 2 | 0 | 1 | 4 | 3 | X | 3 | 0 | 6 | 1 | 0 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 6 | 1.8 | 23 | | |
| 20 | 0 | 4 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 8 | 3 | 0 | 3 | 4 | 0 | 2 | 4 | X | 4 | 1 | 8 | 1.9 | 23 | |
| 21 | 8 | 9 | 8 | 12 | 10 | 12 | 7 | 4 | 4 | 8 | 10 | 9 | 5 | 1 | X | 0 | 1 | 5 | X | 0 | 0 | 0 | 4 | X | 12 | 5.7 | 21 | |
| 22 | 4 | 8 | X | 5 | 0 | 2 | 0 | 2 | 0 | 12 | X | X | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 6 | 0 | 0 | 2 | 0 | 12 | 2.2 | 21 | |
| 23 | 7 | 2 | X | X | 0 | 2 | 0 | 1 | 0 | 5 | 11 | 5 | 4 | 0 | 4 | 3 | 17 | C | X | 0 | 9 | X | X | 0 | 17 | 4.0 | 19 | |
| 24 | X | 1 | 1 | 1 | 0 | X | 3 | 0 | 0 | 0 | 5 | 0 | 2 | 4 | 0 | 2 | 8 | 10 | 4 | X | 0 | 5 | 7 | 10 | 2.6 | 21 | | |
| 25 | 3 | 3 | 4 | 3 | 4 | 3 | 4 | 1 | 6 | 9 | 6 | 8 | 14 | 6 | 4 | 7 | X | X | 1 | 18 | 28 | 13 | 1 | 28 | 6.9 | 22 | | |
| 26 | X | 0 | 4 | 7 | 16 | 14 | 10 | 18 | 9 | 0 | 4 | 0 | 4 | 0 | X | 3 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 18 | 4.3 | 22 | | |
| 27 | 0 | 3 | 5 | 6 | 2 | 0 | 0 | 0 | X | 0 | 7 | 3 | 3 | 5 | 3 | X | 0 | 0 | 6 | 3 | 0 | X | 1 | 0 | 7 | 2.3 | 21 | |
| 28 | 4 | 2 | X | 5 | 2 | 13 | 6 | 7 | X | 7 | 9 | 0 | X | 3 | 2 | 13 | 2 | 3 | 2 | 6 | 0 | 3 | 5 | 8 | 13 | 4.9 | 21 | |
| 29 | 3 | 4 | 0 | 1 | 1 | 4 | 5 | 5 | 2 | 1 | 2 | 0 | 4 | 6 | 1 | 1 | 0 | 5 | 3 | 0 | 3 | 0 | X | 15 | 15 | 2.9 | 23 | |
| HOURLY MAX | 18 | 27 | 29 | 23 | 21 | 24 | 28 | 26 | 27 | 17 | 16 | 14 | 13 | 13 | 9 | 14 | 17 | 8 | 10 | 13 | 18 | 28 | 19 | 23 | | | | |
| HOURLY AVG | 5.0 | 5.8 | 6.5 | 6.2 | 5.0 | 5.9 | 5.2 | 7.0 | 5.4 | 5.8 | 5.4 | 4.7 | 3.6 | 3.3 | 3.1 | 3.6 | 2.8 | 3.0 | 3.7 | 3.5 | 3.1 | 5.0 | 5.0 | 4.6 | | | | |

STATUS FLAG CODES

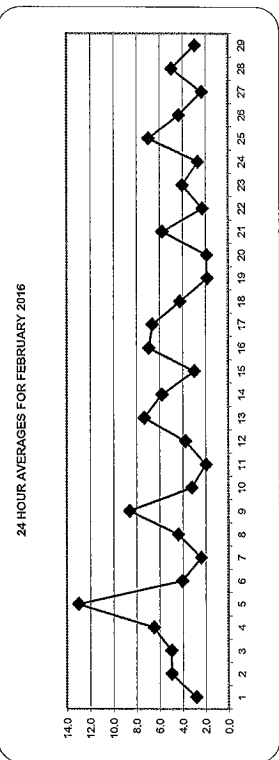
- C - MONTHLY CALIBRATION
- CI - REPEAT CALIBRATION
- Y - MAINTENANCE
- S - DAILY ZERO/SPAN CHECK
- SI - REPEAT ZERO/SPAN CHECK
- Q - QUALITY ASSURANCE
- R - RECOVERY
- X - MACHINE MALFUNCTION
- G - OUT FOR REPAIR
- P - POWER FAILURE

OBJECTIVE LIMIT:

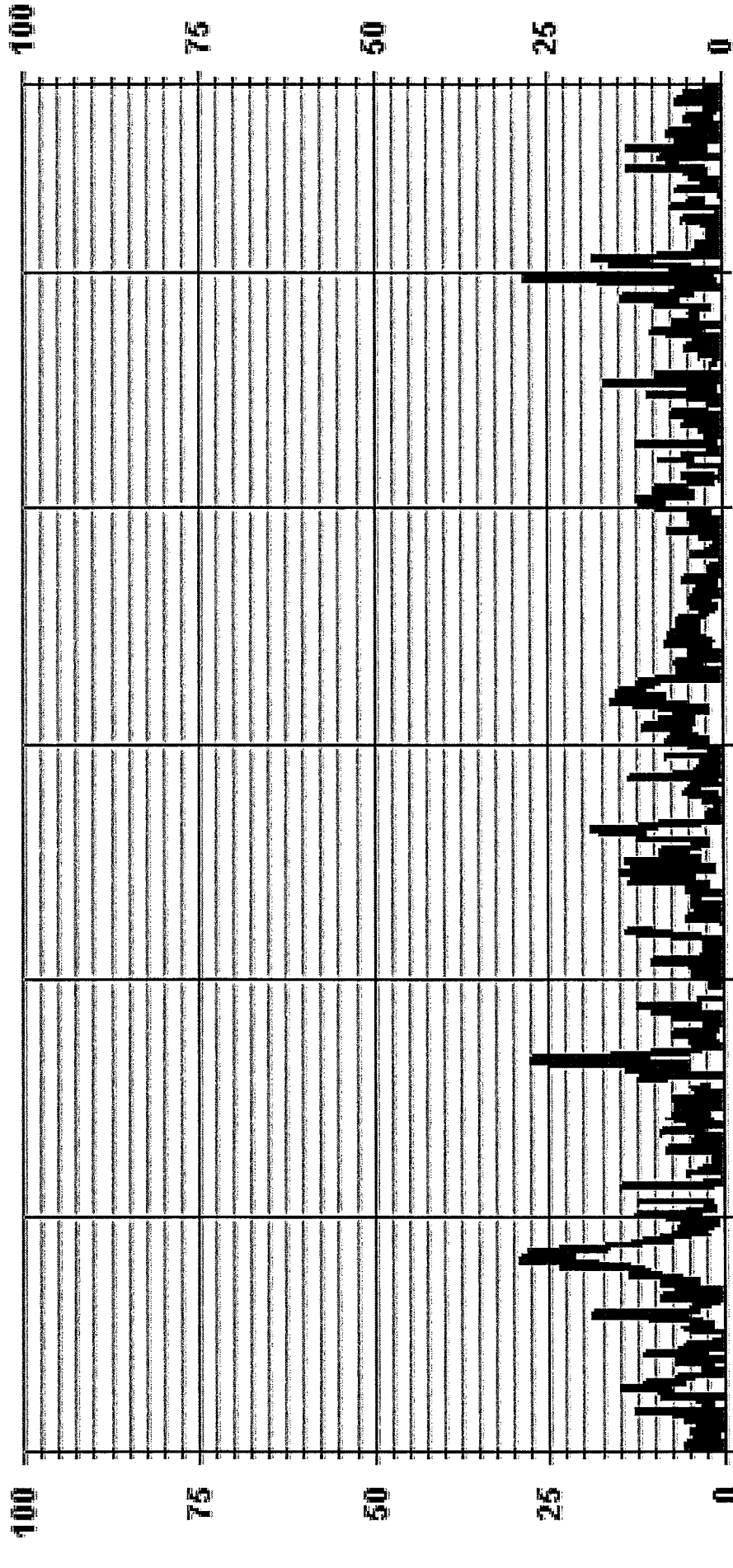
ALBERTA ENVIRONMENT: 24-HR 30 ug/m3

MONTHLY SUMMARY

| | |
|------------------------------|------------|
| NUMBER OF 24-HR EXCEEDENCES: | 0 |
| NUMBER OF NON-ZERO READINGS: | 508 |
| MINIMUM 1-HR AVERAGE: | 0 ug/m3 |
| MAXIMUM 1-HR AVERAGE: | 29 ug/m3 |
| MAXIMUM 24-HR AVERAGE: | 13.0 ug/m3 |
| MONTHLY CALIBRATION TIME: | 2 HRS |
| STANDARD DEVIATION: | 5.13 |
| OPERATIONAL TIME: | 639 HRS |
| AMD OPERATION UPTIME: | 91.8 % |
| MONTHLY AVERAGE: | 4.7 ug/m3 |
| VAR | 5 |
| ON DAY(S) | 5 |
| VAR-VARIOUS | |



01 Hour Averages



— LICA31 PM2 UG/M3

LICA31
 PM2 / WDR Joint Frequency Distribution (Percent)

February 2016

Distribution By % Of Samples

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|------|------|--------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 30.0 | 2.03 | 2.50 | 4.38 | 8.45 | 4.22 | 6.25 | 1.87 | 2.81 | 9.23 | 9.38 | 11.89 | 10.95 | 9.07 | 8.13 | 5.94 | 2.81 | 100.00 |
| < 60.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 80.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 120.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 240.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 240.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.03 | 2.50 | 4.38 | 8.45 | 4.22 | 6.25 | 1.87 | 2.81 | 9.23 | 9.38 | 11.89 | 10.95 | 9.07 | 8.13 | 5.94 | 2.81 | |

Logger Id : 31

Site Name : LICA31

Parameter : PM2

Units : UG/M3

Wind Parameter : WDR

Instrument Height : 10 Meters

Calm : .00 %

Total # Operational Hours : 639

Distribution By Samples

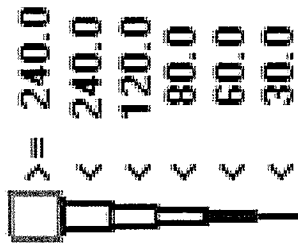
| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 30.0 | 13 | 16 | 28 | 54 | 27 | 40 | 12 | 18 | 59 | 60 | 76 | 70 | 58 | 52 | 38 | 18 | 639 |
| < 60.0 | | | | | | | | | | | | | | | | | |
| < 80.0 | | | | | | | | | | | | | | | | | |
| < 120.0 | | | | | | | | | | | | | | | | | |
| < 240.0 | | | | | | | | | | | | | | | | | |
| >= 240.0 | | | | | | | | | | | | | | | | | |
| Totals | 13 | 16 | 28 | 54 | 27 | 40 | 12 | 18 | 59 | 60 | 76 | 70 | 58 | 52 | 38 | 18 | |

Calm : .00 %

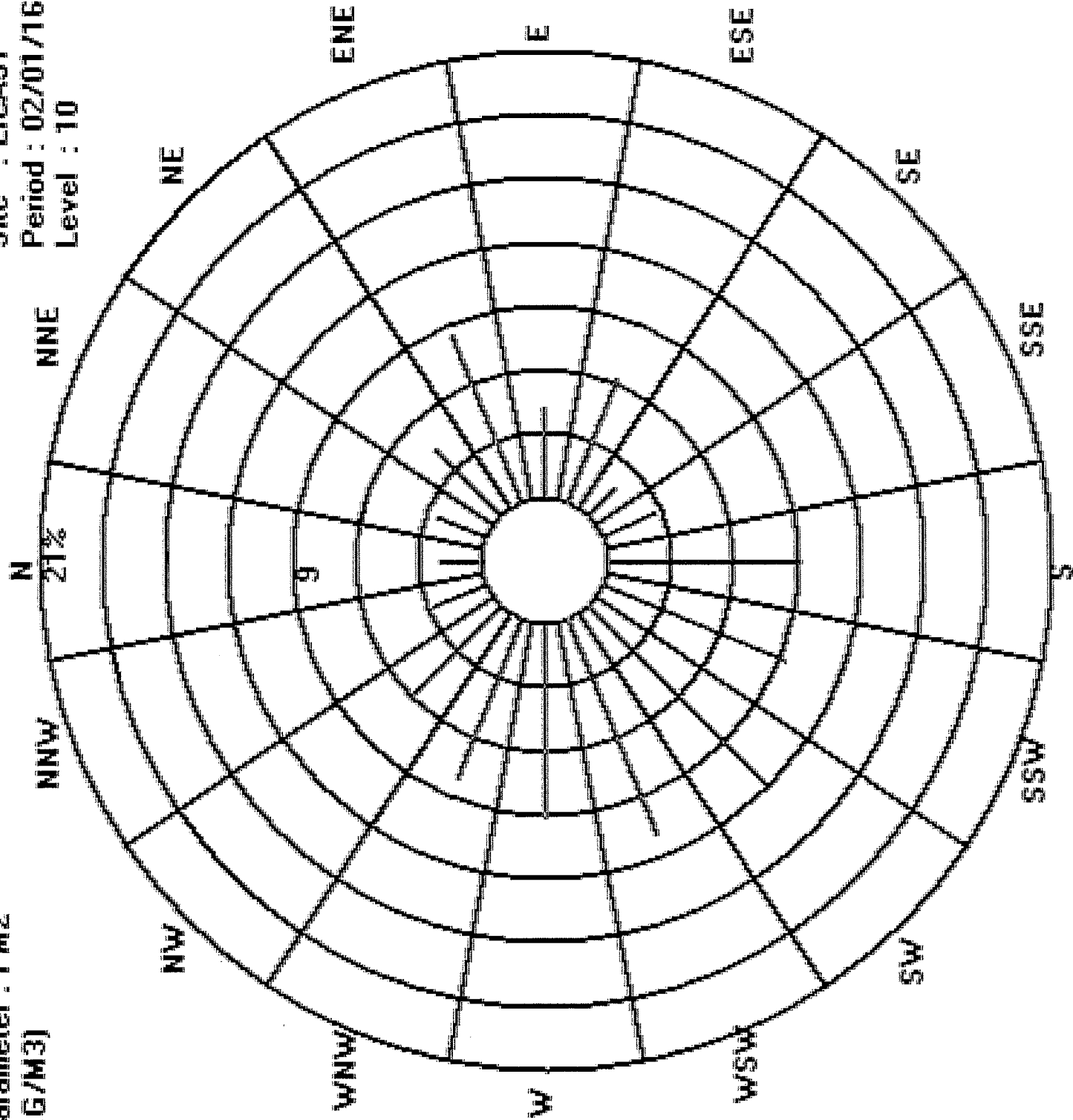
Total # Operational Hours : 639

Logger : 31 Parameter : PM2

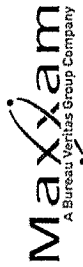
Class Limits (UG/M3)



Site : LICA31
Period : 02/01/16-02/29/16
Level : 10



WIND SPEED



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
 St. Lina Site - FEBRUARY 2016
 JOB # 2833-2016-02-31 - C

WIND SPEED (WS) hourly averages in km/hr

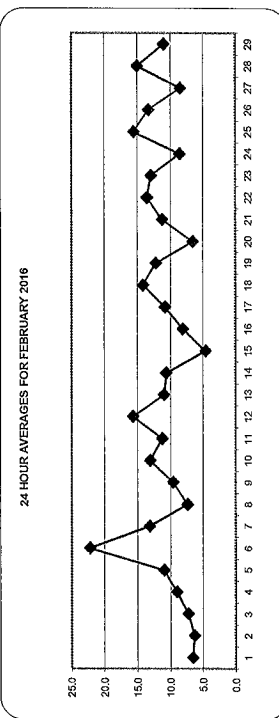
MST

| HR | 0100 | 0200 | 0300 | 0400 | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 | DAILY MAX. | DAILY AVG. | 24-HOUR AVG. | RDGS. |
|----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------------|------------|--------------|-------|
| 1 | 9.6 | 7.3 | 6.0 | 6.0 | 7.5 | 8.1 | 6.5 | 4.1 | 2.3 | 1.4 | 1.4 | 4.9 | 7.0 | 5.2 | 5.7 | 6.4 | 8.1 | 8.7 | 8.2 | 8.7 | 7.6 | 8.7 | 10.9 | 10.9 | 10.9 | 10.9 | 6.5 | 24 |
| 2 | 10.3 | 10.8 | 9.3 | 7.0 | 6.2 | 6.9 | 6.0 | 5.3 | 4.4 | 5.5 | 9.7 | 9.4 | 7.6 | 6.4 | 5.9 | 5.8 | 4.5 | 2.8 | 3.0 | 1.6 | 4.0 | 6.5 | 10.3 | 6.3 | 24 | 6.3 | 24 | |
| 3 | 8.1 | 9.8 | 8.2 | 8.7 | 8.9 | 6.2 | 5.1 | 7.3 | 6.2 | 8.6 | 8.1 | 6.5 | 9.7 | 10.5 | 9.1 | 3.6 | 4.8 | 6.4 | 6.7 | 5.7 | 7.2 | 5.4 | 4.6 | 8.0 | 10.5 | 7.2 | 24 | |
| 4 | 8.2 | 7.4 | 10.3 | 11.2 | 10.5 | 10.8 | 9.6 | 10.3 | 8.4 | 6.8 | 5.2 | 6.8 | 6.5 | 6.0 | 5.9 | 4.6 | 7.3 | 8.1 | 10.4 | 12.4 | 11.2 | 13.0 | 12.1 | 12.3 | 13.0 | 9.0 | 24 | |
| 5 | 12.7 | 10.8 | 8.9 | 7.8 | 9.9 | 10.8 | 10.3 | 10.6 | 9.6 | 9.8 | 12.3 | 11.1 | 11.4 | 12.1 | 11.1 | 11.4 | 11.2 | 13.2 | 12.4 | 11.8 | 10.3 | 14.0 | 13.2 | 10.9 | 24 | 10.9 | 24 | |
| 6 | 9.9 | 9.9 | 12.2 | 11.4 | 13.7 | 12.7 | 12.8 | 14.3 | 14.4 | 18.6 | 28.7 | 25.5 | 28.9 | 30.9 | 35.9 | 33.7 | 30.3 | 32.4 | 31.4 | 30.4 | 29.7 | 24.3 | 23.8 | 21.6 | 35.9 | 22.2 | 24 | |
| 7 | 18.4 | 16.3 | 14.5 | 14.0 | 15.1 | 16.5 | 15.3 | 15.2 | 14.1 | 13.6 | 14.0 | 15.4 | 16.2 | 15.5 | 13.0 | 10.7 | 12.3 | 10.6 | 9.9 | 6.2 | 8.1 | 7.7 | 7.3 | 18.4 | 13.1 | 24 | | |
| 8 | 6.5 | 6.5 | 6.4 | 4.9 | 5.1 | 6.6 | 8.5 | 12.4 | 11.3 | 11.1 | 9.9 | 9.6 | 10.8 | 9.3 | 9.8 | 10.7 | 6.5 | 5.2 | 3.7 | 4.3 | 5.6 | 3.7 | 4.8 | 12.4 | 7.4 | 24 | | |
| 9 | 4.8 | 6.6 | 8.4 | 8.7 | 9.7 | 8.5 | 10.7 | 10.9 | 8.9 | 8.4 | 8.5 | 8.8 | 9.2 | 12.2 | 11.0 | 8.8 | 10.9 | 9.1 | 8.6 | 9.1 | 10.6 | 13.1 | 11.9 | 11.4 | 13.1 | 9.5 | 24 | |
| 10 | 13.1 | 17.8 | 15.7 | 13.0 | 8.9 | 9.9 | 10.0 | 7.6 | 7.2 | 8.3 | 13.9 | 12.8 | 13.7 | 13.3 | 14.4 | 13.8 | 14.1 | 13.5 | 16.3 | 15.7 | 14.7 | 15.3 | 15.9 | 14.0 | 17.8 | 13.0 | 24 | |
| 11 | 14.5 | 12.3 | 14.5 | 11.9 | 12.2 | 11.0 | 10.6 | 11.1 | 9.8 | 9.0 | 9.1 | 9.0 | 8.2 | 8.5 | 11.0 | 10.3 | 11.8 | 10.5 | 13.2 | 12.0 | 11.7 | 10.3 | 13.7 | 12.2 | 14.5 | 11.2 | 24 | |
| 12 | 11.5 | 10.0 | 9.4 | 12.4 | 15.8 | 16.0 | 15.6 | 15.3 | 16.2 | 14.7 | 16.1 | 16.6 | 15.7 | 18.4 | 17.6 | 18.1 | 18.4 | 18.1 | 20.6 | 17.9 | 17.8 | 15.4 | 14.0 | 13.5 | 20.6 | 15.6 | 24 | |
| 13 | 12.3 | 9.9 | 8.6 | 7.7 | 3.6 | 5.1 | 5.1 | 7.5 | 7.2 | 7.8 | 14.1 | 18.3 | 15.7 | 11.9 | 17.8 | 14.2 | 15.3 | 12.5 | 9.5 | 13.9 | 12.8 | 10.7 | 10.8 | 9.9 | 18.3 | 10.9 | 24 | |
| 14 | 10.8 | 11.5 | 11.0 | 11.1 | 9.9 | 11.3 | 10.3 | 11.5 | 10.4 | 10.7 | 12.4 | 14.1 | 11.5 | 13.2 | 13.2 | 13.0 | 9.9 | 8.3 | 11.1 | 9.4 | 8.3 | 6.9 | 6.8 | 6.9 | 14.1 | 10.6 | 24 | |
| 15 | 8.5 | 7.0 | 8.1 | 6.2 | 3.7 | 1.9 | 2.3 | 0.9 | 2.3 | 5.5 | 5.2 | 6.4 | 5.2 | 5.8 | 4.9 | 6.9 | 2.8 | 0.7 | 3.6 | 6.0 | 4.6 | 3.5 | 3.7 | 3.6 | 8.5 | 4.6 | 24 | |
| 16 | 5.4 | 7.3 | 4.7 | 6.6 | 7.5 | 6.8 | 6.0 | 5.5 | 7.4 | 8.5 | 9.8 | 8.7 | 7.6 | 11.9 | 11.5 | 9.4 | 8.0 | 7.2 | 9.2 | 10.1 | 10.3 | 8.6 | 7.2 | 8.0 | 11.9 | 8.1 | 24 | |
| 17 | 11.8 | 10.6 | 9.1 | 10.5 | 11.0 | 10.5 | 10.7 | 10.3 | 8.4 | 5.2 | 2.6 | 1.0 | 5.7 | 7.0 | 9.6 | 12.1 | 12.7 | 13.0 | 14.7 | 13.4 | 15.6 | 16.9 | 18.6 | 16.6 | 18.6 | 10.7 | 24 | |
| 18 | 16.1 | 17.4 | 19.5 | 20.1 | 18.9 | 20.4 | 19.1 | 15.1 | 13.4 | 17.0 | 18.6 | 18.5 | 17.3 | 16.1 | 16.5 | 14.7 | 13.5 | 11.9 | 10.9 | 6.4 | 4.6 | 2.7 | 3.5 | 6.7 | 20.4 | 14.1 | 24 | |
| 19 | 8.2 | 8.8 | 21.3 | 22.3 | 21.2 | 22.2 | 23.0 | 19.9 | 15.7 | 13.0 | 9.1 | 10.3 | 9.5 | 10.0 | 7.4 | 7.4 | 7.2 | 5.6 | 6.6 | 7.0 | 8.5 | 10.8 | 9.4 | 7.8 | 23.0 | 12.2 | 24 | |
| 20 | 6.1 | 6.2 | 7.3 | 5.9 | 7.5 | 7.6 | 6.9 | 6.8 | 7.6 | 5.2 | 6.4 | 2.2 | 2.4 | 1.1 | 3.5 | 6.2 | 5.7 | 5.8 | 6.8 | 7.7 | 8.6 | 9.4 | 11.3 | 12.4 | 12.4 | 6.5 | 24 | |
| 21 | 11.3 | 10.3 | 8.5 | 8.3 | 7.1 | 6.8 | 6.9 | 7.5 | 8.2 | 9.4 | 10.7 | 14.0 | 13.1 | 12.8 | 11.1 | 14.7 | 16.7 | 12.7 | 11.3 | 7.6 | 14.4 | 17.7 | 15.7 | 11.3 | 17.7 | 11.2 | 24 | |
| 22 | 10.5 | 10.2 | 11.5 | 12.6 | 12.4 | 12.4 | 11.8 | 12.3 | 13.3 | 10.6 | 11.1 | 12.5 | 14.5 | 14.6 | 12.3 | 11.8 | 13.4 | 16.5 | 17.9 | 17.4 | 16.7 | 16.3 | 14.8 | 15.8 | 17.9 | 13.5 | 24 | |
| 23 | 14.7 | 13.4 | 11.6 | 10.4 | 10.4 | 9.9 | 10.6 | 13.1 | 14.0 | 16.4 | 16.3 | 17.0 | 18.6 | 19.9 | 18.2 | 15.1 | 11.3 | 9.5 | 11.1 | 13.9 | 12.1 | 7.7 | 6.3 | 8.5 | 19.9 | 12.9 | 24 | |
| 24 | 10.1 | 9.8 | 9.6 | 8.0 | 9.5 | 9.4 | 10.9 | 10.4 | 6.5 | 2.6 | 6.1 | 5.9 | 7.8 | 6.8 | 8.1 | 6.1 | 7.9 | 10.0 | 9.4 | 9.5 | 12.4 | 14.7 | 14.7 | 14.7 | 8.5 | 24 | | |
| 25 | 13.3 | 11.8 | 13.7 | 15.0 | 18.8 | 15.4 | 14.6 | 14.0 | 17.9 | 17.3 | 15.9 | 17.8 | 18.8 | 16.9 | 21.7 | 18.5 | 13.3 | 12.6 | 14.0 | 13.2 | 13.6 | 15.4 | 14.1 | 21.7 | 15.5 | 24 | | |
| 26 | 13.9 | 11.3 | 10.7 | 13.5 | 13.6 | 13.3 | 13.3 | 12.7 | 13.5 | 14.5 | 16.8 | 16.0 | 19.8 | 20.7 | 15.0 | 14.4 | 12.8 | 12.7 | 12.0 | 9.5 | 9.3 | 9.9 | 10.1 | 9.7 | 20.7 | 13.3 | 24 | |
| 27 | 10.0 | 9.4 | 7.2 | 7.2 | 7.8 | 4.5 | 6.6 | 7.4 | 7.9 | 3.8 | 5.2 | 11.1 | 11.2 | 7.4 | 19.1 | 15.7 | 10.3 | 8.9 | 5.9 | 4.0 | 2.5 | 5.8 | 19.1 | 8.4 | 24 | | | |
| 28 | 10.1 | 10.1 | 11.7 | 11.4 | 12.1 | 9.7 | 12.1 | 15.7 | 16.1 | 19.5 | 17.8 | 19.0 | 16.0 | 16.7 | 14.7 | 14.4 | 16.4 | 16.0 | 16.2 | 18.1 | 18.2 | 16.2 | 16.6 | 14.9 | 19.5 | 15.0 | 24 | |
| 29 | 14.0 | 14.1 | 14.7 | 15.8 | 13.5 | 11.7 | 10.0 | 7.7 | 8.3 | 11.5 | 10.3 | 10.5 | 10.3 | 10.4 | 10.5 | 11.0 | 11.7 | 14.0 | 8.7 | 8.5 | 9.2 | 9.2 | 8.4 | 8.5 | 15.8 | 10.9 | 24 | |
| 30 | 18.4 | 17.8 | 21.3 | 22.3 | 21.2 | 22.2 | 23.0 | 19.9 | 16.2 | 19.5 | 23.7 | 25.5 | 28.9 | 30.9 | 35.9 | 33.7 | 30.3 | 32.4 | 31.4 | 30.4 | 29.7 | 24.3 | 23.8 | 21.6 | 35.9 | 22.2 | 24 | |
| 31 | 10.9 | 10.5 | 10.8 | 10.7 | 10.8 | 10.4 | 10.3 | 10.5 | 10.0 | 10.4 | 10.7 | 11.2 | 11.9 | 12.5 | 12.2 | 12.2 | 11.8 | 11.2 | 11.3 | 11.2 | 11.1 | 10.5 | 10.5 | 10.5 | 10.6 | 10.6 | 10.6 | 24 |

STATUS FLAG CODES

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

LAST CALIBRATION: August 28, 2014
 DECLINATION: MAGNETIC DECLINATION 19 DEGREE EAST

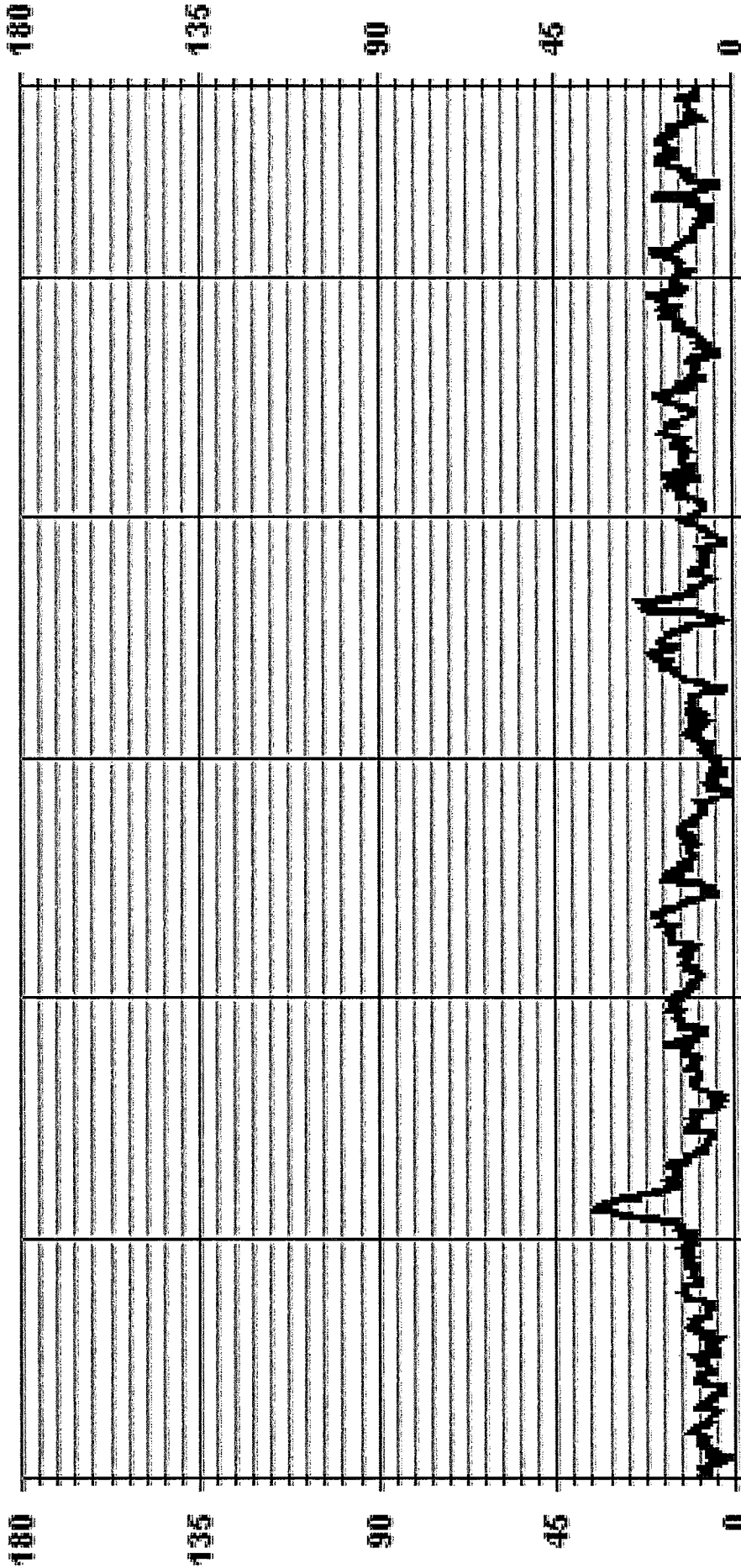


MONTHLY SUMMARY

| | |
|------------------------------|----------|
| NUMBER OF NON-ZERO READINGS: | 696 |
| MINIMUM 1-HR AVERAGE: | 0.7 KPH |
| MAXIMUM 1-HR AVERAGE: | 35.9 KPH |
| MAXIMUM 24-HR AVERAGE: | 22.2 KPH |
| MONTHLY CALIBRATION TIME: | 0 HRS |
| STANDARD DEVIATION: | 4.93 |
| OPERATIONAL TIME: | 696 HRS |
| AMTD OPERATION UPTIME: | 100.0 % |
| MONTHLY AVERAGE: | 11.0 KPH |

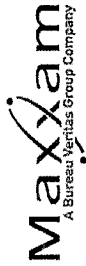
| | | | |
|-----------|----|-----------|-------------|
| ON DAY(S) | 15 | ON DAY(S) | 17 |
| ON DAY(S) | 6 | ON DAY(S) | 14 |
| ON DAY(S) | 6 | ON DAY(S) | VAR-VARIOUS |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA31 WSP KPH



VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

| DAY | 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 | 24:00 | DAILY MAX. | 24-HOUR AVG. | RDGS. |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------|--------------|-------|
| 1 | 28.6 | 21.8 | 17.8 | 17.2 | 21.0 | 20.2 | 19.8 | 16.3 | 26.1 | 41.4 | 15.6 | 13.2 | 16.6 | 17.2 | 16.6 | 16.7 | 16.3 | 18.5 | 18.7 | 20.9 | 21.1 | 20.2 | 20.9 | 20.9 | 24.0 | 41.4 | 20.3 | 24 |
| 2 | 24.4 | 15.8 | 13.7 | 10.6 | 8.8 | 9.7 | 13.2 | 7.8 | 12.2 | 14.1 | 12.6 | 14.1 | 12.6 | 26.4 | 20.9 | 19.8 | 14.8 | 12.8 | 12.6 | 12.8 | 10.4 | 12.5 | 45.6 | 12.3 | 13.9 | 45.6 | 15.6 | 24 |
| 3 | 19.2 | 28.8 | 22.9 | 22.8 | 21.5 | 20.6 | 18.9 | 17.1 | 14.3 | 17.8 | 15.9 | 16.8 | 16.8 | 18.5 | 16.9 | 11.7 | 9.5 | 15.8 | 14.3 | 10.2 | 14.1 | 14.3 | X | 20.9 | 28.8 | 17.4 | 23 | |
| 4 | 13.4 | 13.5 | 19.2 | 22.4 | 25.5 | 28.3 | 23.5 | 20.4 | 18.7 | 15.2 | 14.7 | 16.7 | 12.4 | 15.4 | 18.1 | 12.9 | 22.4 | 20.8 | 19.6 | 20.7 | 19.3 | 16.7 | 17.8 | 17.1 | 28.3 | 18.5 | 24 | |
| 5 | 15.8 | 14.5 | 11.9 | 13.0 | 19.2 | 23.3 | 22.4 | 16.0 | 20.5 | 21.8 | 23.6 | 30.6 | 27.6 | 26.0 | 26.6 | 30.2 | 26.0 | 29.9 | 24.4 | 25.1 | 25.8 | 25.6 | 24.2 | 22.7 | 30.6 | 22.8 | 24 | |
| 6 | 23.4 | 22.3 | 27.3 | 24.2 | 20.7 | 24.7 | 23.5 | 34.3 | 37.6 | 37.1 | 51.6 | 76.5 | 72.4 | 81.1 | 98.0 | 98.4 | 76.9 | 75.8 | 72.6 | 74.7 | 68.3 | 59.8 | 60.3 | 50.0 | 98.4 | 53.8 | 24 | |
| 7 | 44.3 | 38.6 | 41.2 | 43.5 | 94.5 | 41.7 | 95.1 | 33.4 | 32.8 | 35.4 | 36.9 | 34.2 | 36.3 | 37.1 | 94.5 | 38.0 | 29.7 | 20.3 | 20.6 | 18.1 | 9.3 | 11.5 | 10.6 | 11.5 | 44.3 | 30.4 | 24 | |
| 8 | 14.8 | 12.9 | 10.0 | 11.9 | 14.2 | 14.8 | 18.1 | 26.4 | 26.8 | 16.8 | 15.3 | 19.9 | 23.9 | 24.1 | 27.4 | 27.4 | 20.1 | 11.8 | 12.5 | 7.0 | 8.7 | 7.2 | 11.5 | 11.5 | 27.4 | 16.5 | 24 | |
| 9 | 12.0 | 13.9 | 15.5 | 17.0 | 16.1 | 13.9 | 14.6 | 14.3 | 11.1 | 15.7 | 11.8 | 14.6 | 16.4 | 22.5 | 20.3 | 15.7 | 18.7 | 16.0 | 15.9 | 19.3 | 23.4 | 28.4 | 29.7 | 24.0 | 29.7 | 17.5 | 24 | |
| 10 | 52.7 | 45.7 | 38.4 | 36.5 | 29.1 | 30.3 | 25.5 | 19.8 | 16.3 | 20.5 | 31.8 | 25.0 | 35.4 | 39.1 | 34.2 | 31.5 | 30.6 | 28.4 | 35.3 | 36.9 | 30.6 | 31.8 | 37.5 | 30.7 | 52.7 | 32.2 | 24 | |
| 11 | 31.2 | 29.0 | 32.3 | 30.8 | 28.5 | 27.0 | 25.4 | 22.8 | 22.8 | 22.4 | 18.8 | 18.1 | 17.6 | 20.2 | 23.1 | 24.8 | 25.0 | 20.8 | 27.0 | 27.3 | 28.3 | 27.0 | 32.3 | 28.3 | 32.3 | 25.5 | 24 | |
| 12 | 28.8 | 23.1 | 23.7 | 31.6 | 34.7 | 32.9 | 32.6 | 39.9 | 33.4 | R | 33.7 | 32.8 | 32.4 | 36.8 | 44.7 | 40.1 | 35.9 | 40.7 | 49.6 | 36.6 | 35.7 | 31.8 | 32.6 | 23.9 | 49.6 | 34.3 | 23 | |
| 13 | 27.6 | 21.5 | 17.9 | 18.9 | 9.5 | 11.7 | 13.0 | 16.7 | 16.9 | 18.0 | 27.6 | 27.4 | 27.7 | 23.7 | 42.3 | 33.9 | 25.7 | 21.1 | 14.7 | 22.4 | 20.7 | 29.7 | 19.8 | 19.4 | 42.3 | 22.0 | 24 | |
| 14 | 18.8 | 18.0 | 15.4 | 17.6 | 14.3 | 17.2 | 17.0 | 18.3 | 21.6 | 20.0 | 33.4 | 36.0 | 33.7 | 42.9 | 30.2 | 27.4 | 26.4 | 22.6 | 17.2 | 17.0 | 14.8 | 11.5 | 11.7 | 11.5 | 42.9 | 21.4 | 24 | |
| 15 | 13.0 | 12.1 | 13.0 | 10.8 | 11.7 | 10.9 | 9.6 | 10.4 | 8.1 | 17.9 | 13.7 | 17.7 | 15.5 | 13.3 | 11.3 | 15.6 | 12.1 | 10.4 | 11.9 | 15.7 | 12.1 | 12.8 | 12.6 | 10.2 | 17.9 | 12.6 | 24 | |
| 16 | 16.8 | 15.2 | 11.5 | 13.5 | 18.0 | 15.4 | 12.8 | 11.3 | 18.3 | 20.0 | 21.2 | 17.6 | 22.2 | 30.8 | 27.5 | 20.5 | 16.3 | 12.4 | 15.2 | 14.4 | 21.9 | 15.1 | 14.3 | 15.9 | 30.8 | 17.4 | 24 | |
| 17 | 15.2 | 15.2 | 14.8 | 16.3 | 14.3 | 13.6 | 13.2 | 13.6 | 12.1 | 12.6 | 11.7 | 5.0 | 14.0 | 13.1 | 19.9 | 28.8 | 38.9 | 25.7 | 29.9 | 31.0 | 37.8 | 45.8 | 45.9 | 35.4 | 45.9 | 21.8 | 24 | |
| 18 | 35.6 | 33.0 | 46.3 | 45.4 | 46.1 | 45.2 | 47.6 | 36.4 | 31.4 | 38.4 | 41.0 | 36.0 | 38.7 | 32.9 | 32.8 | 32.6 | 32.3 | 24.8 | 22.7 | 14.8 | 13.9 | 12.4 | 10.4 | 17.4 | 47.6 | 32.0 | 24 | |
| 19 | 18.3 | 20.9 | 53.9 | 48.9 | 44.5 | 50.6 | 48.4 | 47.3 | 36.7 | 35.5 | 26.1 | 22.6 | 23.3 | 20.5 | 16.5 | 15.9 | 20.1 | 43.7 | 21.8 | 21.0 | 23.4 | 26.2 | 23.8 | 18.8 | 53.9 | 30.4 | 24 | |
| 20 | 18.4 | 19.6 | 18.0 | 19.0 | 24.2 | 17.1 | 14.8 | 14.6 | 16.1 | 17.9 | 17.3 | 16.7 | 16.8 | 14.9 | 12.9 | 15.3 | 14.4 | 16.0 | 18.4 | 23.6 | 20.1 | 23.4 | 24.3 | 21.2 | 24.3 | 18.1 | 24 | |
| 21 | 20.4 | 17.1 | 15.4 | 16.2 | 15.6 | 14.7 | 14.5 | 13.5 | 12.2 | 12.3 | 16.0 | 23.5 | 21.5 | 20.4 | 20.8 | 25.4 | 32.2 | 23.4 | 17.4 | 17.5 | 25.2 | 37.0 | 33.7 | 26.0 | 37.6 | 20.5 | 24 | |
| 22 | 17.8 | 20.1 | 26.0 | 25.4 | 25.1 | 21.8 | 22.0 | 24.2 | 26.0 | 20.8 | 25.0 | 28.7 | 36.5 | 42.3 | 26.0 | 35.1 | 35.5 | 25.8 | 26.6 | 40.4 | 35.0 | 37.0 | 33.0 | 34.3 | 42.3 | 28.7 | 24 | |
| 23 | 31.7 | 28.2 | 27.4 | 25.1 | 23.2 | 21.2 | 19.2 | 19.8 | 21.6 | 25.6 | 30.0 | 47.4 | 48.9 | 54.1 | 43.5 | 38.3 | 24.3 | 21.2 | 27.4 | 15.3 | 17.0 | 23.2 | 26.7 | 28.0 | 28.0 | 17.3 | 24 | |
| 24 | 19.5 | 18.3 | 19.4 | 16.8 | 18.3 | 16.1 | 18.1 | 18.3 | 15.7 | 14.4 | 13.3 | 9.2 | 12.5 | 16.3 | 14.8 | 15.2 | 13.2 | 12.7 | 20.7 | 21.7 | 22.9 | 22.5 | 22.8 | 25.6 | 38.1 | 27.1 | 24 | |
| 25 | 27.6 | 25.1 | 29.8 | 31.7 | 38.1 | 34.0 | 26.9 | 23.4 | 24.7 | 28.7 | 25.8 | 25.4 | 28.9 | 27.0 | 28.7 | 35.5 | 30.9 | 22.8 | 19.2 | 14.5 | 13.6 | 14.1 | 14.9 | 16.4 | 32.5 | 20.6 | 24 | |
| 26 | 25.8 | 20.7 | 19.5 | 20.2 | 18.8 | 17.0 | 17.9 | 16.2 | 19.6 | 23.9 | 25.9 | 27.1 | 31.4 | 32.5 | 25.0 | 21.9 | 20.9 | 18.2 | 19.2 | 19.2 | 14.5 | 13.6 | 11.2 | 11.6 | 13.6 | 41.1 | 20.5 | 24 |
| 27 | 18.6 | 18.5 | 14.3 | 18.7 | 15.8 | 12.5 | 13.6 | 11.8 | 12.2 | 17.1 | 13.4 | 14.9 | 37.2 | 33.0 | 19.7 | 36.4 | 41.1 | 35.1 | 29.7 | 20.7 | 19.0 | 11.2 | 11.6 | 13.6 | 41.1 | 20.5 | 24 | |
| 28 | 14.9 | 16.4 | 19.0 | 17.5 | 18.3 | 18.4 | 30.1 | 36.7 | 47.6 | 53.5 | 44.4 | 39.8 | 43.7 | 35.0 | 36.3 | 31.0 | 36.2 | 35.0 | 43.4 | 53.5 | 45.0 | 40.0 | 42.2 | 31.9 | 53.5 | 34.6 | 24 | |
| 29 | 33.2 | 31.3 | 40.0 | 34.5 | 28.3 | 26.0 | 24.0 | 21.5 | 22.4 | 24.6 | 25.9 | 25.5 | 27.1 | 27.1 | 27.3 | 26.4 | 26.8 | 25.7 | 22.4 | 19.9 | 18.7 | 22.9 | 21.2 | 17.9 | 40.0 | 25.9 | 24 | |
| HOURLY MAX | 52.7 | 45.7 | 53.9 | 48.9 | 46.1 | 50.6 | 48.4 | 47.3 | 47.6 | 53.5 | 51.6 | 76.5 | 72.4 | 81.1 | 98.0 | 98.4 | 76.9 | 75.8 | 72.6 | 74.7 | 68.3 | 59.8 | 60.3 | 50.0 | 98.4 | 53.8 | 24 | |
| HOURLY AVG | 23.5 | 21.8 | 23.3 | 23.4 | 22.7 | 22.4 | 21.9 | 21.5 | 21.9 | 23.6 | 23.9 | 25.4 | 28.1 | 29.0 | 28.1 | 28.2 | 26.6 | 24.4 | 24.0 | 24.2 | 24.1 | 24.9 | 24.2 | 22.0 | 22.0 | 22.0 | 22.0 | 24 |

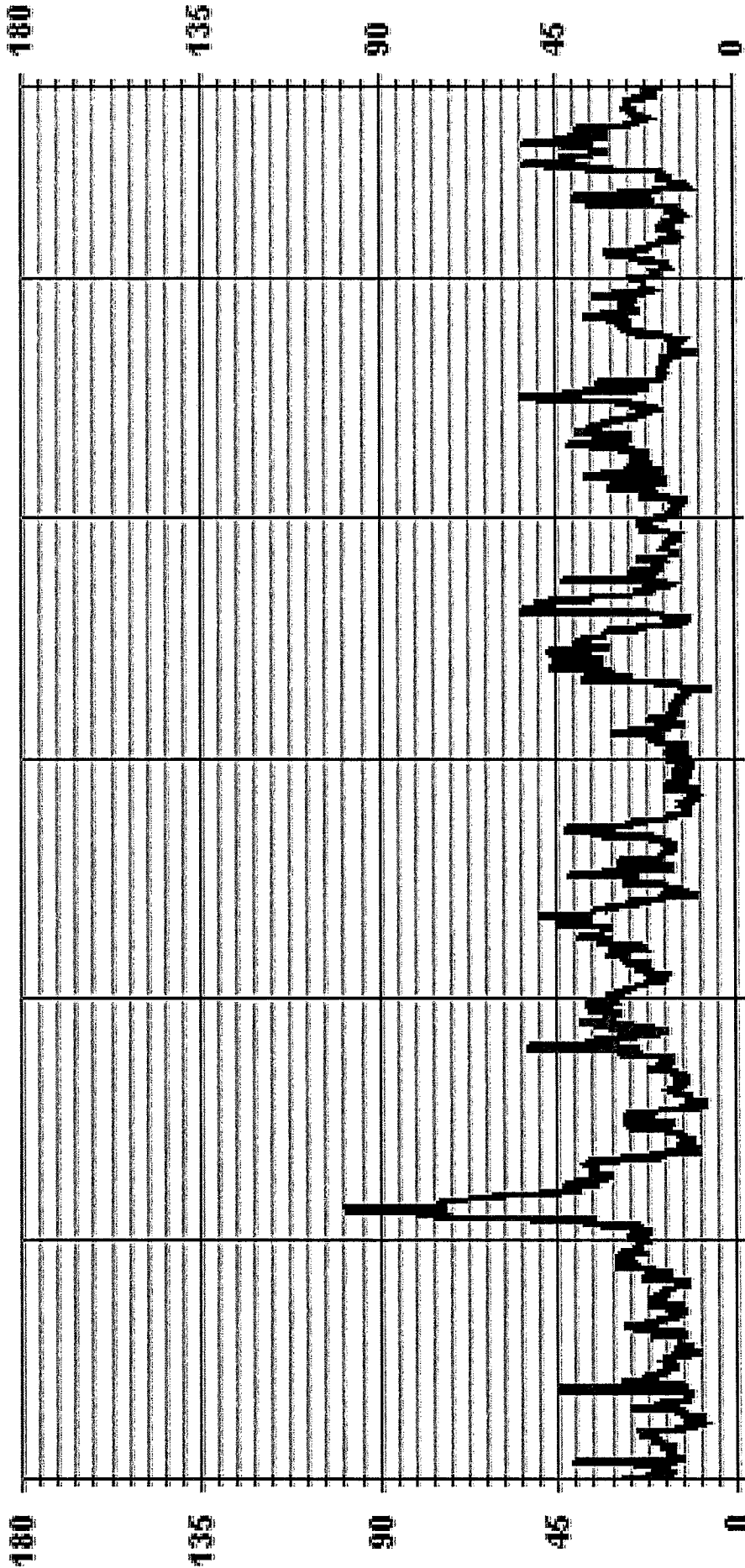
STATUS FLAG CODES

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

MONTHLY SUMMARY

| | | | | | | | |
|------------------------------|------|-----|-----------|----|-----------|-------------|-----|
| MAXIMUM INSTANTANEOUS VALUE: | 98.4 | KPH | @ HOUR(S) | 15 | ON DAY(S) | 6 | |
| OPERATIONAL TIME: | | | | | | 694 | HRS |
| | | | | | | VAR-VARIOUS | |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA31 WSMAX KPH

LICA31
 WSP / WDR Joint Frequency Distribution (Percent)
 February 2016

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : WSP
 Units : KPH

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | NNW | NW | NNW | Freq |
|---------|-----------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|------|------|------|-------|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | W | WNW | | | | |
| < 6.0 | .57 | 1.00 | 1.00 | .43 | .71 | .86 | .71 | 1.00 | 1.29 | 1.00 | .71 | 1.00 | .71 | 1.00 | .71 | .57 | .43 | 12.21 | | |
| < 12.0 | 1.29 | 2.44 | 2.44 | 2.15 | 1.58 | 1.72 | 2.15 | 6.75 | 5.89 | 5.60 | 5.89 | 4.59 | 4.59 | 3.73 | 3.59 | 3.59 | 1.29 | 50.71 | | |
| < 20.0 | .43 | .57 | .57 | 5.60 | 1.86 | 3.59 | .14 | 1.14 | 1.86 | 5.17 | 4.02 | 3.16 | 3.30 | 3.30 | 1.00 | 1.00 | 1.00 | 33.47 | | |
| < 29.0 | .00 | .00 | .00 | .14 | .14 | .00 | .00 | .00 | .00 | .14 | .28 | .14 | .57 | .71 | .71 | .00 | .00 | 2.29 | | |
| < 39.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .43 | .71 | .00 | .00 | .00 | .00 | 1.14 | | |
| >= 39.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | | |
| Totals | 2.29 | 2.44 | 4.02 | 8.33 | 4.31 | 6.03 | 1.72 | 2.87 | 8.90 | 9.05 | 11.92 | 10.91 | 9.33 | 9.05 | 5.89 | 2.72 | | | | |

Calm : .14 %

Total # Operational Hours : 696

Distribution By Samples

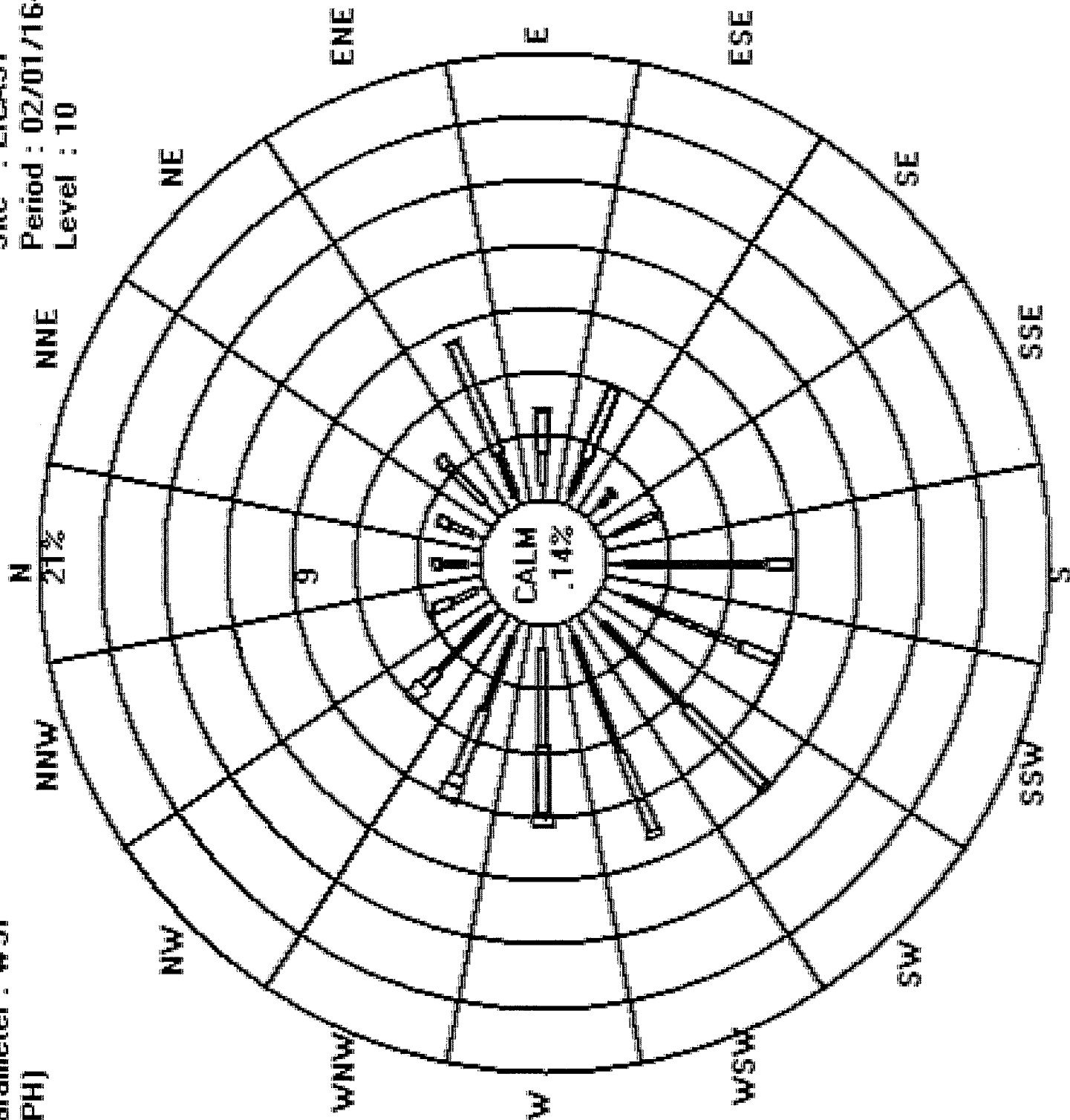
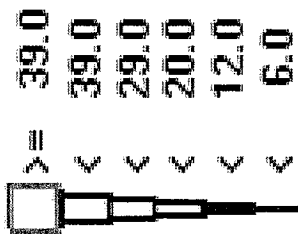
| Limit | Direction | | | | | | | | | | | | | | | | NNW | NW | NNW | Freq |
|---------|-----------|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|----|-----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | W | WNW | | | | |
| < 6.0 | 4 | 4 | 7 | 3 | 5 | 4 | 6 | 5 | 7 | 9 | 7 | 5 | 7 | 5 | 4 | 3 | 85 | | | |
| < 12.0 | 9 | 9 | 17 | 15 | 11 | 12 | 5 | 15 | 47 | 41 | 39 | 41 | 32 | 26 | 25 | 9 | 353 | | | |
| < 20.0 | 3 | 4 | 4 | 39 | 13 | 25 | 1 | 8 | 13 | 36 | 28 | 22 | 23 | 23 | 7 | 7 | 233 | | | |
| < 29.0 | | | | 1 | 1 | 1 | | | | 1 | 2 | 1 | 4 | 5 | | | 16 | | | |
| < 39.0 | | | | | | | | | | | | 3 | 5 | | | | 8 | | | |
| >= 39.0 | | | | | | | | | | | | | | | | | | | | |
| Totals | 16 | 17 | 28 | 58 | 30 | 42 | 12 | 20 | 62 | 63 | 83 | 76 | 65 | 63 | 41 | 19 | | | | |

Calm : .14 %

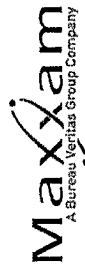
Total # Operational Hours : 696

Site : LICA31
 Period : 02/01/16-02/29/16
 Level : 10

Logger : 31 Parameter : WSP
 Class Limits (KPH)



WIND DIRECTION



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
 St. Linda Site - FEBRUARY 2016
 JOB # 2833-2016-02-31-C

WIND DIRECTION (WD) hourly averages

| DAY | 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 |
|-----|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | N | SSW | SSW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW |
| 2 | N | SSW | SSW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW |
| 3 | W | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW |
| 4 | NNE | NE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE |
| 5 | SW | SW | SSW | SSW | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 6 | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 7 | WNW | WNW | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W |
| 8 | S | SSW | SSW | SSW | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 9 | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 10 | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW |
| 11 | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE |
| 12 | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E |
| 13 | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE |
| 14 | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW | WSW |
| 15 | SW | WSW | WSW | SW | S | SSE | E | SSE | E | SSE | E | SSE | E | SSE | E | SSE | E | SSE | E | SSE | E | SSE | E | SSE |
| 16 | SE | S | SE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE | ESE |
| 17 | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW |
| 18 | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE | ENE |
| 19 | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW |
| 20 | NNE | N | NNE | N | NNE | N | NNE | N | NNE | N | NNE | N | NNE | N | NNE | N | NNE | N | NNE | N | NNE | N | NNE | N |
| 21 | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW | SSW |
| 22 | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W |
| 23 | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W | W |
| 24 | WNW | NW | WNW | WNW | NW | WNW | WNW | WNW | NW | WNW | WNW | WNW | NW | WNW | WNW | WNW | NW | WNW | WNW | WNW | NW | WNW | WNW | NW |
| 25 | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S | S |
| 26 | WSW | SW | WSW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW | SW |
| 27 | WNW | W | WNW | N | NE | ENE | SSE | SSW | SW | WSW | NW | NNE | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW | NW |
| 28 | SW | SSW | SW | SW | W | NW | NW | NW | N | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE | NNE |
| 29 | ENE | ENE | ENE | ENE | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E | E |

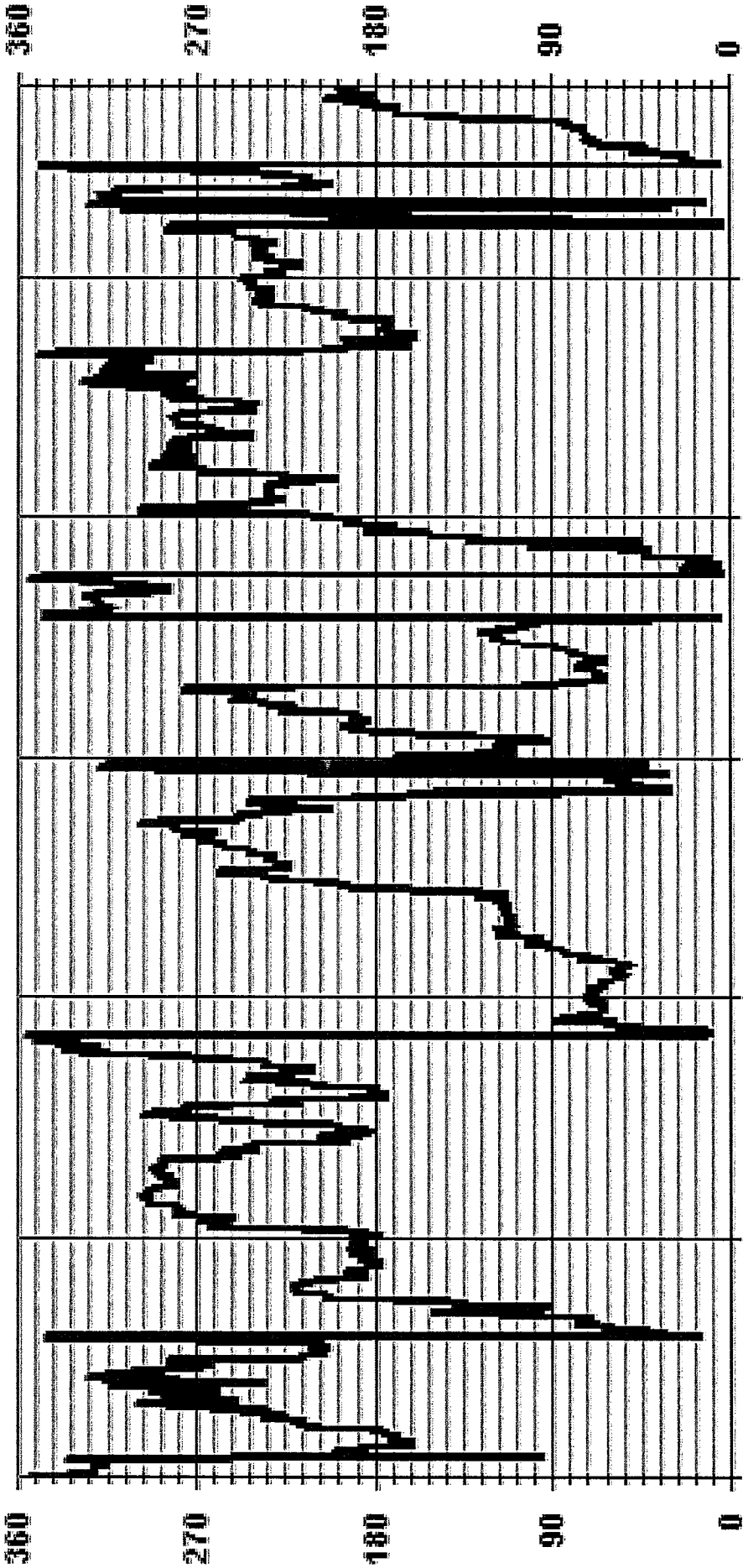
24-HOUR AVG: 23:00 22:00 21:00 20:00 19:00 18:00 17:00 16:00 15:00 14:00 13:00 12:00 11:00 10:00 9:00 8:00 7:00 6:00 5:00 4:00 3:00 2:00 1:00 0:00
 HOUR START: 0:59 1:59 2:59 3:59 4:59 5:59 6:59 7:59 8:59 9:59 10:59 11:59 12:59 13:59 14:59 15:59 16:59 17:59 18:59 19:59 20:59 21:59 22:59 23:59
 HOUR END: 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
 CLASS: CL
 24-HOUR AVG: 23:00 22:00 21:00 20:00 19:00 18:00 17:00 16:00 15:00 14:00 13:00 12:00 11:00 10:00 9:00 8:00 7:00 6:00 5:00 4:00 3:00 2:00 1:00 0:00
 HOUR START: 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
 HOUR END: 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
 CLASS: CL
 24-HOUR AVG: 23:00 22:00 21:00 20:00 19:00 18:00 17:00 16:00 15:00 14:00 13:00 12:00 11:00 10:00 9:00 8:00 7:00 6:00 5:00 4:00 3:00 2:00 1:00 0:00
 HOUR START: 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
 HOUR END: 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
 CLASS: CL

STATUS FLAG CODES

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

| | |
|--|-------------------------------|
| LAST CALIBRATION: August 28, 2014 | |
| DECLINATION: MAGNETIC DECLINATION 19 DEGREE EAST | |
| MONTHLY CALIBRATION TIME: 0 HRS | OPERATIONAL TIME: 696 HRS |
| STANDARD DEVIATION: 88.91 | AMD OPERATION UPTIME: 100.0 % |
| | MONTHLY AVERAGE: WSW |

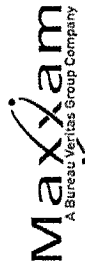
01 Hour Averages



02/04/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA31 WDR DEG

STANDARD DEVIATION WIND DIRECTION



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
 St. Lina Site - FEBRUARY 2016
 JOB # 2833-2016-02-31 - C

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST

| DAY | 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 |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 15 | 15 | 14 | 15 | 14 | 15 | 14 | 14 | 14 | 14 | 12 | 9 | 9 | 9 |
| 2 | 15 | 17 | 15 | 14 | 14 | 15 | 16 | 15 | 15 | 14 | 11 | 12 | 17 | 20 |
| 3 | 13 | 14 | 15 | 19 | 14 | 15 | 19 | 22 | 9 | 10 | 8 | 6 | 8 | 9 |
| 4 | 6 | 6 | 8 | 10 | 11 | 12 | 16 | 15 | 17 | 23 | 22 | 14 | 13 | 10 |
| 5 | 3 | 3 | 3 | 5 | 8 | 8 | 8 | 10 | 12 | 11 | 12 | 12 | 10 | 10 |
| 6 | 9 | 11 | 9 | 7 | 12 | 12 | 11 | 11 | 11 | 11 | 15 | 16 | 15 | 16 |
| 7 | 15 | 15 | 15 | 15 | 15 | 14 | 15 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| 8 | 7 | 7 | 5 | 8 | 9 | 7 | 8 | 8 | 8 | 8 | 7 | 9 | 7 | 5 |
| 9 | 10 | 11 | 10 | 10 | 8 | 6 | 4 | 3 | 2 | 7 | 4 | 7 | 6 | 8 |
| 10 | 12 | 14 | 15 | 13 | 18 | 14 | 13 | 13 | 12 | 11 | 12 | 12 | 11 | 10 |
| 11 | 10 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 12 | 11 | 12 | 12 | 11 | 10 |
| 12 | 12 | 10 | 11 | 13 | 11 | 11 | 11 | 12 | 12 | 13 | 13 | 13 | 12 | 12 |
| 13 | 12 | 12 | 14 | 18 | 12 | 13 | 13 | 13 | 11 | 8 | 6 | 7 | 6 | 5 |
| 14 | 7 | 4 | 5 | 6 | 4 | 6 | 7 | 6 | 12 | 13 | 14 | 13 | 17 | 15 |
| 15 | 4 | 5 | 5 | 13 | 19 | 14 | 49 | 17 | 13 | 17 | 14 | 15 | 11 | 16 |
| 16 | 17 | 15 | 19 | 14 | 14 | 16 | 14 | 14 | 16 | 17 | 14 | 12 | 13 | 9 |
| 17 | 3 | 4 | 5 | 3 | 5 | 4 | 4 | 6 | 12 | 31 | 49 | 22 | 15 | 12 |
| 18 | 9 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 12 | 13 | 14 | 14 | 13 | 14 |
| 19 | 15 | 14 | 13 | 13 | 13 | 12 | 13 | 14 | 15 | 17 | 18 | 20 | 18 | 19 |
| 20 | 14 | 17 | 11 | 15 | 12 | 11 | 10 | 10 | 16 | 21 | 53 | 33 | 52 | 34 |
| 21 | 8 | 6 | 6 | 11 | 12 | 12 | 10 | 7 | 5 | 4 | 7 | 6 | 9 | 8 |
| 22 | 8 | 10 | 11 | 11 | 12 | 10 | 12 | 12 | 13 | 14 | 16 | 17 | 16 | 17 |
| 23 | 14 | 13 | 13 | 13 | 11 | 9 | 7 | 5 | 4 | 5 | 8 | 16 | 17 | 16 |
| 24 | 11 | 10 | 11 | 11 | 10 | 9 | 8 | 9 | 13 | 15 | 30 | 5 | 16 | 15 |
| 25 | 8 | 8 | 9 | 9 | 9 | 9 | 7 | 6 | 6 | 7 | 6 | 6 | 8 | 7 |
| 26 | 6 | 6 | 6 | 5 | 4 | 2 | 3 | 3 | 4 | 5 | 6 | 6 | 7 | 6 |
| 27 | 11 | 11 | 13 | 16 | 10 | 13 | 13 | 9 | 6 | 8 | 22 | 13 | 17 | 19 |
| 28 | 5 | 6 | 6 | 5 | 6 | 11 | 12 | 14 | 15 | 14 | 13 | 13 | 15 | 13 |
| 29 | 10 | 10 | 10 | 9 | 9 | 9 | 9 | 12 | 14 | 14 | 15 | 17 | 19 | 21 |

STATUS FLAG CODES

| | | | |
|----|-------------------------|---|---------------------|
| C | -MONTHLY CALIBRATION | Q | -QUALITY ASSURANCE |
| CI | -REPEAT CALIBRATION | R | -RECOVERY |
| M | -MAINTENANCE | X | -MACHINE/ALFUNCTION |
| S | -DAILY ZERO/SPAN CHECK | G | -OUT FOR REPAIR |
| SI | -REPEAT ZERO/SPAN CHECK | P | -POWER FAILURE |

LAST CALIBRATION:

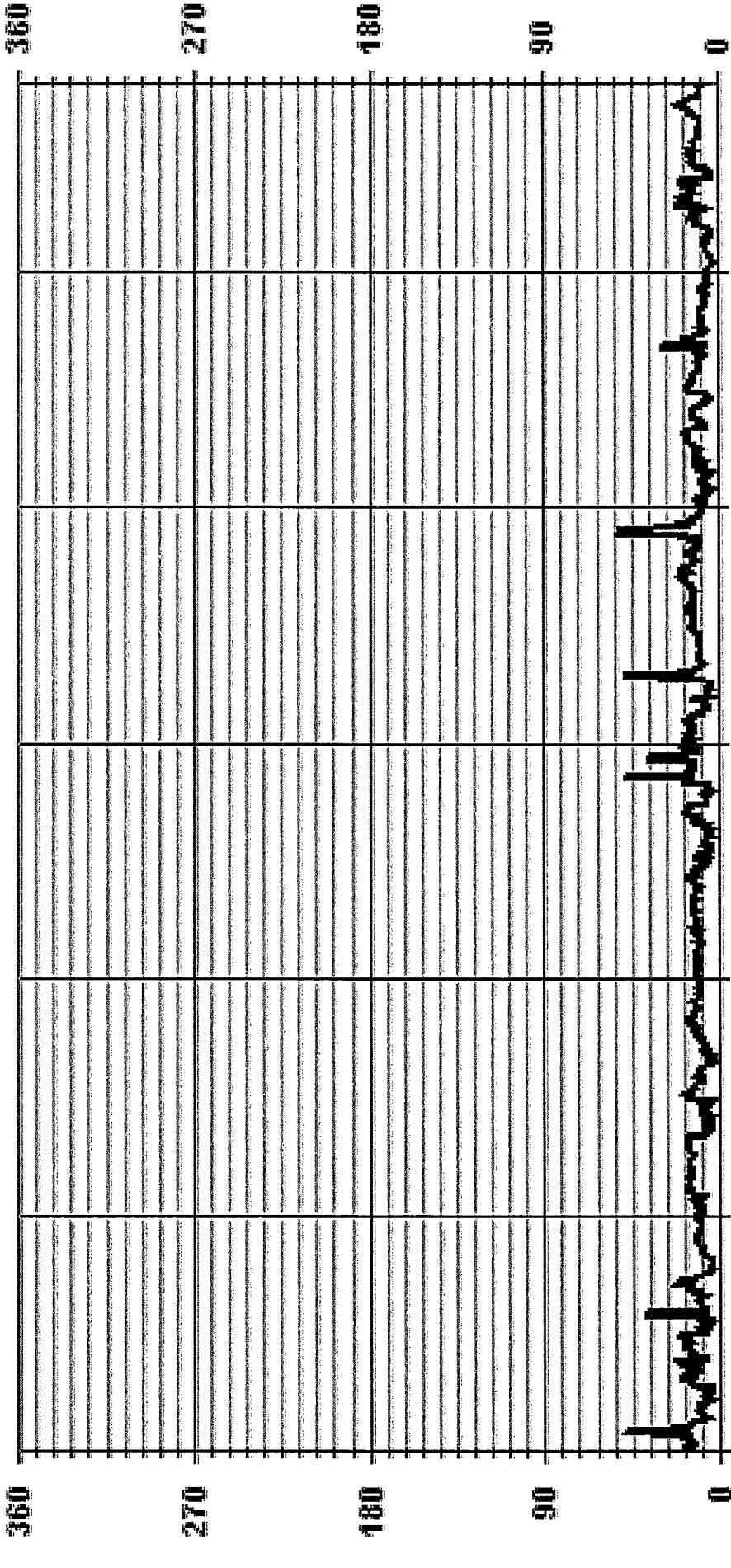
August 28, 2014

CALIBRATION TIME:

0 HRS

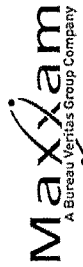
OPERATIONAL TIME: 696 HRS

01 Hour Averages



— LICA31 STDWDIR DEG

RELATIVE HUMIDITY



RELATIVE HUMIDITY (RH) hourly averages in %

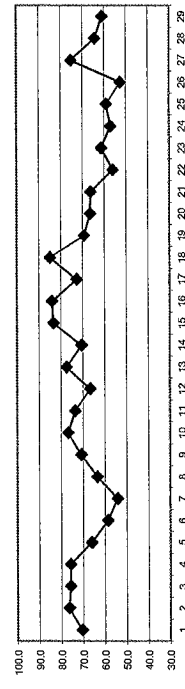
MST

| DAY | 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 | 24:00 | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| HR | 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 | RDGS. | | |
| 1 | 73 | 71 | 71 | 71 | 71 | 71 | 71 | 72 | 72 | 70 | 64 | 60 | 62 | 63 | 61 | 64 | 69 | 73 | 75 | 75 | 75 | 77 | 79 | 80 | 80 | 70.4 | |
| 2 | 80 | 80 | 81 | 82 | 82 | 82 | 81 | 81 | 81 | 82 | 81 | 78 | 73 | 64 | 62 | 68 | 67 | 70 | 72 | 74 | 74 | 75 | 78 | 80 | 82 | 76.3 | |
| 3 | 82 | 83 | 83 | 82 | 79 | 78 | 77 | 77 | 78 | 77 | 74 | 70 | 67 | 68 | 65 | 68 | 65 | 68 | 71 | 74 | 76 | 79 | 80 | 80 | 83 | 75.7 | |
| 4 | 81 | 81 | 80 | 79 | 78 | 78 | 78 | 77 | 76 | 76 | 74 | 74 | 72 | 66 | 66 | 67 | 68 | 71 | 74 | 76 | 80 | 81 | 81 | 81 | 81 | 75.6 | |
| 5 | 80 | 80 | 80 | 80 | 79 | 77 | 76 | 73 | 71 | 66 | 58 | 51 | 49 | 49 | 52 | 53 | 55 | 61 | 62 | 63 | 66 | 67 | 69 | 69 | 80 | 66.1 | |
| 6 | 70 | 71 | 71 | 68 | 64 | 60 | 58 | 56 | 55 | 47 | 44 | 41 | 38 | 38 | 38 | 48 | 66 | 65 | 70 | 72 | 63 | 58 | 56 | 57 | 72 | 58.5 | |
| 7 | 58 | 61 | 64 | 66 | 59 | 57 | 57 | 59 | 58 | 52 | 47 | 44 | 41 | 31 | 36 | 35 | 44 | 58 | 59 | 59 | 60 | 61 | 63 | 61 | 66 | 54.0 | |
| 8 | 67 | 68 | 67 | 66 | 66 | 66 | 69 | 69 | 64 | 59 | 53 | 49 | 49 | 52 | 50 | 50 | 56 | 62 | 65 | 69 | 71 | 73 | 78 | 83 | 83 | 65.4 | |
| 9 | 84 | 85 | 86 | 84 | 83 | 83 | 84 | 80 | 77 | 72 | 64 | 59 | 54 | 56 | 57 | 56 | 58 | 58 | 59 | 59 | 63 | 73 | 80 | 83 | 86 | 70.7 | |
| 10 | 85 | 80 | 78 | 75 | 77 | 77 | 77 | 75 | 76 | 76 | 75 | 74 | 72 | 68 | 65 | 67 | 70 | 73 | 72 | 72 | 71 | 68 | 69 | 71 | 79 | 73.4 | |
| 11 | 79 | 78 | 78 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 72 | 72 | 72 | 72 | 72 | 73 | 79 | 80 | 80 | 79 | 79 | 85 | 76.6 | |
| 12 | 72 | 71 | 72 | 67 | 66 | 67 | 69 | 70 | 71 | 68 | 65 | 64 | 62 | 60 | 59 | 58 | 60 | 62 | 64 | 64 | 67 | 74 | 75 | 76 | 76 | 66.6 | |
| 13 | 76 | 76 | 77 | 77 | 77 | 77 | 78 | 78 | 79 | 81 | 81 | 82 | 80 | 80 | 76 | 63 | 67 | 76 | 81 | 81 | 79 | 77 | 79 | 78 | 82 | 77.3 | |
| 14 | 77 | 78 | 80 | 81 | 83 | 80 | 78 | 76 | 71 | 69 | 62 | 58 | 51 | 47 | 48 | 49 | 52 | 60 | 75 | 80 | 83 | 84 | 84 | 85 | 85 | 70.5 | |
| 15 | 85 | 87 | 87 | 88 | 88 | 88 | 88 | 88 | 88 | 87 | 84 | 79 | 75 | 76 | 76 | 78 | 78 | 80 | 82 | 82 | 84 | 84 | 84 | 83 | 88 | 83.3 | |
| 16 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 83.9 | |
| 17 | 82 | 80 | 82 | 78 | 78 | 76 | 75 | 71 | 64 | 46 | 43 | 43 | 43 | 56 | 56 | 63 | 74 | 82 | 83 | 83 | 84 | 85 | 86 | 86 | 86 | 72.6 | |
| 18 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 85 | 85 | 83 | 83 | 80 | 78 | 78 | 81 | 82 | 86 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 84.8 | |
| 19 | 88 | 88 | 87 | 83 | 81 | 79 | 74 | 74 | 73 | 66 | 62 | 59 | 57 | 55 | 54 | 55 | 54 | 55 | 59 | 59 | 60 | 69 | 74 | 76 | 69.1 | | |
| 20 | 76 | 76 | 77 | 76 | 75 | 75 | 74 | 72 | 72 | 67 | 60 | 54 | 47 | 45 | 54 | 57 | 59 | 62 | 64 | 65 | 66 | 68 | 72 | 75 | 77 | 66.3 | |
| 21 | 78 | 80 | 81 | 82 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 66.2 | |
| 22 | 62 | 63 | 61 | 64 | 67 | 69 | 70 | 69 | 64 | 55 | 51 | 45 | 43 | 40 | 38 | 38 | 43 | 52 | 58 | 58 | 58 | 57 | 57 | 70 | 55.8 | | |
| 23 | 57 | 58 | 59 | 62 | 63 | 65 | 69 | 71 | 63 | 54 | 48 | 43 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 61.2 | |
| 24 | 64 | 65 | 65 | 66 | 68 | 69 | 70 | 69 | 58 | 51 | 42 | 41 | 42 | 44 | 43 | 44 | 43 | 47 | 53 | 58 | 61 | 65 | 68 | 70 | 56.8 | | |
| 25 | 69 | 69 | 69 | 68 | 66 | 67 | 69 | 71 | 68 | 61 | 54 | 48 | 45 | 44 | 43 | 45 | 47 | 51 | 57 | 59 | 61 | 62 | 61 | 59 | 71 | 58.9 | |
| 26 | 59 | 61 | 60 | 59 | 62 | 66 | 69 | 69 | 59 | 51 | 43 | 41 | 39 | 38 | 38 | 38 | 40 | 47 | 52 | 53 | 52 | 54 | 53 | 54 | 69 | 52.4 | |
| 27 | 51 | 52 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 75.1 | |
| 28 | 79 | 81 | 85 | 85 | 86 | 86 | 84 | 83 | 79 | 74 | 73 | 64 | 55 | 46 | 39 | 42 | 44 | 47 | 49 | 48 | 48 | 52 | 54 | 57 | 86 | 64.2 | |
| 29 | 58 | 60 | 61 | 61 | 62 | 63 | 64 | 61 | 56 | 55 | 54 | 53 | 51 | 52 | 53 | 55 | 57 | 62 | 66 | 69 | 70 | 71 | 72 | 72 | 72 | 60.8 | |
| 30 | 88 | 88 | 87 | 88 | 88 | 88 | 88 | 88 | 88 | 87 | 84 | 84 | 84 | 84 | 84 | 85 | 82 | 86 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 68.8 |
| HOURLY MAX | 73.9 | 74.2 | 74.7 | 74.5 | 74.8 | 74.9 | 75.1 | 74.6 | 72.2 | 69.0 | 64.5 | 60.9 | 58.2 | 56.9 | 57.6 | 58.6 | 61.0 | 64.8 | 67.5 | 68.9 | 69.8 | 71.4 | 72.7 | 73.3 | 73.3 | | |
| HOURLY AVG | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STATUS FLAG CODES

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

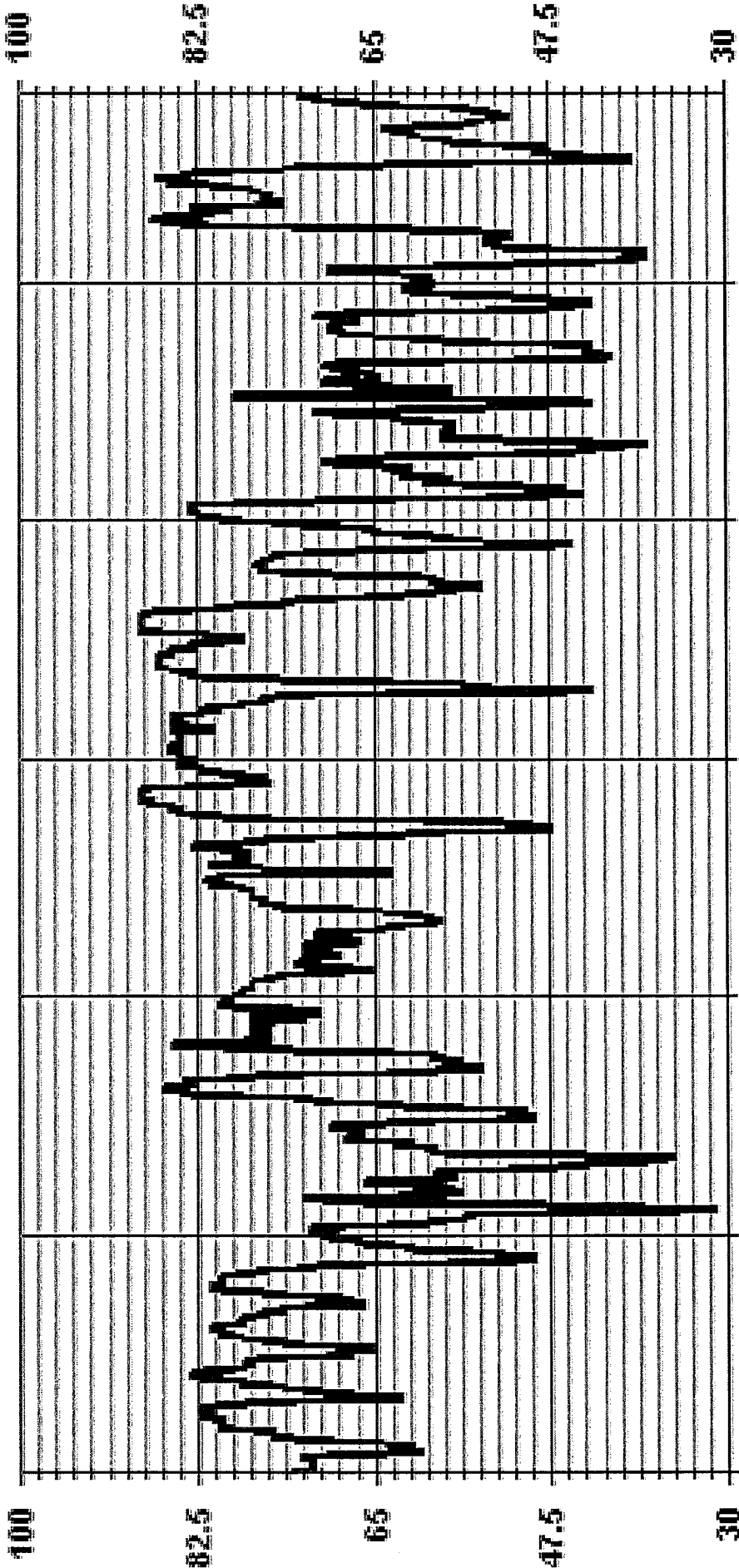
24 HOUR AVERAGES FOR FEBRUARY 2016



MONTHLY SUMMARY

| | | | | | | |
|------------------------|-------|---|-----------|-----|-------------|---------|
| MINIMUM 1-HR AVERAGE: | 31 | % | @ HOUR(S) | 13 | ON DAY(S) | 6 |
| MAXIMUM 1-HR AVERAGE: | 88 | % | @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MAXIMUM 24-HR AVERAGE: | 84.8 | % | | | ON DAY(S) | 18 |
| | | | | | VAR-VARIOUS | |
| OPERATIONAL TIME: | | | | | | 696 HRS |
| AMD OPERATION UPTIME: | | | | | | 100.0 % |
| MONTHLY AVERAGE: | 12.70 | | | | | 68 % |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA31 RH %FS

BAROMETRIC PRESSURE



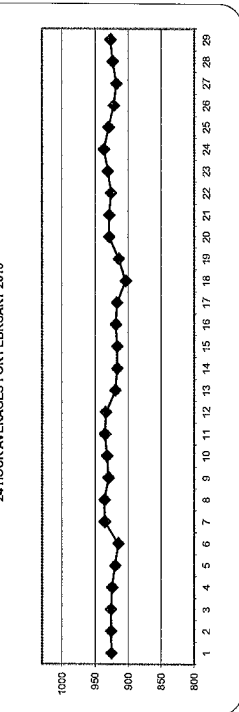
BAROMETRIC PRESSURE (BP) hourly averages in millibar

| DAY | 0:59 | 1:59 | 2:59 | 3:59 | 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 | 24:00 |
|----------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| HR START | 0:59 | 1:59 | 2:59 | 3:59 | 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 | 24:00 |
| HR END | 1:59 | 2:59 | 3:59 | 4:59 | 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 | 24:00 | 0:59 |
| AVG. | 924 | 925 | 925 | 925 | 925 | 925 | 925 | 925 | 926 | 926 | 927 | 927 | 927 | 927 | 926 | 926 | 926 | 926 | 926 | 926 | 926 | 925 | 925 | 925 | 926 |
| MAX. | 924 | 925 | 925 | 925 | 925 | 925 | 925 | 925 | 926 | 926 | 927 | 927 | 927 | 927 | 926 | 926 | 926 | 926 | 926 | 926 | 926 | 925 | 925 | 925 | 926 |
| MIN. | 924 | 925 | 925 | 925 | 925 | 925 | 925 | 925 | 926 | 926 | 927 | 927 | 927 | 927 | 926 | 926 | 926 | 926 | 926 | 926 | 926 | 925 | 925 | 925 | 926 |
| ROGS. | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| 1 | 924 | 925 | 925 | 925 | 925 | 925 | 925 | 925 | 926 | 926 | 927 | 927 | 927 | 927 | 926 | 926 | 926 | 926 | 926 | 926 | 925 | 925 | 925 | 926 | 926 |
| 2 | 925 | 925 | 925 | 925 | 925 | 925 | 925 | 925 | 926 | 926 | 927 | 927 | 927 | 927 | 926 | 926 | 926 | 926 | 926 | 926 | 925 | 925 | 925 | 926 | 926 |
| 3 | 926 | 926 | 927 | 927 | 927 | 927 | 927 | 927 | 927 | 927 | 927 | 927 | 927 | 926 | 926 | 926 | 926 | 926 | 926 | 926 | 925 | 925 | 925 | 926 | 926 |
| 4 | 924 | 924 | 924 | 924 | 924 | 924 | 923 | 923 | 923 | 923 | 923 | 923 | 923 | 923 | 923 | 923 | 923 | 923 | 923 | 923 | 925 | 925 | 925 | 924 | 924 |
| 5 | 925 | 925 | 925 | 924 | 924 | 924 | 923 | 923 | 923 | 922 | 922 | 922 | 922 | 921 | 921 | 921 | 921 | 921 | 921 | 921 | 925 | 925 | 925 | 924 | 924 |
| 6 | 911 | 910 | 909 | 909 | 908 | 909 | 909 | 909 | 911 | 913 | 913 | 913 | 913 | 914 | 915 | 915 | 916 | 917 | 921 | 921 | 923 | 923 | 926 | 927 | 927 |
| 7 | 928 | 929 | 930 | 931 | 932 | 933 | 934 | 934 | 935 | 936 | 937 | 937 | 938 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 938 | 938 | 938 | 938 |
| 8 | 938 | 937 | 937 | 937 | 937 | 936 | 936 | 935 | 935 | 936 | 936 | 937 | 937 | 937 | 937 | 937 | 937 | 937 | 937 | 937 | 935 | 935 | 935 | 936 | 936 |
| 9 | 934 | 934 | 933 | 933 | 932 | 932 | 932 | 932 | 931 | 931 | 931 | 931 | 930 | 930 | 929 | 928 | 927 | 927 | 927 | 927 | 927 | 927 | 927 | 927 | 927 |
| 10 | 928 | 929 | 930 | 930 | 930 | 931 | 932 | 933 | 933 | 934 | 934 | 934 | 934 | 934 | 934 | 933 | 933 | 933 | 933 | 933 | 932 | 932 | 931 | 931 | 931 |
| 11 | 931 | 931 | 931 | 931 | 931 | 931 | 932 | 932 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 933 | 932 | 932 | 931 | 931 |
| 12 | 940 | 940 | 940 | 940 | 940 | 939 | 938 | 938 | 938 | 937 | 937 | 936 | 935 | 934 | 933 | 932 | 931 | 930 | 929 | 928 | 927 | 926 | 925 | 924 | 940 |
| 13 | 923 | 922 | 921 | 921 | 920 | 920 | 919 | 919 | 919 | 919 | 919 | 919 | 919 | 919 | 920 | 920 | 920 | 921 | 921 | 921 | 919 | 918 | 917 | 917 | 923 |
| 14 | 917 | 916 | 916 | 916 | 915 | 915 | 915 | 915 | 915 | 916 | 917 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 916 | 915 | 915 | 915 | 919 |
| 15 | 914 | 914 | 914 | 913 | 913 | 913 | 912 | 912 | 912 | 913 | 913 | 913 | 913 | 914 | 915 | 916 | 917 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 917 |
| 16 | 920 | 920 | 920 | 919 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 919 |
| 17 | 917 | 918 | 917 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 918 | 917 |
| 18 | 911 | 910 | 909 | 908 | 908 | 907 | 905 | 905 | 904 | 904 | 903 | 902 | 901 | 901 | 900 | 900 | 900 | 900 | 900 | 900 | 901 | 902 | 902 | 903 | 911 |
| 19 | 904 | 905 | 906 | 907 | 908 | 909 | 911 | 912 | 913 | 914 | 915 | 916 | 917 | 917 | 917 | 918 | 918 | 918 | 918 | 918 | 919 | 920 | 920 | 921 | 921 |
| 20 | 922 | 923 | 924 | 925 | 925 | 926 | 926 | 927 | 928 | 929 | 930 | 931 | 931 | 931 | 932 | 932 | 932 | 932 | 932 | 932 | 932 | 932 | 931 | 931 | 932 |
| 21 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 |
| 22 | 923 | 923 | 923 | 924 | 924 | 924 | 924 | 924 | 925 | 925 | 926 | 927 | 927 | 927 | 928 | 928 | 928 | 928 | 928 | 928 | 928 | 928 | 928 | 928 | 928 |
| 23 | 929 | 930 | 930 | 931 | 931 | 931 | 931 | 930 | 930 | 930 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 | 931 |
| 24 | 934 | 935 | 935 | 935 | 935 | 935 | 936 | 936 | 937 | 938 | 939 | 940 | 939 | 939 | 938 | 938 | 938 | 938 | 938 | 937 | 936 | 935 | 935 | 934 | 934 |
| 25 | 934 | 933 | 932 | 932 | 931 | 931 | 930 | 930 | 929 | 929 | 930 | 930 | 930 | 930 | 930 | 930 | 930 | 930 | 930 | 929 | 928 | 927 | 927 | 927 | 927 |
| 26 | 927 | 926 | 925 | 925 | 924 | 923 | 923 | 922 | 922 | 923 | 923 | 923 | 923 | 923 | 923 | 922 | 922 | 921 | 921 | 920 | 919 | 919 | 918 | 918 | 922 |
| 27 | 917 | 917 | 917 | 917 | 916 | 916 | 916 | 915 | 915 | 915 | 916 | 916 | 917 | 917 | 918 | 919 | 920 | 921 | 921 | 921 | 921 | 921 | 921 | 921 | 918 |
| 28 | 921 | 921 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 924 |
| 29 | 928 | 928 | 927 | 927 | 927 | 927 | 927 | 927 | 927 | 928 | 928 | 928 | 928 | 928 | 928 | 928 | 928 | 928 | 928 | 927 | 927 | 926 | 925 | 925 | 928 |
| 30 | 940 | 940 | 940 | 940 | 940 | 939 | 938 | 938 | 938 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 939 | 940 | 940 | 940 | 940 | 940 |
| 31 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 |

STATUS FLAG CODES

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

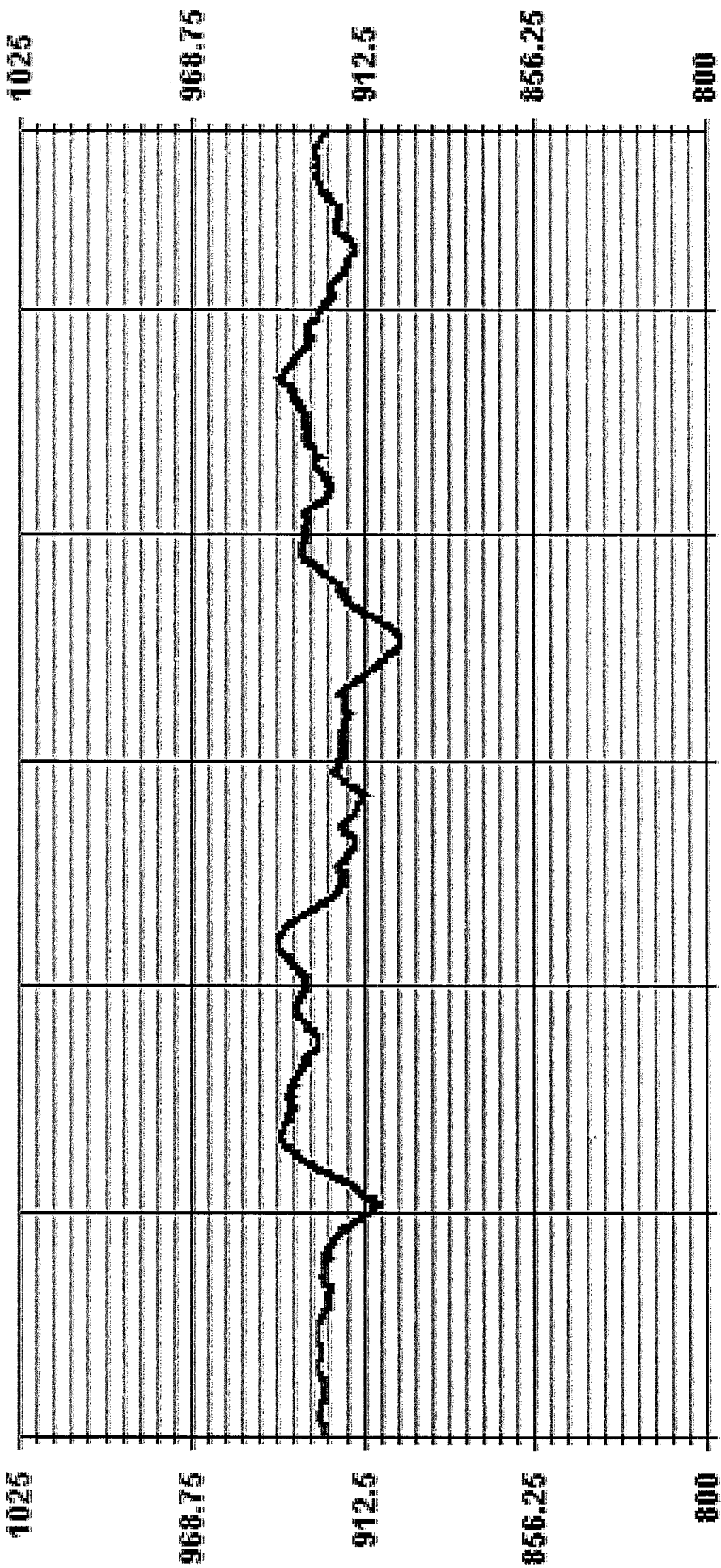
24 HOUR AVERAGES FOR FEBRUARY 2016



MONTHLY SUMMARY

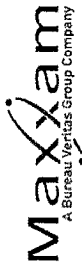
| | | | | | | |
|------------------------|------|----|-----------|-----|-------------|-------|
| MINIMUM 1-HR AVERAGE: | 900 | MB | @ HOUR(S) | VAR | ON DAY(S) | 18 |
| MAXIMUM 1-HR AVERAGE: | 940 | MB | @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MAXIMUM 24-HR AVERAGE: | 937 | MB | | | ON DAY(S) | 24 |
| STANDARD DEVIATION: | 8.27 | | | | VAR-VARIOUS | |
| OPERATIONAL TIME: | | | | | ON DAY(S) | 696 |
| AMTD OPERATION UPTIME: | | | | | ON DAY(S) | 100.0 |
| MONTHLY AVERAGE: | | | | | ON DAY(S) | 925 |
| | | | | | VAR | MB |

01 Hour Averages



— LICA31 BP MB

AMBIENT TEMPERATURE



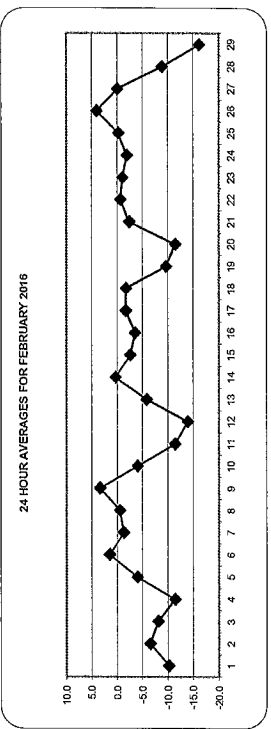
AMBIENT TEMPERATURE (AmbTPX) hourly averages in Degrees Celsius

MST

| DAY | 0:00 | 0:15 | 0:30 | 0:45 | 1:00 | 1:15 | 1:30 | 1:45 | 2:00 | 2:15 | 2:30 | 2:45 | 3:00 | 3:15 | 3:30 | 3:45 | 4:00 | 4:15 | 4:30 | 4:45 | 5:00 | 5:15 | 5:30 | 5:45 | 6:00 | 6:15 | 6:30 | 6:45 | 7:00 | 7:15 | 7:30 | 7:45 | 8:00 | 8:15 | 8:30 | 8:45 | 9:00 | 9:15 | 9:30 | 9:45 | 10:00 | 10:15 | 10:30 | 10:45 | 11:00 | 11:15 | 11:30 | 11:45 | 12:00 | 12:15 | 12:30 | 12:45 | 13:00 | 13:15 | 13:30 | 13:45 | 14:00 | 14:15 | 14:30 | 14:45 | 15:00 | 15:15 | 15:30 | 15:45 | 16:00 | 16:15 | 16:30 | 16:45 | 17:00 | 17:15 | 17:30 | 17:45 | 18:00 | 18:15 | 18:30 | 18:45 | 19:00 | 19:15 | 19:30 | 19:45 | 20:00 | 20:15 | 20:30 | 20:45 | 21:00 | 21:15 | 21:30 | 21:45 | 22:00 | 22:15 | 22:30 | 22:45 | 23:00 | 23:15 | 23:30 | 23:45 | 24:00 | DAILY MAX | DAILY AVG | RDGS. |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|-----------|-------|
| 1 | -10.1 | -10.5 | -10.6 | -10.7 | -10.9 | -11.2 | -11.5 | -11.7 | -11.7 | -11.0 | -9.4 | -7.8 | -8.6 | -8.6 | -7.8 | -8.4 | -9.8 | -10.6 | -11.4 | -11.1 | -11.4 | -11.1 | -10.4 | -10.3 | -9.7 | -7.8 | -10.2 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | -9.0 | -8.3 | -7.9 | -8.3 | -8.7 | -9.1 | -8.9 | -8.8 | -8.7 | -7.7 | -6.6 | -4.7 | -3.6 | -1.7 | -1.7 | -3.4 | -3.9 | -5.2 | -5.9 | -6.4 | -6.8 | -7.3 | -6.8 | -7.8 | -7.8 | -6.6 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | -7.5 | -7.6 | -7.2 | -7.4 | -7.8 | -7.8 | -7.6 | -7.7 | -8.1 | -8.0 | -7.4 | -6.5 | -5.9 | -6.6 | -6.8 | -6.5 | -7.4 | -8.5 | -9.2 | -9.8 | -10.4 | -10.8 | -11.3 | -10.7 | -8.1 | -8.1 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | -11.3 | -12.1 | -13.1 | -13.4 | -13.5 | -14.2 | -14.8 | -15.0 | -14.2 | -12.2 | -11.4 | -10.1 | -8.1 | -9.1 | -9.5 | -9.4 | -9.5 | -9.4 | -9.5 | -9.7 | -9.7 | -10.5 | -10.9 | -11.3 | -8.1 | -11.5 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | -11.1 | -10.7 | -9.9 | -9.1 | -8.6 | -8.1 | -8.0 | -7.8 | -7.6 | -6.4 | -3.8 | -1.6 | -0.4 | 0.4 | 1.2 | 0.7 | -0.7 | -1.1 | -1.2 | -1.2 | -1.2 | -1.4 | -1.7 | -1.7 | -1.7 | -1.5 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | -0.9 | -0.8 | -0.9 | -0.7 | 0.3 | 1.0 | 1.5 | 2.4 | 4.0 | 4.3 | 4.5 | 5.5 | 6.5 | 6.6 | 5.0 | 3.1 | 0.8 | 0.3 | -0.4 | -1.0 | -1.0 | -1.2 | -1.4 | -1.7 | 6.6 | 1.5 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | -2.1 | -2.4 | -2.5 | -2.8 | -2.7 | -2.7 | -3.0 | -3.3 | -3.0 | -3.3 | 0.3 | 1.5 | 2.7 | 3.2 | 3.4 | 3.4 | 1.2 | -1.8 | -2.4 | -2.9 | -3.2 | -3.6 | -4.1 | -3.5 | 3.4 | -1.3 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | -5.0 | -5.1 | -4.8 | -4.4 | -4.2 | -4.4 | -4.9 | -4.5 | -3.3 | -2.1 | -0.1 | 1.8 | 3.6 | 3.9 | 5.7 | 5.8 | 4.0 | 2.3 | 1.5 | 0.4 | 0.2 | 0.6 | 0.0 | -0.2 | 5.8 | -0.6 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | 0.2 | 0.1 | 0.3 | 0.6 | 1.0 | 0.5 | 0.0 | 0.2 | 0.8 | 2.2 | 4.2 | 5.9 | 8.0 | 6.9 | 6.4 | 6.6 | 6.2 | 5.9 | 5.5 | 5.1 | 4.1 | 2.9 | 2.0 | 8.0 | 3.4 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 1.4 | 1.6 | 1.2 | 0.5 | -0.2 | -1.0 | -1.6 | -1.9 | -2.0 | -2.3 | -3.1 | -3.3 | -3.2 | -3.2 | -4.8 | -5.6 | -6.3 | -7.1 | -7.9 | -8.9 | -9.4 | -9.6 | -9.9 | -10.1 | 1.6 | -4.0 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | -10.6 | -11.2 | -11.6 | -11.9 | -12.3 | -12.5 | -12.5 | -12.8 | -12.7 | -12.3 | -11.8 | -10.8 | -9.3 | -8.5 | -8.8 | -9.6 | -10.4 | -11.2 | -11.5 | -11.6 | -11.9 | -12.1 | -12.7 | -13.5 | -8.5 | -11.4 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | -14.1 | -14.3 | -14.9 | -14.5 | -14.6 | -14.8 | -14.9 | -14.9 | -15.0 | -14.4 | -13.9 | -13.2 | -12.1 | -12.1 | -12.3 | -12.8 | -13.4 | -14.0 | -14.1 | -14.0 | -14.0 | -14.1 | -14.3 | -14.2 | -12.1 | -14.0 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | -14.2 | -14.2 | -13.9 | -13.4 | -13.2 | -13.1 | -12.6 | -12.0 | -11.0 | -9.1 | -6.4 | -5.1 | -2.4 | -0.8 | 1.4 | 4.3 | 2.7 | 0.0 | -1.1 | -1.1 | -1.0 | -1.0 | -1.8 | -1.9 | 4.3 | -5.9 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | -1.5 | -1.7 | -2.2 | -2.3 | -3.0 | -2.7 | -2.8 | -3.0 | -1.8 | -0.1 | 2.6 | 4.5 | 6.2 | 7.3 | 6.5 | 5.8 | 4.6 | 1.7 | -0.5 | -1.2 | -1.2 | -1.9 | -2.0 | -2.9 | 7.3 | 0.3 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | -2.7 | -2.3 | -1.2 | -1.1 | -0.9 | -0.6 | -0.6 | -0.5 | -0.4 | 0.1 | 0.3 | 0.0 | -0.5 | -1.2 | -1.6 | -2.6 | -3.2 | -3.8 | -3.8 | -4.7 | -6.7 | -7.9 | -8.7 | -7.7 | 0.3 | -2.6 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | -6.5 | -6.1 | -5.4 | -5.4 | -5.3 | -5.0 | -5.1 | -5.4 | -5.4 | -5.2 | -4.9 | -3.9 | -2.6 | -1.8 | -0.6 | 1.4 | 0.1 | -1.1 | -1.8 | -2.2 | -2.8 | -2.9 | -3.7 | -3.5 | 1.4 | -3.5 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | -4.2 | -4.4 | -5.4 | -4.8 | -4.9 | -4.4 | -5.0 | -5.3 | -4.8 | -2.7 | 4.3 | 6.5 | 5.7 | 4.9 | 3.6 | 1.6 | 0.0 | -2.0 | -2.6 | -3.1 | -3.4 | -3.7 | -3.9 | -3.8 | 6.5 | -1.7 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | -4.2 | -4.2 | -4.1 | -3.9 | -3.7 | -3.2 | -2.8 | -2.4 | -2.1 | -1.3 | -0.5 | 0.3 | 0.5 | 0.2 | -0.4 | -0.4 | -1.2 | -1.5 | -1.4 | -1.3 | -1.2 | -1.1 | -1.1 | -1.1 | 0.5 | -1.8 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | -1.1 | -1.1 | -2.3 | -5.6 | -7.1 | -8.2 | -10.1 | -11.8 | -12.7 | -13.0 | -11.9 | -10.9 | -10.7 | -10.5 | -9.5 | -9.6 | -10.6 | -11.9 | -12.2 | -12.2 | -12.2 | -12.2 | -12.4 | -12.3 | -1.1 | -9.7 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | -12.3 | -12.3 | -12.5 | -12.4 | -12.7 | -13.7 | -14.8 | -15.8 | -16.0 | -14.1 | -11.4 | -9.5 | -7.2 | -6.7 | -9.3 | -10.3 | -10.3 | -11.1 | -11.1 | -10.8 | -10.9 | -10.5 | -9.7 | -9.0 | -6.7 | -11.5 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | -8.3 | -7.6 | -6.7 | -6.2 | -6.7 | -7.0 | -7.1 | -7.4 | -6.5 | -5.0 | -2.2 | 0.2 | 2.7 | 4.4 | 5.6 | 4.2 | 3.6 | 1.4 | -0.5 | -1.5 | -1.7 | -1.6 | -1.7 | -2.8 | 5.6 | -2.4 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | -3.2 | -3.7 | -3.5 | -4.4 | -5.2 | -5.7 | -5.9 | -5.7 | -4.3 | -1.7 | 0.0 | 2.4 | 3.5 | 4.5 | 5.6 | 5.9 | 4.7 | 1.6 | -0.2 | -0.1 | 0.0 | -0.3 | -0.2 | -0.1 | 5.9 | -0.7 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | -0.3 | -0.7 | -1.1 | -1.8 | -2.2 | -3.1 | -4.8 | -6.0 | -4.2 | -1.4 | 1.2 | 3.2 | 3.2 | 3.0 | 0.5 | -1.0 | -0.7 | -0.2 | -0.2 | -0.5 | -1.2 | -1.9 | -3.0 | -2.7 | 3.2 | -1.1 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | -3.0 | -3.6 | -3.8 | -4.3 | -5.2 | -5.5 | -5.9 | -5.6 | -2.8 | -0.5 | 3.4 | 3.0 | 2.6 | 2.8 | 2.0 | 1.4 | -0.4 | -2.3 | -3.0 | -4.0 | -4.9 | -5.5 | -5.1 | 3.5 | -1.9 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | -5.4 | -5.4 | -5.4 | -4.9 | -4.1 | -4.2 | -4.6 | -5.4 | -5.2 | -3.2 | -0.7 | 2.0 | 4.2 | 5.0 | 5.9 | 5.7 | 5.6 | 4.2 | 2.1 | 1.7 | 1.4 | 1.1 | 1.3 | 1.7 | 5.9 | -0.3 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | 1.5 | 0.3 | 0.2 | 0.6 | -0.2 | -1.7 | -2.5 | -2.5 | -0.2 | 2.2 | 5.7 | 7.5 | 8.8 | 9.5 | 10.0 | 9.3 | 7.0 | 5.8 | 5.4 | 5.3 | 4.9 | 5.0 | 4.7 | 10.1 | 4.0 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | 5.4 | 5.2 | 4.4 | 3.3 | 1.4 | 0.6 | 0.2 | 0.0 | 0.4 | 2.1 | 3.9 | 2.8 | 2.1 | 1.6 | -0.6 | -1.3 | -2.4 | -3.3 | -3.7 | -4.8 | -4.7 | -4.6 | -4.7 | 5.4 | -0.1 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | -4.5 | -3.6 | -2.9 | -2.9 | -3.3 | -3.1 | -2.4 | -2.9 | -3.7 | -5.0 | -7.0 | -8.8 | -8.0 | -8.7 | -8.5 | -10.1 | -12.6 | -13.6 | -14.5 | -15.6 | -16.4 | -17.4 | -18.4 | -2.4 | -8.8 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | -19.1 | -20.0 | -21.0 | -22.1 | -23.0 | -23.6 | -23.7 | -22.6 | -19.8 | -18.1 | -16.2 | -14.3 | -12.2 | -11.3 | -10.6 | -10.3 | -10.2 | -11.6 | -12.5 | -13.0 | -13.2 | -13.6 | -13.7 | -13.4 | -10.2 | -16.2 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HOURLY MAX | 5.4 | 5.2 | 4.4 | 3.3 | 1.4 | 1.0 | 1.5 | 2.4 | 4.0 | 4.3 | 5.7 | 7.5 | 8.8 | 9.5 | 10.1 | 10.0 | 9.3 | 7.0 | 5.8 | 5.5 | 5.3 | 4.9 | 5.0 | 4.7 | 10.1 | 4.0 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HOURLY AVG | -5.6 | -5.7 | -5.8 | -6.0 | -6.3 | -6.5 | -6.8 | -6.9 | -6.3 | -5.1 | -3.4 | -2.2 | -1.3 | -0.9 | -1.0 | -1.4 | -2.3 | -3.6 | -4.4 | -4.7 | -5.1 | -5.3 | -5.6 | -5.7 | 10.1 | -16.2 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STATUS FLAG CODES

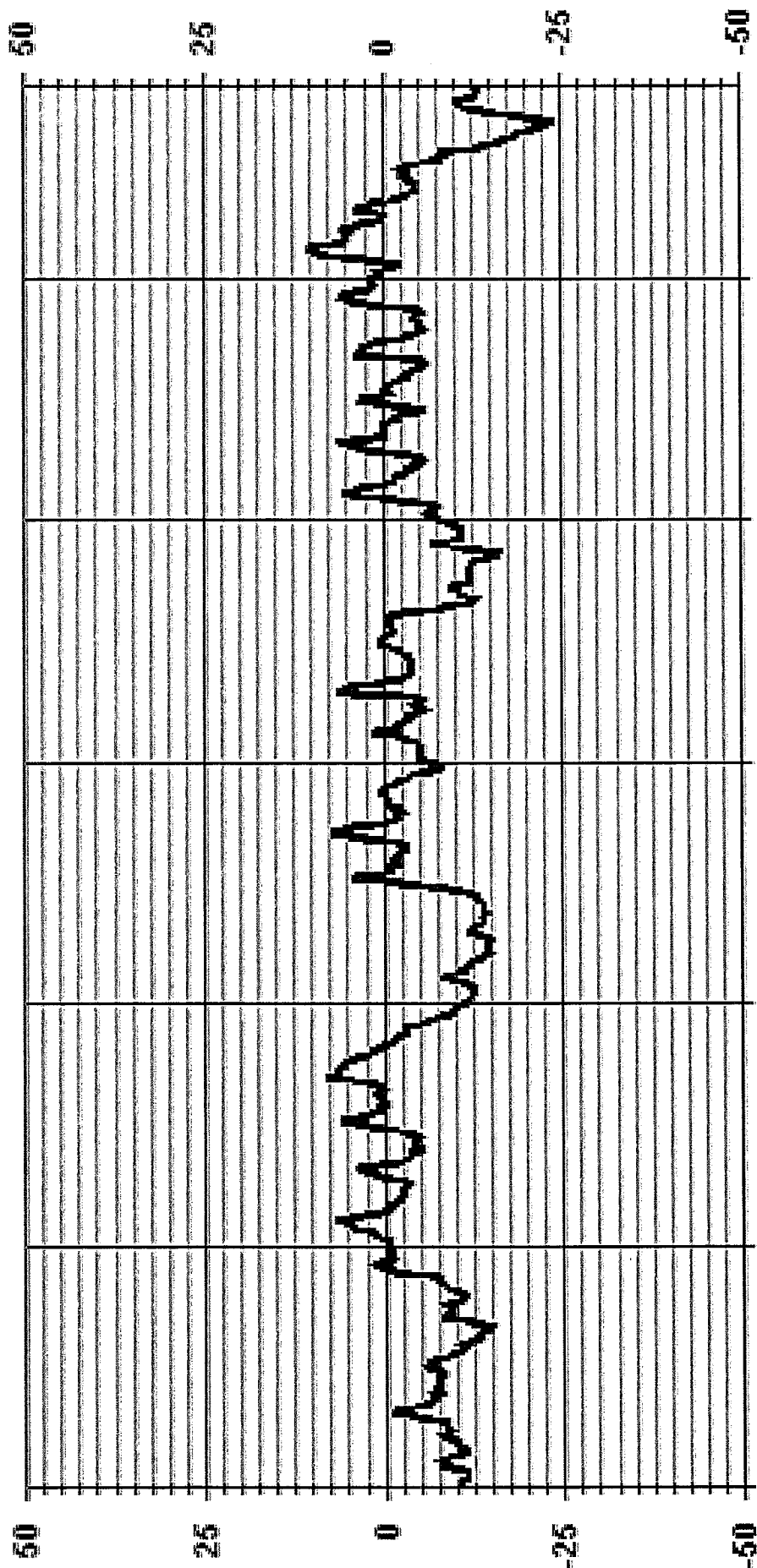
| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION | R | RECOVERY |
| M | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | OUT FOR REPAIR |
| SL | REPEAT ZERO/SPAN CHECK | P | POWER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



MONTHLY SUMMARY

| | | | | | | |
|------------------------|-------|----|-----------|----|-------------|---------|
| MINIMUM 1-HR AVERAGE: | -23.7 | °C | @ HOUR(S) | 6 | ON DAY(S) | 29 |
| MAXIMUM 1-HR AVERAGE: | 10.1 | °C | @ HOUR(S) | 14 | ON DAY(S) | 26 |
| MAXIMUM 24-HR AVERAGE: | 4.0 | °C | | | VAR-VARIOUS | 26 |
| STANDARD DEVIATION: | 6.17 | | | | | |
| OPERATIONAL TIME: | | | | | | 696 HRS |
| AMTD OPERATION UPTIME: | | | | | | 100.0 % |
| MONTHLY AVERAGE: | | | | | | -4.5 °C |

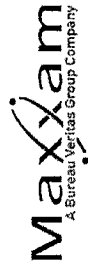
01 Hour Averages



02/04/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA31 TPX DGC

PRECIPITATION



PRECIPITATION hourly averages (mm)

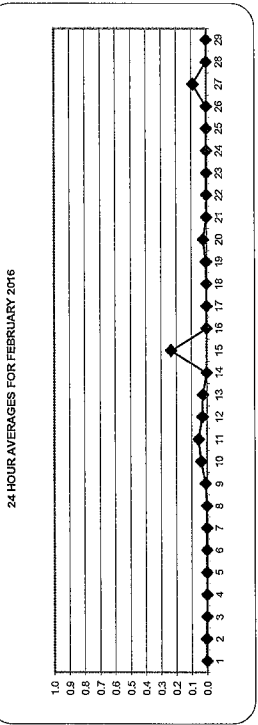
MST

| DAY | 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 | 24:00 | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| HR START | 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 | 24:59 | |
| HR END | 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 | 24:59 | |
| DAILY MAX. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DAILY AVG. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ROGS. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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 |
| 10 | 0.1 | 0.0 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 14 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 15 | 0.0 | 0.6 | 0.4 | 0.5 | 0.4 | 0.9 | 1.1 | 0.3 | 0.2 | 0.2 | 0.3 | 0.2 | 0.3 | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 17 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 21 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 22 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 23 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 24 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 26 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 27 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 29 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| HOURLY MAX | 0.2 | 0.6 | 0.4 | 0.5 | 0.4 | 0.9 | 1.1 | 0.4 | 0.5 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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 | 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 |
| CI | REPEAT CALIBRATION | R | RECOVERY |
| Y | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | OUT-OF-REPAIR |
| SS1 | REPEAT ZERO/SPAN CHECK | P | POWER FAILURE |

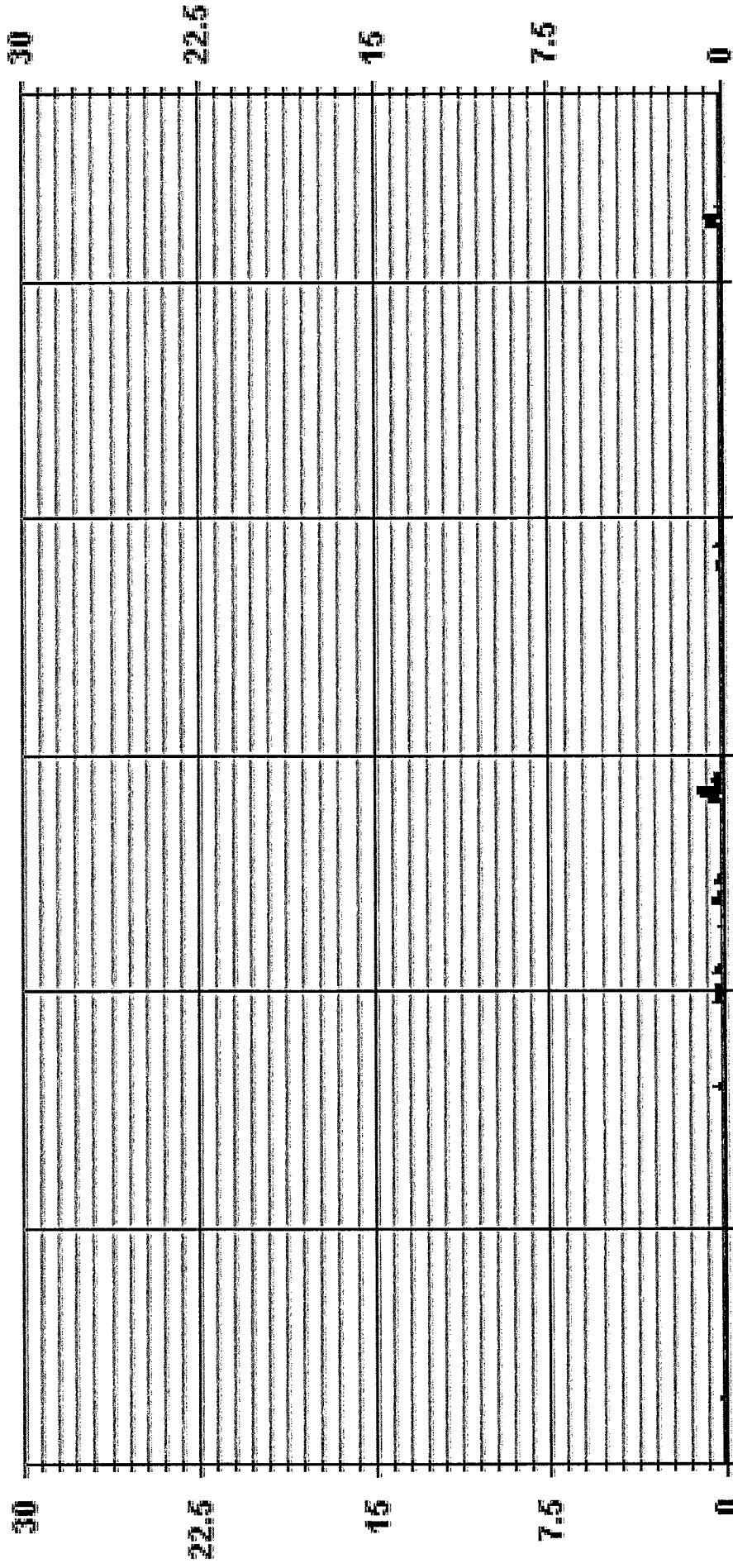
24 HOUR AVERAGES FOR FEBRUARY 2016



MONTHLY SUMMARY

| | | | | | | |
|------------------------|-------|-----|-----------|-----|-------------|-----|
| MINIMUM 1-HR AVERAGE: | 0.0 | MM | @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MAXIMUM 1-HR AVERAGE: | 1.1 | MM | @ HOUR(S) | 6 | ON DAY(S) | 15 |
| MAXIMUM 24-HR AVERAGE: | 0.2 | MM | | | ON DAY(S) | 15 |
| MONTHLY TOTAL | 12.1 | MM | | | VAR-VARIOUS | |
| STANDARD DEVIATION: | 0.09 | | | | | |
| OPERATIONAL TIME: | 696 | HRS | | | | |
| AMD OPERATION UPTIME: | 100.0 | % | | | | |
| MONTHLY AVERAGE: | 0.0 | MM | | | | |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA31 PRECIP MM

APPENDIX II
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE



API 100E Sulphur Dioxide Analyzer Calibration

| | | | |
|--------------------------|-------------------|--|-------------------------------|
| Date: | February 11, 2016 | Barometric Pressure: | 0.929 atm |
| Company/Airshed: | LICA | Station Temperature °C: | 20 |
| Location/Station Name: | St. Lina | Weather Conditions: | Mainly cloudy with snow |
| Parameter: | Sulphur Dioxide | Calibration Purpose: | routine monthly |
| Start Time 24 hr. (mst): | 10:56 | Performed By/Reviewer: | Alex Yakupov Trina Whitsitt |
| End Time 24 hr. (mst): | 14:55 | Cal Gas Expiry Date: | March 12, 2019 |
| Calibration Method: | Gas Dilution | Converter Model & s/n (if applicable): | n/a |

| | | |
|------------------------|--------------------|----------------------|
| Analyzer: | Serial Number: 468 | Range ppb: 1000 |
| Last Calibration Date: | January 14, 2016 | As Found C.F.: 0.996 |
| Previous C.F.: | 0.999 | New C.F.: 0.999 |

| | | | |
|--------------------------|----------------------|--|---|
| Calibrator: | Flow Meter ID's: n/a | Standard Calibration Points for Ranges | |
| Make & Model: | SABIO 2010 D | Point | Sulphur Dioxide Standard Calibration Points |
| Serial #: | 11900613 | High | 780 |
| Cal Gas Cylinder I.D. #: | BLM002073 | Mid | 380 |
| Cal Gas Conc. (ppm): | 49.5 | Low | 190 |

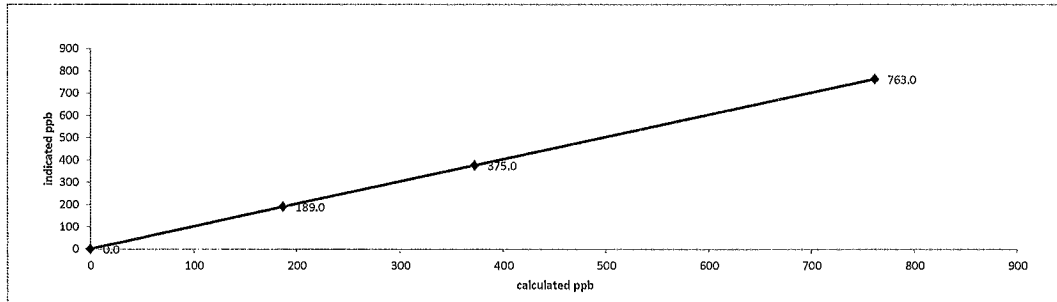
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

| Point | Calibrator Flow Rates (cc/min) | | | Calculated Concentration: (ppb) | Indicated Concentration: (ppb) | Correction Factors (C.F.): |
|-----------------|--------------------------------|---------|-------|---------------------------------|--------------------------------|----------------------------|
| | Diluent | Cal Gas | Total | | | |
| as found zero | 5012 | 0.00 | 5012 | 0.0 | 1.0 | N/A |
| as found high | 4938 | 77.20 | 5015 | 762.0 | 766.0 | 0.996 |
| adjusted zero | 5012 | 0.00 | 5012 | 0.0 | 0.0 | n/a |
| adjusted high | 4938 | 77.20 | 5015 | 762.0 | 763.0 | 0.999 |
| mid | 4975 | 37.70 | 5013 | 372.3 | 375.0 | 0.993 |
| low | 4994 | 18.90 | 5013 | 186.6 | 189.0 | 0.987 |
| calibrator zero | 5012 | 0.00 | 5012 | 0.0 | 0.0 | n/a |
| Average C.F.= | | | | | | 0.993 |

Linear Regression/Calibration Results:

| | | | |
|-----------------------------------|--------|--------|--------------|
| Correlation Coefficient = | 1.000 | LIMITS | > or = 0.995 |
| Slope = | 0.999 | | .95-1.05 |
| b (Intercept as % of full scale)= | -0.13% | | ± 3% F.S. |
| % change in C.F. from last cal= | 0.30% | | ± 10% |

API 100E Sulphur Dioxide Analyzer Calibration

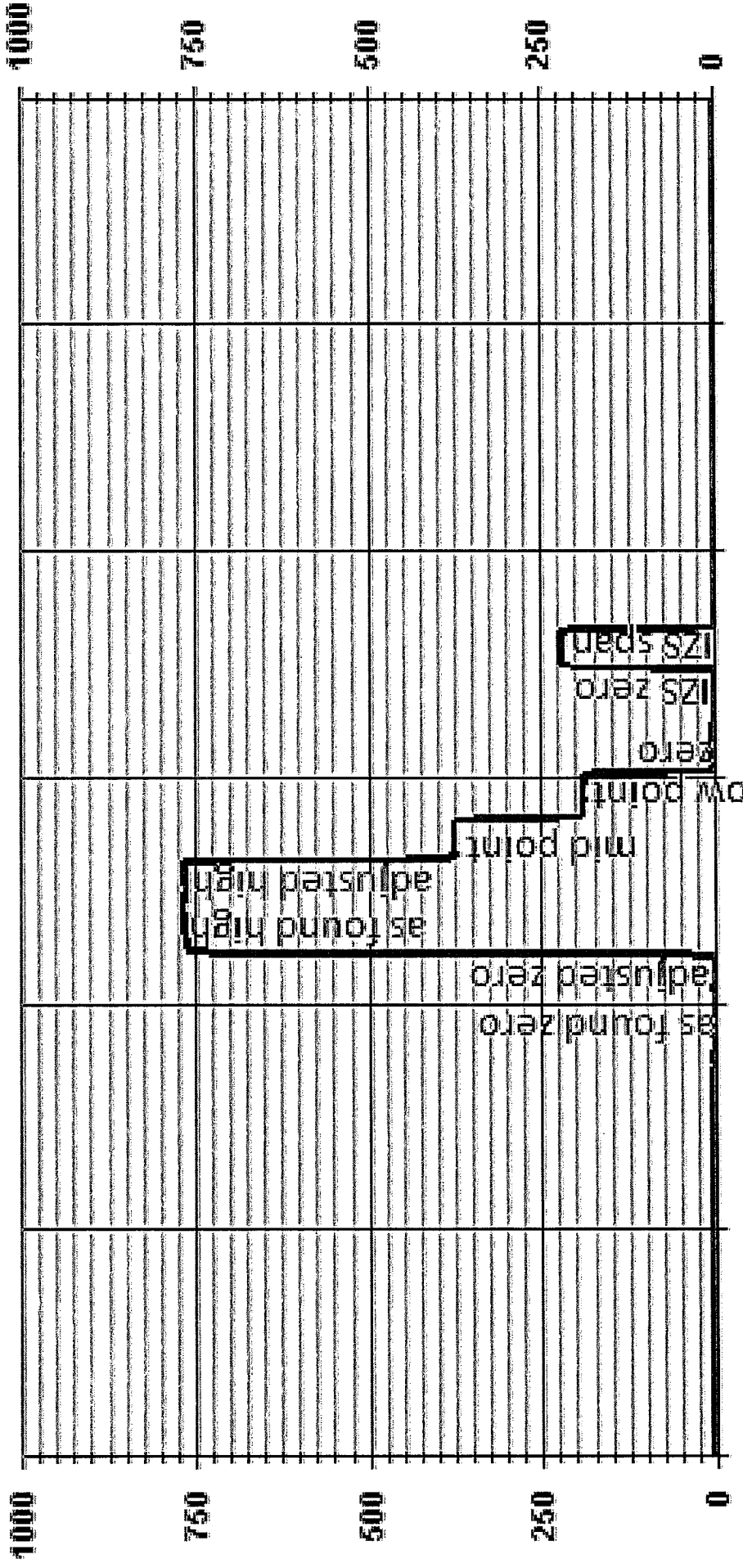


| As found: | As left: |
|--------------------|--------------------|
| SLOPE: 0.980 | SLOPE: 0.978 |
| OFFSET: 93.0 | OFFSET: 98.5 |
| HVPS: 647 | HVPS: 647 |
| RCELL TEMP: 50.0 | RCELL TEMP: 50.0 |
| BOX TEMP: 28.9 | BOX TEMP: 30.6 |
| PMT TEMP: 7.8 | PMT TEMP: 7.8 |
| IZS TEMP: 40.0 | IZS TEMP: 40.0 |
| PRES: 24.3 | PRES: 24.3 |
| SAMP FL: 580 | SAMP FL: 578 |
| NORM PMT: 96.3 | NORM PMT: 96.8 |
| UV LAMP: 3288.7 | UV LAMP: 3287.9 |
| LAMP RATIO: 94.0 | LAMP RATIO: 94.0 |
| STR. LGT: 47.5 | STR. LGT: 48.2 |
| DRK PMT: 5.1 | DRK PMT: 5.4 |
| DRK LMP: 6.9 | DRK LMP: 6.8 |
| Internal Span: 225 | Internal Span: 221 |

Comments:

Sample filter changed.

01 Minute Averages



— LICA31 SO2_ PPB



API 100E Sulphur Dioxide Analyzer Calibration

| | | | |
|--------------------------|-------------------|--|-------------------------------|
| Date: | February 19, 2016 | Barometric Pressure: | 0.911 atm |
| Company/Airshed: | LICA | Station Temperature °C: | 20 |
| Location/Station Name: | St. Lina | Weather Conditions: | A few clouds |
| Parameter: | Sulphur Dioxide | Calibration Purpose: | repeat |
| Start Time 24 hr. (mst): | 11:42 | Performed By/Reviewer: | Alex Yakupov Trina Whitsitt |
| End Time 24 hr. (mst): | 15:45 | Cal Gas Expiry Date: | March 12, 2019 |
| Calibration Method: | Gas Dilution | Converter Model & s/n (if applicable): | n/a |

| | |
|------------------------|-------------------|
| Analyzer: | |
| Serial Number: | 468 |
| Last Calibration Date: | February 11, 2016 |
| Previous C.F.: | 0.999 |
| Range ppb: | 1000 |
| As Found C.F.: | 0.991 |
| New C.F.: | 0.999 |

| | | | |
|--------------------------|--------------|--|---|
| Calibrator: | | Standard Calibration Points for Ranges | |
| Flow Meter ID's: | n/a | Point | Sulphur Dioxide Standard Calibration Points |
| Make & Model: | SABIO 2010 D | High | 780 |
| Serial #: | 11900613 | Mid | 380 |
| Cal Gas Cylinder I.D. #: | BLM002073 | Low | 190 |
| Cal Gas Conc. (ppm): | 49.5 | | |

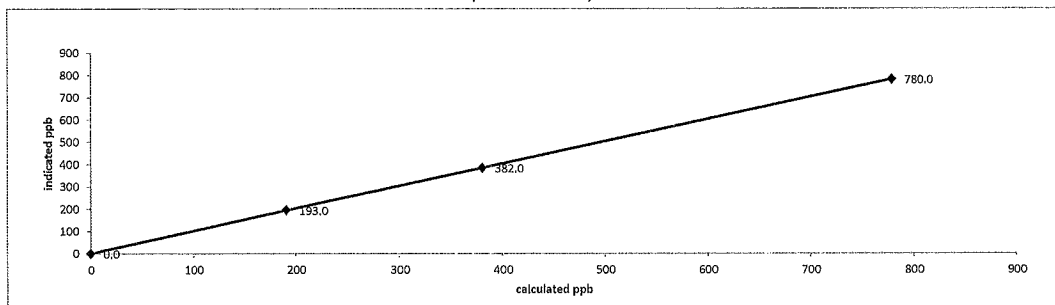
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015

| Point | Calibrator Flow Rates (cc/min) | | | Calculated Concentration: (ppb) | Indicated Concentration: (ppb) | Correction Factors (C.F.): |
|-----------------|--------------------------------|---------|-------|---------------------------------|--------------------------------|----------------------------|
| | Diluent | Cal Gas | Total | | | |
| as found zero | 5012 | 0.00 | 5012 | 0.0 | 1.0 | N/A |
| as found high | 4935 | 78.90 | 5014 | 778.9 | 787.0 | 0.991 |
| adjusted zero | 5012 | 0.00 | 5012 | 0.0 | 0.0 | n/a |
| adjusted high | 4935 | 78.90 | 5014 | 778.9 | 780.0 | 0.999 |
| mid | 4976 | 38.50 | 5015 | 380.0 | 382.0 | 0.995 |
| low | 4993 | 19.30 | 5012 | 190.6 | 193.0 | 0.988 |
| calibrator zero | 5012 | 0.00 | 5012 | 0.0 | 0.0 | n/a |
| Average C.F. = | | | | | | 0.994 |

Linear Regression/Calibration Results:

| | | | |
|------------------------------------|--------|--------|--------------|
| Correlation Coefficient = | 1.000 | LIMITS | > or = 0.995 |
| Slope = | 0.999 | | .95-1.05 |
| b (Intercept as % of full scale) = | -0.11% | | ± 3% F.S. |
| % change in C.F. from last cal = | 0.80% | | ± 10% |

API 100E Sulphur Dioxide Analyzer Calibration

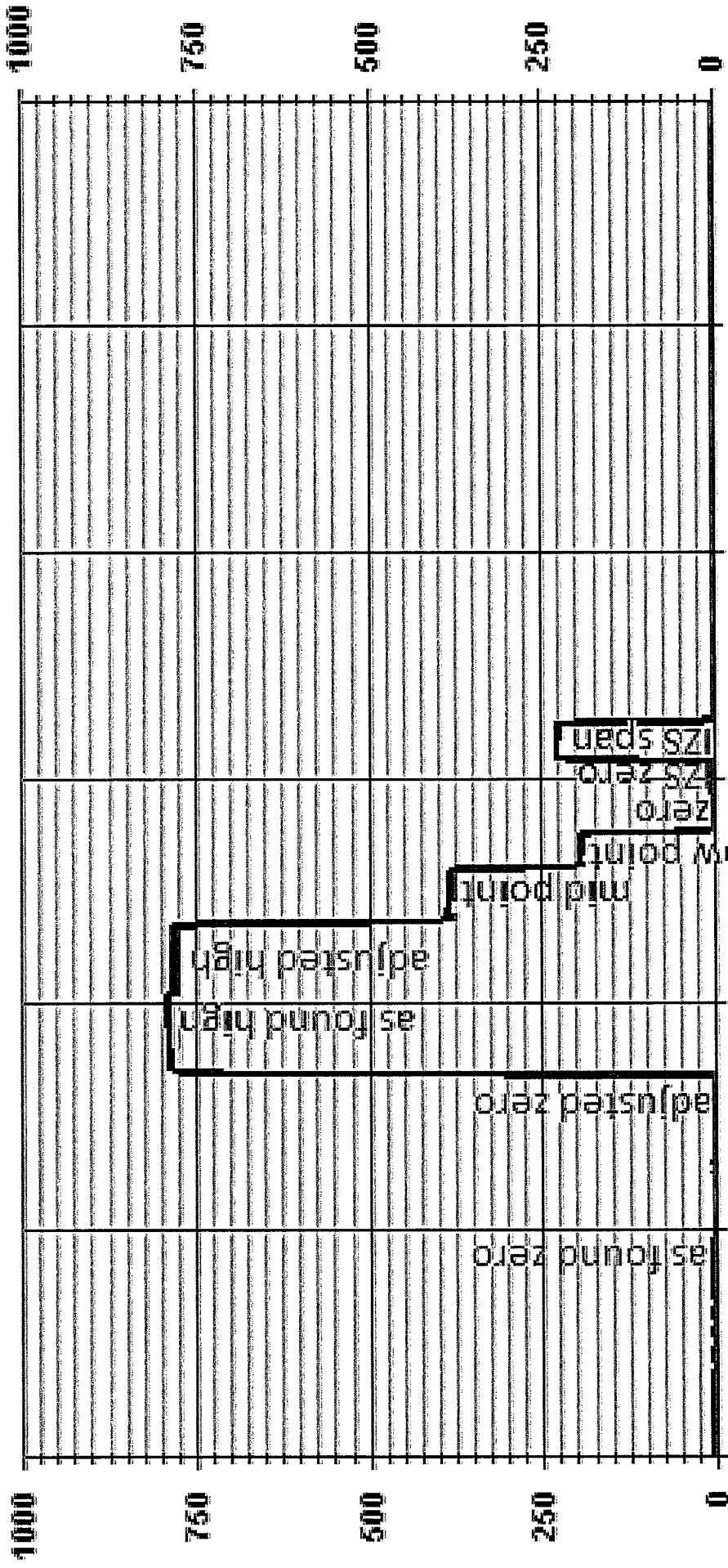


| | |
|--------------------|--------------------|
| As found: | As left: |
| SLOPE: 0.978 | SLOPE: 0.968 |
| OFFSET: 98.5 | OFFSET: 101.0 |
| HVPS: 647 | HVPS: 647 |
| RCELL TEMP: 50.0 | RCELL TEMP: 50.0 |
| BOX TEMP: 29.2 | BOX TEMP: 30.2 |
| PMT TEMP: 7.8 | PMT TEMP: 7.8 |
| IZS TEMP: 40.0 | IZS TEMP: 40.0 |
| PRES: 23.8 | PRES: 23.8 |
| SAMP FL: 568 | SAMP FL: 568 |
| NORM PMT: 96.8 | NORM PMT: 100.5 |
| UV LAMP: 3265.0 | UV LAMP: 2362.4 |
| LAMP RATIO: 94.0 | LAMP RATIO: 93.2 |
| STR. LGT: 48.2 | STR. LGT: 48.9 |
| DRK PMT: 5.4 | DRK PMT: 5.5 |
| DRK LMP: 6.8 | DRK LMP: 6.8 |
| Internal Span: 221 | Internal Span: 225 |

Comments:


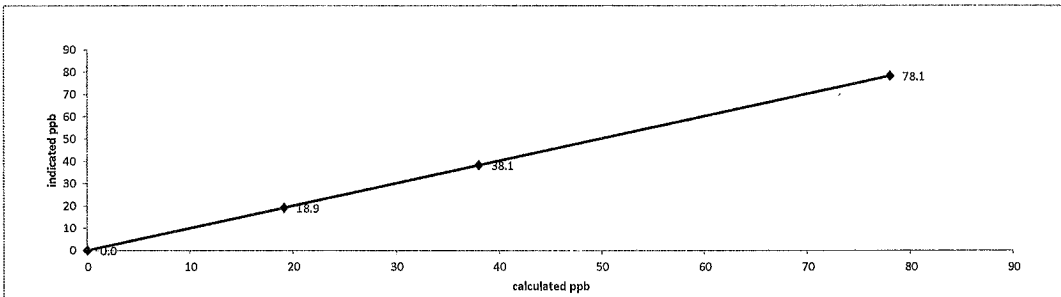
Sample filter changed on February 11, 2016. Repeat calibration performed to correct ZERO drift of about 3 ppb. After "As Found" part, ZERO air path from ZERO Air scrubber and perm tube housing were checked, all connections tightened up and charcoal renewed.

01 Minute Averages

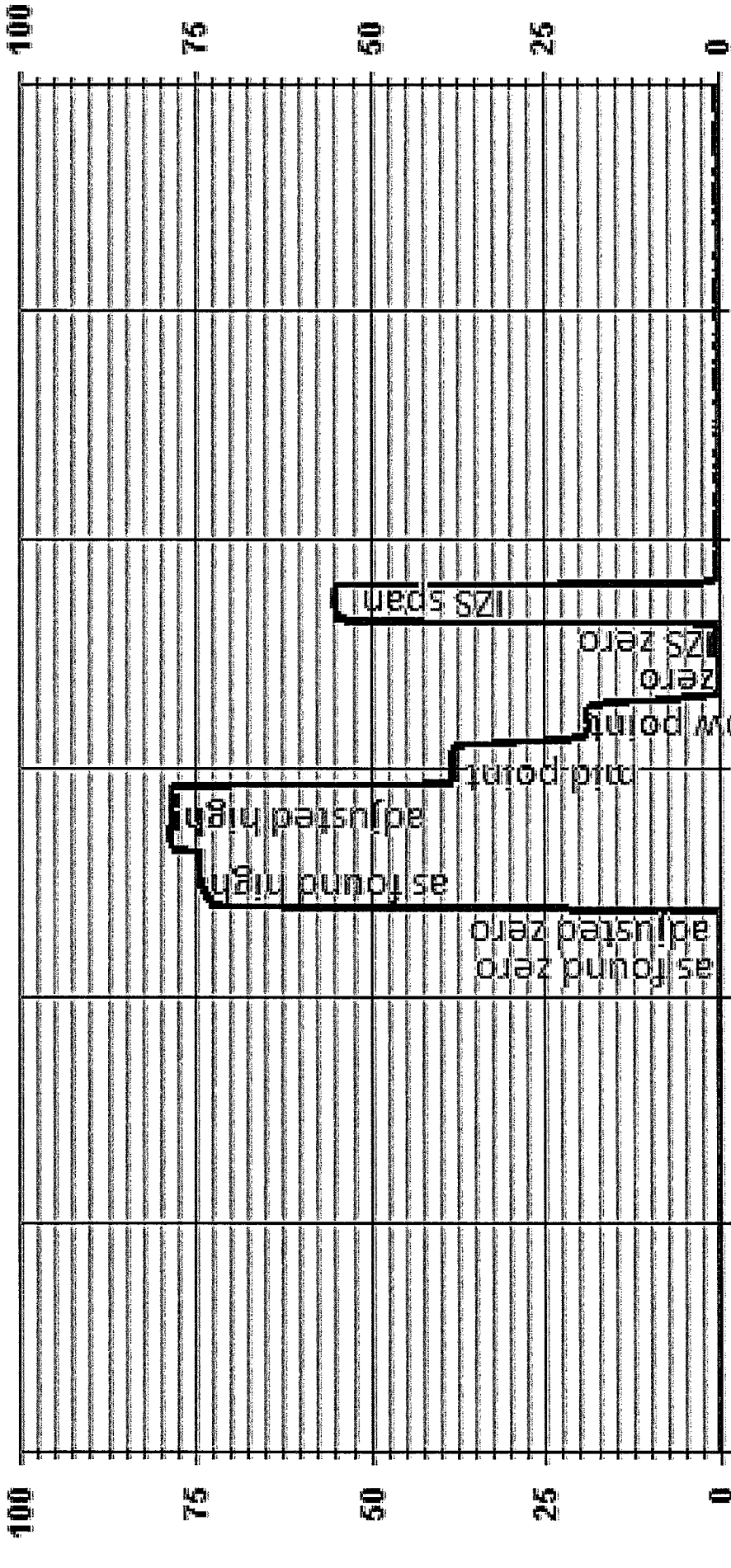


— LICA31 S02_ PPB

HYDROGEN SULPHIDE

|  API 101E Hydrogen Sulphide Analyzer Calibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|---------|---|--|--------------------------------|----------------------------|-------|---------|---------|-------|---------------------------------|--------------------------------|----------------------------|---------------|------|------|------|-----|-----|-----|---------------|------|-------|------|------|------|-------|---------------|------|-------|------|------|------|-------|-----|------|-------|------|------|------|-------|-----|------|-------|------|------|------|-------|-----------------|------|------|------|-----|-----|-----|----------------|--|--|--|--|--|-------|
| Date: February 12, 2016 Company/Alrshed: LICA Location/Station Name: St. Iina Parameter: Hydrogen Sulphide Start Time 24 hr. (mst): 9:19 End Time 24 hr. (mst): 12:52 Calibration Method: Gas Dilution | Barometric Pressure: 0.935 atm Station Temperature °C: 20 Weather Conditions: Light snow Calibration Purpose: routine monthly Performed By/Reviewer: Alex Yakupov / Trina Whitsitt Cal Gas Expiry Date: July 15, 2017 Converter Model & s/n (if applicable): n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analyzer: Serial Number: 509 Range ppb: 100 Last Calibration Date: January 15, 2016 As Found C.F.: 1.049 Previous C.F.: 1.000 New C.F.: 0.999 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibrator: Flow Meter ID's: n/a Make & Model: API 700 Serial #: 830 Cal Gas Cylinder I.D. #: LL36837 Cal Gas Conc. (ppm): 10.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Standard Calibration Points for Ranges | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Point</th> <th>Hydrogen Sulphide Standard Calibration Points</th> </tr> </thead> <tbody> <tr> <td>High</td> <td>78</td> </tr> <tr> <td>Mid</td> <td>38</td> </tr> <tr> <td>Low</td> <td>19</td> </tr> </tbody> </table> | | Point | Hydrogen Sulphide Standard Calibration Points | High | 78 | Mid | 38 | Low | 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Point | Hydrogen Sulphide Standard Calibration Points | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| High | 78 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mid | 38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low | 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Point</th> <th>Diluent</th> <th>Cal Gas</th> <th>Total</th> <th>Calculated Concentration: (ppb)</th> <th>Indicated Concentration: (ppb)</th> <th>Correction Factors (C.F.):</th> </tr> </thead> <tbody> <tr> <td>as found zero</td> <td>7497</td> <td>0.00</td> <td>7497</td> <td>0.0</td> <td>0.0</td> <td>N/A</td> </tr> <tr> <td>as found high</td> <td>7440</td> <td>58.50</td> <td>7499</td> <td>78.0</td> <td>74.4</td> <td>1.049</td> </tr> <tr> <td>adjusted high</td> <td>7440</td> <td>58.50</td> <td>7499</td> <td>78.0</td> <td>78.1</td> <td>0.999</td> </tr> <tr> <td>mid</td> <td>7470</td> <td>28.50</td> <td>7499</td> <td>38.0</td> <td>38.1</td> <td>0.998</td> </tr> <tr> <td>low</td> <td>7482</td> <td>14.30</td> <td>7496</td> <td>19.1</td> <td>18.9</td> <td>1.009</td> </tr> <tr> <td>calibrator zero</td> <td>7497</td> <td>0.00</td> <td>7497</td> <td>0.0</td> <td>0.0</td> <td>n/a</td> </tr> <tr> <td colspan="6" style="text-align: right;">Average C.F. =</td> <td>1.002</td> </tr> </tbody> </table> | | | | | | | Point | Diluent | Cal Gas | Total | Calculated Concentration: (ppb) | Indicated Concentration: (ppb) | Correction Factors (C.F.): | as found zero | 7497 | 0.00 | 7497 | 0.0 | 0.0 | N/A | as found high | 7440 | 58.50 | 7499 | 78.0 | 74.4 | 1.049 | adjusted high | 7440 | 58.50 | 7499 | 78.0 | 78.1 | 0.999 | mid | 7470 | 28.50 | 7499 | 38.0 | 38.1 | 0.998 | low | 7482 | 14.30 | 7496 | 19.1 | 18.9 | 1.009 | calibrator zero | 7497 | 0.00 | 7497 | 0.0 | 0.0 | n/a | Average C.F. = | | | | | | 1.002 |
| Point | Diluent | Cal Gas | Total | Calculated Concentration: (ppb) | Indicated Concentration: (ppb) | Correction Factors (C.F.): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found zero | 7497 | 0.00 | 7497 | 0.0 | 0.0 | N/A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found high | 7440 | 58.50 | 7499 | 78.0 | 74.4 | 1.049 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| adjusted high | 7440 | 58.50 | 7499 | 78.0 | 78.1 | 0.999 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mid | 7470 | 28.50 | 7499 | 38.0 | 38.1 | 0.998 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| low | 7482 | 14.30 | 7496 | 19.1 | 18.9 | 1.009 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| calibrator zero | 7497 | 0.00 | 7497 | 0.0 | 0.0 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average C.F. = | | | | | | 1.002 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Linear Regression/Calibration Results: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Correlation Coefficient = 1.000 Slope = 0.998 b (Intercept as % of full scale) = 0.07% % change in C.F. from last cal = -4.86% | | | | LIMITS > or = 0.995 .95-1.05 ± 3% F.S. ± 10% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| API 101E Hydrogen Sulphide Analyzer Calibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| As found: SLOPE: 1.069 OFFSET: 35.5 HVPS: 651 RCELL TEMP: 50.0 BOX TEMP: 29.6 PMT TEMP: 7.9 IZS TEMP: 48.0 Converter Temp: 315.6 PRES: 20.9 SAMP FL: 528 UV LAMP: 3407.6 LAMP RATIO: 97.3 STR. LGT: 19.0 DRK PMT: 0.1 DRK LMP: 0.5 Internal Span: 53.8 | | | As left: SLOPE: 1.107 OFFSET: 35.5 HVPS: 651 RCELL TEMP: 50.0 BOX TEMP: 29.0 PMT TEMP: 8.0 IZS TEMP: 48.0 Converter Temp: 314.0 PRES: 20.8 SAMP FL: 527 UV LAMP: 3406.2 LAMP RATIO: 97.4 STR. LGT: 19.7 DRK PMT: 0.1 DRK LMP: 0.5 Internal Span: 55.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: Sample filter changed. No ZERO adjustment made. 09:45 - 09:51 SO2 converter efficiency tested. SO2 concentration - 20 ppb. Gas Cylinder - BLM 002073, exp. March 12, 2019. Analyzer response - 0.0 ppb. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

01 Minute Averages



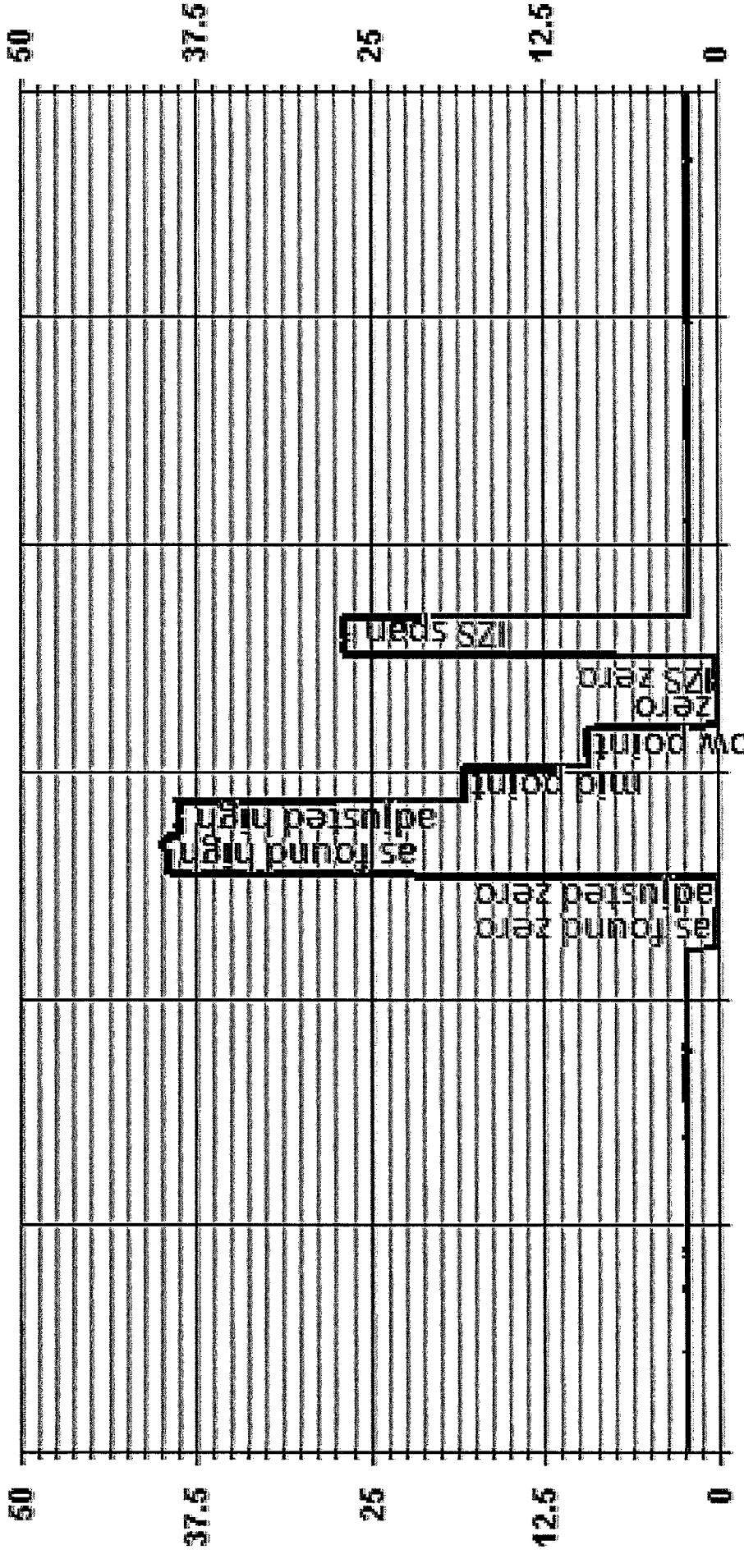
02/12/16 05:11 02/12/16 07:11 02/12/16 09:11 02/12/16 11:11 02/12/16 13:11 02/12/16 15:11

— LICA31 H2S_ PPB

TOTAL HYDROCARBON


| Maxxam <small>ANALYTICAL INSTRUMENTS</small> | | Thermo 51C Total Hydrocarbon Analyzer Calibration | | | | | | | | | |
|---|------------|--|-------|---------------------------------|--------------------------------|---------------------|----|-----|----|-----|---|
| Date: February 11, 2016 | | Barometric Pressure: 0.929 atm | | | | | | | | | |
| Company/Alrshed: LICA | | Station Temperature °C: 20 | | | | | | | | | |
| Location/Station Name: St. Lina | | Weather Conditions: Mainly cloudy with snow | | | | | | | | | |
| Parameter: Total Hydrocarbon | | Calibration Purpose: routine monthly | | | | | | | | | |
| Start/End Time 24 hr. (mst): 10:56 / 14:07 | | Performed By/Reviewer: Alex Yakupov Trina Whitsitt | | | | | | | | | |
| Calibration Method: Gas Dilution | | Cal Gas Expiry Date: November 25, 2023 | | | | | | | | | |
| Analyzer: | | | | | | | | | | | |
| Serial Number: 51CLT-77021-384 | | Range ppm: 50 | | | | | | | | | |
| Last Calibration Date: January 14, 2016 | | As Found C.F.: 0.985 | | | | | | | | | |
| Previous Cal High Point C.F.: 0.998 | | New C.F.: 1.001 | | | | | | | | | |
| Calibrator: | | | | | | | | | | | |
| Flow Meter ID's: n/a | | Standard Calibration Points for a Range of: 50 ppm | | | | | | | | | |
| Make & Model: API 700 | | | | | | | | | | | |
| Serial #: 830 | | <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Point</th> <th>Target ppm</th> </tr> </thead> <tbody> <tr> <td>High</td> <td>38</td> </tr> <tr> <td>Mid</td> <td>18</td> </tr> <tr> <td>Low</td> <td>9</td> </tr> </tbody> </table> | | Point | Target ppm | High | 38 | Mid | 18 | Low | 9 |
| Point | Target ppm | | | | | | | | | | |
| High | 38 | | | | | | | | | | |
| Mid | 18 | | | | | | | | | | |
| Low | 9 | | | | | | | | | | |
| Cal Gas Cylinder I.D. #: LL33674 | | | | | | | | | | | |
| CH ₄ /C ₂ H ₆ Cylinder Conc. (ppm): 606.0 212.0 | | | | | | | | | | | |
| CH ₄ as propane/total CH ₄ equivalents (ppm): 583.0 1189.0 | | | | | | | | | | | |
| ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015 | | | | | | | | | | | |
| Calibrator Flow Rates (cc/mln) | | | | | | | | | | | |
| Point | Diluent | Cal Gas | Total | Calculated Concentration: (ppm) | Indicated Concentration: (ppm) | Correction Factors: | | | | | |
| as found zero | 1999 | 0.00 | 1999 | 0.0 | 0.20 | n/a | | | | | |
| as found high | 1931 | 65.00 | 1996 | 38.72 | 39.50 | 0.985 | | | | | |
| adjusted zero | 1999 | 0.00 | 1999 | 0.00 | 0.00 | n/a | | | | | |
| adjusted high | 1931 | 65.00 | 1996 | 38.72 | 38.70 | 1.001 | | | | | |
| mid | 1969 | 31.00 | 2000 | 18.43 | 18.30 | 1.007 | | | | | |
| low | 1984 | 16.00 | 2000 | 9.51 | 9.40 | 1.012 | | | | | |
| calibrator zero | 1999 | 0.00 | 1999 | 0.0 | 0.00 | n/a | | | | | |
| Average C.F. = | | | | | | 1.007 | | | | | |
| Linear Regression/Calibration Results: | | | | | | | | | | | |
| Correlation Coefficient = 1.000 | | | | LIMITS > or = 0.995 | | | | | | | |
| Slope = 1.000 | | | | .95-1.05 | | | | | | | |
| b (Intercept as % of full scale) = 0.14% | | | | ± 3% F.S. | | | | | | | |
| % change in C.F. from last cal = 1.28% | | | | ± 10% | | | | | | | |
| Thermo 51C Total Hydrocarbon Analyzer Calibration | | | | | | | | | | | |
| | | | | | | | | | | | |
| As found: | | | | As left: | | | | | | | |
| H2 cylinder (psi): 1100 | | | | H2 cylinder (psi): 1100 | | | | | | | |
| H2 cylinder reg set (psi): 25 | | | | H2 cylinder reg set (psi): 25 | | | | | | | |
| Span Cylinder (psi): 1000 | | | | Span Cylinder (psi): 1000 | | | | | | | |
| Span Cylinder Reg Set (psi): 22 | | | | Span Cylinder Reg Set (psi): 22 | | | | | | | |
| Zero Air Gen Pressure: 42 | | | | Zero Air Gen Pressure: 42 | | | | | | | |
| measurement alarms: None | | | | measurement alarms: None | | | | | | | |
| service alarms: None | | | | service alarms: None | | | | | | | |
| cnt: 1694 | | | | cnt: 1671 | | | | | | | |
| rng: 1 | | | | rng: 1 | | | | | | | |
| try: 1 | | | | try: 1 | | | | | | | |
| flm: 187.0 | | | | flm: 187.0 | | | | | | | |
| det: 125.7 | | | | det: 125.3 | | | | | | | |
| Flame: 187 | | | | Flame: 187 | | | | | | | |
| Filter: 125 | | | | Filter: 125 | | | | | | | |
| Base: 125 | | | | Base: 125 | | | | | | | |
| Sample psi: 06.92 | | | | Sample psi: 06.92 | | | | | | | |
| Internal Air Pressure: 18 | | | | Internal Air Pressure: 18 | | | | | | | |
| Internal Fuel Pressure: 13 | | | | Internal Fuel Pressure: 13 | | | | | | | |
| Internal Pressure Gauge psi: 27 | | | | Internal Pressure Gauge psi: 27 | | | | | | | |
| Internal Span: 26.8 | | | | Internal Span: 26.8 | | | | | | | |
| Comments: | | | | | | | | | | | |
| Sample filter changed. EV has not changed after calibration. | | | | | | | | | | | |

01 Minute Averages



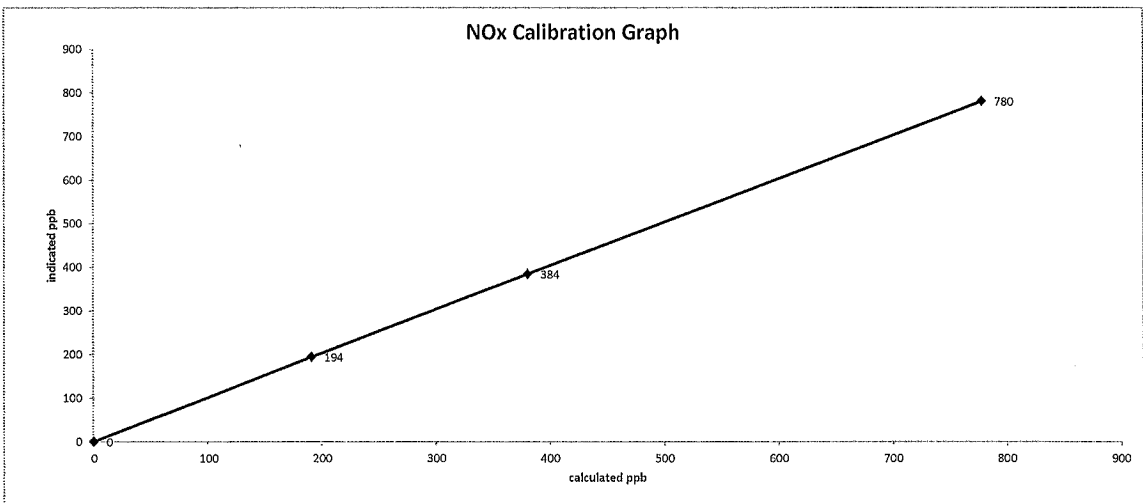
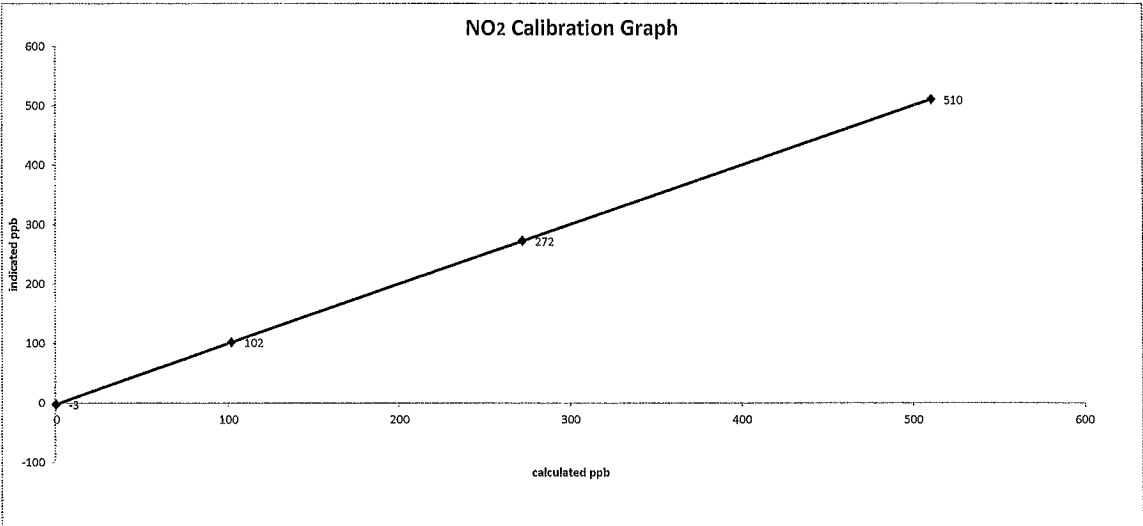
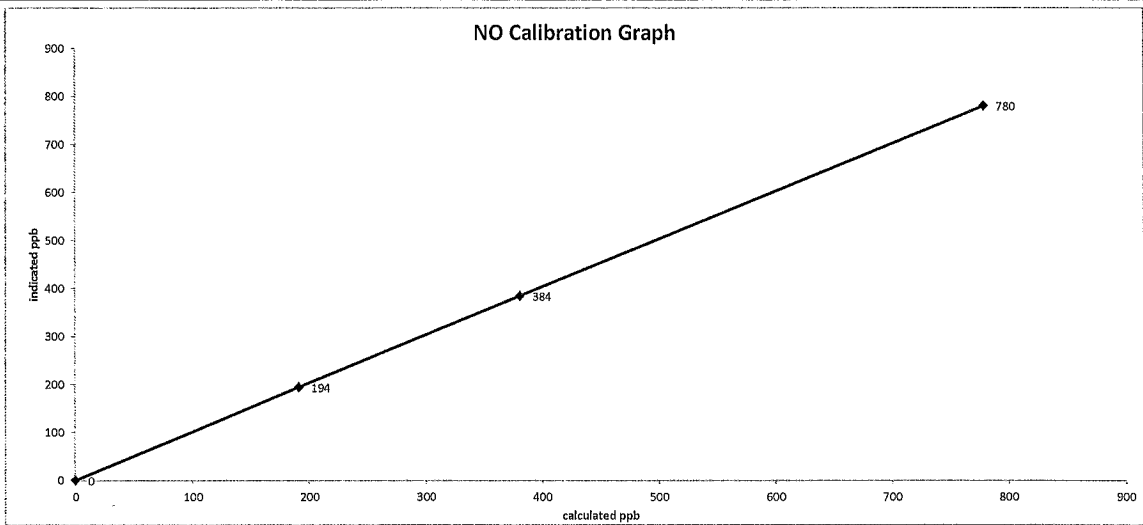
— LICA31 - - - - THC PPM

NITROGEN DIOXIDE

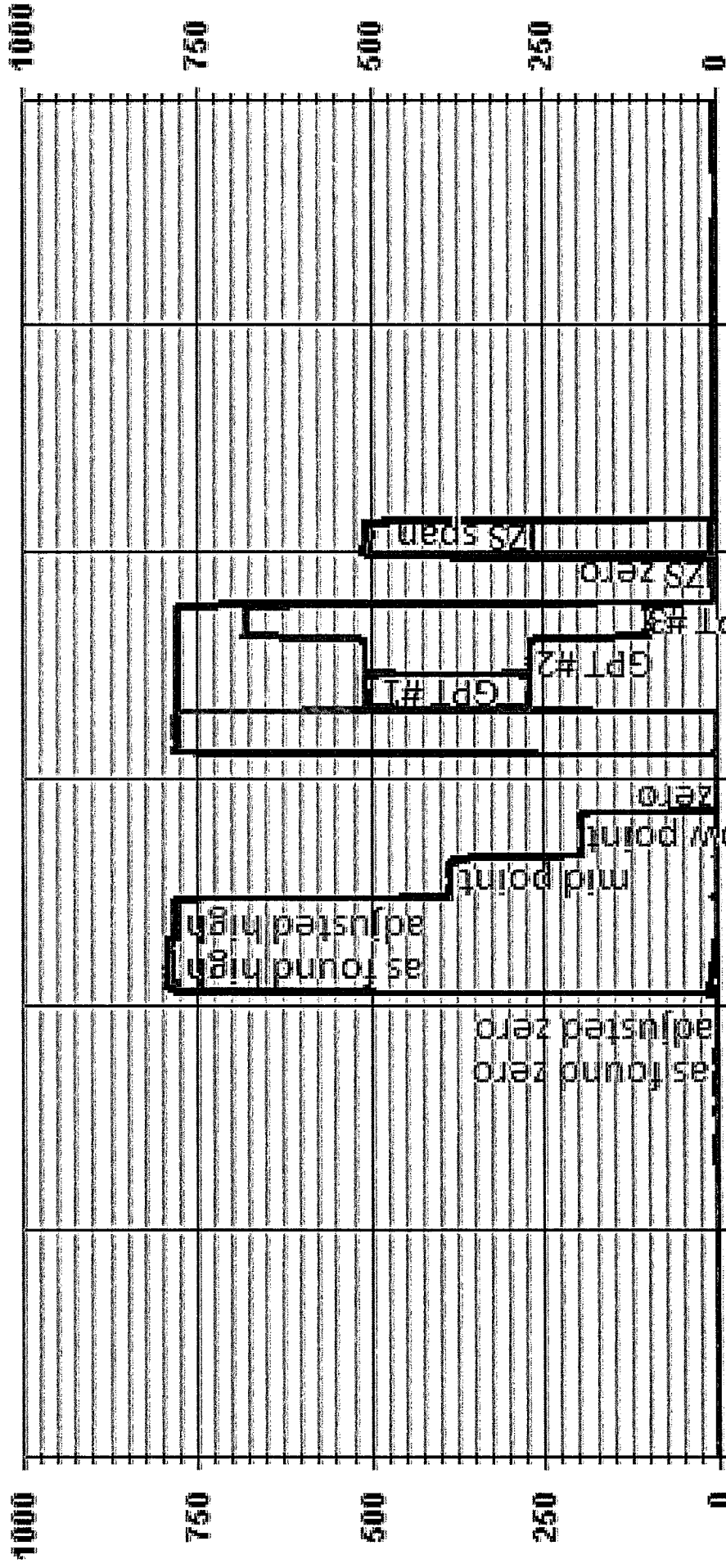
|  API 200E NO-NO2-NOx Analyzer Calibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---|---|------------------------------|-----------------|---------------------------|---------------------------|---------------|---------------------------|----------------------|----------------------|----------------------|---------|------------------------------------|------------|------------|--------------|----------------------------------|-------|-------|--------|--------------------------|-------|---------------|------|-------|------|-----|-------|-------|------|---------------|------|------|-------------------|-------|-------|-------|-------|-------|-------|---------------|-------|-------|-------|---------|------|-------|------|-------|-------|---------------|-------|-------|-------|-------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------------------|-------|-------|-------|-----|------|-------|------|-------|-------|-------|-------|-------|-------|-----------------|------|------|------|---|---|-----|-----|-----|-----|---------------|--|--|--|--|--|--|--|-------|-------|
| Date: February 11, 2016 Company/Alrshed: LICA Location/Station Name: St. Lina Start/End Time 24 hr. (mst): 10:56 / 16:10 G.P.T. to be used for Ozone? No Calibration Method: Gas Dilution & Varying UV Lamp Power | Barometric Pressure: 0.929 atm Station Temperature °C: 20 Weather Conditions: Mainly cloudy with snow Calibration Purpose: routine monthly Performed By/Reviewer: Alex Yakupov Trlna Whltsitt Cal Gas Expiry Date: March 12, 2019 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analyzer: Serial Number: 594 Last Calibration Date: January 14, 2016 Range ppb: 1000 | Correction Factors: <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Previous C.F.:</th> <th>As Found C.F.:</th> <th>New C.F.:</th> </tr> </thead> <tbody> <tr> <td>NO =</td> <td>1.001</td> <td>0.991</td> <td>0.999</td> </tr> <tr> <td>NO₂ =</td> <td>1.000</td> <td>1.002</td> <td>1.002</td> </tr> <tr> <td>NOx =</td> <td>0.999</td> <td>0.986</td> <td>0.999</td> </tr> </tbody> </table> | | Previous C.F.: | As Found C.F.: | New C.F.: | NO = | 1.001 | 0.991 | 0.999 | NO ₂ = | 1.000 | 1.002 | 1.002 | NOx = | 0.999 | 0.986 | 0.999 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Previous C.F.: | As Found C.F.: | New C.F.: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NO = | 1.001 | 0.991 | 0.999 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NO ₂ = | 1.000 | 1.002 | 1.002 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NOx = | 0.999 | 0.986 | 0.999 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibrator: Flow Meter ID's: n/a Make & Model: SABIO 2010 D Serial #: 11900613 Cal Gas Cylinder I.D. #: BLM002073 NO/NOx Gas Conc. (ppm): 50.6 50.6 | Standard Calibration Points for a Range of: 1000 ppb <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Point</th> <th>Target NO (ppb)</th> <th>Target NO₂ (ppb)</th> <th>Cc Ozone ?</th> </tr> </thead> <tbody> <tr> <td>High</td> <td>780</td> <td>500</td> <td>n/a</td> </tr> <tr> <td>Mid</td> <td>380</td> <td>275</td> <td>n/a</td> </tr> <tr> <td>Low</td> <td>190</td> <td>100</td> <td>n/a</td> </tr> <tr> <td>Extra Point #1</td> <td>n/a</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td>Extra Point #2</td> <td>n/a</td> <td>n/a</td> <td>n/a</td> </tr> </tbody> </table> | Point | Target NO (ppb) | Target NO ₂ (ppb) | Cc Ozone ? | High | 780 | 500 | n/a | Mid | 380 | 275 | n/a | Low | 190 | 100 | n/a | Extra Point #1 | n/a | n/a | n/a | Extra Point #2 | n/a | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Point | Target NO (ppb) | Target NO ₂ (ppb) | Cc Ozone ? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| High | 780 | 500 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mid | 380 | 275 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low | 190 | 100 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extra Point #1 | n/a | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extra Point #2 | n/a | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">Calibrator Flow Rates (cc/min)</th> <th>Calculated NO</th> <th>Calculated NOx</th> <th>Indicated NO</th> <th>Indicated NOx</th> <th>NO C.F.</th> <th>NOx C.F.</th> </tr> <tr> <th>Point</th> <th>Diluent</th> <th>Cal Gas</th> <th>Total Flow</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>as found zero</td> <td>5012</td> <td>0.0</td> <td>5012</td> <td>0</td> <td>0</td> <td>0.0</td> <td>1.0</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td>as found high</td> <td>4938</td> <td>77.2</td> <td>5015</td> <td>778.9</td> <td>778.9</td> <td>786.0</td> <td>791.0</td> <td>0.991</td> <td>0.986</td> </tr> <tr> <td>adjusted zero</td> <td>5012</td> <td>0.00</td> <td>5012</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td>adjusted high</td> <td>4938</td> <td>77.20</td> <td>5015</td> <td>778.9</td> <td>778.9</td> <td>780.0</td> <td>780.0</td> <td>0.999</td> <td>0.999</td> </tr> <tr> <td>mid</td> <td>4975</td> <td>37.70</td> <td>5013</td> <td>380.6</td> <td>380.6</td> <td>384.0</td> <td>384.0</td> <td>0.991</td> <td>0.991</td> </tr> <tr> <td>low</td> <td>4994</td> <td>18.90</td> <td>5013</td> <td>190.8</td> <td>190.8</td> <td>194.0</td> <td>194.0</td> <td>0.983</td> <td>0.983</td> </tr> <tr> <td>calibrator zero</td> <td>5013</td> <td>0.00</td> <td>5013</td> <td>0</td> <td>0</td> <td>0.0</td> <td>0.0</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td colspan="8" style="text-align: right;">Average C.F.=</td> <td>0.991</td> <td>0.991</td> </tr> </tbody> </table> | | Calibrator Flow Rates (cc/min) | | | | Calculated NO | Calculated NOx | Indicated NO | Indicated NOx | NO C.F. | NOx C.F. | Point | Diluent | Cal Gas | Total Flow | (ppb) | (ppb) | (ppb) | (ppb) | | | as found zero | 5012 | 0.0 | 5012 | 0 | 0 | 0.0 | 1.0 | n/a | n/a | as found high | 4938 | 77.2 | 5015 | 778.9 | 778.9 | 786.0 | 791.0 | 0.991 | 0.986 | adjusted zero | 5012 | 0.00 | 5012 | 0.0 | 0.0 | 0.0 | 0.0 | n/a | n/a | adjusted high | 4938 | 77.20 | 5015 | 778.9 | 778.9 | 780.0 | 780.0 | 0.999 | 0.999 | mid | 4975 | 37.70 | 5013 | 380.6 | 380.6 | 384.0 | 384.0 | 0.991 | 0.991 | low | 4994 | 18.90 | 5013 | 190.8 | 190.8 | 194.0 | 194.0 | 0.983 | 0.983 | calibrator zero | 5013 | 0.00 | 5013 | 0 | 0 | 0.0 | 0.0 | n/a | n/a | Average C.F.= | | | | | | | | 0.991 | 0.991 |
| Calibrator Flow Rates (cc/min) | | | | Calculated NO | Calculated NOx | Indicated NO | Indicated NOx | NO C.F. | NOx C.F. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Point | Diluent | Cal Gas | Total Flow | (ppb) | (ppb) | (ppb) | (ppb) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found zero | 5012 | 0.0 | 5012 | 0 | 0 | 0.0 | 1.0 | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found high | 4938 | 77.2 | 5015 | 778.9 | 778.9 | 786.0 | 791.0 | 0.991 | 0.986 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| adjusted zero | 5012 | 0.00 | 5012 | 0.0 | 0.0 | 0.0 | 0.0 | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| adjusted high | 4938 | 77.20 | 5015 | 778.9 | 778.9 | 780.0 | 780.0 | 0.999 | 0.999 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mid | 4975 | 37.70 | 5013 | 380.6 | 380.6 | 384.0 | 384.0 | 0.991 | 0.991 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| low | 4994 | 18.90 | 5013 | 190.8 | 190.8 | 194.0 | 194.0 | 0.983 | 0.983 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| calibrator zero | 5013 | 0.00 | 5013 | 0 | 0 | 0.0 | 0.0 | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average C.F.= | | | | | | | | 0.991 | 0.991 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">Calibrator Flow Rates (cc/min)</th> <th>Calibrator Setting</th> <th>Indicated NO</th> <th>Indicated NOx</th> <th>Indicated NO₂</th> <th>NO drop</th> <th>NO₂ gain</th> <th>NO₂ C.F.</th> </tr> <tr> <th>Point</th> <th>Diluent</th> <th>Cal Gas</th> <th>Total Flow</th> <th>volts or ppb</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> </tr> </thead> <tbody> <tr> <td>NOx reference</td> <td>4938</td> <td>77.20</td> <td>5015</td> <td>0.0</td> <td>780.0</td> <td>778.0</td> <td>-3.0</td> <td>0.0</td> <td>-3.0</td> <td></td> </tr> <tr> <td>as found high NO2</td> <td>4938</td> <td>77.20</td> <td>5015</td> <td>530.0</td> <td>269.0</td> <td>777.0</td> <td>507.0</td> <td>511.0</td> <td>510.0</td> <td>1.002</td> </tr> <tr> <td>gpt mid</td> <td>4938</td> <td>77.20</td> <td>5015</td> <td>280.0</td> <td>508.0</td> <td>778.0</td> <td>269.0</td> <td>272.0</td> <td>272.0</td> <td>1.000</td> </tr> <tr> <td>gpt low</td> <td>4938</td> <td>77.20</td> <td>5015</td> <td>100.0</td> <td>678.0</td> <td>778.0</td> <td>99.0</td> <td>102.0</td> <td>102.0</td> <td>1.000</td> </tr> <tr> <td colspan="9" style="text-align: right;">Average NO₂ C.F.=</td> <td>1.001</td> </tr> </tbody> </table> | | Calibrator Flow Rates (cc/min) | | | | Calibrator Setting | Indicated NO | Indicated NOx | Indicated NO ₂ | NO drop | NO ₂ gain | NO ₂ C.F. | Point | Diluent | Cal Gas | Total Flow | volts or ppb | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) | NOx reference | 4938 | 77.20 | 5015 | 0.0 | 780.0 | 778.0 | -3.0 | 0.0 | -3.0 | | as found high NO2 | 4938 | 77.20 | 5015 | 530.0 | 269.0 | 777.0 | 507.0 | 511.0 | 510.0 | 1.002 | gpt mid | 4938 | 77.20 | 5015 | 280.0 | 508.0 | 778.0 | 269.0 | 272.0 | 272.0 | 1.000 | gpt low | 4938 | 77.20 | 5015 | 100.0 | 678.0 | 778.0 | 99.0 | 102.0 | 102.0 | 1.000 | Average NO ₂ C.F.= | | | | | | | | | 1.001 | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibrator Flow Rates (cc/min) | | | | Calibrator Setting | Indicated NO | Indicated NOx | Indicated NO ₂ | NO drop | NO ₂ gain | NO ₂ C.F. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Point | Diluent | Cal Gas | Total Flow | volts or ppb | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NOx reference | 4938 | 77.20 | 5015 | 0.0 | 780.0 | 778.0 | -3.0 | 0.0 | -3.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found high NO2 | 4938 | 77.20 | 5015 | 530.0 | 269.0 | 777.0 | 507.0 | 511.0 | 510.0 | 1.002 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| gpt mid | 4938 | 77.20 | 5015 | 280.0 | 508.0 | 778.0 | 269.0 | 272.0 | 272.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| gpt low | 4938 | 77.20 | 5015 | 100.0 | 678.0 | 778.0 | 99.0 | 102.0 | 102.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average NO ₂ C.F.= | | | | | | | | | 1.001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Linear Regression/Calibration Results: <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>NO</th> <th>NOx</th> <th>NO₂</th> </tr> </thead> <tbody> <tr> <td>Correlation Coefficient =</td> <td>1.000</td> <td>1.000</td> <td>1.000</td> </tr> <tr> <td>Slope =</td> <td>0.999</td> <td>0.999</td> <td>0.997</td> </tr> <tr> <td>b (Intercept as % of full scale) =</td> <td>0.18%</td> <td>0.18%</td> <td>-0.16%</td> </tr> <tr> <td>% change in C.F. from last cal =</td> <td>1.00%</td> <td>1.31%</td> <td>-0.20%</td> </tr> <tr> <td>NO2 converter efficiency</td> <td></td> <td></td> <td>1.00</td> </tr> </tbody> </table> | | | NO | NOx | NO ₂ | Correlation Coefficient = | 1.000 | 1.000 | 1.000 | Slope = | 0.999 | 0.999 | 0.997 | b (Intercept as % of full scale) = | 0.18% | 0.18% | -0.16% | % change in C.F. from last cal = | 1.00% | 1.31% | -0.20% | NO2 converter efficiency | | | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | NO | NOx | NO ₂ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Correlation Coefficient = | 1.000 | 1.000 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Slope = | 0.999 | 0.999 | 0.997 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| b (Intercept as % of full scale) = | 0.18% | 0.18% | -0.16% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % change in C.F. from last cal = | 1.00% | 1.31% | -0.20% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NO2 converter efficiency | | | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="0" style="width:100%;"> <tr> <td style="width: 50%; vertical-align: top;"> As found: NOx SLOPE: 0.954 NOx OFFS: 2.7 NO SLOPE: 0.951 NO OFFS: -0.1 SAMP FLW: 458 OZONE FL: 78 PMT: 14.1 NORM PMT: 2.0 AZERO: 18.0 HVPS: 771 RCELL TEMP: 50.0 BOX TEMP: 35.9 PMT TEMP: 6.8 IZS TEMP: 45.0 MOLY TEMP: 313.8 RCEL: 6.6 SAMP: 26.6 Internal Span NO: 7.4 Internal Span NO2: 522 Internal Span NOx: 529 </td> <td style="width: 50%; vertical-align: top;"> As left: NOx SLOPE: 0.937 NOx OFFS: 0.8 NO SLOPE: 0.942 NO OFFS: 0.1 SAMP FLW: 459 OZONE FL: 78 PMT: 18.8 NORM PMT: 1.8 AZERO: 19.3 HVPS: 771 RCELL TEMP: 50.0 BOX TEMP: 37.6 PMT TEMP: 6.8 IZS TEMP: 45.1 MOLY TEMP: 314.5 RCEL: 6.6 SAMP: 27.1 Internal Span NO: 6.5 Internal Span NO2: 516 Internal Span NOx: 523 </td> </tr> </table> | | As found: NOx SLOPE: 0.954 NOx OFFS: 2.7 NO SLOPE: 0.951 NO OFFS: -0.1 SAMP FLW: 458 OZONE FL: 78 PMT: 14.1 NORM PMT: 2.0 AZERO: 18.0 HVPS: 771 RCELL TEMP: 50.0 BOX TEMP: 35.9 PMT TEMP: 6.8 IZS TEMP: 45.0 MOLY TEMP: 313.8 RCEL: 6.6 SAMP: 26.6 Internal Span NO: 7.4 Internal Span NO2: 522 Internal Span NOx: 529 | As left: NOx SLOPE: 0.937 NOx OFFS: 0.8 NO SLOPE: 0.942 NO OFFS: 0.1 SAMP FLW: 459 OZONE FL: 78 PMT: 18.8 NORM PMT: 1.8 AZERO: 19.3 HVPS: 771 RCELL TEMP: 50.0 BOX TEMP: 37.6 PMT TEMP: 6.8 IZS TEMP: 45.1 MOLY TEMP: 314.5 RCEL: 6.6 SAMP: 27.1 Internal Span NO: 6.5 Internal Span NO2: 516 Internal Span NOx: 523 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Comments: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample filter changed. No NO2 adjustment made. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Date: February 11, 2016
Company/Alrshed: LICA
Location/Station Name: St. Lina

Start/End Time 24 hr. (mst): 10:56 / 16:10
Calibration Purpose: routine monthly
Calibration Method: Gas Dilution & Varying UV Lamp Power



01 Minute Averages



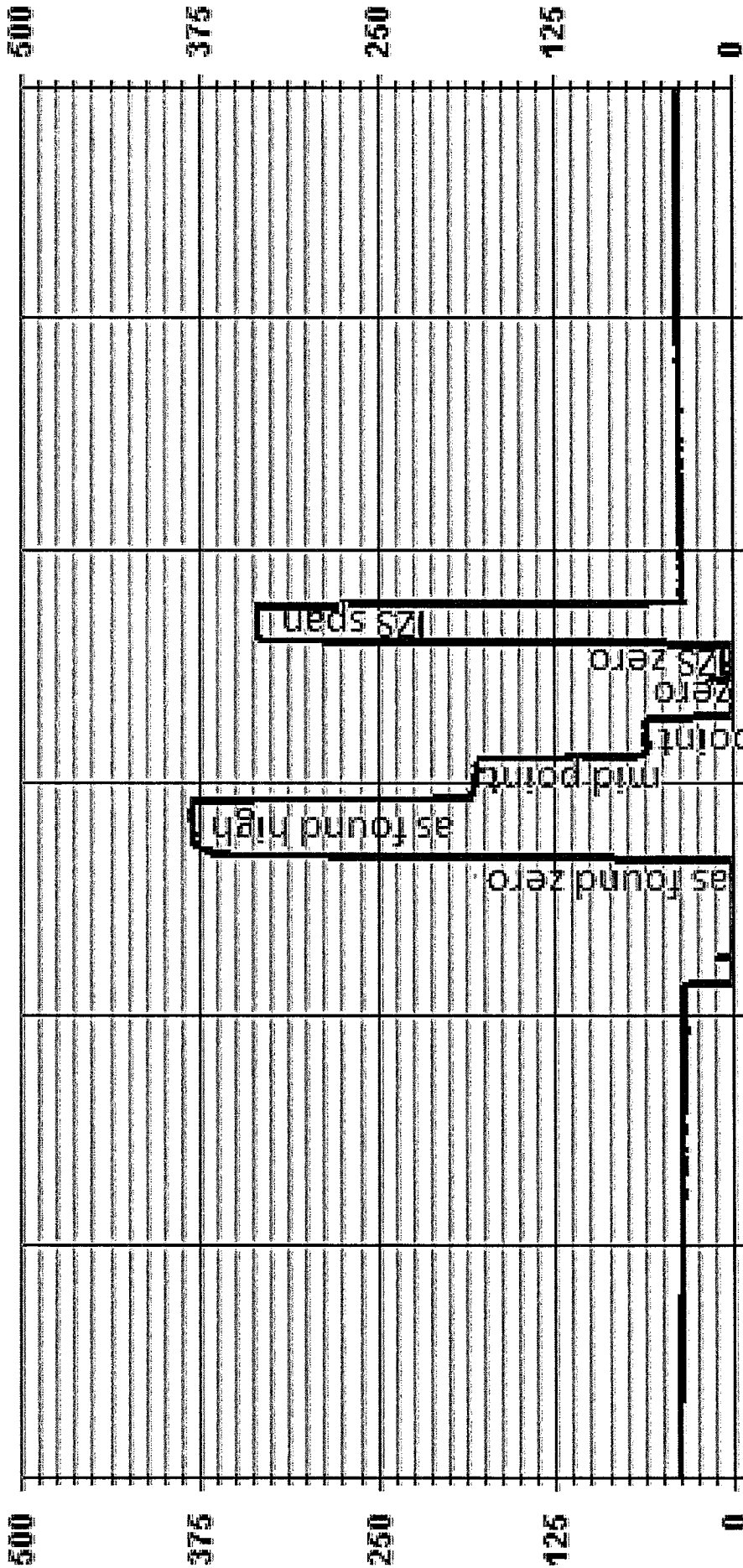
02/11/16 07:50 02/11/16 09:50 02/11/16 11:50 02/11/16 13:50 02/11/16 15:50 02/11/16 17:50

— LICA31 NOX_ PPB — LICA31 NO_ LICA31 NO2_ PPB

OZONE

| Thermo 49i Ozone Analyzer Calibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---|--|-------------------------------------|---------------------------|-------------------------------------|--------------------------|---------------------|--------------------------|---------------------------|-------|-------|-------|---------------|------|------|-----|-----|-----|-----|---------------|------|------|-------|-------|-------|-------|-----|------|------|-------|-------|-------|-------|-----|------|------|------|------|------|-------|-----------------|------|------|-----|-----|-----|-----|---------------|--|--|--|--|--|-------|
| Date: February 12, 2016 Company/Alrshed: LICA Location/Station Name: St. Lina Start/End Time 24 hr. (mst): 9:19 / 12:48 Ozone Calibration Method: Varying UV Lamp Power G.P.T. Date: n/a-done by Varying UV Lamp Power | Barometric Pressure: 0.935 atm Station Temperature °C: 20 Weather Conditions: Light snow Calibration Purpose: routine monthly Performed By/Reviewer: Alex Yakupov Trina Whitsitt Cal Gas Expiry Date: n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analyzer: Serial Number: 1002240371 Ozone Range ppb: 500 Last Calibration Date: January 15, 2016 As Found C.F.: 1.000 Previous Cal High Point C.F.: 1.000 New C.F.: 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibrator: Flow Meter ID's: n/a Make & Model: SABIO 2010 D Serial #: 11900613 Cal Gas Cylinder I.D. #: n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Point</th> <th colspan="2">Calibrator Flow Rate (cc/min)</th> <th>Calculated Concentration:</th> <th>Corrected Calculated Concentration:</th> <th>Indicated Concentration:</th> <th rowspan="2">Correction Factors:</th> </tr> <tr> <th>Total Flow @ Point Start</th> <th>Total Flow @ Point Finlsh</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> </tr> </thead> <tbody> <tr> <td>as found zero</td> <td>5013</td> <td>5013</td> <td>0.0</td> <td>n/a</td> <td>0.0</td> <td>n/a</td> </tr> <tr> <td>as found high</td> <td>5013</td> <td>5013</td> <td>380.0</td> <td>380.0</td> <td>380.0</td> <td>1.000</td> </tr> <tr> <td>mid</td> <td>5013</td> <td>5013</td> <td>180.0</td> <td>180.0</td> <td>180.0</td> <td>1.000</td> </tr> <tr> <td>low</td> <td>5013</td> <td>5013</td> <td>60.0</td> <td>60.0</td> <td>60.0</td> <td>1.000</td> </tr> <tr> <td>calibrator zero</td> <td>5013</td> <td>5013</td> <td>0.0</td> <td>n/a</td> <td>0.0</td> <td>n/a</td> </tr> <tr> <td colspan="6" style="text-align: right;">Average C.F.=</td> <td>1.000</td> </tr> </tbody> </table> | | Point | Calibrator Flow Rate (cc/min) | | Calculated Concentration: | Corrected Calculated Concentration: | Indicated Concentration: | Correction Factors: | Total Flow @ Point Start | Total Flow @ Point Finlsh | (ppb) | (ppb) | (ppb) | as found zero | 5013 | 5013 | 0.0 | n/a | 0.0 | n/a | as found high | 5013 | 5013 | 380.0 | 380.0 | 380.0 | 1.000 | mid | 5013 | 5013 | 180.0 | 180.0 | 180.0 | 1.000 | low | 5013 | 5013 | 60.0 | 60.0 | 60.0 | 1.000 | calibrator zero | 5013 | 5013 | 0.0 | n/a | 0.0 | n/a | Average C.F.= | | | | | | 1.000 |
| Point | Calibrator Flow Rate (cc/min) | | Calculated Concentration: | Corrected Calculated Concentration: | Indicated Concentration: | Correction Factors: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Total Flow @ Point Start | Total Flow @ Point Finlsh | (ppb) | (ppb) | (ppb) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found zero | 5013 | 5013 | 0.0 | n/a | 0.0 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found high | 5013 | 5013 | 380.0 | 380.0 | 380.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mid | 5013 | 5013 | 180.0 | 180.0 | 180.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| low | 5013 | 5013 | 60.0 | 60.0 | 60.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| calibrator zero | 5013 | 5013 | 0.0 | n/a | 0.0 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average C.F.= | | | | | | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Linear Regression/Calibration Results: Correlation Coefficient = 1.000 LIMITS > or = 0.995 Slope = 1.000 .95-1.05 b (Intercept as % of full scale) = 0.00% ± 3% F.S. % change in C.F. from last cal = 0.00% ± 10% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thermo 49i Ozone Analyzer Calibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width:100%;"> <tr> <td style="width:50%; vertical-align: top;"> As found: O3 Bkg: -0.2 O3 Coef: 0.976 Photo Lamp: 9.4 O3 Lamp: 7.8 Bench: 25.2 Bench Lamp: 53.5 O3 Lamp: 67.7 Pressure: 684.4 Cell A lpm: 0.730 Cell B lpm: 0.726 O3 ppb: -5.1 Cell A ppb: 5.0 Cell B ppb: -5.3 Cell A Int: 56052 Cell B Int: 69370 Internal Span: 333 </td> <td style="width:50%; vertical-align: top;"> As left: O3 Bkg: -0.3 O3 Coef: 0.976 Photo Lamp: 9.4 O3 Lamp: 7.8 Bench: 26.2 Bench Lamp: 53.6 O3 Lamp: 67.7 Pressure: 684.4 Cell A lpm: 0.730 Cell B lpm: 0.726 O3 ppb: -0.3 Cell A ppb: -4.4 Cell B ppb: 3.8 Cell A Int: 56077 Cell B Int: 69393 Internal Span: 333.8 </td> </tr> </table> | | As found: O3 Bkg: -0.2 O3 Coef: 0.976 Photo Lamp: 9.4 O3 Lamp: 7.8 Bench: 25.2 Bench Lamp: 53.5 O3 Lamp: 67.7 Pressure: 684.4 Cell A lpm: 0.730 Cell B lpm: 0.726 O3 ppb: -5.1 Cell A ppb: 5.0 Cell B ppb: -5.3 Cell A Int: 56052 Cell B Int: 69370 Internal Span: 333 | As left: O3 Bkg: -0.3 O3 Coef: 0.976 Photo Lamp: 9.4 O3 Lamp: 7.8 Bench: 26.2 Bench Lamp: 53.6 O3 Lamp: 67.7 Pressure: 684.4 Cell A lpm: 0.730 Cell B lpm: 0.726 O3 ppb: -0.3 Cell A ppb: -4.4 Cell B ppb: 3.8 Cell A Int: 56077 Cell B Int: 69393 Internal Span: 333.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Comments: Sample filter changed. No ZERO adjustment made. No High Point adjustment made. EV has not changed after calibration. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

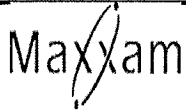
01 Minute Averages



02/12/16 05:11 02/12/16 07:11 02/12/16 09:11 02/12/16 13:11 02/12/16 15:11

— LICA31 03_ PPB

PARTICULATE MATTER



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: February 12, 2016
 Company: LICA
 Station Name/Location: St. Lina
 Previous Audit Date: January 26, 2016
 Parameter: PM 2.5

Performed By/Reviewer: Alex Yakupov | Trina Whatsitt
 Start Time (mst): 12:13
 End Time (mst): 13:12
 Calibration Purpose: Bi-monthly #1
 Weather Conditions: Light snow

1400A Information and Status:

| | | | |
|-------------------------|-----------------------|----------------------------|--------------|
| Serial Number: | <u>1405A208301003</u> | As Found Filter Loading %: | <u>36.24</u> |
| Ko Factor: | <u>13125.0</u> | As Left Filter Loading %: | <u>23.61</u> |
| Ambient Temperature °C: | <u>-11.88</u> | As Found Noise: | <u>0.004</u> |
| Ambient Pressure atm: | <u>0.927</u> | As Left Noise: | <u>0.000</u> |
| Main Flow Reading lpm: | <u>3.00</u> | Pump Vacuum: | <u>0.27</u> |
| Aux Flow Reading lpm: | <u>13.67</u> | Warnings: | <u>None</u> |

Reference Standards:

| | Flow: | Pressure: | Temperature: |
|-------------------|---------------------|------------------|------------------|
| Make: | <u>Dwyer</u> | <u>Fisher</u> | <u>Fisher</u> |
| Model: | <u>475 Mark III</u> | <u>FB 1291</u> | <u>FB 1291</u> |
| Serial Number: | <u>#1</u> | <u>130168457</u> | <u>130168457</u> |
| Calibration Date: | <u>28-Jan-16</u> | <u>18-Mar-15</u> | <u>18-Mar-15</u> |

As found leak check:

| | | Base | Zero | Reference | Zero |
|-------------|--------|------|-----------------|-----------|-----------------|
| PM 2.5 Flow | actual | 0.00 | -0.17 | 0.00 | -0.17 |
| | limit | 0.15 | 0.15 | 0.15 | 0.15 |
| Bypass Flow | actual | 0.00 | -1.66 | 0.00 | -1.66 |
| | limit | 0.60 | 0.60 | 0.60 | 0.60 |

As left leak check (same as above if as found passes):

| | | Base | Zero | Reference | Zero |
|-------------|--------|------|-----------------|-----------|-----------------|
| PM 2.5 Flow | actual | 0.00 | -0.17 | 0.00 | -0.17 |
| | limit | 0.15 | 0.15 | 0.15 | 0.15 |
| Bypass Flow | actual | 0.00 | -1.66 | 0.00 | -1.66 |
| | limit | 0.60 | 0.60 | 0.60 | 0.60 |

As found temperature and pressure:

| | | | |
|---------------------------|--------------|------------------------|--------------|
| tolerance +/- 2.0°C | | tolerance +/- 0.01 atm | |
| 1405F temperature °C: | <u>-11.9</u> | 1405F pressure atm: | <u>0.927</u> |
| reference temperature °C: | <u>-12.0</u> | reference pressure: | <u>0.926</u> |
| difference °C: | <u>-0.1</u> | difference : | <u>0.001</u> |

As left temperature and pressure (same as above if as found adequate):

| | | | |
|---------------------------|--------------|------------------------|--------------|
| tolerance +/- 2.0°C | | tolerance +/- 0.01 atm | |
| 1405F temperature °C: | <u>-12.0</u> | 1405F pressure atm: | <u>0.926</u> |
| reference temperature °C: | <u>-12.0</u> | reference pressure: | <u>0.926</u> |
| difference °C: | <u>0.0</u> | difference : | <u>0.000</u> |

As found flows:

| | | | |
|---|-------------|--|--------------|
| main flow tolerance 3.00 lpm +/- 0.20 lpm | | total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7% | |
| 1405F main flow lpm: | <u>3.00</u> | 1400A total/aux flow lpm: | <u>16.67</u> |
| reference main flow lpm: | <u>3.04</u> | reference total/aux flow lpm: | <u>16.54</u> |
| difference lpm: | <u>0.04</u> | difference lpm: | <u>-0.13</u> |

As left flows (same as above if as found adequate):

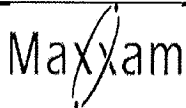
| | | | |
|---|-------------|--|--------------|
| main flow tolerance 3.00 lpm +/- 0.20 lpm | | total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7% | |
| 1405F main flow lpm: | <u>3.00</u> | 1400A total/aux flow lpm: | <u>16.67</u> |
| reference main flow lpm: | <u>3.04</u> | reference total/aux flow lpm: | <u>16.54</u> |
| difference lpm: | <u>0.04</u> | difference lpm: | <u>-0.13</u> |

K_o Audit:

Last K_o audit date: 12-Feb-16
 1405F K_o factor: 13125.0
 Measured K_o factor: 13177.1000
 % difference: 0.40

Comments:

47 mm FDMS filter changed and TEOM sampling filter changed. Ko Audit performed. Main flow has been calculated using measurements of total and auxiliary flows. A high volume cell was used.



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: February 23, 2016
 Company: LICA
 Station Name/Location: St. Lina
 Previous Audit Date: February 12, 2016
 Parameter: PM 2.5

Performed By/Reviewer: Alex Yakupov | Trina Whatsitt
 Start Time (mst): 17:02
 End Time (mst): 17:43
 Calibration Purpose: Bi-monthly #2
 Weather Conditions: Mainly cloudy with snow

1400A Information and Status:

Serial Number: 1405A208301003 As Found Filter Loading %: 29.20
 Ko Factor: 13125.0 As Left Filter Loading %: 22.26
 Ambient Temperature °C: 0.23 As Found Noise: 0.006
 Ambient Pressure atm: 0.931 As Left Noise: 0.000
 Main Flow Reading lpm: 3.00 Pump Vacuum: 0.27
 Aux Flow Reading lpm: 13.67 Warnings: None

Reference Standards:

| | Flow: | Pressure: | Temperature: |
|-------------------|---------------------|------------------|------------------|
| Make: | <u>Dwyer</u> | <u>Fisher</u> | <u>Fisher</u> |
| Model: | <u>475 Mark III</u> | <u>FB 1291</u> | <u>FB 1291</u> |
| Serial Number: | <u>#1</u> | <u>130168457</u> | <u>130168457</u> |
| Calibration Date: | <u>28-Jan-16</u> | <u>18-Mar-15</u> | <u>18-Mar-15</u> |

As found leak check:

| | | Base | Zero | Reference | Zero |
|-------------|--------|------|-----------------|-----------|-----------------|
| PM 2.5 Flow | actual | 0.00 | -0.17 | -0.01 | -0.16 |
| | limit | 0.15 | 0.15 | 0.15 | 0.15 |
| Bypass Flow | actual | 0.00 | -1.66 | 0.00 | -1.66 |
| | limit | 0.60 | 0.60 | 0.60 | 0.60 |

As left leak check (same as above if as found passes):

| | | Base | Zero | Reference | Zero |
|-------------|--------|------|-----------------|-----------|-----------------|
| PM 2.5 Flow | actual | 0.00 | -0.17 | -0.01 | -0.16 |
| | limit | 0.15 | 0.15 | 0.15 | 0.15 |
| Bypass Flow | actual | 0.00 | -1.66 | 0.00 | -1.66 |
| | limit | 0.60 | 0.60 | 0.60 | 0.60 |

As found temperature and pressure:

| | | |
|---------------------------------------|--|----------------------------------|
| tolerance +/- 2.0°C | | tolerance +/- 0.01 atm |
| 1405F temperature °C: <u>0.2</u> | | 1405F pressure atm: <u>0.931</u> |
| reference temperature °C: <u>-0.3</u> | | reference pressure: <u>0.931</u> |
| difference °C: <u>-0.5</u> | | difference: <u>0.000</u> |

As left temperature and pressure (same as above if as found adequate):

| | | |
|---------------------------------------|--|----------------------------------|
| tolerance +/- 2.0°C | | tolerance +/- 0.01 atm |
| 1405F temperature °C: <u>-0.3</u> | | 1405F pressure atm: <u>0.931</u> |
| reference temperature °C: <u>-0.3</u> | | reference pressure: <u>0.931</u> |
| difference °C: <u>0.0</u> | | difference: <u>0.000</u> |

As found flows:

| | | |
|---|--|--|
| main flow tolerance 3.00 lpm +/- 0.20 lpm | | total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7% |
| 1405F main flow lpm: <u>3.00</u> | | 1400A total/aux flow lpm: <u>16.67</u> |
| reference main flow lpm: <u>3.03</u> | | reference total/aux flow lpm: <u>16.94</u> |
| difference lpm: <u>0.03</u> | | difference lpm: <u>0.27</u> |

As left flows (same as above if as found adequate):

| | | |
|---|--|--|
| main flow tolerance 3.00 lpm +/- 0.20 lpm | | total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7% |
| 1405F main flow lpm: <u>3.00</u> | | 1400A total/aux flow lpm: <u>16.67</u> |
| reference main flow lpm: <u>3.03</u> | | reference total/aux flow lpm: <u>16.94</u> |
| difference lpm: <u>0.03</u> | | difference lpm: <u>0.27</u> |

K_o Audit:

Last K_o audit date: 12-Feb-16
 1405F K_o factor: 13125.0
 Measured K_o factor: 13177.1000
 % difference: 0.40

Comments:

47 mm FDMS filter changed and TEOM sampling filter changed. Main flow has been calculated using measurements of total and auxiliary flows.

WIND SYSTEM



Mel One Instruments

3206 Main St., Suite 106
Regional Service Center
Rowlett, TX, 75088

Wind Tunnel Calibration Data Sheet

50.5-6100

NIST Cup Model No. 170.41

Serial No. 3309

NIST Sensor Model No. 50.1B

Serial No. 1263

Average wind speed this test in mps 11.19

| WD Reading Degrees | WD Output Volts | WD Reading Degrees | WD Error +/- .3 Deg | WS Standard mps | WS Output Volts | WS Reading mps | WS Error +/- 0.24 MPS |
|-----------------------|--------------------|-----------------------|------------------------|--------------------|--------------------|-------------------|--------------------------|
| 30.0 | 0.082 | 29.5 | -0.4 | 11.21 | 0.224 | 11.19 | -0.02 |
| 60.0 | 0.164 | 59.0 | -1.0 | 11.17 | 0.227 | 11.33 | 0.16 |
| 120.0 | 0.331 | 119.1 | -0.9 | 11.06 | 0.221 | 11.06 | -0.02 |
| 150.0 | 0.420 | 151.3 | 1.3 | 11.29 | 0.222 | 11.11 | -0.18 |
| 210.0 | 0.582 | 209.4 | -0.6 | 11.25 | 0.223 | 11.16 | -0.09 |
| 240.0 | 0.665 | 239.4 | -0.6 | 11.18 | 0.226 | 11.32 | 0.14 |
| 300.0 | 0.835 | 300.5 | 0.5 | 11.16 | 0.224 | 11.18 | 0.02 |
| 330.0 | 0.917 | 330.0 | 0.0 | 11.18 | 0.223 | 11.15 | -0.03 |

Average wind speed this test in mps 2.21

| WD Reading Degrees | WD Output Volts | WD Reading Degrees | WD Error +/- .3 Deg | WS Standard mps | WS Output Volts | WS Reading mps | WS Error +/- 0.20 MPS |
|-----------------------|--------------------|-----------------------|------------------------|--------------------|--------------------|-------------------|--------------------------|
| 30.0 | 0.041 | 28.3 | -0.7 | 2.18 | 0.042 | 2.08 | -0.10 |
| 60.0 | 0.083 | 58.5 | -1.5 | 2.20 | 0.043 | 2.14 | -0.06 |
| 120.0 | 0.167 | 119.0 | -0.3 | 2.21 | 0.042 | 2.08 | -0.13 |
| 150.0 | 0.211 | 150.3 | 0.3 | 2.22 | 0.042 | 2.07 | -0.15 |
| 210.0 | 0.281 | 210.1 | 0.1 | 2.20 | 0.042 | 2.12 | -0.08 |
| 240.0 | 0.346 | 239.8 | -0.2 | 2.23 | 0.042 | 2.10 | -0.13 |
| 300.0 | 0.455 | 300.6 | 0.6 | 2.22 | 0.043 | 2.18 | -0.04 |
| 330.0 | 0.517 | 330.0 | 0.0 | 2.21 | 0.043 | 2.17 | -0.04 |

Instrument Test Condition: As Found _____ As Left X

Sensor Model No. 50.5H

Sensor Serial No. H12635

Sensor Output Range 0V - 1.0V

Sensor Output Range 0 - 50 MPS

Maximum Allowable Error

Sales Order No. 104703

Traceability 35-66687

Calibration Date 08/28/2014

Calibrated by D. Waltrip

QC Inspector

Diana Dasso

METEOROLOGICAL SYSTEM CHECK

Meteorological System Checklist

Date: 29/02/2016
 Performed by: Alex Yakupov
 Station: St. Lina
 Start: 12:41 End: 13:23

PRECIPITATION SENSOR CHECK

Previous check date: February 29, 2016

| | YES | NO |
|--|------|----|
| Is the sensor Level? | YES | |
| Is the heater operating properly? | YES | |
| Are the bucket drain holes clean? | YES | |
| Is the inner screen on the housing? (screen should be on between July and September) | n/a | |
| Is the upper screen on the housing? (screen should be on between July and September) | n/a | |
| Is the housing clean? | YES | |
| Is the area around the housing clean and free from obstacle? | YES | |
| Is the tipping sensor working properly? (12:51 - 12:55 - test sequence 0.1 - 0.5 - 1.0 - 2.0 - 0.1 mm) | YES | |
| | PASS | |

Comments: the rain gauge has been tested without water because of very low ambient temperature. Response is timely and accurate. No issues.

Field Technician: Alexander Yakupov February 29, 2016

CALIBRATORS



Calibrator Performance Audit

OZONE

File No. 2015-030A

Company: Maxxam **Operator:** Limin Li

| Calibrator: | | Flow Measurement Device: | |
|------------------------|--------------------|--------------------------|------------|
| Make/Model | <u>Sabio 2010D</u> | Make/Model | <u>N/A</u> |
| Serial Number | <u>11900613</u> | Serial Number | <u>N/A</u> |
| Oven Temperature | <u>N/A</u> | Temperature (°C) | <u>N/A</u> |
| Last Verification Date | <u>N/A</u> | Barometric Pressure | <u>N/A</u> |

Flow Measurements

Pt. No. 1 5000 Pt. No. 2 5000 Pt. No. 3 5000

| Calibrator Flow (sccm) | Calculated Concentration (ppm) | Indicated Concentration (ppm) | % Difference | |
|-------------------------------------|-----------------------------------|----------------------------------|--------------|---------------|
| | | | vs Audit Gas | % Diff. Limit |
| 5013 | 0.000 | 0.001 | | |
| 5013 | 0.400 | 0.407 | 1% | ± 10% |
| 5013 | 0.200 | 0.204 | 1% | ± 10% |
| 5014 | 0.100 | 0.101 | 0% | ± 10% |
| Absolute Average Percent Difference | | | 1% | ± 10% |

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

| O_3 | | LIMITS |
|------------------------|--------|---------------|
| Correlation= | 1.0000 | ≥ 0.995 |
| m (Slope)= | 1.0163 | 0.90-1.10 |
| b (Intercept % of FS)= | 0.0800 | ± 3% F.S. |

| AENV Standards | | Ozone Analyzer | |
|-------------------------|--------------------|-----------------------|---------------------|
| Audit Calibrator | | Make/Model | <u>Teco 49i</u> |
| Make/Model | <u>Teco 49i PS</u> | Serial/AMU Number | <u>AMU 1843</u> |
| Serial/AMU Number | <u>AMU 1808</u> | Last Calibration Date | <u>May 21, 2015</u> |
| Ozone Standard | <u>Primary</u> | Full Scale (ppm) | <u>0.5</u> |

COMMENTS: _____

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

Company: Maxxam Operator: Limin Li

| Calibrator: | | Flow Measurement Device: | |
|--------------------------------|-----------------|--------------------------|------------|
| Make/Model | <u>API 700</u> | Make/Model | <u>N/A</u> |
| Serial Number | <u>830</u> | Serial Number | <u>N/A</u> |
| Last Verification Date | <u>Oct 2013</u> | Temperature (°C) | <u>N/A</u> |
| SO ₂ Cylinder Conc. | <u>50.3</u> | Barometric Pressure | <u>N/A</u> |
| SO ₂ Cylinder S/N | <u>LL42475</u> | | |

Flow Measurements

Pt. No. 1 79.5 Pt. No. 2 39.8 Pt. No. 3 19.9

| Calibrator Flow (sccm) | Calculated Concentration (ppm) | Indicated Concentration (ppm) | % Difference | |
|-------------------------------------|-----------------------------------|----------------------------------|--------------|---------------|
| | | | vs Audit Gas | % Diff. Limit |
| Zero Air | 0.000 | 0.000 | | |
| 4918 | 0.800 | 0.798 | 0% | ± 10% |
| 4960 | 0.400 | 0.398 | -1% | ± 10% |
| 4977 | 0.200 | 0.200 | 0% | ± 10% |
| Absolute Average Percent Difference | | | 0% | ± 10% |

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

| SO ₂ | | LIMITS |
|------------------------|--------|-----------|
| Correlation= | 1.0000 | ≥ 0.995 |
| m (Slope)= | 0.9971 | 0.90-1.10 |
| b (Intercept % of FS)= | 0.0000 | ± 3% F.S. |

| AENV Standards | | SO ₂ Analyzer | |
|-------------------------|------------------------|--------------------------|------------------|
| Audit Calibrator | | Make/Model | <u>Teco 43C</u> |
| Make/Model | <u>R&R MFC 201</u> | Serial/AMU Number | <u>AMU 1623</u> |
| Serial/AMU Number | <u>AMU 1690</u> | Last Calibration Date | <u>Dec 15/14</u> |
| | | Full Scale (ppm) | <u>1.0</u> |

COMMENTS: H2S gas was slow to move through the calibrator. Check for contamination inside calibrator. SO2 moves through quickly.

Auditor: Al Clark Date: December 16, 2014
Operator Signature: _____ Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2015-344CGA

Company: Maxxam **Operator's Name:** Limin Li
Cylinder #: BLM002073 **Concentration PPM:** 49.5 **Tolerance(%)** 2 **Certified By:** Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: March 31, 2015
Gas Type: SO2 **Conc.** 98.57
Cylinder Number: CAL016720

Flow Measurement Device:

Make/Model: Bios DC2
Serial Number: AMU 1659
Temp. °C: 22.5 C
B.P. 690 mmhg

Reference Analyzer:

Make/Model: Teco 43C **Serial/AMU Number:** 1623
Instrument Settings: **Zero:** 7.9 **Span:** 1.028 **Range:** 1.0
Last Calibration: **Date:** Mar 31/15 **C.F.** 1.000 **Done By:** Al Clark

| Calibrator Flows (sccm) | | Indicated Concentration (PPM) | Gas Flow/ Dilution Flow | Concentration Factor | Cylinder Concentration |
|---------------------------------|------|-------------------------------|----------------------------|----------------------|------------------------|
| Dilution | Gas | | | | |
| 5000 | 0.0 | 0.000 | 0.0000 | 0.0000 | 0.0000 |
| 4976 | 82.6 | 0.801 | 0.01660 | 60.242 | 48.3 |
| 4993 | 41.0 | 0.396 | 0.00821 | 121.780 | 48.2 |
| 4977 | 20.2 | 0.193 | 0.00406 | 246.386 | 47.6 |
| Average Cylinder Concentration: | | | | | 48.0 |

Previous Stated Concentration PPM: 49.5

Percent variance from Stated: 3.0

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

Auditor: Al Clark
Operator Signature: *Al Clark*

Date: March 31, 2015
Location: McIntyre Center Edmonton



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2014-251CGA

Company: Maxxam Operator's Name: Limin Li
Cylinder #: LL36837 Concentration PPM: 10.0 Tolerance(%) 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: December 15, 2014
Gas Type: H2S Conc. 20.43
Cylinder Number: CAL015106

Flow Measurement Device:

Make/Model: Bios DC2
Serial Number: AMU 1659
Temp. °C: 23.0 C
B.P. 702 mmhg

Reference Analyzer:

Make/Model: Teco 45C Serial/AMU Number: 1624
Instrument Settings: Zero: 6.4 Span: 1.160 Range: 0.1
Last Calibration: Date: Dec15/14 C.F. 1.000 Done By: Al Clark

| Calibrator Flows (sccm) | | Indicated Concentration (PPM) | Gas Flow/ Dilution Flow | Concentration Factor | Cylinder Concentration |
|---------------------------------|------|-------------------------------|----------------------------|----------------------|------------------------|
| Dilution | Gas | | | | |
| 5000 | 0.0 | 0.0000 | 0.0000 | 132.442 | 10.0 |
| 5099 | 38.5 | 0.0754 | 0.00755 | 132.442 | 10.0 |
| 5092 | 18.0 | 0.0349 | 0.00353 | 282.889 | 9.9 |
| 5066 | 9.2 | 0.0178 | 0.00182 | 550.652 | 9.8 |
| Average Cylinder Concentration: | | | | | 9.9 |

Previous Stated Concentration PPM: 10.0

Percent variance from Stated: 1.1

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

Auditor: Al Clark
Operator Signature: *Al Clark*

Date: December 16, 2014
Location: McIntyre Center Edmonton



Praxair Canada, Inc.
 9501-34th Street
 Edmonton, AB T6B 2X6
 Tel: 780-449-0778
 Fax: 780-449-5302

03/27/2014

MAXXAM ANALYTICS INC 'NA'
 9372 49TH ST
 EDMONTON, AB T6B 2L7

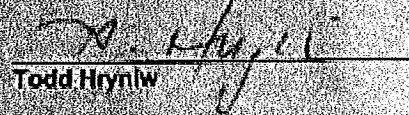
Work Order No. 20248656
 Customer Reference No.

Product Lot/Batch No. Z582 4 085 02
 Product Part No. NI ME600P2P-AQ

CERTIFICATE OF ANALYSIS
Primary Standard

| Component | Requested Concentration | Certified Concentration | Analytical Principle | Analytical Accuracy |
|-----------|-------------------------|-------------------------|----------------------|---------------------|
| Methane | 600.0ppm | 601.4ppm | U | ±1% rel |
| Propane | 200.0ppm | 202ppm | U | ±1% rel |
| Nitrogen | Balance | Balance | | |

| | | | |
|-------------------------|---|------------------|-------------|
| Analytical Instruments | Mettler-Toledo Analytical Balance-ID2ex/USA-- | Filling Method: | Gravimetric |
| | Hewlett-Packard (Agilent)-6890--GC-FID | Date of Fill: | 03/26/2014 |
| Cylinder Style | AQ | Expiration Date: | 03/26/2017 |
| Cylinder Pressure @70F | 2200 psig | | |
| Cylinder Volume | 82.0 ft3 | | |
| Valve Outlet Connection | CGA-350 | | |
| Cylinder No(s) | LL33874 | | |

Analyst: 
 Todd Hryniv

The gas calibration cylinder standard prepared by Praxair Canada, Inc. is considered a certified standard. It is prepared by gravimetric, volumetric, or partial pressure techniques. The calibration standard prepared is certified against Praxair Canada, Inc. Reference Materials which are either prepared by weights traceable to the National Institute of Standards and Technology (NIST), Measurement Canada, or by using NIST certified Reference Materials under contract.

Reported concentrations are expressed in g, % or ppm unless for gas phase, by volume in g, ppm or unless otherwise noted.

| | | | |
|--|---|---|---|
| <input type="checkbox"/> Gas Chromatography with Thermal Conductivity Detector <input type="checkbox"/> Gas Chromatography with Flame Ionization Detector <input type="checkbox"/> Gas Chromatography with Photoacoustic Cell Analyzer <input type="checkbox"/> Gas Chromatography with Mass Spectrometry <input type="checkbox"/> Gas Chromatography with Infrared Spectrometry | <input type="checkbox"/> Gas Chromatography with Discharge Ionization Detector <input type="checkbox"/> Gas Chromatography with Heated Ionization Detector <input type="checkbox"/> Gas Chromatography with Thermal Conductivity Detector <input type="checkbox"/> By Difference or Typical Gravimetric and Chemical Determination | <input type="checkbox"/> Gas Chromatography with Electrode Conductivity Detector <input type="checkbox"/> Gas Chromatography with Metal Ion Catalyzed Detector <input type="checkbox"/> Binary Gas Analyzer with Thermal Conductivity Detector <input type="checkbox"/> Paramagnetic <input type="checkbox"/> Deflection Tube <input type="checkbox"/> Gas Chromatography with Chemiresistive Detector | <input type="checkbox"/> Gas Chromatography with Photoacoustic Cell Analyzer <input type="checkbox"/> Gas Chromatography with Photoacoustic Detector <input type="checkbox"/> Off-gas - FTIR or NDIR <input type="checkbox"/> Gravimetric <input type="checkbox"/> Direct |
|--|---|---|---|

DISCLAIMER
 The information contained herein has been prepared in good faith and by personnel within Praxair Canada, Inc. When we believe the information is accurate within the limits of the analytical methods employed, we warrant its accuracy to the extent of the specific analysis performed. We make no warranty or representation as to the suitability of the use of the information for any particular purpose. The information is intended only for informational purposes and no representation is made as to the accuracy of the information at the time of preparation and publication. In no event shall liability of Praxair Canada, Inc. arising out of the use of the information contained herein be deemed to be assumed by providing such information.



Calibration Gas Audit

NO Cylinder Gas

File No. 2015-345CGA

Company: Maxxam Operators name: Limin Li
Cylinder #: BLM002073 Conc (PPM) 50.6/50.6 Tolerance (%) 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model Teco 146I
Serial Number AMU 1809
Last Verification Date March 31, 2015
Gas Type NO Conc. 48.79
Cylinder Number CAL018024

Flow Measurement Device:

Make/Model Bios DC2
Serial Number AMU 1659
Temp. °C 22.5 C
B.P. 690 mmhg

Reference Analyzer:

Make/Model Teco 42I Serial/AMU Number: 1868
Instrument Settings Zero: 4.2 Span: 1.008 Range: 1.0
Last Calibration: Date: Mar 31/15 C.F. 1.000 Done By: Al Clark

| Calibrator Flows (scm) | | Indicated Conc. (ppm) | | Gas Flow/ Dilution Flow | Concentration Factor | Cylinder Concentration | |
|---------------------------------|------|-----------------------|-------|----------------------------|-------------------------|------------------------|-----------------|
| Dilution | Gas | NO | NOX | | | NO | NOX |
| 5000 | 0.0 | 0.000 | 0.000 | 0.01660 | 60.242 | 51.5 | 51.1 |
| 4976 | 82.6 | 0.855 | 0.848 | 0.01660 | 60.242 | 51.5 | 51.1 |
| 4993 | 41.0 | 0.427 | 0.421 | 0.00821 | 121.780 | 52.0 | 51.3 |
| 4977 | 20.2 | 0.213 | 0.209 | 0.00406 | 246.386 | 52.5 | 51.5 |
| Average Cylinder Concentration: | | | | | | 52.0 | 51.3 |

| | | |
|------------------------------------|-------------|-------------|
| | <u>NO</u> | <u>NOx</u> |
| Previous Stated Concentration PPM: | <u>50.6</u> | <u>50.6</u> |
| Percent variance from Stated: | <u>2.8</u> | <u>1.4</u> |

Cylinder gas tolerances based on NO only

Meets Manufacturer Tolerance. Use manufacturers stated concentration COMMENTS: _____
 <=5% Outside Manufacturer Tolerance. Use manufacturers concentration Contains 49.5 ppm SO2 in cylinder
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder

Auditor: Al Clark Date: March 31, 2015
Operator Signature: *Al Clark* Location: McIntyre Center Edmonton

***APPENDIX III
REPORT CERTIFICATION FORM***

Report Certification Form

| | |
|--|--|
| Alberta Airshed (if applicable) | EPA Approval or Code of Practice Registration # (if applicable) |
| YES | NA |
| Company Name (if applicable) | Industrial Operation Name (if applicable) |
| Lakeland Industry & Community Association | St. Lina Site |
| Name of the Representative of the Person Responsible (Last, First, Middle) | Position / Title of the Representative of the Person Responsible |
| Wunmi Adekanmbi | Project Manager Assistant, Customer Service, Air Services |
| Is an External Party Certifying the Report? (If 'Yes', fill in the fields below for the external person.) | |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Name of External Person Certifying the Report (Last, First, Middle) | Position / Title of External Person Certifying the Report |
| NA | NA |
| Company Name for the External Person Certifying the Report | Identification of Qualifications / Professional Designations of the External Person Certifying the Report |
| NA | NA |

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

Wunmi Adekanmbi

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

15-March-2016

Report Issued Date (dd-mm-yyyy)

APPENDIX IV
DATA VALIDATION CERTIFICATION FORM



Validation Certificate Form

| | |
|---|---|
| Client: <u>Lakeland Industry & Community Association</u> | Project #: <u>2833-2016-02-31- C</u> |
| Site: <u>St. Lina Site</u> | Contact: <u>Mike Bisaga</u> |

Level 0 Preliminary Verification

msalmba

Date 07-March-2016

Level 1 Primary Validation

msalmba

Date 07-March-2016

Level 2 Final Validation

msalmba

Date 15-March-2016

Level 3 Independent Data Review

[Signature]

Date 15-Mar-16

Post-Final Validation

NA

Date NA

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



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MAXXAM ANALYTICS

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**AMBIENT AIR MONITORING MONTHLY DATA REPORT
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
ELK POINT AIRPORT SITE**

JOB #:2833-2016-02-35- C

FEBRUARY 2016

Prepared for:

**LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
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Attention: MIKE BISAGA

DATE: **March 16, 2016**

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SUMMARY

In FEBRUARY 2016, the Air Services Group of Maxxam Analytics conducted an ambient air monitoring program on the Elk Point Airport Site at Lakeland Industry & Community Association, near Elk Point. Sampling was carried out to determine the concentrations of non-compliance parameters as requested by the Project Coordinator.

All data collected this month were within the objectives outlined in the AMD1989, AMD2006 and AMD2015.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

All Parameters: Data collected on February 1 at hour 13 was discarded due to a power outage.

Wind System: The Maxxam-supplied RM Young, S/N: 110980, wind system was replaced with the LICA-owned RM Young, S/N: 56589, wind system following maintenance at Maxxam shop.

THC/CH4/NMHC: A shut-down calibration was performed on February 29 and the analyzer was removed for a major maintenance. A Maxxam-supplied replacement was installed. The analyzer was allowed time to stabilize and an installation calibration was performed on March 2. Five hours of data are invalid on February 29 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 is issuing this completed report to Lakeland Industry & Community Association, Elk Point Airport Site.

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

| Lakeland Industry & Community Association Elk Point Airport Site | | | | | | MAXIMUM VALUES | | | | | | | OPERATIONAL TIME (%) |
|---|------------|-------|-------------|-------|--------------------|----------------|--------|--------|------------------------|--------------------------------|---------|-----|----------------------------|
| PARAMETER | OBJECTIVES | | EXCEEDENCES | | MONTHLY AVERAGE | READING | DAY | 1-HOUR | | | 24-HOUR | | |
| | 1-HR | 24-HR | 1-HR | 24-HR | | | | HOUR | WIND SPEED (KPH) | WIND DIRECTION (DEGREES) | READING | DAY | |
| SO2 (PPB) | 172 | 48 | 0 | 0 | 0.2 | 1.5 | 14 | 6 | 4.7 | W | 0.7 | 14 | 99.9 |
| H2S (PPB) | 10 | 3 | 0 | 0 | 0.2 | 1.9 | 4, 17 | 3, 7 | 0 4.1 | NNE W | 0.8 | 4 | 99.9 |
| THC (PPM) | - | - | - | - | 2.52 | 6.70 | 17, 27 | 12, 2 | 3.4 1.6 | ESE W | 4.20 | 17 | 98.6 |
| CH4 (PPM) | - | - | - | - | 2.52 | 6.60 | 17, 27 | 12, 2 | 3.4 1.6 | ESE W | 4.13 | 17 | 98.6 |
| NMHC (PPM) | - | - | - | - | 0.01 | 0.20 | VAR | VAR | VAR | VAR | 0.07 | 17 | 98.6 |
| NO2 (PPB) | 159 | - | 0 | - | 10.9 | 39.1 | 27 | 2 | 1.6 | W | 23.6 | 17 | 98.4 |
| NO (PPB) | - | - | - | - | 2.9 | 81.1 | 17 | 7 | 4.1 | W | 18.9 | 17 | 98.4 |
| NOX (PPB) | - | - | - | - | 13.8 | 112.2 | 17 | 7 | 4.1 | W | 42.5 | 17 | 98.4 |
| O3 (PPB) | 82 | - | 0 | - | 19.4 | 43.9 | 25 | 17 | 28.7 | W | 31.6 | 26 | 99.7 |
| PM2.5 (UG/M3) | - | 30 | - | 0 | 5.3 | 38.6 | 6 | 1 | 8.9 | E | 13.8 | 5 | 98.1 |
| VECTOR WS (KPH) | - | - | - | - | 11.1 | 52.4 | 6 | 18 | - | WNW | 29.8 | 6 | 99.6 |
| VECTOR WD (DEG) | - | - | - | - | WNW | - | - | - | - | - | - | - | 99.6 |

NA-NOT AVAILABLE VAR-VARIOUS

Exceedence Summary Report

SO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

SO₂ 24- Hour Exceedences

No Exceedences Recorded During the Month

H₂S 1- Hour Exceedences

No Exceedences Recorded During the Month

H₂S 24- Hour Exceedences

No Exceedences Recorded During the Month

NO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

PM_{2.5} 24- Hour Exceedences

No Exceedences Recorded During the Month

O₃ 1- Hour Exceedences

No Exceedences Recorded During the Month

Volatile Organics (VOCs) Data Summary

| Sample Collected Date | Maximum reading (PPB) | Volatile Organic Compound |
|-----------------------|-----------------------|---------------------------|
| FEBRUARY 6, 2016 | 2.5 | ETHANOL |
| FEBRUARY 12, 2016 | 1.4 | ACETONE |
| FEBRUARY 18, 2016 | 4.0 | ACETONE |
| FEBRUARY 24, 2016 | 1.70 | N-DODECANE |

Note: NA

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

| Sample Collected Date | Maximum reading (ug) | Semi-Volatile Organic |
|-----------------------|----------------------|-----------------------|
| FEBRUARY 6, 2016 | 0.15 | PHENANTHRENE |
| FEBRUARY 12, 2016 | 0.24 | 2-METHYLNAPHTHALENE |
| FEBRUARY 18, 2016 | 0.10 | PHENANTHRENE |
| FEBRUARY 24, 2016 | 0.67 | 2-METHYLNAPHTHALENE |

Note: NA

Volatil Organic (VOCs) Data Summary - NMHC Canister System

| Sample Collected Date | Maximum reading (PPB) | Volatile Organic Compound |
|-----------------------|-----------------------|---------------------------|
| FEBRUARY 4, 2016 | 3.02 | 1-BUTENE |

Note: NA

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1.0 Discussion

This monthly report consists of data for parameters Sulphur Dioxide (SO₂), Hydrogen Sulphide (H₂S), Total Hydrocarbon (THC), Methane (CH₄), Non-Methane Hydrocarbon (NMHC), Oxides of Nitrogen (NO_x), Nitric Oxide (NO), Nitrogen Dioxide (NO₂), Ozone (O₃), Particulate Matter 2.5 (PM_{2.5}), Wind Speed (WS), Wind Direction (WD) and Standard Deviation Wind Direction (STDWD). The non-continuous monitoring results for VOCs, PAHs and NMHC canister are also included in this report.

Sample filters for all continuous air monitors are changed before the calibration is started. The sample manifold is cleaned during the site visit on a monthly basis.

Control checks, consisting of zero and span of the analyzer are conducted on a daily basis on all continuous air monitors. In place of the air sample, zero air (from scrubbed air or gas cylinder) 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 calibration is done a minimum of once a month for each continuous air monitor. In addition 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 a downtime (Data is flagged as C). If more than one calibration is performed during the month, the time during the 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 a downtime (Data is flagged as S). If extra zero/span check is performed, the time during the check is considered as a downtime (Data is flagged as S1).

The AMD requires each instrument and accompanying data recording system to be operational 90% of the time (minimum), on a monthly basis.

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 for verification and validation of continuous ambient air quality data. The descriptions of the data verification and validation process can be found in Section 5 of this report.

Hourly/minute data have been reviewed based on daily zero/span results and multi-points calibration results. Data may be considered as 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 (greater than 10%).

Trailer inspection was completed on February 4. No issues were identified.

SULPHUR DIOXIDE (SO₂)

The analyzer was working well throughout the month. The routine monthly calibration was performed on February 5. Data collected on February 1 at hour 13 was discarded due to a power outage. Hourly maximum data collected on February 4 at hour 15 was invalidated as the analyzer was recovering from a short power outage.

HYDROGEN SULPHIDE (H₂S)

The analyzer was working well throughout the month. The routine monthly calibration was performed on February 4. Data collected on February 1 at hour 13 was discarded due to a power outage.

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

The routine monthly calibration was performed on February 5. The Nitrogen and Hydrogen gas cylinders were replaced on February 24. A shut-down calibration was performed on February 29 and the analyzer was removed for a major maintenance. A Maxxam-supplied replacement was installed. Column conditioning was run, the analyzer was allowed time to stabilize and an installation calibration was performed on March 2. Data collected on February 1 at hour 13 was discarded due to a power outage. Hourly maximum data collected on February 4 at hour 15 was invalidated as the analyzer was recovering from a short power outage.

NITROGEN DIOXIDE (NO₂)

The analyzer was working well throughout the month. The routine monthly calibration was performed on February 5. Following an as found points check on February 24, the slope and the output voltage were adjusted and the analog output configuration was changed from 10 volts to 1 volts. A full calibration was then completed. On February 25, the charcoal and purafill were renewed and the zero air filter was replaced. Data collected on February 1 at hour 13 was discarded due to a power outage. Hourly maximum data collected on February 4 at hour 15 was invalidated as the analyzer was recovering from a short power outage.

OZONE (O₃)

The analyzer was working well throughout the month. The routine monthly calibration was performed on February 4. Data collected on February 1 at hour 13 was discarded due to a power outage.

PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5)

Two Teom audits were performed on this month: one was completed on February 4, and the other audit was performed on February 16. Both the inlet filter and the FDMS filter were replaced on February 4. Data collected on February 1 at hour 13 was discarded due to a power outage.

Data was corrected using Alberta air quality guideline. If the data was between 0 to -3 ug/m^3 , the data was corrected to 0 ug/m^3 . If the data was below -3 ug/m^3 , the data was invalidated. Twelve hours of data were invalidated as the data were below -3 ug/m^3 this month.

WIND SPEED (WS), WIND DIRECTION (WD) and STANDARD DEVIATION WIND DIRECTION (STDWD)

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

The LICA-owned RM Young, S/N: 56589, wind system was installed on site on February 25 following maintenance at Maxxam shop. The Maxxam-supplied RM Young, S/N: 110980 was removed and brought back to Maxxam shop. Data collected on February 1 at hour 13 was discarded due to a power outage. Hourly maximum data collected on February 4 at hour 15 was invalidated as the wind system was recovering from a short power outage.

VOC SAMPLES

The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle.

Samples were collected on February 6, 12, 18 and 24. Analytical results are included in this report. The values for the VOCs are reported in ppb.

PAH SAMPLES

The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle.

Samples were collected on February 6, 12, 18 and 24. Analytical results are included in this report. Analytical results are included in this report. The values for the PAHs are reported in μg .

NMHC CANISTER SAMPLES

The NMHC canister sampler is programmed to trigger when the 5-minute average concentration of NMHC is above 0.30 ppm . A one-hour sample is collected when the canister is triggered.

Two canister events were recorded this month: concentrations of 0.41 ppm on February 4 at 16:10 and 0.30 ppm on February 26 at 0:25. However, no sample was collected for the February 26 event due to an operation error. Analytical results for the February 4 event are included in this report. The values for the NMHC canister samples are reported in ppb.

2.0 Project Personnel

Mike Bisaga was the contact for Lakeland Industry & Community Association, and the Maxxam field sampling technicians were Alexander Yakupov, Michael Espiritu and Christopher Wesson.

3.0 Plant Monthly Required AMD Summary

All data collected this month were within the objectives outlined in the AMD1989, AMD2006 and AMD 2015.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

4.0 Calculations and Results

All calculations and reporting of results follow the method described in the Air Monitoring Directive, 1989, 2006 Amendments to the Air Monitoring Directive, 1989 (AMD 2006) as well as AMD 2015.

5.0 Methods and Procedures

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

- Maxxam AIR SOP-00001 - Methane, Non-Methane Hydrocarbon Analyzer Monitoring
- Maxxam AIR SOP-00208: RM Young Monitor Calibration
- Maxxam AIR SOP-00209: Ambient H₂S Monitoring
- Maxxam AIR SOP-00211: Ambient SO₂ Monitoring
- Maxxam AIR SOP-00212: Ambient O₃ Monitoring
- Maxxam AIR SOP-00213: Ambient NO/NO₂/NO_x Monitoring
- Maxxam AIR SOP-00215: Teom Operation
- Maxxam AIR SOP-00225: The Collection of VOCs in Ambient Air Using Canister and Xontech

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

- Sulphur Dioxide - API 100E UV Fluorescent Analyzer
- Hydrogen Sulphide - API 101E UV Fluorescent Analyzer
- Methane, Non-Methane Hydrocarbon - Thermo 55i FID Analyzer
- Oxides of Nitrogen - API 200E Chemiluminescent Analyzer
- Ozone - Thermo 49i Photometric Analyzer
- Particulate Matter (PM_{2.5}) - R&P 1405F Teom Unit
- Wind System - 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

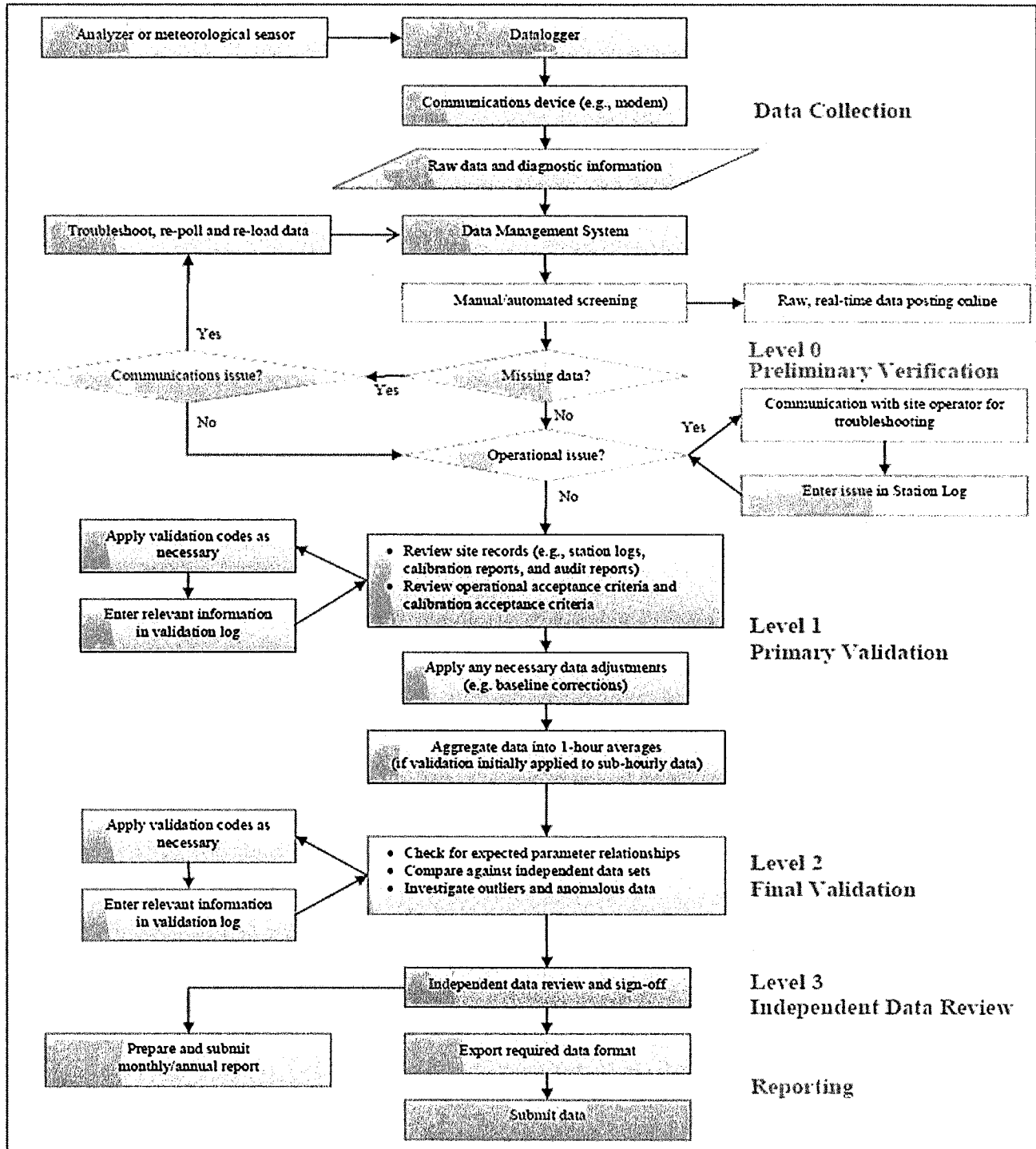
The purpose of Level 2 validation is to verify that there are no inconsistencies among related data, or among regional data measured at nearby sites.

Level 3 Independent Data Review

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

Post-Final Validation

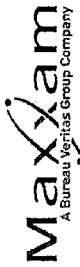
The Post-Final Validation step serves to re-evaluate the data that errors or omissions are discovered and/or suspected after the initial submittal of data. Any data issues or patterns which were not clear on a monthly basis are highlighted during this step. This validation is performed on an annual basis.



Source: AMD Chapter 6: Ambient Data Quality for verification and validation of continuous ambient air quality data; Figure 1 Data Collection and Management Process Flow Chart

APPENDIX I
CONTINUOUS MONITORING DATA RESULTS

SULPHUR DIOXIDE



SULPHUR DIOXIDE (SO2) hourly averages in ppb

MST

| DAY | 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. | ROGS. | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|-------|-----|----|
| 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 23 | |
| 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 4 | 0.0 | 0.1 | 0.5 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 5 | 0.0 | 0.3 | 0.5 | 0.1 | 0.4 | 0.0 | 0.1 | 0.3 | 0.2 | 0.3 | C | C | C | C | C | 0.7 | 0.8 | 0.6 | 0.8 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 24 | |
| 6 | 0.2 | 0.4 | 0.4 | 0.4 | 0.6 | 0.6 | 0.6 | 0.8 | 0.8 | 0.4 | 0.2 | 0.1 | 0.9 | 0.9 | 0.8 | 0.9 | 0.7 | 0.6 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 24 | |
| 7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 14 | 0.8 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | 1.5 | 0.6 | 0.6 | 0.7 | 0.8 | 0.7 | 0.8 | 0.7 | 0.8 | 0.7 | 0.8 | 0.5 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.6 | 0.2 | 24 |
| 15 | 0.1 | 0.1 | 0.2 | 0.0 | 0.1 | 0.2 | 0.1 | 0.2 | 0.3 | 0.3 | 0.1 | 0.1 | 0.4 | 0.4 | 0.3 | 0.2 | 0.4 | 0.4 | 0.4 | 0.3 | 0.5 | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 0.7 | 24 |
| 16 | 0.5 | 0.4 | 0.6 | 0.7 | 0.3 | 0.3 | 0.9 | 1.3 | 0.4 | 0.4 | 0.2 | 0.2 | 0.1 | 0.4 | 0.4 | 0.3 | 0.2 | 0.4 | 0.4 | 0.5 | 0.4 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.3 | 24 |
| 17 | 0.5 | 0.4 | 0.6 | 0.7 | 0.3 | 0.3 | 0.9 | 1.3 | 0.4 | 0.4 | 0.2 | 0.2 | 0.1 | 0.4 | 0.4 | 0.3 | 0.2 | 0.4 | 0.4 | 0.5 | 0.4 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.3 | 24 |
| 18 | 0.1 | 0.1 | 0.3 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 24 | |
| 19 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 20 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 21 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 22 | 0.2 | 0.1 | 0.3 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 24 | |
| 23 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 24 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 26 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 24 | |
| 27 | 0.9 | 0.6 | 1.2 | 0.8 | 0.7 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 | |
| 28 | 0.3 | 0.5 | 0.6 | 0.6 | 0.6 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 24 | |
| 29 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| HOURLY MAX | 0.9 | 0.7 | 1.2 | 0.8 | 0.8 | 0.9 | 1.5 | 1.3 | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.7 | 0.8 | 0.8 | 0.8 | 0.9 | 0.8 | 0.9 | 0.8 | 0.8 | |
| HOURLY AVG | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | |

STATUS FLAG CODES

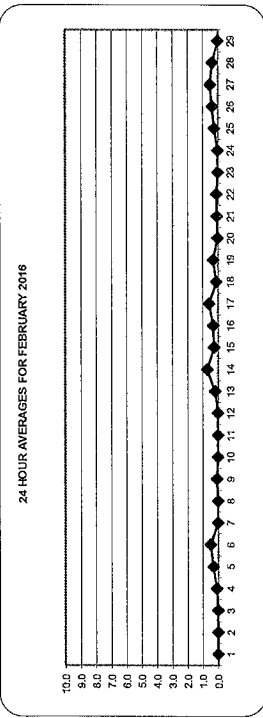
| | | | |
|----|--------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| G1 | REPEAT CALIBRATION | R | RECOVERY |
| Y | MAINTENANCE | X | MACHINE/MALFUNCTION |
| S | DAILY ZERO / SPAN CHECK | G | OUT FOR REPAIR |
| S1 | REPEAT ZERO / SPAN CHECK | P | POWER FAILURE |

OBJECTIVE LIMIT:

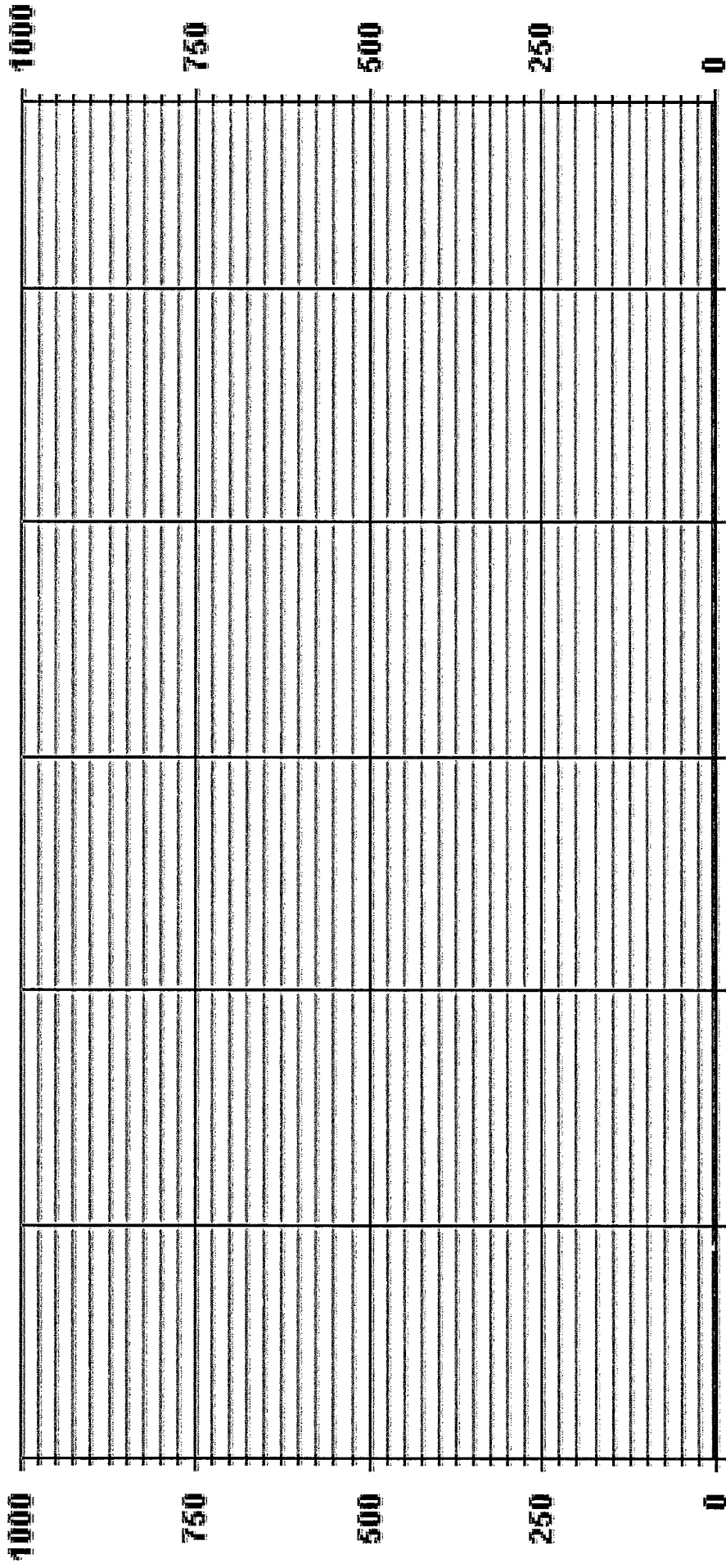
ALBERTA ENVIRONMENT: 1-HR 17Z 24-HR 748 PPB

MONTHLY SUMMARY

| | |
|------------------------------|---------|
| NUMBER OF 1-HR EXCEEDENCES | 0 |
| NUMBER OF 24-HR EXCEEDENCES | 0 |
| NUMBER OF NON-ZERO READINGS: | 253 |
| MINIMUM 1-HR AVERAGE | 0.0 |
| MINIMUM 24-HR AVERAGE | 1.5 |
| MAXIMUM 1-HR AVERAGE | 0.7 |
| MAXIMUM 24-HR AVERAGE | PPB |
| IS CALIBRATION TIME: | 30 HRS |
| MONTHLY CALIBRATION TIME: | 5 HRS |
| STANDARD DEVIATION: | 0.27 |
| OPERATIONAL TIME: | 695 HRS |
| AMD OPERATION UPTIME: | 99.9 % |
| MONTHLY AVERAGE: | 0.2 |
| VAR | 14 |
| ON DAY(S) | 14 |
| VAR-VARIOUS | 14 |



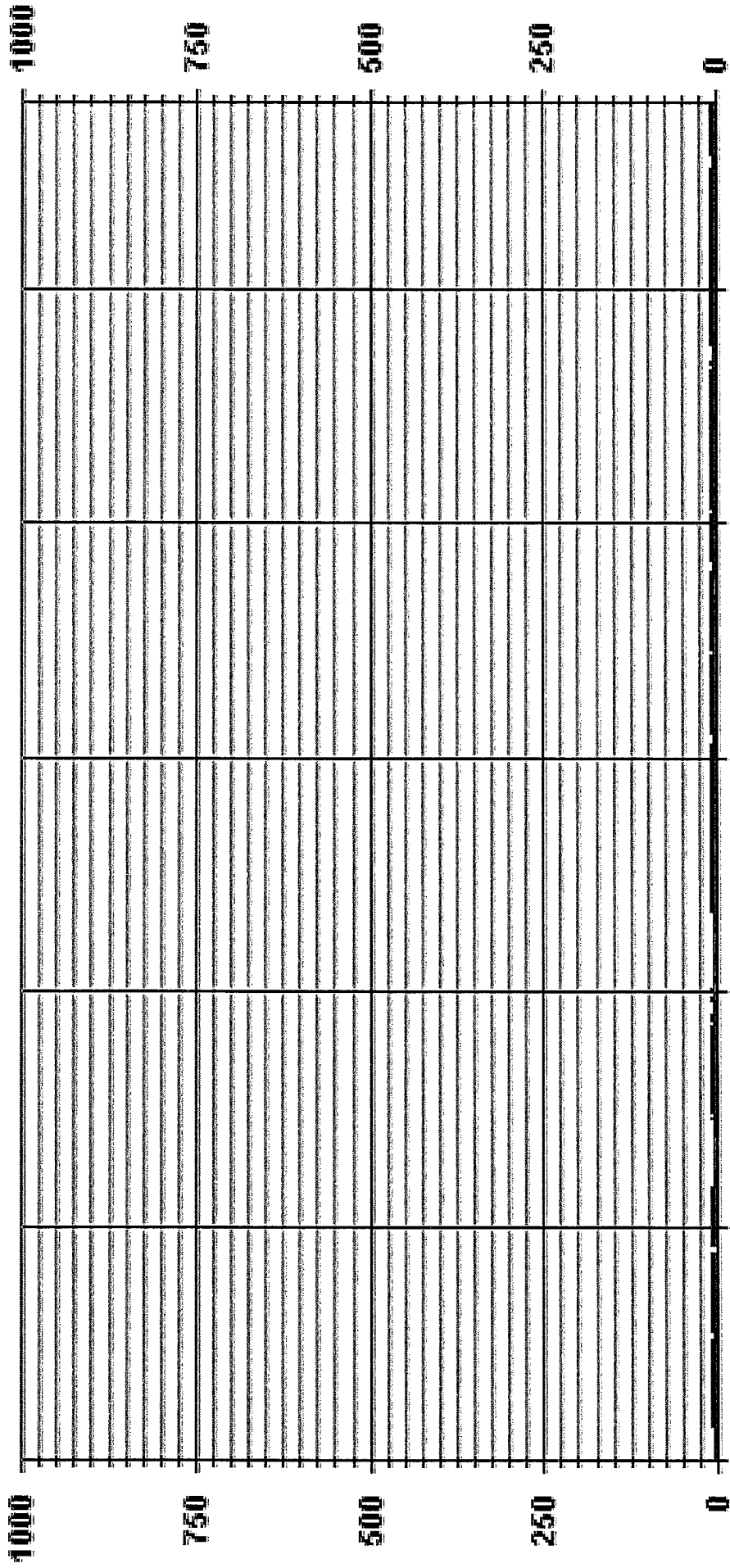
01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA35 SO2_ PPB

01 Hour Averages



— LICA35 SO2MAX PPB

LICA-FLK
 SO2_ / WDR Joint Frequency Distribution (Percent)
 February 2016

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA-FLK
 Parameter : SO2
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|-----|------|------|-------|-------|------|------|------|------|------|-------|-------|-------|------|------|--------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 20.0 | 2.88 | .91 | 3.19 | 3.64 | 12.76 | 18.08 | 3.49 | 2.58 | 1.06 | 1.36 | 1.97 | 10.94 | 16.10 | 10.48 | 7.75 | 2.73 | 100.00 |
| < 60.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 110.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 170.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 340.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 340.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.88 | .91 | 3.19 | 3.64 | 12.76 | 18.08 | 3.49 | 2.58 | 1.06 | 1.36 | 1.97 | 10.94 | 16.10 | 10.48 | 7.75 | 2.73 | |

Calm : .00 %

Total # Operational Hours : 658

Distribution By Samples

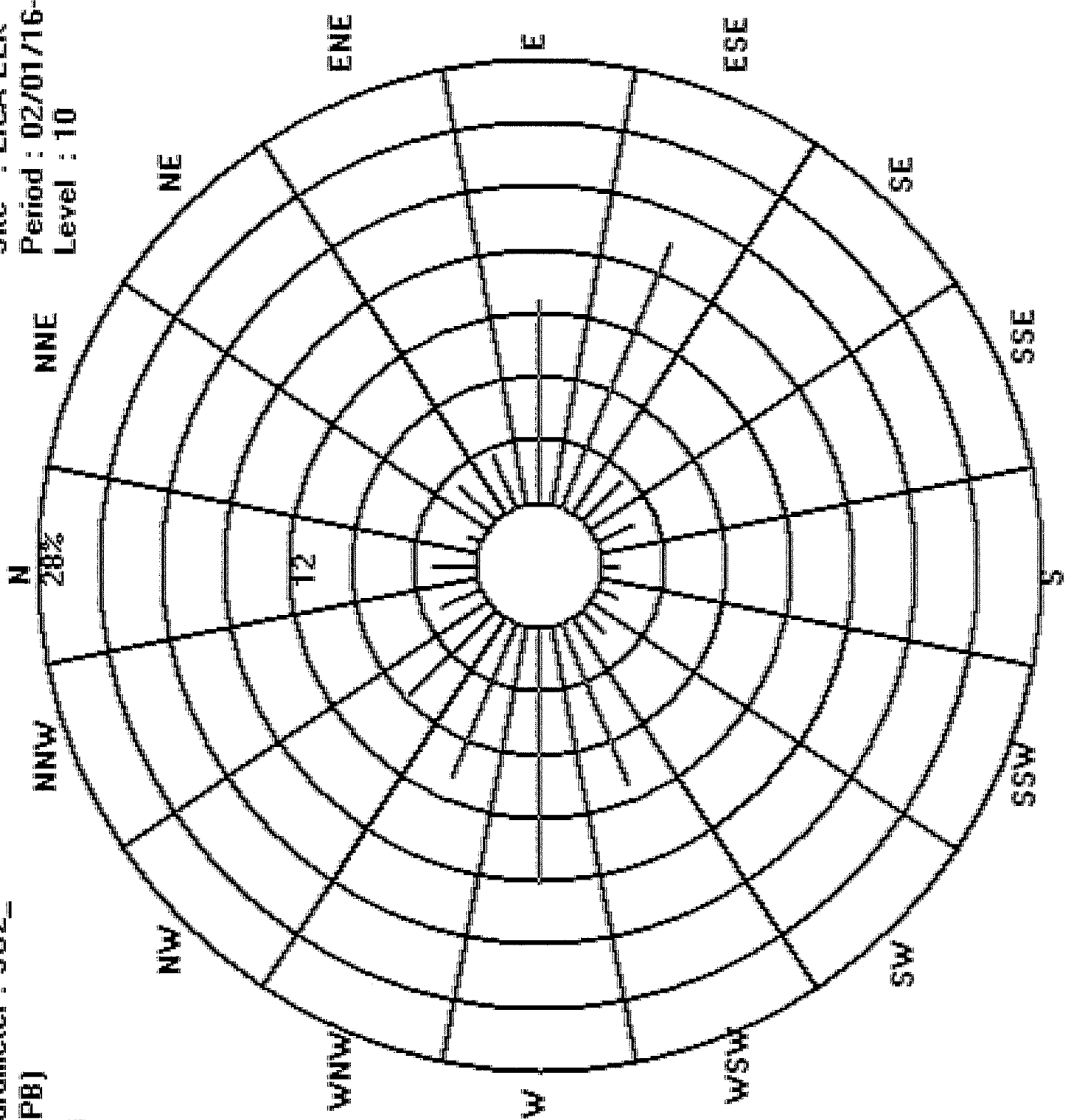
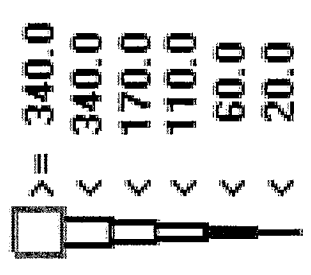
| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|-----|----|-----|----|-----|----|-----|---|-----|----|-----|-----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 20.0 | 19 | 6 | 21 | 24 | 84 | 119 | 23 | 17 | 7 | 9 | 13 | 72 | 106 | 69 | 51 | 18 | 658 |
| < 60.0 | | | | | | | | | | | | | | | | | |
| < 110.0 | | | | | | | | | | | | | | | | | |
| < 170.0 | | | | | | | | | | | | | | | | | |
| < 340.0 | | | | | | | | | | | | | | | | | |
| >= 340.0 | | | | | | | | | | | | | | | | | |
| Totals | 19 | 6 | 21 | 24 | 84 | 119 | 23 | 17 | 7 | 9 | 13 | 72 | 106 | 69 | 51 | 18 | |

Calm : .00 %

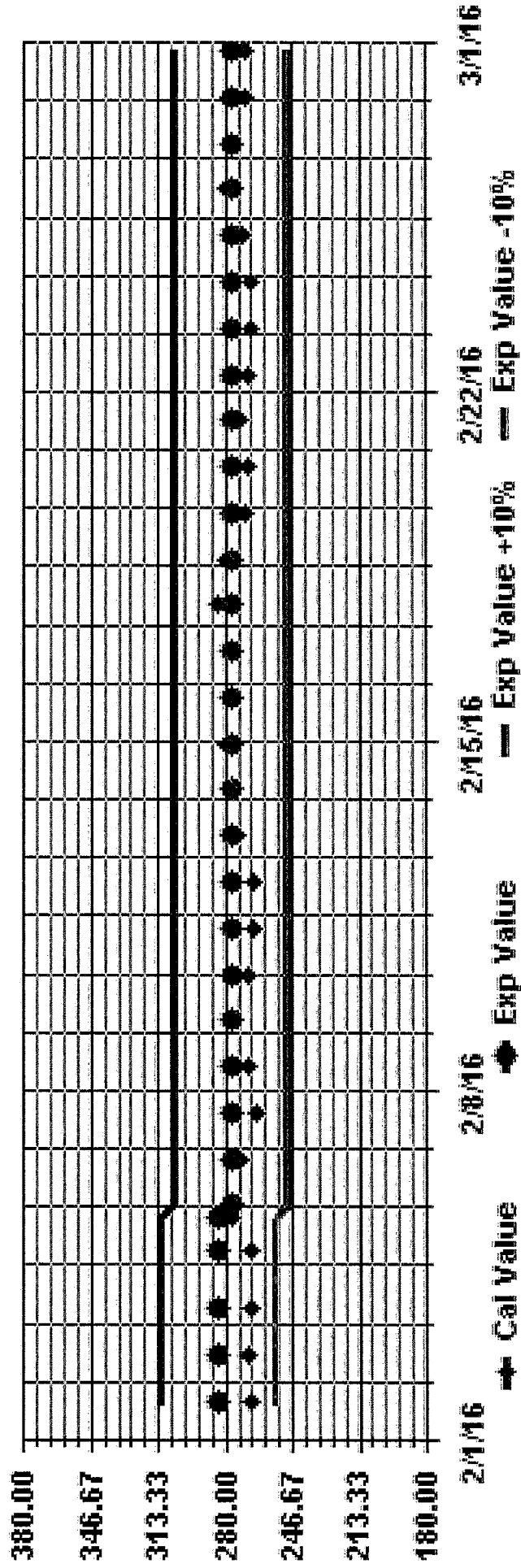
Total # Operational Hours : 658

Site : LICA-ELK
 Period : 02/01/16-02/29/16
 Level : 10

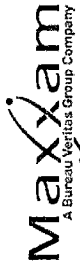
Logger : 35 Parameter : SO2_
 Class Limits (PPB)



Calibration Graph for Site: LICA35 Parameter: S02_ Sequence: S02 Phase: SPAN



HYDROGEN SULPHIDE



HYDROGEN SULPHIDE (H2S) hourly averages in ppb

MST

| DAY | 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 | ROGS. | | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-------|-----|-----|----|
| HOURLY MAX | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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 | 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 | | |
| 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| 2 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.6 | 0.6 | 0.9 | 1.0 | 1.0 | 1.2 | 1.4 | 1.1 | 0.8 | 0.4 | 0.6 | 0.4 | 0.5 | 0.3 | 0.5 | 0.6 | 0.7 | 0.6 | 0.7 | 1.4 | 0.7 | 23 | |
| 3 | 0.6 | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 0.6 | 0.5 | 0.6 | 0.5 | 0.5 | 0.3 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.7 | 1.1 | 1.2 | 1.1 | 1.2 | 24 | |
| 4 | 1.0 | 1.1 | 1.7 | 1.9 | 1.7 | 1.2 | 0.8 | 1.0 | 0.7 | 0.8 | 0.9 | 0.6 | 0.7 | C | C | C | C | 0.0 | 0.1 | 0.2 | 0.2 | 0.2 | S | 0.2 | 1.9 | 0.8 | 24 | | |
| 5 | 0.4 | 0.6 | 0.9 | 0.6 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.0 | 0.1 | 0.4 | 0.6 | 0.5 | 0.3 | 0.4 | 0.4 | 0.4 | 0.6 | 0.5 | 0.4 | S | 0.3 | 0.4 | 0.9 | 24 | | |
| 6 | 0.4 | 0.3 | 0.4 | 0.6 | 0.5 | 0.5 | 0.6 | 0.7 | 0.3 | 0.3 | 0.4 | 0.4 | 0.2 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.0 | 0.0 | 0.7 | 24 | | |
| 7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.0 | 0.0 | 0.0 | 0.0 | 24 | | |
| 8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.0 | 0.0 | 0.0 | 0.0 | 24 | | |
| 9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.3 | 0.3 | 0.2 | 0.1 | 0.0 | 0.0 | S | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.3 | 0.1 | 24 | |
| 10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 14 | 0.0 | 0.1 | 0.2 | 0.5 | 0.4 | 0.2 | 0.3 | 0.2 | 0.9 | 0.4 | 0.2 | 0.1 | 0.2 | S | 0.2 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 24 | |
| 15 | 0.6 | 0.8 | 0.4 | 0.3 | 0.2 | 0.3 | 0.2 | 0.4 | 0.5 | 0.5 | 0.4 | 0.5 | 0.4 | S | 0.2 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.2 | 0.3 | 0.9 | 0.2 | 24 | |
| 16 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | S | 0.0 | 0.3 | 0.1 | 0.4 | 0.2 | 0.2 | 0.1 | 0.3 | 0.3 | 0.0 | 0.1 | 0.4 | 0.1 | 0.1 | 24 | |
| 17 | 0.3 | 0.1 | 0.4 | 0.3 | 0.8 | 1.1 | 1.4 | 1.9 | 1.0 | S | 1.0 | 0.9 | 1.2 | 1.1 | 0.7 | 0.4 | 0.4 | 0.4 | 0.3 | 0.0 | 0.3 | 0.4 | 0.6 | 0.9 | 0.2 | 1.9 | 0.7 | 24 | |
| 18 | 0.3 | 0.4 | 0.3 | 0.2 | 0.3 | 0.2 | 0.3 | 0.4 | S | 0.3 | 0.2 | 0.4 | 0.1 | 0.5 | 0.5 | 0.4 | 0.5 | 0.6 | 0.6 | 0.5 | 0.6 | 0.6 | 0.6 | 0.4 | 0.5 | 0.6 | 0.4 | 24 | |
| 19 | 0.5 | 0.5 | 0.4 | 0.4 | 0.3 | 0.3 | 0.2 | S | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.1 | 24 | |
| 20 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 21 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.4 | 0.0 | 24 | |
| 22 | 0.1 | 0.2 | 0.1 | 0.1 | S | 0.3 | 0.8 | 0.0 | 0.0 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 23 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 24 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 26 | S | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 27 | 0.4 | 0.8 | 1.2 | 0.9 | 1.0 | 0.4 | 0.2 | 0.4 | 0.3 | 0.5 | 0.6 | 0.5 | 0.3 | 0.3 | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.4 | 0.2 | 0.4 | 0.4 | S | 0.1 | 0.1 | 24 | |
| 28 | 0.1 | 0.0 | 0.2 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 29 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 | |
| 30 | 1.0 | 1.1 | 1.7 | 1.9 | 1.7 | 1.2 | 1.4 | 1.9 | 1.0 | 1.0 | 1.2 | 1.4 | 1.2 | 1.1 | 0.7 | 0.6 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.8 | 1.1 | 1.2 | 1.1 | 1.2 | 1.1 | 24 | |
| 31 | 0.2 | 0.2 | 0.3 | 0.3 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 24 |

STATUS FLAG CODES

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

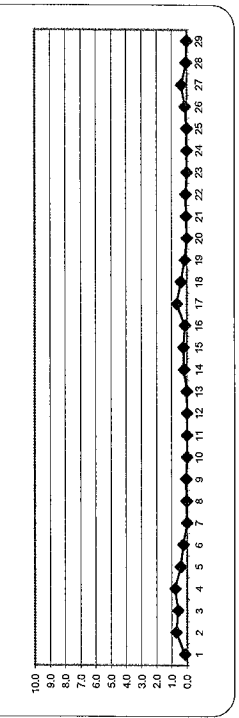
OBJECTIVE LIMIT:

| | | | | | | |
|----------------------|------|----|-----|-------|---|-----|
| ALBERTA ENVIRONMENT: | 1-HR | 30 | PPB | 24-HR | 3 | PPB |
|----------------------|------|----|-----|-------|---|-----|

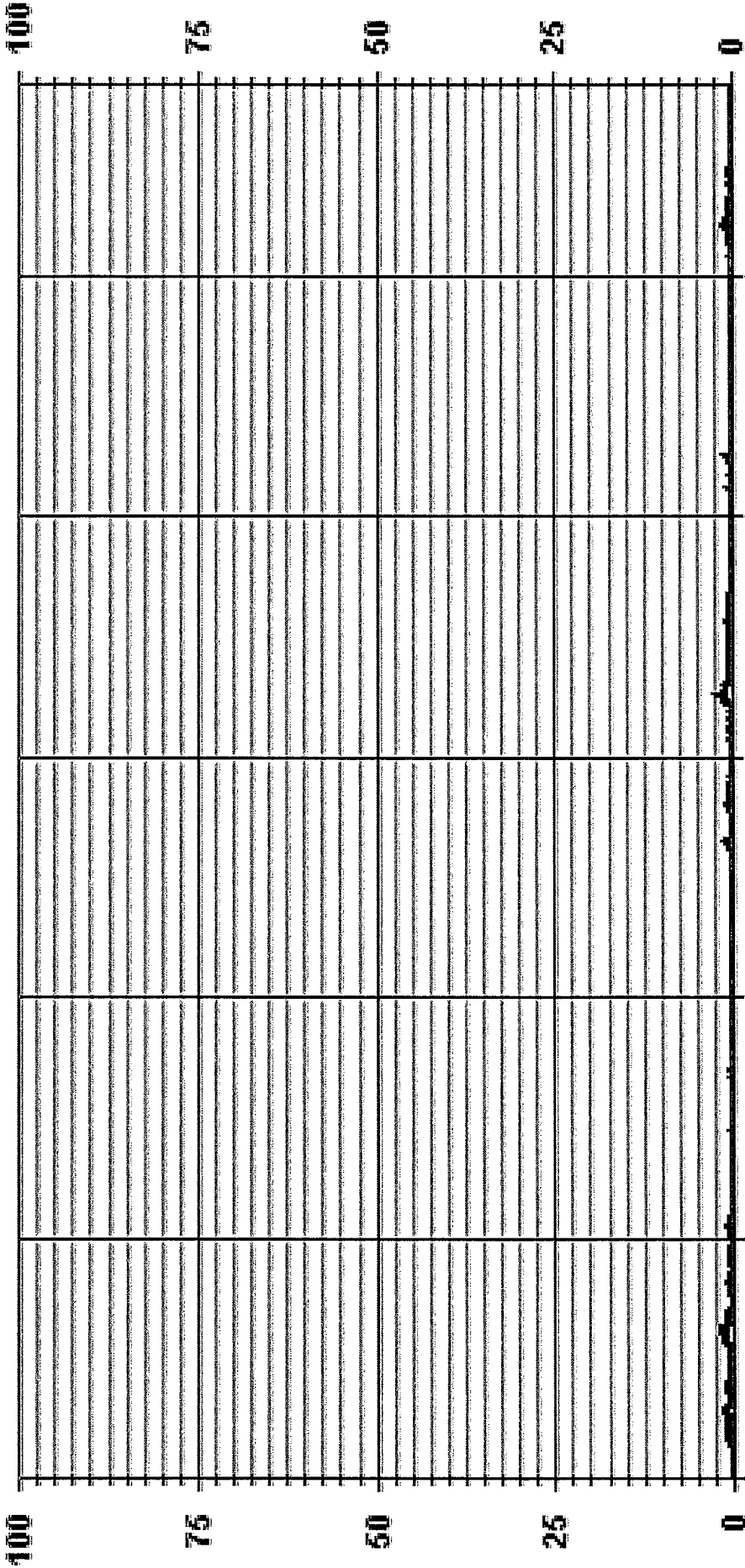
MONTHLY SUMMARY

| | | | | | |
|------------------------------|------|---------------|-----------------------|-----------|-------|
| NUMBER OF 1-HR EXCEEDENCES: | 0 | | | | |
| NUMBER OF 24-HR EXCEEDENCES: | 0 | | | | |
| NUMBER OF NON-ZERO READINGS: | 281 | | | | |
| MINIMUM 1-HR AVERAGE: | 0.0 | PPB @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MAXIMUM 1-HR AVERAGE: | 1.9 | PPB @ HOUR(S) | 3, 7 | ON DAY(S) | 4, 17 |
| MAXIMUM 24-HR AVERAGE: | 0.8 | PPB | PPB | ON DAY(S) | 4 |
| 24-HR CALIBRATION TIME: | 30 | HRS | OPERATIONAL TIME: | 695 | HRS |
| MONTHLY CALIBRATION TIME: | 4 | HRS | AMD OPERATION UPTIME: | 95.9 | % |
| STANDARD DEVIATION: | 0.30 | | MONTHLY AVERAGE: | 0.2 | PPB |

24-HOUR AVERAGES FOR FEBRUARY 2016



01 Hour Averages



02:01/16 00:00 02:06/16 00:00 02:11/16 00:00 02:16/16 00:00 02:21/16 00:00 02:26/16 00:00

— LICA35 H2S_ PPB



HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST

| HOUR START | 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 | | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-------|-----|-----|
| HOUR END | 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 | MAX. | AVG. | | |
| DAY | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | RDGS. | | |
| 1 | 0.2 | 0.1 | 0.0 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | P | 1.8 | 0.2 | 0.3 | 0.4 | 0.7 | S | 1.1 | 0.8 | 0.8 | 0.9 | 1.8 | 0.4 | 23 | |
| 2 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | 1.1 | 1.1 | 1.3 | 1.5 | 1.6 | 1.4 | 1.1 | 0.7 | 0.9 | 0.6 | 0.8 | S | 0.9 | 0.8 | 0.9 | 0.8 | 0.9 | 1.6 | 1.0 | 24 | |
| 3 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.7 | 0.7 | 0.6 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.7 | 0.6 | 0.7 | 0.8 | S | 0.8 | 0.8 | 1.0 | 1.5 | 1.3 | 1.5 | 0.8 | 24 | 1.3 | |
| 4 | 1.3 | 1.3 | 2.0 | 2.1 | 2.2 | 1.5 | 1.0 | 1.3 | 0.9 | 1.2 | 1.2 | 0.8 | 0.9 | C | C | C | C | C | C | 0.3 | 0.5 | 0.5 | 0.5 | S | 0.5 | 2.2 | 1.1 | 24 |
| 5 | 0.6 | 1.1 | 1.1 | 1.1 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 0.5 | 0.3 | 0.6 | 0.7 | 0.8 | 0.6 | 0.6 | 0.9 | 0.9 | 0.8 | 0.7 | S | 0.5 | 0.7 | 1.1 | 0.7 | 24 | |
| 6 | 0.8 | 0.6 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 1.0 | 0.6 | 0.5 | 0.6 | 0.6 | 0.4 | 0.4 | 0.3 | 0.2 | 0.1 | 0.0 | 0.0 | S | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.3 | 0.7 | 0.6 | 0.3 | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.3 | S | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 9 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.3 | 0.4 | 0.1 | 0.5 | 0.6 | 0.5 | 0.5 | 0.3 | 0.3 | S | 0.2 | 0.3 | 0.4 | 0.2 | 0.0 | 0.0 | 0.1 | 0.6 | 0.2 | 0.2 | 24 |
| 10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24 |
| 13 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.2 | 0.3 | 0.4 | S | 0.3 | 0.2 | 0.2 | 0.1 | 0.5 | 0.5 | 0.2 | 0.3 | 0.2 | 0.3 | 0.3 | 0.5 | 0.2 | 0.2 | 24 |
| 14 | 0.2 | 0.4 | 0.5 | 0.8 | 0.8 | 0.8 | 1.2 | 0.6 | 0.4 | 0.3 | 0.3 | 0.4 | S | 0.4 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.5 | 0.6 | 1.2 | 0.4 | 24 |
| 15 | 0.9 | 1.1 | 0.7 | 0.6 | 0.5 | 0.6 | 0.5 | 0.7 | 0.8 | 0.7 | 0.7 | S | 0.6 | 0.4 | 0.4 | 0.3 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.4 | 1.1 | 0.5 | 24 |
| 16 | 0.2 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | S | 0.5 | 0.6 | 0.7 | 0.7 | 0.5 | 0.2 | 0.6 | 0.5 | 0.4 | 0.6 | 0.5 | 0.7 | 0.4 | 0.6 | 0.5 | 0.7 | 0.4 | 24 |
| 17 | 0.6 | 0.5 | 0.6 | 0.6 | 1.3 | 1.7 | 1.7 | 2.1 | 2.0 | S | 1.6 | 1.3 | 1.5 | 1.3 | 1.0 | 0.7 | 0.7 | 0.5 | 0.3 | 0.5 | 0.6 | 0.8 | 0.5 | 0.5 | 2.1 | 1.0 | 24 | |
| 18 | 0.6 | 0.6 | 0.5 | 0.5 | 0.6 | 0.5 | 0.6 | 0.6 | S | 0.7 | 0.6 | 0.8 | 0.7 | 0.8 | 0.8 | 0.7 | 0.8 | 0.8 | 0.8 | 0.9 | 0.8 | 0.9 | 0.7 | 0.7 | 0.9 | 0.7 | 24 | |
| 19 | 0.7 | 0.8 | 0.6 | 0.7 | 0.6 | 0.4 | S | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.3 | 0.1 | 0.2 | 0.1 | 0.0 | 0.8 | 0.3 | 24 | |
| 20 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 24 | |
| 21 | 0.2 | 0.1 | 0.0 | 0.0 | 0.1 | S | 0.2 | 0.1 | 0.3 | 0.3 | 0.1 | 0.4 | 0.3 | 0.4 | 1.2 | 5.1 | 0.0 | 0.1 | 0.2 | 0.0 | 0.2 | 0.3 | 0.3 | 0.4 | 5.1 | 0.4 | 24 | |
| 22 | 0.3 | 0.4 | 0.4 | 0.4 | S | 1.0 | 1.3 | 0.3 | 0.5 | 0.6 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 1.3 | 0.3 | 24 | |
| 23 | 0.2 | 0.0 | 0.0 | S | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.1 | 0.0 | 0.0 | 0.2 | 0.1 | 24 | |
| 24 | 0.0 | 0.0 | S | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.2 | 0.2 | 0.1 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.1 | 0.1 | 0.3 | 0.4 | 0.3 | 0.0 | 0.4 | 0.1 | 24 | |
| 25 | 0.1 | S | 0.0 | 0.3 | 0.0 | 0.1 | 0.2 | 0.4 | 0.5 | 0.2 | 0.0 | 0.3 | 0.3 | 0.3 | 0.1 | 0.4 | 0.3 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.3 | 0.2 | 0.1 | 0.5 | 0.2 | 24 |
| 26 | S | 0.1 | 0.2 | 0.0 | 0.0 | 0.4 | 0.2 | 0.4 | 0.4 | 0.2 | 0.4 | 0.3 | 0.4 | 0.3 | 0.5 | 0.6 | 0.4 | 0.3 | 0.7 | 0.9 | 0.7 | 0.7 | 1.2 | S | 1.2 | 0.4 | 24 | |
| 27 | 0.9 | 2.1 | 1.6 | 1.5 | 1.3 | 0.9 | 0.6 | 0.6 | 0.5 | 0.8 | 0.9 | 0.9 | 0.9 | 0.5 | 0.3 | 0.3 | 0.4 | 0.2 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 | S | 0.3 | 2.1 | 0.7 | 24 |
| 28 | 0.4 | 0.2 | 0.4 | 0.5 | 0.4 | 0.4 | 0.3 | 0.3 | 0.1 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S | 0.0 | 0.5 | 0.2 | 24 |
| 29 | 0.0 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.2 | 0.1 | 0.8 | 0.3 | S | 0.1 | 0.2 | 0.3 | 0.8 | 0.1 | 0.1 | 24 |
| HOURLY MAX | 1.3 | 2.1 | 2.0 | 2.1 | 2.2 | 1.7 | 1.7 | 2.1 | 2.0 | 1.3 | 1.6 | 1.6 | 1.6 | 1.3 | 1.8 | 5.1 | 0.8 | 0.9 | 0.9 | 0.9 | 1.1 | 1.5 | 1.5 | 1.5 | 1.3 | 0.3 | 0.3 | 0.3 |
| HOURLY AVG | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.3 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |

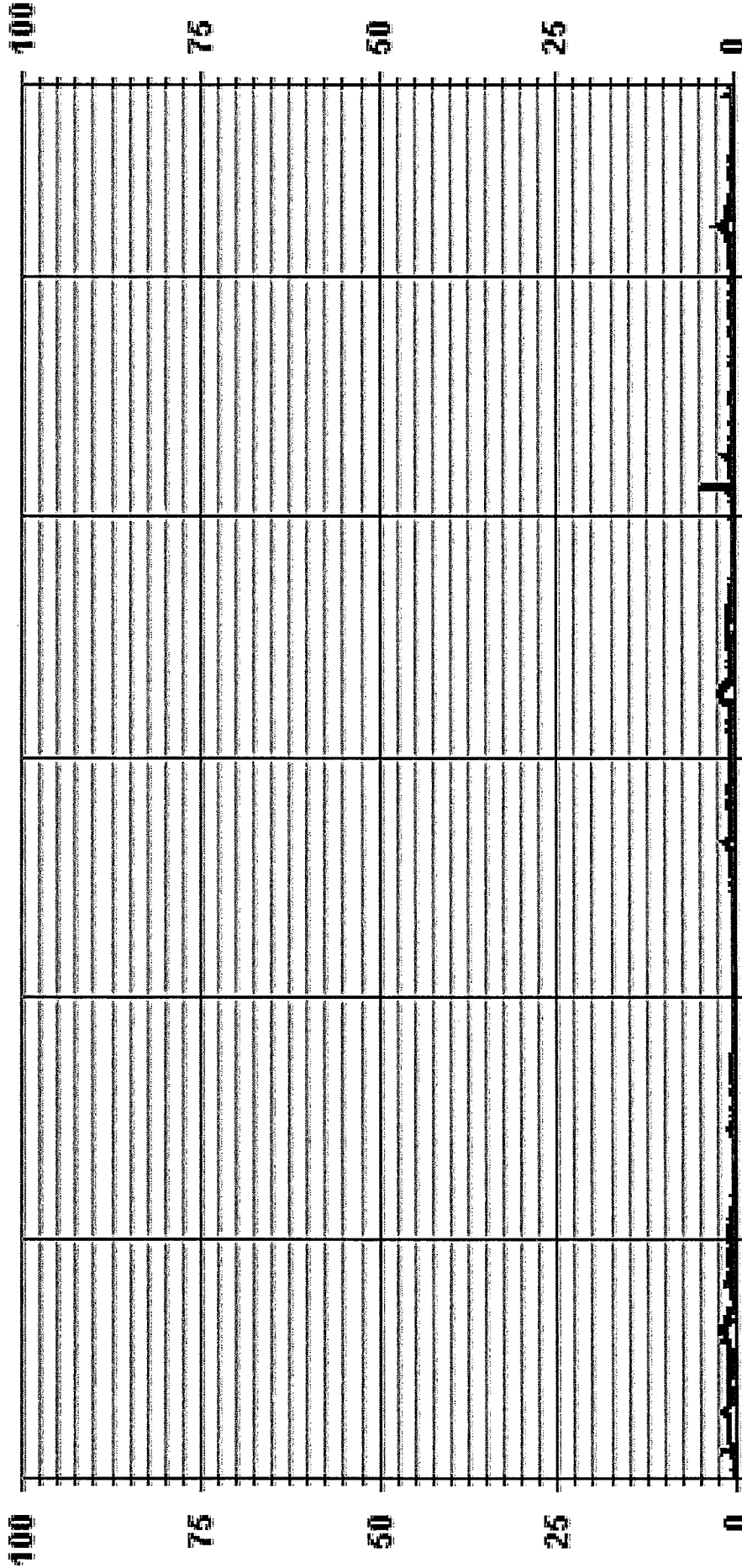
STATUS FLAG CODES

| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION | R | RECOVERY |
| V | MAINTENANCE | A | MACHINE MALFUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | OUT-OF-REPAIR |
| SI | REPEAT ZERO/SPAN CHECK | P | POWER FAILURE |

MONTHLY SUMMARY

| | |
|------------------------------|-----------------------------------|
| NUMBER OF NON-ZERO READINGS: | 468 |
| MAXIMUM INSTANTANEOUS VALUE: | 5.1 PPB @ HOUR(S) 15 ON DAY(S) 21 |
| IS CALIBRATION TIME: | 30 HRS |
| MONTHLY CALIBRATION TIME: | 5 HRS |
| STANDARD DEVIATION: | 0.45 |
| OPERATIONAL TIME: | 695 HRS |
| VAR-VARIOUS | VAR-VARIOUS |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA35 H2SMAX PPB

H2S_ / WDR Joint Frequency Distribution (Percent)
 LICA-ELK
 February 2016

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA-ELK
 Parameter : H2S
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | |
|---------|-----------|-----|------|------|-------|-------|------|------|------|------|------|-------|-------|-------|------|------|--------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 3.0 | 2.88 | .91 | 3.18 | 3.64 | 12.74 | 18.36 | 3.49 | 2.42 | 1.06 | 1.36 | 1.97 | 10.92 | 16.08 | 10.47 | 7.73 | 2.73 | 100.00 |
| < 10.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 50.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 50.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.88 | .91 | 3.18 | 3.64 | 12.74 | 18.36 | 3.49 | 2.42 | 1.06 | 1.36 | 1.97 | 10.92 | 16.08 | 10.47 | 7.73 | 2.73 | |

Calm : .00 %

Total # Operational Hours : 659

Distribution By Samples

| Limit | Direction | | | | | | | | | | | | | | | | |
|---------|-----------|-----|----|-----|----|-----|----|-----|---|-----|----|-----|-----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 3.0 | 19 | 6 | 21 | 24 | 84 | 121 | 23 | 16 | 7 | 9 | 13 | 72 | 106 | 69 | 51 | 18 | 659 |
| < 10.0 | | | | | | | | | | | | | | | | | |
| < 50.0 | | | | | | | | | | | | | | | | | |
| >= 50.0 | | | | | | | | | | | | | | | | | |
| Totals | 19 | 6 | 21 | 24 | 84 | 121 | 23 | 16 | 7 | 9 | 13 | 72 | 106 | 69 | 51 | 18 | |

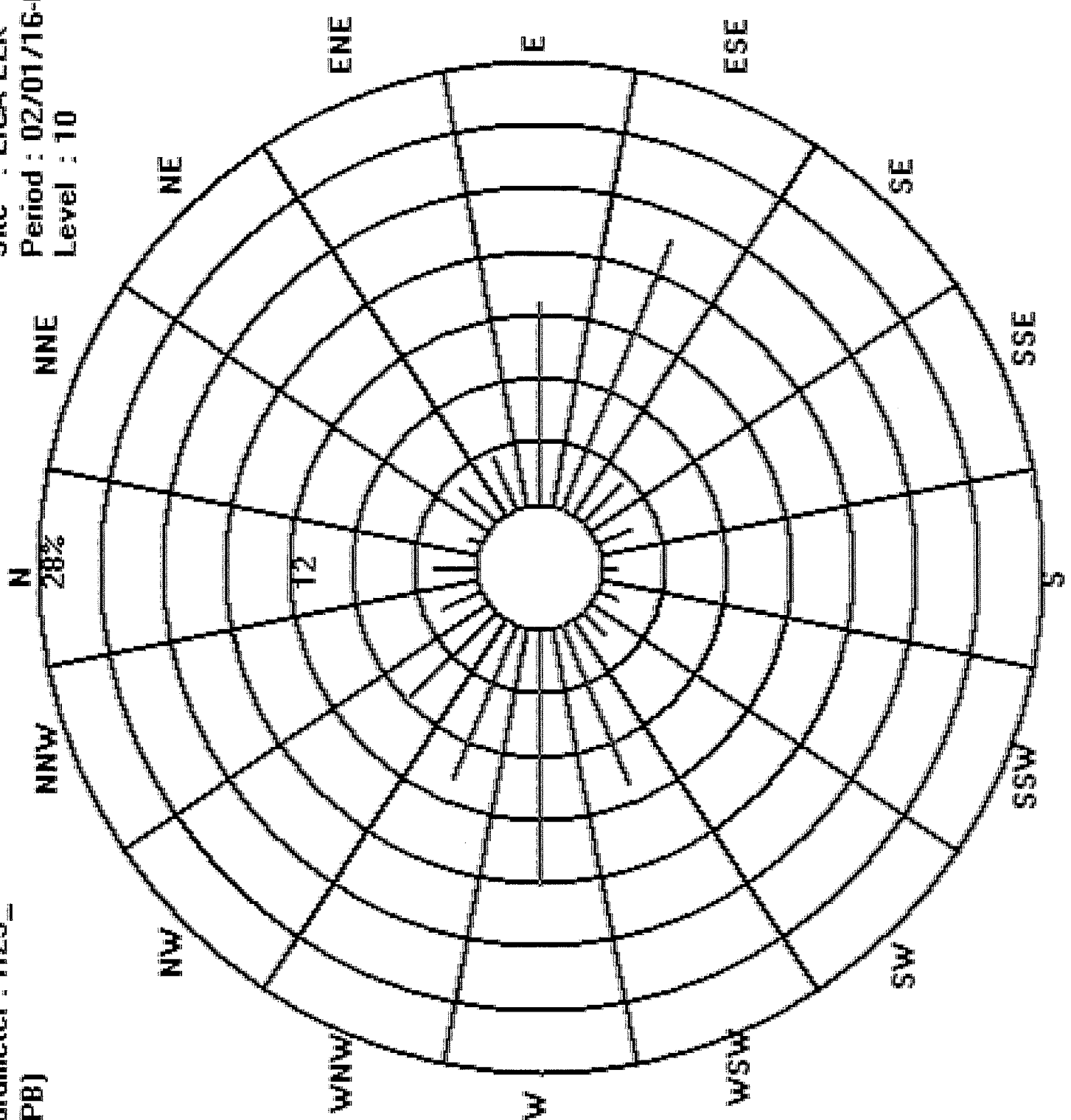
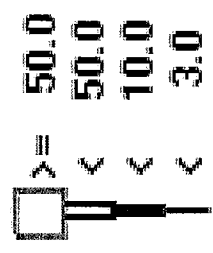
Calm : .00 %

Total # Operational Hours : 659

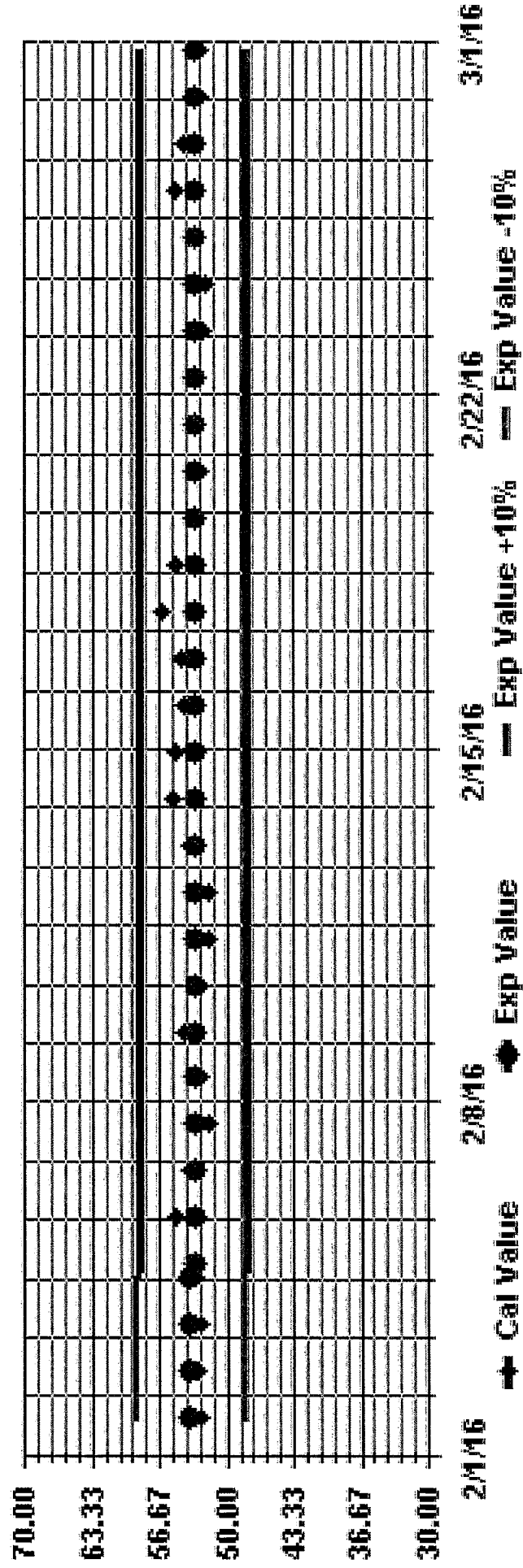
Site : LICA-ELK
Period : 02/01/16-02/29/16
Level : 10

Logger : 35 Parameter : H25_

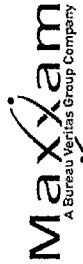
Class Limits (PPB)



Calibration Graph for Site: LICA35 Parameter: H2S_ Sequence: H2S Phase: SPAN



TOTAL HYDROCARBON



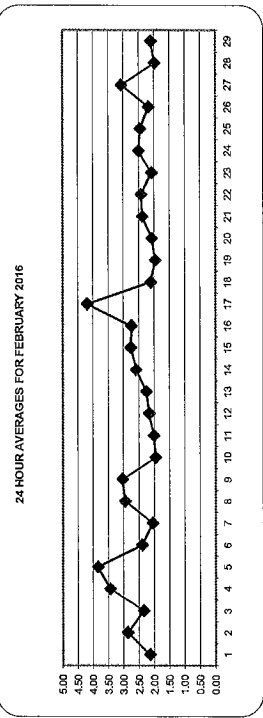
TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST

| DAY | 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. | RDGS. | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|-------|------|----|
| 1 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 2.15 | 23 | |
| 2 | 2.90 | 3.00 | 2.90 | 2.90 | 2.90 | 2.90 | 3.10 | 3.40 | 4.40 | 4.70 | 4.40 | 4.30 | 3.00 | 2.20 | 2.00 | 2.10 | 2.00 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.88 | 24 | |
| 3 | 2.40 | 2.20 | 2.30 | 2.00 | 1.90 | 1.90 | 1.90 | 1.90 | 2.00 | 2.40 | 2.10 | 2.00 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.36 | 24 | |
| 4 | 3.90 | 3.80 | 5.30 | 5.30 | 4.50 | 3.60 | 3.10 | 3.30 | 3.40 | 3.50 | 3.60 | 3.10 | 2.90 | 2.70 | 2.60 | 2.60 | 2.60 | 2.70 | 2.80 | 3.10 | 3.30 | 3.80 | \$ | 3.90 | 5.90 | 3.45 | 24 | |
| 5 | 4.30 | 5.00 | 5.20 | 4.60 | 4.80 | 4.60 | 4.20 | 4.10 | 4.20 | 3.70 | 3.80 | C | C | C | C | C | C | 3.00 | 3.00 | 3.10 | 3.30 | 3.00 | \$ | 3.10 | 3.00 | 3.85 | 24 | |
| 6 | 3.10 | 3.20 | 3.20 | 3.40 | 3.30 | 3.30 | 3.20 | 2.20 | 2.00 | 2.00 | 2.00 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 3.40 | 2.40 | 24 | |
| 7 | 1.90 | 1.90 | 1.90 | 2.00 | 2.10 | 2.00 | 2.00 | 2.00 | 2.30 | 2.40 | 2.10 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.40 | 2.06 | 24 | |
| 8 | 2.40 | 2.50 | 2.60 | 2.80 | 3.50 | 3.40 | 4.30 | 4.30 | 4.00 | 3.70 | 3.40 | 3.80 | 3.10 | 2.50 | 2.30 | 2.10 | 2.30 | 2.50 | 2.50 | 2.30 | 2.20 | 2.20 | 2.60 | 3.00 | 4.30 | 2.96 | 24 | |
| 9 | 2.60 | 2.80 | 3.10 | 3.40 | 3.80 | 3.80 | 3.50 | 3.40 | 3.50 | 3.30 | 3.30 | 3.50 | 3.70 | 3.60 | 3.00 | 3.10 | 2.40 | \$ | 2.20 | 2.30 | 2.70 | 2.30 | 2.20 | 2.30 | 3.80 | 3.03 | 24 | |
| 10 | 2.30 | 2.00 | 2.00 | 2.00 | 2.00 | 1.90 | 2.00 | 2.00 | 2.00 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 2.00 | 1.90 | 2.00 | 2.00 | 2.00 | 1.90 | 2.30 | 1.96 | 24 | |
| 11 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.10 | 2.10 | 2.10 | 2.00 | \$ | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.10 | 2.10 | 2.02 | 24 | |
| 12 | 2.50 | 2.40 | 2.20 | 2.50 | 2.30 | 2.20 | 2.10 | 2.20 | 2.30 | 2.30 | 2.40 | 2.50 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.26 | 24 | |
| 13 | 2.10 | 2.10 | 2.20 | 2.20 | 2.10 | 2.20 | 2.20 | 2.30 | 2.30 | 2.40 | 2.50 | 2.40 | 2.50 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 24 |
| 14 | 2.10 | 2.70 | 2.80 | 3.90 | 3.40 | 2.90 | 5.00 | 2.70 | 2.40 | 2.20 | 2.10 | 2.10 | \$ | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.60 | 24 | |
| 15 | 4.40 | 4.20 | 3.10 | 2.60 | 3.00 | 3.40 | 3.30 | 3.40 | 3.20 | 3.40 | 3.20 | 3.40 | \$ | 2.50 | 2.20 | 2.10 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.77 | 24 | |
| 16 | 2.70 | 2.80 | 2.40 | 2.40 | 2.40 | 2.50 | 2.60 | 2.60 | 2.80 | 2.70 | \$ | 2.50 | 2.50 | 2.40 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.75 | 24 | |
| 17 | 3.80 | 3.90 | 4.20 | 4.20 | 4.40 | 4.90 | 5.20 | 5.60 | 4.00 | \$ | 4.10 | 5.80 | 6.70 | 5.90 | 4.30 | 3.20 | 3.30 | 3.40 | 3.30 | 3.30 | 3.30 | 3.70 | 3.00 | 3.00 | 6.70 | 4.20 | 24 | |
| 18 | 2.80 | 2.60 | 2.20 | 2.20 | 2.10 | 2.10 | 2.00 | 2.00 | \$ | 2.00 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 2.12 | 24 | |
| 19 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | \$ | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 2.12 | 24 | |
| 20 | 2.00 | 2.00 | 2.00 | 2.00 | 1.90 | 1.90 | \$ | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 2.80 | 2.12 | 24 | |
| 21 | 2.70 | 2.60 | 2.50 | 2.60 | 2.50 | 2.40 | 2.60 | 2.50 | 2.40 | 2.50 | 2.80 | 2.90 | 2.70 | 2.40 | 2.10 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.90 | 2.12 | 24 |
| 22 | 2.60 | 3.20 | 2.50 | 2.40 | \$ | 3.50 | 4.60 | 3.00 | 2.50 | 2.50 | 2.20 | 2.10 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.98 | 2.12 | 24 |
| 23 | 2.00 | 2.10 | 2.10 | \$ | 2.10 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.10 | 2.10 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.98 | 2.12 | 24 |
| 24 | 2.20 | 2.20 | \$ | 2.10 | 2.20 | 2.30 | 2.30 | 2.10 | 2.50 | 2.50 | 2.30 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.98 | 2.12 | 24 |
| 25 | 3.30 | \$ | 3.10 | 3.10 | 3.20 | 3.10 | 3.00 | 3.10 | 3.00 | 3.00 | 3.10 | 3.00 | 2.20 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.98 | 2.12 | 24 |
| 26 | \$ | 2.10 | 2.10 | 2.00 | 2.00 | 2.40 | 2.20 | 2.10 | 2.10 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.98 | 2.12 | 24 |
| 27 | 4.30 | 5.00 | 6.70 | 5.90 | 5.30 | 3.80 | 2.80 | 3.40 | 2.70 | 3.20 | 3.20 | 2.60 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.98 | 2.12 | 24 |
| 28 | 2.30 | 2.10 | 2.20 | 2.00 | 2.10 | 2.30 | 2.10 | 2.20 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 2.98 | 2.12 | 24 |
| 29 | 1.90 | 1.90 | 2.00 | 2.00 | 2.00 | 2.00 | 2.20 | 2.30 | 2.30 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.98 | 2.12 | 24 |
| 30 | 4.40 | 5.00 | 6.70 | 5.90 | 5.30 | 4.90 | 5.20 | 5.60 | 4.40 | 4.70 | 4.40 | 5.80 | 6.70 | 5.90 | 4.30 | 3.20 | 3.30 | 3.40 | 3.30 | 3.30 | 3.30 | 3.70 | 3.00 | 3.00 | 6.70 | 4.20 | 24 | |
| HOURLY MAX | 2.69 | 2.72 | 2.81 | 2.80 | 2.78 | 2.74 | 2.84 | 2.74 | 2.65 | 2.54 | 2.55 | 2.51 | 2.44 | 2.30 | 2.19 | 2.19 | 2.17 | 2.20 | 2.29 | 2.34 | 2.42 | 2.49 | 2.47 | 2.59 | | | | |
| HOURLY AVG | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STATUS FLAG CODES

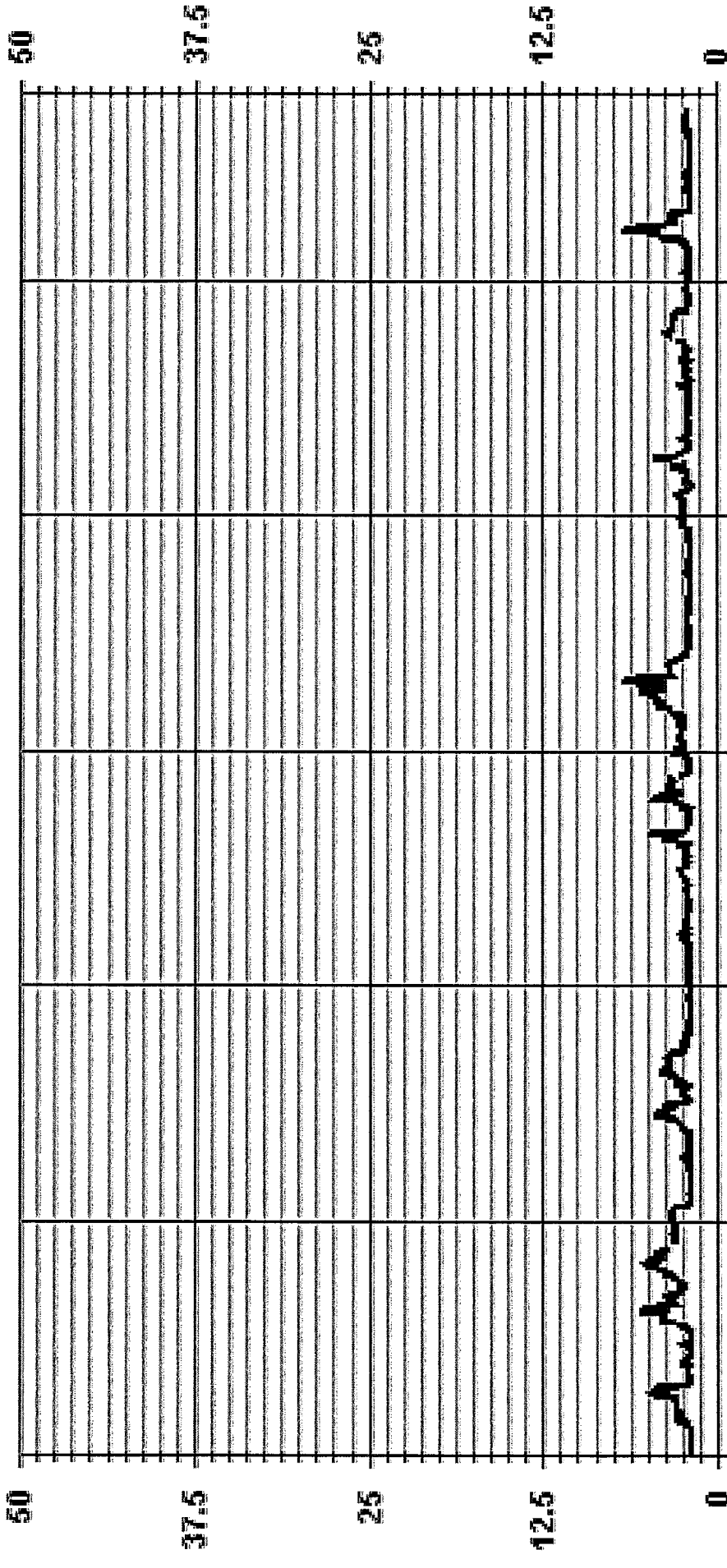
| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CI | REPEAT CALIBRATION | R | RECOVERY |
| M | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | OUT FOR REPAIR |
| SI | REPEAT ZERO/SPAN CHECK | P | POWER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



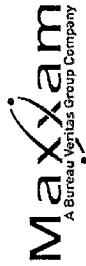
MONTHLY SUMMARY

| | | | | |
|------------------------------|----------|-----------------------|-------------|-----------|
| NUMBER OF NON-ZERO READINGS: | 653 | VAR | ON DAY(S) | VAR |
| MINIMUM 1-HR AVERAGE: | 1.90 PPM | @ HOUR(S) | ON DAY(S) | ON DAY(S) |
| MAXIMUM 1-HR AVERAGE: | 6.70 PPM | @ HOUR(S) | ON DAY(S) | ON DAY(S) |
| MAXIMUM 24-HR AVERAGE: | 4.20 PPM | | VAR-VARIOUS | |
| IS CALIBRATION TIME: | 29 HRS | OPERATIONAL TIME: | 686 HRS | |
| MONTHLY CALIBRATION TIME: | 4 HRS | AMD OPERATION UPTIME: | 98.6 % | |
| STANDARD DEVIATION: | 0.75 | MONTHLY AVERAGE: | 2.52 PPM | |

01 Hour Averages



— LICA35 - - - - - THC55 PPM



TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

| DAY | HOUR | | | | | | | | | | | | | | | | | | | | | | | | 24-HOUR AVG. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 0:00 | 0:15 | 0:30 | 0:45 | 1:00 | 1:15 | 1:30 | 1:45 | 2:00 | 2:15 | 2:30 | 2:45 | 3:00 | 3:15 | 3:30 | 3:45 | 4:00 | 4:15 | 4:30 | 4:45 | 5:00 | 5:15 | 5:30 | 5:45 | | 6:00 | 6:15 | 6:30 | 6:45 | 7:00 | 7:15 | 7:30 | 7:45 | 8:00 | 8:15 | 8:30 | 8:45 | 9:00 | 9:15 | 9:30 | 9:45 | 10:00 | 10:15 | 10:30 | 10:45 | 11:00 | 11:15 | 11:30 | 11:45 | 12:00 | 12:15 | 12:30 | 12:45 | 13:00 | 13:15 | 13:30 | 13:45 | 14:00 | 14:15 | 14:30 | 14:45 | 15:00 | 15:15 | 15:30 | 15:45 | 16:00 | 16:15 | 16:30 | 16:45 | 17:00 | 17:15 | 17:30 | 17:45 | 18:00 | 18:15 | 18:30 | 18:45 | 19:00 | 19:15 | 19:30 | 19:45 | 20:00 | 20:15 | 20:30 | 20:45 | 21:00 | 21:15 | 21:30 | 21:45 | 22:00 | 22:15 | 22:30 | 22:45 | 23:00 | 23:15 | 23:30 |
| 1 | 1.98 | 1.99 | 1.98 | 2.00 | 1.98 | 1.98 | 2.00 | 2.01 | 2.06 | 2.05 | 1.98 | 2.01 | 2.03 | P | 2.10 | 2.25 | 2.23 | 2.23 | 2.61 | 2.96 | \$ | 3.34 | 3.06 | 3.06 | 3.06 | 2.85 | 3.34 | 2.90 | 23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 3.04 | 3.07 | 3.00 | 3.04 | 3.03 | 3.13 | 3.25 | 4.00 | 4.92 | 5.17 | 4.87 | 4.72 | 3.94 | 2.52 | 2.23 | 2.30 | 2.15 | 2.22 | \$ | 2.13 | 2.32 | 2.40 | 2.33 | 2.67 | 5.17 | 3.15 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 2.67 | 2.33 | 2.41 | 2.20 | 2.10 | 2.04 | 2.00 | 2.00 | 2.29 | 2.54 | 2.32 | 2.14 | 2.06 | 2.00 | 2.01 | 2.00 | 2.12 | \$ | 2.60 | 2.78 | 3.33 | 4.64 | 4.13 | 4.26 | 4.64 | 2.56 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 4.24 | 4.20 | 5.95 | 5.84 | 5.56 | 4.07 | 3.38 | 3.66 | 3.68 | 4.79 | 4.52 | 3.36 | 3.06 | R | 2.81 | 2.61 | 2.92 | 2.99 | 3.08 | 3.38 | 3.37 | 4.67 | \$ | 4.14 | 5.95 | 3.92 | 23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 4.53 | 5.99 | 5.52 | 4.87 | 5.32 | 4.95 | 4.66 | 4.37 | 4.44 | 4.06 | 4.07 | C | C | C | 3.36 | 3.36 | 3.36 | 3.48 | 3.46 | 3.37 | 3.30 | \$ | 3.42 | 3.24 | 5.99 | 4.20 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | 3.36 | 3.33 | 3.34 | 3.60 | 3.46 | 3.54 | 3.51 | 3.57 | 2.65 | 2.17 | 2.11 | 2.00 | 2.00 | 2.01 | 2.06 | 2.10 | 1.97 | 2.01 | 1.99 | 2.00 | \$ | 1.98 | 2.00 | 2.00 | 3.60 | 2.55 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 2.00 | 2.00 | 2.01 | 2.25 | 2.39 | 2.11 | 2.12 | 2.03 | 2.78 | 2.63 | 2.37 | 2.19 | 2.14 | 2.15 | 2.18 | 2.17 | 2.11 | 2.15 | 2.22 | \$ | 2.29 | 2.31 | 2.28 | 2.45 | 2.78 | 2.23 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | 2.61 | 2.79 | 2.81 | 3.32 | 4.11 | 3.81 | 4.51 | 4.24 | 3.98 | 3.62 | 4.04 | 3.63 | 2.77 | 2.40 | 2.21 | 2.41 | 2.78 | \$ | 2.86 | 2.49 | 2.51 | 3.33 | 3.42 | 4.51 | 3.27 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | 2.81 | 2.98 | 3.83 | 3.76 | 4.11 | 4.04 | 3.88 | 3.54 | 3.74 | 3.55 | 3.63 | 3.65 | 4.08 | 3.93 | 3.66 | 3.33 | 2.86 | \$ | 2.43 | 2.56 | 3.08 | 2.53 | 2.40 | 2.61 | 4.11 | 3.35 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 2.61 | 2.14 | 2.10 | 2.10 | 2.04 | 2.02 | 2.02 | 2.02 | 2.01 | 2.01 | 2.01 | 2.01 | 2.01 | 2.00 | 2.00 | 2.02 | \$ | 2.05 | 2.01 | 2.05 | 2.07 | 2.04 | 2.01 | 2.00 | 2.61 | 2.06 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | 2.07 | 2.10 | 2.09 | 2.09 | 2.05 | 2.05 | 2.08 | 2.10 | 2.11 | 2.12 | 2.12 | 2.14 | 2.15 | 2.17 | 2.13 | \$ | 2.05 | 2.08 | 2.06 | 2.09 | 2.03 | 2.09 | 2.20 | 2.36 | 2.36 | 2.11 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | 2.72 | 2.59 | 2.34 | 2.61 | 2.49 | 2.34 | 2.21 | 2.28 | 2.38 | 2.37 | 2.30 | 2.28 | 2.24 | 2.14 | \$ | 2.13 | 2.11 | 2.09 | 2.09 | 2.12 | 2.17 | 2.18 | 2.22 | 2.72 | 2.28 | 2.24 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | 2.23 | 2.25 | 2.23 | 2.27 | 2.23 | 2.27 | 2.35 | 2.41 | 2.44 | 2.57 | 2.69 | 2.72 | 2.69 | \$ | 2.33 | 2.31 | 2.34 | 2.33 | 2.45 | 2.51 | 2.52 | 2.66 | 2.42 | 2.72 | 2.41 | 2.41 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | 2.22 | 3.33 | 3.09 | 4.67 | 4.56 | 4.52 | 5.55 | 3.60 | 2.50 | 2.35 | 2.19 | 2.23 | \$ | 2.13 | 2.08 | 2.10 | 2.09 | 2.16 | 2.36 | 2.96 | 2.37 | 3.60 | 3.60 | 4.37 | 5.55 | 3.07 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | 5.10 | 4.61 | 3.28 | 2.80 | 3.59 | 3.64 | 3.39 | 3.72 | 3.60 | 3.63 | 3.51 | \$ | 3.27 | 2.29 | 2.19 | 2.11 | 2.07 | 2.10 | 2.37 | 2.20 | 2.35 | 2.95 | 3.22 | 5.10 | 3.06 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | 2.86 | 2.94 | 2.64 | 2.61 | 2.51 | 2.71 | 2.68 | 2.76 | 2.92 | 2.88 | \$ | 2.56 | 2.60 | 2.52 | 2.92 | 2.99 | 3.01 | 2.54 | 2.83 | 3.36 | 3.71 | 3.69 | 3.68 | 4.59 | 2.98 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | 4.29 | 4.09 | 4.96 | 4.63 | 4.89 | 5.25 | 5.62 | 5.99 | 5.06 | \$ | 4.70 | 7.25 | 7.16 | 6.63 | 5.37 | 3.53 | 3.53 | 3.66 | 3.48 | 3.44 | 3.52 | 4.09 | 3.45 | 3.25 | 7.25 | 4.69 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | 3.03 | 2.95 | 2.35 | 2.28 | 2.17 | 2.15 | 2.10 | 2.11 | \$ | 2.10 | 2.08 | 2.08 | 2.14 | 2.12 | 2.14 | 2.12 | 2.14 | 2.17 | 2.26 | 2.26 | 2.25 | 2.19 | 2.20 | 2.17 | 3.03 | 2.25 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | 2.15 | 2.13 | 2.11 | 2.21 | 2.05 | 2.04 | 2.03 | \$ | 2.01 | 1.99 | 1.99 | 2.03 | 2.00 | 2.01 | 2.00 | 2.05 | 2.09 | 2.01 | 2.18 | 2.74 | 2.64 | 2.07 | 2.14 | 2.09 | 2.74 | 2.12 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | 2.08 | 2.07 | 2.04 | 2.02 | 2.01 | 2.02 | \$ | 2.02 | 2.02 | 2.01 | 2.01 | 2.01 | 2.11 | 2.17 | 2.14 | 2.10 | 2.09 | 2.14 | 2.47 | 2.56 | 2.66 | 2.61 | 2.59 | 2.68 | 2.20 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | 2.77 | 2.76 | 2.64 | 2.64 | 2.61 | \$ | 2.74 | 2.75 | 2.49 | 2.77 | 2.98 | 2.98 | 2.93 | 2.62 | 2.41 | 2.18 | 2.04 | 2.29 | 2.40 | 2.33 | 2.27 | 2.23 | 2.25 | 2.40 | 2.98 | 2.54 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | 2.87 | 3.93 | 2.68 | 2.71 | \$ | 5.14 | 5.86 | 3.65 | 2.77 | 2.85 | 2.36 | 2.20 | 2.08 | 2.11 | 2.10 | 2.25 | 2.82 | 2.24 | 2.25 | 2.20 | 2.12 | 2.10 | 2.08 | 2.14 | 5.86 | 2.76 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | 2.13 | 2.19 | 2.22 | \$ | 2.30 | 2.10 | 2.08 | 2.05 | 2.09 | 2.09 | 2.05 | 2.28 | 2.19 | 2.09 | 2.12 | 2.15 | 2.04 | 2.10 | 3.31 | 3.56 | 2.84 | 2.02 | 2.27 | 2.34 | 3.56 | 2.29 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | 2.44 | 2.33 | \$ | 3.59 | 3.60 | 3.72 | 3.97 | 5.13 | 3.48 | 3.55 | 2.45 | 2.33 | 2.19 | 2.18 | 2.11 | 2.16 | 2.20 | 2.17 | 2.11 | 2.23 | 2.50 | 2.64 | 2.56 | 2.32 | 5.13 | 2.83 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | 3.71 | \$ | 2.27 | 2.27 | 2.09 | 2.18 | 4.37 | 2.45 | 2.50 | 2.34 | 2.13 | 2.12 | 2.08 | 2.51 | 2.16 | 2.58 | 2.52 | 2.08 | 2.57 | 2.33 | 3.53 | 4.07 | 6.68 | \$ | 6.68 | 2.73 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | \$ | 2.27 | 2.27 | 2.09 | 2.18 | 4.86 | 3.23 | 4.12 | 2.89 | 3.69 | 3.85 | 3.01 | 2.33 | 2.16 | 2.03 | 2.01 | 2.00 | 1.99 | 2.01 | 2.23 | 2.03 | 2.38 | \$ | 2.92 | 9.61 | 3.90 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | 2.80 | 2.33 | 2.33 | 2.27 | 2.35 | 2.64 | 2.38 | 3.04 | 2.95 | 1.99 | 1.97 | 1.97 | 1.97 | 1.97 | 1.95 | 1.95 | 1.97 | 1.98 | 1.96 | 1.96 | 1.96 | 1.96 | \$ | 1.97 | 2.04 | 2.17 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | 2.05 | 2.08 | 2.07 | 2.17 | 2.28 | 2.26 | 2.39 | 2.60 | 2.43 | 2.44 | 2.26 | 2.40 | 2.33 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 | 2.38 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | 9.22 | 9.61 | 7.90 | 7.09 | 6.19 | 5.25 | 5.86 | 5.99 | 5.06 | 5.17 | 4.87 | 7.25 | 7.16 | 6.63 | 5.37 | 3.53 | 3.53 | 3.53 | 3.53 | 3.53 | 3.53 | 3.53 | 3.53 | 3.53 | 3.53 | 3.53 | 3.53 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HOURLY MAX | 3.09 | 3.12 | 3.06 | 3.07 | 3.09 | 3.16 | 3.15 | 3.05 | 2.90 | 2.79 | 2.77 | 2.71 | 2.67 | 2.45 | 2.40 | 2.35 | 2.35 | 2.35 | 2.35 | 2.35 | 2.35 | 2.35 | 2.35 | 2.35 | 2.35 | 2.35 | 2.35 | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HOURLY AVG | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DAILY MAX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DAILY AVG | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

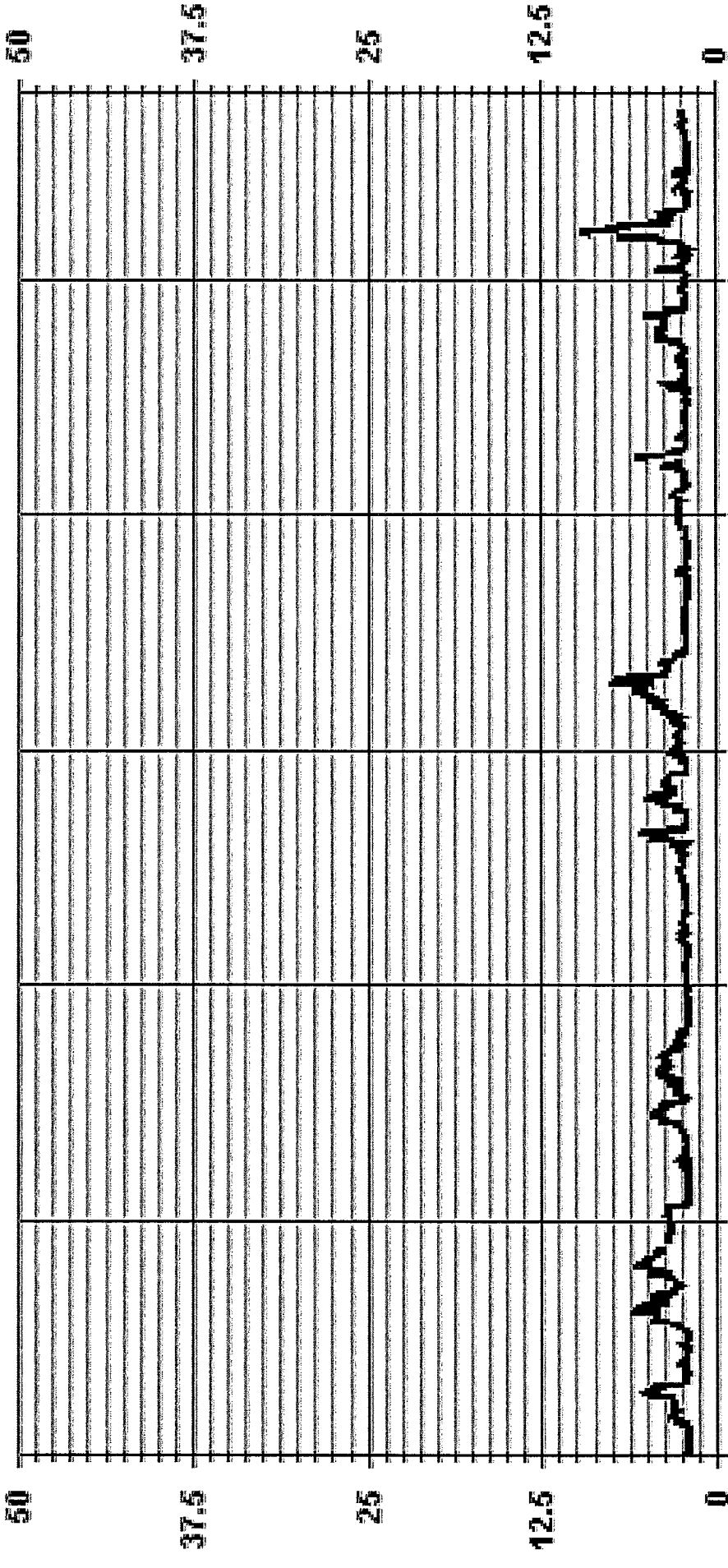
STATUS FLAG CODES

| | | | |
|---|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | O | QUALITY ASSURANCE |
| R | REPAIR CALIBRATION | R | RECOVERY |
| X | MAINTENANCE | X | MACHINE MALFUNCTION |
| G | DAILY ZERO/SPAN CHECK | G | OUT FOR REPAIR |
| P | REPAIR ZERO/SPAN CHECK | P | POWER FAILURE |

MONTHLY SUMMARY

| | | | | | | |
|------------------------------|------|-----|-------------------|---|-----------|-----|
| NUMBER OF NON-ZERO READINGS: | 651 | PPM | @ HOUR(S) | 1 | ON DAY(S) | 27 |
| MAXIMUM INSTANTANEOUS VALUE: | 9.61 | PPM | @ HOUR(S) | 1 | ON DAY(S) | 27 |
| IS CALIBRATION TIME: | 29 | HRS | OPERATIONAL TIME: | | | 684 |
| MONTHLY CALIBRATION TIME: | 4 | HRS | | | | |
| STANDARD DEVIATION: | 1.02 | | | | | |
| VAR-VARIOUS | | | | | | |

01 Hour Averages



— LICA35 THC55MAX PPM

LICA35
 WFC55 / WDR Joint Frequency Distribution (Percent)
 February 2016

Distribution By % Of Samples

Logger Id : 95
 Site Name : LICA35
 Parameter : WFC55
 Units : PPM

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|-----|------|------|-------|-------|------|------|------|------|------|-------|-------|-------|------|------|-------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 3.00 | 2.91 | .76 | 2.61 | 2.61 | 7.98 | 11.05 | 1.84 | 1.84 | .61 | .76 | 1.99 | 10.13 | 14.59 | 8.75 | 6.45 | 2.45 | 77.41 |
| < 10.00 | .00 | .15 | .61 | 1.07 | 4.76 | 6.75 | 1.38 | .61 | .46 | .61 | .00 | .92 | 1.68 | 1.84 | 1.38 | .30 | 22.58 |
| < 50.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 50.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.91 | .92 | 3.22 | 3.68 | 12.74 | 17.81 | 3.22 | 2.45 | 1.07 | 1.38 | 1.99 | 11.05 | 16.28 | 10.59 | 7.83 | 2.76 | |

Calm : .00 %

Total # Operational Hours : 651

Distribution By Samples





| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|-----|----|-----|----|-----|----|-----|---|-----|----|-----|-----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 3.00 | 19 | 5 | 17 | 17 | 52 | 72 | 12 | 12 | 4 | 5 | 13 | 66 | 95 | 57 | 42 | 16 | 504 |
| < 10.00 | 1 | 4 | 4 | 7 | 31 | 44 | 9 | 4 | 3 | 4 | 6 | 11 | 12 | 12 | 9 | 2 | 147 |
| < 50.00 | | | | | | | | | | | | | | | | | |
| >= 50.00 | | | | | | | | | | | | | | | | | |
| Totals | 19 | 6 | 21 | 24 | 83 | 116 | 21 | 16 | 7 | 9 | 13 | 72 | 106 | 69 | 51 | 18 | |

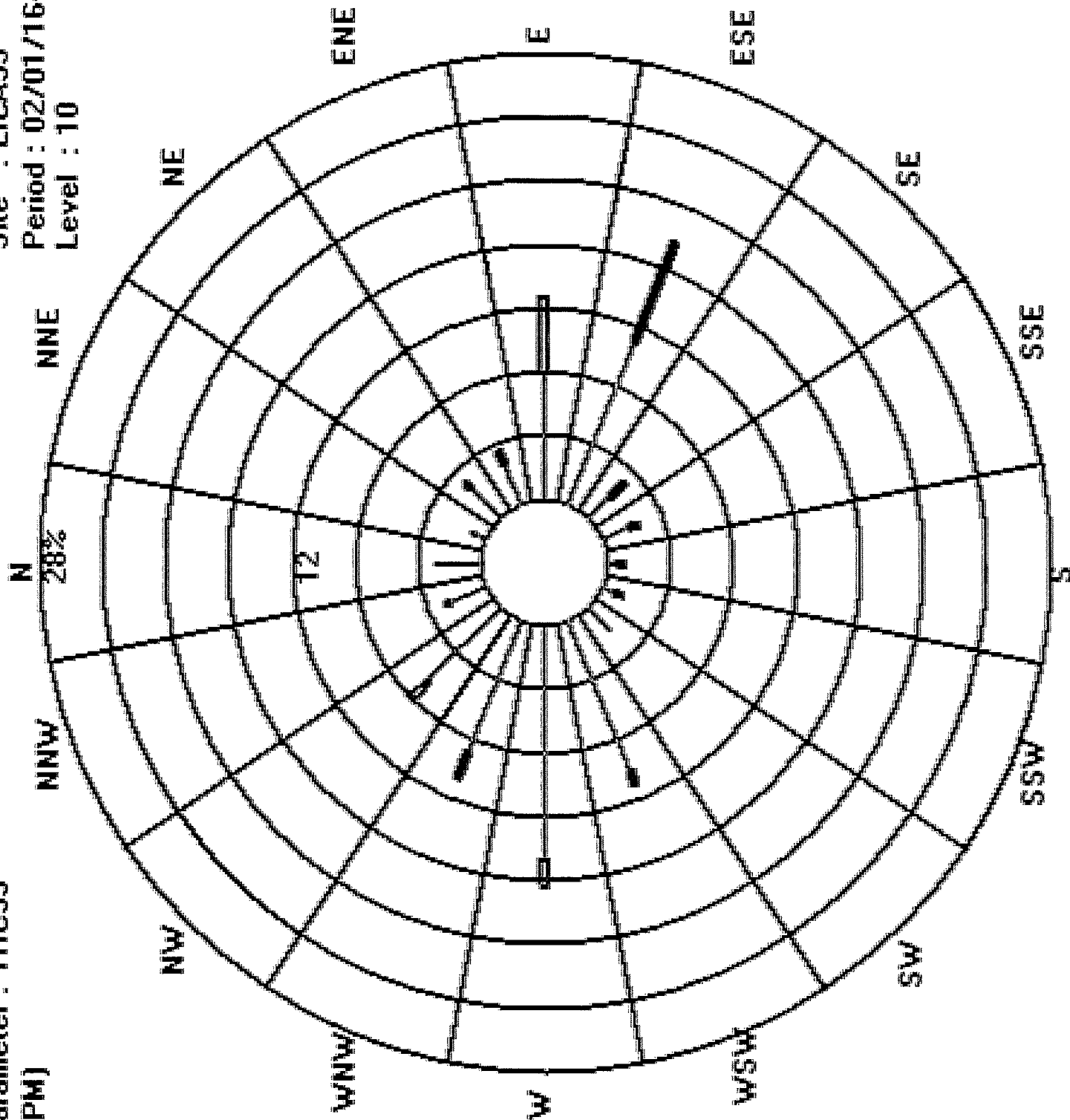
Calm : .00 %

Total # Operational Hours : 651

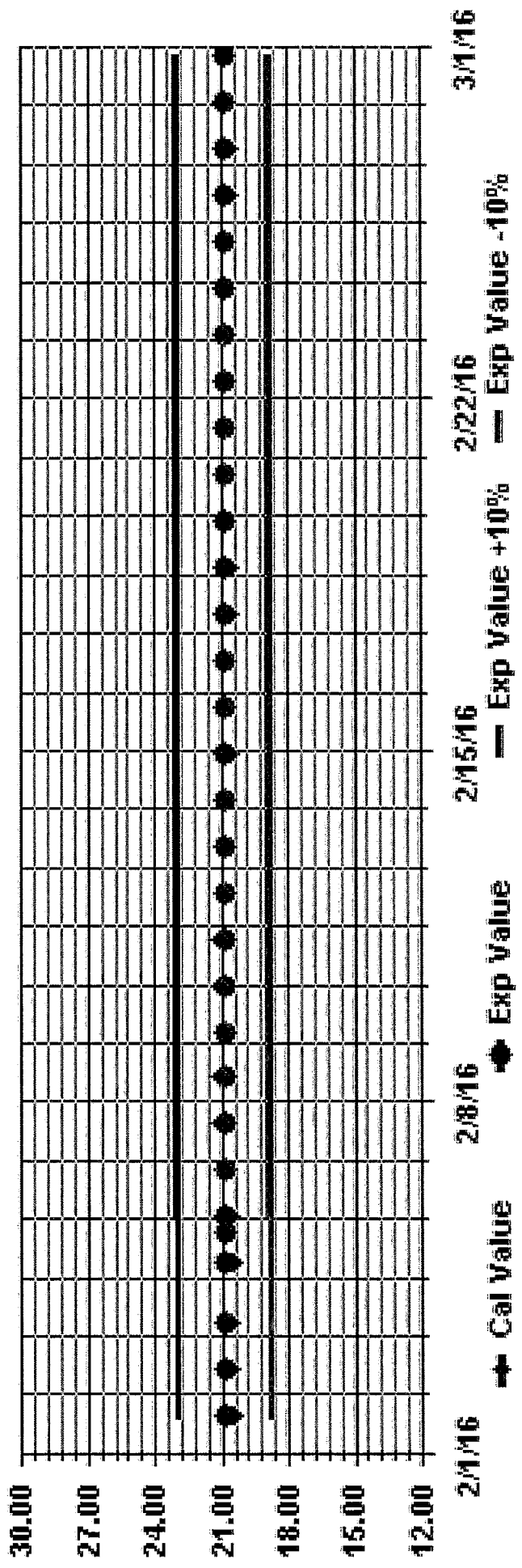
Site : LICA35
Period : 02/01/16-02/29/16
Level : 10

Logger : 35 Parameter : THC55
Class Limits (PPM)

-  >= 50.00
-  < 50.00
-  < 10.00
-  < 3.00



Calibration Graph for Site: LICA35 Parameter: THC55 Sequence: THC55 Phase: SPAN



METHANE



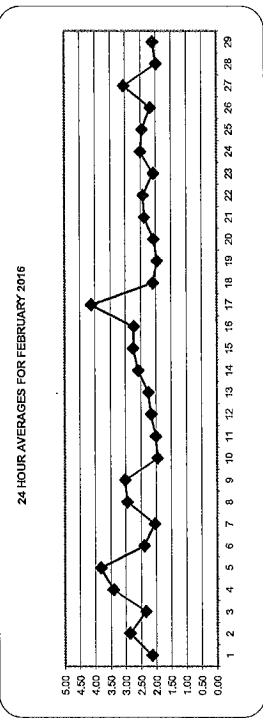
METHANE (CH4) hourly averages in ppm

MST

| DAY | 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 | 24:00 |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| HR START | 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 | ROGS. |
| HR END | 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 | AVG. |
| 1 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 2.15 |
| 2 | 2.90 | 3.00 | 2.90 | 2.90 | 3.10 | 3.40 | 4.40 | 4.70 | 4.40 | 4.70 | 4.40 | 4.30 | 3.00 | 2.20 | 2.00 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.88 |
| 3 | 2.40 | 2.20 | 2.30 | 2.00 | 2.00 | 1.90 | 1.90 | 1.90 | 2.00 | 2.40 | 2.10 | 2.10 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 2.36 |
| 4 | 3.90 | 3.80 | 5.20 | 5.20 | 4.40 | 3.60 | 3.10 | 3.40 | 3.40 | 3.50 | 3.60 | 3.10 | 2.90 | 2.70 | 2.60 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 3.42 |
| 5 | 4.20 | 4.80 | 5.10 | 4.60 | 4.80 | 4.60 | 4.20 | 4.00 | 4.20 | 3.70 | 3.80 | C | C | C | C | C | C | C | C | C | C | C | C | C | 3.83 |
| 6 | 3.10 | 3.20 | 3.20 | 3.40 | 3.30 | 3.30 | 3.30 | 3.20 | 2.20 | 2.00 | 2.00 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 2.40 |
| 7 | 1.90 | 1.90 | 1.90 | 2.00 | 2.10 | 2.00 | 2.00 | 2.00 | 2.30 | 2.40 | 2.10 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.10 | 2.10 | 2.10 | 2.10 | 2.06 |
| 8 | 2.40 | 2.50 | 2.60 | 2.80 | 3.50 | 3.40 | 4.20 | 4.30 | 3.70 | 3.40 | 3.40 | 3.80 | 3.10 | 2.50 | 2.30 | 2.10 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.30 | 2.96 |
| 9 | 2.60 | 2.80 | 3.10 | 3.40 | 3.80 | 3.80 | 3.50 | 3.40 | 3.40 | 3.30 | 3.30 | 3.70 | 3.50 | 3.00 | 3.10 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 3.03 |
| 10 | 2.30 | 2.00 | 2.00 | 2.00 | 2.00 | 1.90 | 2.00 | 2.00 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.96 |
| 11 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.10 | 2.10 | 2.10 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.02 |
| 12 | 2.50 | 2.40 | 2.20 | 2.50 | 2.30 | 2.20 | 2.10 | 2.20 | 2.30 | 2.30 | 2.40 | 2.50 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.17 |
| 13 | 2.10 | 2.10 | 2.20 | 2.20 | 2.10 | 2.20 | 2.20 | 2.30 | 2.30 | 2.40 | 2.50 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.60 | 2.26 |
| 14 | 2.10 | 2.70 | 2.80 | 3.80 | 3.40 | 2.90 | 5.00 | 2.70 | 2.40 | 2.20 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.59 |
| 15 | 4.40 | 4.10 | 2.60 | 3.00 | 3.40 | 3.30 | 3.40 | 3.30 | 3.20 | 3.40 | 3.40 | 3.40 | 3.40 | 3.40 | 3.40 | 3.40 | 3.40 | 3.40 | 3.40 | 3.40 | 3.40 | 3.40 | 3.40 | 3.40 | 2.76 |
| 16 | 2.70 | 2.80 | 2.40 | 2.40 | 2.40 | 2.50 | 2.60 | 2.60 | 2.80 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.70 | 2.73 |
| 17 | 3.60 | 3.70 | 4.00 | 4.00 | 4.20 | 4.80 | 5.10 | 5.50 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.13 |
| 18 | 2.80 | 2.60 | 2.20 | 2.20 | 2.10 | 2.10 | 2.10 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.11 |
| 19 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 1.98 |
| 20 | 2.00 | 2.00 | 2.00 | 2.00 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 2.08 |
| 21 | 2.70 | 2.60 | 2.50 | 2.60 | 2.50 | 2.50 | 2.40 | 2.40 | 2.50 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.38 |
| 22 | 2.60 | 3.20 | 2.50 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.43 |
| 23 | 2.00 | 2.10 | 2.10 | 2.10 | 2.10 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.09 |
| 24 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.51 |
| 25 | 3.30 | 3.30 | 3.10 | 3.10 | 3.20 | 3.10 | 3.00 | 3.10 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 2.46 |
| 26 | 2.10 | 2.10 | 2.00 | 2.00 | 2.00 | 2.40 | 2.20 | 2.10 | 2.10 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.19 |
| 27 | 4.20 | 4.90 | 6.60 | 5.80 | 5.30 | 3.80 | 2.80 | 3.40 | 2.70 | 3.20 | 3.20 | 2.60 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 3.60 |
| 28 | 2.30 | 2.10 | 2.20 | 2.00 | 2.10 | 2.30 | 2.10 | 2.20 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 1.90 | 6.60 |
| 29 | 1.90 | 1.90 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 3.05 |
| 30 | 4.40 | 4.90 | 6.60 | 5.80 | 5.30 | 4.80 | 5.10 | 5.50 | 4.40 | 4.70 | 4.40 | 5.70 | 6.60 | 5.90 | 4.30 | 3.20 | 3.30 | 3.40 | 3.50 | 3.40 | 3.50 | 3.40 | 3.50 | 3.40 | 1.99 |
| HOURLY MAX | 2.68 | 2.70 | 2.79 | 2.78 | 2.77 | 2.74 | 2.83 | 2.74 | 2.65 | 2.54 | 2.54 | 2.50 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.11 |
| HOURLY AVG | 2.68 | 2.70 | 2.79 | 2.78 | 2.77 | 2.74 | 2.83 | 2.74 | 2.65 | 2.54 | 2.54 | 2.50 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.44 | 2.11 |

STATUS FLAG CODES

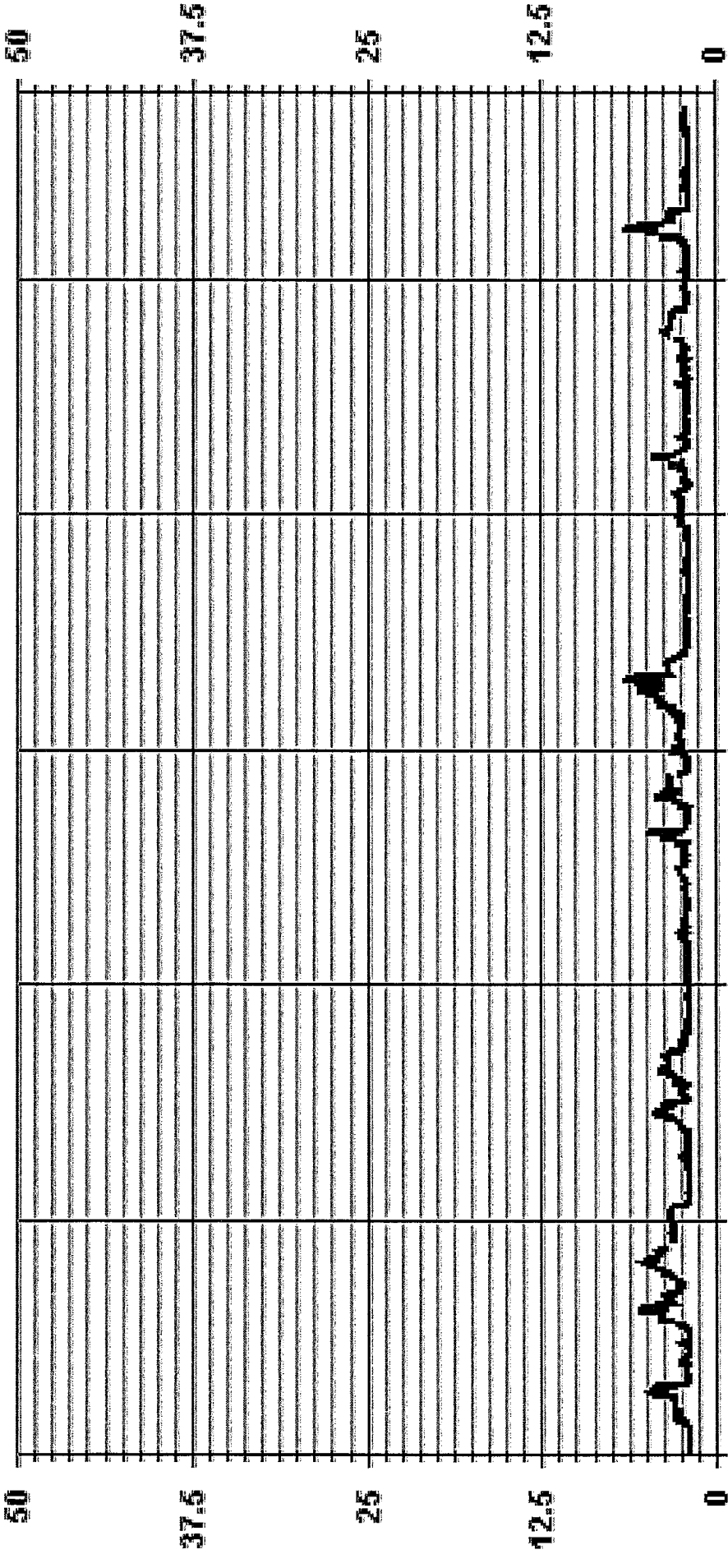
| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION | R | RECOVERY |
| Y | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | OUT FOR REPAIR |
| S1 | REPEAT ZERO/SPAN CHECK | P | POWER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



MONTHLY SUMMARY

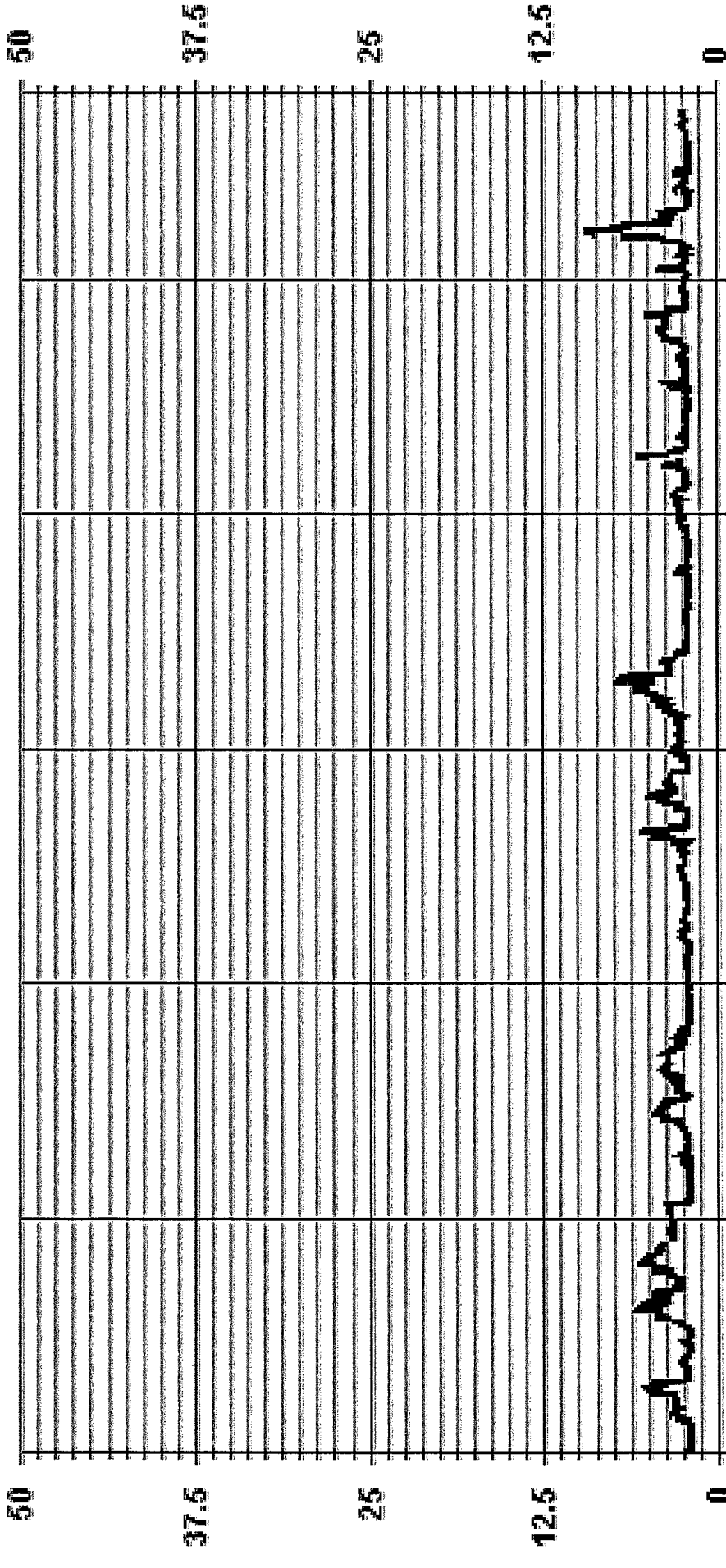
| | | | | | |
|------------------------------|------|---------------|-----------------------|-------------|--------|
| NUMBER OF NON-ZERO READINGS: | 653 | PPM @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MINIMUM 1-HR AVERAGE: | 1.90 | @ HOUR(S) | 12, 2 | ON DAY(S) | 17, 27 |
| MAXIMUM 1-HR AVERAGE: | 6.60 | PPM | | ON DAY(S) | 17 |
| MAXIMUM 24-HR AVERAGE: | 4.13 | PPM | | VAR-VARIOUS | |
| ISZ CALIBRATION TIME: | 29 | HRS | OPERATIONAL TIME: | 686 | HRS |
| MONTHLY CALIBRATION TIME: | 4 | HRS | AMD OPERATION UPTIME: | 98.6 | % |
| STANDARD DEVIATION: | 0.77 | | MONTHLY AVERAGE: | 2.52 | PPM |

01 Hour Averages



— LICA35 METHANE PPM

01 Hour Averages



— LICA35 MATHMAX PPM

LICA35
 METHANE / WDR Joint Frequency Distribution (Percent)
 February 2016

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA35
 Parameter : METHANE
 Units : PPM

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|-----|------|------|-------|-------|------|------|------|------|------|-------|-------|-------|------|------|-------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 3.00 | 2.91 | .76 | 2.61 | 2.61 | 7.98 | 11.05 | 1.84 | 1.84 | .61 | .76 | 1.99 | 10.13 | 14.59 | 8.75 | 6.45 | 2.45 | 77.41 |
| < 10.00 | .00 | .15 | .61 | 1.07 | 4.76 | 6.75 | 1.38 | .61 | .46 | .61 | .00 | .92 | 1.68 | 1.84 | 1.38 | .30 | 22.58 |
| < 50.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 50.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.91 | .92 | 3.22 | 3.68 | 12.74 | 17.81 | 3.22 | 2.45 | 1.07 | 1.38 | 1.99 | 11.05 | 16.28 | 10.59 | 7.83 | 2.76 | |

Calm : .00 %

Total # Operational Hours : 651

Distribution By Samples

| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|-----|----|-----|----|-----|----|-----|---|-----|----|-----|-----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 3.00 | 19 | 5 | 17 | 17 | 52 | 72 | 12 | 12 | 4 | 5 | 13 | 66 | 95 | 57 | 42 | 16 | 504 |
| < 10.00 | 1 | 4 | 4 | 7 | 31 | 44 | 9 | 4 | 3 | 4 | 6 | 11 | 12 | 12 | 9 | 2 | 147 |
| < 50.00 | | | | | | | | | | | | | | | | | |
| >= 50.00 | | | | | | | | | | | | | | | | | |
| Totals | 19 | 6 | 21 | 24 | 83 | 116 | 21 | 16 | 7 | 9 | 13 | 72 | 106 | 69 | 51 | 18 | |

Calm : .00 %





Total # Operational Hours : 651

Logger : 35 Parameter : METHANE

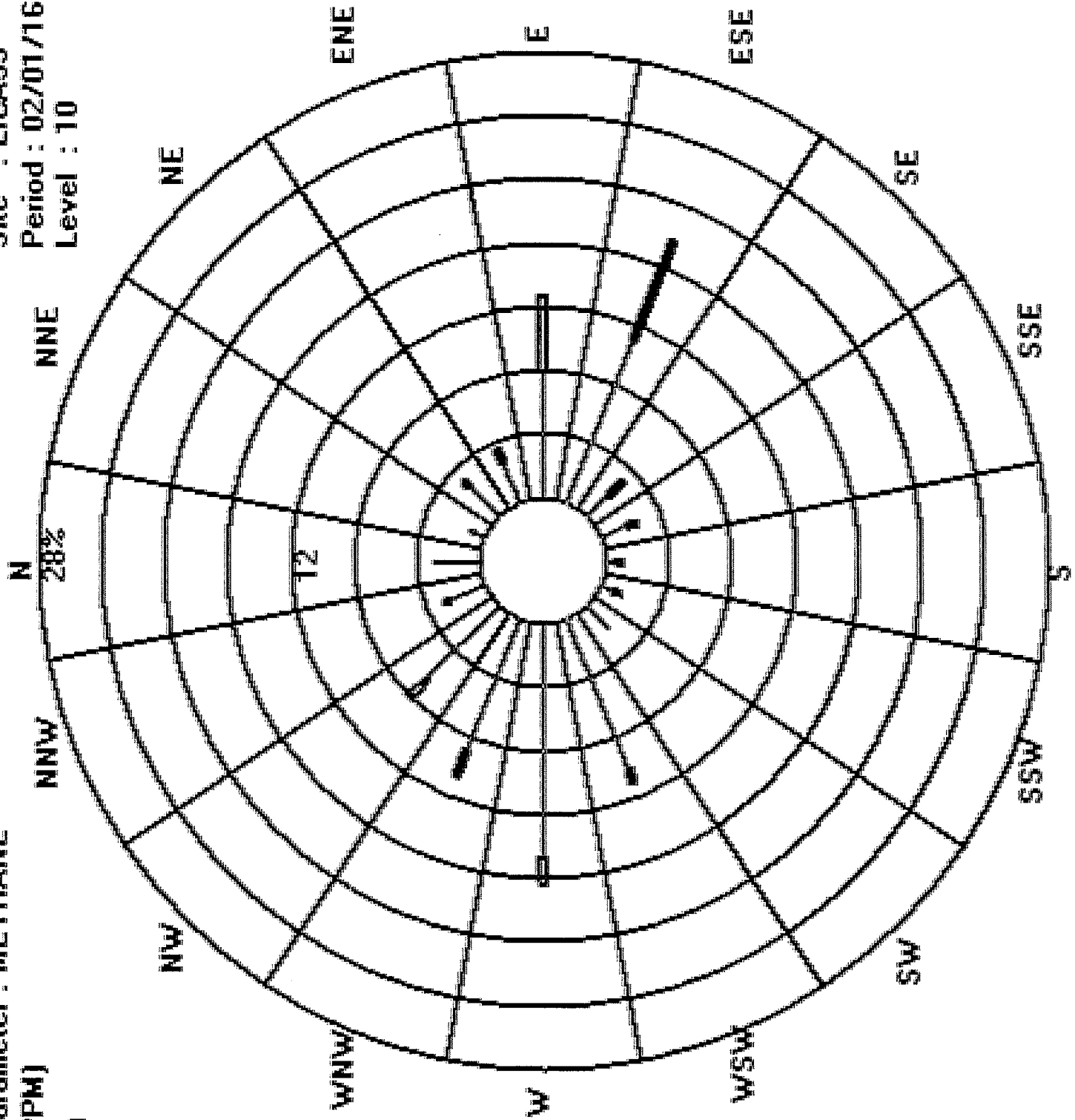
Site : LICA35

Class Limits (PPM)

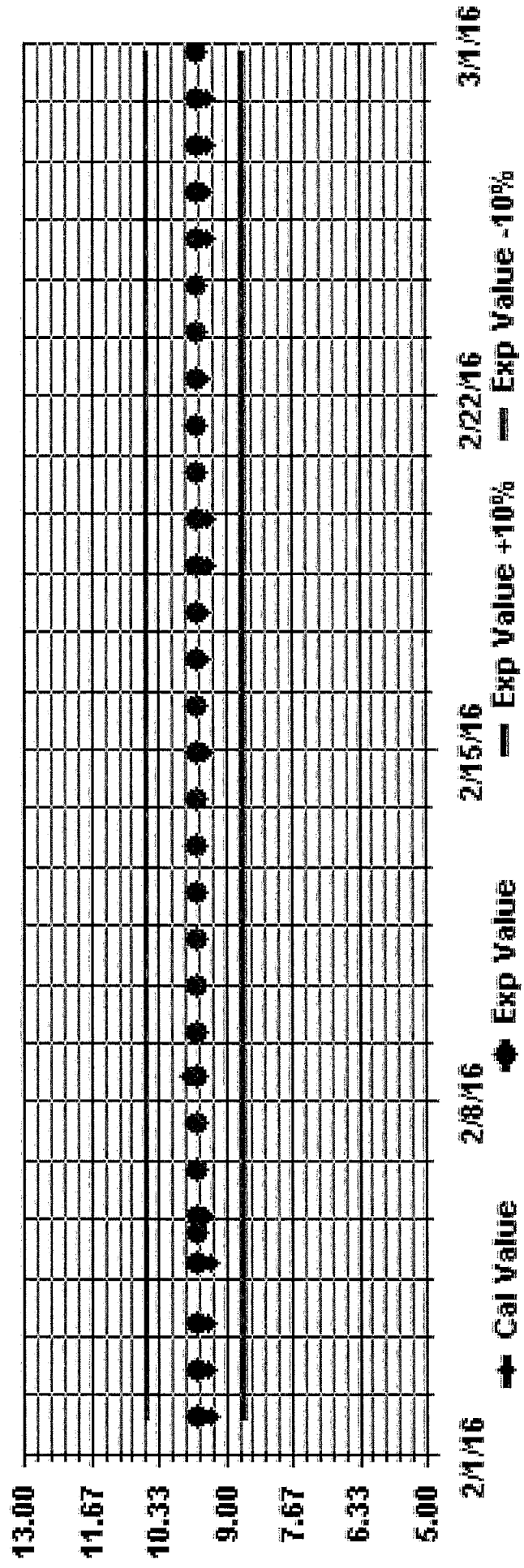
Period : 02/01/16-02/29/16

-  >= 50.00
-  < 50.00
-  < 10.00
-  < 3.00

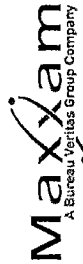
Level : 10



Calibration Graph for Site: LICA35 Parameter: METHANE Sequence: THC55 Phase: SPAN



NON-METHANE HYDROCARBON



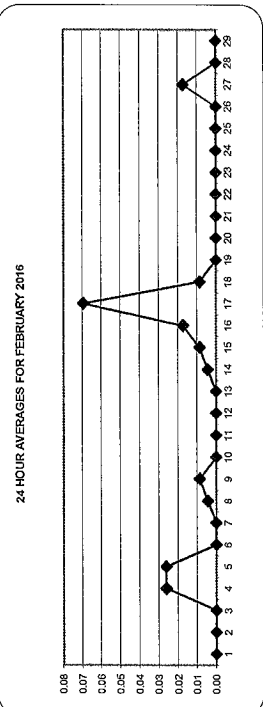
NON-METHANE HYDROCARBONS (NMHC) hourly averages in ppm

MST

| DAY | 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 | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|------|
| HR START | 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 | MAX. | |
| HR END | 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 | AVG. | |
| ROGGS. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4 | 0.00 | 0.00 | 0.10 | 0.10 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.03 | 0.03 |
| 5 | 0.10 | 0.20 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.20 | 0.03 |
| 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.10 | 0.10 | 0.10 | 0.00 | 0.00 | 0.10 | 0.10 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.20 | 0.07 |
| 18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 | 0.00 | 0.00 | 0.00 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 27 | 0.10 | 0.10 | 0.10 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 | 0.00 | 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 MAX | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.10 | 0.10 | 0.10 | 0.00 | 0.00 | 0.10 | 0.10 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| HOURLY AVG | 0.01 | 0.02 | 0.02 | 0.02 | 0.01 | 0.00 | 0.01 | 0.01 | 0.01 | 0.00 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 |

STATUS FLAG CODES

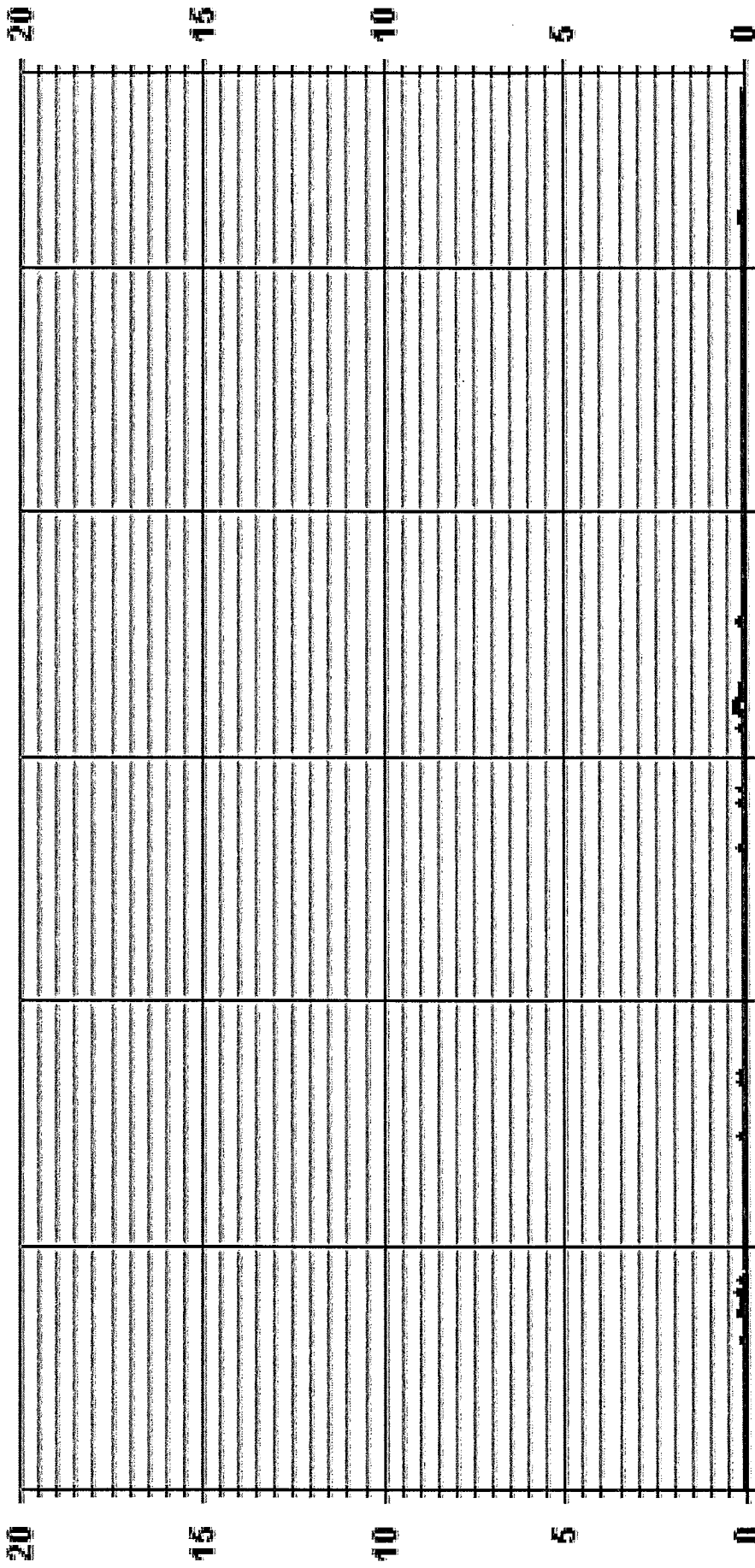
| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CT | REPEAT CALIBRATION | R | RECOVERY |
| V | MAINTENANCE | X | MACHINE/MALFUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | OUT FOR REPAIR |
| SL | REPEAT ZERO/SPAN CHECK | P | POWER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



MONTHLY SUMMARY

| | | | | | |
|------------------------------|------|---------------|-----------------------|-----------|-----|
| NUMBER OF NON-ZERO READINGS: | 35 | PPM @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MINIMUM 1-HR AVERAGE: | 0.00 | PPM @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MAXIMUM 1-HR AVERAGE: | 0.20 | PPM @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MAXIMUM 24-HR AVERAGE: | 0.07 | PPM @ HOUR(S) | VAR-VARIOUS | ON DAY(S) | 17 |
| IZS CALIBRATION TIME: | 29 | HRS | OPERATIONAL TIME: | 686 | HRS |
| MONTHLY CALIBRATION TIME: | 4 | HRS | AMD OPERATION UPTIME: | 98.6 | % |
| STANDARD DEVIATION: | 0.03 | | MONTHLY AVERAGE: | 0.01 | PPM |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA35 NMHC PPM



NON-METHANE HYDROCARBONS MAX instantaneous maximum in ppm

MST

| DAY | 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 | 24:00 |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| HR | 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 | 24:00 |
| MIN | 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 | 24:00 |
| MAX | 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 | 24:00 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4 | 0.13 | 0.05 | 0.15 | 0.15 | 0.21 | 0.04 | 0.00 | 0.02 | 0.04 | 0.18 | 0.15 | 0.00 | 0.00 | 0.00 | 0.15 | 0.06 | 0.44 | 0.09 | 0.10 | 0.00 | 0.00 | 0.11 | \$ | 0.08 | 0.44 |
| 5 | 0.17 | 0.30 | 0.23 | 0.08 | 0.12 | 0.13 | 0.06 | 0.07 | 0.13 | 0.04 | 0.20 | C | C | C | 0.22 | 0.22 | 0.17 | 0.00 | 0.00 | 0.00 | 0.10 | \$ | 0.09 | 0.08 | 0.30 |
| 6 | 0.06 | 0.07 | 0.11 | 0.13 | 0.12 | 0.12 | 0.11 | 0.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | \$ | 0.00 | 0.00 | 0.00 | 0.13 |
| 7 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | \$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 |
| 8 | 0.00 | 0.00 | 0.00 | 0.00 | 0.05 | 0.05 | 0.14 | 0.21 | 0.23 | 0.00 | 0.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.12 | \$ | 0.00 | 0.00 | 0.06 | 0.07 | 0.23 |
| 9 | 0.00 | 0.15 | 0.10 | 0.14 | 0.13 | 0.15 | 0.10 | 0.04 | 0.27 | 0.03 | 0.10 | 0.12 | 0.18 | 0.26 | 0.12 | 0.15 | 0.16 | 0.15 | 0.13 | \$ | 0.15 | 0.20 | 0.06 | 0.04 | 0.00 |
| 10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | \$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | \$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | \$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | \$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | \$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | 0.07 | 0.07 | 0.07 | 0.08 | 0.05 | 0.01 | 0.00 | 0.14 | 0.11 | 0.11 | 0.10 | \$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | \$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | \$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | 0.23 | 0.24 | 0.24 | 0.24 | 0.23 | 0.21 | 0.18 | 0.21 | 0.18 | \$ | 0.18 | 0.27 | 0.33 | 0.29 | 0.18 | 0.11 | 0.11 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | \$ | 0.00 | 0.00 | 0.06 | 0.06 | 0.09 | 0.10 | 0.13 | 0.16 | 0.14 | 0.13 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | 0.08 | 0.06 | 0.08 | 0.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 | 0.00 | 0.00 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | 0.00 | 0.04 | 0.00 | 0.00 | \$ | 0.11 | 0.14 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | 0.00 | 0.00 | 0.00 | \$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.00 | 0.00 | \$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 26 | \$ | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 27 | 0.56 | 0.25 | 0.23 | 0.29 | 0.17 | 0.08 | 0.00 | 0.05 | 0.00 | 0.14 | 0.14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | \$ | 0.32 | 0.02 |
| 28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | \$ | 0.56 | 0.08 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | \$ | 0.00 | 0.00 | 0.00 |
| HOURLY MAX | 0.56 | 0.30 | 0.24 | 0.29 | 0.23 | 0.21 | 0.18 | 0.21 | 0.27 | 0.18 | 0.20 | 0.27 | 0.33 | 0.29 | 0.23 | 0.22 | 0.44 | 0.17 | 0.27 | 0.13 | 0.20 | 0.14 | 0.32 | 0.24 | 0.03 |
| HOURLY AVG | 0.05 | 0.05 | 0.04 | 0.05 | 0.04 | 0.04 | 0.03 | 0.03 | 0.04 | 0.02 | 0.04 | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 | 0.05 | 0.03 | 0.03 | 0.01 | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 |

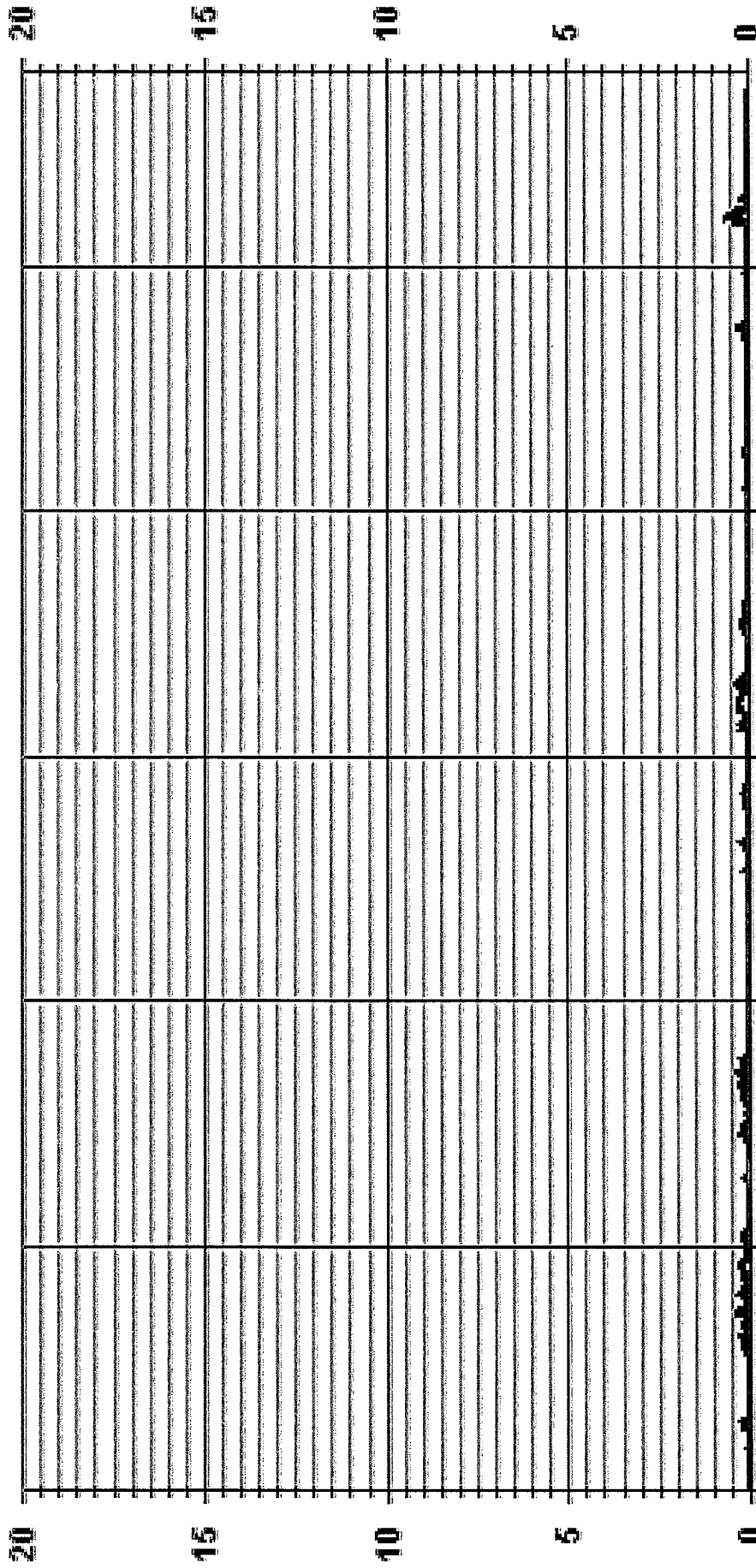
STATUS FLAG CODES

| | |
|----|------------------------|
| C | MONTHLY CALIBRATION |
| Q | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION |
| R | RECOVERY |
| V | MAINTENANCE |
| X | MACHINE MALFUNCTION |
| S | DAILY ZERO/SPAN/CHECK |
| G | OUT OF REPAIR |
| P | POWER FAILURE |
| SL | REPEAT ZERO/SPAN CHECK |

MONTHLY SUMMARY

| | |
|------------------------------|-----------------------------------|
| NUMBER OF NON-ZERO READINGS: | 167 |
| MAXIMUM INSTANTANEOUS VALUE: | 0.56 PPM @ HOUR(S) 0 ON DAY(S) 27 |
| OPERATIONAL TIME: | 684 HRS |
| MONTHLY CALIBRATION TIME: | 4 HRS |
| STANDARD DEVIATION: | 0.07 |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA35 NMHC MAX PPM

LIICA35
 NMEC / WDR Joint Frequency Distribution (Percent)
 February 2016

Distribution By % Of Samples

Logger Id : 35
 Site Name : LIICA35
 Parameter : NMEC
 Units : PPM

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|---------|-----------|-----|------|------|-------|-------|------|------|------|------|------|-------|-------|-------|------|------|--------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < .25 | 2.91 | .92 | 3.22 | 3.68 | 12.74 | 17.81 | 3.22 | 2.45 | 1.07 | 1.38 | 1.99 | 11.05 | 16.28 | 10.59 | 7.83 | 2.76 | 100.00 |
| < .50 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 1.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 2.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 4.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 4.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.91 | .92 | 3.22 | 3.68 | 12.74 | 17.81 | 3.22 | 2.45 | 1.07 | 1.38 | 1.99 | 11.05 | 16.28 | 10.59 | 7.83 | 2.76 | |

Calm : .00 %

Total # Operational Hours : 651

Distribution By Samples

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|---------|-----------|-----|----|-----|----|-----|----|-----|---|-----|----|-----|-----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < .25 | 19 | 6 | 21 | 24 | 83 | 116 | 21 | 16 | 7 | 9 | 13 | 72 | 106 | 69 | 51 | 18 | 651 |
| < .50 | | | | | | | | | | | | | | | | | |
| < 1.00 | | | | | | | | | | | | | | | | | |
| < 2.00 | | | | | | | | | | | | | | | | | |
| < 4.00 | | | | | | | | | | | | | | | | | |
| >= 4.00 | | | | | | | | | | | | | | | | | |
| Totals | 19 | 6 | 21 | 24 | 83 | 116 | 21 | 16 | 7 | 9 | 13 | 72 | 106 | 69 | 51 | 18 | |

Calm : .00 %

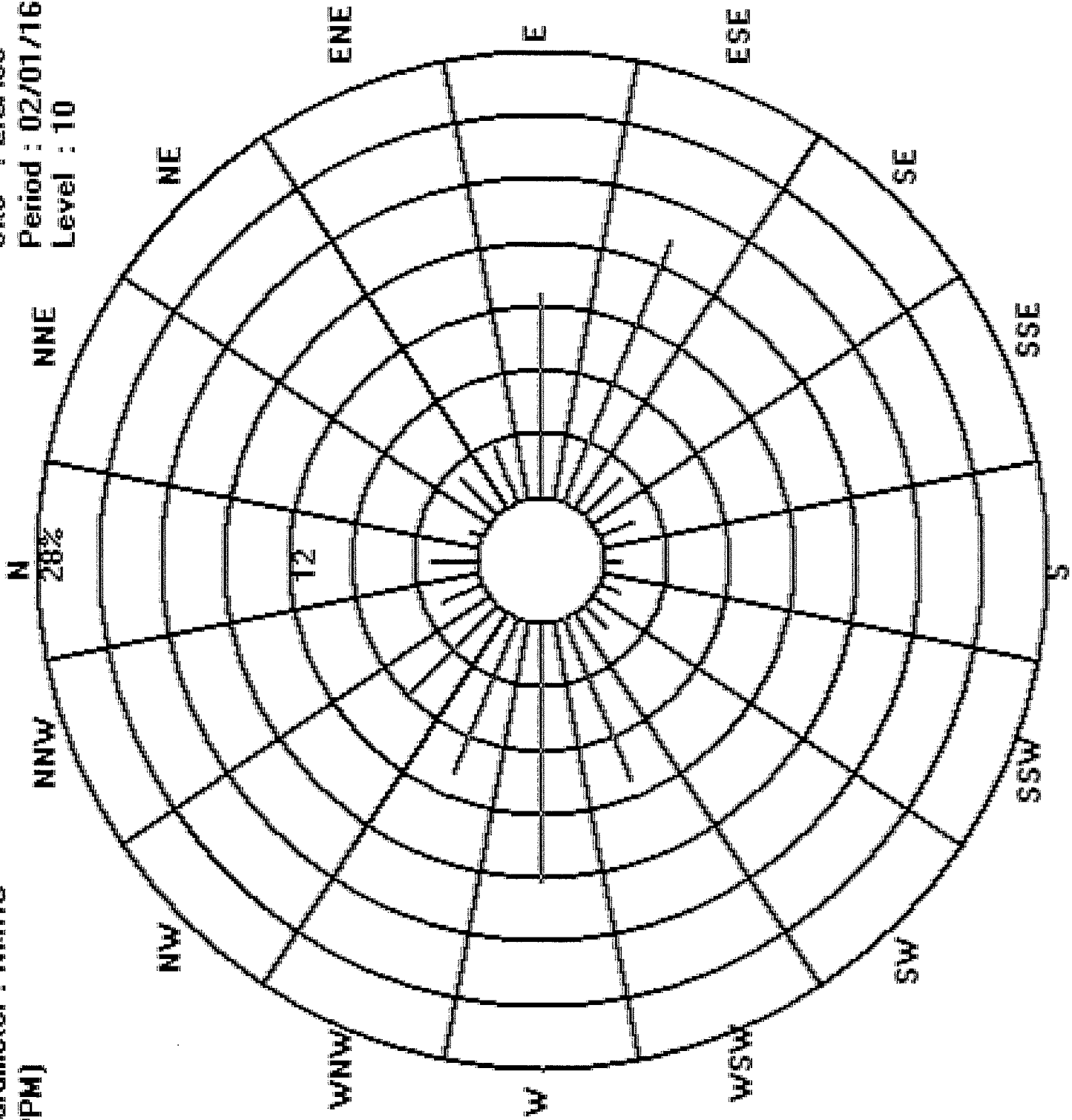
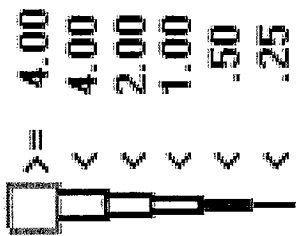
Total # Operational Hours : 651

Logger : 35 Parameter : NMHC

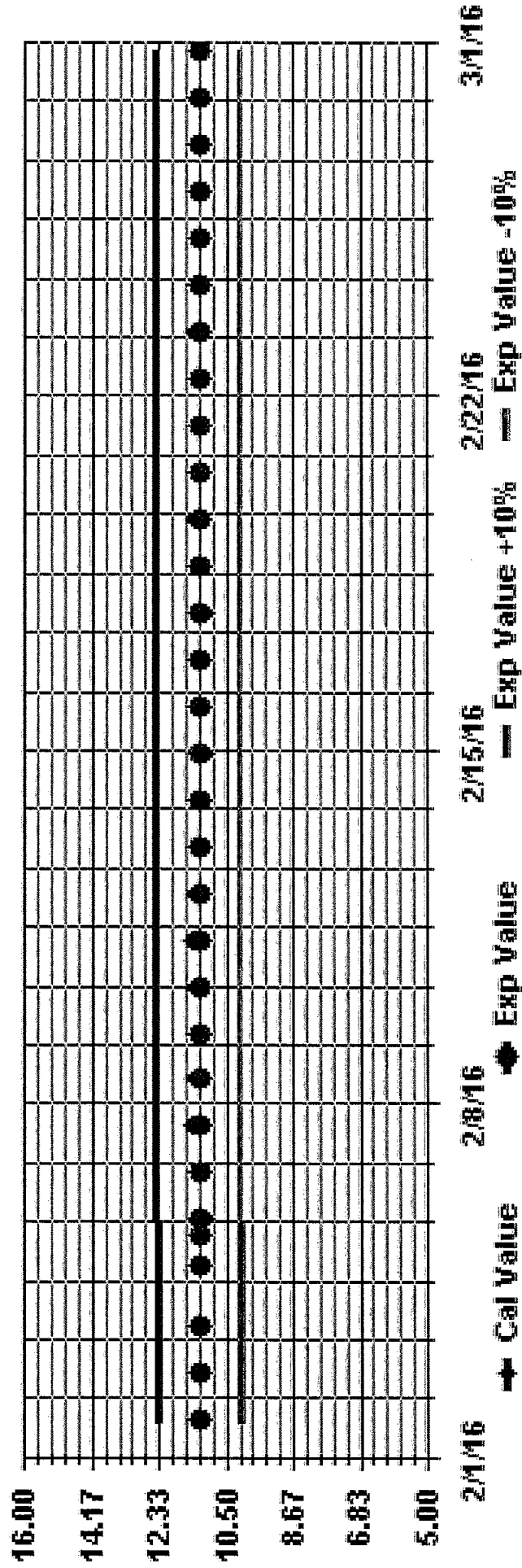
Site : LICA35

Class Limits (PPM)

Period : 02/01/16-02/29/16
Level : 10



Calibration Graph for Site: LICA35 Parameter: NMHC Sequence: THC55 Phase: SPAN



OXIDES OF NITROGEN



OXIDES OF NITROGEN (NOx) hourly averages in ppb

MST

| DAY | 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 | 24:00 | | | |
|------------|------|------|------|------|------|------|-------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|----|
| HOUR START | 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 | 24:00 | | | |
| HOUR END | 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 | 24:59 | | | |
| ROGS. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | MAX. | | |
| 1 | 2.2 | 1.7 | 1.5 | 1.5 | 1.4 | 1.5 | 1.7 | 2.2 | 2.3 | 2.4 | 2.2 | 3.2 | 4.3 | P | 3.8 | 11.7 | 18.1 | 28.6 | 35.5 | \$ | 32.9 | 19.5 | 14.5 | 12.7 | 35.5 | 9.3 | 23 | |
| 2 | 12.6 | 14.4 | 11.8 | 13.0 | 11.3 | 10.9 | 18.9 | 24.2 | 30.4 | 37.5 | 43.4 | 51.1 | 30.2 | 43.6 | 7.6 | 10.3 | 8.0 | 14.9 | \$ | 10.5 | 13.6 | 18.7 | 13.0 | 20.5 | 51.1 | 19.1 | 24 | |
| 3 | 17.1 | 11.9 | 15.3 | 4.7 | 3.9 | 3.1 | 2.6 | 2.3 | 6.2 | 14.9 | 9.6 | 12.1 | 5.5 | 3.7 | 4.0 | 5.0 | 8.5 | \$ | 11.6 | 16.7 | 25.2 | 50.1 | 49.1 | 42.3 | 50.1 | 14.1 | 24 | |
| 4 | 45.5 | 44.1 | 74.1 | 85.4 | 75.2 | 45.5 | 26.6 | 31.3 | 30.6 | 37.8 | 32.5 | 16.6 | 16.2 | 14.3 | 11.8 | 10.8 | 11.7 | 15.0 | \$ | 18.2 | 19.6 | 23.4 | 25.6 | \$ | 30.4 | 85.4 | 24 | |
| 5 | 31.4 | 47.8 | 62.2 | 46.6 | 37.4 | 37.7 | 30.3 | 33.0 | 35.1 | 24.5 | 24.3 | C | C | C | C | C | C | C | \$ | 32.8 | 24.0 | 21.5 | 19.6 | \$ | 13.7 | 12.5 | 24 | |
| 6 | 2.0 | 1.9 | 2.4 | 5.4 | 7.7 | 3.6 | 3.7 | 2.7 | 16.8 | 21.7 | 10.7 | 5.6 | 5.4 | 6.4 | 4.6 | 5.2 | 6.2 | 7.0 | \$ | 7.6 | 11.3 | 14.9 | 16.2 | 21.7 | 7.7 | 24 | | |
| 7 | 15.9 | 17.5 | 18.8 | 28.3 | 40.2 | 42.1 | 52.4 | 50.7 | 43.4 | 30.2 | 30.7 | 41.5 | 28.5 | 17.6 | 14.7 | 8.9 | 13.7 | 20.1 | \$ | 26.7 | 14.8 | 11.7 | 17.2 | 22.0 | 52.4 | 26.2 | 24 | |
| 8 | 20.4 | 22.7 | 23.1 | 24.9 | 28.8 | 30.3 | 23.8 | 24.9 | 31.2 | 31.1 | 22.5 | 23.9 | 35.3 | 31.8 | 24.3 | 27.9 | 23.1 | \$ | 21.1 | 20.9 | 23.3 | 16.0 | 9.5 | 10.2 | 35.3 | 24.0 | 24 | |
| 9 | 8.7 | 4.3 | 4.3 | 3.9 | 2.9 | 3.4 | 4.2 | 3.3 | 2.2 | 2.0 | 1.9 | 1.8 | 1.9 | 2.1 | 2.2 | 2.0 | \$ | 1.9 | 2.0 | 2.0 | 2.0 | 1.9 | 2.1 | 1.8 | 8.7 | 2.8 | 24 | |
| 10 | 2.2 | 2.4 | 2.3 | 2.8 | 2.4 | 2.7 | 2.2 | 2.3 | 2.7 | 2.9 | 3.0 | 3.3 | 3.6 | 3.8 | 3.4 | \$ | 2.5 | 2.3 | 2.4 | 2.4 | 2.4 | 2.3 | 2.8 | 2.9 | 4.3 | 2.8 | 24 | |
| 11 | 8.8 | 6.3 | 4.1 | 6.8 | 7.7 | 5.1 | 3.8 | 4.3 | 4.6 | 5.4 | 5.2 | 4.8 | 5.0 | 4.4 | \$ | 4.6 | 3.8 | 3.3 | 3.8 | 4.0 | 3.9 | 4.0 | 3.5 | 3.5 | 8.8 | 4.8 | 24 | |
| 12 | 3.6 | 3.8 | 3.6 | 3.9 | 3.5 | 4.0 | 4.9 | 7.3 | 7.8 | 9.9 | 10.8 | 14.7 | 14.1 | \$ | 10.1 | 10.9 | 8.2 | 19.2 | 23.1 | 10.5 | 11.7 | 11.1 | 12.4 | 8.4 | 23.1 | 9.5 | 24 | |
| 13 | 8.8 | 18.1 | 20.1 | 41.7 | 33.2 | 24.9 | 68.0 | 28.1 | 17.3 | 12.6 | 10.9 | 8.0 | \$ | 6.3 | 4.6 | 5.1 | 4.7 | 6.1 | 10.2 | 15.5 | 14.2 | 16.0 | 20.3 | 27.0 | 68.0 | 18.3 | 24 | |
| 14 | 43.6 | 51.9 | 30.0 | 27.4 | 22.7 | 25.2 | 25.4 | 26.5 | 33.8 | 35.6 | 31.7 | \$ | 13.9 | 7.4 | 5.5 | 6.9 | 3.6 | 4.0 | 4.2 | 5.1 | 5.0 | 7.1 | 5.2 | 18.2 | 51.9 | 19.1 | 24 | |
| 15 | 9.2 | 12.1 | 8.7 | 5.7 | 5.2 | 5.5 | 6.7 | 6.3 | 7.4 | 6.6 | \$ | 6.4 | 8.9 | 9.4 | 7.8 | 10.2 | 13.9 | 10.5 | 9.3 | 24.8 | 29.3 | 21.2 | 19.1 | 22.0 | 29.3 | 11.6 | 24 | |
| 16 | 23.6 | 21.4 | 26.5 | 59.2 | 71.9 | 96.8 | 112.2 | 75.3 | \$ | 60.6 | 52.8 | 58.2 | 52.1 | 37.4 | 24.4 | 31.5 | 26.0 | 18.7 | 19.7 | 18.9 | 19.7 | 18.9 | 27.6 | 16.0 | 13.2 | 112.2 | 42.5 | 24 |
| 17 | 10.8 | 8.3 | 5.4 | 3.6 | 2.8 | 3.4 | 3.7 | 4.0 | \$ | 4.1 | 3.6 | 4.9 | 5.6 | 5.2 | 4.7 | 4.6 | 3.9 | 5.3 | 6.1 | 5.5 | 4.6 | 6.1 | 5.8 | 4.4 | 10.8 | 5.1 | 24 | |
| 18 | 3.4 | 3.0 | 3.4 | 3.9 | 2.7 | 2.7 | 2.6 | \$ | 2.6 | 1.9 | 1.9 | 2.6 | 3.4 | 2.9 | 2.8 | 4.4 | 3.4 | 2.8 | 3.1 | 9.5 | 8.6 | 3.6 | 4.4 | 5.2 | 9.5 | 3.7 | 24 | |
| 19 | 5.2 | 4.6 | 4.1 | 3.7 | 3.2 | 3.2 | \$ | 4.4 | 4.2 | 4.0 | 4.3 | 6.1 | 5.3 | 6.2 | 5.4 | 6.5 | 8.5 | 9.8 | 9.5 | 13.2 | 10.2 | 7.6 | 7.7 | 8.8 | 13.2 | 6.3 | 24 | |
| 20 | 10.9 | 10.8 | 10.3 | 11.3 | 11.2 | \$ | 12.6 | 20.8 | 24.0 | 24.7 | 20.2 | 21.6 | 19.8 | 13.5 | 6.2 | 4.6 | 4.1 | 8.9 | 18.0 | 11.2 | 11.2 | 11.0 | 11.7 | 14.5 | 24.7 | 13.6 | 24 | |
| 21 | 18.1 | 21.7 | 15.5 | 12.6 | \$ | 34.7 | 59.1 | 24.1 | 18.0 | 19.4 | 8.1 | 7.3 | 4.5 | 4.8 | 3.0 | 6.8 | 20.7 | 9.7 | 9.4 | 7.0 | 6.8 | 5.4 | 6.1 | 5.8 | 59.1 | 14.3 | 24 | |
| 22 | 5.5 | 7.9 | 9.5 | \$ | 8.1 | 6.0 | 5.6 | 6.3 | 8.1 | 7.8 | 4.7 | 7.1 | 6.7 | 5.8 | 6.0 | 5.6 | 3.4 | 4.1 | 10.0 | 16.4 | 5.7 | 2.1 | 7.6 | 8.8 | 16.4 | 6.9 | 24 | |
| 23 | 9.9 | 8.9 | \$ | 6.6 | 14.1 | 14.5 | 14.9 | 16.2 | 27.7 | 27.3 | C1 | C1 | Y | C1 | Y | C1 | C1 | C1 | C1 | C1 | C1 | 33.3 | 33.4 | 29.7 | 21.2 | 33.4 | 19.8 | 14 |
| 24 | 17.0 | \$ | 11.7 | 13.5 | 11.4 | 11.3 | 11.0 | 24.0 | 16.1 | 6.9 | 7.0 | 6.0 | 7.0 | 6.1 | 7.5 | 8.2 | 4.8 | 3.5 | 4.8 | 7.6 | 16.3 | 13.9 | 9.0 | 11.8 | 24.0 | 10.3 | 24 | |
| 25 | \$ | 6.3 | 6.5 | 3.4 | 5.1 | 14.1 | 11.6 | 9.4 | 10.6 | 8.9 | 8.7 | 7.5 | 8.3 | 5.7 | 8.1 | 12.1 | 8.2 | 13.3 | 24.8 | 33.2 | 18.4 | 23.6 | 40.8 | \$ | 40.8 | 13.1 | 24 | |
| 26 | 31.4 | 61.3 | 92.2 | 68.6 | 63.6 | 30.4 | 13.2 | 20.8 | 10.6 | 22.7 | 23.7 | 13.7 | 3.1 | 1.8 | 1.0 | 0.5 | 1.0 | 1.2 | 2.6 | 4.1 | 1.1 | 3.7 | \$ | 11.1 | 92.2 | 21.0 | 24 | |
| 27 | 8.1 | 7.0 | 8.3 | 7.2 | 4.2 | 9.4 | 11.7 | 9.4 | 2.1 | 1.4 | 3.1 | 4.3 | 2.7 | 1.0 | 0.8 | 0.8 | 0.3 | 0.2 | 0.3 | 0.5 | 0.5 | \$ | 0.3 | 0.6 | 11.7 | 3.7 | 24 | |
| 28 | 0.8 | 0.6 | 1.0 | 1.1 | 1.7 | 1.9 | 4.1 | 5.3 | 5.9 | 5.4 | 4.1 | 4.4 | 4.8 | 4.5 | 3.7 | 4.3 | 7.1 | 12.6 | 11.1 | 10.5 | \$ | 13.6 | 9.2 | 15.8 | 15.8 | 5.8 | 24 | |
| 29 | 45.5 | 61.3 | 92.2 | 85.4 | 75.2 | 71.9 | 96.8 | 112.2 | 75.3 | 37.8 | 60.6 | 52.8 | 58.2 | 52.1 | 37.4 | 27.9 | 31.5 | 32.8 | 35.5 | 33.2 | 33.3 | 50.1 | 49.1 | 42.3 | | | | |
| HOURLY MAX | 13.9 | 15.6 | 17.5 | 17.1 | 17.3 | 16.7 | 19.4 | 19.1 | 17.4 | 14.9 | 14.7 | 12.9 | 11.8 | 9.4 | 7.6 | 8.1 | 8.8 | 10.4 | 11.4 | 12.3 | 13.3 | 13.7 | 12.9 | 13.4 | | | | |
| HOURLY AVG | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

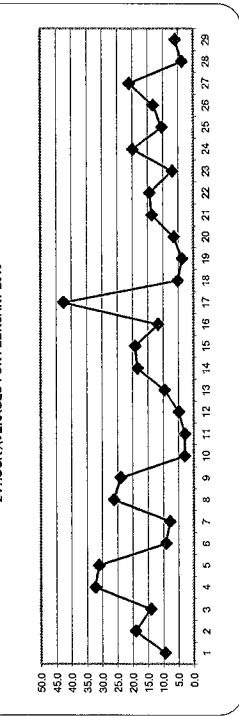
STATUS FLAG CODES

| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CL | 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 |

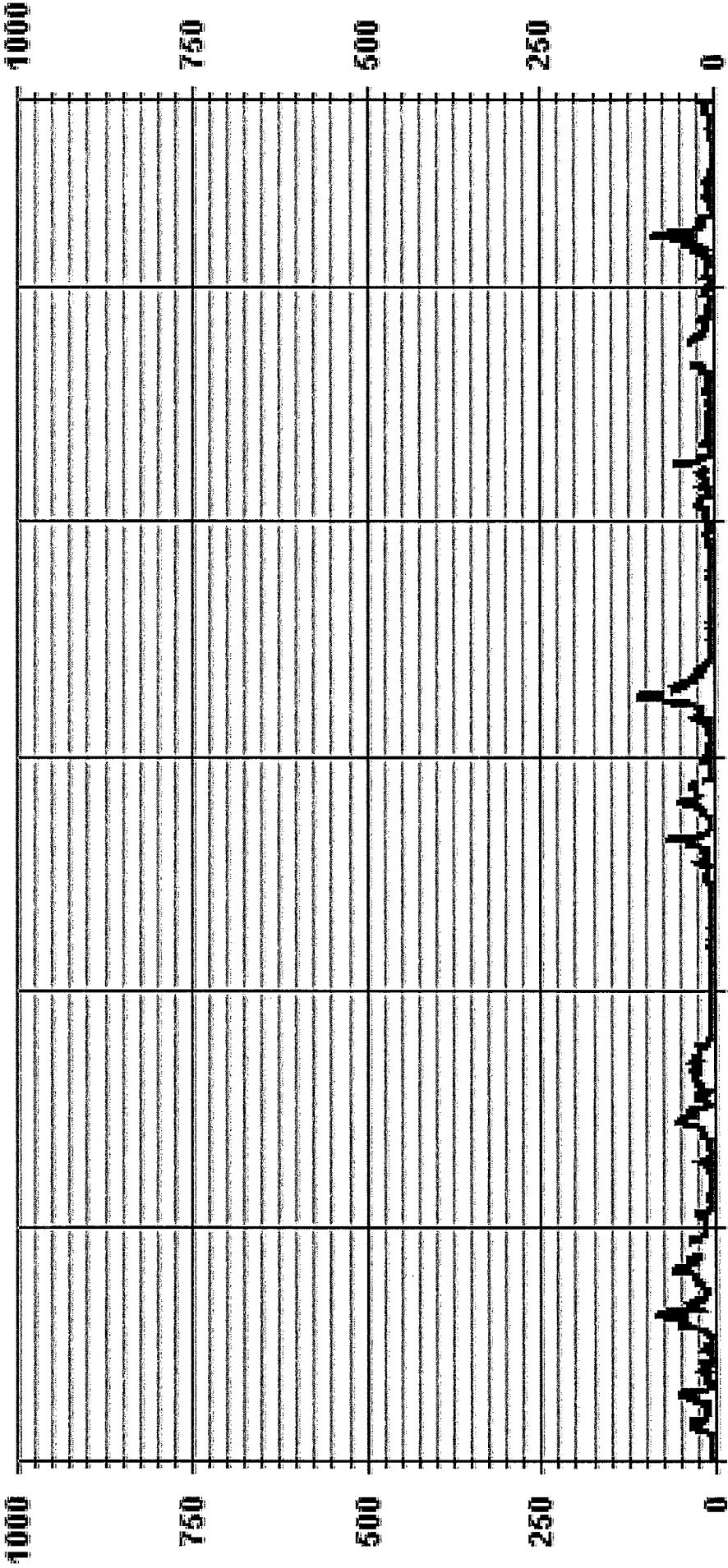
MONTHLY SUMMARY

| | | | | | |
|------------------------------|-------|---------------|--------------------------|-------------|-----|
| NUMBER OF NON-ZERO READINGS: | 649 | PPB @ HOUR(S) | 17 | ON DAY(S) | 28 |
| MINIMUM 1-HR AVERAGE: | 0.2 | PPB @ HOUR(S) | 7 | ON DAY(S) | 17 |
| MAXIMUM 1-HR AVERAGE: | 112.2 | PPB @ HOUR(S) | | ON DAY(S) | 17 |
| MAXIMUM 24-HR AVERAGE: | 42.5 | PPB | | VAR-VARIOUS | |
| ISZ CALIBRATION TIME: | 30 | HRS | OPERATIONAL UPTIME: | 665 | HRS |
| MONTHLY CALIBRATION TIME: | 6 | HRS | AMTD OPERATIONAL UPTIME: | 98.4 | % |
| STANDARD DEVIATION: | 14.77 | | MONTHLY AVERAGE: | 13.8 | PPB |

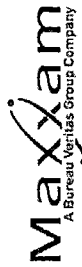
24 HOUR AVERAGES FOR FEBRUARY 2016



01 Hour Averages



— LICA35 NOX_ PPB



OXIDES OF NITROGEN MAX instantaneous maximum in ppb

| DAY | 000 | 015 | 030 | 045 | 060 | 075 | 090 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | DAILY | 24-HOUR | | | | | | | | | |
|------------|------|-------|-------|------|------|------|-------|-------|-------|------|------|------|------|------|------|------|------|-------|---------|------|------|------|-------|-------|-------|------|------|----|
| HR | 000 | 015 | 030 | 045 | 060 | 075 | 090 | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | MAX | AVG | RDS | | | | | | | | |
| 1 | 2.9 | 2.3 | 2.1 | 2.2 | 2.4 | 3.0 | 3.4 | 3.7 | 4.1 | 3.9 | 5.7 | 7.4 | 16.5 | 28.2 | 32.4 | 46.8 | \$ | 43.0 | 21.7 | 17.4 | 14.8 | 12.2 | 23 | | | | | |
| 2 | 14.9 | 17.1 | 13.0 | 14.4 | 12.3 | 30.4 | 32.6 | 44.5 | 47.7 | 56.1 | 48.7 | 18.5 | 12.0 | 18.7 | 11.3 | 20.3 | \$ | 13.0 | 17.9 | 23.8 | 16.0 | 25.7 | 23.8 | 24 | | | | |
| 3 | 23.5 | 14.7 | 19.6 | 9.5 | 5.4 | 3.2 | 9.3 | 19.3 | 16.7 | 17.5 | 9.2 | 5.1 | 5.4 | 7.2 | 12.3 | \$ | 12.8 | 21.2 | 37.0 | 55.8 | 57.4 | 46.9 | 57.4 | 18.1 | 24 | | | |
| 4 | 50.0 | 53.5 | 87.5 | 88.2 | 90.7 | 61.7 | 36.1 | 41.3 | 46.5 | 46.4 | 21.0 | 17.1 | R | 13.9 | 13.3 | 13.5 | 18.7 | 21.1 | 21.6 | 27.6 | 30.1 | \$ | 31.8 | 90.7 | 39.2 | 23 | | |
| 5 | 33.8 | 61.6 | 66.9 | 58.6 | 40.2 | 39.0 | 35.2 | 40.6 | 37.9 | 30.4 | 30.6 | C | C | C | C | C | 32.3 | 26.4 | 19.1 | \$ | 16.6 | 14.2 | 66.9 | 36.5 | 24 | | | |
| 6 | 14.7 | 14.9 | 14.0 | 15.5 | 22.2 | 25.7 | 34.3 | 23.8 | 10.6 | 9.2 | 6.2 | 6.9 | 6.2 | 6.9 | 6.2 | 8.9 | 9.6 | 4.7 | 2.9 | \$ | 2.5 | 2.6 | 2.5 | 34.3 | 11.9 | 24 | | |
| 7 | 2.7 | 2.6 | 3.5 | 11.6 | 16.5 | 5.6 | 3.4 | 35.7 | 25.6 | 19.4 | 10.8 | 10.4 | 8.7 | 8.7 | 8.9 | 6.8 | 8.4 | 9.8 | \$ | 9.6 | 19.3 | 21.0 | 17.9 | 35.7 | 11.8 | 24 | | |
| 8 | 18.3 | 21.7 | 22.5 | 30.1 | 57.8 | 49.9 | 57.1 | 53.9 | 51.0 | 36.6 | 34.0 | 45.6 | 38.2 | 21.4 | 18.1 | 11.9 | 16.2 | 28.3 | \$ | 29.5 | 19.0 | 14.9 | 23.8 | 26.4 | 57.8 | 31.6 | 24 | |
| 9 | 24.9 | 25.7 | 34.5 | 34.5 | 34.0 | 32.6 | 28.0 | 29.4 | 33.6 | 37.6 | 28.4 | 34.3 | 39.9 | 35.1 | 31.1 | 31.6 | 26.8 | \$ | 24.9 | 25.8 | 26.4 | 21.7 | 15.1 | 17.4 | 39.9 | 29.3 | 24 | |
| 10 | 15.9 | 5.6 | 5.6 | 5.2 | 3.7 | 4.4 | 5.0 | 4.9 | 2.8 | 2.7 | 2.5 | 2.6 | 2.7 | 2.7 | 2.8 | 2.8 | \$ | 2.8 | 3.0 | 2.6 | 2.7 | 2.7 | 2.8 | 2.8 | 15.9 | 4.0 | 24 | |
| 11 | 2.9 | 3.3 | 3.0 | 3.6 | 3.0 | 3.2 | 3.4 | 3.8 | 3.8 | 4.1 | 4.5 | 4.5 | 4.3 | \$ | 3.5 | 3.1 | 3.2 | 3.3 | 3.4 | 3.9 | 3.9 | 9.5 | 9.5 | 3.8 | 24 | | | |
| 12 | 11.0 | 8.0 | 6.1 | 8.1 | 9.0 | 7.4 | 4.5 | 5.6 | 5.8 | 7.0 | 6.1 | 5.6 | 6.6 | 6.5 | \$ | 5.8 | 5.2 | 4.2 | 4.7 | 5.4 | 4.9 | 4.7 | 4.2 | 4.2 | 11.0 | 6.1 | 24 | |
| 13 | 4.5 | 4.4 | 4.2 | 5.0 | 5.8 | 9.9 | 9.5 | 12.3 | 12.5 | 17.6 | 16.2 | \$ | 13.1 | 13.5 | 13.9 | 37.8 | 38.5 | 13.9 | 18.6 | 17.5 | 18.8 | 10.0 | 38.5 | 13.3 | 24 | | | |
| 14 | 11.0 | 23.9 | 27.5 | 54.2 | 54.1 | 50.4 | 77.3 | 48.3 | 19.2 | 15.4 | 12.2 | 9.1 | \$ | 9.4 | 6.2 | 5.9 | 5.7 | 10.2 | 13.0 | 18.4 | 18.1 | 19.5 | 22.0 | 31.7 | 77.3 | 24.5 | 24 | |
| 15 | 52.1 | 59.1 | 31.9 | 32.9 | 26.3 | 26.7 | 29.1 | 30.3 | 41.5 | 42.0 | 36.5 | \$ | 27.4 | 8.9 | 6.6 | 11.5 | 4.9 | 5.0 | 5.1 | 8.5 | 7.9 | 9.3 | 12.1 | 24.4 | 59.1 | 29.5 | 24 | |
| 16 | 12.1 | 15.2 | 12.9 | 6.8 | 6.1 | 6.7 | 8.0 | 8.3 | 8.8 | 8.4 | \$ | 7.9 | 10.6 | 10.3 | 8.9 | 12.9 | 21.4 | 12.5 | 13.2 | 32.5 | 31.0 | 28.2 | 22.2 | 26.1 | 32.5 | 14.4 | 24 | |
| 17 | 27.2 | 26.4 | 28.6 | 47.8 | 68.3 | 93.0 | 106.2 | 119.5 | 115.1 | \$ | 81.5 | 62.9 | 62.4 | 55.1 | 47.6 | 33.8 | 36.7 | 28.9 | 24.7 | 23.1 | 23.8 | 32.0 | 25.2 | 15.5 | 119.5 | 51.5 | 24 | |
| 18 | 14.2 | 13.5 | 6.5 | 4.8 | 4.2 | 4.3 | 5.0 | 4.9 | \$ | 5.5 | 4.6 | 5.7 | 6.4 | 6.3 | 6.1 | 5.6 | 5.0 | 7.1 | 8.3 | 7.1 | 6.7 | 8.1 | 8.6 | 5.4 | 14.2 | 6.7 | 24 | |
| 19 | 4.3 | 3.8 | 4.2 | 4.7 | 3.3 | 3.4 | 3.3 | 3.4 | 3.3 | 3.4 | 3.3 | 3.5 | 3.5 | 4.5 | 4.0 | 3.4 | 7.0 | 4.5 | 4.2 | 7.2 | 15.1 | 14.6 | 4.7 | 5.3 | 6.1 | 15.1 | 24 | |
| 20 | 5.9 | 5.3 | 4.8 | 4.5 | 4.2 | 4.0 | \$ | 5.5 | 5.0 | 4.9 | 5.1 | 7.0 | 6.5 | 7.9 | 6.8 | 8.9 | 10.5 | 11.9 | 12.9 | 16.7 | 13.1 | 12.8 | 9.8 | 10.0 | 16.7 | 8.0 | 24 | |
| 21 | 12.5 | 11.8 | 11.2 | 12.6 | 12.3 | \$ | 17.2 | 23.0 | 29.8 | 28.8 | 21.2 | 22.0 | 17.0 | 11.2 | 7.3 | 6.3 | 12.9 | 22.1 | 15.6 | 14.9 | 13.6 | 14.5 | 16.9 | 29.8 | 16.4 | 24 | | |
| 22 | 22.2 | 25.3 | 18.3 | 16.3 | \$ | 67.1 | 74.5 | 37.3 | 22.2 | 29.1 | 13.9 | 12.3 | 5.7 | 8.6 | 4.8 | 10.1 | 36.1 | 14.6 | 10.9 | 10.2 | 8.6 | 6.3 | 6.9 | 6.8 | 74.5 | 20.4 | 24 | |
| 23 | 7.0 | 10.0 | 11.5 | \$ | 12.4 | 7.3 | 6.7 | 7.5 | 9.6 | 9.0 | 6.3 | 9.5 | 7.9 | 7.4 | 7.9 | 8.4 | 4.6 | 6.6 | 14.3 | 25.1 | 15.7 | 3.2 | 11.0 | 13.6 | 25.1 | 9.7 | 24 | |
| 24 | 13.5 | 12.7 | \$ | 7.8 | 17.7 | 16.4 | 18.3 | 23.4 | 37.9 | 36.4 | Cl | Cl | Cl | Cl | Cl | Cl | Cl | Cl | Cl | Cl | Cl | 43.7 | 41.2 | 34.3 | 31.7 | 43.7 | 25.8 | 14 |
| 25 | 19.0 | \$ | 14.3 | 33.2 | 14.4 | 13.9 | 13.9 | 14.4 | 33.0 | 9.4 | 10.8 | 7.6 | 8.6 | 8.1 | 10.3 | 11.0 | 9.1 | 5.0 | 10.4 | 12.1 | 20.3 | 18.9 | 12.6 | 14.3 | 44.4 | 15.4 | 24 | |
| 26 | \$ | 10.1 | 8.4 | 5.6 | 8.4 | 18.5 | 16.4 | 17.0 | 14.0 | 11.5 | 14.6 | 9.9 | 14.7 | 8.4 | 17.2 | 20.5 | 11.6 | 20.7 | 71.7 | 75.2 | 31.1 | 35.5 | 107.5 | \$ | 107.5 | 24.9 | 24 | |
| 27 | 47.5 | 118.5 | 110.4 | 95.1 | 79.7 | 50.1 | 24.9 | 27.7 | 13.5 | 32.7 | 33.1 | 22.3 | 8.2 | 4.3 | 2.8 | 1.8 | 2.1 | 3.5 | 11.5 | 3.1 | 7.2 | \$ | 17.1 | 118.5 | 31.2 | 24 | | |
| 28 | 11.9 | 11.9 | 11.6 | 10.5 | 6.6 | 21.7 | 21.0 | 18.2 | 4.0 | 2.8 | 5.8 | 5.8 | 4.9 | 2.3 | 1.5 | 1.7 | 1.2 | 1.2 | 1.1 | 1.4 | 1.0 | \$ | 1.2 | 1.4 | 21.7 | 6.6 | 24 | |
| 29 | 1.6 | 1.4 | 1.6 | 2.0 | 2.7 | 2.8 | 5.8 | 6.5 | 7.7 | 6.7 | 5.1 | 5.2 | 6.8 | 6.8 | 6.0 | 6.1 | 19.3 | 23.7 | 25.9 | 22.8 | \$ | 20.8 | 12.8 | 19.5 | 25.9 | 9.5 | 24 | |
| HOURLY MAX | 52.1 | 118.5 | 110.4 | 95.1 | 90.7 | 92.0 | 106.2 | 119.5 | 115.1 | 46.5 | 81.5 | 62.9 | 62.4 | 55.1 | 47.6 | 33.8 | 36.7 | 37.8 | 71.7 | 75.2 | 43.7 | 55.8 | 107.5 | 46.9 | | | | |
| HOURLY AVG | 17.2 | 20.9 | 20.9 | 22.3 | 22.0 | 22.9 | 23.5 | 24.3 | 23.4 | 18.8 | 19.1 | 16.0 | 15.5 | 11.4 | 10.5 | 11.3 | 12.5 | 13.3 | 17.2 | 17.7 | 17.9 | 17.8 | 18.7 | 16.6 | | | | |

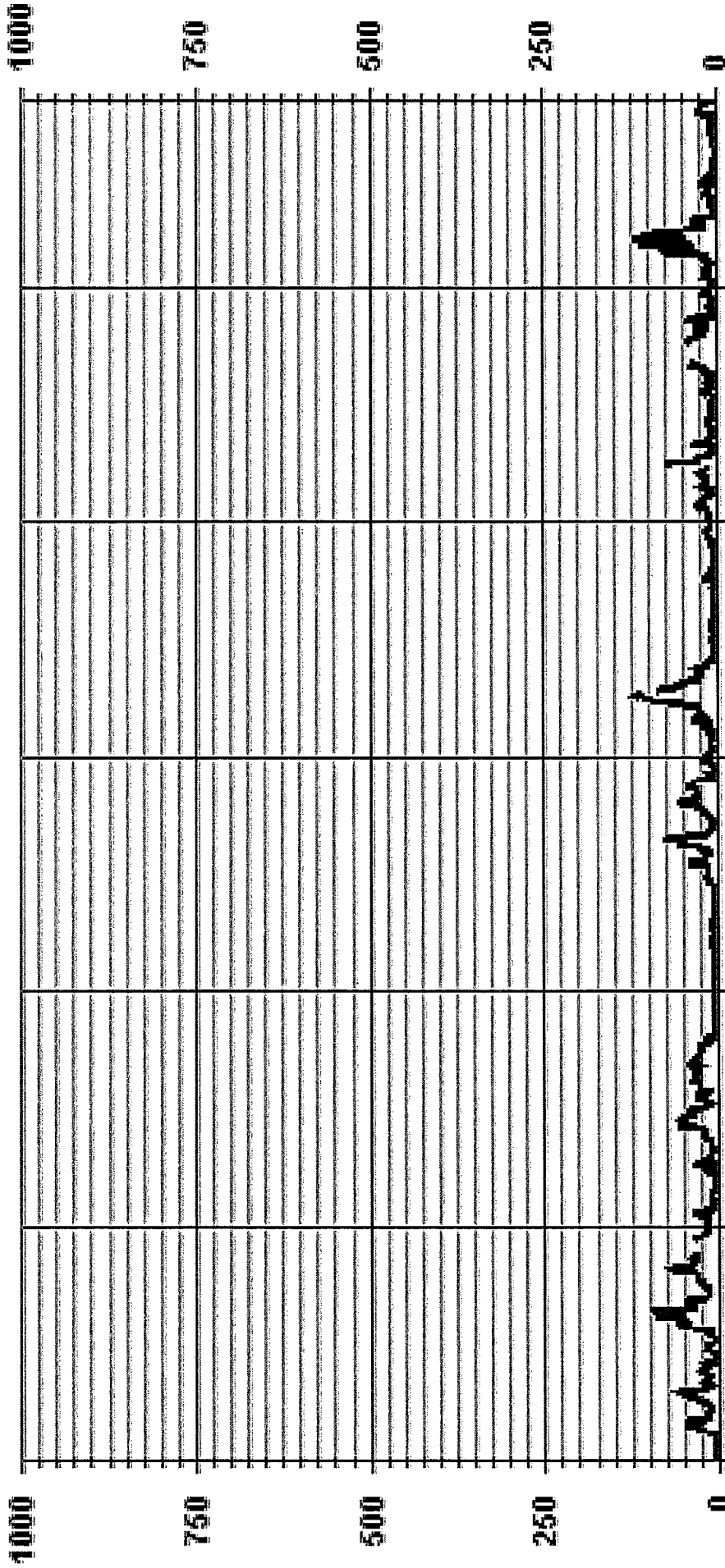
STATUS FLAG CODES

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

MONTHLY SUMMARY

| | |
|------------------------------|-----------|
| NUMBER OF NON-ZERO READINGS: | 647 |
| MAXIMUM INSTANTANEOUS VALUE: | 119.5 PPB |
| @ HOUR(S) | 7 |
| ON DAY(S) | 17 |
| VAR-VARIOUS | |
| OPERATIONAL TIME: | 684 HRS |
| MONTHLY CALIBRATION TIME: | 7 HRS |
| STANDARD DEVIATION: | 18.63 |

01 Hour Averages



02/04/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA35 NOXMAX PPB

LICA-ELK
NOX_ / WDR Joint Frequency Distribution (Percent)
February 2016

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
Parameter : NOX_
Units : PPS

Wind Parameter : WDR
Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|-----|------|------|-------|-------|------|------|-----|-----|------|-------|-------|-------|------|------|-------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 50.0 | 2.93 | .77 | 3.09 | 3.70 | 12.67 | 17.92 | 3.40 | 2.16 | .77 | .77 | 1.85 | 10.81 | 15.45 | 10.04 | 7.10 | 2.78 | 96.29 |
| < 110.0 | .00 | .15 | .15 | .00 | .30 | .30 | .15 | .30 | .00 | .15 | .00 | .00 | .61 | .61 | .77 | .00 | 3.55 |
| < 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .15 | .00 | .00 | .00 | .15 |
| >= 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.93 | .92 | 3.24 | 3.70 | 12.98 | 18.23 | 3.55 | 2.47 | .77 | .92 | 1.85 | 10.81 | 16.22 | 10.66 | 7.88 | 2.78 | |

Calm : .00 %

Total # Operational Hours : 647

Distribution By Samples


| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|-----|----|-----|----|-----|----|-----|---|-----|----|-----|-----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 50.0 | 19 | 5 | 20 | 24 | 82 | 116 | 22 | 14 | 5 | 5 | 12 | 70 | 100 | 65 | 46 | 18 | 623 |
| < 110.0 | | 1 | 1 | 2 | 2 | 2 | 1 | 2 | | 1 | | | 4 | 4 | 5 | | 23 |
| < 210.0 | | | | | | | | | | | | | | | | | |
| >= 210.0 | | | | | | | | | | | | | 1 | | | | 1 |
| Totals | 19 | 6 | 21 | 24 | 84 | 118 | 23 | 16 | 5 | 6 | 12 | 70 | 105 | 69 | 51 | 18 | |

Calm : .00 %

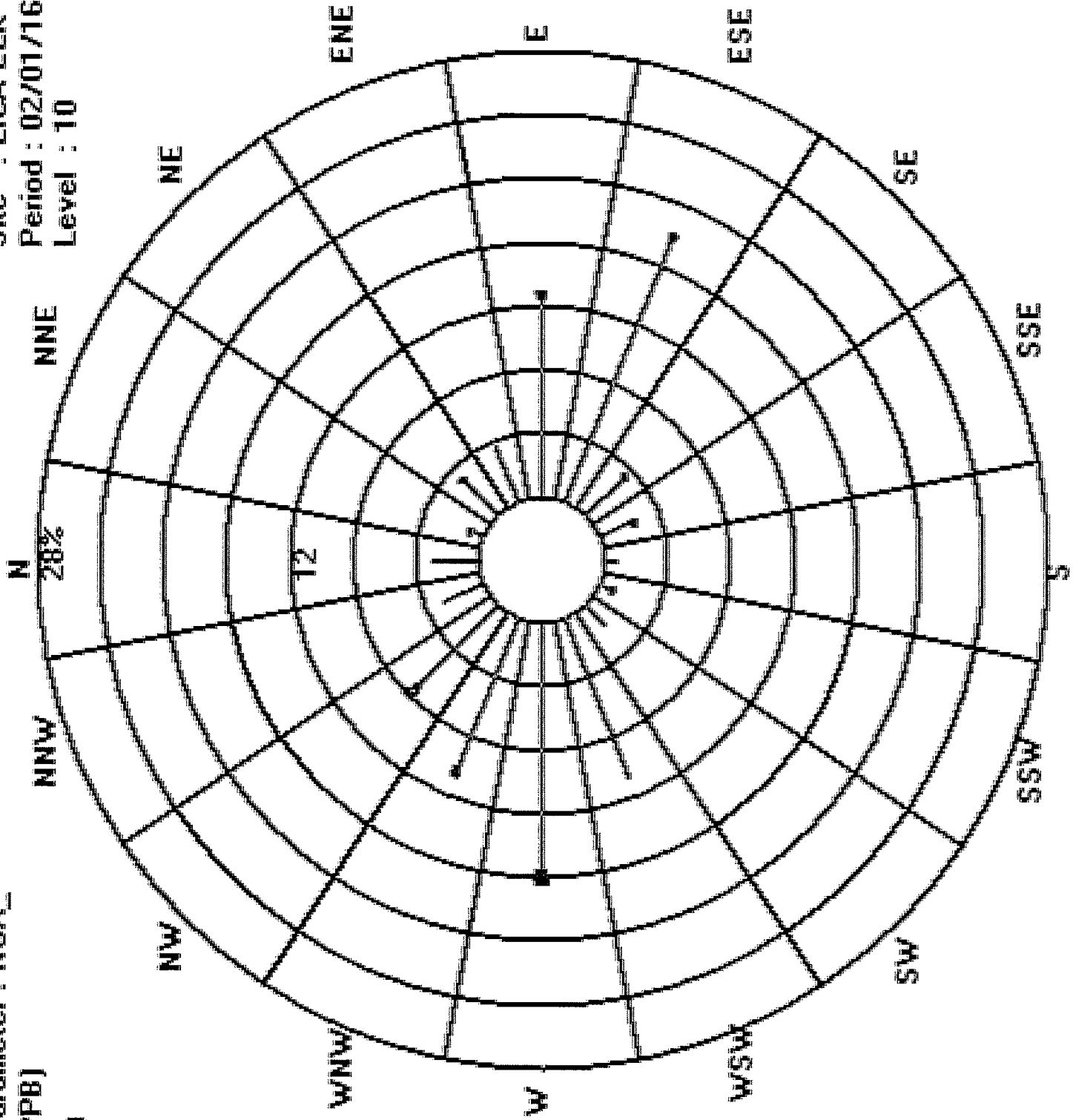
Total # Operational Hours : 647

Logger : 35 Parameter : NOX_

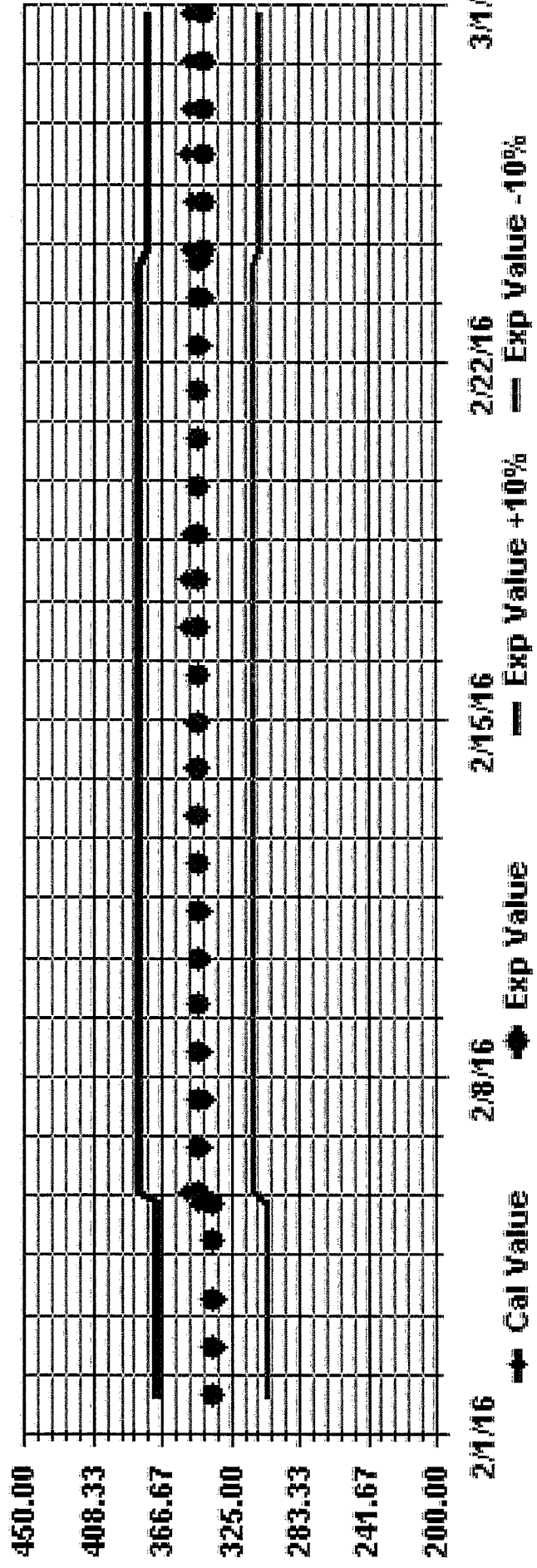
Class Limits (PPB)

-  >= 210.0
-  < 210.0
-  < 110.0
-  < 50.0

Site : LICA-ELK
Period : 02/01/16-02/29/16
Level : 10



Calibration Graph for Site: LICA35 Parameter: NOX_ Sequence: NO2 Phase: SPAN



NITRIC OXIDES



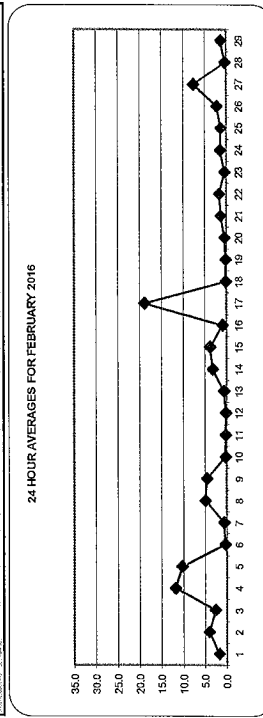
NITRIC OXIDE (NO) hourly averages in ppb

MST

| DAY | 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 | 24:00 | | | | |
|------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-----|----|
| HR START | 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 | RDGS. | | | | |
| HR END | 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 | AVG. | | | | | |
| 1 | 0.4 | 0.3 | 0.4 | 0.4 | 0.3 | 0.3 | 0.4 | 0.6 | 0.3 | 0.4 | 0.5 | 0.4 | 0.7 | P | 0.0 | 1.5 | 2.9 | 6.0 | 11.1 | \$ | 9.2 | 0.7 | 0.5 | 0.3 | 11.1 | 1.7 | 23 | | |
| 2 | 0.2 | 0.5 | 0.3 | 0.2 | 0.3 | 0.3 | 1.6 | 3.0 | 7.3 | 14.2 | 20.6 | 28.2 | 10.1 | 1.5 | 0.4 | 0.8 | 0.1 | 0.3 | \$ | 0.5 | 0.3 | 0.8 | 0.5 | 1.1 | 28.2 | 4.0 | 24 | | |
| 3 | 0.7 | 0.5 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.8 | 0.5 | 1.1 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 0.5 | 0.8 | 2.7 | 19.0 | 18.8 | 13.9 | 19.0 | 2.6 | 24 | | |
| 4 | 17.2 | 16.9 | 46.0 | 57.1 | 46.9 | 18.7 | 3.6 | 7.2 | 7.9 | 14.2 | 10.4 | 2.4 | 2.9 | 2.6 | 1.7 | 1.3 | 0.6 | 0.9 | 1.0 | 0.8 | 1.9 | 3.2 | \$ | 7.0 | 57.1 | 11.8 | 24 | | |
| 5 | 7.8 | 23.6 | 38.0 | 22.2 | 13.3 | 14.1 | 8.1 | 11.3 | 13.4 | 6.3 | 8.3 | C | C | C | C | C | C | C | 8.5 | 0.0 | 0.0 | 0.0 | \$ | 0.2 | 0.0 | 38.0 | 10.3 | 24 | |
| 6 | 0.2 | 0.0 | 0.0 | 0.1 | 0.2 | 0.9 | 1.8 | 3.3 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 0.4 | 0.1 | 0.0 | 3.3 | 0.3 | 24 | | |
| 7 | 0.2 | 0.0 | 0.3 | 0.3 | 0.4 | 1.0 | 9.5 | 9.7 | 19.2 | 17.4 | 13.1 | 5.9 | 6.4 | 13.8 | 5.6 | 2.0 | 1.3 | 0.6 | 0.6 | 1.1 | \$ | 1.5 | 0.5 | 0.4 | 0.8 | 0.9 | 19.2 | 4.9 | 24 |
| 8 | 0.7 | 0.8 | 0.4 | 1.0 | 9.5 | 9.7 | 19.2 | 17.4 | 13.1 | 5.9 | 6.4 | 13.8 | 5.6 | 2.0 | 1.3 | 0.6 | 0.6 | 1.1 | \$ | 1.2 | 0.7 | 0.8 | 0.7 | 0.3 | 0.4 | 15.2 | 4.6 | 24 | |
| 9 | 1.1 | 1.1 | 2.5 | 2.9 | 4.5 | 5.6 | 2.8 | 4.7 | 10.8 | 11.9 | 6.5 | 8.8 | 15.2 | 10.5 | 4.8 | 5.6 | 2.0 | \$ | 1.2 | 0.7 | 0.8 | 0.7 | 0.3 | 0.4 | 15.2 | 4.6 | 24 | | |
| 10 | 0.4 | 0.2 | 0.2 | 0.2 | 0.4 | 0.0 | 0.3 | 0.4 | 0.3 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.1 | \$ | 0.3 | 0.1 | 0.0 | 0.0 | 0.1 | 0.3 | 0.0 | 0.5 | 0.2 | 24 | | |
| 11 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.4 | 0.0 | 0.2 | 0.3 | 0.2 | 0.3 | 0.3 | 0.4 | 0.5 | 0.4 | \$ | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.5 | 0.2 | 24 | |
| 12 | 0.4 | 0.2 | 0.0 | 0.3 | 0.4 | 0.1 | 0.3 | 0.1 | 0.0 | 0.2 | 0.3 | 0.1 | 0.2 | 0.1 | \$ | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.1 | 24 | |
| 13 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.3 | 0.5 | 1.1 | 0.9 | \$ | 1.3 | 0.8 | 0.5 | 1.6 | 2.2 | 0.5 | 0.8 | 0.4 | 0.6 | 0.4 | 2.2 | 0.5 | 24 |
| 14 | 0.4 | 0.7 | 1.0 | 12.0 | 7.0 | 3.3 | 37.8 | 3.9 | 1.2 | 1.0 | 0.9 | 0.5 | \$ | 0.6 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.5 | 0.6 | 1.3 | 37.8 | 3.2 | 24 | |
| 15 | 12.1 | 20.6 | 2.7 | 2.3 | 1.0 | 1.3 | 1.6 | 3.2 | 10.9 | 12.1 | 11.3 | \$ | 2.6 | 0.8 | 0.4 | 0.6 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 0.4 | 0.6 | 0.4 | 1.5 | 20.6 | 3.8 | 24 | |
| 16 | 0.1 | 0.4 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.4 | 0.3 | 0.4 | \$ | 0.8 | 0.7 | 0.7 | 0.6 | 0.7 | 1.4 | 0.2 | 0.3 | 3.6 | 5.0 | 1.5 | 0.9 | 1.7 | 5.0 | 0.9 | 24 | | |
| 17 | 3.2 | 1.5 | 4.3 | 10.7 | 34.7 | 45.5 | 68.2 | 81.1 | 43.6 | 5 | 33.2 | 28.5 | 32.6 | 24.2 | 10.7 | 2.9 | 4.1 | 1.2 | 0.1 | 0.3 | 0.5 | 2.4 | 0.3 | 0.2 | 81.1 | 18.9 | 24 | | |
| 18 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.3 | 0.2 | 0.4 | 0.3 | 0.1 | 0.1 | 0.2 | 0.0 | 0.2 | 0.1 | 0.0 | 0.1 | 0.0 | 0.4 | 0.1 | 24 | | |
| 19 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.3 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 24 | |
| 20 | 0.4 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | \$ | 0.6 | 0.5 | 0.6 | 0.5 | 0.6 | 0.7 | 0.7 | 0.6 | 0.4 | 0.3 | 0.4 | 0.4 | 0.5 | 0.5 | 0.2 | 0.2 | 0.3 | 0.7 | 0.4 | 24 | | |
| 21 | 0.5 | 0.5 | 0.3 | 0.3 | 0.5 | \$ | 0.6 | 2.0 | 4.4 | 5.4 | 3.9 | 4.5 | 3.5 | 1.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.2 | 0.0 | 0.1 | 5.4 | 1.2 | 24 | |
| 22 | 0.3 | 0.3 | 0.1 | 0.0 | \$ | 7.9 | 22.8 | 1.2 | 0.9 | 1.5 | 0.2 | 0.5 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 1.4 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 22.8 | 1.6 | 24 | | |
| 23 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 0.5 | 0.4 | 0.4 | 0.7 | 0.7 | 0.7 | 0.5 | 0.5 | 0.4 | 0.5 | 0.3 | 0.1 | 0.2 | 0.3 | 0.6 | 0.2 | 0.3 | 0.3 | 0.4 | 0.7 | 0.4 | 24 | | |
| 24 | 0.6 | 0.2 | \$ | 0.4 | 0.3 | 0.5 | 0.5 | 0.7 | 3.6 | 4.9 | C1 | C1 | Y | Y | C1 | C1 | C1 | C1 | C1 | C1 | 3.2 | 2.9 | 0.2 | 0.0 | 4.9 | 1.4 | 14 | | |
| 25 | 0.0 | \$ | 0.5 | 1.3 | 0.5 | 0.3 | 0.3 | 4.1 | 3.8 | 2.3 | 2.8 | 2.5 | 2.8 | 1.9 | 2.3 | 2.0 | 0.5 | 0.0 | 0.0 | 0.1 | 0.1 | 0.3 | 0.1 | 0.1 | 4.1 | 1.2 | 24 | | |
| 26 | \$ | 0.7 | 0.6 | 0.4 | 0.2 | 0.8 | 0.8 | 1.0 | 2.6 | 3.2 | 3.2 | 2.9 | 3.0 | 1.9 | 2.5 | 3.6 | 1.4 | 1.0 | 2.6 | 6.5 | 0.9 | 1.5 | 6.3 | \$ | 6.5 | 2.2 | 24 | | |
| 27 | 2.3 | 23.9 | 53.1 | 32.7 | 27.0 | 5.5 | 1.0 | 2.0 | 1.3 | 8.1 | 9.7 | 5.5 | 0.8 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 0.2 | 0.2 | 0.2 | 0.5 | \$ | 53.1 | 7.6 | 24 | | |
| 28 | 0.3 | 0.1 | 0.2 | 0.0 | 0.1 | 0.3 | 0.8 | 0.6 | 0.0 | 0.3 | 0.7 | 1.4 | 0.9 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$ | 0.1 | 0.3 | 1.4 | 0.3 | 24 | |
| 29 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 | 0.7 | 1.8 | 2.4 | 2.0 | 2.0 | 2.3 | 2.0 | 1.7 | 1.6 | 3.1 | 3.3 | 1.8 | 1.1 | \$ | 0.5 | 0.2 | 0.3 | 3.3 | 1.2 | 24 | | |
| HOURLY MAX | 17.2 | 23.9 | 53.1 | 57.1 | 46.9 | 45.5 | 68.2 | 81.1 | 43.6 | 14.2 | 33.2 | 28.5 | 32.6 | 24.2 | 10.7 | 5.6 | 4.1 | 8.5 | 11.1 | 6.5 | 9.2 | 19.0 | 18.8 | 13.9 | | | | | |
| HOURLY AVG | 1.8 | 3.3 | 5.4 | 5.2 | 5.3 | 4.2 | 6.2 | 5.4 | 4.7 | 3.6 | 4.6 | 4.1 | 3.4 | 2.1 | 1.2 | 0.9 | 0.8 | 1.0 | 0.9 | 0.7 | 1.1 | 1.4 | 1.2 | 1.1 | | | | | |

STATUS FLAG CODES

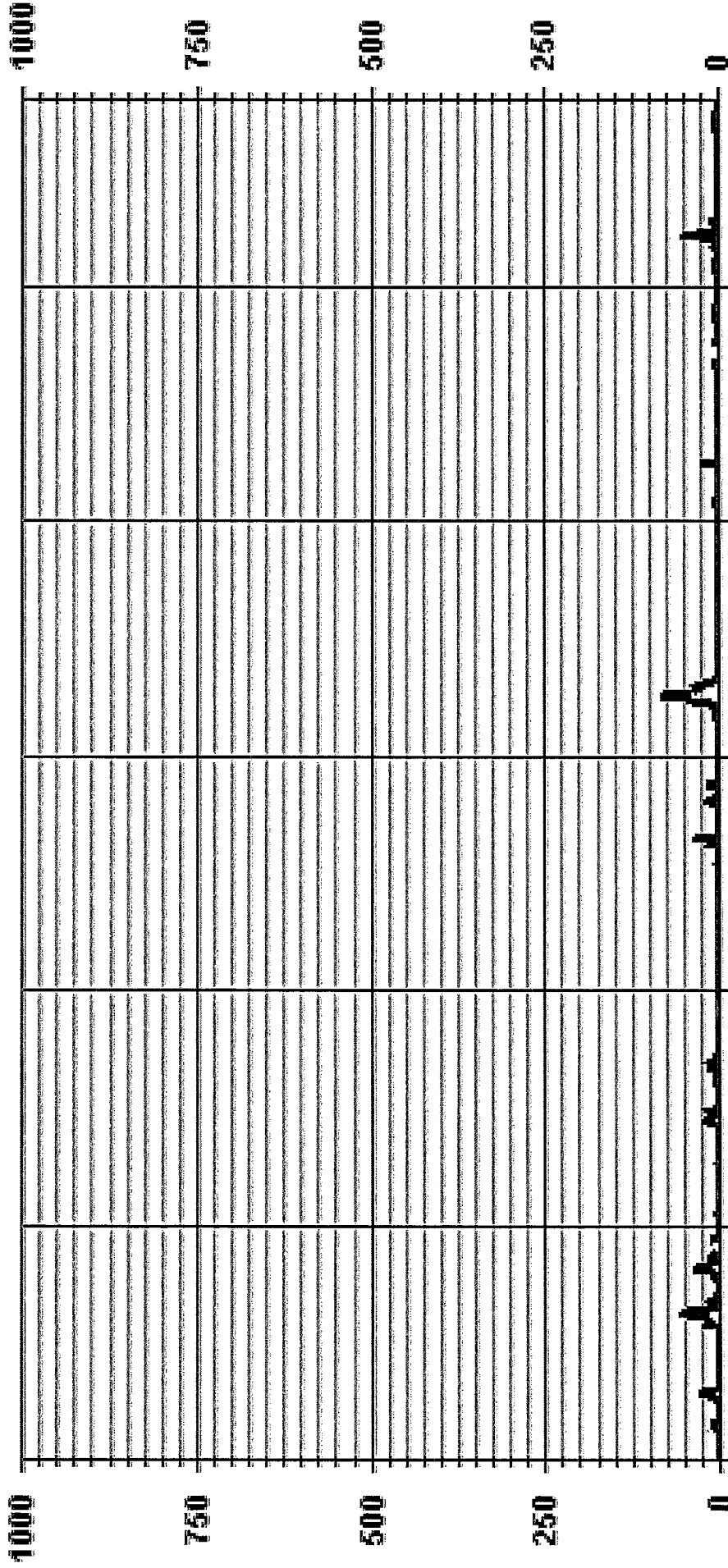
| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION | R | RECOVERY |
| Y | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | OUT FOR REPAIR |
| SL | REPEAT ZERO/SPAN CHECK | P | POWER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



MONTHLY SUMMARY

| | | | | | |
|------------------------------|------|-----------|------|-----------|-----|
| NUMBER OF NON-ZERO READINGS: | 538 | @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MINIMUM 1-HR AVERAGE: | 0.0 | PPB | 81.1 | PPB | 7 |
| MAXIMUM 1-HR AVERAGE: | 81.1 | PPB | 18.9 | PPB | 17 |
| MAXIMUM 24-HR AVERAGE: | 18.9 | PPB | | | |
| IS CALIBRATION TIME: | 30 | HRS | | | |
| MONTHLY CALIBRATION TIME: | 6 | HRS | | | |
| STANDARD DEVIATION: | 7.99 | | | | |
| OPERATIONAL TIME: | 685 | HRS | | | |
| AMD OPERATIONAL UPTIME: | 96.4 | % | | | |
| MONTHLY AVERAGE: | 2.9 | PPB | | | |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA35 NO₂ PPB



NITRIC OXIDE MAX instantaneous maximum in ppb

| DAY | HOUR | | | | | | | | | | | | | | | | | | | | | | | | DAILY MAX. | 24-HOUR AVG. | RDGS. | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------|--------------|-------|----|
| | 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 | | | | |
| 1 | 1.2 | 1.0 | 1.2 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 | 1.4 | 1.0 | 1.4 | 1.4 | P | 1.4 | 2.5 | 6.4 | 9.0 | 20.9 | \$ | 17.0 | 1.5 | 1.4 | 1.2 | 20.9 | 3.5 | 23 | |
| 2 | 0.9 | 1.1 | 1.1 | 1.1 | 1.0 | 2.0 | 3.3 | 1.5 | 9.6 | 21.0 | 24.6 | 32.4 | 25.3 | 2.7 | 1.4 | 3.1 | 1.0 | 1.2 | \$ | 1.3 | 1.0 | 2.3 | 1.3 | 2.6 | 32.4 | 6.5 | 24 | |
| 3 | 1.6 | 1.3 | 1.5 | 0.6 | 0.6 | 0.8 | 0.6 | 0.8 | 0.9 | 1.6 | 2.3 | 4.0 | 1.2 | 0.6 | 0.7 | 0.8 | \$ | 1.4 | 2.0 | 7.1 | 24.5 | 26.8 | 18.6 | 26.8 | 4.4 | 24 | | |
| 4 | 21.4 | 25.3 | 59.3 | 59.9 | 62.1 | 34.0 | 6.9 | 11.1 | 17.2 | 21.5 | 21.2 | 3.7 | 5.4 | R | 2.7 | 2.6 | 2.1 | 2.6 | 2.4 | 1.6 | 4.1 | 6.1 | \$ | 7.9 | 62.1 | 17.3 | 23 | |
| 5 | 10.1 | 37.1 | 43.1 | 33.4 | 15.9 | 15.5 | 12.8 | 17.9 | 16.5 | 11.8 | 12.2 | C | C | C | C | C | C | C | 4.1 | 1.6 | 0.0 | \$ | 1.4 | 0.7 | 43.1 | 14.6 | 24 | |
| 6 | 1.0 | 0.7 | 0.7 | 0.7 | 1.0 | 2.0 | 3.8 | 5.1 | 1.4 | 0.8 | 0.8 | 0.2 | 0.6 | 0.4 | 0.4 | 0.6 | 0.6 | 0.4 | 0.2 | \$ | 1.3 | 0.8 | 0.6 | 5.1 | 1.1 | 24 | | |
| 7 | 0.9 | 0.6 | 1.1 | 1.1 | 1.3 | 1.0 | 0.8 | 0.8 | 6.5 | 3.1 | 2.5 | 1.7 | 1.4 | 1.2 | 1.0 | 1.0 | 1.0 | 1.0 | 1.2 | \$ | 1.6 | 1.3 | 1.0 | 1.5 | 6.5 | 1.6 | 24 | |
| 8 | 1.6 | 1.7 | 1.5 | 2.0 | 24.3 | 15.9 | 24.4 | 20.9 | 18.6 | 9.5 | 8.9 | 17.5 | 11.4 | 3.9 | 2.4 | 1.4 | 1.4 | 2.4 | \$ | 2.5 | 1.3 | 1.0 | 1.5 | 1.8 | 24.4 | 7.7 | 24 | |
| 9 | 2.1 | 1.9 | 8.5 | 8.5 | 7.1 | 4.5 | 9.0 | 13.5 | 17.1 | 9.9 | 16.5 | 19.7 | 13.6 | 9.2 | 8.6 | 3.8 | \$ | 2.2 | 1.9 | 1.6 | 1.3 | 1.1 | 1.1 | 19.7 | 7.4 | 24 | | |
| 10 | 1.2 | 0.9 | 0.9 | 0.9 | 0.9 | 1.3 | 1.3 | 1.3 | 0.9 | 0.7 | 0.6 | 1.0 | 0.9 | 0.9 | 0.7 | 1.0 | \$ | 1.6 | 1.4 | 1.0 | 0.9 | 0.8 | 1.0 | 0.6 | 1.6 | 1.0 | 24 | |
| 11 | 1.0 | 1.0 | 0.9 | 1.0 | 1.0 | 0.7 | 1.0 | 0.8 | 0.7 | 1.0 | 1.3 | 1.2 | 1.1 | 1.1 | \$ | 1.5 | 0.8 | 0.7 | 0.6 | 0.8 | 1.2 | 0.8 | 0.8 | 1.5 | 0.9 | 24 | | |
| 12 | 1.1 | 0.8 | 0.8 | 1.1 | 1.2 | 0.9 | 1.1 | 0.8 | 0.7 | 1.0 | 1.0 | 0.8 | 1.0 | 0.7 | \$ | 0.9 | 0.4 | 0.2 | 0.4 | 0.2 | 0.5 | 0.7 | 0.5 | 0.3 | 1.2 | 0.8 | 24 | |
| 13 | 0.2 | 0.4 | 0.3 | 0.4 | 0.3 | 0.4 | 0.3 | 0.4 | 1.0 | 0.7 | 1.1 | 1.2 | 1.9 | 1.9 | \$ | 2.1 | 1.8 | 1.1 | 8.8 | 8.8 | 1.2 | 1.8 | 1.2 | 1.4 | 1.1 | 8.8 | 1.7 | 24 |
| 14 | 1.1 | 1.9 | 2.0 | 23.1 | 22.8 | 21.0 | 47.4 | 18.5 | 2.1 | 1.7 | 1.7 | 1.2 | \$ | 1.7 | 1.0 | 0.7 | 0.5 | 1.0 | 0.7 | 1.1 | 1.4 | 1.6 | 1.6 | 2.8 | 47.4 | 6.9 | 24 | |
| 15 | 20.1 | 26.4 | 5.8 | 4.5 | 2.3 | 2.3 | 3.0 | 6.1 | 17.2 | 17.1 | 13.9 | \$ | 8.8 | 1.6 | 1.2 | 2.5 | 0.9 | 0.8 | 0.8 | 1.1 | 1.1 | 1.1 | 1.0 | 2.8 | 26.4 | 6.2 | 24 | |
| 16 | 1.0 | 1.5 | 0.8 | 0.8 | 0.7 | 0.6 | 0.8 | 1.2 | 1.3 | 1.2 | \$ | 1.7 | 1.5 | 1.3 | 1.4 | 1.7 | 5.4 | 1.3 | 1.0 | 7.5 | 6.5 | 4.6 | 2.0 | 4.5 | 7.5 | 2.2 | 24 | |
| 17 | 5.9 | 4.3 | 6.1 | 23.7 | 43.1 | 64.9 | 76.8 | 86.7 | 82.5 | \$ | 50.0 | 37.2 | 36.6 | 28.5 | 18.7 | 6.7 | 6.9 | 2.6 | 1.3 | 0.9 | 1.5 | 5.7 | 1.3 | 0.8 | 86.7 | 25.8 | 24 | |
| 18 | 0.8 | 0.7 | 0.4 | 0.1 | 0.3 | 0.7 | 0.4 | 0.5 | \$ | 1.2 | 1.0 | 1.0 | 1.3 | 0.9 | 0.8 | 0.7 | 1.0 | 0.7 | 1.0 | 0.7 | 0.9 | 1.0 | 0.6 | 1.3 | 0.8 | 24 | | |
| 19 | 0.6 | 0.3 | 0.8 | 0.7 | 0.5 | 0.5 | 0.6 | \$ | 1.0 | 0.8 | 0.5 | 0.5 | 1.1 | 1.1 | 1.1 | 1.4 | 0.7 | 0.7 | 0.8 | 1.3 | 1.3 | 0.8 | 0.7 | 1.0 | 1.4 | 0.8 | 24 | |
| 20 | 1.2 | 0.9 | 0.7 | 0.9 | 1.0 | 0.8 | \$ | 1.4 | 1.0 | 1.3 | 1.3 | 1.4 | 1.7 | 1.3 | 1.2 | 1.1 | 1.2 | 1.1 | 1.0 | 1.2 | 1.6 | 0.9 | 0.8 | 0.9 | 1.7 | 1.1 | 24 | |
| 21 | 1.2 | 1.2 | 1.2 | 1.2 | 1.3 | \$ | 1.3 | 3.1 | 7.9 | 7.4 | 4.6 | 5.4 | 5.1 | 2.4 | 1.3 | 0.7 | 0.7 | 0.9 | 1.4 | 0.8 | 0.3 | 0.9 | 0.8 | 0.8 | 7.9 | 2.3 | 24 | |
| 22 | 1.0 | 0.9 | 0.8 | 0.9 | \$ | 30.8 | 36.5 | 4.4 | 2.1 | 4.8 | 1.5 | 1.5 | 0.9 | 1.0 | 0.5 | 0.9 | 5.4 | 0.8 | 0.7 | 0.7 | 0.7 | 0.8 | 0.6 | 0.6 | 36.5 | 4.3 | 24 | |
| 23 | 0.6 | 1.1 | 0.6 | \$ | 1.6 | 1.1 | 1.0 | 1.4 | 1.3 | 1.3 | 1.1 | 1.1 | 1.2 | 1.2 | 1.3 | 1.3 | 0.7 | 0.8 | 0.9 | 1.3 | 1.0 | 1.0 | 1.1 | 1.0 | 1.6 | 1.1 | 24 | |
| 24 | 1.5 | 1.2 | \$ | 1.3 | 8.2 | 1.2 | 0.9 | 1.0 | 15.9 | 9.8 | 3.8 | 4.3 | 3.3 | 4.0 | 3.4 | 3.9 | 3.6 | 2.0 | 0.7 | 0.3 | 0.6 | 1.1 | 2.0 | 0.9 | 1.0 | 15.9 | 3.2 | 24 |
| 25 | 0.0 | \$ | 2.1 | 1.5 | 1.3 | 1.1 | 1.7 | 2.3 | 3.7 | 4.0 | 4.4 | 6.2 | 3.8 | 6.2 | 3.3 | 6.6 | 7.7 | 2.9 | 2.4 | 27.3 | 31.3 | 3.2 | 6.2 | 64.1 | \$ | 64.1 | 8.8 | 24 |
| 26 | \$ | 8.7 | 77.6 | 70.7 | 57.2 | 40.8 | 15.3 | 4.8 | 5.4 | 2.4 | 13.4 | 15.0 | 10.3 | 3.2 | 1.3 | 0.9 | 0.7 | 1.0 | 0.9 | 1.5 | 1.3 | 2.2 | \$ | 2.5 | 77.6 | 14.7 | 24 | |
| 27 | 1.3 | 0.8 | 1.3 | 0.8 | 1.2 | 3.1 | 3.1 | 2.9 | 0.6 | 1.2 | 1.9 | 2.2 | 2.1 | 1.4 | 0.8 | 1.0 | 0.6 | 0.4 | 0.6 | 0.8 | 0.6 | \$ | 0.9 | 1.1 | 3.1 | 1.3 | 24 | |
| 28 | 0.9 | 1.0 | 0.9 | 0.7 | 1.0 | 0.9 | 1.2 | 1.6 | 2.6 | 3.1 | 3.2 | 2.8 | 3.3 | 3.6 | 3.0 | 3.2 | 9.9 | 7.2 | 6.3 | 4.0 | \$ | 1.9 | 1.2 | 1.3 | 9.9 | 2.8 | 24 | |
| 29 | 21.4 | 77.6 | 70.7 | 59.9 | 62.1 | 64.9 | 76.8 | 86.7 | 82.5 | 21.5 | 50.0 | 37.2 | 36.6 | 28.5 | 18.7 | 6.7 | 6.9 | 2.6 | 1.3 | 0.9 | 1.5 | 5.7 | 1.3 | 0.8 | 86.7 | 25.8 | 24 | |
| HOURLY MAX | 3.2 | 7.0 | 7.7 | 8.5 | 8.5 | 8.2 | 8.7 | 8.3 | 8.3 | 5.9 | 7.2 | 6.0 | 5.7 | 3.3 | 2.6 | 2.2 | 2.3 | 2.0 | 3.4 | 2.7 | 2.6 | 3.1 | 4.5 | 2.3 | | | | |
| HOURLY AVG | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

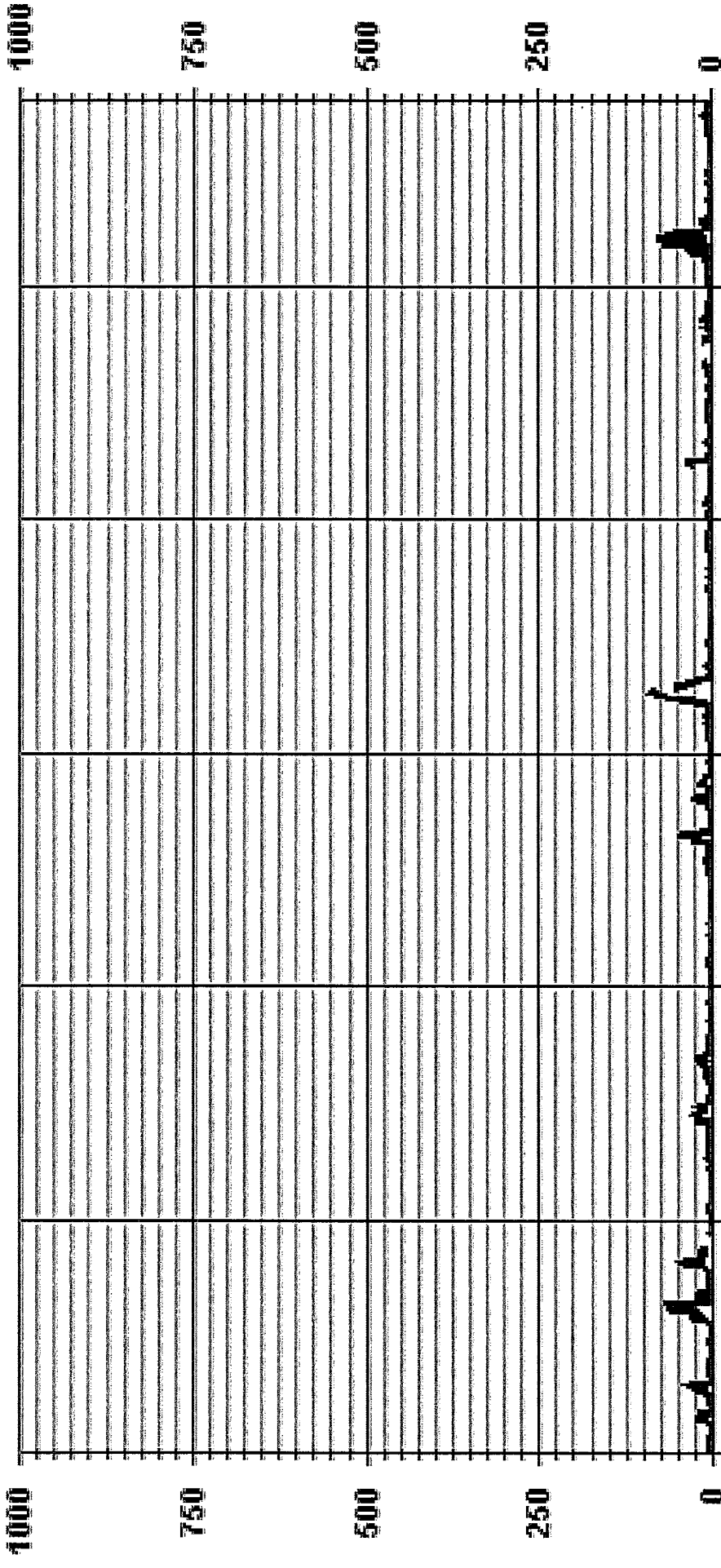
STATUS FLAG CODES

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

MONTHLY SUMMARY

| | |
|------------------------------|-----------------------------------|
| NUMBER OF NON-ZERO READINGS: | 645 |
| MAXIMUM INSTANTANEOUS VALUE: | 86.7 PPB @ HOUR(S) 7 ON DAY(S) 17 |
| OPERATIONAL TIME: | 684 HRS |
| MONTHLY CALIBRATION TIME: | 7 HRS |
| STANDARD DEVIATION: | 11.17 |
| VAR- VARIOUS | |

01 Hour Averages



— LICA35 NOMAX PPB

LICA-ELK
 NO_ / WDR Joint Frequency Distribution (Percent)
 February 2016

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA-ELK
 Parameter : NO
 Units : PPS

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|-----|------|------|-------|-------|------|------|-----|-----|------|-------|-------|-------|------|------|-------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 50.0 | 2.93 | .77 | 3.24 | 3.70 | 12.98 | 18.23 | 3.55 | 2.47 | .77 | .92 | 1.85 | 10.81 | 15.91 | 10.66 | 7.72 | 2.78 | 99.38 |
| < 110.0 | .00 | .15 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .30 | .00 | .15 | .00 | .61 |
| < 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.93 | .92 | 3.24 | 3.70 | 12.98 | 18.23 | 3.55 | 2.47 | .77 | .92 | 1.85 | 10.81 | 16.22 | 10.66 | 7.88 | 2.78 | |

Calm : .00 %

Total # Operational Hours : 647

Distribution By Samples





| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|-----|----|-----|----|-----|----|-----|---|-----|----|-----|-----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 50.0 | 19 | 5 | 21 | 24 | 84 | 118 | 23 | 16 | 5 | 6 | 12 | 70 | 103 | 69 | 50 | 18 | 643 |
| < 110.0 | | 1 | | | | | | | | | | 2 | | 1 | | | 4 |
| < 210.0 | | | | | | | | | | | | | | | | | |
| >= 210.0 | | | | | | | | | | | | | | | | | |
| Totals | 19 | 6 | 21 | 24 | 84 | 118 | 23 | 16 | 5 | 6 | 12 | 70 | 105 | 69 | 51 | 18 | |

Calm : .00 %

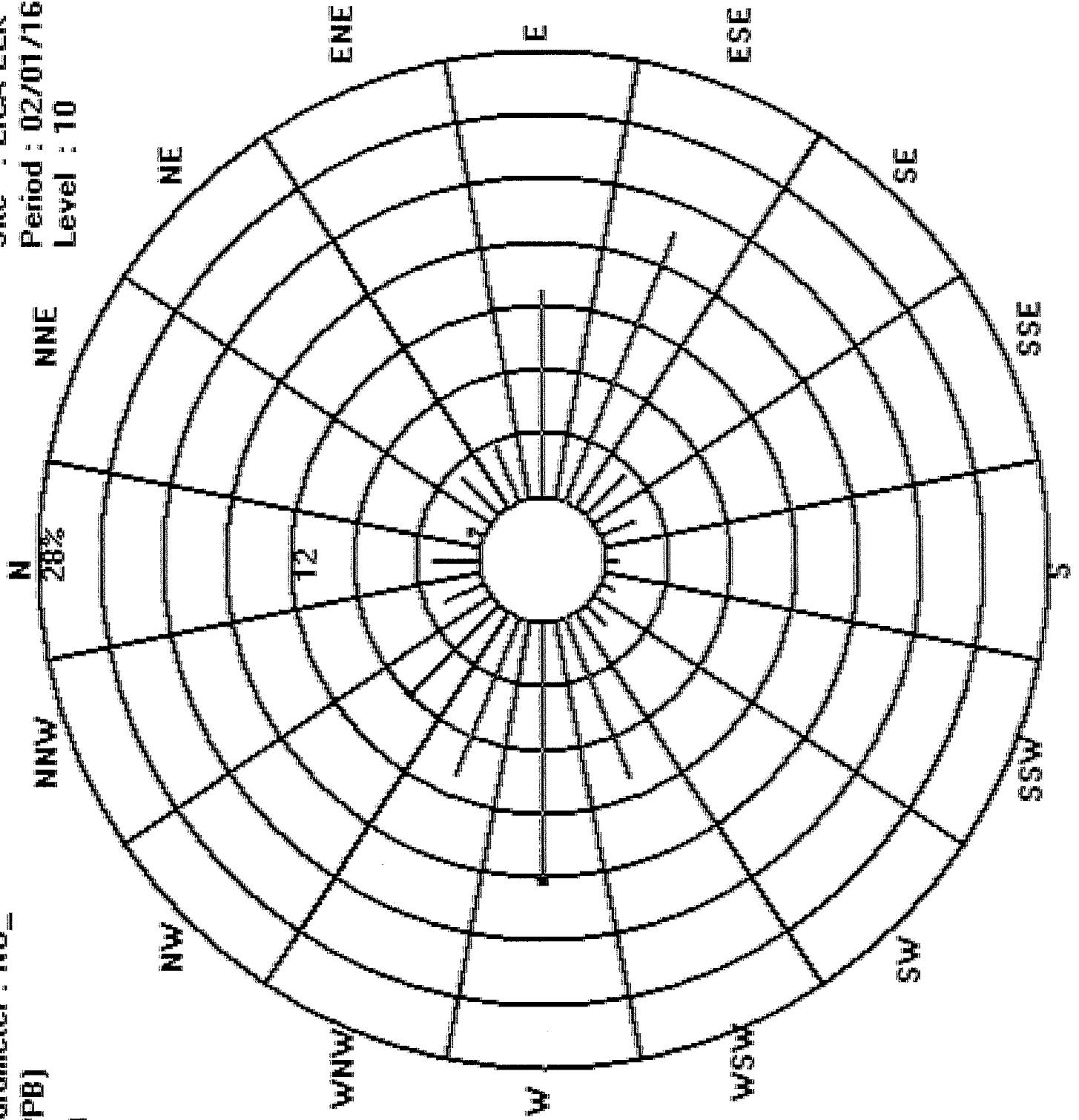
Total # Operational Hours : 647

Logger : 35 Parameter : ND_

Class Limits (PPB)

-  >= 210.0
-  < 210.0
-  < 110.0
-  < 50.0

Site : LICA-ELK
Period : 02/01/16-02/29/16
Level : 10



NITROGEN DIOXIDE

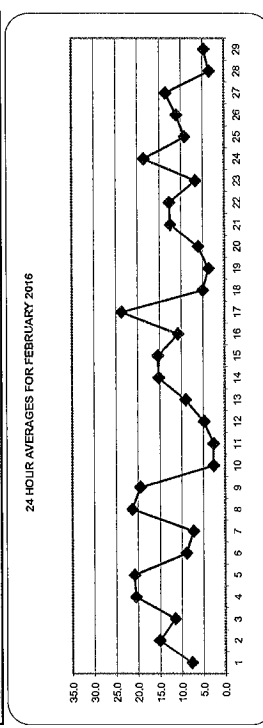


NITROGEN DIOXIDE (NO2) hourly averages in ppb

| DAY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | |
|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 1.8 | 1.4 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | |
| 2 | 12.4 | 13.9 | 11.5 | 12.8 | 11.0 | 10.6 | 17.3 | 21.2 | 23.1 | 23.3 | 22.8 | 22.9 | 20.1 | 12.1 | 7.2 | 9.5 | 7.9 | 14.6 | \$ | 10.0 | 13.3 | 17.9 | 12.5 | 19.4 | 23.3 |
| 3 | 16.4 | 11.4 | 14.7 | 4.7 | 3.9 | 3.1 | 2.6 | 2.3 | 6.0 | 14.1 | 9.1 | 5.2 | 3.7 | 4.0 | 5.0 | 8.5 | \$ | 11.1 | 15.9 | 22.5 | 31.1 | 30.3 | 28.4 | 31.1 | 11.5 |
| 4 | 28.3 | 27.2 | 28.1 | 28.3 | 28.3 | 28.3 | 28.8 | 28.0 | 24.1 | 22.7 | 23.6 | 22.1 | 14.0 | 11.7 | 10.1 | 9.5 | 11.1 | 14.1 | 17.2 | 18.8 | 21.5 | 22.4 | \$ | 23.4 | 28.3 |
| 5 | 23.6 | 24.2 | 24.2 | 24.4 | 24.1 | 23.6 | 22.2 | 21.7 | 21.7 | 18.2 | 16.0 | C | C | C | C | C | C | 24.3 | 24.0 | 21.5 | 13.6 | \$ | 13.5 | 12.5 | |
| 6 | 12.7 | 13.2 | 12.3 | 13.3 | 14.0 | 16.4 | 20.2 | 20.0 | 10.0 | 7.9 | 6.8 | 4.3 | 4.7 | 4.3 | 6.9 | 7.3 | 5.8 | 7.0 | 2.5 | 1.8 | \$ | 1.5 | 1.8 | 26.0 | |
| 7 | 1.8 | 1.9 | 2.1 | 5.1 | 7.3 | 3.4 | 3.5 | 2.7 | 14.7 | 19.9 | 9.9 | 5.1 | 4.9 | 6.0 | 4.4 | 5.1 | 5.9 | 6.8 | 8.5 | \$ | 6.8 | 10.4 | 14.0 | 15.4 | |
| 8 | 15.2 | 16.7 | 18.4 | 22.3 | 30.7 | 32.4 | 33.2 | 33.3 | 30.3 | 24.3 | 27.7 | 22.9 | 15.6 | 13.4 | 8.3 | 13.1 | 19.0 | \$ | 25.2 | 14.3 | 11.3 | 16.4 | 21.1 | 33.3 | |
| 9 | 19.3 | 21.6 | 20.6 | 22.0 | 24.3 | 24.7 | 21.0 | 20.2 | 20.4 | 19.2 | 16.0 | 15.1 | 20.1 | 21.3 | 19.5 | 22.3 | 21.1 | \$ | 19.9 | 20.2 | 22.5 | 15.3 | 9.2 | 9.8 | |
| 10 | 8.3 | 4.1 | 4.1 | 3.7 | 2.5 | 3.4 | 3.9 | 2.9 | 1.9 | 1.9 | 1.8 | 1.7 | 1.7 | 1.9 | 1.9 | 1.9 | \$ | 1.4 | 1.6 | 1.7 | 1.9 | 1.6 | 1.7 | 1.8 | |
| 11 | 2.0 | 2.2 | 2.1 | 2.6 | 2.3 | 2.3 | 2.2 | 2.1 | 2.4 | 2.7 | 2.7 | 3.0 | 3.2 | 3.3 | 3.0 | \$ | 2.2 | 2.2 | 2.4 | 2.4 | 2.2 | 2.5 | 2.9 | 4.2 | |
| 12 | 8.4 | 6.1 | 4.1 | 6.5 | 7.3 | 5.0 | 3.5 | 4.2 | 4.6 | 5.2 | 4.9 | 4.7 | 4.8 | 4.3 | \$ | 4.4 | 3.8 | 3.3 | 3.8 | 4.0 | 3.9 | 4.0 | 3.5 | 8.4 | |
| 13 | 3.6 | 3.8 | 3.6 | 3.9 | 3.5 | 4.0 | 4.9 | 7.1 | 7.7 | 9.6 | 10.3 | 13.6 | 13.2 | \$ | 8.8 | 10.1 | 7.7 | 17.6 | 20.9 | 10.0 | 10.9 | 10.7 | 11.8 | 8.0 | |
| 14 | 8.4 | 17.4 | 19.1 | 29.7 | 26.2 | 21.6 | 30.2 | 24.2 | 16.1 | 11.6 | 10.0 | 7.5 | \$ | 5.7 | 4.3 | 5.1 | 4.7 | 6.1 | 10.2 | 15.1 | 13.7 | 15.5 | 19.7 | 25.7 | |
| 15 | 9.1 | 11.7 | 8.5 | 5.5 | 5.0 | 5.4 | 6.5 | 5.9 | 7.1 | 6.2 | \$ | 5.6 | 8.2 | 8.7 | 7.2 | 9.5 | 12.5 | 10.3 | 9.0 | 21.2 | 24.3 | 19.7 | 18.2 | 20.3 | |
| 16 | 10.8 | 8.3 | 5.4 | 3.6 | 2.8 | 3.4 | 3.7 | 4.0 | \$ | 3.7 | 3.3 | 4.7 | 5.2 | 4.9 | 4.6 | 4.5 | 3.8 | 5.1 | 6.1 | 5.1 | 4.5 | 6.1 | 5.7 | 4.4 | |
| 17 | 20.4 | 19.9 | 22.2 | 22.9 | 24.5 | 26.4 | 28.6 | 31.1 | 31.7 | \$ | 27.4 | 24.3 | 25.6 | 27.9 | 26.7 | 21.5 | 27.4 | 24.8 | 18.6 | 19.4 | 18.4 | 25.2 | 15.7 | 13.0 | |
| 18 | 10.8 | 3.0 | 3.3 | 3.8 | 2.7 | 2.7 | 2.6 | 5 | 2.2 | 1.9 | 1.9 | 2.6 | 3.3 | 2.7 | 2.5 | 3.7 | 3.3 | 2.8 | 3.1 | 9.1 | 8.4 | 3.6 | 4.3 | 5.1 | |
| 19 | 3.4 | 3.0 | 3.3 | 3.8 | 2.7 | 2.7 | 2.6 | 5 | 2.2 | 1.9 | 1.9 | 2.6 | 3.3 | 2.7 | 2.5 | 3.7 | 3.3 | 2.8 | 3.1 | 9.1 | 8.4 | 3.6 | 4.3 | 5.1 | |
| 20 | 4.8 | 4.4 | 4.0 | 3.6 | 3.1 | 3.0 | \$ | 3.8 | 3.7 | 3.4 | 3.8 | 5.5 | 4.6 | 5.5 | 4.8 | 6.1 | 8.2 | 9.4 | 9.1 | 12.7 | 9.7 | 7.4 | 7.5 | 8.5 | |
| 21 | 10.4 | 10.3 | 10.0 | 11.0 | 10.7 | \$ | 12.0 | 18.8 | 19.6 | 19.3 | 16.3 | 17.1 | 16.3 | 12.3 | 6.1 | 4.6 | 4.1 | 8.9 | 17.8 | 11.2 | 11.2 | 10.8 | 11.7 | 14.4 | |
| 22 | 17.8 | 21.4 | 15.4 | 12.6 | \$ | 26.8 | 36.3 | 22.9 | 17.1 | 17.9 | 7.9 | 6.8 | 4.4 | 4.8 | 3.0 | 6.8 | 19.3 | 9.6 | 9.4 | 7.0 | 6.8 | 5.3 | 6.1 | 5.8 | |
| 23 | 5.5 | 7.9 | 9.5 | \$ | 7.6 | 5.6 | 5.2 | 5.6 | 7.4 | 7.1 | 4.2 | 6.6 | 6.2 | 5.4 | 5.5 | 5.3 | 3.8 | 3.9 | 9.7 | 15.8 | 5.5 | 1.8 | 7.3 | 8.4 | |
| 24 | 9.3 | 8.7 | \$ | 6.2 | 13.8 | 14.0 | 14.4 | 15.5 | 24.1 | 22.4 | CI | CI | Y | Y | CI | CI | CI | CI | CI | CI | CI | 30.1 | 30.5 | 29.5 | |
| 25 | 17.0 | \$ | 11.2 | 12.2 | 10.9 | 11.0 | 10.7 | 19.9 | 12.3 | 4.6 | 4.2 | 3.5 | 4.2 | 4.2 | 5.2 | 6.2 | 4.3 | 3.5 | 4.8 | 7.6 | 16.2 | 13.6 | 8.9 | 11.7 | |
| 26 | \$ | 5.6 | 5.9 | 3.0 | 4.9 | 13.3 | 10.8 | 8.4 | 8.0 | 5.7 | 5.5 | 4.6 | 5.3 | 3.8 | 5.6 | 8.5 | 6.8 | 12.3 | 22.2 | 26.7 | 17.5 | 22.1 | 34.5 | \$ | |
| 27 | 29.1 | 37.4 | 39.1 | 35.9 | 36.6 | 24.9 | 12.2 | 18.8 | 9.3 | 14.6 | 14.0 | 8.2 | 2.3 | 1.6 | 1.0 | 0.5 | 1.0 | 1.1 | 2.3 | 3.9 | 0.9 | 3.2 | \$ | 10.6 | |
| 28 | 7.8 | 6.9 | 8.1 | 7.2 | 4.1 | 9.1 | 10.9 | 8.8 | 2.1 | 1.1 | 2.4 | 2.9 | 1.8 | 0.8 | 0.7 | 0.8 | 0.3 | 0.2 | 0.3 | 0.4 | 0.5 | \$ | 0.2 | 0.3 | |
| 29 | 0.6 | 0.4 | 0.8 | 1.0 | 1.6 | 1.7 | 3.9 | 4.6 | 4.1 | 3.0 | 2.1 | 2.4 | 2.5 | 2.5 | 2.0 | 2.7 | 4.0 | 9.3 | 9.3 | 9.4 | \$ | 13.1 | 9.0 | 15.5 | |
| HOURLY MAX | 31.5 | 37.4 | 39.1 | 35.9 | 36.6 | 32.4 | 36.3 | 33.3 | 31.7 | 24.3 | 27.4 | 27.7 | 25.6 | 27.9 | 26.7 | 22.3 | 27.4 | 24.8 | 24.4 | 26.7 | 30.1 | 31.1 | 34.5 | 28.4 | |
| HOURLY AVG | 12.1 | 12.2 | 12.0 | 11.9 | 12.0 | 12.5 | 13.2 | 13.8 | 12.7 | 11.4 | 10.1 | 8.8 | 8.4 | 7.3 | 6.4 | 7.1 | 8.0 | 9.4 | 10.5 | 11.6 | 12.2 | 12.3 | 11.7 | 12.3 | |

STATUS FLAG CODES: C MONTHLY CALIBRATION, Q QUALITY ASSURANCE, R REPEAT CALIBRATION, X MACHINE MAINTENANCE, Y RECOVERY, G OUT FOR REPAIR, S DAILY ZERO / SPAN CHECK, P POWER FAILURE, S1 REPEAT ZERO / SPAN CHECK

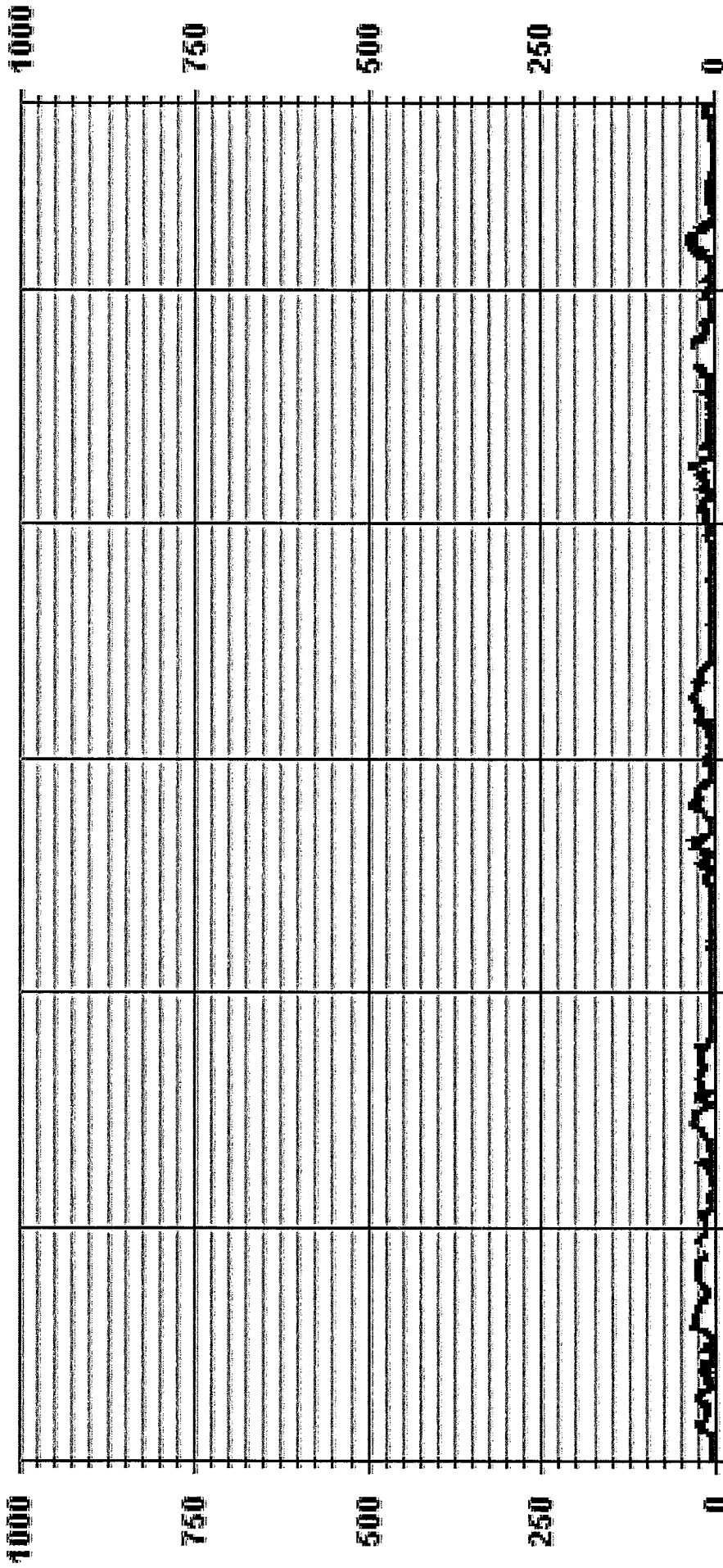
OBJECTIVE LIMIT: ALBERTA ENVIRONMENT: L-HR: 159, PPB: 0



MONTHLY SUMMARY

| | | | | | |
|------------------------------|------|---------------|-----------------------|-------------|--------|
| NUMBER OF NON-ZERO READINGS: | 649 | PPB @ HOUR(S) | 17, 22 | ON DAY(S) | 28, 28 |
| MINIMUM 1-HR AVERAGE: | 0.2 | PPB @ HOUR(S) | 2 | ON DAY(S) | 27 |
| MAXIMUM 1-HR AVERAGE: | 39.1 | PPB | | ON DAY(S) | 17 |
| MAXIMUM 24-HR AVERAGE: | 23.6 | PPB | | VAR-VARIOUS | |
| IS CALIBRATION TIME: | 30 | HRS | OPERATIONAL TIME: | 685 | HRS |
| MONTHLY CALIBRATION TIME: | 6 | HRS | AMD OPERATION UPTIME: | 98.4 | % |
| STANDARD DEVIATION: | 8.59 | | MONTHLY AVERAGE: | 10.9 | PPB |

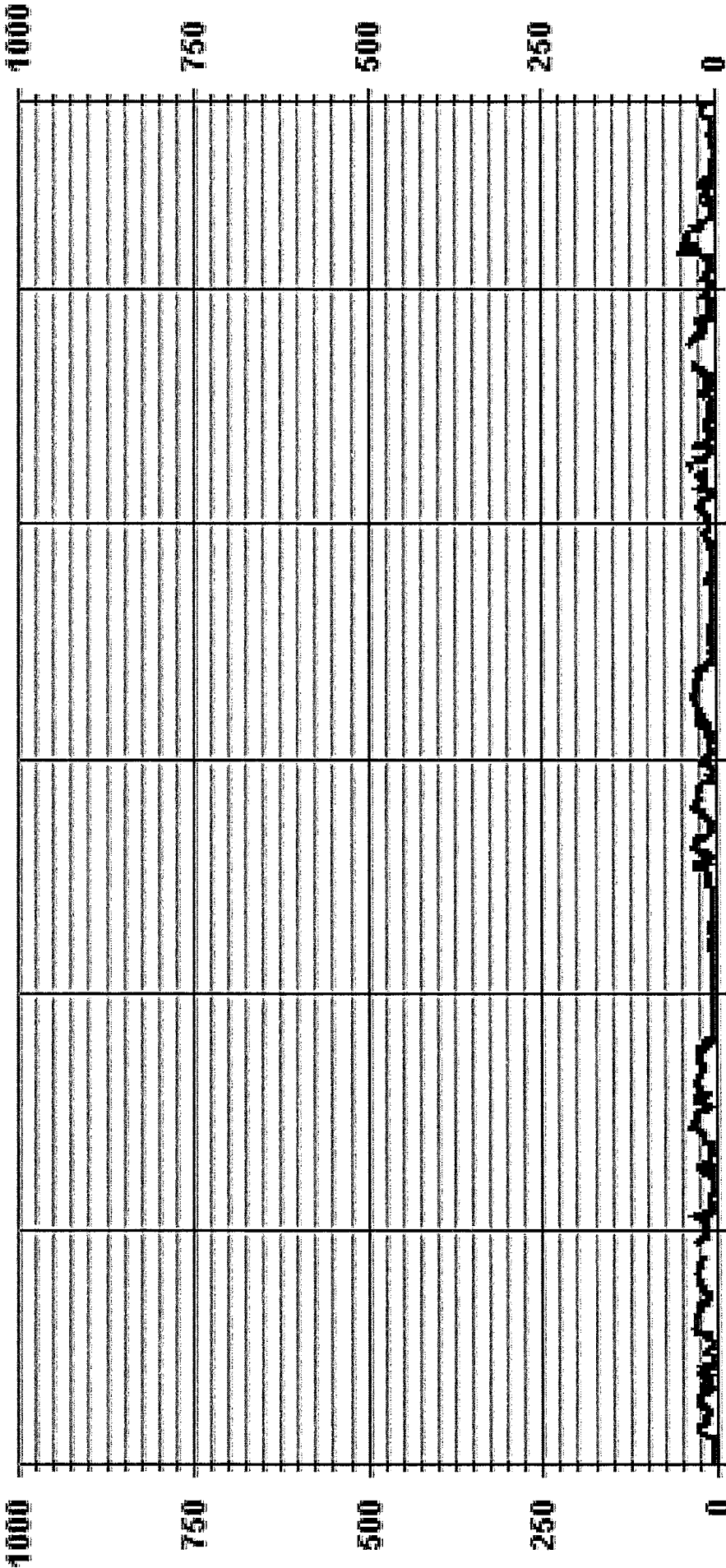
01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA35 NO2_ PPB

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA35 NO2MAX PPB

NO2_ / WDR Joint Frequency Distribution (Percent)

LICA-ELK

February 2016

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA-ELK
 Parameter : NO2
 Units : PPF

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|-----|------|------|-------|-------|------|------|-----|-----|------|-------|-------|-------|------|------|--------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 50.0 | 2.93 | .92 | 3.24 | 3.70 | 12.98 | 18.23 | 3.55 | 2.47 | .77 | .92 | 1.85 | 10.81 | 16.22 | 10.66 | 7.88 | 2.78 | 100.00 |
| < 110.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.93 | .92 | 3.24 | 3.70 | 12.98 | 18.23 | 3.55 | 2.47 | .77 | .92 | 1.85 | 10.81 | 16.22 | 10.66 | 7.88 | 2.78 | |

Calm : .00 %

Total # Operational Hours : 647

Distribution By Samples

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|-----|----|-----|----|-----|----|-----|---|-----|----|-----|-----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 50.0 | 19 | 6 | 21 | 24 | 84 | 118 | 23 | 16 | 5 | 6 | 12 | 70 | 105 | 69 | 51 | 18 | 647 |
| < 110.0 | | | | | | | | | | | | | | | | | |
| < 210.0 | | | | | | | | | | | | | | | | | |
| >= 210.0 | | | | | | | | | | | | | | | | | |
| Totals | 19 | 6 | 21 | 24 | 84 | 118 | 23 | 16 | 5 | 6 | 12 | 70 | 105 | 69 | 51 | 18 | |

Calm : .00 %

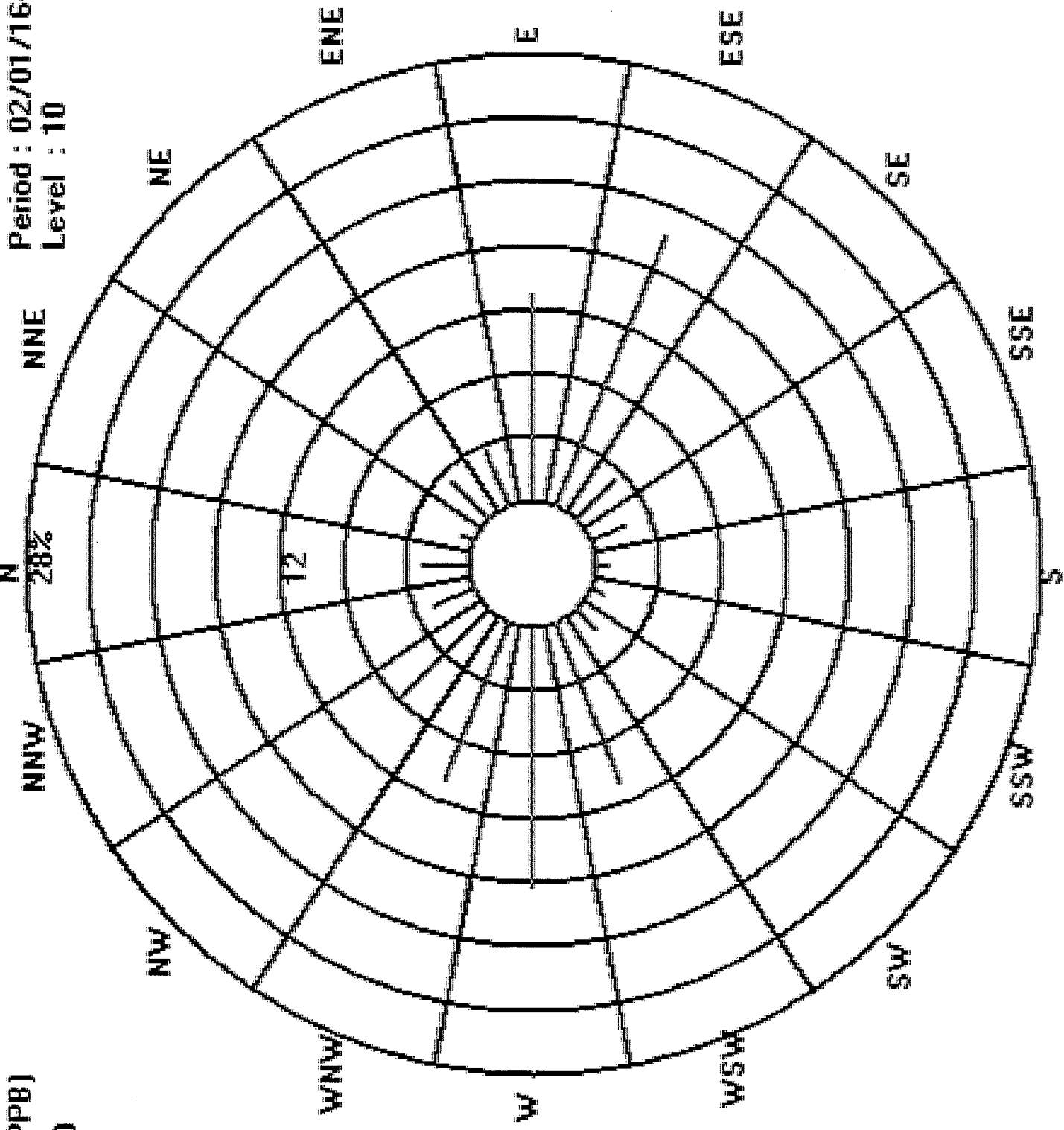
Total # Operational Hours : 647

Logger : 35 Parameter : ND2_

Site : LICA-ELK

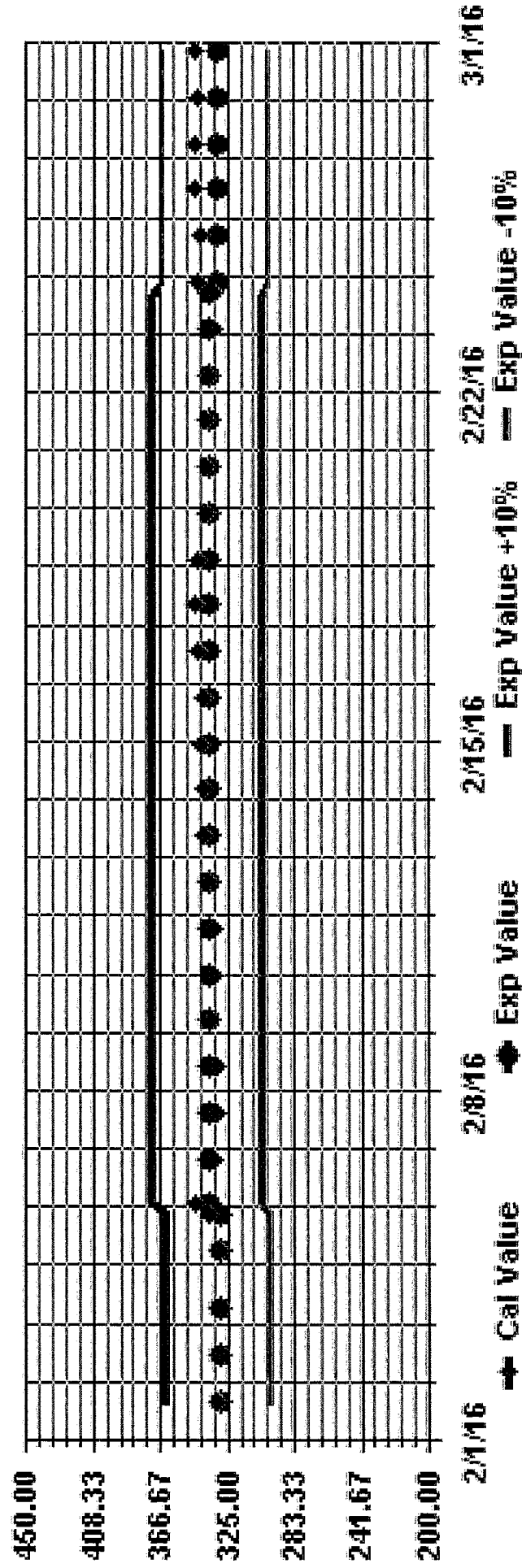
Period : 02/01/16-02/29/16

Level : 10



- Class Limits (PPB)
- >= 210.0
 - < 210.0
 - < 110.0
 - < 50.0

Calibration Graph for Site: LICA35 Parameter: NO2_ Sequence: NO2 Phase: SPAN



OZONE



OZONE (O3) hourly averages in ppb

MST

| DAY | 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. | RDGS. | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|-------|----|
| 1 | 22.0 | 24.0 | 25.3 | 26.2 | 25.3 | 25.1 | 25.0 | 24.2 | 24.0 | 24.4 | 24.7 | 23.1 | 21.8 | P | 20.0 | 13.8 | 9.1 | 2.6 | 0.8 | \$ | 2.1 | 5.7 | 10.2 | 11.3 | 26.2 | 17.8 | 23 |
| 2 | 11.1 | 10.1 | 11.6 | 10.3 | 11.6 | 10.8 | 4.4 | 1.7 | 1.2 | 1.2 | 1.1 | 1.1 | 4.6 | 13.3 | 19.5 | 17.8 | 19.9 | 14.2 | \$ | 17.0 | 13.6 | 9.8 | 13.6 | 7.0 | 19.9 | 9.8 | 24 |
| 3 | 10.4 | 14.0 | 11.6 | 21.1 | 21.0 | 25.5 | 28.5 | 29.3 | 25.4 | 17.6 | 21.2 | 18.1 | 21.9 | 18.4 | 24.0 | 23.6 | 20.8 | \$ | 17.5 | 12.4 | 6.4 | 0.5 | 0.5 | 29.3 | 17.0 | 24 | |
| 4 | 0.6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.7 | 2.4 | 1.1 | 2.1 | 2.0 | 3.9 | 9.7 | 9.0 | C | C | C | C | C | 8.2 | 7.3 | 6.0 | 3.5 | 2.1 | \$ | 0.7 | 9.7 | 24 |
| 5 | 0.6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 1.0 | 3.0 | 5.0 | 4.5 | \$1 | 6.0 | 6.5 | 7.1 | 8.2 | 3.2 | 5.9 | 6.3 | 10.6 | \$ | 10.2 | 10.4 | 10.6 | 4.2 | 23 |
| 6 | 32.3 | 32.0 | 30.6 | 27.0 | 25.1 | 28.5 | 30.7 | 29.7 | 18.0 | 15.4 | 24.2 | 28.0 | 28.8 | 27.9 | 29.6 | 29.3 | 28.8 | 27.8 | 26.0 | \$ | 26.9 | 23.0 | 20.4 | 18.3 | 32.3 | 21.8 | 24 |
| 7 | 18.3 | 16.0 | 14.4 | 8.9 | 2.2 | 0.6 | 0.5 | 0.5 | 1.7 | 5.0 | 5.5 | 2.9 | 7.4 | 15.3 | 19.0 | 24.5 | 20.1 | 14.7 | \$ | 9.6 | 17.5 | 18.6 | 12.8 | 8.3 | 24.5 | 10.6 | 24 |
| 8 | 8.0 | 4.6 | 3.0 | 3.2 | 1.2 | 0.4 | 1.0 | 1.1 | 1.0 | 1.8 | 3.4 | 3.0 | 2.3 | 4.4 | 10.0 | 6.8 | 13.0 | \$ | 12.6 | 12.3 | 10.5 | 16.8 | 19.7 | 15.0 | 19.7 | 6.7 | 24 |
| 9 | 8.0 | 4.6 | 3.0 | 3.2 | 1.2 | 0.4 | 1.0 | 1.1 | 1.0 | 1.8 | 3.4 | 3.0 | 2.3 | 4.4 | 10.0 | 6.8 | 13.0 | \$ | 12.6 | 12.3 | 10.5 | 16.8 | 19.7 | 15.0 | 19.7 | 6.7 | 24 |
| 10 | 16.3 | 21.3 | 20.8 | 22.6 | 25.7 | 23.5 | 21.9 | 22.7 | 26.8 | 27.7 | 27.6 | 27.8 | 27.5 | 26.6 | 26.9 | 26.8 | \$ | 27.3 | 27.3 | 26.5 | 25.8 | 28.6 | 29.4 | 29.1 | 29.4 | 25.5 | 24 |
| 11 | 28.3 | 27.5 | 27.3 | 26.7 | 27.4 | 27.7 | 27.9 | 27.7 | 27.2 | 26.6 | 26.8 | 26.5 | 26.6 | 26.7 | 27.3 | \$ | 28.0 | 28.6 | 29.0 | 30.4 | 30.6 | 29.2 | 28.7 | 27.7 | 30.6 | 27.8 | 24 |
| 12 | 23.3 | 25.6 | 27.7 | 25.4 | 24.9 | 28.2 | 29.2 | 28.6 | 28.3 | 27.6 | 27.7 | 27.9 | 28.5 | 29.5 | \$ | 29.6 | 30.3 | 30.7 | 30.4 | 29.9 | 29.7 | 29.0 | 28.5 | 30.7 | 28.2 | 24 | |
| 13 | 27.9 | 27.7 | 27.3 | 26.7 | 26.4 | 25.8 | 24.8 | 22.6 | 22.1 | 20.0 | 19.8 | 16.6 | 17.3 | \$ | 20.3 | 19.9 | 21.2 | 12.1 | 10.9 | 20.0 | 20.6 | 18.7 | 18.9 | 22.7 | 27.9 | 21.3 | 24 |
| 14 | 21.7 | 12.2 | 10.2 | 1.4 | 3.9 | 6.8 | 0.7 | 6.4 | 12.7 | 18.4 | 20.2 | 24.1 | \$ | 30.2 | 31.4 | 29.3 | 30.5 | 27.6 | 23.3 | 18.0 | 18.6 | 16.2 | 11.5 | 5.6 | 31.4 | 16.5 | 24 |
| 15 | 0.6 | 1.2 | 2.6 | 3.5 | 3.4 | 1.7 | 1.5 | 1.2 | 1.2 | 1.8 | 2.2 | \$ | 13.1 | 16.8 | 19.4 | 18.4 | 20.7 | 19.7 | 18.8 | 17.7 | 18.2 | 16.5 | 18.4 | 6.0 | 20.7 | 9.8 | 24 |
| 16 | 12.9 | 11.4 | 17.2 | 20.1 | 21.1 | 20.0 | 18.5 | 18.6 | 17.5 | 17.8 | \$ | 20.0 | 18.7 | 19.0 | 16.3 | 11.8 | 11.0 | 14.3 | 13.7 | 3.1 | 1.1 | 4.4 | 4.2 | 1.9 | 21.1 | 13.7 | 24 |
| 17 | 2.9 | 2.5 | 0.8 | 0.6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.8 | \$ | 1.3 | 1.4 | 1.3 | 1.9 | 5.6 | 10.7 | 6.8 | 8.8 | 13.0 | 11.2 | 9.9 | 4.3 | 13.1 | 13.7 | 4.9 | 24 | |
| 18 | 15.3 | 19.2 | 23.4 | 25.2 | 25.1 | 25.3 | 25.0 | 24.1 | \$ | 22.5 | 21.8 | 18.8 | 18.2 | 19.5 | 19.7 | 19.3 | 19.0 | 16.8 | 15.6 | 15.7 | 14.5 | 10.1 | 9.7 | 10.0 | 25.3 | 18.9 | 24 |
| 19 | 11.3 | 14.4 | 15.9 | 15.1 | 17.9 | 17.6 | 18.6 | \$ | 21.9 | 23.1 | 23.9 | 23.3 | 22.8 | 24.2 | 23.1 | 23.5 | 24.1 | 23.4 | 17.6 | 19.2 | 23.0 | 21.8 | 21.4 | 24.2 | 20.5 | 24 | |
| 20 | 21.6 | 22.0 | 21.8 | 21.9 | 22.1 | 22.4 | \$ | 22.4 | 23.0 | 24.0 | 23.8 | 22.7 | 23.9 | 22.9 | 24.4 | 24.1 | 22.6 | 20.9 | 19.8 | 15.1 | 17.7 | 20.8 | 20.1 | 18.6 | 24.4 | 21.7 | 24 |
| 21 | 16.6 | 16.3 | 16.3 | 15.1 | 14.7 | \$ | 11.1 | 5.2 | 4.8 | 4.7 | 6.2 | 6.5 | 8.3 | 16.4 | 29.9 | 33.8 | 34.4 | 29.0 | 20.3 | 24.9 | 22.4 | 22.8 | 21.3 | 18.4 | 34.4 | 17.4 | 24 |
| 22 | 13.5 | 10.5 | 17.0 | 20.0 | \$ | 7.3 | 1.9 | 12.8 | 17.1 | 17.2 | 26.7 | 28.6 | 31.1 | 31.4 | 31.6 | 29.2 | 18.9 | 28.7 | 28.2 | 31.5 | 30.4 | 31.0 | 30.0 | 31.6 | 22.8 | 24 | |
| 23 | 30.1 | 27.3 | 26.0 | \$ | 27.7 | 28.3 | 27.8 | 27.1 | 25.5 | 26.3 | 29.5 | 27.9 | 29.1 | 30.7 | 31.2 | 31.1 | 31.0 | 29.8 | 23.7 | 18.2 | 29.2 | 31.3 | 25.5 | 25.1 | 31.3 | 27.8 | 24 |
| 24 | 24.1 | 24.9 | \$ | 27.2 | 19.2 | 19.4 | 19.1 | 17.7 | 9.9 | 9.5 | 25.4 | 30.9 | 32.6 | 33.5 | 37.6 | 35.2 | 34.3 | 28.8 | 24.0 | 13.6 | 7.6 | 5.9 | 8.5 | 13.9 | 37.6 | 21.9 | 24 |
| 25 | 17.3 | \$ | 23.2 | 21.4 | 22.7 | 22.3 | 22.2 | 14.5 | 22.4 | 30.3 | 30.1 | 30.6 | 32.0 | 36.3 | 37.5 | 38.1 | 42.0 | 43.9 | 41.5 | 37.9 | 27.4 | 30.1 | 33.7 | 30.6 | 43.9 | 29.9 | 24 |
| 26 | \$ | 35.7 | 36.9 | 38.4 | 34.4 | 25.3 | 27.1 | 29.6 | 30.2 | 33.2 | 35.6 | 37.7 | 40.0 | 42.2 | 40.6 | 38.1 | 39.5 | 33.9 | 24.0 | 19.3 | 24.8 | 21.1 | 7.0 | \$ | 42.2 | 31.6 | 24 |
| 27 | 7.6 | 1.9 | 0.5 | 0.5 | 0.4 | 10.9 | 21.3 | 15.1 | 24.2 | 17.2 | 19.3 | 24.7 | 32.5 | 34.1 | 34.5 | 32.5 | 32.1 | 32.0 | 30.6 | 29.1 | 33.2 | 29.2 | \$ | 20.4 | 34.5 | 21.0 | 24 |
| 28 | 23.5 | 24.0 | 21.0 | 21.9 | 23.8 | 16.8 | 16.5 | 19.7 | 28.5 | 31.9 | 31.3 | 33.6 | 36.4 | 41.3 | 42.2 | 40.4 | 40.2 | 40.4 | 39.5 | 38.5 | 37.8 | \$ | 36.5 | 35.2 | 42.2 | 31.3 | 24 |
| 29 | 34.0 | 35.7 | 36.9 | 38.4 | 34.4 | 30.9 | 29.2 | 29.7 | 30.2 | 33.2 | 35.6 | 37.7 | 40.0 | 42.2 | 42.2 | 40.4 | 42.0 | 43.9 | 41.5 | 38.5 | 37.8 | 18.9 | 18.9 | 18.9 | 17.1 | 24 | |
| HOURLY MAX | 34.0 | 35.7 | 36.9 | 38.4 | 34.4 | 30.9 | 29.2 | 29.7 | 30.2 | 33.2 | 35.6 | 37.7 | 40.0 | 42.2 | 42.2 | 40.4 | 42.0 | 43.9 | 41.5 | 38.5 | 37.8 | 32.0 | 36.5 | 35.2 | | | |
| HOURLY AVG | 16.5 | 16.8 | 17.0 | 16.9 | 16.7 | 16.4 | 15.6 | 15.6 | 16.7 | 17.9 | 19.5 | 20.8 | 22.2 | 24.4 | 25.7 | 25.1 | 24.8 | 23.0 | 21.5 | 19.8 | 18.9 | 18.9 | 18.9 | 17.1 | | | |

STATUS FLAG CODES

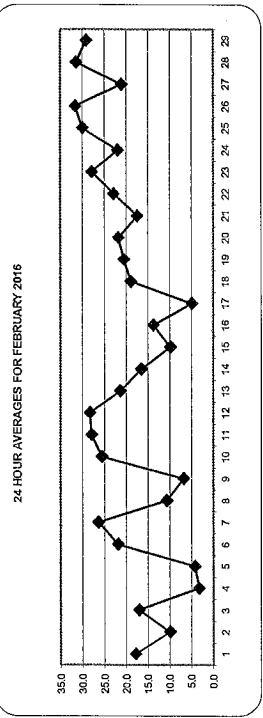
| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION | R | RECOVERY |
| Y | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | OUT FOR REPAIR |
| ST | REPEAT ZERO/SPAN CHECK | P | POWER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

OBJECTIVE LIMIT:

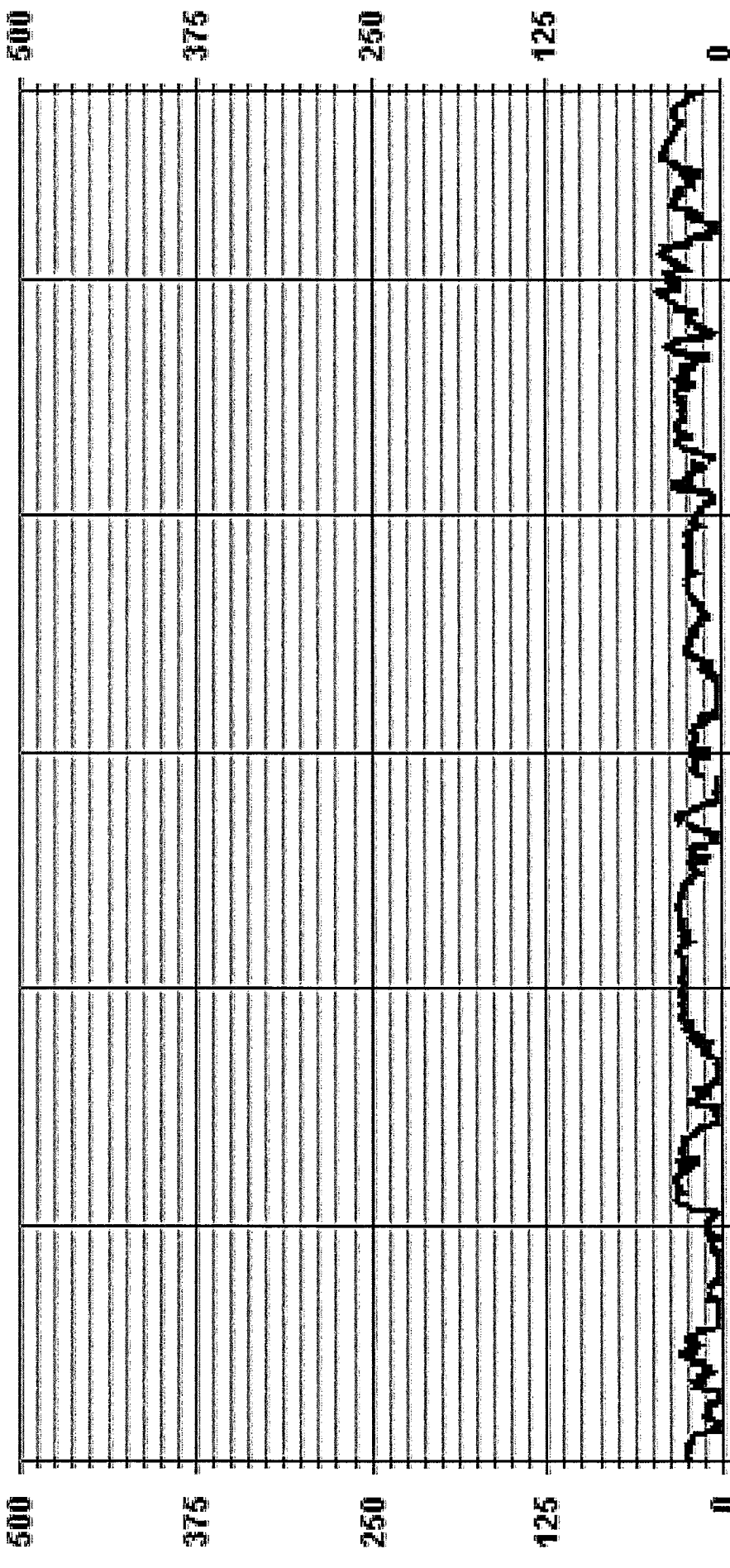
ALBERTA ENVIRONMENT: 2 HR: 82 PPB

MONTHLY SUMMARY

| | |
|------------------------------|----------|
| NUMBER OF 1-HR EXCEEDENCES | 0 |
| NUMBER OF NON-ZERO READINGS: | 660 |
| MINIMUM 1-HR AVERAGE | 0.4 PPB |
| MAXIMUM 1-HR AVERAGE | 43.9 PPB |
| MAXIMUM 24-HR AVERAGE | 31.6 PPB |
| IS CALIBRATION TIME: | 30 HRS |
| MONTHLY CALIBRATION TIME: | 4 HRS |
| STANDARD DEVIATION: | 10.72 |
| OPERATIONAL TIME: | 694 HRS |
| AMD OPERATION UPTIME: | 95.7 % |
| MONTHLY AVERAGE: | 19.4 PPB |
| ON DAY(S) | 5, 4 |
| ON DAY(S) | 17 |
| ON DAY(S) | 26 |
| VAR-VARIOUS | |

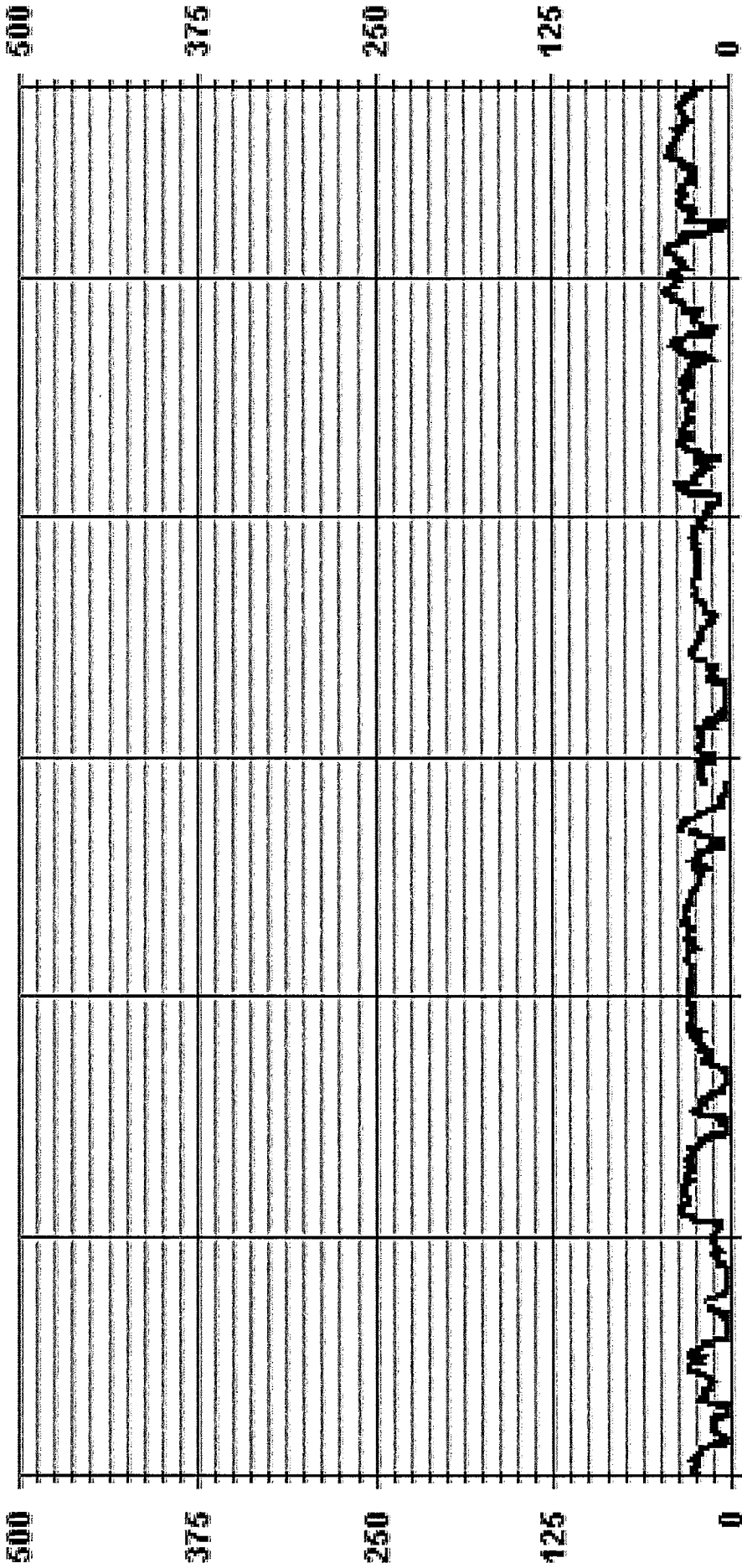


01 Hour Averages



— LICA35_03_PPB

01 Hour Averages



— LICA35 O3MAX PPB

LICA-ELK
 O3_ / WDR Joint Frequency Distribution (Percent)

February 2016

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA-ELK
 Parameter : O3
 Units : PPF

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|-----|------|------|-------|-------|------|------|------|------|------|-------|-------|-------|------|------|--------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 50.0 | 2.88 | .91 | 3.19 | 3.64 | 12.61 | 18.38 | 3.49 | 2.43 | 1.06 | 1.36 | 1.97 | 10.94 | 16.10 | 10.48 | 7.75 | 2.73 | 100.00 |
| < 110.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 210.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.88 | .91 | 3.19 | 3.64 | 12.61 | 18.38 | 3.49 | 2.43 | 1.06 | 1.36 | 1.97 | 10.94 | 16.10 | 10.48 | 7.75 | 2.73 | |

Calm : .00 %

Total # Operational Hours : 658

Distribution By Samples

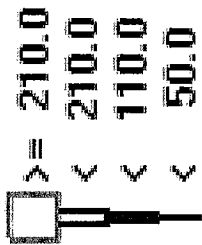
| Limit | Direction | | | | | | | | | | | | | | | | |
|----------|-----------|-----|----|-----|----|-----|----|-----|---|-----|----|-----|-----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | Freq |
| < 50.0 | 19 | 6 | 21 | 24 | 83 | 121 | 23 | 16 | 7 | 9 | 13 | 72 | 106 | 69 | 51 | 18 | 658 |
| < 110.0 | | | | | | | | | | | | | | | | | |
| < 210.0 | | | | | | | | | | | | | | | | | |
| >= 210.0 | | | | | | | | | | | | | | | | | |
| Totals | 19 | 6 | 21 | 24 | 83 | 121 | 23 | 16 | 7 | 9 | 13 | 72 | 106 | 69 | 51 | 18 | |

Calm : .00 %

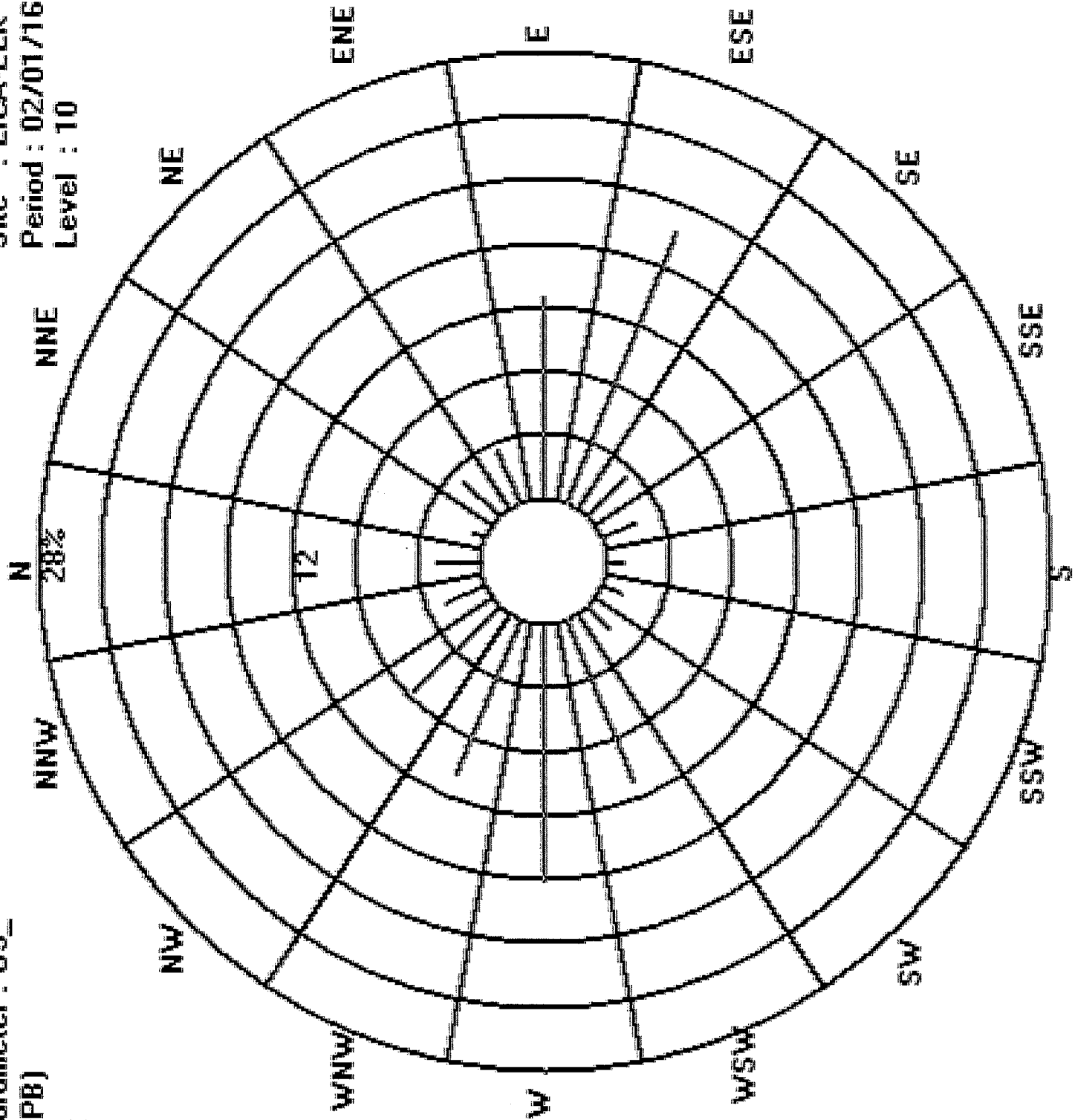
Total # Operational Hours : 658

Logger : 35 Parameter : 03_

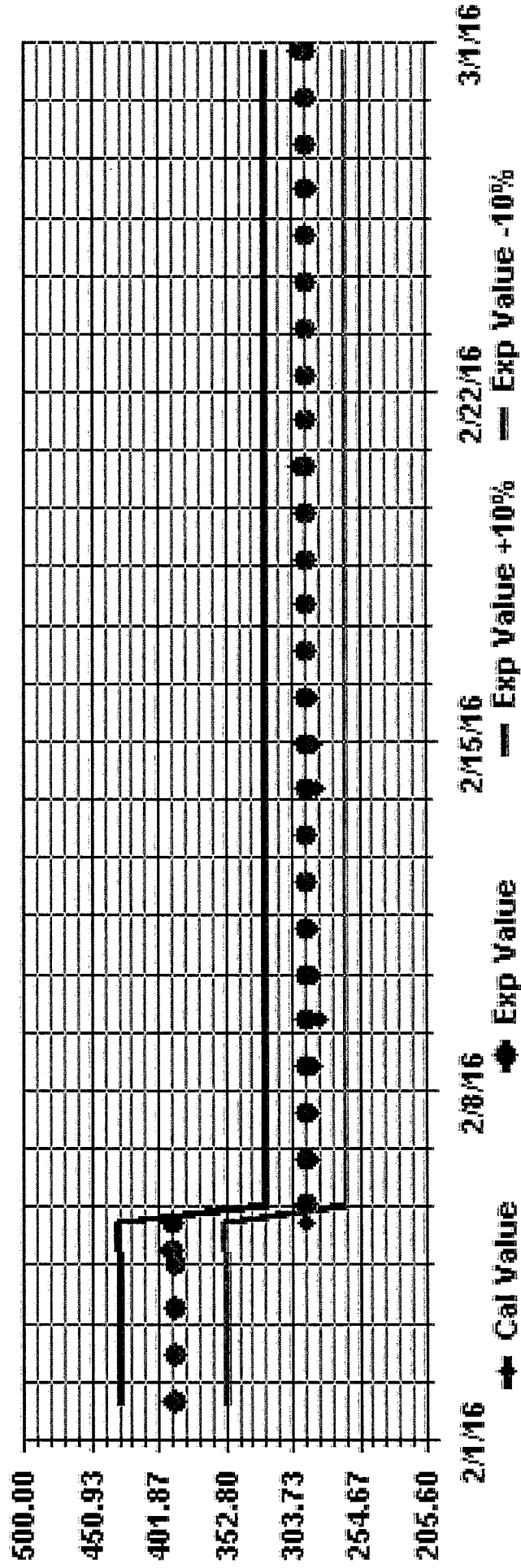
Class Limits (PPB)



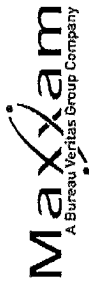
Site : LICA-ELK
Period : 02/01/16-02/29/16
Level : 10



Calibration Graph for Site: LICA35 Parameter: O3_NEW Sequence: O3_NEW Phase: SPAN



PARTICULATE MATTER 2.5



PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5) hourly averages in ug/m3

MST

| DAY | 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 MAX | 24-HOUR AVG. | RDGS. | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|--------------|-------|----|
| 1 | 1 | 2 | 2 | 0 | 2 | 2 | 1 | 1 | 0 | 3 | 5 | 5 | 1 | P | 0 | 3 | 4 | 4 | 3 | X | 8 | 6 | 3 | 6 | 5 | 8 | 2.5 | 22 |
| 2 | 4 | 9 | 5 | 7 | 6 | 4 | 8 | 8 | 0 | 9 | 9 | 9 | 16 | 15 | 11 | 8 | 8 | 4 | 4 | 13 | 13 | 11 | 12 | 13 | 16 | 8.7 | 24 | |
| 3 | 11 | 12 | 11 | 9 | 7 | 3 | 0 | 2 | 1 | 2 | 2 | 11 | 6 | 7 | 0 | 7 | 5 | 1 | 5 | 10 | 9 | 7 | 9 | 8 | 12 | 5.9 | 24 | |
| 4 | 0 | 15 | 1 | 8 | 5 | 7 | 1 | 10 | 0 | 8 | 5 | 2 | 1 | 4 | 7 | 3 | C | 5 | 9 | 10 | 14 | 11 | 15 | 6.2 | 15 | 6.2 | 24 | |
| 5 | 17 | 9 | 12 | 7 | 10 | 17 | 13 | 18 | 23 | 17 | 21 | 20 | 17 | 16 | 12 | 10 | 11 | 13 | 11 | 9 | 8 | 13 | 14 | 15 | 23 | 13.8 | 24 | |
| 6 | 13 | 39 | 26 | 13 | 12 | 11 | 13 | 10 | 3 | 5 | 0 | 3 | 0 | 0 | 4 | 2 | 1 | 0 | 3 | 1 | 1 | 1 | 0 | 0 | 39 | 6.6 | 24 | |
| 7 | 0 | 1 | 1 | X | 3 | 6 | 4 | 4 | 1 | X | 0 | 1 | 0 | 1 | 1 | 3 | 2 | 0 | 7 | 3 | 1 | 7 | 4 | 6 | 7 | 2.4 | 22 | |
| 8 | 4 | 4 | 0 | 4 | 6 | 3 | 6 | 13 | 4 | 7 | 9 | 7 | 6 | 2 | 9 | 4 | 2 | 6 | 4 | 4 | 7 | 6 | 3 | 13 | 13 | 5.4 | 24 | |
| 9 | 13 | 16 | 13 | 14 | 12 | 13 | 21 | 18 | 19 | 18 | 20 | 21 | 21 | 13 | 8 | 12 | 7 | 10 | 6 | 9 | 5 | 6 | 5 | 4 | 21 | 12.5 | 24 | |
| 10 | 4 | 1 | 5 | 0 | X | 4 | 0 | 0 | 0 | 4 | 10 | 2 | 0 | 1 | 5 | 6 | 0 | 7 | 5 | 4 | 1 | 0 | X | 1 | 10 | 2.6 | 22 | |
| 11 | 1 | 1 | 1 | 8 | 7 | 9 | 2 | 9 | 6 | 4 | 4 | 1 | 7 | 3 | 5 | 4 | 3 | 0 | 8 | 0 | 8 | 0 | 8 | 0 | 9 | 3.9 | 23 | |
| 12 | 3 | 4 | 3 | 13 | 1 | 2 | 6 | 0 | 0 | 4 | 4 | 2 | 0 | 4 | 1 | 5 | 1 | 2 | 10 | X | 8 | 7 | X | 6 | 13 | 3.7 | 22 | |
| 13 | X | 6 | 1 | 12 | 1 | 7 | 3 | 7 | 4 | 6 | 3 | 11 | 8 | 16 | 17 | 12 | 4 | 13 | 8 | 5 | 6 | 7 | 4 | 17 | 7.6 | 23 | | |
| 14 | 6 | 7 | 3 | 9 | 9 | 9 | 13 | 7 | 12 | 13 | 10 | 1 | 2 | 2 | 5 | 0 | 1 | 4 | 2 | 0 | 1 | 3 | 5 | 4 | 13 | 4.9 | 24 | |
| 15 | 7 | 9 | 8 | 9 | 5 | 4 | 7 | 7 | 8 | 10 | 7 | 10 | 5 | 3 | 2 | 6 | 4 | 6 | 3 | 6 | 2 | 4 | 4 | 5 | 10 | 5.9 | 24 | |
| 16 | 4 | 8 | 6 | 1 | 5 | 2 | 6 | 6 | 9 | 11 | 3 | 2 | 8 | 5 | 4 | C | 7 | 14 | 10 | 3 | 4 | 7 | 5 | 14 | 5.7 | 24 | | |
| 17 | 8 | 4 | 8 | 11 | 7 | 9 | 7 | 11 | 7 | 6 | 12 | 9 | 11 | 17 | 9 | 8 | 6 | 13 | 9 | 8 | 9 | 9 | 5 | 8 | 17 | 8.6 | 24 | |
| 18 | 6 | 4 | 9 | 2 | 4 | 10 | 10 | 10 | 9 | 6 | 2 | 4 | 8 | 5 | 9 | 8 | 10 | 3 | 5 | 4 | 7 | 0 | 7 | 0 | 10 | 6.2 | 24 | |
| 19 | 4 | 5 | 4 | 3 | 7 | 4 | 6 | 4 | 2 | 0 | 2 | 1 | 2 | 1 | 0 | 3 | 2 | 2 | 4 | 5 | 2 | 3 | 5 | 7 | 7 | 2.5 | 24 | |
| 20 | 0 | 1 | 0 | 0 | 4 | 1 | 1 | 4 | X | 3 | 0 | 4 | 0 | 1 | 4 | 2 | 2 | 2 | 4 | 5 | 2 | 3 | 5 | 7 | 7 | 2.3 | 23 | |
| 21 | 5 | 6 | 8 | 7 | 5 | 7 | 9 | 12 | 11 | 10 | 9 | 9 | 10 | 11 | 3 | 3 | 3 | 2 | 4 | 1 | 4 | 7 | 3 | 1 | 0 | 14 | 4.3 | 24 |
| 22 | 14 | 9 | 10 | 10 | 8 | 4 | 2 | 6 | 3 | 5 | 0 | 2 | 3 | 3 | 3 | 2 | 4 | 1 | 4 | 7 | 3 | 1 | 0 | 14 | 4.3 | 24 | | |
| 23 | 0 | 1 | 1 | 1 | 6 | 2 | 4 | 3 | 4 | 3 | 1 | 4 | 0 | 0 | 4 | 5 | 1 | 0 | 1 | 1 | 5 | 0 | 1 | 0 | 6 | 2.0 | 24 | |
| 24 | 0 | 0 | 1 | 5 | 5 | 1 | 3 | 4 | 1 | 2 | 0 | 0 | 0 | X | 0 | 0 | 1 | 6 | 4 | 0 | 9 | 2 | 6 | 9 | 9 | 2.5 | 23 | |
| 25 | 7 | 13 | 8 | 13 | 11 | 5 | 8 | 8 | 9 | 8 | 15 | 9 | 9 | 9 | 9 | 6 | 5 | 3 | 1 | 7 | 1 | 5 | 4 | 15 | 7.2 | 24 | | |
| 26 | 3 | 2 | 6 | 5 | 3 | 3 | 5 | 4 | 6 | 4 | 6 | 4 | 3 | 6 | 4 | 1 | 5 | 6 | 3 | 3 | 3 | 6 | 8 | 7 | 8 | 4.2 | 24 | |
| 27 | 3 | 10 | 10 | 5 | 3 | 5 | 4 | 4 | 4 | 10 | 7 | 7 | 3 | 3 | 3 | 0 | 4 | 0 | 2 | 6 | 0 | 0 | 0 | 1 | 10 | 3.8 | 24 | |
| 28 | 0 | 3 | 2 | 3 | 5 | 3 | 3 | 7 | 0 | 4 | 4 | 0 | 0 | 0 | 2 | 1 | 0 | 2 | 1 | 0 | 2 | 0 | 0 | 5 | 7 | 2.4 | 24 | |
| 29 | 7 | X | 6 | 0 | 3 | 4 | 2 | 1 | 4 | 2 | 4 | 2 | 3 | 5 | 2 | 1 | 1 | 5 | 3 | 5 | 3 | 4 | 3 | 7 | 7 | 3.1 | 23 | |
| HOURLY MAX | 17 | 39 | 26 | 14 | 12 | 17 | 21 | 18 | 23 | 18 | 21 | 21 | 21 | 17 | 16 | 17 | 12 | 13 | 14 | 13 | 13 | 14 | 14 | 15 | | | | |
| HOURLY AVG | 5.1 | 7.0 | 5.8 | 6.0 | 5.5 | 5.4 | 5.8 | 6.7 | 5.6 | 6.1 | 6.1 | 5.8 | 5.1 | 5.4 | 4.6 | 4.5 | 3.7 | 4.3 | 5.1 | 4.5 | 4.8 | 4.9 | 5.0 | 5.5 | | | | |

STATUS FLAG CODES

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

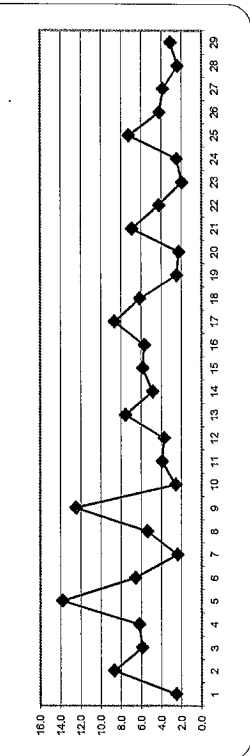
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 24-HR: 30 ug/m3

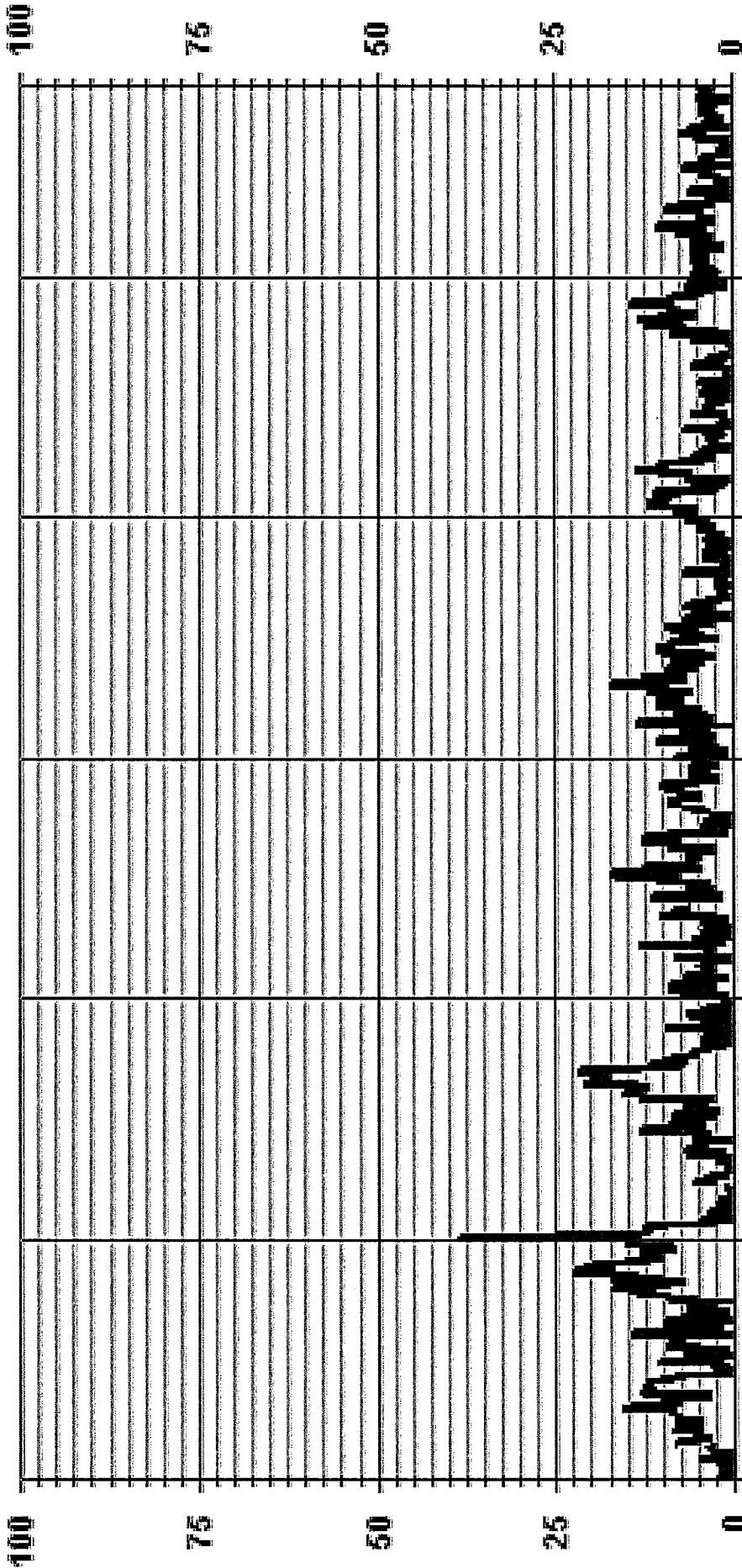
MONTHLY SUMMARY

| | | | | | |
|------------------------------|------------|-----------------------|-----------|-------------|-----|
| NUMBER OF 24-HR EXCEEDENCES: | 0 | | | | |
| NUMBER OF NON-ZERO READINGS: | 615 | | | | |
| MINIMUM 1-HR AVERAGE | 0 ug/m3 | @ HOUR(S) | VAR | ON DAY(S) | VAR |
| MAXIMUM 1-HR AVERAGE: | 39 ug/m3 | @ HOUR(S) | 1 | ON DAY(S) | 6 |
| MAXIMUM 24-HR AVERAGE: | 13.8 ug/m3 | | | ON DAY(S) | 5 |
| | | | | VAR-VARIOUS | |
| MONTHLY CALIBRATION TIME: | 4 HRS | OPERATIONAL TIME: | 683 HRS | | |
| STANDARD DEVIATION: | 4.60 | AMD OPERATION UPTIME: | 98.1 % | | |
| | | MONTHLY AVERAGE: | 5.4 ug/m3 | | |

24 HOUR AVERAGES FOR FEBRUARY 2016



01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA35 PM2 UG/M3

PM2 / WDR Joint Frequency Distribution (Percent)
 LICA-ELK
 February 2016

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA-ELK
 Parameter : PM2
 Units : UG/M3

Wind Parameter : WDR
 Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|-----|------|------|-------|-------|------|------|-----|------|------|-------|-------|-------|------|------|-------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 30.0 | 2.94 | .88 | 3.24 | 3.53 | 12.66 | 18.11 | 3.38 | 2.35 | .88 | 1.47 | 2.06 | 10.89 | 16.34 | 10.45 | 8.10 | 2.50 | 99.85 |
| < 60.0 | .00 | .00 | .00 | .00 | .14 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .14 |
| < 80.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 120.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| < 240.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| >= 240.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| Totals | 2.94 | .88 | 3.24 | 3.53 | 12.81 | 18.11 | 3.38 | 2.35 | .88 | 1.47 | 2.06 | 10.89 | 16.34 | 10.45 | 8.10 | 2.50 | |

Calm : .00 %

Total # Operational Hours : 679

Distribution By Samples

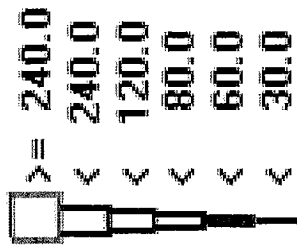
| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|----------|-----------|-----|----|-----|----|-----|----|-----|---|-----|----|-----|-----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 30.0 | 20 | 6 | 22 | 24 | 86 | 123 | 23 | 16 | 6 | 10 | 14 | 74 | 111 | 71 | 55 | 17 | 678 |
| < 60.0 | | | | | 1 | | | | | | | | | | | | 1 |
| < 80.0 | | | | | | | | | | | | | | | | | |
| < 120.0 | | | | | | | | | | | | | | | | | |
| < 240.0 | | | | | | | | | | | | | | | | | |
| >= 240.0 | | | | | | | | | | | | | | | | | |
| Totals | 20 | 6 | 22 | 24 | 87 | 123 | 23 | 16 | 6 | 10 | 14 | 74 | 111 | 71 | 55 | 17 | |

Calm : .00 %

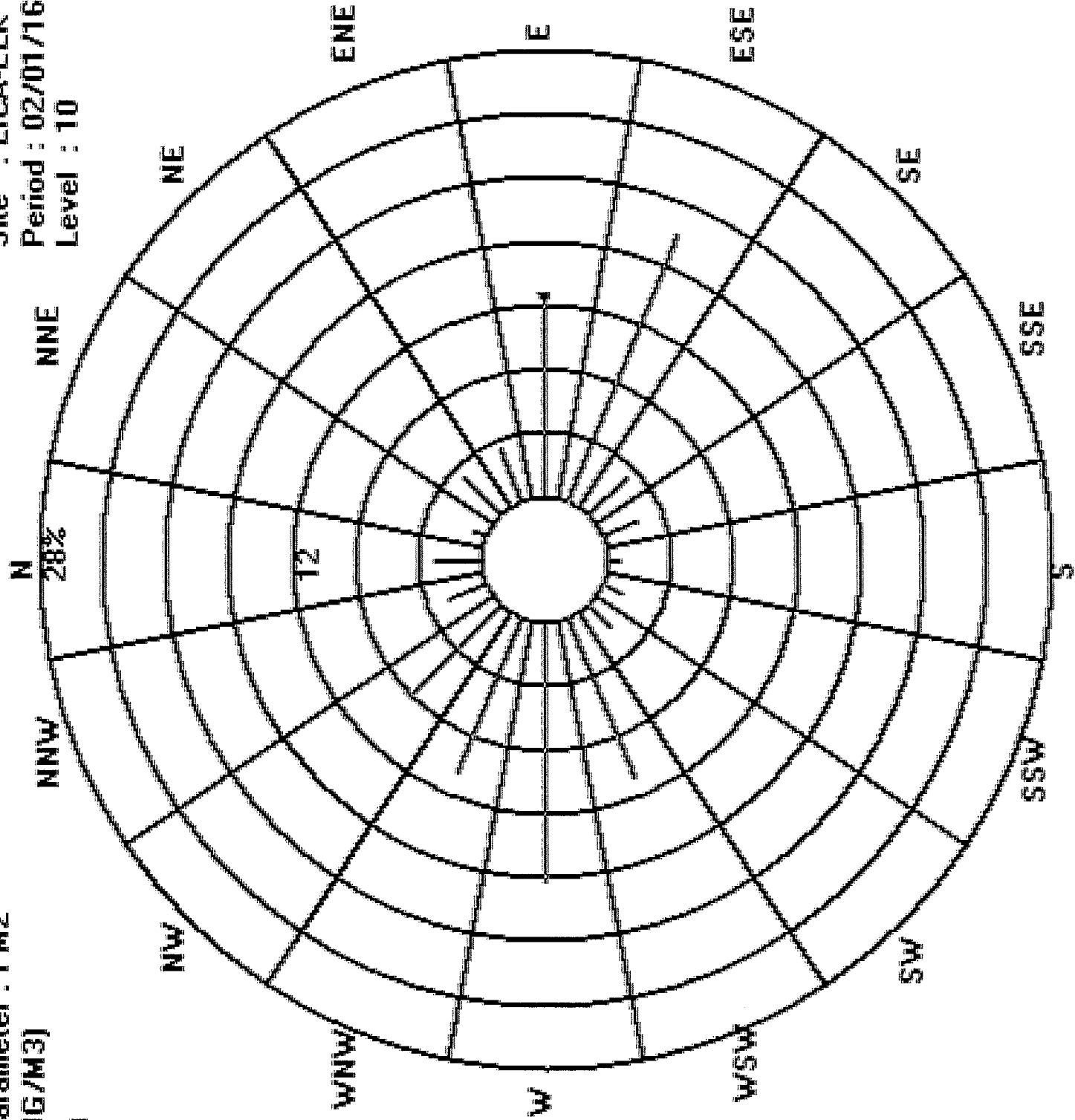
Total # Operational Hours : 679

Logger : 35 Parameter : PM2

Class Limits (UG/M3)



Site : LICA-ELK
Period : 02/01/16-02/29/16
Level : 10



WIND SPEED



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Elk Point Airport Site - FEBRUARY 2016
JOB # 2833-2016-02-35- C

WIND SPEED (WS) hourly averages in km/hr

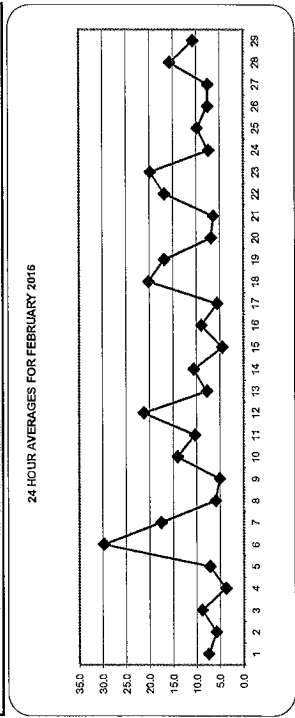
MST

| DAY | HOUR START | | | | | | | | | | | | | | | | | | | | | | | | 24-HOUR AVG. | RDS. | |
|------------|------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|------|----|
| | 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 | | | |
| 1 | 11.7 | 9.9 | 13.2 | 10.0 | 10.2 | 14.9 | 12.6 | 9.5 | 9.5 | 7.5 | 3.7 | 2.7 | 6.0 | P | 3.1 | 1.4 | 3.2 | 5.8 | 5.1 | 5.9 | 5.0 | 7.5 | 8.4 | 7.4 | 14.9 | 7.6 | 23 |
| 2 | 9.3 | 8.5 | 6.0 | 5.1 | 3.0 | 1.9 | 0.6 | 0.3 | 0.6 | 0.1 | 2.1 | 2.4 | 5.0 | 10.3 | 16.7 | 12.5 | 10.3 | 5.4 | 8.8 | 8.0 | 4.7 | 9.2 | 7.5 | 4.0 | 16.7 | 5.9 | 24 |
| 3 | 8.1 | 8.7 | 13.7 | 17.4 | 14.4 | 20.4 | 19.0 | 15.5 | 7.7 | 4.5 | 9.4 | 12.8 | 13.3 | 9.3 | 8.6 | 5.9 | 4.3 | 6.5 | 3.6 | 2.7 | 2.7 | 2.7 | 2.6 | 0.8 | 20.4 | 8.9 | 24 |
| 4 | 1.9 | 2.0 | 0.6 | 0.0 | 0.6 | 1.7 | 2.9 | 3.5 | 4.3 | 1.6 | 1.6 | 2.9 | 6.3 | 8.9 | 8.4 | 7.5 | 7.2 | 10.7 | 8.3 | 5.2 | 2.5 | 2.2 | 0.7 | 1.5 | 10.7 | 3.9 | 24 |
| 5 | 3.3 | 3.1 | 2.3 | 3.0 | 5.0 | 6.3 | 4.8 | 5.0 | 4.1 | 5.2 | 8.6 | 9.0 | 9.8 | 11.9 | 10.7 | 9.1 | 11.2 | 9.7 | 8.9 | 9.8 | 10.6 | 8.8 | 6.7 | 8.4 | 11.9 | 7.3 | 24 |
| 6 | 8.3 | 8.9 | 7.1 | 5.4 | 2.1 | 1.5 | 2.4 | 6.8 | 17.4 | 29.5 | 33.4 | 39.3 | 41.1 | 41.3 | 45.5 | 47.3 | 51.8 | 47.7 | 52.4 | 48.2 | 46.7 | 45.5 | 45.9 | 38.6 | 52.4 | 29.8 | 24 |
| 7 | 35.3 | 30.3 | 27.2 | 21.9 | 16.8 | 17.9 | 19.9 | 19.4 | 16.2 | 13.0 | 21.7 | 20.3 | 18.7 | 19.0 | 19.1 | 16.7 | 13.6 | 12.4 | 3.5 | 14.8 | 17.1 | 10.5 | 7.2 | 10.3 | 35.3 | 17.6 | 24 |
| 8 | 5.1 | 3.7 | 3.3 | 3.1 | 2.9 | 1.0 | 2.6 | 1.0 | 2.9 | 5.9 | 3.7 | 4.3 | 4.8 | 12.9 | 13.1 | 10.4 | 9.6 | 8.0 | 6.4 | 8.6 | 7.6 | 9.1 | 7.3 | 7.5 | 13.1 | 6.0 | 24 |
| 9 | 4.9 | 0.3 | 4.8 | 6.9 | 7.5 | 5.4 | 4.7 | 5.6 | 2.5 | 0.7 | 1.0 | 1.5 | 1.9 | 0.7 | 6.1 | 5.1 | 10.9 | 12.7 | 5.4 | 9.7 | 1.5 | 6.0 | 6.7 | 12.1 | 12.7 | 5.2 | 24 |
| 10 | 13.7 | 14.2 | 14.3 | 19.0 | 19.1 | 14.1 | 12.7 | 16.4 | 14.1 | 11.3 | 12.7 | 13.0 | 12.8 | 11.2 | 9.4 | 11.7 | 13.5 | 15.1 | 14.2 | 16.0 | 16.7 | 17.7 | 13.9 | 13.6 | 19.1 | 14.2 | 24 |
| 11 | 12.4 | 12.5 | 12.3 | 11.5 | 11.3 | 10.1 | 11.3 | 10.4 | 9.7 | 10.5 | 9.6 | 9.5 | 10.3 | 8.6 | 9.7 | 9.2 | 10.3 | 8.4 | 8.7 | 13.2 | 10.9 | 11.0 | 11.5 | 9.0 | 13.2 | 10.5 | 24 |
| 12 | 7.1 | 9.7 | 11.5 | 14.0 | 16.9 | 19.3 | 22.1 | 22.2 | 21.7 | 21.4 | 21.7 | 19.7 | 23.2 | 26.9 | 28.0 | 29.1 | 27.7 | 27.7 | 27.5 | 25.8 | 23.8 | 22.8 | 22.0 | 18.3 | 29.1 | 21.3 | 24 |
| 13 | 19.0 | 16.3 | 15.2 | 14.6 | 12.1 | 8.1 | 5.1 | 3.6 | 3.9 | 5.1 | 3.6 | 2.2 | 2.0 | 1.6 | 1.4 | 9.8 | 9.0 | 3.1 | 3.1 | 6.2 | 12.6 | 5.1 | 13.5 | 13.1 | 19.0 | 7.9 | 24 |
| 14 | 7.4 | 5.8 | 4.0 | 5.6 | 6.6 | 8.2 | 4.7 | 8.4 | 13.3 | 13.2 | 11.8 | 16.8 | 18.7 | 24.3 | 23.4 | 13.3 | 13.5 | 13.5 | 14.9 | 10.3 | 7.3 | 3.6 | 3.1 | 5.0 | 24.3 | 10.7 | 24 |
| 15 | 4.4 | 4.8 | 3.5 | 4.4 | 1.8 | 1.3 | 0.9 | 3.9 | 3.3 | 0.5 | 0.6 | 2.0 | 5.8 | 9.9 | 10.1 | 10.0 | 7.9 | 5.0 | 2.2 | 9.8 | 6.0 | 4.0 | 5.2 | 2.7 | 10.1 | 4.6 | 24 |
| 16 | 7.4 | 6.2 | 11.2 | 11.7 | 15.0 | 14.7 | 12.2 | 12.2 | 11.7 | 11.3 | 12.8 | 8.7 | 10.7 | 9.9 | 10.1 | 8.8 | 7.0 | 6.7 | 6.3 | 5.5 | 6.3 | 4.1 | 1.0 | 5.1 | 15.0 | 9.0 | 24 |
| 17 | 4.3 | 1.5 | 1.1 | 4.4 | 3.8 | 4.6 | 2.7 | 4.1 | 2.7 | 6.2 | 0.3 | 3.0 | 3.4 | 3.4 | 5.7 | 7.4 | 6.6 | 11.1 | 10.6 | 9.8 | 10.1 | 9.7 | 10.1 | 8.8 | 11.1 | 5.6 | 24 |
| 18 | 5.9 | 10.4 | 10.9 | 18.8 | 21.4 | 26.3 | 25.7 | 29.0 | 29.3 | 25.6 | 26.5 | 32.9 | 29.2 | 28.5 | 27.4 | 24.9 | 24.7 | 21.8 | 18.5 | 16.2 | 12.5 | 8.1 | 6.0 | 4.5 | 32.9 | 20.2 | 24 |
| 19 | 9.6 | 15.7 | 14.2 | 21.6 | 34.1 | 30.2 | 29.5 | 32.6 | 29.2 | 14.9 | 18.5 | 17.5 | 24.1 | 19.7 | 18.3 | 13.1 | 11.6 | 12.3 | 7.4 | 4.1 | 6.1 | 4.3 | 6.5 | 10.0 | 34.1 | 16.9 | 24 |
| 20 | 7.7 | 9.4 | 7.2 | 8.1 | 9.9 | 11.0 | 8.4 | 10.0 | 8.7 | 9.1 | 3.8 | 2.9 | 3.4 | 7.7 | 4.4 | 5.3 | 4.6 | 5.8 | 4.2 | 8.3 | 8.7 | 6.8 | 5.8 | 5.4 | 11.0 | 7.0 | 24 |
| 21 | 6.7 | 5.0 | 3.9 | 1.9 | 0.8 | 0.3 | 1.3 | 6.9 | 5.5 | 1.3 | 1.3 | 2.6 | 1.7 | 5.3 | 7.6 | 9.1 | 12.2 | 12.0 | 11.9 | 13.2 | 14.4 | 13.9 | 11.3 | 5.2 | 14.4 | 6.5 | 24 |
| 22 | 5.9 | 6.3 | 11.4 | 14.8 | 17.2 | 20.3 | 20.0 | 19.4 | 21.8 | 20.2 | 16.8 | 16.1 | 20.9 | 19.3 | 20.5 | 21.0 | 18.0 | 15.9 | 15.1 | 12.1 | 13.5 | 19.3 | 20.2 | 17.9 | 21.8 | 16.8 | 24 |
| 23 | 18.4 | 22.9 | 21.9 | 20.2 | 11.8 | 13.9 | 16.6 | 23.5 | 24.5 | 22.9 | 27.0 | 30.4 | 27.3 | 32.4 | 26.7 | 32.4 | 26.7 | 13.6 | 11.0 | 13.3 | 18.3 | 13.4 | 12.2 | 13.0 | 32.4 | 19.9 | 24 |
| 24 | 16.2 | 11.0 | 8.8 | 11.3 | 10.3 | 9.3 | 13.3 | 14.8 | 9.6 | 2.0 | 2.9 | 4.7 | 2.7 | 0.1 | 6.7 | 5.2 | 7.4 | 5.5 | 5.5 | 4.9 | 6.7 | 8.8 | 4.5 | 6.9 | 16.2 | 7.5 | 24 |
| 25 | 7.5 | 7.7 | 7.5 | 8.3 | 9.5 | 8.6 | 6.8 | 6.9 | 1.8 | 7.4 | 10.4 | 7.9 | 9.2 | 9.9 | 9.2 | 9.9 | Y | 26.5 | 28.7 | 14.9 | 10.6 | 5.1 | 6.7 | 5.3 | 10.9 | 9.9 | 22 |
| 26 | 11.0 | 3.9 | 13.8 | 18.6 | 5.5 | 4.8 | 3.8 | 6.1 | 5.2 | 5.3 | 10.4 | 9.6 | 11.7 | 15.0 | 12.6 | 5.6 | 6.8 | 5.5 | 3.7 | 3.4 | 8.6 | 8.5 | 2.8 | 0.6 | 18.6 | 7.6 | 24 |
| 27 | 1.5 | 3.9 | 1.6 | 1.2 | 1.9 | 4.0 | 2.0 | 4.0 | 1.0 | 1.3 | 1.8 | 6.0 | 13.2 | 16.4 | 14.9 | 15.0 | 14.5 | 11.7 | 12.8 | 17.1 | 14.8 | 11.0 | 6.8 | 4.0 | 17.1 | 7.6 | 24 |
| 28 | 4.9 | 8.3 | 8.1 | 9.4 | 10.5 | 8.9 | 12.7 | 9.8 | 17.3 | 22.5 | 21.5 | 23.4 | 21.3 | 20.2 | 19.0 | 18.0 | 18.3 | 19.8 | 16.2 | 15.9 | 17.2 | 17.6 | 18.9 | 16.7 | 23.4 | 15.7 | 24 |
| 29 | 14.9 | 15.1 | 18.1 | 16.0 | 11.2 | 9.5 | 10.3 | 13.4 | 10.7 | 11.3 | 10.7 | 9.8 | 9.8 | 10.0 | 10.5 | 9.8 | 11.7 | 11.6 | 10.9 | 9.5 | 9.4 | 7.1 | 5.7 | 3.1 | 18.1 | 10.8 | 24 |
| 30 | 35.3 | 30.3 | 27.2 | 21.9 | 34.1 | 30.2 | 29.5 | 32.6 | 29.3 | 29.5 | 33.4 | 39.3 | 41.1 | 41.3 | 45.5 | 47.3 | 51.8 | 47.7 | 52.4 | 48.2 | 46.7 | 45.5 | 45.9 | 38.6 | 52.4 | 29.8 | 24 |
| HOURLY MAX | 35.3 | 30.3 | 27.2 | 21.9 | 34.1 | 30.2 | 29.5 | 32.6 | 29.3 | 29.5 | 33.4 | 39.3 | 41.1 | 41.3 | 45.5 | 47.3 | 51.8 | 47.7 | 52.4 | 48.2 | 46.7 | 45.5 | 45.9 | 38.6 | 52.4 | 29.8 | 24 |
| HOURLY AVG | 9.4 | 9.2 | 9.6 | 10.6 | 10.1 | 10.5 | 10.2 | 10.8 | 10.4 | 10.1 | 10.6 | 11.3 | 12.7 | 14.0 | 14.2 | 13.4 | 13.8 | 12.9 | 11.1 | 11.7 | 11.3 | 10.5 | 9.6 | 9.1 | 11.1 | 10.8 | 24 |

STATUS FLAG CODES

| | | | |
|----|------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | O | QUALITY ASSURANCE |
| CI | REPEAT CALIBRATION | R | RECOVERY |
| Y | MAINTENANCE | X | MACHINE/MAINTENANCE |
| S | DAILY ZERO/SPAN CHECK | G | OUT FOR REPAIR |
| 51 | REPEAT ZERO/SPAN CHECK | P | POWER FAILURE |

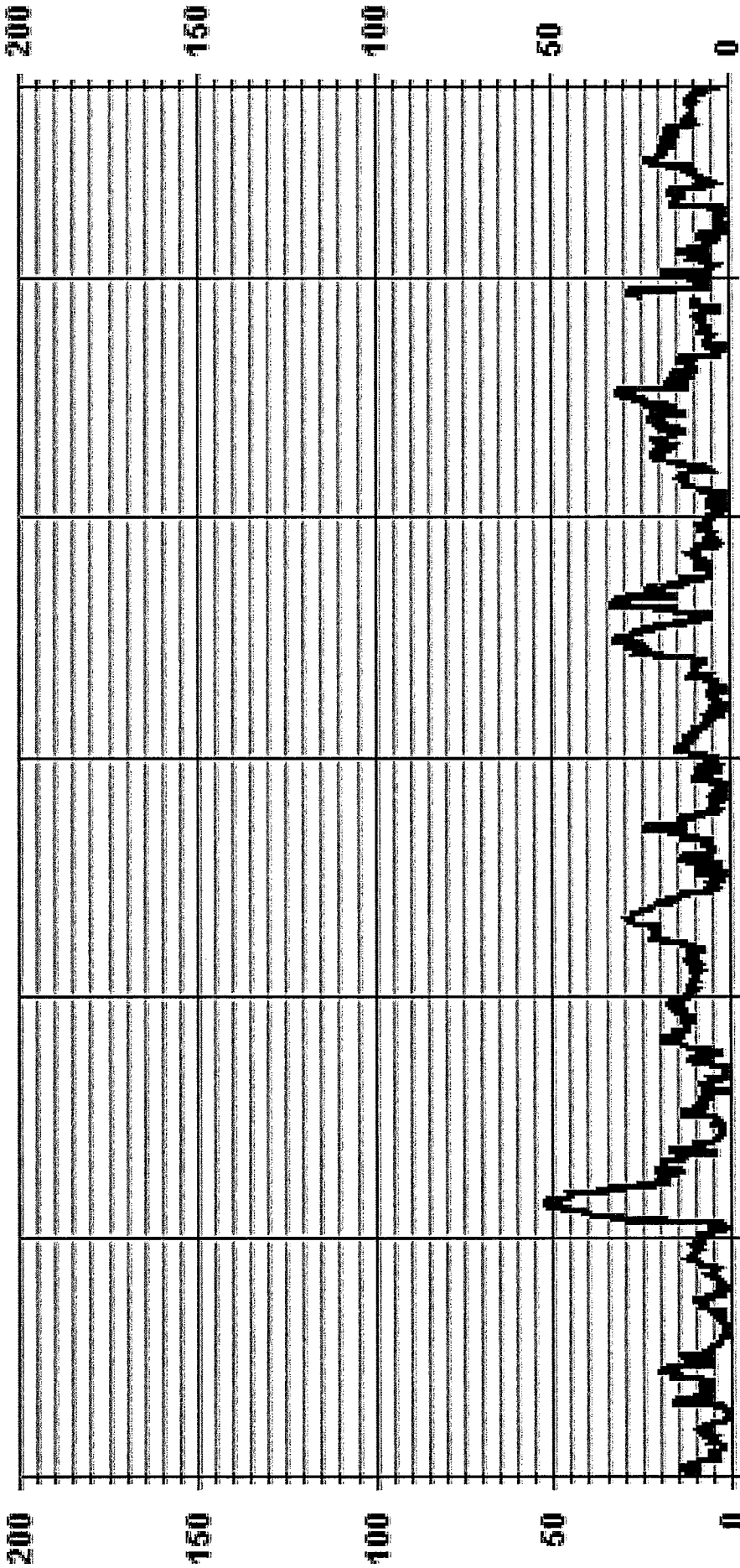
LAST CALIBRATION: January 26, 2016
DECLINATION: MAGNETIC DECLINATION 19 DEGREE EAST



MONTHLY SUMMARY

| | |
|------------------------------|--------------|
| NUMBER OF NON-ZERO READINGS: | 692 |
| MINIMUM 1-HR AVERAGE: | 0.0 KPH |
| MAXIMUM 1-HR AVERAGE: | 52.4 KPH |
| MAXIMUM 24-HR AVERAGE: | 29.8 KPH |
| MONTHLY CALIBRATION TIME: | 0 HRS |
| STANDARD DEVIATION: | 8.52 |
| OPERATIONAL TIME: | 693 HRS |
| AMID OPERATION UPTIME: | 99.6 % |
| MONTHLY AVERAGE: | 11.1 KPH |
| @ HOUR(S) | 3 ON DAY(S) |
| @ HOUR(S) | 18 ON DAY(S) |
| VAR-VARIOUS | 6 ON DAY(S) |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA35 WSP KPH



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
 Elk Point Airport Site - FEBRUARY 2016
 JOB # 2833-2016-02-35-C

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

| DAY | 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 | 24:00 | | |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|----|
| HR START | 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 | | | |
| HR END | 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 | | | | | | | | | | | | | | | | | | | | | | | | | DAILY | 24-HOUR | |
| | | | | | | | | | | | | | | | | | | | | | | | | | MAX. | AVG. | |
| 1 | 22.5 | 18.6 | 23.3 | 21.3 | 22.6 | 26.0 | 22.0 | 16.5 | 13.7 | 14.2 | 10.1 | 9.7 | 14.6 | P | 10.5 | 4.9 | 5.9 | 8.6 | 7.1 | 8.5 | 8.2 | 12.4 | 12.3 | 11.0 | 26.0 | 14.1 | 23 |
| 2 | 12.8 | 12.4 | 9.1 | 7.9 | 8.6 | 4.3 | 3.4 | 3.1 | 3.2 | 2.8 | 6.6 | 7.5 | 13.0 | 18.5 | 24.3 | 17.5 | 17.1 | 12.2 | 18.6 | 14.7 | 13.2 | 14.0 | 11.9 | 8.9 | 24.3 | 11.1 | 24 |
| 3 | 16.3 | 16.8 | 25.2 | 27.5 | 23.0 | 34.4 | 28.7 | 24.6 | 13.3 | 11.7 | 17.9 | 18.2 | 19.5 | 17.0 | 15.7 | 14.4 | 7.2 | 12.5 | 11.2 | 7.0 | 7.1 | 7.9 | 4.9 | 4.0 | 34.4 | 16.1 | 24 |
| 4 | 4.2 | 4.3 | 2.2 | 0.0 | 4.1 | 4.6 | 5.6 | 5.9 | 7.1 | 4.3 | 4.3 | 6.1 | 9.6 | R | 12.5 | 11.6 | 13.6 | 17.1 | 14.2 | 11.5 | 6.1 | 5.0 | 4.5 | 5.1 | 17.1 | 7.1 | 23 |
| 5 | 5.6 | 6.0 | 5.4 | 5.7 | 7.8 | 9.7 | 8.9 | 7.1 | 7.7 | 8.4 | 11.2 | 11.4 | 13.8 | 16.0 | 17.5 | 14.2 | 15.1 | 11.8 | 12.6 | 13.1 | 15.1 | 12.6 | 9.4 | 11.1 | 17.5 | 10.7 | 24 |
| 6 | 12.0 | 13.7 | 10.7 | 8.0 | 6.9 | 6.4 | 16.8 | 19.3 | 40.7 | 52.5 | 54.8 | 66.1 | 64.2 | 61.7 | 67.5 | 86.8 | 84.8 | 73.0 | 81.3 | 79.1 | 76.1 | 74.5 | 72.2 | 60.7 | 86.8 | 49.6 | 24 |
| 7 | 56.7 | 48.1 | 45.9 | 34.7 | 25.6 | 22.5 | 27.1 | 24.7 | 22.9 | 22.6 | 33.3 | 30.4 | 27.1 | 29.1 | 31.0 | 29.7 | 28.9 | 24.8 | 12.2 | 24.5 | 22.6 | 15.3 | 12.7 | 16.8 | 56.7 | 27.9 | 24 |
| 8 | 11.6 | 13.9 | 7.6 | 7.2 | 7.5 | 9.3 | 6.8 | 7.0 | 12.6 | 13.1 | 10.7 | 8.1 | 14.2 | 19.7 | 19.2 | 15.1 | 16.5 | 10.8 | 10.5 | 13.3 | 14.9 | 16.0 | 13.9 | 15.7 | 19.7 | 12.3 | 24 |
| 9 | 11.7 | 3.4 | 7.9 | 10.0 | 11.1 | 11.1 | 8.1 | 8.1 | 5.9 | 4.1 | 5.3 | 4.6 | 5.9 | 5.3 | 19.7 | 15.8 | 22.6 | 22.4 | 14.2 | 17.6 | 10.2 | 11.3 | 15.2 | 20.0 | 22.6 | 11.3 | 24 |
| 10 | 24.0 | 24.9 | 21.9 | 34.7 | 30.4 | 27.4 | 23.2 | 29.0 | 28.9 | 23.9 | 25.8 | 25.8 | 21.5 | 19.8 | 16.0 | 20.7 | 20.6 | 20.6 | 20.6 | 23.2 | 26.8 | 25.3 | 25.5 | 21.6 | 34.7 | 24.3 | 24 |
| 11 | 18.5 | 17.6 | 18.6 | 19.5 | 17.6 | 15.4 | 17.2 | 17.5 | 14.8 | 15.8 | 14.5 | 15.1 | 15.7 | 17.3 | 16.3 | 14.8 | 15.4 | 14.2 | 16.7 | 23.2 | 16.5 | 18.8 | 16.3 | 15.4 | 23.2 | 16.8 | 24 |
| 12 | 10.3 | 15.7 | 18.6 | 22.3 | 23.4 | 27.9 | 32.0 | 31.6 | 30.6 | 29.4 | 28.7 | 26.9 | 34.8 | 37.6 | 38.3 | 41.8 | 40.7 | 39.5 | 39.5 | 39.8 | 38.5 | 33.8 | 32.0 | 25.9 | 41.8 | 30.8 | 24 |
| 13 | 27.8 | 26.6 | 21.5 | 22.1 | 18.6 | 12.5 | 8.3 | 6.5 | 6.0 | 7.8 | 6.1 | 5.4 | 6.3 | 7.5 | 10.6 | 20.4 | 18.2 | 10.9 | 13.7 | 18.5 | 22.4 | 10.2 | 21.7 | 21.5 | 27.8 | 14.6 | 24 |
| 14 | 16.0 | 11.2 | 11.2 | 9.0 | 14.2 | 15.9 | 9.8 | 18.5 | 19.8 | 22.2 | 20.9 | 32.9 | 38.2 | 35.4 | 40.4 | 28.2 | 23.3 | 20.3 | 26.6 | 14.6 | 14.2 | 8.7 | 7.1 | 8.2 | 40.4 | 19.5 | 24 |
| 15 | 9.8 | 9.2 | 9.9 | 9.2 | 5.9 | 4.2 | 6.1 | 8.0 | 6.8 | 5.3 | 3.3 | 6.1 | 12.4 | 15.3 | 15.2 | 17.1 | 13.9 | 12.4 | 7.3 | 15.7 | 9.8 | 11.2 | 15.1 | 10.6 | 17.1 | 9.9 | 24 |
| 16 | 11.9 | 13.3 | 18.7 | 17.9 | 22.1 | 20.9 | 17.7 | 19.8 | 16.7 | 16.2 | 19.8 | 15.0 | 17.5 | 14.4 | 13.7 | 12.0 | 16.4 | 12.3 | 10.8 | 9.1 | 9.5 | 8.3 | 4.1 | 7.9 | 22.1 | 14.4 | 24 |
| 17 | 12.0 | 4.1 | 4.2 | 6.1 | 5.9 | 7.4 | 5.1 | 7.0 | 8.6 | 8.4 | 6.8 | 6.3 | 5.2 | 6.0 | 8.6 | 10.6 | 12.5 | 16.0 | 14.0 | 15.1 | 14.5 | 12.9 | 13.5 | 11.9 | 16.0 | 9.3 | 24 |
| 18 | 10.5 | 18.1 | 23.1 | 25.1 | 33.6 | 38.1 | 40.4 | 40.3 | 42.9 | 37.9 | 42.7 | 50.2 | 46.4 | 40.6 | 39.7 | 38.7 | 37.6 | 32.6 | 29.5 | 25.7 | 23.3 | 15.5 | 12.2 | 9.3 | 50.2 | 31.4 | 24 |
| 19 | 15.0 | 27.1 | 23.9 | 48.3 | 56.5 | 52.0 | 47.2 | 48.6 | 48.1 | 31.1 | 30.4 | 28.0 | 31.6 | 28.9 | 24.8 | 19.8 | 18.6 | 21.6 | 14.2 | 9.2 | 11.6 | 9.6 | 13.6 | 21.4 | 56.5 | 28.4 | 24 |
| 20 | 14.3 | 14.5 | 15.6 | 18.1 | 20.3 | 20.1 | 16.8 | 16.5 | 16.7 | 17.0 | 7.5 | 9.2 | 8.6 | 12.9 | 10.6 | 10.2 | 9.7 | 9.5 | 8.6 | 14.7 | 16.1 | 14.4 | 11.0 | 8.8 | 20.3 | 13.4 | 24 |
| 21 | 8.5 | 8.8 | 6.6 | 5.3 | 4.0 | 2.3 | 7.7 | 11.5 | 11.3 | 4.1 | 3.3 | 5.2 | 5.2 | 15.7 | 13.8 | 20.7 | 18.6 | 18.4 | 16.8 | 21.1 | 23.0 | 20.9 | 19.7 | 17.2 | 23.0 | 12.1 | 24 |
| 22 | 13.2 | 14.6 | 17.0 | 20.3 | 21.6 | 22.8 | 22.5 | 23.2 | 26.6 | 25.5 | 25.0 | 23.1 | 26.6 | 25.9 | 26.6 | 27.1 | 25.8 | 27.9 | 26.2 | 24.8 | 29.7 | 31.3 | 29.2 | 25.5 | 31.3 | 24.3 | 24 |
| 23 | 28.5 | 30.1 | 26.8 | 26.3 | 21.5 | 27.9 | 31.5 | 26.7 | 28.2 | 35.6 | 35.4 | 31.8 | 40.7 | 43.8 | 44.4 | 47.9 | 45.7 | 30.9 | 13.1 | 23.7 | 29.9 | 23.7 | 16.2 | 19.1 | 47.9 | 30.4 | 24 |
| 24 | 19.8 | 18.3 | 16.1 | 17.3 | 14.2 | 16.0 | 18.8 | 18.4 | 18.7 | 7.3 | 9.6 | 9.4 | 5.5 | 4.6 | 12.7 | 9.4 | 12.2 | 9.0 | 9.7 | 11.0 | 9.2 | 12.9 | 8.4 | 9.6 | 19.8 | 12.4 | 24 |
| 25 | 10.8 | 11.1 | 10.7 | 11.7 | 12.1 | 12.0 | 11.2 | 10.3 | 12.8 | 17.3 | 22.3 | 15.7 | 17.7 | 19.2 | Y | Y | 38.3 | 38.9 | 27.5 | 18.2 | 9.5 | 18.3 | 17.8 | 22.9 | 38.9 | 17.6 | 22 |
| 26 | 19.6 | 10.6 | 26.2 | 34.9 | 17.6 | 9.1 | 8.9 | 13.8 | 12.6 | 11.7 | 20.5 | 18.3 | 27.1 | 28.9 | 28.6 | 12.5 | 15.6 | 12.2 | 8.7 | 7.0 | 14.8 | 14.7 | 8.7 | 4.1 | 34.9 | 16.1 | 24 |
| 27 | 6.0 | 8.5 | 6.5 | 9.3 | 5.9 | 10.3 | 7.4 | 5.4 | 6.4 | 6.6 | 6.6 | 15.8 | 20.8 | 28.3 | 24.6 | 23.5 | 24.6 | 20.7 | 20.0 | 30.8 | 26.6 | 19.6 | 18.6 | 8.7 | 30.8 | 15.1 | 24 |
| 28 | 12.0 | 16.8 | 20.1 | 19.1 | 22.2 | 23.2 | 23.4 | 19.0 | 37.0 | 47.5 | 38.9 | 41.9 | 35.9 | 35.5 | 33.2 | 35.3 | 29.6 | 36.1 | 27.2 | 30.1 | 29.2 | 30.0 | 30.4 | 28.3 | 47.5 | 29.2 | 24 |
| 29 | 20.7 | 22.3 | 26.1 | 24.3 | 16.0 | 14.9 | 13.6 | 17.7 | 15.9 | 16.7 | 16.8 | 14.4 | 20.3 | 19.4 | 18.9 | 20.1 | 17.8 | 15.9 | 14.8 | 14.9 | 13.0 | 9.4 | 9.0 | 5.5 | 26.1 | 16.6 | 24 |
| HOURLY MAX | 56.7 | 48.1 | 45.9 | 48.3 | 56.5 | 52.0 | 47.2 | 48.6 | 48.1 | 52.5 | 54.8 | 66.1 | 64.2 | 61.7 | 67.5 | 86.8 | 84.8 | 73.0 | 81.3 | 79.1 | 76.1 | 74.5 | 72.2 | 60.7 | | | |
| HOURLY AVG | 16.0 | 15.9 | 16.6 | 18.0 | 17.3 | 17.5 | 17.1 | 17.5 | 18.5 | 18.0 | 18.6 | 19.3 | 21.4 | 23.1 | 23.4 | 22.9 | 23.0 | 21.1 | 19.9 | 20.0 | 19.4 | 17.9 | 16.7 | 15.7 | | | |

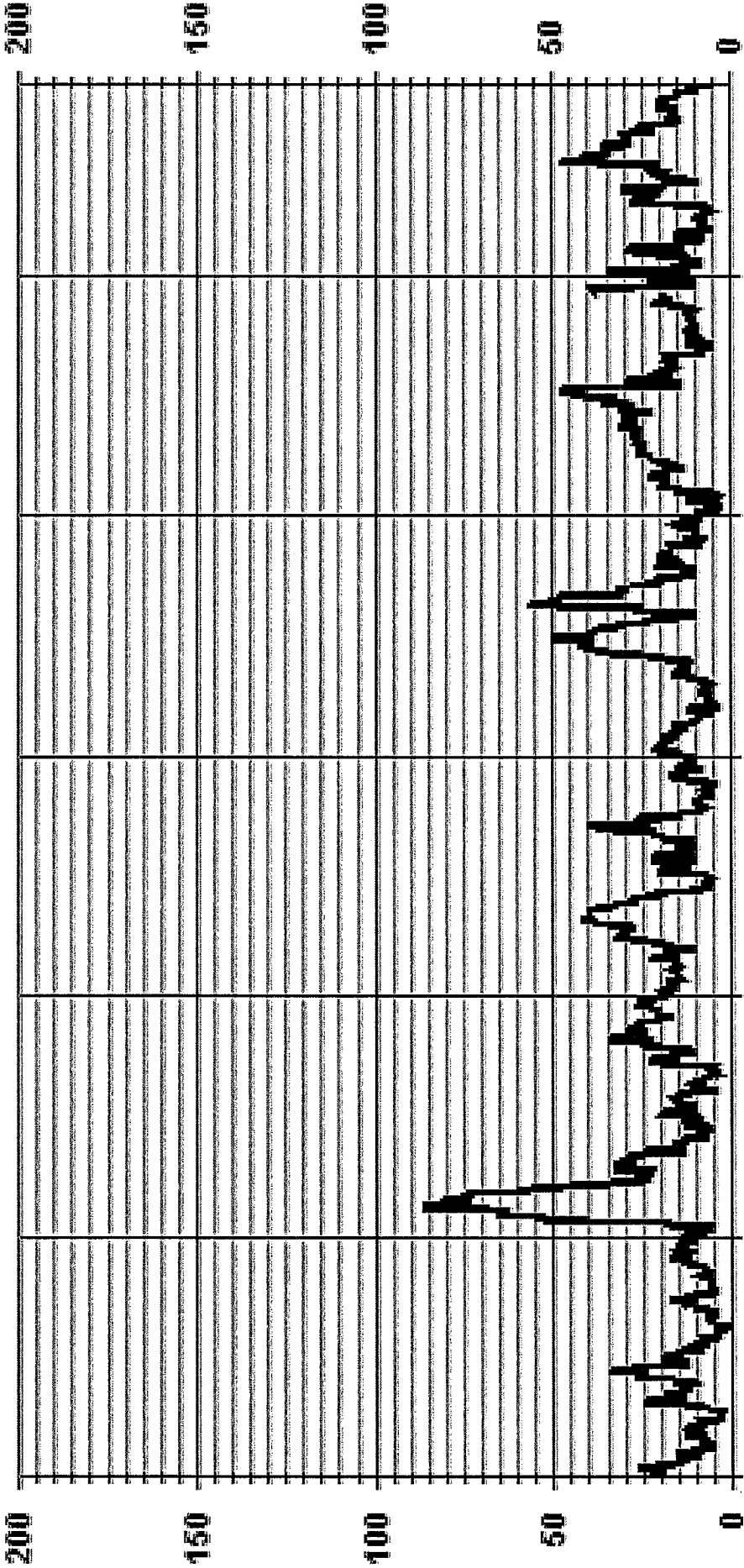
STATUS FLAG CODES

| | | | |
|----|------------------------|---|--------------------------|
| C | MONTHLY CALIBRATION | Q | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION | R | RECOVERY |
| M | MAINTENANCE | X | MACHINE FAILURE/JUNCTION |
| S | DAILY ZERO/SPAN CHECK | G | OUT-OF-REPAIR |
| S1 | REPEAT ZERO/SPAN CHECK | P | POWER FAILURE |

MONTHLY SUMMARY

| | | | | | | |
|------------------------------|------|-----|-------------|----|-----------|---|
| MAXIMUM INSTANTANEOUS VALUE: | 86.8 | KPH | @ HOUR(S) | 15 | ON DAY(S) | 6 |
| OPERATIONAL TIME: | 692 | HRS | VAR-VARIOUS | | | |

01 Hour Averages



— LIC35 WSMAX KPH

LICA-ELK
WSP / WDR Joint Frequency Distribution (Percent)

February 2016

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
Parameter : WSP
Units : KPH

Wind Parameter : WDR
Instrument Height : 10 Meters

| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|---------|-----------|-----|------|------|-------|-------|------|------|------|------|------|-------|-------|-------|------|------|-------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 6.0 | .72 | .14 | .86 | 1.87 | 3.89 | 4.47 | 1.73 | 1.15 | .86 | 1.15 | .86 | 4.04 | 2.88 | 3.46 | 2.02 | .43 | 30.59 |
| < 12.0 | .57 | .28 | 1.29 | .86 | 6.49 | 7.35 | 1.29 | 1.29 | .14 | .28 | .72 | 4.47 | 5.33 | 1.15 | 1.58 | 1.01 | 34.19 |
| < 20.0 | .86 | .28 | 1.15 | .72 | 2.59 | 2.59 | .00 | .00 | .00 | .00 | .43 | 2.16 | 4.90 | 3.03 | 2.45 | 1.15 | 22.36 |
| < 29.0 | .72 | .00 | .00 | .00 | 3.46 | .14 | .00 | .00 | .00 | .00 | .00 | .00 | 2.16 | 1.73 | .28 | .00 | 8.51 |
| < 39.0 | .00 | .00 | .00 | .00 | .00 | .43 | .28 | .00 | .00 | .00 | .00 | .00 | .28 | .28 | 1.15 | .00 | 2.45 |
| >= 39.0 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .43 | .86 | .43 | .00 | 1.73 |
| Totals | 2.88 | .72 | 3.31 | 3.46 | 12.98 | 18.32 | 3.46 | 2.45 | 1.01 | 1.44 | 2.02 | 10.67 | 16.01 | 10.53 | 7.93 | 2.59 | |

Calm : .14 %

Total # Operational Hours : 693

Distribution By Samples

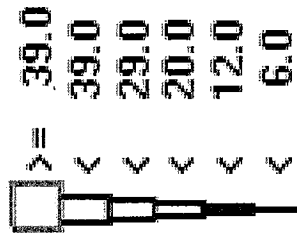
| Limit | Direction | | | | | | | | | | | | | | | | Freq |
|---------|-----------|-----|----|-----|----|-----|----|-----|---|-----|----|-----|-----|-----|----|-----|------|
| | N | NNE | NE | ENE | E | ESE | SE | SSE | S | SSW | SW | WSW | W | WNW | NW | NNW | |
| < 6.0 | 5 | 1 | 6 | 13 | 27 | 31 | 12 | 8 | 6 | 8 | 6 | 28 | 20 | 24 | 14 | 3 | 212 |
| < 12.0 | 4 | 2 | 9 | 6 | 45 | 51 | 9 | 9 | 1 | 2 | 5 | 31 | 37 | 8 | 11 | 7 | 237 |
| < 20.0 | 6 | 2 | 8 | 5 | 18 | 18 | | | | 3 | 15 | 34 | 21 | 17 | 8 | 8 | 155 |
| < 29.0 | 5 | | | | | 24 | 1 | | | | | 15 | 12 | 2 | 2 | | 59 |
| < 39.0 | | | | | | 3 | 2 | | | | | 2 | 2 | 2 | 8 | | 17 |
| >= 39.0 | | | | | | | | | | | | 3 | 6 | 3 | 3 | | 12 |
| Totals | 20 | 5 | 23 | 24 | 90 | 127 | 24 | 17 | 7 | 10 | 14 | 74 | 111 | 73 | 55 | 18 | |

Calm : .14 %

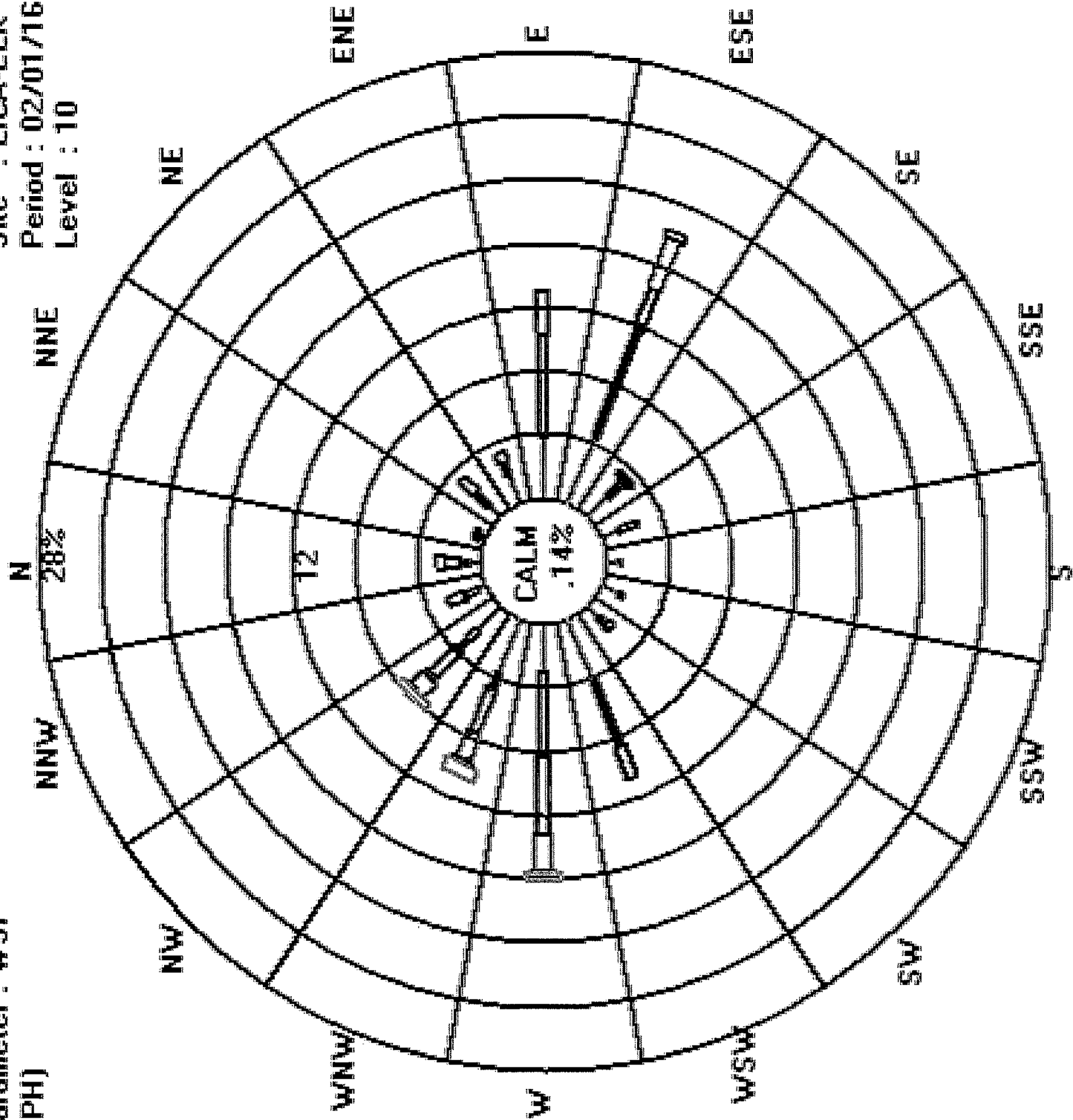
Total # Operational Hours : 693

Logger : 35 Parameter : WSP

Class Limits (KPH)



Site : LICA-ELK
Period : 02/01/16-02/29/16
Level : 10



WIND DIRECTION



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
 Elk Point Airport Site - FEBRUARY 2016
 JOB # 2833-2016-02-35- C

WIND DIRECTION (WD) hourly averages

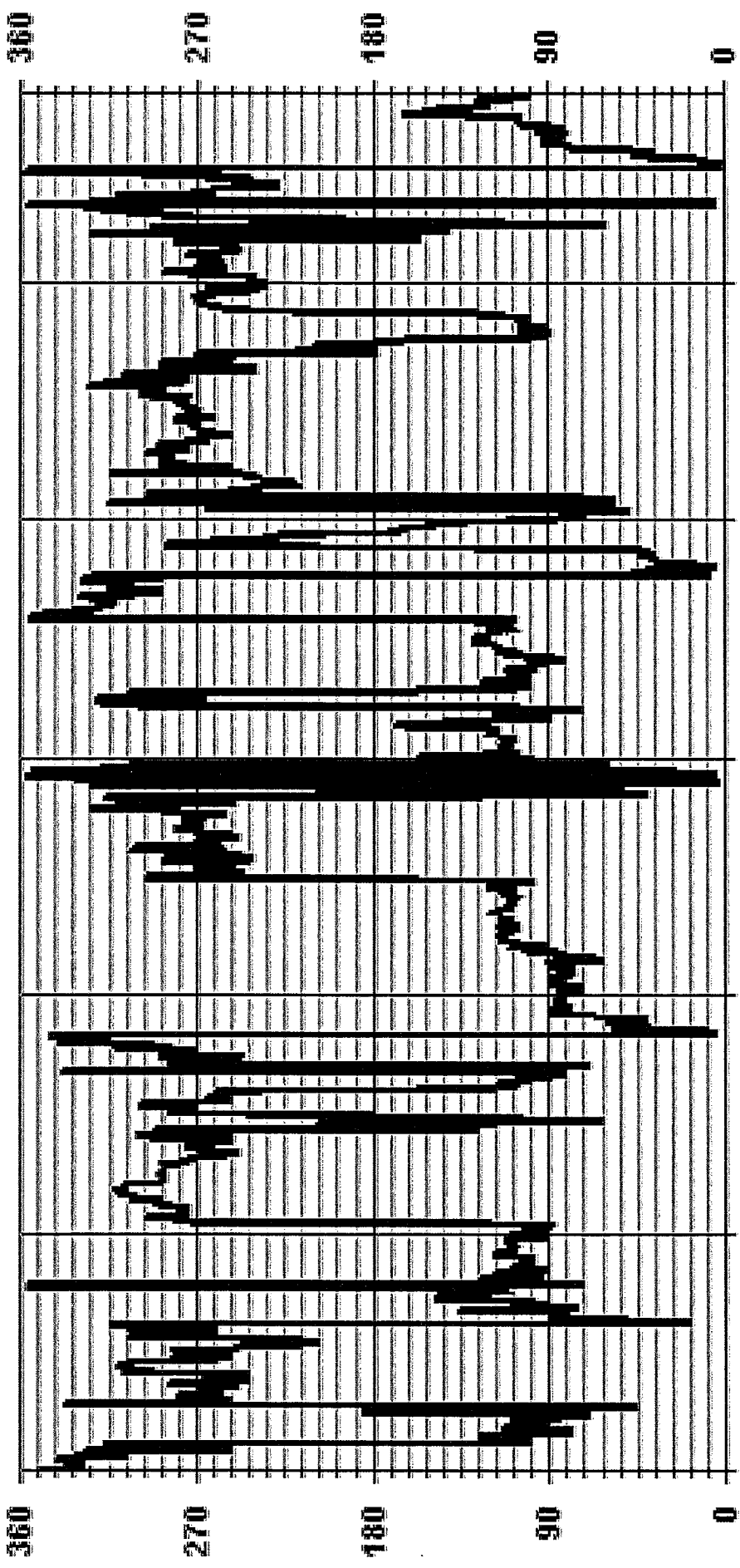
| DAY | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | 24:00 | |
|----------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-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

| | | | |
|---------------------------|--|-------------------------------------|-----|
| MONTHLY CALIBRATION: | | January 26, 2016 | |
| REPEAT CALIBRATION: | | MAGNETIC DECLINATION 29 DEGREE EAST | |
| MAINTENANCE: | | | |
| DAILY ZERO / SPAN CHECK: | | | |
| REPEAT ZERO / SPAN CHECK: | | | |
| MONTHLY CALIBRATION TIME: | | 0 | HRS |
| STANDARD DEVIATION: | | 96.24 | |
| OPERATIONAL TIME: | | 693 | HRS |
| MONTHLY AVERAGE: | | 96.6 | % |
| | | WNW | |

STATUS FLAG CODES

| | |
|----|----------------------|
| C | QUALITY ASSURANCE |
| C1 | RECOVERY |
| R | RECOVERY |
| X | MACHINE/MALEFUNCTION |
| W | OUT FOR REPAIR |
| G | POWER FAILURE |
| P | POWER FAILURE |

01 Hour Averages



02/01/16 00:00 02/06/16 00:00 02/11/16 00:00 02/16/16 00:00 02/21/16 00:00 02/26/16 00:00

— LICA35 WDR DEG

STANDARD DEVIATION WIND DIRECTION



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
 Elk Point Airport Site - FEBRUARY 2016
 JOB # 2833-2016-02-35 - C

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST

| DAY | 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 | |
|-----|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| 1 | 9 | 10 | 9 | 9 | 11 | 10 | 8 | 11 | 4 | 13 | 20 | 39 | 18 | P | 15 | 33 | 15 | 8 | 6 | 6 | 6 | 8 | 7 | 5 | 8 |
| 2 | 5 | 6 | 6 | 7 | 16 | 25 | 13 | 42 | 10 | 37 | 21 | 18 | 13 | 10 | 6 | 8 | 15 | 8 | 15 | 10 | 11 | 37 | 7 | 8 | 15 |
| 3 | 7 | 11 | 5 | 6 | 6 | 7 | 7 | 5 | 6 | 10 | 12 | 8 | 8 | 12 | 13 | 14 | 11 | 8 | 27 | 11 | 26 | 16 | 8 | 43 | |
| 4 | 8 | 9 | 8 | 35 | 11 | 25 | 7 | 6 | 6 | 10 | 16 | 11 | 8 | 4 | 7 | 6 | 13 | 6 | 8 | 11 | 16 | 14 | 30 | 17 | |
| 5 | 13 | 11 | 13 | 10 | 8 | 7 | 8 | 5 | 12 | 6 | 4 | 5 | 7 | 7 | 6 | 5 | 4 | 7 | 5 | 4 | 5 | 9 | 6 | 6 | |
| 6 | 6 | 7 | 9 | 11 | 22 | 17 | 30 | 31 | 10 | 5 | 6 | 6 | 6 | 6 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | |
| 7 | 6 | 6 | 5 | 4 | 3 | 4 | 5 | 3 | 4 | 5 | 4 | 5 | 8 | 9 | 11 | 13 | 12 | 33 | 7 | 3 | 8 | 6 | 7 | 6 | |
| 8 | 12 | 20 | 36 | 11 | 12 | 34 | 10 | 30 | 37 | 12 | 24 | 22 | 14 | 4 | 4 | 6 | 10 | 7 | 11 | 8 | 18 | 10 | 8 | 13 | |
| 9 | 10 | 15 | 12 | 9 | 7 | 24 | 6 | 7 | 4 | 12 | 21 | 20 | 5 | 31 | 18 | 13 | 11 | 13 | 24 | 12 | 43 | 9 | 15 | 8 | |
| 10 | 7 | 12 | 9 | 8 | 9 | 12 | 10 | 13 | 12 | 14 | 15 | 13 | 13 | 15 | 14 | 9 | 6 | 5 | 9 | 7 | 8 | 7 | 9 | 7 | |
| 11 | 7 | 7 | 8 | 9 | 9 | 7 | 8 | 7 | 10 | 9 | 8 | 8 | 14 | 9 | 6 | 7 | 6 | 8 | 9 | 7 | 8 | 5 | 7 | 7 | |
| 12 | 4 | 5 | 7 | 6 | 5 | 6 | 5 | 5 | 5 | 5 | 5 | 5 | 7 | 6 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 5 | 5 | 6 | |
| 13 | 5 | 6 | 6 | 5 | 5 | 6 | 5 | 5 | 4 | 5 | 8 | 27 | 48 | 29 | 27 | 11 | 10 | 27 | 34 | 20 | 10 | 13 | 6 | 11 | |
| 14 | 17 | 13 | 29 | 13 | 20 | 8 | 14 | 11 | 7 | 9 | 13 | 12 | 6 | 5 | 8 | 12 | 8 | 3 | 7 | 7 | 11 | 16 | 7 | 7 | |
| 15 | 19 | 25 | 26 | 16 | 36 | 23 | 23 | 10 | 9 | 8 | 7 | 23 | 16 | 7 | 7 | 10 | 9 | 10 | 19 | 6 | 6 | 21 | 14 | 31 | |
| 16 | 12 | 14 | 7 | 6 | 6 | 6 | 8 | 5 | 6 | 7 | 5 | 6 | 7 | 6 | 5 | 5 | 14 | 11 | 10 | 6 | 7 | 11 | 29 | 6 | |
| 17 | 17 | 17 | 34 | 6 | 7 | 9 | 4 | 11 | 21 | 8 | 37 | 10 | 7 | 10 | 7 | 5 | 9 | 6 | 4 | 6 | 5 | 4 | 5 | 5 | |
| 18 | 9 | 8 | 10 | 4 | 5 | 5 | 6 | 5 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 6 | 6 | 6 | 6 | 6 | 7 | 8 | 13 | |
| 19 | 6 | 9 | 9 | 9 | 8 | 8 | 8 | 6 | 8 | 11 | 9 | 10 | 4 | 8 | 6 | 9 | 9 | 7 | 8 | 16 | 9 | 13 | 11 | 12 | |
| 20 | 14 | 9 | 14 | 15 | 9 | 10 | 14 | 9 | 16 | 9 | 31 | 19 | 7 | 20 | 16 | 17 | 11 | 12 | 10 | 11 | 11 | 11 | 9 | 9 | |
| 21 | 4 | 8 | 12 | 6 | 46 | 33 | 21 | 12 | 10 | 14 | 12 | 12 | 7 | 37 | 11 | 12 | 8 | 5 | 5 | 7 | 6 | 6 | 7 | 28 | |
| 22 | 16 | 11 | 7 | 7 | 5 | 1 | 2 | 2 | 1 | 2 | 4 | 4 | 4 | 4 | 3 | 3 | 5 | 11 | 10 | 13 | 13 | 8 | 7 | 5 | |
| 23 | 7 | 5 | 3 | 3 | 10 | 5 | 6 | 10 | 7 | 6 | 5 | 4 | 5 | 5 | 6 | 5 | 5 | 7 | 2 | 4 | 9 | 7 | 5 | 8 | |
| 24 | 3 | 7 | 13 | 10 | 5 | 7 | 7 | 5 | 14 | 27 | 14 | 18 | 15 | 39 | 11 | 7 | 10 | 9 | 9 | 8 | 4 | 3 | 13 | 4 | |
| 25 | 4 | 5 | 5 | 3 | 2 | 5 | 7 | 5 | 27 | 13 | 15 | 13 | 13 | 13 | 13 | Y | Y | 4 | 7 | 7 | 7 | 5 | 15 | 16 | |
| 26 | 8 | 18 | 12 | 10 | 21 | 9 | 14 | 12 | 14 | 10 | 11 | 9 | 12 | 14 | 12 | 14 | 9 | 5 | 10 | 6 | 10 | 18 | 11 | | |
| 27 | 22 | 7 | 25 | 39 | 20 | 18 | 40 | 12 | 21 | 19 | 30 | 16 | 7 | 8 | 10 | 11 | 10 | 11 | 7 | 6 | 8 | 8 | 9 | 10 | |
| 28 | 14 | 11 | 13 | 11 | 9 | 18 | 9 | 9 | 13 | 13 | 14 | 14 | 14 | 14 | 14 | 10 | 11 | 10 | 10 | 10 | 10 | 9 | 8 | 7 | |
| 29 | 6 | 5 | 6 | 4 | 4 | 5 | 4 | 3 | 5 | 6 | 6 | 9 | 13 | 19 | 18 | 18 | 10 | 3 | 3 | 4 | 4 | 6 | 5 | 11 | |

STATUS FLAG CODES

| | | | |
|----|--------------------------|---|---------------------|
| C | MONTHLY CALIBRATION | O | QUALITY ASSURANCE |
| CL | REPEAT CALIBRATION | R | RECOVERY |
| V | MAINTENANCE | X | MACHINE MALFUNCTION |
| S | DAILY ZERO / SPAN CHECK | G | OUT FOR REPAIR |
| ST | REPEAT ZERO / SPAN CHECK | P | POWER FAILURE |

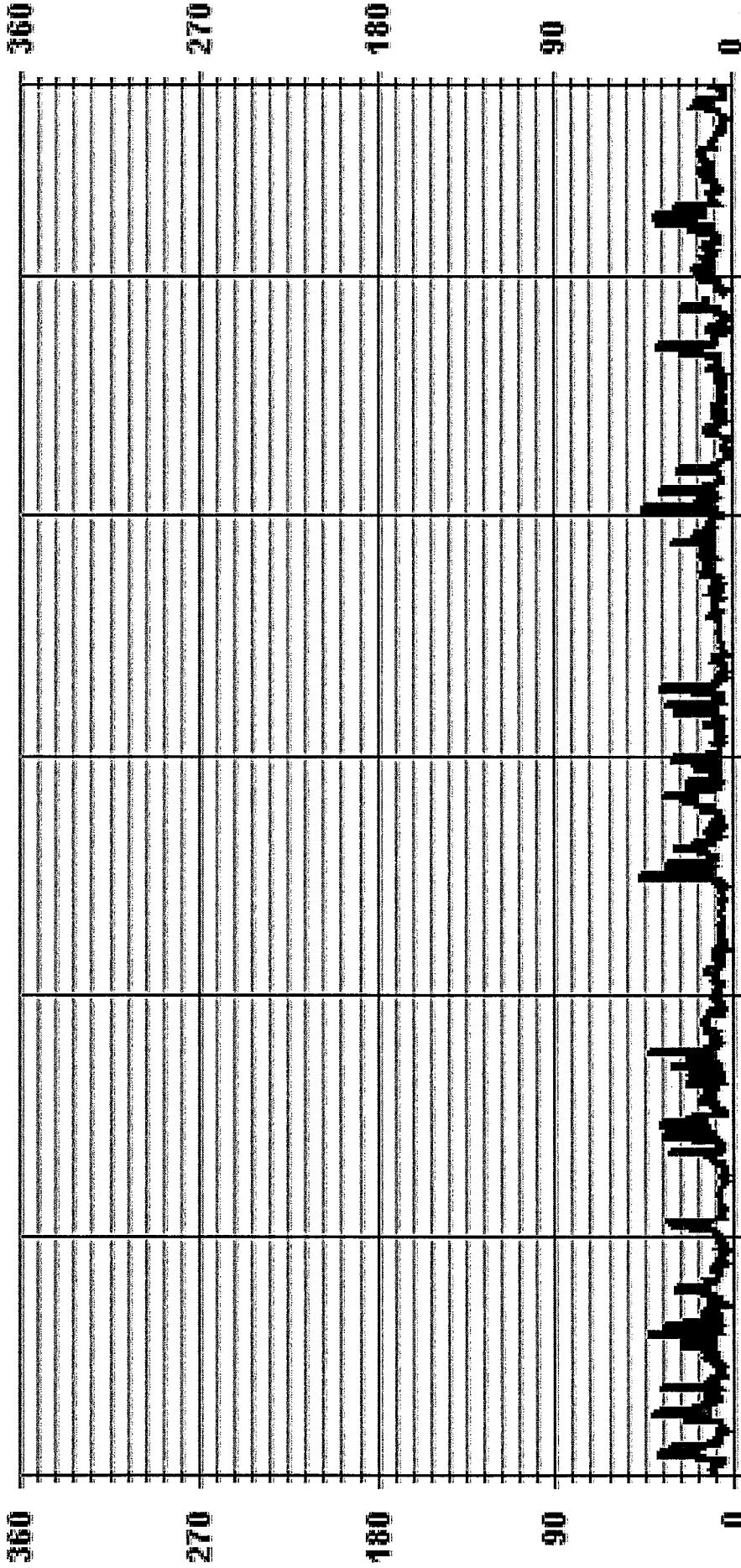
LAST CALIBRATION:

January 26, 2016

CALIBRATION TIME: 0 HRS

OPERATIONAL TIME: 693 HRS

01 Hour Averages



— LICA35 STOWDIR DEG

APPENDIX II
NON-CONTINUOUS MONITORING DATA RESULTS

VOC RESULTS

Sample ID: 16020060-001

Customer ID: LICA

Cust Samp ID: LICAVOC/ELK/feb 6, 2016

Priority: Normal

Maxxam

VOC Sample Collection Data Sheet

Client: LICA
Location: Elk Point Airport
Station ID: LICA 35
Field Sample ID: LICA/voc/Elk/feb 06, 2016

Sampler S/N: 6200
Canister ID: 55659
Canister Installation Date/Time: Feb 3, 2016 / 14:06
Canister Removal Date/Time: Feb 2, 2016 / 12:48

| Date and Time Information | | |
|---------------------------|------------------|----------------------|
| Sample Date | Start Time (MST) | End Time (MST) |
| Feb 6, 2016 | 00:00 | 00:00 |
| | Feb 6, 2016 | Feb 7, 2016 |
| | | Elapsed Time (Hours) |
| | | 24.0 |

| Flow Settings | | |
|----------------------|-------------|------------------------------|
| Meter Reading (sccm) | Pot Set Pt. | Pump Pressure Setting (psig) |
| 10.0 | 4.94 | 26 |

| Canister Information | |
|--------------------------------|--------------------------------|
| Initial Canister Vacuum (inHg) | Final Canister Pressure (psig) |
| - 28.0 | + 19.2 |

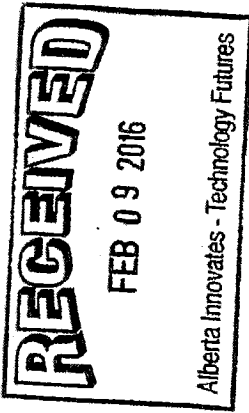
Canister valve open prior to sampling? YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection? YES / NO

Comments: n/a

Technician Signature: Sample in - by Alex Yankov
Sample out - by Alex Yankov

Date: Feb 8, 2016

AIR FCD-01320/2



Volatile Organics Data Results

Date: FEBRUARY 6, 2016
Canister ID: S5659

| PARAMETERS | CONCENTRATION (PPB) |
|-------------------------|---------------------|
| 1,1,1-Trichloroethane | < 0.02 |
| 1,1,2-Tetrachloroethane | < 0.02 |
| 1,1,2-Trichloroethane | < 0.02 |
| 1,1-Dichloroethane | < 0.02 |
| 1,1-Dichloroethylene | < 0.04 |
| 1,2,3-Trimethylbenzene | < 0.05 |
| 1,2,4-Trichlorobenzene | < 0.8 |
| 1,2,4-Trimethylbenzene | < 0.03 |
| 1,2-Dibromoethane | < 0.02 |
| 1,2-Dichlorobenzene | < 0.03 |
| 1,2-Dichloroethane | 0.02 |
| 1,2-Dichloropropane | < 0.01 |
| 1,3,5-Trimethylbenzene | < 0.02 |
| 1,3-Butadiene | < 0.02 |
| 1,3-Dichlorobenzene | < 0.3 |
| 1,4-Dichlorobenzene | < 0.4 |
| 1,4-Dioxane | < 0.4 |
| 1-Butene | < 0.02 |
| 1-Hexene | < 0.02 |
| 1-Pentene | < 0.01 |
| 2,2,4-Trimethylpentane | < 0.01 |
| 2,2-Dimethylbutane | 0.04 |
| 2,3,4-Trimethylpentane | < 0.01 |
| 2,3-Dimethylbutane | 0.10 |
| 2,3-Dimethylpentane | 0.06 |
| 2,4-Dimethylpentane | 0.05 |
| 2-Methylheptane | 0.02 |
| 2-Methylhexane | 0.06 |
| 2-Methylpentane | 0.21 |
| 3-Methylheptane | < 0.02 |
| 3-Methylhexane | 0.08 |
| 3-Methylpentane | 0.11 |
| Acetone | 1.4 |
| Acrolein | < 0.3 |
| Benzene | 0.13 |
| Benzyl chloride | < 0.4 |
| Bromodichloromethane | < 0.02 |
| Bromoform | < 0.02 |
| Bromomethane | 0.01 |
| Carbon disulfide | 0.03 |
| Carbon tetrachloride | 0.09 |
| Chlorobenzene | < 0.02 |
| Chloroethane | < 0.02 |
| Chloroform | 0.02 |
| Chloromethane | 0.86 |
| cis-1,2-Dichloroethene | < 0.01 |
| cis-1,3-Dichloropropene | < 0.04 |
| cis-2-Butene | < 0.02 |
| cis-2-Pentene | < 0.02 |
| Cyclohexane | 0.13 |
| Cyclopentane | 0.05 |
| Dibromochloromethane | < 0.01 |
| Ethanol | 2.5 |
| Ethyl acetate | < 0.4 |
| Ethylbenzene | 0.01 |
| Freon-11 | 0.28 |

Volatile Organics Data Results

Date: FEBRUARY 6, 2016
Canister ID: S5659

| PARAMETERS | CONCENTRATION (PPB) |
|-----------------------------|---------------------|
| Freon-113 | 0.07 |
| Freon-114 | 0.02 |
| Freon-12 | 0.65 |
| Hexachloro-1,3-butadiene | < 0.50 |
| Isobutane | 1.10 |
| Isopentane | 0.95 |
| Isoprene | < 0.01 |
| Isopropyl alcohol | < 0.4 |
| Isopropylbenzene | < 0.01 |
| m,p-Xylene | < 0.03 |
| m-Diethylbenzene | < 0.04 |
| m-Ethyltoluene | < 0.08 |
| Methyl butyl ketone | < 0.50 |
| Methyl ethyl ketone | < 0.3 |
| Methyl isobutyl ketone | < 0.4 |
| Methyl methacrylate | < 0.07 |
| Methyl tert butyl ether | < 0.03 |
| Methylcyclohexane | 0.25 |
| Methylcyclopentane | 0.15 |
| Methylene chloride | < 0.3 |
| n-Butane | 1.82 |
| n-Decane | < 0.06 |
| n-Dodecane | < 0.4 |
| n-Heptane | 0.06 |
| n-Hexane | 0.24 |
| n-Nonane | < 0.01 |
| n-Octane | < 0.02 |
| n-Pentane | 0.5 |
| n-Propylbenzene | < 0.05 |
| n-Undecane | < 0.5 |
| Naphthalene | < 0.5 |
| o-Ethyltoluene | < 0.01 |
| o-Xylene | < 0.01 |
| p-Diethylbenzene | < 0.04 |
| p-Ethyltoluene | < 0.07 |
| Styrene | < 0.04 |
| Tetrachloroethylene | < 0.04 |
| Tetrahydrofuran | < 0.4 |
| Toluene | 0.08 |
| trans-1,2-Dichloroethylene | < 0.01 |
| trans-1,3-Dichloropropylene | < 0.04 |
| trans-2-Butene | < 0.01 |
| trans-2-Pentene | < 0.02 |
| Trichloroethylene | < 0.04 |
| Vinyl acetate | < 0.4 |
| Vinyl chloride | < 0.02 |

Sample ID: 16020158-001

Customer ID: LICA

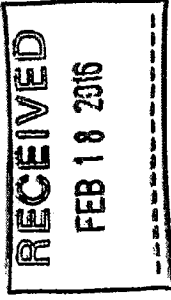
Cust Samp ID: LICA/VOC/ELK/Feb 12, 2016

Maxxam

VOC Sample Collection Data Sheet

Client: LICA
Location: Elk Point Airport
Station ID: LICA 35
Field Sample ID: LICA/VOC/ELK/Feb 12, 2016

Sampler S/N: 6200
Canister ID: 35677
Canister Installation Date/Time: Feb 8, 2016 / 12:49
Canister Removal Date/Time: Feb 16, 2016 / 14:55



| Date and Time Information | | |
|---------------------------|------------------|----------------|
| Sample Date | Start Time (MST) | End Time (MST) |
| Feb 12, 2016 | 00:00 | 00:00 |
| Feb 12, 2016 | Feb 12, 2016 | Feb 13, 2016 |
| | | 24.0 |

| Flow Settings | | |
|----------------------|------------|------------------------------|
| Meter Reading (sccm) | Pot Set Pt | Pump Pressure Setting (psig) |
| 10.0 | 4.94 | 26 |

| Canister Information | |
|--------------------------------|--------------------------------|
| Initial Canister Vacuum (inHg) | Final Canister Pressure (psig) |
| -28.0 | +19.5 |

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: n/a

Technician Signature: Sample in - by Alex Yakupov
Sample out - by Alex Yakupov Date: Feb 16, 2016

Volatile Organics Data Results

Date: FEBRUARY 12 , 2016
Canister ID: S5677

| PARAMETERS | CONCENTRATION (PPB) |
|---------------------------|---------------------|
| 1,1,1-Trichloroethane | < 0.02 |
| 1,1,2,2-Tetrachloroethane | < 0.02 |
| 1,1,2-Trichloroethane | < 0.02 |
| 1,1-Dichloroethane | < 0.02 |
| 1,1-Dichloroethylene | < 0.04 |
| 1,2,3-Trimethylbenzene | < 0.05 |
| 1,2,4-Trichlorobenzene | < 0.8 |
| 1,2,4-Trimethylbenzene | < 0.03 |
| 1,2-Dibromoethane | < 0.02 |
| 1,2-Dichlorobenzene | < 0.03 |
| 1,2-Dichloroethane | 0.02 |
| 1,2-Dichloropropane | < 0.01 |
| 1,3,5-Trimethylbenzene | < 0.02 |
| 1,3-Butadiene | < 0.02 |
| 1,3-Dichlorobenzene | < 0.3 |
| 1,4-Dichlorobenzene | < 0.4 |
| 1,4-Dioxane | < 0.4 |
| 1-Butene | 0.07 |
| 1-Hexene | < 0.02 |
| 1-Pentene | < 0.01 |
| 2,2,4-Trimethylpentane | < 0.01 |
| 2,2-Dimethylbutane | 0.03 |
| 2,3,4-Trimethylpentane | < 0.01 |
| 2,3-Dimethylbutane | 0.06 |
| 2,3-Dimethylpentane | 0.03 |
| 2,4-Dimethylpentane | 0.03 |
| 2-Methylheptane | 0.01 |
| 2-Methylhexane | < 0.01 |
| 2-Methylpentane | 0.08 |
| 3-Methylheptane | < 0.02 |
| 3-Methylhexane | 0.04 |
| 3-Methylpentane | 0.11 |
| Acetone | 1.4 |
| Acrolein | < 0.3 |
| Benzene | 0.15 |
| Benzyl chloride | < 0.4 |
| Bromodichloromethane | < 0.02 |
| Bromoform | < 0.02 |
| Bromomethane | < 0.01 |
| Carbon disulfide | < 0.01 |
| Carbon tetrachloride | 0.09 |
| Chlorobenzene | < 0.02 |
| Chloroethane | < 0.02 |
| Chloroform | 0.02 |
| Chloromethane | 0.89 |
| cis-1,2-Dichloroethene | < 0.01 |
| cis-1,3-Dichloropropene | < 0.04 |
| cis-2-Butene | < 0.02 |
| cis-2-Pentene | < 0.02 |
| Cyclohexane | 0.08 |
| Cyclopentane | 0.02 |
| Dibromochloromethane | < 0.01 |
| Ethanol | 0.8 |
| Ethyl acetate | < 0.4 |
| Ethylbenzene | 0.01 |
| Freon-11 | 0.31 |

Volatile Organics Data Results

Date: FEBRUARY 12 , 2016
Canister ID: S5677

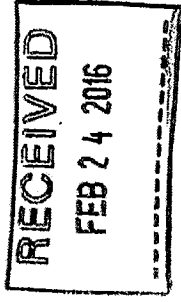
| PARAMETERS | CONCENTRATION (PPB) |
|-----------------------------|---------------------|
| Freon-113 | 0.09 |
| Freon-114 | 0.02 |
| Freon-12 | 0.69 |
| Hexachloro-1,3-butadiene | < 0.50 |
| Isobutane | 0.42 |
| Isopentane | 0.33 |
| Isoprene | < 0.01 |
| Isopropyl alcohol | < 0.4 |
| Isopropylbenzene | < 0.01 |
| m,p-Xylene | < 0.03 |
| m-Diethylbenzene | < 0.04 |
| m-Ethyltoluene | < 0.08 |
| Methyl butyl ketone | < 0.50 |
| Methyl ethyl ketone | < 0.3 |
| Methyl isobutyl ketone | < 0.4 |
| Methyl methacrylate | < 0.07 |
| Methyl tert butyl ether | < 0.03 |
| Methylcyclohexane | 0.13 |
| Methylcyclopentane | 0.17 |
| Methylene chloride | < 0.3 |
| n-Butane | 0.72 |
| n-Decane | < 0.06 |
| n-Dodecane | < 0.4 |
| n-Heptane | 0.03 |
| n-Hexane | 0.50 |
| n-Nonane | < 0.01 |
| n-Octane | < 0.02 |
| n-Pentane | 0.3 |
| n-Propylbenzene | < 0.05 |
| n-Undecane | < 0.5 |
| Naphthalene | < 0.5 |
| o-Ethyltoluene | < 0.01 |
| o-Xylene | < 0.01 |
| p-Diethylbenzene | < 0.04 |
| p-Ethyltoluene | < 0.07 |
| Styrene | < 0.04 |
| Tetrachloroethylene | < 0.04 |
| Tetrahydrofuran | < 0.4 |
| Toluene | 0.12 |
| trans-1,2-Dichloroethylene | < 0.01 |
| trans-1,3-Dichloropropylene | < 0.04 |
| trans-2-Butene | < 0.01 |
| trans-2-Pentene | < 0.02 |
| Trichloroethylene | < 0.04 |
| Vinyl acetate | < 0.4 |
| Vinyl chloride | < 0.02 |

Sample ID: 16020201-003

Customer ID: LICA

Cust Samp ID: LICAVOC/ELK/feb 18, 2016

AIR FCD-01320/2



Maxxam

VOC Sample Collection Data Sheet

Client: LICA
 Location: Elk Point Airport
 Station ID: LICA 35
 Field Sample ID: LICA/VOC/ELK/ Feb 18, 2016

Sampler S/N: 6200
 Canister ID: H2824
 Canister Installation Date/Time: Feb 16, 2016 / 14:56
 Canister Removal Date/Time: Feb 22, 2016 / 14:06

| Date and Time Information | | | |
|---------------------------|-----------------------|-----------------------|----------------------|
| Sample Date | Start Time (MST) | End Time (MST) | Elapsed Time (Hours) |
| Feb 18, 2016 | 00:00 Feb 18, 2016 | 00:00 Feb 19, 2016 | 24.0 |

| Flow Settings | | |
|----------------------|-------------|------------------------------|
| Meter Reading (sccm) | Pot Set Pt. | Pump Pressure Setting (psig) |
| 10.0 | 1.94 | 26 |

| Canister Information | |
|--------------------------------|--------------------------------|
| Initial Canister Vacuum (inHg) | Final Canister Pressure (psig) |
| - 28.0 | + 20.0 |

Canister valve open prior to sampling? YES / NO
 Timer set to 0.00 minutes prior to sampling? YES / NO
 Canister valve closed prior to disconnection? YES / NO

Comments: nlq

Technician Signature: Sample in - by Alex Yakupov
Sample out - by Alex Yakupov
 Date: Feb 22, 2016

Volatile Organics Data Results

Date: FEBRUARY 18 , 2016
Canister ID: H2824

| PARAMETERS | CONCENTRATION (PPB) |
|---------------------------|---------------------|
| 1,1,1-Trichloroethane | < 0.02 |
| 1,1,2,2-Tetrachloroethane | < 0.02 |
| 1,1,2-Trichloroethane | < 0.02 |
| 1,1-Dichloroethane | < 0.02 |
| 1,1-Dichloroethylene | < 0.04 |
| 1,2,3-Trimethylbenzene | < 0.05 |
| 1,2,4-Trichlorobenzene | < 0.8 |
| 1,2,4-Trimethylbenzene | < 0.03 |
| 1,2-Dibromoethane | < 0.02 |
| 1,2-Dichlorobenzene | < 0.03 |
| 1,2-Dichloroethane | 0.03 |
| 1,2-Dichloropropane | < 0.01 |
| 1,3,5-Trimethylbenzene | < 0.02 |
| 1,3-Butadiene | < 0.02 |
| 1,3-Dichlorobenzene | < 0.3 |
| 1,4-Dichlorobenzene | < 0.4 |
| 1,4-Dioxane | < 0.4 |
| 1-Butene | < 0.02 |
| 1-Hexene | < 0.02 |
| 1-Pentene | < 0.01 |
| 2,2,4-Trimethylpentane | < 0.01 |
| 2,2-Dimethylbutane | 0.02 |
| 2,3,4-Trimethylpentane | < 0.01 |
| 2,3-Dimethylbutane | 0.07 |
| 2,3-Dimethylpentane | 0.03 |
| 2,4-Dimethylpentane | 0.03 |
| 2-Methylheptane | 0.02 |
| 2-Methylhexane | < 0.01 |
| 2-Methylpentane | 0.16 |
| 3-Methylheptane | < 0.02 |
| 3-Methylhexane | < 0.02 |
| 3-Methylpentane | 0.09 |
| Acetone | 4.0 |
| Acrolein | < 0.3 |
| Benzene | 0.14 |
| Benzyl chloride | < 0.4 |
| Bromodichloromethane | < 0.02 |
| Bromoform | < 0.02 |
| Bromomethane | 0.01 |
| Carbon disulfide | 0.38 |
| Carbon tetrachloride | 0.09 |
| Chlorobenzene | < 0.02 |
| Chloroethane | < 0.02 |
| Chloroform | 0.02 |
| Chloromethane | 1.21 |
| cis-1,2-Dichloroethene | < 0.01 |
| cis-1,3-Dichloropropene | < 0.04 |
| cis-2-Butene | < 0.02 |
| cis-2-Pentene | < 0.02 |
| Cyclohexane | 0.08 |
| Cyclopentane | 0.05 |
| Dibromochloromethane | < 0.01 |
| Ethanol | 0.9 |
| Ethyl acetate | < 0.4 |
| Ethylbenzene | 0.01 |
| Freon-11 | 0.28 |

Volatile Organics Data Results

Date: FEBRUARY 18 , 2016
Canister ID: H2824

| PARAMETERS | CONCENTRATION (PPB) |
|-----------------------------|---------------------|
| Freon-113 | 0.08 |
| Freon-114 | 0.02 |
| Freon-12 | 0.62 |
| Hexachloro-1,3-butadiene | < 0.50 |
| Isobutane | 1.18 |
| Isopentane | 0.78 |
| Isoprene | < 0.01 |
| Isopropyl alcohol | 0.8 |
| Isopropylbenzene | < 0.01 |
| m,p-Xylene | < 0.03 |
| m-Diethylbenzene | < 0.04 |
| m-Ethyltoluene | < 0.08 |
| Methyl butyl ketone | < 0.50 |
| Methyl ethyl ketone | 0.5 |
| Methyl isobutyl ketone | < 0.4 |
| Methyl methacrylate | < 0.07 |
| Methyl tert butyl ether | < 0.03 |
| Methylcyclohexane | 0.11 |
| Methylcyclopentane | 0.11 |
| Methylene chloride | < 0.3 |
| n-Butane | 3.18 |
| n-Decane | < 0.06 |
| n-Dodecane | < 0.4 |
| n-Heptane | 0.06 |
| n-Hexane | 0.22 |
| n-Nonane | < 0.01 |
| n-Octane | < 0.02 |
| n-Pentane | 0.8 |
| n-Propylbenzene | < 0.05 |
| n-Undecane | < 0.5 |
| Naphthalene | < 0.5 |
| o-Ethyltoluene | < 0.01 |
| o-Xylene | 0.01 |
| p-Diethylbenzene | < 0.04 |
| p-Ethyltoluene | < 0.07 |
| Styrene | < 0.04 |
| Tetrachloroethylene | < 0.04 |
| Tetrahydrofuran | < 0.4 |
| Toluene | 0.08 |
| trans-1,2-Dichloroethylene | < 0.01 |
| trans-1,3-Dichloropropylene | < 0.04 |
| trans-2-Butene | < 0.01 |
| trans-2-Pentene | < 0.02 |
| Trichloroethylene | < 0.04 |
| Vinyl acetate | < 0.4 |
| Vinyl chloride | < 0.02 |

Sample ID: 16030001-001
 Customer ID: LICA
 Cust Samp ID: LICA/VOC/ELK/FEB 24, 2016

Maxxam

VOC Sample Collection Data Sheet

Client: LICA
 Location: Elk Point Airport
 Station ID: LICA 35
 Field Sample ID: LICA/VOC/ELK/FEB 24, 2016

Sampler S/N: 6200
 Canister ID: 1687
 Canister Installation Date/Time: Feb 22, 2016 / 14:07
 Canister Removal Date/Time: Feb 25, 2016 / 11:48

| Date and Time Information | | |
|---------------------------|------------------|----------------------|
| Sample Date | Start Time (MST) | End Time (MST) |
| Feb 24, 2016 | 00:00 | 00:00 |
| | Feb 24, 2016 | Feb 25, 2016 |
| | | Elapsed Time (Hours) |
| | | 24.0 |

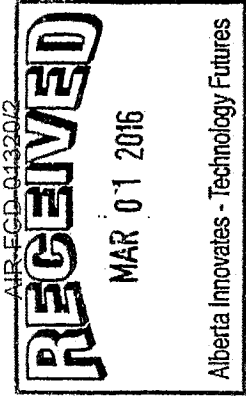
| Flow Settings | | |
|----------------------|-------------|------------------------------|
| Meter Reading (sccm) | Pot Set Pt. | Pump Pressure Setting (psig) |
| 10.0 | 4.94 | 26 |

| Canister Information | |
|--------------------------------|--------------------------------|
| Initial Canister Vacuum (inHg) | Final Canister Pressure (psig) |
| -28.0 | +19.1 |

Canister valve open prior to sampling? YES / NO
 Timer set to 0.00 minutes prior to sampling? YES / NO
 Canister valve closed prior to disconnection? YES / NO

Comments: n/a

Technician Signature: Sample in - by Alex Yakupov
Sample out - by Alex Yakupov
Date: Feb 25, 2016



AIR-EGD-01320/2

Volatile Organics Data Results

Date: FEBRUARY 24 , 2016
Canister ID: 1687

| PARAMETERS | CONCENTRATION (PPB) |
|---------------------------|---------------------|
| 1,1,1-Trichloroethane | < 0.02 |
| 1,1,2,2-Tetrachloroethane | < 0.02 |
| 1,1,2-Trichloroethane | < 0.02 |
| 1,1-Dichloroethane | < 0.02 |
| 1,1-Dichloroethylene | < 0.04 |
| 1,2,3-Trimethylbenzene | < 0.05 |
| 1,2,4-Trichlorobenzene | < 0.8 |
| 1,2,4-Trimethylbenzene | 0.05 |
| 1,2-Dibromoethane | < 0.02 |
| 1,2-Dichlorobenzene | < 0.03 |
| 1,2-Dichloroethane | 0.02 |
| 1,2-Dichloropropane | < 0.01 |
| 1,3,5-Trimethylbenzene | < 0.02 |
| 1,3-Butadiene | < 0.02 |
| 1,3-Dichlorobenzene | < 0.3 |
| 1,4-Dichlorobenzene | < 0.4 |
| 1,4-Dioxane | < 0.4 |
| 1-Butene | 0.06 |
| 1-Hexene | < 0.02 |
| 1-Pentene | < 0.01 |
| 2,2,4-Trimethylpentane | < 0.01 |
| 2,2-Dimethylbutane | 0.06 |
| 2,3,4-Trimethylpentane | 0.02 |
| 2,3-Dimethylbutane | 0.13 |
| 2,3-Dimethylpentane | 0.10 |
| 2,4-Dimethylpentane | 0.05 |
| 2-Methylheptane | 0.03 |
| 2-Methylhexane | 0.03 |
| 2-Methylpentane | 0.27 |
| 3-Methylheptane | < 0.02 |
| 3-Methylhexane | 0.07 |
| 3-Methylpentane | 0.08 |
| Acetone | 1.2 |
| Acrolein | < 0.3 |
| Benzene | 0.17 |
| Benzyl chloride | < 0.4 |
| Bromodichloromethane | < 0.02 |
| Bromoform | < 0.02 |
| Bromomethane | < 0.01 |
| Carbon disulfide | 0.24 |
| Carbon tetrachloride | 0.08 |
| Chlorobenzene | < 0.02 |
| Chloroethane | < 0.02 |
| Chloroform | 0.02 |
| Chloromethane | 0.46 |
| cis-1,2-Dichloroethene | < 0.01 |
| cis-1,3-Dichloropropene | < 0.04 |
| cis-2-Butene | < 0.02 |
| cis-2-Pentene | < 0.02 |
| Cyclohexane | 0.12 |
| Cyclopentane | 0.04 |
| Dibromochloromethane | < 0.01 |
| Ethanol | < 0.3 |
| Ethyl acetate | < 0.4 |
| Ethylbenzene | 0.03 |
| Freon-11 | 0.17 |



Volatile Organics Data Results

Date: FEBRUARY 24 , 2016
Canister ID: 1687

| PARAMETERS | CONCENTRATION (PPB) |
|-----------------------------|---------------------|
| Freon-113 | 0.07 |
| Freon-114 | < 0.02 |
| Freon-12 | 0.40 |
| Hexachloro-1,3-butadiene | < 0.50 |
| Isobutane | 0.38 |
| Isopentane | 0.18 |
| Isoprene | 0.05 |
| Isopropyl alcohol | < 0.4 |
| Isopropylbenzene | < 0.01 |
| m,p-Xylene | 0.08 |
| m-Diethylbenzene | < 0.04 |
| m-Ethyltoluene | < 0.08 |
| Methyl butyl ketone | < 0.50 |
| Methyl ethyl ketone | < 0.3 |
| Methyl isobutyl ketone | < 0.4 |
| Methyl methacrylate | < 0.07 |
| Methyl tert butyl ether | < 0.03 |
| Methylcyclohexane | 0.21 |
| Methylcyclopentane | 0.12 |
| Methylene chloride | < 0.3 |
| n-Butane | 0.47 |
| n-Decane | < 0.06 |
| n-Dodecane | 1.7 |
| n-Heptane | 0.08 |
| n-Hexane | 0.14 |
| n-Nonane | 0.02 |
| n-Octane | 0.02 |
| n-Pentane | 0.3 |
| n-Propylbenzene | < 0.05 |
| n-Undecane | < 0.5 |
| Naphthalene | 0.8 |
| o-Ethyltoluene | 0.01 |
| o-Xylene | 0.03 |
| p-Diethylbenzene | < 0.04 |
| p-Ethyltoluene | < 0.07 |
| Styrene | < 0.04 |
| Tetrachloroethylene | < 0.04 |
| Tetrahydrofuran | < 0.4 |
| Toluene | 0.14 |
| trans-1,2-Dichloroethylene | < 0.01 |
| trans-1,3-Dichloropropylene | < 0.04 |
| trans-2-Butene | < 0.01 |
| trans-2-Pentene | < 0.02 |
| Trichloroethylene | < 0.04 |
| Vinyl acetate | < 0.4 |
| Vinyl chloride | < 0.02 |

PAH RESULTS

Sample ID: 16020060-002

Customer ID: LICA

Cust Samp ID: LICA/PUF/ELK/feb 6, 2016

Priority: Normal

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TISCH PUF PLUS Sample Collection Data Sheet

Client: LICA Puf+ S/N: P13-01
 Location: Elk Point Airport Motor S/N: 1139/100-1015
 Station ID: LICA 35 Installation Date/Time: Feb 3, 2016/14:12
 Field Sample ID: LICA/PUF/ELK/feb 6, 2016 Removal Date/Time: Feb 8, 2016/12:43

Sample Data Collection Information

Sample Date: Feb 6, 2016 Average Pressure (mmHg) 6.90
 Start Time (mst): 00:00 Average Flow (Q_{cal}) 2.29
 End Time (mst): 00:00 / Feb 7, 2016 Average Temperature (°C) -12.9°
 Elapsed Time (Hours): 24.0 Volume (V_{std} m³) 330.19

Sample Recovery Checklist

(circle one)

Flow Rate 230 slpm +/- 0.2 slpm ? YES NO
 Average temperature appears correct? YES NO
 Average pressure appears correct? YES NO
 Any error messages? (if yes list below) YES NO
 Sample duration 24 hours? YES NO
 Date of last calibration/audit: NOV 25, 2015
 Other observations? n/a

Deployed By: Alex Yakupov
 Collected By: Alex Yakupov Date: Feb 8, 2016

Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: FEBRUARY 6, 2016
PUF S/N: P1301

| PARAMETERS | CONCENTRATION (UG) |
|--------------------------------|--------------------|
| 1-Methylnaphthalene | 0.04 |
| 2-Methylnaphthalene | 0.08 |
| 3-Methylcholanthrene | < 0.01 |
| 7,12-Dimethylbenz(a)anthracene | < 0.01 |
| Acenaphthene | 0.03 |
| Acenaphthylene | 0.02 |
| Acridine | 0.01 |
| Anthracene | < 0.01 |
| Benzo(a)anthracene | < 0.01 |
| Benzo(a)pyrene | < 0.01 |
| Benzo(b,j,k)fluoranthene | 0.03 |
| Benzo(c)phenanthrene | 0.02 |
| Benzo(e)pyrene | < 0.01 |
| Benzo(ghi)perylene | < 0.01 |
| Chrysene | 0.01 |
| Dibenzo(a,h)pyrene | < 0.01 |
| Dibenzo(a,i)pyrene | < 0.01 |
| Dibenzo(a,l)pyrene | < 0.01 |
| Dibenzo(ah)anthracene | < 0.01 |
| Fluoranthene | 0.08 |
| Fluorene | 0.09 |
| Indeno(1,2,3-cd)pyrene | < 0.01 |
| Naphthalene | 0.10 |
| Perylene | < 0.01 |
| Phenanthrene | 0.15 |
| Pyrene | 0.03 |
| Retene | 0.02 |

Sample ID: 16020158-002

Customer ID: LICA

Cust Samp ID: LICA/PUF/ELK/Feb 12, 2016

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TISCH PUF PLUS Sample Collection Data Sheet

Client: LICA Puff S/N: 9702
 Location: ELK Point Airport Motor S/N: 1139/100-1015
 Station ID: LICA 35 Installation Date/Time: Feb 8, 2016/12:44
 Field Sample ID: LICA/PUF/ELK/Feb 12, 2016 Removal Date/Time: Feb 16, 2016/15:03

Sample Data Collection Information

Sample Date: Feb 12, 2016 Average Pressure (mmHg) 709
 Start Time (mst): 00:00 Average Flow (Q_{cal}) 229
 End Time (mst): 00:00/ Feb 13, 2016 Average Temperature (°C) -15.8°
 Elapsed Time (Hours): 24.0 Volume (Vstd m³) 330.17

Sample Recovery Checklist

(circle one)

Flow Rate 230 slpm +/- 0.2 slpm ? YES NO
 Average temperature appears correct? YES NO
 Average pressure appears correct? YES NO
 Any error messages? (if yes list below) YES NO
 Sample duration 24 hours? YES NO
 Date of last calibration/audit: Nov 25, 2015
 Other observations? n/a

Deployed By: Alex Yakupov
 Collected By: Alex Yakupov Date: Feb 16, 2016

Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: FEBRUARY 12, 2016
PUF S/N: 9702

| PARAMETERS | CONCENTRATION (UG) |
|--------------------------------|--------------------|
| 1-Methylnaphthalene | 0.16 |
| 2-Methylnaphthalene | 0.24 |
| 3-Methylcholanthrene | < 0.01 |
| 7,12-Dimethylbenz(a)anthracene | < 0.01 |
| Acenaphthene | 0.03 |
| Acenaphthylene | 0.03 |
| Acridine | 0.01 |
| Anthracene | < 0.01 |
| Benzo(a)anthracene | < 0.01 |
| Benzo(a)pyrene | < 0.01 |
| Benzo(b,j,k)fluoranthene | 0.03 |
| Benzo(c)phenanthrene | < 0.01 |
| Benzo(e)pyrene | < 0.01 |
| Benzo(ghi)perylene | < 0.01 |
| Chrysene | < 0.01 |
| Dibenzo(a,h)pyrene | < 0.01 |
| Dibenzo(a,i)pyrene | < 0.01 |
| Dibenzo(a,l)pyrene | < 0.01 |
| Dibenzo(ah)anthracene | < 0.01 |
| Fluoranthene | 0.06 |
| Fluorene | 0.05 |
| Indeno(1,2,3-cd)pyrene | < 0.01 |
| Naphthalene | 0.17 |
| Perylene | < 0.01 |
| Phenanthrene | 0.11 |
| Pyrene | 0.02 |
| Retene | 0.02 |

Sample ID: 16020201-004

Customer ID: LICA

Cust Samp ID: LICA/PUF/ELK/feb 18, 2016

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TISCH PUF PLUS Sample Collection Data Sheet

Client: LICA Puff S/N: TE-05
 Location: Elk Point Airport Motor S/N: 1139/100-1015
 Station ID: LICA 35 Installation Date/Time: Feb 16, 2016/15:04
 Field Sample ID: LICA/PUF/ELK/ Feb 18, 2016 Removal Date/Time: Feb 22, 2016/13:58

Sample Data Collection Information

Sample Date: Feb 18, 2016 Average Pressure (mmHg) 683
 Start Time (mst): 00:00 Average Flow (Q_{cal}) FAV 229
 End Time (mst): 00:00 / Feb 19, 2016 Average Temperature (°C) -1.7°
 Elapsed Time (Hours): 24:0 Volume (Vstd m³) 330.20

Sample Recovery Checklist

(circle one)

- Flow Rate 230 slpm +/- 0.2 slpm ? YES NO
- Average temperature appears correct? YES NO
- Average pressure appears correct? YES NO
- Any error messages? (if yes list below) YES NO NO
- Sample duration 24 hours? YES NO

Date of last calibration/audit: Nov 25, 2015

Other observations? n/a

Deployed By: Alex Yankov

Collected By: Alex Yankov Date: Feb 22, 2016

Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: FEBRUARY 18 , 2016
PUS/N: TE05

| PARAMETERS | CONCENTRATION (UG) |
|--------------------------------|--------------------|
| 1-Methylnaphthalene | 0.05 |
| 2-Methylnaphthalene | 0.08 |
| 3-Methylcholanthrene | < 0.01 |
| 7,12-Dimethylbenz(a)anthracene | < 0.01 |
| Acenaphthene | 0.03 |
| Acenaphthylene | 0.01 |
| Acridine | < 0.01 |
| Anthracene | 0.01 |
| Benzo(a)anthracene | < 0.01 |
| Benzo(a)pyrene | < 0.01 |
| Benzo(b,j,k)fluoranthene | 0.04 |
| Benzo(c)phenanthrene | < 0.01 |
| Benzo(e)pyrene | < 0.01 |
| Benzo(ghi)perylene | < 0.01 |
| Chrysene | 0.01 |
| Dibenzo(a,h)pyrene | < 0.01 |
| Dibenzo(a,i)pyrene | < 0.01 |
| Dibenzo(a,l)pyrene | < 0.01 |
| Dibenzo(ah)anthracene | < 0.01 |
| Fluoranthene | 0.07 |
| Fluorene | 0.07 |
| Indeno(1,2,3-cd)pyrene | < 0.01 |
| Naphthalene | 0.05 |
| Perylene | < 0.01 |
| Phenanthrene | 0.10 |
| Pyrene | 0.02 |
| Retene | 0.02 |

Sample ID: 16030001-002

Customer ID: LICA

Cust Samp ID: LICA/PUF/ELK/FEB 24, 2016

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TISCH PUF PLUS Sample Collection Data Sheet

Client: LICA Puf+ S/N: TE-07
 Location: Elk Point Airport Motor S/N: 1139/100-1015
 Station ID: LICA 35 Installation Date/Time: Feb 22, 2016 / 13:57
 Field Sample ID: LICA/PUF/ELK/FEB 24, 2016 Removal Date/Time: Feb 25, 2016 / 11:56

Sample Data Collection Information

Sample Date: Feb 24, 2016 Average Pressure (mmHg) 7.07
 Start Time (mst): 00:00 Average Flow (Q_{avg}) 2.29
 End Time (mst): 00:00 / Feb 25, 2016 Average Temperature (°C) -4.4°
 Elapsed Time (hours): 24:0 Volume (Vstd m³) 330.18

Sample Recovery Checklist

(circle one)

Flow Rate 230 slpm +/- 0.2 slpm? YES NO
 Average temperature appears correct? YES NO
 Average pressure appears correct? YES NO
 Any error messages? (if yes list below) YES NO NO
 Sample duration 24 hours? YES NO
 Date of last calibration/audit: Nov 25, 2015
 Other observations: n/a

Deployed By: Alex Yakupov
 Collected By: Alex Yakupov Date: Feb 25, 2016

Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: FEBRUARY 24 , 2016
PUF S/N: TE07

| PARAMETERS | CONCENTRATION (UG) |
|--------------------------------|--------------------|
| 1-Methylnaphthalene | 0.35 |
| 2-Methylnaphthalene | 0.67 |
| 3-Methylcholanthrene | < 0.01 |
| 7,12-Dimethylbenz(a)anthracene | < 0.01 |
| Acenaphthene | 0.05 |
| Acenaphthylene | 0.03 |
| Acridine | < 0.01 |
| Anthracene | 0.01 |
| Benzo(a)anthracene | 0.01 |
| Benzo(a)pyrene | < 0.01 |
| Benzo(b,j,k)fluoranthene | 0.04 |
| Benzo(c)phenanthrene | < 0.01 |
| Benzo(e)pyrene | < 0.01 |
| Benzo(ghi)perylene | < 0.01 |
| Chrysene | 0.01 |
| Dibenzo(a,h)pyrene | < 0.01 |
| Dibenzo(a,l)pyrene | < 0.01 |
| Dibenzo(a,l)pyrene | < 0.01 |
| Dibenzo(ah)anthracene | < 0.01 |
| Fluoranthene | 0.08 |
| Fluorene | 0.09 |
| Indeno(1,2,3-cd)pyrene | < 0.01 |
| Naphthalene | 0.40 |
| Perylene | < 0.01 |
| Phenanthrene | 0.12 |
| Pyrene | 0.03 |
| Retene | 0.03 |

NMHC CANISTER RESULTS

Sample ID: 16020060-005

Customer ID: LICA

Cust Samp ID: LICAVOC/ELK/Feb 4, 2016

Priority: Normal

Maxxam

VOC Sample Collection Data Sheet

Client: LICA

Location: ELK POINT AIRPORT

Station ID: LICA 35

Field Sample ID: LICA/VOC/ELK/Feb 4, 2016

Sampler S/N: n/a

Canister ID: H 3286

Canister Installation Date/Time: January 13, 2016 / 13:26

Canister Removal Date/Time: February 05, 2016 / 13:03

| Date and Time Information | | |
|---------------------------|------------------|----------------------|
| Sample Date | Start Time (MST) | End Time (MST) |
| Feb 4, 2016 | 16:15 | n/a |
| | | Elapsed Time (Hours) |
| | | n/a |

| Flow Settings | | |
|----------------------|-------------|------------------------------|
| Meter Reading (sccm) | Pot Set Pt. | Pump Pressure Setting (psig) |
| n/a | n/a | n/a |

| Canister Information | |
|---------------------------------|-------------------------------|
| Initial Canister Vacuum (in Hg) | Final Canister Vacuum (in Hg) |
| - 28.0 | - 2.0 |

Canister valve open prior to sampling? YES NO

Canister valve closed prior to disconnection? YES (YES) NO

Comments:

NMHC sampling canister

Technician Signature:

Sample in - by Alex Yakupov
Sample out - by Alex Yakupov Date: Feb 5, 2016

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Volatile Organics Data Results (NMHC Canister System)

Date: FEBRUARY 4, 2016
Canister ID: H3286

| PARAMETERS | CONCENTRATION (PPB) |
|---------------------------|---------------------|
| 1,1,1-Trichloroethane | < 0.02 |
| 1,1,2,2-Tetrachloroethane | < 0.02 |
| 1,1,2-Trichloroethane | 0.06 |
| 1,1-Dichloroethane | < 0.02 |
| 1,1-Dichloroethylene | < 0.05 |
| 1,2,3-Trimethylbenzene | < 0.06 |
| 1,2,4-Trichlorobenzene | < 0.9 |
| 1,2,4-Trimethylbenzene | 0.12 |
| 1,2-Dibromoethane | < 0.02 |
| 1,2-Dichlorobenzene | 0.11 |
| 1,2-Dichloroethane | 0.06 |
| 1,2-Dichloropropane | 0.08 |
| 1,3,5-Trimethylbenzene | 0.08 |
| 1,3-Butadiene | < 0.02 |
| 1,3-Dichlorobenzene | < 0.3 |
| 1,4-Dichlorobenzene | < 0.5 |
| 1,4-Dioxane | < 0.5 |
| 1-Butene | 3.02 |
| 1-Hexene | < 0.02 |
| 1-Pentene | 0.02 |
| 2,2,4-Trimethylpentane | < 0.01 |
| 2,2-Dimethylbutane | 0.07 |
| 2,3,4-Trimethylpentane | 0.14 |
| 2,3-Dimethylbutane | 0.17 |
| 2,3-Dimethylpentane | 0.22 |
| 2,4-Dimethylpentane | 0.08 |
| 2-Methylheptane | 0.05 |
| 2-Methylhexane | 0.48 |
| 2-Methylpentane | 0.24 |
| 3-Methylheptane | 0.03 |
| 3-Methylhexane | 0.66 |
| 3-Methylpentane | 0.16 |
| Acetone | 8.8 |
| Acrolein | < 0.3 |
| Benzene | 0.31 |
| Benzyl chloride | < 0.5 |
| Bromodichloromethane | 0.04 |
| Bromoform | 0.07 |
| Bromomethane | < 0.01 |
| Carbon disulfide | 0.49 |
| Carbon tetrachloride | 0.10 |
| Chlorobenzene | 0.11 |
| Chloroethane | 0.02 |
| Chloroform | 0.04 |
| Chloromethane | 1.18 |
| cis-1,2-Dichloroethene | < 0.01 |
| cis-1,3-Dichloropropene | < 0.05 |
| cis-2-Butene | < 0.02 |
| cis-2-Pentene | < 0.02 |
| Cyclohexane | 0.17 |
| Cyclopentane | 0.06 |
| Dibromochloromethane | 0.07 |
| Ethanol | 10.9 |
| Ethyl acetate | < 0.5 |
| Ethylbenzene | 0.15 |
| Freon-11 | 0.34 |



Volatile Organics Data Results (NMHC Canister System)

Date: FEBRUARY 4, 2016
Canister ID: H3286

| PARAMETERS | CONCENTRATION (PPB) |
|-----------------------------|---------------------|
| Freon-113 | 0.09 |
| Freon-114 | 0.03 |
| Freon-12 | 0.69 |
| Hexachloro-1,3-butadiene | < 0.58 |
| Isobutane | 0.99 |
| Isopentane | 2.04 |
| Isoprene | 1.33 |
| Isopropyl alcohol | < 0.5 |
| Isopropylbenzene | 0.02 |
| m,p-Xylene | 0.30 |
| m-Diethylbenzene | < 0.05 |
| m-Ethyltoluene | < 0.09 |
| Methyl butyl ketone | < 0.58 |
| Methyl ethyl ketone | < 0.3 |
| Methyl isobutyl ketone | < 0.5 |
| Methyl methacrylate | < 0.08 |
| Methyl tert butyl ether | < 0.03 |
| Methylcyclohexane | 0.35 |
| Methylcyclopentane | 0.20 |
| Methylene chloride | < 0.3 |
| n-Butane | 1.29 |
| n-Decane | < 0.07 |
| n-Dodecane | < 0.5 |
| n-Heptane | 0.50 |
| n-Hexane | 0.32 |
| n-Nonane | < 0.01 |
| n-Octane | 0.06 |
| n-Pentane | 1.1 |
| n-Propylbenzene | < 0.06 |
| n-Undecane | < 0.6 |
| Naphthalene | 1.2 |
| o-Ethyltoluene | 0.02 |
| o-Xylene | 0.15 |
| p-Diethylbenzene | < 0.05 |
| p-Ethyltoluene | 0.10 |
| Styrene | 0.09 |
| Tetrachloroethylene | < 0.05 |
| Tetrahydrofuran | < 0.5 |
| Toluene | 1.88 |
| trans-1,2-Dichloroethylene | < 0.01 |
| trans-1,3-Dichloropropylene | < 0.05 |
| trans-2-Butene | < 0.01 |
| trans-2-Pentene | < 0.02 |
| Trichloroethylene | < 0.05 |
| Vinyl acetate | < 0.5 |
| Vinyl chloride | < 0.02 |

APPENDIX III
EQUIPMENT CALIBRATION RESULTS

SULPHUR DIOXIDE



API 100E Sulphur Dioxide Analyzer Calibration

| | | | |
|--------------------------|------------------|--|---------------------------------|
| Date: | February 5, 2016 | Barometric Pressure: | 0.919 atm |
| Company/Alrshed: | LICA | Station Temperature °C: | 19 |
| Location/Station Name: | Elk Point | Weather Conditions: | Mainly cloudy with sunny breaks |
| Parameter: | Sulphur Dioxide | Calibration Purpose: | routine monthly |
| Start Time 24 hr. (mst): | 11:24 | Performed By/Reviewer: | Alex Yakupov Trina Whitsitt |
| End Time 24 hr. (mst): | 15:27 | Cal Gas Expiry Date: | March 12, 2019 |
| Calibration Method: | Gas Dilution | Converter Model & s/n (if applicable): | n/a |

| | | | | |
|-----------|------------------------|-----------------|----------------|-------|
| Analyzer: | Serial Number: | 467 | Range ppb: | 1000 |
| | Last Calibration Date: | January 7, 2016 | As Found C.F.: | 1.012 |
| | Previous C.F.: | 1.000 | New C.F.: | 1.000 |

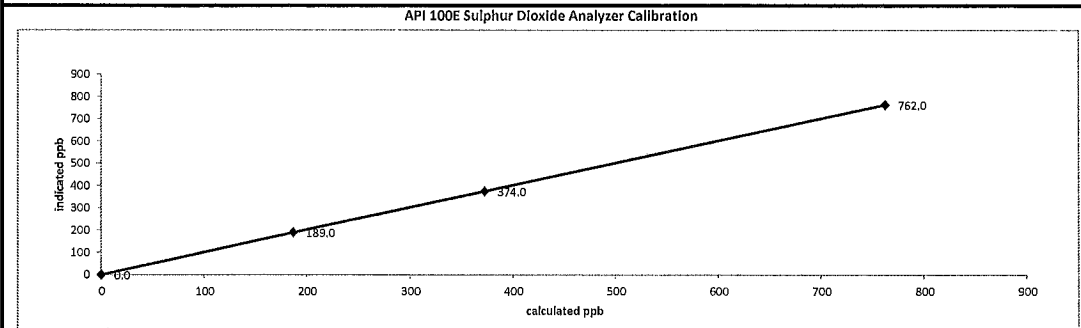
| Calibrator: | Flow Meter ID's: | n/a | <table border="1"> <thead> <tr> <th>Point</th> <th>Sulphur Dioxide Standard Calibration Points</th> </tr> </thead> <tbody> <tr> <td>High</td> <td>780</td> </tr> <tr> <td>Mid</td> <td>380</td> </tr> <tr> <td>Low</td> <td>190</td> </tr> </tbody> </table> | Point | Sulphur Dioxide Standard Calibration Points | High | 780 | Mid | 380 | Low | 190 |
|-------------|---|--------------|--|-------|---|------|-----|-----|-----|-----|-----|
| Point | Sulphur Dioxide Standard Calibration Points | | | | | | | | | | |
| High | 780 | | | | | | | | | | |
| Mid | 380 | | | | | | | | | | |
| Low | 190 | | | | | | | | | | |
| | Make & Model: | SABIO 2010 D | | | | | | | | | |
| | Serial #: | 11900613 | | | | | | | | | |
| | Cal Gas Cylinder I.D. #: | BLM002073 | | | | | | | | | |
| | Cal Gas Conc. (ppm): | 49.5 | | | | | | | | | |

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

| Point | Calibrator Flow Rates (cc/min) | | | Calculated Concentration: | | Indicated Concentration: | | Correction Factors (C.F.): |
|-----------------|--------------------------------|---------|-------|---------------------------|-------|--------------------------|-------|----------------------------|
| | Diluent | Cat Gas | Total | (ppb) | (ppb) | (ppb) | (ppb) | |
| as found zero | 5013 | 0.00 | 5013 | 0.0 | 0.0 | | | N/A |
| as found high | 4938 | 77.20 | 5015 | 762.0 | 753.0 | | | 1.012 |
| adjusted zero | 5013 | 0.00 | 5013 | 0.0 | 0.0 | | | n/a |
| adjusted high | 4938 | 77.20 | 5015 | 762.0 | 762.0 | | | 1.000 |
| mid | 4976 | 37.70 | 5014 | 372.2 | 374.0 | | | 0.995 |
| low | 4994 | 18.90 | 5013 | 186.6 | 189.0 | | | 0.987 |
| calibrator zero | 5013 | 0.00 | 5013 | 0.0 | 0.0 | | | n/a |
| Average C.F. = | | | | | | | | 0.994 |

Linear Regression/Calibration Results:

| | | | |
|------------------------------------|--------|--------|--------------|
| Correlation Coefficient = | 1.000 | LIMITS | > or = 0.995 |
| Slope = | 1.001 | | .95-1.05 |
| b (Intercept as % of full scale) = | -0.13% | | ± 3% F.S. |
| % change in C.F. from last cal = | -1.19% | | ± 10% |

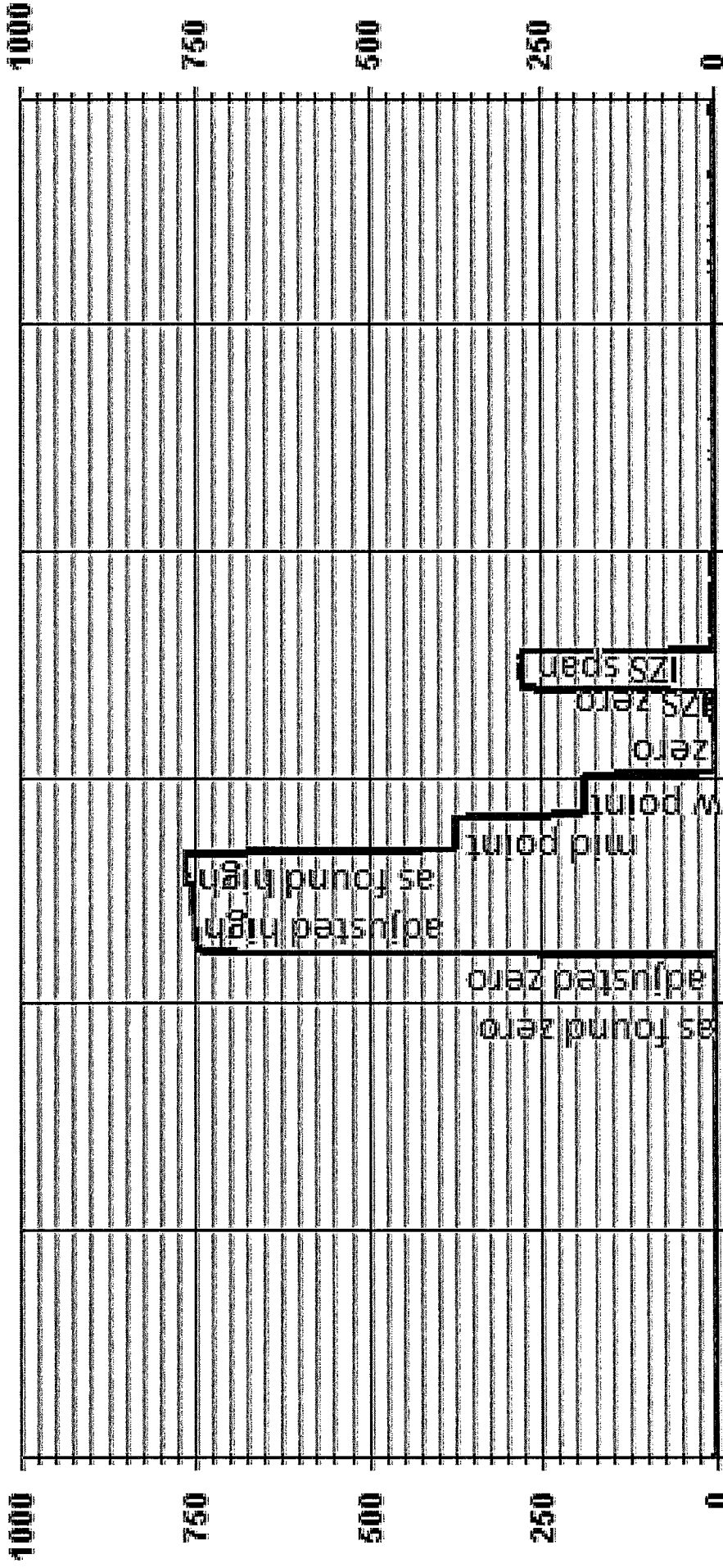


| As found: | | As left: | |
|----------------|--------|----------------|--------|
| SLOPE: | 1.054 | SLOPE: | 1.067 |
| OFFSET: | 118.6 | OFFSET: | 118.6 |
| HVPS: | 512 | HVPS: | 512 |
| RCELL TEMP: | 50.0 | RCELL TEMP: | 50.0 |
| BOX TEMP: | 31.1 | BOX TEMP: | 33.1 |
| PMT TEMP: | 8.1 | PMT TEMP: | 8.1 |
| IZS TEMP: | 45.0 | IZS TEMP: | 45.0 |
| PRES: | 24.5 | PRES: | 24.4 |
| SAMP FL: | 616 | SAMP FL: | 613 |
| NORM PMT: | 117.0 | NORM PMT: | 117.0 |
| UV LAMP: | 2808.4 | UV LAMP: | 2802.9 |
| LAMP RATIO: | 93.3 | LAMP RATIO: | 93.3 |
| STR. LGT | 62.5 | STR. LGT | 63.2 |
| DRK PMT: | 14.3 | DRK PMT: | 15.2 |
| DRK LMP: | 2.8 | DRK LMP: | 2.7 |
| Internal Span: | 283.2 | Internal Span: | 276.9 |

Comments:

Sample filter changed.

01 Minute Averages



— LICA35 SO2_ PPB

HYDROGEN SULPHIDE



API 101E Hydrogen Sulphide Analyzer Calibration

| | | | |
|--------------------------|-------------------|--|-------------------------------|
| Date: | February 4, 2016 | Barometric Pressure: | 0.927 atm |
| Company/Airshed: | LICA | Station Temperature °C: | 19 |
| Location/Station Name: | Elk Point | Weather Conditions: | Mix of sun and clouds |
| Parameter: | Hydrogen Sulphide | Calibration Purpose: | routine monthly |
| Start Time 24 hr. (mst): | 13:43 | Performed By/Reviewer: | Alex Yakupov Trina Whitsitt |
| End Time 24 hr. (mst): | 17:09 | Cal Gas Expiry Date: | July 15, 2017 |
| Calibration Method: | Gas Dilution | Converter Model & s/n (if applicable): | n/a |

| | | | | |
|-----------|------------------------|-----------------|----------------|-------|
| Analyzer: | Serial Number: | 510 | Range ppb: | 100 |
| | Last Calibration Date: | January 7, 2016 | As Found C.F.: | 1.025 |
| | Previous C.F.: | 1.004 | New C.F.: | 0.998 |

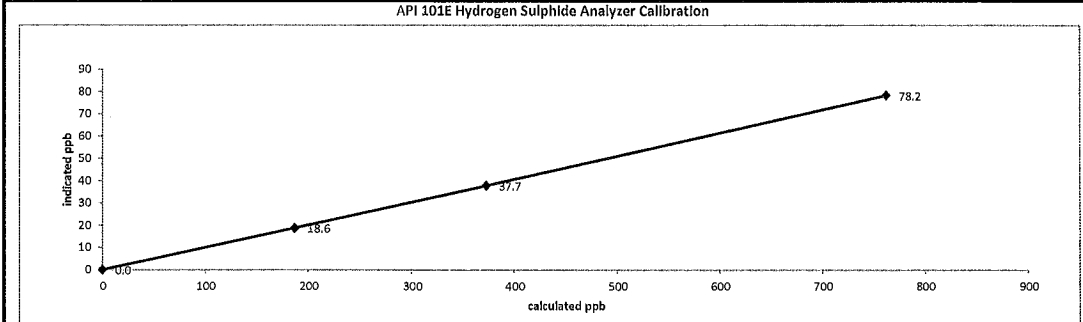
| | | | | |
|-------------|--------------------------|---------|--|---|
| Calibrator: | Flow Meter ID's: | n/a | Standard Calibration Points for Ranges | |
| | Make & Model: | API 700 | Point | Hydrogen Sulphide Standard Calibration Points |
| | Serial #: | 830 | High | 78 |
| | Cal Gas Cylinder I.D. #: | LL36837 | Mid | 38 |
| | Cal Gas Conc. (ppm): | 10.0 | Low | 19 |

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

| Calibrator Flow Rates (cc/min) | | | | Calculated Concentration: | Indicated Concentration: | Correction Factors (C.F.): |
|--------------------------------|---------|---------|-------|---------------------------|--------------------------|----------------------------|
| Point | Diluent | Cal Gas | Total | (ppb) | (ppb) | |
| as found zero | 7498 | 0.00 | 7498 | 0.0 | 0.5 | N/A |
| as found high | 7440 | 58.50 | 7499 | 78.0 | 76.6 | 1.025 |
| adjusted zero | 7498 | 0.00 | 7498 | 0.0 | 0.0 | n/a |
| adjusted high | 7440 | 58.50 | 7499 | 78.0 | 78.2 | 0.998 |
| mid | 7471 | 28.50 | 7500 | 38.0 | 37.7 | 1.008 |
| low | 7481 | 14.30 | 7495 | 19.1 | 18.6 | 1.026 |
| calibrator zero | 7498 | 0.00 | 7498 | 0.0 | 0.0 | n/a |
| Average C.F.= | | | | | | 1.010 |

Linear Regression/Calibration Results:

| | | | |
|------------------------------------|--------|--------|--------------|
| Correlation Coefficient = | 1.000 | LIMITS | > or = 0.995 |
| Slope = | 0.996 | | .95-1.05 |
| b (Intercept as % of full scale) = | 0.29% | | ± 3% F.S. |
| % change in C.F. from last cal = | -2.11% | | ± 10% |

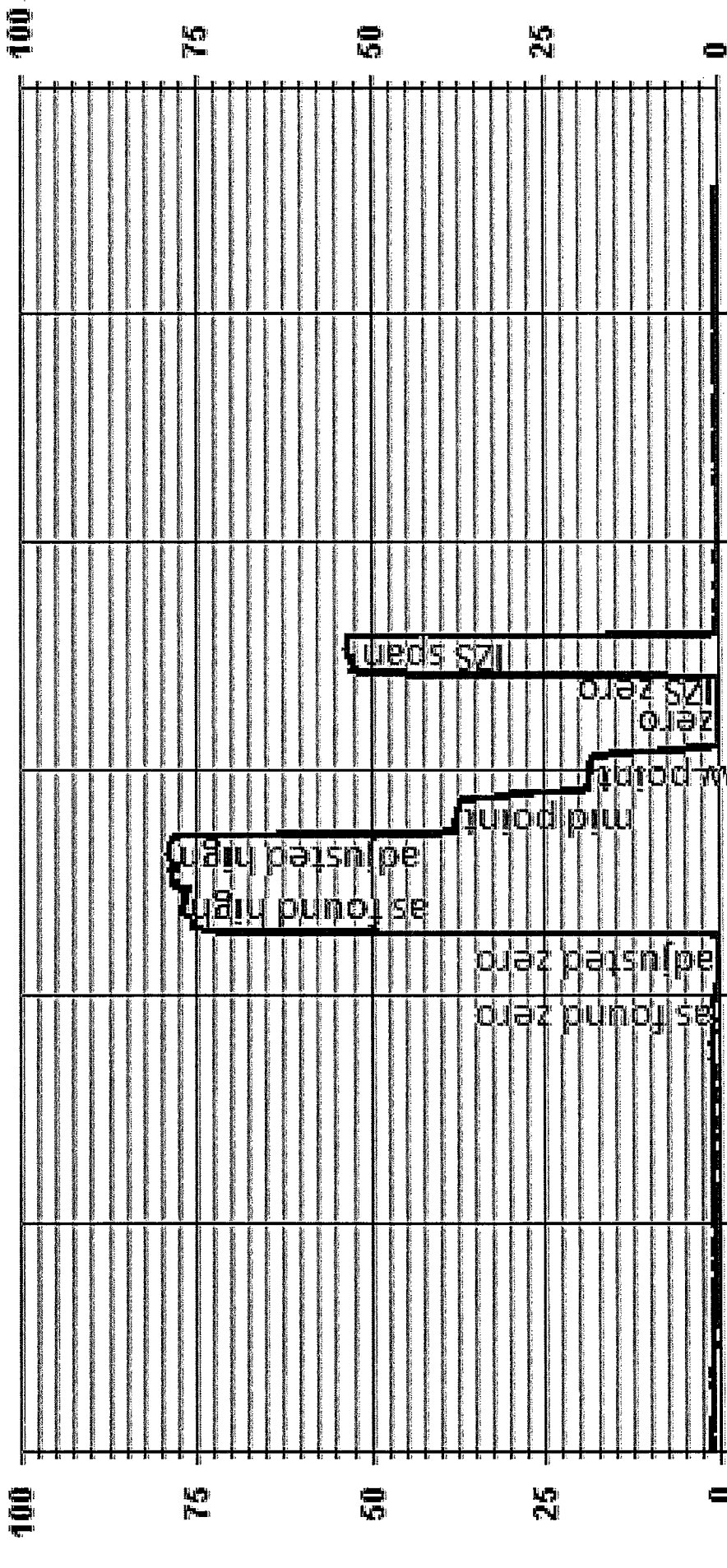


| As found: | | As left: | |
|-----------------|--------|-----------------|--------|
| SLOPE: | 1.129 | SLOPE: | 1.158 |
| OFFSET: | 28.4 | OFFSET: | 29.7 |
| HVPS: | 526 | HVPS: | 526 |
| RCELL TEMP: | 50.0 | RCELL TEMP: | 50.0 |
| BOX TEMP: | 33.0 | BOX TEMP: | 32.8 |
| PMT TEMP: | 8.4 | PMT TEMP: | 8.4 |
| IZS TEMP: | 45.0 | IZS TEMP: | 45.0 |
| Converter Temp: | 314.4 | Converter Temp: | 314.4 |
| PRES: | 21.7 | PRES: | 21.7 |
| SAMP FL: | 564 | SAMP FL: | 564 |
| UV LAMP: | 2721.0 | UV LAMP: | 2723.2 |
| LAMP RATIO: | 85.8 | LAMP RATIO: | 85.8 |
| STR. LGT | 16.0 | STR. LGT | 17.2 |
| DRK PMT: | 34.2 | DRK PMT: | 34.3 |
| DRK LMP: | -2.1 | DRK LMP: | -2.1 |
| Internal Span: | 53.6 | Internal Span: | 53.2 |

Comments:

Sample filter changed, 14:19 - 14:25 - SO2 scrubber tested. Concentration: 20 ppb. SO2 gas cylinder - BLM002073, Expiry - Mach 12, 2019. The analyzer response is 0.1 ppb.

01 Minute Averages

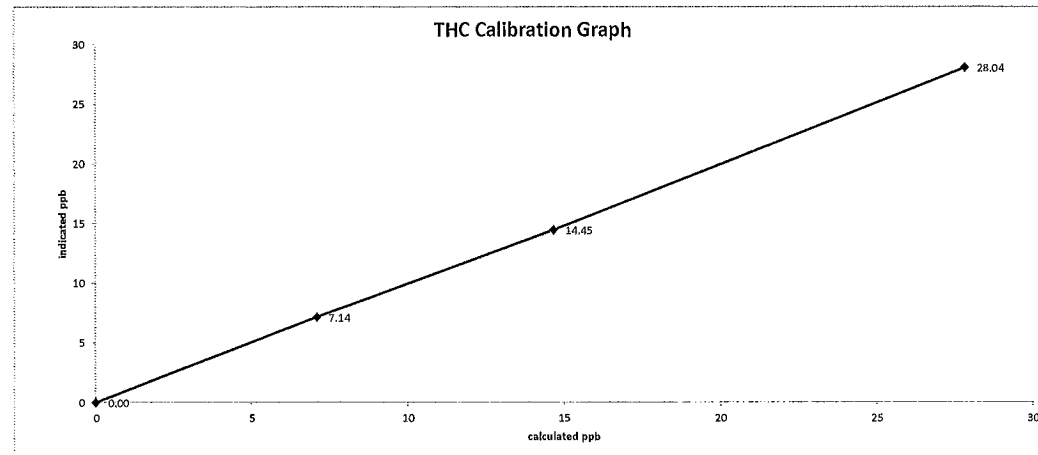
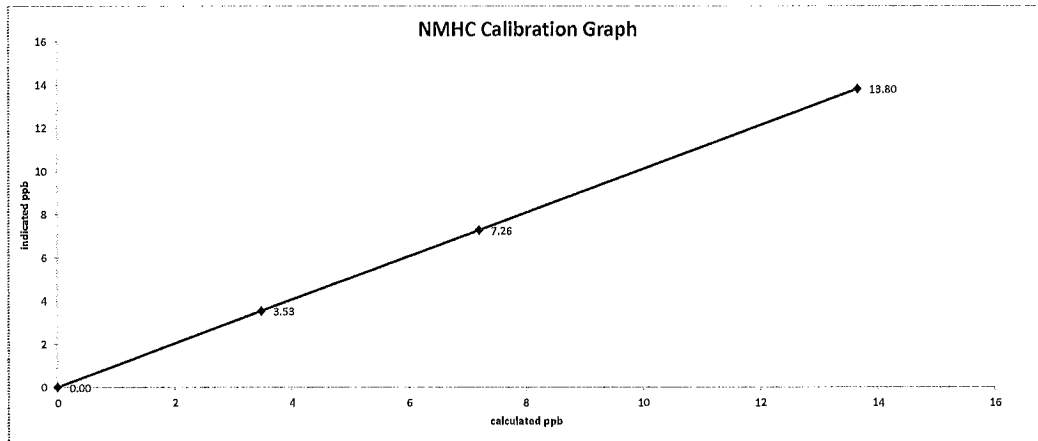
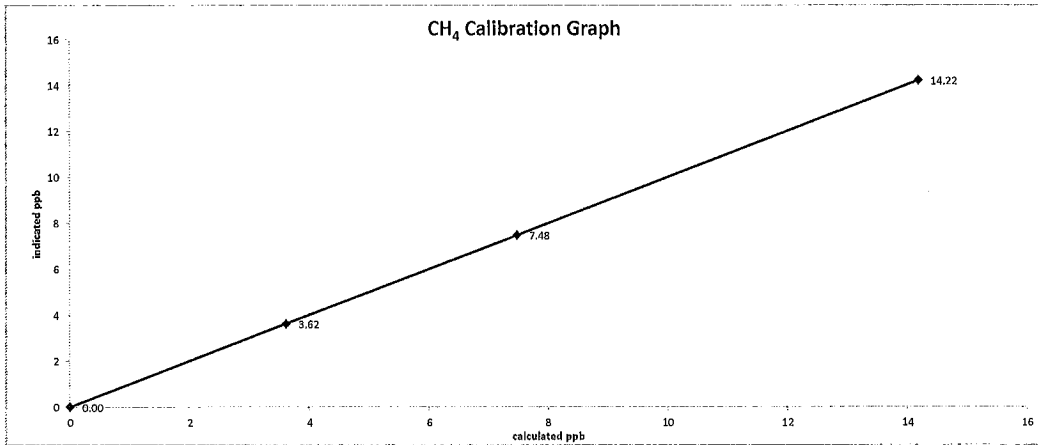


— LICA35 H2S_ PPB

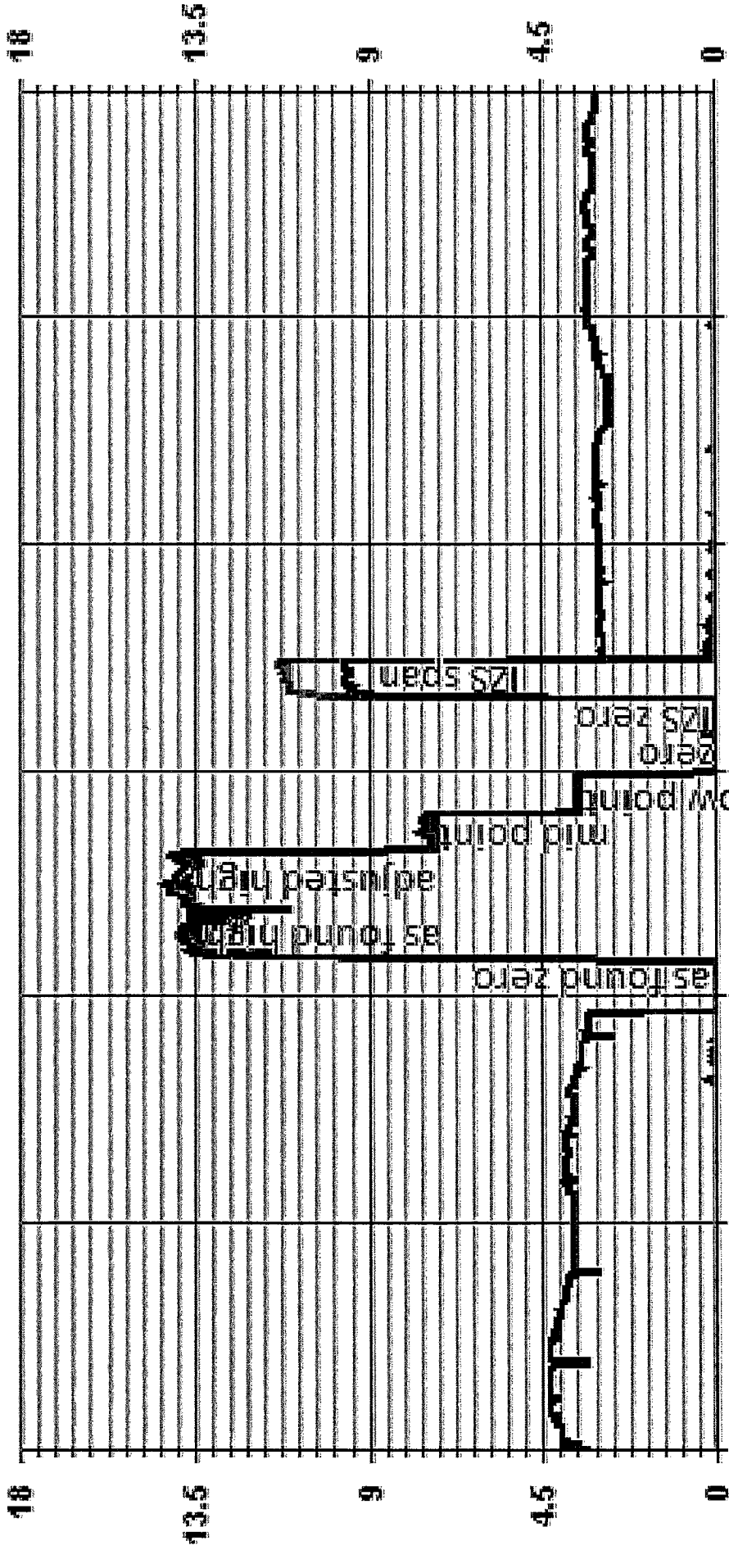
TOTAL HYDROCARBON

| Thermo 55i Methane/Non-Methane Analyzer Calibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|----------------|--|----------------------------------|-----------------------|----------------------|---------------------------------|----------------------|---------------------|----------------------------|-------|-------|-------|--------------|---------|-------|-------|-------|----------|------------------------------------|--------|-------|--------|-----------|----------------------------------|--------|--------|--------|-------|--|--|--|
| Date: <u>February 5, 2016</u> Company/Alrshed: <u>LICA</u> Location/Station Name: <u>Elk Point</u> Parameter: <u>CH₄ / NMHC / THC</u> Start/End Time 24 hr. (mst): <u>11:24 / 14:47</u> Calibration Method: <u>Gas Dilution</u> | Barometric Pressure: <u>0.919 atm</u> Station Temperature °C: <u>19</u> Weather Conditions: <u>Mainly cloudy with sunny breaks</u> Calibration Purpose: <u>routine monthly</u> Performed By/Reviewer: <u>Alex Yakupov</u> / <u>Trina Whitsitt</u> Cal Gas Expiry Date: <u>November 25, 2023</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analyzer: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Serial Number: <u>1236656107</u> Last Calibration Date: <u>January 6, 2016</u> Range ppm: <u>20 CH₄/20 NMHC/40 THC</u> | Correction Factors: <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Previous C.F.:</th> <th>As Found C.F.:</th> <th>New C.F.:</th> </tr> </thead> <tbody> <tr> <td>CH₄ =</td> <td>0.996</td> <td>1.034</td> <td>0.999</td> </tr> <tr> <td>NMHC =</td> <td>1.000</td> <td>1.015</td> <td>0.990</td> </tr> <tr> <td>THC =</td> <td>0.998</td> <td>1.024</td> <td>0.994</td> </tr> </tbody> </table> | | Previous C.F.: | As Found C.F.: | New C.F.: | CH ₄ = | 0.996 | 1.034 | 0.999 | NMHC = | 1.000 | 1.015 | 0.990 | THC = | 0.998 | 1.024 | 0.994 | | | | | | | | | | | | | | | |
| | Previous C.F.: | As Found C.F.: | New C.F.: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CH ₄ = | 0.996 | 1.034 | 0.999 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NMHC = | 1.000 | 1.015 | 0.990 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| THC = | 0.998 | 1.024 | 0.994 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibrator: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flow Meter ID's: <u>n/a</u> Make & Model: <u>API 700</u> Serial #: <u>830</u> Cal Gas Cylinder I.D. #: <u>LL165372</u> CH ₄ Cylinder Conc.: <u>606.0</u> <u>212.0</u> = C ₃ H ₈ Cylinder Conc. CH ₄ as C ₃ H ₈ : <u>583.0</u> <u>1189.0</u> = total CH ₄ equivalent | Standard Calibration Points for Analyzer Range of 20/20/40 ppm <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Point</th> <th>CH₄</th> <th>NMHC</th> <th>THC</th> </tr> </thead> <tbody> <tr> <td>High</td> <td>13.00</td> <td>13.00</td> <td>26.00</td> </tr> <tr> <td>Mid</td> <td>7.00</td> <td>7.00</td> <td>14.00</td> </tr> <tr> <td>Low</td> <td>3.00</td> <td>3.00</td> <td>6.00</td> </tr> </tbody> </table> | Point | CH ₄ | NMHC | THC | High | 13.00 | 13.00 | 26.00 | Mid | 7.00 | 7.00 | 14.00 | Low | 3.00 | 3.00 | 6.00 | | | | | | | | | | | | | | | |
| Point | CH ₄ | NMHC | THC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| High | 13.00 | 13.00 | 26.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mid | 7.00 | 7.00 | 14.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low | 3.00 | 3.00 | 6.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibrator Flow Rates (cc/min) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Diluent | Cal Gas | Total Flow | Calculated CH ₄ (ppm) | Calculated NMHC (ppm) | Calculated THC (ppm) | Indicated CH ₄ (ppm) | Indicated NMHC (ppm) | Indicated THC (ppm) | Correction Factors: | | | | | | | | | | | | | | | | | | | | | | |
| Point | | | | | | | | | | CH ₄ | NMHC | THC | | | | | | | | | | | | | | | | | | | | |
| as found zero | 2000 | 0.00 | 2000 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | n/a | n/a | n/a | | | | | | | | | | | | | | | | | | | | |
| as found high | 2000 | 48.00 | 2048 | 14.20 | 13.66 | 27.87 | 13.73 | 13.46 | 27.21 | 1.034 | 1.015 | 1.024 | | | | | | | | | | | | | | | | | | | | |
| adjusted high | 2000 | 48.00 | 2048 | 14.20 | 13.66 | 27.87 | 14.22 | 13.80 | 28.04 | 0.999 | 0.990 | 0.994 | | | | | | | | | | | | | | | | | | | | |
| mid | 2000 | 25.00 | 2025 | 7.48 | 7.20 | 14.68 | 7.48 | 7.26 | 14.45 | 1.000 | 0.991 | 1.016 | | | | | | | | | | | | | | | | | | | | |
| low | 2000 | 12.00 | 2012 | 3.61 | 3.48 | 7.09 | 3.62 | 3.53 | 7.14 | 0.998 | 0.985 | 0.993 | | | | | | | | | | | | | | | | | | | | |
| calibrator zero | 2000 | 0.00 | 2000 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | n/a | n/a | n/a | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | Average C.F. = | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | 0.999 | 0.989 | 1.001 | | | | | | | | | | | | | | | | | | | | |
| Linear Regression/Calibration Results: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>CH₄</th> <th>NMHC</th> <th>THC</th> <th>LIMITS</th> </tr> </thead> <tbody> <tr> <td>Correlation Coefficient =</td> <td>1.000</td> <td>1.000</td> <td>1.000</td> <td>> or = 0.995</td> </tr> <tr> <td>Slope =</td> <td>1.001</td> <td>1.009</td> <td>1.004</td> <td>.95-1.05</td> </tr> <tr> <td>b (Intercept as % of full scale) =</td> <td>-0.01%</td> <td>0.03%</td> <td>-0.14%</td> <td>± 3% F.S.</td> </tr> <tr> <td>% change in C.F. from last cal =</td> <td>-3.86%</td> <td>-1.52%</td> <td>-2.62%</td> <td>± 10%</td> </tr> </tbody> </table> | | | CH ₄ | NMHC | THC | LIMITS | Correlation Coefficient = | 1.000 | 1.000 | 1.000 | > or = 0.995 | Slope = | 1.001 | 1.009 | 1.004 | .95-1.05 | b (Intercept as % of full scale) = | -0.01% | 0.03% | -0.14% | ± 3% F.S. | % change in C.F. from last cal = | -3.86% | -1.52% | -2.62% | ± 10% | | | |
| CH ₄ | NMHC | THC | LIMITS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Correlation Coefficient = | 1.000 | 1.000 | 1.000 | > or = 0.995 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Slope = | 1.001 | 1.009 | 1.004 | .95-1.05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| b (Intercept as % of full scale) = | -0.01% | 0.03% | -0.14% | ± 3% F.S. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % change in C.F. from last cal = | -3.86% | -1.52% | -2.62% | ± 10% | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| As found: | | | | | | As left: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Interface Board Voltages: Bias Supply: <u>-292.6</u> Temperatures: Detector Oven: <u>175.0</u> Filter: <u>175.0</u> Column Oven: <u>75.0</u> Internal: <u>29.5</u> Cylinder Pressures/reg.: Carrier: <u>700</u> / <u>50</u> Fuel: <u>900</u> / <u>50</u> Span Gas: <u>1100</u> / <u>22</u> Zero Air Generator: <u>46/34</u> Internal Pressures: Carrier: <u>31.1</u> Fuel: <u>40.3</u> Air: <u>32.4</u> FID Status: Status: <u>LIT</u> Counts: <u>26218</u> Flame: <u>376.3</u> Det Base: <u>175.1</u> Flame and Power Stats: Last Power On: <u>Feb 1, 2016</u> Flameouts: <u>4</u> Det Oven at Start: <u>142.4</u> Col Oven at Start: <u>68.1</u> Calibration History: Time: <u>January 01, 1970</u> Type: <u>ERROR</u> Status: <u>ERROR</u> Check/Adjust: <u>ADJUST</u> CH ₄ Span Conc: <u>0.00</u> CH ₄ SP Ratio: <u>0.0</u> CH ₄ RT: <u>0.0</u> CH ₄ PK IDX: <u>0.0</u> CH ₄ PK HT: <u>0.0</u> NM Span Conc: <u>0.0</u> NM SP Ratio: <u>0.0</u> | Calibration History cont'd: NM Peak Area: <u>0.0</u> Methane Start: <u>n/a</u> Methane End: <u>n/a</u> Backflush: <u>n/a</u> NMHV Start: <u>n/a</u> NMHC End: <u>n/a</u> Run History>1: Date: <u>February 05, 2016</u> Time: <u>11:37</u> CH ₄ PK HT: <u>0</u> CH ₄ RT: <u>12.4</u> CH ₄ Baseline: <u>2288</u> CH ₄ LOD: <u>63</u> CH ₄ SD: <u>21</u> CH ₄ CONC: <u>0.00</u> NM PK HT: <u>0</u> NM Peak Area: <u>0</u> NM CONC: <u>0.00</u> NM Base Start: <u>2197</u> NM Base End: <u>2210</u> NM LOD: <u>8</u> NM Start IDX: <u>39</u> NM End IDX: <u>68</u> NM Max Slope: <u>8.2e-0.1</u> NM Min Slope: <u>-3.5e-0.1</u> NM PT Count: <u>0</u> Daily Zero/Span Values: Previous CH ₄ : <u>9.6</u> Previous NMHC: <u>11.2</u> Previous THC: <u>20.82</u> New CH ₄ : <u>9.6</u> New NMHC: <u>11.24</u> New THC: <u>20.87</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Comments: <div style="text-align: center; padding: 5px;">Sample filter changed. No ZERO adjustment made.</div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | |
|------------------------|------------------|------------------------------|-----------------|
| Date: | February 5, 2016 | Start/End Time 24 hr. (mst): | 11:24 / 14:47 |
| Company/Airshed: | LICA | Calibration Purpose: | routine monthly |
| Location/Station Name: | Elk Point | Calibration Method: | Gas Dilution |




01 Minute Averages

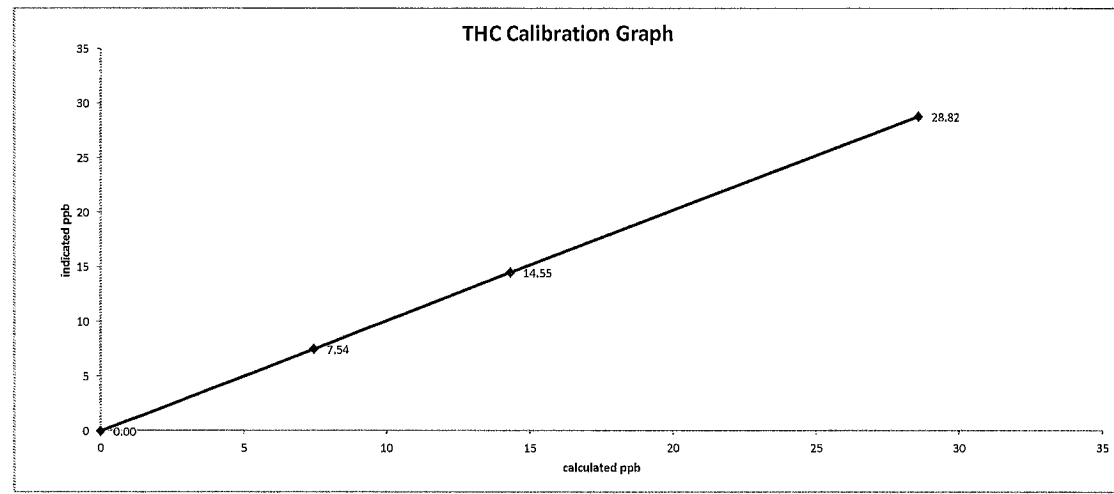
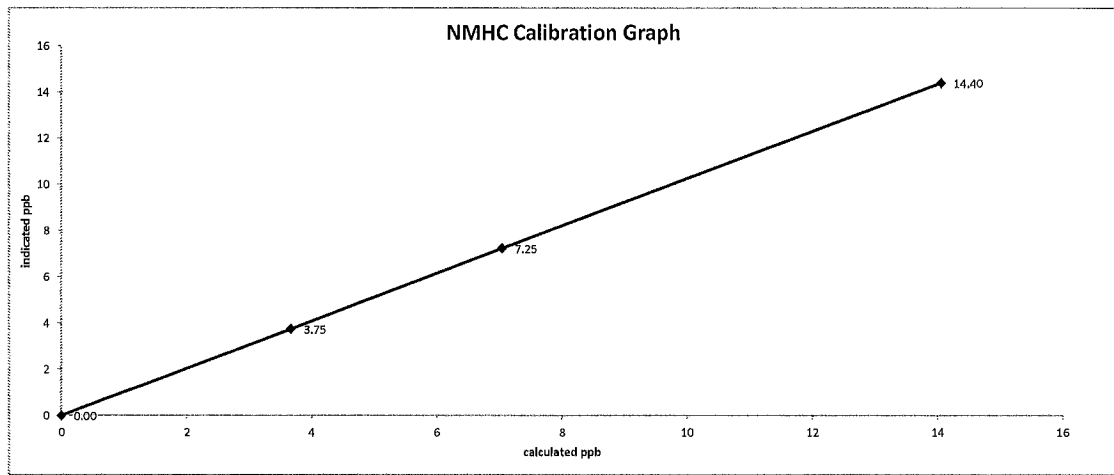
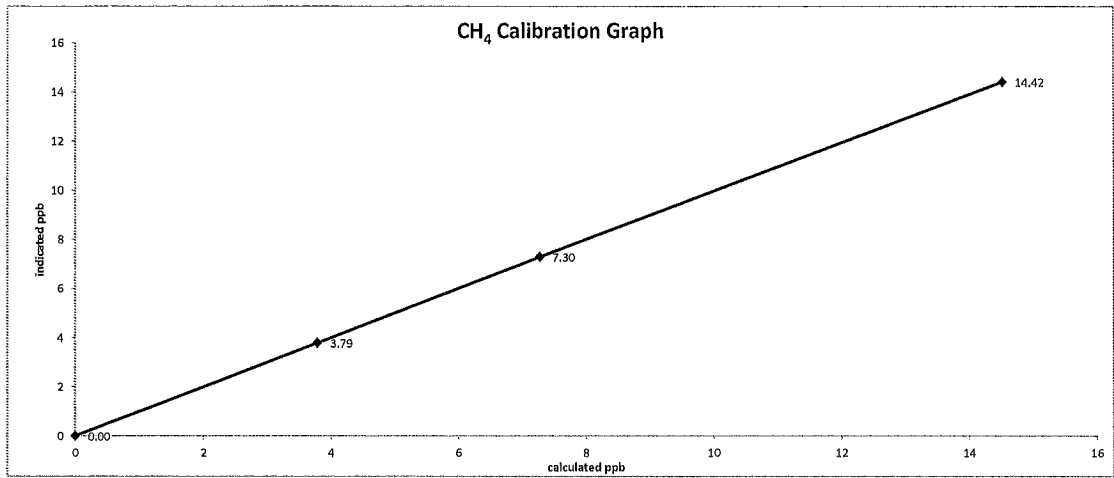


02/05/16 07:40 02/05/16 09:40 02/05/16 11:40 02/05/16 13:40 02/05/16 15:40 02/05/16 17:40

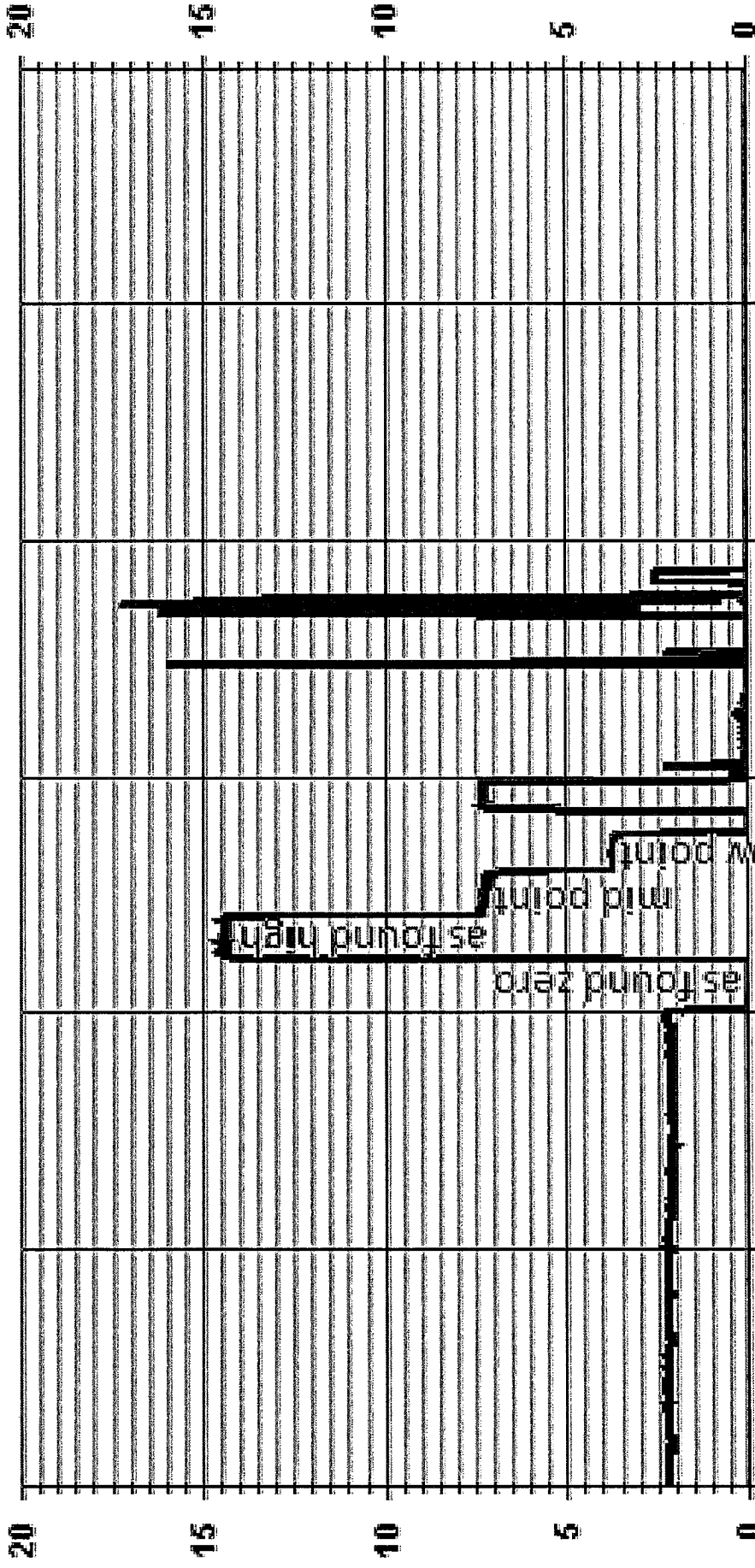
— LICA35 METHANE PPM — LICA35 NMHC PPM

|  Thermo 55i Methane/Non-Methane Analyzer Calibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|----------------------------------|-----------------------|----------------------------------|---------------------------|----------------------|---------------------------------|----------------------|---------------------|----------------------|---------------------------------|----------------------|---------------------|---------------------|-----------------------------------|------------|-----------------|-------|-----------|---------------------------------|--------|-------|-------|-------|------|------|------|------|------|-----|-----|-----|---------------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|------|-------|------|------|------|-------|------|------|-------|-------|-------|-------|-----|------|-------|------|------|------|------|------|------|------|-------|-------|-------|---------------|--|--|--|--|--|--|--|--|--|-------|-------|-------|
| Date: February 29, 2016 Company/Alrshed: LICA Location/Station Name: Elk Point Parameter: CH ₄ / NMHC / THC Start/End Time 24 hr. (mst): 16:05 / 17:31 Calibration Method: Gas Dilution | Barometric Pressure: 947 mb Station Temperature °C: 22 Weather Conditions: Mainly clear Calibration Purpose: shut down Performed By/Reviewer: Chris Wesson Cal Gas Expiry Date: November 25, 2023 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analyzer: Serial Number: 1296656107 Last Calibration Date: February 5, 2016 Range ppm: 20 CH ₄ /20 NMHC/40 THC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Correction Factors: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Previous C.F.:</th> <th>As Found C.F.:</th> <th>New C.F.:</th> </tr> </thead> <tbody> <tr> <td>CH₄ =</td> <td>0.999</td> <td>1.008</td> <td>n/a</td> </tr> <tr> <td>NMHC =</td> <td>0.990</td> <td>0.977</td> <td>n/a</td> </tr> <tr> <td>THC =</td> <td>0.994</td> <td>0.992</td> <td>n/a</td> </tr> </tbody> </table> | | Previous C.F.: | As Found C.F.: | New C.F.: | CH ₄ = | 0.999 | 1.008 | n/a | NMHC = | 0.990 | 0.977 | n/a | THC = | 0.994 | 0.992 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| CH ₄ = | 0.999 | 1.008 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NMHC = | 0.990 | 0.977 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| THC = | 0.994 | 0.992 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibrator: Flow Meter ID's: n/a Make & Model: Sablo 2010 Serial #: 17100415 Cal Gas Cylinder I.D. #: LL86139 CH ₄ Cylinder Conc.: 599.0 211.0 =C ₃ H ₈ Cylinder Conc. CH ₄ as C ₃ H ₈ : 580.3 1179.3 =total CH ₄ equivalent | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Standard Calibration Points for Analyzer Range of 20/20/40 ppm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Point | CH ₄ | NMHC | THC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| High | 13.00 | 13.00 | 26.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mid | 7.00 | 7.00 | 14.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low | 3.00 | 3.00 | 6.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Calibrator Flow Rates (cc/min) | | | | Calculated CH ₄ (ppm) | Calculated NMHC (ppm) | | | | | | | Calculated THC (ppm) | Indicated CH ₄ (ppm) | Indicated NMHC (ppm) | Indicated THC (ppm) | Correction Factors: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Point | Diluent | Cal Gas | Total Flow | | | CH ₄ | NMHC | THC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found zero | 2511 | 0.00 | 2511 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | n/a | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found high | 2450 | 60.90 | 2511 | 14.53 | 14.07 | 28.60 | 14.42 | 14.40 | 28.82 | 1.008 | 0.977 | 0.992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mid | 2480 | 30.50 | 2511 | 7.28 | 7.05 | 14.33 | 7.30 | 7.25 | 14.55 | 0.997 | 0.972 | 0.985 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| low | 2496 | 15.90 | 2512 | 3.79 | 3.67 | 7.46 | 3.79 | 3.75 | 7.54 | 1.000 | 0.979 | 0.990 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average C.F.= | | | | | | | | | | 1.002 | 0.976 | 0.989 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Linear Regression/Calibration Results: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | CH ₄ | NMHC | THC | LIMITS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Correlation Coefficient = | 1.000 | 1.000 | 1.000 | > or = 0.995 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Slope = | 0.993 | 1.024 | 1.008 | 0.90-1.10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| b (Intercept as % of full scale)= | 0.13% | 0.02% | 0.08% | ± 3% F.S. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % change in C.F. from last cal= | -0.85% | 1.28% | 0.16% | ± 10% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width:100%;"> <tr> <td style="width:50%; vertical-align: top;"> Interface Board Voltages: Bias Supply: -292.6 Temperatures: Detector Oven: 175.0 Filter: 175.1 Column Oven: 75.1 Internal: 30.0 Cylinder Pressures/reg.: Carrier: 2500 50 Fuel: 1800 50 Span Gas: 750 21 Zero Air Generator: 45 Internal Pressures: Carrier: 31.1 Fuel: 40.3 Air: 32.4 FID Status: Status: LIT Counts: ~27400 Flame: 378.5 Det Base: 175.0 Flame and Power Stats: Last Power On: 01Feb2016@13:29 Flameouts: 4 Det Oven at Start: 142.4 Col Oven at Start: 68.1 Calibration History: Time: 05Feb2016@12:33 Type: Span Status: Good Check/Adjust: Adjust CH₄ Span Conc: 14.2 CH₄ SP Ratio: .000752 CH₄ RT: 12.4 CH₄ PK IDX: 22 CH₄ PK HT: 18895 NM Span Conc: 13.66 NM SP Ratio: 0.000157 </td> <td style="width:50%; vertical-align: top;"> Calibration History cnt'd: NM Peak Area: 87117 Crucial Settings: Methane Start: n/a Methane End: n/a Backflush: n/a NMHV Start: n/a NMHC End: n/a Run History>1: Date: 29Feb2016 Time: 16:14 CH₄ PK HT: 0 CH₄ RT: 8.0 CH₄ Baseline: 2363 CH₄ LOD: 61 CH₄ SD: 20 CH₄ CONC: 0.00 NM PK HT: 0 NM Peak Area: 0 NM CONC: 0.00 NM Base Start: 2299 NM Base End: 2302 NM LOD: 19 NM Start IDX: 23 NM End IDX: 76 NM Max Slope: 6.7e-01 NM Min Slope: -6.1e-01 NM PT Count: 0 Daily Zero/Span Values: Previous CH₄: Previous NMHC: Previous THC: New CH₄: New NMHC: New THC: </td> </tr> </table> | | Interface Board Voltages: Bias Supply: -292.6 Temperatures: Detector Oven: 175.0 Filter: 175.1 Column Oven: 75.1 Internal: 30.0 Cylinder Pressures/reg.: Carrier: 2500 50 Fuel: 1800 50 Span Gas: 750 21 Zero Air Generator: 45 Internal Pressures: Carrier: 31.1 Fuel: 40.3 Air: 32.4 FID Status: Status: LIT Counts: ~27400 Flame: 378.5 Det Base: 175.0 Flame and Power Stats: Last Power On: 01Feb2016@13:29 Flameouts: 4 Det Oven at Start: 142.4 Col Oven at Start: 68.1 Calibration History: Time: 05Feb2016@12:33 Type: Span Status: Good Check/Adjust: Adjust CH ₄ Span Conc: 14.2 CH ₄ SP Ratio: .000752 CH ₄ RT: 12.4 CH ₄ PK IDX: 22 CH ₄ PK HT: 18895 NM Span Conc: 13.66 NM SP Ratio: 0.000157 | Calibration History cnt'd: NM Peak Area: 87117 Crucial Settings: Methane Start: n/a Methane End: n/a Backflush: n/a NMHV Start: n/a NMHC End: n/a Run History>1: Date: 29Feb2016 Time: 16:14 CH ₄ PK HT: 0 CH ₄ RT: 8.0 CH ₄ Baseline: 2363 CH ₄ LOD: 61 CH ₄ SD: 20 CH ₄ CONC: 0.00 NM PK HT: 0 NM Peak Area: 0 NM CONC: 0.00 NM Base Start: 2299 NM Base End: 2302 NM LOD: 19 NM Start IDX: 23 NM End IDX: 76 NM Max Slope: 6.7e-01 NM Min Slope: -6.1e-01 NM PT Count: 0 Daily Zero/Span Values: Previous CH ₄ : Previous NMHC: Previous THC: New CH ₄ : New NMHC: New THC: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Comments: <div style="text-align: center; padding: 10px;">Shut-down prior to removal (maintenance)</div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | |
|------------------------|-------------------|------------------------------|---------------|
| Date: | February 29, 2016 | Start/End Time 24 hr. (mst): | 16:05 / 17:31 |
| Company/Alrshed: | LICA | Calibration Purpose: | shut down |
| Location/Station Name: | Elk Point | Calibration Method: | Gas Dilution |



01 Minute Averages



02/29/16 12:00 02/29/16 14:00 02/29/16 16:00 02/29/16 18:00 02/29/16 20:00 02/29/16 22:00

— LICA35 METHANE PPM — LICA35 NMHC PPM

NITROGEN DIOXIDE



API 200E NO-NO2-NOx Analyzer Calibration

| | | | |
|------------------------------|--------------------------------------|-------------------------|---------------------------------|
| Date: | February 5, 2016 | Barometric Pressure: | 0.919 atm |
| Company/Airshed: | LICA | Station Temperature °C: | 19 |
| Location/Station Name: | Elk Point | Weather Conditions: | Mainly cloudy with sunny breaks |
| Start/End Time 24 hr. (mst): | 11:24 / 17:08 | Calibration Purpose: | routine monthly |
| G.P.T. to be used for Ozone? | No | Performed By/Reviewer: | Alex Yakupov Trina Whitsitt |
| Calibration Method: | Gas Dilution & Varying UV Lamp Power | Cal Gas Expiry Date: | March 12, 2019 |

| | | | | |
|------------------------|-----------------|---------------------|-------------------|-----------|
| Analyzer: | | Correction Factors: | | |
| Serial Number: | 592 | Previous C.F.: | As Found C.F.: | New C.F.: |
| Last Calibration Date: | January 7, 2016 | NO = | NO ₂ = | NOx = |
| Range ppb: | 1000 | 0.996 | 1.000 | 1.002 |
| | | 1.044 | 1.051 | 0.999 |

| | | | | | |
|--------------------------|--------------|--|-----------------|------------------------------|------------|
| Calibrator: | | Standard Calibration Points for a Range of: 1000 ppb | | | |
| Flow Meter ID's: | n/a | Point | Target NO (ppb) | Target NO ₂ (ppb) | Cc Ozone ? |
| Make & Model: | SABIO 2010 D | High | 780 | 600 | n/a |
| Serial #: | 11900613 | Mid | 380 | 275 | n/a |
| Cal Gas Cylinder I.D. #: | BLM002073 | Low | 190 | 100 | n/a |
| NO/NOx Gas Conc. (ppm): | 50.6 50.6 | Extra Point #1 | n/a | n/a | n/a |
| | | Extra Point #2 | n/a | n/a | n/a |

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

| Calibrator Flow Rates (cc/min) | | | | Calculated NO | Calculated NOx | Indicated NO | Indicated NOx | NO C.F. | NOx C.F. |
|--------------------------------|---------|---------|------------|---------------|----------------|--------------|---------------|---------|----------|
| Point | Diluent | Cal Gas | Total Flow | (ppb) | (ppb) | (ppb) | (ppb) | | |
| as found zero | 5013 | 0.0 | 5013 | 0 | 0 | -1.0 | 4.0 | n/a | n/a |
| as found high | 4938 | 77.2 | 5015 | 778.9 | 778.9 | 745.0 | 745.0 | 1.044 | 1.051 |
| adjusted zero | 5013 | 0.00 | 5013 | 0.0 | 0.0 | 0.0 | 0.0 | n/a | n/a |
| adjusted high | 4938 | 77.20 | 5015 | 778.9 | 778.9 | 780.0 | 780.0 | 0.999 | 0.999 |
| mid | 4976 | 37.70 | 5014 | 380.5 | 380.5 | 386.0 | 386.0 | 0.986 | 0.986 |
| low | 4994 | 18.90 | 5013 | 190.8 | 190.8 | 197.0 | 196.0 | 0.968 | 0.973 |
| calibrator zero | 5013 | 0.00 | 5013 | 0 | 0 | 1.0 | -1.0 | n/a | n/a |
| Average C.F.= | | | | | | | | 0.984 | 0.986 |

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

| Calibrator Flow Rates (cc/min) | | | | Calibrator Setting | Indicated NO | Indicated NOx | Indicated NO ₂ | NO drop | NO ₂ gain | NO ₂ C.F. |
|--------------------------------|---------|---------|------------|--------------------|--------------|---------------|---------------------------|---------|----------------------|----------------------|
| Point | Diluent | Cal Gas | Total Flow | volts or ppb | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) |
| NOx reference | 4938 | 77.20 | 5015 | 0.0 | 779.0 | 777.0 | 0.0 | 0.0 | 0.0 | |
| as found high NO2 | 4938 | 77.20 | 5015 | 530.0 | 276.0 | 777.0 | 503.0 | 503.0 | 503.0 | 1.000 |
| gpt mid | 4938 | 77.20 | 5015 | 290.0 | 507.0 | 777.0 | 272.0 | 272.0 | 272.0 | 1.000 |
| gpt low | 4938 | 77.20 | 5015 | 100.0 | 680.0 | 780.0 | 102.0 | 99.0 | 102.0 | 0.971 |
| Average NO ₂ C.F.= | | | | | | | | | 0.990 | |

Linear Regression/Calibration Results:

| | NO | NOx | NO ₂ | LIMITS |
|-----------------------------------|--------|--------|-----------------|--------------|
| Correlation Coefficient = | 1.000 | 1.000 | 1.000 | > or = 0.995 |
| Slope = | 1.000 | 1.000 | 1.002 | .95-1.05 |
| b (Intercept as % of full scale)= | 0.34% | 0.30% | 0.13% | ± 3% F.S. |
| % change in C.F. from last cal= | -4.83% | -4.90% | -0.40% | ± 10% |
| NO2 converter efficiency | | | 0.99 | 0.96 to 1.04 |

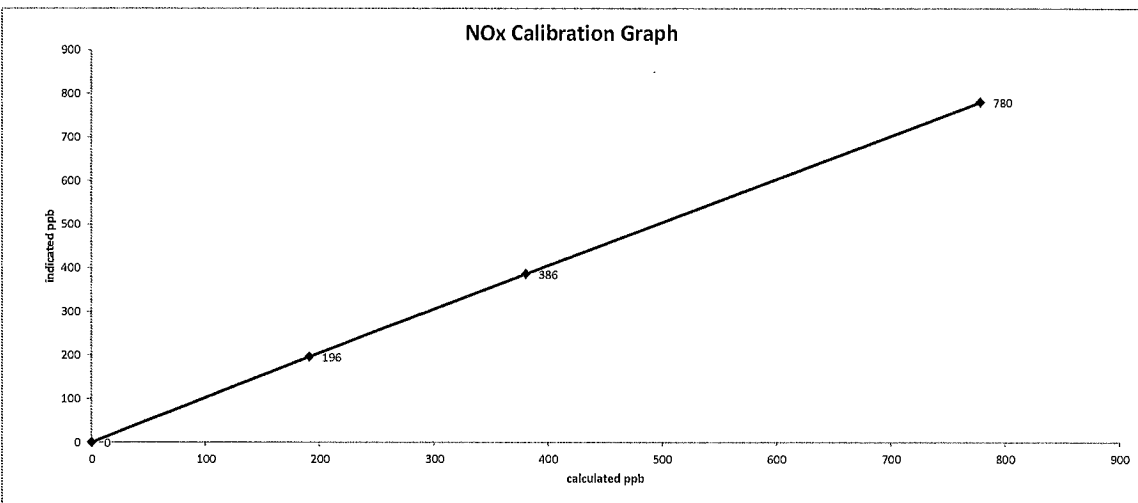
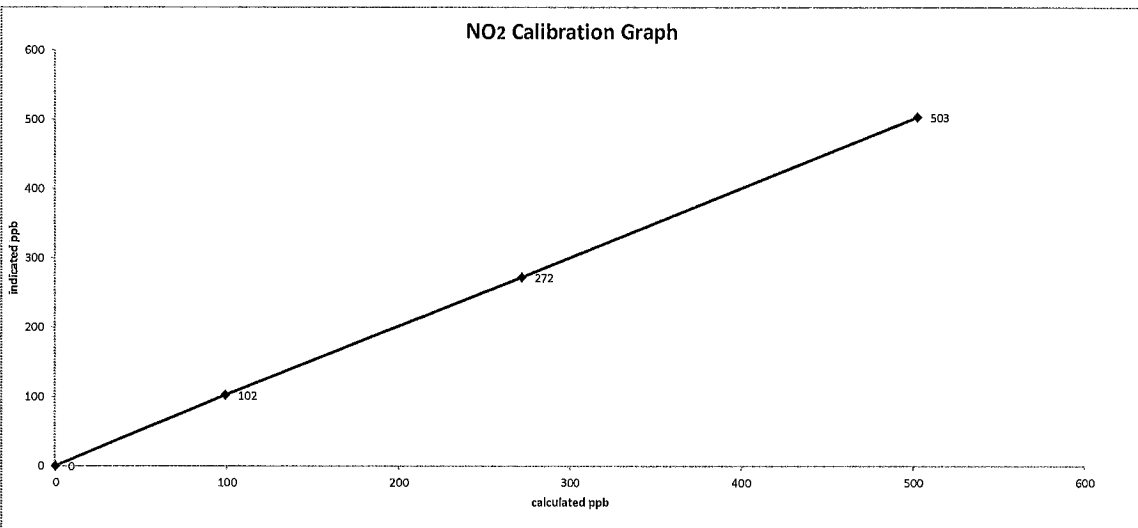
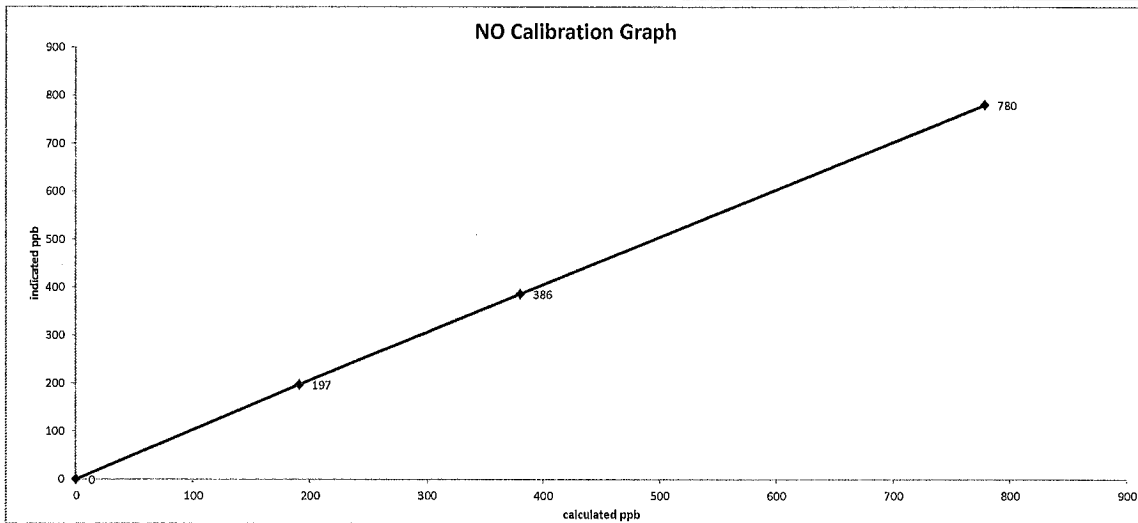
| As found: | As left: |
|--------------------------|------------------------|
| NOx SLOPE: 1.453 | NOx SLOPE: 1.523 |
| NOx OFFS: 2.1 | NOx OFFS: 4.9 |
| NO SLOPE: 1.456 | NO SLOPE: 1.515 |
| NO OFFS: 2.8 | NO OFFS: -0.3 |
| SAMP FLW: 484 | SAMP FLW: 482 |
| OZONE FL: 74 | OZONE FL: 74 |
| PMT: 16.8 | PMT: 13.5 |
| NORM PMT: 4.2 | NORM PMT: 0.0 |
| AZERO: 16.4 | AZERO: 16.7 |
| HVPS: 637 | HVPS: 637 |
| RCELL TEMP: 49.9 | RCELL TEMP: 50.0 |
| BOX TEMP: 28.6 | BOX TEMP: 31.6 |
| PMT TEMP: 6.9 | PMT TEMP: 6.9 |
| IZS TEMP: 40.0 | IZS TEMP: 40.0 |
| MOLY TEMP: 313.9 | MOLY TEMP: 316.0 |
| RCEL: 5.3 | RCEL: 5.3 |
| SAMP: 27.2 | SAMP: 27.1 |
| Internal Span NO: 6.8 | Internal Span NO: 9.4 |
| Internal Span NO2: 330.2 | Internal Span NO2: 337 |
| Internal Span NOx: 336.2 | Internal Span NOx: 345 |

Comments:

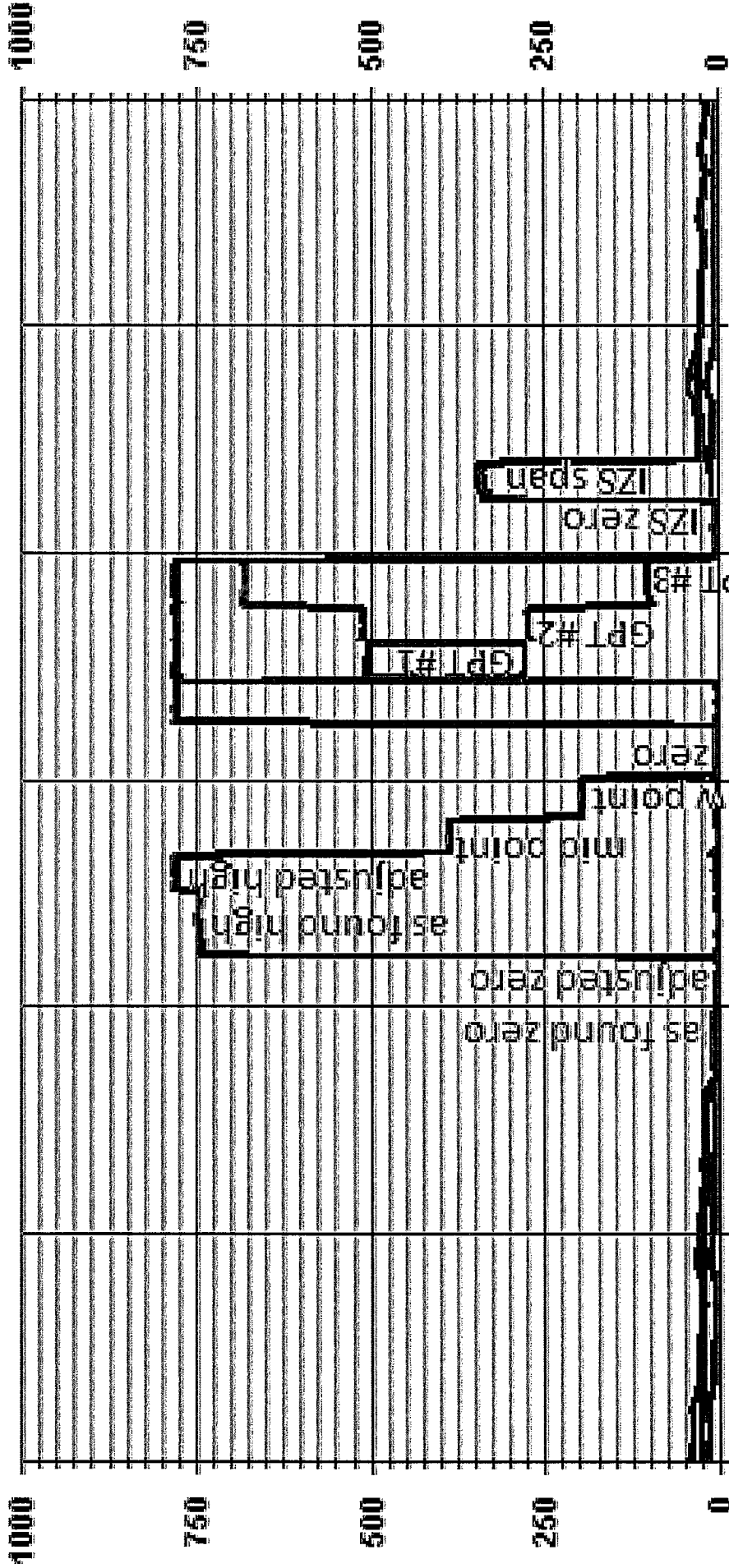
Sample filter changed, No NO2 adjustment made.

Date: February 5, 2016
Company/Airshed: LICA
Location/Station Name: Elk Point

Start/End Time 24 hr. (mst): 11:24 / 17:08
Calibration Purpose: routine monthly
Calibration Method: Gas Dilution & Varying UV Lamp Power





01 Minute Averages



02/05/16 08:15 02/05/16 10:15 02/05/16 12:15 02/05/16 14:15 02/05/16 16:15 02/05/16 18:15

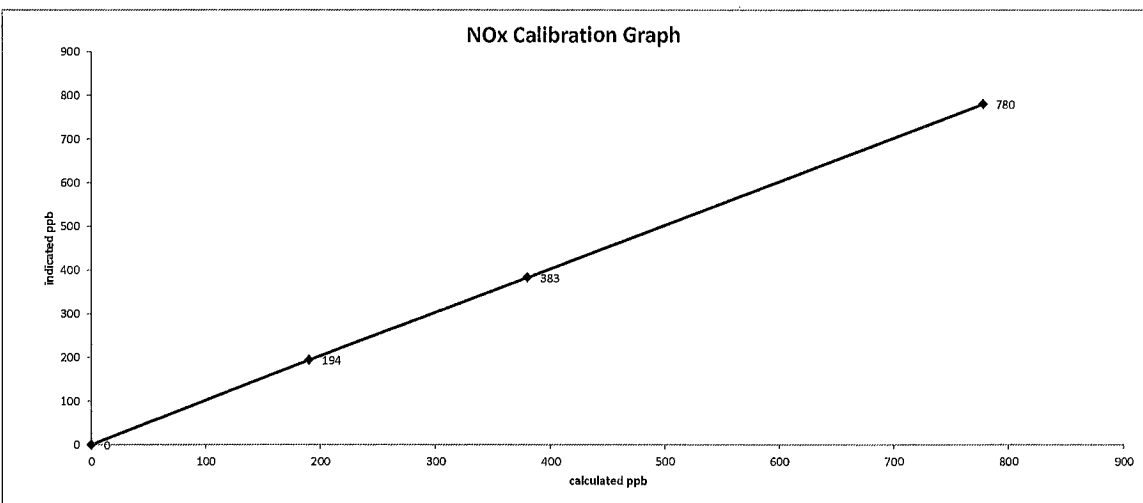
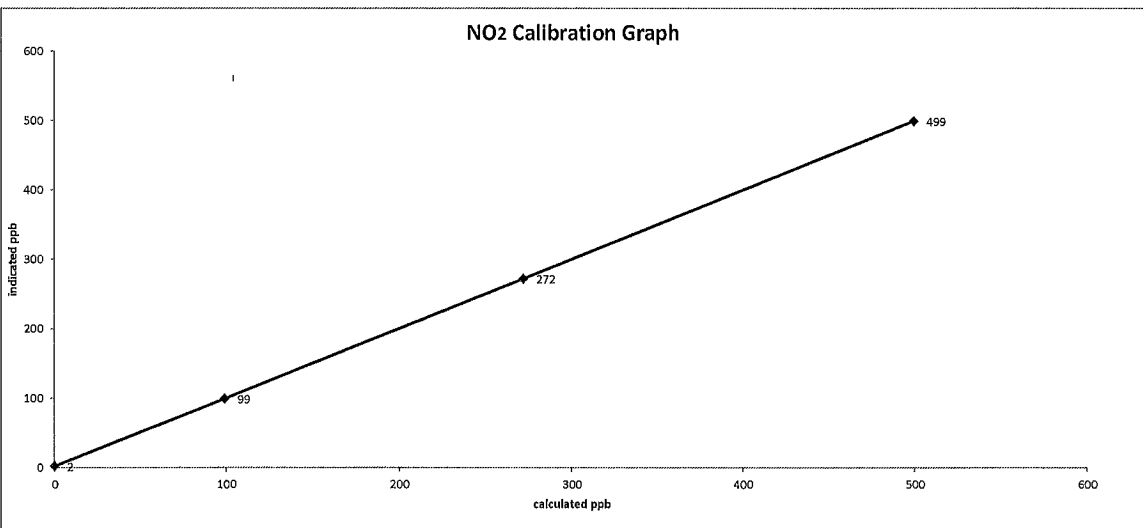
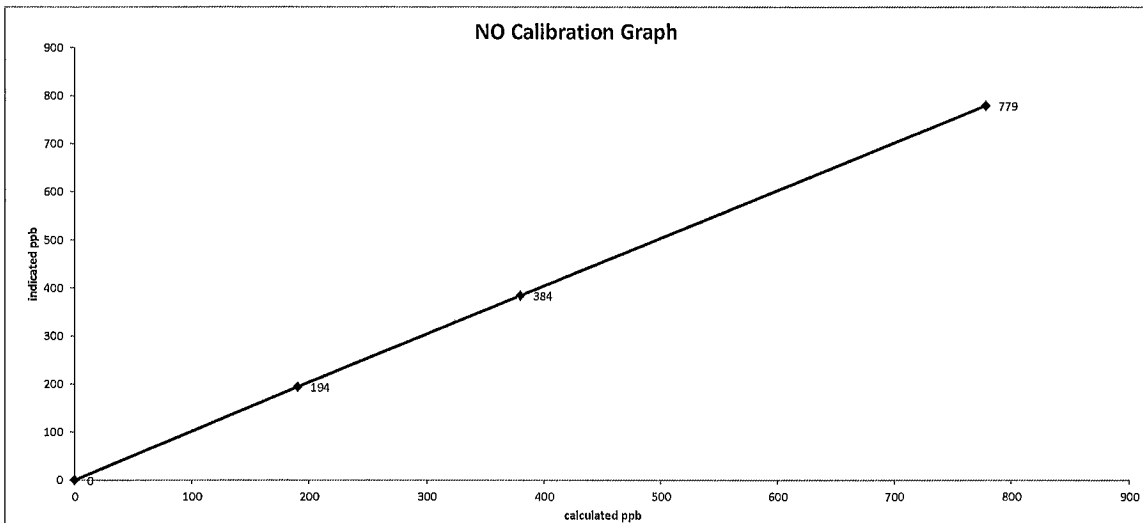
— LICA35 NOX_ PPB — LICA35 NO_ PPB — LICA35 NO2_ PPB

|  | | API 200E NO-NO2-NOx Analyzer Calibration | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------------|--|------------|--|----------------------|------------------------------|---------------------------------|---------------|----------------------------|----------------------------|-----|-------------------|-------|-------|-----|-------|-------|-------|-----|----------------|-----|-----|-----|----------------|-----|-----|-----|
| Date: February 24, 2016 Company/Airshed: LICA Location/Station Name: Elk Point Start/End Time 24 hr. (mst): 10:22 / 12:05 G.P.T. to be used for Ozone?: No Calibration Method: Gas Dilution & Varying UV Lamp Power | | Barometric Pressure: 0.949 atm Station Temperature °C: 20 Weather Conditions: Mix of sun and clouds Calibration Purpose: as found Performed By/Reviewer: Alex Yakupov Trina Whitsitt Cal Gas Expiry Date: December 2, 2023 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analyzer: Serial Number: 592 Last Calibration Date: February 5, 2016 Range ppb: 1000 | | Correction Factors: <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Previous C.F.:</th> <th>As Found C.F.:</th> <th>New C.F.:</th> </tr> </thead> <tbody> <tr> <td>NO =</td> <td>0.999</td> <td>1.032</td> <td>n/a</td> </tr> <tr> <td>NO₂ =</td> <td>1.000</td> <td>0.998</td> <td>n/a</td> </tr> <tr> <td>NOx =</td> <td>0.999</td> <td>1.026</td> <td>n/a</td> </tr> </tbody> </table> | | | Previous C.F.: | As Found C.F.: | New C.F.: | NO = | 0.999 | 1.032 | n/a | NO ₂ = | 1.000 | 0.998 | n/a | NOx = | 0.999 | 1.026 | n/a | | | | | | | | |
| | Previous C.F.: | As Found C.F.: | New C.F.: | | | | | | | | | | | | | | | | | | | | | | | | |
| NO = | 0.999 | 1.032 | n/a | | | | | | | | | | | | | | | | | | | | | | | | |
| NO ₂ = | 1.000 | 0.998 | n/a | | | | | | | | | | | | | | | | | | | | | | | | |
| NOx = | 0.999 | 1.026 | n/a | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibrator: Flow Meter ID's: n/a Make & Model: SABIO 2010 D Serial #: 11900613 Cal Gas Cylinder I.D. #: LL119346 NO/NOx Gas Conc. (ppm): 50.0 50.0 | | Standard Calibration Points for a Range of: 1000 ppb <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Point</th> <th>Target NO (ppb)</th> <th>Target NO₂ (ppb)</th> <th>Cc Ozone ?</th> </tr> </thead> <tbody> <tr> <td>High</td> <td>780</td> <td>500</td> <td>n/a</td> </tr> <tr> <td>Mid</td> <td>380</td> <td>275</td> <td>n/a</td> </tr> <tr> <td>Low</td> <td>190</td> <td>100</td> <td>n/a</td> </tr> <tr> <td>Extra Point #1</td> <td>n/a</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td>Extra Point #2</td> <td>n/a</td> <td>n/a</td> <td>n/a</td> </tr> </tbody> </table> | | Point | Target NO (ppb) | Target NO ₂ (ppb) | Cc Ozone ? | High | 780 | 500 | n/a | Mid | 380 | 275 | n/a | Low | 190 | 100 | n/a | Extra Point #1 | n/a | n/a | n/a | Extra Point #2 | n/a | n/a | n/a |
| Point | Target NO (ppb) | Target NO ₂ (ppb) | Cc Ozone ? | | | | | | | | | | | | | | | | | | | | | | | | |
| High | 780 | 500 | n/a | | | | | | | | | | | | | | | | | | | | | | | | |
| Mid | 380 | 275 | n/a | | | | | | | | | | | | | | | | | | | | | | | | |
| Low | 190 | 100 | n/a | | | | | | | | | | | | | | | | | | | | | | | | |
| Extra Point #1 | n/a | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | |
| Extra Point #2 | n/a | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Calibrator Flow Rates (cc/min) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Point | Diluent | Cal Gas | Total Flow | Calculated NO (ppb) | Calculated NOx (ppb) | Indicated NO (ppb) | Indicated NOx (ppb) | NO C.F. | NOx C.F. | | | | | | | | | | | | | | | | | | |
| as found zero | 5013 | 0.0 | 5013 | 0 | 0 | 1.0 | 0.0 | n/a | n/a | | | | | | | | | | | | | | | | | | |
| as found high | 4935 | 78.1 | 5013 | 779.0 | 779.0 | 756.0 | 759.0 | 1.032 | 1.026 | | | | | | | | | | | | | | | | | | |
| Average C.F.= | | | | | | | | n/a | n/a | | | | | | | | | | | | | | | | | | |
| Calibrator Flow Rates (cc/min) | | | | <i>ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015</i> | | | | | | | | | | | | | | | | | | | | | | | |
| Point | Diluent | Cal Gas | Total Flow | Calibrator Setting (volts or ppb) | Indicated NO (ppb) | Indicated NOx (ppb) | Indicated NO ₂ (ppb) | NO drop (ppb) | NO ₂ gain (ppb) | NO ₂ C.F. (ppb) | | | | | | | | | | | | | | | | | |
| NOx reference | 4935 | 78.10 | 5013 | 0.0 | 756.0 | 759.0 | 6.0 | 1.0 | 6.0 | | | | | | | | | | | | | | | | | | |
| as found high NO2 | 4935 | 78.10 | 5013 | 520.0 | 265.0 | 762.0 | 498.0 | 491.0 | 492.0 | 0.998 | | | | | | | | | | | | | | | | | |
| Average NO ₂ C.F.= | | | | | | | | n/a | n/a | | | | | | | | | | | | | | | | | | |
| Linear Regression/Calibration Results: | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | NO | NOx | NO ₂ | LIMITS | | | | | | | | | | | | | | | | | | | | | | |
| Correlation Coefficient = | | n/a | n/a | n/a | > or = 0.995 | | | | | | | | | | | | | | | | | | | | | | |
| Slope = | | n/a | n/a | n/a | .95-1.05 | | | | | | | | | | | | | | | | | | | | | | |
| b (Intercept as % of full scale)= | | n/a | n/a | n/a | ± 3% F.S. | | | | | | | | | | | | | | | | | | | | | | |
| % change in C.F. from last cal= | | -3.28% | 0.20% | -2.73% | ± 10% | | | | | | | | | | | | | | | | | | | | | | |
| NO2 converter efficiency | | | | 1.00 | 0.96 to 1.04 | | | | | | | | | | | | | | | | | | | | | | |
| As found: | | | | | As left: | | | | | | | | | | | | | | | | | | | | | | |
| NOx SLOPE: | 1.523 | | | | | NOx SLOPE: | n/a | | | | | | | | | | | | | | | | | | | | |
| NOx OFFS: | 4.9 | | | | | NOx OFFS: | n/a | | | | | | | | | | | | | | | | | | | | |
| NO SLOPE: | 1.515 | | | | | NO SLOPE: | n/a | | | | | | | | | | | | | | | | | | | | |
| NO OFFS: | -0.3 | | | | | NO OFFS: | n/a | | | | | | | | | | | | | | | | | | | | |
| SAMP FLW: | 492 | | | | | SAMP FLW: | n/a | | | | | | | | | | | | | | | | | | | | |
| OZONE FL: | 75 | | | | | OZONE FL: | n/a | | | | | | | | | | | | | | | | | | | | |
| PMT: | 20.6 | | | | | PMT: | n/a | | | | | | | | | | | | | | | | | | | | |
| NORM PMT: | 4.5 | | | | | NORM PMT: | n/a | | | | | | | | | | | | | | | | | | | | |
| AZERO: | 16.1 | | | | | AZERO: | n/a | | | | | | | | | | | | | | | | | | | | |
| HVPS: | 637 | | | | | HVPS: | n/a | | | | | | | | | | | | | | | | | | | | |
| RCELL TEMP: | 50.1 | | | | | RCELL TEMP: | n/a | | | | | | | | | | | | | | | | | | | | |
| BOX TEMP: | 28.5 | | | | | BOX TEMP: | n/a | | | | | | | | | | | | | | | | | | | | |
| PMT TEMP: | 6.9 | | | | | PMT TEMP: | n/a | | | | | | | | | | | | | | | | | | | | |
| IZS TEMP: | 40.3 | | | | | IZS TEMP: | n/a | | | | | | | | | | | | | | | | | | | | |
| MOLY TEMP: | 315.9 | | | | | MOLY TEMP: | n/a | | | | | | | | | | | | | | | | | | | | |
| RCEL: | 5.4 | | | | | RCEL: | n/a | | | | | | | | | | | | | | | | | | | | |
| SAMP: | 27.7 | | | | | SAMP: | n/a | | | | | | | | | | | | | | | | | | | | |
| Internal Span NO: | 9.4 | | | | | Internal Span NO: | n/a | | | | | | | | | | | | | | | | | | | | |
| Internal Span NO2: | 337 | | | | | Internal Span NO2: | n/a | | | | | | | | | | | | | | | | | | | | |
| Internal Span NOx: | 345 | | | | | Internal Span NOx: | n/a | | | | | | | | | | | | | | | | | | | | |
| Comments: No ZERO adjustment made. No High Point adjustment made. No NO2 adjustment made. As Found calibration performed to conduct maintenance. | | | | | | | | | | | | | | | | | | | | | | | | | | | |

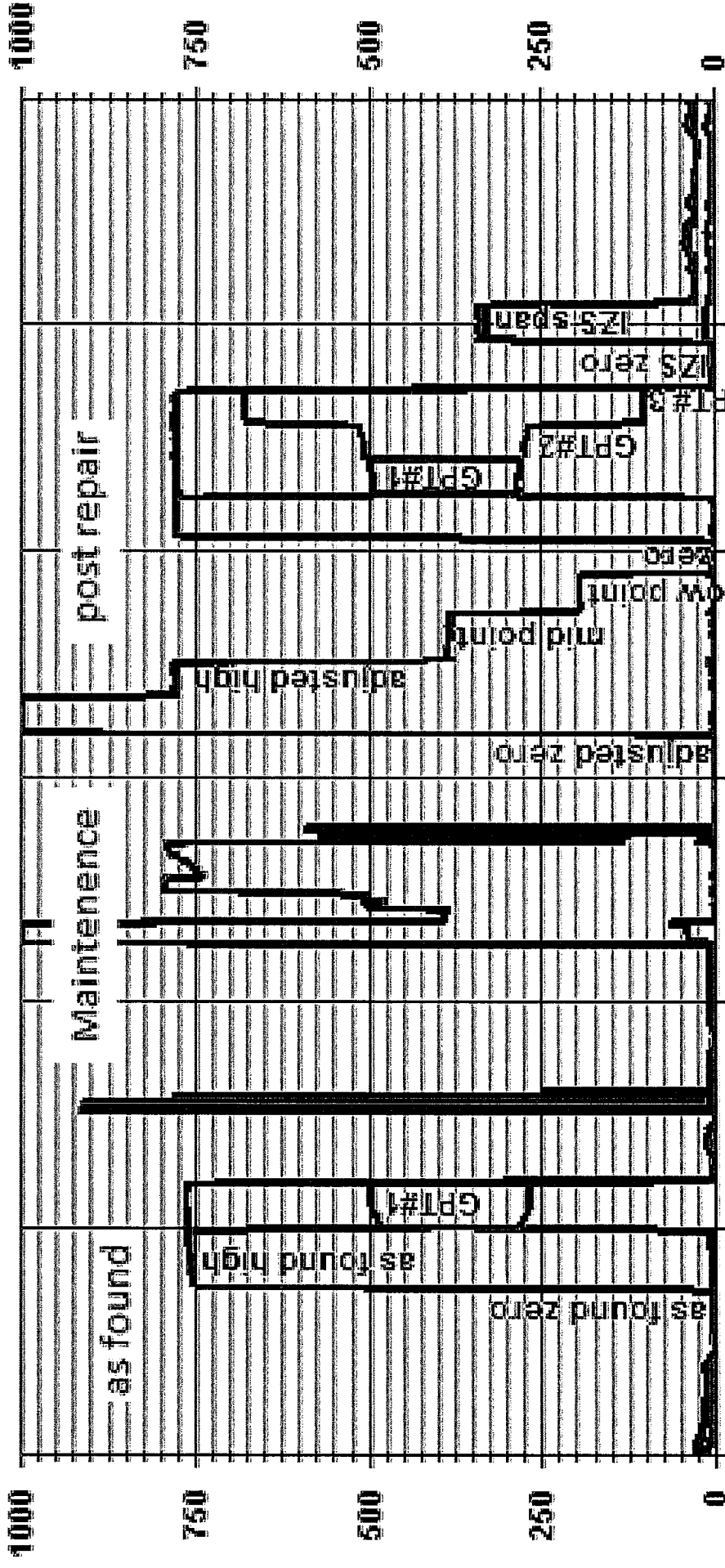
|  API 200E NO-NO2-NOx Analyzer Calibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---|--|------------------------------|-----------------|--------------------|---------------------------|-----------------------|---------------------------|----------------------|----------------------|----------------------|---------|---------|------------|------------|-----------------------------------|----------------|-------|-------|-----------|---------------------------------|-------|---------------|------|-------|--------------------------|-----|-------|-------|--------------|---------------|------|------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-------|-------|-------|-------|------------------|-------|-------|------|------|-------|-------------------------------|-----|-----|-----|---------------|--|--|--|--|--|-------|--|-------|-------|
| Date: February 24, 2016 Company/Airshed: LICA Location/Station Name: Elk Point Start/End Time 24 hr. (mst): 15:07/ 19:45 G.P.T. to be used for Ozone? No Calibration Method: Gas Dilution & Varying UV Lamp Power | Barometric Pressure: 0.949 atm Station Temperature °C: 20 Weather Conditions: Mix of sun and clouds Calibration Purpose: post repair Performed By/Reviewer: Alex Yakupov Trina Whitsitt Cal Gas Expiry Date: December 2, 2023 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analyzer: Serial Number: 592 Last Calibration Date: n/a Range ppb: 1000 | Correction Factors: <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>Previous C.F.:</td> <td>As Found C.F.:</td> <td>New C.F.:</td> </tr> <tr> <td>NO = n/a</td> <td>n/a</td> <td>1.000</td> </tr> <tr> <td>NO₂ = n/a</td> <td>n/a</td> <td>1.002</td> </tr> <tr> <td>NOx = n/a</td> <td>n/a</td> <td>0.999</td> </tr> </table> | Previous C.F.: | As Found C.F.: | New C.F.: | NO = n/a | n/a | 1.000 | NO ₂ = n/a | n/a | 1.002 | NOx = n/a | n/a | 0.999 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Previous C.F.: | As Found C.F.: | New C.F.: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NO = n/a | n/a | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NO ₂ = n/a | n/a | 1.002 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NOx = n/a | n/a | 0.999 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Callibrator: Flow Meter ID's: n/a Make & Model: SABIO 2010 D Serial #: 11900613 Cal Gas Cylinder I.D. #: LL119346 NO/NOx Gas Conc. (ppm): 50.0 50.0 | Standard Calibration Points for a Range of: 1000 ppb <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Point</th> <th>Target NO (ppb)</th> <th>Target NO₂ (ppb)</th> <th>Cc Ozone ?</th> </tr> <tr> <td>High</td> <td>780</td> <td>500</td> <td>n/a</td> </tr> <tr> <td>Mid</td> <td>380</td> <td>275</td> <td>n/a</td> </tr> <tr> <td>Low</td> <td>190</td> <td>100</td> <td>n/a</td> </tr> <tr> <td>Extra Point #1</td> <td>n/a</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td>Extra Point #2</td> <td>n/a</td> <td>n/a</td> <td>n/a</td> </tr> </table> | Point | Target NO (ppb) | Target NO ₂ (ppb) | Cc Ozone ? | High | 780 | 500 | n/a | Mid | 380 | 275 | n/a | Low | 190 | 100 | n/a | Extra Point #1 | n/a | n/a | n/a | Extra Point #2 | n/a | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Point | Target NO (ppb) | Target NO ₂ (ppb) | Cc Ozone ? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| High | 780 | 500 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mid | 380 | 275 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low | 190 | 100 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extra Point #1 | n/a | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extra Point #2 | n/a | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">Callibrator Flow Rates (cc/min)</th> <th>Calculated NO</th> <th>Calculated NOx</th> <th>Indicated NO</th> <th>Indicated NOx</th> <th>NO C.F.</th> <th>NOx C.F.</th> </tr> <tr> <th>Point</th> <th>Diluent</th> <th>Cal Gas</th> <th>Total Flow</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>adjusted zero</td> <td>5013</td> <td>0.0</td> <td>5013</td> <td>0</td> <td>0</td> <td>0.0</td> <td>0.0</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td>adjusted high</td> <td>4935</td> <td>78.1</td> <td>5013</td> <td>779.0</td> <td>779.0</td> <td>779.0</td> <td>780.0</td> <td>1.000</td> <td>0.999</td> </tr> <tr> <td>mid</td> <td>4976</td> <td>38.10</td> <td>5014</td> <td>379.9</td> <td>379.9</td> <td>384.0</td> <td>383.0</td> <td>0.989</td> <td>0.992</td> </tr> <tr> <td>low</td> <td>4995</td> <td>19.10</td> <td>5014</td> <td>190.5</td> <td>190.5</td> <td>194.0</td> <td>194.0</td> <td>0.982</td> <td>0.982</td> </tr> <tr> <td>callibrator zero</td> <td>5013</td> <td>0.00</td> <td>5013</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>n/a</td> <td>n/a</td> </tr> <tr> <td colspan="8" style="text-align: right;">Average C.F.=</td> <td>0.990</td> <td>0.991</td> </tr> </tbody> </table> | | Callibrator Flow Rates (cc/min) | | | | Calculated NO | Calculated NOx | Indicated NO | Indicated NOx | NO C.F. | NOx C.F. | Point | Diluent | Cal Gas | Total Flow | (ppb) | (ppb) | (ppb) | (ppb) | | | adjusted zero | 5013 | 0.0 | 5013 | 0 | 0 | 0.0 | 0.0 | n/a | n/a | adjusted high | 4935 | 78.1 | 5013 | 779.0 | 779.0 | 779.0 | 780.0 | 1.000 | 0.999 | mid | 4976 | 38.10 | 5014 | 379.9 | 379.9 | 384.0 | 383.0 | 0.989 | 0.992 | low | 4995 | 19.10 | 5014 | 190.5 | 190.5 | 194.0 | 194.0 | 0.982 | 0.982 | callibrator zero | 5013 | 0.00 | 5013 | 0.0 | 0.0 | 0.0 | 0.0 | n/a | n/a | Average C.F.= | | | | | | | | 0.990 | 0.991 |
| Callibrator Flow Rates (cc/min) | | | | Calculated NO | Calculated NOx | Indicated NO | Indicated NOx | NO C.F. | NOx C.F. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Point | Diluent | Cal Gas | Total Flow | (ppb) | (ppb) | (ppb) | (ppb) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| adjusted zero | 5013 | 0.0 | 5013 | 0 | 0 | 0.0 | 0.0 | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| adjusted high | 4935 | 78.1 | 5013 | 779.0 | 779.0 | 779.0 | 780.0 | 1.000 | 0.999 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mid | 4976 | 38.10 | 5014 | 379.9 | 379.9 | 384.0 | 383.0 | 0.989 | 0.992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| low | 4995 | 19.10 | 5014 | 190.5 | 190.5 | 194.0 | 194.0 | 0.982 | 0.982 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| callibrator zero | 5013 | 0.00 | 5013 | 0.0 | 0.0 | 0.0 | 0.0 | n/a | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average C.F.= | | | | | | | | 0.990 | 0.991 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">Callibrator Flow Rates (cc/min)</th> <th>Calibrator Setting</th> <th>Indicated NO</th> <th>Indicated NOx</th> <th>Indicated NO₂</th> <th>NO drop</th> <th>NO₂ gain</th> <th>NO₂ C.F.</th> </tr> <tr> <th>Point</th> <th>Diluent</th> <th>Cal Gas</th> <th>Total Flow</th> <th>volts or ppb</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> </tr> </thead> <tbody> <tr> <td>NOx reference</td> <td>4938</td> <td>77.20</td> <td>5015</td> <td>0.0</td> <td>777.0</td> <td>779.0</td> <td>2.0</td> <td>0.0</td> <td>2.0</td> <td></td> </tr> <tr> <td>adjusted high NO2</td> <td>4938</td> <td>77.20</td> <td>5015</td> <td>520.0</td> <td>277.0</td> <td>777.0</td> <td>501.0</td> <td>500.0</td> <td>499.0</td> <td>1.002</td> </tr> <tr> <td>gpt mid</td> <td>4938</td> <td>77.20</td> <td>5015</td> <td>275.0</td> <td>505.0</td> <td>779.0</td> <td>274.0</td> <td>272.0</td> <td>272.0</td> <td>1.000</td> </tr> <tr> <td>gpt low</td> <td>4938</td> <td>77.20</td> <td>5015</td> <td>100.0</td> <td>678.0</td> <td>779.0</td> <td>101.0</td> <td>99.0</td> <td>99.0</td> <td>1.000</td> </tr> <tr> <td colspan="10" style="text-align: right;">Average NO₂ C.F.=</td> <td>1.001</td> </tr> </tbody> </table> | | Callibrator Flow Rates (cc/min) | | | | Calibrator Setting | Indicated NO | Indicated NOx | Indicated NO ₂ | NO drop | NO ₂ gain | NO ₂ C.F. | Point | Diluent | Cal Gas | Total Flow | volts or ppb | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) | NOx reference | 4938 | 77.20 | 5015 | 0.0 | 777.0 | 779.0 | 2.0 | 0.0 | 2.0 | | adjusted high NO2 | 4938 | 77.20 | 5015 | 520.0 | 277.0 | 777.0 | 501.0 | 500.0 | 499.0 | 1.002 | gpt mid | 4938 | 77.20 | 5015 | 275.0 | 505.0 | 779.0 | 274.0 | 272.0 | 272.0 | 1.000 | gpt low | 4938 | 77.20 | 5015 | 100.0 | 678.0 | 779.0 | 101.0 | 99.0 | 99.0 | 1.000 | Average NO ₂ C.F.= | | | | | | | | | | 1.001 | | | |
| Callibrator Flow Rates (cc/min) | | | | Calibrator Setting | Indicated NO | Indicated NOx | Indicated NO ₂ | NO drop | NO ₂ gain | NO ₂ C.F. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Point | Diluent | Cal Gas | Total Flow | volts or ppb | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NOx reference | 4938 | 77.20 | 5015 | 0.0 | 777.0 | 779.0 | 2.0 | 0.0 | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| adjusted high NO2 | 4938 | 77.20 | 5015 | 520.0 | 277.0 | 777.0 | 501.0 | 500.0 | 499.0 | 1.002 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| gpt mid | 4938 | 77.20 | 5015 | 275.0 | 505.0 | 779.0 | 274.0 | 272.0 | 272.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| gpt low | 4938 | 77.20 | 5015 | 100.0 | 678.0 | 779.0 | 101.0 | 99.0 | 99.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average NO ₂ C.F.= | | | | | | | | | | 1.001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Linear Regression/Calibration Results: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>NO</th> <th>NOx</th> <th>NO₂</th> <th>LIMITS</th> </tr> </thead> <tbody> <tr> <td>Correlation Coefficient =</td> <td>1.000</td> <td>1.000</td> <td>1.000</td> <td>> or = 0.995</td> </tr> <tr> <td>Slope =</td> <td>1.001</td> <td>1.000</td> <td>1.005</td> <td>.95-1.05</td> </tr> <tr> <td>b (Intercept as % of full scale)=</td> <td>0.22%</td> <td>0.18%</td> <td>0.13%</td> <td>± 3% F.S.</td> </tr> <tr> <td>% change in C.F. from last cal=</td> <td>n/a</td> <td>n/a</td> <td>n/a</td> <td>± 10%</td> </tr> <tr> <td>NO2 converter efficiency</td> <td></td> <td></td> <td>1.00</td> <td>0.96 to 1.04</td> </tr> </tbody> </table> | | | NO | NOx | NO ₂ | LIMITS | Correlation Coefficient = | 1.000 | 1.000 | 1.000 | > or = 0.995 | Slope = | 1.001 | 1.000 | 1.005 | .95-1.05 | b (Intercept as % of full scale)= | 0.22% | 0.18% | 0.13% | ± 3% F.S. | % change in C.F. from last cal= | n/a | n/a | n/a | ± 10% | NO2 converter efficiency | | | 1.00 | 0.96 to 1.04 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | NO | NOx | NO ₂ | LIMITS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Correlation Coefficient = | 1.000 | 1.000 | 1.000 | > or = 0.995 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Slope = | 1.001 | 1.000 | 1.005 | .95-1.05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| b (Intercept as % of full scale)= | 0.22% | 0.18% | 0.13% | ± 3% F.S. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % change in C.F. from last cal= | n/a | n/a | n/a | ± 10% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NO2 converter efficiency | | | 1.00 | 0.96 to 1.04 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width:100%;"> <tr> <td style="width: 50%; vertical-align: top;"> As found: NOx SLOPE: 1.523 NOx OFFS: 4.9 NO SLOPE: 1.515 NO OFFS: -0.3 SAMP FLW: 492 OZONE FL: 75 PMT: 20.6 NORM PMT: 4.5 AZERO: 16.1 HVPS: 637 RCELL TEMP: 50.1 BOX TEMP: 28.5 PMT TEMP: 6.9 IZS TEMP: 40.3 MOLY TEMP: 315.9 RCEL: 5.4 SAMP: 27.7 Internal Span NO: 9.4 Internal Span NO2: 337 Internal Span NOx: 345 </td> <td style="width: 50%; vertical-align: top;"> As left: NOx SLOPE: 0.985 NOx OFFS: 2.4 NO SLOPE: 0.980 NO OFFS: -0.3 SAMP FLW: 492 OZONE FL: 75 PMT: 32.8 NORM PMT: 4.8 AZERO: 24.8 HVPS: 674 RCELL TEMP: 50.0 BOX TEMP: 31.4 PMT TEMP: 6.9 IZS TEMP: 40.1 MOLY TEMP: 315.9 RCEL: 4.8 SAMP: 27.7 Internal Span NO: 9.6 Internal Span NO2: 332 Internal Span NOx: 341 </td> </tr> </table> | | As found: NOx SLOPE: 1.523 NOx OFFS: 4.9 NO SLOPE: 1.515 NO OFFS: -0.3 SAMP FLW: 492 OZONE FL: 75 PMT: 20.6 NORM PMT: 4.5 AZERO: 16.1 HVPS: 637 RCELL TEMP: 50.1 BOX TEMP: 28.5 PMT TEMP: 6.9 IZS TEMP: 40.3 MOLY TEMP: 315.9 RCEL: 5.4 SAMP: 27.7 Internal Span NO: 9.4 Internal Span NO2: 337 Internal Span NOx: 345 | As left: NOx SLOPE: 0.985 NOx OFFS: 2.4 NO SLOPE: 0.980 NO OFFS: -0.3 SAMP FLW: 492 OZONE FL: 75 PMT: 32.8 NORM PMT: 4.8 AZERO: 24.8 HVPS: 674 RCELL TEMP: 50.0 BOX TEMP: 31.4 PMT TEMP: 6.9 IZS TEMP: 40.1 MOLY TEMP: 315.9 RCEL: 4.8 SAMP: 27.7 Internal Span NO: 9.6 Internal Span NO2: 332 Internal Span NOx: 341 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Comments: <p style="text-align: center;">Sample filter changed on February 5, 2016. No NO2 adjustment made.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Date: February 24, 2016
Company/Airshed: LICA
Location/Station Name: Elk Point

Start/End Time 24 hr. (mst): 15:07 / 19:45
Calibration Purpose: post repair
Calibration Method: Gas Dilution & Varying UV Lamp Power



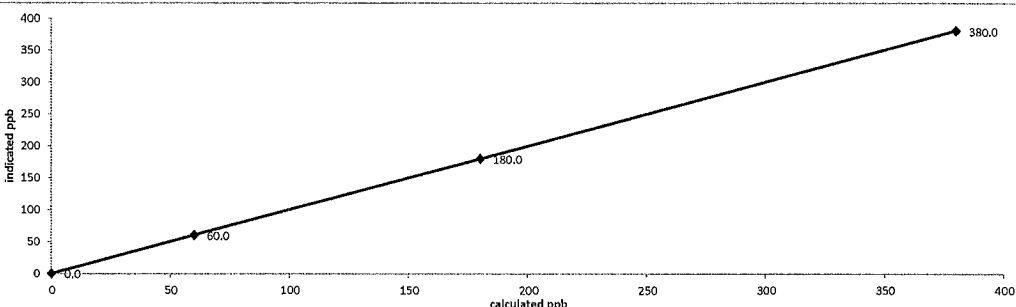
01 Minute Averages



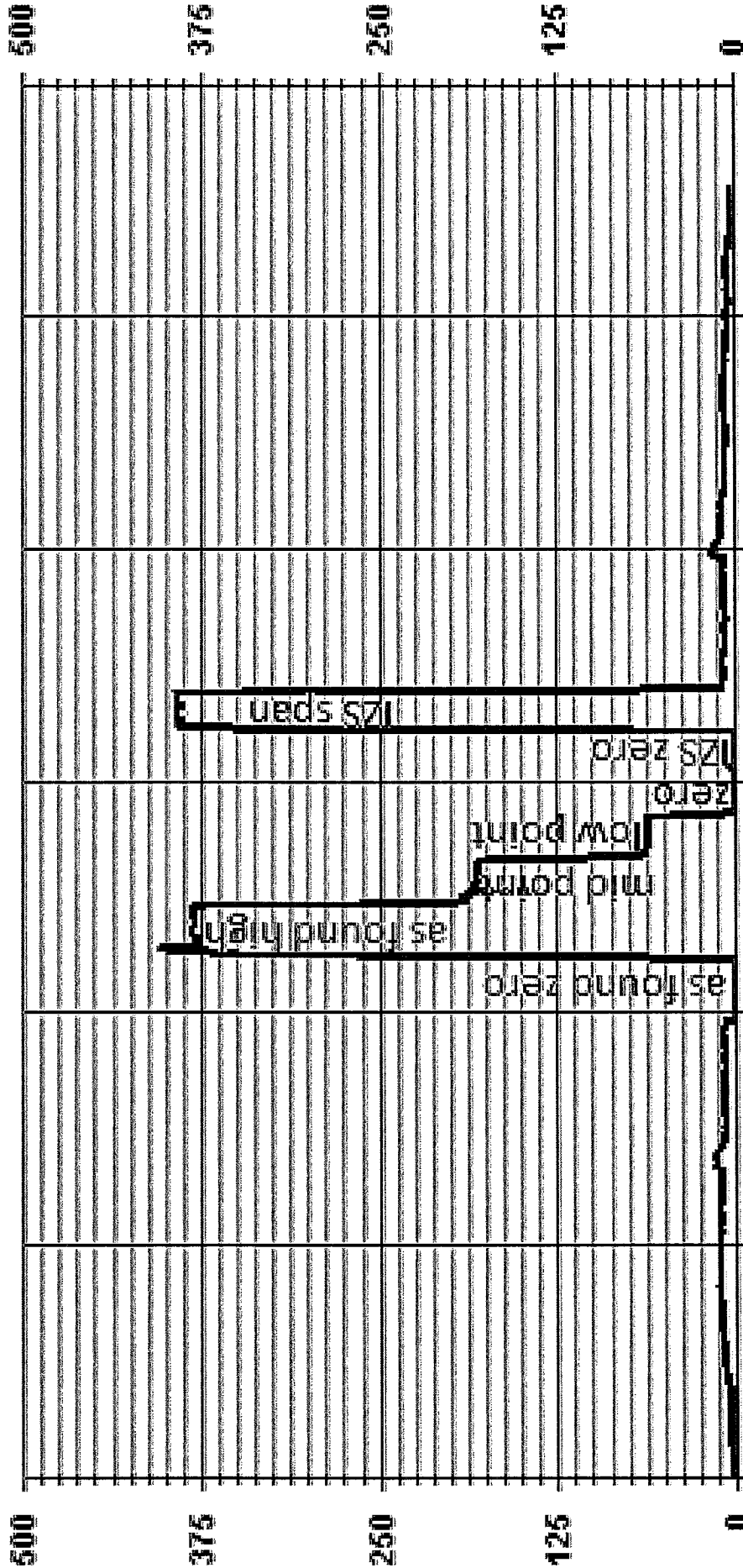
02/24/16 09:30 02/24/16 11:30 02/24/16 13:30 02/24/16 15:30 02/24/16 17:30 02/24/16 19:30

— LICA35 NOX_ PPB — LICA35 NO_ PPB — LICA35 NO2_ PPB

OZONE

| Thermo 49i Ozone Analyzer Calibration <small>A Bureau Veritas Group Company</small> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|--|-------------------------------------|---------------------------|-------------------------------------|--------------------------|---------------------|--------------------------|---------------------------|-------|-------|-------|---------------|------|------|-----|-----|-----|-----|---------------|------|------|-------|-------|-------|-------|-----|------|------|-------|-------|-------|-------|-----|------|------|------|------|------|-------|------------------|------|------|-----|-----|-----|-----|----------------|--|--|--|--|--|-------|
| Date: February 4, 2016 Company/Airshed: LICA Location/Station Name: Elk Point Start/End Time 24 hr. (mst): 13:43 / 16:45 Ozone Calibration Method: Varying UV Lamp Power G.P.T. Date: n/a-done by Varying UV Lamp Power | Barometric Pressure: 0.927 atm Station Temperature °C: 19 Weather Conditions: Mix of sun and clouds Calibration Purpose: routine monthly Performed By/Reviewer: Alex Yakupov / Trina Whitsitt Cal Gas Expiry Date: n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analyzer: Serial Number: 1002240372 Ozone Range ppb: 500 Last Calibration Date: January 6, 2016 As Found C.F.: 1.000 Previous Cal High Point C.F.: 1.000 New C.F.: 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Callibrator: Flow Meter ID's: n/a Make & Model: SABIO 2010 D Serial #: 11900613 Cal Gas Cylinder I.D. #: n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Point</th> <th colspan="2">Callibrator Flow Rate (cc/min)</th> <th>Calculated Concentration:</th> <th>Corrected Calculated Concentration:</th> <th>Indicated Concentration:</th> <th rowspan="2">Correction Factors:</th> </tr> <tr> <th>Total Flow @ Point Start</th> <th>Total Flow @ Point Finish</th> <th>(ppb)</th> <th>(ppb)</th> <th>(ppb)</th> </tr> </thead> <tbody> <tr> <td>as found zero</td> <td>5013</td> <td>5013</td> <td>0.0</td> <td>n/a</td> <td>0.0</td> <td>n/a</td> </tr> <tr> <td>as found high</td> <td>5013</td> <td>5013</td> <td>380.0</td> <td>380.0</td> <td>380.0</td> <td>1.000</td> </tr> <tr> <td>mid</td> <td>5013</td> <td>5013</td> <td>180.0</td> <td>180.0</td> <td>180.0</td> <td>1.000</td> </tr> <tr> <td>low</td> <td>5013</td> <td>5013</td> <td>60.0</td> <td>60.0</td> <td>60.0</td> <td>1.000</td> </tr> <tr> <td>callibrator zero</td> <td>5013</td> <td>5013</td> <td>0.0</td> <td>n/a</td> <td>0.0</td> <td>n/a</td> </tr> <tr> <td colspan="6" style="text-align: right;">Average C.F. =</td> <td>1.000</td> </tr> </tbody> </table> | | Point | Callibrator Flow Rate (cc/min) | | Calculated Concentration: | Corrected Calculated Concentration: | Indicated Concentration: | Correction Factors: | Total Flow @ Point Start | Total Flow @ Point Finish | (ppb) | (ppb) | (ppb) | as found zero | 5013 | 5013 | 0.0 | n/a | 0.0 | n/a | as found high | 5013 | 5013 | 380.0 | 380.0 | 380.0 | 1.000 | mid | 5013 | 5013 | 180.0 | 180.0 | 180.0 | 1.000 | low | 5013 | 5013 | 60.0 | 60.0 | 60.0 | 1.000 | callibrator zero | 5013 | 5013 | 0.0 | n/a | 0.0 | n/a | Average C.F. = | | | | | | 1.000 |
| Point | Callibrator Flow Rate (cc/min) | | Calculated Concentration: | Corrected Calculated Concentration: | Indicated Concentration: | Correction Factors: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Total Flow @ Point Start | Total Flow @ Point Finish | (ppb) | (ppb) | (ppb) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found zero | 5013 | 5013 | 0.0 | n/a | 0.0 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| as found high | 5013 | 5013 | 380.0 | 380.0 | 380.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mid | 5013 | 5013 | 180.0 | 180.0 | 180.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| low | 5013 | 5013 | 60.0 | 60.0 | 60.0 | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| callibrator zero | 5013 | 5013 | 0.0 | n/a | 0.0 | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average C.F. = | | | | | | 1.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Linear Regression/Calibration Results: Correlation Coefficient = 1.000 > or = 0.995 Slope = 1.000 .95-1.05 b (Intercept as % of full scale) = 0.00% ± 3% F.S. % change in C.F. from last cal = 0.00% ± 10% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thermo 49i Ozone Analyzer Calibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width:100%;"> <tr> <td style="width:50%; vertical-align: top;"> As found: O3 Bkg: -0.3 O3 Coef: 0.994 Photo Lamp: 14.2 O3 Lamp: 5.8 Bench: 27.8 Bench Lamp: 54.0 O3 Lamp: 68.1 Pressure: 697.1 Cell A lpm: 0.737 Cell B lpm: 0.748 O3 ppb: -0.7 Cell A ppb: 1.7 Cell B ppb: -3.2 Cell A Int: 98422 Cell B Int: 97389 Internal Span: 390.1 </td> <td style="width:50%; vertical-align: top;"> As left: O3 Bkg: -0.3 O3 Coef: 0.994 Photo Lamp: 14.2 O3 Lamp: 5.8 Bench: 28.8 Bench Lamp: 54.0 O3 Lamp: 68.1 Pressure: 697.4 Cell A lpm: 0.738 Cell B lpm: 0.748 O3 ppb: 0.3 Cell A ppb: 0.3 Cell B ppb: -0.4 Cell A Int: 98370 Cell B Int: 97323 Internal Span: 293.1 </td> </tr> </table> | | As found: O3 Bkg: -0.3 O3 Coef: 0.994 Photo Lamp: 14.2 O3 Lamp: 5.8 Bench: 27.8 Bench Lamp: 54.0 O3 Lamp: 68.1 Pressure: 697.1 Cell A lpm: 0.737 Cell B lpm: 0.748 O3 ppb: -0.7 Cell A ppb: 1.7 Cell B ppb: -3.2 Cell A Int: 98422 Cell B Int: 97389 Internal Span: 390.1 | As left: O3 Bkg: -0.3 O3 Coef: 0.994 Photo Lamp: 14.2 O3 Lamp: 5.8 Bench: 28.8 Bench Lamp: 54.0 O3 Lamp: 68.1 Pressure: 697.4 Cell A lpm: 0.738 Cell B lpm: 0.748 O3 ppb: 0.3 Cell A ppb: 0.3 Cell B ppb: -0.4 Cell A Int: 98370 Cell B Int: 97323 Internal Span: 293.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Comments: Sample filter changed. No ZERO adjustment made. No High Point adjustment made. SPAN LEVEL 3 value has been reduced. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

01 Minute Averages



02/04/16 09:54 02/04/16 11:54 02/04/16 13:54 02/04/16 15:54 02/04/16 17:54 02/04/16 19:54

PARTICULATE MATTER



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: February 4, 2016
 Company: LICA
 Station Name/Location: Elk Point
 Previous Audit Date: January 21, 2016
 Parameter: PM 2.5

Performed By/Reviewer: Alex Yakupov | Trina Whitsitt
 Start Time (mst): 16:39
 End Time (mst): 17:30
 Calibration Purpose: BI-monthly #1
 Weather Conditions: Mix of sun and clouds

1400A Information and Status:

| | | | |
|-------------------------|----------------|----------------------------|-------|
| Serial Number: | 1405A207691003 | As Found Filter Loading %: | 39.00 |
| Ko Factor: | 15635 | As Left Filter Loading %: | 20.22 |
| Ambient Temperature °C: | -11.45 | As Found Noise: | 0.002 |
| Ambient Pressure atm: | 0.927 | As Left Noise: | 0.000 |
| Main Flow Reading lpm: | 3.00 | Pump Vacuum: | 0.34 |
| Aux Flow Reading lpm: | 13.68 | Warnings: | None |

Reference Standards:

| | | | |
|-------------------|--------------|------------------|---------------------|
| | Flow: | Pressure: | Temperature: |
| Make: | Dwyer | Fisher | Fisher |
| Model: | 475 Mark III | FB1291 | FB 1291 |
| Serial Number: | #2 | 130168457 | 130168457 |
| Calibration Date: | 15-Jan-16 | 18-Mar-15 | 18-Mar-15 |

As found leak check:

| | | Base | Zero | Reference | Zero |
|-------------|--------|------|-----------------|-----------|-----------------|
| PM 2.5 Flow | actual | 0.04 | 0.03 | 0.06 | 0.03 |
| | limit | 0.15 | 0.15 | 0.15 | 0.15 |
| Bypass Flow | actual | 0.12 | -0.66 | 0.11 | -0.66 |
| | limit | 0.60 | 0.60 | 0.60 | 0.60 |

As left leak check (same as above if as found passes):

| | | Base | Zero | Reference | Zero |
|-------------|--------|------|-----------------|-----------|-----------------|
| PM 2.5 Flow | actual | 0.04 | 0.03 | 0.06 | 0.03 |
| | limit | 0.15 | 0.15 | 0.15 | 0.15 |
| Bypass Flow | actual | 0.12 | -0.66 | 0.11 | -0.66 |
| | limit | 0.60 | 0.60 | 0.60 | 0.60 |

As found temperature and pressure:

| | | | |
|---------------------------|-------|------------------------|-------|
| tolerance +/- 2.0°C | | tolerance +/- 0.01 atm | |
| 1405F temperature °C: | -11.5 | 1405F pressure atm: | 0.927 |
| reference temperature °C: | -11.5 | reference pressure: | 0.927 |
| difference °C: | -0.1 | difference : | 0.000 |

As left temperature and pressure (same as above if as found adequate):

| | | | |
|---------------------------|-------|------------------------|-------|
| tolerance +/- 2.0°C | | tolerance +/- 0.01 atm | |
| 1405F temperature °C: | -11.5 | 1405F pressure atm: | 0.927 |
| reference temperature °C: | -11.5 | reference pressure: | 0.927 |
| difference °C: | -0.1 | difference : | 0.000 |

As found flows:

| | |
|---|--|
| main flow tolerance 3.00 lpm +/- 0.20 lpm | total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7% |
| 1405F main flow lpm: 3.00 | 1400A total/aux flow lpm: 16.68 |
| reference main flow lpm: 3.03 | reference total/aux flow lpm: 16.78 |
| difference lpm: 0.03 | difference lpm: 0.10 |

As left flows (same as above if as found adequate):

| | |
|---|--|
| main flow tolerance 3.00 lpm +/- 0.20 lpm | total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7% |
| 1405F main flow lpm: 3.00 | 1400A total/aux flow lpm: 16.68 |
| reference main flow lpm: 3.03 | reference total/aux flow lpm: 16.78 |
| difference lpm: 0.03 | difference lpm: 0.10 |

Ko Audit:

Last Ko audit date: 4-Feb-16
 1405F Ko factor: 15635
 Measured Ko factor: 15719.6000
 % difference: 0.55

Comments:

47 mm FDMS filter changed and TEOM sample filter changed. Ko Audit performed.



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: February 16, 2016
 Company: LICA
 Station Name/Location: Elk Point
 Previous Audit Date: February 4, 2016
 Parameter: PM 2.5

Performed By/Reviewer: Alex Yakupov | Trina Whitsitt
 Start Time (mst): 15:33
 End Time (mst): 16:12
 Calibration Purpose: Bi-monthly #2
 Weather Conditions: Mainly cloudy with snow

1400A Information and Status:

Serial Number: 1405A207691003 As Found Filter Loading %: 27.16
 Ko Factor: 15635 As Left Filter Loading %: 28.24
 Ambient Temperature °C: -2.4 As Found Noise: 0.003
 Ambient Pressure atm: 0.923 As Left Noise: 0.000
 Main Flow Reading lpm: 3.00 Pump Vacuum: 0.34
 Aux Flow Reading lpm: 13.68 Warnings: None

Reference Standards:

| | Flow: | Pressure: | Temperature: |
|-------------------|---------------------|------------------|------------------|
| Make: | <u>Dwyer</u> | <u>Fisher</u> | <u>Fisher</u> |
| Model: | <u>475 Mark III</u> | <u>FB1291</u> | <u>FB 1291</u> |
| Serial Number: | <u>#1</u> | <u>130168457</u> | <u>130168457</u> |
| Calibration Date: | <u>28-Jan-16</u> | <u>18-Mar-15</u> | <u>18-Mar-15</u> |

As found leak check:

| | | Base | Zero | Reference | Zero |
|-------------|--------|------|-----------------|-----------|-----------------|
| PM 2.5 Flow | actual | 0.03 | 0.03 | 0.06 | 0.03 |
| | limit | 0.15 | 0.15 | 0.15 | 0.15 |
| Bypass Flow | actual | 0.04 | -0.66 | 0.06 | -0.66 |
| | limit | 0.60 | 0.60 | 0.60 | 0.60 |

As left leak check (same as above if as found passes):

| | | Base | Zero | Reference | Zero |
|-------------|--------|------|-----------------|-----------|-----------------|
| PM 2.5 Flow | actual | 0.03 | 0.03 | 0.06 | 0.03 |
| | limit | 0.15 | 0.15 | 0.15 | 0.15 |
| Bypass Flow | actual | 0.40 | -0.66 | 0.06 | -0.66 |
| | limit | 0.60 | 0.60 | 0.60 | 0.60 |

As found temperature and pressure:

| | |
|---------------------------------------|----------------------------------|
| tolerance +/- 2.0°C | tolerance +/- 0.01 atm |
| 1405F temperature °C: <u>-2.4</u> | 1405F pressure atm: <u>0.923</u> |
| reference temperature °C: <u>-2.1</u> | reference pressure: <u>0.925</u> |
| difference °C: <u>0.3</u> | difference: <u>-0.002</u> |

As left temperature and pressure (same as above if as found adequate):

| | |
|---------------------------------------|----------------------------------|
| tolerance +/- 2.0°C | tolerance +/- 0.01 atm |
| 1405F temperature °C: <u>-2.1</u> | 1405F pressure atm: <u>0.925</u> |
| reference temperature °C: <u>-2.1</u> | reference pressure: <u>0.925</u> |
| difference °C: <u>0.0</u> | difference: <u>0.000</u> |

As found flows:

| | |
|---|--|
| main flow tolerance 3.00 lpm +/- 0.20 lpm | total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7% |
| 1405F main flow lpm: <u>3.00</u> | 1400A total/aux flow lpm: <u>16.68</u> |
| reference main flow lpm: <u>3.05</u> | reference total/aux flow lpm: <u>16.88</u> |
| difference lpm: <u>0.05</u> | difference lpm: <u>0.20</u> |

As left flows (same as above if as found adequate):

| | |
|---|--|
| main flow tolerance 3.00 lpm +/- 0.20 lpm | total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7% |
| 1405F main flow lpm: <u>3.00</u> | 1400A total/aux flow lpm: <u>16.68</u> |
| reference main flow lpm: <u>3.05</u> | reference total/aux flow lpm: <u>16.88</u> |
| difference lpm: <u>0.05</u> | difference lpm: <u>0.20</u> |

K_o Audit:

Last K_o audit date: 4-Feb-16
 1405F K_o factor: 15635
 Measured K_o factor: 15719.6000
 % difference: 0.55

Comments:

47 mm FDMS filter changed. Main flow was calculated using measurements of Total flow and Auxiliary flow.

WIND SYSTEM



Meteorological Sensor Audit

Station Information

| | | | |
|----------------------|--------------------|-------------------|------------------|
| Company: | Maxxam/LICA | Performed By: | Angie Noonan |
| Location: | Edmonton/Elk Point | Reason: | Pre-Installation |
| Audit Date: | 23-Nov-15 | Start Time (mst): | 14:45 |
| Previous Audit Date: | n/a | End Time (mst): | 15:30 |

Wind Speed

| | | | |
|----------------|-------------|-----------------------|----------|
| Sensor make: | R. M. Young | Sensor height: | n/a |
| Sensor model: | 5103VK | Serial Number: | 110980 |
| Calibrator: | Young 18802 | Variable speed motor: | CA 03309 |
| Voltage range: | 0-1 | Output signal range: | 200 |

Wind Speed Audit Data

| RPM | Wind Speed Actual | Indicated WS - CW | Indicated WS-CCW | Correction Factor |
|----------------------------|-------------------|-------------------|------------------|-------------------|
| 0 | 0.0 | 0.04747 | 0.04747 | - |
| 1000 | 17.6 | 17.67 | 17.65 | 1.00 |
| 2000 | 35.28 | 35.3 | 35.3 | 1.00 |
| 3000 | 52.92 | 52.93 | 52.91 | 1.00 |
| 4000 | 70.56 | 70.53 | 70.54 | 1.00 |
| 5000 | 88.2 | 88.18 | 88.18 | 1.00 |
| 6000 | 105.84 | 105.8 | 105.8 | 1.00 |
| 7000 | 123.48 | 123.4 | 123.4 | 1.00 |
| 8000 | 141.12 | 141.1 | 141.1 | 1.00 |
| 9000 | 158.76 | 158.7 | 158.7 | 1.00 |
| 10000 | 176.4 | 176.3 | 176.3 | 1.00 |
| Average Correction Factor: | | | | 1.00 |

Wind Direction

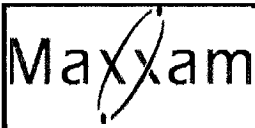
| | | | |
|----------------|-------------|-----------------------|----------|
| Sensor make: | R. M. Young | Sensor height: | n/a |
| Sensor model: | 5103VK | Serial Number: | 110980 |
| Calibrator: | Young 18802 | Variable speed motor: | CA 03309 |
| Voltage range: | 0-1 | Output signal range: | 200 |

Wind Direction Audit Data

| Wind Direction | Indicated | Correction Factor |
|----------------------------|-----------|-------------------|
| 0 | 0.2 | NA |
| 45 | 44.9 | 1.00 |
| 90 | 89.4 | 1.01 |
| 135 | 134.3 | 1.01 |
| 180 | 179.5 | 1.00 |
| 225 | 224.3 | 1.00 |
| 270 | 269.6 | 1.00 |
| 315 | 315.1 | 1.00 |
| 360 | 354.8 | 1.01 |
| Average Correction Factor: | | 1.00 |

Remarks: Pre-installation calibration.

Audit Performed by: Angie Noonan



Meteorological Sensor Audit

Station Information

| | | | |
|----------------------|------------------------------------|-------------------|---------------------------|
| Company: | <u>LICA</u> | Performed By: | <u>Limin Li</u> |
| Location: | <u>ELK point (in Calgary shop)</u> | Reason: | <u>Annual maintenance</u> |
| Audit Date: | <u>26-Jan-16</u> | Start Time (mst): | <u>11:00</u> |
| Previous Audit Date: | <u>NA</u> | End Time (mst): | <u>15:00</u> |

Wind Speed

| | | | |
|----------------|--------------------|-----------------------|-----------------|
| Sensor make: | <u>R. M. Young</u> | Sensor height: | <u>n/a</u> |
| Sensor model: | <u>5103VK</u> | Serial Number: | <u>56589</u> |
| Calibrator: | <u>Young 18802</u> | Variable speed motor: | <u>CA 03309</u> |
| Voltage range: | <u>0-1</u> | Output signal range: | <u>200KPH</u> |

Wind Speed Audit Data

| RPM | Wind Speed Actual | Indicated WS - CW | Indicated WS-CCW | Correction Factor |
|----------------------------|-------------------|-------------------|------------------|-------------------|
| 0 | 0.0 | 0.032 | 0.032 | - |
| 1000 | 17.6 | 17.66 | 17.64 | 1.00 |
| 2000 | 35.28 | 35.3 | 35.29 | 1.00 |
| 3000 | 52.92 | 52.99 | 52.99 | 1.00 |
| 4000 | 70.56 | 70.66 | 70.65 | 1.00 |
| 5000 | 88.2 | 88.35 | 88.33 | 1.00 |
| 6000 | 105.84 | 106 | 106 | 1.00 |
| 7000 | 123.48 | 123.7 | 123.7 | 1.00 |
| 8000 | 141.12 | 141.4 | 141.3 | 1.00 |
| 9000 | 158.76 | 159.1 | 159.1 | 1.00 |
| 10000 | 176.4 | 176.7 | 176.7 | 1.00 |
| Average Correction Factor: | | | | 1.00 |

Wind Direction

| | | | |
|----------------|--------------------|-----------------------|-----------------|
| Sensor make: | <u>R. M. Young</u> | Sensor height: | <u>n/a</u> |
| Sensor model: | <u>5103VK</u> | Serial Number: | <u>56589</u> |
| Calibrator: | <u>Young 18802</u> | Variable speed motor: | <u>CA 03309</u> |
| Voltage range: | <u>0-1</u> | Output signal range: | <u>0-360DEG</u> |

Wind Direction Audit Data

| Wind Direction | Indicated | Correction Factor |
|----------------------------|-----------|-------------------|
| 0 | 0.5 | NA |
| 45 | 44.9 | 1.00 |
| 90 | 92.0 | 0.98 |
| 135 | 136.5 | 0.99 |
| 180 | 180.6 | 1.00 |
| 225 | 224.4 | 1.00 |
| 270 | 270.3 | 1.00 |
| 315 | 312.2 | 1.01 |
| 359 | 355.0 | 1.01 |
| Average Correction Factor: | | 1.00 |

Remarks: Annual maintenance. Changed 05163PG, 05124VG bearings. 05131D, 05133B & 05135D

Audit Performed by: Limin Li

PUF SAMPLER

| | | | | |
|--|--|---|-------------------------------------|--------------------------------------|
| Maxxam <small>A Bureau Veritas Group Company</small> | | TISCH PUF PLUS SAMPLER AUDIT | | |
| Date: February 25, 2016 | | PUF PLUS Serial #: 100-1015 | | |
| Company/Alrshed: LICA | | Performed By/Reviewer: Alex Yakupov Tom Bourque | | |
| Location/Station Name: Elk Point | | Weather Conditions: Mainly clear | | |
| Reference Standards: | | | | |
| Make: Dwyer | Flow: _____ | Pressure: Fisher Scientific | Temperature: Fisher Scientific | |
| Model: Series 475 Mark III | _____ | FB61291 | FB61291 | |
| Serial Number: #1 | _____ | 130168457 | 130168457 | |
| Calibration Date: January 28, 2016 | _____ | March 18, 2015 | March 18, 2015 | |
| TISCH PUF PLUS PRESSURE AND TEMPERATURE AUDIT | | | | |
| AS FOUND Reference Barometric Pressure (mmHg): | 702.81 | AS FOUND Reference Temperature (°C): | 2.8 | |
| AS FOUND PUF PLUS Barometric Pressure (mmHg): | 702 | AS FOUND PUF PLUS Temperature (°C): | 3.2 | |
| % Difference (+/- 2% max.): | 0.12% | % Difference (+/- 2 °C max.): | -0.4 | |
| **IF THE PRESSURE DEVIATES BY MORE THAN +/- 2% A FLOW CALIBRATION IS REQUIRED** | | **IF THE TEMPERATURE DEVIATES BY MORE THAN +/- 2 °C A FLOW CALIBRATION IS REQUIRED** | | |
| TISCH PUF PLUS FLOW AUDIT | | | | |
| Flow Audit Calculations: | | | | |
| Calibrated Orifice Certification Date: | | October 12, 2015 | | |
| Enter Barometric Pressure from reference (InHg) | | 27.67 | | |
| Barometric Pressure (mmHg) | | 702.8 | | |
| Enter Ambient Temperature from reference °C | | 2.8 | | |
| Enter "m" variable from calibrated orifice | | 6.07570 | | |
| Enter "b" variable from calibrated orifice | | -0.03578 | | |
| Enter Δp In. H ₂ O | | 1.86 | | |
| Standardized Flow lpm= | | 230.21 | | |
| Flow Set Point lpm= | | 230.00 | | |
| % Difference (+/- 2% max.)= | | -0.09% | | |
| **IF THE FLOW DEVIATES BY MORE THAN +/- 2% A FLOW CALIBRATION IS REQUIRED** | | | | |
| TISCH PUF PLUS PRESSURE CALIBRATION | | | | |
| Reference Barometric Pressure AFTER CALIBRATION (mmHg): | | n/a | | |
| PUF Barometric Pressure AFTER CALIBRATION (mmHg): | | n/a | | |
| % Difference: | | Max 2.0% | | |
| Calibration Point (mmHg): | Δp (In. H ₂ O) required for target barometric pressure: | As Found barometric pressure (mmHg): | As Left barometric pressure (mmHg): | % Difference vs. Calibration Target: |
| 742.81 | 1.57 | n/a | n/a | n/a |
| 722.81 | 0.79 | n/a | n/a | n/a |
| 702.81 | 0.00 | n/a | n/a | n/a |
| 682.81 | -0.79 | n/a | n/a | n/a |
| 662.81 | -1.57 | n/a | n/a | n/a |
| % Difference (+/- 2% max.)= | | | | n/a |
| TISCH PUF PLUS TEMPERATURE CALIBRATION | | | | |
| Temperature Calibrator Certification Date: | | n/a | | |
| Reference Temperature AFTER CALIBRATION (°C): | | n/a | | |
| TISCH PUF PLUS Temperature AFTER CALIBRATION (°C): | | n/a | | |
| Difference (°C): | | Max 2.0 °C | | |
| Calibration Point (°C): | As Found (°C) | As Left (°C) | +/- Difference (°C) | |
| 20 | n/a | n/a | n/a | |
| -20 | n/a | n/a | n/a | |
| 40 | n/a | n/a | n/a | |
| 0 | n/a | n/a | n/a | |
| -30 | n/a | n/a | n/a | |
| % Difference (+/- 2 °C max.)= | | | | n/a |
| TISCH PUF PLUS FLOW CALIBRATION | | | | |
| Flow Calibration Calculations: | | | | |
| Calibrated Orifice Certification Date: | | n/a | | |
| Enter Barometric Pressure from reference (InHg) | | n/a | | |
| Barometric Pressure (mmHg) | | n/a | | |
| Enter Ambient Temperature from reference °C | | n/a | | |
| Enter "m" variable from calibrated orifice | | n/a | | |
| Enter "b" variable from calibrated orifice | | n/a | | |
| Enter Δp In. H ₂ O | | n/a | | |
| Standardized Flow lpm= | | _____ | | |
| Flow Set Point lpm= | | 230.00 | | |
| % Difference (+/- 2% max.)= | | _____ | | |
| **IF THE FLOW DEVIATES BY MORE THAN +/- 2% A FLOW CALIBRATION IS REQUIRED** | | | | |
| R, A1 and A0 Factors: | | | | |
| | As Found/As Left Pressure: | As Found/As Left Temperature: | As Found/As Left Flow: | |
| A0 | 15312.7500 | -11845.5546 | -0.2483 | |
| A1 | 22.5779 | 0.2990 | 17.6252 | |
| R | 0.0000 | 0.0000 | 0.0000 | |
| Notes: | | | | |
| Flow audit performed. | | | | |

CALIBRATORS

Company: Maxxam Operator: Limin Li

| Calibrator: | | Flow Measurement Device: | |
|------------------------|--------------------|--------------------------|------------|
| Make/Model | <u>Sabio 2010D</u> | Make/Model | <u>N/A</u> |
| Serial Number | <u>11900613</u> | Serial Number | <u>N/A</u> |
| Oven Temperature | <u>N/A</u> | Temperature (°C) | <u>N/A</u> |
| Last Verification Date | <u>N/A</u> | Barometric Pressure | <u>N/A</u> |

Flow Measurements

Pt. No. 1 5000 Pt. No. 2 5000 Pt. No. 3 5000

| Calibrator Flow (sccm) | Calculated Concentration (ppm) | Indicated Concentration (ppm) | % Difference | |
|-------------------------------------|-----------------------------------|----------------------------------|--------------|---------------|
| | | | vs Audit Gas | % Diff. Limit |
| 5013 | 0.000 | 0.001 | | |
| 5013 | 0.400 | 0.407 | 1% | ± 10% |
| 5013 | 0.200 | 0.204 | 1% | ± 10% |
| 5014 | 0.100 | 0.101 | 0% | ± 10% |
| Absolute Average Percent Difference | | | 1% | ± 10% |

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

| <u>O₃</u> | | <u>LIMITS</u> |
|------------------------|--------|---------------|
| Correlation= | 1.0000 | ≥ 0.995 |
| m (Slope)= | 1.0163 | 0.90-1.10 |
| b (Intercept % of FS)= | 0.0800 | ± 3% F.S. |

| AENV Standards | | Ozone Analyzer | |
|-------------------------|--------------------|-----------------------|---------------------|
| Audit Calibrator | | Make/Model | <u>Teco 49i</u> |
| Make/Model | <u>Teco 49i PS</u> | Serial/AMU Number | <u>AMU 1843</u> |
| Serial/AMU Number | <u>AMU 1808</u> | Last Calibration Date | <u>May 21, 2015</u> |
| Ozone Standard | <u>Primary</u> | Full Scale (ppm) | <u>0.5</u> |

COMMENTS: _____

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



Calibrator Performance Audit

Sulphur Dioxide (by Cylinder Dilution)

File No. 2014-258A

Company: Maxxam

Operator: Limin Li

| Calibrator: | | Flow Measurement Device: | |
|--------------------------------|-----------------|--------------------------|------------|
| Make/Model | <u>API 700</u> | Make/Model | <u>N/A</u> |
| Serial Number | <u>830</u> | Serial Number | <u>N/A</u> |
| Last Verification Date | <u>Oct 2013</u> | Temperature (°C) | <u>N/A</u> |
| SO ₂ Cylinder Conc. | <u>50.3</u> | Barometric Pressure | <u>N/A</u> |
| SO ₂ Cylinder S/N | <u>LL42475</u> | | |

Flow Measurements

Pt. No. 1 79.5 Pt. No. 2 39.8 Pt. No. 3 19.9

| Calibrator Flow (sccm) | Calculated Concentration (ppm) | Indicated Concentration (ppm) | % Difference | |
|-------------------------------------|-----------------------------------|----------------------------------|--------------|---------------|
| | | | vs Audit Gas | % Diff. Limit |
| Zero Air | 0.000 | 0.000 | | |
| 4918 | 0.800 | 0.798 | 0% | ± 10% |
| 4960 | 0.400 | 0.398 | -1% | ± 10% |
| 4977 | 0.200 | 0.200 | 0% | ± 10% |
| Absolute Average Percent Difference | | | 0% | ± 10% |

LINEAR REGRESSION ANALYSIS

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

| <u>SO₂</u> | | <u>LIMITS</u> |
|------------------------|--------|---------------|
| Correlation= | 1.0000 | ≥ 0.995 |
| m (Slope)= | 0.9971 | 0.90-1.10 |
| b (Intercept % of FS)= | 0.0000 | ± 3% F.S. |

| AENV Standards | | SO ₂ Analyzer | |
|-------------------------|------------------------|--------------------------|------------------|
| Audit Calibrator | | Make/Model | <u>Teco 43C</u> |
| Make/Model | <u>R&R MFC 201</u> | Serial/AMU Number | <u>AMU 1623</u> |
| Serial/AMU Number | <u>AMU 1690</u> | Last Calibration Date | <u>Dec 15/14</u> |
| | | Full Scale (ppm) | <u>1.0</u> |

COMMENTS: H2S gas was slow to move through the calibrator. Check for contamination inside calibrator. SO2 moves through quickly.

Auditor: Al Clark Date: December 16, 2014
 Operator Signature: _____ Location: McIntyre Center Edmonton

Company Maxxam Operator: Limin Li

| Calibrator: | | Flow Measurement Device: | |
|------------------------|-------------------|--------------------------|------------|
| Make/Model | <u>Sabio 2010</u> | Make/Model | <u>N/A</u> |
| Serial Number | <u>17100415</u> | Serial Number | <u>N/A</u> |
| Last Verification Date | <u>New</u> | Temperature (°C) | <u>N/A</u> |
| NO Cylinder S/N | <u>BLM0027561</u> | Barometric Pressure | <u>N/A</u> |
| NO/NOX Concentration | <u>50.7/50.7</u> | | |

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

| Calibrator Flow (sccm) | | Calculated Conc.(ppm) | | Indicated Conc.(ppm) | | | % Difference vs Audit Gas | |
|-------------------------------------|------|-----------------------|-------|----------------------|-----------------|-------|---------------------------|-----|
| Dilution | Gas | NO | NOx | NO | NO ₂ | NOx | NO | NOx |
| 5000 | 0.0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | Limit ± 10% | |
| 5016 | 79.1 | 0.800 | 0.800 | 0.811 | -0.011 | 0.800 | 1% | 0% |
| 5016 | 39.7 | 0.401 | 0.401 | 0.405 | -0.005 | 0.400 | 1% | 0% |
| 5015 | 19.9 | 0.201 | 0.201 | 0.203 | -0.003 | 0.200 | 1% | 0% |
| Absolute Average Percent Difference | | | | | | | 1% | 0% |

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

| NO | | LIMITS | | NOx | |
|------------------------|---------|-----------|--|------------------------|---------|
| Correlation= | 1.0000 | ≥ 0.990 | | Correlation= | 1.0000 |
| m (Slope)= | 1.0139 | 0.90-1.10 | | m (Slope)= | 1.0003 |
| b (Intercept % of FS)= | #DIV/0! | ± 3% F.S. | | b (Intercept % of FS)= | #DIV/0! |

| Flow | O ₂ Conc | NO Decrease | NO | NO ₂ | NOX | % Diff. Vs Audit gas | |
|-------------------------------------|---------------------|-------------|-------|-----------------|-------|----------------------|---------------|
| 5016 | 0.000 | 0.000 | 0.809 | -0.013 | 0.796 | NO ₂ | % Diff. Limit |
| 5016 | 0.500 | 0.484 | 0.325 | 0.469 | 0.794 | 0 | ± 10% |
| 5016 | 0.300 | 0.278 | 0.531 | 0.263 | 0.794 | 0 | ± 10% |
| 5016 | 0.100 | 0.090 | 0.719 | 0.076 | 0.765 | 0 | ± 10% |
| Absolute Average Percent Difference | | | | | | 0 | ± 10% |

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

| NO ₂ | | LIMITS | |
|------------------------|---------|-----------|--|
| Correlation= | 1.0000 | ≥ 0.995 | |
| m (Slope)= | 0.9960 | 0.90-1.10 | |
| b (Intercept % of FS)= | #DIV/0! | ± 3% F.S. | |

| AENV Standards | | NO _x Analyzer | |
|-------------------------|------------------|--------------------------|---------------------|
| Audit Calibrator | | Make/Model | <u>Teco 42i</u> |
| Make/Model | <u>Teco 146i</u> | Serial/AMU Number | <u>AMU 1868</u> |
| Serial/AMU Number | <u>AMU 1809</u> | Last Calibration Date | <u>May 21, 2015</u> |
| | | Full Scale (ppm) | |

COMMENTS: Contains 49.9 ppm SO2

Auditor: Al Clark
Operator Signature: *Limin Li*

Date: May 21, 2015
Location: McIntyre Center Edmonton

CALIBRATION GASES



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2015-344CGA

Company: Maxxam Operator's Name: Limin Li
Cylinder #: BLM002073 Concentration PPM: 49.5 Tolerance(%): 2 Certified By: Air Liquide

Reference Calibrator and Gas:

Make/Model: R&R MFC 201
Serial Number: AMU 1690
Last Verification Date: March 31, 2015
Gas Type: SO2 Conc. 98.57
Cylinder Number: CAL016720

Flow Measurement Device:

Make/Model: Bios DC2
Serial Number: AMU 1659
Temp. °C: 22.5 C
B.P.: 690 mmhg

Reference Analyzer:

Make/Model: Teco 43C Serial/AMU Number: 1623
Instrument Settings: Zero: 7.9 Span: 1.028 Range: 1.0
Last Calibration: Date: Mar 31/15 C.F.: 1.000 Done By: Al Clark

| Calibrator Flows (scm) | | Indicated Concentration (PPM) | Gas Flow/ Dilution Flow | Concentration Factor | Cylinder Concentration |
|---------------------------------|------|-------------------------------|----------------------------|----------------------|------------------------|
| Dilution | Gas | | | | |
| 5000 | 0.0 | 0.000 | 0.00000 | 0.00000 | 0.000 |
| 4976 | 82.6 | 0.801 | 0.01660 | 60.242 | 48.3 |
| 4993 | 41.0 | 0.396 | 0.00821 | 121.780 | 48.2 |
| 4977 | 20.2 | 0.193 | 0.00406 | 246.386 | 47.6 |
| Average Cylinder Concentration: | | | | | 48.0 |

Previous Stated Concentration PPM: 49.5

Percent variance from Stated: 3.0

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

Auditor: Al Clark
Operator Signature: *Al Clark*

Date: March 31, 2015
Location: McIntyre Center Edmonton



Calibration Gas Audit

Single Component Cylinder Gas

File No. 2014-251CGA

Company: Maxxam Operator's Name: Limin Li
 Cylinder #: LL36837 Concentration PPM: 10.0 Tolerance(%) 2 Certified By: Air Liquide

| Reference Calibrator and Gas: | Flow Measurement Device: |
|--|--------------------------------|
| Make/Model: <u>R&R MFC 201</u> | Make/Model: <u>Bios DC2</u> |
| Serial Number: <u>AMU 1690</u> | Serial Number: <u>AMU 1659</u> |
| Last Verification Date: <u>December 16, 2014</u> | Temp. °C: <u>23.0 C</u> |
| Gas Type: <u>H2S</u> Conc. <u>20.43</u> | B.P. <u>702 mmhg</u> |
| Cylinder Number: <u>CAL015106</u> | |

Reference Analyzer:
 Make/Model: Teco 45C Serial/AMU Number: 1624
 Instrument Settings: Zero: 6.4 Span: 1.160 Range: 0.1
 Last Calibration: Date: Dec15/14 C.F. 1.000 Done By: Al Clark

| Calibrator Flows (scm) | | Indicated Concentration (PPM) | Gas Flow/ Dilution Flow | Concentration Factor | Cylinder Concentration |
|---------------------------------|------|-------------------------------|----------------------------|----------------------|------------------------|
| Dilution | Gas | | | | |
| 5000 | 0.0 | 0.0000 | 0.0000 | 132.442 | 10.0 |
| 5099 | 39.5 | 0.0754 | 0.00755 | 132.442 | 10.0 |
| 5092 | 18.0 | 0.0349 | 0.00353 | 282.889 | 9.9 |
| 5066 | 9.2 | 0.0178 | 0.00182 | 550.652 | 9.8 |
| Average Cylinder Concentration: | | | | | 9.9 |

Previous Stated Concentration PPM: 10.0
 Percent variance from Stated: 1.1

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

Auditor: Al Clark Date: December 16, 2014
 Operator Signature: *Limin Li* Location: McIntyre Center Edmonton



Calibration Gas Audit

CH₄ / C₃H₈ Cylinder Gas

File No. 2015-002CGA

Company: Maxxam Operators name: Chris Wesson
 Cylinder #: LL165372 Conc CH₄ (PPM) 606/212 Tolerance (%) 0.5 Certified By: Praxair

Reference Calibrator and Gas:

Make/Model R&R MFC 201
 Serial Number AMU 1698
 Last Verification Date January 18, 2016
 Gas Type CH₄ Conc. 999.2
 Cylinder Number D761932
 Gas Type C₃H₈ Conc. 246.5
 Cylinder Number XF0037998

Flow Measurement Device:

Make/Model Elos DC-2
 Serial Number Elos D
 Temp. °C 24.5
 B.P. 698mmHg

Reference Analyzer:

Make/Model Thermo 55C Serial/AMU Number: 1643
 Instrument Settings Zero: NA Span: NA Range: 20.0
 Last Calibration: Date: 18-Jan-16 C.F. 1.000 Done By: SB

| Calibrator Flows (scm) | | Indicated Conc. (ppm) | | Gas Flow/ Dilution Flow | Concentration Factor | Cylinder Concentration | |
|---------------------------------|-------|-----------------------|-------------------------------|----------------------------|-------------------------|------------------------|-------------------------------|
| Dilution | Gas | CH ₄ | C ₃ H ₈ | | | CH ₄ | C ₃ H ₈ |
| 2688 | 0.00 | 0.00 | 0.00 | 0.02140 | 46.722 | 607 | 214 |
| 2680 | 56.29 | 12.99 | 12.62 | 0.02140 | 46.722 | 607 | 214 |
| 2688 | 19.73 | 4.62 | 4.50 | 0.00762 | 131.171 | 606 | 215 |
| 2680 | 9.69 | 2.29 | 2.24 | 0.00376 | 266.254 | 610 | 217 |
| Average Cylinder Concentration: | | | | | | 608 | 215 |

| | |
|---|-----------------------------------|
| <u>CH₄</u> | <u>C₃H₈</u> |
| Previous Stated Concentration PPM: <u>606</u> | <u>212</u> |
| Percent variance from Stated: <u>0.3</u> | <u>1.6</u> |

Cylinder gas tolerances based on CH₄ only

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

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



Calibration Gas Audit

CH4 / C3H8 Cylinder Gas

File No. 2016-091CGA

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

| Reference Calibrator and Gas: | | | | Flow Measurement Device: | |
|-------------------------------|-------------------------|-------|--------------|--------------------------|------------------|
| Make/Model | <u>R&R MFC 201</u> | | | Make/Model | <u>Bios DC-2</u> |
| Serial Number | <u>AMU 1698</u> | | | Serial Number | <u>Bios D</u> |
| Last Verification Date | <u>January 18, 2016</u> | | | Temp. °C | <u>23</u> |
| Gas Type | <u>CH4</u> | Conc. | <u>999.2</u> | B.P. | <u>599mmHg</u> |
| Cylinder Number | <u>D761932</u> | | | | |
| Gas Type | <u>C3H8</u> | Conc. | <u>246.5</u> | | |
| Cylinder Number | <u>XF0037998</u> | | | | |

Reference Analyzer:
 Make/Model Thermo 55C Serial/AMU Number: 1643
 Instrument Settings Zero: NA Span: NA Range: 20.0
 Last Calibration: Date: 18-Jan-16 C.F. 1.000 Done By: SB

| Calibrator Flows (scm) | | Indicated Conc. (ppm) | | Gas Flow/ Dilution Flow | Concentration Factor | Cylinder Concentration | |
|---------------------------------|-------|-----------------------|-------|----------------------------|-------------------------|------------------------|----------------|
| Dilution | Gas | CH4 | C3H8 | | | CH4 | C3H8 |
| 2583 | 0.00 | 0.00 | 0.00 | 0.02145 | 46.621 | 597 | 213 |
| 2635 | 56.62 | 12.80 | 12.59 | 0.02145 | 46.621 | 597 | 213 |
| 2592 | 19.72 | 4.54 | 4.49 | 0.00761 | 131.440 | 597 | 216 |
| 2584 | 9.69 | 2.25 | 2.24 | 0.00375 | 266.667 | 600 | 217 |
| Average Cylinder Concentration: | | | | | | 598 | 215 |

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

Cylinder gas tolerances based on CH4 only

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

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



Calibration Gas Audit

NO Cylinder Gas

File No. 2015-345CGA

Company: Maxxam **Operators name:** Limin Li
Cylinder #: BLM002073 **Conc (PPM)** 50.6/50.6 **Tolerance (%)** 2 **Certified By:** Air Liquide

| Reference Calibrator and Gas: | | | | Flow Measurement Device: | |
|-------------------------------|-----------------------|-------|--------------|--------------------------|-----------------|
| Make/Model | <u>Teco 1461</u> | | | Make/Model | <u>Bios DC2</u> |
| Serial Number | <u>AMU 1809</u> | | | Serial Number | <u>AMU 1659</u> |
| Last Verification Date | <u>March 31, 2015</u> | | | Temp. °C | <u>22.5 C</u> |
| Gas Type | <u>NO</u> | Conc. | <u>48.79</u> | B.P. | <u>690 mmhg</u> |
| Cylinder Number | <u>CAL018024</u> | | | | |

Reference Analyzer:
Make/Model Teco 421 **Serial/AMU Number:** 1868
Instrument Settings **Zero:** 4.2 **Span:** 1.008 **Range:** 1.0
Last Calibration: **Date:** Mar 31/15 **C.F.** 1.000 **Done By:** Al Clark

| Calibrator Flows (scem) | | Indicated Conc. (ppm) | | Gas Flow/ Dilution Flow | Concentration Factor | Cylinder Concentration | |
|---------------------------------|------|-----------------------|-------|----------------------------|-------------------------|------------------------|-----------------|
| Dilution | Gas | NO | NOX | | | NO | NOX |
| 5000 | 0.0 | 0.000 | 0.000 | 0.01660 | 60.242 | 51.5 | 51.1 |
| 4976 | 82.6 | 0.855 | 0.848 | 0.01660 | 60.242 | 51.5 | 51.1 |
| 4993 | 41.0 | 0.427 | 0.421 | 0.00821 | 121.780 | 52.0 | 51.3 |
| 4977 | 20.2 | 0.213 | 0.209 | 0.00406 | 246.386 | 52.5 | 51.5 |
| Average Cylinder Concentration: | | | | | | 52.0 | 51.3 |

| | | |
|------------------------------------|-------------|-------------|
| | <u>NO</u> | <u>NOx</u> |
| Previous Stated Concentration PPM: | <u>50.6</u> | <u>50.6</u> |
| Percent variance from Stated: | <u>2.8</u> | <u>1.4</u> |

Cylinder gas tolerances based on NO only

Meets Manufacturer Tolerance. Use manufacturers stated concentration **COMMENTS:** _____
 <=5% Outside Manufacturer Tolerance. Use manufacturers concentration **Contains 49.5 ppm SO2 in cylinder**
 > 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder:

Auditor: Al Clark **Date:** March 31, 2015
Operator Signature: *Al Clark* **Location:** McIntyre Center Edmonton



Calibration Gas Audit

NO Cylinder Gas

File No. 2016-115CGA

Company: Maxxam **Operators name:** Chris Wesson
Cylinder #: LL119346 **Conc (PPM)** 50.0/50.0 **Tolerance (%)** 2 **Certified By:** Air Liquide

| Reference Calibrator and Gas: | | | | Flow Measurement Device: | |
|-------------------------------|-------------------------|-------|--------------|--------------------------|------------------|
| Make/Model | <u>Thermo 146i</u> | | | Make/Model | <u>Bios DC-2</u> |
| Serial Number | <u>AMU 1809</u> | | | Serial Number | <u>Bios D</u> |
| Last Verification Date | <u>February 2, 2016</u> | | | Temp. °C | <u>24.5</u> |
| Gas Type | <u>NO</u> | Conc. | <u>48.79</u> | B.P. | <u>702mmHg</u> |
| Cylinder Number | <u>CAL018024</u> | | | | |

Reference Analyzer:

Make/Model: Thermo 42i Serial/AMU Number: 1868
Instrument Settings Zero: 4.2 Span: 1.014 Range: 1.0
Last Calibration: Date: 02-Feb-16 C.F. 1.000 Done By: SB

| Calibrator Flows (scm) | | Indicated Conc. (ppm) | | Gas Flow/ Dilution Flow | Concentration Factor | Cylinder Concentration | |
|---------------------------------|-------|-----------------------|-------|----------------------------|-------------------------|------------------------|-------------|
| Dilution | Gas | NO | NOX | | | NO | NOX |
| 4952 | 0.0 | 0.000 | 0.000 | | | | |
| 4946 | 79.54 | 0.809 | 0.809 | 0.01608 | 62.183 | 50.3 | 50.3 |
| 4941 | 39.35 | 0.403 | 0.402 | 0.00796 | 125.565 | 50.6 | 50.5 |
| 4940 | 19.57 | 0.200 | 0.200 | 0.00396 | 252.427 | 50.5 | 50.5 |
| Average Cylinder Concentration: | | | | | | 50.5 | 50.4 |

| | |
|--|-------------|
| <u>NO</u> | <u>NOx</u> |
| Previous Stated Concentration PPM: <u>50.0</u> | <u>50.0</u> |
| Percent variance from Stated: <u>0.9</u> | <u>0.8</u> |

Cylinder gas tolerances based on NO only

Meets Manufacturer Tolerance. Use manufacturers stated concentration **COMMENTS:** SO2/NO Blend 50.0PPM SO2
<=5% Outside Manufacturer Tolerance. Use manufacturers concentration
> 5% Outside Manufacturer Tolerance. **DO NOT USE** this cylinder

Auditor: Shea Beaton Date: February 2, 2016
Operator Signature: [Signature] Location: McIntyre Center Edmonton

APPENDIX IV
ANALYTICAL RESULTS

VOCS SAMPLES

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|--------------------------|---------------------------|------------------------|----------------|------------|--------|---------------|
| LICA/VOC/ELK/Feb 6, 2016 | S5659 | Ambient Air | 06-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: | Elk Point Airport | | | | | |
| REPORT NUMBER: | 16020060 | REPORT CREATED: | 24-Feb-16 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020060-001 | 1,1,1-Trichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1,1,2,2-Tetrachloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1,1,2-Trichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1,1-Dichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1,1-Dichloroethylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1,2,3-Trimethylbenzene | K, T, U | < 0.05 ppbv | 0.05 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1,2,4-Trichlorobenzene | K, T, U | < 0.8 ppbv | 0.8 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1,2,4-Trimethylbenzene | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1,2-Dibromoethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1,2-Dichlorobenzene | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1,2-Dichloroethane | I | 0.02 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1,2-Dichloropropane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1,3,5-Trimethylbenzene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1,3-Butadiene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1,3-Dichlorobenzene | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1,4-Dichlorobenzene | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1,4-Dioxane | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1-Butene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1-Hexene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | 1-Pentene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | 2,2,4-Trimethylpentane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | 2,2-Dimethylbutane | I | 0.04 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | 2,3,4-Trimethylpentane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | 2,3-Dimethylbutane | I | 0.10 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | 2,3-Dimethylpentane | I | 0.06 ppbv | 0.02 | AC-058 | 09-Feb-16 |

Report certified by: Graham Knox, Team Lead

Date: February 24, 2016

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Inquiries: (780) 632 8455

E-mail: EAS.Results@albertainnovates.ca

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|--------------------------|-------------------------|------------------------|----------------|------------|--------|---------------|
| LICA/VOC/ELK/Feb 6, 2016 | S5659 | Ambient Air | 06-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: | Elk Point Airport | | | | | |
| REPORT NUMBER: | 16020060 | REPORT CREATED: | 24-Feb-16 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020060-001 | 2,4-Dimethylpentane | I | 0.05 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | 2-Methylheptane | I | 0.02 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | 2-Methylhexane | I | 0.06 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | 2-Methylpentane | I | 0.21 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | 3-Methylheptane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | 3-Methylhexane | I | 0.08 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | 3-Methylpentane | I | 0.11 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | Acetone | | 1.4 ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-001 | Acrolein | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 09-Feb-16 |
| 16020060-001 | Benzene | I | 0.13 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | Benzyl chloride | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-001 | Bromodichloromethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | Bromoform | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | Bromomethane | I | 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | Carbon disulfide | I | 0.03 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | Carbon tetrachloride | I | 0.09 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | Chlorobenzene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | Chloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | Chloroform | I | 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | Chloromethane | | 0.86 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | cis-1,2-Dichloroethene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | cis-1,3-Dichloropropene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 09-Feb-16 |
| 16020060-001 | cis-2-Butene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | cis-2-Pentene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | Cyclohexane | I | 0.13 ppbv | 0.02 | AC-058 | 09-Feb-16 |

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|--------------------------------|---------------------------|-------------|----------------|------------|--------|---------------|
| LICA/VOC/ELK/Feb 6, 2016 | S5659 | Ambient Air | 06-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Elk Point Airport | | | | | | |
| REPORT NUMBER: 16020060 | REPORT CREATED: 24-Feb-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020060-001 | Cyclopentane | I | 0.05 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | Dibromochloromethane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | Ethanol | | 2.5 ppbv | 0.3 | AC-058 | 09-Feb-16 |
| 16020060-001 | Ethyl acetate | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-001 | Ethylbenzene | I | 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | Freon-11 | I | 0.28 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | Freon-113 | I | 0.07 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | Freon-114 | I | 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | Freon-12 | | 0.65 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | Hexachloro-1,3-butadiene | K, T, U | < 0.50 ppbv | 0.50 | AC-058 | 09-Feb-16 |
| 16020060-001 | Isobutane | | 1.10 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | Isopentane | | 0.95 ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-001 | Isoprene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | Isopropyl alcohol | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-001 | Isopropylbenzene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | m,p-Xylene | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-001 | m-Diethylbenzene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 09-Feb-16 |
| 16020060-001 | m-Ethyltoluene | K, T, U | < 0.08 ppbv | 0.08 | AC-058 | 09-Feb-16 |
| 16020060-001 | Methyl butyl ketone | K, T, U | < 0.50 ppbv | 0.50 | AC-058 | 09-Feb-16 |
| 16020060-001 | Methyl ethyl ketone | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 09-Feb-16 |
| 16020060-001 | Methyl isobutyl ketone | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-001 | Methyl methacrylate | K, T, U | < 0.07 ppbv | 0.07 | AC-058 | 09-Feb-16 |
| 16020060-001 | Methyl tert butyl ether | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-001 | Methylcyclohexane | I | 0.25 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | Methylcyclopentane | I | 0.15 ppbv | 0.02 | AC-058 | 09-Feb-16 |

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|--------------------------------|-----------------------------|-------------|----------------|------------|--------|---------------|
| LICA/VOC/ELK/Feb 6, 2016 | S5659 | Ambient Air | 06-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Elk Point Airport | | | | | | |
| REPORT NUMBER: 16020060 | REPORT CREATED: 24-Feb-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020060-001 | Methylene chloride | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 09-Feb-16 |
| 16020060-001 | n-Butane | | 1.82 ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-001 | n-Decane | K, T, U | < 0.06 ppbv | 0.06 | AC-058 | 09-Feb-16 |
| 16020060-001 | n-Dodecane | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-001 | n-Heptane | I | 0.06 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | n-Hexane | I | 0.24 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | n-Octane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | n-Pentane | | 0.5 ppbv | 0.1 | AC-058 | 09-Feb-16 |
| 16020060-001 | n-Propylbenzene | K, T, U | < 0.05 ppbv | 0.05 | AC-058 | 09-Feb-16 |
| 16020060-001 | n-Undecane | K, T, U | < 0.5 ppbv | 0.5 | AC-058 | 09-Feb-16 |
| 16020060-001 | Naphthalene | K, T, U | < 0.5 ppbv | 0.5 | AC-058 | 09-Feb-16 |
| 16020060-001 | n-Nonane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | o-Ethyltoluene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | o-Xylene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | p-Diethylbenzene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 09-Feb-16 |
| 16020060-001 | p-Ethyltoluene | K, T, U | < 0.07 ppbv | 0.07 | AC-058 | 09-Feb-16 |
| 16020060-001 | Styrene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 09-Feb-16 |
| 16020060-001 | Tetrachloroethylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 09-Feb-16 |
| 16020060-001 | Tetrahydrofuran | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 09-Feb-16 |
| 16020060-001 | Toluene | I | 0.08 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | trans-1,2-Dichloroethylene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | trans-1,3-Dichloropropylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 09-Feb-16 |
| 16020060-001 | trans-2-Butene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-001 | trans-2-Pentene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-001 | Trichloroethylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 09-Feb-16 |

| | | | |
|--------------------------|--------------------|------------------------|--|
| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED |
| LICA/VOC/ELK/Feb 6, 2016 | S5659 | Ambient Air | 06-Feb-16 0:00 |
| DESCRIPTION: | Eik Point Airport | | |
| REPORT NUMBER: | 16020060 | REPORT CREATED: | 24-Feb-16 |
| VERSION: | Version 01 | | |
| Lab ID | Parameter | Qualifier | Result Units RDL Method Analysis Date |
| 16020060-001 | Vinyl acetate | K, T, U | < 0.4 ppbv 0.4 AC-058 09-Feb-16 |
| 16020060-001 | Vinyl chloride | K, T, U | < 0.02 ppbv 0.02 AC-058 09-Feb-16 |

Report certified by: Graham Knox, Team Lead

Date: February 24, 2016

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

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Vegreville, Alberta
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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|---------------------------|---------------------------|------------------------|----------------|------------|--------|---------------|
| LICA/VOC/ELK/Feb 12, 2016 | S5677 | Ambient Air | 12-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: | Elk Point Airport | | | | | |
| REPORT NUMBER: | 16020158 | REPORT CREATED: | 24-Feb-16 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020158-001 | 1,1,1-Trichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1,1,2,2-Tetrachloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1,1,2-Trichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1,1-Dichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1,1-Dichloroethylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1,2,3-Trimethylbenzene | K, T, U | < 0.05 ppbv | 0.05 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1,2,4-Trichlorobenzene | K, T, U | < 0.8 ppbv | 0.8 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1,2,4-Trimethylbenzene | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1,2-Dibromoethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1,2-Dichlorobenzene | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1,2-Dichloroethane | I | 0.02 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1,2-Dichloropropane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1,3,5-Trimethylbenzene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1,3-Butadiene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1,3-Dichlorobenzene | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1,4-Dichlorobenzene | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1,4-Dioxane | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1-Butene | I | 0.07 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1-Hexene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | 1-Pentene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | 2,2,4-Trimethylpentane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | 2,2-Dimethylbutane | I | 0.03 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | 2,3,4-Trimethylpentane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | 2,3-Dimethylbutane | I | 0.06 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | 2,3-Dimethylpentane | I | 0.03 ppbv | 0.02 | AC-058 | 19-Feb-16 |

Report certified by: Graham Knox, Team Lead

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: February 24, 2016

Inquiries: (780) 632 8455

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|--------------------------------|---------------------------|-------------|----------------|------------|--------|---------------|
| LICA/VOC/ELIK/Feb 12, 2016 | S5677 | Ambient Air | 12-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Elk Point Airport | | | | | | |
| REPORT NUMBER: 16020158 | REPORT CREATED: 24-Feb-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020158-001 | 2,4-Dimethylpentane | I | 0.03 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | 2-Methylheptane | I | 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | 2-Methylhexane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | 2-Methylpentane | I | 0.08 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | 3-Methylheptane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | 3-Methylhexane | I | 0.04 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | 3-Methylpentane | I | 0.11 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | Acetone | I | 1.4 ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-001 | Acrolein | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 19-Feb-16 |
| 16020158-001 | Benzene | I | 0.15 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | Benzyl chloride | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-001 | Bromodichloromethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | Bromoform | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | Bromomethane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | Carbon disulfide | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | Carbon tetrachloride | I | 0.09 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | Chlorobenzene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | Chloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | Chloroform | I | 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | Chloromethane | I | 0.89 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | cis-1,2-Dichloroethene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | cis-1,3-Dichloropropene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 19-Feb-16 |
| 16020158-001 | cis-2-Butene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | cis-2-Pentene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | Cyclohexane | I | 0.08 ppbv | 0.02 | AC-058 | 19-Feb-16 |

Report certified by: Graham Knox, Team Lead

Date: February 24, 2016

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Inquiries: (780) 632 8455

E-mail: EAS.Results@albertainnovates.ca

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|--------------------------------|---------------------------|-------------|----------------|------------|--------|---------------|
| LICA/VOC/ELK/Feb 12, 2016 | S5677 | Ambient Air | 12-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Elk Point Airport | | | | | | |
| REPORT NUMBER: 16020158 | REPORT CREATED: 24-Feb-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020158-001 | Cyclopentane | I | 0.02 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | Dibromochloromethane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | Ethanol | | 0.8 ppbv | 0.3 | AC-058 | 19-Feb-16 |
| 16020158-001 | Ethyl acetate | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-001 | Ethylbenzene | I | 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | Freon-11 | | 0.31 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | Freon-113 | I | 0.09 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | Freon-114 | I | 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | Freon-12 | | 0.69 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | Hexachloro-1,3-butadiene | K, T, U | < 0.50 ppbv | 0.50 | AC-058 | 19-Feb-16 |
| 16020158-001 | Isobutane | | 0.42 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | Isopentane | | 0.33 ppbv | 0.03 | AC-058 | 19-Feb-16 |
| 16020158-001 | Isoprene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | Isopropyl alcohol | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-001 | Isopropylbenzene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | m,p-Xylene | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 19-Feb-16 |
| 16020158-001 | m-Diethylbenzene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 19-Feb-16 |
| 16020158-001 | m-Ethyltoluene | K, T, U | < 0.08 ppbv | 0.08 | AC-058 | 19-Feb-16 |
| 16020158-001 | Methyl butyl ketone | K, T, U | < 0.50 ppbv | 0.50 | AC-058 | 19-Feb-16 |
| 16020158-001 | Methyl ethyl ketone | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 19-Feb-16 |
| 16020158-001 | Methyl isobutyl ketone | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-001 | Methyl methacrylate | K, T, U | < 0.07 ppbv | 0.07 | AC-058 | 19-Feb-16 |
| 16020158-001 | Methyl tert butyl ether | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 19-Feb-16 |
| 16020158-001 | Methylcyclohexane | I | 0.13 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | Methylcyclopentane | I | 0.17 ppbv | 0.02 | AC-058 | 19-Feb-16 |

Report certified by: Graham Knox, Team Lead

Date: February 24, 2016

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Inquiries: (780) 632 8455

E-mail: EAS.Results@albertainnovates.ca

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|--------------------------------|-----------------------------|-------------|----------------|------------|--------|---------------|
| LICA/VOC/ELK/Feb 12, 2016 | S5677 | Ambient Air | 12-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Elk Point Airport | | | | | | |
| REPORT NUMBER: 16020158 | REPORT CREATED: 24-Feb-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020158-001 | Methylene chloride | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 19-Feb-16 |
| 16020158-001 | n-Butane | | 0.72 ppbv | 0.03 | AC-058 | 19-Feb-16 |
| 16020158-001 | n-Decane | K, T, U | < 0.06 ppbv | 0.06 | AC-058 | 19-Feb-16 |
| 16020158-001 | n-Dodecane | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-001 | n-Heptane | I | 0.03 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | n-Hexane | | 0.50 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | n-Octane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | n-Pentane | | 0.3 ppbv | 0.1 | AC-058 | 19-Feb-16 |
| 16020158-001 | n-Propylbenzene | K, T, U | < 0.05 ppbv | 0.05 | AC-058 | 19-Feb-16 |
| 16020158-001 | n-Undecane | K, T, U | < 0.5 ppbv | 0.5 | AC-058 | 19-Feb-16 |
| 16020158-001 | Naphthalene | K, T, U | < 0.5 ppbv | 0.5 | AC-058 | 19-Feb-16 |
| 16020158-001 | n-Nonane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | o-Ethyltoluene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | o-Xylene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | p-Diethylbenzene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 19-Feb-16 |
| 16020158-001 | p-Ethyltoluene | K, T, U | < 0.07 ppbv | 0.07 | AC-058 | 19-Feb-16 |
| 16020158-001 | Styrene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 19-Feb-16 |
| 16020158-001 | Tetrachloroethylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 19-Feb-16 |
| 16020158-001 | Tetrahydrofuran | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 19-Feb-16 |
| 16020158-001 | Toluene | I | 0.12 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | trans-1,2-Dichloroethylene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | trans-1,3-Dichloropropylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 19-Feb-16 |
| 16020158-001 | trans-2-Butene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 19-Feb-16 |
| 16020158-001 | trans-2-Pentene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 19-Feb-16 |
| 16020158-001 | Trichloroethylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 19-Feb-16 |

Report certified by: Graham Knox, Team Lead

Date: February 24, 2016

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Inquiries: (780) 632 8455

E-mail: EAS.Results@albertainnovates.ca

| | | | |
|---------------------------|------------------------|------------------|----------------------|
| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED |
| LICA/VOC/ELK/Feb 12, 2016 | S5677 | Ambient Air | 12-Feb-16 0:00 |
| DESCRIPTION: | | VERSION: | |
| Elk Point Airport | | Version 01 | |
| REPORT NUMBER: | REPORT CREATED: | | |
| 16020158 | 24-Feb-16 | | |
| Lab ID | Parameter | Qualifier | Result Units |
| 16020158-001 | Vinyl acetate | K, T, U | < 0.4 ppbv |
| 16020158-001 | Vinyl chloride | K, T, U | < 0.02 ppbv |
| | | RDL | Method |
| | | 0.4 | AC-058 |
| | | 0.02 | AC-058 |
| | | | Analysis Date |
| | | | 19-Feb-16 |
| | | | 19-Feb-16 |

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|---------------------------|---------------------------|-----------------|----------------|------------|--------|---------------|
| LICA/VOC/ELK/Feb 18, 2016 | H2824 | Ambient Air | 18-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: | Eik Point Airport | | | | | |
| REPORT NUMBER: | 16020201 | REPORT CREATED: | 22-Mar-16 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020201-003 | 1,1,1-Trichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1,1,2,2-Tetrachloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1,1,2-Trichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1,1-Dichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1,1-Dichloroethylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1,2,3-Trimethylbenzene | K, T, U | < 0.05 ppbv | 0.05 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1,2,4-Trichlorobenzene | K, T, U | < 0.8 ppbv | 0.8 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1,2,4-Trimethylbenzene | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1,2-Dibromoethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1,2-Dichlorobenzene | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1,2-Dichloroethane | I | 0.03 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1,2-Dichloropropane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1,3,5-Trimethylbenzene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1,3-Butadiene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1,3-Dichlorobenzene | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1,4-Dichlorobenzene | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1,4-Dioxane | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1-Butene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1-Hexene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | 1-Pentene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | 2,2,4-Trimethylpentane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | 2,2-Dimethylbutane | I | 0.02 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | 2,3,4-Trimethylpentane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | 2,3-Dimethylbutane | I | 0.07 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | 2,3-Dimethylpentane | I | 0.03 ppbv | 0.02 | AC-058 | 24-Feb-16 |

Report certified by: Graham Knox, Team Lead

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: March-22-16

Inquiries: (780) 632 8455

E-mail: EAS.Results@albertainnovates.ca

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|---------------------------|-------------------------|-------------|-----------------|------------|--------|---------------|
| LICA/VOC/ELK/Feb 18, 2016 | H2824 | Ambient Air | 18-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: | Elk Point Airport | | REPORT CREATED: | 22-Mar-16 | | |
| REPORT NUMBER: | 16020201 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020201-003 | 2,4-Dimethylpentane | I | 0.03 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | 2-Methylheptane | I | 0.02 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | 2-Methylhexane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | 2-Methylpentane | I | 0.16 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | 3-Methylheptane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | 3-Methylhexane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | 3-Methylpentane | I | 0.09 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | Acetone | | 4.0 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-003 | Acrolein | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 24-Feb-16 |
| 16020201-003 | Benzene | I | 0.14 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | Benzyl chloride | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-003 | Bromodichloromethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | Bromoform | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | Bromomethane | I | 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | Carbon disulfide | | 0.38 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | Carbon tetrachloride | I | 0.09 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | Chlorobenzene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | Chloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | Chloroform | I | 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | Chloromethane | | 1.21 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | cis-1,2-Dichloroethene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | cis-1,3-Dichloropropene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 24-Feb-16 |
| 16020201-003 | cis-2-Butene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | cis-2-Pentene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | Cyclohexane | I | 0.08 ppbv | 0.02 | AC-058 | 24-Feb-16 |

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|--------------------------------|---------------------------|-------------|----------------|------------|--------|---------------|
| LICA/VOC/ELK/Feb 18, 2016 | H2824 | Ambient Air | 18-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Elk Point Airport | | | | | | |
| REPORT NUMBER: 16020201 | REPORT CREATED: 22-Mar-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020201-003 | Cyclopentane | I | 0.05 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | Dibromochloromethane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | Ethanol | | 0.9 ppbv | 0.3 | AC-058 | 24-Feb-16 |
| 16020201-003 | Ethyl acetate | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-003 | Ethylbenzene | I | 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | Freon-11 | I | 0.28 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | Freon-113 | I | 0.08 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | Freon-114 | I | 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | Freon-12 | | 0.62 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | Hexachloro-1,3-butadiene | K, T, U | < 0.50 ppbv | 0.50 | AC-058 | 24-Feb-16 |
| 16020201-003 | Isobutane | | 1.18 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | Isopentane | | 0.78 ppbv | 0.03 | AC-058 | 24-Feb-16 |
| 16020201-003 | Isoprene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | Isopropyl alcohol | | 0.8 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-003 | Isopropylbenzene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | m,p-Xylene | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 24-Feb-16 |
| 16020201-003 | m-Diethylbenzene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 24-Feb-16 |
| 16020201-003 | m-Ethyltoluene | K, T, U | < 0.08 ppbv | 0.08 | AC-058 | 24-Feb-16 |
| 16020201-003 | Methyl butyl ketone | K, T, U | < 0.50 ppbv | 0.50 | AC-058 | 24-Feb-16 |
| 16020201-003 | Methyl ethyl ketone | | 0.5 ppbv | 0.3 | AC-058 | 24-Feb-16 |
| 16020201-003 | Methyl isobutyl ketone | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-003 | Methyl methacrylate | K, T, U | < 0.07 ppbv | 0.07 | AC-058 | 24-Feb-16 |
| 16020201-003 | Methyl tert butyl ether | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 24-Feb-16 |
| 16020201-003 | Methylcyclohexane | I | 0.11 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | Methylcyclopentane | I | 0.11 ppbv | 0.02 | AC-058 | 24-Feb-16 |

Report certified by: Graham Knox, Team Lead

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: March-22-16

Inquiries: (780) 632 8455

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| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|---------------------------------------|----------------------------------|-------------|----------------|------------|--------|---------------|
| LICA/VOC/ELK/Feb 18, 2016 | H2824 | Ambient Air | 18-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Elk Point Airport | | | | | | |
| REPORT NUMBER: 16020201 | REPORT CREATED: 22-Mar-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020201-003 | Methylene chloride | K, T, U | <0.3 ppbv | 0.3 | AC-058 | 24-Feb-16 |
| 16020201-003 | n-Butane | | 3.18 ppbv | 0.03 | AC-058 | 24-Feb-16 |
| 16020201-003 | n-Decane | K, T, U | <0.06 ppbv | 0.06 | AC-058 | 24-Feb-16 |
| 16020201-003 | n-Dodecane | K, T, U | <0.4 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-003 | n-Heptane | I | 0.06 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | n-Hexane | I | 0.22 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | n-Octane | K, T, U | <0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | n-Pentane | | 0.8 ppbv | 0.1 | AC-058 | 24-Feb-16 |
| 16020201-003 | n-Propylbenzene | K, T, U | <0.05 ppbv | 0.05 | AC-058 | 24-Feb-16 |
| 16020201-003 | n-Undecane | K, T, U | <0.5 ppbv | 0.5 | AC-058 | 24-Feb-16 |
| 16020201-003 | Naphthalene | K, T, U | <0.5 ppbv | 0.5 | AC-058 | 24-Feb-16 |
| 16020201-003 | n-Nonane | K, T, U | <0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | o-Ethyltoluene | K, T, U | <0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | o-Xylene | I | 0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | p-Diethylbenzene | K, T, U | <0.04 ppbv | 0.04 | AC-058 | 24-Feb-16 |
| 16020201-003 | p-Ethyltoluene | K, T, U | <0.07 ppbv | 0.07 | AC-058 | 24-Feb-16 |
| 16020201-003 | Styrene | K, T, U | <0.04 ppbv | 0.04 | AC-058 | 24-Feb-16 |
| 16020201-003 | Tetrachloroethylene | K, T, U | <0.04 ppbv | 0.04 | AC-058 | 24-Feb-16 |
| 16020201-003 | Tetrahydrofuran | K, T, U | <0.4 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-003 | Toluene | I | 0.08 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | trans-1,2-Dichloroethylene | K, T, U | <0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | trans-1,3-Dichloropropylene | K, T, U | <0.04 ppbv | 0.04 | AC-058 | 24-Feb-16 |
| 16020201-003 | trans-2-Butene | K, T, U | <0.01 ppbv | 0.01 | AC-058 | 24-Feb-16 |
| 16020201-003 | trans-2-Pentene | K, T, U | <0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |
| 16020201-003 | Trichloroethylene | K, T, U | <0.04 ppbv | 0.04 | AC-058 | 24-Feb-16 |

Report certified by: Graham Knox, Team Lead

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: March-22-16

Inquiries: (780) 632 8455

E-mail: EAS.Results@albertainnovates.ca

CLIENT SAMPLE ID: LICA/VOC/ELK/Feb 18, 2016 CANISTER ID: H2824 Matrix: Ambient Air DATE SAMPLED: 18-Feb-16 0:00
 DESCRIPTION: Elk Point Airport REPORT CREATED: 22-Mar-16 VERSION: Version 01
 REPORT NUMBER: 16020201

| Lab ID | Parameter | Qualifier | Result | Units | RDL | Method | Analysis Date |
|--------------|----------------|-----------|--------|-----------|------|--------|---------------|
| 16020201-003 | Vinyl acetate | K, T, U | < | 0.4 ppbv | 0.4 | AC-058 | 24-Feb-16 |
| 16020201-003 | Vinyl chloride | K, T, U | < | 0.02 ppbv | 0.02 | AC-058 | 24-Feb-16 |

Report certified by: Graham Knox, Team Lead On behalf of: PJ Pretorius, Manager, Analysis and Testing Services
 Date: March-22-16 Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|---------------------------|---------------------------|------------------------|----------------|------------|--------|---------------|
| LICA/VOC/ELK/FEB 24, 2016 | 1687 | Ambient Air | 24-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: | Eik Point Airport | | | | | |
| REPORT NUMBER: | 16030001 | REPORT CREATED: | 22-Mar-16 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16030001-001 | 1,1,1-Trichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1,1,2,2-Tetrachloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1,1,2-Trichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1,1-Dichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1,1-Dichloroethylene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1,2,3-Trimethylbenzene | K, T, U | < 0.05 ppbv | 0.05 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1,2,4-Trichlorobenzene | K, T, U | < 0.8 ppbv | 0.8 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1,2,4-Trimethylbenzene | I | 0.05 ppbv | 0.03 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1,2-Dibromoethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1,2-Dichlorobenzene | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1,2-Dichloroethane | I | 0.02 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1,2-Dichloropropane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1,3,5-Trimethylbenzene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1,3-Butadiene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1,3-Dichlorobenzene | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1,4-Dichlorobenzene | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1,4-Dioxane | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1-Butene | I | 0.06 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1-Hexene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | 1-Pentene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | 2,2,4-Trimethylpentane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | 2,2-Dimethylbutane | I | 0.06 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | 2,3,4-Trimethylpentane | I | 0.02 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | 2,3-Dimethylbutane | I | 0.13 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | 2,3-Dimethylpentane | I | 0.10 ppbv | 0.02 | AC-058 | 03-Mar-16 |

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|---------------------------|-------------------------|------------------------|----------------|------------|--------|---------------|
| LICA/VOC/ELK/FEB 24, 2016 | 1687 | Ambient Air | 24-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: | Elk Point Airport | | | | | |
| REPORT NUMBER: | 16030001 | REPORT CREATED: | 22-Mar-16 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16030001-001 | 2,4-Dimethylpentane | I | 0.05 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | 2-Methylheptane | I | 0.03 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | 2-Methylhexane | I | 0.03 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | 2-Methylpentane | I | 0.27 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | 3-Methylheptane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | 3-Methylhexane | I | 0.07 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | 3-Methylpentane | I | 0.08 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | Acetone | | 1.2 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-001 | Acrolein | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 03-Mar-16 |
| 16030001-001 | Benzene | I | 0.17 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | Benzyl chloride | K, T, U | < 0.4 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-001 | Bromodichloromethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | Bromoform | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | Bromomethane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | Carbon disulfide | I | 0.24 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | Carbon tetrachloride | I | 0.08 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | Chlorobenzene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | Chloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | Chloroform | I | 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | Chloromethane | | 0.46 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | cis-1,2-Dichloroethene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | cis-1,3-Dichloropropene | K, T, U | < 0.04 ppbv | 0.04 | AC-058 | 03-Mar-16 |
| 16030001-001 | cis-2-Butene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | cis-2-Pentene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | Cyclohexane | I | 0.12 ppbv | 0.02 | AC-058 | 03-Mar-16 |



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|--------------------------------|---------------------------|-------------|----------------|------------|--------|---------------|
| LICA/VOC/ELK/FEB 24, 2016 | 1687 | Ambient Air | 24-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Elk Point Airport | | | | | | |
| REPORT NUMBER: 16030001 | REPORT CREATED: 22-Mar-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16030001-001 | Cyclopentane | I | 0.04 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | Dibromochloromethane | K, T, U | <0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | Ethanol | K, T, U | <0.3 ppbv | 0.3 | AC-058 | 03-Mar-16 |
| 16030001-001 | Ethyl acetate | K, T, U | <0.4 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-001 | Ethylbenzene | I | 0.03 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | Freon-11 | I | 0.17 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | Freon-113 | I | 0.07 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | Freon-114 | K, T, U | <0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | Freon-12 | | 0.40 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | Hexachloro-1,3-butadiene | K, T, U | <0.50 ppbv | 0.50 | AC-058 | 03-Mar-16 |
| 16030001-001 | Isobutane | | 0.38 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | Isopentane | I | 0.18 ppbv | 0.03 | AC-058 | 03-Mar-16 |
| 16030001-001 | Isoprene | I | 0.05 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | Isopropyl alcohol | K, T, U | <0.4 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-001 | Isopropylbenzene | K, T, U | <0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | m,p-Xylene | I | 0.08 ppbv | 0.03 | AC-058 | 03-Mar-16 |
| 16030001-001 | m-Diethylbenzene | K, T, U | <0.04 ppbv | 0.04 | AC-058 | 03-Mar-16 |
| 16030001-001 | m-Ethyltoluene | K, T, U | <0.08 ppbv | 0.08 | AC-058 | 03-Mar-16 |
| 16030001-001 | Methyl butyl ketone | K, T, U | <0.50 ppbv | 0.50 | AC-058 | 03-Mar-16 |
| 16030001-001 | Methyl ethyl ketone | K, T, U | <0.3 ppbv | 0.3 | AC-058 | 03-Mar-16 |
| 16030001-001 | Methyl isobutyl ketone | K, T, U | <0.4 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-001 | Methyl methacrylate | K, T, U | <0.07 ppbv | 0.07 | AC-058 | 03-Mar-16 |
| 16030001-001 | Methyl tert butyl ether | K, T, U | <0.03 ppbv | 0.03 | AC-058 | 03-Mar-16 |
| 16030001-001 | Methylcyclohexane | I | 0.21 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | Methylcyclopentane | I | 0.12 ppbv | 0.02 | AC-058 | 03-Mar-16 |

Report certified by: Graham Knox, Team Lead

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: March-22-16

Inquiries: (780) 632 8455

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| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|---------------------------|-----------------------------|-----------------|----------------|------------|--------|---------------|
| LICA/VOC/ELK/FEB 24, 2016 | 1687 | Ambient Air | 24-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: | Elk Point Airport | | | | | |
| REPORT NUMBER: | 16030001 | REPORT CREATED: | 22-Mar-16 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16030001-001 | Methylene chloride | K, T, U | <0.3 ppbv | 0.3 | AC-058 | 03-Mar-16 |
| 16030001-001 | n-Butane | | 0.47 ppbv | 0.03 | AC-058 | 03-Mar-16 |
| 16030001-001 | n-Decane | K, T, U | <0.06 ppbv | 0.06 | AC-058 | 03-Mar-16 |
| 16030001-001 | n-Dodecane | | 1.7 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-001 | n-Heptane | I | 0.08 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | n-Hexane | I | 0.14 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | n-Octane | I | 0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | n-Pentane | | 0.3 ppbv | 0.1 | AC-058 | 03-Mar-16 |
| 16030001-001 | n-Propylbenzene | K, T, U | <0.05 ppbv | 0.05 | AC-058 | 03-Mar-16 |
| 16030001-001 | n-Undecane | K, T, U | <0.5 ppbv | 0.5 | AC-058 | 03-Mar-16 |
| 16030001-001 | Naphthalene | | 0.8 ppbv | 0.5 | AC-058 | 03-Mar-16 |
| 16030001-001 | n-Nonane | I | 0.02 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | o-Ethyltoluene | I | 0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | o-Xylene | I | 0.03 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | p-Diethylbenzene | K, T, U | <0.04 ppbv | 0.04 | AC-058 | 03-Mar-16 |
| 16030001-001 | p-Ethyltoluene | K, T, U | <0.07 ppbv | 0.07 | AC-058 | 03-Mar-16 |
| 16030001-001 | Styrene | K, T, U | <0.04 ppbv | 0.04 | AC-058 | 03-Mar-16 |
| 16030001-001 | Tetrachloroethylene | K, T, U | <0.04 ppbv | 0.04 | AC-058 | 03-Mar-16 |
| 16030001-001 | Tetrahydrofuran | K, T, U | <0.4 ppbv | 0.4 | AC-058 | 03-Mar-16 |
| 16030001-001 | Toluene | I | 0.14 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | trans-1,2-Dichloroethylene | K, T, U | <0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | trans-1,3-Dichloropropylene | K, T, U | <0.04 ppbv | 0.04 | AC-058 | 03-Mar-16 |
| 16030001-001 | trans-2-Butene | K, T, U | <0.01 ppbv | 0.01 | AC-058 | 03-Mar-16 |
| 16030001-001 | trans-2-Pentene | K, T, U | <0.02 ppbv | 0.02 | AC-058 | 03-Mar-16 |
| 16030001-001 | Trichloroethylene | K, T, U | <0.04 ppbv | 0.04 | AC-058 | 03-Mar-16 |

| | | | | |
|---------------------------|------------------|------------------------|---------------------|----------------------|
| CLIENT SAMPLE ID | | CANISTER ID | Matrix | DATE SAMPLED |
| LICA/VOC/ELK/FEB 24, 2016 | | 1687 | Ambient Air | 24-Feb-16 0:00 |
| DESCRIPTION: | | REPORT CREATED: | | |
| Elk Point Airport | | 22-Mar-16 | | |
| REPORT NUMBER: | | VERSION: | | |
| 16030001 | | Version 01 | | |
| Lab ID | Parameter | Qualifier | Result Units | RDI |
| 16030001-001 | Vinyl acetate | K, T, U | < 0.4 ppbv | 0.4 |
| 16030001-001 | Vinyl chloride | K, T, U | < 0.02 ppbv | 0.02 |
| | | | | Method |
| | | | | AC-058 |
| | | | | AC-058 |
| | | | | Analysis Date |
| | | | | 03-Mar-16 |
| | | | | 03-Mar-16 |

Report certified by: Graham Knox, Team Lead

Date: March-22-16

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|--------------------------------|--------------------------------|------------|------------------|------------|--------|---------------|
| LICA/PUF/ELK/feb 6, 2016 | P13-01 | Air Filter | 06-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Elk Point Airport | | | | | | |
| REPORT NUMBER: 16020060 | REPORT CREATED: 24-Feb-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020060-002 | 1-Methylnaphthalene | | 0.04 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | 2-Methylnaphthalene | | 0.08 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | 3-Methylcholanthrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | 7,12-Dimethylbenz(a)anthracene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Acenaphthene | | 0.03 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Acenaphthylene | | 0.02 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Acridine | | 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Anthracene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Benzo(a)anthracene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Benzo(a)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Benzo(b,j,k)fluoranthene | K, T, U | 0.03 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Benzo(c)phenanthrene | | 0.02 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Benzo(e)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Benzo(ghi)perylene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Chrysene | | 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Dibenzo(a,h)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Dibenzo(a,i)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Dibenzo(a,j)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Dibenzo(ah)anthracene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Fluoranthene | | 0.08 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Fluorene | | 0.09 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Indeno(1,2,3-cd)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Naphthalene | | 0.10 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Perylene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Phenanthrene | | 0.15 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |

Report certified by: Graham Knox, Team Lead

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: February 24, 2016

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID: LICA/PUF/ELK/Feb 6, 2016
 CANISTER ID: P13-01
 Matrix: Air Filter
 DATE SAMPLED: 06-Feb-16 0:00
 DESCRIPTION: Elk Point Airport
 REPORT NUMBER: 16020060
 REPORT CREATED: 24-Feb-16
 VERSION: Version 01

| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
|--------------|-----------|-----------|----------------|------|--------|---------------|
| 16020060-002 | Pyrene | | 0.03 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020060-002 | Retene | | 0.02 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |

Report certified by: Graham Knox, Team Lead
 Date: February 24, 2016
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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|--------------------------------|--------------------------------|------------|------------------|------------|--------|---------------|
| LICA/PUF/ELK/Feb 12, 2016 | 9702 | Air Filter | 12-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: Elk Point Airport | | | | | | |
| REPORT NUMBER: 16020158 | REPORT CREATED: 24-Feb-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020158-002 | 1-Methylnaphthalene | | 0.16 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | 2-Methylnaphthalene | | 0.24 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | 3-Methylcholanthrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | 7,12-Dimethylbenz(a)anthracene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Acenaphthene | | 0.03 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Acenaphthylene | | 0.03 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Acridine | | 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Anthracene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Benzo(a)anthracene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Benzo(a)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Benzo(b,j,k)fluoranthrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Benzo(c)phenanthrene | K, T, U | 0.03 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Benzo(e)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Benzo(ghi)perylene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Chrysene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Dibenzo(a,h)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Dibenzo(a,i)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Dibenzo(a,l)pyrene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Dibenzo(ah)anthracene | K, T, U | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Fluoranthene | | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Fluorene | | 0.06 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Indeno(1,2,3-cd)pyrene | K, T, U | 0.05 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Naphthalene | | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Perylene | K, T, U | 0.17 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Phenanthrene | | < 0.01 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| | | | 0.11 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |

Report certified by: Graham Knox, Team Lead

Date: February 24, 2016

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Inquiries: (780) 632 8455

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

| | | | | | | |
|--|-----------------------------------|-------------------------------------|---------------------------------------|------------|---------------|----------------------|
| CLIENT SAMPLE ID LICA/PUF/ELK/Feb 12, 2016 | CANISTER ID 9702 | Matrix Air Filter | DATE SAMPLED 12-Feb-16 0:00 | | | |
| DESCRIPTION: Elk Point Airport | REPORT NUMBER: 16020158 | REPORT CREATED: 24-Feb-16 | VERSION: Version 01 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020158-002 | Pyrene | | 0.02 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |
| 16020158-002 | Retene | | 0.02 ug/Filter | 0.01 | NA-017 | 19-Feb-16 |

Report certified by: Graham Knox, Team Lead

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Date: February 24, 2016

Inquiries: (780) 632 8455

E-mail: EAS.Results@albertainnovates.ca

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|---------------------------|--------------------------------|------------|----------------|------------|--------|---------------|
| LICA/PUF/ELK/Feb 18, 2016 | TE-05 | Air Filter | 18-Feb-16 0:00 | Version 01 | | |
| REPORT NUMBER: 16020201 | REPORT CREATED: 22-Mar-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020201-004 | 1-Methylnaphthalene | | 0.05 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | 2-Methylnaphthalene | | 0.08 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | 3-Methylcholanthrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | 7,12-Dimethylbenz(a)anthracene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Acenaphthene | | 0.03 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Acenaphthylene | | 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Acridine | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Anthracene | | 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Benzo(a)anthracene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Benzo(a)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Benzo(b,j,k)fluoranthene | K, T, U | 0.04 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Benzo(c)phenanthrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Benzo(e)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Benzo(ghi)perylene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Chrysene | | 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Dibenzo(a,h)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Dibenzo(a,i)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Dibenzo(a,l)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Dibenzo(ah)anthracene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Fluoranthene | | 0.07 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Fluorene | | 0.07 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Indeno(1,2,3-cd)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Naphthalene | | 0.05 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Perylene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Phenanthrene | | 0.10 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |

CLIENT SAMPLE ID: LICA/PUF/ELK/Feb 18, 2016
 CANISTER ID: TE-05
 Matrix: Air Filter
 DATE SAMPLED: 18-Feb-16 0:00
 DESCRIPTION: Elk Point Airport
 REPORT NUMBER: 16020201
 REPORT CREATED: 22-Mar-16
 VERSION: Version 01

| Lab ID | Parameter | Qualifier | Result | Units | RDL | Method | Analysis Date |
|--------------|-----------|-----------|--------|--------|------|--------|---------------|
| 16020201-004 | Pyrene | | 0.02 | ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16020201-004 | Retene | | 0.02 | ug/PUF | 0.01 | NA-017 | 09-Mar-16 |

Report certified by: Graham Knox, Team Lead
 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services
 Date: March-22-16
 Inquiries: (780) 632 8455
 E-mail: EAS.Results@albertainnovates.ca

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|---------------------------|--------------------------------|-----------------|----------------|------------|--------|---------------|
| LICA/PUF/ELK/FEB 24, 2016 | TE-07 | Air Filter | 24-Feb-16 0:00 | Version 01 | | |
| DESCRIPTION: | Elk Point Airport | | | | | |
| REPORT NUMBER: | 16030001 | REPORT CREATED: | 22-Mar-16 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16030001-002 | 1-Methylnaphthalene | | 0.35 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | 2-Methylnaphthalene | | 0.67 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | 3-Methylcholanthrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | 7,12-Dimethylbenz(a)anthracene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Acenaphthene | | 0.05 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Acenaphthylene | | 0.03 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Acridine | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Anthracene | | 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Benzo(a)anthracene | | 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Benzo(a)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Benzo(b,j,k)fluoranthene | K, T, U | 0.04 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Benzo(c)phenanthrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Benzo(e)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Benzo(ghi)perylene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Chrysene | | 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Dibenzo(a,h)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Dibenzo(a,i)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Dibenzo(a,l)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Dibenzo(ah)anthracene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Fluoranthene | | 0.08 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Fluorene | | 0.09 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Indeno(1,2,3-cd)pyrene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Naphthalene | | 0.40 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Perylene | K, T, U | < 0.01 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Phenanthrene | | 0.12 ug/PUF | 0.01 | NA-017 | 09-Mar-16 |



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID: LICA/PUF/ELK/FEB 24, 2016
CANISTER ID: TE-07
Matrix: Air Filter
DATE SAMPLED: 24-Feb-16 0:00
DESCRIPTION: Elk Point Airport
REPORT NUMBER: 16030001
REPORT CREATED: 22-Mar-16
VERSION: Version 01

| Lab ID | Parameter | Qualifier | Result | Units | RDL | Method | Analysis Date |
|--------------|-----------|-----------|--------|--------|------|--------|---------------|
| 16030001-002 | Pyrene | | 0.03 | ug/PUF | 0.01 | NA-017 | 09-Mar-16 |
| 16030001-002 | Retene | | 0.03 | ug/PUF | 0.01 | NA-017 | 09-Mar-16 |

Report certified by: Graham Knox, Team Lead
Date: March-22-16
On behalf of: PJ Pretorius, Manager, Analysis and Testing Services
Inquiries: (780) 632 8455
E-mail: EAS.Results@albertainnovates.ca

NMHC CANISTER SAMPLES

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|--------------------------------|---------------------------|-------------|-----------------|------------|--------|---------------|
| LICA/VOC/ELK/Feb 4, 2016 | H3286 | Ambient Air | 04-Feb-16 16:15 | Version 01 | | |
| DESCRIPTION: Elk Point Airport | | | | | | |
| REPORT NUMBER: 16020060 | REPORT CREATED: 24-Feb-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020060-005 | 1,1,1-Trichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1,1,2,2-Tetrachloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1,1,2-Trichloroethane | I | 0.06 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1,1-Dichloroethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1,1-Dichloroethylene | K, T, U | < 0.05 ppbv | 0.05 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1,2,3-Trimethylbenzene | K, T, U | < 0.06 ppbv | 0.06 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1,2,4-Trichlorobenzene | K, T, U | < 0.9 ppbv | 0.9 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1,2,4-Trimethylbenzene | I | 0.12 ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1,2-Dibromoethane | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1,2-Dichlorobenzene | I | 0.11 ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1,2-Dichloroethane | I | 0.06 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1,2-Dichloropropane | I | 0.08 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1,3,5-Trimethylbenzene | I | 0.08 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1,3-Butadiene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1,3-Dichlorobenzene | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1,4-Dichlorobenzene | K, T, U | < 0.5 ppbv | 0.5 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1,4-Dioxane | K, T, U | < 0.5 ppbv | 0.5 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1-Butene | K, T, U | 3.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1-Hexene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | 1-Pentene | I | 0.02 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | 2,2,4-Trimethylpentane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | 2,2-Dimethylbutane | I | 0.07 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | 2,3,4-Trimethylpentane | I | 0.14 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | 2,3-Dimethylbutane | I | 0.17 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | 2,3-Dimethylpentane | I | 0.22 ppbv | 0.02 | AC-058 | 09-Feb-16 |

CLIENT SAMPLE ID: LICA/VOC/ELK/Feb 4, 2016 CANISTER ID: H3286 DATE SAMPLED: 04-Feb-16 16:15
 Matrix: Ambient Air
 DESCRIPTION: Elk Point Airport
 REPORT NUMBER: 16020060 REPORT CREATED: 24-Feb-16 VERSION: Version 01

| Lab ID | Parameter | Qualifier | Result | Units | RDL | Method | Analysis Date |
|--------------|-------------------------|-----------|--------|-------|------|--------|---------------|
| 16020060-005 | 2,4-Dimethylpentane | I | 0.08 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | 2-Methylheptane | I | 0.05 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | 2-Methylhexane | I | 0.48 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | 2-Methylpentane | I | 0.24 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | 3-Methylheptane | I | 0.03 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | 3-Methylhexane | I | 0.66 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | 3-Methylpentane | I | 0.16 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | Acetone | I | 8.8 | ppbv | 0.5 | AC-058 | 09-Feb-16 |
| 16020060-005 | Acrolein | K, T, U | < 0.3 | ppbv | 0.3 | AC-058 | 09-Feb-16 |
| 16020060-005 | Benzene | I | 0.31 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | Benzyl chloride | K, T, U | < 0.5 | ppbv | 0.5 | AC-058 | 09-Feb-16 |
| 16020060-005 | Bromodichloromethane | I | 0.04 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | Bromoform | I | 0.07 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | Bromomethane | K, T, U | < 0.01 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | Carbon disulfide | I | 0.49 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | Carbon tetrachloride | I | 0.10 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | Chlorobenzene | I | 0.11 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | Chloroethane | I | 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | Chloroform | I | 0.04 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | Chloromethane | I | 1.18 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | cis-1,2-Dichloroethene | K, T, U | < 0.01 | ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | cis-1,3-Dichloropropene | K, T, U | < 0.05 | ppbv | 0.05 | AC-058 | 09-Feb-16 |
| 16020060-005 | cis-2-Butene | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | cis-2-Pentene | K, T, U | < 0.02 | ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | Cyclohexane | I | 0.17 | ppbv | 0.02 | AC-058 | 09-Feb-16 |



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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|--------------------------|--------------------------|------------------------|-----------------|------------|--------|---------------|
| LICA/VOC/ELK/feb 4, 2016 | H3286 | Ambient Air | 04-Feb-16 16:15 | Version 01 | | |
| DESCRIPTION: | | Elk Point Airport | | | | |
| REPORT NUMBER: | 16020060 | REPORT CREATED: | 24-Feb-16 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020060-005 | Cyclopentane | I | 0.06 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | Dibromochloromethane | I | 0.07 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | Ethanol | | 10.9 ppbv | 0.3 | AC-058 | 09-Feb-16 |
| 16020060-005 | Ethyl acetate | K, T, U | < 0.5 ppbv | 0.5 | AC-058 | 09-Feb-16 |
| 16020060-005 | Ethylbenzene | I | 0.15 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | Freon-11 | I | 0.34 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | Freon-113 | I | 0.09 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | Freon-114 | I | 0.03 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | Freon-12 | I | 0.69 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | Hexachloro-1,3-butadiene | K, T, U | < 0.58 ppbv | 0.58 | AC-058 | 09-Feb-16 |
| 16020060-005 | Isobutane | | 0.99 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | Isopentane | | 2.04 ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-005 | Isoprene | | 1.33 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | Isopropyl alcohol | K, T, U | < 0.5 ppbv | 0.5 | AC-058 | 09-Feb-16 |
| 16020060-005 | Isopropylbenzene | I | 0.02 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | m,p-Xylene | I | 0.30 ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-005 | m-Diethylbenzene | K, T, U | < 0.05 ppbv | 0.05 | AC-058 | 09-Feb-16 |
| 16020060-005 | m-Ethyltoluene | K, T, U | < 0.09 ppbv | 0.09 | AC-058 | 09-Feb-16 |
| 16020060-005 | Methyl butyl ketone | K, T, U | < 0.58 ppbv | 0.58 | AC-058 | 09-Feb-16 |
| 16020060-005 | Methyl ethyl ketone | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 09-Feb-16 |
| 16020060-005 | Methyl isobutyl ketone | K, T, U | < 0.5 ppbv | 0.5 | AC-058 | 09-Feb-16 |
| 16020060-005 | Methyl methacrylate | K, T, U | < 0.08 ppbv | 0.08 | AC-058 | 09-Feb-16 |
| 16020060-005 | Methyl tert butyl ether | K, T, U | < 0.03 ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-005 | Methylcyclohexane | | 0.35 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | Methylcyclopentane | I | 0.20 ppbv | 0.02 | AC-058 | 09-Feb-16 |

Report certified by: Graham Knox, Team Lead

Date: February 24, 2016

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca

| CLIENT SAMPLE ID | CANISTER ID | Matrix | DATE SAMPLED | VERSION: | | |
|--------------------------|-----------------------------|-------------------|-----------------|------------|--------|---------------|
| LICA/VOC/ELK/Feb 4, 2016 | H3286 | Ambient Air | 04-Feb-16 16:15 | Version 01 | | |
| DESCRIPTION: | | Elk Point Airport | | | | |
| REPORT NUMBER: | 16020060 | REPORT CREATED: | 24-Feb-16 | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020060-005 | Methylene chloride | K, T, U | < 0.3 ppbv | 0.3 | AC-058 | 09-Feb-16 |
| 16020060-005 | n-Butane | | 1.29 ppbv | 0.03 | AC-058 | 09-Feb-16 |
| 16020060-005 | n-Decane | K, T, U | < 0.07 ppbv | 0.07 | AC-058 | 09-Feb-16 |
| 16020060-005 | n-Dodecane | K, T, U | < 0.5 ppbv | 0.5 | AC-058 | 09-Feb-16 |
| 16020060-005 | n-Heptane | | 0.50 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | n-Hexane | I | 0.32 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | n-Octane | I | 0.06 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | n-Pentane | | 1.1 ppbv | 0.1 | AC-058 | 09-Feb-16 |
| 16020060-005 | n-Propylbenzene | K, T, U | < 0.06 ppbv | 0.06 | AC-058 | 09-Feb-16 |
| 16020060-005 | n-Undecane | K, T, U | < 0.6 ppbv | 0.6 | AC-058 | 09-Feb-16 |
| 16020060-005 | Naphthalene | | 1.2 ppbv | 0.6 | AC-058 | 09-Feb-16 |
| 16020060-005 | n-Nonane | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | o-Ethyltoluene | I | 0.02 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | o-Xylene | I | 0.15 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | p-Diethylbenzene | K, T, U | < 0.05 ppbv | 0.05 | AC-058 | 09-Feb-16 |
| 16020060-005 | p-Ethyltoluene | I | 0.10 ppbv | 0.08 | AC-058 | 09-Feb-16 |
| 16020060-005 | Styrene | I | 0.09 ppbv | 0.05 | AC-058 | 09-Feb-16 |
| 16020060-005 | Tetrachloroethylene | K, T, U | < 0.05 ppbv | 0.05 | AC-058 | 09-Feb-16 |
| 16020060-005 | Tetrahydrofuran | K, T, U | < 0.5 ppbv | 0.5 | AC-058 | 09-Feb-16 |
| 16020060-005 | Toluene | | 1.88 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | trans-1,2-Dichloroethylene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | trans-1,3-Dichloropropylene | K, T, U | < 0.05 ppbv | 0.05 | AC-058 | 09-Feb-16 |
| 16020060-005 | trans-2-Butene | K, T, U | < 0.01 ppbv | 0.01 | AC-058 | 09-Feb-16 |
| 16020060-005 | trans-2-Pentene | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |
| 16020060-005 | Trichloroethylene | K, T, U | < 0.05 ppbv | 0.05 | AC-058 | 09-Feb-16 |



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TEST REPORT

| CLIENT SAMPLE ID LICA/VOC/ELK/Feb 4, 2016 | CANISTER ID H3286 | Matrix Ambient Air | DATE SAMPLED 04-Feb-16 16:15 | | | |
|---|----------------------------------|------------------------------|--|------|--------|---------------|
| DESCRIPTION: Elk Point Airport | | VERSION: Version 01 | | | | |
| REPORT NUMBER: 16020060 | REPORT CREATED: 24-Feb-16 | | | | | |
| Lab ID | Parameter | Qualifier | Result Units | RDL | Method | Analysis Date |
| 16020060-005 | Vinyl acetate | K, T, U | < 0.5 ppbv | 0.5 | AC-058 | 09-Feb-16 |
| 16020060-005 | Vinyl chloride | K, T, U | < 0.02 ppbv | 0.02 | AC-058 | 09-Feb-16 |

Report certified by: Graham Knox, Team Lead

Date: February 24, 2016

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Inquiries: (780) 632 8455

E-mail: EAS.Results@albertainnovates.ca

APPENDIX V
REPORT CERTIFICATION FORM

Report Certification Form

| | |
|--|---|
| Alberta Airshed (if applicable) | EPA Approval or Code of Practice Registration # (if applicable) |
| YES | NA |
| Company Name (if applicable) | Industrial Operation Name (if applicable) |
| Lakeland Industry & Community Association | Elk Point Airport Site |
| Name of the Representative of the Person Responsible (Last, First, Middle) | Position / Title of the Representative of the Person Responsible |
| Wunmi Adekanmbi | Project Manager Assistant, Customer Service, Air Services |
| Is an External Party Certifying the Report? (If 'Yes', fill in the fields below for the external person.) | |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Name of External Person Certifying the Report (Last, First, Middle) | Position / Title of External Person Certifying the Report |
| NA | NA |
| Company Name for the External Person Certifying the Report | Identification of Qualifications / Professional Designations of the External Person Certifying the Report |
| NA | NA |

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

Wunmi Adekanmbi

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

22-March-2016

Report Issued Date (dd-mm-yyyy)

APPENDIX VI
DATA VALIDATION CERTIFICATION FORM



Validation Certificate Form

| | |
|---|---|
| Client: <u>Lakeland Industry & Community Association</u> | Project #: <u>2833-2016-02-35- C</u> |
| Site: <u>Elk Point Airport Site</u> | Contact: <u>Mike Bisaga</u> |

Level 0 Preliminary Verification

msclmth

Date 08-March-2016

Level 1 Primary Validation

msclmth

Date 08-March-2016

Level 2 Final Validation

msclmth

Date 22-March-2016

Level 3 Independent Data Review

[Signature]

Date 22-Mar-16

Post-Final Validation

NA

Date NA

Notes

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

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