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March 14, 2013

RE: January 2013 Ambient Air Monitoring Monthly Reports

Attached are the monthly ambient air monitoring reports for the LICA Airshed Zone's Cold Lake South, Maskwa, St. Lina, and Elk Point continuous stations. In addition, there are also summaries for the passive monitoring network and speciated VOC and PAH sampling programs.

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

Lakeland Industry & Community Association

Cold Lake Monitoring Site

Ambient Air Monitoring

Data Report

For

January 2013

Prepared By:



February 28, 2013

Lakeland Industry & Community Association

Cold Lake Monitoring Site

Ambient Air Monitoring

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Introduction

The following Ambient Air Monitoring report was prepared for:

Mr. Mike Bisaga
Lakeland Industry & Community Association
Box 8237
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Bonnyville, Alberta
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Monitoring Location: Cold Lake
Data Period: January 2013

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Craig Snider

The monthly analytical report for passive monitoring:
Authorized by Levi Manchak

The 6-day analytical report for VOCs and PAHs:
Authorized by Petro Oh

Calibration Procedure

The following calibration procedure applies to all calibrations conducted at the Lakeland Industry & Community Association Air Monitoring Station.

Calibration gas concentrations are generated using a dynamic mass flow controlled calibrator. EPA Protocol one gases are diluted with zero air generated on site. The Mass Flow Controllers in the calibrator are referenced using an NIST traceable flow meter once per month. All listed flows are reported as corrected to Standard Temperature and Pressure (STP).

Generated zero gas is introduced to the analyzer first. Three concentrations of calibration gas are then generated in order to introduce points at approximately 50-80%, 25-40% & 10-20% of the analyzer's full-scale range. An auto zero and span are then performed to validate the daily zero and span values recorded to the next multi-point calibration.

All indicated concentrations are taken from the ESC data logger used to collect the data for monthly reporting.

Conformance of each calibration to Alberta Environment regulations is outlined in the individual calibration reports. The slope and correlation coefficient are derived from the calculated and indicated analyzer responses. The percent change is calculated using the previous calibration correction factor and the current correction factor before adjustment. The calibration conforms to the procedure outlined in the *Air Monitoring Directive, Appendix A-10, Section 1.6*.

MONTHLY CONTINUOUS DATA SUMMARY

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

Continuous Ambient Monitoring – January 2013

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION COLD LAKE SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)	
						OBJECTIVES					EXCEEDENCES			MONTHLY AVERAGE
PARAMETER	1-HR	24-HR	1-HR	24-HR		READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY		
SO ₂ (PPB)	172	48	0	0	0.51	4	29	4	11.1	332(NNW)	1.2	29	100.0	
TRS (PPB)	-	-	-	-	0.00	0	ALL	ALL	VAR	VAR	0.0	ALL	99.9	
NO ₂ (PPB)	159	-	0	-	9.35	32.1	26	19	0.9	65(ENE)	21.3	27	99.9	
NO (PPB)	-	-	-	-	2.23	38.1	23	7	1	70(ENE)	14.2	27	99.9	
NO _x (PPB)	-	-	-	-	11.58	69.1	23	7	1	70(ENE)	35.5	27	99.9	
O ₃ (PPB)	82	-	0	-	22.87	42	3	14, 15	9.9, 9.2	274(W), 274(W)	37.1	1	100.0	
THC (PPM)	-	-	-	-	2.52	4.3	13	18	0.9	294(WNW)	3.6	27	99.9	
PM 2.5 (UG/M ³)	-	30	-	0	6.08	33.0	5	4	6.7	261(W)	15.6	27	98.0	
TEMPERATURE (DEG C)	-	-	-	-	-14.84	6.0	15	12	18.7	305(WNW)	-0.3	15	100.0	
RELATIVE HUMIDITY (%)	-	-	-	-	75.52	96	15	5	7.5	239(WSW)	87.0	15	100.0	
VECTOR WS (KPH)	-	-	-	-	4.53	20.0	15	11	-	305(WNW)	10.9	1	99.5	
VECTOR WD (DEGREES)	-	-	-	-	310(NW)	-	-	-	-	-	-	-	99.5	

VAR-VARIOUS NA: NOT AVAILABLE

Monthly Non-Continuous Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

Passive Ambient Monitoring Network – January 2013

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO ₂	#14	1.5	0.73
H ₂ S	#5	0.40	0.20
NO ₂	#28	10.8	3.9
O ₃	#4	34.0	27.6

Volatile Organics Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

Xontech Model 910A – January 04, 2013

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – January 10, 2013

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – January 16, 2013

Maximum reading (ug/m3)	Volatile Organic
NA	NA

Note: Sample result for January 16 is not included in this monthly report because it is not available when the monthly report was preparing. The result will be included in the following monthly report.

Xontech Model 910A – January 22, 2013

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – January 28, 2013

Maximum reading (ug/m3)	Volatile Organic
NA	NA

Note: Sample result for January 28 is not included in this monthly report because it is not available when the monthly report was preparing. The result will be included in the following monthly report.

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

PUF cartridge – January 04, 2013

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – January 10, 2013

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – January 16, 2013

Maximum reading (ng/m3)	Semi-Volatile Organic
NA	NA

Note: No sample was collected for sampling date of January 16th as the sampler provided by AITF lab was not completed.

PUF cartridge – January 22, 2013

Maximum reading (ng/m3)	Semi-Volatile Organic
14.409	2-Methylnaphthalene

PUF cartridge – January 28, 2013

Maximum reading (ng/m3)	Semi-Volatile Organic
NA	NA

Note: Sample result for January 28th is not included in this monthly report because it is not available when the monthly report was preparing. The result will be included in the following monthly report.

General Monthly Summary - Cold Lake

Equipment Operation

The following summary outlines the analyzer performance. Any non-conformances, problems or maintenance performed are detailed at the end of each section.

AQM STATION – LICA – COLD LAKE

Sulphur Dioxide (PPB)

- Analyzer make / model – Thermo 43i, S/N: 806528242

No operational issues were observed during the month. The inlet filter was changed before the monthly calibration was started on January 9th. Data was corrected using daily zero information.

Total Reduced Sulphur (PPB)

- Analyzer make / model –TEI 450i, S/N: 812728560
- Converter - CD NOVA CDN 101, S/N: 250

No operational issues were observed during the month. The inlet filter was changed before the monthly calibration was started on January 9th. Some daily span results went below -10% of the limited range, as the expected span value was setup too high after the monthly calibration was performed on January 9th. This issue did not affect the data quality. Data was corrected using daily zero information.

Ozone (PPB)

- Analyzer make / model –Thermo 49i, S/N: 700419951

No operational issues were observed during the month. The inlet filter was changed before the monthly calibration was started on January 9th. Data was corrected using daily zero information.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Total Hydrocarbon (PPM)

- Analyzer make / model -TECO 51C-LT, S/N: 427408718

No operational issues were observed during the month. The H2 gas was replaced before the monthly calibration was performed on January 9th. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

- Analyzer make / model - TECO 42C, S/N: 427408716

No operational issues were observed during the month. The inlet filter was changed before the monthly calibration was started on January 9th. Data was corrected using daily zero information.

Particulate Matter 2.5 (UG/M3)

- Analyzer make / model –TEOM1405F, S/N: 1405A201620804

Two Teom audits were performed in January: one was on January 9th and the other one was on January 16th. Both audits passed the manufacturer requirements. Data was corrected using Alberta air quality guideline. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. Fifteen hours of data were invalid as the data were below –3 ug/m3.

Vector Wind Speed (KPH) & Vector Wind Direction (DEG)

- System make / model –RM Young, S/N: 46553

The wind system is reported as vector wind speed and vector wind direction.

No operational issues were observed during the month. The MetOne wind system, LICA supplied, attempted to be installed on January 16th. However, due to lack of proper tools to connect the wires, the installation was not successful. The MetOne unit will be installed during the site visit in February.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Relative Humidity (PERCENT)

- System make / model - Rotronic Hygroclip-S3
- No operational issues were observed during the month.

Ambient Temperature (DEGC)

- System make / model - Rotronic Hygroclip-S3
- No operational issues were observed during the month.

Trailer Temperature (DEGC)

- System make / model - R&R 61
- No operational issues were observed during the month.

Datalogger

- System make / model - ESC 8832, S/N: 263
 - Software make / version - ESC v 5.51a
- The ESC 8832 is connected to a modem with DSL for continuous connection with the base computer.

Trailer

The manifold was cleaned on January 9th.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Passive Network

All samples installed at site #11 were not changed, as the access to the samplers was blocked by snow.

Volatile Organics (VOCs)

The volatile organics were sampled from January 1st to January 30th. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the VOCs in this report were reported as ug/m³ in 3 significant figures. Sample result for January 16th and 28th are not included in this monthly report because they are not available when the monthly report was preparing. The results will be included in the following monthly report.

Polycyclic Aromatic Hydrocarbons (PAHs)

The PAHs scheduled to be sampled on January 1st to January 30th. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the PAHs in this report were reported as ng/m³. No sample was collected for sampling date of January 16th as the sampler provided by AITF lab was not completed. Sample result for January 28th is not included in this monthly report because it is not available when the monthly report was preparing. The result will be included in the following monthly report.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	RDGS.
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	
DAY																											
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	S	0	0	0	1	0.7	24
2	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	S	0	0	0	1	1	0.4	24
3	0	0	1	2	2	2	2	2	2	1	1	1	1	1	0	0	0	1	S	0	0	0	0	0	2	0.8	24
4	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	S	0	0	0	0	0	0	1	0.1	24
5	0	0	1	1	1	0	0	0	0	0	1	1	1	1	1	0	S	0	0	0	0	0	0	0	1	0.3	24
6	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	S	1	1	1	0	0	0	0	0	1	0.3	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	S	1	1	1	1	1	0	1	1	1	1	0.4	24
8	1	1	1	1	1	1	1	1	1	1	1	1	2	S	1	1	0	0	0	0	0	0	0	0	2	0.7	24
9	0	0	0	0	0	0	0	0	0	1	1	1	S	1	1	1	C	C	C	C	0	0	0	0	1	0.3	24
10	0	1	1	1	2	1	1	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
11	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
12	0	0	0	0	0	0	0	1	1	S	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0.4	24
13	0	0	0	0	0	0	0	0	0	S	0	1	1	1	2	3	2	1	0	0	0	0	0	0	3	0.5	24
14	0	0	0	0	0	0	0	S	1	1	1	1	1	1	2	2	2	2	2	1	1	1	1	1	2	0.9	24
15	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
16	0	0	0	0	0	S	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0.5	24
17	0	0	0	0	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0.8	24
18	1	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	2	2	3	2	1	3	0.7	24
19	1	1	S	1	1	1	0	0	0	0	1	1	2	1	1	0	0	0	1	0	2	3	3	3	3	1.0	24
20	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
21	S	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	24
22	0	0	0	0	1	1	0	0	0	0	1	2	2	2	1	1	0	0	0	0	0	0	S	0	2	0.5	24
23	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	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	S	0	0	0	0	0.0	24
25	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	S	1	1	0	0	0.5	24
26	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	0.6	24
27	1	1	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	S	1	1	1	1	0	1	1	0.8	24
28	1	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	S	0	0	1	1	1	1	1	1	0.5	24
29	1	1	1	2	4	3	2	1	1	1	1	1	1	1	1	S	1	1	1	1	1	0	0	0	4	1.2	24
30	0	1	0	1	0	0	1	1	1	1	1	1	1	1	S	1	1	1	1	1	0	0	0	0	1	0.7	24
31	0	0	0	0	0	0	0	0	0	1	1	1	1	S	1	1	1	2	2	2	2	1	1	1	2	0.8	24
HOURLY MAX	1	1	1	2	4	3	2	2	2	1	1	2	2	2	3	2	2	2	2	2	3	3	3	3			
HOURLY AVG	0.3	0.3	0.3	0.4	0.5	0.5	0.3	0.4	0.4	0.4	0.6	0.8	0.8	0.8	0.8	0.6	0.6	0.6	0.5	0.5	0.6	0.5	0.4	0.4			

STATUS FLAG CODES

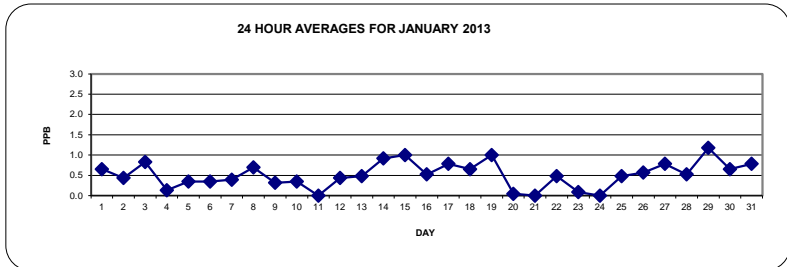
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

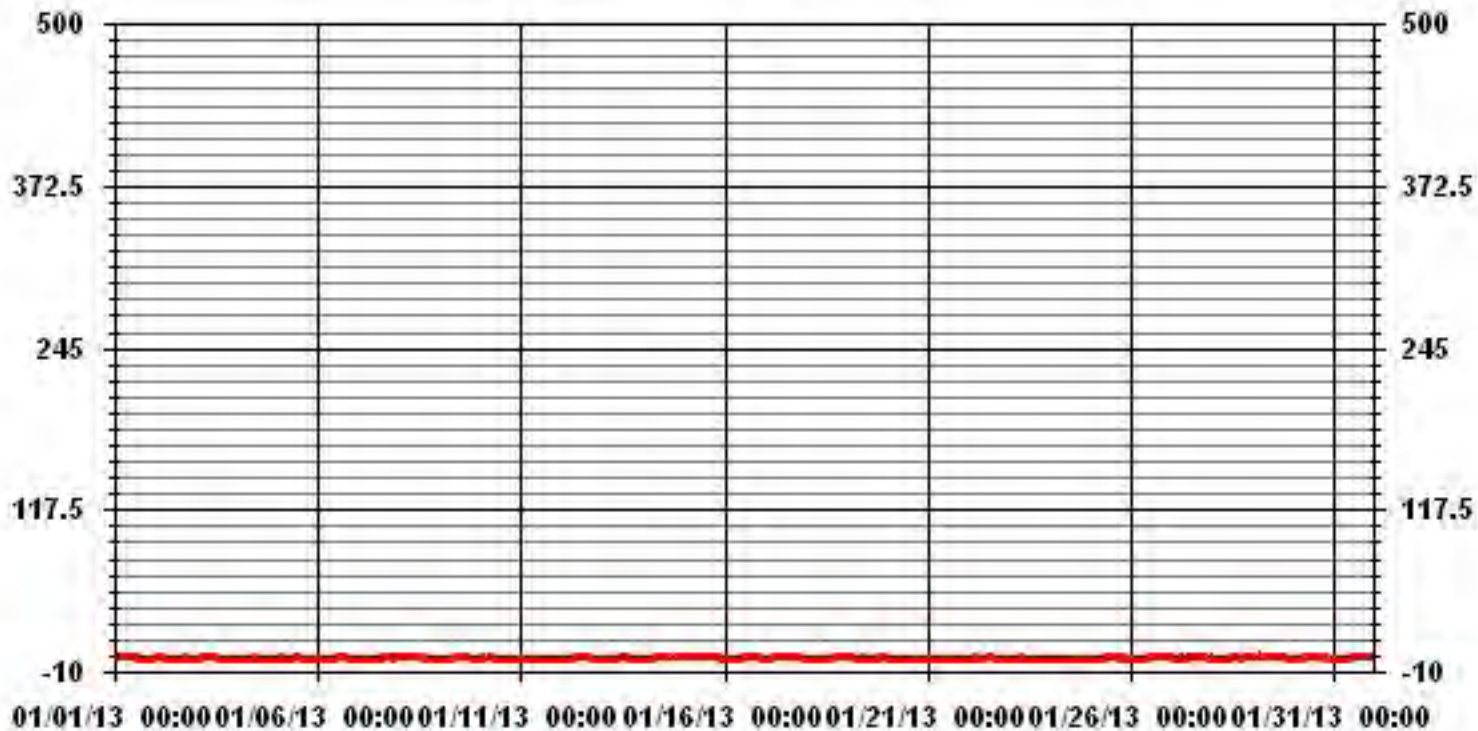
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	319
MAXIMUM 1-HR AVERAGE:	4 PPB @ HOUR(S) 4 ON DAY(S) 29
MAXIMUM 24-HR AVERAGE:	1.2 PPB ON DAY(S) 29
IZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	0.63
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME:	100.0 %
MONTHLY AVERAGE:	0.51 PPB



01 Hour Averages



— LICA SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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		
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.	AVG.	RDGS.		
DAY																												
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1.0	24
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1.0	24
3	1	1	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	2	1.3	24
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1.0	24
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1.0	24
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1.0	24
7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	2	2	2	1.1	24
8	2	1	1	2	1	1	1	1	2	1	1	2	2	S	1	1	1	1	1	1	1	1	1	1	1	2	1.2	24
9	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	C	C	C	C	1	1	1	1	1	1	1.0	24
10	1	1	1	2	2	1	2	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	0	1	2	1.1	24
11	1	1	1	0	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
12	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
13	1	1	1	1	1	1	1	1	S	1	1	1	2	3	3	3	1	1	1	1	1	1	1	1	1	3	1.3	24
14	1	1	1	1	1	1	1	S	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	1.5	24
15	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
16	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
17	1	1	1	1	S	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24
18	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	2	1	2	3	3	2	3	2	2	3	3	1.4	24
19	2	2	S	1	1	1	1	1	1	1	1	2	3	1	1	1	1	1	1	1	1	1	4	3	3	4	1.6	24
20	2	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
21	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1.0	24
22	1	1	1	1	1	1	1	1	1	1	2	2	3	1	1	1	1	1	1	1	1	1	S	1	3	1.2	24	
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1.0	24
24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1.0	24
25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1.0	24
26	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	S	1	1	1	1	1	1	2	1.2	24
27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1.0	24
28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	2	2	2	2	2	2	1.2	24
29	1	2	2	4	4	4	3	2	2	2	2	1	2	2	2	S	1	1	1	1	1	1	1	1	1	4	1.9	24
30	1	1	1	1	1	1	1	1	1	2	1	1	1	1	S	2	2	1	1	1	1	1	1	1	1	2	1.1	24
31	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	2	2	2	2	2	2	2	2	2	2	1.3	24
HOURLY MAX	2	2	2	4	4	4	3	2	2	2	2	2	3	3	3	3	2	2	2	2	3	4	3	3	3	3		
HOURLY AVG	1.1	1.1	1.1	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.3	1.2	1.2	1.2	1.2		

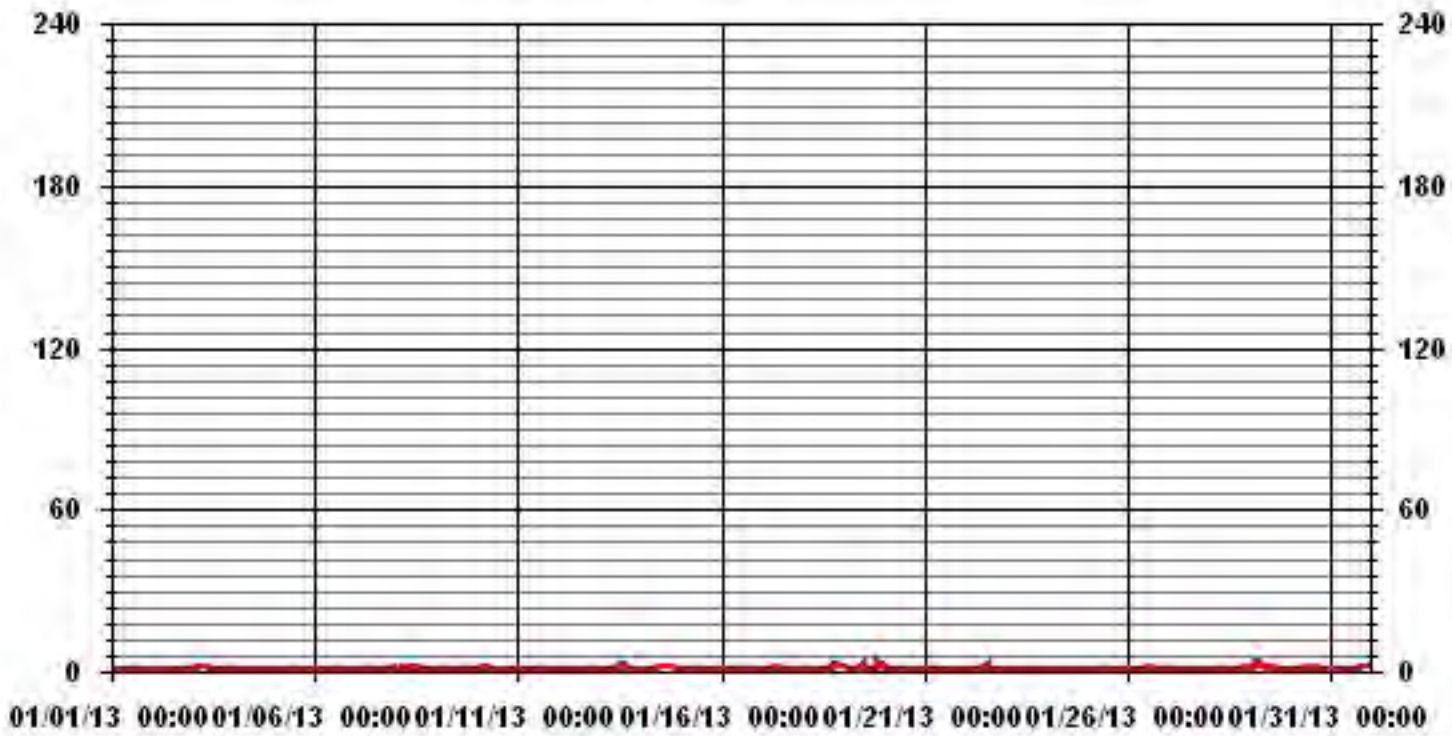
STATUS FLAG CODES

C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	706					
MAXIMUM INSTANTANEOUS VALUE:	4	PPB	@ HOUR(S)	20	ON DAY(S)	19
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	0.44					

01 Hour Averages



— LICA SO2MAX PPB

LICA
SO2_ / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 01
Site Name : LICA
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	2.98	6.53	6.10	4.54	6.53	5.68	5.11	.99	1.42	2.41	3.83	14.48	16.47	10.36	6.67	5.82	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.98	6.53	6.10	4.54	6.53	5.68	5.11	.99	1.42	2.41	3.83	14.48	16.47	10.36	6.67	5.82	

Calm : .00 %

Total # Operational Hours : 704

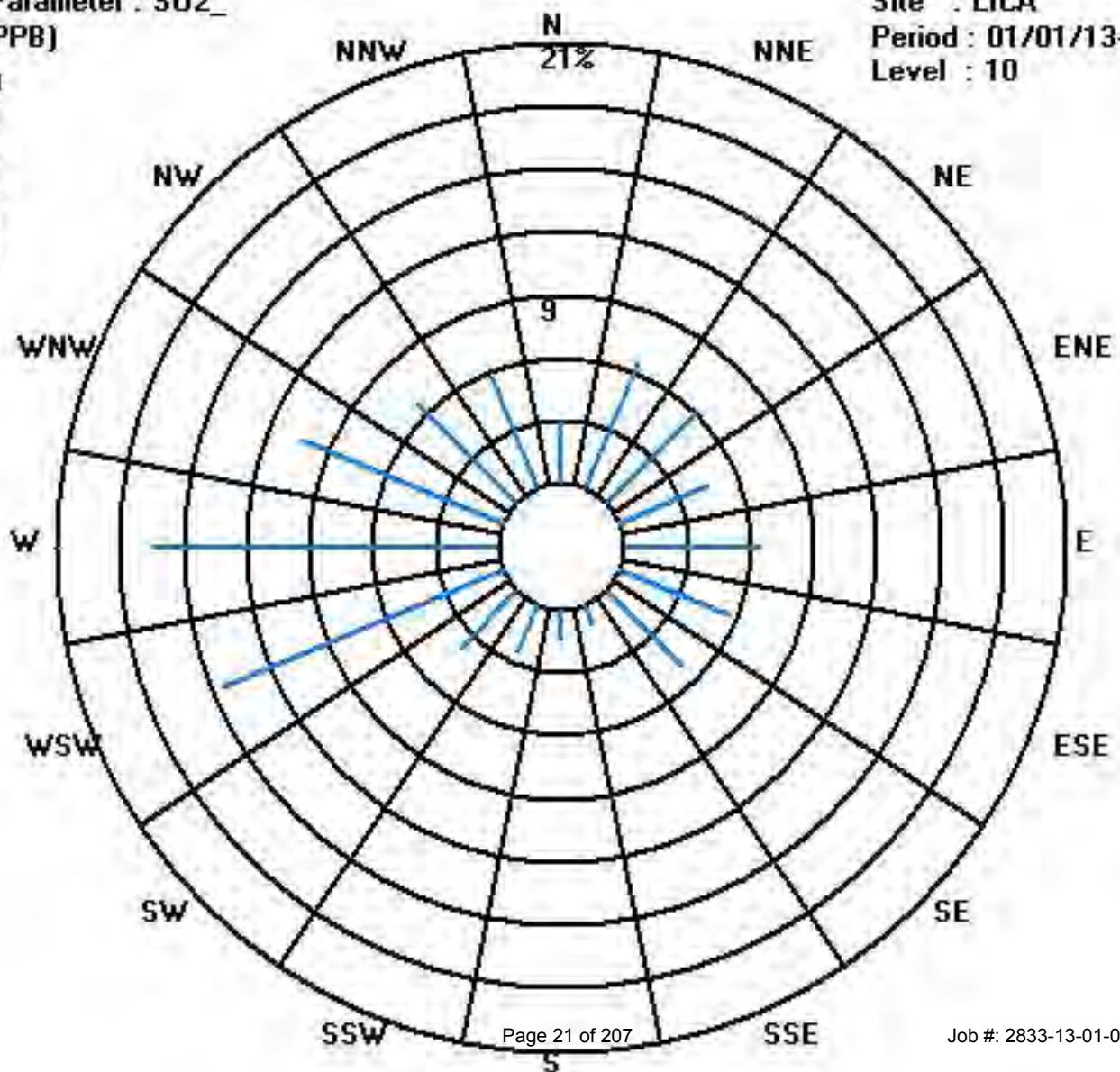
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	21	46	43	32	46	40	36	7	10	17	27	102	116	73	47	41	704
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	21	46	43	32	46	40	36	7	10	17	27	102	116	73	47	41	

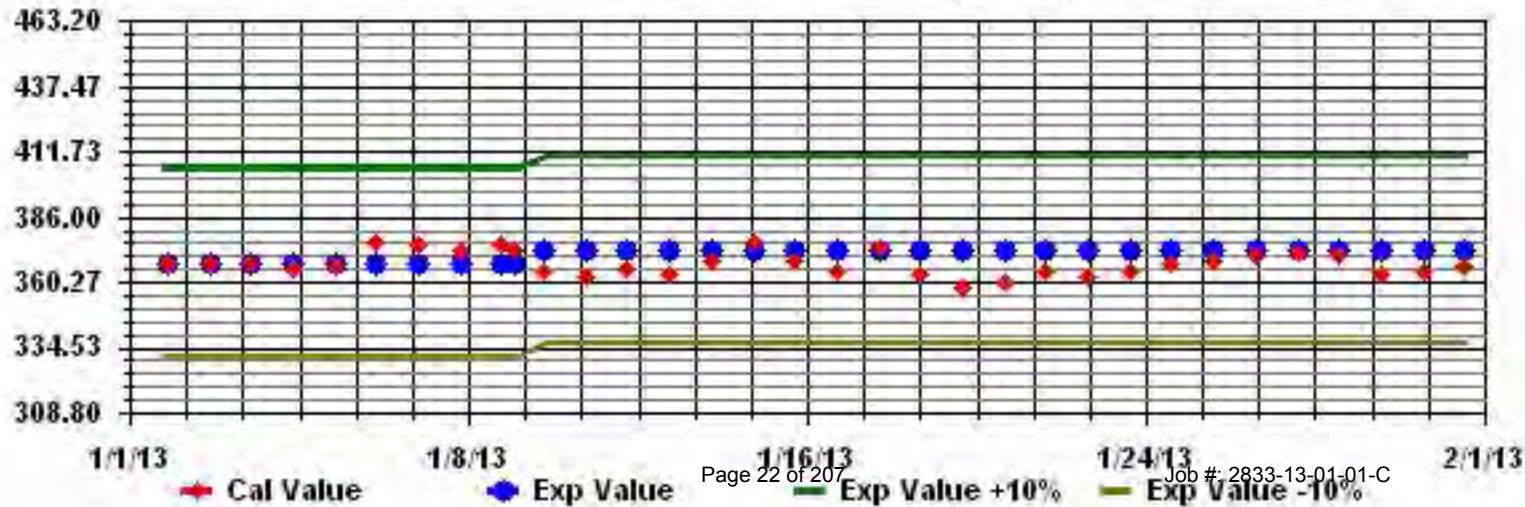
Calm : .00 %

Total # Operational Hours : 704

Class Limits (PPB)

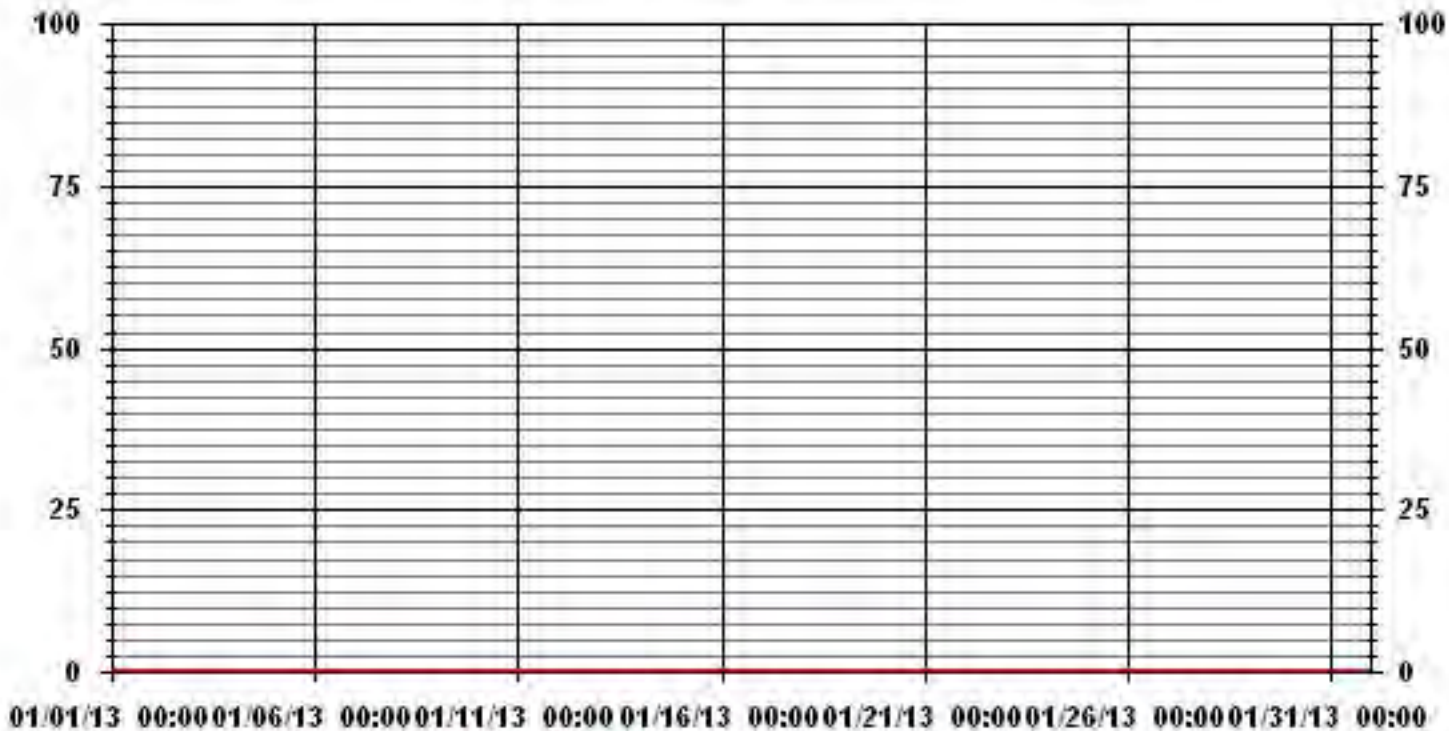


Calibration Graph for Site: LICA Parameter: SO2_ Sequence: SO2 Phase: SPAll



Total Reduced Sulphur

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

TOTAL REDUCED SULPHUR MAX instantaneous maximum in ppb

MST																										DAILY 24-HOUR			
DAY	HOURLY MAX	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.
1	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	24
2	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
3	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	24
4	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
5	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	24
6	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	24
7	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	24
8	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
9	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	Y	0	0	0	0	0	0	0	0.0	23
10	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0.0	24
11	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	24
12	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	24
13	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.0	24
14	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
15	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	24
16	0	0	0	0	0	S	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
17	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	24
18	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	24
19	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
20	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0.0	24
21	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	S	0	0.0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0	24
23	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	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	S	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	S	0	0	0	0	0	0	0.0	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	S	1	0	0	0	0	0	1	0.1	24
27	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	S	0	0	0	0	0	0	0	1	0.1	24
28	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	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	S	S	0	0	0	0	0	0	0.0	24
30	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	24
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	S	S	S	0	0	0	0	0	0.0	23
HOURLY MAX		0	0	0	1	0	0	0	1	1	0	0	0	1	1	0	0	1	1	0	1	1	0	1	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	0.0

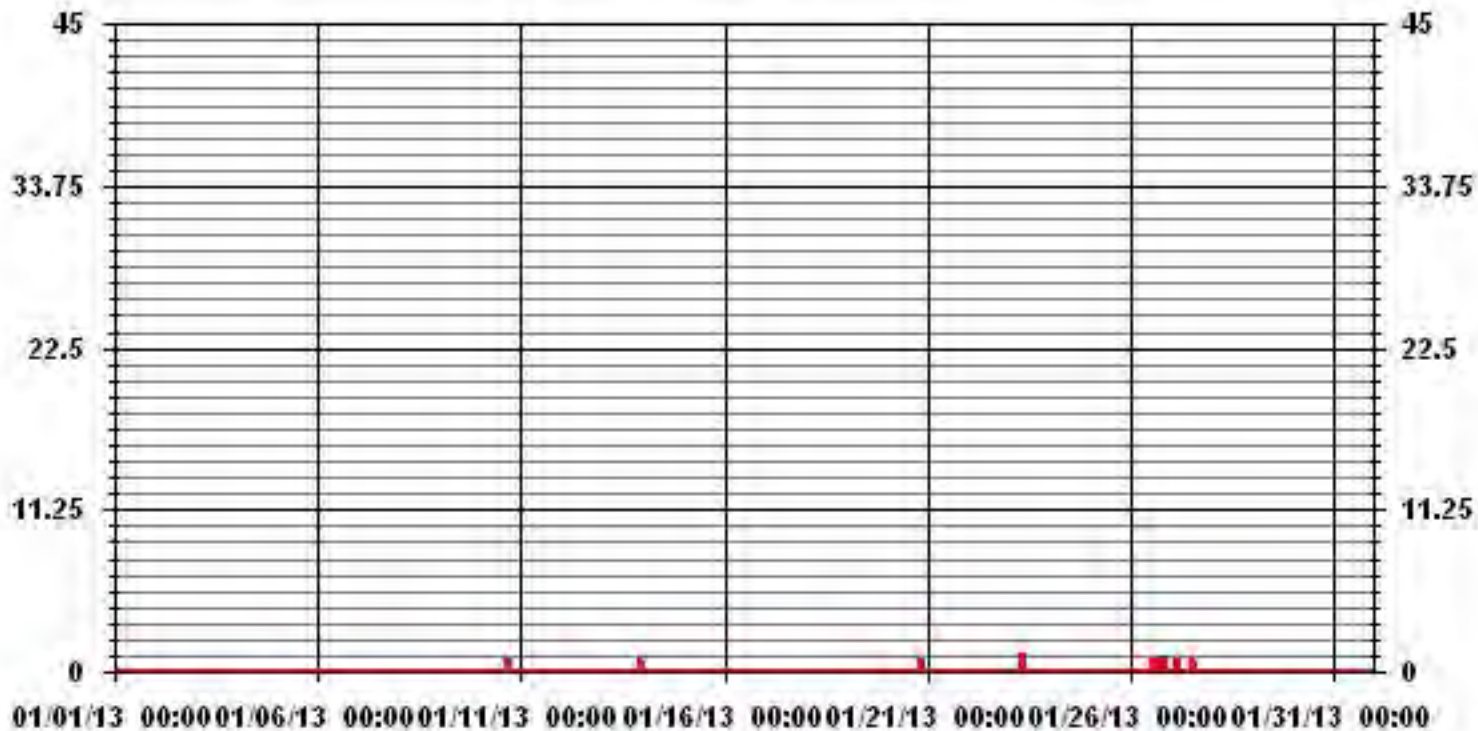
STATUS FLAG CODES

C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	10					
MAXIMUM INSTANTANEOUS VALUE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
VAR - VARIOUS						
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	0.12					

01 Hour Averages



LICA
 TRS_ / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 01
 Site Name : LICA
 Parameter : TRS_
 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	
< 3	3.00	6.72	6.29	4.57	6.29	5.72	5.15	1.00	1.43	2.28	3.71	14.44	16.59	10.30	6.58	5.86	100.00
< 10	.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
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.00	6.72	6.29	4.57	6.29	5.72	5.15	1.00	1.43	2.28	3.71	14.44	16.59	10.30	6.58	5.86	

Calm : .00 %

Total # Operational Hours : 699

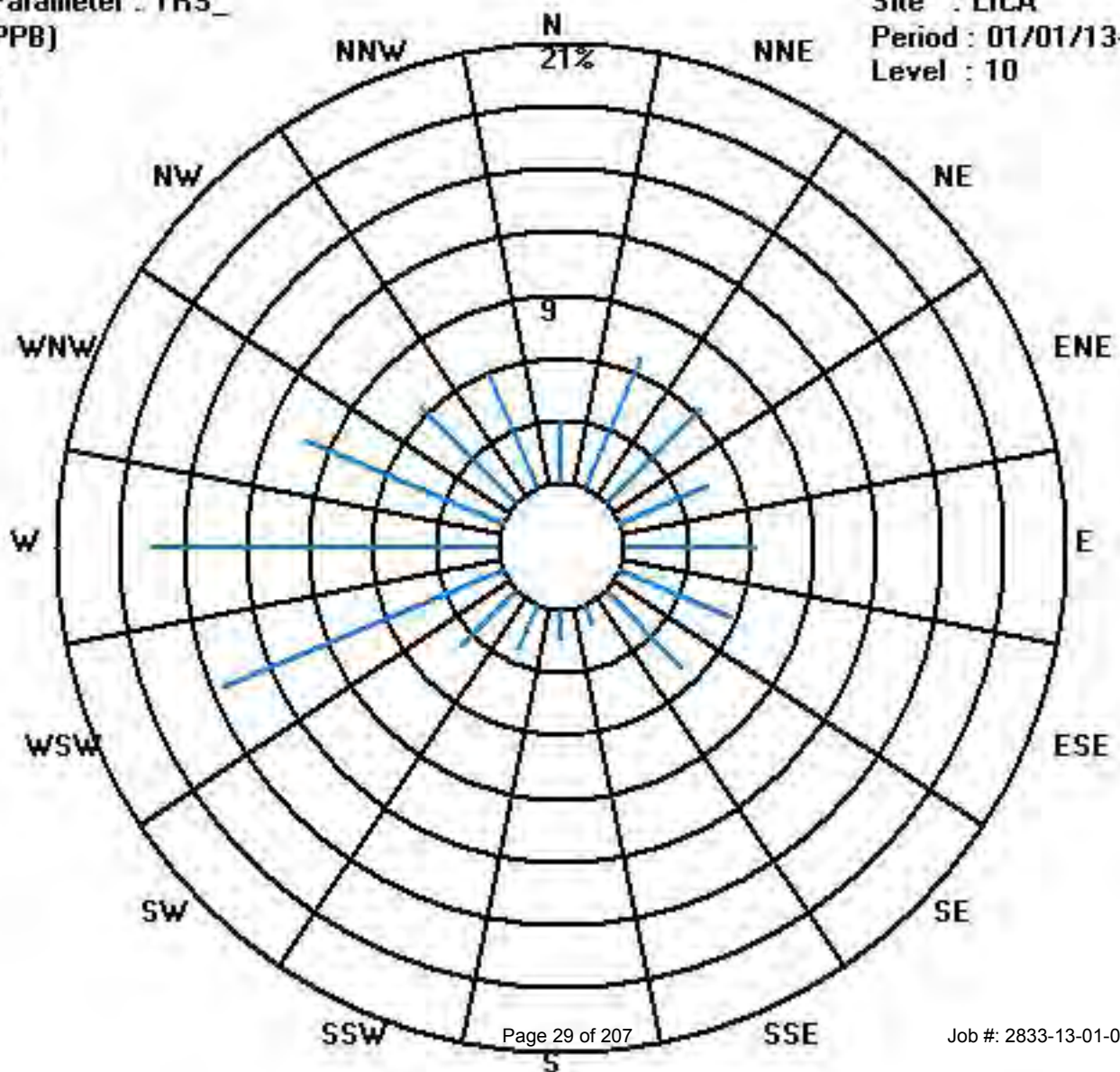
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3	21	47	44	32	44	40	36	7	10	16	26	101	116	72	46	41	699
< 10																	
< 50																	
>= 50																	
Totals	21	47	44	32	44	40	36	7	10	16	26	101	116	72	46	41	

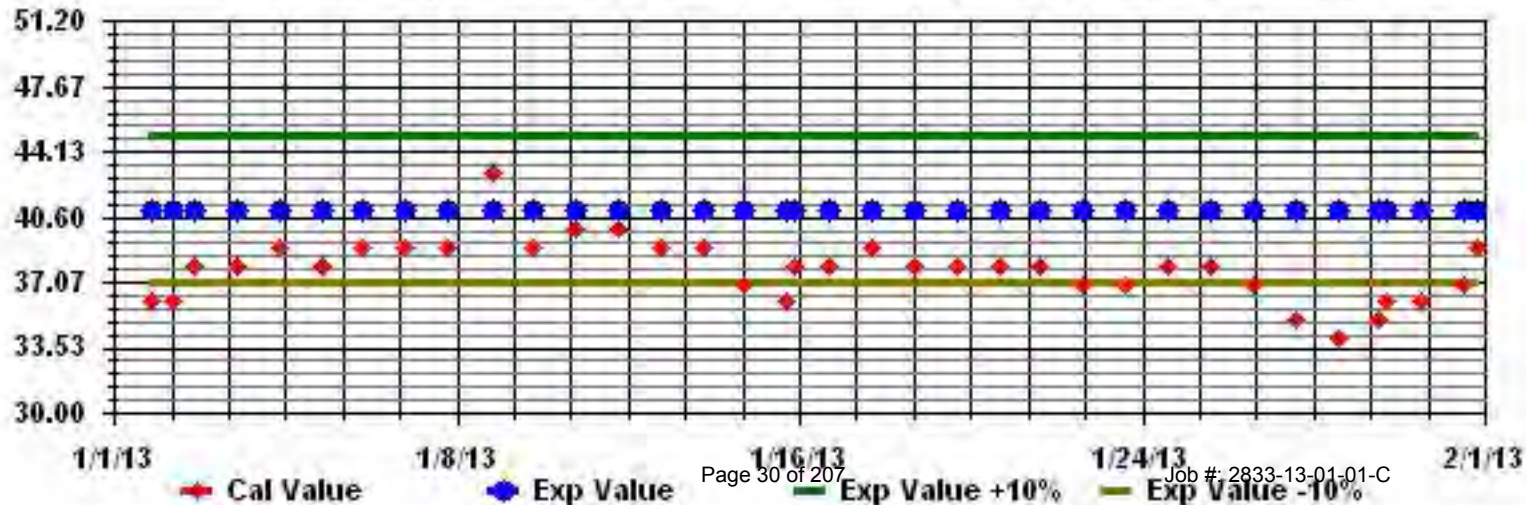
Calm : .00 %

Total # Operational Hours : 699

Class Limits (PPB)

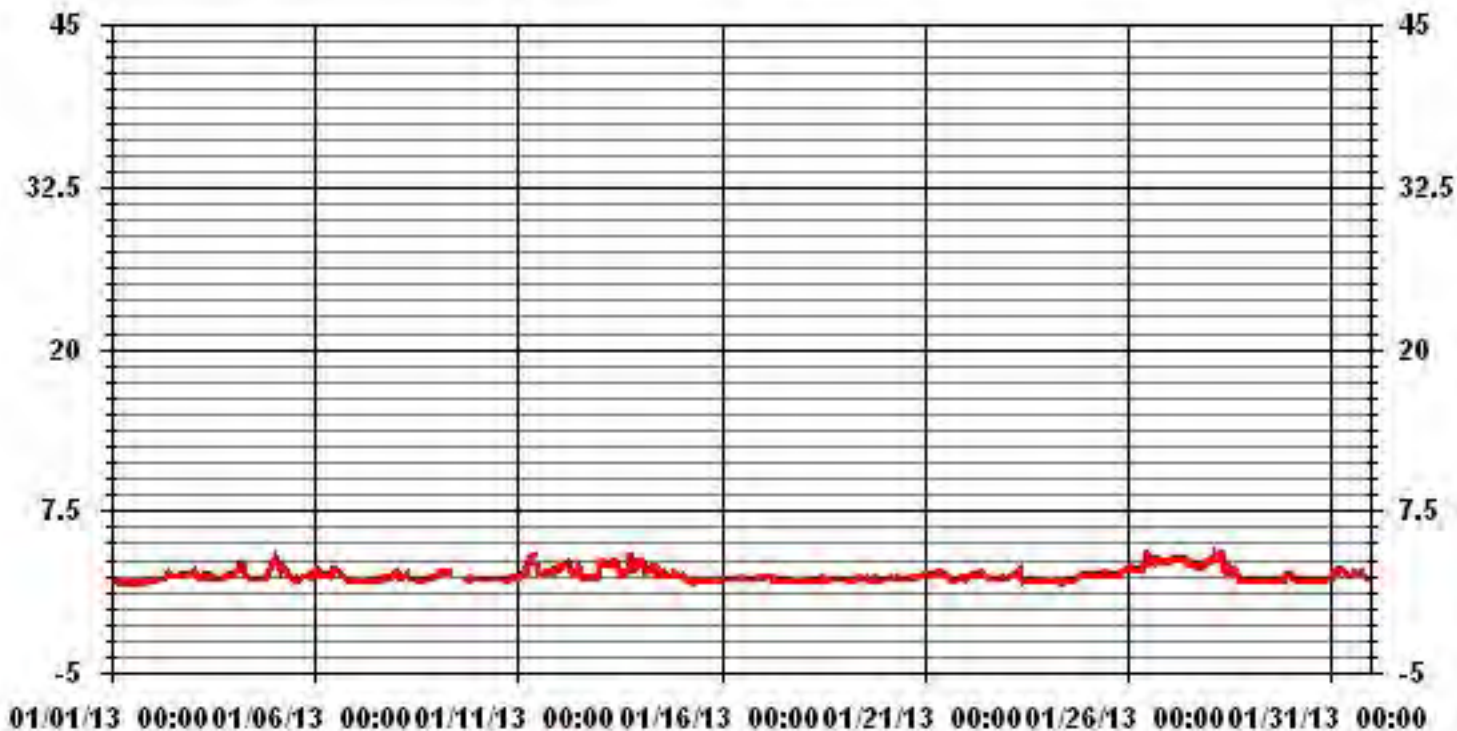


Calibration Graph for Site: LICA Parameter: TRS_ Sequence: TRS Phase: SPAll



Total Hydrocarbons

01 Hour Averages



— LICA — THC — PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST																									DAILY	24-HOUR		
HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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		
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.	AVG.	RDGS.		
DAY																												
1	2.3	2.2	2.2	2.2	2.1	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	S	2.1	2.1	2.1	2.3	2.0	24		
2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	4.1	2.9	2.6	2.6	2.5	2.5	2.6	2.5	2.6	2.8	2.7	S	2.8	2.8	2.8	2.8	4.1	2.6	24	
3	2.8	2.9	2.8	2.4	2.4	2.7	3	2.4	2.4	2.4	2.6	2.8	2.6	2.4	2.3	2.2	2.3	2.4	S	2.5	2.6	2.6	2.5	2.6	3	2.5	24	
4	2.7	3	3.1	3.1	4	3.5	3.3	3.1	2.6	2.4	2.4	2.4	2.3	2.2	2.4	2.3	2.3	S	2.4	2.5	2.6	3.3	3.4	3.5	4	2.8	24	
5	3.9	4	4	3.7	3.1	3.2	3.2	3.2	2.6	2.5	2.5	2.6	2.4	2.3	2.3	2.5	S	2.6	2.5	2.5	2.7	2.8	2.6	3.1	4	2.9	24	
6	3.5	3.1	3.1	2.8	2.8	2.6	2.7	2.7	2.8	2.5	2.9	3.3	3.4	3.3	3	S	2.5	2.5	2.5	2.4	2.2	2.2	2.1	2	3.5	2.7	24	
7	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.4	2.3	2.3	2.4	S	2.3	3.1	3.3	2.4	2.7	7.7	2.7	2.6	2	7.7	2.6	24	
8	2.9	2.8	2.4	2.4	2.5	2.7	2.8	2.7	2.4	2.4	2.3	2.3	2.3	S	2.1	2.2	2.6	2.4	2.4	2.4	2.6	2.4	2.4	2.6	2.9	2.5	24	
9	2.7	2.9	3.4	4.2	2.9	3	3.1	2.9	3.8	C	C	C	C	C	C	C	C	2.3	Y	2.3	2.3	2.3	2.3	2.3	4.2	2.8	23	
10	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	S	2.3	2.2	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.4	2.3	24	
11	2.3	2.4	2.7	3.2	2.9	3.3	3.5	3.7	4.5	4.6	S	3.9	3	2.7	2.7	2.7	2.7	2.8	2.8	2.9	2.9	3.1	3.1	3.1	4.6	3.1	24	
12	3.4	3.4	3.3	3.4	3.5	3.8	3.7	3.1	2.9	S	3.1	3.3	3.1	2.8	2.6	2.4	2.3	2.4	2.4	2.3	2.4	2.5	3	3.8	2.9	24		
13	3.6	3.6	3.5	3.5	3.5	3.4	3.4	3.5	S	3.6	3.7	3.3	2.8	2.9	2.7	2.8	2.9	3.2	8.9	4.4	3.1	3.4	3.7	3.6	8.9	3.6	24	
14	3.6	3.6	3.5	3	3.1	2.9	2.9	S	3.3	3.3	3	2.7	2.7	2.8	2.7	2.6	2.5	2.5	2.5	2.6	2.8	2.8	2.7	2.5	3.6	2.9	24	
15	2.7	2.8	2.5	2.4	2.3	2.3	S	2.1	2.1	2.1	2	2	2	2	2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.8	2.2	24	
16	2.2	2.2	2.2	2.2	2.2	S	2.2	2.2	2.2	2.3	2.3	2.5	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.5	2.3	24	
17	2.3	2.4	2.4	2.5	S	2.8	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.2	24
18	2.1	2.1	2.1	S	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.5	2.5	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.3	2.5	2.2	24	
19	2.3	2.3	S	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.4	2.5	2.2	2.2	2.2	2.3	2.5	2.3	2.4	24	
20	2.3	S	2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.4	2.4	2.3	2.3	2.2	2.2	2.4	2.4	2.4	2.5	2.4	2.4	2.4	2.6	2.6	2.6	2.4	24	
21	S	2.6	2.6	2.6	2.6	2.6	2.6	2.7	2.9	3	2.9	2.8	2.6	2.6	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	S	3	2.6	24
22	2.7	2.4	2.6	2.6	2.7	2.7	2.6	2.5	2.8	3.1	3	2.6	2.5	2.4	2.4	2.4	2.2	2.3	2.2	2.2	2.2	2.2	2.3	S	3.1	2.5	24	
23	2.4	2.4	2.5	2.5	2.6	2.6	2.7	3	3.2	2.6	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	S	2.1	3.2	2.4	24		
24	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.5	2.3	2.2	2.3	2.4	2.4	2.5	S	2.6	2.5	2.5	2.6	2.2	24	
25	2.5	2.6	2.6	2.7	2.7	2.6	2.6	2.6	2.6	2.8	2.8	2.9	3	2.7	2.6	2.5	2.6	2.7	2.6	S	2.8	2.9	3	3.1	3.1	2.7	24	
26	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.4	4	4.4	4.3	4.1	3.7	4	3.8	4.1	S	3.7	3.6	3.6	3.7	3.7	4.4	3.6	24	
27	3.7	3.8	3.8	3.8	3.7	3.9	3.9	3.9	3.8	4	4.1	3.8	3.4	3.4	3.4	3.4	3.3	S	3.3	3.3	3.4	3.5	3.5	3.6	4.1	3.6	24	
28	3.6	3.6	3.8	4.3	4.1	4.2	4.4	4.4	4.2	3.3	2.9	3	3.2	3.1	3.1	3	S	2.6	2.2	2.1	2.1	2.1	2.1	2.1	4.4	3.2	24	
29	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	S	2.2	2.1	2.4	2.2	2.4	2.4	2.6	2.6	2.6	2.2	24	
30	2.6	2.4	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.6	2.2	2.4	24	
31	2.5	3.1	3.1	2.9	3	3	3.1	3.1	3	3	2.4	2.5	2.6	S	2.7	2.8	2.8	2.8	2.8	C	C	2.5	2.4	2.4	3.1	2.8	24	
HOURLY MAX	4	4	4	4	4	4	4	4	5	5	4	4	4	4	4	4	4	4	4	9	4	8	4	4	4			
HOURLY AVG	2.7	2.8	2.8	2.8	2.7	2.8	2.8	2.7	2.8	2.7	2.6	2.7	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.5	2.7	2.6	2.6	2.6			

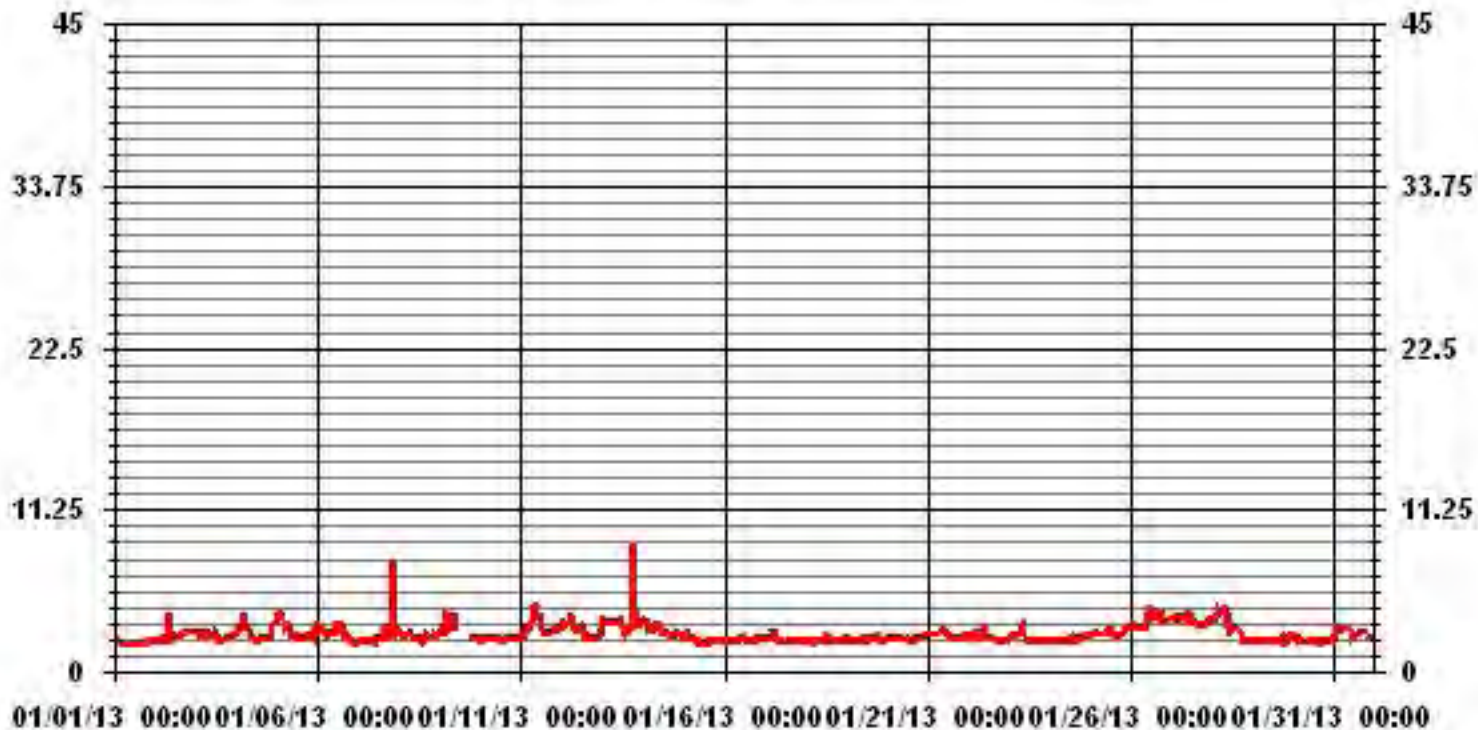
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	702					
MAXIMUM INSTANTANEOUS VALUE:	8.9	PPM	@ HOUR(S)	21	ON DAY(S)	28
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	10	HRS				
STANDARD DEVIATION:	0.62					

01 Hour Averages



— LICA THCMAX PPM

LICA
 THC / WD Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

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

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
< 3.0	2.43	6.16	4.58	3.00	5.44	5.30	4.29	.85	1.14	1.86	3.15	11.74	13.32	7.87	6.59	4.58	82.37
< 10.0	.57	.57	1.28	1.43	.85	.42	.85	.14	.28	.42	.71	2.72	3.29	2.57	.14	1.28	17.62
< 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	3.00	6.73	5.87	4.44	6.30	5.73	5.15	1.00	1.43	2.29	3.86	14.46	16.61	10.45	6.73	5.87	

Calm : .00 %

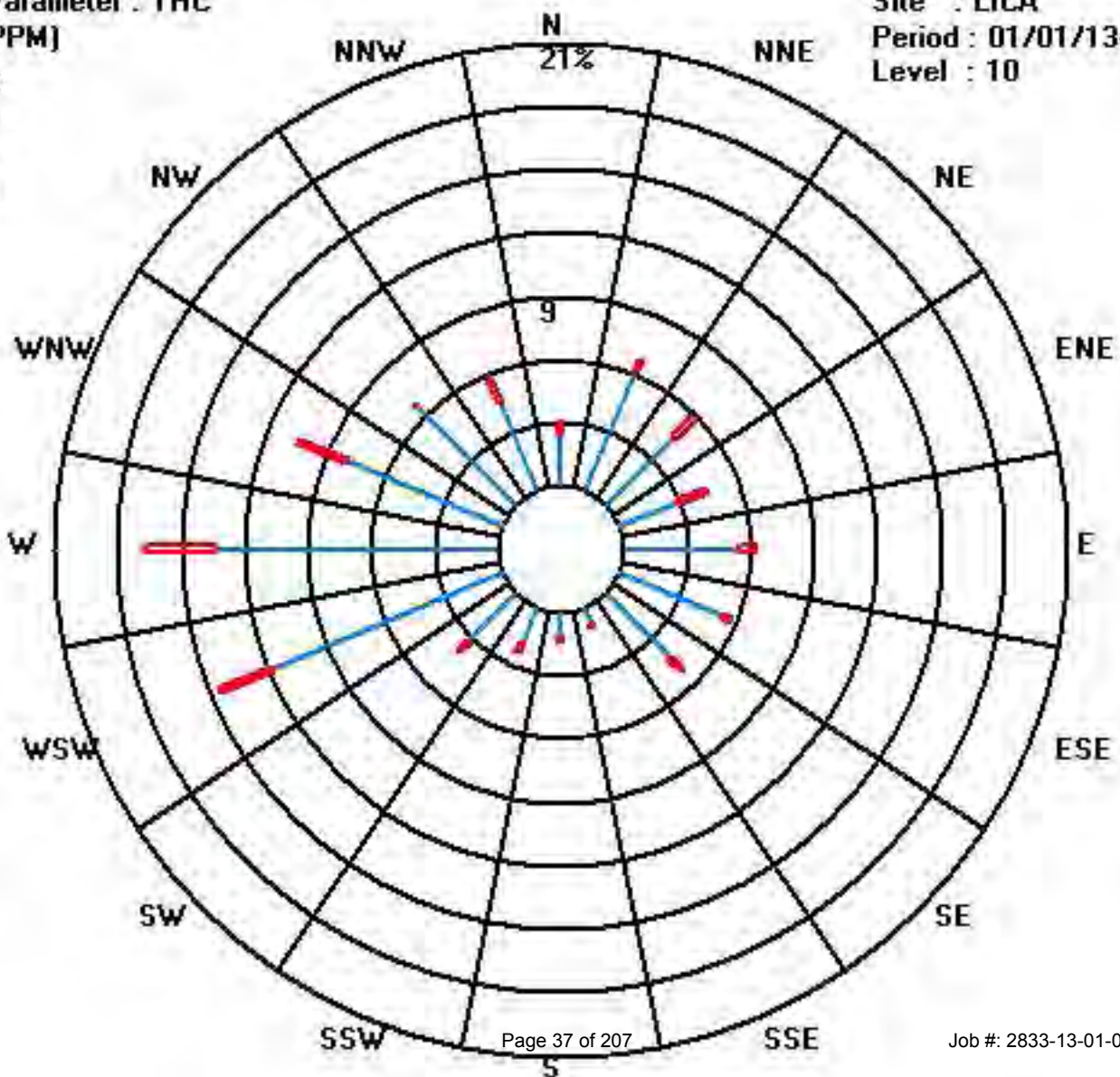
Total # Operational Hours : 698

Distribution By Samples

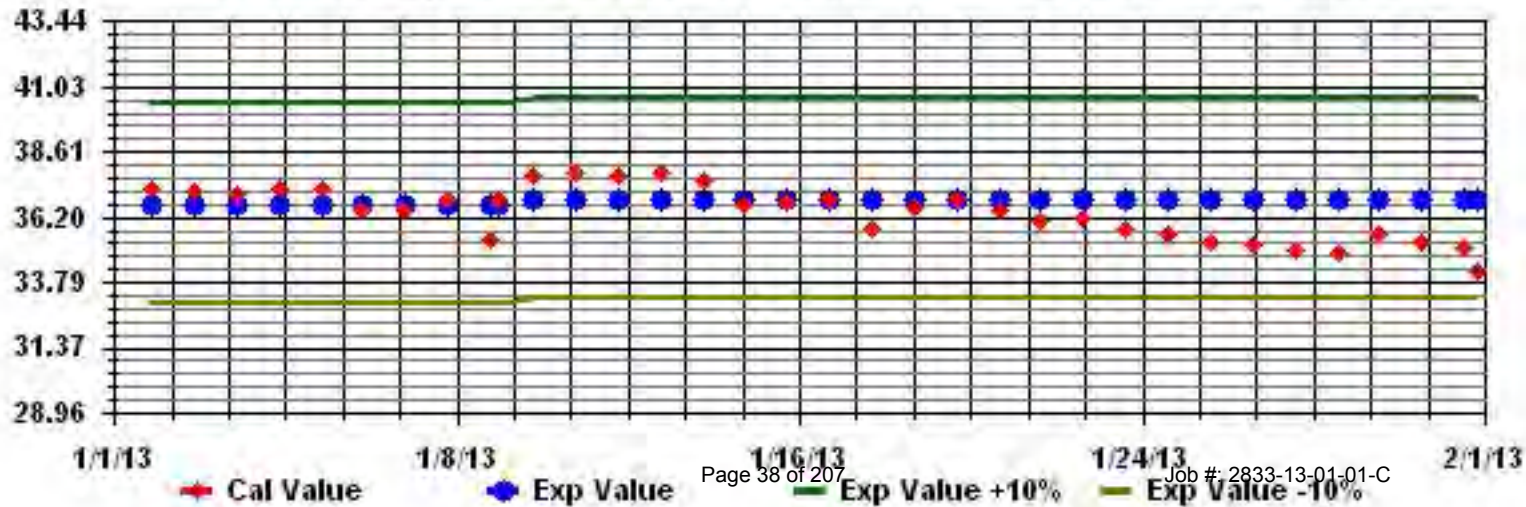
Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	17	43	32	21	38	37	30	6	8	13	22	82	93	55	46	32	575
< 10.0	4	4	9	10	6	3	6	1	2	3	5	19	23	18	1	9	123
< 50.0																	
>= 50.0																	
Totals	21	47	41	31	44	40	36	7	10	16	27	101	116	73	47	41	

Calm : .00 %

Total # Operational Hours : 698



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



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

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

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	
DAY	1	13	15	7	8	2	9	4	2	0	0	5	7	9	6	7	1	9	3	0	9	7	5	7	4	15.0	5.8	24
2	2	4	0	2	1	0	4	2	0	1	7	8	3	9	15	7	6	2	2	2	0	0	8	7	X	15.0	3.9	23
3	3	X	6	8	6	4	7	11	7	13	15	4	7	6	7	4	5	4	1	0	3	3	12	X	X	15.0	6.3	21
4	4	3	4	2	6	9	3	8	5	8	4	1	4	13	10	15	2	4	4	0	2	2	1	7	6	15.0	5.1	24
5	5	5	6	11	26	33	21	13	13	14	7	8	10	9	6	12	17	8	6	11	16	2	8	10	16	33.0	12.0	24
6	6	12	14	11	10	0	7	8	9	1	4	11	7	16	7	14	16	9	6	5	9	7	6	6	11	16.0	8.6	24
7	7	5	1	1	2	6	3	2	5	0	2	1	9	9	6	6	0	0	0	0	3	4	5	3	3	9.0	3.2	24
8	8	9	2	8	7	12	5	7	7	0	5	2	4	8	0	4	9	3	4	5	4	5	8	1	3	12.0	5.1	24
9	9	2	0	1	0	2	5	15	10	5	0	0	10	2	9	4	C	C	0	0	1	10	0	0	0	15.0	3.5	24
10	10	6	4	8	X	5	3	0	0	4	0	0	6	3	X	8	0	0	X	0	1	3	4	3	6	8.0	3.0	21
11	11	5	4	0	4	1	4	5	6	4	10	15	14	4	12	11	8	5	10	5	3	8	8	6	4	15.0	6.5	24
12	12	8	4	8	11	7	7	18	10	22	19	26	18	16	10	4	12	8	11	8	5	7	7	9	0	26.0	10.6	24
13	13	10	7	2	7	5	7	4	0	2	9	19	6	15	3	11	13	9	5	7	7	0	18	14	17	19.0	8.2	24
14	14	9	15	7	7	7	7	4	10	9	16	10	4	12	11	13	3	6	7	10	7	2	13	18	15	18.0	9.3	24
15	15	19	7	12	7	6	16	5	6	0	3	2	1	0	1	3	1	9	0	6	2	2	2	10	9	19.0	5.4	24
16	16	8	3	6	2	1	4	9	3	5	C	C	C	3	3	0	3	3	0	0	0	1	11	2	11.0	3.2	24	
17	17	2	7	4	3	8	0	1	4	2	3	0	5	X	0	4	10	10	10	9	8	9	3	X	0	10.0	4.6	22
18	18	0	X	4	2	5	X	20	10	10	5	9	10	14	3	0	8	8	2	1	2	8	10	4	3	20.0	6.3	22
19	19	2	4	4	3	1	2	0	2	6	0	7	3	3	0	1	14	0	1	2	4	2	1	3	3	14.0	2.8	24
20	20	4	1	0	0	1	2	0	0	0	1	5	3	3	3	0	X	0	3	0	0	0	0	0	0	5.0	1.1	23
21	21	1	0	0	4	7	5	5	10	9	14	9	12	4	4	4	10	8	8	3	2	4	1	1	0	14.0	5.2	24
22	22	6	2	2	4	X	7	6	12	4	6	6	2	5	14	7	10	0	3	0	3	3	1	3	1	14.0	4.7	23
23	23	2	5	3	1	3	4	3	4	5	5	2	6	11	3	6	2	11	5	5	6	8	2	5	6	11.0	4.7	24
24	24	3	9	1	5	7	8	0	7	1	7	4	2	1	3	5	1	3	7	4	2	6	12	2	0	12.0	4.2	24
25	25	2	4	1	9	6	7	6	11	8	10	4	13	13	10	6	7	11	6	8	1	9	7	4	10	13.0	7.2	24
26	26	8	5	5	5	4	6	0	5	0	13	12	17	23	21	23	29	23	27	18	9	15	26	12	18	29.0	13.5	24
27	27	20	19	13	17	13	12	10	8	13	19	23	19	13	20	14	22	20	18	13	14	19	11	13	11	23.0	15.6	24
28	28	20	14	18	15	14	14	18	13	13	2	4	4	4	7	2	0	1	1	6	2	X	0	6	X	20.0	8.1	22
29	29	0	0	3	2	3	0	0	0	0	1	3	0	2	3	4	1	4	3	1	3	5	0	5	5	5.0	2.0	24
30	30	5	7	5	5	4	4	0	0	0	0	2	3	1	6	2	5	3	1	4	0	3	3	3	1	7.0	2.8	24
31	31	3	3	2	2	2	4	7	2	2	6	4	5	4	5	5	7	8	5	10	9	6	4	7	10.0	4.9	24	
HOURLY MAX		20	19	18	26	33	21	20	13	22	19	26	19	23	21	23	29	23	27	18	16	19	26	18	18			
HOURLY AVG		6.5	5.7	5.1	6.0	5.9	6.2	6.2	5.8	5.2	6.4	6.9	7.1	7.8	6.9	6.6	7.6	6.3	5.4	4.5	4.5	5.4	6.1	6.1	5.8			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

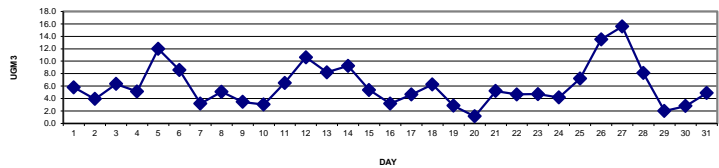
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR - ug/m³ 24-HR 30 ug/m³

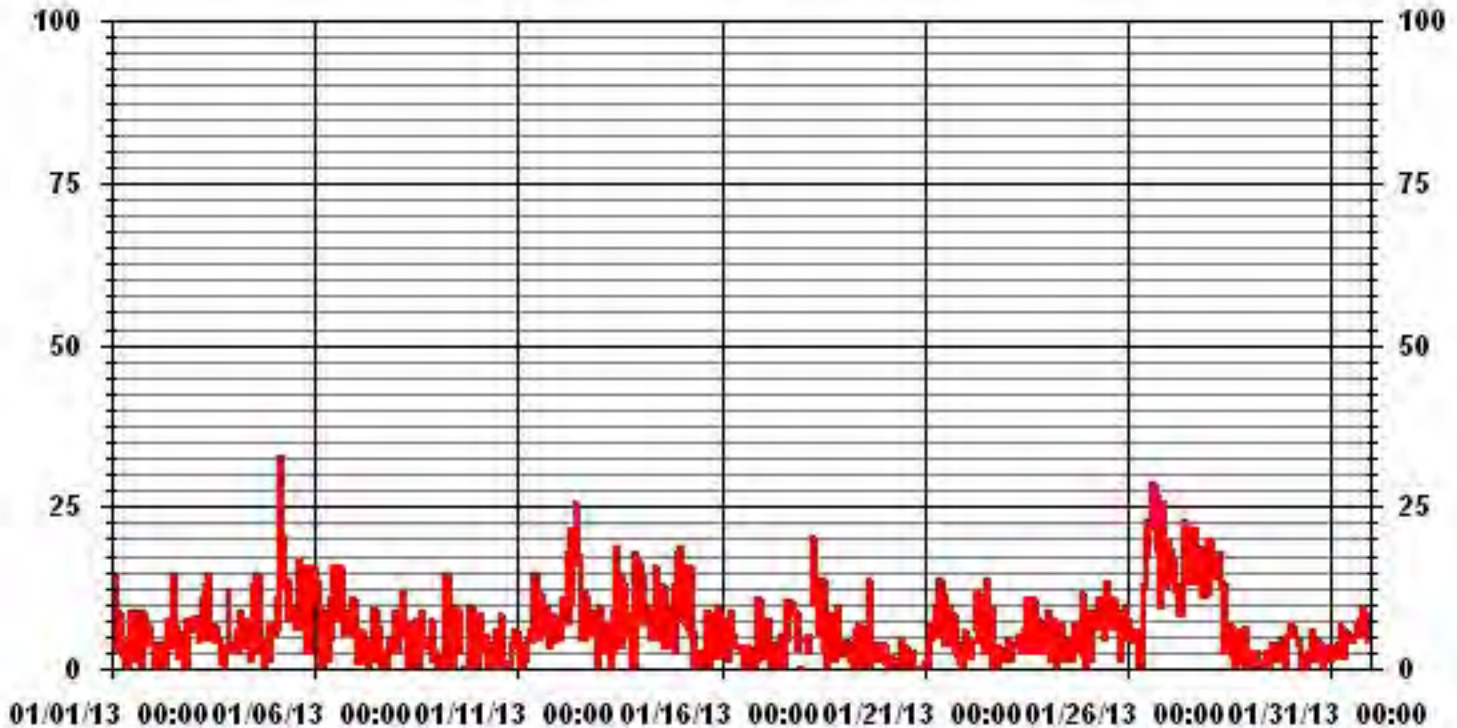
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	631
MAXIMUM 1-HR AVERAGE:	33.0 UG/M ³ @ HOUR(S) 4 ON DAY(S) 5
MAXIMUM 24-HR AVERAGE:	15.6 UG/M ³ ON DAY(S) 27
IZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION:	5.37
OPERATIONAL TIME:	729 HRS
AMD OPERATION UPTIME:	98.0 %
MONTHLY AVERAGE:	6.08 UG/M ³

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



— LICA PM2 UG/M3

LICA
 PM2 / WD Joint Frequency Distribution (Percent)

January 2013

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	2.76	6.77	6.50	4.28	6.36	5.67	5.25	1.10	1.52	2.21	3.59	14.66	16.32	10.09	7.05	5.67	99.86
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00	.13
< 80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.76	6.77	6.50	4.28	6.36	5.67	5.25	1.10	1.52	2.21	3.59	14.66	16.45	10.09	7.05	5.67	

Calm : .00 %

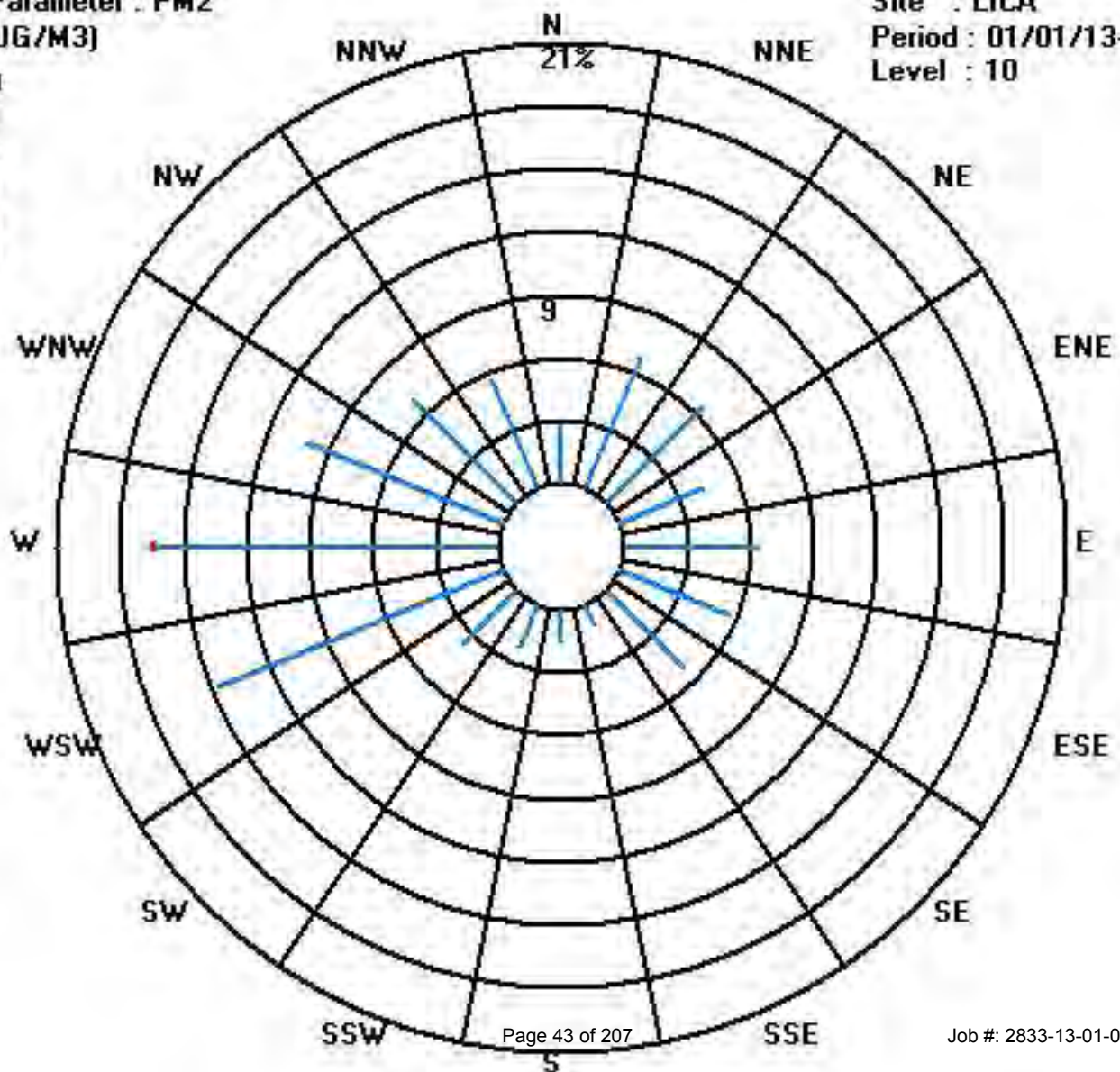
Total # Operational Hours : 723

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 30	20	49	47	31	46	41	38	8	11	16	26	106	118	73	51	41	722
< 60													1				1
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	20	49	47	31	46	41	38	8	11	16	26	106	119	73	51	41	

Calm : .00 %

Total # Operational Hours : 723



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

NITROGEN DIOXIDE hourly averages in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.
DAY																											
1	5.7	5.7	4.8	4.4	2.5	1.9	1.7	1.8	2.7	1.5	1.7	1.4	1.6	1.9	1.6	1.5	3.1	3	3.4	1.9	S	1.2	1.3	1.4	5.7	2.5	24
2	1.6	1.8	1.9	2.5	2.8	3.3	2.9	4.2	7.9	5.6	4.6	4.2	3.4	3.6	4.9	7.8	12.6	7.8	11.2	S	8.9	9.5	15.8	6.9	15.8	5.9	24
3	6.5	5.5	8.6	8.3	8	9.2	9.7	10.8	14	13.3	10	8.2	5.3	4.2	3.5	3.2	4.2	5.9	S	8.6	9.7	11.5	8	9	14	8.1	24
4	4.7	5.6	15.6	22.3	23.8	25.8	22.1	18.9	16.7	10.5	6.7	3.6	4.2	3.6	3.2	3.4	7.5	S	11.9	13.5	7.5	9.3	12	14	25.8	11.6	24
5	14.7	11.4	10.6	11.7	11.1	12.2	13.2	9.5	7.6	6.6	5.3	5.4	4.4	4.2	4.7	5.2	S	5.4	10.1	9.2	17.6	23.7	14.3	21	23.7	10.4	24
6	26.1	24.4	18.9	9.8	8.2	6.1	7.9	9.3	4.5	4.3	4.4	7.7	7.4	6.6	7.2	S	8.4	9.4	8.6	7.3	5.7	5.1	2.1	1.8	26.1	8.7	24
7	1.8	2.4	2.1	1.6	1.4	1.3	1.4	1.1	1.5	6.7	6.1	4.8	4.2	3.2	S	8.1	4.8	5.4	6.3	10.6	15.8	12.2	5.1	5.8	15.8	4.9	24
8	7.4	7.4	6.9	7.6	8.9	10.5	9.6	9.6	8	3.6	2.4	3.4	3.2	S	2.2	2.3	9.6	20.7	16.4	8.9	9.6	3.9	3.9	5.5	20.7	7.5	24
9	5	6.1	8.6	12.3	16.1	20.9	23.7	25.4	18	C	C	C	C	C	C	C	4.2	4.4	Y	5.3	2	1.6	1.7	1.5	25.4	9.8	23
10	1.1	1.1	1.8	1.9	1.6	1.1	1.2	1.1	0.9	1.4	1	S	0.6	0.7	2.1	5.4	7.3	16.8	11.5	18.2	11.7	9.1	11.1	9	18.2	5.1	24
11	8.2	10.7	15.6	14.7	11.1	12	17.5	19.7	20.5	17.5	S	14	7.3	5.5	8	10	22.7	20.7	17.7	18.3	19.5	18	17	18.3	22.7	15.0	24
12	13.9	15.7	16.7	15.9	15.1	16.2	17.5	18.5	19.1	S	15.1	13.3	11.1	8.5	7.2	5.7	10.3	13.2	10.6	13.1	12.6	12	10	12.2	19.1	13.2	24
13	17.8	17.2	16.4	15.6	13.9	13.8	15.3	17.6	S	17.6	21.1	11	7.4	9.6	12	10.7	13.9	20.1	18.8	15.6	17.6	18.9	22.3	24	24	16.0	24
14	20.8	17.3	10.6	11.5	11.2	12.9	12.6	S	19.8	10	8.2	6.4	5.6	6.2	6.8	7	7.6	7.3	7.4	8.4	8.3	8.7	10.5	9.8	20.8	10.2	24
15	8.7	6.7	5.8	4.3	3.9	3.4	S	4.1	4	3.2	1.5	1.5	1.5	1.6	6.2	7.5	6.7	5.9	4.6	4.7	3.6	2.9	2.4	8.7	4.2	24	
16	1.7	1.9	2.2	2.8	2.5	S	4.3	3.5	6.9	4.4	4.2	4.1	4.5	2.4	2.3	2.2	2.7	2.2	2.5	2.9	4	2.8	4.5	4.7	6.9	3.3	24
17	5.3	10.9	10.2	10.1	S	8.2	5.2	4.9	6.1	6.6	5.7	4.9	3.9	4.2	4.6	6.8	5.6	6.7	7	4.8	5.4	4.4	4	3.8	10.9	6.1	24
18	4.4	2.9	4.6	S	5.6	5.9	14.4	10.4	8.4	8.7	8.1	4.6	4.4	8	2.7	3.6	4	3.1	3.7	3.6	4.5	4.2	1.9	2.6	14.4	5.4	24
19	3.1	2.6	S	3.5	5.1	3.7	8	6.1	11.3	10.4	7.4	4	4.7	3.7	4.7	4	3.2	4.6	5.9	2.1	2.4	3.2	3.7	4.7	11.3	4.9	24
20	3.9	S	3.1	3.1	4	4.6	6.2	7.5	9.4	5.1	3.9	1.6	1.8	1.7	1.9	2.1	3.8	4.9	5.8	6.8	6.9	5.6	6	8.6	9.4	4.7	24
21	S	8.9	9.1	13.5	17.1	18.2	22.3	28.1	30.5	29.4	24	19.3	12.9	7.2	6.4	6.9	8	12.3	8.3	7.6	3.9	4.4	4.4	S	30.5	13.8	24
22	4.8	5	3.7	4.7	6.4	7.7	6.5	11.9	20.8	14.6	7.2	7.5	7.1	7.8	5.6	5.7	4.7	18.5	12.6	11.5	15.1	20.5	S	16.8	20.8	9.9	24
23	16.5	18.2	20.6	21.7	26	25	25.2	31	26	4.4	3.2	2.7	2.4	2.8	4	5.8	4.2	3.9	2.9	3.2	2.4	S	2	1.8	31	11.1	24
24	2.2	2.5	3.3	2.9	3.4	3.7	4.8	6.4	6.2	4.5	3.7	1.6	2.1	2	2.8	4	5.3	7.2	6.2	8.1	S	15.6	11.6	11	15.6	5.3	24
25	10.7	12.3	15.7	20.5	23.1	21.6	19.9	24.4	24.2	12.2	10.9	8.5	7.1	8.8	8.9	7.2	10.1	21.5	18.9	S	12.8	18.4	16	12.7	24.4	15.1	24
26	12	12.2	9.4	11.1	13.8	13.8	16.8	17.3	15	16.2	15.4	13.9	11.7	11.7	14.6	24.9	27.1	31.5	S	32.1	30.6	29.7	27.4	27	32.1	18.9	24
27	26.9	26.1	24.7	25.6	24.3	24.5	24.4	23.1	22	21.3	21.1	17.1	13.7	11.2	13.2	14.7	16.1	S	20.7	21.1	25.3	25	23.7	24.1	26.9	21.3	24
28	23	21	19.7	21	18.5	20.1	24.5	22	13.9	8.6	8.5	7.4	7.7	7.3	8.7	8.1	S	4.4	3.3	5.4	5.1	4.5	4.7	4.8	24.5	11.8	24
29	4.1	3.8	3.2	4.3	4.4	5	4.3	3.2	3.1	2.3	1.7	1	1.4	1.7	1.8	S	2.1	3.4	5.1	3.7	6.8	8.9	7.9	8.3	8.9	4.0	24
30	10.4	7.6	6.2	4.8	4	4.4	2.9	2.5	2.9	2.7	1.7	1	1.3	1.9	S	2.6	7.1	17.4	26	22.2	20.3	17.5	14.7	12.8	26	8.5	24
31	13.1	18.7	16.8	17.8	21	24.9	28.7	28.8	25.3	13	6.3	6.7	7.7	S	5.3	5.9	8	8	8.1	7.8	7.4	7.5	8.3	8.1	28.8	13.2	24
HOURLY MAX	27	26	25	26	26	26	29	31	31	29	24	19	14	12	15	25	27	32	26	32	31	30	27	27			
HOURLY AVG	9.5	9.8	9.9	10.4	10.6	11.4	12.5	12.8	12.6	9.2	7.6	6.6	5.4	5.1	5.4	6.5	8.1	10.2	9.9	9.9	10.5	10.7	9.3	9.8			

STATUS FLAG CODES

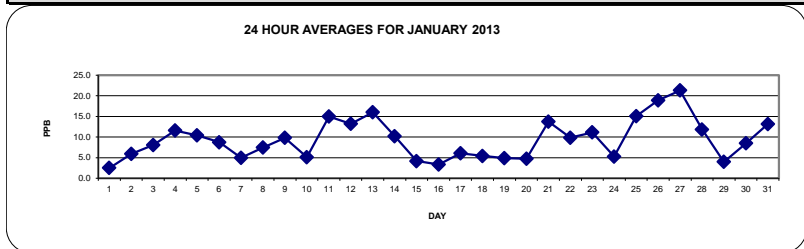
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

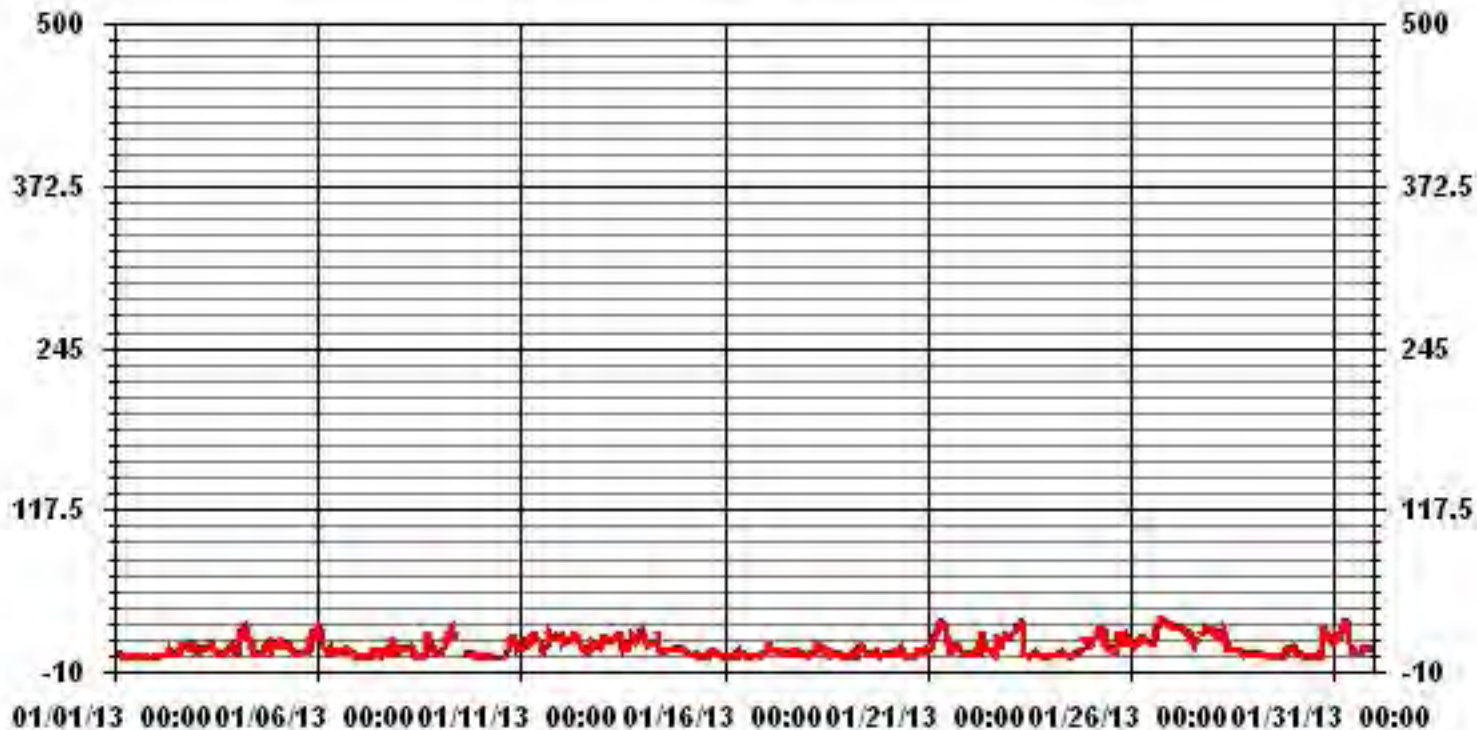
ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	705					
MAXIMUM 1-HR AVERAGE:	32.1	PPB	@ HOUR(S)	19	ON DAY(S)	26
MAXIMUM 24-HR AVERAGE:	21.3	PPB			ON DAY(S)	27
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	7.04		MONTHLY AVERAGE:	9.35	PPB	



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00				
DAY																												
1	6.5	7	6	5.5	4	3	2	3	3.5	2.5	4	1.5	2	2.5	2.5	2	4	3.5	5.5	3	S	1.5	2	2	7	3.4	24	
2	2.5	2.5	2	3	4.5	4	5	11	13	9	6.5	8	5	6	10	12.5	25	13.5	31.5	S	20	14.5	19.5	9.1	31.5	10.3	24	
3	9	8.5	10.5	12	9.5	12	11	13	22.5	17	15.5	11	9	5.5	4.5	4	5.5	7.5	S	11	13	16.5	13	14.5	22.5	11.1	24	
4	8.5	8.5	24.5	26	27.5	56	27.5	24.5	19	15.5	10	8	7	6	5	4.5	10.5	S	17	20.5	11.5	11.5	16	17	56	16.6	24	
5	18	12.5	12.5	14	12.5	14.5	16	16	10.5	10.5	7	9	5	6	6.5	6	S	8	13	13	27.5	30.5	19	26.5	30.5	13.7	24	
6	28.5	25.5	25	14	11	10	11	13.5	6.5	6.5	5.5	10	9.5	9	8	S	9.1	11.1	10.6	8.6	7.6	7.6	3.1	2.1	28.5	11.0	24	
7	2.6	4.1	2.6	1.8	1.6	1.6	1.6	1.6	2.1	11.1	8.1	8.1	6.1	4.6	S	15.5	6.5	9	13	16.5	25.5	26.5	5.5	7.5	26.5	8.0	24	
8	8.5	8.5	8	9	11.5	12.5	10.5	10	10	4.5	3	4	3.5	S	2.5	3	20	28.5	24.5	22.5	18	5.5	6	7	28.5	10.5	24	
9	9.5	10.5	13	15.5	22.5	47	28	30	28.5	C	C	C	C	C	C	C	C	5.5	6.5	Y	9.5	3	2.1	2	1.5	47	23	
10	1.5	1	2	2.5	2	1.5	1.5	2	1.5	2	2.5	S	2.6	4.6	3.6	13.1	19.1	26.6	23.1	22.6	19.6	20.1	17.6	16.6	26.6	9.1	24	
11	10.6	13.1	18.6	18.6	14.6	15.6	20.6	23.1	24.1	19.1	S	17.1	11.5	7.1	10.6	13.6	29.1	24.6	22.1	20.6	21.6	20.6	22.6	22.1	29.1	18.3	24	
12	18.6	20.6	20.1	18.6	17.1	18.6	18.6	20.1	20.6	S	19.7	15.7	15.2	11.2	8.7	8.7	12.7	18.7	17.2	20.2	35.7	23.2	11.7	16.7	35.7	17.7	24	
13	19.7	20.7	18.7	19.2	17.2	16.2	18.2	19.7	S	21	24	20	10	11.5	14	12.5	20.5	27.5	23.5	21	20	21	25.5	26.5	27.5	19.5	24	
14	22	20	14.5	15	14	21	22.5	S	23.5	18	9.5	9.5	6.5	8.5	11.9	8	10.5	10	8.5	12.4	10	9.5	13	11.5	23.5	13.5	24	
15	10.5	8.5	6.5	4.5	4.5	4.5	S	5.5	5	4.5	1.5	1.5	1.5	1.5	2	10	9.5	8	7	8	5.5	4.5	4.5	4	10.5	5.3	24	
16	2.5	3	3.5	5	4	S	5.5	8	13	18.5	9	7.5	8	4	3	3.5	3.5	3	3.5	3.5	9.5	5	8.5	6.5	18.5	6.1	24	
17	8.5	16	14	13.5	S	14.5	8	7	8.5	9.5	10	6.5	6	5.5	7	31	8	9	9.5	6	6.5	6.5	5.8	5	31	9.6	24	
18	6.5	6	8	S	7.5	10	20	16	14.5	16	20.5	21	13.5	15.5	3.5	8.5	5.5	3.5	4.5	4	5	5.5	2.5	3.5	21	9.6	24	
19	4	3.5	S	5.5	7	6.5	17	10.5	18.5	15.5	12.5	7	6	5	6	10.5	4.5	7.5	8	3	3	3.5	4.1	6	18.5	7.6	24	
20	6	S	5.6	5.1	9.1	8.6	9.6	9.6	14.6	9.1	6.6	3.6	3.1	3.6	6.1	3.6	5.6	9.1	7.1	8.6	9.1	6.6	10.1	11.1	14.6	7.4	24	
21	S	13.6	14.1	19.6	21.1	22.1	29.6	32.1	35.1	33.6	29.1	23.1	17.6	9.6	12.6	12.1	12.6	16.6	11.6	11.6	7.1	8.1	8.6	S	35.1	18.2	24	
22	8	7.5	5	8.5	8.5	10.5	14	16.5	23.5	22	10	11	9.5	9.5	8	8.5	19.5	36	25	14.5	23.5	27.5	S	24	36	15.2	24	
23	21	23	25	28.5	28.5	28.5	29	35.5	35.5	10.5	7	3.5	4	4	27.5	15.5	7.5	9.5	4.5	7.5	3.5	S	3	3	35.5	15.9	24	
24	3	4	4.5	4	5.5	7	7.5	11	12	16	8	4.5	3	4	4.5	6	13	10.5	7.5	13.5	S	29.6	18.6	14.1	29.6	9.2	24	
25	14.6	17.1	19.6	26.1	27.6	33.1	28.6	33.1	28.1	26.1	16.6	11.1	10.6	13.1	13.1	13.1	25.1	25.6	24.6	S	16.5	22.5	21.5	18.5	33.1	21.1	24	
26	21	22.5	13.5	15	22	22	25	21.5	20.5	21	18	16.5	15	13.5	19	29.5	34.5	35.5	S	35.5	34.5	35.5	31	29.5	35.5	24.0	24	
27	30.5	27.5	26.5	28.5	26.5	31	27.5	27	26	24	25.5	20.5	18.5	15.5	15.5	23	25.5	S	29.5	24	28.1	26	26	27	31	25.2	24	
28	25	21.5	21	23.5	19.5	25.5	25.5	25.5	18	11.5	12	10	13	10.5	10.5	10	S	9.5	5.5	5.5	5.5	5	5.5	6	25.5	14.1	24	
29	4.9	5	3.8	5	5	5.5	5	4	3.5	2.5	2.5	1.5	2	2	2	S	4.5	5	10.5	4.5	9.5	12.5	10	10	12.5	5.2	24	
30	16	9	8.5	8	7	6	4.5	7	5	6	3	1.5	2.5	5.5	S	3	13	27	31.5	34.5	23	21	17	16.5	34.5	12.0	24	
31	19.5	24.5	21	21.5	25	28	31.4	36.5	29.5	24.5	9	14.5	10.5	S	9.8	7.7	15.7	9.7	9.2	8.7	8.6	8.2	10.2	9.2	36.5	17.1	24	
HOURLY MAX	31	28	27	29	29	56	31	37	36	34	29	23	19	16	28	31	35	36	32	36	36	36	31	30				
HOURLY AVG	12.3	12.5	12.6	13.2	13.3	16.6	16.1	16.5	16.5	14.1	10.9	9.9	7.9	7.3	8.5	10.7	13.3	14.5	14.6	13.6	14.9	14.6	12.1	12.5				

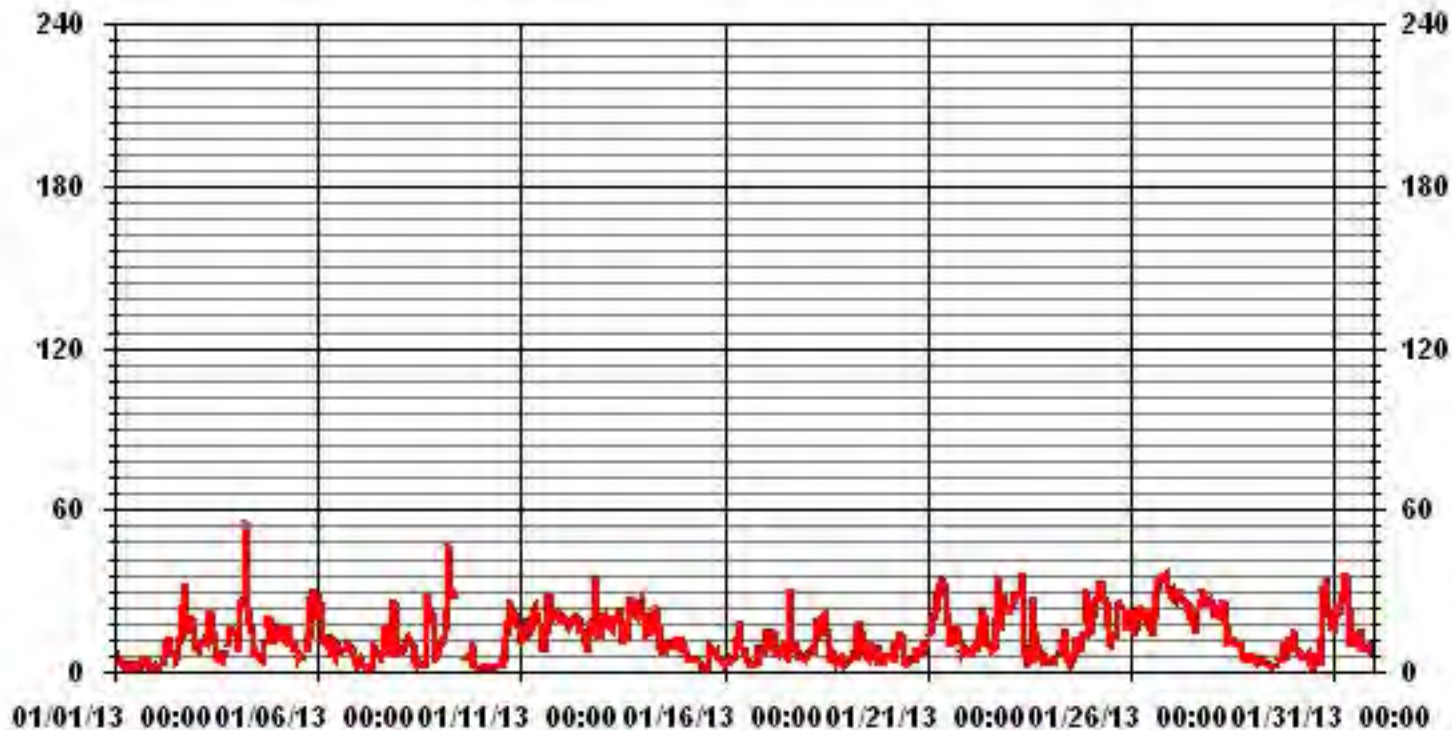
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	705					
MAXIMUM INSTANTANEOUS VALUE:	56	PPB	@ HOUR(S)	5	ON DAY(S)	4
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	8.80					

01 Hour Averages



— LICA NO2MAX PPB

LICA
 NO2_ / WD Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 01
 Site Name : LICA
 Parameter : NO2_
 Units : PPB

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	2.99	6.70	5.99	4.42	6.27	5.70	5.13	.99	1.42	2.42	3.85	14.55	16.54	10.41	6.70	5.84	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	2.99	6.70	5.99	4.42	6.27	5.70	5.13	.99	1.42	2.42	3.85	14.55	16.54	10.41	6.70	5.84	

Calm : .00 %

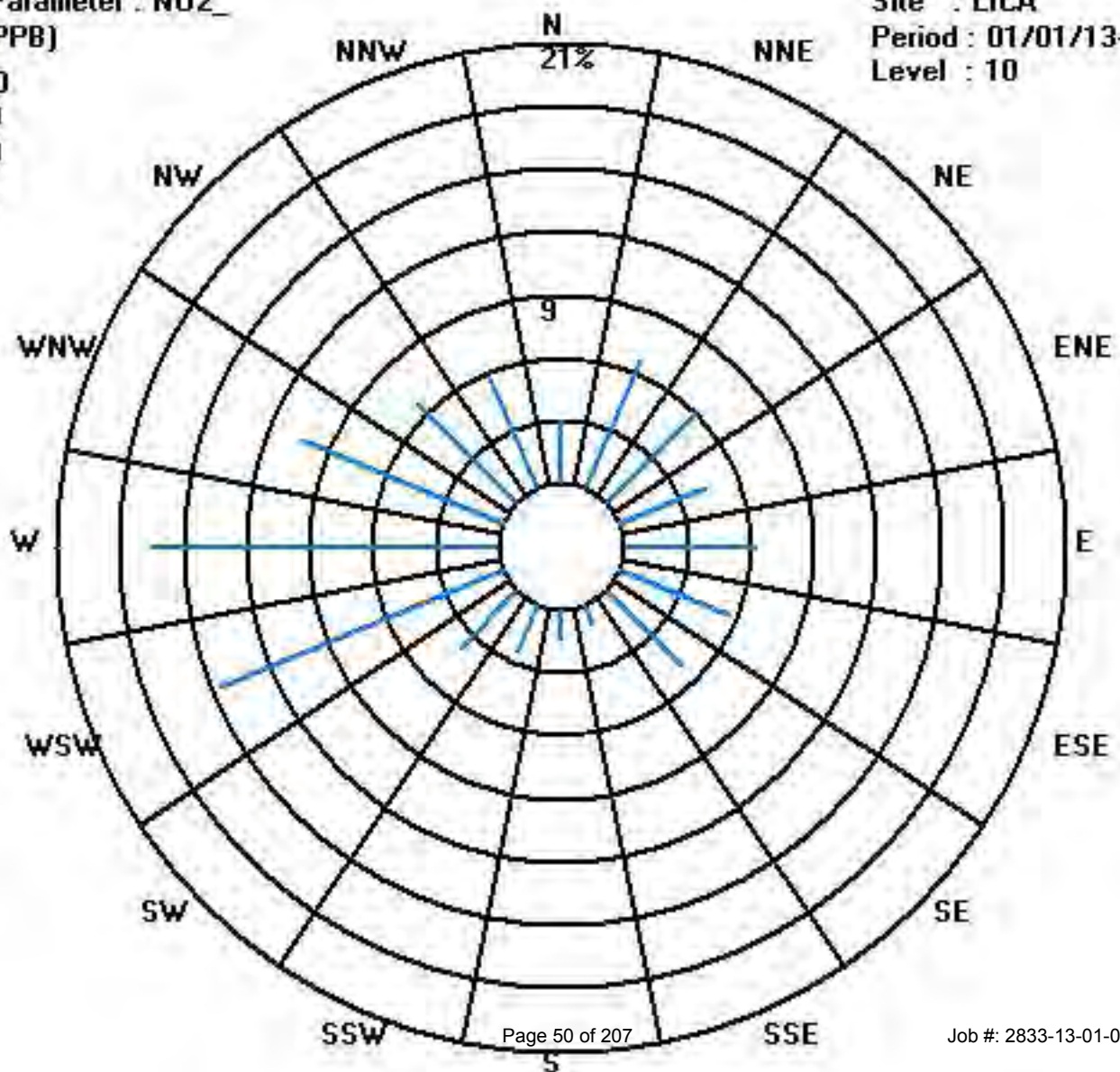
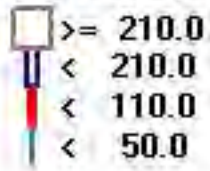
Total # Operational Hours : 701

Distribution By Samples

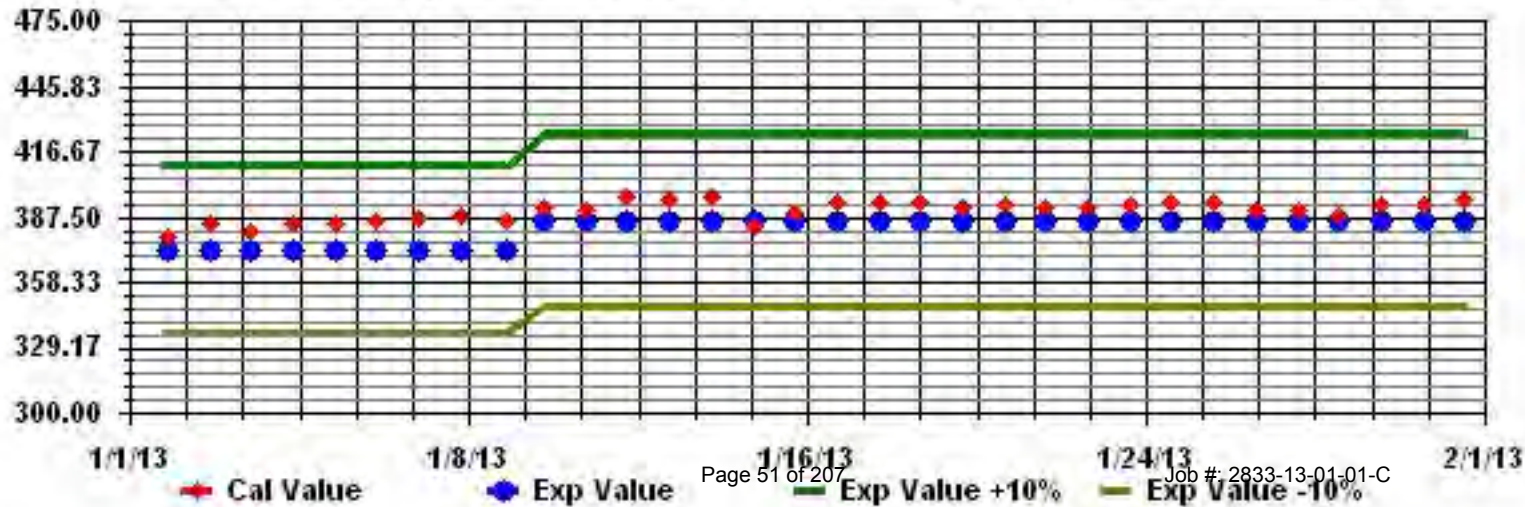
Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	21	47	42	31	44	40	36	7	10	17	27	102	116	73	47	41	701
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	21	47	42	31	44	40	36	7	10	17	27	102	116	73	47	41	

Calm : .00 %

Total # Operational Hours : 701



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



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

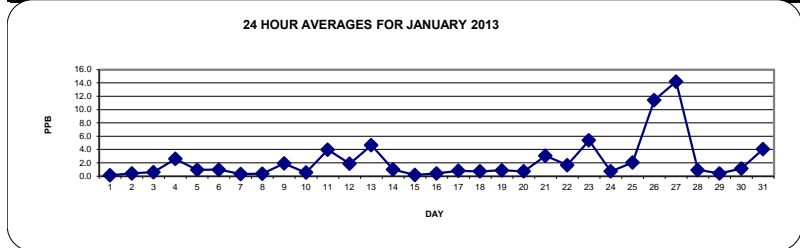
NITRIC OXIDE hourly averages in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	RDGS.	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.		
DAY																												
1	0.1	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0.4	0	0.1	0.1	0.2	0.2	0.1	S	0	0	0	0.4	0.1	24	
2	0	0	0	0	0	0	0.1	0	0.5	0.7	0.9	1.2	1	0.9	0.7	0.7	0.4	0.7	1.2	S	0.2	0.2	0.4	0.1	1.2	0.4	24	
3	0.2	0.1	0.4	0.6	0.4	0.3	0.4	0.4	0.7	1.4	2.2	2.4	1.3	0.9	0.5	0.1	0.2	0.3	S	0.1	0	0.2	0.1	0.3	2.4	0.6	24	
4	0.1	0.3	2.4	5.7	13.5	16.7	7.8	2.7	1.1	1.8	1.6	0.8	1.2	0.9	0.6	0.3	0.3	S	0.1	0.8	0.2	0.1	0.3	0.1	16.7	2.6	24	
5	0.1	0.1	0.4	0.4	0.5	0.5	0.4	0.4	0.3	0.8	1.2	1.7	1.4	1.1	0.6	0.4	S	0.4	0.1	0	1.2	3.1	0.6	6	6	0.9	24	
6	8.7	4	1.5	0.6	0.6	0.2	0.1	0.1	0.2	0.5	0.4	1.2	1.1	0.8	0.8	S	0.3	0.3	0.3	0.3	0.3	0.2	0	0	8.7	1.0	24	
7	0	0.1	0	0	0.1	0.1	0.1	0	0	0.4	1	1.2	1.2	0.7	S	1.1	0	0.1	0.2	0.1	0.5	0.3	0.1	0.2	1.2	0.3	24	
8	0.1	0.2	0.3	0.3	0.4	0.3	0.1	0.1	0	0.2	0.3	0.8	1	S	0.5	0.2	0.4	1.7	0.3	0.5	0.4	0	0	0.1	1.7	0.4	24	
9	0.1	0.3	0.4	1.4	3.3	5.3	10	5.6	2.9	C	C	C	C	C	C	C	C	0.3	0.3	Y	0.4	0.1	0.1	0.2	0	10	1.9	23
10	0	0	0	0.1	0.2	0.2	0.2	0.2	0.2	0.5	0.7	S	0.3	0.6	0.9	1.6	0.4	2.7	0.5	1	0.7	0.2	0.5	0.4	2.7	0.5	24	
11	0.2	0.5	0.2	0.3	0.1	0.2	2	5.5	12.2	19.6	S	16.2	6	3.8	4.1	2.9	6.8	1.7	2.3	1.6	0.9	0.7	1.6	1.9	19.6	4.0	24	
12	0.5	0.8	0.5	0.5	0.7	0.8	0.4	0.4	1.1	S	8.9	9.9	5.9	3.5	2.3	1	0.8	0.6	0.5	0.4	2.1	0.5	0.3	0.2	9.9	1.9	24	
13	0.5	0.5	0.2	0.5	0.3	0.3	1.4	2.9	S	19.5	33.6	10.7	6.4	7	7.1	3.1	1.5	2.8	1.8	0.9	1.3	1	1.7	1.9	33.6	4.6	24	
14	1	0.6	0.3	0.4	0.2	1.9	0.4	S	6.1	1.6	1.9	1.9	1.5	1.5	2.1	0.5	0.1	0.1	0	0.2	0.3	0.1	0	0.2	6.1	1.0	24	
15	0.1	0.1	0	0	0	0.1	S	0.2	0	0.1	0	0	0	0	0	0.7	0.6	0.8	0.4	0.6	0.2	0.2	0.3	0.1	0.8	0.2	24	
16	0.1	0.1	0.2	0.3	0.1	S	0.5	0.8	0.5	1.4	0.9	1.2	1.7	0.7	0.4	0.2	0	0	0	0	0.3	0.1	0.1	0.1	1.7	0.4	24	
17	0.1	0.6	0.2	0.2	S	0.2	0.2	0.6	0.7	1.3	2	1.6	1.7	1.6	1.8	1.8	0.9	0.7	0.6	0.4	0.5	0.4	0.4	0.3	2	0.8	24	
18	0.3	0.2	0.2	S	0.2	0.2	1	0.4	0.8	1.6	2.9	1.7	1.4	3.1	0.7	1.5	0.1	0	0	0	0	0	0	0	3.1	0.7	24	
19	0	0	S	0.3	0.5	0.4	0.2	0.3	1.2	3.8	4.5	2.2	2	1.3	1.4	1	0.2	0.1	0.3	0.3	0.1	0	0	0	4.5	0.9	24	
20	0.3	S	0.4	0.3	0.6	0.9	0.5	0.7	0.7	1.6	2.1	1.1	1.2	1.2	1.2	0.8	0.1	0.5	0.4	0.3	0.4	0.3	0.3	0.4	2.1	0.7	24	
21	S	0.1	0	0.3	0.4	0.2	0.8	2.8	6.7	15.8	13.7	11.1	6	2.5	1.6	1.6	0.6	0.7	0.7	0.6	0.5	0.1	0.1	S	15.8	3.0	24	
22	0.2	0.1	0	0.3	0.2	0.3	0.2	0.8	2.4	4.7	3.8	4.9	4.6	3.6	2	1.5	1.1	3.6	0.5	0.2	0.6	2.3	S	0.2	4.9	1.7	24	
23	0.8	1.1	1.8	3.3	10.9	12.4	9.6	38.1	30.9	1.8	1.3	1.2	1.2	1.1	1.6	2.5	0.8	0.9	0.6	0.7	0.5	S	0.3	0.3	38.1	5.4	24	
24	0.4	0.3	0.4	0.4	0.5	0.8	0.6	0.6	1.2	2.2	1.8	1.5	1.1	0.9	0.7	0.7	0.6	0.2	0	0.2	S	1	0.2	0.1	2.2	0.7	24	
25	0	0.3	0.7	1.7	1.8	2.4	1.3	3.3	3.5	3.4	4.6	4.2	3.7	4.6	3.8	2	1.6	1.2	1.1	S	0.6	0.7	0.9	0.2	4.6	2.1	24	
26	0.1	0.3	0	0.2	0.5	0.9	2.7	2.8	4.3	17.6	18.9	16.5	12.3	9.8	10.2	16.7	11.1	23.5	S	26.9	23.1	19.2	18.7	26.2	26.9	11.4	24	
27	25.9	18	18.9	21.6	19.4	25.3	28.6	27.8	24.2	24.9	28.4	20.5	13.5	7	6.3	5.4	2.6	S	1.5	0.3	1.8	0.9	1.4	2.3	28.6	14.2	24	
28	1.4	0.7	0.6	0.6	0.1	1	2.3	0.5	0.5	0.9	2.1	2.3	2.9	2.2	1.7	1.1	S	0.2	0.1	0	0	0.1	0	0	2.9	0.9	24	
29	0	0	0	0	0	0	0	0	0.2	0.6	0.7	0.6	1.2	1.4	1.2	S	0.4	0.2	0.2	0.2	0.4	0.7	0.8	0.5	1.4	0.4	24	
30	0.9	0.6	0.1	0.3	0.2	0.4	0.6	0.7	0.7	1.2	0.9	0.7	2	2.1	S	0.9	3.1	3.1	3.6	2.4	0.8	0.3	0.3	0.1	3.6	1.1	24	
31	0.2	1.9	0.5	0.8	1.8	9.3	15.6	16.7	15.3	12.4	3.6	4.3	5.3	S	2.9	1.3	1.2	0.1	0	0	0	0.1	0.1	0	16.7	4.1	24	
HOURLY MAX	26	18	19	22	19	25	29	38	31	25	34	21	14	10	10	17	11	24	4	27	23	19	19	26				
HOURLY AVG	1.4	1.1	1.0	1.4	1.9	2.7	2.9	3.9	4.0	4.9	5.0	4.3	3.0	2.3	2.1	1.8	1.3	1.6	0.6	1.4	1.3	1.1	1.0	1.4				

STATUS FLAG CODES

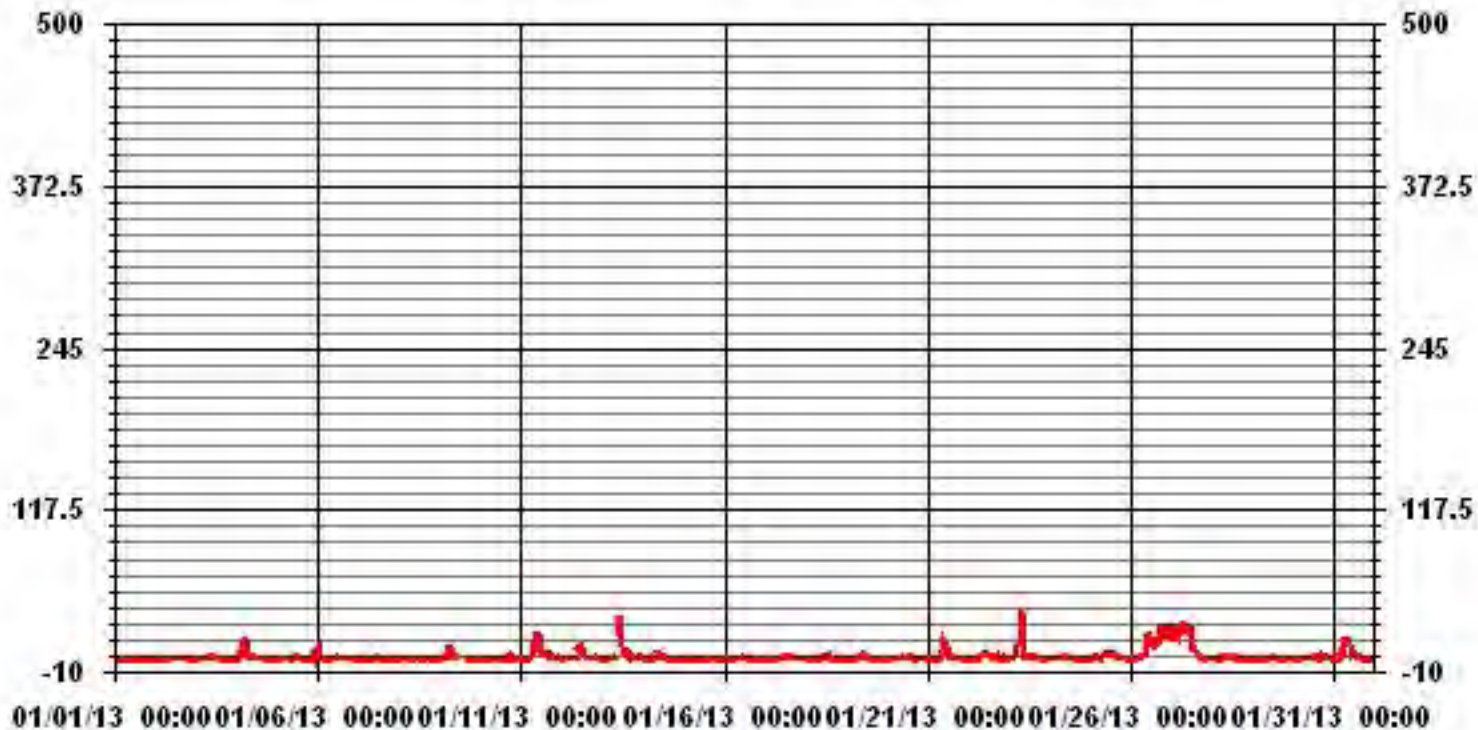
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	627					
MAXIMUM 1-HR AVERAGE:	38.1	PPB	@ HOUR(S)	7	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	14.2	PPB			ON DAY(S)	27
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	5.02		MONTHLY AVERAGE:	2.23	PPB	

01 Hour Averages



— LICA NO PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00			
DAY																											
1	0.5	1	1	0.5	1	1	0.5	0.5	1	1	1	0	0.5	0.5	0	0.5	1.5	1.5	1	1.5	S	0	0	0.1	1.5	0.7	24
2	0	0	0.5	0	0	0.5	1	1.5	4	3	2.5	2.5	1.5	2	2	2	4	8.5	23.5	S	2	2	2	1	23.5	2.9	24
3	2	1.5	3	3	3	2	2.5	2.5	4.5	3	3	4	2.5	1.5	1	0.5	2	1.5	S	1	1	1	2	1.5	4.5	2.2	24
4	1	2	7.5	10.5	30.1	31.5	16.5	6	5	3.5	4	2.5	6	2	1.5	1	6.5	S	1	3.5	3	1	4.5	0.5	31.5	6.5	24
5	0.5	1.5	2.5	2	1.5	2	2	2	1.5	2	3	6.5	3.5	2	2.5	1	S	4.5	1	1	5.5	12	2.5	14.5	14.5	3.3	24
6	15	5.5	4	3	1.5	1	1	1	1	3.5	1	2.5	2.5	2	2	S	1.5	1.5	1	1.5	2	1.5	0.5	0.5	15	2.5	24
7	0.5	1	0.5	0.5	1.5	0.5	1	0	0.1	1	1.5	2	2	3	S	6	1	1.5	2	2	4.5	3	1	2	6	1.7	24
8	1	1	1.5	1.5	3	2.5	0.5	1	1.3	0.5	0.5	1	1.5	S	0.5	0.5	2.5	5.5	1.5	9.5	3	0	0.5	1.5	9.5	1.8	24
9	1.5	2	1.5	4.5	7.5	19.5	23	16	9.5	C	C	C	C	C	C	C	1	1.5	Y	1.5	0.5	0.5	0.9	0.5	23	5.7	23
10	0	0.5	0.5	0.5	0.5	0.5	0.5	1.5	1.5	1.5	6	S	1	2	2	5.5	2	14	4.5	3	8	1.5	4.5	3.5	14	2.8	24
11	2	5	2.5	2	2	1	6	15.5	18.5	26.5	S	22.5	11	5	5.5	6.5	20.5	3.5	25	5	2	4.5	13.5	7	26.5	9.2	24
12	3.5	3	1	2	2	3.5	2	2	4	S	12.2	13.5	8.5	5	5	2.5	3.5	3	2.5	3.5	21.5	5.5	1.5	3.5	21.5	5.0	24
13	3.5	4.5	1	2	2.5	3.5	7.5	6	S	26.5	40	25.5	9.5	9	9	6	5	22	24	2.5	3	4.5	5	3.5	40	9.8	24
14	2	1.5	1.5	2	2	21.5	3.5	S	11.5	6	4.5	6	1.5	6	24.5	2	0.5	2.5	1	3.5	3	1	0.5	1.5	24.5	4.8	24
15	1	0.5	0.5	0.5	0.7	1.5	S	1	0.5	0.5	0	0.3	0	0.2	0	3	4	6	1	7.5	1	1	1	1.5	7.5	1.4	24
16	1	0.5	1	1.5	0.5	S	1.5	2.5	1.5	15	3.5	2	3	2	0.5	0.5	0.5	0.5	1	0.5	1.5	1	1	0.5	15	1.9	24
17	1	3.5	1	1.5	S	1	0.5	1.5	2	3.5	8.5	2.5	4.5	4	11.5	10	5	2.5	1.5	1.5	2	1.5	1.5	1	11.5	3.2	24
18	2	2	1.5	S	1.5	2	4.5	1.5	2	3.5	22	19.5	5	8.5	1.5	23	0.5	0	0	0.5	0.5	0	0	23	4.4	24	
19	0	0.5	S	3.5	3	2	1	1.5	4.5	8.5	12	4.5	3.5	3	7.5	1.5	1.5	1	2	1	0	0.5	0.5	12	2.9	24	
20	2	S	2.5	2	2.5	5	2.5	3.5	2	4.5	4	2	2	3.5	6.5	2	1.5	3.5	2	1	1.5	2.5	2	1.5	6.5	2.7	24
21	S	2.5	0.5	2	1	0.6	3.5	10	13.5	22.5	17.5	14.5	9.5	4.5	5	9.5	2	2.5	2	2	6.5	1	1.5	S	22.5	6.1	24
22	2	1.5	1	2.5	1.5	1.5	1	5.5	7	8.5	5	8	5.6	4.5	3.5	5	5.5	17	4.5	1.5	3	11	S	1	17	4.7	24
23	5	9	5	16	19	23	28.5	58.5	66	7.5	3.5	2	4	2	13	18	2.5	5.5	1.5	4	1.5	S	1	1	66	12.9	24
24	1	1	1	1	1.5	2	1.5	3	11.5	11.5	5	19	2.5	2	1.5	2.5	5	3	0.5	1.5	S	6	1.5	1	19	3.7	24
25	0.5	1.5	2	4	7	14.5	5	14.5	8	11.5	8.5	7	8	8	7	9.5	6.5	4.5	3.5	S	2	3.5	5.5	0.5	14.5	6.2	24
26	1.5	1.5	0.5	1.5	6	9	8	7.5	11.5	28	25	21.5	14	10.5	13	23.5	27	46.5	S	36.5	36.5	30	38	38	46.5	18.9	24
27	33.5	22	24	27.5	29	37.5	35	34.5	31.1	33	39	27	23.5	10	8	9	8	S	19	1	5	2	3.5	5.5	39	20.3	24
28	2.5	1.5	1	1.5	1.5	5.5	7.5	2	1.5	2	4	3.5	6	3.5	3	1.5	S	0.5	0.5	0.5	0.5	0.5	0.5	0.5	7.5	2.2	24
29	0.4	0.5	0.5	0.5	0	0	0.3	0	0.5	1	1	1	1.5	2	1.5	S	2	1.5	2.5	2	2	2.5	2.1	1.5	2.5	1.2	24
30	3	2	1	1	1	2	2	5.5	2	4.5	2.5	1.5	17	9	S	2	52.5	30	15.5	13	3	2.5	1.5	2	52.5	7.7	24
31	2	5.5	1.5	3	6	19.5	30.5	79	36.6	31	9.5	13	11	S	17.5	3	5.5	0.5	0.5	0.9	1	1	1	0.5	79	12.2	24
HOURLY MAX	34	22	24	28	30	38	35	79	66	33	40	27	24	11	25	24	53	47	25	37	37	30	38	38			
HOURLY AVG	3.0	2.9	2.4	3.5	4.7	7.2	6.7	9.6	8.8	9.5	8.6	8.2	5.7	4.2	5.4	5.8	6.2	6.8	5.2	3.9	4.4	3.5	3.4	3.3			

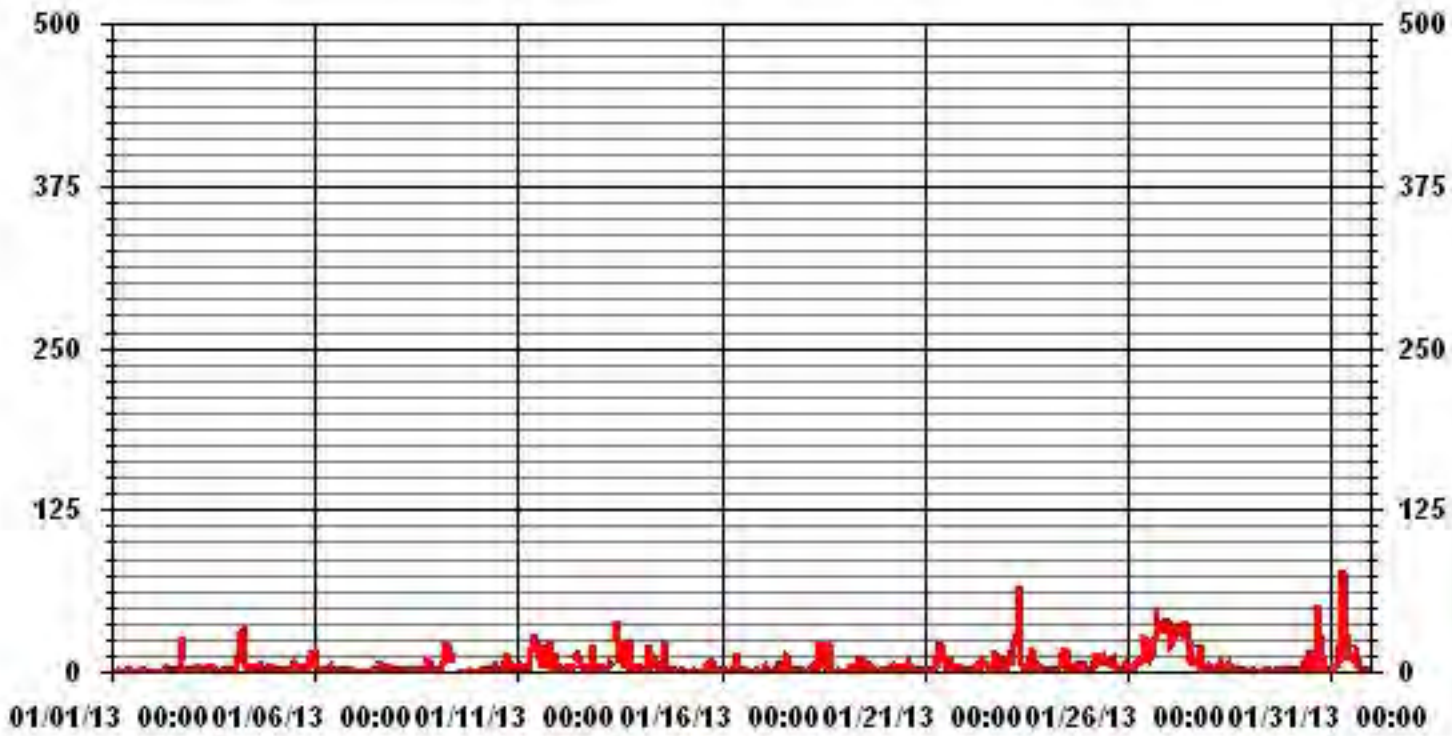
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	681					
MAXIMUM INSTANTANEOUS VALUE:	79	PPB	@ HOUR(S)	7	ON DAY(S)	31
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	8.79					

01 Hour Averages



— LICA NOMAX PPB

LICA
 NO_ / WD Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 01
 Site Name : LICA
 Parameter : NO_
 Units : PPB

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	2.99	6.70	5.99	4.42	6.27	5.70	5.13	.99	1.42	2.42	3.85	14.55	16.54	10.41	6.70	5.84	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	2.99	6.70	5.99	4.42	6.27	5.70	5.13	.99	1.42	2.42	3.85	14.55	16.54	10.41	6.70	5.84	

Calm : .00 %

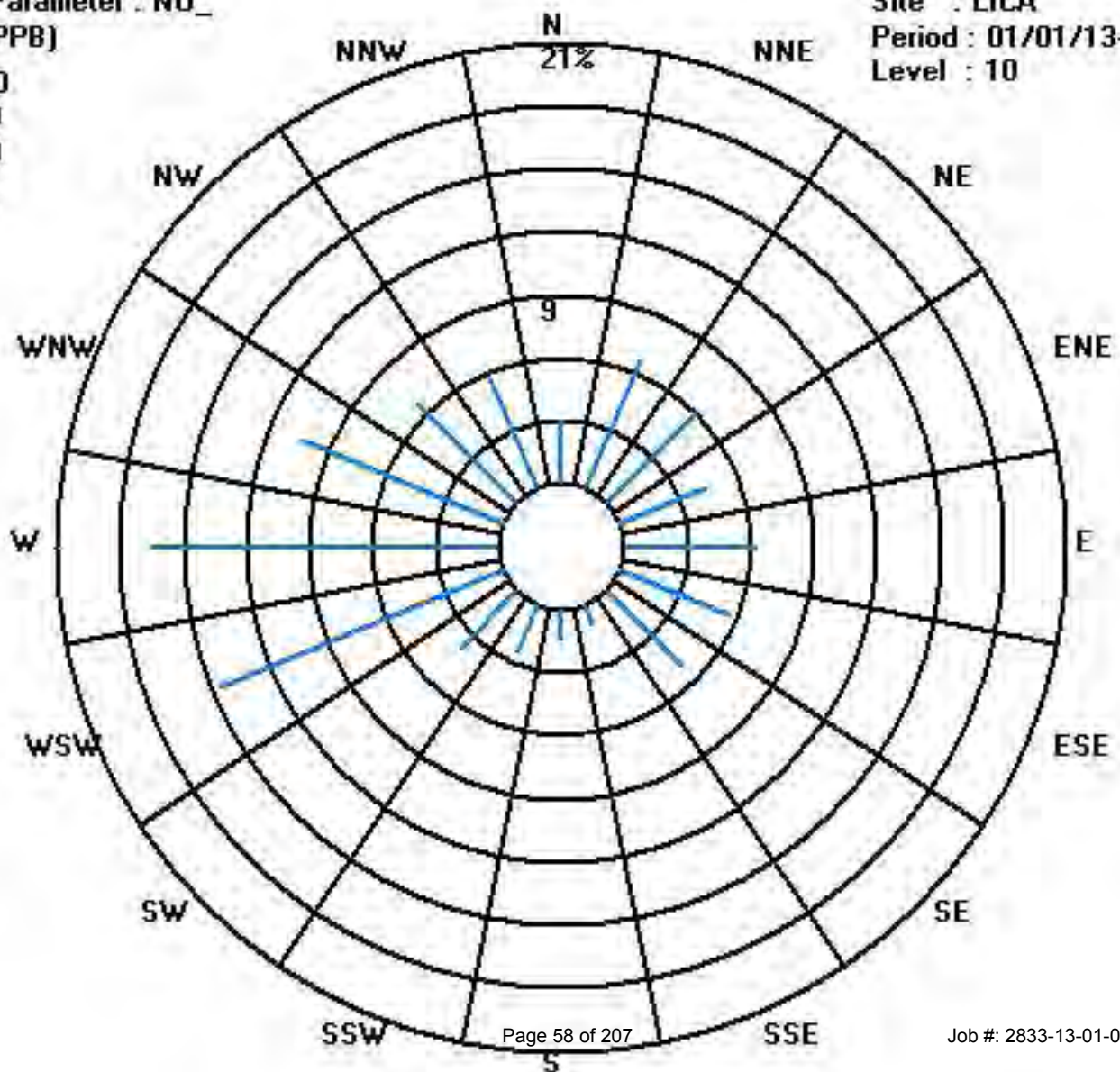
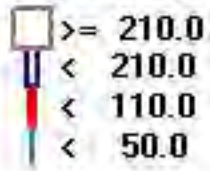
Total # Operational Hours : 701

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	21	47	42	31	44	40	36	7	10	17	27	102	116	73	47	41	701
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	21	47	42	31	44	40	36	7	10	17	27	102	116	73	47	41	

Calm : .00 %

Total # Operational Hours : 701



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

OXIDES OF NITROGEN hourly averages in ppb

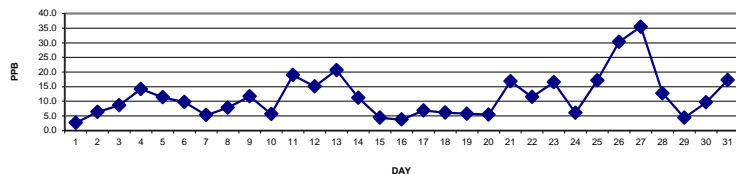
MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.
DAY																											
1	5.8	6	5.1	4.6	2.7	2	1.8	1.9	2.8	1.6	1.8	1.4	1.6	2.3	1.6	1.6	3.2	3.2	3.6	2	S	1.2	1.3	1.4	6	2.6	24
2	1.6	1.8	1.9	2.5	2.8	3.3	3	4.2	8.4	6.3	5.5	5.4	4.4	4.5	5.6	8.5	13	8.5	12.4	S	9.1	9.7	16.2	7	16.2	6.3	24
3	6.7	5.6	9	8.9	8.4	9.5	10.1	11.2	14.7	14.7	12.2	10.6	6.6	5.1	4	3.3	4.4	6.2	S	8.7	9.7	11.7	8.1	9.3	14.7	8.6	24
4	4.8	5.9	18	28	37.3	42.5	29.9	21.6	17.8	12.3	8.3	4.4	5.4	4.5	3.8	3.7	7.8	S	12	14.3	7.7	9.4	12.3	14.1	42.5	14.2	24
5	14.8	11.5	11	12.1	11.6	12.7	13.6	9.9	7.9	7.4	6.5	7.1	5.8	5.3	5.3	5.6	S	5.8	10.2	9.2	18.8	26.8	14.9	27	27	11.3	24
6	34.8	28.4	20.4	10.4	8.8	6.3	8	9.4	4.7	4.8	4.8	8.9	8.5	7.4	8	S	8.7	9.7	8.9	7.6	6	5.3	2.1	1.8	34.8	9.7	24
7	1.8	2.5	2.1	1.6	1.5	1.4	1.5	1.1	1.5	7.1	7.1	6	5.4	3.9	S	9.2	4.8	5.5	6.5	10.7	16.3	12.5	5.2	6	16.3	5.3	24
8	7.5	7.6	7.2	7.9	9.3	10.8	9.7	9.7	8	3.8	2.7	4.2	4.2	S	2.7	2.5	10	22.4	16.7	9.4	10	3.9	3.9	5.6	22.4	7.8	24
9	5.1	6.4	9	13.7	19.4	26.2	33.7	31	20.9	C	C	C	C	C	C	C	4.5	4.7	Y	5.7	2.1	1.7	1.9	1.5	33.7	11.7	23
10	1.1	1.1	1.8	2	1.8	1.3	1.4	1.3	1.1	1.9	1.7	S	0.9	1.3	3	7	7.7	19.5	12	19.2	12.4	9.3	11.6	9.4	19.5	5.6	24
11	8.4	11.2	15.8	15	11.2	12.2	19.5	25.2	32.7	37.1	S	30.2	13.3	9.3	12.1	12.9	29.5	22.4	20	19.9	20.4	18.7	18.6	20.2	37.1	18.9	24
12	14.4	16.5	17.2	16.4	15.8	17	17.9	18.9	20.2	S	24	23.2	17	12	9.5	6.7	11.1	13.8	11.1	13.5	14.7	12.5	10.3	12.4	24	15.0	24
13	18.3	17.7	16.6	16.1	14.2	14.1	16.7	20.5	S	37.1	54.7	21.7	13.8	16.6	19.1	13.8	15.4	22.9	20.6	16.5	18.9	19.9	24	25.9	54.7	20.7	24
14	21.8	17.9	10.9	11.9	11.4	14.8	13	S	25.9	11.6	10.1	8.3	7.1	7.7	8.9	7.5	7.7	7.4	7.4	8.6	8.6	8.8	10.5	10	25.9	11.2	24
15	8.8	6.8	5.8	4.3	3.9	3.5	S	4.3	4	3.3	1.5	1.5	1.5	1.5	1.6	6.9	8.1	7.5	6.3	5.2	4.9	3.8	3.2	2.5	8.8	4.4	24
16	1.8	2	2.4	3.1	2.6	S	4.8	4.3	7.4	5.8	5.1	5.3	6.2	3.1	2.7	2.4	2.7	2.2	2.5	2.9	4.3	2.9	4.6	4.8	7.4	3.7	24
17	5.4	11.5	10.4	10.3	S	8.4	5.4	5.5	6.8	7.9	7.7	6.5	5.6	5.8	6.4	8.6	6.5	7.4	7.6	5.2	5.9	4.8	4.4	4.1	11.5	6.9	24
18	4.7	3.1	4.8	S	5.8	6.1	15.4	10.8	9.2	10.3	11	6.3	5.8	11.1	3.4	5.1	4.1	3.1	3.7	3.6	4.5	4.2	1.9	2.6	15.4	6.1	24
19	3.1	2.6	S	3.8	5.6	4.1	8.2	6.4	12.5	14.2	11.9	6.2	6.7	5	6.1	5	3.4	4.7	6.2	2.4	2.5	3.2	3.7	4.7	14.2	5.7	24
20	4.2	S	3.5	3.4	4.6	5.5	6.7	8.2	10.1	6.7	6	2.7	3	2.9	3.1	2.9	3.9	5.4	6.2	7.1	7.3	5.9	6.3	9	10.1	5.4	24
21	S	9	9.1	13.8	17.5	18.4	23.1	30.9	37.2	45.2	37.7	30.4	18.9	9.7	8	8.5	8.6	13	9	8.2	4.4	4.5	4.5	S	45.2	16.8	24
22	5	5.1	3.7	5	6.6	8	6.7	12.7	23.2	19.3	11	12.4	11.7	11.4	7.6	7.2	5.8	22.1	13.1	11.7	15.7	22.8	S	17	23.2	11.5	24
23	17.3	19.3	22.4	25	36.9	37.4	34.8	69.1	56.9	6.2	4.5	3.9	3.6	3.9	5.6	8.3	5	4.8	3.5	3.9	2.9	S	2.3	2.1	69.1	16.5	24
24	2.6	2.8	3.7	3.3	3.9	4.5	5.4	7	7.4	6.7	5.5	3.1	3.2	2.9	3.5	4.7	5.9	7.4	6.2	8.3	S	16.6	11.8	11.1	16.6	6.0	24
25	10.7	12.6	16.4	22.2	24.9	24	21.2	27.7	27.7	15.6	15.5	12.7	10.8	13.4	12.7	9.2	11.7	22.7	20	S	13.4	19.1	16.9	12.9	27.7	17.1	24
26	12.1	12.5	9.4	11.3	14.3	14.7	19.5	20.1	19.3	33.8	34.3	30.4	24	21.5	24.8	41.6	38.2	55	S	59	53.7	48.9	46.1	53.2	59	30.3	24
27	52.8	44.1	43.6	47.2	43.7	49.8	53	50.9	46.2	46.2	49.5	37.6	27.2	18.2	19.5	20.1	18.7	S	22.2	21.4	27.1	25.9	25.1	26.4	53	35.5	24
28	24.4	21.7	20.3	21.6	18.6	21.1	26.8	22.5	14.4	9.5	10.6	9.7	10.6	9.5	10.4	9.2	S	4.6	3.4	5.4	5.1	4.6	4.7	4.8	26.8	12.8	24
29	4.1	3.8	3.2	4.3	4.4	5	4.3	3.2	3.3	2.9	2.4	1.6	2.6	3.1	3	S	2.5	3.6	5.3	3.9	7.2	9.6	8.7	8.8	9.6	4.4	24
30	11.3	8.2	6.3	5.1	4.2	4.8	3.5	3.2	3.6	3.9	2.6	1.7	3.3	4	S	3.5	10.2	20.5	29.6	24.6	21.1	17.8	15	12.9	29.6	9.6	24
31	13.3	20.6	17.3	18.6	22.8	34.2	44.3	45.5	40.6	25.4	9.9	11	13	S	8.2	7.2	9.2	8.1	8.1	7.8	7.4	7.6	8.4	8.1	45.5	17.2	24
HOURLY MAX	53	44	44	47	44	50	53	69	57	46	55	38	27	22	25	42	38	55	30	59	54	49	46	53			
HOURLY AVG	11.0	10.9	10.9	11.8	12.6	14.1	15.4	16.6	16.5	14.1	12.6	10.8	8.4	7.4	7.5	8.3	9.4	11.9	10.5	11.2	11.8	11.8	10.3	11.2			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

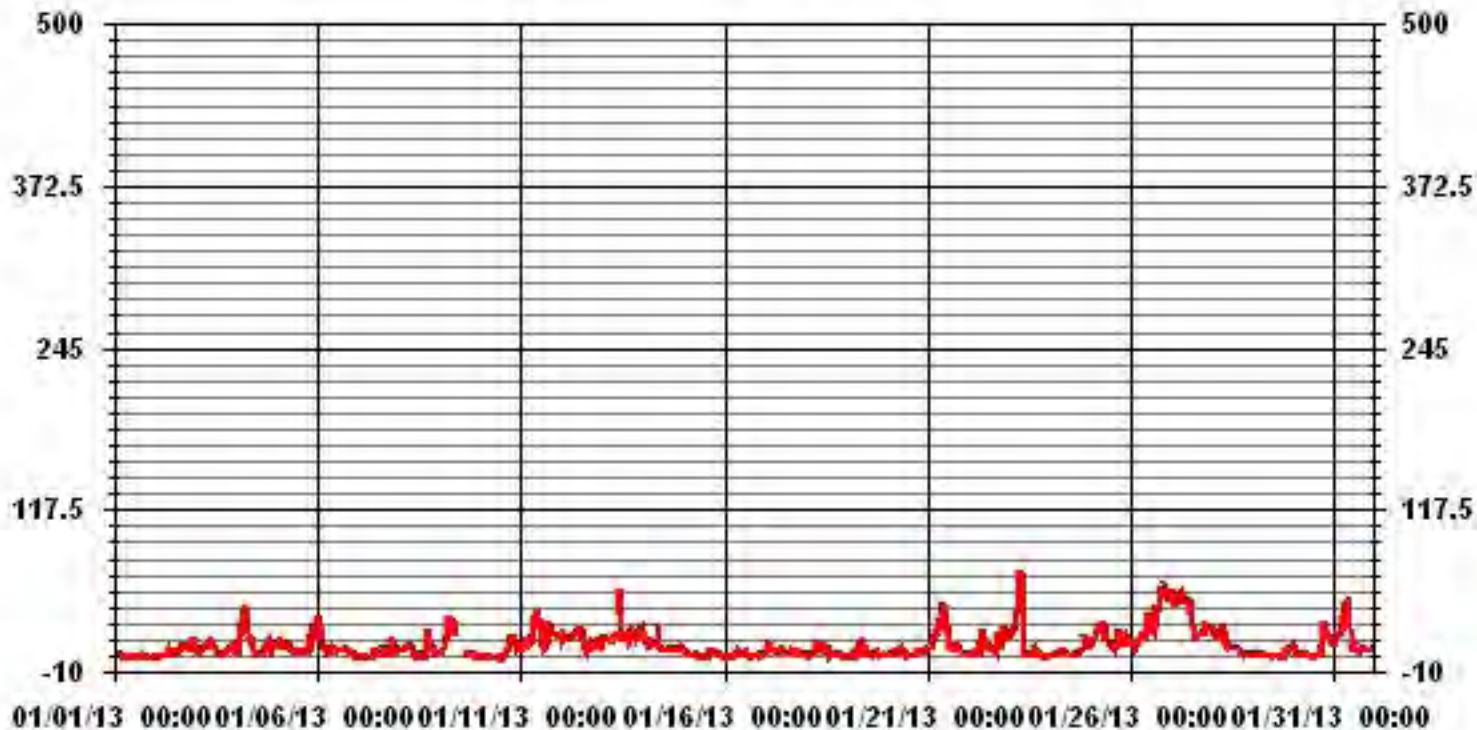
24 HOUR AVERAGES FOR JANUARY 2013



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	705
MAXIMUM 1-HR AVERAGE:	69.1 PPB @ HOUR(S) 7 ON DAY(S) 23
MAXIMUM 24-HR AVERAGE:	35.5 PPB ON DAY(S) 27
IZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	10.77
MONTHLY AVERAGE:	11.58 PPB

01 Hour Averages



— LICA NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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		
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.	
DAY																												
1	7	7.5	6.5	6	4	3	2.5	3	4.5	3	4.5	1.5	2	2.5	2.5	3	5	5	6	4.5	S	1.5	2	2	7.5	3.9	24	
2	2.5	2.5	2	3.1	4.5	4.5	6	12.5	15	11.5	9	10	6.5	8	11.5	13	28.5	20.5	53.5	S	22	15.5	21.5	10	53.5	12.8	24	
3	10.5	10	12	13.5	12	12	12	15.5	25.5	18	18.5	14.5	11.5	6.5	4.5	4	7	8.5	S	11	13.5	17	13.5	15	25.5	12.4	24	
4	9.5	9	31	35	57	83	43.5	30	23.1	18.5	13.5	10	12.5	7.5	6.5	5.5	16	S	17.5	24	14.5	12	20.5	17.5	83	22.5	24	
5	18	14	13.5	14.5	14	15	16	16	12	12	8.5	15.5	7.5	7.5	7.5	6.5	S	11	13.5	13.5	32.5	38	20	41	41	16.0	24	
6	43.5	31	28	14.5	12.5	10.5	11.5	13.5	7	9.5	6.5	12	11.5	11.5	9.5	S	9.6	11.1	11.1	9.6	9.1	9.1	3.1	2.6	43.5	12.9	24	
7	3.1	5.1	2.6	1.6	2.1	2.1	2.1	1.6	2.2	12.1	9.6	9.6	7.6	7.6	S	21.1	6.6	10.6	15.1	16.6	30.1	27.1	6.1	9.1	30.1	9.2	24	
8	9.6	9.1	8.6	9.6	12.6	14.1	10.6	10.1	10.1	4.6	3.1	5.1	5.1	S	3	3.5	21.4	33	26	31	20.5	5.5	6.5	8	33	11.8	24	
9	9.5	11.5	14.5	20	28	66	49.5	45	38	C	C	C	C	C	C	C	6.6	7.6	Y	10.6	3.6	2.6	2.6	2.1	66	19.9	23	
10	1.6	1.6	2.1	2.6	2.6	2.1	2.1	3.1	2.6	3.6	6.6	S	3.1	6.5	5.5	18	19.5	38	27.5	25	24	21.5	18.5	20	38	11.2	24	
11	11.5	16.5	19.5	20.5	16.5	16	26	38	40.5	45	S	38.9	21.5	11.5	15.5	18	49	27	43.5	23.5	22.5	24	33	27.5	49	26.3	24	
12	19.5	23	20.5	19.5	18.5	20	20	21	22	S	30.5	26	22	16	12.5	10	14.5	20.5	17.5	21	52	28.5	13	17	52	21.1	24	
13	22.5	25	19.5	20.5	19.5	18	25	24.5	S	47.5	62.5	45	19.5	20	22.5	18	25	48	46.5	23	22.5	24.5	30.5	29.5	62.5	28.7	24	
14	24	21.5	14.5	17.5	15.5	34	25.5	S	33	24	12	13.5	8	10.5	16.5	10	11	12.5	9	15.5	11.5	10.5	13	12.5	34	16.3	24	
15	11	9	6.5	5	4.5	5.5	S	5.5	5	4.5	1.5	1.5	1.5	1.5	1.5	2	12.5	12.5	10	8	14	6	5	5	5.5	14	6.2	24
16	3.5	3	4.5	7	4	S	6.1	9.1	14.6	31.6	12.1	10.1	11.1	5.6	3.6	4.1	3.6	3.1	4.1	3.6	11.1	6.1	8.6	7.6	31.6	7.7	24	
17	9.1	19.1	14.6	15.1	S	14.5	8.5	8.5	10.5	12.5	15.5	8.5	8.5	9	10.5	40.5	12.5	11.5	11	7.5	7	7.5	6.5	5.5	40.5	11.9	24	
18	7.5	7.5	9.5	S	8.5	11	24	16.5	16.5	18.5	41	40.5	18	24	4.6	21	5.5	4	4.5	4.5	5	5.5	3	3.5	41	13.2	24	
19	4	3.5	S	9	8.5	7.5	17.5	11.5	21.5	23.5	22	11.5	9	7.5	8	16.5	5.5	8	9	4	3.5	4	4.5	6	23.5	9.8	24	
20	7	S	8	6	10.5	10.5	11	11.5	16.5	12.5	9	5.5	5	6.5	11.5	4.5	5.5	12	8	9	10.5	8.5	12	11.5	16.5	9.2	24	
21	S	15	14	20.5	22	22	33	42.5	48	55.5	46.5	37.5	27	13.5	17.5	17	13.5	18.5	13	13	12	8	8.5	S	55.5	23.5	24	
22	9.5	8.5	5	11	9	11	14.5	18	29	28.5	14.5	18.5	15	14	11	12	24.5	50.5	27	16	26	29.5	S	24.5	50.5	18.6	24	
23	23.5	31.5	30	44.5	47.5	51	57	93	97.4	17.5	10.5	5.5	5.5	6	34.5	28.5	9.5	14.5	6	10	4.5	S	3	3.5	97.4	27.6	24	
24	3.5	5	5.5	5	6.5	8.5	8	13.5	18	27	11.5	9.5	5	6	5.5	8.5	17	13	7.5	14	S	35.5	20	14.5	35.5	11.7	24	
25	15	18.5	21	30	31.5	41.5	32.5	47.5	34	35.5	24	17	18.5	20	18.5	21.5	29.5	29.5	26	S	18.5	24.5	26	19	47.5	26.1	24	
26	22.5	24	13.5	16.5	27	31	32.5	27.5	28.5	49	42.5	37.4	28.5	23.5	32	51.5	57.5	79	S	70	71	63.5	69	65.5	79	41.9	24	
27	63.5	49	48	53.5	55	66	60.5	59.5	57	57	64	47	41.5	24.5	23.5	30.5	33.5	S	47.5	25	32.5	27	29.5	32	66	44.7	24	
28	27	22.5	21.5	25	20	30.5	33	27	18	12.5	16	13.5	19	13.5	13	11.5	S	10	5.5	6	5.5	5	5.5	6	33	16.0	24	
29	4.5	5	4	5	5	5.5	5	4	4	3.5	3	2.5	3.5	4	3.5	S	6.5	6	12	5.5	10	14	12	11.5	14	6.1	24	
30	19	10	8.5	9.8	8	6.5	6	12.5	5.5	8.5	6	3	15	13.5	S	5	34.5	51	46	47	25	22	18.5	18	51	17.3	24	
31	21.5	30	22.5	24	31	47	62	105	62.5	54	15	27	20	S	15.6	9.6	19.1	10.1	9.6	9.1	10	9.1	10.6	9.1	105	27.5	24	
HOURLY MAX	64	49	48	54	57	83	62	105	97	57	64	47	42	25	35	52	58	79	54	70	71	64	69	66				
HOURLY AVG	14.8	14.9	14.4	16.2	17.3	22.3	22.1	24.9	24.1	22.8	18.6	17.2	13.0	11.0	11.9	15.2	17.6	20.1	19.0	16.8	18.5	17.1	14.9	15.2				

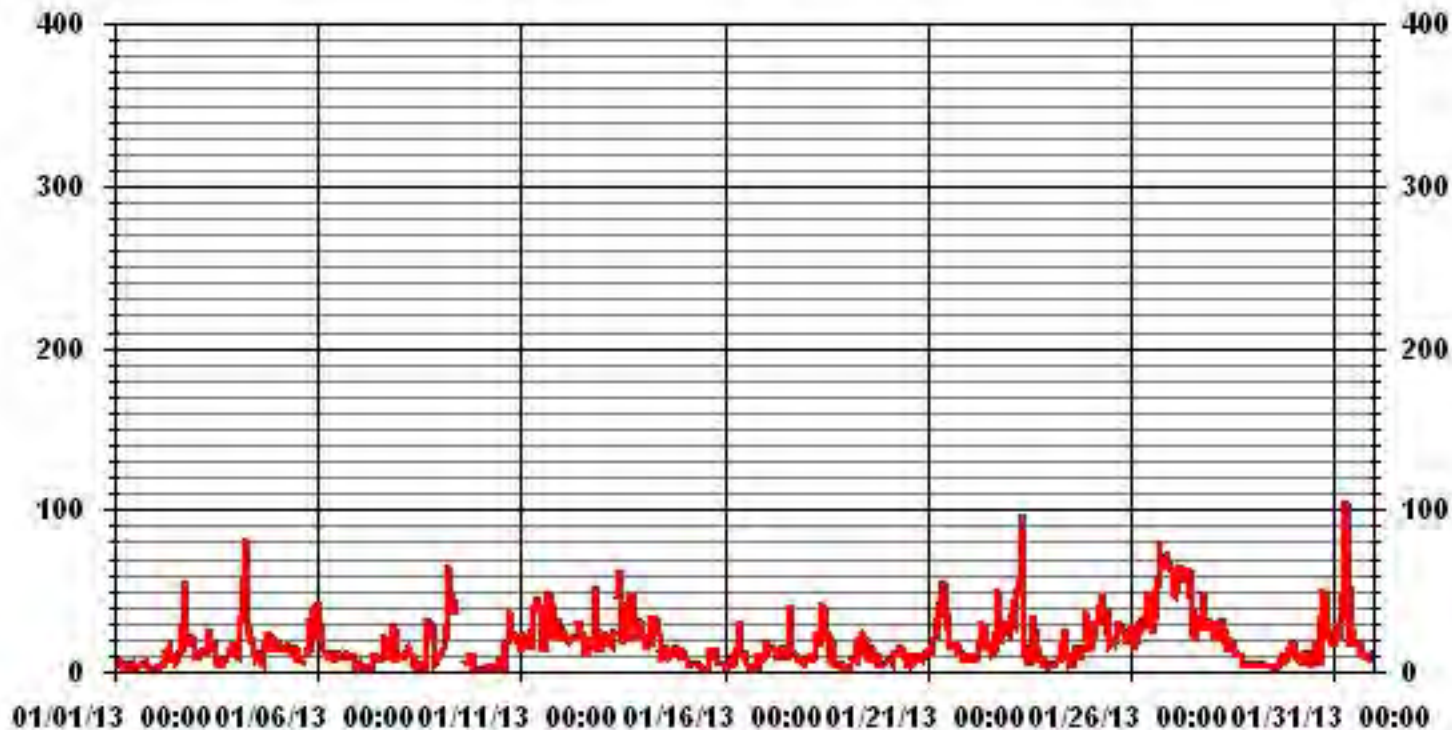
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	705					
MAXIMUM INSTANTANEOUS VALUE:	105	PPB	@ HOUR(S)	7	ON DAY(S)	31
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	15.26					

01 Hour Averages



LICA
NOX_ / WD Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 01
Site Name : LICA
Parameter : NOX_
Units : PPB

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	2.85	6.56	5.84	3.85	6.13	5.70	4.99	.99	1.42	2.42	3.85	14.55	16.54	10.41	6.70	5.70	98.57
< 110.0	.14	.14	.14	.57	.14	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.14	1.42
< 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	2.99	6.70	5.99	4.42	6.27	5.70	5.13	.99	1.42	2.42	3.85	14.55	16.54	10.41	6.70	5.84	

Calm : .00 %

Total # Operational Hours : 701

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	20	46	41	27	43	40	35	7	10	17	27	102	116	73	47	40	691
< 110.0	1	1	1	4	1		1									1	10
< 210.0																	
>= 210.0																	
Totals	21	47	42	31	44	40	36	7	10	17	27	102	116	73	47	41	

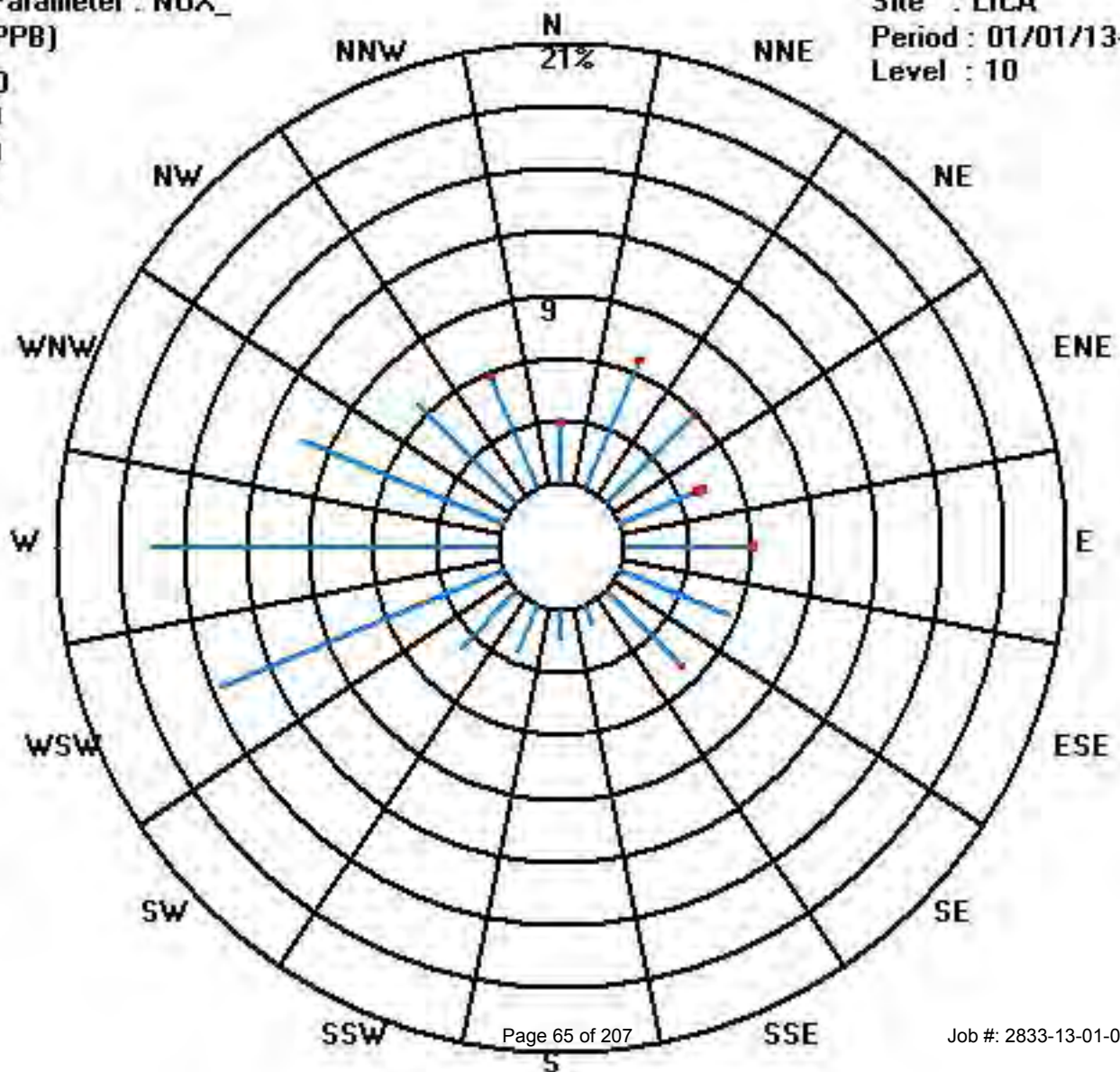
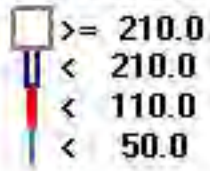
Calm : .00 %

Total # Operational Hours : 701

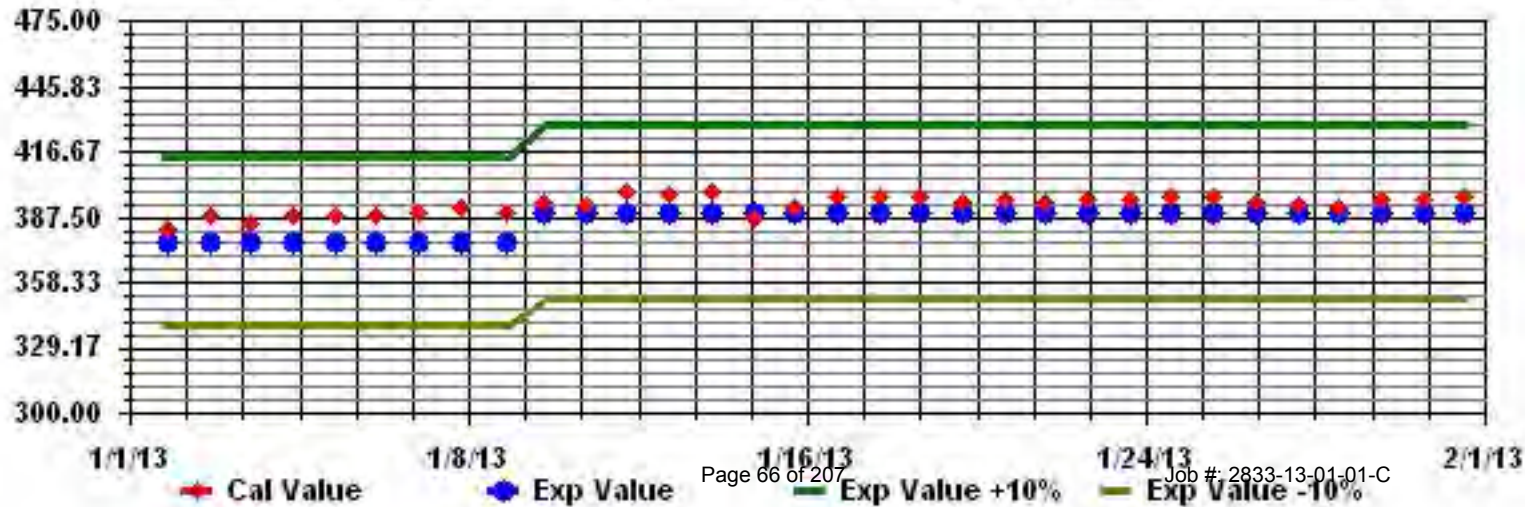
Class Limits (PPB)

Period : 01/01/13-01/31/13

Level : 10



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



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

OZONE (O₃) hourly averages in ppb

MST

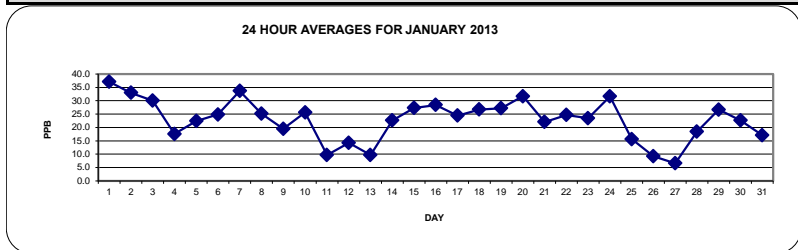
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HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	00:00	MAX.	AVG.		
DAY																												
1	31	31	34	36	38	38	38	38	36	37	37	37	37	37	38	38	37	37	37	39	S	41	41	40	41	41	37.1	24
2	41	41	41	40	39	38	38	36	29	32	33	35	36	36	35	33	25	31	30	S	25	23	14	27	41	33.0	24	
3	24	20	25	29	28	28	27	26	24	26	31	34	39	41	42	42	41	38	S	33	31	24	21	17	42	30.0	24	
4	16	17	8	2	1	1	2	9	14	23	28	33	34	33	34	33	27	S	15	10	15	19	16	13	34	17.5	24	
5	14	19	20	19	19	19	19	23	27	29	31	32	34	35	35	35	S	34	24	22	10	4	7	4	35	22.4	24	
6	2	2	10	23	25	27	22	21	26	27	27	27	28	28	27	S	26	25	27	29	32	33	38	39	39	24.8	24	
7	38	36	36	36	36	36	36	38	39	33	34	37	36	37	S	31	37	35	33	26	17	23	33	31	39	33.7	24	
8	29	28	28	26	24	21	21	20	22	28	32	30	29	S	31	32	27	12	12	18	19	31	31	26	32	25.1	24	
9	21	16	11	6	4	5	3	3	14	25	28	31	S	34	C	C	C	C	C	31	30	29	30	29	34	19.4	24	
10	27	26	23	23	25	29	29	31	33	33	33	S	35	35	34	32	28	16	18	12	18	18	15	15	35	25.6	24	
11	16	12	7	7	8	7	3	1	2	5	S	16	22	25	24	21	8	7	6	5	5	6	6	4	25	9.7	24	
12	8	6	4	4	5	8	10	10	8	S	12	15	20	24	26	29	23	20	22	17	17	12	14	12	29	14.2	24	
13	10	11	9	7	8	7	4	2	S	5	9	18	21	19	18	19	15	7	6	7	5	6	6	3	21	9.7	24	
14	4	7	16	15	13	11	12	S	7	24	28	32	33	33	33	34	33	32	31	29	28	25	20	21	34	22.7	24	
15	17	20	25	27	27	29	S	29	30	31	36	36	36	37	36	22	19	20	22	24	24	28	26	27	37	27.3	24	
16	28	28	27	26	26	S	24	28	26	27	27	26	26	32	34	35	33	33	32	31	29	29	25	21	35	28.4	24	
17	19	11	11	13	S	21	24	25	25	25	25	27	28	27	28	27	28	27	27	28	28	29	29	29	29	24.4	24	
18	29	30	28	S	27	27	19	23	24	25	25	28	29	26	31	29	27	27	27	26	24	25	30	28	31	26.7	24	
19	28	29	S	27	25	27	22	24	17	17	23	28	28	29	28	29	29	27	26	31	33	33	33	31	33	27.1	24	
20	30	S	31	32	32	31	29	28	25	31	33	36	36	36	36	37	35	34	32	31	31	31	31	27	24	37	31.7	24
21	S	21	19	16	13	12	8	4	5	8	14	19	26	32	33	33	32	28	31	31	34	33	33	S	34	22.0	24	
22	31	31	31	30	29	27	27	20	12	18	26	27	28	28	30	31	33	20	24	24	17	12	S	11	33	24.7	24	
23	10	7	5	4	1	1	2	1	9	35	36	36	36	36	35	33	34	35	36	36	37	S	37	37	37	23.4	24	
24	36	36	35	36	35	35	33	32	31	33	34	35	35	36	35	34	33	31	31	28	S	17	19	17	36	31.6	24	
25	16	13	9	7	5	7	8	6	7	21	23	25	26	25	25	27	23	12	13	S	19	14	13	15	27	15.6	24	
26	14	12	13	13	8	7	5	4	6	8	13	16	19	22	20	13	9	3	S	2	1	1	1	1	22	9.2	24	
27	1	1	1	1	1	2	1	1	2	5	9	11	15	19	20	17	16	S	9	8	3	3	3	1	20	6.5	24	
28	1	2	2	5	7	4	2	7	21	30	30	31	30	31	31	32	S	25	23	20	22	23	22	23	32	18.4	24	
29	24	25	26	25	26	24	25	27	29	30	30	27	27	29	30	S	31	29	28	29	25	22	23	22	31	26.7	24	
30	21	24	25	27	27	27	31	31	30	28	28	29	30	30	S	32	26	16	8	8	9	10	12	12	32	22.7	24	
31	12	7	8	7	4	1	1	1	4	18	25	27	26	S	28	27	25	25	25	25	25	25	24	23	28	17.1	24	
HOURLY MAX	41	41	41	40	39	38	38	38	39	37	37	37	39	41	42	42	41	38	37	39	37	41	41	40				
HOURLY AVG	19.9	19.0	18.9	19.0	18.9	18.6	17.5	18.3	19.5	23.9	26.7	28.0	29.5	30.8	30.6	29.9	27.1	24.5	23.4	22.8	21.1	21.0	21.6	20.1				

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

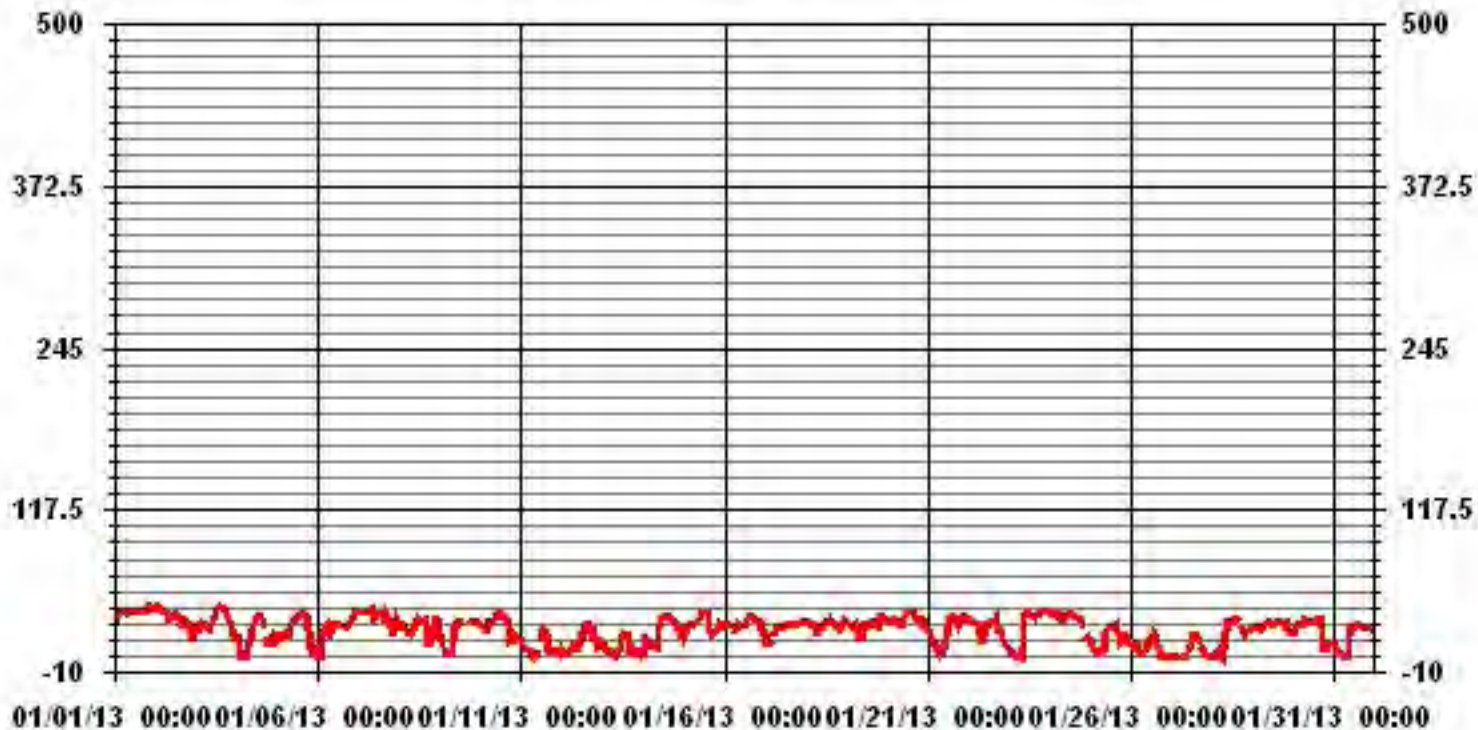
ALBERTA ENVIRONMENT: 1-HR 82 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	707				
MAXIMUM 1-HR AVERAGE:	42	PPB	@ HOUR(S)	14, 15	ON DAY(S) 3
MAXIMUM 24-HR AVERAGE:	37.1	PPB			ON DAY(S) 1
					VAR-VARIOUS
I/ZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	10.79		MONTHLY AVERAGE:	22.87	PPB

01 Hour Averages



— LICA 03_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

OZONE MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00				
DAY																												
1	31	33	35	37	38	38	38	38	37	38	38	37	38	38	39	38	38	39	40	S	41	42	41	42	42	37.8	24	
2	41	42	42	41	40	38	39	38	34	34	35	36	37	38	37	37	35	37	35	S	32	28	19	31	42	35.9	24	
3	31	25	29	31	29	29	28	27	28	29	33	35	40	42	43	43	42	40	S	36	33	27	25	28	43	32.7	24	
4	20	25	25	3	1	2	5	14	20	26	33	35	41	35	37	34	31	S	19	17	21	22	19	15	41	21.7	24	
5	18	20	21	20	21	20	21	27	28	31	31	34	35	35	35	S	36	28	29	20	8	12	12	36	25.1	24		
6	3	5	25	27	26	29	28	30	30	28	28	29	29	27	S	27	26	29	31	33	36	39	40	40	40	27.6	24	
7	39	37	36	37	36	36	38	40	40	38	37	38	39	38	S	36	38	38	36	29	29	33	33	32	40	36.2	24	
8	30	29	29	27	25	23	22	21	26	31	33	31	31	S	32	34	34	18	21	22	28	32	32	30	34	27.9	24	
9	26	20	16	8	7	9	4	6	25	28	30	32	S	35	C	C	C	C	C	33	33	30	31	30	35	22.4	24	
10	27	27	24	25	27	29	31	32	34	34	34	S	36	36	35	35	32	30	23	19	23	26	21	20	36	28.7	24	
11	21	15	10	9	10	9	5	2	4	7	S	19	25	26	26	25	20	12	13	7	9	10	7	26	13.0	24		
12	11	10	6	7	7	12	12	11	10	S	14	19	22	25	30	30	26	22	24	22	21	17	17	15	30	17.0	24	
13	11	12	10	9	9	8	7	3	S	8	13	22	23	22	20	20	19	12	8	9	8	9	9	5	23	12.0	24	
14	6	11	19	22	16	17	18	S	19	27	32	33	34	34	34	34	33	32	30	28	27	24	22	34	25.5	24		
15	21	25	27	27	29	30	S	31	31	35	36	37	37	37	35	21	21	25	25	25	31	27	28	37	29.5	24		
16	29	28	28	27	27	S	28	30	28	29	28	28	29	35	36	37	35	34	33	32	32	30	29	24	37	30.3	24	
17	22	17	14	17	S	24	26	27	27	27	26	29	29	28	29	29	30	29	29	30	29	30	30	30	30	30	26.4	24
18	30	31	31	S	29	28	23	26	28	28	27	31	32	32	32	30	29	28	28	27	25	29	30	30	32	28.9	24	
19	30	30	S	29	26	28	27	26	23	21	29	30	29	31	29	30	30	29	30	33	34	34	33	33	34	29.3	24	
20	31	S	32	34	34	32	31	30	29	32	35	36	36	37	37	37	35	33	32	32	32	30	27	37	33.1	24		
21	S	22	21	20	16	14	11	6	8	11	17	23	35	34	35	35	35	33	34	33	35	35	34	S	35	24.9	24	
22	33	32	32	32	30	30	30	23	16	23	27	29	31	30	31	35	35	34	34	28	23	22	S	17	35	28.6	24	
23	17	10	10	7	2	1	4	3	29	37	37	37	37	37	37	36	36	37	37	37	38	S	38	38	38	26.2	24	
24	37	37	37	37	36	36	35	35	34	34	35	36	36	37	36	35	34	32	32	30	S	24	24	19	37	33.4	24	
25	20	18	12	12	10	13	12	8	15	27	26	27	28	27	28	28	28	16	19	S	25	18	20	20	28	19.9	24	
26	19	16	19	15	11	12	9	8	8	9	15	18	21	23	22	17	16	12	S	4	2	2	1	2	23	12.2	24	
27	1	1	1	1	1	12	3	1	5	7	11	13	19	20	21	19	17	S	12	10	6	5	4	2	21	8.3	24	
28	2	3	3	7	8	6	3	16	28	33	33	32	32	33	32	35	S	31	27	21	22	23	23	24	35	20.7	24	
29	25	26	26	26	26	26	27	28	31	31	31	28	28	30	31	S	32	31	30	30	29	24	23	24	32	28.0	24	
30	24	25	26	29	28	31	32	32	31	29	29	30	30	31	S	33	31	21	14	14	13	14	15	16	33	25.1	24	
31	13	11	12	10	6	2	1	5	7	26	27	28	30	S	29	28	26	25	25	25	25	25	24	24	30	18.9	24	
HOURLY MAX	41	42	42	41	40	38	39	40	40	38	38	38	41	42	43	43	42	40	39	40	38	41	42	41				
HOURLY AVG	22.3	21.4	21.9	21.1	20.4	20.8	19.9	20.8	23.8	26.6	28.7	29.7	31.6	32.2	32.0	32.2	30.3	28.2	26.8	25.3	24.6	24.1	23.9	22.9				

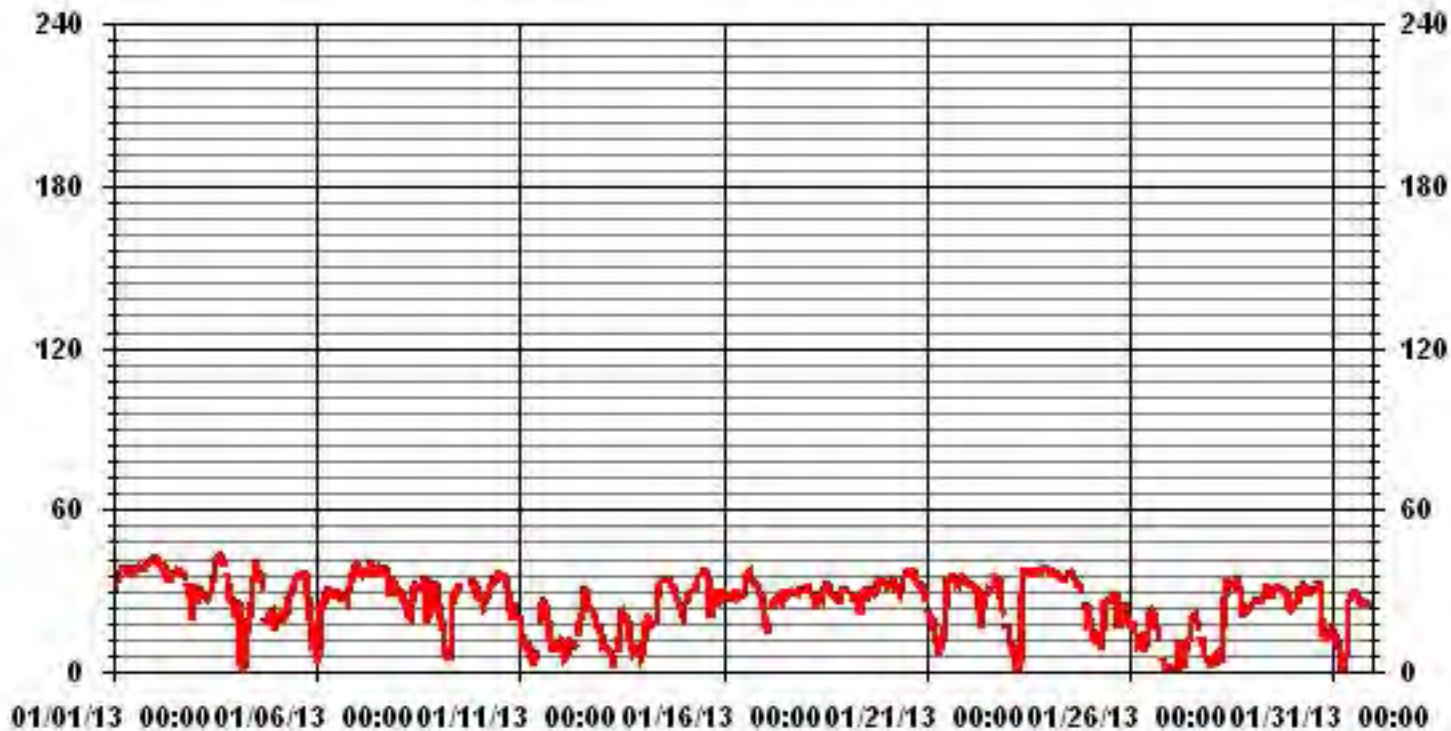
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	707					
MAXIMUM INSTANTANEOUS VALUE:	43	PPB	@ HOUR(S)	14, 15	ON DAY(S)	3
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	10.20					

01 Hour Averages



— LICA O3MAX PPB

LICA
O3_ / WD Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 01
Site Name : LICA
Parameter : O3_
Units : PPB

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	2.98	6.54	5.97	4.55	6.54	5.68	5.12	.99	1.42	2.41	3.84	14.50	16.50	10.38	6.68	5.83	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.98	6.54	5.97	4.55	6.54	5.68	5.12	.99	1.42	2.41	3.84	14.50	16.50	10.38	6.68	5.83	

Calm : .00 %

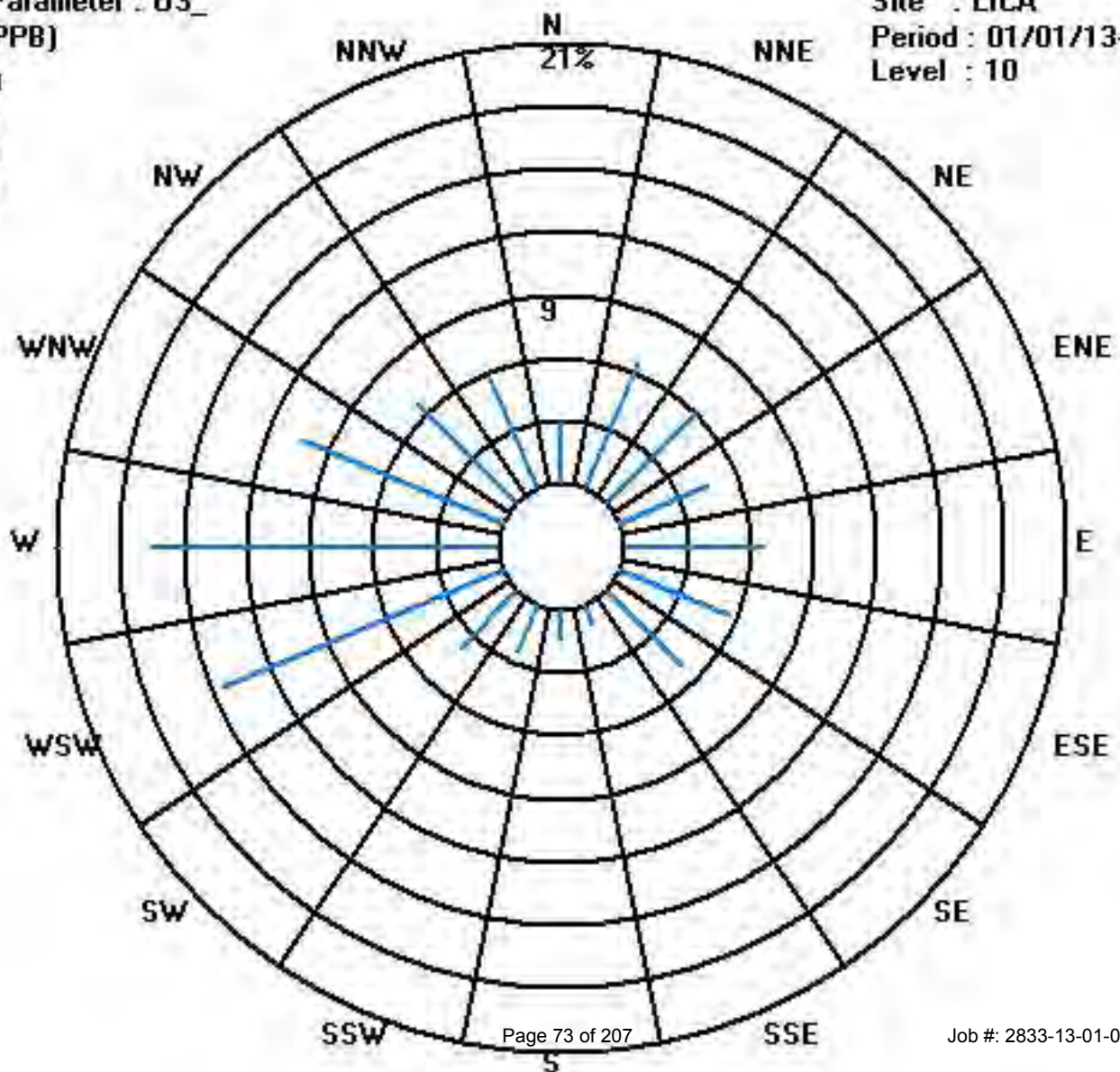
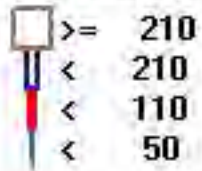
Total # Operational Hours : 703

Distribution By Samples

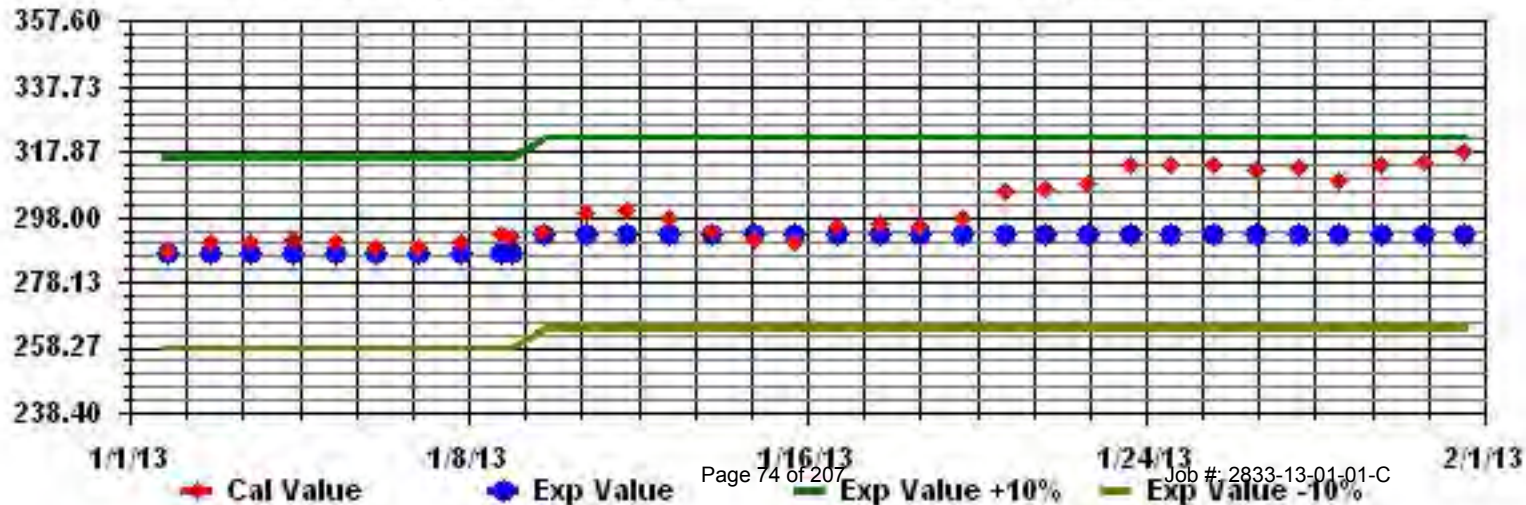
Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50	21	46	42	32	46	40	36	7	10	17	27	102	116	73	47	41	703
< 110																	
< 210																	
>= 210																	
Totals	21	46	42	32	46	40	36	7	10	17	27	102	116	73	47	41	

Calm : .00 %

Total # Operational Hours : 703



Calibration Graph for Site: LICA Parameter: 03_ Sequence: 03 Phase: SPAll



Ambient Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

AMBIENT TEMPERATURE hourly averages (Degrees C)

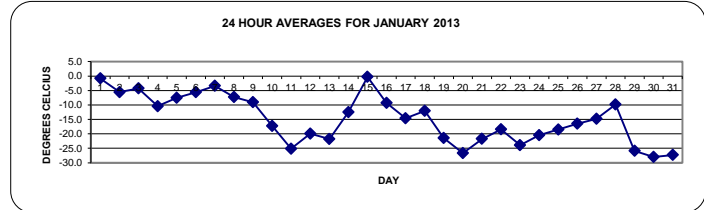
MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS	
HOUR START	HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	00:00				
DAY																													
1		-4.1	-3.5	-2.2	-1.2	-0.6	-0.2	0.2	-0.3	-1.4	-0.4	-0.2	0	0.4	0.8	0.6	0.4	-0.1	-1.1	-1.8	-1.3	-0.7	-1	-1	-1.1	0.8	-0.8	24	
2		-1.1	-1.5	-2.1	-2.6	-3.3	-3.7	-4.5	-5	-8.1	-8.6	-7.8	-6.6	-4.2	-3.2	-3.1	-3	-5.4	-6.2	-7.1	-9.6	-9.5	-9.1	-9.9	-8.6	-1.1	-5.6	24	
3		-10	-11.9	-9.7	-6.7	-7.5	-5.6	-6.1	-5.2	-3.9	-3.2	-1.7	-0.1	1.5	2.7	3	2.1	0.7	-0.8	-2.1	-3.3	-4.7	-8.1	-10.4	-11.7	3.0	-4.3	24	
4		-13	-13.6	-13.6	-14.4	-14.6	-14.6	-14	-12.2	-10.4	-9	-7.5	-7.2	-6.9	-6.6	-6.5	-6.7	-7.1	-8.2	-9.3	-11.4	-11.8	-10	-10.8	-11.2	-6.5	-10.4	24	
5		-10.2	-9.7	-9.5	-9.4	-9.4	-8.8	-9.1	-8.9	-6.7	-6.4	-5.3	-4.3	-3.4	-3.2	-3.4	-3.7	-4.9	-5.9	-7.7	-9.2	-10.2	-10.8	-10.8	-9.9	-3.2	-7.5	24	
6		-9	-8.4	-7.8	-6.7	-6.4	-6.1	-6.3	-6.6	-6.7	-6.9	-6.3	-6.2	-6.3	-6.3	-5.9	-5.3	-4.6	-4.3	-3.9	-3.8	-3.1	-3	-2	-2	-2.0	-5.6	24	
7		-2	-2	-1.9	-1.9	-2.2	-2.4	-2.7	-3	-3.6	-3.7	-2.8	-2	-2.3	-2.3	-1.9	-1.9	-2.6	-4	-5	-6.5	-7.2	-6.2	-5.5	-5.9	-1.9	-3.4	24	
8		-6.4	-6.5	-6.9	-6.8	-6.9	-6.8	-6.5	-6	-5.3	-5.1	-5.2	-5.9	-5.9	-5.9	-5.6	-5.7	-7.1	-9.7	-10.8	-12.3	-10.3	-7.9	-8.5	-10.6	-5.1	-7.3	24	
9		-12.9	-13.9	-15	-14.9	-14.7	-14.1	-13.5	-12.3	-10.6	-8.9	-8.2	-7.9	-6.7	-6.1	-5.1	-4.4	-4.6	-4.3	-4.1	-4.2	-5.6	-7.7	-8.2	-8.4	-4.1	-9.0	24	
10		-8.9	-9	-9.5	-10.1	-11.4	-12.8	-14.3	-15.9	-17.8	-18.5	-18.5	-18.3	-17.7	-16.8	-16.1	-16.2	-18	-20.5	-22.4	-22.3	-23	-24.3	-25.3	-26.3	-8.9	-17.2	24	
11		-27.5	-27.9	-28.7	-29.1	-29.2	-30	-30.5	-30.2	-30.4	-29.8	-25.9	-23	-20.5	-19	-17.8	-17.1	-20.1	-22.6	-24.4	-24.9	-23.6	-22.3	-23.9	-25.5	-17.1	-25.2	24	
12		-26.1	-26.9	-27.2	-27.7	-27.6	-25.3	-22.6	-21.4	-20.2	-19.6	-18.1	-16.6	-14.6	-13.8	-13.2	-13.6	-14.5	-15.3	-16.6	-18.8	-19.6	-19.6	-19.7	-18.9	-13.2	-19.9	24	
13		-18.1	-18.9	-20.9	-22.5	-23.8	-25.8	-26.9	-27.5	-28.2	-27.4	-22.7	-19.6	-18.4	-18.1	-16.8	-16.6	-19.2	-22.2	-24	-23.8	-22.4	-20.7	-19.4	-19.1	-16.6	-21.8	24	
14		-18.8	-18.6	-17.8	-18.7	-19.9	-18.8	-17.9	-17.4	-16	-13.8	-12.2	-10.8	-10.4	-9.7	-9.3	-8.9	-8.7	-8.6	-8.3	-7.9	-7.4	-6.9	-6.7	-5.9	-5.9	-12.5	24	
15		-6.3	-6.1	-4	-2.9	-1.7	0	1.3	2.1	2.7	3.4	5.2	5.7	6	5.6	5.3	2.3	-0.3	-1.5	-1.8	-2.5	-3.2	-4.9	-5.5	-6	6.0	-0.3	24	
16		-6.7	-7.4	-7.6	-7.7	-8.1	-8.3	-9.1	-9.9	-10.1	-9.4	-8.7	-8.1	-6.3	-5	-5	-6.2	-8.1	-9.6	-10.4	-11	-12.8	-14.5	-15.7	-17.5	-5.0	-9.3	24	
17		-18.6	-19	-18.2	-17.2	-15.5	-14.8	-14.8	-14.6	-14.2	-14.2	-14.2	-13.9	-13.5	-13.4	-13.6	-13.5	-13.5	-13.3	-13.5	-13.3	-13.6	-13.2	-13.3	-13.2	-13.3	-13.2	-14.6	24
18		-12.8	-12.9	-12.7	-12.6	-12.2	-12	-12.4	-12.3	-12	-11.7	-11.3	-10.6	-10	-9.6	-9.8	-9.6	-9.3	-10.8	-12.8	-13.5	-13.8	-13.8	-15.1	-16.1	-9.3	-12.1	24	
19		-17.4	-18.5	-19	-20.4	-22.6	-23.3	-23.6	-23.9	-25.9	-25	-21.6	-20.3	-19.9	-19.8	-19.6	-19.1	-19	-19.3	-19.5	-19.9	-22.3	-23.7	-24.7	-25.6	-17.4	-21.4	24	
20		-26.4	-27.4	-27.3	-27.8	-28.8	-29.8	-30.4	-30	-31	-28.6	-26.9	-25.9	-25	-24.3	-23.6	-24.1	-24.2	-24.3	-24.6	-24.4	-24.1	-24.9	-27.6	-28.8	-23.6	-26.7	24	
21		-29.1	-28.1	-28.7	-28.2	-26.4	-25.4	-25.7	-24.2	-23.1	-22	-21.2	-19.8	-19.2	-18.8	-18.6	-18.4	-18.4	-18.2	-18.3	-18.2	-18	-18	-17.9	-17.9	-17.9	-21.7	24	
22		-18	-17.7	-17.5	-17.1	-16.9	-17.2	-17.8	-19.3	-19.6	-19.1	-16.7	-14.9	-14.2	-14.4	-14.7	-15	-15.5	-17.4	-18.8	-21.3	-23.5	-23.9	-25.5	-27	-14.2	-18.5	24	
23		-27.2	-28.2	-28.5	-28	-27.5	-28.3	-28.6	-27.9	-26.5	-23.7	-23.5	-23.4	-22.3	-21.7	-21.3	-21	-20.7	-20.4	-20.7	-21.2	-21	-20.7	-20.7	-20.8	-20.4	-23.9	24	
24		-21.2	-21.3	-21.3	-21.5	-21.5	-21.9	-21.8	-21.6	-21.7	-21.5	-20.9	-20.3	-18.8	-17.9	-18.2	-17.9	-18	-18.2	-18.4	-19.8	-21.7	-23.2	-24.1	-17.9	-20.5	24		
25		-24.6	-25	-24.7	-24.6	-24.4	-24.6	-24	-21.9	-19.9	-17.8	-16.6	-15.9	-14.6	-13.2	-12.5	-11.8	-11.7	-13.5	-15.5	-16.6	-16.3	-16.7	-18.3	-19.1	-11.7	-18.5	24	
26		-19.9	-20.5	-21.2	-21.4	-21.6	-22.1	-22.8	-23.2	-23.1	-19.5	-16.1	-11.9	-10.2	-7.3	-4.7	-5	-7.2	-11.3	-14.6	-16.1	-17.4	-18.4	-19.4	-20	-4.7	-16.5	24	
27		-20.5	-20.6	-21.1	-21.4	-21.8	-22	-22.5	-22.7	-22	-19.4	-16.4	-14.2	-11.2	-9.5	-8.6	-8.5	-8.7	-9.2	-9.2	-9.1	-9	-8.8	-9.4	-9.3	-8.5	-14.8	24	
28		-9.2	-8.9	-8.6	-8.1	-7.9	-8.2	-8.1	-8.3	-8.2	-8.2	-7.8	-7.1	-6.6	-6.6	-6.5	-6.5	-6.7	-7.7	-9.6	-13.1	-16.5	-18.1	-19.4	-20.6	-6.5	-9.9	24	
29		-22.1	-23.1	-24.1	-24.9	-25.2	-25.4	-25.2	-25.6	-26.5	-26.4	-25.5	-25.5	-25.7	-25.6	-25.3	-25.4	-26.3	-27.2	-27.6	-27.1	-27.5	-27.7	-27.6	-27.7	-22.1	-25.8	24	
30		-27.4	-27.2	-27.3	-27.2	-27	-26.8	-26.9	-27.3	-27.9	-28.3	-27.7	-27	-26.2	-25.1	-23.2	-22.9	-23.7	-27.1	-29.3	-30.7	-32.2	-33.4	-34.5	-35.4	-22.9	-28.0	24	
31		-35.8	-36.2	-37	-37.3	-37.4	-35.1	-34.4	-35.1	-34.9	-30	-27.6	-25.5	-24.3	-23.1	-21.8	-22.8	-20.4	-20.3	-20.4	-19.9	-19.6	-19.3	-19.4	-19.3	-19.3	-27.3	24	
HOURLY MAX		-1.1	-1.5	-1.9	-1.2	-0.6	0.0	1.3	2.1	2.7	3.4	5.2	5.7	6.0	5.6	5.3	2.3	0.7	-0.8	-1.8	-1.3	-0.7	-1.0	-1.0	-1.1				
HOURLY AVG		-16.5	-16.8	-16.8	-16.8	-16.9	-16.8	-16.8	-16.7	-16.6	-15.6	-14.2	-13.1	-12.2	-11.5	-11.1	-11.1	-11.9	-13.0	-13.9	-14.7	-15.2	-15.5	-16.1	-16.6				

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

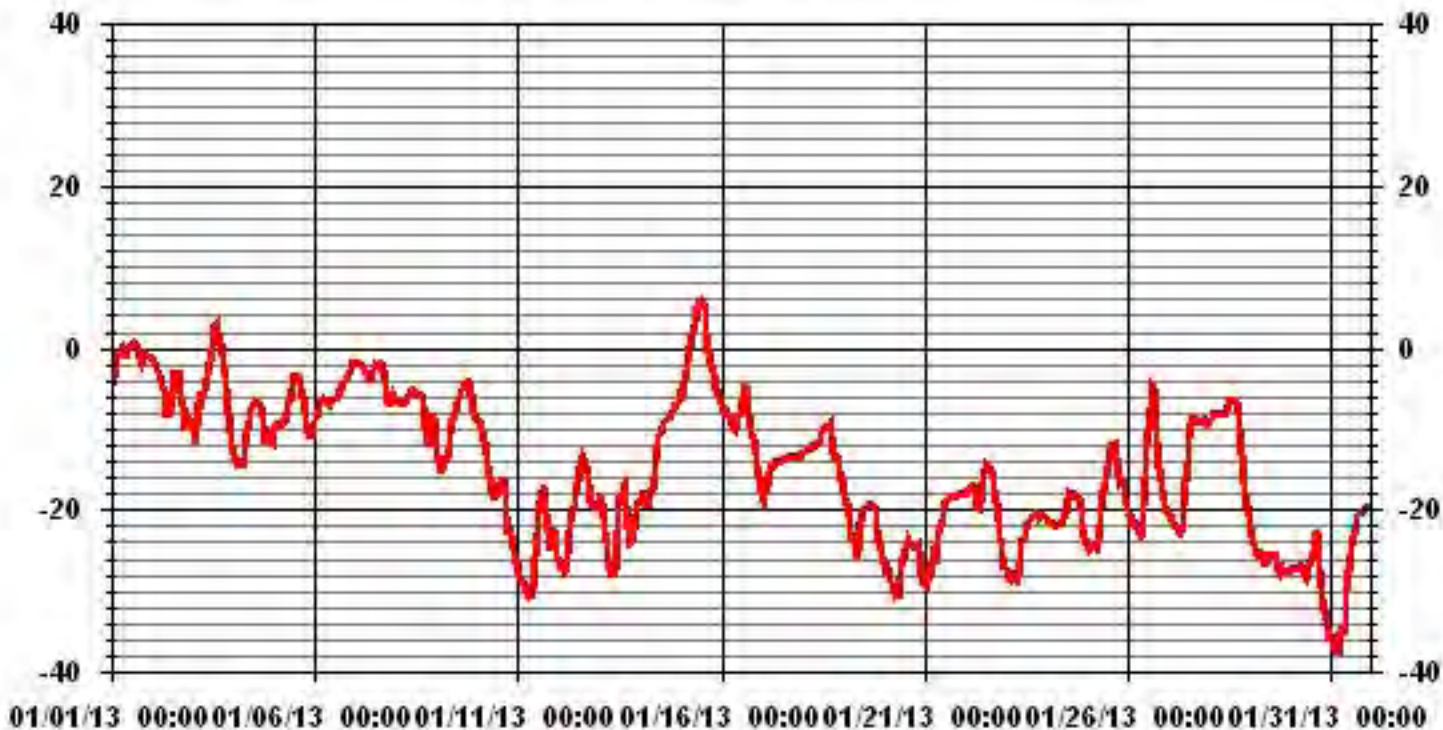
MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-37.4 °C	@ HOUR(S)	4	ON DAY(S)	31
MAXIMUM 1-HR AVERAGE:	6.0 °C	@ HOUR(S)	12	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	-0.3 °C			ON DAY(S)	15
				VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	8.96		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	-14.84	°C



* Outside detection limits of sensor.

01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

RELATIVE HUMIDITY hourly averages (%)

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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		
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.	
DAY																												
1	80	78	75	73	73	73	73	75	78	73	72	72	72	70	71	72	75	76	76	72	68	69	70	70	80	73.2	24	
2	68	68	69	71	74	76	80	82	88	88	82	77	68	66	65	65	73	68	68	77	77	76	80	74	88	74.2	24	
3	77	82	75	65	67	61	62	60	57	55	51	48	49	50	52	55	60	65	69	73	79	85	86	85	86	65.3	24	
4	83	83	83	82	82	82	82	85	86	86	86	87	85	84	84	85	86	88	87	87	85	88	87	86	88	85.0	24	
5	87	86	86	86	86	86	88	88	87	86	82	78	76	74	74	75	78	81	85	88	87	87	85	86	88	83.4	24	
6	87	87	88	88	88	88	88	88	87	87	86	87	88	89	90	90	91	89	85	83	81	80	77	75	91	86.1	24	
7	77	79	79	79	79	78	78	76	76	78	74	69	65	62	61	62	63	66	69	75	80	74	68	69	80	72.3	24	
8	71	74	86	86	87	87	86	86	86	82	76	70	67	68	69	70	76	84	85	85	86	85	87	88	88	80.3	24	
9	86	84	81	82	82	83	84	85	86	83	81	78	76	77	78	79	82	83	83	83	84	84	83	82	86	82.0	24	
10	80	78	76	76	76	76	77	77	75	72	69	67	65	64	63	63	69	76	76	77	76	75	75	73	80	73.0	24	
11	72	72	71	71	71	70	70	70	70	70	69	70	68	65	63	62	73	75	75	73	74	75	74	73	75	70.7	24	
12	73	72	72	71	73	75	75	76	75	75	76	76	75	74	72	73	76	78	80	79	79	77	76	79	80	75.3	24	
13	79	78	77	76	74	72	73	72	72	75	75	73	70	71	69	69	76	76	74	74	74	75	77	78	77	79	74.3	24
14	77	78	79	78	76	77	78	79	80	79	78	75	73	73	75	76	77	78	79	80	86	88	88	89	89	79.0	24	
15	89	91	93	94	94	96	91	85	83	81	77	76	75	77	78	88	90	92	92	89	89	89	90	90	96	87.0	24	
16	90	89	88	88	88	88	87	84	83	81	81	86	85	80	77	76	73	71	74	75	77	78	80	80	90	81.6	24	
17	80	79	78	80	81	81	81	81	80	81	81	81	79	79	80	82	83	82	83	82	83	82	82	82	82	83	81.0	24
18	83	83	82	82	82	82	83	83	84	83	83	82	83	84	83	83	78	76	74	74	74	74	70	69	84	79.8	24	
19	68	68	70	73	76	75	74	74	73	69	67	68	69	69	70	72	74	75	76	64	63	63	64	68	76	70.1	24	
20	72	73	72	71	71	72	72	71	71	68	66	63	60	59	58	62	64	66	68	69	69	70	72	72	73	68.0	24	
21	71	72	71	72	72	72	72	73	74	74	72	68	64	64	69	72	75	75	76	75	76	76	77	77	77	72.4	24	
22	77	77	77	76	76	77	77	78	78	77	71	65	64	66	68	70	73	78	77	77	74	76	73	72	78	73.9	24	
23	73	72	72	72	73	71	71	73	74	74	74	74	73	73	73	74	74	74	73	73	73	74	74	74	74	73.1	24	
24	73	73	75	74	74	74	74	74	74	73	70	68	66	63	66	67	69	72	73	74	76	76	75	74	76	72.0	24	
25	73	73	73	74	73	74	74	75	76	77	77	75	74	73	73	72	74	80	82	81	81	80	79	78	82	75.9	24	
26	77	76	75	75	75	75	74	74	73	69	69	65	64	61	57	61	72	81	80	80	80	79	78	77	81	72.8	24	
27	77	77	76	76	76	76	75	74	75	76	75	77	75	74	75	73	77	79	81	82	84	85	86	86	86	77.8	24	
28	86	86	86	88	88	88	91	91	90	90	89	87	84	86	86	88	86	81	78	77	77	76	75	91	85.2	24		
29	72	69	67	67	64	64	63	63	62	61	63	61	57	54	54	55	58	63	65	65	66	67	66	72	63.0	24		
30	68	68	70	70	69	70	70	70	69	66	62	57	54	52	48	50	54	68	71	71	69	69	68	67	71	64.6	24	
31	67	67	66	65	66	67	67	67	67	68	68	66	66	65	66	67	70	74	77	78	76	74	73	74	78	69.2	24	
HOURLY MAX	90	91	93	94	94	96	91	91	90	90	90	89	88	89	90	90	91	92	92	89	89	89	90	90				
HOURLY AVG	77.2	77.2	77.0	76.8	77.0	77.0	77.1	77.1	77.1	76.0	74.3	72.5	70.7	69.8	69.9	71.1	74.2	76.6	77.3	77.2	77.5	77.7	77.3	77.0				

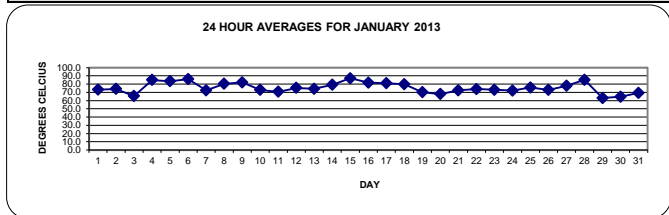
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

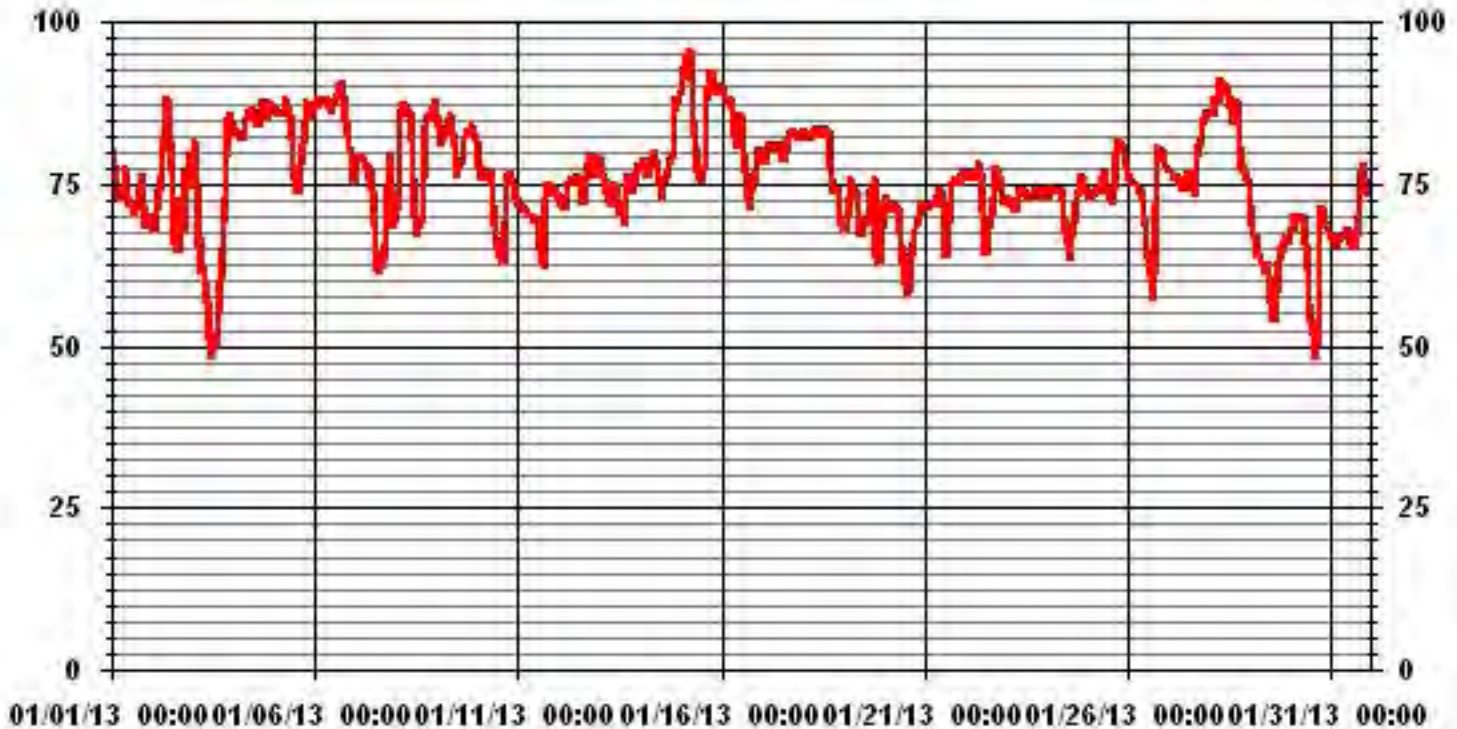
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	96	%	@ HOUR(S)	5	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	87.0	%			ON DAY(S)	15
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	8.08		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	75.52	%	

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

VECTOR WIND SPEED (WS) hourly averages (km/hr)

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	RDGS.
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	
DAY																											
1	5	6.8	9	11.6	11.7	9.8	12.2	10.7	9.9	12	12.4	14.1	14.7	17.2	12.1	9.6	10.9	9.8	9.8	9.9	15.4	15.8	13.5	14.3	17.2	10.9	24
2	15.7	15.2	11	8.5	4	5.5	5.6	1.4	4.1	4.6	5	5.6	2.8	3.6	2.2	1.6	1.7	3.1	0.9	0.5	1.7	0.9	1	5.4	15.7	3.3	24
3	1.5	1.2	5.7	6.3	6.3	6.2	6.7	7.4	7.3	6.8	7.9	7	9.5	10.7	9.9	9.2	8.5	7.4	7.2	4.8	4.6	3.4	3.8	1.4	10.7	6.2	24
4	1	2.5	0.6	0.7	1	0.9	1.2	2	1.8	4.2	3	3.8	2.8	2.5	2.7	2.7	1.2	0.3	0.4	1.1	1.6	4.8	0.7	2.2	4.8	0.5	24
5	2.7	4.7	4.4	4.9	6.7	7.1	6	7.4	5.7	7.6	6	6	8.4	8.8	7.1	6.7	5.8	4.1	2.2	1.7	0.5	0.4	0.4	1.2	8.8	4.9	24
6	1.5	1.1	2	2.9	2.6	2.1	1.2	1.2	1.3	1.6	3.3	6.1	5.8	7.1	7.8	8.3	9.1	8.9	10.4	7.2	5.9	8.3	12.3	7.6	12.3	5.2	24
7	6.9	7.1	7.6	8.2	7.7	8.9	7.5	8.3	5.5	2.7	3.2	5	7.3	5.9	1.7	1.7	4	3.4	0.5	0.9	1	2.4	4.9	3.7	8.9	4.8	24
8	4.4	4.9	7.8	6.8	6.3	6.2	6	7.2	9.3	11.6	13.5	14.5	12.8	10.1	8.6	5.3	2.9	0.3	0.7	1.5	2.1	2.7	2.6	0.3	14.5	6.2	24
9	0.2	0.5	0.6	1.6	1.9	2.4	3.1	1.1	4.1	2.5	5.2	6.6	6.1	7.8	7	7.3	7	6.5	7	4.4	10.8	11.5	9.8	12.9	12.9	5.3	24
10	15.1	15.5	14.2	12	11.3	9.7	10.1	11.8	10.9	7	7.8	8.7	7.8	8.1	5.4	3.7	1.4	0.3	0.8	1.1	1.3	1	0.7	0.7	15.5	6.9	24
11	0.8	0.9	1.6	0.8	0.1	0.5	0.4	0.5	0.3	0.9	1.1	2.2	4	3.6	0.4	0.8	1.1	1.1	0.7	0.6	0.7	1	0.4	1.3	4.0	1.1	24
12	0.4	0.9	0.6	0.7	1.4	3.9	2.3	3.4	3.1	2.8	5.2	3.8	3.3	3.6	3.7	4.1	3.7	3.6	3.3	3.6	1.7	0.9	1.7	2.5	5.2	2.7	24
13	3.4	2.6	3	0.3	1	1.1	0.2	0.6	0.2	0.3	0.6	2.2	3.3	3.5	3.1	3.2	2.6	0.6	0.9	0.7	1	1.5	1.1	0.5	3.5	1.6	24
14	0.1	0.1	1.4	0.9	1.4	0.6	0.4	0.7	1.9	2.3	2.7	3.4	6.1	4.1	3.8	2.9	2.9	2.7	1.7	3	3.8	1.7	2.4	2.5	6.1	2.2	24
15	1.2	4.2	5.5	6.7	6.7	7.5	9.1	9.2	12.2	12.5	18.1	20	18.7	17.6	13.4	6.7	9.1	6.6	5.3	5.8	7	7.3	5.6	4.2	20.0	9.2	24
16	6.7	5.4	3	3.3	4	2.4	4.2	5.8	2.8	Y	Y	Y	Y	9.8	10.9	10	14.8	13.6	7.8	6	4.1	4.1	2.2	1	14.8	6.1	20
17	0.3	0.5	0.8	0.3	1.2	2.9	4.4	4.8	4.5	6.3	8.3	9.2	8.3	9	9.3	7.3	7.1	6.8	5.7	6	5	6.1	3.8	4.4	9.3	5.1	24
18	2.4	3.3	1.5	2.6	1.7	1.1	2	3.4	2.8	3.2	3.3	3	2.4	6.2	5.5	5.7	16.2	14	15.3	10.2	8.5	13.1	15.3	13.7	16.2	6.5	24
19	11.9	9.7	7.4	2.6	4.2	4.1	2.9	2.7	2.1	0.9	2.5	3.7	2.4	2.3	3.9	2.7	3	4.2	6.4	13.7	14	10.6	6.8	6.7	14.0	5.5	24
20	5.1	5.6	4.9	4.8	4.6	5.3	4.7	4	2.8	4.7	5.8	8.7	8.7	9.7	9.6	7.8	4.4	4.1	4.2	4.9	3.7	3.3	2.7	1.7	9.7	5.2	24
21	2	0.3	0.4	0.5	1	0.9	1.1	0.8	1	1.1	1.7	0.9	2	3	2.5	2.4	2.4	2.2	3.1	2.8	2.2	3.6	2.6	2.8	3.6	1.8	24
22	2.6	1.1	0.9	1.6	1.3	2.7	2.8	3.9	4.8	4.1	6.1	3.9	4.4	5.6	5.2	5	3.9	4	2.6	3.1	2.4	2.1	1.2	1	6.1	3.2	24
23	1.1	0.4	0.2	0.2	0.8	1.5	0.5	1	2.2	7.1	7.5	6.7	7	8.3	8.4	7.1	7.3	7.6	8.7	9.6	8.7	8.8	10.5	12	12.0	5.6	24
24	11.4	8.5	7.2	7.7	8	6.9	5.7	3.5	4.3	4.1	3.6	2.6	1.2	3.8	4.3	2.9	3.7	2.8	1.4	1.7	1	0.8	0.8	0.6	11.4	4.1	24
25	0.8	1.2	1.4	1.4	0.5	1.2	0.5	1	0.9	2.6	4.6	4.7	5.3	3.4	3.3	1.9	2.2	1.4	1.7	0.5	0.6	0.8	0.9	0.6	5.3	1.8	24
26	0.8	0.7	0.4	0.7	0.7	0.8	1.2	0.2	0.9	0.8	1.9	2.4	4.5	3.5	1.9	1.6	0.9	1.1	1	0.9	1.2	0.8	0.6	0.9	4.5	1.3	24
27	0.5	1.4	0.6	0.3	0.5	0.7	0.7	0.5	0.3	0.5	1.2	1.8	1.5	1.4	1.4	1.4	1.9	0.9	1	1	0.6	0.6	0.7	1.2	1.9	0.9	24
28	1.1	0.7	0.8	3	1.2	0.3	0.4	3.3	2.6	3	1.5	2.6	3.9	5.2	4.3	4.7	4.2	6.9	12.4	13.8	13.8	11.9	11.1	11.5	13.8	5.2	24
29	12.5	12.1	11.3	8.7	11.1	12.5	14.5	12.1	9.9	9.9	12.2	14	12.4	12.2	12.1	9.8	6.6	3.9	3.9	1.8	4	3.8	3.3	0.8	14.5	9.0	24
30	3.1	4	3.8	4.2	1.4	2.6	4.9	6.4	5.4	4.9	7	6.4	5.2	3.8	0.8	0.2	1.6	1.1	1.7	0.9	0.9	1	1.1	0.9	7.0	3.1	24
31	1	0.3	1	0.7	0.9	0.9	0.9	1	0.9	2.8	3.4	3.2	3.6	4.1	4.5	1.9	2.2	3.6	2.9	1.8	0.7	1.1	1.2	1.9	4.5	1.9	24
HOURLY MAX	15.7	15.5	14.2	12.0	11.7	12.5	14.5	12.1	12.2	12.5	18.1	20.0	18.7	17.6	13.4	10.0	16.2	14.0	15.3	13.8	15.4	15.8	15.3	14.3			
HOURLY AVG	4.0	4.0	3.9	3.7	3.8	4.0	4.1	4.1	4.5	5.5	6.1	6.2	6.6	6.6	5.7	4.7	5.0	4.4	4.2	4.0	4.2	4.4	4.1	3.9			

STATUS FLAG CODES

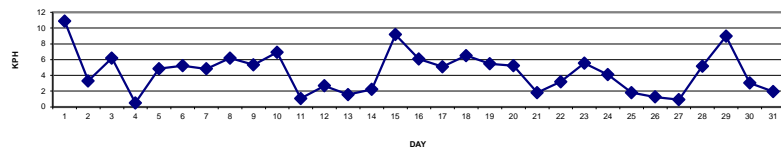
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION: November 28, 2012

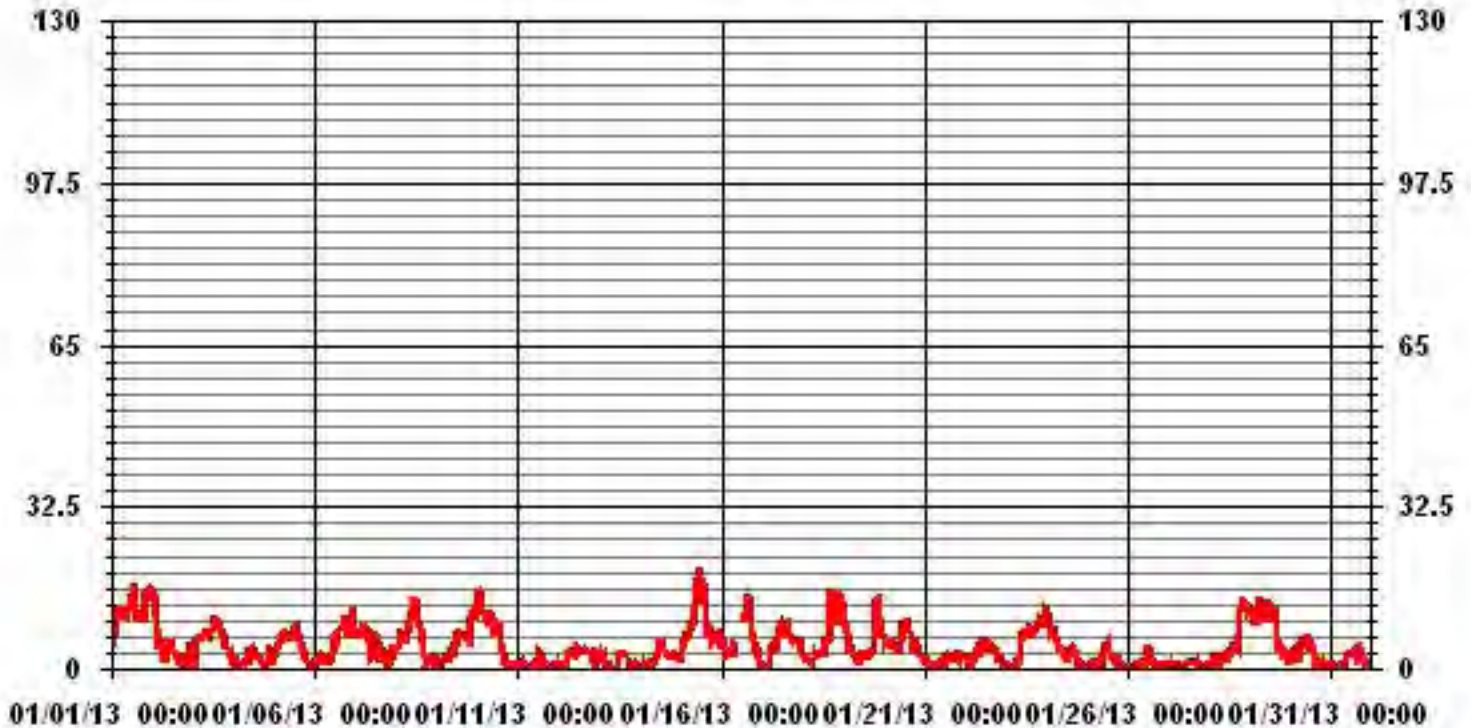
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	20.0	KPH	@ HOUR(S)	11	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	10.9	KPH			ON DAY(S)	1
CALMS (≤ 0 KPH)	3.23	%	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:	99.5	%	
STANDARD DEVIATION:	3.94		MONTHLY AVERAGE:	4.53	KPH	

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



— LICA WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	
HOURLY START	HOURLY END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	
DAY																											
1		7.3	12.5	12.8	16.2	16.9	14.1	17.7	16.7	14.7	20.5	18.9	23.5	26.8	23.3	22.1	14.9	14.6	13.5	14.4	20.5	24.3	27.5	22.6	20.4	27.5	
2		22.3	23.1	17	15	13.9	8.4	11.1	8.7	8.3	9.1	9	9.8	7.5	7.4	6	3.8	3.5	8	2.8	3.7	4.8	4.9	4	7	23.1	
3		4.5	3.9	8.6	8.8	8.8	8.7	10.5	10.7	10.8	10.2	10.4	9.8	13.1	15.8	13.8	13.5	11.1	9.8	9.1	6.6	6.1	5.5	6.4	4	15.8	
4		2.7	5.3	3.9	4.6	3.6	3.6	4.7	4.7	4.9	7.4	6.5	7.5	5.8	4.7	4.1	4	3.2	2.4	0.9	3.2	3.9	7.9	3.3	5.2	7.9	
5		6.9	8.2	6.5	8.1	9.3	11.7	8.1	10.7	8.8	9.6	9.6	8.8	12.7	11.5	12.2	11.7	9.1	6.7	3.5	4.9	3.2	2.9	2.5	3.9	12.7	
6		4.1	3.3	4.4	5	4.9	5.2	4.1	6.8	6.3	6.2	7.6	9.2	9.9	10.1	11	12.6	12.7	11.2	13	10.9	8.7	13.3	19.3	11.5	19.3	
7		11.7	10.7	14.6	13	11.1	14.5	14.5	14.4	11.5	5.5	6.3	10	12.2	9.7	5.3	5.7	6.8	8.1	3.9	2.6	3.6	8.8	9.3	6.2	14.6	
8		6.6	8.5	11.4	10.4	10.3	10.8	9.1	10.5	12.6	18.5	22.8	20.8	18.6	15.4	13.9	11.9	6.7	2.9	3.7	3.8	6.1	5.3	4.3	4	22.8	
9		3.5	2.2	2.4	3	3.9	4	4.4	4.6	6.9	5.8	9.5	11.9	9.1	13	11.5	10.6	11.3	10.3	13.3	9	23.5	17.8	15.5	23.1	23.5	
10		20.9	21.7	19.5	19.1	16.3	15.6	15.6	17.2	22	12.1	15.7	13.5	14.3	13.7	8	5.7	3.5	3.1	3.2	2.8	3	4.2	3.1	2.2	22	
11		3.8	3.7	3.2	2.5	1.5	3.2	3.2	1.6	2.2	2.7	2.8	4.9	7.7	6.9	4.6	4	3.4	2.6	2.5	2.4	2.9	2.7	2.7	3.1	7.7	
12		1.6	2.2	2.1	3.9	4.3	7.5	7.7	7.9	7	6	7.7	6.8	5.7	6.7	7.9	7.6	5.5	4.5	6.2	5.5	4.2	2.9	3.8	5.8	7.9	
13		5.8	4.6	6	2.8	3.3	3	2.5	2	3.9	2.1	1.6	4	6.3	7.4	6.2	6.1	5.5	4.1	0.9	2.5	3.6	4	4.2	5	7.4	
14		3.8	4.3	3.8	4.9	3.2	1.7	2.2	1.3	3.7	4.7	6.1	10.8	10.5	9.1	7.4	7.9	6.7	5.5	4.1	6.1	7.9	4.2	4	5.1	10.8	
15		3.7	8.8	8.8	10.4	10.5	11.7	13.4	17.7	16.4	21.1	27.4	26.9	29.1	26.1	23	11.6	14.1	13	7.9	8.8	12.3	12.4	9.2	7.3	29.1	
16		10.9	9.4	6.3	6.3	6.6	5	8.6	10.9	5.4	Y	Y	Y	Y	17.9	18.6	17.2	28.2	25.1	14.8	10.9	8.6	6.8	4.6	3.7	28.2	
17		3.1	4.1	1	3	3.9	6.2	7.6	7.9	9.2	10.2	14.2	13.7	12.7	14.3	17	11.8	12.8	11	10.5	10.3	8.2	10.8	8.3	7.6	17	
18		7.1	6.6	5.5	5.2	4.9	4.1	4.2	5.5	5.1	6.2	7.8	5.9	5.3	17.4	8.9	11	23.4	31.6	24.8	15.5	12.9	23.5	21.7	21.2	31.6	
19		19.6	17.8	15.1	6.6	5.6	6.2	4.2	5	3.4	3.5	6.8	7	6.5	7.6	6.9	5.6	6.2	7.4	19.3	19.7	23.7	16.1	10	9.3	23.7	
20		7.2	7.8	7.8	6	6.5	7.4	6.2	6	5.3	6.5	9.1	14	12.8	15.5	14.1	11.3	7.1	6.8	6.8	7.9	5.6	5.1	4.7	4.8	15.5	
21		4.4	3.1	2.8	2.5	2.4	3.4	2.9	2.1	3.1	3.9	5.1	3.2	4.6	5.6	4.9	4.8	5.3	4.2	6.5	6.6	5.2	7.7	5.2	5.1	7.7	
22		5	3.6	3.6	3.3	2.8	6.1	4	5.2	6.2	6.4	9.8	6.9	7.8	8.8	7.7	6.8	6.2	8.1	6.2	4.2	4	5.4	3.4	4.3	9.8	
23		2.6	3.9	2.9	7	2	3.2	3.3	3	7.6	13.6	12.1	10	12	13.9	12.8	12.7	12.3	11.5	14.8	17.4	14.2	13.5	15.9	17.5	17.5	
24		16.9	13.5	11.6	11.8	12.6	11.2	8.8	7.7	7.1	7	6.8	6.7	4.3	6.5	7.6	6.8	7	5.9	4.3	3.2	3.1	2.5	2.6	2.4	16.9	
25		1	2.7	3.2	3.3	2.7	3.1	3.3	3.7	3.5	6.3	7.7	6.5	8.8	6.8	7	7.9	6.7	5.5	5.3	4.1	3.8	3	4	3.1	8.8	
26		3.7	0.8	1.3	2.7	1.3	1.8	4.1	4.2	2.9	1	4	5.9	7.7	6.2	3.9	4.3	3.2	2.6	2.4	3.1	3.1	2.4	2.4	2.6	7.7	
27		2.5	3.4	4.3	4.8	6.1	2.2	3.5	3.4	2.9	2.6	3.1	4.2	3.6	6.3	4.1	3.6	3.6	2.4	3.7	3.5	2.8	2.4	3.9	4.2	6.3	
28		3	3.7	2.8	6.6	4.1	3.5	4.1	6.3	6.1	7.3	3.6	6.5	7.5	7.8	6.8	7.4	6.1	12.3	18.6	20.3	20.3	17.5	18.5	19.4	20.3	
29		18.8	18.8	20.5	16	18.8	19.1	20.2	20.1	16.9	16.1	17.2	20.9	18.7	17.1	17.4	17.5	12.9	6.5	6.6	4.3	6.1	7	5.7	4.6	20.9	
30		6.9	8.4	6.4	6.9	4.4	6	8.4	10.8	9.1	7.1	12.9	10.7	9.1	6.9	4.4	5.5	4	3	3.3	0.9	1.5	2.9	3.6	1.5	12.9	
31		2.2	3.8	3.9	2.9	2	0.9	1.5	2.2	1.3	5.8	7.5	7.2	6.7	6.7	9.1	6.5	7.8	6.5	8.2	5.1	2.7	2.5	3.1	4.6	9.1	
PEAK		22.3	23.1	20.5	19.1	18.8	19.1	20.2	20.1	22.0	21.1	27.4	26.9	29.1	26.1	23.0	17.5	28.2	31.6	24.8	20.5	24.3	27.5	22.6	23.1		

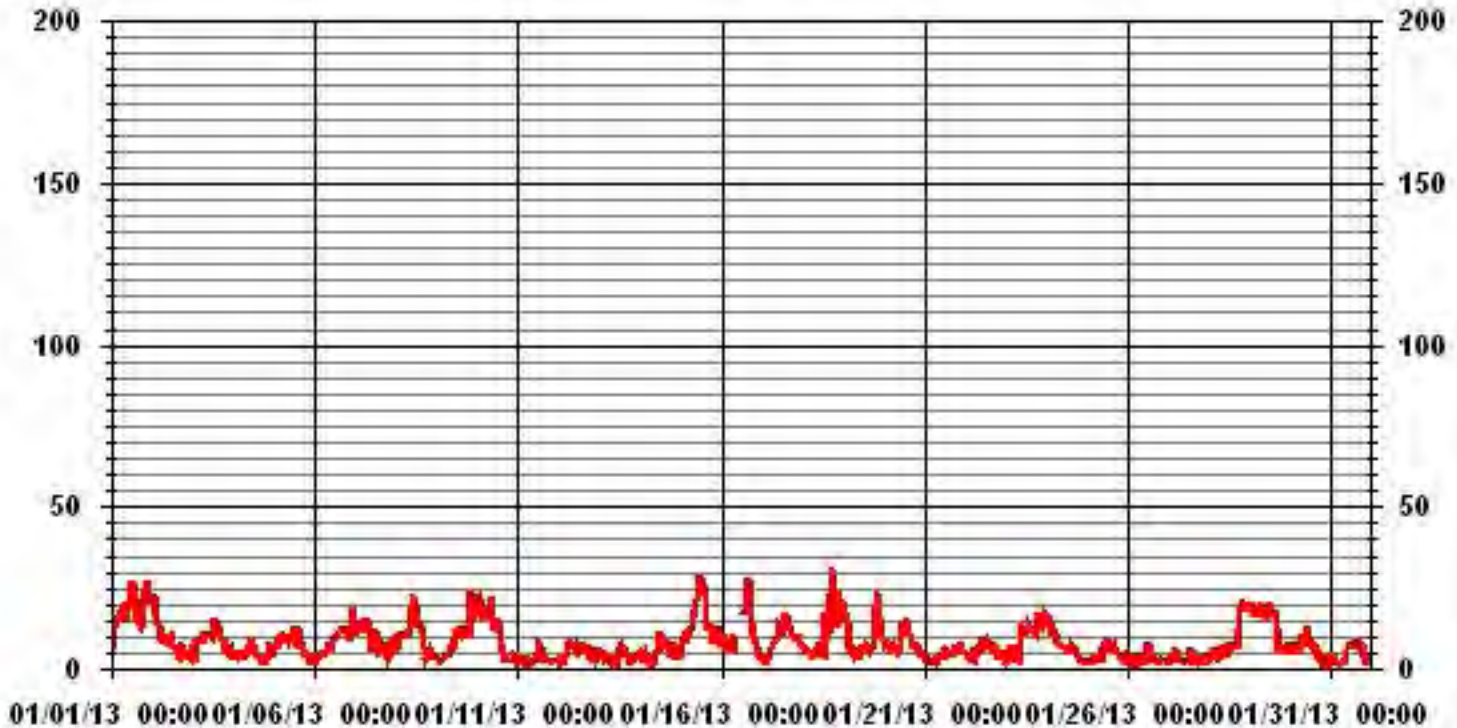
STATUS FLAG CODES

C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	31.6	KPH	@ HOUR(S)	17
			ON DAY(S)	18

01 Hour Averages



LICA
WSP / WD Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

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

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	
< 6.0	1.35	3.24	5.27	4.18	3.24	4.32	4.45	1.08	1.35	1.89	3.24	10.94	11.21	7.29	1.89	1.75	66.75
< 12.0	.94	2.56	1.35	.00	2.97	1.35	.00	.00	.00	.00	.40	3.10	4.86	1.75	1.75	1.75	22.83
< 20.0	.40	.67	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00	.13	.94	3.10	1.62	7.02
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.00	.13
< 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	2.70	6.48	6.62	4.18	6.35	5.67	4.45	1.08	1.35	1.89	3.64	14.05	16.21	10.00	6.89	5.13	

Calm : 3.24 %

Total # Operational Hours : 740

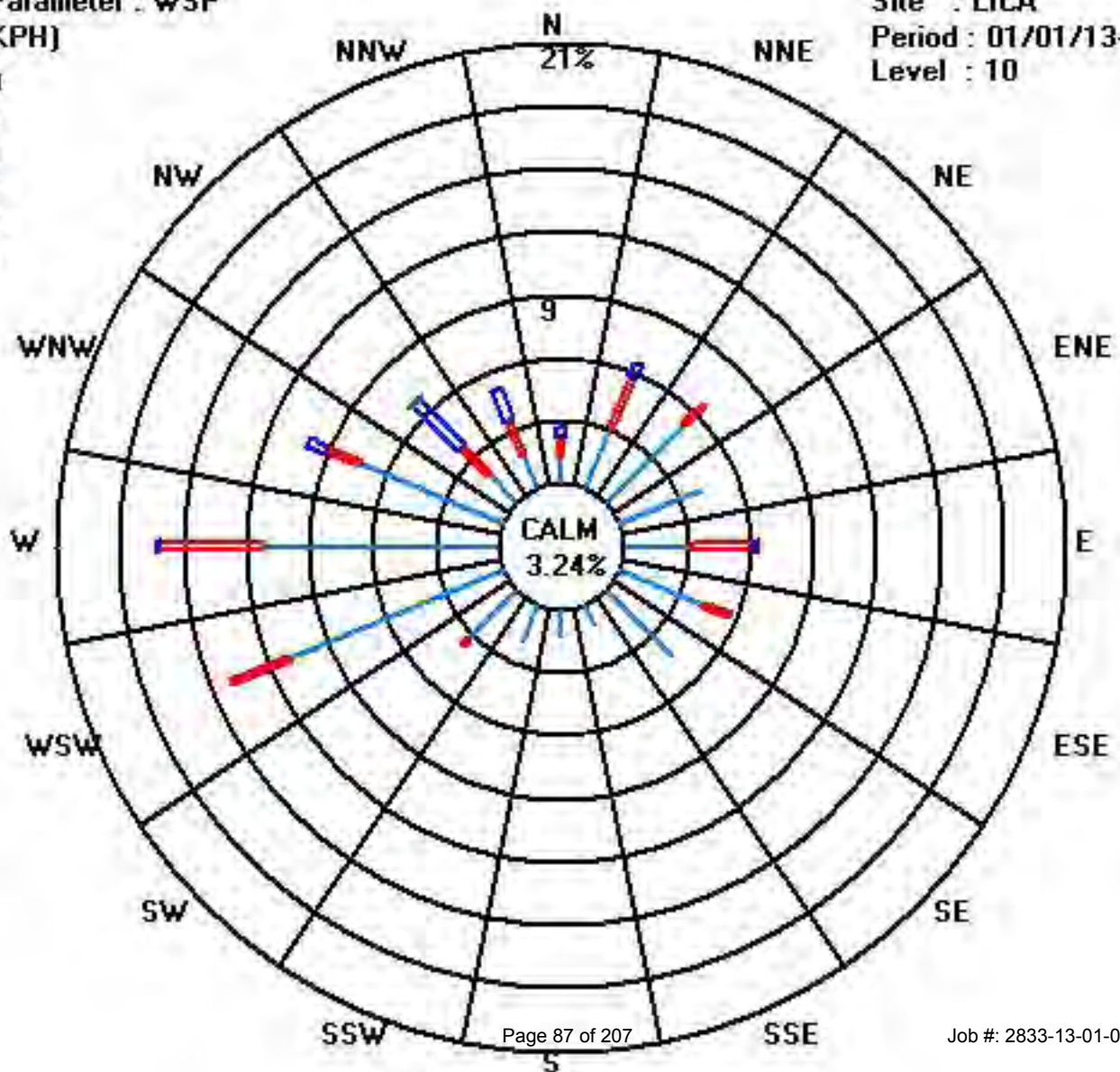
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	10	24	39	31	24	32	33	8	10	14	24	81	83	54	14	13	494
< 12.0	7	19	10		22	10					3	23	36	13	13	13	169
< 20.0	3	5			1								1	7	23	12	52
< 29.0															1		1
< 39.0																	
>= 39.0																	
Totals	20	48	49	31	47	42	33	8	10	14	27	104	120	74	51	38	

Calm : 3.24 %

Total # Operational Hours : 740

Class Limits (KPH)



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

VECTOR WIND DIRECTION (WD) hourly averages in degrees

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	24-HOUR AVG	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	AVG.	QUADRANT	RDGS.
DAY																											
1	238	252	259	267	273	287	283	277	275	294	294	303	312	315	303	283	266	260	270	305	309	313	312	311	290	SW	24
2	319	320	327	331	327	309	299	305	249	244	248	244	237	251	268	195	208	204	180	179	161	293	186	234	289	SE	24
3	215	255	251	253	251	239	248	248	249	255	262	265	265	277	274	274	268	262	258	260	260	268	263	253	260	SW	24
4	268	276	13	45	52	53	290	40	38	58	100	122	100	105	131	140	142	144	284	252	269	235	172	274	110	ESE	24
5	233	240	253	253	261	265	263	262	259	261	251	251	258	248	237	242	247	254	253	303	51	105	205	72	254	W	24
6	58	67	106	65	47	3	104	104	219	193	245	245	253	258	261	260	261	264	266	269	269	272	308	297	271	WSW	24
7	286	278	293	303	298	289	296	302	312	240	239	240	247	248	270	187	225	227	168	339	126	219	235	243	272	SW	24
8	245	244	258	257	260	275	298	301	307	310	315	319	318	321	321	313	267	248	193	218	192	184	138	145	295	WSW	24
9	77	116	44	61	65	57	58	45	70	63	89	80	55	53	39	43	35	29	44	40	19	29	33	24	43	WSW	24
10	17	12	15	16	13	21	15	14	17	30	26	21	25	24	33	17	351	192	317	31	17	357	46	16	18	NW	24
11	316	210	259	266	9	284	301	359	209	300	319	283	245	282	30	130	264	254	149	237	301	114	259	256	267	SSW	24
12	339	327	280	282	261	254	257	257	261	269	279	271	264	290	305	303	266	277	272	254	289	263	265	253	273	SW	24
13	251	264	256	197	238	280	330	29	239	332	20	277	263	245	245	233	239	280	294	287	300	277	360	269	262	W	24
14	342	133	208	250	253	284	295	30	129	145	144	203	225	160	158	185	208	215	215	244	246	254	249	246	206	NE	24
15	242	239	237	232	235	239	254	257	270	282	303	305	305	307	314	26	51	49	36	42	39	34	44	24	307	NNW	24
16	23	43	43	31	22	25	37	55	116	Y	Y	Y	Y	312	336	353	338	328	339	339	3	346	318	281	353	NW	20
17	142	340	282	238	130	139	136	131	117	101	97	99	101	96	97	101	98	95	88	94	86	90	104	93	101	SW	24
18	113	133	110	92	110	67	80	103	105	61	94	142	105	27	27	20	335	335	332	334	338	329	326	322	351	SW	24
19	326	336	337	301	271	294	257	254	253	287	298	312	276	217	265	270	305	325	3	1	351	342	325	315	323	WSW	24
20	274	264	291	265	270	263	265	269	260	266	269	275	263	262	263	264	245	246	251	254	255	250	253	261	264	SW	24
21	273	133	217	45	296	227	283	317	1	35	68	53	119	103	118	123	125	100	87	106	135	126	147	148	112	E	24
22	108	172	216	285	290	280	262	262	265	272	302	280	284	272	280	283	293	296	293	266	257	291	253	248	277	S	24
23	69	271	16	21	45	252	299	70	127	114	109	115	119	100	101	113	105	108	104	100	105	102	100	99	105	SE	24
24	99	99	97	96	96	101	98	94	69	78	89	118	12	282	237	250	231	223	194	136	103	125	128	34	105	SE	24
25	54	50	51	55	343	267	295	29	50	129	65	55	71	83	75	135	109	133	124	219	124	55	107	83	82	WSW	24
26	67	24	280	331	39	41	294	139	292	347	297	278	273	285	281	55	287	48	54	65	71	65	83	86	335	SW	24
27	347	115	223	33	258	66	72	4	221	96	41	79	72	108	63	40	8	22	345	290	251	97	142	273	48	WSW	24
28	269	166	215	255	241	187	287	314	289	295	100	211	256	274	268	273	294	9	3	346	347	353	354	351	331	WNW	24
29	340	339	343	343	332	326	331	327	323	322	318	312	314	308	312	307	311	302	303	291	251	265	273	20	321	ESE	24
30	70	93	141	134	123	16	21	14	13	10	18	3	52	80	37	328	268	283	269	248	248	252	244	237	32	SW	24
31	240	267	262	331	274	276	276	276	276	121	124	104	61	130	134	180	182	220	220	240	211	292	253	335	178	SW	24
HOURLY AVG	347	340	343	343	343	326	331	359	323	347	319	319	318	321	336	353	351	335	345	346	351	357	360	351			

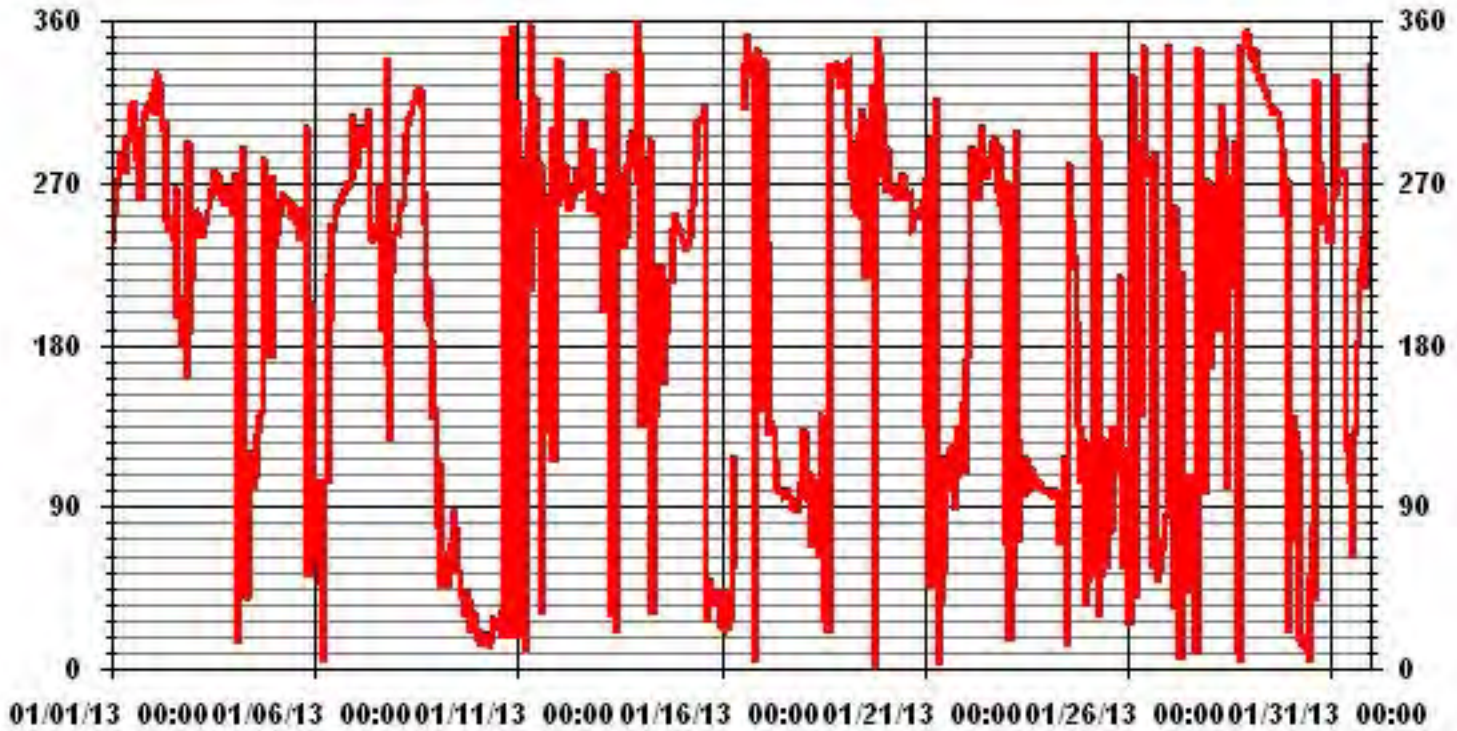
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION:	November 28, 2012
DECLINATION:	NA

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	740 HRS
STANDARD DEVIATION:	104.18	AMD OPERATION UPTIME:	99.5 %
		MONTHLY AVERAGE:	310 DEG

01 Hour Averages



Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2013

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00
DAY																								
1	17	15	16	16	17	20	19	18	18	19	18	17	16	14	17	20	16	17	18	18	17	15	15	15
2	15	16	16	14	15	14	15	42	22	20	19	20	39	24	43	37	32	30	50	44	53	44	63	15
3	37	50	18	13	12	16	14	18	18	14	15	15	15	17	16	17	15	13	12	9	7	7	9	33
4	20	19	25	43	33	44	41	27	29	18	30	26	32	30	21	15	23	33	40	39	24	18	47	25
5	30	17	14	14	13	16	11	13	15	14	15	18	18	17	18	18	17	11	11	6	34	49	55	51
6	52	37	22	17	22	24	50	34	33	34	23	20	19	18	17	15	14	15	15	15	16	17	17	16
7	18	17	18	16	16	18	19	18	21	16	22	28	20	19	31	42	26	26	57	20	42	32	18	18
8	19	19	16	16	15	17	17	14	13	15	16	15	14	16	14	16	13	26	64	35	39	35	30	66
9	31	34	40	16	19	11	10	23	28	35	22	19	18	18	21	20	21	21	21	23	20	22	22	21
10	17	17	17	20	17	20	18	17	19	23	22	21	21	19	19	18	26	58	45	25	20	38	32	41
11	31	30	13	13	40	30	62	43	44	29	25	19	31	26	39	30	30	14	42	40	42	29	38	24
12	46	30	36	43	60	24	37	36	23	18	18	20	25	22	29	14	13	11	17	10	21	21	28	22
13	20	27	20	34	47	22	34	53	55	48	36	29	28	28	29	22	16	36	0	49	58	44	36	75
14	74	85	57	60	26	38	27	27	23	46	38	43	29	34	35	42	39	35	38	16	19	32	13	17
15	25	22	15	16	19	20	19	17	18	19	18	17	17	16	15	30	19	20	21	20	21	21	19	19
16	19	19	18	19	19	19	19	22	22	Y	Y	Y	Y	16	16	17	17	15	14	19	18	12	19	28
17	50	37	27	45	48	31	19	21	24	21	20	19	21	20	20	21	22	19	19	26	21	23	26	26
18	44	27	65	26	45	51	41	23	30	24	30	33	33	21	18	20	15	15	14	16	14	14	14	15
19	14	13	17	16	10	14	9	20	11	45	36	22	30	27	27	21	16	16	16	16	18	15	14	10
20	13	12	16	12	13	8	9	10	16	13	17	18	18	18	17	16	18	16	17	15	16	13	12	27
21	21	37	41	40	11	35	11	20	27	25	32	50	31	21	29	25	25	25	25	22	34	22	26	25
22	21	42	33	14	17	14	13	9	11	16	14	24	27	19	18	17	15	14	16	8	11	43	40	12
23	29	52	32	67	24	15	32	29	38	21	23	23	24	20	22	24	23	23	20	20	22	21	19	19
24	21	20	18	19	19	19	19	21	16	19	23	30	33	22	22	23	21	23	40	22	29	16	41	35
25	2	0	19	22	52	0	27	11	34	31	17	14	18	29	21	53	27	61	55	58	67	33	56	46
26	39	29	40	17	17	17	10	59	14	11	14	31	18	20	31	17	41	32	10	19	23	23	21	17
27	42	29	42	29	43	31	14	23	52	29	24	25	29	19	17	15	20	11	35	17	25	34	56	33
28	1	15	37	18	47	43	53	16	13	22	41	43	32	18	16	16	18	21	17	16	16	17	17	17
29	15	13	15	14	15	14	15	16	14	15	15	15	17	16	15	16	13	11	11	12	15	14	16	39
30	26	25	19	19	44	34	18	15	16	17	19	22	21	28	63	43	23	9	12	0	0	3	5	0
31	6	53	17	13	0	0	0	0	0	53	22	27	26	22	25	51	31	28	29	16	16	10	34	6

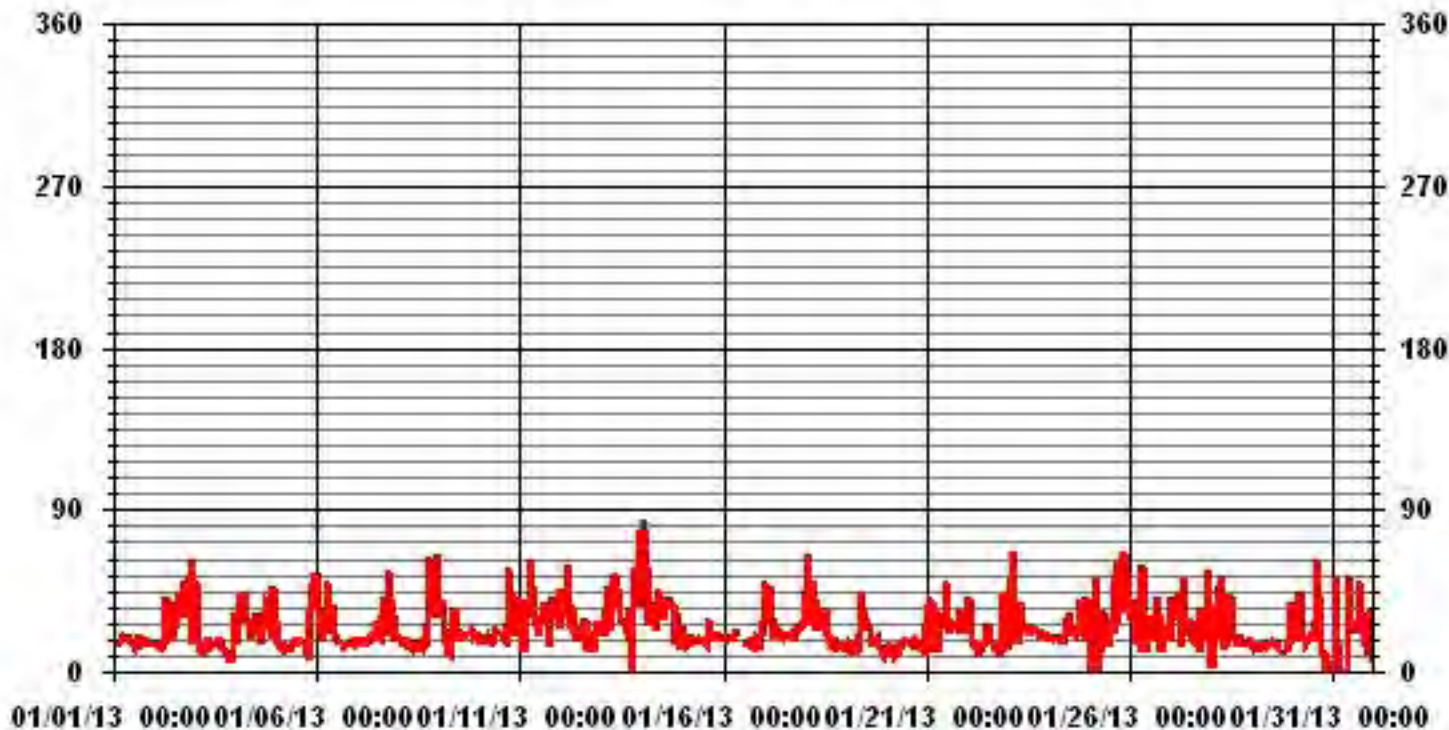
STATUS FLAG CODES

C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR

LAST CALIBRATION: November 28, 2012

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 740 HRS

01 Hour Averages



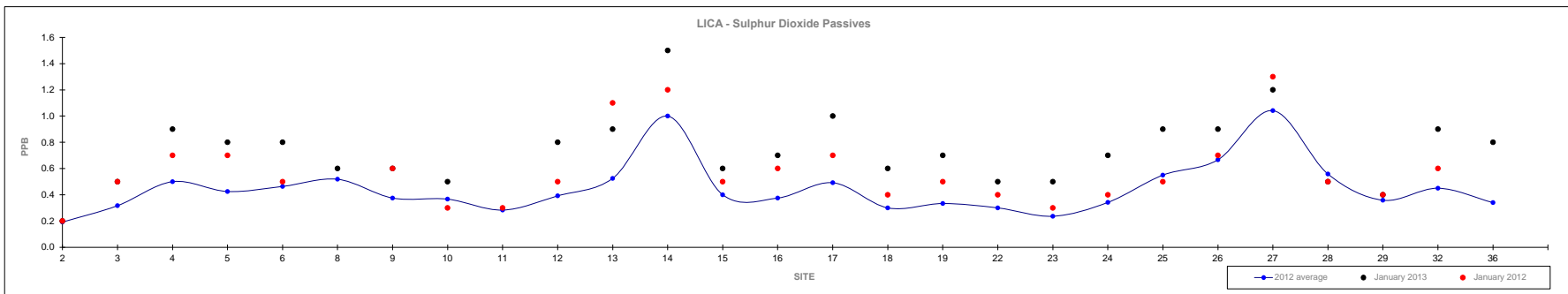
— LICA STDWDIR DEG

Non-Continuous Monitoring

Passive Summary Results for January 2013

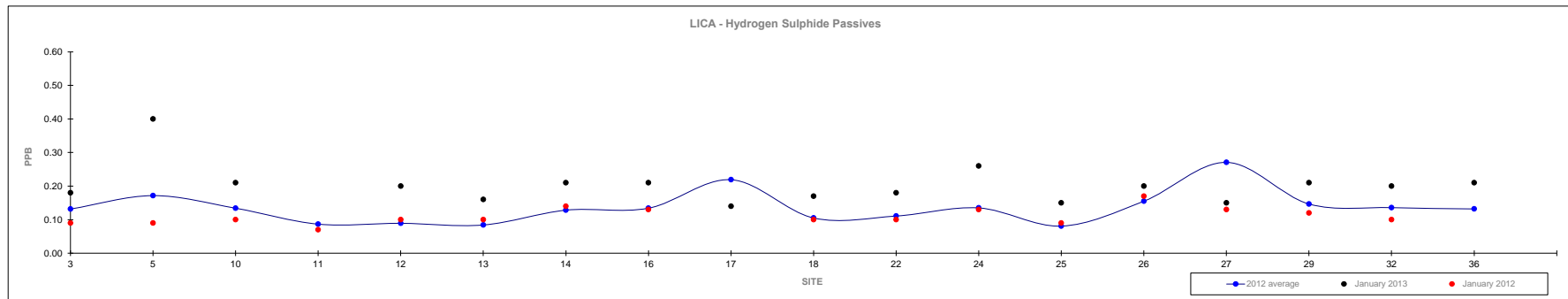
Lakeland Industry & Community Association

	Sulphur Dioxide ppb																												January 2013	Site
	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	25	26	27	28	29	32	36	Reading	-	
Mean	0.2	0.3	0.5	0.4	0.5	0.5	0.4	0.4	0.3	0.4	0.5	1.0	0.4	0.4	0.5	0.3	0.3	0.3	0.2	0.3	0.6	0.7	1.0	0.6	0.4	0.5	0.3	0.73	-	
Minimum	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.7	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.5	0.4	0.2	0.2	0.1	0.2	#2	
Maximum	0.3	0.6	0.8	0.7	0.7	1.2	0.7	0.7	0.5	0.9	1.1	1.6	0.7	0.7	1.0	0.6	0.7	0.6	0.4	0.7	0.9	1.1	1.8	1.0	0.6	0.8	0.8	1.5	#14	



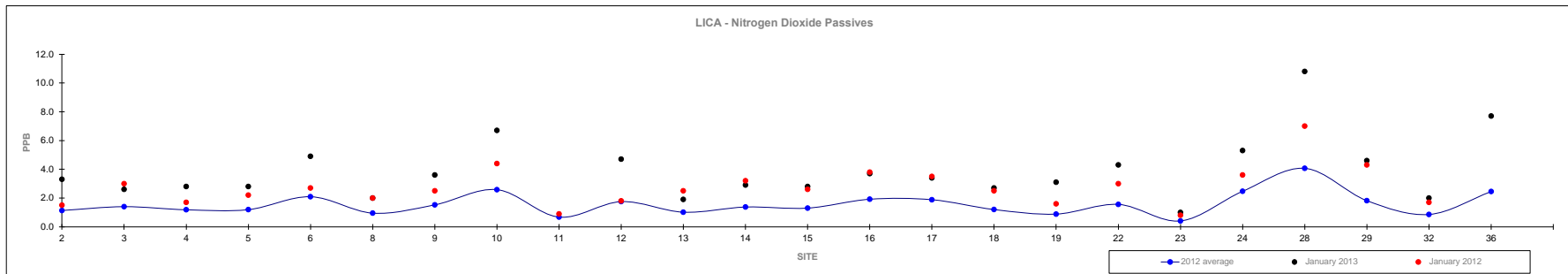
Passive Summary Results for January 2013 Lakeland Industry & Community Association

	Hydrogen Sulphide ppb																	January 2013		
	3	5	10	11	12	13	14	16	17	18	22	24	25	26	27	29	32	36	Reading	Site
Mean	0.13	0.17	0.13	0.09	0.09	0.08	0.13	0.13	0.22	0.11	0.11	0.14	0.08	0.16	0.27	0.15	0.14	0.13	0.20	-
Minimum	0.09	0.06	0.08	0.04	0.02	0.02	0.06	0.09	0.09	0.06	0.06	0.07	0.03	0.07	0.02	0.06	0.09	0.07	0.14	#17
Maximum	0.21	0.38	0.35	0.15	0.16	0.16	0.20	0.23	0.55	0.16	0.18	0.24	0.17	0.28	0.74	0.49	0.23	0.23	0.40	#5



Passive Summary Results for January 2013 Lakeland Industry & Community Association

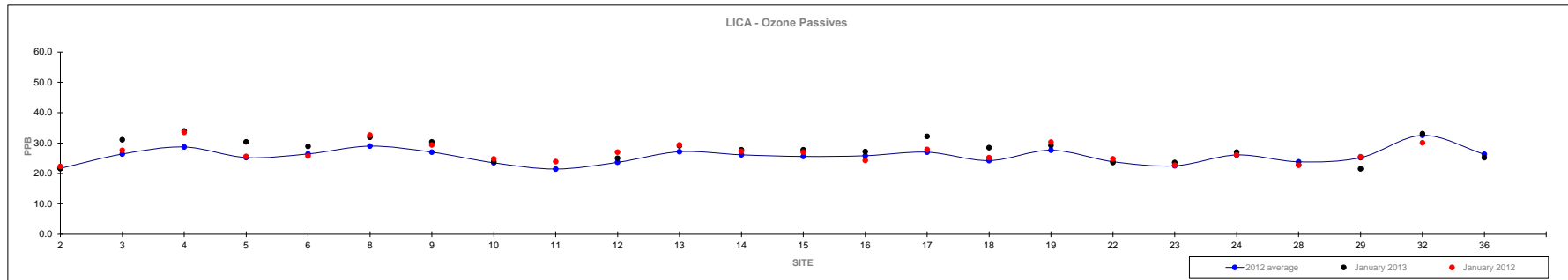
	Nitrogen Dioxide ppb																												January 2013	
	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	28	29	32	36	Reading	Site				
Mean	1.1	1.4	1.2	1.2	2.1	1.0	1.5	2.6	0.7	1.8	1.0	1.4	1.3	1.9	1.9	1.2	0.9	1.6	0.4	2.5	4.1	1.8	0.9	2.5	3.9	-				
Minimum	0.4	0.5	0.4	0.3	0.9	0.3	0.7	1.3	0.2	0.4	0.3	0.5	0.3	0.6	0.8	0.4	0.3	0.4	0.1	1.1	1.2	0.4	0.2	1.0	1.0	#23				
Maximum	3.6	3.6	3.6	3.2	4.7	2.1	3.6	5.2	1.8	4.4	2.5	3.2	2.9	4.9	3.9	2.7	2.0	3.2	1.2	6.0	8.6	4.8	2.4	6.6	10.8	#28				



Passive Summary Results for January 2013

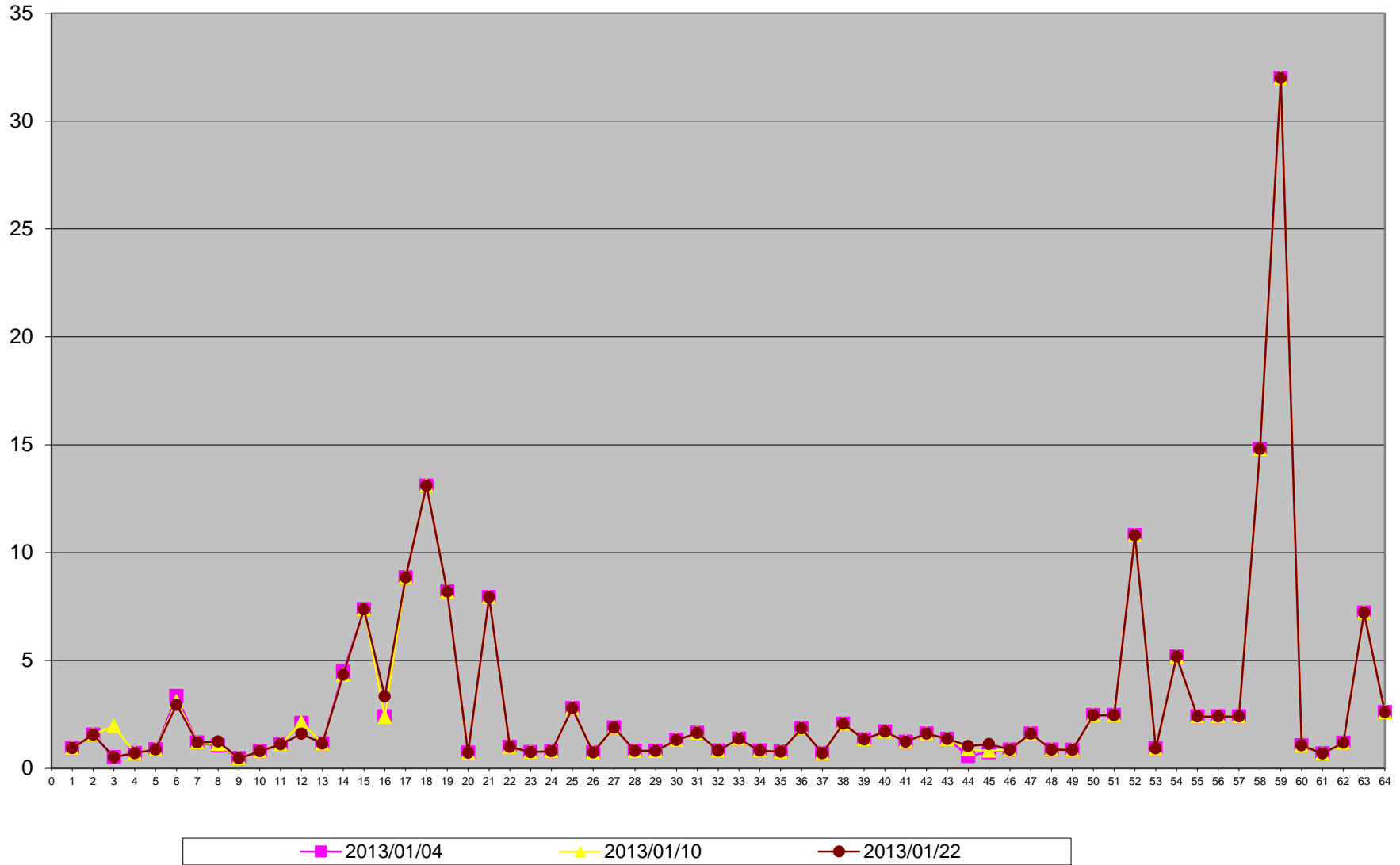
Lakeland Industry & Community Association

	Ozone ppb																												January 2013	
	2	3	4	5	6	8	9	10	11	12	2012 13	14	15	16	17	18	19	22	23	24	28	29	32	36	Reading	Site				
Mean	21.7	26.4	28.7	25.2	26.4	29.0	27.0	23.5	21.5	23.7	27.2	26.1	25.6	25.8	27.0	24.2	27.7	23.9	22.5	26.1	23.8	25.2	32.5	26.3	27.6	-				
Minimum	12.8	18.4	18.8	19.0	17.5	21.6	17.6	15.1	12.3	13.9	15.9	17.8	16.8	18.4	16.4	15.8	18.3	15.2	11.8	17.5	17.1	17.5	24.4	20.4	21.5	#29				
Maximum	32.2	41.2	42.3	34.7	37.0	38.8	40.2	35.4	32.1	33.1	38.9	37.4	36.6	38.1	38.7	33.8	35.6	35.2	36.1	37.9	30.2	33.2	40.8	33.1	34.0	#4				



Volatile Organics

Volatile Organics in ug/m3 Site: LICA - Cold Lake South



1	2,2,4-Trimethylpentane	33	1,1,2,2-Tetrachloroethane
2	Carbon Disulfide	34	cis-1,3-Dichloropropene
3	Propene	35	trans-1,3-Dichloropropene
4	Vinyl Acetate	36	1,2-Dichloropropane
5	Vinyl Bromide	37	Bromomethane
6	Dichlorodifluoromethane (FREON 12)	38	Bromoform
7	1,2-Dichlorotetrafluoroethane	39	Bromodichloromethane
8	Chloromethane	40	Dibromochloromethane
9	Vinyl Chloride	41	Heptane
10	Chloroethane	42	Trichloroethylene
11	1,3-Butadiene	43	Tetrachloroethylene
12	Trichlorofluoromethane (FREON 11)	44	Benzene
13	Trichlorotrifluoroethane	45	Toluene
14	Ethanol	46	Ethylbenzene
15	2-Propanol	47	p+m-Xylene
16	2-Propanone	48	o-Xylene
17	Methyl Ethyl Ketone (2-Butanone)	49	Styrene
18	Methyl Isobutyl Ketone	50	1,3,5-Trimethylbenzene
19	Methyl Butyl Ketone (2-Hexanone)	51	1,2,4-Trimethylbenzene
20	Methyl t-butyl ether (MTBE)	52	4-ethyltoluene
21	Ethyl Acetate	53	Chlorobenzene
22	1,1-Dichloroethylene	54	Benzyl chloride
23	cis-1,2-Dichloroethylene	55	1,3-Dichlorobenzene
24	trans-1,2-Dichloroethylene	56	1,4-Dichlorobenzene
25	Methylene Chloride (Dichloromethane)	57	1,2-Dichlorobenzene
26	Chloroform	58	1,2,4-Trichlorobenzene
27	Carbon Tetrachloride	59	Hexachlorobutadiene
28	1,1-Dichloroethane	60	Hexane
29	1,2-Dichloroethane	61	Cyclohexane
30	Ethylene Dibromide	62	Tetrahydrofuran
31	1,1,1-Trichloroethane	63	1,4-Dioxane
32	1,1,2-Trichloroethane	64	Xylene (Total)

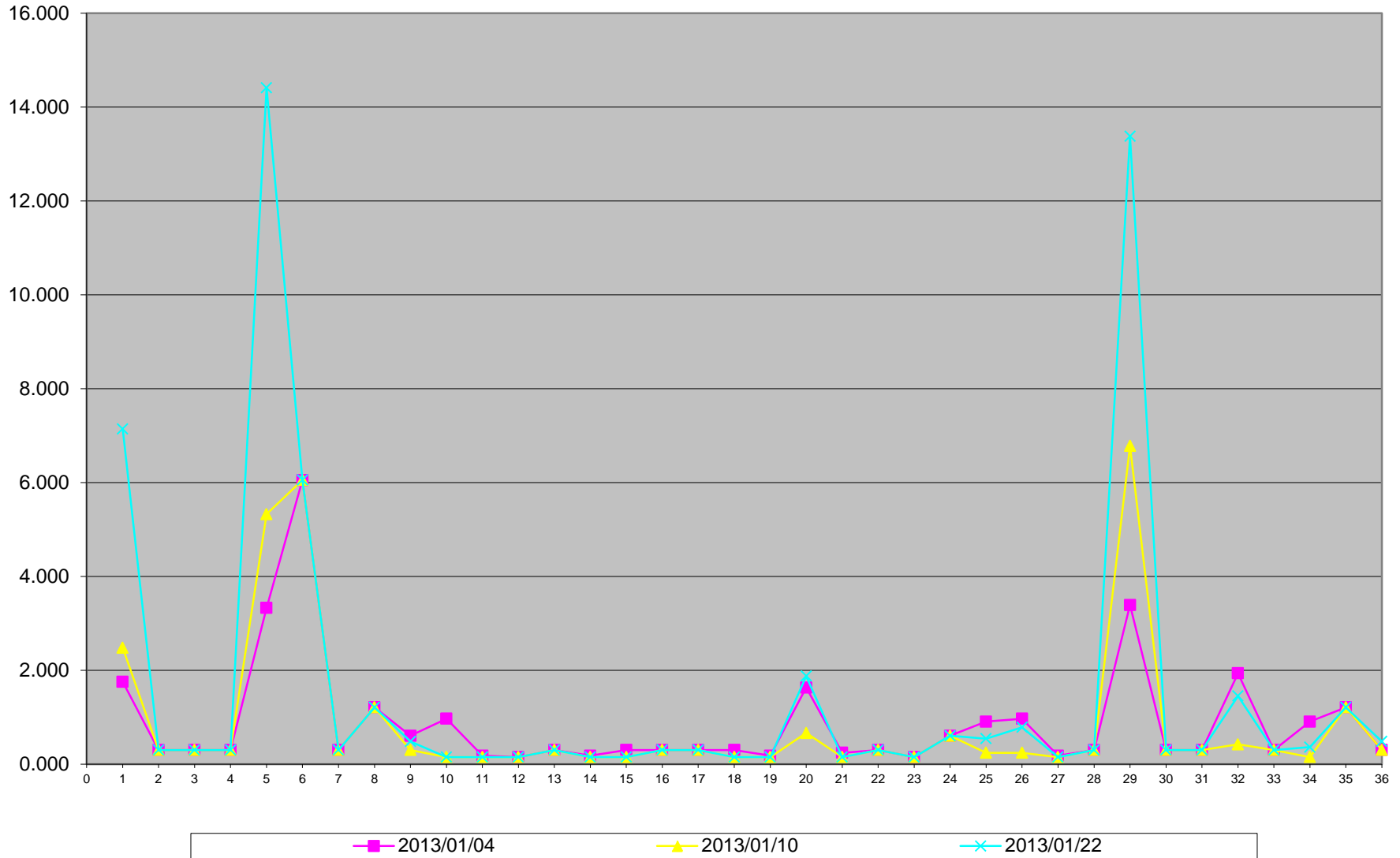
Polycyclic Aromatic Hydrocarbons

Polycyclic Aromatic Hydrocarbons (PAHs) Results for January 2013
LICA- Cold Lake South Site
Unit: ng/m³

PAHs	2013/01/04	2013/01/10	2013/01/16	2013/01/22	2013/01/28
Sample Volume (unit: m3)	330.38	330.36	NA	330.36	330.347
1 1-Methylnaphthalene	1.756	2.482	NA	7.144	NA
2 1-Methylphenanthrene	0.303	0.303	NA	0.303	NA
3 2-Chloronaphthalene	0.303	0.303	NA	0.303	NA
4 2-Methylantracene	0.303	0.303	NA	0.303	NA
5 2-Methylnaphthalene	3.329	5.328	NA	14.409	NA
6 3-Methylcholanthrene	6.054	6.054	NA	6.054	NA
7 7,12-Dimethylbenzo(a)anthracene	0.303	0.303	NA	0.303	NA
8 9,10-Dimethylantracene	1.211	1.211	NA	1.211	NA
9 Acenaphthene	0.605	0.303	NA	0.484	NA
10 Acenaphthylene	0.969	0.151	NA	0.151	NA
11 Anthracene	0.182	0.151	NA	0.151	NA
12 Benzo(a)anthracene	0.151	0.151	NA	0.151	NA
13 Benzo(a)fluorene	0.303	0.303	NA	0.303	NA
14 Benzo(a)pyrene	0.182	0.151	NA	0.151	NA
15 Benzo(b)fluoranthene	0.303	0.151	NA	0.151	NA
16 Benzo(b)fluorene	0.303	0.303	NA	0.303	NA
17 Benzo(e)pyrene	0.303	0.303	NA	0.303	NA
18 Benzo(g,h,i)perylene	0.303	0.151	NA	0.151	NA
19 Benzo(k)fluoranthene	0.182	0.151	NA	0.151	NA
20 Biphenyl	1.634	0.666	NA	1.877	NA
21 Chrysene	0.242	0.151	NA	0.151	NA
22 Coronene	0.303	0.303	NA	0.303	NA
23 Dibenz(a,h)anthracene	0.151	0.151	NA	0.151	NA
24 Dibenzo(a,e)pyrene	0.605	0.605	NA	0.605	NA
25 Fluoranthene	0.908	0.242	NA	0.545	NA
26 Fluorene	0.969	0.242	NA	0.787	NA
27 Indeno(1,2,3-cd)pyrene	0.182	0.151	NA	0.151	NA
28 m-Terphenyl	0.303	0.303	NA	0.303	NA
29 Naphthalene	3.390	6.780	NA	13.379	NA
30 o-Terphenyl	0.303	0.303	NA	0.303	NA
31 Perylene	0.303	0.303	NA	0.303	NA
32 Phenanthrene	1.937	0.424	NA	1.453	NA
33 p-Terphenyl	0.303	0.303	NA	0.303	NA
34 Pyrene	0.908	0.151	NA	0.363	NA
35 Quinoline	1.211	1.211	NA	1.211	NA
36 Tetralin	0.303	0.303	NA	0.484	NA

Note: - Values were calculated by the formula of [reading (ug) x 1000 / sample volume (m3)].
- Where the analytical results are less than the minimum detection limit (MDL), the MDL has been used in calculations.
- No sample was collected for sampling date of January 16th as the sampler provided by AITF lab was not completed.
- Sample results for January 28th is not available when the monthly report was preparing. The result will be included in the following monthly report.

PAHs in ng/m3 Site: LICA - Cold Lake South



1	1-Methylnaphthalene
2	1-Methylphenanthrene
3	2-Chloronaphthalene
4	2-Methylantracene
5	2-Methylnaphthalene
6	3-Methylcholanthrene
7	7,12-Dimethylbenzo(a)anthracene
8	9,10-Dimethylantracene
9	Acenaphthene
10	Acenaphthylene
11	Anthracene
12	Benzo(a)anthracene
13	Benzo(a)fluorene
14	Benzo(a)pyrene
15	Benzo(b)fluoranthene
16	Benzo(b)fluorene
17	Benzo(e)pyrene
18	Benzo(g,h,l)perylene
19	Benzo(k)fluoranthene
20	Biphenyl
21	Chrysene
22	Coronene
23	Dibenz(a,h)anthracene
24	Dibenzo(a,e)pyrene
25	Fluoranthene
26	Fluorene
27	Indeno(1,2,3-cd)pyrene
28	m-Terphenyl
29	Naphthalene
30	o-Terphenyl
31	Perylene
32	Phenanthrene
33	p-Terphenyl
34	Pyrene
35	Quinoline
36	Tetralin

Calibration Reports

Sulphur Dioxide

SO2 Calibration Report

Station Information

Calibration Date	January 9, 2013	Previous Calibration	December 4, 2012
Company	Lakeland Community and Industry Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	16:14	End Time (MST)	19:38
Reason:	Monthly Calibration		
Barometric Pressure	0.93 atm	Station Temperature	23 Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	LL42502
DAS Output Voltage	0 - 10 Volts	Cal Gas Expiry date	December 29, 2013
		Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	Thermo 43i	S/N :	806528242	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	3485		
Chart Recorder Make / Model:	NA	S/N :	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 500 ppb				
Sample Flow / Box Temp	443 ccm	30.9 Deg C	445 ccm	32.2 Deg C	
HVPS / Lamp Setting	-632	737	-632	736	
PMT / RxCell Temp	OK Deg C	45.1 Deg C	OK Deg C	45 Deg C	
Converter / IZS Temp	NA Deg C	45 Deg C	NA Deg C	45.0 Deg C	
Offset / Slope	6.1	1.031	6	1.031	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4997	0	0	0	N/A
4953	No Zero Adj 40.3	400	398	1.0058
4976	No Span Adj. 22.7	225	226	0.9966
4982	12.6	125	126	0.9931
4994	0	0	0	N/A
Sum of Least Squares				1.0029
New Correction Factor				1.0058

IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.3	Auto Zero	0.2
Auto Span	375.0	Auto Span	373.0
Sample Lines Connected		Sample Lines Connected	YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0058
Percent Change:	-0.6%

Notes: **N/A : Not applicable**

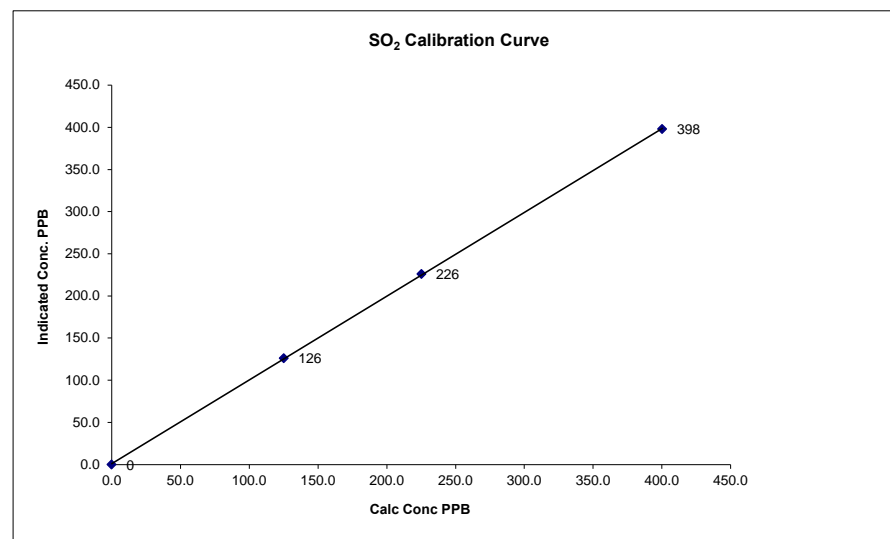
At the last few minutes of the second span point, there was a dilution gas alarm, causing the reading lower for three minutes, redid the point.

Calibration Performed by: Ting Xu

SO₂ Calibration Curve

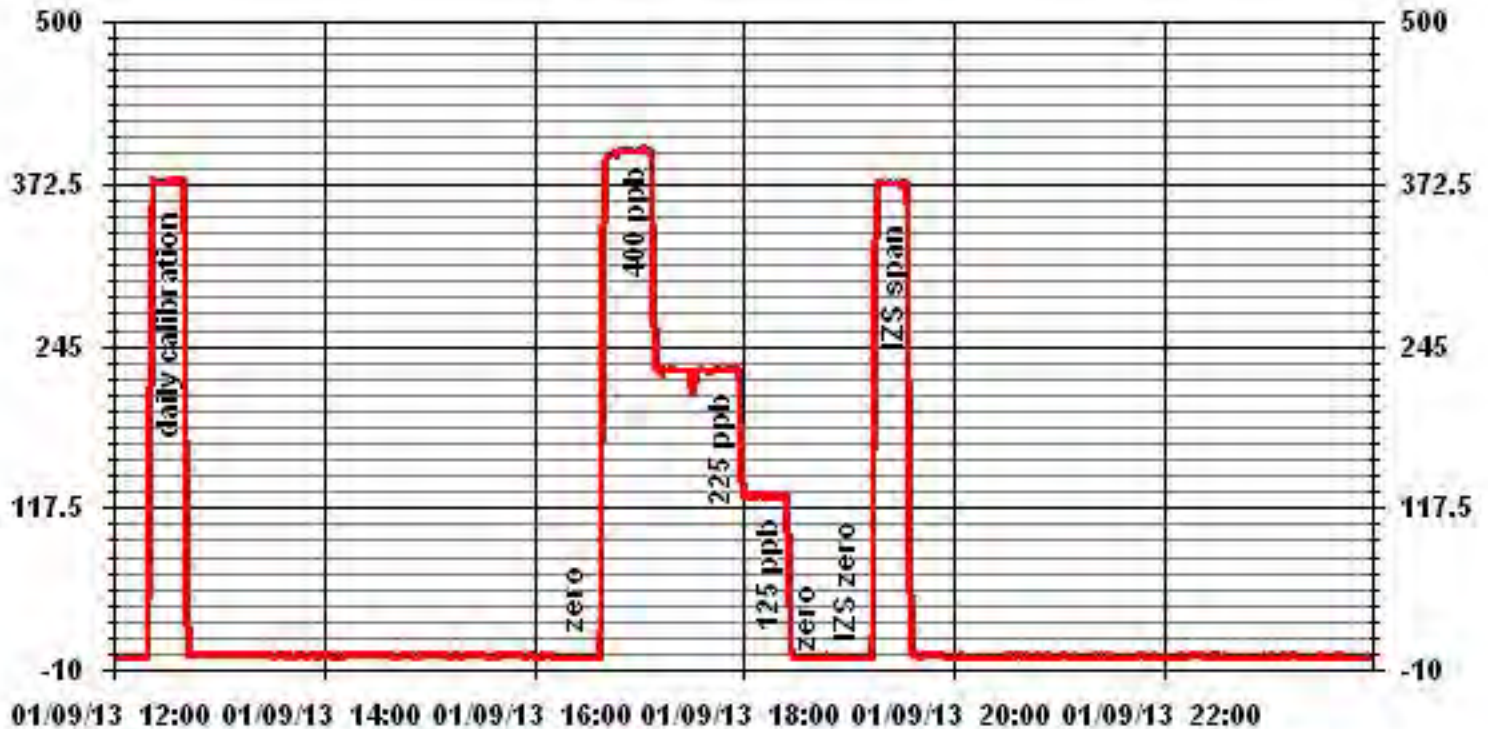
Calibration Date	January 9, 2013		
Company	Lakeland Community and Industry Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	16:14	End Time (MST)	19:38

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	0	n/a		0.999959
125	126	0.9931		0.993962
225	226	0.9966		0.962692
400	398	1.0058		



Notes:

01 Minute Averages



Total Reduced Sulphur

TRS Calibration Report

Station Information

Calibration Date	January 9, 2013	Previous Calibration	December 4, 2012
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	10:15	End Time (MST)	13:48
Reason:	Monthly Calibration		
Barometric Pressure	0.93 atm	Station Temperature	23 Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648
DAS Output Voltage	0 - 10 Volts	Cal Gas Expiry date	December 27, 2012
		Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	Thermo 450i	S/N :	812728560	Method:	Fluorescent
Converter Make / Model:	CDN 101	S/N :	501		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	3485		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 100		
Sample Flow / Box Temp	466 ccm, 34.2 Deg C	464 ccm, 33.9 Deg C	
HVPS / Lamp Setting	-640.1, 749	-640.1, 748	
PMT / RxCell Temp	OK Deg C, 45.2 Deg C	0.1 Deg C, 45.2 Deg C	
Converter / IZS Temp	810 Deg C, 45 Deg C	810 Deg C, 45.0 Deg C	
Offset / Slope	13.4, 1.052	13.5, 1.052	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	N/A
4960	No Zero Adj. 40.0	80	80	1.0000
4976	No Span Adj. 20.0	40	41	0.9764
4986	11.5	23	24	0.9588
4996	0.0	0	0	N/A
Sum of Least Squares				0.9928
New Correction Factor				1.0000

IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	-0.2		-0.1
Auto Span	39.2		42.5
Sample Lines Connected			YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0127
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	1.3%

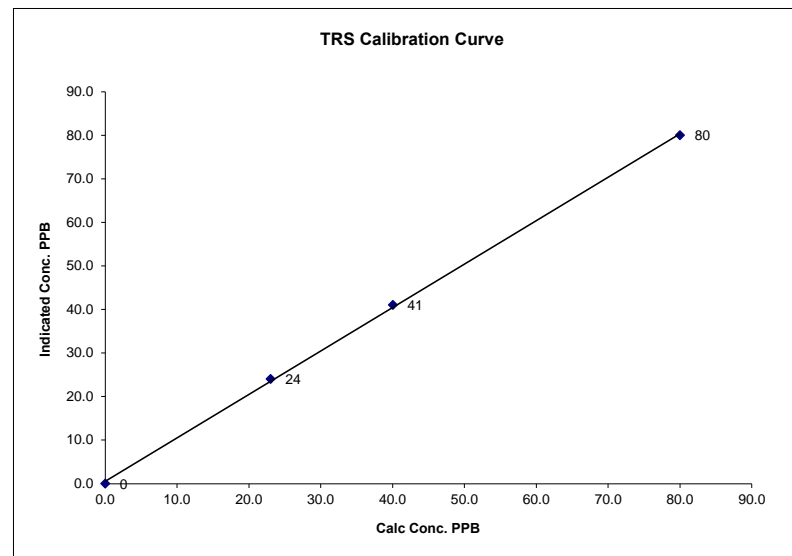
Notes: **N/A : Not applicable**

Calibration Performed by: Ting Xu

TRS Calibration Curve

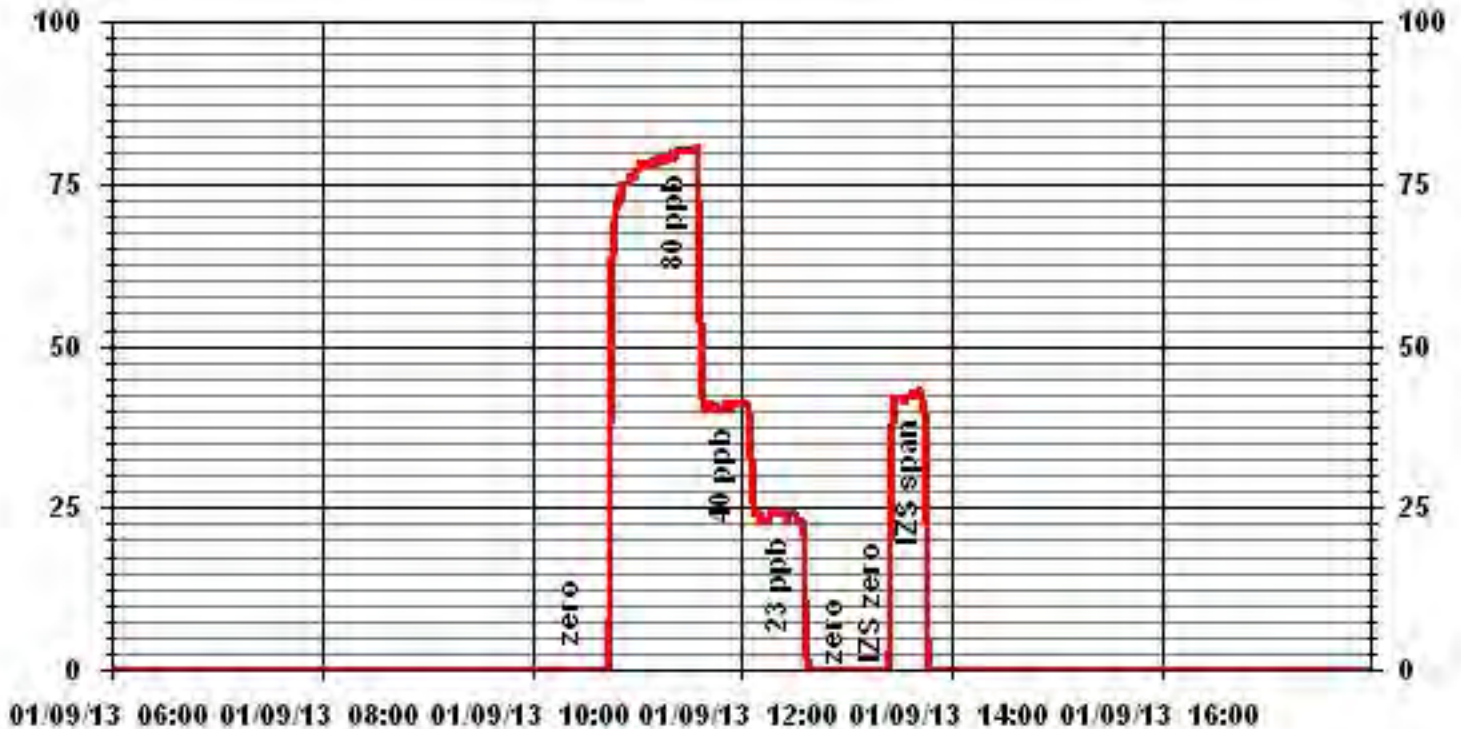
Calibration Date	January 9, 2013
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	10:15
End Time (MST)	13:48

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	
0	0	n/a	Slope	(0.85 to 1.15)	0.999725
23	24	0.0000	Intercept	(± 3% F.S.)	0.997522
40	41	0.5613			0.577750
80	80	0.5004			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	January 9, 2013	Previous Calibration	December 4, 2012
Company:	Lakeland Industry and Community Association		
Plant / Location:	LICA1/Cold Lake		
Start Time (MST)	13:09	End Time (MST)	16:58
Reason:	Monthly Calibration		
Barometric Pressure:	0.93 atm	Station Temperature:	23 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 600 PPM	C3H8 204 PPM	
	TOTAL CH4 1161.0 PPM	Gas Cyl. # LL55310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832	S/N :	3485
Chart Recorder:	NA	S/N:	NA
Output Voltage Range:	0 - 10 VDC	Chart Speed:	NA mm/hr

Analyzer Information

Make / Model	TEI 51C-LT	S/N :	427408718	Method	Flame Ionization
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Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	6.5	psi	6.5	psi
Hydrogen Pressure	8	psi	8	psi
Air Pressure	20	psi	20	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	-0.1	NA
	No Zero Adj.			
2000	74.0	41.4	40.1	1.0330
2000	74.0	41.4	41.5	0.9982
2000	37.0	21.1	20.8	1.0139
2000	20.0	11.5	11.3	1.0173
2000	0.0	0.0	-0.1	NA
New Correction Factor:				0.9982

Percent Change

Previous Calibration Correction Factor:	0.9982
Current Correction Factor Before Span Adjust:	1.0330
Percent Change:	-3.4%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.1	0.0
Auto Span	36.9	36.9
Sample Lines Connected	YES	

Cylinder Pressures			
Span	1500 psi	Hydrogen 700 psi	Zero Air 32 psi

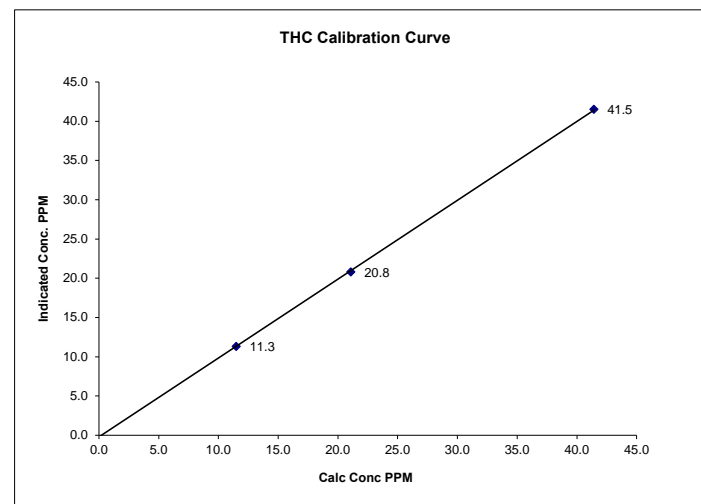
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

THC Calibration Curve

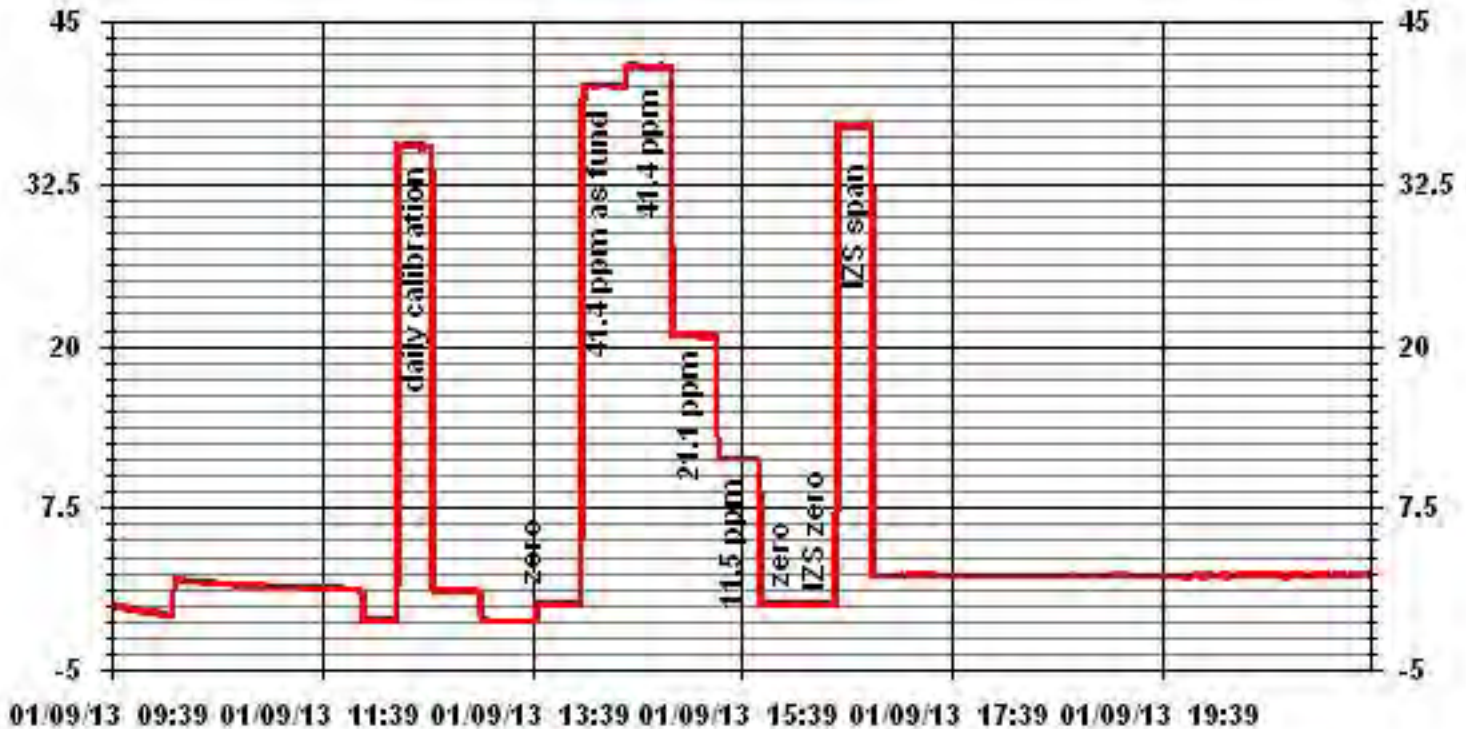
Calibration Date	January 9, 2013
Company	Lakeland Industry and Community Association
Plant / Location	LICA1/Cold Lake
Start Time (MST)	13:09
End Time (MST)	16:58

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient (≥ 0.995)	Slope (0.85 to 1.15)	Intercept (± 3% F.S.)
0.0	-0.1	NA	0.999943	1.004554	-0.21120
11.5	11.3	1.0173			
21.1	20.8	1.0139			
41.4	41.5	0.9982			



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOM 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	January 9, 2013	Make/Model:	Streamline FTS
Station Name:	LICA 1	Serial Number:	Hi 091001, Lo 091099
Location:	Cold Lake South	Cell s/n:	NA
Operator:	LICA	Thermometer s/n:	Station Temp Sensor

	<u>Sampler</u>		<u>Set-up and current Sampler readings</u>
Make/Model	Thermo Scientific Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	AMU 1775	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A201620804	Filter Load (%)	27.6%
Firmware Ver.	1.52	K _o Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-4.4
		Press (ATM)	0.925

Conversion from mmHg or "Hg to ATM (Atmospheres)

ATM = (mmHg) X (1.316 X 10⁻³) or ATM = ("Hg) X (3.34207 X 10⁻²)

Note: Tolerances are noted as **BOLD** in Brackets

Audit

Status			
Noise <0.10ug	0.005	Warnings	None
Pump Vacuum < 0.40 atm	0.35	Pump Guage (in Hg)	NA
Temperature/Pressure			
Measured Temp (± 2 °C)	-4.31	Δ °C	-0.09
Measured Press (± 0.01atm)	0.927	DATM	-0.002
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (± 10.0%)	2.37%
Measured Main Flow (l/min)	2.98	Flow Adjusted to Measured?	No
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (± 10.0%)	1.98%
Measured Bypass Flow (l/min)	13.59	Flow Adjusted to Measured?	No
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	NA	Flow Control = Active	
Aux (< 0.6 l/min)	NA	Report Conditions = Actual	
K_o Factor			
Measured	NA		
K _o Difference (± 2.5%)	NA		

Start Time: 15:30 **Finish Time:** 17:50

Sample Inlet Cleaned: No **New Filters Installed:** Yes
New Filter Loading %: NA

Comments:

Auditor/s: Ting Xu

TEOM 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	January 16, 2013	Make/Model:	Streamline FTS
Station Name:	LICA 1	Serial Number:	Hi 091001, Lo 091099
Location:	Cold Lake South	Cell s/n:	NA
Operator:	LICA	Thermometer s/n:	Station Temp Sensor

	<u>Sampler</u>		<u>Set-up and current Sampler readings</u>
Make/Model	Thermo Scientific Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	AMU 1775	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A201620804	Filter Load (%)	32.0%
Firmware Ver.	1.52	K _o Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-9.2
		Press (ATM)	0.941

Conversion from mmHg or "Hg to ATM (Atmospheres)

ATM = (mmHg) X (1.316 X 10⁻³) or ATM = ("Hg) X (3.34207 X 10⁻²)

Note: Tolerances are noted as **BOLD** in Brackets

Audit

Status			
Noise <0.10ug	0.008	Warnings	None
Pump Vacuum < 0.40 atm	0.36	Pump Guage (in Hg)	NA
Temperature/Pressure			
Measured Temp (± 2 °C)	-9.32	Δ °C	0.12
Measured Press (± 0.01atm)	0.938	DATM	0.003
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	3.38%
Measured Main Flow (l/min)	3.01	Flow Adjusted to Measured?	No
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	2.22%
Measured Bypass Flow (l/min)	13.54	Flow Adjusted to Measured?	No
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	Base=0.02 Ref=0.02	Flow Control = Active	
Aux (< 0.6 l/min)	Base=0.00 Ref=0.00	Report Conditions = Actual	
K_o Factor			
Measured	NA		
K _o Difference (± 2.5%)	NA		

Start Time: 09:30 **Finish Time:** 10:50

Sample Inlet Cleaned: No **New Filters Installed:** Yes
New Filter Loading %: 20.2%

Comments:

Auditor/s: Limin Li

Nitrogen Dioxide

NOx - NO- NO2 Calibration Report

Station Information

Calibration Date	January 9, 2013		Previous Calibration		December 4, 2012	
Company	LICA		Plant/Location		Cold Lake South	
Start Time (MST)	09:08		End Time (MST)		15:19	
Reason:	Monthly Calibration					
Barometric Pressure	0.926 atm	Station Temperature	23 Deg C	MFCF	0	
Cal Gas Concentration	NOx 50.1 ppm	NO	50.1 ppm	Cal Gas Expiry date	December 29, 2013	
Cal Gas Cylinder #	LL42502					
DAS Output Voltage	0 - 10 Volts	Chart Rec. Output	NA Volts			

Equipment Information

Analyzer Make / Model:	Thermo 42C	S/N :	427408716	Method:	Chemiluminescent
Calibrator Make / Model:	Envionics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	3485		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Envionics 6100	S/N :	4760		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	733 ccm			0 - 500 ppb			
Sample Flow/Conv. Temp	733 ccm	317 Deg C		735 ccm	317 Deg C		
Ozone Flow / Vacuum	OK	174.0 *Hg-A		OK	174 *Hg-A		
HVPS / A ZERO	-821 Volts	NA MV		-821 Volts	NA MV		
Rx/ Temp / PMT Temp	49.8 Deg C	-2.5 Deg C		49.6 Deg C	-2.5 Deg C		
Box Temp / IZS Temp	30.0 Deg C	OK Deg C		30.5 Deg C	OK Deg C		
Offset	3.8 NOx	3.5 NO		3.9 NOx	3.6 NO		
Slope	1.002 NOx	0.909 NO		1.002 NOx	0.920 NO		
NO2 COEF / Conv Efficiency	0.998 NO2	NA		0.998 NO2	NA		

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	0	0	0	NA	NA
	No Zero Adj									
4955	39.8	NA	399	399	NA	395	395	1	1.0107	1.0107
4955	39.8	NA	399	399	NA	399	399	1	1.0000	1.0000
4976	19.9	NA	200	200	NA	202	201	1	0.9879	0.9928
4984	9.9	NA	99	99	NA	103	102	1	0.9643	0.9737
4994	0.0	NA	0	0	NA	1	0	1	NA	NA

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4954	39.8	NA	399	399	NA	399	398	1	NA	NA
4954	39.8	350	399	NA	332	399	67	332	1.0000	100.00%
	No Adj.									
4954	39.8	150	399	NA	144	398	255	143	1.0070	99.30%
4954	39.8	75	399	NA	71	398	328	71	1.0000	100.00%

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 0.996	NO= 0.998	NO2= 1.001
				NOx= 1.0000	NO= 1.0000	NO2= 1.0000
				Average Converter Efficiency= 99.77%		

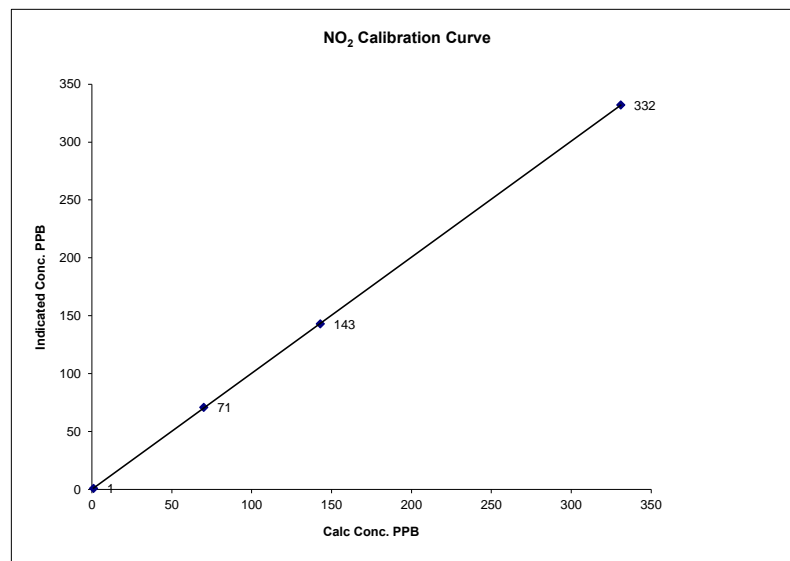
IZS Calibration Data

Before Calibration				After Calibration				
Auto Zero	0.1	NOx	0.2	NO2	0.0	NOx	0.2	NO2
Auto Span	392	NOx	388	NO2	389	NOx	386	NO2
			Sample Lines Connected YES					
Percent Change from Previous Calibration		NOx	-1.3%	NO	-1.1%	NO2	0.0%	
Notes	NA : Not Applicable							
Calibration Performed by:	Ting Xu							

NO2 Calibration Curve

Calibration Date	January 9, 2013	
Company	LICA	
Plant / Location	Cold Lake South	
Start Time (MST)	09:08	End Time (MST) 15:19

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999988
1	1	N/A	Intercept	(± 3% F.S.)	1.002119
70	71	0.9859			0.21135
143	143	1.0000			
331	332	0.9970			

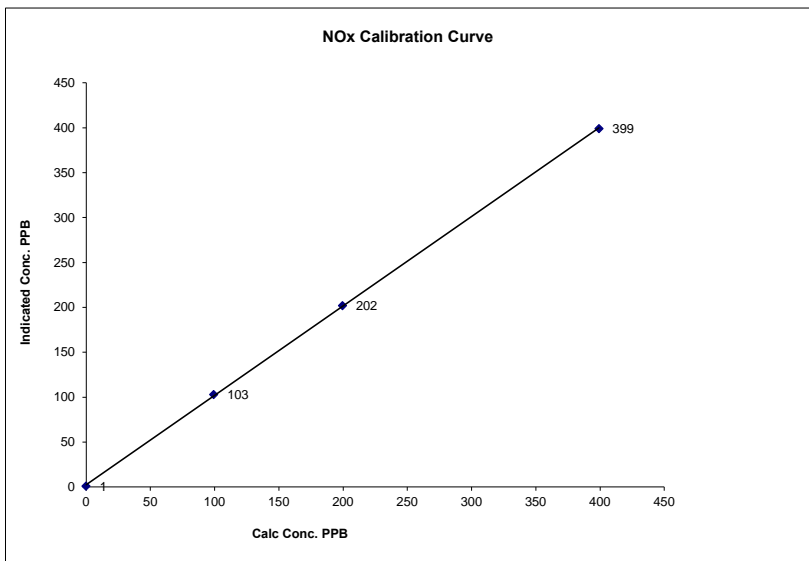


Notes:

NOx Calibration Curve

Calibration Date	January 9, 2013	
Company	LICA	
Plant / Location	Cold Lake South	
Start Time (MST)	09:08	End Time (MST) 15:19

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999926
0	1	N/A	Slope (0.85 to 1.15)	0.994982
99	103	0.9643	Intercept (± 3% F.S.)	2.60283
200	202	0.9879		
399	399	1.0005		

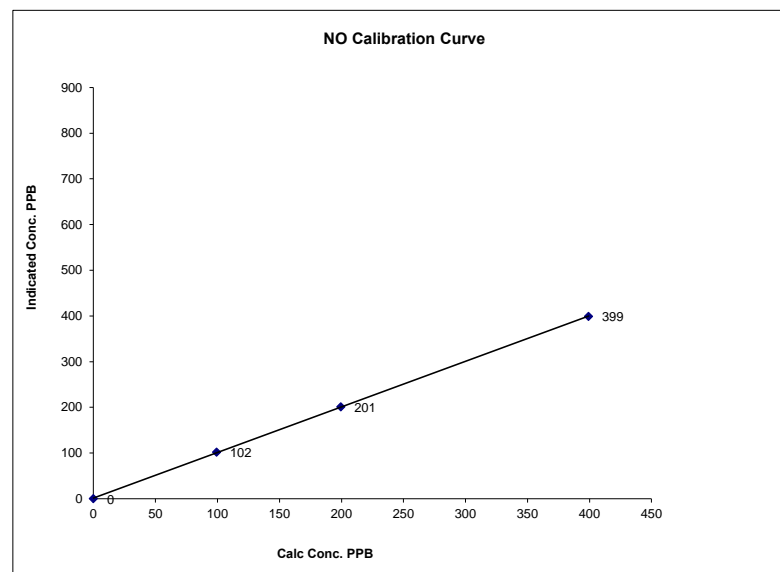


Notes:

NO Calibration Curve

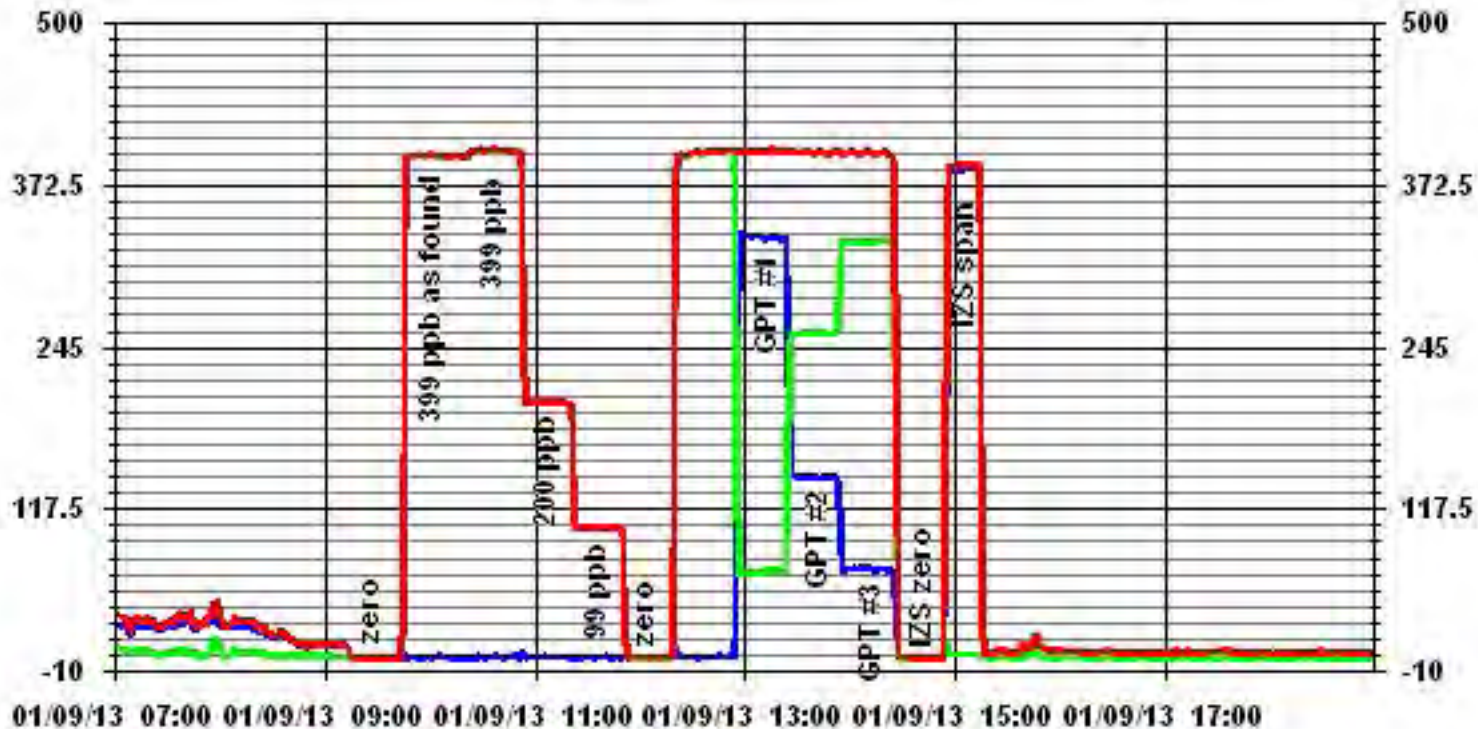
Calibration Date	January 9, 2013	
Company	LICA	
Plant / Location	Cold Lake South	
Start Time (MST)	09:08	End Time (MST) 15:19

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999943
0	0	N/A	Slope (0.85 to 1.15)	0.990553
99	102	0.9737	Intercept (± 3% F.S.)	3.0872
200	201	0.9928		
399	399	1.0005		



Notes:

01 Minute Averages



— LICA NOX_ PPB
 — LICA NO_ PPB
 — LICA NO2_ PPB

Ozone

O₃ Calibration Report

Station Information

Calibration Date	January 9, 2013	Previous Calibration	December 4, 2012
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	14:35	End Time (MST)	18:14
Reason:	Monthly Calibration		
Barometric Pressure	0.924 atm	Station Temperature	22 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	700419951	Method:	Photometric
Calibrator Make / Model:	Enviroics 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	3485		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	0 - 500			ppb			
Cell A Flow / Cell B Flow	706 LPM	746 LPM		705 LPM	745 LPM		
O ₃ Set Level	695	mmHg		695	mmHg		
Bench Lamp	30.1	Deg C		30.4	Deg C		
O ₃ Lamp / Box Temp	53.5 Deg	67.5 Deg C		53.6 Deg C	67.6 Deg C		
Offset / Slope	-0.2	1.041		-0.2	1.046		

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	NA
	No Zero Adj			
4994	350	331	327	1.0122
4994	350	331	332	0.9970
4994	150	144	143	1.0070
4994	75	70	70	1.0000
4994	0	0	0	NA
Sum of Least Squares				0.9986
New Correction Factor				0.9970

IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.2	Auto Zero	0.2
Auto Span	293	Auto Span	293
Sample Lines Connected		YES	
Previous Calibration Correction Factor:		0.9970	
Current Correctio Factor Before Span Adjust:		1.0122	
Percent Change:		-1.5%	

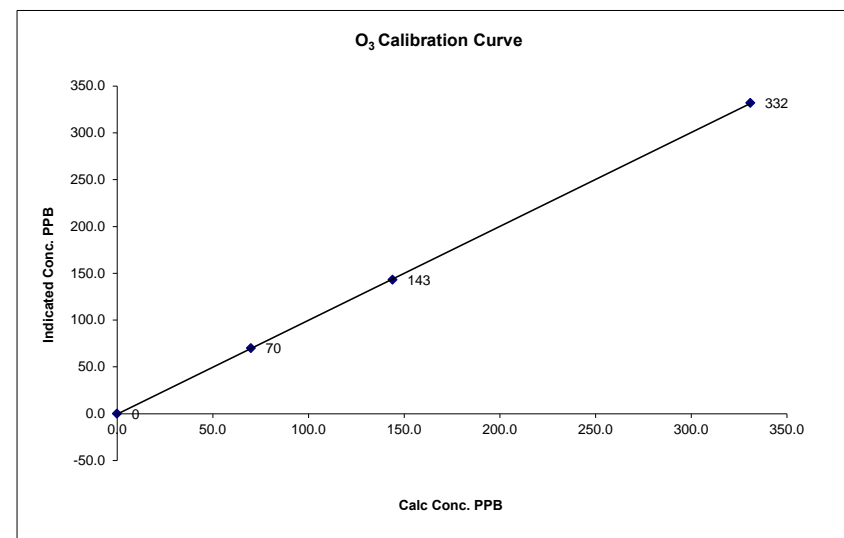
Note: NA : Not Applicable

Calibration Performed by: Ting Xu

O₃ Calibration Curve

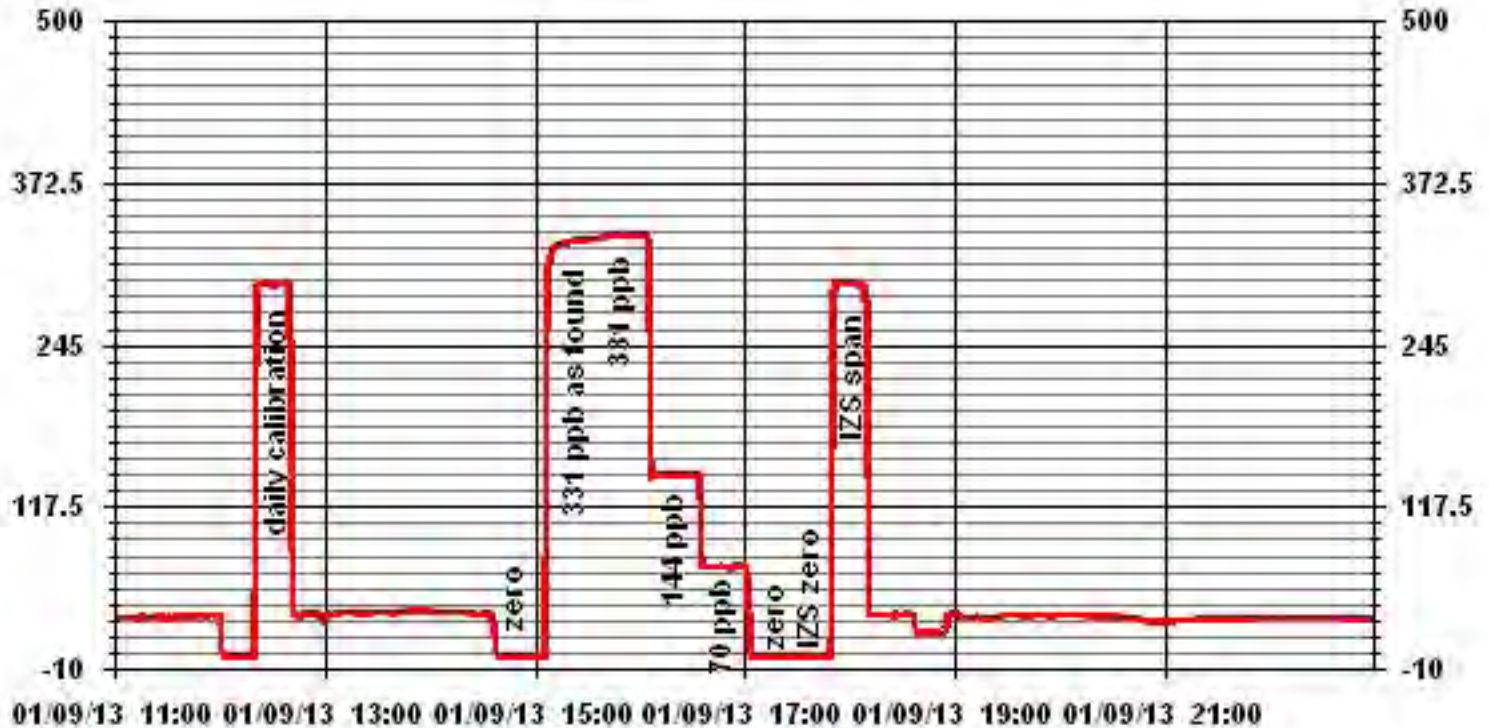
Calibration Date	January 9, 2013		
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	14:35	End Time (MST)	18:14

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)	
0	0	n/a	Intercept		0.999977
70	70	1.0000			1.003069
144	143	1.0070			-0.418091
331	332	0.9970			



Notes:

01 Minute Averages



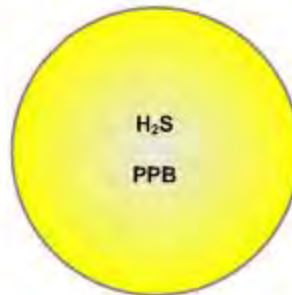
Passive Bubble Maps

Lakeland Industry & Community Association H₂S Passive Bubble Map

JANUARY 2013

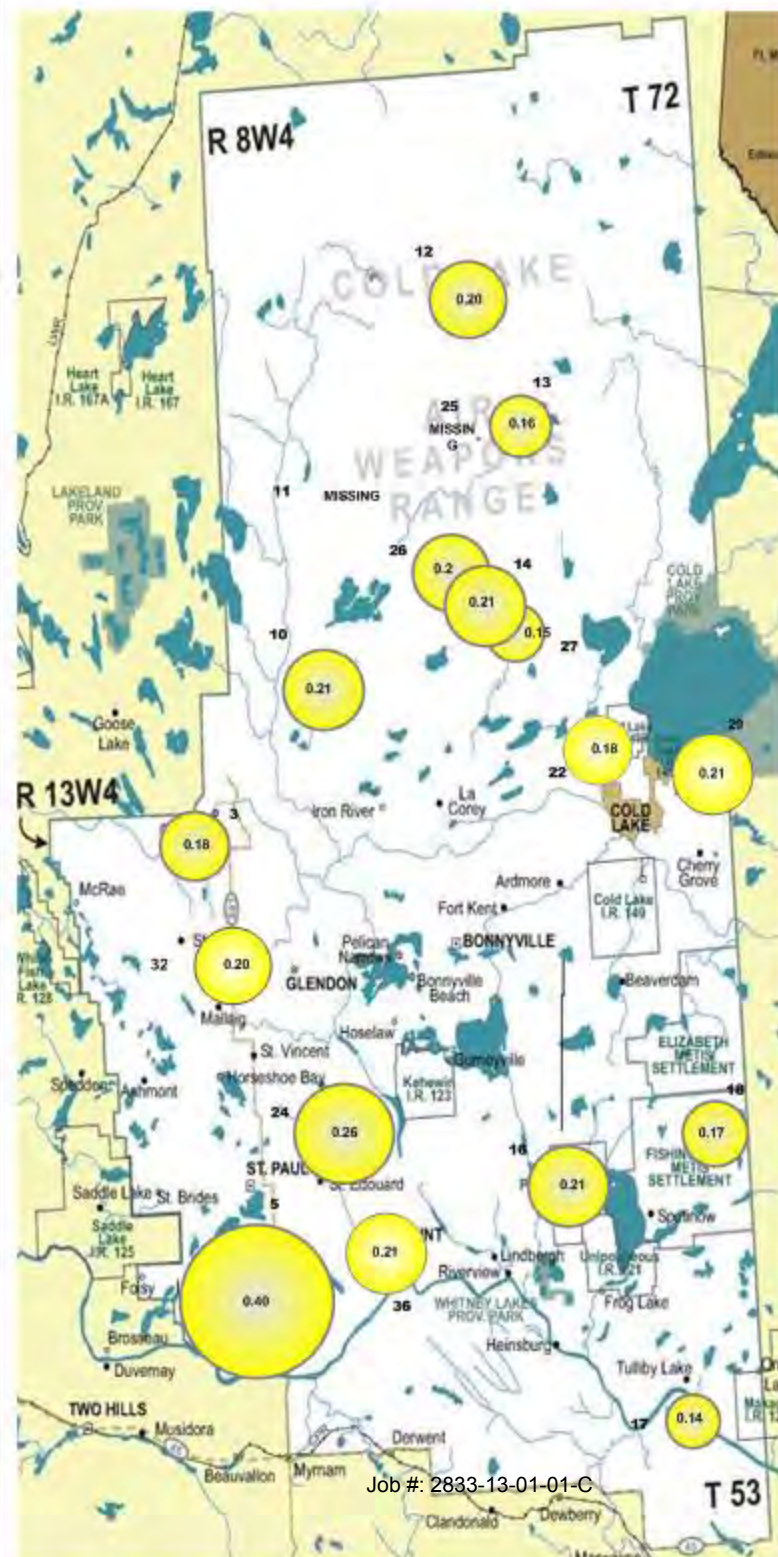
PASSIVE STATIONS

Station	Reading	DUPLICATE
3 – Therien	0.18 PPB	NA
5 – Lake Eliza	0.40 PPB	NA
10 – La Corey	0.21 PPB	NA
11 – Wolf Lake	MISSING	NA
12 – Foster Creek	0.20 PPB	NA
13 – Primrose	0.16 PPB	NA
14 – Maskwa	0.21 PPB	NA
16 – Frog Lake	0.21 PPB	NA
17 – Clear Range	0.14 PPB	NA
18 – Fishing Lake	0.17 PPB	NA
22 – Cold Lake South	0.18 PPB	NA
24 – Fort George	0.26 PPB	NA
25 – Burnt Lake	0.15 PPB	MISSING
26 – Mahihkan	0.18 PPB	0.21 PPB
27 – Mahkeses	0.15 PPB	NA
29 – Cold Lake South 2	0.21 PPB	NA
32 – St. Lina	0.20 PPB	NA
36 – Elk Point	0.21 PPB	NA



Summary

Minimum : 0.14 PPB – Clear Range
Maximum: 0.40 PPB –Lake Eliza
Average: 0.20 PPB *Includes Duplicates



Lakeland Industry & Community Association NO₂ Passive Bubble Map

JANUARY 2013

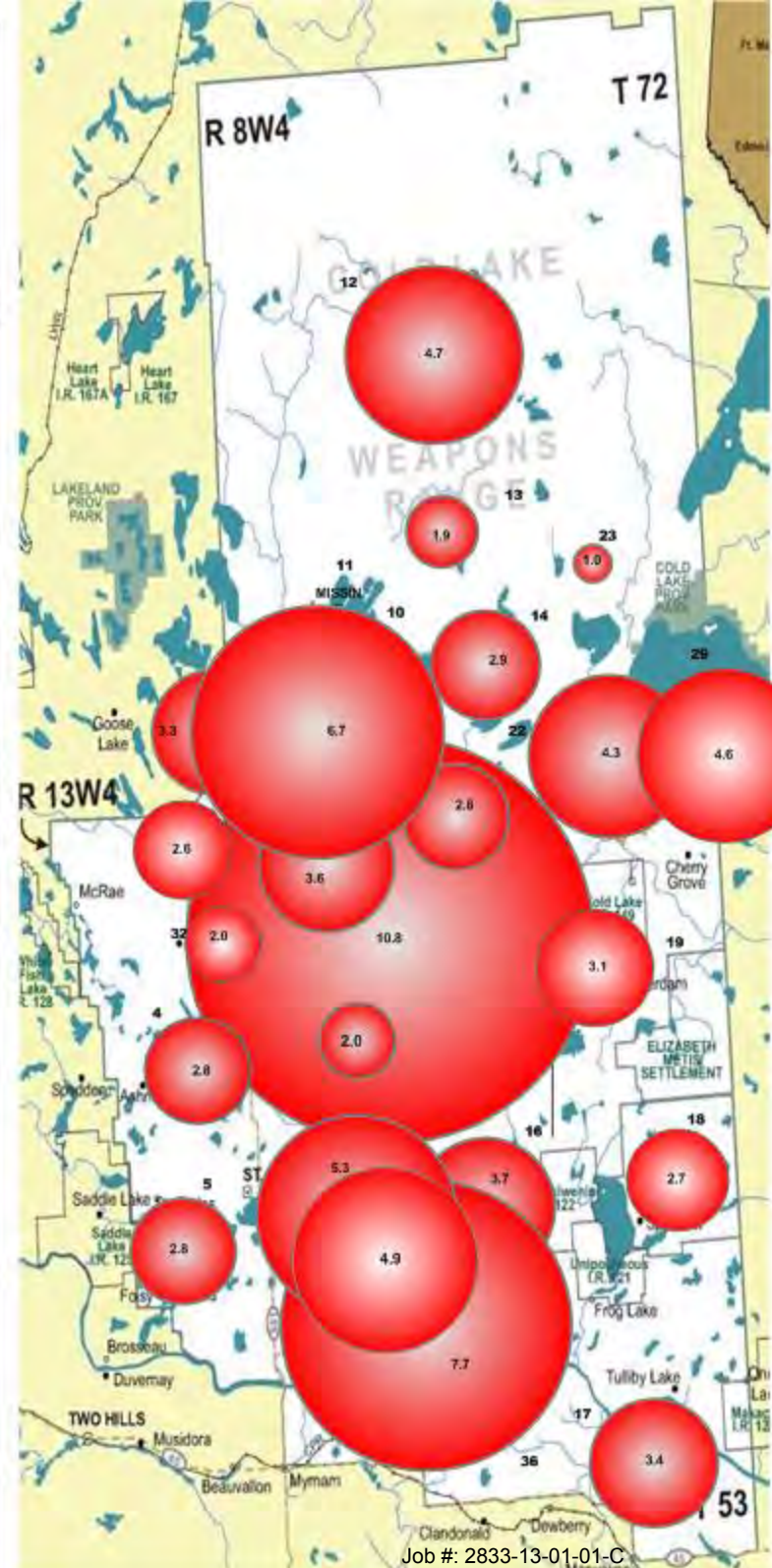
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	3.3 PPB	NA
3 – Therien	2.6 PPB	NA
4 – Flat Lake	2.8 PPB	NA
5 – Lake Eliza	2.8 PPB	NA
6 – Telegraph Creek	5.1 PPB	4.6 PPB
8 – Muriel-Kehewin	2.1 PPB	1.8 PPB
9 – Dupre	3.6 PPB	NA
10 – La Corey	6.7 PPB	NA
11 – Wolf Lake	MISSING	NA
12 – Foster Creek	4.7 PPB	NA
13 – Primrose	1.9 PPB	NA
14 – Maskwa	2.9 PPB	NA
15 – Ardmore	2.8 PPB	NA
16 – Frog Lake	3.7 PPB	NA
17 – Clear Range	3.4 PPB	NA
18 – Fishing Lake	2.7 PPB	NA
19 – Beaverdam	3.1 PPB	NA
22 – Cold Lake South	4.3 PPB	NA
23 – Medley-Martineau	1.0 PPB	NA
24 – Fort George	5.3 PPB	NA
28 – Town of Bonnyville	10.8 PPB	NA
29 – Cold Lake South 2	4.6 PPB	NA
32 – St. Lina	2.0 PPB	NA
36 – Elk Point	7.7 PPB	NA



Summary

Minimum : 1.0 PPB – Medley-Martineau
 Maximum: 10.8 PPB – Town of Bonnyville
 Average: 3.9 PPB *Includes Duplicates

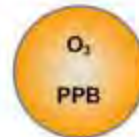


Lakeland Industry & Community Association O₃ Passive Bubble Map

JANUARY 2013

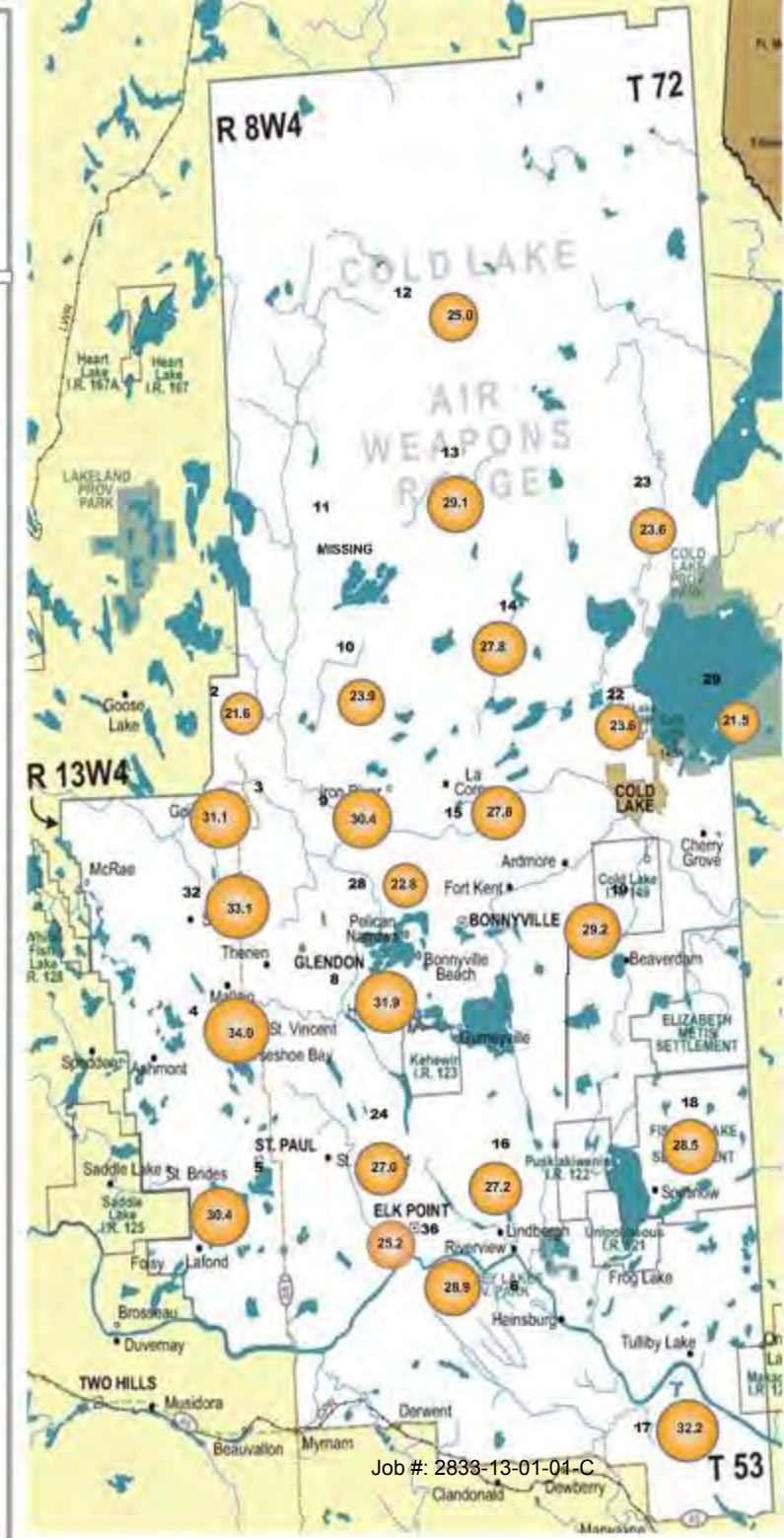
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	21.6 PPB	NA
3 – Therien	31.1 PPB	NA
4 – Flat Lake	34.0 PPB	NA
5 – Lake Eliza	30.4 PPB	NA
6 – Telegraph Creek	29.3 PPB	28.5 PPB
8 – Muriel-Kehewin	32.9 PPB	30.9 PPB
9 – Dupre	30.4 PPB	NA
10 – La Corey	23.9 PPB	NA
11 – Wolf Lake	MISSING	NA
12 – Foster Creek	25.0 PPB	NA
13 – Primrose	29.1 PPB	NA
14 – Maskwa	27.8 PPB	NA
15 – Ardmore	27.8 PPB	NA
16 – Frog Lake	27.2 PPB	NA
17 – Clear Range	32.2 PPB	NA
18 – Fishing Lake	28.5 PPB	NA
19 – Beaverdam	29.2 PPB	NA
22 – Cold Lake South	23.6 PPB	NA
23 – Medley-Martineau	23.6 PPB	NA
24 – Fort George	27.0 PPB	NA
28 – Town of Bonnyville	22.8 PPB	NA
29 – Cold Lake South 2	21.5 PPB	NA
32 – St. Lina	33.1 PPB	NA
36 – Elk Point	25.2 PPB	NA



Summary

Minimum : 21.5 PPB – Cold Lake South 2
 Maximum: 34.0 PPB – Flat Lake
 Average: 27.6 PPB *Includes Duplicates



Lakeland Industry & Community Association SO₂ Passive Bubble Map

JANUARY 2013

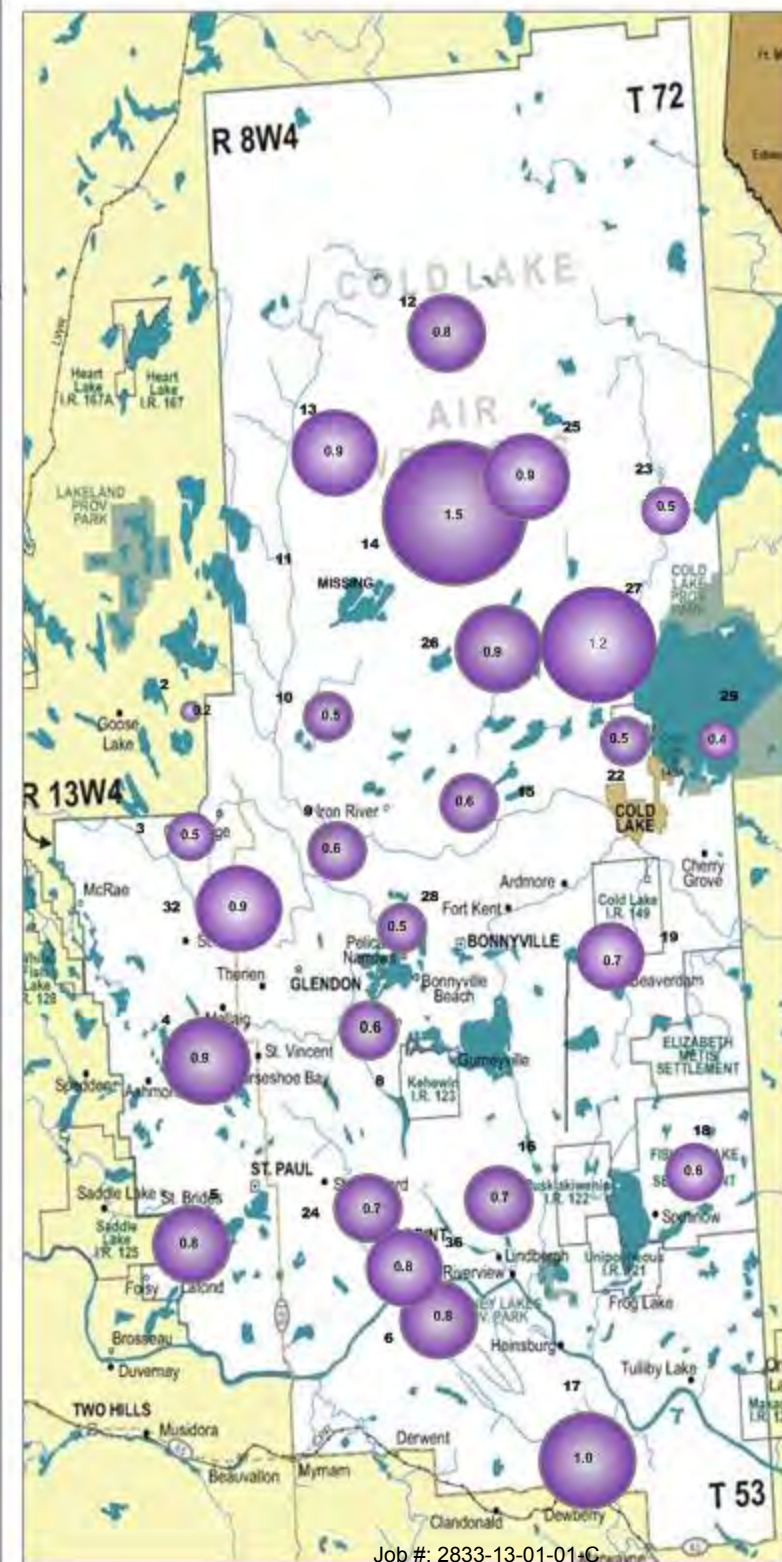
PASSIVE STATIONS

Station	SO ₂ Concentration (PPB)	Duplicate
2 – Sand River	0.2 PPB	NA
3 – Therien	0.5 PPB	NA
4 – Flat Lake	0.9 PPB	NA
5 – Lake Eliza	0.8 PPB	NA
6 – Telegraph Creek	0.8 PPB	NA
8 – Muriel-Kehewin	0.6 PPB	NA
9 – Dupre	0.6 PPB	NA
10 – La Corey	0.5 PPB	NA
11 – Wolf Lake	MISSING	NA
12 – Foster Creek	0.8 PPB	NA
13 – Primrose	0.9 PPB	NA
14 – Maskwa	1.5 PPB	NA
15 – Ardmore	0.6 PPB	NA
16 – Frog Lake	0.7 PPB	0.6 PPB
17 – Clear Range	1.1 PPB	0.8 PPB
18 – Fishing Lake	0.6 PPB	0.6 PPB
19 – Beaverdam	0.7 PPB	NA
22 – Cold Lake South	0.5 PPB	NA
23 – Medley-Martineau	0.5 PPB	NA
24 – Fort George	0.7 PPB	NA
25 – Burnt Lake	0.9 PPB	NA
26 – Mahikan	0.9 PPB	NA
27 – Mahkeses	1.2 PPB	NA
28 – Town of Bonnyville	0.5 PPB	NA
29 – Cold Lake South 2	0.4 PPB	NA
32 – St. Lina	0.9 PPB	NA
36 – Elk Point	0.8 PPB	NA



Summary

Minimum : 0.2 PPB – Sand River
 Maximum: 1.5 PPB – Maskwa
 Average: 0.73 PPB *Includes Duplicates



Passive Field Data

Field Notes

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
2	SO ₂ /NO ₂ /O ₃	12/31/2012	16:45	01/29/2013	11:52	
3	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/2012	17:35	01/29/2013	11:16	
4	SO ₂ /NO ₂ /O ₃	01/02/2013	17:20	01/30/2013	16:18	
5	H ₂ S/SO ₂ /NO ₂ /O ₃	01/02/2013	16:10	01/30/2013	15:09	
6	SO ₂ /NO ₂ /O ₃	01/02/2013	13:50	01/30/2013	13:15	
8	SO ₂ /NO ₂ /O ₃	01/02/2013	18:20	01/30/2013	17:24	
9	SO ₂ /NO ₂ /O ₃	12/31/2012	19:40	01/29/2013	08:32	
10	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/2012	12:15	01/29/2013	12:59	
11	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/2012	13:10	NA	NA	Sample was not changed as the access to the sample was blocked by snow.
12	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/2012	15:05	01/31/2013	10:49	
13	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/2012	10:40	01/31/2013	14:55	
14	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/2012	09:25	01/31/2013	15:47	
15	SO ₂ /NO ₂ /O ₃	12/31/2012	11:45	01/30/2013	17:50	
16	H ₂ S/SO ₂ /NO ₂ /O ₃	01/02/2013	12:10	01/30/2013	11:25	
17	H ₂ S/SO ₂ /NO ₂ /O ₃	01/02/2013	13:13	01/30/2013	12:18	
18	H ₂ S/SO ₂ /NO ₂ /O ₃	01/02/2013	11:30	01/30/2013	10:35	
19	SO ₂ /NO ₂ /O ₃	01/02/2013	10:30	01/30/2013	09:06	
22	H ₂ S/SO ₂ /NO ₂ /O ₃	01/02/2013	09:20	01/29/2013	18:20	
23	SO ₂ /NO ₂ /O ₃	12/31/2012	07:50	01/29/2013	17:15	
24	H ₂ S/SO ₂ /NO ₂ /O ₃	01/02/2013	14:30	01/30/2013	13:51	
25	H ₂ S/SO ₂	12/31/2012	13:55	01/31/2013	12:13	
26	H ₂ S/SO ₂	12/31/2012	09:50	01/31/2013	15:13	
27	H ₂ S/SO ₂	12/31/2012	09:00	01/31/2013	16:41	
28	SO ₂ /NO ₂ /O ₃	12/31/2012	19:15	01/29/2013	09:03	
29	H ₂ S/SO ₂ /NO ₂ /O ₃	01/02/2013	09:00	01/29/2013	18:20	
32	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/2012	18:20	01/29/2013	09:55	
36	H ₂ S/SO ₂ /NO ₂ /O ₃	01/02/2013	14:45	01/30/2013	14:01	

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
Duplicate # 16	SO ₂	01/02/2013	12:10	01/30/2013	11:25	
Duplicate # 17	SO ₂	01/02/2013	13:13	01/30/2013	12:18	
Duplicate # 18	SO ₂	01/02/2013	11:30	01/30/2013	10:35	
Duplicate # 26	H ₂ S	12/13/2012	09:50	01/31/2013	15:13	
Duplicate # 06	NO ₂	01/02/2013	13:50	01/30/2013	13:15	
Duplicate # 08	NO ₂	01/02/2013	18:20	01/30/2013	17:24	
Duplicate # 06	O ₃	01/02/2013	13:50	01/30/2013	13:15	
Duplicate # 08	O ₃	01/02/2013	18:20	01/30/2013	1724	

Passive Network Laboratory Analysis



Your Project #: 2012/12/31 - 2013/01/29
Site Location: LICA

Attention: MICHAEL BISAGA

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
PO BOX 8237
5107W- 50TH STREET
BONNYVILLE, AB
CANADA T9N 2J5

Report Date: 2013/02/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B313446

Received: 2013/02/21, 09:18

Sample Matrix: Air
Samples Received: 34

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
H2S Passive Analysis (1)	20	2013/02/25	2013/02/26	EINDSOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (1)	26	2013/02/26	2013/02/26	EINDSOP-00148	Tang Passive NO2 in
O3 Passive Analysis (1)	26	2013/02/25	2013/02/26	EINDSOP-00197	EPA 300 R2.1
SO2 Passive Analysis (1)	30	2013/02/25	2013/02/26	EINDSOP-00149	Tang Passive SO2 in

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) The detection limit is based on a 30 day sampling period.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Levi Manchak, Customer Service
Email: LManchak@maxxam.ca
Phone# (780) 378-8500

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Maxxam Analytics International Corporation o/a Maxxam Analytics Edmonton: 6744 - 50th Street T6B 3M9 Telephone(780) 378-8500 FAX(780) 378-8699



Maxxam Job #: B313446
 Report Date: 2013/02/26

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2012/12/31 - 2013/01/29
 Site Location: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		FR2365	FR2367	FR2368	FR2369	FR2370		
Sampling Date		2012/12/31 16:45	2012/12/31 17:35	2013/01/02 17:20	2013/01/02 16:10	2013/01/02 13:50		
	UNITS	2	3	4	5	6	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb		0.18		0.40		0.02	6595104
Calculated NO2	ppb	3.3	2.6	2.8	2.8	5.1	0.1	6598876
Calculated O3	ppb	21.6	31.1	34.0	30.4	29.3	0.1	6594796
Calculated SO2	ppb	0.2	0.5	0.9	0.8	0.8	0.1	6594233
RDL = Reportable Detection Limit								

Maxxam ID		FR2372	FR2373	FR2374	FR2375	FR2376		
Sampling Date		2013/01/02 18:20	2012/12/31 19:40	2012/12/31 12:15	2012/12/31 13:10	2012/12/31 15:05		
	UNITS	8	9	10	11	12	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb			0.21	MISSING	0.20	0.02	6595104
Calculated NO2	ppb	2.1	3.6	6.7	MISSING	4.7	0.1	6598876
Calculated O3	ppb	32.9	30.4	23.9	MISSING	25.0	0.1	6594796
Calculated SO2	ppb	0.6	0.6	0.5	MISSING	0.8	0.1	6594233
RDL = Reportable Detection Limit								

Maxxam ID		FR2378	FR2379	FR2380	FR2382	FR2383		
Sampling Date		2012/12/31 10:40	2012/12/31 09:25	2012/12/31 11:45	2013/01/02 12:10	2013/01/02 13:13		
	UNITS	13	14	15	16	17	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.16	0.21		0.21	0.14	0.02	6595104
Calculated NO2	ppb	1.9	2.9	2.8	3.7	3.4	0.1	6598876
Calculated O3	ppb	29.1	27.8	27.8	27.2	32.2	0.1	6594796
Calculated SO2	ppb	0.9	1.5	0.6	0.7	1.1	0.1	6594233
RDL = Reportable Detection Limit								



Maxxam Job #: B313446
 Report Date: 2013/02/26

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2012/12/31 - 2013/01/29
 Site Location: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		FR2385		FR2386		FR2387	FR2388		
Sampling Date		2013/01/02 11:30		2013/01/02 10:20		2013/01/02 09:20	2012/12/31 07:50		
	UNITS	18	QC Batch	19	QC Batch	22	23	RDL	QC Batch

Passive Monitoring									
Calculated H2S	ppb	0.17	6595104			0.18		0.02	6595104
Calculated NO2	ppb	2.7	6598876	3.1	6598876	4.3	1.0	0.1	6598884
Calculated O3	ppb	28.5	6594803	29.2	6594803	23.6	23.6	0.1	6594803
Calculated SO2	ppb	0.6	6594233	0.7	6594256	0.5	0.5	0.1	6594256

RDL = Reportable Detection Limit

Maxxam ID		FR2389	FR2390	FR2391	FR2392	FR2393		
Sampling Date		2013/01/02 14:30	2012/12/31 13:55	2012/12/31 09:50	2012/12/31 09:00	2012/12/31 19:15		
	UNITS	24	25	26	27	28	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.26	0.15	0.18	0.15		0.02	6595104
Calculated NO2	ppb	5.3				10.8	0.1	6598884
Calculated O3	ppb	27.0				22.8	0.1	6594803
Calculated SO2	ppb	0.7	0.9	0.9	1.2	0.5	0.1	6594256

RDL = Reportable Detection Limit

Maxxam ID		FR2394	FR2395	FR2396		FR2399		
Sampling Date		2013/01/02 09:00	2012/12/31 18:20	2013/01/02 14:45		2013/01/02 13:50		
	UNITS	29	32	34	QC Batch	6 DUP	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.21	0.20	0.21	6595104		0.02	
Calculated NO2	ppb	4.6	2.0	7.7	6598884	4.6	0.1	6598876
Calculated O3	ppb	21.5	33.1	25.2	6594803	28.5	0.1	6594803
Calculated SO2	ppb	0.4	0.9	0.8	6594256		0.1	

RDL = Reportable Detection Limit



Maxxam Job #: B313446
 Report Date: 2013/02/26

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2012/12/31 - 2013/01/29
 Site Location: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		FR2400	FR2401	FR2402	FR2403	FR2404		
Sampling Date		2013/01/02 18:20	2013/01/02 12:10	2013/01/02 13:13	2013/01/02 11:30	2012/12/31 13:55		
	UNITS	8 DUP	16 DUP	17 DUP	18 DUP	25 DUP	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb					MISSING	0.02	6595104
Calculated NO2	ppb	1.8					0.1	6598876
Calculated O3	ppb	30.9					0.1	6594803
Calculated SO2	ppb		0.6	0.8	0.6		0.1	6594233

RDL = Reportable Detection Limit

Maxxam ID		FR2405		
Sampling Date		2012/12/31 09:50		
	UNITS	26 DUP	RDL	QC Batch

Passive Monitoring				
Calculated H2S	ppb	0.21	0.02	6595104

RDL = Reportable Detection Limit



Maxxam Job #: B313446
Report Date: 2013/02/26

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2012/12/31 - 2013/01/29
Site Location: LICA
Sampler Initials: SB

General Comments

Sample #34 returned labelled as #36 for SO2 LM
Samples FR2375 (#11) for all parameteres were not returned to the lab. - OZ
Sample FR2404(#25 DUP) for H2S Parameter was not returned to the lab. - AC

Results relate only to the items tested.



LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Attention: MICHAEL BISAGA
 Client Project #: 2012/12/31 - 2013/01/29
 P.O. #:
 Site Location: LICA

Quality Assurance Report
 Maxxam Job Number: PB313446

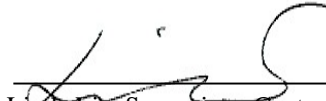
QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6594233 DF4	Calibration Check	Calculated SO2	2013/02/25		100	%	95 - 105
	Spiked Blank	Calculated SO2	2013/02/25		101	%	N/A
	Method Blank	Calculated SO2	2013/02/25	<0.1		ppb	
6594256 DF4	Calibration Check	Calculated SO2	2013/02/25		99	%	95 - 105
	Spiked Blank	Calculated SO2	2013/02/25		105	%	N/A
	Method Blank	Calculated SO2	2013/02/25	<0.1		ppb	
6594796 OZ	Calibration Check	Calculated O3	2013/02/25		101	%	91 - 107
	Spiked Blank	Calculated O3	2013/02/25		101	%	N/A
	Method Blank	Calculated O3	2013/02/25	<0.1		ppb	
6594803 OZ	Calibration Check	Calculated O3	2013/02/25		101	%	91 - 107
	Spiked Blank	Calculated O3	2013/02/25		99	%	N/A
	Method Blank	Calculated O3	2013/02/25	<0.1		ppb	
6595104 WC6	Calibration Check	Calculated H2S	2013/02/25		101	%	80 - 120
	Spiked Blank	Calculated H2S	2013/02/25		99	%	N/A
6598876 DF4	Calibration Check	Calculated NO2	2013/02/26		98	%	76 - 118
	Spiked Blank	Calculated NO2	2013/02/26		98	%	N/A
	Method Blank	Calculated NO2	2013/02/26	<0.1		ppb	
6598884 DF4	Calibration Check	Calculated NO2	2013/02/26		99	%	76 - 118
	Spiked Blank	Calculated NO2	2013/02/26		98	%	N/A
	Method Blank	Calculated NO2	2013/02/26	<0.1		ppb	

Calibration Check: A calibration standard analyzed at different times to evaluate on-going calibration accuracy.
 Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
 Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Validation Signature Page

Maxxam Job #: B313446

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Linda Lin, Supervisor, Centre for Passive Sampling Technology

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Volatile Organics Laboratory Analysis

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: 272
Station ID: Lica 1 Canister Installation Date/Time: Jan 02, 2013 @ 8:22 mst
Field Sample ID: LICA VOC/ CLS /Jan 04, 2012 Canister Removal Date/Time: Jan 08, 2013 @ 8:35 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
04-Jan-13	01/04/2013 0:00	01/05/2013 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	643	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	23

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: System leak check prior to sampling. COC#13155

Technician Signiture: Ting Xu_____



Your C.O.C. #: 13155

Attention: Michael Bisaga

Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2013/01/17

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B305510

Received: 2013/01/10, 10:30

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2013/01/15	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2013/01/15	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days or as contractually agreed from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====
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Total cover pages: 1

Maxxam Job #: B305510
 Report Date: 2013/01/17

RESULTS OF ANALYSES OF AIR

Maxxam ID		QF4226	QF4227	
Sampling Date		2013/01/04	2013/01/04	
COC Number		13155	13155	
	Units	LICA VOC/CLS/JAN 04,13 - 272	LICA VOC/PORT/JAN 04,13 - 7870	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	22	3096962

QC Batch = Quality Control Batch

Maxxam Job #: B305510
 Report Date: 2013/01/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF4226			QF4227				
Sampling Date		2013/01/04			2013/01/04				
COC Number		13155			13155				
	Units	LICA VOC/CLS/JAN 04,13 - 272	ug/m3	DL (ug/m3)	LICA VOC/PORT/JAN 04,13 - 7870	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatilic Organics									
Dichlorodifluoromethane (FREON 12)	ppbv	0.68	3.35	0.989	0.68	0.20	3.36	0.989	3096955
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	3096955
Chloromethane	ppbv	0.51	1.05	0.620	0.50	0.30	1.02	0.620	3096955
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	3096955
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	3096955
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	3096955
Trichlorofluoromethane (FREON 11)	ppbv	0.37	2.10	1.12	0.37	0.20	2.08	1.12	3096955
Ethanol (ethyl alcohol)	ppbv	2.4	4.48	4.33	<2.3	2.3	<4.33	4.33	3096955
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	3096955
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	3096955
2-Propanone	ppbv	1.02	2.41	1.90	1.17	0.80	2.77	1.90	3096955
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	3096955
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	3096955
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	3096955
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	3096955
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	3096955
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	3096955
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	3096955
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	3096955
Methylene Chloride(Dichloromethane)	ppbv	<0.80	<2.78	2.78	<0.80	0.80	<2.78	2.78	3096955
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	3096955
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	3096955
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	3096955
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	3096955
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	3096955
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	3096955
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	3096955
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	3096955
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	3096955
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	3096955
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	3096955

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B305510
 Report Date: 2013/01/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF4226			QF4227				
Sampling Date		2013/01/04			2013/01/04				
COC Number		13155			13155				
	Units	LICA VOC/CLS/JAN 04,13 - 272	ug/m3	DL (ug/m3)	LICA VOC/PORT/JAN 04,13 - 7870	RDL	ug/m3	DL (ug/m3)	QC Batch
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	3096955
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	3096955
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	3096955
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	3096955
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	3096955
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	3096955
Benzene	ppbv	<0.18	<0.575	0.575	0.23	0.18	0.740	0.575	3096955
Toluene	ppbv	<0.20	<0.753	0.753	0.25	0.20	0.927	0.753	3096955
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	3096955
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	3096955
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	3096955
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	3096955
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	3096955
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	3096955
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	3096955
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	3096955
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	3096955
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	3096955
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	3096955
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	3096955
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	3096955
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	3096955
Hexane	ppbv	<0.30	<1.06	1.06	0.77	0.30	2.72	1.06	3096955
Heptane	ppbv	<0.30	<1.23	1.23	0.53	0.30	2.17	1.23	3096955
Cyclohexane	ppbv	<0.20	<0.688	0.688	0.38	0.20	1.32	0.688	3096955
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	3096955
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	3096955
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	3096955
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	3096955
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	3096955
2,2,4-Trimethylpentane	ppbv	<0.20	<0.934	0.934	<0.20	0.20	<0.934	0.934	3096955
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	3096955
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	3096955
QC Batch = Quality Control Batch									

Maxxam Job #: B305510
 Report Date: 2013/01/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF4226			QF4227				
Sampling Date		2013/01/04			2013/01/04				
COC Number		13155			13155				
	Units	LICA VOC/CLS/JAN 04,13 - 272	ug/m3	DL (ug/m3)	LICA VOC/PORT/JAN 04,13 - 7870	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)									
Bromochloromethane	%	85	N/A	N/A	84		N/A	N/A	3096955
D5-Chlorobenzene	%	82	N/A	N/A	84		N/A	N/A	3096955
Difluorobenzene	%	82	N/A	N/A	82		N/A	N/A	3096955

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B305510
 Report Date: 2013/01/17

Test Summary

Maxxam ID QF4226
Sample ID LICA VOC/CLS/JAN 04,13 - 272
Matrix AIR

Collected 2013/01/04
Shipped
Received 2013/01/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	3096962	N/A	2013/01/15	Spomenka Smiljanic
Volatile Organics in Air (TO-15)	GC/MS	3096955	N/A	2013/01/15	Spomenka Smiljanic

Maxxam ID QF4227
Sample ID LICA VOC/PORT/JAN 04,13 - 7870
Matrix AIR

Collected 2013/01/04
Shipped
Received 2013/01/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	3096962	N/A	2013/01/15	Spomenka Smiljanic
Volatile Organics in Air (TO-15)	GC/MS	3096955	N/A	2013/01/15	Spomenka Smiljanic

Maxxam Job #: B305510
Report Date: 2013/01/17

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report

Maxxam Job Number: GB305510

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3096955 S_S	Spiked Blank	Bromochloromethane	2013/01/15		94	%	60 - 140
		D5-Chlorobenzene	2013/01/15		92	%	60 - 140
		Difluorobenzene	2013/01/15		91	%	60 - 140
		Dichlorodifluoromethane (FREON 12)	2013/01/15		114	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2013/01/15		123	%	70 - 130
		Chloromethane	2013/01/15		121	%	70 - 130
		Vinyl Chloride	2013/01/15		100	%	70 - 130
		Chloroethane	2013/01/15		95	%	70 - 130
		1,3-Butadiene	2013/01/15		105	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2013/01/15		122	%	70 - 130
		Ethanol (ethyl alcohol)	2013/01/15		109	%	70 - 130
		Trichlorotrifluoroethane	2013/01/15		100	%	70 - 130
		2-propanol	2013/01/15		97	%	70 - 130
		2-Propanone	2013/01/15		103	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2013/01/15		115	%	70 - 130
		Methyl Isobutyl Ketone	2013/01/15		116	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2013/01/15		120	%	70 - 130
		Methyl t-butyl ether (MTBE)	2013/01/15		111	%	70 - 130
		Ethyl Acetate	2013/01/15		114	%	70 - 130
		1,1-Dichloroethylene	2013/01/15		109	%	70 - 130
		cis-1,2-Dichloroethylene	2013/01/15		115	%	70 - 130
		trans-1,2-Dichloroethylene	2013/01/15		106	%	70 - 130
		Methylene Chloride(Dichloromethane)	2013/01/15		102	%	70 - 130
		Chloroform	2013/01/15		108	%	70 - 130
		Carbon Tetrachloride	2013/01/15		125	%	70 - 130
		1,1-Dichloroethane	2013/01/15		101	%	70 - 130
		1,2-Dichloroethane	2013/01/15		125	%	70 - 130
		Ethylene Dibromide	2013/01/15		101	%	70 - 130
		1,1,1-Trichloroethane	2013/01/15		120	%	70 - 130
		1,1,2-Trichloroethane	2013/01/15		95	%	70 - 130
		1,1,2,2-Tetrachloroethane	2013/01/15		88	%	70 - 130
		cis-1,3-Dichloropropene	2013/01/15		110	%	70 - 130
		trans-1,3-Dichloropropene	2013/01/15		124	%	70 - 130
		1,2-Dichloropropane	2013/01/15		95	%	70 - 130
		Bromomethane	2013/01/15		96	%	70 - 130
		Bromoform	2013/01/15		105	%	70 - 130
		Bromodichloromethane	2013/01/15		108	%	70 - 130
		Dibromochloromethane	2013/01/15		107	%	70 - 130
		Trichloroethylene	2013/01/15		98	%	70 - 130
		Tetrachloroethylene	2013/01/15		101	%	70 - 130
		Benzene	2013/01/15		99	%	70 - 130
		Toluene	2013/01/15		106	%	70 - 130
		Ethylbenzene	2013/01/15		117	%	70 - 130
		p+m-Xylene	2013/01/15		117	%	70 - 130
		o-Xylene	2013/01/15		114	%	70 - 130
		Styrene	2013/01/15		103	%	70 - 130
		4-ethyltoluene	2013/01/15		113	%	70 - 130
		1,3,5-Trimethylbenzene	2013/01/15		115	%	70 - 130
		1,2,4-Trimethylbenzene	2013/01/15		118	%	70 - 130
		Chlorobenzene	2013/01/15		96	%	70 - 130
		Benzyl chloride	2013/01/15		100	%	70 - 130
		1,3-Dichlorobenzene	2013/01/15		101	%	70 - 130
		1,4-Dichlorobenzene	2013/01/15		97	%	70 - 130
		1,2-Dichlorobenzene	2013/01/15		97	%	70 - 130
		1,2,4-Trichlorobenzene	2013/01/15		101	%	70 - 130

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB305510

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3096955 S_S	Spiked Blank	Hexachlorobutadiene	2013/01/15		107	%	70 - 130
		Hexane	2013/01/15		100	%	70 - 130
		Heptane	2013/01/15		111	%	70 - 130
		Cyclohexane	2013/01/15		103	%	70 - 130
		Tetrahydrofuran	2013/01/15		110	%	70 - 130
		1,4-Dioxane	2013/01/15		96	%	70 - 130
		Xylene (Total)	2013/01/15		116	%	70 - 130
		Vinyl Bromide	2013/01/15		90	%	70 - 130
		Propene	2013/01/15		89	%	70 - 130
		2,2,4-Trimethylpentane	2013/01/15		96	%	70 - 130
		Carbon Disulfide	2013/01/15		89	%	70 - 130
		Vinyl Acetate	2013/01/15		121	%	70 - 130
	Method Blank	Bromochloromethane	2013/01/15		78	%	60 - 140
		D5-Chlorobenzene	2013/01/15		63	%	60 - 140
		Difluorobenzene	2013/01/15		79	%	60 - 140
		Dichlorodifluoromethane (FREON 12)	2013/01/15	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2013/01/15	<0.17		ppbv	
		Chloromethane	2013/01/15	<0.30		ppbv	
		Vinyl Chloride	2013/01/15	<0.18		ppbv	
		Chloroethane	2013/01/15	<0.30		ppbv	
		1,3-Butadiene	2013/01/15	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2013/01/15	<0.20		ppbv	
		Ethanol (ethyl alcohol)	2013/01/15	<2.3		ppbv	
		Trichlorotrifluoroethane	2013/01/15	<0.15		ppbv	
		2-propanol	2013/01/15	<3.0		ppbv	
		2-Propanone	2013/01/15	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2013/01/15	<3.0		ppbv	
		Methyl Isobutyl Ketone	2013/01/15	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2013/01/15	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2013/01/15	<0.20		ppbv	
		Ethyl Acetate	2013/01/15	<2.2		ppbv	
		1,1-Dichloroethylene	2013/01/15	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2013/01/15	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2013/01/15	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2013/01/15	<0.80		ppbv	
		Chloroform	2013/01/15	<0.15		ppbv	
		Carbon Tetrachloride	2013/01/15	<0.30		ppbv	
		1,1-Dichloroethane	2013/01/15	<0.20		ppbv	
		1,2-Dichloroethane	2013/01/15	<0.20		ppbv	
		Ethylene Dibromide	2013/01/15	<0.17		ppbv	
		1,1,1-Trichloroethane	2013/01/15	<0.30		ppbv	
		1,1,2-Trichloroethane	2013/01/15	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2013/01/15	<0.20		ppbv	
		cis-1,3-Dichloropropene	2013/01/15	<0.18		ppbv	
		trans-1,3-Dichloropropene	2013/01/15	<0.17		ppbv	
		1,2-Dichloropropane	2013/01/15	<0.40		ppbv	
		Bromomethane	2013/01/15	<0.18		ppbv	
		Bromoform	2013/01/15	<0.20		ppbv	
		Bromodichloromethane	2013/01/15	<0.20		ppbv	
		Dibromochloromethane	2013/01/15	<0.20		ppbv	
		Trichloroethylene	2013/01/15	<0.30		ppbv	
		Tetrachloroethylene	2013/01/15	<0.20		ppbv	
		Benzene	2013/01/15	<0.18		ppbv	
		Toluene	2013/01/15	<0.20		ppbv	
		Ethylbenzene	2013/01/15	<0.20		ppbv	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB305510

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3096955 S_S	Method Blank	p+m-Xylene	2013/01/15	<0.37		ppbv	
		o-Xylene	2013/01/15	<0.20		ppbv	
		Styrene	2013/01/15	<0.20		ppbv	
		4-ethyltoluene	2013/01/15	<2.2		ppbv	
		1,3,5-Trimethylbenzene	2013/01/15	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2013/01/15	<0.50		ppbv	
		Chlorobenzene	2013/01/15	<0.20		ppbv	
		Benzyl chloride	2013/01/15	<1.0		ppbv	
		1,3-Dichlorobenzene	2013/01/15	<0.40		ppbv	
		1,4-Dichlorobenzene	2013/01/15	<0.40		ppbv	
		1,2-Dichlorobenzene	2013/01/15	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2013/01/15	<2.0		ppbv	
		Hexachlorobutadiene	2013/01/15	<3.0		ppbv	
		Hexane	2013/01/15	<0.30		ppbv	
		Heptane	2013/01/15	<0.30		ppbv	
		Cyclohexane	2013/01/15	<0.20		ppbv	
		Tetrahydrofuran	2013/01/15	<0.40		ppbv	
		1,4-Dioxane	2013/01/15	<2.0		ppbv	
		Xylene (Total)	2013/01/15	<0.60		ppbv	
		Vinyl Bromide	2013/01/15	<0.20		ppbv	
		Propene	2013/01/15	<0.30		ppbv	
		2,2,4-Trimethylpentane	2013/01/15	<0.20		ppbv	
		Carbon Disulfide	2013/01/15	<0.50		ppbv	
		Vinyl Acetate	2013/01/15	<0.20		ppbv	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: 304
Station ID: Lica 1 Canister Installation Date/Time: Jan 08, 2013 @ 8:43 mst
Field Sample ID: LICA VOC/ CLS /Jan 10, 2012 Canister Removal Date/Time: Jan 11, 2013 @ 9:22 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
10-Jan-13	01/10/2013 0:00	01/11/2013 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	643	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	23

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: System leak check prior to sampling. COC#13173

Technician Signature: Ting Xu_____



Your C.O.C. #: 13173

Attention: Michael Bisaga

Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2013/01/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B306228

Received: 2013/01/15, 09:34

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2013/01/15	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2013/01/15	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days or as contractually agreed from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

Maxxam Job #: B306228
 Report Date: 2013/01/16

RESULTS OF ANALYSES OF AIR

Maxxam ID		QF8353	QF8354	
Sampling Date		2013/01/10	2013/01/10	
COC Number		13173	13173	
	Units	LICA VOC/CLS/JAN 10,13 - 304	LICA VOC/PORT/JAN 10,13 - 296	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	22	3095565

QC Batch = Quality Control Batch

Maxxam Job #: B306228
 Report Date: 2013/01/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF8353				
Sampling Date		2013/01/10				
COC Number		13173				
	Units	LICA VOC/CLS/JAN 10,13 - 304	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.63	0.20	3.10	0.989	3095567
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	3095567
Chloromethane	ppbv	0.54	0.30	1.12	0.620	3095567
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	3095567
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	3095567
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	3095567
Trichlorofluoromethane (FREON 11)	ppbv	0.38	0.20	2.12	1.12	3095567
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	3095567
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	3095567
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	3095567
2-Propanone	ppbv	1.00	0.80	2.38	1.90	3095567
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	3095567
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	3095567
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	3095567
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	3095567
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	3095567
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	3095567
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	3095567
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	3095567
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	3095567
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	3095567
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	3095567
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3095567
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3095567
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	3095567
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	3095567
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	3095567
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	3095567
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	3095567
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	3095567
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	3095567
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B306228
 Report Date: 2013/01/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF8353				
Sampling Date		2013/01/10				
COC Number		13173				
	Units	LICA VOC/CLS/JAN 10,13 - 304	RDL	ug/m3	DL (ug/m3)	QC Batch
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	3095567
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	3095567
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	3095567
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	3095567
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	3095567
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	3095567
Benzene	ppbv	0.27	0.18	0.875	0.575	3095567
Toluene	ppbv	0.22	0.20	0.815	0.753	3095567
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	3095567
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	3095567
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	3095567
Styrene	ppbv	<0.20	0.20	<0.852	0.852	3095567
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	3095567
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3095567
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3095567
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	3095567
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	3095567
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3095567
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3095567
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3095567
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	3095567
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	3095567
Hexane	ppbv	<0.30	0.30	<1.06	1.06	3095567
Heptane	ppbv	<0.30	0.30	<1.23	1.23	3095567
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	3095567
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	3095567
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	3095567
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	3095567
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	3095567
Propene	ppbv	1.14	0.30	1.96	0.516	3095567
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	3095567
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	3095567
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	3095567
QC Batch = Quality Control Batch						

Maxxam Job #: B306228
 Report Date: 2013/01/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF8353				
Sampling Date		2013/01/10				
COC Number		13173				
	Units	LICA VOC/CLS/JAN 10,13 - 304	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	89		N/A	N/A	3095567
D5-Chlorobenzene	%	82		N/A	N/A	3095567
Difluorobenzene	%	90		N/A	N/A	3095567
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B306228
 Report Date: 2013/01/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF8354				
Sampling Date		2013/01/10				
COC Number		13173				
	Units	LICA VOC/PORT/JAN 10,13 - 296	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.64	0.20	3.18	0.989	3095567
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	3095567
Chloromethane	ppbv	0.48	0.30	0.982	0.620	3095567
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	3095567
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	3095567
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	3095567
Trichlorofluoromethane (FREON 11)	ppbv	0.30	0.20	1.67	1.12	3095567
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	3095567
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	3095567
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	3095567
2-Propanone	ppbv	<0.80	0.80	<1.90	1.90	3095567
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	3095567
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	3095567
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	3095567
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	3095567
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	3095567
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	3095567
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	3095567
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	3095567
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	3095567
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	3095567
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	3095567
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3095567
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3095567
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	3095567
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	3095567
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	3095567
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	3095567
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	3095567
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	3095567
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	3095567
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B306228
 Report Date: 2013/01/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF8354				
Sampling Date		2013/01/10				
COC Number		13173				
	Units	LICA VOC/PORT/JAN 10,13 - 296	RDL	ug/m3	DL (ug/m3)	QC Batch
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	3095567
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	3095567
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	3095567
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	3095567
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	3095567
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	3095567
Benzene	ppbv	0.20	0.18	0.643	0.575	3095567
Toluene	ppbv	<0.20	0.20	<0.753	0.753	3095567
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	3095567
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	3095567
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	3095567
Styrene	ppbv	<0.20	0.20	<0.852	0.852	3095567
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	3095567
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3095567
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3095567
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	3095567
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	3095567
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3095567
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3095567
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3095567
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	3095567
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	3095567
Hexane	ppbv	<0.30	0.30	<1.06	1.06	3095567
Heptane	ppbv	<0.30	0.30	<1.23	1.23	3095567
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	3095567
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	3095567
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	3095567
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	3095567
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	3095567
Propene	ppbv	<1.3	1.3	<2.24	2.24	3095567
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	3095567
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	3095567
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	3095567
QC Batch = Quality Control Batch						

Maxxam Job #: B306228
 Report Date: 2013/01/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF8354				
Sampling Date		2013/01/10				
COC Number		13173				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/PORT/JAN				
		10,13 - 296				

Surrogate Recovery (%)						
Bromochloromethane	%	89		N/A	N/A	3095567
D5-Chlorobenzene	%	83		N/A	N/A	3095567
Difluorobenzene	%	88		N/A	N/A	3095567

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B306228
 Report Date: 2013/01/16

Test Summary

Maxxam ID QF8353 **Collected** 2013/01/10
Sample ID LICA VOC/CLS/JAN 10,13 - 304 **Shipped**
Matrix AIR **Received** 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	3095565	N/A	2013/01/15	Jie Wu
Volatile Organics in Air (TO-15)	GC/MS	3095567	N/A	2013/01/15	Jie Wu

Maxxam ID QF8353 Dup **Collected** 2013/01/10
Sample ID LICA VOC/CLS/JAN 10,13 - 304 **Shipped**
Matrix AIR **Received** 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organics in Air (TO-15)	GC/MS	3095567	N/A	2013/01/15	Jie Wu

Maxxam ID QF8354 **Collected** 2013/01/10
Sample ID LICA VOC/PORT/JAN 10,13 - 296 **Shipped**
Matrix AIR **Received** 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	3095565	N/A	2013/01/15	Jie Wu
Volatile Organics in Air (TO-15)	GC/MS	3095567	N/A	2013/01/15	Jie Wu

Maxxam Job #: B306228
Report Date: 2013/01/16

GENERAL COMMENTS

Sample QF8353-01: The amount reported for propene represents the mixture of propene and propane.

Sample QF8354-01: Increased DL further for propene due to possible background.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report

Maxxam Job Number: GB306228

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3095567 JIW	Spiked Blank	Bromochloromethane	2013/01/15		105	%	60 - 140
		D5-Chlorobenzene	2013/01/15		103	%	60 - 140
		Difluorobenzene	2013/01/15		105	%	60 - 140
		Dichlorodifluoromethane (FREON 12)	2013/01/15		102	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2013/01/15		113	%	70 - 130
		Chloromethane	2013/01/15		102	%	70 - 130
		Vinyl Chloride	2013/01/15		99	%	70 - 130
		Chloroethane	2013/01/15		96	%	70 - 130
		1,3-Butadiene	2013/01/15		103	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2013/01/15		103	%	70 - 130
		Ethanol (ethyl alcohol)	2013/01/15		117	%	70 - 130
		Trichlorotrifluoroethane	2013/01/15		94	%	70 - 130
		2-propanol	2013/01/15		92	%	70 - 130
		2-Propanone	2013/01/15		103	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2013/01/15		88	%	70 - 130
		Methyl Isobutyl Ketone	2013/01/15		96	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2013/01/15		95	%	70 - 130
		Methyl t-butyl ether (MTBE)	2013/01/15		101	%	70 - 130
		Ethyl Acetate	2013/01/15		98	%	70 - 130
		1,1-Dichloroethylene	2013/01/15		94	%	70 - 130
		cis-1,2-Dichloroethylene	2013/01/15		96	%	70 - 130
		trans-1,2-Dichloroethylene	2013/01/15		101	%	70 - 130
		Methylene Chloride(Dichloromethane)	2013/01/15		88	%	70 - 130
		Chloroform	2013/01/15		97	%	70 - 130
		Carbon Tetrachloride	2013/01/15		87	%	70 - 130
		1,1-Dichloroethane	2013/01/15		94	%	70 - 130
		1,2-Dichloroethane	2013/01/15		101	%	70 - 130
		Ethylene Dibromide	2013/01/15		93	%	70 - 130
		1,1,1-Trichloroethane	2013/01/15		102	%	70 - 130
		1,1,2-Trichloroethane	2013/01/15		95	%	70 - 130
		1,1,2,2-Tetrachloroethane	2013/01/15		101	%	70 - 130
		cis-1,3-Dichloropropene	2013/01/15		94	%	70 - 130
		trans-1,3-Dichloropropene	2013/01/15		94	%	70 - 130
		1,2-Dichloropropane	2013/01/15		92	%	70 - 130
		Bromomethane	2013/01/15		98	%	70 - 130
		Bromoform	2013/01/15		109	%	70 - 130
		Bromodichloromethane	2013/01/15		104	%	70 - 130
		Dibromochloromethane	2013/01/15		103	%	70 - 130
		Trichloroethylene	2013/01/15		95	%	70 - 130
		Tetrachloroethylene	2013/01/15		98	%	70 - 130
		Benzene	2013/01/15		94	%	70 - 130
		Toluene	2013/01/15		95	%	70 - 130
		Ethylbenzene	2013/01/15		99	%	70 - 130
		p+m-Xylene	2013/01/15		99	%	70 - 130
		o-Xylene	2013/01/15		104	%	70 - 130
		Styrene	2013/01/15		89	%	70 - 130
		4-ethyltoluene	2013/01/15		115	%	70 - 130
		1,3,5-Trimethylbenzene	2013/01/15		108	%	70 - 130
		1,2,4-Trimethylbenzene	2013/01/15		109	%	70 - 130
		Chlorobenzene	2013/01/15		97	%	70 - 130
		Benzyl chloride	2013/01/15		97	%	70 - 130
		1,3-Dichlorobenzene	2013/01/15		106	%	70 - 130
		1,4-Dichlorobenzene	2013/01/15		99	%	70 - 130
		1,2-Dichlorobenzene	2013/01/15		106	%	70 - 130
		1,2,4-Trichlorobenzene	2013/01/15		102	%	70 - 130

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB306228

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3095567 JIW	Spiked Blank	Hexachlorobutadiene	2013/01/15		138 (1)	%	70 - 130
		Hexane	2013/01/15		96	%	70 - 130
		Heptane	2013/01/15		98	%	70 - 130
		Cyclohexane	2013/01/15		96	%	70 - 130
		Tetrahydrofuran	2013/01/15		97	%	70 - 130
		1,4-Dioxane	2013/01/15		99	%	70 - 130
		Xylene (Total)	2013/01/15		101	%	70 - 130
		Vinyl Bromide	2013/01/15		106	%	70 - 130
		Propene	2013/01/15		85	%	70 - 130
		2,2,4-Trimethylpentane	2013/01/15		103	%	70 - 130
		Carbon Disulfide	2013/01/15		97	%	70 - 130
		Vinyl Acetate	2013/01/15		96	%	70 - 130
	Method Blank	Bromochloromethane	2013/01/15		99	%	60 - 140
		D5-Chlorobenzene	2013/01/15		96	%	60 - 140
		Difluorobenzene	2013/01/15		102	%	60 - 140
		Dichlorodifluoromethane (FREON 12)	2013/01/15	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2013/01/15	<0.17		ppbv	
		Chloromethane	2013/01/15	<0.30		ppbv	
		Vinyl Chloride	2013/01/15	<0.18		ppbv	
		Chloroethane	2013/01/15	<0.30		ppbv	
		1,3-Butadiene	2013/01/15	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2013/01/15	<0.20		ppbv	
		Ethanol (ethyl alcohol)	2013/01/15	<2.3		ppbv	
		Trichlorotrifluoroethane	2013/01/15	<0.15		ppbv	
		2-propanol	2013/01/15	<3.0		ppbv	
		2-Propanone	2013/01/15	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2013/01/15	<3.0		ppbv	
		Methyl Isobutyl Ketone	2013/01/15	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2013/01/15	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2013/01/15	<0.20		ppbv	
		Ethyl Acetate	2013/01/15	<2.2		ppbv	
		1,1-Dichloroethylene	2013/01/15	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2013/01/15	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2013/01/15	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2013/01/15	<0.80		ppbv	
		Chloroform	2013/01/15	<0.15		ppbv	
		Carbon Tetrachloride	2013/01/15	<0.30		ppbv	
		1,1-Dichloroethane	2013/01/15	<0.20		ppbv	
		1,2-Dichloroethane	2013/01/15	<0.20		ppbv	
		Ethylene Dibromide	2013/01/15	<0.17		ppbv	
		1,1,1-Trichloroethane	2013/01/15	<0.30		ppbv	
		1,1,2-Trichloroethane	2013/01/15	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2013/01/15	<0.20		ppbv	
		cis-1,3-Dichloropropene	2013/01/15	<0.18		ppbv	
		trans-1,3-Dichloropropene	2013/01/15	<0.17		ppbv	
		1,2-Dichloropropane	2013/01/15	<0.40		ppbv	
		Bromomethane	2013/01/15	<0.18		ppbv	
		Bromoform	2013/01/15	<0.20		ppbv	
		Bromodichloromethane	2013/01/15	<0.20		ppbv	
		Dibromochloromethane	2013/01/15	<0.20		ppbv	
		Trichloroethylene	2013/01/15	<0.30		ppbv	
		Tetrachloroethylene	2013/01/15	<0.20		ppbv	
		Benzene	2013/01/15	<0.18		ppbv	
		Toluene	2013/01/15	<0.20		ppbv	
		Ethylbenzene	2013/01/15	<0.20		ppbv	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB306228

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3095567 JIW	Method Blank	p+m-Xylene	2013/01/15	<0.37		ppbv	
		o-Xylene	2013/01/15	<0.20		ppbv	
		Styrene	2013/01/15	<0.20		ppbv	
		4-ethyltoluene	2013/01/15	<2.2		ppbv	
		1,3,5-Trimethylbenzene	2013/01/15	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2013/01/15	<0.50		ppbv	
		Chlorobenzene	2013/01/15	<0.20		ppbv	
		Benzyl chloride	2013/01/15	<1.0		ppbv	
		1,3-Dichlorobenzene	2013/01/15	<0.40		ppbv	
		1,4-Dichlorobenzene	2013/01/15	<0.40		ppbv	
		1,2-Dichlorobenzene	2013/01/15	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2013/01/15	<2.0		ppbv	
		Hexachlorobutadiene	2013/01/15	<3.0		ppbv	
		Hexane	2013/01/15	<0.30		ppbv	
		Heptane	2013/01/15	<0.30		ppbv	
		Cyclohexane	2013/01/15	<0.20		ppbv	
		Tetrahydrofuran	2013/01/15	<0.40		ppbv	
		1,4-Dioxane	2013/01/15	<2.0		ppbv	
		Xylene (Total)	2013/01/15	<0.60		ppbv	
		Vinyl Bromide	2013/01/15	<0.20		ppbv	
		Propene	2013/01/15	<0.30		ppbv	
		2,2,4-Trimethylpentane	2013/01/15	<0.20		ppbv	
		Carbon Disulfide	2013/01/15	<0.50		ppbv	
		Vinyl Acetate	2013/01/15	<0.20		ppbv	
	RPD - Sample/Sample Dup	Dichlorodifluoromethane (FREON 12)	2013/01/15	NC		%	25
		1,2-Dichlorotetrafluoroethane	2013/01/15	NC		%	25
		Chloromethane	2013/01/15	NC		%	25
		Vinyl Chloride	2013/01/15	NC		%	25
		Chloroethane	2013/01/15	NC		%	25
		1,3-Butadiene	2013/01/15	NC		%	25
		Trichlorofluoromethane (FREON 11)	2013/01/15	NC		%	25
		Ethanol (ethyl alcohol)	2013/01/15	NC		%	25
		Trichlorotrifluoroethane	2013/01/15	NC		%	25
		2-propanol	2013/01/15	NC		%	25
		2-Propanone	2013/01/15	NC		%	25
		Methyl Ethyl Ketone (2-Butanone)	2013/01/15	NC		%	25
		Methyl Isobutyl Ketone	2013/01/15	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2013/01/15	NC		%	25
		Methyl t-butyl ether (MTBE)	2013/01/15	NC		%	25
		Ethyl Acetate	2013/01/15	NC		%	25
		1,1-Dichloroethylene	2013/01/15	NC		%	25
		cis-1,2-Dichloroethylene	2013/01/15	NC		%	25
		trans-1,2-Dichloroethylene	2013/01/15	NC		%	25
		Methylene Chloride(Dichloromethane)	2013/01/15	NC		%	25
		Chloroform	2013/01/15	NC		%	25
		Carbon Tetrachloride	2013/01/15	NC		%	25
		1,1-Dichloroethane	2013/01/15	NC		%	25
		1,2-Dichloroethane	2013/01/15	NC		%	25
		Ethylene Dibromide	2013/01/15	NC		%	25
		1,1,1-Trichloroethane	2013/01/15	NC		%	25
		1,1,2-Trichloroethane	2013/01/15	NC		%	25
		1,1,2,2-Tetrachloroethane	2013/01/15	NC		%	25
		cis-1,3-Dichloropropene	2013/01/15	NC		%	25

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB306228

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3095567 JIW	RPD - Sample/Sample Dup	trans-1,3-Dichloropropene	2013/01/15	NC		%	25
		1,2-Dichloropropane	2013/01/15	NC		%	25
		Bromomethane	2013/01/15	NC		%	25
		Bromoform	2013/01/15	NC		%	25
		Bromodichloromethane	2013/01/15	NC		%	25
		Dibromochloromethane	2013/01/15	NC		%	25
		Trichloroethylene	2013/01/15	NC		%	25
		Tetrachloroethylene	2013/01/15	NC		%	25
		Benzene	2013/01/15	NC		%	25
		Toluene	2013/01/15	NC		%	25
		Ethylbenzene	2013/01/15	NC		%	25
		p+m-Xylene	2013/01/15	NC		%	25
		o-Xylene	2013/01/15	NC		%	25
		Styrene	2013/01/15	NC		%	25
		4-ethyltoluene	2013/01/15	NC		%	25
		1,3,5-Trimethylbenzene	2013/01/15	NC		%	25
		1,2,4-Trimethylbenzene	2013/01/15	NC		%	25
		Chlorobenzene	2013/01/15	NC		%	25
		Benzyl chloride	2013/01/15	NC		%	25
		1,3-Dichlorobenzene	2013/01/15	NC		%	25
		1,4-Dichlorobenzene	2013/01/15	NC		%	25
		1,2-Dichlorobenzene	2013/01/15	NC		%	25
		1,2,4-Trichlorobenzene	2013/01/15	NC		%	25
		Hexachlorobutadiene	2013/01/15	NC		%	25
		Hexane	2013/01/15	NC		%	25
		Heptane	2013/01/15	NC		%	25
		Cyclohexane	2013/01/15	NC		%	25
		Tetrahydrofuran	2013/01/15	NC		%	25
		1,4-Dioxane	2013/01/15	NC		%	25
		Xylene (Total)	2013/01/15	NC		%	25
		Vinyl Bromide	2013/01/15	NC		%	25
		Propene	2013/01/15	NC		%	25
		2,2,4-Trimethylpentane	2013/01/15	NC		%	25
		Carbon Disulfide	2013/01/15	NC		%	25
		Vinyl Acetate	2013/01/15	NC		%	25

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Maxxam

VOC Sample Collection Data Sheet

Client: LICA Sampler S/N: 6167
 Location: COLD LAKE SOUTH Canister ID: 7614
 Station ID: LICA 1. Canister Installation Date/Time: JAN 18, 2013 @ 12:30
 Field Sample ID: LICA VOC / CLS / JAN 22, 2013 Canister Removal Date/Time: _____

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
22-JAN-13	01/22/2013 0:00	01/23/2013 0:00	24.

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	643	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	

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: SYSTEM LEAK CHECK PRIOR TO SAMPLING. COC # ^(RA) ~~317~~ 3.13196

Technician Signature

RAJA ABID.



Your C.O.C. #: 13197

Attention: Michael Bisaga

Maxxam Analytics
 2608 6A Ave.
 Cold Lake, AB
 CANADA T9M 2C7

Report Date: 2013/02/06

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B313348

Received: 2013/01/28, 08:56

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2013/01/30	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2013/01/30	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days or as contractually agreed from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Theresa Stephenson, Project Manager
 Email: TStephenson@maxxam.ca
 Phone# (905) 817-5763

=====
 Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

Maxxam Job #: B313348
 Report Date: 2013/02/06

RESULTS OF ANALYSES OF AIR

Maxxam ID		QJ5032	QJ5033	
Sampling Date		2013/01/22	2013/01/22	
COC Number		13197	13197	
	Units	LICA VOC/CLS/JAN 22,13 - 7614	LICA VOC/PORT/JAN 22,13 - 308	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	22	3110177

QC Batch = Quality Control Batch

Maxxam Job #: B313348
 Report Date: 2013/02/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QJ5032				
Sampling Date		2013/01/22				
COC Number		13197				
	Units	LICA VOC/CLS/JAN 22,13 - 7614	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.60	0.20	2.95	0.989	3110231
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	3110231
Chloromethane	ppbv	0.60	0.30	1.24	0.620	3110231
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	3110231
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	3110231
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	3110231
Trichlorofluoromethane (FREON 11)	ppbv	0.28	0.20	1.60	1.12	3110231
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	3110231
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	3110231
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	3110231
2-Propanone	ppbv	<1.4	1.4	<3.33	3.33	3110231
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	3110231
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	3110231
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	3110231
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	3110231
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	3110231
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	3110231
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	3110231
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	3110231
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	3110231
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	3110231
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	3110231
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3110231
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3110231
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	3110231
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	3110231
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	3110231
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	3110231
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	3110231
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	3110231
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	3110231
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B313348
 Report Date: 2013/02/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QJ5032				
Sampling Date		2013/01/22				
COC Number		13197				
	Units	LICA VOC/CLS/JAN 22,13 - 7614	RDL	ug/m3	DL (ug/m3)	QC Batch
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	3110231
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	3110231
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	3110231
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	3110231
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	3110231
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	3110231
Benzene	ppbv	0.32	0.18	1.03	0.575	3110231
Toluene	ppbv	0.30	0.20	1.12	0.753	3110231
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	3110231
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	3110231
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	3110231
Styrene	ppbv	<0.20	0.20	<0.852	0.852	3110231
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	3110231
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3110231
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3110231
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	3110231
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	3110231
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3110231
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3110231
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3110231
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	3110231
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	3110231
Hexane	ppbv	<0.30	0.30	<1.06	1.06	3110231
Heptane	ppbv	<0.30	0.30	<1.23	1.23	3110231
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	3110231
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	3110231
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	3110231
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	3110231
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	3110231
Propene	ppbv	<0.30	0.30	<0.516	0.516	3110231
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	3110231
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	3110231
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	3110231
QC Batch = Quality Control Batch						

Maxxam Job #: B313348
 Report Date: 2013/02/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QJ5032				
Sampling Date		2013/01/22				
COC Number		13197				
	Units	LICA VOC/CLS/JAN 22,13 - 7614	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	83		N/A	N/A	3110231
D5-Chlorobenzene	%	84		N/A	N/A	3110231
Difluorobenzene	%	83		N/A	N/A	3110231
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B313348
 Report Date: 2013/02/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QJ5033				
Sampling Date		2013/01/22				
COC Number		13197				
	Units	LICA VOC/PORT/JAN 22,13 - 308	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.62	0.20	3.07	0.989	3110231
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	3110231
Chloromethane	ppbv	0.60	0.30	1.25	0.620	3110231
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	3110231
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	3110231
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	3110231
Trichlorofluoromethane (FREON 11)	ppbv	0.30	0.20	1.70	1.12	3110231
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	3110231
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	3110231
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	3110231
2-Propanone	ppbv	<1.6	1.6	<3.80	3.80	3110231
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	3110231
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	3110231
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	3110231
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	3110231
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	3110231
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	3110231
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	3110231
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	3110231
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	3110231
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	3110231
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	3110231
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3110231
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3110231
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	3110231
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	3110231
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	3110231
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	3110231
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	3110231
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	3110231
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	3110231
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B313348
 Report Date: 2013/02/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QJ5033				
Sampling Date		2013/01/22				
COC Number		13197				
	Units	LICA VOC/PORT/JAN 22,13 - 308	RDL	ug/m3	DL (ug/m3)	QC Batch
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	3110231
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	3110231
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	3110231
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	3110231
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	3110231
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	3110231
Benzene	ppbv	0.25	0.18	0.794	0.575	3110231
Toluene	ppbv	<0.20	0.20	<0.753	0.753	3110231
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	3110231
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	3110231
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	3110231
Styrene	ppbv	<0.20	0.20	<0.852	0.852	3110231
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	3110231
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3110231
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3110231
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	3110231
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	3110231
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3110231
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3110231
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3110231
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	3110231
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	3110231
Hexane	ppbv	0.44	0.30	1.57	1.06	3110231
Heptane	ppbv	<0.30	0.30	<1.23	1.23	3110231
Cyclohexane	ppbv	0.30	0.20	1.02	0.688	3110231
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	3110231
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	3110231
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	3110231
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	3110231
Propene	ppbv	<1.9	1.9	<3.27	3.27	3110231
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	3110231
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	3110231
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	3110231
QC Batch = Quality Control Batch						

Maxxam Job #: B313348
 Report Date: 2013/02/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QJ5033				
Sampling Date		2013/01/22				
COC Number		13197				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/PORT/JAN				
		22,13 - 308				

Surrogate Recovery (%)						
Bromochloromethane	%	82		N/A	N/A	3110231
D5-Chlorobenzene	%	84		N/A	N/A	3110231
Difluorobenzene	%	82		N/A	N/A	3110231

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B313348
 Report Date: 2013/02/06

Test Summary

Maxxam ID QJ5032
Sample ID LICA VOC/CLS/JAN 22,13 - 7614
Matrix AIR

Collected 2013/01/22
Shipped
Received 2013/01/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	3110177	N/A	2013/01/30	Diane Temniuk
Volatile Organics in Air (TO-15)	GC/MS	3110231	N/A	2013/01/30	Diane Temniuk

Maxxam ID QJ5033
Sample ID LICA VOC/PORT/JAN 22,13 - 308
Matrix AIR

Collected 2013/01/22
Shipped
Received 2013/01/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	3110177	N/A	2013/01/30	Diane Temniuk
Volatile Organics in Air (TO-15)	GC/MS	3110231	N/A	2013/01/30	Diane Temniuk

Maxxam Job #: B313348
Report Date: 2013/02/06

GENERAL COMMENTS

Sample QJ5032-01: DL raised for 2-Propanone due to matrix interference.

Sample QJ5033-01: DLs raised for Propene and 2-Propanone due to matrix interference.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB313348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3110231	DVO	Spiked Blank					
		Bromochloromethane	2013/01/30		96	%	60 - 140
		D5-Chlorobenzene	2013/01/30		100	%	60 - 140
		Difluorobenzene	2013/01/30		100	%	60 - 140
		Dichlorodifluoromethane (FREON 12)	2013/01/30		103	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2013/01/30		114	%	70 - 130
		Chloromethane	2013/01/30		103	%	70 - 130
		Vinyl Chloride	2013/01/30		100	%	70 - 130
		Chloroethane	2013/01/30		100	%	70 - 130
		1,3-Butadiene	2013/01/30		96	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2013/01/30		105	%	70 - 130
		Ethanol (ethyl alcohol)	2013/01/30		99	%	70 - 130
		Trichlorotrifluoroethane	2013/01/30		101	%	70 - 130
		2-propanol	2013/01/30		92	%	70 - 130
		2-Propanone	2013/01/30		97	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2013/01/30		110	%	70 - 130
		Methyl Isobutyl Ketone	2013/01/30		90	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2013/01/30		91	%	70 - 130
		Methyl t-butyl ether (MTBE)	2013/01/30		97	%	70 - 130
		Ethyl Acetate	2013/01/30		98	%	70 - 130
		1,1-Dichloroethylene	2013/01/30		98	%	70 - 130
		cis-1,2-Dichloroethylene	2013/01/30		100	%	70 - 130
		trans-1,2-Dichloroethylene	2013/01/30		98	%	70 - 130
		Methylene Chloride(Dichloromethane)	2013/01/30		96	%	70 - 130
		Chloroform	2013/01/30		103	%	70 - 130
		Carbon Tetrachloride	2013/01/30		92	%	70 - 130
		1,1-Dichloroethane	2013/01/30		99	%	70 - 130
		1,2-Dichloroethane	2013/01/30		99	%	70 - 130
		Ethylene Dibromide	2013/01/30		96	%	70 - 130
		1,1,1-Trichloroethane	2013/01/30		93	%	70 - 130
		1,1,2-Trichloroethane	2013/01/30		96	%	70 - 130
		1,1,2,2-Tetrachloroethane	2013/01/30		96	%	70 - 130
		cis-1,3-Dichloropropene	2013/01/30		92	%	70 - 130
		trans-1,3-Dichloropropene	2013/01/30		93	%	70 - 130
		1,2-Dichloropropane	2013/01/30		96	%	70 - 130
		Bromomethane	2013/01/30		101	%	70 - 130
		Bromoform	2013/01/30		93	%	70 - 130
		Bromodichloromethane	2013/01/30		93	%	70 - 130
		Dibromochloromethane	2013/01/30		93	%	70 - 130
		Trichloroethylene	2013/01/30		93	%	70 - 130
		Tetrachloroethylene	2013/01/30		95	%	70 - 130
		Benzene	2013/01/30		95	%	70 - 130
		Toluene	2013/01/30		96	%	70 - 130
		Ethylbenzene	2013/01/30		98	%	70 - 130
		p+m-Xylene	2013/01/30		95	%	70 - 130
		o-Xylene	2013/01/30		95	%	70 - 130
		Styrene	2013/01/30		84	%	70 - 130
		4-ethyltoluene	2013/01/30		93	%	70 - 130
		1,3,5-Trimethylbenzene	2013/01/30		97	%	70 - 130
		1,2,4-Trimethylbenzene	2013/01/30		95	%	70 - 130
		Chlorobenzene	2013/01/30		97	%	70 - 130
		Benzyl chloride	2013/01/30		81	%	70 - 130
		1,3-Dichlorobenzene	2013/01/30		99	%	70 - 130
		1,4-Dichlorobenzene	2013/01/30		94	%	70 - 130
		1,2-Dichlorobenzene	2013/01/30		94	%	70 - 130
		1,2,4-Trichlorobenzene	2013/01/30		109	%	70 - 130

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB313348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3110231	DVO	Spiked Blank	2013/01/30		99	%	70 - 130
		Hexachlorobutadiene	2013/01/30		93	%	70 - 130
		Hexane	2013/01/30		91	%	70 - 130
		Heptane	2013/01/30		93	%	70 - 130
		Cyclohexane	2013/01/30		99	%	70 - 130
		Tetrahydrofuran	2013/01/30		90	%	70 - 130
		1,4-Dioxane	2013/01/30		95	%	70 - 130
		Xylene (Total)	2013/01/30		98	%	70 - 130
		Vinyl Bromide	2013/01/30		93	%	70 - 130
		Propene	2013/01/30		91	%	70 - 130
		2,2,4-Trimethylpentane	2013/01/30		103	%	70 - 130
		Carbon Disulfide	2013/01/30		94	%	70 - 130
	Method Blank	Vinyl Acetate	2013/01/30		85	%	60 - 140
		Bromochloromethane	2013/01/30		86	%	60 - 140
		D5-Chlorobenzene	2013/01/30		86	%	60 - 140
		Difluorobenzene	2013/01/30				
		Dichlorodifluoromethane (FREON 12)	2013/01/30	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2013/01/30	<0.17		ppbv	
		Chloromethane	2013/01/30	<0.30		ppbv	
		Vinyl Chloride	2013/01/30	<0.18		ppbv	
		Chloroethane	2013/01/30	<0.30		ppbv	
		1,3-Butadiene	2013/01/30	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2013/01/30	<0.20		ppbv	
		Ethanol (ethyl alcohol)	2013/01/30	<2.3		ppbv	
		Trichlorotrifluoroethane	2013/01/30	<0.15		ppbv	
		2-propanol	2013/01/30	<3.0		ppbv	
		2-Propanone	2013/01/30	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2013/01/30	<3.0		ppbv	
		Methyl Isobutyl Ketone	2013/01/30	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2013/01/30	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2013/01/30	<0.20		ppbv	
		Ethyl Acetate	2013/01/30	<2.2		ppbv	
		1,1-Dichloroethylene	2013/01/30	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2013/01/30	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2013/01/30	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2013/01/30	<0.80		ppbv	
		Chloroform	2013/01/30	<0.15		ppbv	
		Carbon Tetrachloride	2013/01/30	<0.30		ppbv	
		1,1-Dichloroethane	2013/01/30	<0.20		ppbv	
		1,2-Dichloroethane	2013/01/30	<0.20		ppbv	
		Ethylene Dibromide	2013/01/30	<0.17		ppbv	
		1,1,1-Trichloroethane	2013/01/30	<0.30		ppbv	
		1,1,2-Trichloroethane	2013/01/30	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2013/01/30	<0.20		ppbv	
		cis-1,3-Dichloropropene	2013/01/30	<0.18		ppbv	
		trans-1,3-Dichloropropene	2013/01/30	<0.17		ppbv	
		1,2-Dichloropropane	2013/01/30	<0.40		ppbv	
		Bromomethane	2013/01/30	<0.18		ppbv	
		Bromoform	2013/01/30	<0.20		ppbv	
		Bromodichloromethane	2013/01/30	<0.20		ppbv	
		Dibromochloromethane	2013/01/30	<0.20		ppbv	
		Trichloroethylene	2013/01/30	<0.30		ppbv	
		Tetrachloroethylene	2013/01/30	<0.20		ppbv	
		Benzene	2013/01/30	<0.18		ppbv	
		Toluene	2013/01/30	<0.20		ppbv	
		Ethylbenzene	2013/01/30	<0.20		ppbv	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB313348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3110231	DVO	Method Blank					
		p+m-Xylene	2013/01/30	<0.37		ppbv	
		o-Xylene	2013/01/30	<0.20		ppbv	
		Styrene	2013/01/30	<0.20		ppbv	
		4-ethyltoluene	2013/01/30	<2.2		ppbv	
		1,3,5-Trimethylbenzene	2013/01/30	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2013/01/30	<0.50		ppbv	
		Chlorobenzene	2013/01/30	<0.20		ppbv	
		Benzyl chloride	2013/01/30	<1.0		ppbv	
		1,3-Dichlorobenzene	2013/01/30	<0.40		ppbv	
		1,4-Dichlorobenzene	2013/01/30	<0.40		ppbv	
		1,2-Dichlorobenzene	2013/01/30	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2013/01/30	<2.0		ppbv	
		Hexachlorobutadiene	2013/01/30	<3.0		ppbv	
		Hexane	2013/01/30	<0.30		ppbv	
		Heptane	2013/01/30	<0.30		ppbv	
		Cyclohexane	2013/01/30	<0.20		ppbv	
		Tetrahydrofuran	2013/01/30	<0.40		ppbv	
		1,4-Dioxane	2013/01/30	<2.0		ppbv	
		Xylene (Total)	2013/01/30	<0.60		ppbv	
		Vinyl Bromide	2013/01/30	<0.20		ppbv	
		Propene	2013/01/30	<0.30		ppbv	
		2,2,4-Trimethylpentane	2013/01/30	<0.20		ppbv	
		Carbon Disulfide	2013/01/30	<0.50		ppbv	
		Vinyl Acetate	2013/01/30	<0.20		ppbv	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

Polycyclic Aromatic Hydrocarbons Laboratory Analysis

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
 Location: Cold Lake South
 Station ID: Lica1
 Field Sample ID: LICA PUF/CLS/Jan 04 ,2013

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: Jan 02, 2013 @ 8:47 mst
 Removal Date/Time: Jan 08, 2013 @ 8:50 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
04-Jan-13	01/04/2013 0:00	01/05/2013 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
28-Dec-12	08-Jan-13	10-Jan-13	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
715	229	-8.8	330.38

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC#13156
GB2K1672 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jan 04, 2013

Technician Signature: Ting Xu

Your C.O.C. #: 13156

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2013/01/18

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B304015**

Received: 2013/01/10, 09:10

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2013/01/11	2013/01/16	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

Page 1 of 7

Maxxam Job #: B304015
 Report Date: 2013/01/18

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		QE6800	QE6801		
Sampling Date		2013/01/04 00:00	2013/01/04 00:00		
COC Number		13156	13156		
	Units	LICA PUFF+QFF/CLS/JAN 04,13	LICA PUFF+QFF/PORT/JAN 04,13	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.58	1.58	0.10	3091394
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	3091394
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	3091394
2-Methylantracene	ug	<0.10	<0.10	0.10	3091394
2-Methylnaphthalene	ug	1.10	3.02	0.10	3091394
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	3091394
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	3091394
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	3091394
Acenaphthene	ug	0.200	0.220	0.050	3091394
Acenaphthylene	ug	0.320	0.220	0.050	3091394
Anthracene	ug	0.060	<0.050	0.050	3091394
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	3091394
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	3091394
Benzo(a)pyrene	ug	0.060	<0.050	0.050	3091394
Benzo(b)fluoranthene	ug	0.100	<0.050	0.050	3091394
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	3091394
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	3091394
Benzo(g,h,i)perylene	ug	0.100	<0.050	0.050	3091394
Benzo(k)fluoranthene	ug	0.060	<0.050	0.050	3091394
Biphenyl	ug	0.54	0.66	0.10	3091394
Chrysene	ug	0.080	<0.050	0.050	3091394
Coronene	ug	<0.10	<0.10	0.10	3091394
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	3091394
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	3091394
Fluoranthene	ug	0.300	0.100	0.050	3091394
Fluorene	ug	0.320	0.380	0.050	3091394
Indeno(1,2,3-cd)pyrene	ug	0.060	<0.050	0.050	3091394
m-Terphenyl	ug	<0.10	<0.10	0.10	3091394
Naphthalene	ug	1.12	1.16	0.072	3091394
o-Terphenyl	ug	<0.10	<0.10	0.10	3091394

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B304015
 Report Date: 2013/01/18

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		QE6800	QE6801		
Sampling Date		2013/01/04 00:00	2013/01/04 00:00		
COC Number		13156	13156		
	Units	LICA PUFF+QFF/CLS/JAN 04,13	LICA PUFF+QFF/PORT/JAN 04,13	RDL	QC Batch

Perylene	ug	<0.10	<0.10	0.10	3091394
Phenanthrene	ug	0.640	0.340	0.050	3091394
p-Terphenyl	ug	<0.10	<0.10	0.10	3091394
Pyrene	ug	0.300	0.060	0.050	3091394
Quinoline	ug	<0.40	<0.40	0.40	3091394
Tetralin	ug	<0.10	0.12	0.10	3091394
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	70	80		3091394
D10-Fluoranthene	%	96	98		3091394
D10-Fluorene (FS)	%	56	58		3091394
D10-Phenanthrene	%	88	94		3091394
D12-Benzo(a)anthracene	%	100	104		3091394
D12-Benzo(a)pyrene	%	96	96		3091394
D12-Benzo(b)fluoranthene	%	96	96		3091394
D12-Benzo(ghi)perylene	%	96	98		3091394
D12-Benzo(k)fluoranthene	%	98	98		3091394
D12-Chrysene	%	100	100		3091394
D12-Indeno(1,2,3-cd)pyrene	%	94	96		3091394
D12-Perylene	%	92	94		3091394
D14-Dibenzo(a,h)anthracene	%	96	96		3091394
D14-Terphenyl (FS)	%	94	96		3091394
D8-Acenaphthylene	%	68	80		3091394
D8-Naphthalene	%	66	74		3091394

QC Batch = Quality Control Batch

Maxxam Job #: B304015
 Report Date: 2013/01/18

Test Summary

Maxxam ID QE6800
Sample ID LICA PUFF+QFF/CLS/JAN 04,13
Matrix PUF AND FILTER

Collected 2013/01/04
Shipped
Received 2013/01/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	3091394	2013/01/11	2013/01/16	Lidija Tomic

Maxxam ID QE6801
Sample ID LICA PUFF+QFF/PORT/JAN 04,13
Matrix PUF AND FILTER

Collected 2013/01/04
Shipped
Received 2013/01/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	3091394	2013/01/11	2013/01/16	Lidija Tomic

Maxxam Job #: B304015
Report Date: 2013/01/18

GENERAL COMMENTS

7,12-dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positives found for this compound.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB304015

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3091394 LTO	Spiked Blank	D10-2-Methylnaphthalene	2013/01/16		74	%	50 - 150
		D10-Fluoranthene	2013/01/16		96	%	50 - 150
		D10-Phenanthrene	2013/01/16		84	%	50 - 150
		D12-Benzo(a)anthracene	2013/01/16		98	%	50 - 150
		D12-Benzo(a)pyrene	2013/01/16		96	%	50 - 150
		D12-Benzo(b)fluoranthene	2013/01/16		96	%	50 - 150
		D12-Benzo(ghi)perylene	2013/01/16		104	%	50 - 150
		D12-Benzo(k)fluoranthene	2013/01/16		98	%	50 - 150
		D12-Chrysene	2013/01/16		98	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2013/01/16		102	%	50 - 150
		D12-Perylene	2013/01/16		96	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2013/01/16		102	%	50 - 150
		D8-Acenaphthylene	2013/01/16		72	%	50 - 150
		D8-Naphthalene	2013/01/16		72	%	50 - 150
		RPD	Acenaphthene	2013/01/16		75	%
	Spiked Blank	Acenaphthene	2013/01/16	6.9		%	50
	RPD	Acenaphthylene	2013/01/16		70	%	60 - 130
	Spiked Blank	Acenaphthylene	2013/01/16	3.6		%	50
	RPD	Anthracene	2013/01/16		78	%	60 - 130
	Spiked Blank	Anthracene	2013/01/16	6.3		%	50
	RPD	Benzo(a)anthracene	2013/01/16		95	%	60 - 130
	Spiked Blank	Benzo(a)anthracene	2013/01/16	2.7		%	50
	RPD	Benzo(a)pyrene	2013/01/16		75	%	60 - 130
	Spiked Blank	Benzo(a)pyrene	2013/01/16	0		%	50
	RPD	Benzo(b)fluoranthene	2013/01/16		83	%	60 - 130
	Spiked Blank	Benzo(b)fluoranthene	2013/01/16	3.0		%	50
	RPD	Benzo(g,h,i)perylene	2013/01/16		100	%	60 - 130
	Spiked Blank	Benzo(g,h,i)perylene	2013/01/16	19.2		%	50
	RPD	Benzo(k)fluoranthene	2013/01/16		93	%	60 - 130
	Spiked Blank	Benzo(k)fluoranthene	2013/01/16	2.7		%	50
	RPD	Chrysene	2013/01/16		93	%	60 - 130
	Spiked Blank	Chrysene	2013/01/16	0		%	50
	RPD	Dibenz(a,h)anthracene	2013/01/16		105	%	60 - 130
	Spiked Blank	Dibenz(a,h)anthracene	2013/01/16	15.4		%	50
	RPD	Fluoranthene	2013/01/16		90	%	60 - 130
	Spiked Blank	Fluoranthene	2013/01/16	2.7		%	50
	RPD	Fluorene	2013/01/16		78	%	60 - 130
	Spiked Blank	Fluorene	2013/01/16	0		%	50
	RPD	Indeno(1,2,3-cd)pyrene	2013/01/16		100	%	60 - 130
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2013/01/16	16.2		%	50
RPD	Naphthalene	2013/01/16		75	%	60 - 130	
Spiked Blank	Naphthalene	2013/01/16	10.5		%	50	
RPD	Phenanthrene	2013/01/16		80	%	60 - 130	
Spiked Blank	Phenanthrene	2013/01/16	6.1		%	50	
RPD	Pyrene	2013/01/16		83	%	60 - 130	
Spiked Blank	Pyrene	2013/01/16	3.0		%	50	
RPD	D10-2-Methylnaphthalene	2013/01/16		86	%	50 - 150	
Method Blank	D10-Fluoranthene	2013/01/16		92	%	50 - 150	
	D10-Phenanthrene	2013/01/16		90	%	50 - 150	
	D12-Benzo(a)anthracene	2013/01/16		98	%	50 - 150	
	D12-Benzo(a)pyrene	2013/01/16		98	%	50 - 150	
	D12-Benzo(b)fluoranthene	2013/01/16		96	%	50 - 150	
	D12-Benzo(ghi)perylene	2013/01/16		104	%	50 - 150	
	D12-Benzo(k)fluoranthene	2013/01/16		100	%	50 - 150	
	D12-Chrysene	2013/01/16		98	%	50 - 150	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB304015

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3091394 LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2013/01/16		98	%	50 - 150
		D12-Perylene	2013/01/16		94	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2013/01/16		98	%	50 - 150
		D8-Acenaphthylene	2013/01/16		82	%	50 - 150
		D8-Naphthalene	2013/01/16		84	%	50 - 150
		1-Methylnaphthalene	2013/01/16	<0.10		ug	
		1-Methylphenanthrene	2013/01/16	<0.10		ug	
		2-Chloronaphthalene	2013/01/16	<0.10		ug	
		2-Methylantracene	2013/01/16	<0.10		ug	
		2-Methylnaphthalene	2013/01/16	<0.10		ug	
		3-Methylcholanthrene	2013/01/16	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2013/01/16	<0.10		ug	
		9,10-Dimethylantracene	2013/01/16	<0.40		ug	
		Acenaphthene	2013/01/16	<0.050		ug	
		Acenaphthylene	2013/01/16	<0.050		ug	
		Anthracene	2013/01/16	<0.050		ug	
		Benzo(a)anthracene	2013/01/16	<0.050		ug	
		Benzo(a)fluorene	2013/01/16	<0.10		ug	
		Benzo(a)pyrene	2013/01/16	<0.050		ug	
		Benzo(b)fluoranthene	2013/01/16	<0.050		ug	
		Benzo(b)fluorene	2013/01/16	<0.10		ug	
		Benzo(e)pyrene	2013/01/16	<0.10		ug	
		Benzo(g,h,i)perylene	2013/01/16	<0.050		ug	
		Benzo(k)fluoranthene	2013/01/16	<0.050		ug	
		Biphenyl	2013/01/16	<0.10		ug	
		Chrysene	2013/01/16	<0.050		ug	
		Coronene	2013/01/16	<0.10		ug	
		Dibenz(a,h)anthracene	2013/01/16	<0.050		ug	
		Dibenzo(a,e)pyrene	2013/01/16	<0.20		ug	
		Fluoranthene	2013/01/16	<0.050		ug	
		Fluorene	2013/01/16	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2013/01/16	<0.050		ug	
		m-Terphenyl	2013/01/16	<0.10		ug	
		Naphthalene	2013/01/16	<0.072		ug	
		o-Terphenyl	2013/01/16	<0.10		ug	
		Perylene	2013/01/16	<0.10		ug	
		Phenanthrene	2013/01/16	<0.050		ug	
		p-Terphenyl	2013/01/16	<0.10		ug	
		Pyrene	2013/01/16	<0.050		ug	
		Quinoline	2013/01/16	<0.40		ug	
		Tetralin	2013/01/16	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
 Location: Cold Lake South
 Station ID: Lica1
 Field Sample ID: LICA PUF/CLS/Jan 10 ,2013

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: Jan 08, 2013 @ 9:05 mst
 Removal Date/Time: Jan 11, 2013 @ 10:41 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
10-Jan-13	01/10/2013 0:00	01/11/2013 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
04-Jan-12	11-Jan-13	17-Jan-13	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
718	229	-15.9	330.36

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC#13174
GB2K2485 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jan 10, 2013

Technician Signature: Ting Xu

Your C.O.C. #: 13174

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2013/01/28

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B306580****Received: 2013/01/15, 09:55**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2013/01/17	2013/01/21	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====

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Total cover pages: 1

Page 1 of 7

Maxxam Job #: B306580
 Report Date: 2013/01/28

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		QF9867	QF9868		
Sampling Date		2013/01/10 00:00	2013/01/10 00:00		
COC Number		13174	13174		
	Units	LICA PUFF+QFF/CLS/JAN 10,13	LICA PUFF+QFF/PORT/JAN 10,13	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.82	0.66	0.10	3096989
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	3096989
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	3096989
2-Methylantracene	ug	<0.10	<0.10	0.10	3096989
2-Methylnaphthalene	ug	1.76	0.96	0.10	3096989
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	3096989
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	3096989
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	3096989
Acenaphthene	ug	0.100	0.080	0.050	3096989
Acenaphthylene	ug	<0.050	0.220	0.050	3096989
Anthracene	ug	<0.050	<0.050	0.050	3096989
Benzo(a)anthracene	ug	<0.050	0.080	0.050	3096989
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	3096989
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	3096989
Benzo(b)fluoranthene	ug	<0.050	0.100	0.050	3096989
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	3096989
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	3096989
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	3096989
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	3096989
Biphenyl	ug	0.22	0.78	0.10	3096989
Chrysene	ug	<0.050	0.160	0.050	3096989
Coronene	ug	<0.10	<0.10	0.10	3096989
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	3096989
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	3096989
Fluoranthene	ug	0.080	0.300	0.050	3096989
Fluorene	ug	0.080	0.280	0.050	3096989
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	3096989
m-Terphenyl	ug	<0.10	<0.10	0.10	3096989
Naphthalene	ug	2.24	1.56	0.072	3096989
o-Terphenyl	ug	<0.10	<0.10	0.10	3096989
RDL = Reportable Detection Limit QC Batch = Quality Control Batch					

Maxxam Job #: B306580
 Report Date: 2013/01/28

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		QF9867	QF9868		
Sampling Date		2013/01/10 00:00	2013/01/10 00:00		
COC Number		13174	13174		
	Units	LICA PUFF+QFF/CLS/JAN 10,13	LICA PUFF+QFF/PORT/JAN 10,13	RDL	QC Batch

Perylene	ug	<0.10	<0.10	0.10	3096989
Phenanthrene	ug	0.140	0.680	0.050	3096989
p-Terphenyl	ug	<0.10	<0.10	0.10	3096989
Pyrene	ug	<0.050	0.200	0.050	3096989
Quinoline	ug	<0.40	<0.40	0.40	3096989
Tetralin	ug	<0.10	<0.10	0.10	3096989
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	58	64		3096989
D10-Fluoranthene	%	96	100		3096989
D10-Fluorene (FS)	%	62	64		3096989
D10-Phenanthrene	%	82	88		3096989
D12-Benzo(a)anthracene	%	106	112		3096989
D12-Benzo(a)pyrene	%	90	92		3096989
D12-Benzo(b)fluoranthene	%	90	90		3096989
D12-Benzo(ghi)perylene	%	88	84		3096989
D12-Benzo(k)fluoranthene	%	90	96		3096989
D12-Chrysene	%	108	110		3096989
D12-Indeno(1,2,3-cd)pyrene	%	94	88		3096989
D12-Perylene	%	88	90		3096989
D14-Dibenzo(a,h)anthracene	%	96	88		3096989
D14-Terphenyl (FS)	%	102	104		3096989
D8-Acenaphthylene	%	58	66		3096989
D8-Naphthalene	%	54	58		3096989

QC Batch = Quality Control Batch

Maxxam Job #: B306580
 Report Date: 2013/01/28

Test Summary

Maxxam ID QF9867
Sample ID LICA PUFF+QFF/CLS/JAN 10,13
Matrix PUF AND FILTER

Collected 2013/01/10
Shipped
Received 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	3096989	2013/01/17	2013/01/21	Lidija Tomic

Maxxam ID QF9868
Sample ID LICA PUFF+QFF/PORT/JAN 10,13
Matrix PUF AND FILTER

Collected 2013/01/10
Shipped
Received 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	3096989	2013/01/17	2013/01/21	Lidija Tomic

Maxxam Job #: B306580
Report Date: 2013/01/28

GENERAL COMMENTS

Low recovery for Acenaphthylene in Spike and Spike Dup.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB306580

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3096989 LTO	Spiked Blank	D10-2-Methylnaphthalene	2013/01/21		62	%	50 - 150
		D10-Fluoranthene	2013/01/21		94	%	50 - 150
		D10-Phenanthrene	2013/01/21		80	%	50 - 150
		D12-Benzo(a)anthracene	2013/01/21		108	%	50 - 150
		D12-Benzo(a)pyrene	2013/01/21		94	%	50 - 150
		D12-Benzo(b)fluoranthene	2013/01/21		90	%	50 - 150
		D12-Benzo(ghi)perylene	2013/01/21		90	%	50 - 150
		D12-Benzo(k)fluoranthene	2013/01/21		96	%	50 - 150
		D12-Chrysene	2013/01/21		106	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2013/01/21		96	%	50 - 150
		D12-Perylene	2013/01/21		92	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2013/01/21		98	%	50 - 150
		D8-Acenaphthylene	2013/01/21		62	%	50 - 150
		D8-Naphthalene	2013/01/21		60	%	50 - 150
		RPD	Acenaphthene	2013/01/21		63	%
	RPD	Acenaphthene	2013/01/21	0		%	50
	Spiked Blank	Acenaphthylene	2013/01/21		60 (1)	%	60 - 130
	RPD	Acenaphthylene	2013/01/21	0		%	50
	Spiked Blank	Anthracene	2013/01/21		73	%	60 - 130
	RPD	Anthracene	2013/01/21	0		%	50
	Spiked Blank	Benzo(a)anthracene	2013/01/21		103	%	60 - 130
	RPD	Benzo(a)anthracene	2013/01/21	0		%	50
	Spiked Blank	Benzo(a)pyrene	2013/01/21		73	%	60 - 130
	RPD	Benzo(a)pyrene	2013/01/21	0		%	50
	Spiked Blank	Benzo(b)fluoranthene	2013/01/21		80	%	60 - 130
	RPD	Benzo(b)fluoranthene	2013/01/21	0		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2013/01/21		78	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2013/01/21	6.7		%	50
	Spiked Blank	Benzo(k)fluoranthene	2013/01/21		88	%	60 - 130
	RPD	Benzo(k)fluoranthene	2013/01/21	5.6		%	50
	Spiked Blank	Chrysene	2013/01/21		100	%	60 - 130
	RPD	Chrysene	2013/01/21	4.9		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2013/01/21		85	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2013/01/21	9.2		%	50
	Spiked Blank	Fluoranthene	2013/01/21		88	%	60 - 130
	RPD	Fluoranthene	2013/01/21	2.9		%	50
	Spiked Blank	Fluorene	2013/01/21		68	%	60 - 130
	RPD	Fluorene	2013/01/21	0		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2013/01/21		83	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2013/01/21	9.5		%	50
Spiked Blank	Naphthalene	2013/01/21		63	%	60 - 130	
RPD	Naphthalene	2013/01/21	0		%	50	
Spiked Blank	Phenanthrene	2013/01/21		75	%	60 - 130	
RPD	Phenanthrene	2013/01/21	3.4		%	50	
Spiked Blank	Pyrene	2013/01/21		83	%	60 - 130	
RPD	Pyrene	2013/01/21	3.1		%	50	
Method Blank	D10-2-Methylnaphthalene	2013/01/21		56	%	50 - 150	
	D10-Fluoranthene	2013/01/21		94	%	50 - 150	
	D10-Phenanthrene	2013/01/21		80	%	50 - 150	
	D12-Benzo(a)anthracene	2013/01/21		108	%	50 - 150	
	D12-Benzo(a)pyrene	2013/01/21		92	%	50 - 150	
	D12-Benzo(b)fluoranthene	2013/01/21		88	%	50 - 150	
	D12-Benzo(ghi)perylene	2013/01/21		86	%	50 - 150	
	D12-Benzo(k)fluoranthene	2013/01/21		98	%	50 - 150	
	D12-Chrysene	2013/01/21		114	%	50 - 150	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB306580

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3096989 LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2013/01/21		90	%	50 - 150
		D12-Perylene	2013/01/21		92	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2013/01/21		90	%	50 - 150
		D8-Acenaphthylene	2013/01/21		60	%	50 - 150
		D8-Naphthalene	2013/01/21		54	%	50 - 150
		1-Methylnaphthalene	2013/01/21	<0.10		ug	
		1-Methylphenanthrene	2013/01/21	<0.10		ug	
		2-Chloronaphthalene	2013/01/21	<0.10		ug	
		2-Methylantracene	2013/01/21	<0.10		ug	
		2-Methylnaphthalene	2013/01/21	<0.10		ug	
		3-Methylcholanthrene	2013/01/21	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2013/01/21	<0.10		ug	
		9,10-Dimethylantracene	2013/01/21	<0.40		ug	
		Acenaphthene	2013/01/21	<0.050		ug	
		Acenaphthylene	2013/01/21	<0.050		ug	
		Anthracene	2013/01/21	<0.050		ug	
		Benzo(a)anthracene	2013/01/21	<0.050		ug	
		Benzo(a)fluorene	2013/01/21	<0.10		ug	
		Benzo(a)pyrene	2013/01/21	<0.050		ug	
		Benzo(b)fluoranthene	2013/01/21	<0.050		ug	
		Benzo(b)fluorene	2013/01/21	<0.10		ug	
		Benzo(e)pyrene	2013/01/21	<0.10		ug	
		Benzo(g,h,i)perylene	2013/01/21	<0.050		ug	
		Benzo(k)fluoranthene	2013/01/21	<0.050		ug	
		Biphenyl	2013/01/21	<0.10		ug	
		Chrysene	2013/01/21	<0.050		ug	
		Coronene	2013/01/21	<0.10		ug	
		Dibenz(a,h)anthracene	2013/01/21	<0.050		ug	
		Dibenzo(a,e)pyrene	2013/01/21	<0.20		ug	
		Fluoranthene	2013/01/21	<0.050		ug	
		Fluorene	2013/01/21	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2013/01/21	<0.050		ug	
		m-Terphenyl	2013/01/21	<0.10		ug	
		Naphthalene	2013/01/21	<0.072		ug	
		o-Terphenyl	2013/01/21	<0.10		ug	
		Perylene	2013/01/21	<0.10		ug	
		Phenanthrene	2013/01/21	<0.050		ug	
		p-Terphenyl	2013/01/21	<0.10		ug	
		Pyrene	2013/01/21	<0.050		ug	
		Quinoline	2013/01/21	<0.40		ug	
		Tetralin	2013/01/21	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Maxxam

Hi-Vol PUF+ Sample Collection Data Sheet

Client: LICA
 Location: COLD LAKE SOUTH
 Station ID: LICA 1
 Field Sample ID: LICA PUF [CLS/JAN 22, 2013]

Puf+ S/N: 100-1020
 Motor S/N: 1138
 Installation Date/Time: JAN 18, 2013 @ 13:10
 Removal Date/Time: _____

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
22 JAN 2013	01/22/2013 0:00	01/23/2013 0:00	24:00-

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
17-JAN-2013	25-JAN- ²⁰¹³		

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-SEP-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (Volume (Vstd m ³)
720	229	-16.1	330.36

Time set correctly prior to sampling? YES / NO ✓
 Timer set correctly prior to sampling? YES / NO ✓
 Sampling data saved to memory card after sampling? YES / NO

Comments: COC # 13197

Technician Signature: RAJA ABID

Your C.O.C. #: 13197

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2013/02/07

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B312982****Received: 2013/01/28, 08:56**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2013/01/30	2013/02/02	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

Page 1 of 7

Maxxam Job #: B312982
 Report Date: 2013/02/07

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		QJ2079	QJ2080		
Sampling Date		2013/01/22	2013/01/22		
COC Number		13197	13197		
	Units	LICA	LICA	RDL	QC Batch
		PUFF/QFF/CLS/JAN22,13	PUFF/QFF/PORT/JAN22,13		

Semivolatile Organics					
1-Methylnaphthalene	ug	2.36	0.42	0.10	3108904
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	3108904
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	3108904
2-Methylantracene	ug	<0.10	<0.10	0.10	3108904
2-Methylnaphthalene	ug	4.76	0.56	0.10	3108904
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	3108904
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	3108904
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	3108904
Acenaphthene	ug	0.160	<0.050	0.050	3108904
Acenaphthylene	ug	<0.050	<0.050	0.050	3108904
Anthracene	ug	<0.050	<0.050	0.050	3108904
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	3108904
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	3108904
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	3108904
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	3108904
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	3108904
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	3108904
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	3108904
Benzo(k)fluoranthene	ug	<0.050	0.060	0.050	3108904
Biphenyl	ug	0.62	0.50	0.10	3108904
Chrysene	ug	<0.050	<0.050	0.050	3108904
Coronene	ug	<0.10	<0.10	0.10	3108904
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	3108904
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	3108904
Fluoranthene	ug	0.180	0.120	0.050	3108904
Fluorene	ug	0.260	0.220	0.050	3108904
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	3108904
m-Terphenyl	ug	<0.10	<0.10	0.10	3108904
Naphthalene	ug	4.42	1.14	0.072	3108904
o-Terphenyl	ug	<0.10	<0.10	0.10	3108904
Perylene	ug	<0.10	<0.10	0.10	3108904
Phenanthrene	ug	0.480	0.360	0.050	3108904

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B312982
 Report Date: 2013/02/07

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		QJ2079	QJ2080		
Sampling Date		2013/01/22	2013/01/22		
COC Number		13197	13197		
	Units	LICA PUFF/QFF/CLS/JAN22,13	LICA PUFF/QFF/PORT/JAN22,13	RDL	QC Batch
p-Terphenyl	ug	<0.10	<0.10	0.10	3108904
Pyrene	ug	0.120	0.060	0.050	3108904
Quinoline	ug	<0.40	<0.40	0.40	3108904
Tetralin	ug	0.16	<0.10	0.10	3108904
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	70	68		3108904
D10-Fluoranthene	%	102	100		3108904
D10-Phenanthrene	%	90	90		3108904
D12-Benzo(a)anthracene	%	96	96		3108904
D12-Benzo(a)pyrene	%	90	92		3108904
D12-Benzo(b)fluoranthene	%	92	92		3108904
D12-Benzo(ghi)perylene	%	94	94		3108904
D12-Benzo(k)fluoranthene	%	90	90		3108904
D12-Chrysene	%	92	92		3108904
D12-Indeno(1,2,3-cd)pyrene	%	88	88		3108904
D12-Perylene	%	88	90		3108904
D14-Dibenzo(a,h)anthracene	%	88	88		3108904
D8-Acenaphthylene	%	72	70		3108904
D8-Naphthalene	%	66	66		3108904
QC Batch = Quality Control Batch					

Maxxam Job #: B312982
 Report Date: 2013/02/07

Test Summary

Maxxam ID QJ2079
Sample ID LICA PUFF/QFF/CLS/JAN22,13
Matrix PUF AND FILTER

Collected 2013/01/22
Shipped
Received 2013/01/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	3108904	2013/01/30	2013/02/02	Lidija Tomic

Maxxam ID QJ2080
Sample ID LICA PUFF/QFF/PORT/JAN22,13
Matrix PUF AND FILTER

Collected 2013/01/22
Shipped
Received 2013/01/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	3108904	2013/01/30	2013/02/02	Lidija Tomic

Maxxam Job #: B312982
Report Date: 2013/02/07

GENERAL COMMENTS

7,12-dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positives found for this compound

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB312982

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3108904 LTO	Spiked Blank	D10-2-Methylnaphthalene	2013/02/02		80	%	50 - 150
		D10-Fluoranthene	2013/02/02		90	%	50 - 150
		D10-Phenanthrene	2013/02/02		84	%	50 - 150
		D12-Benzo(a)anthracene	2013/02/02		94	%	50 - 150
		D12-Benzo(a)pyrene	2013/02/02		94	%	50 - 150
		D12-Benzo(b)fluoranthene	2013/02/02		90	%	50 - 150
		D12-Benzo(ghi)perylene	2013/02/02		92	%	50 - 150
		D12-Benzo(k)fluoranthene	2013/02/02		88	%	50 - 150
		D12-Chrysene	2013/02/02		90	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2013/02/02		90	%	50 - 150
		D12-Perylene	2013/02/02		92	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2013/02/02		90	%	50 - 150
		D8-Acenaphthylene	2013/02/02		80	%	50 - 150
		D8-Naphthalene	2013/02/02		78	%	50 - 150
		RPD	Acenaphthene	2013/02/02		80	%
	Spiked Blank	Acenaphthene	2013/02/02	3.1		%	50
	RPD	Acenaphthylene	2013/02/02		78	%	60 - 130
	Spiked Blank	Acenaphthylene	2013/02/02	3.2		%	50
	RPD	Anthracene	2013/02/02		78	%	60 - 130
	Spiked Blank	Anthracene	2013/02/02	6.3		%	50
	RPD	Anthracene	2013/02/02		6.3	%	50
	Spiked Blank	Benzo(a)anthracene	2013/02/02		90	%	60 - 130
	RPD	Benzo(a)anthracene	2013/02/02	2.7		%	50
	Spiked Blank	Benzo(a)pyrene	2013/02/02		83	%	60 - 130
	RPD	Benzo(a)pyrene	2013/02/02	3.0		%	50
	Spiked Blank	Benzo(b)fluoranthene	2013/02/02		80	%	60 - 130
	RPD	Benzo(b)fluoranthene	2013/02/02	6.1		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2013/02/02		85	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2013/02/02	5.7		%	50
	Spiked Blank	Benzo(k)fluoranthene	2013/02/02		90	%	60 - 130
	RPD	Benzo(k)fluoranthene	2013/02/02	8.0		%	50
	Spiked Blank	Chrysene	2013/02/02		88	%	60 - 130
	RPD	Chrysene	2013/02/02	2.8		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2013/02/02		93	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2013/02/02	0		%	50
	Spiked Blank	Fluoranthene	2013/02/02		88	%	60 - 130
	RPD	Fluoranthene	2013/02/02	2.8		%	50
	Spiked Blank	Fluorene	2013/02/02		78	%	60 - 130
	RPD	Fluorene	2013/02/02	6.3		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2013/02/02		88	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2013/02/02	0		%	50
	Spiked Blank	Naphthalene	2013/02/02		83	%	60 - 130
	RPD	Naphthalene	2013/02/02	5.9		%	50
	Spiked Blank	Phenanthrene	2013/02/02		80	%	60 - 130
	RPD	Phenanthrene	2013/02/02	6.1		%	50
Spiked Blank	Pyrene	2013/02/02		80	%	60 - 130	
RPD	Pyrene	2013/02/02	3.1		%	50	
Method Blank	D10-2-Methylnaphthalene	2013/02/02		74	%	50 - 150	
	D10-Fluoranthene	2013/02/02		90	%	50 - 150	
	D10-Phenanthrene	2013/02/02		82	%	50 - 150	
	D12-Benzo(a)anthracene	2013/02/02		90	%	50 - 150	
	D12-Benzo(a)pyrene	2013/02/02		92	%	50 - 150	
	D12-Benzo(b)fluoranthene	2013/02/02		90	%	50 - 150	
	D12-Benzo(ghi)perylene	2013/02/02		92	%	50 - 150	
	D12-Benzo(k)fluoranthene	2013/02/02		88	%	50 - 150	
	D12-Chrysene	2013/02/02		90	%	50 - 150	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB312982

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3108904 LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2013/02/02		88	%	50 - 150
		D12-Perylene	2013/02/02		90	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2013/02/02		88	%	50 - 150
		D8-Acenaphthylene	2013/02/02		74	%	50 - 150
		D8-Naphthalene	2013/02/02		74	%	50 - 150
		1-Methylnaphthalene	2013/02/02	<0.10		ug	
		1-Methylphenanthrene	2013/02/02	<0.10		ug	
		2-Chloronaphthalene	2013/02/02	<0.10		ug	
		2-Methylantracene	2013/02/02	<0.10		ug	
		2-Methylnaphthalene	2013/02/02	<0.10		ug	
		3-Methylcholanthrene	2013/02/02	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2013/02/02	<0.10		ug	
		9,10-Dimethylantracene	2013/02/02	<0.40		ug	
		Acenaphthene	2013/02/02	<0.050		ug	
		Acenaphthylene	2013/02/02	<0.050		ug	
		Anthracene	2013/02/02	<0.050		ug	
		Benzo(a)anthracene	2013/02/02	<0.050		ug	
		Benzo(a)fluorene	2013/02/02	<0.10		ug	
		Benzo(a)pyrene	2013/02/02	<0.050		ug	
		Benzo(b)fluoranthene	2013/02/02	<0.050		ug	
		Benzo(b)fluorene	2013/02/02	<0.10		ug	
		Benzo(e)pyrene	2013/02/02	<0.10		ug	
		Benzo(g,h,i)perylene	2013/02/02	<0.050		ug	
		Benzo(k)fluoranthene	2013/02/02	<0.050		ug	
		Biphenyl	2013/02/02	<0.10		ug	
		Chrysene	2013/02/02	<0.050		ug	
		Coronene	2013/02/02	<0.10		ug	
		Dibenz(a,h)anthracene	2013/02/02	<0.050		ug	
		Dibenzo(a,e)pyrene	2013/02/02	<0.20		ug	
		Fluoranthene	2013/02/02	<0.050		ug	
		Fluorene	2013/02/02	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2013/02/02	<0.050		ug	
		m-Terphenyl	2013/02/02	<0.10		ug	
		Naphthalene	2013/02/02	<0.072		ug	
		o-Terphenyl	2013/02/02	<0.10		ug	
		Perylene	2013/02/02	<0.10		ug	
		Phenanthrene	2013/02/02	<0.050		ug	
		p-Terphenyl	2013/02/02	<0.10		ug	
		Pyrene	2013/02/02	<0.050		ug	
		Quinoline	2013/02/02	<0.40		ug	
		Tetralin	2013/02/02	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

Lakeland Industry & Community Association

Portable / Elk Point Airport Monitoring Site

Ambient Air Monitoring Data Report

For

January 2013

Prepared By:



February 28, 2013

Lakeland Industry & Community Association Portable / Elk Point Airport Ambient Air Monitoring

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Introduction

The following Ambient Air Monitoring report was prepared for:

Mr. Mike Bisaga
Lakeland Industry & Community Association
Box 8237
5107W – 50 Street
Bonnyville, Alberta
T9N 2J5

Monitoring Location: Portable / Elk Point Airport
Data Period: January 2013

The monthly ambient data report:

- Prepared by Katherine Rapske
- Reviewed by Lily Lin

The 6-days analytical report for VOCs and PAHs:
Authorized by Petro Oh

Calibration Procedure

The following calibration procedure applies to all calibrations conducted at the Lakeland Industry & Community Association Air Monitoring Station.

Calibration gas concentrations are generated using a dynamic mass flow controlled calibrator. EPA Protocol one gases are diluted with zero air generated on site. The Mass Flow Controllers in the calibrator are referenced using an NIST traceable flow meter once per month. All listed flows are reported as corrected to Standard Temperature and Pressure (STP).

Generated zero gas is introduced to the analyzer first. Three concentrations of calibration gas are then generated in order to introduce points at approximately 50-80%, 25-40% & 10-20% of the analyzer's full-scale range. An auto zero and span are then performed to validate the daily zero and span values recorded to the next multi-point calibration.

All indicated concentrations are taken from the ESC data logger used to collect the data for monthly reporting.

Conformance of each calibration to Alberta Environment regulations is outlined in the individual calibration reports. The slope and correlation coefficient are derived from the calculated and indicated analyzer responses. The percent change is calculated using the previous calibration correction factor and the current correction factor before adjustment. The calibration conforms to the procedure outlined in the *Air Monitoring Directive, Appendix A-10, Section 1.6*.

MONTHLY CONTINUOUS DATA SUMMARY
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
 – PORTABLE –
 - ELK POINT AIRPORT -

Continuous Ambient Monitoring – January 2013

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PORTABEL / ELK POINT AIRPORT SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						OBJECTIVES					1-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									
SO ₂ (PPB)	172	48	0	0	0.23	6	28	23	24.6	322(NW)	1.2	27	96.1
H ₂ S (PPB)	10	3	0	0	0.09	1	VAR	VAR	VAR	VAR	0.9	27	100.0
THC (PPM)	-	-	-	-	4.49	17.5	4,31	22,4	2.7,6.5	96(E),110 (ESE)	12.3	27	98.3
NO ₂ (PPB)	159	-	0	-	11.95	37.0	2	17	4.1	129(SE)	28.2	27	99.7
NO (PPB)	-	-	-	-	3.64	47.6	11	11	2.2	113(SE)	21.4	11	99.7
NO _x (PPB)	-	-	-	-	15.58	78.7	11	8	1.7	304(WNW)	46.6	11	99.7
O ₃ (PPB)	82	-	0	-	22.56	42	1, 18	21, 14	26.6, 25.7	320(NW), 292(WNW)	38	1	100.0
PM 2.5 (UG/M ³)	-	30	-	0	15.40	50.0	22	9	13.1	309(NW)	25.3	14	89.4
VECTOR WS (KPH)	-	-	-	-	10.8	41.2	15	11	-	304(WNW)	24.2	1	100.0
VECTOR WD (DEGREES)	-	-	-	-	303	-	-	-	-	-	-	-	100.0

VAR-VARIOUS

Volatile Organics Data Summary
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
- PORTABLE – Elk Point Airport Site

Xontech Model 910A – January 4th, 2013

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – January 10th, 2013

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – January 16, 2013

Maximum reading (ug/m3)	Volatile Organic
NA	NA

Note: Sample result for January 16 is not included in this monthly report because it is not available when the monthly report was preparing. The result will be included in the following monthly report.

Xontech Model 910A – January 22, 2013

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – January 28, 2013

Maximum reading (ug/m3)	Volatile Organic
NA	NA

Note: Sample result for January 28 is not included in this monthly report because it is not available when the monthly report was preparing. The result will be included in the following monthly report.

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

- PORTABLE – Elk Point Airport Site

PUF cartridge – January 04, 2013

Maximum reading (ng/m3)	Semi-Volatile Organic
9.142	2-Methylnaphthalene

PUF cartridge – January 10, 2013

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – January 16, 2013

Maximum reading (ng/m3)	Semi-Volatile Organic
NA	NA

Note: No sample was collected for sampling date of January 16th as the sampler provided by AITF lab was not completed.

PUF cartridge – January 22, 2013

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – January 28, 2013

Maximum reading (ng/m3)	Semi-Volatile Organic
NA	NA

Note: Sample result for January 28th is not included in this monthly report because it is not available when the monthly report was preparing. The result will be included in the following monthly report.

General Monthly Summary

Equipment Operation

The following summary outlines the analyzer performance. Any non-conformances, problems or maintenance performed are detailed at the end of each section.

AQM STATION – LICA – PORTABLE

Sulphur Dioxide (PPB)

- Analyzer make / model – API 100E, S/N: 467

The analyzer was working well throughout the month. The monthly calibration was performed on January 8th. The inlet filter was replaced before the monthly calibration was started. The analyzer failed after the daily cal check on January 30th at hour 19 and could not be fixed in the field. As a result, it was brought back to the Calgary shop for repair. 29 hours of data were lost. All data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

- Analyzer make / model –API 101E, S/N: 509
- Converter - Internal

The analyzer was working well throughout the month. The monthly calibration was performed on January 7th. The inlet filter was replaced before the monthly calibration was started. All data was corrected using daily zero information.

THC (PPM)

- Analyzer make / model –Thermo 51C, S/N: 77021-384

The analyzer was working well throughout the month. The monthly calibration was performed on January 7th. On January 21 at hours 14 and 15, and January 22 at hours 15 and 16, data was invalidated as the hourly reading was below the 1.5 ppm background concentration. All data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Nitrogen Dioxide (PPB)

- Analyzer make / model – API 200E, S/N: 593

The analyzer was working well throughout the month. The monthly calibration was performed on January 7th. The inlet filter was replaced before the monthly calibration was started. One hour of data was invalidated on January 15th at hour 11 due to equipment malfunction. Data was corrected using daily zero information.

Ozone (PPB)

- Analyzer make / model –Thermo 49i, S/N: 1002240372

The analyzer was working well throughout the month. The monthly calibration was performed on January 8th. The inlet filter was replaced before the monthly calibration was started. Data was corrected using daily zero information.

Particulate Matter 2.5 (ug/m³)

- Analyzer make / model – TEOM 1405F, S/N: 1405A208301003

A routine Teom audits were performed on the Teom 1405F unit on January 7th. Data was corrected using Alberta air quality guideline for PM2.5 analyzer. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. Seventy-eight hours of data were invalidated this month as the data were below -3 ug/m³.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Vector Wind Speed (KPH) & Vector Wind Direction (DEG)

- System make / model –RM Young 5103VK, S/N: 43708

The wind system is reported as vector wind speed and vector wind direction.

No operational issues were observed during the month.

The most recent wind system calibration was done on November 24, 2011.

Datalogger

- System make / model - ESC 8832, S/N: AO717

- Software make / version - ESC v 5.51a

The ESC 8832 is connected to a modem with DSL for continuous connection with the base computer.

Trailer

The manifold was cleaned on January 8th.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Volatile Organics (VOCs)

The volatile organics were sampled from January 1st to January 30th. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the VOCs in this report were reported as ug/m3 in 3 significant figures. Sample result for January 16th and 28th are not included in this monthly report because they are not available when the monthly report was preparing. The results will be included in the following monthly report.

Polycyclic Aromatic Hydrocarbons (PAHs)

The PAHs scheduled to be sampled on January 1st to January 30th. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the PAHs in this report were reported as ng/m3. No sample was collected for sampling date of January 16th as the sampler provided by AITF lab was not completed. Sample result for January 28th is not included in this monthly report because it is not available when the monthly report was preparing. The result will be included in the following monthly report.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JANUARY 2013

SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST

DAY	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	DAILY MAX.	24-HOUR AVG.	RDGS.
1	1	S	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
2	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	1	1	S	1	0.3	24
3	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.3	24
4	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	24
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0	24
6	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	0	0	0	0	1	0.7	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	1	1	0.1	24
8	1	1	1	0	1	0	0	0	0	0	C	C	C	C	C	0	0	S	0	0	0	0	0	0	1	0.2	24
9	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	0.0	24
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0	24
11	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	24
12	0	0	0	0	0	0	0	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
13	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
14	0	0	0	0	0	0	0	1	1	1	1	S	1	1	1	1	1	1	1	0	0	0	0	0	1	0.5	24
15	0	0	0	0	0	0	1	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
16	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
17	0	0	0	0	0	0	0	0	S	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	24
18	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
19	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.1	24
20	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
21	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0.2	24
22	1	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
23	0	0	S	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
24	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
25	S	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	S	1	0.5	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	0.0	24
27	1	1	1	1	1	1	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	S	0	2	1.2	24
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	S	3	5	6	6	0.7	24
29	4	4	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	4	0.6	24
30	0	0	0	1	1	1	0	1	1	0	0	1	1	1	0	0	0	S	X	X	X	X	X	X	1	0.4	19
31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0		0
HOURLY MAX	4	4	2	1	1	1	2	2	2	2	2	2	1	1	1	1	1	1	2	1	1	3	5	6			
HOURLY AVG	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.1	0.1	0.2	0.4	0.4			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

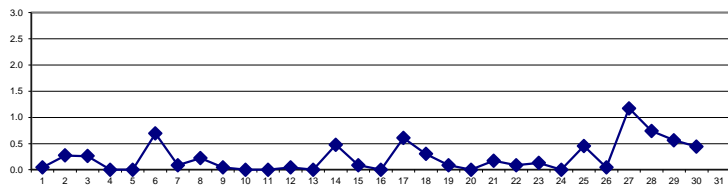
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	57	PPB
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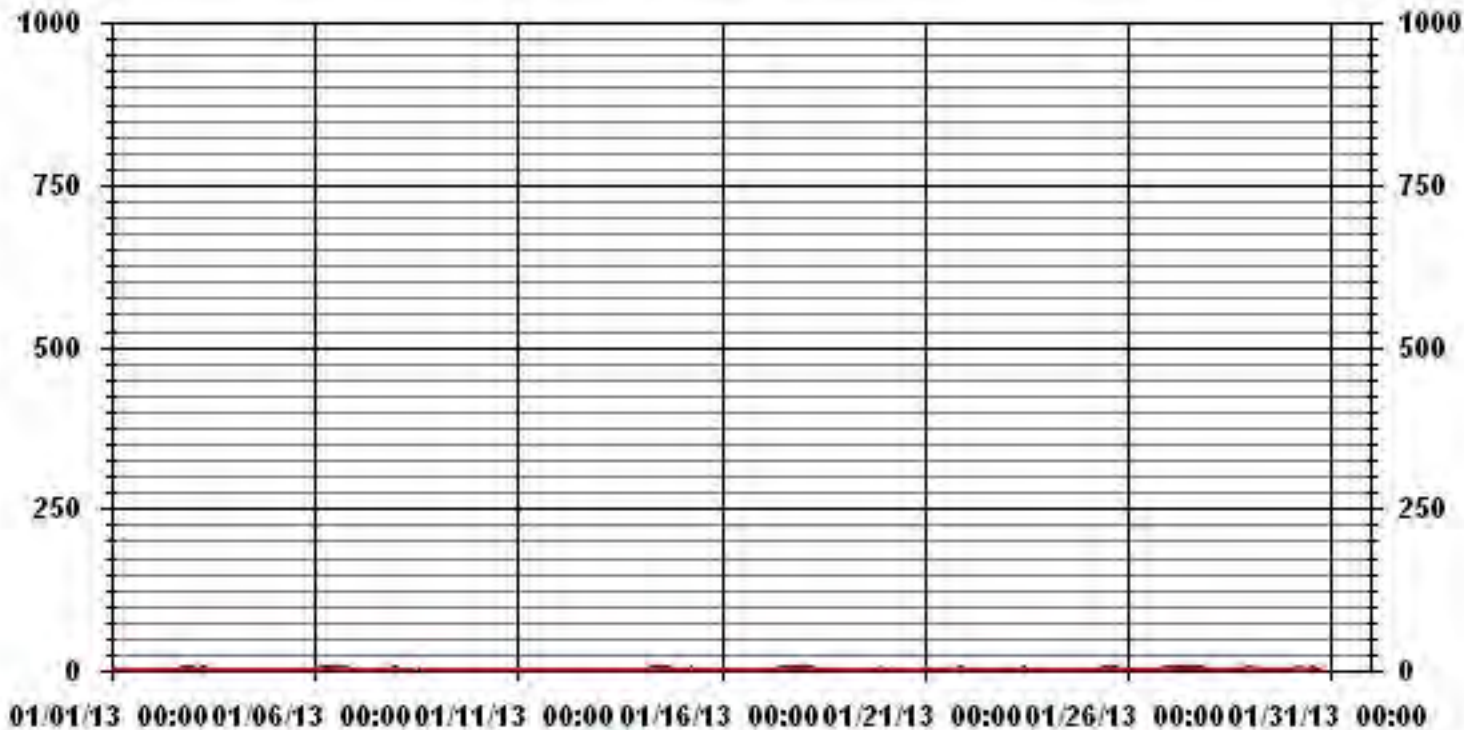
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	133
MAXIMUM 1-HR AVERAGE:	6 PPB @ HOUR(S) 23 ON DAY(S) 28
MAXIMUM 24-HR AVERAGE:	1.2 PPB ON DAY(S) 27
IZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	5 HRS
OPERATIONAL TIME:	715 HRS
AMD OPERATION UPTIME:	96.1 %
STANDARD DEVIATION:	0.57
MONTHLY AVERAGE:	0.23 PPB

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JANUARY 2013

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	DAILY	24-HOUR	RDGS.
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.		
DAY																												
1	3	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.1	24
2	S	0	0	0	0	0	0	0	0	1	0	0	1	1	1	2	2	2	2	2	2	2	2	S	2	0.9	24	
3	1	1	1	1	2	2	2	2	2	2	1	1	1	0	0	0	0	0	0	0	0	0	S	0	0.8	24		
4	0	0	0	0	0	0	0	1	1	1	0	1	1	1	0	1	0	0	1	1	1	S	0	0.5	24			
5	1	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	1	0	S	1	1	1	0.5	24			
6	1	1	2	2	2	2	5	2	2	2	2	2	2	2	2	2	2	2	S	1	0	0	1.7	24				
7	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	S	1	1	1	0.7	24				
8	2	2	2	2	2	1	1	1	1	0	C	C	C	C	C	0	0	S	2	1	1	1	1.1	24				
9	1	1	1	1	1	1	4	1	1	2	2	2	2	1	2	1	S	0	0	0	0	0	1.1	24				
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	2	1	1	0	0	0.3	24				
11	1	1	0	0	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0.8	24				
12	1	1	1	1	1	2	2	2	2	1	1	1	1	S	1	1	1	1	1	1	1	1	1.1	24				
13	0	1	1	1	1	1	1	1	1	0	0	1	S	1	0	0	1	0	1	0	1	1	0.7	24				
14	1	1	1	1	1	1	1	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	1.6	24				
15	1	1	5	2	1	2	2	2	2	1	S	3	0	0	0	0	0	0	0	0	0	0	1.0	24				
16	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0	24				
17	0	0	0	0	0	0	0	0	S	1	2	2	2	2	2	2	2	2	2	2	2	2	1.3	24				
18	2	2	2	2	3	3	2	S	1	2	1	1	1	1	2	1	1	1	1	1	1	0	1.4	24				
19	0	0	0	0	0	0	S	1	0	0	0	1	0	1	0	1	0	0	0	0	0	2	0.3	24				
20	1	0	0	0	0	S	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24				
21	1	1	1	1	S	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	3	3	1.1	24				
22	2	2	2	S	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	24				
23	0	0	S	0	0	1	0	1	1	1	2	2	2	1	1	1	1	1	1	1	2	1	1.0	24				
24	2	S	1	1	1	1	1	1	1	1	1	2	3	2	1	1	1	1	1	1	1	1	1.2	24				
25	S	1	1	1	1	1	1	2	2	2	2	2	2	3	3	2	2	2	2	1	2	1	1.7	24				
26	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	S	0.7	24				
27	2	2	2	3	3	3	3	3	3	4	3	3	2	3	2	3	3	2	2	2	2	S	2.5	24				
28	1	1	0	1	1	1	1	1	1	1	1	1	1	1	2	2	1	3	4	3	S	4	2.0	24				
29	6	5	4	2	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	S	1	1	1.7	24				
30	1	2	2	2	2	2	2	2	2	1	2	2	2	2	2	1	1	1	S	X	Y	Y	1.7	19				
31	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	0	0				
HOURLY MAX	6	5	5	3	3	3	5	3	3	4	3	3	3	3	3	3	3	3	4	3	3	4	7	7				
HOURLY AVG	1.1	1.0	1.0	0.9	0.9	1.0	1.1	1.0	1.1	1.0	1.0	1.2	1.1	1.0	1.0	1.0	0.9	1.0	1.1	0.9	0.9	1.0	1.1	1.1				

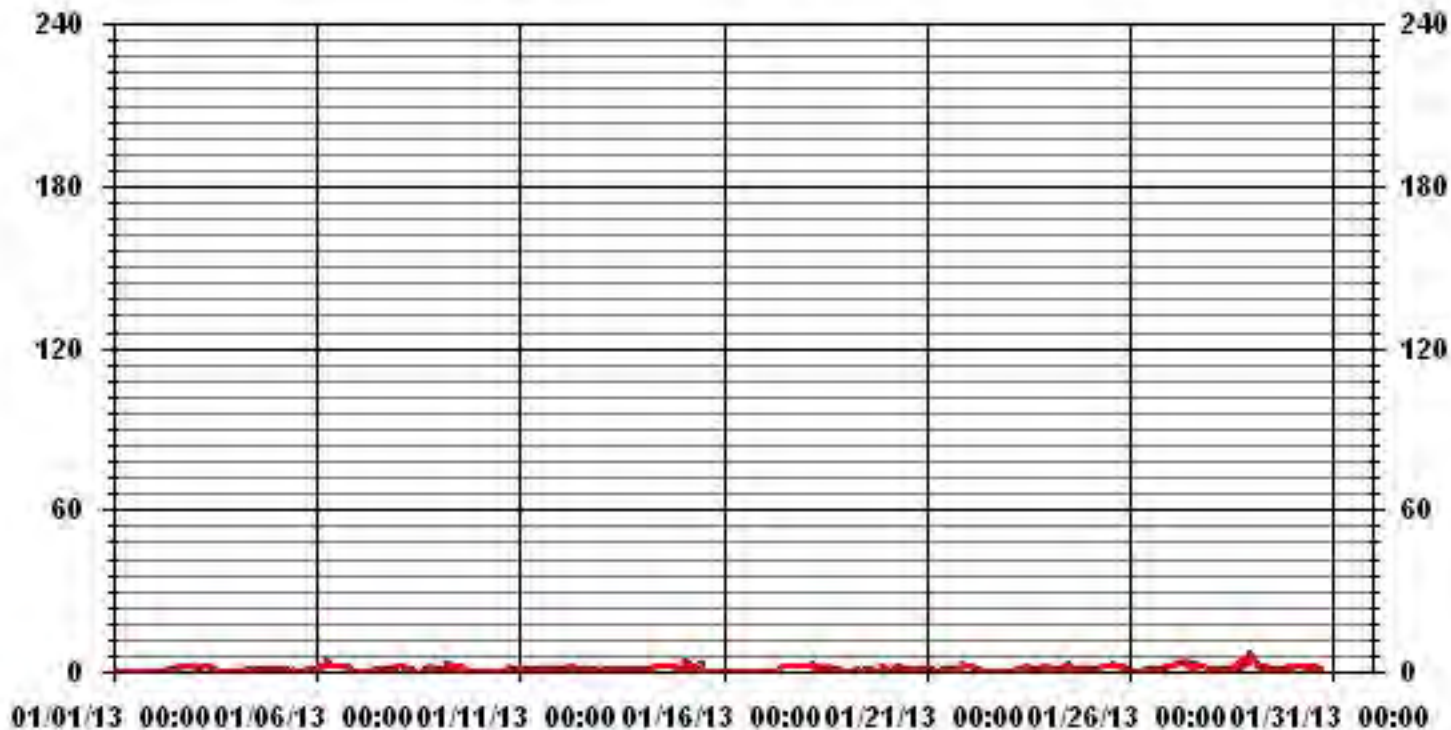
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	460
MAXIMUM INSTANTANEOUS VALUE:	7 PPB @ HOUR(S) 22, 23 ON DAY(S) 28
IZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION:	0.98
OPERATIONAL TIME:	715 HRS

01 Hour Averages



— LICA35 SO2MAX PPB

LICA-ELK
 SO2_ / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA-ELK
 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	2.35	.58	1.47	1.76	10.47	17.69	3.53	1.91	1.91	1.32	1.17	6.78	16.66	12.38	15.19	4.71	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.35	.58	1.47	1.76	10.47	17.69	3.53	1.91	1.91	1.32	1.17	6.78	16.66	12.38	15.19	4.71	

Calm : .00 %

Total # Operational Hours : 678

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	16	4	10	12	71	120	24	13	13	9	8	46	113	84	103	32	678
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	16	4	10	12	71	120	24	13	13	9	8	46	113	84	103	32	

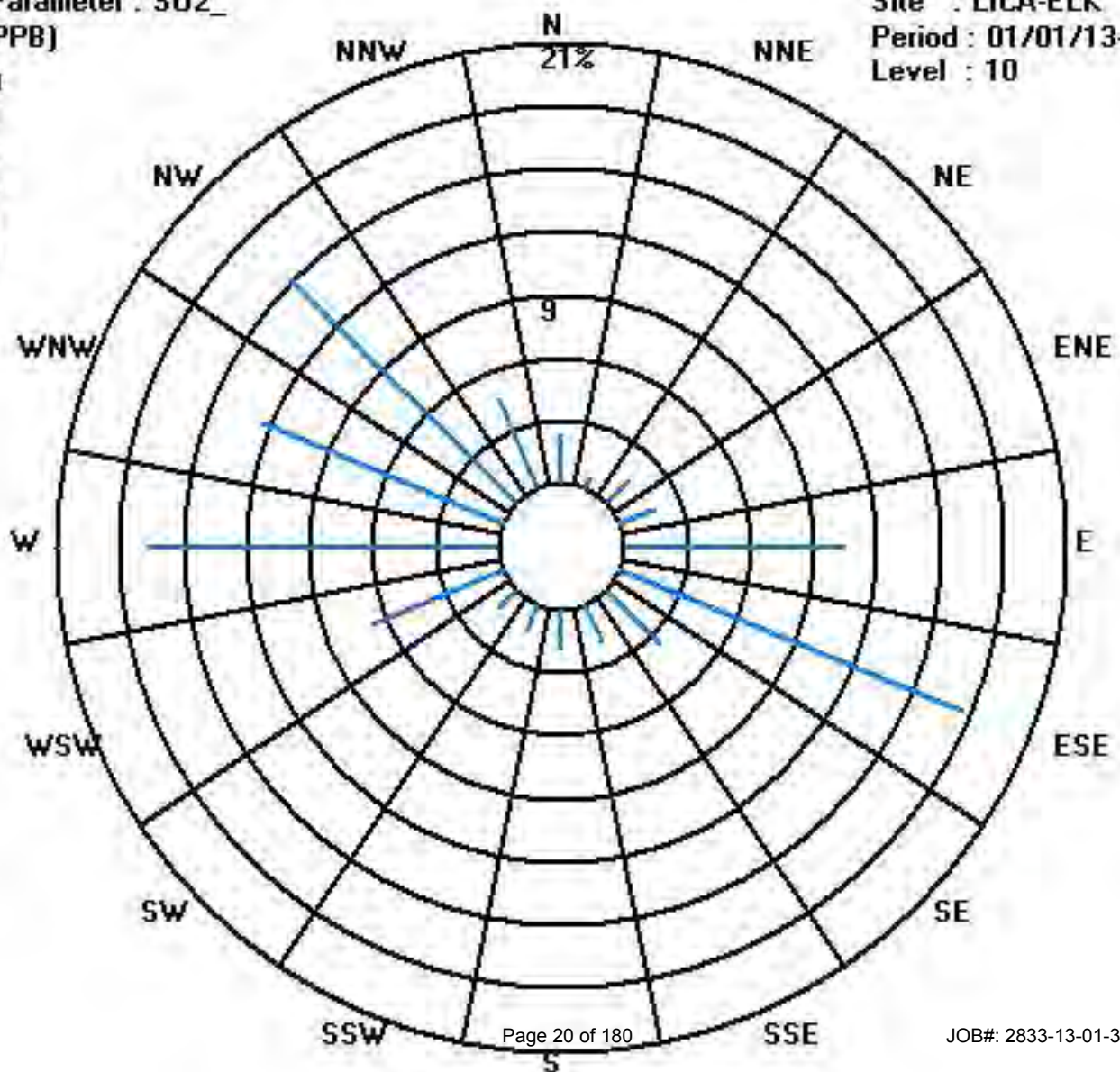
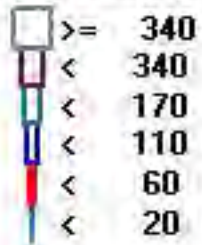
Calm : .00 %

Total # Operational Hours : 678

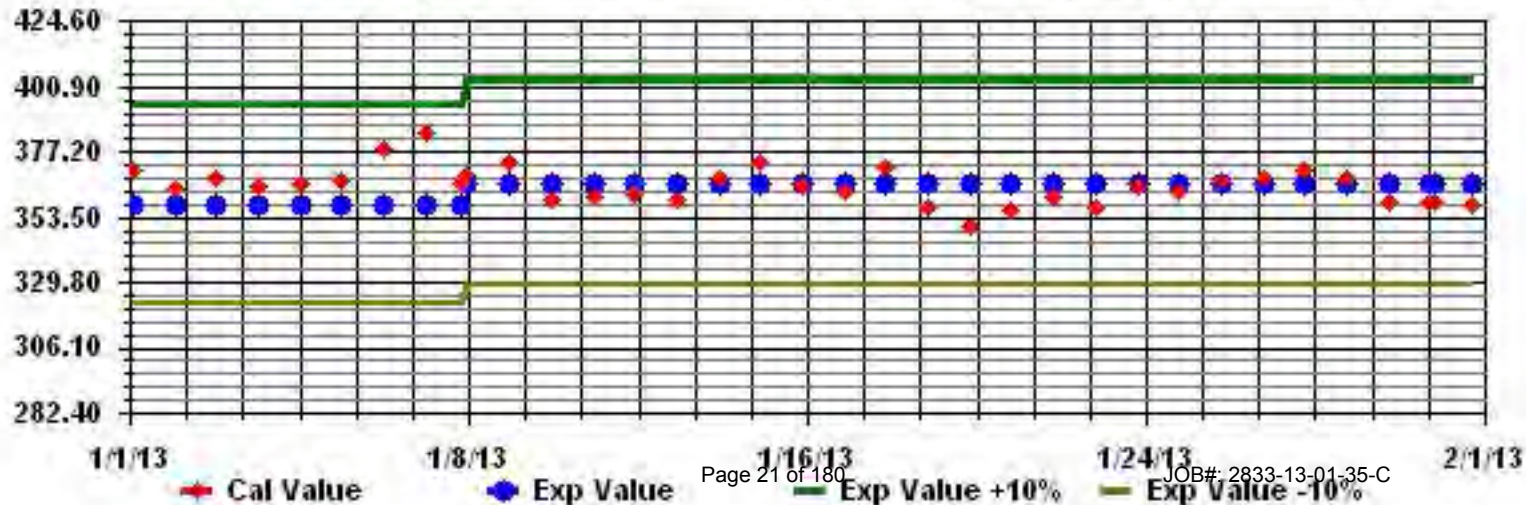
Class Limits (PPB)

Period : 01/01/13-01/31/13

Level : 10



Calibration Graph for Site: LICA35 Parameter: SO2_ Sequence: S02 Phase: SPAll



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE - Elk Point Airport

JANUARY 2013

HYDROGEN SULPHIDE (H₂S) hourly averages in ppb

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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			
DAY	HOUR START HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.	
1		0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
2		S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	S	1	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	S	0	0.0	24	
4		0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	S	0	0	1	0.5	24
5		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0	24	
6		0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0.0	24
7		0	0	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	S	0	0	0	0	0	0	0.0	24	
8		0	0	0	0	0	0	0	0	0	0	0	0	0	0	Y	0	0	S	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	S	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	S	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	S	0	0	0	1	0	0	0	0	0	0	1	0.0	24
12		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
13		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	24
14		0	0	0	0	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
15		0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
16		0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
17		0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0.3	24
18		1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
19		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	24
20		0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
21		0	0	0	0	S	0	0	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
22		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	24
23		0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
24		0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
25		S	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	24
26		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	S	1	1	0.3	24	
27		1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	S	1	0	1	0.9	24
28		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	24
29		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
30		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	24
31		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	24
HOURLY MAX		1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1		
HOURLY AVG		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	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1			

STATUS FLAG CODES

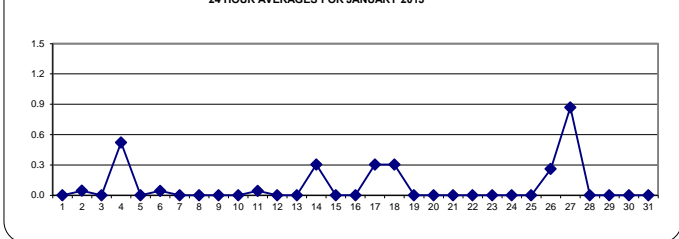
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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:	62				
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	0.9	PPB			ON DAY(S)
				VAR-VARIOUS	27
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.28		MONTHLY AVERAGE:	0.09	PPB

24 HOUR AVERAGES FOR JANUARY 2013



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JANUARY 2013

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST																										DAILY 24-HOUR		
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	MAX.	AVG.	RDGS.	
1	1	S	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
2	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	3	1	1	S	3	0.4	24	
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	0.0	24	
4	0	0	1	1	1	1	1	1	2	2	1	1	1	1	1	1	2	2	2	2	S	1	1	2	1.2	24		
5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0.0	24		
6	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	S	0	0	0	0	1	0.5	24		
7	0	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	S	0	1	1	0	1	1	0.2	24		
8	1	1	0	0	0	0	0	0	0	0	0	0	0	Y	0	0	S	0	0	0	0	0	0	1	0.1	24		
9	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	2	0.1	24		
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0	24	
11	0	1	0	0	0	0	0	0	1	1	1	1	1	0	S	1	1	1	1	0	0	0	0	1	1	0.5	24	
12	1	1	0	1	0	0	0	0	2	0	0	0	0	S	0	0	0	0	0	0	0	0	0	2	0.2	24		
13	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	0	0.0	24	
14	0	1	1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24	
15	1	1	1	1	1	0	0	0	0	0	S	4	0	0	0	0	0	0	0	0	0	0	0	0	4	0.4	24	
16	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
17	0	0	0	0	0	0	0	0	S	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0.5	24	
18	2	2	2	2	2	2	1	S	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0.7	24	
19	0	0	0	0	0	0	S	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
20	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
21	0	0	1	1	S	0	0	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24		
22	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	24	
23	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	24	
24	0	S	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	1	0	0	0	0	2	0.2	24	
25	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	S	1	0.1	24	
26	0	0	0	0	0	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	S	1	1	0.7	24	
27	1	1	1	1	1	1	1	1	2	2	2	1	1	1	1	2	2	1	1	1	1	S	1	1	2	1.2	24	
28	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0.1	24		
29	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	24	
30	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	
31	0	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	S	0	0	0	0	0	1	0.5	24		
HOURLY MAX	2	2	2	2	2	2	1	1	2	2	2	4	2	1	1	2	2	2	2	2	3	1	1	1				
HOURLY AVG	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.4	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.1	0.2				

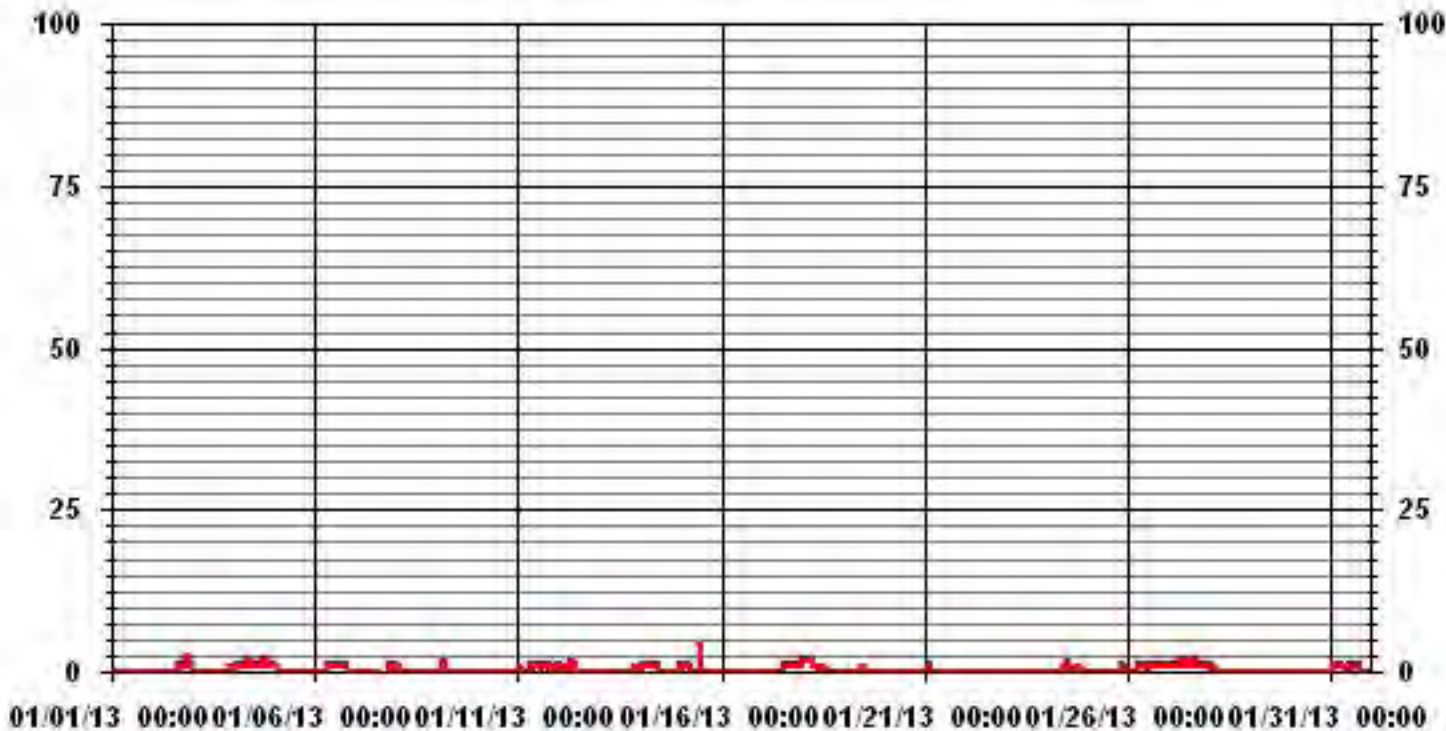
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	164				
MAXIMUM INSTANTANEOUS VALUE:	4	PPB	@ HOUR(S)	11	ON DAY(S) 15
VAR - VARIOUS					
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	6	HRS			
STANDARD DEVIATION:	0.53				

01 Hour Averages



— LICA35 H2S MAX PPB

LICA-ELK
H2S_ / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
Parameter : H2S_
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	
< 3	2.26	.56	1.41	1.70	11.34	18.01	3.12	1.98	1.84	1.27	1.13	6.80	16.31	12.19	15.46	4.53	100.00
< 10	.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
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.26	.56	1.41	1.70	11.34	18.01	3.12	1.98	1.84	1.27	1.13	6.80	16.31	12.19	15.46	4.53	

Calm : .00 %

Total # Operational Hours : 705

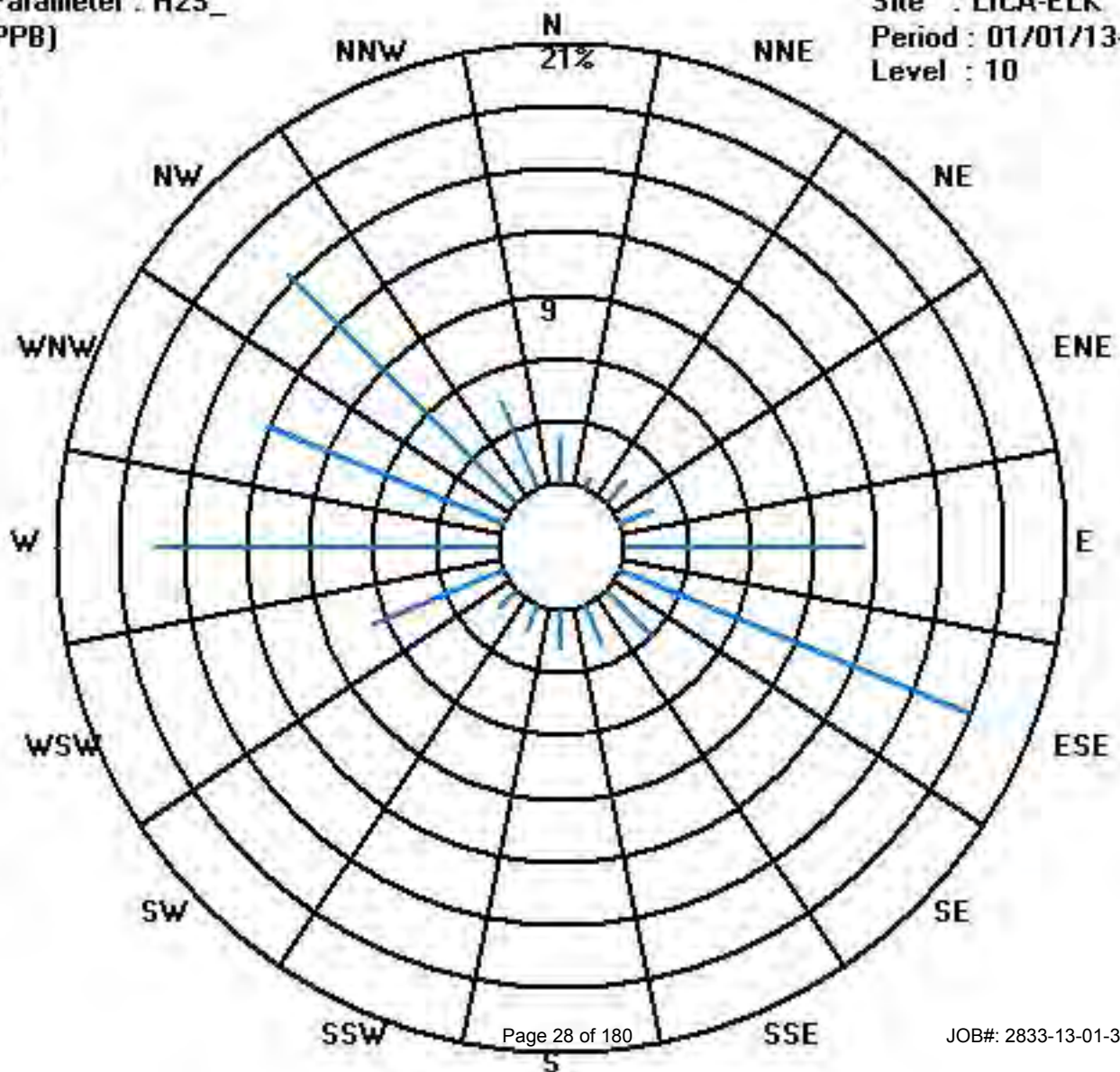
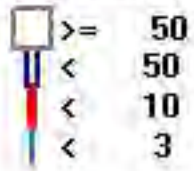
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3	16	4	10	12	80	127	22	14	13	9	8	48	115	86	109	32	705
< 10																	
< 50																	
>= 50																	
Totals	16	4	10	12	80	127	22	14	13	9	8	48	115	86	109	32	

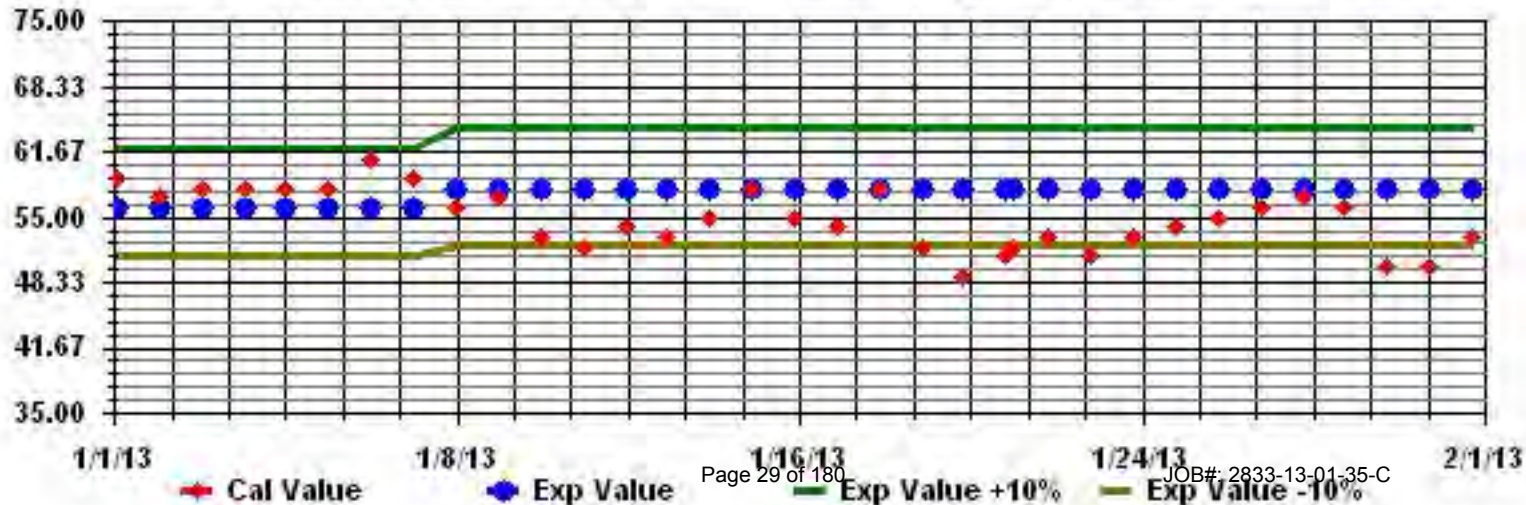
Calm : .00 %

Total # Operational Hours : 705

Class Limits (PPB)



Calibration Graph for Site: LICA35 Parameter: H2S_ Sequence: H2S Phase: SPAll



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Poinr Airport

JANUARY 2013

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

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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		
HOUR START	HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.	
DAY																													
1		21	13	26	6	11	10	11	6	13	3	21	8	0	16	2	10	11	7	12	0	32	0	13	13	32.0	11.0	24	
2		10	7	7	X	8	12	11	0	X	29	3	29	1	16	25	33	9	34	19	6	20	3	29	1	34.0	14.2	22	
3		16	13	13	12	10	23	14	22	12	24	16	9	3	10	3	14	16	14	11	19	17	18	9	16	24.0	13.9	24	
4		18	24	19	16	21	31	15	21	22	19	19	19	19	14	16	17	8	16	28	19	26	5	37	32	37.0	20.0	24	
5		8	35	30	32	27	36	23	24	21	17	17	24	16	23	23	20	14	17	21	20	39	23	27	27	39.0	23.5	24	
6		21	26	33	29	18	19	19	20	14	19	22	27	19	29	25	26	19	16	14	10	13	12	4	14	33.0	19.5	24	
7		13	10	15	9	3	6	12	11	10	17	X	26	12	C	C	8	18	0	X	29	16	16	30	15	30.0	13.8	22	
8		18	28	21	27	15	26	13	29	11	22	13	21	10	10	9	13	12	19	12	18	7	23	4	38	38.0	17.5	24	
9		20	3	25	31	12	22	16	28	19	11	13	20	17	13	8	16	10	17	10	8	18	6	4	11	31.0	14.9	24	
10		15	13	20	19	5	34	18	21	0	28	45	25	4	X	0	16	20	19	30	30	14	10	24	23	45.0	18.8	23	
11		14	18	15	26	22	21	13	20	31	22	27	13	34	0	0	14	33	23	40	28	13	29	23	18	40.0	20.7	24	
12		15	25	22	23	20	22	46	33	25	27	29	8	22	8	0	15	29	12	11	1	18	17	8	34	46.0	19.6	24	
13		25	4	4	25	18	12	20	13	23	7	29	35	3	28	9	36	47	34	34	20	1	X	9	17	47.0	19.7	23	
14		38	47	47	25	24	42	41	41	30	38	37	6	13	13	13	18	15	14	17	15	16	19	18	20	47.0	25.3	24	
15		16	22	19	17	10	16	11	2	4	3	9	6	11	6	9	13	4	8	1	2	7	13	9	13	22.0	9.6	24	
16		15	25	13	21	19	20	15	14	17	13	11	13	15	12	C	C	C	C	C	3	7	26	X	27	27.0	15.9	23	
17		X	19	7	X	17	6	X	25	8	0	18	X	12	12	0	12	0	2	23	7	3	10	4	6	25.0	9.6	20	
18		14	10	6	2	5	9	4	0	0	0	4	1	4	X	2	X	10	24	22	X	30	11	16	0	30.0	8.3	21	
19		6	5	13	X	11	14	0	23	4	X	5	X	X	13	0	X	10	19	13	0	6	9	1	14	23.0	8.7	19	
20		1	0	20	17	0	6	14	11	1	4	9	11	8	1	11	19	2	X	X	23	19	X	24	X	24.0	10.1	20	
21		31	13	0	6	44	X	23	29	0	31	X	X	X	X	0	X	X	22	28	X	X	16	5	44.0	17.7	14		
22		X	X	X	21	23	X	X	27	41	50	40	X	X	32	28	X	X	X	3	14	30	0	11	6	50.0	23.3	14	
23		10	X	11	23	11	0	18	X	23	6	7	18	0	4	27	13	2	26	X	15	28	X	15	6	28.0	13.2	20	
24		14	1	8	17	X	25	X	29	X	7	X	X	24	X	4	14	31	X	10	6	10	5	13	19	31.0	13.9	17	
25		20	14	8	17	27	X	35	0	46	34	37	0	17	26	1	2	32	0	2	0	13	25	X	19	46.0	17.0	22	
26		3	X	28	X	18	1	23	3	20	2	X	29	11	17	19	12	11	31	37	38	18	7	21	32	38.0	18.1	21	
27		38	33	13	18	20	34	41	X	25	13	21	16	14	16	8	16	16	13	23	16	21	14	22	11	41.0	20.1	23	
28		19	2	14	13	10	14	4	18	4	10	4	17	9	11	8	8	10	X	0	0	X	X	X	10	19.0	9.3	20	
29		8	0	11	0	8	0	5	5	6	6	2	0	6	X	0	2	4	0	0	10	5	1	12	3	12.0	4.1	23	
30		6	12	9	0	X	16	17	X	0	10	19	X	1	17	19	X	6	X	2	9	1	3	10	X	19.0	8.7	18	
31		2	13	0	20	X	17	5	24	0	13	5	13	X	19	X	6	X	X	19	X	33	X	X	30	33.0	13.7	16	
HOURLY MAX		38	47	47	32	44	42	46	41	46	50	45	35	34	32	28	36	47	34	40	38	39	29	37	38				
HOURLY AVG		15.7	15.5	15.9	17.5	15.6	17.6	17.4	17.8	14.8	16.2	17.9	15.8	11.3	14.6	10.0	14.3	14.8	15.9	16.1	13.6	16.6	12.2	15.3	16.6				

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

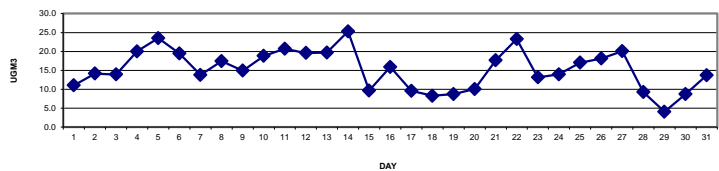
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	-	PPB	24-HR	30	PPB
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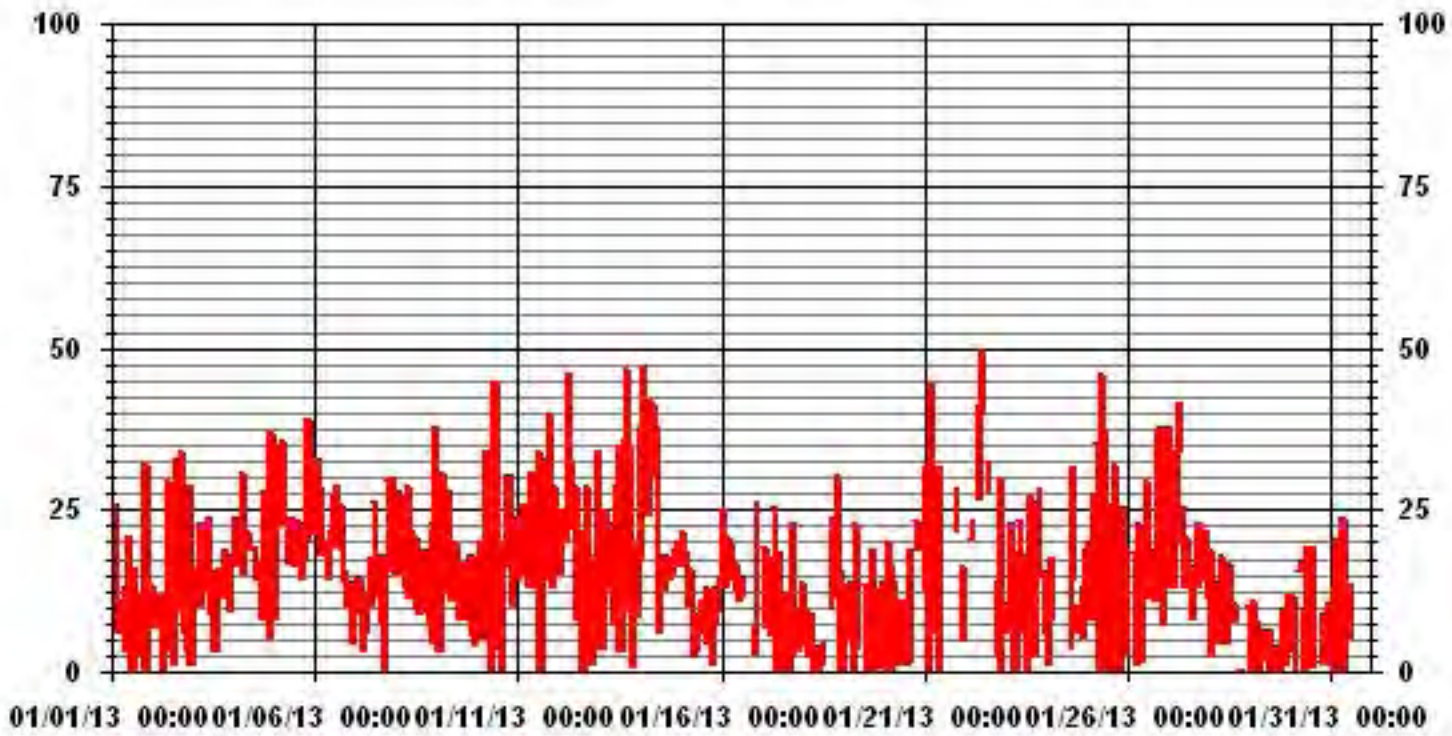
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	613		
MAXIMUM 1-HR AVERAGE:	50.0 UG/M ³ @ HOUR(S) 9 ON DAY(S) 22		
MAXIMUM 24-HR AVERAGE:	25.3 UG/M ³ ON DAY(S) 14		
IZS CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	665 HRS
MONTHLY CALIBRATION TIME:	7 HRS	AMD OPERATION UPTIME:	89.4 %
STANDARD DEVIATION:	10.38	MONTHLY AVERAGE:	15.40 UG/M ³

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



— LICA35 PM2 UG/M3

LICA-ELK
 PM2 / WDR Joint Frequency Distribution (Percent)

January 2013

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	2.27	.60	1.82	1.36	10.03	14.28	2.73	1.82	1.67	1.06	.91	6.68	15.34	12.46	13.37	3.64	90.12
< 60	.15	.00	.00	.00	2.27	1.97	.60	.30	.15	.15	.00	.60	1.21	.75	1.51	.15	9.87
< 80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.43	.60	1.82	1.36	12.31	16.26	3.34	2.12	1.82	1.21	.91	7.29	16.56	13.22	14.89	3.79	

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
< 30	15	4	12	9	66	94	18	12	11	7	6	44	101	82	88	24	593
< 60	1				15	13	4	2	1	1		4	8	5	10	1	65
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	16	4	12	9	81	107	22	14	12	8	6	48	109	87	98	25	

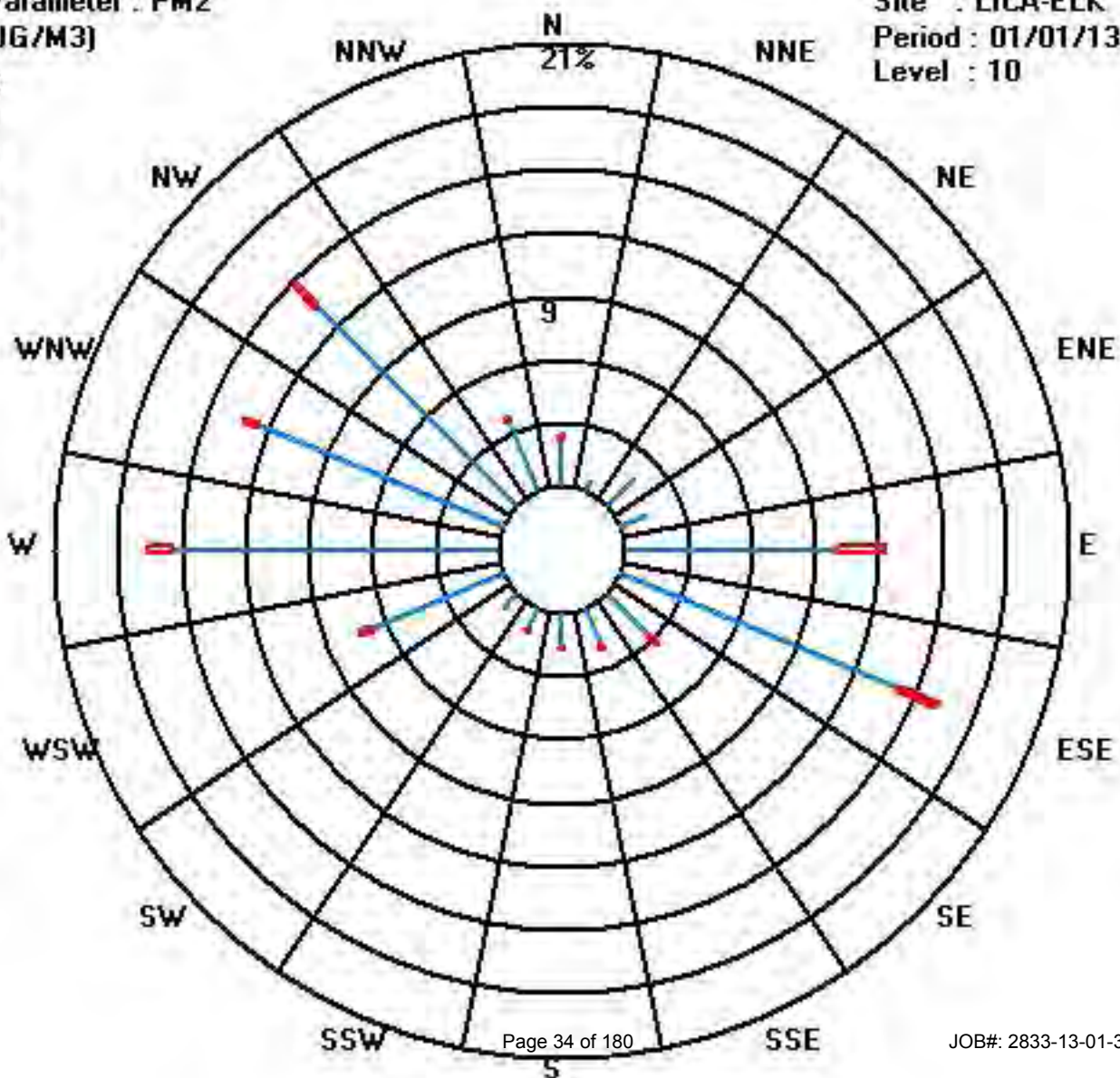
Calm : .00 %

Total # Operational Hours : 658

Class Limits (UG/M3)

Period : 01/01/13-01/31/13

Level : 10



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JANUARY 2013

NITROGEN DIOXIDE hourly averages in ppb

MST	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	24:00	RDGS.
HOUR START	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	
DAY 1	4.7	S	2.9	1.8	3.3	4.1	1	3.6	4	2.2	2.5	0.8	2.1	2.5	2.2	3.3	3.6	4.3	1.2	3.7	1.9	0.4	0.4	1.9	4.7	2.5	24
2	S	2.9	2.1	2.9	8.9	8.3	9	19.2	24	15.8	12.2	9.1	14.2	8.7	5.4	8.7	22.4	37	33.1	28.8	28.4	20.6	23.2	S	37	15.7	24
3	23	18.7	18.6	18.8	18.6	22	14.3	9.8	9.7	10.3	11.3	7.6	8.1	7.4	9.5	10.1	13.4	14.3	18.6	14.9	9.9	12	S	19	23	13.9	24
4	9.7	9.9	24.4	26.8	33.6	31.7	30.5	34	34.5	33.5	21.9	25.1	26.2	19.4	18.7	26.3	29.7	30.8	35.6	37	35	S	34.4	32.4	37	27.9	24
5	31.2	29.3	25.4	22.2	16.7	14.4	11.6	8.7	9.5	8.4	8.1	6.4	5.2	6.1	15.8	11.7	20.2	27	26.7	23.2	S	19.9	14.5	14.4	31.2	16.4	24
6	15.2	16.6	15.4	11.4	9.4	8.4	9.1	13.2	17	17.4	20.4	10.5	7.2	9.5	7.9	6.4	8.8	8.8	6.1	S	4.1	2.9	2.5	2.7	20.4	10.0	24
7	1.9	2.1	1.4	3.1	6.7	1.7	3.9	5.8	10.6	13.4	8.5	C	C	C	C	C	C	15	C	15.9	17.9	17.1	17.8	19.1	19.1	9.5	24
8	16.2	9.6	11.8	12.1	11.9	9.1	5.3	2	1.5	0.7	0.4	1.1	1.6	0.3	Y	3.7	10.1	S	19.2	19.6	12.1	21.1	20.5	23.9	23.9	9.7	23
9	16	14.9	12.3	16.3	15.5	19.1	19.2	19.1	15.1	13	9.9	7.1	4.4	4.4	2.5	2.9	S	3.9	3.3	2	1.7	1.4	1.2	1.1	19.2	9.0	24
10	1.2	0.9	1.3	1.7	2.4	3.8	3	2.2	2.2	1.8	2.2	1.5	1.3	1.8	2.4	S	8.8	21.2	22.8	15.5	6.3	10.6	12.2	29.4	29.4	6.8	24
11	29.7	30	28.8	26	24.8	24.3	28.1	26.3	31.7	23.6	20.9	20.5	18.4	17.5	S	22.9	28.7	30.2	33	25.8	22.1	21	19.9	27	33	25.3	24
12	27.5	29.7	26.8	29	21.6	16.7	19.5	22.7	24.4	18.2	12.5	12	9	S	7	6.7	5.7	9.5	11.3	8.4	14.9	17.6	22.9	20.3	29.7	17.1	24
13	22.4	18.8	10.5	14.6	16.9	12.5	14.3	8.8	14.5	13.2	12.3	7.4	S	6.1	4.5	8.1	17.3	19.6	21.7	20.1	26.6	23.3	21.6	20.8	26.6	15.5	24
14	20.1	27.5	28.8	29.1	27.8	27	26.3	21.6	18.2	14.2	11.9	S	10.1	6.9	8.3	10.3	13.8	12.9	15.9	16.2	21.6	10	13.2	17.6	29.1	17.8	24
15	23.8	25.9	20.8	25.5	5.4	3.1	5.9	5.7	3.2	2.4	S	X	3.4	0.9	3.4	9	3.3	3.2	3.7	2.2	4.5	5.5	3.3	0.9	25.9	7.5	23
16	0.8	1.3	2.7	3.3	4.4	5.5	4.3	1.9	0.8	S	1.9	3.1	2.1	0.5	0.6	0.4	0.6	1.1	0.5	0.6	4.4	4	2	3.9	5.5	2.2	24
17	7.4	9	9.2	10.3	8.1	8.6	11.7	8.1	S	5.5	5.8	5	4	3.4	4	4.8	5	6.4	5.9	4.7	6	8.1	9	9.6	11.7	6.9	24
18	8.8	11	20.3	16.3	21.1	13.7	9.5	S	4.7	10.9	4.6	3.4	8.2	1.7	0.9	0.8	0.8	1.3	1.5	1.7	2.1	0.8	0.4	0.4	21.1	6.3	24
19	0.4	0.4	0.4	0.4	3.1	2.9	S	14.8	18.1	13.7	15.8	15.4	12.5	10.1	9.1	10.9	13.4	15.4	3.7	2	1.9	1.3	1.4	1.2	18.1	7.3	24
20	6	6.8	2.7	4.2	1.2	S	6.9	7.8	4.3	5.7	2.3	1.9	0.4	1.3	2.2	3.1	6.3	9.2	3.8	4.5	4.8	2.6	3.6	3.5	9.2	4.1	24
21	3.1	8.8	12.6	10	S	10.5	11.3	19	13.1	13.2	7.8	5.3	3.5	4.2	4	4	3.9	6.4	8.5	8.9	9.8	7.7	7.4	8	19	8.3	24
22	7.8	7.7	9.5	S	8.5	8.7	10.7	8.7	8.4	6.9	3.8	2.9	4	2.6	2.2	1.7	2.2	10.3	5.9	8.8	7.7	5.6	7	2.1	10.7	6.2	24
23	6.3	10.2	S	14.7	18.8	24	22.2	23	19.6	14.3	7.2	4.5	5.1	5.4	4.2	3.7	3.6	3.6	3.9	2.2	2.1	2.7	2.3	1.8	24	8.9	24
24	1.3	S	1.3	1.3	2.1	3.1	3.6	3.7	5.8	7.8	4.8	7.2	6.2	3.9	4.8	6.7	11.8	21.1	25.9	34.5	34.6	32.9	29.4	30.6	34.6	12.4	24
25	S	22.8	20.1	16.2	17.6	19.1	19.3	20.7	20.3	13	8.9	7.2	6.6	6.2	7.3	7.6	15.6	19.6	20.9	23.7	24	22.6	15	S	24	16.1	24
26	17	15.7	16.5	19.1	22.3	16.4	24.7	28.9	25.2	18.5	13.6	12.8	12.8	15.2	17.8	17.8	26.2	32.5	29	35.5	33.9	33.4	S	31.3	35.5	22.4	24
27	31.4	31.8	31.1	30.5	30.8	31	31.5	29.7	30.1	24	19.3	17	14.7	14.6	17.9	26.6	31	35.1	36.5	36.2	35.8	S	33.9	28.9	36.5	28.2	24
28	16	19.4	15	10.2	11.1	12.1	8.3	9.5	7.9	5.8	7.6	7.7	4.9	5.6	6.4	11.2	3.8	8.5	9.9	6	S	4.7	5	5.5	19.4	8.8	24
29	4.8	3.5	3	2.4	2.3	0.8	0.5	0.6	1	0.4	0.4	0.3	0.4	0.3	1.5	2.5	3.2	4.5	6.8	S	7.3	7.8	7.6	11.2	11.2	3.2	24
30	13.3	6.1	7.8	8.5	9.5	7.7	5	3.7	3.4	1.6	1.3	2.8	1.8	2.1	1.8	2.1	3.6	5.5	S	11.9	14.2	15.9	13.1	18.3	18.3	7.0	24
31	25.8	30.3	30.1	29.1	30.3	26.8	21	17.9	14.8	11.5	8.6	7.7	7.2	7.4	7.7	7.6	7.8	S	10.1	11	11.3	9.7	10.1	13.2	30.3	15.5	24
HOURLY MAX	31	32	31	31	34	32	32	34	35	34	22	25	26	19	19	27	31	37	37	37	36	33	34	32			
HOURLY AVG	13.5	14.5	13.8	13.9	13.8	13.2	13.1	13.4	13.3	11.4	9.0	7.6	7.1	6.1	6.4	8.3	11.2	14.4	14.7	14.7	14.0	11.8	12.2	13.8			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

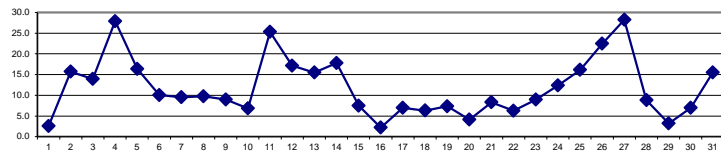
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

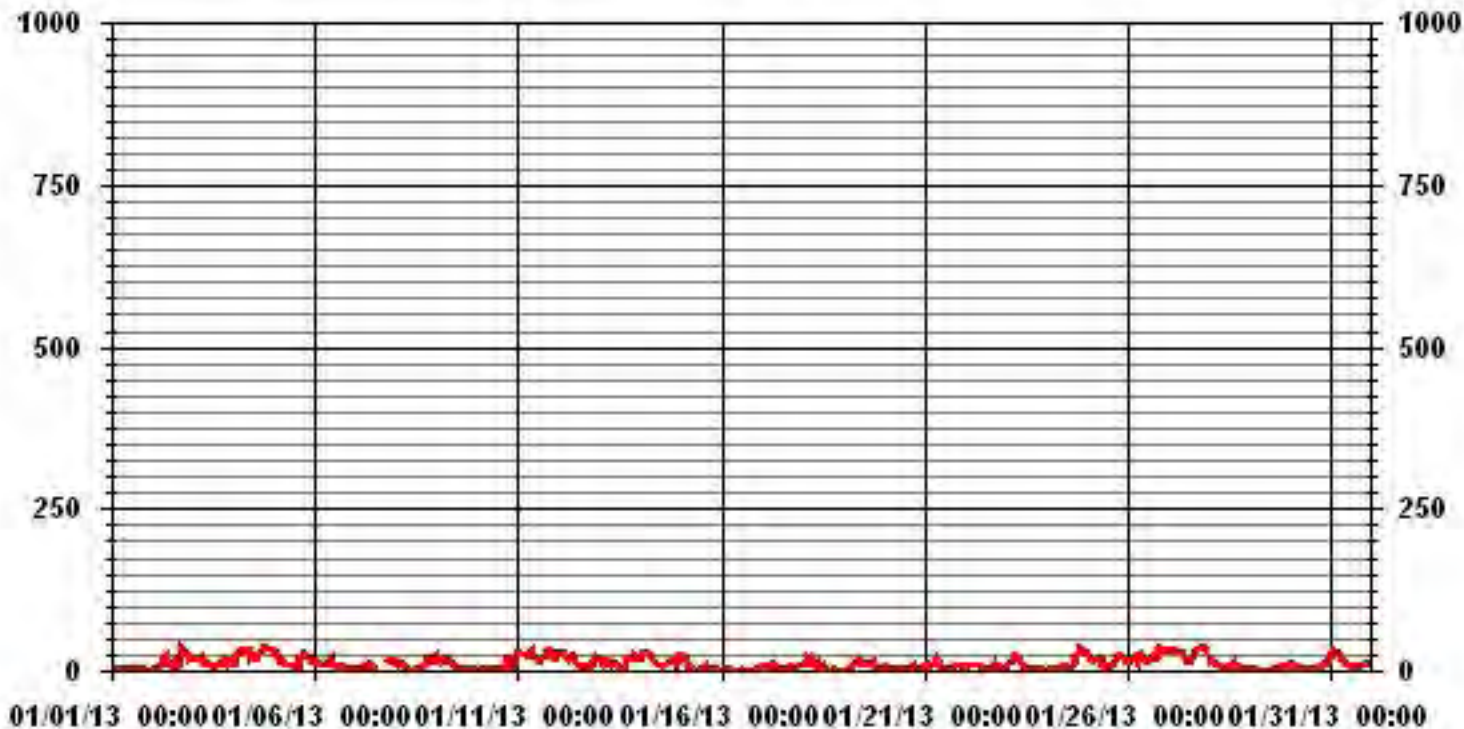
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	703					
MAXIMUM 1-HR AVERAGE:	37.0	PPB	@ HOUR(S)	17	ON DAY(S)	2
MAXIMUM 24-HR AVERAGE:	28.2	PPB			ON DAY(S)	27
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	9.49		MONTHLY AVERAGE:	11.91	PPB	

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



— LICA35 NO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JANUARY 2013

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00				
DAY																												
1	5.9	S	4.4	2.6	8.5	8.6	1.9	7.7	7.9	4.1	4.1	2.2	4.4	4.9	6.8	8.1	8.2	6.8	4.6	9.5	9.1	1.4	1.2	5.1	9.5	5.6	24	
2	S	7.6	6	33.4	41.9	35.5	15.8	38.8	28.8	20.5	27.2	21.3	22.4	13.2	7.8	16.1	45.7	47.1	40.2	39.5	39.9	27.7	30.5	S	47.1	27.6	24	
3	26.9	22.7	24.5	28.6	29.5	33.9	18.5	15.2	12.5	16.4	15.6	15.3	15.2	16.4	13.8	14.8	24.6	19.9	24.1	20.3	12	26.2	S	32.4	33.9	20.8	24	
4	14.2	23.5	31.5	36	35.4	36	35.2	36.6	46.9	43.3	27.7	27.7	36.9	22.7	27.2	32.7	41.4	44.7	45.8	43.1	36.9	S	41.7	42.7	46.9	35.2	24	
5	42.5	31.8	30.5	27.5	19.3	23.4	16	11.2	11.6	9.5	10	11.6	8.1	12	21.8	18.6	44.3	36.4	32.8	29.8	S	27.4	17.3	19.9	44.3	22.3	24	
6	18.1	18.9	17.8	13.5	11.1	9.5	14.1	17.8	30.2	23.3	26.6	15.1	8.5	10.6	9.9	7.1	12.7	11.5	9.3	S	8.5	4	3.7	3.8	30.2	13.3	24	
7	3.4	5.8	2.4	7.2	10.8	5	22.6	21.7	21.1	24.6	C	C	C	C	C	C	C	C	18.9	21.4	21.5	24.4	24.3	24.6	24.6	15.7	24	
8	25.2	14.5	14.2	14.9	17.2	18.2	9	3.1	2.8	1.6	1.3	2.9	5.5	1.1	Y	8.7	14.5	S	26.6	45	25.5	28	27.9	27.8	45	15.3	23	
9	21.6	19.9	14.2	24.9	18.5	24.2	23	23.5	18.3	15.6	13.2	9.4	6.7	6.7	4.8	4.2	S	4.9	4.9	3.9	2.6	2.5	2.2	2	24.9	11.8	24	
10	1.9	1.9	2.4	2.8	4.7	4.9	4.2	3.3	3.2	2.8	3.2	2.5	2.3	2.9	3.8	S	33.3	33.9	29.2	24.4	9	18.7	29.5	36.3	36.3	11.4	24	
11	31.6	32	32.5	33.7	29.7	28.5	32.3	28	44.6	30	29.9	24.8	20.6	19.8	S	26.9	43.2	36.3	45.1	31.4	23.7	22.4	25.9	42.5	45.1	31.1	24	
12	41.5	33.4	29.3	30	28.2	20.9	22.7	25.4	26.2	22.9	17.5	14.3	14.1	S	26.3	19.4	29.8	20.6	19.2	13.7	23.8	27.9	27.4	25.8	41.5	24.4	24	
13	27.9	23.1	19	21.8	27	18.5	20.4	27.5	20.8	18.1	16.1	12	S	29	9.8	12.1	24.7	27.7	32.4	30.7	30.7	32.3	28.6	26.1	32.4	23.3	24	
14	22.7	29.8	30	31.5	29.4	30.4	29.9	24.9	24.3	18.4	15.4	S	14.7	9.7	9.6	12.7	30	17.1	19.2	20.1	24.8	15.7	19.5	25.1	31.5	22.0	24	
15	27.9	28.6	25	27.8	21.1	4.1	8.3	7.5	5.4	5.7	S	X	6.6	5.2	11.1	15.1	9.5	12.2	13.4	10.6	6.7	7	5.9	2.9	28.6	12.2	23	
16	1.6	5	4.3	4.4	9.3	12.2	12.2	6.3	2.5	S	4.2	5.6	5.9	1.5	1.5	1.6	3.3	4.4	1.5	2	18.2	10.6	5.6	12	18.2	5.9	24	
17	11.9	10.6	12.4	15.4	11.1	14.8	17.5	12.3	S	7.6	7.5	7.6	5.9	14	5.6	7.9	11.5	10	9	6.4	9.2	10.7	10.9	11.9	17.5	10.5	24	
18	11.1	14.7	25.7	24.5	28.4	41	15.4	S	16.6	83.4	8.4	8	17.3	5.5	2.3	2.6	2.6	2.2	2.4	2.9	3.2	2.6	1.4	1.3	83.4	14.1	24	
19	1.4	2.3	1.4	2.2	27	18	S	26.9	27	30.8	19	19.5	14.5	12.7	14.4	12.5	17.9	18.4	13.8	3.8	3.7	2.3	2.3	2.5	30.8	12.8	24	
20	26	22.7	9.8	21.3	7.5	S	16.4	16.7	7.5	25.4	6.1	4.4	1.7	3.3	5.1	6.9	15.1	17.8	5.7	7.3	7	5.5	5.2	5.2	26	10.9	24	
21	7.9	14.5	19.5	15.2	S	14.5	15.6	24.5	16.9	15.2	22	6.6	4.9	5.5	5.7	5.2	5.7	8.4	11.8	18.8	11.5	8.9	8.6	9.8	24.5	12.1	24	
22	9.4	9.4	11.9	S	10.1	11.1	18.3	13.5	27.9	36.9	9.2	7.4	9.1	5.5	3.8	4	4.3	32.5	10.9	17.8	18	12.7	16.7	3.4	36.9	13.2	24	
23	10.8	18.2	S	20.2	27.4	28.3	28.6	28.4	24.3	20.3	10.5	6.4	6.9	6.9	5.9	5	14.5	5.7	5.8	4.1	2.9	4.2	3.5	3.5	28.6	12.7	24	
24	2.7	S	2.3	2.8	4	6	6.3	6.4	12.5	23	7.2	71.7	133.5	17.6	8	15	26.1	32.6	40.5	42.3	39.6	42.7	32.9	33.8	133.5	26.5	24	
25	S	25.3	23.1	17.4	18.9	21.9	20.3	22.7	21.4	17.1	10.7	8.1	8.2	8.2	9.6	9.8	26.5	30.4	29.9	40.8	36.1	37.6	22.7	S	40.8	21.2	24	
26	25.8	19.8	18.8	24.2	26.4	24.4	31.8	34.5	32.1	26.1	17.2	14.8	14.8	18.3	21.3	19.8	33.5	42.9	35.6	42.7	36.5	39.1	S	32.1	42.9	27.5	24	
27	32.3	34.3	32.6	35.8	37	32.3	32.9	32	35.6	33.9	27	18.5	15.4	16.3	21.3	34	36.4	41.3	37.8	37.1	38	S	35.5	34.9	41.3	31.8	24	
28	19.7	23.3	20.9	12	19.8	14.2	12.9	13.4	10.3	9.3	10.4	11.2	6.2	6.9	8.2	17.5	7.2	16.4	15.4	7.9	S	5.8	6	6.3	23.3	12.2	24	
29	6	4.4	4.1	3.4	3.4	2.5	1.3	1.5	3.8	1.3	1.2	3.8	1.9	1.3	4.6	8.7	12.4	26.7	27	S	12	10.7	14.3	19	27	7.6	24	
30	19.3	8.1	9.8	10.5	11.4	10.3	7.1	4.6	4.6	2.7	2.7	22.7	8.9	3.1	2.7	2.9	8.4	17	S	26.2	18.2	22.2	21.1	29	29	11.9	24	
31	31.3	31.6	31.6	32.2	38.7	30.4	24.1	20.4	17.2	13.8	11.2	8.9	8.1	8.8	10	9.4	9.4	S	12.4	13.3	13.2	10.8	11.3	16.3	38.7	18.0	24	
HOURLY MAX	43	34	33	36	42	41	35	39	47	83	30	72	134	29	27	34	46	47	46	45	40	43	42	43				
HOURLY AVG	18.2	18.5	17.1	19.3	20.4	19.5	17.8	18.5	18.8	20.1	13.2	13.7	14.8	10.0	10.1	12.4	20.6	22.4	20.9	21.2	18.7	16.9	16.7	18.5				

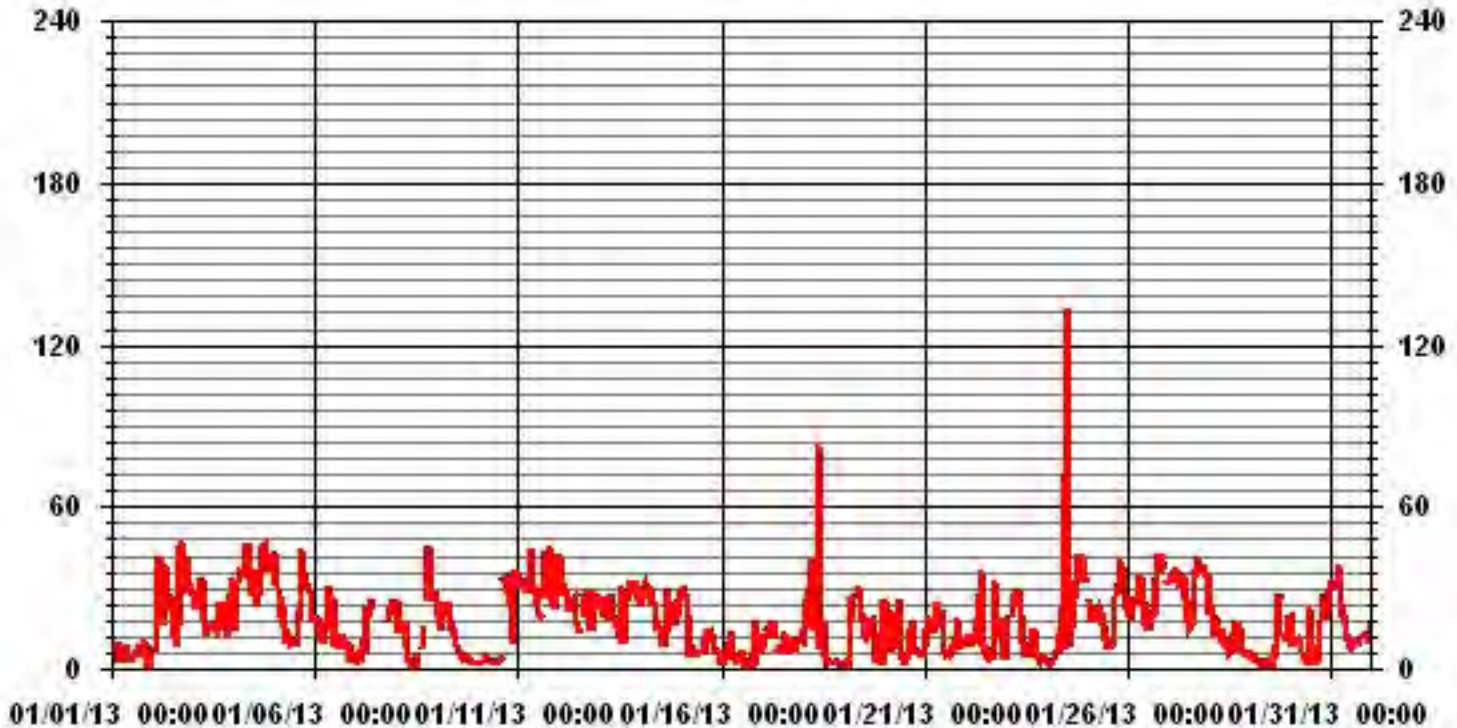
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	701					
MAXIMUM INSTANTANEOUS VALUE:	133.5	PPB	@ HOUR(S)	12	ON DAY(S)	24
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	12.71					

01 Hour Averages



LICA-ELK
 NO2_ / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA-ELK
 Parameter : NO2_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50.0	2.27	.56	1.42	1.70	11.52	18.20	3.12	1.99	1.84	1.13	.99	6.68	16.35	12.23	15.36	4.55	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	2.27	.56	1.42	1.70	11.52	18.20	3.12	1.99	1.84	1.13	.99	6.68	16.35	12.23	15.36	4.55	

Calm : .00 %

Total # Operational Hours : 703

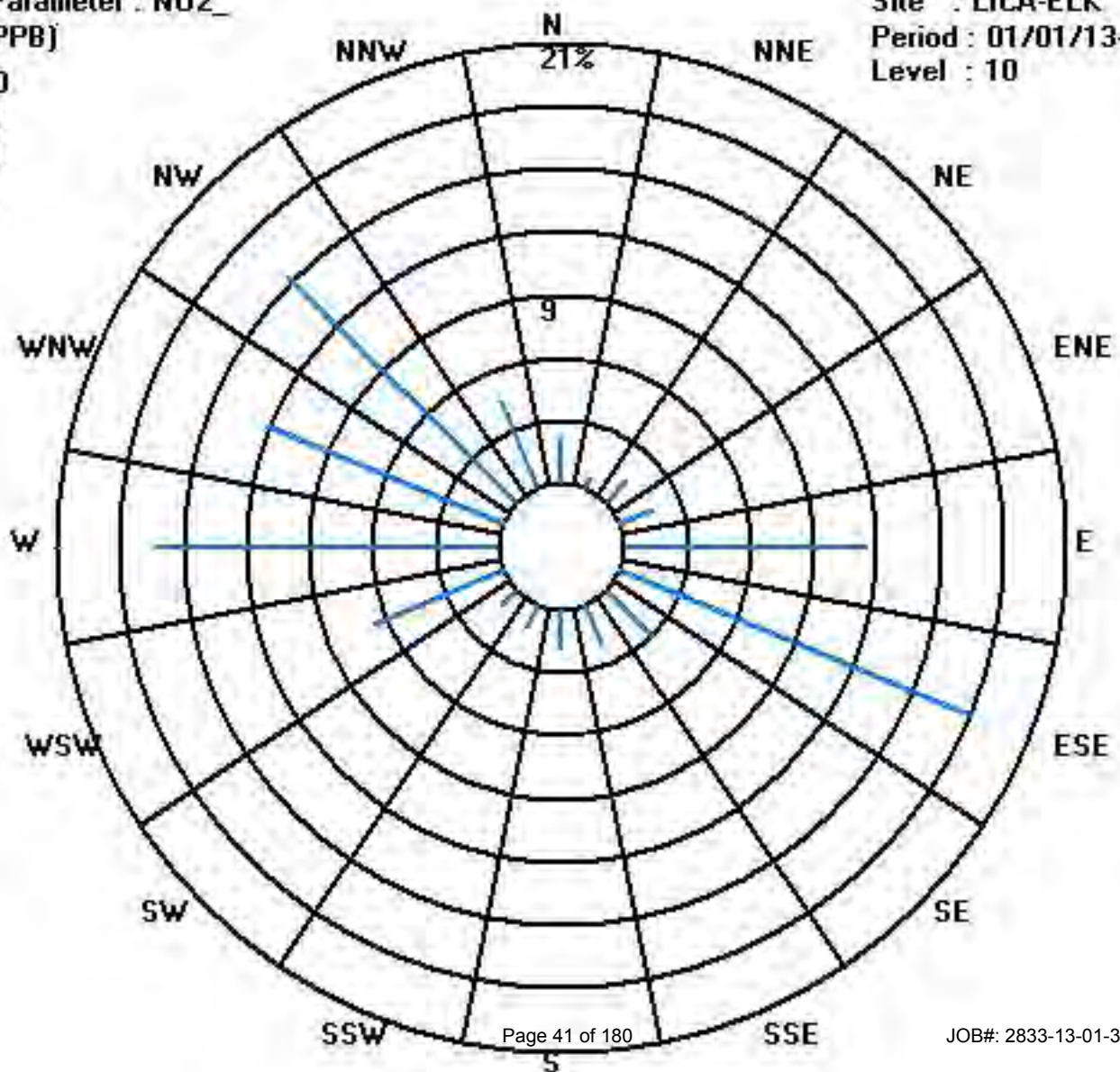
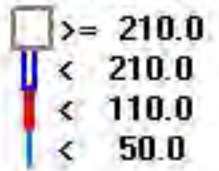
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50.0	16	4	10	12	81	128	22	14	13	8	7	47	115	86	108	32	703
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	16	4	10	12	81	128	22	14	13	8	7	47	115	86	108	32	

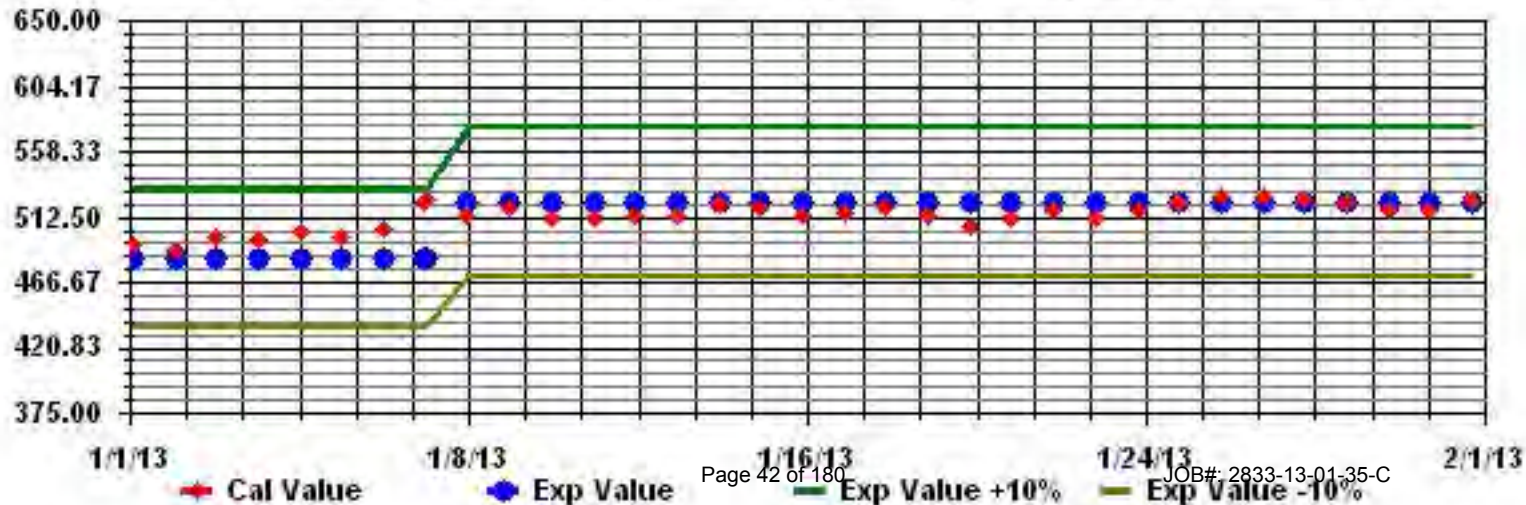
Calm : .00 %

Total # Operational Hours : 703

Class Limits (PPB)



Calibration Graph for Site: LICA35 Parameter: H02_ Sequence: H02 Phase: SPAll



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JANUARY 2013

NITRIC OXIDE hourly averages in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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		
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.
DAY																											
1	0	S	0.3	0	0.1	0.2	0	0	0.1	0.1	0.3	0	0.7	1	0.7	1	0	0	0	0.8	0.3	0	0	0.1	1	0.2	24
2	S	0.7	0.5	0.7	4.3	2.2	1.1	5.3	2.6	4.7	5.2	5.5	11.7	5.1	1.4	1.8	4.4	10.2	5	3.8	5.3	1.1	1.6	S	11.7	3.8	24
3	0.6	0.4	0.7	1.3	1.6	1.8	0.5	0.2	0.3	1.7	3.6	3.3	3.7	3	2.5	1.2	0.4	0.2	0.2	0.3	0.1	0.7	S	1	3.7	1.3	24
4	0.2	0	0.4	4	4.1	3.8	6.3	15.5	22.6	38.3	21.2	28.2	27.3	12.8	9.7	12.8	16.6	18	29.1	40.1	27.4	S	27.2	27.3	40.1	17.1	24
5	16.3	3	1.1	0.4	0.2	0.6	0.8	0	0.2	0.9	2.3	2.6	1.7	1.7	6.4	1.6	1.3	4	3.1	0.7	S	1.4	0.2	0.7	16.3	2.2	24
6	0.4	0.3	0.3	0.1	0	0	0.4	0	2.2	3.3	9.9	2.8	1.5	2.5	1.2	0.2	0	0	0	S	0.5	0.3	0.2	0.1	9.9	1.1	24
7	0.2	0	0.1	0.1	0.3	0.1	1.1	0.6	1.4	3.8	3.4	C	C	C	C	C	C	1	C	0.4	0.4	1	0	3.8	0.8	24	
8	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	Y	0.2	0	S	2.4	4.3	1.7	1.2	0.9	2.4	4.3	0.6	23
9	1.2	0.5	0.5	1.4	0.6	1.1	1.1	1.2	0.9	2.5	2.7	2	1.1	1.3	0.4	0.1	S	0.5	0.2	0	0	0	0	0	2.7	0.8	24
10	0	0	0	0	0	0	0	0.1	0	0.3	0.8	0.9	0.9	1.1	0.8	S	3.4	4.4	4.1	1.5	0.2	1.4	2.4	14.7	14.7	1.6	24
11	20.1	35.2	19.9	9.8	9.4	7.1	20	10.6	47	32.8	40.8	47.6	42	34	S	28.1	16.7	15.9	38.7	4	0.5	0.4	0.8	10.2	47.6	21.4	24
12	4.2	11	3.8	11.3	2.2	1.4	2	2	4.4	7.2	8.3	9.3	5.1	S	5.8	2.9	1.7	1	0.4	0.8	1.2	2.1	2.4	1.1	11.3	4.0	24
13	2.2	0.8	0.3	0.9	1.9	0.3	1.3	3.5	2.4	4.4	7.3	4.6	S	5.3	1.8	2.5	4.5	3.1	3.3	2.4	3.8	5.5	1.3	1.5	7.3	2.8	24
14	0.8	4.8	8.4	14.4	8.2	6.3	6.1	1.5	2	2.9	5.1	S	4.6	2.3	2.3	1.8	1.6	0.7	0.6	0.1	0.7	0	0.2	0.7	14.4	3.3	24
15	1.3	1.8	0.6	3.6	0.1	0	0	0	0	0.1	S	X	1.9	0.4	1.3	3.7	0.6	0.5	0.9	0.2	0	0	0	0	3.7	0.8	23
16	0	0	0	0	0.5	0.7	0.6	0.2	0	S	0.7	1	0.8	0.2	0.2	0.1	0	0	0	0.1	0.5	0.2	0.1	0.1	1	0.3	24
17	0.5	0.3	0.1	0.2	0.1	0.4	0.9	0.9	S	1.5	2.1	1.9	2	1.9	1.4	1.1	0.8	0.7	0.4	0.2	0.7	0.2	0	0.2	2.1	0.8	24
18	0.3	0.4	1.7	0.6	2.3	3.8	0.3	S	0.4	1.2	1.1	0.7	2.9	0.4	0.2	0.1	0.1	0	0.1	0.1	0.1	0.1	0.1	0	3.8	0.7	24
19	0	0.2	0.1	0.1	1.2	0.5	S	2.2	3.8	7.5	13.7	15.2	9.2	6.3	3.9	2.9	1.4	0.5	0	0	0	0	0	0	15.2	3.0	24
20	3.6	1.2	0.8	2.2	0.4	S	0.6	0.5	0.3	2.4	1.7	1.4	0.4	0.8	1.1	0.8	1	0.4	0.1	0	0.2	0.1	0.1	0.1	3.6	0.9	24
21	0	0.2	0.2	0.2	S	0.6	0.3	1.2	0.8	2.7	2.4	1.8	1.4	1.8	1.2	0.8	0.3	0.5	0.6	0.8	0.4	0	0.1	0.1	2.7	0.8	24
22	0.1	0	0.1	S	0.2	0.2	0.4	0.1	2.7	4.1	2	1.8	3	1.4	0.7	0.4	0.1	3	0.5	1.4	0.6	0.6	1.1	0	4.1	1.1	24
23	0.6	0.8	S	0.6	2	2.4	2.5	3.5	2.6	4.9	3.5	2.1	2.1	2.1	1.6	1.1	0.7	0.4	0.4	0.3	0.2	0.1	0	0	4.9	1.5	24
24	0	S	0.2	0.2	0.1	0.3	0.8	0.6	0.9	3	2.1	4.9	6.8	5	2.5	2.6	2.1	4.1	7.2	15.8	11.9	11.4	7.4	6.3	15.8	4.2	24
25	S	0.7	0.5	0.2	0.1	0.9	0.3	0.1	1.6	3.6	4.4	5	4.3	3.8	4.4	2.8	4.3	5.8	2.4	3.5	7.6	7.6	0.9	S	7.6	2.9	24
26	1.6	0.9	0.8	1.1	0.9	0.9	5.5	13.2	10.1	16.2	15.9	17.2	18.5	21.6	18.1	10.6	18.1	20.1	4.6	22.5	14.4	15.2	S	11.1	22.5	11.3	24
27	8.6	12.6	13.6	10.8	15.1	16.7	20.1	10.9	30.6	21.1	19.9	15.8	13.1	11.4	11.2	23.8	15.2	8.7	12.6	9.8	14.9	S	14.4	3.2	30.6	14.5	24
28	0.3	0.3	0.1	0	0.1	0	0.2	0.4	0.5	1.2	2.2	3	1.7	1.8	1.4	2	0	0	0	0	S	0.3	0.2	0	3	0.7	24
29	0.1	0	0.1	0.1	0.1	0	0	0.1	0.5	0.1	0.1	0.3	0.3	0.2	1.5	2.3	1.7	0.9	0.9	S	0.9	0.6	0.3	0.5	2.3	0.5	24
30	0.5	0.1	0.1	0.4	0.3	0.2	0	0	0.3	0.5	0.9	2.8	1.5	1.8	1.3	0.7	1	0.8	S	2.9	2.9	1.4	1.1	3.6	3.6	1.1	24
31	2.9	10.9	16.9	12	14.7	6.4	1.8	1.1	3.3	6.6	6.2	6.6	6	5.4	5.1	3	1.1	S	0.4	0.5	0.3	0	0	0.1	16.9	4.8	24
HOURLY MAX	20	35	20	14	15	17	20	16	47	38	41	48	42	34	18	28	18	20	39	40	27	15	27	27			
HOURLY AVG	2.3	3.0	2.4	2.6	2.4	2.0	2.5	2.5	4.8	6.0	6.3	6.7	6.1	4.7	3.2	3.9	3.4	3.6	4.1	4.0	3.4	1.8	2.2	2.9			

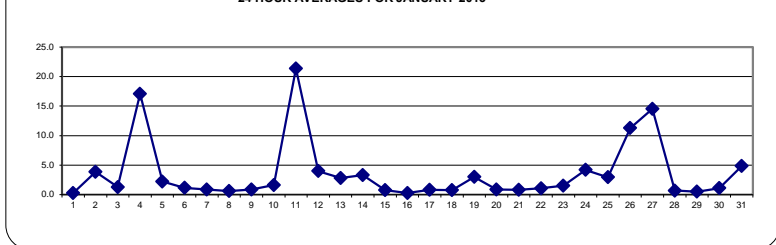
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

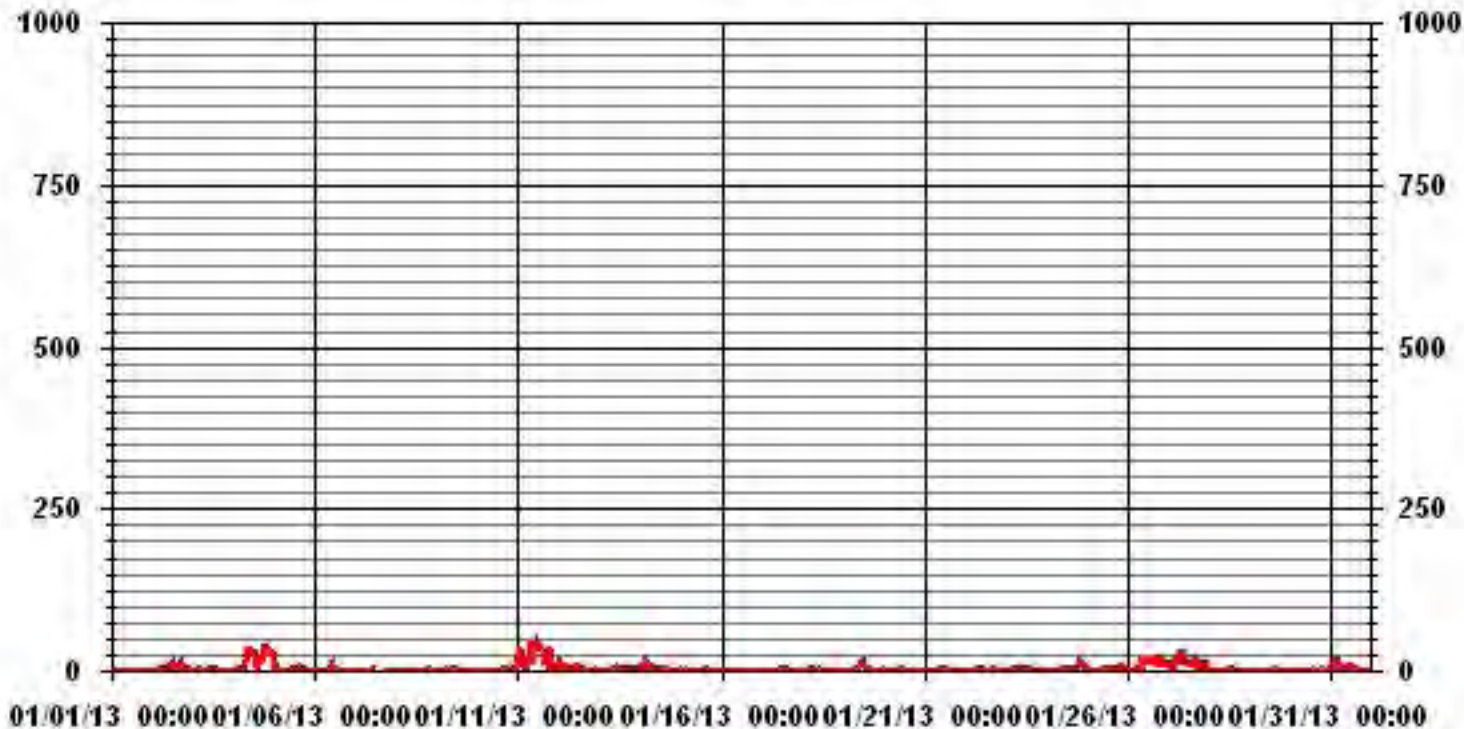
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	607					
MAXIMUM 1-HR AVERAGE:	47.6	PPB	@ HOUR(S)	11	ON DAY(S)	11
MAXIMUM 24-HR AVERAGE:	21.4	PPB			ON DAY(S)	11
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	6.80		MONTHLY AVERAGE:	3.61	PPB	

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JANUARY 2013

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00			
DAY																											
1	0.4	S	0.8	0.5	0.9	0.8	0.5	0.5	0.7	0.8	0.9	0.6	2.3	2.4	2.6	3.6	0.6	0.6	1.2	3.2	2.8	0.3	0.3	1.1	3.6	1.2	24
2	S	2.1	2	16.6	53.6	35.1	4.5	19.7	5.2	9.9	23.5	27.5	24.8	9.9	3	5.8	34	51	15.6	13.6	16.3	4.6	5	S	53.6	17.4	24
3	1.2	1	2.4	4.6	6.9	5.7	1.5	1.1	1	3.8	5.5	8.8	8.8	7.5	4.2	3.8	2.2	0.9	0.8	1.6	0.9	4.1	S	3.1	8.8	3.5	24
4	0.7	0.6	1.5	11.4	10.3	7.2	18.3	32.6	69.7	101.6	36.2	37.7	59.9	18.4	16.6	32.9	56.1	60.1	78.7	73.9	46.7	S	47.1	93	101.6	39.6	24
5	51.5	4.6	2.8	1.7	0.6	3.7	4.2	0.4	1.1	2.4	3.8	7.6	4	5.3	13	6.3	18.1	16.2	8.5	3.4	S	7.8	1	3.9	51.5	7.5	24
6	1.1	0.8	1.4	0.9	0.7	1.1	3.1	0.7	6.7	7.9	18	5.1	2.4	3.4	2.8	0.9	0.8	0.4	0.1	S	1.3	0.7	0.7	0.6	18	2.7	24
7	0.6	0.5	0.5	0.7	0.9	1.6	11.8	10.9	7.1	13.6	C	C	C	C	C	C	C	C	2.3	1.8	2.3	5	0.4	13.6	4.0	24	
8	0.6	0.2	0.3	0.2	0.9	1.9	1.7	0	0	0	0	1.1	3.1	0.2	Y	5.3	1.3	S	5.7	35	23.6	3.5	1.9	6.9	35	4.2	23
9	5.4	1.1	0.9	4.8	1.3	3.2	1.9	3.5	1.6	3.5	3.8	3.1	1.9	2.2	1.2	0.6	S	1.1	0.7	0.5	0.5	0.4	0.3	5.4	1.9	24	
10	0.5	0.3	0.3	0.3	0.3	0.5	0.4	0.4	0.4	0.8	1.4	1.5	1.3	1.7	1.3	S	29.6	16.3	11.3	4.1	0.7	4.7	16.1	55.6	55.6	6.5	24
11	34.7	51.3	43.9	45	19.5	16.6	29.4	17.8	86.2	63	83.5	64.7	49.9	40.8	S	61.1	56.5	69.5	95.3	16.5	1.7	1.2	28.9	66.4	95.3	45.4	24
12	43.9	24.6	11	19.1	9.3	5.1	4.7	4.2	7.1	12.7	15.4	16.2	11.2	S	27.4	13.5	20.2	5.9	3.2	3.6	3.7	9.9	6.4	4.3	43.9	12.3	24
13	5.6	2	1	2.5	8.6	1.4	5.7	28	5.9	8.8	11.8	8.8	S	46.4	4	5.6	11.5	9.9	8.6	11.4	7.4	16.9	4.6	6.2	46.4	9.7	24
14	2.1	9	11.1	30.8	12.2	16.6	14.4	3.3	7.2	3.8	8.9	S	7.8	4.9	3.5	3.2	20.4	4	1.6	0.8	2.2	0.4	1.2	2.9	30.8	7.5	24
15	2.9	5.1	1.8	7.8	1.2	0.3	0.4	0.2	0.2	1	S	X	3.6	3	5.8	7.9	3.5	4	4.5	2.6	0.5	0.5	0.4	7.9	2.6	23	
16	0.3	0.5	0.3	0.5	2.2	4.1	2.6	2.1	0.7	S	1.4	2.2	2.4	0.6	0.7	0.7	1.2	0.3	0.7	3.8	1.5	1.4	0.9	4.1	1.4	24	
17	3.8	0.9	1.1	0.9	0.6	1.6	3.6	2.2	S	2.8	3.3	3.3	4.2	16.3	2.5	2.7	13.8	1.9	2.5	0.7	2.2	0.7	0.6	0.8	16.3	3.2	24
18	0.7	1	4.1	2.1	5.9	42.5	0.9	S	1.1	3.9	2.3	2	7.6	1.9	0.6	0.8	0.8	0.4	0.6	0.5	0.7	0.5	0.6	0.4	42.5	3.6	24
19	0.5	1	0.5	0.5	25.6	3.7	S	6.7	9.6	40	18.5	23.2	10.9	8.4	6.6	4.3	2.4	1.6	0.5	0.4	0.4	0.6	0.4	0.3	40	7.2	24
20	24.3	5.1	4.6	15	3.7	S	2.7	2.6	0.9	28.7	6.1	3.4	0.9	2.1	2.9	1.7	3.2	1.2	0.6	0.6	0.6	0.6	0.6	0.6	28.7	4.9	24
21	0.4	1.1	0.6	0.8	S	2	1	3.8	1.4	4	6.5	2.7	2.1	2.5	2.1	1.5	0.8	1.5	1.6	11.9	1.5	0.5	0.6	0.6	11.9	2.2	24
22	0.8	0.5	0.6	S	0.8	0.7	1.3	0.9	68.5	68.5	7.4	5.9	8.4	3.5	1.7	1.6	1.3	25.3	2.5	5.9	2.8	3.2	3.7	0.6	68.5	9.4	24
23	2.4	3.4	S	1.9	4.6	5.2	11.7	11.3	7.8	8.9	5.6	3.6	3.5	3.4	3.1	1.9	6.8	1.5	1.2	1.1	1.1	0.7	0.4	0.7	11.7	4.0	24
24	0.4	S	1.2	0.7	0.6	1.4	2	1.5	2.5	37.4	2.9	22.1	240.1	141.9	4.5	6.3	7.4	31	43.3	67.2	44.6	68.5	19.2	12.4	240.1	41.7	24
25	S	1.6	1.7	0.7	0.5	4.8	0.9	0.7	3.7	4.6	6.7	6.3	6.1	6.7	7.6	5.5	16.8	18.3	8.4	62.4	31	35.6	7.1	S	62.4	10.8	24
26	5.8	3.3	1.7	3.3	2.3	5.9	12.8	25.7	16.6	29.3	25.6	20.1	24.1	29.2	21.2	16.9	67.6	60.5	20.1	56.1	24.8	41.9	S	18.2	67.6	23.2	24
27	12.6	21.5	26.4	36.6	60.6	27.5	26.9	20.9	53.7	44.6	44.3	19.1	14.4	12.8	15.7	57.7	56.9	27.2	21.3	29.7	29.8	S	24.7	8.5	60.6	30.1	24
28	1	0.9	0.7	0.4	1.3	0.7	1	1.3	1.3	4.7	5.1	5.4	2.6	2.7	2.1	5.3	1.4	0.4	0.4	S	0.7	0.7	0.6	5.4	1.8	24	
29	0.6	0.6	0.7	0.7	0.7	0.4	0.5	0.7	2.2	0.7	0.7	1.1	1.5	0.7	5.5	5.4	9.4	9.1	9.1	S	2.3	3.1	0.6	1.2	9.4	2.5	24
30	1.2	0.6	0.6	1.2	1	0.6	0.6	0.4	0.9	1.1	1.6	29.5	2.5	2.5	2	1.3	3.7	10.7	S	31.2	8.8	3	2.5	12.9	31.2	5.2	24
31	9.1	19.4	23.9	17.3	48.4	12.6	4.6	2.3	6.4	7.4	7.5	8.1	6.9	7.2	6.9	4.6	1.9	S	1.1	1.9	0.9	0.5	0.3	0.7	48.4	8.7	24
HOURLY MAX	52	51	44	45	61	43	29	33	86	102	84	221	240	142	27	61	68	70	95	74	47	69	47	93			
HOURLY AVG	7.4	5.7	5.0	7.7	9.5	7.2	5.9	6.9	12.6	17.3	12.4	19.3	17.9	13.4	6.1	9.3	15.5	15.4	12.0	15.3	9.2	7.6	6.3	10.5			

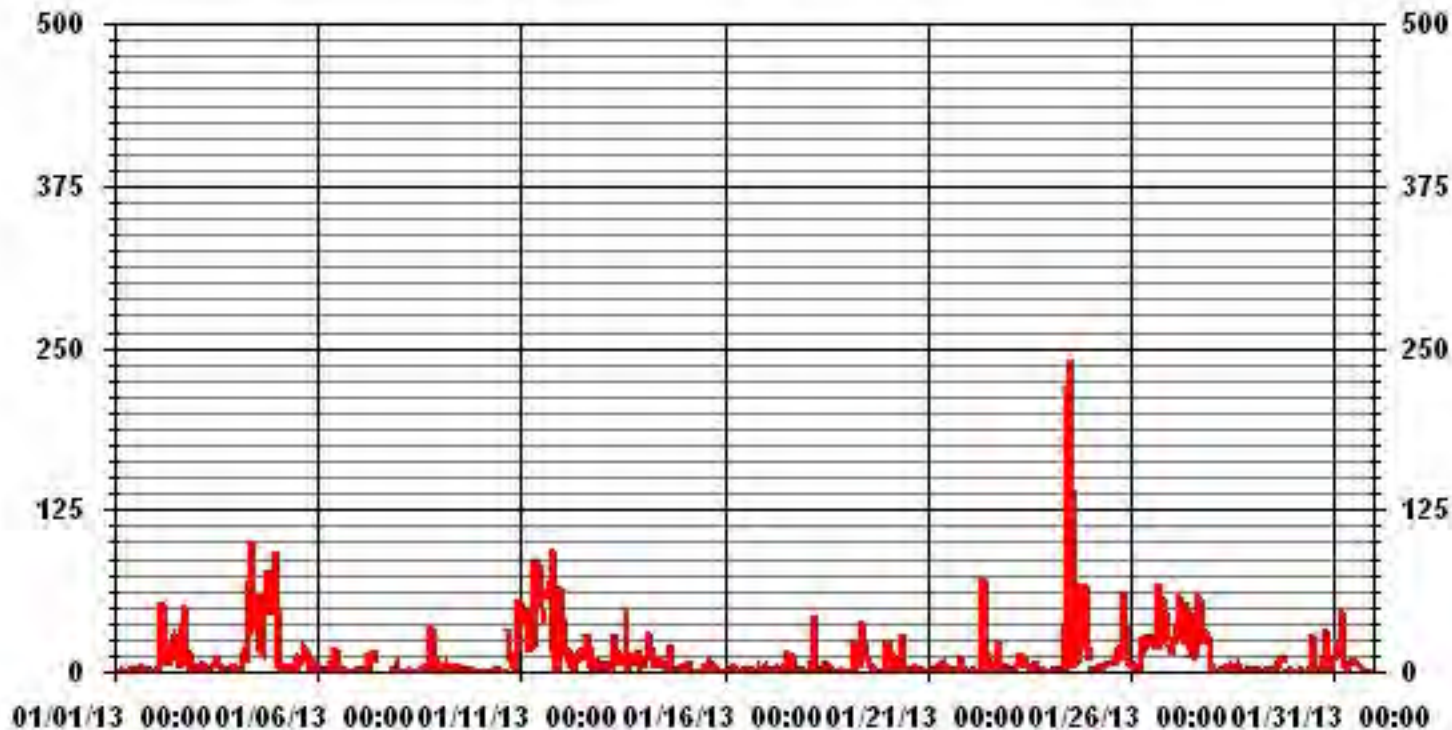
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	697					
MAXIMUM INSTANTANEOUS VALUE:	240.1	PPB	@ HOUR(S)	12	ON DAY(S)	24
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	20.64					

01 Hour Averages



LICA-ELK
 NO_ / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA-ELK
 Parameter : NO_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50.0	2.27	.56	1.42	1.70	11.52	18.20	3.12	1.99	1.84	1.13	.99	6.68	16.35	12.23	15.36	4.55	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	2.27	.56	1.42	1.70	11.52	18.20	3.12	1.99	1.84	1.13	.99	6.68	16.35	12.23	15.36	4.55	

Calm : .00 %

Total # Operational Hours : 703

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50.0	16	4	10	12	81	128	22	14	13	8	7	47	115	86	108	32	703
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	16	4	10	12	81	128	22	14	13	8	7	47	115	86	108	32	

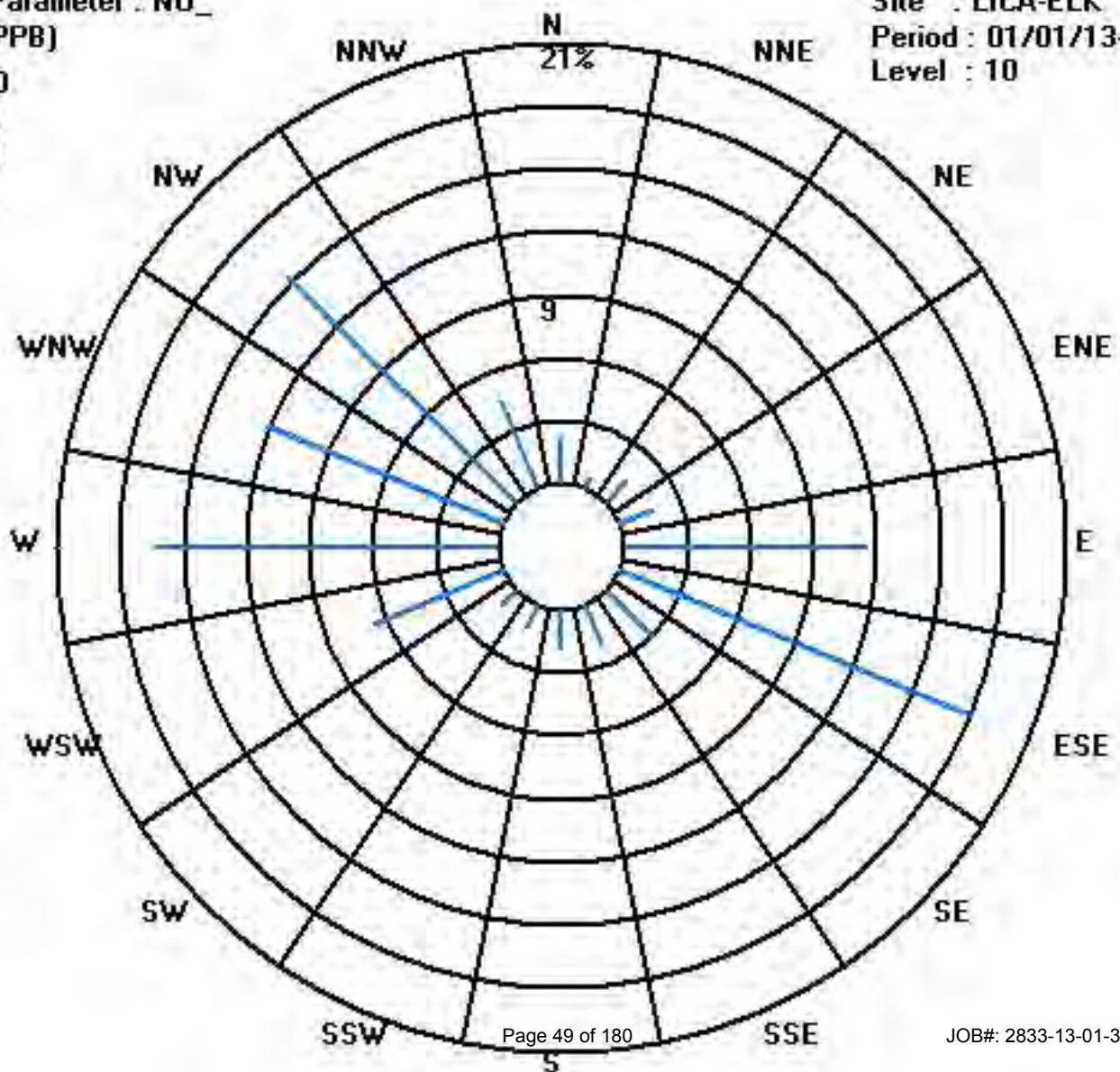
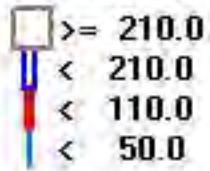
Calm : .00 %

Total # Operational Hours : 703

Class Limits (PPB)

Period : 01/01/13-01/31/13

Level : 10



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JANUARY 2013

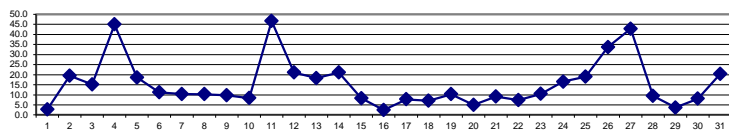
OXIDES OF NITROGEN hourly averages in ppb

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.
DAY																											
1	4.7	S	3.2	1.8	3.4	4.3	1	3.6	4.1	2.3	2.8	0.8	2.8	3.5	2.9	4.3	3.6	4.3	1.2	4.5	2.2	0.4	0.4	2	4.7	2.8	24
2	S	3.6	2.6	3.6	13.2	10.5	10.1	24.5	26.6	20.5	17.4	14.6	25.9	13.8	6.8	10.5	26.8	47.2	38.1	32.6	33.7	21.7	24.8	S	47.2	19.5	24
3	23.6	19.1	19.3	20.1	20.2	23.8	14.8	10	10	12	14.9	10.9	11.8	10.4	12	11.3	13.8	14.5	18.8	15.2	10	12.7	S	20	23.8	15.2	24
4	9.9	9.9	24.8	30.8	37.7	35.5	36.8	49.5	57.1	71.8	43.1	53.3	53.5	32.2	28.4	39.1	46.3	48.8	64.7	77.1	62.4	S	61.6	59.7	77.1	45.0	24
5	47.5	32.3	26.5	22.6	16.9	15	12.4	8.7	9.7	9.3	10.4	9	6.9	7.8	22.2	13.3	21.5	31	29.8	23.9	S	21.3	14.7	15.1	47.5	18.6	24
6	15.6	16.9	15.7	11.5	9.4	8.4	9.5	13.2	19.2	20.7	30.3	13.3	8.7	12	9.1	6.6	8.8	8.8	6.1	S	4.6	3.2	2.7	2.8	30.3	11.2	24
7	2.1	2.1	1.5	3.2	7	1.8	5	6.4	12	17.2	11.9	C	C	C	C	C	C	16	C	16.3	18.3	17.5	18.8	19.1	19.1	10.4	24
8	16.2	9.6	11.8	12.1	11.9	9.1	5.3	2	1.5	0.7	0.4	1.1	1.9	0.3	Y	3.9	10.1	S	21.6	23.9	13.8	22.3	21.4	26.3	26.3	10.3	23
9	17.2	15.4	12.8	17.7	16.1	20.2	20.3	20.3	16	15.5	12.6	9.1	5.5	5.7	2.9	3	S	4.4	3.5	2	1.7	1.4	1.2	1.1	20.3	9.8	24
10	1.2	0.9	1.3	1.7	2.4	3.8	3	2.3	2.2	2.1	3	2.4	2.2	2.9	3.2	S	12.2	25.6	26.9	17	6.5	12	14.6	44.1	44.1	8.4	24
11	49.8	65.2	48.7	35.8	34.2	31.4	48.1	36.9	78.7	56.4	61.7	68.1	60.4	51.5	S	51	45.4	46.1	71.7	29.8	22.6	21.4	20.7	37.2	78.7	46.6	24
12	31.7	40.7	30.6	40.3	23.8	18.1	21.5	24.7	28.8	25.4	20.8	21.3	14.1	S	12.8	9.6	7.4	10.5	11.7	9.2	16.1	19.7	25.3	21.4	40.7	21.1	24
13	24.6	19.6	10.8	15.5	18.8	12.8	15.6	12.3	16.9	17.6	19.6	12	S	11.4	6.3	10.6	21.8	22.7	25	22.5	30.4	28.8	22.9	22.3	30.4	18.3	24
14	20.9	32.3	37.2	43.5	36	33.3	32.4	23.1	20.2	17.1	17	S	14.7	9.2	10.6	12.1	15.4	13.6	16.5	16.3	22.3	10	13.4	18.3	43.5	21.1	24
15	25.1	27.7	21.4	29.1	5.5	3.1	5.9	5.7	3.2	2.5	S	X	5.3	1.3	4.7	12.7	3.9	3.7	4.6	2.4	4.5	5.5	3.3	0.9	29.1	8.3	23
16	0.8	1.3	2.7	3.3	4.9	6.2	4.9	2.1	0.8	S	2.6	4.1	2.9	0.7	0.8	0.5	0.6	1.1	0.5	0.7	4.9	4.2	2.1	4	6.2	2.5	24
17	7.9	9.3	9.3	10.5	8.2	9	12.6	9	S	7	7.9	6.9	6	5.3	5.4	5.9	5.8	7.1	6.3	4.9	6.7	8.3	9	9.8	12.6	7.7	24
18	9.1	11.4	22	16.9	23.4	17.5	9.8	S	5.1	12.1	5.7	4.1	11.1	2.1	1.1	0.9	0.9	1.3	1.6	1.8	2.2	0.9	0.5	0.4	23.4	7.0	24
19	0.4	0.6	0.5	0.5	4.3	3.4	S	17	21.9	21.2	29.5	30.6	21.7	16.4	13	13.8	14.8	15.9	3.7	2	1.9	1.3	1.4	1.2	30.6	10.3	24
20	9.6	8	3.5	6.4	1.6	S	7.5	8.3	4.6	8.1	4	3.3	0.8	2.1	3.3	3.9	7.3	9.6	3.9	4.5	5	2.7	3.7	3.6	9.6	5.0	24
21	3.1	9	12.8	10.2	S	11.1	11.6	20.2	13.9	15.9	10.2	7.1	4.9	6	5.2	4.8	4.2	6.9	9.1	9.7	10.2	7.7	7.5	8.1	20.2	9.1	24
22	7.9	7.7	9.6	S	8.7	8.9	11.1	8.8	11.1	11	5.8	4.7	7	4	2.9	2.1	2.3	13.3	6.4	10.2	8.3	6.2	8.1	2.1	13.3	7.3	24
23	6.9	11	S	15.3	20.8	26.4	24.7	26.5	22.2	19.2	10.7	6.6	7.2	7.5	5.8	4.8	4.3	4	4.3	2.5	2.3	2.8	2.3	1.8	26.5	10.4	24
24	1.3	S	1.5	1.5	2.2	3.4	4.4	4.3	6.7	10.8	6.9	12.1	13	8.9	7.3	9.3	13.9	25.2	33.1	50.3	46.5	44.3	36.8	36.9	50.3	16.5	24
25	S	23.5	20.6	16.4	17.7	20	19.6	20.8	21.9	16.6	13.3	12.2	10.9	10	11.7	10.4	19.9	25.4	23.3	27.2	31.6	30.2	15.9	S	31.6	19.1	24
26	18.6	16.6	17.3	20.2	23.2	17.3	30.2	42.1	35.3	34.7	29.5	30	31.3	36.8	35.9	28.4	44.3	52.6	33.6	58	48.3	48.6	S	42.4	58	33.7	24
27	40	44.4	44.7	41.3	45.9	47.7	51.6	40.6	60.7	45.1	39.2	32.8	27.8	26	29.1	50.4	46.2	43.8	49.1	46	50.7	S	48.3	32.1	60.7	42.8	24
28	16.3	19.7	15.1	10.2	11.2	12.1	8.5	9.9	8.4	7	9.8	10.7	6.6	7.4	7.8	13.2	3.8	8.5	9.9	6	S	5	5.2	5.5	19.7	9.5	24
29	4.9	3.5	3.1	2.5	2.4	0.8	0.5	0.7	1.5	0.5	0.5	0.6	0.7	0.5	3	4.8	4.9	5.4	7.7	S	8.2	8.4	7.9	11.7	11.7	3.7	24
30	13.8	6.2	7.9	8.9	9.8	7.9	5	3.7	3.7	2.1	2.2	5.6	3.3	3.9	3.1	2.8	4.6	6.3	S	14.8	17.1	17.3	14.2	21.9	21.9	8.1	24
31	28.7	41.2	47	41.1	45	33.2	22.8	19	18.1	18.1	14.8	14.3	13.2	12.8	12.8	10.6	8.9	S	10.5	11.5	11.6	9.7	10.1	13.3	47	20.4	24
HOURLY MAX	50	65	49	44	46	48	52	50	79	72	62	68	60	52	36	51	46	53	72	77	62	49	62	60			
HOURLY AVG	15.8	17.5	16.2	16.5	16.2	15.2	15.6	15.9	18.1	17.4	15.3	14.3	13.2	10.8	9.6	12.2	14.6	18.1	18.7	18.7	17.4	13.6	14.4	16.7			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

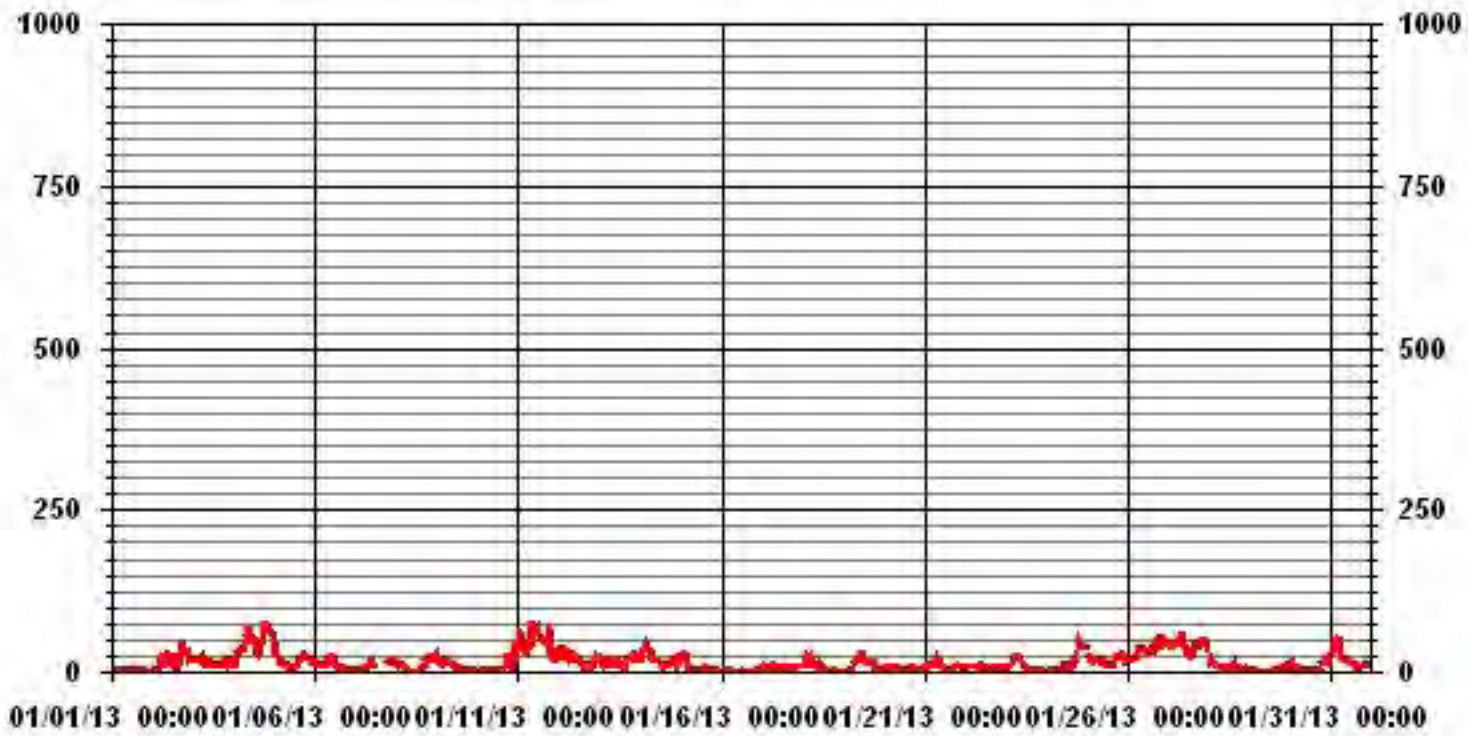
24 HOUR AVERAGES FOR JANUARY 2013



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	703					
MAXIMUM 1-HR AVERAGE:	78.7	PPB	@ HOUR(S)	8	ON DAY(S)	11
MAXIMUM 24-HR AVERAGE:	46.6	PPB			ON DAY(S)	11
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	14.64		MONTHLY AVERAGE:	15.52	PPB	

01 Hour Averages



— LICA35 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JANUARY 2013

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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		
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.	
DAY																												
1	5.9	S	4.8	2.3	8.9	8.8	1.5	7.6	7.9	4.4	4.2	2.1	6.1	6.7	8.9	11.2	7.9	6.8	5.2	12.5	11.4	1	0.8	5.3	12.5	6.2	24	
2	S	8.9	7.3	48.5	93.6	68.1	20	57.8	33.3	28.8	43.4	47.1	46.6	22.6	10.2	21.5	78.5	92.8	55.4	52.5	55.5	31.9	35.1	S	35.5	93.6	43.6	24
3	27.5	23.3	26.2	33	36.1	39.1	19.7	16.1	12.6	19.7	20.7	23.9	23.8	23.7	17.5	18.1	26.6	20.1	24.6	21.7	12.5	30.1	S	35.5	39.1	24.0	24	
4	14.6	23.9	32.1	47.5	44.8	43.1	53.3	68.9	111	139.1	63.6	65.4	93.5	41.2	43.5	65.6	93.2	104.3	122.6	116.4	83.2	S	89	123.5	139.1	73.2	24	
5	94.4	36.6	33.5	29.2	19.8	27.1	19.4	11.5	12.7	11.8	13.8	19.5	12.2	17.2	35.3	25	62.1	52.8	41	33.4	S	35.2	17.8	23.8	94.4	29.8	24	
6	18.8	19.3	19.1	14	11.8	10	15.8	18	36.8	29.9	44.2	20.1	10.3	13.8	12.5	7.7	13.1	12	9.5	S	9.1	3.9	3.6	3.8	44.2	15.5	24	
7	3.3	5.7	2.3	7.4	11.1	5.8	34.3	32.4	28	37.8	C	C	C	C	C	C	C	C	C	19.6	23	23.9	29.4	24.7	37.8	19.2	24	
8	26	14.6	14.1	14.8	18.3	20.5	9.1	3.4	2.3	1.5	1.1	3.6	8.4	1.1	Y	13.9	15.5	S	30.4	77.7	44.8	30	29	34.1	77.7	18.8	23	
9	26.5	20.4	14.3	26.7	18.9	26.9	24.6	26.5	19	17.7	16.7	11.7	7.9	8	5.7	4.1	S	4.8	4.8	3.4	2.3	2.1	1.6	1.7	26.9	12.9	24	
10	1.7	1.5	2.2	2.4	4.3	4.6	3.8	2.8	2.7	2.9	3.8	3	2.7	3.8	4.3	S	58.2	49.2	39.7	27.8	8.9	19.9	45.3	86	86	16.6	24	
11	65.2	82.5	75.2	73.2	48.5	44.9	60.6	44.6	120	88.5	111.4	88.7	69.7	58.9	S	86.3	96.9	98.4	140	48.2	25	23.8	46.6	91.3	140	73.4	24	
12	85.7	58.4	40.3	49.3	37.9	26.2	25.4	29	31.5	30.9	33.1	30.6	25.4	S	53.5	32.7	48.9	26.2	20.1	15.5	27.1	37.4	30.8	30	85.7	35.9	24	
13	33.2	24.9	19.6	24.1	35.5	19.4	25.2	52.3	25.4	25.9	27.4	20.4	S	70.4	13.4	17.1	35.4	35.4	39.3	41.7	36.7	48.8	32.7	31.6	70.4	32.0	24	
14	23.9	38.3	39.8	61.8	41.2	46.1	43.8	27.6	31.1	21.4	24	S	22.2	14.1	12.4	14.7	48.3	20.1	20.1	20.3	26.6	16	20.6	27.3	61.8	28.8	24	
15	29.9	33.3	26.4	35.1	21.9	3.9	8.2	7.2	5.3	6.5	S	X	9.8	7.9	16.8	22.5	12.7	15.8	17.2	12.5	6.6	6.8	5.6	2.6	35.1	14.3	23	
16	1.3	4.6	3.7	4.1	10.6	15.5	14.3	7.9	2.4	S	4.9	7.2	7.5	1.2	1.2	1.4	3.4	5	1	1.7	21.4	11.6	6.1	11.9	21.4	6.5	24	
17	14.4	10.5	12.4	15.7	10.8	15.2	20.5	13.7	S	9.8	9.8	10.1	9.1	27	7.3	9.9	24	10.8	10.7	6	9.8	10.4	10.5	11.6	27	12.6	24	
18	11.1	14.8	28.7	25.9	33.3	81.3	15.2	S	17.1	86.9	9.5	9.2	23.9	6.7	2.1	2.7	1.9	1.9	2	2.3	2.9	2.1	1.1	0.9	86.9	16.7	24	
19	1	2.3	1	1.9	48.1	21.1	0	33.1	36.2	64.6	37	41.9	25.1	19.8	20.6	16.1	19.5	19.3	13.7	3.5	3.4	2.1	1.8	2	64.6	18.1	24	
20	48.4	27.1	12.8	35.4	10.8	S	18.5	18.4	7.3	52.4	11.9	6.9	1.6	4.8	7.2	7.8	17.4	18.3	5.4	7.2	6.6	5.3	5.1	5.1	52.4	14.9	24	
21	7.6	14.3	19.6	15.5	S	15.9	16.3	27.7	17.4	18.7	28.2	8.8	6.1	7.2	6.9	6.1	5.8	8.9	12.1	30.2	12.1	8.8	8.4	9.8	30.2	13.6	24	
22	9.4	9.2	11.6	S	10.2	11.1	18.8	13.4	96.1	97.4	16	12.9	17.2	8.2	4.5	4.7	4.7	56.8	13.3	23	20	15.5	20	3	97.4	21.6	24	
23	12.5	19.2	S	20.8	30.2	31.9	40.1	39.6	31.7	27.3	15.2	9.4	9.1	9.6	8.5	6.2	19.4	6.8	6.1	4.5	3.2	4.3	3.3	3.1	40.1	15.7	24	
24	2.4	S	2.2	2.8	3.7	6.3	6.7	7.3	14.4	49.7	9.3	239.2	371.4	157.8	11.5	19.1	33	61.9	82.9	105.8	82.5	109.5	51.5	45.6	371.4	64.2	24	
25	S	26.7	23.8	17.8	19	26.4	20.9	23.3	23.7	20.7	17	14	14	14.8	17.2	15.3	40.7	48.9	34.7	96.2	66.6	66.2	29.8	S	96.2	30.8	24	
26	31.3	22.4	19.6	25.1	27.2	30	43.8	59.4	46.1	55.1	42.1	34.8	38.5	47.2	42.2	36.3	99.3	102.4	55.3	95	60.8	75.5	S	49.9	102.4	49.5	24	
27	45	54.3	58.6	70.2	91.9	59.5	59.3	52.7	85.4	74.7	71.3	37.5	29.4	27.2	36.7	91.4	90.7	65.6	58.9	67	67.1	S	59.8	42.8	91.9	60.7	24	
28	20	23.5	21.1	11.7	20.8	14.6	13	13.9	10.8	13.4	15.4	16.2	8.5	9.3	9.8	22.7	7.8	16.3	15.3	7.9	S	5.5	5.8	5.9	23.5	13.4	24	
29	5.7	4.2	3.8	3.1	3.2	2.2	1	1.3	5.3	0.9	1.1	4.4	2.7	1	9.4	13.2	21.3	35.5	35.5	S	13.7	13.3	14.4	19.6	35.5	9.4	24	
30	19.7	8	9.8	10.8	11.3	10	6.9	4.3	4.5	2.7	3.5	50.3	9.8	4.7	3.8	3.4	11	27.5	S	55.7	25.3	24.6	21.9	41.4	55.7	16.1	24	
31	39.7	50.2	54.7	46.7	84.5	42.8	27.9	22.1	20.6	19.4	17.5	16.8	14.3	15.8	16.4	13.2	9.7	S	13	14.9	13.6	10.7	11.3	16.6	84.5	25.8	24	
HOURLY MAX	94	83	75	73	94	81	61	69	120	139	111	239	371	158	54	91	99	104	140	116	83	110	89	124				
HOURLY AVG	25.0	23.5	21.4	25.9	28.9	25.9	22.2	24.8	30.0	35.4	24.7	30.6	32.0	22.5	15.7	21.0	34.7	36.6	32.1	35.3	27.0	23.3	22.0	27.3				

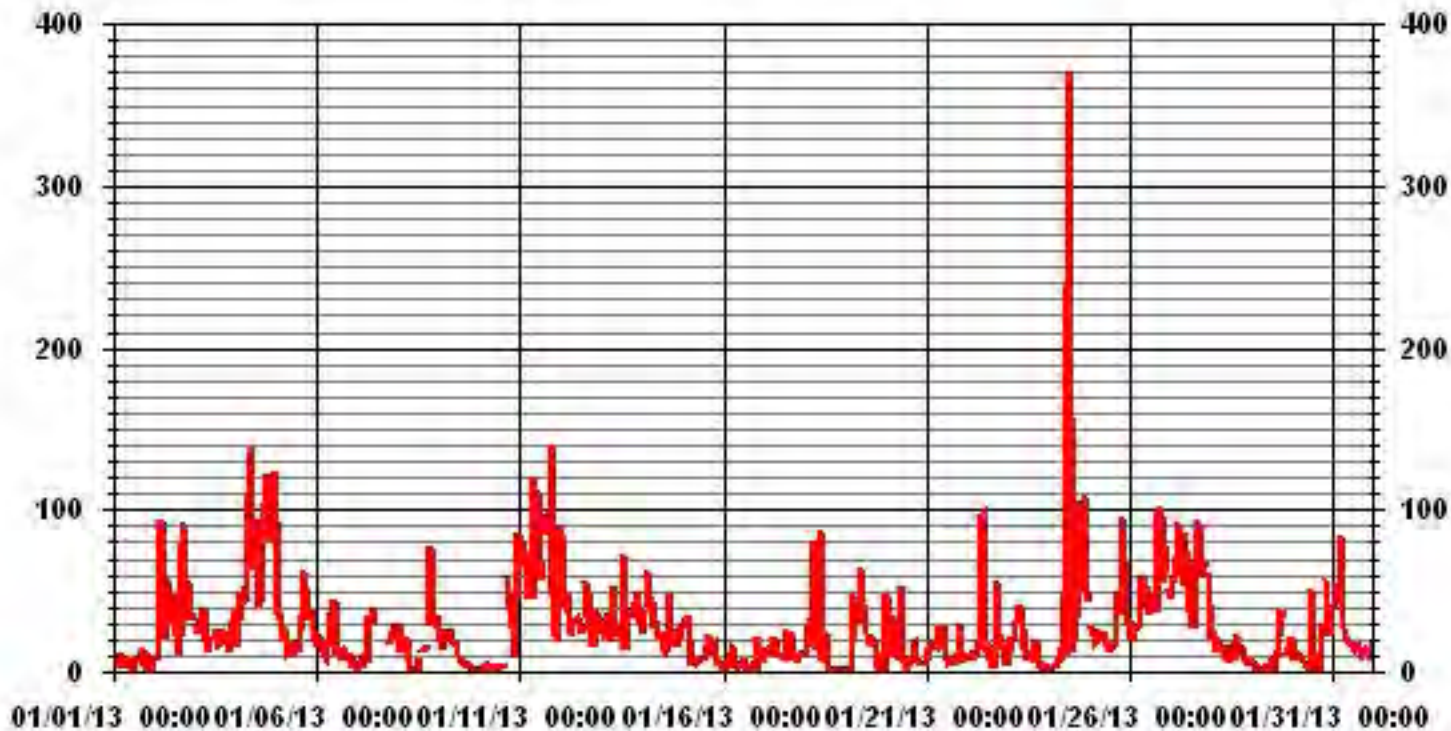
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	701					
MAXIMUM INSTANTANEOUS VALUE:	371	PPB	@ HOUR(S)	12	ON DAY(S)	24
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	29.73					

01 Hour Averages



LICA-ELK
 NOX_ / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA-ELK
 Parameter : NOX_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50.0	2.27	.56	1.42	1.70	11.09	17.06	2.98	1.42	1.70	.99	.99	6.68	15.93	11.80	15.22	4.55	96.44
< 110.0	.00	.00	.00	.00	.42	1.13	.14	.56	.14	.14	.00	.00	.42	.42	.14	.00	3.55
< 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	2.27	.56	1.42	1.70	11.52	18.20	3.12	1.99	1.84	1.13	.99	6.68	16.35	12.23	15.36	4.55	

Calm : .00 %

Total # Operational Hours : 703

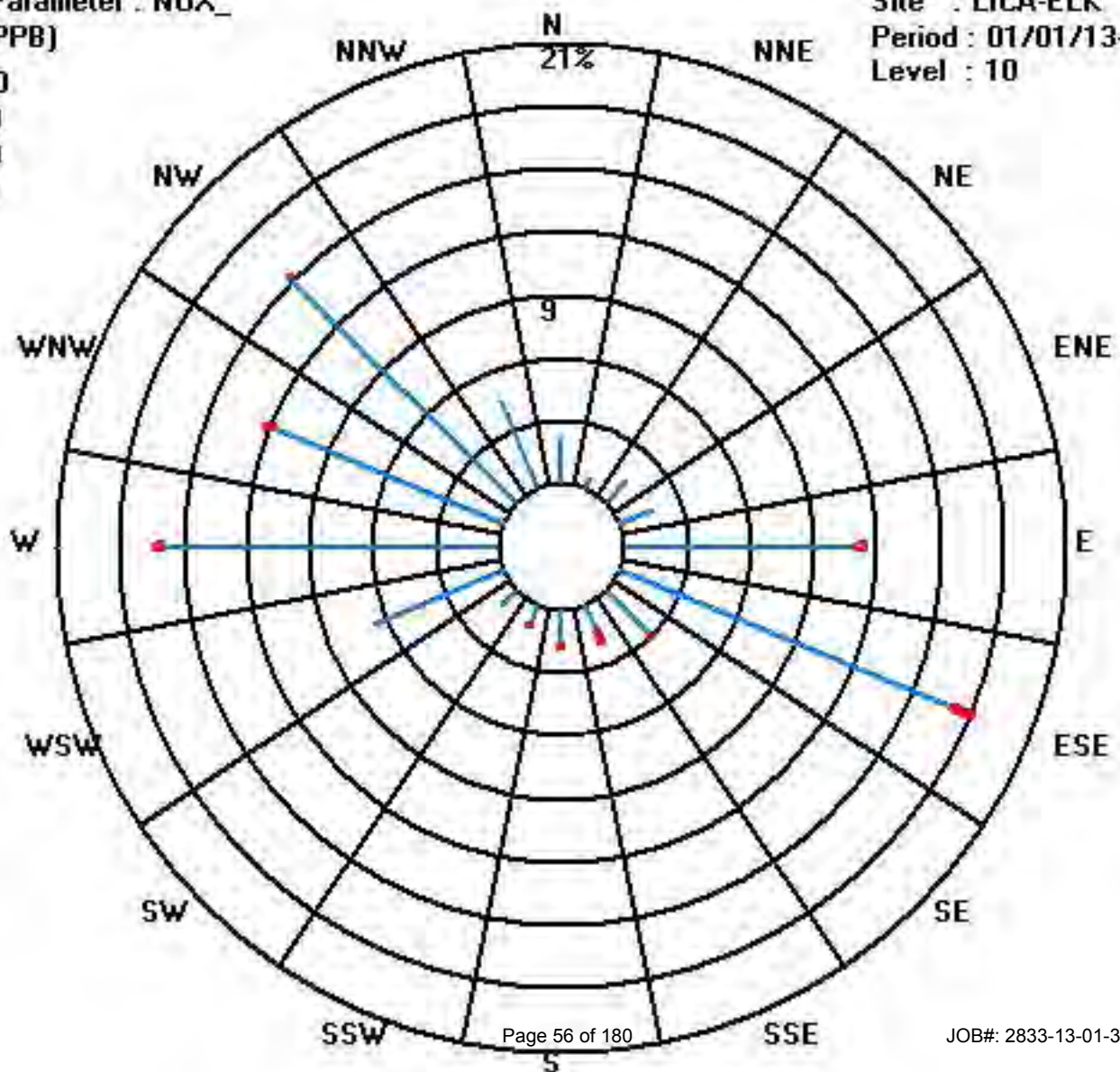
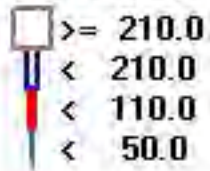
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50.0	16	4	10	12	78	120	21	10	12	7	7	47	112	83	107	32	678
< 110.0					3	8	1	4	1	1			3	3	1		25
< 210.0																	
>= 210.0																	
Totals	16	4	10	12	81	128	22	14	13	8	7	47	115	86	108	32	

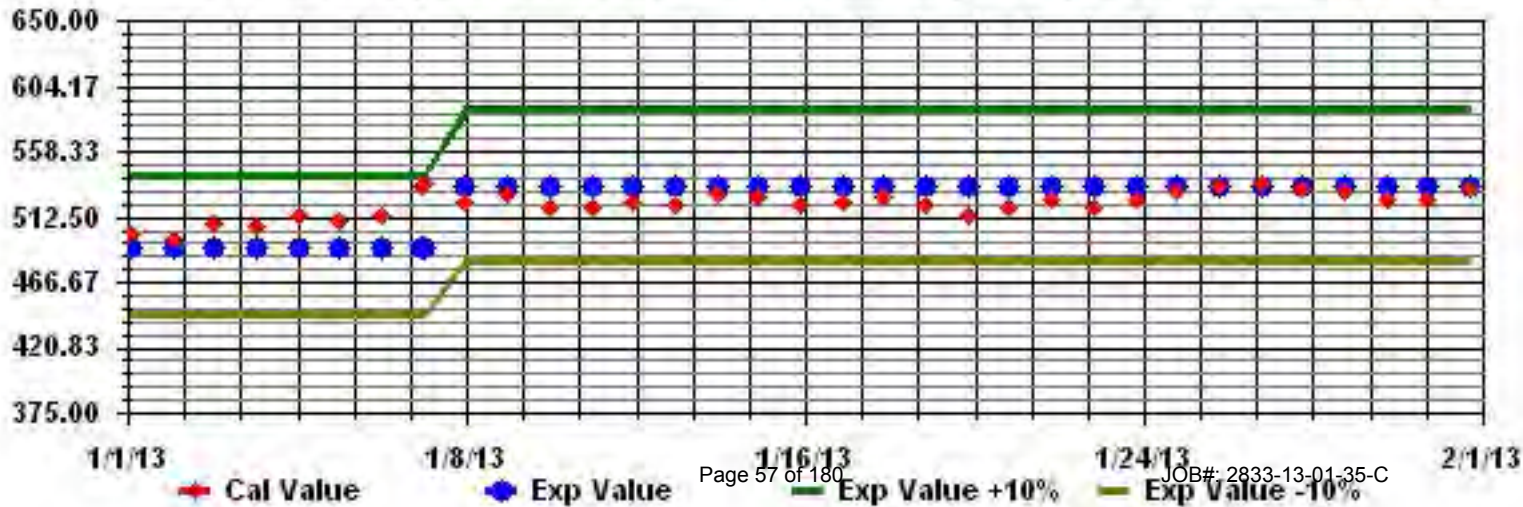
Calm : .00 %

Total # Operational Hours : 703

Class Limits (PPB)



Calibration Graph for Site: LICA35 Parameter: NOX_ Sequence: NO2 Phase: SPAll



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JANUARY 2013

OZONE (O₃) hourly averages in ppb

MST

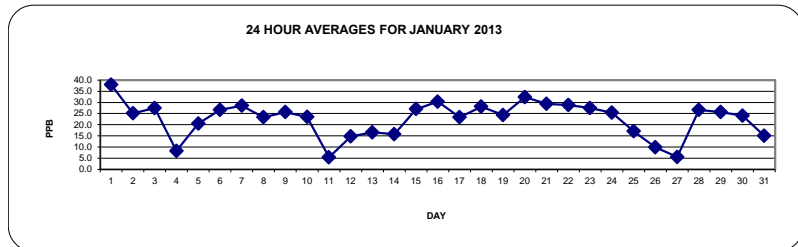
HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	00:00	MAX.	AVG.		
DAY																												
1	33	S	38	39	37	36	39	36	35	37	37	39	38	38	37	37	37	37	41	38	41	42	41	40	42	38.0	24	
2	S	39	39	39	32	31	32	20	15	25	28	31	25	32	37	34	19	7	10	12	12	18	16	S	39	25.1	24	
3	15	19	19	18	19	17	24	29	29	30	32	37	36	39	36	35	31	29	23	28	33	30	S	23	39	27.4	24	
4	31	29	14	9	4	3	4	1	2	4	8	10	12	17	16	11	4	5	2	1	1	S	1	1	31	8.3	24	
5	2	4	8	13	20	23	26	27	26	28	29	31	35	35	26	29	20	11	11	13	S	15	20	20	35	20.5	24	
6	18	17	18	24	27	28	27	23	17	17	14	24	27	27	30	32	30	31	34	S	36	37	37	37	37	26.6	24	
7	38	38	38	36	33	37	36	35	28	26	28	29	31	33	28	25	25	23	S	22	18	18	17	14	38	28.5	24	
8	19	24	22	21	22	25	29	32	32	35	C	C	C	C	C	32	27	S	19	18	25	14	14	9	35	23.3	24	
9	17	17	19	15	15	12	12	12	17	20	25	30	36	37	40	36	S	31	32	34	33	35	33	31	40	25.6	24	
10	31	29	26	24	21	18	22	25	27	28	29	31	33	33	32	S	25	14	11	18	25	20	17	2	33	23.5	24	
11	1	1	2	2	3	3	1	1	1	7	10	11	12	13	S	8	5	3	1	6	9	10	11	4	13	5.4	24	
12	3	2	2	1	8	12	10	7	6	12	18	19	24	S	30	29	29	25	23	25	17	15	10	11	30	14.7	24	
13	9	12	20	16	13	18	17	23	16	18	19	24	S	27	29	26	17	15	13	14	6	8	11	10	29	16.6	24	
14	9	1	1	1	1	1	4	8	13	19	22	S	29	33	32	29	25	24	20	18	13	24	20	14	33	15.7	24	
15	6	4	8	3	27	29	27	29	32	34	S	35	37	40	37	33	38	38	38	36	20	17	23	30	40	27.0	24	
16	31	30	24	23	23	23	26	32	33	S	30	30	31	34	33	35	36	36	36	35	30	29	30	27	36	30.3	24	
17	23	19	19	20	21	21	17	22	S	25	24	26	28	29	28	27	27	25	25	26	24	22	20	19	29	23.3	24	
18	19	16	7	10	6	25	28	S	37	33	36	39	34	41	42	34	30	28	27	27	27	33	34	32	42	28.0	24	
19	32	31	31	31	28	27	S	16	14	18	15	15	19	22	22	21	18	15	28	29	29	31	33	35	35	24.3	24	
20	29	26	31	31	33	S	27	28	31	30	34	35	37	36	36	35	32	29	34	33	33	35	35	34	37	32.3	24	
21	34	28	25	27	S	26	23	16	23	23	30	34	36	35	36	36	35	33	30	30	28	30	29	28	36	29.3	24	
22	28	27	25	S	25	24	21	23	23	26	29	30	30	32	32	35	35	27	32	29	30	33	31	36	36	28.8	24	
23	31	25	S	20	15	9	11	11	13	21	28	32	32	32	34	35	35	35	35	36	36	35	35	36	36	27.5	24	
24	37	S	37	36	36	35	35	34	32	30	33	33	35	34	33	31	25	17	12	3	2	3	5	4	37	25.3	24	
25	S	9	12	15	13	11	11	9	11	19	23	26	27	28	28	28	20	17	15	12	10	13	18	S	28	17.0	24	
26	16	16	14	11	8	13	7	3	7	13	17	18	19	17	15	15	7	2	4	1	1	1	S	1	19	9.8	24	
27	1	1	1	1	1	1	1	1	3	8	12	15	18	18	16	9	7	3	1	1	1	S	1	6	18	5.5	24	
28	18	16	20	25	25	25	32	30	32	37	34	35	37	37	36	30	35	19	12	17	S	20	20	20	37	26.6	24	
29	21	24	24	26	26	29	29	28	25	25	26	27	29	30	29	29	28	25	24	S	23	23	22	18	30	25.7	24	
30	17	24	21	20	19	21	24	25	25	28	30	30	31	31	32	31	29	27	S	20	18	16	20	13	32	24.0	24	
31	5	1	1	1	1	3	7	10	14	18	22	24	25	25	25	24	24	S	22	20	19	20	19	16	25	15.0	24	
HOURLY MAX	38	39	39	39	37	37	39	36	37	37	37	39	38	41	42	37	38	38	41	38	41	42	41	40				
HOURLY AVG	19.8	18.2	18.9	18.6	18.7	19.5	20.3	19.9	20.6	23.1	24.9	27.6	29.1	30.5	30.6	28.4	25.2	21.8	21.2	20.8	20.7	22.3	21.5	19.7				

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

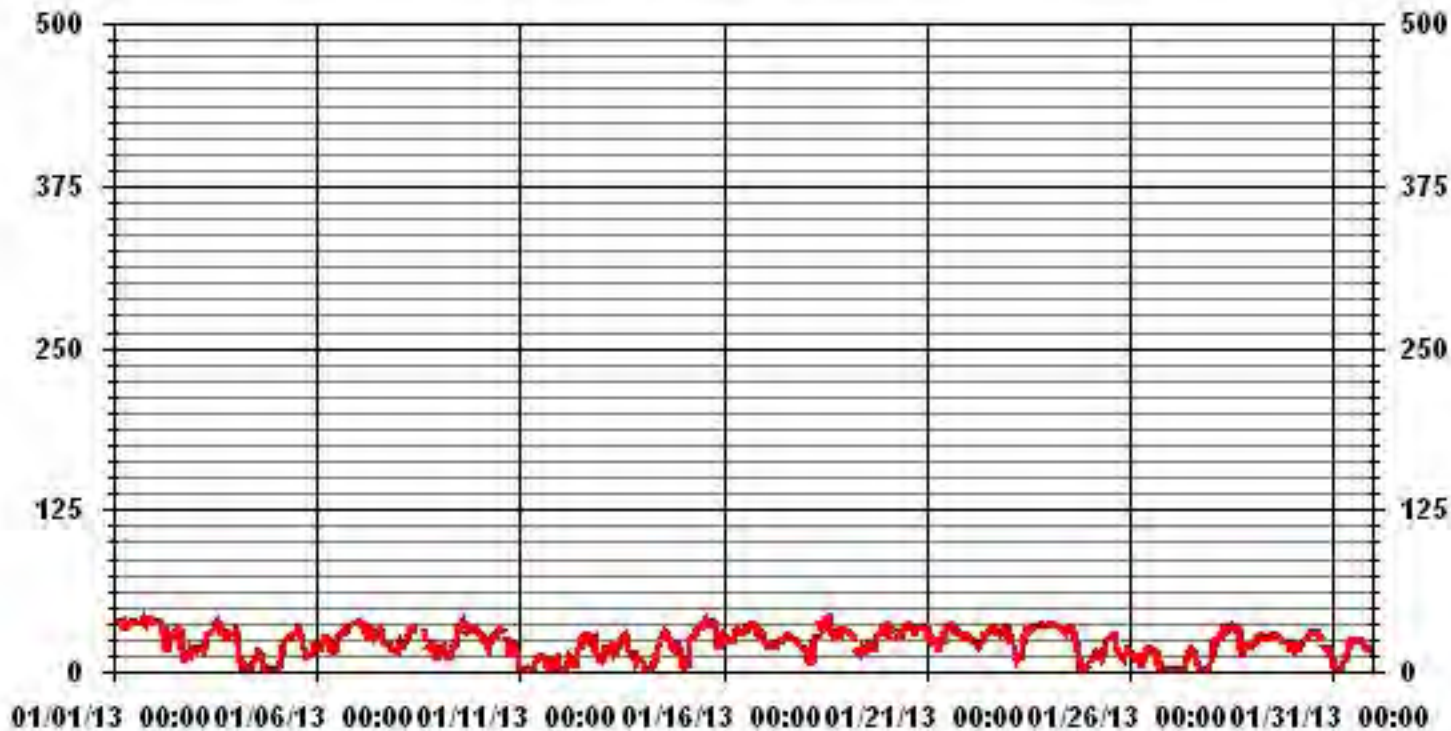
ALBERTA ENVIRONMENT: 1-HR 82 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	706				
MAXIMUM 1-HR AVERAGE:	42	PPB	@ HOUR(S)	21,14	ON DAY(S) 1, 18
MAXIMUM 24-HR AVERAGE:	38.0	PPB			ON DAY(S) 1
					VAR-VARIOUS
I/SZ CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	10.87		MONTHLY AVERAGE:	22.56	PPB

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JANUARY 2013

OZONE MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.
DAY																											
1	34	S	39	39	39	39	39	39	38	38	39	39	39	39	39	40	41	41	42	42	42	42	41	42	42	39.5	24
2	S	41	42	41	40	39	38	33	25	32	32	37	29	38	39	38	34	18	19	23	21	26	23	S	42	32.2	24
3	18	22	27	27	30	25	27	32	32	34	37	41	41	42	41	37	37	34	27	34	35	37	S	27	42	32.3	24
4	34	34	20	17	6	9	7	5	8	9	10	13	16	23	20	15	14	16	6	1	2	S	1	1	34	12.5	24
5	4	10	12	16	22	27	30	29	29	30	34	35	37	38	33	32	30	22	21	17	S	18	23	23	38	24.9	24
6	22	19	22	27	29	30	31	28	25	22	20	27	28	29	33	34	32	33	35	S	37	37	38	38	38	29.4	24
7	39	39	39	39	39	39	39	39	34	31	32	33	34	35	34	31	28	26	S	24	24	23	24	17	39	32.3	24
8	24	25	24	23	25	29	34	34	33	36	C	C	C	C	C	35	32	S	29	32	32	18	21	19	36	28.1	24
9	21	21	21	20	17	15	14	16	20	23	31	33	39	39	41	39	S	32	33	34	34	36	36	32	41	28.1	24
10	32	31	28	25	23	20	24	26	28	29	31	33	34	34	34	S	30	24	18	24	26	26	23	9	34	26.6	24
11	2	2	4	6	10	6	4	3	3	11	13	13	15	S	11	8	7	2	10	11	13	14	7	15	8.2	24	
12	5	5	7	2	13	16	14	10	9	16	21	21	27	S	34	34	34	30	27	28	26	20	19	17	34	18.9	24
13	15	18	23	20	22	21	27	27	25	22	25	27	S	30	32	30	30	23	21	23	16	22	15	17	32	23.1	24
14	14	4	1	2	2	2	8	12	16	22	25	S	34	35	33	31	29	28	25	23	24	27	25	21	35	19.3	24
15	11	9	13	9	29	30	30	34	36	S	39	40	41	41	41	40	41	41	42	41	25	22	29	31	42	30.6	24
16	32	32	28	26	26	27	33	34	33	S	32	32	34	34	34	36	37	37	37	36	35	32	32	30	37	32.6	24
17	27	21	22	23	23	25	22	27	S	26	26	27	30	30	29	29	29	28	26	27	27	24	22	21	30	25.7	24
18	20	19	17	13	10	39	35	S	42	38	38	42	41	43	43	41	32	29	28	28	30	35	34	33	43	31.7	24
19	32	32	32	32	31	30	S	25	20	24	18	17	21	31	30	22	21	17	30	30	32	32	35	35	35	27.3	24
20	35	33	33	34	34	S	31	30	33	34	37	37	37	37	37	36	34	35	35	35	36	37	35	35	37	34.9	24
21	36	34	28	32	S	28	25	21	25	29	35	35	37	36	37	37	37	35	33	32	30	31	30	30	37	31.9	24
22	29	28	27	S	25	25	25	26	28	29	30	31	32	33	34	36	37	35	35	36	35	37	37	36	37	31.6	24
23	35	31	S	24	22	14	17	15	19	27	32	33	33	34	35	36	36	36	37	37	37	36	36	37	37	30.4	24
24	37	S	37	37	37	36	36	36	36	33	35	36	36	35	35	35	30	25	22	10	5	7	8	7	37	28.3	24
25	S	12	17	18	15	13	12	11	14	22	25	27	28	30	29	29	28	24	22	20	22	21	21	S	30	20.9	24
26	19	18	16	15	15	15	13	13	15	18	19	20	20	20	18	16	15	6	7	1	2	2	S	1	20	13.2	24
27	2	1	1	1	1	1	1	1	8	10	14	18	20	20	18	13	14	6	1	1	1	S	4	15	20	7.5	24
28	24	20	27	29	30	28	35	34	36	39	36	37	38	38	37	37	37	30	15	17	S	21	21	20	39	29.8	24
29	23	24	25	26	27	29	29	29	28	26	27	29	31	31	31	31	31	29	28	S	27	25	26	24	31	27.7	24
30	24	25	23	22	20	22	25	26	27	29	30	31	32	32	33	33	31	30	S	27	23	23	26	26	33	27.0	24
31	10	2	1	2	2	6	9	13	16	20	23	25	25	25	26	25	25	S	24	22	20	22	21	19	26	16.7	24
HOURLY MAX	39	41	42	41	40	39	39	39	42	39	39	42	41	43	43	41	41	41	42	42	42	42	41	41			
HOURLY AVG	22.8	21.1	21.9	21.6	22.1	22.8	23.8	23.5	24.6	26.5	27.8	29.9	31.2	32.7	33.1	31.3	29.8	26.8	25.0	24.7	24.7	25.9	24.9	23.1			

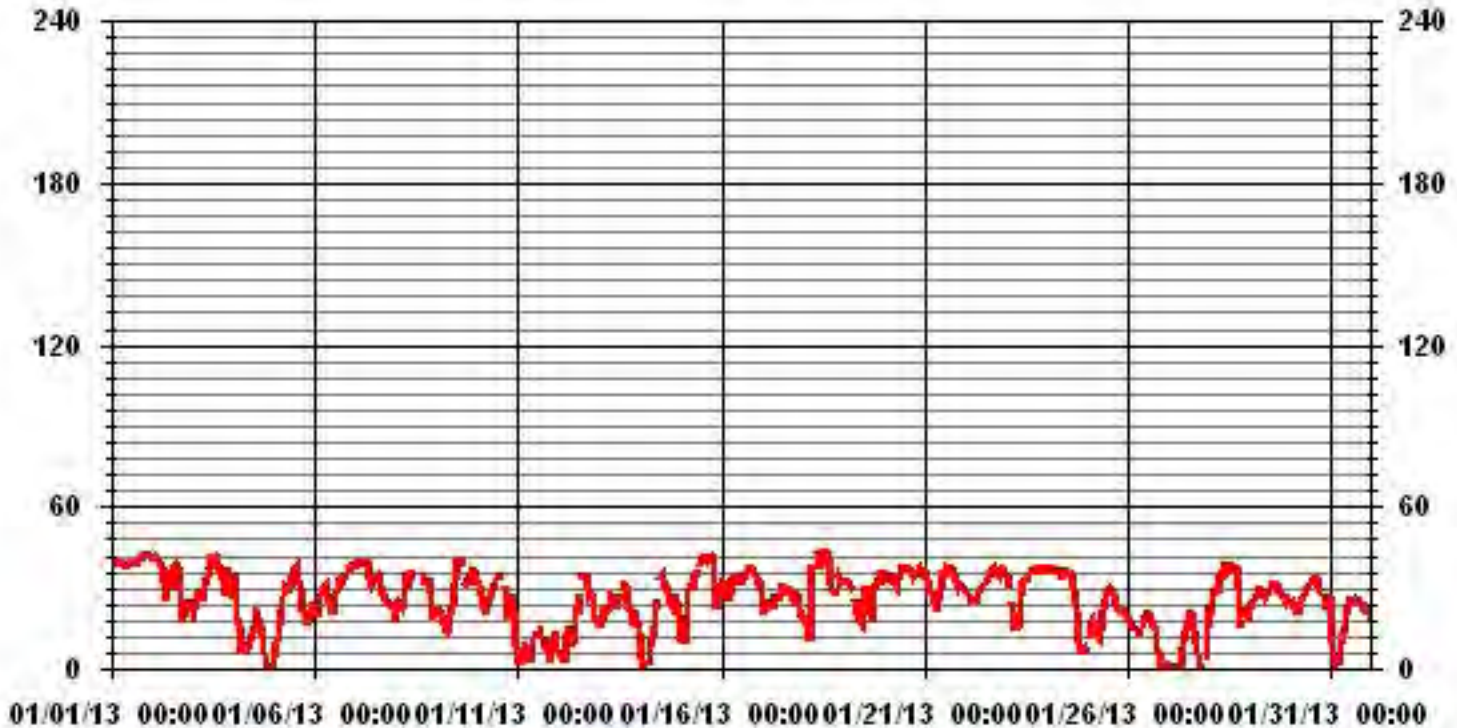
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	706					
MAXIMUM INSTANTANEOUS VALUE:	43	PPB	@ HOUR(S)	13, 14	ON DAY(S)	18
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	10.43					

01 Hour Averages



— LICA35 O3MAX PPB

LICA-ELK
 O3_ / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA-ELK
 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	2.26	.56	1.41	1.69	11.61	18.13	3.39	1.98	1.84	1.27	1.13	6.79	16.28	12.18	14.87	4.53	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.26	.56	1.41	1.69	11.61	18.13	3.39	1.98	1.84	1.27	1.13	6.79	16.28	12.18	14.87	4.53	

Calm : .00 %

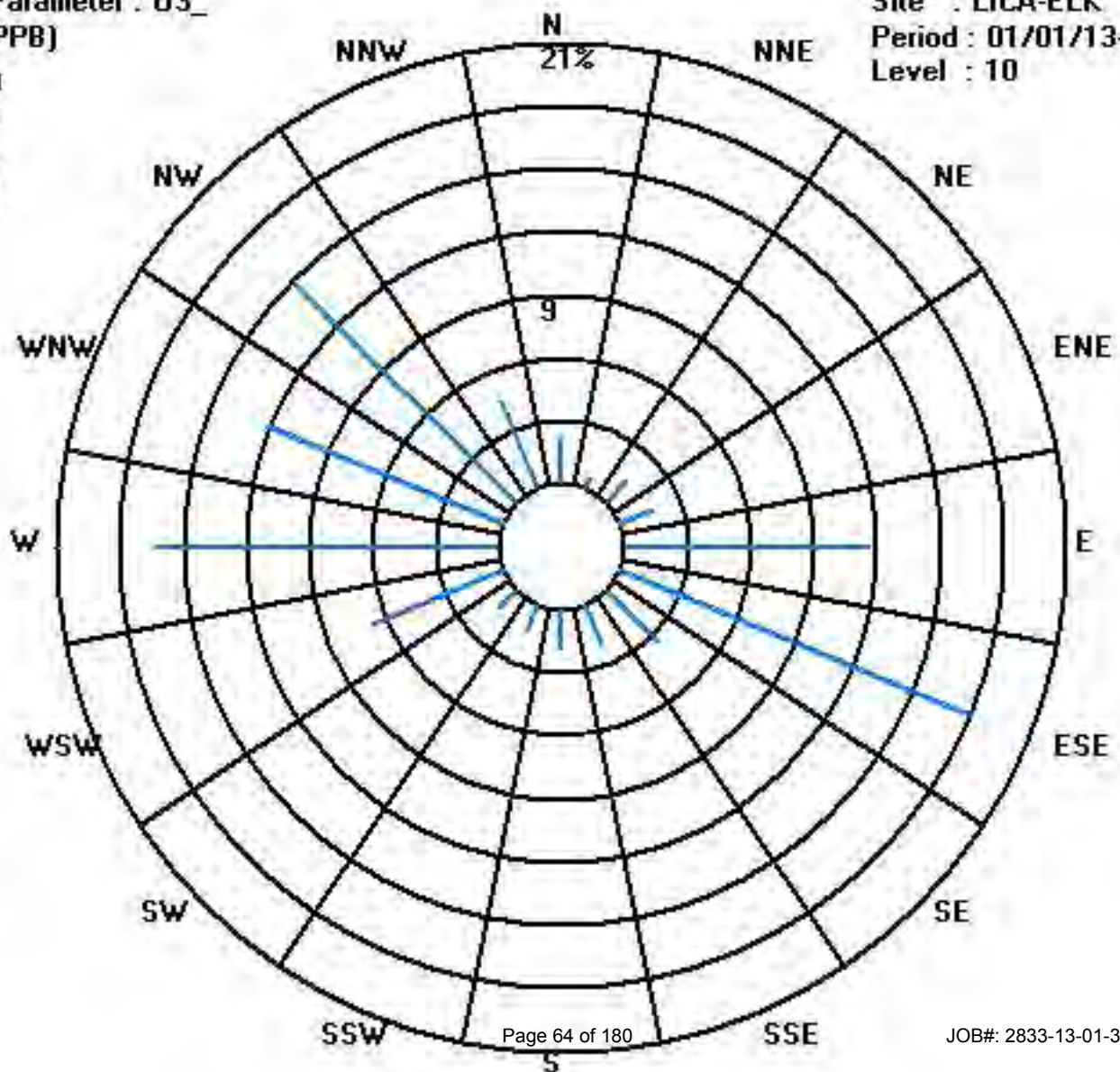
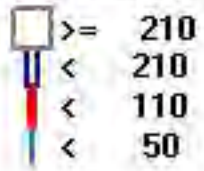
Total # Operational Hours : 706

Distribution By Samples

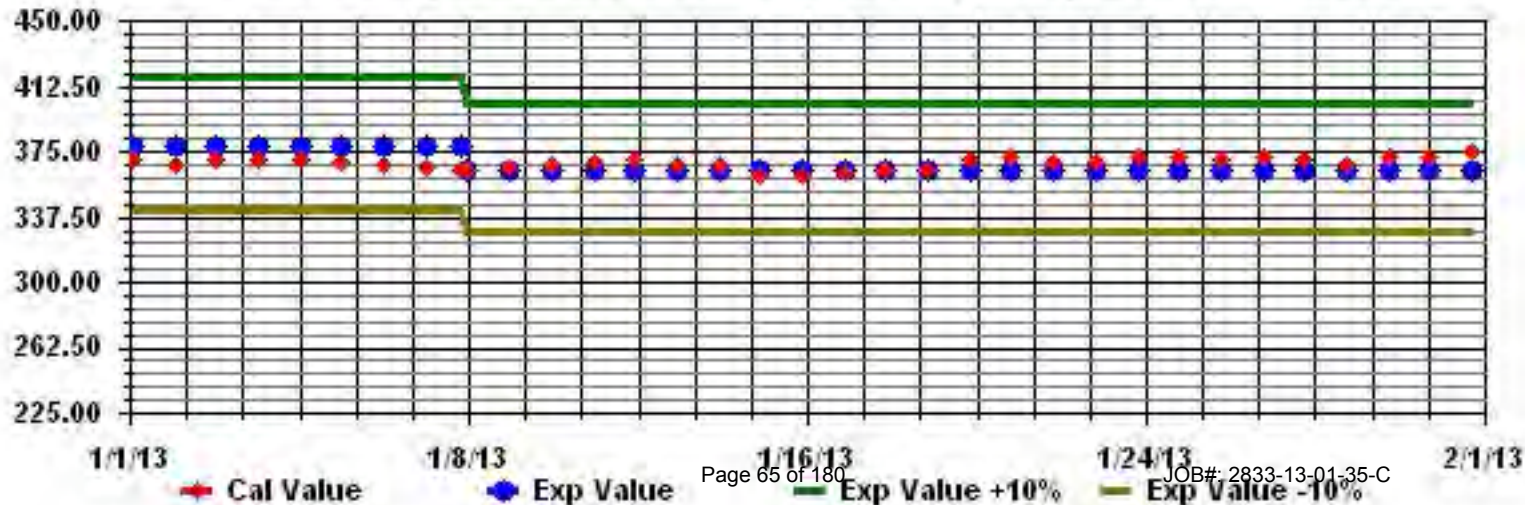
Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50	16	4	10	12	82	128	24	14	13	9	8	48	115	86	105	32	706
< 110																	
< 210																	
>= 210																	
Totals	16	4	10	12	82	128	24	14	13	9	8	48	115	86	105	32	

Calm : .00 %

Total # Operational Hours : 706



Calibration Graph for Site: LICA35 Parameter: O3_ Sequence: 03 Phase: SPAll



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JANUARY 2013

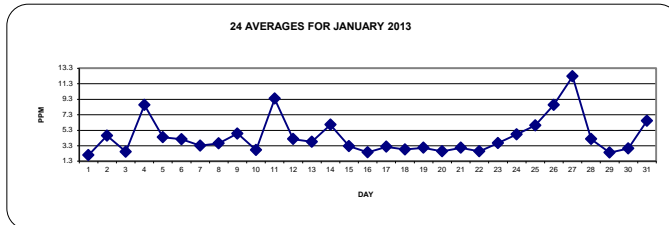
TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	
HOURLY MAX	HOURLY END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.
DAY																												
1		1.6	S	2.1	2.1	2.3	2.2	2	2.2	2.3	2.1	2.1	2	2	2	2.1	2.2	2.3	2	2.1	2.1	2	2	2.1	2.3	2.1	24	
2		S	2.2	2.2	2.2	2.4	2.6	2.7	3.3	4.4	3.8	4.1	4.3	5.6	4.9	3.2	3.4	6.1	5.9	8	7.7	8.9	7.2	5.9	S	8.9	4.6	24
3		4	3.3	3.1	2.9	2.4	3.1	2.7	2	1.9	1.7	2.3	1.8	1.8	1.9	1.8	1.8	2.1	2.3	2.7	2.6	1.9	2.4	S	5.5	5.5	2.5	24
4		3.5	2.8	3.9	5.3	6.2	9.4	8.9	9.1	12.4	11.8	11.4	9.4	7	7	6.8	6.5	8.5	7.6	7.8	8.7	10.9	S	17.5	14.2	17.5	8.5	24
5		10.9	6.8	4.7	3.5	2.7	2.6	2.7	2.4	2.4	2.6	3.1	3.4	2.5	2.4	4.3	3.9	4.3	7	8	6.9	S	5.4	4.5	4.3	10.9	4.4	24
6		6.4	6.5	6.2	5.2	5.3	4.4	4.1	4	5	5.5	8.3	5.2	3.9	3.1	2.5	2.4	2.5	2.6	2.4	S	2.5	2.3	2.3	2.3	8.3	4.1	24
7		2.2	2.3	2.2	2.6	2.9	2.2	2.1	2.6	2.8	3.6	3.3	C	C	C	C	3.3	3.4	4.7	S	4.3	4.1	4.7	4.5	5.2	5.2	3.3	24
8		5.3	2.6	2.6	2.5	2.5	2.2	2	1.8	1.8	1.8	C	C	2.3	2.2	Y	2.7	3.1	S	4.4	5.8	4.6	5.9	7	8.7	8.7	3.6	23
9		8.6	10.6	6.5	5.5	7.9	8	8.4	8.2	6.9	6.2	5.1	4.2	3	2.6	2.3	2.3	S	2.3	2.4	2.3	2.2	2.1	2.2	2.2	10.6	4.9	24
10		2.3	2.2	2.1	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.3	2.3	2.3	2.3	S	2.4	2.8	4.2	4.2	2.7	2.9	3.4	7.1	7.1	2.8	24	
11		6.9	13.6	11.5	9.4	11.1	9.9	11.4	8.3	11.1	9.4	11.8	14.4	16.2	11	S	9	9	6.9	5.9	5.3	5.8	6	5.5	6.1	16.2	9.4	24
12		8.5	7.9	8.7	9	5.5	3.6	3.6	3	3.9	3.2	2.7	2.9	2.5	S	2.3	2.4	2.2	2.6	4.4	3.1	3.3	3.2	3.9	3	9.0	4.1	24
13		3.6	4.3	3.9	4.2	3	3.4	3.7	2.9	3.7	4.1	4.6	3.4	S	2.5	2.2	2.9	3.4	3.4	3.5	3.9	4.2	5.7	5.7	5.4	5.7	3.8	24
14		5.4	7.7	9.7	17.1	15.3	11.7	9.9	6.5	5	4.4	4.1	S	3.4	2.7	2.9	3.3	3.2	3	4.6	4.6	4.5	2.2	2.6	4.5	17.1	6.0	24
15		7.1	8.5	5.9	7.5	2.4	2.4	2.3	2.5	2.4	2.3	S	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.4	2.7	2.9	2.6	2.5	8.5	3.2	24
16		2.5	2.5	2.5	2.7	2.7	2.7	2.6	2.5	2.5	S	2.4	2.5	2.5	2.3	Y	Y	Y	Y	1.8	2	2.3	2.1	2.9	2.9	2.4	19	
17		4.9	4.3	3.7	4	4.1	3.8	4.2	3.5	S	2.7	3.7	3.1	2.4	2.1	2	2.1	2	2.3	2.2	2.2	2.4	3.3	3.8	4	4.9	3.2	24
18		3.6	4.1	6.2	7	7.7	3.2	1.9	S	2	2.7	1.9	2.1	2.4	1.7	1.6	1.7	1.8	1.8	1.9	1.9	2	1.9	1.9	1.9	7.7	2.8	24
19		1.9	1.9	1.9	1.9	2.1	2.2	S	3.1	3	2.8	4	5.2	4.7	4.2	4.1	4.7	4.5	4.9	2.7	2.1	2.1	2	2	2.1	5.2	3.0	24
20		2.2	2.9	2.3	2.2	2.1	S	2.8	2.8	2.7	3	2.4	2.5	2.3	2.4	2.6	2.5	2.7	2.8	2.5	2.6	3.3	2.4	2.6	2.6	3.3	2.6	24
21		2.5	3.9	4.4	3.5	S	5.1	4	C	C	4.5	3.3	2.7	1.7	1.6	X	X	1.5	2.2	2.3	2.6	2.6	2.7	3.2	3.5	5.1	3.0	22
22		3.8	3.8	3.7	S	3.9	4.1	4.3	3.7	3.2	2.6	2.3	2.1	1.9	1.7	1.6	X	X	1.5	1.7	1.6	1.7	1.8	1.7	1.7	4.3	2.6	22
23		2.2	3.9	S	8.2	8.4	7.4	6.9	6.1	5.8	4.9	3	1.8	2.3	2.5	2.4	1.9	2.2	2.2	2.1	2	1.9	1.9	1.9	1.9	8.4	3.6	24
24		1.8	S	1.8	1.8	1.8	2	2	2.2	2.3	2.8	2.7	2.7	2.3	2.3	2.3	2.3	2.7	4.8	7.5	12.9	14.7	12.3	10.1	11.3	14.7	4.8	24
25		S	6.7	6.2	5.7	6	6.8	7.4	7.3	7.7	6.2	5	4.6	3.6	3.6	3.5	3.2	5.3	10.2	6.6	5.6	8.8	5.6	4.6	S	10.2	5.9	23
26		4.5	4.6	5.2	14.1	7.6	5.7	6.5	6.3	6.8	6.8	7.7	8.8	8.2	10	9.6	7.9	9	10.2	8	11.7	12	11.5	S	14.5	14.5	8.6	24
27		14.1	15	14.6	14.2	13.8	16.8	17.2	14.2	13.5	12.1	12.4	9.3	9	8	8	9.9	9.8	9.3	12.9	10.5	13.1	S	14.9	9.4	17.2	12.3	24
28		6.3	6.6	6.1	5.3	5.3	5.9	4.2	4.3	4.4	3.3	4.8	3.9	4	3.8	3.7	3.7	2.6	C	C	2.3	S	2.3	2.3	2.3	6.6	4.2	24
29		2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.5	2.6	2.8	S	2.2	2.5	2.5	4.5	4.5	24
30		4.7	3	3.4	3.6	4.1	3.5	3	2.8	2.6	2.2	2.1	2	2	2.1	2	2	2.2	2.3	S	3	2.9	3.4	3.4	5.5	5.5	2.9	24
31		7	9.1	12.5	17.4	17.5	Y	Y	6.5	5.9	6.2	5.6	5.3	5.1	4.3	4	4	3.5	S	3.4	3.8	3.8	3.6	3.6	4.3	17.5	6.5	22
HOURLY MAX		14.1	15.0	14.6	17.4	17.5	16.8	17.2	14.2	13.5	12.1	12.4	14.4	16.2	11.0	9.6	9.9	9.8	10.2	12.9	12.9	14.7	12.3	17.5	14.5			
HOURLY AVG		4.8	5.4	5.1	5.8	5.5	4.9	4.8	4.4	4.6	4.3	4.5	4.2	3.8	3.5	3.3	3.6	3.8	4.2	4.4	4.5	4.7	3.9	4.5	5.0			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

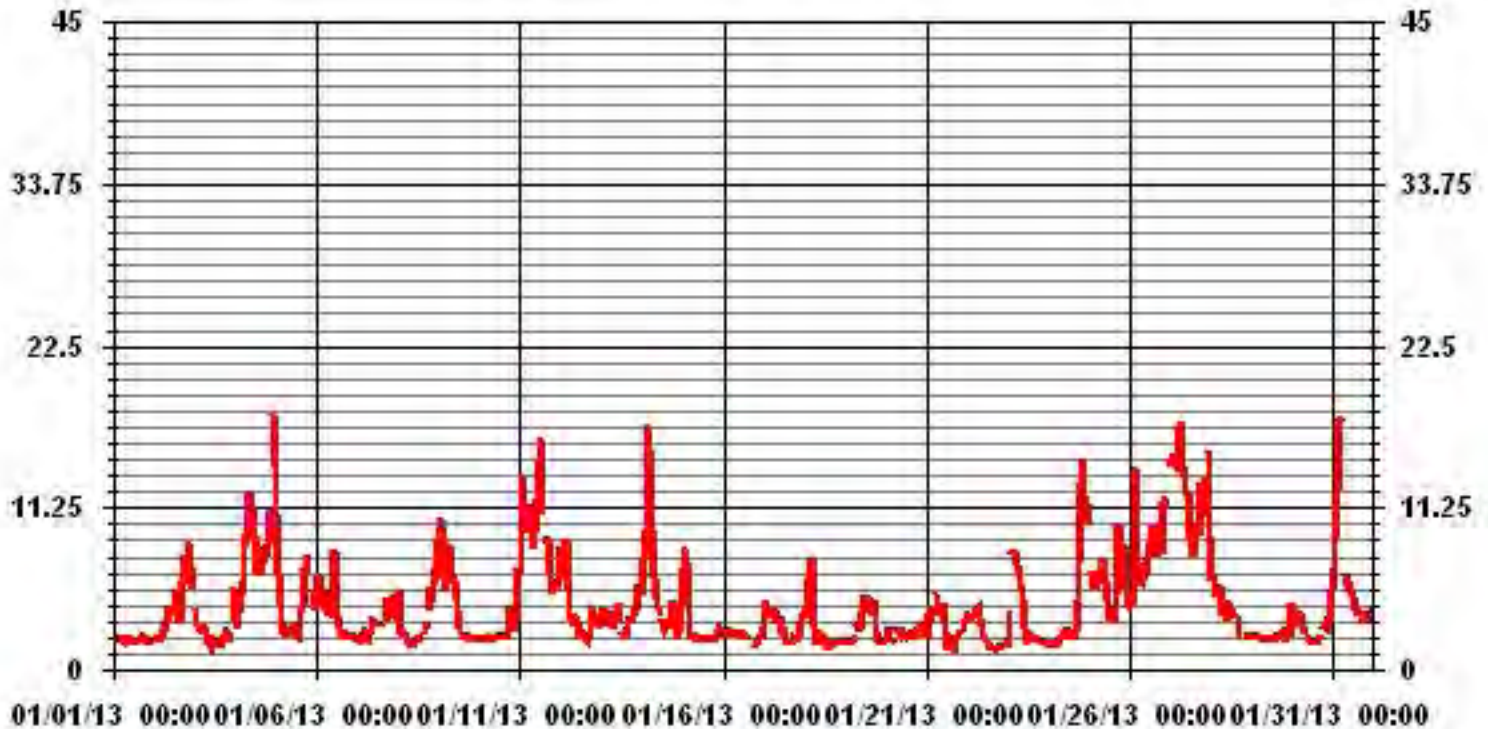
24 AVERAGES FOR JANUARY 2013



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	689					
MAXIMUM 1-HR AVERAGE:	17.5	PPM	@ HOUR(S)	22, 4	ON DAY(S)	4, 31
MAXIMUM 24-HR AVERAGE:	12.3	PPM			ON DAY(S)	27
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	731	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	98.3	%	
STANDARD DEVIATION:	3.19		MONTHLY AVERAGE:	4.49	PPM	

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JANUARY 2013

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

DAY	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.
	HOUR START	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00		
1	1.9	S	2.3	2.2	2.9	2.6	2.3	2.6	2.7	2.3	2.3	2.1	2.1	2.2	2.1	2.4	3.1	2.9	2.1	2.3	2.3	2.1	2.1	2.2	3.1	2.4	24
2	S	2.4	2.4	2.6	3.4	3.4	3.1	4.4	5.5	4.3	5.4	5.3	6	9.8	9.5	5	8.6	7.9	14.1	12.5	13.9	9	9	S	14.1	6.7	24
3	4.9	4	3.5	3.5	3.5	3.8	3.8	2.5	2.5	1.9	3.3	2.3	2.2	2.1	2	3	2.9	3	3.4	2.1	4.3	S	9.1	9.1	3.3	24	
4	4.5	3.6	4.1	6.8	7.9	11.7	10	13.8	24.1	14.4	13.4	12.3	7.9	8.9	8.1	7	11.2	9.8	8.9	9.9	13.3	S	22.2	18.4	24.1	11.0	24
5	13.8	9.4	6.1	4.7	3	2.9	3.5	2.5	2.7	2.9	3.7	7.7	3.1	2.7	5.7	5.5	7.1	9.7	10.1	8.1	S	5.7	5.1	4.7	13.8	5.7	24
6	8.9	8.5	6.5	5.8	7.4	4.8	4.8	4.4	7.4	10.3	10.2	6	4.8	3.8	2.9	2.7	2.7	2.7	S	3.2	2.5	2.7	2.7	10.3	5.1	24	
7	2.4	2.7	2.3	3.6	3.8	2.7	2.4	4.4	4.7	5.5	C	C	C	C	4.4	5	7.8	S	7.4	4.8	6.8	4.9	6.8	7.8	4.6	24	
8	7.5	3	3.1	4.2	3.2	2.5	2.4	1.9	1.9	1.8	C	C	2.5	2.3	Y	4.1	4.2	S	6.5	8	9	6.9	9.4	18.5	18.5	5.1	23
9	13.3	17.6	10.2	7.4	12.2	12.2	11.2	11.6	9	8.4	7.7	5.6	4	3.4	2.8	2.5	S	2.5	2.5	2.4	2.3	2.2	2.3	2.3	17.6	6.8	24
10	2.3	2.3	2.2	2.2	2.3	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.4	S	2.5	3.5	5.3	5.2	3.2	3.5	6	20.7	20.7	3.7	24	
11	12.9	18.2	19	18.4	17	29.8	15.8	9.7	14.3	12.4	17	18.6	27.5	13.5	S	9.9	12	10.4	6.5	6.5	6.9	10.6	6.1	8.5	29.8	14.0	24
12	10.4	9.9	10.4	11.1	8.4	4	3.9	3.6	4.6	4.3	3.8	4.1	3.3	S	2.7	2.8	2.9	2.9	7.1	3.6	4.5	4.3	4.7	4.2	11.1	5.3	24
13	6.1	6.3	4.9	4.7	3.5	5	4.6	3.4	4.3	6	6.5	5	S	3.2	2.8	3.3	5.1	4.2	4.3	5	4.7	8.9	7.3	5.8	8.9	5.0	24
14	6.1	10.7	17.1	44.8	21.6	16	16.3	7.3	5.6	5.4	5.4	S	5.3	3.6	5.4	5.6	4	3.7	7.2	7.7	5.1	3	4.5	6.6	44.8	9.5	24
15	9.6	9.9	7.4	8.4	6.3	2.6	2.4	2.6	2.5	2.6	S	2.3	2.2	3.3	2.5	2.9	2.6	2.4	2.6	3.3	3.1	2.8	2.8	9.9	3.9	24	
16	3.3	2.9	2.7	3.1	3.1	2.8	2.9	2.8	2.8	S	2.9	2.7	3	2.6	Y	Y	Y	Y	Y	2.1	2.3	2.9	2.7	11.2	11.2	3.3	19
17	7	5.9	4.6	5.2	6	6	4.6	4.3	S	4.2	5.5	3.6	2.7	2.7	2.2	2.5	2.5	3.9	2.5	2.5	3.6	5.4	5.8	5.4	7	4.3	24
18	4.6	5.7	8.3	10.8	10	7.4	2.9	S	2.5	4.1	2.3	3.5	4.2	2.2	1.8	1.9	2	1.9	2	2	2.1	2	1.9	2	10.8	3.8	24
19	1.9	2	2	2.1	2.6	3.1	S	3.8	4.5	4.2	4.7	6.5	5.1	5.4	5.1	5	4.9	5.5	4.5	2.3	2.3	2	2.1	2.3	6.5	3.6	24
20	2.6	4.9	3.2	2.4	2.5	S	3.2	3.1	3.2	3.5	2.6	3.2	2.4	2.6	3.3	2.6	3.5	3.1	2.6	3.6	4.6	2.8	2.7	2.9	4.9	3.1	24
21	3	6.8	6.8	4.8	S	6.2	5.1	C	C	5.3	4.4	3.7	2.8	1.8	X	X	1.9	3.1	2.6	4.5	3.1	3.3	3.8	5.2	6.8	4.1	22
22	5.3	4.2	3.9	S	4.1	5.1	4.8	4	4.1	3.5	2.9	2.4	2.2	1.9	1.9	X	X	2	2.2	2	2	2.3	2.2	2.2	5.3	3.1	22
23	3.4	11.9	S	12.7	11.1	9.6	8.6	8.3	6.1	5.5	4	2.1	2.7	2.7	2.6	2.3	2.4	2.4	2.3	2.2	2.1	2	2	2.1	12.7	4.8	24
24	2.2	S	2	1.9	1.9	2.1	2.3	3	3	3.4	3.2	3.6	2.6	2.4	2.6	2.8	3.1	7.5	17.4	21.7	22.6	19	12.4	17.9	22.6	7.0	24
25	S	8	8	6.8	6.2	7.7	8.7	8.1	8.5	7.2	5.7	5.7	4.1	3.8	4.2	3.6	19.5	54.3	14.2	15.1	37.3	9.1	5.6	S	54.3	11.4	24
26	5.4	5.5	8.7	53.5	9.9	6.7	11	7	7.6	7.9	10.6	11.2	11.4	12.6	10.1	9	25.3	25.1	9.5	26.5	25.4	18.6	S	19.6	53.5	14.7	24
27	30	53.5	18.7	17.6	15.4	19.7	28.9	18.2	16.4	17.9	14.7	10.7	10.3	8.4	10	13.3	13.8	16.7	25.9	11.2	16	S	16.9	12.3	53.5	18.1	24
28	7	7.5	7.2	5.9	7.4	7.1	5.4	5	5.4	4.7	5.4	4.5	4.3	4.9	4.4	4.4	3	C	C	2.4	S	2.4	2.4	2.4	7.5	4.9	24
29	2.4	2.3	2.4	2.4	2.4	2.3	2.3	2.3	2.4	2.3	2.3	2.2	2.7	2.3	2.4	2.4	4.3	4.1	3.9	S	2.5	2.7	3	9	9	2.9	24
30	5.9	4.5	4.2	4.1	5.5	4	3.3	3	2.8	2.3	2.2	2.2	2.1	2.2	2.3	2.2	2.7	2.6	S	6	3.2	3.9	3.7	7.8	7.8	3.6	24
31	9.7	11.7	16.8	39	48	Y	Y	9.3	6.9	6.7	6.6	6	5.6	4.8	4.4	5.7	3.9	S	3.9	4.2	4.2	4.1	3.9	4.9	48	10.0	22
HOURLY MAX	30.0	53.5	19.0	53.5	48.0	29.8	28.9	18.2	24.1	17.9	17.0	18.6	27.5	13.5	10.1	13.3	25.3	54.3	25.9	26.5	37.3	19.0	22.2	20.7			
HOURLY AVG	6.8	8.5	6.7	10.1	8.1	6.8	6.3	5.5	5.9	5.6	5.8	5.3	4.9	4.3	4.1	4.3	6.0	7.6	6.5	6.7	7.3	5.4	5.5	7.6			

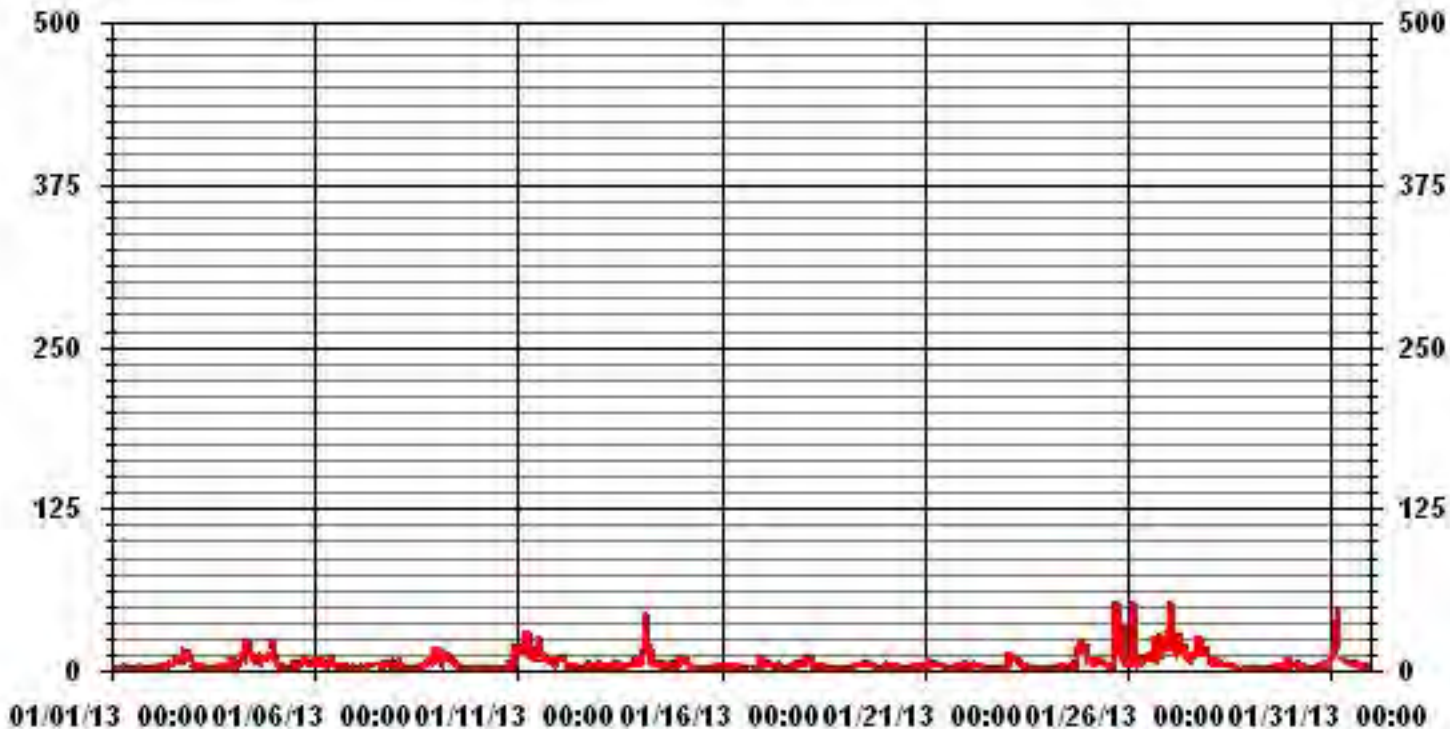
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	688					
MAXIMUM INSTANTANEOUS VALUE:	54.3	PPB	@ HOUR(S)	17	ON DAY(S)	25
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	732	HRS	
MONTHLY CALIBRATION TIME:	11	HRS				
STANDARD DEVIATION:	6.42					

01 Hour Averages



— LICA35 THCMAX PPM

LICA-ELK
 THC / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA-ELK
 Parameter : THC
 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	
< 3.0	2.32	.58	.58	.00	.29	5.66	.14	.00	.29	.00	.14	1.74	10.44	8.70	11.75	3.77	46.44
< 10.0	.00	.00	.87	1.45	9.57	9.86	2.61	1.59	1.45	1.01	.87	5.07	5.37	3.48	2.17	.72	46.15
< 50.0	.00	.00	.00	.29	1.74	2.46	.58	.43	.14	.14	.00	.00	.87	.29	.43	.00	7.40
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.32	.58	1.45	1.74	11.61	17.99	3.33	2.03	1.88	1.16	1.01	6.82	16.69	12.48	14.36	4.49	

Calm : .00 %

Total # Operational Hours : 689

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	16	4	4		2	39	1		2		1	12	72	60	81	26	320
< 10.0			6	10	66	68	18	11	10	7	6	35	37	24	15	5	318
< 50.0				2	12	17	4	3	1	1			6	2	3		51
>= 50.0																	
Totals	16	4	10	12	80	124	23	14	13	8	7	47	115	86	99	31	

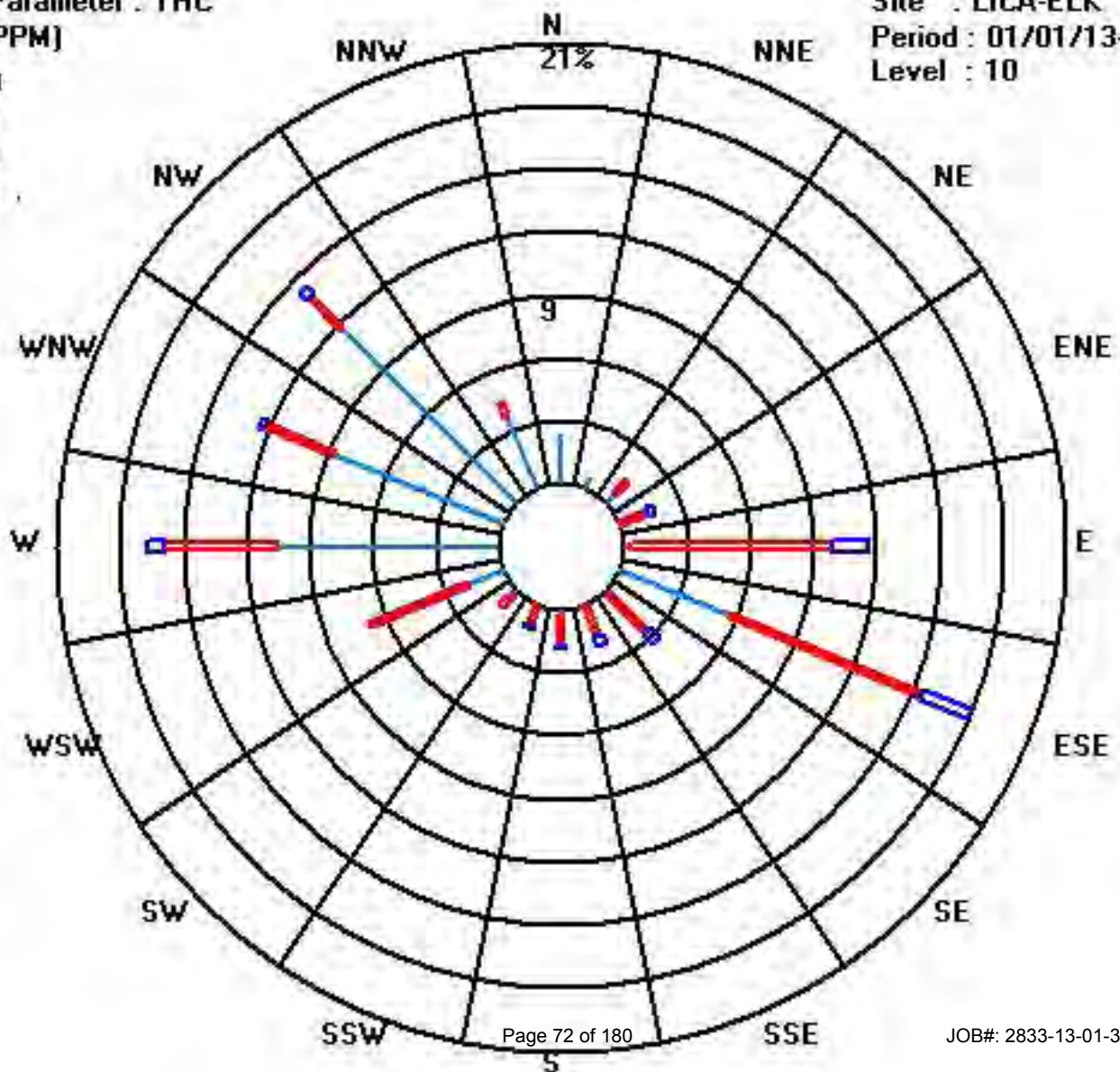
Calm : .00 %

Total # Operational Hours : 689

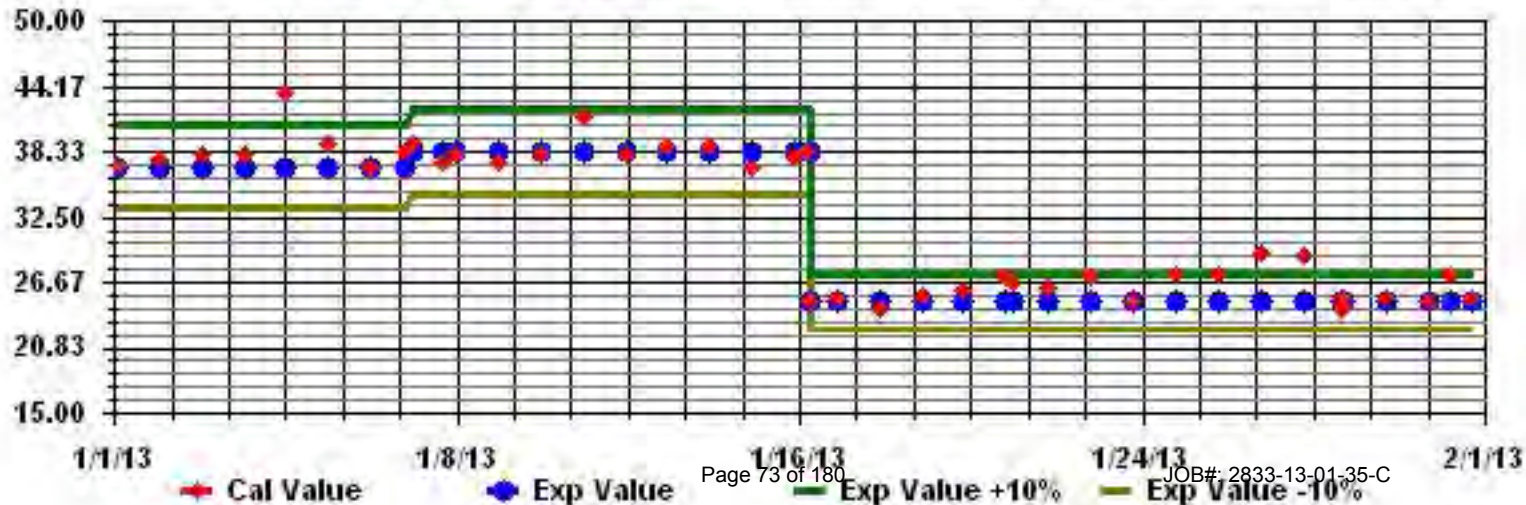
Class Limits (PPM)

Period : 01/01/13-01/31/13

Level : 10



Calibration Graph for Site: LICA35 Parameter: THC Sequence: THC Phase: SPAN



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JANUARY 2013

VECTOR WIND SPEED (WS) hourly averages (km/hr)

MST

DAY	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	14.4	21.3	26.8	26.1	26.5	25.5	29.7	29.4	31.9	30.1	32.7	31.6	29.2	30.8	25.4	21.3	12.6	13.6	23.1	26.9	21.4	26.6	22.9	20.6	32.7	24.2	24
2	24.6	22	23.3	19.1	13.2	13.2	6.9	5.9	8.9	10.8	4.2	2.3	4.7	4.7	7.6	6	4.6	4.1	1.8	2.3	2.1	0.5	3.3	6	24.6	5.5	24
3	7.2	7.2	6.5	5.6	6.6	11.7	13.7	10.8	10.6	14.9	18.4	17.5	17	14.7	10.7	10.6	8.4	4.2	5.6	9.4	10.6	11.9	1.8	7.3	18.4	9.7	24
4	15.2	10	2.3	2.6	2.2	3.1	2.7	0.8	3.9	1.3	2	1.9	0.6	3.2	0.6	1.1	5.4	6.1	2	3.2	5.6	0.3	2.7	3.8	15.2	1.2	24
5	3.2	3.8	6	10.5	15.1	10.3	15.2	15.2	15	13.1	13.4	15.6	12.7	6.2	6.2	4.3	2.3	4.8	4.1	4.5	4.8	5.1	6.9	8.9	15.6	8.6	24
6	8	10.8	10.8	11.5	11.6	8.6	5.7	1.7	1.4	3.8	3	7.9	12	15.1	13.8	21.8	18.3	17.8	21.5	28.7	26.6	26.3	23	19.4	28.7	13.7	24
7	23	26.2	28.4	28.2	23.2	21.5	21.1	12.2	8.8	9.3	3.6	9.9	7.5	3.6	6.8	8.5	9.7	7.2	7.3	5.4	5.6	5.8	0.4	2.6	28.4	11.9	24
8	9.1	6.5	8.7	13.1	18.6	23.3	28.3	31.2	27.1	30.5	27.1	22.2	21.8	18.1	18.3	11	6.9	2.4	9	11.8	4.1	1	3.5	6.2	31.2	15.0	24
9	5	5.3	6.3	6.1	6.8	6.5	6.8	5.7	9.2	10.1	12.7	13.2	14.7	19.4	14.3	9.8	11.7	9	8.5	10.7	13.1	11.7	15.5	16.2	19.4	10.3	24
10	19.1	18.2	16.9	14.8	12.2	15.5	17	19.1	18.8	13.3	15.3	15.4	16.3	10.3	9.2	12.2	6.4	5.4	7.5	9.8	13.5	6.9	6.6	6.2	19.1	12.7	24
11	7.2	6.5	4.2	2.6	3.5	3.6	2.9	2	1.7	2.7	0.3	2.2	5.1	6.1	6.1	6.4	7	5.9	6.5	6.5	4.1	5.5	3	3.2	7.2	4.4	24
12	4.4	1.2	0.9	5.4	11.7	8.8	12.4	10.9	15.2	12	14	15.6	13.5	15.2	14.9	15.1	10.9	6	12.1	6.3	8.7	7.5	5.2	3.9	15.6	9.7	24
13	6.7	6.1	8	8.8	9.3	11.1	13.9	11.3	5.9	4.3	4.8	8.1	5.1	4.1	4.4	3.5	7.1	6.9	8.9	4.4	1.9	6.9	3.3	3.8	13.9	6.6	24
14	0.9	1.9	3.1	3.5	2.1	2.4	3.6	6.8	7.5	8.5	7.9	7.4	8	9.5	8.2	4.2	2.6	0.8	1.7	1.4	2.2	6.3	3.9	3	9.5	4.5	24
15	3.8	3	2.1	1.1	11.5	15.4	13.4	22.6	30.8	35.2	40.6	41.2	38.1	35.3	31.2	28.1	28.3	30.1	28.6	12.3	5.3	6.5	8.7	8.5	41.2	20.1	24
16	9.2	10	11.3	7.6	8.4	10.9	12.1	15.9	10.9	7.8	5.2	4.2	9.1	13.8	18.8	25.3	20.6	17.3	15.8	8.2	8.7	9.4	8.3	4.3	25.3	11.4	24
17	3	1.8	6.2	9.6	10.1	10.5	13.2	14.9	16.9	18.5	22.7	23.3	25.4	23.2	22	15.7	17.6	13	9.1	9	8.3	4.1	3.8	4.8	25.4	12.8	24
18	5.2	1.4	2.5	2.6	6	15.6	7.2	17.6	16.7	12.2	13.7	21.9	15.7	26.8	25.7	34.7	33.9	28.9	28.6	26.3	20.8	30.9	26.6	27.9	34.7	18.7	24
19	26.2	21.2	20.1	13.4	11.3	8.4	7.6	5.5	8.4	4.3	1	0.9	0.8	2.2	2.4	1.1	0.1	1.6	13.1	20.9	23.9	23.7	21	14.7	26.2	10.6	24
20	16.9	14.7	12.9	13.6	13.7	12	12.7	14.7	15.9	16	19.2	18.3	21.3	19.7	16.7	17.7	13.7	8	8.9	7.5	7.5	7.1	10.9	7.4	21.3	13.6	24
21	5.7	6.4	6.8	2.7	3.9	2.4	2.3	5.3	4.5	3.1	3	6.2	9.2	9.4	9.9	10.5	13.2	11.8	11.5	11.8	10.6	9.4	6.2	7.1	13.2	7.2	24
22	6.7	4.4	1.7	2.1	1.2	3.2	4.2	8.4	10.7	13.1	11.2	11.8	12	14.7	12.1	13.6	11.3	12.1	10.7	9.5	8.9	13.6	12	7.2	14.7	9.0	24
23	3.7	1.8	1.3	2.7	1.9	2.7	4	4.3	7.3	11	16	18.4	22.8	24.5	24.6	27.3	26.3	26.9	27.1	34	34.4	30.6	30.1	27.9	34.4	17.2	24
24	30.6	26.3	21.3	23.3	16	14	13	8.9	3.9	0.4	2.9	5.3	6.7	5.8	5.9	9.6	6.6	2	3.2	3.1	3.3	3.3	3.4	4.5	30.6	9.3	24
25	4.8	5	3.5	4.3	3.8	6.7	7.1	6.4	6.8	9.5	13.1	14.6	14.2	11.1	12.6	12.2	10.4	9.4	6.8	6.5	7.2	7.5	5.6	6.6	14.6	8.2	24
26	5.7	3.3	3	6	5.1	4.5	5.2	3.3	1.2	3.1	2.7	2.6	3.6	3.6	1.6	4.1	6.1	6.7	4.8	6.2	5	6.4	4.7	6.1	6.7	4.4	24
27	5.3	3.8	2.2	4.5	3.9	2.8	2.6	2.3	3.8	3.4	6.3	4.4	1.5	0.4	0.1	3.6	4.8	3.1	2.5	0.4	1.7	4.1	5.8	7.7	7.7	3.4	24
28	2.7	1.7	4.3	1.5	2.3	3.4	3.6	4.1	3.2	3.3	0.4	0.7	2	2.9	1.5	9.3	19.3	16.9	27.5	23.4	23.2	22.5	24.5	24.6	27.5	9.5	24
29	21.1	23.3	18.1	24	25	29.1	27.4	21.8	23.9	25.3	26.4	27.6	23.9	25.2	24.1	22.6	14.9	10.3	7.5	7.4	6.3	4.3	2.4	3.8	29.1	18.6	24
30	6.8	9	6.4	5.6	7	3.3	2.8	3.4	6.1	9.1	9.5	11.7	15	14.6	14.8	12.3	9.9	11.9	10.5	7.1	9.5	9.1	12.8	6.4	15.0	8.9	24
31	2.9	0.3	0.1	2.3	6.5	6.5	7.7	8.1	8.4	7.2	8.9	10.7	9.2	11.9	14.4	9.9	11.1	11.4	10.3	9.6	6.7	6.3	5.4	3.2	14.4	7.5	24
HOURLY MAX	30.6	26.3	28.4	28.2	26.5	29.1	29.7	31.2	31.9	35.2	40.6	41.2	38.1	35.3	31.2	34.7	33.9	30.1	28.6	34.0	34.4	30.9	30.1	27.9			
HOURLY AVG	9.9	9.2	8.9	9.2	9.7	10.2	10.5	10.7	11.1	11.2	11.7	12.7	12.9	13.1	12.4	12.7	11.7	10.2	11.2	10.8	10.2	10.4	9.5	9.2			

STATUS FLAG CODES

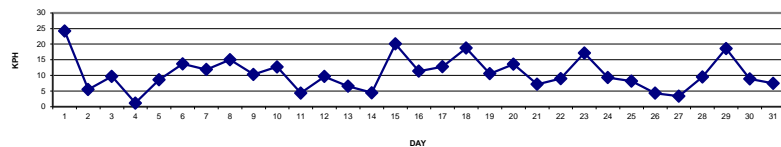
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION: November 24, 2011

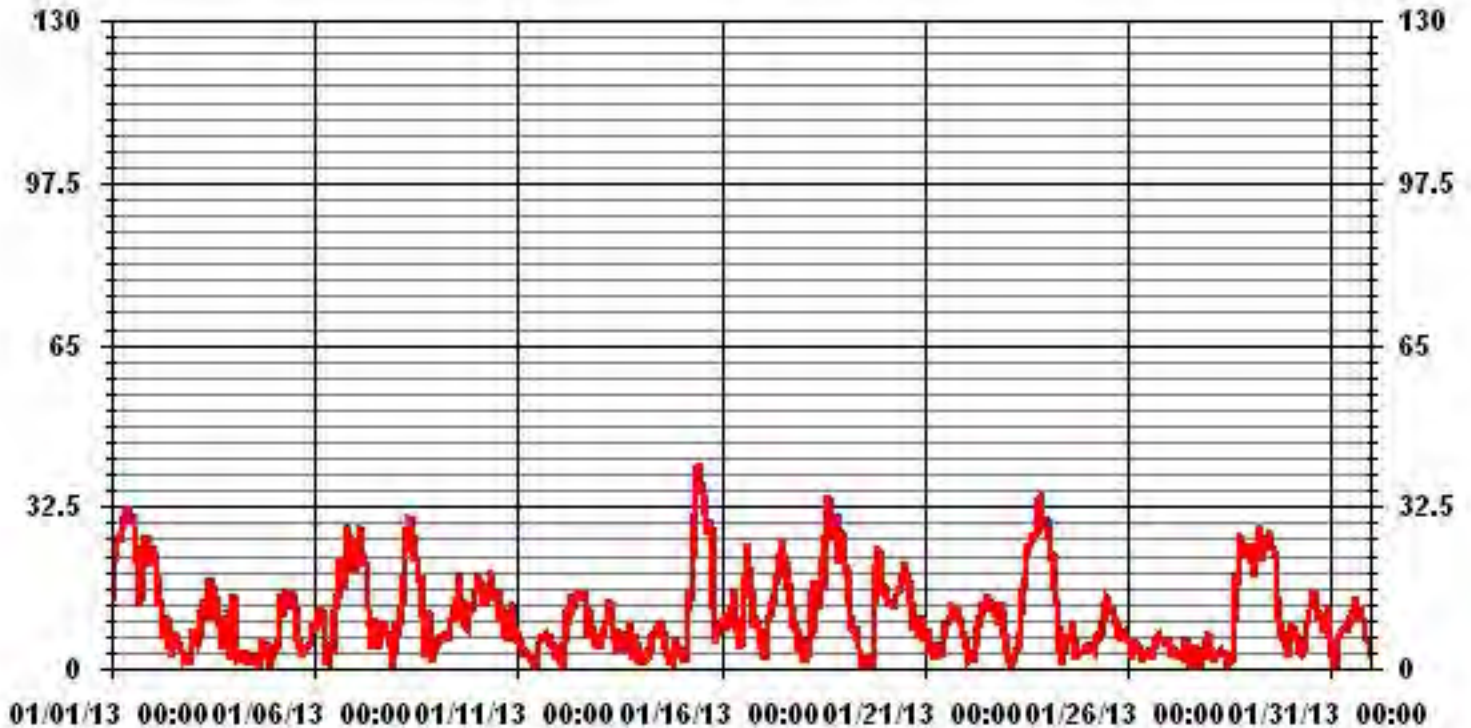
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	41.2 KPH	@ HOUR(S)	11	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	24.2 KPH			ON DAY(S)	1
CALMS (≤ 0 KPH)	0.81 %	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0 HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	8.29	MONTHLY AVERAGE:	10.8	KPH	

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JANUARY 2013

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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
HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	
DAY																									
1	27.2	37.8	42.8	38.6	37.9	44.9	46.5	47.4	46.1	44.2	48.4	49.5	45.3	55.9	40.3	37.9	24.2	37.7	37.9	39.6	45	48.2	42	36.8	55.9
2	39.5	36	39.4	35.9	19.6	20.3	12	9.8	16.4	16.2	15.9	10	7	13.3	15.1	13	7.7	7.3	4.9	7.7	9.1	10	7.9	9.5	39.5
3	9.7	10.2	10.5	10.8	16.5	21	22.8	21.4	21.4	26.4	31	26.6	25.4	24.4	20.9	20	15.7	13.8	10.4	14.5	16.4	18.3	12.2	13.1	31
4	20	20.2	5.7	6.9	8.5	8.6	8.6	4.7	6.6	5.1	4.5	5.2	4.6	5.6	3.3	6.4	7.1	11.7	6.3	7.4	12.5	4.6	7.7	12.4	20.2
5	6.5	11.1	10.7	17.5	24	25.3	29	26.8	25	23	25.7	22.5	20.9	17.9	10.3	11.3	6.9	8.1	7.8	7.3	8.5	7.8	9.3	12.3	29
6	12.7	17.4	17.1	19.4	23.7	21.2	14.6	6.9	3.7	8.2	9	13.2	19.2	21	33.5	41.1	33	32.8	35.7	40.4	34.8	38.1	36.5	29.7	41.1
7	33.8	36.2	38.8	37.3	32.7	31.8	34.1	24.5	14.5	17.4	10.3	17.6	16.6	10.7	14.7	14.5	15.1	12.2	14.3	12.7	8.1	7.8	5.1	8.1	38.8
8	14.8	12.6	17.7	25.1	28.7	34	45.5	49.9	43.3	46.9	45.1	34.9	37.7	28	33.5	21.4	12.2	11.5	17.2	15.9	11	6.1	7.3	8.4	49.9
9	9	7.9	9.3	9.2	9.5	10	9.9	9.5	14.1	14	20.9	19.5	29.8	35	28.6	22.2	26.9	24.5	18.1	23	22.8	24.2	30.7	29.5	35
10	33.4	38.3	32.5	29.7	24.3	25.2	26.8	30.5	28.2	26.1	26.9	23.4	28	19.6	14.5	16.8	12.6	9.7	9.4	15.2	16.9	13.3	10.1	10.4	38.3
11	10.3	9.7	7	4.6	6.8	7.3	6.1	4.7	4.1	7.5	3.9	4.8	7.8	8.2	7.5	8.4	9.9	10.1	8.8	10.1	5.6	8.1	5.6	6.2	10.3
12	6.1	4.2	3.9	13.4	18.3	19	20.9	21.2	22.5	19.5	20.2	20.4	21.2	28.4	25.8	23.6	20.3	10.3	16.2	10.7	15.2	15.2	10.7	9.2	28.4
13	8.7	11.9	13.1	14.9	14	16.4	19.9	15.5	9.9	9.9	15.3	13.2	7.8	8.4	13.2	6.7	9.8	10.6	13.5	12.7	5.6	12	11.5	10	19.9
14	6.9	6.1	7.3	6.7	5.7	6.1	6.3	8.8	11.2	11.8	10.7	10.2	12.6	17.4	13.2	9.7	6.3	6.7	6.1	5.2	10.8	14.7	9.8	8.5	17.4
15	6.3	5.1	6.2	7.9	23.1	30.8	31.2	36.3	50.1	53.3	64.5	62.3	58.4	50.5	56	40.7	46	52.3	43.9	28.2	13.2	15.6	16.4	13.7	64.5
16	14.7	26.1	24.6	20.8	13.9	16.9	23.9	26.6	18.1	12.7	9.3	8.5	24	22.7	40.4	49.5	33	28.3	27.7	20.4	12.4	12	13.2	8.6	49.5
17	11	5.9	10.1	14.7	14.6	15.1	19.5	23.1	22.4	26.8	34.4	33.6	34.6	34.9	33.1	22.2	27.3	19.7	19.2	14.3	17.5	9.3	7.8	9.2	34.9
18	9.6	5.8	11.6	6.9	18.6	33.3	13.5	32.9	30.6	20	26.2	35.6	29	43.5	38.7	59.8	59.4	53.7	45.5	43.5	39.2	49.8	48.3	56.9	59.8
19	46.5	33.9	33	26.3	16.3	16.8	14	9.1	13.9	10.6	5.1	4.7	3.8	9.3	6.9	5.3	3.6	5.8	32.9	36.6	44.7	46.1	33.8	29.3	46.5
20	23.6	20.6	21.3	23.1	20.9	20.9	23	19	22.4	25	29.6	32	29.2	26.8	24.9	23.4	20.2	15.2	14.3	17.4	14.5	15.3	16.8	12.4	32
21	9.6	10.9	12	6.8	6.7	5.7	7.4	9.5	8.1	7.1	6.8	11.1	13.1	13.3	13.1	14.4	17.1	15.8	15.5	16.6	14	12.7	9.2	9.7	17.1
22	12.1	7.7	6.9	6.2	3.8	5.3	8.5	15.2	14.5	17.1	16.1	17.6	19.6	22.4	18.5	20.9	16.4	17.8	19	17.4	12.5	18.2	15.4	12.1	22.4
23	7.2	5.2	4.5	5.1	5.2	5.5	6.2	11.1	13.4	17.6	24.9	25.2	33.9	33.5	34.1	37.9	35.4	39.1	42.9	47.9	51.5	43.5	43.7	42	51.5
24	46.6	43.4	32.8	35.7	26.6	20.1	19.1	14.6	9	2.4	8.5	11.9	11.9	11.3	11.6	15.4	13.8	6.3	6.1	7.6	8	6.8	5.1	7.7	46.6
25	7.8	7.2	6.7	6.3	7.2	13.7	9.9	9.6	10.6	16.6	21.2	21.6	21	20.3	18	20.5	16.9	12.2	11.5	8.1	9.4	10	8.6	8.7	21.6
26	8.5	6.3	6.4	8.5	7.7	6.6	6.5	6.1	4.2	4.6	4.6	6.7	7	6.5	5.7	6	10.3	9.6	6.6	9.1	7.1	8.6	7	9	10.3
27	10.1	7.3	8.5	7.5	7.5	5.7	4.8	5	5.3	6.4	9.5	7.4	5	3.1	2.3	8.3	8.8	5.5	5.6	3.2	4.6	7.5	11	12.7	12.7
28	6.6	4.9	9.9	4.2	5.7	6.4	7	8.8	6	5.9	5.3	4.4	6.8	6.1	9	14.1	31.2	30.8	41.8	37.9	35.7	37	36.3	37.5	41.8
29	32.9	43.3	34.4	42.7	42.1	49.5	49.2	46	38.3	41.4	46.4	46.1	38.3	40.2	32.5	30.6	22.9	14.7	12.5	12.6	12.3	12.8	6.2	7.7	49.5
30	12.7	13.9	10.9	9.7	10.4	10.1	6.1	6	13.3	13.4	17.3	24.1	23.3	21.6	21.5	20.2	13.8	16.9	16.2	11.7	12.7	13.1	18.1	11.9	24.1
31	5.7	3.4	2	7	8.9	10.3	11.4	11.5	11	11.4	12.9	19.8	12.8	16.8	19.9	14.6	15.4	15.4	15.5	13.2	11.3	9.2	8	7.1	19.9
PEAK	46.6	43.4	42.8	42.7	42.1	49.5	49.2	49.9	50.1	53.3	64.5	62.3	58.4	55.9	56.0	59.8	59.4	53.7	45.5	47.9	51.5	49.8	48.3	56.9	

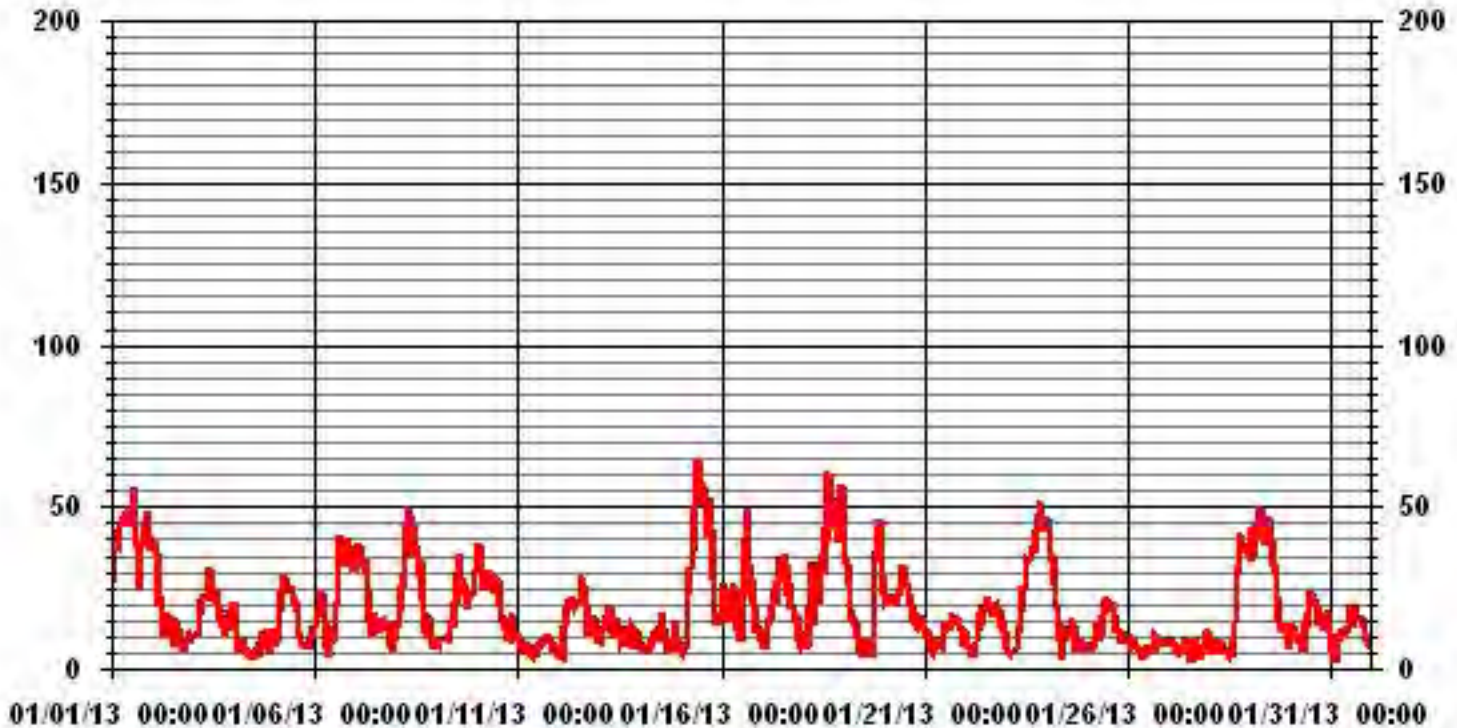
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	64.5	KPH	@ HOUR(S)	12
			ON DAY(S)	23

01 Hour Averages



LICA-ELK
WSP / WDR Joint Frequency Distribution (Percent)

January 2013

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	.00	.13	.94	1.61	5.77	5.77	2.28	1.88	1.47	.94	.67	2.28	4.30	3.09	1.74	.80	33.73
< 12.0	.40	.26	.67	.00	5.64	6.45	1.07	.00	.26	.26	.40	3.36	5.24	2.95	3.62	1.07	31.72
< 20.0	1.61	.13	.00	.00	.53	2.68	.00	.00	.00	.00	.00	1.20	3.62	3.36	3.89	1.20	18.27
< 29.0	.13	.00	.00	.00	.00	2.15	.00	.00	.00	.00	.00	.00	1.88	2.41	4.83	1.20	12.63
< 39.0	.00	.00	.00	.00	.00	.67	.00	.00	.00	.00	.00	.00	.80	.53	1.34	.00	3.36
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.13	.00	.26
Totals	2.15	.53	1.61	1.61	11.96	17.74	3.36	1.88	1.74	1.20	1.07	6.85	15.86	12.50	15.59	4.30	

Calm : .00 %

Total # Operational Hours : 744

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0		1	7	12	43	43	17	14	11	7	5	17	32	23	13	6	251
< 12.0	3	2	5		42	48	8		2	2	3	25	39	22	27	8	236
< 20.0	12	1			4	20						9	27	25	29	9	136
< 29.0	1					16							14	18	36	9	94
< 39.0						5							6	4	10		25
>= 39.0															1	1	2
Totals	16	4	12	12	89	132	25	14	13	9	8	51	118	93	116	32	

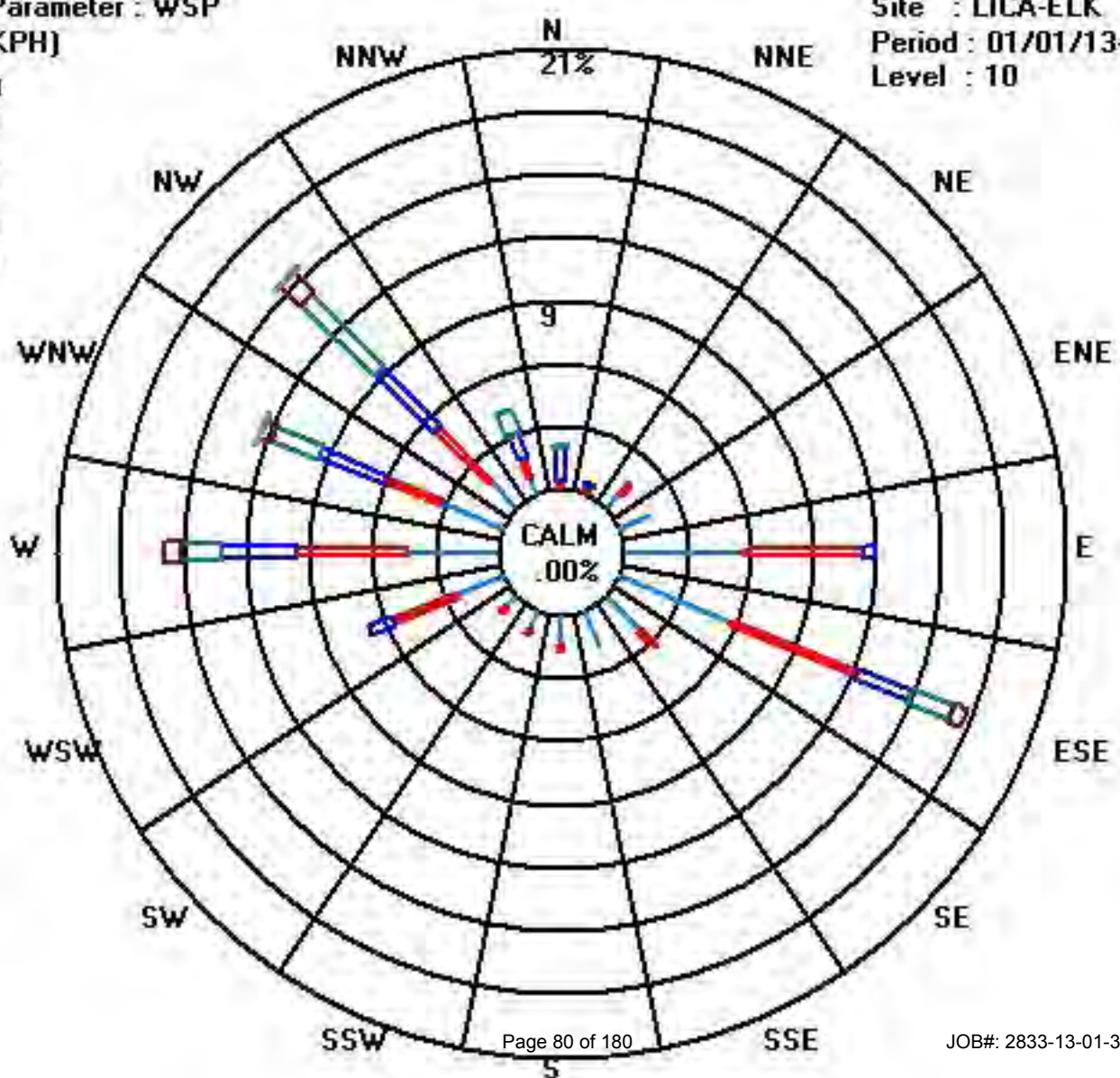
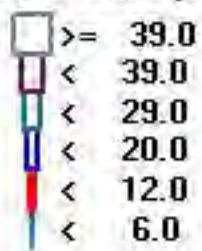
Calm : .00 %

Total # Operational Hours : 744

Class Limits (KPH)

Period : 01/01/13-01/31/13

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JANUARY 2013

VECTOR WIND DIRECTION (WD) hourly averages in degrees

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	24-HOUR AVG	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	AVG.	QUADRANT	RDGS.
DAY																											
1	255	270	274	276	284	283	290	281	280	279	281	290	297	304	305	293	272	266	290	297	312	320	316	305	289	WNW	24
2	299	304	308	312	294	293	258	235	258	238	245	159	106	194	208	198	137	129	115	258	133	154	321	324	281	W	24
3	324	317	292	290	278	261	257	260	271	262	279	281	279	276	257	264	271	299	287	266	266	264	253	242	273	W	24
4	250	261	303	305	226	90	257	344	179	149	76	87	161	298	308	83	106	142	112	282	268	137	96	288	243	WSW	24
5	312	275	288	264	262	286	282	267	263	268	263	280	270	259	247	257	146	146	145	98	86	92	95	115	264	W	24
6	94	109	119	118	115	123	119	121	207	272	257	263	270	274	264	275	267	265	270	272	279	273	272	273	263	W	24
7	276	279	277	282	283	292	296	283	247	234	251	242	236	213	126	125	101	94	93	112	114	121	151	269	270	W	24
8	252	258	256	281	284	280	289	315	314	312	316	308	312	318	308	282	271	282	246	242	182	119	72	104	296	WNW	24
9	116	108	91	104	101	100	97	86	93	91	96	95	91	110	85	50	38	47	44	37	24	18	3	359	68	ENE	24
10	354	354	351	353	354	341	333	346	351	355	359	349	356	343	333	325	321	300	311	315	317	305	309	294	341	NNW	24
11	293	291	278	288	276	273	260	328	304	281	207	113	105	100	101	116	134	107	110	110	87	93	97	80	106	ESE	24
12	105	93	299	264	256	253	246	256	245	255	281	284	293	306	305	304	309	303	292	298	265	268	258	265	278	W	24
13	253	260	254	251	257	277	292	296	282	265	287	283	299	296	256	280	254	272	274	271	267	235	245	241	270	W	24
14	315	100	128	130	97	111	108	99	98	99	105	98	126	177	185	184	188	85	180	54	267	267	272	240	136	SE	24
15	116	128	94	43	254	252	263	274	275	280	302	304	304	310	306	300	300	297	305	324	13	31	347	316	297	WNW	24
16	327	333	358	320	306	291	291	307	313	305	302	285	322	332	316	313	308	308	329	317	305	313	317	324	315	NW	24
17	71	75	102	123	103	104	109	116	110	110	112	113	114	116	111	109	107	116	103	84	108	92	107	96	109	ESE	24
18	87	159	165	128	293	295	274	289	282	273	256	284	285	290	292	320	313	329	317	334	321	315	320	328	307	NW	24
19	326	316	329	323	310	311	297	270	254	260	322	334	345	189	49	80	190	324	335	346	344	354	344	328	328	NNW	24
20	305	283	302	308	308	288	275	282	280	294	295	289	289	283	288	284	281	270	273	268	266	263	274	274	287	WNW	24
21	261	262	273	274	241	265	77	106	98	172	174	118	113	113	110	105	117	117	123	110	111	97	110	120	ESE	24	
22	122	62	145	39	97	301	289	286	305	309	307	315	305	310	314	313	308	301	300	300	299	309	315	335	309	NW	24
23	260	270	113	76	175	89	97	113	105	117	114	114	114	115	117	116	118	116	115	118	117	117	118	118	116	ESE	24
24	119	121	117	116	108	110	120	122	131	219	293	273	265	270	275	269	268	220	163	152	92	78	107	106	126	SE	24
25	96	94	109	91	79	92	93	90	88	97	109	112	110	94	109	105	116	124	111	94	103	99	83	100	102	E	24
26	87	73	107	113	104	78	102	106	54	100	112	99	104	103	109	77	131	103	79	108	107	94	82	88	98	E	24
27	84	97	102	85	110	108	127	98	103	108	97	81	89	309	203	277	261	198	260	131	167	278	275	280	119	ESE	24
28	243	240	285	48	117	150	191	230	193	168	150	321	75	138	248	279	313	319	314	317	318	317	319	322	310	NW	24
29	322	323	327	322	330	326	327	326	310	315	318	320	313	311	300	304	307	290	286	254	261	257	285	126	315	NW	24
30	131	94	123	115	104	52	331	344	341	355	349	337	324	323	331	324	307	294	305	277	279	285	256	242	319	NW	24
31	319	289	306	87	110	106	100	88	94	85	98	100	99	106	112	103	100	109	115	112	95	95	109	158	103	ESE	24
HOURLY AVG	354	354	358	353	354	341	333	346	351	355	359	349	356	343	333	325	321	329	335	346	344	354	347	359			

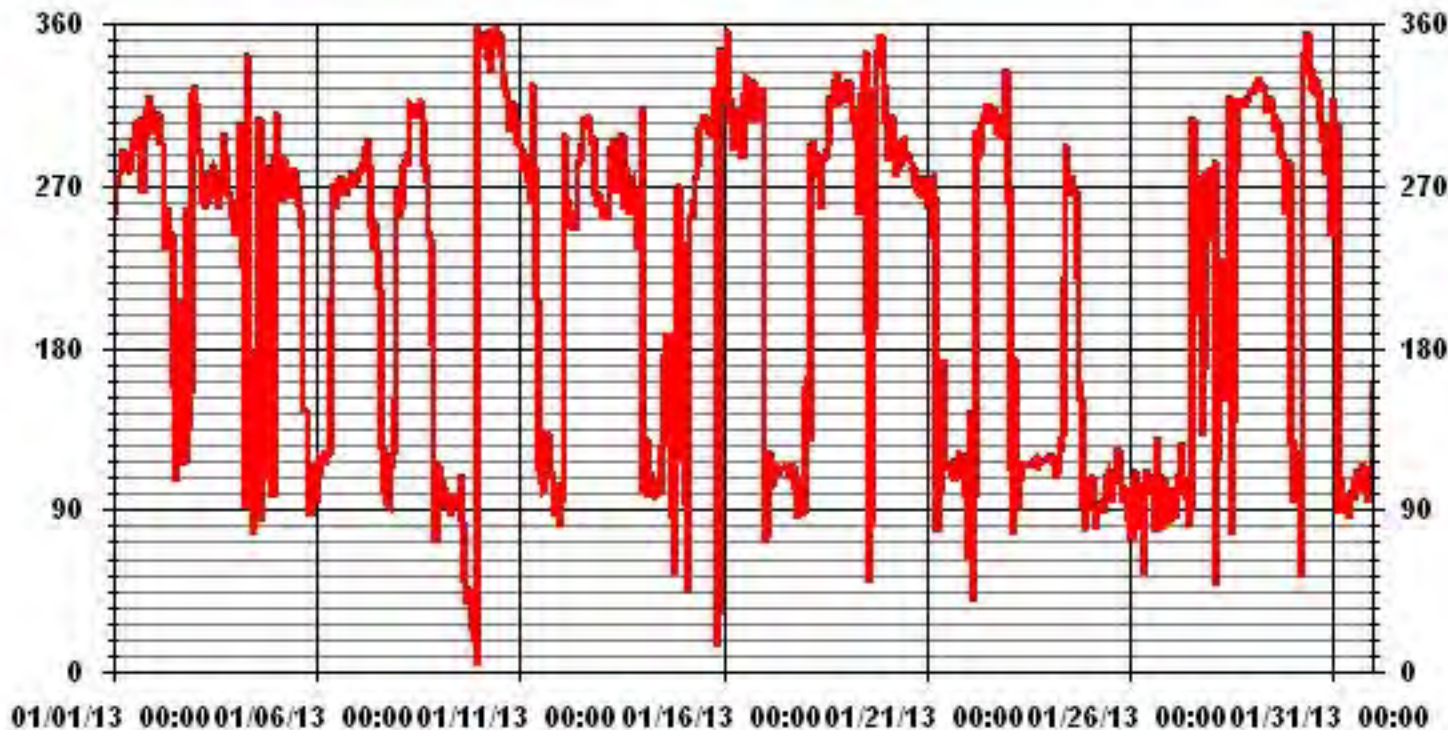
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION:	November 24, 2011
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	94.43	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	303 DEG

01 Hour Averages



Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE - Elk Point Airport

JANUARY 2013

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00
DAY																								
1	11	10	7	6	5	5	5	6	5	6	6	5	6	7	6	7	12	9	6	5	8	10	8	8
2	8	8	8	8	6	6	9	10	6	6	26	57	5	18	9	12	17	12	30	13	41	51	19	7
3	6	11	9	13	13	5	8	13	12	10	9	7	6	7	11	10	11	25	13	6	7	10	41	12
4	4	13	14	28	46	45	27	41	10	26	35	54	43	12	12	38	10	8	28	9	24	50	34	19
5	23	19	13	10	9	11	9	10	9	9	10	6	9	15	9	13	43	8	10	13	8	11	6	4
6	7	6	5	8	11	12	18	22	9	17	14	11	9	6	10	6	10	11	8	6	4	6	7	6
7	5	5	5	4	5	5	6	8	7	11	16	9	11	25	23	15	6	8	10	20	10	6	21	10
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9	12	14	8	9	5	7	7	12	5	6	6	5	7	7	12	20	16	25	18	14	11	13	14	14
10	12	14	15	14	15	10	9	9	10	13	12	9	11	12	10	5	17	9	6	7	3	11	7	13
11	5	4	5	14	9	6	16	5	5	6	20	10	8	5	5	4	7	7	4	7	9	6	19	18
12	10	35	16	7	7	8	10	12	6	11	5	6	8	8	6	6	8	11	3	4	7	14	11	12
13	8	12	9	8	7	6	5	5	8	26	20	6	9	10	16	14	6	7	8	33	22	8	22	17
14	50	58	24	18	26	21	17	6	7	5	6	9	9	11	8	12	12	30	18	54	17	15	18	30
15	11	17	53	70	15	11	12	7	6	5	5	5	5	6	6	5	6	5	5	14	14	24	11	6
16	9	10	15	9	7	6	6	7	6	8	6	8	11	8	9	7	6	6	10	8	7	4	7	7
17	29	31	8	7	6	6	6	6	6	6	7	6	6	6	7	7	10	7	22	11	10	16	24	19
18	29	20	29	33	30	8	12	7	5	11	10	6	4	6	6	9	8	10	8	11	9	8	8	9
19	9	8	8	7	8	14	10	9	6	14	29	28	35	37	26	41	37	10	9	11	11	13	8	7
20	4	4	4	6	5	4	8	3	4	4	6	6	5	4	5	4	4	11	6	12	12	12	7	10
21	9	10	7	11	11	18	28	14	25	21	24	15	8	7	6	6	6	6	6	7	6	7	12	8
22	10	18	36	25	26	11	6	8	5	5	5	8	8	7	8	7	5	4	8	7	5	4	3	33
23	15	19	13	15	20	30	11	14	6	6	6	6	5	6	6	5	6	6	6	6	6	6	6	7
24	7	7	6	7	7	6	6	6	9	10	9	12	13	12	10	8	10	14	10	17	10	12	14	8
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26	8	21	10	2	9	8	6	7	18	5	10	18	13	11	21	7	10	10	8	8	9	11	11	15
27	8	18	41	16	12	29	10	14	9	13	7	9	27	39	38	13	9	9	10	28	16	8	8	6
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30	10	10	14	10	9	17	11	10	10	11	12	14	8	8	7	7	5	4	6	10	7	6	7	16
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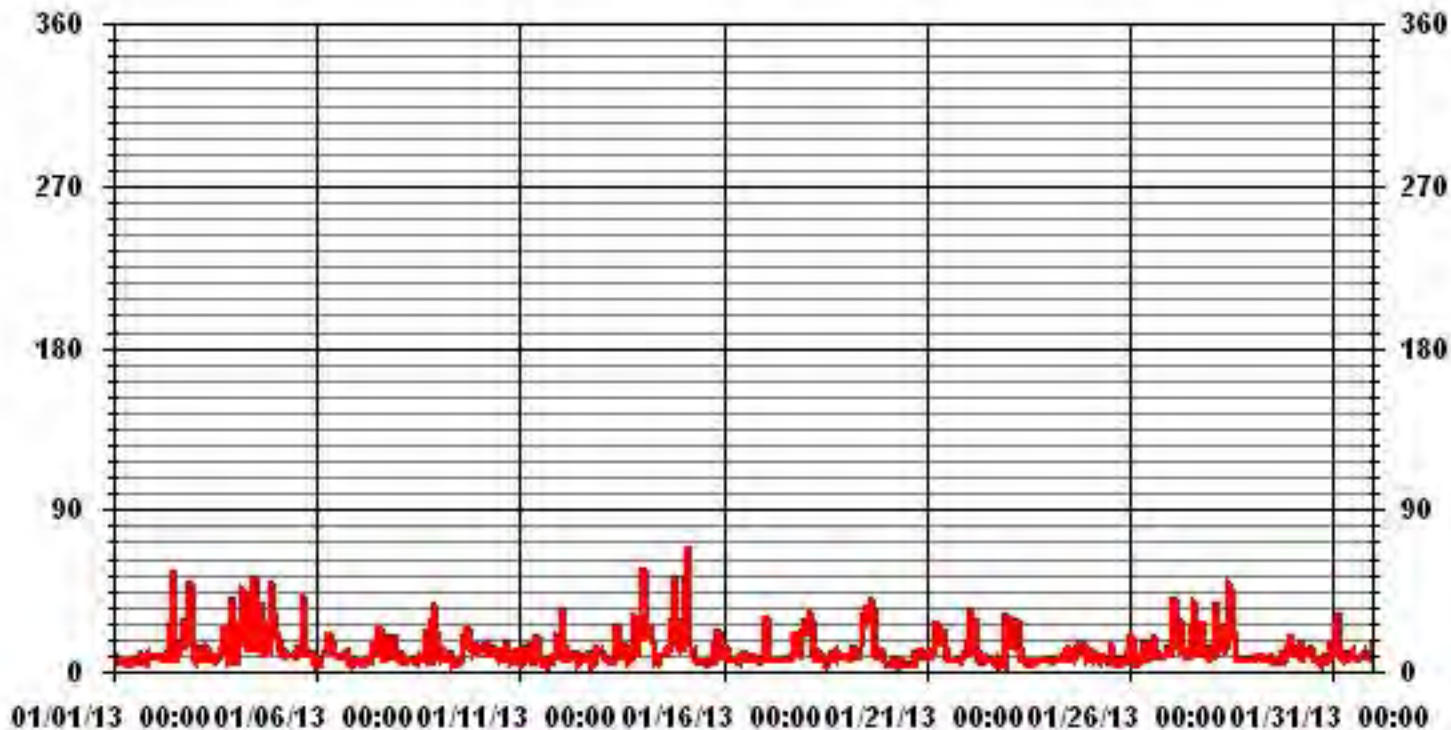
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION: November 24, 2011

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS

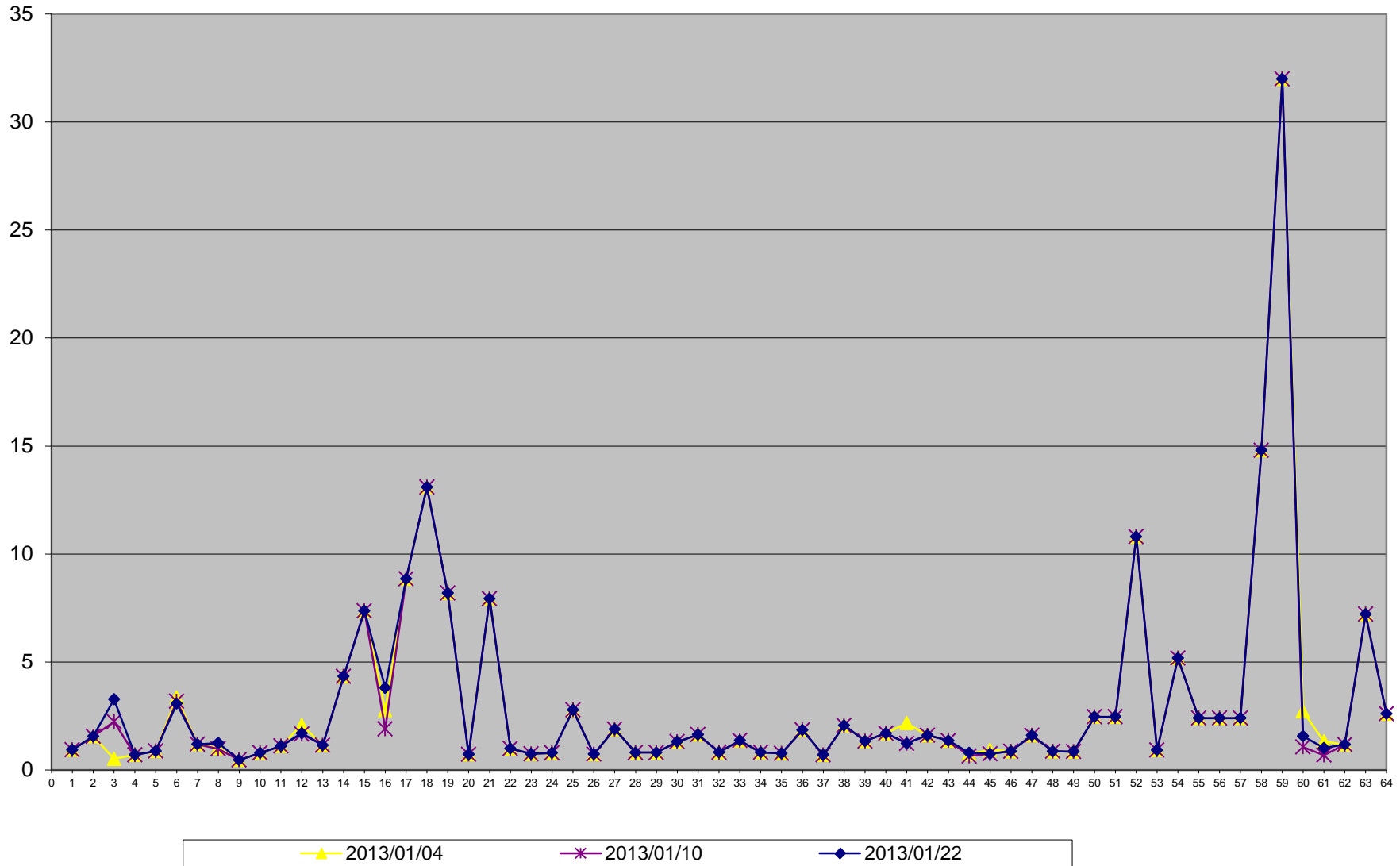
01 Hour Averages



Volatile Organics

Volatile Organics in ug/m3

Site: LICA - Portable - Elk Point Airport



1	2,2,4-Trimethylpentane	33	1,1,2,2-Tetrachloroethane
2	Carbon Disulfide	34	cis-1,3-Dichloropropene
3	Propene	35	trans-1,3-Dichloropropene
4	Vinyl Acetate	36	1,2-Dichloropropane
5	Vinyl Bromide	37	Bromomethane
6	Dichlorodifluoromethane (FREON 12)	38	Bromoform
7	1,2-Dichlorotetrafluoroethane	39	Bromodichloromethane
8	Chloromethane	40	Dibromochloromethane
9	Vinyl Chloride	41	Heptane
10	Chloroethane	42	Trichloroethylene
11	1,3-Butadiene	43	Tetrachloroethylene
12	Trichlorofluoromethane (FREON 11)	44	Benzene
13	Trichlorotrifluoroethane	45	Toluene
14	Ethanol	46	Ethylbenzene
15	2-Propanol	47	p+m-Xylene
16	2-Propanone	48	o-Xylene
17	Methyl Ethyl Ketone (2-Butanone)	49	Styrene
18	Methyl Isobutyl Ketone	50	1,3,5-Trimethylbenzene
19	Methyl Butyl Ketone (2-Hexanone)	51	1,2,4-Trimethylbenzene
20	Methyl t-butyl ether (MTBE)	52	4-ethyltoluene
21	Ethyl Acetate	53	Chlorobenzene
22	1,1-Dichloroethylene	54	Benzyl chloride
23	cis-1,2-Dichloroethylene	55	1,3-Dichlorobenzene
24	trans-1,2-Dichloroethylene	56	1,4-Dichlorobenzene
25	Methylene Chloride (Dichloromethane)	57	1,2-Dichlorobenzene
26	Chloroform	58	1,2,4-Trichlorobenzene
27	Carbon Tetrachloride	59	Hexachlorobutadiene
28	1,1-Dichloroethane	60	Hexane
29	1,2-Dichloroethane	61	Cyclohexane
30	Ethylene Dibromide	62	Tetrahydrofuran
31	1,1,1-Trichloroethane	63	1,4-Dioxane
32	1,1,2-Trichloroethane	64	Xylene (Total)

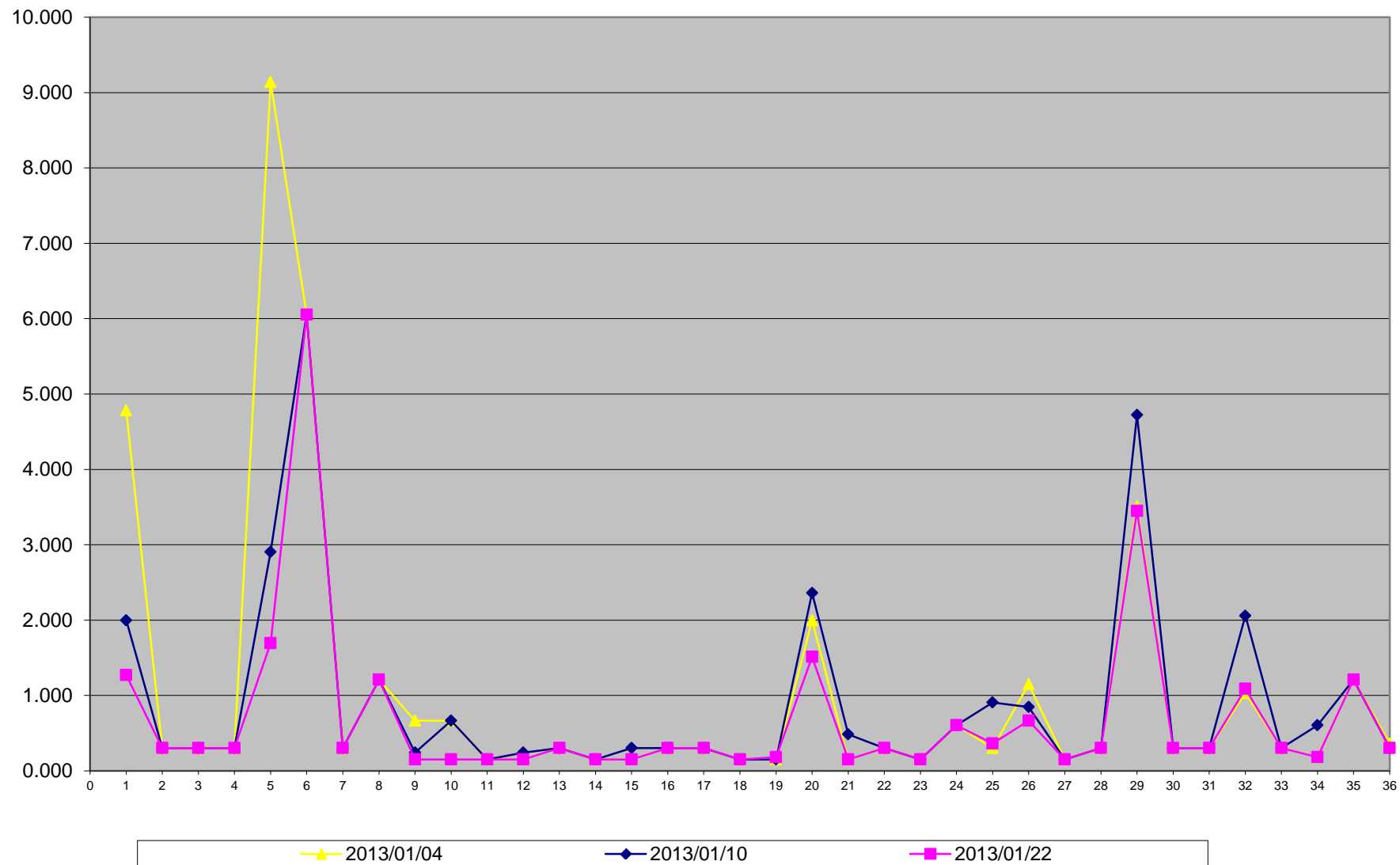
Polycyclic Aromatic Hydrocarbons

Polycyclic Aromatic Hydrocarbons (PAHs) Results for January 2013
LICA - Portable Site - Elk Point Airport
Unit: ng/m3

PAHs	2013/01/04	2013/01/10	2013/01/16	2013/01/22	2013/01/28
Sample Volume (unit: m3)	330.36	330.36	NA	330.36	330.36
1 1-Methylnaphthalene	4.783	1.998	NA	1.271	NA
2 1-Methylphenanthrene	0.303	0.303	NA	0.303	NA
3 2-Chloronaphthalene	0.303	0.303	NA	0.303	NA
4 2-Methylantracene	0.303	0.303	NA	0.303	NA
5 2-Methylnaphthalene	9.142	2.906	NA	1.695	NA
6 3-Methylcholanthrene	6.054	6.054	NA	6.054	NA
7 7,12-Dimethylbenzo(a)anthracene	0.303	0.303	NA	0.303	NA
8 9,10-Dimethylantracene	1.211	1.211	NA	1.211	NA
9 Acenaphthene	0.666	0.242	NA	0.151	NA
10 Acenaphthylene	0.666	0.666	NA	0.151	NA
11 Anthracene	0.151	0.151	NA	0.151	NA
12 Benzo(a)anthracene	0.151	0.242	NA	0.151	NA
13 Benzo(a)fluorene	0.303	0.303	NA	0.303	NA
14 Benzo(a)pyrene	0.151	0.151	NA	0.151	NA
15 Benzo(b)fluoranthene	0.151	0.303	NA	0.151	NA
16 Benzo(b)fluorene	0.303	0.303	NA	0.303	NA
17 Benzo(e)pyrene	0.303	0.303	NA	0.303	NA
18 Benzo(g,h,i)perylene	0.151	0.151	NA	0.151	NA
19 Benzo(k)fluoranthene	0.151	0.151	NA	0.182	NA
20 Biphenyl	1.998	2.361	NA	1.514	NA
21 Chrysene	0.151	0.484	NA	0.151	NA
22 Coronene	0.303	0.303	NA	0.303	NA
23 Dibenz(a,h)anthracene	0.151	0.151	NA	0.151	NA
24 Dibenzo(a,e)pyrene	0.605	0.605	NA	0.605	NA
25 Fluoranthene	0.303	0.908	NA	0.363	NA
26 Fluorene	1.150	0.848	NA	0.666	NA
27 Indeno(1,2,3-cd)pyrene	0.151	0.151	NA	0.151	NA
28 m-Terphenyl	0.303	0.303	NA	0.303	NA
29 Naphthalene	3.511	4.722	NA	3.451	NA
30 o-Terphenyl	0.303	0.303	NA	0.303	NA
31 Perylene	0.303	0.303	NA	0.303	NA
32 Phenanthrene	1.029	2.058	NA	1.090	NA
33 p-Terphenyl	0.303	0.303	NA	0.303	NA
34 Pyrene	0.182	0.605	NA	0.182	NA
35 Quinoline	1.211	1.211	NA	1.211	NA
36 Tetralin	0.363	0.303	NA	0.303	NA

Note: - Values were calculated by the formula of [reading (ug) x 1000 / sample volume (m3)].
- Where the analytical results are less than the minimum detection limit (MDL), the MDL has been used in calculations.
- No sample was collected for sampling date of January 16th as the sampler provided by AITF lab was not completed.
- Results for samples collected on January 28th was not available at the time the monthly report was prepared. It will be included in the monthly report for February.

PAHs in ng/m3 Site: LICA - Portable - Elk Point Airport



1	1-Methylnaphthalene
2	1-Methylphenanthrene
3	2-Chloronaphthalene
4	2-Methylantracene
5	2-Methylnaphthalene
6	3-Methylcholanthrene
7	7,12-Dimethylbenzo(a)anthracene
8	9,10-Dimethylantracene
9	Acenaphthene
10	Acenaphthylene
11	Anthracene
12	Benzo(a)anthracene
13	Benzo(a)fluorene
14	Benzo(a)pyrene
15	Benzo(b)fluoranthene
16	Benzo(b)fluorene
17	Benzo(e)pyrene
18	Benzo(g,h,l)perylene
19	Benzo(k)fluoranthene
20	Biphenyl
21	Chrysene
22	Coronene
23	Dibenz(a,h)anthracene
24	Dibenzo(a,e)pyrene
25	Fluoranthene
26	Fluorene
27	Indeno(1,2,3-cd)pyrene
28	m-Terphenyl
29	Naphthalene
30	o-Terphenyl
31	Perylene
32	Phenanthrene
33	p-Terphenyl
34	Pyrene
35	Quinoline
36	Tetralin

Calibration Reports

Sulphur Dioxide

SO2 Calibration Report

Station Information

Calibration Date	January 8, 2013	Previous Calibration	December 12, 2012
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	LICA PORTABLE/ ELK POINT AIRPORT		
Start Time (MST)	10:36	End Time (MST)	14:44
Reason:	Monthly Calibration		
Barometric Pressure	0.923 atm	Station Temperature	20 Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	LL42502
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	December 29, 2013
		Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	467	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N :	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 1000 ppb				
Sample Flow / Box Temp	571 ccm	31.7 Deg C	576 ccm	31.3 Deg C	
HVPS / Lamp Setting	612	1632	612	1629	
PMT / RxCell Temp	8.1 Deg C	50.0 Deg C	8.1 Deg C	50.0 Deg C	
Converter / IZS Temp	NA Deg C	45.0 Deg C	NA Deg C	45.0 Deg C	
Offset / Slope	97.9	1.192	101.8	1.189	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	3	NA
4996	0	0	0	NA
4924	75.6	750	754	0.9947
4924	75.6	750	750	1.0000
4960	40.3	400	402	0.9944
4981	17.1	170	170	1.0000
4995	0	0	0	NA
Sum of Least Squares				0.9987
New Correction Factor				1.0000

Before Calibration

After Calibration

Auto Zero	4.2	0.8
Auto Span	385.0	366.0
Sample Lines Connected		YES

Percent Change

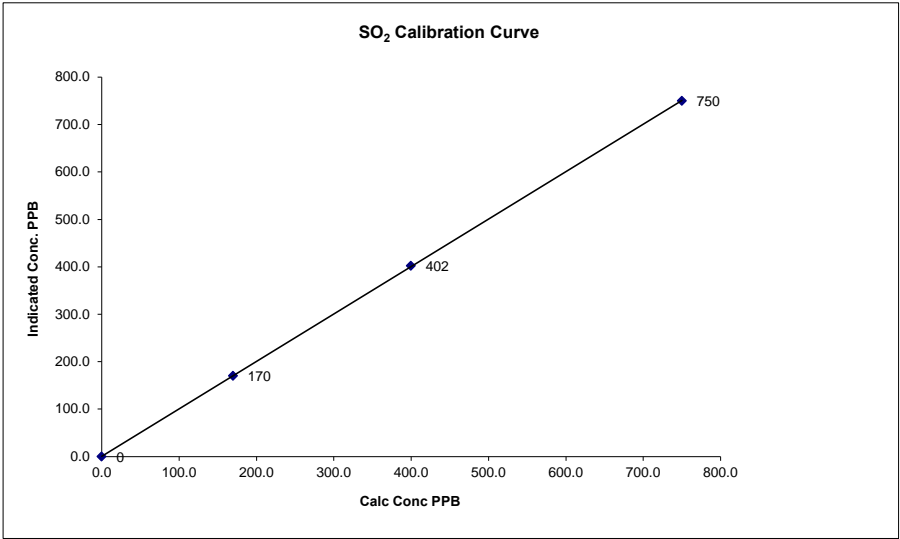
Previous Month's Calibration Correction Factor:	1.0014
Current Correction Factor Before Span Adjust:	0.9947
Percent Change:	0.7%

Notes: **NA : Not applicable**

SO2 Calibration Curve

Calibration Date	January 8, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	LICA PORTABLE/ ELK POINT AIRPORT
Start Time (MST)	10:36
End Time (MST)	14:44

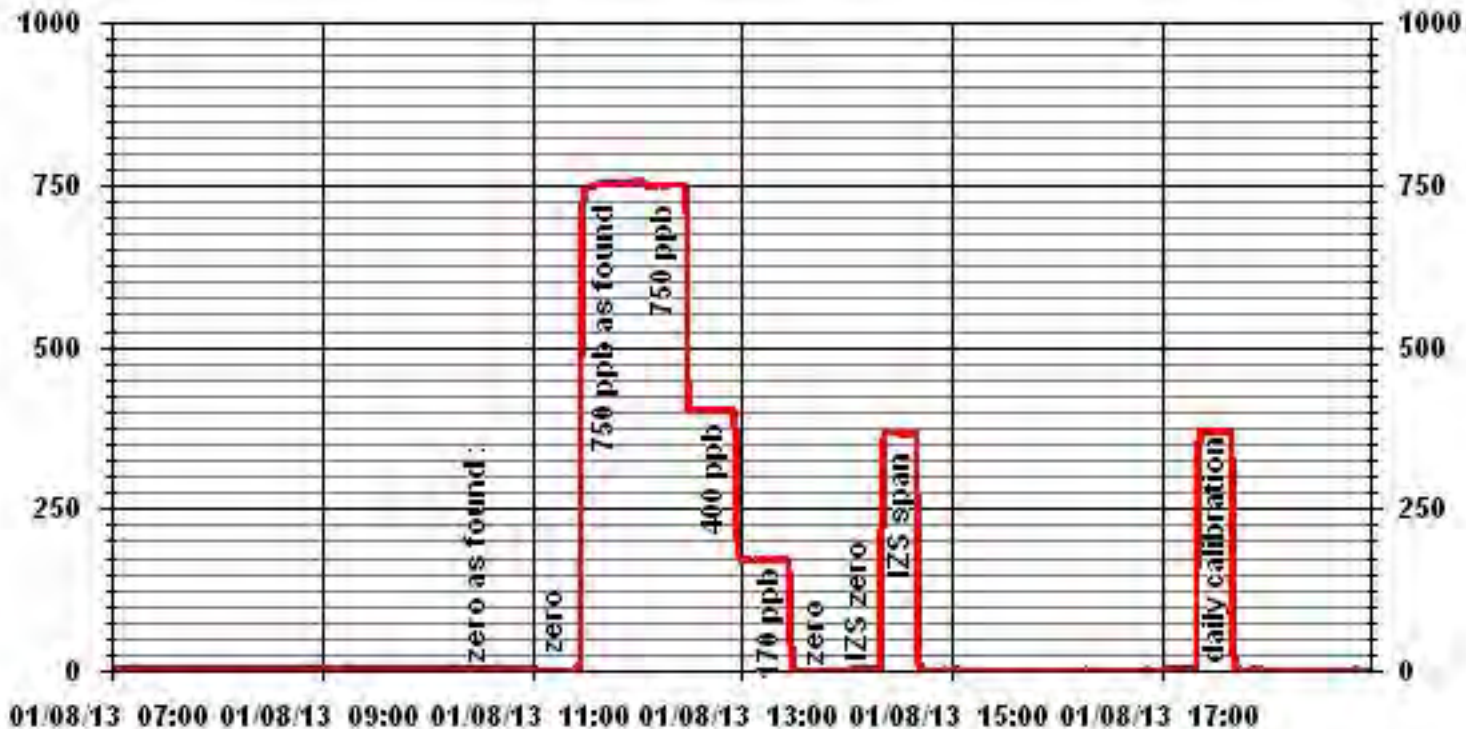
Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	0	n/a		0.999989
170	170	1.0000		1.000328
400	402	0.9944		0.526843
750	750	1.0000		



Notes:

Calibration Performed by: Ting Xu

01 Minute Averages



Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	January 7, 2013	Previous Calibration	December 6, 2012
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Portable/ Elk Point Airport		
Start Time (MST)	14:12	End Time (MST)	18:07
Reason:	Monthly Calibration		
Barometric Pressure	0.92 atm	Station Temperature	21 Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	December 27, 2012
		Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	509	Method:	Fluorescent
Converter Make / Model:	internal	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

		Before Calibration	0 - 100	After Calibration
Concentration Range				
Sample Flow / Box Temp	515 ccm	30.9 Deg C	508 ppb	30.6 Deg C
HVPS / Lamp Setting	540	1879	540	1879
PMT / RxCell Temp	7.9 Deg C	50.0 Deg C	7.9 Deg C	50.0 Deg C
Converter / IZS Temp	314.0 Deg C	45.0 Deg C	315 Deg C	45.0 Deg C
Offset / Slope	96	1.024	98.8	0.988

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	3	NA
3995	0	0	0	NA
4960	40.0	80	83	0.9639
4960	40.0	80	80	1.0000
4975	20.0	40	41	0.9766
4985	11.5	23	24	0.9590
4996	0	0	0	NA
Sum of Least Squares				0.9929
New Correction Factor				1.0000

IZS Calibration Data

		Before Calibration	After Calibration
Auto Zero		2.9	1.3
Auto Span		61.4	58.6
Sample Lines Connected			YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9877
Current Correction Factor Before Span Adjust:	0.9639
Percent Change:	2.5%

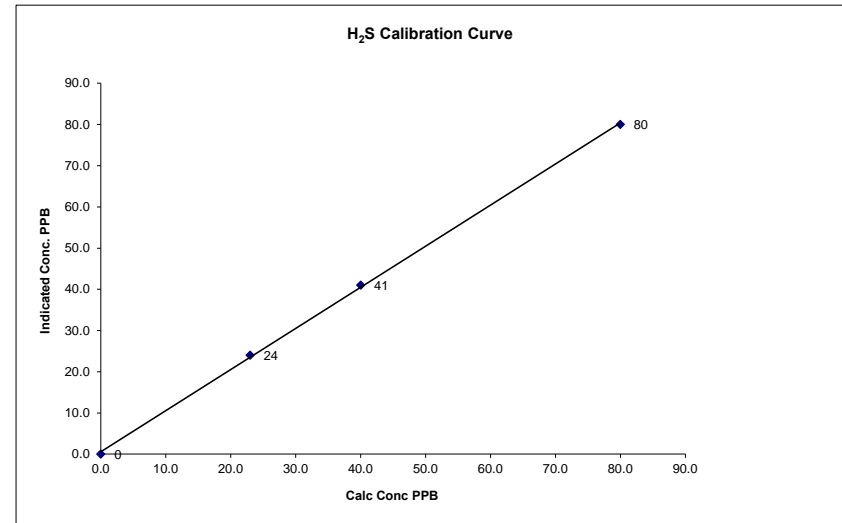
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

H₂S Calibration Curve

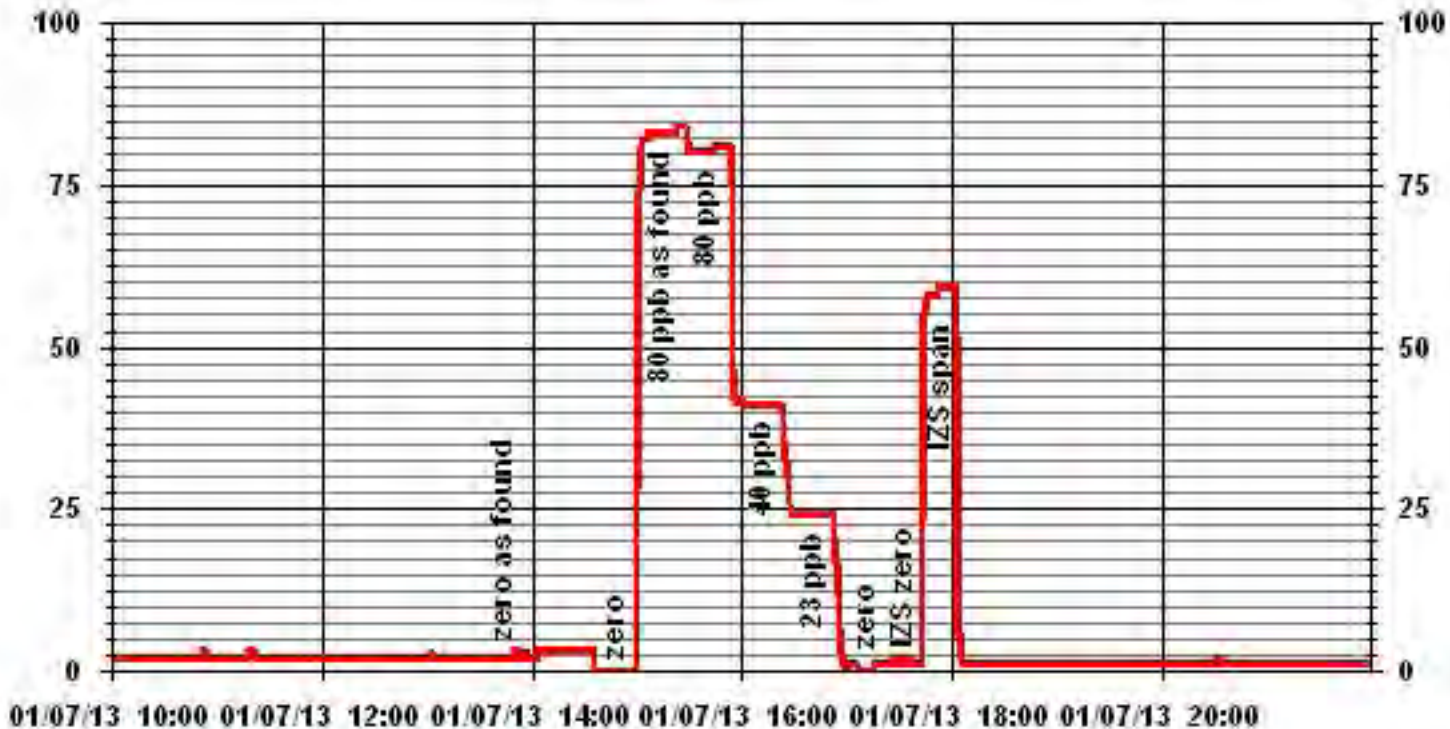
Calibration Date	January 7, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	Portable/ Elk Point Airport
Start Time (MST)	14:12
End Time (MST)	18:07

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999728
0	0		Intercept	(± 3% F.S.)	0.574284
23	24	0.9590			
40	41	0.9766			
80	80	1.0000			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	January 7, 2013	Previous Calibration	December 6, 2012
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	ST. LINA		
Start Time (MST)	10:53	End Time (MST)	14:53
Reason:	Monthly Calibration		
Barometric Pressure:	0.92 atm	Station Temperature:	21 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 600 PPM	C3H8 204 PPM	
	TOTAL CH4 1161.0 PPM	Gas Cyl. # LL155310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832	S/N :	AO 717
Chart Recorder:	NA	S/N:	NA
Output Voltage Range:	0 - 10 VDC	Chart Speed:	NA mm/hr

Analyzer Information

Make / Model	TECO 51C	S/N :	77021-384	Method	Flame Ionization
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Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	6.9	psi	6.9	psi
Hydrogen Pressure	8.5	psi	8.5	psi
Air Pressure	22	psi	22	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	-1.5	NA
2000	0.0	0.0	0.0	1.0000
2000	74.0	41.4	38.2	1.0844
2000	74.0	41.4	41.7	0.9934
2000	37.0	21.1	21.2	0.9947
1994	20.0	11.5	11.2	1.0294
2000	0.0	0.0	-0.4	NA
New Correction Factor:				0.9934

Percent Change

Previous Calibration Correction Factor:	0.9958
Current Correction Factor Before Span Adjust:	1.0844
Percent Change:	-8.2%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.2	-0.3
Auto Span	36.9	38.3
Sample Lines Connected	YES	

Cylinder Pressures			
Span	650 psi	Hydrogen 2000 psi	Zero Air 34 psi

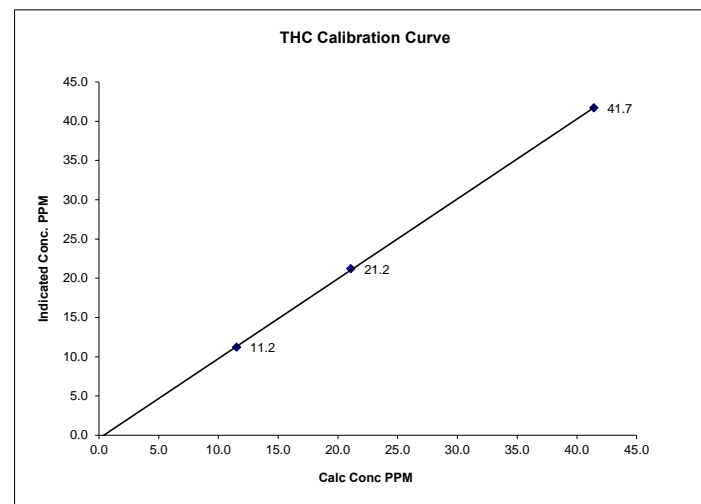
Notes: **NA : Not Applicable**
 Replaced the Hydrogen gas cylinder then performed calibration

Calibration Performed by: Ting Xu

THC Calibration Curve

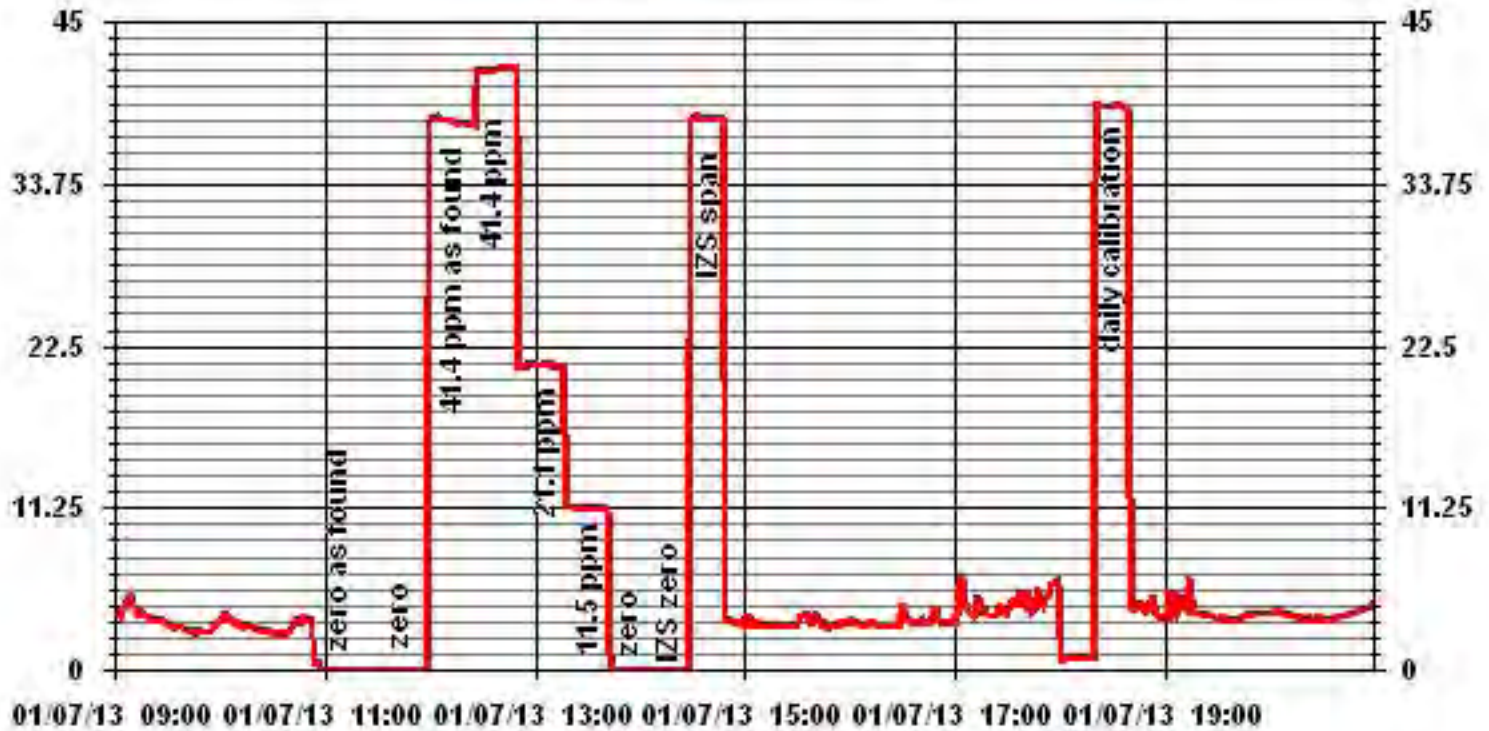
Calibration Date	January 7, 2013		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	10:53	End Time (MST)	14:53

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient	Slope	Intercept	(≥ 0.995)	0.999959
0.0	-0.4	NA				(0.85 to 1.15)	1.017667
11.5	11.2	1.0294				(± 3% F.S.)	-0.41252
21.1	21.2	0.9947					
41.4	41.7	0.9934					

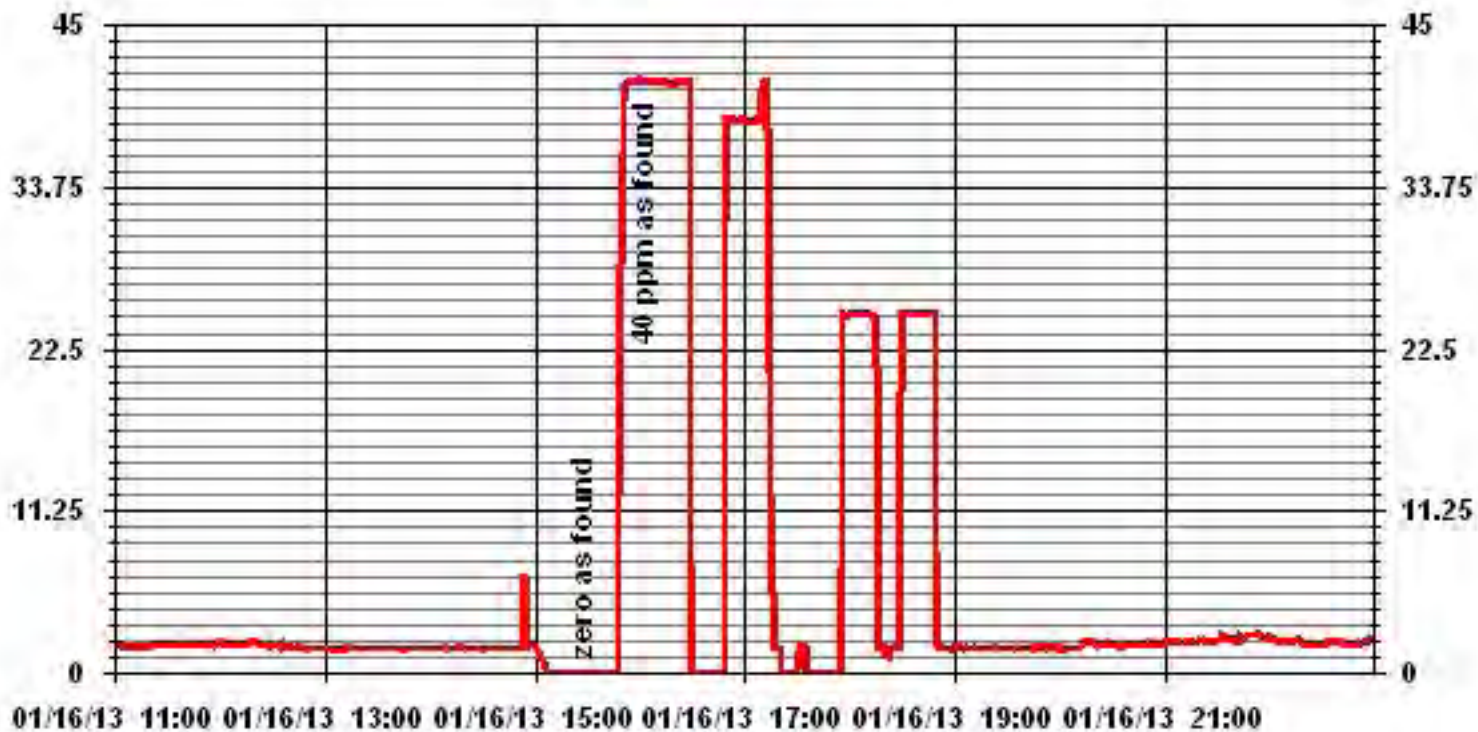


Notes:

01 Minute Averages



01 Minute Averages



Particulate Matter 2.5

TEOM[®] 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	January 7, 2013	Make/Model:	Streamline FTS
Station Name:	Lica Portable (CASA # 35)	Serial Number:	Hi 091001, Lo 091099
Location:	Elk Point Airport	Cell s/n:	na
Operator:	LICA	Thermometer s/	Fisher Brand 15-021B

	<u>Sampler</u>		<u>Set-up and current Sampler readings</u>
Make/Model	Thermo Scientific Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	NA	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A208301003	Filter Load (%)	27.8%
Firmware Ver.	1.52	K _o Factor	13125.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-2.9
		Press (ATM)	0.921

Conversion from mmHg or "Hg to ATM (Atmospheres)

ATM = (mmHg) X (1.316 X 10⁻³) or ATM = ("Hg) X (3.34207 X 10⁻²)

Note: Tolerances are noted as BOLD in Brackets

Audit

Status			
Noise <0.10μg	0.003	Warnings	None
Pump Vacuum <0.4atm	0.34	Pump Gauge (inHg)	-18
Temperature/Pressure			
Measured Temp (± 2 °C)	-3.10	D °C	0.2
Measured Press (± 0.01atm)	0.922	DATM	-0.001
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (± 10.0%)	0.52%
Measured Main Flow (l/min)	2.98	Flow Adjusted to Measured?	YES
Indicated Bypass Flow (l/min)	13.68	Bypass Flow Drift (± 10.0%)	0.28%
Measured Bypass Flow (l/min)	13.56	Flow Adjusted to Measured?	Yes
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	NA	Flow Control = Active	
Aux (< 0.6 l/min)	NA	Report Conditions = Actual	
K_o Factor			
Measured	NA		
K _o Difference (± 2.5%)	NA		

Start Time: 13:07 **Finish Time:** 14:12

Sample Inlet Cleaned: Yes **New Filters Installed:** NA
New Filter Loading %: NA

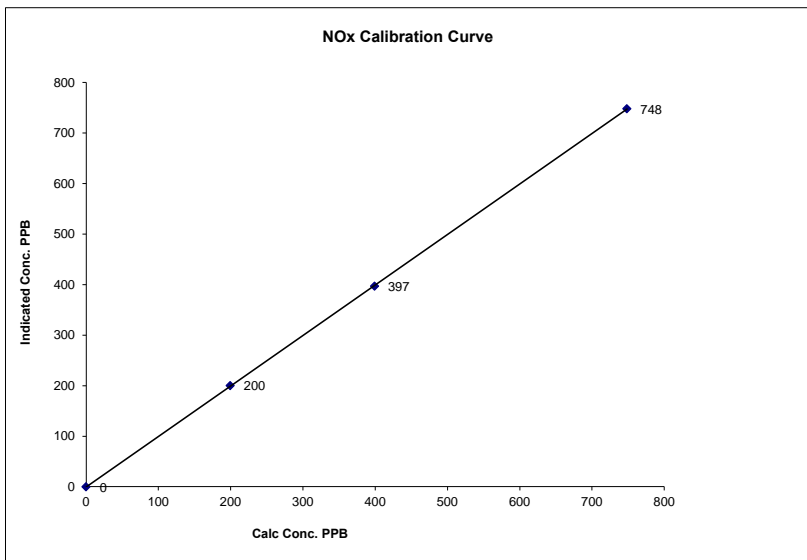
Comments: _____

Nitrogen Dioxide

NOx Calibration Curve

Calibration Date	January 7, 2013	
Company	LICA	
Plant / Location	Lica Portable/ Elk Point Airport	
Start Time (MST)	10:53	End Time (MST) 17:13

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999989
0	0	N/A	Slope (0.85 to 1.15)	0.998744
200	200	0.9976	Intercept (± 3% F.S.)	-0.10282
399	397	1.0054		
748	748	1.0006		

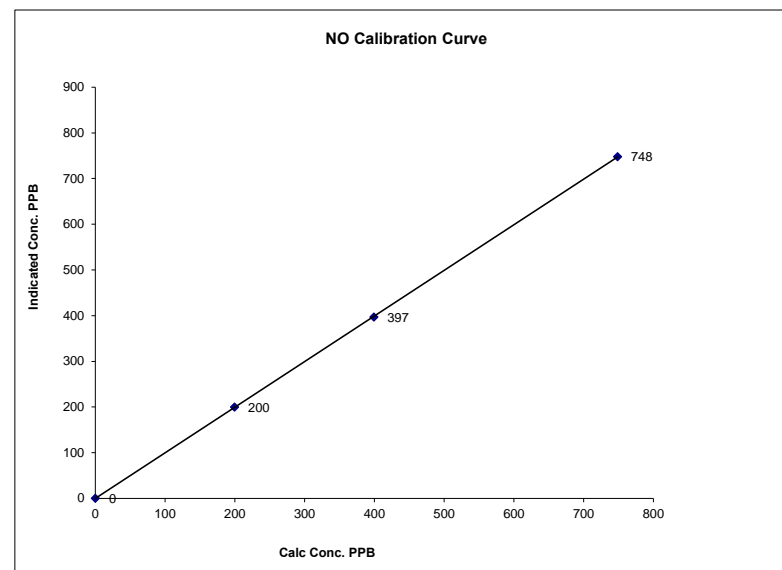


Notes:

NO Calibration Curve

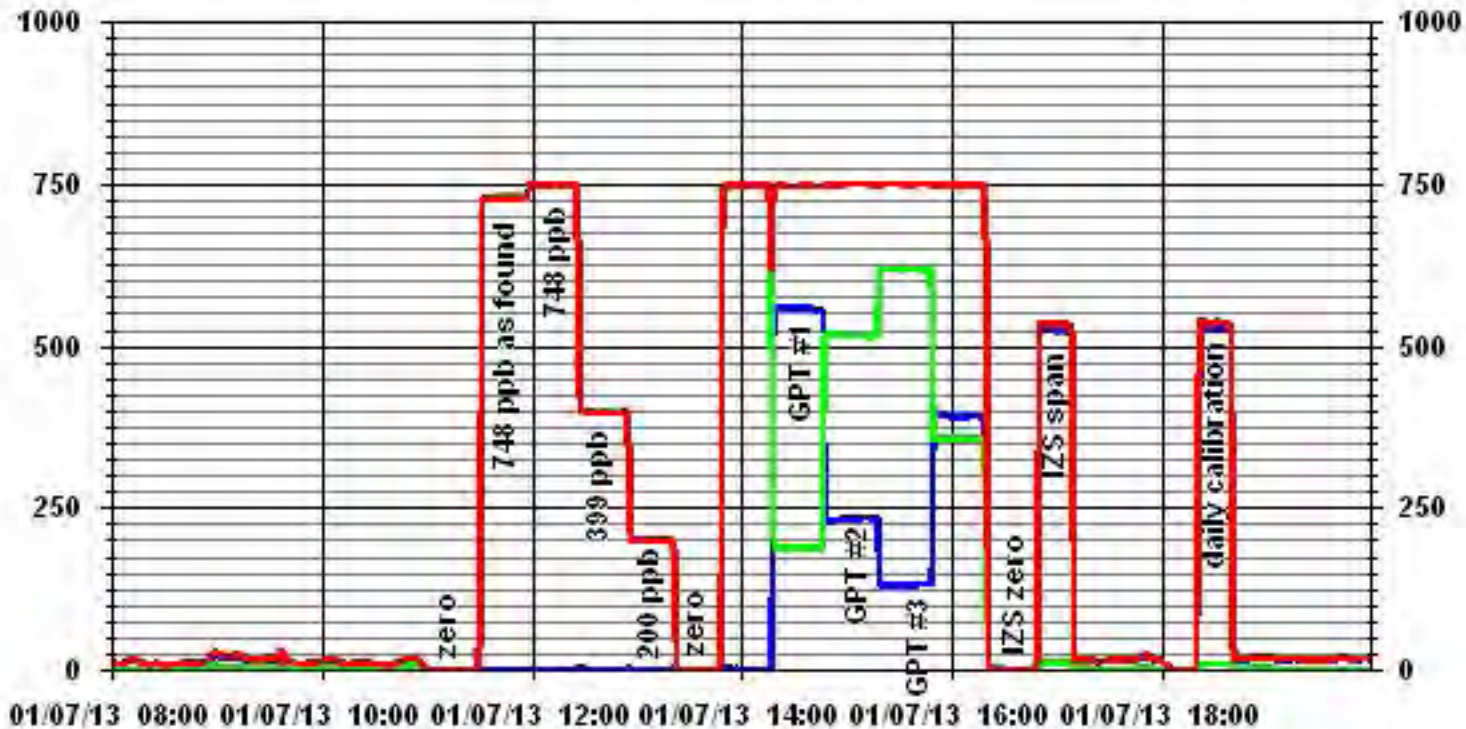
Calibration Date	January 7, 2013	
Company	LICA	
Plant / Location	Lica Portable/ Elk Point Airport	
Start Time (MST)	10:53	End Time (MST) 17:13

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999989
0	0	N/A	Slope (0.85 to 1.15)	0.999043
200	200	0.9976	Intercept (± 3% F.S.)	-4.0523
399	397	1.0054		
748	748	1.0006		



Notes:

01 Minute Averages



— LICA35 IIOX_ PPB

— LICA35 IIO_ PPB

— LICA35 IIO2_ PPB

Ozone

O₃ Calibration Report
Station Information

Calibration Date	January 8, 2013	Previous Calibration	December 7, 2012
Company	Lakeland Industry & Community Association		
Plant / Location	LICA PORTABLE/ ELK POINT AIRPORT		
Start Time (MST)	10:36	End Time (MST)	14:19
Reason:	Monthly Calibration		
Barometric Pressure	0.92 atm	Station Temperature	20 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	1002240372	Method:	Fluorescent
Calibrator Make / Model:	Enviroics 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO 717		

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 500 ppb			
Cell A Flow / Cell B Flow	735 ccm	743 ccm	751 ccm	760 ccm
Pressure	666 mmHg		689 mmHg	
Bench Temp	54.0 Deg C		54.0 Deg C	
O3 Lamp / Box Temp	68.2 Deg C	28.3 Deg C	68.2 Deg C	27.9 Deg C
Offset / Slope	-0.2	1.013	-0.2	1.003

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	0.0000
	No Zero Adj			
4994	420	391	396	0.9874
4994	420	391	390	1.0026
4994	250	232	233	0.9957
4994	140	129	131	0.9847
4994	0	0	0	N/A
Sum of Least Squares				0.9996
New Correction Factor				1.0026

	Before Calibration	After Calibration
Auto Zero	0.1	0.1
Auto Span	366	365
Sample Lines Connected		yes
Percent Change from Previous Calibration		1.0%

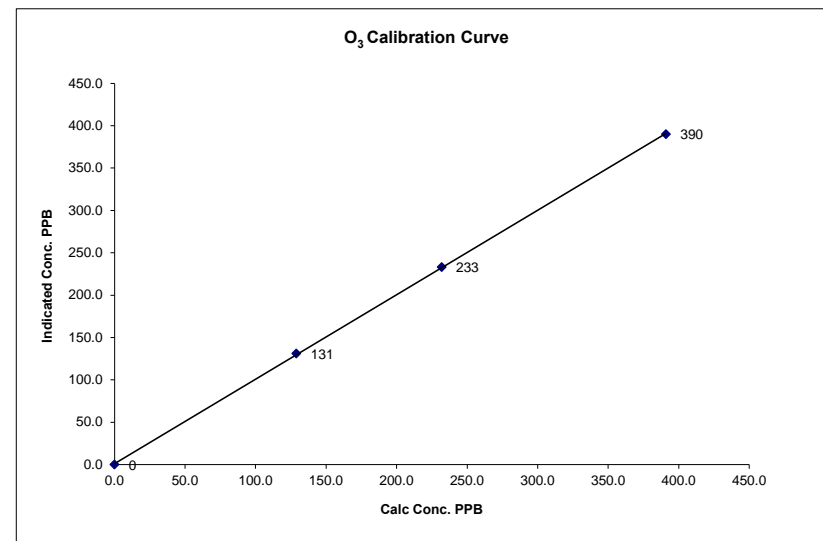
Note: NA - not applicable

Calibration Performed by: Limin Li

O₃ Calibration Curve

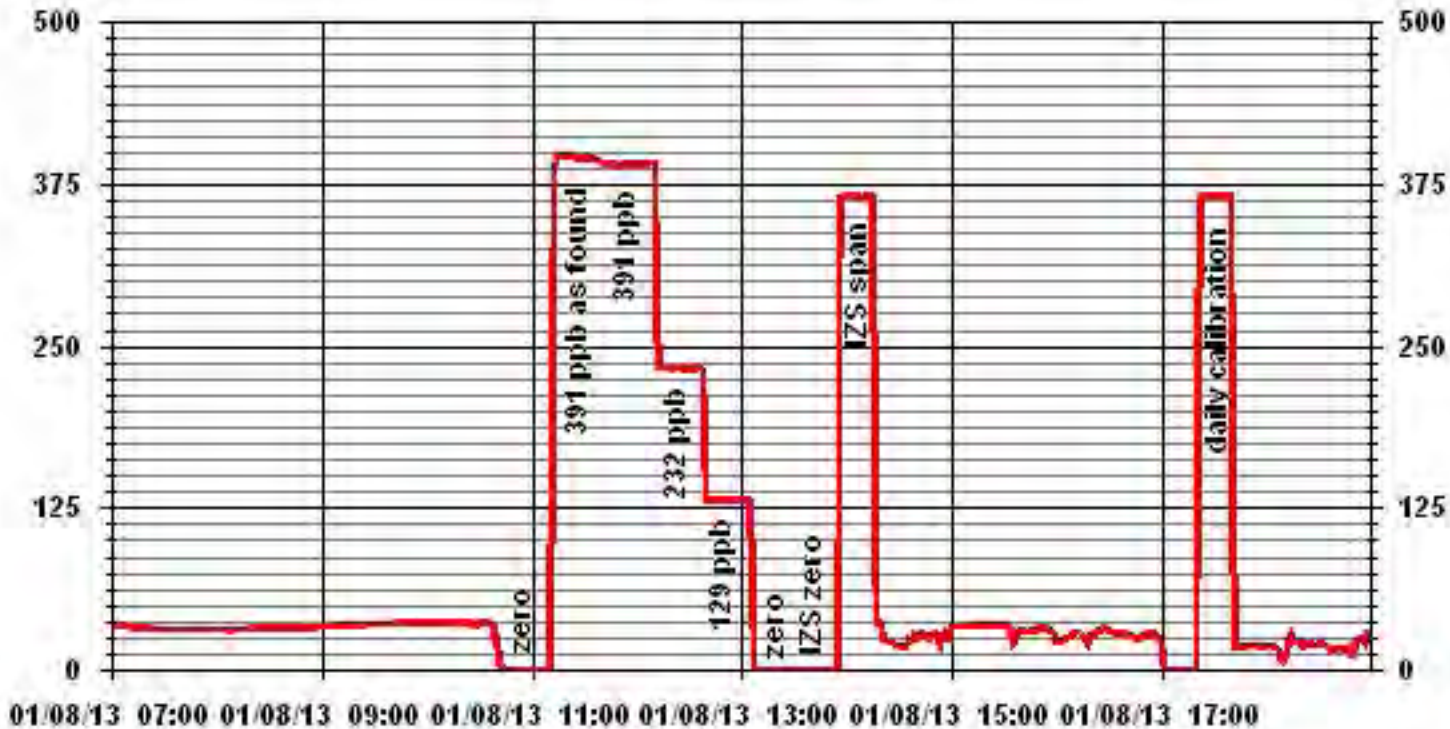
Calibration Date	January 8, 2013
Company	Lakeland Industry & Community Association
Plant / Location	LICA PORTABLE/ ELK POINT AIRPORT
Start Time (MST)	10:36
End Time (MST)	14:19

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999950
0	0	n/a	Intercept	(± 3% F.S.)	1.135306
129	131	0.9847			0.996621
232	233	0.9957			
391	390	1.0026			



Notes:

01 Minute Averages



Volatile Organics Laboratory Analysis

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: Elk Point Airport Canister ID: 7870
Station ID: Lica 35 (Portable) Canister Installation Date/Time: Jan 02, 13 @ 15:20 mst
Field Sample ID: LICA VOC/PORT/ Jan 04, 13 Canister Removal Date/Time: Jan 08, 13 @ 10:43 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
04-Jan-13	01/04/2013 0:00	01/05/2013 0:00	24.0000

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1496	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	22

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: System leak check prior to sampling. COC# 13155

Technician Signature: Ting Xu



Your C.O.C. #: 13155

Attention: Michael Bisaga

Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2013/01/17

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B305510

Received: 2013/01/10, 10:30

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2013/01/15	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2013/01/15	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days or as contractually agreed from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

Maxxam Job #: B305510
 Report Date: 2013/01/17

RESULTS OF ANALYSES OF AIR

Maxxam ID		QF4226	QF4227	
Sampling Date		2013/01/04	2013/01/04	
COC Number		13155	13155	
	Units	LICA VOC/CLS/JAN 04,13 - 272	LICA VOC/PORT/JAN 04,13 - 7870	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	22	3096962

QC Batch = Quality Control Batch

Maxxam Job #: B305510
 Report Date: 2013/01/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF4226			QF4227				
Sampling Date		2013/01/04			2013/01/04				
COC Number		13155			13155				
	Units	LICA VOC/CLS/JAN 04,13 - 272	ug/m3	DL (ug/m3)	LICA VOC/PORT/JAN 04,13 - 7870	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics									
Dichlorodifluoromethane (FREON 12)	ppbv	0.68	3.35	0.989	0.68	0.20	3.36	0.989	3096955
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	3096955
Chloromethane	ppbv	0.51	1.05	0.620	0.50	0.30	1.02	0.620	3096955
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	3096955
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	3096955
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	3096955
Trichlorofluoromethane (FREON 11)	ppbv	0.37	2.10	1.12	0.37	0.20	2.08	1.12	3096955
Ethanol (ethyl alcohol)	ppbv	2.4	4.48	4.33	<2.3	2.3	<4.33	4.33	3096955
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	3096955
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	3096955
2-Propanone	ppbv	1.02	2.41	1.90	1.17	0.80	2.77	1.90	3096955
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	3096955
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	3096955
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	3096955
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	3096955
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	3096955
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	3096955
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	3096955
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	3096955
Methylene Chloride(Dichloromethane)	ppbv	<0.80	<2.78	2.78	<0.80	0.80	<2.78	2.78	3096955
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	3096955
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	3096955
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	3096955
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	3096955
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	3096955
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	3096955
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	3096955
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	3096955
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	3096955
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	3096955
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	3096955

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B305510
 Report Date: 2013/01/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF4226			QF4227				
Sampling Date		2013/01/04			2013/01/04				
COC Number		13155			13155				
	Units	LICA VOC/CLS/JAN 04,13 - 272	ug/m3	DL (ug/m3)	LICA VOC/PORT/JAN 04,13 - 7870	RDL	ug/m3	DL (ug/m3)	QC Batch
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	3096955
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	3096955
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	3096955
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	3096955
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	3096955
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	3096955
Benzene	ppbv	<0.18	<0.575	0.575	0.23	0.18	0.740	0.575	3096955
Toluene	ppbv	<0.20	<0.753	0.753	0.25	0.20	0.927	0.753	3096955
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	3096955
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	3096955
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	3096955
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	3096955
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	3096955
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	3096955
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	3096955
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	3096955
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	3096955
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	3096955
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	3096955
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	3096955
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	3096955
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	3096955
Hexane	ppbv	<0.30	<1.06	1.06	0.77	0.30	2.72	1.06	3096955
Heptane	ppbv	<0.30	<1.23	1.23	0.53	0.30	2.17	1.23	3096955
Cyclohexane	ppbv	<0.20	<0.688	0.688	0.38	0.20	1.32	0.688	3096955
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	3096955
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	3096955
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	3096955
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	3096955
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	3096955
2,2,4-Trimethylpentane	ppbv	<0.20	<0.934	0.934	<0.20	0.20	<0.934	0.934	3096955
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	3096955
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	3096955
QC Batch = Quality Control Batch									

Maxxam Job #: B305510
 Report Date: 2013/01/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF4226			QF4227				
Sampling Date		2013/01/04			2013/01/04				
COC Number		13155			13155				
	Units	LICA VOC/CLS/JAN 04,13 - 272	ug/m3	DL (ug/m3)	LICA VOC/PORT/JAN 04,13 - 7870	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)									
Bromochloromethane	%	85	N/A	N/A	84		N/A	N/A	3096955
D5-Chlorobenzene	%	82	N/A	N/A	84		N/A	N/A	3096955
Difluorobenzene	%	82	N/A	N/A	82		N/A	N/A	3096955

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B305510
 Report Date: 2013/01/17

Test Summary

Maxxam ID QF4226
Sample ID LICA VOC/CLS/JAN 04,13 - 272
Matrix AIR

Collected 2013/01/04
Shipped
Received 2013/01/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	3096962	N/A	2013/01/15	Spomenka Smiljanic
Volatile Organics in Air (TO-15)	GC/MS	3096955	N/A	2013/01/15	Spomenka Smiljanic

Maxxam ID QF4227
Sample ID LICA VOC/PORT/JAN 04,13 - 7870
Matrix AIR

Collected 2013/01/04
Shipped
Received 2013/01/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	3096962	N/A	2013/01/15	Spomenka Smiljanic
Volatile Organics in Air (TO-15)	GC/MS	3096955	N/A	2013/01/15	Spomenka Smiljanic

Maxxam Job #: B305510
Report Date: 2013/01/17

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB305510

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3096955 S_S	Spiked Blank	Bromochloromethane	2013/01/15		94	%	60 - 140
		D5-Chlorobenzene	2013/01/15		92	%	60 - 140
		Difluorobenzene	2013/01/15		91	%	60 - 140
		Dichlorodifluoromethane (FREON 12)	2013/01/15		114	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2013/01/15		123	%	70 - 130
		Chloromethane	2013/01/15		121	%	70 - 130
		Vinyl Chloride	2013/01/15		100	%	70 - 130
		Chloroethane	2013/01/15		95	%	70 - 130
		1,3-Butadiene	2013/01/15		105	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2013/01/15		122	%	70 - 130
		Ethanol (ethyl alcohol)	2013/01/15		109	%	70 - 130
		Trichlorotrifluoroethane	2013/01/15		100	%	70 - 130
		2-propanol	2013/01/15		97	%	70 - 130
		2-Propanone	2013/01/15		103	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2013/01/15		115	%	70 - 130
		Methyl Isobutyl Ketone	2013/01/15		116	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2013/01/15		120	%	70 - 130
		Methyl t-butyl ether (MTBE)	2013/01/15		111	%	70 - 130
		Ethyl Acetate	2013/01/15		114	%	70 - 130
		1,1-Dichloroethylene	2013/01/15		109	%	70 - 130
		cis-1,2-Dichloroethylene	2013/01/15		115	%	70 - 130
		trans-1,2-Dichloroethylene	2013/01/15		106	%	70 - 130
		Methylene Chloride(Dichloromethane)	2013/01/15		102	%	70 - 130
		Chloroform	2013/01/15		108	%	70 - 130
		Carbon Tetrachloride	2013/01/15		125	%	70 - 130
		1,1-Dichloroethane	2013/01/15		101	%	70 - 130
		1,2-Dichloroethane	2013/01/15		125	%	70 - 130
		Ethylene Dibromide	2013/01/15		101	%	70 - 130
		1,1,1-Trichloroethane	2013/01/15		120	%	70 - 130
		1,1,2-Trichloroethane	2013/01/15		95	%	70 - 130
		1,1,2,2-Tetrachloroethane	2013/01/15		88	%	70 - 130
		cis-1,3-Dichloropropene	2013/01/15		110	%	70 - 130
		trans-1,3-Dichloropropene	2013/01/15		124	%	70 - 130
		1,2-Dichloropropane	2013/01/15		95	%	70 - 130
		Bromomethane	2013/01/15		96	%	70 - 130
		Bromoform	2013/01/15		105	%	70 - 130
		Bromodichloromethane	2013/01/15		108	%	70 - 130
		Dibromochloromethane	2013/01/15		107	%	70 - 130
		Trichloroethylene	2013/01/15		98	%	70 - 130
		Tetrachloroethylene	2013/01/15		101	%	70 - 130
		Benzene	2013/01/15		99	%	70 - 130
		Toluene	2013/01/15		106	%	70 - 130
		Ethylbenzene	2013/01/15		117	%	70 - 130
		p+m-Xylene	2013/01/15		117	%	70 - 130
		o-Xylene	2013/01/15		114	%	70 - 130
		Styrene	2013/01/15		103	%	70 - 130
		4-ethyltoluene	2013/01/15		113	%	70 - 130
		1,3,5-Trimethylbenzene	2013/01/15		115	%	70 - 130
		1,2,4-Trimethylbenzene	2013/01/15		118	%	70 - 130
		Chlorobenzene	2013/01/15		96	%	70 - 130
		Benzyl chloride	2013/01/15		100	%	70 - 130
		1,3-Dichlorobenzene	2013/01/15		101	%	70 - 130
		1,4-Dichlorobenzene	2013/01/15		97	%	70 - 130
		1,2-Dichlorobenzene	2013/01/15		97	%	70 - 130
		1,2,4-Trichlorobenzene	2013/01/15		101	%	70 - 130

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB305510

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3096955 S_S	Spiked Blank	Hexachlorobutadiene	2013/01/15		107	%	70 - 130
		Hexane	2013/01/15		100	%	70 - 130
		Heptane	2013/01/15		111	%	70 - 130
		Cyclohexane	2013/01/15		103	%	70 - 130
		Tetrahydrofuran	2013/01/15		110	%	70 - 130
		1,4-Dioxane	2013/01/15		96	%	70 - 130
		Xylene (Total)	2013/01/15		116	%	70 - 130
		Vinyl Bromide	2013/01/15		90	%	70 - 130
		Propene	2013/01/15		89	%	70 - 130
		2,2,4-Trimethylpentane	2013/01/15		96	%	70 - 130
		Carbon Disulfide	2013/01/15		89	%	70 - 130
		Vinyl Acetate	2013/01/15		121	%	70 - 130
	Method Blank	Bromochloromethane	2013/01/15		78	%	60 - 140
		D5-Chlorobenzene	2013/01/15		63	%	60 - 140
		Difluorobenzene	2013/01/15		79	%	60 - 140
		Dichlorodifluoromethane (FREON 12)	2013/01/15	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2013/01/15	<0.17		ppbv	
		Chloromethane	2013/01/15	<0.30		ppbv	
		Vinyl Chloride	2013/01/15	<0.18		ppbv	
		Chloroethane	2013/01/15	<0.30		ppbv	
		1,3-Butadiene	2013/01/15	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2013/01/15	<0.20		ppbv	
		Ethanol (ethyl alcohol)	2013/01/15	<2.3		ppbv	
		Trichlorotrifluoroethane	2013/01/15	<0.15		ppbv	
		2-propanol	2013/01/15	<3.0		ppbv	
		2-Propanone	2013/01/15	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2013/01/15	<3.0		ppbv	
		Methyl Isobutyl Ketone	2013/01/15	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2013/01/15	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2013/01/15	<0.20		ppbv	
		Ethyl Acetate	2013/01/15	<2.2		ppbv	
		1,1-Dichloroethylene	2013/01/15	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2013/01/15	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2013/01/15	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2013/01/15	<0.80		ppbv	
		Chloroform	2013/01/15	<0.15		ppbv	
		Carbon Tetrachloride	2013/01/15	<0.30		ppbv	
		1,1-Dichloroethane	2013/01/15	<0.20		ppbv	
		1,2-Dichloroethane	2013/01/15	<0.20		ppbv	
		Ethylene Dibromide	2013/01/15	<0.17		ppbv	
		1,1,1-Trichloroethane	2013/01/15	<0.30		ppbv	
		1,1,2-Trichloroethane	2013/01/15	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2013/01/15	<0.20		ppbv	
		cis-1,3-Dichloropropene	2013/01/15	<0.18		ppbv	
		trans-1,3-Dichloropropene	2013/01/15	<0.17		ppbv	
		1,2-Dichloropropane	2013/01/15	<0.40		ppbv	
		Bromomethane	2013/01/15	<0.18		ppbv	
		Bromoform	2013/01/15	<0.20		ppbv	
		Bromodichloromethane	2013/01/15	<0.20		ppbv	
		Dibromochloromethane	2013/01/15	<0.20		ppbv	
		Trichloroethylene	2013/01/15	<0.30		ppbv	
		Tetrachloroethylene	2013/01/15	<0.20		ppbv	
		Benzene	2013/01/15	<0.18		ppbv	
		Toluene	2013/01/15	<0.20		ppbv	
		Ethylbenzene	2013/01/15	<0.20		ppbv	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB305510

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3096955 S_S	Method Blank	p+m-Xylene	2013/01/15	<0.37		ppbv	
		o-Xylene	2013/01/15	<0.20		ppbv	
		Styrene	2013/01/15	<0.20		ppbv	
		4-ethyltoluene	2013/01/15	<2.2		ppbv	
		1,3,5-Trimethylbenzene	2013/01/15	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2013/01/15	<0.50		ppbv	
		Chlorobenzene	2013/01/15	<0.20		ppbv	
		Benzyl chloride	2013/01/15	<1.0		ppbv	
		1,3-Dichlorobenzene	2013/01/15	<0.40		ppbv	
		1,4-Dichlorobenzene	2013/01/15	<0.40		ppbv	
		1,2-Dichlorobenzene	2013/01/15	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2013/01/15	<2.0		ppbv	
		Hexachlorobutadiene	2013/01/15	<3.0		ppbv	
		Hexane	2013/01/15	<0.30		ppbv	
		Heptane	2013/01/15	<0.30		ppbv	
		Cyclohexane	2013/01/15	<0.20		ppbv	
		Tetrahydrofuran	2013/01/15	<0.40		ppbv	
		1,4-Dioxane	2013/01/15	<2.0		ppbv	
		Xylene (Total)	2013/01/15	<0.60		ppbv	
		Vinyl Bromide	2013/01/15	<0.20		ppbv	
		Propene	2013/01/15	<0.30		ppbv	
		2,2,4-Trimethylpentane	2013/01/15	<0.20		ppbv	
		Carbon Disulfide	2013/01/15	<0.50		ppbv	
		Vinyl Acetate	2013/01/15	<0.20		ppbv	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: Elk Point Airport Canister ID: 296
Station ID: Lica 35 (Portable) Canister Installation Date/Time: Jan 08, 13 @ 10:51 mst
Field Sample ID: LICA VOC/PORT/ Jan 10, 13 Canister Removal Date/Time: _____

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
10-Jan-13	01/10/2013 0:00	01/11/2013 0:00	24.0000

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1496	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	

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: System leak check prior to sampling. COC#

Technician Signature: Ting Xu_____



Your C.O.C. #: 13173

Attention: Michael Bisaga

Maxxam Analytics
 2608 6A Ave.
 Cold Lake, AB
 CANADA T9M 2C7

Report Date: 2013/01/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B306228

Received: 2013/01/15, 09:34

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2013/01/15	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2013/01/15	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days or as contractually agreed from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Theresa Stephenson, Project Manager
 Email: TStephenson@maxxam.ca
 Phone# (905) 817-5763

=====
 Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

Maxxam Job #: B306228
 Report Date: 2013/01/16

RESULTS OF ANALYSES OF AIR

Maxxam ID		QF8353	QF8354	
Sampling Date		2013/01/10	2013/01/10	
COC Number		13173	13173	
	Units	LICA VOC/CLS/JAN 10,13 - 304	LICA VOC/PORT/JAN 10,13 - 296	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	22	3095565

QC Batch = Quality Control Batch

Maxxam Job #: B306228
 Report Date: 2013/01/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF8353				
Sampling Date		2013/01/10				
COC Number		13173				
	Units	LICA VOC/CLS/JAN 10,13 - 304	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.63	0.20	3.10	0.989	3095567
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	3095567
Chloromethane	ppbv	0.54	0.30	1.12	0.620	3095567
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	3095567
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	3095567
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	3095567
Trichlorofluoromethane (FREON 11)	ppbv	0.38	0.20	2.12	1.12	3095567
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	3095567
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	3095567
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	3095567
2-Propanone	ppbv	1.00	0.80	2.38	1.90	3095567
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	3095567
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	3095567
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	3095567
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	3095567
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	3095567
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	3095567
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	3095567
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	3095567
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	3095567
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	3095567
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	3095567
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3095567
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3095567
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	3095567
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	3095567
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	3095567
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	3095567
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	3095567
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	3095567
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	3095567
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B306228
 Report Date: 2013/01/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF8353				
Sampling Date		2013/01/10				
COC Number		13173				
	Units	LICA VOC/CLS/JAN 10,13 - 304	RDL	ug/m3	DL (ug/m3)	QC Batch
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	3095567
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	3095567
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	3095567
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	3095567
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	3095567
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	3095567
Benzene	ppbv	0.27	0.18	0.875	0.575	3095567
Toluene	ppbv	0.22	0.20	0.815	0.753	3095567
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	3095567
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	3095567
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	3095567
Styrene	ppbv	<0.20	0.20	<0.852	0.852	3095567
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	3095567
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3095567
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3095567
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	3095567
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	3095567
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3095567
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3095567
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3095567
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	3095567
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	3095567
Hexane	ppbv	<0.30	0.30	<1.06	1.06	3095567
Heptane	ppbv	<0.30	0.30	<1.23	1.23	3095567
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	3095567
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	3095567
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	3095567
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	3095567
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	3095567
Propene	ppbv	1.14	0.30	1.96	0.516	3095567
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	3095567
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	3095567
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	3095567
QC Batch = Quality Control Batch						

Maxxam Job #: B306228
 Report Date: 2013/01/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF8353				
Sampling Date		2013/01/10				
COC Number		13173				
	Units	LICA VOC/CLS/JAN 10,13 - 304	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	89		N/A	N/A	3095567
D5-Chlorobenzene	%	82		N/A	N/A	3095567
Difluorobenzene	%	90		N/A	N/A	3095567
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B306228
 Report Date: 2013/01/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF8354				
Sampling Date		2013/01/10				
COC Number		13173				
	Units	LICA VOC/PORT/JAN 10,13 - 296	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.64	0.20	3.18	0.989	3095567
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	3095567
Chloromethane	ppbv	0.48	0.30	0.982	0.620	3095567
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	3095567
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	3095567
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	3095567
Trichlorofluoromethane (FREON 11)	ppbv	0.30	0.20	1.67	1.12	3095567
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	3095567
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	3095567
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	3095567
2-Propanone	ppbv	<0.80	0.80	<1.90	1.90	3095567
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	3095567
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	3095567
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	3095567
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	3095567
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	3095567
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	3095567
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	3095567
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	3095567
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	3095567
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	3095567
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	3095567
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3095567
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3095567
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	3095567
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	3095567
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	3095567
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	3095567
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	3095567
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	3095567
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	3095567

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B306228
 Report Date: 2013/01/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF8354				
Sampling Date		2013/01/10				
COC Number		13173				
	Units	LICA VOC/PORT/JAN 10,13 - 296	RDL	ug/m3	DL (ug/m3)	QC Batch
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	3095567
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	3095567
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	3095567
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	3095567
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	3095567
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	3095567
Benzene	ppbv	0.20	0.18	0.643	0.575	3095567
Toluene	ppbv	<0.20	0.20	<0.753	0.753	3095567
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	3095567
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	3095567
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	3095567
Styrene	ppbv	<0.20	0.20	<0.852	0.852	3095567
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	3095567
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3095567
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3095567
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	3095567
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	3095567
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3095567
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3095567
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3095567
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	3095567
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	3095567
Hexane	ppbv	<0.30	0.30	<1.06	1.06	3095567
Heptane	ppbv	<0.30	0.30	<1.23	1.23	3095567
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	3095567
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	3095567
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	3095567
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	3095567
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	3095567
Propene	ppbv	<1.3	1.3	<2.24	2.24	3095567
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	3095567
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	3095567
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	3095567
QC Batch = Quality Control Batch						

Maxxam Job #: B306228
 Report Date: 2013/01/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QF8354				
Sampling Date		2013/01/10				
COC Number		13173				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/PORT/JAN				
		10,13 - 296				

Surrogate Recovery (%)						
Bromochloromethane	%	89		N/A	N/A	3095567
D5-Chlorobenzene	%	83		N/A	N/A	3095567
Difluorobenzene	%	88		N/A	N/A	3095567

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B306228
 Report Date: 2013/01/16

Test Summary

Maxxam ID QF8353 **Collected** 2013/01/10
Sample ID LICA VOC/CLS/JAN 10,13 - 304 **Shipped**
Matrix AIR **Received** 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	3095565	N/A	2013/01/15	Jie Wu
Volatile Organics in Air (TO-15)	GC/MS	3095567	N/A	2013/01/15	Jie Wu

Maxxam ID QF8353 Dup **Collected** 2013/01/10
Sample ID LICA VOC/CLS/JAN 10,13 - 304 **Shipped**
Matrix AIR **Received** 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organics in Air (TO-15)	GC/MS	3095567	N/A	2013/01/15	Jie Wu

Maxxam ID QF8354 **Collected** 2013/01/10
Sample ID LICA VOC/PORT/JAN 10,13 - 296 **Shipped**
Matrix AIR **Received** 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	3095565	N/A	2013/01/15	Jie Wu
Volatile Organics in Air (TO-15)	GC/MS	3095567	N/A	2013/01/15	Jie Wu

Maxxam Job #: B306228
Report Date: 2013/01/16

GENERAL COMMENTS

Sample QF8353-01: The amount reported for propene represents the mixture of propene and propane.

Sample QF8354-01: Increased DL further for propene due to possible background.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB306228

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3095567 JIW	Spiked Blank	Bromochloromethane	2013/01/15		105	%	60 - 140
		D5-Chlorobenzene	2013/01/15		103	%	60 - 140
		Difluorobenzene	2013/01/15		105	%	60 - 140
		Dichlorodifluoromethane (FREON 12)	2013/01/15		102	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2013/01/15		113	%	70 - 130
		Chloromethane	2013/01/15		102	%	70 - 130
		Vinyl Chloride	2013/01/15		99	%	70 - 130
		Chloroethane	2013/01/15		96	%	70 - 130
		1,3-Butadiene	2013/01/15		103	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2013/01/15		103	%	70 - 130
		Ethanol (ethyl alcohol)	2013/01/15		117	%	70 - 130
		Trichlorotrifluoroethane	2013/01/15		94	%	70 - 130
		2-propanol	2013/01/15		92	%	70 - 130
		2-Propanone	2013/01/15		103	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2013/01/15		88	%	70 - 130
		Methyl Isobutyl Ketone	2013/01/15		96	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2013/01/15		95	%	70 - 130
		Methyl t-butyl ether (MTBE)	2013/01/15		101	%	70 - 130
		Ethyl Acetate	2013/01/15		98	%	70 - 130
		1,1-Dichloroethylene	2013/01/15		94	%	70 - 130
		cis-1,2-Dichloroethylene	2013/01/15		96	%	70 - 130
		trans-1,2-Dichloroethylene	2013/01/15		101	%	70 - 130
		Methylene Chloride(Dichloromethane)	2013/01/15		88	%	70 - 130
		Chloroform	2013/01/15		97	%	70 - 130
		Carbon Tetrachloride	2013/01/15		87	%	70 - 130
		1,1-Dichloroethane	2013/01/15		94	%	70 - 130
		1,2-Dichloroethane	2013/01/15		101	%	70 - 130
		Ethylene Dibromide	2013/01/15		93	%	70 - 130
		1,1,1-Trichloroethane	2013/01/15		102	%	70 - 130
		1,1,2-Trichloroethane	2013/01/15		95	%	70 - 130
		1,1,2,2-Tetrachloroethane	2013/01/15		101	%	70 - 130
		cis-1,3-Dichloropropene	2013/01/15		94	%	70 - 130
		trans-1,3-Dichloropropene	2013/01/15		94	%	70 - 130
		1,2-Dichloropropane	2013/01/15		92	%	70 - 130
		Bromomethane	2013/01/15		98	%	70 - 130
		Bromoform	2013/01/15		109	%	70 - 130
		Bromodichloromethane	2013/01/15		104	%	70 - 130
		Dibromochloromethane	2013/01/15		103	%	70 - 130
		Trichloroethylene	2013/01/15		95	%	70 - 130
		Tetrachloroethylene	2013/01/15		98	%	70 - 130
		Benzene	2013/01/15		94	%	70 - 130
		Toluene	2013/01/15		95	%	70 - 130
		Ethylbenzene	2013/01/15		99	%	70 - 130
		p+m-Xylene	2013/01/15		99	%	70 - 130
		o-Xylene	2013/01/15		104	%	70 - 130
		Styrene	2013/01/15		89	%	70 - 130
		4-ethyltoluene	2013/01/15		115	%	70 - 130
		1,3,5-Trimethylbenzene	2013/01/15		108	%	70 - 130
		1,2,4-Trimethylbenzene	2013/01/15		109	%	70 - 130
		Chlorobenzene	2013/01/15		97	%	70 - 130
		Benzyl chloride	2013/01/15		97	%	70 - 130
		1,3-Dichlorobenzene	2013/01/15		106	%	70 - 130
		1,4-Dichlorobenzene	2013/01/15		99	%	70 - 130
		1,2-Dichlorobenzene	2013/01/15		106	%	70 - 130
		1,2,4-Trichlorobenzene	2013/01/15		102	%	70 - 130

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB306228

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3095567 JIW	Spiked Blank	Hexachlorobutadiene	2013/01/15		138 (1)	%	70 - 130
		Hexane	2013/01/15		96	%	70 - 130
		Heptane	2013/01/15		98	%	70 - 130
		Cyclohexane	2013/01/15		96	%	70 - 130
		Tetrahydrofuran	2013/01/15		97	%	70 - 130
		1,4-Dioxane	2013/01/15		99	%	70 - 130
		Xylene (Total)	2013/01/15		101	%	70 - 130
		Vinyl Bromide	2013/01/15		106	%	70 - 130
		Propene	2013/01/15		85	%	70 - 130
		2,2,4-Trimethylpentane	2013/01/15		103	%	70 - 130
		Carbon Disulfide	2013/01/15		97	%	70 - 130
		Vinyl Acetate	2013/01/15		96	%	70 - 130
	Method Blank	Bromochloromethane	2013/01/15		99	%	60 - 140
		D5-Chlorobenzene	2013/01/15		96	%	60 - 140
		Difluorobenzene	2013/01/15		102	%	60 - 140
		Dichlorodifluoromethane (FREON 12)	2013/01/15	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2013/01/15	<0.17		ppbv	
		Chloromethane	2013/01/15	<0.30		ppbv	
		Vinyl Chloride	2013/01/15	<0.18		ppbv	
		Chloroethane	2013/01/15	<0.30		ppbv	
		1,3-Butadiene	2013/01/15	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2013/01/15	<0.20		ppbv	
		Ethanol (ethyl alcohol)	2013/01/15	<2.3		ppbv	
		Trichlorotrifluoroethane	2013/01/15	<0.15		ppbv	
		2-propanol	2013/01/15	<3.0		ppbv	
		2-Propanone	2013/01/15	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2013/01/15	<3.0		ppbv	
		Methyl Isobutyl Ketone	2013/01/15	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2013/01/15	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2013/01/15	<0.20		ppbv	
		Ethyl Acetate	2013/01/15	<2.2		ppbv	
		1,1-Dichloroethylene	2013/01/15	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2013/01/15	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2013/01/15	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2013/01/15	<0.80		ppbv	
		Chloroform	2013/01/15	<0.15		ppbv	
		Carbon Tetrachloride	2013/01/15	<0.30		ppbv	
		1,1-Dichloroethane	2013/01/15	<0.20		ppbv	
		1,2-Dichloroethane	2013/01/15	<0.20		ppbv	
		Ethylene Dibromide	2013/01/15	<0.17		ppbv	
		1,1,1-Trichloroethane	2013/01/15	<0.30		ppbv	
		1,1,2-Trichloroethane	2013/01/15	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2013/01/15	<0.20		ppbv	
		cis-1,3-Dichloropropene	2013/01/15	<0.18		ppbv	
		trans-1,3-Dichloropropene	2013/01/15	<0.17		ppbv	
		1,2-Dichloropropane	2013/01/15	<0.40		ppbv	
		Bromomethane	2013/01/15	<0.18		ppbv	
		Bromoform	2013/01/15	<0.20		ppbv	
		Bromodichloromethane	2013/01/15	<0.20		ppbv	
		Dibromochloromethane	2013/01/15	<0.20		ppbv	
		Trichloroethylene	2013/01/15	<0.30		ppbv	
		Tetrachloroethylene	2013/01/15	<0.20		ppbv	
		Benzene	2013/01/15	<0.18		ppbv	
		Toluene	2013/01/15	<0.20		ppbv	
		Ethylbenzene	2013/01/15	<0.20		ppbv	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB306228

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3095567 JIW	Method Blank	p+m-Xylene	2013/01/15	<0.37		ppbv	
		o-Xylene	2013/01/15	<0.20		ppbv	
		Styrene	2013/01/15	<0.20		ppbv	
		4-ethyltoluene	2013/01/15	<2.2		ppbv	
		1,3,5-Trimethylbenzene	2013/01/15	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2013/01/15	<0.50		ppbv	
		Chlorobenzene	2013/01/15	<0.20		ppbv	
		Benzyl chloride	2013/01/15	<1.0		ppbv	
		1,3-Dichlorobenzene	2013/01/15	<0.40		ppbv	
		1,4-Dichlorobenzene	2013/01/15	<0.40		ppbv	
		1,2-Dichlorobenzene	2013/01/15	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2013/01/15	<2.0		ppbv	
		Hexachlorobutadiene	2013/01/15	<3.0		ppbv	
		Hexane	2013/01/15	<0.30		ppbv	
		Heptane	2013/01/15	<0.30		ppbv	
		Cyclohexane	2013/01/15	<0.20		ppbv	
		Tetrahydrofuran	2013/01/15	<0.40		ppbv	
		1,4-Dioxane	2013/01/15	<2.0		ppbv	
		Xylene (Total)	2013/01/15	<0.60		ppbv	
		Vinyl Bromide	2013/01/15	<0.20		ppbv	
		Propene	2013/01/15	<0.30		ppbv	
		2,2,4-Trimethylpentane	2013/01/15	<0.20		ppbv	
		Carbon Disulfide	2013/01/15	<0.50		ppbv	
		Vinyl Acetate	2013/01/15	<0.20		ppbv	
	RPD - Sample/Sample Dup	Dichlorodifluoromethane (FREON 12)	2013/01/15	NC		%	25
		1,2-Dichlorotetrafluoroethane	2013/01/15	NC		%	25
		Chloromethane	2013/01/15	NC		%	25
		Vinyl Chloride	2013/01/15	NC		%	25
		Chloroethane	2013/01/15	NC		%	25
		1,3-Butadiene	2013/01/15	NC		%	25
		Trichlorofluoromethane (FREON 11)	2013/01/15	NC		%	25
		Ethanol (ethyl alcohol)	2013/01/15	NC		%	25
		Trichlorotrifluoroethane	2013/01/15	NC		%	25
		2-propanol	2013/01/15	NC		%	25
		2-Propanone	2013/01/15	NC		%	25
		Methyl Ethyl Ketone (2-Butanone)	2013/01/15	NC		%	25
		Methyl Isobutyl Ketone	2013/01/15	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2013/01/15	NC		%	25
		Methyl t-butyl ether (MTBE)	2013/01/15	NC		%	25
		Ethyl Acetate	2013/01/15	NC		%	25
		1,1-Dichloroethylene	2013/01/15	NC		%	25
		cis-1,2-Dichloroethylene	2013/01/15	NC		%	25
		trans-1,2-Dichloroethylene	2013/01/15	NC		%	25
		Methylene Chloride(Dichloromethane)	2013/01/15	NC		%	25
		Chloroform	2013/01/15	NC		%	25
		Carbon Tetrachloride	2013/01/15	NC		%	25
		1,1-Dichloroethane	2013/01/15	NC		%	25
		1,2-Dichloroethane	2013/01/15	NC		%	25
		Ethylene Dibromide	2013/01/15	NC		%	25
		1,1,1-Trichloroethane	2013/01/15	NC		%	25
		1,1,2-Trichloroethane	2013/01/15	NC		%	25
		1,1,2,2-Tetrachloroethane	2013/01/15	NC		%	25
		cis-1,3-Dichloropropene	2013/01/15	NC		%	25

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB306228

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3095567 JIW	RPD - Sample/Sample Dup	trans-1,3-Dichloropropene	2013/01/15	NC		%	25
		1,2-Dichloropropane	2013/01/15	NC		%	25
		Bromomethane	2013/01/15	NC		%	25
		Bromoform	2013/01/15	NC		%	25
		Bromodichloromethane	2013/01/15	NC		%	25
		Dibromochloromethane	2013/01/15	NC		%	25
		Trichloroethylene	2013/01/15	NC		%	25
		Tetrachloroethylene	2013/01/15	NC		%	25
		Benzene	2013/01/15	NC		%	25
		Toluene	2013/01/15	NC		%	25
		Ethylbenzene	2013/01/15	NC		%	25
		p+m-Xylene	2013/01/15	NC		%	25
		o-Xylene	2013/01/15	NC		%	25
		Styrene	2013/01/15	NC		%	25
		4-ethyltoluene	2013/01/15	NC		%	25
		1,3,5-Trimethylbenzene	2013/01/15	NC		%	25
		1,2,4-Trimethylbenzene	2013/01/15	NC		%	25
		Chlorobenzene	2013/01/15	NC		%	25
		Benzyl chloride	2013/01/15	NC		%	25
		1,3-Dichlorobenzene	2013/01/15	NC		%	25
		1,4-Dichlorobenzene	2013/01/15	NC		%	25
		1,2-Dichlorobenzene	2013/01/15	NC		%	25
		1,2,4-Trichlorobenzene	2013/01/15	NC		%	25
		Hexachlorobutadiene	2013/01/15	NC		%	25
		Hexane	2013/01/15	NC		%	25
		Heptane	2013/01/15	NC		%	25
		Cyclohexane	2013/01/15	NC		%	25
		Tetrahydrofuran	2013/01/15	NC		%	25
		1,4-Dioxane	2013/01/15	NC		%	25
		Xylene (Total)	2013/01/15	NC		%	25
		Vinyl Bromide	2013/01/15	NC		%	25
		Propene	2013/01/15	NC		%	25
		2,2,4-Trimethylpentane	2013/01/15	NC		%	25
		Carbon Disulfide	2013/01/15	NC		%	25
		Vinyl Acetate	2013/01/15	NC		%	25

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Maxxam

VOC Sample Collection Data Sheet

Client: LICA Sampler S/N: 6200
 Location: ELK POINT AIRPORT Canister ID: #308
 Station ID: LICA 35 (PORTABLE) Canister Installation Date/Time: JAN 18, 2013 @ 15:55 mst
 Field Sample ID: LICA VOC /PORT /JAN22,13 Canister Removal Date/Time: _____

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
22 - JAN - 13	01/22/2013 0:00	01/23 /2013 0:00	24.0000

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1496	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	

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: SYSTEM LEAK CHECK PRIOR TO SAMPLING.

Technician Signature: RAJA ABID.



Your C.O.C. #: 13197

Attention: Michael Bisaga

Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2013/02/06

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B313348

Received: 2013/01/28, 08:56

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2013/01/30	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2013/01/30	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days or as contractually agreed from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

Maxxam Job #: B313348
 Report Date: 2013/02/06

RESULTS OF ANALYSES OF AIR

Maxxam ID		QJ5032	QJ5033	
Sampling Date		2013/01/22	2013/01/22	
COC Number		13197	13197	
	Units	LICA	LICA	QC Batch
		VOC/CLS/JAN	VOC/PORT/JAN	
		22,13 - 7614	22,13 - 308	

Volatile Organics				
Pressure on Receipt	psig	22	22	3110177

QC Batch = Quality Control Batch

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QJ5032				
Sampling Date		2013/01/22				
COC Number		13197				
	Units	LICA VOC/CLS/JAN 22,13 - 7614	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.60	0.20	2.95	0.989	3110231
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	3110231
Chloromethane	ppbv	0.60	0.30	1.24	0.620	3110231
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	3110231
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	3110231
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	3110231
Trichlorofluoromethane (FREON 11)	ppbv	0.28	0.20	1.60	1.12	3110231
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	3110231
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	3110231
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	3110231
2-Propanone	ppbv	<1.4	1.4	<3.33	3.33	3110231
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	3110231
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	3110231
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	3110231
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	3110231
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	3110231
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	3110231
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	3110231
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	3110231
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	3110231
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	3110231
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	3110231
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3110231
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3110231
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	3110231
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	3110231
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	3110231
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	3110231
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	3110231
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	3110231
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	3110231
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B313348
 Report Date: 2013/02/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QJ5032				
Sampling Date		2013/01/22				
COC Number		13197				
	Units	LICA VOC/CLS/JAN 22,13 - 7614	RDL	ug/m3	DL (ug/m3)	QC Batch
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	3110231
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	3110231
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	3110231
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	3110231
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	3110231
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	3110231
Benzene	ppbv	0.32	0.18	1.03	0.575	3110231
Toluene	ppbv	0.30	0.20	1.12	0.753	3110231
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	3110231
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	3110231
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	3110231
Styrene	ppbv	<0.20	0.20	<0.852	0.852	3110231
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	3110231
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3110231
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3110231
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	3110231
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	3110231
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3110231
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3110231
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3110231
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	3110231
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	3110231
Hexane	ppbv	<0.30	0.30	<1.06	1.06	3110231
Heptane	ppbv	<0.30	0.30	<1.23	1.23	3110231
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	3110231
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	3110231
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	3110231
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	3110231
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	3110231
Propene	ppbv	<0.30	0.30	<0.516	0.516	3110231
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	3110231
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	3110231
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	3110231
QC Batch = Quality Control Batch						

Maxxam Job #: B313348
 Report Date: 2013/02/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QJ5032				
Sampling Date		2013/01/22				
COC Number		13197				
	Units	LICA VOC/CLS/JAN 22,13 - 7614	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	83		N/A	N/A	3110231
D5-Chlorobenzene	%	84		N/A	N/A	3110231
Difluorobenzene	%	83		N/A	N/A	3110231
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B313348
 Report Date: 2013/02/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QJ5033				
Sampling Date		2013/01/22				
COC Number		13197				
	Units	LICA VOC/PORT/JAN 22,13 - 308	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.62	0.20	3.07	0.989	3110231
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	3110231
Chloromethane	ppbv	0.60	0.30	1.25	0.620	3110231
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	3110231
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	3110231
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	3110231
Trichlorofluoromethane (FREON 11)	ppbv	0.30	0.20	1.70	1.12	3110231
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	3110231
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	3110231
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	3110231
2-Propanone	ppbv	<1.6	1.6	<3.80	3.80	3110231
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	3110231
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	3110231
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	3110231
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	3110231
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	3110231
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	3110231
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	3110231
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	3110231
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	3110231
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	3110231
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	3110231
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3110231
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3110231
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	3110231
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	3110231
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	3110231
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	3110231
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	3110231
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	3110231
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	3110231

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B313348
 Report Date: 2013/02/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QJ5033				
Sampling Date		2013/01/22				
COC Number		13197				
	Units	LICA VOC/PORT/JAN 22,13 - 308	RDL	ug/m3	DL (ug/m3)	QC Batch
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	3110231
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	3110231
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	3110231
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	3110231
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	3110231
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	3110231
Benzene	ppbv	0.25	0.18	0.794	0.575	3110231
Toluene	ppbv	<0.20	0.20	<0.753	0.753	3110231
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	3110231
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	3110231
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	3110231
Styrene	ppbv	<0.20	0.20	<0.852	0.852	3110231
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	3110231
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3110231
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3110231
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	3110231
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	3110231
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3110231
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3110231
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3110231
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	3110231
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	3110231
Hexane	ppbv	0.44	0.30	1.57	1.06	3110231
Heptane	ppbv	<0.30	0.30	<1.23	1.23	3110231
Cyclohexane	ppbv	0.30	0.20	1.02	0.688	3110231
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	3110231
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	3110231
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	3110231
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	3110231
Propene	ppbv	<1.9	1.9	<3.27	3.27	3110231
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	3110231
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	3110231
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	3110231
QC Batch = Quality Control Batch						

Maxxam Job #: B313348
 Report Date: 2013/02/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		QJ5033				
Sampling Date		2013/01/22				
COC Number		13197				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/PORT/JAN				
		22,13 - 308				

Surrogate Recovery (%)						
Bromochloromethane	%	82		N/A	N/A	3110231
D5-Chlorobenzene	%	84		N/A	N/A	3110231
Difluorobenzene	%	82		N/A	N/A	3110231

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B313348
 Report Date: 2013/02/06

Test Summary

Maxxam ID QJ5032
Sample ID LICA VOC/CLS/JAN 22,13 - 7614
Matrix AIR

Collected 2013/01/22
Shipped
Received 2013/01/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	3110177	N/A	2013/01/30	Diane Temniuk
Volatile Organics in Air (TO-15)	GC/MS	3110231	N/A	2013/01/30	Diane Temniuk

Maxxam ID QJ5033
Sample ID LICA VOC/PORT/JAN 22,13 - 308
Matrix AIR

Collected 2013/01/22
Shipped
Received 2013/01/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	3110177	N/A	2013/01/30	Diane Temniuk
Volatile Organics in Air (TO-15)	GC/MS	3110231	N/A	2013/01/30	Diane Temniuk

Maxxam Job #: B313348
Report Date: 2013/02/06

GENERAL COMMENTS

Sample QJ5032-01: DL raised for 2-Propanone due to matrix interference.

Sample QJ5033-01: DLs raised for Propene and 2-Propanone due to matrix interference.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB313348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3110231	DVO	Spiked Blank					
		Bromochloromethane	2013/01/30		96	%	60 - 140
		D5-Chlorobenzene	2013/01/30		100	%	60 - 140
		Difluorobenzene	2013/01/30		100	%	60 - 140
		Dichlorodifluoromethane (FREON 12)	2013/01/30		103	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2013/01/30		114	%	70 - 130
		Chloromethane	2013/01/30		103	%	70 - 130
		Vinyl Chloride	2013/01/30		100	%	70 - 130
		Chloroethane	2013/01/30		100	%	70 - 130
		1,3-Butadiene	2013/01/30		96	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2013/01/30		105	%	70 - 130
		Ethanol (ethyl alcohol)	2013/01/30		99	%	70 - 130
		Trichlorotrifluoroethane	2013/01/30		101	%	70 - 130
		2-propanol	2013/01/30		92	%	70 - 130
		2-Propanone	2013/01/30		97	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2013/01/30		110	%	70 - 130
		Methyl Isobutyl Ketone	2013/01/30		90	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2013/01/30		91	%	70 - 130
		Methyl t-butyl ether (MTBE)	2013/01/30		97	%	70 - 130
		Ethyl Acetate	2013/01/30		98	%	70 - 130
		1,1-Dichloroethylene	2013/01/30		98	%	70 - 130
		cis-1,2-Dichloroethylene	2013/01/30		100	%	70 - 130
		trans-1,2-Dichloroethylene	2013/01/30		98	%	70 - 130
		Methylene Chloride(Dichloromethane)	2013/01/30		96	%	70 - 130
		Chloroform	2013/01/30		103	%	70 - 130
		Carbon Tetrachloride	2013/01/30		92	%	70 - 130
		1,1-Dichloroethane	2013/01/30		99	%	70 - 130
		1,2-Dichloroethane	2013/01/30		99	%	70 - 130
		Ethylene Dibromide	2013/01/30		96	%	70 - 130
		1,1,1-Trichloroethane	2013/01/30		93	%	70 - 130
		1,1,2-Trichloroethane	2013/01/30		96	%	70 - 130
		1,1,2,2-Tetrachloroethane	2013/01/30		96	%	70 - 130
		cis-1,3-Dichloropropene	2013/01/30		92	%	70 - 130
		trans-1,3-Dichloropropene	2013/01/30		93	%	70 - 130
		1,2-Dichloropropane	2013/01/30		96	%	70 - 130
		Bromomethane	2013/01/30		101	%	70 - 130
		Bromoform	2013/01/30		93	%	70 - 130
		Bromodichloromethane	2013/01/30		93	%	70 - 130
		Dibromochloromethane	2013/01/30		93	%	70 - 130
		Trichloroethylene	2013/01/30		93	%	70 - 130
		Tetrachloroethylene	2013/01/30		95	%	70 - 130
		Benzene	2013/01/30		95	%	70 - 130
		Toluene	2013/01/30		96	%	70 - 130
		Ethylbenzene	2013/01/30		98	%	70 - 130
		p+m-Xylene	2013/01/30		95	%	70 - 130
		o-Xylene	2013/01/30		95	%	70 - 130
		Styrene	2013/01/30		84	%	70 - 130
		4-ethyltoluene	2013/01/30		93	%	70 - 130
		1,3,5-Trimethylbenzene	2013/01/30		97	%	70 - 130
		1,2,4-Trimethylbenzene	2013/01/30		95	%	70 - 130
		Chlorobenzene	2013/01/30		97	%	70 - 130
		Benzyl chloride	2013/01/30		81	%	70 - 130
		1,3-Dichlorobenzene	2013/01/30		99	%	70 - 130
		1,4-Dichlorobenzene	2013/01/30		94	%	70 - 130
		1,2-Dichlorobenzene	2013/01/30		94	%	70 - 130
		1,2,4-Trichlorobenzene	2013/01/30		109	%	70 - 130

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB313348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3110231	DVO	Spiked Blank	2013/01/30		99	%	70 - 130
		Hexachlorobutadiene	2013/01/30		93	%	70 - 130
		Hexane	2013/01/30		91	%	70 - 130
		Heptane	2013/01/30		93	%	70 - 130
		Cyclohexane	2013/01/30		99	%	70 - 130
		Tetrahydrofuran	2013/01/30		90	%	70 - 130
		1,4-Dioxane	2013/01/30		95	%	70 - 130
		Xylene (Total)	2013/01/30		98	%	70 - 130
		Vinyl Bromide	2013/01/30		93	%	70 - 130
		Propene	2013/01/30		91	%	70 - 130
		2,2,4-Trimethylpentane	2013/01/30		103	%	70 - 130
		Carbon Disulfide	2013/01/30		94	%	70 - 130
	Method Blank	Vinyl Acetate	2013/01/30		85	%	60 - 140
		Bromochloromethane	2013/01/30		86	%	60 - 140
		D5-Chlorobenzene	2013/01/30		86	%	60 - 140
		Difluorobenzene	2013/01/30				
		Dichlorodifluoromethane (FREON 12)	2013/01/30	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2013/01/30	<0.17		ppbv	
		Chloromethane	2013/01/30	<0.30		ppbv	
		Vinyl Chloride	2013/01/30	<0.18		ppbv	
		Chloroethane	2013/01/30	<0.30		ppbv	
		1,3-Butadiene	2013/01/30	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2013/01/30	<0.20		ppbv	
		Ethanol (ethyl alcohol)	2013/01/30	<2.3		ppbv	
		Trichlorotrifluoroethane	2013/01/30	<0.15		ppbv	
		2-propanol	2013/01/30	<3.0		ppbv	
		2-Propanone	2013/01/30	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2013/01/30	<3.0		ppbv	
		Methyl Isobutyl Ketone	2013/01/30	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2013/01/30	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2013/01/30	<0.20		ppbv	
		Ethyl Acetate	2013/01/30	<2.2		ppbv	
		1,1-Dichloroethylene	2013/01/30	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2013/01/30	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2013/01/30	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2013/01/30	<0.80		ppbv	
		Chloroform	2013/01/30	<0.15		ppbv	
		Carbon Tetrachloride	2013/01/30	<0.30		ppbv	
		1,1-Dichloroethane	2013/01/30	<0.20		ppbv	
		1,2-Dichloroethane	2013/01/30	<0.20		ppbv	
		Ethylene Dibromide	2013/01/30	<0.17		ppbv	
		1,1,1-Trichloroethane	2013/01/30	<0.30		ppbv	
		1,1,2-Trichloroethane	2013/01/30	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2013/01/30	<0.20		ppbv	
		cis-1,3-Dichloropropene	2013/01/30	<0.18		ppbv	
		trans-1,3-Dichloropropene	2013/01/30	<0.17		ppbv	
		1,2-Dichloropropane	2013/01/30	<0.40		ppbv	
		Bromomethane	2013/01/30	<0.18		ppbv	
		Bromoform	2013/01/30	<0.20		ppbv	
		Bromodichloromethane	2013/01/30	<0.20		ppbv	
		Dibromochloromethane	2013/01/30	<0.20		ppbv	
		Trichloroethylene	2013/01/30	<0.30		ppbv	
		Tetrachloroethylene	2013/01/30	<0.20		ppbv	
		Benzene	2013/01/30	<0.18		ppbv	
		Toluene	2013/01/30	<0.20		ppbv	
		Ethylbenzene	2013/01/30	<0.20		ppbv	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB313348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3110231	DVO	Method Blank					
		p+m-Xylene	2013/01/30	<0.37		ppbv	
		o-Xylene	2013/01/30	<0.20		ppbv	
		Styrene	2013/01/30	<0.20		ppbv	
		4-ethyltoluene	2013/01/30	<2.2		ppbv	
		1,3,5-Trimethylbenzene	2013/01/30	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2013/01/30	<0.50		ppbv	
		Chlorobenzene	2013/01/30	<0.20		ppbv	
		Benzyl chloride	2013/01/30	<1.0		ppbv	
		1,3-Dichlorobenzene	2013/01/30	<0.40		ppbv	
		1,4-Dichlorobenzene	2013/01/30	<0.40		ppbv	
		1,2-Dichlorobenzene	2013/01/30	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2013/01/30	<2.0		ppbv	
		Hexachlorobutadiene	2013/01/30	<3.0		ppbv	
		Hexane	2013/01/30	<0.30		ppbv	
		Heptane	2013/01/30	<0.30		ppbv	
		Cyclohexane	2013/01/30	<0.20		ppbv	
		Tetrahydrofuran	2013/01/30	<0.40		ppbv	
		1,4-Dioxane	2013/01/30	<2.0		ppbv	
		Xylene (Total)	2013/01/30	<0.60		ppbv	
		Vinyl Bromide	2013/01/30	<0.20		ppbv	
		Propene	2013/01/30	<0.30		ppbv	
		2,2,4-Trimethylpentane	2013/01/30	<0.20		ppbv	
		Carbon Disulfide	2013/01/30	<0.50		ppbv	
		Vinyl Acetate	2013/01/30	<0.20		ppbv	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

Polycyclic Aromatic Hydrocarbons Laboratory Analysis

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA PUF/PORT/Jan 04, 13

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Jan 02, 2013 @ 15:09 mst
Removal Date/Time: Jan 08, 2013 @ 10:56 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
04-Jan-13	01/04/2013 0:00	01/05/2013 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
28-Dec-12	08-Jan-13	10-Jan-13	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 25-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
710	229	-10.3	330.36

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC#13156

GB2K1672 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jan 04, 13

Technician Signature: Ting Xu

Your C.O.C. #: 13156

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2013/01/18

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B304015****Received: 2013/01/10, 09:10**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2013/01/11	2013/01/16	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

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Total cover pages: 1

Page 1 of 7

Maxxam Job #: B304015
 Report Date: 2013/01/18

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		QE6800	QE6801		
Sampling Date		2013/01/04 00:00	2013/01/04 00:00		
COC Number		13156	13156		
	Units	LICA PUFF+QFF/CLS/JAN 04,13	LICA PUFF+QFF/PORT/JAN 04,13	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.58	1.58	0.10	3091394
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	3091394
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	3091394
2-Methylantracene	ug	<0.10	<0.10	0.10	3091394
2-Methylnaphthalene	ug	1.10	3.02	0.10	3091394
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	3091394
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	3091394
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	3091394
Acenaphthene	ug	0.200	0.220	0.050	3091394
Acenaphthylene	ug	0.320	0.220	0.050	3091394
Anthracene	ug	0.060	<0.050	0.050	3091394
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	3091394
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	3091394
Benzo(a)pyrene	ug	0.060	<0.050	0.050	3091394
Benzo(b)fluoranthene	ug	0.100	<0.050	0.050	3091394
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	3091394
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	3091394
Benzo(g,h,i)perylene	ug	0.100	<0.050	0.050	3091394
Benzo(k)fluoranthene	ug	0.060	<0.050	0.050	3091394
Biphenyl	ug	0.54	0.66	0.10	3091394
Chrysene	ug	0.080	<0.050	0.050	3091394
Coronene	ug	<0.10	<0.10	0.10	3091394
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	3091394
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	3091394
Fluoranthene	ug	0.300	0.100	0.050	3091394
Fluorene	ug	0.320	0.380	0.050	3091394
Indeno(1,2,3-cd)pyrene	ug	0.060	<0.050	0.050	3091394
m-Terphenyl	ug	<0.10	<0.10	0.10	3091394
Naphthalene	ug	1.12	1.16	0.072	3091394
o-Terphenyl	ug	<0.10	<0.10	0.10	3091394

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B304015
 Report Date: 2013/01/18

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		QE6800	QE6801		
Sampling Date		2013/01/04 00:00	2013/01/04 00:00		
COC Number		13156	13156		
	Units	LICA PUFF+QFF/CLS/JAN 04,13	LICA PUFF+QFF/PORT/JAN 04,13	RDL	QC Batch

Perylene	ug	<0.10	<0.10	0.10	3091394
Phenanthrene	ug	0.640	0.340	0.050	3091394
p-Terphenyl	ug	<0.10	<0.10	0.10	3091394
Pyrene	ug	0.300	0.060	0.050	3091394
Quinoline	ug	<0.40	<0.40	0.40	3091394
Tetralin	ug	<0.10	0.12	0.10	3091394
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	70	80		3091394
D10-Fluoranthene	%	96	98		3091394
D10-Fluorene (FS)	%	56	58		3091394
D10-Phenanthrene	%	88	94		3091394
D12-Benzo(a)anthracene	%	100	104		3091394
D12-Benzo(a)pyrene	%	96	96		3091394
D12-Benzo(b)fluoranthene	%	96	96		3091394
D12-Benzo(ghi)perylene	%	96	98		3091394
D12-Benzo(k)fluoranthene	%	98	98		3091394
D12-Chrysene	%	100	100		3091394
D12-Indeno(1,2,3-cd)pyrene	%	94	96		3091394
D12-Perylene	%	92	94		3091394
D14-Dibenzo(a,h)anthracene	%	96	96		3091394
D14-Terphenyl (FS)	%	94	96		3091394
D8-Acenaphthylene	%	68	80		3091394
D8-Naphthalene	%	66	74		3091394

QC Batch = Quality Control Batch

Maxxam Job #: B304015
Report Date: 2013/01/18

Test Summary

Maxxam ID QE6800
Sample ID LICA PUFF+QFF/CLS/JAN 04,13
Matrix PUF AND FILTER

Collected 2013/01/04
Shipped
Received 2013/01/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	3091394	2013/01/11	2013/01/16	Lidija Tomic

Maxxam ID QE6801
Sample ID LICA PUFF+QFF/PORT/JAN 04,13
Matrix PUF AND FILTER

Collected 2013/01/04
Shipped
Received 2013/01/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	3091394	2013/01/11	2013/01/16	Lidija Tomic

Maxxam Job #: B304015
Report Date: 2013/01/18

GENERAL COMMENTS

7,12-dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positives found for this compound.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB304015

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3091394 LTO	Spiked Blank	D10-2-Methylnaphthalene	2013/01/16		74	%	50 - 150
		D10-Fluoranthene	2013/01/16		96	%	50 - 150
		D10-Phenanthrene	2013/01/16		84	%	50 - 150
		D12-Benzo(a)anthracene	2013/01/16		98	%	50 - 150
		D12-Benzo(a)pyrene	2013/01/16		96	%	50 - 150
		D12-Benzo(b)fluoranthene	2013/01/16		96	%	50 - 150
		D12-Benzo(ghi)perylene	2013/01/16		104	%	50 - 150
		D12-Benzo(k)fluoranthene	2013/01/16		98	%	50 - 150
		D12-Chrysene	2013/01/16		98	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2013/01/16		102	%	50 - 150
		D12-Perylene	2013/01/16		96	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2013/01/16		102	%	50 - 150
		D8-Acenaphthylene	2013/01/16		72	%	50 - 150
		D8-Naphthalene	2013/01/16		72	%	50 - 150
		RPD	Acenaphthene	2013/01/16		75	%
	RPD	Acenaphthene	2013/01/16	6.9		%	50
	Spiked Blank	Acenaphthylene	2013/01/16		70	%	60 - 130
	RPD	Acenaphthylene	2013/01/16	3.6		%	50
	Spiked Blank	Anthracene	2013/01/16		78	%	60 - 130
	RPD	Anthracene	2013/01/16	6.3		%	50
	Spiked Blank	Benzo(a)anthracene	2013/01/16		95	%	60 - 130
	RPD	Benzo(a)anthracene	2013/01/16	2.7		%	50
	Spiked Blank	Benzo(a)pyrene	2013/01/16		75	%	60 - 130
	RPD	Benzo(a)pyrene	2013/01/16	0		%	50
	Spiked Blank	Benzo(b)fluoranthene	2013/01/16		83	%	60 - 130
	RPD	Benzo(b)fluoranthene	2013/01/16	3.0		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2013/01/16		100	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2013/01/16	19.2		%	50
	Spiked Blank	Benzo(k)fluoranthene	2013/01/16		93	%	60 - 130
	RPD	Benzo(k)fluoranthene	2013/01/16	2.7		%	50
	Spiked Blank	Chrysene	2013/01/16		93	%	60 - 130
	RPD	Chrysene	2013/01/16	0		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2013/01/16		105	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2013/01/16	15.4		%	50
	Spiked Blank	Fluoranthene	2013/01/16		90	%	60 - 130
	RPD	Fluoranthene	2013/01/16	2.7		%	50
	Spiked Blank	Fluorene	2013/01/16		78	%	60 - 130
	RPD	Fluorene	2013/01/16	0		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2013/01/16		100	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2013/01/16	16.2		%	50
Spiked Blank	Naphthalene	2013/01/16		75	%	60 - 130	
RPD	Naphthalene	2013/01/16	10.5		%	50	
Spiked Blank	Phenanthrene	2013/01/16		80	%	60 - 130	
RPD	Phenanthrene	2013/01/16	6.1		%	50	
Spiked Blank	Pyrene	2013/01/16		83	%	60 - 130	
RPD	Pyrene	2013/01/16	3.0		%	50	
Method Blank	D10-2-Methylnaphthalene	2013/01/16		86	%	50 - 150	
	D10-Fluoranthene	2013/01/16		92	%	50 - 150	
	D10-Phenanthrene	2013/01/16		90	%	50 - 150	
	D12-Benzo(a)anthracene	2013/01/16		98	%	50 - 150	
	D12-Benzo(a)pyrene	2013/01/16		98	%	50 - 150	
	D12-Benzo(b)fluoranthene	2013/01/16		96	%	50 - 150	
	D12-Benzo(ghi)perylene	2013/01/16		104	%	50 - 150	
	D12-Benzo(k)fluoranthene	2013/01/16		100	%	50 - 150	
	D12-Chrysene	2013/01/16		98	%	50 - 150	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB304015

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3091394 LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2013/01/16		98	%	50 - 150
		D12-Perylene	2013/01/16		94	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2013/01/16		98	%	50 - 150
		D8-Acenaphthylene	2013/01/16		82	%	50 - 150
		D8-Naphthalene	2013/01/16		84	%	50 - 150
		1-Methylnaphthalene	2013/01/16	<0.10		ug	
		1-Methylphenanthrene	2013/01/16	<0.10		ug	
		2-Chloronaphthalene	2013/01/16	<0.10		ug	
		2-Methylanthracene	2013/01/16	<0.10		ug	
		2-Methylnaphthalene	2013/01/16	<0.10		ug	
		3-Methylcholanthrene	2013/01/16	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2013/01/16	<0.10		ug	
		9,10-Dimethylanthracene	2013/01/16	<0.40		ug	
		Acenaphthene	2013/01/16	<0.050		ug	
		Acenaphthylene	2013/01/16	<0.050		ug	
		Anthracene	2013/01/16	<0.050		ug	
		Benzo(a)anthracene	2013/01/16	<0.050		ug	
		Benzo(a)fluorene	2013/01/16	<0.10		ug	
		Benzo(a)pyrene	2013/01/16	<0.050		ug	
		Benzo(b)fluoranthene	2013/01/16	<0.050		ug	
		Benzo(b)fluorene	2013/01/16	<0.10		ug	
		Benzo(e)pyrene	2013/01/16	<0.10		ug	
		Benzo(g,h,i)perylene	2013/01/16	<0.050		ug	
		Benzo(k)fluoranthene	2013/01/16	<0.050		ug	
		Biphenyl	2013/01/16	<0.10		ug	
		Chrysene	2013/01/16	<0.050		ug	
		Coronene	2013/01/16	<0.10		ug	
		Dibenz(a,h)anthracene	2013/01/16	<0.050		ug	
		Dibenzo(a,e)pyrene	2013/01/16	<0.20		ug	
		Fluoranthene	2013/01/16	<0.050		ug	
		Fluorene	2013/01/16	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2013/01/16	<0.050		ug	
		m-Terphenyl	2013/01/16	<0.10		ug	
		Naphthalene	2013/01/16	<0.072		ug	
		o-Terphenyl	2013/01/16	<0.10		ug	
		Perylene	2013/01/16	<0.10		ug	
		Phenanthrene	2013/01/16	<0.050		ug	
		p-Terphenyl	2013/01/16	<0.10		ug	
		Pyrene	2013/01/16	<0.050		ug	
		Quinoline	2013/01/16	<0.40		ug	
		Tetralin	2013/01/16	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA PUF/PORT/Jan 10, 13

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Jan 08, 2013 @ 11:18 mst
Removal Date/Time: Jan 11, 2013 @ 13:44 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
10-Jan-13	01/10/2013 0:00	01/11/2013 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
04-Jan-13	11-Jan-13	17-Jan-13	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 25-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
711	229	-15.9	330.36

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC#13174

GB2K2485 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jan 10, 13

Technician Signature: Ting Xu

Your C.O.C. #: 13174

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2013/01/28

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B306580****Received: 2013/01/15, 09:55**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2013/01/17	2013/01/21	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

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Total cover pages: 1

Page 1 of 7

Maxxam Job #: B306580
 Report Date: 2013/01/28

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		QF9867	QF9868		
Sampling Date		2013/01/10 00:00	2013/01/10 00:00		
COC Number		13174	13174		
	Units	LICA PUFF+QFF/CLS/JAN 10,13	LICA PUFF+QFF/PORT/JAN 10,13	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.82	0.66	0.10	3096989
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	3096989
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	3096989
2-Methylantracene	ug	<0.10	<0.10	0.10	3096989
2-Methylnaphthalene	ug	1.76	0.96	0.10	3096989
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	3096989
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	3096989
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	3096989
Acenaphthene	ug	0.100	0.080	0.050	3096989
Acenaphthylene	ug	<0.050	0.220	0.050	3096989
Anthracene	ug	<0.050	<0.050	0.050	3096989
Benzo(a)anthracene	ug	<0.050	0.080	0.050	3096989
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	3096989
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	3096989
Benzo(b)fluoranthene	ug	<0.050	0.100	0.050	3096989
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	3096989
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	3096989
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	3096989
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	3096989
Biphenyl	ug	0.22	0.78	0.10	3096989
Chrysene	ug	<0.050	0.160	0.050	3096989
Coronene	ug	<0.10	<0.10	0.10	3096989
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	3096989
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	3096989
Fluoranthene	ug	0.080	0.300	0.050	3096989
Fluorene	ug	0.080	0.280	0.050	3096989
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	3096989
m-Terphenyl	ug	<0.10	<0.10	0.10	3096989
Naphthalene	ug	2.24	1.56	0.072	3096989
o-Terphenyl	ug	<0.10	<0.10	0.10	3096989

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B306580
 Report Date: 2013/01/28

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		QF9867	QF9868		
Sampling Date		2013/01/10 00:00	2013/01/10 00:00		
COC Number		13174	13174		
	Units	LICA PUFF+QFF/CLS/JAN 10,13	LICA PUFF+QFF/PORT/JAN 10,13	RDL	QC Batch

Perylene	ug	<0.10	<0.10	0.10	3096989
Phenanthrene	ug	0.140	0.680	0.050	3096989
p-Terphenyl	ug	<0.10	<0.10	0.10	3096989
Pyrene	ug	<0.050	0.200	0.050	3096989
Quinoline	ug	<0.40	<0.40	0.40	3096989
Tetralin	ug	<0.10	<0.10	0.10	3096989
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	58	64		3096989
D10-Fluoranthene	%	96	100		3096989
D10-Fluorene (FS)	%	62	64		3096989
D10-Phenanthrene	%	82	88		3096989
D12-Benzo(a)anthracene	%	106	112		3096989
D12-Benzo(a)pyrene	%	90	92		3096989
D12-Benzo(b)fluoranthene	%	90	90		3096989
D12-Benzo(ghi)perylene	%	88	84		3096989
D12-Benzo(k)fluoranthene	%	90	96		3096989
D12-Chrysene	%	108	110		3096989
D12-Indeno(1,2,3-cd)pyrene	%	94	88		3096989
D12-Perylene	%	88	90		3096989
D14-Dibenzo(a,h)anthracene	%	96	88		3096989
D14-Terphenyl (FS)	%	102	104		3096989
D8-Acenaphthylene	%	58	66		3096989
D8-Naphthalene	%	54	58		3096989

QC Batch = Quality Control Batch

Maxxam Job #: B306580
Report Date: 2013/01/28

Test Summary

Maxxam ID QF9867
Sample ID LICA PUFF+QFF/CLS/JAN 10,13
Matrix PUF AND FILTER

Collected 2013/01/10
Shipped
Received 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	3096989	2013/01/17	2013/01/21	Lidija Tomic

Maxxam ID QF9868
Sample ID LICA PUFF+QFF/PORT/JAN 10,13
Matrix PUF AND FILTER

Collected 2013/01/10
Shipped
Received 2013/01/15

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	3096989	2013/01/17	2013/01/21	Lidija Tomic

Maxxam Job #: B306580
Report Date: 2013/01/28

GENERAL COMMENTS

Low recovery for Acenaphthylene in Spike and Spike Dup.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB306580

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3096989 LTO	Spiked Blank	D10-2-Methylnaphthalene	2013/01/21		62	%	50 - 150
		D10-Fluoranthene	2013/01/21		94	%	50 - 150
		D10-Phenanthrene	2013/01/21		80	%	50 - 150
		D12-Benzo(a)anthracene	2013/01/21		108	%	50 - 150
		D12-Benzo(a)pyrene	2013/01/21		94	%	50 - 150
		D12-Benzo(b)fluoranthene	2013/01/21		90	%	50 - 150
		D12-Benzo(ghi)perylene	2013/01/21		90	%	50 - 150
		D12-Benzo(k)fluoranthene	2013/01/21		96	%	50 - 150
		D12-Chrysene	2013/01/21		106	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2013/01/21		96	%	50 - 150
		D12-Perylene	2013/01/21		92	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2013/01/21		98	%	50 - 150
		D8-Acenaphthylene	2013/01/21		62	%	50 - 150
		D8-Naphthalene	2013/01/21		60	%	50 - 150
		Acenaphthene	2013/01/21		63	%	60 - 130
	RPD	Acenaphthene	2013/01/21	0		%	50
	Spiked Blank	Acenaphthylene	2013/01/21		60 (1)	%	60 - 130
	RPD	Acenaphthylene	2013/01/21	0		%	50
	Spiked Blank	Anthracene	2013/01/21		73	%	60 - 130
	RPD	Anthracene	2013/01/21	0		%	50
	Spiked Blank	Benzo(a)anthracene	2013/01/21		103	%	60 - 130
	RPD	Benzo(a)anthracene	2013/01/21	0		%	50
	Spiked Blank	Benzo(a)pyrene	2013/01/21		73	%	60 - 130
	RPD	Benzo(a)pyrene	2013/01/21	0		%	50
	Spiked Blank	Benzo(b)fluoranthene	2013/01/21		80	%	60 - 130
	RPD	Benzo(b)fluoranthene	2013/01/21	0		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2013/01/21		78	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2013/01/21	6.7		%	50
	Spiked Blank	Benzo(k)fluoranthene	2013/01/21		88	%	60 - 130
	RPD	Benzo(k)fluoranthene	2013/01/21	5.6		%	50
	Spiked Blank	Chrysene	2013/01/21		100	%	60 - 130
	RPD	Chrysene	2013/01/21	4.9		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2013/01/21		85	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2013/01/21	9.2		%	50
	Spiked Blank	Fluoranthene	2013/01/21		88	%	60 - 130
	RPD	Fluoranthene	2013/01/21	2.9		%	50
	Spiked Blank	Fluorene	2013/01/21		68	%	60 - 130
	RPD	Fluorene	2013/01/21	0		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2013/01/21		83	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2013/01/21	9.5		%	50
Spiked Blank	Naphthalene	2013/01/21		63	%	60 - 130	
RPD	Naphthalene	2013/01/21	0		%	50	
Spiked Blank	Phenanthrene	2013/01/21		75	%	60 - 130	
RPD	Phenanthrene	2013/01/21	3.4		%	50	
Spiked Blank	Pyrene	2013/01/21		83	%	60 - 130	
RPD	Pyrene	2013/01/21	3.1		%	50	
Method Blank	D10-2-Methylnaphthalene	2013/01/21		56	%	50 - 150	
	D10-Fluoranthene	2013/01/21		94	%	50 - 150	
	D10-Phenanthrene	2013/01/21		80	%	50 - 150	
	D12-Benzo(a)anthracene	2013/01/21		108	%	50 - 150	
	D12-Benzo(a)pyrene	2013/01/21		92	%	50 - 150	
	D12-Benzo(b)fluoranthene	2013/01/21		88	%	50 - 150	
	D12-Benzo(ghi)perylene	2013/01/21		86	%	50 - 150	
	D12-Benzo(k)fluoranthene	2013/01/21		98	%	50 - 150	
	D12-Chrysene	2013/01/21		114	%	50 - 150	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB306580

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3096989 LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2013/01/21		90	%	50 - 150
		D12-Perylene	2013/01/21		92	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2013/01/21		90	%	50 - 150
		D8-Acenaphthylene	2013/01/21		60	%	50 - 150
		D8-Naphthalene	2013/01/21		54	%	50 - 150
		1-Methylnaphthalene	2013/01/21	<0.10		ug	
		1-Methylphenanthrene	2013/01/21	<0.10		ug	
		2-Chloronaphthalene	2013/01/21	<0.10		ug	
		2-Methylantracene	2013/01/21	<0.10		ug	
		2-Methylnaphthalene	2013/01/21	<0.10		ug	
		3-Methylcholanthrene	2013/01/21	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2013/01/21	<0.10		ug	
		9,10-Dimethylantracene	2013/01/21	<0.40		ug	
		Acenaphthene	2013/01/21	<0.050		ug	
		Acenaphthylene	2013/01/21	<0.050		ug	
		Anthracene	2013/01/21	<0.050		ug	
		Benzo(a)anthracene	2013/01/21	<0.050		ug	
		Benzo(a)fluorene	2013/01/21	<0.10		ug	
		Benzo(a)pyrene	2013/01/21	<0.050		ug	
		Benzo(b)fluoranthene	2013/01/21	<0.050		ug	
		Benzo(b)fluorene	2013/01/21	<0.10		ug	
		Benzo(e)pyrene	2013/01/21	<0.10		ug	
		Benzo(g,h,i)perylene	2013/01/21	<0.050		ug	
		Benzo(k)fluoranthene	2013/01/21	<0.050		ug	
		Biphenyl	2013/01/21	<0.10		ug	
		Chrysene	2013/01/21	<0.050		ug	
		Coronene	2013/01/21	<0.10		ug	
		Dibenz(a,h)anthracene	2013/01/21	<0.050		ug	
		Dibenzo(a,e)pyrene	2013/01/21	<0.20		ug	
		Fluoranthene	2013/01/21	<0.050		ug	
		Fluorene	2013/01/21	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2013/01/21	<0.050		ug	
		m-Terphenyl	2013/01/21	<0.10		ug	
		Naphthalene	2013/01/21	<0.072		ug	
		o-Terphenyl	2013/01/21	<0.10		ug	
		Perylene	2013/01/21	<0.10		ug	
		Phenanthrene	2013/01/21	<0.050		ug	
		p-Terphenyl	2013/01/21	<0.10		ug	
		Pyrene	2013/01/21	<0.050		ug	
		Quinoline	2013/01/21	<0.40		ug	
		Tetralin	2013/01/21	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Maxxam

Hi-Vol PUF+ Sample Collection Data Sheet

Client: LICA
 Location: ELK POINT AIRPORT
 Station ID: LICA 35 (PORTABLE)
 Field Sample ID: LICA PUF PORT/JAN 22, 13.

Puf+ S/N: 100 - 1015
 Motor S/N: 1139
 Installation Date/Time: JAN 18, 2013 @ 16:15 mst
 Removal Date/Time: JAN 24, 2013 @ 16:45 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
22-JAN-13	1/22/2013 0:00	23 (QA) 1/23/2013 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
17 JAN 13	25 JAN 13		15 JAN 2013

Set Flow Rate (slpm): 230

Date of Last Calibration: 25-SEP-11

Sampling Data			
Average Pressure (mmHg)	Average Flow (Qstd slpm)	Average Temperature (Volume (Vstd m ³)
714	229	16.7	330.36

Time set correctly prior to sampling? YES / NO
 Timer set correctly prior to sampling? YES / NO
 Sampling data saved to memory card after sampling? YES / NO

Comments: COC # 13197

Technician Signature: RAJA ABID

Your C.O.C. #: 13197

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2013/02/07

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B312982****Received: 2013/01/28, 08:56**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2013/01/30	2013/02/02	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====

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Total cover pages: 1

Page 1 of 7

Maxxam Job #: B312982
 Report Date: 2013/02/07

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		QJ2079	QJ2080		
Sampling Date		2013/01/22	2013/01/22		
COC Number		13197	13197		
	Units	LICA	LICA	RDL	QC Batch
		PUFF/QFF/CLS/JAN22,13	PUFF/QFF/PORT/JAN22,13		

Semivolatile Organics					
1-Methylnaphthalene	ug	2.36	0.42	0.10	3108904
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	3108904
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	3108904
2-Methylantracene	ug	<0.10	<0.10	0.10	3108904
2-Methylnaphthalene	ug	4.76	0.56	0.10	3108904
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	3108904
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	3108904
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	3108904
Acenaphthene	ug	0.160	<0.050	0.050	3108904
Acenaphthylene	ug	<0.050	<0.050	0.050	3108904
Anthracene	ug	<0.050	<0.050	0.050	3108904
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	3108904
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	3108904
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	3108904
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	3108904
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	3108904
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	3108904
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	3108904
Benzo(k)fluoranthene	ug	<0.050	0.060	0.050	3108904
Biphenyl	ug	0.62	0.50	0.10	3108904
Chrysene	ug	<0.050	<0.050	0.050	3108904
Coronene	ug	<0.10	<0.10	0.10	3108904
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	3108904
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	3108904
Fluoranthene	ug	0.180	0.120	0.050	3108904
Fluorene	ug	0.260	0.220	0.050	3108904
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	3108904
m-Terphenyl	ug	<0.10	<0.10	0.10	3108904
Naphthalene	ug	4.42	1.14	0.072	3108904
o-Terphenyl	ug	<0.10	<0.10	0.10	3108904
Perylene	ug	<0.10	<0.10	0.10	3108904
Phenanthrene	ug	0.480	0.360	0.050	3108904

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B312982
 Report Date: 2013/02/07

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		QJ2079	QJ2080		
Sampling Date		2013/01/22	2013/01/22		
COC Number		13197	13197		
	Units	LICA PUFF/QFF/CLS/JAN22,13	LICA PUFF/QFF/PORT/JAN22,13	RDL	QC Batch
p-Terphenyl	ug	<0.10	<0.10	0.10	3108904
Pyrene	ug	0.120	0.060	0.050	3108904
Quinoline	ug	<0.40	<0.40	0.40	3108904
Tetralin	ug	0.16	<0.10	0.10	3108904
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	70	68		3108904
D10-Fluoranthene	%	102	100		3108904
D10-Phenanthrene	%	90	90		3108904
D12-Benzo(a)anthracene	%	96	96		3108904
D12-Benzo(a)pyrene	%	90	92		3108904
D12-Benzo(b)fluoranthene	%	92	92		3108904
D12-Benzo(ghi)perylene	%	94	94		3108904
D12-Benzo(k)fluoranthene	%	90	90		3108904
D12-Chrysene	%	92	92		3108904
D12-Indeno(1,2,3-cd)pyrene	%	88	88		3108904
D12-Perylene	%	88	90		3108904
D14-Dibenzo(a,h)anthracene	%	88	88		3108904
D8-Acenaphthylene	%	72	70		3108904
D8-Naphthalene	%	66	66		3108904
QC Batch = Quality Control Batch					

Maxxam Job #: B312982
 Report Date: 2013/02/07

Test Summary

Maxxam ID QJ2079
Sample ID LICA PUFF/QFF/CLS/JAN22,13
Matrix PUF AND FILTER

Collected 2013/01/22
Shipped
Received 2013/01/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	3108904	2013/01/30	2013/02/02	Lidija Tomic

Maxxam ID QJ2080
Sample ID LICA PUFF/QFF/PORT/JAN22,13
Matrix PUF AND FILTER

Collected 2013/01/22
Shipped
Received 2013/01/28

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	3108904	2013/01/30	2013/02/02	Lidija Tomic

Maxxam Job #: B312982
Report Date: 2013/02/07

GENERAL COMMENTS

7,12-dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positives found for this compound

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB312982

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3108904 LTO	Spiked Blank	D10-2-Methylnaphthalene	2013/02/02		80	%	50 - 150
		D10-Fluoranthene	2013/02/02		90	%	50 - 150
		D10-Phenanthrene	2013/02/02		84	%	50 - 150
		D12-Benzo(a)anthracene	2013/02/02		94	%	50 - 150
		D12-Benzo(a)pyrene	2013/02/02		94	%	50 - 150
		D12-Benzo(b)fluoranthene	2013/02/02		90	%	50 - 150
		D12-Benzo(ghi)perylene	2013/02/02		92	%	50 - 150
		D12-Benzo(k)fluoranthene	2013/02/02		88	%	50 - 150
		D12-Chrysene	2013/02/02		90	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2013/02/02		90	%	50 - 150
		D12-Perylene	2013/02/02		92	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2013/02/02		90	%	50 - 150
		D8-Acenaphthylene	2013/02/02		80	%	50 - 150
		D8-Naphthalene	2013/02/02		78	%	50 - 150
		RPD	Acenaphthene	2013/02/02		80	%
	Spiked Blank	Acenaphthene	2013/02/02	3.1		%	50
	RPD	Acenaphthylene	2013/02/02		78	%	60 - 130
	Spiked Blank	Acenaphthylene	2013/02/02	3.2		%	50
	RPD	Anthracene	2013/02/02		78	%	60 - 130
	Spiked Blank	Anthracene	2013/02/02	6.3		%	50
	RPD	Anthracene	2013/02/02		6.3		50
	Spiked Blank	Benzo(a)anthracene	2013/02/02		90	%	60 - 130
	RPD	Benzo(a)anthracene	2013/02/02	2.7		%	50
	Spiked Blank	Benzo(a)pyrene	2013/02/02		83	%	60 - 130
	RPD	Benzo(a)pyrene	2013/02/02	3.0		%	50
	Spiked Blank	Benzo(b)fluoranthene	2013/02/02		80	%	60 - 130
	RPD	Benzo(b)fluoranthene	2013/02/02	6.1		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2013/02/02		85	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2013/02/02	5.7		%	50
	Spiked Blank	Benzo(k)fluoranthene	2013/02/02		90	%	60 - 130
	RPD	Benzo(k)fluoranthene	2013/02/02	8.0		%	50
	Spiked Blank	Chrysene	2013/02/02		88	%	60 - 130
	RPD	Chrysene	2013/02/02	2.8		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2013/02/02		93	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2013/02/02	0		%	50
	Spiked Blank	Fluoranthene	2013/02/02		88	%	60 - 130
	RPD	Fluoranthene	2013/02/02	2.8		%	50
	Spiked Blank	Fluorene	2013/02/02		78	%	60 - 130
	RPD	Fluorene	2013/02/02	6.3		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2013/02/02		88	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2013/02/02	0		%	50
	Spiked Blank	Naphthalene	2013/02/02		83	%	60 - 130
	RPD	Naphthalene	2013/02/02	5.9		%	50
	Spiked Blank	Phenanthrene	2013/02/02		80	%	60 - 130
	RPD	Phenanthrene	2013/02/02	6.1		%	50
Spiked Blank	Pyrene	2013/02/02		80	%	60 - 130	
RPD	Pyrene	2013/02/02	3.1		%	50	
Method Blank	D10-2-Methylnaphthalene	2013/02/02		74	%	50 - 150	
	D10-Fluoranthene	2013/02/02		90	%	50 - 150	
	D10-Phenanthrene	2013/02/02		82	%	50 - 150	
	D12-Benzo(a)anthracene	2013/02/02		90	%	50 - 150	
	D12-Benzo(a)pyrene	2013/02/02		92	%	50 - 150	
	D12-Benzo(b)fluoranthene	2013/02/02		90	%	50 - 150	
	D12-Benzo(ghi)perylene	2013/02/02		92	%	50 - 150	
	D12-Benzo(k)fluoranthene	2013/02/02		88	%	50 - 150	
	D12-Chrysene	2013/02/02		90	%	50 - 150	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB312982

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3108904 LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2013/02/02		88	%	50 - 150
		D12-Perylene	2013/02/02		90	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2013/02/02		88	%	50 - 150
		D8-Acenaphthylene	2013/02/02		74	%	50 - 150
		D8-Naphthalene	2013/02/02		74	%	50 - 150
		1-Methylnaphthalene	2013/02/02	<0.10		ug	
		1-Methylphenanthrene	2013/02/02	<0.10		ug	
		2-Chloronaphthalene	2013/02/02	<0.10		ug	
		2-Methylanthracene	2013/02/02	<0.10		ug	
		2-Methylnaphthalene	2013/02/02	<0.10		ug	
		3-Methylcholanthrene	2013/02/02	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2013/02/02	<0.10		ug	
		9,10-Dimethylanthracene	2013/02/02	<0.40		ug	
		Acenaphthene	2013/02/02	<0.050		ug	
		Acenaphthylene	2013/02/02	<0.050		ug	
		Anthracene	2013/02/02	<0.050		ug	
		Benzo(a)anthracene	2013/02/02	<0.050		ug	
		Benzo(a)fluorene	2013/02/02	<0.10		ug	
		Benzo(a)pyrene	2013/02/02	<0.050		ug	
		Benzo(b)fluoranthene	2013/02/02	<0.050		ug	
		Benzo(b)fluorene	2013/02/02	<0.10		ug	
		Benzo(e)pyrene	2013/02/02	<0.10		ug	
		Benzo(g,h,i)perylene	2013/02/02	<0.050		ug	
		Benzo(k)fluoranthene	2013/02/02	<0.050		ug	
		Biphenyl	2013/02/02	<0.10		ug	
		Chrysene	2013/02/02	<0.050		ug	
		Coronene	2013/02/02	<0.10		ug	
		Dibenz(a,h)anthracene	2013/02/02	<0.050		ug	
		Dibenzo(a,e)pyrene	2013/02/02	<0.20		ug	
		Fluoranthene	2013/02/02	<0.050		ug	
		Fluorene	2013/02/02	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2013/02/02	<0.050		ug	
		m-Terphenyl	2013/02/02	<0.10		ug	
		Naphthalene	2013/02/02	<0.072		ug	
		o-Terphenyl	2013/02/02	<0.10		ug	
		Perylene	2013/02/02	<0.10		ug	
		Phenanthrene	2013/02/02	<0.050		ug	
		p-Terphenyl	2013/02/02	<0.10		ug	
		Pyrene	2013/02/02	<0.050		ug	
		Quinoline	2013/02/02	<0.40		ug	
		Tetralin	2013/02/02	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

Lakeland Industry & Community Association

Maskwa Monitoring Site
Ambient Air Monitoring
Data Report
For
January 2013

Prepared By:



February 27, 2013

Lakeland Industry & Community Association Ambient Air Monitoring Maskwa

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Introduction

The following Ambient Air Monitoring report was prepared for:

Mr. Mike Bisaga
Lakeland Industry & Community Association
Box 8237
5107W – 50 Street
Bonnyville, Alberta
T9N 2J5

Monitoring Location: Maskwa
Data Period: January 2013

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Craig Snider

Calibration Procedure

The following calibration procedure applies to all calibrations conducted at the Lakeland Industry & Community Association Air Monitoring Station.

Calibration gas concentrations are generated using a dynamic mass flow controlled calibrator. EPA Protocol one gases are diluted with zero air generated on site. The Mass Flow Controllers in the calibrator are referenced using an NIST traceable flow meter once per month. All listed flows are reported as corrected to Standard Temperature and Pressure (STP).

Generated zero gas is introduced to the analyzer first. Three concentrations of calibration gas are then generated in order to introduce points at approximately 50-80%, 25-40% & 10-20% of the analyzer's full-scale range. An auto zero and span are then performed to validate the daily zero and span values recorded to the next multi-point calibration.

All indicated concentrations are taken from the ESC data logger used to collect the data for monthly reporting.

The calibrations conducted at the LICA - Maskwa Air Monitoring Stations conform to the following Maxxam Standard Operation Procedures:

- CAL SOP-00211
- CAL SOP-00209
- CAL SOP-00213
- CAL SOP-00214
- CAL SOP-00208

Conformance of each calibration to Alberta Environment regulations is outlined in the individual calibration reports. The slope and correlation coefficient are derived from the calculated and indicated analyzer responses. The percent change is calculated using the previous calibration correction factor and the current correction factor before adjustment. All calibration's and maintenance conforms to the procedures outlined in the *Air Monitoring Directive, Appendix A-10, Section 1.6*.

MONTHLY CONTINUOUS DATA SUMMARY

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – MASKWA

Continuous Ambient Monitoring – January 2013

LICA MASKWA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						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	1.05	17	15	12, 13	15.5, 10.5	308(NW), 307(NW)	3.7	15	99.9
H2S (PPB)	10	3	1	0	0.24	14	27	7	2.5	121(ESE)	2.8	27	99.9
THC (PPM)	-	-	-	-	2.42	6.7	27	7	2.5	121(ESE)	4.0	27	100.0
NOx (PPB)	-	-	-	-	11.28	95.9	11	10	2.4	210(SSW)	23.5	11	100.0
NO (PPB)	-	-	-	-	0.93	37	11	10	2.4	210(SSW)	4.1	11	100.0
NO ₂ (PPB)	159	-	0	-	6.03	29.5	12	6	1.8	219(SW)	12.6	12	100.0
VECTOR WS (KPH)	-	-	-	-	5.05	17.3	15	10	-	303(WNW)	9.3	1	100.0
VECTOR WD (DEGREES)	-	-	-	-	301(WNW)	-	-	-	-	-	-	-	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	71.92	89	15	6	5.7	238(SW)	84.2	15	100.0
TEMPERATURE (DEG C)	-	-	-	-	-14.55	5.5	15	11, 12	16.1, 15.5	307(NW), 308(NW)	-0.9	15	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	940	961	20	VAR	VAR	VAR	958.9	20	100.0
PRECIPITATION (MM)	-	-	-	-	0.04	3.2	15	10	17.3	303(WNW)	16.7	15	99.5

NA-NOT APPLICABLE VAR-VARIOUS

General Monthly Summary

Equipment Operation

The following summary outlines the analyzer performance. Any non-conformances, problems encountered or maintenance performed are detailed at the end of each section.

AQM STATION – LICA – Maskwa

Sulphur Dioxide (PPB)

- Analyzer make / model - API 100E, S/N: 508

No operational issues were observed during the month. The inlet filter was changed before the monthly calibration was started on January 3rd. Some daily span results went above +10% of the limited range from January 8th to January 24th, and then went back to within +/-10% of the limited range. We are not sure reasons that may cause this shift. The analyzer and zero/span system will be checked during next site visit in February. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

- Analyzer make / model - API 101E, S/N: 511

No operational issues were observed during the month. The as found points check was performed on January 3rd to verify the analyzer's functionality and to ensure that data collected after the analyzer was installed on December 28th, 2012 and before an installation calibration were valid. The check result was within the acceptable range. A 3-points installation calibration was then performed. The inlet filter was changed before the installation calibration was started. Data was corrected using daily zero information.

There was one 1-Hour average contravention recorded at hour 7 on January 27th, concentration of 14ppb. THE AESRD reference # is 266784.

Total Hydrocarbon (PPM)

- Analyzer make / model –TECO 51C-LT, S/N: 436609738

No operational issues were observed during the month. Following the H2 gas cylinder and CH4 gas cylinder replacements, the monthly calibration was performed on January 3rd. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – Maskwa

Nitrogen Dioxide (PPB)

- Analyzer make / model - API 200E, S/N: 594

No operational issues were observed during the month. The inlet filter was changed before the monthly calibration was started on January 3rd. Data was corrected using daily zero information.

Vector Wind Speed (KPH) & Vector Wind Direction (DEG)

- System make / model - MetOne 50.5H Sonic, S/N: H10703

The wind system is reported as vector wind speed and vector wind direction.

No operational issues were observed this month. The wind speed maximum reading recorded on January 11th at hour 1 and hour 8 were invalidated, as the values went above the full scale.

Relative Humidity (PERCENT)

- System make / model - Met One 083

No operational issues were observed during the month.

Precipitation (MM)

- System make / model - Met One 387

During the site visit on December 24th, it was found that the heater was not working efficiently. The rain gauge sensor with a heater was replaced on January 16th. Data collected between January 1st and 16th should be used with caution.

General Monthly Summary

AQM STATION – LICA – Maskwa

Barometric Pressure (MILLIBAR)

- System make / model - Met One 092
- No operation issues were observed during the month.

Ambient Temperature (DEGC)

- System make / model - Met One 060
- No operational issues were observed during the month.

Trailer Temperature (DEG C)

- System make / model – R&R 61
- No operational issues were observed during the month.

Standard Deviation Wind Direction (DEG)

- System make / model –Met One 50.5H
- No operational issues were observed during the month.

General Monthly Summary

AQM STATION – LICA – Maskwa

Datalogger

- System make / model - ESC 8832
- Software make/version - ESC v 5.51a

No operational issues were observed during the month.

Trailer

The manifold was cleaned on January 3rd.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA
JANUARY 2013
SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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		
DAY	DAY	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.	
1	1	2	2	0	0	0	3	1	S	1	2	3	13	7	7	7	2	0	0	2	5	9	6	1	6	13	3.4	24	
2	2	4	0	0	0	0	2	S	0	0	0	1	0	0	1	1	1	1	1	1	1	1	2	2	1	4	0.9	24	
3	3	1	3	4	3	3	S	3	3	3	2	C	C	C	C	0	0	0	Y	0	0	0	0	2	8	8	2.1	23	
4	4	5	3	2	1	S	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	5	0.6	24	
5	5	0	1	1	S	0	0	1	0	0	0	1	0	0	1	1	1	0	0	0	0	1	1	1	1	1	1	0.5	24
6	6	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	9	2	9	0.8	24	
7	7	0	S	3	3	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	3	0.7	24
8	8	S	2	1	1	1	4	9	9	14	7	11	1	2	2	0	2	0	0	0	0	0	0	0	S	14	3.0	24	
9	9	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	24	
10	10	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0.0	24	
11	11	0	0	0	0	0	0	0	0	0	0	1	1	2	1	0	1	0	0	1	1	S	0	0	0	2	0.3	24	
12	12	0	0	0	0	0	1	2	1	0	2	0	0	0	0	0	2	1	1	0	S	1	1	0	0	2	0.5	24	
13	13	0	0	0	2	3	5	2	1	1	2	2	3	2	1	1	2	1	0	S	0	0	0	0	0	5	1.2	24	
14	14	0	0	0	0	0	0	1	1	1	1	1	1	1	2	2	1	1	S	0	1	1	1	1	0	2	0.7	24	
15	15	0	0	1	0	0	1	0	0	1	9	15	16	17	17	7	1	S	0	0	1	0	0	0	0	17	3.7	24	
16	16	0	0	1	0	0	1	0	0	0	0	0	1	2	0	0	S	0	0	0	0	0	0	2	0	2	0.3	24	
17	17	0	0	0	0	0	0	0	0	2	1	0	1	1	0	S	1	2	2	0	1	1	0	2	0	2	0.6	24	
18	18	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	2	3	1	1	0	0	3	0.3	24	
19	19	0	0	0	0	4	3	2	1	0	1	3	1	S	1	1	1	0	0	0	0	2	3	3	12	12	1.7	24	
20	20	4	4	8	2	8	4	0	4	4	7	3	S	1	1	0	0	0	0	0	0	0	0	0	0	8	2.2	24	
21	21	1	0	0	0	0	0	0	0	0	0	S	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0.5	24	
22	22	1	1	1	1	1	2	2	2	2	S	2	0	1	1	0	0	1	1	7	6	0	0	0	0	7	1.4	24	
23	23	0	0	0	0	0	0	0	0	S	2	4	2	1	5	5	6	3	5	4	5	1	1	2	1	6	2.0	24	
24	24	1	4	2	2	1	1	2	S	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	1	4	0.7	24	
25	25	1	1	1	1	1	1	S	0	0	0	0	0	0	0	1	2	2	1	0	0	0	1	0	0	2	0.6	24	
26	26	0	0	0	0	0	S	0	0	0	0	4	3	2	1	2	1	1	1	0	0	0	0	0	0	4	0.7	24	
27	27	0	0	0	0	S	0	0	0	0	0	1	1	2	2	2	1	1	1	0	0	0	1	0	0	2	0.5	24	
28	28	1	0	0	S	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0.2	24	
29	29	0	0	S	4	3	1	0	0	0	0	2	5	2	0	4	3	0	1	0	0	0	0	0	0	5	1.1	24	
30	30	0	S	0	0	0	0	0	0	0	0	0	1	0	0	1	3	2	1	2	1	2	2	3	2	3	0.9	24	
31	31	S	0	0	0	0	0	0	0	0	0	0	1	1	1	2	1	Y	1	1	1	1	1	1	S	2	0.6	24	
HOURLY MAX		5	4	8	4	8	5	9	9	14	9	15	16	17	17	7	6	3	5	7	6	9	6	9	12				
HOURLY AVG		0.8	0.8	0.9	0.7	0.9	1.0	0.9	0.8	1.0	1.2	1.9	1.8	1.6	1.6	1.3	1.2	0.6	0.7	0.7	0.9	0.8	0.9	1.1	1.3				

STATUS FLAG CODES

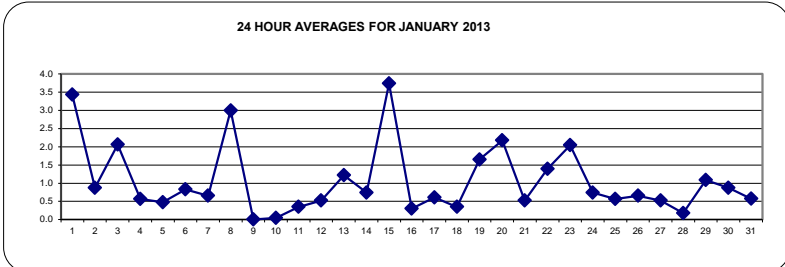
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

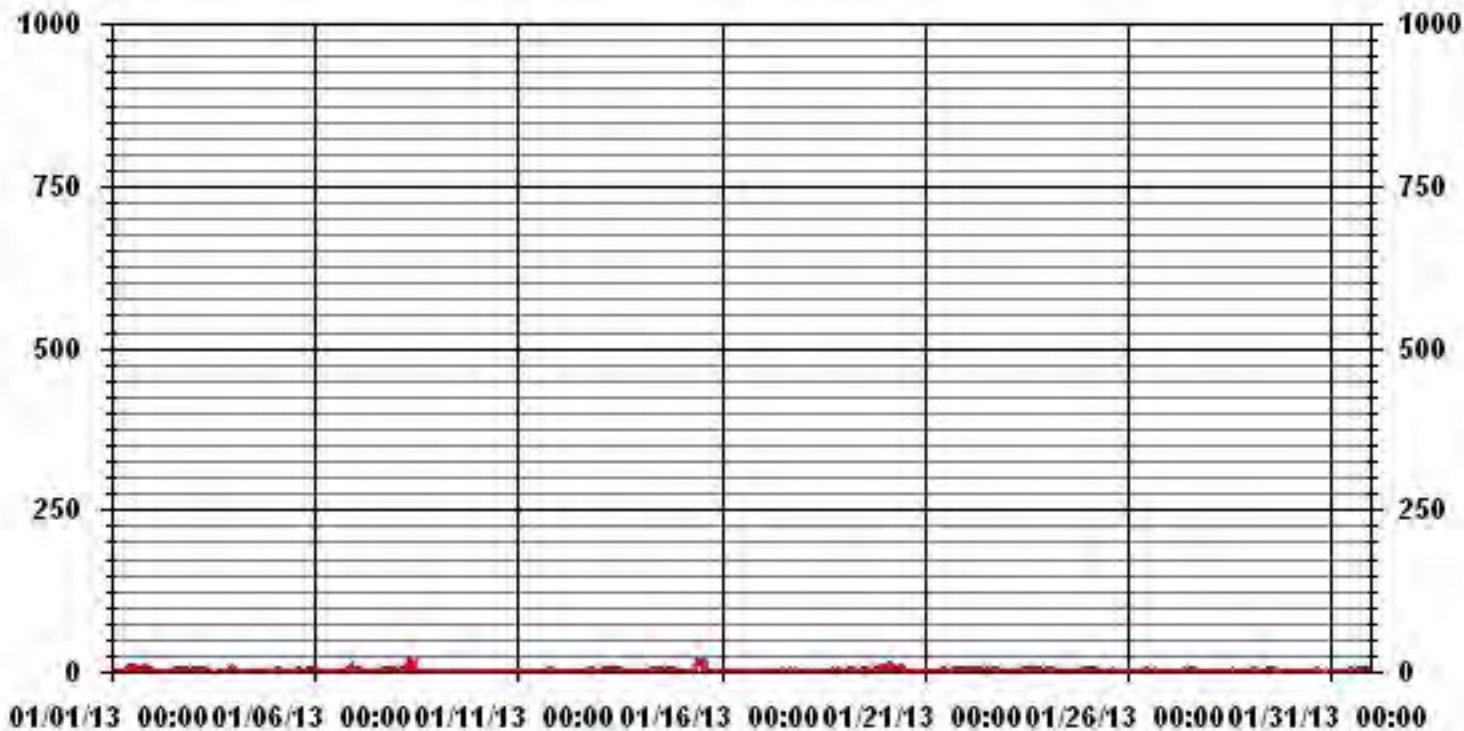
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
-----------------------------	------	-----	-----	-------	----	-----

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	311
MAXIMUM 1-HR AVERAGE:	17 PPB @ HOUR(S) 12, 13 ON DAY(S) 15
MAXIMUM 24-HR AVERAGE:	3.7 PPB ON DAY(S) 15
IZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION:	2.10
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
MONTHLY AVERAGE:	1.05 PPB



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2013

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	24-HOUR	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX	AVG	RDGS	
DAY																												
1	4	4	0	0	1	8	4	S	2	3	10	19	16	22	20	4	3	0	18	17	17	14	4	18	22	12	9.0	24
2	12	5	3	0	8	7	S	1	1	1	4	1	1	2	1	2	2	2	1	2	2	2	3	2	2	22	2.8	24
3	2	5	5	4	3	S	4	4	5	3	C	C	C	C	C	1	1	Y	1	1	1	1	6	17	17	3.8	23	
4	11	5	4	1	S	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	2	11	1.8	24	
5	1	1	2	S	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	2	2	2	2	1.3	24	
6	1	1	S	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	1	1	5	14	18	14	18	2.7	24	
7	1	S	11	10	1	1	7	0	4	0	0	0	1	1	1	2	2	1	1	1	2	1	1	2	11	2.2	24	
8	S	3	2	1	1	15	19	19	22	18	30	4	5	8	2	3	1	1	1	0	0	0	0	S	30	7.0	24	
9	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	1	1	1	0	0	0	S	0	1	0.4	24
10	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0	1	0.3	24
11	0	0	0	1	0	1	1	0	1	1	1	1	4	1	1	1	1	1	1	1	S	0	0	0	0	4	0.8	24
12	1	1	0	0	0	2	3	2	0	9	7	0	1	1	1	10	6	4	3	S	2	2	1	1	10	2.5	24	
13	1	1	2	5	5	14	3	2	2	3	4	4	3	2	2	3	2	1	S	1	1	1	1	1	14	2.8	24	
14	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	S	1	1	1	1	2	1	2	1.5	24	
15	1	1	2	1	1	3	1	1	2	19	19	21	22	20	1	S	1	1	1	1	1	1	1	1	22	6.3	24	
16	0	1	2	1	1	1	1	1	1	1	0	2	5	1	0	S	0	0	0	0	0	3	9	1	9	1.3	24	
17	0	1	1	0	0	0	0	0	6	6	3	3	4	1	S	3	5	4	1	3	3	1	7	1	7	2.3	24	
18	1	0	0	0	0	0	0	0	0	0	0	0	0	S	1	2	2	1	3	4	4	3	1	3	4	1.1	24	
19	1	0	0	0	12	10	10	2	1	3	11	6	S	1	2	1	1	1	1	2	3	3	11	19	19	4.4	24	
20	15	20	18	10	19	14	1	6	8	16	10	S	3	2	2	1	0	0	0	0	1	1	1	1	20	6.5	24	
21	2	2	1	1	1	1	1	1	1	1	S	1	3	3	1	1	1	2	2	1	2	2	1	1	3	1.4	24	
22	1	1	1	1	2	4	6	6	4	S	7	2	4	2	1	0	8	6	12	10	2	0	0	0	12	3.5	24	
23	0	0	0	0	0	0	0	0	S	8	8	6	3	10	8	9	6	9	9	9	3	2	4	2	10	4.2	24	
24	3	7	4	3	2	2	4	S	1	3	2	3	1	1	1	1	1	1	1	0	0	0	1	1	7	1.9	24	
25	1	1	1	1	1	1	S	0	0	0	1	1	1	2	2	3	2	1	1	1	1	1	1	1	3	1.1	24	
26	1	1	1	1	1	S	1	1	1	1	5	4	2	2	2	2	1	1	1	1	1	1	1	1	5	1.5	24	
27	1	1	1	1	S	1	1	1	1	1	1	2	2	2	2	2	1	1	1	1	1	1	1	1	2	1.2	24	
28	1	1	1	S	0	0	0	0	0	0	2	1	2	2	2	2	0	0	0	0	0	1	1	0	2	0.7	24	
29	0	1	S	5	4	1	1	0	0	0	10	10	9	3	11	7	6	6	0	0	0	0	0	0	11	3.2	24	
30	0	S	0	1	0	1	1	1	0	1	1	1	1	1	2	4	3	2	3	2	3	4	3	4	4	1.7	24	
31	S	1	0	1	0	1	1	0	1	1	1	2	2	2	3	0	Y	1	1	1	1	1	2	S	3	1.1	24	
HOURLY MAX	15	20	18	10	19	15	19	19	22	19	30	21	22	22	20	10	8	9	18	17	17	14	18	19				
HOURLY AVG	2.2	2.3	2.2	1.8	2.3	3.1	2.5	1.8	2.3	3.5	4.9	3.4	3.5	3.4	3.3	2.4	2.1	1.8	2.2	2.1	2.0	2.1	2.8	3.3				

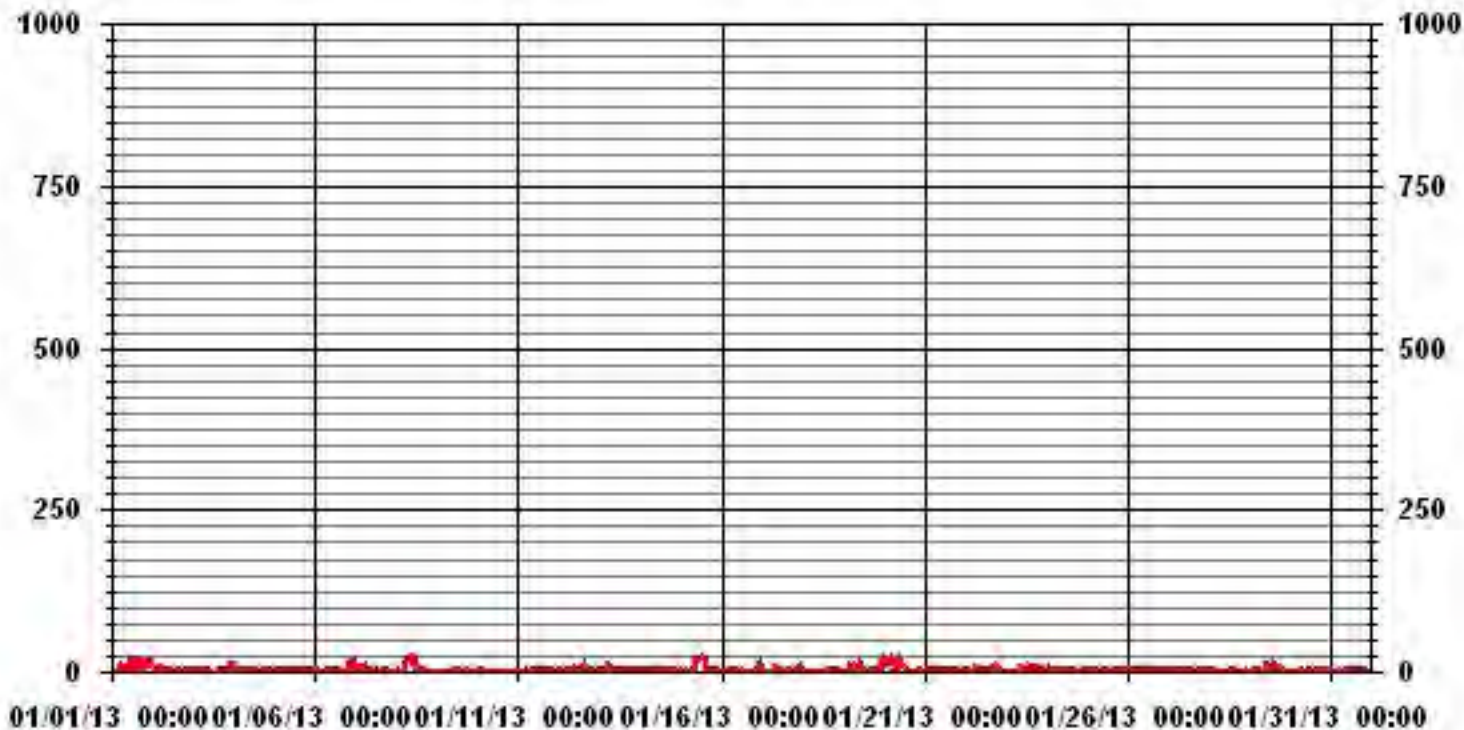
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	561					
MAXIMUM INSTANTANEOUS VALUE:	30	PPB	@ HOUR(S)	10	ON DAY(S)	8
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	4.20					

01 Hour Averages



— LICA30 SO2MAX PPB

LICA30
 SO2_ / WDR Joint Frequency Distribution (Percent)

January 2013

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	6.95	6.38	5.67	4.82	7.23	3.82	.85	1.70	3.54	16.31	10.21	3.40	7.65	6.95	8.51	5.95	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	6.95	6.38	5.67	4.82	7.23	3.82	.85	1.70	3.54	16.31	10.21	3.40	7.65	6.95	8.51	5.95	

Calm : .00 %

Total # Operational Hours : 705

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 20	49	45	40	34	51	27	6	12	25	115	72	24	54	49	60	42	705
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	49	45	40	34	51	27	6	12	25	115	72	24	54	49	60	42	

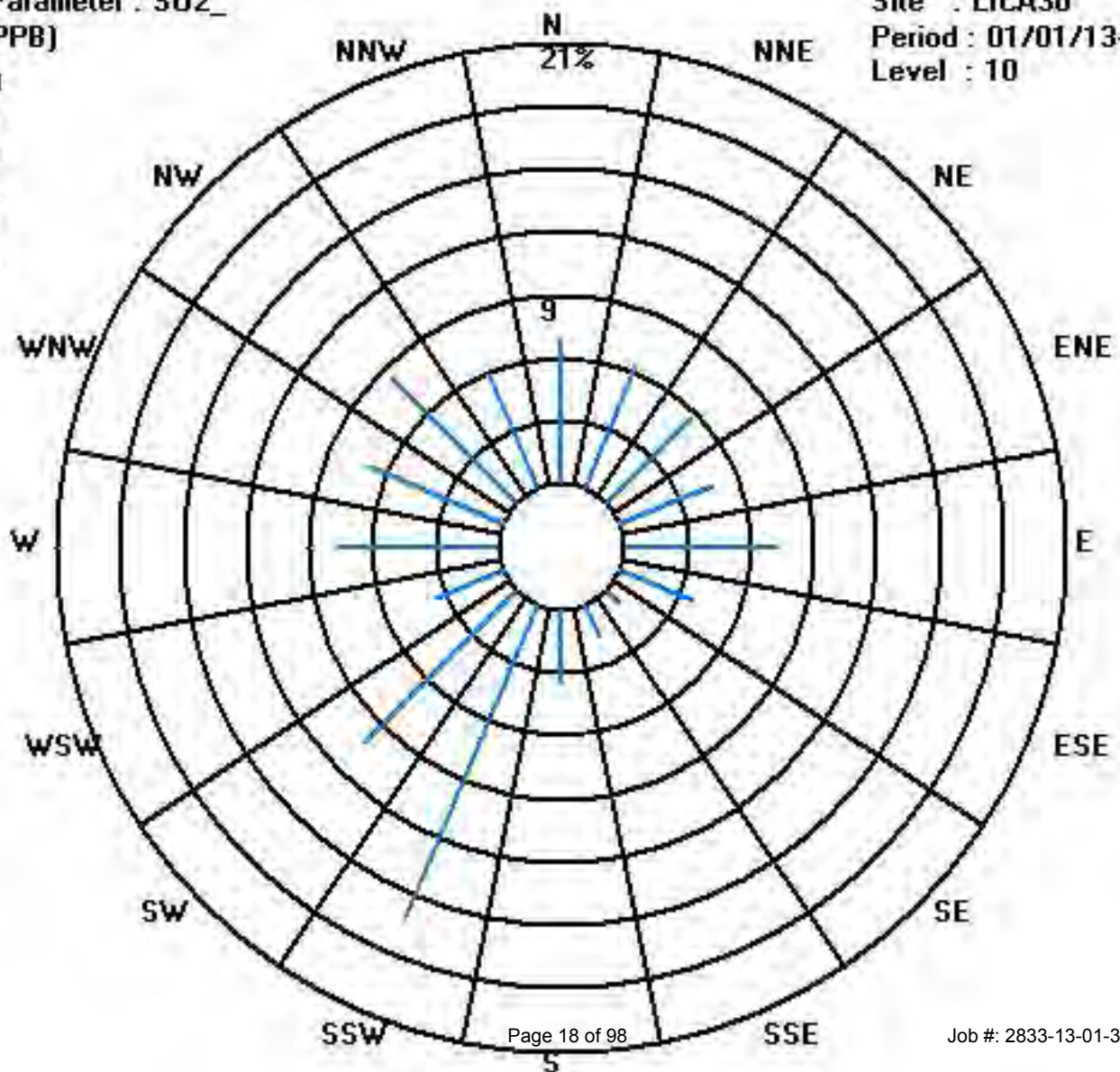
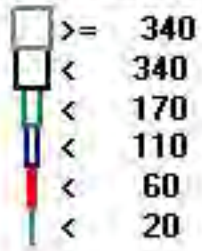
Calm : .00 %

Total # Operational Hours : 705

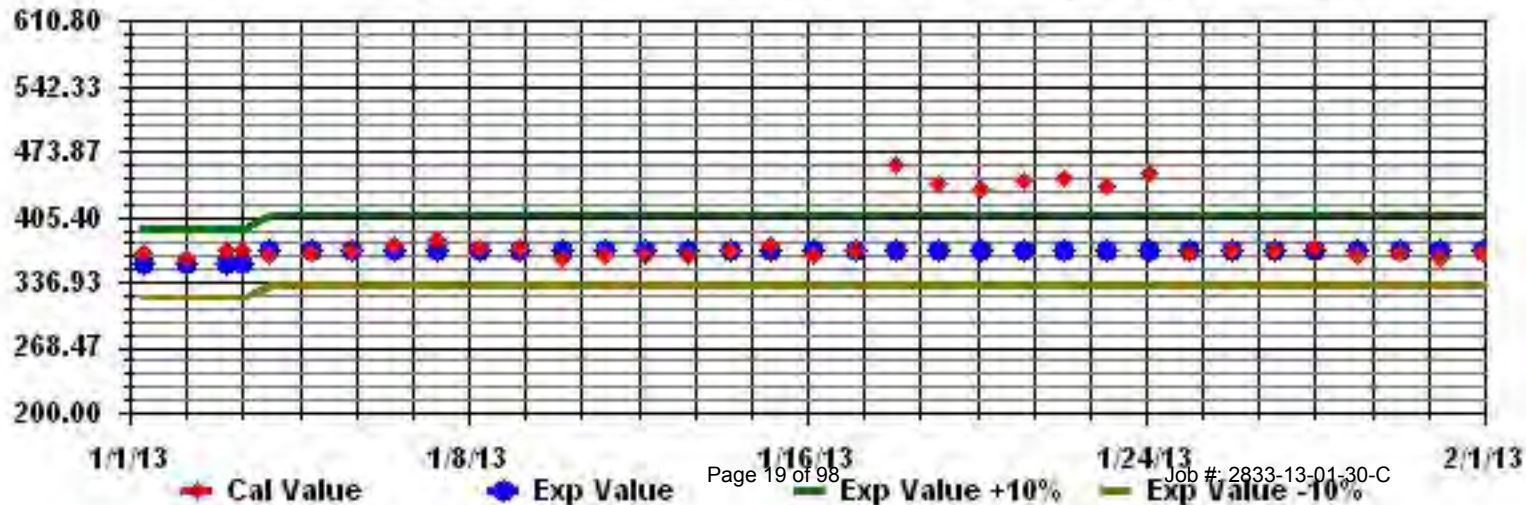
Class Limits (PPB)

Period : 01/01/13-01/31/13

Level : 10



Calibration Graph for Site: LICA30 Parameter: SO2_ Sequence: SO2 Phase: SPAll



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2013

HYDROGEN SULPHIDE (H₂S) hourly averages in ppb

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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			
DAY	HOURLY MAX	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.	
1		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	24	
2		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	
3		0	0	0	0	0	S	0	0	0	0	C	C	C	C	0	0	Y	0	0	0	0	0	0	0	0	0.0	23	
4		0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
5		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	24	
6		0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	0	1	0.2	24
7		0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0.1	24
8		S	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	S	1	0.4	24	
9		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	24	
10		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	24	
11		0	0	0	1	0	1	1	2	2	2	2	1	0	0	0	0	0	0	0	0	0	S	0	0	0	2	0.5	24
12		0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0.2	24
13		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	24
14		0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	0.8	24
15		1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	1	S	1	0	0	1	1	0	0	0	1	0.7	24
16		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0	24
17		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	24
18		0	0	0	1	1	1	0	0	1	0	0	1	1	S	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
19		0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0	0	0	0	0	0	0	0	1	0.0	24
20		0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
21		0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
22		0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
23		0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
24		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
25		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	24
26		0	0	0	0	0	S	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8	2	1	3	8	1.2	24
27		3	3	4	4	S	2	2	14	8	7	4	3	1	1	1	1	1	1	1	1	1	1	1	1	0	14	2.8	24
28		0	1	1	S	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
29		0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
30		0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
31		S	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0.0	24	
HOURLY MAX		3	3	4	4	1	2	2	14	8	7	4	3	1	1	1	1	1	1	1	1	1	8	2	1	3			
HOURLY AVG		0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.7	0.5	0.4	0.3	0.3	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.4	0.2	0.1	0.1			

STATUS FLAG CODES

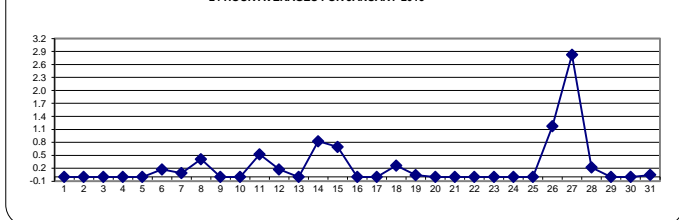
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT: ALBERTA ENVIRONMENT: 1-HR 10 PPB 24-HR 3 PPB

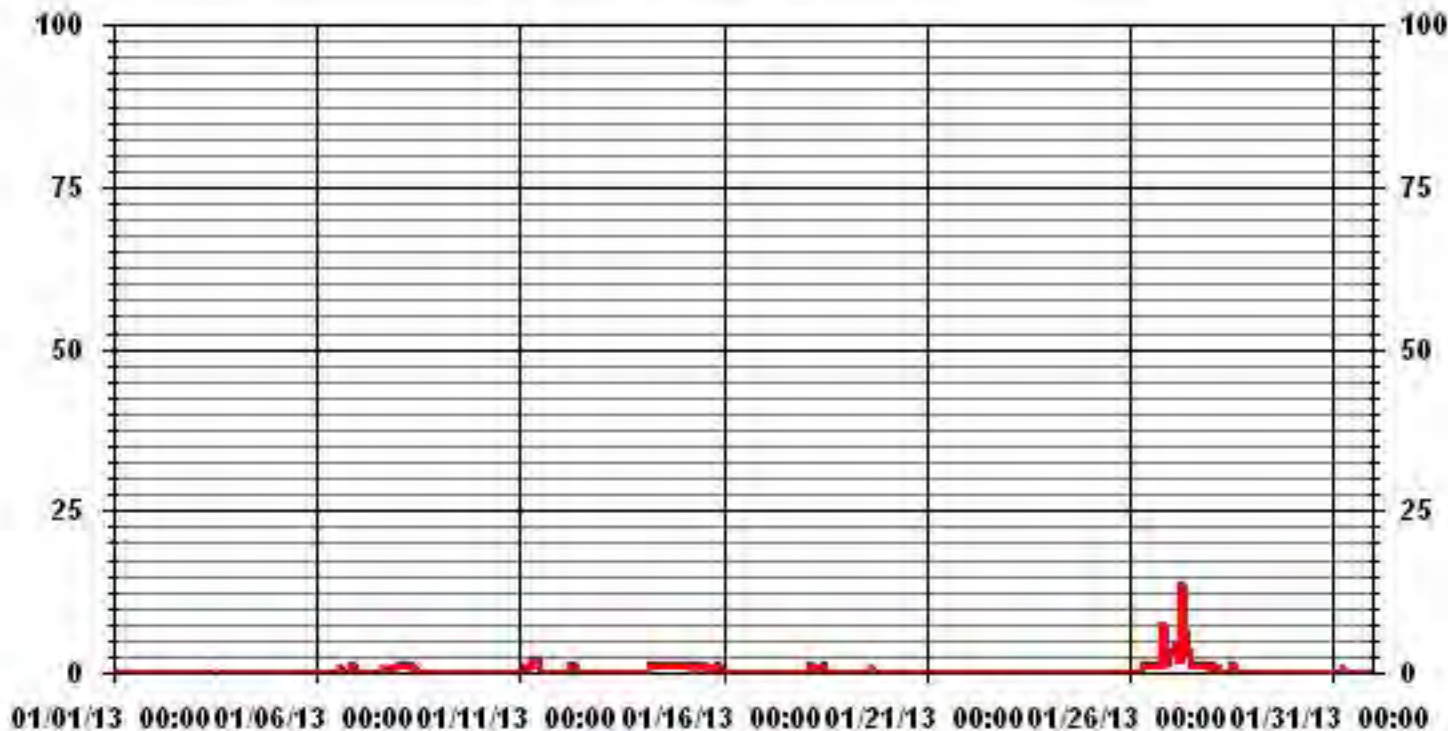
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	1
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	114
MAXIMUM 1-HR AVERAGE:	14 PPB @ HOUR(S) 7 ON DAY(S) 27
MAXIMUM 24-HR AVERAGE:	2.8 PPB ON DAY(S) 27
	VAR-VARIOUS
IZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	5 HRS
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	0.87
MONTHLY AVERAGE:	0.24 PPB

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2013

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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		
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.	
DAY																												
1	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0.1	24
2	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
3	0	0	0	0	0	S	0	0	0	0	C	C	C	C	C	1	0	Y	1	0	0	0	0	0	1	0.2	23	
4	1	0	1	1	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
5	0	0	0	S	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
6	0	1	S	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24
7	0	S	1	1	0	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	24
8	S	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	1	0	0	S	1	0.6	24	
9	0	0	0	0	1	1	0	0	1	1	0	1	1	1	0	1	0	1	1	1	1	1	0	S	0	1	0.5	24
10	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	24
11	0	0	1	1	1	1	2	2	2	2	3	1	1	0	0	0	0	0	0	0	0	S	0	0	0	3	0.7	24
12	0	0	1	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	S	0	0	0	1	1	0.3	24
13	0	0	1	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0	S	0	0	0	0	1	1	1	0.3	24
14	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	0.9	24
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1.0	24
16	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0.1	24
17	0	1	1	0	0	0	0	0	0	0	0	0	0	0	S	1	1	0	0	0	1	0	0	1	1	1	0.3	24
18	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	0	0	0	0	0	0	0	0	0	0	1	0.7	24
19	0	0	0	0	0	0	0	1	1	0	0	0	S	0	1	1	0	0	0	0	0	0	0	0	0	1	0.2	24
20	0	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
21	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0.1	24
22	0	0	0	0	0	0	1	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	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	24
24	0	1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.1	24
25	0	1	1	0	0	1	S	1	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0.7	24
26	1	1	1	1	1	S	1	1	1	5	5	1	1	1	1	1	1	1	1	1	4	17	7	2	4	17	2.6	24
27	5	5	7	5	S	3	2	37	10	9	5	5	2	1	1	1	1	1	1	1	1	1	1	1	1	37	4.6	24
28	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	0.8	24
29	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
30	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
31	S	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	1	0	1	1	1	0	S	1	0.3	24	
HOURLY MAX	5	5	7	5	1	3	2	37	10	9	5	5	2	1	1	1	1	1	1	1	4	17	7	2	4			
HOURLY AVG	0.3	0.6	0.7	0.5	0.3	0.5	0.6	1.8	0.8	0.8	0.8	0.6	0.4	0.3	0.4	0.5	0.3	0.3	0.3	0.5	0.9	0.4	0.3	0.5				

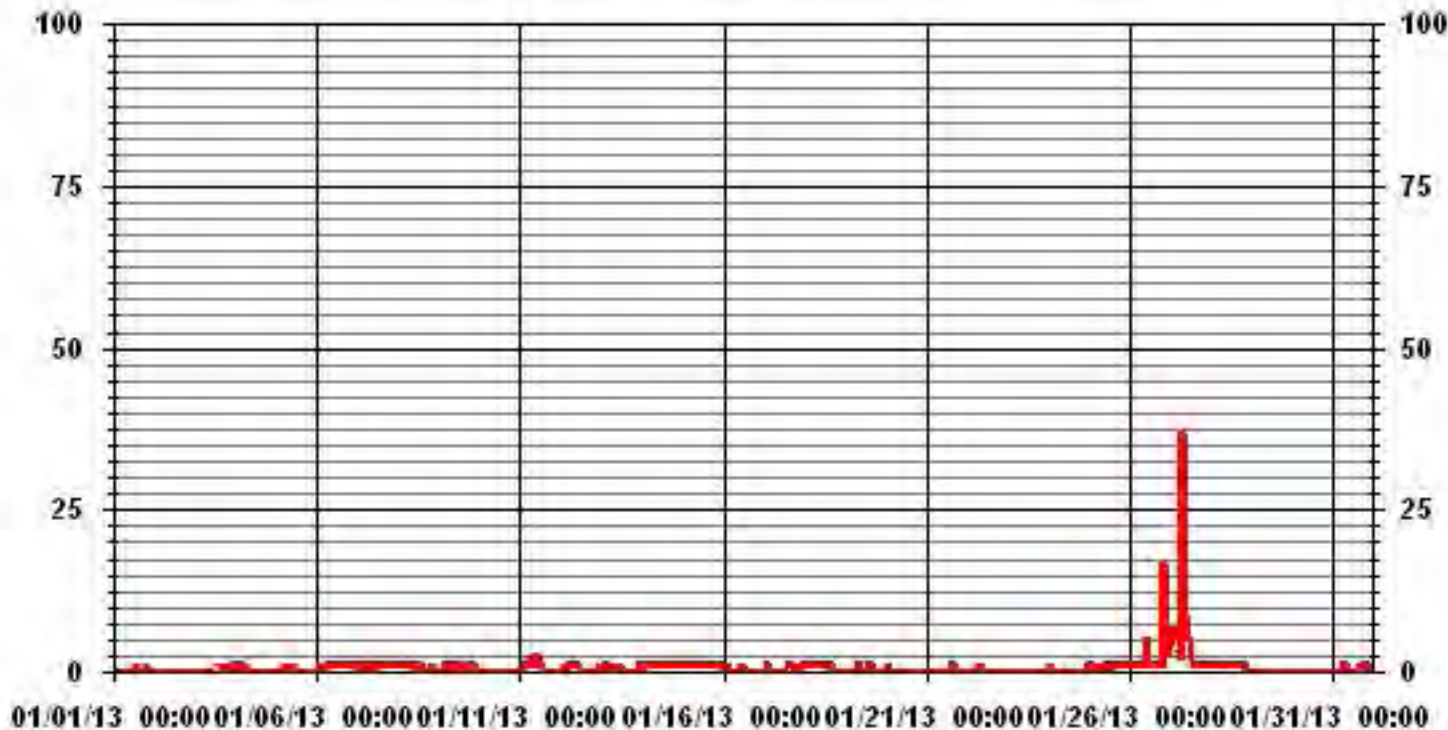
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	270					
MAXIMUM INSTANTANEOUS VALUE:	37	PPB	@ HOUR(S)	7	ON DAY(S)	27
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	1.77					

01 Hour Averages



LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 30
Site Name : LICA30
Parameter : H2S_
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
< 3	6.96	6.10	5.39	4.68	7.10	3.55	.85	1.42	3.26	16.47	10.22	3.40	7.52	6.96	8.52	5.96	98.43
< 10	.00	.28	.28	.14	.14	.14	.00	.14	.28	.00	.00	.00	.00	.00	.00	.00	1.42
< 50	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	6.96	6.39	5.68	4.82	7.24	3.83	.85	1.56	3.55	16.47	10.22	3.40	7.52	6.96	8.52	5.96	

Calm : .00 %

Total # Operational Hours : 704

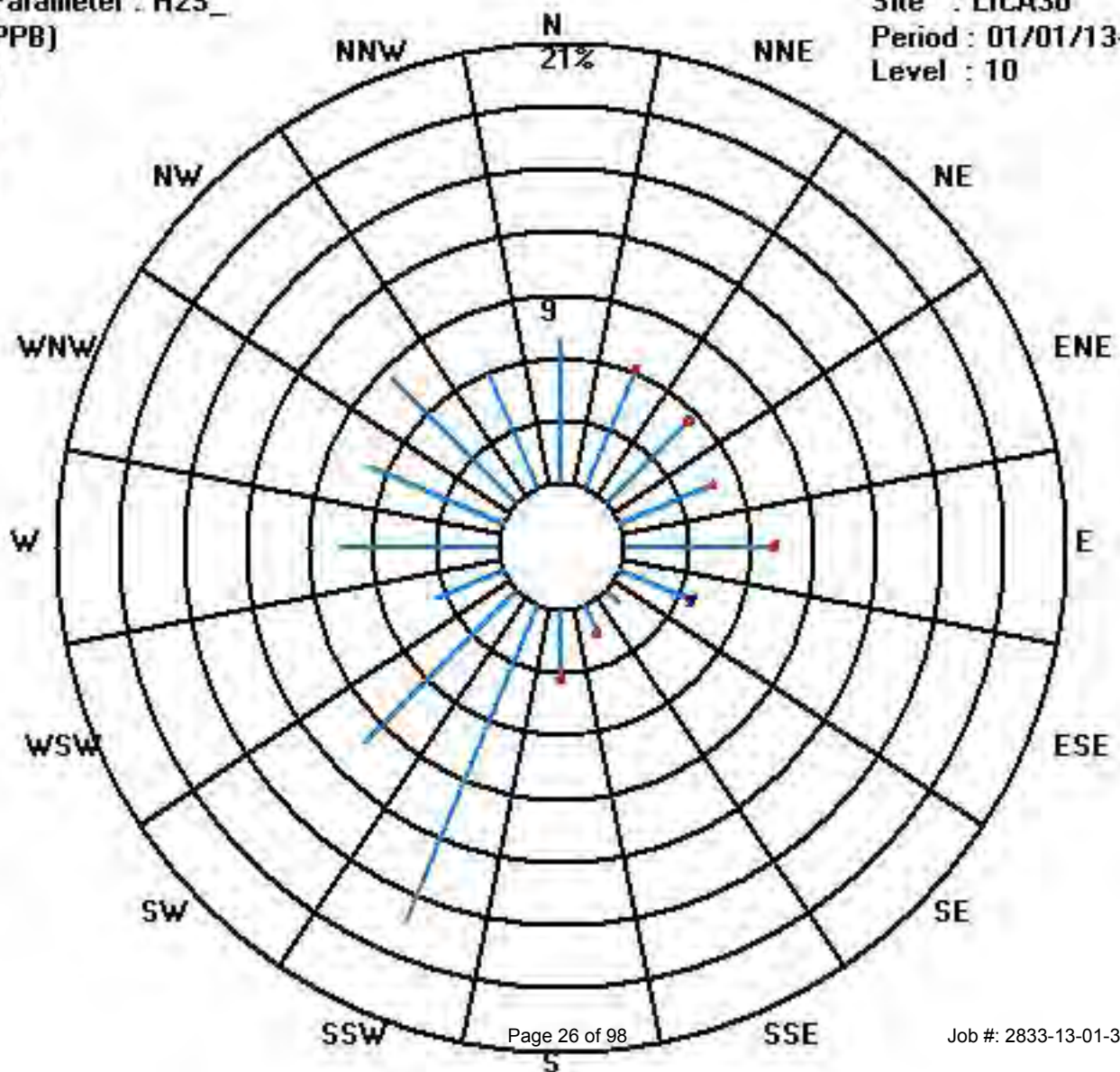
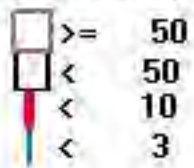
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	49	43	38	33	50	25	6	10	23	116	72	24	53	49	60	42	693
< 10		2	2	1	1	1		1	2								10
< 50																	
>= 50																	
Totals	49	45	40	34	51	27	6	11	25	116	72	24	53	49	60	42	

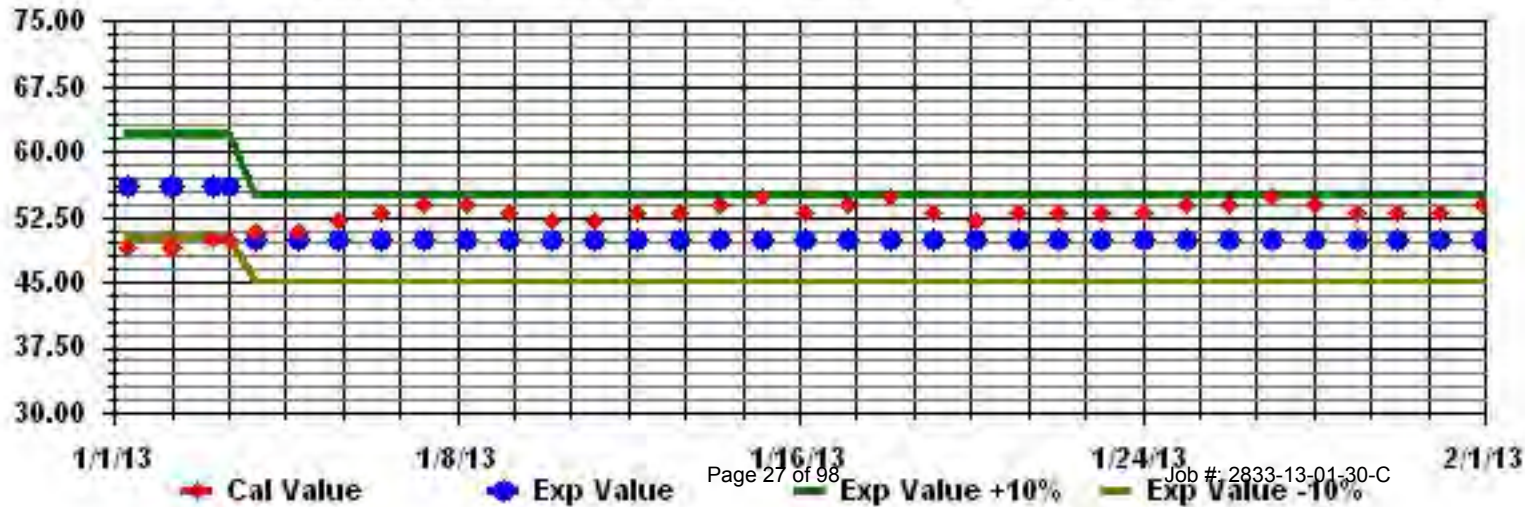
Calm : .00 %

Total # Operational Hours : 704

Class Limits (PPB)



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

JANUARY 2013

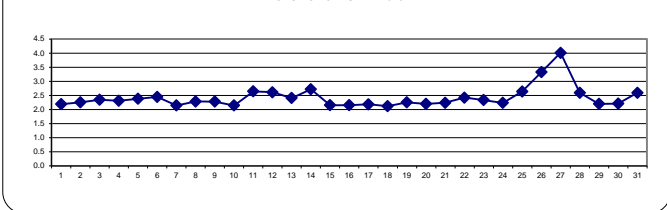
TOTAL HYDROCARBONS hourly averages in ppm

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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			
DAY	HOURLY MAX	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.	
1		2.9	2.8	2	2	2.1	2.2	2.1	S	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.3	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.9	2.2	24
2		2.1	2.1	2.1	2.1	2.1	2.2	S	2.1	2.2	2.4	2.5	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.3	2.4	2.3	2.3	2.3	2.3	2.4	2.5	2.3	24
3		2.4	2.4	2.5	2.6	2.6	S	2.6	2.6	2.4	2.4	2.4	2.1	2.1	2.1	C	C	C	C	C	2.1	2.1	2.1	2.3	2.4	2.6	2.3	24	
4		2.3	2.4	2.4	2.3	S	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.5	2.9	3.4	3.4	2.3	24	
5		3.3	3.2	3.1	S	2.5	2.2	2.2	2.2	2.1	2.1	2.3	2.1	2.1	2.1	2.3	2.3	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	3.3	2.4	24	
6		2.4	2.5	S	2.5	2.4	2.4	2.4	2.5	2.7	2.6	2.6	2.7	3	3.1	3.1	2.4	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	3.1	2.4	24
7		2	S	2.1	2.1	2	2	2.1	2	2.1	2	2	2.1	2.2	2.1	2.2	2.1	2.1	2.1	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.1	24	
8		S	2.6	2.9	3.1	3	2.5	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.3	2.2	S	3.1	2.3	24	
9		2.3	2.3	2.2	2.5	2.5	2.4	2.4	2.4	2.3	2.3	2.5	2.5	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	S	2.1	2.5	2.3	24	
10		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	S	2.2	2.3	2.3	2.1	24	
11		2.4	2.4	2.6	2.6	2.5	2.5	2.6	2.8	3.2	3.2	3	2.5	2.4	2.8	3	2.5	2.4	2.5	2.5	S	2.5	2.6	2.8	3.2	2.6	2.4	24	
12		2.8	2.7	2.7	2.7	3	3.5	3.5	3.3	3.4	3.4	2.3	2.2	2.2	2.2	2.2	2.2	2.4	2.3	S	2.2	2.2	2.2	2.3	3.5	2.6	2.4	24	
13		2.3	2.3	2.3	2.5	2.5	2.4	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.2	2.2	2.3	2.3	2.4	S	2.5	2.6	2.8	2.9	2.7	2.9	2.4	24	
14		2.8	3.2	3	3.4	3	2.7	2.5	2.5	2.4	2.7	2.9	2.8	2.8	2.7	2.6	2.5	2.5	S	2.5	2.6	2.6	2.6	2.7	2.5	3.4	2.7	24	
15		2.4	2.4	2.2	2.4	2.4	2.5	2.3	2.1	2	2	2	2	2	2	2	2	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.2	24
16		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.2	2.2	2.1	2.1	S	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.2	2.3	2.2	24	
17		2.2	2.3	2.4	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	S	2.2	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.2	24
18		2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.2	2.2	2.1	24	
19		2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.3	2.3	2.2	S	2.2	2.3	2.5	2.4	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	2.3	24	
20		2.3	2.3	2.2	2.2	2.3	2.4	2.2	2.4	2.4	2.4	2.3	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.2	24
21		2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.2	2.1	S	2.2	2.2	2.2	2.3	2.3	2.3	2.5	2.5	2.4	2.3	2.3	2.3	2.4	2.5	2.2	24	
22		2.5	2.5	2.5	2.6	2.6	2.7	2.6	2.6	2.6	S	2.4	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.4	2.5	2.3	2.3	2.3	2.4	2.7	2.4	24	
23		2.3	2.3	2.4	2.5	2.5	2.5	2.6	2.5	S	2.3	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.4	2.2	2.2	2.2	2.2	2.1	2.1	2.6	2.3	24	
24		2.2	2.4	2.2	2.1	2.1	2.1	2.2	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.2	24	
25		2.5	2.5	2.5	2.5	2.5	2.6	S	2.5	2.4	2.4	2.5	2.5	2.6	2.8	2.7	2.7	2.7	2.7	2.7	3	3	3	3	3	3.0	2.6	24	
26		2.9	2.7	2.9	2.9	3	S	3.1	3.5	3.6	5.1	3.3	3	3.1	2.8	2.9	3.1	3.2	3.4	3.4	3.5	4.1	3.6	3.4	4	5.1	3.3	24	
27		4.2	4.3	4.4	4.2	S	4.5	4.8	6.7	5.6	5.5	5.1	4.5	3.6	3.4	3.6	3.3	3.3	3.3	3.2	3.1	3.1	2.9	2.8	2.8	6.7	4.0	24	
28		2.8	2.9	3.1	S	3.2	3	3	2.7	2.6	2.5	2.8	2.6	2.7	2.7	2.6	2.6	2.4	2.2	2.2	2.2	2.2	2.2	2.2	2.2	3.2	2.6	24	
29		2.2	2.2	S	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	24	
30		2.2	S	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.2	24	
31		S	2.3	2.4	2.3	2.4	2.5	2.6	2.5	2.4	2.6	2.6	2.7	2.6	2.6	2.6	2.6	2.6	2.7	2.7	2.8	2.8	2.8	2.8	S	2.8	2.6	24	
HOURLY MAX		4.2	4.3	4.4	4.2	3.2	4.5	4.8	6.7	5.6	5.5	5.1	4.5	3.6	3.4	3.6	3.3	3.3	3.4	3.4	3.5	4.1	3.6	3.4	4.0				
HOURLY AVG		2.5	2.5	2.5	2.5	2.4	2.5	2.6	2.5	2.5	2.5	2.4	2.4	2.3	2.4	2.4	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	24

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

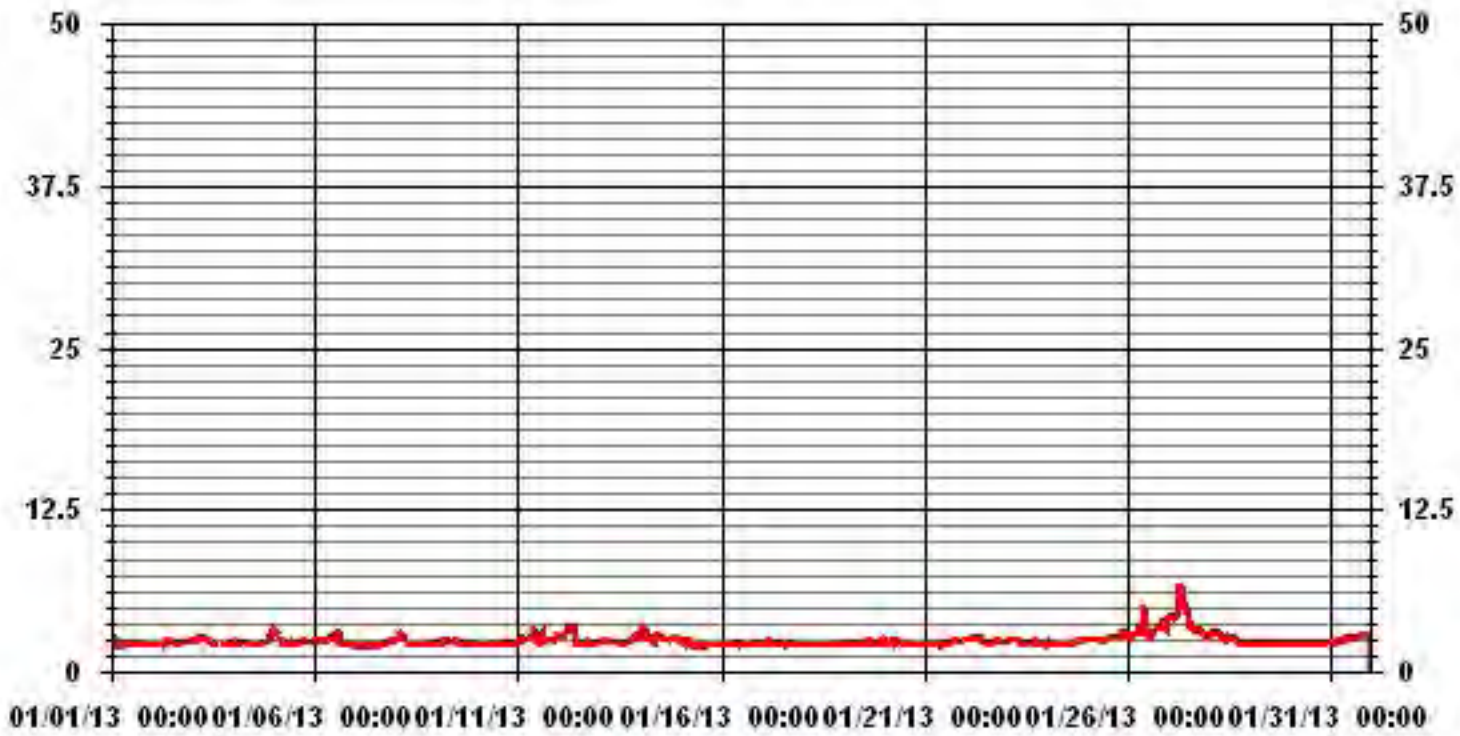
24 AVERAGES FOR JANUARY 2013



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	706
MAXIMUM 1-HR AVERAGE:	6.7 PPM @ HOUR(S) 7 ON DAY(S) 27
MAXIMUM 24-HR AVERAGE:	4.0 PPM ON DAY(S) 27
	VAR- VARIOUS
IZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION:	0.47
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME:	100.0 %
MONTHLY AVERAGE:	2.42 PPM

01 Hour Averages



— LICA30 THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2013

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST																											DAILY		24-HOUR	
HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.	AVG.	RDGS.			
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00						
DAY																														
1	3	3.1	2.1	2.1	2.2	2.4	2.3	S	2.3	2.3	2.4	2.3	2.1	2.2	2.4	2.4	2.3	2.1	2.5	2.3	2.2	2.1	2.1	2.1	2.1	3.1	2.3	24		
2	2.1	2.1	2.1	2.1	2.2	2.3	S	2.2	2.3	2.5	2.5	2.4	2.5	2.4	2.2	2.2	2.2	2.2	2.4	2.5	2.4	2.3	2.4	2.4	2.4	2.5	2.3	24		
3	2.4	2.5	2.6	2.6	2.6	S	2.7	2.7	2.5	2.5	2.5	2.1	2.1	2.1	C	C	C	C	C	2.1	2.1	2.1	3.1	2.9	3.1	2.5	24			
4	2.5	2.6	2.6	2.4	S	2.6	2.6	3.4	2.5	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.3	2.3	2.5	2.6	3.4	3.4	3.4	2.5	24			
5	3.4	3.3	3.1	S	2.9	2.3	2.2	2.2	2.1	2.3	2.3	2.2	2.1	2.2	2.3	2.4	2.4	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.5	3.4	2.5	24		
6	3.5	2.7	S	2.7	2.4	2.4	2.5	2.7	3.3	3	2.7	2.8	3	3.1	3.2	2.9	2.2	2.1	2.1	2.1	2.3	2.4	2.3	2.4	3.5	2.6	24			
7	2	S	2.4	2.4	2	2.1	2.4	2	2.4	2	2	2.2	2.3	2.2	2.3	2.1	2.1	2.2	2.3	2.3	2.4	2.4	2.5	2.5	2.5	2.2	24			
8	S	2.8	3.1	3.2	3.2	2.8	2.3	2.2	2.2	2.2	2.3	2.1	2.1	2.1	2.1	2.4	2.2	2.1	2.1	2.1	2.3	2.3	2.3	S	3.2	2.4	24			
9	2.4	2.3	2.4	2.7	2.8	2.5	2.5	2.4	2.4	2.4	2.5	2.5	2.5	2.3	2.3	2.3	2.2	2.2	2.1	2.2	2.2	2.2	S	2.2	2.8	2.4	24			
10	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.3	S	2.3	2.3	2.3	2.2	24			
11	3.3	2.6	2.7	2.8	2.6	2.6	2.7	3.7	3.8	3.8	5.2	2.6	2.4	3.1	3.3	2.7	2.5	2.6	2.6	2.6	S	2.6	2.7	2.9	5.2	3.0	24			
12	2.9	2.7	2.9	2.9	3.3	3.7	3.6	3.4	3.5	3.5	2.9	2.3	2.2	2.2	2.2	2.4	2.4	3.1	2.5	S	2.3	2.2	2.3	2.3	3.7	2.8	24			
13	2.3	2.3	2.7	2.6	2.9	2.8	2.5	2.3	2.3	2.5	3.4	2.4	2.3	2.3	2.3	2.3	2.4	2.5	S	2.6	2.6	2.9	3	3	3.4	2.6	24			
14	3.1	3.5	3.4	3.6	3.1	2.9	2.6	2.5	2.5	2.8	3	2.9	2.8	2.7	2.7	2.5	2.6	S	2.5	2.6	2.6	2.6	2.7	2.7	3.6	2.8	24			
15	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.2	2.1	2.2	2.1	2.1	2	2.1	2.1	2.1	S	2.2	2.1	2.1	2.2	2.1	2.2	2.1	2.5	2.2	24			
16	2.1	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.2	2.4	2.5	2.1	2.1	S	2.2	2.2	2.2	2.2	2.2	2.3	2.7	2.2	2.7	2.2	24			
17	2.2	2.8	2.7	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.4	2.5	2.3	S	2.7	2.6	2.5	2.2	2.4	2.3	2.1	2.2	2.1	2.8	2.3	24			
18	2.1	2.1	2.1	2.4	2.1	2.3	2.2	2.1	2.2	2.2	2.3	2.2	2.1	S	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.4	2.2	24			
19	2.2	2.2	2.2	2.2	2.5	2.6	2.4	2.4	2.4	2.5	2.4	2.2	S	2.3	2.4	2.5	2.5	2.3	2.2	2.2	2.2	2.2	2.3	2.9	2.9	2.4	24			
20	2.6	2.5	2.4	2.5	2.6	2.7	2.2	2.7	2.7	2.6	2.4	S	2.3	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.7	2.3	24			
21	2.1	2.5	2.3	2.3	2.4	2.2	2.3	2.4	2.3	2.2	S	2.2	2.3	2.2	2.3	2.3	2.4	2.6	2.6	2.5	2.3	2.4	2.4	2.5	2.6	2.3	24			
22	2.5	2.5	2.5	2.6	2.7	2.8	2.7	2.7	2.8	S	2.5	2.4	2.4	2.6	2.3	2.2	2.5	2.6	2.7	2.8	2.4	2.3	2.3	2.6	2.8	2.5	24			
23	2.5	2.4	2.5	2.5	2.7	2.6	2.9	2.8	S	2.8	2.4	2.2	2.3	2.5	2.5	2.6	2.5	2.6	2.7	2.6	2.4	2.4	2.5	2.2	2.9	2.5	24			
24	2.5	2.6	2.4	2.3	2.1	2.2	2.2	S	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.6	2.3	24			
25	2.6	2.6	3.4	3.1	2.9	3.2	S	2.8	2.5	2.5	2.5	2.7	2.7	2.9	2.8	2.7	2.7	2.8	2.7	3	2.9	3	4.1	3.1	4.1	2.9	24			
26	3.4	2.9	3.3	3.3	3.3	S	3.3	3.8	4.4	10.1	5.2	3.3	3.7	2.8	3	3.2	3.3	3.4	3.6	4.8	5.3	6.1	3.9	5	10.1	4.1	24			
27	4.6	5.1	5.1	4.6	S	5	5.2	10.9	6.1	5.9	5.6	5	4	3.5	4.5	3.5	3.4	3.4	3.3	3.2	3.2	3	2.9	10.9	4.5	24				
28	2.9	3.7	3.4	S	3.3	3.1	3.1	2.8	2.6	2.8	2.9	2.7	2.8	2.7	2.7	2.7	2.5	2.2	2.2	2.2	2.2	2.2	2.2	3.7	2.7	24				
29	2.2	2.2	S	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.4	2.2	24				
30	2.2	S	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.3	2.3	2.2	2.4	2.3	2.4	2.4	2.2	24			
31	S	2.5	2.5	2.4	2.7	2.8	2.7	2.9	2.5	2.7	2.7	2.7	2.6	2.6	2.6	2.7	2.7	2.8	2.8	2.8	2.8	2.8	2.8	S	2.9	2.7	24			
HOURLY MAX	5	5	5	5	3	5	5	11	6	10	6	5	4	4	5	4	3	3	4	5	5	6	4	5						
HOURLY AVG	2.6	2.7	2.7	2.6	2.6	2.6	2.6	2.9	2.7	2.9	2.7	2.5	2.5	2.4	2.5	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.6	2.6						

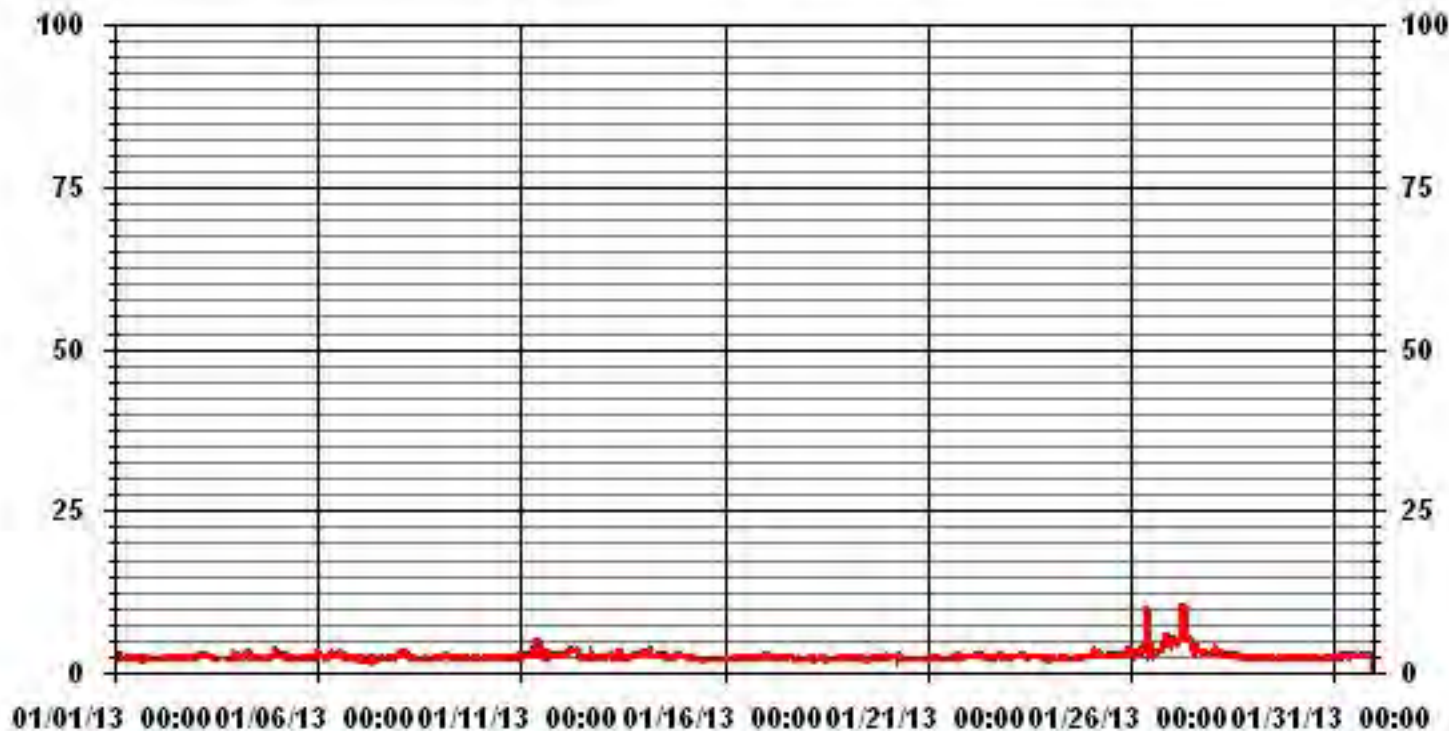
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	706					
MAXIMUM INSTANTANEOUS VALUE:	10.9	PPM	@ HOUR(S)	7	ON DAY(S)	27
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744 HRS		
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.71					

01 Hour Averages



LICA30
 THC / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 30
 Site Name : LICA30
 Parameter : THC
 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
< 3.0	6.78	5.65	4.80	4.52	6.50	3.11	.70	1.55	3.25	14.14	8.34	2.82	7.07	6.93	8.48	5.79	90.52
< 10.0	.14	.70	.84	.28	.70	.70	.14	.14	.28	2.26	1.83	.70	.56	.00	.00	.14	9.47
< 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	6.93	6.36	5.65	4.80	7.21	3.81	.84	1.69	3.53	16.40	10.18	3.53	7.63	6.93	8.48	5.94	

Calm : .00 %

Total # Operational Hours : 707

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	48	40	34	32	46	22	5	11	23	100	59	20	50	49	60	41	640
< 10.0	1	5	6	2	5	5	1	1	2	16	13	5	4			1	67
< 50.0																	
>= 50.0																	
Totals	49	45	40	34	51	27	6	12	25	116	72	25	54	49	60	42	

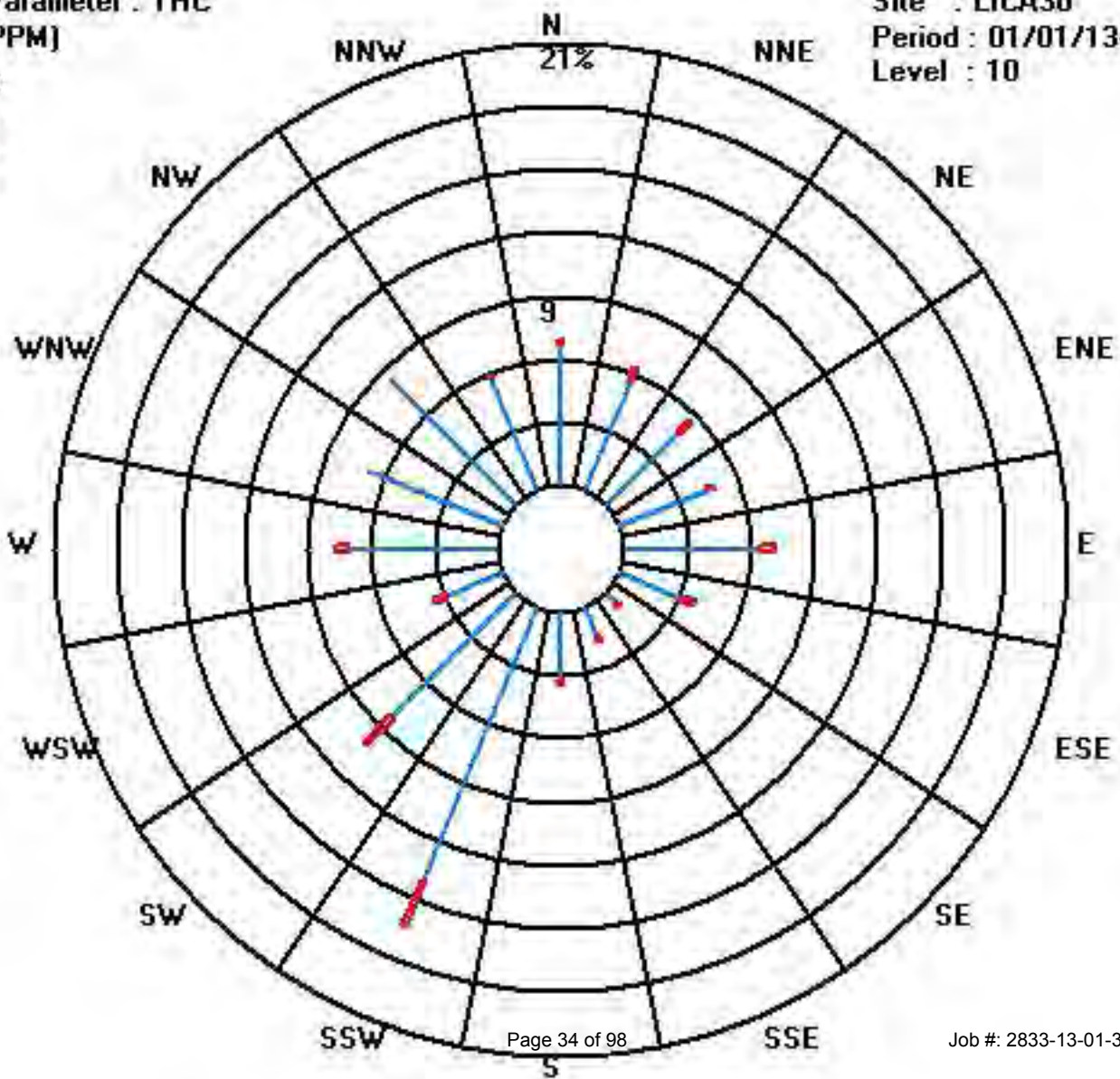
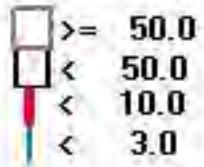
Calm : .00 %

Total # Operational Hours : 707

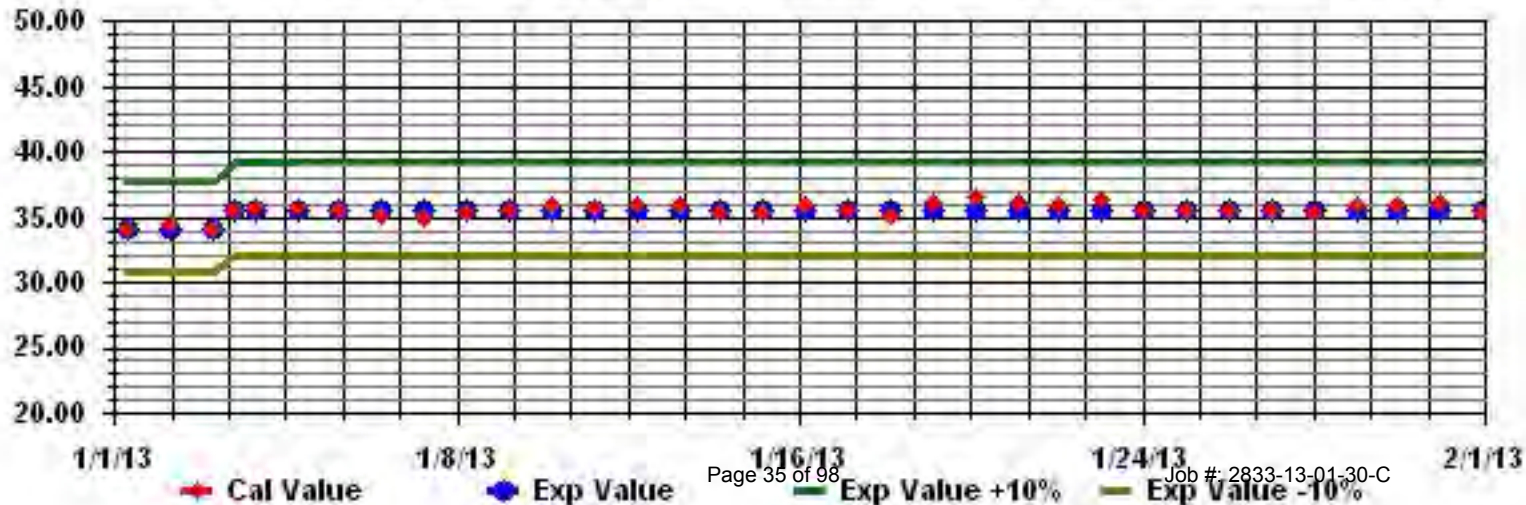
Class Limits (PPM)

Period : 01/01/13-01/31/13

Level : 10



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



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2013

NITROGEN DIOXIDE hourly averages in ppb

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	23:00	DAILY	24-HOUR	
DAY	DAY	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.	
1	1	13.7	13.6	1	0.8	5.2	10	10.4	S	11.3	10.7	8.6	16.2	8.1	7.7	10.7	9	2.2	0.4	7.2	8.9	12.1	9.1	2.7	7.9	16.2	8.2	24	
2	2	5.3	0.4	0.6	0	1	3.8	S	2.6	7.1	5.3	6.4	4.1	3.8	4.3	3.2	3.4	4.2	5	5.4	7.1	6.3	5.7	5.9	7	7.1	4.3	24	
3	3	6.9	9.1	12.6	13.3	11.8	S	15.6	17.2	15.8	11.6	C	C	C	C	C	C	C	1	1	1.3	0.9	6.2	15.7	17.2	9.3	24		
4	4	10.1	6.6	13	8.5	S	7.1	2.1	2.8	3.7	2.4	2	1.1	0.7	1.4	2.1	3.8	0.6	1.6	3.7	3.7	3	5.1	8	10.6	13	4.5	24	
5	5	9.5	10	12.3	S	5.5	3	6.4	5.6	4.6	4	7	2.3	1.5	3.9	7.7	7.9	6	6.2	6.5	5.1	6.5	7.4	7.3	6.4	12.3	6.2	24	
6	6	5.4	4.6	S	5.1	3.9	3	3.4	5.5	8.5	5.6	7.1	6.9	9	10.3	11.1	7.1	5	3.9	3.3	6.7	10.2	13.9	13.2	7.2	13.9	7.0	24	
7	7	1	S	7.5	5	0.9	0.8	2.1	0.2	5	3.6	2	2.1	4.7	3	3.3	6.2	7.1	5.6	4.7	4.4	4.3	4.4	5.1	6.3	7.5	3.9	24	
8	8	S	9.7	13.4	16.4	15.9	13.6	13.6	14	17.9	8.6	12.1	2.8	2.3	2.5	1.8	4.1	10.9	9.9	3	1.7	3.1	4.2	2.8	S	17.9	8.4	24	
9	9	2.7	3	3.6	4.2	2.9	3.5	3.2	4.9	5.9	1.6	1.9	1.7	1.8	1.4	1.5	1.2	1.1	0.9	0.7	0.6	1	1	S	1	5.9	2.2	24	
10	10	1.1	2.1	1.7	1.7	0.5	0.3	0.4	0.1	1	1.7	1.1	1.2	1.2	1.2	1.1	1.8	2.4	3.1	1.9	1.7	2.2	S	4.4	4.9	4.9	1.7	24	
11	11	4.8	4.4	6.1	12.5	8.5	10.7	12.1	15.2	16.1	18.4	19.9	9	6.6	7.1	8.7	8	10.1	13.9	14.2	14.1	S	13.6	12.9	14.6	19.9	11.4	24	
12	12	13.7	14.2	15.1	13.8	20.8	29	29.5	29	27	24.2	9.1	5.5	4.3	5.1	4.3	7.1	6.7	6.4	6.1	S	4.7	5.5	4.1	5.4	29.5	12.6	24	
13	13	4.2	4.1	5.1	6.8	7.8	10.4	6.8	8.7	10.6	10.9	11.2	9.9	6.4	3.6	4.8	13	10.8	11	S	13.1	13.8	13.8	15.2	12.2	15.2	9.3	24	
14	14	14	19.2	13.7	16.7	12.1	8.7	8.5	9.6	8.5	8	8.1	7.9	8.4	8.7	8.1	7.6	9.3	S	7.6	8.6	9.7	10.5	13.7	9.3	19.2	10.3	24	
15	15	7	7	6.6	6	5.4	7.3	6.6	5	3.8	14.7	18.7	18.6	19.1	20.5	8.8	6	S	7.4	3.7	4.5	4.3	4.6	4.6	2.3	20.5	8.4	24	
16	16	1.5	2.7	5.9	3.8	3.5	4.9	2.4	5.5	6.1	6.7	2.6	6	6	0.8	0.7	S	1	0.6	0.7	2.3	1.4	3.4	5.9	4.9	6.7	3.4	24	
17	17	1.9	3.4	4.8	1.5	0.6	0.2	0.8	2.8	5.8	3.5	1.6	2.6	2.6	1.1	S	2.6	4.8	3.4	0.8	1.8	1.7	0.5	2.5	0.8	5.8	2.3	24	
18	18	2.1	1.6	0.5	1.2	4.4	2.1	1	1	1.6	1	1.9	3.6	1.2	S	3	2.6	1.1	1.4	3	5	3.6	0.7	0.2	1.4	5	2.0	24	
19	19	0.5	0	0.4	0.9	7.4	5	4.6	8.4	15.5	10.6	6.7	3.2	S	2.1	4.2	7	6.8	0.8	1.5	1.3	1.9	2.7	3.5	14.5	15.5	4.8	24	
20	20	5.3	6	9.3	2.7	10.5	7.8	0.2	9.6	10.7	10.6	4.2	S	2.7	1.3	0.8	0.2	0.5	0.8	0.1	0	0.1	0.1	0.4	1.5	10.7	3.7	24	
21	21	2.4	2.3	1.4	2.4	2.8	2.6	3.7	8.2	10.5	10.5	S	3.4	3.6	2.6	2.2	2.5	3.7	6.3	6.3	8.4	3	2.8	3	3	10.5	4.2	24	
22	22	2.9	2.9	3.3	3	3.4	6.4	8	9.7	10.7	S	5.3	3.1	3.2	3.8	1.5	1	4.6	4.8	11.9	12.6	3.2	1.5	4.3	4.4	12.6	5.0	24	
23	23	3.8	3.3	4.3	3.4	3.2	3.3	7.1	7.3	S	3.9	6.6	2.9	1.6	6.4	5.9	7.4	4.3	6.7	5.2	6.1	1.5	0.6	1.9	0	7.4	4.2	24	
24	24	1.3	5.3	2.2	0.7	0	0.4	1.6	S	0.9	0.7	1	2.3	2.3	1.9	1.6	2.5	4.3	6.5	7.8	7.6	6.2	5.4	6.2	6.4	7.8	3.3	24	
25	25	5.9	5.4	4.9	4.9	4.4	4.1	S	5.3	6.4	4.7	4.9	4.6	3.8	3.9	4.3	5	6	5.8	8	7	6.5	6.8	6.3	5.7	8	5.4	24	
26	26	5	3.3	3.7	4.4	4.5	S	8.3	13.6	14	9.7	13.6	12.6	11.3	10.7	12.3	15	19.7	23.7	22.3	20.8	15.6	14.9	14.4	14.7	23.7	12.5	24	
27	27	14.7	14.9	15.9	16.4	S	18	18.5	16.2	16.1	11.4	12.6	14.2	11.9	11.4	10.9	11.2	12.2	11.5	9.1	7.7	7.4	5.8	4.5	4.4	18.5	12.0	24	
28	28	4	3.8	4.1	S	5.3	6.9	8.5	7.6	7.7	6.1	8.4	5.2	6.3	8.6	10.6	12.1	1.8	4.1	3.9	5.6	5.7	5.4	5.2	3.2	12.1	6.1	24	
29	29	2	2.3	S	4.8	4.3	1.7	0.7	0.1	0	0	1.7	4.1	2.1	0.5	4.2	3	1	2.3	0	0	0	0.5	0.2	0.5	4.8	1.6	24	
30	30	0.6	S	1	0.7	0.6	0.6	0.2	0.2	1.3	1.6	2.3	0.9	0.4	0.7	1.9	4.2	5.1	4.6	4.6	4.2	3.2	5.5	7	6	7	2.5	24	
31	31	S	6.5	9	11.5	10.6	9.8	12.5	9.6	6.7	7.8	5	4.3	4.7	4.5	5.6	6.2	7.4	8.2	9	8.6	7.8	7.9	7.7	S	12.5	7.8	24	
HOURLY MAX		15	19	16	17	21	29	30	29	27	24	20	19	19	21	12	15	20	24	22	21	16	15	15	16				
HOURLY AVG		5.3	5.9	6.3	6.0	5.8	6.4	6.9	7.8	8.7	7.3	6.7	5.6	4.9	4.9	5.1	5.8	5.5	5.8	5.4	6.0	5.0	5.5	6.0	6.3				

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

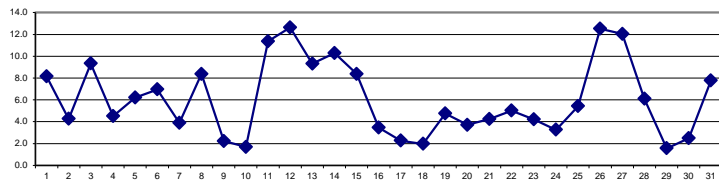
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

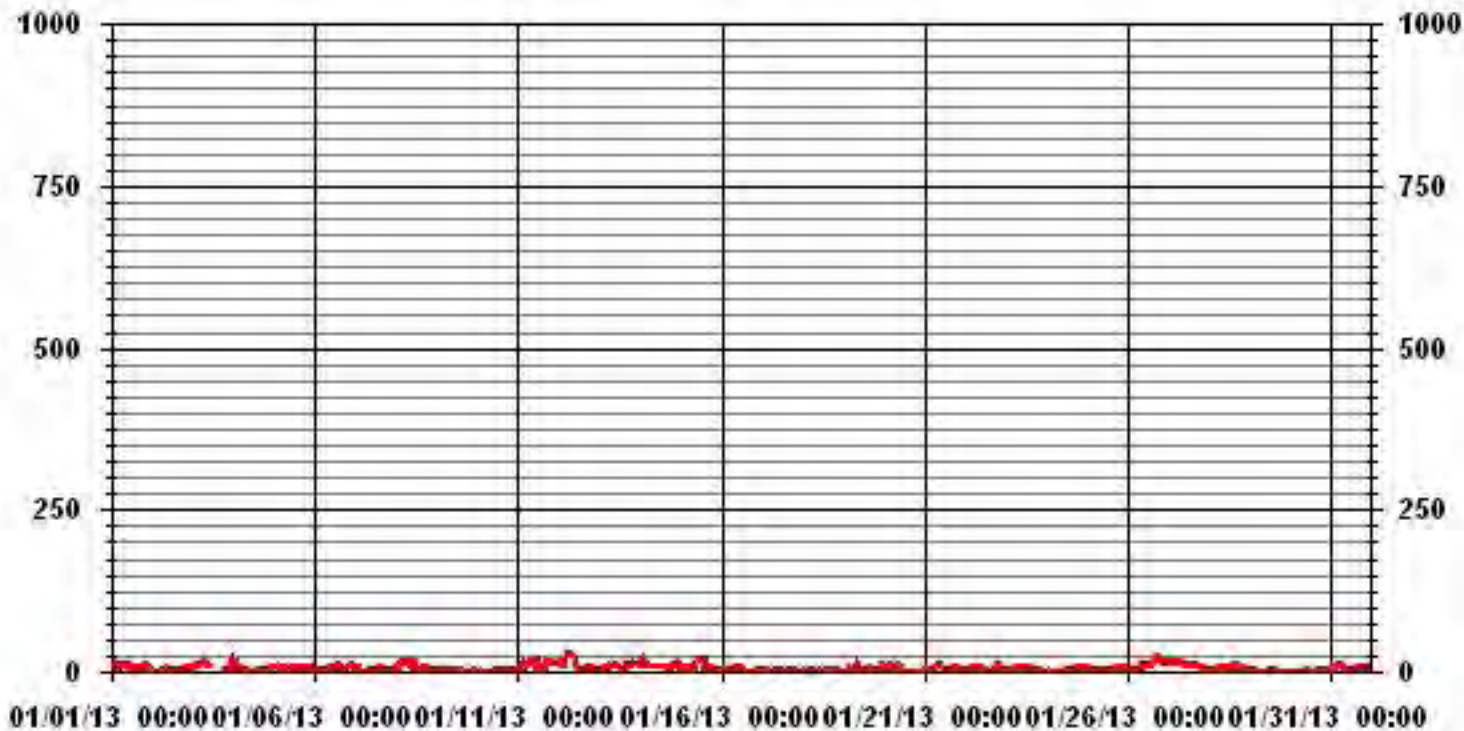
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	693					
MAXIMUM 1-HR AVERAGE:	29.5	PPB	@ HOUR(S)	6	ON DAY(S)	12
MAXIMUM 24-HR AVERAGE:	12.6	PPB			ON DAY(S)	12
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	4.91		MONTHLY AVERAGE:	6.03	PPB	

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2013

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.
DAY																											
1	18.1	18	2.2	3.3	9.7	14.2	15.7	S	17.2	12.2	12.7	21.3	18.5	24.3	24.2	13.3	9.8	0.9	26.1	23.1	21.3	15.6	6.2	22.3	26.1	15.2	24
2	15.2	7.2	3.1	0.7	8.3	10.9	S	11	11.7	7.5	10.3	5.7	4.9	7.7	3.9	4.2	5.8	6.3	6.9	8.5	7	6.8	8.2	7.8	15.2	7.4	24
3	8.7	12.6	14.1	14.2	13	S	27.1	20.3	20.1	25.1	C	C	C	C	C	C	C	2.7	2.5	3	2.1	11.7	31	31	13.9	24	
4	23.8	10.9	22.7	16.2	S	12.2	4.4	7	9.4	5.1	3.5	1.9	1.9	2.6	5	7.6	2.1	3.7	5.2	5	4.9	7.1	10.7	13.2	23.8	8.1	24
5	10.8	11.3	15.2	S	9.3	5.4	8.1	7.2	10.8	6.2	13.9	3.5	1.1	4.9	12.2	10.4	7	6.7	7.3	5.5	7.3	7.5	7.4	6.9	15.2	8.1	24
6	5.6	4.7	S	5.4	4.3	3.1	3.6	7.1	13.7	6.5	8.1	9.1	9.5	10.4	12	9.9	5.1	4.5	3.3	9.5	17	22.2	24.7	19.6	24.7	9.5	24
7	4.9	S	15.8	12.3	2.4	2.5	12.1	2.2	10.5	8.4	5.3	2.7	6.2	5.4	4.9	18.8	9.9	6.9	7.5	5.3	5.6	5.4	6.1	7.9	18.8	7.3	24
8	S	11.2	15	18.3	17.7	21.5	22.7	21.8	23.3	22.3	26	5.6	5.5	7.6	5.2	5.9	16.2	16.3	7.2	2.5	5.2	5.1	5	S	26	13.1	24
9	3.7	4.8	5.9	6.3	5.1	5.5	5.2	10.8	10.1	3.6	3.5	3.6	3.7	3.2	3.5	3.1	3.2	2.9	2.7	2.7	3	3	S	2.8	10.8	4.4	24
10	3.5	4	3.5	3.5	3.1	2.1	2.5	2.2	4.4	5.2	3.1	3	3.2	4.1	3.1	4.1	7.4	9	4.3	3.8	4.7	S	7.6	7.9	9	4.3	24
11	5.9	5.3	7.9	19.7	11.8	19	20.7	19.4	19.5	24.6	27	15.1	8.9	9.1	10.4	9.5	13.7	15.6	15.6	14.9	S	14.6	14.6	16.1	27	14.7	24
12	14.7	15.6	17	16.3	27.2	30.2	31.6	31.4	28	26.8	21.1	6.7	5.7	29.7	5	14.3	11.1	10.2	8.9	S	6.9	6.8	5	7.5	31.6	16.4	24
13	6.9	7.1	8.6	10.6	10.4	22	9.5	26.5	14.2	12.2	12.2	11.9	8.5	5	8.5	19.2	14.8	12.9	S	14.9	18	16.5	16.6	14.7	26.5	13.1	24
14	19.7	22.9	15.8	18.9	13.7	11	10.6	11	10.1	8.8	8.8	9	9	10	8.6	8.5	13.3	S	7.7	9.3	10	12.5	15.6	12.5	22.9	12.1	24
15	7.7	7.7	8.7	6.5	6.4	9.7	18	12.1	9.7	23.7	21.6	21.2	25.5	24.4	23.5	6.5	S	8.7	5	6.7	5	5.4	5.3	4.4	25.5	11.9	24
16	2.6	5.9	9.7	4.9	4.5	7.1	3.8	7.7	11.9	11.6	4.3	8.9	10.4	2.5	2.4	S	2.4	1.6	2.1	3.7	3	8.5	15.8	7.4	15.8	6.2	24
17	3.2	8.1	8.3	3.2	1.9	1.2	3.3	6	9.9	9.8	3.4	4.1	6.1	2.6	S	6.1	9.3	7.5	2	5.1	4.4	1.7	8.9	2.7	9.9	5.2	24
18	4.5	4.5	1.6	3	6.7	3.2	3.2	1.8	2.6	2.3	4	6.5	3.1	S	5.2	4	4	2.7	5.4	6.5	5.1	4.3	1.8	4.4	6.7	3.9	24
19	1.9	1.4	1.8	2.3	16.5	13.8	13.2	37.3	26	16.3	12.7	10.1	S	4.1	6.9	8.4	8.3	3.9	3	3.1	3.2	4.8	10.2	20.5	37.3	10.0	24
20	18.9	22.2	20.3	12.4	21.9	14.1	3	14.5	14	19.2	9.1	S	4.6	3.3	2.6	1.6	1.6	14.1	1.2	1.1	1.4	1.2	1.8	2.7	22.2	9.0	24
21	7	6.7	2.9	4.9	5.5	5.1	6	13.4	18.8	15.5	S	6.7	6.4	6.1	3.7	3.9	4.8	9.1	8.7	11.4	4.2	4.5	4.6	4.1	18.8	7.1	24
22	4	3.8	4.8	4	5	9.4	26.2	15.2	16.5	S	8.5	3.9	6.7	11.9	3	2.1	11	10.2	18	16	7.9	3.7	5.3	5.6	26.2	8.8	24
23	5.1	4.7	8.1	5.1	4.6	4.3	10.8	12.6	S	10.5	10.9	6.7	3.6	8.9	8.8	9.9	8.5	11.1	9.5	9.7	4	2.6	4.1	1.7	12.6	7.2	24
24	5.1	7.8	3.6	2.2	0.6	1.9	3.2	S	2.3	3.7	2.8	4	4.1	2.9	2.8	4.2	10.1	9.1	9.5	8.8	7.9	7.2	8.1	8.2	10.1	5.2	24
25	7.8	7	6.1	6.5	5.6	5.2	S	7.6	8.7	8.5	6.2	6.8	5	5	5.5	5.8	8	7.7	14.2	12	7.8	7.8	7.6	7	14.2	7.4	24
26	6.5	6	5.1	7.5	7	S	11.3	16.9	16.2	13.1	17.2	14.7	13	12.7	13.1	17.3	24	24.5	24	23.7	19	15.9	15.2	15.8	24.5	14.8	24
27	16.2	16.7	18.7	18	S	18.5	19.4	16.3	18.4	11.7	13.8	18.2	12.2	11.1	10.8	11.1	11.4	11.6	10	7.6	7.2	7.1	4.5	4.3	19.4	12.8	24
28	3.7	3.4	4.9	S	7.8	9.6	9.4	8.8	10.6	9	9.9	9.4	8.8	9.5	12.2	13.2	6.6	5.1	4.6	6.8	6	5.8	6	4.5	13.2	7.6	24
29	2.9	2.9	S	6.4	6	3.2	1.8	1.1	1.1	1.1	8.5	8.3	6.2	2.8	7.5	7.7	4.7	7	1.1	0.9	0.8	1.9	1.3	1.7	8.5	3.8	24
30	1.8	S	1.8	1.7	1.6	1.8	1.2	1.2	3.6	3.7	4.5	1.9	1	1.6	3.5	6.4	6.5	6.7	6.7	5.5	4.7	9.7	8.4	6.9	9.7	4.0	24
31	S	7.6	12.6	13.8	11.7	12.4	16.3	11.8	7.6	9.5	6.1	4.8	4.9	5.8	6.7	6.6	8.9	8.8	9.8	9.6	8.4	8.6	8.4	S	16.3	9.1	24
HOURLY MAX	24	23	23	20	27	30	32	37	28	27	27	21	26	30	24	19	24	25	26	24	21	22	25	31			
HOURLY AVG	8.3	8.7	9.2	8.6	8.6	9.7	11.2	12.5	12.7	11.5	10.3	8.1	7.2	8.2	7.7	8.4	8.6	8.5	8.0	8.2	7.1	7.5	8.6	9.4			

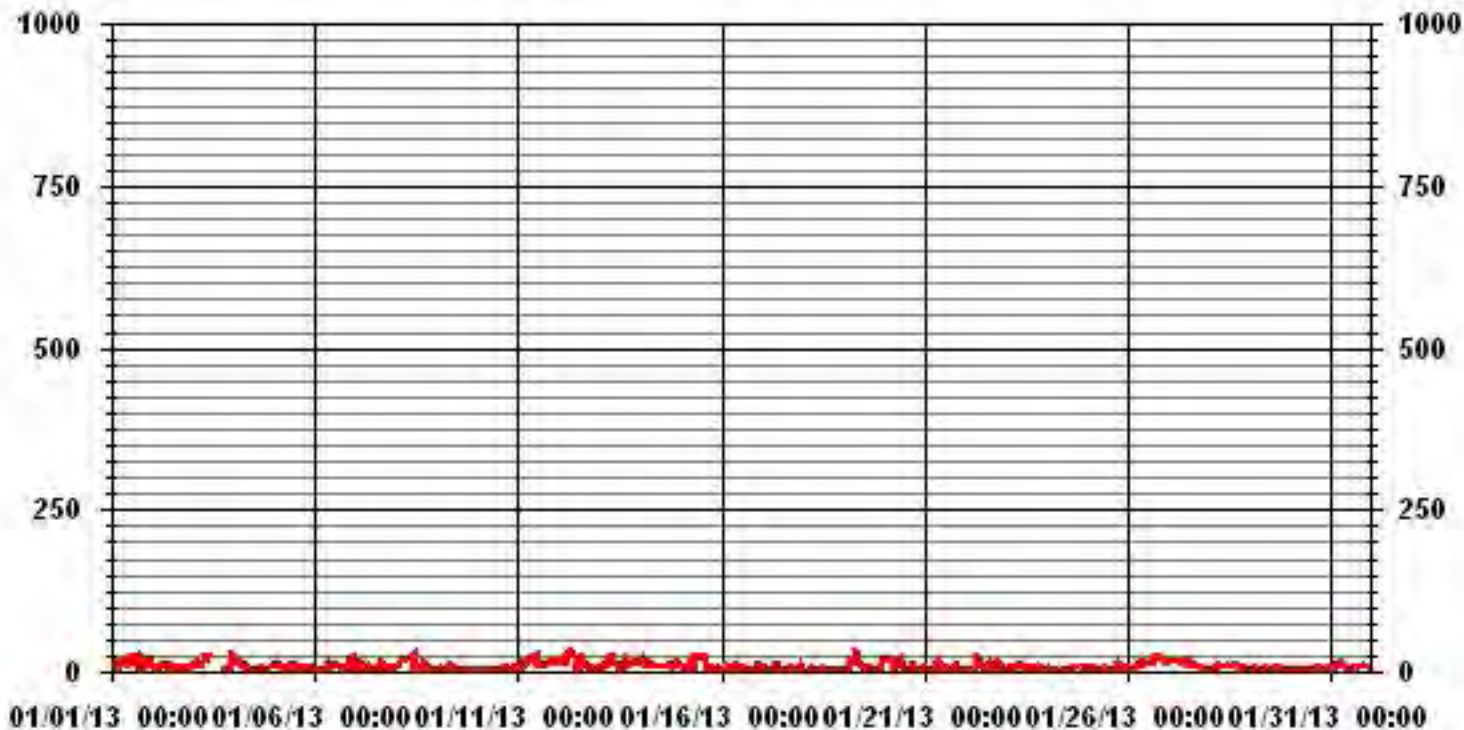
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	703					
MAXIMUM INSTANTANEOUS VALUE:	37.3	PPB	@ HOUR(S)	7	ON DAY(S)	19
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	6.33					

01 Hour Averages



— LICA30 NO2MAX PPB

LICA30
 NO2_ / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 30
 Site Name : LICA30
 Parameter : NO2_
 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	6.97	6.40	5.68	4.83	7.25	3.84	.85	1.70	3.55	16.50	10.24	3.41	7.25	6.97	8.53	5.97	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	6.97	6.40	5.68	4.83	7.25	3.84	.85	1.70	3.55	16.50	10.24	3.41	7.25	6.97	8.53	5.97	

Calm : .00 %

Total # Operational Hours : 703

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	49	45	40	34	51	27	6	12	25	116	72	24	51	49	60	42	703
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	49	45	40	34	51	27	6	12	25	116	72	24	51	49	60	42	

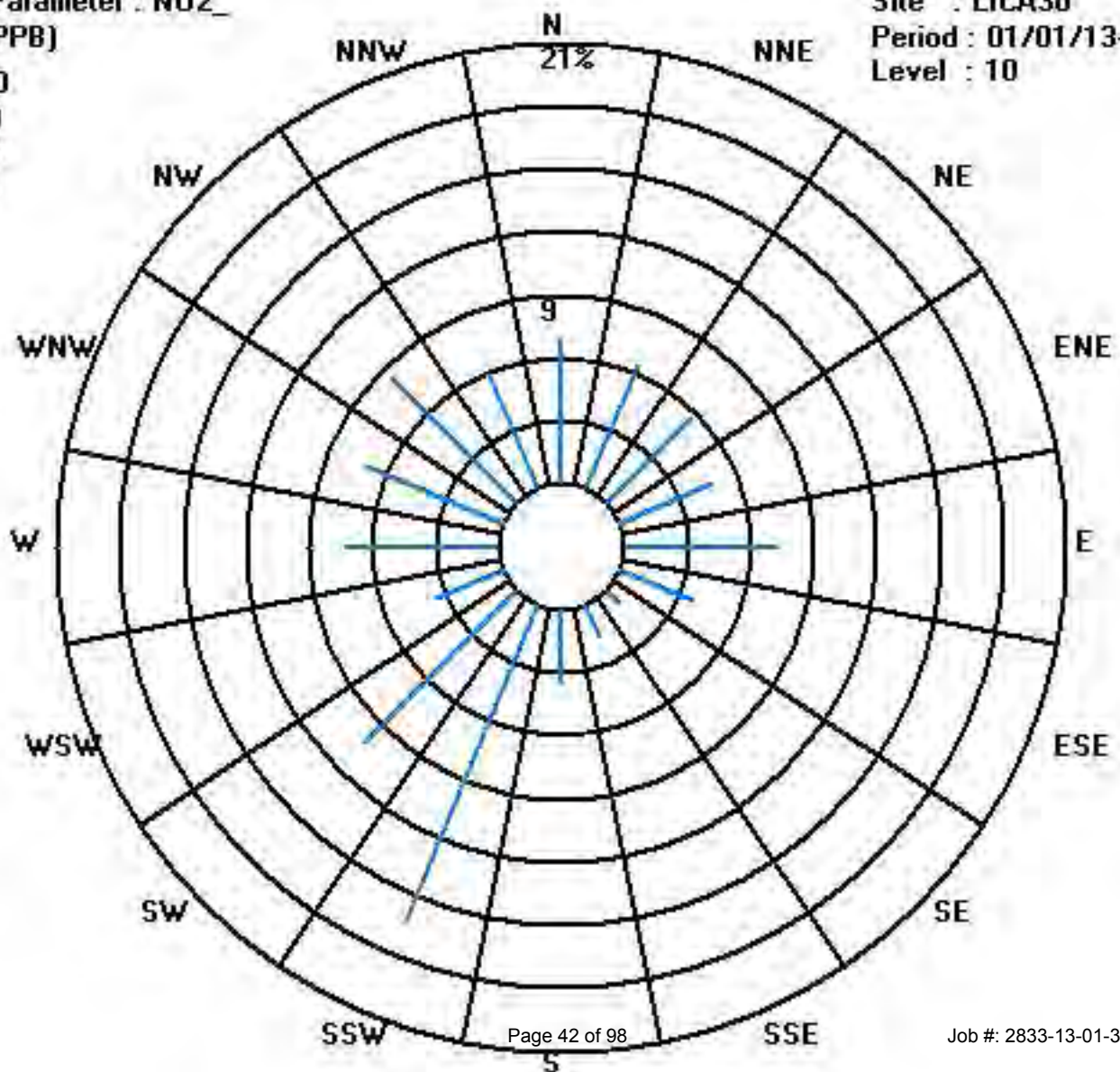
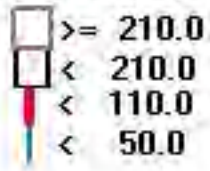
Calm : .00 %

Total # Operational Hours : 703

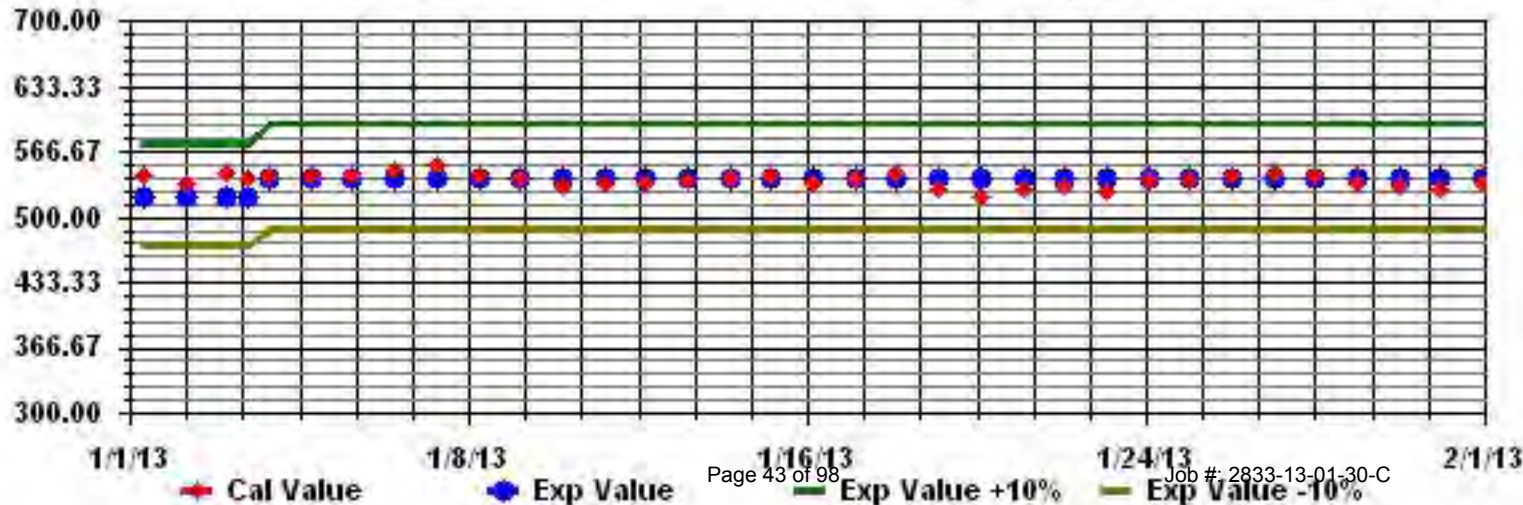
Class Limits (PPB)

Period : 01/01/13-01/31/13

Level : 10



Calibration Graph for Site: LICA30 Parameter: H02_ Sequence: H02 Phase: SPAll



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOICATION - MASKWA

JANUARY 2013

NITRIC OXIDE hourly averages in ppb

MST

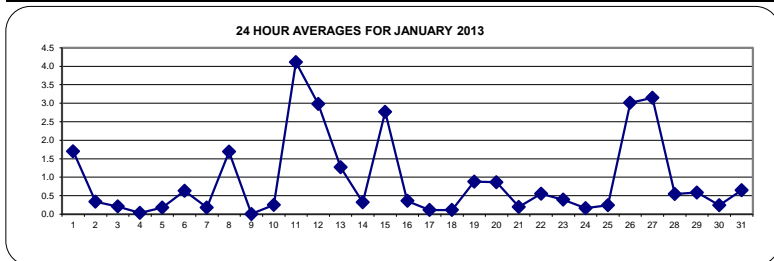
HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR			
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	00:00	MAX.	AVG.	RDGS.	
DAY 1	0	0	0	0	0	0.5	0	S	0.6	0.9	2	8.8	3.9	4	4.7	1.1	0.2	0	1.2	2.6	3.7	2.3	0.4	2.2	8.8	1.7	24	
2	1.1	0.1	0	0	0.1	0.2	S	0.3	0.4	0.6	1.4	1.2	1.1	1.1	0.2	0	0	0	0	0	0	0	0	0	1.4	0.3	24	
3	0	0	0	0	0	S	0.3	0.3	0.5	1	C	C	C	C	C	C	C	0	0.1	0	0	0.1	0.8	1	0.2	24		
4	0.4	0	0.1	0.1	S	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0.4	0.0	24	
5	0	0	0	S	0	0	0.1	0	0.1	0	1.5	0.2	0	0.6	1.2	0.4	0	0	0	0	0	0	0	0	1.5	0.2	24	
6	0	0	S	0	0	0	0	0	1	0.3	0.5	1.1	1.2	1.2	1.4	0.4	0	0	0	0.1	0.4	2.3	4.3	0.3	4.3	0.6	24	
7	0	S	0.6	0.4	0	0	0	0	0.2	0.3	0.1	0.2	1.1	0.3	0.2	0.7	0	0	0	0	0	0	0	0	1.1	0.2	24	
8	S	0	0	0	0	1.4	5.2	5.4	9.1	3.6	9.1	0.6	0.8	1.1	0.4	0.3	0.1	0	0	0	0	0	0	0	S	9.1	1.7	24
9	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	S	0	0.1	0.0	24
10	0	0.1	0	0	0.1	0	0.1	0.1	0.3	0.4	0.5	0.7	0.7	0.7	0.6	0.3	0.3	0.3	0.1	0.2	0.2	S	0	0	0.7	0.2	24	
11	0	0	0	0.2	0.1	2.3	2.4	1.4	2.6	21.5	37.4	8.6	5.6	5.2	4.6	1.8	0.5	0.2	0.1	0	S	0	0	0	37.4	4.1	24	
12	0	0	0	0	0.1	5.3	10.5	13.1	11.1	20.4	3	1.3	1	1.5	0.5	0.7	0	0	0	S	0	0	0	0	20.4	3.0	24	
13	0	0	0	0	0	1.2	0	1.7	0	2.4	6.9	7.4	3.5	1.2	1.3	2.9	0.6	0	S	0	0	0	0	0	7.4	1.3	24	
14	0	0	0	0	0	0	0	0	0	0.3	1.1	1.6	2.2	1.3	0.7	0.1	0.1	S	0	0	0	0	0	0	2.2	0.3	24	
15	0	0	0	0	0	0	0	0	0.7	0	7.4	12.2	12.7	13.5	3.6	0.1	S	0	0	0.1	0	0	0	0	13.5	2.8	24	
16	0	0	0.1	0	0.1	0.1	0	0.3	0.7	1.4	0.3	1.9	2.6	0.2	0.4	S	0	0	0	0	0	0	0.1	0	2.6	0.4	24	
17	0	0	0	0	0	0	0	0	0	0	0	0.3	0.3	0	S	0.5	0.7	0.5	0.1	0.1	0	0	0.1	0	0.7	0.1	24	
18	0.1	0	0.1	0.1	0.1	0	0	0.1	0	0.2	1.1	0.3	S	0.4	0.1	0	0	0	0	0	0	0	0	0	1.1	0.1	24	
19	0	0	0	0	0.7	0.4	0.3	1.6	2.3	3.1	2.4	1.3	S	0.6	0.8	0.9	0	0	0	0	0	0	0	0	5.8	5.8	0.9	24
20	0.7	1.3	3.2	0.7	4	0.7	0	0.3	0.9	3.9	2.2	S	1.4	0.5	0	0	0	0	0	0	0	0	0	0	4	0.9	24	
21	0	0	0	0	0	0	0	0	0.4	0.9	S	0.9	1.1	0.5	0.4	0.2	0	0	0	0.1	0	0	0	0	1.1	0.2	24	
22	0.1	0	0	0	0	0.1	1.8	1.1	2.2	S	2.2	1.3	1.2	1	0.1	0	0.1	0	0.7	0.8	0	0	0	0	2.2	0.6	24	
23	0	0	0	0	0	0	0	0	S	0.7	1.7	0.7	0.3	1.6	1.2	1.1	0.2	0.5	0.4	0.4	0	0	0.2	0	1.7	0.4	24	
24	0	0.3	0	0	0	0	0	S	0	0	0.1	0.8	1.2	0.5	0.3	0.2	0.3	0	0	0	0	0	0	0	1.2	0.2	24	
25	0	0	0	0	0	0	0	S	0	0.3	0.9	1.3	1	0.9	0.7	0.4	0	0	0	0	0	0	0	0	1.3	0.2	24	
26	0	0	0	0	0	S	0.1	3.9	2.9	7.3	13.9	11.5	8.6	6.9	6.9	5.1	2	0.1	0	0	0	0	0	0	13.9	3.0	24	
27	0	0	0	0.1	S	2.5	1.3	1.1	4.7	6.8	12.9	17.4	10.2	7.2	4.9	2.4	0.9	0	0	0	0	0	0	0	17.4	3.1	24	
28	0	0	0	S	0	0.2	0.1	0	0.1	0.4	1.7	1.8	1.7	2.4	2.4	1.7	0	0	0	0	0	0	0	0	2.4	0.5	24	
29	0	0	S	0	0	0	0	0	0	0	1.4	4	2.4	0.2	3.5	1.7	0.2	0	0	0	0	0	0	0	4	0.6	24	
30	0	S	0	0	0	0	0	0	0	0.3	1.4	0.4	0	0.2	0.9	1.5	0.8	0	0	0	0	0	0	0	1.5	0.2	24	
31	S	0	0	0	0	0	0.3	0.1	0.6	3.3	2	1.6	1.9	1.7	1.4	0.8	0.4	0	0	0	0	0.1	0	0	3.3	0.6	24	
HOURLY MAX	1	1	3	1	4	5	11	13	11	22	37	17	14	13	7	5	2	1	1	3	4	2	4	6				
HOURLY AVG	0.1	0.1	0.1	0.1	0.2	0.5	0.8	1.1	1.4	2.9	4.1	3.1	2.4	1.9	1.5	0.9	0.3	0.1	0.1	0.2	0.1	0.2	0.2	0.3				

STATUS FLAG CODES

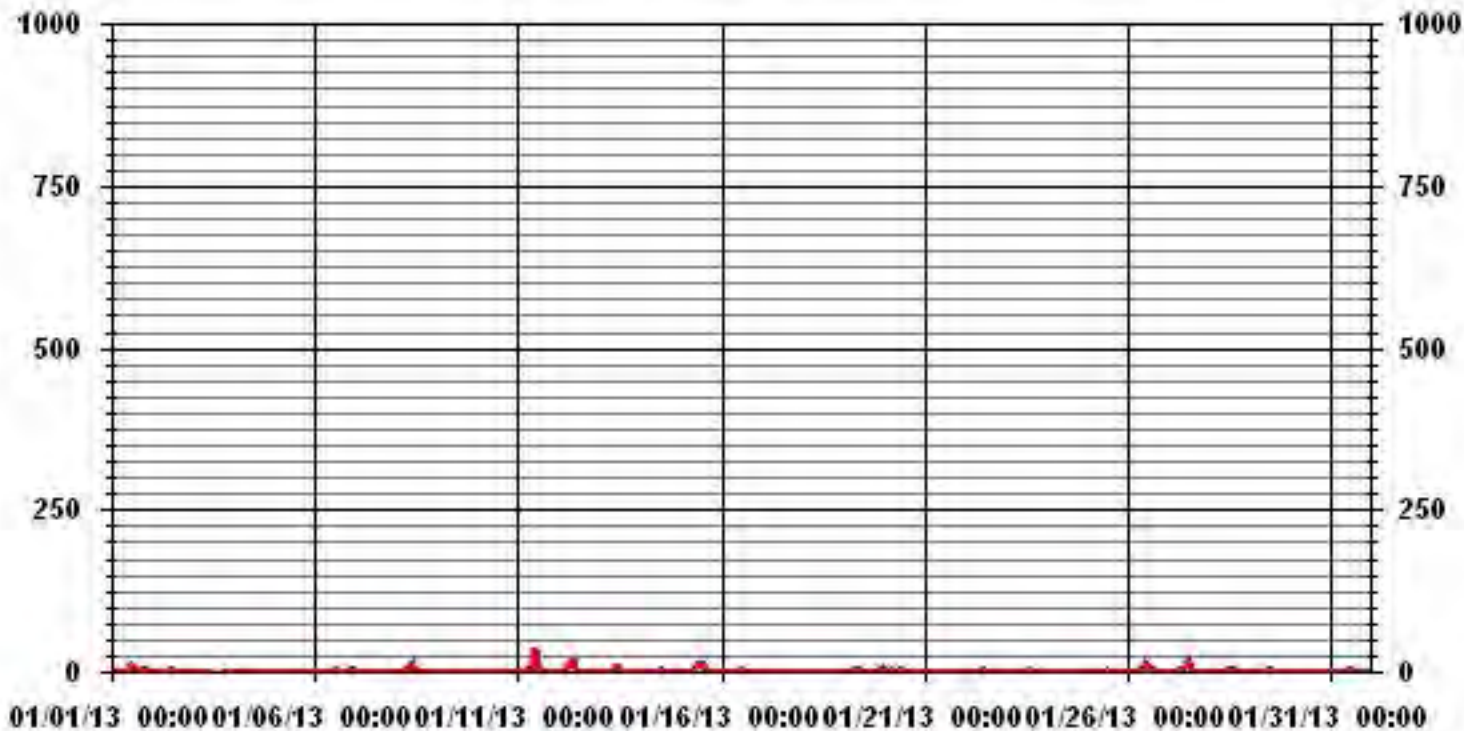
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	317					
MAXIMUM 1-HR AVERAGE:	37	PPB	@ HOUR(S)	10	ON DAY(S)	11
MAXIMUM 24-HR AVERAGE:	4.1	PPB			ON DAY(S)	11
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	2.73		MONTHLY AVERAGE:	0.93	PPB	



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2013

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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		
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.	
DAY																												
1	0.3	0.3	0.2	0	0.2	3.6	2	S	2.4	1.7	6.7	14.6	11.3	16.2	16.1	2.2	2.6	0.4	10.5	8.7	9.4	4.7	1.3	9.1	16.2	5.4	24	
2	4.9	1.7	0.7	0.5	1.5	1.2	S	3.9	5.2	4.8	3.5	2.9	2.7	4.7	0.9	0.4	0.5	0.5	0.3	0.3	0.3	0.2	0.4	0.3	5.2	1.8	24	
3	0.5	0.3	0.3	0.3	0.5	S	19.7	1.2	2.4	16.8	C	C	C	C	C	C	C	0.5	0.7	0.6	0.6	1	3.2	19.7	3.2	24		
4	1.6	0.7	0.7	0.7	S	0.6	0.3	0.6	0.9	0.5	0.6	0.4	0.3	1.3	0.9	1.5	0.3	0.1	0.1	0.2	0.2	0.5	0.4	0.3	1.6	0.6	24	
5	0.3	0.4	0.2	S	0.1	1.9	1.9	0.8	21.9	1.8	5.8	1.2	0.5	1.2	4.1	1.8	0.3	0.5	0.3	0	0	0.1	0.1	0.2	21.9	2.0	24	
6	0.3	0	S	0.6	0.5	0.7	0.6	0.5	4.8	1.2	1.2	3.2	3.2	1.7	3.5	2.2	0.6	0.4	0.5	0.8	2.2	12.5	8.4	4.2	12.5	2.3	24	
7	0.3	S	4.1	3.2	0.2	0.2	3.9	0.2	11.8	2.2	1.4	0.8	2.1	1.3	1.1	21.4	1.6	0.3	0.1	0.2	0.2	0.3	0.3	0.4	21.4	2.5	24	
8	S	0.5	0.4	0.6	0.5	8.7	12.8	13.9	15	14.2	30.7	2.3	3	4.9	2.8	1.2	1	0.5	0.3	0.3	0.4	0.3	0.3	S	30.7	5.2	24	
9	0.4	0.5	0.5	0.3	0.3	0.4	0.4	0.5	0.7	0.4	0.6	0.6	0.5	0.5	0.2	0.1	0.1	0	0.1	0.2	0.2	0.1	S	0.5	0.7	0.4	24	
10	0.4	0.5	0.5	0.5	0.8	0.6	0.5	0.6	1.1	0.9	1.2	1.3	1.4	1.8	1.2	0.9	1.1	1.4	0.6	0.6	0.6	S	0.6	0.4	1.8	0.8	24	
11	0.5	0.6	0.7	1.2	0.7	25.2	17.6	10.1	7.9	40.3	71.6	19.4	9.5	7.2	6.4	3.6	1.1	0.8	0.6	0.5	S	0.5	0.4	0.5	71.6	9.9	24	
12	0.5	0.3	0.5	0.2	1.7	9.5	17.9	19.3	21.7	25.8	17.8	1.8	2.4	14.3	1	3	1.2	0.4	0.7	S	0.5	0.5	0.3	0.3	25.8	6.2	24	
13	0.3	0.2	0.4	0.4	0.8	4.2	0.7	46.7	1.1	5.3	9.2	9.3	5.7	2.9	2.6	5.8	3.2	0.3	S	0.3	1.2	0.4	0.4	0.3	46.7	4.4	24	
14	0.3	0.7	0.4	0.7	0.4	0.2	0.3	0.3	0.9	1.1	1.7	2.6	3	2.6	1.3	0.9	2.7	S	0.4	0.2	0.2	0.2	0.2	0.2	3	0.9	24	
15	0.1	0.2	0.2	0.1	0.2	0	12.8	16	0.2	18.3	15.8	15.7	21.8	18.2	18.3	0.7	S	0.6	0.6	0.6	0.8	0.5	0.6	0.6	21.8	6.2	24	
16	0.4	0.5	0.6	0.6	0.7	0.7	0.5	1.5	3.2	5	1.2	3.5	6.5	1.3	1.6	S	0.9	0	0	0.4	0.3	0.2	1.6	0.1	6.5	1.4	24	
17	0	0.3	0.3	0.1	0.4	0.4	0.3	0.3	0.9	0.9	0.7	0.9	1.7	0.6	S	1.4	1.5	1.3	0.7	0.7	0.7	0.5	0.6	0.5	1.7	0.7	24	
18	0.7	0.5	0.4	0.7	0.7	0.6	0.6	0.8	0.6	0.5	0.7	1.9	1.1	S	1.2	1.2	0.7	0.5	0.4	0.4	1.6	1.3	0.1	1.1	1.9	0.8	24	
19	0.1	0.1	0.3	0.1	3.7	2.7	2.7	17.5	7.1	8.7	5.3	4.3	S	2.4	1.8	1.5	0.8	0	0	0.1	0.2	4.1	11.3	17.5	3.3	24		
20	5.9	11.5	9.8	4.2	11.6	5.2	0	2.2	3.9	15.3	6.4	S	2.8	1.5	1.3	0.4	0.2	14.6	0.2	0	0.1	0.1	0.3	0.1	15.3	4.2	24	
21	0.2	0.3	0	0.2	0.1	0.2	0.1	0.3	5.8	2.9	S	1.6	1.9	1.6	1.1	0.9	0.5	0.4	0.6	0.6	0.6	0.5	0.6	0.4	5.8	0.9	24	
22	0.7	0.6	0.5	0.6	0.4	1	32.6	3.2	7.6	S	4.5	2.1	3.7	6.4	1.2	0.3	2.3	1	1.7	2.4	0.4	0.1	0.3	0	32.6	3.2	24	
23	0	0.1	0.4	0.4	0.1	0.3	0.3	0.5	S	2.6	3.2	2.3	1.4	2.5	2.6	2.3	1.2	1.5	1.3	1.6	0.6	0.5	1.1	0.3	3.2	1.2	24	
24	1	1.1	0.5	0.5	0.4	0.5	0.3	S	0.2	0.9	1	2.3	3.1	1.3	1.1	1.1	3.9	0.4	0.5	0.3	0.2	0.1	0.2	0.5	3.9	0.9	24	
25	0.5	0.5	0.3	0.3	0.3	0.5	S	0.6	0.6	1.2	1.8	2	2	1.5	1.4	0.9	0.5	0.6	0	0.2	0.2	0.1	0.1	0.3	2	0.7	24	
26	0.1	0	0.3	0	0.1	S	1.4	10.5	6.2	16	20.5	15	9.9	10.1	8.1	6.5	3.6	1.1	0.4	0.6	0.5	0.5	0.5	0.5	20.5	4.9	24	
27	0.5	0.3	0.4	0.5	S	22.8	5.4	7.3	7.3	9.7	18.5	28.6	13.8	8.5	6.4	3.4	2.6	0.4	0.3	0	0.2	0.2	0.3	0.3	28.6	6.0	24	
28	0.3	0.2	0.2	S	1.8	2.6	1.1	0.6	0.8	1	3.6	3.9	2.9	3.3	4.7	2.4	0.6	0.2	0.3	0.3	0.7	0.4	0.3	0.5	4.7	1.4	24	
29	0.4	0.5	S	0.3	0.2	0.2	0.2	0.1	0	0.1	8.7	9.2	8.1	2.4	7.3	6.2	2.2	1.9	0	0	0.2	0.1	0.4	0.1	9.2	2.1	24	
30	0.1	S	0.4	0.2	0.4	0.4	0.1	0.4	0.3	1	2.9	1.3	0.7	0.9	2.2	3	2.6	0.9	0.5	0.2	0.4	0.5	0.5	0.5	3	0.9	24	
31	S	0.5	0.3	0.4	0.4	0.4	1.5	0.9	2.6	6.8	3.2	2.3	3	4.6	2.4	1.4	1.3	0.7	0.6	0.5	0.6	0.4	0.5	S	6.8	1.6	24	
HOURLY MAX	6	12	10	4	12	25	33	47	22	40	72	29	22	18	18	21	4	15	11	9	9	13	8	11				
HOURLY AVG	0.7	0.8	0.8	0.6	1.0	3.3	4.8	5.6	4.8	6.9	8.6	5.4	4.5	4.4	3.6	2.7	1.4	1.1	0.8	0.7	0.8	0.9	0.9	1.3				

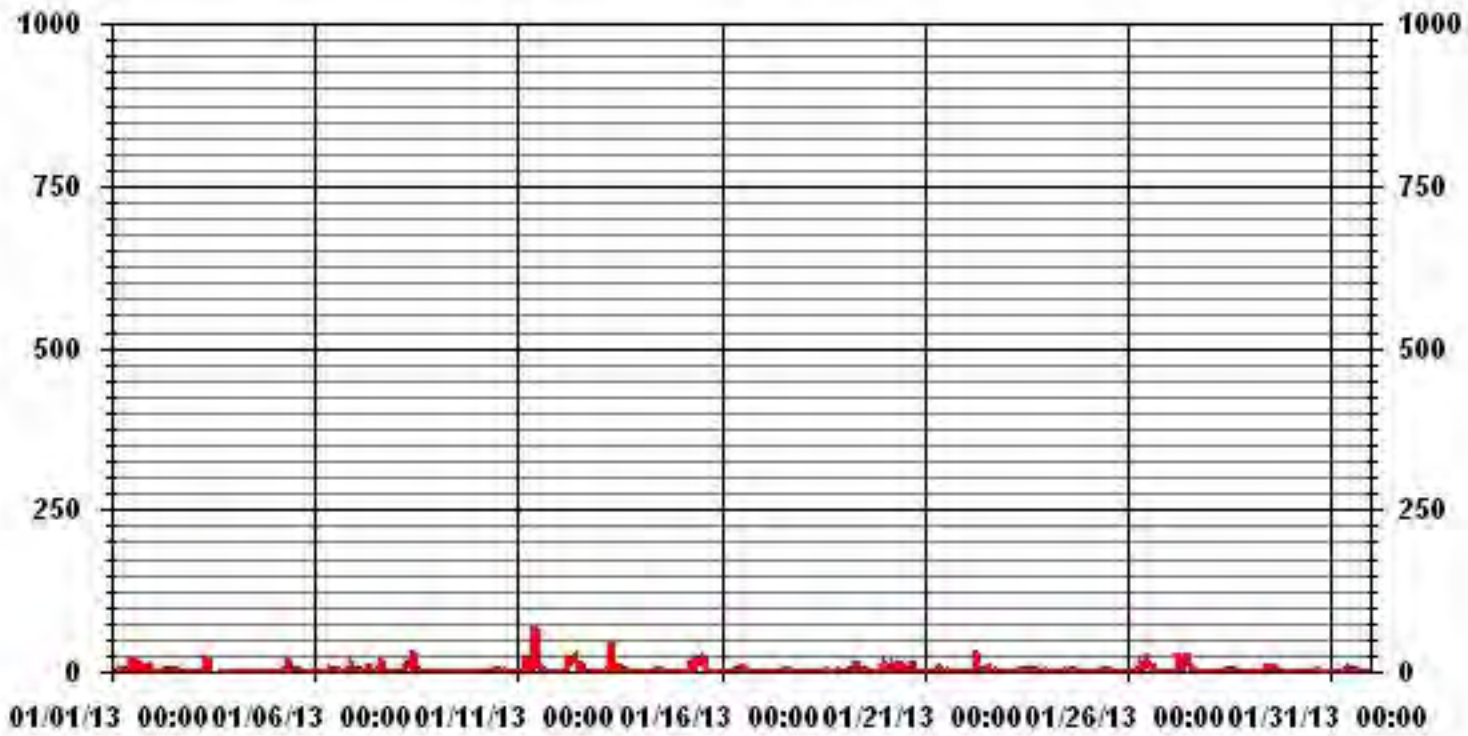
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	679					
MAXIMUM INSTANTANEOUS VALUE:	71.6	PPB	@ HOUR(S)	10	ON DAY(S)	11
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	5.76					

01 Hour Averages



LICA30
 NO_ / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 30
 Site Name : LICA30
 Parameter : NO_
 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	6.97	6.40	5.68	4.83	7.25	3.84	.85	1.70	3.55	16.50	10.24	3.41	7.25	6.97	8.53	5.97	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	6.97	6.40	5.68	4.83	7.25	3.84	.85	1.70	3.55	16.50	10.24	3.41	7.25	6.97	8.53	5.97	

Calm : .00 %

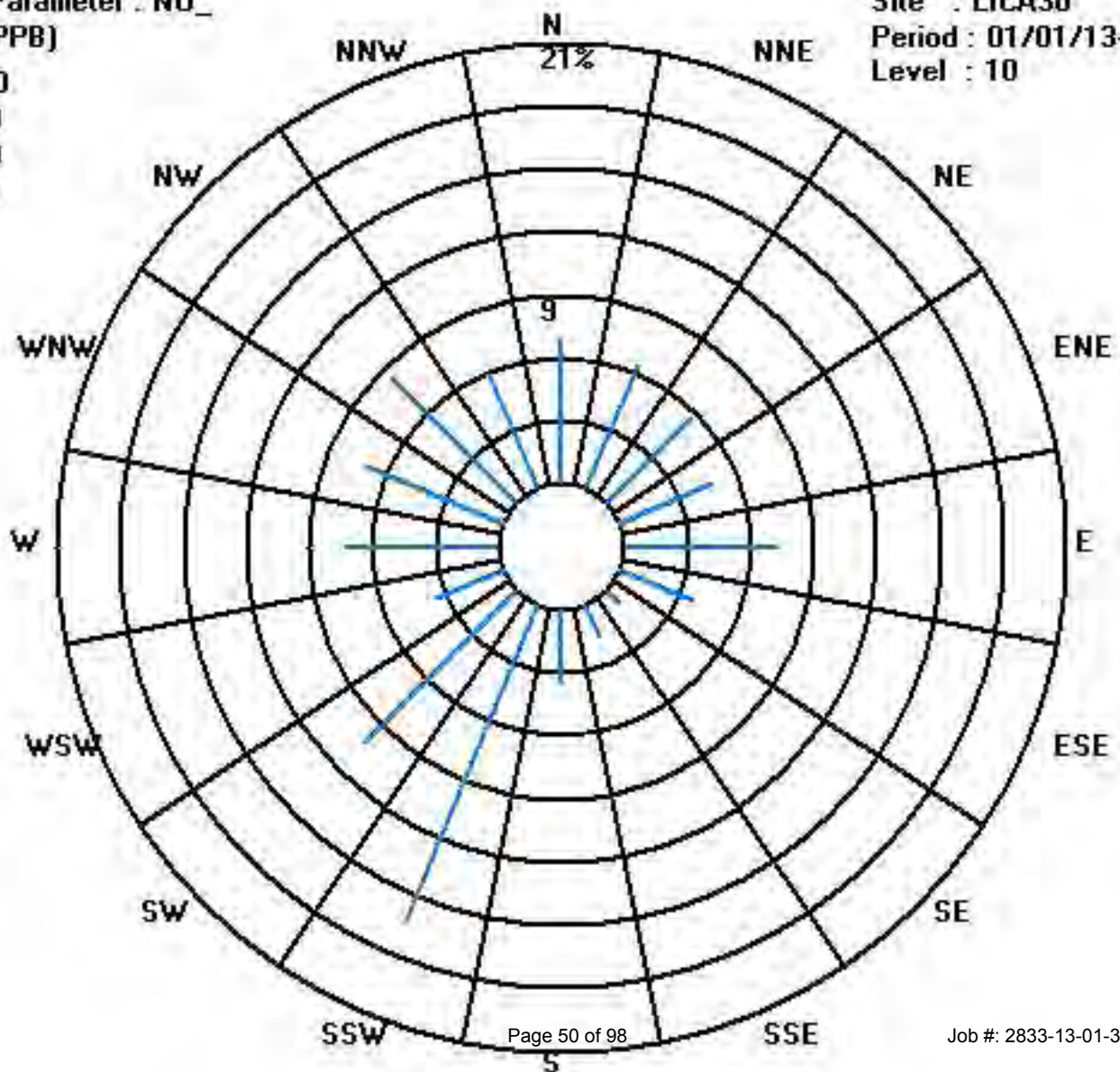
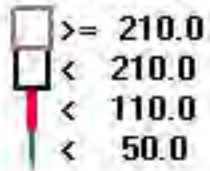
Total # Operational Hours : 703

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	49	45	40	34	51	27	6	12	25	116	72	24	51	49	60	42	703
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	49	45	40	34	51	27	6	12	25	116	72	24	51	49	60	42	

Calm : .00 %

Total # Operational Hours : 703



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA
JANUARY 2013
OXIDES OF NITROGEN hourly averages in ppb

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00			
DAY																											
1	18.2	18.1	2.2	3.3	9.6	17.6	17.3	S	19.6	13.1	19.3	35.8	29.8	40.1	40.1	15.6	11.5	1.1	36.5	31.9	30.3	20	7.8	31.4	40.1	20.4	24
2	20	8.9	3.5	0.7	9.7	12.2	S	14.7	13.7	12.3	13.6	7.8	7.3	12.4	4.6	4.3	6.2	6.4	6.7	8.5	7.1	6.4	7.9	7.9	20	8.8	24
3	8.4	12.4	14	14.2	13	S	42.9	20.3	22.3	40.2	C	C	C	C	C	C	C	2.2	1.9	2.2	1.5	11.5	33.4	42.9	16.0	24	
4	24.7	10.3	22.3	15.3	S	11.9	3.7	7.3	9.6	4.7	3.5	1.8	1.4	3.1	5.1	8.9	1.9	3.1	4.7	4.6	4.3	7.1	10.2	12.7	24.7	7.9	24
5	10.4	10.7	14.5	S	10.2	7.9	10.7	8.3	27.9	8.7	20.4	5.1	2.3	6.9	17	12.9	7.4	7.5	8	6.2	7.7	8.3	7.9	7.1	27.9	10.2	24
6	6.4	5.2	S	6.3	5.1	3.6	4.3	7.6	18.3	8.1	9.8	12.9	12	12.4	15.8	12.8	5.9	5.1	3.8	10.7	19.5	34.9	33.6	24.3	34.9	12.1	24
7	5.8	S	19.6	15.4	2.6	2.3	16	2	19.9	9.3	6.3	3.3	8.4	6.9	5.9	36.2	11.5	6.7	7.5	5.1	5.1	5.3	5.8	7.9	36.2	9.3	24
8	S	11.2	15	18.1	17.9	30.1	35.1	35.2	37.9	36.2	56.5	7.7	8.3	12.3	7.9	6.9	16.8	16.3	7.2	2.3	4.8	4.9	4.7	S	56.5	17.9	24
9	3.4	3.6	4.7	5.1	3.6	4.1	3.9	9.7	8.9	2.5	2.5	2.8	2.8	2	2.2	1.7	1.8	1.4	1.3	1.2	1.7	1.7	S	1.7	9.7	3.2	24
10	2.2	2.9	2.3	2.4	1.8	1.2	1.5	0.9	3.4	4.2	2.4	2.6	3.1	4.2	2.3	3.2	6.7	8.8	2.9	2.7	3.5	S	7.4	7.7	8.8	3.5	24
11	5.3	5.3	7.4	20.4	11.8	40	36.9	29.2	25.3	61.4	95.9	34.4	17.8	15.8	16.1	12.8	13.7	15.6	15.5	15	S	14.8	14.6	16	95.9	23.5	24
12	14.9	15.7	17.3	16.4	28.8	38.9	49	50.3	48.3	50.2	39	8.3	7.5	42	5.9	17.5	12.7	10.6	9.4	S	7.3	7.5	5.3	7.7	50.3	22.2	24
13	6.9	7	8.9	10.8	11.3	26	10.7	72.2	15.4	17.4	20.8	21.1	14.3	8.2	11.3	25.3	18.5	13.6	S	14.6	18.7	16.3	16.5	14.7	72.2	17.4	24
14	19.2	23	15.5	18.9	13.6	10.6	10.8	10.9	10.8	9.4	10	11.3	11.8	12.2	9.7	9.1	15.7	S	8.4	9.7	10.6	12.8	15.9	13	23	12.7	24
15	7.8	7.7	9.1	6.8	6.6	9.9	30.2	28.7	10.1	42.4	37.5	37.2	45.7	42.7	41.7	7.6	S	9.1	5.1	6.8	5.4	5.5	5.2	4.5	45.7	18.0	24
16	2.5	6.1	10	4.8	4.7	6.9	3.9	9	14.6	16.2	5.2	12.1	16.7	3.3	3.6	S	2.8	1.2	1.7	3.3	2.4	8.2	17.2	7.1	17.2	7.1	24
17	2.6	8.1	8.4	2.6	1.2	0.9	2.7	5.6	10	10.1	3.7	4.5	7.3	2.5	S	6.5	10.1	8.3	2.1	4.9	4.3	1.5	8.8	2.2	10.1	5.2	24
18	4.2	4.2	1.1	2.9	6.6	3	2.7	1.7	2.4	1.8	4.1	8	3.4	S	5.9	4.5	4.4	2.5	5.1	6.1	6.3	5.4	1.1	4.9	8	4.0	24
19	1.1	0.7	1.4	1.8	18.9	16	14.9	53.7	32.2	24.8	18	13.9	S	5.6	8.6	9.5	8.9	3.5	2.8	2.8	2.5	4.3	14.5	31.6	53.7	12.7	24
20	24.6	33.2	29.9	16.1	32.8	18.4	2.5	16.5	17.5	28.6	15	S	7.2	4.5	3.5	1	1	24.9	0.7	0.6	0.7	0.7	1.2	2.3	33.2	12.3	24
21	6.4	6	2.1	4.5	4.8	4.4	5.6	13	24	17.9	S	7.7	7.6	7	3.6	3.6	4.6	8.7	8.1	11.2	3.8	3.9	4.1	3.6	24	7.2	24
22	3.4	3.4	4.2	3.6	4.4	9.6	55.2	15.2	22.4	S	12.8	6.1	10.5	18.3	4.4	2	12.8	11.3	19.4	18	7.8	3.5	5.2	5.6	55.2	11.3	24
23	4.8	4.5	8	4.8	4.4	4.1	10.9	13	S	13.1	13.8	9.2	4.5	11.2	11.2	11.9	9.2	12.2	10.6	11.1	4.3	2.6	4.3	1.7	13.8	8.1	24
24	5.8	8.8	3.8	2.3	0.4	1.6	3.1	S	2	3.9	2.9	5.7	6	3.8	3.3	4.7	13	9	9.3	8.6	7.5	6.4	7.6	7.9	13	5.5	24
25	7.4	6.7	5.7	5.9	5.4	4.7	S	7.4	9	8.7	7.4	8.3	6.6	5.9	6	6.4	7.8	8.1	13.5	11.3	7.3	7.5	7.1	6.3	13.5	7.4	24
26	6.3	5.4	4.5	7.2	6.3	S	12	26.8	20.7	28.9	36.8	29.2	22.3	22.3	20.7	23.2	25	25	23.9	23.6	18.6	15.6	15.3	15.9	36.8	18.9	24
27	16	16.3	18.5	18.1	S	37.4	23.7	23.9	25.7	22	33.4	47.8	26.8	20.8	16.9	15.5	14.8	13.3	11.3	8.8	8.2	8	5.4	5.4	47.8	19.0	24
28	4.9	4.6	5.8	S	9.8	12.1	10.3	9.1	11.4	10.3	13.6	13.4	11.7	12.8	17.4	15.6	7.6	5.5	4.7	6.9	6.4	6.2	6.2	5	17.4	9.2	24
29	3.1	3.3	S	5.9	6	2.8	1.4	0.7	0.6	0.6	17	17	14	4.7	14.3	13.6	6.6	8.4	0.6	0.5	0.4	1.5	1	1.3	17	5.4	24
30	1.3	S	1.6	1.1	1.3	1.6	0.9	1	3.6	4.2	7.1	2.7	1.1	1.9	5.4	8.3	8.5	7.1	6.5	5.1	4.3	9.9	8.1	6.7	9.9	4.3	24
31	S	8	13.1	14.1	12	12.8	17.9	12.2	10.2	16.4	9.6	7.1	8.2	10.4	8.9	7.8	10	9.1	10.2	9.9	8.6	8.5	8.6	S	17.9	10.6	24
HOURLY MAX	25	33	30	20	33	40	55	72	48	61	96	48	46	43	42	36	25	25	37	32	30	35	34	33			
HOURLY AVG	8.6	9.0	9.5	8.6	9.1	12.2	15.2	17.5	16.6	17.6	18.5	13.3	11.3	12.3	11.0	10.7	9.6	9.1	8.3	8.5	7.4	8.0	9.0	10.3			

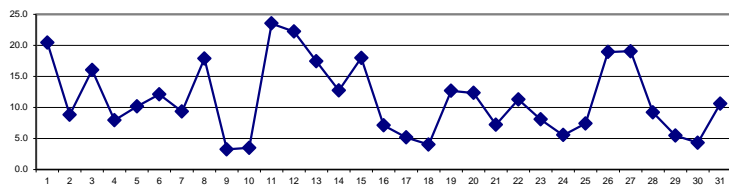
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

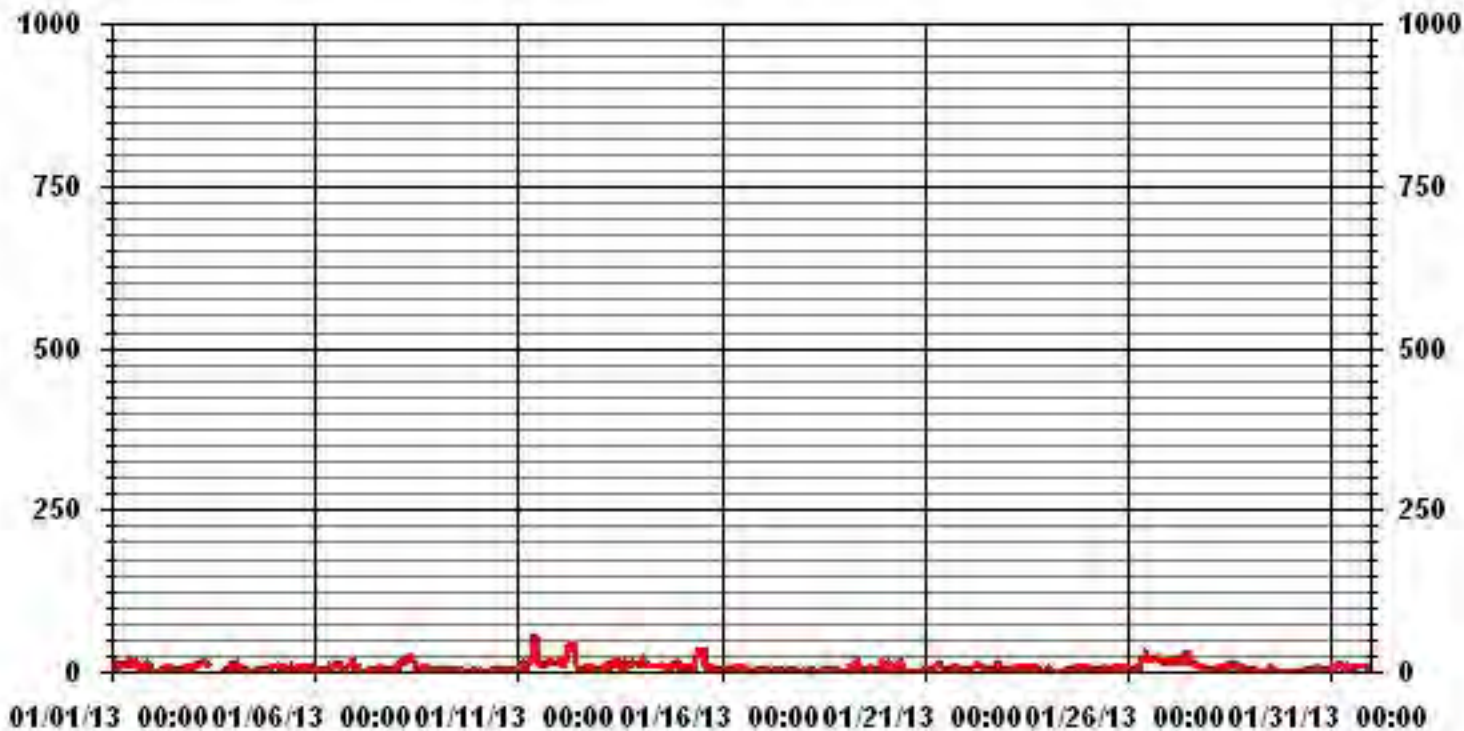
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	703					
MAXIMUM 1-HR AVERAGE:	95.9	PPB	@ HOUR(S)	10	ON DAY(S)	11
MAXIMUM 24-HR AVERAGE:	23.5	PPB			ON DAY(S)	11
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	10.73		MONTHLY AVERAGE:	11.28	PPB	

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2013

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00			
DAY																											
1	18.2	18.1	2.2	3.3	9.6	17.6	17.3	S	19.6	13.1	19.3	35.8	29.8	40.1	40.1	15.6	11.5	1.1	36.5	31.9	30.3	20	7.8	31.4	40.1	20.4	24
2	20	8.9	3.5	0.7	9.7	12.2	S	14.7	13.7	12.3	13.6	7.8	7.3	12.4	4.6	4.3	6.2	6.4	6.7	8.5	7.1	6.4	7.9	7.9	20	8.8	24
3	8.4	12.4	14	14.2	13	S	42.9	20.3	22.3	40.2	C	C	C	C	C	C	C	2.2	1.9	2.2	1.5	11.5	33.4	42.9	16.0	24	
4	24.7	10.3	22.3	15.3	S	11.9	3.7	7.3	9.6	4.7	3.5	1.8	1.4	3.1	5.1	8.9	1.9	3.1	4.7	4.6	4.3	7.1	10.2	12.7	24.7	7.9	24
5	10.4	10.7	14.5	S	10.2	7.9	10.7	8.3	27.9	8.7	20.4	5.1	2.3	6.9	17	12.9	7.4	7.5	8	6.2	7.7	8.3	7.9	7.1	27.9	10.2	24
6	6.4	5.2	S	6.3	5.1	3.6	4.3	7.6	18.3	8.1	9.8	12.9	12	12.4	15.8	12.8	5.9	5.1	3.8	10.7	19.5	34.9	33.6	24.3	34.9	12.1	24
7	5.8	S	19.6	15.4	2.6	2.3	16	2	19.9	9.3	6.3	3.3	8.4	6.9	5.9	36.2	11.5	6.7	7.5	5.1	5.1	5.3	5.8	7.9	36.2	9.3	24
8	S	11.2	15	18.1	17.9	30.1	35.1	35.2	37.9	36.2	56.5	7.7	8.3	12.3	7.9	6.9	16.8	16.3	7.2	2.3	4.8	4.9	4.7	S	56.5	17.9	24
9	3.4	3.6	4.7	5.1	3.6	4.1	3.9	9.7	8.9	2.5	2.5	2.8	2.8	2	2.2	1.7	1.8	1.4	1.3	1.2	1.7	1.7	S	1.7	9.7	3.2	24
10	2.2	2.9	2.3	2.4	1.8	1.2	1.5	0.9	3.4	4.2	2.4	2.6	3.1	4.2	2.3	3.2	6.7	8.8	2.9	2.7	3.5	S	7.4	7.7	8.8	3.5	24
11	5.3	5.3	7.4	20.4	11.8	40	36.9	29.2	25.3	61.4	95.9	34.4	17.8	15.8	16.1	12.8	13.7	15.6	15.5	15	S	14.8	14.6	16	95.9	23.5	24
12	14.9	15.7	17.3	16.4	28.8	38.9	49	50.3	48.3	50.2	39	8.3	7.5	42	5.9	17.5	12.7	10.6	9.4	S	7.3	7.5	5.3	7.7	50.3	22.2	24
13	6.9	7	8.9	10.8	11.3	26	10.7	72.2	15.4	17.4	20.8	21.1	14.3	8.2	11.3	25.3	18.5	13.6	S	14.6	18.7	16.3	16.5	14.7	72.2	17.4	24
14	19.2	23	15.5	18.9	13.6	10.6	10.8	10.9	10.8	9.4	10	11.3	11.8	12.2	9.7	9.1	15.7	S	8.4	9.7	10.6	12.8	15.9	13	23	12.7	24
15	7.8	7.7	9.1	6.8	6.6	9.9	30.2	28.7	10.1	42.4	37.5	37.2	45.7	42.7	41.7	7.6	S	9.1	5.1	6.8	5.4	5.5	5.2	4.5	45.7	18.0	24
16	2.5	6.1	10	4.8	4.7	6.9	3.9	9	14.6	16.2	5.2	12.1	16.7	3.3	3.6	S	2.8	1.2	1.7	3.3	2.4	8.2	17.2	7.1	17.2	7.1	24
17	2.6	8.1	8.4	2.6	1.2	0.9	2.7	5.6	10	10.1	3.7	4.5	7.3	2.5	S	6.5	10.1	8.3	2.1	4.9	4.3	1.5	8.8	2.2	10.1	5.2	24
18	4.2	4.2	1.1	2.9	6.6	3	2.7	1.7	2.4	1.8	4.1	8	3.4	S	5.9	4.5	4.4	2.5	5.1	6.1	6.3	5.4	1.1	4.9	8	4.0	24
19	1.1	0.7	1.4	1.8	18.9	16	14.9	53.7	32.2	24.8	18	13.9	S	5.6	8.6	9.5	8.9	3.5	2.8	2.8	2.5	4.3	14.5	31.6	53.7	12.7	24
20	24.6	33.2	29.9	16.1	32.8	18.4	2.5	16.5	17.5	28.6	15	S	7.2	4.5	3.5	1	1	24.9	0.7	0.6	0.7	0.7	1.2	2.3	33.2	12.3	24
21	6.4	6	2.1	4.5	4.8	4.4	5.6	13	24	17.9	S	7.7	7.6	7	3.6	3.6	4.6	8.7	8.1	11.2	3.8	3.9	4.1	3.6	24	7.2	24
22	3.4	3.4	4.2	3.6	4.4	9.6	55.2	15.2	22.4	S	12.8	6.1	10.5	18.3	4.4	2	12.8	11.3	19.4	18	7.8	3.5	5.2	5.6	55.2	11.3	24
23	4.8	4.5	8	4.8	4.4	4.1	10.9	13	S	13.1	13.8	9.2	4.5	11.2	11.2	11.9	9.2	12.2	10.6	11.1	4.3	2.6	4.3	1.7	13.8	8.1	24
24	5.8	8.8	3.8	2.3	0.4	1.6	3.1	S	2	3.9	2.9	5.7	6	3.8	3.3	4.7	13	9	9.3	8.6	7.5	6.4	7.6	7.9	13	5.5	24
25	7.4	6.7	5.7	5.9	5.4	4.7	S	7.4	9	8.7	7.4	8.3	6.6	5.9	6	6.4	7.8	8.1	13.5	11.3	7.3	7.5	7.1	6.3	13.5	7.4	24
26	6.3	5.4	4.5	7.2	6.3	S	12	26.8	20.7	28.9	36.8	29.2	22.3	22.3	20.7	23.2	25	25	23.9	23.6	18.6	15.6	15.3	15.9	36.8	18.9	24
27	16	16.3	18.5	18.1	S	37.4	23.7	23.9	25.7	22	33.4	47.8	26.8	20.8	16.9	15.5	14.8	13.3	11.3	8.8	8.2	8	5.4	5.4	47.8	19.0	24
28	4.9	4.6	5.8	S	9.8	12.1	10.3	9.1	11.4	10.3	13.6	13.4	11.7	12.8	17.4	15.6	7.6	5.5	4.7	6.9	6.4	6.2	6.2	5	17.4	9.2	24
29	3.1	3.3	S	5.9	6	2.8	1.4	0.7	0.6	0.6	17	17	14	4.7	14.3	13.6	6.6	8.4	0.6	0.5	0.4	1.5	1	1.3	17	5.4	24
30	1.3	S	1.6	1.1	1.3	1.6	0.9	1	3.6	4.2	7.1	2.7	1.1	1.9	5.4	8.3	8.5	7.1	6.5	5.1	4.3	9.9	8.1	6.7	9.9	4.3	24
31	S	8	13.1	14.1	12	12.8	17.9	12.2	10.2	16.4	9.6	7.1	8.2	10.4	8.9	7.8	10	9.1	10.2	9.9	8.6	8.5	8.6	S	17.9	10.6	24
HOURLY MAX	25	33	30	20	33	40	55	72	48	61	96	48	46	43	42	36	25	25	37	32	30	35	34	33			
HOURLY AVG	8.6	9.0	9.5	8.6	9.1	12.2	15.2	17.5	16.6	17.6	18.5	13.3	11.3	12.3	11.0	10.7	9.6	9.1	8.3	8.5	7.4	8.0	9.0	10.3			

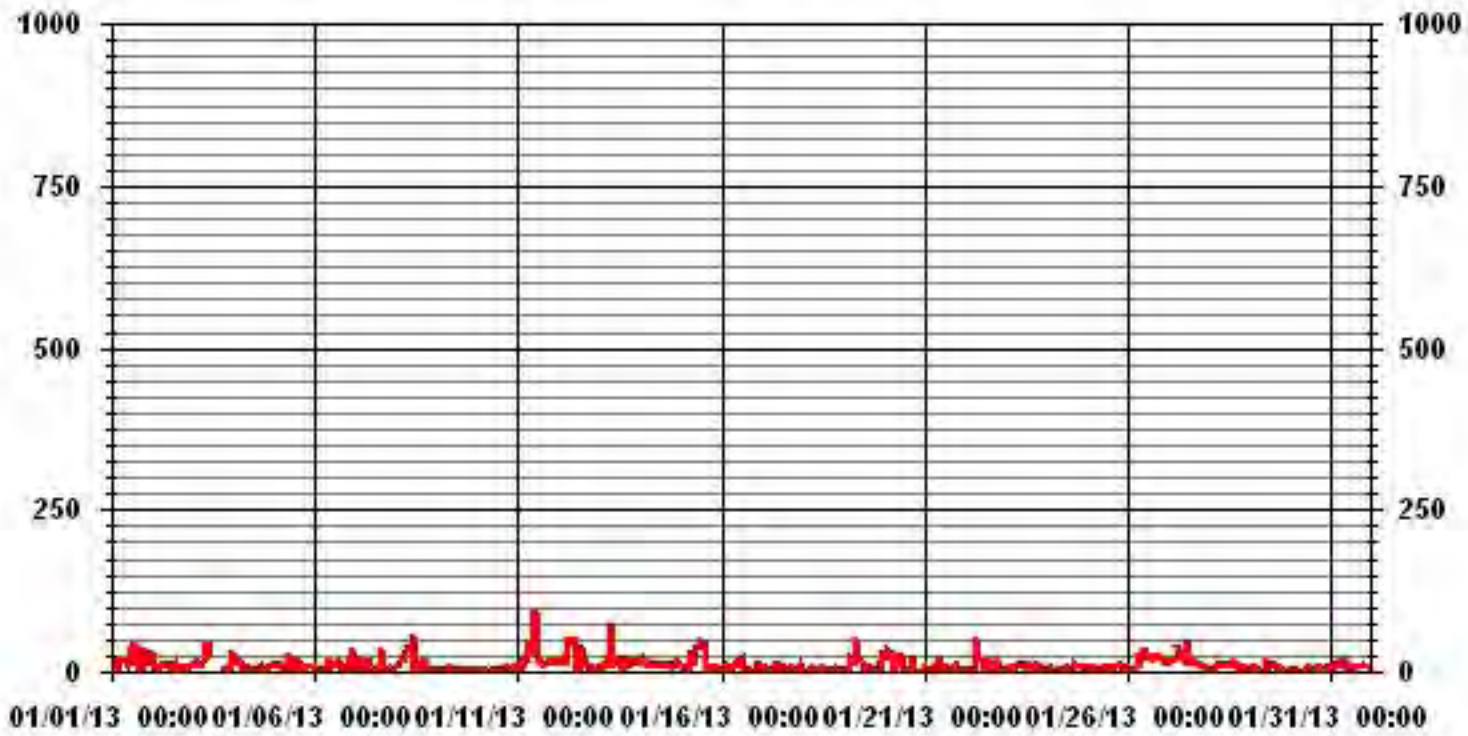
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	703					
MAXIMUM INSTANTANEOUS VALUE:	95.9	PPB	@ HOUR(S)	10	ON DAY(S)	11
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	10.73					

01 Hour Averages



LICA30
 NOX_ / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 30
 Site Name : LICA30
 Parameter : NOX_
 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	6.97	6.40	5.68	4.83	7.25	3.84	.85	1.70	3.55	16.35	10.24	3.41	7.25	6.97	8.53	5.97	99.85
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.14
< 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	6.97	6.40	5.68	4.83	7.25	3.84	.85	1.70	3.55	16.50	10.24	3.41	7.25	6.97	8.53	5.97	

Calm : .00 %

Total # Operational Hours : 703

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	49	45	40	34	51	27	6	12	25	115	72	24	51	49	60	42	702
< 110.0										1							1
< 210.0																	
>= 210.0																	
Totals	49	45	40	34	51	27	6	12	25	116	72	24	51	49	60	42	

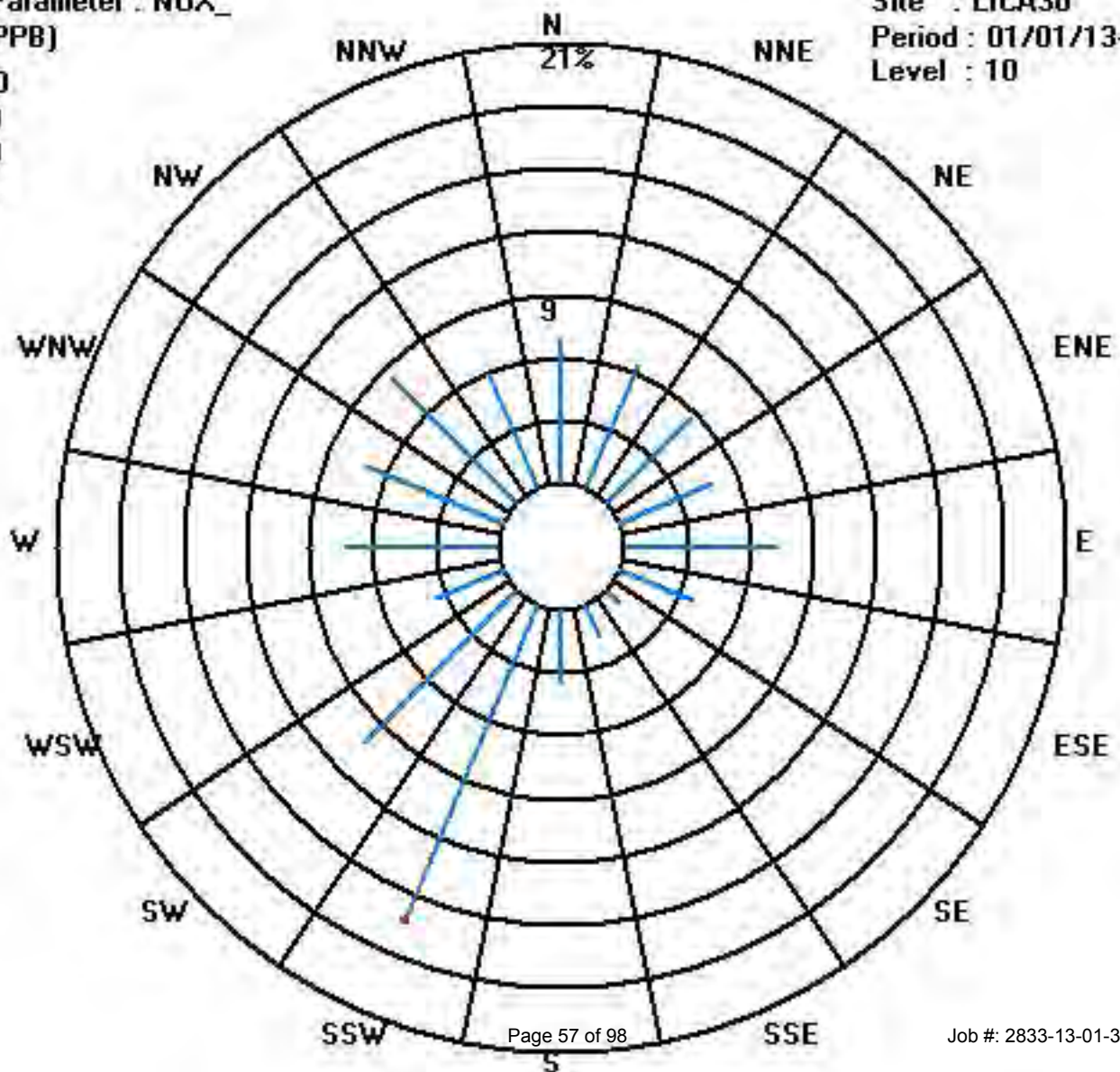
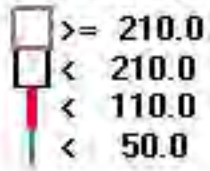
Calm : .00 %

Total # Operational Hours : 703

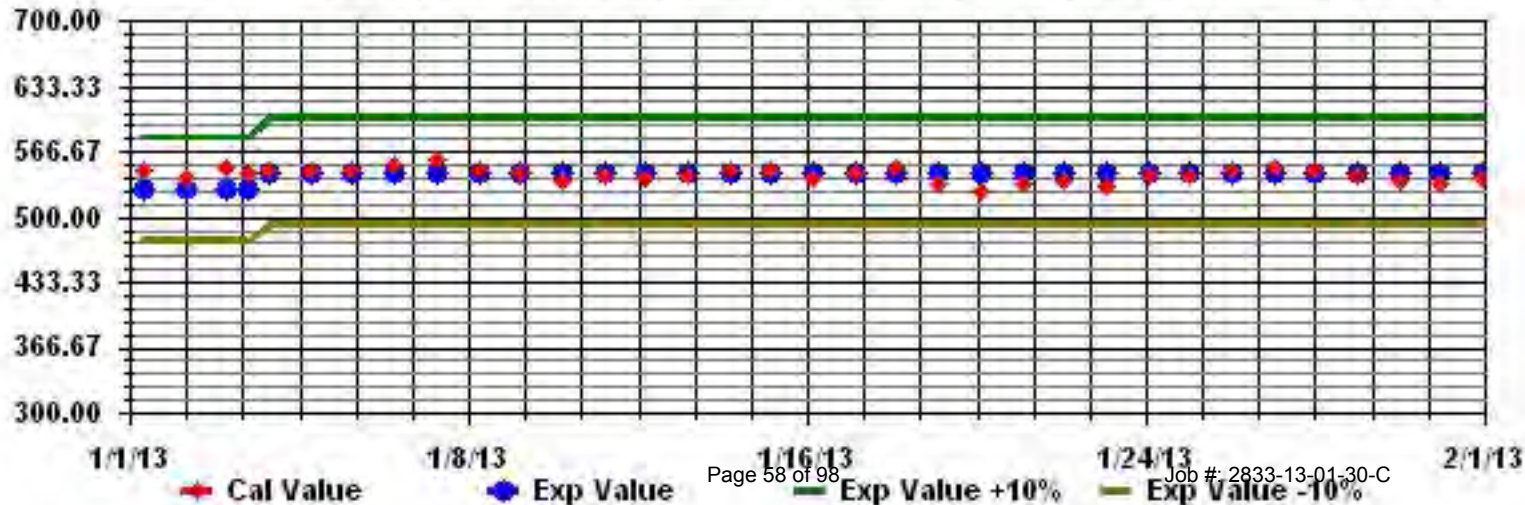
Class Limits (PPB)

Period : 01/01/13-01/31/13

Level : 10



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



Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA
JANUARY 2013
AMBIENT TEMPERATURE hourly averages (Degrees C)

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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			
DAY	HOURLY MAX	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.	
1		-6.3	-5.4	-1.7	-1.3	-1	-0.8	-0.9	-1.7	-2	-1.4	-0.7	-0.1	0.1	0.7	0.4	-0.2	-1	-2.2	-2.4	-1.4	-1.6	-1.9	-1.8	-1.9	0.7	-1.5	24	
2		-2.1	-2.6	-3.3	-4.2	-5.2	-5.3	-5.5	-8.1	-8.5	-8.8	-7.7	-5.7	-4.2	-4.4	-4.6	-5.1	-5.7	-6.2	-7.2	-7.4	-6.4	-6.4	-6.5	-7.3	-2.1	-5.8	24	
3		-7.7	-7.7	-7.5	-7.9	-8	-7.2	-6.9	-5.9	-4.2	-3.3	-0.9	2.8	3.8	4	3.6	0.9	-0.9	-1.9	-2.8	-3.4	-4	-4.9	-6.1	-6.8	4.0	-3.5	24	
4		-7.7	-8.7	-10.3	-12.2	-13.5	-14	-12.3	-11	-10.1	-10	-8.9	-7.2	-6.6	-5.7	-5.7	-6	-7.3	-8.7	-9.3	-10.1	-8.8	-8.7	-9.4	-9.4	-5.7	-9.2	24	
5		-9.6	-10	-10.5	-10.8	-9.4	-8.4	-8.8	-7.6	-6.2	-6.2	-5	-2.3	-1.3	-1.4	-2.3	-3.3	-4.6	-5.7	-6.5	-7.3	-7.5	-7.6	-7.4	-7.7	-1.3	-6.6	24	
6		-7.8	-7.9	-7.8	-7.4	-7.3	-7.3	-7.4	-7.2	-7.2	-6.8	-6.2	-5.8	-5.8	-5.7	-5.4	-4.5	-3.9	-4	-3.7	-3.4	-3.1	-2.6	-2.4	-2.7	-2.4	-5.6	24	
7		-2.9	-2.9	-2.9	-2.9	-3.2	-3.5	-3.6	-4	-4.8	-4.2	-3	-2.2	-2	-2.5	-3	-4.3	-5.9	-7.3	-6.5	-6.2	-6.1	-6.2	-6.5	-6.6	-2.0	-4.3	24	
8		-6.7	-7	-7.2	-7.4	-7.3	-6.6	-6.2	-6	-5.8	-5.8	-6.5	-6.7	-6.2	-5.5	-6.2	-7	-9.5	-10.1	-9.7	-8.1	-7.7	-7.7	-8.1	-7.9	-5.5	-7.2	24	
9		-8.6	-9	-9.3	-9.9	-11.9	-12.5	-12.3	-11.6	-11.2	-10	-8.4	-6.9	-6.7	-6.2	-5.3	-5.4	-5.4	-4.8	-4.5	-4.8	-5.3	-6.3	-7.3	-8.4	-4.5	-8.0	24	
10		-9.3	-10	-10.8	-12	-13.2	-14.9	-16.1	-18	-19.7	-19.9	-18.2	-16.7	-15.3	-14.1	-13.6	-15.2	-17.5	-19.9	-21.3	-22.6	-24.2	-25	-26	-26.5	-9.3	-17.5	24	
11		-27.5	-28.2	-28.1	-28.4	-29.2	-29.4	-29.9	-30.3	-30.3	-29.3	-24.5	-19.2	-18.2	-17.9	-18.3	-19.7	-21	-22	-21	-21	-20.4	-21.6	-22.8	-23.3	-17.9	-24.2	24	
12		-22.6	-23.2	-23.9	-24	-23.5	-22.6	-21.5	-20.6	-20.4	-19	-15.8	-14.2	-13.2	-13.3	-13.3	-14.2	-15.1	-16	-17.7	-17.9	-17.7	-18.1	-17.8	-17.7	-13.2	-18.5	24	
13		-18.3	-20.2	-21.7	-22.3	-22.1	-21.7	-22.6	-24.4	-26	-25.7	-19.1	-16.6	-15.4	-15.6	-13.9	-15.3	-18.1	-20.7	-21.4	-19.7	-18.8	-18.4	-18.3	-17.9	-13.9	-19.8	24	
14		-17.1	-17.4	-17	-17.8	-16.9	-16.3	-16.1	-15.8	-14.7	-13.7	-12.7	-11.8	-11.1	-10.6	-10	-9.9	-9.9	-9.6	-9.4	-9.1	-8.6	-8	-7.4	-6.8	-6.8	-12.4	24	
15		-6.5	-6.2	-4.6	-3.9	-3.2	-2.3	-0.8	0.6	2.3	3.6	5	5.5	5.5	4.6	4.1	1.5	0.3	-1.4	-1.9	-2.6	-3.3	-4.7	-6	-6.4	5.5	-0.9	24	
16		-6.9	-7.4	-7.5	-7.9	-8.2	-8.7	-8.9	-9.1	-9	-8.5	-7.5	-6.2	-5.3	-5.3	-6.2	-8.1	-10	-11.2	-11.7	-12.7	-14.6	-16.9	-17	-17.3	-5.3	-9.7	24	
17		-17.8	-17.4	-16.5	-15.7	-15.1	-14.7	-14.3	-14.8	-14.4	-14.1	-14	-13.9	-13.5	-13.5	-13.8	-13.6	-13.4	-13.7	-13.7	-13.5	-13.6	-13.3	-13.4	-13.3	-13.4	-13.3	-14.4	24
18		-13.1	-12.8	-12.7	-12.3	-12	-12	-12.8	-12.4	-12	-11.8	-10.7	-9	-8.8	-8.3	-6	-8.3	-11	-12.5	-14.2	-14.5	-14.3	-15.3	-16.6	-17.7	-6.0	-12.1	24	
19		-19	-19.7	-21	-22.6	-23.7	-23.2	-22.5	-23.9	-25.3	-23.6	-21.3	-19.7	-19.6	-19.5	-19.3	-19	-19.1	-18.7	-19.3	-21.4	-23.6	-24.7	-25.6	-26	-18.7	-21.7	24	
20		-26.9	-27.1	-26.7	-27	-27.3	-28.1	-29	-28.8	-29.1	-27.9	-25	-22.8	-21.8	-20.8	-21.6	-23.2	-23.8	-24.5	-24.6	-24.6	-24.4	-25.2	-26.1	-26.5	-20.8	-25.5	24	
21		-27.1	-26.7	-27.6	-27.6	-27.6	-25.7	-25.3	-25	-23.4	-22.2	-21	-19.5	-19.3	-18.5	-18.3	-18.5	-18.2	-18.6	-18.9	-18.8	-18.7	-18.5	-18.4	-18.5	-18.2	-18.2	-21.4	24
22		-17.9	-17.9	-17.8	-17.7	-17.5	-17.6	-18	-19	-19.6	-17.8	-14.9	-13.1	-12.3	-13.5	-14.2	-15.4	-16.4	-18.3	-18.9	-19.9	-21.1	-22.9	-23.4	-25	-12.3	-17.9	24	
23		-27	-27.6	-27.7	-28.3	-28.9	-28.5	-28.3	-28.2	-27.7	-24.1	-22.7	-22	-21.2	-21	-21.2	-21.2	-21.5	-21.5	-21.4	-21.5	-21.6	-21.7	-21.4	-21.5	-21.0	-24.1	24	
24		-21.3	-21.4	-21.6	-21.7	-21.9	-21.9	-21.6	-21.6	-21.5	-20.9	-19.9	-18.4	-16.4	-16.8	-16.8	-17.8	-18.1	-19	-20.3	-22.3	-23.9	-25	-25.7	-26.4	-16.4	-20.9	24	
25		-27.1	-27.1	-26.5	-26.8	-26.4	-26	-25.2	-23.3	-21.2	-19.6	-17.7	-16	-14.3	-12.5	-10.4	-10.2	-11.6	-14.9	-17.2	-18.1	-17.1	-16.5	-18.9	-20.1	-10.2	-19.4	24	
26		-21.1	-20.8	-20.5	-20.2	-21.2	-21.5	-22	-22.2	-22.1	-18.7	-10	-5	-2.2	-2.6	-1.9	-2.9	-6.6	-10.4	-12.6	-14.3	-15.6	-16.4	-17.7	-18.5	-1.9	-14.5	24	
27		-19	-19.2	-19.1	-19.7	-20.1	-20.8	-21.4	-20	-19.1	-17.7	-14.1	-11.6	-8.6	-5.5	-2.7	-6.2	-7.7	-7.9	-7.6	-8.2	-9.3	-8.7	-8.4	-8	-2.7	-12.9	24	
28		-7.8	-8	-7.7	-7.1	-7.3	-8	-8.3	-8	-8.1	-7.7	-6.7	-5.9	-6	-5.4	-5.8	-5.5	-7.1	-11.2	-14.2	-17	-18.7	-19.8	-21	-22.3	-5.4	-10.2	24	
29		-23	-24.2	-24.9	-25.6	-26.1	-26	-26.2	-27	-27.6	-26.2	-25.8	-26	-24.6	-24	-23.9	-25.3	-27.4	-27.9	-27.9	-27.7	-28	-27.8	-27.8	-27.8	-23.0	-26.2	24	
30		-27.6	-27.6	-27.5	-27.4	-27.4	-27.5	-27.8	-28.4	-29.6	-28.8	-26.5	-23.9	-23.3	-21.9	-22	-22.7	-25.4	-27.7	-28.5	-30.4	-30.9	-32.4	-32.4	-32.3	-21.9	-27.5	24	
31		-34	-35.7	-36.8	-37.2	-36.8	-34.6	-35.5	-36.5	-36.3	-32.1	-26.8	-24.1	-23	-22.4	-22.1	-22.2	-21.9	-22.1	-21.4	-20.8	-20.8	-20.5	-19.9	-19.9	-19.9	-27.7	24	
HOURLY MAX		-2.1	-2.6	-1.7	-1.3	-1.0	-0.8	-0.8	0.6	2.3	3.6	5.0	5.5	5.5	4.6	4.1	1.5	0.3	-1.4	-1.9	-1.4	-1.6	-1.9	-1.8	-1.9				
HOURLY AVG		-16.0	-16.4	-16.4	-16.7	-16.8	-16.7	-16.7	-16.7	-16.6	-15.5	-13.4	-11.7	-10.9	-10.5	-10.3	-11.2	-12.4	-13.6	-14.1	-14.6	-14.8	-15.3	-15.7	-16.1				

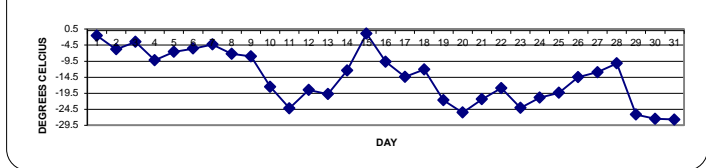
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

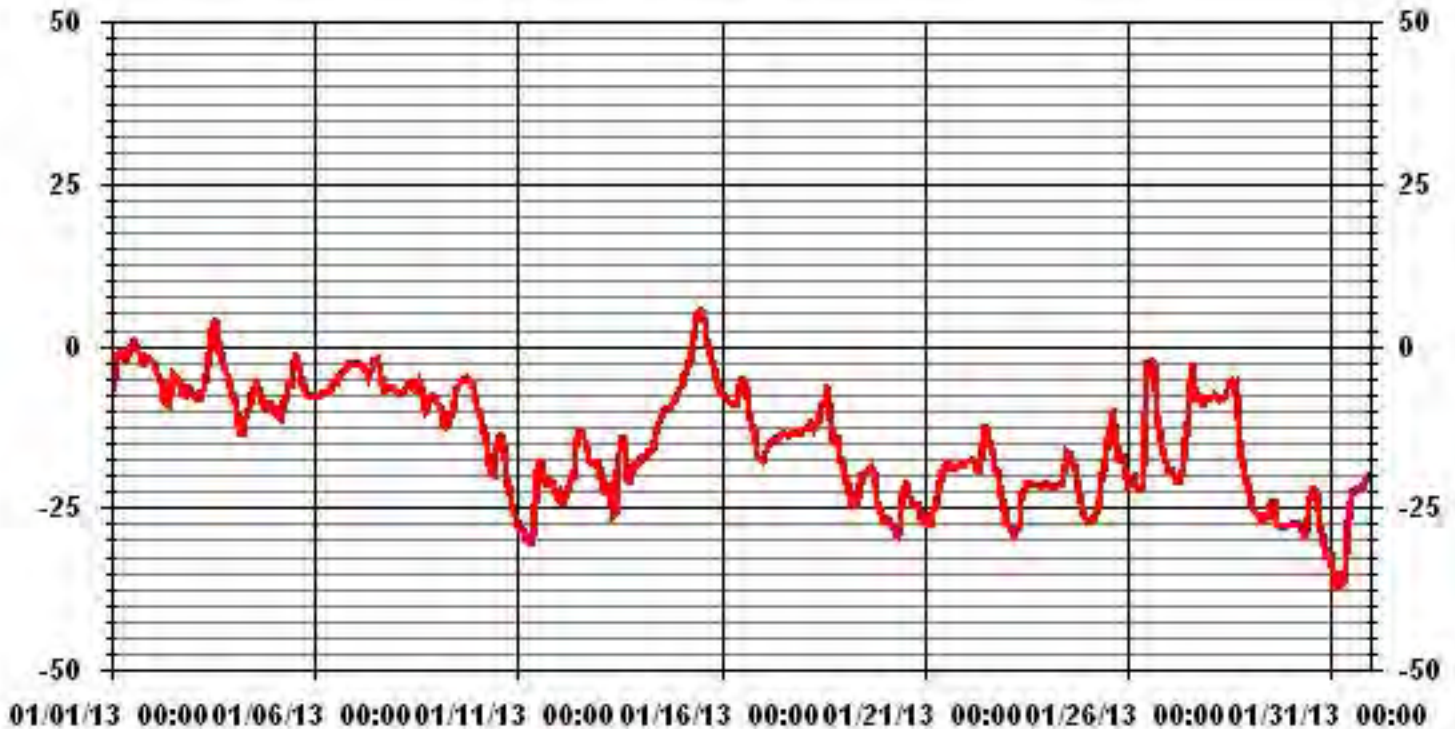
MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-37.2 °C	@ HOUR(S)	3	ON DAY(S)	31
MAXIMUM 1-HR AVERAGE:	5.5 °C	@ HOUR(S)	11, 12	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	-0.9 °C			ON DAY(S)	15
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	8.82		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	-14.55	°C

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2013

PRECIPITATION hourly averages (mm)

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY		
DAY	HOURLY MAX	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	TOTAL	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	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	24	
3		0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.8	0.1	0	0	0	0	0	0	0	0	0	0.8	1.1	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	24	
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	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	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	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	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	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	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	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	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	24	
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	24	
15		0	0	0	0	0	0	0	0	0	2.1	3.2	2.6	2.6	2.2	1.4	1.8	0.6	0.2	0	0	0	0	0	0	3.2	16.7	24	
16		0	0	0	0	0	0	0	0	0	0	0	0	0	Y	Y	Y	Y	0	0	0	0	0	0	0	0.0	0.0	20	
17		0	0	0	0	0	0	0	0	0.2	0.2	0.1	0.2	0.4	0.4	0.8	0.5	0.2	0.3	0.2	0.2	0.3	0	0	0	0.8	4.0	24	
18		0	0	0	0	0	0.1	0	0.1	0.1	0.2	0.2	0.4	0.5	0.4	0.4	0	0	0	0	0	0	0	0	0	0.5	2.4	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	24	
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	24	
21		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	0.1	0.1	24	
22		0	0	0	0.1	0	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	24	
23		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.2	0.2	0.4	0.1	0.1	0.2	0.5	0.5	1.8	24	
24		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	0.3	0.3	24	
25		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	0.3	0.3	24	
26		0	0	0	0	0	0	0	0	0	0	0.1	1.1	0	0	0	0	0	0	0	0	0	0	0	0	1.1	1.2	24	
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	24	
28		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0	0	0	0.1	0	0.2	0	0.1	0.6	1.0	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	24	
30		0	0	0	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	0.1	0.4	24	
31		0	0	0	0	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		0.0	0.0	0.0	0.3	0.1	0.1	0.1	0.1	0.1	2.1	3.2	2.6	2.6	2.2	1.4	1.8	0.6	0.2	0.3	0.4	0.2	0.3	0.2	0.5				

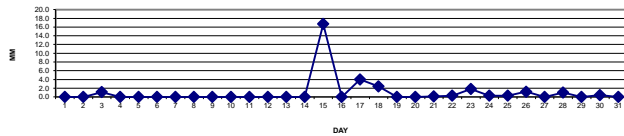
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

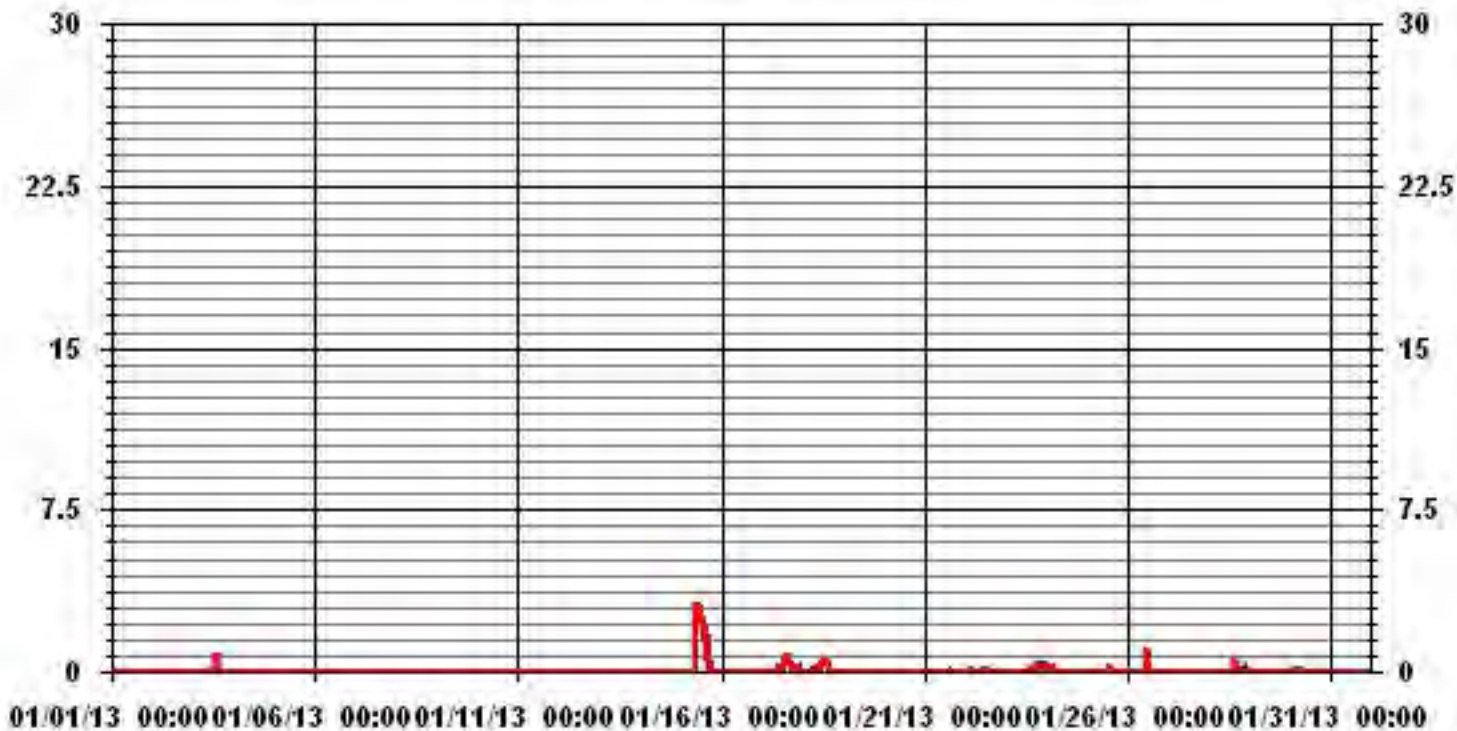
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	3.2	MM	10	ON DAY(S)	15
MAXIMUM DAILY TOTAL	16.7	MM		ON DAY(S)	15
MONTHLY TOTAL	29.6	MM			
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	740	HRS
STANDARD DEVIATION:	0.24		AMD OPERATION UPTIME:	99.5	%
			MONTHLY AVERAGE:	0.04	MM

DAILY TOTALS FOR JANUARY 2013



01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2013

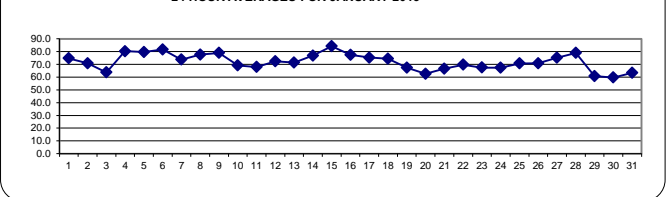
RELATIVE HUMIDITY hourly averages (%)

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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			
HR START	HR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.		
DAY																														
1		80	80	76	75	76	75	77	79	78	76	74	73	72	70	71	73	75	78	77	71	72	72	72	71	80	74.7	24		
2		70	70	72	74	77	79	80	84	85	83	80	72	65	63	65	65	66	64	65	65	63	63	63	65	85	85	70.8	24	
3		66	67	66	67	67	64	63	61	57	57	53	49	49	50	51	59	65	68	70	72	73	76	79	79	63.7	24	24		
4		81	82	84	83	80	79	80	80	81	81	80	78	76	73	73	76	78	83	84	84	83	83	82	82	84	80.3	24	24	
5		81	81	81	81	83	83	83	83	83	83	83	78	71	68	70	73	76	79	81	81	81	82	82	82	83	79.5	24	24	
6		82	82	81	82	82	82	83	83	83	82	81	81	81	82	83	84	85	84	82	81	81	79	76	76	85	81.6	24	24	
7		79	80	80	80	80	80	79	78	77	77	73	70	67	64	64	67	72	76	73	71	70	70	71	70	80	73.7	24	24	
8		70	76	81	82	82	82	82	82	82	78	73	70	66	64	69	72	79	82	83	81	80	80	82	83	83	77.5	24	24	
9		84	84	83	82	80	80	80	81	81	80	79	76	75	74	76	80	80	78	76	78	78	78	78	77	75	84	79.0	24	24
10		74	73	72	72	73	74	74	73	72	70	65	61	58	56	56	62	68	74	75	74	72	72	70	69	75	69.1	24	24	
11		68	67	67	67	66	66	65	65	65	64	65	65	65	62	64	69	72	73	73	73	72	72	72	72	73	67.9	24	24	
12		72	72	70	70	70	70	71	71	71	72	74	72	68	68	68	68	71	74	76	77	77	76	75	75	77	72.3	24	24	
13		75	74	73	73	74	74	73	70	69	69	68	67	65	68	65	67	75	74	74	74	73	73	73	74	75	71.4	24	24	
14		74	75	76	76	76	76	76	76	76	75	74	73	72	73	74	75	76	77	79	82	83	83	83	84	84	76.8	24	24	
15		85	85	86	87	87	88	89	87	85	82	79	77	77	82	83	85	87	87	86	84	84	83	83	83	89	84.2	24	24	
16		83	83	81	80	80	80	79	78	77	77	79	79	75	74	74	74	74	74	75	74	75	77	77	77	83	77.3	24	24	
17		77	76	76	75	75	75	75	75	75	75	74	73	73	74	74	75	77	76	76	76	76	76	76	76	77	75.3	24	24	
18		76	76	76	76	76	77	78	77	77	76	76	74	76	76	78	73	73	72	71	73	73	69	68	67	78	74.3	24	24	
19		68	68	69	70	71	70	68	69	70	67	67	64	66	66	67	69	71	70	67	63	62	62	64	68	71	67.3	24	24	
20		67	67	65	64	65	65	65	65	64	63	55	51	50	49	53	59	63	66	67	67	67	68	69	69	69	62.6	24	24	
21		68	68	67	66	67	67	68	68	68	67	61	59	58	59	64	66	68	69	69	70	69	70	71	71	71	66.6	24	24	
22		71	71	71	72	71	72	73	74	74	70	61	57	56	62	64	68	70	74	75	75	75	74	72	70	75	69.7	24	24	
23		68	67	66	66	65	66	65	65	65	68	68	67	67	68	69	69	69	69	69	69	69	69	69	69	69	67.5	24	24	
24		69	69	69	69	69	69	69	69	68	66	63	61	57	60	63	66	68	70	72	72	71	70	69	68	72	67.3	24	24	
25		67	67	67	67	67	66	67	69	70	70	70	70	69	68	70	69	72	78	77	76	76	77	75	73	78	70.7	24	24	
26		73	73	71	72	72	72	71	70	71	70	70	58	55	60	58	61	71	80	81	80	79	78	76	76	81	70.8	24	24	
27		75	74	74	74	73	73	72	73	73	72	73	75	73	66	60	72	77	80	79	81	83	84	83	83	84	75.1	24	24	
28		83	83	83	84	85	84	84	84	84	83	83	80	80	78	80	80	80	75	72	71	70	71	69	67	85	78.9	24	24	
29		67	65	65	64	64	63	62	62	62	61	60	59	54	52	52	54	59	61	61	61	62	62	63	63	67	60.8	24	24	
30		62	63	62	62	63	63	63	63	64	62	54	47	47	47	48	49	59	64	66	66	66	64	64	63	66	59.6	24	24	
31		61	60	59	58	58	59	58	58	58	59	62	59	47	47	49	59	61	64	68	72	71	71	71	71	72	63.3	24	24	
HOURLY MAX		85	85	86	87	87	88	89	87	85	83	83	81	81	82	83	85	87	87	86	84	84	84	83	84					
HOURLY AVG		73.4	73.5	73.2	73.2	73.4	73.3	73.3	73.3	73.1	72.1	70.1	67.4	65.8	65.7	66.7	69.3	72.6	74.4	74.3	74.0	73.7	73.6	73.4	73.3					

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

24 HOUR AVERAGES FOR JANUARY 2013



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	89	%	@ HOUR(S)	6	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	84.2	%			ON DAY(S)	15
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	7.81		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	71.92	%	

01 Hour Averages



Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2013

BAROMETRIC PRESSURE hourly averages (millibar)

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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			
HOURLY MAX	HOURLY AVG	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX	AVG	RDGS		
DAY																														
1		935	935	935	935	936	936	936	936	937	937	938	939	940	940	940	940	940	940	940	941	942	942	943	944	944	938.6	24		
2		945	946	946	946	946	947	947	947	947	947	947	946	946	945	944	943	942	941	940	939	938	937	937	936	947	943.5	24		
3		936	935	935	935	935	935	935	935	934	935	936	937	938	939	939	939	940	940	940	940	941	941	941	941	941	941	937.8	24	
4		941	941	941	941	941	940	941	941	941	941	941	942	942	942	942	942	942	942	941	941	941	940	940	940	942	941.2	24		
5		940	939	940	940	940	941	941	941	941	941	942	942	942	942	942	942	942	941	940	940	939	939	938	937	942	940.5	24		
6		936	935	934	933	932	931	929	928	928	927	927	926	925	925	924	924	924	924	924	925	925	926	927	927	936	927.8	24		
7		927	928	928	929	929	929	929	929	928	928	928	928	927	926	925	924	923	922	921	921	920	920	920	920	929	925.4	24		
8		920	920	921	921	921	922	923	924	926	928	929	930	931	932	933	933	933	932	932	933	932	933	932	932	933	928.0	24		
9		932	931	931	931	931	930	930	930	929	929	929	929	928	928	928	928	929	929	929	930	931	932	933	935	935	935	930.1	24	
10		935	937	938	939	940	941	942	943	944	945	946	946	946	946	946	946	947	947	948	949	949	949	950	950	950	944.5	24		
11		950	949	950	950	950	949	949	950	950	950	949	948	947	946	946	945	945	945	944	944	943	943	943	942	950	947.0	24		
12		942	942	942	942	942	942	941	942	942	942	943	943	943	944	944	944	945	945	945	945	945	946	946	946	946	946	943.4	24	
13		946	946	947	947	946	946	947	947	948	948	947	946	946	945	945	945	945	945	945	944	944	944	944	943	948	945.7	24		
14		943	942	941	941	940	939	938	938	937	936	935	935	934	933	933	933	932	932	932	932	931	931	931	931	943	935.5	24		
15		930	929	929	928	926	925	924	924	924	924	925	926	927	927	926	928	930	930	931	931	931	932	932	933	933	928.0	24		
16		934	935	936	937	938	938	939	940	940	941	941	941	942	942	943	945	946	946	947	948	948	948	949	949	949	949	942.2	24	
17		948	948	949	948	947	947	946	945	945	944	943	941	939	938	936	935	934	934	933	932	931	931	930	930	949	939.8	24		
18		930	929	929	928	927	927	927	927	927	927	927	927	927	927	929	931	933	935	936	938	939	941	942	944	944	931.5	24		
19		945	947	948	949	950	951	951	951	952	952	952	951	951	950	950	950	951	952	953	955	957	958	960	960	960	951.9	24		
20		960	961	961	961	961	961	961	961	961	961	961	960	959	958	958	958	958	957	957	957	956	955	955	955	961	958.9	24		
21		954	954	953	953	952	952	952	951	950	950	950	949	948	948	947	947	946	946	946	946	946	945	945	945	954	949.0	24		
22		945	944	944	944	944	944	944	945	945	946	947	947	947	947	947	948	948	948	949	950	950	951	952	952	952	946.8	24		
23		952	953	953	954	954	954	954	954	954	953	953	953	952	951	950	949	949	948	947	946	945	944	943	942	954	950.3	24		
24		940	940	939	938	938	937	937	937	937	937	938	938	938	938	938	939	939	940	940	940	940	940	940	940	940	938.6	24		
25		940	940	939	939	938	938	938	938	937	937	937	936	936	935	935	935	935	935	935	935	935	934	934	934	940	936.4	24		
26		934	934	934	934	934	934	934	934	934	934	935	935	935	935	935	934	934	934	934	934	934	934	934	934	934	935	934.3	24	
27		934	934	934	934	933	934	933	933	933	933	933	933	933	932	933	932	932	932	932	932	932	932	932	932	934	932.8	24		
28		932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	933	934	935	936	936	937	938	940	940	940	933.4	24		
29		941	942	943	945	946	947	948	949	951	951	951	952	951	950	950	949	949	948	948	947	946	945	945	952	947.9	24			
30		944	944	944	943	943	944	945	945	946	947	947	947	947	946	947	948	949	950	951	951	951	952	951	952	951	952	947.0	24	
31		952	952	952	952	951	949	949	949	948	946	944	943	942	941	940	940	939	939	938	938	938	937	937	952	952	943.9	24		
HOURLY MAX		960	961	961	961	961	961	961	961	961	961	961	960	959	958	958	958	958	957	957	957	957	958	960	960					
HOURLY AVG		940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940				

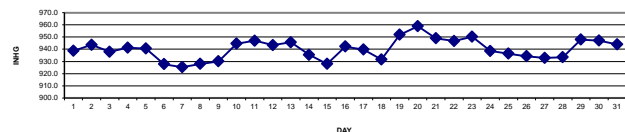
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

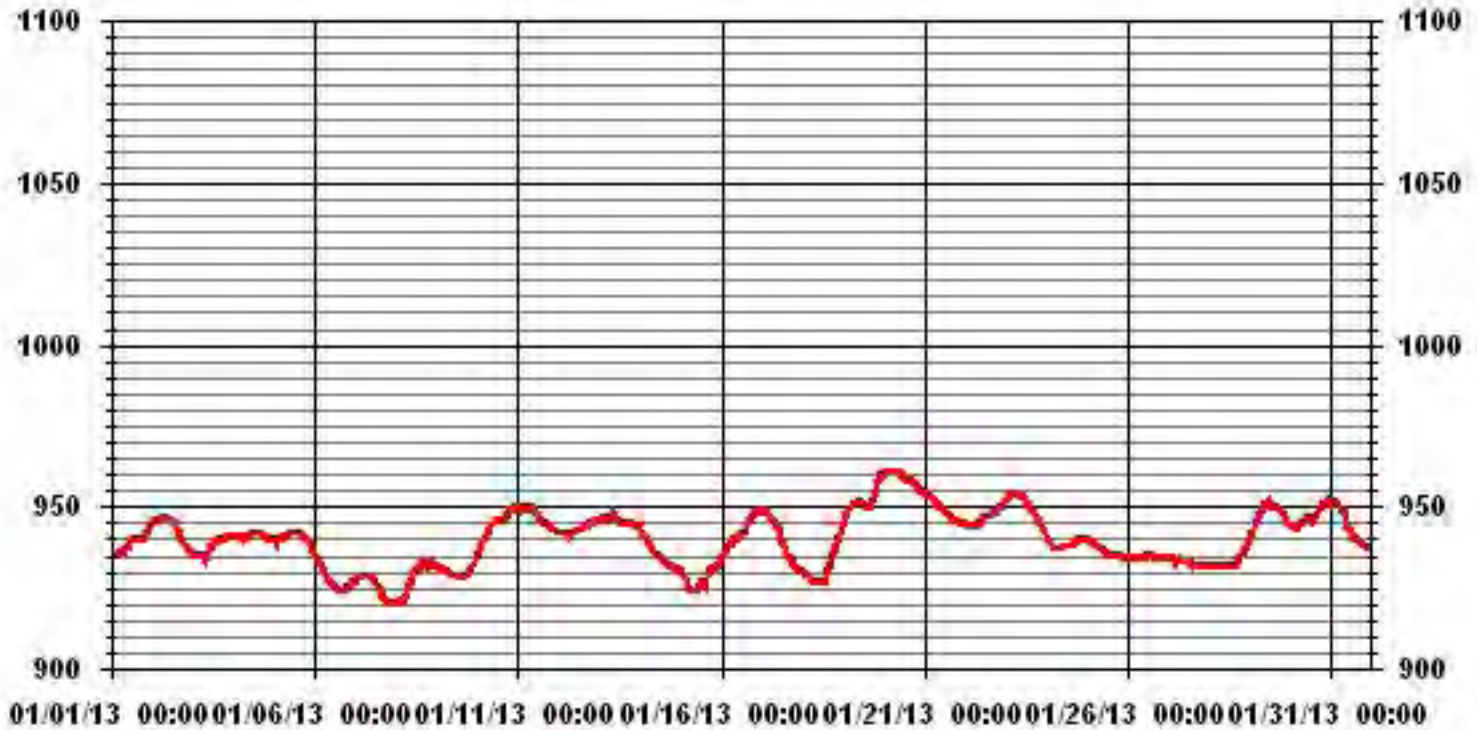
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	961	MB	@ HOUR(S)	VAR	ON DAY(S)	20
MAXIMUM 24-HR AVERAGE:	958.9	MB			ON DAY(S)	20
				VAR-VARIOUS		
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	8.65		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	940	MB	

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



Vector Wind Speed

IMPERIAL OIL RESOURCES LTD. - COLD LAKE - MASKWA

JANUARY 2013

WIND SPEED hourly averages (km/hr)

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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		
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.	
DAY																												
1	7.5	6.3	10	10.5	10.3	11	11.8	12.1	11.6	10.3	9.8	11.2	11.1	10.1	10.1	10.4	7.5	7.6	8.7	11.3	11.5	10.6	9.8	9.7	12.1	9.3	24	
2	10.4	9.2	7.5	5.2	4	3.2	3	2.7	4.6	5.6	4.7	6.9	7.2	9.5	8.5	8.6	6.5	8.3	5.5	7.2	7.5	5	6.1	6.7	10.4	4	24	
3	6.3	5.7	6.5	5.7	5.4	6.6	6.5	6.7	7.7	7	5.7	8.4	7.2	5.9	5.3	5.5	5.3	5	5.2	3.6	3.8	3.9	3.6	2.8	8.4	4.9	24	
4	1.9	2.7	2.4	0.6	2	4.5	3.3	2.9	6	5.7	4.2	3.6	4.3	2.3	1.7	2	1.9	3.2	4.9	3.9	4.8	6.6	6.4	5.7	6.6	0.3	24	
5	7.7	6.9	5.6	5.6	5.6	4.2	2.8	4.1	4.1	3.7	6	6.3	5.2	5.1	4.5	5.5	6.4	5.2	6.5	5.2	6.8	5.8	4.9	0.6	7.7	4.8	24	
6	2.7	2.4	3.1	4.4	4.3	3.8	4.4	1.5	1	1.1	3	4.7	5.1	4.4	4.2	7.9	9	9.9	10.4	9.6	8.8	11.7	9.4	6.6	11.7	3.4	24	
7	7.3	7.7	6.7	6.9	4.7	5.2	7.6	7	6.7	4.3	7.2	8.8	7.6	7.2	9.8	8.1	6.9	5	5.3	4.9	6.8	5	4.1	3.5	9.8	4.5	24	
8	4.3	4.6	4.4	4.2	4.4	4.3	8.8	8.9	8.6	9.3	10.5	8.3	7.7	8.4	6.4	4.2	2.5	2.4	6.6	6.6	8.2	10.1	8.9	8.6	10.5	3.5	24	
9	8.3	6.4	6	2.4	2.8	3.1	3.6	3.8	5.2	4.8	5.1	5.1	7.2	6.9	8.6	10.2	7.8	8.1	11.1	10.6	12.8	13.4	15.5	12.9	15.5	5.6	24	
10	13	10.7	12.1	10.3	6.8	8	7.1	8.2	6.3	5.6	8.3	8.1	7.1	6.7	6.7	4.3	4.9	3.9	2.7	2.2	1	1.2	1.3	0.3	13	5.9	24	
11	1.6	0.8	1.7	2	0.7	2.3	0.3	0.3	1.5	0.6	2.4	2.7	6.5	7.2	8.2	5.6	4.4	4.3	5.6	5	4.5	1.9	2.9	2.5	8.2	2.8	24	
12	3.1	2.6	1.9	4.4	5.8	4.5	1.8	2.7	1.7	1.1	5	4.2	4.9	4.8	4.1	4.1	3.2	3.5	1.7	2.5	1.7	2.4	3.6	3.3	5.8	2.1	24	
13	3.7	2.6	0.7	1.2	3.6	1.1	2.5	1.9	1.2	1.1	2.4	1.9	3.6	4.2	3.6	2	3.7	3.4	2.9	3.7	4	3.9	1.2	2.9	4.2	2	24	
14	5.8	7	8.6	7.3	8.1	7.4	6.8	4.5	5.1	6.9	6.5	7.4	7.7	6	5	5.4	5.7	4.7	5.1	5	4.4	3.4	4.7	3.6	8.6	5.8	24	
15	3.8	5.1	5.1	7.2	8.3	7.5	5.7	7.1	12.9	15.8	17.3	16.1	15.5	10.5	9.4	7.9	8.7	7.4	6.4	6.3	7.7	8.5	6.6	6	17.3	5.4	24	
16	7.1	3.5	4.8	3.8	3.5	3.1	4.8	3	0.6	2.3	3.6	5.1	6.7	7.1	7.9	8.8	7.9	6	6.1	7	4.2	1.2	2.6	1.3	8.8	4	24	
17	2.3	2	1.9	0.9	1.8	1.8	1.7	3.7	4.4	5.9	6.8	8.6	7.8	7.9	8.7	7.4	6.6	7.4	5.9	4.6	3.8	3.8	3.8	2.7	8.7	4.1	24	
18	2.7	2.6	1.8	2.5	2.5	1.9	3.1	3.6	3.4	3.6	3.3	1.2	4.1	4	5.8	10.1	8.9	8.6	10.9	7.3	6.8	9.8	8.8	8.2	10.9	3.9	24	
19	7.7	9.2	5.7	3.5	3.9	4	4.4	3.5	2	1.4	2.8	0.4	4.6	5.6	5.1	3.7	0.6	7.2	10.7	11.7	10	8.2	7.5	9	11.7	3.6	24	
20	6.7	8.6	9	8.3	9.7	7.7	7.5	10.2	7.2	7	7.4	7.3	6.2	7.1	7.2	5.5	3.8	3.8	4.3	4.8	5.3	4.5	4	3.9	10.2	6.1	24	
21	1.5	2.5	1.4	1.7	3	3.3	3.6	1.3	0.9	0.3	1.3	3.9	3.5	5	4.2	2.3	3.2	2.1	2.4	1.9	1.4	2.2	0.8	1.6	5	1.6	24	
22	0.8	1.7	1.9	1.7	1.8	3.4	3.3	2.6	2.9	4.4	5.6	4.9	5	5.1	4.6	4.8	5.7	5.1	5.1	4.5	3.5	2.4	2.1	3	5.7	3	24	
23	2.1	1.9	1.8	0.8	3.8	2.4	6.8	2.7	3.1	8.3	8.8	7.8	8.5	9.1	9.3	7.5	7.9	9.8	9.1	9.8	9.4	10.5	10.8	9.5	10.8	6.4	24	
24	11.7	8.5	8	7.3	8	5.9	4.8	4.1	4.4	5.1	4.5	1.8	2.8	3.5	4.7	5.6	6.7	6.1	5.1	3.2	0.5	0.5	0.4	1	11.7	2.6	24	
25	2.6	1.5	2.7	2	1.4	3.1	3.2	3.8	3.9	4.9	5.6	6.2	6.2	3.7	4.7	3.2	2.4	1	2.8	1	3.6	3.5	1	1.3	6.2	1.9	24	
26	2.6	1.9	0.9	1.3	0.5	1.4	2.5	2.5	1.4	0.6	3.8	1.3	1.7	4.5	3.1	2.9	5	1	0.2	1.7	2.8	2.9	0.6	0.8	5	0.8	24	
27	1.8	2.7	0	1.9	1.1	2	1.8	2.5	0.6	2	1	2.8	3.2	2.5	3.3	3.2	1	0.6	1.6	2.2	1.6	2.8	0.9	0.4	3.3	0.8	24	
28	1.4	0.3	0.8	2.8	3.7	3	2.6	1.4	2.1	2.2	2.1	4.7	2.7	2.2	2.2	0.4	6.6	9.2	9.2	10.3	9.8	9	10.2	12.2	12.2	2.2	24	
29	10.9	11.7	10	9.2	9.1	9.9	10.7	8.5	8.1	8.9	9.9	9.5	8.4	7.7	7.8	6.9	4.4	4.4	3.3	2.2	0.8	1.2	1.5	1.5	11.7	6.6	24	
30	6.5	5	4.4	3.3	4.8	6.1	5.3	4	1	3.8	6.9	5.9	8.2	6.2	6	5.7	3.9	2.6	2.6	2.2	0.8	3.4	2.4	2	8.2	2.9	24	
31	1.4	1.6	1.2	1.9	0.4	1.4	3	2.4	1.9	3.7	1.8	5.2	4.4	5.5	5.4	5.7	3.5	4	2.8	0.6	0.1	0.7	1.9	1	5.7	1.3	24	
HOURLY MAX	13.0	11.7	12.1	10.5	10.3	11.0	11.8	12.1	12.9	15.8	17.3	16.1	15.5	10.5	10.1	10.4	9.0	9.9	11.1	11.7	12.8	13.4	15.5	12.9				
HOURLY AVG	5.1	4.7	4.5	4.2	4.4	4.4	4.7	4.3	4.3	4.8	5.6	5.8	6.2	6.0	6.0	5.7	5.2	5.2	5.5	5.2	5.1	5.2	4.8	4.4				

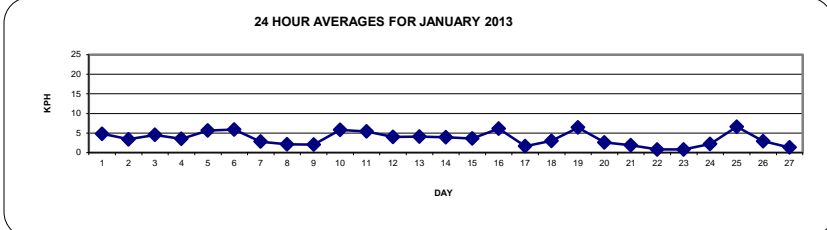
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

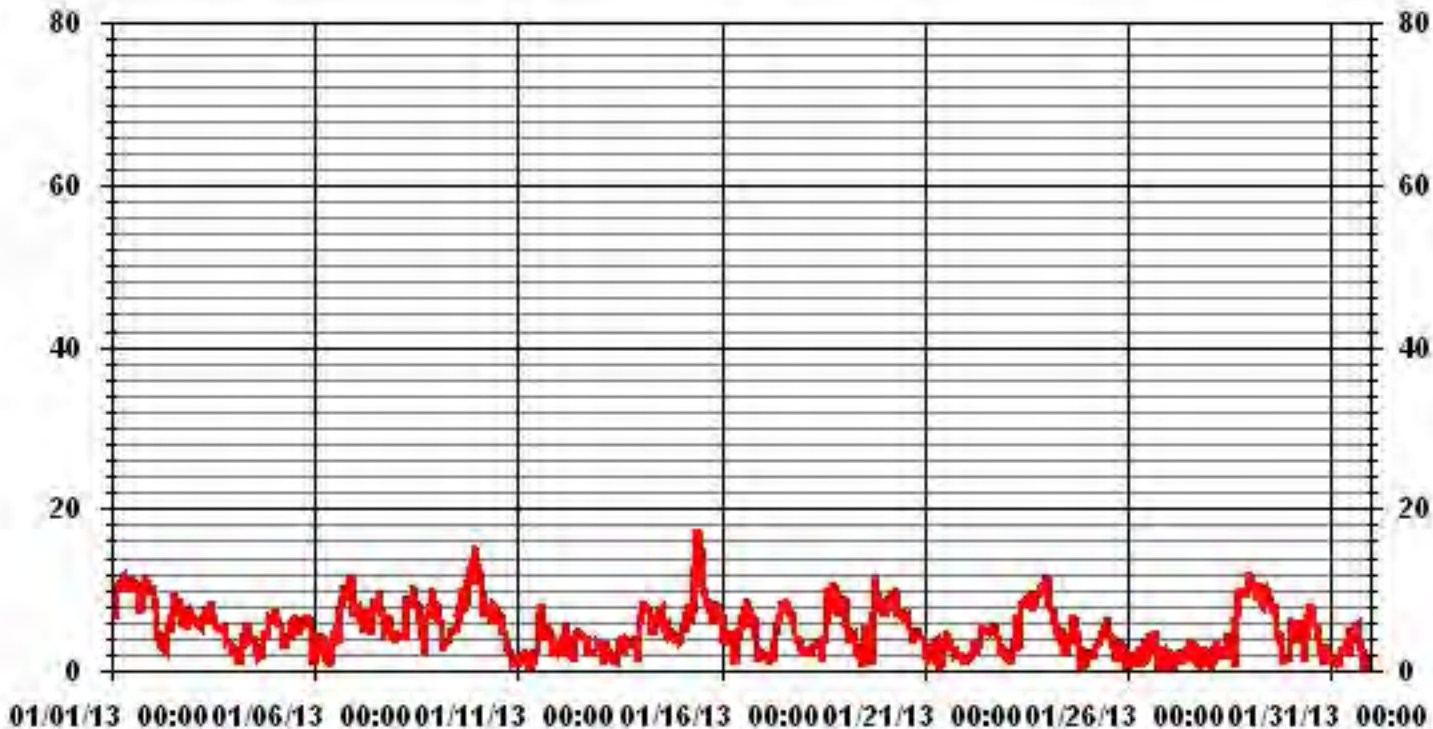
LAST CALIBRATION: December 20, 2011

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	17.3	KPH	@ HOUR(S)	10	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	9.3	KPH			ON DAY(S)	1
CALMS (≤ 1 KPH)	4.97	%	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	3.06		MONTHLY AVERAGE:	5.05	KPH	



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2013

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.
DAY																									
1	17	30.7	34.6	31.7	34.4	34.4	50.1	42.2	44	33.1	32.9	36	38.1	36.8	32.6	34.6	24.2	31.7	35.7	42.9	43.8	35.9	32.5	39.6	50.1
2	37.9	36.8	30.2	22.3	18.1	13.9	17	9.7	13.7	13.7	14.8	26	17.7	22.1	24.6	22.6	19.2	20.3	15.9	20.5	19.9	14	13.9	15.5	37.9
3	17.5	16.2	14	12.6	15.3	13.6	16	16.4	17.5	18.3	21.3	27.6	25.6	21.2	17	28.9	18.2	22.2	15.9	13.5	11.3	12.9	11.3	13.1	28.9
4	16.8	13.2	9.4	15.3	15.1	18	17.4	14.5	14.5	20	16.5	13.3	12.4	11.4	7.2	11.4	12.3	22.3	8.7	11.9	15.2	16.2	17.1	13.8	22.3
5	19.6	16.7	13.2	13.2	22.9	16.8	14.2	14.6	15.5	13.5	14.7	23.3	26.5	12.9	12.4	12.2	13.5	12.4	15.1	13.3	15.1	15.4	11	11.9	26.5
6	15.1	15.8	16.9	15.2	13.6	12.8	15.2	16.2	13.1	14.7	12.1	16.2	14.8	16.7	20.6	28.3	30.9	33.9	33.3	29.6	30.5	39	36.3	24.7	39
7	23.7	26	21.4	21.4	16.4	19.9	23.5	24.4	23.8	15.7	16.2	18.6	16.9	16.6	19.3	19.3	14.1	11.2	16.6	12	24.7	13.5	11.7	13.2	26
8	13.2	13.2	12.8	11.5	11	15.1	26	26	25.3	29	46.1	27.1	30.2	26.7	21.4	17.4	11.7	11	12.6	14.6	16.3	24	18.8	19.5	46.1
9	26.5	13.5	13.7	16.2	12.4	15.5	14.6	12.9	17.6	20.4	20.3	14.6	19.2	19.5	19.9	24.5	18	18.8	24.1	23.4	28.7	32.8	36.3	33.9	36.3
10	30.9	30.4	35.5	31.5	23.8	18.5	19.8	24.7	22.8	15.1	17.7	19.5	16.8	14.8	14.4	14.9	14.8	46.7	20.6	68.9	33.2	33.3	24.3	47.7	68.9
11	43.3	X	59	38.9	43.5	40.2	35.6	31.6	X	35.3	22.1	48.8	14.1	14.9	19.6	18.9	10.2	13.3	14.9	17.3	15.9	89.3	89.2	99.9	99.9
12	47.2	31.1	51.1	85.8	17.9	77.9	81.4	42.1	71.9	92.8	17.5	17	17.3	19	14	17.1	78.3	44.9	86.2	29.6	29.6	16.8	13.3	26.3	92.8
13	16.6	30.2	62.3	91.5	85.8	86.2	103.9	86.3	29.3	32.7	101.4	31.2	57.5	12.1	36.3	90.9	50	12.6	16.1	21.4	12.8	35.5	19.9	20.4	103.9
14	12.9	15.2	17.5	16.2	18.3	18.9	16.4	11.4	13.7	18.9	14.9	18.5	19.4	15.2	13.6	11.7	12.7	12.8	16.4	13.3	13.7	11.7	12	19.2	19.4
15	10.4	14.5	13.1	16.9	19.1	20.2	20	34.3	38.4	46.3	60.1	49.7	47.1	39.8	34.1	27.5	25.4	22.7	24.3	21.8	17.7	18.4	16	12	60.1
16	14.8	12.6	15.7	17.5	12.9	12.6	13.7	13.7	17.2	10	15.5	23.2	25.1	25.4	32	29.8	36.8	32.9	19.5	22.1	19	57.4	14.8	19.3	57.4
17	51.5	37	79.1	29.1	18.5	43.8	20.8	15.1	19	18.2	21.6	24.7	26	28.2	25	27.3	22.1	25.2	19.7	18.7	28.2	19.2	25.6	30.2	79.1
18	40.8	16.8	11.6	18.8	28	34.4	12.7	15.1	27.8	16.4	14.2	12.2	20	25.2	27.8	38.5	29.3	35.9	41.4	21.3	34.8	39.9	33.7	27.4	41.4
19	31.7	34.3	24.3	14.3	76.5	47.5	53.6	37.9	68.2	84	80.3	19.8	11.9	13.8	13	14.9	28.1	20.5	33	39.6	38.4	29.6	29.1	31.7	84
20	40	30.4	31.9	34.6	32.9	24.5	31.9	38.1	29.2	31.2	22.6	23.8	26.2	59.4	27.3	70.7	72.9	40.5	27.4	33.8	25.7	22.7	51.1	23.9	72.9
21	37.3	24.8	29.6	32.1	34.9	63.4	16.9	74.1	51.2	59	26.3	11.4	11.2	11.4	11.8	12.8	26.2	52.3	37.1	35.6	55.3	15.6	23.3	24.2	74.1
22	26.2	18.9	42.4	40.2	36.7	84.3	22.2	15.8	66.3	41.7	32.1	17.2	16	19.8	15.1	15.3	18	42.4	52.4	16.9	18.8	97.1	37.4	18.2	97.1
23	77.4	66.6	53.6	21.3	34.6	34.5	54.9	37.2	28.8	39.3	27.4	24.9	25.1	24.9	25.5	23.4	29.3	27.4	27.9	29.9	28.6	35.8	29	28.7	77.4
24	36	24.5	23.8	26.6	24	54	37.6	67.1	29.4	50.6	65.3	33.6	24.5	17.1	13	13.9	14.2	13.9	16.8	69.1	87.6	31.3	94.6	79.4	94.6
25	53.6	48.7	41.3	52.1	53.9	26.5	55.5	53.3	28.6	20.4	31.7	14.8	16.7	14.6	18.2	17.4	15.6	21	41.7	20.5	11.8	11.7	20	19.8	55.5
26	67.2	22.2	19.5	15.9	19.6	57.8	29.1	23.7	20.5	20.4	11.7	11.9	11.5	11.7	7	9.1	10.9	18.2	8.9	16.5	19.7	31.7	16.2	22.8	67.2
27	26.1	18	93.5	22.4	64.7	20.4	47	27.8	30.1	25.8	24.4	11.2	11	10.7	14	11.3	9.9	10.9	11.6	10.3	10.6	10.4	14.1	10.2	93.5
28	13.3	6.4	10	10.2	13.6	10.3	14.9	12.5	11.2	11.8	13.1	11.6	10	10.7	11.4	13	20.7	31.5	25.8	35.6	36.2	29.5	33.9	36.2	36.2
29	35.7	43.9	37.2	32	37.6	34.4	31.8	31.8	43.9	32	30.5	31.7	26.9	30.7	26.6	27.1	34.8	20.1	29.6	34.6	31.2	36.5	48	50.7	50.7
30	26.4	29.3	35.7	52.6	27.3	19.1	32.6	44	58.2	44.2	20.8	20.1	24.5	28.3	17.5	19.5	16.5	31	26	47.4	58.7	22.9	26.1	37.4	58.7
31	31.2	94.2	113	107.5	105.4	99.1	86.3	105.8	100.7	59.9	39.7	15.1	18.3	15.9	17.1	14.7	12.5	13.1	24.8	17.8	28.3	71.4	38.6	29.6	113
PEAK	77.4	94.2	113.0	107.5	105.4	99.1	103.9	105.8	100.7	92.8	101.4	49.7	57.5	59.4	36.3	90.9	78.3	52.3	86.2	69.1	87.6	97.1	94.6	99.9	

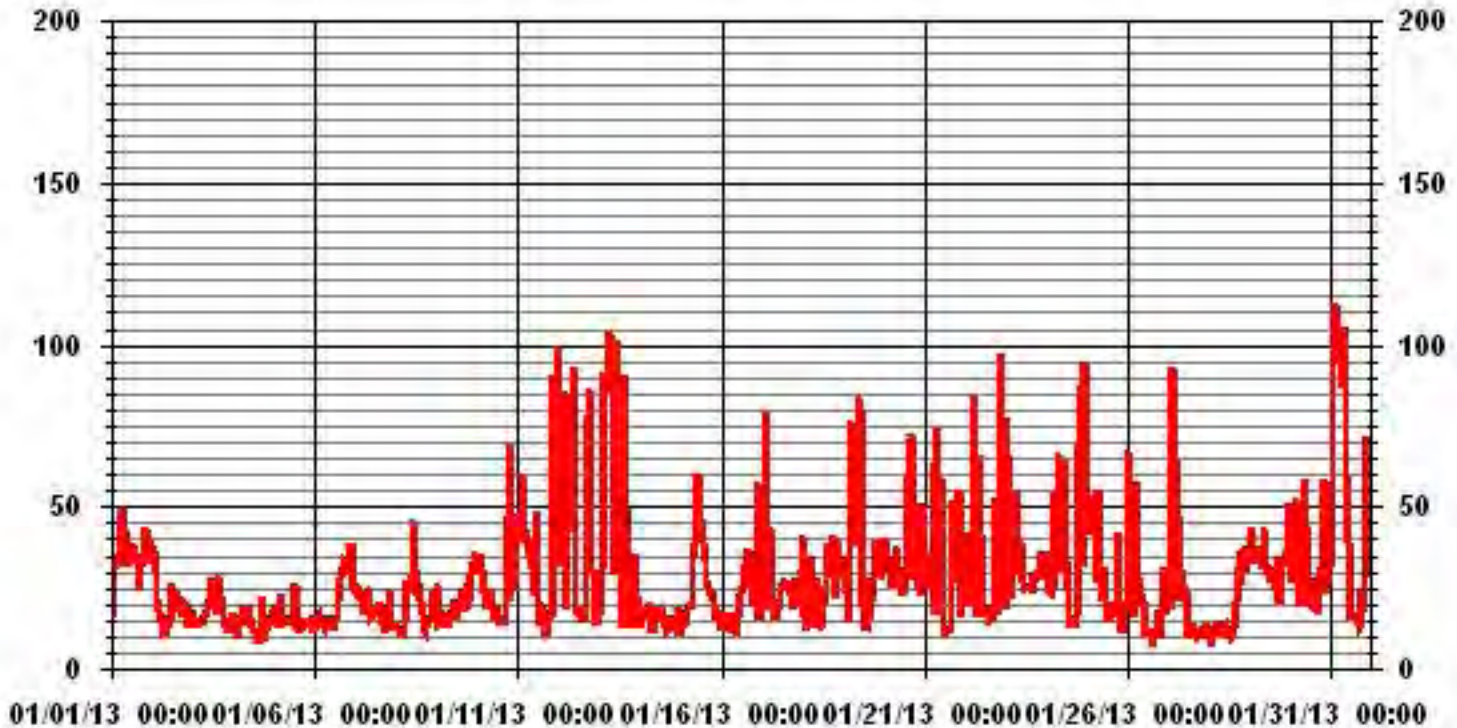
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	113	KPH	@ HOUR(S)	2
			ON DAY(S)	31

01 Hour Averages



LICA30
WSP / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 30
Site Name : LICA30
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	2.28	2.95	4.56	4.56	4.56	2.41	.80	1.74	2.68	9.94	9.00	3.36	5.64	3.09	4.03	2.68	64.38
< 12.0	4.56	2.41	1.47	.13	2.55	1.20	.00	.00	.94	6.31	1.20	.13	2.41	3.09	4.03	3.22	33.73
< 20.0	.13	.80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.53	.26	.00	1.74
< 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	6.98	6.18	6.04	4.70	7.12	3.62	.80	1.74	3.62	16.26	10.21	3.49	8.06	6.72	8.33	5.91	

Calm : .13 %

Total # Operational Hours : 744

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	17	22	34	34	34	18	6	13	20	74	67	25	42	23	30	20	479
< 12.0	34	18	11	1	19	9			7	47	9	1	18	23	30	24	251
< 20.0	1	6												4	2		13
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	52	46	45	35	53	27	6	13	27	121	76	26	60	50	62	44	

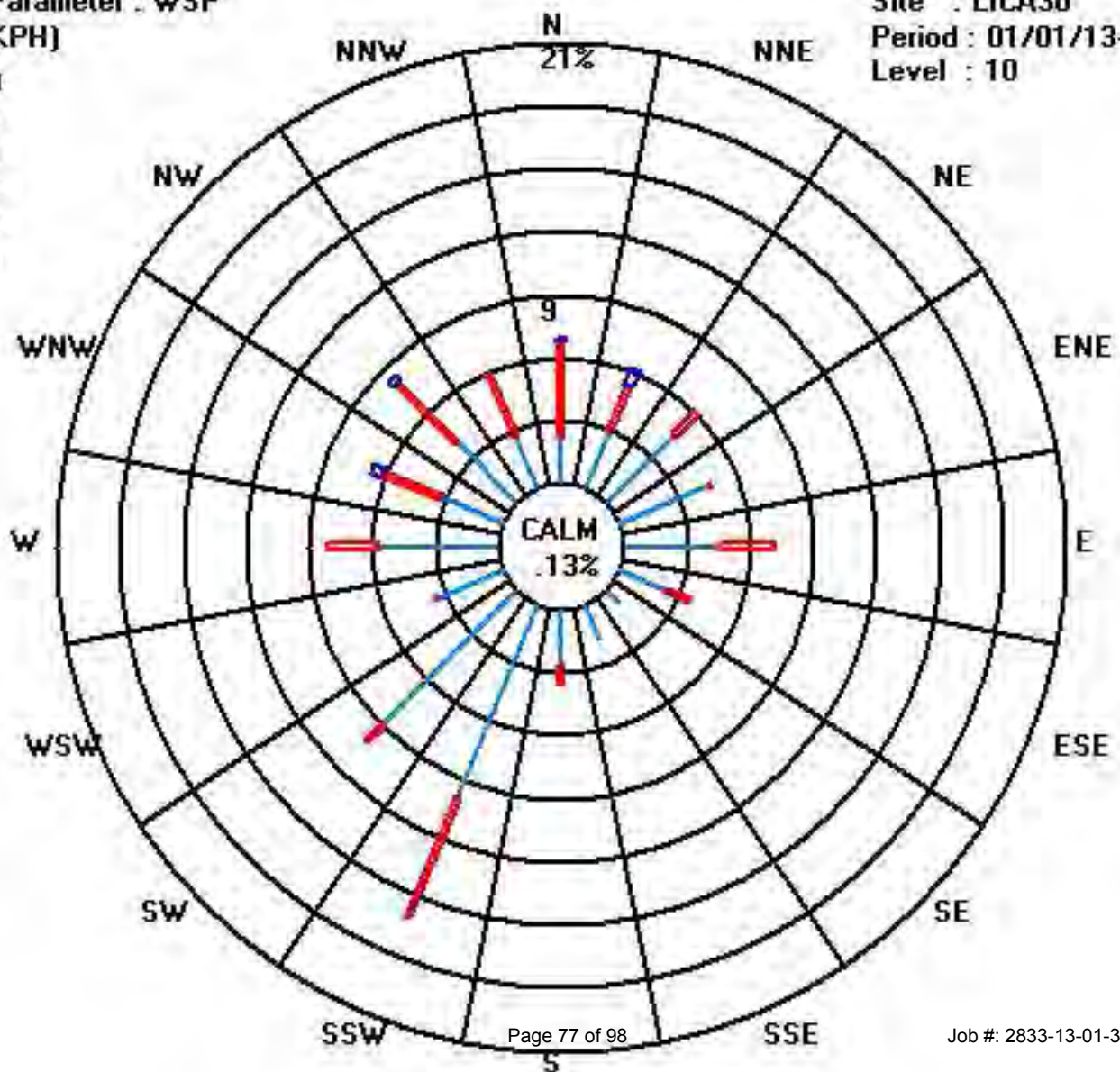
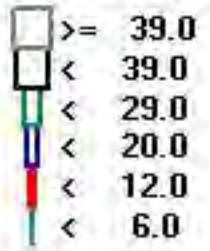
Calm : .13 %

Total # Operational Hours : 744

Class Limits (KPH)

Period : 01/01/13-01/31/13

Level : 10



Vector Wind Direction

IMPERIAL OIL RESOURCES LTD. - COLD LAKE - MASKWA

JANUARY 2013

WIND DIRECTION hourly averages in degrees

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	24-HOUR AVG		
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	AVG.	QUADRANT	RDGS.	
DAY																												
1	211	237	282	284	287	294	290	287	291	289	294	305	315	316	295	290	277	277	291	318	314	315	319	317	295	WNW	24	
2	317	330	331	334	330	320	344	161	206	204	219	214	203	203	201	203	210	209	219	209	213	223	211	211	230	SW	24	
3	214	222	211	212	211	212	212	221	217	224	247	279	274	272	268	273	272	271	281	266	263	276	305	300	246	WSW	24	
4	294	302	204	79	52	68	51	62	45	53	54	39	18	339	16	185	85	193	187	219	222	212	220	217	121	ESE	24	
5	213	218	217	216	263	258	240	239	263	237	223	270	266	218	211	203	209	209	204	204	211	210	210	96	224	SW	24	
6	69	54	38	74	47	30	56	106	311	118	243	234	239	242	249	278	278	281	282	282	284	293	312	278	288	WNW	24	
7	275	279	298	317	336	312	280	277	278	264	195	196	207	200	191	201	208	194	188	197	193	210	217	226	234	SW	24	
8	226	222	234	227	230	286	317	316	313	319	315	334	329	323	335	307	230	160	190	199	201	197	192	191	267	W	24	
9	201	204	203	197	41	63	58	49	45	65	63	49	43	51	40	32	35	35	34	30	30	31	29	22	40	NE	24	
10	20	13	17	15	359	13	6	6	8	13	25	19	22	17	21	11	14	24	29	82	93	1	81	129	17	NNE	24	
11	97	279	175	202	249	202	302	91	93	234	210	221	202	191	201	208	212	217	219	214	214	214	229	224	207	SSW	24	
12	229	228	215	206	209	213	219	222	206	266	320	323	335	325	328	308	302	281	286	238	246	203	214	231	260	WSW	24	
13	227	227	262	269	300	281	309	347	343	220	299	256	283	213	262	294	220	210	206	219	210	211	162	204	243	WSW	24	
14	204	206	207	209	210	212	204	205	193	189	189	191	196	192	181	193	200	205	209	217	208	197	220	251	203	SSW	24	
15	228	229	217	211	211	221	238	266	289	301	303	307	308	307	330	357	9	9	356	1	27	29	31	28	312	NW	24	
16	26	11	328	336	337	338	7	350	266	223	271	289	307	329	333	346	351	351	358	4	15	299	291	265	339	NNW	24	
17	267	287	299	32	76	88	127	125	112	83	81	92	84	81	86	91	90	87	80	80	84	71	83	78	86	86	E	24
18	91	117	142	95	103	92	55	68	66	65	70	22	31	34	355	344	351	338	351	355	338	339	339	328	5	N	24	
19	340	349	360	337	299	311	309	276	195	284	311	326	197	219	209	216	298	6	10	5	3	352	328	304	331	NNW	24	
20	281	297	320	323	318	291	283	293	291	299	306	304	277	281	287	281	265	259	261	267	267	246	240	245	288	WNW	24	
21	292	226	206	113	210	182	217	211	269	27	166	199	205	199	200	172	154	133	97	116	116	55	66	199	185	S	24	
22	68	207	235	252	317	299	313	307	310	316	324	331	318	306	350	333	320	301	308	304	351	10	315	212	314	NW	24	
23	113	173	90	104	61	99	48	84	48	110	113	114	122	109	106	106	97	96	97	102	92	90	93	89	98	E	24	
24	93	102	92	82	80	85	92	80	75	84	63	205	259	223	211	193	203	207	202	166	117	231	357	71	118	ESE	24	
25	57	64	91	63	98	39	49	47	45	31	39	28	47	30	119	169	178	72	109	213	208	209	110	48	65	ESE	24	
26	42	162	3	181	106	211	219	256	351	270	220	276	256	212	214	215	200	202	340	58	43	87	83	184	203	SSW	24	
27	102	73	41	170	261	212	48	121	161	84	28	30	32	25	50	21	100	123	39	142	203	188	93	272	81	E	24	
28	246	187	200	216	219	219	259	271	222	177	148	214	211	218	235	246	40	3	2	5	2	359	359	2	346	NNW	24	
29	4	2	355	354	346	347	348	340	339	340	322	319	324	329	314	318	320	326	343	354	266	266	291	42	339	NNW	24	
30	65	65	74	73	58	39	55	61	245	49	30	5	17	2	357	325	344	353	327	16	312	205	236	217	25	NNE	24	
31	190	147	59	160	11	66	36	32	53	23	162	180	170	162	188	201	199	206	209	276	84	230	244	34	175	S	24	
HOURLY AVG	340	349	360	354	359	347	348	350	351	340	324	334	335	339	357	357	351	353	358	355	351	359	359	328				

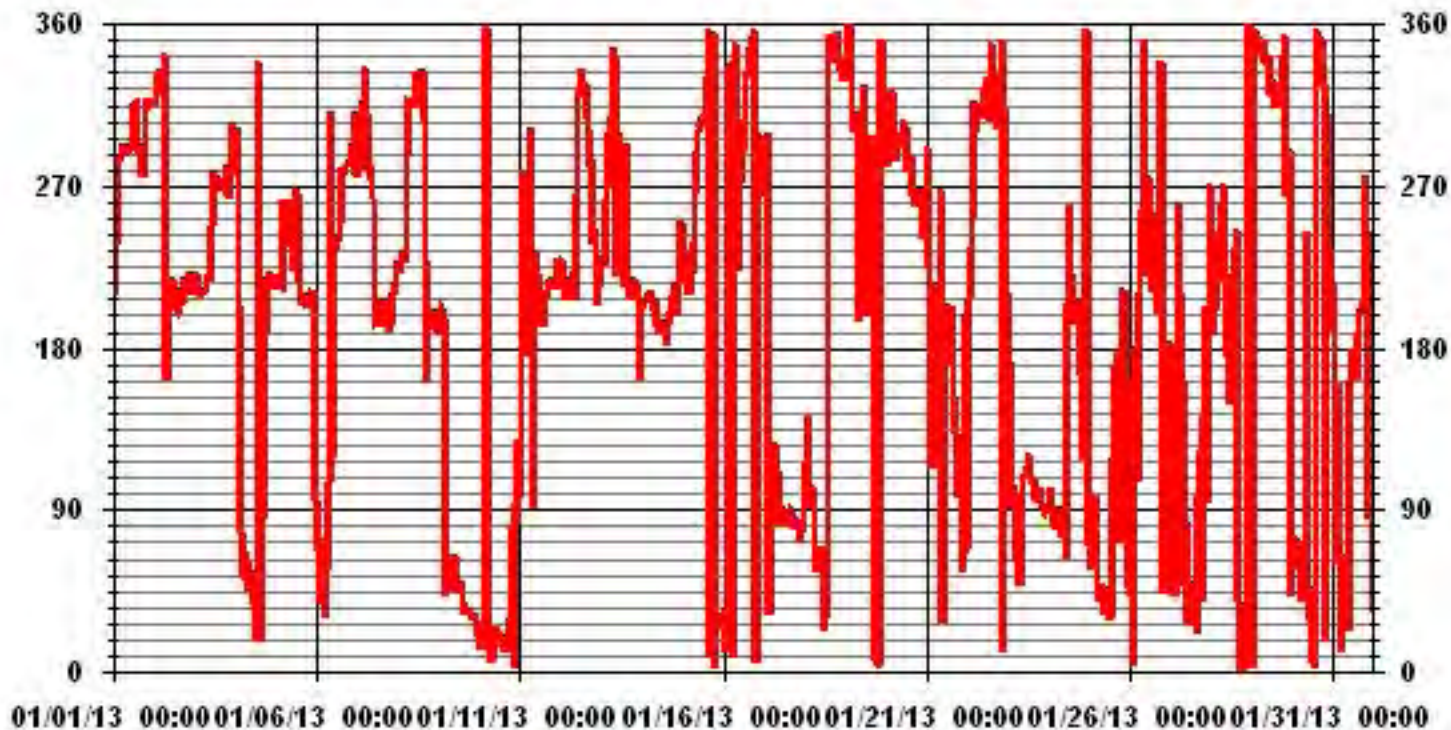
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION:	December 20, 2011
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	104.59	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	301 DEG

01 Hour Averages



Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2013

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00
DAY																								
1	15	20	26	27	25	24	24	24	24	26	27	30	32	33	24	25	28	27	25	33	32	34	33	32
2	32	34	36	37	35	43	38	48	16	18	25	21	20	17	19	17	19	16	19	19	21	24	17	17
3	19	19	14	13	12	14	14	14	14	17	23	24	28	31	31	28	27	23	22	28	26	23	26	31
4	37	25	25	44	25	20	24	25	19	20	28	30	22	28	35	42	41	44	13	27	24	20	28	24
5	20	23	19	20	28	32	40	28	32	28	17	29	29	24	18	15	14	16	12	20	15	21	20	66
6	49	32	21	16	17	21	20	47	42	41	30	31	33	31	33	26	27	24	27	25	27	25	33	32
7	28	28	27	32	41	36	28	31	29	37	17	17	21	20	16	15	15	19	22	21	19	25	29	29
8	26	22	24	21	28	32	28	29	30	35	28	33	35	34	33	39	31	43	10	16	12	14	15	15
9	13	14	15	42	21	20	17	19	16	23	23	22	20	22	18	14	16	15	15	13	15	14	15	15
10	18	17	16	19	23	19	19	21	20	18	15	18	20	22	17	22	15	16	40	52	49	48	41	46
11	39	48	32	31	36	42	70	49	49	60	39	37	22	16	17	18	17	18	19	19	27	36	32	35
12	30	26	26	26	21	26	61	34	37	41	32	32	33	36	32	33	33	25	39	24	45	27	45	33
13	24	39	53	61	37	54	33	42	54	36	42	43	33	25	40	54	24	20	26	41	30	34	66	45
14	23	19	16	16	17	17	15	19	18	20	23	21	21	21	23	21	17	21	19	20	23	27	18	27
15	19	19	22	16	18	21	31	31	24	27	25	27	28	31	32	23	23	24	28	25	18	19	14	13
16	12	25	33	30	36	33	20	34	52	26	35	33	30	37	34	31	32	32	29	23	26	43	35	63
17	29	34	28	37	28	40	40	29	23	23	25	24	24	26	27	26	26	28	25	33	42	39	32	40
18	41	40	34	31	29	38	24	24	26	26	30	54	12	43	28	32	28	35	29	30	33	35	33	35
19	32	32	29	37	34	39	30	37	48	58	40	58	24	24	23	30	58	22	21	25	22	30	33	27
20	30	25	30	33	30	30	31	25	36	31	31	28	36	33	31	34	38	33	36	38	34	30	32	33
21	50	51	58	51	37	33	27	58	70	37	56	17	22	18	16	32	20	30	32	32	33	33	63	41
22	40	45	29	38	35	32	27	32	29	30	31	34	34	31	33	35	31	29	27	28	28	28	38	20
23	34	40	40	70	29	55	80	38	32	26	27	28	27	26	25	30	25	23	26	26	26	24	24	24
24	25	26	25	30	26	31	30	31	33	29	45	56	54	46	40	16	17	15	18	32	61	74	67	61
25	39	39	39	45	60	37	32	27	30	14	16	11	20	30	35	46	55	44	31	54	32	36	52	63
26	36	54	70	34	54	43	49	46	63	59	28	45	37	18	21	22	13	42	36	39	22	37	46	55
27	37	28	70	47	57	46	31	43	58	48	37	20	11	24	25	21	23	30	60	35	21	34	42	50
28	29	65	60	20	21	34	35	55	37	32	28	23	25	32	26	52	23	24	24	24	23	25	25	26
29	23	22	28	27	30	33	29	33	33	34	32	31	33	35	31	37	38	40	37	36	59	52	68	56
30	25	28	28	37	28	19	24	24	53	24	17	29	24	34	32	34	37	35	41	37	54	17	32	33
31	44	51	71	55	69	53	30	55	52	29	47	30	33	27	24	18	23	18	28	59	60	61	42	56

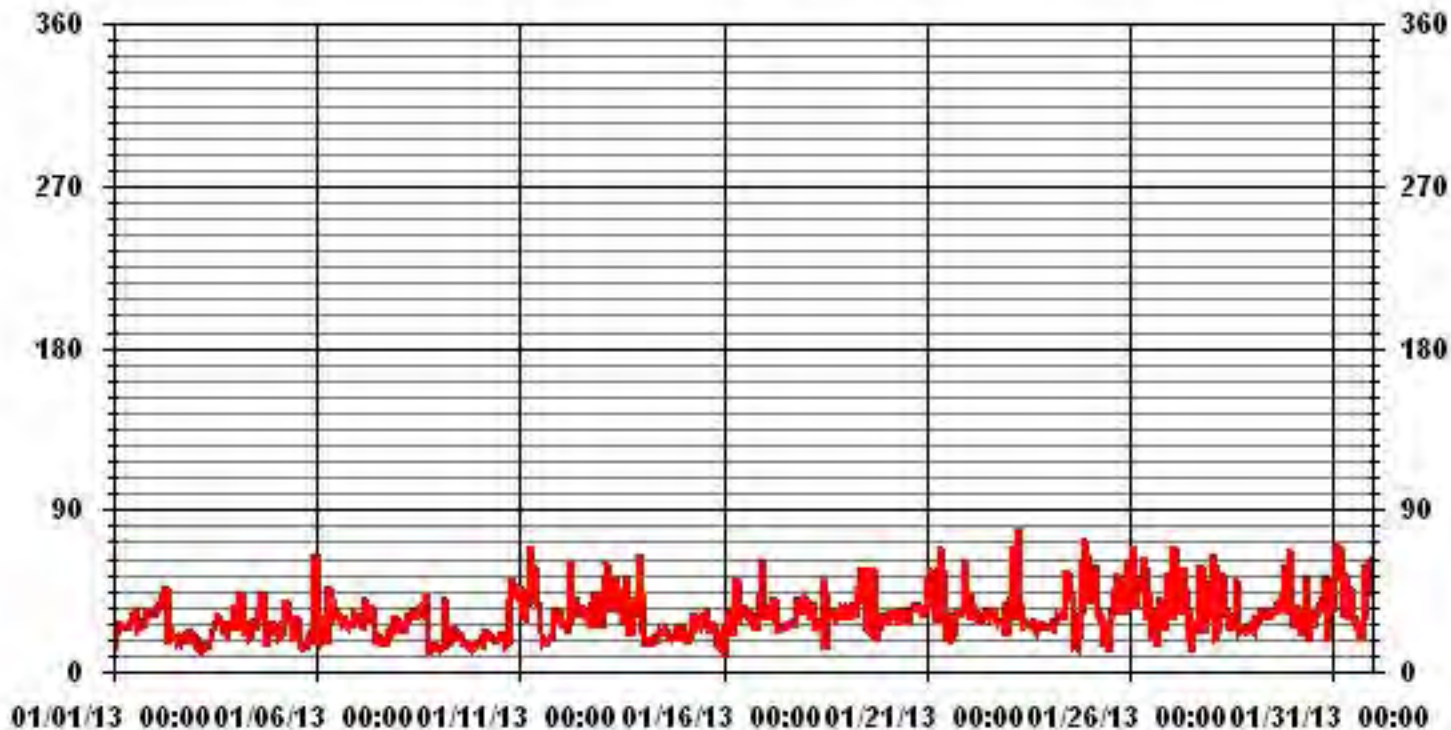
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION: December 20, 2011

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS

01 Hour Averages



Calibration Reports

Sulphur Dioxide

SO2 Calibration Report

Station Information

Calibration Date	January 3, 2013	Previous Calibration	December 19, 2012
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	10:27	End Time (MST)	14:10
Reason:	Monthly Calibration		
Barometric Pressure	937 mmHg	Station Temperature	23 Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	LL42502
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	December 29, 2013
		Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	508	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	EnviroNics 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Chart Recorder Make / Model:	NA	S/N :	NA		
Flow Meter:	EnviroNics 6100	S/N :	4760		

Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 1000 ppb				
Sample Flow / Box Temp	593 ccm	30.1 Deg C	594 ccm	32.4 Deg C	
HVPS / Lamp Setting	515	2251	514	2247	
PMT / RxCell Temp	7.7 Deg C	50 Deg C	7.7 Deg C	50 Deg C	
Converter / IZS Temp	NA Deg C	45 Deg C	NA Deg C	45.0 Deg C	
Offset / Slope	65.9	1.009	66.6	1.01	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	1	N/A
4994	0	0	1	N/A
4918	74.6	741	746	0.9935
No Span Adj.				
4955	39.8	395	396	0.9980
4974	19.9	198	195	1.0136
4994	0	0	0	N/A
Sum of Least Squares				0.9955
New Correction Factor				0.9935

Before Calibration

	Before Calibration	After Calibration
Auto Zero	2.2	1.3
Auto Span	371.0	370.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9988
Current Correction Factor Before Span Adjust:	0.9935
Percent Change:	0.5%

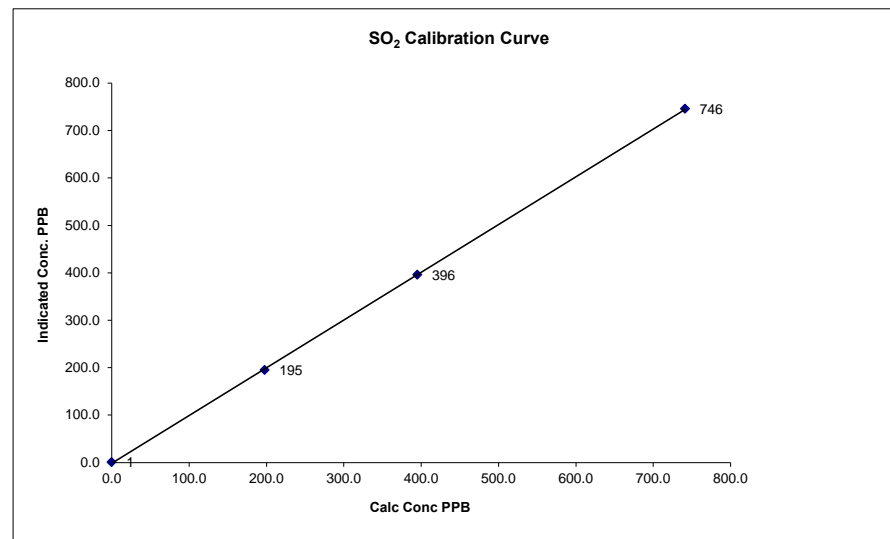
Notes: **N/A : Not applicable**

Calibration Performed by: Ting Xu

SO2 Calibration Curve

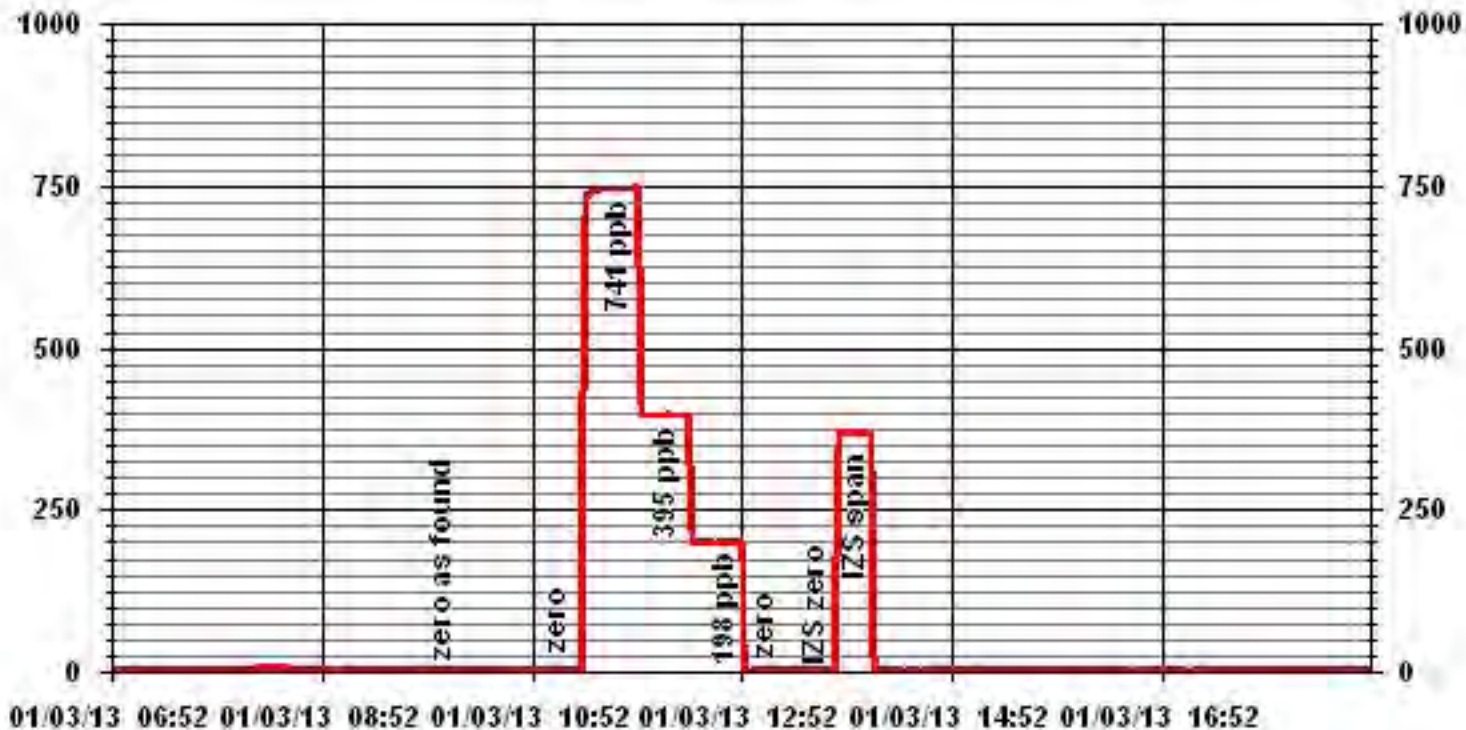
Calibration Date	January 3, 2013
Company	Lakeland Industry & Community Association
Plant / Location	Cold Lake - Maskwa
Start Time (MST)	10:27
End Time (MST)	14:10

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	1	n/a		0.999953
198	195	1.0136		1.006874
395	396	0.9980		-1.293657
741	746	0.9935		



Notes:

01 Minute Averages



Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	January 3, 2013		Previous Calibration	January 3, 2013		
Company	Lakeland Industry & Community Association					
Plant / Location	Cold Lake - Maskwa					
Start Time (MST)	11:26	End Time (MST)	14:45			
Reason:	Installation Calibration					
Barometric Pressure	937	mBar	Station Temperature	23	Deg C	
Cal Gas	10	ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 2012
DAS Output Voltage	0 - 1	Volts	Chart Rec. Output	NA	Volts	

Equipment Information

Analyzer Make / Model:	API 101A	S/N :	324	Method:	Fluorescent
Converter Make / Model:	Internal	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Chart Recorder Make / Model:	Not in use		S/N:	NA	
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 100	ppb	
Sample Flow / Box Temp	602 ccm 31.1 Deg C	599 ccm	31.9 Deg C
HVPS / Lamp Setting	634 4551	548	4540
PMT / RxCell Temp	6.7 Deg C 49.6 Deg C	6.7 Deg C	50.2 Deg C
Converter / IZS Temp	324 Deg C 45 Deg C	324 Deg C	45.0 Deg C
Offset / Slope	48.3 0.942	45.2	0.938

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4997	0	0	0	NA
	No Zero Adj.			
4958	40.0	80	80	1.0000
	No Span Adj.			
4977	20.0	40	40	1.0000
4986	11.5	23	23	1.0000
4996	0	0	0	NA
Sum of Least Squares				1.0004
New Correction Factor				

Before Calibration

	Before Calibration	After Calibration
Auto Zero	NA	0.2
Auto Span	NA	49.6
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	NA
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	#VALUE!

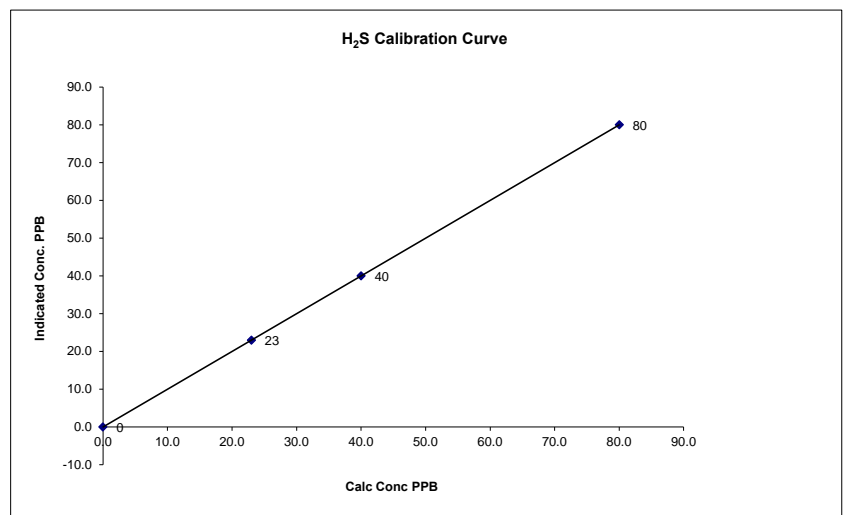
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

H₂S Calibration Curve

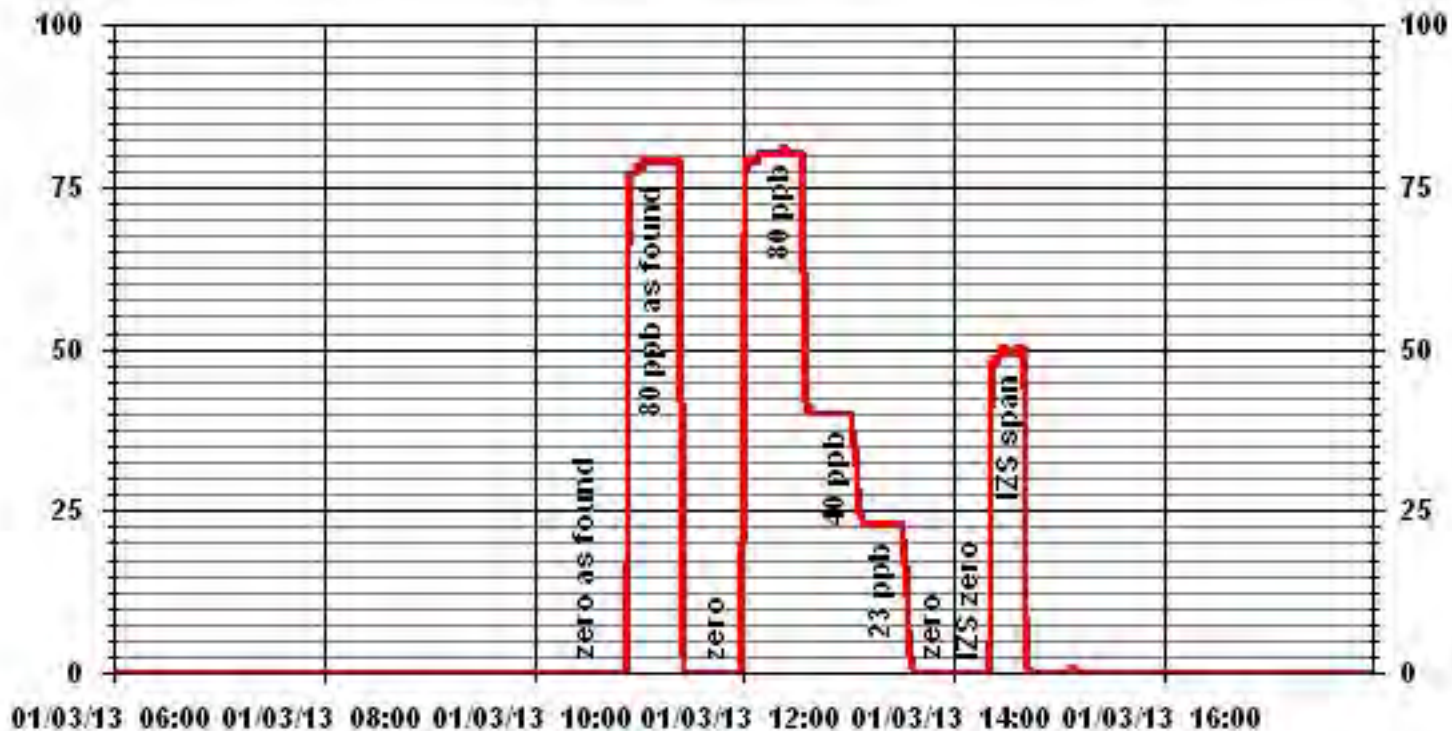
Calibration Date	January 3, 2013		
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	11:26	End Time (MST)	14:45

Calculated Conc.	Indicated Response	Correction Factor	Correlation Coefficient	(≥ 0.995)	1.000000
ppb	ppb		Slope	(0.85 to 1.15)	0.999599
0	0		Intercept	(± 3% F.S.)	-0.002527
23	23	1.0005			
40	40	1.0006			
80	80	1.0004			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	January 3, 2013	Previous Calibration	December 19, 2012
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	Maskwa		
Start Time (MST)	14:02	End Time (MST)	18:43
Reason:	Monthly Calibration		
Barometric Pressure:	939 mmHg	Station Temperature:	25 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 600 PPM	C3H8 204 PPM	
	TOTAL CH4 1161.0 PPM	Gas Cyl. #	LL155310
		Cal Gas Expiry Date:	September 9, 2013
DAS make & Model:	ESC 8832	S/N :	AO 791
Chart Recorder:	NA	S/N:	NA
Output Voltage Range:	0 - 1 VDC	Chart Speed:	NA mm/hr

Analyzer Information

Make / Model	Thermo 51C-LT	S/N :	436609738	Method	Flame Ionization
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Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	7.5	psi	7.5	psi
Hydrogen Pressure	8	psi	8	psi
Air Pressure	20	psi	20	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	-1.6	NA
2000	0.0	0.0	0.0	NA
2000	74.0	41.4	40.2	1.0305
2000	74.0	41.4	41.6	0.9958
2000	37.0	21.1	21.1	1.0000
2000	20.0	11.5	11.6	0.9910
2000	0.0	0.0	0.0	NA
New Correction Factor:				0.9958

Percent Change

Previous Calibration Correction Factor:	0.9982
Current Correction Factor Before Span Adjust:	1.0305
Percent Change:	-3.1%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	34.3	35.6
Sample Lines Connected	YES	

Cylinder Pressures			
Span	900 psi	Hydrogen 2000 psi	Zero Air 32 psi

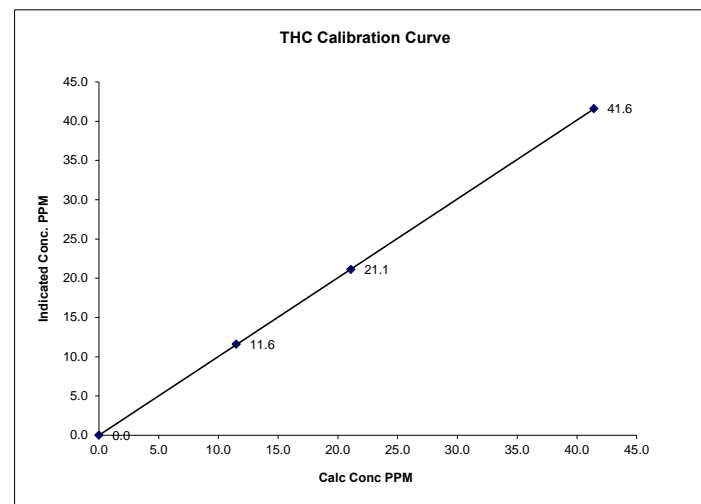
Notes: **NA : Not Applicable**
 Replaced both the H2 and CH4 gas cylinders, then performed the calibration.

Calibration Performed by: Ting Xu

THC Calibration Curve

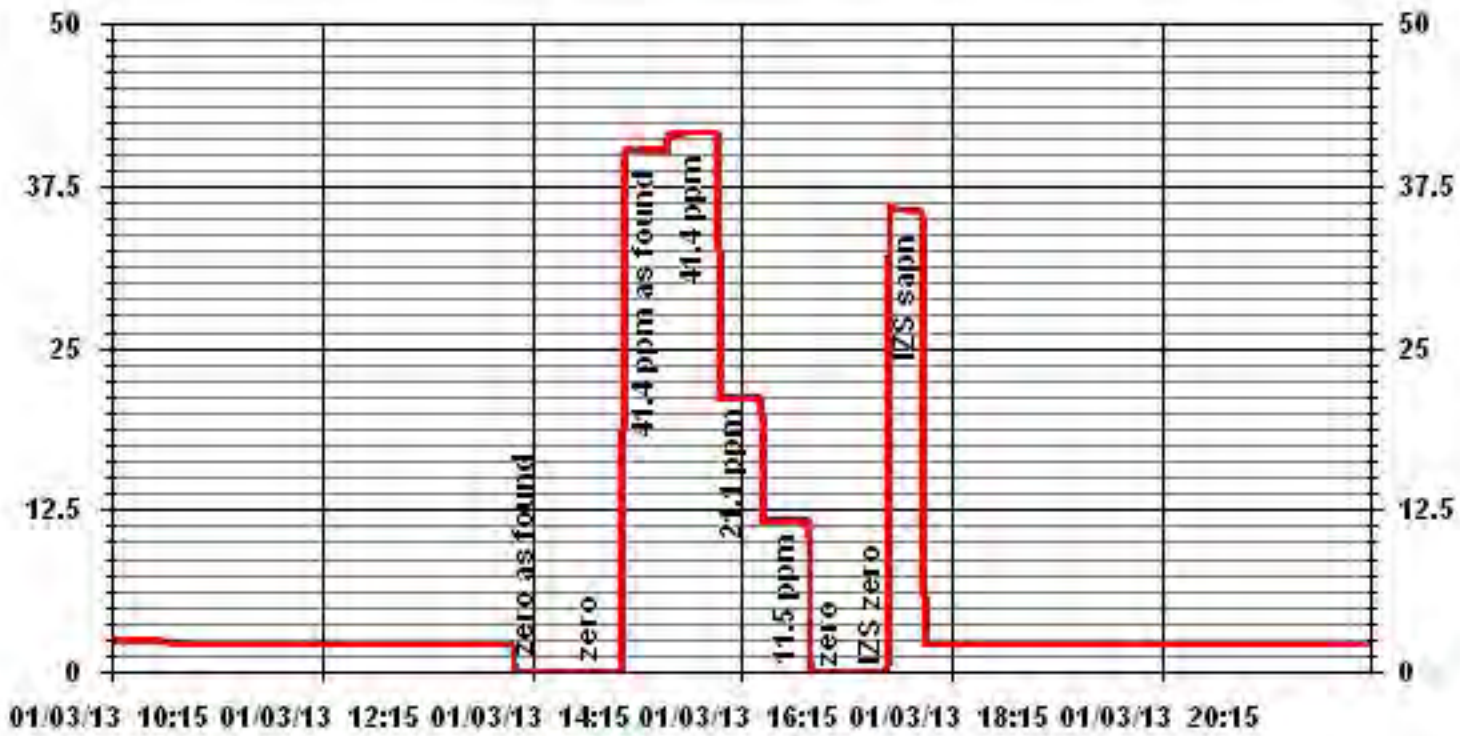
Calibration Date	January 3, 2013		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Maskwa		
Start Time (MST)	14:02	End Time (MST)	18:43

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient	Slope	Intercept
0.0	0.0	NA	(≥ 0.995)	1.003597	0.00652
11.5	11.6	0.9910	(0.85 to 1.15)		
21.1	21.1	0.9994	(± 3% F.S.)		
41.4	41.6	0.9958			



Notes:

01 Minute Averages



— LICA30 THC PPM

Nitrogen Dioxide

**NOx - NO- NO2 Calibration Report
Station Information**

Calibration Date	January 3, 2013	Previous Calibration	December 19, 2012
Company	LICA	Plant/Location	Maskwa
Start Time (MST)	10:27	End Time (MST)	16:32
Reason:	Monthly Calibration		
Barometric Pressure	937 mBar	Station Temperature	23 Deg C
Cal Gas Concentration	NOx 50.1 ppm	NO 50.1 ppm	Cal Gas Expiry date
Cal Gas Cylinder #	LL42502		December 29, 2013
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	TAPI 200E	S/N :	594	Method:	Chemiluminescent
Calibrator Make / Model:	Envionics 6100	S/N :	4760		
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Envionics 6100	S/N :	4760		

Analyzer Settings

Before Calibration		0 - 1000		After Calibration	
Concentration Range					
Sample Flow/Conv. Temp	454 ccm	314 Deg C		448 ccm	316 Deg C
Ozone Flow / Vacuum	79 ccm	4.5 "Hg-A		79 ccm	4.5 "Hg-A
HVPS / A ZERO	751 Volts	14.7 MV		751 Volts	15.7 MV
Rx/ Temp / PMT Temp	50.0 Deg C	6.6 Deg C		49.9 Deg C	6.7 Deg C
Box Temp / IZS Temp	29.1 Deg C	42.0 Deg C		33.3 Deg C	42.3 Deg C
Offset	0.4 NOx	0.3 NO		0.6 NOx	0.3 NO
Slope	1.066 NOx	1.063 NO		1.066 NOx	1.063 NO
NO2 COEF / Conv Efficiency	NA NO2	0.994		NA NO2	0.994

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	1	1	1	NA	NA
4994	0.0	NA	0	0	NA	0	1	0	NA	NA
4919	74.6	NA	748	748	NA	748	747	1	1.0000	1.0033
	No Span Adj									
4957	39.8	NA	399	399	NA	398	397	1	1.0052	1.0077
4974	19.9	NA	200	200	NA	201	201	1	0.9982	0.9982
4995	0.0	NA	0	0	NA	0	1	1	NA	NA

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4920	74.6	NA	748	748	NA	750	748	2	NA	
4920	74.6	600	748	NA	557	748	193	556	1.0018	99.82%
4920	74.6	250	748	NA	234	749	516	234	1.0000	100.00%
4920	74.6	140	748	NA	131	750	619	132	0.9924	100.78%

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 1.001	NO= 1.002	NO2=
				NOx= 1.0000	NO= 1.0033	NO2=
				Average Converter Efficiency=		

Before Calibration

Before Calibration		After Calibration	
Auto Zero	1.3 NOx 1.3 NO2	0.7 NOx 0.5 NO2	
Auto Span	551 NOx 545 NO2	545 NOx 540 NO2	
	Sample Lines Connected	YES	
Percent Change from Previous Calibration	NOx -0.1%	NO -0.4%	NO2 0.2%

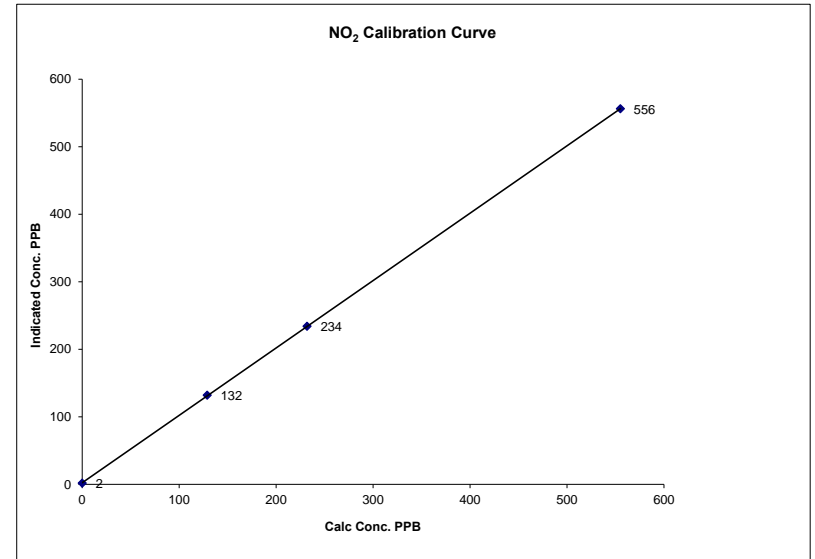
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu.

NO2 Calibration Curve

Calibration Date	January 3, 2013	Company	LICA
Plant / Location	Maskwa	Start Time (MST)	10:27
End Time (MST)	16:32		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)	0.999994
0	2	N/A	Intercept		2.57818
129	132	0.9773			
232	234	0.9915			
555	556	0.9982			

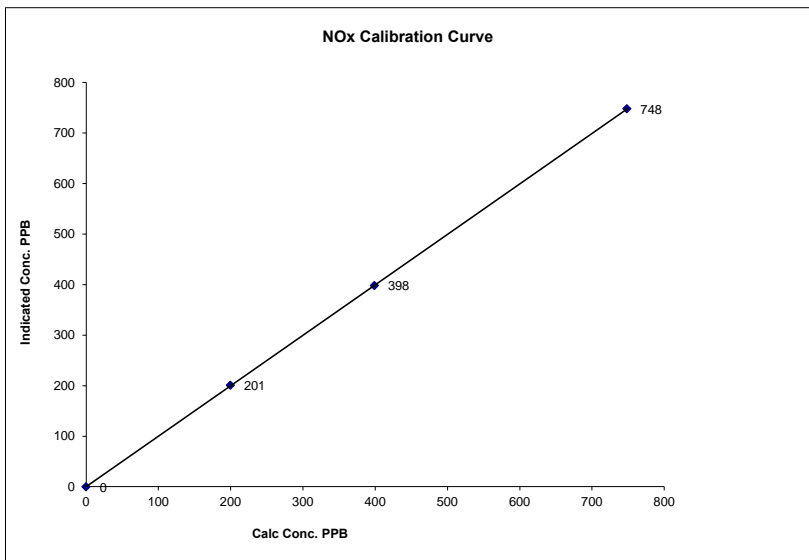


Notes:

NOx Calibration Curve

Calibration Date	January 3, 2013	
Company	LICA	
Plant / Location	Maskwa	
Start Time (MST)	10:27	End Time (MST) 16:32

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999992
0	0	N/A	Slope (0.85 to 1.15)	0.998570
200	201	0.9932	Intercept (± 3% F.S.)	0.44591
399	398	1.0026		
748	748	1.0006		

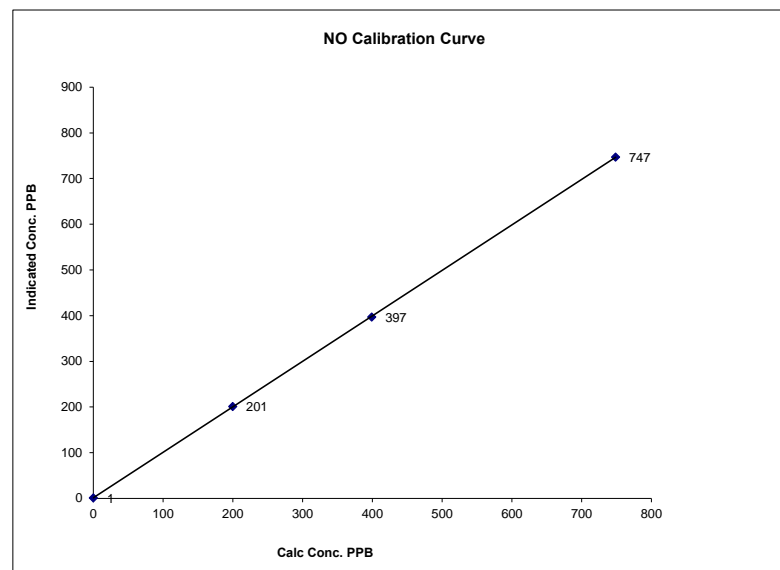


Notes:

NO Calibration Curve

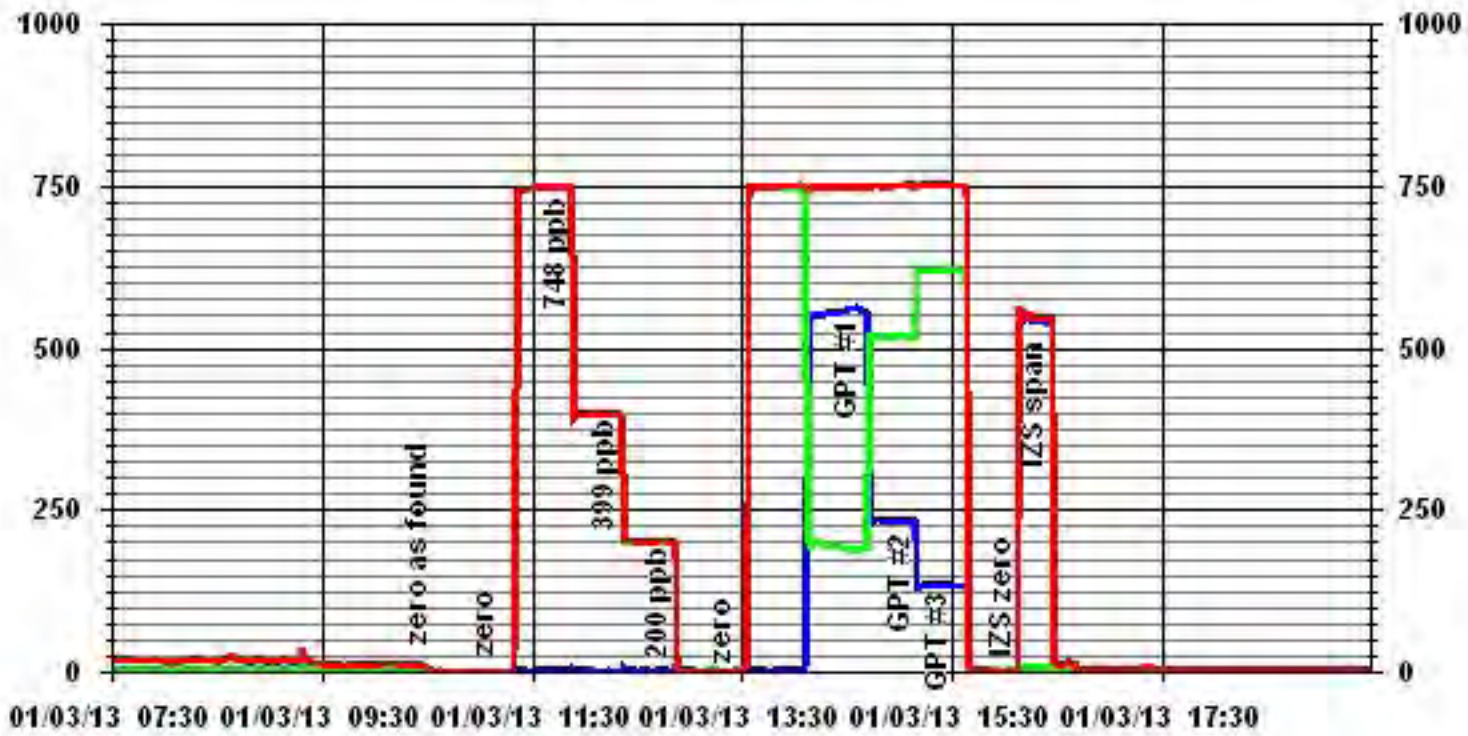
Calibration Date	January 3, 2013	
Company	LICA	
Plant / Location	Maskwa	
Start Time (MST)	10:27	End Time (MST) 16:32

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999988
0	1	N/A	Slope (0.85 to 1.15)	0.995657
200	201	0.9932	Intercept (± 3% F.S.)	-2.7382
399	397	1.0052		
748	747	1.0019		



Notes:

01 Minute Averages



— LICA30 IIOX_ PPB — LICA30 IIO_ PPB — LICA30 IIO2_ PPB

Lakeland Industry & Community Association

St. Lina Monitoring Site
Ambient Air Monitoring
Data Report
For
January 2013

Prepared By:



February 27, 2013

Lakeland Industry & Community Association

St. Lina

Ambient Air Monitoring

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Introduction

The following Ambient Air Monitoring report was prepared for:

Mr. Mike Bisaga
Lakeland Industry & Community Association
Box 8237
5107W – 50 Street
Bonnyville, Alberta
T9N 2J5

Monitoring Location: St. Lina
Data Period: January 2013

The monthly ambient data report:

- Prepared by Katherine Rapske
- Reviewed by Lily Lin

Calibration Procedure

The following calibration procedure applies to all calibrations conducted at the Lakeland Industry & Community Association Air Monitoring Station.

Calibration gas concentrations are generated using a dynamic mass flow controlled calibrator. EPA Protocol one gases are diluted with zero air generated on site. The Mass Flow Controllers in the calibrator are referenced using an NIST traceable flow meter once per month. All listed flows are reported as corrected to Standard Temperature and Pressure (STP).

Generated zero gas is introduced to the analyzer first. Three concentrations of calibration gas are then generated in order to introduce points at approximately 50-80%, 25-40% & 10-20% of the analyzer's full-scale range. An auto zero and span are then performed to validate the daily zero and span values recorded to the next multi-point calibration.

All indicated concentrations are taken from the ESC data logger used to collect the data for monthly reporting.

The calibrations conducted at the LICA – St. Lina Air Monitoring Stations conform to the following Maxxam Standard Operation Procedures:

- CAL SOP-00211
- CAL SOP-00209
- CAL SOP-00213
- CAL SOP-00214
- CAL SOP-00208
- CAL SOP-00215

Conformance of each calibration to Alberta Environment regulations is outlined in the individual calibration reports. The slope and correlation coefficient are derived from the calculated and indicated analyzer responses. The percent change is calculated using the previous calibration correction factor and the current correction factor before adjustment. All calibration's and maintenance conforms to the procedures outlined in the *Air Monitoring Directive, Appendix A-10, Section 1.6*.

MONTHLY CONTINUOUS DATA SUMMARY

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – ST. LINA

Continuous Ambient Monitoring – January 2013

LICA ST. LINA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						OBJECTIVES				EXCEEDENCES		MONTHLY AVERAGE	
PARAMETER	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	0.79	7	31	19,20	7.4,8.3	225(WSW), 247(WSW)	3.2	31	100.0
H2S (PPB)	10	3	0	0	1.05	5	18	1	4.7	203(SSW)	1.8	14	100.0
THC (PPM)	-	-	-	-	2.26	3.6	27	10	7.8	209(SSW)	3.0	27	100.0
OZONE (PPB)	82	-	0	-	29.3	43	3	VAR	VAR	VAR	38	1	100.0
NOx (PPB)	-	-	-	-	4.19	22.8	26	13	8.7	219(SW)	14.9	26	100.0
NO (PPB)	-	-	-	-	0.49	8.8	26	13	8.7	219(SW)	2.1	26	100.0
NO ₂ (PPB)	159	-	0	-	3.70	20.8	5	1	12.6	240(WSW)	12.8	26	100.0
PM2.5 (ug/m3)	-	30	-	0	5.45	32.0	5	1	12.6	240(WSW)	19.3	26	98.8
TEMPERATURE (DEGREE C)	-	-	-	-	-12.38	7.4	15	13	26.7	318(NW)	2.8	15	100.0
BP (MILLIBAR)	-	-	-	-	923	944	20	VAR	VAR	VAR	941.5	20	100.0
RH (%)	-	-	-	-	70.98	89	15	2,3	14.6,14.8	262(W),280(W)	80.3	16	100.0
PRECIPITATION (MM)	-	-	-	-	0.02	0.9	17	14	14.9	127(SE)	4.6	17	100.0
VECTOR WS (KPH)	-	-	-	-	11.37	27.6	15	12	-	253(WSW)	19.2	1	1000
VECTOR WD (DEGREES)	-	-	-	-	276(W)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS

General Monthly Summary

Equipment Operation

The following summary outlines the analyzer performance. Any non-conformances, problems or maintenance performed are detailed at the end of each section.

AQM STATION – LICA – St. Lina

Sulphur Dioxide (PPB)

Analyzer make / model - API 100E, S/N: 468

The analyzer was working well throughout the month. The inlet filter was changed before the monthly calibration was started on January 17th. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

Analyzer make / model - API 101E, S/N: 510

The analyzer was working well throughout the month. The inlet filter was changed before the monthly calibration was started on January 17th. Data was corrected using daily zero information.

Ozone (PPB)

Analyzer make / model Thermo 49C, S/N: 49C-54926-302

The analyzer was working well throughout the month. The inlet filter was changed before the monthly calibration was started on January 17th. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – St. Lina

Total Hydrocarbon (PPM)

Analyzer make / model – Thermo 51C-LT, S/N: 77021-384 replaced to Thermo 51C-LT, S/N: 04366-09739

The analyzer was working well throughout the month. The inlet filter was changed before the monthly calibration was started on January 17th. On January 29th between hour 10 and 11, an H2 gas cylinder was replaced and a daily calibration check was run as a result. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

Analyzer make / model - API 200E, S/N: 592

The analyzer was working well throughout the month. The inlet filter was changed before the monthly calibration was started on January 17th. Data was corrected using daily zero information.

Particulate Matter 2.5 (UG/M3)

Analyzer make / model –Thermo Scientific Series 1405F, S/N: 1405A207691003

A routine Teom audit was performed on January 17th. Data was corrected using Alberta air quality guideline. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. A total of 9 hours of PM 2.5 data was invalidated as the data were below –3 ug/m3.

General Monthly Summary

AQM STATION – LICA – St. Lina

Temperature (Degree C)

Analyzer make / model – Met One 060
No issue was recorded this month.

Barometric Pressure (Millibar)

Analyzer make / model - Met One 092
No issue was recorded this month.

Relative Humidity (%)

Analyzer make / model - Met One 083
No issue was recorded this month.

Precipitation (MM)

Analyzer make / model - Met One 387
No issue was recorded this month.

Vector Wind Speed (KPH) & Vector Wind Direction (DEG)

System make / model –MetOne 50.5H Sonic, S/N: H12635
No issue was recorded this month.

General Monthly Summary

AQM STATION – LICA – St. Lina

Datalogger

System make / model - ESC 8832, S/N: AO717

Software make/version - ESC v 5.51a

The station is connected to a modem to allow for daily polling of the station.

Trailer

No issue was recorded this month.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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		
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.	
DAY																												
1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
2	0	0	0	0	0	0	0	0	S	0	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.2	24
3	3	3	3	4	4	3	3	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1.1	24
4	0	0	0	0	0	0	S	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.1	24
5	1	1	1	0	0	S	0	0	0	0	0	0	0	0	1	1	1	2	1	1	1	1	1	1	1	2	0.6	24
6	2	2	2	2	S	1	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1.5	24
7	1	1	1	S	0	0	0	0	0	0	0	1	2	2	1	2	2	1	2	2	2	2	2	2	2	2	1.1	24
8	1	1	S	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
9	0	S	0	0	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	0.5	24
10	S	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0.3	24	
11	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	1	1	S	1	2	1.3	24	
12	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0.2	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	0.1	24
14	1	1	1	2	3	2	2	2	2	2	2	3	3	3	3	3	3	3	2	S	1	1	1	1	1	3	2.0	24
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	0	1	0.8	24
16	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
17	0	0	0	0	0	0	0	0	0	C	C	C	C	2	1	1	S	1	C	C	1	1	1	1	2	0.5	24	
18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	0	0	0	0	1	0.8	24	
19	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	24
20	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
21	0	0	0	0	0	0	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
22	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	1	1	1	0	0	1	0	0	1	0.3	24	
23	1	0	0	0	0	0	1	1	1	2	S	2	2	2	2	2	1	1	1	1	1	1	1	1	1	2	1.0	24
24	1	1	1	1	1	1	1	1	1	S	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0.8	24
25	1	1	1	1	1	1	2	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.7	24
26	2	2	3	2	2	2	2	S	2	2	2	2	2	2	2	2	3	4	3	2	2	2	2	1	4	2.2	24	
27	1	1	1	2	2	2	S	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	2	0.9	24	
28	0	0	0	0	0	S	1	1	1	1	1	1	1	1	3	5	4	3	4	5	2	1	1	5	1.6	24		
29	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
30	0	0	0	S	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0.1	24	
31	0	0	S	1	1	1	1	2	2	2	2	3	3	3	4	5	6	6	6	7	7	6	3	3	7	3.2	24	
HOURLY MAX	3	3	3	4	4	3	3	2	2	2	2	3	3	3	4	5	6	6	6	7	7	6	3	3				
HOURLY AVG	0.7	0.6	0.7	0.7	0.7	0.6	0.7	0.6	0.6	0.8	0.7	0.8	0.9	0.9	0.9	1.1	1.1	1.1	1.0	0.9	0.9	0.8	0.6	0.7				

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

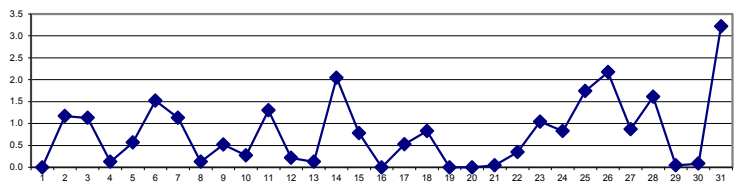
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	57	PPB
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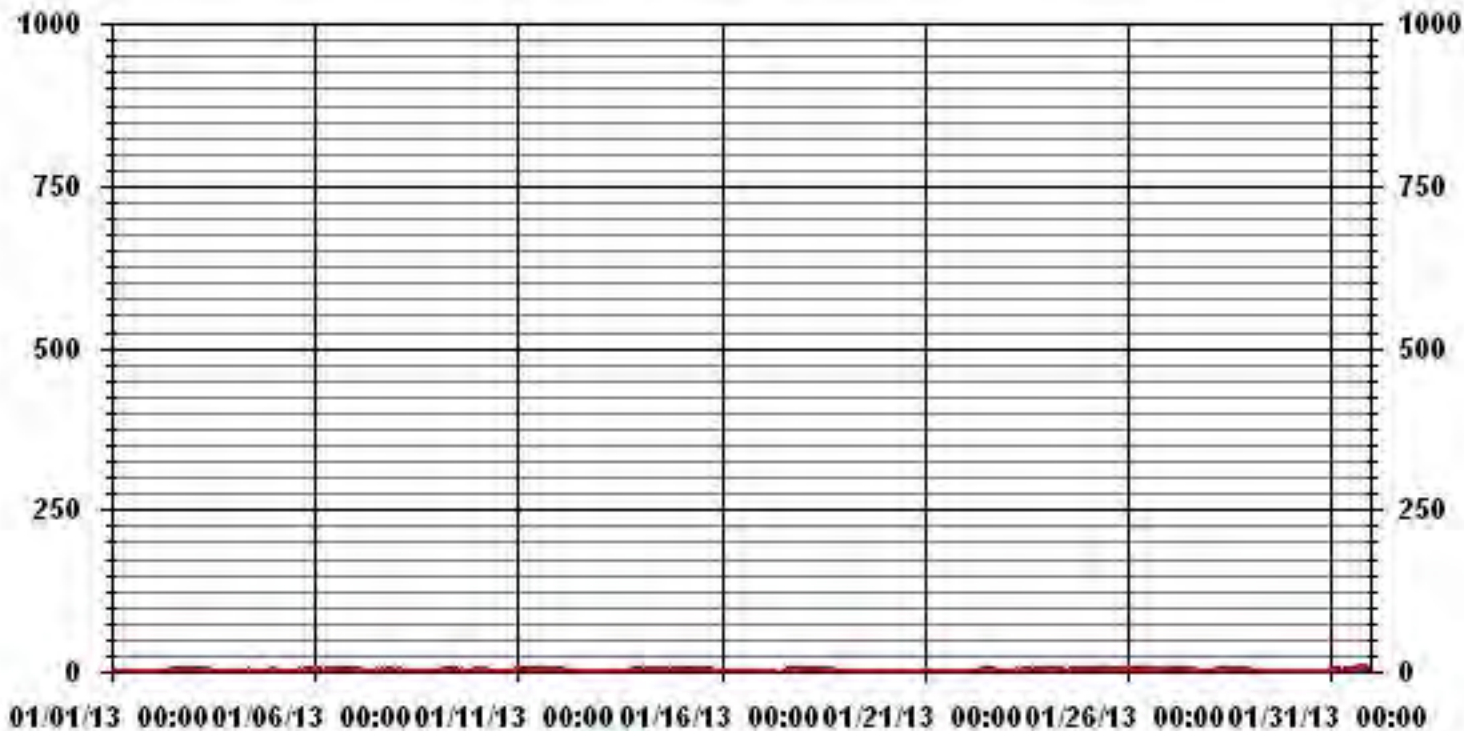
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	349
MAXIMUM 1-HR AVERAGE:	7 PPB @ HOUR(S) 19, 20 ON DAY(S) 31
MAXIMUM 24-HR AVERAGE:	3.2 PPB ON DAY(S) 31
IZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	6 HRS
STANDARD DEVIATION:	1.06
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME:	100.0 %
MONTHLY AVERAGE:	0.79 PPB

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



— LICA31 SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	DAILY	24-HOUR	RDGS.	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.			
DAY																													
1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
2	1	1	1	1	1	1	1	1	S	1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2.2	24
3	4	4	4	5	5	5	4	S	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	2.1	24
4	1	1	1	1	1	1	S	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1.2	24
5	2	2	2	1	1	S	1	1	1	1	1	1	1	1	1	2	2	3	3	2	2	2	2	2	3	3	1.7	24	
6	3	3	3	3	S	2	3	3	2	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	3	2.5	24	
7	2	2	2	S	1	1	1	1	1	1	2	3	3	3	3	3	2	2	4	3	3	3	3	3	3	4	2.3	24	
8	2	2	S	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	2	1.1	24	
9	1	S	1	2	3	3	2	2	2	2	2	2	2	2	2	1	2	1	1	1	1	1	1	1	1	3	1.6	24	
10	S	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	1.3	24	
11	2	2	3	2	2	2	2	2	2	2	2	2	2	3	3	3	2	3	2	3	2	2	S	2	3	2.3	24		
12	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	2	1.1	24	
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	2	2	2	1.1	24	
14	2	2	2	3	4	3	3	3	3	3	3	4	4	4	4	4	4	3	3	S	2	2	2	2	4	3.0	24		
15	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	1	1	1	1	1	1	2	1.8	24	
16	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	1	1	1	0.5	24	
17	1	1	1	1	1	1	1	1	1	1	C	C	C	C	3	3	2	S	2	C	C	2	2	2	2	3	1.6	24	
18	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	1	1	1	1	1	2	1.8	24	
19	1	1	1	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	1	1	1	1	1	1	1	0.5	24	
20	1	0	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
21	1	1	1	1	1	1	1	1	1	1	1	1	2	S	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
22	1	1	1	1	1	1	1	1	1	1	1	1	S	2	2	2	2	2	1	2	1	1	1	1	1	2	1.3	24	
23	1	1	1	1	1	1	2	2	2	3	S	3	3	3	3	2	2	2	2	2	2	2	2	2	2	3	2.0	24	
24	2	3	2	2	2	2	2	2	2	S	2	1	1	2	2	1	2	2	2	2	1	1	2	2	2	3	1.8	24	
25	2	2	2	2	2	2	2	3	S	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2.7	24	
26	3	5	5	3	3	3	3	S	3	3	3	3	3	3	3	4	4	5	4	3	3	3	3	3	2	5	3.3	24	
27	2	2	2	3	3	3	S	2	2	2	2	2	2	2	2	2	3	2	1	1	1	1	1	1	1	3	1.9	24	
28	1	1	1	1	1	S	2	2	2	2	2	2	2	2	6	6	6	6	5	6	6	5	2	2	6	2.9	24		
29	1	1	1	1	S	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
30	1	1	1	S	1	1	1	1	1	2	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	2	1.1	24	
31	1	1	S	2	2	2	3	3	3	3	3	4	4	4	5	6	6	7	7	8	8	8	8	4	4	8	4.3	24	
HOURLY MAX	4	5	5	5	5	5	4	3	3	3	3	4	4	4	5	6	6	7	7	8	8	8	8	4	4				
HOURLY AVG	1.6	1.7	1.7	1.7	1.7	1.6	1.7	1.5	1.5	1.7	1.6	1.8	1.8	1.9	1.9	2.0	2.1	2.1	2.0	1.9	1.9	1.9	1.9	1.6	1.7				

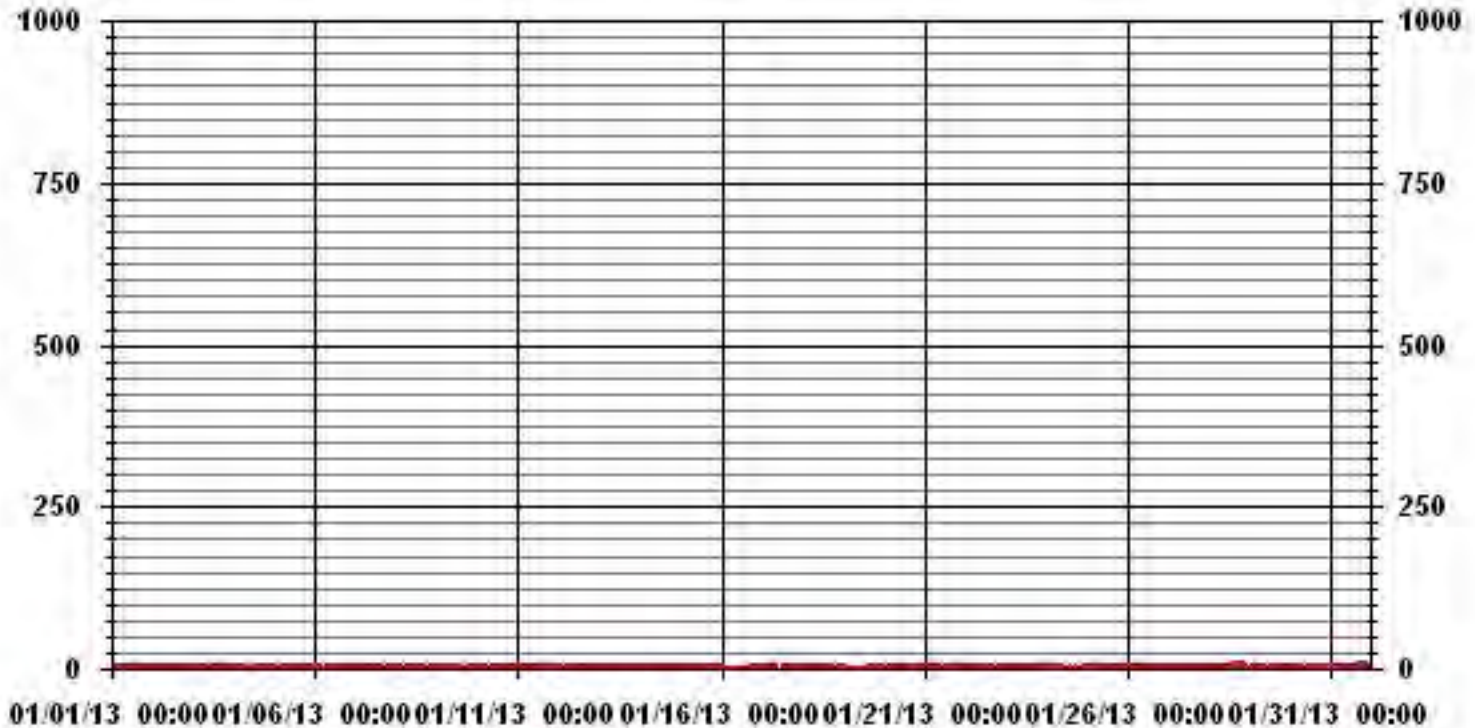
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	680				
MAXIMUM INSTANTANEOUS VALUE:	8	PPB	@ HOUR(S)	VAR	ON DAY(S)
					31
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	6	HRS			
STANDARD DEVIATION:	1.15				

01 Hour Averages



— LICA31 SO2MAX PPB

LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
Parameter : H2S_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	5.53	2.55	2.13	1.27	2.27	4.82	2.98	1.27	5.53	11.50	14.06	6.25	7.10	9.23	10.36	11.36	98.29
< 10	.00	.00	.00	.00	.00	.56	.42	.28	.00	.14	.00	.00	.14	.14	.00	.00	1.70
< 50	.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
Totals	5.53	2.55	2.13	1.27	2.27	5.39	3.40	1.56	5.53	11.64	14.06	6.25	7.24	9.37	10.36	11.36	

Calm : .00 %

Total # Operational Hours : 704

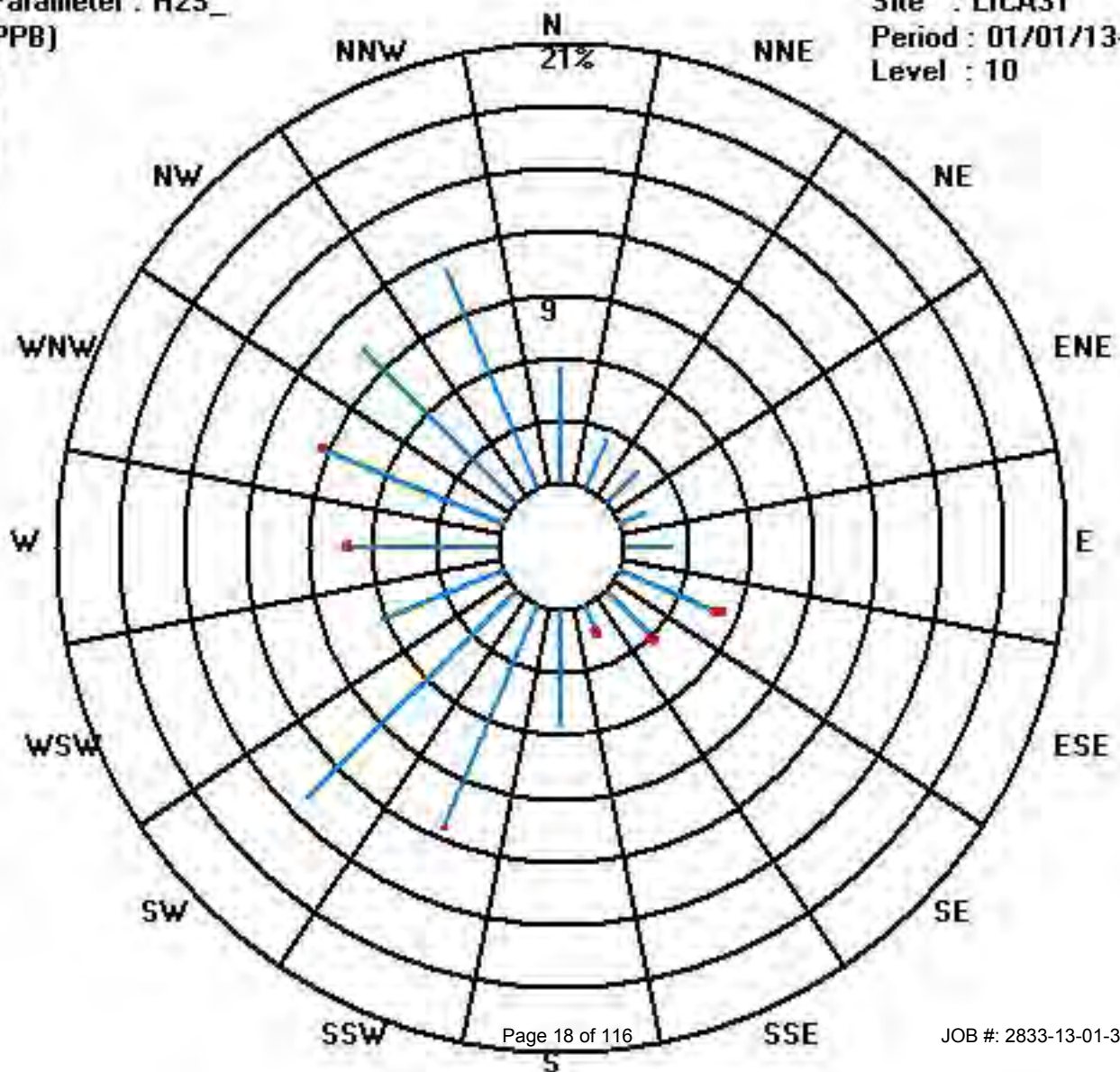
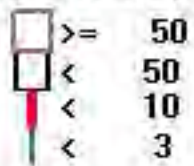
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	39	18	15	9	16	34	21	9	39	81	99	44	50	65	73	80	692
< 10						4	3	2		1			1	1			12
< 50																	
>= 50																	
Totals	39	18	15	9	16	38	24	11	39	82	99	44	51	66	73	80	

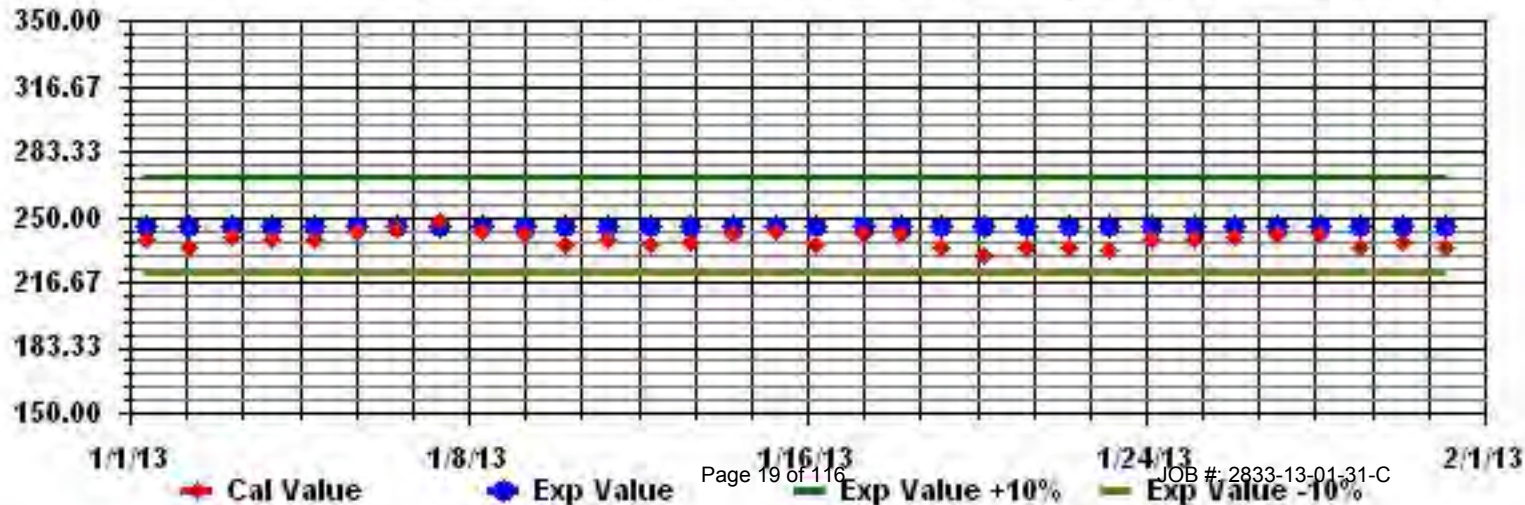
Calm : .00 %

Total # Operational Hours : 704

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: S02_ Sequence: S02 Phase: SPAll



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

HYDROGEN SULPHIDE (H₂S) hourly averages in ppb

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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			
HOUR START	HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.	
DAY	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	0	1	1	1	1	1	0	1	0.9	24		
2	0	0	0	0	0	0	0	0	1	S	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.3	24	
3	2	2	2	2	2	2	2	2	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.3	24
4	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
5	1	2	1	1	1	S	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	2	2	1.1	24	
6	2	2	2	2	S	1	1	1	1	1	1	1	2	1	1	2	2	2	1	1	1	1	1	1	1	1	2	1.3	24
7	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	1	2	3	3	1.4	24	
8	2	2	S	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0.4	24	
9	0	S	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
10	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0.0	24	
11	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	S	1	1	0.9	24	
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	S	1	1	1	1.0	24	
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1.0	24	
14	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	1	2	1	1	2	1.8	24	
15	1	2	1	2	2	2	2	2	2	2	2	2	1	2	2	2	1	1	1	S	1	1	1	1	1	2	1.5	24	
16	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0.3	24
17	0	0	0	0	0	0	0	0	0	0	C	C	C	C	1	1	1	S	1	C	C	1	2	1	2	2	0.6	24	
18	3	5	2	2	2	1	1	0	2	2	1	1	1	1	1	S	1	1	1	0	0	0	0	0	5	1.2	24		
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	1	1	1	1	1	1	0.4	24	
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	2	1	1	1	1	2	1.0	24	
21	1	1	1	1	1	1	2	0	0	0	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	2	0.9	24	
22	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
23	1	1	1	0	0	0	0	1	0	1	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.3	24	
24	3	3	3	3	3	3	3	3	3	3	S	0	1	1	0	1	0	1	1	0	1	0	1	0	1	0	3	1.5	24
25	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
26	1	1	1	1	1	1	1	1	S	1	1	1	1	1	2	2	2	2	1	1	1	1	2	1	2	1	1.2	24	
27	1	1	2	1	1	1	1	S	1	1	1	2	2	2	1	1	2	2	2	1	1	1	2	1	2	1	1.3	24	
28	1	1	1	1	1	S	1	1	1	1	2	1	1	2	1	2	2	1	1	1	1	1	1	0	2	1.1	24		
29	0	0	0	0	S	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	24	
30	1	1	1	S	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
31	1	1	S	1	1	1	1	1	1	1	1	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	1.5	24	
HOURLY MAX		3	5	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3			
HOURLY AVG		1.1	1.2	1.1	1.0	1.1	1.0	1.0	0.9	1.0	1.0	0.9	1.1	1.1	1.1	1.2	1.2	1.2	1.1	1.0	1.0	1.0	1.0	1.1	1.0				

STATUS FLAG CODES

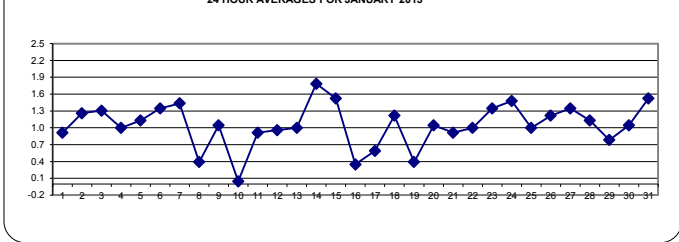
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT: ALBERTA ENVIRONMENT: 1-HR 10 PPB 24-HR 3 PPB

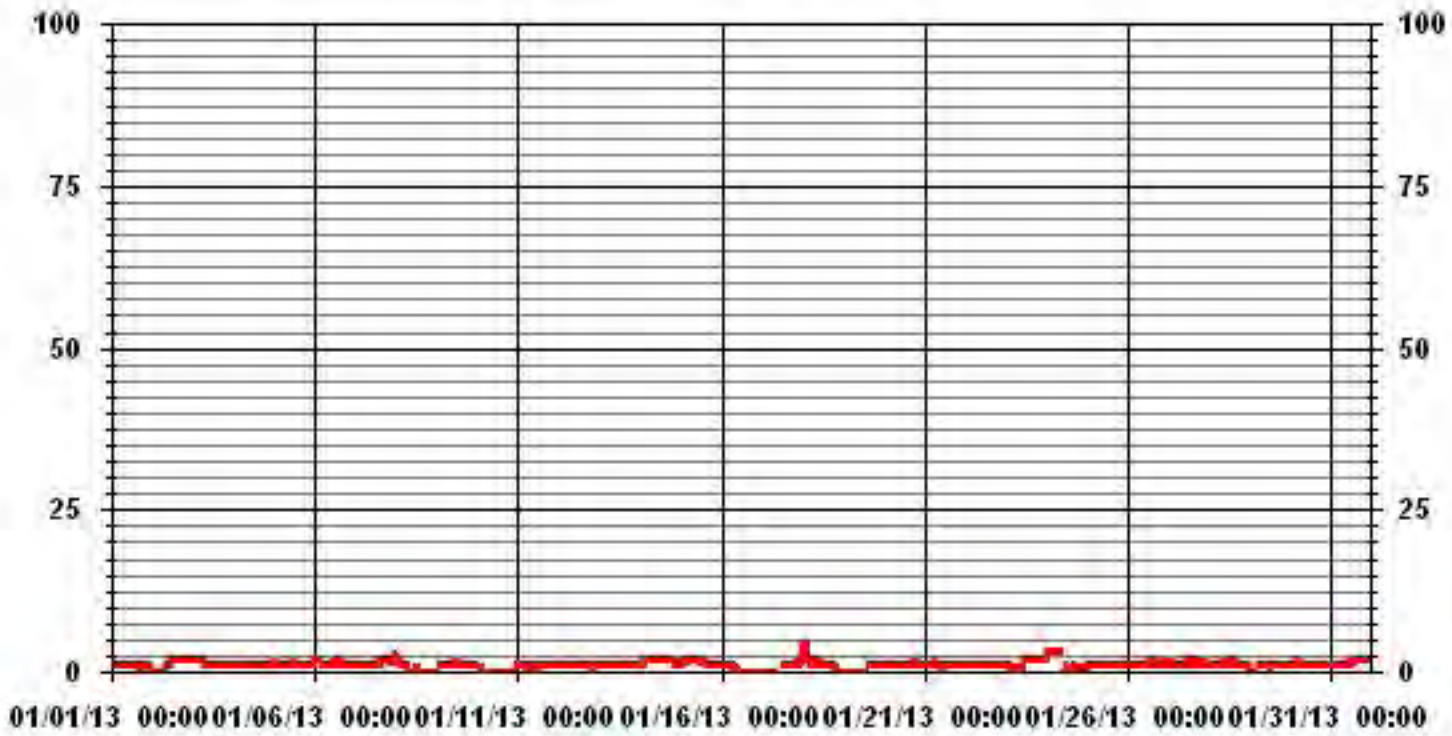
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	591		
MAXIMUM 1-HR AVERAGE:	5 PPB	@ HOUR(S)	1 ON DAY(S)
MAXIMUM 24-HR AVERAGE:	1.8 PPB		14 ON DAY(S)
			VAR-VARIOUS
IZS CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
MONTHLY CALIBRATION TIME:	6 HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.65	MONTHLY AVERAGE:	1.05 PPB

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	DAILY	24-HOUR	RDGS.
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.		
DAY																												
1	2	2	2	2	1	1	1	2	2	S	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	1.3	24
2	1	1	1	1	1	1	1	1	S	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	1.8	24
3	2	3	3	3	3	3	3	S	2	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	3	1.7	24
4	1	1	1	1	1	1	S	1	1	1	1	2	1	1	1	1	2	1	1	1	1	1	1	1	1	2	1.1	24
5	2	2	2	1	1	S	1	2	1	1	2	3	1	1	1	2	2	2	2	2	2	2	2	2	2	3	1.7	24
6	2	2	2	2	S	1	1	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2.0	24
7	2	2	1	S	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	4	4	2	2	3	4	1.9	24	
8	2	2	S	1	1	1	1	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0.5	24
9	0	S	1	1	1	1	1	2	2	1	2	2	2	2	2	2	2	5	2	1	1	1	2	2	5	1.7	24	
10	S	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0.2	24
11	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	2	1	2	1	1	S	1	1	2	1.3	24
12	2	2	2	2	2	2	2	2	2	1	2	1	2	1	1	2	1	1	2	2	1	S	1	1	2	1.6	24	
13	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	2	2	2	2	1.3	24
14	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	3	3	S	2	2	2	2	3	2.1	24	
15	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2.0	24
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	S	1	1	0	0	0	0	0	1	0.8	24
17	0	0	0	0	0	0	0	1	1	C	C	C	C	1	1	1	S	2	C	C	2	2	2	2	2	2	0.9	24
18	8	12	2	2	2	2	2	0	2	2	2	2	2	2	2	S	1	4	1	1	1	0	0	0	12	2.3	24	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	2	2	2	2	1	1	1	1	2	0.6	24	
20	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	2	2	1	1	1	1	2	1.1	24	
21	2	2	2	2	2	2	2	0	0	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	2	1.2	24	
22	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
23	1	1	1	1	1	1	1	1	1	1	S	2	2	2	2	2	2	2	2	2	2	3	3	2	3	3	1.7	24
24	3	3	3	3	3	3	3	3	3	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.8	24
25	1	1	1	1	1	1	1	1	S	1	1	1	2	1	1	1	1	2	1	1	1	2	1	1	2	1.1	24	
26	2	2	2	1	2	2	2	S	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.9	24
27	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	3	2.0	24	
28	3	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	3	1.8	24	
29	1	1	0	1	S	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1.1	24	
30	2	2	2	S	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.4	24	
31	1	1	S	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.7	24
HOURLY MAX	8	12	3	3	3	3	3	3	3	2	2	3	2	2	2	3	3	5	3	4	4	3	3	3	3			
HOURLY AVG	1.7	1.9	1.5	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.4	1.5	1.3	1.4	1.4	1.5	1.7	1.4	1.4	1.4	1.4	1.4	1.4	1.5			

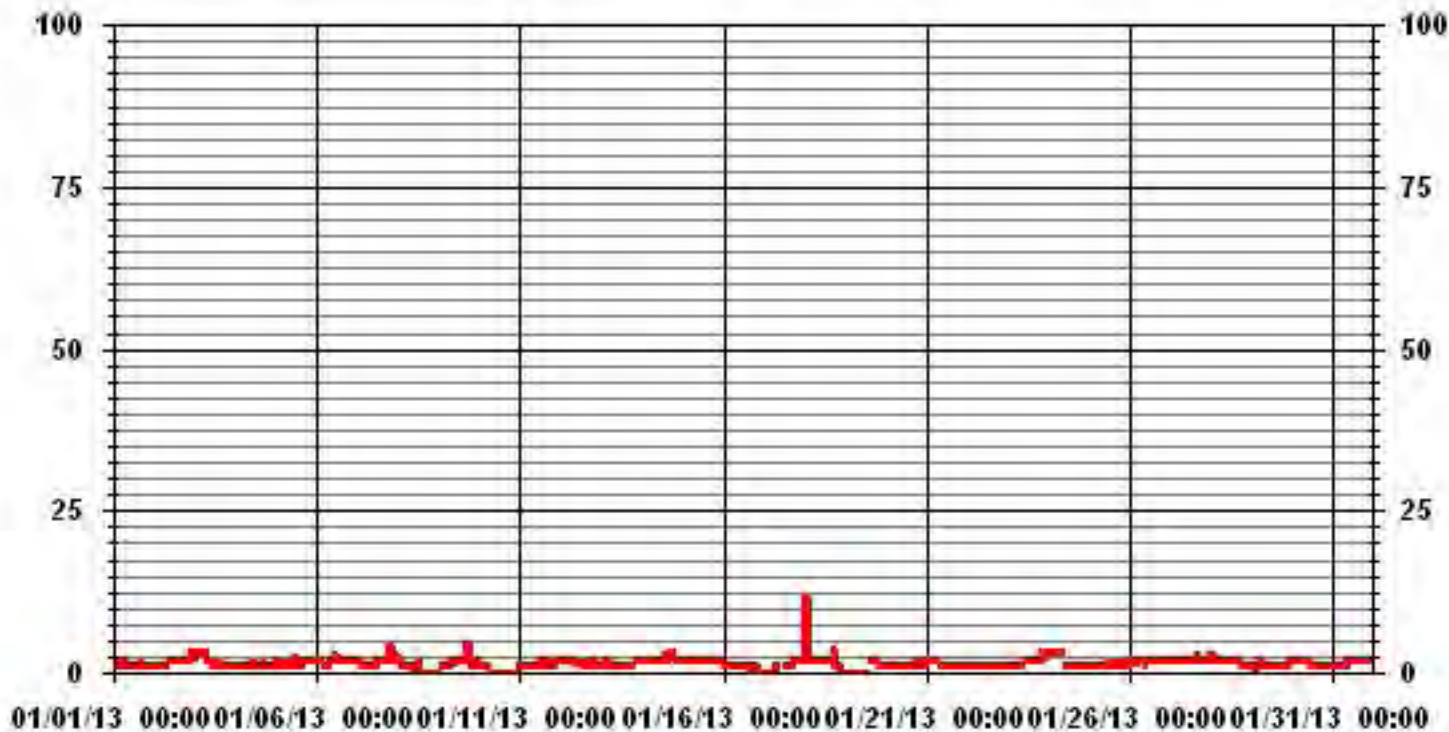
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	641					
MAXIMUM INSTANTANEOUS VALUE:	12	PPB	@ HOUR(S)	1	ON DAY(S)	18
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	0.88					

01 Hour Averages



LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
Parameter : H2S_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	5.53	2.55	2.13	1.27	2.27	4.82	2.98	1.27	5.53	11.50	14.06	6.25	7.10	9.23	10.36	11.36	98.29
< 10	.00	.00	.00	.00	.00	.56	.42	.28	.00	.14	.00	.00	.14	.14	.00	.00	1.70
< 50	.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
Totals	5.53	2.55	2.13	1.27	2.27	5.39	3.40	1.56	5.53	11.64	14.06	6.25	7.24	9.37	10.36	11.36	

Calm : .00 %

Total # Operational Hours : 704

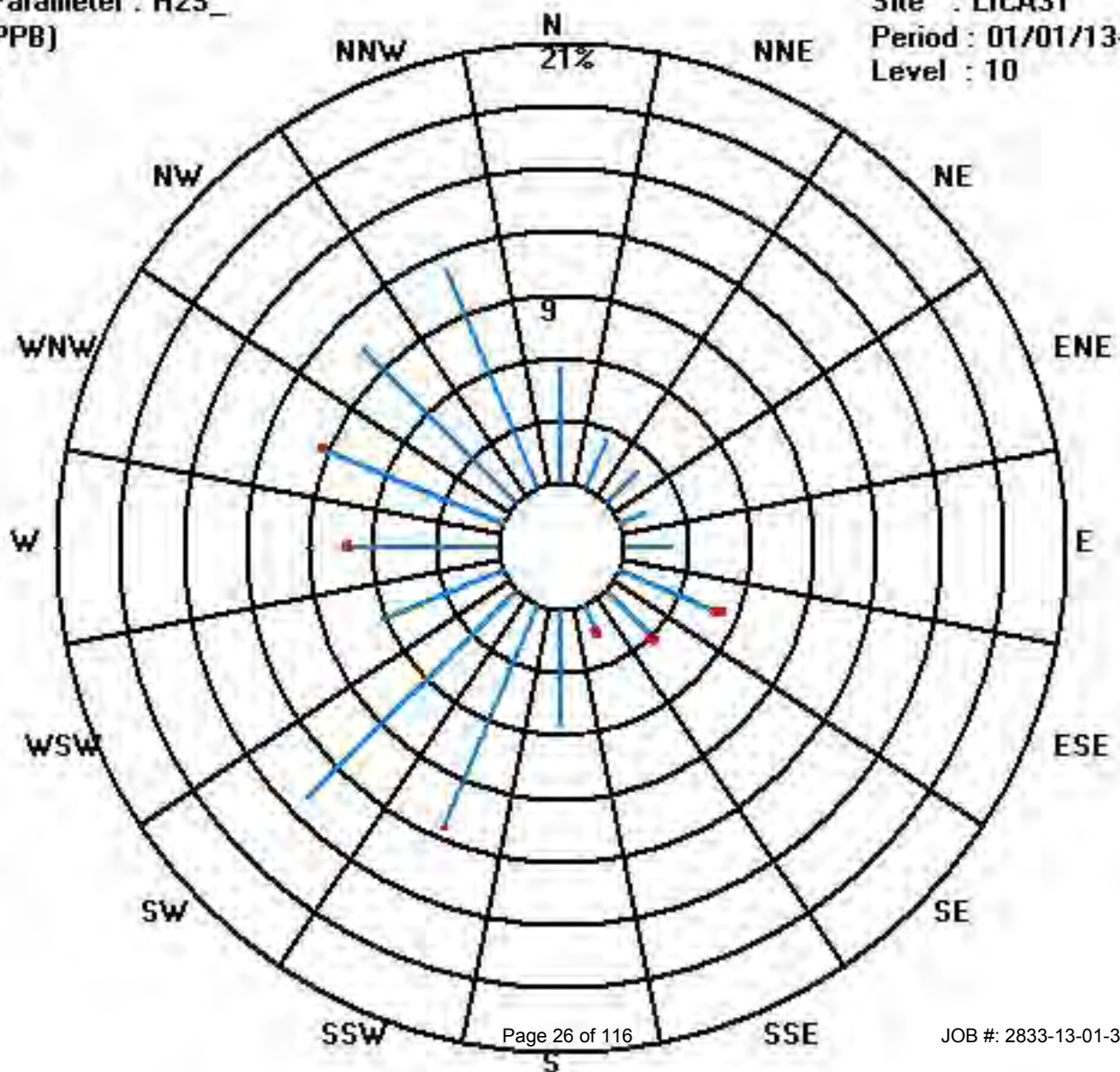
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	39	18	15	9	16	34	21	9	39	81	99	44	50	65	73	80	692
< 10						4	3	2		1			1	1			12
< 50																	
>= 50																	
Totals	39	18	15	9	16	38	24	11	39	82	99	44	51	66	73	80	

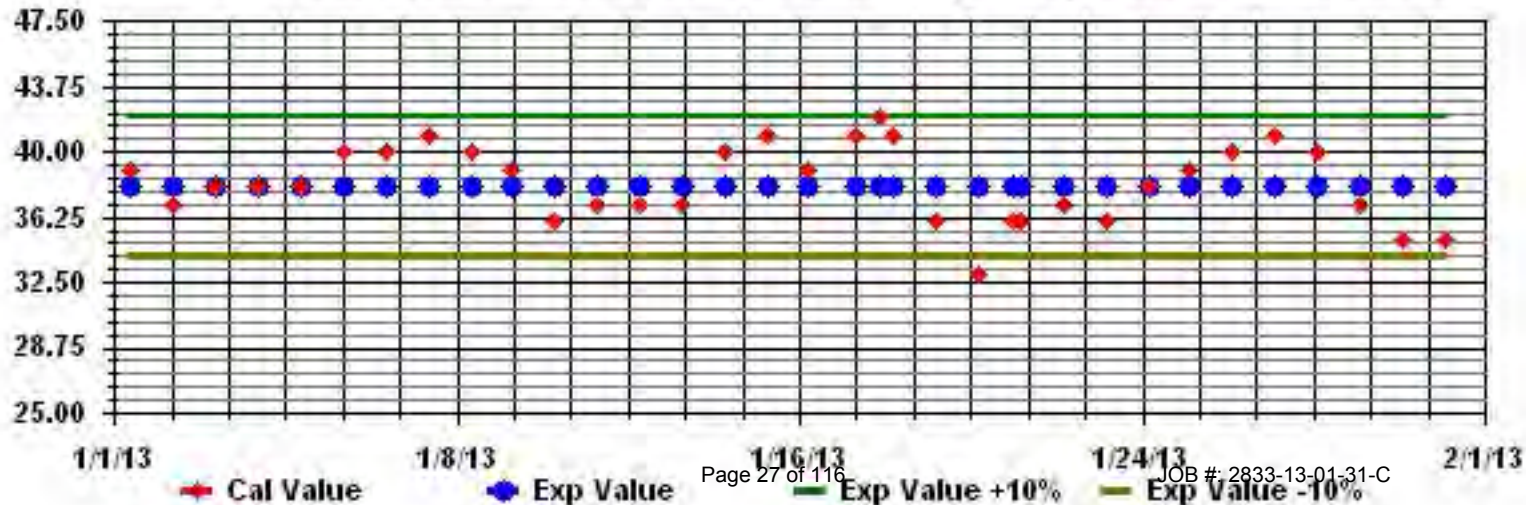
Calm : .00 %

Total # Operational Hours : 704

Class Limits (PPB)



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

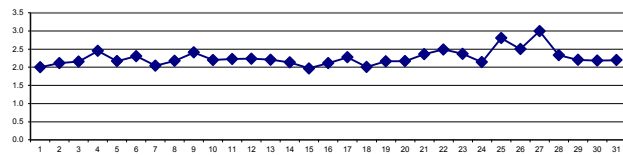
TOTAL HYDROCARBONS hourly averages in ppm

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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				
DAY	HOURLY MAX	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.		
1		2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	2.0	24	
2		2.1	2.1	2.2	2.1	2.2	2.2	2.1	2.1	S	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24
3		2.1	2.1	2.2	2.2	2.2	2.2	2.2	S	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.2	2.1	2.2	2.1	2.2	2.3	2.2	2.3	2.2	24
4		2.3	2.2	2.2	2.1	2.1	2.1	S	2.2	2.4	2.4	2.3	2.5	2.5	2.5	2.5	2.5	2.6	2.7	2.8	2.8	2.8	2.8	2.8	2.6	2.5	2.8	2.5	24	
5		2.5	2.5	2.3	2.2	2.1	S	2	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.5	2.2	24	
6		2.1	2.2	2.3	2.6	S	2.8	2.8	3	2.8	2.6	2.5	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	3.0	2.3	24		
7		2	2	2	S	2	2	2	2	2	2.1	2	2.1	2.1	2.1	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	24	
8		2.2	2.2	S	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	24	
9		2.2	S	2.1	2.1	2.1	2.2	2.4	2.5	2.6	3.1	2.9	3	2.8	2.7	2.6	2.5	2.4	2.3	2.2	2.2	2.2	2.1	2.1	2.1	3.1	3.1	2.4	24	
10		S	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	S	2.3	2.2	24	
11		2.1	2.3	2.1	2.2	2.2	2.3	2.3	2.3	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	S	2.2	2.3	2.2	24		
12		2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.2	2.3	2.2	2.1	2.2	2.1	2.1	2.1	2.2	2.2	2.2	S	2.2	2.2	2.4	2.2	24		
13		2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	S	2.1	2.2	2.2	2.3	2.2	24	
14		2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.3	2.1	24	
15		2.1	2.1	2	2	1.9	2	1.9	2	1.9	1.9	1.9	2	1.9	1.9	1.9	2	2	2	S	1.9	2	2.1	2	2	2	2.1	2.0	24	
16		2	2	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.1	2.2	S	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.1	24		
17		2.1	2.3	2.3	2.3	2.2	2.2	2.3	2.4	2.1	C	C	C	C	2.5	2.3	2.3	S	2.4	C	C	2.2	2.3	2.2	2.3	2.5	2.3	24		
18		2.2	2.2	2.1	2	2	2	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	S	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.0	24		
19		2.1	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.2	24	
20		2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	S	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.2	24	
21		2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2	2.1	2.1	2.1	S	2.1	2.2	2.6	2.8	2.8	2.6	2.6	2.7	2.8	2.9	3	3.0	2.4	24		
22		3.1	3.1	3.1	3.1	2.9	2.8	2.8	2.6	2.4	2.5	2.4	S	2.2	2.2	2.1	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	3.1	2.5	24		
23		2.2	2.2	2.2	2.2	2.5	2.6	2.6	2.3	2.4	2.5	S	2.6	2.5	2.5	2.7	2.7	2.6	2.4	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.7	2.4	24	
24		2.1	2	2	2	2	2	2	2	2	S	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.1	24		
25		2.3	2.3	2.3	2.4	2.6	2.8	2.9	3	S	2.8	3	3.3	3.3	3.1	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.7	2.6	3.3	2.8	24	
26		2.6	2.6	2.5	2.5	2.5	2.5	2.4	S	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.7	2.7	2.8	2.8	2.5	24	
27		2.7	2.6	2.6	2.6	2.7	2.5	S	3.1	3.1	3.1	3.6	3.3	3.3	3.3	3.3	3.4	3.3	3.1	2.8	2.9	2.9	3.1	2.9	2.7	3.6	3.0	24		
28		2.6	2.5	2.4	2.3	2.2	S	2.2	2.2	2.4	2.3	2.2	2.4	2.3	2.5	3	2.5	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	3.0	2.3	24	
29		2.2	2.2	2.2	2.2	S	2.6	2.7	2.7	2.7	2.7	C	C	2	2	2	2	2	2	1.9	2	2.1	2	2.1	2	2.7	2.2	24		
30		1.9	2	1.9	S	2.1	2.2	2.2	2.3	2.5	2.5	2.3	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.3	2.5	2.2	24		
31		2.2	2.3	S	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.6	2.7	2.7	2.2	24		
HOURLY MAX		3.1	3.1	3.1	3.1	2.9	2.8	2.9	3.1	3.1	3.1	3.6	3.3	3.3	3.3	3.3	3.4	3.3	3.1	2.9	2.9	2.9	3.1	2.9	3.0					
HOURLY AVG		2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.3	2.3	2.3					

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

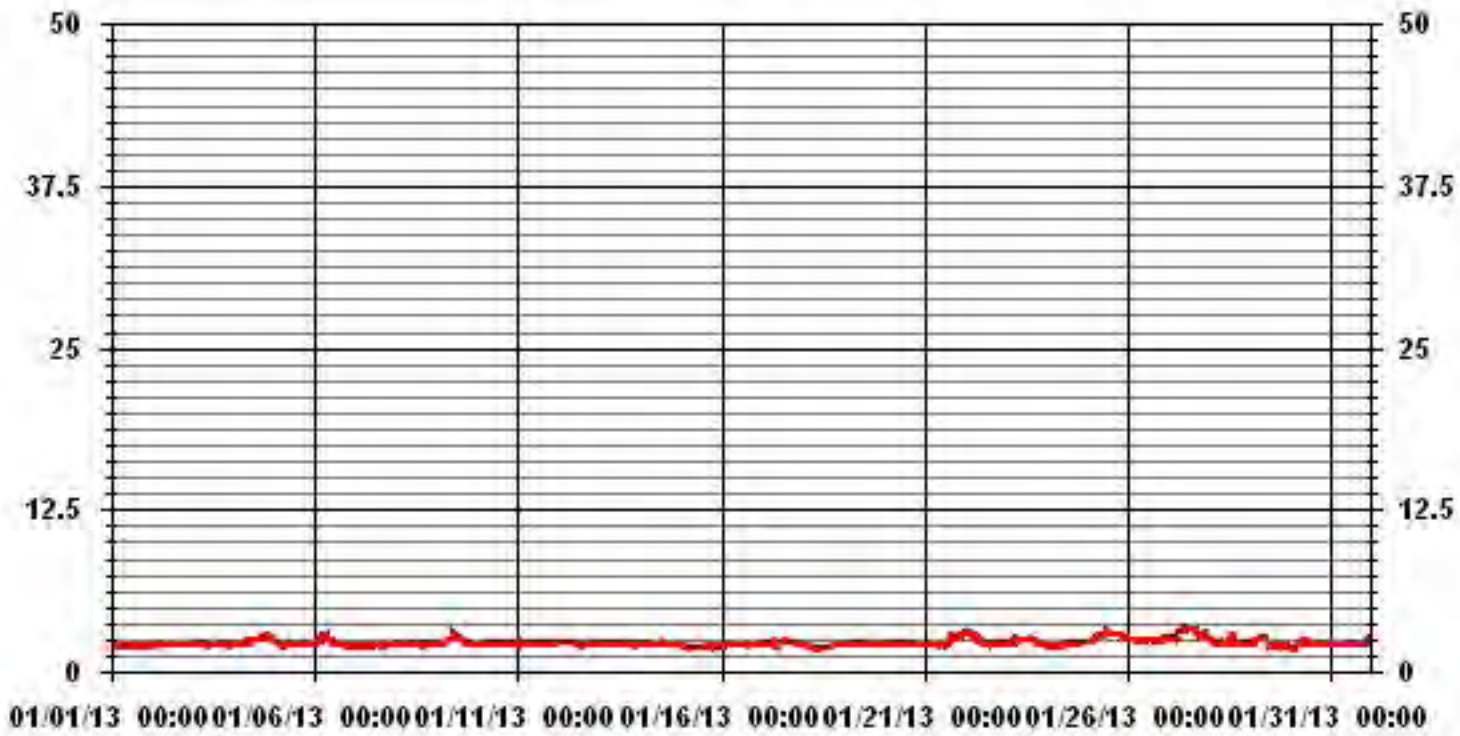
24 AVERAGES FOR JANUARY 2013



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	704		
MAXIMUM 1-HR AVERAGE:	3.6 PPM	@ HOUR(S)	10 ON DAY(S)
MAXIMUM 24-HR AVERAGE:	3.0 PPM		27 ON DAY(S)
			VAR- VARIOUS
IZS CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
MONTHLY CALIBRATION TIME:	8 HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.28	MONTHLY AVERAGE:	2.26 PPM

01 Hour Averages



— LICA31 THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST																										DAILY	24-HOUR	
HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.	AVG.	RDGS.
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00				
DAY																												
1	2	2	2	2.1	2.2	2.1	2.1	2	2	S	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.2	2.2	2.2	2.1	24
2	2.2	2.3	2.7	2.4	2.4	2.4	2.5	2.1	S	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.7	2.2	24
3	2.2	2.1	2.2	2.2	2.2	2.2	2.3	S	2.3	2.2	2.5	2.3	2.3	2.5	2.3	2.1	2.2	2.3	2.3	2.2	2.1	2.6	2.4	2.9	2.9	2.9	2.3	24
4	2.3	6.5	2.6	2.1	2.1	2.1	S	2.6	2.7	2.8	2.7	3	3	3.2	2.5	2.5	3.1	2.9	2.9	2.9	2.8	2.8	2.8	2.6	6.5	2.8	24	
5	2.5	2.5	2.4	2.3	2.3	S	2.1	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.5	2.2	2.4	24	
6	2.1	2.3	2.5	2.6	S	4.3	3.8	3.1	2.9	2.7	2.6	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.2	2.2	2.2	4.3	2.5	24	
7	2.1	2.1	2.2	S	2.2	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.1	24	
8	2.2	2.2	S	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.5	2.3	2.3	2.3	2.4	2.4	2.4	2.8	2.2	2.2	2.2	2.2	2.3	2.3	2.8	2.3	24	
9	2.2	S	2.1	2.1	2.1	2.3	2.5	2.5	3.1	3.5	3.2	3.2	2.9	2.8	2.7	2.5	2.5	2.4	2.3	2.2	2.2	2.1	2.1	3.5	2.5	24		
10	S	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.5	2.5	2.2	2.2	2.2	2.9	2.3	3	2.3	2.5	2.3	S	3	2.3	24	
11	2.1	3.4	2.1	3.3	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	S	2.3	3.4	2.4	24	
12	2.3	2.3	2.4	2.3	2.4	2.4	2.4	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.6	2.4	2.3	2.3	2.4	2.4	2.9	S	2.6	2.7	2.9	2.4	24	
13	2.8	2.2	2.5	2.7	2.6	2.7	2.8	2.7	2.9	2.2	2.2	2.4	2.2	2.3	2.6	2.6	2.9	2.7	2.5	3.6	S	2.2	2.2	2.3	3.6	2.6	24	
14	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.5	2.2	2.1	2.1	2.2	2.1	S	2.2	2.2	2.1	2.1	2.5	2.2	24	
15	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.0	24
16	2.1	2.1	2.2	2.4	2.5	2.4	2.3	2.4	2.7	2.8	2.5	2.6	2.2	2.3	2.4	2.2	2.3	S	2.2	2.4	2.8	2.4	2.5	2.1	2.8	2.4	24	
17	2.1	3.1	3	3	2.7	2.6	2.8	2.8	2.8	C	C	C	C	2.7	2.4	2.4	S	2.9	C	C	3.1	3	2.3	2.9	3.1	2.7	24	
18	2.9	4.7	2.3	2.1	2.1	2.6	2.3	2	1.9	1.9	2	2	2.1	2	2.1	S	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.2	4.7	2.3	24	
19	2.2	2.4	2.5	2.9	2.8	2.4	2.2	2.6	2.8	2.2	2.2	2.2	2.2	S	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.5	2.9	2.3	24		
20	2.4	2.2	2.3	2.4	2.6	2.5	2.3	2.4	2.4	2.5	2.4	2.3	2.4	S	2.2	2.3	2.3	2.5	2.6	2.5	2.4	2.1	2.1	2.1	2.6	2.4	24	
21	2.2	2.2	2.1	2.1	2.2	2.6	2.9	2.3	2.1	2.1	2.1	2.1	S	2.3	2.6	2.9	3	3	2.7	2.7	2.7	2.9	3.2	3.2	3.2	2.5	24	
22	3.2	3.2	3.5	4	3.4	3.2	3.2	3.2	2.8	3	2.8	S	2.4	2.4	2.3	2.3	2.5	2.8	2.9	2.5	2.2	2.6	2.2	2.2	4	2.8	24	
23	2.2	2.2	2.7	3.1	3.5	3.4	3.4	2.4	2.5	2.6	S	2.7	2.6	2.5	2.8	2.8	2.6	2.5	2.3	2.2	2.2	2.1	2.1	2.1	3.5	2.6	24	
24	2.1	2.1	2	2	2	2	2	2.1	2.1	S	2.2	2.2	2.2	2.5	2.3	2.3	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.5	2.2	24	
25	2.3	2.3	2.4	2.5	2.8	2.9	3	3.7	S	2.9	3.2	3.3	3.4	3.3	3	3	2.9	2.9	2.9	3	3	2.9	2.7	2.7	3.7	2.9	24	
26	2.7	2.6	2.6	2.5	2.6	2.5	2.5	S	2.5	2.5	2.5	2.5	2.5	2.6	2.5	2.6	2.5	2.4	2.4	2.5	2.5	2.9	2.8	2.9	2.9	2.6	24	
27	2.7	2.7	2.7	2.7	2.7	2.6	S	3.9	4.4	3.6	3.7	3.5	3.4	3.4	3.4	3.5	3.4	3.4	2.9	2.9	3.1	3.1	3.1	2.8	4.4	3.2	24	
28	2.7	2.6	2.5	2.4	2.3	S	2.3	2.3	3.8	2.9	2.4	2.9	2.6	2.7	3.3	2.8	2.4	2.3	2.3	2.2	2.2	2.3	2.2	2.2	3.8	2.5	24	
29	2.3	2.3	2.3	2.3	S	2.7	2.7	2.8	2.8	3	C	C	2.1	2.1	2.3	2.2	2.2	2.7	2.3	2.1	2.2	2.2	2.9	2.5	3	2.4	24	
30	2.3	2.4	2.2	S	2.5	2.5	2.3	2.4	2.5	2.6	2.8	2.2	2.2	2.2	2.4	2.4	2.5	2.5	2.7	2.7	2.8	2.8	2.2	2.4	2.8	2.5	24	
31	2.3	2.3	S	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.5	3	3	3	2.3	24	
HOURLY MAX	3.2	6.5	3.5	4.0	3.5	4.3	3.8	3.9	4.4	3.6	3.7	3.5	3.4	3.4	3.4	3.5	3.4	3.4	2.9	3.6	3.1	3.1	3.2	3.2				
HOURLY AVG	2.3	2.6	2.4	2.5	2.4	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.4	2.4	2.4	2.4	2.4	2.4				

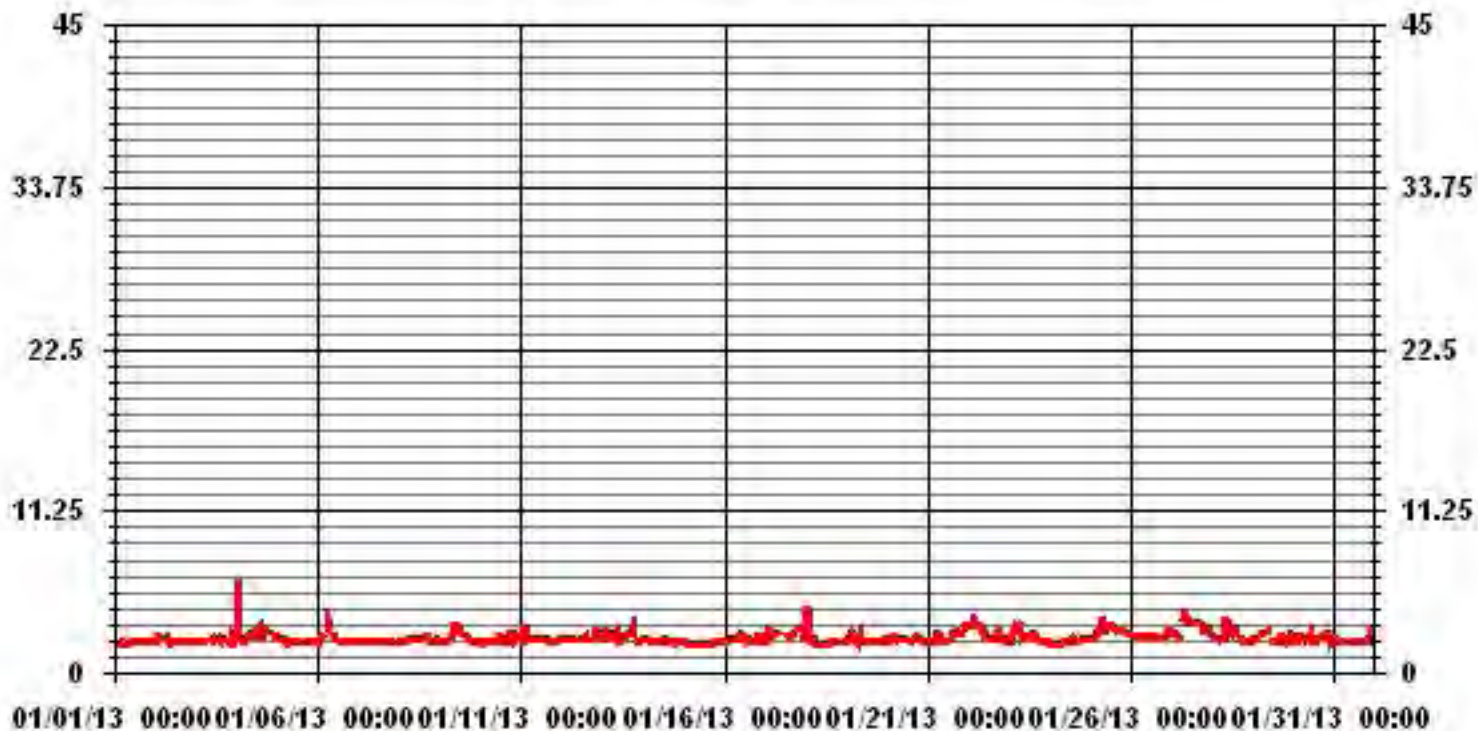
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	704					
MAXIMUM INSTANTANEOUS VALUE:	6.5	PPM	@ HOUR(S)	1	ON DAY(S)	4
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	0.41					

01 Hour Averages



— LICA31 THCMAX PPM

LICA31
 THC / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : THC
 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
< 3.0	5.53	2.55	2.12	1.13	2.12	5.39	2.97	1.27	5.10	10.63	13.61	6.24	6.95	9.50	10.21	10.92	96.31
< 10.0	.00	.00	.00	.14	.14	.14	.42	.42	.42	.99	.42	.00	.28	.00	.14	.14	3.68
< 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	5.53	2.55	2.12	1.27	2.26	5.53	3.40	1.70	5.53	11.63	14.04	6.24	7.23	9.50	10.35	11.06	

Calm : .00 %

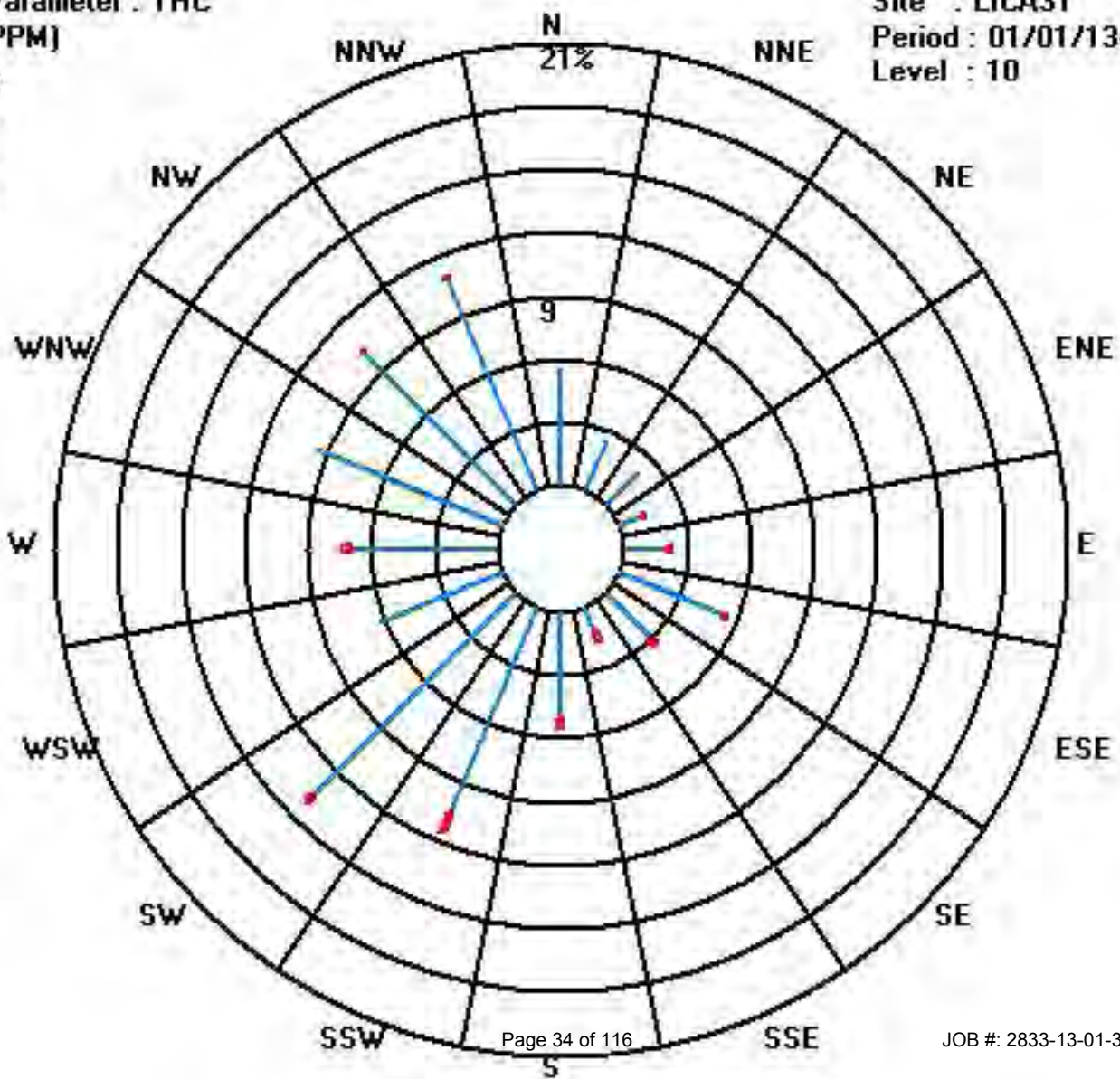
Total # Operational Hours : 705

Distribution By Samples

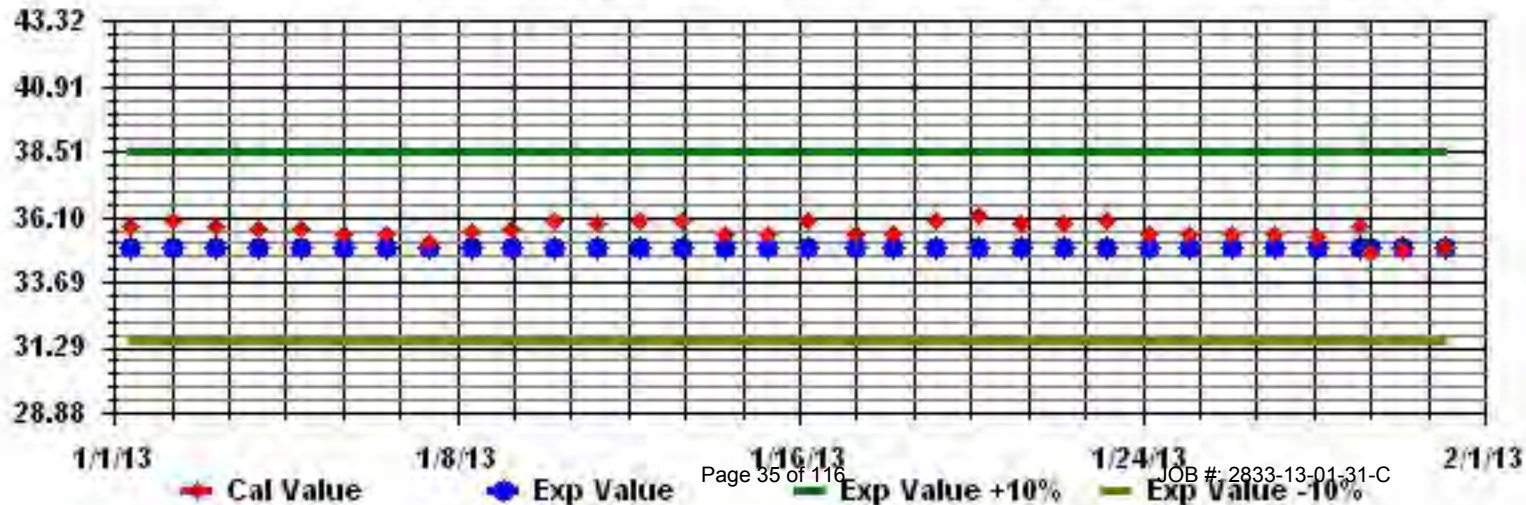
Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	39	18	15	8	15	38	21	9	36	75	96	44	49	67	72	77	679
< 10.0				1	1	1	3	3	3	7	3		2		1	1	26
< 50.0																	
>= 50.0																	
Totals	39	18	15	9	16	39	24	12	39	82	99	44	51	67	73	78	

Calm : .00 %

Total # Operational Hours : 705



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



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

OZONE (O₃) hourly averages in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	RDGS.	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.		
DAY																												
1	36	37	37	37	37	37	37	37	36	S	37	37	38	38	38	38	39	39	40	40	40	40	39	39	40	40	38.0	24
2	39	39	38	38	38	37	38	37	S	35	35	35	35	36	36	35	34	34	34	34	34	34	33	32	39	39	35.7	24
3	31	31	29	27	25	26	25	S	29	37	39	42	43	43	42	42	37	35	38	40	40	40	40	40	43	43	35.8	24
4	37	38	38	39	38	37	S	34	27	26	29	27	28	30	29	30	26	22	22	20	22	24	23	22	39	29.0	24	
5	15	13	20	26	31	S	34	35	30	27	28	31	32	34	34	33	29	25	23	25	29	29	29	30	35	27.9	24	
6	29	29	31	29	S	29	29	28	27	28	27	27	28	31	33	33	32	33	34	34	35	36	38	38	38	31.2	24	
7	38	37	37	S	37	38	38	37	34	33	33	32	32	32	32	32	33	34	33	32	31	30	26	23	38	33.2	24	
8	21	20	S	26	27	29	31	33	33	35	32	34	35	36	37	38	37	36	35	33	33	33	32	30	38	32.0	24	
9	30	S	30	32	33	33	31	30	30	28	27	23	25	27	30	30	27	30	30	29	29	28	29	27	33	29.0	24	
10	S	21	19	19	19	21	23	25	27	28	29	30	31	30	30	29	28	28	27	26	26	27	26	S	31	25.9	24	
11	25	25	26	26	25	24	22	23	22	23	24	24	24	24	23	20	18	20	22	22	20	19	S	18	26	22.6	24	
12	17	17	16	13	13	13	12	17	18	20	25	26	28	33	33	34	32	30	30	28	28	S	29	28	34	23.5	24	
13	28	28	28	27	27	27	27	28	26	26	28	29	29	29	30	30	30	30	29	28	S	27	24	24	30	27.8	24	
14	25	27	24	24	21	24	27	27	28	28	27	28	29	30	30	29	28	26	26	S	26	27	27	27	30	26.7	24	
15	27	28	27	28	29	31	31	33	35	37	37	38	39	39	40	40	40	40	S	40	27	23	26	29	40	33.2	24	
16	31	31	31	31	30	31	30	31	32	33	32	32	30	30	32	34	34	S	34	33	32	31	31	31	34	31.6	24	
17	31	28	27	27	27	27	26	25	25	24	26	27	27	C	C	C	C	C	C	C	22	24	24	23	31	25.9	24	
18	23	23	26	31	35	36	36	39	39	38	39	40	40	40	31	S	27	24	25	26	33	33	32	31	40	32.5	24	
19	31	30	30	30	30	29	30	30	30	29	28	29	29	30	S	30	29	30	29	30	31	33	32	31	33	30.0	24	
20	31	31	31	32	33	33	33	34	34	34	35	36	36	S	36	36	36	36	36	36	37	36	36	36	37	34.5	24	
21	35	33	33	34	34	35	36	37	37	36	35	35	S	36	34	33	32	31	32	30	30	29	28	26	37	33.1	24	
22	26	26	25	25	26	27	26	27	29	29	29	S	33	34	36	37	37	36	35	34	35	36	35	35	37	31.2	24	
23	35	34	34	34	32	31	30	31	31	31	S	30	32	32	32	32	33	34	34	34	34	35	36	35	34	36	32.9	24
24	35	35	36	36	35	35	35	34	34	S	34	34	34	34	33	32	30	30	30	30	29	27	28	26	36	32.4	24	
25	24	22	22	20	17	16	16	17	S	20	21	23	24	24	24	24	21	21	21	20	20	19	19	24	20.7	24		
26	18	17	15	17	16	17	18	S	18	19	21	21	22	23	24	23	22	22	24	23	21	18	17	17	24	19.7	24	
27	17	18	18	19	20	25	S	22	22	22	22	27	28	30	30	29	26	28	30	30	28	26	26	30	30	24.9	24	
28	31	32	35	37	38	S	36	37	37	36	36	32	34	31	20	9	12	17	20	20	20	20	24	25	38	27.8	24	
29	24	26	27	27	S	25	24	24	25	25	27	28	28	28	29	29	29	28	27	28	27	28	27	29	29	26.8	24	
30	28	28	27	S	27	27	25	24	23	24	26	28	30	30	30	29	28	30	30	30	30	30	29	27	30	27.8	24	
31	28	28	S	27	28	29	28	27	27	26	26	26	25	25	24	22	20	19	19	17	16	17	19	18	29	23.5	24	
HOURLY MAX	39	39	38	39	38	38	38	39	39	38	39	42	43	43	43	42	42	40	40	40	40	40	40	40	40			
HOURLY AVG	28.2	27.7	28.2	28.2	28.6	28.6	28.8	29.8	29.1	28.9	29.8	30.4	30.9	31.5	31.5	30.8	29.7	29.3	29.2	29.3	28.8	28.7	28.8	28.1				

STATUS FLAG CODES

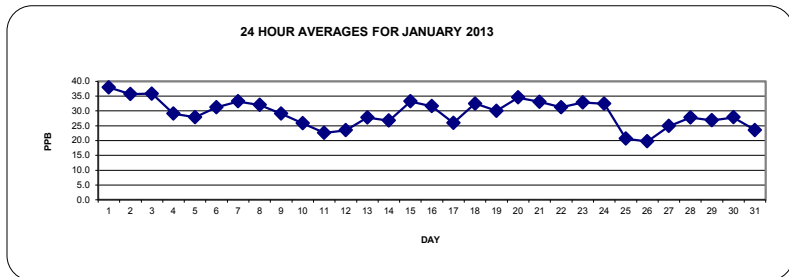
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

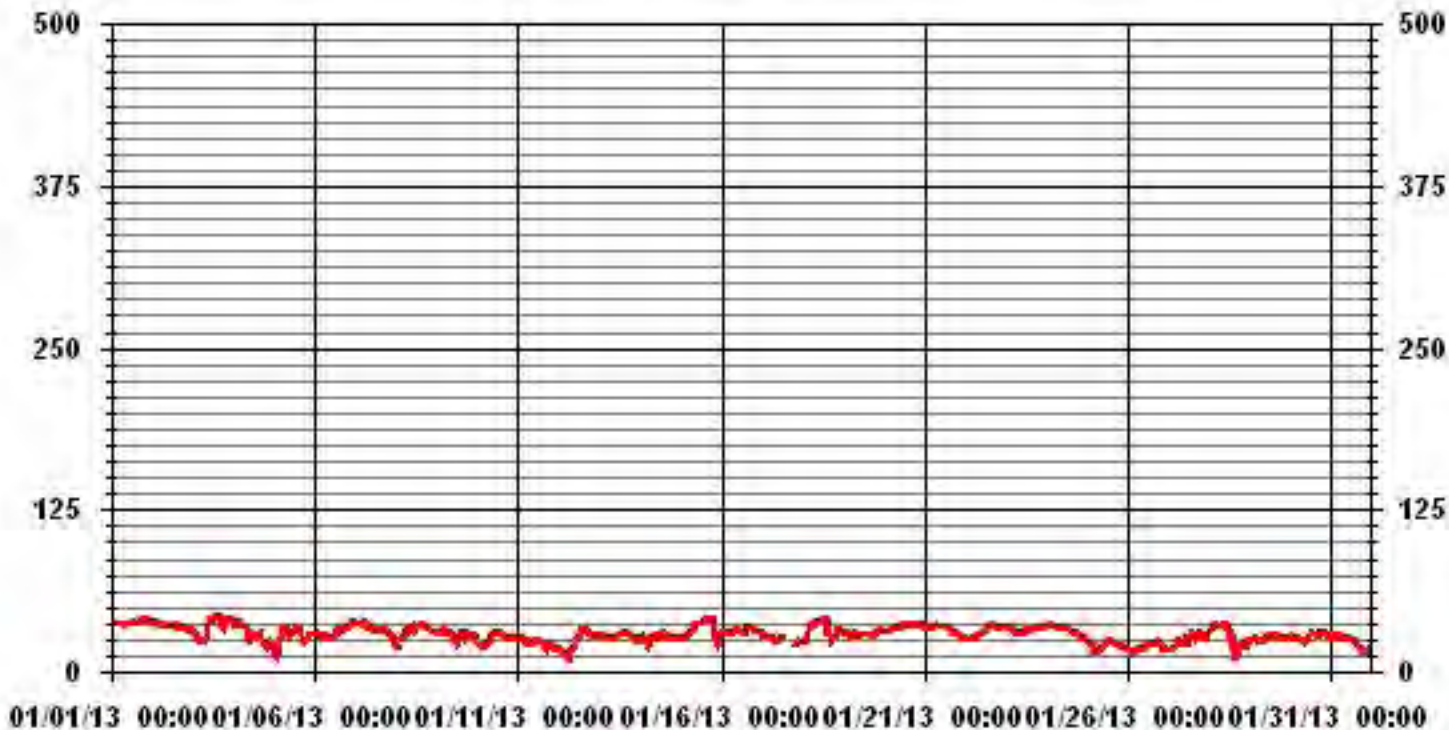
ALBERTA ENVIRONMENT: 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	707				
MAXIMUM 1-HR AVERAGE:	43	PPB	@ HOUR(S)	VAR	ON DAY(S) 3
MAXIMUM 24-HR AVERAGE:	38.0	PPB			ON DAY(S) 1
					VAR-VARIOUS
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	6.03		MONTHLY AVERAGE:	29.3	PPB



01 Hour Averages



— LICA31_03_PPb

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

OZONE MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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		
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.	
DAY																												
1	37	37	38	37	37	37	37	37	37	S	37	38	38	38	38	39	39	40	40	40	40	40	40	40	40	40	38.3	24
2	40	40	39	38	38	38	38	37	S	36	35	35	36	36	36	36	35	34	35	34	34	34	34	34	33	40	36.1	24
3	32	31	30	28	26	26	26	S	34	38	41	43	43	43	43	42	38	36	39	40	40	40	40	40	40	43	36.6	24
4	39	40	39	39	38	37	S	35	31	29	29	28	31	31	30	31	31	23	23	21	23	25	24	23	40	30.4	24	
5	19	16	24	28	33	S	34	35	35	28	30	32	33	35	35	34	32	27	24	28	30	29	31	30	35	29.7	24	
6	29	30	32	30	S	30	30	28	28	28	27	29	32	34	34	33	34	34	34	34	36	37	38	39	39	39	31.9	24
7	38	38	37	S	38	39	38	37	36	33	33	33	33	32	32	33	34	34	34	33	32	31	29	24	39	34.0	24	
8	22	21	S	27	28	32	32	34	35	36	34	34	35	37	37	38	38	36	36	34	33	33	32	30	38	32.8	24	
9	31	S	31	32	34	34	32	31	31	28	28	24	26	28	30	30	29	31	30	30	30	29	29	28	34	29.8	24	
10	S	22	20	22	21	22	24	26	27	28	30	31	32	31	31	30	29	29	27	27	27	28	26	S	32	26.8	24	
11	26	26	26	26	25	25	22	23	23	23	25	26	24	24	24	22	19	21	23	23	21	20	S	19	26	23.3	24	
12	17	17	16	15	14	13	14	18	19	23	25	26	32	33	34	34	33	32	30	29	29	S	29	28	34	24.3	24	
13	28	28	29	28	28	28	27	28	28	27	29	29	29	30	30	30	31	30	30	28	S	28	25	25	31	28.4	24	
14	26	27	25	24	22	26	27	28	28	28	28	29	30	30	30	29	27	26	S	27	27	27	27	27	30	27.2	24	
15	28	28	27	29	30	31	32	34	36	37	38	38	39	39	40	40	40	S	41	38	26	27	31	41	34.3	24		
16	31	32	31	33	31	31	31	31	33	33	33	32	32	32	33	35	35	S	35	34	33	31	32	31	35	32.4	24	
17	31	30	28	28	27	27	27	25	26	25	26	28	28	27	C	C	C	C	C	C	23	24	24	24	31	26.6	24	
18	24	25	30	33	36	37	37	40	40	38	40	40	41	41	39	S	29	25	26	29	33	33	32	31	41	33.9	24	
19	31	31	30	30	30	30	30	30	31	30	29	29	30	30	S	30	29	31	30	32	32	34	34	32	34	30.7	24	
20	31	31	31	32	33	33	33	34	34	34	35	36	36	S	37	36	37	36	37	37	37	36	36	36	37	34.7	24	
21	36	34	33	34	35	36	36	37	37	37	36	36	S	36	35	34	33	32	32	31	30	30	28	27	37	33.7	24	
22	26	26	25	26	26	27	27	29	29	29	30	S	34	35	37	37	38	36	36	35	36	36	35	35	38	31.7	24	
23	35	35	34	34	33	31	31	32	32	32	S	31	32	33	32	32	33	34	35	35	36	36	35	35	36	33.4	24	
24	35	36	36	36	36	35	35	35	34	S	34	34	34	34	34	33	32	31	31	31	30	28	29	28	36	33.1	24	
25	25	22	22	21	18	16	17	18	S	21	22	23	24	25	25	24	23	21	22	21	20	20	19	19	25	21.2	24	
26	19	18	17	17	17	18	19	S	18	20	21	22	22	23	24	23	23	23	23	25	24	21	20	17	18	25	20.4	24
27	18	18	19	19	24	26	S	25	23	24	24	29	29	32	32	30	28	30	32	31	29	27	28	31	32	26.4	24	
28	32	34	37	37	39	S	38	37	37	37	37	35	35	34	28	13	15	19	20	21	21	21	26	26	39	29.5	24	
29	24	27	27	28	S	27	24	25	25	26	27	29	28	28	29	29	28	28	28	28	28	28	28	27	29	27.3	24	
30	28	28	28	S	28	27	26	25	24	24	27	30	30	30	31	29	29	30	30	30	30	30	30	29	31	28.4	24	
31	29	29	S	27	29	29	29	27	27	26	26	26	26	25	25	23	21	20	19	18	16	19	19	18	29	24.0	24	
HOURLY MAX	40	40	39	39	39	39	38	40	40	38	41	43	43	43	43	43	42	40	40	41	40	40	40	40				
HOURLY AVG	28.9	28.6	29.0	28.9	29.4	29.2	29.4	30.4	30.3	29.6	30.6	31.1	31.7	32.1	32.6	31.4	30.9	30.1	29.9	30.3	29.8	29.3	29.4	28.8				

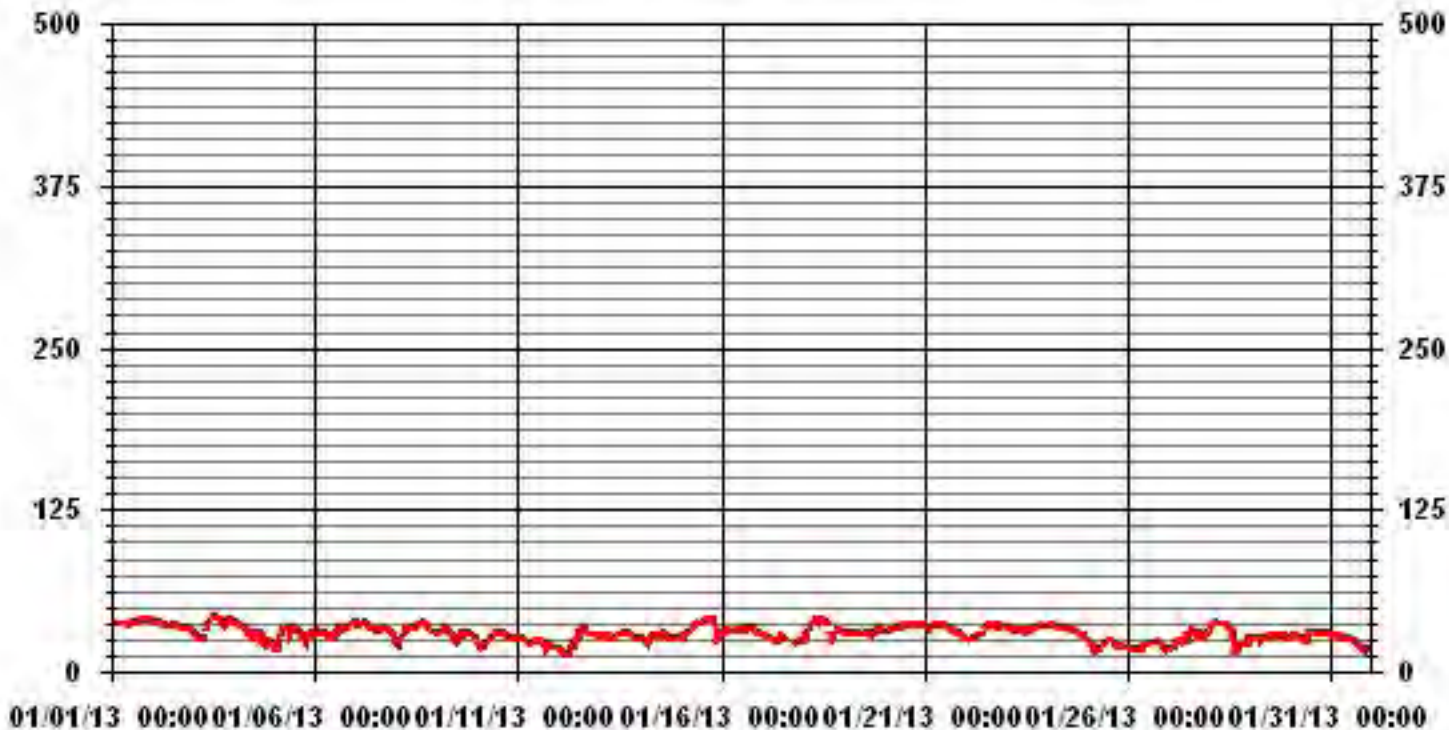
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	707				
MAXIMUM INSTANTANEOUS VALUE:	43	PPB	@ HOUR(S)	VAR	ON DAY(S) 3
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	6	HRS			
STANDARD DEVIATION:	5.89				

01 Hour Averages



— LICA31 O3MAX PPB

LICA31
O3_ / WDR Joint Frequency Distribution (Percent)

January 2013

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	5.51	2.54	2.12	1.27	2.26	5.51	3.39	1.69	5.51	11.59	14.00	6.22	7.21	9.47	10.32	11.31	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.51	2.54	2.12	1.27	2.26	5.51	3.39	1.69	5.51	11.59	14.00	6.22	7.21	9.47	10.32	11.31	

Calm : .00 %

Total # Operational Hours : 707

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50	39	18	15	9	16	39	24	12	39	82	99	44	51	67	73	80	707
< 110																	
< 210																	
>= 210																	
Totals	39	18	15	9	16	39	24	12	39	82	99	44	51	67	73	80	

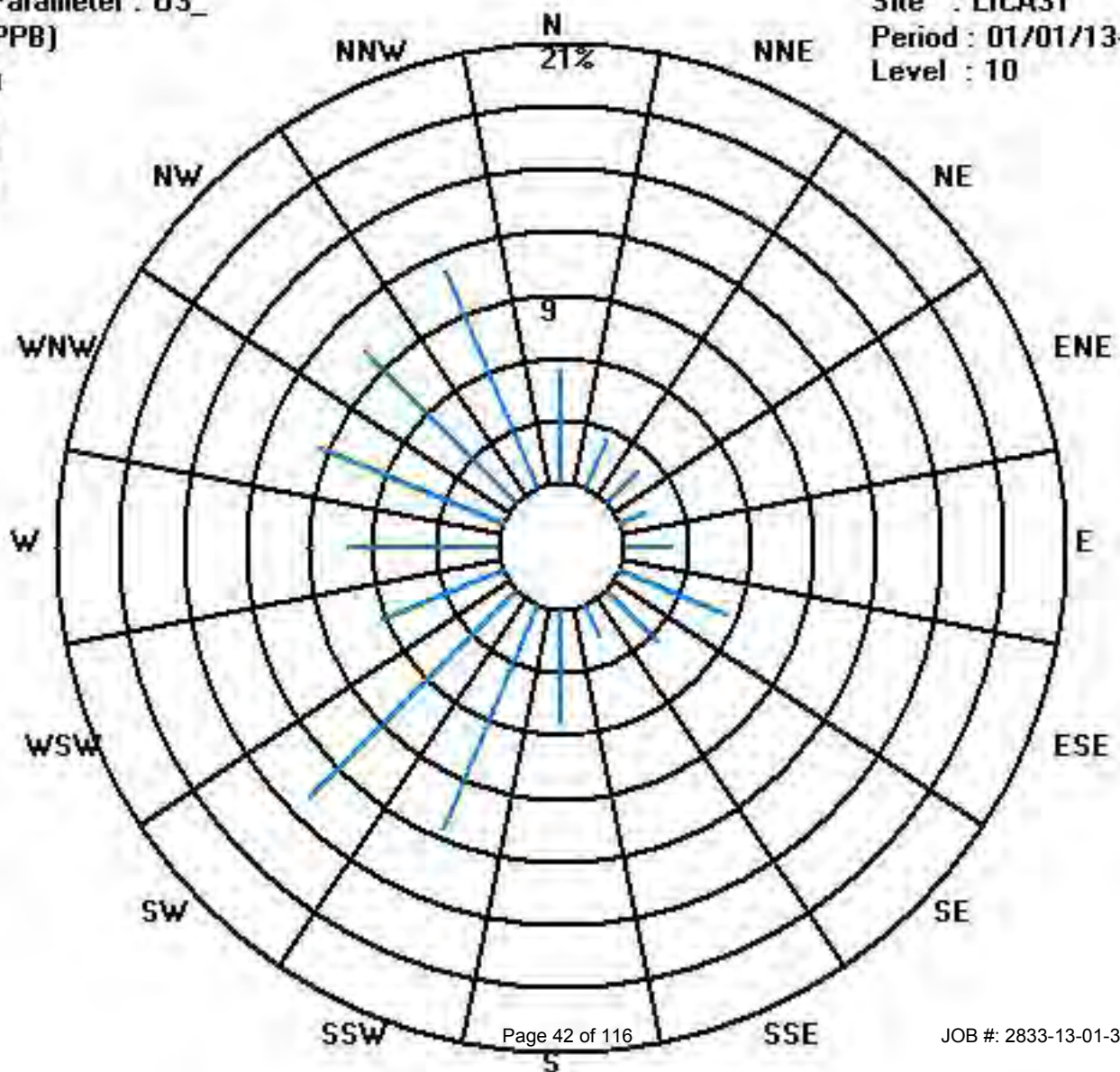
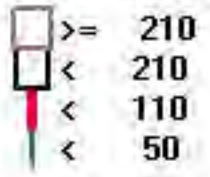
Calm : .00 %

Total # Operational Hours : 707

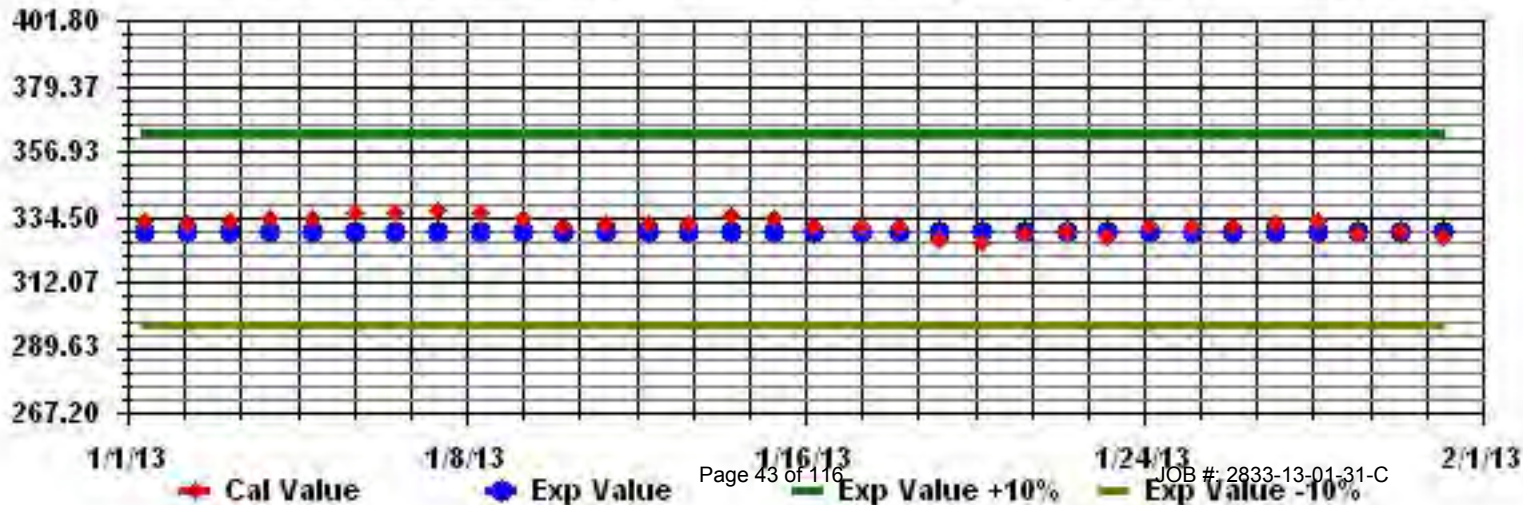
Class Limits (PPB)

Period : 01/01/13-01/31/13

Level : 10



Calibration Graph for Site: LICA31 Parameter: 03_ Sequence: 03 Phase: SPAll



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

NITROGEN DIOXIDE hourly averages in ppb

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	RDGS.		
DAY	HOURLY MAX	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.		
1		0.9	0.5	0.1	0	0	0	0	0	S	0.2	0.3	0.5	0.4	0.5	0.5	0.2	0.4	0.2	0.3	0.4	0.2	0.2	0.2	0.2	0.9	0.3	24	
2		0.1	0.3	0.4	0.3	0.9	1.1	0.9	0.7	S	1.4	1.7	2.9	3.6	3.6	4.9	6	7.3	7.1	6	5.6	5.5	5.1	5.4	5.2	7.3	3.3	24	
3		6.2	6.1	6.8	8.8	10.6	10	10.6	S	7.5	3.4	2.2	1	0.4	0.4	0.5	0.5	0.6	3.2	3.9	2.1	0.9	0.7	0.6	0.7	10.6	3.8	24	
4		1.6	1.4	1.2	0.6	0.9	0.8	S	2.1	5.8	7.1	5.1	6.2	5.4	4.7	5.9	5.9	8.4	11.5	10.9	11.7	10.6	7.9	8.5	10	11.7	5.8	24	
5		17	20.8	14.9	9.1	4.7	S	2.2	1.5	3.1	5.3	4.4	3.1	2.7	2.6	3	4.5	8.8	11.4	12.2	10	6.7	6.6	5.7	5.4	20.8	7.2	24	
6		5.9	5.4	5.2	6.8	S	5.2	4.9	5.8	5.4	5.1	5.3	5.7	5.7	5.1	4.3	3.9	4	3.3	2.6	2.3	1.6	1.1	0.8	0.7	6.8	4.2	24	
7		0.6	0.6	0.4	S	0.4	0.1	0.3	0.4	1	1.6	1.7	3.7	3.9	4.3	4.4	5.9	5	4.6	4.7	4.9	4.8	5.3	8.1	10	10	3.3	24	
8		11.1	12.4	S	5	3.6	2.4	1.7	1.2	0.7	0.3	0.8	0.6	0.4	0.3	0.4	0.3	0.4	0.5	0.9	1.5	1.8	1.8	3.1	4.8	12.4	2.4	24	
9		4.8	S	4.5	3.7	3.5	3.2	4.9	5	5.2	6.3	6.2	8.1	6.7	5.7	4.4	5.1	8	5	4.4	3.8	2.7	2.7	1.9	1.1	8.1	4.6	24	
10		S	1.4	2.9	3.2	2.5	2.1	2.3	1.8	1.4	1	0.8	0.6	0.8	1	1.2	1.9	2.6	2.3	3.2	2.9	2.9	2.5	2.9	S	3.2	2.0	24	
11		2.8	2.5	2.1	2	2.7	3.3	4.8	3.8	4.6	3.7	3.1	3.5	4.8	5.1	6.6	10.2	12.9	11.8	10.6	10.2	11.5	12	S	11	12.9	6.3	24	
12		12.2	12.6	13.6	15.3	14.5	14.7	14.2	11.3	9.6	7.7	5.1	4.4	3.3	1.9	1.7	1.4	1.8	1.9	1.7	2.4	2.3	S	2.2	2.3	15.3	6.9	24	
13		2.2	2.2	2.4	3.1	2.5	2.4	2.5	2	1.8	2	1.7	1.5	1.6	1.8	1.6	1.8	2.1	1.8	2	2.8	S	2.5	4.8	5.2	5.2	2.4	24	
14		4.1	3.7	6.3	8	10.8	8.8	6.8	6	5.5	5.3	5.2	5.2	5.1	5	5.3	6	7.1	8	7.2	S	5.3	4.1	3.4	3.1	10.8	5.9	24	
15		2.6	2.5	2.4	1.8	1.3	1.4	1.2	0.7	0.3	0.4	0.4	0.6	0.4	0.3	0.5	0.3	0.6	0.4	S	0.2	1.3	1.5	0.8	0.4	2.6	1.0	24	
16		0.3	0.2	0.1	0.3	0.5	0.4	0.5	0.2	0.1	0	0.1	0.3	0.4	0.2	0.7	0.2	0.2	S	0	0.3	0.6	0.6	0.5	0.8	0.8	0.3	24	
17		0.8	1.1	1.9	1.9	1.4	1.6	1.7	2.5	2.5	C	C	C	C	C	C	C	S	4.9	C	C	4	3.2	3.5	4.4	4.9	2.5	24	
18		4.2	3.9	4.1	2.3	0.9	0.7	0.7	0	0.3	0.3	0.3	0.5	0.1	0	0.3	S	1.2	2.2	2.4	1.8	0.3	0.1	0.1	0	4.2	1.2	24	
19		0	0.2	0.2	0.1	0	0	0	0	0	0	0.6	0.5	0.5	0.4	S	0.5	0.6	0.7	0.9	0.3	0	0	0	0	0.9	0.2	24	
20		0	0.2	0.2	0.2	0.1	0.4	0.1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.4	0.1	24
21		0.5	1.3	1.2	0.9	0.8	0.6	0	0	0.4	1.3	1.1	S	0.9	1.9	2.8	4.5	5.3	4.7	5.3	5	5.1	5.9	6.8	6.8	2.4	24		
22		6.9	6.6	6.5	5.8	4.7	3.9	3.9	3.2	2.7	2.7	2.4	S	0.9	0.8	0.6	0.5	0.9	1.5	2.2	2.2	1.9	1	1	1	6.9	2.8	24	
23		1.1	1.4	1.4	0.9	1.7	3.2	3.4	2.5	2.7	3.2	S	3.7	3.5	3.3	4.1	3.9	3.5	2.9	2	2.1	1.4	1.1	1.6	1.5	4.1	2.4	24	
24		1.2	0.8	0.5	0.4	0.4	0.5	0.9	1.2	S	1.5	1.1	1.1	1.2	1.8	2.4	4.9	4.8	4.1	4.4	4.7	6.2	4.8	4.7	6.2	2.3	24		
25		5.5	5.8	6.4	7.2	9	9.4	9.2	9.4	S	6.8	6.7	6.4	5.9	5.8	5.6	6.7	8.5	8.5	7.7	8.2	8.5	8.4	9.7	9.2	9.7	7.6	24	
26		9.5	11.2	14.8	11.8	11.9	11.6	10.8	S	10.6	10.6	10.6	11.1	12.1	14	13	13.6	15.7	15.6	13.8	13.7	13.9	15.1	15.2	15.1	15.7	12.8	24	
27		15.5	14.2	13.6	13.1	12.4	9.2	S	9.6	9	8.2	10.2	8.1	7.7	7.4	7.6	8.7	12.4	8.7	7.1	5.7	6	6.7	6.3	5.1	15.5	9.2	24	
28		4.4	3.6	2.7	2.3	2.2	S	2.6	2.1	1.7	2.9	1.7	3.1	2.1	3.1	7.5	13.1	8.6	5.8	4.1	3.7	4.1	3.9	2.2	1	13.1	3.8	24	
29		1.1	0.6	0.2	0.2	S	0	0	0.1	0	0	0	0	0.2	0.1	0.1	0.1	0.2	0.7	1.9	0.2	0.6	1	0.9	1.4	1.9	0.4	24	
30		0.6	0.4	0.6	S	0.9	1	2.7	3	4.6	4	2.1	0.7	0.5	0.6	1	1.7	2.4	1.6	1.3	0.9	0.8	0.8	1.3	3.2	4.6	1.6	24	
31		2.5	2.3	S	2.5	1.9	1.4	2	2.7	3	3.3	3.2	3.2	3.6	3.5	4.4	5.6	6.9	7.5	7.6	9.5	9.4	8.9	8.2	8.2	9.5	4.8	24	
HOURLY MAX		17	21	15	15	15	15	14	11	11	11	11	11	12	14	13	14	16	16	14	14	14	15	15	15				
HOURLY AVG		4.2	4.2	4.1	4.1	3.7	3.4	3.3	2.7	3.1	3.3	2.9	3.0	2.9	2.9	3.2	3.9	4.7	4.8	4.5	4.1	4.0	3.9	3.7	4.1				

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

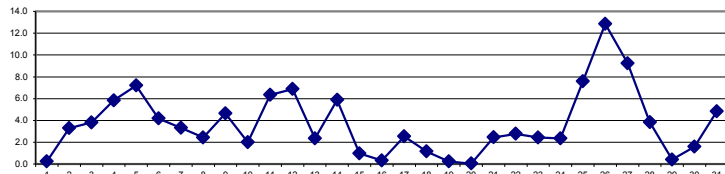
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

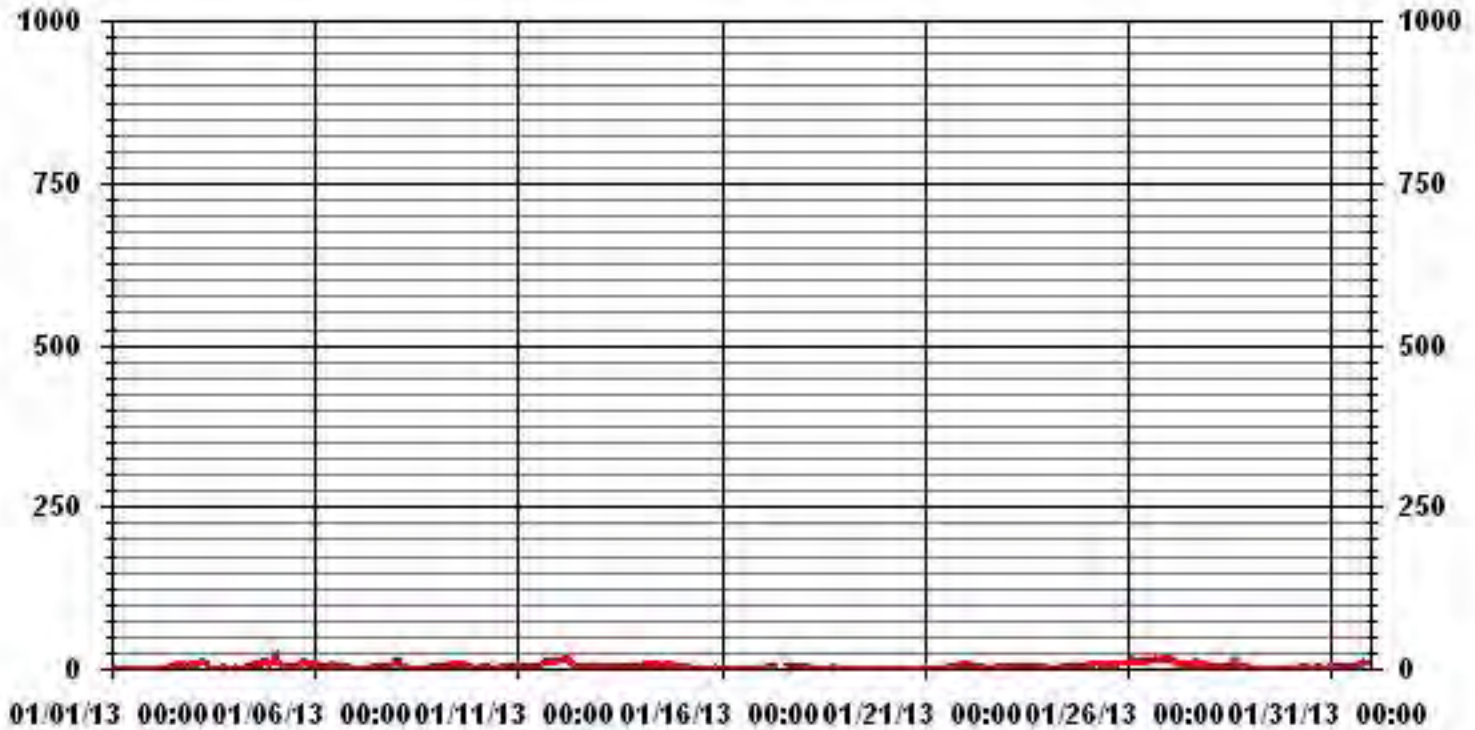
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	655					
MAXIMUM 1-HR AVERAGE:	20.8	PPB	@ HOUR(S)	1	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	12.8	PPB			ON DAY(S)	26
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	3.77		MONTHLY AVERAGE:	3.70	PPB	

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

JANUARY 2013

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00				
DAY																												
1	1.5	1.3	1	0.5	0.5	0.6	0.3	0.4	0.2	S	0.8	0.9	1.9	1.1	1	1.2	0.9	1.2	1	1	1	1	1	0.8	1.9	0.9	24	
2	0.7	0.9	0.9	0.9	1.5	1.8	1.7	1.6	S	9.9	3.3	4.1	4.7	5.1	6.4	7.4	9	8.9	7.1	6.5	7	6.1	6.2	6.4	9.9	4.7	24	
3	7.4	7.1	8.5	11.7	12	11.4	12.5	S	10.3	5.1	3.1	2.1	1.2	1.3	1.2	1.2	3.1	4.6	4.9	3.6	2	1.6	1.6	1.4	12.5	5.2	24	
4	3.4	2.9	2.7	1.6	1.7	1.5	S	4.3	8.9	9.3	6.2	7.5	7	6	7.2	7.2	13.4	13.4	12.7	13.6	12.2	9.5	9.7	13.2	13.6	7.6	24	
5	21.2	23.1	19.5	12.6	7.3	S	2.5	2.2	5	5.8	4.9	3.7	2.9	6.1	3.3	5.6	11	12.7	13.6	11.4	7.5	7.2	6.1	6	23.1	8.7	24	
6	6.4	5.8	5.7	7.2	S	5.7	4.9	5.9	5.6	5.2	12	5.7	5.8	5.1	4.2	3.9	4	3.5	2.9	2.6	1.7	1	0.7	0.8	12	4.6	24	
7	0.5	0.5	0.4	S	0.8	0.9	1.6	0.9	2.1	3.3	2.7	5.4	4.5	5.3	5.1	6.8	5.8	5.4	5.9	5.4	5.3	6.3	10.2	11.5	11.5	4.2	24	
8	11.8	13.8	S	6.6	4.7	3.2	2.4	2.1	1.3	0.9	1.5	1.1	0.9	1.1	0.9	0.9	1.1	1.1	2.1	2.2	3	2.5	4.3	5.3	13.8	3.3	24	
9	5.4	S	5.5	4.3	4.4	4.1	6	5.7	6.3	7.1	8.1	9.5	8.4	6.7	5.8	7.4	9.6	6.3	5.5	4.5	3.9	3.4	3	2.1	9.6	5.8	24	
10	S	2.7	4.2	4.7	3.7	3.4	3.2	2.9	2.2	1.9	1.9	1.7	1.4	1.9	2.4	3.3	4.5	4.2	4.4	4.1	4.2	4.3	4.9	S	4.9	3.3	24	
11	2.8	2.4	2.1	2.2	3.1	3.7	16.3	5.4	19.2	3.9	9	13.6	11.5	5	7.2	12.2	13.4	12.4	11.1	10.4	12.6	12.2	S	12.3	19.2	8.9	24	
12	13.4	13.5	14.8	16.5	16.5	15.6	15.3	13.7	11.6	9.1	6.6	5.8	4.6	2.7	3.4	3.5	3.6	3.7	3.5	3.7	4.1	S	3	3	16.5	8.3	24	
13	3	3	3.4	4.2	3.9	3.7	3.8	3.7	3	3.2	3.3	2.6	2.6	2.8	2.5	3.1	17	3.1	3.1	3.8	S	4.4	7	7.2	17	4.2	24	
14	5.1	5.2	8.4	10.5	12.5	10.9	8.1	7.5	6.3	6	6.5	6.2	6.2	7.4	7.3	7.2	14.4	13.8	8.5	S	5.3	4.4	3.5	3.2	14.4	7.6	24	
15	2.6	2.6	2.8	2.1	1.4	1.3	1.2	0.6	0.3	0.5	0.5	0.5	0.3	0.5	1.1	0.3	0.6	6.7	S	1.2	2.9	2.9	1.7	1.3	6.7	1.6	24	
16	1.2	1.1	1	0.8	1.4	1.3	1.5	1.2	1.1	1	1.1	1.2	1.2	1.3	5.1	1.4	1.1	S	1.1	1.6	1.6	1.8	1.6	2.4	5.1	1.5	24	
17	2.4	3.1	3.2	3	2.6	2.7	3	3.7	3.9	C	C	C	C	C	C	C	S	6.1	C	C	5.8	4.4	4.9	5.8	6.1	3.9	24	
18	5.8	5.7	5.7	3.8	2.6	2.6	9.3	1	2	4.2	1.3	17.3	1.6	1.3	1.3	S	2.8	3.6	3.4	3.3	1.7	1.1	1.1	1	17.3	3.6	24	
19	1	1.4	1.1	1.1	1.1	0.9	0.9	1	1.1	0.9	1.9	2	2.1	1.8	S	2	1.9	1.8	2.2	1.6	1.2	1	1	1.3	2.2	1.4	24	
20	1.1	1.4	1.4	1.3	1.2	1.6	1.3	1.2	1.4	1	1.5	1.1	1.2	S	1	1.1	1.2	1.2	1.1	1.2	1.6	1.4	1.6	1.5	1.6	1.3	24	
21	2.9	2.9	3	2.5	2.4	2.1	1.5	1.4	1.5	2.5	3.1	2.5	S	2	2.9	4.1	5.9	6.9	5.9	6.7	6.2	6.8	7.3	8.2	8.2	4.0	24	
22	8.1	7.8	7.6	7	6.9	5.2	5.2	4.5	4.4	3.8	4	S	1.7	1.8	1.5	1.9	3	2.9	7.1	3.9	4.9	1.7	2.2	2.2	8.1	4.3	24	
23	2	2.6	2.4	1.9	4	4.3	4.5	3.6	3.5	4.1	S	4.7	4.5	4.3	5.5	5.1	4.5	4.5	3.4	3.1	2.7	2.2	2.6	2.6	5.5	3.6	24	
24	2.3	1.7	1.6	1.4	1.5	1.6	1.7	1.9	2.3	S	8.9	2.3	8.1	2.2	20.9	4.1	18.3	7.3	6	12.6	5.9	7.7	6.2	5.6	20.9	5.7	24	
25	6.8	7.1	7.5	9	10.6	10.7	10.6	10.6	S	7.9	7.3	7.1	7	6.5	6.7	8.5	12.8	9.9	9.7	9.4	9.3	9.2	43.3	10.1	43.3	10.3	24	
26	10.6	16.6	19.9	12.5	12.8	12.2	11.8	S	25.8	11.2	17.8	12.2	13.4	16.4	14.1	15.3	17.4	17.3	15.5	14.6	14.8	16.3	16.1	15.9	25.8	15.2	24	
27	16.2	15.3	14.6	14.5	15	10.7	S	10.5	10.6	9.7	11.4	22.6	8.8	8.4	8.5	9.9	62	10.4	21	7	7.5	7.8	7.4	6.3	62	13.7	24	
28	5.1	4.5	3.9	3.3	3.2	S	6.4	2.3	1.8	14.6	2.5	4.5	2.4	4	13.6	15.6	9.4	8	4.6	4.1	4.5	4.3	3.9	1.4	15.6	5.6	24	
29	1.4	1.2	0.3	0.3	S	0.9	1	1.1	0.9	1	1.2	1.3	1.2	1	1.3	1.4	1.9	2.1	7.9	1.6	2	2.1	2.1	2.6	7.9	1.6	24	
30	2.3	1.5	2	S	1.8	2.3	4.3	4.9	6	5.5	4.1	9.5	1.6	1.8	2.3	2.9	3.5	3.1	2.9	1.9	2.5	2.3	2.3	6.5	9.5	3.4	24	
31	4.3	3.3	S	4.4	4.7	3.1	4.1	4.3	4.7	5	5	4.7	5	5.2	6	7.8	9.1	9.4	9.6	11.8	11.1	11	9.7	10	11.8	6.7	24	
HOURLY MAX	21	23	20	17	17	16	16	14	26	15	18	23	13	16	21	16	62	17	21	15	15	16	43	16				
HOURLY AVG	5.3	5.4	5.3	5.3	5.0	4.5	5.1	3.8	5.3	5.1	4.9	5.6	4.3	4.0	5.2	5.3	8.9	6.5	6.5	5.5	5.2	4.9	5.9	5.3				

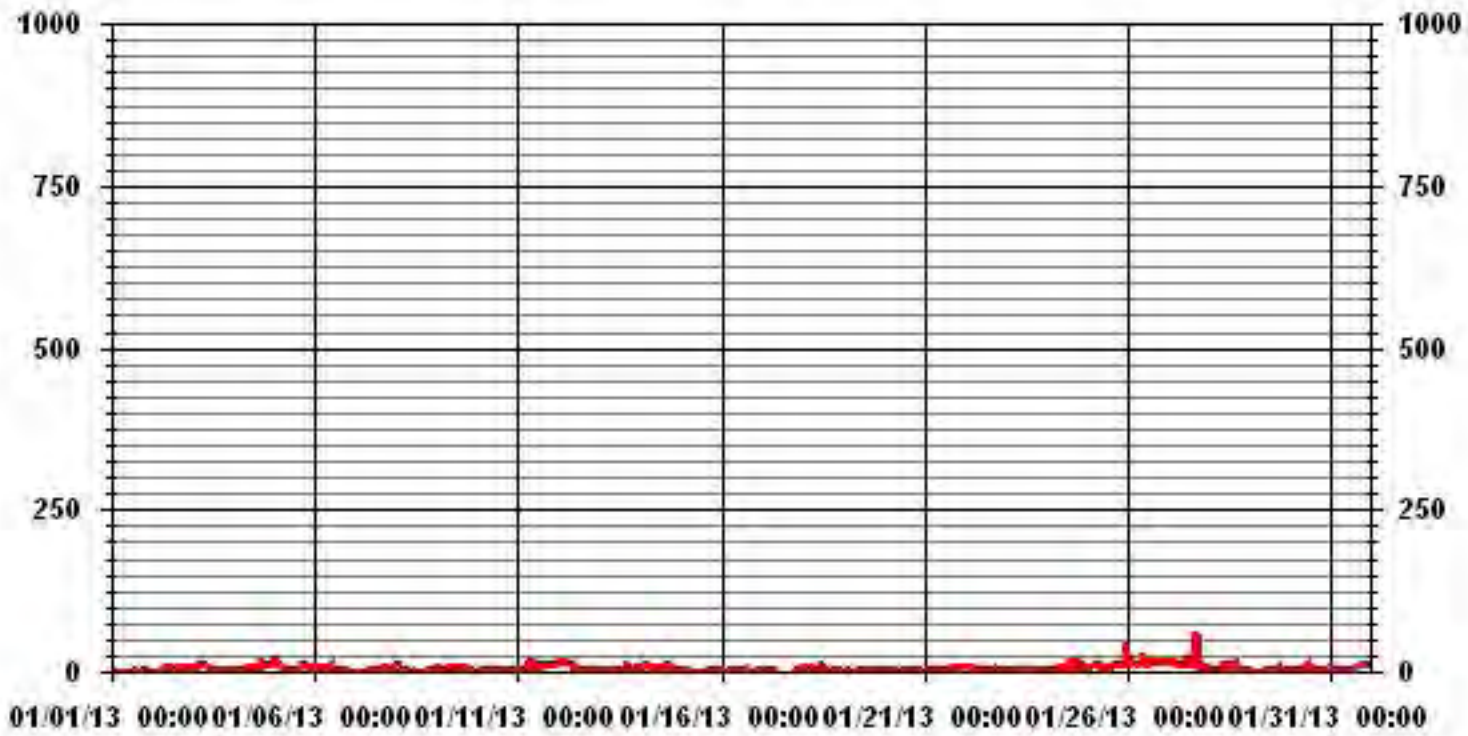
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	703					
MAXIMUM INSTANTANEOUS VALUE:	62	PPB	@ HOUR(S)	16	ON DAY(S)	27
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	5.13					

01 Hour Averages



— LICA31 NO2MAX PPB

LICA31
 NO2_ / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : NO2_
 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	5.53	2.55	2.13	1.27	2.27	5.39	3.12	1.70	5.53	11.64	14.06	6.25	7.24	9.51	10.36	11.36	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	5.53	2.55	2.13	1.27	2.27	5.39	3.12	1.70	5.53	11.64	14.06	6.25	7.24	9.51	10.36	11.36	

Calm : .00 %

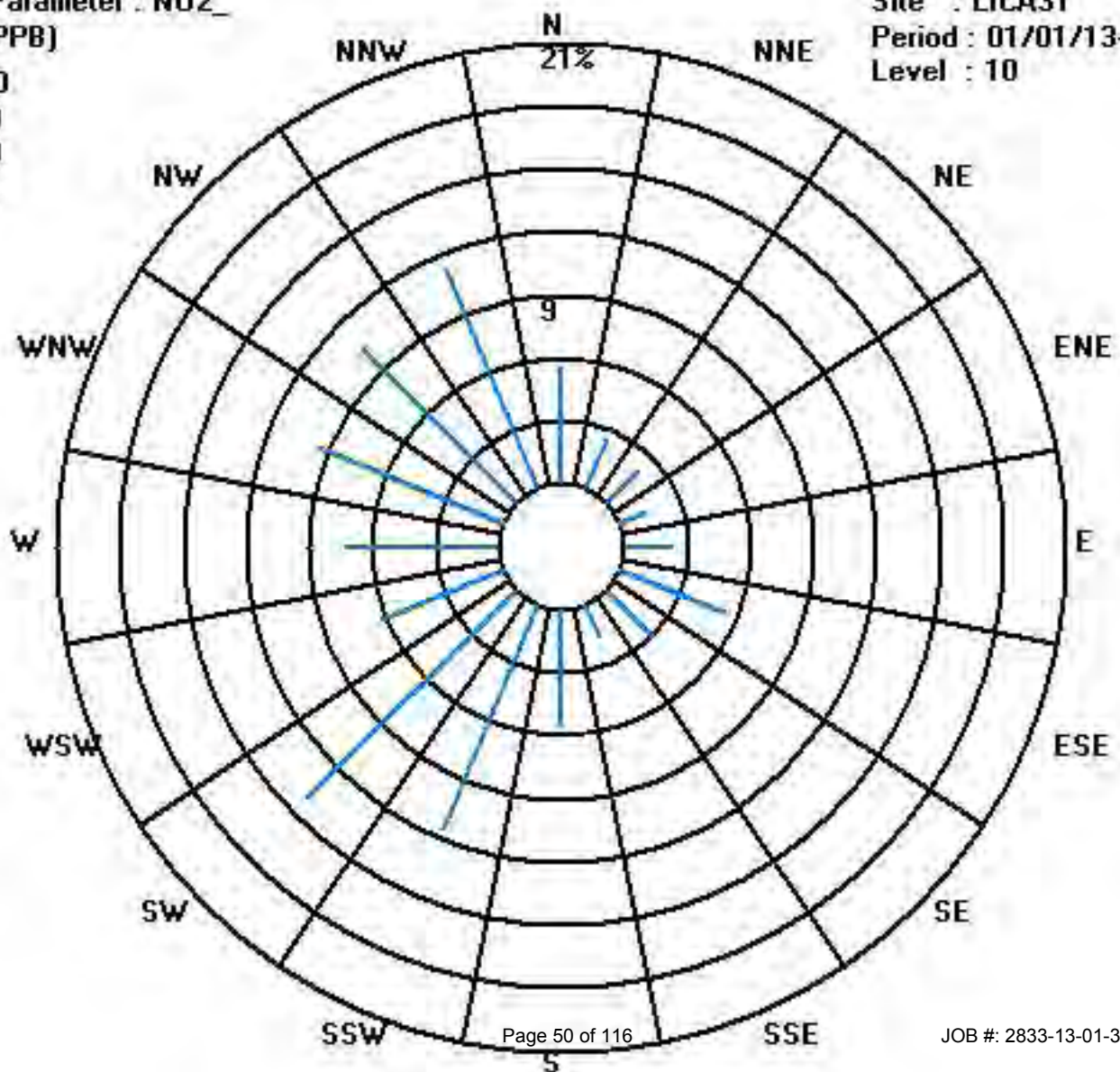
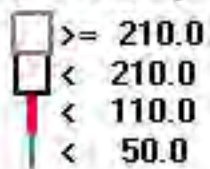
Total # Operational Hours : 704

Distribution By Samples

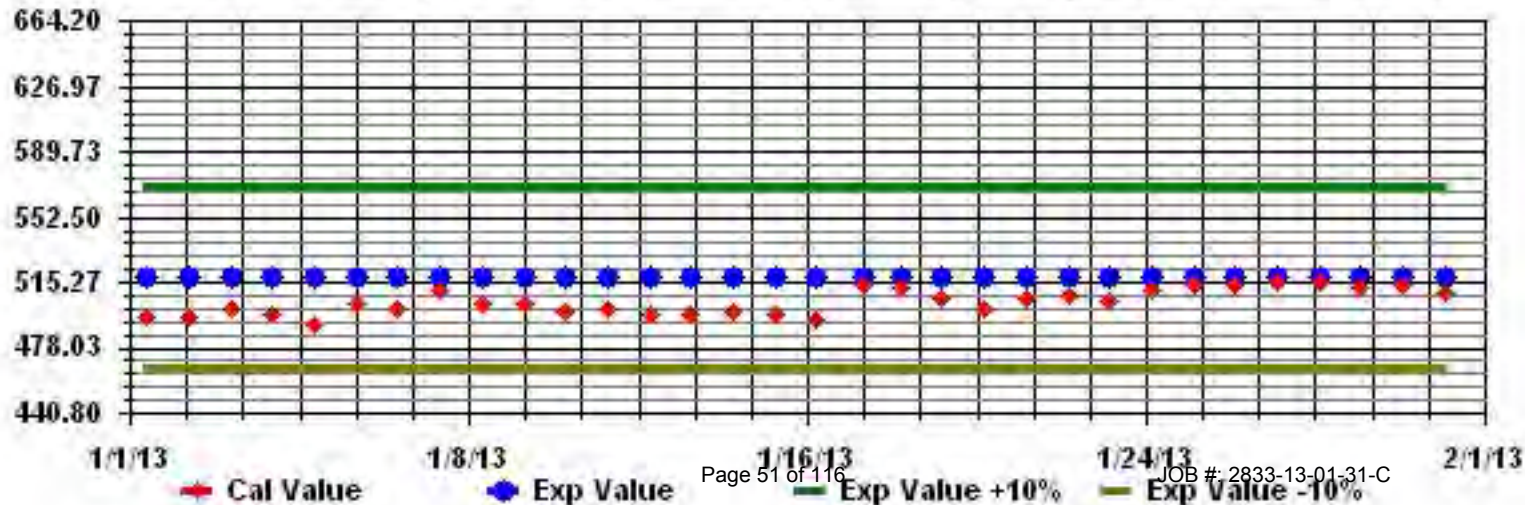
Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	39	18	15	9	16	38	22	12	39	82	99	44	51	67	73	80	704
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	39	18	15	9	16	38	22	12	39	82	99	44	51	67	73	80	

Calm : .00 %

Total # Operational Hours : 704



Calibration Graph for Site: LICA31 Parameter: H02_ Sequence: H02 Phase: SPAll



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

NITRIC OXIDE hourly averages in ppb

MST

DAY	HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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		
	HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.
1	0	0	0	0	0	0	0	0	0	S	0.9	0.5	0.7	0.8	0.5	0.6	0.5	0.4	0.6	0.5	0.4	0.5	0.4	0.3	0.9	0.3	24	
2	0.3	0.3	0.2	0.3	0.4	0.4	0.5	0.3	S	1	0.7	1.2	1.6	1.5	1.3	0.9	0.3	0	0.2	0	0.1	0.2	0	0.4	1.6	0.5	24	
3	0	0.1	0.1	0.3	0.2	0.4	0.5	S	0.9	0.5	0.4	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.9	0.2	24	
4	0	0	0	0	0	0	S	0.4	0.4	0.9	1.2	2.1	1.9	1.4	1.7	1.1	0.5	0.6	0.5	0.8	0.5	0.4	0.4	0.5	2.1	0.7	24	
5	0.5	0.8	0.4	0.7	0.3	S	0.3	0	0.1	0.7	1.2	0.9	1	0.6	0.6	0.5	0.5	0.2	0.6	0.2	0.2	0	0	0	1.2	0.4	24	
6	0	0	0	0	S	0.5	0.3	0.1	0.1	0.3	0.6	0.9	0.9	0.7	0.4	0.3	0	0.1	0	0	0	0.1	0	0	0.9	0.2	24	
7	0	0	0	S	0.2	0	0	0	0	0.1	0.4	1.5	1.7	1.2	0.9	0.5	0.2	0	0.2	0.2	0.2	0.1	0.2	0.3	1.7	0.3	24	
8	0.3	0.2	S	0.7	0.2	0	0.2	0	0	0	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0	0.1	0	0	0.1	0.7	0.1	24	
9	0.1	S	0.6	0.2	0.3	0.2	0.1	0.1	0.1	0.6	1.1	2.2	1.9	1.2	0.6	0.3	0.2	0	0	0	0.2	0.2	0	0	2.2	0.4	24	
10	S	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0	0.5	0.3	0.4	0.4	0.7	0.6	0.5	0.4	0.5	0.4	0.4	0.4	0.4	0.3	S	0.7	0.4	24	
11	0.5	0.3	0.1	0	0	0.1	0.5	0.1	0.5	0.7	1.4	1.9	4.4	3.7	3.6	3.5	1.4	0.8	0.4	0.1	0.3	0.1	S	0.8	4.4	1.1	24	
12	0.4	0.3	0.4	0.2	0.4	0.5	0.6	0.4	0.6	1.4	0.9	1.2	0.7	0.4	0.4	0	0	0	0	0	0	S	0.7	0.5	1.4	0.4	24	
13	0.4	0.4	0.3	0.2	0.3	0.3	0.4	0.4	0.4	0.6	0.6	0.7	0.9	1	0.7	0.4	0.8	0.4	0.3	0.1	S	0.7	0.5	0.4	1	0.5	24	
14	0.1	0.3	0.3	0.4	0.5	0.2	0.1	0.3	0.2	0.3	1	1.3	1.1	1	1.3	0.7	0.5	0.3	0.1	S	0.8	0.5	0.4	0.1	1.3	0.5	24	
15	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.5	0.1	0.2	0.2	0.2	0.5	0.1	24	
16	0.1	0.2	0	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.4	0.5	0.3	0.1	S	0.9	0.7	0.6	0.8	0.5	0.7	0.9	0.3	24
17	0.5	0.5	0.8	0.5	0.5	0.5	0.5	0.7	0.7	C	C	C	C	C	C	C	S	0.6	C	C	0.7	0.4	0.3	0.5	0.8	0.6	24	
18	0.2	0.3	0.2	0.1	0.1	0	0.2	0	0	0	0.1	0.1	0	0	0	S	0.6	0.4	0.2	0.4	0.3	0.3	0.3	0.3	0.6	0.2	24	
19	0.1	0.1	0.3	0	0.2	0.3	0.1	0.2	0.2	0.2	0.7	0.7	0.8	0.5	S	0.7	0.4	0.3	0.2	0.4	0.1	0.2	0.1	0.2	0.8	0.3	24	
20	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.2	0.4	0.3	0.4	0.3	0.2	S	0.2	0	0	0	0	0	0	0	0	0	0.4	0.2	24	
21	0	0	0	0	0	0	0	0	0	0	0	0	S	0.4	0.2	0.1	0	0	0	0	0	0	0	0	0.4	0.0	24	
22	0	0	0.1	0	0	0.1	0	0.1	0	0.3	0.6	S	1.2	0.9	0.5	0.5	0.4	0.5	0.8	0.5	0.5	0.4	0.3	0.3	1.2	0.3	24	
23	0.4	0.3	0.4	0.4	0.2	0.3	0.3	0.3	0.3	0.7	S	1.6	1.1	1	0.9	0.5	0.2	0.2	0	0	0	0	0	1.6	0.4	24		
24	0	0	0	0	0	0	0	0	0	S	1.4	1.1	1.1	0.8	1	0.8	1.4	0.7	0.3	0.1	0.1	0.2	0.1	0.2	1.4	0.4	24	
25	0.2	0.2	0.3	0.3	0.4	0.3	0.4	0.3	S	1.8	2.6	3.5	4	3.1	2.8	2.2	1.4	0.6	0.4	0.3	0.5	0.3	0.5	0.4	4	1.2	24	
26	0.5	0.4	0.2	0.3	0.2	0.3	0.5	S	1.4	2.8	5.4	6.6	8	8.8	6	3.9	1.4	0.3	0	0	0.2	0.1	0	8.8	2.1	2.1	24	
27	0	0	0	0.1	0	0	S	0.4	0.4	1.5	2.8	2.9	3.2	2.5	1.8	1.2	5.6	0	0	0	0	0	0	5.6	1.0	24		
28	0	0	0	0	0	S	0.6	0.2	0.1	1.4	0.6	1	0.7	1	3.3	7.6	2	0.8	0.5	0.3	0.5	0.4	0.2	0.1	7.6	0.9	24	
29	0.1	0.2	0.2	0.2	S	0.7	0.2	0	0	0.1	0	0.1	0.1	0.1	0	0	0	0.5	0	0	0	0	0	0	0.7	0.1	24	
30	0	0	0	S	0.9	0.6	0.7	0.4	0.8	1.9	2.1	1	0.6	0.7	0.8	1.1	0.6	0.4	0.1	0.2	0.1	0	0.1	0.3	2.1	0.6	24	
31	0.5	0.2	S	0.4	0	0	0	0	0	0.4	1	1.1	1.2	1.3	1	0.9	0.5	0	0	0	0	0	0	1.3	0.4	24		
HOURLY MAX	1	1	1	1	1	1	1	1	1	3	5	7	8	9	6	8	6	1	1	1	1	1	1	1	1			
HOURLY AVG	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.7	1.0	1.2	1.4	1.2	1.1	1.0	0.7	0.3	0.3	0.2	0.2	0.2	0.2	0.2				

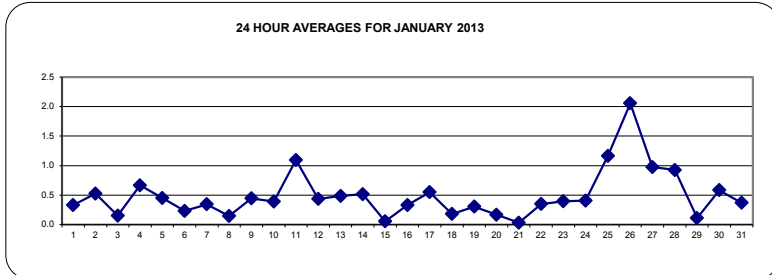
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

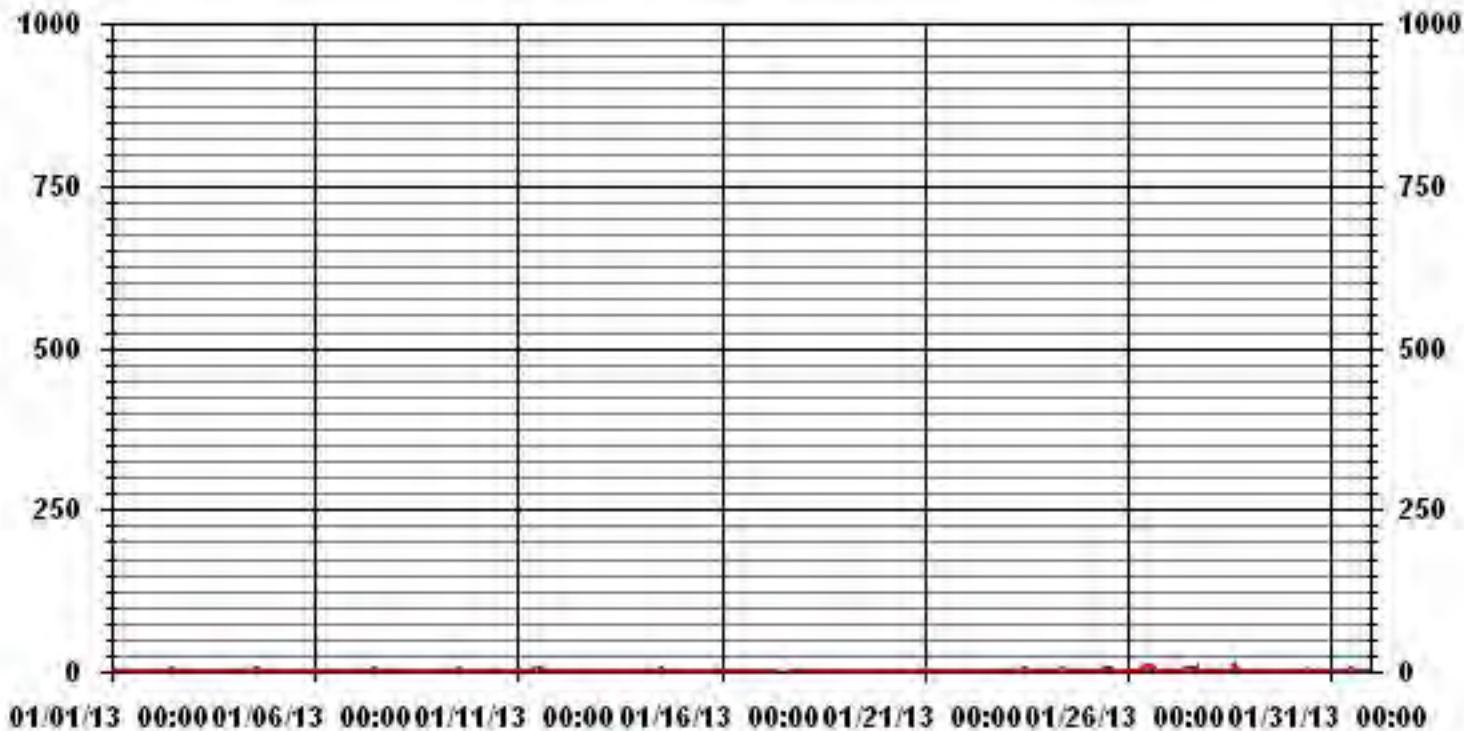
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	505					
MAXIMUM 1-HR AVERAGE:	8.8	PPB	@ HOUR(S)	13	ON DAY(S)	26
MAXIMUM 24-HR AVERAGE:	2.1	PPB			ON DAY(S)	26
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744 HRS		
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	100.0 %		
STANDARD DEVIATION:	0.89		MONTHLY AVERAGE:	0.49 PPB		

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.
DAY																											
1	0.6	0.6	0.4	0.3	0.4	0.2	0.2	0.2	0.3	S	1.7	1.2	2.3	1.9	1.1	1.1	1.3	1.1	1.1	1.1	1.1	1.1	1	0.7	2.3	0.9	24
2	1.1	0.9	1	1.2	1.2	1.2	1.2	0.8	S	20.4	1.4	1.9	2.3	2	2	2.2	1.1	0.7	1.1	0.7	0.8	0.7	0.7	1.9	20.4	2.1	24
3	0.7	0.7	0.8	0.8	0.8	1.1	1.2	S	2.2	1.3	1.7	0.6	0.5	0.6	0.8	0.2	0.8	0.6	0.9	0.3	0.1	0.6	0.4	0.7	2.2	0.8	24
4	0.4	0.4	0.7	0.3	0.4	0.5	S	1.4	1	1.6	1.9	2.8	2.6	2	2.5	2.1	1.1	1.2	1.2	1.7	1.2	1	1.2	1.1	2.8	1.3	24
5	1.1	1.4	1.1	1.6	1	S	1.2	1.1	0.7	1.3	2.1	1.6	1.6	7.1	1.5	1.1	3.2	0.8	2	0.7	1.7	0.4	0.6	0.6	7.1	1.5	24
6	0.5	0.6	0.6	0.5	S	1.2	0.8	0.7	0.9	1.1	4.5	1.4	1.5	1.3	1	1	0.7	1	1	0.5	0.5	0.8	0.8	0.7	4.5	1.0	24
7	0.6	0.8	0.7	S	0.9	0.6	0.9	0.7	0.5	2.2	1.5	3.4	3	2.1	1.5	1.2	0.9	0.6	0.8	1.1	1.1	0.8	1.1	0.8	3.4	1.2	24
8	1.1	0.7	S	1.6	0.8	0.5	0.8	0.6	0.8	0.8	2	0.9	0.9	1	0.9	0.8	0.7	1	0.9	1.1	0.8	0.7	0.6	0.8	2	0.9	24
9	0.8	S	1.5	1	1	1.1	0.8	0.7	0.7	1.4	2.5	3.1	2.7	2.1	1.3	1.3	0.8	0.7	0.8	0.6	0.7	0.8	0.5	0.6	3.1	1.2	24
10	S	1.4	1	1	1.1	1	1	1	0.6	1.3	0.9	1.2	1.1	1.4	1.2	1.2	1.4	1.2	1.2	0.9	1	1	1.3	S	1.4	1.1	24
11	1.6	0.9	0.6	0.5	0.5	0.8	14.7	7.7	23.3	2.1	7.6	5	22.9	5	6.4	4.7	3.1	2	1.8	0.8	1	0.8	S	1.8	23.3	5.0	24
12	1.1	0.8	1	0.8	1.2	1.2	2	1.4	1.4	2.5	1.9	2.2	1.7	1	1.6	1.7	0.8	0.8	0	0	0.3	S	1.6	1.3	2.5	1.2	24
13	1.1	1.1	0.9	1	1	0.9	1.3	1.2	1	1.2	1.2	1.6	1.7	3	2	1.1	22.8	1.2	0.9	0.7	S	1.8	1.1	0.9	22.8	2.2	24
14	0.8	1	0.8	1.1	1	0.9	0.8	1.7	1	1.1	1.7	2.4	1.8	10	3	1.7	19.3	12.6	1	S	1.9	1.1	1	0.6	19.3	3.0	24
15	0.6	0.6	0.7	0.7	0.5	0.5	0.8	0.6	0.5	0.7	0.7	0.7	0.9	0.7	0.6	0.6	0.9	0.9	S	1.5	0.7	0.7	1	0.8	1.5	0.7	24
16	0.7	0.7	0.7	0.8	0.9	0.9	0.9	0.8	0.8	0.9	0.7	0.7	0.9	1.2	5.7	1	1	S	1.9	1.4	1.3	1.6	1.2	1.5	5.7	1.2	24
17	1.4	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	C	C	C	C	C	C	C	S	1.2	C	C	1.5	1	1	1.1	1.5	1.2	24
18	1	1.2	0.7	0.7	1	0.8	15.2	0.6	1.3	2.5	0.6	13.3	0.5	0.6	0.9	S	1.4	1.1	0.9	1.1	0.9	0.9	0.9	0.9	15.2	2.1	24
19	0.7	0.8	0.9	0.8	0.8	1.1	0.7	0.9	0.8	0.9	1.5	1.4	2.1	1.4	S	1.7	0.8	1.1	0.8	1	0.6	0.9	0.7	0.8	2.1	1.0	24
20	0.8	0.8	0.8	0.7	0.8	1.6	1.1	0.8	1.2	0.9	1.4	1.2	0.9	S	1	0.6	0.4	0.6	0.3	0.6	0.7	0.3	0.3	0.4	1.6	0.8	24
21	0.4	0.3	0.3	0.3	0.4	0.6	0.5	0.3	0.4	0.4	0.6	0.6	S	1.1	0.9	0.6	0.6	0.4	0.7	0.5	0.4	0.7	0.5	0.5	1.1	0.5	24
22	0.7	0.6	0.9	0.6	0.7	1.4	0.9	0.9	0.5	1.4	1.5	S	2	1.9	1.1	1.2	1.8	1.5	4.7	1.2	2.5	1.1	0.9	0.9	4.7	1.3	24
23	1	1.1	1.1	1	0.7	1.2	0.9	0.9	0.9	1.5	S	2.5	1.8	1.9	1.5	1.3	0.7	0.9	0.6	0.5	0.6	0.4	0.7	0.4	2.5	1.0	24
24	0.4	0.4	0.3	0.4	0.5	0.5	0.5	0.6	0.6	S	12.8	2	8.7	1.7	13.9	2.1	25.2	2.7	1.6	12.6	0.8	0.7	0.6	0.9	25.2	3.9	24
25	0.9	0.7	0.9	0.9	0.9	0.9	1.1	0.9	S	2.7	3.5	4.2	6	4.7	3.5	3.4	3.6	1.4	3.6	1	2	1.2	11.5	1	11.5	2.6	24
26	1.1	1	1.1	0.9	0.9	1	1.9	S	5	4.5	17.8	7.7	8.9	10.8	7.7	5.4	3	1	1.1	0.7	0.6	0.8	0.8	1.2	17.8	3.7	24
27	0.6	0.6	0.6	0.6	0.7	0.8	S	2.1	1.2	4.6	4.1	14	4.1	3.5	3.3	2.1	79.9	1.3	13.3	0.5	0.3	0.4	0.4	0.4	79.9	6.1	24
28	0.9	0.5	0.3	0.4	0.4	S	2.2	0.7	0.9	19.4	1.2	2	1.2	2	7.8	10.3	3.3	2.1	1.3	1.3	1.6	1.3	0.8	0.9	19.4	2.7	24
29	1	0.9	0.8	1.1	S	1.5	0.9	0.6	0.8	0.9	0.7	1	0.7	0.7	0.7	0.8	0.7	0.7	5.7	0.6	1.1	0.7	0.4	0.5	5.7	1.0	24
30	0.6	0.5	0.4	S	2.2	1.3	1.3	1.2	1.7	2.6	5.1	10.5	1.2	1.4	2	2.4	1.3	1.3	0.8	1	0.8	0.7	0.9	1	10.5	1.8	24
31	1	0.9	S	1.2	0.7	0.7	0.5	0.6	0.7	1.2	2	1.7	1.9	2	1.7	1.7	1.5	0.6	0.4	0.9	0.9	0.4	0.7	0.4	2	1.1	24
HOURLY MAX	2	1	2	2	2	2	15	8	23	20	18	14	23	11	14	10	80	13	13	13	3	2	12	2			
HOURLY AVG	0.8	0.8	0.8	0.8	0.8	0.9	2.0	1.1	1.8	3.0	3.0	3.2	3.0	2.6	2.7	2.0	6.1	1.5	1.8	1.3	1.0	0.8	1.2	0.9			

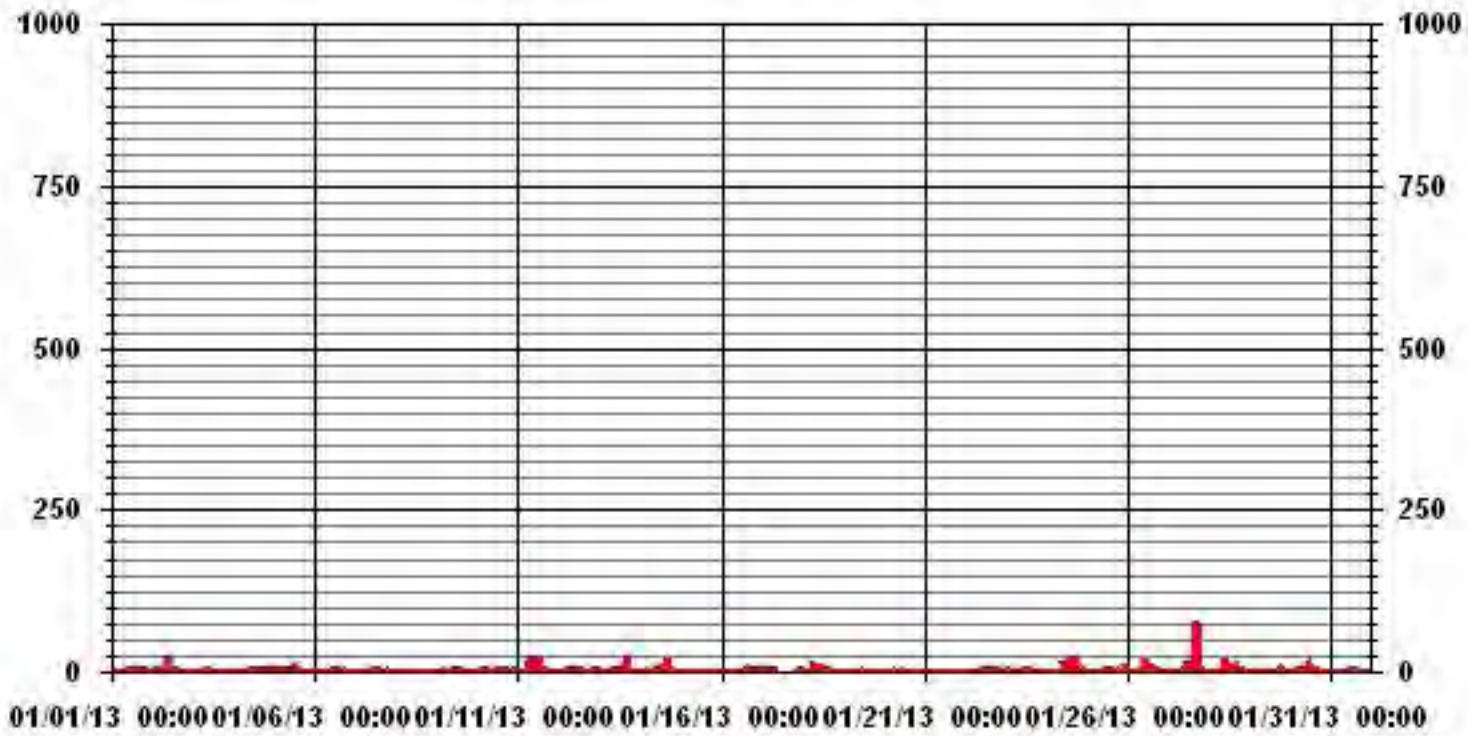
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	701					
MAXIMUM INSTANTANEOUS VALUE:	79.9	PPB	@ HOUR(S)	16	ON DAY(S)	27
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	4.12					

01 Hour Averages



LICA31
 NO_ / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : NO_
 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	5.53	2.55	2.13	1.27	2.27	5.39	3.12	1.70	5.53	11.64	14.06	6.25	7.24	9.51	10.36	11.36	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	5.53	2.55	2.13	1.27	2.27	5.39	3.12	1.70	5.53	11.64	14.06	6.25	7.24	9.51	10.36	11.36	

Calm : .00 %

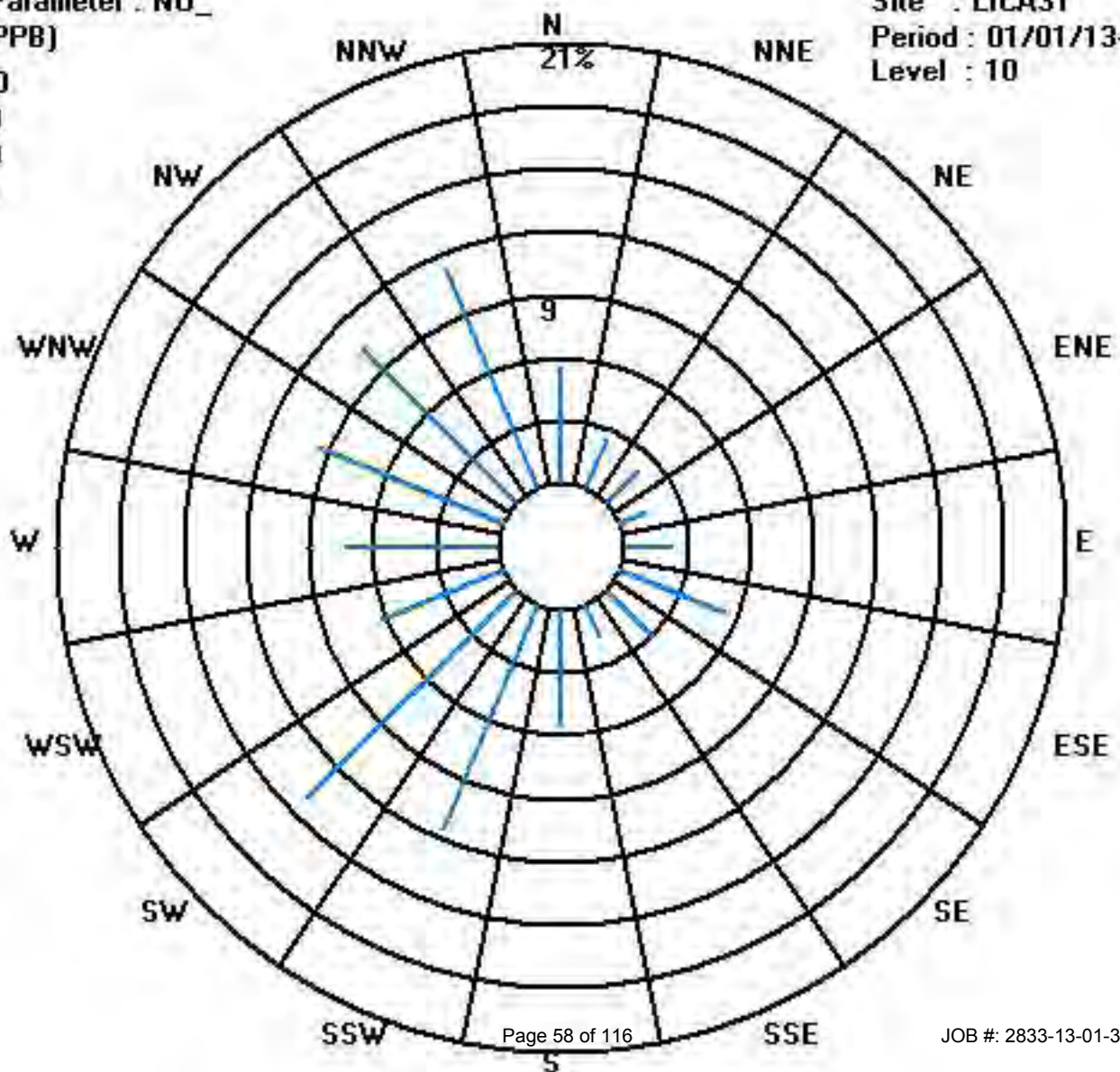
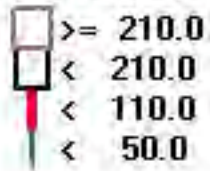
Total # Operational Hours : 704

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	39	18	15	9	16	38	22	12	39	82	99	44	51	67	73	80	704
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	39	18	15	9	16	38	22	12	39	82	99	44	51	67	73	80	

Calm : .00 %

Total # Operational Hours : 704



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

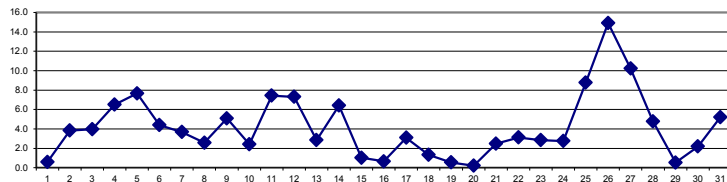
OXIDES OF NITROGEN hourly averages in ppb

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00			
DAY																											
1	0.9	0.5	0.1	0	0	0	0	0	0	S	1.1	0.8	1.2	1.2	1	1.1	0.7	0.8	0.8	0.8	0.8	0.7	0.6	0.5	1.2	0.6	24
2	0.4	0.6	0.6	0.6	1.3	1.5	1.4	1	S	2.4	2.4	4.1	5.2	5.1	6.2	6.9	7.6	7.1	6.2	5.6	5.6	5.3	5.4	5.6	7.6	3.8	24
3	6.2	6.2	6.9	9.1	10.8	10.4	11.1	S	8.4	3.9	2.6	1.1	0.4	0.4	0.5	0.6	3.2	3.9	2.1	0.9	0.7	0.6	0.7	11.1	4.0	24	
4	1.6	1.4	1.2	0.6	0.9	0.8	S	2.5	6.2	8	6.3	8.3	7.3	6.1	7.6	7	8.9	12.1	11.4	12.5	11.1	8.3	8.9	10.5	12.5	6.5	24
5	17.5	21.6	15.3	9.8	5	S	2.5	1.5	3.2	6	5.6	4	3.7	3.2	3.6	5	9.3	11.6	12.8	10.2	6.9	6.6	5.7	5.4	21.6	7.7	24
6	5.9	5.4	5.2	6.8	S	5.7	5.2	5.9	5.5	5.4	5.9	6.6	6.6	5.8	4.7	4.2	4	3.4	2.6	2.3	1.6	1.2	0.8	0.7	6.8	4.4	24
7	0.6	0.6	0.4	S	0.6	0.1	0.3	0.4	1	1.7	2.1	5.2	5.6	5.5	5.3	6.4	5.2	4.6	4.9	5.1	5	5.4	8.3	10.3	10.3	3.7	24
8	11.4	12.6	S	5.7	3.8	2.4	1.9	1.2	0.7	0.3	1	0.8	0.6	0.5	0.6	0.4	0.5	0.7	1	1.5	1.9	1.8	3.1	4.9	12.6	2.6	24
9	4.9	S	5.1	3.9	3.8	3.4	5	5.1	5.3	6.9	7.3	10.3	8.6	6.9	5	5.4	8.2	5	4.4	3.8	2.9	2.9	1.9	1.1	10.3	5.1	24
10	S	2	3.2	3.5	2.8	2.4	2.6	2.1	1.4	1.5	1.1	1	1.2	1.7	1.8	2.4	3	2.8	3.6	3.3	3.3	2.9	3.2	S	3.6	2.4	24
11	3.3	2.8	2.2	2	2.7	3.4	5.3	3.9	5.1	4.4	4.5	5.4	9.2	8.8	10.2	13.7	14.3	12.6	11	10.3	11.8	12.1	S	11.8	14.3	7.4	24
12	12.6	12.9	14	15.5	14.9	15.2	14.8	11.7	10.2	9.1	6	5.6	4	2.3	2.1	1.4	1.8	1.9	1.7	2.4	2.3	S	2.9	2.8	15.5	7.3	24
13	2.6	2.6	2.7	3.3	2.8	2.7	2.9	2.4	2.2	2.6	2.3	2.2	2.5	2.8	2.3	2.2	2.9	2.2	2.3	2.9	S	3.2	5.3	5.6	5.6	2.8	24
14	4.2	4	6.6	8.4	11.3	9	6.9	6.3	5.7	5.6	6.2	6.5	6.2	6	6.6	6.7	7.6	8.3	7.3	S	6.1	4.6	3.8	3.2	11.3	6.4	24
15	2.7	2.5	2.4	1.8	1.3	1.4	1.2	0.7	0.3	0.4	0.4	0.6	0.4	0.3	0.5	0.3	0.6	0.4	S	0.7	1.4	1.7	1	0.6	2.7	1.0	24
16	0.4	0.4	0.1	0.5	0.7	0.6	0.7	0.3	0.3	0.2	0.3	0.4	0.6	0.6	1.2	0.5	0.3	S	0.9	1	1.2	1.4	1	1.5	1.5	0.7	24
17	1.3	1.6	2.7	2.4	1.9	2.1	2.2	3.2	3.2	C	C	C	C	C	C	C	S	5.5	C	C	4.7	3.6	3.8	4.9	5.5	3.1	24
18	4.4	4.2	4.3	2.4	1	0.7	0.9	0	0.3	0.3	0.4	0.6	0.1	0	0.3	S	1.8	2.6	2.6	2.2	0.6	0.4	0.4	0.3	4.4	1.3	24
19	0.1	0.3	0.5	0.1	0.2	0.3	0.1	0.2	0.2	0.2	1.3	1.2	1.3	0.9	S	1.2	1	1	1.1	0.7	0.1	0.2	0.1	0.2	1.3	0.5	24
20	0.2	0.4	0.4	0.4	0.3	0.8	0.5	0.2	0.4	0.3	0.4	0.3	0.2	S	0.2	0	0	0	0	0	0	0	0	0	0.8	0.2	24
21	0.5	1.3	1.2	0.9	0.8	0.6	0	0	0.4	1.3	1.1	S	1.3	2.1	2.9	4.5	5.3	4.7	5.3	5	5.1	5.9	6.8	6.8	2.5	24	
22	6.9	6.6	6.6	5.8	4.7	4	3.9	3.3	2.7	3	3	S	2.1	1.7	1.1	1	1.3	2	3	2.7	2.4	1.4	1.3	1.3	6.9	3.1	24
23	1.5	1.7	1.8	1.3	1.9	3.5	3.7	2.8	3	3.9	S	5.3	4.6	4.3	5	4.4	3.7	3.1	2	2.1	1.4	1.1	1.6	1.5	5.3	2.8	24
24	1.2	0.8	0.5	0.4	0.4	0.4	0.5	0.9	1.2	S	2.9	2.2	2.2	2	2.8	3.2	6.3	5.5	4.4	4.5	4.8	6.4	4.9	4.9	6.4	2.8	24
25	5.7	6	6.7	7.5	9.4	9.7	9.6	9.7	S	8.6	9.3	9.9	9.9	8.9	8.4	8.9	9.9	9.1	8.1	8.5	9	8.7	10.2	9.6	10.2	8.8	24
26	10	11.6	15	12.1	12.1	11.9	11.3	S	12	13.4	16	17.7	20.1	22.8	19	17.5	17.1	15.9	13.8	13.7	13.9	15.3	15.1	22.8	14.9	24	
27	15.5	14.2	13.6	13.2	12.4	9.2	S	10	9.4	9.7	13	11	10.9	9.9	9.4	9.9	18	8.7	7.1	5.7	6	6.7	6.3	5.1	18	10.2	24
28	4.4	3.6	2.7	2.3	2.2	S	3.2	2.3	1.8	4.3	2.3	4.1	2.8	4.1	10.8	20.7	10.6	6.6	4.6	4	4.6	4.3	2.4	1.1	20.7	4.8	24
29	1.2	0.8	0.4	0.4	S	0.7	0.2	0.1	0	0.1	0	0.1	0.3	0.2	0.2	0.1	0.2	0.7	2.4	0.2	0.6	1	0.9	1.4	2.4	0.5	24
30	0.6	0.4	0.6	S	1.8	1.6	3.4	3.4	5.4	5.9	4.2	1.7	1.1	1.3	1.8	2.8	3	2	1.4	1.1	0.9	0.8	1.4	3.5	5.9	2.2	24
31	3	2.5	S	2.9	1.9	1.4	2	2.7	3	3.7	4.2	4.3	4.8	4.8	5.4	6.5	7.4	7.5	7.6	9.5	9.4	8.9	8.2	8.2	9.5	5.2	24
HOURLY MAX	18	22	15	16	15	15	15	12	12	13	16	18	20	23	19	21	18	16	14	14	14	15	15	15			
HOURLY AVG	4.4	4.4	4.2	4.3	3.9	3.7	3.6	2.9	3.4	4.0	3.9	4.2	4.3	4.1	4.3	4.9	5.3	5.1	4.7	4.3	4.2	4.1	3.8	4.3			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

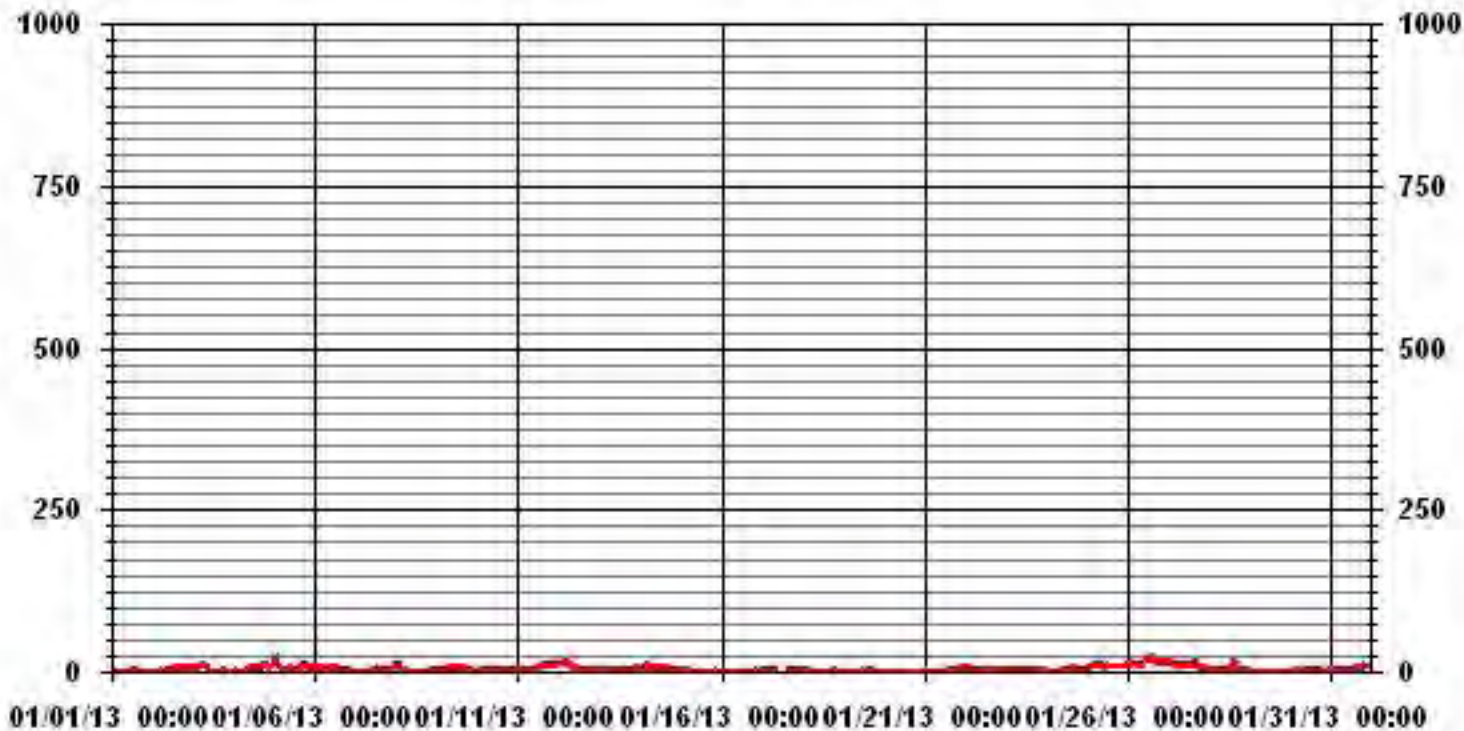
24 HOUR AVERAGES FOR JANUARY 2013



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	681
MAXIMUM 1-HR AVERAGE:	22.8 PPB @ HOUR(S) 13 ON DAY(S) 26
MAXIMUM 24-HR AVERAGE:	14.9 PPB ON DAY(S) 26
IZS CALIBRATION TIME:	0 HRS OPERATIONAL TIME: 744 HRS
MONTHLY CALIBRATION TIME:	9 HRS AMD OPERATION UPTIME: 100.0 %
STANDARD DEVIATION:	4.15 MONTHLY AVERAGE: 4.19 PPB

01 Hour Averages



— LICA31 POX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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		
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	RDGS.	
DAY																												
1	1.8	1.5	0.9	0.3	0.1	0.5	0.2	0.1	0.1	S	2.2	1.6	4.1	2.2	1.7	1.7	1.4	1.4	1.3	1.4	1.4	1.3	1.3	1	4.1	1.3	24	
2	1.1	1.1	1.1	1.6	1.9	2.6	2.1	1.9	S	24.4	3.9	5.2	5.9	5.9	7.2	8.4	8.4	8.4	7.3	6.2	6.7	6.1	6.2	6.9	24.4	5.7	24	
3	7.2	7	7.9	11.4	11.8	11.2	12.6	S	11.8	5.5	4.1	2.1	1.3	1.1	1.5	1.1	3.4	4.8	5	3.4	1.5	1.5	1.3	1.3	12.6	5.2	24	
4	3.2	2.5	2.9	1.2	1.5	1.4	S	4.4	9.3	9.7	7	9.5	8.9	7.2	8.6	8.4	13.2	13.4	12.9	14.1	12.1	9.8	9.5	12.8	14.1	8.0	24	
5	21.3	23.4	19.6	12.5	7.3	S	3.5	3.7	5.6	7.2	7	5.3	4.7	10.1	4.8	6.4	11.5	13.5	15.4	12.1	9.1	7.8	7	6.4	23.4	9.8	24	
6	6.6	6.4	6.1	8	S	6.7	5.9	6.6	6.5	6.6	15.2	7.3	7.3	6.7	5.5	5.1	4.7	4.8	4.1	2.9	2.4	2	1.7	1.3	15.2	5.7	24	
7	1.1	1.3	1.1	S	1.3	0.8	2.3	1	2.1	5.3	3.5	8.6	6.7	7	6.3	7.4	6.1	5.5	6.2	6	5.7	6.5	10.6	11.5	11.5	5.0	24	
8	12.2	14	S	8.1	5.1	3.5	2.5	2.2	1.4	1.2	2.9	1.4	1.5	1.4	1.2	1.3	1.5	1.6	2.2	2.7	3.4	2.7	4.6	5.6	14	3.7	24	
9	5.6	S	5.9	4.8	4.7	4.4	6.2	6	6.3	7.8	10.2	11.4	10	8.4	6.7	7.4	9.7	6.3	5.4	4.6	3.8	3.6	2.9	1.9	11.4	6.3	24	
10	S	2.9	4.5	4.6	3.8	3.2	3.3	3	2.2	2.8	1.8	2	1.8	2.6	3.1	4	5.3	5	5.1	4.5	4.3	4.4	5.5	S	5.5	3.6	24	
11	4.4	3.4	3	3	3.8	4.7	29.7	12.8	38.5	6.1	13.7	18.3	35	10.1	13.6	16.8	16.6	14.2	12.9	11.2	13.6	13.1	S	12.6	38.5	13.5	24	
12	13.6	13.6	15	16.4	16.5	16.1	16.6	14.3	12.6	10.2	7.5	7.1	5.5	3.2	4.7	4.7	3.6	3.6	2.8	3.4	3.7	S	3.6	3.7	16.6	8.8	24	
13	3.4	3.2	3.4	4.3	3.8	3.8	4.5	4.4	3.2	3.5	3.9	3.6	3.4	5	3.9	3.3	38.8	3.5	3.2	3.6	S	4.7	7.2	7.2	38.8	5.6	24	
14	5.1	5.2	8.4	10.5	12.5	10.8	8	8.7	6.7	6.4	7.4	7.9	7.3	13.2	9.9	7.9	28.1	22.7	8.5	S	7.4	5.6	4.7	4	28.1	9.4	24	
15	3.3	3.2	4	2.8	1.9	2	2.2	1.4	0.9	1.2	1.2	1.2	1.3	1.2	1.8	0.9	1.2	7.8	S	1.3	2.5	2.7	1.9	1.4	7.8	2.1	24	
16	1.1	1.1	0.7	1.2	1.5	1.4	1.4	0.9	1	0.9	1	1.2	1.2	1.4	7.5	1.3	1.3	S	1.7	2.2	2	2.1	1.7	2.9	7.5	1.7	24	
17	2.8	3.4	3.5	3.1	2.6	2.9	3.2	3.9	4.2	C	C	C	C	C	C	C	S	6.3	C	C	5.8	4.3	4.8	5.9	6.3	4.1	24	
18	5.6	5.6	5.6	3.8	2.2	2.8	22.7	0.6	2.5	5.9	1	29.8	1.1	1.1	1.2	S	2.8	3.4	3.3	3.4	1.5	1	1	0.9	29.8	4.7	24	
19	0.9	0.9	1	1.2	0.8	0.9	0.6	0.9	0.9	0.8	2.4	2.4	3.2	2.2	S	2.2	1.9	1.8	1.9	1.6	0.8	0.7	0.6	0.8	3.2	1.4	24	
20	0.9	1.1	1.1	1	1.1	2.1	1.3	0.8	1.4	0.7	1.2	1.1	0.9	S	0.6	0.3	0.6	0.5	0.2	0.7	1.4	0.3	0.5	0.6	2.1	0.9	24	
21	2	2	2	1.4	1.5	1.2	0.8	0.4	0.8	1.5	2.6	2	S	1.9	2.9	3.9	5.4	6.4	5.4	6.1	5.8	6.3	6.7	7.6	7.6	3.3	24	
22	7.7	7.3	7.2	6.9	6.6	5	5.2	4.2	4.3	4.4	4.4	S	3.2	3.3	2.3	2.5	4.2	3.7	11.2	4	6.8	2	2.2	2.2	11.2	4.8	24	
23	2.3	2.7	2.7	2	4	4.6	4.4	3.5	3.6	4.8	S	6	5.3	5.3	6.1	5.6	4.3	4.2	2.8	2.7	2.3	1.7	2.3	2	6.1	3.7	24	
24	1.8	1.5	1.2	1	1.1	1.3	1.2	1.6	2	S	21.1	3.1	13.9	3.1	34.3	5.3	39.3	9.4	6.7	23.4	5.9	7.7	6.2	5.8	39.3	8.6	24	
25	6.5	6.9	7.3	9.1	10.6	10.4	10.8	10.8	S	9.8	10.1	10.6	12.8	10.8	9.8	10.7	15.9	10.4	11.8	9.7	10.9	9.7	53.3	10.4	53.3	12.1	24	
26	11	17.3	20.4	13.1	12.8	12.5	12.7	S	30.3	15	31.5	19.1	21.8	26.7	21.4	18.6	18.1	17.9	15.5	14.6	14.8	16.5	15.9	16.3	31.5	18.0	24	
27	16.2	15.3	14.5	14.8	15.2	10.9	S	12.5	11.1	13.7	15.1	36.1	12.2	11.4	10.9	10.6	125.4	11.3	34.3	7	7.6	7.4	7.4	5.9	125.4	18.6	24	
28	5.2	4.4	3.4	3.3	3	S	8.7	3.1	2.5	30.1	3.7	6.1	3.6	5.3	21.7	25.4	12	9.7	5.6	4.9	6.2	5.2	4.4	1.8	30.1	7.8	24	
29	1.9	1.8	1	1	S	1.2	0.9	0.7	0.9	1.2	1	1	1	0.7	0.9	1.2	1.7	1.8	12.4	0.9	2.3	1.8	1.6	2.3	12.4	1.8	24	
30	1.7	1.2	1.2	S	2.7	2.4	4.3	4.6	6.5	6.9	8.1	14.8	2	2.3	3.4	4	3.9	3	2.8	1.8	2.8	2	2.1	6.4	14.8	4.0	24	
31	4.3	3.5	S	3.8	4	2.1	3	3.5	3.9	4.5	5.8	5.5	5.7	5.7	6.3	8.4	8.8	8.4	8.7	11.5	10.7	10.1	9	9.3	11.5	6.4	24	
HOURLY MAX	21	23	20	16	17	16	30	14	39	30	32	36	35	27	34	25	125	23	34	23	15	17	53	16				
HOURLY AVG	5.4	5.5	5.4	5.4	5.0	4.6	6.2	4.2	6.3	7.1	6.9	8.0	6.6	5.7	7.2	6.4	13.3	7.2	7.5	5.9	5.5	5.0	6.3	5.3				

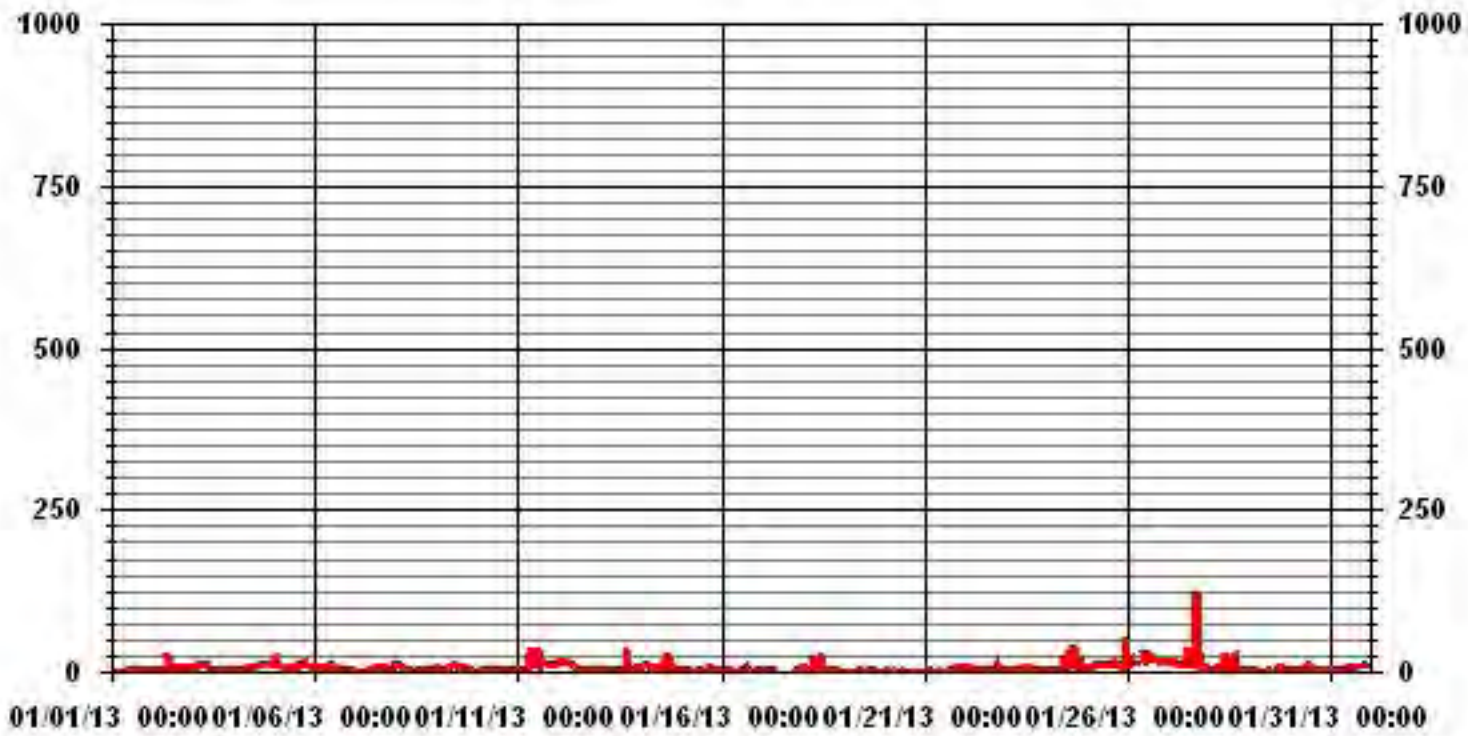
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	703
MAXIMUM INSTANTANEOUS VALUE:	125 PPB @ HOUR(S) 16 ON DAY(S) 27
IZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	9 HRS
OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	7.78

01 Hour Averages



LICA31
 NOX_ / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : NOX_
 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	5.53	2.55	2.13	1.27	2.27	5.39	3.12	1.70	5.53	11.64	14.06	6.25	7.24	9.51	10.36	11.36	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	5.53	2.55	2.13	1.27	2.27	5.39	3.12	1.70	5.53	11.64	14.06	6.25	7.24	9.51	10.36	11.36	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	39	18	15	9	16	38	22	12	39	82	99	44	51	67	73	80	704
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	39	18	15	9	16	38	22	12	39	82	99	44	51	67	73	80	

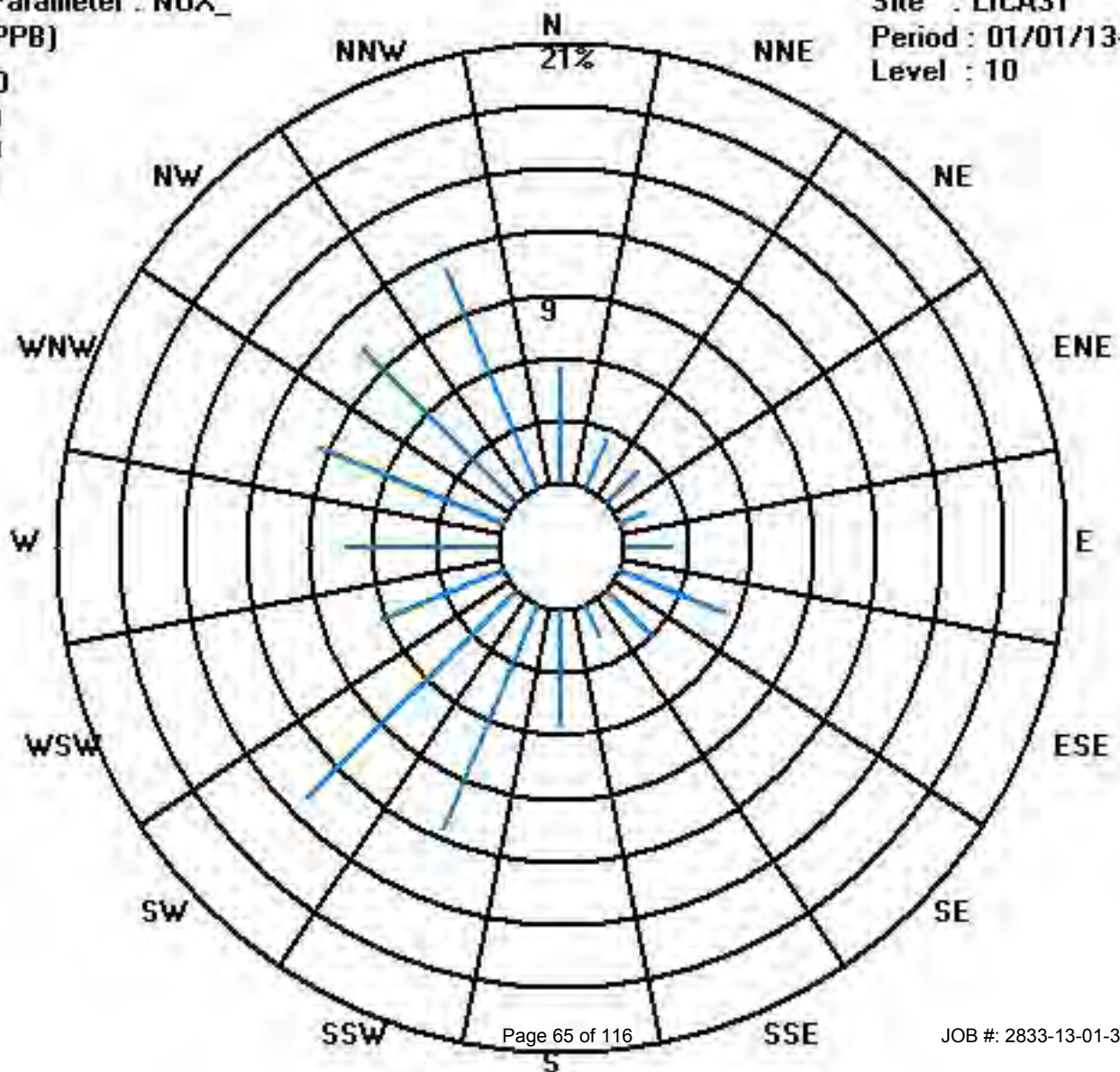
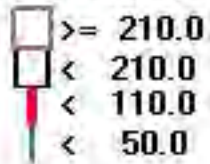
Calm : .00 %

Total # Operational Hours : 704

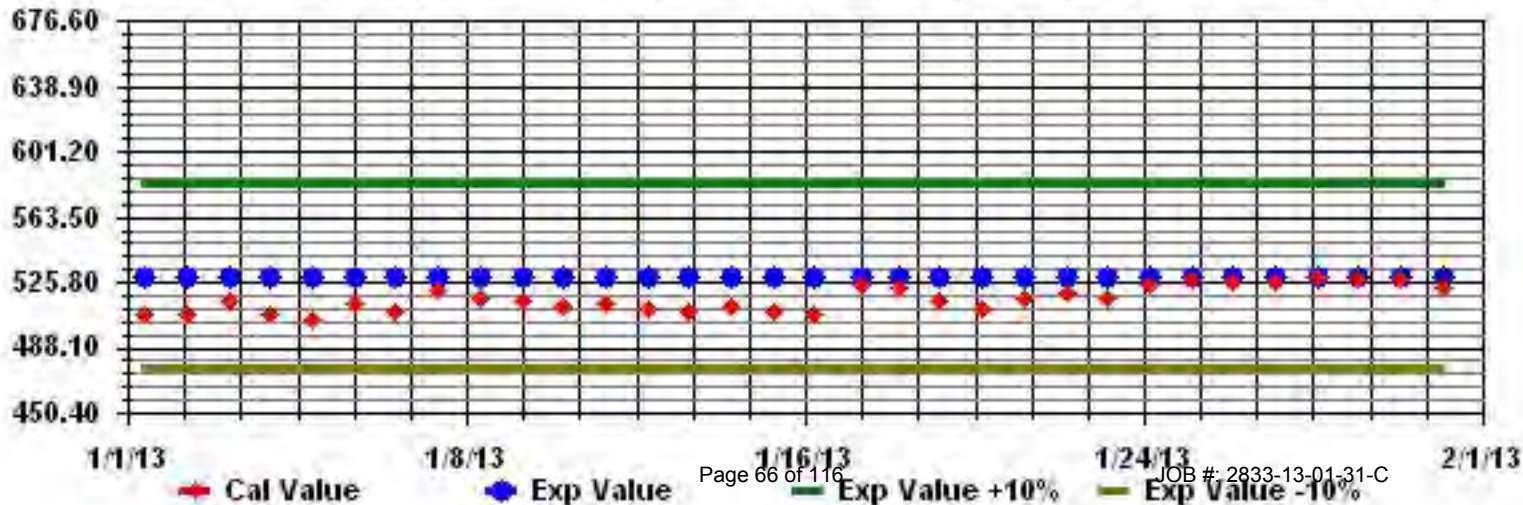
Class Limits (PPB)

Period : 01/01/13-01/31/13

Level : 10



Calibration Graph for Site: LICA31 Parameter: NOX_ Sequence: NO2 Phase: SPAll



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

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

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	RDGS.
HOUR START	HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	
DAY																												
1		0	0	2	0	0	2	2	0	0	0	0	1	X	0	1	3	4	0	0	X	0	0	1	0	4.0	0.7	22
2		0	0	0	2	0	0	0	6	1	2	0	4	4	5	1	2	4	2	1	2	2	4	7	0	7.0	2.0	24
3		9	4	7	6	5	5	4	8	8	8	2	0	0	1	2	3	3	0	6	0	0	1	0	9.0	3.4	24	
4		5	2	6	1	0	2	2	5	0	5	6	7	6	0	0	7	7	7	9	14	7	8	8	18	18.0	5.5	24
5		30	32	29	19	9	4	7	4	4	11	10	10	8	5	9	3	6	6	13	14	8	14	13	13	32.0	11.7	24
6		9	11	9	18	12	10	13	10	6	15	18	18	16	14	11	8	6	2	4	3	0	0	4	1	18.0	9.1	24
7		0	3	3	0	0	0	0	0	0	0	2	5	5	7	3	7	3	7	0	2	3	4	1	0	7.0	2.3	24
8		8	8	10	10	5	5	4	4	2	0	3	0	0	0	0	1	0	1	0	1	0	5	3	10.0	2.9	24	
9		12	8	1	4	2	6	1	5	5	2	14	9	3	1	6	4	5	4	7	X	6	7	1	0	14.0	4.9	23
10		1	7	2	3	0	5	0	3	0	3	1	3	0	2	3	2	0	0	2	2	4	3	3	4	7.0	2.2	24
11		3	1	2	1	1	2	2	2	0	3	8	10	13	14	11	19	16	10	7	8	12	9	13	13	19.0	7.5	24
12		10	10	14	15	15	14	16	8	9	11	6	4	4	3	2	2	0	0	3	4	4	2	3	0	16.0	6.6	24
13		5	5	5	6	6	4	5	3	2	5	5	5	0	6	5	3	1	5	3	6	2	2	6	9	9.0	4.3	24
14		10	7	10	21	22	22	13	10	9	12	9	7	6	10	11	9	9	10	7	5	4	7	0	0	22.0	9.6	24
15		5	5	3	4	6	6	6	2	0	2	0	0	0	3	0	0	9	2	2	4	X	0	2	0	9.0	2.7	23
16		X	0	0	0	2	0	2	0	X	0	0	0	1	5	2	0	1	0	0	0	0	3	0	1	5.0	0.8	22
17		0	2	4	3	7	4	2	6	3	C	C	C	C	C	0	0	3	10	2	3	1	0	2	11	11.0	3.3	24
18		10	7	7	4	0	2	2	1	0	2	0	4	0	1	0	2	X	3	6	4	4	4	X	5	10.0	3.1	22
19		6	0	0	5	2	4	1	3	4	3	0	3	1	0	5	3	6	4	2	0	2	6	0	0	6.0	2.5	24
20		2	0	1	1	4	3	0	0	4	0	4	1	0	3	X	2	3	1	1	6	2	0	2	1	6.0	1.8	23
21		0	2	0	1	6	5	4	3	4	3	6	3	8	0	3	2	3	10	7	7	0	3	7	7	10.0	3.9	24
22		6	4	3	9	8	9	3	2	6	9	6	3	2	3	0	0	0	5	4	4	4	1	3	6	9.0	4.2	24
23		3	2	0	6	3	5	2	3	0	4	3	6	3	5	3	7	4	6	9	8	3	4	5	9	9.0	4.3	24
24		0	3	3	3	4	5	4	4	1	4	3	2	3	1	3	4	5	3	12	10	7	11	9	10	12.0	4.8	24
25		17	13	11	8	8	14	8	14	10	12	10	8	7	9	15	11	12	13	14	12	15	16	18	21	21.0	12.3	24
26		14	18	23	18	18	19	18	18	21	20	25	21	25	24	21	20	21	18	16	17	19	16	17	15	25.0	19.3	24
27		16	17	19	14	11	13	11	9	15	15	14	9	8	9	9	10	17	10	14	9	7	10	15	6	19.0	12.0	24
28		12	6	2	4	2	6	4	5	4	3	2	8	2	6	10	13	6	6	6	2	4	7	5	3	13.0	5.3	24
29		3	1	2	5	7	4	4	2	2	4	0	9	3	0	1	2	6	3	7	7	2	4	4	7	9.0	3.7	24
30		2	3	8	2	10	3	2	3	7	2	7	4	9	5	1	2	4	3	2	0	4	0	3	4	10.0	3.8	24
31		5	8	4	4	8	9	5	4	5	6	7	5	6	8	9	5	7	8	5	8	14	11	4	4	14.0	6.9	24
HOURLY MAX		30.0	32.0	29.0	21.0	22.0	22.0	18.0	18.0	21.0	20.0	25.0	21.0	25.0	24.0	21.0	20.0	21.0	18.0	16.0	17.0	19.0	16.0	18.0	21.0			
HOURLY AVG		6.8	6.1	6.1	6.4	5.9	6.2	4.7	4.7	4.4	5.5	5.7	5.6	4.9	5.0	4.9	5.0	5.7	5.2	5.4	5.8	4.7	5.0	5.6	5.5			

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

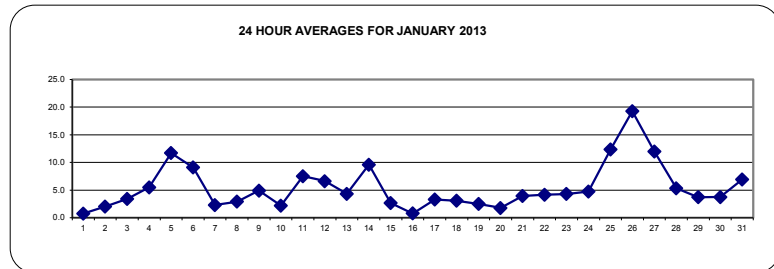
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR - ug/m³ 24-HR 30 ug/m³

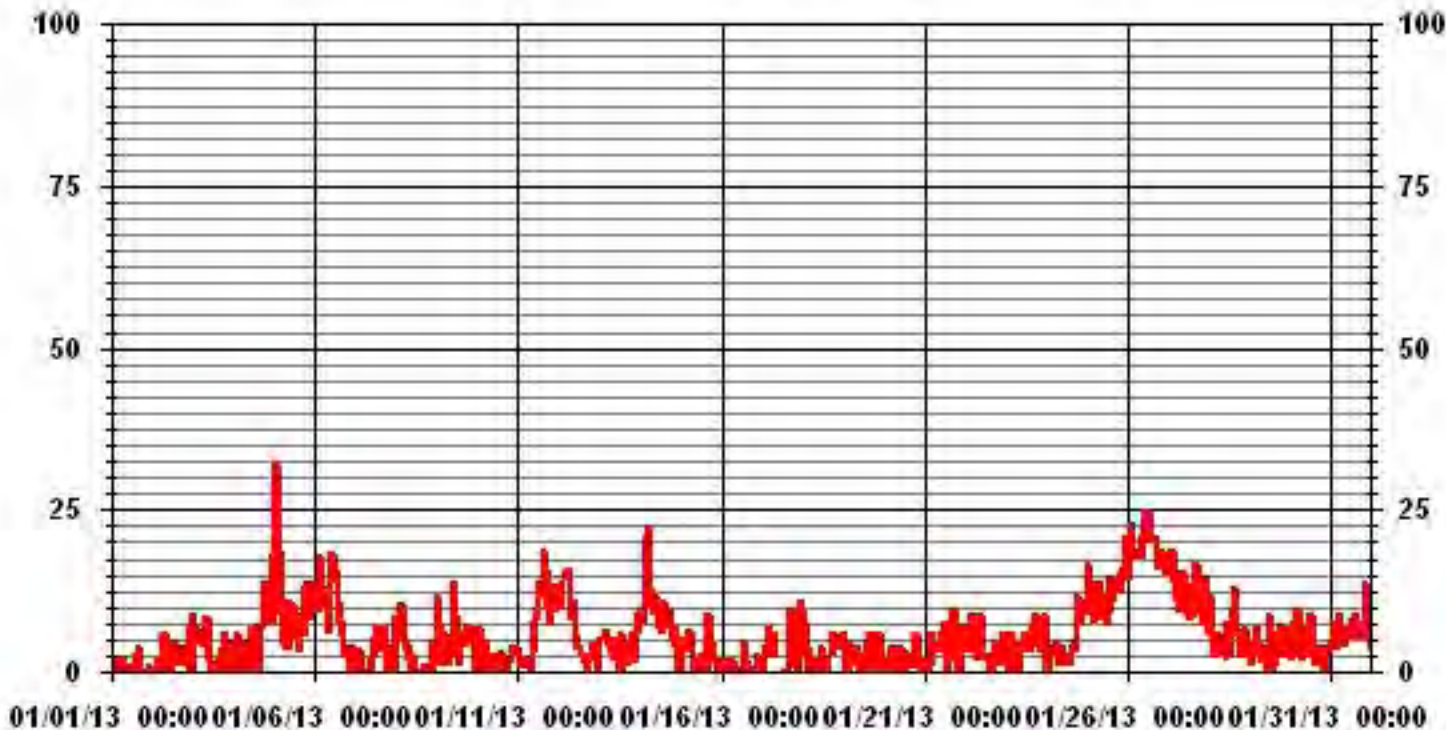
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	604
MAXIMUM 1-HR AVERAGE:	32.0 UG/M ³ @ HOUR(S) 1 ON DAY(S) 5
MAXIMUM 24-HR AVERAGE:	19.3 UG/M ³ ON DAY(S) 26
I/ZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION:	5.33
OPERATIONAL TIME:	735 HRS
AMD OPERATION UPTIME:	98.8 %
MONTHLY AVERAGE:	5.45 UG/M ³

24 HOUR AVERAGES FOR JANUARY 2013



01 Hour Averages



— LICA31 PM2 UG/M3

LICA31
 PM2 / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : PM2
 Units : UG/M3

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30	5.20	2.32	2.19	1.36	2.60	5.34	3.28	1.91	5.61	11.50	14.10	6.30	6.98	9.86	10.13	10.95	99.72
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.13	.00	.00	.00	.00	.27
< 80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.20	2.32	2.19	1.36	2.60	5.34	3.28	1.91	5.61	11.50	14.24	6.43	6.98	9.86	10.13	10.95	

Calm : .00 %

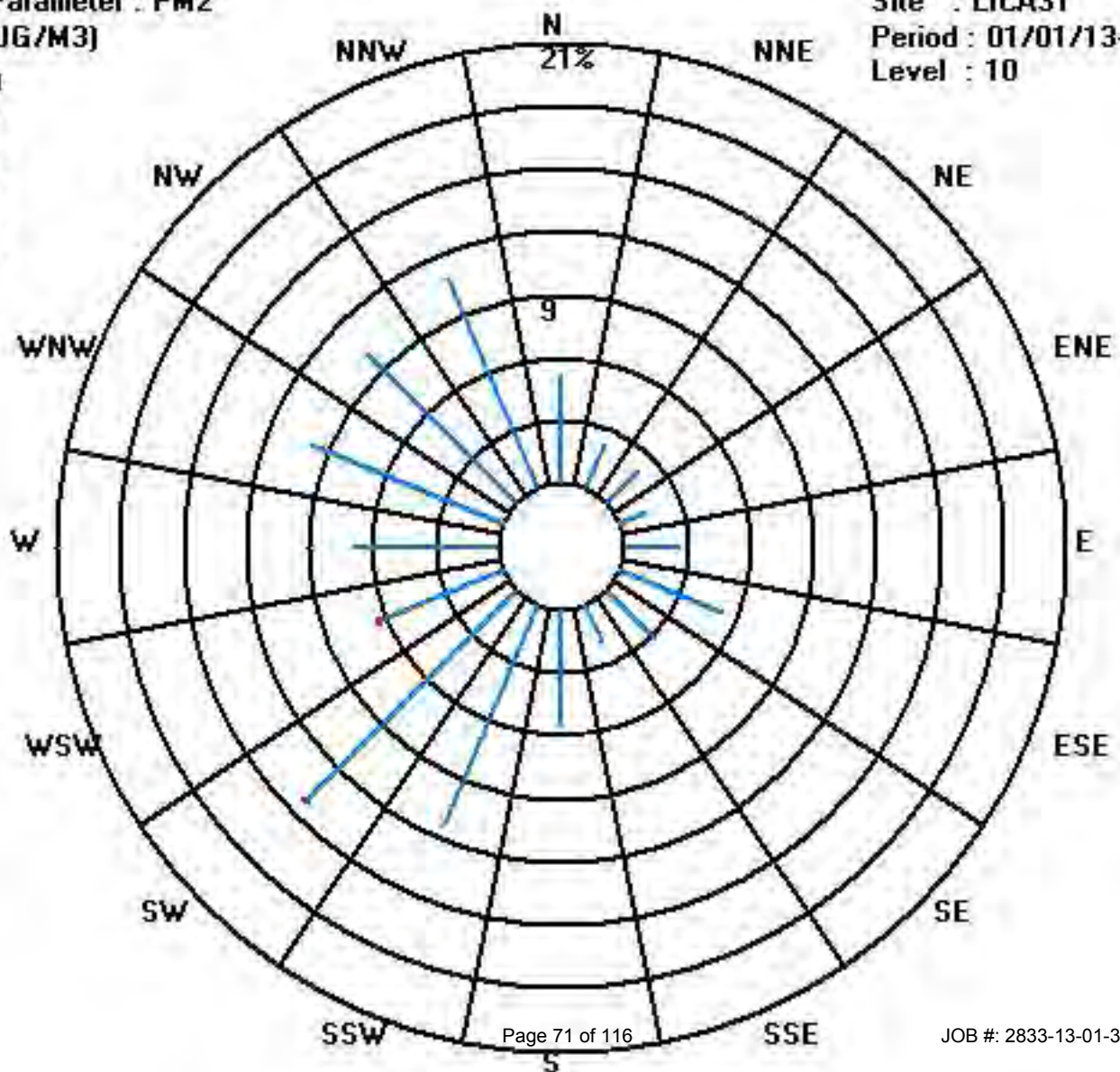
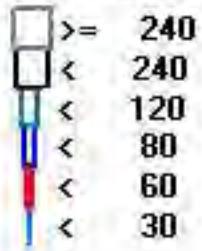
Total # Operational Hours : 730

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30	38	17	16	10	19	39	24	14	41	84	103	46	51	72	74	80	728
< 60											1	1					2
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	38	17	16	10	19	39	24	14	41	84	104	47	51	72	74	80	

Calm : .00 %

Total # Operational Hours : 730



Temperature

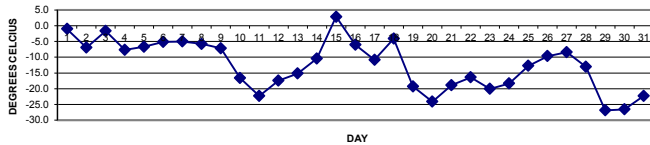
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA
JANUARY 2013
AMBIENT TEMPERATURE hourly averages (Degrees C)

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.	
HOUR START	HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00				
DAY																													
1		-0.9	-0.3	-0.4	-0.6	-0.3	-0.3	-0.8	-1.2	-1.5	-1	-0.7	-0.1	1.1	1.1	0.6	-0.4	-1.5	-2.1	-2.6	-2.6	-2.6	-2.4	-2.7	-2.9	1.1	-1.0	24	
2		-3.3	-4.3	-6	-6.8	-7.3	-7.6	-7.7	-9.8	-11.2	-11.4	-9.8	-7.4	-5.6	-4.7	-4.7	-4.7	-5.6	-6.4	-6.9	-6.9	-6.5	-6.9	-7.3	-7.6	-3.3	-6.9	24	
3		-7.2	-7.2	-7	-6.1	-4.1	-4	-4.2	-4.9	-3.8	-0.2	1.8	4.5	5.2	5.2	4.6	2.9	0.5	-1.8	-2.7	-2.3	-2.1	-1.8	-2.2	-2.8	5.2	-1.7	24	
4		-5.8	-6.2	-6.1	-5	-5.7	-6.1	-6.8	-7.7	-8.4	-8.3	-7.1	-7.1	-6	-6	-5.3	-4.8	-7.7	-9.7	-9.7	-10.5	-10.8	-10.9	-11.7	-10.9	-4.8	-7.7	24	
5		-9.9	-9.3	-8	-7.1	-5.9	-5.3	-6.2	-6.5	-8.9	-9	-7.7	-5.7	-3.9	-3.4	-3.7	-4.1	-5.1	-6.2	-7.9	-8.2	-7.3	-7.2	-7.2	-7	-3.4	-6.7	24	
6		-6.6	-6.6	-6	-6.4	-6.8	-7.2	-7.6	-8.3	-8.5	-8.4	-7.7	-6.7	-5.6	-3.4	-1.4	-1.1	-2.9	-3.8	-4.1	-4	-3.5	-2.7	-2.2	-2	-1.1	-5.1	24	
7		-2	-2.3	-2.2	-2.3	-2.4	-2.9	-4.4	-6	-7.5	-7.1	-5.6	-4	-3.4	-3.3	-5.2	-6.1	-5.9	-5.9	-6	-6.6	-7	-7.6	-7.5	-7.4	-2.0	-5.0	24	
8		-7.4	-7.1	-5.9	-4.3	-3.7	-3.3	-4.3	-5.3	-6	-5.8	-5.2	-4.8	-4.5	-3.2	-3.7	-4.2	-4.6	-5.6	-6.9	-7.8	-8.3	-8.4	-8.9	-9.2	-3.2	-5.8	24	
9		-9.7	-9.8	-9.1	-8.4	-6.5	-5.5	-6.4	-6.7	-7.1	-8	-7.8	-8.4	-8.3	-7.3	-7.1	-6.5	-6.2	-5.7	-5	-5.3	-5.5	-6.1	-7	-8.3	-5.0	-7.2	24	
10		-9.5	-9.7	-10.1	-10.9	-12.3	-13.5	-15.8	-17.8	-19.1	-19.2	-17.1	-16	-15.1	-14.7	-15.2	-17.5	-19.4	-19.8	-20.7	-20.8	-20.8	-20.8	-20.9	-21.3	-9.5	-16.6	24	
11		-21.2	-21.9	-21.1	-21.6	-23.2	-24.7	-25.6	-25.3	-25.7	-25.5	-24.7	-22.8	-20.2	-18.8	-18.9	-20	-21.7	-21.7	-20.4	-20.3	-21.2	-21.8	-22.7	-23.2	-18.8	-22.3	24	
12		-23.4	-23.7	-23.4	-22.6	-23.7	-21.8	-21.7	-18.3	-17.8	-17.1	-15	-14	-12.4	-10.8	-11.5	-13.2	-14.8	-15.7	-16	-16.3	-16.3	-16.1	-16	-16.3	-10.8	-17.4	24	
13		-16.8	-16.9	-15.9	-16.2	-16.4	-16.6	-17.1	-17.4	-17.8	-17.5	-15.4	-13.7	-13.3	-12.4	-12.2	-12.8	-13.4	-13.8	-14.1	-14.4	-14.3	-14.9	-15.2	-15.3	-12.2	-15.2	24	
14		-15.4	-16.3	-16.8	-17.1	-17.2	-16.6	-15.3	-14.5	-13.7	-12.6	-11.2	-10	-9.1	-8.4	-7.9	-7.4	-7.5	-6.8	-5.9	-5.4	-4.9	-4.2	-3.6	-2.8	-2.8	-10.4	24	
15		-2	-1.3	-0.6	0	0.8	1.6	2.1	3.3	4.3	5.6	6.2	6.5	7	7.4	6.9	6.3	5.3	4.6	4.2	3.4	1.1	-0.3	-1.8	-2.6	7.4	2.8	24	
16		-3.3	-3.9	-4.6	-4.8	-5	-5.5	-5.4	-5.3	-5.4	-5.1	-4.2	-3.2	-3.3	-4	-5	-5.7	-6.5	-6.8	-7.6	-8.8	-9.7	-10.2	-10.8	-11.5	-3.2	-6.1	24	
17		-11.7	-12	-12.3	-12.4	-12.7	-13	-12.8	-12.6	-12.4	-11.8	-11.5	-10.7	-10.2	-10.2	-10.3	-10.1	-9.9	-9.6	-9.5	-9.8	-10.5	-10.3	-8.5	-5.9	-5.9	-10.9	24	
18		-5.2	-6	-1.9	0.6	1.6	1.5	1.9	2.4	2	2.3	3.6	4	3.9	3.7	-0.7	-5.8	-9.4	-11.2	-12.1	-12.7	-14.4	-15	-15.5	-16.9	4.0	-4.1	24	
19		-18.4	-19.4	-20.3	-21	-21.3	-21.2	-20.3	-19.8	-19.4	-19.6	-18.6	-17.6	-16.5	-16	-15.3	-15	-15.7	-16.6	-17.4	-18.4	-21	-23.1	-24.5	-25.5	-15.0	-19.2	24	
20		-26.1	-26.5	-26.8	-26.8	-27.2	-27.4	-27.9	-28.2	-28.1	-26.3	-24.5	-23.2	-21.7	-21.2	-20.9	-21.7	-22	-22.4	-22.1	-21.7	-21.6	-21.4	-21.1	-21	-20.9	-24.1	24	
21		-21.1	-21.6	-21.2	-20.9	-20.6	-20.2	-20	-19.8	-19.6	-19.5	-19	-18	-17.3	-17	-17.2	-17.4	-17.9	-18	-17.9	-18	-17.8	-17.8	-17.6	-17.4	-17.0	-18.9	24	
22		-17.2	-17	-16.8	-16.5	-16.7	-16.8	-16.9	-17	-17.3	-17	-15.5	-14.3	-14.4	-13.7	-13.4	-14	-15.3	-16.3	-16.7	-17.2	-17.6	-18	-18.7	-19.3	-13.4	-16.4	24	
23		-19.5	-19.8	-20.1	-20.6	-21.1	-21.4	-21.5	-21.1	-20.8	-20.3	-19.7	-19.4	-18.9	-18.9	-19.2	-19.3	-19.7	-19.8	-19.7	-19.8	-20	-20.2	-20.4	-18.9	-20.0	-24	24	
24		-20.5	-20.3	-20.4	-20.4	-20.3	-20.5	-20.4	-20.4	-20.4	-19.7	-18.8	-17.3	-16.7	-14.8	-14.5	-15.3	-15.8	-16.6	-16.8	-17.7	-18.4	-18.3	-17.9	-17.1	-14.5	-18.3	24	
25		-16.8	-17.1	-16.8	-16.7	-16.6	-16	-15.1	-12.9	-13	-11.5	-10.8	-10.2	-8.5	-8.5	-7.6	-8.1	-9.6	-11	-12.2	-13	-13.5	-13.5	-13.4	-13.3	-7.6	-12.7	24	
26		-13.3	-12.9	-12.2	-12.8	-12.9	-13.5	-13	-13.7	-13.4	-11.6	-9.3	-6.2	-4.4	-2.6	-2.6	-4.4	-6.6	-7.7	-9	-9	-8.9	-10.8	-10.2	-10.7	-2.6	-9.7	24	
27		-11	-10.7	-11.2	-11.8	-11.6	-9.5	-8.9	-9.1	-9.3	-9.2	-8.9	-5.5	-1.8	-1.8	-3.4	-4.7	-5.8	-7.7	-8	-9.2	-10.6	-10.4	-11	-11.3	-1.8	-8.4	24	
28		-11.2	-10.8	-9.7	-9.4	-9.8	-11	-11.9	-12.6	-13.6	-13.1	-8.1	-7.4	-8.4	-9.4	-10.3	-10.8	-13.3	-15.2	-16.9	-17.8	-18.8	-19.6	-21.4	-22.6	-7.4	-13.0	24	
29		-23.1	-23.9	-24.6	-24.5	-25.2	-26	-26.9	-27.9	-27.8	-27.9	-27.9	-27	-25.9	-25.6	-25.7	-25.7	-27.8	-28.7	-28.8	-28.8	-28.6	-28.5	-28.9	-28.5	-23.1	-26.8	24	
30		-28.3	-28.2	-28.4	-28.2	-28.1	-28	-27.9	-27.9	-28	-26	-23.7	-23.2	-22.7	-21.6	-21.8	-23.4	-25.1	-26.9	-27.3	-27.4	-27.5	-28	-28.8	-29.9	-21.6	-26.5	24	
31		-29.8	-30.3	-31.2	-30.7	-30.3	-29.6	-28.9	-27.9	-26.7	-25.2	-22.9	-21.4	-20.5	-19.3	-18.6	-17.4	-16.8	-16.5	-16	-15.1	-14.6	-14.3	-15.9	-15.6	-14.3	-22.3	24	
HOURLY MAX		-0.9	-0.3	-0.4	0.6	1.6	1.6	2.1	3.3	4.3	5.6	6.2	6.5	7.0	7.4	6.9	6.3	5.3	4.6	4.2	3.4	1.1	-0.3	-1.8	-2.0				
HOURLY AVG		-13.5	-13.7	-13.5	-13.3	-13.3	-13.3	-13.5	-13.6	-13.7	-13.1	-11.8	-10.7	-9.7	-9.1	-9.4	-10.1	-11.2	-12.0	-12.3	-12.7	-13.0	-13.3	-13.6	-13.8				

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

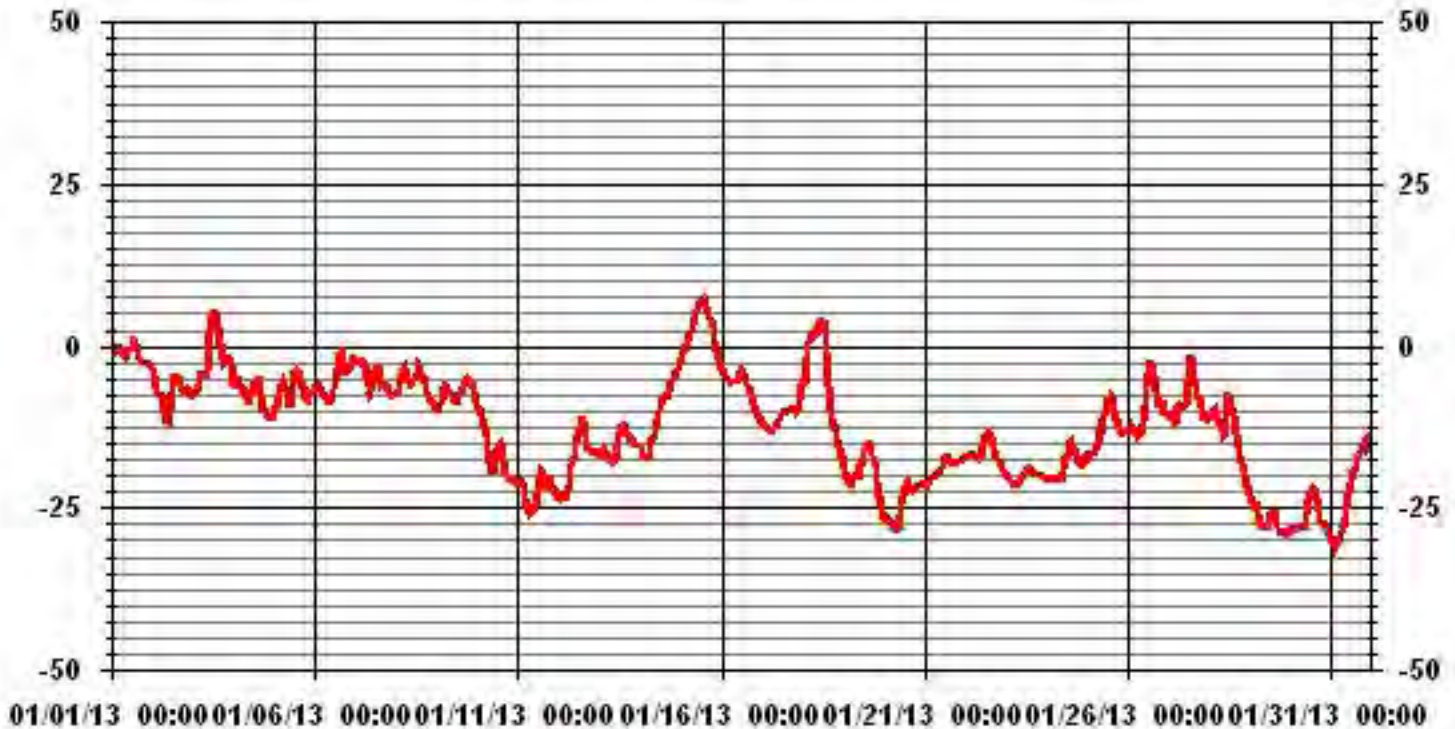
24 HOUR AVERAGES FOR JANUARY 2013



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-31.2 °C	@ HOUR(S)	2	ON DAY(S)	31
MAXIMUM 1-HR AVERAGE:	7.4 °C	@ HOUR(S)	13	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	2.8 °C			ON DAY(S)	15
CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS		
STANDARD DEVIATION:	8.34	AMD OPERATION UPTIME:	100.0 %		
		MONTHLY AVERAGE:	-12.38 °C		

01 Hour Averages



Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

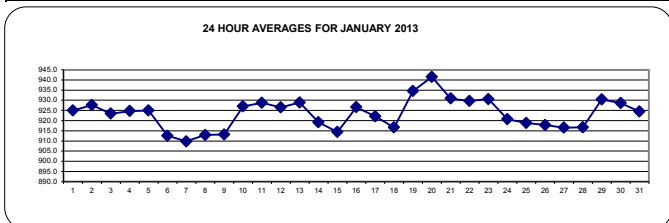
BAROMETRIC PRESSURE hourly averages (millibar)

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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			
DAY	HOURLY MAX	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX	AVG	RDGS		
1	921	921	921	922	922	923	923	923	923	924	925	925	925	926	926	927	927	927	927	927	927	927	928	929	930	930	930	925.0	24	
2	931	931	930	930	931	931	931	930	931	930	930	930	930	929	928	927	927	926	925	924	924	923	922	922	921	931	931	927.7	24	
3	921	920	920	920	921	921	921	921	921	922	923	924	924	925	925	925	926	926	926	926	926	926	926	926	926	926	926	926	923.4	24
4	926	926	925	925	924	924	924	924	924	924	925	925	925	925	925	925	925	925	925	925	925	925	924	924	924	926	926	924.7	24	
5	924	924	924	925	925	925	926	927	926	926	927	927	927	926	926	926	926	925	924	924	923	923	922	921	927	927	925.0	24		
6	919	918	917	916	915	914	913	912	912	911	911	911	910	910	910	911	911	911	910	911	911	911	912	912	913	919	912.5	24		
7	913	913	914	914	914	914	914	913	913	913	912	912	911	910	909	907	907	906	905	905	904	904	904	904	904	914	909.8	24		
8	905	905	906	906	907	908	909	910	912	913	914	915	916	916	917	918	918	917	917	917	917	916	916	916	916	918	913.0	24		
9	915	915	915	914	914	913	913	913	912	912	911	911	910	910	911	911	912	912	913	914	915	916	917	918	918	918	913.2	24		
10	919	921	921	922	923	924	925	925	926	927	928	929	929	928	929	929	929	930	930	931	931	931	931	931	931	931	931	927.0	24	
11	931	931	931	931	931	931	930	931	931	931	931	930	929	928	928	928	928	927	927	927	926	926	925	925	925	931	928.8	24		
12	924	924	925	925	925	925	925	925	926	926	926	926	926	926	927	927	927	928	928	928	928	929	929	929	929	929	929	926.5	24	
13	929	929	930	930	929	929	929	930	930	930	930	929	929	929	929	929	928	928	928	928	928	928	927	927	930	928.8	24			
14	926	926	925	924	923	922	921	920	920	919	918	918	917	917	917	917	917	917	916	916	916	916	916	916	916	926	919.2	24		
15	915	915	914	914	913	912	911	911	912	912	913	914	914	914	915	916	916	916	916	916	916	916	917	917	917	917	917	914.4	24	
16	918	919	921	922	923	923	923	924	925	925	926	926	926	927	927	928	929	930	931	931	932	932	932	932	932	932	932	926.6	24	
17	931	931	931	931	930	929	928	927	926	925	924	922	921	919	918	917	917	916	916	915	914	914	913	914	914	931	922.0	24		
18	914	914	914	914	913	913	913	913	913	913	913	913	914	913	915	916	918	919	920	922	923	925	926	928	928	931	916.7	24		
19	929	930	931	932	933	933	934	934	934	934	934	934	933	933	933	933	933	933	934	936	937	939	941	942	943	943	934.5	24		
20	944	944	944	944	944	944	944	944	944	943	943	943	942	941	941	940	940	939	939	939	938	938	937	936	944	941.5	24			
21	936	935	935	934	934	934	933	932	932	932	932	931	930	930	929	929	929	928	928	928	928	927	927	927	936	930.8	24			
22	927	927	927	927	927	927	927	928	928	929	930	930	930	930	930	931	931	931	931	932	932	933	933	933	933	933	933	929.6	24	
23	934	934	934	935	935	935	934	934	933	933	934	933	932	931	930	930	929	928	927	925	925	924	923	921	935	930.5	24			
24	921	920	920	919	919	919	919	919	919	919	920	920	920	921	921	921	922	922	922	922	922	922	922	922	922	922	922	920.7	24	
25	921	921	920	920	920	920	919	919	919	920	919	919	919	919	918	918	918	918	918	918	918	917	917	917	917	921	918.8	24		
26	918	918	918	917	917	917	918	918	918	918	918	918	918	918	918	918	918	918	918	918	918	917	917	917	918	918	917.8	24		
27	917	917	917	917	917	916	917	917	917	916	917	917	917	917	917	916	916	916	916	916	916	916	916	916	915	917	916.5	24		
28	915	915	915	915	915	915	915	915	915	915	915	915	916	915	916	916	917	917	918	919	920	921	922	923	923	923	916.7	24		
29	924	925	926	928	929	930	931	932	933	934	934	934	934	934	933	933	932	932	931	930	929	929	927	926	934	930.4	24			
30	925	925	925	924	924	925	926	926	927	928	929	929	929	929	929	930	930	931	932	932	932	932	932	932	932	932	932	928.6	24	
31	932	931	931	930	930	929	927	927	926	925	925	924	923	922	922	921	920	920	920	920	920	920	920	920	920	932	924.5	24		
HOURLY MAX	944	944	944	944	944	944	944	944	944	944	943	943	943	942	941	941	940	940	939	939	939	939	941	942	943					
HOURLY AVG	923	923	923	923	923	923	923	923	923	924	924	924	924	923	923	923	923	923	923	923	923	923	923	923	923					

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

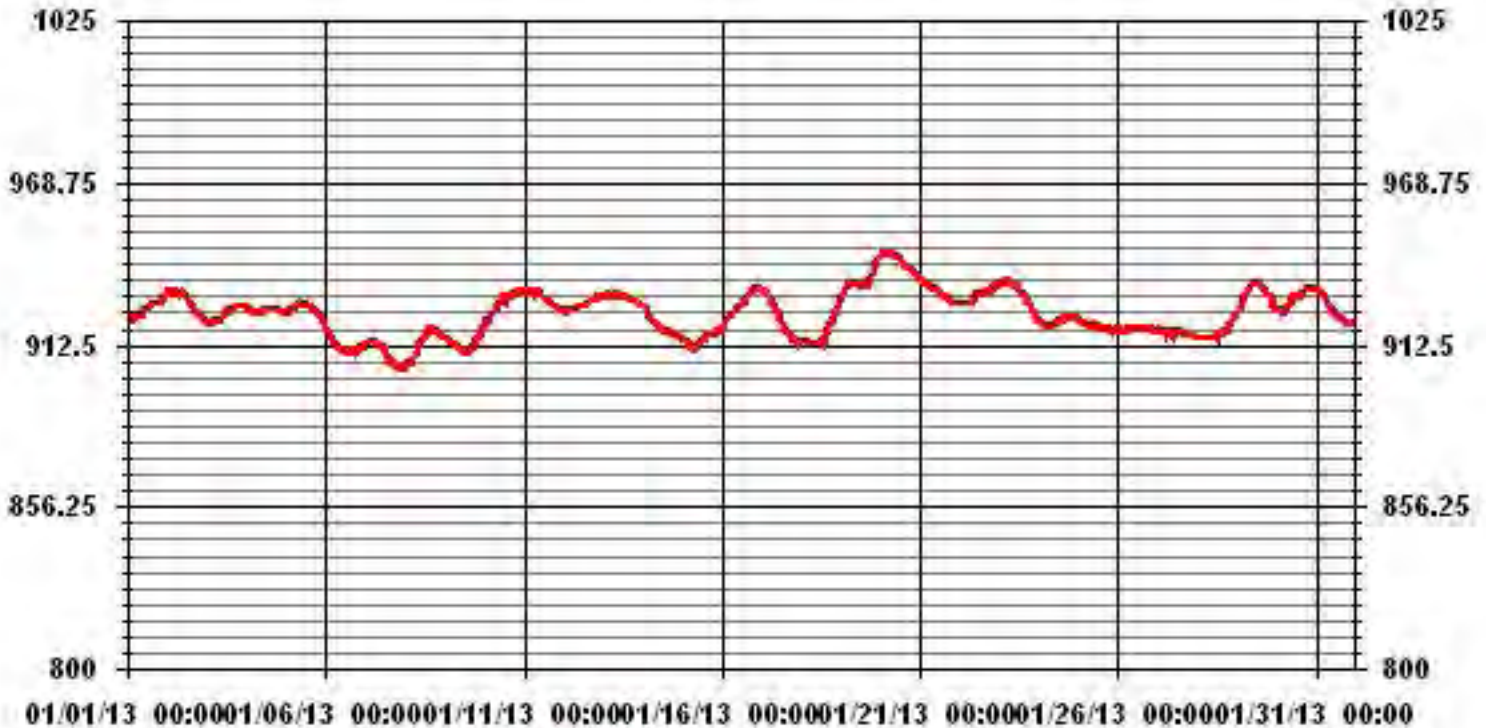
24 HOUR AVERAGES FOR JANUARY 2013



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	944	MB	@ HOUR(S)	VAR	ON DAY(S)	20
MAXIMUM 24-HR AVERAGE:	941.5	MB			ON DAY(S)	20
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
			AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	7.80		MONTHLY AVERAGE:	923	MB	

01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

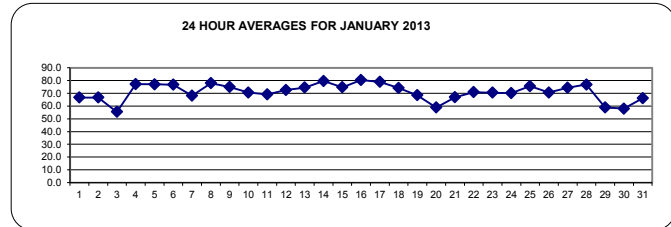
RELATIVE HUMIDITY hourly averages (%)

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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		
DAY	HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.	AVG.	RDGS.	
1	1	68	66	66	66	70	73	74	72	72	69	66	63	60	60	63	66	68	65	64	63	63	65	69	70	74	66.7	24	
2	2	71	71	73	75	76	76	76	82	81	78	73	65	58	55	53	54	56	59	61	61	60	61	62	63	82	66.7	24	
3	3	61	61	60	58	53	52	53	55	53	45	42	42	45	46	47	52	59	62	63	65	65	64	64	63	65	55.4	24	
4	4	76	77	76	72	74	75	77	79	80	81	78	77	73	72	69	67	76	83	82	82	82	81	80	80	83	77.0	24	
5	5	81	81	81	79	78	78	80	82	82	78	76	73	67	67	69	71	75	77	79	79	78	79	79	79	82	77.0	24	
6	6	77	77	77	77	78	79	81	83	82	81	79	79	81	81	77	73	76	75	73	72	70	68	70	73	83	76.6	24	
7	7	75	74	75	75	73	71	75	80	83	75	68	61	59	58	60	63	63	63	62	64	64	64	64	65	83	68.1	24	
8	8	70	78	84	85	84	84	81	79	80	78	78	75	72	65	66	68	72	76	80	83	84	84	83	81	85	77.9	24	
9	9	80	77	71	69	60	57	61	62	66	77	79	78	78	77	77	77	78	82	85	83	82	81	80	79	85	74.8	24	
10	10	77	77	77	76	76	76	75	75	74	72	66	62	60	57	57	62	68	70	71	72	73	73	73	73	77	70.5	24	
11	11	73	72	73	72	71	69	68	68	67	66	66	66	65	64	65	66	70	71	71	71	71	71	70	70	73	69.0	24	
12	12	69	69	70	70	69	71	70	73	74	73	74	73	72	68	67	71	74	76	77	77	77	76	76	76	77	72.6	24	
13	13	76	76	76	76	76	76	74	74	73	74	73	72	71	70	70	72	73	75	76	76	76	77	77	77	77	74.4	24	
14	14	77	77	77	76	75	76	76	76	77	78	78	78	78	78	77	78	80	84	84	85	85	86	86	87	87	79.5	24	
15	15	88	88	89	89	87	80	77	74	69	64	62	59	60	57	58	61	67	71	72	76	86	88	86	84	89	74.7	24	
16	16	83	82	81	82	83	83	84	84	82	82	81	78	78	80	80	77	79	78	78	78	80	81	78	76	84	80.3	24	
17	17	78	77	77	78	78	78	78	78	78	78	78	78	78	78	79	79	80	80	81	80	80	80	82	84	84	79.0	24	
18	18	83	84	84	81	78	80	77	80	83	79	70	69	71	72	75	68	68	69	69	70	69	69	68	65	84	74.2	24	
19	19	66	68	70	71	71	70	69	70	71	70	68	68	66	69	71	71	72	72	69	66	64	61	63	67	72	68.5	24	
20	20	68	68	67	66	65	65	64	63	59	55	52	48	47	50	53	56	56	57	58	60	61	62	68	58.8	24			
21	21	63	65	64	64	64	62	62	59	60	66	67	67	66	66	68	69	71	72	72	72	72	72	72	72	72	67.0	24	
22	22	72	72	73	73	73	73	74	74	72	71	68	66	66	64	63	65	68	71	73	74	74	73	74	75	75	70.9	24	
23	23	75	75	75	74	74	73	72	71	70	70	69	69	68	68	68	68	69	69	69	69	69	70	69	68	68	75	70.4	24
24	24	68	69	70	70	70	69	69	70	70	70	69	68	66	65	65	67	69	72	73	74	75	75	75	76	76	70.2	24	
25	25	75	74	74	74	75	75	76	78	78	79	79	78	75	73	68	67	71	75	76	77	78	79	79	79	79	75.5	24	
26	26	79	79	79	80	79	78	78	78	77	73	70	65	58	53	53	57	62	66	69	70	70	75	72	73	80	70.5	24	
27	27	74	73	75	78	79	76	74	74	77	75	75	69	56	57	64	69	72	81	83	82	81	81	80	80	83	74.4	24	
28	28	80	80	81	81	81	79	79	78	78	78	81	79	77	76	78	78	76	75	74	73	72	71	69	68	81	76.8	24	
29	29	68	68	67	66	64	64	63	63	62	59	56	54	52	50	49	49	52	55	56	58	58	59	60	59	68	58.8	24	
30	30	59	61	62	62	62	63	62	63	63	58	52	50	48	46	46	48	52	57	60	61	63	63	65	65	65	58.0	24	
31	31	65	65	64	64	63	62	62	63	64	65	65	64	64	65	65	65	67	67	69	70	70	70	74	76	76	66.2	24	
	HOURLY MAX	88	88	89	89	87	84	84	84	83	82	81	79	81	81	80	79	80	84	85	85	86	88	86	87				
	HOURLY AVG	73.4	73.6	73.8	73.5	72.9	72.4	72.3	72.9	72.9	71.6	69.7	67.6	65.7	64.6	65.0	66.1	68.9	71.1	71.8	72.3	72.6	72.8	72.9	73.1				

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

24 HOUR AVERAGES FOR JANUARY 2013



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	89	%	@ HOUR(S)	2, 3	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	80.3	%			ON DAY(S)	16
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
			AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	8.48		MONTHLY AVERAGE:	70.98	%	

01 Hour Averages



Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

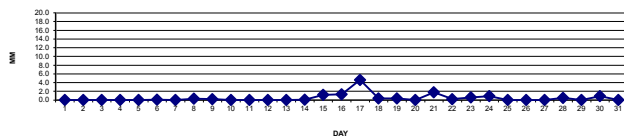
PRECIPITATION hourly averages (mm)

MST		00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY		
HOUR START	HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	TOTAL	RDGS.	
DAY																													
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	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	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	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	24	
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	24	
6		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	0.1	0.1	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	24	
8		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	0.1	0.3	24
9		0	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	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	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	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	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	24	
14		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	0.1	0.1	24
15		0.1	0.1	0.2	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	0	0.3	1.2	24	
16		0.1	0.1	0.1	0.1	0.1	0.2	0	0	0	0	0.1	0.4	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.3	24
17		0	0	0	0	0	0	0	0.2	0.5	0.2	0.1	0.5	0.4	0.5	0.9	0.4	0.3	0.1	0.1	0	0	0	0.2	0.2	0.9	4.6	24	
18		0	0	0	0	0	0	0	0.2	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	24	
19		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0.1	0.2	0	0	0	0	0	0.2	0.4	24
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	24	
21		0	0	0	0	0	0	0	0	0	0	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0	0.2	1.8	24	
22		0	0	0	0	0	0	0.1	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	24	
23		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0.1	0	0.1	0.3	0	0	0.3	0.6	24	
24		0.1	0.3	0.3	0	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.9	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	24	
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	24	
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	24	
28		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.1	0	0.1	0	0	0	0.3	0.5	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	24	
30		0	0.1	0.2	0.1	0.1	0.2	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0.2	0.9	24	
31		0	0	0	0	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		0.1	0.3	0.3	0.3	0.1	0.2	0.1	0.2	0.5	0.2	0.2	0.5	0.4	0.5	0.9	0.4	0.3	0.2	0.2	0.2	0.1	0.3	0.3	0.2				

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

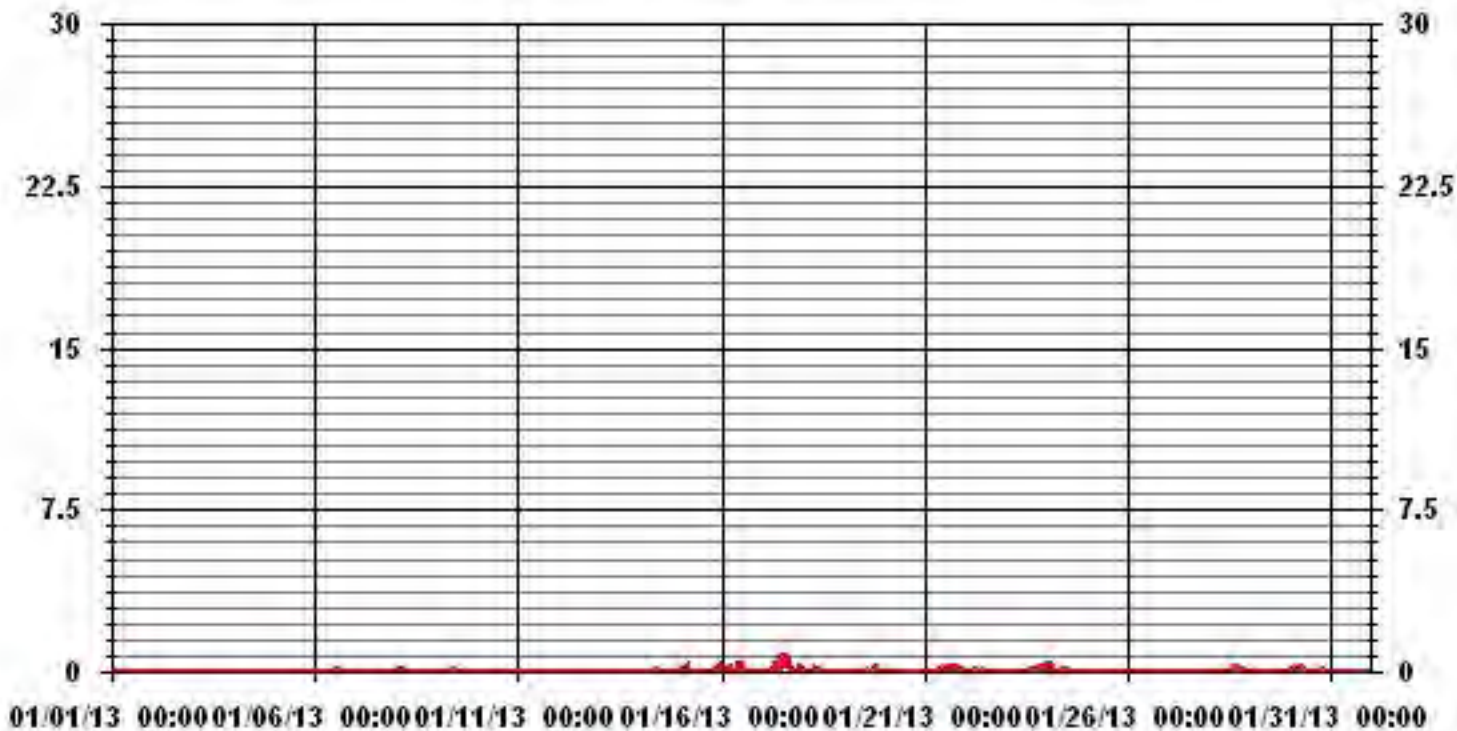
DAILY TOTALS FOR JANUARY 2013



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	0.9	MM	14	ON DAY(S)	17
MAXIMUM DAILY TOTAL	4.6	MM		ON DAY(S)	17
MONTHLY TOTAL	13.5	MM			
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	0.07		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	0.02	MM

01 Hour Averages



— LICA31 PRECIP MM

JOB #: 2833-13-01-31-C

Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

WIND SPEED hourly averages (km/hr)

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	RDGS.
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.	AVG.	
DAY																											
1	17.2	21.6	21.8	20.6	20.7	22	19.6	20.3	20.2	20.3	21.9	21.2	19.4	18.4	18.4	17	14.4	18.6	17.1	22.3	20.6	22.9	20.8	17.8	22.9	19.2	24
2	20.5	15.1	11.2	9.6	14.2	13.4	9.7	8.3	11.1	12	12.4	13.9	16.6	18.6	18.8	15.9	16.9	14.7	17.1	15.7	14.5	17.1	18.3	17.4	20.5	11	24
3	16.2	15.6	14.4	16.2	15.1	14.7	15.6	14.8	13.2	14.1	9.4	10.8	13.7	12.3	10	12.3	10	11.7	12.5	12.2	11.8	11.5	11.5	7.2	16.2	11.2	24
4	6.9	3.9	4.8	7.3	9.5	8.7	12.3	9.9	12.1	12.3	7.8	6	2.6	4	3.9	3	5.5	7.2	9.5	11.3	12	12.5	15.6	14.9	15.6	2.6	24
5	11.8	12.6	14.6	14.8	14.4	13.7	12.3	9.8	7	8.8	11.9	11.5	10.8	11.6	12	9.6	9.3	8.7	11	11.7	9.1	9.4	7.5	12	14.8	9.1	24
6	11.6	11.8	13.3	13.6	4.3	1.5	2.7	5.6	8.7	9.4	12.6	13.1	13.4	11.9	12.7	12.1	11.4	12.8	12.6	13	13.5	14.2	13.2	14.4	14.4	8.1	24
7	14.8	13.5	15.6	14.4	15.8	13.6	7.2	9.4	11.4	11.8	11	9.9	11.8	8.4	9.7	11.2	12.9	15.1	14.3	16.8	20.5	15.9	11.6	9.4	20.5	9.5	24
8	11.6	12.3	11.8	12.3	12.8	14.2	19.7	20	17.1	13.9	13.9	14.9	15.9	13.8	10.4	11.2	9.7	4.7	9.3	10.8	9.6	10.1	9.9	9.1	20	9.4	24
9	9.6	11.7	10.9	12	12.4	15.2	11.9	10.2	9.6	12.2	13.9	14.9	16.6	14.7	15.1	12.8	14.7	16.3	13.7	13.2	18.8	16.1	19.2	17.3	19.2	7.4	24
10	17.4	14.9	16.3	13.6	12.1	14.6	15.6	14.2	15.6	11.2	10.2	10.3	9.8	10.4	10	8.8	10.1	10.6	11.6	12.8	9.5	11.1	9.9	6	17.4	11.6	24
11	8	6.6	8.5	8.5	7.3	7.6	8.4	8.6	8.1	13.4	15.9	14	10.6	13.5	11.1	8.8	8.8	11.9	13.5	13	10.3	11.4	9.4	9.8	15.9	8.3	24
12	9.1	8.4	8.6	10.1	10.3	10	12.4	13.2	10.9	9.1	11.2	9.5	9	10.4	10.2	10.8	9.7	9.4	9.2	9.7	7.5	6.6	6.9	5.1	13.2	8.1	24
13	5.9	7.1	9	9.4	9.7	8	7.8	7.6	4	7.5	2.4	0.9	5.6	7	7.8	5.9	7.3	7.9	5.3	4	4.3	5.7	5.6	6.5	9.7	5.3	24
14	8.5	9.8	8.9	8.2	9.1	9.8	10.6	13.6	13.5	12.4	12.6	12.7	9.2	9.8	10.9	9.6	12.4	11.2	11.3	11.3	10	10.1	8.6	9.9	13.6	9.9	24
15	11.4	11.3	12.4	14.1	17.5	18.6	17.6	18.3	20.8	25.8	26	24.9	27.6	26.7	25.3	22.1	21.2	20.8	21.7	17.9	11	10.5	8.2	9.6	27.6	15.5	24
16	10.4	13.4	10.3	8.5	8.3	9.2	8.6	9.6	9.4	5.5	4.4	2.4	6	13.6	18.7	18.8	15.1	15.5	12	9.3	8	5.2	7.7	6.3	18.8	9.2	24
17	5.4	6.3	6.5	7.1	8.8	10.9	11.8	13.2	15.9	18.2	20.4	19.4	16.3	18.7	14.9	13.3	10.8	10.2	8.6	9.9	9.5	7.2	6.9	5	20.4	10.6	24
18	2.7	4.7	9.1	10.7	12.1	5.8	11.6	14.7	7.3	12.1	15.7	13.7	17.2	21.7	24.1	27	25.8	24.2	25.1	22.1	24.7	22.1	20	19.9	27	14.4	24
19	16.3	13	9.6	8	8.6	8.9	7.7	5.6	2.2	4.7	4.9	6.5	7.7	10.6	5.8	6.1	7.2	12.2	16	20.5	22.1	17.7	11.9	10.2	22.1	7.6	24
20	10.5	11.4	10.6	12.2	11.2	12.5	10.3	10.1	9.2	9.1	10.3	13.6	10.7	11.9	12.5	10.2	8.4	6.9	8.3	6.7	6	6	7	5.8	13.6	9.2	24
21	5	3.7	2.5	6.3	6.3	2.6	6.2	5.7	5.1	6.6	7.6	5.4	6.3	6.5	9	8	9.5	7.6	8.4	7.3	6.3	5.5	5.5	5.5	9.5	4.8	24
22	4.8	4.4	3.9	2.5	4.7	6.8	6	7.5	7.6	7.8	8	9.1	9.9	10.5	9.9	9.5	9.4	8.3	6.6	7.4	9.5	9.1	9.9	9	10.5	6.4	24
23	8.5	5.9	6.6	8.2	8.6	9.2	8.6	10.3	12.1	12.9	14.1	14.3	18.1	17	17.2	17.6	20.7	21.7	21.2	21.5	21.4	21.4	22.2	23.5	23.5	14.3	24
24	20.4	18.7	18.8	17.8	13.8	13.6	9.7	6.4	3.1	3.4	5.9	6.1	9.9	7.1	5.9	7.6	5.1	8.1	8.6	10.1	9.8	9.2	11.9	11.3	20.4	6.8	24
25	9.5	8.2	8.9	9.5	10	10.9	11.5	7.5	8.8	9.8	9.8	11.6	9.4	11.1	11	9	11.1	13.2	15.3	14.2	12.5	12	11.4	10.7	15.3	9.9	24
26	11	10.4	9.5	7.8	9.9	12	12.1	12.1	12	10.8	8.5	7.7	7.6	8.7	9.2	8.8	8.5	9.7	9.7	10.2	11.5	9.4	10.5	11.4	12.1	9.7	24
27	9.6	10.1	10.9	10.6	12.1	10.6	8.8	1.6	6.4	3.3	7.8	9	5.2	8.1	7.2	5.7	7.8	6.5	7.7	7.7	5.1	6.5	7.7	7.5	12.1	7	24
28	7.7	8.8	8.4	9.1	8	6.8	5.4	3.8	3.2	2.8	1.8	3.5	4.7	6.7	10.3	15.3	15.5	16.5	19.1	19.9	20.2	18.3	20.1	19.8	20.2	6.8	24
29	17.4	16.4	17.6	20.6	22.5	19.5	19.8	18.9	18.1	20.2	24.2	17.7	14.1	13.6	12.1	9.4	7.9	4.8	25.2	1.3	3.5	2.8	8.8	11.1	25.2	10.6	24
30	11.2	9.7	9.3	9.5	7.9	5.9	7.3	5.7	6.2	8.4	8.4	11.9	12.3	10.2	9.7	10.4	10.1	9.6	8.8	9.8	7.8	7.4	7.7	7.5	12.3	4.6	24
31	7.8	10.4	10.6	12.3	13	16.6	15.6	13.5	12.8	12.4	12.7	12.8	10	12.6	9.5	7.3	6.2	6.2	6.1	7.4	8.3	2.1	4.1	1.7	16.6	8.8	24
HOURLY MAX	20.5	21.6	21.8	20.6	22.5	22.0	19.8	20.3	20.8	25.8	26.0	24.9	27.6	26.7	25.3	27.0	25.8	24.2	25.2	22.3	24.7	22.9	22.2	23.5			
HOURLY AVG	10.9	10.7	10.8	11.1	11.3	11.2	11.1	10.6	10.4	11.0	11.5	11.4	11.5	12.3	12.0	11.5	11.4	11.7	12.8	12.3	11.9	11.2	11.3	10.7			

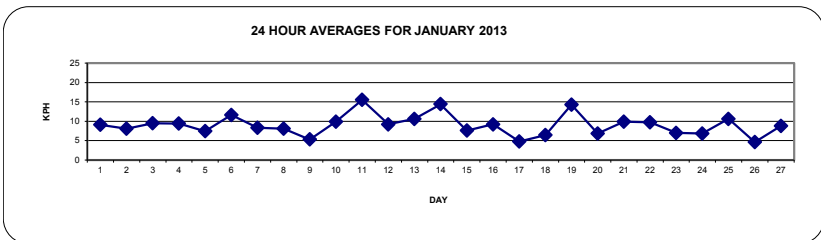
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

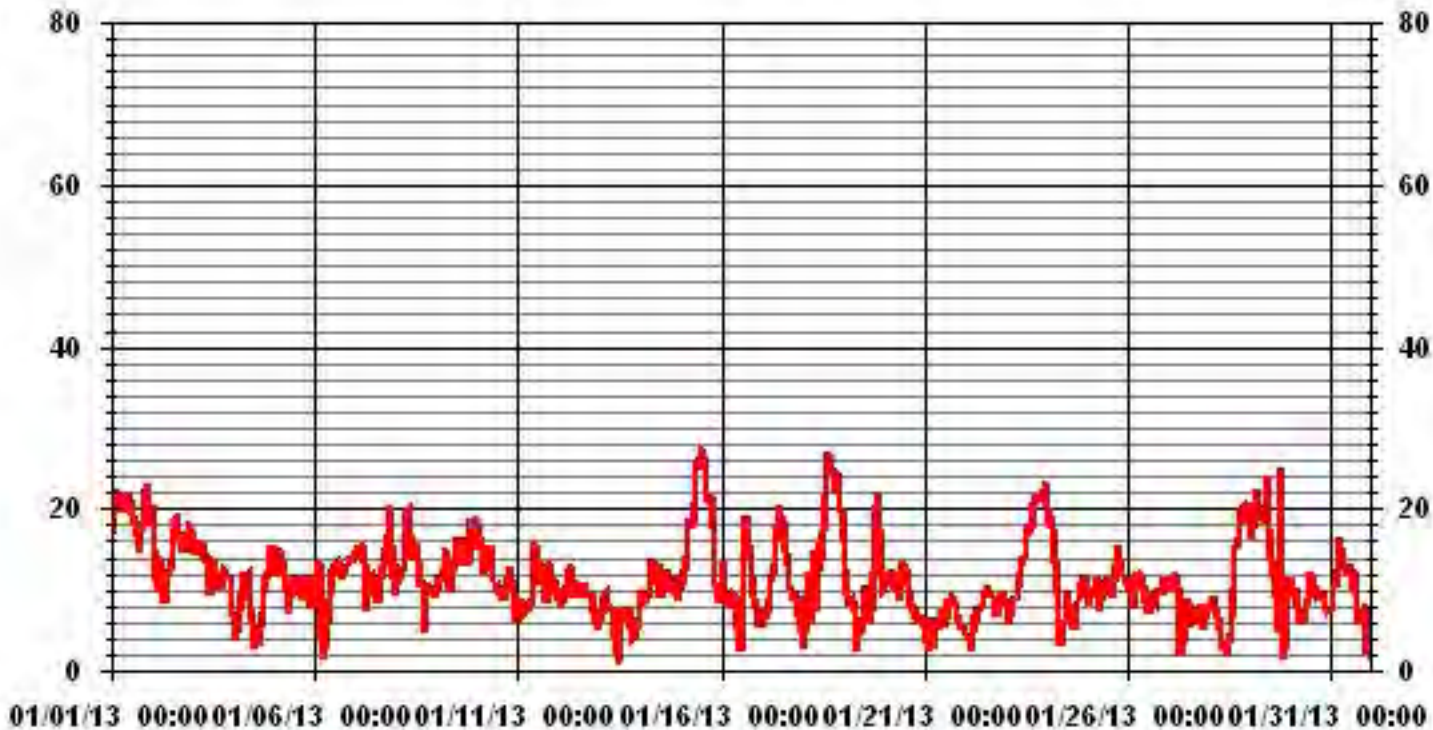
LAST CALIBRATION: June 12, 2012

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	27.6 KPH	@ HOUR(S)	12	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	19.2 KPH			ON DAY(S)	1
CALMS (≤ 0 KPH)	0.00 %	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0 HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	4.90	MONTHLY AVERAGE:	11.37	KPH	



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2013

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST																								DAILY	
hour start	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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.
hour end	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	MAX.
DAY																								MAX.	
1	36.4	53.4	53.9	46	45.2	49.3	43.6	49.1	53.4	48.5	46.5	49.7	43.4	47.5	44.3	39.9	30.5	42.5	41.6	48	42.8	57.6	49.5	39.7	57.6
2	51.9	31.4	26.3	19.5	27.8	25.5	25.2	11.9	20.4	17.4	20.6	23.7	29.4	33.8	32.7	28.3	28.1	24.6	26.3	26.1	25.2	26.1	25.5	22.8	51.9
3	23.2	19.3	18.7	20.2	20	25	26.5	20.4	21.3	27.8	21.3	24.4	30.7	33.5	22.6	21.3	17.8	16.7	16	22.8	19.3	20.6	22.4	16.9	33.5
4	10.3	14	8.8	11.4	15.6	11.9	22.1	20	22.6	20	14.3	13.2	12.1	12.1	18.4	12.1	16.2	11	21.3	17.6	18.3	20.6	23.2	20.2	23.2
5	17.4	19.3	22.4	23.2	27.9	27.6	23.5	20.2	10.3	12.7	16.9	16.9	14.3	17.6	17.3	16.5	14.5	13.8	17.8	20.2	20.2	19.2	19.5	24.3	27.9
6	26.5	24.6	28.5	30.9	20	14.5	12.5	15.2	14.7	16.7	19.1	19.3	19.7	21.5	21.3	22.6	19.7	23.2	21	28.5	28.3	31.6	27.6	40.3	40.3
7	33.8	29.6	39	35.9	34.6	29.9	13.2	16.5	16.9	16.9	17.8	17.8	21.3	24.8	24.1	28.9	25.7	29.6	28.3	26.1	32.2	25.7	19.3	15.4	39
8	18	16.2	16.9	21.6	25.4	42.1	48.8	41.6	35.5	37.5	34	32.7	32.1	28.8	23.5	25.4	20.6	14.9	16.7	16	15.2	18.5	19.1	17.3	48.8
9	19.5	20.4	23.7	23.2	25.2	31	30	23.2	17.6	20.8	26.5	26.1	31.8	26.7	30.9	25.2	28.5	31.1	27.2	34.4	34.2	33.6	38.4	35.7	38.4
10	37.9	33.8	39.7	29.6	28.3	33.8	35.3	32.9	32.9	26.6	24.3	25.2	24.4	26.7	25.9	22.4	21.7	18.7	23.5	27.9	25.7	26.4	21.3	20.9	39.7
11	40.8	19.5	53.3	80.6	17.4	10.8	11.7	13.4	13.4	20.6	24.3	23.1	22.2	19.3	18.7	18.2	20	19.1	22.6	22	20.9	22.6	16.5	13.6	80.6
12	12.8	12.4	16	14.9	16.5	15.8	16.7	19.5	18.9	16.9	21.9	21.7	22.4	22.8	20.6	25.7	21.9	20.2	17.8	19.4	14.9	13.2	12.8	11.5	25.7
13	14.3	16.7	19.1	18	20.2	17.6	17.3	18.9	17.1	15.8	16.7	17.1	11.9	16.9	17.1	13.8	14.9	16.3	13.6	13	20	7.9	11.7	16.7	20.2
14	14.5	15.8	15.2	15.2	21.1	23.5	25.9	28.3	25.9	25.4	29.6	23.9	20.4	19.3	18.9	16.5	18.4	16.5	15.8	16	14.5	14.9	13	16	29.6
15	16.5	17.4	18	28.3	29.8	39.9	42.8	42.7	50.1	57.4	61.1	56.5	63.1	59.6	58.5	59.3	55.4	48.8	50.8	44	36.6	24.8	18.2	20.7	63.1
16	28.3	35.1	29	19.7	19.1	18.7	18.2	18	21	10.6	13.6	12.5	16.9	38.2	40.5	43.8	40.3	37.3	28.1	26.1	19.1	14.5	16.7	14.9	43.8
17	8.6	19.5	14.7	15.4	18.4	18.7	20.2	22.4	30.5	32.7	43.4	33.6	31	32.9	31.8	23.9	19.6	20.4	16.7	18.2	18.3	16.7	18.4	16.7	43.4
18	12.1	14.5	15.4	34.6	27.6	16.4	47.6	41	14	41	37.7	30.7	45.3	47.3	52.8	71.4	59.6	57.2	57.6	53.5	65.3	58.3	47.3	47.8	71.4
19	42.1	30.3	27.4	22.2	17.1	21.8	30.5	19.3	30.3	13.4	13.4	16.1	17.6	16.7	13.2	17.6	17.4	33.6	38.4	50.2	45	47.6	34.9	22.2	50.2
20	21.9	21.9	25	24.4	23.7	24.1	22.6	21.3	19.1	18.2	24.3	28.6	21.5	26.5	24.6	21.1	19.8	14.5	16.9	17.4	14.7	12.8	14.1	42.1	42.1
21	11.7	23	59.6	11	11	66	68.4	15.8	16	16.3	16.5	16.7	18.2	17.4	18.4	18.3	21.3	18.2	16.7	15.8	14.5	16.9	15.6	12.3	68.4
22	50.6	67.1	14.9	13.8	14.3	12.7	13	21.9	21.5	19.5	17.8	18	21.1	23.5	23.5	23.9	23.3	16.2	14.5	18.7	23.9	20.2	21.7	16.1	67.1
23	14.9	9.7	30.5	20.6	18.9	16.3	16.5	20.6	25.5	25.2	25.9	30.1	34.2	36	33.3	35.1	40.1	41.4	39.5	37.1	39.7	51.5	41.2	45.4	51.5
24	44.9	36.4	36.4	39.9	28.3	25.7	18.2	19.8	66	52.2	12.3	11.7	16.9	14.3	13.4	13	27.2	11.9	18.2	17.6	18.1	18.4	22.4	20.8	66
25	18.9	20.2	17.8	24.1	23.3	29.2	29.6	17.6	25	24.4	27.2	25	26.1	27.2	21.3	21.9	25.9	24.6	25.2	19.8	18.2	17.1	15.8	29.6	29.6
26	18	14.3	15.1	11.9	14.7	16.7	16.5	13.9	14.3	14	12.1	10.4	9.5	13	15.4	18.4	17.2	13.2	17.3	16.5	14	14.7	21.1	19.1	21.1
27	16.9	16.5	17.1	19.4	22.4	20.2	20.2	13	19.5	14.5	19.1	18.4	15.6	13.6	15.4	15.2	14.5	15.8	14.9	12.3	10.6	12.1	15.6	16.7	22.4
28	20	15.6	17.8	19.3	17.6	13.8	13.4	11.9	30.3	9.5	9.7	13.8	12.7	18.7	25.2	34.2	36.2	38.8	46.3	49.3	51	43	45.4	47.1	51
29	48.7	37.9	39.9	53.7	52.2	43.4	44.3	40.8	40.8	52.4	56.3	41.7	33.1	28.8	23.3	20.2	18	67.3	149.6	162.5	19.8	34.5	25.5	22.4	162.5
30	21.7	25.2	23.3	25	136	133.4	20.7	36.9	82.8	36.6	24.1	27.2	27	26.5	23.1	19.8	19.8	20.9	17.8	21.1	34	15.4	15.8	15.8	136
31	16.5	21.9	22.2	22.6	25.7	32.5	31.8	27.6	24.4	25.5	25.7	29	22.8	27.4	23.7	18	15.6	16	14.1	14.3	12.7	12.8	18.9	15.2	32.5
PEAK	51.9	67.1	59.6	80.6	136.0	133.4	68.4	49.1	82.8	57.4	61.1	56.5	63.1	59.6	58.5	71.4	59.6	67.3	149.6	162.5	65.3	58.3	49.5	47.8	

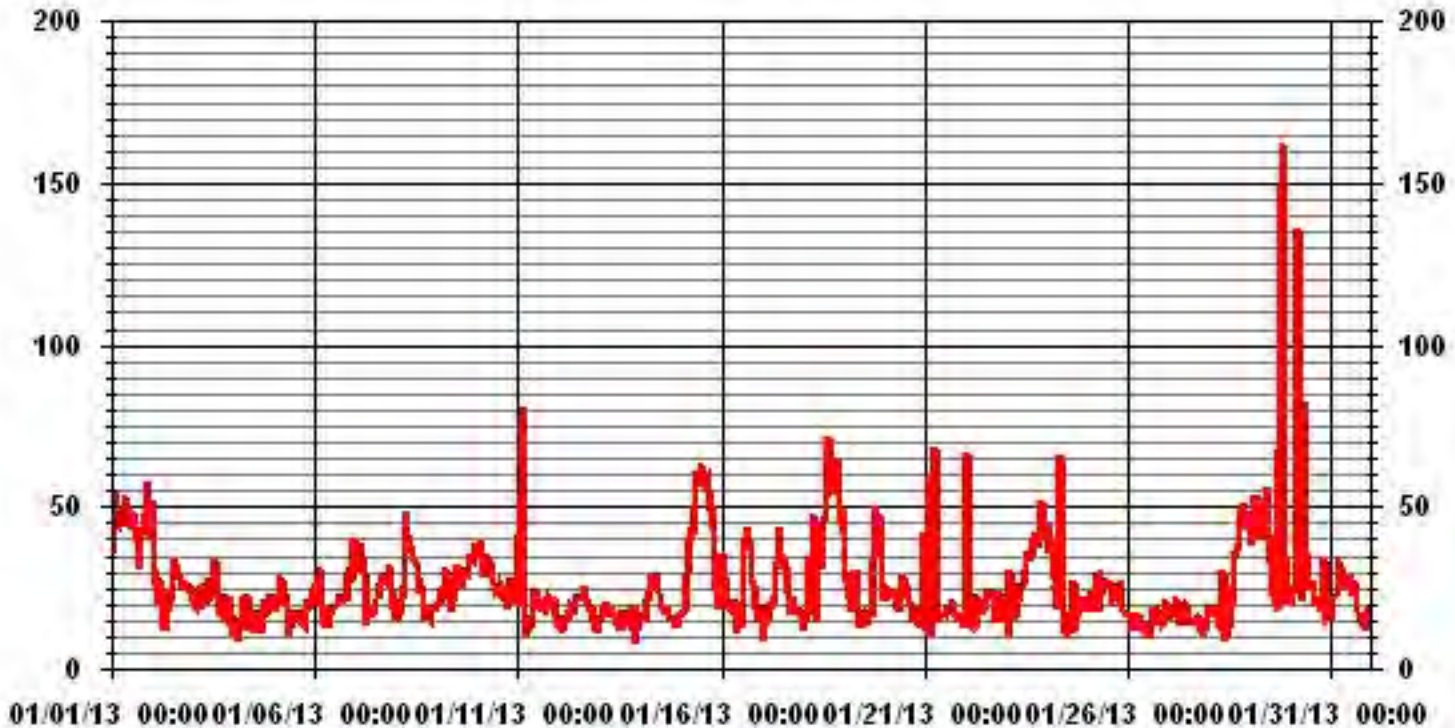
STATUS FLAG CODES

C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	162.5	KPH	@ HOUR(S)	19
			ON DAY(S)	29

01 Hour Averages



LICA31
WSP / WDR Joint Frequency Distribution (Percent)

January 2013

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	.26	.00	.53	.40	.26	.53	.40	.67	.80	1.34	1.34	.94	.67	1.47	.53	.67	10.88
< 12.0	2.41	1.47	.80	.40	2.01	2.15	1.47	.94	2.82	8.06	8.33	3.62	2.95	3.89	4.43	5.24	51.07
< 20.0	1.74	1.07	.80	.53	.26	1.61	1.47	.26	1.88	1.88	4.16	1.74	3.09	3.22	3.22	3.36	30.37
< 29.0	.80	.00	.00	.00	.00	1.34	.13	.00	.00	.00	.13	.00	.13	1.20	2.01	1.88	7.66
< 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	5.24	2.55	2.15	1.34	2.55	5.64	3.49	1.88	5.51	11.29	13.97	6.31	6.85	9.81	10.21	11.15	

Calm : .00 %

Total # Operational Hours : 744

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	2		4	3	2	4	3	5	6	10	10	7	5	11	4	5	81
< 12.0	18	11	6	3	15	16	11	7	21	60	62	27	22	29	33	39	380
< 20.0	13	8	6	4	2	12	11	2	14	14	31	13	23	24	24	25	226
< 29.0	6					10	1				1		1	9	15	14	57
< 39.0																	
>= 39.0																	
Totals	39	19	16	10	19	42	26	14	41	84	104	47	51	73	76	83	

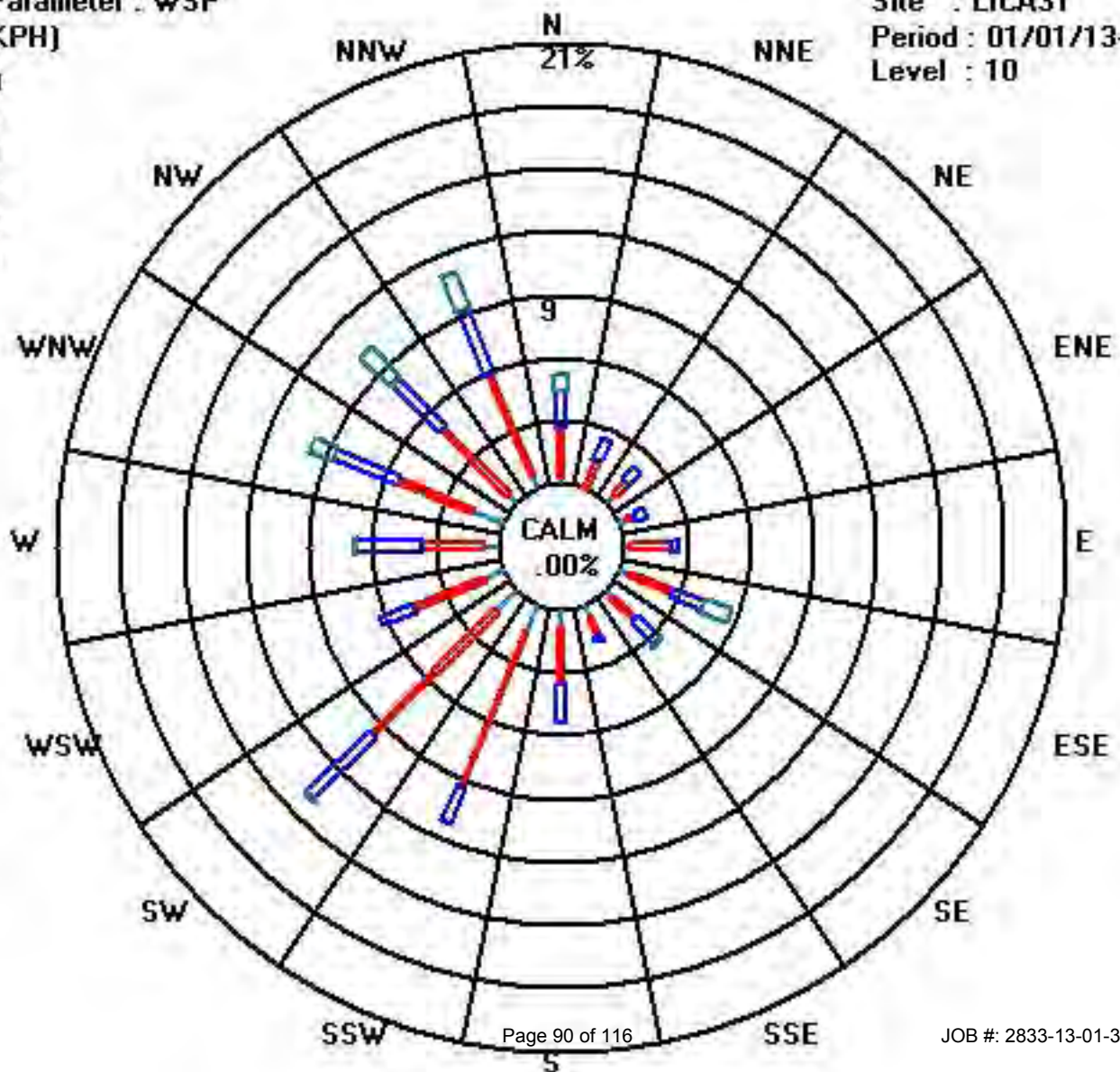
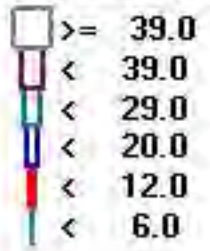
Calm : .00 %

Total # Operational Hours : 744

Class Limits (KPH)

Period : 01/01/13-01/31/13

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

JANUARY 2013

WIND DIRECTION hourly averages in degrees

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	24-HOUR AVG		
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00	AVG.	QUADRANT	RDGS.	
DAY 1	280	281	291	295	299	303	297	293	292	298	306	309	315	314	315	301	295	300	298	308	322	336	332	326	336	NNW	24	
2	327	314	313	308	310	318	308	219	216	214	212	215	214	212	214	215	221	218	223	223	213	227	230	236	327	NW	24	
3	236	240	236	249	259	261	254	235	264	277	284	296	318	324	302	277	267	265	267	284	289	305	333	323	333	NNW	24	
4	257	346	39	53	55	65	57	80	97	107	85	70	109	115	183	168	105	128	187	217	219	208	237	238	346	NNW	24	
5	231	240	262	280	295	312	290	303	226	225	235	246	240	232	235	232	212	209	203	205	214	200	186	189	312	NW	24	
6	187	186	171	172	241	80	184	167	238	239	259	269	264	269	274	264	269	269	273	285	293	301	302	294	302	WNW	24	
7	295	296	299	303	307	314	265	238	227	228	223	223	226	196	186	190	185	185	201	221	235	251	262	263	314	NW	24	
8	249	249	255	268	281	306	333	325	324	323	307	313	314	314	307	299	290	282	223	217	217	206	209	204	333	NNW	24	
9	202	200	192	177	165	168	165	152	120	107	80	68	63	63	56	53	50	48	34	22	34	29	27	17	202	SSW	24	
10	22	18	21	20	2	360	358	352	3	3	20	9	9	1	2	360	351	329	344	3	13	21	27	36	360	N	24	
11	1	330	3	137	191	216	229	245	225	238	237	234	232	235	227	222	211	225	231	229	217	219	224	231	330	NNW	24	
12	227	242	272	271	255	267	261	269	270	276	297	306	317	326	322	340	337	336	327	327	316	297	309	297	340	NNW	24	
13	285	271	303	314	303	317	331	340	258	257	243	170	247	282	293	302	305	299	295	307	283	231	217	212	340	NNW	24	
14	222	222	211	211	204	199	195	206	214	207	207	216	204	207	220	221	234	249	252	257	251	258	260	257	260	WSW	24	
15	261	253	253	254	254	259	271	286	298	309	314	312	318	318	317	312	299	306	317	329	28	44	19	345	345	NNW	24	
16	3	3	350	331	323	321	292	304	329	274	300	349	14	345	329	338	338	340	337	342	331	301	330	16	350	N	24	
17	43	84	112	109	111	110	105	108	112	113	111	117	124	124	127	121	112	107	94	82	81	98	177	224	224	SW	24	
18	289	203	256	281	300	276	281	298	276	261	296	302	298	304	339	327	338	342	350	339	339	349	335	340	350	N	24	
19	343	332	336	331	320	348	356	348	317	198	219	210	221	241	291	345	23	357	355	0	2	6	348	326	357	N	24	
20	298	287	300	317	319	314	293	299	302	288	293	305	311	303	293	296	289	303	312	308	267	243	255	249	319	NW	24	
21	234	207	201	231	231	213	98	121	158	190	183	173	154	142	111	110	112	126	127	143	139	153	133	131	234	SW	24	
22	174	194	264	310	332	315	310	338	338	332	332	324	328	326	334	337	335	325	319	345	354	334	8	34	354	N	24	
23	32	46	77	82	99	101	113	132	133	140	134	124	121	120	132	127	123	118	120	114	112	118	123	120	140	SE	24	
24	121	123	124	120	122	126	138	152	159	184	225	233	260	267	273	235	200	214	194	196	196	201	196	199	273	W	24	
25	200	197	193	187	177	178	174	141	148	146	165	161	179	192	196	196	199	208	218	215	208	220	216	218	220	SW	24	
26	232	246	239	218	212	209	227	229	225	225	238	236	224	219	218	202	204	214	215	224	229	219	204	199	246	WSW	24	
27	215	197	198	196	182	188	188	277	94	140	209	200	217	228	205	195	215	208	211	222	213	188	212	203	277	W	24	
28	209	229	213	223	213	229	240	200	98	296	240	329	342	344	339	338	337	335	336	346	356	353	352	351	356	N	24	
29	345	341	338	340	340	337	335	332	331	334	336	334	330	325	318	316	302	316	132	217	236	228	98	109	345	NNW	24	
30	110	103	111	101	81	68	53	36	27	358	346	359	358	357	349	326	319	329	328	339	332	288	264	198	359	N	24	
31	203	195	203	203	191	184	184	185	180	190	205	201	195	188	195	191	178	177	208	225	247	358	63	77	358	N	24	
HOURLY AVG	345	346	350	340	340	360	358	352	338	358	346	359	358	357	349	360	351	357	355	346	356	358	352	351				

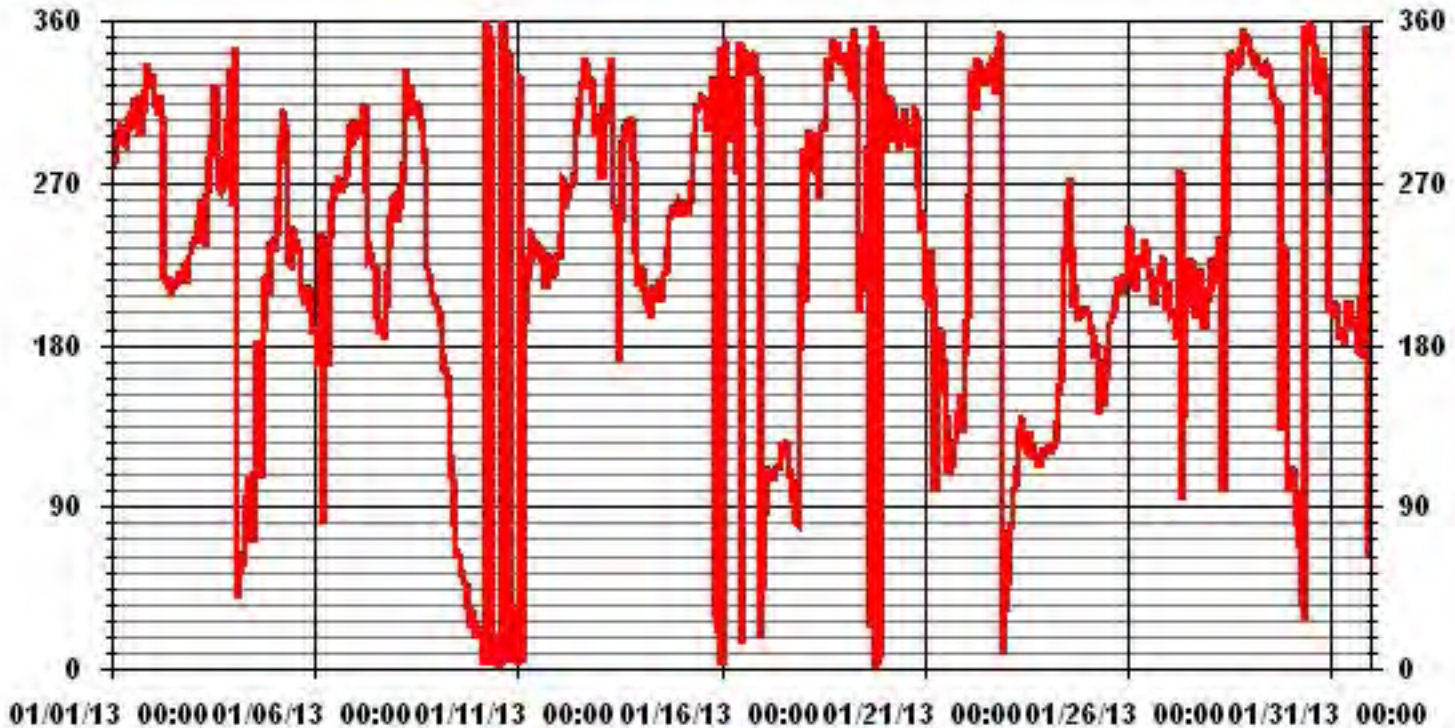
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION:	June 12, 2012
DECLINATION:	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	90.80	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	276 DEG

01 Hour Averages



Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

JANUARY 2013

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

HOUR START	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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
HOUR END	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	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	00:00
DAY																								
1	11	12	14	14	14	15	15	14	14	15	15	14	15	15	14	14	14	14	14	14	14	14	13	13
2	15	14	12	12	11	10	20	7	9	10	9	8	9	9	8	8	7	8	7	9	9	5	5	4
3	4	4	3	4	3	5	5	5	6	10	12	15	15	14	15	8	7	5	4	7	9	11	12	24
4	8	12	7	4	5	6	7	10	9	7	10	10	22	14	17	18	15	9	9	8	7	10	8	5
5	5	5	5	10	13	13	12	11	10	6	4	5	4	5	5	7	7	7	6	8	9	8	10	12
6	9	9	9	13	31	78	48	12	13	8	7	8	6	8	9	8	9	8	8	12	13	14	14	15
7	14	15	15	15	16	14	12	6	5	5	7	10	9	12	12	9	8	8	10	8	6	5	6	11
8	7	6	6	8	12	14	14	13	13	14	15	15	15	15	16	15	13	18	8	5	5	9	9	8
9	8	7	7	6	9	11	10	11	12	11	10	8	9	9	10	10	10	10	12	13	11	11	12	13
10	12	13	13	14	14	14	18	12	13	18	15	15	18	14	15	15	11	9	12	10	15	14	8	15
11	26	10	20	52	8	4	3	3	6	5	5	6	8	6	9	11	12	8	8	9	11	10	7	6
12	7	5	6	5	8	6	3	5	5	8	14	16	16	14	13	12	12	12	10	10	11	13	13	13
13	9	6	12	12	13	13	14	16	22	8	42	33	13	17	16	16	13	12	16	15	12	7	8	10
14	9	7	9	10	12	12	11	11	10	11	11	11	13	12	10	9	6	6	5	5	6	5	5	5
15	6	6	6	6	7	8	10	13	14	15	14	15	14	14	15	15	15	15	14	14	14	12	15	16
16	15	15	14	15	13	13	14	13	14	15	23	39	19	17	14	14	14	14	15	14	12	15	12	10
17	8	10	10	10	11	10	9	9	9	10	9	10	12	11	12	11	10	9	10	9	8	13	14	27
18	50	29	13	11	15	15	15	14	10	10	15	14	16	15	15	13	15	14	15	15	14	15	14	15
19	15	13	13	12	12	14	17	20	46	14	13	13	10	8	16	16	15	18	15	14	17	15	15	12
20	12	10	12	12	13	12	13	13	11	12	15	16	16	17	15	15	14	15	12	16	13	9	9	11
21	8	15	25	8	8	28	25	14	16	13	12	21	16	15	11	10	11	13	14	13	14	14	15	15
22	17	16	13	19	14	13	14	14	14	11	15	13	14	14	15	14	12	11	12	12	16	11	11	9
23	7	7	27	10	9	9	13	12	13	14	14	14	12	12	13	12	11	11	11	10	10	11	11	11
24	12	11	12	11	11	11	12	13	22	23	11	12	8	15	17	10	12	6	9	7	7	7	7	9
25	13	13	14	11	10	13	12	16	15	14	14	14	17	14	15	14	11	9	8	7	6	5	5	5
26	6	8	7	9	6	6	4	2	2	3	6	5	4	6	6	10	8	5	6	5	3	5	6	6
27	9	4	5	6	6	6	8	61	11	19	12	11	15	10	14	13	11	10	8	6	19	16	16	14
28	17	12	12	11	14	10	16	16	28	18	43	48	25	20	16	16	15	13	13	15	14	14	17	14
29	13	13	13	14	14	13	14	13	14	14	13	13	14	14	16	16	14	24	59	43	15	24	13	10
30	10	13	11	11	18	23	11	15	24	19	16	16	18	18	17	13	12	11	10	11	9	8	8	7
31	10	7	8	8	9	9	10	10	10	12	12	12	14	13	13	16	17	15	13	10	7	28	15	31

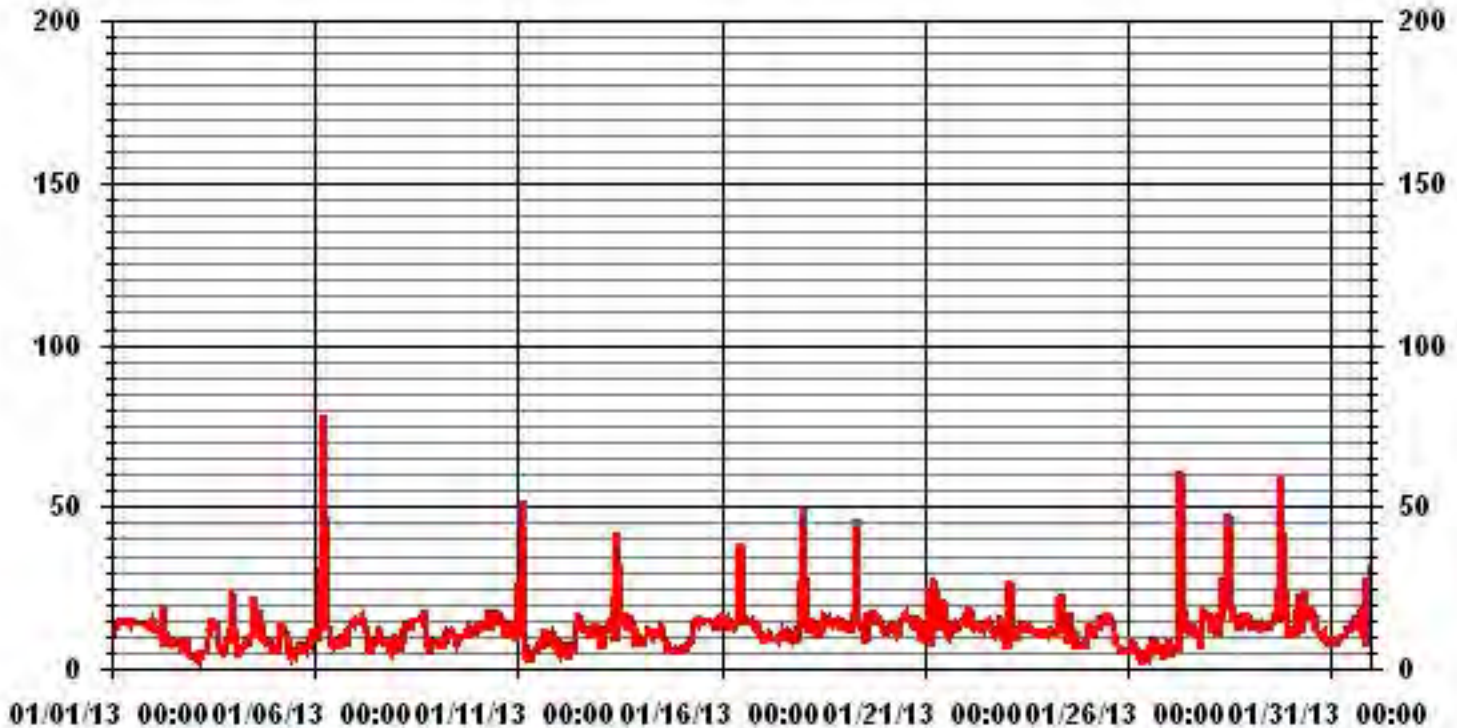
STATUS FLAG CODES

C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR

LAST CALIBRATION: June 12, 2012

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS

01 Hour Averages



Calibration Reports

Sulphur Dioxide

SO2 Calibration Report

Station Information

Calibration Date	January 17, 2013	Previous Calibration	December 12, 2012
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	09:00	End Time (MST)	12:30
Reason:	Monthly Calibration		
Barometric Pressure	27.6 mBar	Station Temperature	18 Deg C
Cal Gas	49.8 ppm	Gas Cyl. #	LL67757
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	December 29, 2012
		Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	468	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	690	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N :	NA		
Flow Meter:	API 700	S/N :	690		

Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 1000 ppb				
Sample Flow / Box Temp	577 ccm	26.7 Deg C	574 ccm	26.9 Deg C	
HVPS / Lamp Setting	540	2185	540	2180	
PMT / RxCell Temp	7.8 Deg C	50 Deg C	7.8 Deg C	50 Deg C	
Converter / IZS Temp	NA Deg C	40 Deg C	NA Deg C	40.0 Deg C	
Offset / Slope	98.2	1	98.2	1	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	0	0.0000
	No Zero Adj.			
4920	79.5	792	798	0.9924
	No Span Adj.			
4960	39.8	396	402	0.9861
4980	19.9	198	204	0.9716
4997	0	0	0	0.0000
			Sum of Least Squares	0.9902
			New Correction Factor	0.9924

Before Calibration

After Calibration

Auto Zero	0.0	0.0
Auto Span	238.0	238.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9993
Current Correction Factor Before Span Adjust:	0.9924
Percent Change:	0.7%

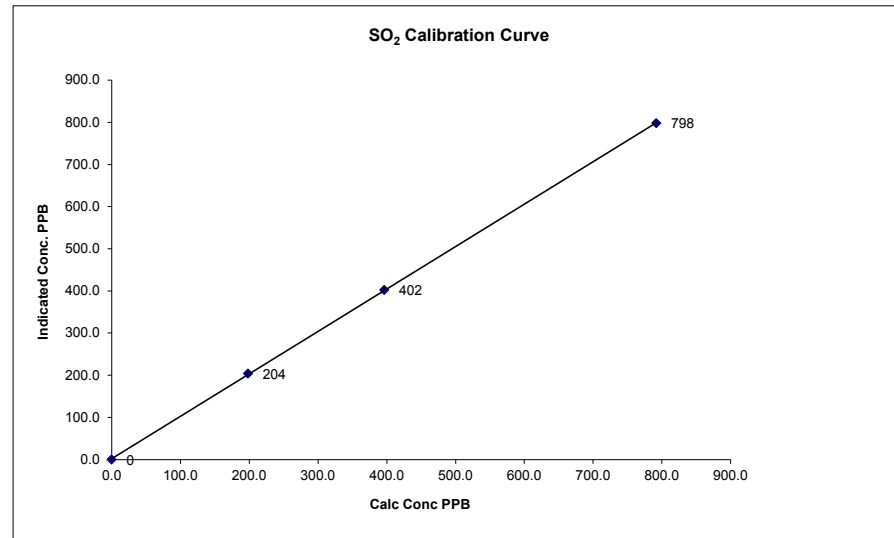
Notes:

Changed sample filter

SO2 Calibration Curve

Calibration Date	January 17, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	09:00
End Time (MST)	12:30

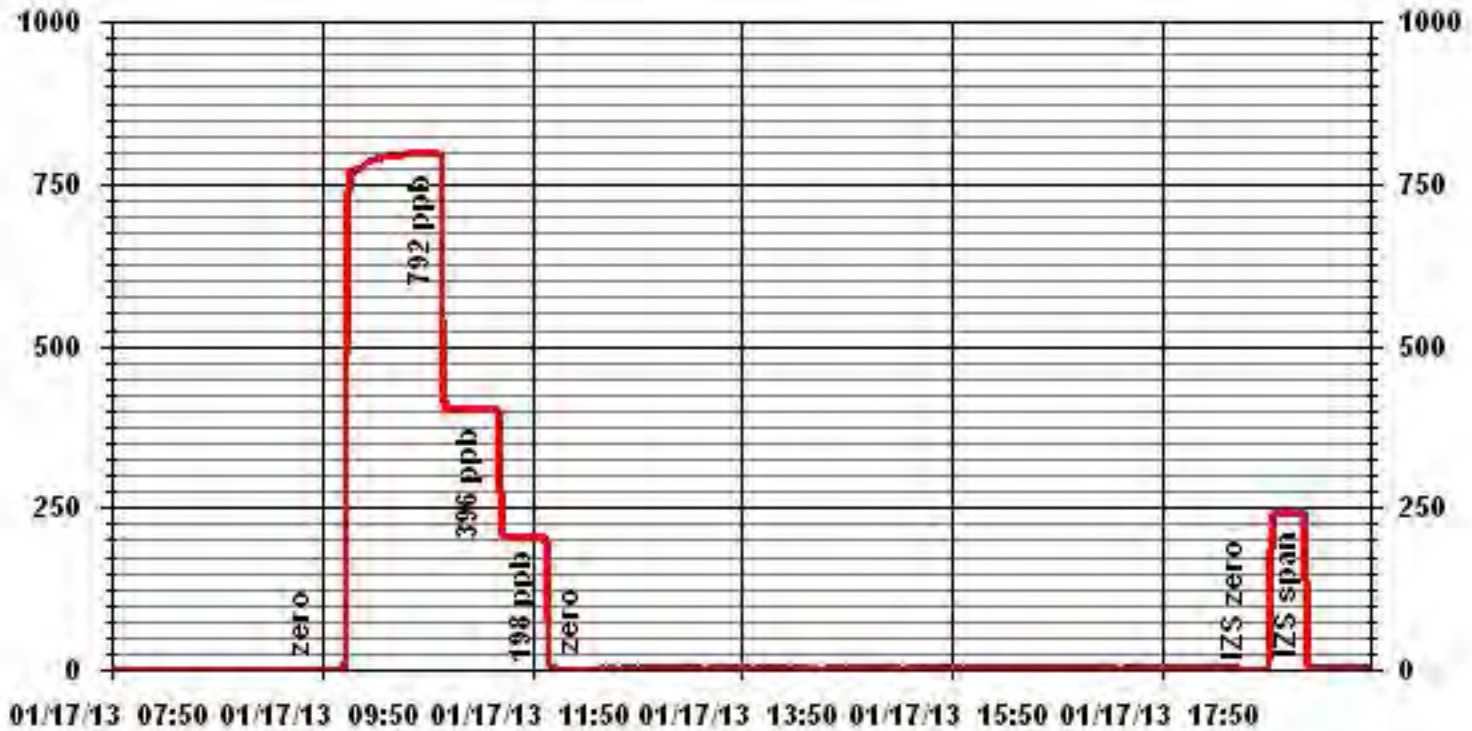
Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	0	n/a		0.999965
198	204	0.9716		1.006224
396	402	0.9861		2.209726
792	798	0.9924		



Notes:

Calibration Performed by: Ting Xu

01 Minute Averages



— LICA31 SO2_ PPB

Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	January 17, 2013	Previous Calibration	December 11, 2012
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST.LINA		
Start Time (MST)	09:00	End Time (MST)	12:45
Reason:	Monthly Calibration		
Barometric Pressure	27.62 mmHg	Station Temperature	18 Deg C
Cal Gas	9.9 ppm	Gas Cyl. #	LL42561
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	December 27, 2012
		Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	510	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	830	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N :	NA		
Flow Meter:	API 700	S/N :	830		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 100		
Sample Flow / Box Temp	535 ccm 29.3 Deg C	535 ccm 30.9 Deg C	
HVPS / Lamp Setting	518 2458	518 2150	
PMT / RxCell Temp	8.4 Deg C 50 Deg C	8.4 Deg C 50 Deg C	
Converter / IZS Temp	315 Deg C 45 Deg C	315 Deg C 45.0 Deg C	
Offset / Slope	103.5 1.015	103.7 1.035	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	0	0.0000
4960	40.4	80	78	1.0255
4960	40.4	80	80	1.0000
4980	20.2	40	39	1.0255
4988	12.0	24	24	1.0000
5000	0	0	0	0.0000
Sum of Least Squares				1.0039
New Correction Factor				1.0000

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.3	0.0
Auto Span	40.9	40.9
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0255
Percent Change:	-2.5%

Notes:

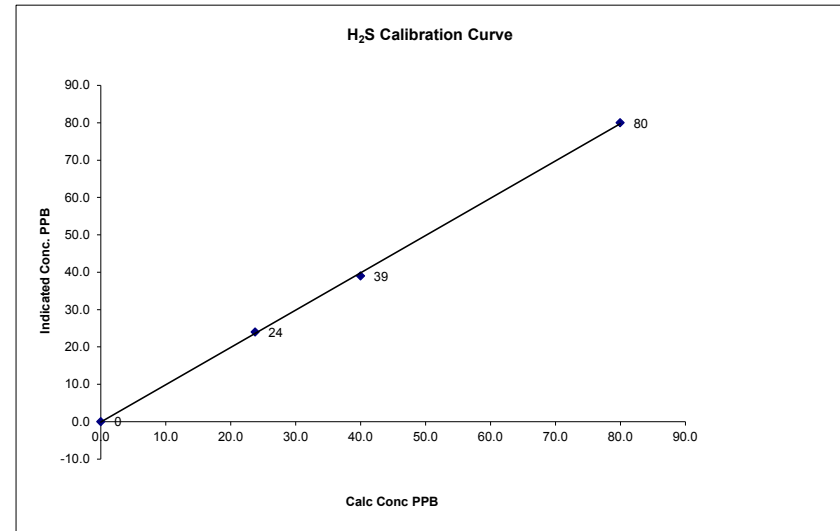
Changed sample filter
NA - Not Applicable

Calibration Performed by: Limin Li

H₂S Calibration Curve

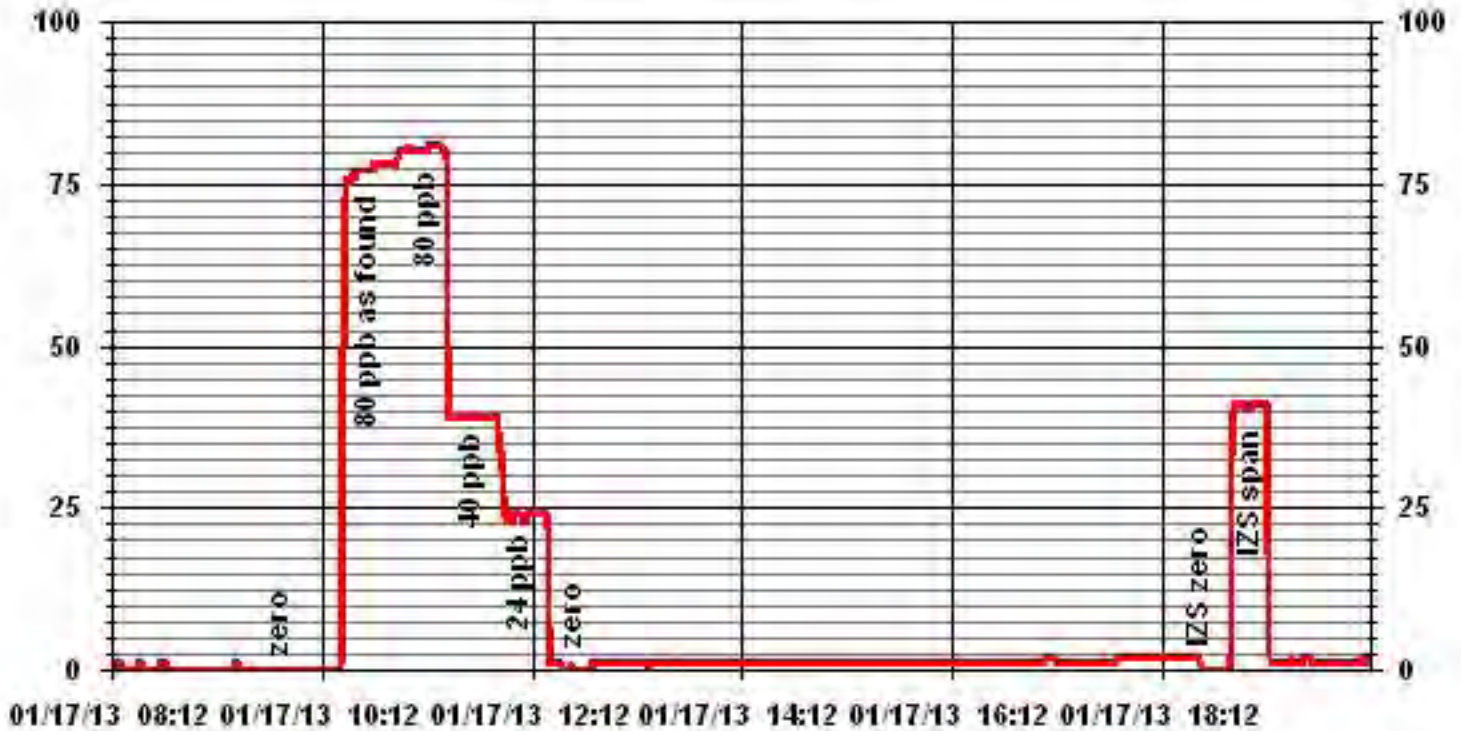
Calibration Date	January 17, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST.LINA
Start Time (MST)	09:00
End Time (MST)	12:45

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999735
0	0		Intercept	(0.85 to 1.15)	0.998138
24	24	0.9900		(± 3% F.S.)	-0.118088
40	39	1.0255			
80	80	0.9998			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	January 17, 2013	Previous Calibration	December 11, 2012
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	ST. LINA		
Start Time (MST)	09:00	End Time (MST)	12:40
Reason:	Monthly Calibration		
Barometric Pressure:	27.61 in Hg	Station Temperature:	18 Deg C
Calibrator:	EnviroNics 6100	S/N:	5212
Cal Gas Concentration:	CH4 593 PPM TOTAL CH4 1156.8 PPM	C3H8 205 PPM Gas Cyl. # LL84567	Cal Gas Expiry Date: June 7, 2014
DAS make & Model:	ESC 8832	S/N :	AO 717
Chart Recorder:	NA	S/N:	NA
Output Voltage Range:	0 - 10 VDC	Chart Speed:	NA mm/hr

Analyzer Information

Make / Model	TECO 51C	S/N :	77021-384	Method	Flame Ionization
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Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	6.8	psi	6.8	psi
Hydrogen Pressure	9	psi	9	psi
Air Pressure	21	psi	21	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	0.0	0.0000
2000	0.0	0.0	0.0	1.0000
1931	69.2	40.0	40.2	0.9955
1965	34.6	20.0	19.8	1.0109
1983	17.3	10.0	9.8	1.0209
2000	0.0	0.0	-0.1	0.0000
New Correction Factor:				0.9955

Percent Change

Previous Calibration Correction Factor:	0.9958
Current Correction Factor Before Span Adjust:	0.9955
Percent Change:	0.0%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	35.0	35.0
Sample Lines Connected	YES	

Cylinder Pressures			
Span	1200 psi	Hydrogen	700 psi
		Zero Air	34 psi

Notes:

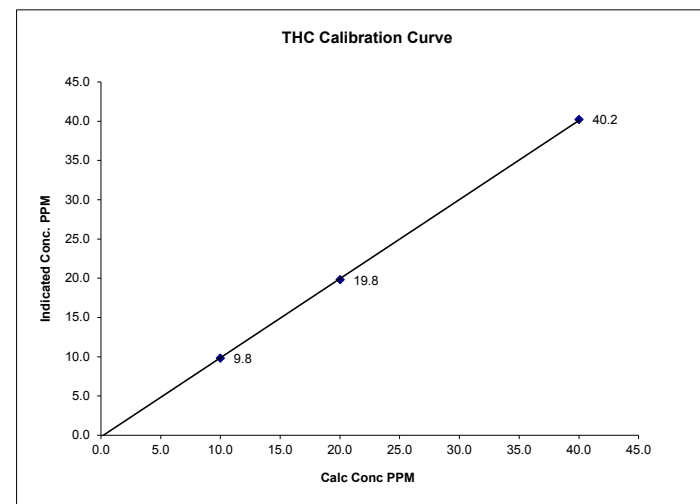
Changed sample filter
H2 spare: 1 (700 psi). Span spare: 1

Calibration Performed by: Limin Li

THC Calibration Curve

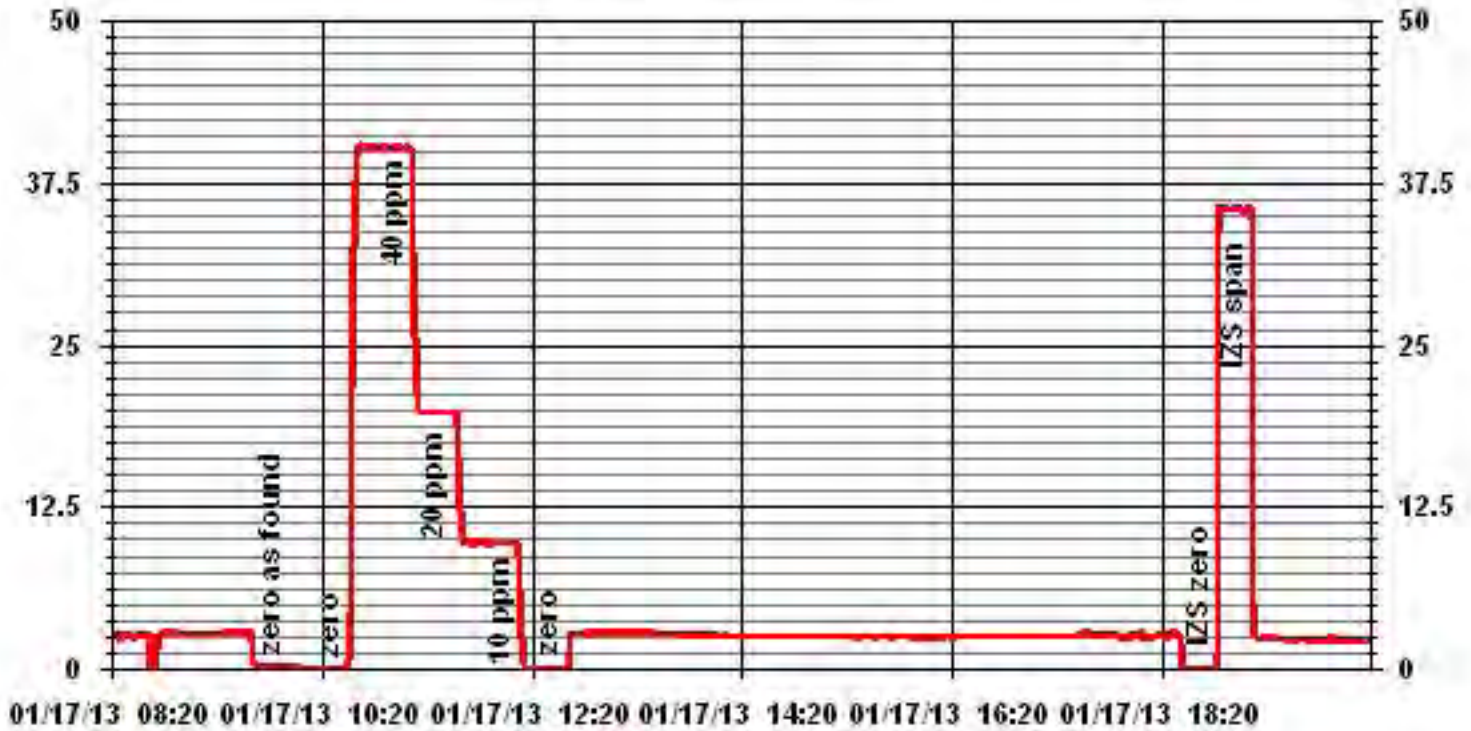
Calibration Date	January 17, 2013		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	09:00	End Time (MST)	12:40

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient (≥ 0.995)	Slope (0.85 to 1.15)	Intercept (± 3% F.S.)
0.0	-0.1	0.0000	0.999945	1.007771	-0.22099
10.0	9.8	1.0209			
20.0	19.8	1.0109			
40.0	40.2	0.9955			



Notes:

01 Minute Averages



Nitrogen Dioxide

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	January 17, 2013	Previous Calibration	December 11, 2012
Company	LICA	Plant/Location	St. Lina
Start Time (MST)	09:00	End Time (MST)	16:15
Reason:	Monthly Calibration		
Barometric Pressure	27.6 inHg	Station Temperature	18 Deg C
Cal Gas Concentration	NOx 50.3 ppm	NO 50.3 ppm	Cal Gas Expiry date
Cal Gas Cylinder #	LL67757		December 29, 2013
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	TAPI 200E	S/N :	592	Method:	Chemiluminescent
Calibrator Make / Model:	API 700	S/N:	690		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N :	NA		
Flow Meter:	API 700	S/N :	690		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	0 - 1000			ppb			
Sample Flow/Conv. Temp	477 ccm	315 Deg C		447 ccm	314 Deg C		
Ozone Flow / Vacuum	73 ccm	6.2 °Hg-A		72 ccm	6.2 °Hg-A		
HVPS / A ZERO	637 Volts	18.6 MV		637 Volts	19 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.9 Deg C		50.0 Deg C	6.9 Deg C		
Box Temp / IZS Temp	32.4 Deg C	45.0 Deg C		33.2 Deg C	45.2 Deg C		
Offset	1.1 NOx	-0.1 NO		1.1 NOx	-0.1 NO		
Slope	1.050 NOx	1.043 NO		1.075 NOx	1.070 NO		
NO2 COEF / Conv Efficiency	N/A NO2	0.993 N/A		NA NO2	0.993		

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
5000	0.0	0	0	0	0	0	1	0	0	0
4920	79.5	0	800	800	0	779	779	0	1.0268	1.0281
4920	79.5	0	800	800	0	800	800	0	1.0000	1.0000
4960	39.8	0	400	400	0	404	404	0	0.9911	0.9936
4980	19.9	0	200	200	0	206	206	0	0.9718	0.9766
5000	0.0	0	0	0	0	0	1	0	0.0000	0.0000

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4920	79.5	0	800	800	0	800	798	3	0	0.00%
4920	79.5	600	800	0.0	499	802	302	500	0.9980	100.20%
4920	79.5	300	800	0.0	260	802	541	261	0.9962	100.39%
4920	79.5	120	800	0.0	105	802	696	106	0.9906	100.98%

Linearity	Sum of Least Squares	NOx= 0.997	NO= 0.997	NO2= 0.997	
OK?	Yes	Correction Factors:	NOx= 1.0000	NO= 1.0000	NO2= 0.9980
	No		Average Converter Efficiency= 100.52%		

IZS Calibration Data

Before Calibration				After Calibration			
Auto Zero	0.7 NOx	0.6 NO2		0.5 NOx	0.0 NO2		
Auto Span	529 NOx	518 NO2		519 NOx	518 NO2		
	Sample Lines Connected			YES			

Percent Change

	NOX	NO	NO
Previous Months Calibration Correction Factor	1.000	1.003	1.000
Current Correction Factor Before Span Adjust	1.027	1.028	0.998
Percent Change	-0.026	-0.024	0.002

Notes

Additional GPT point done for O3 calibration. O3 set point 500, Nox=802, NO=378, NO2=424.

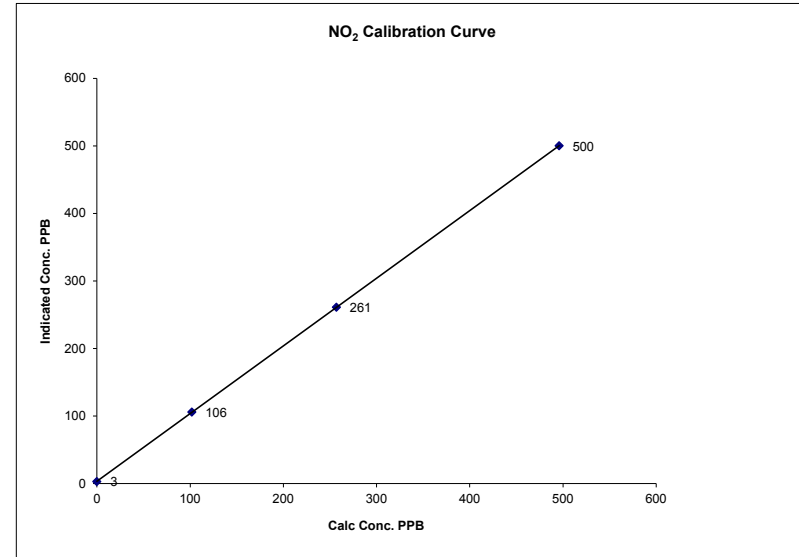
NA - Not Applicable

Calibration Performed by: Limin Li

NO2 Calibration Curve

Calibration Date	January 17, 2013	Company	LICA
Plant / Location	St. Lina	Start Time (MST)	09:00
End Time (MST)	16:15		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999997
0	3	N/A	Intercept	(± 3% F.S.)	3.42298
102	106	0.9623			
257	261	0.9847			
496	500	0.9920			

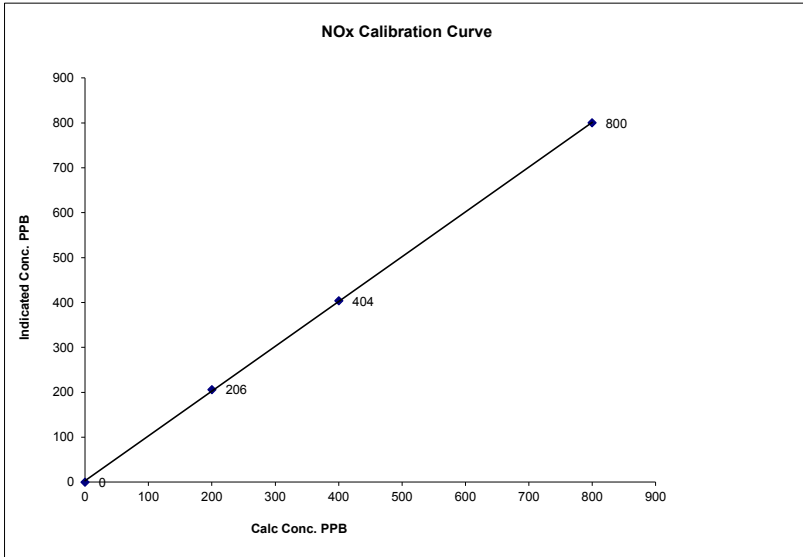


Notes:

NOx Calibration Curve

Calibration Date January 17, 2013
 Company LICA
 Plant / Location St. Lina
 Start Time (MST) 09:00 End Time (MST) 16:15

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999935
0	0	0.0000	Intercept	(0.85 to 1.15)	0.998224
200	206	0.9718		($\pm 3\%$ F.S.)	3.00897
400	404	0.9911			
800	800	0.9998			

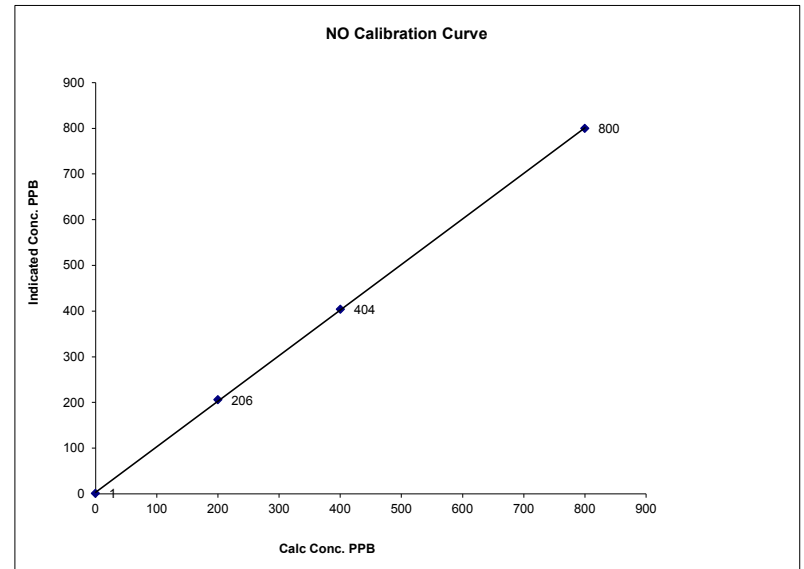


Notes:

NO Calibration Curve

Calibration Date January 17, 2013
 Company LICA
 Plant / Location St. Lina
 Start Time (MST) 09:00 End Time (MST) 16:15

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999951
0	1	0.0000	Intercept	(0.85 to 1.15)	0.990688
200	206	0.9766		($\pm 3\%$ F.S.)	7.0502
400	404	0.9936			
800	800	1.0000			



Notes:

01 Minute Averages



— LICA31 NOX_ PPB

— LICA31 NO_ PPB

— LICA31 NO2_ PPB

Ozone

O₃ Calibration Report
Station Information

Calibration Date	January 17, 2013	Previous Calibration	December 12, 2012
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	14:00	End Time (MST)	16:30
Reason:	As Found		
Barometric Pressure	27.41 mmHg	Station Temperature	19 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49C	S/N :	49C-54926-302	Method:	Fluorescent
Calibrator Make / Model:	EnviroNics 6100	S/N :	5212	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO 717		

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 500 ppb			
Cell A Flow / Cell B Flow	839 ccm	870 ccm	840 ccm	871 ccm
Pressure	703 mmHg		700 mmHg	
Bench Temp	56.7 Deg C		56.7 Deg C	
O3 Lamp / Box Temp	80 Deg C	29.6 Deg C	80 Deg C	29.6 Deg C
Offset / Slope	0.1	1.019	0.1	1.09

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	0.0000
	No Zero Adj			
4994	450	423	395	1.0709
4994	450	423	423	1.0000
4994	300	285	287	0.9930
4994	120	115	116	0.9914
4994	0	0	0	N/A
Sum of Least Squares				N/A
New Correction Factor				1.0000

	Before Calibration	After Calibration
Auto Zero	0.4	0.0
Auto Span	330	330
Sample Lines Connected		NA
Percent Change from Previous Calibration		-6.4%

Note: Changed sample filter.

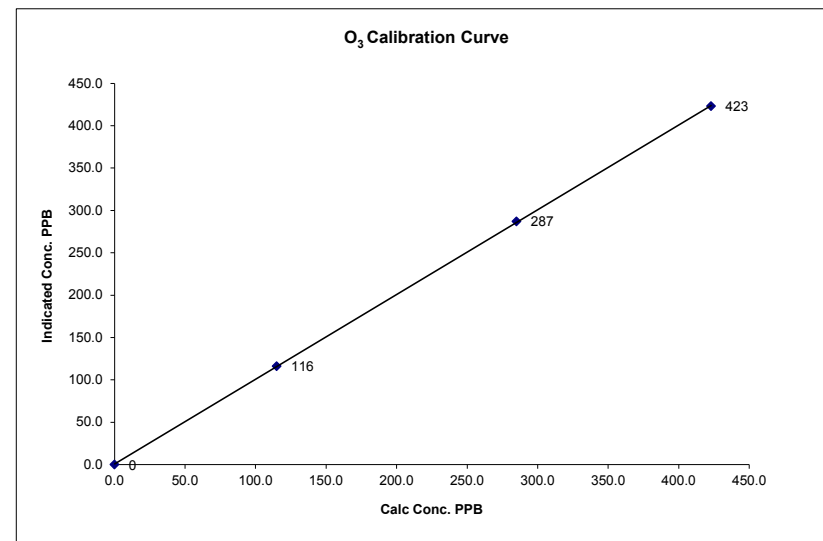
After calibration, check 420 ppb point with API 700 S/N:690 calibrator. Reading 447.
Need to redo the calibration

Calibration Performed by: Limin Li

O₃ Calibration Curve

Calibration Date	January 17, 2013
Company	Lakeland Industry & Community Association
Plant / Location	St. Lina
Start Time (MST)	14:00
End Time (MST)	16:30

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999974
0	0	n/a	Intercept	(± 3% F.S.)	0.616026
115	116	0.9914			1.000651
285	287	0.9930			
423	423	1.0000			



Notes:

O₃ Calibration Report

Station Information

Calibration Date	January 17, 2013	Previous Calibration	December 12, 2012
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	16:30	End Time (MST)	19:20
Reason:	Monthly Calibration		
Barometric Pressure	27.41 in Hg	Station Temperature	19 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49C	S/N :	49C-54926-302	Method:	Fluorescent
Calibrator Make / Model:	API	S/N :	690	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO 717		

Analyzer Settings

	Before Calibration		After Calibration	
	0 - 500			
Concentration Range	ppb			
CellA Flow / Cell B Flow	839 ccm	870 ccm	838 ccm	871 ccm
Pressure	702.1 mmHg		702.3 mmHg	
Bench Temp	56.7 Deg C		56.7 Deg C	
O3 Lamp / Box Temp	80 Deg C	29.2 Deg C	80 Deg C	29.6 Deg C
Offset / Slope	0.1	1.09	0.1	1.011

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	NA
	No Zero Adj			
4994	500	420	420	1.0000
	No Span Adj.			
4994	300	257	259	0.9923
4994	120	102	104	0.9808
4994	0	0	0	N/A
Sum of Least Squares				N/A
New Correction Factor				0.0000

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.4	0.0
Auto Span	330	330
Sample Lines Connected		YES
Percent Change from Previous Calibration		0.2%

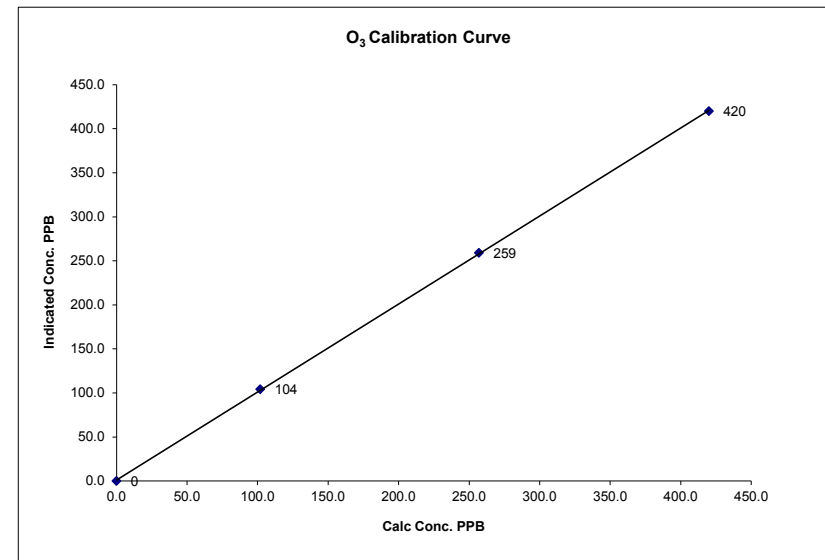
Note: Changed sample filter.
After calibration with Evronics 6100, check 420ppb point with API700 sn: 690 calibrator. Reading: 448.
Redo the calibration

Calibration Performed by: Limin Li

O₃ Calibration Curve

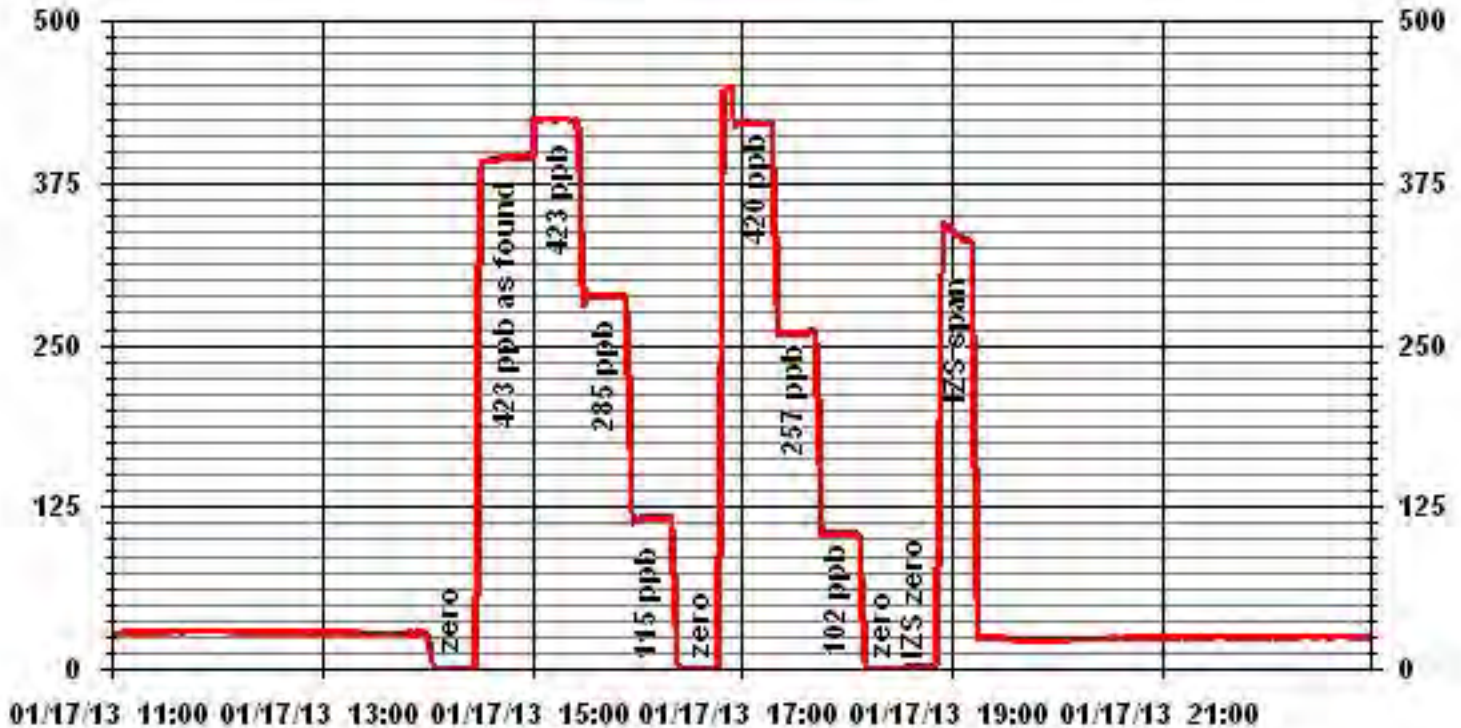
Calibration Date	January 17, 2013		
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	16:30	End Time (MST)	19:20

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
0	0	n/a	Slope (0.85 to 1.15)	0.999961
102	104	0.9808	Intercept (± 3% F.S.)	0.999397
257	259	0.9923		
420	420	1.0000		1.117455



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOMÒ 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	January 17, 2013	Make/Model:	Streamline FTS
Station Name:	Lica St. Lina (CASA # 31)	Serial Number:	Hi 091001, Lo 091099
Location:	St. Lina Station	Cell s/n:	na
Operator:	LICA	Thermometer s/:	Station Temp. Sensor

	<u>Sampler</u>		<u>Set-up and current Sampler readings</u>
Make/Model	Thermo Scientific Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	NA	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A207691003	Filter Load (%)	30.6%
Firmware Ver.	1.55	K _o Factor	15634.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-11.3
		Press (ATM)	0.922

Conversion from mmHg or "Hg to ATM (Atmospheres)

ATM = (mmHg) X (1.316 X 10⁻³) or ATM = ("Hg) X (3.34207 X 10⁻²)

Note: Tolerances are noted as **BOLD** in Brackets

Audit

Status			
Noise <0.10µg	0.003	Warnings	None
Pump Vacuum <0.4atm	0.30	Pump Gauge (inHg)	-19
Temperature/Pressure			
Measured Temp (± 2 °C)	-10.22	D °C	-1.1
Measured Press (± 0.01atm)	0.922	DATM	0.000
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	2.18%
Measured Main Flow (l/min)	2.97	Flow Adjusted to Measured?	YES
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	2.65%
Measured Bypass Flow (l/min)	13.70	Flow Adjusted to Measured?	YES
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	Base=0.00 Ref=0.00	Flow Control = Active	
Aux (< 0.6 l/min)	Base=0.00 Ref=0.00	Report Conditions = Actual	
K_o Factor			
Measured	NA		
K _o Difference (± 2.5%)	NA		

Start Time: 09:00 **Finish Time:** 14:50

Sample Inlet Cleaned: NO **New Filters Installed:** yes
New Filter Loading %: 20.0%

Comments: _____

