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March 14, 2014

RE: January 2014 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 2014

Prepared By:



February 28, 2014

Lakeland Industry & Community Association Cold Lake Monitoring Site Ambient Air Monitoring

Table of Contents	Page		Page
Introduction	3	Calibration Reports	96
Calibration Procedure	4	• Sulphur Dioxide	97
Monthly Continuous Summary	5	• Total Reduced Sulphur	100
Monthly Non-Continuous Summary	6	• Total Hydrocarbons	103
General Monthly Summary	7	• Particulate Matter 2.5	106
Continuous Monitoring	10	• Nitrogen Dioxide	110
• Monthly Summaries, Graphs & Wind Roses	11	• Ozone	114
○ Sulphur Dioxide	12	Passive Bubble Maps	117
○ Total Reduced Sulphur	20	Passive Field Data	122
○ Total Hydrocarbons	28	• Field Notes	123
○ Particulate Matter 2.5	36	Passive Monitoring Laboratory Analysis	125
○ Nitrogen Dioxide	41		
○ Nitric Oxide	49		
○ Oxides of Nitrogen	56		
○ Ozone	64		
○ Ambient Temperature	72		
○ Relative Humidity	75		
○ Vector Wind Speed	78		
○ Vector Wind Direction	85		
○ Standard Deviation Wind Direction	88		
Non-Continuous Monitoring	91		

Introduction

The following Ambient Air Monitoring report was prepared for:

Mr. Mike Bisaga
Lakeland Industry & Community Association
Box 8237
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Monitoring Location: Cold Lake
Data Period: January 2014

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Lili Zhou

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

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 2014

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	0.38	4	6, 26	VAR	VAR	VAR	1.3	29	100.0
TRS (PPB)	-	-	-	-	0.02	1	VAR	VAR	VAR	VAR	0.3	16	100.0
NO ₂ (PPB)	159	-	0	-	6.51	30.7	7	8	1.1	351(N)	14.7	27	100.0
NO (PPB)	-	-	-	-	1.11	27.4	10	8	0.5	183(S)	6.2	10	100.0
NO _x (PPB)	-	-	-	-	7.62	49.4	10	8	0.5	183(S)	19.3	10	100.0
O ₃ (PPB)	82	-	0	-	27.80	46	15	4	32.1	291(WNW)	41.5	15	100.0
THC (PPM)	-	-	-	-	1.93	3.0	2, 3	VAR	VAR	VAR	2.5	1	100.0
PM 2.5 (UG/M ³)	-	30	-	0	4.89	41	9	20	1	222(SW)	13.1	9	87.9
TEMPERATURE (DEG C)	-	-	-	-	-12.53	8.6	15	3	24.6	274(W)	4.0	15	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	70.86	93	25	5	1.8	219(SW)	87.7	9	100.0
VECTOR WS (KPH)	-	-	-	-	7.03	32.3	15	11	-	312(NW)	23.2	15	100.0
VECTOR WD (DEGREES)	-	-	-	-	297(WNW)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS NA: NOT AVAILABLE

Monthly Non-Continuous Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

Passive Ambient Monitoring Network – January 2014

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO ₂	#14	2.4	0.9
H ₂ S	XOEJ	0.25	0.18
NO ₂	#36	7.9	3.0
O ₃	#11	51.2	32.1

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 – COLD LAKE SOUTH

Sulphur Dioxide (PPB)

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

No operational issues were observed during the month. The monthly calibration was performed on January 10th. The inlet filter was changed before the monthly calibration was started. The time spent on the routine calibration was extended this month for Maxxam field technician training purposes. 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 monthly calibration was performed on January 10th. The inlet filter was changed before the monthly calibration was started. The time spent on the routine calibration was extended this month for Maxxam field technician training purposes. 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 monthly calibration was performed on January 17th. The inlet filter was changed before the monthly calibration was started. The time spent on the routine calibration was extended this month for Maxxam field technician training purposes. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – COLD LAKE SOUTH

Total Hydrocarbon (PPM)

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

No operational issues were observed during the month. The monthly calibration was performed on January 17th. The inlet filter was changed before the monthly calibration was started. The time spent on the routine calibration was extended this month for Maxxam field technician training purposes. 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 monthly calibration was performed on January 17th. The inlet filter was changed before the monthly calibration was started. The time spent on the routine calibration was extended this month for Maxxam field technician training purposes. Data was corrected using daily zero information.

Particulate Matter 2.5 (UG/M3)

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

Three Teom audits were performed in January: one was on January 10th and the other two were on January 17th. The Teom filter and the FDMS filter were replaced on January 10th. The sample pump was rebuilt following a pre-maintenance audit on January 17th. The flow were check again after the maintenance. 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. Ninety hours of data were invalidated as the data were below –3 ug/m3. The operational uptime for the month was 87.9%.

Relative Humidity (PERCENT)

- System make / model - Rotronic Hygroclip-S3

No operational issues were observed during the month.

General Monthly Summary

AQM STATION – LICA – COLD LAKE SOUTH

Ambient Temperature (DEGC)

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

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

- System make / model –MetOne, S/N: F1644
- The wind system is reported as vector wind speed and vector wind direction. The last wind system calibration was performed on November 18th, 2012.
- 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 glass manifold was cleaned on January 10th.

Passive Network

The samplers installed at site #2 had been removed, so no sample filters were installed. The duplicate SO₂ at site #23 was destroyed by gun shot.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

SULPHUR DIOXIDE (SO2) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	0	0	0	S	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	1	1	0.2	24
2	1	S	2	2	2	1	1	2	2	2	2	2	2	2	2	1	1	1	0	0	0	0	0	0	0	2	1.2	24
3	S	0	0	0	0	0	0	0	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	S	1	1	0.6	24
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	S	1	1	0.1	24
5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0.1	24
6	0	0	0	0	0	0	0	1	1	1	3	2	2	4	4	2	1	1	1	1	1	S	1	0	0	4	1.1	24
7	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
8	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	0.7	24
9	1	0	0	0	1	1	0	0	0	0	0	0	1	1	1	1	1	1	S	1	1	0	0	0	0	1	0.5	24
10	0	0	0	1	1	0	0	0	C	C	C	C	C	C	C	0	S	0	0	0	0	0	0	0	0	1	0.1	24
11	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	S	0	0	0	0	0	0	0	0	1	0.1	24
12	0	0	0	0	0	1	1	1	1	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.2	24
13	0	0	1	1	1	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.2	24
14	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	1	0.0	24
15	1	2	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24
16	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
17	1	1	2	2	2	1	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.4	24
18	0	0	0	0	0	0	0	0	S	2	2	1	1	1	1	0	0	0	0	0	0	1	1	0	0	2	0.4	24
19	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0.0	24
20	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0.1	24
21	0	0	0	0	0	S	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	1	0.3	24
22	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	24
23	0	0	0	S	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
24	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
25	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0.1	24
26	S	0	1	1	1	0	0	0	0	0	0	1	2	2	2	1	2	3	4	3	2	1	1	0	S	4	1.2	24
27	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	S	0	1	0.2	24
28	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	2	1	1	1	1	1	1	S	0	1	2	0.7	24
29	1	1	2	1	1	1	1	1	1	1	1	2	3	3	2	1	1	2	2	2	1	S	1	0	0	3	1.3	24
30	0	0	1	1	2	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	2	0.3	24
31	1	1	1	0	1	1	2	2	2	1	1	2	1	1	1	1	1	0	S	0	0	0	0	0	1	2	0.9	24
HOURLY MAX		1	2	2	2	2	2	2	2	2	3	2	3	4	4	2	2	3	4	3	2	1	1	1	1			
HOURLY AVG		0.2	0.2	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.5	0.5	0.7	0.7	0.7	0.6	0.4	0.4	0.4	0.3	0.3	0.2	0.3	0.1	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

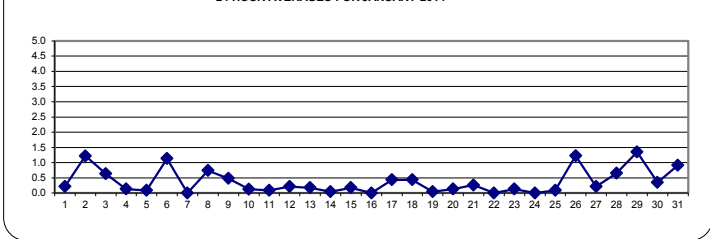
OBJECTIVE LIMIT:

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

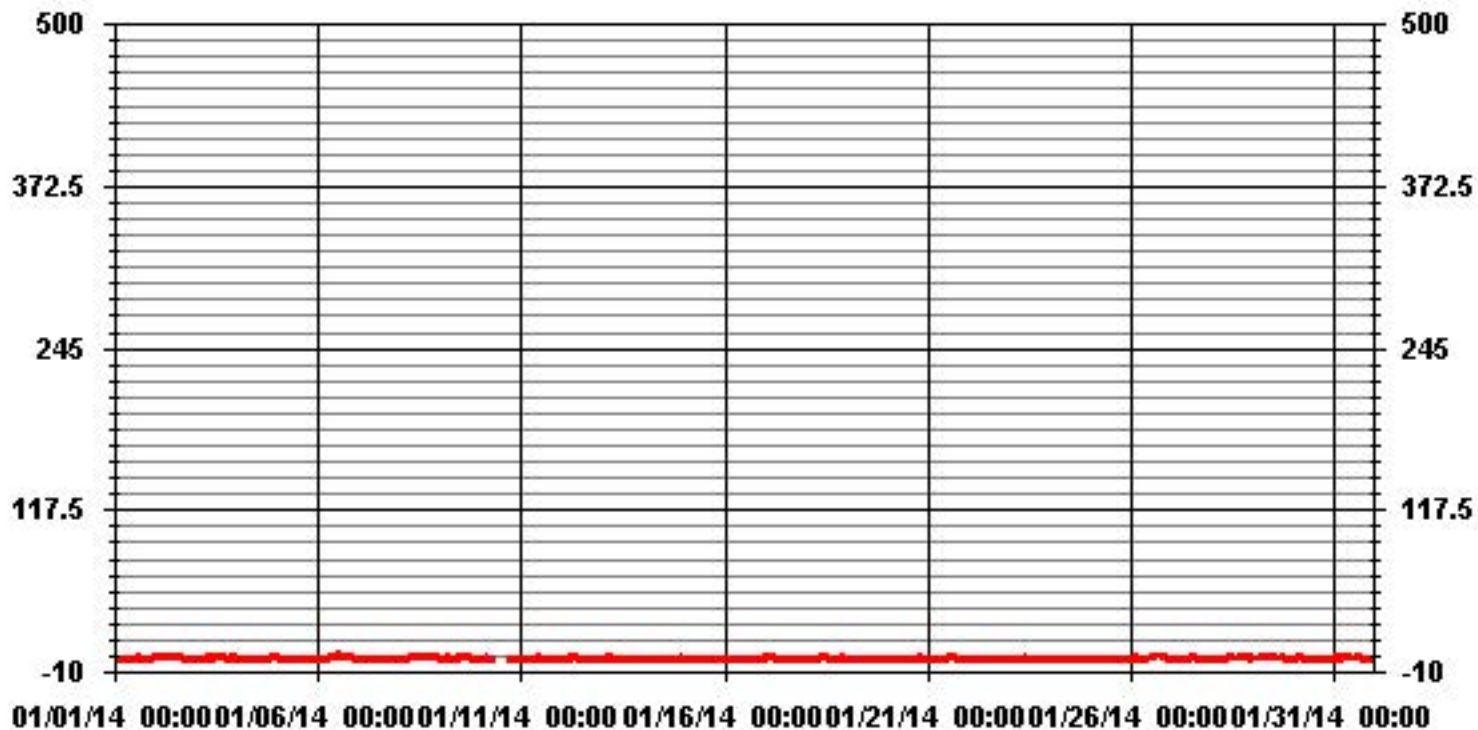
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	209					
MAXIMUM 1-HR AVERAGE:	4	PPB	@ HOUR(S)	VAR	ON DAY(S)	6, 26
MAXIMUM 24-HR AVERAGE:	1.3	PPB			ON DAY(S)	29
				VAR-VARIOUS		
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.66		MONTHLY AVERAGE:	0.38	PPB	

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



— LICA SO2_ PPB

Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST																									DAILY	24-HOUR		
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																												
1	0	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
2	2	S	3	2	2	2	2	2	2	2	3	3	2	2	2	2	2	1	1	1	1	1	1	1	1	3	1.8	24
3	S	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	S	2	1.1	24	
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1.0	24	
5	2	2	1	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	
6	1	1	1	1	1	1	1	1	2	4	2	3	5	5	2	2	1	1	1	1	S	1	1	1	5	1.7	24	
7	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	
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	S	1	2	1	1	1	3	1.1	24	
9	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	1.0	24	
10	1	1	1	1	1	1	1	1	C	C	C	C	C	C	C	1	S	1	1	1	1	1	1	1	1	1.0	24	
11	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	S	1	1	1	1	0	1	1	1	1	0.8	24	
12	1	1	1	1	1	1	2	2	1	1	1	1	1	1	S	1	1	1	0	1	1	1	1	1	1	2	1.0	24
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	0	1	1.0	24	
14	1	0	0	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
15	2	3	2	1	1	1	1	1	1	0	0	S	1	1	1	1	1	1	1	1	1	1	1	1	3	1.1	24	
16	1	1	0	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
17	1	1	2	3	2	2	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	0	1	0	3	1.1	24	
18	1	1	1	1	0	0	0	1	S	3	2	2	1	1	1	1	1	1	1	1	1	1	2	1	3	1.1	24	
19	1	1	0	1	1	0	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
20	1	0	1	1	1	1	S	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
21	1	1	1	1	1	S	0	0	1	1	1	1	2	2	2	1	1	1	1	1	0	1	1	1	2	1.0	24	
22	0	1	1	0	S	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
23	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	1.0	24	
24	1	1	S	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	0.9	24	
25	1	S	1	0	1	1	1	0	1	1	0	0	0	1	1	1	1	1	1	1	1	2	1	1	2	0.8	24	
26	S	1	1	1	1	1	1	1	1	1	3	2	3	2	2	3	4	4	3	2	1	1	1	S	4	1.8	24	
27	1	1	1	1	1	0	1	1	1	1	1	1	2	1	1	1	1	1	0	0	1	S	1	2	0.9	24		
28	0	0	0	1	1	1	1	1	1	1	2	2	1	2	2	2	1	1	1	1	S	1	2	2	1.1	24		
29	2	2	2	2	1	1	1	1	1	2	4	5	4	3	2	2	2	2	2	2	S	1	1	1	5	2.0	24	
30	0	1	2	2	3	3	1	1	1	1	1	0	0	1	1	0	0	0	0	S	0	1	1	1	3	0.9	24	
31	1	1	1	1	1	2	2	3	2	2	2	2	2	1	1	1	1	1	S	1	1	1	1	1	3	1.4	24	
HOURLY MAX	2	3	3	3	3	3	2	3	2	4	4	5	5	5	2	3	4	4	3	2	2	2	2	2				
HOURLY AVG	1.0	1.0	1.0	1.1	1.1	1.0	1.0	1.0	1.1	1.2	1.3	1.3	1.3	1.4	1.2	1.2	1.1	1.2	1.0	1.0	0.9	1.0	1.0	1.0				

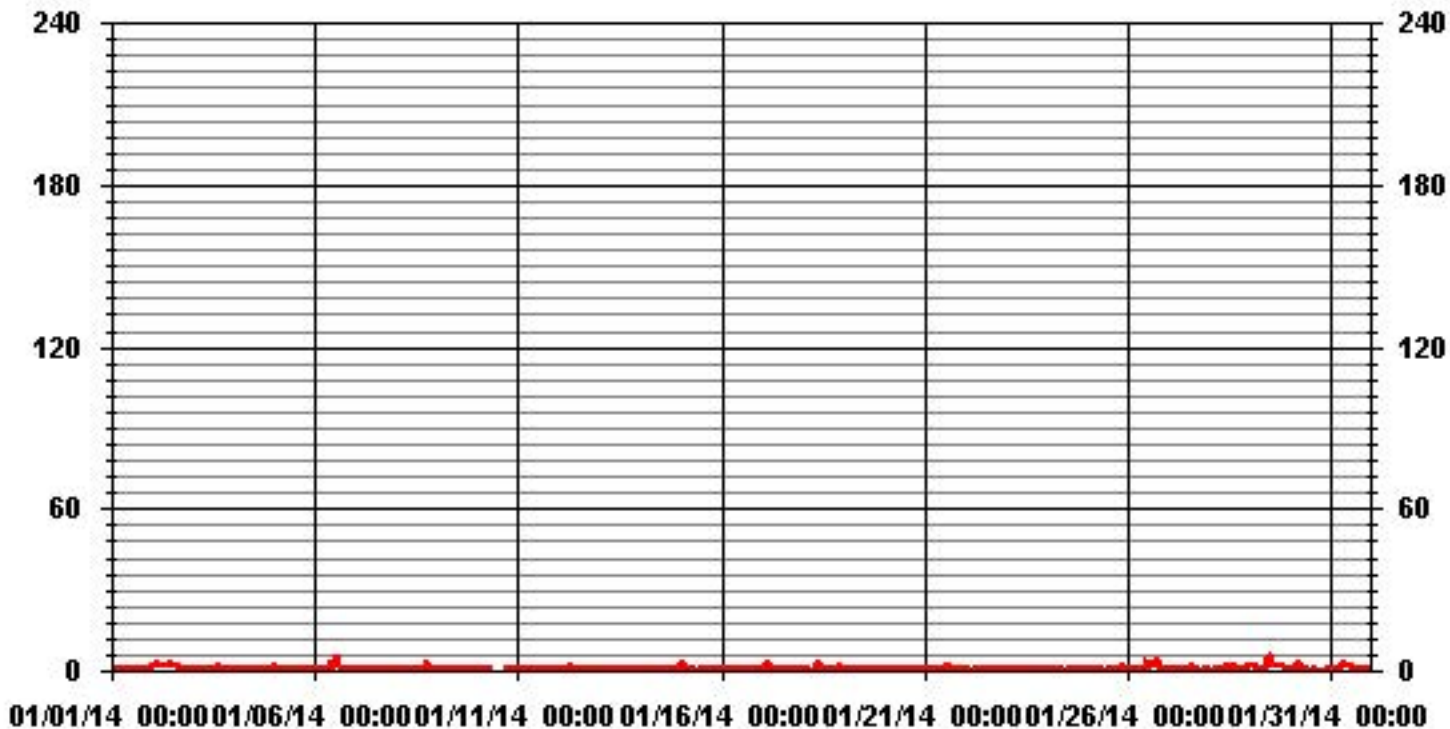
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	654					
MAXIMUM INSTANTANEOUS VALUE:	5	PPB	@ HOUR(S)	VAR	ON DAY(S)	6, 29
				VAR-VARIOUS		
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744 HRS		
MONTHLY CALIBRATION TIME:	7 HRS					
STANDARD DEVIATION:	0.61					

01 Hour Averages



LICA
 SO2_ / WDR Joint Frequency Distribution (Percent)

January 2014

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	5.82	1.98	1.98	2.41	3.55	2.69	12.78	2.69	2.13	1.98	7.10	16.19	13.35	7.95	10.08	7.24	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	5.82	1.98	1.98	2.41	3.55	2.69	12.78	2.69	2.13	1.98	7.10	16.19	13.35	7.95	10.08	7.24	

Calm : .00 %

Total # Operational Hours : 704

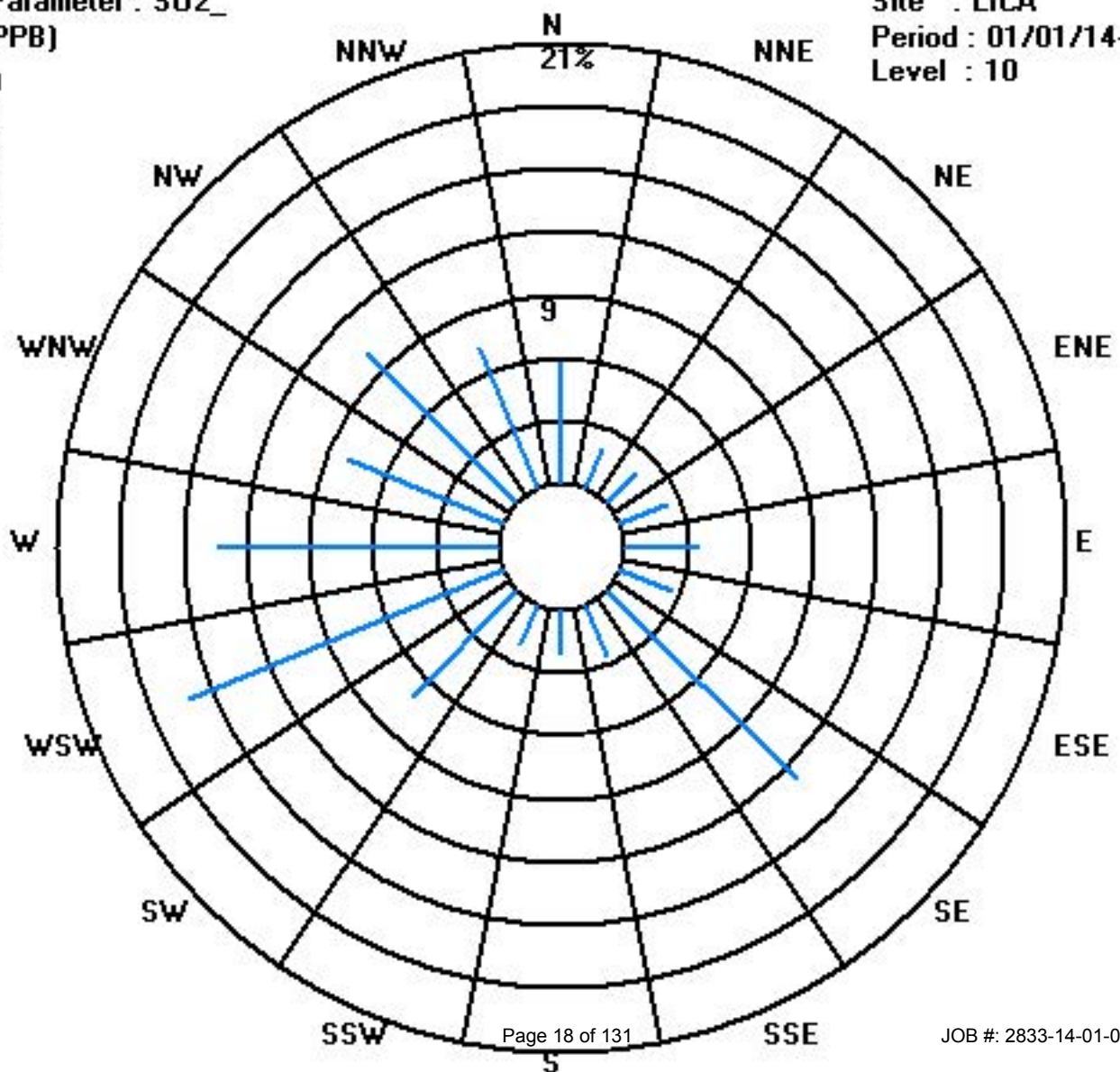
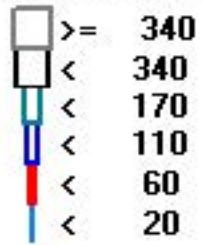
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	41	14	14	17	25	19	90	19	15	14	50	114	94	56	71	51	704
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	41	14	14	17	25	19	90	19	15	14	50	114	94	56	71	51	

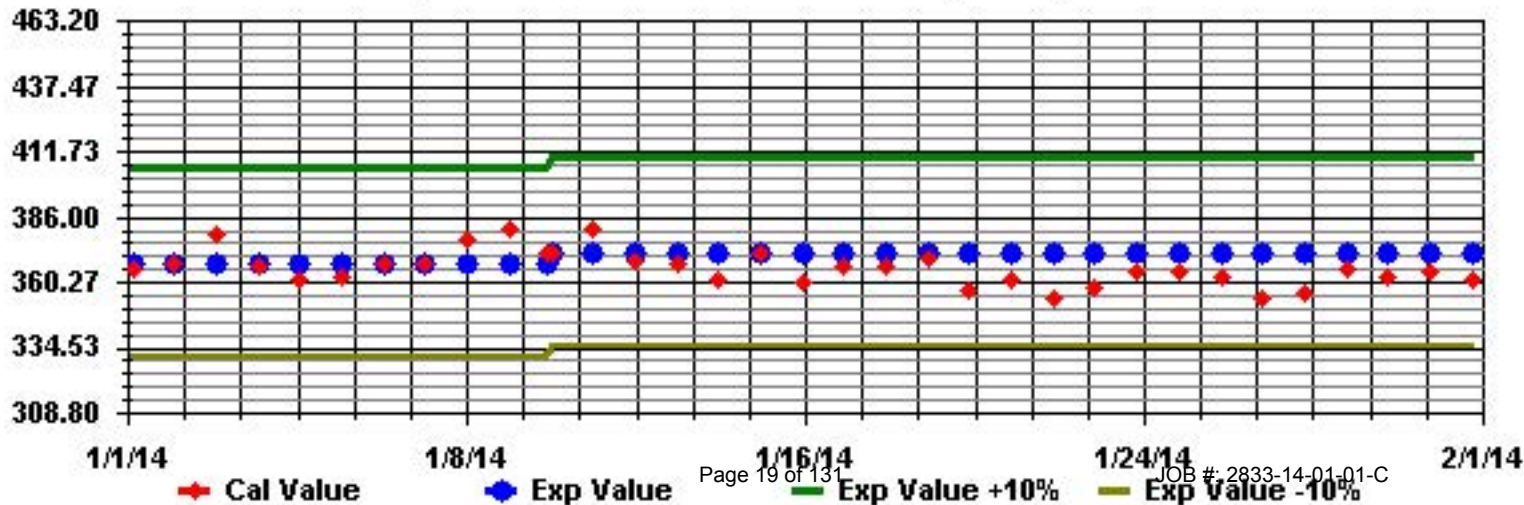
Calm : .00 %

Total # Operational Hours : 704

Class Limits (PPB)



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



Total Reduced Sulphur

Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

TOTAL REDUCED SULPHUR (TRS) hourly averages in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	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
2	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
3	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	0.0	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	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	0	0	S	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	S	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	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	0	0	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	0	S	0	0	0	0	0	0	0	0	0.0	24
10	0	0	0	0	0	0	0	0	C	C	C	C	C	C	C	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	0	S	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	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	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
15	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
16	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	I	I	I	0	I	I	I	I	I	I	0.3	24
17	I	I	I	I	0	0	0	S	S	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	I	0.2	24
18	0	0	0	I	0	I	0	S	S	I	0	0	0	0	0	0	0	0	0	0	0	0	I	0	I	0.2	24	
19	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
20	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
21	0	I	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	I	0.0	24	
22	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	24
23	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
24	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
25	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
26	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	0.0	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	24
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	S	0	0	0	0	0.0	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	S	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	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	1	1	1				
HOURLY AVG	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0			

STATUS FLAG CODES

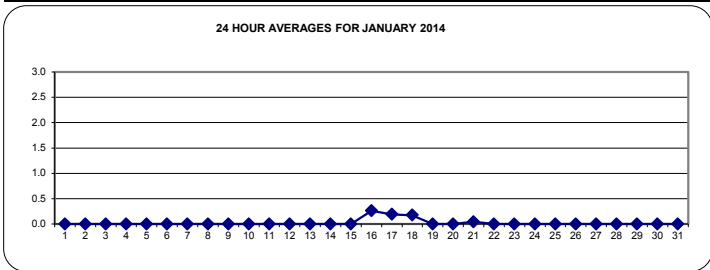
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT: ALBERTA ENVIRONMENT: 1-HR NA PPB 24-HR NA PPB

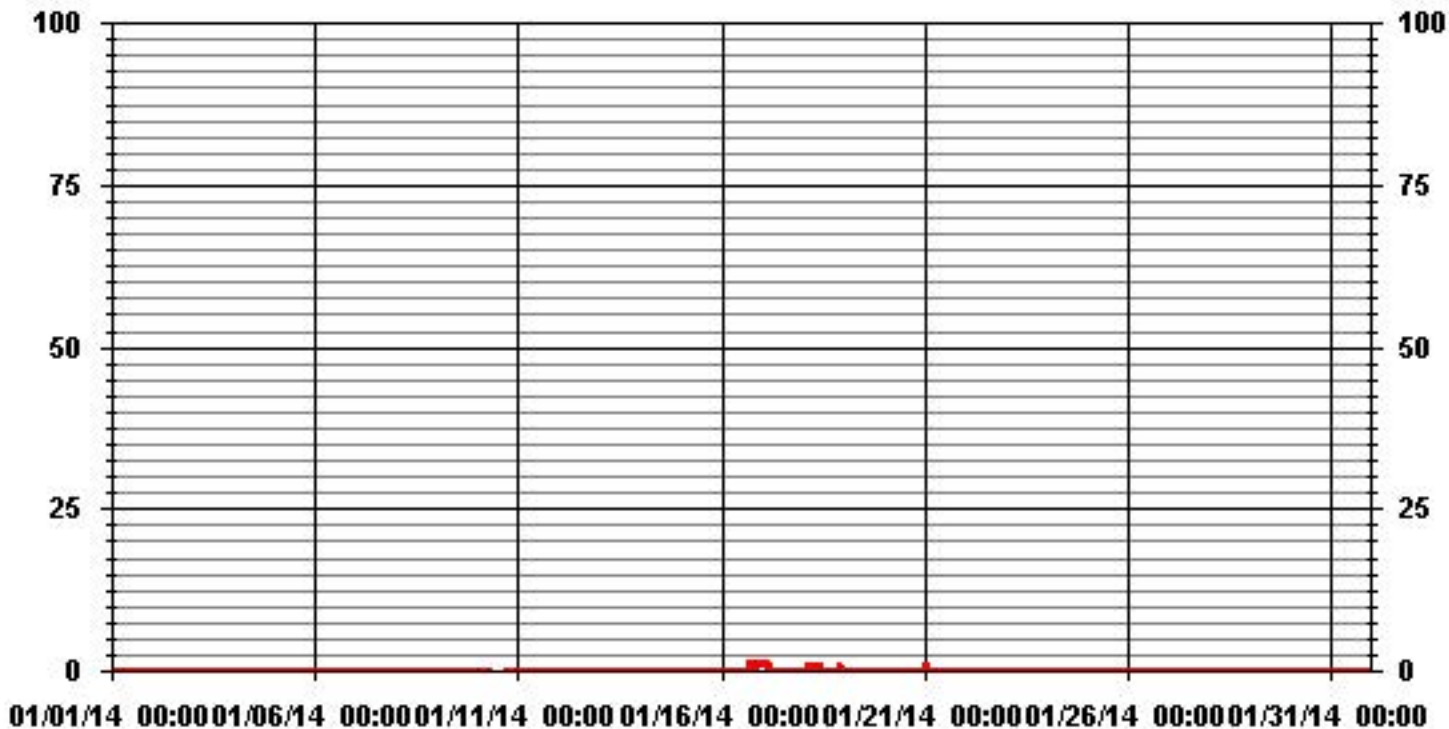
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA				
NUMBER OF 24-HR EXCEEDENCES:	NA				
NUMBER OF NON-ZERO READINGS:	15				
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	0.3	PPB			ON DAY(S)
				VAR-VARIOUS	16
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.14		MONTHLY AVERAGE:	0.02	PPB

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

TOTAL REDUCED SULPHUR MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1.0	24	
2	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
3	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	1.0	24	
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1.0	24	
5	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1.0	24	
6	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	
7	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	
8	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	
9	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	1.0	24	
10	1	1	1	1	1	1	1	1	C	C	C	C	C	C	C	1	S	1	1	1	1	1	1	1	1	1.0	24	
11	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	
12	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	1.0	24	
13	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	1.0	24	
14	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	1.0	24	
15	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	
16	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	1.0	24	
17	1	2	2	1	1	1	1	S	S	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24
18	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	
19	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	1.0	24	
20	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	
21	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	
22	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	
23	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	1.0	24	
24	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
25	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
26	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	1.0	24	
27	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	
28	1	1	1	1	1	1	1	1	1	1	1	1	1	S	S	1	1	1	1	1	S	1	1	1	1	1.0	24	
29	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	
30	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	
31	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	
HOURLY MAX	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
HOURLY AVG	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0			

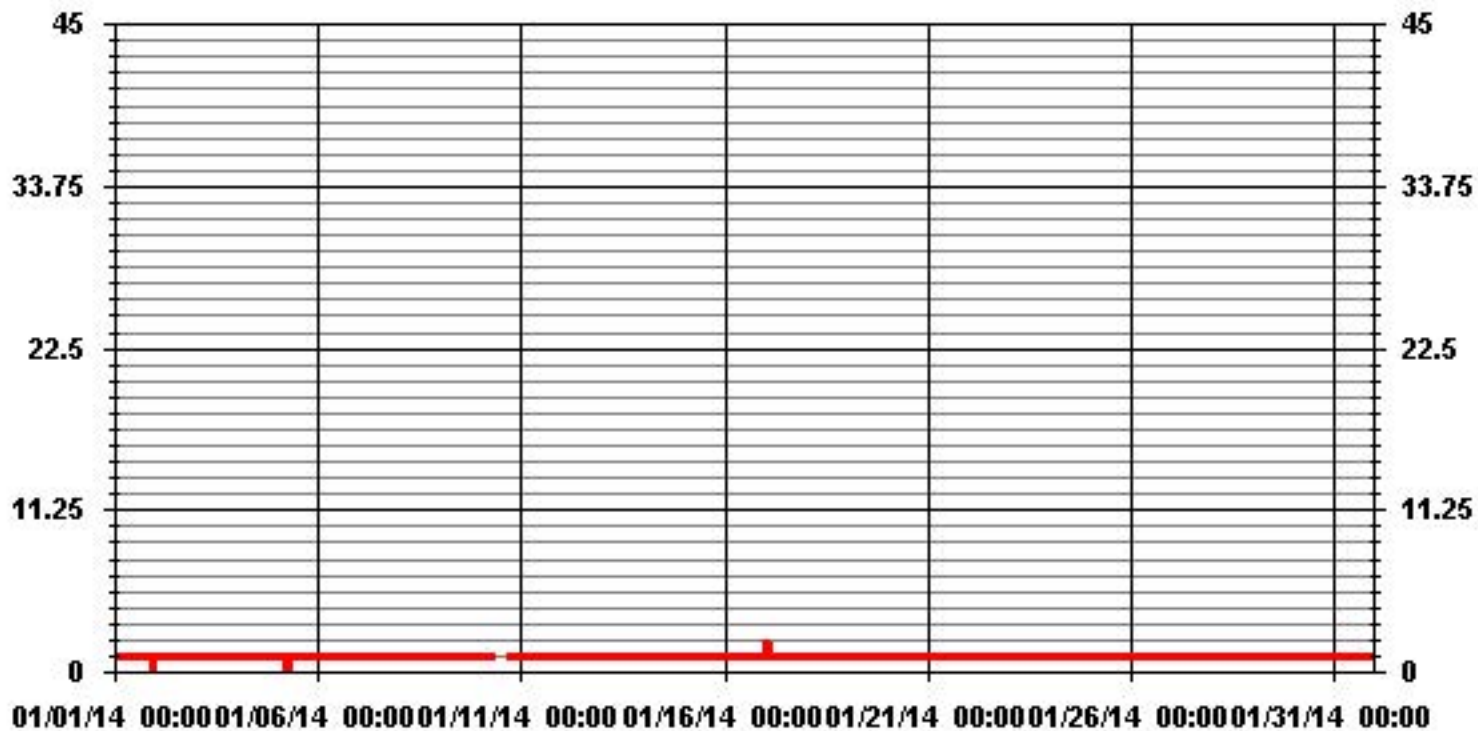
STATUS FLAG CODES

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:	698
MAXIMUM INSTANTANEOUS VALUE:	2 PPB @ HOUR(S) 1, 2 ON DAY(S) 17
	VAR-VARIOUS
IZS CALIBRATION TIME:	37 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	0.08

01 Hour Averages



LICA
 TRS_ / WDR Joint Frequency Distribution (Percent)

January 2014

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	5.84	1.99	1.99	2.42	3.56	2.71	12.83	2.71	2.13	1.99	7.13	16.11	13.12	7.98	10.12	7.27	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	5.84	1.99	1.99	2.42	3.56	2.71	12.83	2.71	2.13	1.99	7.13	16.11	13.12	7.98	10.12	7.27	

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
< 3	41	14	14	17	25	19	90	19	15	14	50	113	92	56	71	51	701
< 10																	
< 50																	
>= 50																	
Totals	41	14	14	17	25	19	90	19	15	14	50	113	92	56	71	51	

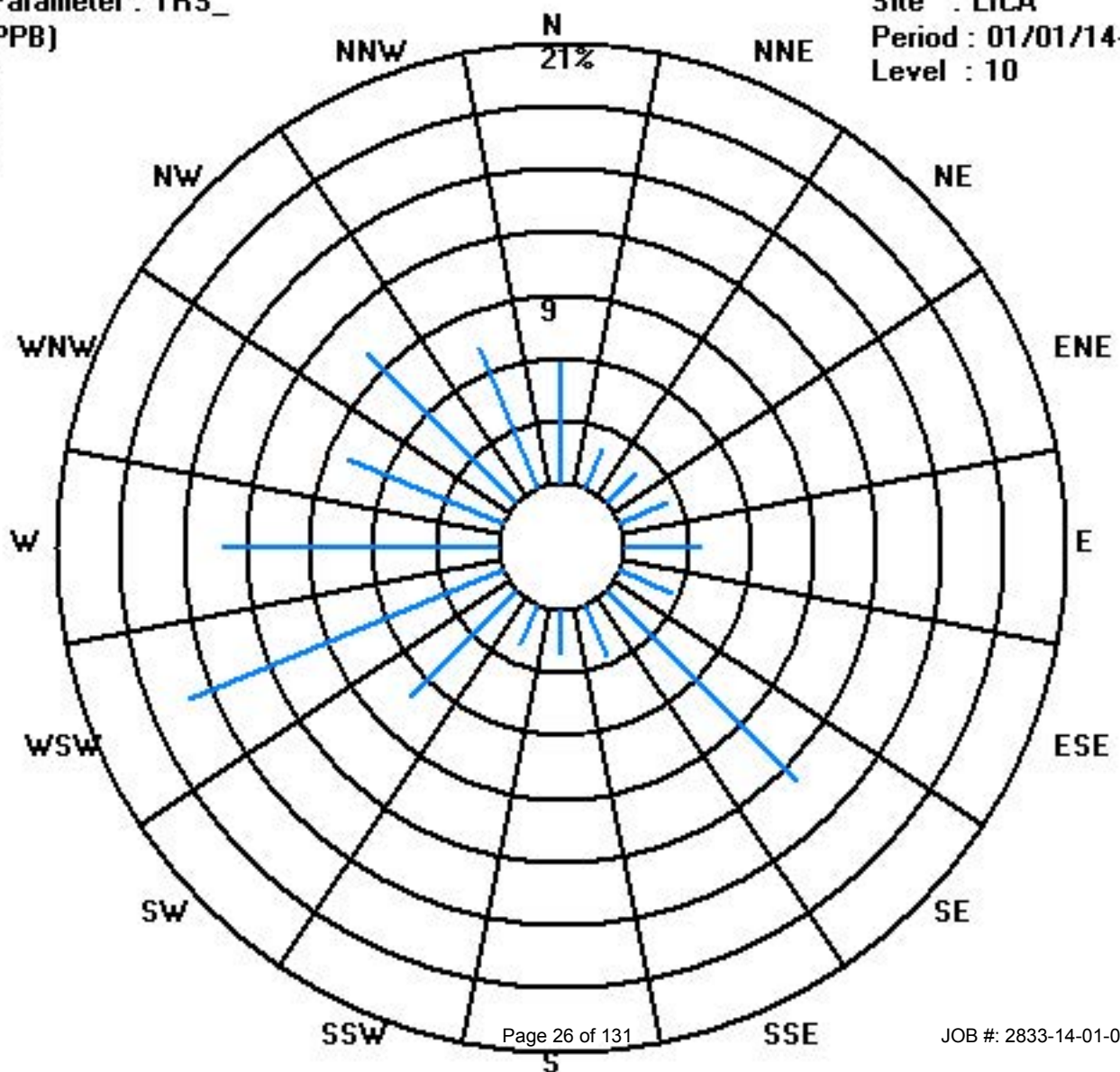
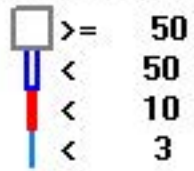
Calm : .00 %

Total # Operational Hours : 701

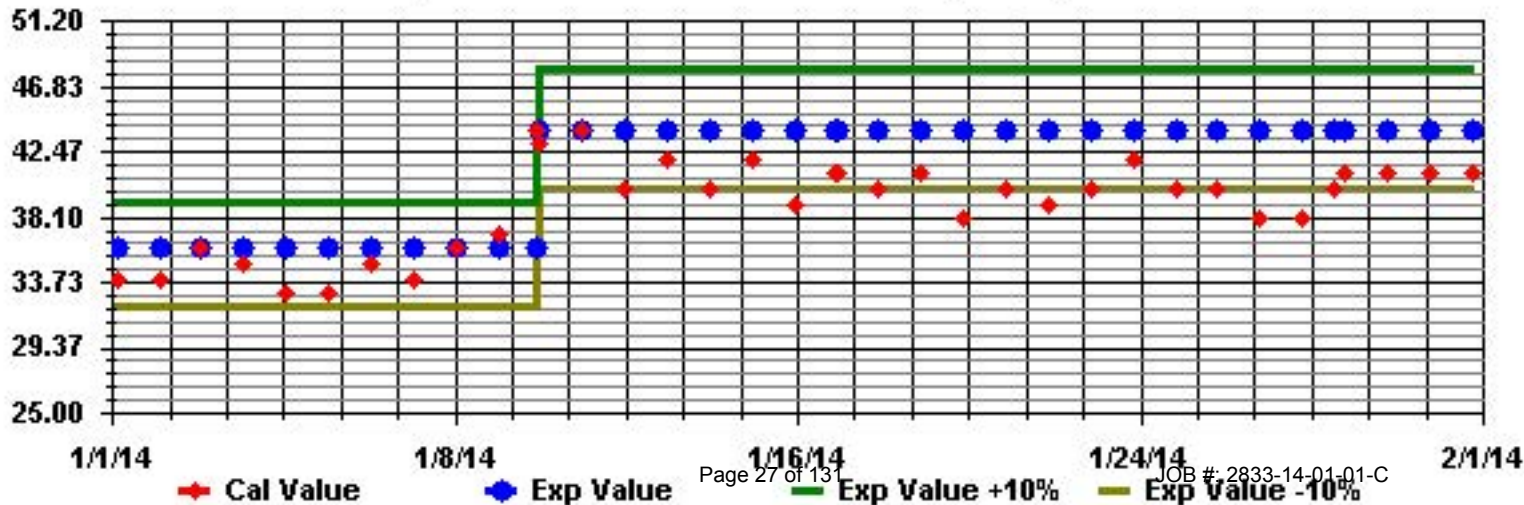
Class Limits (PPB)

Period : 01/01/14-01/31/14

Level : 10



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



Total Hydrocarbons

Lakeland Industry & Community Association - Cold Lake South Site

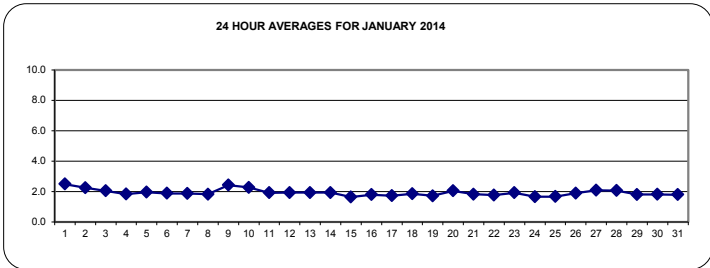
JANUARY 2014

TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																												
1	2.4	2.8	S	2.5	2.4	2.5	2.5	2.4	2.5	2.6	2.6	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.5	2.3	2.4	2.7	2.8	2.8	2.5	24	
2	3.0	S	2.7	2.5	2.2	2.1	2.1	2.1	2.2	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.2	2.2	2.3	2.3	2.3	2.4	3.0	2.2	24	
3	S	2.7	2.7	2.8	2.9	3.0	3.0	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	S	3.0	2.1	24	
4	1.8	1.8	1.9	1.8	1.8	1.8	1.8	2.0	2.0	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	S	1.8	2.0	24	
5	1.8	1.9	1.9	1.9	1.9	2.0	2.0	2.2	2.1	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	S	2.0	2.0	2.2	2.0	24	
6	2.3	2.3	2.0	2.0	1.9	1.8	1.8	2.0	2.0	1.9	1.8	1.8	1.9	1.8	1.8	1.8	1.7	1.7	1.7	S	1.9	1.9	1.9	1.9	2.3	1.9	24	
7	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	2.1	2.0	1.9	1.8	1.9	1.8	1.8	1.9	2.0	2.0	1.9	S	1.9	1.7	1.7	1.7	2.1	1.9	24	
8	1.8	1.8	1.8	1.8	1.7	1.8	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.0	S	1.9	1.9	1.9	1.9	1.9	2.0	1.8	24	
9	1.9	1.9	2.0	2.1	2.3	2.4	2.5	2.5	2.4	2.5	2.3	2.3	2.3	2.6	2.6	2.6	2.7	S	2.7	2.6	2.6	2.6	2.8	2.7	2.8	2.4	24	
10	2.6	2.7	2.5	2.3	2.4	2.5	2.5	2.5	2.6	2.8	2.7	2.6	2.2	2.0	2.0	2.0	S	1.8	1.9	1.9	1.9	1.9	1.9	2.0	2.8	2.3	24	
11	2.0	2.1	2.0	2.0	2.1	2.3	2.2	2.1	2.1	2.0	2.0	1.9	1.9	1.7	1.5	S	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.9	2.3	1.9	24	
12	1.9	2.1	2.2	2.0	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	2.0	S	1.8	1.8	1.8	1.9	1.9	2.0	1.9	1.9	1.9	2.2	1.9	24	
13	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.4	2.5	1.9	1.7	S	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.0	2.5	1.9	24	
14	2.1	2.1	2.2	2.2	2.3	1.9	1.9	1.9	1.9	1.9	1.9	1.9	S	1.8	1.8	1.8	1.9	1.9	2.0	2.0	1.9	1.7	1.7	1.7	2.3	1.9	24	
15	1.6	1.6	1.5	1.6	1.5	1.6	1.6	1.6	1.6	1.6	1.6	S	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.6	24	
16	1.8	1.8	1.8	1.9	2.1	2.1	2.0	1.9	1.9	S	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.1	1.8	24	
17	1.7	1.7	1.8	1.7	1.7	1.8	1.8	1.7	C	C	C	C	C	C	C	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.9	1.9	1.9	1.7	24
18	1.9	2.0	2.1	2.0	1.9	1.8	1.8	1.9	S	1.8	1.8	1.8	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	2.1	1.9	24	
19	1.8	1.7	1.7	1.6	1.6	1.6	1.6	S	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.7	24	
20	1.9	1.9	1.9	1.9	1.9	S	1.9	2.0	1.9	1.9	2.0	2.1	2.0	2.0	2.1	2.1	2.0	2.1	2.2	2.3	2.3	2.3	2.3	2.5	2.5	2.0	24	
21	2.4	2.1	1.7	1.7	S	1.7	1.7	1.9	2.2	2.2	2.1	1.9	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.4	1.8	24	
22	1.7	1.7	1.7	1.7	S	1.6	1.7	1.6	1.6	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.8	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	1.8	24	
23	2.0	2.0	2.0	S	2.0	2.2	2.3	2.2	2.3	2.2	2.1	2.2	2.3	2.0	1.7	1.6	1.6	1.6	1.6	1.7	1.6	1.7	1.7	1.6	2.3	1.9	24	
24	1.6	1.6	S	1.7	1.7	1.6	1.6	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.7	24	
25	1.7	S	1.6	1.8	1.8	1.9	1.9	1.9	1.9	1.8	1.6	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.9	1.7	24	
26	S	1.7	1.7	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	S	2.0	1.9	24	
27	1.8	1.8	1.8	1.9	2.0	2.1	2.0	2.0	2.1	2.4	2.7	2.4	2.1	2.0	2.0	1.9	2.0	2.1	2.2	2.2	2.2	2.2	S	2.2	2.7	2.1	24	
28	2.2	2.2	2.3	2.4	2.6	2.3	2.3	2.4	2.4	2.2	2.1	2.0	2.1	2.0	1.8	1.7	1.7	1.8	1.9	1.9	1.8	S	1.7	1.8	2.6	2.1	24	
29	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.8	S	1.7	1.8	1.8	1.9	1.8	24	
30	1.8	1.8	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	S	1.9	1.8	1.8	1.8	1.9	1.8	24	
31	1.8	1.8	1.9	2.0	1.9	1.8	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	S	1.7	1.7	1.7	1.7	1.7	2.0	1.8	24	
HOURLY MAX	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3			
HOURLY AVG	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.8	1.8	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9			

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:	706					
MAXIMUM 1-HR AVERAGE:	3.0	PPM	@ HOUR(S)	VAR	ON DAY(S)	2, 3
MAXIMUM 24-HR AVERAGE:	2.5	PPM			ON DAY(S)	1
				VAR-VARIOUS		
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.27		MONTHLY AVERAGE:	1.93	PPM	

01 Hour Averages



— LICA — THC — PPM

Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY																												
1	2.6	3	S	2.6	2.5	2.5	2.6	2.5	2.6	2.7	2.8	2.5	2.6	2.6	2.5	2.4	2.8	2.6	2.5	2.7	2.5	2.7	2.7	2.9	3	2.6	24	
2	3	S	2.8	2.5	2.4	2.2	2.2	2.2	2.3	2	2.1	2.4	2.1	2.2	2.2	2.4	2.6	2.7	2.3	2.5	2.4	2.5	2.4	2.6	3	2.4	24	
3	S	2.8	2.8	2.9	3	3.2	3.8	1.8	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.9	2	1.9	1.9	2	2	2	2	S	3.8	2.2	24	
4	1.8	1.8	1.9	2	1.8	1.9	1.9	2.1	2.1	2.3	2.1	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	S	1.9	2.3	1.9	24	
5	1.9	1.9	1.9	1.9	2	2	2.1	2.2	2.2	2.1	2.1	4.8	1.9	1.9	1.9	1.9	4.2	2	2	2	2	S	2	2.2	4.8	2.2	24	
6	2.6	2.4	2.2	2.2	2.2	1.9	1.9	2.1	2.1	1.9	2.4	1.9	1.9	1.8	2.1	1.8	1.8	1.9	1.7	S	1.9	1.9	1.9	1.9	2.6	2.0	24	
7	1.9	1.9	1.9	1.9	1.9	2	2	2.2	2.3	2.3	2.1	1.9	2.4	1.9	1.9	2	3.8	2.2	2	S	2.2	1.8	1.8	1.8	3.8	2.1	24	
8	1.8	1.9	1.9	1.8	1.8	1.9	1.8	1.8	1.9	1.9	2.6	1.9	1.9	1.9	1.9	2	2.1	S	2.1	1.9	1.9	1.9	1.9	2	2.6	1.9	24	
9	2	2	2.1	2.3	2.4	2.5	2.6	2.6	2.4	2.6	2.5	2.4	3.1	2.6	2.6	2.8	2.9	S	2.7	2.6	2.8	2.8	3.5	3.4	3.5	2.6	24	
10	2.8	2.8	2.7	2.4	2.6	3.9	2.6	2.7	2.8	2.9	2.9	2.7	2.4	2.2	2.4	2.3	S	1.9	2	2	1.9	1.9	2	2.1	3.9	2.5	24	
11	2.2	2.2	2.2	2.2	2.2	4.1	2.5	2.4	2.5	3	3.1	2	1.9	1.8	1.6	S	1.8	1.9	1.9	1.8	1.8	1.9	1.9	1.9	4.1	2.2	24	
12	1.9	2.2	2.2	2.1	1.9	2	2	2	2	2	2	1.9	2	2.1	S	1.9	1.9	1.8	2.1	2.2	2.1	2.1	2	2	2.2	2.0	24	
13	2	2.1	2.1	2	2.2	2.1	2	2	2.5	2.8	2.6	2.2	1.7	S	1.8	1.8	1.8	1.9	1.8	1.8	1.9	1.9	2	2.1	2.8	2.0	24	
14	2.1	2.2	2.3	2.3	2.4	2.1	2	1.9	2	1.9	1.9	1.9	S	1.9	1.9	1.9	2	2.1	2.1	2.1	2	1.8	1.7	1.8	2.4	2.0	24	
15	1.7	1.6	1.6	1.6	1.5	1.6	1.6	1.6	1.6	1.6	1.6	S	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	24
16	1.8	1.9	1.9	2	2.2	2.1	2	2	2	2.1	S	1.8	1.8	1.8	1.7	1.8	1.9	1.9	1.8	1.8	1.8	1.8	1.7	1.7	2.2	1.9	24	
17	1.8	1.8	1.8	1.8	1.7	1.8	1.9	1.9	C	C	C	C	C	C	C	C	2.7	1.9	1.7	1.7	1.7	1.8	1.9	1.9	1.9	2.7	1.9	24
18	2	2.1	2.1	2.1	1.9	1.9	1.9	2	S	1.9	1.8	1.9	2	2	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	2	2.1	1.9	24	
19	1.8	1.8	1.7	1.7	1.6	1.6	1.7	S	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.8	24
20	1.9	1.9	1.9	1.9	2	2	S	2	2.2	2	2	2.2	2.2	2.1	2.2	2.2	2.2	2.1	2.1	2.3	2.3	2.3	2.4	2.6	2.6	2.1	24	
21	2.5	2.3	1.9	1.7	1.7	S	1.7	1.8	2.2	2.3	2.4	2.3	2.2	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.5	1.9	24
22	1.8	1.8	1.8	1.8	S	1.6	4.3	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2	1.9	2	2	2.3	2	2.1	2.1	4.3	2.0	24	
23	2.1	2	2	S	2.2	2.3	2.3	2.3	2.4	2.2	2.3	2.5	2.5	2.2	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.9	1.6	2.5	2.0	24	
24	1.6	1.6	S	1.8	1.7	1.7	1.7	1.7	1.7	1.8	1.7	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	2	2	1.7	24	
25	1.8	S	1.7	1.9	1.9	2	2	2	2.1	2	1.9	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	2.1	1.7	24
26	S	1.7	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	2	2	2	2	1.9	2	2	2	2	2	2	2	2	2	S	2	1.9	24
27	1.9	1.9	1.9	2	2	2.5	2.1	2.1	2.2	2.9	3.3	2.6	2.2	2.4	2.1	2	2.1	3	2.2	2.2	2.3	2.3	S	2.3	3.3	2.3	24	
28	2.2	2.3	2.6	2.7	2.8	2.6	2.4	2.6	2.5	2.3	2.3	2.1	2.1	2.1	1.9	2	2	1.9	2	2	1.8	S	1.8	1.8	2.8	2.2	24	
29	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.2	1.9	1.9	1.9	1.8	3	1.9	1.8	1.9	1.9	S	1.8	1.8	1.8	3	1.9	24	
30	1.8	1.8	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2	1.8	1.8	S	1.9	1.9	1.8	1.8	2	1.9	24		
31	1.9	1.9	2	2.1	2	1.9	1.9	1.9	2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.8	S	1.7	1.7	1.7	1.7	1.8	2.1	1.9	24
HOURLY MAX	3	3	3	3	3	4	4	3	3	3	3	5	3	3	3	3	4	3	3	3	3	3	4	3				
HOURLY AVG	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.1	2.0	2.0	1.9	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0			

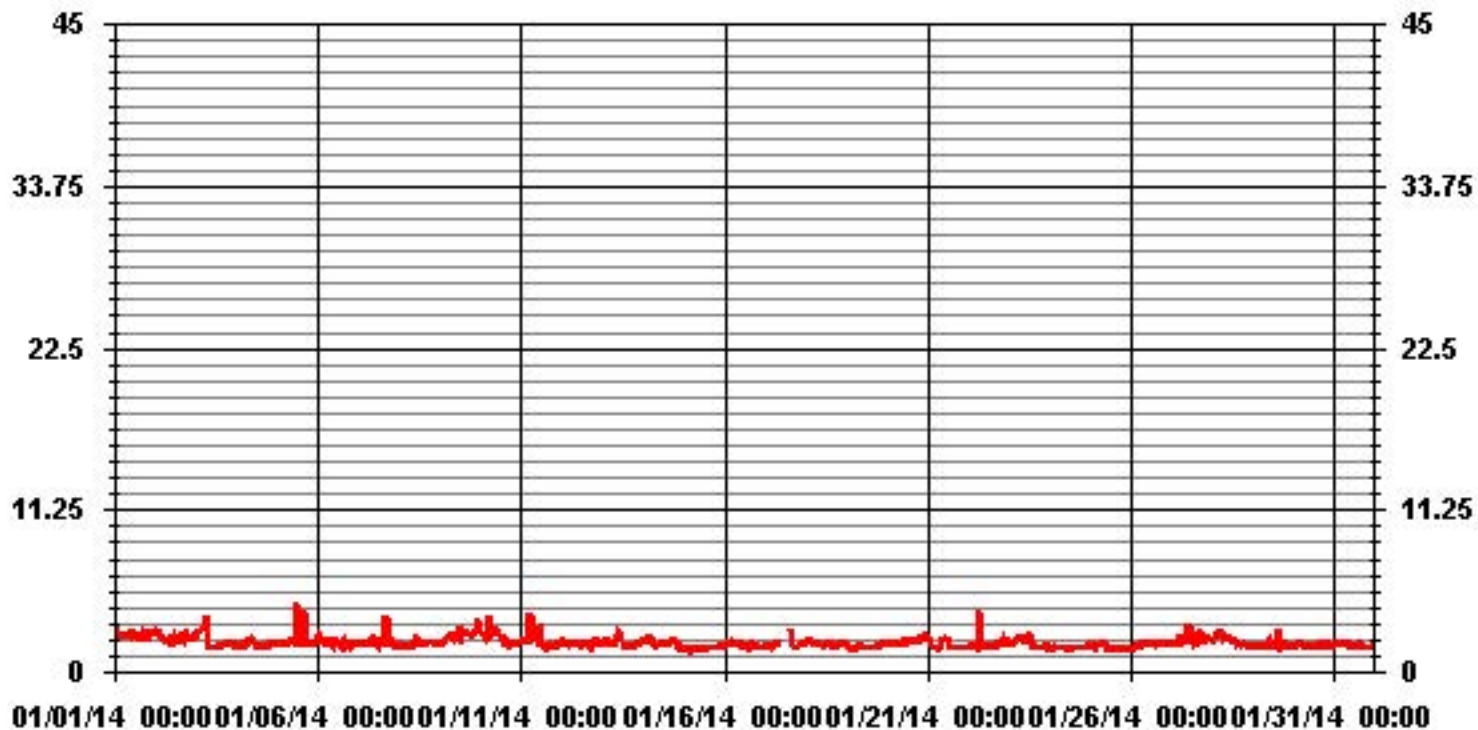
STATUS FLAG CODES

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:	705
MAXIMUM INSTANTANEOUS VALUE:	4.8 PPM @ HOUR(S) 11 ON DAY(S) 5
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	0.39

01 Hour Averages



— LICA THCMAX PPM

LICA
 THC / WD Joint Frequency Distribution (Percent)

January 2014

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	5.80	1.84	1.98	2.40	3.54	2.69	12.60	2.69	2.26	1.98	7.50	16.14	13.17	7.64	10.05	7.22	99.57
< 10.0	.00	.14	.00	.00	.00	.00	.14	.00	.00	.00	.00	.14	.00	.00	.00	.00	.42
< 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	5.80	1.98	1.98	2.40	3.54	2.69	12.74	2.69	2.26	1.98	7.50	16.28	13.17	7.64	10.05	7.22	

Calm : .00 %

Total # Operational Hours : 706

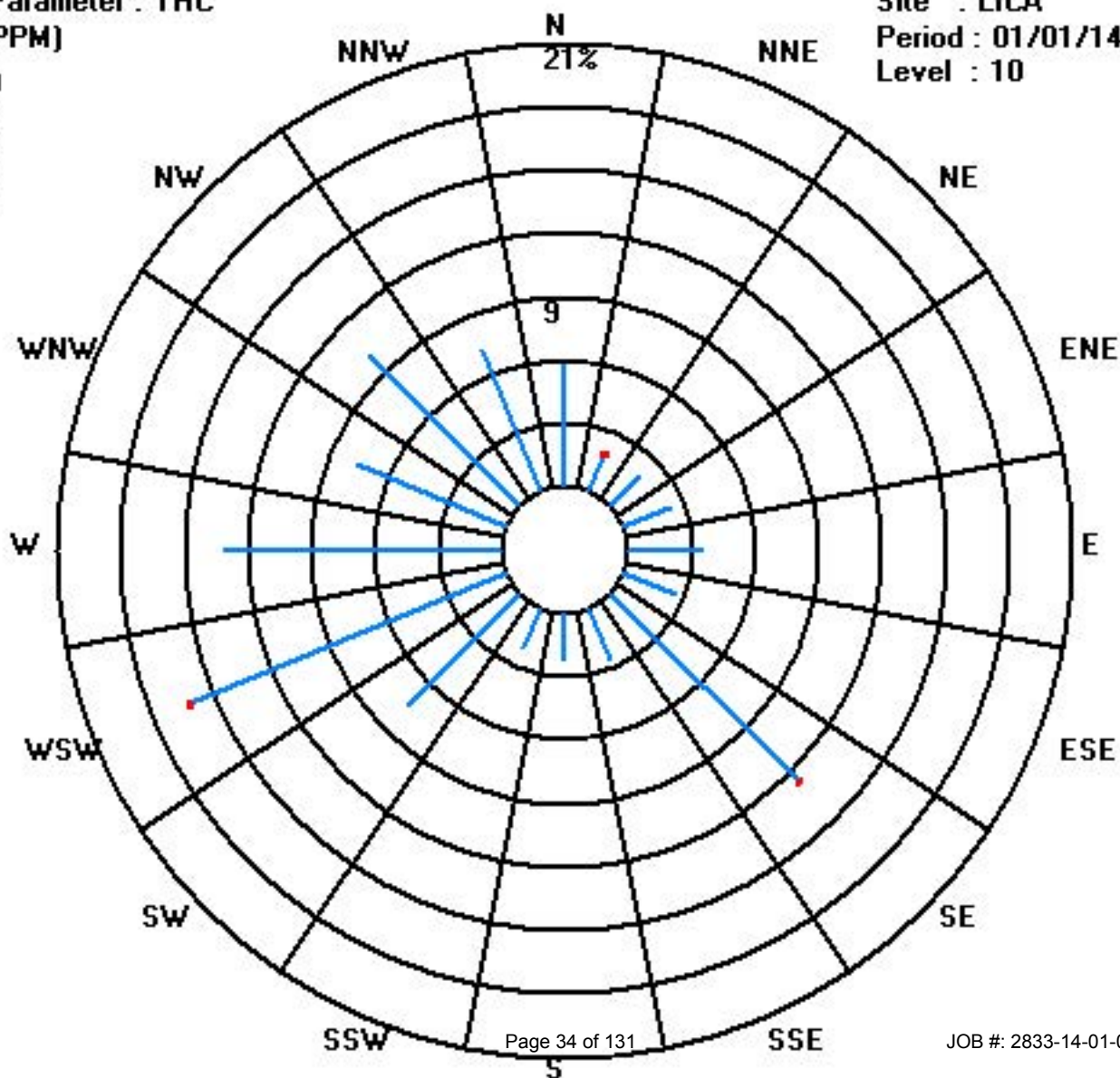
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	41	13	14	17	25	19	89	19	16	14	53	114	93	54	71	51	703
< 10.0		1					1					1					3
< 50.0																	
>= 50.0																	
Totals	41	14	14	17	25	19	90	19	16	14	53	115	93	54	71	51	

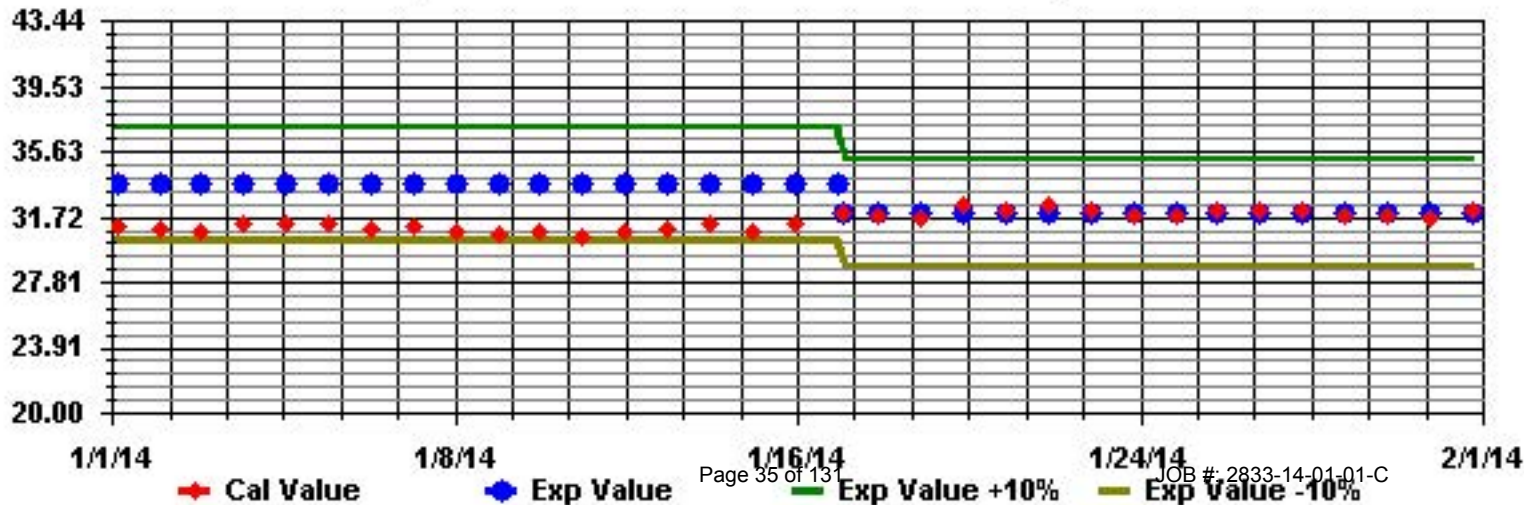
Calm : .00 %

Total # Operational Hours : 706

Class Limits (PPM)



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



Particulate Matter 2.5

Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

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

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY	1	0	9	6	14	7	13	6	13	5	8	7	7	4	7	6	6	4	11	8	8	4	10	7	10	14	7.5	24
2	3	8	5	8	5	4	1	0	0	7	10	1	6	6	9	7	16	14	13	11	11	11	6	9	16	7.1	24	
3	13	11	11	7	8	9	11	1	4	1	0	0	0	0	5	2	0	0	0	X	0	0	3	0	13	3.7	23	
4	0	X	6	0	0	0	3	X	3	0	4	0	6	0	5	1	6	1	1	X	2	0	4	X	6	2.1	20	
5	0	0	5	0	2	X	1	3	3	X	0	2	6	X	6	5	2	3	7	2	4	6	6	0	7	3.0	21	
6	6	5	3	4	4	4	0	1	5	5	0	1	0	6	0	1	2	2	11	8	7	5	3	2	11	3.5	24	
7	6	12	3	6	4	7	5	2	6	8	5	5	5	6	4	0	5	7	0	2	3	5	3	4	12	4.7	24	
8	3	10	4	8	1	4	X	4	0	11	5	9	1	7	1	9	2	11	3	12	10	10	8	18	18	6.6	23	
9	13	17	5	16	7	16	5	12	6	9	3	11	3	8	5	13	X	17	7	20	41	39	X	15	41	13.1	22	
10	4	10	5	29	8	18	0	23	25	27	13	16	1	13	C	C	C	C	0	11	5	3	1	2	2	29	10.3	24
11	4	3	3	3	3	6	8	2	6	1	7	3	3	3	X	X	7	6	4	5	1	0	1	X	8	3.8	21	
12	2	17	1	0	0	0	6	11	0	6	1	1	X	X	X	0	X	0	1	1	X	3	X	12	17	3.4	18	
13	8	7	X	4	3	2	0	6	2	17	3	17	X	10	1	8	X	0	1	8	X	8	0	7	17	5.6	20	
14	1	5	0	7	X	2	X	8	0	10	X	0	5	4	X	8	X	7	6	2	X	4	X	4	10	4.3	17	
15	X	0	X	2	X	3	0	X	1	X	3	X	X	0	X	0	0	0	6	8	X	X	X	11	11	2.6	13	
16	3	1	X	0	7	0	3	X	3	2	2	17	10	1	9	7	X	2	0	2	13	X	7	8	17	4.9	20	
17	8	4	6	1	10	0	0	0	X	X	2	X	X	C	0	13	0	X	3	14	2	7	0	8	14	4.3	19	
18	X	13	14	6	X	17	0	7	12	2	1	2	X	12	3	6	X	12	0	2	2	0	2	8	17	6.1	20	
19	0	1	1	7	0	6	0	3	X	2	0	1	0	2	X	X	X	0	1	1	4	1	1	4	7	1.8	20	
20	3	3	0	0	0	0	0	0	6	3	1	0	3	0	3	2	0	0	3	4	0	0	9	11	11	2.1	24	
21	X	10	12	1	X	X	9	0	0	3	0	4	0	2	4	X	0	1	7	X	0	1	2	0	12	2.9	19	
22	5	0	2	0	5	0	5	0	8	3	1	5	0	X	0	5	0	5	10	2	0	2	0	8	10	2.9	23	
23	7	4	7	2	5	11	7	12	0	6	16	5	13	8	X	5	0	X	10	14	0	0	4	2	16	6.3	22	
24	7	1	2	0	0	0	0	0	1	4	0	4	0	2	X	0	7	3	2	6	1	1	X	3	7	2.0	22	
25	1	0	X	X	5	X	X	3	2	8	9	10	9	X	0	1	0	X	X	0	8	0	X	5	10	3.8	16	
26	1	14	1	5	0	5	1	7	4	28	1	13	3	6	X	4	X	8	0	8	3	19	X	17	28	7.0	21	
27	0	9	0	6	X	8	3	7	0	15	1	27	8	4	0	10	X	12	7	8	1	15	9	6	27	7.1	22	
28	0	15	X	4	11	2	X	8	13	8	5	11	5	14	8	13	16	10	15	11	6	8	X	2	16	8.8	21	
29	6	7	2	3	0	4	3	3	3	2	0	X	6	7	X	0	6	1	3	0	0	6	3	0	7	3.0	22	
30	4	X	0	X	0	0	0	3	0	5	0	2	4	X	3	5	2	6	2	6	0	4	1	6	6	2.2	21	
31	15	0	6	1	5	7	6	4	0	0	18	0	0	0	5	2	0	2	0	1	2	2	2	0	18	3.3	24	
HOURLY MAX	15	17	14	29	11	18	11	23	25	28	18	27	13	14	9	13	16	17	15	20	41	39	9	18				
HOURLY AVG	4.4	6.8	4.2	5.0	3.8	5.3	3.1	5.0	4.2	7.0	4.1	6.1	3.8	5.1	3.7	4.9	3.7	4.9	4.9	6.0	5.0	5.7	3.7	6.1				

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

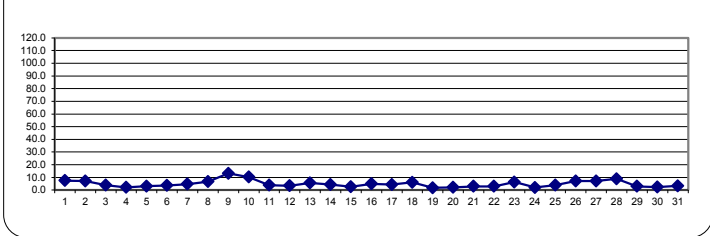
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 24-HR 30 ug/m3

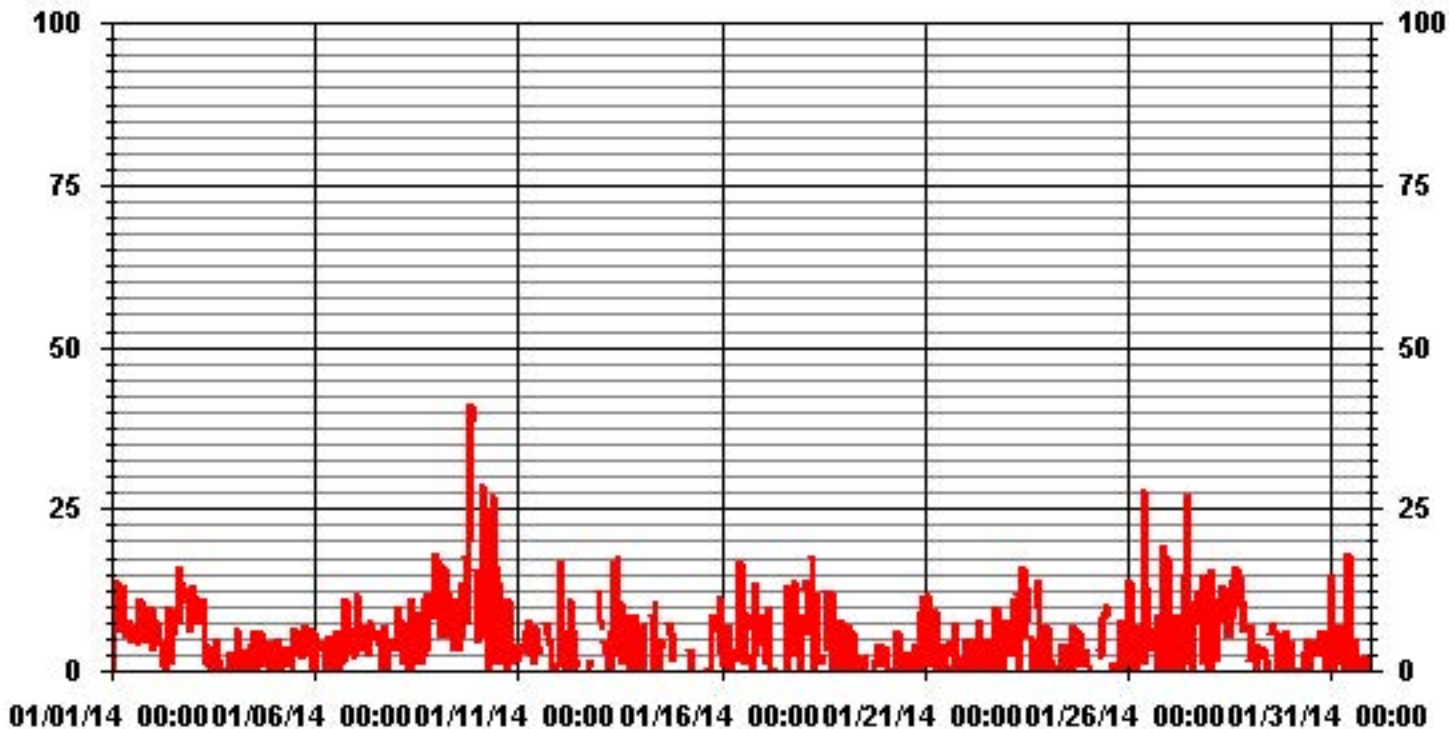
MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	503				
MAXIMUM 1-HR AVERAGE:	41 ug/m3	@ HOUR(S)	20	ON DAY(S)	9
MAXIMUM 24-HR AVERAGE:	13.1 ug/m3			ON DAY(S)	9
				VAR-VARIOUS	
MONTHLY CALIBRATION TIME:	4 HRS	OPERATIONAL TIME:	654 HRS		
STANDARD DEVIATION:	5.26	AMD OPERATION UPTIME:	87.9 %		
		MONTHLY AVERAGE:	4.89 ug/m3		

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



— LICA PM2 UG/M3

LICA
 PM2 / WD Joint Frequency Distribution (Percent)

January 2014

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	5.84	1.84	2.00	2.61	4.00	3.07	12.76	2.76	2.30	2.00	8.00	15.53	13.53	6.46	9.84	7.07	99.69
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.30	.00	.00	.00	.00	.00	.30
< 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	5.84	1.84	2.00	2.61	4.00	3.07	12.76	2.76	2.30	2.00	8.30	15.53	13.53	6.46	9.84	7.07	

Calm : .00 %

Total # Operational Hours : 650

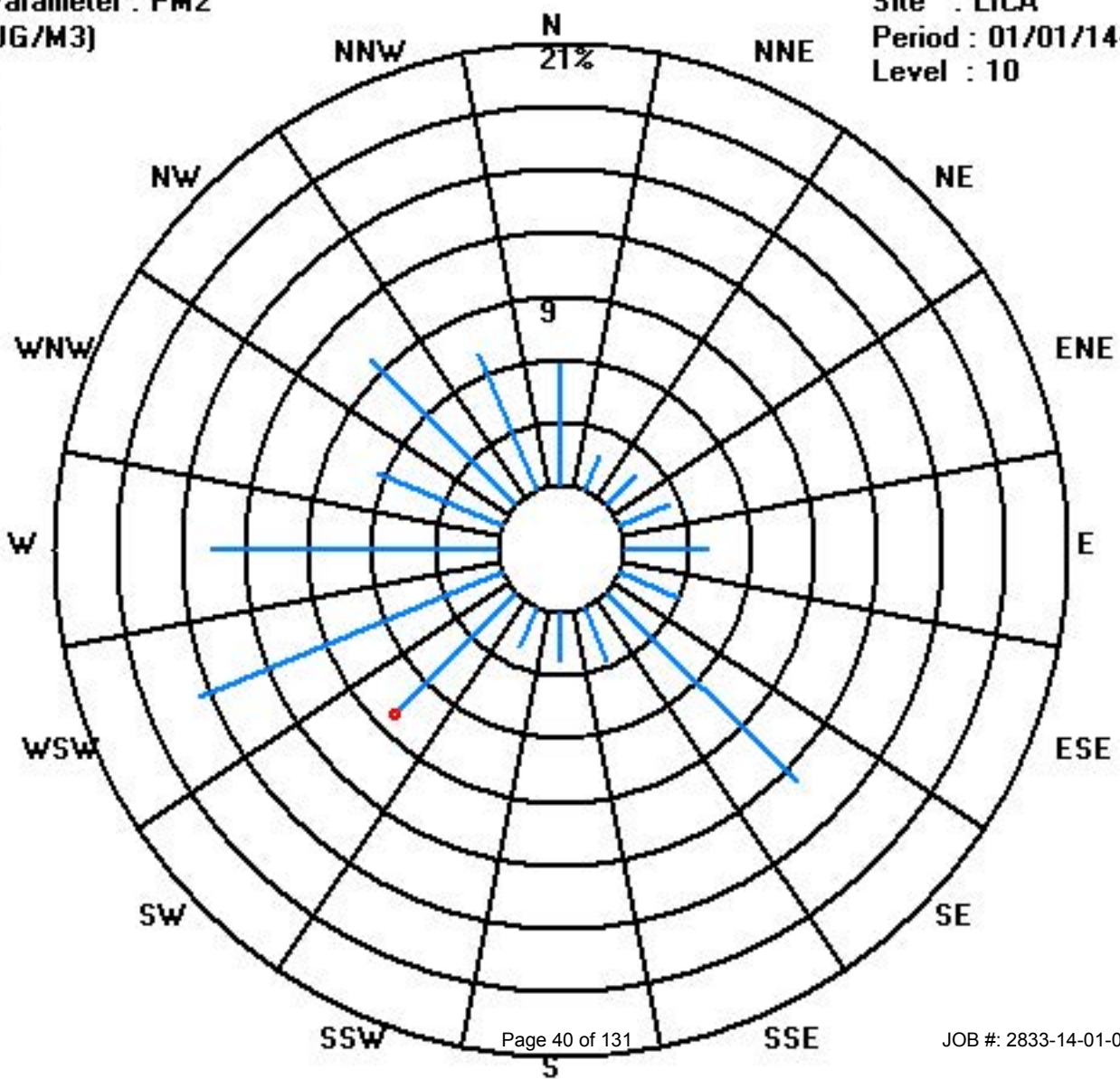
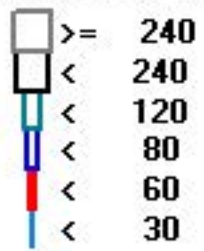
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	38	12	13	17	26	20	83	18	15	13	52	101	88	42	64	46	648
< 60											2						2
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	38	12	13	17	26	20	83	18	15	13	54	101	88	42	64	46	

Calm : .00 %

Total # Operational Hours : 650

Class Limits (UG/M3)



Nitrogen Dioxide

Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																												
1	6.4	9.4	S	17.1	17.6	17.7	21.3	15.8	13.8	11.8	10.7	8	7.5	7	8.6	8.3	8.2	12.8	14.3	15.7	7.7	6.9	8.5	8.9	21.3	11.5	24	
2	7.6	S	6.7	5.8	4.7	3.9	4	4.6	5.5	4.4	4.5	4.8	4.9	6.8	10	15.2	22.3	22	21.3	22.3	20.6	20	15.7	17.2	22.3	11.1	24	
3	S	17.5	16.7	17.4	18.2	16.9	17.9	2.6	2.5	2.1	1.2	1	1.7	2.3	2.9	3.3	3.7	3.3	3.1	1.6	3.5	2.7	1.9	S	18.2	6.5	24	
4	1.3	2.2	3.6	3.3	1.8	2.8	4.3	5.7	8.7	5.8	3	0.7	0.7	0.7	0.8	1	1.5	1.4	0.9	1.1	1.8	1.5	S	3.4	8.7	2.5	24	
5	3.4	3.4	1.6	2.1	3.1	3.8	4	8.1	6.7	4.7	4	4.4	2.9	3	3.2	3.8	4.7	6.4	6.7	6.6	12	S	9.5	8.6	12	5.1	24	
6	11.4	7.8	6.2	5.5	4.9	7.9	6.6	7.6	10.7	10	4.9	5.4	4.7	4.7	5.4	7.5	7.3	8.9	6.3	6.6	S	5.7	5	4.1	11.4	6.7	24	
7	4	4.1	3.3	2.3	3.6	5.6	11.4	24.6	30.7	27.6	15.6	5.3	4.6	5	5.6	9.6	26.1	28.8	21	S	15	3.1	1.7	1.7	30.7	11.3	24	
8	1.8	1.6	1.6	1.5	1.5	1.9	3.6	3.1	3.3	3.2	3.8	3.8	3.2	4.4	4.7	5	6.6	8.5	S	7.9	8	8.1	6.4	5.8	8.5	4.3	24	
9	5.4	5.3	5.4	6.6	7.7	8.5	16.6	16.7	14.5	8.8	7.3	8.6	7.4	6.3	7	9.5	14.9	S	11.3	11.4	13.1	13.2	13.6	15.6	16.7	10.2	24	
10	10.6	8.5	13	16.2	16.7	19.3	21	22.9	22	16.4	15.4	15.5	14.9	16.1	15.5	12.6	S	8.7	10.3	7.6	4	4.2	4.2	5.6	22.9	13.1	24	
11	5.9	7.3	5.3	5.6	4.6	20.9	25.1	17.5	20.8	7.7	7.4	5.9	6.1	5.9	4.1	S	5.7	5.5	4.8	3.7	5.1	4	2.4	2.8	25.1	8.0	24	
12	2.5	4.2	6.4	3.5	3.9	5.1	6.3	4.9	2.6	1.4	1.6	1.7	2.1	2.1	S	2.5	3.6	7.4	11.1	9.9	12.6	5.3	3.2	2.7	12.6	4.6	24	
13	4	4.3	3.7	3.9	4.2	4.2	7	8.6	10.6	11.3	12.4	5.1	1.5	S	1.7	1.3	3	4.8	2.4	5.4	9.7	8.1	7.6	7.9	12.4	5.8	24	
14	5.5	7	10.5	15.8	16.1	8.4	7.7	2.6	3.5	2.5	3.3	3.2	S	2.1	3	4.4	5.1	7.7	9	11.3	7.9	5.4	4.9	3.8	16.1	6.6	24	
15	4.8	4.7	2.9	1.8	0.5	0.7	1	0.7	0.8	0.6	0.5	S	0.6	0.4	0.5	0.5	0.6	0.6	0.5	0.6	0.7	0.6	0.6	0.6	4.8	1.1	24	
16	0.9	1.2	2.1	2.1	3.6	3.3	3.3	4.6	4.9	4.2	S	7	5	4.5	4.9	9.5	7.1	7.8	8.2	8.1	7.8	7.1	8.6	8.5	9.5	5.4	24	
17	9.5	10.1	10.2	8.3	9.6	10.2	9.8	8	C	C	C	C	C	C	C	2.7	3.1	2.1	2.2	2.3	1.9	2.5	3.4	3.6	10.2	5.9	24	
18	4	6.3	4.9	3.6	2.9	2.8	3	4	S	8	6.8	6	6.2	6.4	6.7	6.1	6	5.7	6.6	6.8	7.9	8.3	9.7	5.7	9.7	5.8	24	
19	4.1	2.8	1.9	1.1	0.8	0.6	1	S	2.6	3.9	1.8	1.6	1.8	1.8	0.9	0.9	2.1	2.5	1.4	1.1	1.3	1	1.4	1.7	4.1	1.7	24	
20	1.5	1.1	1.7	3.1	6.3	5.2	S	12.9	12.8	7	4.7	4.3	4.5	4.6	4.9	6.4	6.2	5.6	5.9	7.9	7.6	11.1	12.8	14.2	14.2	6.6	24	
21	14.2	10.6	4.6	3.7	4	S	10.8	20	18.4	16.1	11.6	12.5	7.1	4.5	4.1	3.2	4.2	4.2	3.7	3.8	1.7	1.8	3	4.9	20	7.5	24	
22	4.7	3.6	3.6	2.2	S	3.7	6.6	6	5.5	3.2	1.9	2.2	1.9	2.2	2.5	2.4	4.2	4.2	4.7	4.8	7.6	7.2	3.8	3.4	7.6	4.0	24	
23	3.8	3.5	3.4	S	5	6.9	8.6	13.4	21.2	16.5	13.3	13	11.8	6.6	4.6	5	6	5.2	5	4.3	4.7	4.5	5.1	3.6	21.2	7.6	24	
24	3.5	3	S	3.5	2.5	2.2	4.3	3.7	4.2	4.1	2.6	1.7	2.2	2	1.5	3.5	5.2	3.9	3.6	2.8	3.5	2.5	2.6	2.4	5.2	3.1	24	
25	2.5	S	1.1	1.6	2.4	5.4	4.7	7.7	6.6	6.5	2.2	1.4	1.1	1	1	1.2	1.5	1.4	1	1.1	1.2	1.8	1.2	1.2	7.7	2.5	24	
26	S	0.8	1.5	1.4	1.4	1.3	1.2	1.5	1.8	1.8	2.6	3.6	3.8	4.3	3.3	4.9	7.6	8.7	8.5	9	9.2	9.6	9.3	S	9.6	4.4	24	
27	8.7	7.9	9.4	11.3	11.3	12.2	15.8	24.9	23.8	17.6	19.9	15.1	8.2	8	9.6	9.2	12.8	23.2	23.9	19.1	17.4	16.6	S	11.8	24.9	14.7	24	
28	12.5	11.3	12.8	14.6	11.9	10.3	10.3	14.7	22.5	13.8	9	6.7	8.7	8.6	9.3	10.8	13.2	15.5	16.1	17.3	13.4	S	2.2	2.7	22.5	11.7	24	
29	2.8	4	5.9	4.4	3.1	2.6	3.1	3.9	4.4	4.1	6.1	7	8.6	7	5	5.9	5.6	5.4	5.9	3.9	S	2.5	1.7	1.6	8.6	4.5	24	
30	1.3	1.9	4.7	5.3	4.9	4.2	3.2	1.8	2.6	1.5	1.5	1.1	1.3	1.9	2.3	3	3.1	3.9	4.2	S	5.5	4.3	3.1	4.6	5.5	3.1	24	
31	7.6	8.3	7.4	7	5.7	6.5	7.3	5.6	5.2	2.8	4.2	4.3	2.2	2.8	7.3	4.4	3.1	1.5	S	1.9	1.9	1.9	1.9	2.7	8.3	4.5	24	
HOURLY MAX	14	18	17	17	18	21	25	25	31	28	20	16	15	16	16	15	26	29	24	22	21	20	16	17				
HOURLY AVG	5.4	5.6	5.6	6.1	6.2	6.8	8.4	9.3	10.1	7.6	6.3	5.5	4.7	4.6	4.9	5.5	6.8	7.6	7.7	7.1	7.4	5.9	5.3	5.6				

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

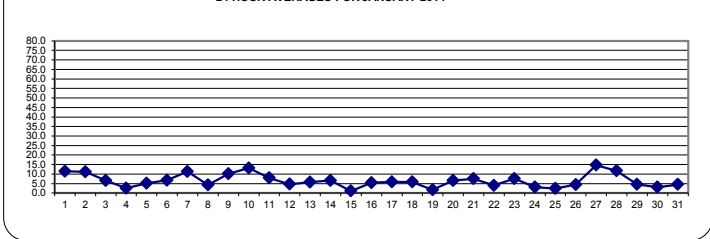
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

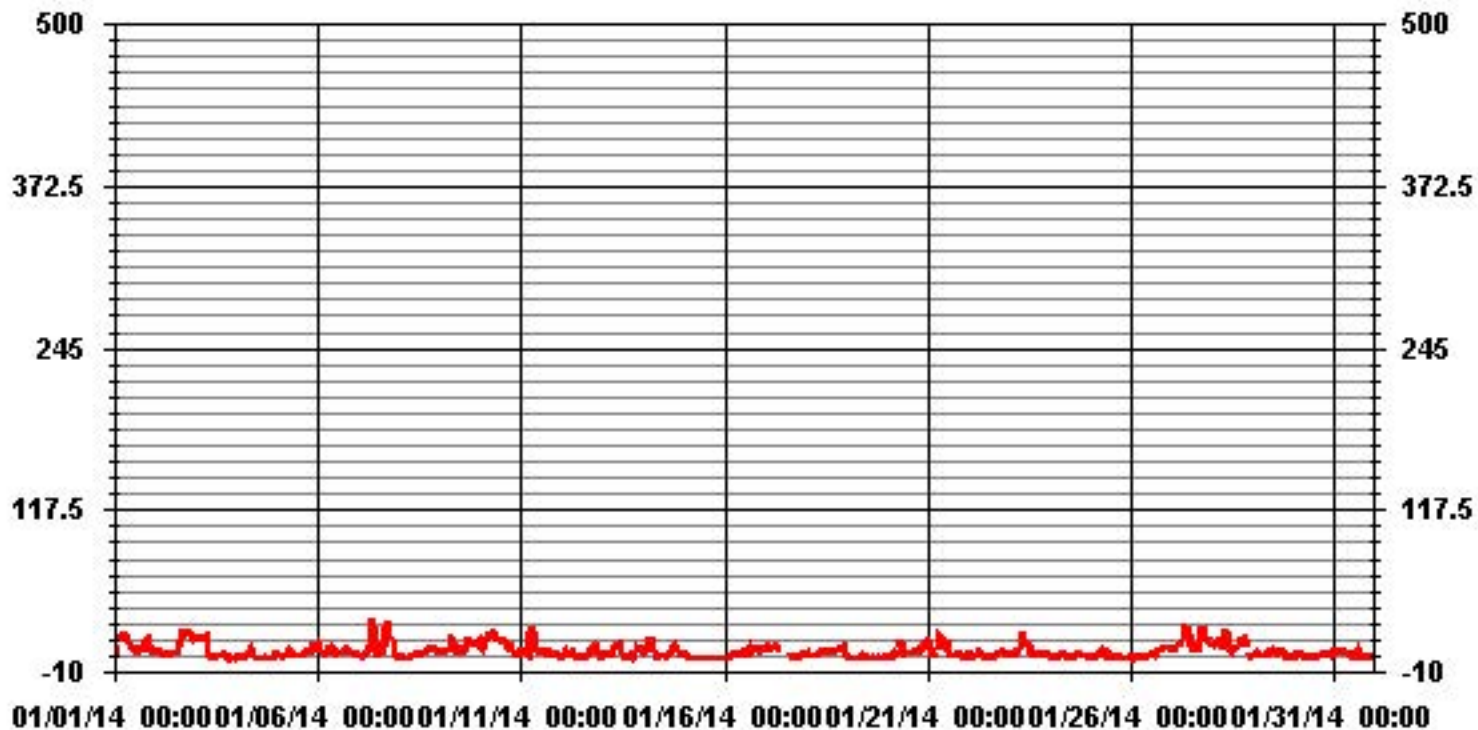
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	705					
MAXIMUM 1-HR AVERAGE:	30.7	PPB	@ HOUR(S)	8	ON DAY(S)	7
MAXIMUM 24-HR AVERAGE:	14.7	PPB			ON DAY(S)	27
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	5.34		MONTHLY AVERAGE:	6.51	PPB	

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



— LICA NO2_ PPB

Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																												
1	7.6	12.6	S	20.1	18.6	19.1	24.6	16.6	15.6	13.1	13.1	9.6	8.6	8.6	10.6	15.1	14.1	17.1	17.6	19.6	12.6	8.1	9.6	13.6	24.6	14.2	24	
2	8.6	S	8.5	6.5	5.5	4.5	4.5	5.5	6.5	5	4.5	5.5	5	11.5	14.5	19.5	26.5	24.5	23.5	24.5	31.5	23.5	18	20	31.5	13.4	24	
3	S	19.5	19	19.5	19.5	20	25.5	5	3	3	2	1.5	2.5	3	4	4	5	5	4.5	3.5	4.5	3	3	S	25.5	8.2	24	
4	1.6	7.1	6.6	6.1	2.6	4.6	6.6	10.6	11.6	11.1	6.6	2.1	1.1	1.1	1.6	1.6	2.1	2.1	1.1	1.6	2.6	1.6	S	4	11.6	4.2	24	
5	5	6	2	3.5	4	4.5	5	10.5	11	7	5.5	22	3.5	4	4	5	5.5	9	7.5	8	17.5	S	11.5	11.5	22	7.5	24	
6	16	10.5	8.5	8	11	11	12.5	11.5	12.5	13.5	7.5	8.5	6.5	8.5	9	11.5	9	14	8.5	8	S	8.5	7	6.5	16	9.9	24	
7	5.5	7	5	3.5	6.5	14.5	22	36.5	34.5	31	27	15	6	7.5	8.5	15.5	39	41	26	S	23.1	5.1	3.1	3.1	41	16.8	24	
8	2.1	2.1	2.6	2.1	3.6	4.6	19.6	4.6	4.6	4.1	4.6	6.6	3.6	7.1	5.6	6.6	12.6	12.6	S	9.5	10	10.5	7.1	6.6	19.6	6.7	24	
9	5.6	6	7	8.5	8.5	11.5	30.5	28.5	19.5	10.5	17.5	16.5	17.5	9	8	14.5	19.1	S	12	13.4	16.5	14.9	15.4	19	30.5	14.3	24	
10	16.4	10	16.9	19.4	19.4	26.9	27.4	26.4	31.4	20.9	17.4	19.9	16.4	18.5	19.9	19.5	S	27.9	22.5	27.9	9	6	6.9	7.9	31.4	18.9	24	
11	8.5	15.9	8.4	9.5	7	34.4	28.4	25	24	25	14.4	11.4	7.9	8.4	6.9	S	7.9	10	9	6.9	6.5	6.5	5.5	4	34.4	12.7	24	
12	4	6.5	9.5	5	4.5	6	6.9	6	3	1.9	1.9	2	2.9	3.4	S	4	6	13.5	17	15	24.5	16	5.5	3.5	24.5	7.3	24	
13	5	5.5	5.5	4.5	6	7.5	11.1	10.1	13.1	14	17.5	13.5	2	S	2.5	2.5	6	8.4	3.5	12.5	18.5	18.4	11.4	10.9	18.5	9.1	24	
14	7.4	10.9	14.9	19.5	28	13	17.4	4.5	5	29.9	18.9	20	S	14.4	4.5	6	9.4	14.4	14.4	14.4	12	6.9	5.5	4.5	29.9	12.9	24	
15	5.5	6	3.5	3	0.5	1	3	1	0.9	1	S	0.4	0.4	0.4	0.4	1	0.5	0.5	0.4	0.9	0.4	0.4	1	6	1.4	24		
16	1	3	4.5	3	5.5	4.5	5.5	6.5	6.5	7.9	S	15.4	11	5	7.9	14.4	10.9	8.4	10.9	12	10.5	7.9	12.9	12	15.4	8.1	24	
17	11.5	11	13.4	9.5	12.5	13.9	13.9	12	C	C	C	C	C	C	C	5	5	3	3.5	4.5	3.9	4.5	4.4	4.5	13.9	8.0	24	
18	5.5	10	5.5	6	4.5	3.9	4.5	7	S	9.1	7.6	6.6	7.1	7.1	8.6	7.1	6.6	6.6	8.1	8.1	9.5	10	10.5	8.1	10.5	7.3	24	
19	5.1	4.6	3.5	1.6	1.1	1.1	1.6	S	4.5	6.5	2.5	2.5	2	2	1.5	1.5	2.9	3.4	2	1.5	1.5	1.5	2	2.5	6.5	2.6	24	
20	2.9	2	2.9	5.4	9.4	9	S	18	21	9	6.5	5	5	12.5	8	8.9	7	7	7	9	9.9	13.5	17.9	15.9	21	9.2	24	
21	15.9	13.9	7	4.4	5.5	S	19.4	25.9	25.5	20	17.4	31.5	8.5	5	4.4	4.4	5	5.4	7.9	4.9	2	3.4	5.4	8	31.5	10.9	24	
22	5.9	5.4	5.5	3.9	S	7	12.5	9.4	8	5.9	2.5	3.9	2.9	5	5.9	6.4	8.4	8.9	11.9	11.9	4.4	3.9	12.5	6.4	24			
23	4.9	4.4	3.9	S	7	8.5	10.5	19	25.5	18.5	15	16.5	15.1	9.1	5.6	6.6	8.1	7.1	6.1	5.1	5.6	6.1	8.6	4.5	25.5	9.6	24	
24	5.1	5.1	S	5	2.9	2.9	18.9	4.4	4.9	5.4	3.9	2.9	2.5	2.5	2	5.4	6	5.9	3.9	3.9	4.9	4.4	4.4	4.4	18.9	4.9	24	
25	4.4	S	2.1	3	4.5	17.5	5.6	11.6	8.6	8.6	4	2.1	1.6	1.6	1.6	2.1	2.1	2.1	1.6	2.1	1.6	2.6	2.1	1.6	17.5	4.1	24	
26	S	1.6	1.6	1.6	1.6	2.1	1.6	2	2	2	4	4	4.5	4.5	4.5	7	8	10	17	12	15	12	11.5	S	17	5.9	24	
27	10	10	13.5	17	16	16.5	21.5	29	27.5	22	28	19.5	10	11.5	13	11	16.5	29.5	32.5	21.5	19.5	19.5	S	14	32.5	18.7	24	
28	15	14.5	16.5	18	19	23	14	19	31	19	11.5	9.5	12	14	15.5	20	18	17.5	19.6	22.1	15.1	S	3.7	3.2	31	16.1	24	
29	3.3	4.8	6.8	5.8	3.2	2.8	6.2	5.2	7.7	4.7	8.7	8.7	10.7	10.7	6.2	8.2	6.7	8.2	7.7	4.2	S	3.6	2.5	2.1	10.7	6.0	24	
30	1.5	2.6	7	6	5.5	5.5	4.5	3.5	3	1.5	3	1.5	2.5	3	3	5	4	5	5.5	S	8.5	5	4	5.5	8.5	4.2	24	
31	9.5	11	9.5	7.5	6	8	8	7	6	3	34	9.5	2.5	10	22	12.5	3.6	2.1	S	2	2.5	2.5	2.9	3.9	34	8.1	24	
HOURLY MAX	16	20	19	20	28	34	31	37	35	31	34	32	18	19	22	20	39	41	33	28	32	24	18	20				
HOURLY AVG	6.9	7.9	7.6	7.9	8.3	10.3	13.1	12.7	13.0	11.1	10.6	10.1	6.3	7.2	7.1	8.3	9.3	10.9	10.7	9.9	10.7	8.2	7.1	7.2				

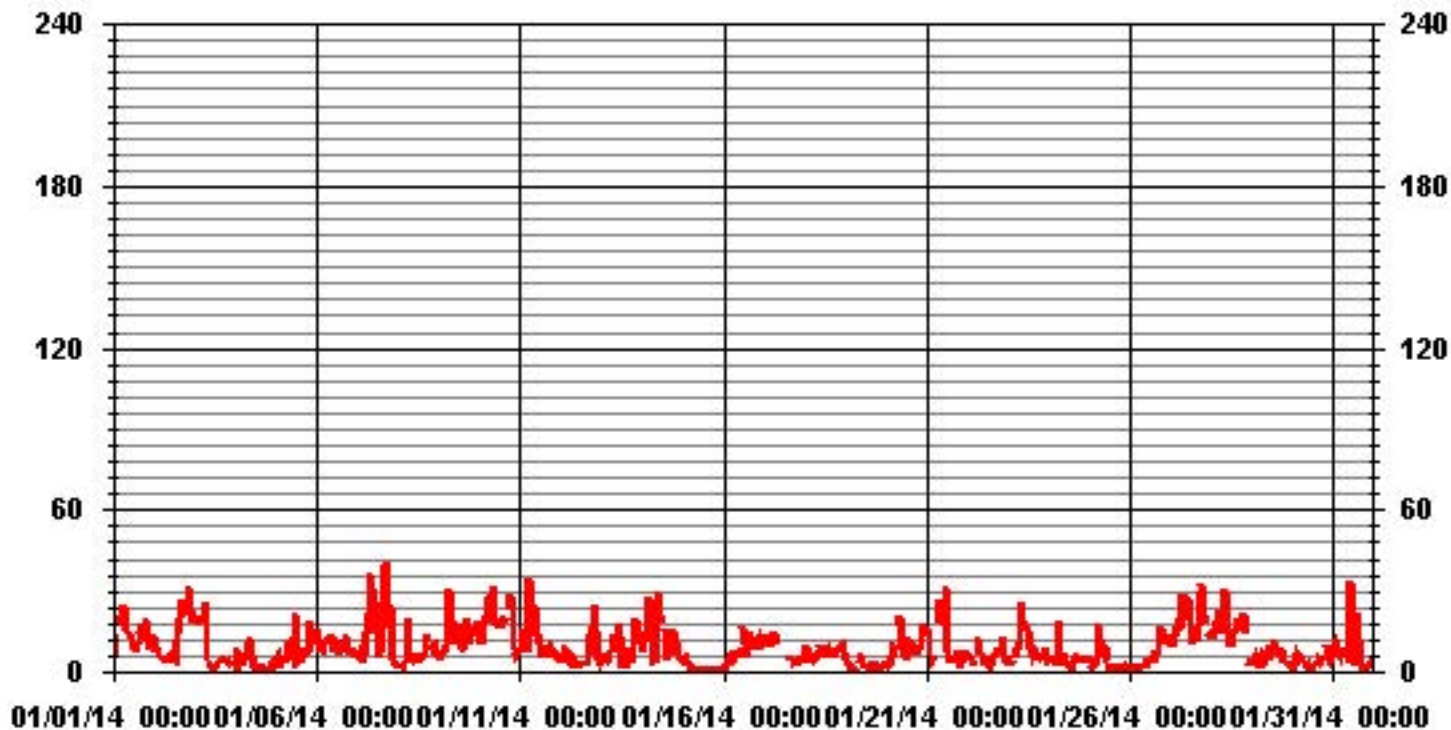
STATUS FLAG CODES

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:	41	PPB	@ HOUR(S)	17	ON DAY(S)	7
	VAR-VARIOUS					
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	7.29					

01 Hour Averages



— LICA NO2MAX PPB

LICA
 NO2_ / WD Joint Frequency Distribution (Percent)

January 2014

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	5.81	1.98	1.98	2.41	3.54	2.69	12.76	2.69	2.26	1.98	7.51	16.31	13.19	7.51	10.07	7.23	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	5.81	1.98	1.98	2.41	3.54	2.69	12.76	2.69	2.26	1.98	7.51	16.31	13.19	7.51	10.07	7.23	

Calm : .00 %

Total # Operational Hours : 705

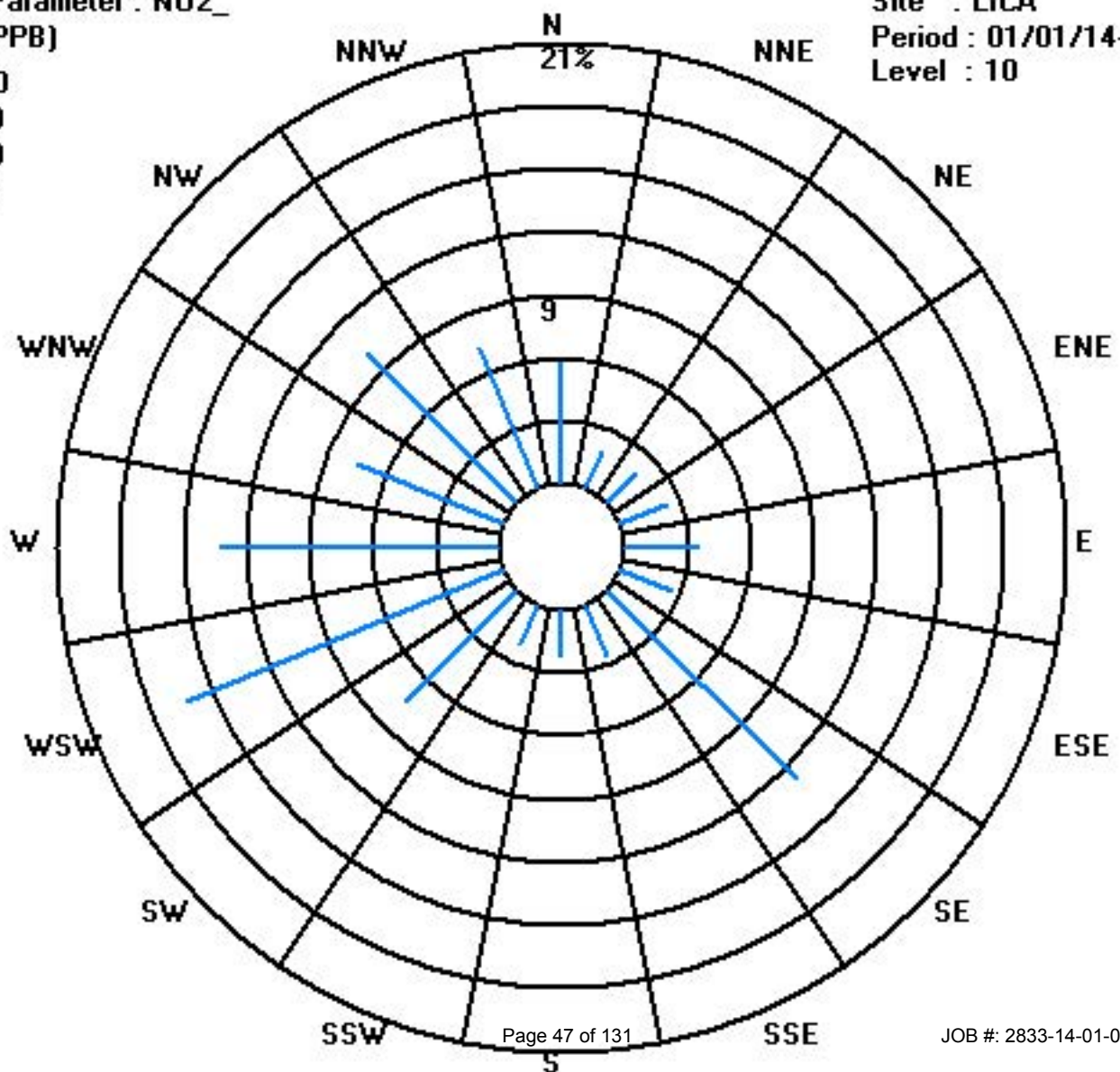
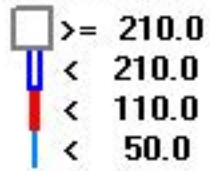
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	41	14	14	17	25	19	90	19	16	14	53	115	93	53	71	51	705
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	41	14	14	17	25	19	90	19	16	14	53	115	93	53	71	51	

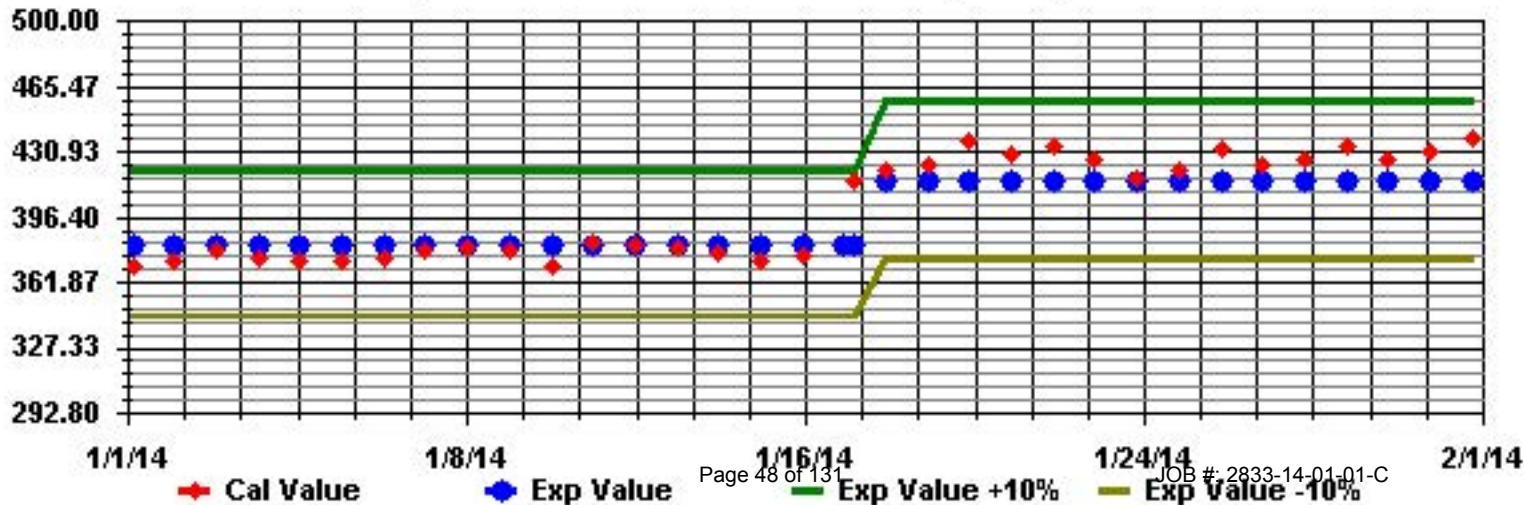
Calm : .00 %

Total # Operational Hours : 705

Class Limits (PPB)



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



Nitric Oxide

Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

NITRIC OXIDE (NO) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																													
1		0.3	0.4	S	0.5	0.5	0.6	1.1	0.4	0.6	2.2	4.5	4.5	4.1	3.4	3.3	1.9	0.7	1.3	0.8	1.4	0.7	0.6	1.2	4.5	1.6	24		
2		0.4	S	0.6	0.5	0.6	0.4	0.5	0.3	0.4	0.5	0.9	1.3	1.6	2.4	3.9	4.1	3.6	2.3	2.3	5.9	6.3	7.4	1.2	2.4	7.4	2.2	24	
3		S	3.8	2.7	8.4	7	6.7	12.2	0.3	0.3	0.4	0.5	0.5	0.8	0.9	0.9	0.4	0.5	0.3	0.4	0.3	0.3	0.2	0.2	S	12.2	2.2	24	
4		0	0.4	1	0.4	0.1	0.3	0.7	0.7	0.9	1.3	1.3	0.4	0.3	0.3	0.2	0.1	0	0	0.2	0.3	0.1	S	0.2	1.3	0.4	24		
5		0.3	0.7	0.1	0.6	1	0.5	0.9	0.9	0.4	1.2	1.6	2.1	1.6	1.4	1	0.5	0.4	0.5	0.3	0.4	0.5	S	0.3	0.3	2.1	0.8	24	
6		0.4	0.3	0.2	0.5	0.9	1	0.9	0.7	1.3	1.7	1.2	3	1.7	1.5	1.5	1.8	1.4	1.4	1.1	0.9	S	0.7	1	0.5	3	1.1	24	
7		0.5	0.8	0.7	0.5	0.6	0.8	0.9	1.3	9.5	21.5	9.5	3.3	2.5	2.4	2.4	2.5	6.5	5.9	0.9	S	1.1	0.6	0.6	0.6	21.5	3.3	24	
8		0.4	0.4	0.4	0.4	0.4	0.6	0.8	0.5	0.3	0.5	1	1.3	0.6	0.8	0.8	0.6	0.7	0.6	S	0.5	0.4	0.3	0.2	0.2	1.3	0.6	24	
9		0.2	0.1	0.2	0.2	0.3	0.4	0.9	1.2	0.4	1.6	2.2	3.7	3.2	1.6	1.7	1.4	1.5	S	0.3	0.4	0.3	0.3	1.1	2.2	3.7	1.1	24	
10		1.5	0.4	0.6	0.5	0.8	2.3	3.9	15.4	27.4	18.5	18	11.5	9.3	8.2	7	2.4	S	4.9	3.9	5.4	0.4	0.4	0.5	0.2	27.4	6.2	24	
11		0.1	0.7	0.2	0.5	0.6	4.9	5.5	4.3	5.8	2.4	1.9	1.3	1.7	1.4	0.9	S	0.6	0.8	0.7	0.7	0.4	0.1	0.3	0.1	5.8	1.6	24	
12		0	0.2	0.6	0.2	0.2	0.2	0.1	0.1	0.2	0.4	0.4	0.6	0.8	1	S	0.9	0.4	0.4	0.8	0.7	1.6	0.7	0.4	0.3	1.6	0.5	24	
13		0.3	0.4	0.3	0.3	0.4	0.4	0.5	0.7	0.8	2.9	7.7	2.8	0.7	S	0.6	0.5	0.5	0.7	0.5	0.4	1.2	0.8	0.3	0.5	7.7	1.1	24	
14		0.7	0.4	0.4	0.8	1.6	0.7	0.5	0.4	0.4	11.1	1.4	1.4	S	2.5	0.7	0.6	0.5	1	1.2	0.6	0.3	0.2	0.1	0.2	11.1	1.2	24	
15		0.2	0.3	0.2	0.3	0.1	0.1	0.3	0.2	0.2	0.2	0.3	S	0	0.1	0	0.1	0.1	0	0.1	0	0.1	0	0.1	0.1	0.3	0.1	24	
16		0.1	0.2	0.2	0.2	0.3	0.6	0.5	0.2	0.5	0.6	S	2.5	1.5	1.3	0.8	1.2	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.3	2.5	0.5	24	
17		0.4	0.2	0.3	0.3	0.4	0.4	0.5	0.3	C	C	C	C	C	C	C	C	0.1	0	0.1	0	0.3	0	0.1	0	0.1	0.5	0.2	24
18		0.1	0.1	0	0.1	0.1	0.1	0	0.1	S	0.6	1	1.1	1.4	1.4	1.1	0.5	0	0	0	0.1	0	0.1	0.1	0	1.4	0.3	24	
19		0.1	0	0	0	0	0	0	S	0.1	0.1	0	0.1	0.2	0.2	0	0	0	0	0	0	0	0	0	0	0.2	0.0	24	
20		0	0	0	0	0.3	0	S	0.5	0.7	0.9	1.2	1.5	1.4	1.9	1	0.8	0.1	0	0	0.1	0.3	0.3	0.2	0.2	1.9	0.5	24	
21		0.3	0.3	0	0	0.1	S	0.6	1.3	3.2	4.1	3.7	11.1	2.7	1.4	0.9	0.5	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.3	11.1	1.4	24	
22		0.3	0.4	0.3	0.1	S	0.7	1	0.2	0.4	0.5	0.5	1	0.6	0.8	0.6	0.5	0.4	0	0.2	0	0.2	0.1	0	0	1	0.4	24	
23		0	0	0	S	0.3	0.2	0.4	0.1	1.9	3.3	4.8	4.6	3.3	1.8	0.9	0.6	0.3	0.2	0.2	0.1	0.2	0.2	0.3	0.1	4.8	1.0	24	
24		0.2	0.2	S	0	0.1	0	0.5	0.1	0	0.3	0.4	0.1	0.1	0.2	0	0	0.1	0.1	0	0.1	0.1	0	0	0	0.5	0.1	24	
25		0	S	0	0	0	0.7	0.2	0.2	0.2	0.3	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0.1	24	
26		S	0	0	0	0	0	0	0	0	0	0.6	1.1	1.3	0.9	0.6	0.5	0.2	0	0.1	0.2	0.4	0.1	0	S	1.3	0.3	24	
27		0	0	0	0.1	0.1	0.6	0.8	4.7	6.6	11.1	14	8	4.2	3.8	3.3	1.9	0.8	1.2	1.4	0.4	0.3	0.1	S	0	14	2.8	24	
28		0	0.1	0.2	0.4	0.7	0.8	0.2	0.9	7	4.1	3	2.5	3.9	3.4	3.2	2.1	1.3	0.5	0.5	0.4	0.4	S	0.1	0.1	7	1.6	24	
29		0.1	0.1	0.1	0.1	0	0	0.1	0.1	0.1	0.5	1.2	1.9	2.7	2.4	1.4	1.2	0.4	0.2	0.2	0	S	0	0	0	2.7	0.6	24	
30		0	0	0	0.2	0.1	0	0.1	0	0	0	0.3	0.2	0.5	0.6	0.8	0.7	0.3	0.2	0.2	S	0.3	0.2	0.1	0.1	0.8	0.2	24	
31		0.3	0.3	0.1	0.1	0	0	0	0	0	0	1.4	2.6	0.6	1.5	3.9	1.1	0.1	0.1	S	0	0	0	0	0	3.9	0.5	24	
HOURLY MAX		2	4	3	8	7	7	12	15	27	22	18	12	9	8	7	4	7	6	4	6	6	7	1	2				
HOURLY AVG		0.2	0.4	0.3	0.5	0.6	0.8	1.2	1.2	2.4	3.1	2.9	2.6	1.8	1.7	1.5	1.0	0.7	0.8	0.6	0.7	0.6	0.5	0.3	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

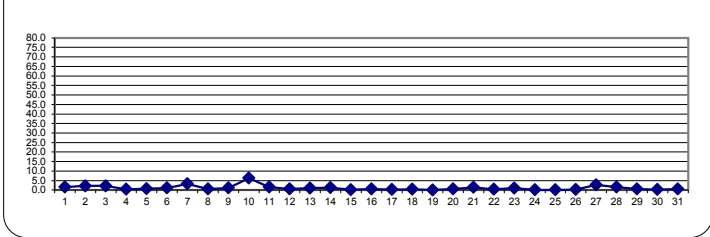
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

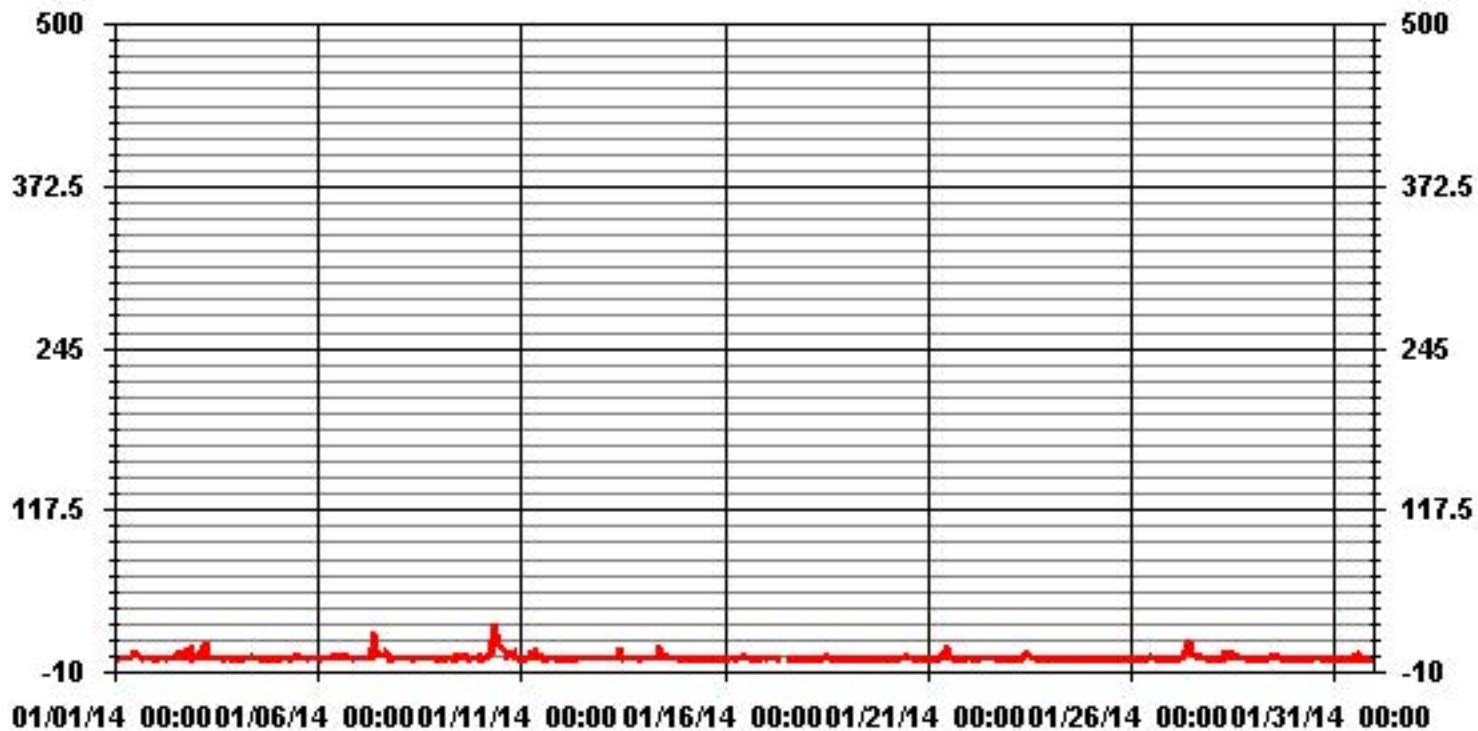
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	586					
MAXIMUM 1-HR AVERAGE:	27.4	PPB	@ HOUR(S)	8	ON DAY(S)	10
MAXIMUM 24-HR AVERAGE:	6.2	PPB			ON DAY(S)	10
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	2.41		MONTHLY AVERAGE:	1.11	PPB	

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

NITRIC OXIDE MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																												
1	1.4	1.9	S	2.9	1.4	1.9	2.9	1.4	1.9	4.4	5.9	5.4	5.4	6.9	7.4	14.4	8.4	3.9	3.9	6.4	2.4	1.5	1.4	7.9	14.4	4.4	24	
2	0.9	S	1	1	1	0.5	1	1.5	1	1	1.6	7	2.5	5	7	8.5	6	7.6	5	11.5	40	16	2	10.5	40	6.0	24	
3	S	8.9	7.5	13.4	10.9	8.9	30.4	0.4	0.4	0.5	2.9	1	1.4	1.5	1.5	0.9	1.5	0.9	0.9	0.4	0.4	0.4	1.5	S	30.4	4.4	24	
4	0.3	3.3	3.8	2.8	0.8	2.8	3.8	2.8	2.8	4.3	2.8	1.3	0.3	0.3	0.8	0.8	0.3	0.3	0.3	0.3	0.8	0.3	S	0.3	4.3	1.6	24	
5	1.8	2.8	0.8	1.8	2.8	2.3	1.8	2.3	1.3	3.8	3.3	8.3	2.8	1.8	1.8	1.8	1.3	3.4	3.4	2.8	2.8	S	1	0.5	8.3	2.5	24	
6	1	1	0.5	2	4.5	2.5	2.5	2	3.6	2.5	2	29	3.5	3	2.5	3	12	4	3.1	2	S	2.4	4.4	1.4	29	4.1	24	
7	1.4	2.4	1.9	1.4	3.4	2.4	3.4	3.4	18.4	53.9	28.4	10.9	5.4	4.4	4.9	5.9	42.9	15.4	1.9	S	3	1.6	4.5	4.5	53.9	9.8	24	
8	1	0.5	0.5	0.5	2	3.5	8	3.5	0.5	1	2	8	1.1	2	1.1	1.5	6.5	2.5	S	1.8	2.3	1.3	0.9	0.9	8	2.3	24	
9	1.3	0.8	1.3	0.8	1.3	4.3	4.3	4.8	1.8	4.3	5.8	8.8	12.8	3.4	2.4	3.9	7.3	S	0.5	2.5	1	0.9	6	6	12.8	3.8	24	
10	8.5	3	2.5	2.5	4	13.4	15.5	29	52	24.5	24.5	14.4	12	11.5	15.5	9	S	18.4	33.4	75.9	1.9	2.9	3.9	1.9	75.9	16.5	24	
11	0.8	5.4	1.4	2.4	2.4	13.4	11.9	12.9	12.9	15.9	7.4	4.4	4.9	2.4	2.4	S	4.4	9.4	2.9	2.9	1.4	0.9	2.4	0.9	15.9	5.5	24	
12	0.9	1.4	2.9	0.9	0.4	0.9	0.4	0.4	0.4	0.9	0.8	0.9	1.9	2.3	S	2.4	0.9	1.4	2.4	3.4	8.9	8	1.5	0.4	8.9	1.9	24	
13	0.4	0.9	0.9	0.9	1.9	5.9	5.5	4	1.9	5.4	16.4	9.9	1	S	1	0.9	1.9	2	1	1	10.5	5.5	0.5	2	16.4	3.5	24	
14	3	2	1	2.5	5	1.5	1.5	1.5	0.5	82.9	14.4	13.9	S	42.5	1.5	3.5	3	4	6.5	2	1	0.5	0.5	1	82.9	8.5	24	
15	1	1	1	1	0.5	0.5	117	0.9	0.5	0.5	0.5	S	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	117	5.6	24	
16	0.9	1.4	0.9	0.9	1.4	1.4	1.9	0.9	3.4	1.9	S	14.7	4.3	6.8	1.3	8.2	0.7	1.3	0.8	0.8	0.7	0.7	2.3	1.3	14.7	2.6	24	
17	2.8	1.3	1.3	2.8	2.3	1.7	2.8	1.3	C	C	C	C	C	C	C	1.5	1	1.5	1	2.5	2	1.5	1	1	2.8	1.7	24	
18	1	1.5	1	1.5	1	1	0.5	1.5	S	1.5	2	1.5	2	3.5	3.5	2	0.5	0.5	0.5	1	1	0.5	1	1	3.5	1.3	24	
19	0.5	0.5	0.5	0	0	0	0.5	S	1	1	0.5	0.5	0.5	0.5	0	0.5	0.5	0	0	0	0	0	0	0.5	1	0.3	24	
20	1	0.1	0.5	0.5	1.5	0.5	S	4	1.5	1.5	6.5	2	2	13.5	2.5	3	0.5	1	0	1	1.5	2	1.5	2	13.5	2.2	24	
21	1.5	2	0.5	0	1	S	5.5	5	15	7	7	47.5	4	2	1	1	0.5	1.5	2.4	0.5	0.5	0.5	1	1	47.5	4.7	24	
22	1	1.5	1	1	S	4.5	10.5	1	1.5	1	1	2.9	1.5	2.4	1.5	3.5	4.5	0.4	4.4	1.9	1.4	0.4	0.4	0.4	10.5	2.2	24	
23	0.4	0.9	0	S	1.5	1.5	2	1.5	5	5	6	8.1	4.6	3	1.1	1.1	1.1	0.6	1.1	0.6	1.1	1.1	4	0.6	8.1	2.3	24	
24	0.6	0.6	S	0.5	0.5	0.5	11	0.5	0.5	1	1	1	0.5	0.5	0	0.5	0.5	2.4	0.5	2.4	1.5	0	1	1	11	1.2	24	
25	0.5	S	0.5	1	1	12.5	1	1	2	1.5	0.5	0.5	0.5	0.5	0	0	0	1	0.5	0	0	0	0	0	12.5	1.1	24	
26	S	0	0	0	0	0.5	0.4	0	0	0.4	1.4	1.4	1.4	1.4	1.4	0.9	0.4	0	3.4	1.4	4.9	0.9	0.9	S	4.9	1.0	24	
27	0.5	0	0.5	1.5	0.5	11	2	9.5	12	14	21.5	11	5.1	16.5	5.5	2.5	2	8.5	10.5	1	1.5	0.5	S	0.5	21.5	6.0	24	
28	0.5	0.5	1	1.5	9.5	11.5	1	3	17	6	5	4.5	6	5.5	11.5	8.5	4	3.1	2.1	1.1	2.1	S	0.1	0.1	17	4.6	24	
29	0.1	0.6	0.6	0.1	0.5	0.6	1.5	1	2	0.6	2.5	2.5	5.5	3.6	2	2.5	1	2	1.5	0.5	S	0.5	0	0	5.5	1.4	24	
30	0.5	0	0.5	1	0.5	0.5	2	0	0	0.5	1.5	1.5	1.5	1	1.5	1.5	1	1.5	1	S	1	1.5	0.5	0.5	2	0.9	24	
31	1	1.5	0.6	0.5	0	0	0	0	0.5	0.5	15.5	11	1	19	25	8.5	0.6	0.1	S	0	0.5	0.5	0.5	0.5	25	3.8	24	
HOURLY MAX	9	9	8	13	11	13	117	29	52	83	28	48	13	43	25	14	43	18	33	76	40	16	6	11				
HOURLY AVG	1.3	1.6	1.3	1.7	2.1	3.7	8.4	3.4	5.6	8.3	6.6	8.1	3.3	5.8	3.7	3.4	3.9	3.3	3.3	4.4	3.3	1.8	1.6	1.7				

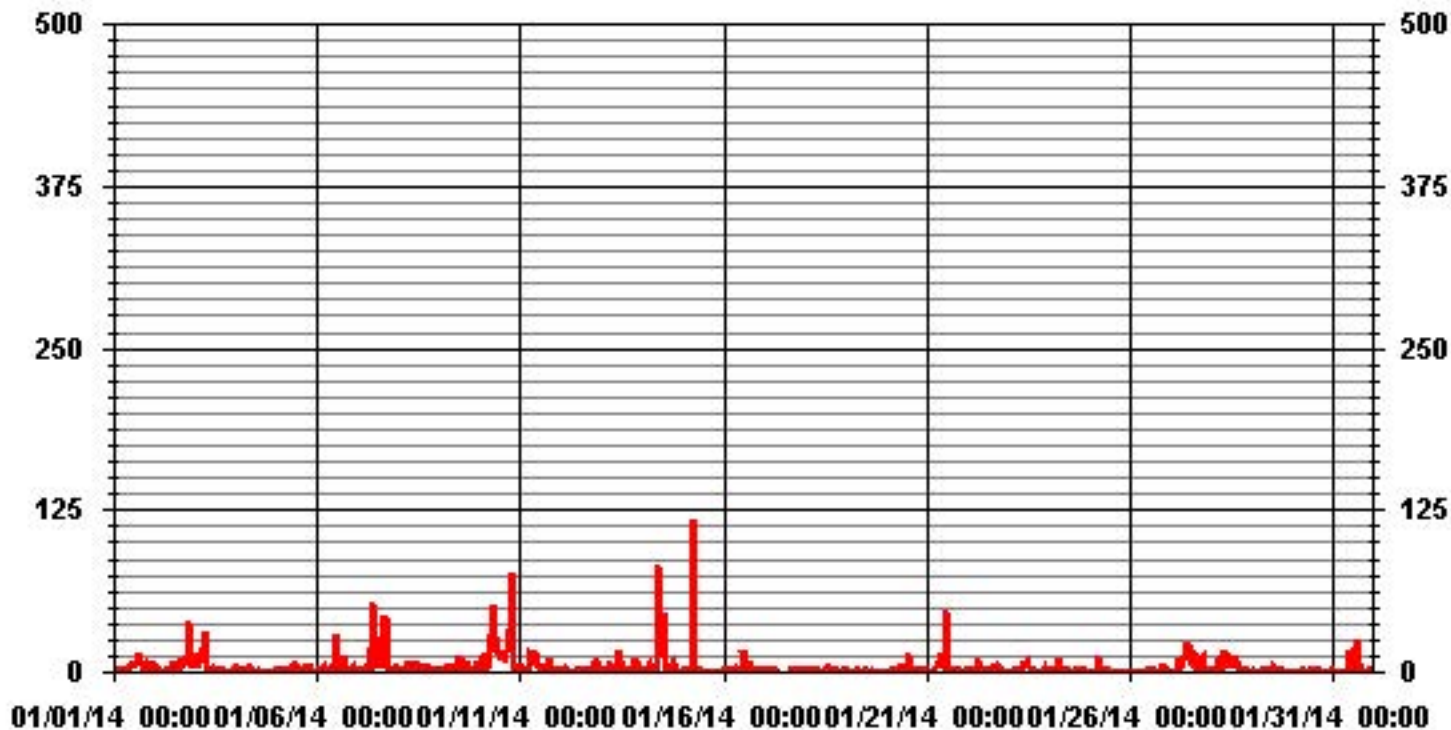
STATUS FLAG CODES

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:	664					
MAXIMUM INSTANTANEOUS VALUE:	117	PPB	@ HOUR(S)	6	ON DAY(S)	15
	VAR-VARIOUS					
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	8.39					

01 Hour Averages



— LICA NOMAX PPB

LICA
 NO_ / WD Joint Frequency Distribution (Percent)

January 2014

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	5.81	1.98	1.98	2.41	3.54	2.69	12.76	2.69	2.26	1.98	7.51	16.31	13.19	7.51	10.07	7.23	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	5.81	1.98	1.98	2.41	3.54	2.69	12.76	2.69	2.26	1.98	7.51	16.31	13.19	7.51	10.07	7.23	

Calm : .00 %

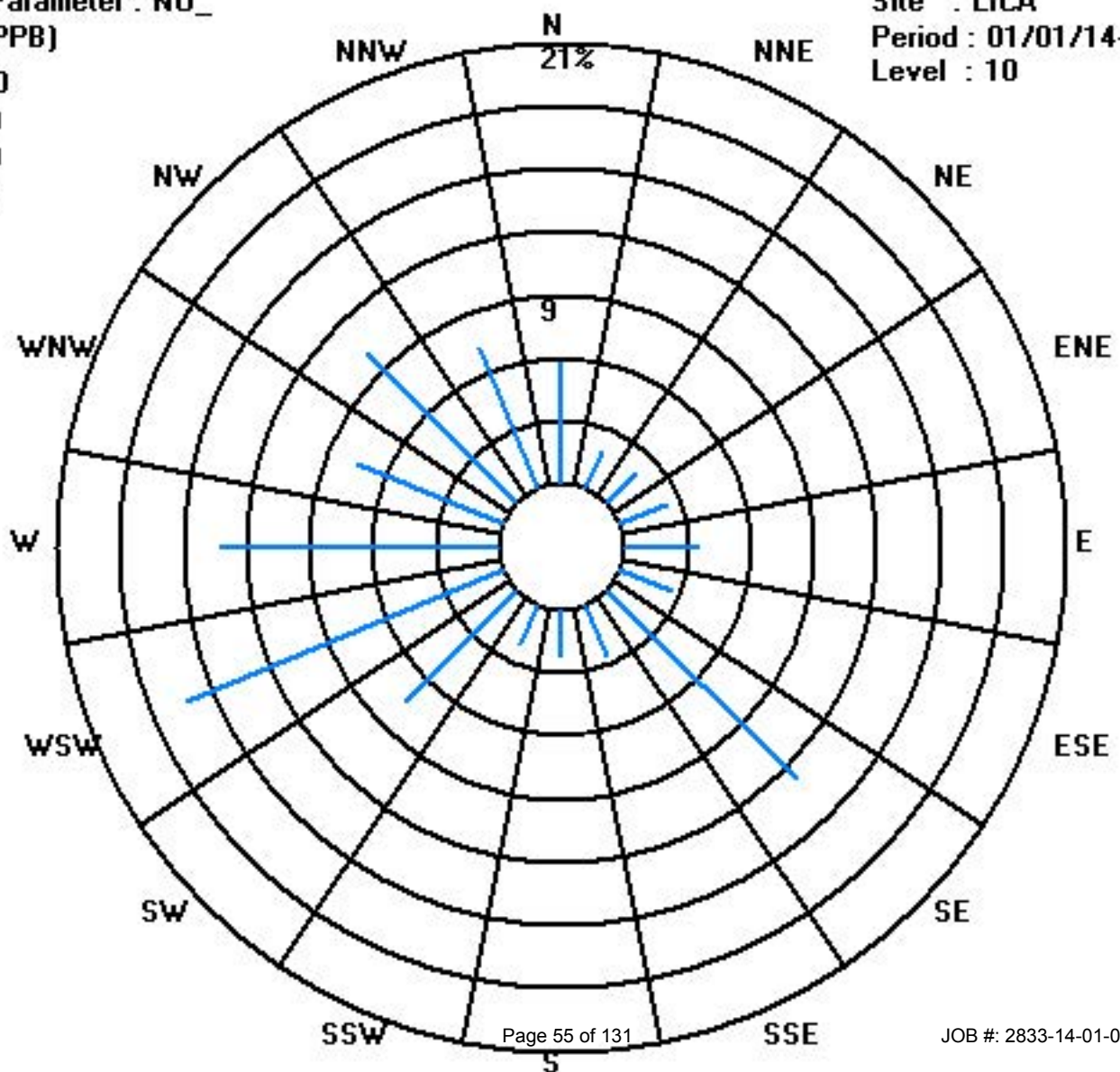
Total # Operational Hours : 705

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	41	14	14	17	25	19	90	19	16	14	53	115	93	53	71	51	705
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	41	14	14	17	25	19	90	19	16	14	53	115	93	53	71	51	

Calm : .00 %

Total # Operational Hours : 705



Oxides of Nitrogen

Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

OXIDES OF NITROGEN (NOx) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																													
1		6.7	9.8	S	17.6	18.1	18.3	22.4	16.2	14.4	14	15.2	11.6	10.4	11.9	10.2	8.9	14.1	15.1	17.1	8.4	7.6	9.1	10.1	22.4	13.0	24		
2		8	S	7.3	6.3	5.3	4.3	4.5	4.9	5.9	4.9	5.4	6.1	6.5	9.2	13.9	19.3	25.9	24.3	23.6	28.2	26.9	27.4	16.9	19.6	28.2	13.2	24	
3		S	21.3	19.4	25.8	25.2	23.6	30.1	2.9	2.8	2.5	1.7	1.5	2.5	3.2	3.8	3.7	4.2	3.6	3.5	1.9	3.8	2.9	2.1	S	30.1	8.7	24	
4		1.3	2.6	4.6	3.7	1.9	3.1	5	6.4	9.6	7.1	4.3	1.1	1	1.1	1.2	1.6	1.4	0.9	1.3	2.1	1.6	S	3.6	9.6	2.9	24		
5		3.7	4.1	1.7	2.7	4.1	4.3	4.9	9	7.1	5.9	5.6	6.5	4.5	4.4	4.2	4.3	5.1	6.9	7	7	12.5	S	9.8	8.9	12.5	5.8	24	
6		11.8	8.1	6.4	6	5.8	8.9	7.5	8.3	12	11.7	6.1	8.4	6.4	6.2	6.9	9.3	8.7	10.3	7.4	7.5	S	6.4	6	4.6	12	7.9	24	
7		4.5	4.9	4	2.8	4.2	6.4	12.3	25.9	40.2	49.1	25.1	8.6	7.1	7.4	8	12.1	32.6	34.7	21.9	S	16.1	3.7	2.3	2.3	49.1	14.6	24	
8		2.2	2	2	1.9	1.9	2.5	4.4	3.6	3.6	3.7	4.8	5.1	3.8	5.2	5.5	5.6	7.3	9.1	S	8.4	8.4	8.4	6.6	6	9.1	4.9	24	
9		5.6	5.4	5.6	6.8	8	8.9	17.5	17.9	14.9	10.4	9.5	12.3	10.6	7.9	8.7	10.9	16.4	S	11.6	11.8	13.4	13.5	14.7	17.8	17.9	11.3	24	
10		12.1	8.9	13.6	16.7	17.5	21.6	24.9	38.3	49.4	34.9	33.4	27	24.2	24.3	22.5	15	S	13.6	14.2	13	4.4	4.6	4.7	5.8	49.4	19.3	24	
11		6	8	5.5	6.1	5.2	25.8	30.6	21.8	26.6	10.1	9.3	7.2	7.8	7.3	5	S	6.3	6.3	5.5	4.4	5.5	4.1	2.7	2.9	30.6	9.6	24	
12		2.5	4.4	7	3.7	4.1	5.3	6.4	5	2.8	1.8	2	2.3	2.9	3.1	S	3.4	4	7.8	11.9	10.6	14.2	6	3.6	3	14.2	5.1	24	
13		4.3	4.7	4	4.2	4.6	4.6	7.5	9.3	11.4	14.2	20.1	7.9	2.2	S	2.3	1.8	3.5	5.5	2.9	5.8	10.9	8.9	7.9	8.4	20.1	6.8	24	
14		6.2	7.4	10.9	16.6	17.7	9.1	8.2	3	3.9	13.6	4.7	4.6	S	4.6	3.7	5	5.6	8.7	10.2	11.9	8.2	5.6	5	4	17.7	7.8	24	
15		5	5	3.1	2.1	0.6	0.8	1.3	0.9	1	0.8	0.8	S	0.6	0.5	0.5	0.6	0.7	0.6	0.6	0.8	0.6	0.7	0.7	0.7	5	1.3	24	
16		1	1.4	2.3	2.3	3.9	3.8	4.8	5.4	4.8	S	9.5	6.5	5.8	5.7	10.7	7.4	8	8.4	8.3	7.9	7.3	8.8	8.8	10.7	5.9	24		
17		9.9	10.3	10.5	8.6	10	10.6	10.3	8.3	C	C	C	C	C	C	C	2.8	3.1	2.2	2.2	2.6	1.9	2.6	3.4	3.7	10.6	6.1	24	
18		4.1	6.4	4.9	3.7	3	2.9	3	4.1	S	8.6	7.8	7.1	7.6	7.8	7.8	6.6	6	5.7	6.6	6.9	7.9	8.4	9.8	5.7	9.8	6.2	24	
19		4.2	2.8	1.9	1.1	0.8	0.6	1	S	2.7	4	1.8	1.7	2	2	0.9	0.9	2.1	2.5	1.4	1.1	1.3	1	1.4	1.7	4.2	1.8	24	
20		1.5	1.1	1.7	3.1	6.6	5.2	S	13.4	13.5	7.9	5.9	5.8	5.9	6.5	5.9	7.2	6.3	5.6	5.9	8	7.9	11.4	13	14.4	14.4	7.1	24	
21		14.5	10.9	4.6	3.7	4.1	S	11.4	21.3	21.6	20.2	15.3	23.6	9.8	5.9	5	3.7	4.4	4.3	3.9	3.9	1.8	2	3.2	5.2	23.6	8.9	24	
22		5	4	3.9	2.3	S	4.4	7.6	6.2	5.9	3.7	2.4	3.2	2.5	3	3.1	2.9	4.6	4.2	4.9	4.8	7.8	7.3	3.8	3.4	7.8	4.4	24	
23		3.8	3.5	3.4	S	5.3	7.1	9	13.5	23.1	19.8	18.1	17.6	15.1	8.4	5.5	5.6	6.3	5.4	5.2	4.4	4.9	4.7	5.4	3.7	23.1	8.6	24	
24		3.7	3.2	S	3.5	2.6	2.2	4.8	3.8	4.2	4.4	3	1.8	2.3	2.2	1.5	3.5	5.3	4	3.6	2.9	3.6	2.5	2.6	2.4	5.3	3.2	24	
25		2.5	S	1.1	1.6	2.4	6.1	4.9	7.9	6.8	6.8	2.4	1.4	1.1	1	1	1.2	1.5	1.4	1	1.1	1.2	1.8	1.2	1.2	7.9	2.5	24	
26		S	0.8	1.5	1.4	1.4	1.3	1.2	1.5	1.8	1.8	3.2	4.7	5.1	5.2	3.9	5.4	7.8	8.7	8.6	9.2	9.6	9.7	9.3	S	9.7	4.7	24	
27		8.7	7.9	9.4	11.4	11.4	12.8	16.6	29.6	30.4	28.7	33.9	23.1	12.4	11.8	12.9	11.1	13.6	24.4	25.3	19.5	17.7	16.7	S	11.8	33.9	17.4	24	
28		12.5	11.4	13	15	12.6	11.1	10.5	15.6	29.5	17.9	12	9.2	12.6	12	12.5	12.9	14.5	16	16.6	17.7	13.8	S	2.3	2.8	29.5	13.2	24	
29		2.9	4.1	6	4.5	3.1	2.6	3.2	4	4.5	4.6	7.3	8.9	11.3	9.4	6.4	7.1	6	5.6	6.1	3.9	S	2.5	1.7	1.6	11.3	5.1	24	
30		1.3	1.9	4.7	5.5	5	4.2	3.3	1.8	2.6	1.5	1.8	1.3	1.8	2.5	3.1	3.7	3.4	4.1	4.4	S	5.8	4.5	3.2	4.7	5.8	3.3	24	
31		7.9	8.6	7.5	7.1	5.7	6.5	7.3	5.6	5.2	2.8	5.6	6.9	2.8	4.3	11.2	5.5	3.2	1.6	S	1.9	1.9	1.9	1.9	2.7	11.2	5.0	24	
HOURLY MAX		15	21	19	26	25	26	31	38	49	49	34	27	24	24	23	19	33	35	25	28	27	27	17	20				
HOURLY AVG		5.6	6.0	5.9	6.6	6.7	7.6	9.5	10.5	12.5	10.7	9.3	8.2	6.6	6.3	6.4	6.4	7.5	8.4	8.3	7.8	8.0	6.4	5.6	5.9				

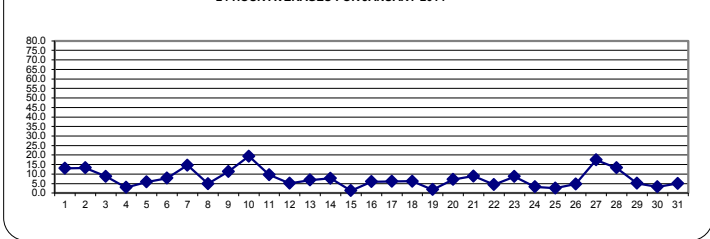
STATUS FLAG CODES

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

OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

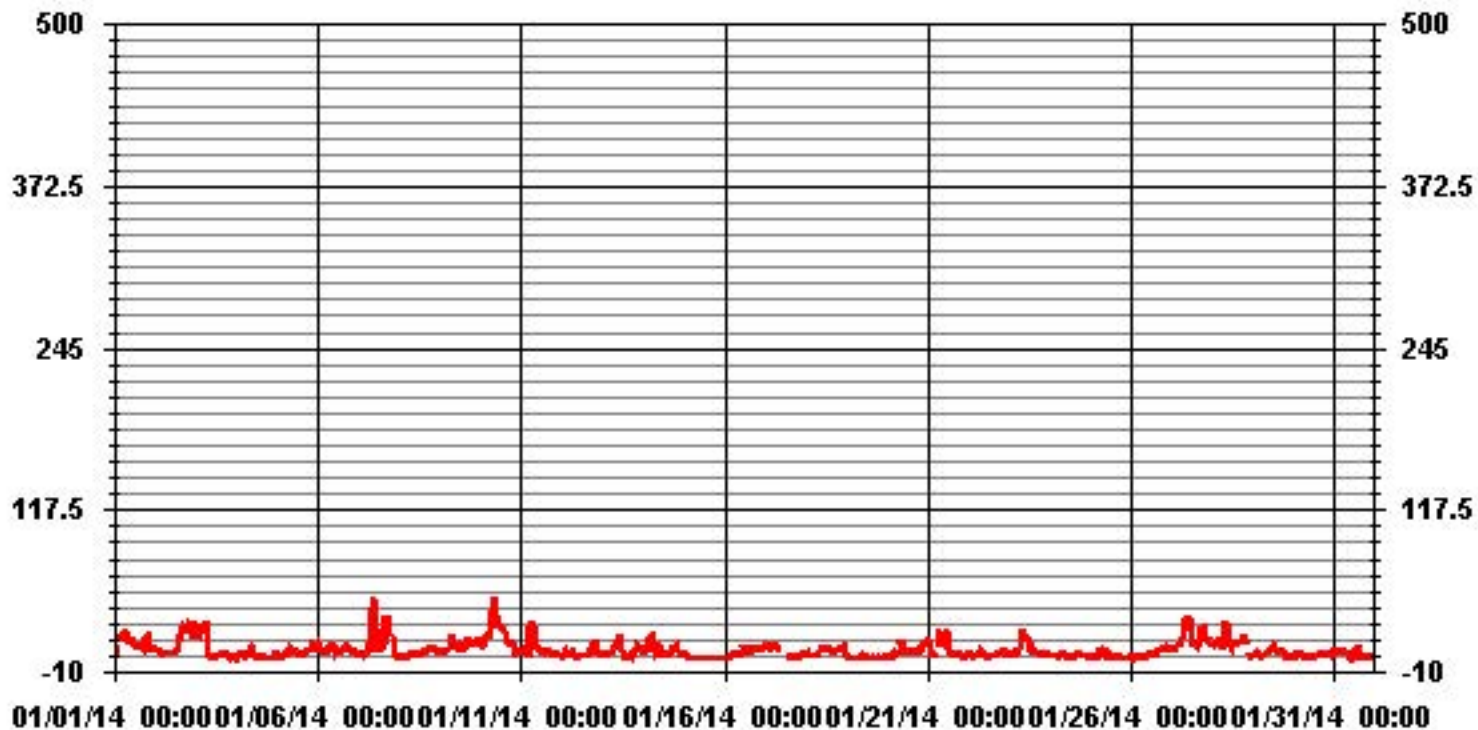
24 HOUR AVERAGES FOR JANUARY 2014



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	705					
MAXIMUM 1-HR AVERAGE:	49.4	PPB	@ HOUR(S)	8	ON DAY(S)	10
MAXIMUM 24-HR AVERAGE:	19.3	PPB			ON DAY(S)	10
	VAR-VARIOUS					
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	6.96		MONTHLY AVERAGE:	7.62	PPB	

01 Hour Averages



— LICA NOX_ PPB

Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	8.5	13	S	22.5	20	20.5	27.5	17.5	16.5	16	17.5	15	14	13.5	17.5	27	22	20	21.5	26	13.5	9.1	10.5	20.5	27.5	17.8	24	
2	9.5	S	9.1	7.5	6.5	5.5	5.5	6	7	6	6.1	8.6	7.1	16	21	28	32	30.5	29	35.5	55.5	37.5	20	30	55.5	18.2	24	
3	S	28.4	25.9	32.9	29.9	28.4	51.9	5.4	3.4	3.4	4.9	2	3.9	4.4	5.9	4.9	6.9	5.9	5.4	3.4	4.9	3.4	3.9	S	51.9	12.2	24	
4	2	10	10	7	3.5	5	9	12.5	13	12.5	9.5	3	1.5	1.5	2.5	2	2.6	2.1	1.5	2.1	3.5	2.1	S	4.6	13	5.3	24	
5	6.5	9	2.6	5.1	5.5	5.5	6.5	12	12.5	10.5	8	29.5	6	5.5	5.5	6	7	9.5	8.5	10.5	19.5	S	12	12	29.5	9.4	24	
6	17	10.5	9	10	15.5	13	13.5	14	15	16	9	20.5	8.5	11.5	11	14	11	17.5	11	9.5	S	11	10.5	7.5	20.5	12.4	24	
7	6.5	9.5	6.5	5	10	17.5	23.5	40	51.5	69.5	53	26	11	11.5	13	21.5	74	56.5	28	S	24	6.5	6.5	7	74	25.1	24	
8	3	3	3	2.1	4.5	7	26.5	7.5	5	4.5	6.1	12	4.5	9	6.1	8.1	16	12.5	S	10.5	11.5	11	8.1	7.1	26.5	8.2	24	
9	7.1	6.6	8.5	9	9.5	15	34.5	32.5	20.5	14	23.5	24	30.5	12.1	10.1	18.6	25.5	S	13	14.9	17	15.5	21.5	24.5	34.5	17.7	24	
10	24	12.5	18	22	23	39.5	42	53.9	82.5	45	41.4	33.4	27.9	29.5	32	24	S	43.9	47.9	96.5	10	8	8	9	96.5	33.6	24	
11	8.5	20.5	9.5	10	8	42.5	36	37.5	36.5	41	20	14.4	9.5	10	8.5	S	9	17.5	10.5	9.5	8	7.5	8	5	42.5	16.8	24	
12	5	7.5	10.5	6	5	6.5	7.5	6.5	3.5	2.5	2.5	3	4.5	5.5	S	5	6.5	14.5	18.5	17.5	31.5	24	5.5	4	31.5	8.8	24	
13	5	6	6.5	5.5	7	11.5	15.6	14.6	14.1	17.6	33.5	23.5	3.1	S	3.5	3	7	9	4.5	12.5	27.5	21	12.5	12.5	33.5	12.0	24	
14	9.5	11	15.4	20.9	33	13.5	18.5	5	5.5	80.4	33.4	32.5	S	20.5	5.5	8.5	12	17	19.5	15.5	13	7.5	5.5	5	80.4	17.7	24	
15	6	6.5	4	3.5	1	1	4.5	2	1.5	1	1.5	S	1	1	1	1	1	1	1	1	1	1	1	1	1.5	6.5	2.0	24
16	2	3.5	5	4	7	5.5	7.5	7.5	9.5	9.5	S	29.5	15.5	11	9.5	19.5	12	10	12	12.5	11	8.5	15.5	13	29.5	10.5	24	
17	14	12	15	11	13	14.4	16.5	13.5	C	C	C	C	C	C	C	6.5	5.5	3.5	4	6	5	5.5	5	5.5	16.5	9.2	24	
18	6.5	10	6	6	5	4.5	4.5	7	S	9.6	9.1	8.1	9.1	9.6	12.1	8.1	6.6	6.6	8.1	8.6	10.1	10.6	11.1	8.1	12.1	8.0	24	
19	5.1	5.1	3.6	1.6	1.1	1.1	1.6	S	4.5	7	2.5	3	2.5	2.5	2	1.5	3	3	2	1.5	1.5	1.5	2	2.5	7	2.7	24	
20	3.5	2	3.5	5.5	10.5	9	S	21.5	22	10	12.5	7	7	20.5	10.5	11	7.5	8	7	9.5	11	14.5	18.4	17	22	10.8	24	
21	17	15.5	7	4.5	6.5	S	21	30.5	38.9	26.5	24.5	59.4	12.5	6.5	5.5	5	5.5	6.5	10.5	5	2.5	3.5	6.5	8.5	59.4	14.3	24	
22	6.5	7	6.5	5	S	11	20.5	10	9	7	3.5	6.5	4	6.5	4.5	8	8.5	6.5	12.5	10.9	12.5	12.5	5	4.4	20.5	8.2	24	
23	5.5	5	3.9	S	7.9	9.4	11.9	19.4	29.9	22.9	20.4	23.5	19	11	6.5	7	9	7.5	6.5	5.5	5.5	6.5	11.5	5	29.9	11.3	24	
24	5.5	5	S	5	3.5	3	29	5.5	5	6	4.5	3	3	2.5	2	6	6.5	8	4.5	5	5.5	4	4.5	4.5	29	5.7	24	
25	5	S	2	3	5.5	29.5	6.5	12	8.5	10	4.5	2.5	2	1.5	1.5	1.5	2	2	2.5	2	2	2.5	2	1.5	29.5	4.9	24	
26	S	1.6	1.6	1.6	1.6	2.1	2	2	2	2	5.5	5	5.6	6	6	7.5	8.5	10	21	12.6	20	12.6	11.5	S	21	6.7	24	
27	9.9	9.9	13.9	17.4	15.9	24.4	23.4	38.4	35.9	32.9	49.4	30.4	14.9	22.4	18.4	13.5	16.9	34.4	42.4	22.4	20	20	S	14.4	49.4	23.5	24	
28	14.9	14.9	16.9	18.9	27.4	34.4	14.9	20.9	47.4	24.9	16.4	13.4	17.4	18.9	24.4	27.9	22	19.4	20.5	23	16.5	S	4	3.5	47.4	20.1	24	
29	3.5	5	7	6	4	3.5	7.9	5.5	9.9	5.5	11.4	11.4	16.4	13.9	8.4	10.4	7.9	9.9	9.4	4.9	S	3.5	2	2	16.4	7.4	24	
30	1.6	2.5	7.1	6.5	6	6	6.5	3.5	3	2	4.5	2.5	4	4	4	6	5	6	6	S	9.2	6.2	4.7	6.2	9.2	4.9	24	
31	10.2	11.7	10.2	8.2	6.3	8.2	8.2	7.3	6.2	3.3	49.7	17.2	3.7	23.2	36.2	19.2	3.8	2.3	S	2.5	2.5	3	3.5	3.5	49.7	10.9	24	
HOURLY MAX	24	28	26	33	33	43	52	54	83	80	53	59	31	30	36	28	74	57	48	97	56	38	22	30				
HOURLY AVG	7.9	9.1	8.5	9.1	10.1	13.3	16.8	15.7	17.9	17.3	16.8	16.2	9.3	10.7	10.2	11.0	12.1	13.4	13.4	13.7	12.9	9.7	8.3	8.6				

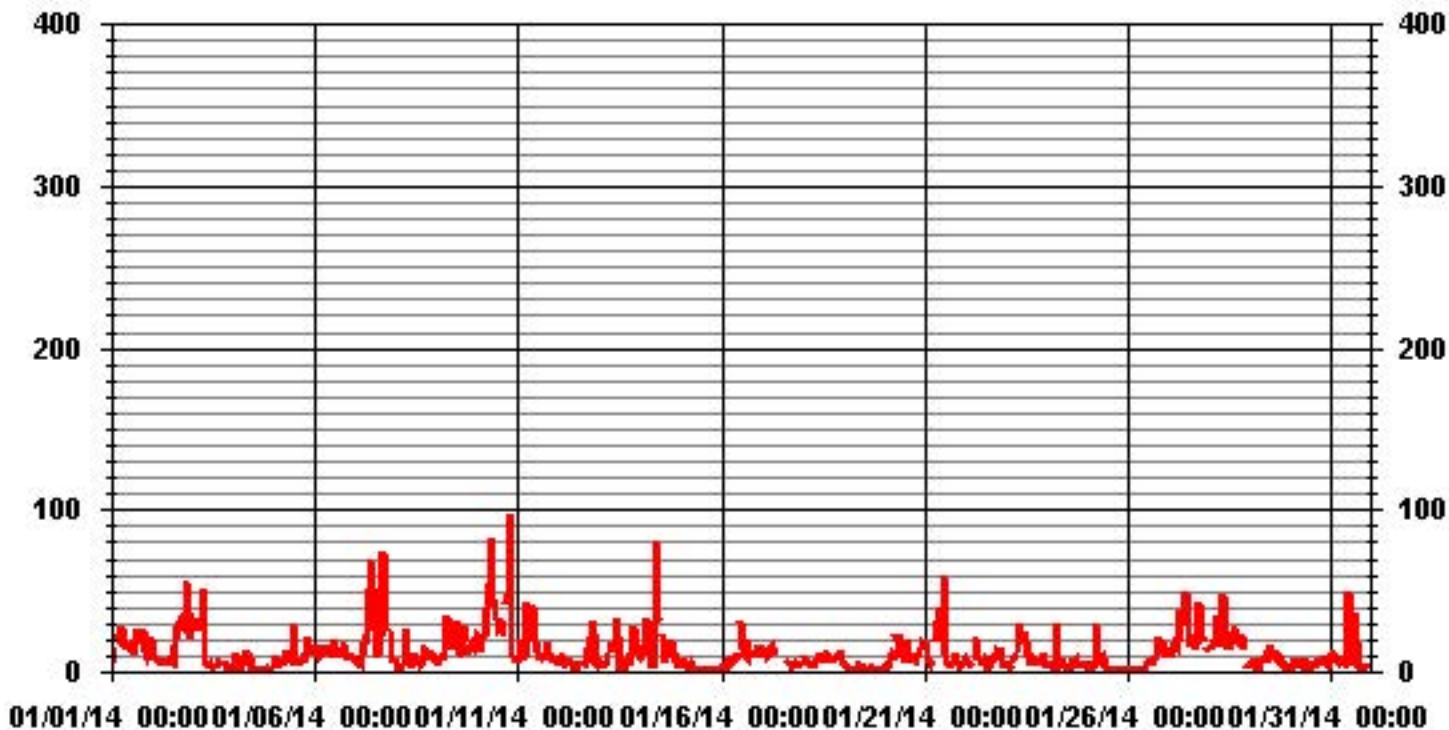
STATUS FLAG CODES

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:	705
MAXIMUM INSTANTANEOUS VALUE:	96.5 PPB @ HOUR(S) 19 ON DAY(S) 10
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	11.78

01 Hour Averages



— LICA NOXMAX PPB

LICA
 NOX_ / WD Joint Frequency Distribution (Percent)

January 2014

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	5.81	1.98	1.98	2.41	3.54	2.69	12.76	2.69	2.26	1.98	7.51	16.31	13.19	7.51	10.07	7.23	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	5.81	1.98	1.98	2.41	3.54	2.69	12.76	2.69	2.26	1.98	7.51	16.31	13.19	7.51	10.07	7.23	

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
< 50.0	41	14	14	17	25	19	90	19	16	14	53	115	93	53	71	51	705
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	41	14	14	17	25	19	90	19	16	14	53	115	93	53	71	51	

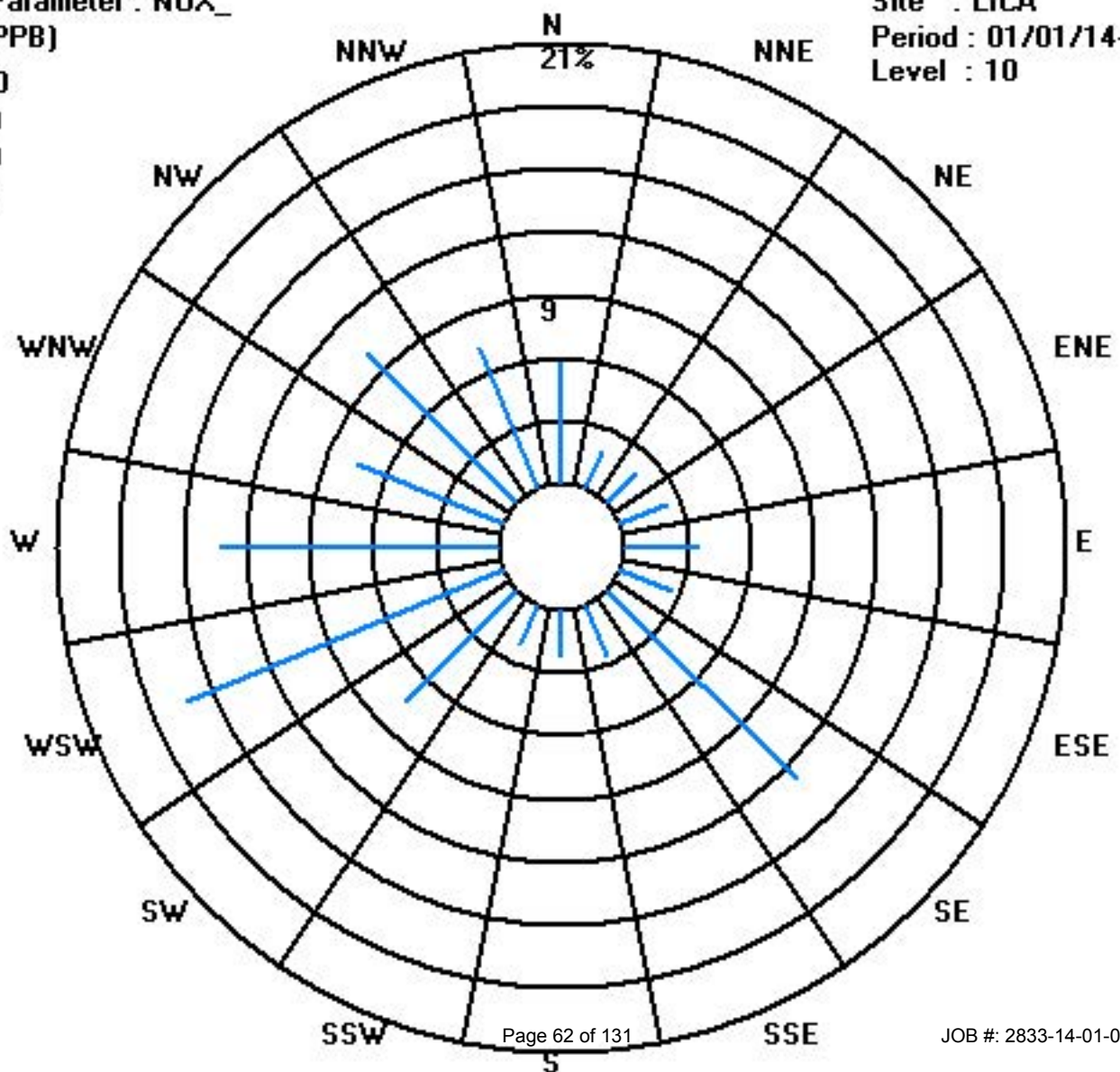
Calm : .00 %

Total # Operational Hours : 705

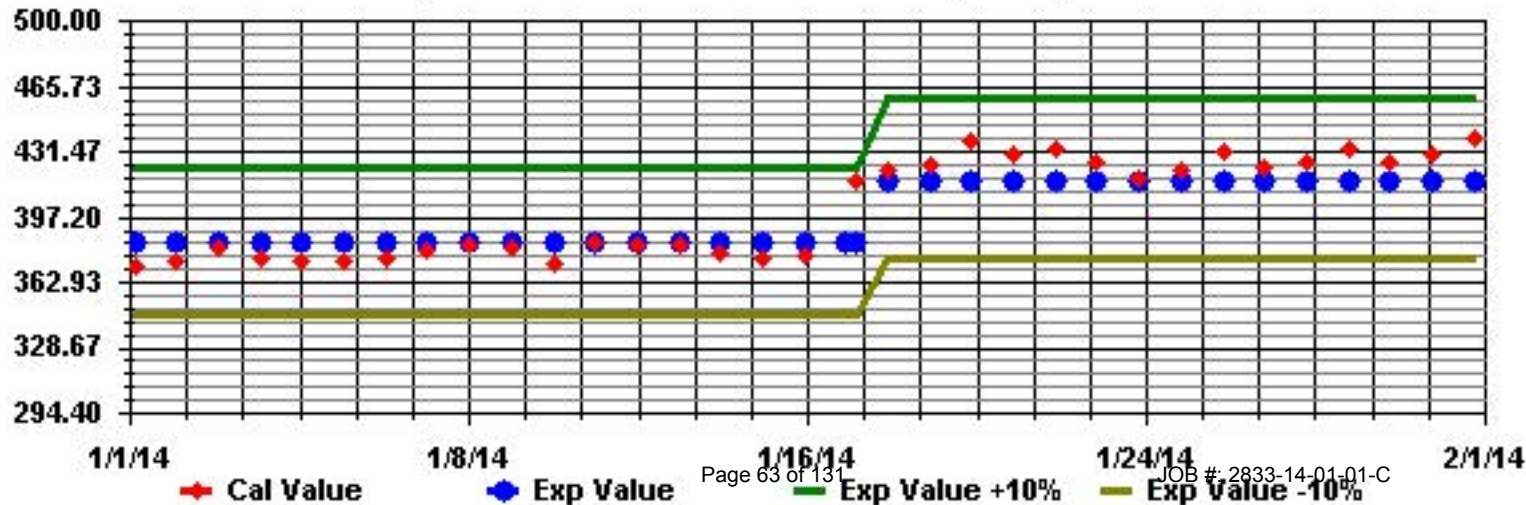
Class Limits (PPB)

Period : 01/01/14-01/31/14

Level : 10



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



Ozone

Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

OZONE (O3) hourly averages in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																												
1	18	15	S	9	8	9	5	10	12	15	16	19	20	20	19	19	19	13	9	7	18	19	17	18	20	14.5	24	
2	20	S	21	22	23	24	24	23	21	24	24	23	23	22	18	14	7	4	4	2	2	1	3	2	24	15.3	24	
3	S	1	1	1	1	1	5	31	31	31	31	33	35	34	34	34	32	32	33	36	34	36	36	S	36	24.8	24	
4	35	34	33	33	36	35	33	31	28	31	33	37	37	37	37	36	37	37	37	36	33	32	S	30	37	34.3	24	
5	30	30	32	31	30	29	29	26	27	30	32	32	33	33	33	33	32	30	27	27	20	S	20	19	33	28.9	24	
6	19	25	28	29	30	27	30	27	24	25	29	29	31	32	31	28	28	27	30	29	S	28	28	29	32	28.0	24	
7	29	29	30	31	31	30	26	14	6	8	23	34	36	37	32	29	14	13	17	S	23	36	37	37	37	26.2	24	
8	36	36	36	37	38	37	36	36	36	35	35	35	35	35	34	33	33	31	28	S	27	26	25	26	27	38	33.0	24
9	27	27	26	24	22	21	13	15	16	21	24	25	25	26	25	22	16	S	20	18	12	11	7	6	27	19.5	24	
10	6	8	9	11	9	6	2	1	2	4	9	17	19	19	20	23	S	27	24	26	28	26	26	25	28	15.1	24	
11	22	18	21	23	23	12	3	4	4	26	26	27	27	28	30	S	30	30	31	31	29	28	30	29	31	23.1	24	
12	29	27	24	28	21	17	16	19	23	26	28	29	28	29	S	30	29	24	19	19	18	25	27	27	30	24.4	24	
13	25	24	25	25	24	24	21	19	17	17	17	27	33	S	35	36	34	32	35	31	24	22	20	19	36	25.5	24	
14	26	22	17	11	13	26	26	31	30	29	31	31	S	32	32	31	30	27	25	22	24	32	32	37	37	26.8	24	
15	36	37	39	42	46	45	45	44	43	44	43	S	42	42	41	41	41	41	41	41	40	40	40	40	46	41.5	24	
16	39	39	37	36	35	35	36	34	33	34	S	33	35	35	36	32	33	32	32	32	32	32	30	29	39	34.0	24	
17	27	26	26	28	26	25	26	31	37	S	40	41	42	C	C	C	C	C	C	39	39	39	38	37	36	42	33.5	24
18	35	32	32	33	36	36	34	31	S	31	34	34	34	35	35	36	36	36	33	33	29	30	29	36	36	33.5	24	
19	38	42	43	42	41	41	41	S	38	37	40	40	40	41	42	41	38	33	32	34	34	34	34	33	43	38.2	24	
20	34	34	33	31	27	25	S	19	21	26	28	29	29	30	29	28	28	29	28	26	25	21	19	17	34	26.8	24	
21	18	22	29	30	29	S	17	8	12	17	23	25	27	32	33	33	31	31	34	33	34	34	33	32	34	26.8	24	
22	31	30	29	30	S	28	26	27	27	29	30	29	30	30	31	32	30	29	28	27	24	25	28	28	32	28.6	24	
23	28	29	29	S	27	24	22	17	10	14	17	21	25	31	34	33	32	33	32	33	32	32	32	33	34	27.0	24	
24	32	32	S	32	33	33	31	31	31	31	33	34	35	35	36	32	29	31	33	36	36	34	34	36	34	36	33.0	24
25	34	S	32	30	27	18	23	21	24	26	32	33	34	37	37	38	38	39	40	39	37	35	36	38	40	32.5	24	
26	S	40	38	37	38	38	38	38	37	37	37	36	36	36	34	32	30	30	28	25	23	21	S	40	33.9	24		
27	21	21	18	17	15	13	10	4	5	11	18	25	27	29	29	29	26	14	12	13	12	12	S	16	29	17.3	24	
28	16	17	15	14	20	21	18	14	8	17	23	26	25	27	27	26	22	20	18	18	21	S	32	32	32	20.7	24	
29	33	31	28	31	32	32	31	30	29	30	28	28	28	30	32	31	31	30	29	31	S	33	34	34	34	30.7	24	
30	34	33	31	30	30	31	33	35	34	35	35	35	35	34	34	33	33	31	31	S	30	32	33	31	35	32.7	24	
31	28	27	28	28	30	30	29	31	32	35	34	35	36	36	34	35	36	38	S	37	37	37	37	36	38	33.3	24	
HOURLY MAX	39	42	43	42	46	45	45	44	43	44	43	41	42	42	42	41	41	41	41	41	41	40	40	40	40			
HOURLY AVG	27.8	27.2	27.2	26.9	26.7	25.8	24.3	23.4	23.3	25.9	28.5	30.1	31.4	31.8	31.9	31.1	29.5	28.3	27.7	28.0	26.8	28.1	28.2	27.9				

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

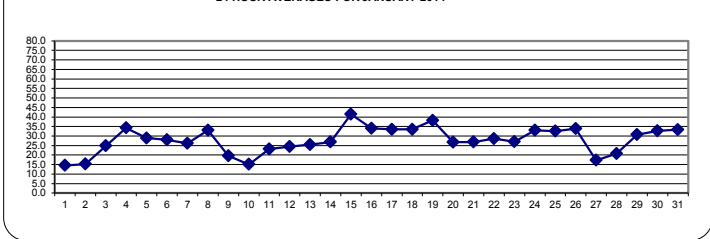
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 82 PPB

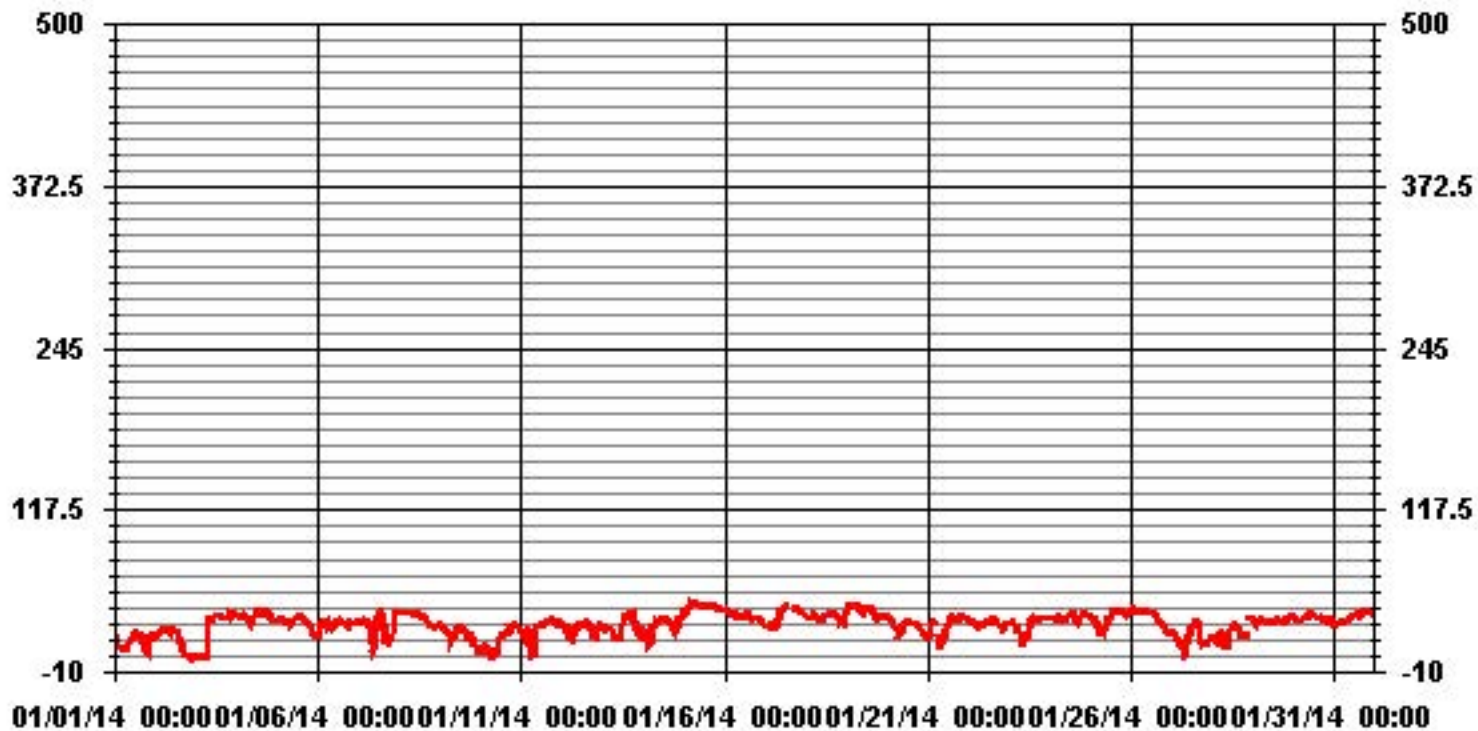
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	706					
MAXIMUM 1-HR AVERAGE:	46	PPB	@ HOUR(S)	4	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	41.5	PPB			ON DAY(S)	15
					VAR-VARIOUS	
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	9.00		MONTHLY AVERAGE:	27.80	PPB	

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

OZONE MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	19	17	S	11	10	11	10	12	14	16	18	20	20	21	20	21	21	18	13	14	20	20	19	21	21	16.8	24
2	20	S	22	23	24	25	24	24	23	24	24	24	24	22	16	11	7	8	7	7	3	4	4	4	25	17.1	24
3	S	2	2	2	1	2	27	33	32	34	34	36	36	36	35	34	33	36	37	35	37	36	S	37	37	27.1	24
4	36	36	34	36	37	37	35	33	32	32	36	37	38	37	37	37	37	38	38	37	34	33	S	31	38	35.6	24
5	30	32	32	32	30	30	30	29	29	31	32	33	34	34	34	34	33	32	30	29	28	S	24	24	34	30.7	24
6	22	27	31	31	31	31	32	29	26	28	31	31	32	33	33	30	30	31	31	30	S	30	30	31	33	30.0	24
7	31	31	32	33	32	30	23	11	15	33	38	39	40	34	33	23	25	23	S	34	37	38	37	40	30.6	24	
8	36	36	37	38	38	38	38	37	36	36	36	36	36	35	34	34	32	32	S	28	27	27	27	27	38	34.0	24
9	28	28	27	26	23	23	20	19	20	23	27	30	27	26	25	20	S	21	20	15	14	10	14	30	22.3	24	
10	10	9	12	12	12	9	6	3	4	6	16	20	20	20	25	24	S	30	26	29	29	28	27	26	30	17.5	24
11	26	21	25	26	26	25	6	10	19	29	28	29	28	29	31	S	32	32	32	32	30	31	31	30	32	26.4	24
12	30	29	26	30	24	19	17	22	25	28	28	29	29	30	S	31	31	28	24	24	24	28	28	28	31	26.6	24
13	26	25	26	25	25	25	24	21	19	19	22	33	35	S	36	36	36	35	36	35	30	29	26	22	36	28.1	24
14	28	27	23	16	24	30	32	32	31	32	32	32	S	33	33	32	31	30	28	27	31	33	33	39	39	30.0	24
15	38	39	40	45	46	46	46	44	44	45	43	S	43	42	42	42	42	41	41	41	41	41	40	40	46	42.3	24
16	40	40	39	38	36	36	37	36	35	36	S	35	36	37	37	36	35	33	34	33	33	33	31	30	40	35.5	24
17	29	27	27	29	27	26	31	35	39	S	41	42	43	C	C	C	C	C	C	40	40	39	38	37	43	34.7	24
18	36	34	34	36	37	37	36	34	S	33	35	35	36	36	37	37	36	36	34	32	31	32	40	40	40	35.2	24
19	39	44	44	43	42	42	42	S	40	39	41	41	41	42	42	42	40	35	34	34	34	35	35	34	44	39.3	24
20	35	35	34	33	30	29	S	24	27	28	29	30	30	31	30	29	29	30	29	27	26	24	22	19	35	28.7	24
21	19	27	31	30	30	S	25	13	21	19	26	27	31	33	34	34	31	32	35	34	35	35	35	34	35	29.2	24
22	33	31	31	31	S	30	33	30	29	30	30	30	30	31	32	33	32	30	29	28	27	28	29	29	33	30.3	24
23	29	30	30	S	27	26	24	22	14	17	19	24	29	33	34	34	33	34	33	34	33	33	34	34	34	28.7	24
24	33	33	S	32	33	33	33	32	32	33	34	35	36	36	36	36	30	33	35	38	38	38	37	36	38	34.4	24
25	35	S	34	31	29	24	24	25	25	29	33	34	35	38	38	39	38	40	41	40	39	37	38	39	41	34.1	24
26	S	42	39	38	38	39	39	39	38	38	38	37	36	37	37	36	33	32	32	32	28	25	23	S	42	35.3	24
27	23	22	24	19	18	17	17	7	8	16	23	27	28	30	30	31	29	22	15	15	15	15	S	20	31	20.5	24
28	20	21	19	19	22	23	21	19	14	22	26	27	26	28	28	27	26	20	20	22	23	S	33	33	33	23.4	24
29	34	33	30	33	33	33	33	31	31	30	30	29	29	33	33	32	31	31	31	32	S	34	34	34	34	31.9	24
30	34	34	33	30	30	33	34	35	35	35	35	35	35	35	34	33	33	32	S	31	32	34	33	35	35	33.5	24
31	30	28	29	29	32	31	31	33	35	35	36	36	37	38	36	36	37	39	S	38	38	38	38	37	39	34.7	24
HOURLY MAX	40	44	44	45	46	46	46	44	44	45	43	42	43	42	42	42	42	42	41	41	41	41	41	40			
HOURLY AVG	29.3	29.0	29.2	28.6	28.2	28.1	27.9	26.2	26.3	27.9	30.5	31.7	32.6	33.1	33.1	32.6	31.3	30.8	29.4	30.0	29.6	29.9	29.9	29.8			

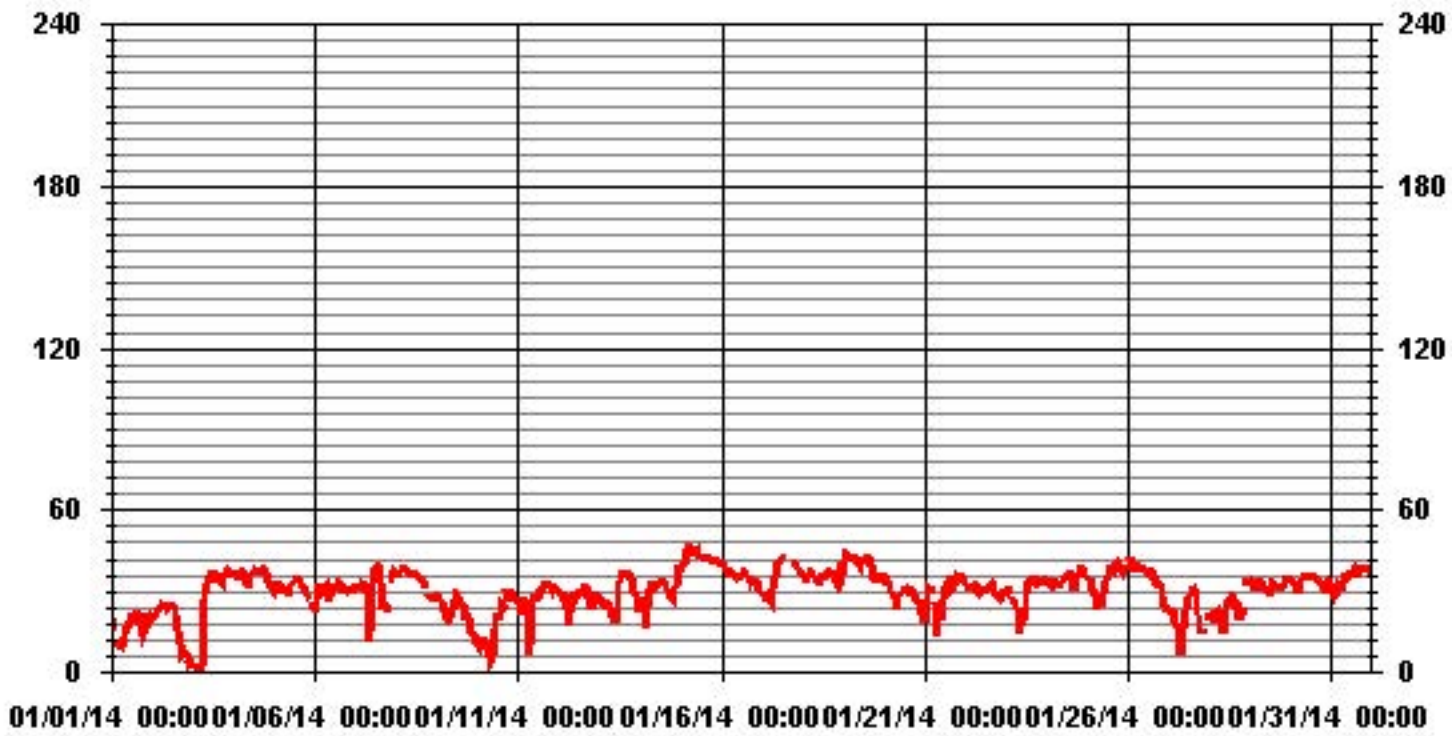
STATUS FLAG CODES

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:	705
MAXIMUM INSTANTANEOUS VALUE:	46 PPB @ HOUR(S) VAR ON DAY(S) 15
	VAR-VARIOUS
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	6 HRS
STANDARD DEVIATION:	8.15
OPERATIONAL TIME:	744 HRS

01 Hour Averages



— LICA O3MAX PPB

LICA
O3_ / WD Joint Frequency Distribution (Percent)

January 2014

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	5.80	1.98	1.98	2.40	3.54	2.69	12.74	2.69	2.26	1.98	7.50	16.28	13.31	7.50	10.05	7.22	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	5.80	1.98	1.98	2.40	3.54	2.69	12.74	2.69	2.26	1.98	7.50	16.28	13.31	7.50	10.05	7.22	

Calm : .00 %

Total # Operational Hours : 706

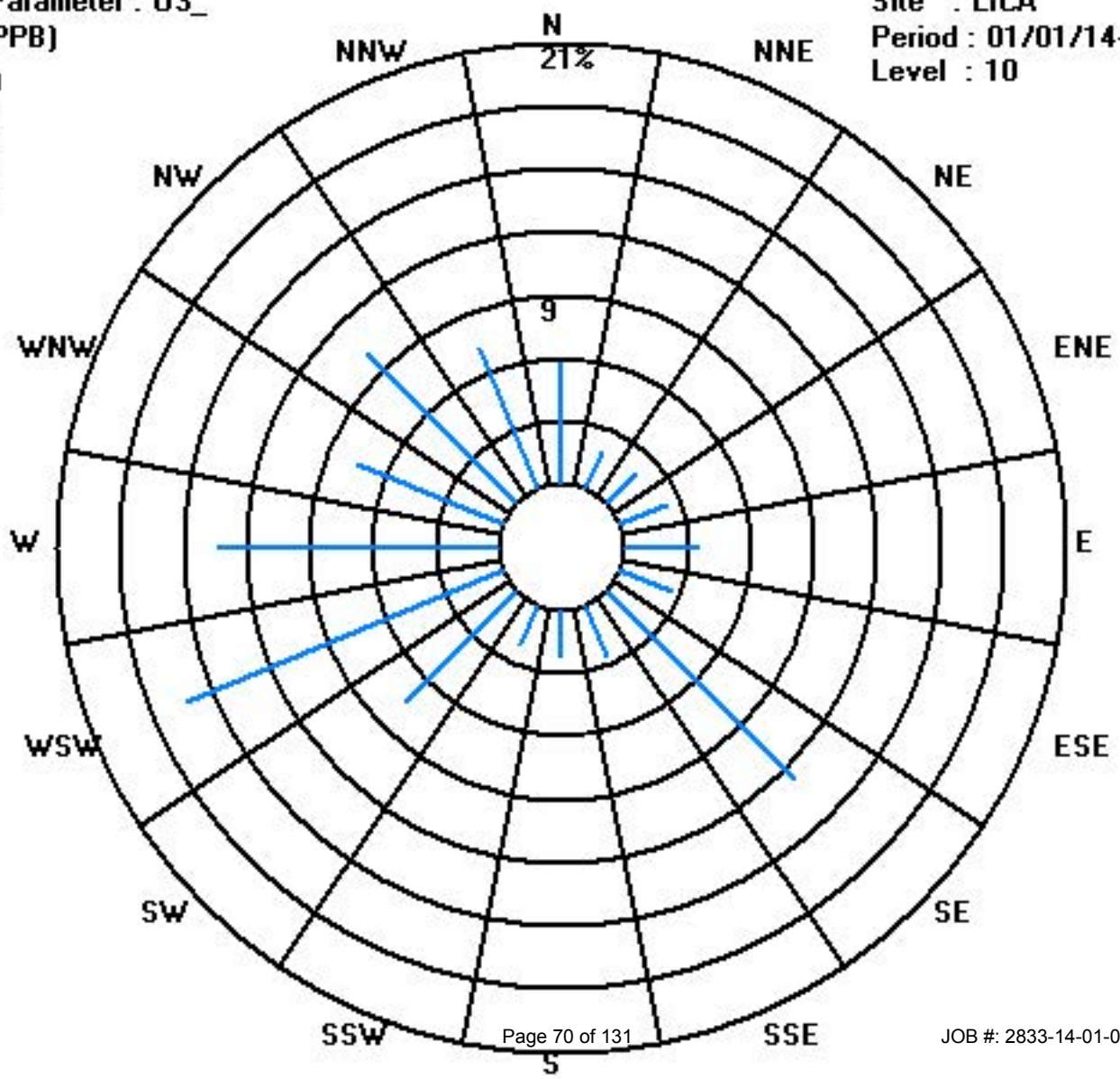
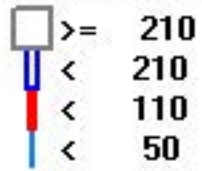
Distribution By Samples

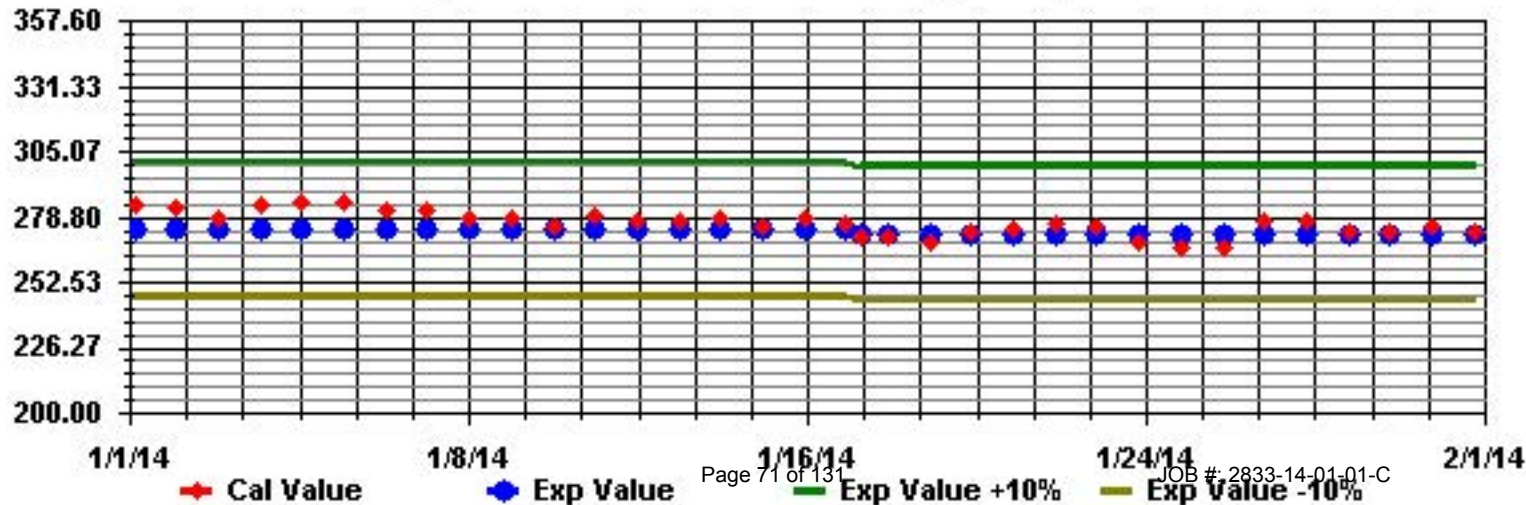
	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	41	14	14	17	25	19	90	19	16	14	53	115	94	53	71	51	706
< 110																	
< 210																	
>= 210																	
Totals	41	14	14	17	25	19	90	19	16	14	53	115	94	53	71	51	

Calm : .00 %

Total # Operational Hours : 706

Class Limits (PPB)





Ambient Temperature

Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

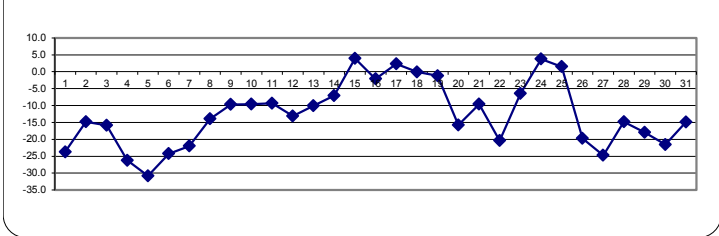
AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOURLY START	HOURLY END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																												
1		-27	-26.7	-26.7	-26.6	-26.3	-25.3	-25.2	-25.1	-24.7	-24	-23	-22.1	-21.2	-21	-20.3	-20.2	-21.4	-23.7	-24.4	-24.2	-22.7	-22.4	-22.5	-22.6	-20.2	-23.7	24
2		-21.9	-21.4	-20.8	-20.4	-19.6	-18.9	-17.8	-16.1	-14.8	-13.7	-13.2	-12.7	-11.3	-10	-9.2	-10.1	-11.4	-12.3	-13.3	-14.1	-13.8	-13.5	-12.8	-12.8	-9.2	-14.8	24
3		-13	-12.8	-12.7	-12.9	-13.4	-13.5	-12.7	-8.2	-11	-13	-14.2	-15.4	-16	-16.3	-16.9	-17.6	-18.4	-19.1	-19.7	-19.6	-19.8	-20.5	-21.5	-22.5	-8.2	-15.9	24
4		-23.1	-23.7	-24.9	-25.9	-25.6	-26	-26.4	-26.8	-27.5	-27.3	-25.9	-24.6	-24.3	-24.2	-24.5	-24.4	-24.8	-25.4	-26.4	-27.4	-29	-29.9	-30.5	-30.8	-23.1	-26.2	24
5		-31.2	-31.5	-31.9	-32	-32.4	-32.7	-33	-32.9	-33.5	-32.9	-31	-29.4	-28.5	-27.7	-27.4	-28.3	-28.7	-29.1	-29.9	-30.3	-30.3	-30.9	-32.2	-32.3	-27.4	-30.8	24
6		-30	-29.2	-28.5	-28.4	-28.1	-27.3	-26.1	-26	-25.4	-24.9	-24.2	-23	-22.1	-22	-21.7	-22.2	-21.9	-21.5	-21.3	-21.3	-21.6	-21.8	-21.7	-21.5	-21.3	-24.2	24
7		-21.2	-20.9	-20.7	-20.9	-20.9	-20.8	-21.5	-23.2	-24.9	-24.3	-22.2	-21	-20	-19.3	-19.6	-20.7	-22.6	-23.5	-24.5	-24.7	-23.7	-22.3	-22	-22.1	-19.3	-22.0	24
8		-21.6	-20.8	-19.9	-19.3	-18.5	-17.8	-16.8	-15.9	-15.9	-15.9	-14.9	-13.6	-12	-11.2	-10.9	-10.5	-10.3	-10.1	-10.3	-9.8	-9.5	-9.4	-9.5	-9.9	-9.4	-13.9	24
9		-10.6	-11.7	-12.1	-12.3	-13.2	-13.2	-12.9	-12.2	-11.6	-11.1	-10	-9	-7.9	-6.8	-6.4	-6.3	-6.8	-6.7	-6.3	-6.1	-7.4	-8.6	-10.8	-12	-6.1	-9.7	24
10		-12.6	-11.3	-9.7	-9.6	-11.8	-13.8	-13.6	-15.1	-16.4	-16	-12.5	-8.5	-5.7	-6.1	-5.1	-4.9	-5.2	-6.1	-7.4	-6.9	-6.9	-8	-8.1	-8.4	-4.9	-9.6	24
11		-9.5	-11.8	-11.6	-11.7	-11.9	-12.4	-13.6	-14.6	-15	-9.8	-9	-9.1	-8.7	-7.9	-7.3	-6.7	-6.4	-6.3	-6.6	-6.9	-7	-7	-7.1	-7.1	-6.3	-9.4	24
12		-7.2	-6.8	-5.7	-5	-7.1	-8.9	-10.2	-11.3	-12.4	-12.8	-13.2	-13.5	-13.4	-14.3	-14.1	-14.7	-16.2	-17.8	-20.1	-21.1	-19.7	-18	-16.2	-15.6	-5	-13.1	24
13		-15.1	-14	-13.3	-12.7	-12	-11.6	-11.5	-11.4	-11.4	-12.3	-10.2	-7	-5.1	-4.1	-4.2	-4.9	-6	-6.9	-7.4	-8.9	-12.2	-13.4	-12.9	-13.4	-4.1	-10.1	24
14		-10.5	-10.5	-9.8	-9.4	-10.2	-10.5	-10.3	-11.2	-11.4	-11	-10.2	-9.1	-8	-7.3	-6.8	-6	-5.3	-5.3	-5.3	-4.2	-2.8	0.2	1	4	4	-7.1	24
15		5.1	6.5	7.4	8.6	8.5	3.2	1.9	1.3	2.5	3.1	4.6	5	4.7	4.2	4.3	4.6	4.1	3.6	3	2.6	2.2	1.9	1.4	0.7	8.6	4.0	24
16		-0.1	-0.6	-1.9	-3.1	-4.1	-4.4	-4.6	-4.2	-4.3	-3.7	-2.2	-1.2	-0.6	-0.4	-0.1	-0.1	-0.8	-1.6	-1.9	-2.4	-2.5	-2.1	-1.9	-1.7	-0.1	-2.1	24
17		-1.5	-1.2	-0.7	-0.8	-0.7	-0.3	-0.4	0	0.7	1.9	3	4.7	6	6.2	6.4	6.5	5.7	5.3	4.4	3.1	2.5	2.1	1	0.9	6.5	2.3	24
18		-0.1	-1.2	-1.9	-2.6	-2.4	-3	-4.2	-4.5	-3.7	-1.6	0	1.4	3.2	4	4.2	4.1	2.5	1.3	0.4	-0.1	-1.7	-0.4	1	3.7	4.2	-0.1	24
19		4.4	4.8	4.9	5.1	4.9	4.7	3.6	2.3	2.2	2.8	4.2	4.4	4.4	4.4	4.1	1.6	0.3	-4.5	-9.2	-12.8	-14.3	-16	-17.1	-17.9	5.1	-1.2	24
20		-18.9	-20	-20.6	-21.2	-21.6	-22.5	-22.8	-22.7	-22.2	-20.5	-18.2	-15.3	-14.1	-12.5	-11.8	-11.4	-11	-10.8	-10.7	-10.4	-10.3	-10.1	-9.7	-9.3	-9.3	-15.8	24
21		-8.3	-7.1	-5.9	-6	-6.3	-7.8	-10.3	-11.7	-12.6	-10.6	-8.5	-6.3	-4.8	-3.7	-3.3	-4.7	-8.2	-9.4	-11.3	-13	-15.4	-17.2	-18.5	-19.3	-3.3	-9.6	24
22		-20	-21	-21.8	-22.7	-23.4	-24	-24.1	-24.1	-24.2	-23.2	-22	-20.7	-19	-17.1	-15.4	-14.8	-15.8	-18.1	-19.5	-20.2	-20.5	-20.3	-19.2	-18.3	-14.8	-20.4	24
23		-16.9	-15.5	-15.7	-15.7	-16.3	-16.2	-15.3	-15	-14.3	-12.4	-10	-6.3	-2.4	0.3	1.8	1.8	1	0.6	1	1.9	1.7	1.8	2.2	3	3	-6.5	24
24		3.1	3.6	3.4	4.1	4.9	4.9	4.5	4.6	4.7	5.2	6.2	6.6	7.1	7.6	6.7	5.2	2.8	2	1.4	0.3	0.2	0.1	0	7.6	3.7	24	
25		-0.2	-0.1	-0.6	-1.1	-1.5	-2.3	-1.8	-0.5	1.5	2.8	5.2	6.4	7.7	7.9	7.1	5.8	4.8	3.8	2.9	2.3	0.2	-2.5	-4.8	-7.3	7.9	1.5	24
26		-9.2	-11.6	-14.2	-16.7	-18.1	-19.4	-20.6	-21.5	-22.2	-22	-21.5	-21.1	-20.8	-20.5	-20	-19.8	-19.7	-19.9	-20.2	-20.7	-21.6	-22.9	-24.3	-25.4	-9.2	-19.7	24
27		-26.4	-27.3	-27.8	-28.7	-29	-29.4	-30	-30.3	-30.4	-27.1	-24.7	-22.5	-20.4	-18.7	-18	-18	-19.2	-21	-22.9	-23.8	-24.5	-24.7	-24.6	-24.3	-18	-24.7	24
28		-24.3	-24.2	-23.7	-22.1	-19.9	-18.9	-20.7	-21.3	-21.4	-17.9	-15	-12.8	-12	-10	-9	-9.3	-9.3	-9.9	-9.9	-9.6	-9.9	-8.1	-7.8	-8.9	-7.8	-14.8	24
29		-10	-11.3	-12.4	-13.6	-15.1	-17.1	-18.7	-19.4	-19.8	-19.7	-18.8	-18.2	-17.6	-16.5	-15.7	-15.7	-17.3	-18.8	-19.8	-21.1	-22	-23.2	-24.2	-24.7	-10	-17.9	24
30		-24.9	-25.1	-25.1	-25.1	-24.8	-24.2	-23.6	-23.7	-23.8	-23.5	-22.8	-22	-20.9	-19.6	-18.9	-18.7	-18.9	-19.3	-19.5	-19.6	-19	-18.7	-18.3	-17.4	-17.4	-21.6	24
31		-16.5	-16.2	-16.3	-16.3	-16.2	-17.1	-18	-17.6	-16.9	-16.5	-15.8	-14.3	-13.7	-13.5	-13	-12.4	-12.4	-12.9	-13	-13.4	-13.6	-13.9	-13.9	-14.1	-12.4	-14.9	24
HOURLY MAX		5.1	6.5	7.4	8.6	8.5	4.9	4.5	4.6	4.7	5.2	6.2	6.6	7.7	7.9	7.1	6.5	5.7	5.3	4.4	3.1	2.5	2.1	2.2	4			
HOURLY AVG		-13.5	-13.6	-13.6	-13.7	-13.9	-14.4	-14.7	-14.8	-14.8	-13.9	-12.6	-11.3	-10.2	-9.6	-9.2	-9.4	-10.2	-11.1	-11.9	-12.3	-12.7	-12.9	-13.1	-13.1			

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 2014



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-33.5 °C	@ HOUR(S)	8	ON DAY(S)	5
MAXIMUM 1-HR AVERAGE:	8.6 °C	@ HOUR(S)	3	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	4.0 °C			ON DAY(S)	15
				VAR-VARIOUS	
OPERATIONAL TIME:			744	HRS	
AMD OPERATION UPTIME:			100.0	%	
STANDARD DEVIATION:	10.15				
MONTHLY AVERAGE:	-12.53	°C			

01 Hour Averages



Relative Humidity

Lakeland Industry & Community Association - Cold Lake South Site

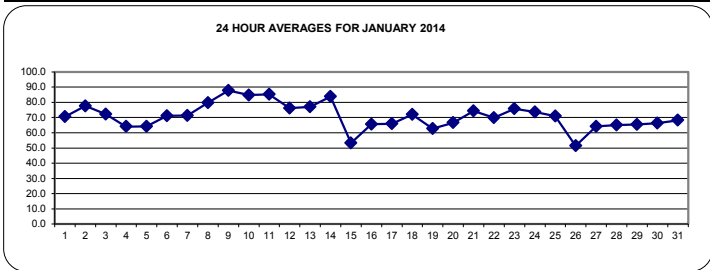
JANUARY 2014

RELATIVE HUMIDITY (RH) hourly averages in %

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																												
1	70	70	70	71	70	70	71	71	71	70	70	67	66	66	66	67	72	75	73	74	74	74	73	73	75	70.6	24	
2	72	72	73	74	75	77	78	79	79	79	76	75	74	72	72	77	81	83	84	83	82	82	82	82	82	84	77.6	24
3	83	82	82	83	83	82	85	79	72	69	66	61	62	62	63	66	70	71	71	68	68	67	69	70	85	72.3	24	
4	71	71	73	72	69	69	71	72	73	70	67	61	59	59	58	66	63	61	54	53	55	54	57	60	73	64.1	24	
5	61	62	63	64	66	65	67	68	67	66	63	60	58	56	56	61	63	65	67	68	69	68	69	68	69	64.2	24	
6	68	70	70	70	70	69	69	67	68	71	72	73	72	72	72	72	72	72	72	73	74	73	72	72	74	71.0	24	
7	73	72	72	72	72	72	73	76	75	70	71	68	64	62	63	67	73	76	72	74	74	74	74	73	76	71.3	24	
8	74	73	73	73	75	77	78	78	78	77	76	77	79	81	81	79	79	79	82	87	89	89	89	89	89	89	79.7	24
9	88	87	86	86	85	85	85	86	86	87	88	88	89	89	89	89	90	90	91	91	90	88	86	86	91	87.7	24	
10	85	86	89	89	86	84	84	83	81	81	83	85	84	84	80	83	84	85	87	86	85	87	87	87	89	84.8	24	
11	87	86	88	88	87	85	83	82	82	84	83	84	85	86	87	88	88	88	86	83	82	84	84	85	88	85.2	24	
12	87	88	87	84	78	76	75	74	75	75	75	73	70	64	65	70	74	78	78	77	77	75	76	88	76.1	24		
13	77	79	82	82	83	82	82	86	84	79	73	65	63	63	65	70	75	70	76	82	83	82	82	86	86	77.0	24	
14	84	84	85	85	86	80	80	79	77	76	77	77	79	84	87	90	90	90	91	91	90	90	90	90	91	83.8	24	
15	63	57	53	45	43	81	86	84	72	68	53	45	47	50	47	42	41	39	40	41	43	44	46	49	86	53.3	24	
16	51	53	57	61	65	68	70	71	72	69	64	63	62	63	63	66	68	68	70	71	72	73	73	73	73	65.7	24	
17	73	73	74	76	75	74	74	73	72	69	65	60	56	55	55	55	56	53	56	62	65	67	72	73	76	66.0	24	
18	76	80	83	85	84	84	85	86	84	74	67	64	59	57	58	59	65	68	72	71	77	72	66	54	86	72.1	24	
19	54	52	53	52	54	60	68	74	72	64	56	56	55	51	53	82	90	80	67	63	64	62	62	62	90	62.8	24	
20	63	63	66	69	72	74	75	74	74	69	62	57	56	54	55	56	59	63	67	69	72	74	75	80	80	66.6	24	
21	82	81	77	77	78	82	86	86	86	83	78	70	64	62	57	61	74	74	70	69	69	71	73	75	86	74.4	24	
22	75	75	75	76	76	77	77	76	75	72	69	65	62	58	54	53	57	66	68	71	73	74	76	76	77	69.8	24	
23	76	76	78	79	80	80	81	79	82	83	81	79	74	68	65	66	70	73	73	72	75	77	77	76	83	75.8	24	
24	77	75	75	73	70	71	72	72	71	69	65	63	61	59	63	70	80	81	83	84	83	82	83	84	84	73.6	24	
25	86	86	89	91	92	93	92	85	77	72	63	58	53	51	53	56	58	59	59	62	70	80	65	52	93	70.9	24	
26	44	43	52	48	48	48	50	52	52	50	49	49	46	45	44	45	46	47	50	55	61	66	72	71	72	51.4	24	
27	71	72	72	72	71	71	70	69	68	65	64	59	51	46	44	45	51	60	66	69	70	72	72	71	72	64.2	24	
28	72	72	73	73	72	70	74	73	74	66	59	54	53	52	52	55	57	60	63	62	66	70	69	69	74	65.0	24	
29	69	68	69	66	65	66	67	68	67	65	65	68	73	68	65	62	64	66	63	61	63	61	60	61	73	65.4	24	
30	66	66	66	68	70	70	70	69	69	68	67	65	62	58	57	58	62	65	67	69	70	69	69	69	70	66.2	24	
31	69	73	73	73	71	73	75	75	74	71	68	62	61	63	62	61	64	67	64	68	67	68	68	68	75	68.3	24	
HOURLY MAX	88	88	89	91	92	93	92	86	86	87	88	88	89	89	89	90	90	90	91	91	90	90	90	89				
HOURLY AVG	72.5	72.5	73.5	73.5	73.3	74.7	75.9	75.5	74.5	72.1	69.1	66.5	64.6	63.4	62.8	65.3	68.5	70.1	70.1	71.1	72.6	73.3	73.1	72.1				

STATUS FLAG CODES

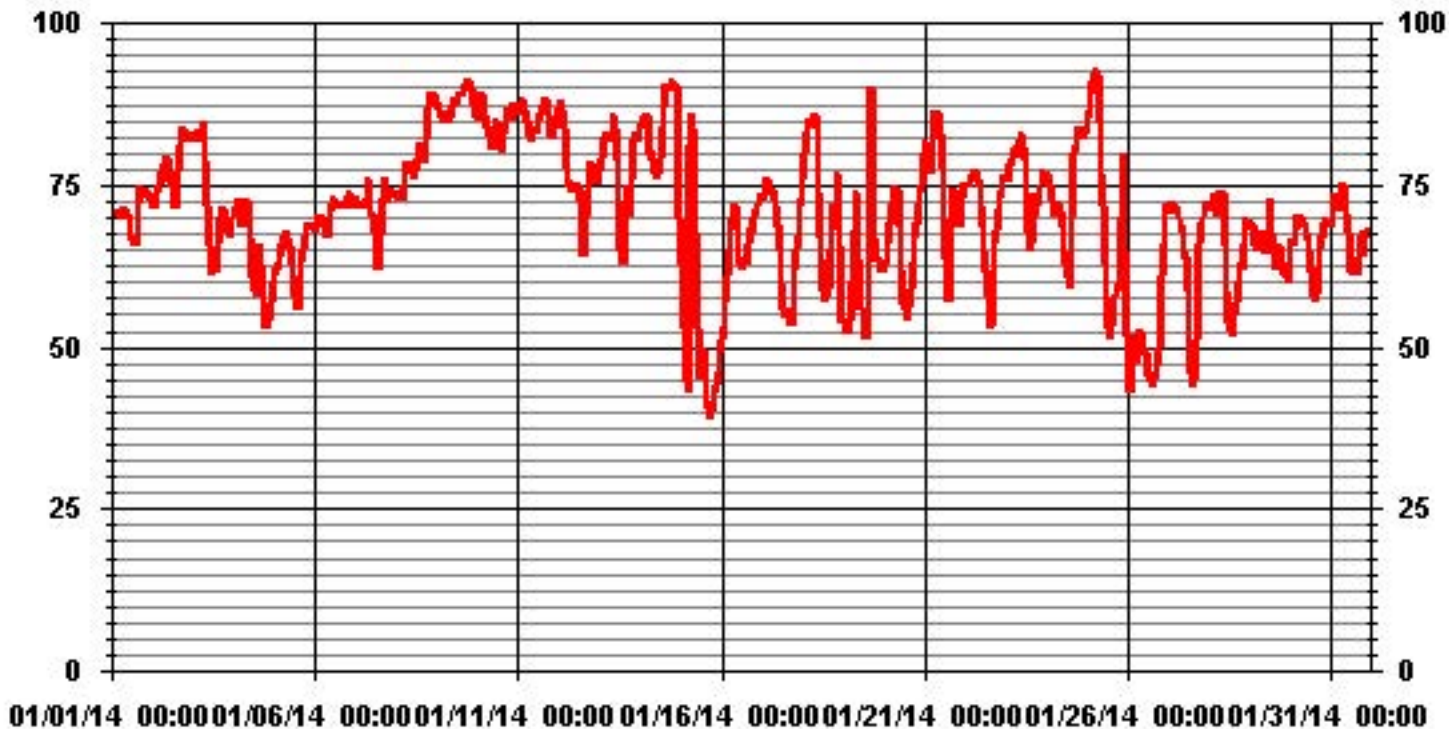
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	93	%	@ HOUR(S)	5	ON DAY(S)	25
MAXIMUM 24-HR AVERAGE:	87.7	%			ON DAY(S)	9
					VAR-VARIOUS	
			OPERATIONAL TIME:		744	HRS
			AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	10.93		MONTHLY AVERAGE:		70.86	%

01 Hour Averages



Vector Wind Speed

Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

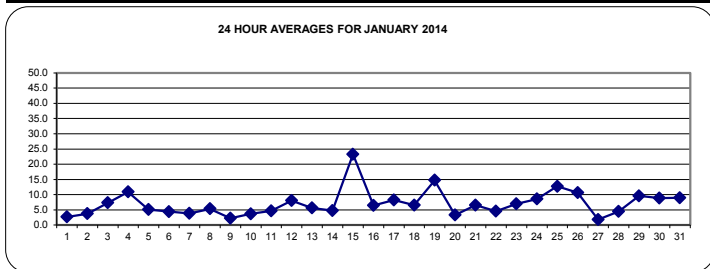
WIND SPEED (WS) hourly averages in km/hr

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																												
1	1.8	2.5	1.8	2.3	3	2.5	1.4	1.2	2.3	2.5	3.3	3.9	3.1	4.1	3.2	1.7	0.9	0.7	0.3	0.9	4.4	4	5.8	5.6	5.8	2.6	24	
2	6.8	6.6	7.4	6.9	8.3	8.4	7.8	2.7	2.3	4.7	6	4.4	4.4	2.7	1.2	1.7	1.7	1.6	1.2	0.7	0.5	1.2	0	0.2	8.4	3.7	24	
3	0.6	0.1	0.3	0.6	1	1.3	3.4	12.6	13.4	13.8	10.8	13.1	10.4	11.9	10.3	9.7	6.5	4.8	7.6	8.4	9.4	11.1	7.2	7	13.8	7.3	24	
4	8.4	5.8	4.8	6.2	7	4	6.1	7.7	7.1	6.5	8	13.3	13.8	13.8	13.9	11.6	17.6	18.3	21.1	16	14.1	15.8	9.4	10.3	21.1	10.9	24	
5	7.7	5.8	9	6.4	6.9	5.1	7.1	6.2	4.5	5.6	7.3	7.1	8.2	7.7	6.5	4.8	4	4.2	3.7	2.9	0.1	0.4	0.1	0.4	9.0	5.1	24	
6	0.5	1.8	1.9	2.4	3.2	4.3	3.4	6.6	4.3	3.7	6.5	5.9	7.7	5.9	6.2	6.2	5.4	3.9	4.8	5.2	4.8	3.6	3.9	3.3	7.7	4.4	24	
7	3.5	3.6	3.5	4.2	3.4	4.1	2.6	2	1.1	1.6	4.3	5.8	4.3	3.2	3.4	3.2	2.3	2.7	1.4	2.2	2.7	8.1	8.7	10.5	10.5	3.9	24	
8	8.7	6.5	6.3	7.2	7.2	5.7	4.9	6.2	5.3	4.5	5.2	5.5	3.6	4.3	5.3	4.4	2.8	3	4.2	5.5	5.8	5.5	4.4	5.4	8.7	5.3	24	
9	5.2	4.8	3.1	1.7	2.3	1.2	1.3	3.2	1.2	1.6	2.6	2.4	3.3	1.7	2	1.4	1.8	3.2	3.7	1.8	1	0.7	1.8	0.6	5.2	2.2	24	
10	1	0.7	2.2	3.1	1.7	0.5	0.4	1	0.5	0.1	3.1	4.9	6.4	6.5	5.1	5.5	8.1	5.7	5.6	6.2	6.3	4.5	4.5	4.4	8.1	3.7	24	
11	1.7	1.1	3.3	3.7	2.1	1.7	1.7	1.3	2.1	5.6	6.8	8.8	9.8	10.2	10.9	7.8	6.9	5.3	5.8	5	3.9	1	3	2.5	10.9	4.7	24	
12	3.2	4.5	6.3	11.4	14	13	13.2	13.3	13.3	13.5	13.5	10.7	7.9	10.8	9	8.6	4.9	3	1.2	0.9	1.7	4.5	4.9	6.1	14.0	8.1	24	
13	6.5	7.4	5.7	5.6	5	2.3	3.7	0.9	4	5.2	5.4	9	10.6	11.7	12.9	10.6	6.7	4.1	6.6	3.5	1.9	2.5	1	1.4	12.9	5.6	24	
14	3.5	2.2	1.3	0.9	2.7	3.1	3.5	5.8	7.4	7.2	7	7.1	6.6	8.3	8.9	6	4.8	3.5	3.1	1.5	2.3	2.8	3.8	10.9	10.9	4.8	24	
15	15.5	18.6	20.3	24.6	32.1	29.4	20.8	18.6	19.5	24.6	23.9	32.3	29.8	30.2	30.9	26	22.8	23.5	20.5	20.8	20.5	20.2	18.1	13.9	32.3	23.2	24	
16	10.1	7	4.6	5.1	6.5	5.4	6.8	5.6	5.8	5.6	7	8.1	8.8	8	7.5	6.4	6	4.8	5.8	6.8	6.9	6.3	4.4	5.2	10.1	6.4	24	
17	4.4	4.2	4.2	5.7	6.5	7.4	5.9	9	11.1	10.9	11.4	10.9	13.1	11.7	12	9.7	7.7	7.8	7	6.4	7.2	7.4	8	7.2	13.1	8.2	24	
18	6	5.4	5.6	5.1	6	5.1	2.9	4.7	4.5	8.1	7.6	7.8	6.7	8.5	8.6	8.5	6.5	7.4	5.8	5.1	4.4	6.4	9	10.2	10.2	6.5	24	
19	11	13.2	14.4	16.3	14.7	19.1	11.2	8.4	7.5	7.8	10.6	11.5	15.2	15.6	19.6	14.4	14.3	24.8	22.4	23.1	20.5	17.1	10.9	9.1	24.8	14.7	24	
20	7	6.4	3	1.9	1.4	1.5	1.5	0.6	2.6	1.7	2.3	2.5	3.9	3.6	1.2	4.2	2.3	2.9	2.7	4.3	4	4.4	6.2	6.4	7.0	3.3	24	
21	5.8	6	6.8	7.8	4.1	3.3	0.8	0.8	4.6	5.1	5.4	4.8	5.3	10.7	11.2	9.9	8.4	10.1	11	8.9	10.4	6.9	4.6	4.4	11.2	6.5	24	
22	4.9	4.9	5.7	4.7	1.4	4.3	3.1	5.4	5.3	6.4	7.5	4.8	5.9	4.6	4.2	5.1	2.8	5.9	3.3	1.7	2	5.7	5.4	4.7	7.5	4.6	24	
23	2.9	3.1	2.6	3	4.5	4.5	3.9	2.2	4.1	3.8	4	8.9	12	11.2	11	10.1	8.1	8.2	9	9.3	9.8	9.6	9.8	11.4	12.0	7.0	24	
24	9.8	12.4	11.3	10.8	9.7	9.9	8.5	10	9.6	9.7	9.2	10	13.6	14.2	13.1	7.9	6.5	6.8	6.3	7.5	3.5	1.9	1.5	2.2	14.2	8.6	24	
25	4.1	6.3	6.1	3.4	1.8	1.8	6	8.8	10.7	8.6	9.3	12.4	16.6	25.7	19.1	23.5	18.7	21.3	15.4	11.7	12.8	15.9	21.7	23.4	25.7	12.7	24	
26	22.5	23.3	22.4	27.7	21.8	21.9	13.9	12.1	12.4	12.5	10.6	8.1	8.8	8.7	6.2	6	5.8	4.9	1.5	1.6	0.5	0.7	1	0.6	27.7	10.6	24	
27	0.5	0.8	0.5	0.6	0.5	0.5	0.5	1.2	0.9	0.8	3.6	3.9	3.7	4.6	4.7	5.1	4.5	2.1	1.5	0.4	0.3	0.7	0.7	0.2	5.1	1.8	24	
28	0.6	0.4	0.4	0.8	2.2	1.8	0.4	0.5	2.5	2.6	2.1	4.1	6.4	7.7	7.5	8.5	5.5	4.2	5.1	4.7	4.8	9.3	13.3	11.2	13.3	4.4	24	
29	11.5	13.3	11.3	10.8	8.6	9.6	6.2	6.5	6.2	6.3	4.4	7.1	6.5	7.6	8.1	10.4	11.6	10	11.9	13.4	12.8	13.3	12.9	9.1	13.4	9.6	24	
30	9.5	8.1	6	6.3	5.6	6.3	10.4	10.6	11.1	10	9.3	9.9	9.5	9.7	10.8	10.2	11	6.4	6.4	8.9	10.7	8.9	8.4	8.2	11.1	8.8	24	
31	8.5	7.3	7.6	7	8.1	8	7.4	8.8	9	12.4	10	10.5	12.4	11.8	10.4	9.7	10.4	11.6	9.6	9.9	6.8	6.5	4.2	7.3	12.4	9.0	24	
HOURLY MAX	22.5	23.3	22.4	27.7	32.1	29.4	20.8	18.6	19.5	24.6	23.9	32.3	29.8	30.2	30.9	26.0	22.8	24.8	22.4	23.1	20.5	20.2	21.7	23.4				
HOURLY AVG	6.2	6.3	6.1	6.6	6.6	6.4	5.5	6.0	6.3	6.9	7.4	8.4	9.0	9.6	9.2	8.3	7.3	7.3	7.0	6.6	6.3	6.7	6.4	6.6				

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

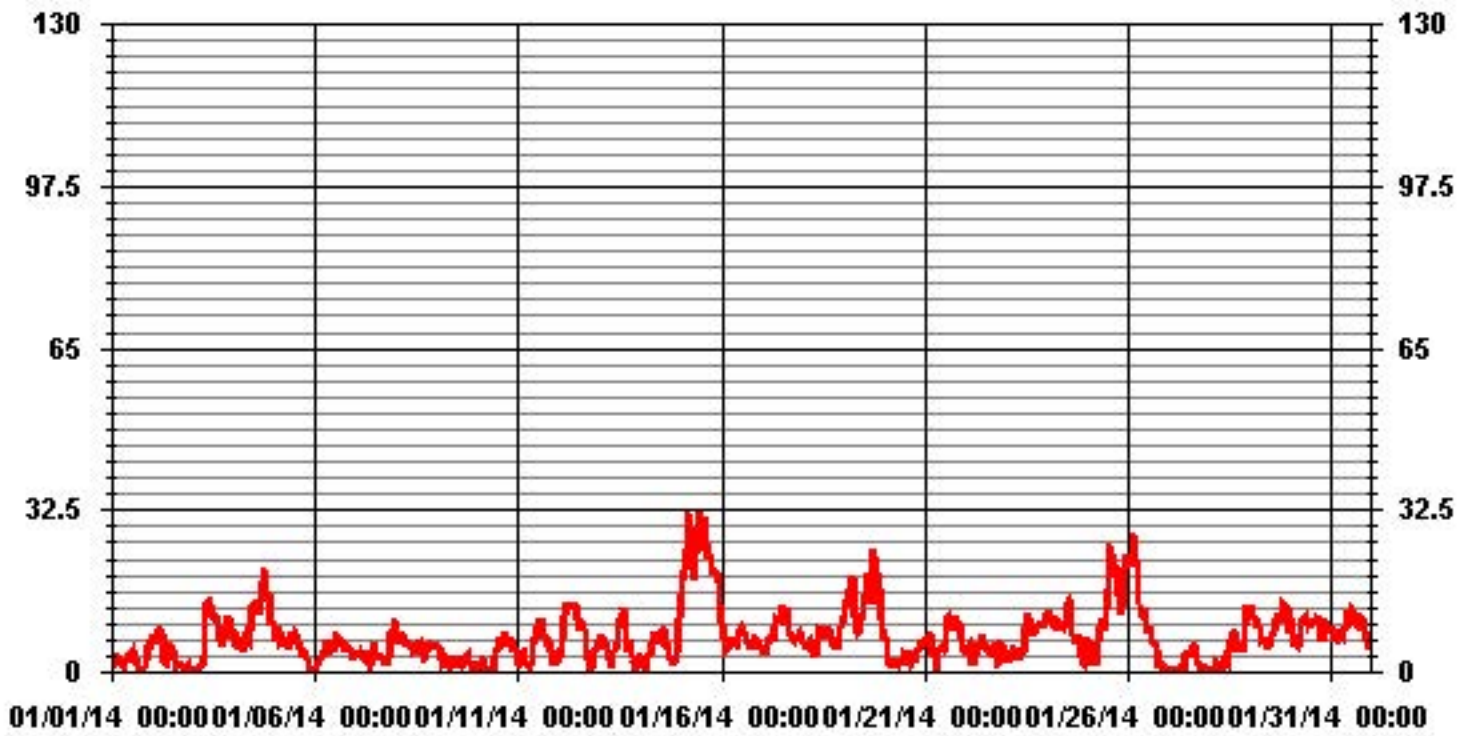
LAST CALIBRATION:	November 28, 2012
DECLINATION:	19 DEGREE FROM MAGNETIC NORTH



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	743
MAXIMUM 1-HR AVERAGE:	32.3 KPH @ HOUR(S) 11 ON DAY(S) 15
MAXIMUM 24-HR AVERAGE:	23.2 KPH ON DAY(S) 15
	VAR-VARIOUS
MONTHLY CALIBRATION TIME:	0 HRS
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	5.48
MONTHLY AVERAGE:	7.03 KPH

01 Hour Averages



— LICA WSP KPH

Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	1	4	4.4	4	9.1	4.6	7	5.1	3.8	5.4	6.7	6.8	9	6.6	7.8	7	4.1	2.6	3.2	2.8	14.3	6.6	7.2	8.2	8.9	14	6.2	24
2	2	9.3	9.9	11.2	13.1	14.2	13.4	12.9	8.2	5.1	9.1	12.9	10.8	9.9	6.2	5	5.2	5.4	5.5	5.6	2.5	4	3.3	2.4	2.5	14	7.8	24
3	3	4	1.3	2	4	4.8	3.8	11	18.6	21.5	21.5	16.2	20.4	18.5	20.2	16.2	14.3	10.8	7.7	14.8	13.9	15.4	17.4	13.2	11.1	22	12.6	24
4	4	14.1	8.3	7.9	11.2	12.7	7.6	8.9	10	9.8	8.9	15.3	20.2	21.3	21.1	20.2	21.7	28.6	29.5	32.3	23.9	24.2	23.5	15.8	15.6	32	17.2	24
5	5	11.5	8.7	13.3	9.3	9.4	8.5	9.1	9.2	8.7	9.8	10.8	13.6	14.4	11.7	13.2	8.8	5.7	7.9	6.7	6	3.8	3.6	3.4	2.5	14	8.7	24
6	6	2.9	3.8	4	8.7	7.1	8	6.9	13.8	7.1	8.3	13.6	12.5	12.2	11.1	10.5	9.6	9	7.7	8.2	9.2	8.5	9.1	6.9	6.9	14	8.6	24
7	7	7.1	7.2	7.6	8.3	7.2	7.2	5.8	4.5	36.4	4.8	6.9	8.8	7.7	6.8	5.5	4.7	12.6	47.1	4.1	5.7	7.6	12.4	12.5	15.9	47	10.6	24
8	8	13.9	10.3	10	11.3	9.9	7.9	8.6	8.9	8.1	6.5	8.4	10.5	7.1	10.2	9.3	8.9	6.3	5.2	8.9	9.3	10.8	9.4	7.3	8.6	14	9.0	24
9	9	9	8.8	8	4.4	4.9	5.5	3.5	6.8	3.4	6.7	5.3	4.7	7.2	4.8	4.5	3	6	6.1	6.9	4.5	2.5	2.4	4.7	5.2	9	5.4	24
10	10	4.3	2.7	5.1	6	5.8	5.2	5.3	3.6	2.6	2.3	7	7.7	10.9	10.3	8.6	9.5	12.7	8.4	8.5	11.2	11.5	7.1	7.4	7.4	13	7.1	24
11	11	5.1	3.8	5.7	5.8	5	2.9	4.1	2.6	7.1	9.9	10.3	13.9	15.2	15	17.8	13.4	11.4	9	9.3	10	7.2	4.4	5.7	4.5	18	8.3	24
12	12	6.4	9	10	31.1	22.7	24.5	21.4	22.7	21.8	23.3	21.8	18.3	16.4	17	13.5	12.7	9.9	6.9	3.5	4.3	4.8	6.5	9.5	9.6	31	14.5	24
13	13	9	13	11.2	9.9	8.7	6.8	6	7	7.1	7.9	9.2	22.2	18.9	19.2	20.3	19.3	17.1	7.2	10.8	7.1	4.1	5.5	3.8	4.8	22	10.7	24
14	14	6	5.6	4.4	3.1	8.6	6.9	10.5	9.9	13.1	10.9	10.6	10.4	9.5	11.3	11.9	8.9	8.3	6	4.8	4.1	7.1	6.5	7.6	17.4	17	8.5	24
15	15	21	26.9	32.9	40.7	57.7	50.2	47.5	42.1	33.9	48.6	38.8	48.1	45.7	46.2	45.6	41.8	35.7	33.2	28.9	30.2	32.5	30.4	26.6	23.1	58	37.8	24
16	16	16.4	10.5	6.9	7.7	8.9	9.6	9.4	9.4	8.2	8.6	11	11.7	14.2	11.9	11.6	10.8	8.2	7.8	9.3	9.9	11.3	8.7	5.5	9.8	16	9.9	24
17	17	7.1	7	6.4	8.4	9.8	9.9	8.2	11.9	14.4	14.7	16.2	16.6	21.9	17.8	18.1	15.1	13.7	13.6	10.1	8.9	10.9	10.4	11.5	10.7	22	12.2	24
18	18	7.9	8.1	8.2	11.6	8.6	7.8	5.2	6.2	7.3	11.8	11.3	10.9	10.1	12.9	12.5	11.1	9.3	11.5	9.9	8.7	7.8	10.9	14.7	16.6	17	10.0	24
19	19	15.5	20.8	21.3	25.6	24.5	29	19	12.1	12.2	10.8	17.8	16.6	20.1	22.1	31	32	34.2	37.9	32.7	34.3	31.8	24.1	22.5	16	38	23.5	24
20	20	13.4	13.8	5.6	5.7	4.6	4.2	5.4	2.4	5.2	4.9	5.4	7.5	7.2	8	7.6	7.2	6.4	6.7	8.3	7	6.3	6.8	10.8	11.8	14	7.2	24
21	21	8.5	8.5	11.7	11.6	7.4	6.3	3.1	3.2	7.9	6.2	8.7	8.1	12.4	18	17.4	15.2	15.7	18.9	17.7	18	15.5	11.9	8	6.8	19	11.1	24
22	22	8.1	8.8	8.8	8	3.3	7.1	6.8	7.3	8.1	9.6	11.9	8.8	10.3	7.9	8.6	8.4	5	10.7	6.7	3.9	4.3	8.2	7.9	8	12	7.8	24
23	23	6.7	6.1	5.1	6.6	7.2	6.9	6.2	4.4	6.7	6.2	8	14.6	18.4	15.1	14.8	15.8	11.1	10.9	11.3	13.4	15.3	12.9	14.3	15.9	18	10.6	24
24	24	15.3	17.5	15	14.5	13.1	12.2	11.1	13.3	12.6	14.3	13.1	14.3	19.8	19.7	18	17.8	12.3	10.1	10.3	14.7	6.9	3.7	3.9	4.3	20	12.8	24
25	25	7.7	9.3	10.5	9.5	4.2	7	8.1	11.4	14.9	13.3	14.5	16.5	27.6	40.7	32.8	36.9	29.4	36.2	25.6	23.1	23.8	26.9	32.5	33.3	41	20.7	24
26	26	37.5	32.6	32.6	42.3	32	31.9	24.2	20.3	19.9	21.8	19.3	14.9	14.5	13.9	10.9	9.7	9.4	9	4.5	3.5	3.6	4	2.9	3.8	42	17.5	24
27	27	2.9	2.2	2.8	4.8	2.8	3.2	2.6	3.1	4.1	2.5	6.6	6.7	8.5	8	8.5	8.2	6.5	4	3.4	3.6	1.9	2.7	3.6	1.6	9	4.4	24
28	28	4.3	2	2.8	4.4	5.8	4.5	3.3	3.1	4.8	5.2	5.6	10.4	11.5	12.6	11.7	13.3	8.7	5.9	7.4	7.3	10.6	16	24.8	19	25	8.5	24
29	29	17.5	22.2	19.8	18.4	13	15.3	9.7	9.7	8.6	11.9	8.2	12.5	10.2	11.5	14.3	14.4	17.1	15.5	19.8	21	21.6	20	18.7	14.5	22	15.2	24
30	30	16.3	10.8	8.3	9.3	9.9	13.2	17.5	17	19.1	16.6	14.4	14.8	15.1	14.3	17.2	13.9	18.2	9.9	10.6	12.6	15.9	13.3	12.9	14.1	19	14.0	24
31	31	12	11.6	10.4	10.4	11.1	10.7	11.8	15.5	16.6	20.1	15.1	17.8	19.7	18.6	14.5	15.8	15.7	16.1	17.6	13.7	11.5	10.4	7.4	12.1	20	14.0	24
HOURLY MAX		38	33	33	42	58	50	48	42	36	49	39	48	46	46	46	42	36	47	33	34	33	30	33	33			
HOURLY AVG		10.5	10.2	10.1	12.1	11.3	11.1	10.3	10.4	11.7	11.7	12.3	14.0	14.9	15.2	14.8	13.9	13.0	13.4	11.7	11.6	11.3	11.0	10.9	11.0			

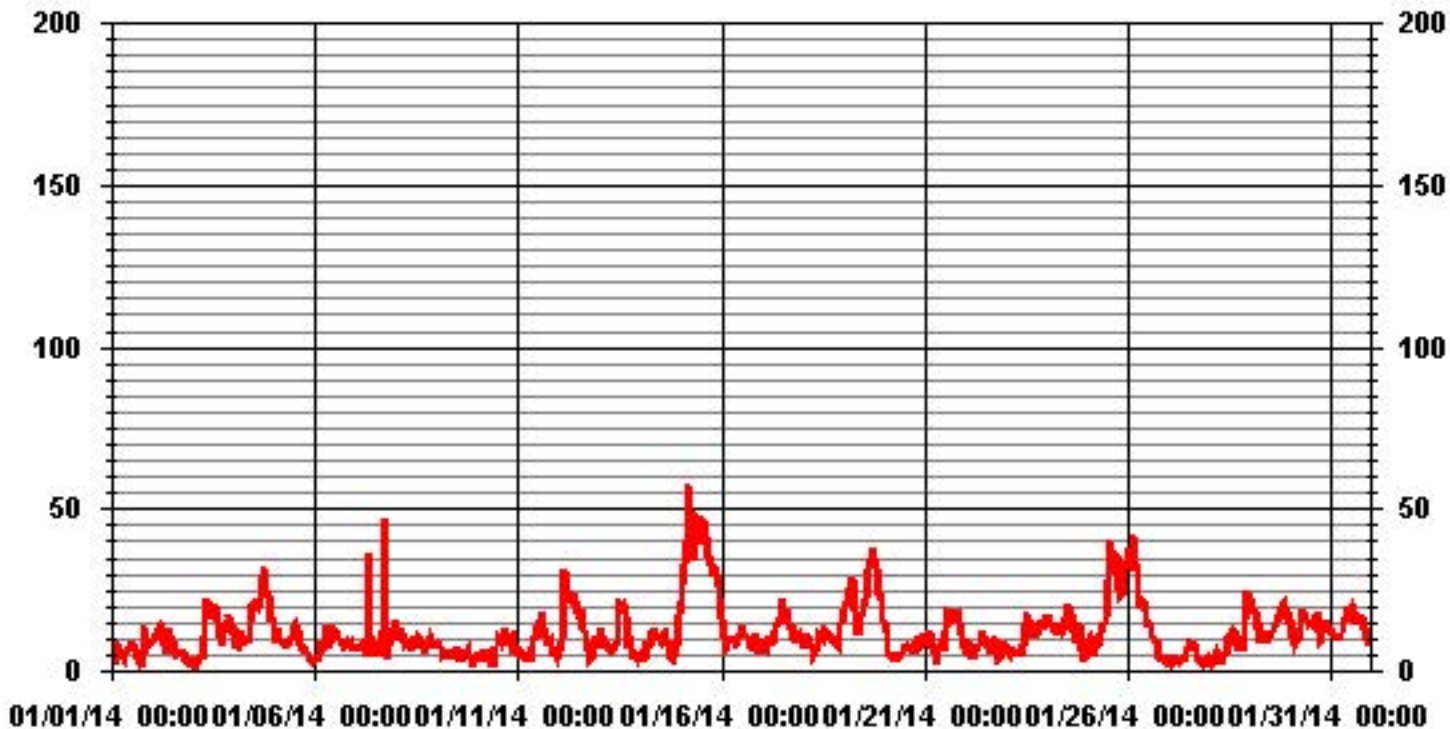
STATUS FLAG CODES

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 INSTANTANEOUS VALUE:	58	KPH	@ HOUR(S)	4	ON DAY(S)	15
					VAR-VARIOUS	
OPERATIONAL TIME:				744	HRS	

01 Hour Averages



LICA
WSP / WD Joint Frequency Distribution (Percent)

January 2014

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	.67	.80	1.34	2.15	2.68	2.41	8.33	2.55	2.01	1.61	6.31	10.75	3.89	1.34	.94	.67	48.52
< 12.0	2.55	.80	.53	.13	1.07	.26	4.43	.00	.00	.13	1.47	4.70	8.46	3.62	5.77	2.95	36.96
< 20.0	1.34	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.26	.94	2.01	1.61	2.41	8.60
< 29.0	1.07	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.13	.26	1.07	1.07	3.76
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.67	.00	.80
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.64	1.61	1.88	2.28	3.76	2.68	12.76	2.55	2.01	1.74	7.79	15.86	13.44	7.39	10.08	7.12	

Calm : 1.34 %

Total # Operational Hours : 744

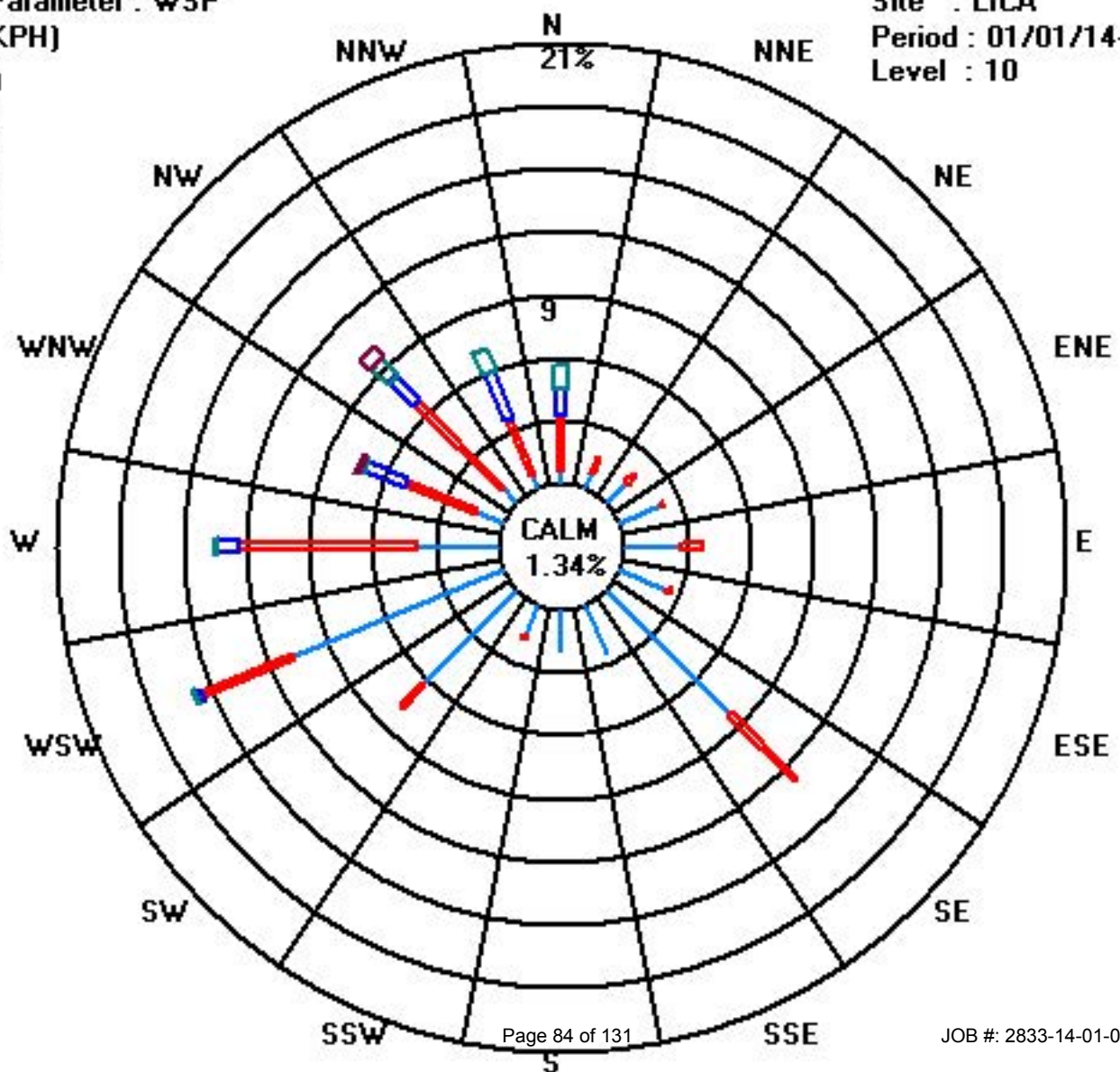
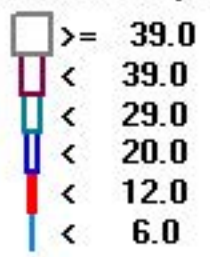
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	5	6	10	16	20	18	62	19	15	12	47	80	29	10	7	5	361
< 12.0	19	6	4	1	8	2	33			1	11	35	63	27	43	22	275
< 20.0	10											2	7	15	12	18	64
< 29.0	8											1	1	2	8	8	28
< 39.0														1	5		6
>= 39.0																	
Totals	42	12	14	17	28	20	95	19	15	13	58	118	100	55	75	53	

Calm : 1.34 %

Total # Operational Hours : 744

Class Limits (KPH)



Vector Wind Direction

Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

WIND DIRECTION (WD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR		
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUADRANT	RDGS.	
1		254	251	231	235	242	256	259	202	230	238	247	279	274	262	244	177	179	94	155	72	133	135	135	279		W	24	
2		136	135	134	133	133	136	137	158	172	214	210	218	221	251	278	12	31	274	228	126	311	169	242	247	311		NW	24
3		142	199	341	215	291	250	22	354	344	346	342	346	353	342	335	321	326	321	331	327	324	321	308	304	354		N	24
4		308	294	280	299	306	269	261	262	261	256	289	307	303	302	301	313	331	339	342	347	355	340	323	322	355		N	24
5		315	292	315	283	264	244	263	269	248	246	233	239	242	236	232	235	246	244	247	257	185	233	14	35	315		NW	24
6		107	129	146	137	130	98	114	132	110	99	130	119	121	113	106	90	86	72	76	92	79	96	74	104	146		SE	24
7		108	60	84	117	102	98	109	93	351	69	62	72	77	80	43	50	65	189	97	84	114	135	138	136	351		N	24
8		137	138	135	137	140	135	136	143	146	145	141	145	206	231	222	227	228	266	230	253	245	238	239	237	266		W	24
9		237	238	242	270	244	173	64	84	162	132	133	114	142	154	287	233	238	229	225	240	222	235	258	234	287		WNW	24
10		203	258	241	238	262	259	87	217	183	234	265	263	235	236	245	240	265	262	251	274	289	249	248	239	289		WNW	24
11		238	139	144	134	134	68	50	54	93	121	98	101	95	95	99	95	92	72	79	75	101	188	255	241	255		WSW	24
12		225	239	266	296	293	302	312	311	312	313	317	323	287	261	268	255	229	214	166	111	126	128	130	135	323		NW	24
13		135	135	134	131	132	148	4	332	241	245	252	297	304	311	320	306	292	278	288	265	243	162	184	227	332		NNW	24
14		258	253	240	35	19	82	127	133	136	132	139	141	138	141	142	142	143	132	133	130	200	185	191	234	258		WSW	24
15		242	250	253	274	291	310	307	299	288	297	296	312	313	316	317	316	311	312	308	309	312	314	314	307	317		NW	24
16		298	295	248	226	240	249	250	236	244	238	237	233	237	234	236	237	240	232	238	238	235	241	249	246	298		WNW	24
17		240	242	243	252	268	264	265	260	265	258	259	273	297	286	282	276	273	285	288	280	282	286	284	277	297		WNW	24
18		262	250	233	235	241	241	239	245	240	239	238	245	248	233	245	248	247	249	244	248	244	240	248	267	267		W	24
19		260	271	273	283	290	301	289	270	260	273	283	271	262	271	301	297	296	340	349	344	345	352	356	5	356		N	24
20		3	351	348	13	46	225	155	168	136	203	218	172	163	172	155	144	160	173	213	235	253	256	276	273	351		N	24
21		276	284	305	307	294	258	203	218	250	262	245	262	285	318	330	9	30	21	12	31	52	44	49	68	330		NNW	24
22		93	105	120	133	116	133	128	137	138	141	140	128	145	136	150	146	213	224	202	195	130	137	139	145	224		SW	24
23		163	221	210	233	243	248	254	263	256	263	274	264	273	273	281	274	270	280	279	277	278	275	262	265	281		W	24
24		263	262	259	270	274	275	275	276	280	277	285	304	314	331	337	357	38	27	47	64	104	148	141	136	357		N	24
25		133	145	144	147	169	219	254	261	260	265	274	277	304	328	334	332	332	332	333	339	9	5	356	352	356		N	24
26		342	354	0	350	355	356	356	355	339	342	339	324	322	340	330	300	324	326	7	32	6	50	35	230	356		N	24
27		192	320	58	347	5	337	232	235	242	301	294	280	254	242	231	234	234	235	145	168	299	332	128	29	347		NNW	24
28		310	138	154	131	138	154	136	125	126	125	164	230	261	256	241	237	266	260	257	278	274	333	335	350	350		N	24
29		346	347	350	345	352	355	351	354	350	340	291	314	312	321	350	346	9	12	5	357	356	360	343	338	360		N	24
30		337	325	310	298	292	313	319	312	317	309	294	291	277	260	262	264	260	240	241	240	246	250	238	244	337		NNW	24
31		261	266	286	292	315	313	311	320	321	334	317	310	322	330	316	324	331	338	338	339	350	357	313	313	357		N	24

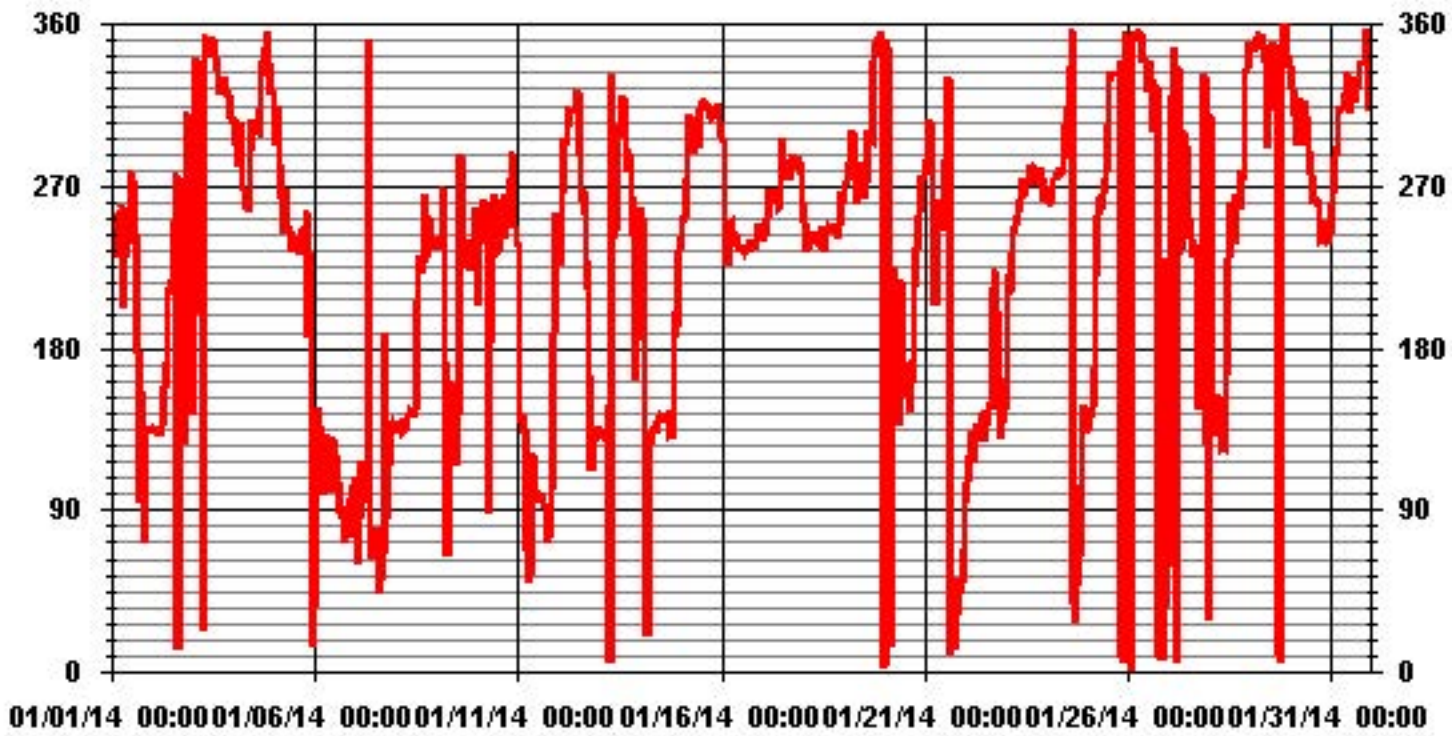
STATUS FLAG CODES

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

LAST CALIBRATION:	November 28, 2012
DECLINATION :	19 DEGREE FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	89.59	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	297 DEG

01 Hour Averages



Standard Deviation Wind Direction

Lakeland Industry & Community Association - Cold Lake South Site

JANUARY 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	
DAY																										
1		40	37	37	36	32	39	41	53	35	40	34	29	33	27	30	35	33	49	59	42	21	22	17	17	
2		14	17	18	20	19	15	15	40	41	36	32	45	33	35	37	26	39	46	55	67	35	33	52	55	
3		66	68	67	70	57	25	34	15	15	16	17	17	17	13	14	11	11	12	12	13	14	12	15	18	
4		14	20	27	24	22	33	27	25	26	25	24	18	19	20	20	18	14	15	15	20	16	13	20	18	
5		27	38	23	36	34	35	32	34	37	32	31	31	28	30	30	30	34	32	37	49	85	69	78	76	
6		69	39	34	37	36	37	35	28	31	35	27	26	24	26	24	22	22	22	23	24	23	31	24	29	
7		30	26	30	28	31	28	31	38	53	36	21	21	29	27	18	18	27	52	55	39	27	15	13	13	
8		13	14	14	14	14	13	17	18	22	17	17	29	36	25	25	29	27	22	20	18	20	28	26	20	
9		20	21	26	39	30	48	58	31	52	52	33	23	36	39	39	43	39	24	28	34	36	44	30	37	
10		40	41	36	24	29	76	60	69	69	64	25	16	18	18	20	19	18	17	15	22	19	18	15	24	
11		47	38	19	19	44	15	21	37	29	20	22	21	19	19	20	21	18	19	19	22	23	57	19	17	
12		27	24	17	18	20	17	15	15	15	15	16	17	19	18	19	17	19	23	37	58	47	15	31	15	
13		14	16	16	17	20	49	26	47	21	16	16	19	19	16	15	17	17	20	19	19	32	31	62	68	
14		21	54	48	55	30	24	31	18	13	15	15	14	14	11	12	15	19	18	21	44	36	42	44	21	
15		19	18	19	19	20	17	21	19	20	19	19	15	16	15	14	15	14	16	16	15	15	14	15	15	
16		16	18	16	18	16	17	15	19	17	18	18	19	20	20	18	20	16	16	16	16	16	16	17	15	16
17		18	20	23	13	16	16	15	14	14	16	16	19	18	20	19	20	19	20	17	17	19	17	17	17	
18		15	13	13	26	17	16	23	15	18	18	18	19	22	20	19	18	18	16	16	15	19	18	18	18	
19		16	17	18	20	19	17	19	17	17	17	20	19	18	19	18	17	19	21	17	14	14	16	17	17	
20		19	17	27	32	49	44	33	59	38	60	44	44	35	42	58	24	45	43	48	20	18	18	18	17	
21		16	17	17	12	17	23	52	51	15	13	18	24	23	17	14	24	20	18	17	20	17	19	22	25	
22		31	29	27	29	43	29	36	25	24	22	19	29	23	26	35	19	34	23	35	53	34	18	18	21	
23		45	29	34	29	18	15	18	23	20	21	28	17	18	17	17	16	16	17	17	17	18	18	17	16	
24		16	16	15	17	18	17	17	17	18	18	19	16	14	14	13	19	19	19	17	18	26	26	30	37	
25		18	21	19	31	42	37	13	15	15	16	18	19	18	15	15	15	15	16	17	16	21	18	18	17	
26		17	17	22	15	17	15	18	18	13	16	19	26	22	17	25	25	18	16	39	38	62	76	54	56	
27		62	68	66	80	82	70	62	49	59	62	34	32	37	32	30	26	22	33	40	66	83	58	52	60	
28		62	56	66	53	45	34	57	60	24	27	40	37	21	21	20	19	18	14	15	19	16	13	15	16	
29		15	14	17	16	18	16	17	19	17	17	28	20	19	20	22	15	16	18	17	16	17	19	14	14	
30		15	14	18	23	25	19	15	16	16	18	21	23	24	21	19	20	19	21	20	18	18	18	20	21	
31		18	18	18	17	12	11	13	17	17	15	18	17	19	18	15	16	14	16	15	14	18	17	18	17	

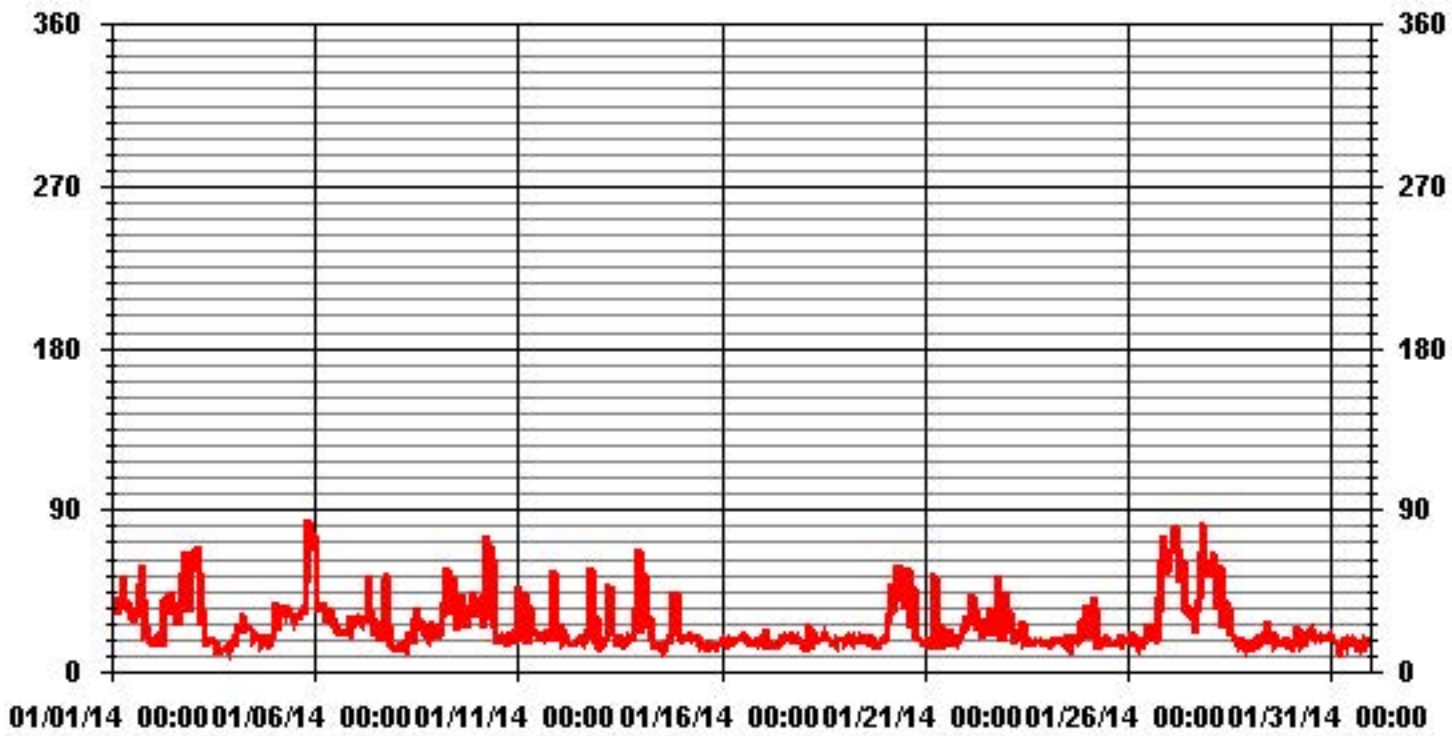
STATUS FLAG CODES

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: 744 HRS

01 Hour Averages

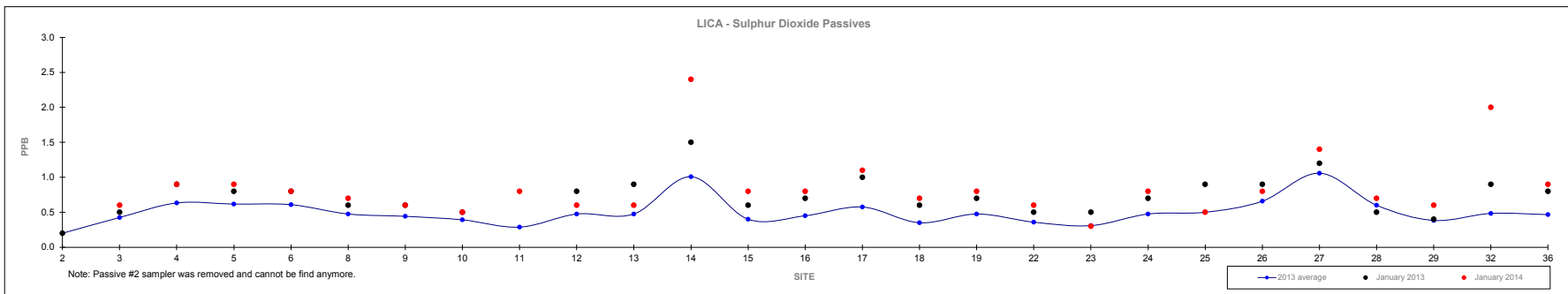


— LICA STDWDIR DEG

Non-Continuous Monitoring

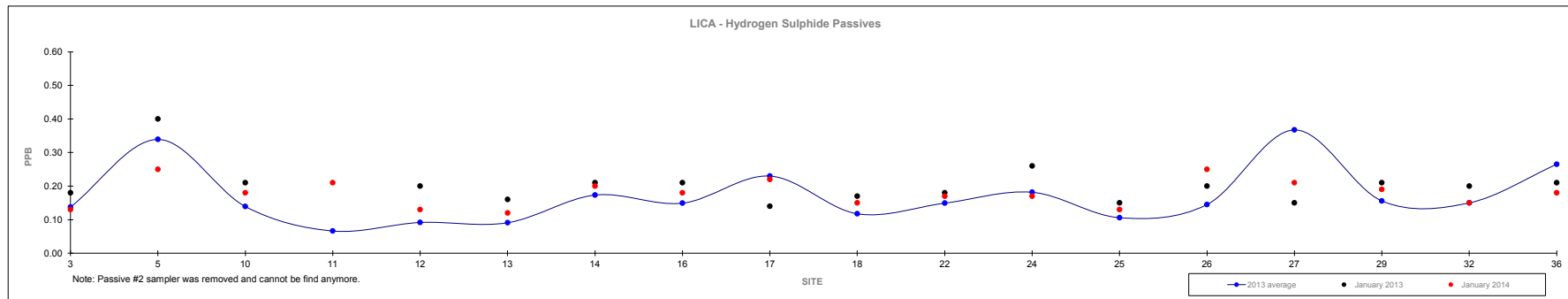
Passive Summary Results for January 2014 Lakeland Industry & Community Association

	Sulphur Dioxide ppb																																January 2014	
	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	Site					
Mean	0.2	0.4	0.6	0.6	0.6	0.5	0.4	0.4	0.3	0.5	0.5	1.0	0.4	0.5	0.6	0.4	0.5	0.4	0.3	0.5	0.5	0.7	1.1	0.6	0.4	0.5	0.5	0.90	-					
Minimum	0.2	0.2	0.3	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.5	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.4	0.3	0.4	0.2	0.2	0.2	0.3	#23					
Maximum	0.2	0.8	1.0	0.9	1.0	0.8	0.8	0.6	0.4	1.0	0.9	1.7	0.6	0.8	1.0	0.6	1.3	0.6	0.5	0.8	1.0	1.3	1.8	0.9	0.7	0.9	0.8	2.4	#14					



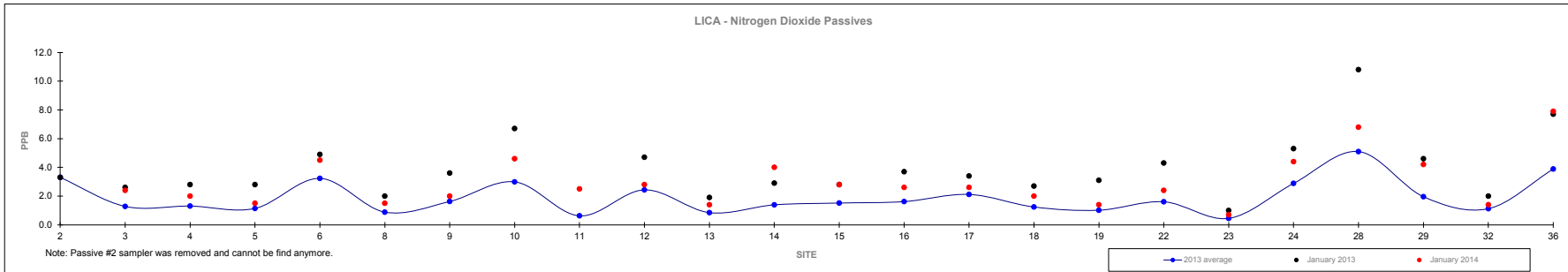
Passive Summary Results for January 2014 Lakeland Industry & Community Association

	Hydrogen Sulphide ppb																	January 2014		
	3	5	10	11	12	13	14	2013 16	17	18	22	24	25	26	27	29	32	36	Reading	Site
Mean	0.14	0.34	0.14	0.07	0.09	0.09	0.17	0.15	0.23	0.12	0.15	0.18	0.11	0.15	0.37	0.16	0.15	0.27	0.18	-
Minimum	0.05	0.07	0.06	0.04	0.02	0.02	0.05	0.07	0.11	0.04	0.04	0.06	0.03	0.06	0.04	0.05	0.05	0.07	0.12	#13
Maximum	0.24	0.97	0.31	0.11	0.20	0.16	0.30	0.29	0.44	0.17	0.32	0.32	0.16	0.21	1.23	0.33	0.26	1.36	0.25	various sites



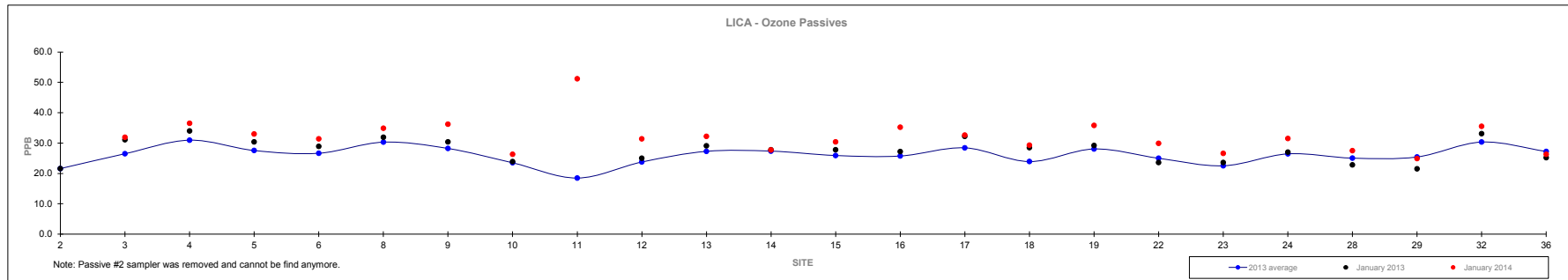
Passive Summary Results for January 2014 Lakeland Industry & Community Association

	Nitrogen Dioxide ppb																												January 2014	
	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	3.3	1.3	1.3	1.1	3.2	0.9	1.6	3.0	0.6	2.4	0.9	1.4	1.5	1.6	2.1	1.2	1.0	1.6	0.5	2.9	5.1	2.0	1.1	3.9	3.0	-				
Minimum	3.3	0.2	0.2	0.1	1.5	0.1	0.3	0.8	0.1	0.6	0.1	0.3	0.2	0.4	0.8	0.2	0.1	0.4	0.1	0.9	1.2	0.5	0.2	1.4	0.7	#23				
Maximum	3.3	3.7	2.8	3.4	7.1	2.0	4.0	6.7	1.5	4.7	1.9	3.4	4.9	3.9	4.9	2.8	3.1	4.3	1.0	5.7	11.6	4.7	2.6	8.1	7.9	#36				



Passive Summary Results for January 2014 Lakeland Industry & Community Association

	Ozone ppb																												January 2014	
	2	3	4	5	6	8	9	10	11	12	2013 13	14	15	16	17	18	19	22	23	24	28	29	32	36	Reading	Site				
Mean	21.6	26.5	31.0	27.6	26.7	30.3	28.2	23.5	18.5	23.8	27.3	27.4	25.9	25.7	28.4	23.9	28.1	25.0	22.5	26.5	25.0	25.4	30.3	27.2	32.1	-				
Minimum	21.6	15.9	16.7	16.3	13.2	18.9	17.6	12.1	11.1	14.8	18.1	16.8	14.7	14.1	14.4	12.0	17.6	13.5	12.5	15.5	14.8	15.4	20.7	15.5	24.9	#29				
Maximum	21.6	37.0	48.1	47.1	43.3	45.1	43.3	36.3	31.5	34.0	38.6	37.5	39.3	40.2	44.1	36.2	41.8	36.1	35.1	38.7	36.3	38.9	40.5	39.4	51.2	#11				



Calibration Reports

Sulphur Dioxide

SO2 Calibration Report

Station Information

Calibration Date	January 10, 2014	Previous Calibration	December 12, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake South		
Start Time (MST)	8:53	End Time (MST)	13:06
Reason:	Monthly calibration		
Barometric Pressure	27.85 in HG	Station Temperature	22 Deg C
Cal Gas	49.7 ppm	Gas Cyl. #	BAL3165
DAS Output Voltage	0-10 Volts	Cal Gas Expiry date	December 29, 2016
		Chart Rec. Output	N/A Volts

Equipment Information

Analyzer Make / Model:	Thermo 43i	S/N :	806528242	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	A3485K		
Chart Recorder Make / Model:	N/A	S/N :	N/A		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	0-500 ppb						
Sample Flow / Box Temp	446 ccm	28.2 Deg C	446 ccm	28.2 Deg C			
HVPS / Lamp Setting	-631.6	729	-631.6	725			
PMT / RxCell Temp	OK Deg C	45 Deg C	OK Deg C	45 Deg C			
Converter / IZS Temp	N/A Deg C	45 Deg C	N/A Deg C	45.0 Deg C			
Offset / Slope	7.7	1.087	7.6	1.066			

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	N/A
4995	0	0	0	N/A
4966	35.2	350	354	0.9881
4966	35.2	350	350	1.0000
4981	19.1	190	190	1.0000
4981	9.1	91	88	1.0299
4995	0	0	0	N/A
Sum of Least Squares				1.0009
New Correction Factor				1.0000

IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0		-1.0
Auto Span	368.0		372.0
Sample Lines Connected			Yes

Percent Change

Previous Month's Calibration Correction Factor:	0.9949
Current Correction Factor Before Span Adjust:	0.9881
Percent Change:	0.7%

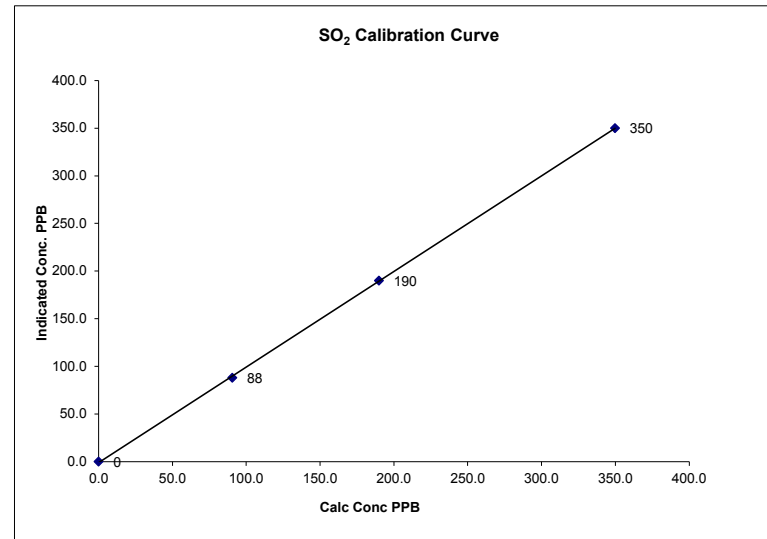
Notes: **N/A : Not applicable**

Calibration Performed by: Tom Bourque/Kevin Hope

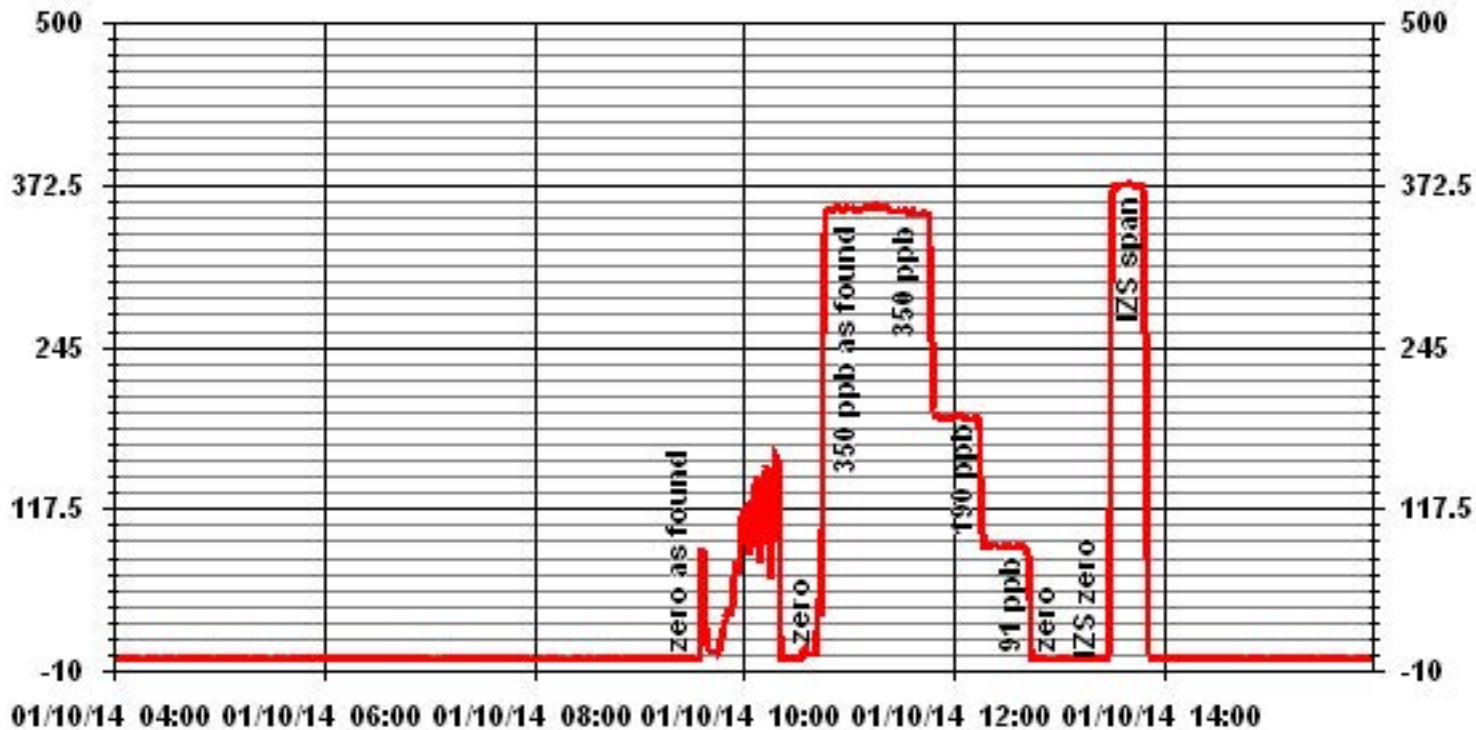
SO2 Calibration Curve

Calibration Date	January 10, 2014
Company	Lakeland Industry & Community Association
Plant / Location	Cold Lake South
Start Time (MST)	8:53
End Time (MST)	13:06

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		0.999927
91	88	1.0299		1.003251
190	190	1.0000		-1.084135
350	350	1.0000		



Notes:



Total Reduced Sulphur

TRS Calibration Report

Station Information

Calibration Date	January 10, 2014	Previous Calibration	December 13, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake South		
Start Time (MST)	8:53	End Time (MST)	13:06
Reason:	Monthly calibration		
Barometric Pressure	27.85 in HG	Station Temperature	22 Deg C
Cal Gas	10.1 ppm	Gas Cyl. #	BLM005049
DAS Output Voltage	0-10 Volts	Cal Gas Expiry date	December 25, 2015
		Chart Rec. Output	N/A Volts

Equipment Information

Analyzer Make / Model:	Thermo 450i	S/N :	812728560	Method:	Fluorescent
Converter Make / Model:	CND 101	S/N :	501		
Calibrator Make / Model:	Enviroics 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	A3485K		
Chart Recorder Make / Model:	N/A	S/N:	S/N:	N/A	N/A
Flow Meter:	Enviroics 6100	S/N :	4760		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0-100		
Sample Flow / Box Temp	498 ccm 31.2 Deg C	498 ccm 31.2 Deg C	
HVPS / Lamp Setting	-650.1 744	-650.1 744	
PMT / RxCell Temp	OK 45 Deg C	OK 45 Deg C	
Converter / IZS Temp	810 45 Deg C	810 45.0 Deg C	
Offset / Slope	12.5 0.898	14.2 1.038	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5993	0	0	0	N/A
5993	0	0	0	N/A
5992	38.89	65	64	1.0176
5992	38.9	65	67	0.9721
5992	22.9	39	38	1.0027
5992	10.0	17	17	1.0000
5993	0.0	0	0	N/A
Sum of Least Squares				0.9802
New Correction Factor				0.9721

IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0		0.1
Auto Span	35.7		43.9
Sample Lines Connected			Yes

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0176
Percent Change:	-1.7%

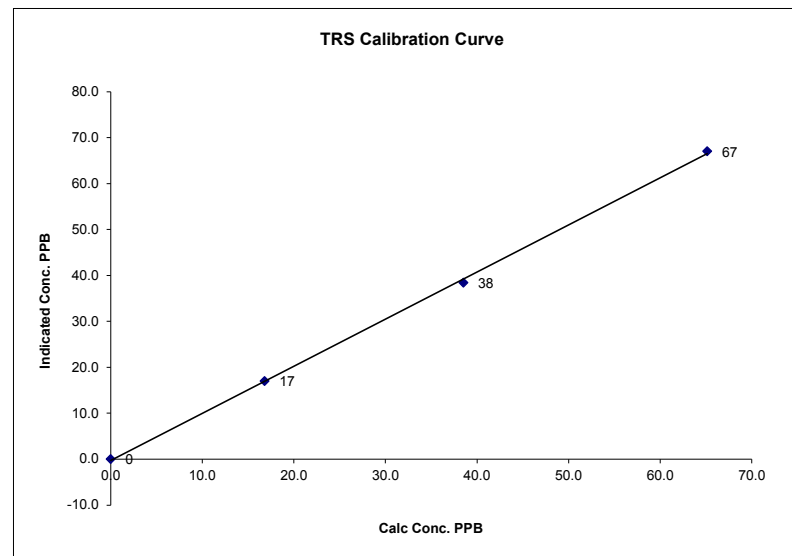
Notes: **N/A : Not applicable**

Calibration Performed by: Tom Bourque

TRS Calibration Curve

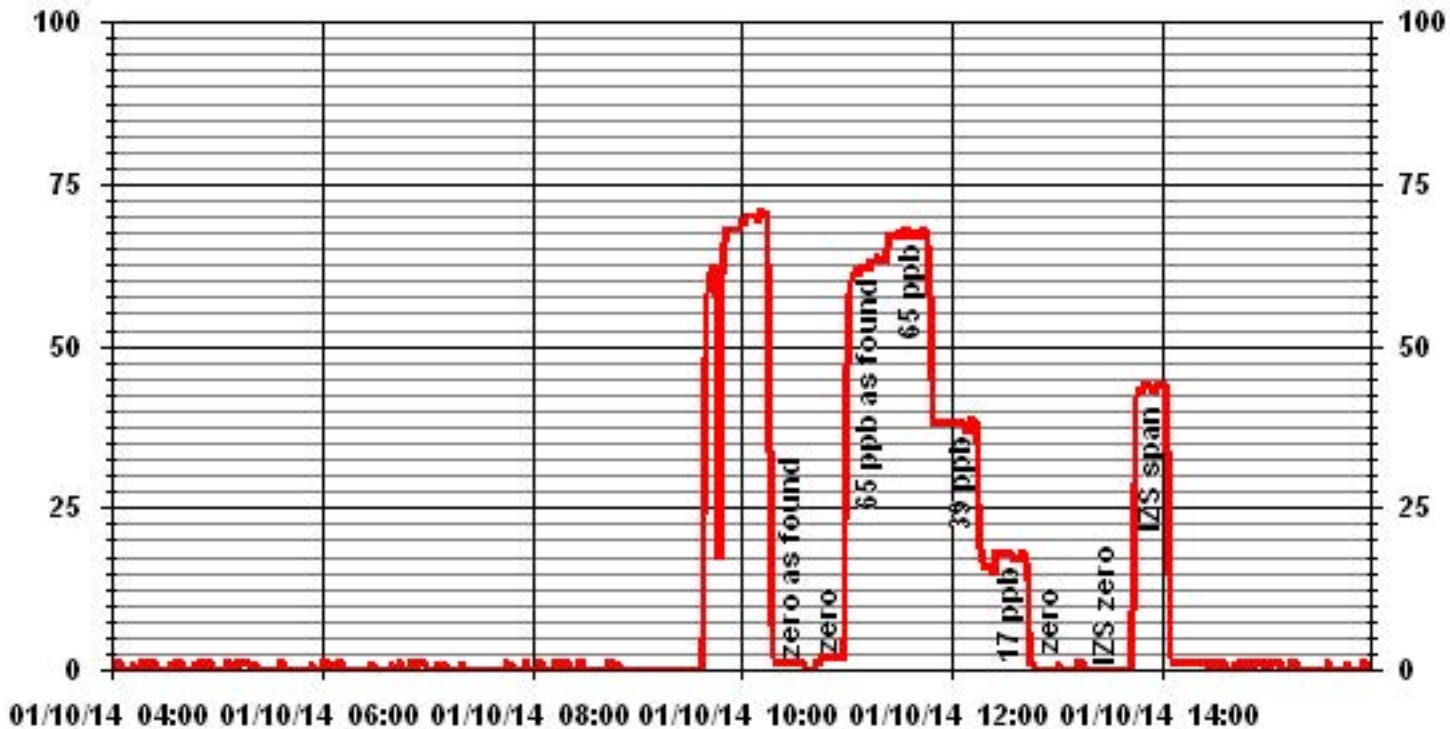
Calibration Date	January 10, 2014
Company	Lakeland Industry & Community Association
Plant / Location	Cold Lake South
Start Time (MST)	8:53
End Time (MST)	13:06

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
0	0	N/A	Slope (0.85 to 1.15)	0.999614
17	17	1.0000	Intercept (± 3% F.S.)	1.026099
39	38	1.0027		-0.296721
65	67	0.9721		



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	January 17, 2014	Previous Calibration	2013/12/013
Company:	Lakeland Industry & Community Association		
Plant / Location:	Cold Lake South		
Start Time (MST)	8:26	End Time (MST)	14:03
Reason:	routine monthly		
Barometric Pressure:	27.76 in HG	Station Temperature:	22 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 609 PPM	C3H8	201 PPM
	TOTAL CH4 1161.8 PPM	Gas Cyl. #	LL36542
		Cal Gas Expiry Date:	November 7, 2021
DAS make & Model:	ESC 8832	S/N :	A3485K
Chart Recorder:	N/A	S/N:	N/A
Output Voltage Range:	0-10 VDC	Chart Speed:	N/A mm/hr

Analyzer Information

Make / Model	Thermo 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	6.9 psi	6.9 psi
Hydrogen Pressure	20 psi	20 psi
Air Pressure	34 psi	34 psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
4996	0.0	0.0	-0.2	0.0000
4996	0.0	0.0	0.0	0.0000
2000	65.0	36.6	35.9	1.0186
2000	65.0	36.6	36.4	1.0046
2000	33.0	18.9	18.4	1.0249
2000	15.0	8.6	8.3	1.0420
2000	0.0	0.0	-0.2	0.0000
New Correction Factor:				1.0046

Percent Change

Previous Calibration Correction Factor:	0.9921
Current Correction Factor Before Span Adjust:	1.0186
Percent Change:	-2.6%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	33.7	32.0
Sample Lines Connected		Yes

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

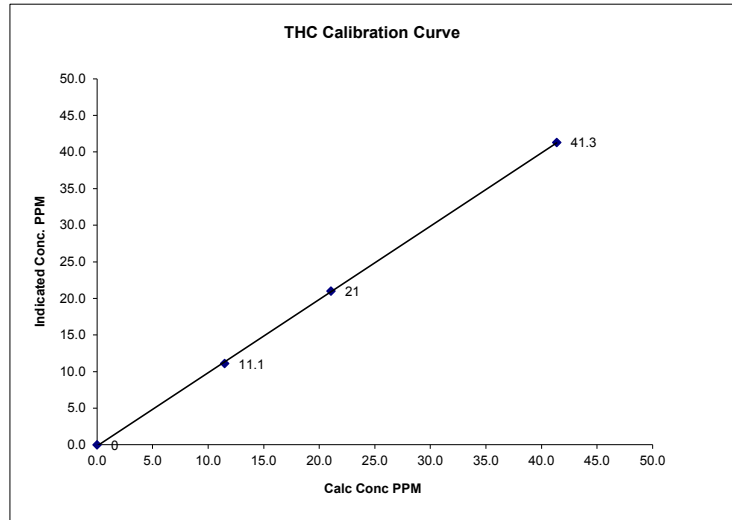
Notes:
 installed new span and H2 tanks

Calibration Performed by: Tom Bourque/Kevin Hope

THC Calibration Curve

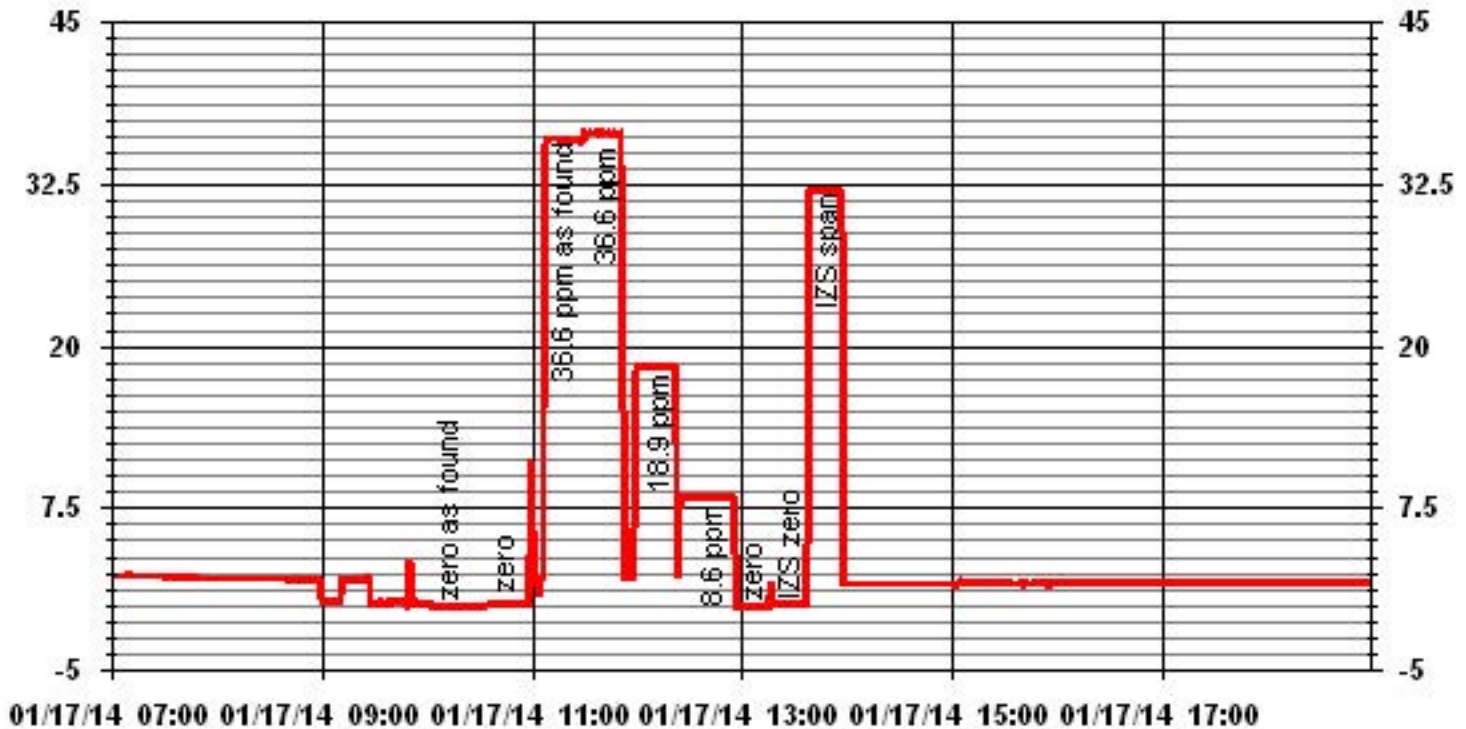
Calibration Date	January 17, 2014
Company	Lakeland Industry & Community Association
Plant / Location	Cold Lake South
Start Time (MST)	8:26
End Time (MST)	14:03

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient (≥ 0.995)	Slope (0.85 to 1.15)	Intercept (± 3% F.S.)
0.0	0.0	0.0000	0.999844	0.997041	-0.19620
8.6	8.3	1.0420			
18.9	18.4	1.0249			
36.6	36.4	1.0046			



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOM 1405F Audit

<u>Station</u>		<u>Audit Transfer Standard</u>	
Date:	January 10, 2014	Make/Model:	Streamline FTS
Station Name:	LICA 1	Serial Number:	LO 091099, HI 091001
Location:	Cold Lake South	Cell s/n:	N/A
Operator:	LICA	Thermometer s/n:	Station Temp. Sensor
<u>Sampler</u>		<u>Set-up and current Sampler readings</u>	
Make/Model	Thermo TEOM 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 (%)	21.0%
Firmware Ver.	1.52	K _o Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-4.7
		Press (ATM)	0.888

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	0.012	Warnings	pump vac too high
Pump Vacuum <0.40atm	0.44	Pump Gauge (inHg)	N/A
Temperature/Pressure		D °C	
Measured Temp (± 2 °C)	-5.8		1.1
Measured Press (± 0.01atm)	0.921	DATM	-0.033
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	3.16%
Measured Main Flow (l/min)	2.98	Flow Adjusted to Measured?	no
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	no
Measured Bypass Flow (l/min)	16.86	Flow Adjusted to Measured?	no
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	yes - pass	Flow Control=Active	
Aux (< 0.6 l/min)	yes - pass	Report Conditions=Actual	
K_o Factor			
Measured	N/A		
K _o Difference (± 2.5%)	N/A		

Start Time: 14:39 **Finish Time:** 15:50

Sample Inlet Cleaned: yes **New Filters Installed:** yes
New Filter Loading %: 22.0%

Comments: Initial pressure failed, adjusted to match, both reference and 1405F read .921

Auditor/s: Tom Bourque/Kevin Hope

TEOM 1405F Audit

<u>Station</u>		<u>Audit Transfer Standard</u>	
Date:	January 17, 2014	Make/Model:	Dwyer 475 Mark III
Station Name:	LICA 1	Serial Number:	LO 091099, HI 091001
Location:	Cold Lake South	Cell s/n:	N/A
Operator:	LICA	Thermometer s/n:	Station Temp. Sensor
<u>Sampler</u>		<u>Set-up and current Sampler readings</u>	
Make/Model	Thermo TEOM Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	AMU 1775	F-Aux Set Pt (l/min)	na
Unit s/n	1405A201620804	Filter Load (%)	na
Firmware Ver.	1.52	K _o Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	na
		Press (ATM)	na

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	na	Warnings	pump vac too high
Pump Vacuum <0.40atm	0.44	Pump Gauge (inHg)	N/A
Temperature/Pressure		D °C	
Measured Temp (± 2 °C)	-5.8	#VALUE!	
Measured Press (± 0.01atm)	0.921	DATM #VALUE!	
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	3.16%
Measured Main Flow (l/min)	2.98	Flow Adjusted to Measured?	no
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	no
Measured Bypass Flow (l/min)	16.86	Flow Adjusted to Measured?	no
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	yes - pass	Flow Control=Active	
Aux (< 0.6 l/min)	yes - pass	Report Conditions=Actual	
K_o Factor			
Measured	N/A		
K _o Difference (± 2.5%)	N/A		

Start Time: 13:18 **Finish Time:** 13:48

Sample Inlet Cleaned: no **New Filters Installed:** no
Comments: these are the flows prior to pump removal **New Filter Loading %:** 22.0%

Auditor/s: Tom Bourque/Kevin Hope

TEOM 1405F Audit

<u>Station</u>		<u>Audit Transfer Standard</u>	
Date:	January 17, 2014	Make/Model:	Dwyer 475 Mark III
Station Name:	LICA 1	Serial Number:	LO 091099, HI 091001
Location:	Cold Lake South	Cell s/n:	N/A
Operator:	LICA	Thermometer s/n:	Station Temp. Sensor
<u>Sampler</u>		<u>Set-up and current Sampler readings</u>	
Make/Model	Thermo TEOM Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	AMU 1775	F-Aux Set Pt (l/min)	na
Unit s/n	1405A201620804	Filter Load (%)	na
Firmware Ver.	1.52	K _o Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	na
		Press (ATM)	na

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	na	Warnings	still pump vac too high
Pump Vacuum <0.40atm	0.44	Pump Gauge (inHg)	N/A
Temperature/Pressure		D °C	
Measured Temp (± 2 °C)	-5.8		#VALUE!
Measured Press (± 0.01atm)	0.921	DATM	#VALUE!
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	3.16%
Measured Main Flow (l/min)	3.01	Flow Adjusted to Measured?	no
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	no
Measured Bypass Flow (l/min)	16.66	Flow Adjusted to Measured?	no
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	yes - pass	Flow Control=Active	
Aux (< 0.6 l/min)	yes - pass	Report Conditions=Actual	
K_o Factor			
Measured	N/A		
K _o Difference (± 2.5%)	N/A		

Start Time: 13:18 **Finish Time:** 13:48

Sample Inlet Cleaned: no **New Filters Installed:** no
New Filter Loading %: 22.0%

Comments: these are the flows with the new pump, still have alarm, rebuilt pump not strong enough

Auditor/s: Tom Bourque/Kevin Hope

Nitrogen Dioxide

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	January 17, 2014	Previous Calibration	December 4, 2012
Company	LICA	Plant/Location	Cold Lake South
Start Time (MST)	8:25	End Time (MST)	14:48
Reason:	Monthly calibration		
Barometric Pressure	0.938 atm	Station Temperature	22 Deg C
Cal Gas Concentration	NOx 49.0 ppm	NO	48.9 ppm
Cal Gas Cylinder #	8:25		
DAS Output Voltage	0-10 Volts	Chart Rec. Output	N/A Volts

Equipment Information

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

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range							
Sample Flow/Conv. Temp	737 ccm	317 Deg C		722 ccm	318 Deg C		
Ozone Flow / Vacuum	OK ccm	175.0 "Hg-A		OK ccm	177 "Hg-A		
HVPS / A ZERO	-821 Volts	NA MV		-821 Volts	NA MV		
Rx/ Temp / PMT Temp	49.6 Deg C	-2.5 Deg C		49.6 Deg C	-2.5 Deg C		
Box Temp / IZS Temp	30.8 Deg C	OK Deg C		28.3 Deg C	OK Deg C		
Offset	6.9 NOx	5.7 NO		12.2 NOx	8.6 NO		
Slope	1.002 NOx	0.909 NO		1.003 NOx	1.455 NO		
NO2 COEF / Conv Efficiency	0.998 NO2	NA		0.977 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
5000	0.0	0	0	0	0	2	1	1	0	0
5000	0.0	0	0	0	0	0	0	0	0	0
4996	37.9	0	369	368	0	326	324	1	1.1380	1.1392
4996	37.9	0	369	368	0	370	369	1	1.0020	0.9999
4996	17.9	0	175	175	0	181	179	2	0.9795	0.9830
4995	8.2	0	80	80	0	84	83	1	0.9794	0.9774
5000	0.0	0	0	0	0	8	7	1	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		
4995	37.9	0	369	368	0	369	368	1	0	0.00%
4995	37.9	300	369	0.0	314	366	55	311	1.0129	99.04%
4995	37.9	300	369	0.0	315	369	54	315	1.0032	100.00%
4995	37.9	175	369	0.0	188	373	181	192	0.9843	102.14%
4995	37.9	75	369	0.0	77	373	292	81	0.9639	105.11%

Linearity	Sum of Least Squares	NOx= 0.990	NO= 0.992	NO2= 0.993
OK?	Yes No	Correction Factors:	NOx= 1.0020	NO= 0.9999
			Average Converter Efficiency= 102.41%	

IZS Calibration Data

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	384 NOx	382 NO2		417 NOx	416 NO2		
	Sample Lines Connected:			YES			

Percent Change

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	1.000	1.000	1.009
Current Correction Factor Before Span Adjust	1.138	1.139	1.013
Percent Change	-12.1%	-12.2%	-0.4%

Notes : **Not Applicable**

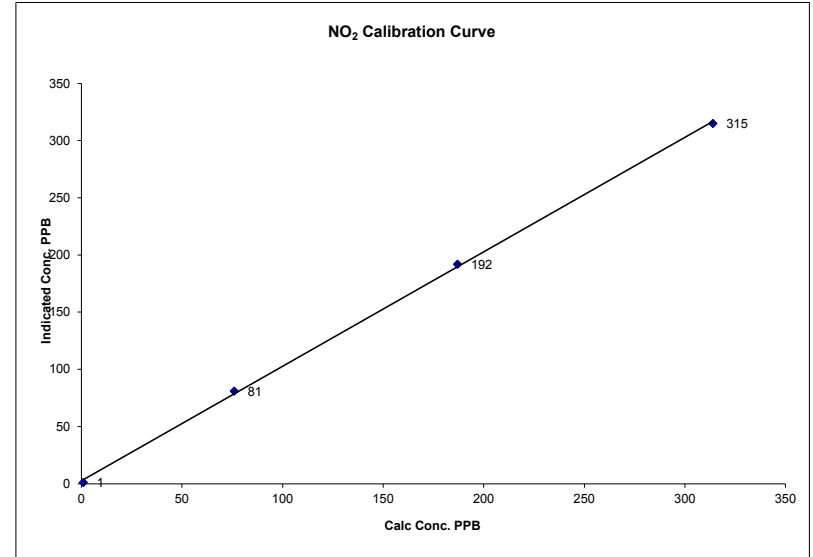
% change attributed to 2 different calibrators used in last 2 calibrations, sample flow also dropped from .75 to .72

Calibration Performed by: Tom Bourque/Kevin Hope

NO2 Calibration Curve

Calibration Date	January 17, 2014
Company	LICA
Plant / Location	Cold Lake South
Start Time (MST)	8:25
End Time (MST)	14:48

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) Intercept	0.999639
1	1	0.0000		(0.85 to 1.15)	1.000855
76	81	0.9397		(± 3% F.S.)	2.59647
187	192	0.9740			
314	315	0.9968			

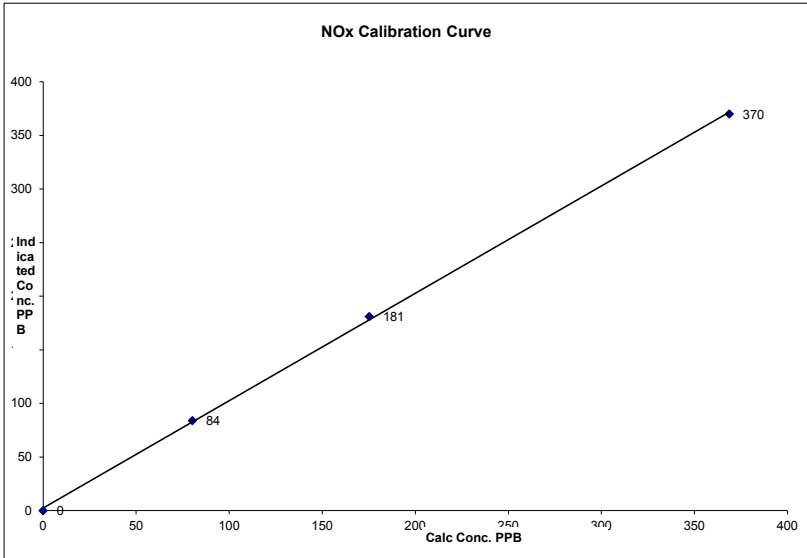


Notes:

NOx Calibration Curve

Calibration Date	January 17, 2014	
Company	LICA	
Plant / Location	Cold Lake South	
Start Time (MST)	8:25	End Time (MST) 14:48

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999749
0	0	0.0000	Slope (0.85 to 1.15)	1.001327
80	84	0.9794	Intercept (± 3% F.S.)	2.45352
175	181	0.9795		
369	370	1.0020		

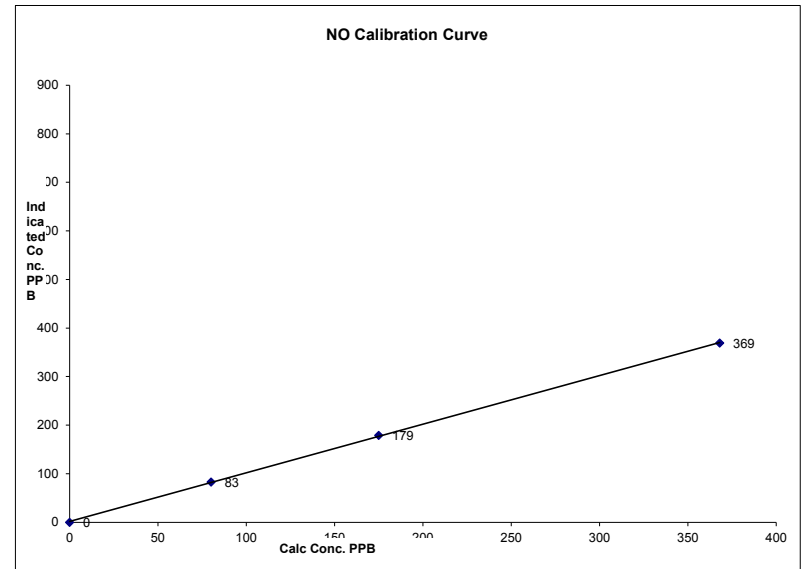


Notes:

NO Calibration Curve

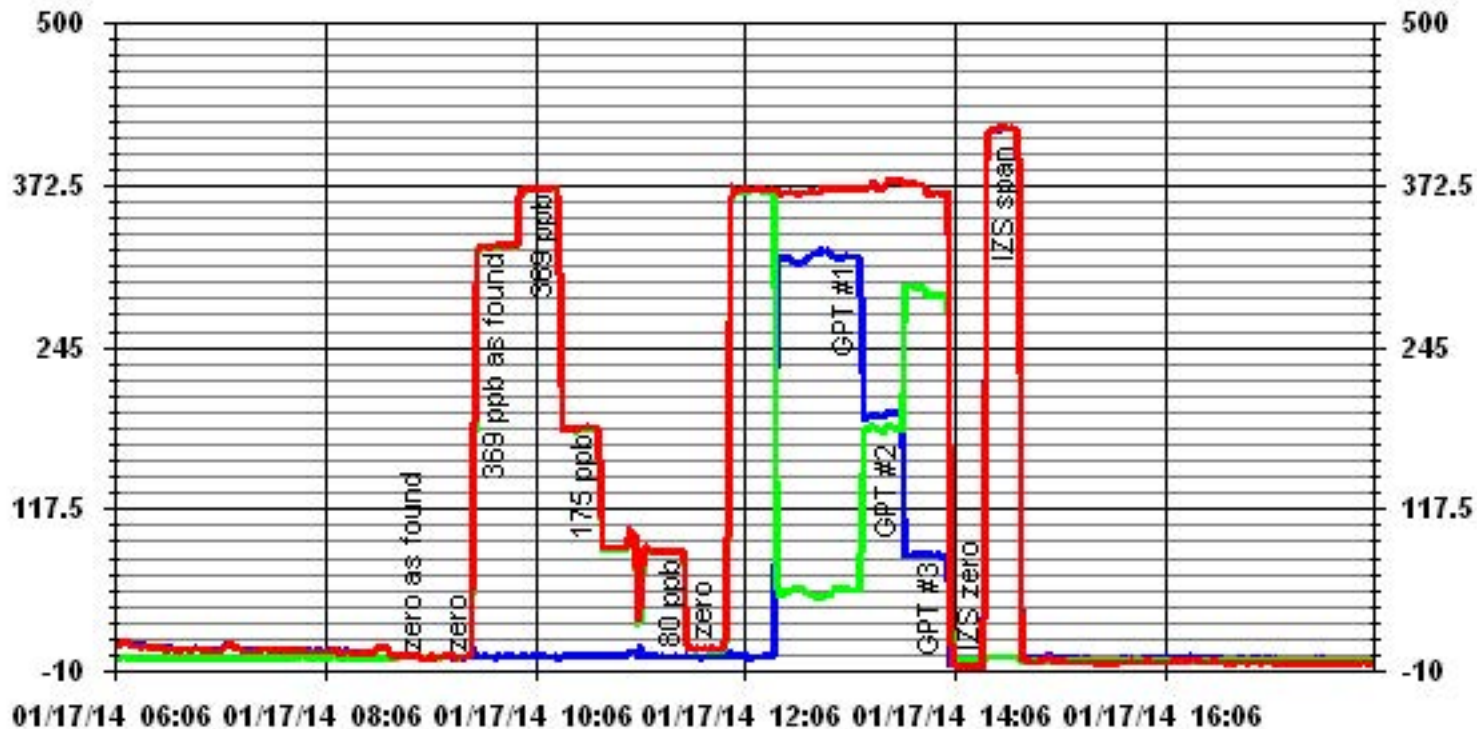
Calibration Date	January 17, 2014	
Company	LICA	
Plant / Location	Cold Lake South	
Start Time (MST)	8:25	End Time (MST) 14:48

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999871
0	0	0.0000	Slope (0.85 to 1.15)	1.001054
80	83	0.9774	Intercept (± 3% F.S.)	1.81507
175	179	0.9830		
368	369	0.9999		



Notes:

01 Minute Averages



— LICA

NOX_

PPB

— LICA

Page 113 of 131

NO_

PPB

— LICA

JOB #: 2833-14-01-01-C

NO2_

PPB

Ozone

O₃ Calibration Report

Station Information

Calibration Date	December 17, 2014	Previous Calibration	December 13, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	13:18	End Time (MST)	18:21
Reason:	Monthly Calibration		
Barometric Pressure	27.73 inHg	Station Temperature	23 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	700419951	Method:	Photometric
Calibrator Make / Model:	Envionics 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	712 LPM	752 LPM		712 LPM	752 LPM		
O ₃ Set Level	696 mmHg			696 mmHg			
Bench Lamp	53.5 Deg C			53.5 Deg C			
O ₃ Lamp / Box Temp	67.5 Deg			67.5 Deg C	67.5 Deg C		
Offset / Slope	-0.2	1.024		-0.2	1.001		

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5038	0	0	0	NA
5038	0	0	0	NA
5038	300	314	320	0.9813
5038	300	314	315	0.9968
5038	170	187	182	1.0275
5038	75	76	77	0.9870
5038	0	0	0	NA
Sum of Least Squares				1.0039
New Correction Factor				0.9968

IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0	0.0	
Auto Span	274	272	
Sample Lines Connected		YES	
Previous Calibration Correction Factor:		1.0056	
Current Correctio Factor Before Span Adjust:		0.9813	
Percent Change:		2.5%	

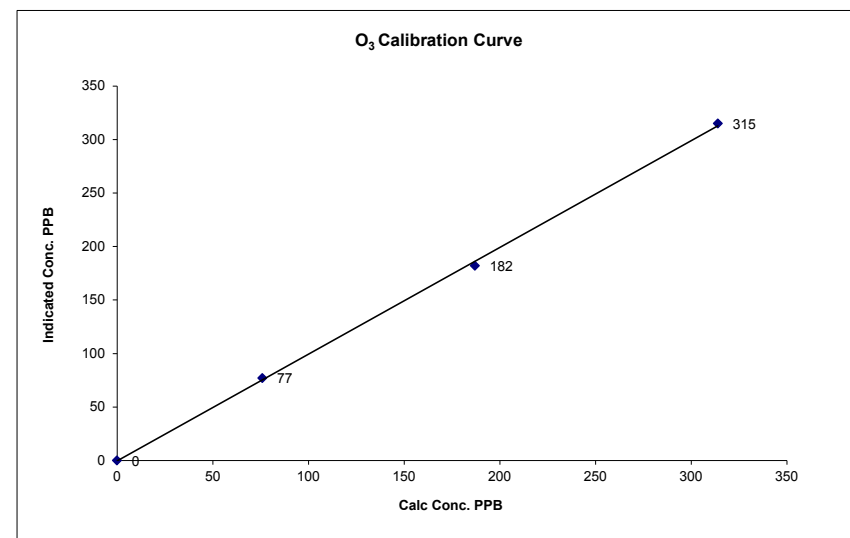
Note: NA : Not Applicable

Calibration Performed by: Tom Bourque/Kevin Hope

O₃ Calibration Curve

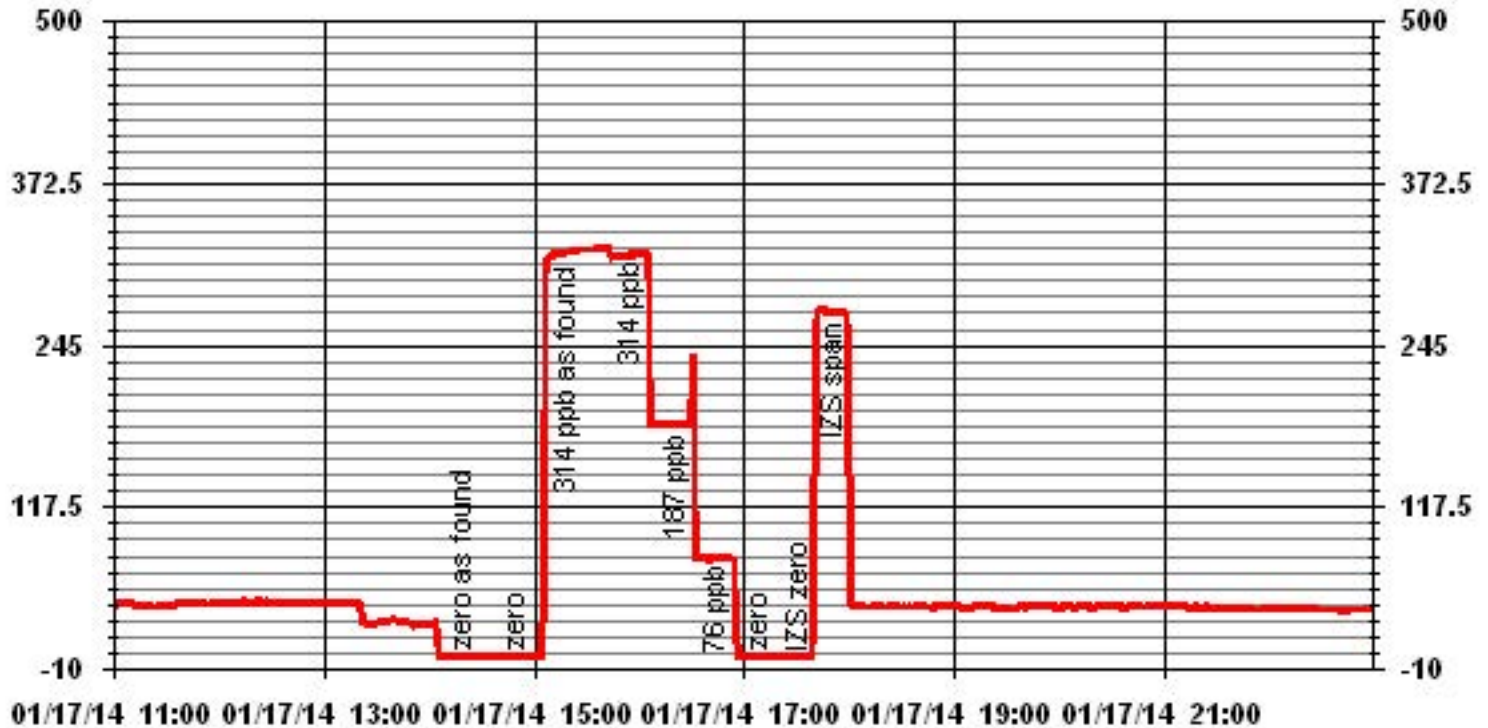
Calibration Date	December 17, 2014		
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	13:18	End Time (MST)	18:21

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	Slope (0.85 to 1.15)	Intercept (± 3% F.S.)
0	0	n/a	0.999561	0.997999	-0.461416
76	77	0.9870			
187	182	1.0275			
314	315	0.9968			



Notes:

01 Minute Averages



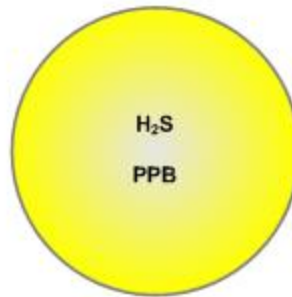
Passive Bubble Maps

Lakeland Industry & Community Association H₂S Passive Bubble Map

JANUARY 2014

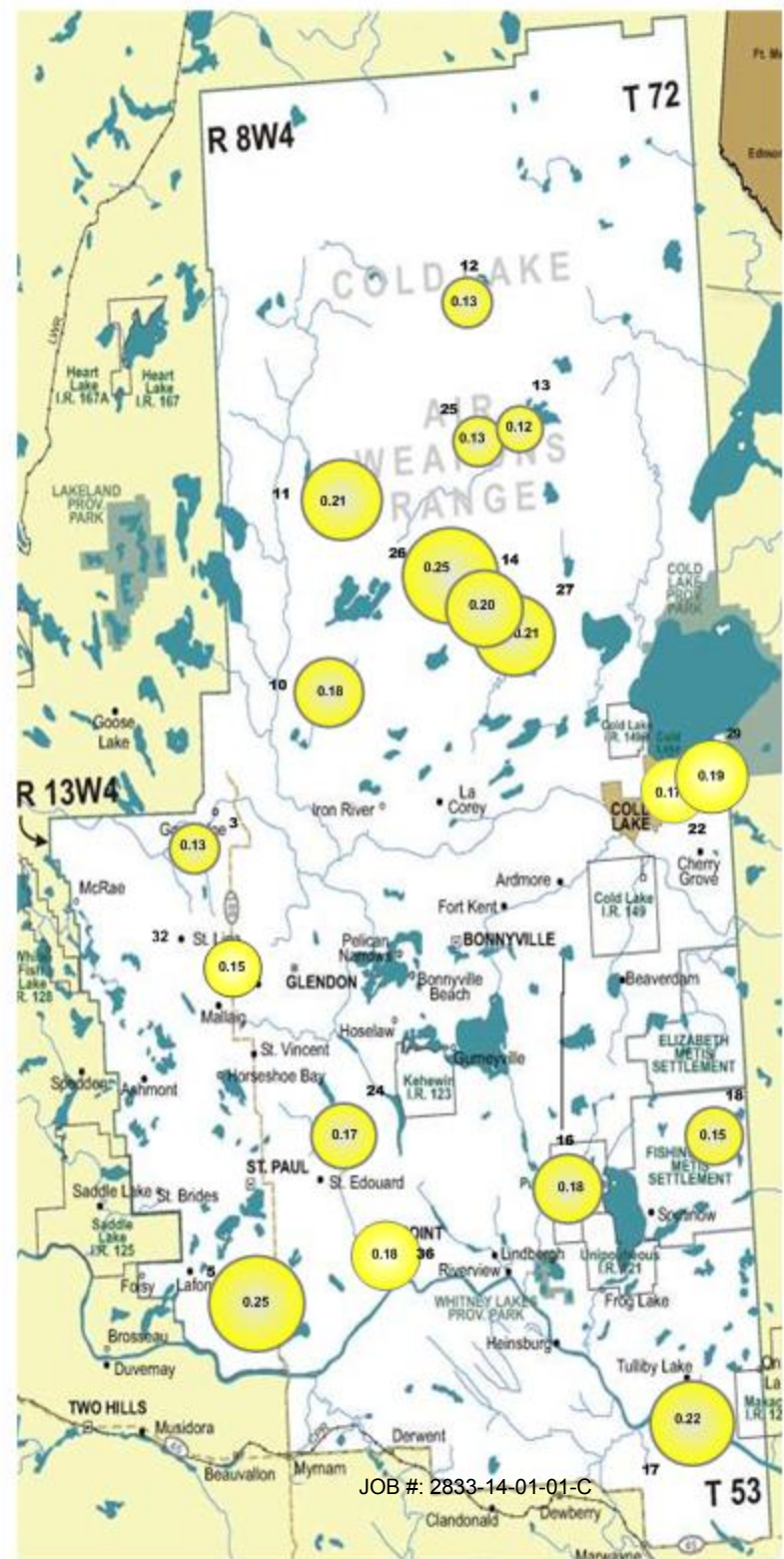
PASSIVE STATIONS

		DUPLICATE
3 – Therien	0.13 PPB	NA
5 – Lake Eliza	0.25 PPB	NA
10 – La Corey	0.18 PPB	NA
11 – Wolf Lake	0.21 PPB	NA
12 – Foster Creek	0.13 PPB	NA
13 – Primrose	0.12 PPB	NA
14 – Maskwa	0.20 PPB	NA
16 – Frog Lake	0.18 PPB	NA
17 – Clear Range	0.22 PPB	NA
18 – Fishing Lake	0.15 PPB	NA
22 – Cold Lake South	0.17 PPB	NA
24 – Fort George	0.17 PPB	NA
25 – Burnt Lake	0.13 PPB	NA
26 – Mahihkan	0.25 PPB	NA
27 – Mahkeses	0.20 PPB	0.21 PPB
29 – Cold Lake South 2	0.18 PPB	0.19 PPB
32 – St. Lina	0.25 PPB	NA
36 – Elk Point	0.18 PPB	NA



Summary

Minimum : 0.12 PPB –Primrose
Maximum: 0.25 PPB – various sites
Average: 0.18 PPB (Includes Duplicates)



Lakeland Industry & Community Association NO₂ Passive Bubble Map

January 2014

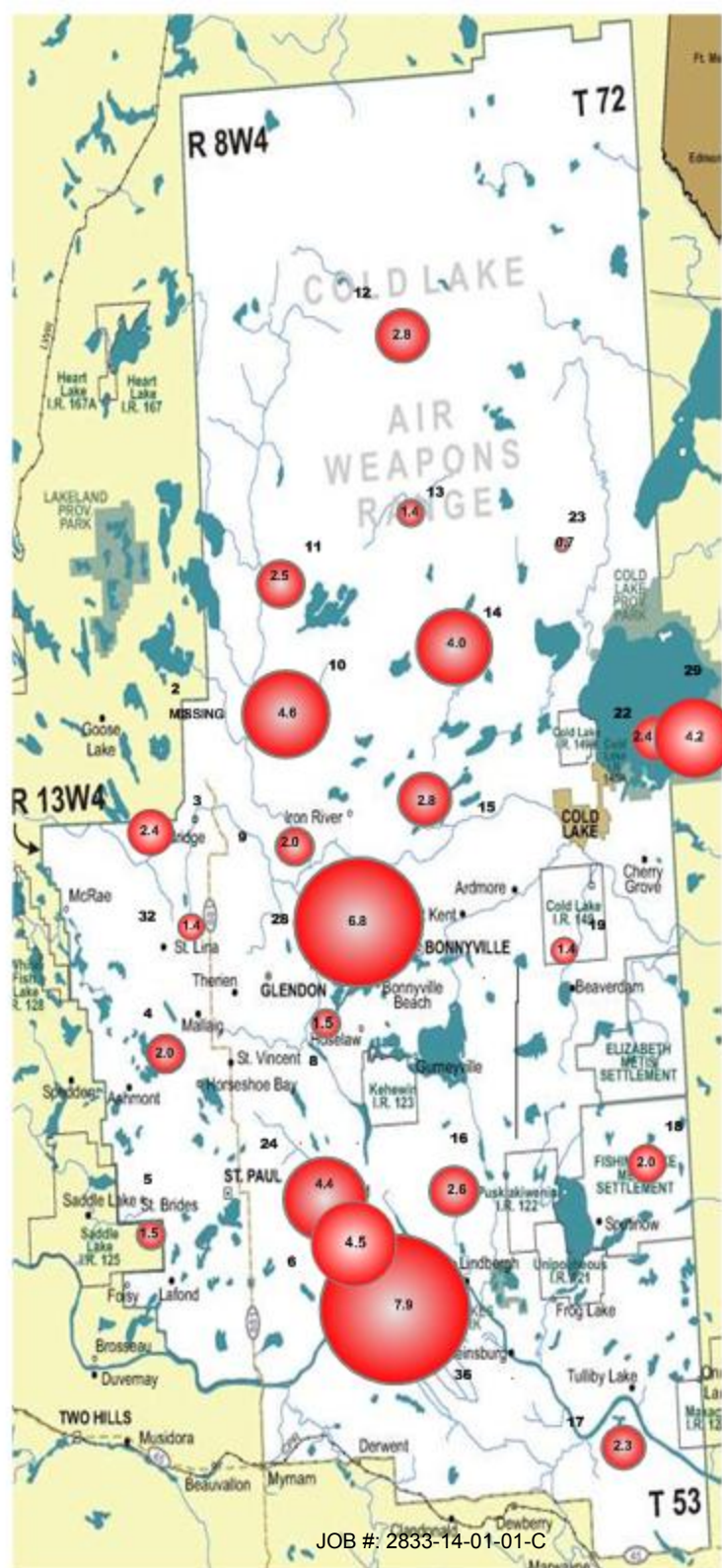
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	2.4 PPB	NA
4 – Flat Lake	1.8 PPB	2.1 PPB
5 – Lake Eliza	1.5 PPB	1.4 PPB
6 – Telegraph Creek	4.5 PPB	NA
8 – Muriel-Kehewin	1.5 PPB	NA
9 – Dupre	2.0 PPB	NA
10 – La Corey	4.6 PPB	NA
11 – Wolf Lake	2.5 PPB	NA
12 – Foster Creek	2.8 PPB	NA
13 – Primrose	1.4 PPB	NA
14 – Maskwa	4.0 PPB	NA
15 – Ardmore	2.8 PPB	NA
16 – Frog Lake	2.6 PPB	NA
17 – Clear Range	2.3 PPB	NA
18 – Fishing Lake	2.0 PPB	NA
19 – Beaverdam	1.4 PPB	NA
22 – Cold Lake South	2.4 PPB	NA
23 – Medley-Martineau	0.7 PPB	NA
24 – Fort George	4.4 PPB	NA
28 – Town of Bonnyville	6.8 PPB	NA
29 – Cold Lake South 2	4.2 PPB	NA
32 – St. Lina	1.4 PPB	NA
36 – Elk Point	7.9 PPB	NA



Summary

Minimum : 0.7 PPB – Medley-Martineau
 Maximum: 7.9 PPB – Elk Point
 Average: 3.0 PPB *Includes Duplicates

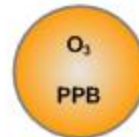


Lakeland Industry & Community Association O₃ Passive Bubble Map

JANUARY 2014

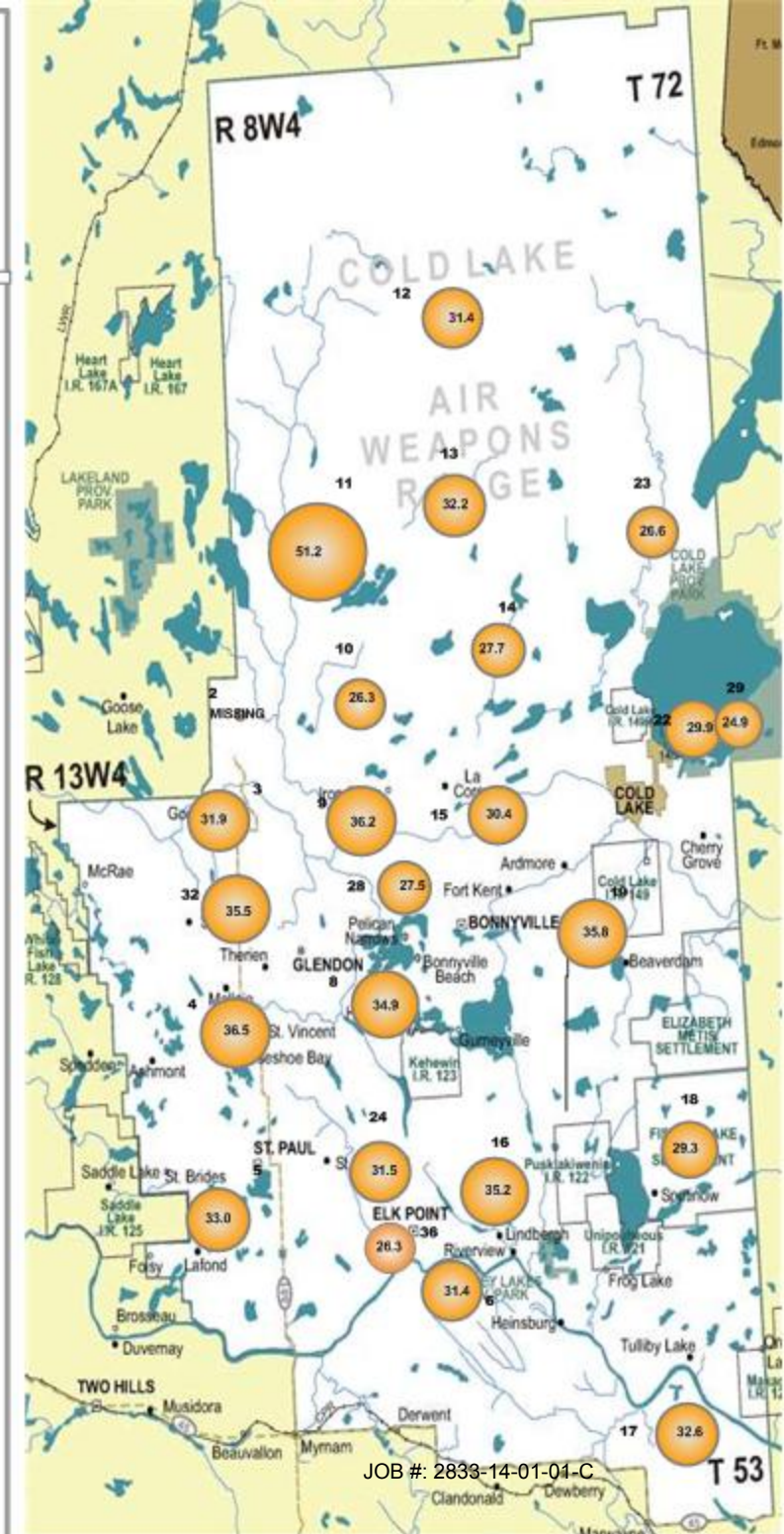
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	31.9 PPB	NA
4 – Flat Lake	36.5 PPB	NA
5 – Lake Eliza	33.0 PPB	NA
6 – Telegraph Creek	32.4 PPB	30.3 PPB
8 – Muriel-Kehewin	33.2 PPB	36.6 PPB
9 – Dupre	36.2 PPB	NA
10 – La Corey	26.3 PPB	NA
11 – Wolf Lake	51.2 PPB	NA
12 – Foster Creek	31.4 PPB	NA
13 – Primrose	32.2 PPB	NA
14 – Maskwa	27.7 PPB	NA
15 – Ardmore	30.4 PPB	NA
16 – Frog Lake	35.2 PPB	NA
17 – Clear Range	32.6 PPB	NA
18 – Fishing Lake	29.3 PPB	NA
19 – Beaverdam	35.8 PPB	NA
22 – Cold Lake South	29.9 PPB	NA
23 – Medley-Martineau	26.6 PPB	NA
24 – Fort George	31.5 PPB	NA
28 – Town of Bonnyville	27.5 PPB	NA
29 – Cold Lake South 2	24.9 PPB	NA
32 – St. Lina	35.5 PPB	NA
36 – Elk Point	26.3 PPB	NA



Summary

Minimum : 24.9 PPB – Cold Lake South 2
 Maximum: 51.2 PPB – Wolf Lake
 Average: 32.1 PPB *Includes Duplicates



Lakeland Industry & Community Association SO₂ Passive Bubble Map

JANUARY 2014

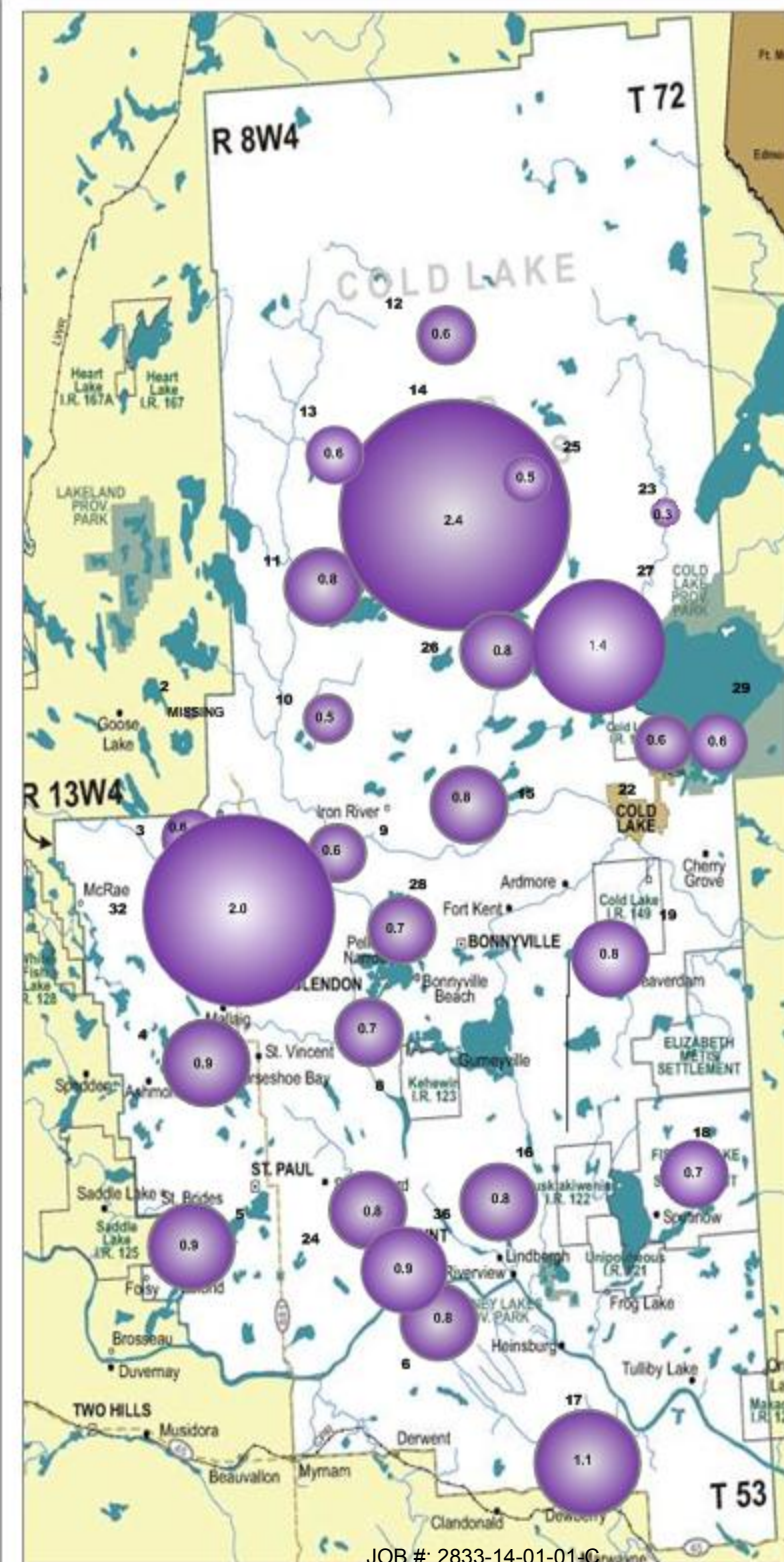
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	0.6 PPB	NA
4 – Flat Lake	0.9 PPB	NA
5 – Lake Eliza	0.9 PPB	NA
6 – Telegraph Creek	0.8 PPB	NA
8 – Muriel-Kehewin	0.7 PPB	NA
9 – Dupre	0.6 PPB	NA
10 – La Corey	0.5 PPB	NA
11 – Wolf Lake	0.8 PPB	NA
12 – Foster Creek	0.6 PPB	NA
13 – Primrose	0.6 PPB	NA
14 – Maskwa	2.4 PPB	NA
15 – Ardmore	0.8 PPB	NA
16 – Frog Lake	0.8 PPB	NA
17 – Clear Range	1.1 PPB	NA
18 – Fishing Lake	0.7 PPB	NA
19 – Beaverdam	0.8 PPB	NA
22 – Cold Lake South	0.5 PPB	0.6 PPB
23 – Medley-Martineau	0.3 PPB	NA
24 – Fort George	0.8 PPB	0.7 PPB
25 – Burnt Lake	0.5 PPB	NA
26 – Mahikan	0.8 PPB	NA
27 – Mahkeses	1.4 PPB	NA
28 – Town of Bonnyville	0.7 PPB	NA
29 – Cold Lake South 2	0.6 PPB	NA
32 – St. Lina	2.0 PPB	NA
36 – Elk Point	0.9 PPB	NA



Summary

Minimum : 0.3 PPB – Medley-Martineau
 Maximum: 2.4 PPB – Maskwa
 Average: 0.9 PPB *Includes Duplicates



Passive Field Data

Passive Sampler Data Sheet for LICA January 2014

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
2	SO ₂ /NO ₂ /O ₃	NA	NA	NA	NA	All samplers had been removed. No samples was installed.
3	H ₂ S/SO ₂ /NO ₂ /O ₃	01/01/2014	16:14	01/27/2014	14:15	
4	SO ₂ /NO ₂ /O ₃	12/31/2013	17:21	01/26/2014	14:33	
5	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/2013	16:05	01/26/2014	13:55	
6	SO ₂ /NO ₂ /O ₃	12/31/2013	13:34	01/26/2014	11:36	
8	SO ₂ /NO ₂ /O ₃	01/01/2014	07:56	01/26/2014	15:26	
9	SO ₂ /NO ₂ /O ₃	01/01/2014	15:30	01/26/2014	16:05	
10	H ₂ S/SO ₂ /NO ₂ /O ₃	12/30/2013	15:31	01/25/2014	09:00	
11	H ₂ S/SO ₂ /NO ₂ /O ₃	NA	NA	01/25/2014	09:45	
12	H ₂ S/SO ₂ /NO ₂ /O ₃	01/01/2014	12:58	01/25/2014	11:20	
13	H ₂ S/SO ₂ /NO ₂ /O ₃	12/30/2013	14:16	01/25/2014	14:44	
14	H ₂ S/SO ₂ /NO ₂ /O ₃	12/30/2013	12:10	01/25/2014	15:20	
15	SO ₂ /NO ₂ /O ₃	12/29/2013	11:15	01/25/2014	14:00	
16	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/2013	10:02	01/26/2014	10:12	
17	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/2013	12:30	01/26/2014	10:57	
18	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/2013	10:52	01/26/2014	09:36	
19	SO ₂ /NO ₂ /O ₃	12/31/2013	09:08	01/26/2014	08:46	
22	H ₂ S/SO ₂ /NO ₂ /O ₃	12/28/2013	15:00	01/25/2014	17:51	
23	SO ₂ /NO ₂ /O ₃	12/28/2013	17:38	01/25/2014	16:38	
24	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/2013	14:23	01/26/2014	12:08	
25	H ₂ S/SO ₂	01/01/2014	14:11	01/25/2014	12:18	
26	H ₂ S/SO ₂	12/30/2013	12:39	01/25/2014	15:10	
27	H ₂ S/SO ₂	12/30/2013	11:47	01/25/2014	15:36	
28	SO ₂ /NO ₂ /O ₃	12/30/2013	17:32	01/26/2014	15:52	
29	H ₂ S/SO ₂ /NO ₂ /O ₃	12/28/2013	14:55	01/25/2014	17:38	
32	H ₂ S/SO ₂ /NO ₂ /O ₃	01/01/2014	17:02	01/27/2014	15:01	
34	H ₂ S/SO ₂ /NO ₂ /O ₃	12/28/2013	12:00	01/26/2014	12:26	

Passive Sampler Data Sheet for LICA January 2014

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
Duplicate #24	SO ₂	12/31/2013	14:23	01/26/2014	12:08	
Duplicate #22	SO ₂	12/28/2013	15:00	01/27/2014	11:00	
Duplicate #23	SO ₂	12/28/2013	17:38	NA	NA	Not present-gun shot
Duplicate #27	H ₂ S	12/30/2013	11:47	01/25/2014	15:36	
Duplicate #29	H ₂ S	12/28/2013	14:55	01/25/2014	17:38	
Duplicate #5	NO ₂	12/31/2013	16:05	01/26/2014	13:55	
Duplicate #4	NO ₂	12/31/2013	17:21	01/26/2014	14:33	
Duplicate #6	O ₃	12/31/2013	13:34	01/26/2014	11:36	
Duplicate #8	O ₃	01/01/2014	07:56	01/26/2014	15:26	

Passive Network Laboratory Analysis

Your Project #: 2013/12/31 - 2014/01/25
 Site Location: LICA

Attention:MICHAEL BISAGA

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

Report Date: 2014/02/18
 Report #: R1518005
 Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B408992

Received: 2014/02/05, 08:57

Sample Matrix: Air
 # Samples Received: 34

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
H2S Passive Analysis (1)	20	2014/02/12	2014/02/18	PTC SOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (1)	25	2014/02/18	2014/02/18	PTC SOP-00148	Passive NO2 in ATM
O3 Passive Analysis (1)	25	2014/02/07	2014/02/18	PTC SOP-00197	EPA 300 R2.1
SO2 Passive Analysis (1)	28	2014/02/10	2014/02/18	PTC SOP-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.

Maxxam Job #: B408992
 Report Date:

 LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2013/12/31 - 2014/01/25
 Site Location: LICA
 Sampler Initials: WA

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		IP7789	IP7790	IP7791	IP7792	IP7793	IP7794	IP7795		
Sampling Date		2014/01/01 16:14	2013/12/31 17:21	2013/12/31 16:05	2013/12/31 13:34	2014/01/01 07:56	2014/01/01 15:30	2013/12/30 15:31		
	Units	3	4	5	6	8	9	10	RDL	QC Batch

Passive Monitoring

Calculated H2S	ppb	0.13		0.25				0.18	0.02	7380462
Calculated NO2	ppb	2.4	1.8	1.5	4.5	1.5	2.0	4.6	0.1	7384901
Calculated O3	ppb	31.9	36.5	33.0	32.4	33.2	36.2	26.3	0.1	7375416
Calculated SO2	ppb	0.6	0.9	0.9	0.8	0.7	0.6	0.5	0.1	7377466

RDL = Reportable Detection Limit

Maxxam ID		IP7796	IP7797	IP7798	IP7799	IP7800	IP7801	IP7802		
Sampling Date		2014/01/01 16:14	2014/01/01 12:58	2013/12/30 14:16	2013/12/30 12:10	2013/12/29 11:15	2013/12/31 10:02	2013/12/31 12:30		
	Units	11	12	13	14	15	16	17	RDL	QC Batch

Passive Monitoring

Calculated H2S	ppb	0.21	0.13	0.12	0.20		0.18	0.22	0.02	7380462
Calculated NO2	ppb	2.5	2.8	1.4	4.0	2.8	2.6	2.3	0.1	7384901
Calculated O3	ppb	51.2	31.4	32.2	27.7	30.4	35.2	32.6	0.1	7375416
Calculated SO2	ppb	0.8	0.6	0.6	2.4	0.8	0.8	1.1	0.1	7377466

RDL = Reportable Detection Limit

Maxxam ID		IP7803	IP7804		IP7805		IP7806	IP7807		
Sampling Date		2013/12/31 10:52	2013/12/31 09:08		2013/12/28 15:00		2013/12/28 17:38	2013/12/31 14:23		
	Units	18	19	QC Batch	22	QC Batch	23	24	RDL	QC Batch

Passive Monitoring

Calculated H2S	ppb	0.15		7380462	0.17	7380462		0.17	0.02	7380462
Calculated NO2	ppb	2.0	1.4	7384901	2.4	7384911	0.7	4.4	0.1	7384911
Calculated O3	ppb	29.3	35.8	7375416	29.9	7375424	26.6	31.5	0.1	7375424
Calculated SO2	ppb	0.7	0.8	7377466	0.5	7377466	0.3	0.8	0.1	7377471

RDL = Reportable Detection Limit

Maxxam ID		IP7808	IP7809	IP7810	IP7811	IP7812	IP7813	IP7814		
Sampling Date		2014/01/01 14:11	2013/12/30 12:39	2013/12/30 11:47	2013/12/30 17:32	2013/12/28 14:55	2014/01/01 17:02	2013/12/28 12:00		
	Units	25	26	27	28	29	32	36	RDL	QC Batch

Passive Monitoring

Calculated H2S	ppb	0.13	0.25	0.20		0.18	0.15	0.18	0.02	7380462
Calculated NO2	ppb				6.8	4.2	1.4	7.9	0.1	7384911
Calculated O3	ppb				27.5	24.9	35.5	26.3	0.1	7375424
Calculated SO2	ppb	0.5	0.8	1.4	0.7	0.6	2.0	0.9	0.1	7377471

RDL = Reportable Detection Limit

Maxxam Job #: B408992
 Report Date:

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2013/12/31 - 2014/01/25
 Site Location: LICA
 Sampler Initials: WA

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		IP7817	IP7818	IP7819	IP7820	IP7821		IP7822		
Sampling Date		2013/12/31 17:21	2013/12/31 16:05	2013/12/31 13:34	2014/01/01 07:56	2013/12/28 15:00		2013/12/31 14:23		
	Units	4 DUP	5 DUP	6 DUP	8 DUP	22 DUP	QC Batch	24 DUP	RDL	QC Batch

Passive Monitoring										
Calculated NO2	ppb	2.1	1.4				7384901		0.1	7384901
Calculated O3	ppb			30.3	36.6		7375424		0.1	7375424
Calculated SO2	ppb					0.6	7377466	0.7	0.1	7377471
RDL = Reportable Detection Limit										

Maxxam ID		IP7823	IP7824		
Sampling Date		2013/12/30 11:47	2013/12/28 14:55		
	Units	27 DUP	29 DUP	RDL	QC Batch
Passive Monitoring					
Calculated H2S	ppb	0.21	0.19	0.02	7380462
RDL = Reportable Detection Limit					

Maxxam Job #: B408992
Report Date:

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2013/12/31 - 2014/01/25
Site Location: LICA
Sampler Initials: WA

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Job #: B408992

Report Date:

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION

Client Project #: 2013/12/31 - 2014/01/25

Site Location: LICA

Sampler Initials: WA

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
7375416	OZ	Calibration Check	Calculated O3	2014/02/07		101	%	90 - 110
7375416	OZ	Spiked Blank	Calculated O3	2014/02/07		99	%	90 - 110
7375416	OZ	Method Blank	Calculated O3	2014/02/07	<0.1		ppb	
7375424	OZ	Calibration Check	Calculated O3	2014/02/07		100	%	90 - 110
7375424	OZ	Spiked Blank	Calculated O3	2014/02/07		101	%	90 - 110
7375424	OZ	Method Blank	Calculated O3	2014/02/07	<0.1		ppb	
7377466	DF4	Calibration Check	Calculated SO2	2014/02/10		100	%	90 - 110
7377466	DF4	Spiked Blank	Calculated SO2	2014/02/10		101	%	90 - 110
7377466	DF4	Method Blank	Calculated SO2	2014/02/10	<0.1		ppb	
7377471	DF4	Calibration Check	Calculated SO2	2014/02/10		100	%	90 - 110
7377471	DF4	Spiked Blank	Calculated SO2	2014/02/10		108	%	90 - 110
7377471	DF4	Method Blank	Calculated SO2	2014/02/10	<0.1		ppb	
7380462	SS6	Calibration Check	Calculated H2S	2014/02/12		104	%	90 - 110
7380462	SS6	Spiked Blank	Calculated H2S	2014/02/12		100	%	90 - 110
7384901	DF4	Calibration Check	Calculated NO2	2014/02/18		99	%	90 - 110
7384901	DF4	Spiked Blank	Calculated NO2	2014/02/18		98	%	90 - 110
7384901	DF4	Method Blank	Calculated NO2	2014/02/18	<0.1		ppb	
7384911	DF4	Calibration Check	Calculated NO2	2014/02/18		100	%	90 - 110
7384911	DF4	Spiked Blank	Calculated NO2	2014/02/18		98	%	90 - 110
7384911	DF4	Method Blank	Calculated NO2	2014/02/18	<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.

Maxxam Job #: B408992
Report Date:

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2013/12/31 - 2014/01/25
Site Location: LICA
Sampler Initials: WA

VALIDATION SIGNATURE PAGE

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.

Lakeland Industry & Community Association

Maskwa Monitoring Site
Ambient Air Monitoring
Data Report
For
January 2014

Prepared By:



February 28, 2014

Lakeland Industry & Community Association Ambient Air Monitoring Maskwa

Table of Contents

	Page		Page
Introduction	3	Calibration Reports	84
Calibration Procedure	4	• Sulphur Dioxide	85
Monthly Continuous Summary	5	• Hydrogen Sulphide	88
General Monthly Summary	6	• Total Hydrocarbons	91
Continuous Monitoring	10	• Nitrogen Dioxide	94
• Monthly Summaries, Graphs & Wind Roses	11		
• Sulphur Dioxide	12		
• Hydrogen Sulphide	20		
• Total Hydrocarbons	28		
• Nitrogen Dioxide	36		
• Nitric Oxide	44		
• Oxides of Nitrogen	51		
• Temperature	59		
• Precipitation	62		
• Relative Humidity	65		
• Barometric Pressure	68		
• Vector Wind Speed	71		
• Vector Wind Direction	78		
• Standard Deviation Wind Direction	81		

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 2014

The monthly ambient data report:

- Prepared by Lili Zhou
- 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 - Maskwa Air Monitoring Stations conform to the following Maxxam Standard Operation Procedures:

- AIR SOP-00211
- AIR SOP-00209
- AIR SOP-00213
- AIR SOP-00214
- AIR 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 2014

LICA MASKWA 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									
SO2 (PPB)	172	48	0	0	2.20	19	25	11	15.3	306(NW)	7.1	13	100.0
H2S (PPB)	10	3	0	0	0.20	2	13	7	4.2	289(WNW)	0.9	13	100.0
THC (PPM)	-	-	-	-	2.37	17.2	27	9	0.2	158(SSE)	3.6	27	100.0
NOx (PPB)	-	-	-	-	6.80	37.6	27	9	0.2	158(SSE)	14.5	13	100.0
NO (PPB)	-	-	-	-	1.07	18.5	27	10	1.9	225(SW)	4.1	13	100.0
NO ₂ (PPB)	159	-	0	-	5.73	30.6	10	6	4.7	218(SW)	12.5	10	100.0
VECTOR WS (KPH)	-	-	-	-	6.84	23.3	15	4	-	294(WNW)	16.6	15	100.0
VECTOR WD (DEGREES)	-	-	-	-	298(WNW)	-	-	-	-	-	-	-	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	68.11	89	25	4, 5	6.4, 4.7	209(SSW), 224(SW)	81.8	11	100.0
TEMPERATURE (DEG C)	-	-	-	-	-12.57	8.6	18	14	8	280(W)	3.4	24	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	938.48	965	5	VAR	VAR	VAR	961.9	5	100.0
PRECIPITATION (MM)	-	-	-	-	0.01	2	15	6	17.5	304(WNW)	0.2	11, 15	100.0

NA-NOT AVAILABLE 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 monthly calibration was performed on January 23rd. The inlet filter was changed before the calibration was started. The time spent on the routine calibration was extended this month for Maxxam field technician training purposes. 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 monthly calibration was performed on January 23rd. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Total Hydrocarbon (PPM)

- Analyzer make / model –TECO 51C-LT, S/N: 436609738

No operational issues were observed during the month. The monthly calibration was performed on January 23rd. The inlet filter was changed before the calibration was started. The time spent on the routine calibration was extended this month for Maxxam field technician training purposes. 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 monthly calibration was performed on January 23rd. The inlet filter was changed before the calibration was started. 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. The last wind system calibration was performed by manufacturer on December 20th, 2011.

No operational issues were observed this month.

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

No operational issues were observed during the month.

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

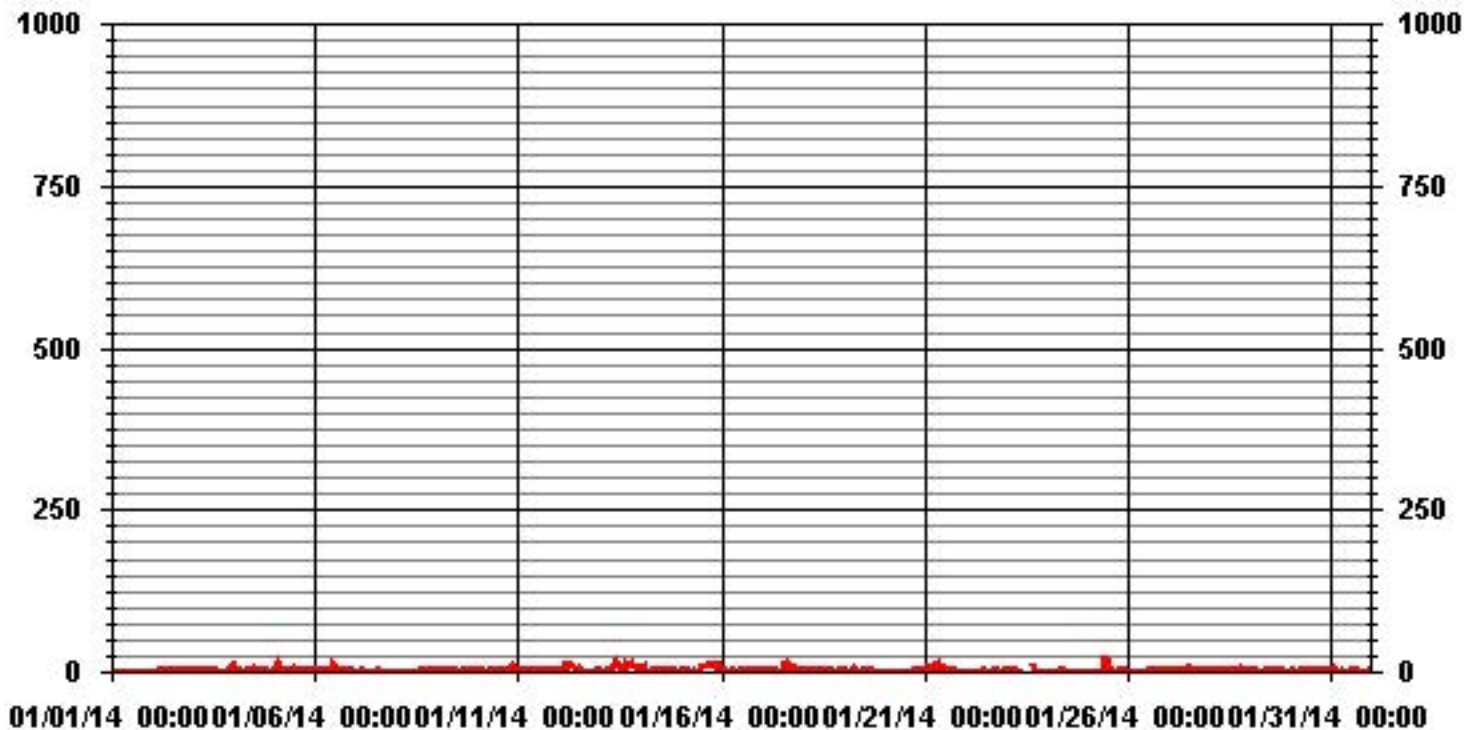
The manifold was cleaned on January 23rd.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

01 Hour Averages



— LICA30 SO2_ PPB

Lakeland Industry & Community Association - Maskwa Site

JANUARY 2014

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	0	0	0	0	0	0	S	0	4	4	1	1	1	0	0	0	0	1	3	2	4	0.7	24
2	2	3	2	2	3	3	3	4	4	S	3	3	3	3	3	3	2	2	3	2	2	3	3	3	4	2.8	24
3	3	4	11	3	14	2	2	2	S	2	2	2	2	2	1	2	1	1	1	1	1	10	17	17	17	4.5	24
4	9	14	1	10	11	7	3	S	10	4	4	12	13	15	8	10	1	1	1	1	1	1	1	0	15	6.0	24
5	5	13	19	19	6	8	S	7	6	3	2	10	3	4	2	2	1	2	1	1	2	2	2	2	19	5.3	24
6	2	2	2	2	2	S	2	4	4	10	13	11	11	12	11	7	4	3	2	2	2	2	2	2	13	5.0	24
7	2	2	2	2	S	1	0	0	0	0	0	0	1	2	4	4	0	1	0	0	0	0	1	1	4	1.0	24
8	1	1	3	S	0	1	1	2	2	1	1	1	1	1	1	1	1	2	2	2	2	3	3	2	3	1.5	24
9	2	2	S	1	1	1	1	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	1.8	24
10	3	S	3	3	3	5	5	3	2	2	2	2	2	2	2	1	1	1	1	17	17	9	8	6	17	4.3	24
11	S	1	1	1	2	1	2	2	2	2	6	9	4	3	3	4	3	2	2	5	5	4	2	S	9	3.0	24
12	1	2	2	4	23	24	21	19	17	16	16	6	13	1	1	0	0	0	0	0	1	1	S	2	24	7.4	24
13	2	3	3	2	2	2	2	10	23	29	19	18	16	10	10	26	25	31	29	27	18	S	23	4	31	14.5	24
14	2	9	21	1	1	1	1	1	1	1	3	2	3	3	3	3	2	2	2	2	S	2	2	2	21	3.0	24
15	3	2	2	2	3	13	6	3	2	2	8	13	14	15	11	15	17	18	19	S	16	21	25	15	25	10.7	24
16	10	8	2	1	5	1	1	2	3	3	2	2	1	1	2	2	1	2	S	3	2	3	6	6	10	3.0	24
17	2	2	4	4	3	2	2	2	2	2	3	8	16	16	22	20	15	S	19	21	3	3	1	1	22	7.5	24
18	2	2	1	2	2	2	2	3	4	3	3	2	3	2	2	3	S	2	2	2	3	3	3	2	4	2.4	24
19	2	2	2	2	9	14	8	2	1	1	3	1	1	3	11	S	3	2	1	1	1	0	0	0	14	3.0	24
20	0	0	0	0	0	0	0	0	0	0	0	0	0	1	S	2	3	2	1	2	2	2	7	7	7	1.3	24
21	20	8	23	21	25	23	5	2	22	4	14	8	2	S	1	2	2	1	1	1	1	1	0	1	25	8.2	24
22	1	1	2	2	1	1	1	1	1	2	2	2	S	3	3	2	2	2	2	2	2	2	2	2	3	1.8	24
23	2	2	3	3	3	4	4	4	C	C	C	C	C	C	C	C	23	2	0	0	0	0	0	0	23	3.2	24
24	0	0	0	0	0	0	0	1	4	3	16	S	3	0	0	0	0	0	0	0	0	0	0	0	16	1.2	24
25	0	1	1	0	0	0	0	0	7	33	S	27	22	1	1	1	1	1	1	1	1	2	1	2	33	4.5	24
26	1	0	1	1	1	1	0	0	1	S	3	14	9	3	5	5	2	2	5	3	2	2	2	2	14	2.8	24
27	2	2	2	2	2	2	2	S	2	3	6	10	6	5	2	3	2	2	2	2	2	2	2	2	10	2.9	24
28	2	2	2	3	3	3	3	S	2	2	3	3	4	6	4	4	3	3	21	12	3	3	3	3	21	4.2	24
29	4	4	4	4	3	3	S	2	3	3	8	6	8	4	3	3	3	3	3	2	2	1	1	1	8	3.4	24
30	1	1	4	4	3	S	9	9	9	15	11	3	3	3	2	2	2	2	2	2	4	3	4	3	15	4.4	24
31	3	3	17	5	S	2	6	5	2	2	2	4	1	1	2	1	1	1	1	1	1	1	7	6	17	3.3	24
HOURLY MAX	20	14	23	21	25	24	21	19	23	33	19	27	22	16	22	26	25	31	29	27	18	21	25	17			
HOURLY AVG	3.0	3.2	4.7	3.5	4.5	4.4	3.2	3.2	4.8	5.3	5.5	6.1	6.0	4.4	4.3	4.5	4.2	3.2	4.2	3.9	3.3	3.0	4.4	3.3			

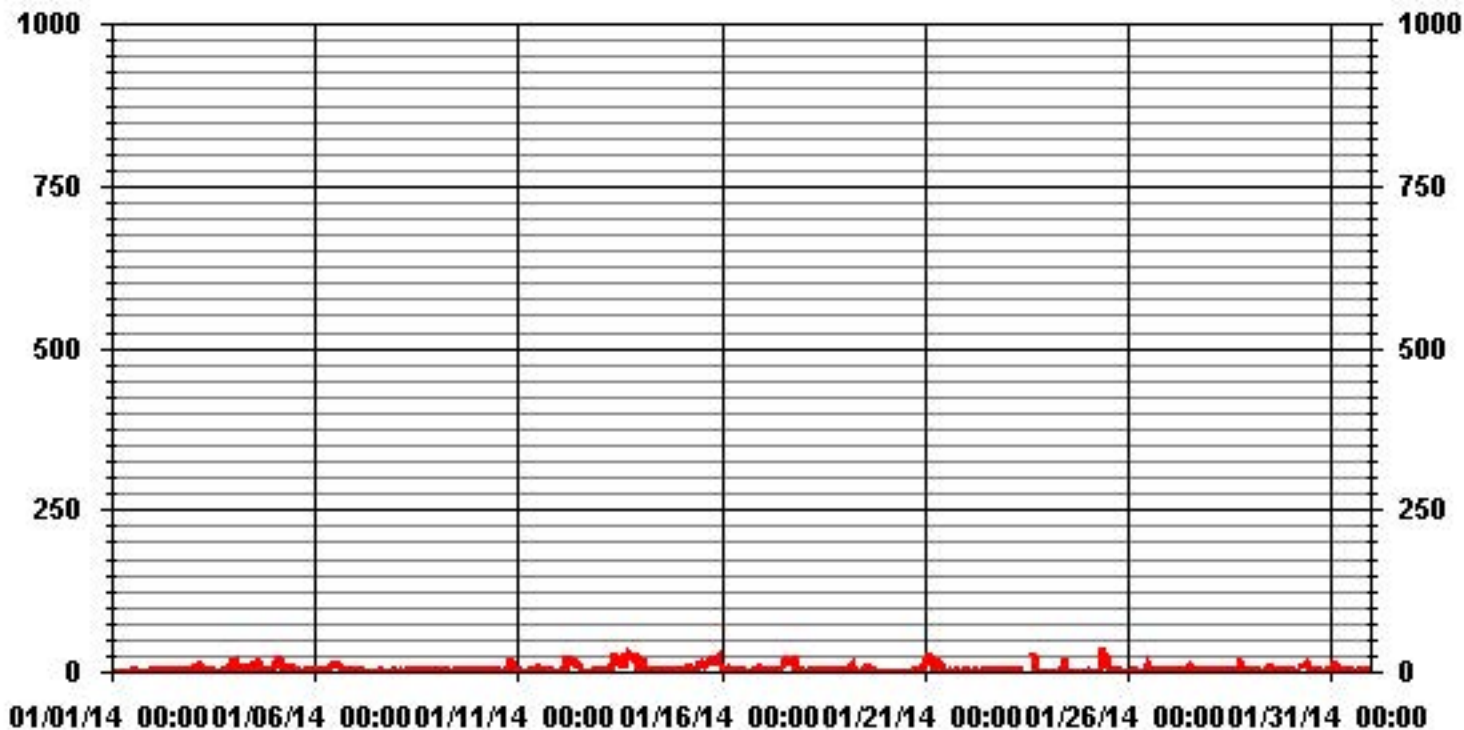
STATUS FLAG CODES

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:	623
MAXIMUM INSTANTANEOUS VALUE:	33 PPB @ HOUR(S) 9 ON DAY(S) 25
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	5.62

01 Hour Averages



LICA30
 SO2_ / WDR Joint Frequency Distribution (Percent)

January 2014

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	8.78	3.25	4.10	3.68	2.97	2.83	3.39	2.69	3.82	12.32	11.61	4.95	6.65	10.19	10.05	8.64	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	8.78	3.25	4.10	3.68	2.97	2.83	3.39	2.69	3.82	12.32	11.61	4.95	6.65	10.19	10.05	8.64	

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	
< 20	62	23	29	26	21	20	24	19	27	87	82	35	47	72	71	61	706
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	62	23	29	26	21	20	24	19	27	87	82	35	47	72	71	61	

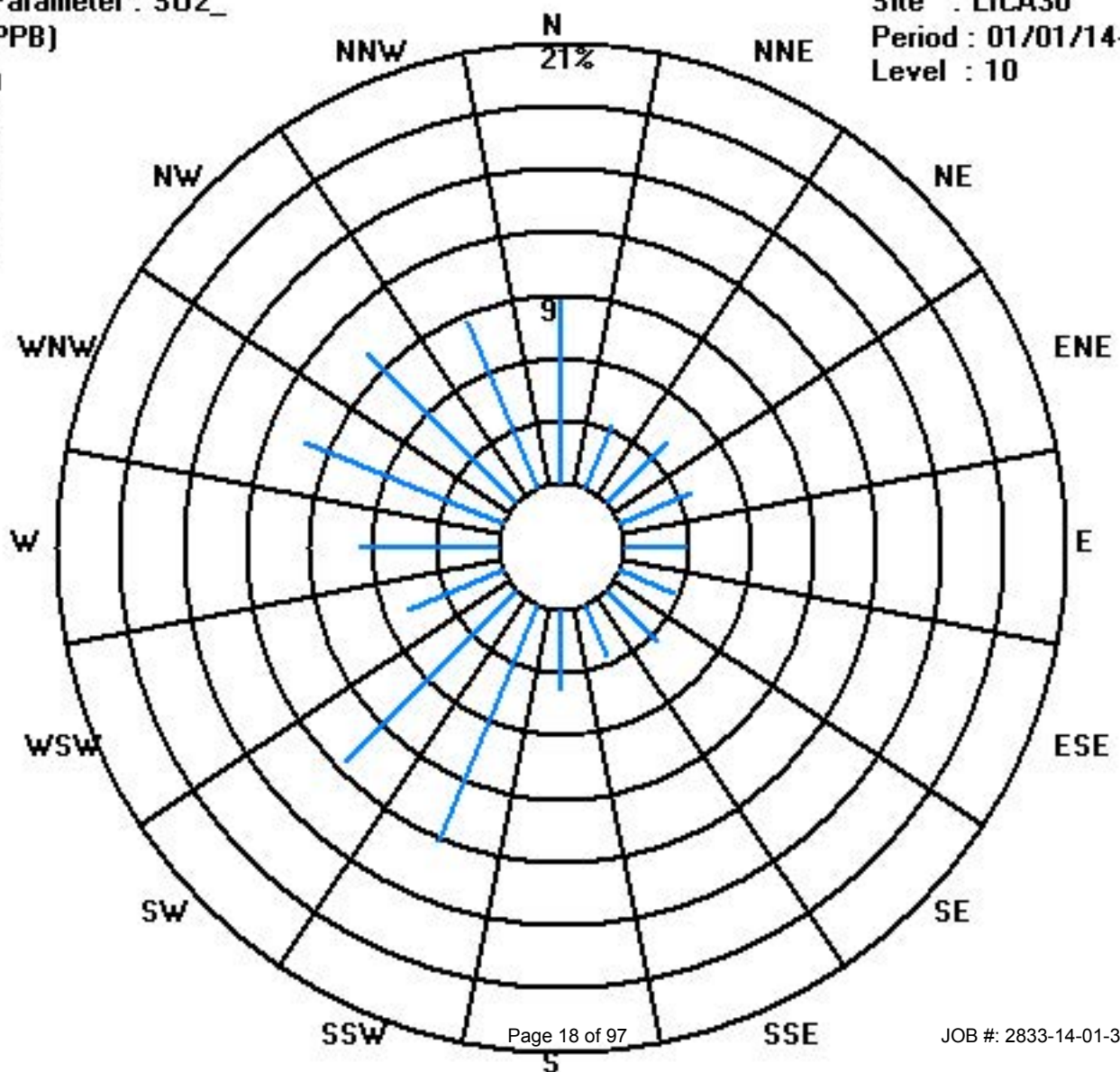
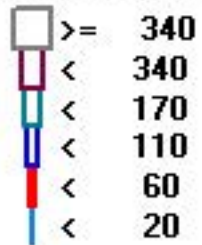
Calm : .00 %

Total # Operational Hours : 706

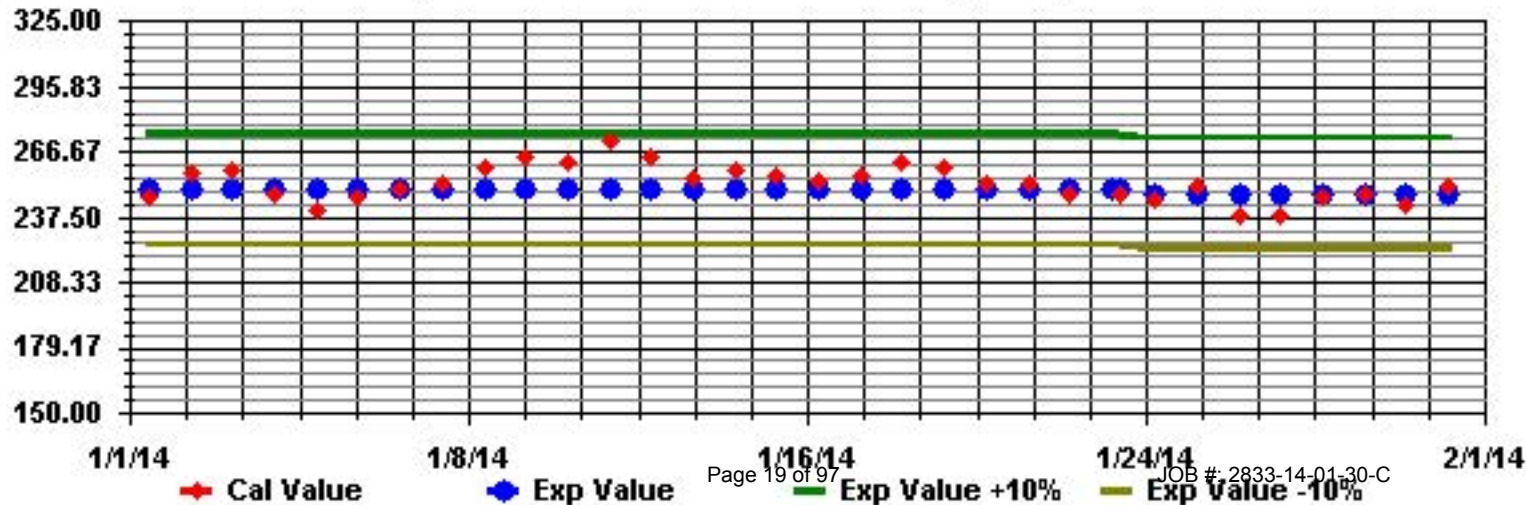
Class Limits (PPB)

Period : 01/01/14-01/31/14

Level : 10



Calibration Graph for Site: LICA30 Parameter: SO2_ Sequence: SO2 Phase: SPAN



Hydrogen Sulphide

Lakeland Industry & Community Association - Maskwa Site

JANUARY 2014

HYDROGEN SULPHIDE (H2S) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOURLY MAX	HOURLY AVG	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.0	24	
2		0	0	0	0	0	0	0	0	1	S	0	1	1	1	0	1	0	0	1	1	1	1	1	1	1	1	0.5	24
3		0	1	0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
4		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
5		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	
6		0	0	0	0	0	S	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
7		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	
8		0	0	0	S	1	0	0	0	1	1	0	0	0	1	0	1	0	0	0	0	0	1	0	0	1	0.3	24	
9		1	1	S	1	0	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	24	
10		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	
11		S	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	S	1	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	S	1	1	0.0	24	
13		1	1	1	1	1	1	1	2	1	1	1	1	1	0	0	1	1	1	1	1	1	1	S	1	0	2	0.9	24
14		0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	0	S	1	1	1	1	0.3	24	
15		1	0	1	0	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	S	0	1	0	0	1	0.5	24	
16		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0.0	24	
17		1	1	1	1	1	0	0	1	0	1	1	1	0	0	0	0	0	S	0	0	0	0	0	0	1	0.4	24	
18		0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0.2	24	
19		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	
20		0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0	24	
21		0	0	0	0	0	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
22		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	
23		0	0	0	0	0	0	1	0	0	1	1	S	1	0	C	C	C	C	0	0	0	0	0	0	1	0.2	24	
24		0	0	0	0	0	0	0	0	0	0	1	S	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0.1	24
25		1	0	0	0	0	1	0	0	1	1	S	1	1	0	0	0	0	0	0	0	1	0	0	0	1	0.3	24	
26		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	
27		0	0	0	0	0	0	0	1	S	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
28		0	0	0	0	0	0	0	S	0	1	1	0	1	0	1	1	1	1	1	1	1	0	1	1	0	1	0.5	24
29		0	0	0	1	0	0	S	0	0	0	0	0	1	1	1	0	1	0	1	0	0	0	0	0	1	0.3	24	
30		0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0.1	24	
31		0	1	1	0	S	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0.3	24	
HOURLY MAX		1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
HOURLY AVG		0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.3	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2				

STATUS FLAG CODES

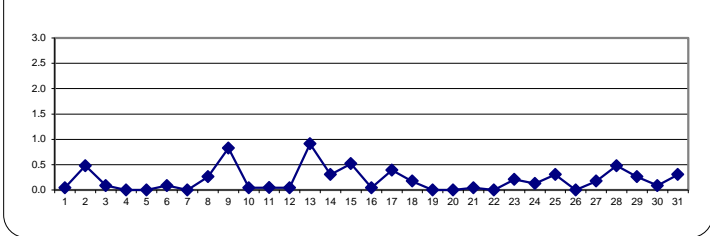
C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR

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

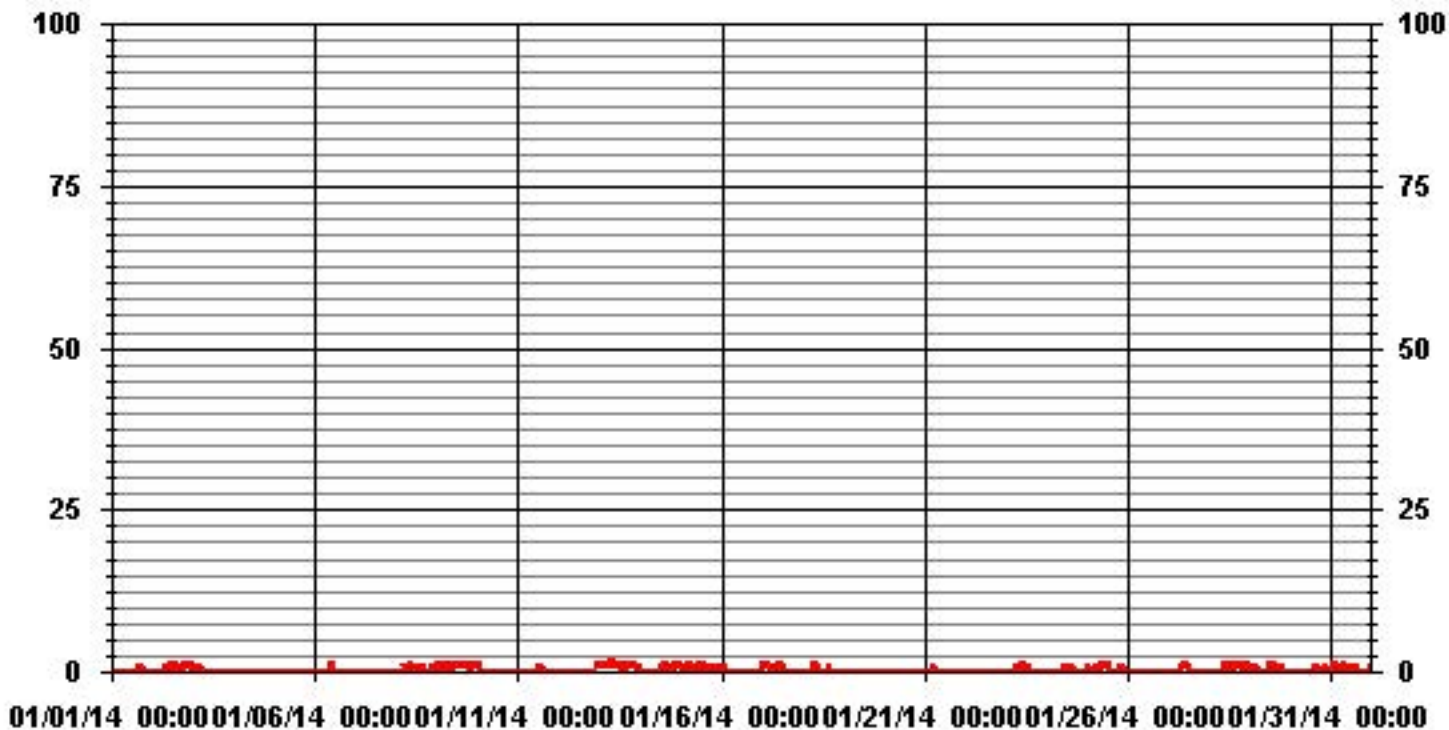
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF 24-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	142				
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	7	ON DAY(S) 13
MAXIMUM 24-HR AVERAGE:	0.9	PPB			ON DAY(S) 13
					VAR-VARIOUS
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744 HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0 %	
STANDARD DEVIATION:	0.40		MONTHLY AVERAGE:	0.20 PPB	

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



— LICA30 H2S_ PPB

Lakeland Industry & Community Association - Maskwa Site

JANUARY 2014

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																												
1	0	1	0	0	0	0	1	1	1	0	S	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0.7	24
2	1	1	0	1	1	0	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1.0	24
3	1	1	1	1	1	1	1	1	S	1	1	0	0	1	0	1	1	1	1	1	1	1	1	0	1	1	0.8	24
4	1	1	0	0	1	1	0	S	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0.3	24
5	0	0	0	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
6	0	0	0	0	0	S	1	0	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0.3	24
7	0	1	1	1	S	0	0	0	1	1	1	1	1	1	1	0	0	0	0	1	1	0	0	1	1	1	0.6	24
8	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	1	1.0	24
9	1	1	S	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	1.0	24
10	2	S	1	1	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.4	24
11	S	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	1	1	0	0	S	1	0.3	24
12	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	0.3	24
13	1	1	1	2	1	1	1	3	2	2	2	2	2	1	1	2	1	2	1	2	1	1	S	1	1	3	1.4	24
14	1	1	1	1	1	0	0	0	1	1	0	1	1	1	1	4	1	1	1	1	S	1	2	4	4	1.1	24	
15	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	2	1.0	24
16	1	2	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	S	1	1	1	1	1	1	2	1.0	24
17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	0	1	1	1	1	0	1	0.9	24	
18	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	1	0.6	24
19	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
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	1	1	1	1	1	2	1	2	0.4	24	
21	1	1	1	1	1	1	0	1	1	1	1	1	1	S	0	0	0	0	0	1	1	0	0	0	1	0.6	24	
22	0	0	1	0	0	0	0	0	0	0	0	1	S	0	0	1	1	0	0	0	1	1	1	0	1	0.3	24	
23	0	0	0	0	0	1	1	1	1	2	2	S	1	1	C	C	C	C	1	0	1	1	0	1	2	0.7	24	
24	1	1	1	1	1	1	1	1	1	1	2	S	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
25	1	1	1	1	1	1	1	1	1	1	S	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
26	1	0	0	0	0	0	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
27	0	0	0	0	1	1	2	S	2	2	1	1	1	0	0	1	1	0	1	0	1	1	0	0	1	2	0.7	24
28	1	1	0	1	1	1	1	S	0	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	1.0	24	
29	1	1	1	1	1	1	S	1	1	0	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	0.8	24	
30	1	0	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0.9	24	
31	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	0.9	24	
HOURLY MAX	2	2	1	2	1	2	1	3	2	2	2	2	1	1	2	4	2	1	2	1	1	1	2	4				
HOURLY AVG	0.7	0.7	0.5	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.8	0.7	0.5	0.6	0.6	0.7	0.6	0.7	0.8				

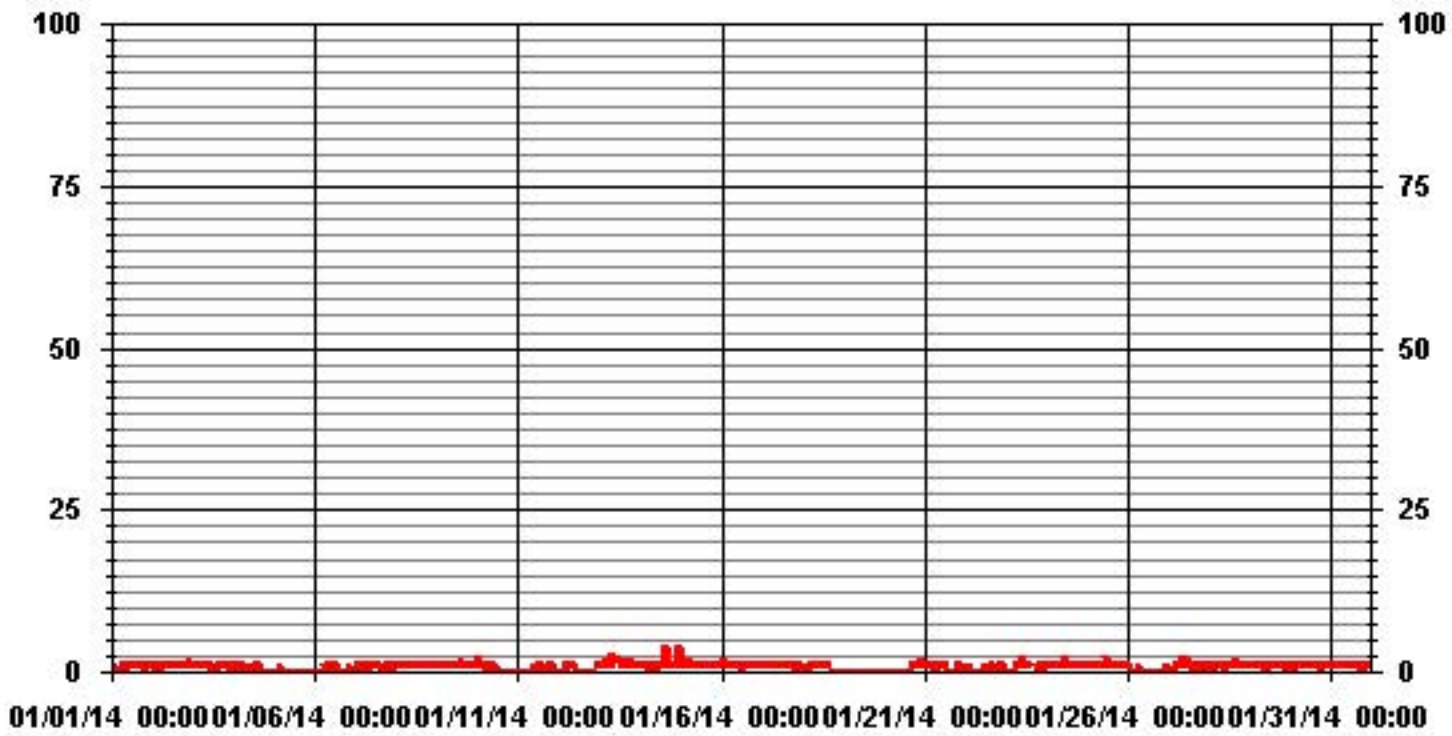
STATUS FLAG CODES

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:	458
MAXIMUM INSTANTANEOUS VALUE:	4 PPB @ HOUR(S) 15, 23 ON DAY(S) 14
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	4 HRS
OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	0.56

01 Hour Averages



LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

January 2014

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	8.74	3.24	4.09	3.66	2.96	2.82	3.38	2.67	3.80	12.27	11.70	5.07	6.62	10.15	10.01	8.60	99.85
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.14
< 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	8.74	3.24	4.09	3.66	2.96	2.82	3.38	2.67	3.80	12.27	11.70	5.07	6.62	10.15	10.15	8.60	

Calm : .00 %

Total # Operational Hours : 709

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	62	23	29	26	21	20	24	19	27	87	83	36	47	72	71	61	708
< 10															1		1
< 50																	
>= 50																	
Totals	62	23	29	26	21	20	24	19	27	87	83	36	47	72	72	61	

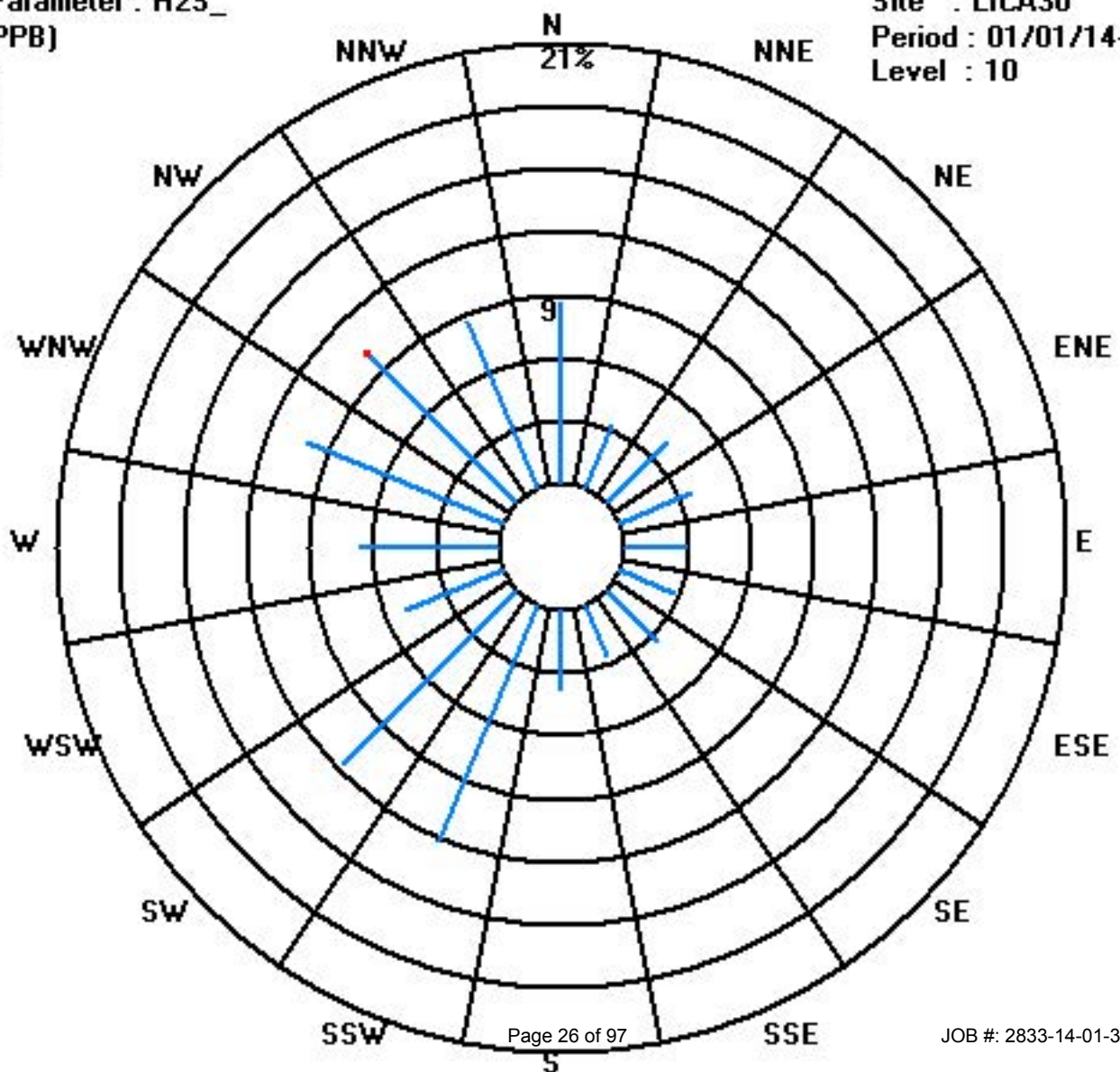
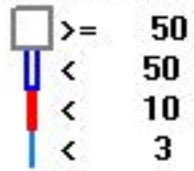
Calm : .00 %

Total # Operational Hours : 709

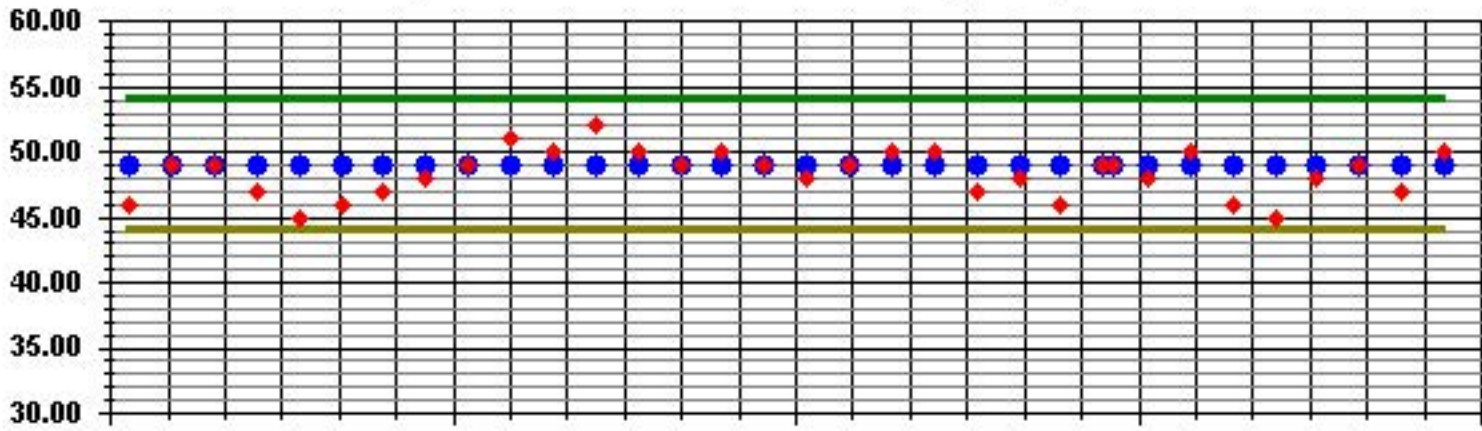
Class Limits (PPB)

Period : 01/01/14-01/31/14

Level : 10



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



1/1/14

1/8/14

1/16/14

1/24/14

2/1/14

◆ Cal Value

◆ Exp Value

— Exp Value +10%

— Exp Value -10%

Total Hydrocarbons

Lakeland Industry & Community Association - Maskwa Site

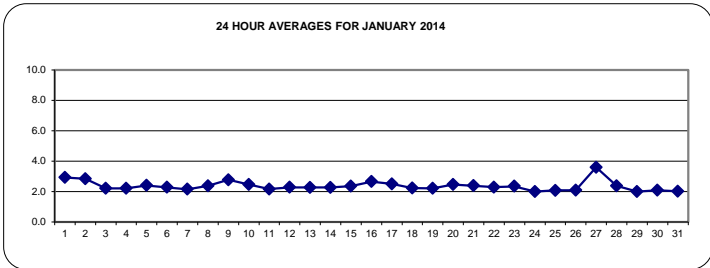
JANUARY 2014

TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																													
1	2.3	2.3	2.3	2.4	2.5	2.5	2.5	2.6	2.6	2.7	S	3.0	3.0	3.2	3.4	3.4	3.6	3.4	3.2	3.2	3.2	3.2	3.6	3.4	3.6	3.4	3.6	2.9	24
2	3.2	3.2	3.3	3.2	2.9	2.7	2.7	2.7	2.7	S	2.8	2.8	2.8	2.8	2.8	2.8	2.9	2.9	2.8	2.7	2.7	2.7	2.6	2.6	3.3	2.8	2.8	24	
3	2.7	2.8	2.8	2.3	2.2	2.1	2.1	2.1	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	2.3	2.2	2.2	2.8	2.2	24		
4	2.2	2.2	2.2	2.2	2.3	2.4	2.2	S	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	2.2	2.2	2.4	2.2	24		
5	2.2	2.4	2.4	2.5	2.4	2.4	S	2.3	2.3	2.2	2.2	2.2	2.3	2.2	2.2	2.1	2.3	2.5	2.6	2.7	2.7	2.8	2.8	2.8	2.8	2.4	24		
6	2.8	2.7	2.6	2.4	2.5	S	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.3	24	
7	2.1	2.1	2.1	2.1	S	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	24	
8	2.2	2.3	2.3	S	2.3	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.6	2.5	2.6	2.4	24	
9	2.4	2.4	S	2.4	2.5	2.4	2.4	2.4	2.6	2.7	2.7	2.9	3.1	3.1	3.1	3.0	3.1	3.0	2.9	2.9	2.9	3.0	2.9	3.0	3.1	2.8	24		
10	2.7	S	2.8	2.8	2.8	2.8	3.0	3.0	2.9	2.6	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.4	2.3	2.2	2.3	2.2	3.0	2.5	24	
11	S	2.3	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.3	2.3	2.3	2.2	2.1	2.0	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.0	S	2.4	2.2	24		
12	2.2	2.3	2.5	2.3	2.3	2.4	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	2.4	2.3	2.4	S	2.2	2.5	2.3	24	
13	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.6	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.4	2.5	S	2.4	2.2	2.6	2.3	24		
14	2.1	2.3	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.5	2.5	2.6	2.5	2.4	S	2.3	2.2	2.1	2.6	2.3	24		
15	2.1	2.0	2.0	1.9	2.1	2.7	2.4	2.3	2.1	2.5	2.9	2.1	2.2	2.1	2.1	2.1	2.3	2.3	2.8	S	2.1	2.1	2.4	4.8	4.8	2.4	24		
16	5.5	4.9	2.3	2.2	2.9	2.1	2.2	2.3	2.3	2.4	2.5	2.5	2.3	2.3	2.5	2.4	2.4	2.4	S	2.5	2.5	2.7	2.8	2.4	5.5	2.7	24		
17	2.4	2.4	2.4	2.5	2.5	2.2	2.0	2.1	2.1	2.0	2.2	3.5	3.1	3.1	2.8	2.1	2.0	S	2.1	5.4	2.3	2.2	2.1	2.1	5.4	2.5	24		
18	2.1	2.1	2.1	2.1	2.4	2.8	2.5	2.3	2.3	2.3	2.3	2.2	2.1	2.0	2.0	2.0	S	2.0	2.0	2.4	2.6	2.5	2.2	2.0	2.8	2.2	24		
19	2.0	2.0	2.0	2.2	2.7	3.2	2.6	2.0	2.0	2.0	2.6	2.0	2.0	2.1	2.8	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	3.2	2.2	24		
20	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.5	2.6	2.7	S	2.6	2.6	2.7	2.8	2.8	2.8	2.7	3.0	2.3	3.0	2.5	24		
21	2.9	2.2	2.3	2.2	2.7	3.1	2.2	2.2	3.6	2.2	3.1	2.2	2.1	S	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	3.6	2.4	24		
22	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.4	S	2.3	2.3	2.2	2.3	2.3	2.4	2.5	2.4	2.4	2.4	2.4	2.5	2.3	24		
23	2.4	2.4	2.5	2.6	2.6	2.5	2.4	2.4	2.4	C	C	C	C	C	C	2.0	4.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	4.1	2.4	24		
24	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.4	2.0	C	C	S	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.0	24		
25	2.0	2.0	2.1	2.2	2.3	2.3	2.3	2.0	2.8	2.3	S	2.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.8	2.1	24		
26	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	S	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	2.2	2.1	24		
27	2.2	2.2	2.2	2.2	2.3	2.8	3.1	7.5	S	17.2	7.8	2.3	2.2	2.2	2.2	2.5	2.6	2.9	3.2	3.0	2.7	2.6	2.4	2.3	17.2	3.6	24		
28	2.3	2.3	2.3	2.2	2.3	2.3	2.3	S	2.4	2.6	2.7	2.6	2.4	2.4	2.5	2.7	2.8	3.0	2.4	2.1	2.1	2.0	2.0	3.0	2.4	2.4	24		
29	2.0	2.0	2.0	2.0	2.0	S	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	24		
30	2.0	2.1	2.1	2.1	2.1	S	2.0	2.0	2.0	2.1	2.2	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.3	2.2	2.2	2.3	2.1	24		
31	2.2	2.1	2.1	2.0	S	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.0	24		
HOURLY MAX	6	5	3	3	3	3	3	8	4	17	8	4	3	3	3	3	4	3	3	5	3	3	4	5					
HOURLY AVG	2.4	2.4	2.3	2.3	2.4	2.4	2.3	2.4	2.4	2.8	2.6	2.4	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.4	2.3	2.3	2.3	2.4					

STATUS FLAG CODES

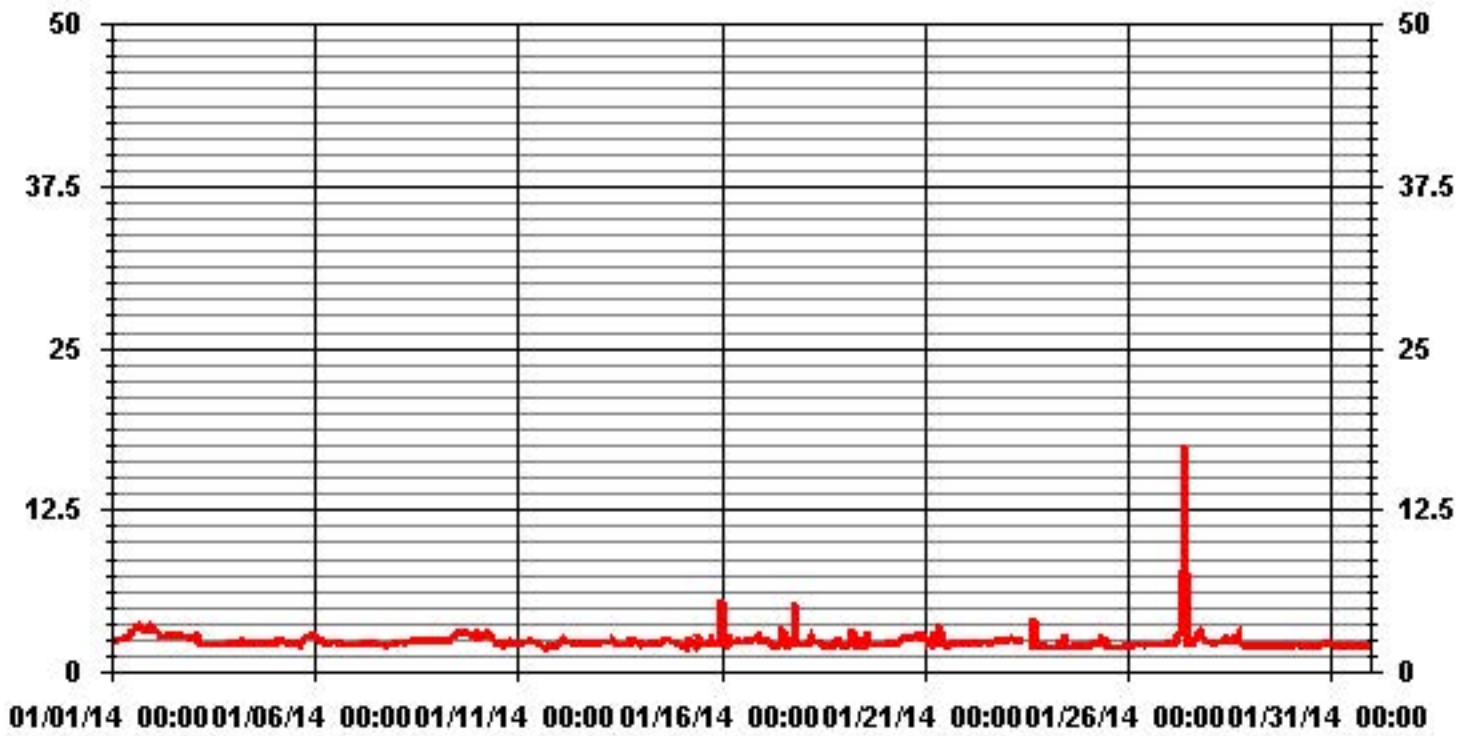
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	707					
MAXIMUM 1-HR AVERAGE:	17.2	PPM	@ HOUR(S)	9	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	3.6	PPM			ON DAY(S)	27
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.74		MONTHLY AVERAGE:	2.37	PPM	

01 Hour Averages



— LICA30 THC PPM

Lakeland Industry & Community Association - Maskwa Site

JANUARY 2014

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	2.3	2.3	2.4	2.4	2.5	2.5	2.6	2.6	2.6	2.9	S	3.1	3.1	3.3	3.4	3.5	3.7	3.6	3.5	3.4	3.6	3.6	3.7	3.5	3.7	3.0	24	
2	3.3	3.3	3.3	3.3	3	2.8	2.7	2.7	2.7	S	2.8	2.8	2.8	2.8	2.8	3	3	2.9	3.3	2.8	2.7	2.7	2.7	2.9	3.3	2.9	24	
3	3.3	4.1	4	2.5	2.4	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.5	2.4	2.5	4.1	2.4	24	
4	2.4	2.5	2.4	2.5	2.6	2.6	2.3	S	2.5	2.3	2.3	2.4	2.4	2.4	2.4	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.6	2.3	24	
5	2.3	2.7	2.7	2.9	2.7	2.7	S	2.5	2.4	2.2	2.3	2.3	2.5	2.3	2.2	2.2	2.4	2.6	2.7	2.7	2.8	2.8	2.9	2.8	2.9	2.5	24	
6	2.8	2.8	2.6	2.5	2.6	S	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.5	2.3	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.8	2.3	24	
7	2.1	2.1	2.1	2.1	S	2.2	2.2	2.2	2.2	2.6	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	2.6	2.2	24	
8	2.3	2.3	2.3	S	2.3	2.3	2.3	2.3	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	2.5	2.5	2.6	2.6	2.4	24	
9	2.4	2.4	S	2.5	2.5	2.4	2.4	2.4	2.7	2.7	2.8	3	3.1	3.1	3.1	3.1	3.1	3.1	3	2.9	3.1	3.1	3	3	3.1	2.8	24	
10	2.9	S	2.8	2.8	2.9	2.9	3.1	3	3	2.8	2.5	2.3	2.2	2.6	2.2	2.2	2.2	2.2	2.3	2.7	2.8	2.5	2.9	2.4	3.1	2.6	24	
11	S	2.3	2.3	2.3	2.3	2.4	2.4	2.5	2.4	2.3	2.4	2.5	2.3	2.2	2	2	2	2	2	2	2.2	2.1	2	2	S	2.5	2.2	24
12	2.2	2.5	2.6	2.5	2.5	2.6	2.6	2.4	2.5	2.4	2.2	2.3	2.5	2.3	2.2	2.2	2.2	2.3	2.4	2.4	2.9	S	2.3	2.9	2.4	2.4	24	
13	2.3	2.4	2.3	2.3	2.4	2.3	2.6	3	2.8	2.5	2.3	2.2	2.1	2.1	2.1	2.3	2.4	2.3	2.6	2.8	2.8	S	2.8	2.4	3	2.4	24	
14	2.1	2.5	2.6	2.1	2.2	2.2	2.4	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.5	2.5	2.6	2.6	2.6	2.4	S	2.4	2.3	2.1	2.6	2.3	24	
15	2.2	2.1	2	2	3.2	5.3	6.4	4.6	3.7	3.9	4.6	3	4.1	3.6	3.7	3.3	4.2	3.3	4.8	S	2.4	2.8	5.5	6.2	6.4	3.8	24	
16	6.5	7.5	3	2.5	6.6	2.1	2.3	2.4	2.3	2.5	2.6	2.5	2.4	2.5	2.5	2.4	2.4	2.4	S	2.6	2.6	2.8	2.9	2.6	7.5	3.1	24	
17	2.5	2.5	2.4	2.6	2.6	2.4	2.1	2.2	3.3	2.1	4.6	5	5.1	5.1	5.4	2.4	2.2	S	5.1	8	3.4	2.7	2.1	2.1	8	3.4	24	
18	2.1	2.3	2.1	2.2	2.7	2.9	2.7	2.4	2.4	2.4	2.4	2.5	2.3	2.1	2.1	2.1	S	2	2.2	2.6	2.6	2.6	2.7	2.2	2.9	2.4	24	
19	2.4	2	2.5	3.2	4.9	5.1	4.8	2	2	2.4	4	2	2.2	3.7	4.5	S	3.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	5.1	2.9	24	
20	2.2	2.2	2.2	2.3	2.4	2.2	2.3	2.3	2.3	2.3	2.5	2.6	2.7	2.7	S	2.6	2.6	2.8	2.8	2.8	2.8	2.8	5.1	2.7	5.1	2.6	24	
21	7.7	2.2	4.5	2.5	4.9	6.2	2.3	2.2	5.7	2.3	5.7	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	7.7	3.2	24	
22	2.2	2.2	2.4	2.4	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	S	2.3	2.4	2.3	2.3	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.3	24
23	2.5	2.5	2.5	2.7	2.7	2.5	2.4	2.4	2.5	C	C	C	C	C	C	C	6.6	2.1	2	2	2	2	2	2	6.6	2.6	24	
24	2	2	1.9	1.9	1.9	1.9	1.9	2	4.8	2.8	5.7	S	1.9	1.9	2	2	2	2	2	2	2	2.1	2	2	5.7	2.3	24	
25	2	2	2.1	2.3	2.3	2.3	2.4	2.1	6.2	6.2	S	4.3	2.3	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	6.2	2.5	24	
26	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	3.7	2.5	2.1	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	3.7	2.2	24	
27	2.2	2.2	2.2	2.4	2.5	4.1	4	23	S	22	19.7	2.4	2.5	2.2	2.5	2.6	2.7	3.2	3.3	3.2	2.9	2.8	2.5	2.4	23	5.2	24	
28	2.3	2.3	2.3	2.3	2.4	2.4	2.4	S	2.5	2.7	2.7	2.7	2.5	2.5	2.6	2.8	2.9	3	2.8	2.1	2.1	2	2	2	3	2.4	24	
29	2	2.1	2.1	2	2	2	S	2	2.1	2.1	2.3	2	2	2	2	2	2.1	2.1	2.1	2	2.1	2.1	2.1	2.1	2.3	2.1	24	
30	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.4	2.3	2.3	2.2	2.3	2.1	2	2	2.1	2.1	2.1	2.1	2.3	2.3	2.3	2.4	2.2	24	
31	2.2	2.2	2.3	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.2	2.3	2.3	2.1	24	
HOURLY MAX	8	8	5	3	7	6	6	23	6	22	20	5	5	5	5	4	7	4	5	8	4	4	6	6				
HOURLY AVG	2.7	2.6	2.5	2.4	2.8	2.7	2.6	3.1	2.8	3.3	3.4	2.6	2.5	2.5	2.6	2.4	2.6	2.4	2.6	2.6	2.5	2.5	2.6	2.5				

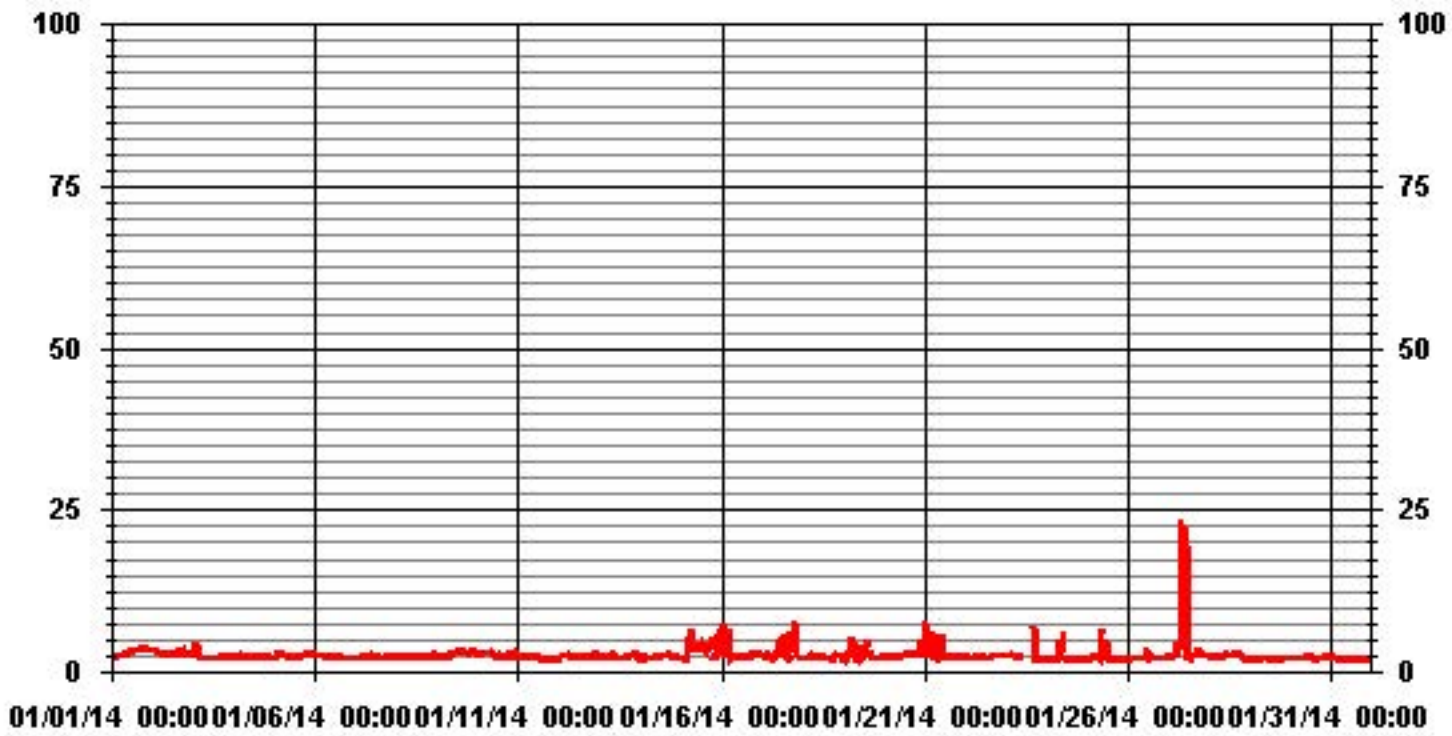
STATUS FLAG CODES

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:	706
MAXIMUM INSTANTANEOUS VALUE:	23 PPM @ HOUR(S) 7 ON DAY(S) 27
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	1.48

01 Hour Averages



— LICA30 THCMAX PPM

LICA30
 THC / WDR Joint Frequency Distribution (Percent)

January 2014

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	8.76	3.25	3.96	3.67	2.97	2.40	2.82	2.12	3.53	10.89	10.18	4.95	6.64	8.48	10.04	8.62	93.35
< 10.0	.00	.00	.14	.00	.00	.42	.56	.42	.28	1.41	1.41	.00	.00	1.69	.14	.00	6.50
< 50.0	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.14
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	8.76	3.25	4.10	3.67	2.97	2.82	3.39	2.68	3.81	12.30	11.59	4.95	6.64	10.18	10.18	8.62	

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	62	23	28	26	21	17	20	15	25	77	72	35	47	60	71	61	660
< 10.0			1			3	4	3	2	10	10			12	1		46
< 50.0								1									1
>= 50.0																	
Totals	62	23	29	26	21	20	24	19	27	87	82	35	47	72	72	61	

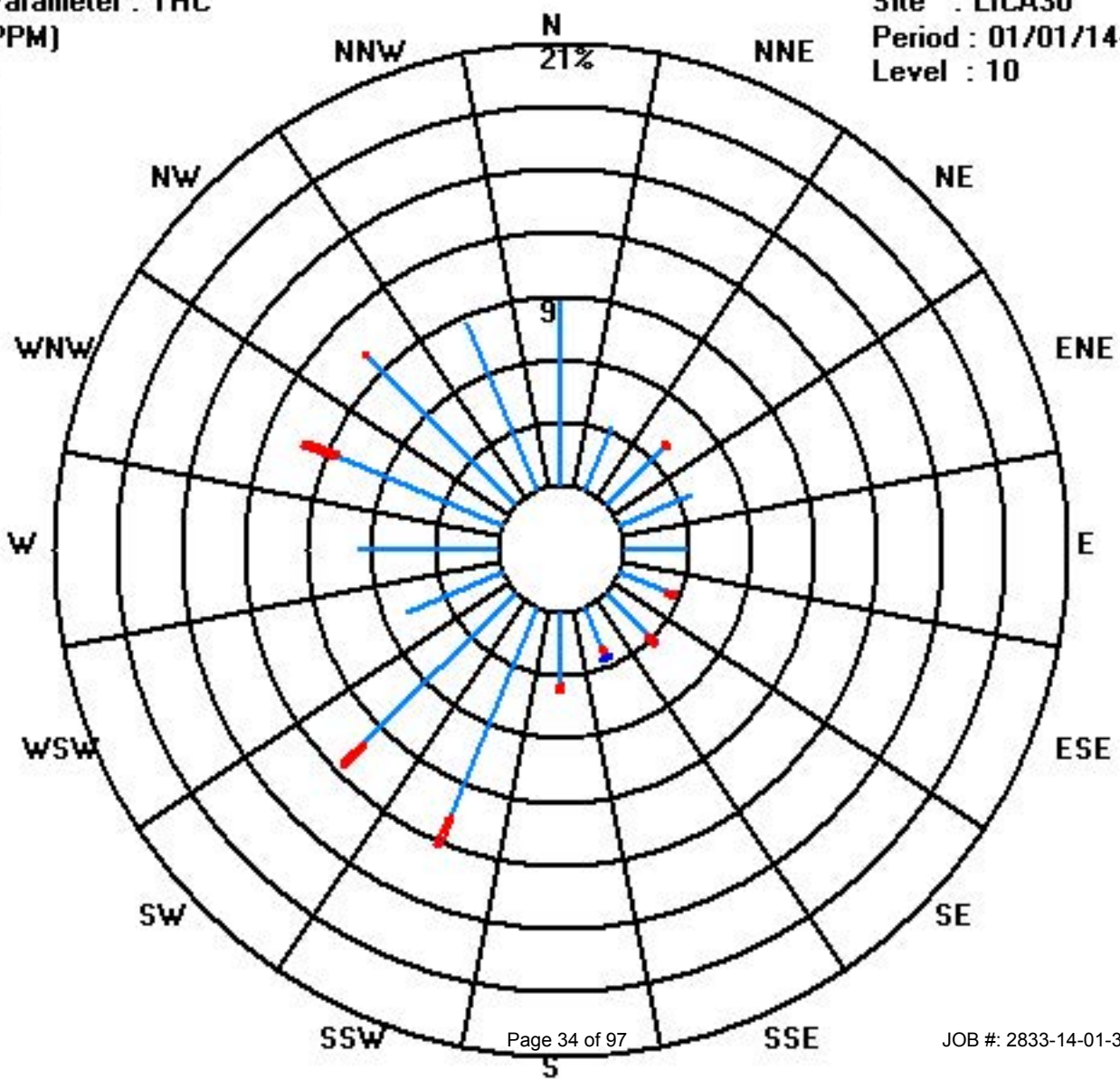
Calm : .00 %

Total # Operational Hours : 707

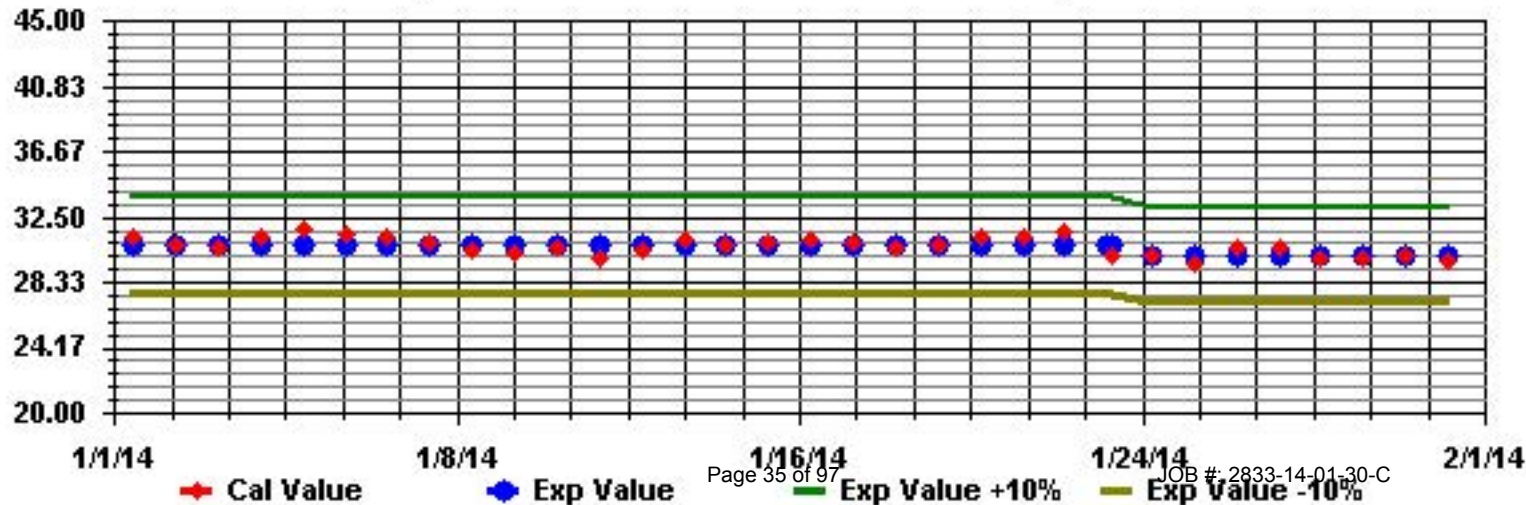
Class Limits (PPM)

Period : 01/01/14-01/31/14

Level : 10



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



Nitrogen Dioxide

Lakeland Industry & Community Association - Maskwa Site

JANUARY 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																													
1		1.6	2.6	3.7	4.4	4.6	6.4	7.7	8.2	8.3	8	S	9.1	10.5	11.4	11.6	13.9	17.8	18	15.6	12.9	11.6	9.2	13	10.5	18	9.6	24	
2		8.3	7.6	6.5	6.1	5.4	4.5	4.5	5.7	5.6	S	4.6	5.1	5.1	6.1	6.5	8.4	12.2	14.6	16	10.9	8.6	9	12.3	11.2	16	8.0	24	
3		10.4	13.3	15.8	6.9	8.9	2.3	1.5	2	S	1.5	1.6	1.5	2.3	2.1	1.2	0.6	1.2	1.7	1	0.6	9.7	11.8	15.3	15.8	5.0	24		
4		4.8	7.6	0.4	3.2	9.1	6.6	4.9	S	8.8	6	4.9	7.4	9.2	7.7	6.1	3	0.2	0.5	0.5	1	1.4	1.7	0.7	0.2	9.2	4.2	24	
5		0.9	8.6	17	11	5.2	5.8	S	8.2	5.4	3.2	2.9	5.8	3.7	4.3	3.4	1.4	3.9	6.3	8	8.8	10.6	10	9.9	9.7	17	6.7	24	
6		13.1	9.2	6.4	4.8	5	S	3.2	5.5	4.7	6.3	5.8	9	10.9	8.3	9.2	4.8	3.1	1.5	1.3	1.3	1.1	1.1	1	13.1	5.1	24		
7		0.8	0.9	1	1	S	0.8	0.5	0.9	0.9	4.5	1.1	0.8	1.3	2.6	3.8	1	0.6	2.5	1	1.9	1.3	0.7	1.5	1.8	4.5	1.4	24	
8		1.6	2	3.2	S	1.8	1.7	2.5	3.3	3.2	2.4	2.7	3.5	4.3	4.7	5.1	5.6	7.3	7.2	6.7	6.7	8.9	9.6	10.2	7.5	10.2	4.9	24	
9		6.6	6	S	5.7	6	6.7	6.5	6.7	7.5	8.5	5.8	6.2	6.6	7.2	8.6	9.6	13.7	11.1	11.2	12.2	12.8	15.2	15.4	18.1	18.1	9.3	24	
10		20.4	S	23.6	22.7	22.9	23.5	30.6	30	24.9	17	12.1	8.2	3.1	1.9	1.9	2.2	1.8	3	3.4	9.4	12.2	5.1	5.3	2.7	30.6	12.5	24	
11		S	4	3.6	3.8	4.8	5.3	4.3	4.5	3.7	3.1	5	11.5	3.9	1.9	1.7	1.9	2	0.5	0.8	3.3	3.8	1.6	1.2	S	11.5	3.5	24	
12		1.3	4	5.4	4.5	14.8	13.9	16.1	15.6	12.5	7.9	5.7	0.9	7.4	2.8	1	1.4	4.2	7.3	5.5	3.9	3	3.5	S	4.3	16.1	6.4	24	
13		4.2	4.5	4.1	3	2.9	2.6	3.1	12	19.5	18.7	14.9	10.9	7.8	4.9	6.3	18.3	17.6	9.9	17.8	18.6	17	S	15.1	6.4	19.5	10.4	24	
14		0.9	6.3	9.3	1.1	1.8	1.2	1.6	1.2	2.2	2.8	4.8	4.2	6.1	6.4	7.1	8	7.9	7.6	7.2	7.2	S	7.5	6.1	4.7	9.3	4.9	24	
15		4.1	2.4	1.8	0.5	0.6	8.5	3.2	3	1.3	3.5	6.5	12	12.9	10.6	10.8	12.6	18.7	19.8	19.8	S	15.5	16.9	18	12.4	19.8	9.4	24	
16		13.3	13.7	8.2	4.4	12.6	1.3	3.9	7.9	8.3	10.4	9	8.6	5.2	3.7	7.5	8.3	S	11	8.9	11.5	12.9	8.1	13.7	8.5	24			
17		5.4	5.8	9.3	14.1	12.4	4.2	2	9.7	2.6	1.8	4.9	10.1	13.5	14.3	18	11.8	9	S	3	19.3	10.7	8.2	1.2	0.7	19.3	8.3	24	
18		0.9	2.4	1.6	1.4	7.3	11.2	5.4	4.8	11.2	9.3	7.3	4.6	6.5	2	2.4	3.5	S	3.6	4.4	7.7	10.1	10.9	4.6	1	11.2	5.4	24	
19		0.7	0.1	0.1	1.4	4.9	11.5	5.5	0.6	0.4	0.7	6.4	1.7	0.4	1	6.3	S	1.9	1.5	0.3	0.6	0.2	0.2	0.8	0.4	11.5	2.1	24	
20		0.5	1.6	1.4	0.9	0.8	3.9	4.1	4.7	4.6	3.9	5.1	4.6	4.8	5.3	S	5.2	8.5	7	7.2	7.4	9.2	7.7	20.7	14.4	20.7	5.8	24	
21		13.8	3	6.2	8.4	6.9	10.6	1.8	2.7	16.4	12.9	9.2	1.4	1.4	S	1.6	2.8	3.5	3	2.8	2.7	0.8	0	0	0	16.4	4.9	24	
22		0	0	0.8	1.1	0	0	0.1	1.1	1	2.6	3.9	3.3	S	2.6	2.5	2.9	3.4	2.7	4.3	5.7	5	3.6	3.2	4.1	5.7	2.3	24	
23		3.9	4.1	4.1	5.2	6.2	6	8.1	15.3	15.7	C	C	C	C	C	C	C	C	C	2.1	0.9	0.4	1.4	1.5	1.1	15.7	5.1	24	
24		1.5	0.7	0.2	0.5	1	0.1	0.5	2	8.8	11.9	8	S	1.1	0	0.3	1.6	4.1	2.3	0.8	0.5	0	0.1	0.7	0.3	11.9	2.0	24	
25		1.5	1.5	1.7	1.9	2.4	3.5	6	2.7	14	13.6	S	14.6	4.5	0	0	0	0.2	0	0	0.5	0.3	1	0.7	0.3	14.6	3.1	24	
26		0	0	0.9	0.9	1.1	0.9	0.9	1.3	2.6	S	2.4	3	2.4	2.9	3.8	3.5	2.4	2.2	1.7	1.7	1.4	1.5	1.6	2.2	3.8	1.8	24	
27		4.5	4.7	4.6	2.6	2.3	4.2	7.7	22	S	19.6	16.6	9.5	11.5	8	6	9.5	14.8	14.3	17.8	15.3	11.6	11.1	6.6	5.1	22	10.0	24	
28		6.2	6	5.4	5.4	4.8	5.5	6.3	S	10.3	14.3	9.5	7.4	7.2	8.8	10.6	14.1	19.9	24.3	16.7	7.1	2.8	2.2	1.1	1.9	24.3	8.6	24	
29		3	3.2	4.6	2.7	2.2	2.8	S	5.5	6.9	5.8	6.5	4.7	4.3	4.5	3.6	4.7	6.2	5.3	5.3	3.9	4.2	1.7	1.8	1.3	6.9	4.1	24	
30		1.8	2.4	3.6	2.9	1.2	S	1.5	1.5	2.1	5.4	4	0.9	1	0.4	0	0.6	1.8	1.6	4	1.9	4.6	5.2	3.9	5.2	5.4	2.5	24	
31		3.3	2.7	7.5	1.2	S	1.6	3.3	3.1	1	2.1	1.2	0.2	0	0.3	1	1.2	0.2	0.6	0.5	0.3	0.6	0.7	0.7	0.7	7.5	1.5	24	
HOURLY MAX		20	14	24	23	23	24	31	30	25	20	17	15	14	14	18	18	20	24	20	19	17	17	21	18				
HOURLY AVG		4.6	4.4	5.4	4.5	5.5	5.4	5.1	6.6	7.4	7.4	6.2	5.9	5.5	4.7	5.1	5.6	6.7	6.5	6.2	6.2	6.0	5.6	6.1	5.1				

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

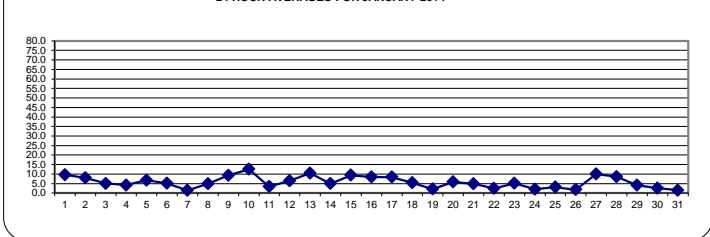
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

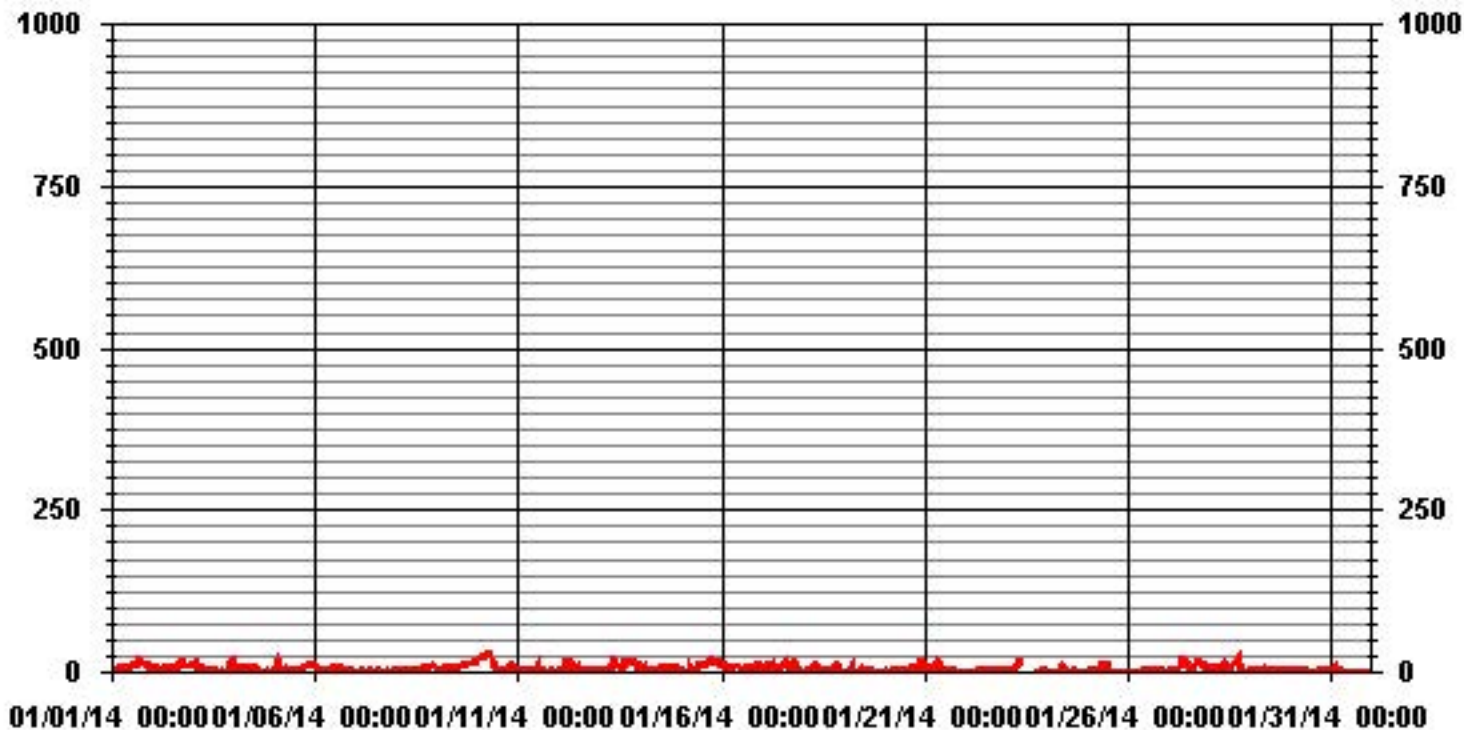
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	686					
MAXIMUM 1-HR AVERAGE:	30.6	PPB	@ HOUR(S)	6	ON DAY(S)	10
MAXIMUM 24-HR AVERAGE:	12.5	PPB			ON DAY(S)	10
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	5.19		MONTHLY AVERAGE:	5.73	PPB	

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



— LICA30 NO2_ PPB

Lakeland Industry & Community Association - Maskwa Site

JANUARY 2014

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	1	2.4	3.9	4.7	5	5.5	8	8.6	8.8	9.2	10.1	S	10	12.3	12.6	13	15.5	18.9	20.2	18.2	14.6	12.9	12.2	14.3	13.2	20.2	11.0	24	
2	2	9.4	8.8	7.3	7	6.1	5.2	5.8	7	6.6	S	5.3	5.8	6	7.6	7.7	9.6	18.4	20.5	20.7	16.3	10.4	12.2	14.9	13.8	20.7	10.1	24	
3	3	13.6	15	21.2	11.6	22.1	3.8	3	3.2	S	2.9	2.5	3	3.3	7.1	3.6	2	1.7	2.4	2.8	2.9	1.8	16.7	22.3	21.6	22.3	8.3	24	
4	4	13.7	17.5	3.5	16.7	16	13.7	11.9	S	16.4	11	8.1	11.9	14	16.9	10.5	10.4	1.2	1.7	1.6	2.4	2.2	2.8	1.8	1	17.5	9.0	24	
5	5	5.6	14.8	20.2	20.2	10.9	12	S	13.3	9.5	5.5	4.3	9.3	6.1	5.8	4.8	3.3	6.5	8.5	9.1	9.1	11.3	10.6	10.4	10.8	20.2	9.6	24	
6	6	15.7	11.5	7.6	5.3	5.2	S	4	8.5	8.2	8.6	10	12.8	15.8	13.8	14.4	9	4.7	2.2	2.2	2.3	2.1	2.1	1.8	1.7	15.8	7.4	24	
7	7	1.4	1.7	1.8	1.8	S	1.4	1.2	2	1.7	16.4	1.8	1.2	2.1	4.8	5.7	6	2.3	3	2.5	3	2.5	1.7	2.3	2.6	16.4	3.1	24	
8	8	2.2	3.4	4	S	3.1	2.7	4.1	4.5	4.3	3.3	3.6	4.4	5.1	5.4	5.7	6.5	8.6	9.4	8.3	9.6	10.2	10.8	11.1	9.8	11.1	6.1	24	
9	9	8.7	8.5	S	6.4	6.7	7.7	7.6	8.1	8.8	26.2	6.4	7.1	6.7	7.5	9.6	10.8	19.1	11.6	12.2	13.7	15.8	16	16.4	19.1	26.2	11.3	24	
10	10	21.1	S	24.5	23.8	23.5	28	37.2	32.2	28.3	27.2	17.1	22.3	4.7	3.2	3.4	3.3	3	4.6	9.2	22	19.5	10.8	11.5	8.2	37.2	16.9	24	
11	11	S	4.8	4.8	4.6	7	6.4	5.6	6.2	5.4	4.4	13	21.3	7.3	3	3.8	3.8	4.1	1.5	1.4	8.2	7.8	4.6	1.9	S	21.3	6.0	24	
12	12	2.1	7.5	7.4	10.2	20.1	20.4	19	19.5	18.2	17.5	14	5.4	13.4	6.5	8.5	3.4	10.5	9.5	8.4	5.5	4.3	4.8	S	4.8	20.4	10.5	24	
13	13	5.2	5.2	5.1	3.8	3.5	3.6	4.9	24.9	26	26.2	21.2	16.4	12.6	7.9	9.3	26.7	29.7	34.1	33.9	30.7	26.3	S	27.4	19.9	34.1	17.6	24	
14	14	2.6	13.3	27.8	2.6	2.5	2	2.6	1.9	3.4	3.5	6.4	5.2	7.7	7.4	8.4	8.9	8.8	8.5	7.9	8	S	8.2	7.4	5.3	27.8	7.0	24	
15	15	5.4	4.3	2.4	1.3	3.6	19.5	10.4	6.9	10	7.6	11.2	16.1	19.1	21	16.2	18.7	23.4	24	26.6	S	24	28.2	30.9	22.6	30.9	15.4	24	
16	16	18.4	18.9	18	12.2	20.4	3.7	8.5	9.9	11.5	12.1	11.9	10.2	17.7	6.2	11.9	10.8	9.8	10.9	S	13	10	13.9	16.4	16.7	20.4	12.7	24	
17	17	6.5	6.9	11.1	15.5	15.3	8	3	20.4	5.9	3.5	9.6	12	16.7	19.1	24.3	22.3	18.5	S	23.4	27.1	15.7	15.6	2	0.9	27.1	13.2	24	
18	18	1.4	6.5	2.3	3.1	12	13.2	7.8	6.4	14.2	9.8	8.3	5.8	12.4	3	3.2	6.2	S	5.3	7.1	9.8	11.5	12.6	9.8	6.2	14.2	7.7	24	
19	19	4.6	0.7	0.7	3.3	12.6	17.6	15.2	2.8	1.4	3.8	10.5	16.2	1.2	5.4	23.3	S	3.8	3.2	1.3	1.9	0.8	1.1	1.6	1.1	23.3	5.8	24	
20	20	1.3	2.4	2.1	1.5	1.5	8.5	7.3	9.5	7.4	5.5	5.5	4.8	5.2	6	S	6.1	10.6	8.4	8.6	8.6	11.2	9.1	32.5	33.5	33.5	8.6	24	
21	21	2.4	7.3	20.3	17.8	20	25	7.4	7.5	33.8	17.1	14.8	8	3.4	S	2.7	4.2	5.1	4.1	3.6	3.7	2.3	0.1	0.1	0.4	33.8	10.1	24	
22	22	0.3	0.1	3.5	3.4	0.5	0.4	0.7	1.9	1.7	14	6.2	3.9	S	3.6	4.1	3.9	4.3	3.8	6.3	6.4	5.9	4.6	3.8	4.8	14	3.8	24	
23	23	4.5	5.1	4.9	6.2	7.1	6.9	10.8	17.9	20	C	C	C	C	C	C	C	C	C	C	4	1.7	1.1	4.4	3	2.2	20	6.7	24
24	24	2.3	1.9	1.1	2.2	2.1	1	3.2	7.7	18.5	20.3	16.4	S	2.6	0.8	1.4	4.6	5.8	3.8	2.3	1.1	0.6	0.8	1.5	0.9	20.3	4.5	24	
25	25	3	2.2	2.5	2.7	3.1	5.3	7.8	5.8	23.4	23.4	S	19.5	14.5	0.5	0.6	0.3	4.4	0.4	0.8	1.7	1	1.8	1.5	1.3	23.4	5.5	24	
26	26	0.2	0.6	1.9	1.7	1.9	1.6	1.5	2.1	4.2	S	3.5	8.5	5.3	4.3	5.9	5.9	3.7	3.8	2.7	2.7	2.5	2.3	2.9	5.3	8.5	3.3	24	
27	27	6.2	5.7	5.7	3.9	3.2	8.1	11	43	S	22.7	19.8	14.7	16.6	10.1	9.4	11.7	21.3	16.3	20.4	18.6	15.6	15.5	9.8	6.4	43	13.7	24	
28	28	7.3	7.3	6.5	7.3	6.3	10.4	19.8	S	16.6	20.9	12.1	8.1	8.1	10.5	12.2	17	28.4	27.7	20.8	12.4	4.3	3.5	2.8	3.1	28.4	11.9	24	
29	29	3.9	5.1	5.7	4.1	3.1	3.9	S	7	9	6.4	10.1	7.3	7.1	5.2	4.8	5.7	7.4	6.9	7	4.8	4.7	3.4	2.3	1.8	10.1	5.5	24	
30	30	2.9	3.5	6.2	3.6	2.2	S	7.1	8.9	8.8	11	10.4	5.1	3.1	3.3	1.4	2.4	5.2	3.7	6.4	3.6	9.6	8.4	7.4	7	11	5.7	24	
31	31	4.6	4.2	15.6	2.7	S	2.7	7.9	8.1	3	4	7.3	1.9	1	1.6	4.3	3.5	1.1	1.8	1.3	1.2	1.8	1.6	6.5	5.9	15.6	4.1	24	
HOURLY MAX		24	19	28	24	24	28	37	43	34	27	21	22	19	21	24	27	30	34	34	31	26	28	33	34				
HOURLY AVG		6.7	6.6	8.3	7.1	8.5	8.6	8.4	10.5	11.6	12.3	9.7	9.6	8.7	7.2	8.1	8.4	10.0	9.0	9.4	8.9	8.3	8.0	9.3	8.4				

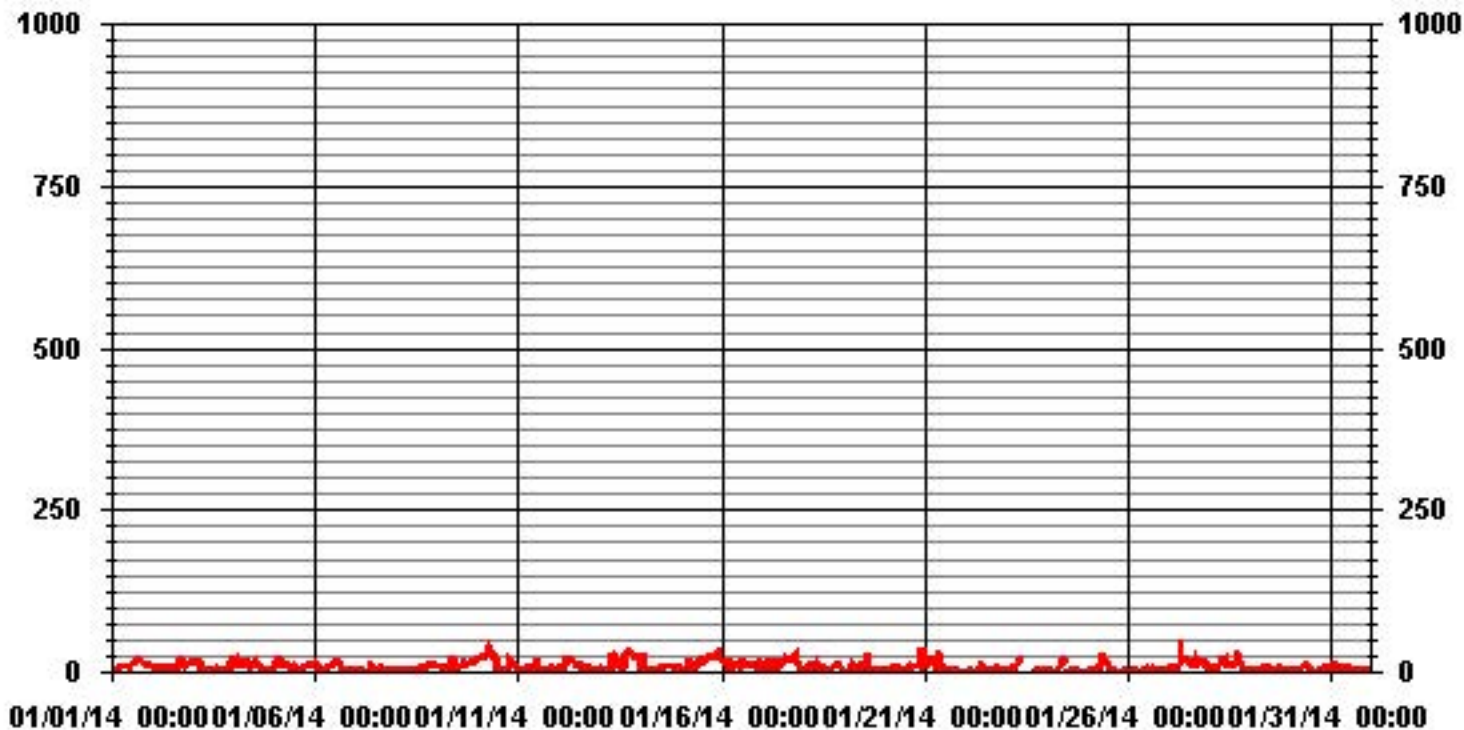
STATUS FLAG CODES

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:	43	PPB	@ HOUR(S)	7	ON DAY(S)	27
	VAR-VARIOUS					
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	7.27					

01 Hour Averages



— LICA30 NO2MAX PPB

LICA30
 NO2_ / WDR Joint Frequency Distribution (Percent)

January 2014

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	8.67	3.27	4.12	3.69	2.98	2.84	3.41	2.70	3.84	12.37	11.66	4.97	6.54	10.09	10.09	8.67	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	8.67	3.27	4.12	3.69	2.98	2.84	3.41	2.70	3.84	12.37	11.66	4.97	6.54	10.09	10.09	8.67	

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	61	23	29	26	21	20	24	19	27	87	82	35	46	71	71	61	703
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	61	23	29	26	21	20	24	19	27	87	82	35	46	71	71	61	

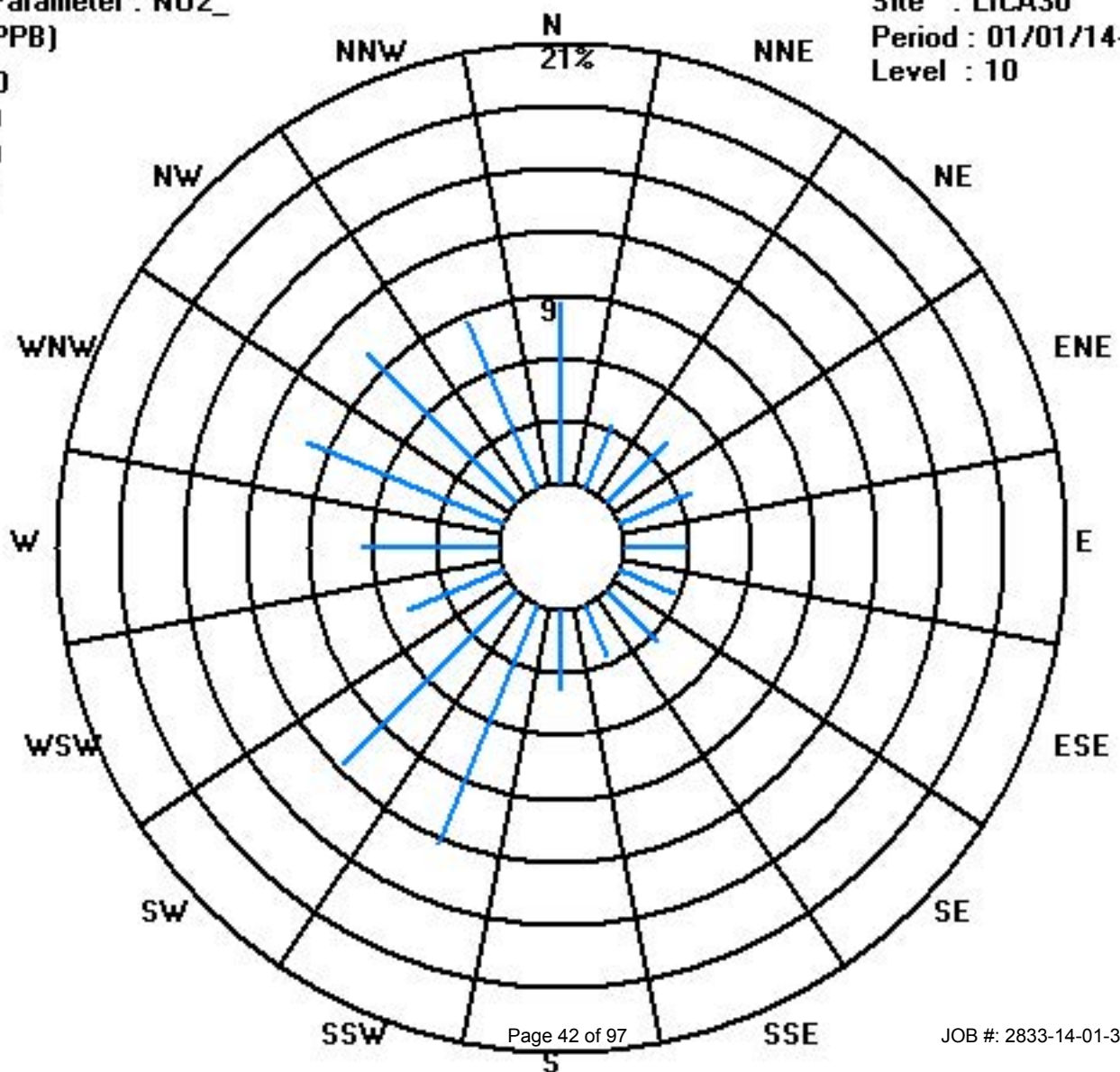
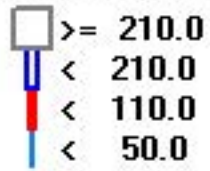
Calm : .00 %

Total # Operational Hours : 703

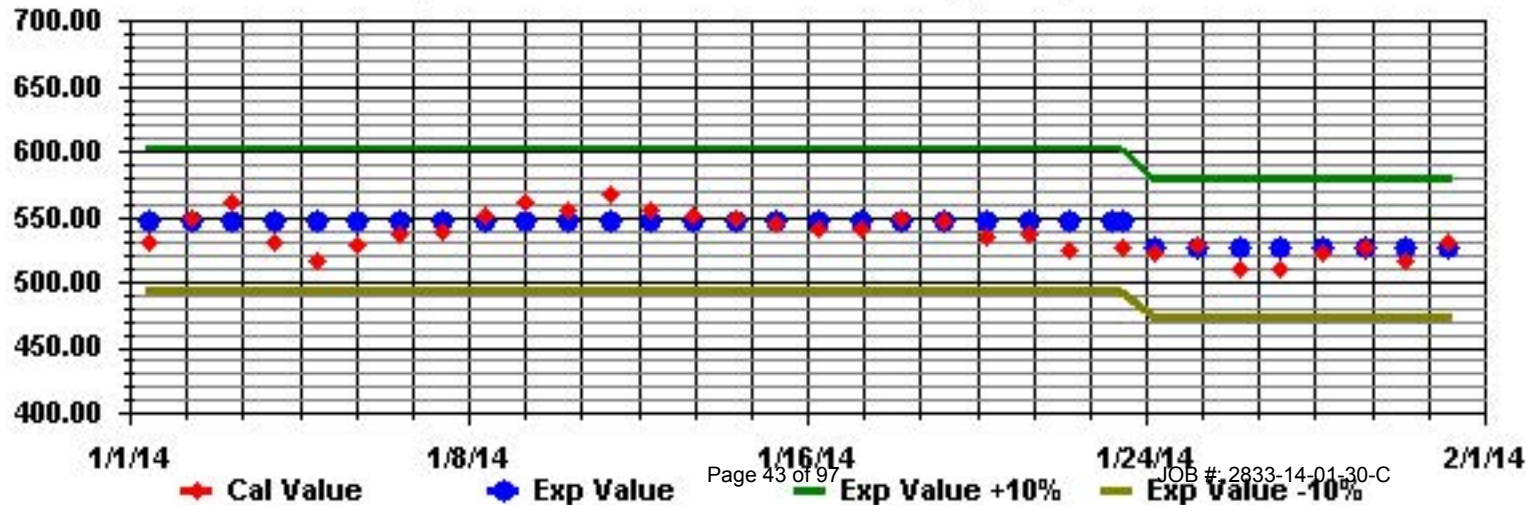
Class Limits (PPB)

Period : 01/01/14-01/31/14

Level : 10



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



Nitric Oxide

Lakeland Industry & Community Association - Maskwa Site

JANUARY 2014

NITRIC OXIDE (NO) hourly averages in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	0	0	0	0	0	0	0	0	0	1	S	5.1	6.5	6	4.5	2.7	0.7	0.2	0	0	0	0	0.1	0	6.5	1.2	24	
2	0	0	0	0	0	0	0	0	0	S	0.7	0.5	1.2	1.2	1.1	0.5	0.7	0.5	0.2	0	0	0	0	0	1.2	0.3	24	
3	0	0	1	0	0	0	0	0	S	0.4	0.6	0.8	0.7	0.9	0.4	0	0.2	0.2	0.1	0	0.2	1.9	3.7	4.9	4.9	0.7	24	
4	1.2	1.7	0	0.8	1.9	0.9	0.4	S	1	0.8	1.7	5.2	6.4	4	2.4	1.1	0.1	0	0.1	0	0	0	0	0	6.4	1.3	24	
5	0	1.8	6.2	3.8	1.2	1.1	S	1.2	0.6	0.4	1	3.5	1.8	1.9	0.7	0	0	0	0	0	0	0	0	0	6.2	1.1	24	
6	0	0.1	0	0	0	S	0	0	0	0.3	0.3	1.2	2.6	1.7	1.7	0	0	0	0	0	0	0	0	0	2.6	0.3	24	
7	0	0	0	0	S	0	0	0	0	1.2	0.3	0.1	0.4	0.7	0.7	0	0	0	0	0	0	0	0	0	1.2	0.1	24	
8	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
9	0	0	S	0	0	0	0	0	0	1	1.1	2	1.4	1.6	1.5	0.3	0.2	0	0	0	0	0	0	0	2	0.4	24	
10	0	S	0.5	0.3	0.4	0.6	5.8	3.8	4	5.6	5.3	4.4	1.4	0.9	0.9	0.7	0.3	0.1	0.1	2.4	4.1	1.3	0.7	0	5.8	1.9	24	
11	S	0	0.1	0.2	0.5	0.5	0.5	0.7	0.4	0.8	1	2.7	0.5	0.3	0.4	0.5	0.6	0.3	0.1	0.3	0.2	0.1	0	S	2.7	0.5	24	
12	0	0	0	0.3	14.1	11.5	14.2	11.4	7.5	5.2	4.3	0.8	5.1	1.6	0.8	0.5	0.2	0.9	0.6	0.4	0.3	0.3	S	0	14.2	3.5	24	
13	0	0	0	0	0	0	2.4	9.1	14.7	11.5	8.9	5.6	2.7	3.4	9.3	6.2	3.1	6	5.7	2.9	S	2.7	0	14.7	4.1	24		
14	0	0.2	2.4	0	0	0	0	0	0.2	0.2	0.7	0.8	0.9	0.9	0.3	0	0	0	0	0	S	0.2	0.1	0	2.4	0.3	24	
15	0	0.1	0	0	0.3	2.1	0.4	0.1	0	0.3	1.6	6.3	5.9	4.7	5	5.5	7.9	7.4	7.5	S	5.2	6	7.1	2.7	7.9	3.3	24	
16	1.4	0.7	0	0	0.3	0	0	0	1.3	2.3	2.5	1.9	1.1	1.8	0.7	0	0	S	0.1	0	0	0	0	0	2.5	0.6	24	
17	0	0	0	0	0	0	0	0.9	0	0	0.9	2.6	5.8	6.5	7.9	3.8	1.6	S	0.7	2.9	0.2	0.1	0	0	7.9	1.5	24	
18	0.1	0.1	0	0	0.2	0	0.1	0	0.2	1	1.7	1.2	2.1	0.6	0.4	0.4	S	0	0	0	0	0	0	0	2.1	0.4	24	
19	0	0	0	0	0.4	1.6	0.3	0	0	0	0.8	0.7	0.1	0.2	1.4	S	0	0	0	0	0	0	0	0	1.6	0.2	24	
20	0	0	0	0	0	0	0	0	0	0.2	1.6	1.9	2.1	2.1	S	0.5	0	0	0	0	0	0	0	2.9	2.1	2.9	0.6	24
21	1.5	0.2	1.1	1.8	1.1	1.6	0.1	0.4	4.8	4.6	4.3	0.8	1.2	S	0.1	0	0	0	0	0	0	0	0	0	4.8	1.0	24	
22	0	0	0	0	0	0	0	0	0	0.2	1.1	1.5	S	0.9	0.6	0	0	0	0	0	0	0	0	0	1.5	0.2	24	
23	0	0	0	0	0	0	0	0.4	0.3	C	C	C	C	C	C	C	C	C	0.1	0.1	0	0.1	0.1	0	0.4	0.1	24	
24	0	0	0	0	0.1	0	0.6	0	0.7	2.1	2.9	S	0.2	0	0	0	0	0	0	0	0	0	0	0	2.9	0.3	24	
25	0	0	0	0	0	0	0	0	0.8	5.2	S	10.2	3.5	0.4	0	0	0	0	0.1	0	0	0	0	0	10.2	0.9	24	
26	0	0	0	0	0	0	0	0.1	0.3	S	0.7	1.7	1	0.7	1	0.2	0	0	0	0	0	0	0	0	1.7	0.2	24	
27	0	0	0	0	0	0	0.1	10.2	S	18	18.5	8.6	10.1	5.8	3.6	3.3	2.5	0.3	0.4	0.7	0.5	0.5	0.3	0.3	18.5	3.6	24	
28	0.4	0.4	0.3	0.3	0.3	0.4	0.5	S	1.4	7.7	5.8	4.2	4	4.8	4.7	4.1	4.6	0.9	1	0.2	0	0	0	0	7.7	2.0	24	
29	0	0	0	0	0	0	S	0.4	0.7	1	1.6	1.7	2.4	1.9	1.4	1	0.6	0.3	0.2	0.2	0.1	0.1	0.2	0.3	2.4	0.6	24	
30	0.2	0.3	0.3	0.2	0.3	S	1.2	1.1	1.4	2.6	2.7	1.8	1.8	1.3	0.9	0.8	1.1	0.6	0.4	0.5	0.6	0.4	0.3	0.4	2.7	0.9	24	
31	0.4	0.5	1.1	0.3	S	0.6	0.8	0.8	0.8	1	1.2	0.9	0.8	0.8	1.1	0.8	0.3	0.2	0.3	0.2	0.3	0.3	0.4	0.2	1.2	0.6	24	
HOURLY MAX	2	2	6	4	14	12	14	11	9	18	19	10	10	7	8	9	8	7	8	6	5	6	7	5				
HOURLY AVG	0.2	0.2	0.4	0.3	0.7	0.7	0.9	1.2	1.2	2.7	2.7	2.8	2.7	1.9	1.7	1.3	1.0	0.5	0.6	0.5	0.5	0.4	0.6	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

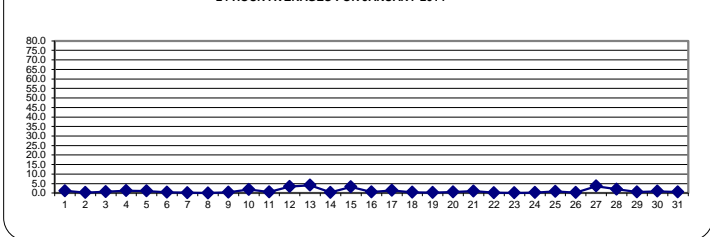
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

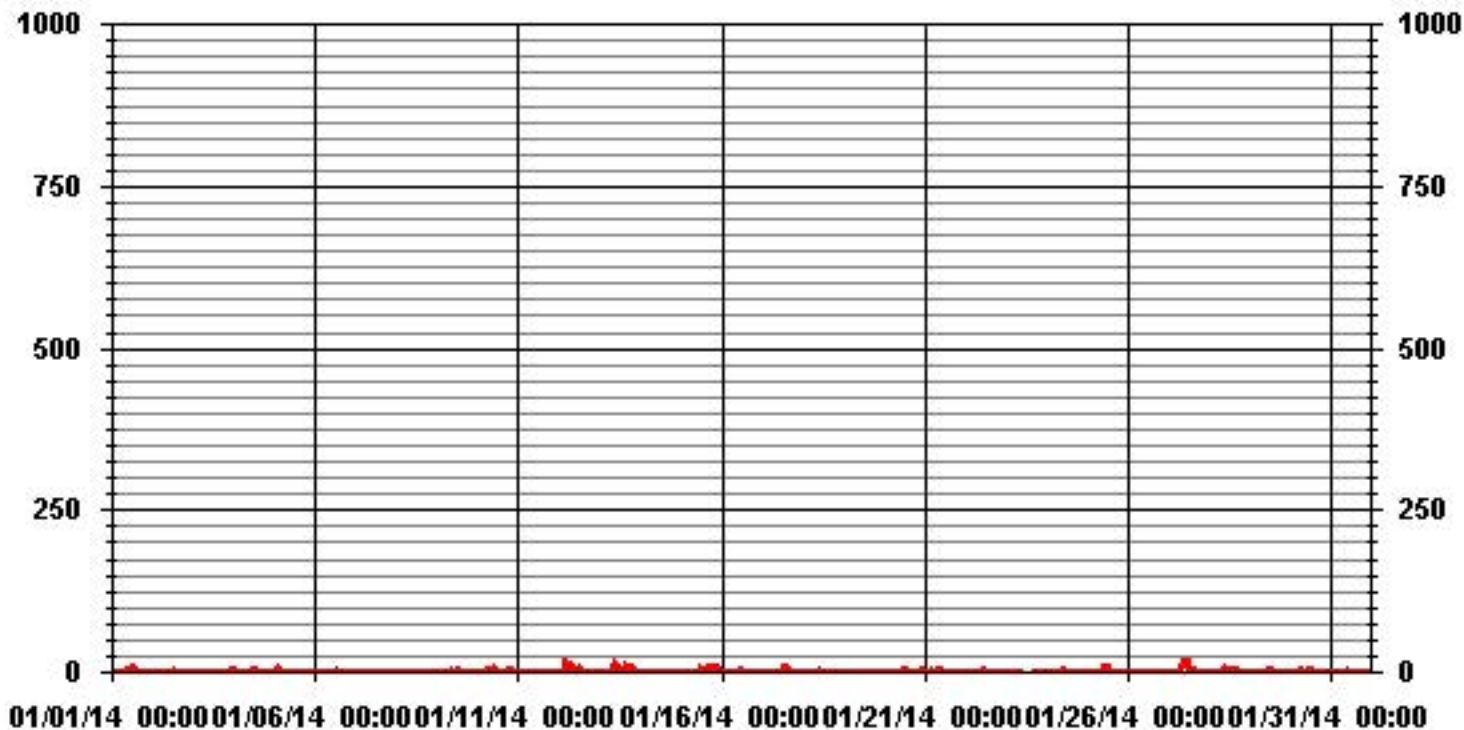
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	382					
MAXIMUM 1-HR AVERAGE:	18.5	PPB	@ HOUR(S)	10	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	4.1	PPB			ON DAY(S)	13
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	2.26		MONTHLY AVERAGE:	1.07	PPB	

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



— LICA30 NO_ PPB

Lakeland Industry & Community Association - Maskwa Site

JANUARY 2014

NITRIC OXIDE MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																												
1	0.1	0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.5	3	S	6.1	8.1	7.6	5.8	4.2	2	1.2	0.3	0.6	0.5	0.5	0.7	0.5	8.1	1.9	24	
2	0.5	0.8	0.5	0.4	0.4	0.3	0.3	0.3	0.3	S	2.3	1.9	1.8	4.3	1.9	1.4	3	11.5	1.7	0.5	0.6	0.3	1.1	0.3	11.5	1.6	24	
3	0	0.3	4.8	0.8	3.4	0	0	0.3	S	1	1.3	1.5	1.3	14.5	1.8	0.7	0.7	0.8	0.7	0.5	0.9	4.2	9.1	8.9	14.5	2.5	24	
4	3.2	5.6	0.5	5.5	4.2	2.4	1.7	S	3.6	2.3	3.3	10.4	10.9	11.7	4.6	5.6	0.7	0.5	0.7	0.5	0.5	0.3	0.5	0.4	11.7	3.5	24	
5	1.6	4.1	9.5	9.7	3.2	3.5	S	2.8	1.7	1.7	2.2	5.9	4.1	3.4	1.4	0.5	0.4	0.4	0.1	0.6	0.4	0.5	0.4	0.6	9.7	2.6	24	
6	0.6	0.7	0.7	0.3	0.3	S	0.3	0.6	0.7	0.9	1.2	2.9	4.8	4.3	4.1	0.8	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	4.8	1.1	24	
7	0	0.2	0.2	0.2	S	0.3	0.2	0.3	0.4	17.5	0.9	0.6	1.4	1.7	1.4	1.5	0.4	0.4	0	0.2	0.4	0.4	0.4	0.4	17.5	1.3	24	
8	0.3	0.3	0.3	S	0.1	0.1	0	0	0	0	0	0.9	0.5	0.6	1	0.7	0.5	0	0	0	0.1	0.2	0.3	0.2	1	0.3	24	
9	0	0	S	0.5	0.3	0.4	0.2	0	1.4	12.5	2.2	3.4	2.1	2.3	2.9	1.3	5	0	0	0	0	0	0	0	12.5	1.5	24	
10	0.3	S	1.3	0.8	1.1	2.7	25.9	7.2	19.9	16.8	8.7	27	2.6	1.5	2.3	1.6	1	0.6	0.6	14.3	11.6	4.1	2.2	1.4	27	6.8	24	
11	S	0.5	0.6	0.7	2.1	0.9	1	2.2	1	1.3	3.1	6.9	1.7	1	1.3	1.2	1.2	0.7	0.5	1.1	0.9	0.6	0.7	S	6.9	1.4	24	
12	0.6	0.4	0.6	4.4	25.4	26.4	19.9	16.3	13.2	14.6	11.6	4.3	11.1	4.5	15.1	2.1	1.4	3.1	1.1	1	0.8	0.8	S	0.7	26.4	7.8	24	
13	0.4	0.6	0.3	0.3	0.1	0.1	0.3	11.9	33.1	26.8	17.9	14.5	11.2	4.7	6.7	17.2	16.6	19.4	18.8	19.9	7.5	S	7.6	1.2	33.1	10.3	24	
14	0.5	2	9.2	0.5	0.4	0.4	0.6	0.5	0.8	0.8	1.5	1.3	1.4	1.5	0.9	0.5	0.5	0	0.4	0.3	S	0.9	0.5	0.5	9.2	1.1	24	
15	0.5	0.6	0.5	0.5	1.8	6.7	3.3	1.8	6.5	1	5.8	9.9	9	10.8	8.1	9.8	12.3	11.2	12.8	S	9.5	12	17.7	7.5	17.7	6.9	24	
16	3.9	2.3	0.5	0.4	1.7	1.5	0.5	1	0.7	3.4	3.9	5.5	18.4	3.4	4.6	3	0.9	0.5	S	1	0.3	0.3	0.4	0.4	18.4	2.5	24	
17	0.5	0.4	0.3	0.2	0.4	0.4	0.6	19.6	0.7	1.1	2.5	3.9	8.9	10.1	13.5	9.7	5.5	S	4.8	7.3	0.8	0.8	0.7	0.6	19.6	4.1	24	
18	0.7	0.5	0.5	0.4	2.4	0.5	1.3	0.4	1	1.9	2.5	1.9	4.7	1.8	1	1	S	0.4	2.3	0.1	0.2	0.4	0.4	0.2	4.7	1.2	24	
19	0.3	0.4	0.4	0.3	3.7	5	2.2	1.5	0.3	0.8	2.7	18.9	1.3	2.2	2.3	S	0.9	0.2	0	0	0	0	0	0	23	2.8	24	
20	0	0	0	0	0	0.9	1.2	2.2	1.1	1.4	2.6	3	2.8	3.2	S	2.1	0.8	0.3	0.2	0.1	0.2	0.3	10.4	10.6	10.6	1.9	24	
21	7.2	1.4	4.9	4.9	5.8	5.1	1.2	2.6	44.4	9.6	7.8	4.2	6.6	S	1.1	0.6	1.6	0	0	0	0.1	0.1	0	0.1	44.4	4.8	24	
22	0.1	0	0.1	0	0	0	0.1	0.3	0.2	7.4	2.6	2.2	S	1.8	2	1.4	0.4	0.1	0	0.7	0.2	0	0	0	7.4	0.9	24	
23	0	0.2	0	0	0	0	0	4.3	6.5	C	C	C	C	C	C	C	C	C	C	0.7	0.6	0.7	0.6	0.7	0.4	6.5	1.0	24
24	0.5	0.6	0.5	0.5	0.7	0.6	4.8	0.6	3.4	3.8	7	S	1	0.4	0.5	0.6	0.7	0.4	0.2	0	0.1	0.3	0.3	0.4	7	1.2	24	
25	0.2	0.3	0	0.2	0.2	0.3	1	2.8	2.8	13.5	S	13.6	11.4	1	0.6	0.3	3.3	0.6	0.6	0.6	0.4	0.3	0.5	0.2	13.6	2.4	24	
26	0	0.4	0.4	0.5	0.4	0.5	0.6	0.9	0.8	S	1.3	6.8	3.5	2.3	2.2	1.3	0.6	0.2	0.6	0.4	0.4	0.5	0.3	0.2	6.8	1.1	24	
27	0.4	0.5	0.6	0.6	0.3	0.6	0.8	71.9	S	22.8	23.2	14.4	16.3	7.1	5.5	4.5	5.1	0.8	1	2.6	1	1.1	0.9	0.8	71.9	7.9	24	
28	0.8	0.8	0.9	0.8	0.9	3	11.1	S	5.7	14.3	8.6	5.2	5.4	6.7	6.8	6	35.4	5.4	4.6	2.1	0	0.1	0.2	0.2	35.4	5.4	24	
29	0.2	0.3	0.6	0.1	0.2	0.4	S	1.9	1.9	1.7	3.4	2.6	4.1	2.4	2.1	1.7	1.6	0.8	0.8	0.8	0.7	0.7	0.7	0.9	4.1	1.3	24	
30	0.9	0.7	1.1	0.9	1	S	3.3	3	3.5	5.3	5.9	5	4.1	3.3	1.4	1.9	4.6	1.7	1	1	1	1	0.9	0.9	5.9	2.3	24	
31	1	1.2	3.8	0.9	S	1.1	1.9	1.4	1.3	1.5	8	2.4	1.4	1.7	3.5	1.8	1	0.9	0.8	0.7	0.7	0.9	1.5	1.2	8	1.8	24	
HOURLY MAX	7	6	10	10	25	26	26	72	44	27	23	27	18	15	23	17	35	19	19	20	12	12	18	11				
HOURLY AVG	0.8	0.9	1.5	1.2	2.1	2.2	2.9	5.5	5.4	6.7	5.1	6.5	5.6	4.2	4.4	2.9	3.7	2.1	1.9	1.9	1.4	1.1	2.0	1.3				

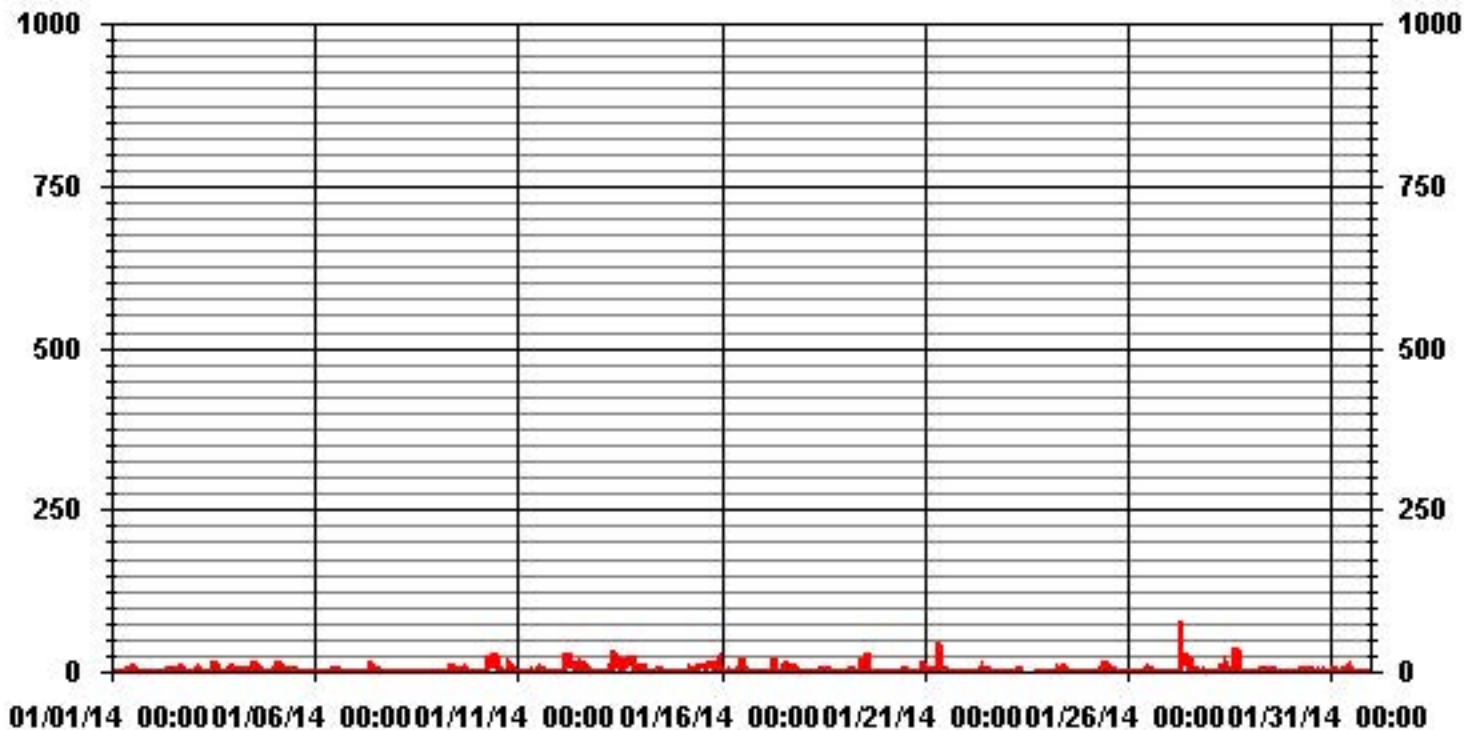
STATUS FLAG CODES

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:	647
MAXIMUM INSTANTANEOUS VALUE:	71.9 PPB @ HOUR(S) 7 ON DAY(S) 27
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	9 HRS
OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	5.70

01 Hour Averages



LICA30
 NO_ / WDR Joint Frequency Distribution (Percent)

January 2014

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	8.80	3.26	4.11	3.69	2.98	2.84	3.40	2.69	3.83	12.35	11.64	4.97	6.53	10.08	10.08	8.66	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	8.80	3.26	4.11	3.69	2.98	2.84	3.40	2.69	3.83	12.35	11.64	4.97	6.53	10.08	10.08	8.66	

Calm : .00 %

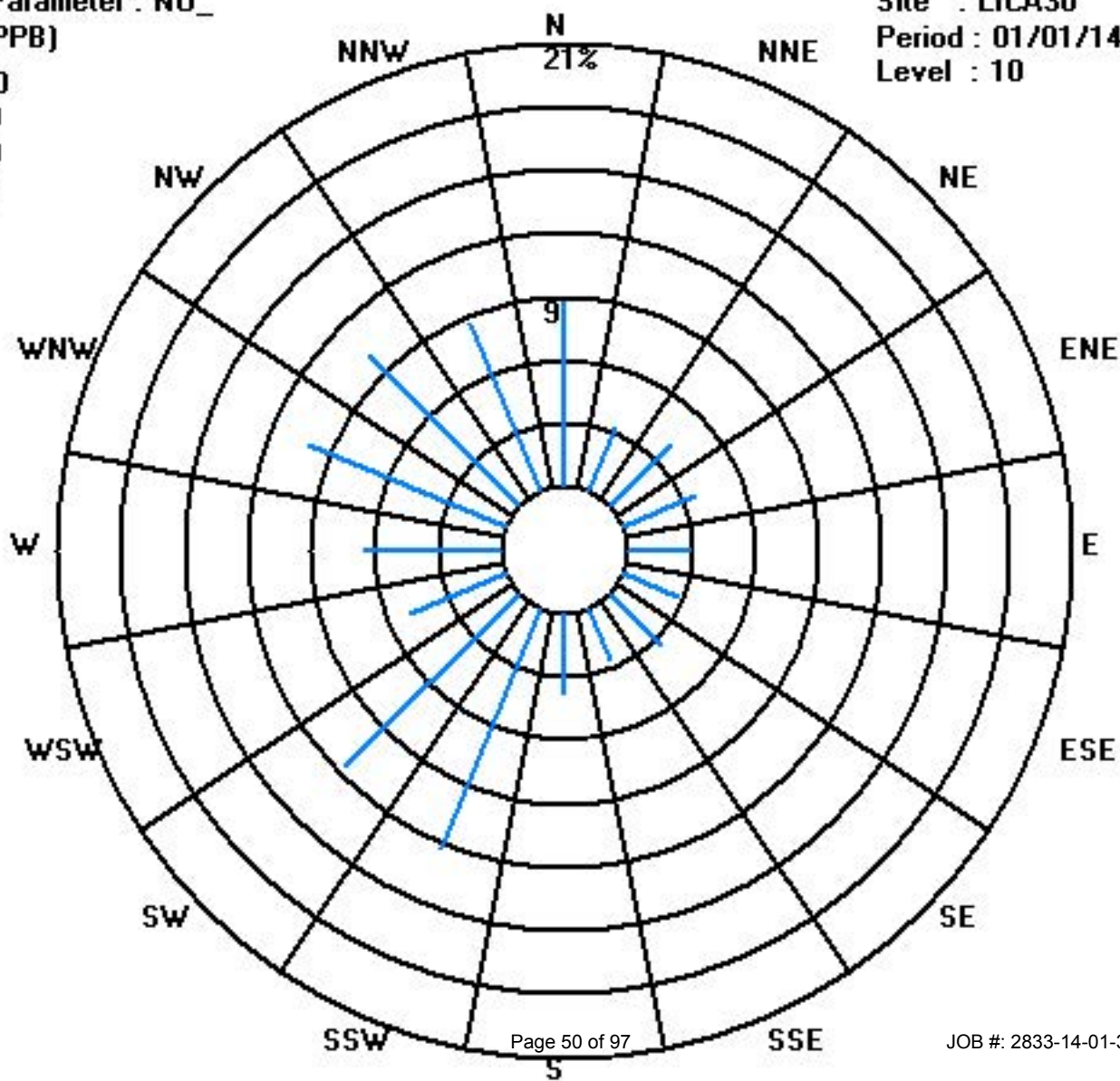
Total # Operational Hours : 704

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	62	23	29	26	21	20	24	19	27	87	82	35	46	71	71	61	704
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	62	23	29	26	21	20	24	19	27	87	82	35	46	71	71	61	

Calm : .00 %

Total # Operational Hours : 704



Oxides of Nitrogen

Lakeland Industry & Community Association - Maskwa Site

JANUARY 2014

OXIDES OF NITROGEN (NOx) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																													
1		1.6	2.6	3.7	4.4	4.6	6.4	7.7	8.2	8.3	9	S	14.2	17	17.4	16.1	16.6	18.5	18.2	15.6	12.9	11.6	9.2	13.1	10.5	18.5	10.8	24	
2		8.3	7.6	6.5	6.1	5.4	4.5	4.5	5.7	5.6	S	5.3	5.6	6.3	7.3	7.6	8.9	12.9	15.1	16.2	10.9	8.6	9	12.3	11.2	16.2	8.3	24	
3		10.4	13.3	16.8	6.9	8.9	2.3	1.5	2	S	1.9	2.2	2.3	3	3	2.5	1.2	0.8	1.4	1.8	1	0.8	11.6	15.5	20.2	20.2	5.7	24	
4		6	9.3	0.4	4	11	7.5	5.3	S	9.8	6.8	6.6	12.6	15.6	11.7	8.5	4.1	0.3	0.5	0.6	1	1.4	1.7	0.7	0.2	15.6	5.5	24	
5		0.9	10.4	23.2	14.8	6.4	6.9	S	9.4	6	3.6	3.9	9.3	5.5	6.2	4.1	1.4	3.9	6.3	8	8.8	10.6	10	9.9	9.7	23.2	7.8	24	
6		13.1	9.3	6.4	4.8	5	S	3.2	5.5	4.7	6.6	6.1	10.2	13.5	10	10.9	4.8	3.1	1.5	1.3	1.3	1.3	1.1	1.1	1	13.5	5.5	24	
7		0.8	0.9	1	1	S	0.8	0.5	0.9	0.9	5.7	1.4	0.9	1.7	3.3	4.5	1	0.6	2.5	1	1.9	1.3	0.7	1.5	1.8	5.7	1.6	24	
8		1.6	2	3.2	S	1.8	1.7	2.5	3.3	3.2	2.4	2.7	3.5	4.3	4.7	5.1	5.6	7.3	7.2	6.7	6.7	8.9	9.6	10.2	7.5	10.2	4.9	24	
9		6.6	6	S	5.7	6	6.7	6.5	6.7	7.5	9.5	6.9	8.2	8	8.8	10.1	9.9	13.9	11.1	11.2	12.2	12.8	15.2	15.4	18.1	18.1	9.7	24	
10		20.4	S	24.1	23	23.3	24.1	36.4	33.8	28.9	22.6	17.4	12.6	4.5	2.8	2.8	2.9	2.1	3.1	3.5	11.8	16.3	6.4	6	2.7	36.4	14.4	24	
11		S	4	3.7	4	5.3	5.8	4.8	5.2	4.1	3.9	6	14.2	4.4	2.2	2.1	2.4	2.6	0.8	0.9	3.6	4	1.7	1.2	S	14.2	4.0	24	
12		1.3	4	5.4	4.8	28.9	25.4	30.3	27	20	13.1	10	1.7	12.5	4.4	1.8	1.9	4.4	8.2	6.1	4.3	3.3	3.8	S	4.3	30.3	9.9	24	
13		4.2	4.5	4.1	3	2.9	2.6	3.1	14.4	28.6	33.4	26.4	19.8	13.4	7.6	9.7	27.6	23.8	13	23.8	24.3	19.9	S	17.8	6.4	33.4	14.5	24	
14		0.9	6.5	11.7	1.1	1.8	1.2	1.6	1.2	2.4	3	5.5	5	7	7.3	7.4	8	7.9	7.6	7.2	7.2	S	7.7	6.2	4.7	11.7	5.2	24	
15		4.1	2.5	1.8	0.5	0.9	10.6	3.6	3.1	1.3	3.8	8.1	18.3	18.8	15.3	15.8	18.1	26.6	27.2	27.3	S	20.7	22.9	25.1	15.1	27.3	12.7	24	
16		14.7	14.4	8.2	4.4	12.9	1.3	3.9	7.9	8.3	11.7	11.3	11.1	7.1	4.8	9.3	9	7.5	8.3	S	11.1	8.9	11.5	12.9	8.1	14.7	9.1	24	
17		5.4	5.8	9.3	14.1	12.4	4.2	2	10.6	2.6	1.8	5.8	12.7	19.3	20.8	25.9	15.6	10.6	S	3.7	22.2	10.9	8.3	1.2	0.7	25.9	9.8	24	
18		1	2.5	1.6	1.4	7.5	11.2	5.5	4.8	11.4	10.3	9	5.8	8.6	2.6	2.8	3.9	S	3.6	4.4	7.7	10.1	10.9	4.6	1	11.4	5.7	24	
19		0.7	0.1	0.1	1.4	5.3	13.1	5.8	0.6	0.4	0.7	7.2	2.4	0.5	1.2	7.7	S	1.9	1.5	0.3	0.6	0.2	0.2	0.8	0.4	13.1	2.3	24	
20		0.5	1.6	1.4	0.9	0.8	3.9	4.1	4.7	4.6	4.1	6.7	6.5	6.9	7.4	S	5.7	8.5	7	7.2	7.4	9.2	7.7	23.6	16.5	23.6	6.4	24	
21		15.3	3.2	7.3	10.2	8	12.2	1.9	3.1	21.2	17.5	13.5	2.2	2.6	S	1.7	2.8	3.5	3	2.8	2.7	0.8	0	0	0	21.2	5.9	24	
22		0	0	0.8	1.1	0	0	0.1	1.1	1	2.8	5	4.8	S	3.5	3.1	2.9	3.4	2.7	4.3	5.7	5	3.6	3.2	4.1	5.7	2.5	24	
23		3.9	4.1	4.1	5.2	6.2	6	8.1	15.7	16	C	C	C	C	C	C	C	C	C	2.2	1	0.4	1.5	1.6	1.1	16	5.1	24	
24		1.5	0.7	0.2	0.5	1.1	0.1	1.1	2	9.5	14	10.9	S	1.3	0	0.3	1.6	4.1	2.3	0.8	0.5	0	0.1	0.7	0.3	14	2.3	24	
25		1.5	1.5	1.7	1.9	2.4	3.5	6	2.7	14.8	18.8	S	24.8	8	0.4	0	0	0.2	0	0.1	0.5	0.3	1	0.7	0.3	24.8	4.0	24	
26		0	0	0.9	0.9	1.1	0.9	0.9	1.4	2.9	S	3.1	4.7	3.4	3.6	4.8	3.7	2.4	2.2	1.7	1.7	1.4	1.5	1.6	2.2	4.8	2.0	24	
27		4.5	4.7	4.6	2.6	2.3	4.2	7.8	32.2	S	37.6	35.1	18.1	21.6	13.8	9.6	12.8	17.3	14.6	18.2	16	12.1	11.6	6.9	5.4	37.6	13.6	24	
28		6.6	6.4	5.7	5.7	5.1	5.9	6.8	S	11.7	22	15.3	11.6	11.2	13.6	15.3	18.2	24.5	25.2	17.7	7.3	2.8	2.2	1.1	1.9	25.2	10.6	24	
29		3	3.2	4.6	2.7	2.2	2.8	S	5.9	7.6	6.8	8.1	6.4	6.7	6.4	5	5.7	6.8	5.6	5.5	4.1	4.3	1.8	2	1.6	8.1	4.7	24	
30		2	2.7	3.9	3.1	1.5	S	2.7	2.6	3.5	8	6.7	2.7	2.8	1.7	0.9	1.4	2.9	2.2	4.4	2.4	5.2	5.6	4.2	5.6	8	3.4	24	
31		3.7	3.2	8.6	1.5	S	2.2	4.1	3.9	1.8	3.1	2.4	1.1	0.8	1.1	2.1	2	0.5	0.8	0.8	0.5	0.9	1	1.1	0.9	8.6	2.1	24	
HOURLY MAX		20	14	24	23	29	25	36	34	29	38	35	25	22	21	26	28	27	27	27	27	24	21	23	25	20			
HOURLY AVG		4.8	4.6	5.8	4.7	6.2	6.1	5.9	7.8	8.6	10.2	8.9	8.7	8.1	6.7	6.8	6.9	7.7	7.0	6.8	6.6	6.5	6.0	6.7	5.5				

STATUS FLAG CODES

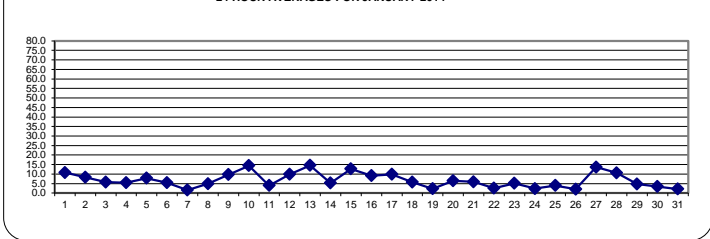
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT: ALBERTA ENVIRONMENT: 1-HR NA PPB

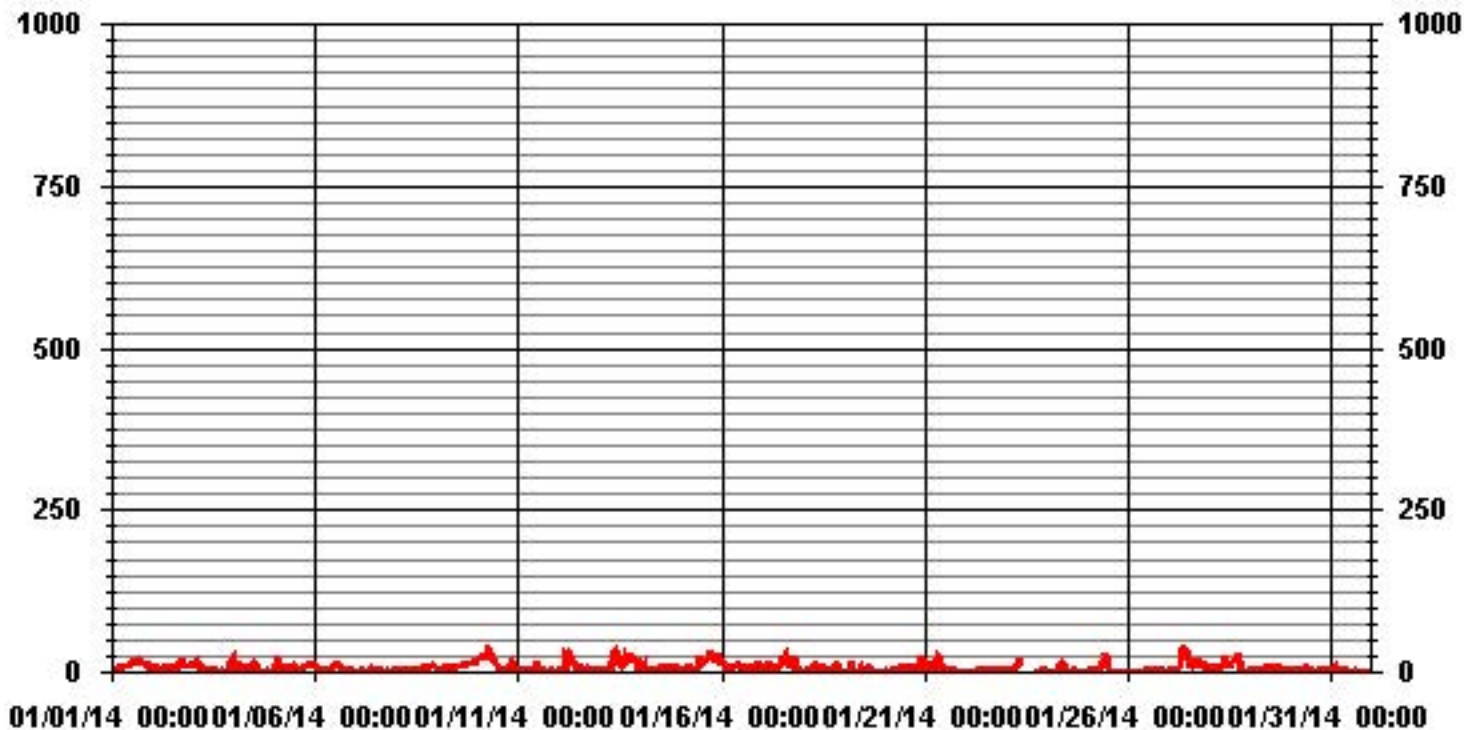
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	690					
MAXIMUM 1-HR AVERAGE:	37.6	PPB	@ HOUR(S)	9	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	14.5	PPB			ON DAY(S)	13
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	6.70		MONTHLY AVERAGE:	6.80	PPB	

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



— LICA30 NOX_ PPB

Lakeland Industry & Community Association - Maskwa Site

JANUARY 2014

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY																												
1	2.2	4	4.8	5	5.6	8.1	9	9.1	9.3	13.3	S	16	19.9	20.1	17.4	17.9	20	21.5	18.2	14.9	13.3	12.3	14.6	13.5	21.5	12.6	24	
2	9.5	8.9	7.3	7	6.1	5.5	5.7	6.9	6.6	S	7.2	7.4	7.1	11.9	9	9.8	21.3	30.9	21.8	16.1	10.1	12.1	15.7	13.9	30.9	11.2	24	
3	13.6	15.1	25.8	12.2	25.3	3.3	2.3	2.6	S	3.2	3.2	3.8	4.1	15.6	5.1	2.1	1.6	2.4	2.8	2.9	2	19.6	30.9	30	30.9	10.0	24	
4	16.7	23.1	3.5	22	19.8	15.6	12.2	S	19.7	12.3	10.9	21.9	24.1	28.1	14.8	15.7	0.8	1.4	1.3	2	2	2.5	1.4	0.7	28.1	11.8	24	
5	6.7	18.4	29.2	29.6	13.7	15.2	S	15.7	11.3	6.6	5.9	15.2	10.5	9.4	6.2	3.9	6.6	8.6	9	9.6	11.8	11	10.6	11.3	29.6	12.0	24	
6	16.1	12	8	5.5	5.4	S	4	8.5	8.8	9.3	10.9	15.5	20.5	17.8	17.8	9.7	4.5	2.2	1.8	1.9	1.9	1.8	1.6	1.5	20.5	8.1	24	
7	1.3	1.5	1.6	1.6	S	1.8	1.5	2.1	1.8	31.9	2.2	1.6	3.3	6.7	7.4	7.6	2.4	3.3	2.5	3	2.7	1.9	2.4	2.6	31.9	4.1	24	
8	2.2	3.2	4.2	S	2.9	2.5	4	4.2	4	3.2	3.5	5.2	6.1	6.5	6.9	6.9	8.4	9.1	8.2	9.7	10.5	10.8	10.8	9.5	10.8	6.2	24	
9	8.7	8.2	S	6.6	6.8	7.9	7.8	8.1	10	39.2	8.4	10.7	9	10	13	11.8	24.7	11.8	12.3	14.1	16	16.2	16.8	19.5	39.2	12.9	24	
10	21.5	S	25.7	24.4	24.2	30.6	61.8	38.7	45.6	43.5	25.4	44.4	7	4	4.6	3.7	3.2	4.2	9.1	35.6	30.6	14.4	12.8	9.4	61.8	22.8	24	
11	S	4.7	5	4.7	8.7	6.7	5.9	7.5	5.4	5.1	15.6	28	8.7	3.1	4.5	4.2	4.7	1.5	1.5	8.9	8.2	4.5	1.9	S	28	6.8	24	
12	2.3	7.5	7.5	14.1	44.1	46.2	37.7	34.3	30.9	31.3	24.8	9.3	24	10.5	21.3	4.9	11.6	11.4	8.5	5.7	4.2	4.8	S	5	46.2	17.5	24	
13	5	5.6	5.3	3.7	3.7	3.2	5	36.5	50.1	52.9	37.4	30.6	23.6	12.7	15.1	44	45.8	53.3	52.5	50.4	33.8	S	35	20.3	53.3	27.2	24	
14	2.6	15.3	36.6	2.6	2.7	1.8	2.5	2	3.6	3.8	7.4	5.9	8.6	8.5	8.9	9.3	9	8.3	7.7	7.8	S	9	7.7	5.7	36.6	7.7	24	
15	5.8	4.7	2.7	1.5	5	26.4	12.1	9	16.6	8	17	24.6	28	31.8	23.6	28.4	35.7	35.2	39.5	S	33.2	39.8	48	29.8	48	22.0	24	
16	21.1	19.9	18	12.3	21.8	4.9	8.9	10.7	11.9	14.6	15.5	15.5	33.2	8.1	16.4	14	10.3	10.7	S	14.1	10.5	14.4	16.8	17	33.2	14.8	24	
17	6.7	6.9	11.5	15.9	15.4	8.2	3.6	35.8	6.5	4.9	12.3	15.9	25.7	29.1	37.8	32.3	24.2	S	28.6	34.4	16.1	16.1	2.1	1.2	37.8	17.0	24	
18	1.6	6.8	2.7	3.3	14.6	13.6	8	6.6	14.4	11.3	10.6	7.6	16.9	4.1	3.8	7	S	5.7	9.5	10	11.7	12.9	10.3	6.4	16.9	8.7	24	
19	4.7	0.8	0.8	3.2	16.7	22.7	17.5	4.1	1.4	4.5	13.2	34.8	1.4	6.4	42.8	S	4.4	2.9	1.6	1.7	0.8	1.1	1.8	1.1	42.8	8.3	24	
20	1.3	2.5	2.2	1.5	1.6	8.9	8.9	11.9	9.1	7	8.2	8	8	9.8	S	7.9	10.5	8.1	8.4	8.3	11	8.9	42.1	43.6	43.6	10.3	24	
21	30.2	8	24.5	22.1	25	29.6	7	9.2	69.2	23.9	22	11.5	7.3	S	3.4	4.4	6.7	4.1	3.6	3.6	2.5	0.3	0.3	0.5	69.2	13.9	24	
22	0.4	0.2	3.8	3.6	0.5	0.6	0.7	2.4	2	21.5	9	6.6	S	5.3	6.3	5.4	4.6	4.3	6.6	7.5	6.3	4.6	3.8	4.9	21.5	4.8	24	
23	4.9	5.3	5.1	6.2	7.4	7.1	11.1	20.4	27.2	C	C	C	C	C	C	C	C	C	C	4.1	1.6	1.2	4.2	2.8	1.7	27.2	7.4	24
24	2.1	1.8	0.8	1.8	1.9	0.8	7.3	7.6	20.8	23.3	23	S	3.5	0.6	1.3	4.8	6	3.7	2.2	1.1	0.6	0.9	1.5	1.2	23.3	5.2	24	
25	2.9	2.3	2.3	2.5	3.1	5.1	8.6	8.9	25.8	36.7	S	32.6	25.8	1	0.6	0.4	6.9	0.5	1	1.8	1.3	2.1	1.5	1	36.7	7.6	24	
26	0.2	0.5	2.1	1.8	2.1	1.5	1.7	2.7	4.5	S	4.5	14.9	8.5	6.2	7	6.9	3.8	3.3	2.4	2.4	1.9	1.9	2.6	4.9	14.9	3.8	24	
27	5.6	5.5	5.4	3.5	2.9	7.7	10.9	113	S	42.2	41.4	28.1	31.9	16.6	14.1	14.7	26	16.3	20.6	20.6	15.8	15.8	9.7	6.2	113	20.6	24	
28	7.4	7.2	6.6	7.3	6	12.9	28.8	S	22.1	34.8	20.8	12.9	13.7	17.4	19	23.1	54.8	33.2	24.6	14.5	4.4	3.2	2.6	2.6	54.8	16.5	24	
29	3.7	5.1	5.5	3.8	2.8	3.8	S	9.1	11.1	7.9	13.2	9.8	11.1	7.7	6.7	7.2	9	7.6	7.6	5.1	5.2	3.9	2.7	2.1	13.2	6.6	24	
30	3.3	3.9	7.2	3.8	2.9	S	9.5	10.6	10.6	15	15.4	7.2	5.8	5	1.8	3.3	8.9	3.7	6.2	3.7	9.9	8.6	7.2	7.2	15.4	7.0	24	
31	4.4	4.4	18.8	2.6	S	3	9.2	8.7	3.3	4.5	13.6	3.3	1.6	2.4	7.1	4.3	1.3	1.6	1.3	1	1.6	1.6	7.4	6.5	18.8	4.9	24	
HOURLY MAX	30	23	37	30	44	46	62	113	69	53	41	44	33	32	43	44	55	53	53	50	34	40	48	44				
HOURLY AVG	7.2	7.1	9.5	7.9	10.3	10.5	10.8	15.4	16.0	18.4	14.4	15.5	13.8	10.9	11.9	10.9	13.0	10.7	10.8	10.5	9.4	8.7	10.8	9.4				

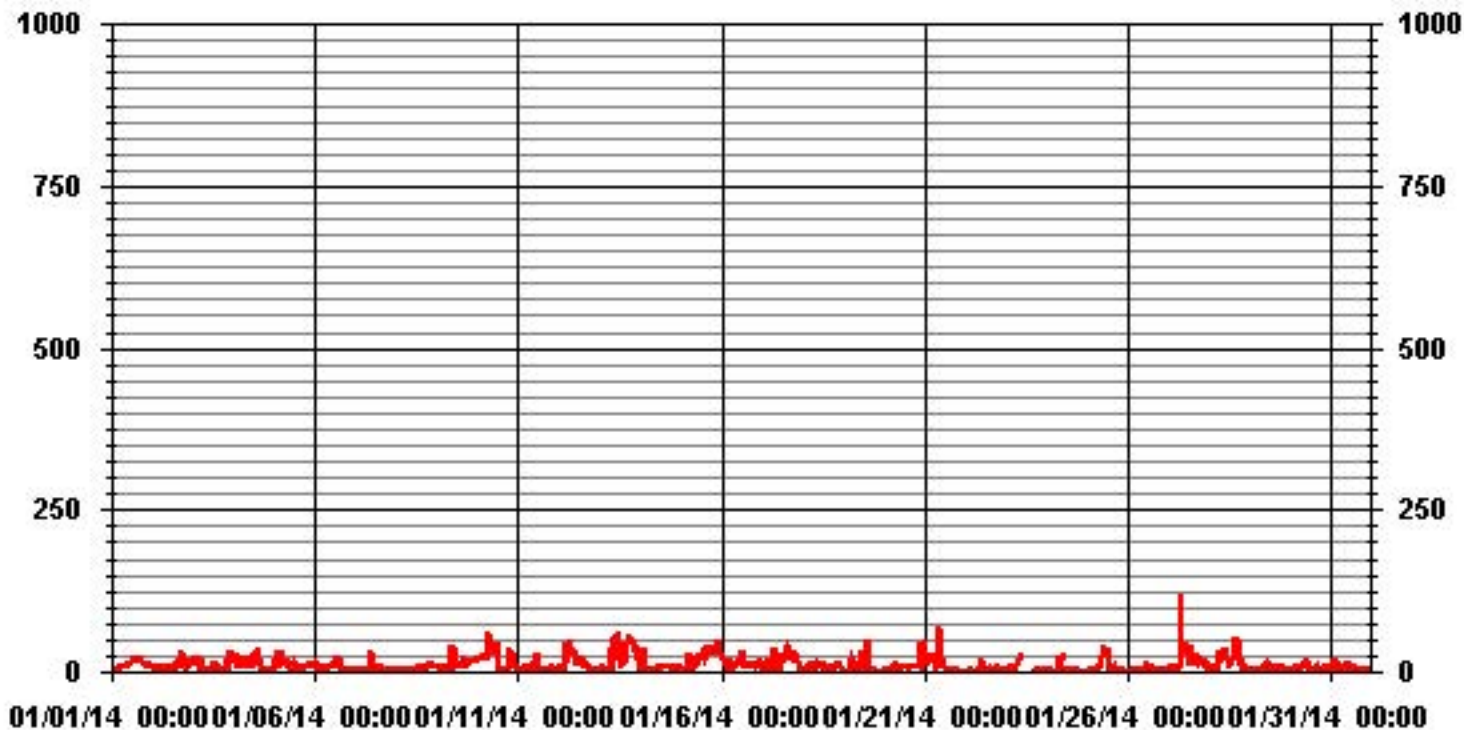
STATUS FLAG CODES

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:	704					
MAXIMUM INSTANTANEOUS VALUE:	113	PPB	@ HOUR(S)	7	ON DAY(S)	27
	VAR-VARIOUS					
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	11.64					

01 Hour Averages



— LICA30 NOXMAX PPB

LICA30
NOX_ / WDR Joint Frequency Distribution (Percent)

January 2014

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	8.80	3.26	4.11	3.69	2.98	2.84	3.40	2.69	3.83	12.35	11.64	4.97	6.53	10.08	10.08	8.66	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	8.80	3.26	4.11	3.69	2.98	2.84	3.40	2.69	3.83	12.35	11.64	4.97	6.53	10.08	10.08	8.66	

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	62	23	29	26	21	20	24	19	27	87	82	35	46	71	71	61	704
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	62	23	29	26	21	20	24	19	27	87	82	35	46	71	71	61	

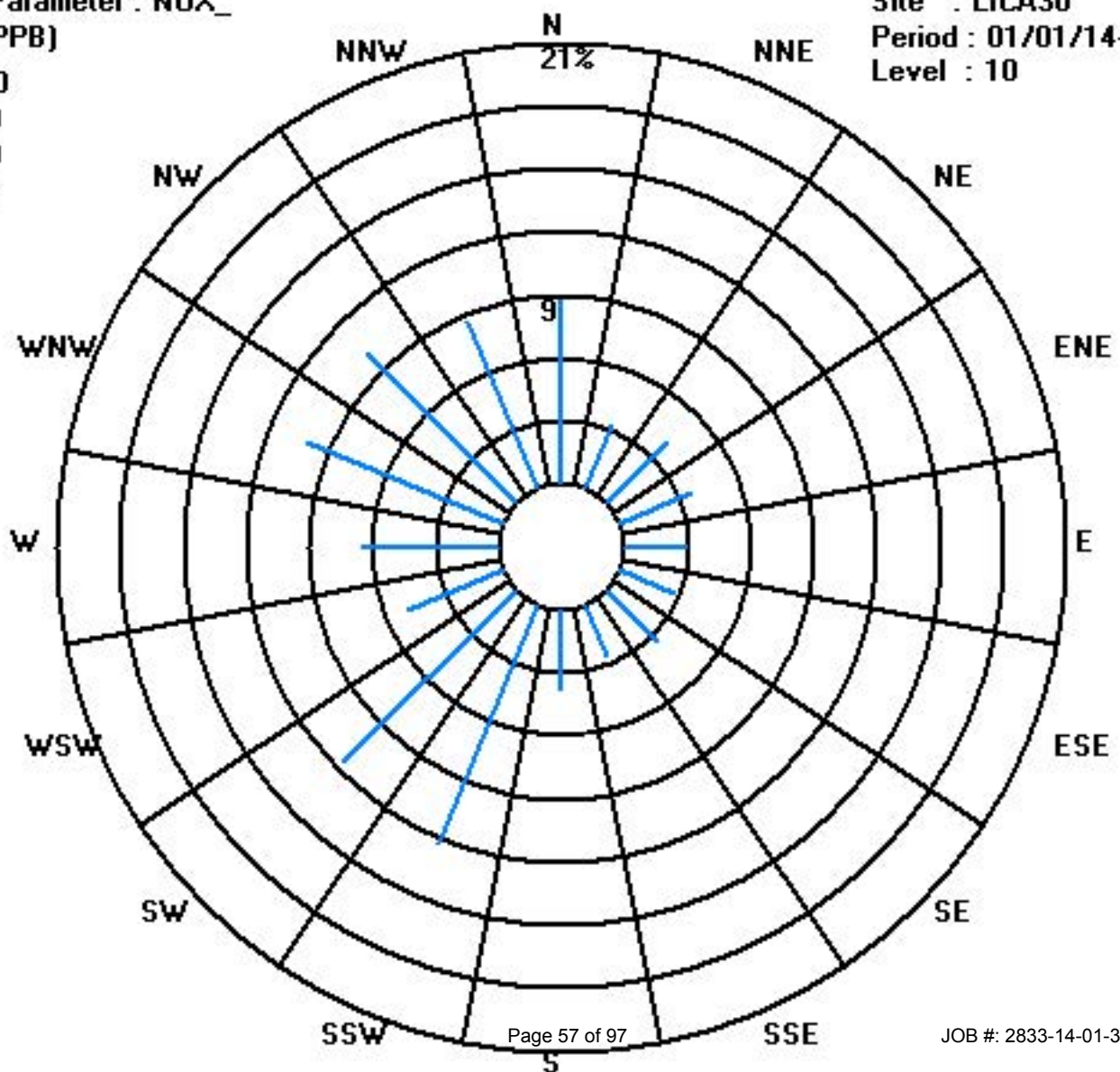
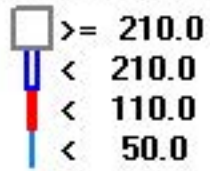
Calm : .00 %

Total # Operational Hours : 704

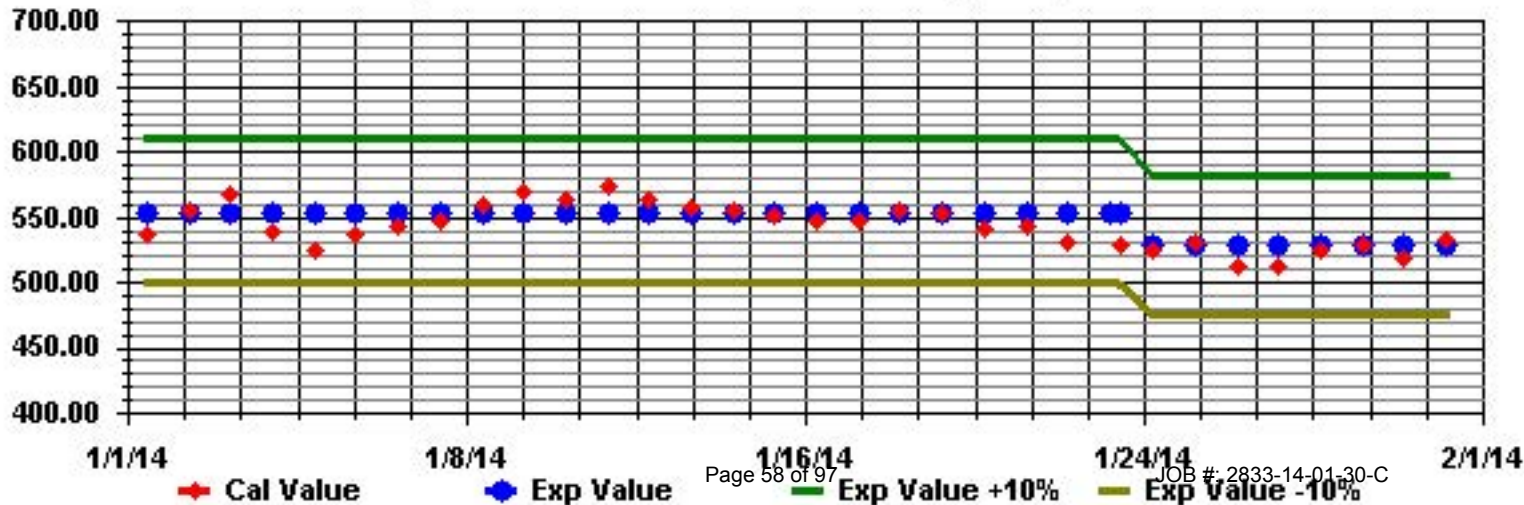
Class Limits (PPB)

Period : 01/01/14-01/31/14

Level : 10



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



Temperature

Lakeland Industry & Community Association - Maskwa Site

JANUARY 2014

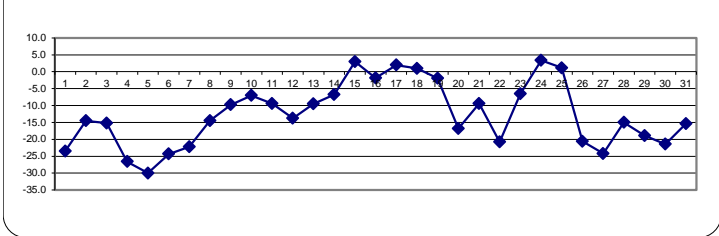
AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOURLY MAX	HOURLY AVG	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		-27.2	-26.6	-26.1	-25.7	-25.9	-25.3	-25.3	-24.7	-24.2	-23.4	-22.3	-20.9	-19.8	-19.9	-19.5	-19.8	-22.4	-24	-24.7	-24.8	-24.5	-22.6	-22.6	-22.6	-19.5	-23.5	24	
2		-21.4	-20.6	-20.6	-20.5	-19.8	-18.9	-18.2	-17.2	-16.3	-15.2	-13.8	-13.1	-11.5	-10.3	-9.8	-10.6	-12	-12.5	-12.3	-11.3	-12.1	-10.7	-10.2	-9.8	-9.8	-14.5	24	
3		-9.4	-9.6	-9	-8.3	-7.4	-7.1	-7.4	-9.7	-12.8	-15.1	-16.2	-15.7	-16.7	-17.1	-17	-17.8	-18.8	-19.5	-20.7	-20.9	-21	-22	-22.8	-23.3	-7.1	-15.2	24	
4		-23.8	-24.1	-24.7	-25.4	-26	-26.4	-26.9	-28	-27.8	-27.1	-25.1	-24.2	-23.9	-24.2	-24.4	-25	-25.6	-26.4	-27.3	-28.4	-29.6	-30.9	-31.5	-31.7	-23.8	-26.6	24	
5		-32	-32.4	-32.4	-32.5	-32.7	-32.7	-32.9	-32.9	-33.1	-32.9	-29.7	-26.2	-24.8	-23.7	-24.4	-26.6	-27.9	-28.6	-29.2	-29.3	-29	-30.3	-31.8	-31.6	-23.7	-30.0	24	
6		-29.9	-29.2	-28.7	-29	-28.3	-26.6	-25.9	-25.5	-25.3	-24.9	-24.2	-23.5	-22.5	-22.1	-21.9	-22.2	-22.2	-22.3	-22	-21.9	-21.7	-21.5	-21.5	-21.4	-21.4	-24.3	24	
7		-21.3	-21	-20.8	-20.7	-21	-21.4	-22.8	-24.6	-25.8	-25.8	-22.9	-20.8	-19.6	-16.9	-16.7	-20.6	-23.6	-25.8	-27.6	-26	-22.5	-21.6	-21.7	-21.6	-16.7	-22.2	24	
8		-21	-20.2	-19.6	-19.1	-18.6	-18.2	-17.6	-17.2	-16.8	-16.1	-15.1	-14	-13.3	-12.5	-11.6	-11.4	-11.4	-11.4	-11.2	-10.7	-10.4	-10.1	-9.8	-10.1	-9.8	-14.5	24	
9		-11.3	-12.3	-12.9	-13.3	-13.1	-12.9	-12.6	-11.9	-11.5	-11.3	-9.5	-8	-7.4	-7.8	-7.2	-7.1	-7.5	-7.4	-7.1	-7.6	-8.1	-8.4	-9.3	-8.9	-7.1	-9.8	24	
10		-8.1	-8.6	-9.6	-10	-10.4	-8.6	-8.5	-10.2	-12.4	-11.4	-6	-3.2	-1.5	-0.2	-1.9	-3.8	-5.6	-7.4	-7.3	-6.5	-6.7	-6.8	-7.4	-6.8	-7.4	-0.2	-7.0	24
11		-8.8	-10.4	-9.7	-11.3	-10.6	-11.8	-13.9	-15.2	-15.4	-13	-10.2	-8.6	-8.6	-8.3	-7.1	-6.4	-6.4	-6.6	-7	-7.1	-7.2	-7.3	-7.5	-7.6	-6.4	-9.4	24	
12		-7.5	-7.3	-6.5	-6.4	-8.5	-10.5	-11.9	-13.1	-13.4	-13.9	-14.3	-14.1	-13.5	-12.7	-12.8	-15.3	-17.5	-18.7	-19.2	-19.1	-19.2	-19.5	-18.6	-17.5	-6.4	-13.8	24	
13		-16.3	-13.5	-12.7	-13.4	-13.5	-13	-12.1	-10.1	-8.9	-7	-5.7	-4.7	-4.2	-4.4	-6	-6.6	-7.6	-8.3	-8.9	-9.4	-9.4	-9.9	-9.5	-4.2	-9.5	24		
14		-9.9	-9.2	-7.5	-7.9	-11.1	-11.2	-10.8	-11.3	-11.1	-10.4	-9.5	-8.3	-7.7	-6.5	-5.8	-5.4	-5	-4.8	-3.9	-2.9	-2.4	-1.2	0	1.1	1.1	-6.8	24	
15		3.3	5.3	6.2	7.2	6.1	1.9	0.9	0.7	1.1	2.7	4.4	4.5	4	3.8	3.9	3.9	3.3	2.6	2.1	1.6	1.2	0.8	0.3	-0.3	7.2	3.0	24	
16		-0.9	-1.7	-3	-3.5	-3.8	-3.6	-4.1	-4.7	-4.4	-3.6	-1.7	-0.3	1.8	1.9	1.3	0.6	-0.5	-1.6	-2.1	-2.3	-2.2	-2.5	-2.3	-2	1.9	-1.9	24	
17		-2.5	-2	-1.5	-2.3	-2	-0.8	-0.3	0	1.1	1.9	4.6	5.7	6.3	6.6	6.8	6.6	5.6	4.9	4	2.9	2.2	1	-0.7	-0.7	6.8	2.0	24	
18		-1.3	-1.8	-2.6	-3.4	-3.3	-3.5	-3.8	-3.5	-3.1	-1.2	1.7	4.9	7.1	8.5	8.6	6.5	4	2.6	0.7	0	-0.8	-0.4	2.6	5.1	8.6	1.0	24	
19		5.7	5.3	4.7	4.4	4.2	3.7	2.5	1.6	2.1	2.9	3.6	4.7	5.5	4.2	2.5	0.6	-1.9	-7.4	-12	-13.8	-15.6	-17.1	-18.3	-19.4	5.7	-2.0	24	
20		-20.2	-21.4	-22.2	-23.5	-23.6	-23.9	-24.2	-23.4	-22.4	-20.4	-18.8	-16.7	-15.1	-13.7	-13.2	-12.4	-12.7	-12.5	-12.2	-12	-11.4	-10.7	-9.1	-7.7	-7.7	-16.8	24	
21		-6.7	-6.4	-6.9	-6.6	-6.9	-8.1	-8.7	-10	-10.7	-9.4	-6.1	-4.8	-3.9	-3.1	-3.4	-5.4	-7.7	-10.5	-12.5	-14.4	-15.4	-17.9	-19.9	-21.4	-3.1	-9.5	24	
22		-22.2	-23.3	-24	-24.6	-25	-24.7	-24.5	-24.5	-24.9	-23.2	-20.5	-19	-17.6	-16.1	-15.9	-16.7	-17.8	-18.7	-19.8	-20.7	-20.4	-19.1	-18.1	-17.7	-15.9	-20.8	24	
23		-17.5	-18.1	-17.6	-17.3	-16.8	-16.1	-15.3	-14.7	-14	-12.7	-9.3	-4.3	0.7	2.5	3.7	3.2	1.6	-0.6	-0.1	0.6	1	1.3	1.4	1.8	3.7	-6.5	24	
24		2	2.8	3.6	4.4	4.6	4.1	3.6	3.8	4.1	4.9	6.6	6.7	6.9	7.1	5.9	5	3.1	1.6	1	0.6	-0.1	-0.3	-0.5	-1	7.1	3.4	24	
25		-1.6	-0.8	-1.2	-1.4	-1.7	-2.3	-1.9	-0.2	2.6	4.9	6.2	7.3	8.3	7.2	6.3	4.8	3.9	2.6	1.9	1.1	-0.8	-3.5	-6.1	-8.4	8.3	1.1	24	
26		-10.5	-12.9	-15.2	-17.5	-19	-20.4	-21.5	-22.6	-23.4	-22.7	-21.5	-20.3	-19.7	-20.2	-19.4	-20.1	-20.5	-20.9	-21.1	-21.2	-23.4	-25.3	-27	-28.2	-10.5	-20.6	24	
27		-28.8	-29.6	-30.5	-31	-31.4	-31.9	-32.1	-32.4	-32	-27.8	-22.9	-19.4	-16.4	-15	-15.2	-18.9	-20.5	-21.6	-21.7	-21.3	-21.7	-21.4	-21	-15	-24.2	24		
28		-20.8	-21.1	-21.1	-19.8	-18.6	-20.5	-23.4	-24.6	-24.8	-22	-16.8	-13.1	-11.5	-10.3	-9.5	-10.1	-10.4	-9	-8.2	-7.9	-7.7	-8.5	-9.9	-7.7	-15.0	24		
29		-11.3	-12.2	-13.6	-15.2	-17.1	-19	-20.1	-20.5	-21.2	-20.3	-19.3	-17.9	-16.1	-16.3	-15.9	-17.1	-18.7	-19.8	-21.5	-22.4	-23	-24.3	-25.3	-25.7	-11.3	-18.9	24	
30		-26	-26.1	-25.9	-25.2	-24.5	-24.2	-24.3	-24.2	-23.4	-22.2	-20.4	-18.7	-17.4	-16.7	-16.8	-18.5	-19.3	-20.4	-20.2	-19.4	-19.2	-18.8	-18.5	-16.7	-21.4	24		
31		-17.5	-17	-16.5	-16.6	-17.8	-18.5	-18.5	-18	-17.2	-16.8	-15.1	-13.7	-13.6	-13	-12.5	-12.7	-13.2	-13.6	-13.8	-14	-14.3	-14.6	-14.8	-15.1	-12.5	-15.4	24	
HOURLY MAX		5.7	5.3	6.2	7.2	6.1	4.1	3.6	3.8	4.1	4.9	6.6	7.3	8.3	8.5	8.6	6.6	5.6	4.9	4	2.9	2.2	1.3	2.6	5.1				
HOURLY AVG		-13.7	-13.7	-13.8	-14.0	-14.3	-14.6	-14.9	-15.2	-15.1	-14.1	-12.0	-10.4	-9.3	-8.7	-8.6	-9.5	-10.7	-11.8	-12.4	-12.6	-12.8	-13.0	-13.2	-13.3				

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 2014



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-33.1 °C	@ HOUR(S)	8	ON DAY(S)	5
MAXIMUM 1-HR AVERAGE:	8.6 °C	@ HOUR(S)	14	ON DAY(S)	18
MAXIMUM 24-HR AVERAGE:	3.4 °C			ON DAY(S)	24
				VAR-VARIOUS	
OPERATIONAL TIME:				744	HRS
AMD OPERATION UPTIME:				100.0	%
STANDARD DEVIATION:	10.26			MONTHLY AVERAGE:	-12.57 °C

01 Hour Averages



Precipitation

Lakeland Industry & Community Association - Maskwa Site

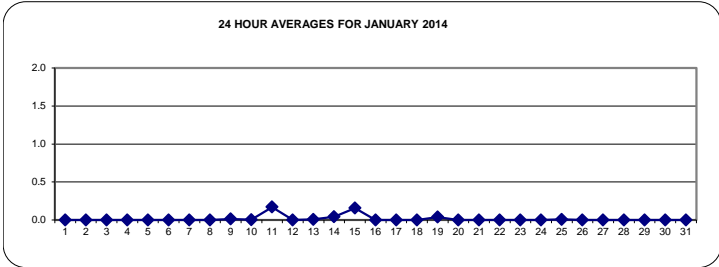
JANUARY 2014

PRECIPITATION hourly averages in millimeter

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR			
HOURLY MAX	HOURLY AVG	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	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	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	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
11		0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.8	0.4	1	0.3	0.1	0.1	0	0	0	0.6	0.2	1	0.2	24	
12		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
13		0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
14		0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	0.1	0	0.1	0	0.1	0	0.2	0.2	0	0	0.2	0.0	24	
15		0	0	0	0	0.5	0.8	2	0.4	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24	
16		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
17		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
18		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
19		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.7	0	0	0	0	0	0	0	0	0.7	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	0	0	0	0	0	0	0	0	0	0	0.0	24	
22		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
23		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
24		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
25		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0.2	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	0	0	0	0	0	0	0	0	0.0	24	
29		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
30		0	0	0	0	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		0	0	0	0	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	0.1	0.1	0	0.5	0.8	2	0.4	0.1	0	0	0.1	0.6	0.8	0.4	1	0.7	0.1	0.2	0	0.2	0.2	0.6	0.2					
HOURLY AVG		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					

STATUS FLAG CODES

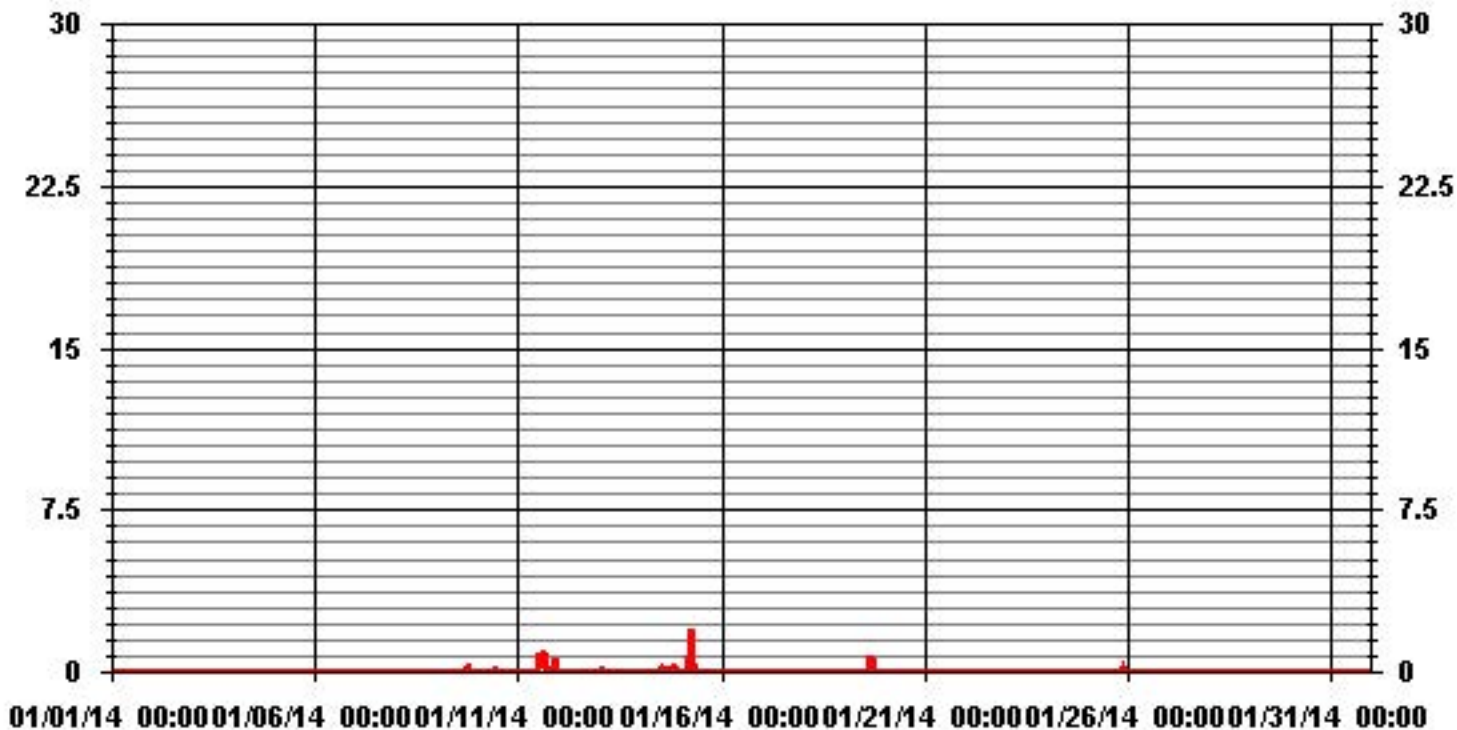
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	2	MM	@ HOUR(S)	6	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	0.2	MM			ON DAY(S)	11, 15
					VAR-VARIOUS	
				OPERATIONAL TIME:	744	HRS
				AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.11			MONTHLY AVERAGE:	0.01	MM

01 Hour Averages



— LICA30 PRECIP MM

Relative Humidity

Lakeland Industry & Community Association - Maskwa Site

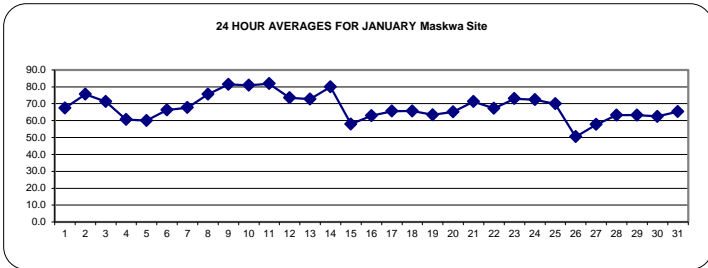
JANUARY Maskwa Site

RELATIVE HUMIDITY (RH) hourly averages in %

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																												
1	67	66	67	67	66	67	67	67	67	67	66	64	64	65	65	67	70	71	69	69	69	70	70	70	71	71	67.4	24
2	69	69	69	70	71	72	72	74	74	75	74	75	74	74	74	76	80	80	82	82	81	82	82	82	83	83	75.6	24
3	83	83	83	84	83	82	80	74	71	68	65	61	63	61	61	65	67	67	69	68	66	68	69	70	84	71.3	24	
4	67	67	65	65	67	67	67	67	67	64	59	57	57	58	59	61	60	57	53	52	51	55	57	57	67	60.7	24	
5	57	61	63	62	61	62	61	62	61	61	58	53	51	50	53	59	61	63	63	64	64	64	64	63	64	60.0	24	
6	63	63	64	64	64	64	63	63	65	66	66	66	66	66	67	68	68	69	69	69	69	69	69	69	69	69	66.2	24
7	70	70	70	70	70	70	71	70	69	68	64	61	61	57	56	67	71	71	69	70	70	70	70	71	71	67.7	24	
8	71	71	71	71	72	72	73	73	74	74	73	72	74	74	75	76	77	79	81	82	82	82	82	82	82	82	75.5	24
9	81	80	79	79	79	79	79	80	80	80	81	81	82	82	81	82	83	83	83	84	84	84	84	84	84	84	81.4	24
10	85	84	83	82	82	84	84	83	81	82	84	83	78	69	72	77	80	83	82	80	81	81	81	81	81	85	80.9	24
11	83	84	84	83	84	80	78	79	79	80	80	80	81	82	83	83	83	84	83	82	82	82	82	83	84	81.8	24	
12	83	84	84	80	77	76	74	75	75	74	73	70	67	61	59	66	72	75	74	74	73	72	73	73	84	73.5	24	
13	75	77	76	76	76	76	76	81	83	82	74	68	64	63	64	70	71	72	69	69	70	71	71	71	83	72.7	24	
14	80	82	80	80	78	77	77	77	76	76	74	72	75	78	81	83	85	86	86	84	83	84	84	84	80	86	79.9	24
15	72	65	61	53	58	83	86	84	80	69	55	48	51	53	50	45	43	43	44	46	47	49	51	53	86	57.9	24	
16	54	56	59	61	62	63	65	68	69	68	62	59	55	54	56	59	62	66	67	68	68	70	70	70	70	63.0	24	
17	72	71	71	75	75	74	74	74	70	68	60	57	55	55	55	53	53	55	58	63	65	69	75	76	76	65.5	24	
18	78	80	83	85	84	85	84	81	79	73	64	54	48	43	41	45	50	54	59	65	68	67	57	49	85	65.7	24	
19	50	52	55	56	58	66	70	73	67	61	58	55	49	52	69	85	84	76	68	66	64	63	62	62	85	63.4	24	
20	64	66	66	70	70	70	70	70	69	65	62	59	57	56	58	58	59	60	62	65	66	69	74	79	79	65.2	24	
21	77	76	77	76	76	79	80	81	83	79	69	64	62	58	54	61	67	71	69	69	68	69	71	74	83	71.3	24	
22	73	72	72	71	71	71	70	70	69	69	67	64	60	54	54	56	61	65	67	69	71	74	73	72	74	67.3	24	
23	73	74	76	76	76	76	77	77	78	78	77	75	67	62	59	61	67	74	75	73	73	74	76	77	78	73.0	24	
24	77	74	73	70	70	72	73	73	72	69	63	62	62	61	65	69	74	77	78	78	80	81	82	82	82	82	72.4	24
25	85	83	87	88	89	89	88	82	73	63	58	56	52	54	55	60	61	62	63	65	71	79	65	50	89	69.9	24	
26	45	42	56	55	49	50	52	53	55	52	47	43	42	43	42	44	46	48	49	50	56	61	65	66	66	50.5	24	
27	65	65	64	63	63	62	62	62	63	60	49	41	38	38	43	49	54	58	61	62	64	67	68	68	68	57.7	24	
28	70	71	71	69	67	69	70	69	68	68	60	56	53	51	49	51	52	55	59	62	69	71	69	68	71	63.2	24	
29	69	68	67	65	64	65	68	66	66	65	67	66	61	62	60	60	63	63	60	60	59	57	57	59	69	63.2	24	
30	62	64	65	65	65	66	66	66	66	66	63	58	55	53	51	52	59	63	66	66	65	65	65	67	67	62.5	24	
31	68	69	69	68	70	72	72	71	71	69	63	58	59	58	59	60	62	62	63	62	64	67	65	66	72	65.3	24	
HOURLY MAX	85	84	87	88	89	89	88	84	83	82	84	83	82	82	83	85	85	86	86	84	84	84	84	84	84			
HOURLY AVG	70.6	70.6	71.3	70.9	70.9	72.3	72.5	72.4	71.6	69.7	66.0	62.8	60.8	59.6	60.2	63.3	65.8	67.4	67.6	68.3	69.1	70.4	70.4	70.1				

STATUS FLAG CODES

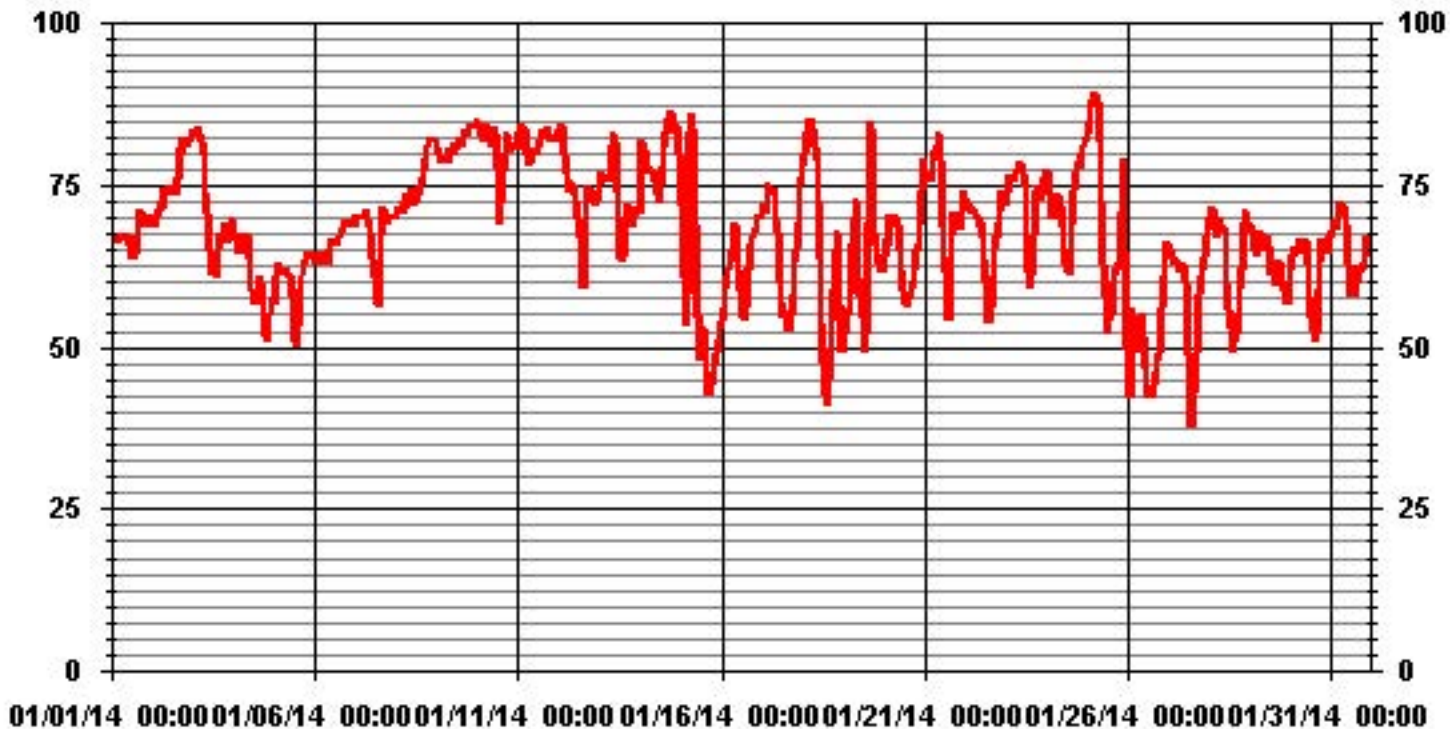
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	89 %	@ HOUR(S)	4, 5	ON DAY(S)	25
MAXIMUM 24-HR AVERAGE:	81.8 %			ON DAY(S)	11
VAR-VARIOUS					
OPERATIONAL TIME:				744	HRS
AMD OPERATION UPTIME:				100.0	%
STANDARD DEVIATION:	10.14	MONTHLY AVERAGE:		68.11	%

01 Hour Averages



Barometric Pressure

Lakeland Industry & Community Association - Maskwa Site

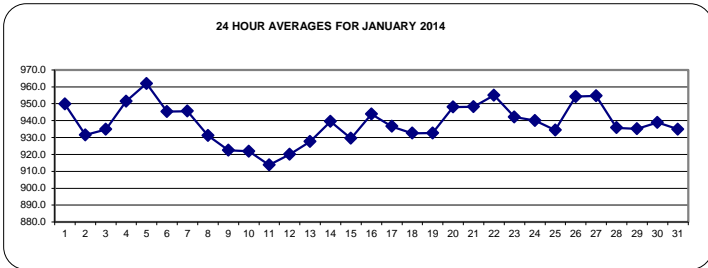
JANUARY 2014

BAROMETRIC PRESSURE (BP) hourly averages in millibar

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY 1	949	950	950	950	951	951	951	951	951	952	951	951	951	950	950	950	950	950	949	948	947	946	945	952	949.8	24		
2	942	942	942	940	939	937	936	934	933	932	931	930	929	928	928	928	927	927	926	926	925	925	924	924	942	931.5	24	
3	924	924	924	924	925	926	927	928	930	932	934	935	936	937	938	940	941	942	943	942	944	945	947	947	947	947	934.8	24
4	947	948	948	949	949	949	949	949	950	950	949	949	949	949	949	950	951	953	953	954	958	959	961	961	961	961	951.4	24
5	962	963	964	964	965	965	965	965	965	965	964	963	962	961	961	961	961	958	960	960	959	958	958	957	965	961.9	24	
6	956	955	954	954	952	951	949	948	947	946	945	943	941	940	940	940	940	940	941	941	941	941	942	942	942	956	945.4	24
7	943	943	944	945	945	945	946	947	947	948	948	947	947	946	945	946	947	946	946	945	944	943	943	943	948	945.5	24	
8	941	941	940	939	937	936	935	934	933	932	931	930	929	926	927	927	927	927	927	926	926	926	926	925	941	931.2	24	
9	925	925	925	925	924	924	924	923	923	923	923	922	922	922	922	922	922	922	921	921	920	920	920	919	919	925	922.4	24
10	919	919	919	919	919	919	919	919	919	919	920	921	921	922	922	922	923	924	924	925	926	926	927	927	927	927	921.9	24
11	926	926	925	924	923	920	919	919	918	916	914	912	910	908	906	906	906	907	906	907	907	908	909	909	926	913.8	24	
12	909	909	910	912	913	915	917	918	920	922	924	924	925	925	926	926	926	926	925	924	923	922	920	919	926	920.0	24	
13	919	918	918	917	917	917	918	918	920	922	924	926	928	929	931	933	934	936	937	938	939	940	941	942	942	942	927.6	24
14	943	943	944	945	946	946	946	946	946	945	945	944	942	941	939	939	938	935	933	933	931	929	926	923	946	939.5	24	
15	921	921	920	921	922	923	923	922	923	924	925	926	928	929	931	933	935	937	938	939	940	941	943	944	944	944	929.5	24
16	945	945	946	946	946	946	946	946	946	947	947	946	946	945	944	944	943	943	942	941	940	939	938	937	947	943.9	24	
17	936	935	934	934	933	933	933	933	934	934	935	934	935	936	936	937	938	939	940	941	941	942	942	942	942	942	936.5	24
18	942	942	941	940	939	938	937	935	934	933	933	932	931	930	930	930	930	929	928	927	926	925	925	942	942	932.5	24	
19	925	925	925	926	927	927	927	928	928	929	930	930	930	930	930	931	933	936	939	942	944	946	947	948	948	948	932.6	24
20	950	951	952	952	951	951	953	953	952	952	951	950	949	948	947	946	945	944	943	943	942	942	942	942	953	948.0	24	
21	943	943	943	944	945	945	946	946	946	946	947	948	948	948	949	949	950	951	952	953	953	953	954	955	955	955	948.2	24
22	955	956	956	956	956	956	956	956	957	957	957	956	956	956	955	955	955	954	954	953	953	952	951	950	957	954.9	24	
23	949	948	947	946	945	944	943	942	941	941	940	940	940	940	941	941	941	941	941	941	941	940	939	938	949	942.1	24	
24	936	936	936	937	937	937	938	938	939	940	940	940	941	941	942	942	943	943	944	944	943	943	942	941	944	940.0	24	
25	940	938	937	935	933	932	931	930	929	929	931	931	932	933	934	935	936	936	936	936	936	936	937	938	940	940	934.4	24
26	941	943	946	948	950	952	954	955	956	957	958	958	957	957	957	957	957	957	956	957	957	957	957	957	958	958	954.2	24
27	957	957	957	957	958	957	955	955	957	957	955	955	955	955	954	954	953	953	953	952	952	951	950	949	958	954.7	24	
28	948	946	945	944	942	941	940	939	938	937	935	934	933	932	931	930	930	930	930	930	930	931	931	932	948	935.8	24	
29	932	932	933	933	934	935	934	933	934	934	935	934	934	933	933	934	935	936	937	938	939	940	941	942	942	942	935.2	24
30	942	943	943	943	943	943	943	943	943	942	942	942	941	939	939	938	937	936	935	934	932	931	930	928	943	938.8	24	
31	928	927	926	927	928	930	931	932	933	934	934	935	936	936	937	937	939	940	940	941	941	942	942	942	942	942	934.9	24
HOURLY MAX	962	963	964	964	965	965	965	965	965	965	964	963	962	961	961	961	961	958	960	960	959	959	961	961				
HOURLY AVG	938.5	938.5	938.5	938.6	938.5	938.5	938.5	938.2	938.4	938.6	938.6	938.4	938.2	937.8	937.9	938.2	938.5	938.6	938.7	938.8	938.8	938.8	938.7	938.5				

STATUS FLAG CODES

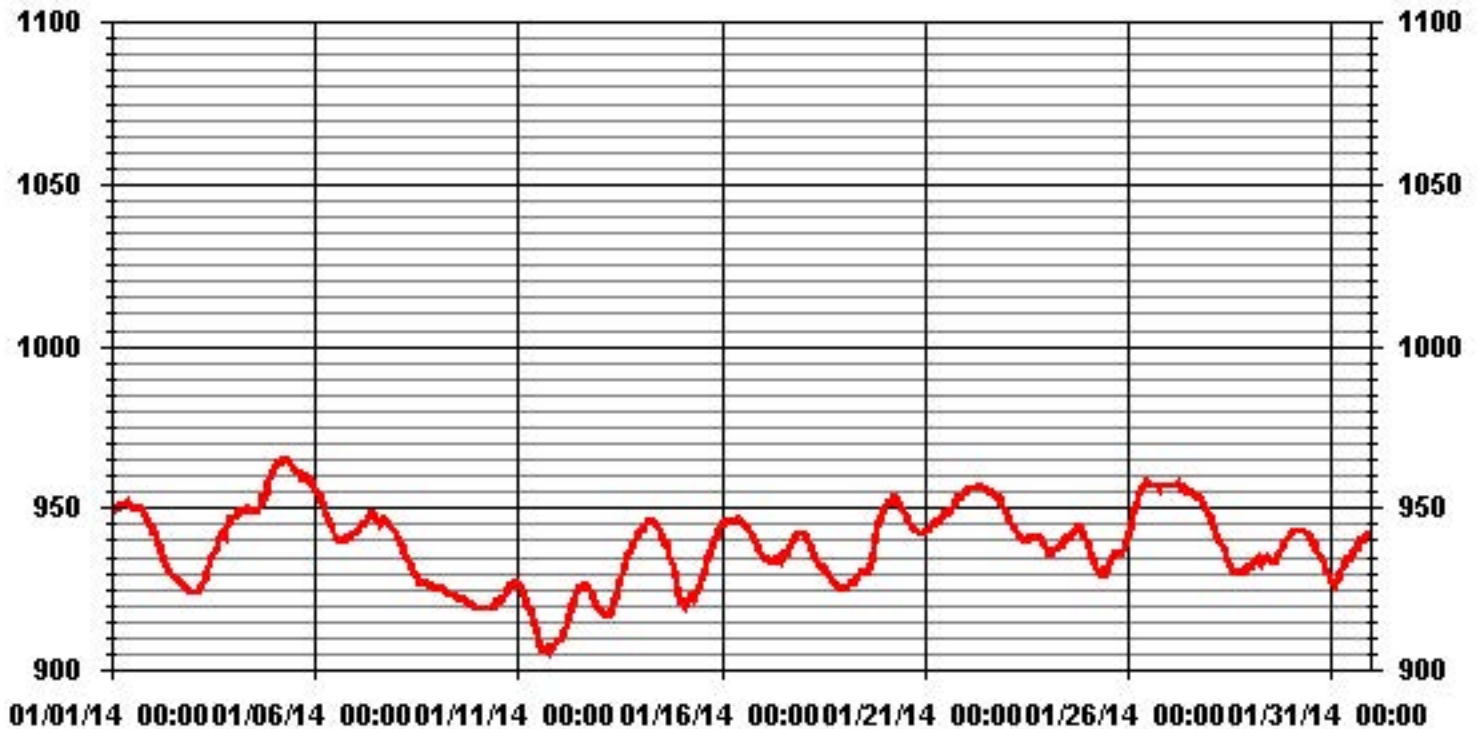
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	965 MB	@ HOUR(S)	VAR	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	961.9 MB			ON DAY(S)	5
				VAR-VARIOUS	
			OPERATIONAL TIME:	744	HRS
			AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	12.22		MONTHLY AVERAGE:	938.48	MB

01 Hour Averages



Vector Wind Speed

Lakeland Industry & Community Association - Maskwa Site

JANUARY 2014

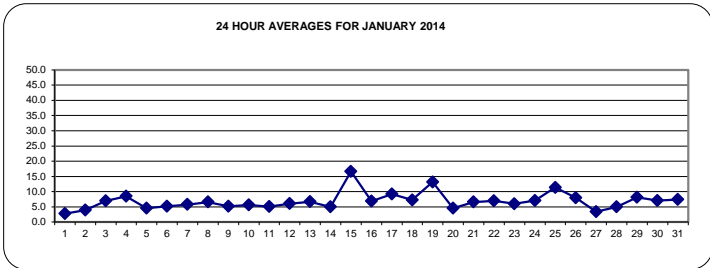
WIND SPEED (WS) hourly averages in km/hr

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	1.8	2.5	3.1	3	4.1	2.6	2.7	1.2	1.5	2.7	2.6	2.9	1.8	3.5	3	2.9	3.6	2.9	1.4	1.1	2.6	3.9	4.3	3.8	4.3	2.7	24	
2	4.6	4.7	4.5	5.3	5.2	5.7	5.2	4.4	5	6.5	7.4	7.1	5.4	4.9	2.8	2.1	1.3	1	2	2.5	1.8	1.2	2	1.8	7.4	3.9	24	
3	2	0.9	2.2	2.2	3.8	5.5	11.1	14.6	12.8	12.8	11.6	8.6	6.8	7.2	7.4	6.1	6.6	6.4	4.6	6.3	6.9	6.4	6.7	8.1	14.6	7.0	24	
4	7	6.6	5.2	7.2	5.9	6.1	5	2.2	6.2	8.7	8.1	10.4	10.3	8.9	9.6	9.3	10.5	12.9	12.2	11.5	13	8.6	8.1	9.1	13.0	8.4	24	
5	7.2	7	7.7	7.6	7.5	6.6	6.5	4.8	3.8	3.7	4	4.8	6.4	5.4	4.1	1.5	3.7	3.7	3.6	1	3.4	1.8	1.3	1	7.7	4.5	24	
6	1	2.3	2.5	2.1	2.3	3.9	6	4.6	4.7	4.8	6.1	5.8	7.8	8.1	7.3	6.1	5.2	6.4	6.2	6	6.5	5.9	5.8	6	8.1	5.1	24	
7	6.9	5.1	4.2	7.1	6.2	6.8	5.7	5.7	4.6	4.2	5.2	7.1	7.3	4.2	6.4	5.2	4.5	3.3	3.1	7.1	7.9	7.9	6.7	5.8	7.9	5.8	24	
8	4.1	6.6	7.2	7.4	6.7	6.4	7.3	7.1	7.9	9.4	7.6	7.1	6.7	7.1	9.1	7.1	4.5	6.2	5.6	6	4.4	5.2	4.5	6.7	9.4	6.6	24	
9	5.8	4.6	4.8	4.7	4.9	4.7	3.1	2.5	5.7	3.3	5.4	8.3	5.2	4.5	4.6	6.5	5.9	6.6	4.7	3.4	7.2	6.3	5.6	6.3	8.3	5.2	24	
10	5.7	6.1	6.6	5.9	5.1	5.4	4.7	3.8	2	2.1	3.7	3.8	4.3	8.8	8.7	7.4	8.7	5.5	9	9.3	6.2	5.6	4.2	2.6	9.3	5.6	24	
11	5	4.9	5.1	2.8	5.7	0.8	2.8	2.3	4.3	4.7	5.9	7.2	8	8.1	9.5	9.6	7.9	6	6.4	5	2.8	2.6	2	2.5	9.6	5.1	24	
12	4.3	5.1	4.5	13.2	10.9	9.9	11.6	9.3	9	9.3	8.1	5.9	5.6	5.4	5.5	4.6	3.3	3.5	4.2	3.7	2.3	1.6	2	2.2	13.2	6.0	24	
13	2.2	3	1.5	2.5	3.3	2.3	0.7	4.2	8.1	10.5	11.7	11.2	10.7	10.3	8.8	9.8	9	7.7	9.3	7.9	7.7	5.9	6.2	6.2	11.7	6.7	24	
14	2.5	2.9	4.6	3.9	5.3	2.6	2	3.2	3.3	3.1	3.1	3.7	3.9	3.5	4.4	4	3.7	2.7	4.5	7.6	10	10.6	13.6	10.3	13.6	5.0	24	
15	9.8	10.2	10.7	20.2	23.3	19	17.5	15.9	16	20.9	20.3	22.2	18.4	20	20	16	18	16.3	16.7	14.4	14.6	13.3	12.7	12.3	23.3	16.6	24	
16	11.4	8	8.6	8.3	5.9	5.1	6.9	5.9	6.3	7.2	6.7	5.1	5.2	6.7	8	6.8	6.5	7	7.1	6.2	6.5	6.9	6.5	7.1	11.4	6.9	24	
17	7.3	6.9	6.4	6.1	5.2	6.2	6.6	6.7	6.6	7.3	13.1	14.7	14.4	14	14.1	14.2	12.9	11.9	8.7	8.3	9	6.5	6.3	6.6	14.7	9.2	24	
18	6	4.8	4	6	7.3	9	8.3	8.5	6.7	6.1	5.2	7.7	11.9	7.6	8	6.8	5.2	4.5	5	7.6	6.6	8.4	10	13	13.0	7.3	24	
19	13.7	15.3	15.8	16.7	17.4	14.6	12.2	10.5	10.2	11.2	11.2	9.2	15.5	17.9	13.5	11.8	13.6	15.1	14.6	12.9	13.4	12.1	9.3	7.5	17.9	13.1	24	
20	5.6	5.1	4.4	1.8	1.2	2.2	3.2	3.6	3.9	6.6	8.2	9.1	6.7	6.1	5.5	4.3	4.4	3.1	3.3	3.7	2.5	3.3	6.3	5.5	9.1	4.6	24	
21	5.2	6	5.7	5.6	5.6	4.2	3.1	2.4	3.7	4.6	6.2	6.2	6.7	5.7	7.6	8.8	7.5	11.5	10.4	8.6	11.4	7.8	6.8	6.2	11.5	6.6	24	
22	5.9	5	4.4	4.7	4.9	5.8	6.4	7	5.4	6.5	7.8	8.2	8	7.6	8.8	7.7	7.1	7.8	9.2	8.4	8.2	7.1	7.3	7	9.2	6.9	24	
23	7.1	4.6	7.2	6.5	7	6.6	6.2	6.9	4.3	3.6	4.6	6.4	7.8	6.9	6.2	6.7	5.8	4.6	6.8	6.3	7.2	4.7	5.4	5	7.8	6.0	24	
24	4.6	7	7.6	9.3	8.5	8	7.2	7.7	7.2	5.9	8.1	9.2	9.6	10	8.5	7.5	9.6	8.5	7	4.4	3.8	2.3	4.6	4	10.0	7.1	24	
25	2.6	5.7	6	5.7	6.4	4.7	6.1	8	9.8	11.8	13.5	15.3	16	17.6	17.6	13.2	13.1	13.8	10.6	10.3	14.4	15.9	17.9	16.2	17.9	11.3	24	
26	13.5	16.9	16.2	16.1	14.9	15.1	9.6	9	7.7	7.3	7.8	7	6.3	6.3	5.2	5.4	5.1	4.2	4.6	4.1	2.6	3.9	2.2	0.4	16.9	8.0	24	
27	1.2	0.8	0.4	1.9	0.6	0.9	0.5	0.6	1.2	0.2	1.9	2.6	4.4	5.1	4.8	7	6.7	6.1	5.3	6.1	7	5.5	5.5	6	7.0	3.4	24	
28	4.3	4.9	3.4	4.5	2	1.1	0.8	2	2	2.3	1.9	7.3	7.1	5.5	7.2	5.9	3.6	4.5	6.1	8	7.8	7.9	10.5	9.3	10.5	5.0	24	
29	8.7	8.4	8.9	7.9	8.9	7	5.6	6.6	5.6	4.3	6.1	5.7	6.6	7	8.5	7.9	7.7	9.9	11.3	10.6	10.5	12.7	9.8	7.9	12.7	8.1	24	
30	7.5	4.8	5.4	5.9	7.5	7.7	8.4	7.9	8.7	8.2	9.6	9.6	9.4	8.6	7.1	5.8	5.8	4.7	4.9	5.3	6.3	6.3	7.8	6.2	9.6	7.1	24	
31	4.7	4	5.1	6.6	5.9	6.3	6.2	6	9.2	10.1	9.6	10	9.3	9.3	8.4	8.2	8.1	8.5	9.2	8.2	5.6	5.6	6.8	6	10.1	7.4	24	
HOURLY MAX	13.7	16.9	16.2	20.2	23.3	19.0	17.5	15.9	16.0	20.9	20.3	22.2	18.4	20.0	20.0	16.0	18.0	16.3	16.7	14.4	14.6	15.9	17.9	16.2				
HOURLY AVG	5.8	5.8	5.9	6.7	6.8	6.2	6.1	6.0	6.2	6.8	7.5	8.0	8.2	8.1	8.1	7.3	7.1	7.0	7.0	6.8	7.1	6.6	6.7	6.4				

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

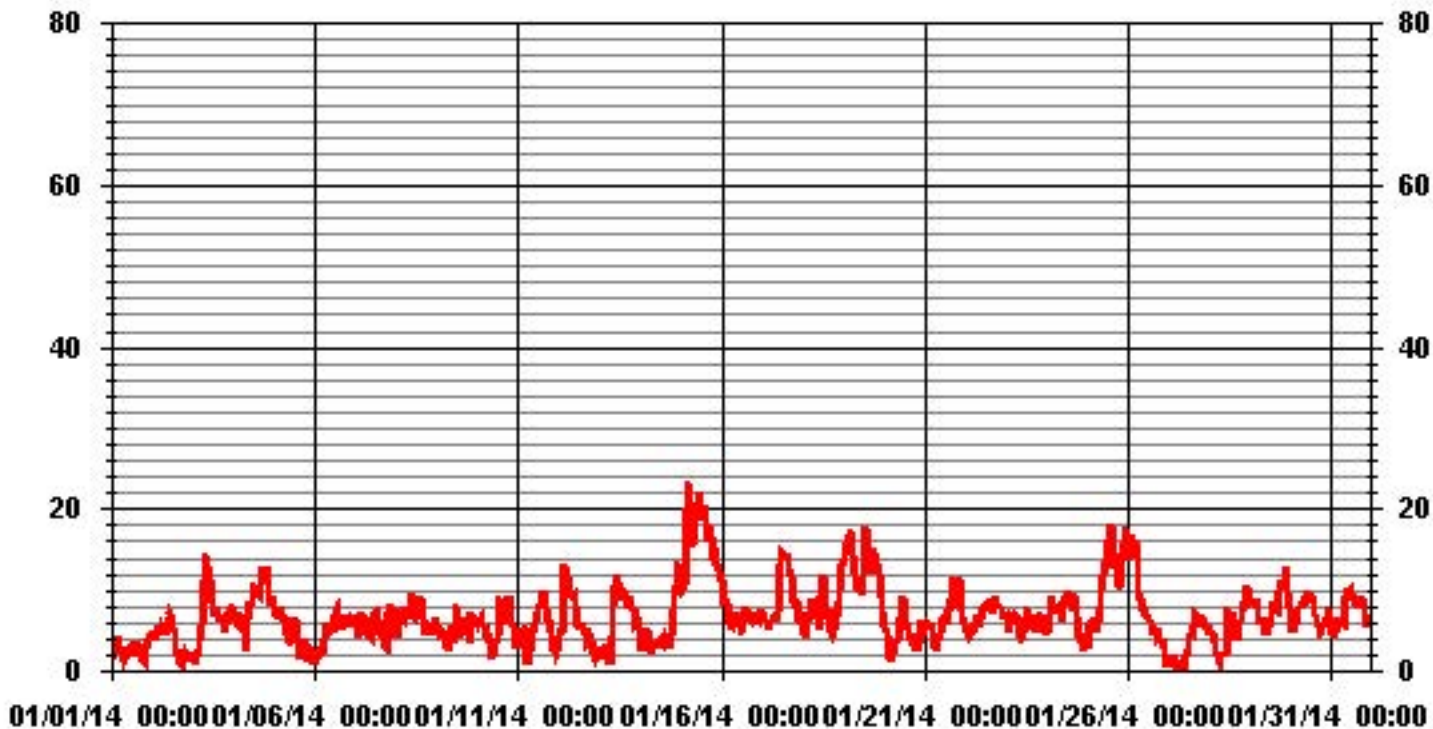
LAST CALIBRATION:	December 20, 2011
DECLINATION:	19 DEGREE FROM MAGNETIC NORTH



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	744					
MAXIMUM 1-HR AVERAGE:	23.3	KPH	@ HOUR(S)	4	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	16.6	KPH			ON DAY(S)	15
					VAR-VARIOUS	
MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744 HRS		
			AMD OPERATION UPTIME:	100.0 %		
STANDARD DEVIATION:	3.74		MONTHLY AVERAGE:	6.84 KPH		

01 Hour Averages



— LICA30 WSP KPH

Lakeland Industry & Community Association - Maskwa Site

JANUARY 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	37.8	40.1	80.9	72.1	29.5	29.7	73.4	61.7	91.1	73.1	20.7	51.9	23.3	13.9	14.7	18.8	18.1	21.6	72.4	75.5	66	50.6	15.3	27	91	45.0	24	
2	18	28.2	21.6	17.5	19	17.7	25.1	15.9	14.5	17	22.8	17.4	15.8	13.9	15.6	10.9	11.6	9	14.4	13.6	10	15.4	12.3	13.9	28	16.3	24	
3	12.5	68	16.6	11.2	13.9	18.6	36.2	50.5	46.8	41.6	39.2	30.5	26.4	23.5	29.8	30	24.8	24.5	25.1	28.3	25.7	20.8	22.8	25.4	68	28.9	24	
4	34.2	29.3	24.6	30.3	27.5	22.8	31.2	54	36.2	31.4	31.5	37.4	39.2	37.8	36.9	38.2	41.9	45.9	48.1	43.1	44.9	33.4	33.8	37.1	54	36.3	24	
5	28.3	29.6	28.5	23.3	37.5	40.6	33.1	48.4	28	39.6	28.1	45.9	27.3	81.9	86.6	66.3	20.4	16.1	20.9	38	16.9	47.7	29.1	33.3	87	37.3	24	
6	59.3	36.9	74.4	48	51.4	58.3	28.9	23.7	45.8	26.4	61.7	63.7	24.1	32.5	54.5	21.8	27.8	18.4	28.6	20.9	20.1	16.7	26.1	24.2	74	37.3	24	
7	17.8	33.8	50.3	17.3	43.9	17.7	24.3	41.6	47.1	33.1	51.8	29.6	23.9	19	21.1	43.2	76.8	74.3	87.7	60.9	19.8	19.5	19.7	62.1	88	39.0	24	
8	52.9	27.3	18.4	21.4	18	19.4	20.6	17.7	20.2	24.8	19.7	19.8	14.5	17.5	20.1	17.1	15.5	16	15.1	16.8	14.4	13.8	12.8	17.2	53	19.6	24	
9	17.3	11.7	13.4	11.8	10.5	12.8	14.1	15.8	14.1	14	15.6	20.7	14.5	9.5	11.8	14.3	15.1	18	15.1	14.1	17	16.4	14.4	15.6	21	14.5	24	
10	14.4	11.4	13.3	15.3	11.3	11.4	11.4	9	8.3	11.4	13.8	15.7	18.1	29.6	29.4	31.4	29.6	25.4	34.8	35.2	27.6	23	15.1	11.8	35	19.1	24	
11	12.2	14.3	12.8	10.7	14.4	13.1	18.8	13.8	13.8	15.3	27.8	28.9	27.6	25.9	31.5	31.3	30.5	22.2	24.6	21.3	17.8	11.3	13.6	10.8	32	19.3	24	
12	12.3	12.5	24.8	42.5	36.7	37	44.3	33.2	30.7	34.2	33.8	22.4	20.7	22	20.8	20.2	25.2	13.5	12	11.7	11.7	21	51.5	25.4	52	25.8	24	
13	25.5	14.9	18.6	12	16	12.8	16	47.6	29.8	33.4	36.1	40.1	35.3	33.3	38.4	34.7	29.9	25.9	27.1	25.7	25.9	22.4	19.3	22.4	48	26.8	24	
14	16	16.3	17.2	17.3	16.3	14.2	13.7	15.3	14.3	17.1	13.3	18.6	12.4	14.9	13.3	13	12	10.9	15.1	18.6	28.7	26	36.1	33.1	36	17.7	24	
15	41	44.1	49.7	94.4	101.4	67.7	87.4	56.5	70.7	71.6	68.5	88.7	82.5	80.4	71.9	61.4	62.7	50.2	66.4	42.8	56.8	52.8	41.9	37.3	101	64.5	24	
16	34.2	32.8	21.9	25.9	18.6	18.9	14.7	13.4	12.8	15.4	17.2	13.3	16	17.4	17.2	16.7	12.8	16.1	14.6	12.3	13	15.4	14.5	16.7	34	17.6	24	
17	16.7	14.3	17.1	13.1	15.2	19.4	22.2	17.5	25.6	30.1	46.8	47.9	41.5	42.6	41.4	56.3	45.4	39.4	31	24.4	24.3	21.8	18.2	21.9	56	28.9	24	
18	17.7	15.2	12.4	22.7	14.3	18	20	20.3	18	16.1	27.3	38.1	25.2	30.2	23.2	17	13.3	11.9	15.3	21.7	19.3	34.3	41.4	41	21.3	24		
19	44.7	49.8	55.9	52.7	64.3	46.7	42.7	33.7	32.4	34.5	40.8	35.2	56.7	61.9	42	42.9	58.7	59.2	55.6	49	45.8	38.3	35.3	30.8	64	46.2	24	
20	22.4	17.1	69.5	72.8	61.1	25.3	15.9	13	14.2	22.4	25.5	20.4	16.2	13.6	12.3	10.8	13.2	15.3	12	17.1	14.9	14	20.6	23.9	73	23.5	24	
21	19.1	20.2	20	19.3	18.9	19.7	13.2	32.3	19.7	17.8	19.7	24.5	22.1	20.6	27.4	28.1	23.9	35.3	35.3	23.3	27.7	20.8	19.9	19.5	35	22.8	24	
22	69.4	70.1	56.1	38.8	80.7	27.1	29.3	19.1	29.1	35.3	19.9	23.9	18.1	21	22.4	20.4	18.1	22.3	24.2	23	21.6	19.9	18.3	15.5	81	31.0	24	
23	16.3	42.7	17.6	15.3	19.3	15.1	14.5	16.9	46.5	19.7	19.8	20.5	31.7	29.1	30.6	34.4	24.3	16	28.4	23.2	29.1	16.4	25.4	18.1	47	23.8	24	
24	16.6	30.8	28.4	31.7	28.2	24.5	26.2	23.5	20.3	26.5	36	38.4	38.3	38.6	31	26.3	19.3	22	15.4	13	13.4	10.6	12.1	11.2	39	24.3	24	
25	12.6	18.2	16.4	14.9	16.3	11.4	16.9	22.4	32.2	40.3	46.9	48.7	79	63.6	63.3	54.2	49.4	62.5	47.8	46.3	50.1	55.8	53.6	56.2	79	40.8	24	
26	50.5	67	54.9	47.7	58	54.5	35.4	33.2	31	34.1	31.2	24.9	20.2	19.6	17.3	17.2	15.6	38.6	34.6	84.7	93.3	36.2	49.7	40.8	93	41.3	24	
27	33.6	59.1	53.6	55.2	72.9	62.5	85.9	55.6	123	85	82	67.8	28	19.6	19.8	18.4	15.5	14.1	13.3	13.5	18.1	15	14.6	17.7	123	43.5	24	
28	14.6	15.5	66.6	18.5	18.1	58.7	55.1	25.4	20.1	22.6	28.3	19.1	18.9	16.3	17.2	19.2	13.9	16.3	25.6	28.4	29.6	26.6	32.2	33.7	67	26.7	24	
29	25.8	26.9	34.5	22.5	28.2	26.7	16.4	16.8	15.2	16.8	22.1	17.6	23	21.1	21.6	21	23.1	32.8	33.9	31.3	34.3	35	32.2	30.6	35	25.4	24	
30	26.4	19	29	21.5	33.1	26.6	28.6	26.5	29.3	27.3	31.6	28.3	29.2	26.2	26.5	22	27.8	20.3	22.9	22.9	21.6	21.3	21.4	21.4	33	25.4	24	
31	21.7	33.2	20.9	22.9	22.7	20.4	21.1	22	31.9	33.7	36.1	33.3	40.8	34.6	33.8	35.8	27.3	26.8	34.6	33	18	19.1	23.1	17.4	41	27.7	24	
HOURLY MAX	69	70	81	94	101	68	87	62	123	85	82	89	83	82	87	66	77	74	88	85	93	56	54	62				
HOURLY AVG	27.2	30.7	33.5	30.3	32.8	28.0	30.1	28.9	32.7	31.1	32.4	33.0	29.8	29.9	30.7	29.0	27.3	27.2	30.6	29.9	28.4	25.0	25.5	26.2				

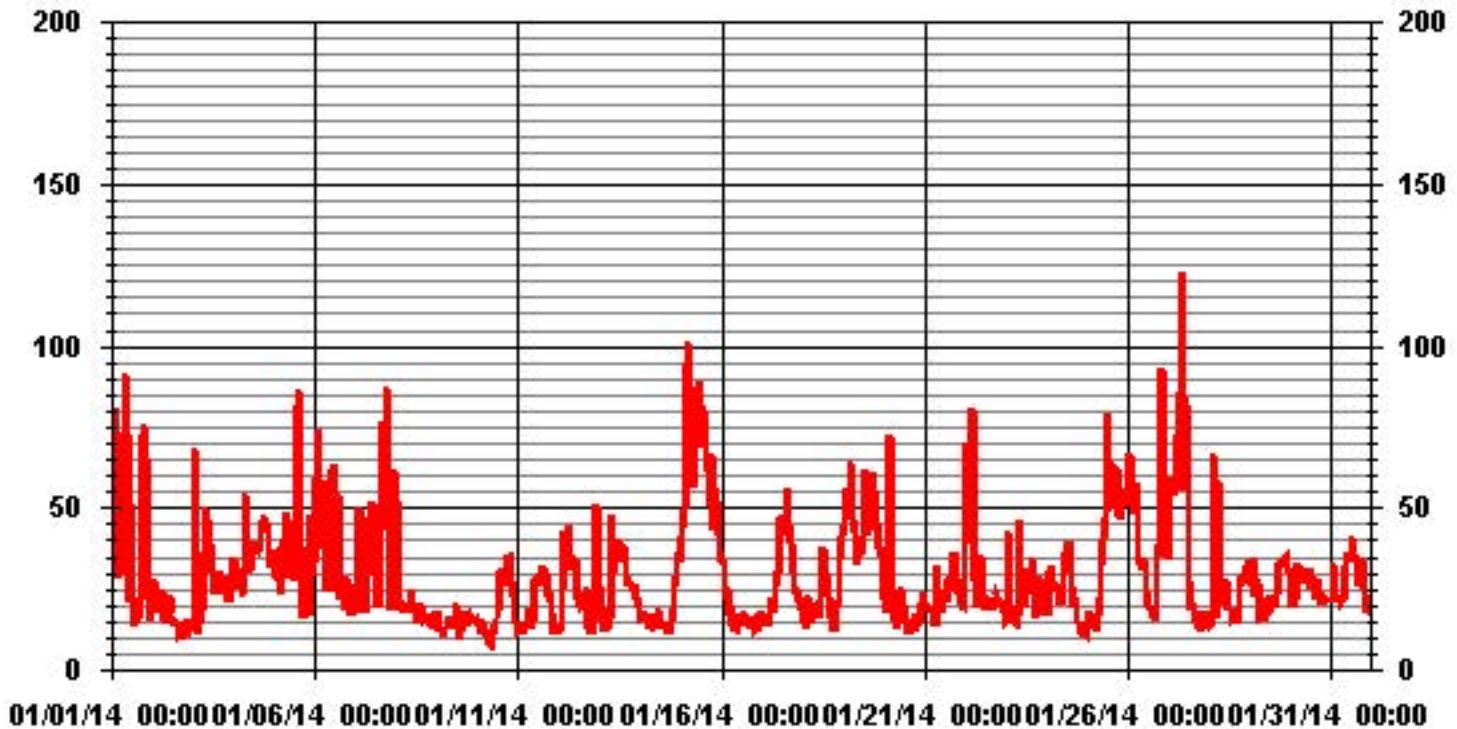
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS VALUE:	123	KPH	@ HOUR(S)	8	ON DAY(S)	27
					VAR-VARIOUS	
OPERATIONAL TIME:				744	HRS	

01 Hour Averages



LICA30
WSP / WDR Joint Frequency Distribution (Percent)

January 2014

Distribution By % Of Samples

Logger Id : 30
Site Name : LICA30
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	1.07	1.88	2.55	2.41	2.01	1.88	1.88	2.01	2.95	6.58	6.31	4.03	2.41	1.34	1.88	2.41	43.68
< 12.0	5.37	.94	1.47	1.20	.94	.80	1.47	.53	1.20	5.77	4.97	1.07	3.89	5.64	6.18	5.10	46.63
< 20.0	2.15	.40	.00	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00	2.68	2.15	1.20	8.73
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.40	.40	.00	.94
< 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	8.60	3.22	4.03	3.62	2.95	2.68	3.36	2.55	4.16	12.50	11.29	5.10	6.45	10.08	10.61	8.73	

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	8	14	19	18	15	14	14	15	22	49	47	30	18	10	14	18	325
< 12.0	40	7	11	9	7	6	11	4	9	43	37	8	29	42	46	38	347
< 20.0	16	3								1				20	16	9	65
< 29.0													1	3	3		7
< 39.0																	
>= 39.0																	
Totals	64	24	30	27	22	20	25	19	31	93	84	38	48	75	79	65	

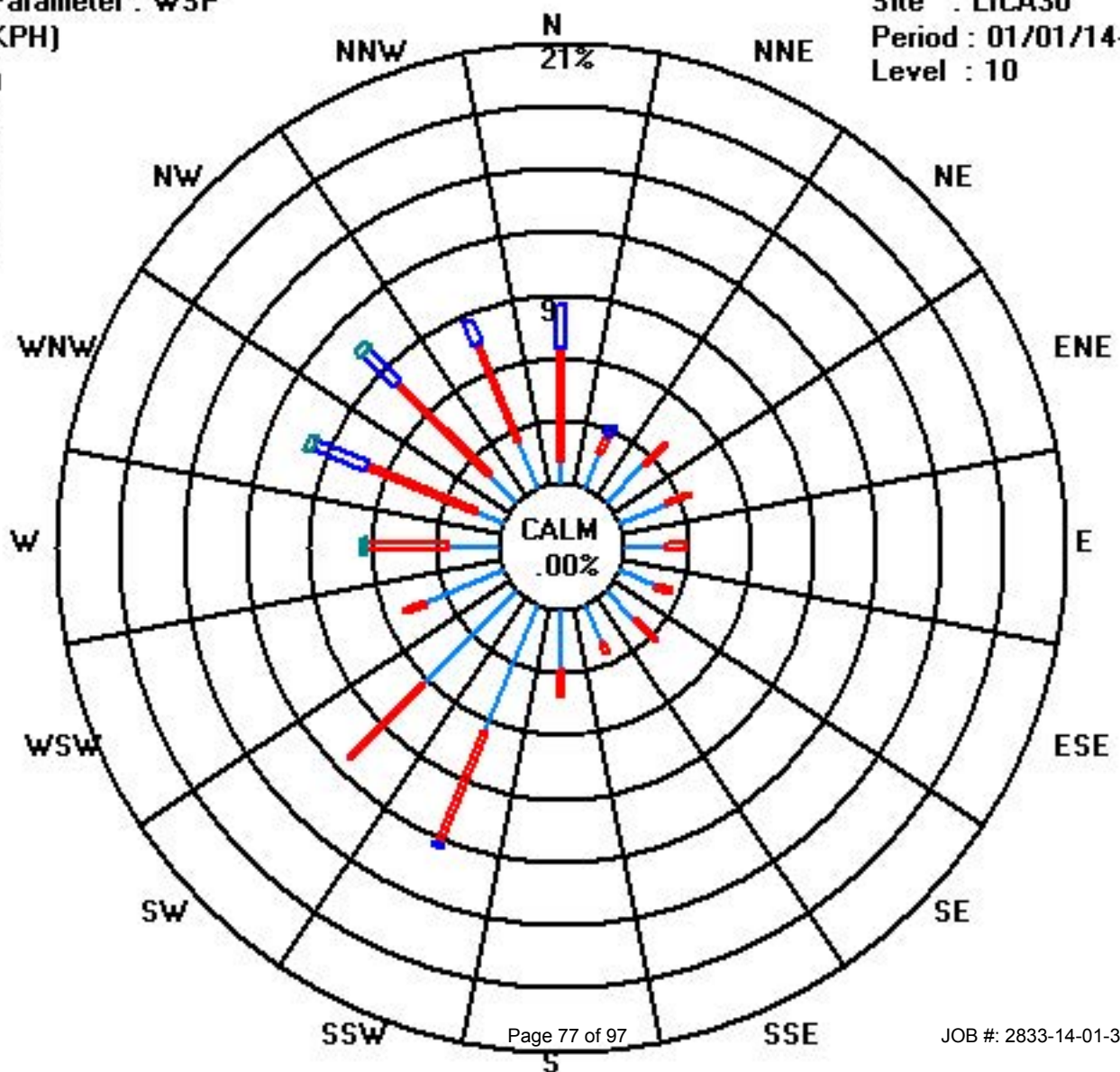
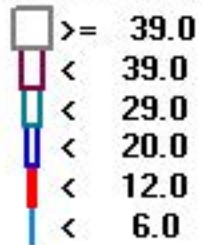
Calm : .00 %

Total # Operational Hours : 744

Class Limits (KPH)

Period : 01/01/14-01/31/14

Level : 10



Vector Wind Direction

Lakeland Industry & Community Association - Maskwa Site

JANUARY 2014

WIND DIRECTION (WD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR		
DAY	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	QUADRANT	RDGS.
1	207	234	204	210	219	213	216	147	216	210	211	221	198	221	198	166	176	149	175	49	124	155	145	123	234	234	SW	24	
2	133	127	113	110	121	123	131	152	183	197	198	205	209	209	222	195	148	165	201	242	223	236	225	254	254	WSW	24		
3	280	260	309	337	315	360	7	14	7	12	5	0	342	359	348	339	349	347	340	332	336	312	311	311	360	360	N	24	
4	323	318	338	326	317	297	275	317	291	287	288	304	309	311	312	330	344	350	359	352	355	352	337	345	359	359	N	24	
5	330	310	308	304	298	298	287	298	327	239	241	318	293	281	263	268	210	206	208	200	206	209	172	145	330	330	NNW	24	
6	23	41	40	40	49	101	112	96	83	95	109	98	92	99	89	78	67	44	54	61	55	48	57	45	112	112	ESE	24	
7	52	59	63	44	60	49	61	50	65	38	56	39	35	91	122	47	79	69	28	111	125	120	120	117	125	125	SE	24	
8	107	125	136	132	128	125	137	149	167	176	173	194	201	205	207	210	228	218	231	234	223	222	213	213	234	234	SW	24	
9	226	213	190	200	203	203	35	72	191	196	206	203	210	203	201	200	214	221	221	227	210	215	216	217	227	227	SW	24	
10	220	211	210	221	224	218	218	216	198	245	250	272	290	283	280	281	273	286	299	315	322	329	225	329	329	329	NNW	24	
11	199	206	190	150	187	75	56	43	40	58	82	88	73	73	90	97	92	72	77	90	108	187	218	192	218	218	SW	24	
12	217	220	270	290	304	311	308	309	309	317	321	334	298	274	280	276	225	211	208	207	180	64	39	32	334	334	NNW	24	
13	81	123	68	30	33	6	240	289	302	307	301	314	316	317	320	308	312	319	301	302	302	304	295	284	320	320	NW	24	
14	244	288	326	33	54	56	87	55	106	104	131	139	150	148	144	151	174	175	193	204	203	200	197	215	326	326	NW	24	
15	235	246	255	280	294	296	304	288	284	290	296	307	307	311	310	310	307	308	304	310	310	312	307	298	312	312	NW	24	
16	296	296	285	284	273	243	212	221	223	214	221	235	245	225	224	230	221	216	222	221	211	216	221	219	296	296	WNW	24	
17	210	212	217	216	238	265	270	267	260	267	285	293	301	299	304	313	316	320	319	300	286	272	277	276	320	320	NW	24	
18	274	260	225	208	208	205	214	222	232	239	249	268	284	276	280	274	245	237	216	208	215	215	282	286	286	286	WNW	24	
19	286	284	287	289	294	294	285	282	285	287	288	275	282	286	295	288	339	343	349	348	3	360	360	3	360	360	N	24	
20	9	21	22	65	114	208	184	198	185	203	206	206	201	198	186	183	171	167	208	220	251	249	287	286	287	287	WNW	24	
21	305	323	319	319	313	320	336	332	292	266	296	332	335	339	350	13	358	15	14	19	34	60	53	62	358	358	N	24	
22	68	69	82	124	115	131	130	127	124	139	168	171	175	146	171	167	177	176	192	198	197	196	190	196	198	198	SSW	24	
23	204	213	216	221	231	226	221	218	240	234	240	247	284	279	307	315	291	265	277	275	275	252	248	243	315	315	NW	24	
24	241	266	273	281	278	274	279	281	287	277	313	325	323	347	344	1	29	32	30	23	81	160	191	172	347	347	NNW	24	
25	132	165	172	197	209	224	247	272	290	315	314	306	325	341	343	341	334	339	335	348	3	9	0	353	353	353	N	24	
26	348	349	1	360	351	359	351	351	344	341	333	323	331	357	328	341	355	5	13	18	58	71	75	202	360	360	N	24	
27	177	202	110	97	345	142	209	202	176	158	225	230	299	284	237	204	205	214	205	205	206	213	219	217	345	345	NNW	24	
28	219	208	225	190	211	81	28	15	36	15	224	209	218	220	211	222	243	235	301	322	350	352	0	352	352	352	N	24	
29	353	357	358	357	1	0	357	360	354	335	316	334	334	339	5	353	358	11	8	7	5	13	3	356	360	360	N	24	
30	356	341	325	331	337	331	324	328	321	307	291	286	288	286	277	264	254	247	236	247	238	239	233	239	356	356	N	24	
31	249	255	303	327	330	331	326	334	343	350	338	328	343	336	331	334	346	353	356	352	358	348	329	323	358	358	N	24	

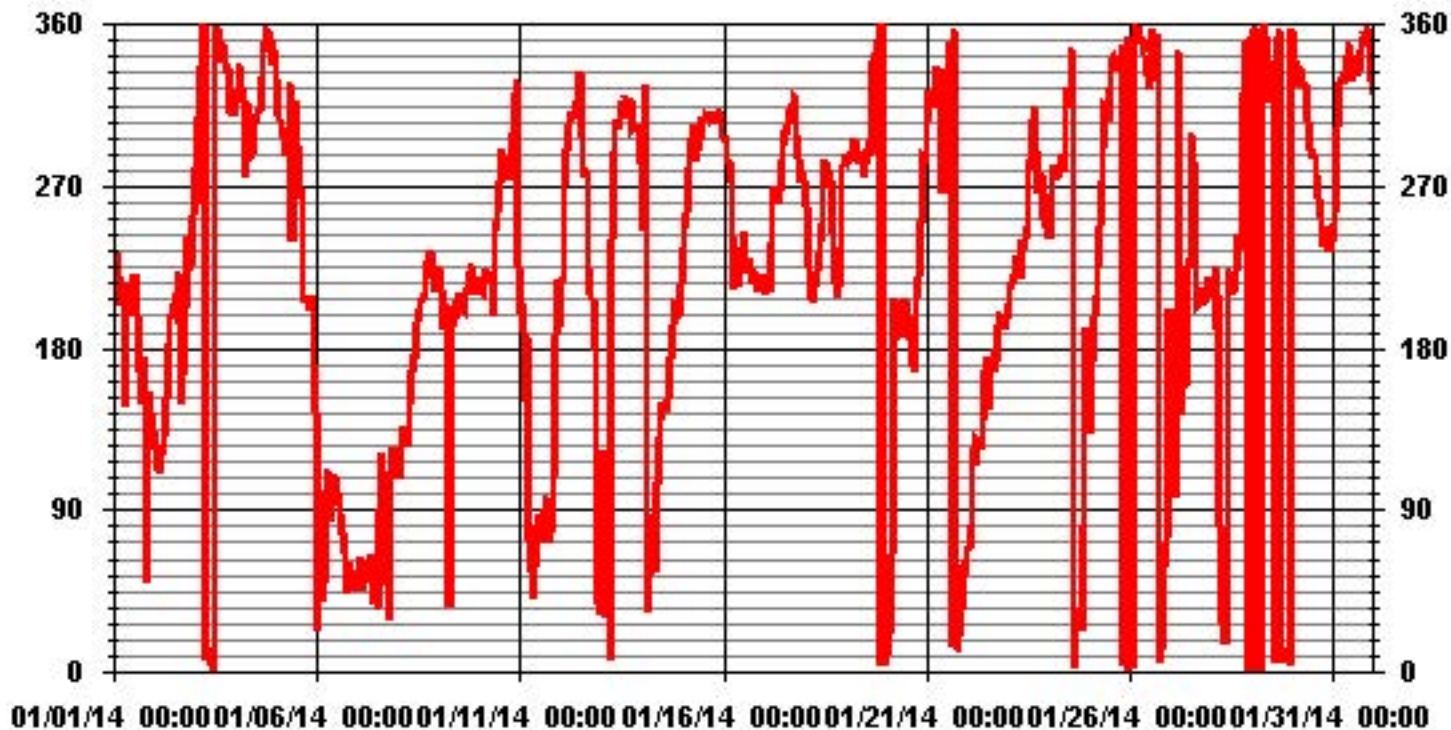
STATUS FLAG CODES

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

LAST CALIBRATION:	December 20, 2011
DECLINATION :	19 DEGREE FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	99.69	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	298 DEG

01 Hour Averages



— LICA30 WDR DEG

Standard Deviation Wind Direction

Lakeland Industry & Community Association - Maskwa Site

JANUARY 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	
DAY																										
1		50	42	35	39	28	53	37	63	66	49	53	37	46	33	30	28	16	21	45	38	33	26	23	23	
2		24	27	29	27	28	27	30	29	26	23	19	20	25	21	33	35	61	51	26	33	32	38	29	39	
3		37	57	35	34	33	27	22	18	22	24	23	27	34	28	33	36	31	33	36	36	34	32	32	33	
4		37	38	36	34	36	31	31	56	32	25	29	32	33	34	33	35	32	32	25	30	29	30	37	36	
5		38	33	32	33	32	34	40	45	42	47	35	43	26	33	42	59	28	29	31	72	47	55	59	53	
6		50	34	30	51	40	28	26	32	30	34	31	29	28	27	26	32	29	21	24	26	23	24	25	21	
7		22	27	26	19	26	21	19	19	31	27	26	18	15	31	26	20	28	30	34	25	20	20	28	35	
8		46	27	25	22	25	25	25	26	24	23	24	21	19	20	19	28	32	22	26	27	38	34	33	23	
9		28	27	17	24	27	38	50	48	24	66	29	20	28	20	21	16	23	22	32	33	15	25	22	19	
10		22	17	16	23	20	16	21	18	45	36	31	32	34	27	25	29	24	28	26	28	36	41	38	39	
11		15	17	21	26	17	38	23	26	14	18	25	26	25	27	28	27	24	26	25	57	33	28	32		
12		20	18	35	25	30	31	28	30	33	34	34	35	32	34	33	32	24	18	16	22	51	33	40	24	
13		39	43	50	24	19	35	49	31	30	27	25	33	34	33	35	26	31	31	23	28	20	29	25	27	
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15		32	37	38	32	28	27	31	25	26	25	25	31	32	33	31	32	29	29	26	31	31	33	29	24	
16		23	24	21	22	25	28	14	17	14	14	19	28	32	21	19	19	16	15	16	14	14	16	17	19	
17		16	19	21	16	21	26	26	26	29	32	25	25	27	27	28	31	33	34	35	23	24	27	23	24	
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19		24	25	24	24	26	26	26	24	23	27	31	27	28	27	25	32	32	31	31	28	24	28	24		
20		24	21	18	43	41	34	16	20	20	17	18	19	21	18	22	23	25	33	45	34	39	36	25	26	
21		29	35	32	33	30	41	41	43	27	29	25	38	34	38	31	22	29	18	19	16	16	22	20	21	
22		23	27	31	32	29	27	28	26	28	22	25	26	25	26	25	24	20	20	21	20	20	22	20	23	
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25		28	25	22	19	24	18	23	26	22	30	30	26	34	34	32	33	34	34	35	30	25	26	24	29	
26		31	28	24	28	28	25	30	31	31	34	36	36	35	31	34	33	29	30	21	21	30	27	39	49	
27		52	48	47	50	64	38	57	66	54	73	45	47	38	39	27	19	16	15	16	15	16	20	22	22	
28		23	21	31	30	52	56	56	42	36	51	55	23	29	29	21	27	27	19	30	35	32	29	26	29	
29		28	26	28	24	23	21	26	23	28	40	33	35	33	33	27	28	26	20	19	22	22	18	23	28	
30		26	34	32	36	33	36	34	34	35	32	28	29	28	32	35	39	35	38	26	39	32	33	28	34	
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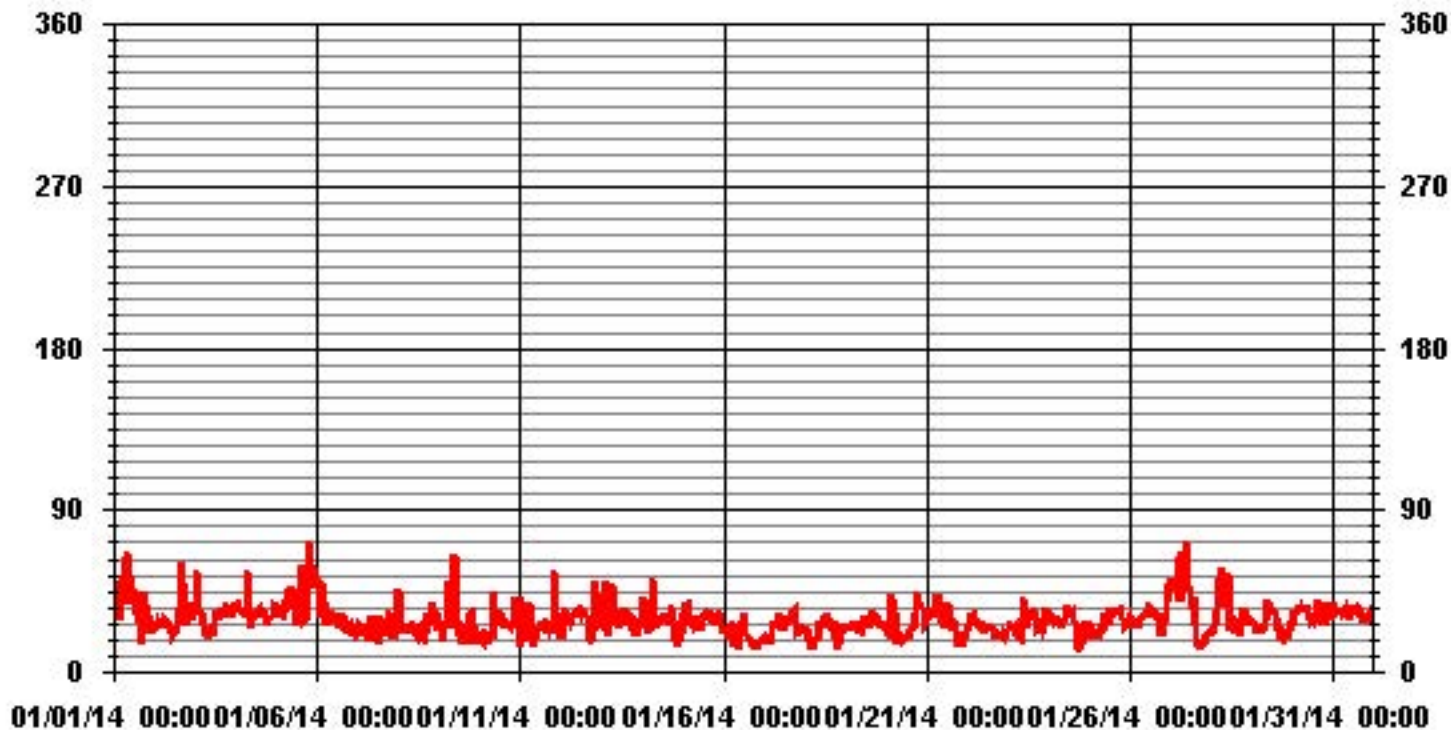
STATUS FLAG CODES

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: 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 23, 2013	Previous Calibration	December 18, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	LICA MASKWA		
Start Time (MST)	10:28	End Time (MST)	15:51
Reason:	Monthly calibration		
Barometric Pressure	27.94 in HG	Station Temperature	21 Deg C
Cal Gas	49.7 ppm	Gas Cyl. #	BAL3165
DAS Output Voltage	0-1 Volts	Cal Gas Expiry date	December 29, 2016
		Chart Rec. Output	N/A Volts

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	508	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	EnviroNics 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO791		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	EnviroNics 6100	S/N :	4760		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	0-1000 ppb						
Sample Flow / Box Temp	579 ccm	29.9 Deg C	579 ccm	29.9 Deg C			
HVPS / Lamp Setting	491	2823	491	2823			
PMT / RxCell Temp	7.7 Deg C	50 Deg C	7.7 Deg C	50 Deg C			
Converter / IZS Temp	N/A Deg C	45 Deg C	N/A Deg C	45.0 Deg C			
Offset / Slope	75.8	1.285	77.6	1.239			

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	1	0.0000
4996	0	0	0	0.0000
4996	79.8	781	811	0.9635
4996	79.8	781	783	0.9978
4996	39.9	393	392	1.0035
4996	19.9	197	196	1.0055
4995	0	0	1	0.0000
Sum of Least Squares				0.9993
New Correction Factor				0.9978

IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0	Auto Zero	0.0
Auto Span	250.0	Auto Span	248.0
Sample Lines Connected		Sample Lines Connected	YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9635
Percent Change:	3.8%

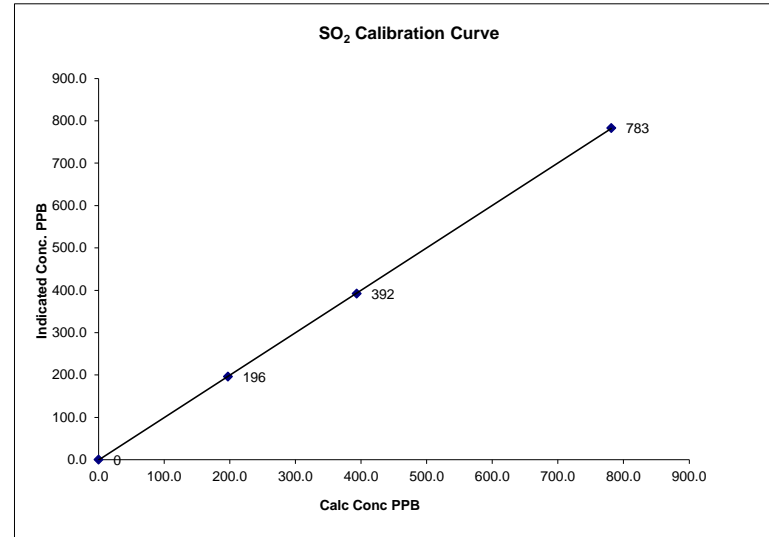
Notes:

Calibration Performed by: Tom Bourque/Kevin Hope

SO₂ Calibration Curve

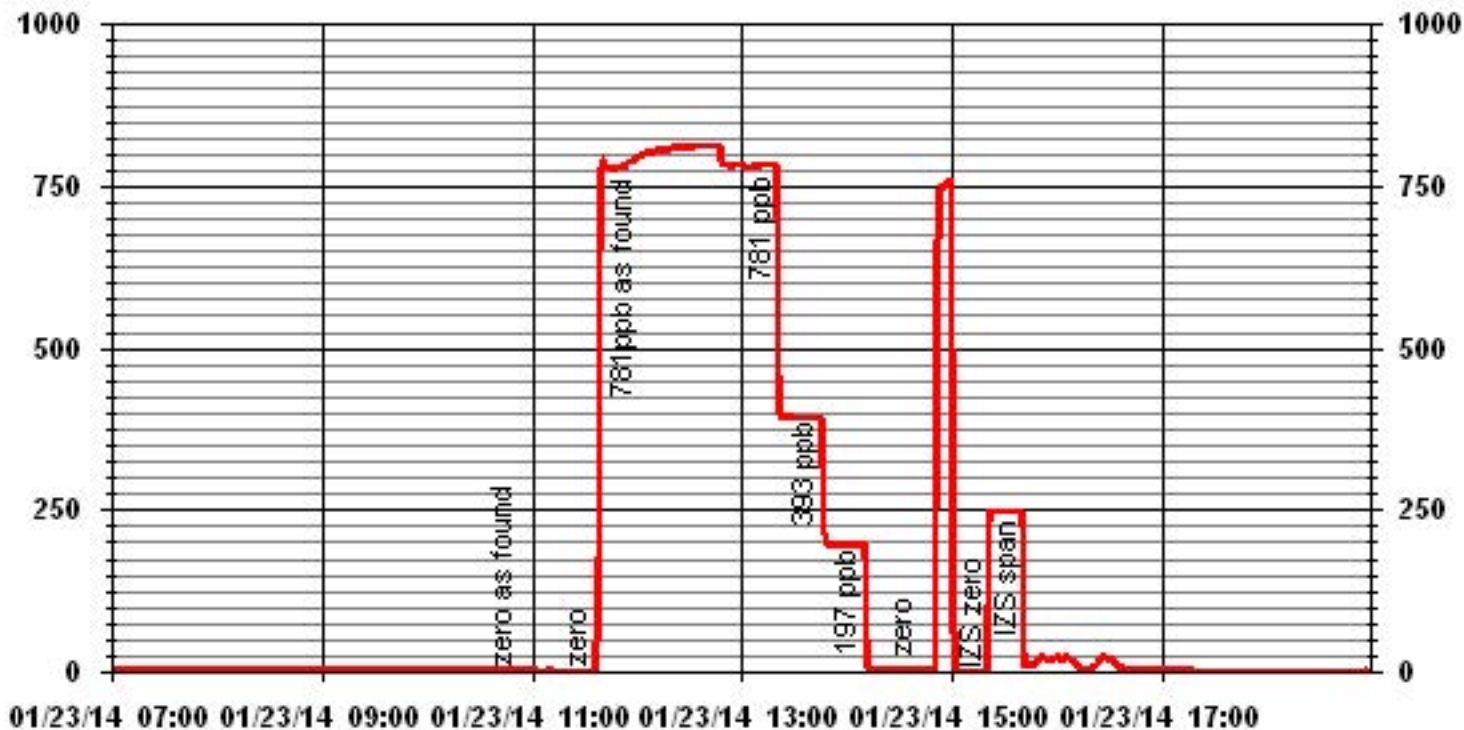
Calibration Date	January 23, 2013
Company	Lakeland Industry & Community Association
Plant / Location	LICA MASKWA
Start Time (MST)	10:28
End Time (MST)	15:51

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	0	0.0000		0.999987
197	196	1.0055		1.002232
393	392	1.0035		-0.873978
781	783	0.9978		



Notes:

01 Minute Averages



Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	December 18, 2013	Previous Calibration	December 18, 2013
Company	Lakeland Industry and Community Association		
Plant / Location	LICA MASKWA		
Start Time (MST)	13:51	End Time (MST)	16:57
Reason:	Monthly calibration		
Barometric Pressure	27.94 in HG	Station Temperature	21 Deg C
Cal Gas	10.1 ppm	Gas Cyl. #	BLM00504 Cal Gas Expiry date
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts
			December 25, 2015

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	511	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 :	AO791		
Chart Recorder Make / Model:	NA	S/N:	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	654 ccm	33.6 Deg C		654 ccm	33.6 Deg C
HVPS / Lamp Setting	584	3430		584	3430
PMT / RxCell Temp	7.9 Deg C	50 Deg C		7.9 Deg C	50 Deg C
Converter / IZS Temp	314.5 Deg C	45 Deg C		314.5 Deg C	45.0 Deg C
Offset / Slope	30.8	1.163		30.8	1.163

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
1996	0	0	0	0.0000
1996	0	0	0	0.0000
4996	35.0	70	70	1.0021
4996	35.0	70	70	0.9981
4995	19.0	38	39	0.9890
4995	9.0	18	18	0.9835
4995	0	0	0	0.0000
Sum of Least Squares				0.9954
New Correction Factor				0.9981

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.6
Auto Span	49.6	49.6
Sample Lines Connected		Yes

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0021
Percent Change:	-0.2%

Notes:

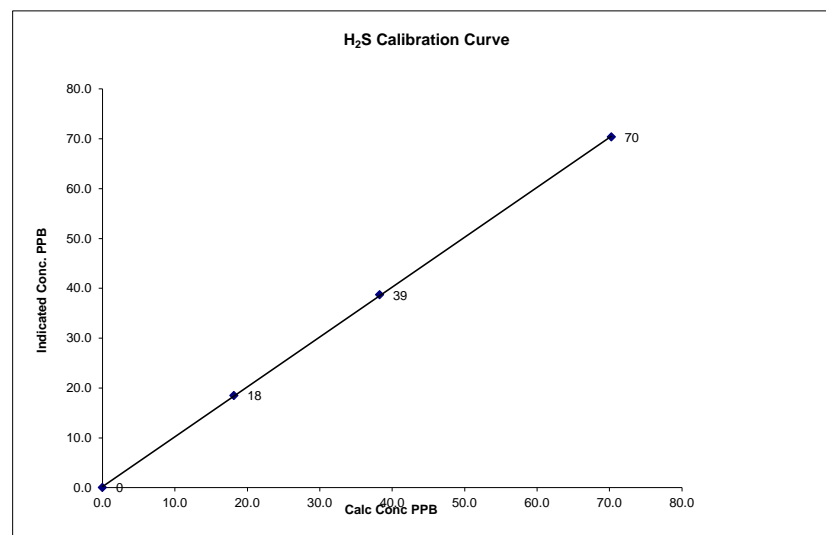
Sample manifold cleaned.

Calibration Performed by: Kevin Hope/Tom Bourque

H₂S Calibration Curve

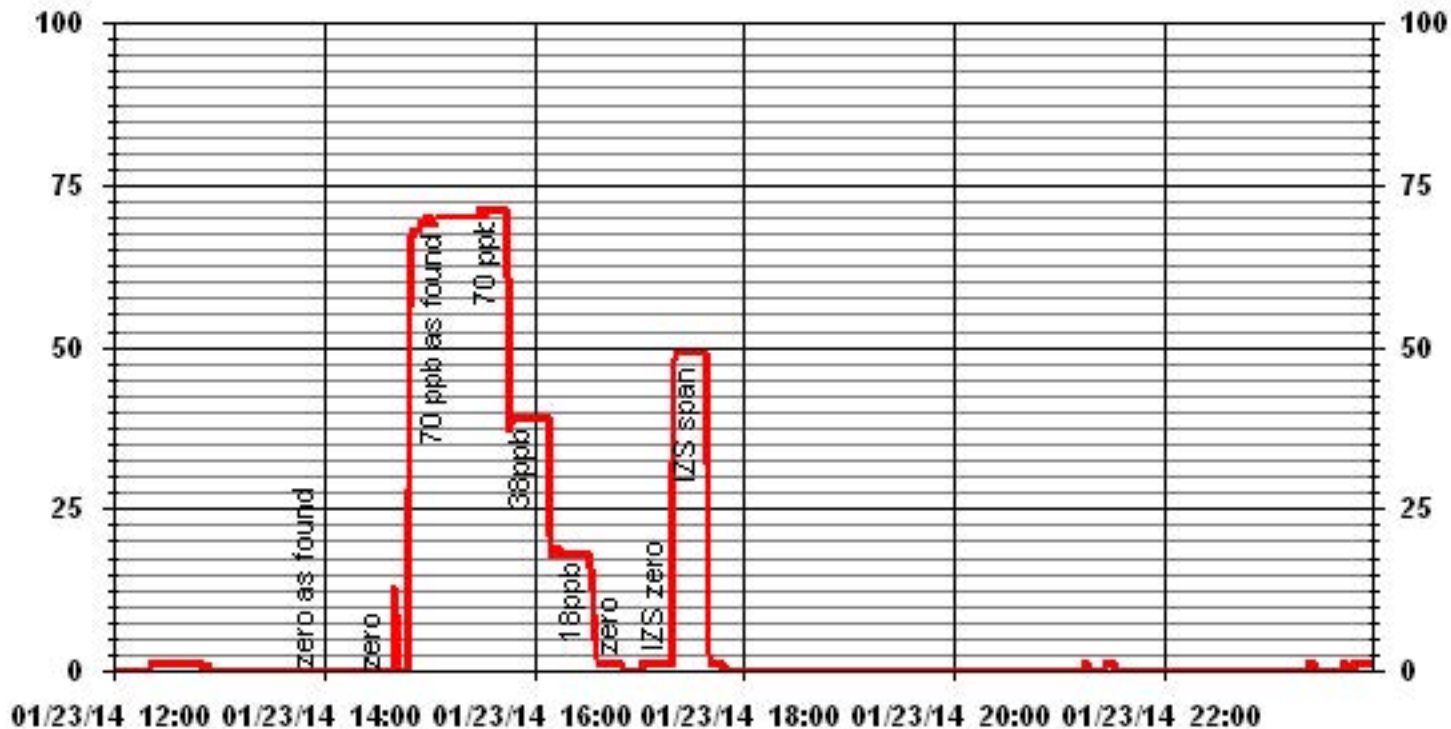
Calibration Date	December 18, 2013		
Company	Lakeland Industry and Community Association		
Plant / Location	LICA MASKWA		
Start Time (MST)	13:51	End Time (MST)	16:57

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999969
0	0	0.0000	Intercept	(0.85 to 1.15)	1.000866
18	18	0.9835		(± 3% F.S.)	0.201904
38	39	0.9890			
70	70	0.9981			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	January 23, 2014	Previous Calibration	December 18, 2013
Company:	Lakeland Industry & Community Association		
Plant / Location:	LICA MASKWA		
Start Time (MST)	9:36	End Time (MST)	13:54
Reason:	Monthly calibration		
Barometric Pressure:	27.94 atm	Station Temperature:	21 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 609 PPM	C3H8 201 PPM	
	TOTAL CH4 1161.8 PPM	Gas Cyl. # LL36542	Cal Gas Expiry Date: November 7, 2021
DAS make & Model:	ESC 8832	S/N :	AO791
Chart Recorder:	N/A	S/N:	N/A
Output Voltage Range:	0-10 VDC	Chart Speed:	N/A mm/hr

Analyzer Information

Make / Model	Thermo 51C-LT	S/N :	436609738	Method	Flame Ionization
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	Before Calibration		After Calibration	
Concentration Range	0-50	ppm	0-50	ppm
Sample Pressure	7.5	psi	7.5	psi
Hydrogen Pressure	25	psi	25	psi
Air Pressure	33	psi	33	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
1996	0.0	0.0	0.4	0.0000
1996	0.0	0.0	0.1	0.0000
1995	65.0	36.7	37.8	0.9698
1995	65.0	36.7	36.7	0.9999
1991	33.0	18.9	18.6	1.0167
1994	15.0	8.7	8.5	1.0169
1996	0.0	0.0	0.0	0.0000
New Correction Factor:				0.9999

Percent Change

Previous Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9698
Percent Change:	3.1%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	30.7	30.1
Sample Lines Connected	yes	

Cylinder Pressures			
Span	500 psi	Hydrogen 1500 psi	Zero Air 33 psi

Notes:

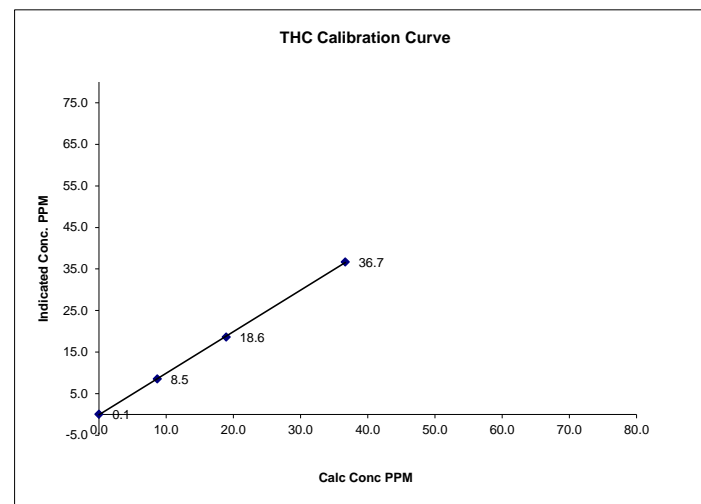
Sample line/ manifold cleaned.

Calibration Performed by: Kevin Hope/Tom Bourque

THC Calibration Curve

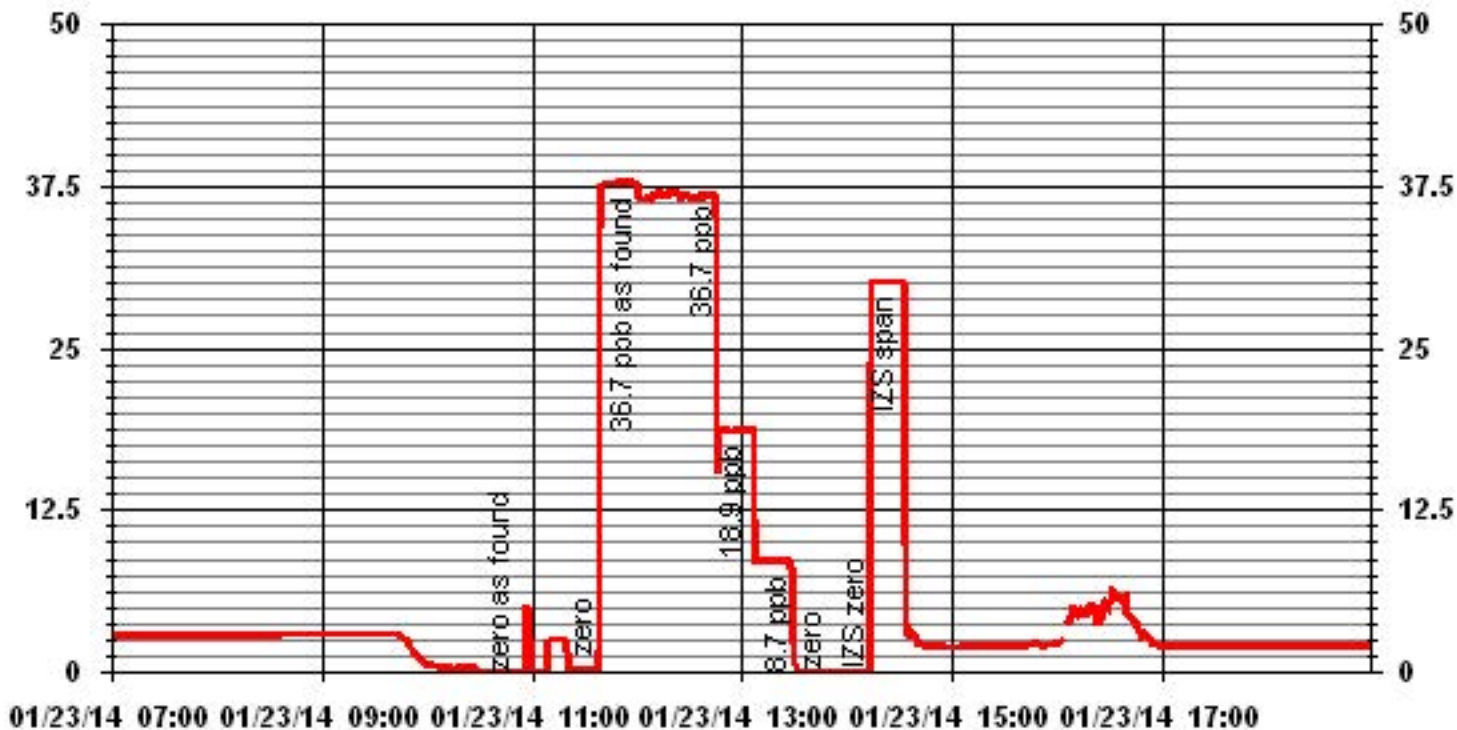
Calibration Date	January 23, 2014		
Company	Lakeland Industry & Community Association		
Plant / Location	LICA MASKWA		
Start Time (MST)	9:36	End Time (MST)	13:54

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	0.999890	0.999013	-0.08234
8.7	8.5	1.0169			
18.9	18.6	1.0167			
36.7	36.7	0.9999			



Notes:

01 Minute Averages



Nitrogen Dioxide

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	January 23, 2014	Previous Calibration	December 19, 2013
Company	LICA	Plant/Location	LICA Maskwa
Start Time (MST)	10:28	End Time (MST)	16:33
Reason:	Monthly calibration		
Barometric Pressure	27.91 in Hg	Station Temperature	20 Deg C
Cal Gas Concentration	NOx 48.9 ppm	NO	49 ppm
Cal Gas Cylinder #	BAL 3165	Cal Gas Expiry date	December 29, 2016
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts

Equipment Information

Analyzer Make / Model:	API 200E	S/N :	594	Method:	Chemiluminescent
Calibrator Make / Model:	EnviroNics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO791		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	EnviroNics 6100	S/N :	4760		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range			0-1000				
Sample Flow/Conv. Temp	448 ccm	316.9 Deg C		448 ccm	316.9 Deg C		
Ozone Flow / Vacuum	79 ccm	5.0 *Hg-A		79 ccm	5.0 *Hg-A		
HVPS / A ZERO	750 Volts	15.1 MV		750 Volts	15.1 MV		
Rx/ Temp / PMT Temp	50.2 Deg C	6.6 Deg C		50.2 Deg C	6.6 Deg C		
Box Temp / IZS Temp	30.6 Deg C	42.1 Deg C		30.6 Deg C	42.1 Deg C		
Offset	0.3 NOx	0.3 NO		15.7 NOx	7.5 NO		
Slope	1.067 NOx	1.062 NO		1.044 NOx	1.040 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
4995	0.0	0	0	0	0	7	3	4	0	0
4996	0.0	0	0	0	0	0	-2	0	0	0
4996	79.8	0	769	770	0	800	759	6	0.9696	1.0184
4996	79.8	0	769	770	0	771	765	4	1.0059	1.0098
4996	39.9	0	387	388	0	387	385	1	1.0000	1.0141
4995	19.9	0	194	194	0	197	194	1	1.0213	1.0000
4996	0.0	0	0	0	0	3	2	1	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		
4996	79.8	0	769	770	0	773	767	5	0	0.00%
4996	79.8	600	769	0.0	635	776	137	639	0.9999	100.61%
		no adj.								
4996	79.8	350	769	0.0	380	773	392	381	1.0078	100.22%
4996	79.8	175	769	0.0	195	774	577	197	1.0100	100.96%

Linearity	Sum of Least Squares	NOx= 0.997	NO= 1.006	NO2= 0.995
OK?	Correction Factors:	NOx= 1.0059	NO= 1.0098	NO2= 0.9999
		Average Converter Efficiency= 100.59%		

IZS Calibration Data

Before Calibration					After Calibration				
Auto Zero	0.8 NOx	-0.1 NO2			0.0 NOx	0.0 NO2			
Auto Span	554 NOx	548 NO2			528 NOx	526 NO2			
	Sample Lines Connected:				YES				

Percent Change

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	1.000	1.000	1.003
Current Correction Factor Before Span Adjust	0.970	1.018	1.000
Percent Change	3.1%	-1.8%	0.3%

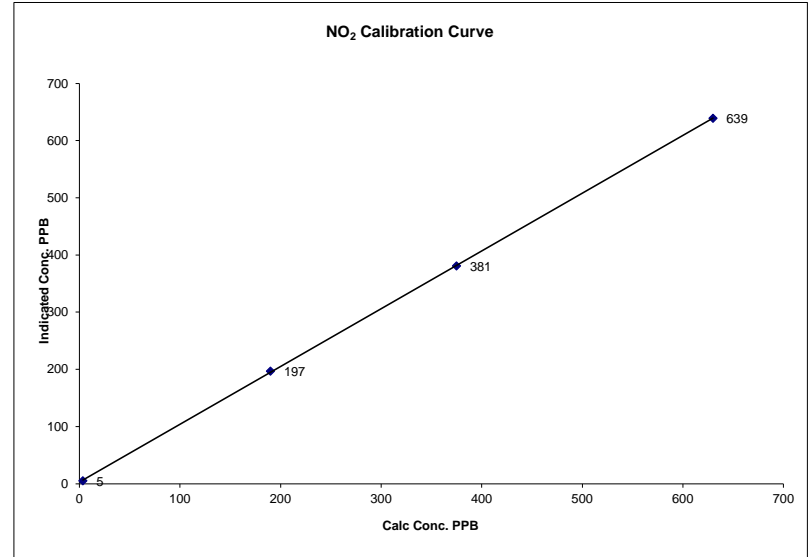
Notes: **NA : Not Applicable**

Calibration Performed by: Tom Bourque/Kevin Hope

NO2 Calibration Curve

Calibration Date	January 23, 2014
Company	LICA
Plant / Location	LICA Maskwa
Start Time (MST)	10:28
End Time (MST)	16:33

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999969
4	5	NA	Intercept	(± 3% F.S.)	2.90225
190	197	0.9645			
375	381	0.9843			
630	639	0.9859			

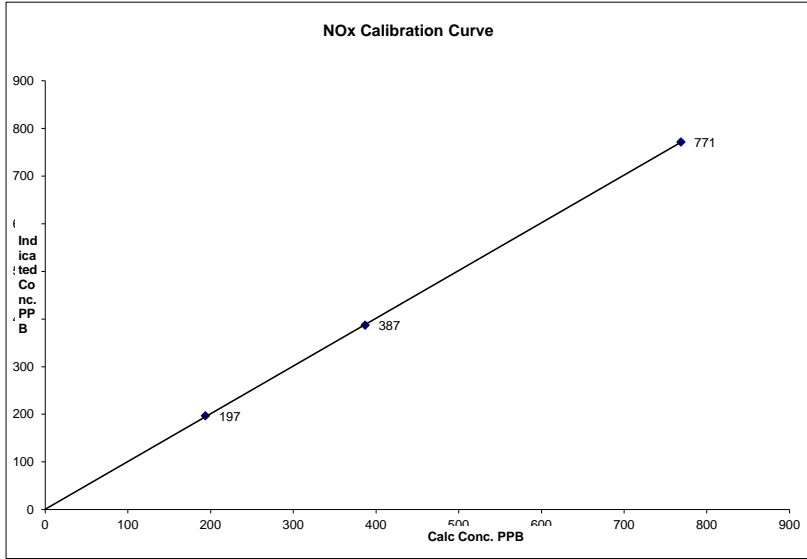


Notes:

NOx Calibration Curve

Calibration Date	January 23, 2014	
Company	LICA	
Plant / Location	LICA Maskwa	
Start Time (MST)	10:28	End Time (MST) 16:33

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999978
0	0	NA	Slope (0.85 to 1.15)	1.002310
194	197	1.0213	Intercept (± 3% F.S.)	0.57790
387	387	1.0000		
769	771	1.0059		

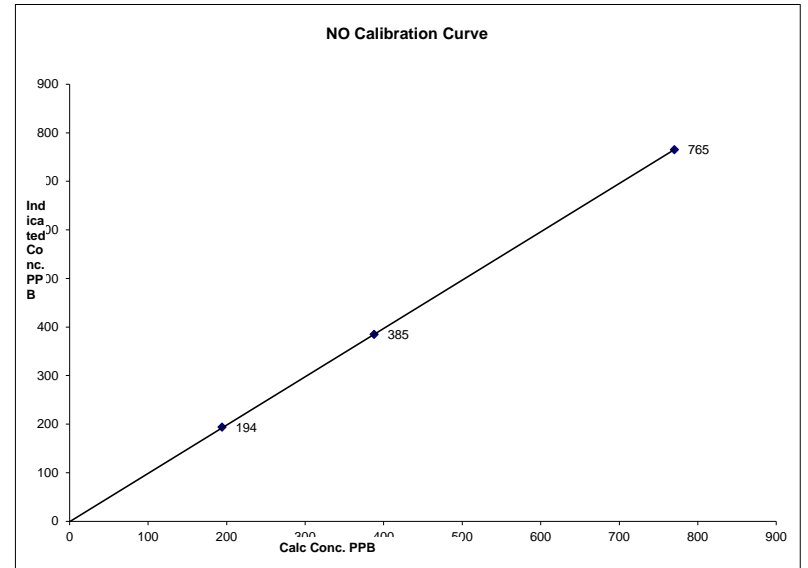


Notes:

NO Calibration Curve

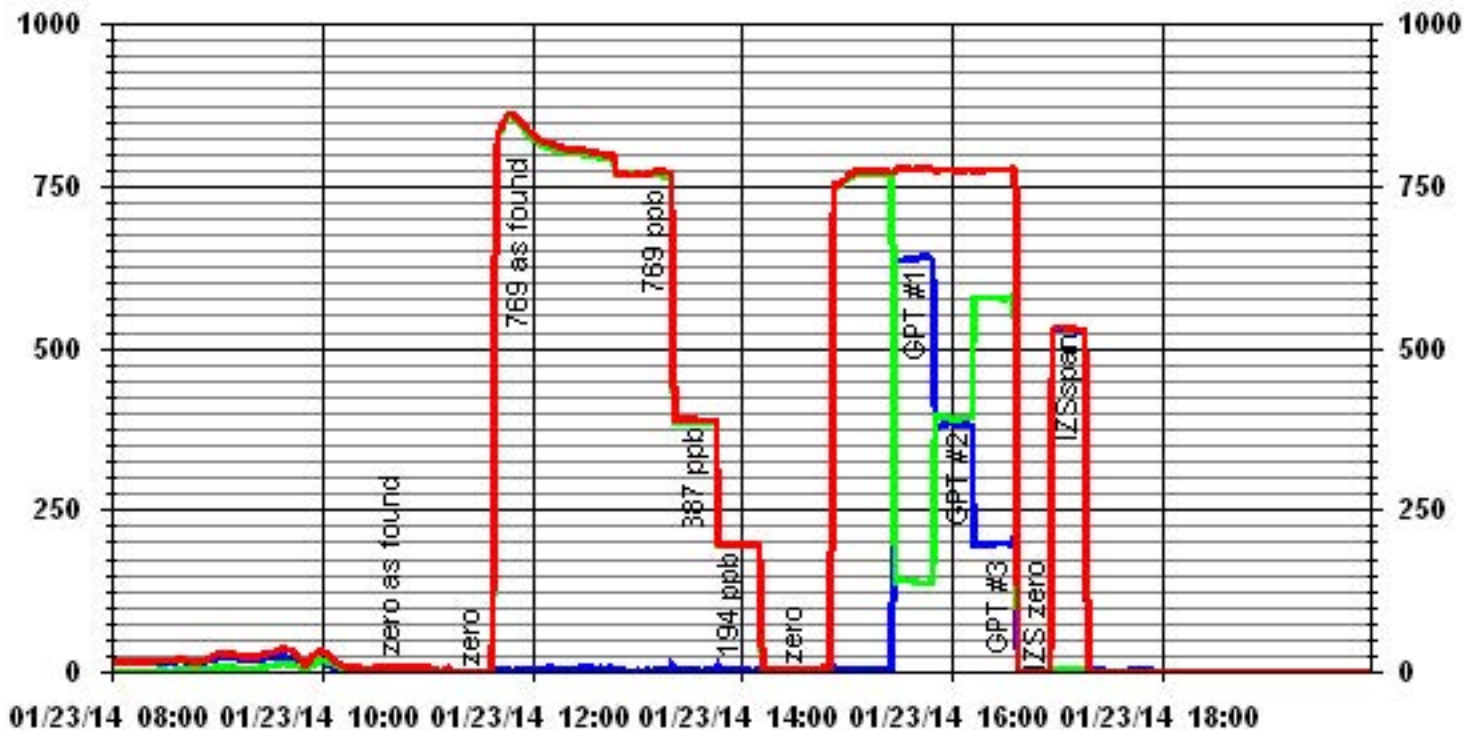
Calibration Date	January 23, 2014	
Company	LICA	
Plant / Location	LICA Maskwa	
Start Time (MST)	10:28	End Time (MST) 16:33

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999991
0	-2	NA	Slope (0.85 to 1.15)	0.994897
194	194	1.0000	Intercept (± 3% F.S.)	-0.74219
388	385	1.0141		
770	765	1.0098		



Notes:

01 Minute Averages



Lakeland Industry & Community Association

St. Lina Monitoring Site
Ambient Air Monitoring
Data Report
For
January 2014

Prepared By:



February 28, 2014

Lakeland Industry & Community Association

St. Lina

Ambient Air Monitoring

Table of Contents	Page		Page
Introduction	3	Calibration Reports	97
Calibration Procedure	4	<ul style="list-style-type: none"> • Sulphur Dioxide • Hydrogen Sulphide • Total Hydrocarbons • Nitrogen Dioxide • Ozone • Particulate Matter 2.5 	98 101 104 107 11% 1%
Monthly Continuous Summary	5		
General Monthly Summary	6		
Continuous Monitoring	10		
<ul style="list-style-type: none"> • Monthly Summaries, Graphs & Wind Roses 	11		
<ul style="list-style-type: none"> • Sulphur Dioxide • Hydrogen Sulphide • Total Hydrocarbons • Ozone • Nitrogen Dioxide • Nitric Oxide • Oxides of Nitrogen • Particulate Matter 2.5 • Temperature • Barometric Pressure • Relative Humidity • Precipitation • Vector Wind Speed • Vector Wind Direction • Standard Deviation Wind Direction 	12 20 28 36 44 52 59 67 72 75 78 81 84 91 94		

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 2014

The monthly ambient data report:

- Prepared by Lili Zhou
- 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:

- AIR SOP-00211
- AIR SOP-00209
- AIR SOP-00213
- AIR SOP-00214
- AIR SOP-00208
- AIR 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 2014

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	3.60	14	7	20	12.8	162(SSE)	6.3	2	99.5
H2S (PPB)	10	3	0	0	1.68	4	1	9	2.3	203(SSW)	2.7	11	99.7
THC (PPM)	-	-	-	-	2.06	3.4	1	21	11.5	177(S)	2.6	1	99.7
OZONE (PPB)	82	-	0	-	32.96	48	15	VAR	VAR	VAR	43.3	15	99.5
NOx (PPB)	-	-	-	-	3.23	23.7	16	23	12.6	224(SW)	9.6	9	99.9
NO (PPB)	-	-	-	-	0.43	5.1	28	13	12.8	232(SW)	1.2	10	99.9
NO ₂ (PPB)	159	-	0	-	2.80	22.1	16	23	12.6	224(SW)	8.9	9	99.9
PM2.5 (ug/m3)	-	30	-	0	1.69	17	9	14	13	233(SW)	5.4	9	99.2
TEMPERATURE (DEGREE C)	-	-	-	-	-10.44	8.9	25	13	27.1	310(NW)	5.0	24	99.9
BP (MILLIBAR)	-	-	-	-	922.46	947	5	VAR	VAR	VAR	943.7	5	99.9
RH (%)	-	-	-	-	66.78	87	2, 14	VAR	VAR	VAR	81.5	9	99.9
PRECIPITATION (MM)	-	-	-	-	0.01	0.5	6	11	12	161(SSE)	0.1	6, 14	100.0
VECTOR WS (KPH)	-	-	-	-	13.96	40.5	15	11	-	309(NW)	31.6	15	99.9
VECTOR WD (DEGREES)	-	-	-	-	286(WNW)	-	-	-	-	-	-	-	99.9

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 monthly calibration was performed on January 20th. The inlet filter was changed before the calibration was started. The time spent on the routine calibration was extended this month for Maxxam field technician training purposes. As the O3 channel and SO2 channel are on the same rely. The SO2 channel was put into the maintenance mode while the O3 calibration was performed on January 22nd. Hourly data collected on January 28th during hour 14 is missing due to a power failure event. Hourly data collected on January 28th at hour 15 was invalidated as the analyzer was recovering from the power failure. 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 monthly calibration was performed on January 20th. The inlet filter was changed before the calibration was started. The time spent on the routine calibration was extended this month for Maxxam field technician training purposes. Hourly data collected on January 28th during hour 14 is missing due to a power failure event. Hourly data collected on January 28th at hour 15 was invalidated as the analyzer was recovering from the power failure. 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: 04366-09739

The analyzer was working well throughout the month. The monthly calibration was performed on January 21st. The inlet filter was changed before the calibration was started. The time spent on the routine calibration was extended this month for Maxxam field technician training purposes. Hourly data collected on January 28th during hour 14 is missing due to a power failure event. Hourly data collected on January 28th at hour 15 was invalidated as the analyzer was recovering from the power failure. 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 monthly calibration was performed on January 21st. The inlet filter was changed before the calibration was started. The time spent on the routine calibration was extended this month for Maxxam field technician training purposes. Hourly data collected on January 28th during hour 14 is missing due to a power failure event. Data was corrected using daily zero information.

Ozone (PPB)

Analyzer make / model - Thermo 49i, S/N: 1002240371

The analyzer was working well throughout the month. As the O3 channel and SO2 channel are on the same rely. The O3 channel was put into the maintenance mode while the SO2 calibration was performed on January 20th. The monthly calibration was performed on January 22nd. The inlet filter was changed before the calibration was started. The time spent on the routine calibration was extended this month for Maxxam field technician training purposes. Hourly data collected on January 28th during hour 14 is missing due to a power failure event. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – St. Lina

Particulate Matter 2.5 (UG/M3)

Analyzer make / model –R&P Teom 1400a, S/N: 20001

One Teom audit was performed on January 21st. The audit passed the manufacturer requirements. The sample inlet was cleaned and both the flow audit and leak check were performed on January 21st. The time spent on the audit was extended this month for Maxxam field technician training purposes. Hourly data collected on January 28th during hour 14 is missing due to a power failure event. 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. Five hourly data were invalidated as the data were below –3 ug/m3.

Temperature (Degree C)

Analyzer make / model – Met One 060

The temperature sensor was working well throughout the month. Hourly data collected on January 28th during hour 14 is missing due to a power failure event.

Barometric Pressure (Millibar)

Analyzer make / model - Met One 092

The BP sensor was working well throughout the month. Hourly data collected on January 28th during hour 14 is missing due to a power failure event.

Relative Humidity (%)

Analyzer make / model - Met One 083

The RH sensor was working well throughout the month. Hourly data collected on January 28th during hour 14 is missing due to a power failure event.

General Monthly Summary

AQM STATION – LICA – St. Lina

Precipitation (MM)

Analyzer make / model - Met One 387

No issues were recorded this month.

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

System make / model –MetOne 50.5H Sonic, S/N: H12635

The wind system is reported as vector wind speed and vector wind direction. The last wind system calibration was performed on June 12th, 2012 by the manufacturer.

The wind system was working well throughout the month. Hourly data collected on January 28th during hour 14 is missing due to a power failure event.

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

The glass manifold was cleaned on January 20th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

SULPHUR DIOXIDE (SO2) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY	1	3	3	3	3	3	3	3	3	2	2	2	3	3	S	4	3	3	3	3	3	3	4	4	5	5	5	3.1	24
2	6	6	8	8	7	7	7	7	7	7	8	8	7	S	6	6	6	6	6	5	5	5	5	5	5	5	8	6.3	24
3	4	5	4	5	5	4	4	4	4	4	4	4	S	3	3	3	3	3	2	3	3	2	2	2	2	5	3.4	24	
4	2	2	2	2	2	2	1	1	2	1	S	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	2.4	24	
5	2	2	2	2	3	2	2	2	2	S	3	3	3	3	3	4	4	4	4	4	5	5	5	5	4	5	3.3	24	
6	4	5	4	4	4	5	5	5	S	4	5	5	5	5	4	5	6	6	5	6	6	6	6	6	6	6	5.0	24	
7	6	5	4	4	4	5	5	S	4	3	3	3	3	3	3	3	3	3	3	3	6	14	6	4	4	14	4.4	24	
8	4	4	4	4	4	4	S	4	4	5	5	5	5	5	5	6	6	5	5	5	5	5	6	5	5	6	4.8	24	
9	5	5	5	5	5	S	3	3	3	4	5	5	5	4	4	4	5	5	5	5	5	5	5	5	5	5	4.6	24	
10	5	5	6	5	S	4	4	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	6	3.6	24	
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19	3	4	3	3	4	3	3	3	3	3	3	3	3	3	3	3	3	2	S	3	3	2	2	2	2	4	2.9	24	
20	2	2	2	2	2	2	2	2	2	2	2	2	C	C	C	C	C	C	C	C	C	C	4	4	3	4	2.4	24	
21	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	3	S	3	3	2	2	2	2	2	3	2.5	24	
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27	4	4	3	3	3	3	3	3	3	S	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	4	2.9	24	
28	4	4	4	4	4	4	4	4	5	S	4	4	5	5	P	R	4	4	4	4	4	4	4	4	4	5	4.1	22	
29	4	3	4	3	3	4	4	4	S	4	4	4	4	4	4	4	4	4	4	4	3	3	3	3	3	4	3.7	24	
30	5	4	3	3	3	3	3	S	4	4	4	4	4	4	4	4	4	4	4	4	5	5	5	6	6	6	4.1	24	
31	7	7	6	5	5	5	S	3	3	3	3	2	3	2	2	2	2	2	3	3	2	2	2	2	2	7	3.3	24	
HOURLY MAX		7	7	8	8	7	7	7	7	7	8	8	7	6	6	6	6	6	6	5	6	14	6	6	6				
HOURLY AVG		4.0	3.9	3.7	3.6	3.7	3.7	3.5	3.5	3.5	3.4	3.6	3.5	3.5	3.5	3.4	3.5	3.6	3.5	3.5	3.6	3.9	3.6	3.6	3.6				

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

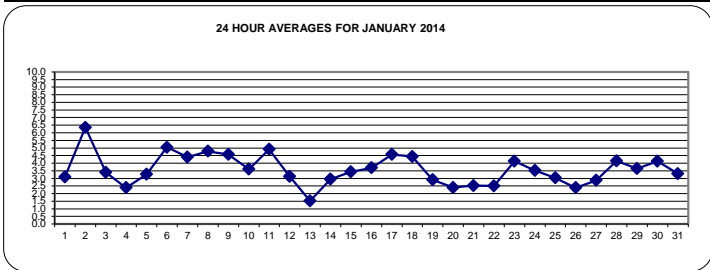
OBJECTIVE LIMIT:

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

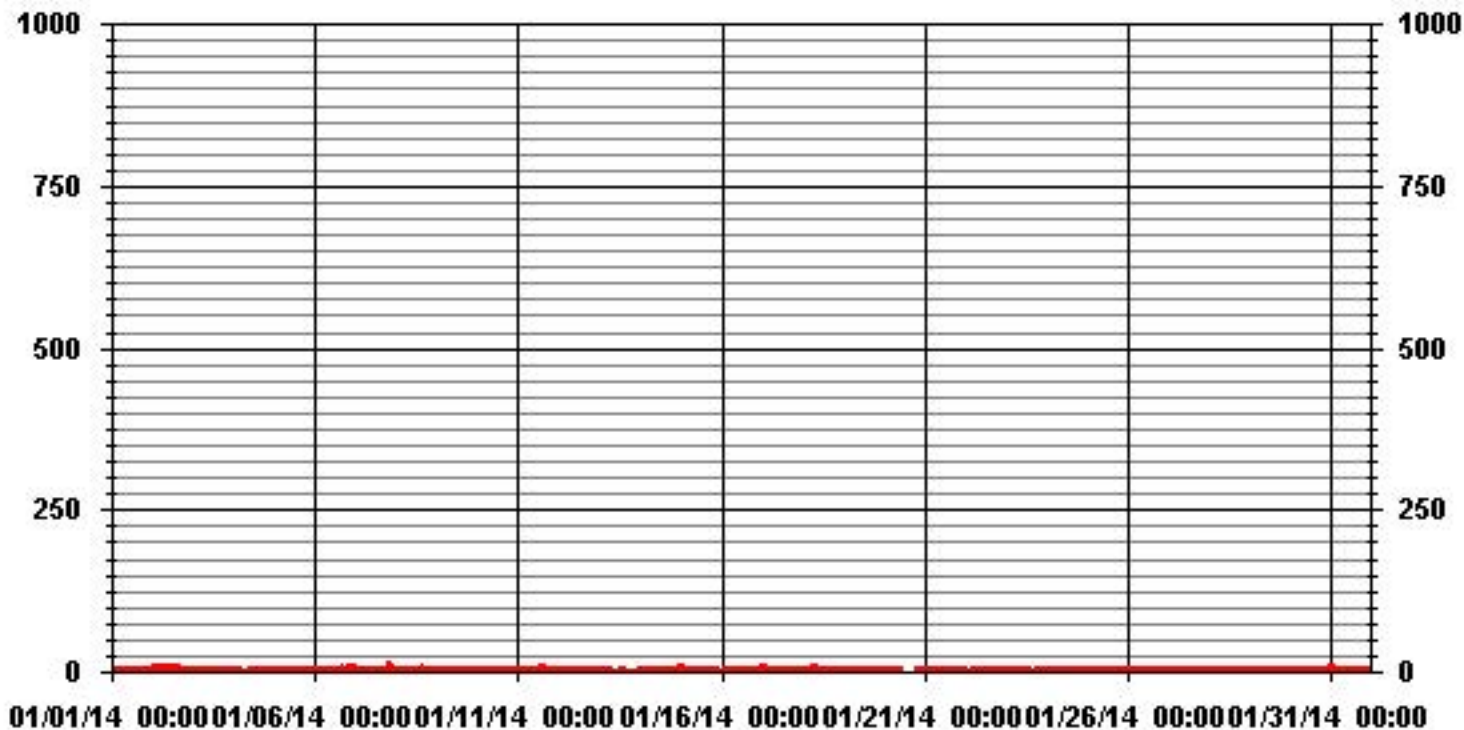
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	694
MAXIMUM 1-HR AVERAGE:	14 PPB @ HOUR(S) 20 ON DAY(S) 7
MAXIMUM 24-HR AVERAGE:	6.3 PPB ON DAY(S) 2
VAR-VARIOUS	
IZS CALIBRATION TIME:	30 HRS
MONTHLY CALIBRATION TIME:	9 HRS
OPERATIONAL TIME:	740 HRS
AMD OPERATION UPTIME:	99.5 %
STANDARD DEVIATION:	1.39
MONTHLY AVERAGE:	3.60 PPB

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



— LICA31 SO2_ PPB

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1		4	4	4	4	4	4	4	4	4	4	3	4	4	S	5	5	4	4	4	4	4	5	5	6	6	4.2	24	
2		7	8	9	9	8	8	8	8	9	9	9	9	S	7	7	7	7	7	6	6	6	6	6	6	6	9	7.5	24
3		6	6	6	6	6	5	6	5	5	5	5	S	4	4	4	4	4	3	4	4	3	3	3	3	6	4.5	24	
4		3	3	3	3	3	3	2	3	3	2	S	4	5	5	4	4	4	4	4	4	4	4	4	4	4	5	3.6	24
5		4	4	3	3	4	3	3	3	3	S	4	5	4	4	5	5	5	5	6	6	6	6	6	5	6	4.4	24	
6		5	7	7	5	5	6	6	6	S	6	6	6	6	6	5	6	7	7	6	6	7	7	7	7	7	6.2	24	
7		7	6	5	5	5	6	7	S	5	4	4	4	4	4	4	4	4	4	4	14	16	13	5	5	16	6.0	24	
8		5	5	5	6	5	5	S	5	5	5	6	6	6	6	6	7	7	6	6	6	7	7	6	6	7	5.8	24	
9		6	6	7	6	6	S	4	4	4	5	6	6	6	5	6	6	6	6	6	6	6	6	7	7	7	5.7	24	
10		6	7	7	6	S	5	5	5	5	5	4	4	4	4	4	4	4	4	4	3	4	4	4	4	7	4.6	24	
11		3	3	5	S	5	6	6	6	7	6	7	7	7	7	7	7	7	7	6	6	6	6	6	6	7	6.0	24	
12		6	6	S	5	4	7	5	4	4	4	3	4	4	2	2	3	3	3	3	4	5	5	5	5	5	7	4.3	24
13		5	S	5	5	5	5	4	3	3	3	3	2	2	2	2	2	2	1	2	1	1	1	1	1	5	2.7	24	
14		S	3	3	3	3	3	3	3	3	3	4	4	5	5	4	4	4	5	6	6	5	5	5	S	6	4.0	24	
15		9	8	7	5	5	5	5	5	5	4	5	4	4	4	3	3	3	3	3	3	3	3	S	4	9	4.5	24	
16		4	4	4	4	5	4	4	4	5	5	5	4	6	5	5	5	5	5	5	5	5	S	6	8	8	4.9	24	
17		9	9	8	7	6	6	6	6	6	6	6	5	5	5	6	5	5	5	5	5	S	4	4	4	9	5.8	24	
18		4	4	4	4	4	6	7	9	8	7	6	5	5	6	5	5	6	6	S	7	6	5	4	9	5.6	24		
19		4	5	4	4	5	4	4	4	4	4	4	4	4	4	4	4	4	3	S	4	4	4	3	3	5	4.0	24	
20		4	4	3	3	3	3	3	3	3	3	3	C	C	C	C	C	C	C	C	C	5	5	5	4	5	3.6	24	
21		4	4	4	4	4	4	4	4	4	4	3	3	3	4	4	S	S	S	4	4	4	4	3	3	4	3.8	24	
22		3	3	2	3	3	3	3	4	4	3	3	3	3	3	Y	Y	S	4	4	5	5	5	5	5	5	3.6	22	
23		6	6	6	6	6	6	6	6	6	5	6	6	6	5	S	4	5	5	4	4	5	4	5	5	6	5.3	24	
24		5	5	5	5	5	5	5	5	5	5	5	5	S	4	4	4	4	4	4	4	4	3	3	5	4.4	24		
25		3	4	4	4	5	5	5	5	5	4	4	4	S	4	4	4	4	4	4	4	4	4	4	4	5	4.2	24	
26		4	4	3	3	3	2	2	2	2	2	2	S	4	4	4	5	5	5	5	4	5	4	5	5	5	3.7	24	
27		4	5	4	5	4	4	4	4	4	4	S	3	3	3	3	3	4	4	4	4	4	4	4	4	5	3.9	24	
28		5	5	5	5	5	5	6	6	S	5	6	6	6	P	P	5	5	5	5	5	5	5	5	5	6	5.2	22	
29		5	5	5	4	4	5	5	5	S	5	5	5	5	5	5	5	5	5	5	5	4	4	4	5	5	4.8	24	
30		6	5	4	4	4	4	4	S	5	5	5	5	5	5	5	5	5	5	5	6	6	7	7	7	7	5.2	24	
31		8	8	7	6	6	6	S	4	4	4	4	3	4	4	3	3	3	4	4	3	3	3	3	3	8	4.3	24	
HOURLY MAX		9	9	9	9	8	8	8	9	9	9	9	9	7	7	7	7	7	7	6	14	16	13	7	8				
HOURLY AVG		5.1	5.2	4.9	4.7	4.7	4.8	4.7	4.7	4.7	4.5	4.7	4.6	4.6	4.6	4.5	4.5	4.6	4.6	4.6	4.9	5.1	4.9	4.7	4.7				

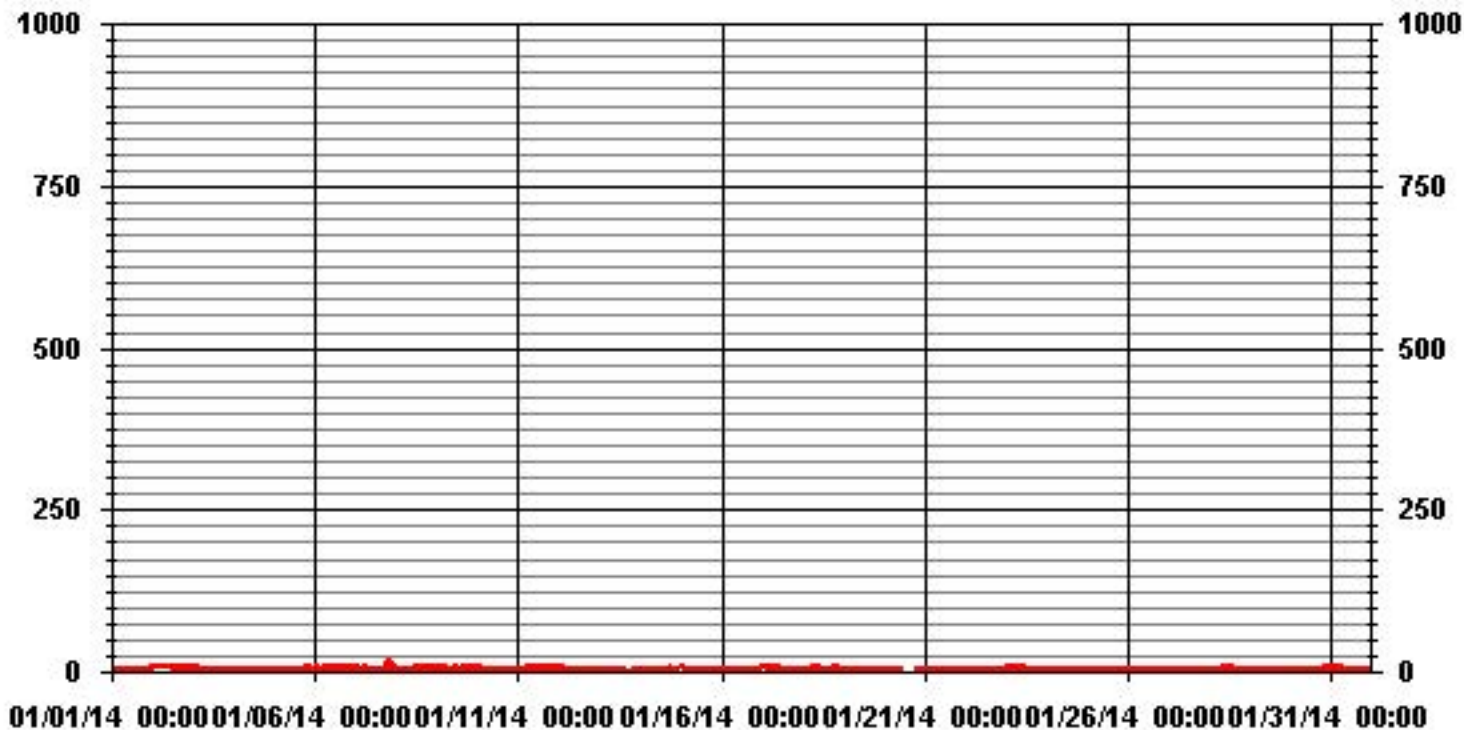
STATUS FLAG CODES

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:	699					
MAXIMUM INSTANTANEOUS VALUE:	16	PPB	@ HOUR(S)	20	ON DAY(S)	7
	VAR-VARIOUS					
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	1.52					

01 Hour Averages



LICA31
 SO2_ / WDR Joint Frequency Distribution (Percent)

January 2014

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 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	7.83	1.99	.85	1.70	2.13	.85	2.13	4.27	3.41	8.11	12.53	9.68	7.40	8.83	16.80	11.39	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	7.83	1.99	.85	1.70	2.13	.85	2.13	4.27	3.41	8.11	12.53	9.68	7.40	8.83	16.80	11.39	

Calm : .00 %

Total # Operational Hours : 702

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	55	14	6	12	15	6	15	30	24	57	88	68	52	62	118	80	702
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	55	14	6	12	15	6	15	30	24	57	88	68	52	62	118	80	

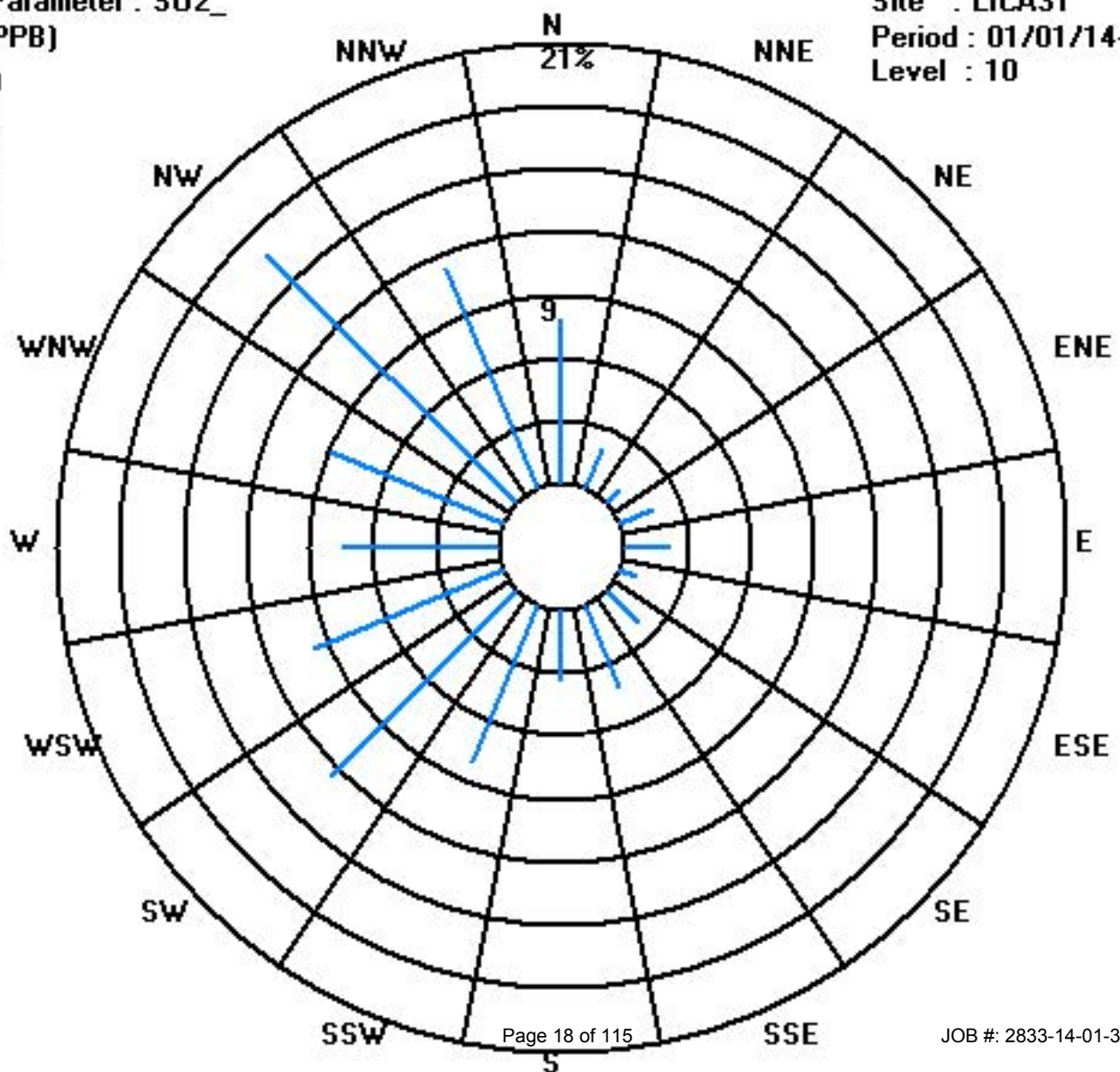
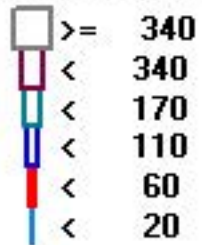
Calm : .00 %

Total # Operational Hours : 702

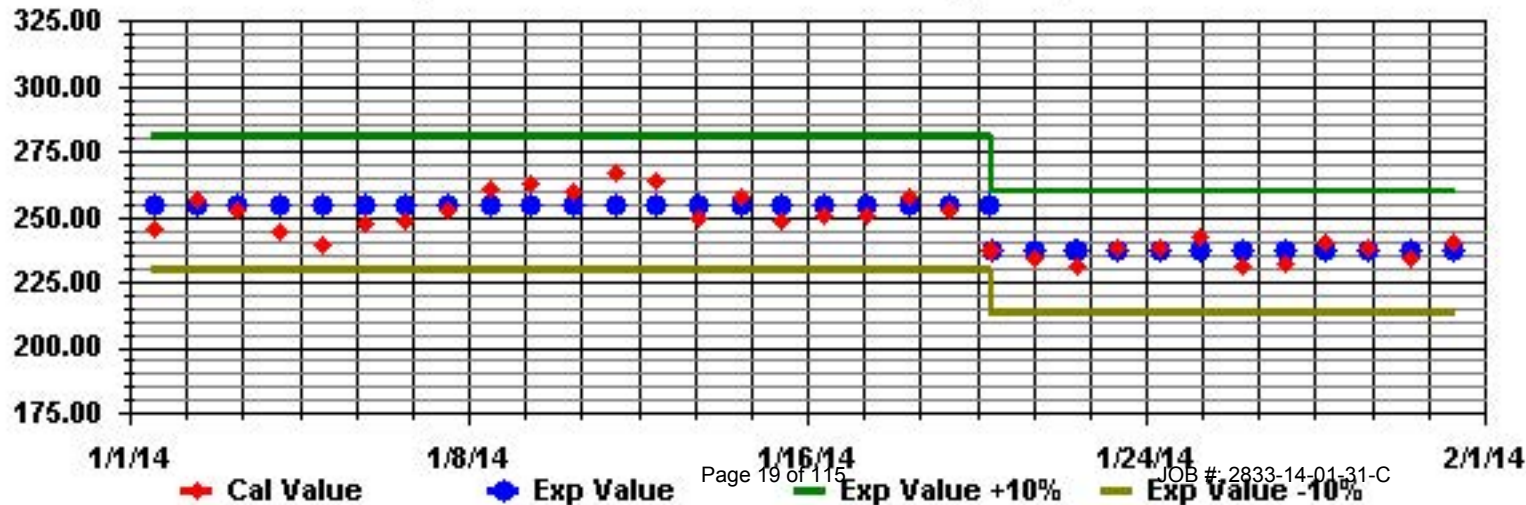
Class Limits (PPB)

Period : 01/01/14-01/31/14

Level : 10



Calibration Graph for Site: LICA31 Parameter: SO2_ Sequence: S02 Phase: SPAN



Hydrogen Sulphide

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

HYDROGEN SULPHIDE (H2S) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																													
1		2	2	1	2	1	1	3	1	3	4	1	0	1	S	1	0	1	1	0	1	1	1	1	1	1	4	1.3	24
2		1	2	2	2	2	2	2	2	2	2	2	2	S	2	2	1	2	3	2	3	3	3	3	3	3	3	2.2	24
3		3	3	3	3	3	3	2	2	2	2	1	S	2	2	2	2	2	2	2	2	2	2	2	2	1	3	2.2	24
4		2	2	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	0	0	2	1.0	24
5		0	0	0	0	0	0	0	1	1	S	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	0.3	24
6		1	1	1	1	2	1	1	S	S	3	2	2	3	2	2	2	2	3	2	2	2	2	2	2	2	3	1.9	24
7		2	2	2	2	3	1	2	S	2	2	1	2	2	1	2	2	2	2	2	2	2	2	2	2	2	3	1.9	24
8		2	2	2	2	3	3	S	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	2.4	24
9		3	3	3	3	3	S	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	3	3	3	3	3	2.4	24
10		3	3	3	3	S	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	3	1.7	24
11		1	1	1	S	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2.7	24
12		2	2	S	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1.3	24
13		2	S	2	2	2	2	2	1	1	1	1	1	1	1	0	0	0	0	0	0	0	2	3	2	2	3	1.2	24
14		S	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	S	2	1.4	24
15		2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	0	0	0	0	S	1	2	1.3	24
16		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	S	2	2	2	1.2	24
17		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	S	2	1	1	2	1.9	24
18		1	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	S	2	2	2	2	2	2	1.9	24
19		2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	1	1	1	S	2	1	1	1	1	1	2	1.7	24
20		1	1	1	1	1	0	1	1	1	1	1	C	C	C	C	C	C	C	C	C	C	2	2	3	2	3	1.3	24
21		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	1	1	1	1	1	1	1	1	2	1.7	24
22		1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	2	1	1	2	2	2	1.1	24
23		2	2	2	2	2	2	2	2	2	3	3	3	3	3	S	2	2	2	2	2	2	2	2	2	2	3	2.2	24
24		2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	1	2	2	2.0	24
25		2	2	2	2	3	3	3	3	3	3	3	2	S	1	2	1	1	1	1	1	1	1	1	1	1	3	1.9	24
26		1	3	3	3	3	3	3	3	3	2	2	S	2	2	2	2	2	2	2	2	3	2	2	2	2	3	2.3	24
27		2	2	2	2	2	2	2	2	2	2	S	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1.7	24
28		2	2	2	3	3	3	3	3	3	S	1	2	2	2	P	R	1	1	1	1	2	2	1	2	3	2.0	22	
29		1	2	1	1	1	1	2	1	S	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	2	1.2	24
30		1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	1.2	24
31		2	3	2	2	2	2	S	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	3	1.7	24
HOURLY MAX		3	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
HOURLY AVG		1.7	1.9	1.8	1.9	1.9	1.8	1.9	1.8	1.8	1.9	1.6	1.6	1.6	1.6	1.5	1.3	1.4	1.5	1.4	1.6	1.7	1.7	1.7	1.7	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

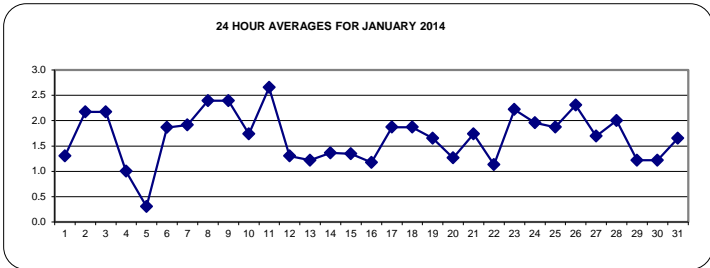
OBJECTIVE LIMIT:

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

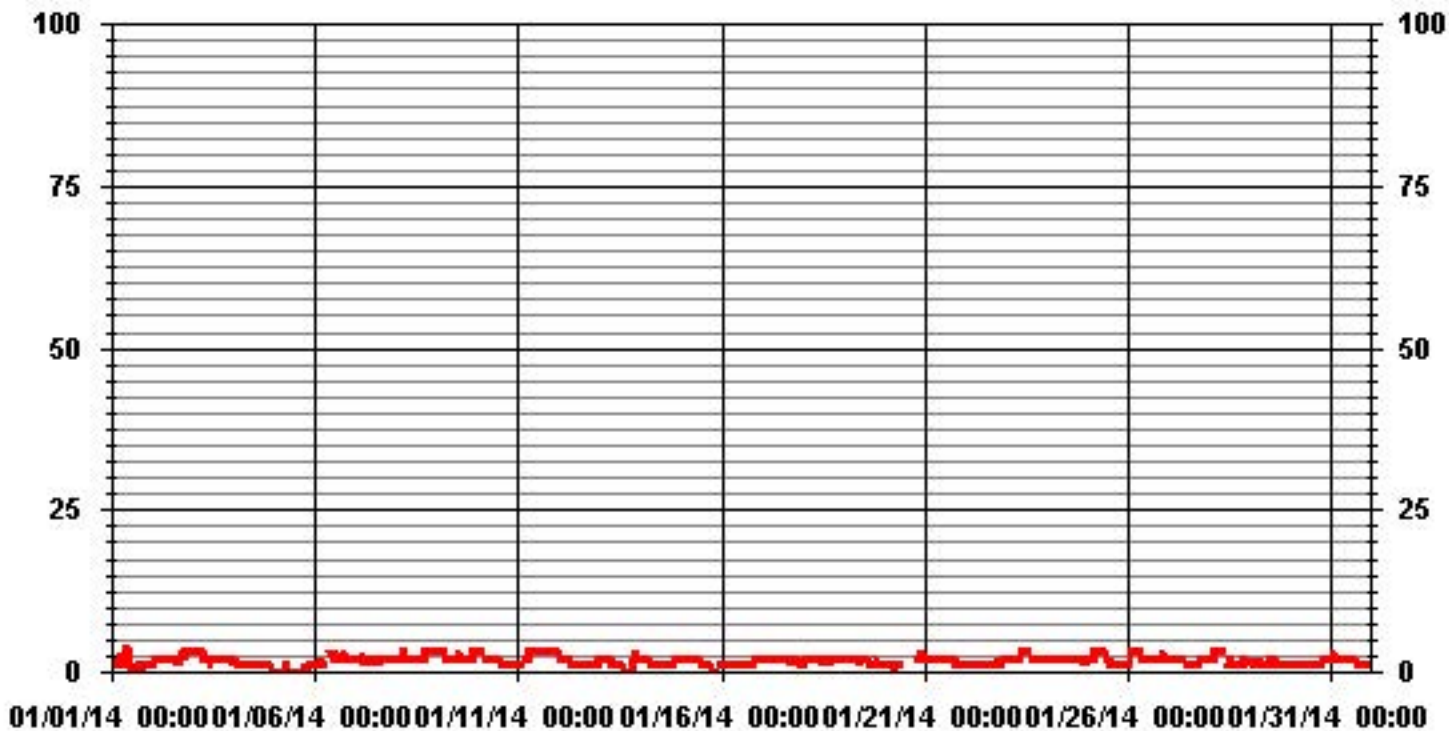
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	669
MAXIMUM 1-HR AVERAGE:	4 PPB @ HOUR(S) 9 ON DAY(S) 1
MAXIMUM 24-HR AVERAGE:	2.7 PPB ON DAY(S) 11
VAR-VARIOUS	
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	9 HRS
OPERATIONAL TIME:	742 HRS
AMD OPERATION UPTIME:	99.7 %
STANDARD DEVIATION:	0.75
MONTHLY AVERAGE:	1.68 PPB

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



— LICA31 H2S_ PPB

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1		2	2	2	2	2	2	5	3	3	6	3	2	2	S	1	1	1	1	1	1	1	1	1	2	6	2.0	24	
2		2	2	2	2	2	2	2	2	2	2	3	3	S	3	3	3	3	3	3	3	3	3	3	3	3	3	2.6	24
3		3	3	3	3	3	3	3	3	3	3	2	S	3	3	3	3	2	2	3	2	2	2	2	2	3	2.7	24	
4		2	2	2	2	2	2	1	2	2	2	S	2	2	2	2	2	2	1	2	2	1	1	1	1	2	1.7	24	
5		1	1	1	1	0	2	1	2	4	S	0	1	1	1	1	1	1	1	2	1	1	2	2	2	4	1.3	24	
6		2	1	1	2	2	2	2	S	S	4	3	3	3	3	3	3	3	4	4	3	3	3	3	3	4	2.7	24	
7		3	3	3	3	4	3	2	S	2	3	4	2	2	2	2	2	2	2	2	2	3	2	2	2	4	2.5	24	
8		3	3	3	3	3	3	S	2	2	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2.9	24	
9		3	3	3	4	3	S	2	3	3	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	4	2.8	24	
10		4	3	3	3	S	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	4	1.9	24	
11		1	1	2	S	3	3	3	3	3	4	4	3	4	4	4	3	4	3	3	3	3	3	3	3	4	3.0	24	
12		3	3	S	2	2	2	2	2	2	1	1	1	1	1	1	1	1	2	1	1	2	2	2	2	3	1.7	24	
13		2	S	2	2	2	2	2	2	2	1	1	1	1	1	1	0	0	0	0	0	3	3	3	3	3	1.5	24	
14		S	3	3	2	2	2	2	2	2	2	2	1	1	1	1	1	1	2	2	2	2	2	2	S	3	1.8	24	
15		2	2	3	2	3	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	S	1	3	1.7	24	
16		1	2	1	1	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	1.7	24	
17		3	2	3	2	3	2	2	3	3	3	2	3	2	2	2	2	2	2	2	2	2	S	2	2	3	2.3	24	
18		2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	2	2	2	2	3	S	3	2	2	3	2.3	24	
19		3	2	3	3	2	2	2	2	4	2	2	3	2	2	2	2	2	2	S	2	2	2	2	1	4	2.2	24	
20		2	2	1	1	1	1	1	1	1	1	1	C	C	C	C	C	C	C	C	C	C	3	3	3	3	1.7	24	
21		3	3	3	2	2	2	2	3	2	2	2	2	2	3	2	2	S	S	2	2	2	2	2	2	3	2.2	24	
22		2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2.0	24	
23		2	2	2	3	3	3	3	3	3	3	3	3	3	S	2	2	2	2	2	2	2	2	2	3	2.5	24		
24		2	2	3	2	2	2	2	3	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	3	2.1	24		
25		2	2	3	3	3	3	3	3	3	3	3	3	S	2	2	2	2	2	2	2	2	2	1	2	3	2.4	24	
26		1	4	4	4	3	3	5	3	3	3	2	S	3	2	3	3	3	3	4	4	2	2	3	5	3.0	24		
27		3	3	3	3	3	3	3	3	3	S	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2.5	24	
28		3	3	3	3	3	3	3	4	4	S	2	2	2	2	P	P	2	2	2	2	2	2	2	4	2.5	22		
29		2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	2	1.9	24	
30		1	1	1	1	1	1	1	S	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3	1.5	24		
31		3	3	3	3	2	3	S	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1	1	1	3	2.0	24	
HOURLY MAX		4	4	4	4	4	3	5	4	4	6	4	3	4	4	4	3	4	4	4	4	4	3	3	3				
HOURLY AVG		2.3	2.3	2.4	2.3	2.3	2.3	2.2	2.4	2.4	2.4	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.0	2.2	2.0	2.0	2.2				

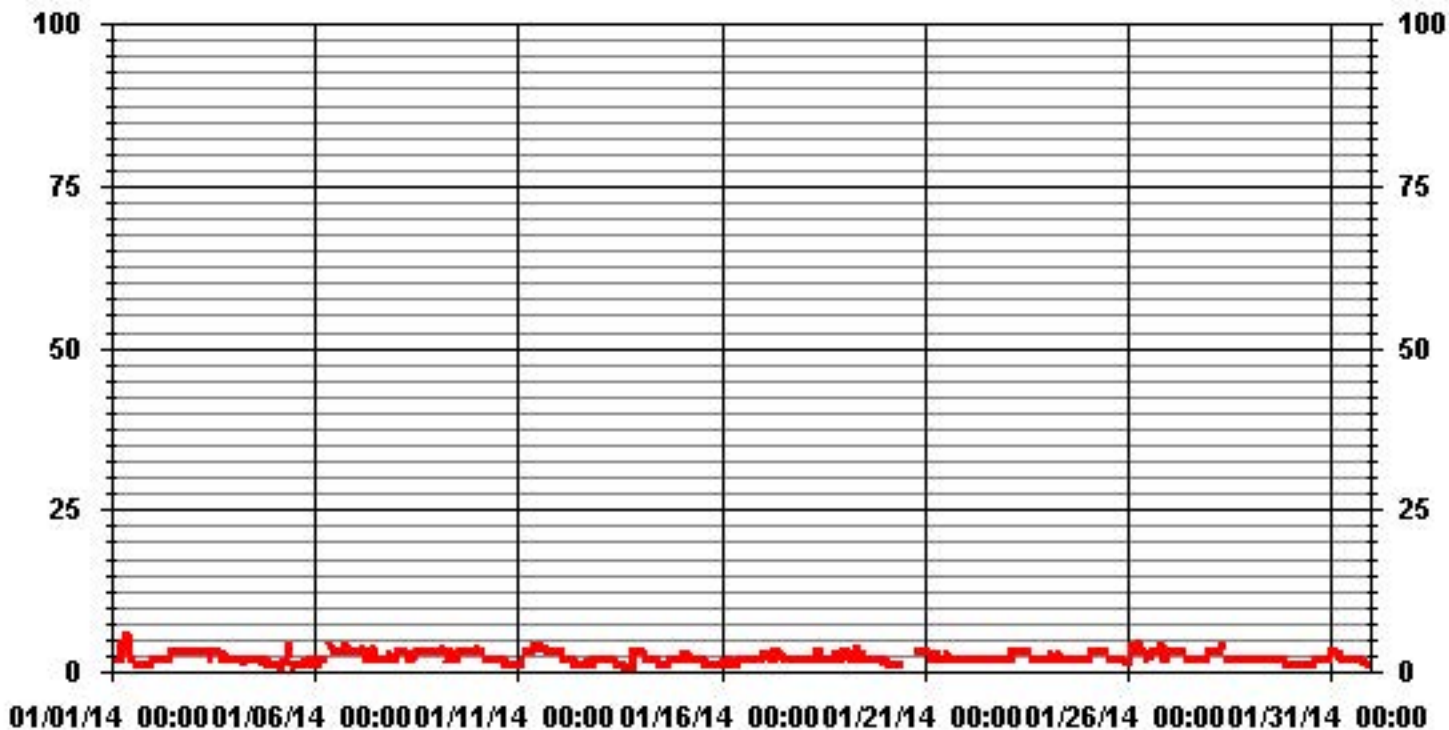
STATUS FLAG CODES

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:	693					
MAXIMUM INSTANTANEOUS VALUE:	6	PPB	@ HOUR(S)	9	ON DAY(S)	1
	VAR-VARIOUS					
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	0.79					

01 Hour Averages



LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

January 2014

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
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	6.55	1.42	.71	1.56	2.13	.85	1.13	3.56	3.13	6.98	9.82	8.54	6.69	7.97	15.95	10.25	87.32
< 10	1.28	.56	.14	.14	.00	.00	.99	.71	.28	1.13	2.70	1.13	.71	.85	.85	1.13	12.67
< 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	7.83	1.99	.85	1.70	2.13	.85	2.13	4.27	3.41	8.11	12.53	9.68	7.40	8.83	16.80	11.39	

Calm : .00 %

Total # Operational Hours : 702

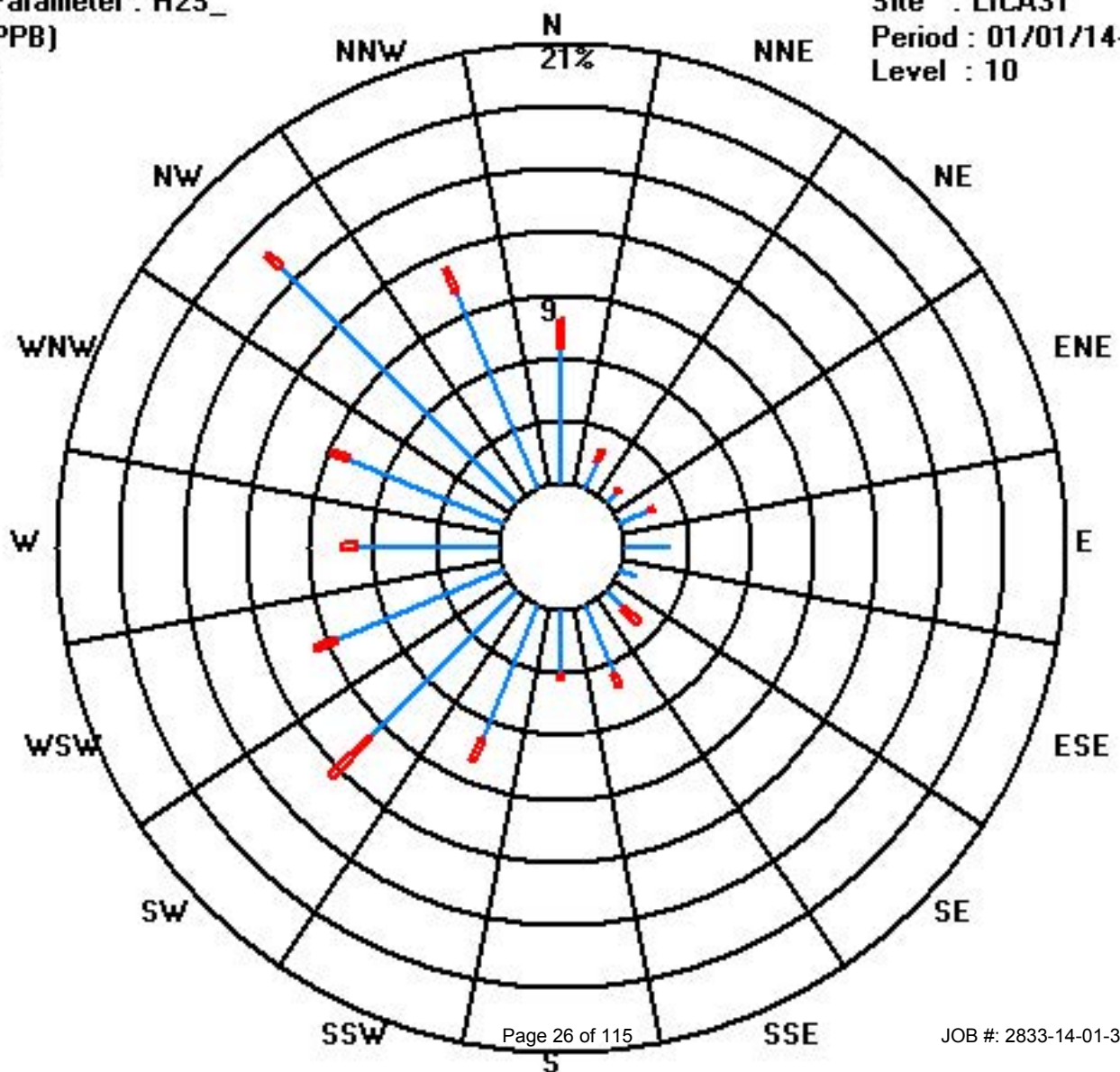
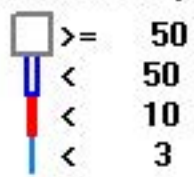
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3	46	10	5	11	15	6	8	25	22	49	69	60	47	56	112	72	613
< 10	9	4	1	1			7	5	2	8	19	8	5	6	6	8	89
< 50																	
>= 50																	
Totals	55	14	6	12	15	6	15	30	24	57	88	68	52	62	118	80	

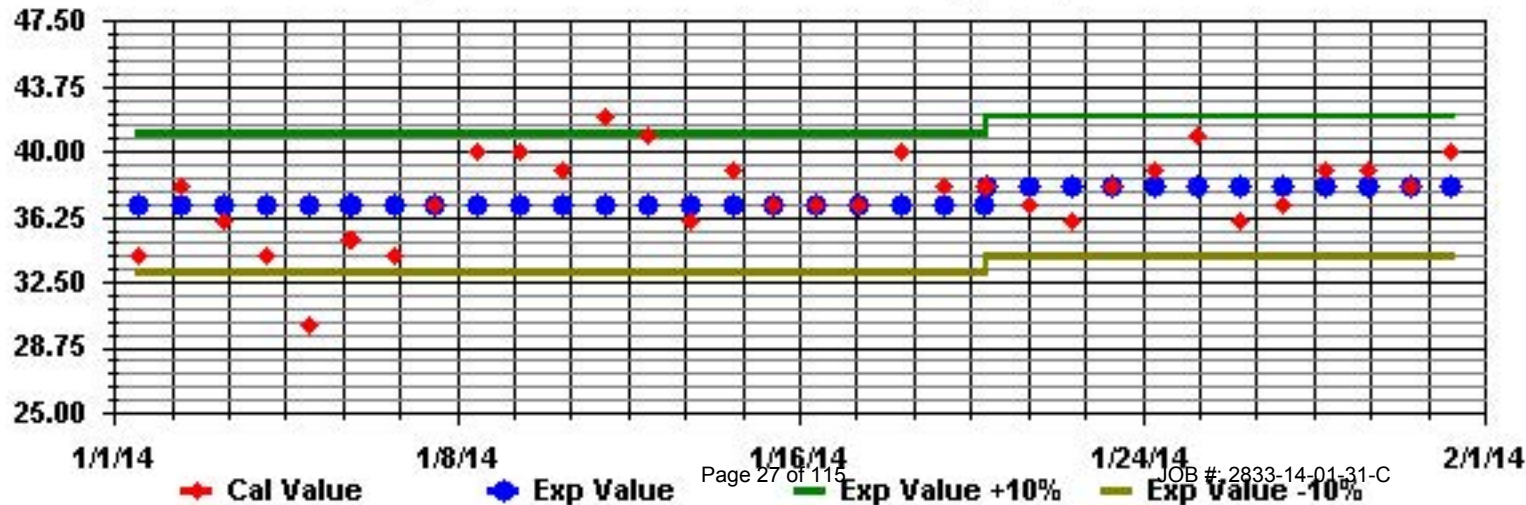
Calm : .00 %

Total # Operational Hours : 702

Class Limits (PPB)



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



Total Hydrocarbons

Lakeland Industry & Community Association - St. Lina Site

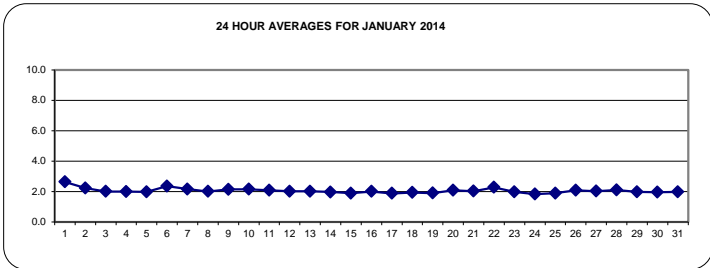
JANUARY 2014

TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY																												
1	2.6	2.6	2.7	2.6	2.6	2.7	2.6	2.7	2.7	2.6	2.5	2.5	2.4	S	2.3	2.4	2.4	2.3	2.4	2.6	3.0	3.4	3.2	2.9	3.4	2.6	24	
2	2.5	2.4	2.4	2.4	2.5	2.3	2.3	2.3	2.2	2.2	2.1	2.1	S	2.2	2.2	2.2	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.0	2.5	2.2	24	
3	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	1.9	2.0	2.0	S	1.9	1.9	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.0	24	
4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	S	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	24	
5	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	S	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.1	24	
6	1.9	1.9	1.9	1.9	2.3	2.4	2.5	2.4	S	2.6	2.5	2.2	2.2	2.2	2.1	2.4	2.6	2.6	2.6	2.6	2.7	2.6	2.5	2.5	2.7	2.4	24	
7	2.5	2.5	2.5	2.4	2.4	2.2	2.2	S	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.3	2.4	2.2	2.1	2.0	2.5	2.2	24	
8	2.0	2.0	2.0	2.0	2.0	2.1	S	2.0	2.0	2.0	2.0	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.0	24
9	2.1	2.1	2.0	2.0	2.0	S	2.0	2.0	2.1	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.1	24	
10	2.3	2.3	2.3	2.3	S	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.2	2.2	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.3	2.2	24	
11	2.1	2.1	2.1	S	2.0	2.0	2.0	2.1	2.2	2.2	2.3	2.4	2.2	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	1.9	1.9	2.4	2.1	24	
12	1.8	1.9	S	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.0	24	
13	2.0	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	24	
14	S	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.1	2.1	2.1	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	S	2.1	2.0	24	
15	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	S	1.9	2.1	24	
16	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	S	2.1	2.2	2.0	24	
17	2.1	2.0	2.0	2.0	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	S	1.9	1.9	1.9	2.1	1.9	24	
18	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.8	1.8	1.9	1.9	1.9	1.9	S	2.1	2.0	1.9	1.8	2.1	1.9	24	
19	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	S	1.9	2.0	2.0	2.0	2.0	2.0	1.9	24	
20	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	S	2.1	2.0	2.1	S	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	24	
21	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	C	C	C	C	C	C	C	C	C	C	C	C	2.0	2.1	2.1	2.1	2.1	2.0	24
22	2.1	2.0	2.1	2.1	2.2	2.3	2.4	2.5	2.5	2.5	2.5	2.6	2.5	2.4	2.5	2.4	S	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.6	24	
23	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.0	1.9	1.9	S	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.2	2.0	24
24	1.8	1.8	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.8	24	
25	2.0	2.0	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	1.9	24	
26	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	S	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3	2.1	24	
27	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	S	2.1	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24	
28	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	1.9	S	2.2	2.2	2.3	2.2	P	R	2.4	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.4	2.1	24	
29	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.0	24	
30	2.0	2.0	2.0	2.0	2.0	2.0	2.0	S	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	24	
31	2.0	2.0	1.9	1.9	1.8	1.9	S	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	24	
HOURLY MAX	3	3	3	3	3	3	3	3	3	3	3	3	2	3	2	2	3	3	3	3	3	3	3	3	3			
HOURLY AVG	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1			

STATUS FLAG CODES

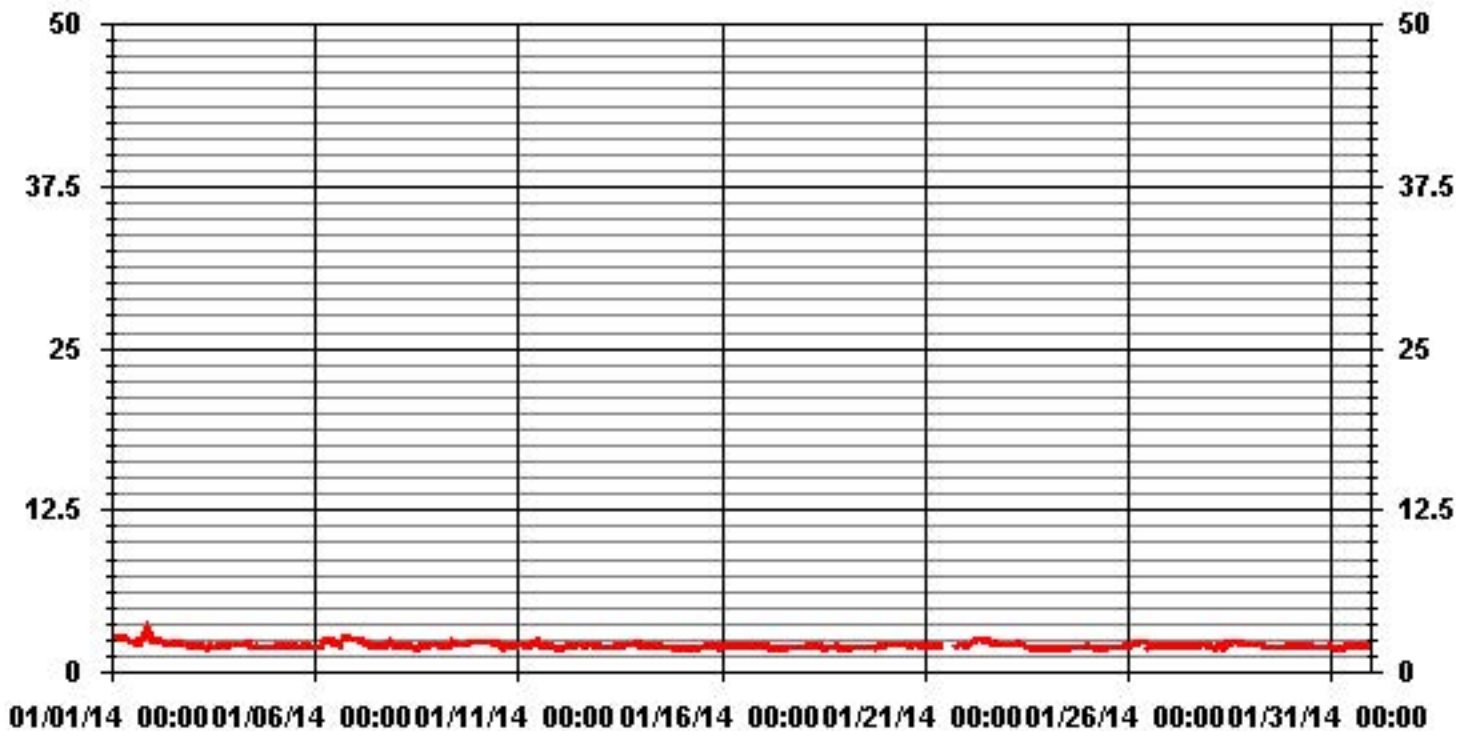
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	700					
MAXIMUM 1-HR AVERAGE:	3.4	PPM	@ HOUR(S)	21	ON DAY(S)	1
MAXIMUM 24-HR AVERAGE:	2.6	PPM			ON DAY(S)	1
					VAR-VARIOUS	
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	0.20		MONTHLY AVERAGE:	2.06	PPM	

01 Hour Averages



— LICA31 THC PPM

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1		2.7	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.5	2.5	S	2.4	2.5	2.5	2.4	2.5	2.7	3.5	3.5	3.3	3.2	3.5	2.7	24	
2		2.6	2.4	2.4	2.5	2.5	2.5	2.3	2.3	2.3	2.2	2.1	2.1	S	2.2	2.2	2.2	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.6	2.3	24
3		2	2	2	2.2	2.2	2	2.1	2	2	2	2.1	S	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24	
4		2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.2	2.2	S	1.9	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	2	2	2.2	2.0	24
5		2	2	2.1	2	2.1	2.1	2	2	S	2	2	2	2	2	2	2	2	2	2	2.1	2	2	2	2	2.1	2.0	24
6		1.9	1.9	1.9	2.2	2.4	2.5	2.5	S	2.7	2.6	2.4	2.2	2.2	2.1	2.5	2.7	2.7	2.6	2.7	2.8	2.7	2.6	2.5	2.8	2.4	24	
7		2.5	2.7	2.6	2.5	2.4	2.3	2.2	S	2.1	2.1	2.1	2	2	2	2.1	2.1	2.1	2.1	2.4	2.4	2.3	2.2	2.1	2.7	2.2	24	
8		2	2	2	2	2.1	2.1	S	2.1	2	2	2	2	2	2	2	2	2.1	2.1	2	2.1	2.1	2.1	2.2	2.2	2.2	2.1	24
9		2.1	2.1	2.1	2	2	S	2.1	2.1	2.3	2.4	2.4	2.3	2.2	2.1	2.1	2.2	2.2	2.2	2.3	2.4	2.3	2.4	2.4	2.4	2.4	2.2	24
10		2.3	2.3	2.3	2.3	S	2.3	2.3	2.3	2.3	3.2	3	2.3	2.2	2.1	2	2	2	2	2	2	2	2	2.1	2.1	3.2	2.2	24
11		2.1	2.1	2.2	S	2.1	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.3	2.1	2	2	2	2	2.1	2.2	2.2	2.2	2	1.9	2.5	2.1	24
12		1.9	1.9	S	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	2.1	2.1	2.1	2.1	2.1	24
13		2	S	2	2	2	2	1.9	1.9	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	24
14		S	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	1.9	1.9	1.9	1.8	S	2.1	2.0	24
15		1.9	1.8	1.8	1.8	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	2	2.1	2.1	S	2	2.1	1.9	24
16		2	2	2	2	2	2.1	2	2	2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2.1	S	2.2	2.2	2.0	24
17		2.2	2	2	2	2	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	S	1.9	1.9	1.9	2.2	1.9	24
18		1.9	2	2	2	2	2.1	2.1	2	2.1	2.1	2.1	2	1.9	1.9	1.9	1.9	1.9	2	S	2.1	2.1	1.9	1.9	2.1	2.0	24	
19		1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	S	2	2	2	2.1	2.1	2.1	2.1	1.9	24	
20		2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	S	S	2.7	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2	2.7	2.2	24
21		2	2	2	2	2	2	2	2.1	2.1	2.1	C	C	C	C	C	C	C	C	C	2.1	2.1	2.2	2.1	2.1	2.2	2.1	24
22		2.1	2.1	2.1	2.2	2.2	2.3	2.5	2.6	2.5	2.6	2.5	2.5	2.5	S	2.3	2.3	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.6	2.3	24	
23		2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.2	2.1	2	2	1.9	S	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.3	2.0	24
24		1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	1.9	24	
25		2	2	2	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	S	1.9	1.9	1.9	2	2	2	2	2	2	2	2	2	1.9	24	
26		2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	S	2	2	2	2	2	2	2	2	2	2	2.2	2	2.1	2.3	2.1	24
27		2.1	2.1	2	2	2	2	2	2	2	2.1	S	2.2	2.1	2	2	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.1	24
28		2.1	2.1	2	2	2	2	2	2	2	S	2.3	2.3	2.3	2.3	P	P	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.4	2.2	24
29		2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	S	1.9	1.9	2	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2.2	2.0	24
30		2	2	2	2	2	2.1	2.1	S	2	2.1	2.1	2	2	2	2	1.9	1.9	2	2	2	2	2	2	2	2.1	2.0	24
31		2	2	2	1.9	1.9	1.9	S	2	2	2	2	2	2	2	2	2	2	2.1	2	2	2	2.1	2.1	2.1	2.1	2.0	24
HOURLY MAX		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	3	3			
HOURLY AVG		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1			

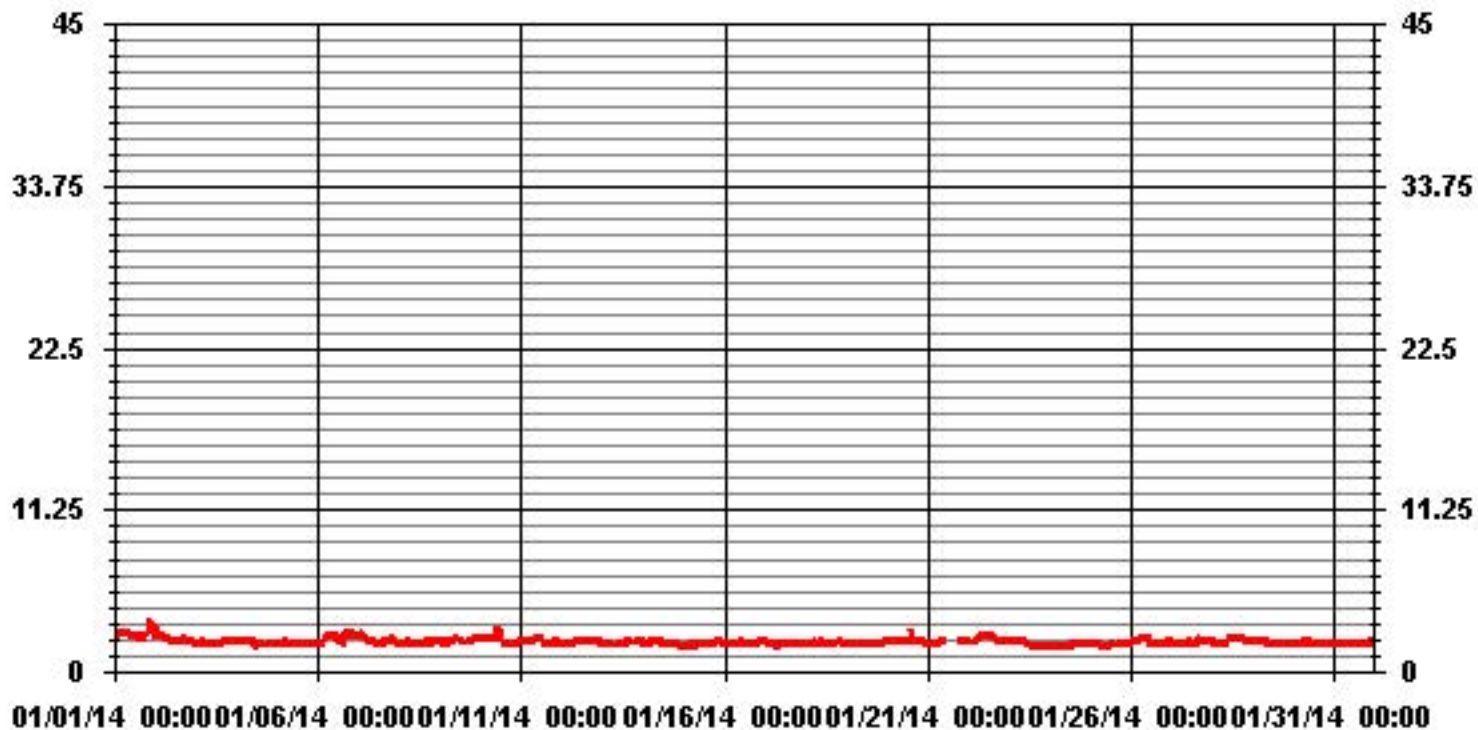
STATUS FLAG CODES

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:	700					
MAXIMUM INSTANTANEOUS VALUE:	3.5	PPM	@ HOUR(S)	20, 21	ON DAY(S)	1
	VAR-VARIOUS					
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	0.22					

01 Hour Averages



— LICA31 THCMAX PPM

LICA31
 THC / WDR Joint Frequency Distribution (Percent)

January 2014

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	7.84	1.85	.85	1.71	2.13	.85	2.13	4.42	2.99	8.55	12.69	9.84	7.41	8.70	16.69	10.69	99.42
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.42	.00	.00	.00	.00	.00	.00	.00	.42
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.14
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	7.84	1.85	.85	1.71	2.13	.85	2.13	4.42	3.42	8.55	12.69	9.84	7.41	8.70	16.69	10.84	

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
< 3.0	55	13	6	12	15	6	15	31	21	60	89	69	52	61	117	75	697
< 10.0									3								3
< 50.0																1	1
>= 50.0																	
Totals	55	13	6	12	15	6	15	31	24	60	89	69	52	61	117	76	

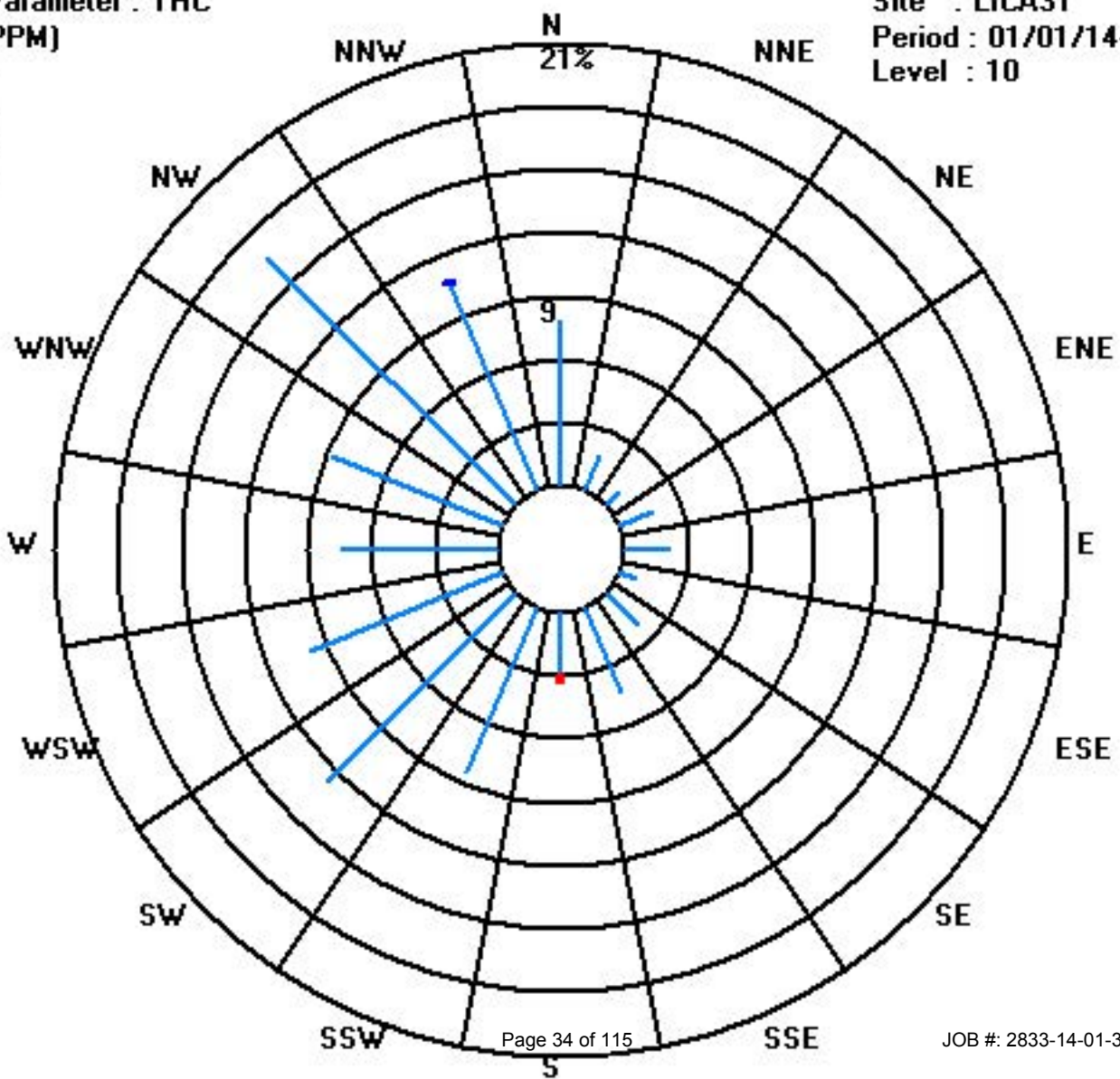
Calm : .00 %

Total # Operational Hours : 701

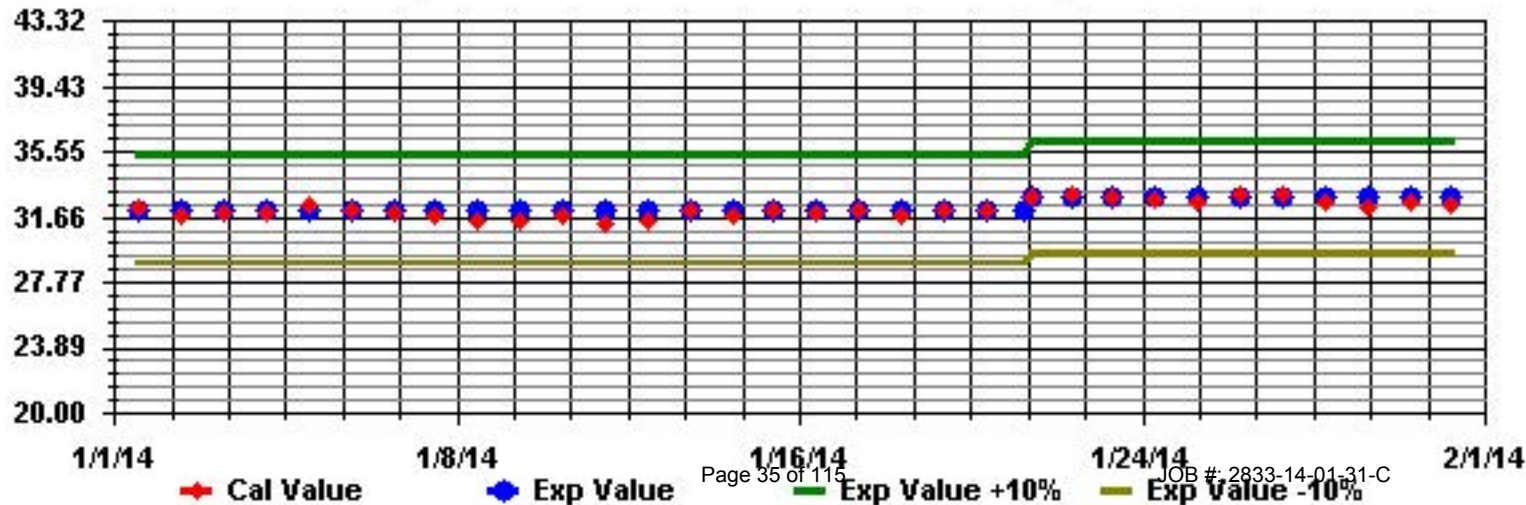
Class Limits (PPM)

Period : 01/01/14-01/31/14

Level : 10



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



Ozone

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

OZONE (O3) hourly averages in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																												
1	22	23	21	21	21	20	20	19	19	21	23	24	25	S	26	25	25	25	24	23	20	19	20	21	26	22.0	24	
2	21	21	19	20	21	21	21	21	20	21	21	22	S	23	22	20	15	10	19	21	21	21	21	23	23	20.2	24	
3	27	28	26	21	21	27	27	29	35	34	34	S	36	37	36	34	33	33	34	35	37	37	37	37	37	32.0	24	
4	37	36	38	38	38	37	37	37	36	36	S	37	37	37	38	38	39	39	38	38	37	36	36	36	39	37.2	24	
5	35	35	35	35	35	35	35	35	35	S	35	36	36	37	36	36	35	33	31	28	28	29	30	32	37	33.8	24	
6	31	29	30	31	28	28	27	30	S	30	31	34	35	35	35	32	30	30	30	27	24	25	26	26	35	29.7	24	
7	26	25	26	27	27	27	S	32	32	32	32	32	33	34	33	32	32	32	30	32	35	35	35	36	36	31.0	24	
8	37	38	38	37	37	36	S	36	36	36	35	35	35	33	32	31	29	27	26	25	24	22	20	19	38	31.5	24	
9	18	20	23	24	24	S	28	27	26	25	27	28	29	29	29	26	23	19	18	15	9	11	10	10	29	21.7	24	
10	9	8	9	11	S	14	13	13	14	17	22	23	25	27	33	36	36	35	35	35	35	34	34	30	36	23.8	24	
11	31	33	30	S	31	31	31	30	31	32	33	33	34	35	35	35	34	34	30	29	29	30	32	34	35	32.0	24	
12	35	35	S	28	23	23	25	27	29	30	31	32	32	32	31	31	30	29	29	27	26	26	26	29	35	29.0	24	
13	31	S	33	33	33	32	33	35	35	35	35	36	38	38	38	37	37	37	37	37	37	37	37	37	38	35.6	24	
14	S	36	36	35	34	34	34	35	36	35	33	33	33	35	37	38	39	37	36	35	34	35	41	S	41	35.5	24	
15	35	38	39	43	48	48	48	48	47	45	44	44	43	43	43	43	43	43	43	43	42	42	S	42	48	43.3	24	
16	42	41	41	40	40	38	38	38	38	36	37	38	38	38	39	39	39	38	37	36	35	S	25	14	42	36.7	24	
17	21	28	27	27	32	40	44	45	46	45	44	44	44	44	44	44	43	43	43	43	S	42	42	42	46	39.9	24	
18	41	40	38	38	36	31	29	32	31	31	34	37	39	41	41	40	39	37	34	S	29	32	44	46	46	36.5	24	
19	45	46	45	44	44	43	43	43	42	43	43	43	44	44	44	44	43	38	S	35	34	35	35	36	46	41.6	24	
20	35	35	34	34	34	34	33	32	32	33	33	33	33	S	31	27	Y	Y	Y	S	28	26	30	36	36	32.3	21	
21	38	39	41	41	40	39	37	35	34	33	35	36	39	38	38	38	S	37	36	37	35	33	32	32	41	36.7	24	
22	34	36	35	34	34	33	30	28	28	29	C	C	C	C	C	30	29	30	30	30	31	31	31	31	36	31.3	24	
23	31	30	29	27	26	25	22	19	21	25	28	33	36	37	S	39	39	38	38	38	37	36	35	35	39	31.5	24	
24	35	36	36	37	37	37	37	37	36	36	36	36	36	S	37	36	36	35	35	35	35	35	33	32	37	35.7	24	
25	31	31	31	31	31	32	34	36	36	36	36	36	S	37	38	39	40	40	40	40	41	42	42	39	42	36.5	24	
26	40	41	41	39	40	40	40	40	39	40	39	S	38	38	38	38	38	38	39	38	38	37	37	36	41	38.8	24	
27	35	37	37	37	37	37	36	36	34	S	33	36	38	37	38	38	34	33	33	30	26	24	22	38	34.1	24		
28	24	27	28	29	28	25	25	25	25	S	27	26	26	26	P	24	25	31	31	29	30	31	31	32	32	27.5	23	
29	33	35	36	36	35	35	34	34	S	34	34	34	34	35	34	35	34	34	33	33	34	33	34	35	36	34.3	24	
30	34	34	35	35	36	36	S	36	35	35	35	35	35	35	35	34	34	34	34	34	32	28	25	36	36	34.0	24	
31	18	18	29	35	36	36	S	37	37	37	37	38	38	39	39	39	39	39	39	38	39	39	39	38	39	35.8	24	
HOURLY MAX	45	46	45	44	48	48	48	48	47	45	44	44	44	44	44	44	43	43	43	43	42	42	44	46				
HOURLY AVG	31.1	32.0	32.2	32.3	32.9	32.5	31.9	32.4	32.7	33.0	33.4	34.0	35.3	35.7	35.7	35.0	34.4	33.6	33.2	32.7	31.6	31.6	31.6	31.4				

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

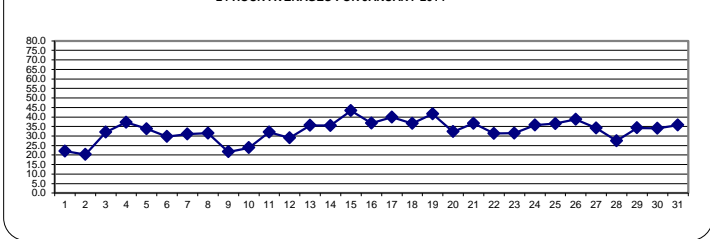
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 82 PPB

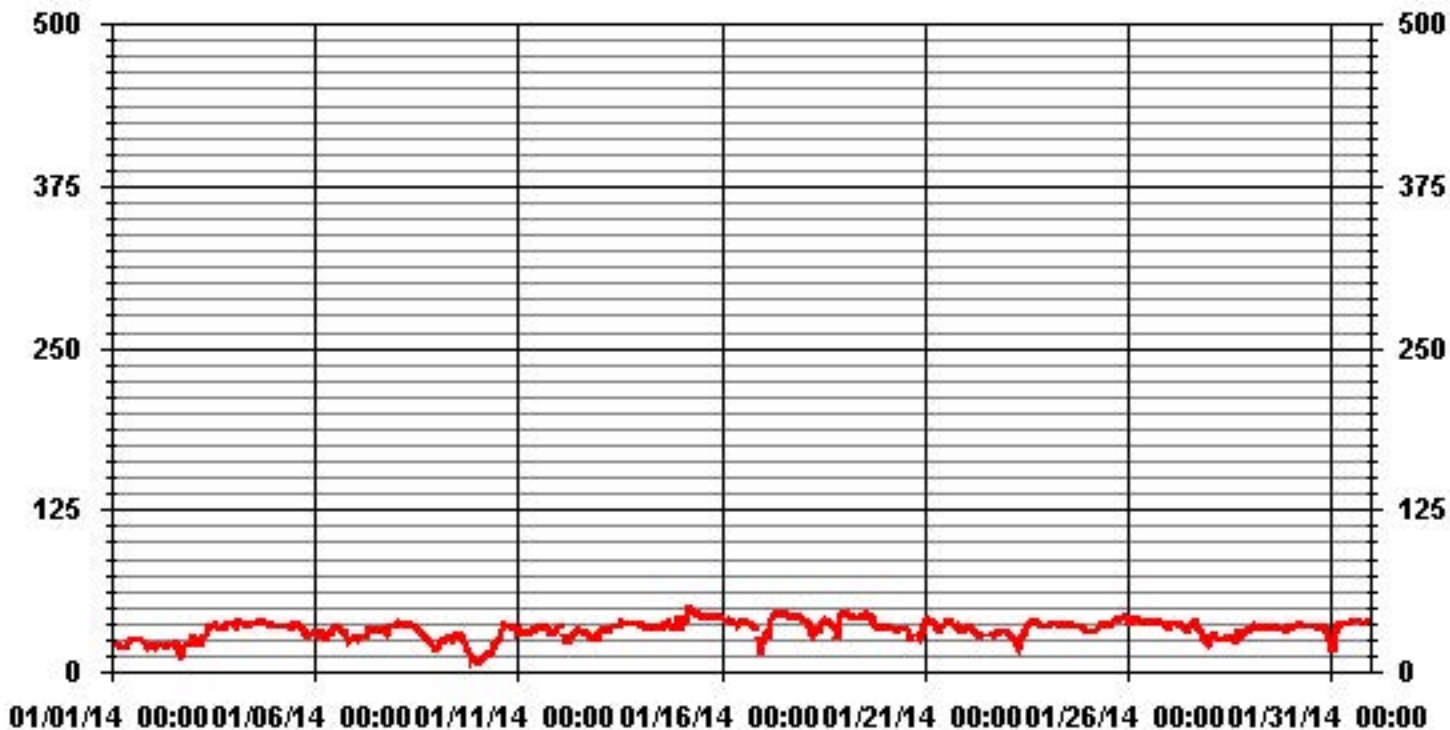
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	702				
MAXIMUM 1-HR AVERAGE:	48	PPB	@ HOUR(S)	VAR	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	43.3	PPB			ON DAY(S)
					VAR-VARIOUS
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	99.5	%
STANDARD DEVIATION:	6.94		MONTHLY AVERAGE:	32.96	PPB

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



— LICA31_03_PPB

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

OZONE MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	24	24	24	23	23	21	20	19	20	22	24	25	26	S	26	26	25	26	26	24	23	20	21	22	26	23.2	24	
2	22	22	20	20	21	22	21	21	21	21	22	23	S	23	22	21	19	12	21	22	22	24	21	26	26	21.3	24	
3	29	29	29	24	28	29	28	32	36	35	35	S	37	38	37	35	34	34	34	36	37	37	37	37	38	33.3	24	
4	38	37	39	39	38	37	37	37	36	36	S	38	38	38	38	39	39	39	38	38	37	36	36	39	37.7	24		
5	36	36	36	36	35	35	35	36	35	S	36	36	37	37	37	36	36	35	32	29	28	29	31	32	37	34.4	24	
6	32	31	31	31	30	29	30	31	S	31	32	34	35	35	35	31	31	31	29	25	26	27	27	35	30.8	24		
7	27	27	27	28	27	28	28	S	33	32	33	33	34	34	34	33	32	32	31	35	35	36	35	36	36	31.7	24	
8	38	38	38	38	37	36	S	36	36	36	36	36	36	34	33	32	33	32	26	25	26	23	22	20	38	32.5	24	
9	19	21	24	25	25	S	28	28	27	26	28	29	30	30	30	28	24	21	19	18	12	12	11	10	30	22.8	24	
10	10	9	11	12	S	15	15	14	15	21	23	24	26	30	35	37	36	35	35	35	35	35	32	37	25.0	24		
11	32	33	32	S	32	32	31	31	32	33	34	34	35	36	36	35	35	34	33	29	29	31	33	35	36	32.9	24	
12	36	36	S	34	24	24	26	28	30	31	32	32	32	32	31	31	29	29	28	27	26	27	30	36	29.9	24		
13	33	S	34	33	33	34	35	35	35	36	37	38	39	38	38	37	37	37	37	37	37	37	37	37	39	36.0	24	
14	S	36	36	35	35	34	35	36	37	36	35	34	35	36	38	40	39	38	36	36	35	38	42	S	42	36.5	24	
15	37	38	42	46	49	48	51	49	48	46	45	44	44	44	44	44	43	43	43	43	43	42	S	42	51	44.3	24	
16	42	42	41	41	40	39	38	39	38	37	38	38	39	39	39	39	39	39	38	37	36	S	32	16	42	37.7	24	
17	26	29	28	29	37	42	45	46	46	46	45	45	44	44	44	44	43	43	43	S	42	42	42	46	40.8	24		
18	42	42	39	39	37	35	30	33	32	33	35	39	40	43	43	40	40	38	35	S	30	38	47	47	47	38.1	24	
19	47	47	46	45	44	43	43	43	43	43	43	44	44	45	45	44	44	38	S	36	35	35	36	36	47	42.1	24	
20	36	35	35	35	35	34	34	33	33	33	33	33	33	S	32	Y	Y	Y	Y	Y	Y	30	26	33	38	38	33.4	19
21	39	41	42	42	41	40	39	36	34	34	36	39	38	39	39	S	S	S	37	39	37	34	33	33	42	37.8	24	
22	36	36	36	35	34	34	31	29	29	C	C	C	C	C	C	C	C	30	30	30	31	32	31	31	36	32.2	24	
23	31	31	30	28	27	26	24	21	23	27	31	34	38	37	S	39	39	39	39	38	38	36	36	35	39	32.5	24	
24	36	36	37	37	37	37	37	37	37	36	36	36	37	S	37	37	36	36	36	35	36	35	34	33	37	36.1	24	
25	32	32	32	32	32	33	35	36	36	36	37	36	S	37	39	39	40	40	40	40	42	43	42	43	42	37.1	24	
26	42	42	42	39	40	40	40	40	40	40	S	39	39	39	39	39	39	39	39	39	38	38	38	42	39.5	24		
27	36	37	38	38	37	38	37	37	36	36	S	35	38	39	38	38	38	35	35	32	28	25	23	39	35.3	24		
28	26	28	28	29	28	27	25	25	26	S	27	27	27	P	P	29	32	31	30	31	32	32	33	33	28.6	22		
29	34	36	36	36	36	35	35	35	S	34	35	35	35	35	35	36	35	35	34	34	34	34	35	36	36	35.0	24	
30	35	35	35	36	36	36	36	S	36	36	35	35	35	35	35	35	35	34	34	35	34	29	27	36	34.5	24		
31	20	21	32	36	36	36	S	38	37	38	38	39	39	39	39	39	40	39	39	39	39	39	39	40	40	36.5	24	
HOURLY MAX	47	47	46	46	49	48	51	49	48	46	45	45	44	45	45	44	44	43	43	43	43	43	47	47				
HOURLY AVG	32.4	32.9	33.3	33.4	33.8	33.3	32.7	33.1	33.3	33.9	34.3	34.8	36.1	36.4	36.4	36.4	35.4	34.4	33.9	33.6	32.5	32.6	32.6	32.4				

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:	697					
MAXIMUM INSTANTANEOUS VALUE:	51	PPB	@ HOUR(S)	6	ON DAY(S)	15
	VAR-VARIOUS					
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	737	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	6.72					

01 Hour Averages



LICA31
O3_ / WDR Joint Frequency Distribution (Percent)

January 2014

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	7.83	1.99	.85	1.70	2.13	.85	2.13	3.84	3.27	8.40	12.82	9.68	7.40	8.83	16.80	11.39	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	7.83	1.99	.85	1.70	2.13	.85	2.13	3.84	3.27	8.40	12.82	9.68	7.40	8.83	16.80	11.39	

Calm : .00 %

Total # Operational Hours : 702

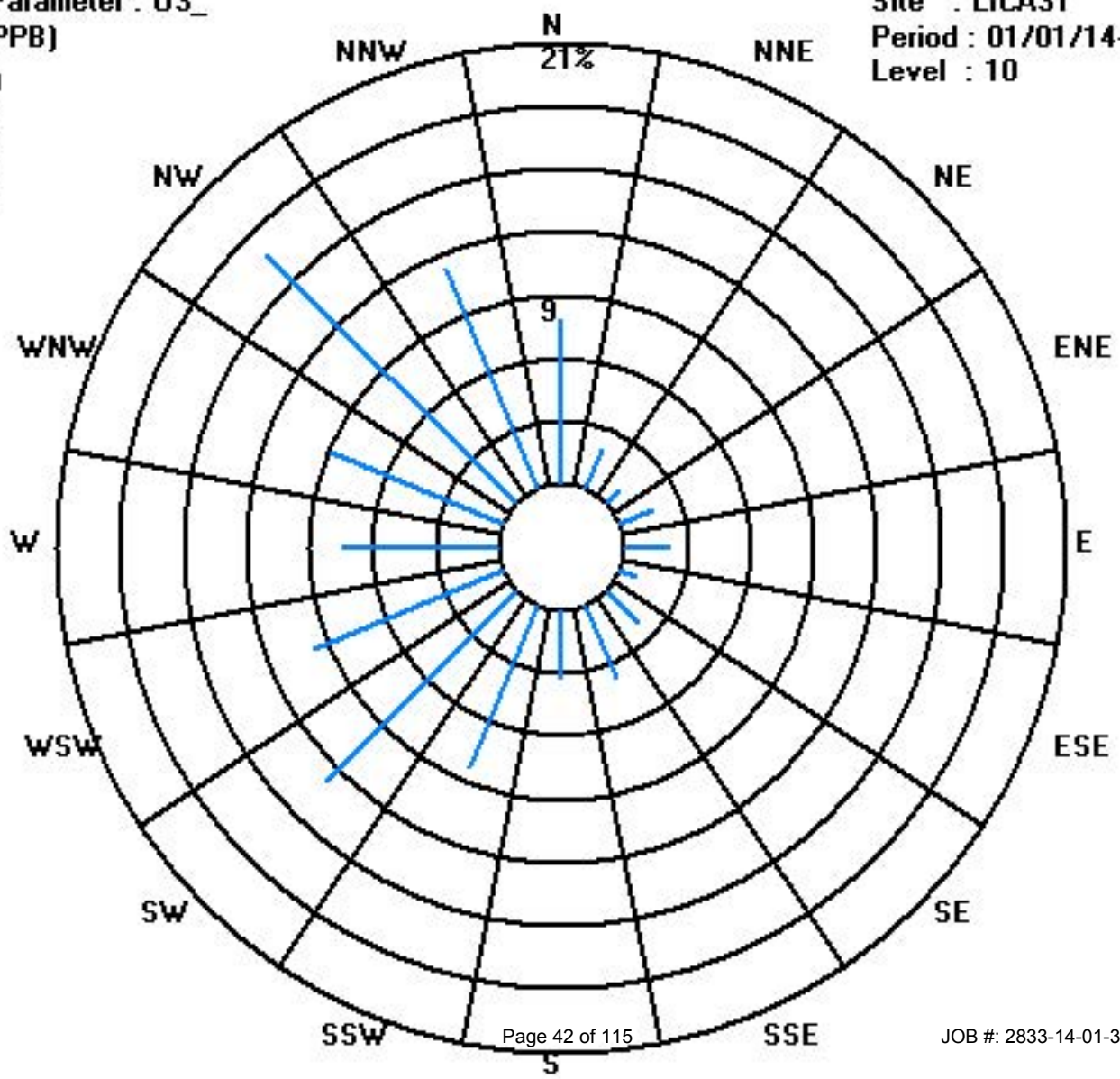
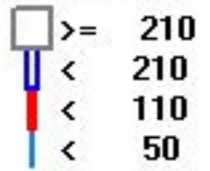
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50	55	14	6	12	15	6	15	27	23	59	90	68	52	62	118	80	702
< 110																	
< 210																	
>= 210																	
Totals	55	14	6	12	15	6	15	27	23	59	90	68	52	62	118	80	

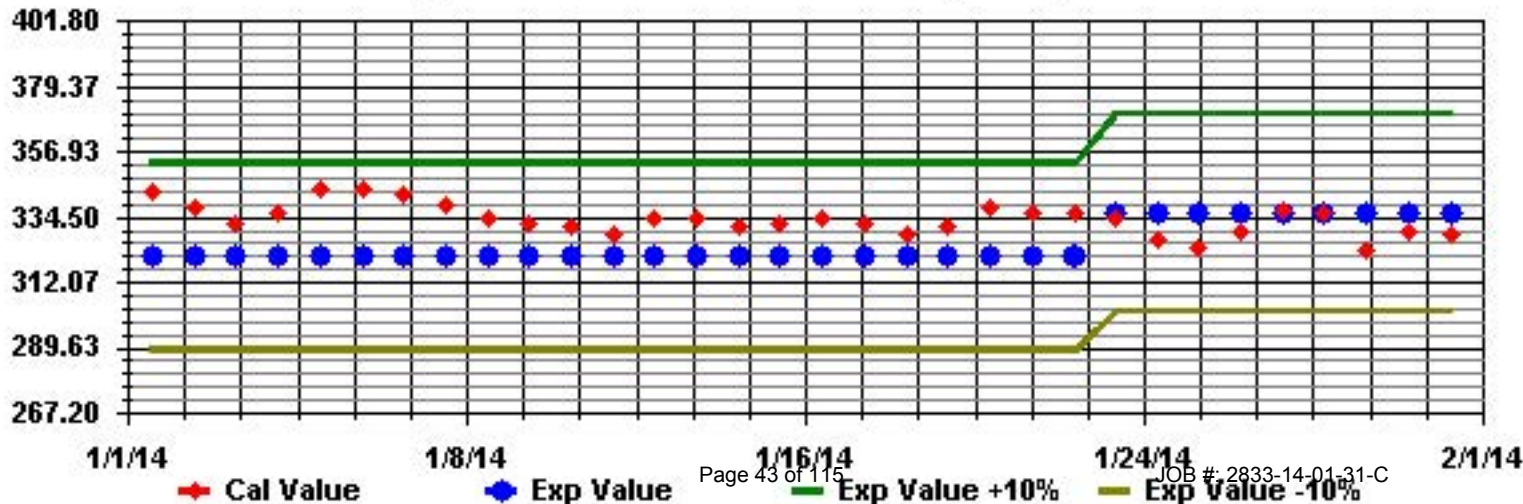
Calm : .00 %

Total # Operational Hours : 702

Class Limits (PPB)



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



Nitrogen Dioxide

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOURLY MAX	HOURLY AVG	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																												
1		6.4	5.5	6.8	6.6	6.1	5.9	6.4	6.3	6.5	5.2	4.2	3.4	3.1	S	2.4	3.2	3.7	2.8	3.3	4.2	6.7	8.1	6.7	6.2	8.1	5.2	24
2		4.8	4.8	6	5.7	5.2	4.6	4.4	4.6	4.6	4.8	5	4.8	S	4.3	5.5	8.8	14.6	20.3	10.2	6.2	5.8	5.3	5.3	4.5	20.3	6.5	24
3		2.7	2.3	2.5	3.6	4.1	2.8	2.6	1.8	0.2	0.7	0.4	S	0.3	0.4	0.6	0.6	0.6	0.4	0.4	0.4	0.3	0.1	0.2	0.4	4.1	1.2	24
4		0.2	0	0.1	0	0.2	0.6	0.3	0	0	0.3	S	0.2	0.4	0.4	0.3	0.2	0.1	0	0	0	0	0	0	0.2	0.6	0.2	24
5		0.2	0	0	0.2	0.4	0.7	0.4	0.5	0.3	S	0.7	0.6	0.6	0.6	0.6	1.5	1.1	3.8	5.1	6.6	6.6	6.1	5.1	4.1	6.6	2.0	24
6		4	5.5	5.2	4.4	6.5	7.7	8.9	6.5	S	5.7	5	4	3.7	3.8	3.1	5.6	6.6	6.5	5.9	6.8	8.6	7.4	6.2	5.6	8.9	5.8	24
7		5.8	7.1	5.6	5	5.2	4.8	4.7	S	1.1	1.4	1.4	2.3	1.4	1.1	1.6	2.8	3.7	3.4	4.8	4.4	3.6	2.5	2.3	1.9	7.1	3.4	24
8		1.5	0.8	0.8	0.7	1.1	1.3	S	1	1.3	1.4	1.8	1.9	2.6	2.5	4.3	5.8	5.6	6.5	7	7.1	7.9	8.2	9.2	10.5	10.5	3.9	24
9		10.5	9.1	6.8	5.8	5.2	S	3.3	3.7	4	5.1	4.6	3.8	3.7	4.3	5.8	7.6	10.1	11.7	11.8	14.3	19.8	18.1	17.9	18.5	19.8	8.9	24
10		18.8	20.8	19.3	16.9	S	12.1	12.2	12	12.4	11	9	8.5	7	5.8	2.3	0.8	0.3	0.5	0.3	0.3	0	0	0	2.1	20.8	7.5	24
11		1.4	0.9	2.4	S	3.5	3.4	3.7	4	4.7	4.5	4.2	4.1	4.1	3.5	3.4	3.2	3.3	3.2	3.4	3.5	3.1	2.7	2.1	1.4	4.7	3.2	24
12		1.4	0.9	S	0.7	1.7	2.4	1.6	1.1	0.8	0.7	0.7	0.7	0.4	0.5	0.6	0.3	1	1.3	1.3	2.6	2.6	3.3	3.6	3.3	3.6	1.5	24
13		2.6	S	2.2	2.7	3.3	3.6	2.2	1.2	1	0.9	0.5	0.7	0.4	0.2	0.4	0.4	0.8	0.7	0.6	0.7	0.6	0.7	0.4	0.4	3.6	1.2	24
14		S	0.9	1.3	1.4	1.6	1.6	1.9	1.9	1.6	2.3	4.1	4.7	5.6	5.4	4.4	4.1	4.3	5.5	6.2	6.6	6.4	5.5	3.3	S	6.6	3.7	24
15		6.5	4.6	3.2	1	0.5	0.5	0.3	0.4	0.3	0.3	0.4	0.4	0.6	0.2	0.5	0.4	0.4	0.4	0.4	0.6	0.5	0.6	S	0.6	6.5	1.0	24
16		0.6	0.8	0.8	0.8	0.7	1.3	1.3	1.2	1.2	2.4	2.4	2	3.4	2.8	2.9	3.2	3.7	3.8	4.2	4.7	5.3	S	11.1	22.1	22.1	3.6	24
17		14.9	8.6	8.7	9.8	6.3	2.6	1.1	0.6	0.5	0.5	0.5	0.7	0.5	0.5	0.7	0.7	0.5	0.8	0.6	0.8	S	0.2	0.2	0.2	14.9	2.6	24
18		0.5	0.5	1.1	1.3	2.2	5.8	7.4	6.5	7.6	7.7	5.7	3.7	2.3	1.7	2	2.7	3.2	5.3	6.7	S	9.7	6.4	1.3	0.6	9.7	4.0	24
19		0.6	0.1	0	0	0	0	0	0.1	0.3	0.1	0	0	0	0	0	0	0	0	S	0	0.2	0.2	0.1	0.1	0.6	0.1	24
20		0	0.1	0.3	0.1	0.1	0	0.8	0.9	0.9	0.9	1.3	1.5	1.5	S	4.4	5.9	4.4	S	4.3	5.2	7.1	8.8	6	2.4	8.8	2.6	24
21		1.4	1.3	0.8	0.9	0.9	0.7	1.1	1.2	1.4	1.5	C	C	C	C	C	C	C	C	C	0.2	0	1.2	1.6	1.1	1.6	1.0	24
22		0	0	0	0	0	0	0	1.9	1.3	1.1	S	S	0.5	0.5	0.7	S	2.2	2.3	2.2	2	1.2	1.4	1.8	2	2.3	1.0	24
23		1.9	2.5	3.1	3.5	4.3	5.1	6.9	9.5	9.1	7.4	6.6	4.4	2.5	1.7	S	0.8	1	0.8	0.9	0.6	0.6	0.7	0.9	0.7	9.5	3.3	24
24		0.6	0.5	0.2	0.1	0.1	0	0	0	0.1	0.2	0.3	0.2	0.1	S	0.3	0.6	0.7	0.9	0.7	1.3	0.8	1.2	0.7	1.2	1.3	0.5	24
25		2	1.7	1.6	1.5	1.6	1.3	0.8	0.3	0.4	0.4	0.8	0.2	S	0	0.3	0.1	0.2	0.1	0	0.2	0.1	0	0.2	0.2	2	0.6	24
26		0	0	0	0	0	0	0	0	0	0	0	S	0	0.1	0.2	0.4	0.4	0.2	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.2	24
27		1.3	0.7	0.6	0.5	0.6	0.6	0.5	S	0.5	0.6	S	0.3	0.8	1.3	0.9	1.2	1.2	2.4	3	3.3	5	7	8.4	9.8	9.8	2.3	24
28		8.4	6.7	5.9	5.2	5.5	6.8	7	7	6.6	S	4.5	5.8	6.7	8.2	P	6	9.6	4.7	3.9	3.7	1.6	1.4	0.6	0.4	9.6	5.3	23
29		0.1	0	0	0	0	0	0	0	S	1.2	1	1.4	1.4	1.3	1.6	1.6	2.1	1.2	1.7	0.8	0.6	0.8	1.2	0.9	2.1	0.8	24
30		1.3	1	0.7	0.2	0	0	0	S	0	0.1	0.1	1	0.3	0.7	0.4	0.5	0.8	1.6	1.3	1.4	1.8	2.8	6	8.6	8.6	1.3	24
31		15	15.9	7	2.3	1.3	1	S	0	0	0	0	0.2	0	0	0	0.1	0.3	0.2	0.2	0.2	0.2	0	0	0	15.9	1.9	24
HOURLY MAX		19	21	19	17	7	12	12	12	12	11	9	9	7	8	6	9	15	20	12	14	20	18	18	22			
HOURLY AVG		3.8	3.5	3.1	2.7	2.3	2.6	2.8	2.7	2.4	2.4	2.4	2.3	1.9	1.9	1.8	2.4	2.9	3.1	3.1	3.0	3.6	3.4	3.4	3.7			

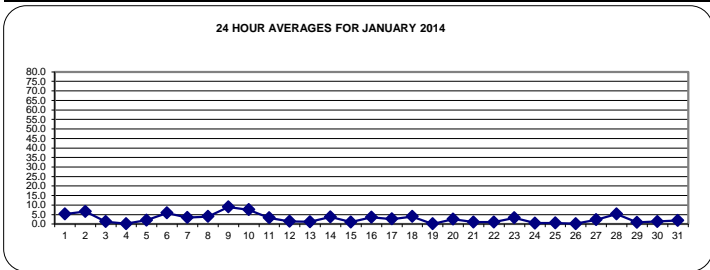
STATUS FLAG CODES

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

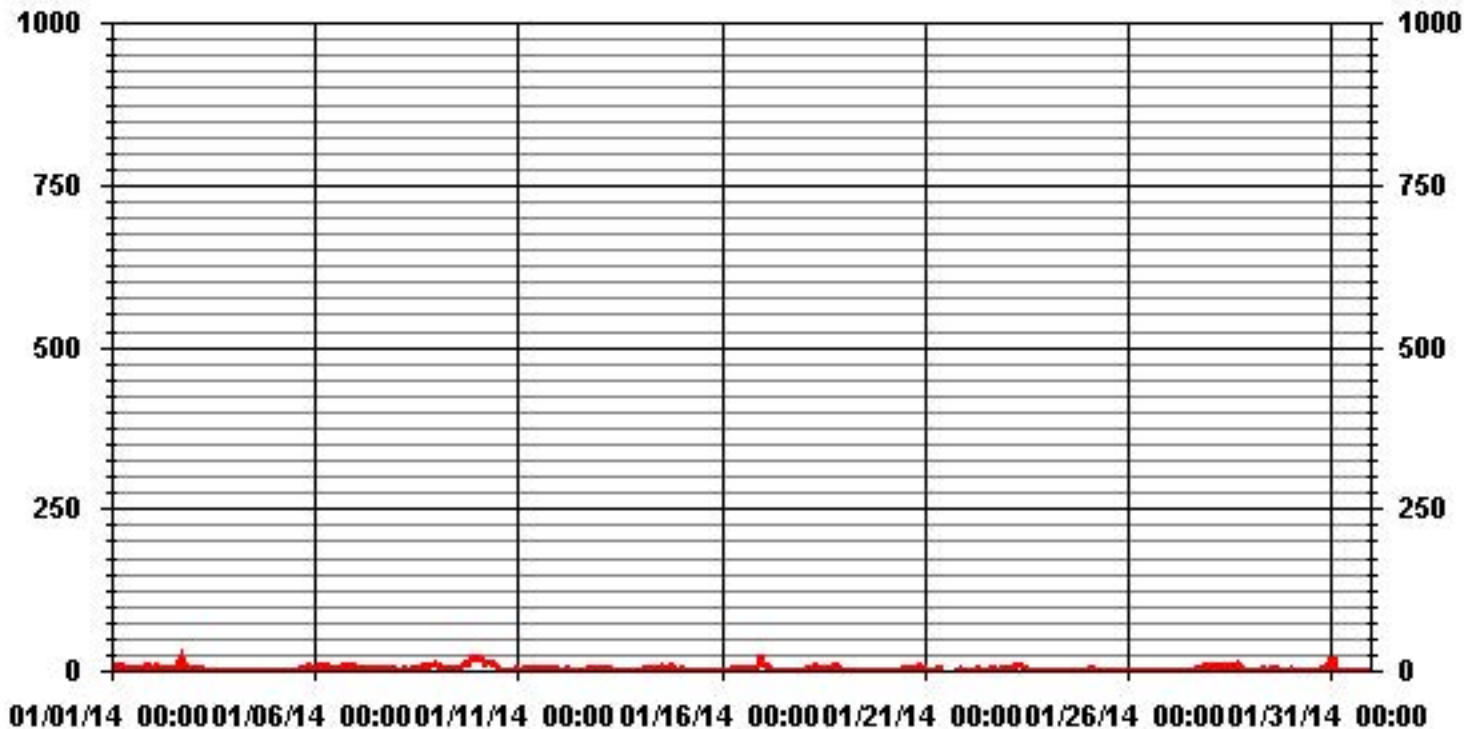
OBJECTIVE LIMIT: ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	621					
MAXIMUM 1-HR AVERAGE:	22.1	PPB	@ HOUR(S)	23	ON DAY(S)	16
MAXIMUM 24-HR AVERAGE:	8.9	PPB			ON DAY(S)	9
					VAR-VARIOUS	
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	3.51		MONTHLY AVERAGE:	2.80	PPB	



01 Hour Averages



— LICA31 NO2_ PPB

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	7.5	7	8	7.4	7	6.8	7.3	7.1	7.9	6.2	5.7	4.2	4	S	3.4	4.5	4.6	4.1	4.7	5.4	9.3	9.8	8	8.1	9.8	6.4	24	
2	6.5	6.8	7.3	7.3	6.5	6.3	5.9	5.7	5.9	5.8	5.5	5.5	S	6.7	18.1	20.7	22	23.1	18.9	8.8	8	7.4	7.4	7	23.1	9.7	24	
3	4.3	4.1	4.5	6.1	6.7	4.7	4.3	4.3	2.4	2.5	2	S	1.6	1.9	2	1.9	2.5	1.9	2.4	2	1.8	1.7	1.9	2	6.7	3.0	24	
4	1.8	1.6	1.5	1.7	2	2.2	1.8	1.6	1.5	1.8	S	1.3	1.6	1.6	1.5	1.7	1.5	1.3	1.2	1	1.2	0.9	1.2	1.5	2.2	1.5	24	
5	1.8	1.1	1.3	1.4	1.9	1.9	1.9	1.6	1.6	S	2.5	1.8	1.5	1.7	2.1	2.9	3.4	6.6	7.1	8.2	9	8	6.7	5.5	9	3.5	24	
6	5.3	7.4	6.9	5.4	7.9	10.4	10.3	8.2	S	7.1	6.1	5.7	4.9	5.1	4.6	7.8	8.6	7.8	7.7	9.9	11	10.8	8.5	7.7	11	7.6	24	
7	7.4	10.1	8.5	6.9	7.1	7.2	6.5	S	3.3	3.7	3.3	4.5	3.8	3.3	3.7	5.5	5.4	5.5	6.8	7.1	5.3	4.4	4.2	3.5	10.1	5.5	24	
8	3.1	2.4	2.3	2.2	2.5	3	S	2.7	2.7	2.7	3.1	3.5	4.5	4.3	6.7	7.8	7.1	8.2	8.5	8.7	9.1	10.3	11	12.4	12.4	5.6	24	
9	11.9	11.2	8.7	7.5	6.5	S	4.7	5.1	5.4	7	19.7	5.2	5.2	5.7	7.9	10.1	13.5	13.4	13.2	19.5	24.2	23.3	19.7	20.4	24.2	11.7	24	
10	21.1	22.9	21.8	19.4	S	14.7	15	14.8	21.5	23.5	12	11.6	10.2	31.6	5.6	4.3	3.7	11.9	3.3	3.1	3	3.1	3	5.4	31.6	12.5	24	
11	4.6	4	6.2	S	4.8	4.7	4.7	5.3	6	5.6	5.6	5.6	5.5	4.7	4.5	4.3	4.5	4.7	5.1	4.7	4.3	3.8	3.7	2.9	6.2	4.8	24	
12	2.4	2.1	S	2.1	3.4	3.6	3	2.7	2.1	1.9	2	2.5	1.9	1.9	10.7	1.9	2.5	2.7	2.8	4.3	4.4	4.7	4.9	4.9	10.7	3.3	24	
13	3.9	S	3.7	4.7	5	5	4	2.6	2.4	8.7	1.8	2.1	2.1	1.7	2.1	1.9	2.3	2.3	2.1	2.2	2.2	2	2	2.5	8.7	3.0	24	
14	S	1.9	1.9	2.1	2.4	2.7	3.3	3.1	2.3	3.5	6.8	5.7	6.5	6.5	5.4	11.6	6.3	6.5	7.1	7.7	7.5	6.8	5.5	S	11.6	5.1	24	
15	9	5.8	5.1	2.3	1.3	1.6	1.4	1.3	1.2	1.5	1.3	1.3	8.4	1	2.1	1.4	1.4	1.4	1.7	1.7	1.6	1.7	S	1.4	9	2.5	24	
16	1.4	1.7	1.5	1.7	1.9	2.1	2	2	5.9	3.2	3.1	2.9	66.4	4.1	3.6	3.8	4.5	4.5	5.4	5.3	7.2	S	20.8	23.9	66.4	7.8	24	
17	21.2	11.1	10.6	11.7	8.9	4.5	2.1	1.9	1.4	1.5	1.5	1.6	1.5	1.3	1.6	1.5	1.7	1.9	1.9	2	S	1.6	1.5	2	21.2	4.2	24	
18	1.9	2.2	2.5	3.1	4.3	10	9.8	8.2	9.2	9.3	10.4	5.3	4.1	3.4	3.8	4.2	4.8	7.9	9	S	11.7	9.9	4.4	2.5	11.7	6.2	24	
19	2.5	1.5	1.4	1.4	1.3	1.3	1.3	6.9	1.8	1.5	1.4	1.6	1.5	1.4	1.3	1.5	1.3	S	1.1	1.2	1.2	1.4	1.2	1.2	6.9	1.7	24	
20	1.3	1.4	1.5	1.2	1.4	1.8	2.3	2.3	2.7	2.2	2.2	2.5	8.4	S	5.7	8.4	5.6	S	5.9	6.3	9.1	10.3	9	4.8	10.3	4.4	24	
21	2.7	2.5	2.5	2.2	2	1.7	3.1	2.5	3.4	2.5	C	C	C	C	C	C	C	C	C	C	1.6	1.5	3.1	3.3	2.5	3.4	2.5	24
22	1.5	0	0.1	0.7	0.4	0.6	2.1	3.3	2.3	2	S	S	1.4	1.4	1.6	S	3.2	3.8	3.3	3.3	2.7	2.7	3.3	3.8	3.8	2.1	24	
23	3.4	3.9	4.2	4.9	5.4	6.7	8.9	10.8	10.7	9	8.1	5.9	4.1	3.1	S	1.6	1.8	1.4	1.7	1.3	1.3	1.7	1.7	1.6	10.8	4.5	24	
24	1.5	1.3	1	0.9	1	0.8	0.8	1.2	0.9	0.8	1.4	0.8	S	1.2	1.8	1.4	2.7	2.4	2.7	1.6	13.5	1.9	2.2	13.5	2.0	24		
25	3.3	2.6	2.7	2.7	2.4	2.1	1.9	1.2	1.2	1.6	10.5	1.3	S	1	1.2	0.7	1.3	1	0.9	1.3	1	0.9	1	1.2	10.5	2.0	24	
26	1	0.9	0.8	1.2	0.8	1	1	1.2	1.3	1	0.8	S	0.3	1.3	1	1.8	1.5	1.2	1.6	1.4	1.6	1.4	1.3	1.8	1.8	1.2	24	
27	2.4	2	1.6	1.8	1.9	1.9	1.5	S	2.1	S	1.6	2.4	17.3	2.8	2.8	3.2	4.7	4.7	4.9	7	8.9	10.2	11.7	17.3	4.6	24		
28	10.3	8.9	7.6	7.1	7.2	8.5	8.6	8.5	8.1	S	5.8	10.6	8.4	10	P	P	16.1	8.1	4.9	5.6	3.4	2.8	2.6	1.5	16.1	7.4	22	
29	1.1	0.9	0.4	0.3	0.3	0.7	1.6	1	S	2	2.2	2.8	2.2	2.3	2.6	2.6	3.4	2.9	2.9	2.2	1.8	3.1	2.8	2.1	3.4	1.9	24	
30	2.9	2.5	2	1.8	1.2	1.4	1.1	S	1	1	1	11.9	1	7.1	1.7	1.3	1.5	13.9	2.4	2.3	2.8	5.2	7.4	13.5	13.9	3.8	24	
31	17.3	18.1	13.4	4.1	2.3	1.7	S	0.6	0.9	1.1	0.7	1.1	0.6	1	0.9	0.8	1.1	1	1.2	0.8	0.9	0.7	0.9	0.6	18.1	3.1	24	
HOURLY MAX	21	23	22	19	9	15	15	15	22	24	20	12	66	32	18	21	22	23	19	20	24	23	21	24				
HOURLY AVG	5.5	5.0	4.7	4.1	3.6	4.1	4.2	4.2	4.2	4.2	4.7	4.1	5.9	4.9	3.9	4.3	4.7	5.4	4.9	4.5	5.2	5.5	5.4	5.4				

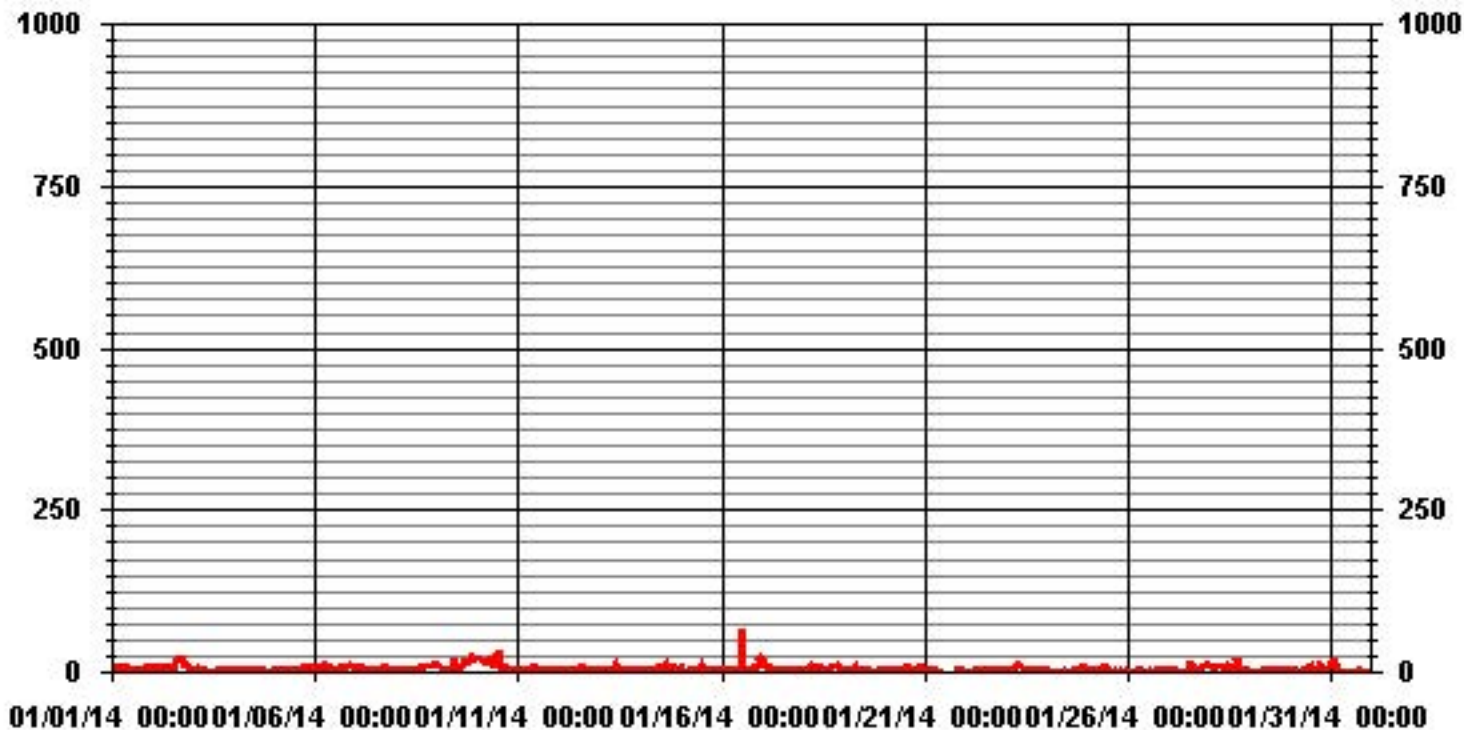
STATUS FLAG CODES

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:	696
MAXIMUM INSTANTANEOUS VALUE:	66.4 PPB @ HOUR(S) 12 ON DAY(S) 16
	VAR-VARIOUS
IZS CALIBRATION TIME:	36 HRS
MONTHLY CALIBRATION TIME:	9 HRS
OPERATIONAL TIME:	742 HRS
STANDARD DEVIATION:	5.00

01 Hour Averages



— LICA31 NO2MAX PPB

LICA31
 NO2_ / WDR Joint Frequency Distribution (Percent)

January 2014

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	7.86	1.85	.85	1.71	2.14	.85	2.14	4.29	3.29	8.58	13.01	9.87	7.43	8.72	16.73	10.58	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	7.86	1.85	.85	1.71	2.14	.85	2.14	4.29	3.29	8.58	13.01	9.87	7.43	8.72	16.73	10.58	

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
< 50.0	55	13	6	12	15	6	15	30	23	60	91	69	52	61	117	74	699
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	55	13	6	12	15	6	15	30	23	60	91	69	52	61	117	74	

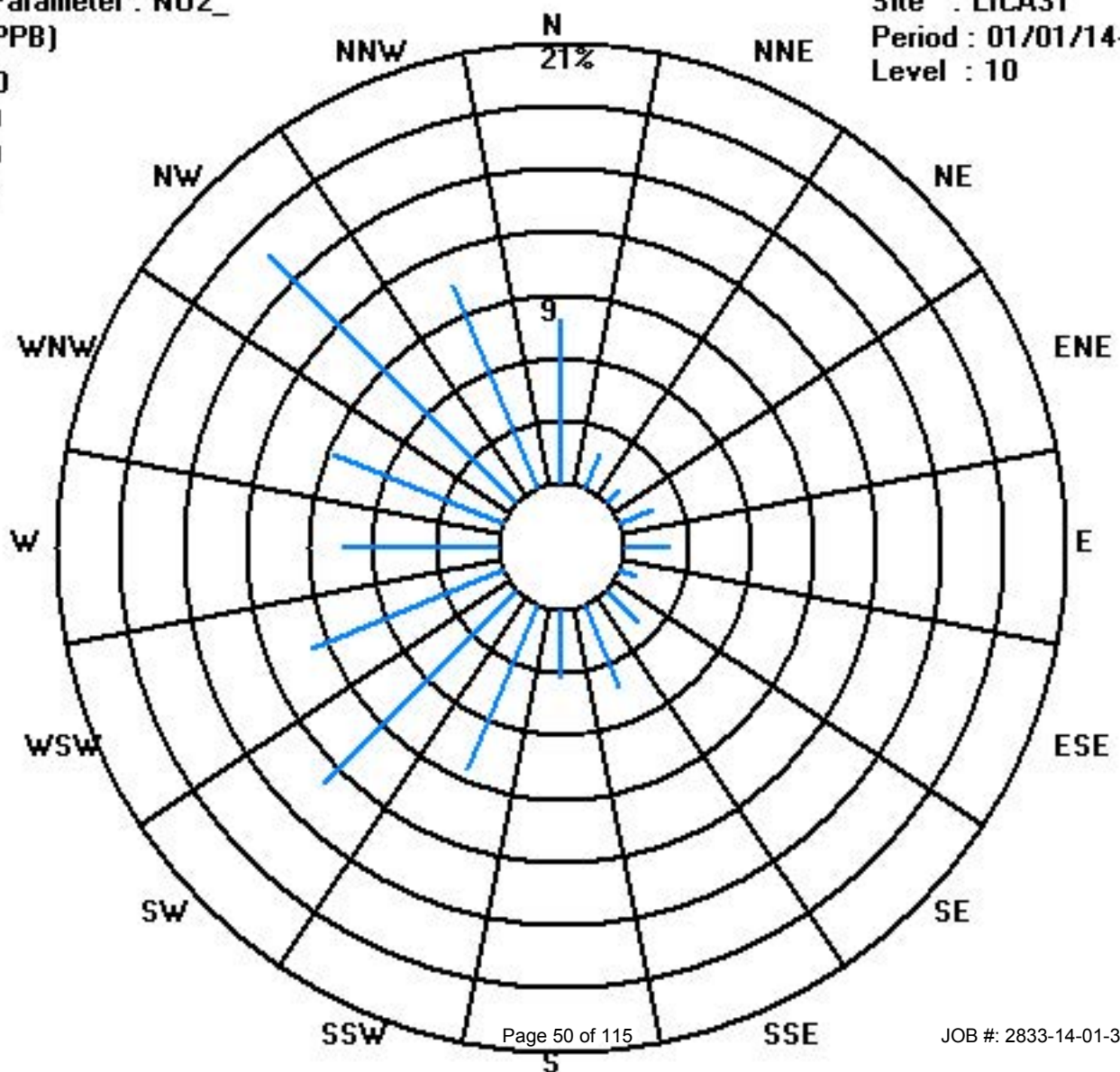
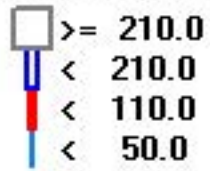
Calm : .00 %

Total # Operational Hours : 699

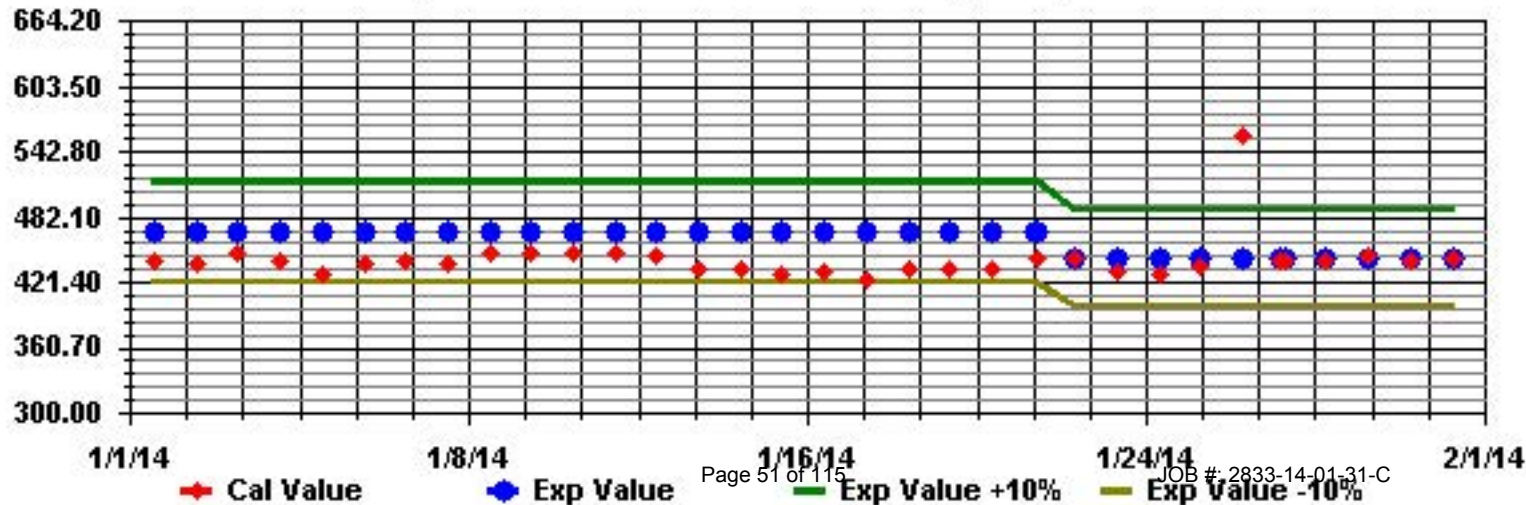
Class Limits (PPB)

Period : 01/01/14-01/31/14

Level : 10



Calibration Graph for Site: LICA31 Parameter: NO2_ Sequence: NO2 Phase: SPAN



Nitric Oxide

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

NITRIC OXIDE (NO) hourly averages in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.	RDGS.		
1	0.1	0	0.2	0.4	0.5	0.4	0.2	0.5	0.4	0.9	1.2	1.6	0.9	S	1.2	0.1	0	0	0	0	0	0	0	0	1.6	0.4	24	
2	0	0	0	0	0	0	0	0	0	0	0	0.6	S	3.1	2.5	2.2	1.4	1.1	0.7	0.6	0.4	0.5	0.3	0	3.1	0.6	24	
3	0.4	0.2	0	0	0.1	0	0	0.4	0.3	0	0.2	S	0.6	0.3	0.3	0.2	0.4	0.2	0	0.2	0	0	0	0	0.6	0.2	24	
4	0	0	0.1	0	0	0	0	0	0	0.1	S	0.2	0.1	0	0.2	0	0	0	0	0	0	0	0	0	0	0.2	0.0	24
5	0	0	0	0	0	0.3	0	0	0	S	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.0	24	
6	0	0	0	0	0	0	0	0	S	0.7	0.6	0.2	0	0	0.2	0	0	0	0	0	0	0	0	0	0.7	0.1	24	
7	0	0	0	0	0	0	0	S	0.7	0.9	0.9	1.1	1	0.9	0.8	0.6	0.8	0.8	0.4	0.5	0.5	0.4	0	0.3	1.1	0.5	24	
8	0.1	0.6	0.3	0.5	0.2	0.3	S	1	0.4	0.6	0.6	0.5	0.5	0.8	1	0.7	0.4	0.3	0.4	0.6	0.5	0.2	0	0.6	1	0.5	24	
9	0.4	0.4	0.8	0.4	0.2	S	0.6	0.2	0	0.5	1.4	1	1.1	1.1	1.3	0.6	0.4	0.2	0.2	0.3	0.9	1.2	0.9	1	1.4	0.7	24	
10	0.9	0.9	1.1	1.1	S	1.5	0.9	0.7	0.9	3.2	4.7	4.5	3.7	3	0.4	0	0	0	0	0	0	0	0	0	4.7	1.2	24	
11	0	0	0	S	1.3	0.7	0.3	0.1	0.2	0.4	0.7	0.8	0.6	0.5	0.1	0.2	0.4	0	0	0.1	0	0	0	0	1.3	0.3	24	
12	0	0	S	1.2	0.7	0.7	0.6	0.7	0.5	1	0.7	1	0.7	0.7	1	0.7	0.4	0.6	0.6	0.8	0.9	0.6	0.6	0.5	1.2	0.7	24	
13	0.4	S	0.7	0.5	0.6	0.2	0.6	0.1	0.3	0.3	0.5	0.5	0.7	0.7	0.8	0.5	0.5	0.4	0.2	0.3	0.3	0.1	0.3	0.4	0.8	0.4	24	
14	S	0.6	0.3	0.1	0.2	0.1	0	0.3	0.2	0	0.8	1.2	1.1	0.4	0.7	0.3	0	0.1	0	0.2	0	0.1	0	S	1.2	0.3	24	
15	1.2	0.8	0.6	0.5	0.5	0.5	0.6	0.4	0.2	0.6	0.4	0.3	0.7	0.6	0.5	0.6	0.5	0.6	0.5	0.4	0.3	0.7	S	0.7	1.2	0.6	24	
16	0.7	0.1	0.2	0.2	0	0	0.3	0.3	0.7	0.4	0.9	0.7	1	0.7	0.6	0.4	0.1	0.1	0.1	0.2	0.2	S	1.2	1.6	1.6	0.5	24	
17	1.1	0.9	0.7	0.8	0.8	0.4	0.2	0.1	0.4	0.2	0.3	0.1	0.2	0.3	0	0.4	0.6	0.1	0.2	0.2	S	0.8	0.5	0.4	1.1	0.4	24	
18	0.5	0.3	0.1	0.3	0	0.5	0.2	0.5	0.4	1.3	1.8	1.5	1.1	0.7	0.6	0.5	0.3	0.1	0.2	S	1.1	0.8	0.5	0.3	1.8	0.6	24	
19	0	0.3	0.3	0	0.1	0	0	0.2	0.1	0	0.1	0	0.2	0.1	0.2	0.3	0	0	S	0.3	0	0.2	0	0	0.3	0.1	24	
20	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.8	S	0.9	0.6	0.1	S	0.9	0.8	0.4	0.4	0.2	0.3	0.9	0.3	24
21	0	0.2	0	0	0.2	0.2	0.3	0	0.3	0.5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	0	0.5	0.1	24
22	0	0	0	0	0	0	0	0	0	0.1	S	S	0.1	0.5	0.5	S	0.5	0	0	0	0	0	0	0	0.5	0.1	24	
23	0	0	0	0	0	0	0	0	0	1.1	1.2	0.9	0.2	0	S	0.6	0.5	0.1	0.1	0.3	0	0.1	0.2	0.3	1.2	0.2	24	
24	0.4	0.4	0.2	0.6	0.2	0.1	0.2	0.5	0	0.3	0.1	0.1	0.5	S	1.1	0.8	0.4	0.8	0.6	0.4	0.6	0.5	0.1	0.4	1.1	0.4	24	
25	0.5	0.2	0.5	0.5	0.4	0.3	0.3	0.6	0.3	0.5	0.6	0.5	S	1.3	0.7	0.7	0.7	0.8	0.8	0.9	0.6	0.8	0.5	0.5	1.3	0.6	24	
26	0.6	0.9	0.8	0.7	0.8	0.6	0.7	0.7	0.8	0.6	0.7	S	1.3	1	0.5	0.7	0.6	0.6	0.5	0.6	0.7	0.5	0.6	0.2	1.3	0.7	24	
27	0.6	0.8	0.4	0.4	0.5	0.7	0.4	S	1.2	1.1	S	1.6	0.5	1	0.5	0.2	0.3	0.4	0.3	0.6	0.8	0.4	0.6	1.1	1.6	0.7	24	
28	0.9	0.9	0.6	0.8	0.7	0.8	0.6	0.7	1	S	3.1	4	4.6	5.1	P	0	1.8	0.4	0	0	0	0	0	0	5.1	1.2	23	
29	0	0	0	0	0.1	0	0	0	S	0.3	0	0	0.1	0	0.2	0	0	0	0	0	0	0	0	0	0.3	0.0	24	
30	0	0	0	0	0	0	0	S	0.5	0.2	0.6	0.7	0.2	0.6	0.1	0.1	0.1	0.3	0.1	0.3	0.4	0.5	0.3	0	0.7	0.2	24	
31	0.7	1.2	0.5	0.2	0	0	S	1.6	1.4	1.4	1	0.9	0.9	0.9	0.8	0.6	0.9	0.7	0.9	0.8	0.6	0.8	0.6	0.6	1.6	0.8	24	
HOURLY MAX	1	1	1	1	1	2	1	2	1	3	5	5	5	5	3	2	2	1	1	1	1	1	1	2				
HOURLY AVG	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.4	0.6	0.9	0.9	0.8	0.9	0.6	0.4	0.4	0.3	0.3	0.3	0.3	0.3	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

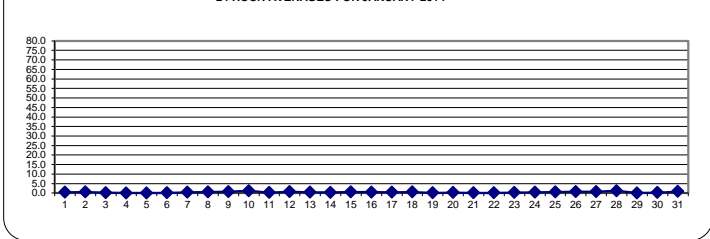
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

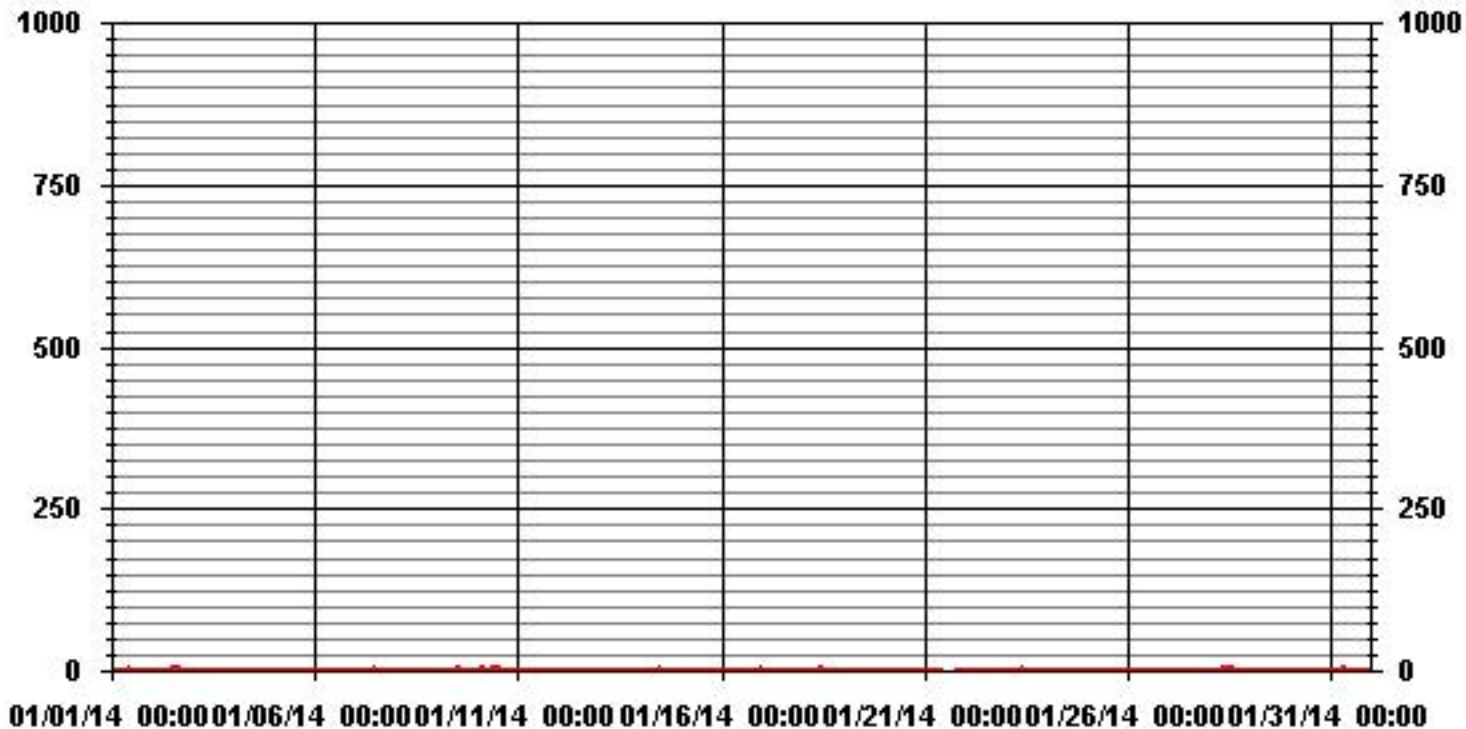
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	475					
MAXIMUM 1-HR AVERAGE:	5.1	PPB	@ HOUR(S)	13	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	1.2	PPB			ON DAY(S)	10
					VAR-VARIOUS	
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.58		MONTHLY AVERAGE:	0.43	PPB	

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



— LICA31 NO_ PPB

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

NITRIC OXIDE MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY																												
1	1	0.9	1	1.3	1.3	1.2	1.2	1.3	1	1.8	3.5	3.2	1.9	S	3	0.9	0.7	0.3	0.8	1.1	0.9	0.3	0.5	0.3	3.5	1.3	24	
2	0	0	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.5	0.9	1.3	S	4.1	11.3	11.5	2.8	2	1.9	1.5	1.5	1.6	1.2	0.8	11.5	1.9	24	
3	1.2	0.9	0.7	0.7	1.1	0.7	1	1.9	1.1	1.3	1.1	S	1.9	1.3	1.3	1.6	1.6	1.1	0.7	1	0.7	0.7	0.5	0.7	1.9	1.1	24	
4	0.8	0.2	0.9	0.7	0.9	1	0.5	0.5	0.7	0.9	S	1	0.9	0.9	0.8	0.4	1.2	0.4	0.2	0.8	0.6	0.8	0.9	0.6	1.2	0.7	24	
5	0.9	0.8	0.5	0.8	0.6	1.2	0.4	1	0.6	S	15.4	0.5	1	0.9	0.5	0.3	0	0.5	1.1	0.7	1.2	0.4	0.2	0.5	15.4	1.3	24	
6	0.2	0.5	0.5	1	0.6	0.5	1	0.5	S	1.4	1.3	1	0.8	0.8	0.6	1	0.6	0.8	0.7	0.2	0.5	0.8	0.3	0.1	1.4	0.7	24	
7	0.8	0.7	0.2	0.4	0.3	0	0.3	S	2.3	1.8	1.5	1.8	1.8	1.7	1.5	1.4	1.5	1.8	1.3	1.3	1.3	1.3	0.6	1.2	2.3	1.2	24	
8	0.9	1.5	1.3	1.8	1.1	1.2	S	2.4	1.4	1.7	1.8	1.3	1.7	1.5	8	1.4	1.1	1.1	1.7	1.4	1.3	0.9	1.3	1.4	8	1.7	24	
9	1.3	1.3	1.5	1.3	1	S	1.7	1.1	1.2	1.8	21.6	2.7	1.8	2	2.3	1.4	1.2	1	1.1	1.3	3.3	2.2	1.7	2.2	21.6	2.5	24	
10	1.6	1.8	2	1.7	S	2.5	1.9	1.8	15.3	25.6	6.3	6.3	4.9	27.4	2	0.6	1.7	7.5	0.4	1	0.2	0.6	0.5	0.8	27.4	5.0	24	
11	0.6	0.6	0.4	S	2.5	1.7	1.2	0.9	1.2	1.3	1.6	1.8	1.3	1.4	1.2	1.2	1.2	0.5	0.9	0.9	0.7	0.8	0.9	0.9	2.5	1.1	24	
12	1.1	0.7	S	2.5	1.4	1.6	1.6	2	1.4	2.1	1.7	2.7	1.6	1.6	9.8	2.1	1.4	1.6	1.8	1.5	1.5	1.5	1.5	1.2	9.8	2.0	24	
13	1.2	S	2.2	1.6	1.6	0.9	1.8	0.9	1	9.2	1.3	1.6	2.4	1.6	1.7	1.5	1.4	2	0.9	1	1.4	0.8	1.2	1.2	9.2	1.8	24	
14	S	1.7	1.2	0.8	1	1	0.8	1	0.9	0.6	2.5	2.2	1.9	1.4	1.5	5.1	1.4	0.8	0.6	1.4	1	1	0.5	S	5.1	1.4	24	
15	2	1.8	1.4	1.5	1.3	1.3	1.6	1.5	1.1	1.4	1.1	0.9	3.7	1.6	1.4	1.6	1.1	1.3	1.1	1.5	1.7	1.4	S	1.5	3.7	1.5	24	
16	1.3	0.9	1.2	1.2	0.9	0.9	1.2	1.1	29.1	1.2	2.8	2.3	7.2	3.3	1.8	1.3	0.9	0.7	1.3	1	1.7	S	2.2	2.7	29.1	3.0	24	
17	1.8	2	1.5	1.6	1.8	1.2	1.3	1.1	1.1	1	1.1	0.9	1	1.1	1	1.2	1.5	1	1.1	0.9	S	2	1.2	1.3	2	1.3	24	
18	1.4	1.1	0.8	1.1	0.7	1.3	0.9	1.1	1.3	2.1	3	2.4	2.2	1.9	1.6	1.5	1.3	1	1.3	S	2.3	1.5	1.7	1.2	3	1.5	24	
19	1.1	1	1.4	0.7	1	0.7	0.9	5.1	1.5	1	1.2	0.8	0.7	0.9	1.7	1.7	0.7	1	S	1.1	0.6	1.7	0.7	1.2	5.1	1.2	24	
20	0.4	0.6	0.9	0.7	0.4	0.3	0.6	0.5	0.3	0.8	1.1	1.3	13.4	S	1.6	1.7	1.2	S	2.1	1.8	1.2	1.4	1	1.1	13.4	1.6	24	
21	0.6	0.9	0.9	1.1	0.9	1.1	1.3	0.7	1.2	1.3	C	C	C	C	C	C	C	C	C	C	0.8	0.3	0.4	0.4	0.5	1.3	0.8	24
22	0.5	0.3	0.1	0.4	0.3	0.7	0	0.4	0.3	0.9	S	S	1.2	1.4	1.3	S	1.3	0.8	0.8	0.5	0.3	0.4	0.5	0.3	1.4	0.6	24	
23	0.5	0.5	0.8	0.8	1.1	1	1	0.6	1.2	2	2.5	2	1.2	0.6	S	2	1.4	0.8	1.1	1.2	0.7	0.9	0.9	1.1	2.5	1.1	24	
24	1.2	1.1	0.9	1.6	1.3	0.8	1	1.2	0.8	1.1	1.1	1	1.3	S	2.1	1.7	1.3	1.7	1.6	1.5	1.5	1.4	0.9	1.4	1.4	1.8	24	
25	1.2	1.3	1.4	1.4	1.2	1.4	1.1	1.5	1.4	1.2	12	1.7	S	2.7	1.6	1.5	1.8	1.6	1.4	1.9	1.4	1.7	1.6	1.6	12	2.0	24	
26	1.6	1.7	1.7	1.6	1.5	1.6	1.9	1.8	1.5	1.3	1.6	S	2.5	2.1	1.3	1.9	1.8	1.6	1.4	1.4	1.7	1.6	1.4	0.9	2.5	1.6	24	
27	1.9	1.7	1.4	1.3	1.2	1.7	1.4	S	1.9	S	2.3	1.5	9.2	1.5	1.2	1.2	2.6	1.4	1.3	1.6	1.4	1.5	1.9	9.2	2.0	24		
28	2.3	1.7	1.3	1.7	1.5	1.5	1.5	1.5	1.7	S	4.3	12.1	5.4	6	P	P	16.7	1.4	0.8	1.2	0.6	1.4	1	0.7	16.7	3.2	22	
29	1	0.8	0.5	0.7	0.8	0.6	0.6	0.7	S	1.8	0.6	0.8	0.8	0.9	1.2	0.6	1.2	0.1	0.6	0.1	0.2	0.3	0.7	0.3	1.8	0.7	24	
30	0.5	0.4	0.7	0	0.2	0	0.9	S	1.4	1.2	1.5	17.8	1	10.2	1.4	1.1	1.2	3.7	0.9	2.5	1.6	1.4	1	0.9	17.8	2.2	24	
31	1.5	2.1	1.6	1.2	0.8	0.7	S	2.8	2.2	2.2	1.7	1.9	1.7	1.9	2.1	1.7	1.6	2.1	1.9	1.9	1.5	1.8	1.5	1.7	2.8	1.7	24	
HOURLY MAX	2	2	2	3	3	3	2	5	29	26	22	18	13	27	11	12	17	8	2	3	3	14	2	3				
HOURLY AVG	1.1	1.1	1.0	1.1	1.0	1.0	1.1	1.3	2.7	2.5	3.6	2.8	2.5	3.3	2.4	1.8	1.8	1.5	1.1	1.2	1.2	1.6	1.0	1.1				

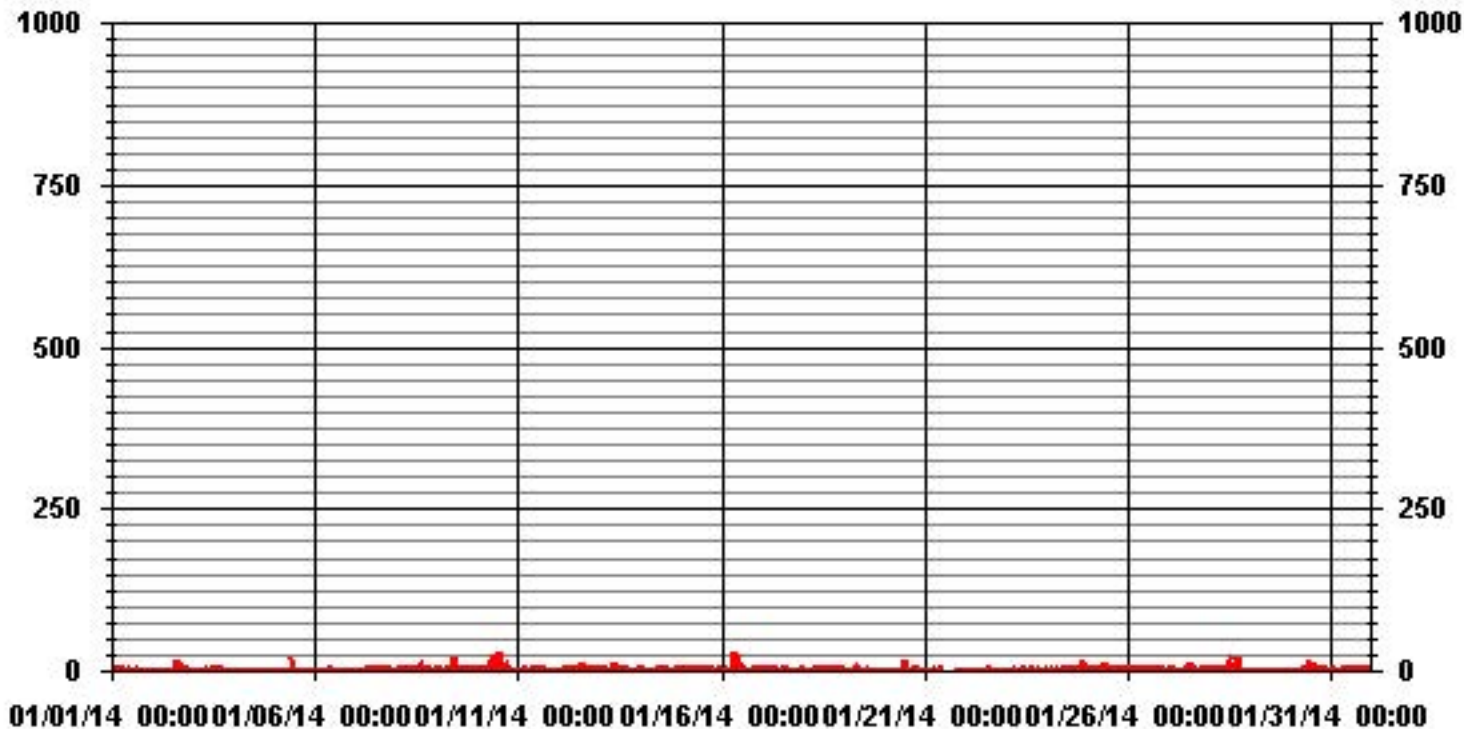
STATUS FLAG CODES

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:	690
MAXIMUM INSTANTANEOUS VALUE:	29.1 PPB @ HOUR(S) 8 ON DAY(S) 16
	VAR-VARIOUS
IZS CALIBRATION TIME:	36 HRS
MONTHLY CALIBRATION TIME:	9 HRS
OPERATIONAL TIME:	742 HRS
STANDARD DEVIATION:	2.62

01 Hour Averages



LICA31
 NO_ / WDR Joint Frequency Distribution (Percent)

January 2014

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	7.86	1.85	.85	1.71	2.14	.85	2.14	4.29	3.29	8.58	13.01	9.87	7.43	8.72	16.73	10.58	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	7.86	1.85	.85	1.71	2.14	.85	2.14	4.29	3.29	8.58	13.01	9.87	7.43	8.72	16.73	10.58	

Calm : .00 %

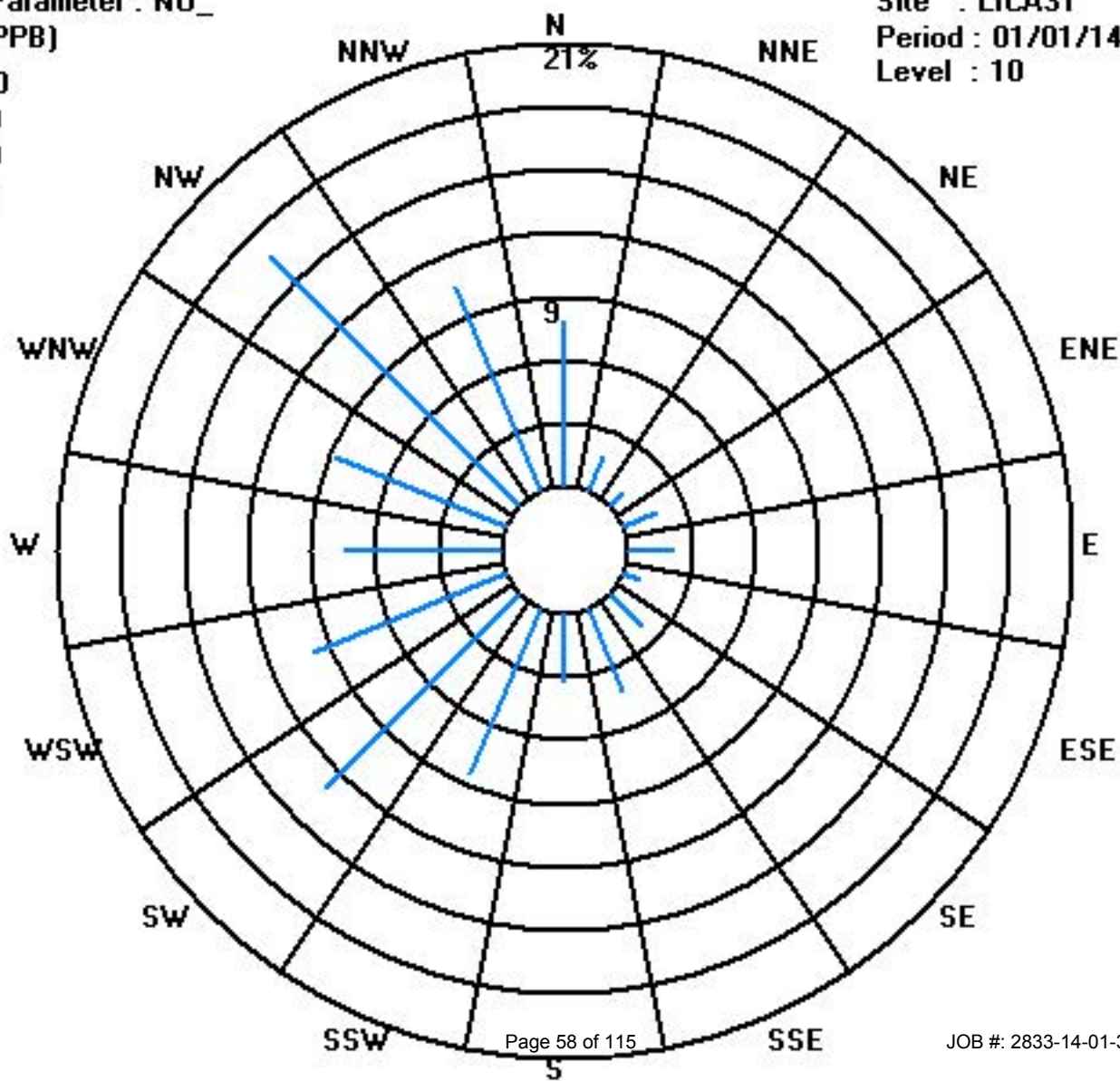
Total # Operational Hours : 699

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	55	13	6	12	15	6	15	30	23	60	91	69	52	61	117	74	699
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	55	13	6	12	15	6	15	30	23	60	91	69	52	61	117	74	

Calm : .00 %

Total # Operational Hours : 699



Oxides of Nitrogen

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

OXIDES OF NITROGEN (NOx) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOURLY START	HOURLY END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																												
1		6.5	5.5	7	7	6.6	6.3	6.6	6.8	6.9	6.1	5.4	5	4	S	3.6	3.3	3.7	2.8	3.3	4.2	6.7	8.1	6.7	6.2	8.1	5.6	24
2		4.8	4.8	6	5.7	5.2	4.6	4.4	4.6	4.6	4.8	5	5.4	S	7.4	8	11	16	21.4	10.9	6.8	6.2	5.8	5.6	4.5	21.4	7.1	24
3		3.1	2.5	2.5	3.6	4.2	2.8	2.6	2.2	0.5	0.7	0.6	S	0.9	0.7	0.9	0.8	1	0.6	0.4	0.6	0.3	0.1	0.2	0.4	4.2	1.4	24
4		0.2	0	0.2	0	0.2	0.6	0.3	0	0	0.4	S	0.4	0.5	0.4	0.5	0.2	0.1	0	0	0	0	0	0	0.2	0.6	0.2	24
5		0.2	0	0	0.2	0.4	1	0.4	0.5	0.3	S	1.1	0.6	0.6	0.6	0.6	1.5	1.1	3.8	5.1	6.6	6.6	6.1	5.1	4.1	6.6	2.0	24
6		4	5.5	5.2	4.4	6.5	7.7	8.9	6.5	S	6.4	5.6	4.2	3.7	3.8	3.1	5.8	6.6	6.5	5.9	6.8	8.6	7.4	6.2	5.6	8.9	5.9	24
7		5.8	7.1	5.6	5	5.2	4.8	4.7	S	1.8	2.3	2.3	3.4	2.4	2	2.4	3.4	4.5	4.2	5.2	4.9	4.1	2.9	2.3	2.2	7.1	3.8	24
8		1.6	1.4	1.1	1.2	1.3	1.6	S	2	1.7	2	2.4	2.4	3.1	3.3	5.3	6.5	6	6.8	7.4	7.7	8.4	8.4	9.2	11.1	11.1	4.4	24
9		10.9	9.5	7.6	6.2	5.4	S	3.9	3.9	4	5.6	6	4.8	4.8	5.4	7.1	8.2	10.5	11.9	12	14.6	20.7	19.3	18.8	19.5	20.7	9.6	24
10		19.7	21.7	20.4	18	S	13.6	13.1	12.7	13.3	14.2	13.7	13	10.7	8.8	2.7	0.8	0.3	0.5	0.3	0.3	0	0	0	2.1	21.7	8.7	24
11		1.4	0.9	2.4	S	4.8	4.1	4	4.1	4.9	4.9	4.9	4.9	4.7	4	3.5	3.4	3.7	3.2	3.4	3.6	3.1	2.7	2.1	1.4	4.9	3.5	24
12		1.4	0.9	S	1.9	2.4	3.1	2.2	1.8	1.3	1.7	1.4	1.7	1.1	1.2	1.6	1	1.4	1.9	1.9	3.4	3.5	3.9	4.2	3.8	4.2	2.1	24
13		3	S	2.9	3.2	3.9	3.8	2.8	1.3	1.3	1.2	1	1.2	1.1	0.9	1.2	0.9	1.3	1.1	0.8	1	0.9	0.8	0.7	0.8	3.9	1.6	24
14		S	1.5	1.6	1.5	1.8	1.7	1.9	2.2	1.8	2.3	4.9	5.9	6.7	5.8	5.1	4.4	4.3	5.6	6.2	6.8	6.4	5.6	3.3	S	6.8	4.0	24
15		7.7	5.4	3.8	1.5	1	0.9	0.8	0.5	0.9	0.8	0.7	1.3	0.8	1	0.9	1	0.9	1	0.9	1	0.8	1.3	S	1.3	7.7	1.6	24
16		1.3	0.9	1	1	0.7	1.3	1.6	1.5	1.9	2.8	3.3	2.7	4.4	3.5	3.5	3.6	3.8	3.9	4.3	4.9	5.5	S	12.3	23.7	23.7	4.1	24
17		16	9.5	9.4	10.6	7.1	3	1.3	0.7	0.9	0.7	0.8	0.8	0.7	0.8	0.7	1.1	1.1	0.9	0.8	1	S	1	0.7	0.6	16	3.1	24
18		1	0.8	1.2	1.6	2.2	6.3	7.6	7	8	9	7.5	5.2	3.4	2.4	2.6	3.2	3.5	5.4	6.9	S	10.8	7.2	1.8	0.9	10.8	4.6	24
19		0.6	0.4	0.3	0	0.1	0	0	0.3	0.4	0.1	0.1	0	0.2	0.1	0.2	0.3	0	0	S	0.3	0.2	0.4	0.1	0.1	0.6	0.2	24
20		0	0.1	0.3	0.1	0.1	0	0.8	0.9	0.9	0.9	1.3	1.8	2.3	S	5.3	6.5	4.5	S	5.2	6	7.5	9.2	6.2	2.7	9.2	2.8	24
21		1.4	1.5	0.8	0.9	1.1	0.9	1.4	1.2	1.7	2	C	C	C	C	C	C	C	C	C	0.2	0	1.2	1.6	1.1	2	1.1	24
22		0	0	0	0	0	0	0	1.9	1.3	1.2	S	0.6	1	1.2	S	2.7	2.3	2.2	2	1.2	1.4	1.8	2	2.7	1.1	24	
23		1.9	2.5	3.1	3.5	4.3	5.1	6.9	9.5	9.1	8.5	7.8	5.3	2.7	1.7	S	1.4	1.5	0.9	1	0.9	0.6	0.8	1.1	1	9.5	3.5	24
24		1	0.9	0.4	0.7	0.3	0.1	0.2	0.5	0.1	0.5	0.4	0.3	0.6	S	1.4	1.4	1.1	1.7	1.3	1.7	1.4	1.7	0.8	1.6	1.7	0.9	24
25		2.5	1.9	2.1	2	2	1.6	1.1	0.9	0.7	0.9	1.4	0.7	S	1.3	1	0.8	0.9	0.9	0.8	1.1	0.7	0.8	0.7	0.7	2.5	1.2	24
26		0.6	0.9	0.8	0.7	0.8	0.6	0.7	0.7	0.8	0.6	0.7	S	1.3	1.1	0.7	1.1	1	0.8	0.9	1.1	1.1	1	1.1	0.7	1.3	0.9	24
27		1.9	1.5	1	0.9	1.1	1.3	0.9	S	1.7	1.7	S	1.9	1.3	2.3	1.4	1.4	1.5	2.8	3.3	3.9	5.8	7.4	9	10.9	10.9	3.0	24
28		9.3	7.6	6.5	6	6.2	7.6	7.6	7.7	7.6	S	7.6	9.8	11.3	13.3	P	6	11.4	5.1	3.9	3.7	1.6	1.4	0.6	0.4	13.3	6.5	23
29		0.1	0	0	0	0.1	0	0	0	S	1.5	1	1.4	1.5	1.3	1.8	1.6	2.1	1.2	1.7	0.8	0.6	0.8	1.2	0.9	2.1	0.9	24
30		1.3	1	0.7	0.2	0	0	0	S	0.5	0.3	0.7	1.7	0.5	1.3	0.5	0.6	0.9	1.9	1.4	1.7	2.2	3.3	6.3	8.6	8.6	1.5	24
31		15.7	17.1	7.5	2.5	1.3	1	S	1.6	1.4	1.4	1	1.1	0.9	0.9	0.8	0.7	1.2	0.9	1.1	1	0.8	0.8	0.6	0.6	17.1	2.7	24
HOURLY MAX		20	22	20	18	7	14	13	13	13	14	14	13	11	13	8	11	16	21	12	15	21	19	19	24			
HOURLY AVG		4.2	3.8	3.4	3.0	2.5	2.9	3.0	3.0	2.8	3.0	3.3	3.2	2.8	2.8	2.4	2.8	3.3	3.4	3.4	3.3	3.9	3.7	3.7	4.0			

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

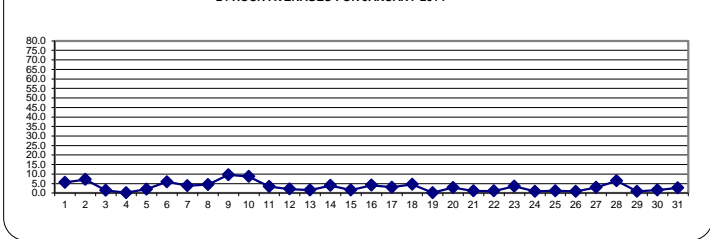
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

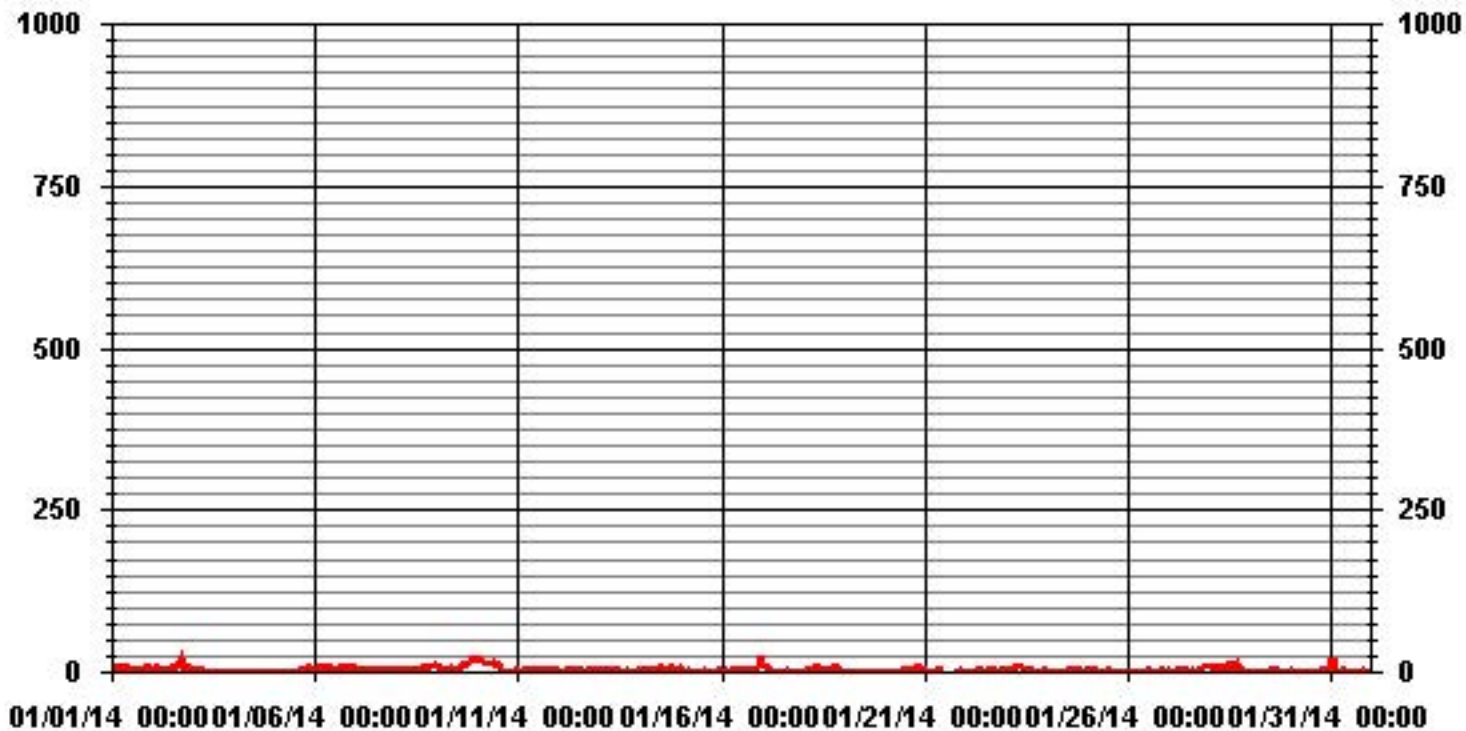
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	659					
MAXIMUM 1-HR AVERAGE:	23.7	PPB	@ HOUR(S)	23	ON DAY(S)	16
MAXIMUM 24-HR AVERAGE:	9.6	PPB			ON DAY(S)	9
					VAR-VARIOUS	
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	3.72		MONTHLY AVERAGE:	3.23	PPB	

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



— LICA31 NOX_ PPB

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	7.8	6.8	8.3	8	7.6	7.1	7.6	8	8.2	7.1	8.6	6.7	5.6	S	4.8	4.5	4.7	3.7	4.6	5.3	8.7	9	7.5	8	9	6.9	24	
2	5.7	6.3	6.7	6.7	6.1	5.5	5.2	5.2	5.5	6	5.7	6.1	S	8.9	28.2	30.3	22	23.4	19.1	8.3	7.3	7.2	7	5.8	30.3	10.4	24	
3	4.3	3.7	3.8	5.2	6.2	4	3.4	4.7	1.7	1.5	1.6	S	1.9	1.7	2	2.6	3.1	1.5	1.7	1.4	1.3	1	1	1.2	6.2	2.6	24	
4	1	0.7	0.9	0.7	1.3	1.5	1.2	0.7	0.8	1.5	S	1.5	1.3	1.5	1.3	1	1.3	0.9	0.4	0.9	0.7	1	0.9	0.9	1.5	1.0	24	
5	2.1	0.8	1	1.1	1.5	1.7	1.1	1.5	1	S	11.8	1.4	1.7	1.3	1.8	2.7	3	6.6	7	8.4	9.7	7.3	6.2	4.8	11.8	3.7	24	
6	4.8	7	6.7	5.4	7.5	9.7	10.1	7.5	S	7.6	6.6	5.9	4.6	4.9	3.9	7.3	7.4	7.4	7	9.2	10.2	10.3	7.1	6.8	10.3	7.2	24	
7	6.6	9.7	7.2	5.9	6.2	5.6	5.5	S	4	3.6	3.5	4.6	4	2.8	3.6	5.3	5.4	5.1	6.2	6.7	4.8	4.2	3.2	2.9	9.7	5.1	24	
8	2.6	2.1	2	2.3	2	2.6	S	3.8	2.8	3.4	3.7	3.9	5	4.5	10.5	7.7	7.3	7.9	8.8	8.7	9.3	9.8	11.1	12.8	12.8	5.9	24	
9	11.8	11.3	9	7.6	6.6	S	5.2	4.8	4.8	7.7	38.4	6.3	5.7	6.5	9.2	10	12.6	12.9	12.9	19.3	24.5	23.3	20.4	21.1	38.4	12.7	24	
10	20.8	23	22.4	19.9	S	14.6	14.2	13.9	31.8	46.8	14.7	14.8	12.1	55.5	5.6	2.4	2.8	17.3	1.3	1.7	0.7	1.1	1.1	3.7	55.5	14.9	24	
11	2.7	2.3	4	S	6.6	4.9	5.1	4.9	5.7	5.8	6.1	6.1	5.8	4.7	4.3	4.3	4.4	4.2	4.4	4.3	3.8	3.4	2.9	2.5	6.6	4.5	24	
12	2.7	1.8	S	2.9	3.3	4.1	3.3	3.3	2	2.5	2.3	4.1	1.8	2.1	16	2.7	2.3	3.1	2.8	4.5	4.7	4.9	5	4.8	16	3.8	24	
13	3.9	S	3.9	4.7	5.4	5.2	4.1	2.5	2.5	16.9	1.9	1.9	3.2	1.6	2.6	2.1	2.3	3.3	1.5	1.7	1.8	1.8	1.5	2.7	16.9	3.4	24	
14	S	2.4	2.6	2.6	2.6	3.2	3.2	3.4	2.4	3.4	8.3	7.2	7.7	6.8	6.2	15.2	7	6.7	7.3	7.6	7.1	6.6	5.3	S	15.2	5.7	24	
15	10	6.3	5.5	3.3	1.8	2.2	1.8	1.8	1.3	2.2	1.7	1.3	10.8	1.8	2.4	1.9	1.8	1.8	1.9	2.1	1.9	2.2	S	2.3	10.8	3.0	24	
16	1.9	1.8	1.7	2	1.5	2.2	2.6	2.3	34.1	3.7	5.2	4.2	72.5	6.5	4.8	4.5	4.8	4.7	5.6	6	7.2	S	22.3	25.1	72.5	9.9	24	
17	22.1	11.8	10.6	12	9.4	4.3	2.4	1.6	1.6	1.7	1.6	1.6	1.7	1.5	1.9	1.7	2	1.8	1.9	2.2	S	2	1.4	1.4	22.1	4.4	24	
18	2	1.9	2.2	2.7	4.1	10	9.5	8.4	9.3	9.9	12.4	6.7	5.3	3.8	4.1	4.4	4.5	7	8.6	S	12.4	9.7	4	1.9	12.4	6.3	24	
19	1.8	1.1	1.6	0.6	0.7	0.5	0.6	10.6	2.5	0.9	0.9	1	0.9	0.8	1.4	1.1	0.8	0.8	S	1.2	1	1.5	1.3	1	10.6	1.5	24	
20	0.9	0.9	1.3	1.2	0.9	1	2	1.7	2.2	2.2	2.4	2.9	16.3	S	6.5	9	6.1	S	6.8	7	9	10.2	9.1	4.6	16.3	4.7	24	
21	2.1	2.3	2.1	1.7	1.9	1.8	3	2.1	3.2	2.7	C	C	C	C	C	C	C	C	C	C	2.1	0.6	2.5	2.4	2.3	3.2	2.2	24
22	0.9	0	0	0	0	0.6	0.8	3	2.1	2.3	S	S	1.6	2.4	2.3	S	3.5	3.4	3	2.9	2	2.3	2.8	3.2	3.5	1.9	24	
23	2.5	3.7	4.2	4.4	5.9	6.3	9	10.6	10.3	9.8	9	6.8	4.9	2.7	S	2.4	3	1.7	1.6	1.7	1.5	1.6	2.1	1.7	10.6	4.7	24	
24	1.7	1.7	0.8	1.7	1.5	0.9	1	1.5	1	1.3	1.7	1.7	1.5	S	2	2.3	1.8	3.8	3.2	3.5	2.1	2.4	2	2.7	2.4	2.8	24	
25	3.4	3.3	3	2.8	2.7	2.5	1.8	1.8	1.7	2.2	19.9	1.7	S	2.1	1.9	1.6	2.7	1.7	1.5	1.8	1.5	1.7	1.8	1.4	19.9	2.9	24	
26	1.5	1.8	1.5	1.5	1.5	1.3	1.5	1.7	1.7	1.2	1.3	S	1.8	2.9	1.5	2.4	2.8	1.9	2	1.8	2	1.8	1.8	1.8	2.9	1.8	24	
27	2.9	2.3	1.8	1.9	1.9	2.2	1.9	S	S	2.4	S	2.9	2.8	25.5	2.5	2.4	2.6	6.1	4.1	5.2	7.3	9.2	10.8	12.3	25.5	5.3	24	
28	11.1	9.2	7.8	6.9	7.4	8.9	8.4	8.6	8.6	S	9.5	22.2	13.2	14.5	P	P	31.1	8.1	5	5.8	2.6	3.4	2.6	1.3	31.1	9.3	22	
29	0.7	0.5	0.3	0.4	0.2	0.4	0.8	0.5	S	2.6	2.1	2.9	2.2	2.6	3.4	2.4	4	2.4	2.9	1.9	1.6	2.8	2.3	1.8	4	1.8	24	
30	2.2	2.4	1.5	0.9	0.7	0.7	1.3	S	1.1	1.4	1.8	28.8	1.2	1.6	2.6	1.6	1.9	15.8	2.2	4.2	3.1	5.2	7.1	13.5	28.8	5.1	24	
31	17.6	18.9	14.4	4.3	2.3	1.9	S	2.4	2.5	2.5	1.8	2.1	1.7	1.8	1.9	2	2.1	2.2	2.7	1.8	1.6	1.6	1.4	1.6	18.9	4.0	24	
HOURLY MAX	22	23	22	20	9	15	14	14	34	47	38	29	73	56	28	30	31	23	19	19	25	24	22	25				
HOURLY AVG	5.4	4.9	4.6	4.0	3.6	3.9	4.1	4.4	5.6	5.6	6.8	5.8	7.1	7.0	5.0	4.9	5.4	5.8	4.8	4.6	5.1	5.8	5.2	5.3				

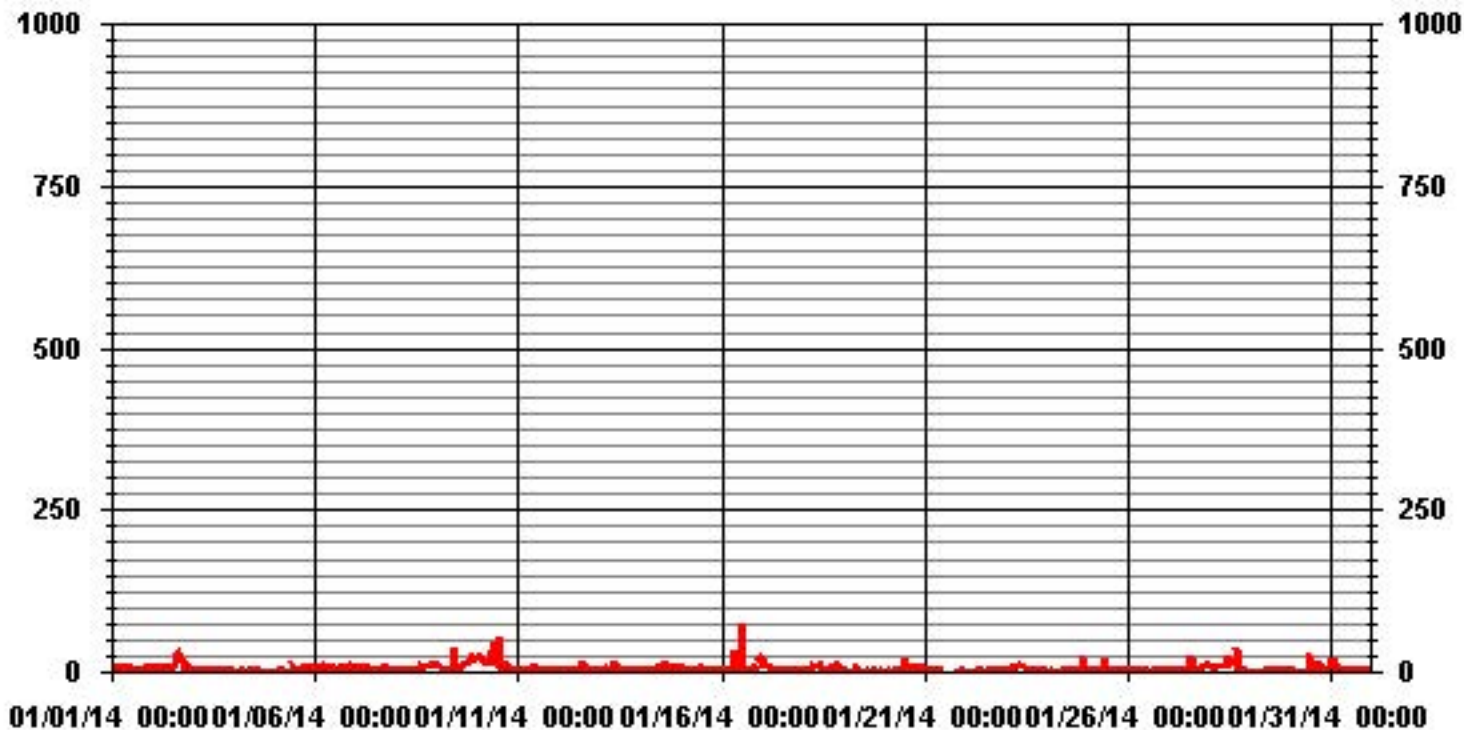
STATUS FLAG CODES

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:	693
MAXIMUM INSTANTANEOUS VALUE:	72.5 PPB @ HOUR(S) 12 ON DAY(S) 16
	VAR-VARIOUS
IZS CALIBRATION TIME:	36 HRS
MONTHLY CALIBRATION TIME:	9 HRS
OPERATIONAL TIME:	742 HRS
STANDARD DEVIATION:	6.31

01 Hour Averages



— LICA31 NOXMAX PPB

LICA31
NOX_ / WDR Joint Frequency Distribution (Percent)

January 2014

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	7.86	1.85	.85	1.71	2.14	.85	2.14	4.29	3.29	8.58	13.01	9.87	7.43	8.72	16.73	10.58	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	7.86	1.85	.85	1.71	2.14	.85	2.14	4.29	3.29	8.58	13.01	9.87	7.43	8.72	16.73	10.58	

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
< 50.0	55	13	6	12	15	6	15	30	23	60	91	69	52	61	117	74	699
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	55	13	6	12	15	6	15	30	23	60	91	69	52	61	117	74	

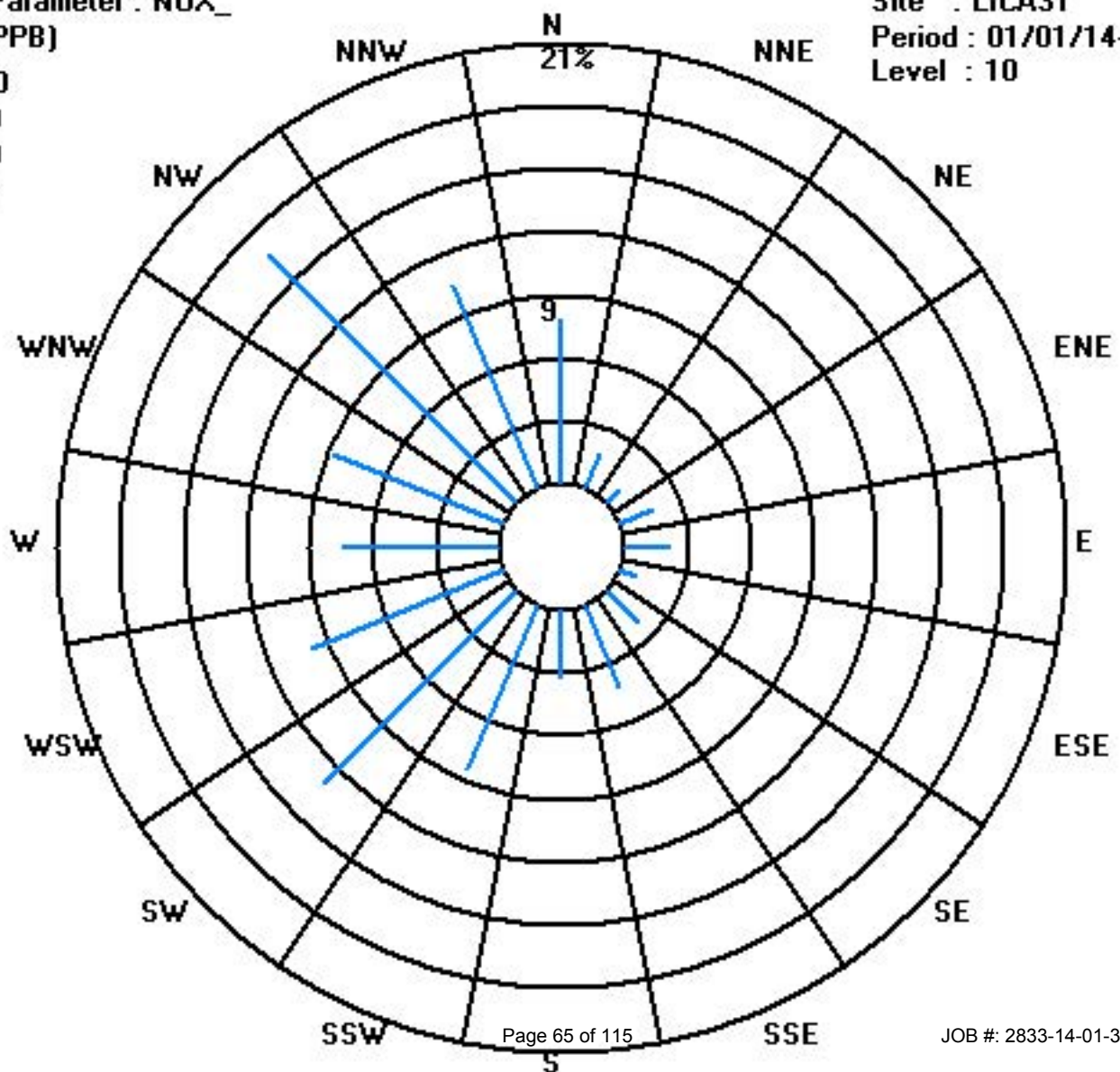
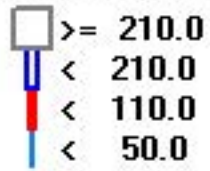
Calm : .00 %

Total # Operational Hours : 699

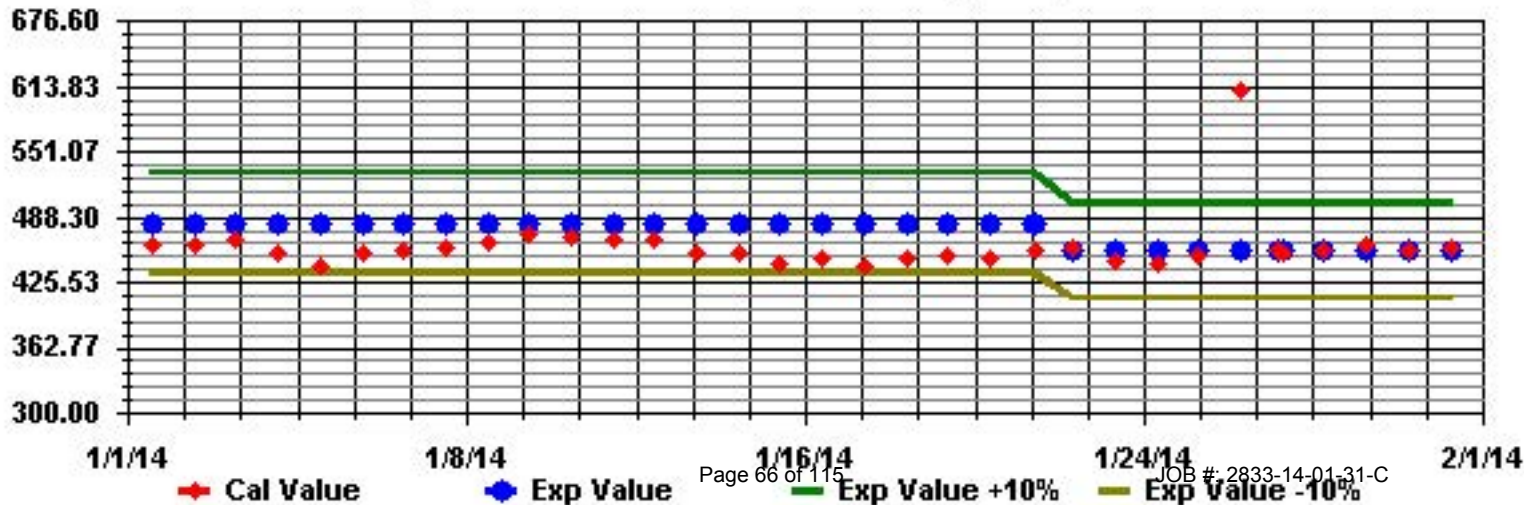
Class Limits (PPB)

Period : 01/01/14-01/31/14

Level : 10



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



Particulate Matter 2.5

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

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

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																												
1	4	3	4	4	4	3	4	4	5	4	3	2	2	1	2	4	1	3	2	0	1	1	0	1	5	2.6	24	
2	2	1	2	0	2	0	1	2	0	3	3	3	4	3	4	4	5	6	1	0	1	1	2	1	6	2.1	24	
3	0	1	3	4	5	2	3	4	3	5	2	2	2	2	4	2	1	1	3	2	1	1	2	1	5	2.3	24	
4	0	0	1	1	0	0	0	0	2	0	0	0	0	0	1	2	2	3	4	5	4	2	3	2	5	1.3	24	
5	1	2	1	0	1	0	0	0	1	1	0	0	0	0	0	0	2	7	8	9	8	4	1	0	9	1.9	24	
6	0	1	0	1	0	0	0	1	0	0	0	0	0	1	2	3	3	2	3	3	3	2	2	2	3	1.2	24	
7	3	3	3	3	2	4	3	3	3	4	2	1	1	2	1	2	2	1	1	0	0	0	0	0	4	1.8	24	
8	0	0	0	0	0	0	1	0	2	2	1	1	7	2	9	12	8	10	4	3	10	4	5	5	12	3.6	24	
9	6	3	3	2	2	2	2	2	3	3	5	1	3	8	17	13	9	4	5	6	8	6	8	8	17	5.4	24	
10	5	6	6	5	4	5	4	6	6	6	6	7	5	5	1	0	0	1	1	0	0	1	0	0	7	3.3	24	
11	0	0	0	0	0	0	0	0	X	0	X	0	X	0	1	0	5	0	2	1	3	3	3	3	5	1.0	21	
12	2	2	4	6	5	6	6	5	5	3	2	1	1	0	1	1	0	0	0	0	0	1	0	0	6	2.1	24	
13	0	1	1	1	3	4	3	4	6	5	3	1	2	3	4	4	3	3	2	2	2	2	1	1	6	2.5	24	
14	0	2	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	X	0	0	0	0	0	0	2	0.3	23	
15	0	0	2	3	5	0	3	1	5	1	3	2	3	3	3	3	4	3	2	3	1	3	2	1	5	2.3	24	
16	1	2	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3	3	0.5	24	
17	2	1	1	2	2	1	1	2	2	2	3	1	1	1	3	3	4	1	1	1	0	1	0	0	4	1.5	24	
18	0	0	0	0	0	2	1	0	4	4	2	1	0	0	0	1	0	1	0	3	4	2	0	1	4	1.1	24	
19	2	1	2	1	2	2	0	0	0	1	2	0	0	0	5	3	3	6	5	4	3	2	2	2	6	2.0	24	
20	1	1	2	0	2	0	0	0	0	0	0	X	0	0	0	0	0	0	2	2	4	4	4	2	4	1.0	23	
21	1	2	2	2	1	1	2	2	3	4	4	1	1	9	C	C	C	C	0	0	0	0	0	0	9	1.8	24	
22	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	1	1	1	0	1	0.3	24
23	0	1	0	1	1	2	3	5	6	4	4	2	1	1	0	1	1	1	2	0	0	0	0	0	6	1.5	24	
24	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	1	1	1	1	0	0	0	0	0	1	0.3	24	
25	0	0	0	0	0	0	0	0	1	3	2	1	0	1	1	1	1	0	0	0	0	0	1	4	4	0.7	24	
26	0	2	2	3	2	2	3	3	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.8	24	
27	0	0	1	1	0	0	0	1	1	1	1	0	1	2	1	1	0	0	0	1	0	1	3	3	0.7	24		
28	1	0	0	0	0	0	0	1	0	2	3	3	3	6	P	2	7	4	5	5	4	6	6	3	7	2.7	23	
29	2	1	1	1	1	0	0	0	1	1	0	0	0	0	1	1	2	2	3	3	1	1	2	1	3	1.0	24	
30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	0.2	24	
31	3	5	7	5	2	2	3	16	3	2	2	1	2	1	1	1	1	1	1	1	0	0	0	0	16	2.5	24	
HOURLY MAX	6	6	7	6	5	6	6	16	6	6	6	7	7	9	17	13	9	10	8	9	10	6	8	8				
HOURLY AVG	1.2	1.3	1.6	1.5	1.5	1.3	1.4	2.0	2.2	2.1	1.8	1.0	1.3	1.6	2.2	2.2	2.2	2.1	1.9	1.7	1.9	1.6	1.6	1.5				

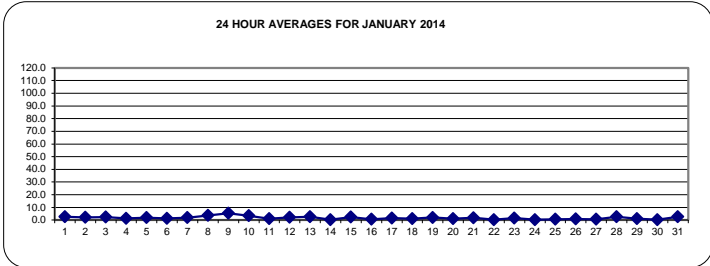
STATUS FLAG CODES

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

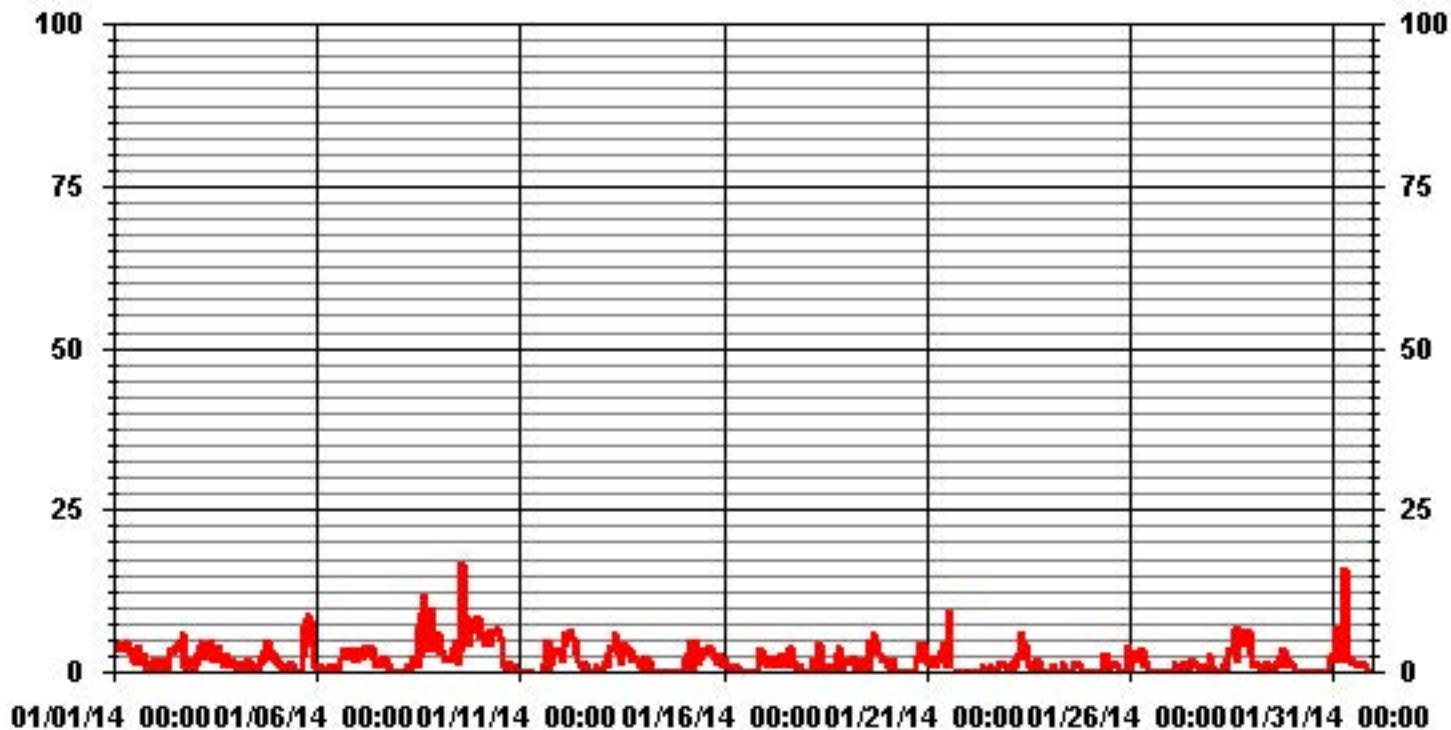
OBJECTIVE LIMIT: ALBERTA ENVIRONMENT: 24-HR 30 ug/m3

MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	455				
MAXIMUM 1-HR AVERAGE:	17 ug/m3	@ HOUR(S)	14	ON DAY(S)	9
MAXIMUM 24-HR AVERAGE:	5.4 ug/m3			ON DAY(S)	9
				VAR-VARIOUS	
MONTHLY CALIBRATION TIME:	4 HRS	OPERATIONAL TIME:	738 HRS		
		AMD OPERATION UPTIME:	99.2 %		
STANDARD DEVIATION:	2.14	MONTHLY AVERAGE:	1.69 ug/m3		



01 Hour Averages



— LICA31 PM2 UG/M3

LICA31
 PM2 / WDR Joint Frequency Distribution (Percent)

January 2014

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	8.03	1.90	.81	1.77	2.04	.81	1.90	4.08	3.67	8.31	13.07	9.80	7.49	8.99	16.48	10.76	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 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	8.03	1.90	.81	1.77	2.04	.81	1.90	4.08	3.67	8.31	13.07	9.80	7.49	8.99	16.48	10.76	

Calm : .00 %

Total # Operational Hours : 734

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30	59	14	6	13	15	6	14	30	27	61	96	72	55	66	121	79	734
< 60																	
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	59	14	6	13	15	6	14	30	27	61	96	72	55	66	121	79	

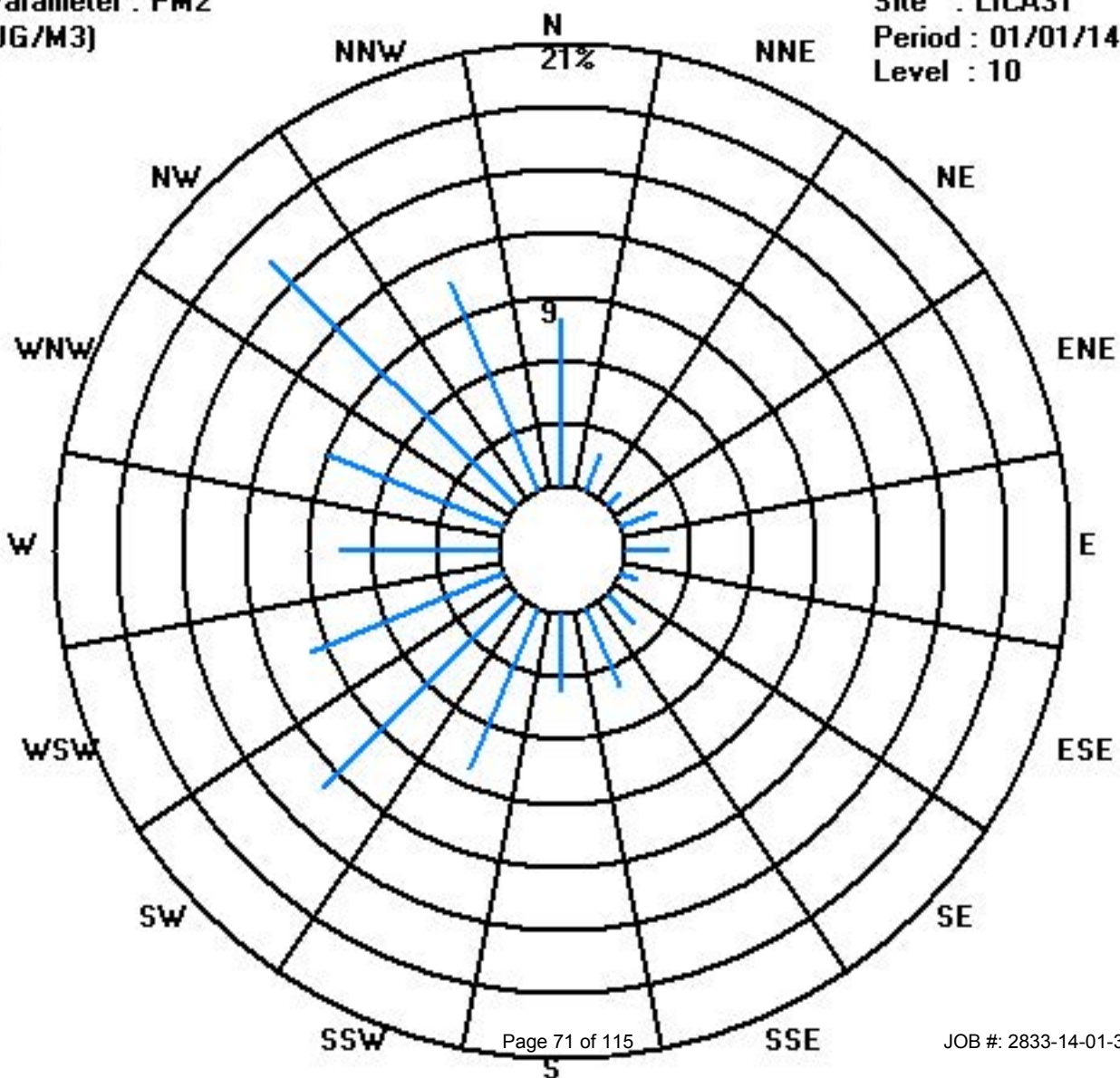
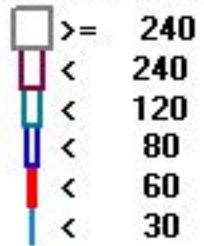
Calm : .00 %

Total # Operational Hours : 734

Class Limits (UG/M3)

Period : 01/01/14-01/31/14

Level : 10



Temperature

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

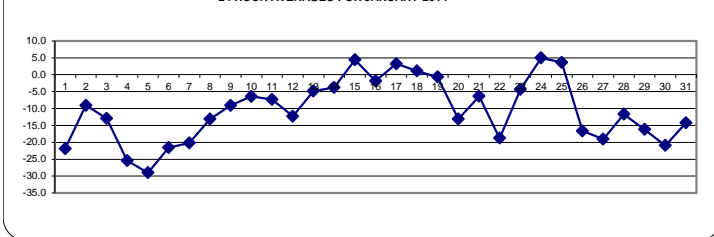
AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOURLY MAX	HOURLY AVG	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																												
1		-26.6	-25.7	-26.2	-25.7	-24.8	-24.7	-24.4	-24.3	-23.7	-22.6	-21.6	-20.6	-19.1	-18.4	-18	-18.4	-19.5	-20.2	-19.9	-20.1	-20.2	-20.3	-20.5	-19.6	-18	-21.9	24
2		-18.4	-17.9	-17.2	-16.6	-15.9	-14.3	-13.3	-13.1	-12.2	-10.8	-9.3	-7.6	-5.3	-5.1	-5	-4.6	-4.1	-3	-3.6	-4.3	-4.4	-3.9	-4	-3.8	-3	-9.1	24
3		-3.8	-4	-4.5	-5.6	-6.3	-5.8	-7	-8.2	-8.9	-10.5	-12.6	-12.9	-13.7	-14.2	-14.9	-16.2	-17.6	-18.7	-19.6	-19.7	-20	-21.2	-22.3	-23	-3.8	-13.0	24
4		-23.6	-23.9	-23.5	-24	-25.4	-26.3	-26.8	-26.5	-26.8	-25.4	-23.8	-22.5	-22.2	-22.1	-22.8	-23.9	-24.5	-25	-26	-27.2	-28.1	-29.5	-30.2	-30.7	-22.1	-25.4	24
5		-31	-31.3	-31.6	-31.9	-32	-31.9	-32.2	-32.6	-33.2	-31.1	-28.4	-25.7	-24.5	-22.8	-25	-26.3	-27.3	-27.7	-27.9	-28.4	-28.6	-28.6	-28.4	-27.9	-22.8	-29.0	24
6		-27.2	-26	-25.1	-24.8	-24.2	-23.1	-22.5	-22.2	-21.9	-22.2	-21.7	-20.4	-19.3	-18.8	-18.5	-19	-19.7	-19.7	-19.6	-19.6	-20.1	-20.4	-20.5	-20.6	-18.5	-21.5	24
7		-20.8	-20.8	-20.8	-20.7	-20.7	-20.6	-20.7	-20.6	-20.8	-20.6	-20.7	-20.3	-19.9	-19.6	-20	-20.6	-21.2	-21.2	-20.8	-19.5	-18.7	-18.5	-18.4	-18.1	-18.1	-20.2	24
8		-18	-17.7	-17.5	-17	-16.6	-16.1	-15.5	-14.9	-14.4	-13.8	-13	-12.1	-11	-10.3	-9.6	-9.3	-9.9	-9.8	-10	-10.5	-11.3	-12	-12.7	-12.8	-9.3	-13.2	24
9		-12.7	-12.3	-11.8	-11.7	-12.1	-12.1	-11.2	-10.8	-10	-9.1	-8.1	-6.9	-6.4	-6.5	-6	-5.9	-6.1	-6.4	-7.4	-8.4	-8.8	-9.4	-9	-8.6	-5.9	-9.1	24
10		-9.5	-9.2	-9.1	-9.4	-9.3	-8.4	-8.9	-9.1	-8.3	-7.2	-3.8	-4.2	-3.6	-2.9	-1	-1.6	-4.5	-5.6	-5.7	-5.4	-5.8	-6	-7	-9	-1	-6.4	24
11		-9.1	-9.7	-10.8	-11.2	-10.3	-9.6	-8.7	-8.5	-6.9	-5.9	-5.7	-5.9	-5.5	-5.6	-5.5	-5.9	-6.3	-6.4	-7.4	-7.6	-7.4	-6.5	-5.2	-4.8	-4.8	-7.4	24
12		-4.9	-4.9	-5.3	-7	-9.1	-11.5	-13.5	-14.9	-16	-16	-15.4	-13.9	-11.9	-11.6	-11.6	-13	-16	-16.8	-16.7	-16.1	-15	-13.3	-11.5	-9.4	-4.9	-12.3	24
13		-8.6	-7.2	-6.2	-5.5	-4.2	-3.5	-3.2	-3.2	-3.8	-4.6	-2.8	-2.2	-1.7	-1.6	-3.1	-4.4	-4.6	-5.6	-6	-6.7	-6.7	-7.3	-7.2	-6.5	-1.6	-4.9	24
14		-7.1	-6.8	-6.3	-7	-7.6	-8.9	-9.1	-8.5	-8.5	-8.2	-7.4	-5.8	-4.2	-3.1	-2	-1	-0.8	-1.7	-1	0.6	0.8	1.8	5.5	5.7	5.7	-3.8	24
15		6.5	7.2	7.6	8	8.2	7.5	6.8	4.4	4.3	5.2	5.7	5.9	5.6	5.2	5.5	4.8	3.3	2.3	1.8	1	0.5	-0.1	-0.4	-0.7	8.2	4.4	24
16		-0.9	-1.5	-1.8	-2.4	-2.9	-4.1	-4	-3.5	-3.6	-4.1	-3	-1	0.8	0.3	0.3	0.7	-0.4	-1	-1.4	-1.4	-1.7	-2.4	-2.8	-2.4	0.8	-1.8	24
17		-1.5	-0.2	0.1	0.9	0.9	1.9	1.9	2.3	3.2	4.6	6.5	7.4	7.4	7.4	7.3	6.6	5	3.9	3.5	3.1	2.4	1.4	1	0.5	7.4	3.2	24
18		0	-1.2	-3	-3.6	-4.3	-4	-3.6	-2.4	-1.9	-1.4	0.8	3.2	5.8	7.4	6.9	4.8	3	2.8	1.5	1	1.7	1.9	5.2	5.6	7.4	1.1	24
19		3.8	4.4	4.7	4.4	4.3	4	4	2.7	1.2	2.2	3.3	5.3	5	5.5	3.6	1.5	1.4	-2.4	-6	-10.2	-12.7	-14.3	-15.5	-16.5	5.5	-0.7	24
20		-17.3	-18	-18.7	-19	-19.2	-19.3	-19.7	-20	-19.6	-18	-15.6	-14.3	-12.4	-9.8	-8.7	-8.6	-9.3	-9.2	-8.5	-8.2	-7.5	-6	-4.6	-3.8	-3.8	-13.1	24
21		-3.7	-3.1	-3.1	-4.1	-5	-5.6	-6.7	-7.9	-8.3	-5.5	-3.5	-2.6	-2.2	-2.1	-2	-3	-5.5	-7.4	-8.5	-10.3	-11.4	-12.2	-13.7	-15.3	-2	-6.4	24
22		-17.8	-19.4	-20.6	-21.4	-22.1	-22.1	-22.5	-23	-22.5	-20.6	-19.5	-17.4	-15.7	-15.3	-15.6	-17.1	-18.7	-19.3	-18.6	-17.7	-17.2	-15.8	-15.2	-14.8	-14.8	-18.7	24
23		-14.7	-14.9	-14.8	-14.7	-14.6	-14.5	-14	-12.1	-8.9	-6.5	-4.9	-2	1.4	3.4	5.7	5.3	3.9	2.9	2.3	1.4	0.9	0.9	1.9	2.6	5.7	-4.3	24
24		3.6	5.2	5.6	6.1	6.1	5.7	5.4	5.3	5	5.3	5.7	6	6.2	6.3	6.4	5.8	5.3	4.7	4.6	4.4	3.7	3	2.4	1.8	6.4	5.0	24
25		1	0.4	-0.4	-0.5	0.1	1.3	2.9	5.1	5.8	5.5	6.4	6.6	8	8.9	8.8	7.8	6	4.6	4.2	3.9	3	1.5	-0.7	-3.4	8.9	3.6	24
26		-6.6	-9.3	-12.5	-15	-16.7	-17.7	-18.6	-19.4	-19.8	-18.4	-17.4	-16.8	-16.1	-14.7	-14.9	-15.7	-16.9	-18.5	-18.7	-18.6	-18.6	-18.8	-19.5	-20.5	-6.6	-16.7	24
27		-20.9	-20.9	-21.1	-21.5	-21.8	-22.1	-22.2	-22.9	-21.5	-17.8	-16.8	-15.9	-14.8	-13.9	-13.3	-13.6	-15.9	-18.8	-20	-20.5	-20.9	-20.7	-19.8	-13.3	-19.1	24	
28		-18.8	-17.8	-17	-16.3	-15.8	-16	-16.2	-16.3	-16.1	-15	-12.8	-10.9	-8.7	-7	P	-5.9	-6.6	-6.5	-6.8	-7.3	-7.1	-7.3	-7.7	-8.7	-5.9	-11.7	23
29		-9.3	-10.3	-11.5	-11.8	-12.6	-13.6	-14.8	-16.2	-16.9	-16.9	-15.9	-15.7	-15.5	-15.7	-15.5	-15	-17.1	-17.7	-18	-20.3	-21	-21.4	-22.7	-23.9	-9.3	-16.2	24
30		-24.7	-24.6	-24.2	-24	-23.8	-24	-24.3	-24.3	-24	-23.3	-21.9	-20.5	-18.4	-16.7	-15.4	-14.8	-16.2	-18.9	-19.7	-20.3	-20.4	-19.9	-19.5	-19.3	-14.8	-21.0	24
31		-18.1	-16.7	-15.3	-15	-15.7	-15.8	-15.9	-16.1	-15.7	-15	-14.3	-13.3	-12.9	-12.8	-12.2	-12.5	-12.8	-12.9	-13.1	-13.1	-13	-13.3	-13.7	-13.7	-12.2	-14.3	24
HOURLY MAX		6.5	7.2	7.6	8	8.2	7.5	6.8	5.3	5.8	5.5	6.5	7.4	8	8.9	8.8	7.8	6	4.7	4.6	4.4	3.7	3	5.5	5.7			
HOURLY AVG		-11.6	-11.6	-11.7	-11.9	-12.0	-12.1	-12.2	-12.3	-12.1	-11.2	-10.0	-8.9	-7.9	-7.3	-7.2	-7.7	-8.8	-9.7	-10.1	-10.5	-10.8	-10.9	-10.9	-11.0			

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 HOUR AVERAGES FOR JANUARY 2014



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-33.2 °C	@ HOUR(S)	8	ON DAY(S)	5
MAXIMUM 1-HR AVERAGE:	8.9 °C	@ HOUR(S)	13	ON DAY(S)	25
MAXIMUM 24-HR AVERAGE:	5.0 °C			ON DAY(S)	24
				VAR-VARIOUS	
OPERATIONAL TIME:				743	HRS
AMD OPERATION UPTIME:				99.9	%
STANDARD DEVIATION:	9.87				
MONTHLY AVERAGE:	-10.44				°C

01 Hour Averages



— LICA31 TPX DGC

Barometric Pressure

Lakeland Industry & Community Association - St. Lina Site

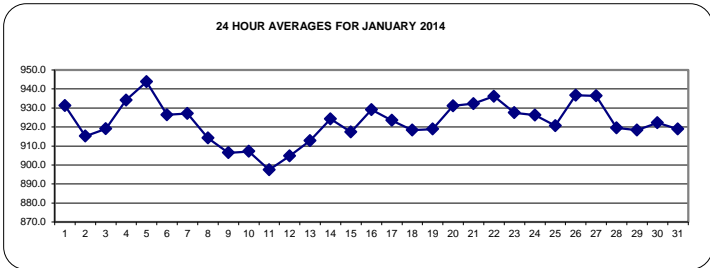
JANUARY 2014

BAROMETRIC PRESSURE (BP) hourly averages in millibar

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY 1	931	931	931	932	932	932	932	933	933	933	933	933	933	932	932	932	931	931	930	929	928	927	926	926	933	931.3	24	
2	925	924	923	921	920	919	918	917	916	915	915	914	914	913	913	912	912	912	912	911	910	910	910	909	925	915.2	24	
3	909	909	909	910	910	911	912	913	914	916	918	919	920	921	923	924	925	925	926	927	928	929	930	930	930	930	919.1	24
4	930	930	931	932	932	932	932	932	932	933	932	932	932	932	932	933	934	935	936	938	940	941	942	943	943	943	934.1	24
5	944	945	946	946	947	947	947	947	947	947	946	945	944	944	943	943	943	942	941	941	940	939	938	937	947	943.7	24	
6	936	935	934	934	933	931	930	928	927	926	925	923	922	921	921	922	922	922	922	923	923	924	924	924	936	926.3	24	
7	925	925	926	927	927	927	928	928	928	929	929	929	929	929	928	928	928	927	927	926	926	925	925	924	929	927.1	24	
8	923	922	921	920	919	918	917	916	915	914	913	913	912	912	912	911	911	911	910	910	910	909	909	909	923	914.1	24	
9	909	908	908	908	907	907	907	907	907	907	907	907	906	906	906	906	906	906	906	905	905	904	904	904	909	906.4	24	
10	904	904	904	904	904	904	904	904	904	905	906	906	906	907	908	909	909	910	911	911	911	912	912	911	912	907.1	24	
11	910	910	909	908	906	905	903	902	900	898	896	894	892	890	890	889	890	891	891	891	891	892	893	894	894	910	897.4	24
12	895	896	896	898	899	901	903	904	906	907	908	909	910	910	910	910	910	909	908	907	906	905	904	903	910	904.7	24	
13	902	902	902	901	902	902	903	905	906	909	911	912	913	915	916	918	920	921	922	923	924	925	926	927	927	927	912.8	24
14	927	928	929	930	930	930	930	929	929	929	928	927	926	924	923	923	922	921	920	918	917	915	913	912	930	924.2	24	
15	910	909	909	909	910	911	911	911	911	912	914	915	916	917	919	920	922	924	925	926	927	928	929	930	930	930	917.3	24
16	930	931	931	932	931	932	932	932	931	931	931	931	931	930	929	929	928	928	927	926	925	924	923	923	932	929.1	24	
17	921	921	920	920	920	920	920	920	921	921	922	923	923	923	924	924	926	926	927	928	928	928	928	928	928	928	923.4	24
18	928	927	926	925	924	923	922	920	920	919	919	918	917	917	916	916	915	914	913	912	913	912	912	913	928	918.4	24	
19	913	913	913	914	914	915	915	915	915	916	916	917	917	917	917	918	919	921	924	926	927	929	930	931	931	931	918.8	24
20	932	933	934	934	935	935	935	934	934	934	933	932	931	931	930	929	928	927	927	927	927	927	927	928	935	931.0	24	
21	928	928	929	929	930	930	930	931	931	931	932	932	932	933	933	933	934	935	935	935	935	936	936	936	936	936	932.3	24
22	937	936	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	936	935	935	934	933	933	932	937	936.1	24	
23	932	931	930	929	929	928	928	927	927	926	926	926	926	926	927	927	928	928	928	927	927	926	925	925	932	927.5	24	
24	924	923	923	924	924	924	925	925	925	926	926	927	927	927	927	928	928	929	929	929	928	928	927	926	929	926.2	24	
25	925	923	922	920	919	918	917	917	917	918	919	920	919	920	921	921	922	922	922	922	922	922	923	924	925	920.6	24	
26	926	927	930	932	933	935	936	938	939	939	940	940	940	939	939	939	939	939	938	938	938	938	938	938	940	936.6	24	
27	938	937	937	937	937	937	937	938	938	938	938	938	938	937	937	937	936	935	935	934	933	932	931	938	938	936.4	24	
28	930	928	927	926	925	923	922	921	920	919	918	918	917	916	P	916	915	915	915	915	915	916	916	916	930	919.5	23	
29	916	917	917	917	918	917	917	917	917	918	918	917	917	917	917	917	918	919	921	922	922	923	924	924	924	918.3	24	
30	925	925	925	926	926	926	926	926	926	926	926	925	925	924	923	922	922	921	920	919	918	916	915	914	912	926	922.2	24
31	911	911	911	912	913	914	915	916	916	917	918	919	920	921	921	922	923	923	924	924	925	925	925	926	926	918.8	24	
HOURLY MAX	944	945	946	946	947	947	947	947	947	947	946	945	944	944	943	943	943	942	941	941	940	941	942	943				
HOURLY AVG	922.5	922.2	922.3	922.4	922.4	922.3	922.3	922.3	922.2	922.5	922.5	922.5	922.3	922.2	922.4	922.4	922.7	922.7	922.7	922.8	922.7	922.7	922.6	922.6	922.5			

STATUS FLAG CODES

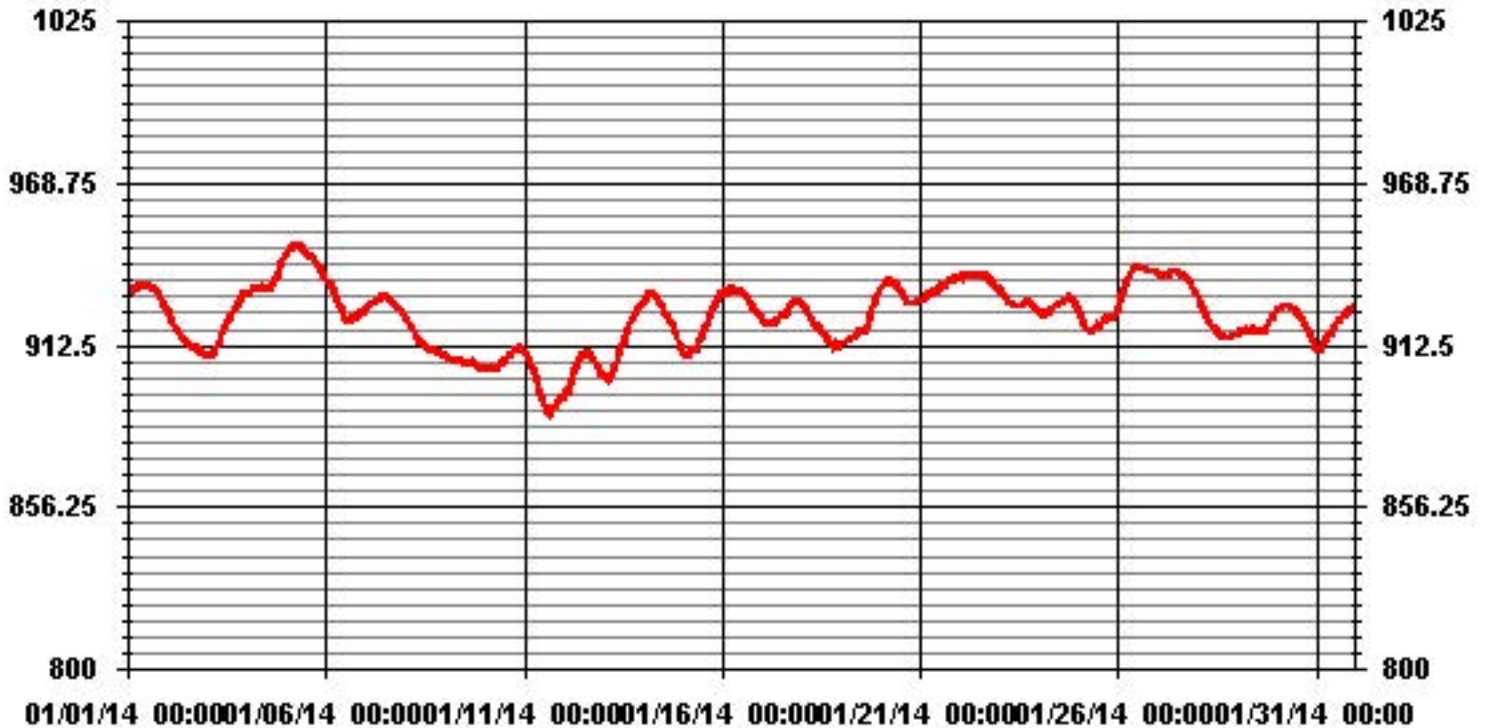
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	947 MB	@ HOUR(S)	VAR	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	943.7 MB			ON DAY(S)	5
				VAR-VARIOUS	
			OPERATIONAL TIME:	743	HRS
			AMD OPERATION UPTIME:	99.9	%
STANDARD DEVIATION:	11.20	MONTHLY AVERAGE:	922.46	MB	

01 Hour Averages



Relative Humidity

Lakeland Industry & Community Association - St. Lina Site

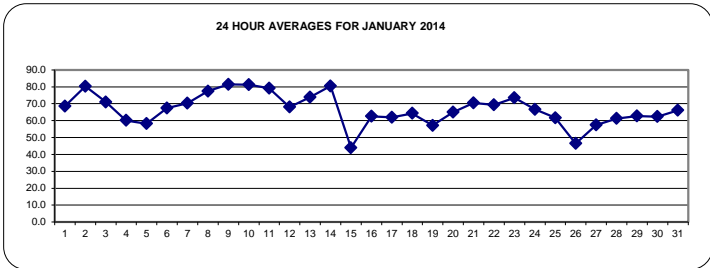
JANUARY 2014

RELATIVE HUMIDITY (RH) hourly averages in %

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.		
DAY																													
1	66	66	65	66	67	67	67	67	68	68	69	69	70	70	70	70	70	70	70	70	70	70	70	70	70	70	68.5	24	
2	71	73	73	74	75	76	77	77	78	79	80	80	79	80	81	83	86	87	87	86	86	86	86	86	86	86	87	80.3	24
3	83	83	82	83	83	78	79	79	78	69	65	58	55	54	58	63	70	70	71	70	68	68	68	69	83	71.0	24		
4	70	70	68	66	68	68	68	67	67	64	58	53	52	51	53	55	61	59	54	53	58	51	53	56	70	60.1	24		
5	57	57	59	62	62	62	62	63	63	56	51	48	46	44	50	54	60	62	62	62	63	63	64	64	64	58.2	24		
6	64	64	63	63	63	61	61	59	62	67	68	69	71	71	72	71	71	71	71	71	71	71	71	71	72	67.4	24		
7	70	71	71	71	70	70	70	70	70	70	69	69	68	69	69	70	70	70	70	72	72	72	72	72	72	72	70.3	24	
8	73	73	74	74	74	75	76	76	77	77	77	77	78	79	79	79	80	81	81	80	80	80	79	78	78	81	77.4	24	
9	78	79	79	79	79	79	79	80	81	81	82	83	83	83	84	84	84	84	83	83	82	82	82	82	84	81.5	24		
10	82	82	82	82	82	82	82	82	82	84	85	83	83	84	81	77	78	79	80	78	79	79	80	83	85	81.3	24		
11	83	82	81	80	80	79	77	75	74	75	73	73	76	80	78	79	80	81	82	82	82	83	83	81	83	79.1	24		
12	78	74	70	76	76	74	73	73	71	70	67	61	52	50	49	52	63	66	71	73	73	74	74	73	78	68.0	24		
13	81	83	84	85	86	85	83	81	77	73	61	53	51	52	58	65	67	72	74	77	78	81	82	82	86	73.8	24		
14	84	84	84	84	83	83	83	83	82	82	82	83	85	86	87	87	87	84	77	73	77	75	58	58	87	80.5	24		
15	55	52	50	46	36	37	38	50	49	40	39	38	38	37	35	35	38	40	42	48	50	53	55	54	55	44.0	24		
16	53	56	58	61	63	66	66	66	67	67	65	60	55	57	58	57	60	63	65	65	66	68	69	70	70	62.5	24		
17	70	69	69	67	66	62	63	64	61	56	52	49	50	50	51	54	59	63	64	65	67	70	71	73	73	61.9	24		
18	74	77	81	81	83	81	78	73	71	69	62	56	50	45	47	53	59	59	63	65	63	61	46	46	83	64.3	24		
19	51	52	51	51	51	58	55	58	60	56	55	48	48	43	51	69	67	77	68	62	61	60	61	59	77	57.2	24		
20	60	62	63	63	63	65	66	68	67	62	59	60	60	60	62	63	66	70	71	72	71	67	67	74	74	65.0	24		
21	77	75	76	79	79	79	78	78	78	66	63	63	59	57	54	56	63	69	72	77	77	75	70	69	79	70.4	24		
22	71	72	73	74	73	72	71	70	69	66	65	61	57	57	58	63	70	74	74	74	74	75	75	76	76	69.3	24		
23	76	76	76	76	76	76	77	79	82	83	82	73	66	61	58	60	66	70	72	75	77	77	76	74	83	73.5	24		
24	71	67	66	64	64	65	66	66	65	64	63	62	61	61	63	65	67	68	68	71	73	75	77	77	77	66.6	24		
25	79	80	81	81	78	72	65	58	56	58	55	56	51	48	46	47	52	57	57	57	64	59	53	67	81	61.7	24		
26	54	42	43	47	47	49	50	52	51	46	43	39	38	34	34	37	41	48	50	51	51	53	56	60	60	46.5	24		
27	61	62	62	64	65	65	64	66	60	47	46	44	41	39	39	41	47	58	62	64	68	71	71	70	71	57.4	24		
28	68	66	64	61	60	64	66	68	66	62	56	53	49	48	P	49	52	59	60	62	66	69	70	70	70	61.2	23		
29	71	69	69	70	69	68	67	63	63	61	56	55	54	54	56	57	62	64	65	64	64	62	61	61	71	62.7	24		
30	62	64	65	64	67	65	66	66	67	65	60	58	55	51	48	47	53	64	66	67	68	69	70	70	70	62.3	24		
31	70	69	64	65	70	70	68	68	70	68	65	61	60	61	60	63	65	66	66	67	68	69	67	67	70	66.1	24		
HOURLY MAX	84	84	84	85	86	85	83	83	82	84	85	83	85	86	87	87	87	87	87	87	86	86	86	86	86				
HOURLY AVG	69.8	69.4	69.2	69.6	69.6	69.5	69.1	69.2	68.8	66.2	63.7	61.2	59.5	58.5	59.6	61.4	64.9	67.9	68.3	68.9	69.8	69.8	68.8	69.7					

STATUS FLAG CODES

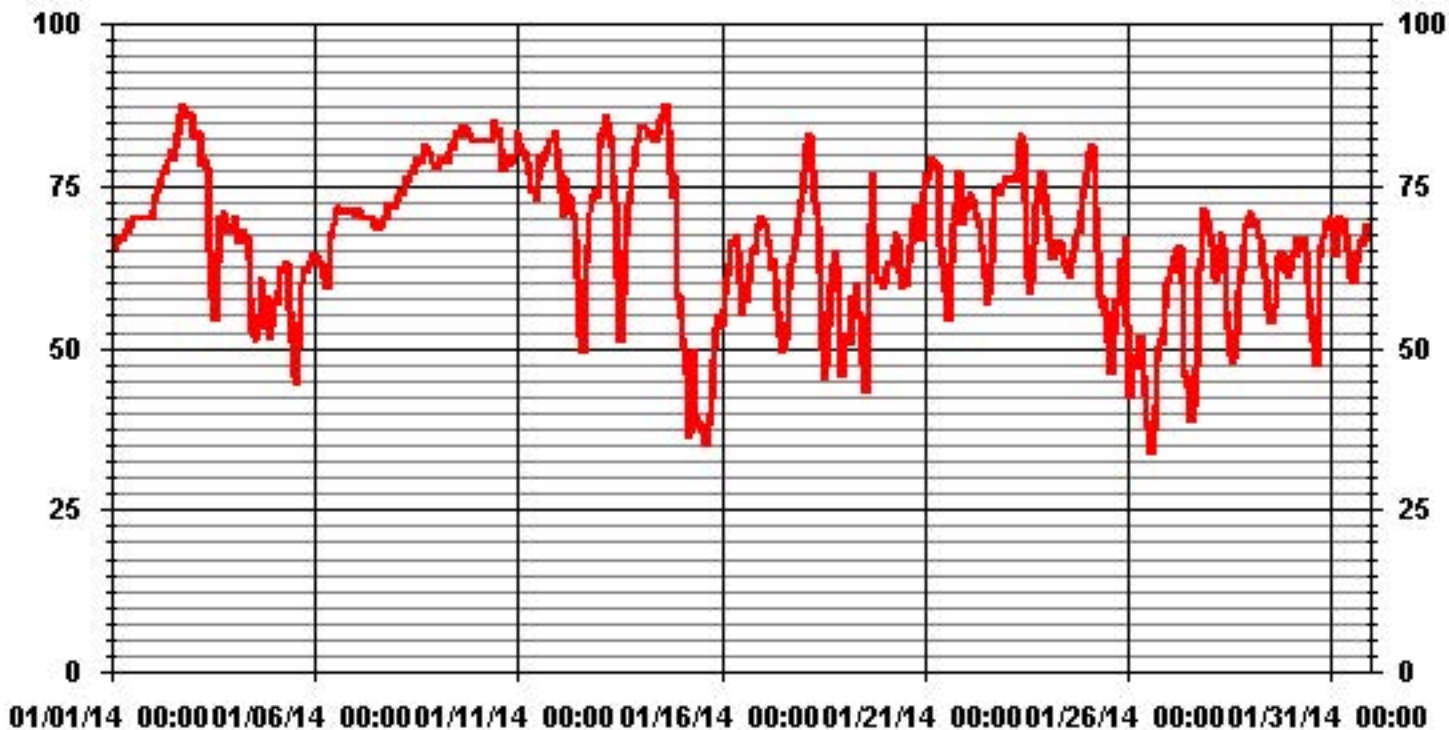
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	87 %	@ HOUR(S)	VAR	ON DAY(S)	2, 14
MAXIMUM 24-HR AVERAGE:	81.5 %			ON DAY(S)	9
			VAR-VARIOUS		
			OPERATIONAL TIME:		743 HRS
			AMD OPERATION UPTIME:		99.9 %
STANDARD DEVIATION:	11.36		MONTHLY AVERAGE:		66.78 %

01 Hour Averages



— LICA31 RH %FS

Precipitation

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

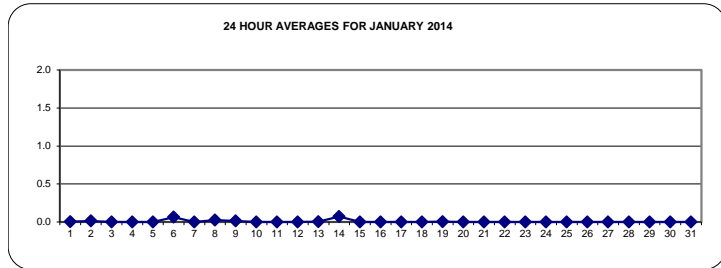
PRECIPITATION hourly averages in millimeter

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
1	0	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	0.0	24	
2	0	0.1	0.1	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	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	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	0.2	0.2	0.4	0.5	0.1	0	0	0	0	0.1	0	0	0	0	0	0	0	0.5	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	0	0	0	0	0	0	0	0	0.2	0.2	0.2	0	0	0	0	0	0	0	0	0	0	0	0.2	0.0	24
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.1	0	0	0	0	0	0	0	0	0.2	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	0.1	0	0.1	0.0	24
14	0.1	0	0	0	0	0	0	0	0	0	0	0.3	0.4	0.1	0.4	0	0	0	0	0.4	0	0	0	0	0	0.4	0.1	24
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0.1	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	0	0	0	0	0	0	0	0	0	0	0.0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	0	0	0	0	0	0	0	0	0.0	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
30	0	0	0	0	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	0	0	0	0	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	0.1	0.1	0	0	0	0	0.1	0.2	0.2	0.4	0.5	0.4	0.2	0.4	0.2	0.1	0.1	0	0.4	0	0	0	0.1				
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			

STATUS FLAG CODES

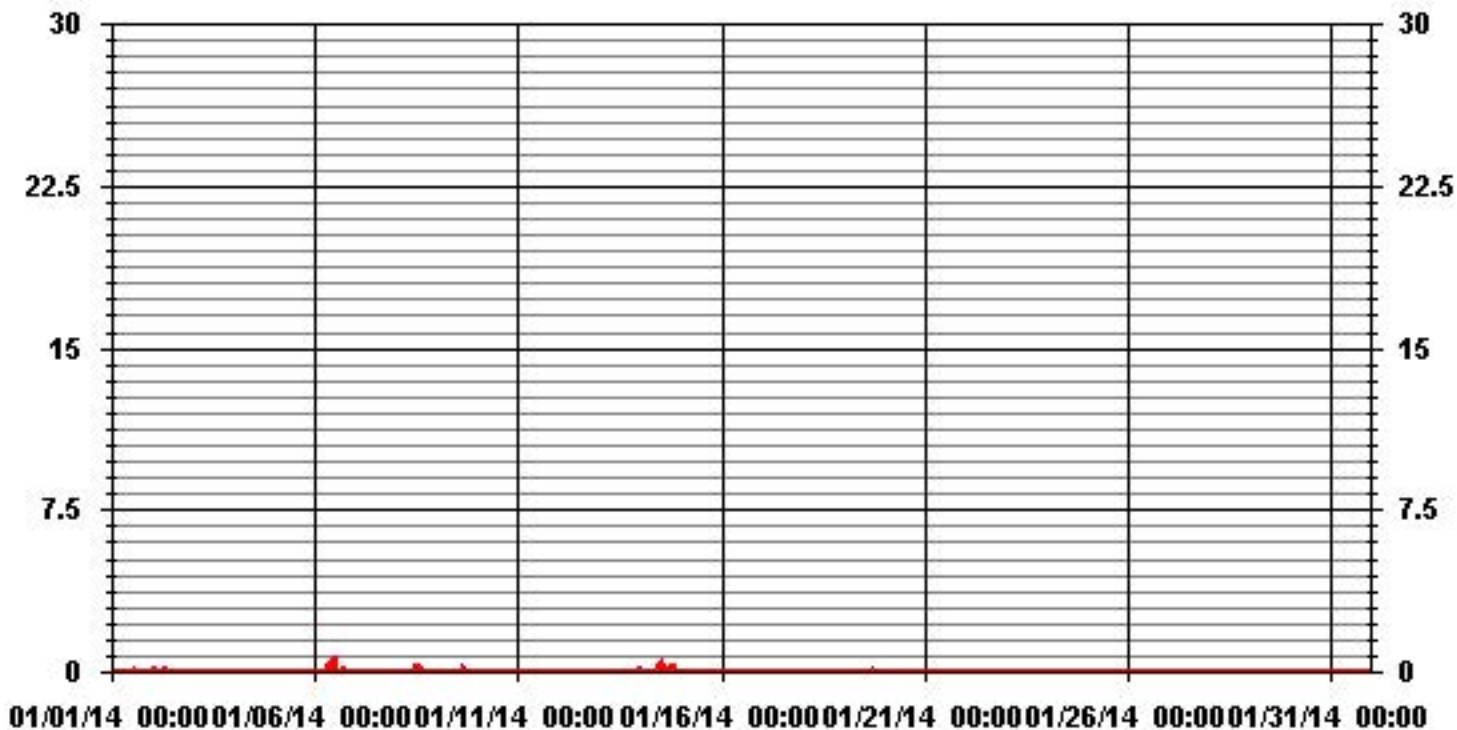
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	0.5	MM	@ HOUR(S)	11	ON DAY(S)	6
MAXIMUM 24-HR AVERAGE:	0.1	MM			ON DAY(S)	6, 14
					VAR-VARIOUS	
					OPERATIONAL TIME:	744 HRS
					AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.04				MONTHLY AVERAGE:	0.01 MM

01 Hour Averages



— LICA31 PRECIP MM

Vector Wind Speed

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

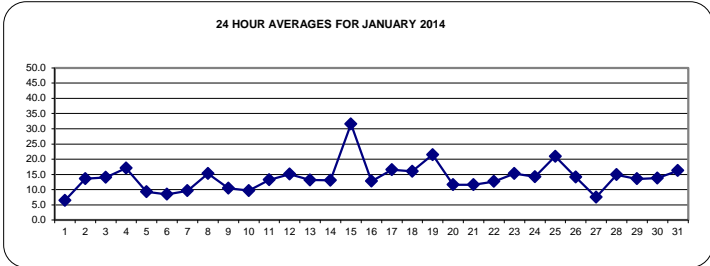
WIND SPEED (WS) hourly averages in km/hr

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																												
1	6.9	5.8	6	5.1	5.1	3.2	3.8	4.3	1.6	2.3	4.7	6.6	4.1	2.7	2.5	3.3	6.1	7.4	8.2	10.4	10.5	11.5	13.8	17.5	17.5	6.4	24	
2	14.4	16.3	16	18.4	18.2	18.9	17.9	18.7	20.2	20.2	16.4	15.3	13.9	11.3	12.4	11.7	11.2	8.6	9.1	7.9	8.8	7.3	5	7.7	20.2	13.6	24	
3	8.7	8	10.6	12	12.5	13.2	15.3	18.9	20.8	19.5	17.8	17.8	17.6	16.3	16.7	13.6	14	11.6	11.6	12.1	14.4	11.4	12	9.9	20.8	14.0	24	
4	10.3	12.6	15	14.5	9.3	9.8	11.3	14.4	13.2	14.4	17.5	22.4	22	20.6	21	20	18.5	22.2	25.1	21.8	19.7	20.3	17.4	15.1	25.1	17.0	24	
5	14.4	12.9	13.1	10.6	12.5	13	9.7	5.9	9.4	8.2	9.6	12.4	12.7	6.9	4.7	5.4	5.4	7.3	7.4	6.8	7.2	8.9	9.1	9.1	14.4	9.3	24	
6	9.7	7.3	6.6	8.9	8	9.9	10.5	12.9	11.6	12.4	13.8	12	12.1	8.7	7.3	7.7	8.2	6.9	7.3	4.1	2.2	4.9	4.9	5.9	13.8	8.5	24	
7	5.1	8.1	6.9	5.1	6.1	7.7	7.8	7.3	9.7	11.4	12.8	9.8	8.8	8	9.6	9.9	12.8	11.1	8.4	9.6	12.8	13	14.1	14.5	14.5	9.6	24	
8	15.5	16.4	16.8	17.4	17.8	20.9	17.9	16.6	17.2	18.7	20.7	21.7	20.8	19	15.3	13.1	10.4	11.6	12.6	8.5	9.1	10.6	10.1	8.5	21.7	15.3	24	
9	8.8	9.4	9.9	10.2	8.7	7.4	7.8	6.7	8.7	10.7	12.3	13.4	15.7	15	13	13	10	9.9	11	12	9.4	9.6	8.8	9.1	15.7	10.4	24	
10	9.2	8.3	7.8	7.8	8.1	8.8	7.4	9.1	10.2	10.6	10.5	9.5	8	8.7	8.2	12.8	12.1	11.2	13.3	12.2	12.5	8.9	6.5	10.5	13.3	9.7	24	
11	10	10.1	11.6	12	13.5	14	13.8	13.2	15.6	18.9	22	22.8	21.4	20.9	16.2	13.9	6	4.5	6.8	5.3	6.5	10.2	12.8	14.4	22.8	13.2	24	
12	15.2	19.3	20.8	19.7	19.7	19.3	17.1	15.7	15.9	16	14	15	14.4	13.1	10	7.5	10.1	15	15.5	13.5	13	12	14.2	16.8	20.8	15.1	24	
13	14.1	14.8	12.6	11.4	10.7	12.2	11.4	15.9	17.8	14.8	19.5	20.5	16.4	15.7	18	16.7	13.6	10.1	9.6	8.8	9	8.2	7	6.8	20.5	13.2	24	
14	7.8	8.8	10.8	9.9	8	8.6	7.9	6.8	7.8	9.7	9.1	9.3	12.7	13.3	15.5	14.6	12.4	12.6	15.4	17.1	9.4	20.2	32.2	32.6	32.6	13.0	24	
15	37.4	36.3	37.1	33.6	39.9	37.4	40.3	30.8	36.2	40.3	39.5	40.5	34.2	38.3	34.9	33.8	26.8	22.8	21.5	20.7	20.8	18.1	19	17	40.5	31.6	24	
16	15.4	12.4	12.4	9.7	11.4	12.5	12.5	12	11.3	12.6	12	13.1	12.1	11	12.5	13.6	15.8	16.6	15.6	12.8	11.3	11.6	13.9	12.6	16.6	12.8	24	
17	15.3	13	11.2	17.3	12.1	13.1	12.8	15.9	17.5	15.3	21.2	25.4	23.9	23.7	24.1	21.5	17.1	15.3	15.6	15.6	12.6	13.3	12.2	12.4	25.4	16.6	24	
18	10.7	9.9	9.9	12.3	12.7	12.3	15.9	19.7	16.8	15	18.4	18.8	20.5	17.7	17.5	18.7	19.3	19.8	14.6	14.4	15.1	13.4	20.3	20.5	20.5	16.0	24	
19	16	20	22.3	22.5	22	23.5	18.3	14.2	17.1	17.6	17.8	20.3	22.9	27.1	31.4	25.9	25.2	30.7	31.5	25.1	22.3	18.3	13	9.5	31.5	21.4	24	
20	7.3	6.2	5.1	5.7	2.9	7.4	10	12.2	12	12.9	13.9	16.5	17.2	14.4	13.7	12.3	13	14.7	16.5	13	12.4	13.1	13.9	11.7	17.2	11.6	24	
21	10.7	14.1	13.8	11.7	10.1	11.5	9.4	7	7.2	8	9.4	11.3	18.7	17	13.2	11.3	11.9	11.4	11.7	9.7	8.5	14.1	14.2	18.7	11.6	24		
22	14.3	12.2	12.3	11.7	11.2	10.4	9.3	8.4	11.2	11.1	12.5	11.1	10.2	11.3	12.6	13.2	15.1	15.3	16.1	14.6	14.1	17.6	15.8	12.7	17.6	12.7	24	
23	14.5	16.7	16.6	16.2	14.9	13	12.9	15.5	17.6	19.4	16.7	19.7	20.6	17.9	13.7	17	14.4	12.1	11.2	11.5	12.6	13.1	13.9	15	20.6	15.3	24	
24	17.3	16.8	16.1	18.5	20.2	19.2	18.3	19.5	17.7	17.6	17.3	16.9	16.4	14.6	14	10.6	9.3	10.1	8.7	8.5	6.9	7.1	8.7	10.4	20.2	14.2	24	
25	11.1	11.8	13.2	13.4	16.5	17	15.3	18	18.1	19.4	23.7	21.7	24.2	27.1	26.2	25.6	23.8	20	20	20.6	22.9	31.6	35	26.2	35.0	20.9	24	
26	31.9	34.5	34.1	28.4	28.7	17.2	17.1	16.4	13.4	12.9	14.6	13.1	11.3	8.5	9.1	9.9	10.2	8.4	6.9	4.6	2.3	0.8	1.9	3.1	34.5	14.1	24	
27	2.1	3.9	5.3	4.6	6.7	7.7	7.5	7.2	8	3.1	1.9	4.7	6.8	8.1	6.4	6.8	9.1	7.6	10.8	12	12.1	11.9	12.9	13.5	13.5	7.5	24	
28	15.7	14.9	14.2	15.3	15.3	17	17.4	16.1	17.5	18	15.7	13.4	11.2	12.8	P	8.9	9.4	10.6	9.6	14.4	18.5	19.7	19.1	18	19.7	14.9	23	
29	14.8	17.3	14.1	12.9	15.6	13.9	12.6	10.7	9	9.8	8.3	8.3	10.6	9.3	9.7	12.1	13.9	14.3	15.7	19.8	15.8	21.7	17.6	17	21.7	13.5	24	
30	13.8	12.7	13.1	11.4	12.6	14.2	14.4	15.2	12.7	15.3	14.4	15.1	12.4	12.6	9.6	8.9	10.1	15.8	16.7	13.7	16.5	17.6	14.9	16.5	17.6	13.8	24	
31	16.4	12.3	11.8	16.2	17.8	16.2	21	19	18.7	20.2	20.2	18.7	16.5	15.7	16.5	17.1	16.6	17.6	14.1	11.7	12.7	14	15.2	13.2	21.0	16.2	24	
HOURLY MAX	37.4	36.3	37.1	33.6	39.9	37.4	40.3	30.8	36.2	40.3	39.5	40.5	34.2	38.3	34.9	33.8	26.8	30.7	31.5	25.1	22.9	31.6	35.0	32.6				
HOURLY AVG	13.4	13.6	13.8	13.7	13.8	13.9	13.7	13.7	14.2	14.7	15.4	16.0	15.8	15.1	14.5	13.9	13.3	13.3	13.5	12.7	12.4	13.2	13.8	13.6				

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

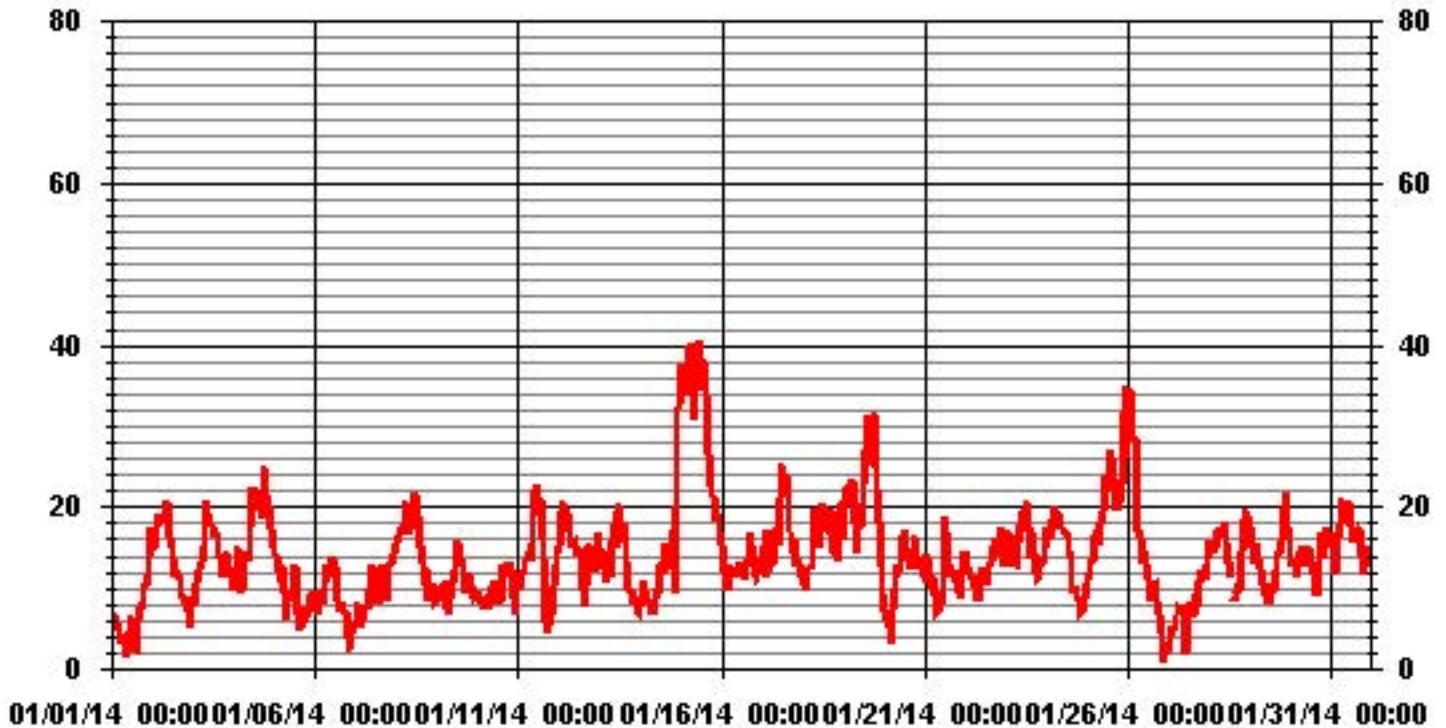
LAST CALIBRATION:	June 12, 2012
DECLINATION:	19 DEGREE FROM MAGNETIC NORTH



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	743					
MAXIMUM 1-HR AVERAGE:	40.5	KPH	@ HOUR(S)	11	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	31.6	KPH			ON DAY(S)	15
					VAR-VARIOUS	
MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	743	HRS	
			AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	6.33		MONTHLY AVERAGE:	13.96	KPH	

01 Hour Averages



Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOURLY MAX	HOURLY AVG	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																												
1		15	42.1	75.4	85.7	31	71.6	25.9	46.5	46.3	75.6	17.8	11.4	12.3	14.1	23.9	29	20	16.5	20.4	22.8	22.8	25	31.8	36.2	86	34.1	24
2		30.5	32.5	34.2	38.8	37.7	44.7	39.9	40.6	35.5	37.3	26.5	25.9	24.1	17.6	17.3	16.2	14.5	15.8	21.5	15.2	15.2	15.8	14	17.6	45	26.2	24
3		18	16.9	23.7	25.5	27.4	35.3	37.9	44.1	46.2	49.1	40.6	45.6	46.5	37.5	36	31.8	34	30.3	23.9	28.1	38.6	28.3	25.2	25	49	33.1	24
4		26.8	24.6	45.2	40.6	21.9	23.3	25.9	30.5	28.8	30.8	43.2	47.8	44.5	43.2	47.8	43.7	40.6	66.4	57.9	56.6	54.1	54.2	53.9	38.4	66	41.3	24
5		31.2	25.9	27	21.3	22.2	26.6	19.1	79.8	31.8	17.6	20.2	26.3	28.8	18.2	15.2	12.1	12.1	15.4	20.6	16.5	15.8	15.8	17.2	19.3	80	23.2	24
6		23.5	18.2	18.7	17.8	18.9	19.6	23.1	28.5	25.9	25	30.5	26.1	31.6	20.4	15	23.7	18.9	18.9	20.9	84.6	80.2	55.2	13.4	21.1	85	28.3	24
7		35.8	19.5	13.9	20	13.8	18.5	16.7	20.4	20.6	26.1	28.3	21.3	21.7	18	22.8	22.4	25.5	22.2	18.7	28.1	29.2	28.7	30.3	32.5	36	23.1	24
8		34.4	33.2	35.3	34.4	39.1	46	38.6	35.5	33.8	35.7	40.3	35.3	30.7	30.7	24.8	20.4	18.2	18.9	20.2	17.6	17.8	18.9	18.2	16.7	46	28.9	24
9		17.3	17.3	22.9	22.2	21.3	19.8	17.8	14.3	17.1	22.8	26.7	28.1	26.3	26.7	20.6	16.5	18	16.5	16.1	15.6	16	15.2	16.5	28	19.7	24	
10		13.8	11.7	12.3	12.1	11.9	14.9	21.5	14.3	14.7	15.6	16.7	18	13.2	12.7	17.3	35.1	26.3	22.1	25.7	28.1	27.2	20.2	13	16.2	35	18.1	24
11		14.1	18.9	23	25.4	26.8	25.4	30.5	28.1	35.6	38.1	52.1	54.8	37.3	44.5	36.8	30.7	22.1	16	15.2	14.3	12.5	27.8	29.4	33.8	55	28.9	24
12		29.2	49.1	52.6	44.3	48	42.1	44.3	35.3	34.2	35.8	34.9	32.2	28.5	28.3	22.6	17.8	17.1	21.9	27.8	26.1	25.9	27	28.7	33.2	53	32.8	24
13		31.4	29.8	22.4	18.7	20.4	22.8	22.4	35.1	37.7	33.8	40.1	58.9	36.6	43.4	37.9	37.3	35.5	30.5	21.1	16.5	17.1	18.4	14.5	13.6	59	29.0	24
14		12.7	16.7	20.7	19.5	17.1	12.7	11.9	17.1	16.5	21.1	15.4	18.5	22.8	24.6	30.3	27.4	24.1	26.5	36.8	33.6	23.7	46.2	69.2	51.5	69	25.7	24
15		66.1	64.1	79.5	87.8	105.3	89.8	105.9	80.3	97.2	92.6	91.7	104.4	89.8	103.1	80.2	82.1	65.2	59.1	53	44.9	46	38.1	38.8	37	106	75.1	24
16		33.5	25.4	24.8	18	16	18	18	15.8	15.4	16.5	16.9	21.3	20	19.3	20.2	20	23.5	23.5	21.7	18.7	15.6	15.8	18.7	21.3	34	19.9	24
17		24.1	23	21.7	35.3	22.1	27.4	24.3	37.2	35.1	33.5	49.5	58.9	58.2	50.6	49.3	47.1	36.4	32.4	31.8	32.9	25.4	23.9	21.7	19.7	59	34.2	24
18		18.4	17.2	14.3	16.2	18	23.9	24.4	29.4	30.5	22.8	25	30.5	34	41	25.4	26.7	39.9	40.3	23.2	26.1	25	25.8	48.2	48.2	48	28.1	24
19		36.4	50.4	48.8	62.6	51.9	55.1	46.2	30	41.6	42.7	46	50	51.9	81.4	76.2	68.1	67.2	70.7	78.6	82.8	57.2	50.4	38.8	24.6	83	54.6	24
20		21.1	16.3	11.4	70.5	15.6	15	18.9	21.1	20.2	22.2	28.7	31.8	29	28.3	27.4	26.7	25.7	27.4	28.1	17.6	17.8	23.5	28.5	30.7	71	25.1	24
21		21.9	29.6	27.4	22.4	21.7	24.1	20.4	16.9	14.7	18	19.3	33.8	39.7	39.2	29.8	23.7	28.1	Y	25	25.6	19.5	28.7	34.7	32.2	40	25.9	23
22		30.5	27.2	23.9	19.5	20.2	18.2	23.5	19.1	23.3	26.8	27.8	25.2	25.5	25.9	26.8	31.4	33.6	33.4	34.4	29.2	25.7	34	31.9	24.1	34	26.7	24
23		25.4	26.1	27	22.2	22.4	16.2	15.8	21.3	23.5	29.2	30.3	41.9	46.7	38.6	34.6	36.8	32.2	25.6	23.9	19.8	18.2	20.6	19.7	23.2	47	26.7	24
24		30.5	33.3	34.6	42.5	39.7	42.7	40.8	42.8	41	36.1	36.1	33.7	40.1	35.3	36.6	21.9	17.1	19.1	18.2	15.8	12.7	11.6	13.2	15.4	43	29.6	24
25		17.5	16.7	18.9	21.3	24.1	30.9	29.2	39.7	40.1	43.2	50.4	46.7	54.3	56.3	63.9	58.5	54.3	48.6	43.9	50.6	63.3	86.7	86.9	77.7	87	46.8	24
26		77.7	85.8	79.9	72.3	72.5	48.4	47.8	45.6	29.8	34.7	33.6	31.2	28.1	23.3	21.5	25.9	27	23.3	19.5	14.3	20.6	51.1	25.7	40.8	86	40.9	24
27		65.5	33.4	11.9	28.5	10.6	12.1	15.6	20.4	29.2	19.8	53	11.9	12.3	14.1	13.2	14.3	16.3	16.3	18.1	18.7	17.8	18.1	23.5	23.9	66	21.6	24
28		27	25.9	26.8	30.3	28.5	31.6	30.7	25.2	28.5	28.1	22.2	20	16	17.8	P	12.8	20.2	23.7	24.1	34.3	43.2	47.5	49.9	49.5	50	28.9	23
29		36.8	47.1	34.9	32.1	44.9	35.5	30.9	28.1	22.8	24.1	21.3	26.1	25.2	23.9	25	31.4	33.6	36.4	46.7	53.9	45.9	52.6	43	38.8	54	35.0	24
30		43.2	33.2	34.7	28.7	31	39.9	33.6	39.7	33.4	33.6	32.7	32.1	30.5	30.7	20.9	19.5	21.3	24.3	28.3	23	22	25.9	21.7	23.1	43	29.5	24
31		23	19.1	25.3	37.3	40.8	35.5	52.4	45.8	46.7	43.4	42.7	45.4	42.5	42.6	38.8	36.8	37.9	43.2	38.6	27.6	28.3	39.7	39.5	32.5	52	37.7	24
HOURLY MAX		78	86	80	88	105	90	106	80	97	93	92	104	90	103	80	82	67	71	79	85	80	87	87	78			
HOURLY AVG		30.1	30.0	31.4	34.6	30.4	31.9	30.8	33.2	32.2	33.3	34.2	35.3	33.8	33.9	31.9	30.7	29.2	29.6	29.2	30.3	29.0	32.0	30.9	30.1			

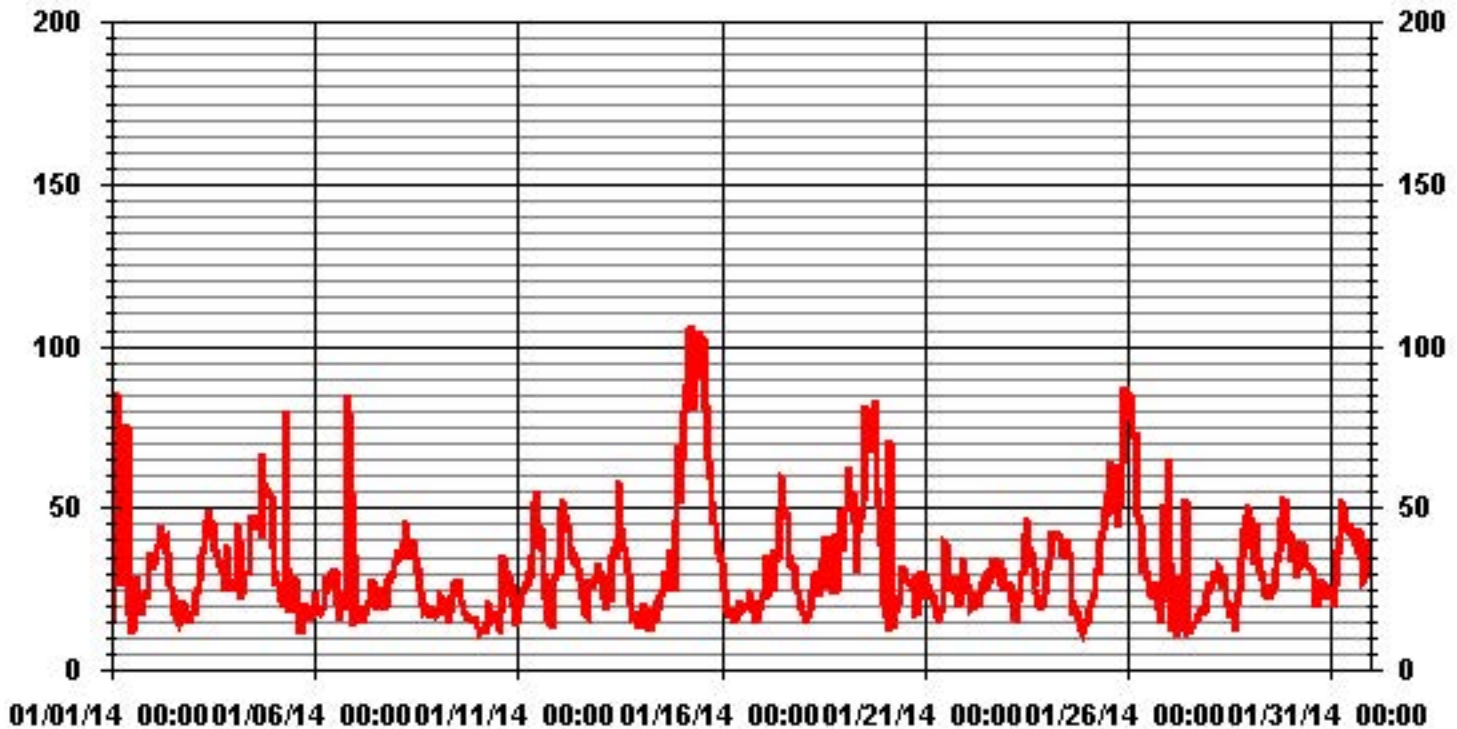
STATUS FLAG CODES

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 VALUE:	106	KPH	@ HOUR(S)	6	ON DAY(S)	15
					VAR-VARIOUS	
OPERATIONAL TIME:				742	HRS	

01 Hour Averages



LICA31
WSP / WDR Joint Frequency Distribution (Percent)

January 2014

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
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	.53	.26	.80	.13	.00	.13	.13	.13	.40	.80	.94	.53	.13	.26	.26	5.51
< 12.0	1.61	1.07	.53	.94	.94	.67	1.21	1.74	1.07	2.82	4.71	3.76	2.15	3.23	2.82	3.36	32.70
< 20.0	4.44	.26	.00	.00	.80	.13	.26	2.28	2.42	4.84	6.86	4.44	4.17	3.76	8.34	5.78	48.85
< 29.0	1.21	.00	.00	.00	.00	.00	.53	.00	.00	.26	.67	.00	.40	1.34	3.36	1.48	9.28
< 39.0	.67	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.53	.13	.40	.80	.26	2.82
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.67	.00	.67
Totals	7.94	1.88	.80	1.74	1.88	.80	2.15	4.17	3.63	8.34	13.05	9.69	7.40	8.88	16.28	11.17	

Calm : .13 %

Total # Operational Hours : 743

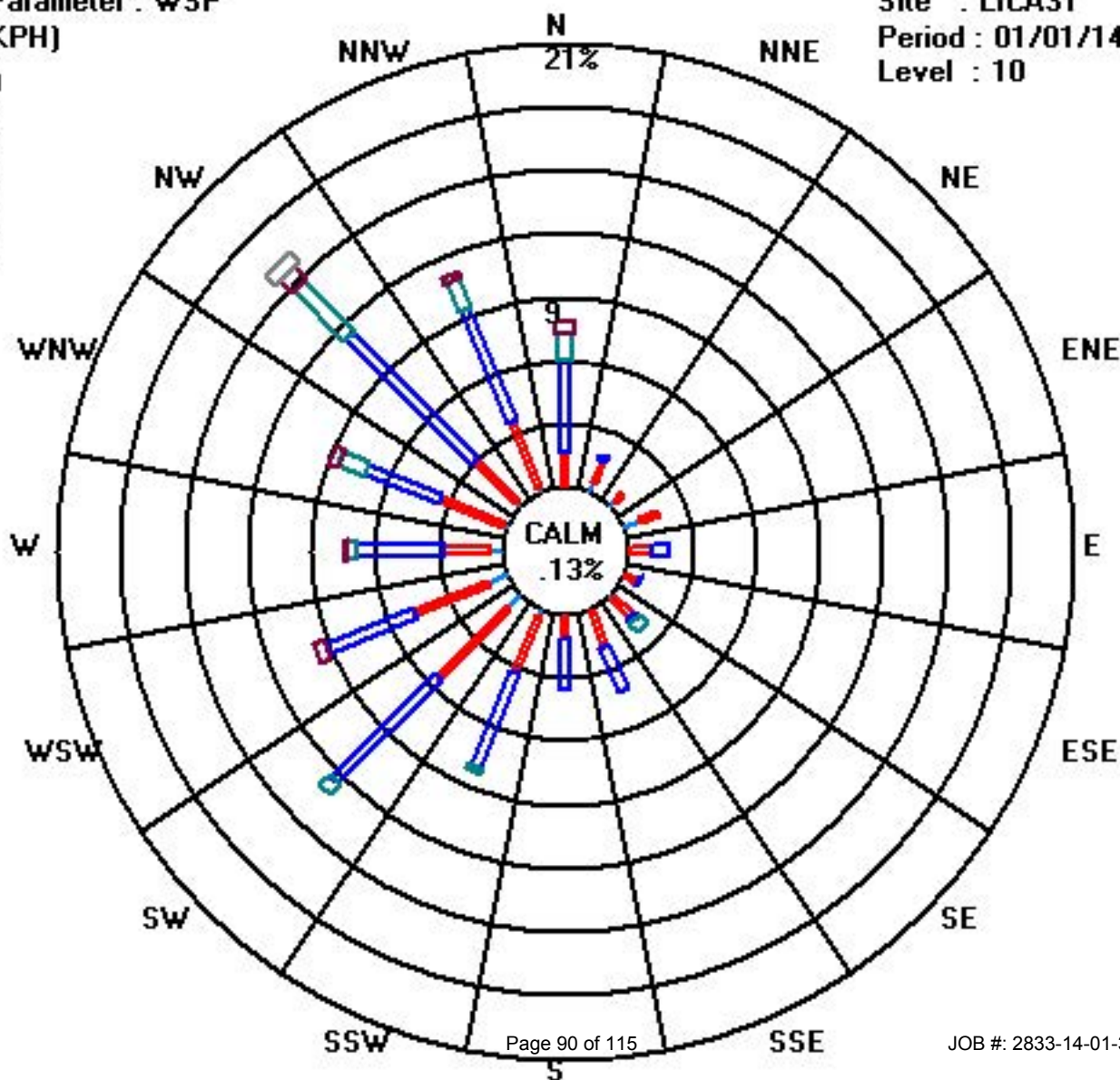
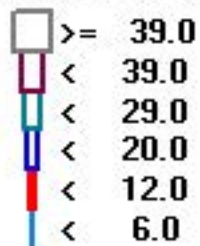
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0		4	2	6	1		1	1	1	3	6	7	4	1	2	2	41
< 12.0	12	8	4	7	7	5	9	13	8	21	35	28	16	24	21	25	243
< 20.0	33	2			6	1	2	17	18	36	51	33	31	28	62	43	363
< 29.0	9						4			2	5		3	10	25	11	69
< 39.0	5											4	1	3	6	2	21
>= 39.0															5		5
Totals	59	14	6	13	14	6	16	31	27	62	97	72	55	66	121	83	

Calm : .13 %

Total # Operational Hours : 743

Class Limits (KPH)



Vector Wind Direction

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

WIND DIRECTION (WD) hourly averages in degrees

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR		
DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	AVG.	QUADRANT	RDGS.	
1	276	274	237	259	261	238	244	250	217	203	222	236	234	213	222	137	154	163	155	167	178	177	180	176	276	W	24	
2	171	169	164	167	182	184	196	204	208	216	217	216	221	235	236	236	263	307	349	330	329	325	330	353	353	N	24	
3	3	348	344	327	336	346	345	357	3	359	358	353	351	351	334	348	333	340	334	336	341	335	333	318	359	N	24	
4	307	314	327	326	311	301	300	310	315	310	312	314	308	305	307	316	324	347	347	354	2	355	344	333	355	N	24	
5	328	329	321	313	314	309	287	270	272	263	268	273	275	297	242	228	218	204	192	199	201	207	201	194	329	NNW	24	
6	181	167	143	113	138	142	152	147	143	147	160	161	165	156	133	85	71	68	79	64	83	66	51	62	181	S	24	
7	71	56	48	64	56	67	63	67	76	80	95	86	86	106	99	98	97	108	125	153	162	168	161	160	168	SSE	24	
8	167	174	169	174	183	193	205	199	209	210	214	228	233	229	234	233	241	247	250	244	226	229	222	216	250	WSW	24	
9	216	219	211	211	200	185	186	199	173	194	211	220	229	230	233	239	231	225	230	231	217	207	215	223	239	WSW	24	
10	233	217	218	222	237	250	223	239	249	257	266	248	249	248	281	307	315	292	281	307	305	296	244	232	315	NW	24	
11	222	199	190	184	185	180	176	167	156	158	133	132	124	124	124	138	131	13	28	27	237	295	300	300	300	WNW	24	
12	283	281	294	311	310	309	319	319	317	322	324	312	301	304	296	253	220	229	213	206	195	194	189	192	324	NW	24	
13	197	220	233	236	261	273	292	307	315	313	313	320	321	314	310	305	312	307	289	315	308	295	287	299	321	NW	24	
14	273	287	308	301	282	237	231	220	195	200	208	204	213	211	207	213	210	211	218	237	215	230	256	249	308	NW	24	
15	250	251	266	284	306	307	303	297	307	306	309	314	321	319	319	318	314	314	310	310	310	313	318	319	321	NW	24	
16	317	309	303	271	257	253	259	259	239	252	255	244	246	256	258	260	264	263	250	247	232	231	224	317	NW	24		
17	235	243	252	269	279	303	294	296	296	287	303	312	310	306	306	306	303	303	304	296	286	295	286	312	NW	24		
18	276	246	238	236	227	226	235	246	259	255	257	256	262	263	257	255	267	271	248	259	271	265	285	274	285	WNW	24	
19	275	287	289	291	307	320	296	275	271	287	296	291	288	295	306	310	319	349	354	8	7	10	10	12	354	N	24	
20	1	24	42	72	195	192	195	206	209	211	208	214	215	214	213	204	202	219	231	242	262	288	303	307	307	NW	24	
21	300	314	323	330	322	328	335	332	329	297	292	317	331	336	344	330	344	337	16	29	46	64	84	89	344	NNW	24	
22	105	96	96	106	110	129	142	149	152	154	165	183	158	163	164	182	176	185	199	204	211	218	218	214	218	SW	24	
23	217	221	222	228	232	231	233	248	259	256	259	265	277	275	301	307	305	302	299	278	266	263	255	254	307	NW	24	
24	267	290	296	307	308	308	307	307	308	305	309	309	312	314	300	303	307	316	308	294	262	256	247	316	316	NW	24	
25	248	246	234	242	258	272	290	309	308	315	316	310	303	310	326	334	332	332	329	335	339	341	343	359	359	N	24	
26	3	354	359	3	1	353	357	3	14	8	358	356	360	356	328	338	343	354	9	29	22	79	244	154	360	N	24	
27	180	291	322	329	317	319	327	341	348	321	255	240	235	259	249	234	229	205	217	221	224	221	212	211	348	NNW	24	
28	210	213	206	204	208	214	218	216	221	232	236	234	234	232	P	234	270	320	343	342	345	340	351	354	354	N	23	
29	352	2	353	346	355	9	17	19	3	358	16	10	19	358	339	350	355	355	3	8	9	4	7	3	358	N	24	
30	2	360	354	341	336	334	328	332	324	320	314	313	306	292	304	282	257	248	251	254	240	234	237	235	360	N	24	
31	244	258	307	342	344	342	343	345	337	339	340	339	335	337	336	337	338	342	347	343	339	345	343	346	347	NNW	24	

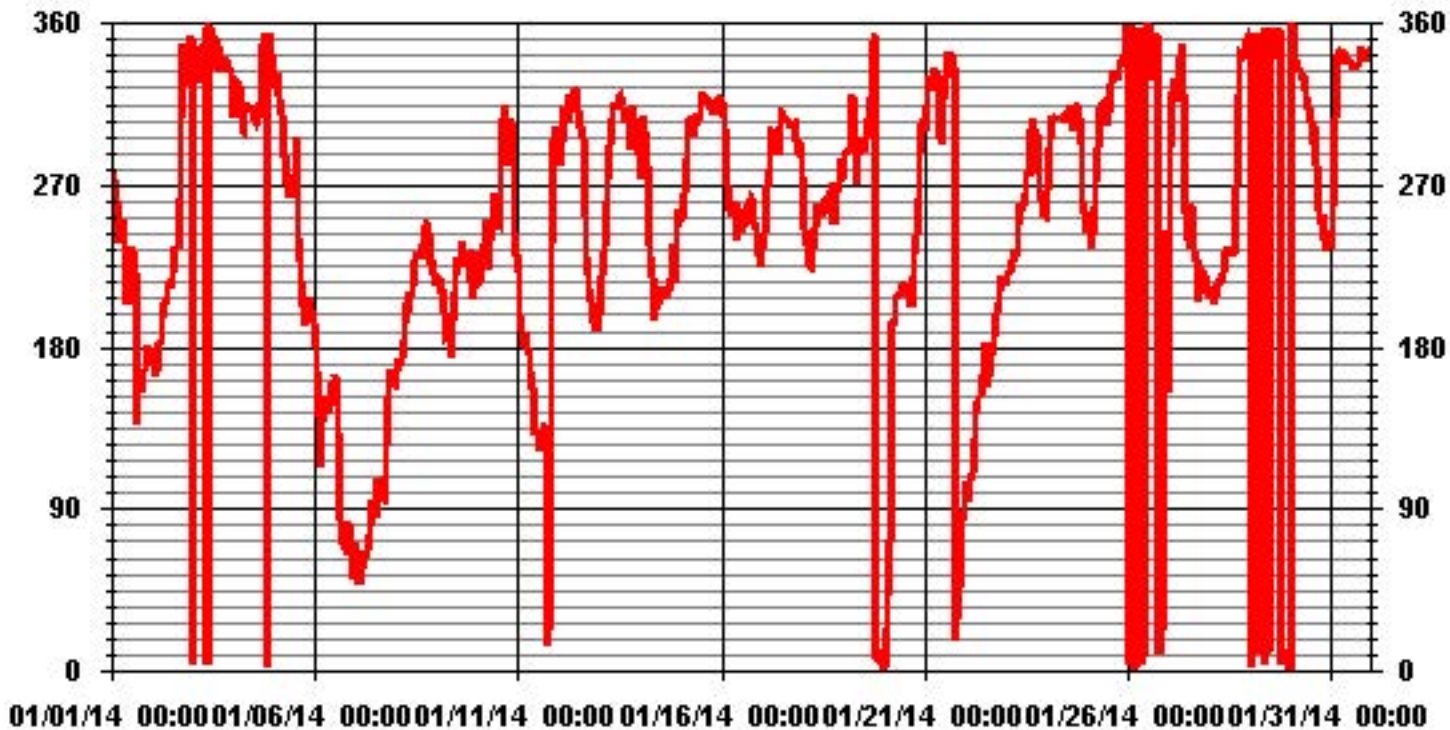
STATUS FLAG CODES

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

LAST CALIBRATION:	June 12, 2012
DECLINATION :	19 DEGREE FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	743 HRS
STANDARD DEVIATION:	88.58	AMD OPERATION UPTIME:	99.9 %
		MONTHLY AVERAGE:	286 DEG

01 Hour Averages



Standard Deviation Wind Direction

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	
	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	
DAY																										
1		10	23	14	19	21	31	19	16	51	36	17	8	14	28	31	29	15	11	13	12	12	12	11	11	
2		12	12	12	12	12	12	13	12	10	9	9	9	7	7	4	4	4	11	13	11	10	12	11	8	
3		7	8	8	10	12	14	14	17	15	15	14	18	15	15	14	15	13	13	11	13	14	15	12	13	
4		12	12	13	14	13	12	13	14	13	14	16	15	15	16	15	14	14	17	15	17	16	14	15	13	
5		14	13	13	12	12	13	11	34	20	8	11	12	12	19	19	9	6	9	11	12	12	8	10	11	
6		12	15	13	10	13	12	13	14	13	12	13	13	15	16	18	9	12	12	25	42	17	10	12		
7		17	12	12	15	13	12	12	12	12	11	11	12	11	11	10	9	8	9	11	12	12	13	13	13	
8		13	12	12	11	12	11	12	12	11	11	10	8	8	7	7	6	7	6	7	8	7	7	8	9	
9		9	9	12	13	13	17	15	14	13	13	12	11	9	9	7	8	9	7	6	5	8	10	9	7	
10		6	6	7	8	7	6	16	6	6	5	7	6	7	7	14	17	13	11	9	13	12	13	10	5	
11		7	6	9	9	8	7	10	11	13	13	13	13	12	12	13	12	27	19	12	24	31	13	14	13	
12		13	14	15	16	15	15	15	14	13	14	14	15	18	17	13	10	6	9	10	11	9	9	9	11	
13		11	13	7	7	8	10	12	13	13	14	14	14	15	15	14	15	15	12	12	13	9	8	11		
14		9	11	12	11	11	5	6	10	9	10	10	10	10	11	11	12	11	11	13	14	31	8	7	7	
15		7	8	9	14	15	16	15	19	16	16	15	15	15	15	14	15	15	14	14	14	14	14	13	13	
16		13	14	13	8	6	7	4	4	5	4	5	6	8	8	7	6	5	5	5	5	5	5	5	6	
17		7	8	9	7	10	13	13	13	13	12	15	15	15	14	14	15	14	14	13	14	13	10	11	9	
18		6	6	7	4	4	7	7	6	6	5	4	5	6	6	6	5	6	6	5	10	6	6	13	11	
19		10	14	14	15	15	17	15	10	10	13	15	16	15	16	16	16	22	15	15	16	15	19	16	14	
20		19	12	10	29	24	8	8	8	9	8	11	10	9	10	10	11	11	9	6	4	6	11	13	13	
21		13	13	11	11	12	12	11	11	12	13	14	13	13	15	12	13	11	14	10	10	12	13	11		
22		10	9	9	7	7	12	13	10	11	13	13	14	14	15	13	12	12	11	12	12	11	10	10	10	
23		10	7	7	6	5	4	4	3	4	5	5	6	10	9	16	14	14	14	13	8	5	5	6	5	
24		8	13	13	15	14	14	14	14	15	14	15	14	14	15	15	14	13	12	12	11	10	5	4	5	
25		5	5	4	4	4	7	11	14	14	13	13	14	15	15	14	14	13	14	14	14	14	15	20		
26		15	15	15	19	15	16	18	15	14	18	16	16	20	20	16	16	17	16	17	16	27	53	41	30	
27		18	16	6	7	7	7	9	11	11	18	48	9	8	8	12	12	7	10	8	6	5	5	9	9	
28		9	9	10	10	11	9	9	8	7	5	5	9	7	6	P	8	10	12	12	14	14	13	14	16	
29		18	15	15	16	15	15	15	15	16	14	19	18	16	19	14	16	15	17	15	16	18	14	18	15	
30		15	18	14	14	14	14	15	14	14	15	16	17	18	16	19	15	12	6	6	5	6	6	5	5	
31		5	6	13	13	13	14	16	15	14	15	13	14	16	15	14	13	15	14	14	14	14	14	15	18	

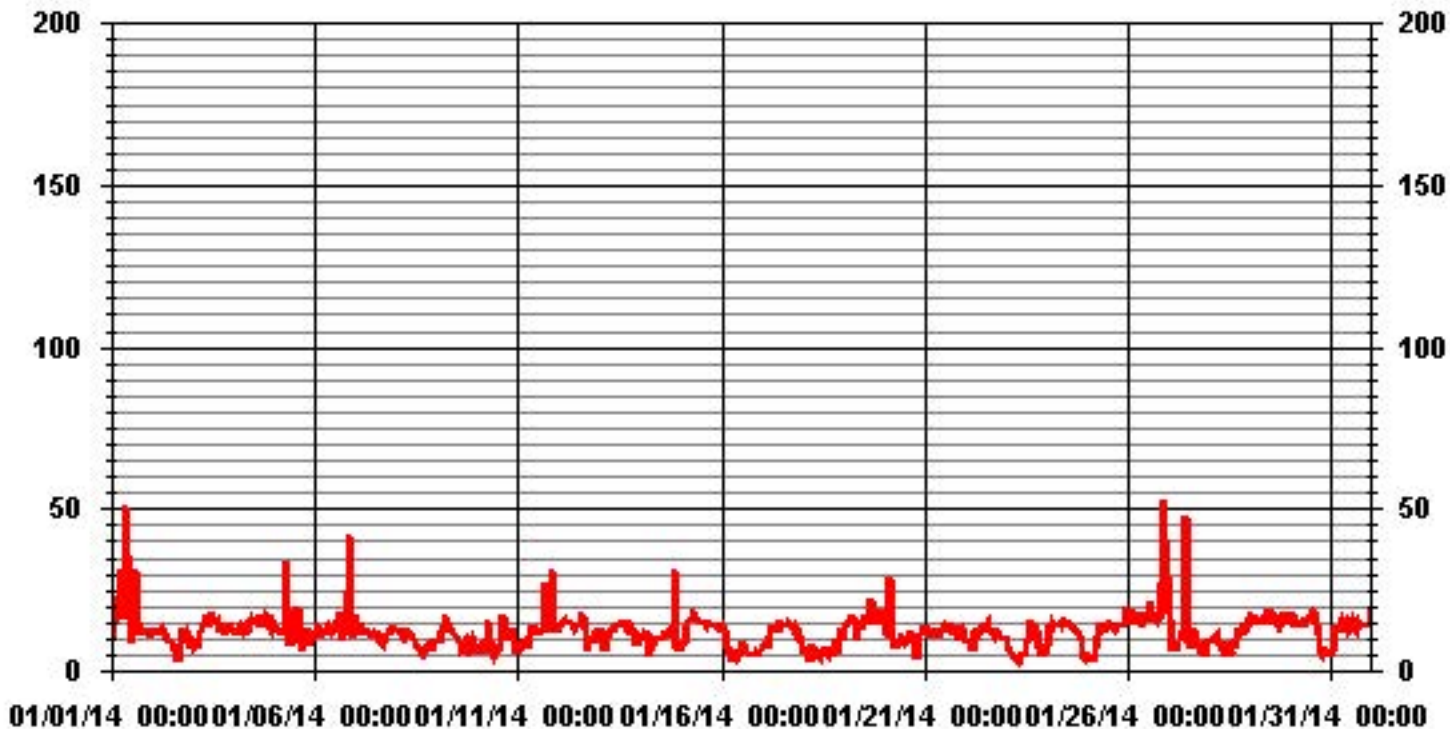
STATUS FLAG CODES

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: 743 HRS

01 Hour Averages



Calibration Reports

Sulphur Dioxide

SO2 Calibration Report

Station Information

Calibration Date	January 20, 2014	Previous Calibration	December 18, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	ST. LINA		
Start Time (MST)	14:20	End Time (MST)	14:00
Reason:	PR Calibration		
Barometric Pressure	na atm	Station Temperature	na Deg C
Cal Gas	49.7 ppm	Gas Cyl. #	BAL3165
		Cal Gas Expiry date	29/12/2016
DAS Output Voltage	0 - 1 Volts	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 :	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	0 - 1000 ppb	
Sample Flow / Box Temp	534 ccm 30.9 Deg C	534 ccm 30.9 Deg C	
HVPS / Lamp Setting	560 1844(100.5%)	560 1844(100.5%)	
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	129.8 1.038	130.4 1.013	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	1	0.0000
4998	0	0	0	0.0000
4996	80.0	783	801	0.9780
4996	80.0	783	785	0.9976
4993	40.0	395	392	1.0087
4995	20.0	198	197	1.0071
4995	0	0	0	0.0000
Sum of Least Squares				1.0012
New Correction Factor				1.0000

IZS alibration Data

Before Calibration		After Calibration	
Auto Zero	0.0	Auto Zero	0.0
Auto Span	234.0	Auto Span	236.8
Sample Lines Connected		Sample Lines Connected	YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9780
Percent Change:	0.0%

Notes:

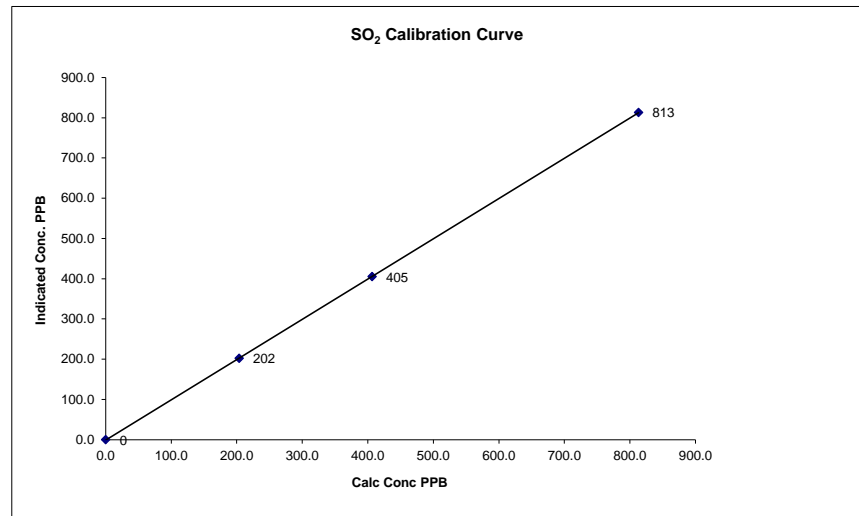
Change sample filter.

Calibration Performed by: Kevin Hope/Tom Bourque

SO2 Calibration Curve

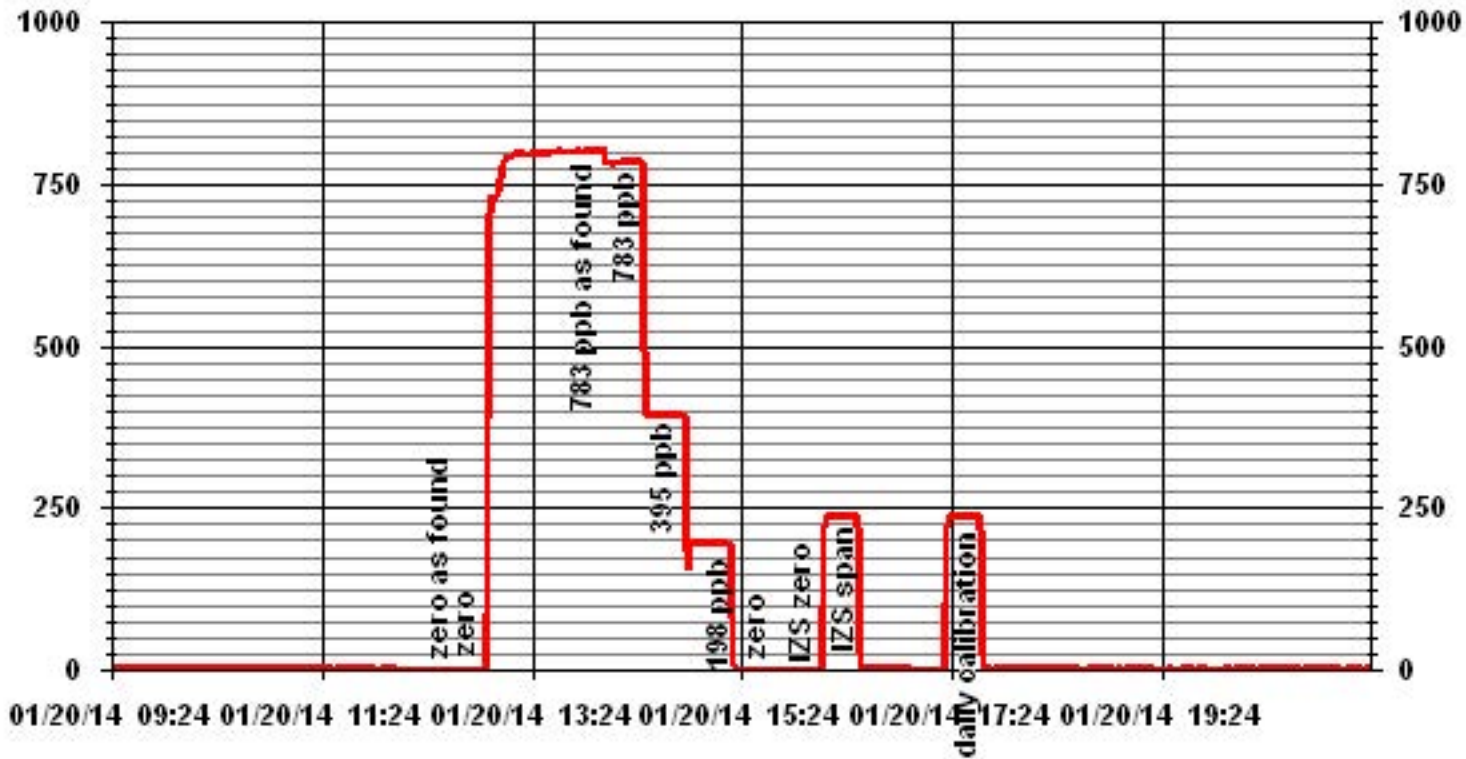
Calibration Date	January 20, 2014
Company	Lakeland Industry & Community Association
Plant / Location	ST. LINA
Start Time (MST)	14:20
End Time (MST)	14:00

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999961
0	0	n/a	Intercept	(± 3% F.S.)	-1.555539
198	197	1.0071			
395	392	1.0087			
783	785	0.9976			



Notes:

01 Minute Averages



Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	January 20, 2014	Previous Calibration	December 18, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST.LINA		
Start Time (MST)	11:20	End Time (MST)	14:00
Reason:	routine calibration		
Barometric Pressure	na	inHG	Station Temperature
Cal Gas	10.1 ppm	Gas Cyl. #	BLM05049
DAS Output Voltage	0 - 1	Volts	Chart Rec. Output
			NA

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	510	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	Enviroics 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N :	NA		
Flow Meter:	Enviroics 6100	S/N :	4760		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 100	ppb	
Sample Flow / Box Temp	553 ccm 34 Deg C	553 ccm 34 Deg C	
HVPS / Lamp Setting	542 1530(99.8%)	542 1530(99.8%)	
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	116.9 1.069	119.1 1.138	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
3000	0	0	1	0.0000
4995	0	0	0	0.0000
4996	37.7	76	72	1.0535
4996	37.7	76	76	0.9966
4996	18.0	36	36	1.0157
4996	9.0	18	17	1.0403
4996	0	0	0	0.0000
Sum of Least Squares				1.0018
New Correction Factor				0.9966

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	34.4	37.9
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0007
Current Correction Factor Before Span Adjust:	1.0535
Percent Change:	-5.0%

Notes:

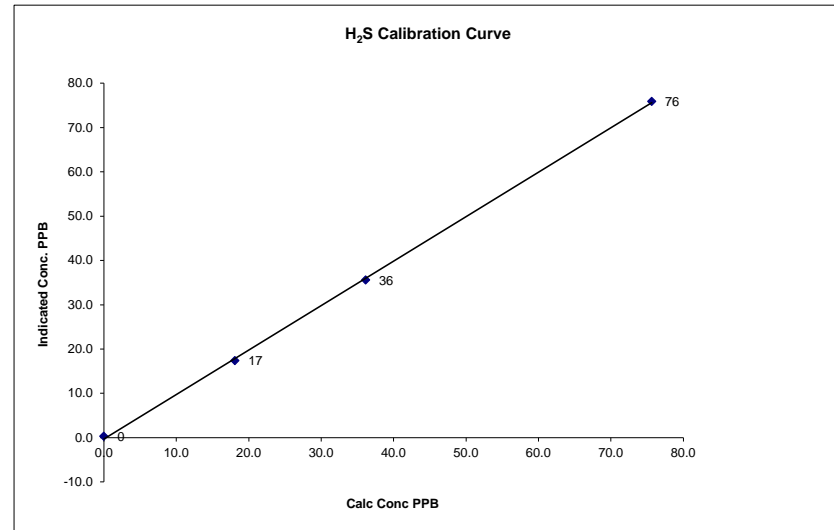
Change Sample filter.

Calibration Performed by: Kevin Hope/Tom Bourque

H₂S Calibration Curve

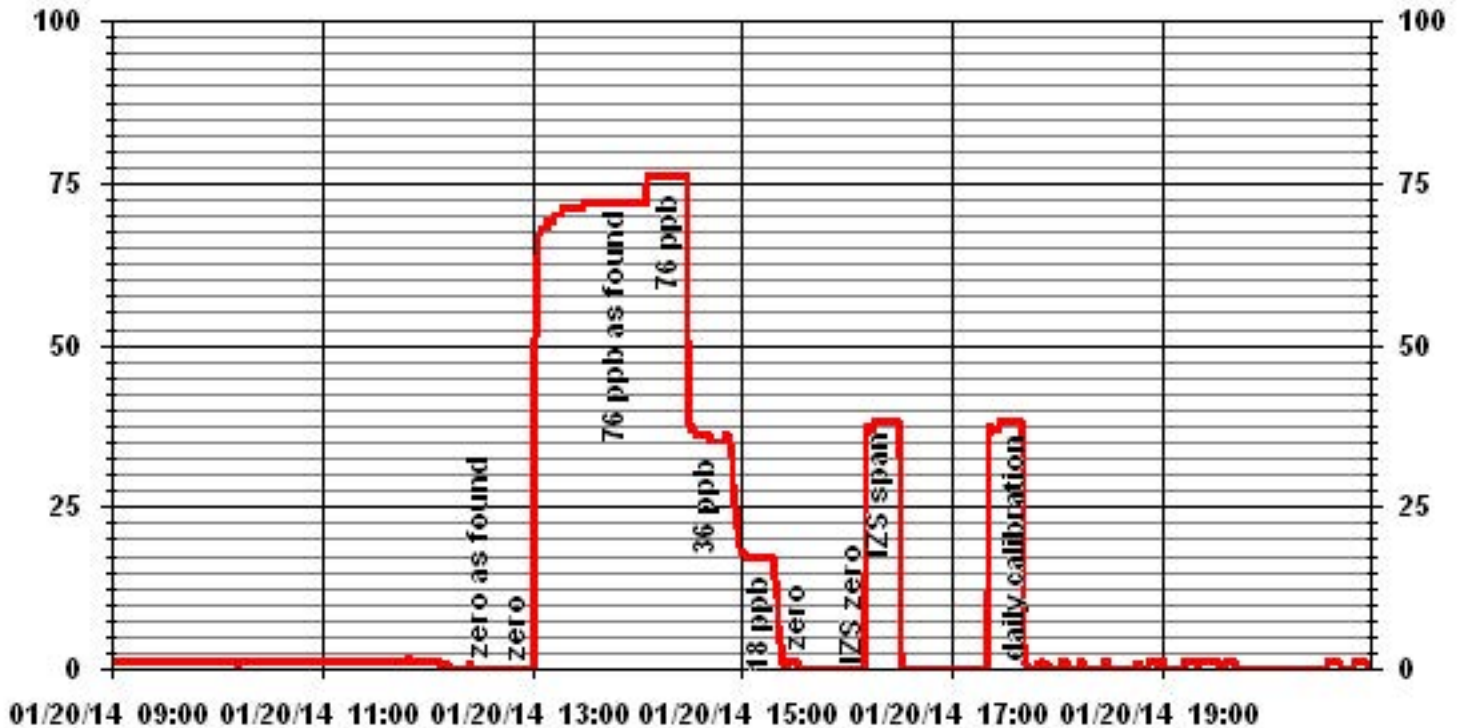
Calibration Date	January 20, 2014
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST.LINA
Start Time (MST)	11:20
End Time (MST)	14:00

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999744
0	0		Intercept	(0.85 to 1.15)	1.002972
				(± 3% F.S.)	-0.272455
18	17	1.0403			
36	36	1.0157			
76	76	0.9966			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	January 21, 2014	Previous Calibration	December 18, 2013
Company:	Lakeland Industry & Community Association		
Plant / Location:	ST. LINA		
Start Time (MST)	10:10	End Time (MST)	14:00
Reason:	routine calibration		
Barometric Pressure:	na inHG	Station Temperature:	na Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 609 PPM	C3H8 201 PPM	
	TOTAL CH4 1161.8 PPM	Gas Cyl. # LL36542	Cal Gas Expiry Date: July 11, 2021
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	Thermo 51C-LT	S/N :	043669739	Method	Flame Ionization
--------------	---------------	-------	-----------	--------	------------------

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	5.97	psi	5.97	psi
Hydrogen Pressure	25	psi	25	psi
Air Pressure	35	psi	35	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2001	0.0	0.0	0.3	0.0000
2001	0.0	0.0	0.0	0.0000
2001	64.8	36.4	35.6	1.0239
2001	64.8	36.4	36.5	0.9984
2001	32.9	18.8	18.5	1.0138
2001	15.0	8.6	8.4	1.0233
2001	0.0	0.0	0.0	0.0000
New Correction Factor:				1.0120

Percent Change

Previous Calibration Correction Factor:	1.0067
Current Correction Factor Before Span Adjust:	1.0239
Percent Change:	1.7%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	32.1	32.9
Sample Lines Connected		yes

Cylinder Pressures

Span 1500 psi Hydrogen 2000 psi Zero Air 34 psi

Notes:

Change sample filter

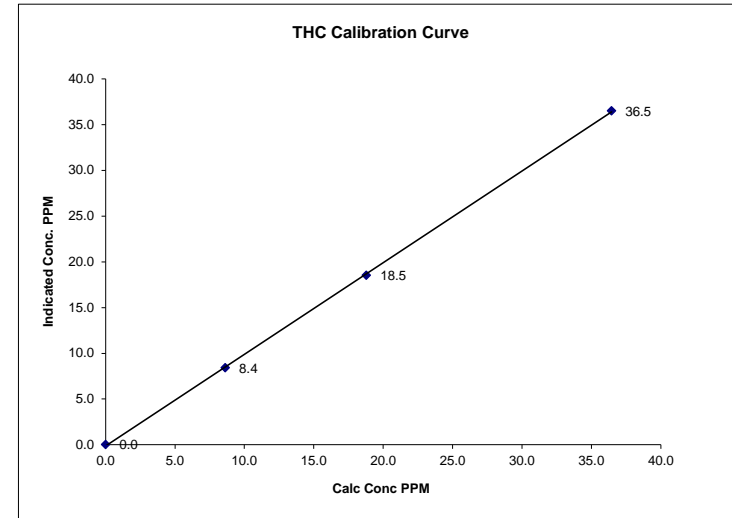
Spare

Calibration Performed by: Kevin Hope/Tom Bourque

THC Calibration Curve

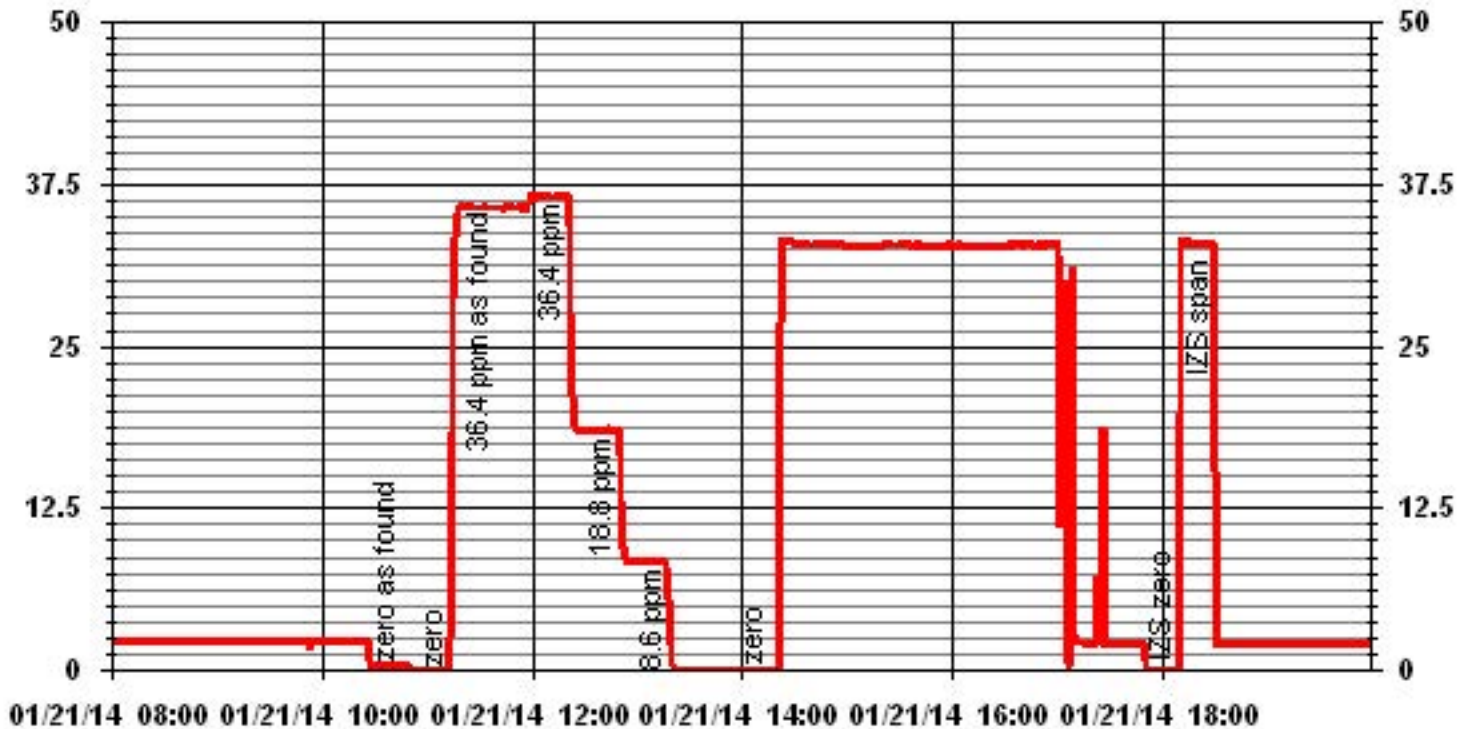
Calibration Date	January 21, 2014		
Company	Lakeland Industry & Community Association		
Plant / Location	ST. LINA		
Start Time (MST)	10:10	End Time (MST)	14:00

Calculated Conc.	Indicated Response	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999902
ppm	ppm		Slope	(0.85 to 1.15)	1.001947
0.0	0.0	0.0000	Intercept	(± 3% F.S.)	-0.12239
8.6	8.4	1.0233			
18.8	18.5	1.0138			
36.4	36.5	0.9984			



Notes:

01 Minute Averages



Nitrogen Dioxide

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	January 21, 2014	Previous Calibration	December 18, 2013
Company	LICA	Plant/Location	St. Lina
Start Time (MST)	10:10	End Time (MST)	18:08
Reason:	routine calibration		
Barometric Pressure	na atm	Station Temperature	na Deg C
Cal Gas Concentration	NOx 49.0 ppm	NO	48.9 ppm
Cal Gas Cylinder #	BAL3165	Cal Gas Expiry date	29/12/2016
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts

Equipment Information

Analyzer Make / Model:	API 200E	S/N :	592	Method:	Chemiluminescent
Calibrator Make / Model:	EnviroNics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	EnviroNics 6100	S/N :	4760		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	0-1000			ppb			
Sample Flow/Conv. Temp	479 ccm	314 Deg C		479 ccm	314 Deg C		
Ozone Flow / Vacuum	74 ccm	9.7 °Hg-A		74 ccm	9.7 °Hg-A		
HVPS / A ZERO	650 Volts	21.3 MV		650 Volts	21.3 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	31.4 Deg C	40.2 Deg C		31.4 Deg C	40.2 Deg C		
Offset	-1 NOx	-1.0 NO		14.4 NOx	2.8 NO		
Slope	1.007 NOx	1.002 NO		1.041 NOx	1.040 NO		
NO2 COEF / Conv Efficiency	N/A NO2	0.993		N/A NO2	0.992		

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	7	2	5	0	0
5000	0.0	0	0	0	0	1	1	0	0	0
4917	76.7	0	753	751	0	732	726	6	1.0385	1.0377
4917	76.7	0	753	751	0	755	752	3	1.0066	1.0017
4957	38.8	0	381	380	0	384	380	4	1.0102	1.0000
4978	18.4	0	180	180	0	184	181	3	1.0212	1.0072
5000	0.0	0	0	0	0	6	3	3	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		
4917	76.7	0	753	751	0	746	743	3	0	0.00%
4917	76.7	550	753	0.0	605	745	141	604	1.0100	99.88%
4917	76.7	550	753	0.0	605	745	141	604	1.0100	99.88%
4917	76.7	375	753	0.0	418	746	328	418	1.0121	100.07%
4917	76.7	175	753	0.0	198	748	548	200	1.0155	101.18%

Linearity	Sum of Least Squares		NOx= 0.995	NO= 0.999	NO2= 1.000
OK?	Yes	No	Correction Factors: NOx= 1.0066	NO= 1.0017	NO2= 1.0100
			Average Converter Efficiency= 100.38%		

IZS Calibration Data

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	483 NOx	468 NO2		456 NOx	444 NO2		
	Sample Lines Connected:			YES			

Percent Change

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	1.000	0.998	1.002
Current Correction Factor Before Span Adjust	1.039	1.038	1.010
Percent Change	-3.7%	-3.9%	-0.8%

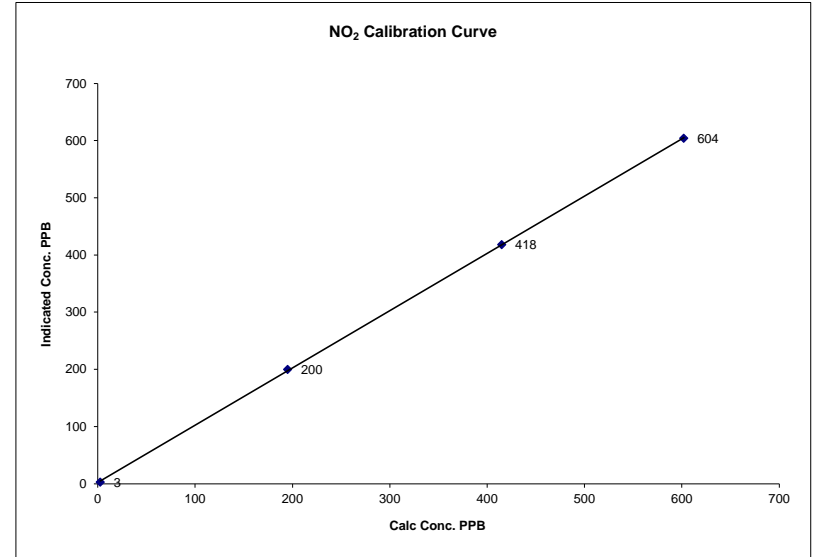
Notes: **Change sample filter.**

Calibration Performed by: Kevin Hope/Tom Bourque

NO2 Calibration Curve

Calibration Date	January 21, 2014
Company	LICA
Plant / Location	St. Lina
Start Time (MST)	10:10
End Time (MST)	18:08

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999944
3	3	0.0000	Intercept	(± 3% F.S.)	2.06230
195	200	0.9750			
415	418	0.9928			
602	604	0.9967			

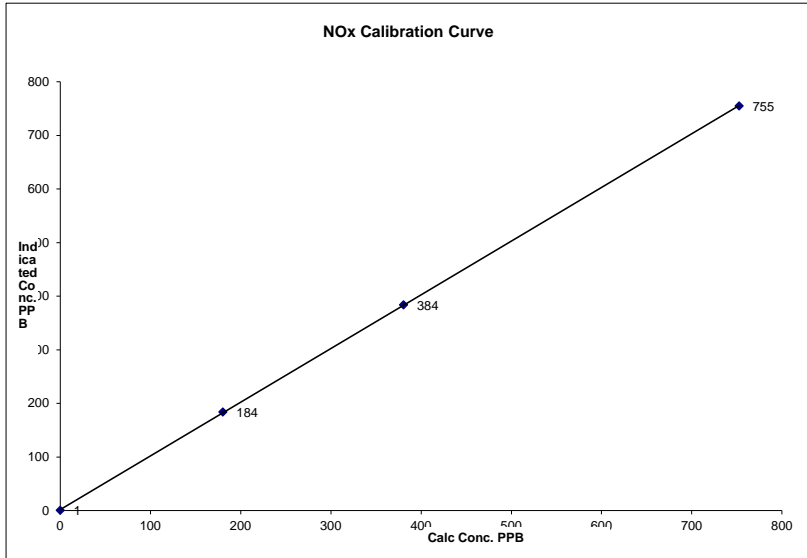


Notes:

NOx Calibration Curve

Calibration Date	January 21, 2014	
Company	LICA	
Plant / Location	St. Lina	
Start Time (MST)	10:10	End Time (MST) 18:08

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999985
0	1	0.0000	Slope (0.85 to 1.15)	1.001405
180	184	1.0212	Intercept (± 3% F.S.)	2.05919
381	384	1.0102		
753	755	1.0066		

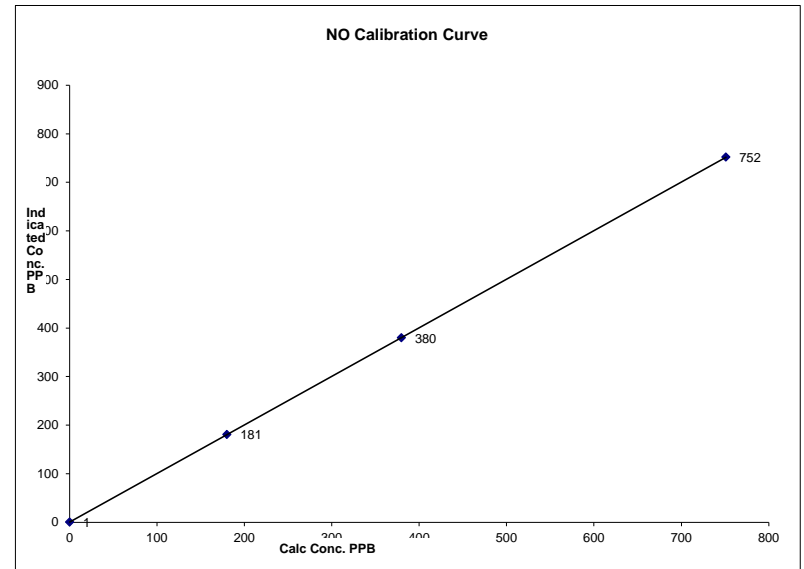


Notes:

NO Calibration Curve

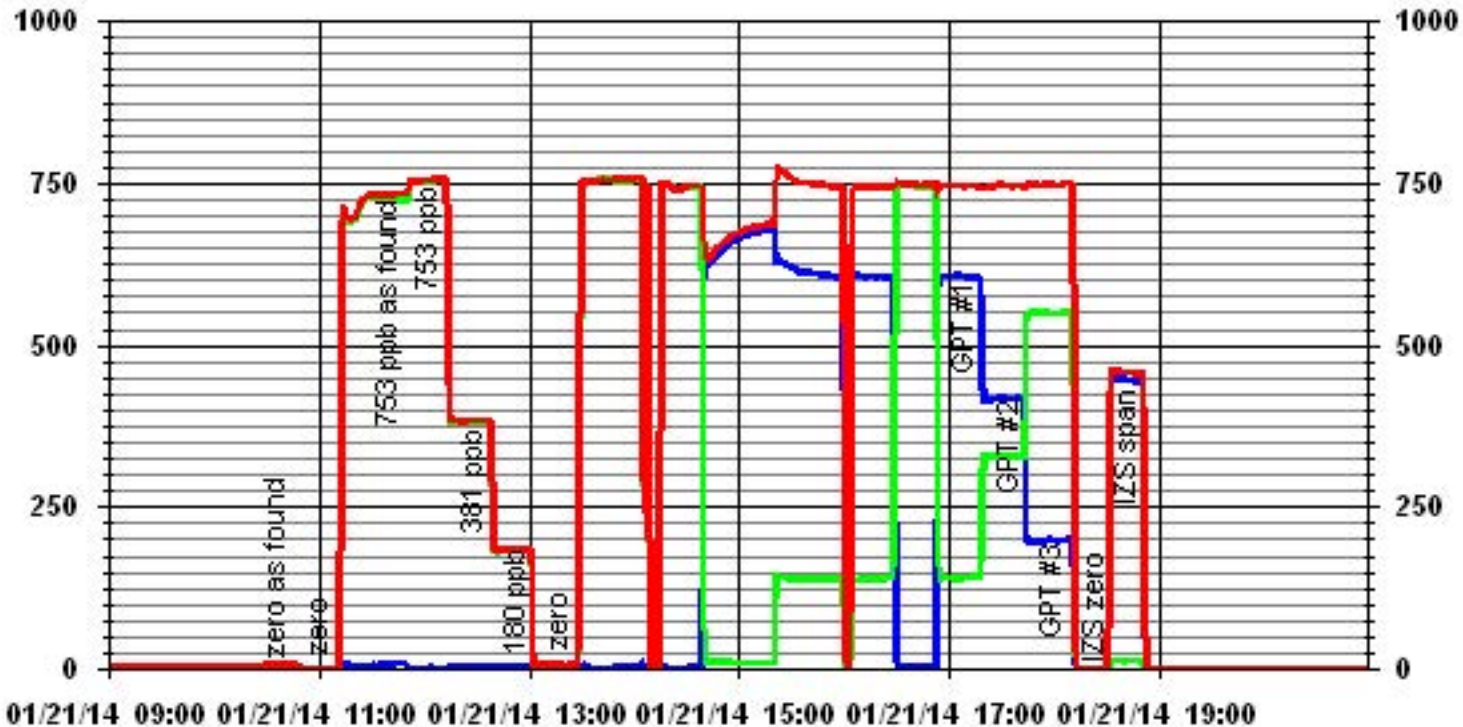
Calibration Date	January 21, 2014	
Company	LICA	
Plant / Location	St. Lina	
Start Time (MST)	10:10	End Time (MST) 18:08

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999999
0	1	0.0000	Slope (0.85 to 1.15)	1.000231
180	181	1.0072	Intercept (± 3% F.S.)	0.59015
380	380	1.0000		
751	752	1.0017		



Notes:

01 Minute Averages



Ozone

O₃ Calibration Report

Station Information

Calibration Date	January 22, 2014	Previous Calibration	December 19, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	9:54	End Time (MST)	14:00
Reason:	Monthly Calibration		
Barometric Pressure	na atm	Station Temperature	na Deg C
DAS Output Voltage	0-10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	1002240371	Method:	Photometric
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	736 LPM	678 LPM	730 LPM	736 LPM	736 LPM	678 LPM	730 LPM	730 LPM
O ₃ Set Level	678 mmHg				678 mmHg			
Bench Lamp	53.6 Deg C				53.6 Deg C			
O ₃ Lamp / Box Temp	67.8 Deg	27.3 Deg	27.3 Deg	67.8 Deg	27.3 Deg	27.3 Deg	27.3 Deg	27.3 Deg
Offset / Slope	-0.2	0.993	0	0	0.978			

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5083	0	0	0.3	N/A
5083	0	0	0.1	N/A
5083	350	388	393	0.9873
5083	350	388	388	1.0000
5083	175	167	169	0.9882
5083	75	81	50.6	1.6008
5083	0	0	-0.1	N/A
Sum of Least Squares				1.0116
New Correction Factor				1.0000

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	321	326
Sample Lines Connected		Yes
Previous Calibration Correction Factor:		1.0000
Current Correctio Factor Before Span Adjust:		0.9873
Percent Change:		1.3%

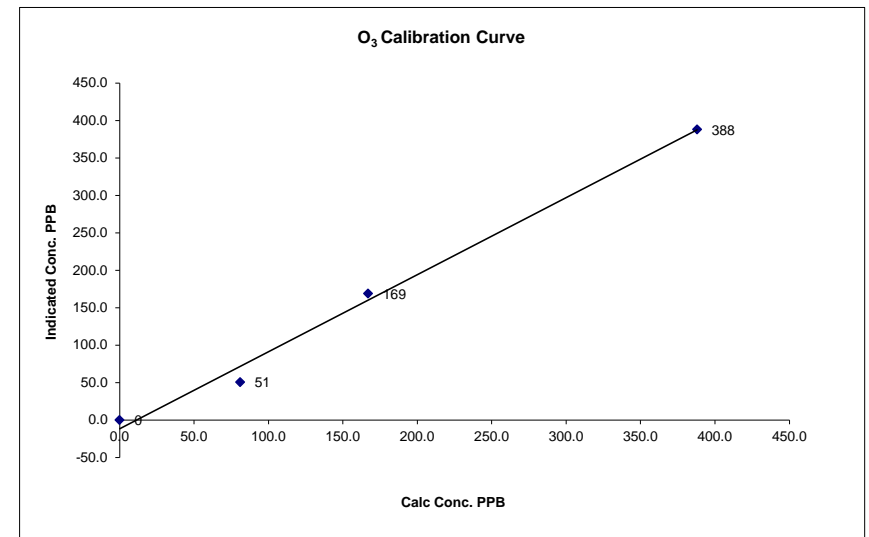
Note: **N/A : Not Applicable**
Change sample filter.

Calibration Performed by: Kevin Hope/Tom Bourque

O₃ Calibration Curve

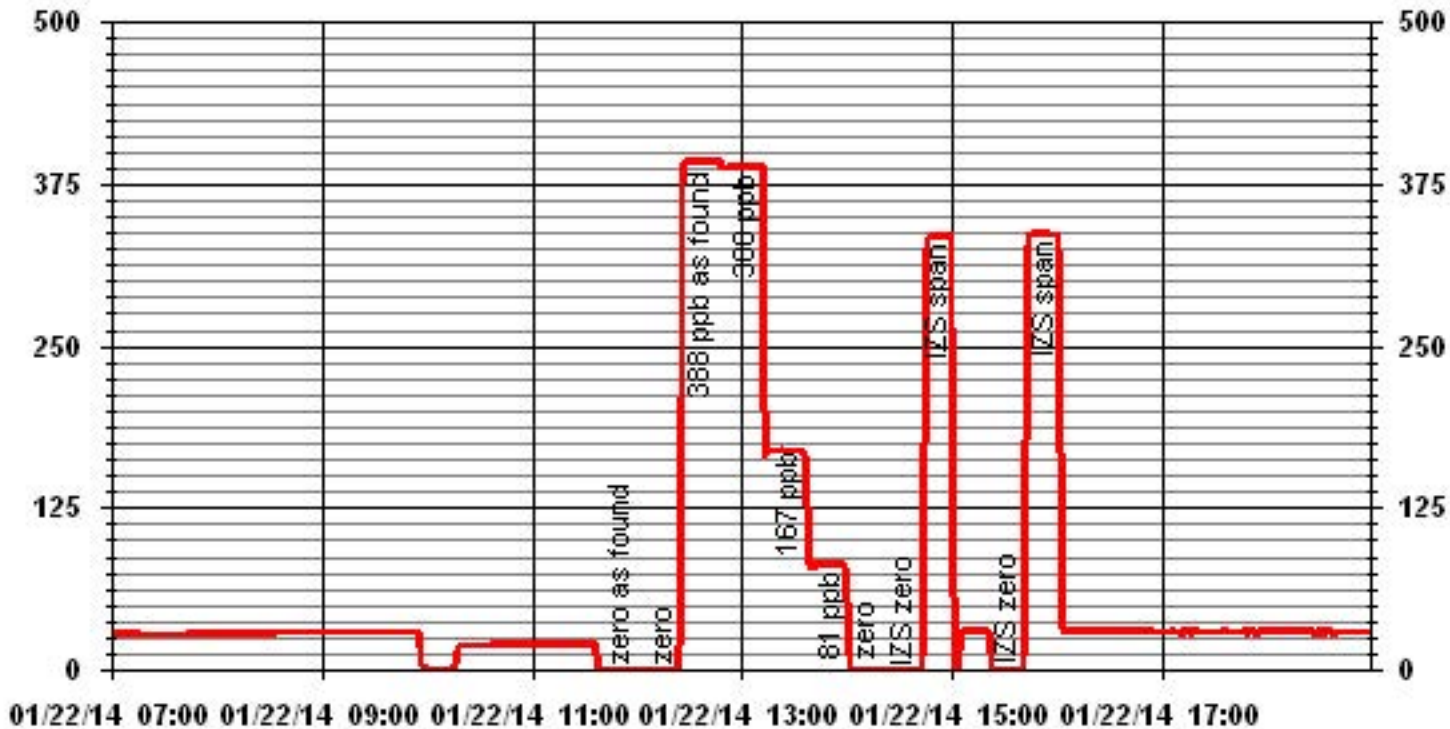
Calibration Date	January 22, 2014
Company	Lakeland Industry & Community Association
Plant / Location	St. Lina
Start Time (MST)	9:54
End Time (MST)	14:00

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.992602
0	0	N/A	Slope (0.85 to 1.15)	1.028274
81	51	1.6008	Intercept (± 3% F.S.)	-11.570489
167	169	0.9882		
388	388	1.0000		



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOM® Calibration

	<u>Station</u>		<u>Transfer Standard</u>
Date:	January 21, 2014	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:	Maxxam Analytics	Thermometer:	Fluke 15a ex

	<u>Sampler</u>		<u>Set-up and current Sampler readings</u>
Make/Model	R&P Teom 1400a	F-Main Set Pt (l/min)	3.00
Unit #	20001	F-Aux Set Pt (l/min)	13.67
Control unit s/n	140AB228720001	Filter Load (%)	34%
Transducer s/n	1200C153540001	K _o Factor	15003
Parameter	PM2.5	Temp (°C)	-2.4
		Press (ATM)	0.931

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

Calibration

Zero flow				
	Pump Off		Pump On (Time to reach set points)	
F-Main (l/min)	0.05		(45-60 Sec)	22
F-Aux (l/min)	0.13		(45-60 Sec)	45
Temperature/Pressure				
Measured Temp (± 1 °C)	-4.3	Δ °C	-1.9	
Measured Press (± 1.5% ATM)	0.929	Δ % ATM	-0.2%	
Flow Audit				
Indicated Main/Aux Flow (l/min)	2.98 / 13.59	Δ % from Set-pt		
Total Flow = Main + Aux (l/min)	16.57	(± 2%)	0.7% / 0.6%	
Measured Total Flow (l/min)	17.09	(± 2%)	0.6%	
Measured Main Flow (l/min)	3.050	(± 1.0 l/min. (5.65%))	-3.0%	
		(± 0.2 l/min. (6.25%))	-2.3%	
Leak Check				
		Actual leakage = Pump On - Pump Off		
Main (< 0.15 l/min)	0.06	0.01		
Aux (< 0.15 l/min)	0.15	0.02		
K_o Factor				
Measured	na			
K _o Difference (± 2.5%)	na			

Start Time: 14:00 **Finish Time:** 17:00
Sample Inlet Cleaned: Yes **Sample Inlet Connected:** Yes
Comments: Change sample filter.

Calibrator/s: Kevin Hope/Tom Bourque

Lakeland Industry & Community Association

Portable / Elk Point Airport Monitoring Site

Ambient Air Monitoring Data Report

For

January 2014

Prepared By:



February 28, 2014

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

Table of Contents

	Page		Page
Introduction	3		
Calibration Procedure	4		
Monthly Continuous Summary	5	Calibration Reports	99
General Monthly Summary	6	• Sulphur Dioxide	100
Continuous Monitoring	9	• Hydrogen Sulphide	104
• Monthly Summaries, Graphs & Wind Roses	10	• Total Hydrocarbons (55i)	108
○ Sulphur Dioxide	11	• Particulate Matter 2.5	112
○ Hydrogen Sulphide	19	• Nitrogen Dioxide	11)
○ Particulate Matter 2.5	27	• Ozone	120
○ Nitrogen Dioxide	32		
○ Nitric Oxide	40		
○ Oxides of Nitrogen	47		
○ Ozone	55		
○ Total Hydrocarbons (55i)	63		
○ Methane	70		
○ Non-Methane Hydrocarbons	78		
○ Vector Wind Speed	86		
○ Vector Wind Direction	93		
○ Standard Deviation Wind Direction	96		

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 2014

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Lili Zhou

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 2014

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PORTABLE / ELK POINT AIRPORT SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						OBJECTIVES				MONTHLY AVERAGE	1-HOUR		
PARAMETER	1-HR		24-HR		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	0.34	6	5	14	7.9	273(W)	2.0	5	96.8
H ₂ S (PPB)	10	3	0	0	0.29	5	25	VAR	VAR	VAR	3.6	25	90.6
THC (55i) (PPM)	-	-	-	-	2.75	10.0	14	10	2.7	85(E)	5.6	1	96.9
Methane (PPM)	-	-	-	-	2.72	9.2	10	7	0.5	187(S)	5.5	1	96.9
NMHC (PPM)	-	-	-	-	0.03	5.1	14	10	2.7	85(E)	0.4	14	96.9
NO ₂ (PPB)	159	-	0	-	9.57	36.7	14	18	2.1	80(E)	21.4	10	96.9
NO (PPB)	-	-	-	-	3.57	86.4	27	10	1.3	289(WNW)	20.0	10	96.9
NO _x (PPB)	-	-	-	-	13.14	116.1	27	10	1.3	289(WNW)	41.4	10	96.9
O ₃ (PPB)	82	-	0	-	25.14	46	15	5, 7	60.9, 48.7	301(WNW), 308(NW)	42.8	15	96.9
PM 2.5 (UG/M ³)	-	30	-	0	8.65	80	2	13	4.8	76(ENE)	31.5	2	81.0
VECTOR WS (KPH)	-	-	-	-	13.18	60.9	15	5	-	301(WNW)	42.0	15	97.2
VECTOR WD (DEGREES)	-	-	-	-	304(WNW)	-	-	-	-	-	-	-	97.2

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 – PORTABLE

Sulphur Dioxide (PPB)

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

The analyzer was working well throughout the month. Following the as found points check on January 3rd, both the UV lamp and HVPS were adjusted and the inlet filter was changed. The analyzer was allowed time to stabilize before the post-repair calibration was performed. A major power failure occurred on January 15th during hour 9. The power was restored on January 16th during hour 4. Another power failure occurred on January 16th during hour 15 and hour 16. 21 hours of data are missing due to these two power failure events. Two hours of data collected on January 16th at hour 4 and hour 17 were invalidated as the analyzer was recovering from the power failures. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

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

The analyzer failed on December 31st hour 4 due to sample pump failure. This pump was replaced on January 2nd, 2014. A post-repair as found points check was performed following the pump replacement. A full post-repair calibration was completed on January 3rd. Both the UV lamp and HVPS were adjusted before the calibration was started on the 3rd. A major power failure occurred on January 15th during hour 9. The power was restored on January 16th during hour 4. Another power failure occurred on January 16th during hour 15 and hour 16. 21 hours of data are missing due to these two power failure events. Two hours of data collected on January 16th at hour 4 and hour 17 were invalidated as the analyzer was recovering from the power failures. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

THC 55i (PPM)

- Analyzer make / model –Thermo 55i, S/N: (12)36656107

The analyzer was working well throughout the month. The monthly calibration was performed on January 3rd. The inlet filter was changed before the calibration was started. A major power failure occurred on January 15th during hour 9. The power was restored on January 16th during hour 4. Another power failure occurred on January 16th during hour 15 and hour 16. 21 hours of data are missing due to these two power failures. Two hours of data collected on January 16th at hour 4 and hour 17 were invalidated as the analyzer was recovering from the power failures. The span gas was replaced on January 25th. The expected span value was changed on January 29th. 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 3rd. The inlet filter was changed before the calibration was started. A major power failure occurred on January 15th during hour 9. The power was restored on January 16th during hour 4. Another power failure occurred on January 16th during hour 15 and hour 16. 21 hours of data are missing due to these two power failure events. Two hours of data collected on January 16th at hour 4 and hour 17 were invalidated as the analyzer was recovering from the power failures. Data was corrected using daily zero information.

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 3rd. The inlet filter was changed before the calibration was started. A major power failure occurred on January 15th during hour 9. The power was restored on January 16th during hour 4. Another power failure occurred on January 16th during hour 15 and hour 16. 21 hours of data are missing due to these two power failure events. Two hours of data collected on January 16th at hour 4 and hour 17 were invalidated as the analyzer was recovering from the power failures. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Particulate Matter 2.5 (ug/m³)

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

Two Teom audits were performed this month: one was done on January 4th and the other was completed on January 16th. The switch valve for the Teom unit was cleaned and the sample pump was replaced on January 4th. 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. 10 hours of data were invalidated as the data were below –3 ug/m³. The monthly operational time was 81.6%.

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. The most recent wind system calibration was done on 01/24/2011.

No operational issues were observed during the month. A major power failure occurred on January 15th during hour 9. The power was restored on January 16th during hour 4. Another power failure occurred on January 16th during hour 15 and hour 16. 21 hours of data are missing due to these two power failure events.

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

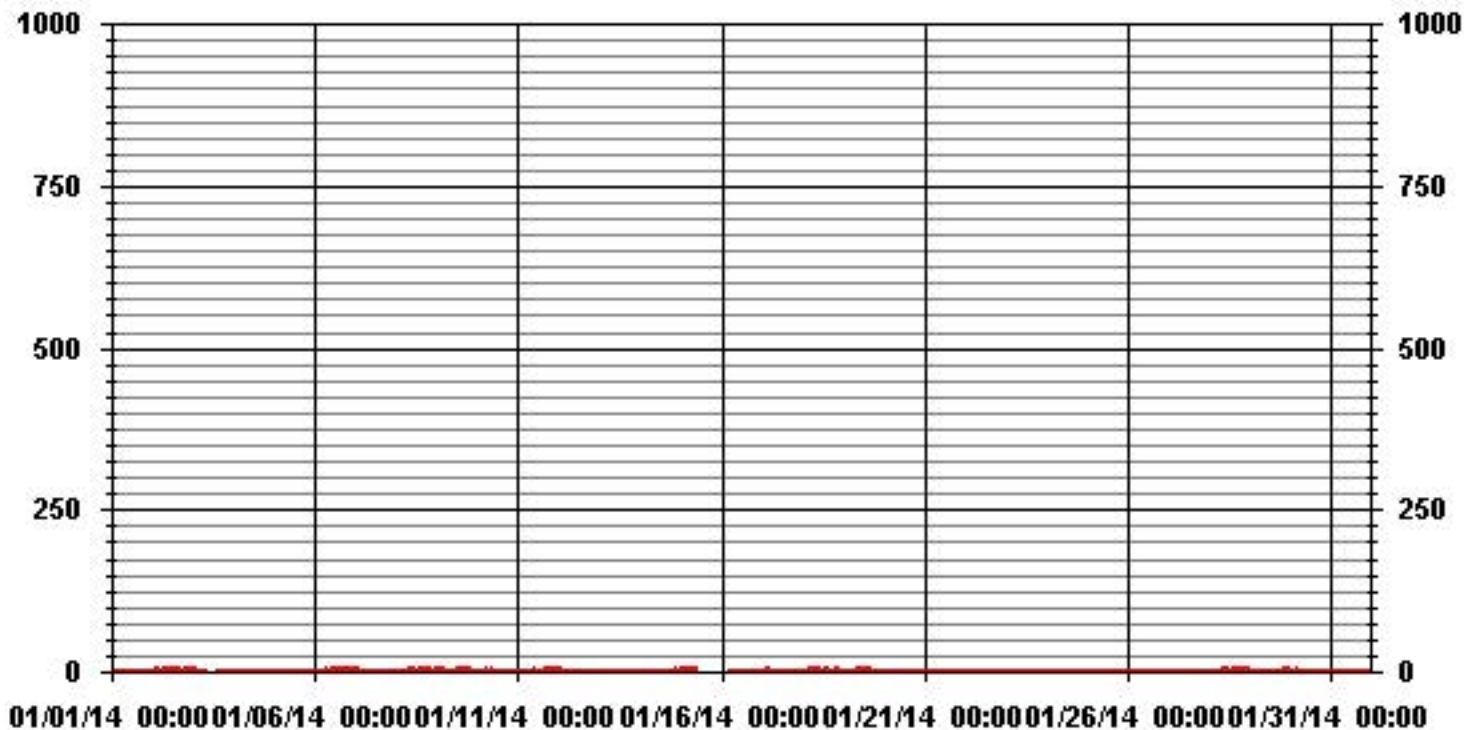
The manifold system was cleaned on January 3rd.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

01 Hour Averages



Lakeland Industry & Community Association - Elk Point Site

JANUARY 2014

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1		0	0	0	0	S	1	0	1	1	1	1	1	0	0	1	1	0	1	1	0	1	1	1	1	1	1	0.6	24
2		2	2	2	S	1	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2.6	24
3		3	3	S	1	0	0	0	0	C	C	Y	C	C	C	C	C	1	1	1	0	0	0	0	0	3	0.7	23	
4		0	S	2	1	2	2	1	1	1	1	2	1	2	1	1	1	1	1	1	1	1	0	0	0	2	1.0	24	
5		S	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	2	1	S	2	0.4	24	
6		0	1	1	1	1	2	2	2	3	4	5	6	6	5	8	6	4	6	4	3	3	4	S	3	8	3.5	24	
7		3	3	2	2	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	1	S	1	1	3	0.9	24	
8		2	1	2	1	2	1	2	2	2	2	2	3	1	4	3	2	3	3	3	3	S	1	S	2	4	2.1	24	
9		2	2	2	2	2	2	2	2	2	1	2	2	2	3	3	3	3	3	S	2	2	2	2	1	3	2.1	24	
10		1	2	2	1	2	2	2	2	2	2	2	2	2	1	1	1	0	S	0	0	0	0	0	0	2	1.3	24	
11		0	0	2	0	0	1	0	1	2	2	3	3	3	3	3	3	3	S	2	2	2	2	2	2	3	1.8	24	
12		2	2	2	2	1	1	2	1	1	1	0	0	0	0	0	1	S	0	0	1	0	1	1	1	2	0.9	24	
13		1	1	2	2	2	2	1	2	1	1	0	0	0	0	0	S	2	2	1	2	1	2	1	1	2	1.2	24	
14		1	1	1	1	1	1	1	1	2	1	1	1	2	2	P	P	P	P	R	2	2	4	3	3	4	1.8	20	
15		3	3	3	3	4	2	3	4	2	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	4	3.0	9
16		P	P	P	P	R	0	0	S	S	1	1	2	S	1	1	P	P	R	1	1	4	2	1	2	4	1.3	16	
17		2	2	2	2	2	2	2	1	1	1	1	S	2	2	1	2	1	2	3	2	2	1	1	1	3	1.7	24	
18		2	1	2	2	2	2	2	3	2	S	2	2	2	2	2	3	3	3	3	3	3	2	1	3	2.2	24		
19		1	1	1	0	1	1	1	1	1	S	3	3	3	3	3	2	2	3	2	2	1	1	1	2	3	1.7	24	
20		1	1	1	0	0	1	0	0	S	0	0	0	0	1	1	1	1	1	1	1	1	1	2	1	2	0.7	24	
21		2	3	1	1	1	1	1	S	2	1	1	1	1	1	1	1	0	0	0	0	1	0	0	0	3	0.9	24	
22		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	
23		0	0	0	1	1	S	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
24		1	2	1	1	S	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24	
25		0	1	0	S	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
26		0	0	S	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	1	0	0	1	0.5	24	
27		0	S	0	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	0.6	24	
28		S	0	1	1	1	1	1	1	2	2	2	2	3	3	3	4	3	3	3	3	3	2	2	S	4	2.1	24	
29		1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	4	4	4	S	2	4	1.5	24	
30		2	2	1	3	2	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	S	1	3	3	1.1	24	
31		3	2	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	2	2	2	3	0.7	24	
HOURLY MAX		3	3	3	3	4	3	3	4	3	4	5	6	6	5	8	6	4	6	4	4	4	4	3	4				
HOURLY AVG		1.3	1.3	1.3	1.1	1.1	1.2	1.0	1.0	1.3	1.1	1.3	1.3	1.3	1.3	1.4	1.4	1.3	1.4	1.4	1.3	1.5	1.5	1.0	1.3				

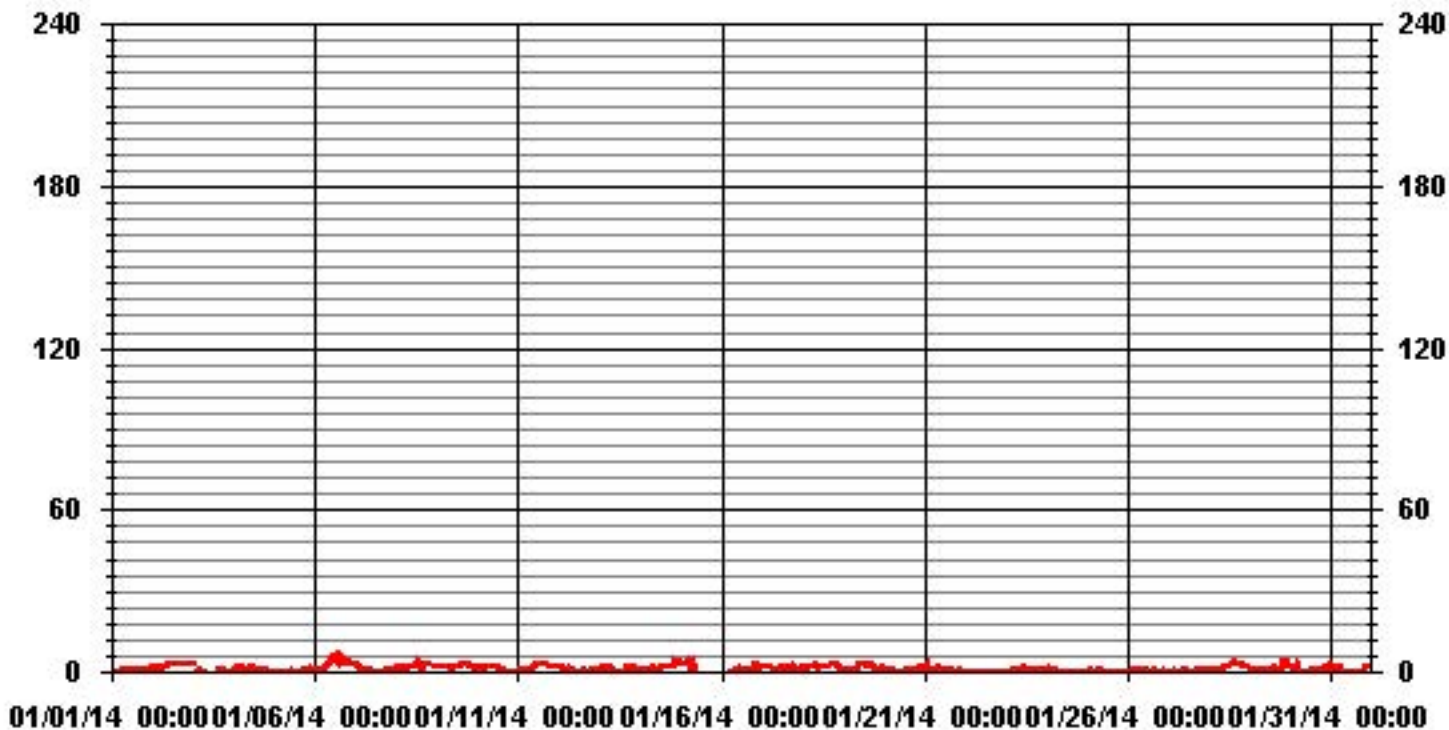
STATUS FLAG CODES

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:	481
MAXIMUM INSTANTANEOUS VALUE:	8 PPB @ HOUR(S) 14 ON DAY(S) 6
	VAR-VARIOUS
IZS CALIBRATION TIME:	34 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	716 HRS
STANDARD DEVIATION:	1.15

01 Hour Averages



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

January 2014

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	2.94	1.32	1.02	1.91	6.02	16.76	3.97	2.05	1.61	1.61	2.35	6.61	13.82	15.73	15.29	6.91	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	2.94	1.32	1.02	1.91	6.02	16.76	3.97	2.05	1.61	1.61	2.35	6.61	13.82	15.73	15.29	6.91	

Calm : .00 %

Total # Operational Hours : 680

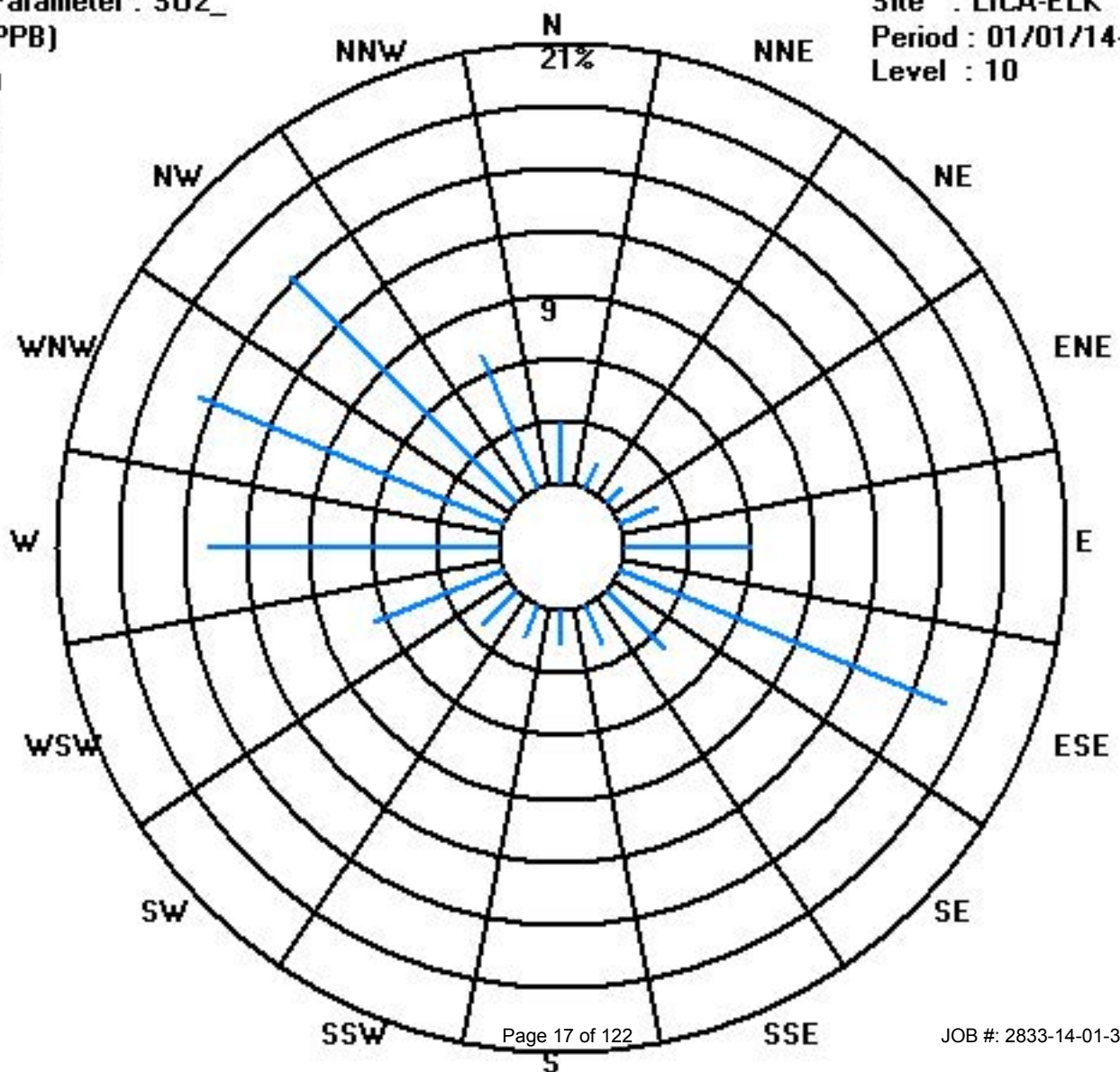
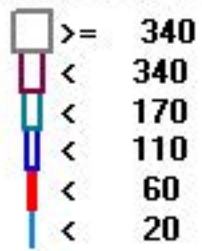
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	20	9	7	13	41	114	27	14	11	11	16	45	94	107	104	47	680
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	20	9	7	13	41	114	27	14	11	11	16	45	94	107	104	47	

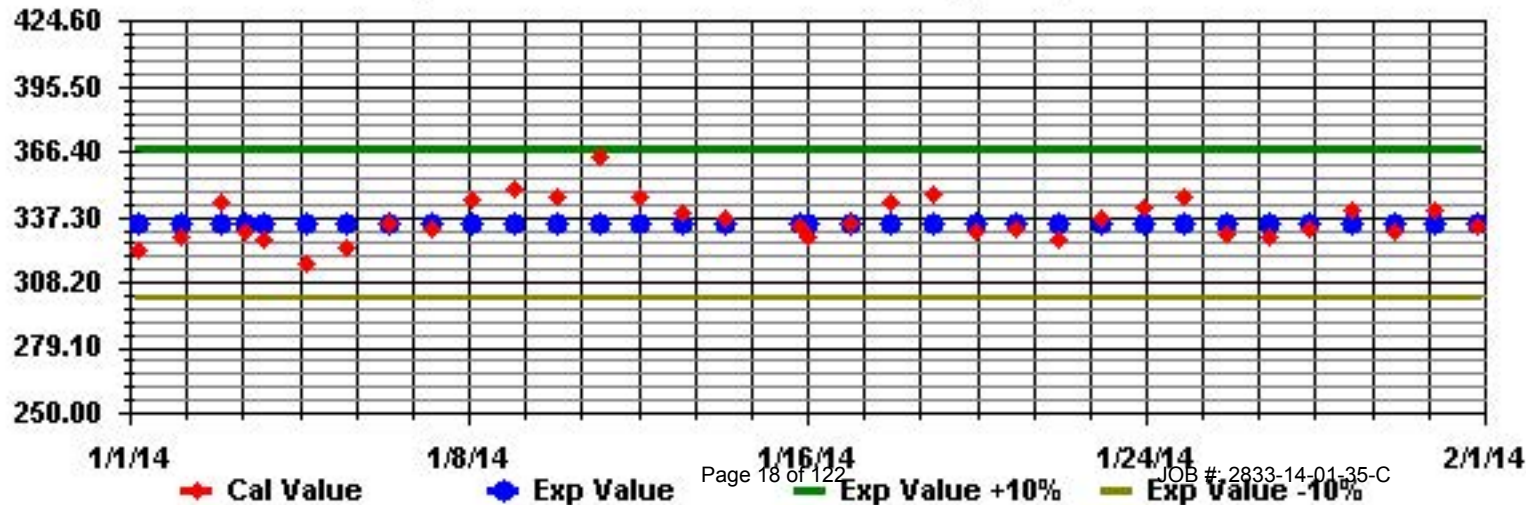
Calm : .00 %

Total # Operational Hours : 680

Class Limits (PPB)

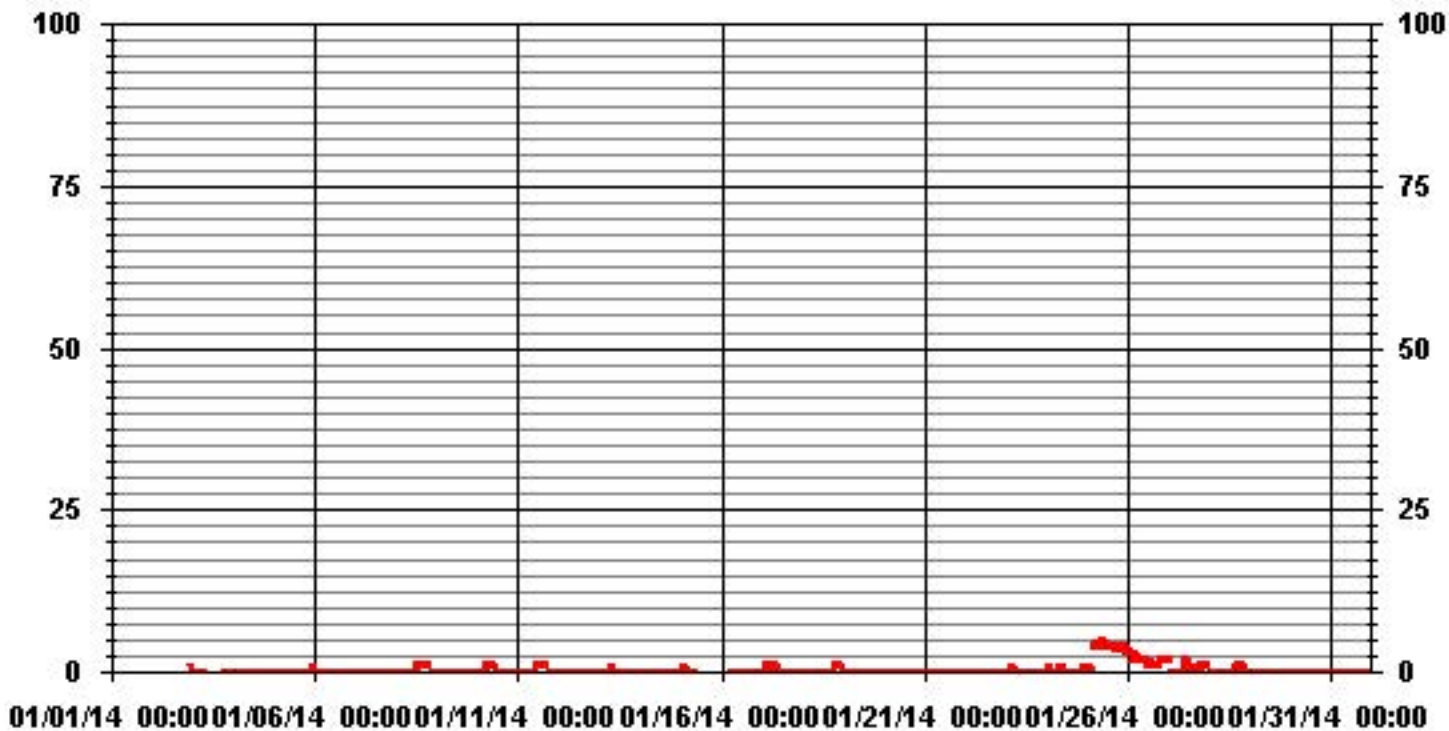


Calibration Graph for Site: LICA35 Parameter: SO2_ Sequence: SO2 Phase: SPAN



Hydrogen Sulphide

01 Hour Averages



Lakeland Industry & Community Association - Elk Point Site

JANUARY 2014

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY	24-HOUR	
DAY	HOURLY MAX	HOURLY AVG	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.	RDGS.	
1	X	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	
2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Y	Y	C	C	C	C	1	1	1.0	4
3	0	1	S	1	0	0	0	0	0	C	C	C	Y	Y	Y	C	C	C	C	0	0	0	0	0	0	1	0.2	21	
4	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	
5	S	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	S	2	0.4	24	
6	0	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	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	S	0	0	0.0	24	
8	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	2	2	2	S	0	S	0	2	0.7	24
9	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	1	0.2	24
10	1	1	1	1	1	2	2	2	2	2	2	1	1	0	0	1	1	0	S	0	0	0	0	0	0	2	0.9	24	
11	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	2	2	S	0	0	0	0	0	0	2	0.5	24	
12	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0	0	0	0	0	1	0.1	24	
13	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	S	1	1	1	1	1	1	0	0	0	1	0.6	24	
14	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	P	P	P	P	R	1	1	0	1	1	1	1	0.6	20
15	1	1	1	1	1	1	1	0	1	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	1	0.9	9	
16	P	P	P	P	R	0	0	S	S	0	1	0	S	1	1	P	P	R	0	0	0	0	1	1	1	1	0.4	16	
17	1	1	1	1	1	1	1	1	1	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24
18	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	1	3	2	1	2	2	1	1	3	0.6	24	
19	1	1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24
20	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0.2	24
21	0	0	0	0	0	0	0	0	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
22	0	0	0	0	0	0	S	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
23	1	1	1	1	1	S	0	0	1	1	0	0	0	0	1	0	0	0	1	0	1	0	1	0	1	1	1	0.5	24
24	1	1	1	1	1	S	1	1	2	1	1	1	1	0	1	1	1	0	1	1	1	0	1	2	1	2	1	1.0	24
25	1	2	2	S	5	5	5	5	5	5	4	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5	4.0	24
26	4	3	S	3	3	3	3	3	3	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2.4	24
27	2	S	1	0	0	1	1	1	1	2	2	2	1	1	1	1	1	2	1	2	2	2	2	1	2	2	2	1.3	24
28	S	0	0	0	0	0	0	0	0	1	1	1	0	1	1	0	1	1	2	1	1	1	1	1	S	2	0.6	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	S	0	0	0.0	24	
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	S	0	1	1	0.1	24	
31	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0.3	24	
HOURLY MAX	4	3	2	3	5	5	5	5	5	5	4	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4			
HOURLY AVG	0.5	0.5	0.4	0.5	0.6	0.7	0.6	0.7	0.8	0.8	0.7	0.5	0.5	0.5	0.5	0.6	0.6	0.8	0.7	0.7	0.6	0.6	0.7	0.6	0.6				

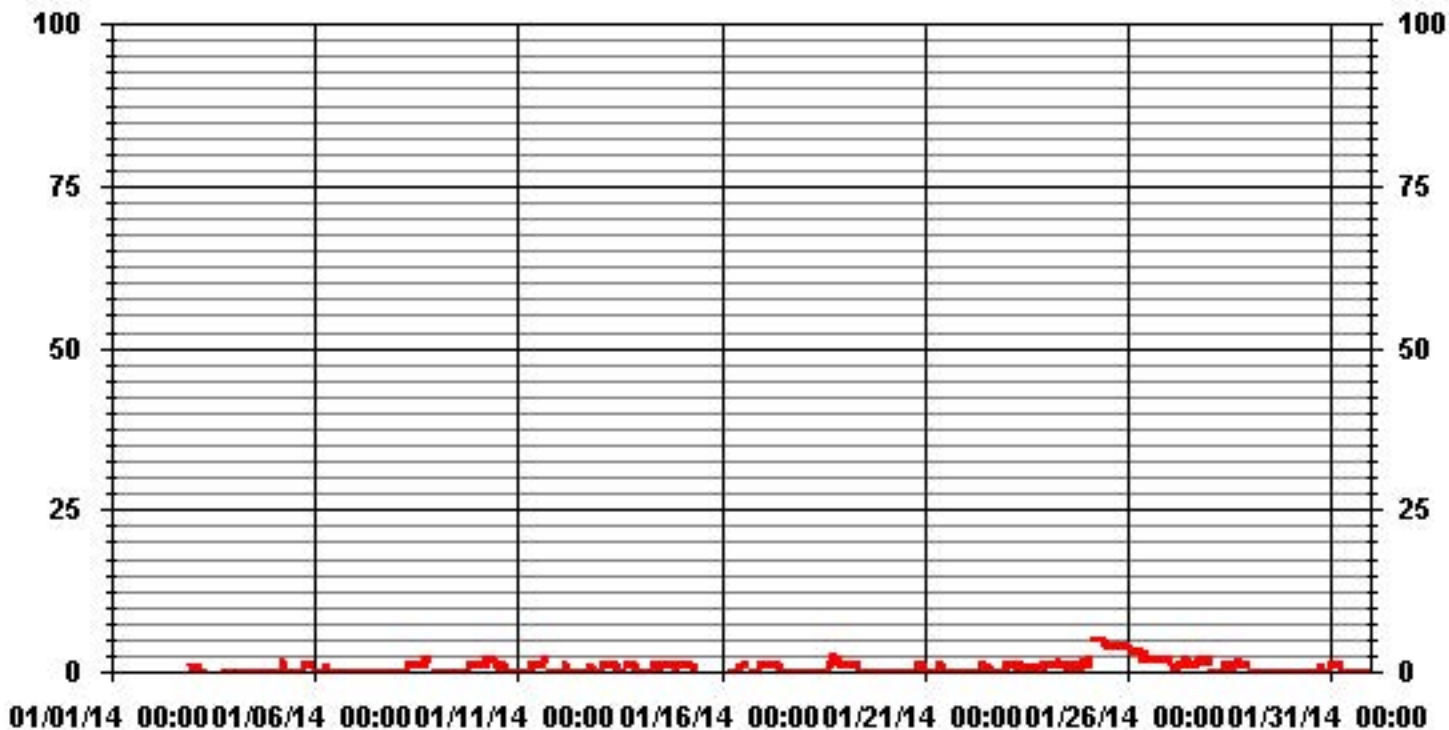
STATUS FLAG CODES

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:	249
MAXIMUM INSTANTANEOUS VALUE:	5 PPB @ HOUR(S) VAR ON DAY(S) 25
	VAR-VARIOUS
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	10 HRS
OPERATIONAL TIME:	670 HRS
STANDARD DEVIATION:	0.97

01 Hour Averages



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

January 2014

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	2.84	1.42	1.10	1.42	5.37	14.37	4.10	2.05	1.42	1.73	2.36	6.95	14.37	15.79	14.06	6.79	96.20
< 10	.15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.31	.94	1.57	.63	3.63
< 50	.15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.15	1.42	1.10	1.42	5.37	14.37	4.10	2.05	1.42	1.73	2.36	6.95	14.69	16.74	15.63	7.42	

Calm : .00 %

Total # Operational Hours : 633

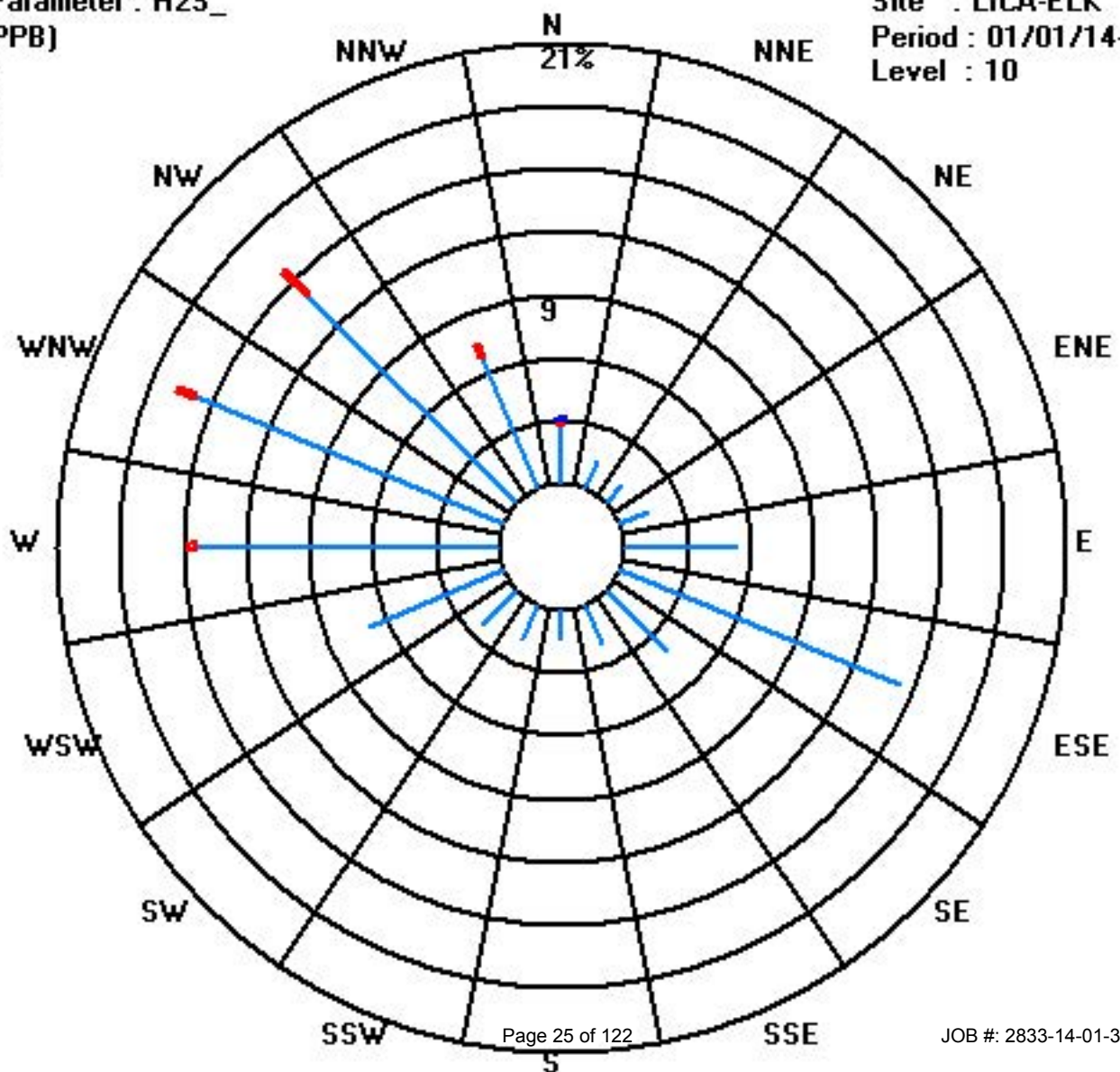
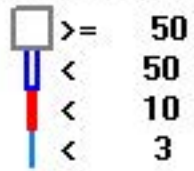
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	18	9	7	9	34	91	26	13	9	11	15	44	91	100	89	43	609
< 10	1												2	6	10	4	23
< 50	1																1
>= 50																	
Totals	20	9	7	9	34	91	26	13	9	11	15	44	93	106	99	47	

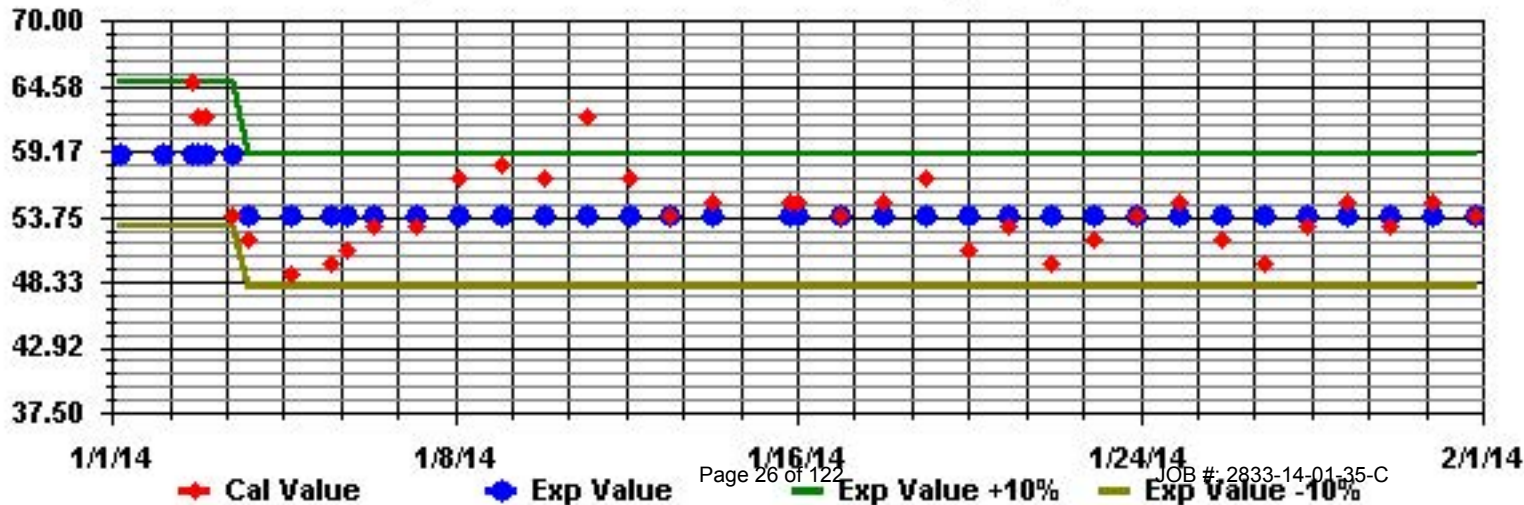
Calm : .00 %

Total # Operational Hours : 633

Class Limits (PPB)



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



Particulate Matter 2.5

Lakeland Industry & Community Association - Elk Point Site

JANUARY 2014

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

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	6	18	2	14	5	10	8	8	10	15	15	X	37	5	19	X	X	X	12	3	X	0	6	9	37	10.6	19	
2	9	17	X	22	X	8	6	33	X	34	6	26	X	80	X	X	X	67	43	9	41	X	71	X	80	31.5	15	
3	X	X	9	1	5	X	X	0	2	X	25	X	0	C	C	C	0	28	X	12	X	0	X	0	28	6.8	15	
4	7	5	10	7	0	8	8	8	3	2	2	4	2	7	40	X	X	X	X	33	X	X	0	0	40	8.1	18	
5	0	1	0	0	4	4	0	0	4	6	0	7	6	1	4	2	8	7	5	3	9	6	10	8	10	4.0	24	
6	8	8	15	10	8	7	7	16	15	12	X	4	17	9	12	10	14	9	1	12	9	14	2	9	17	9.9	23	
7	6	10	8	10	3	15	7	15	6	9	0	5	9	7	10	6	3	8	1	8	17	0	8	5	17	7.3	24	
8	7	2	9	2	5	10	7	6	14	1	7	6	9	24	7	0	X	X	49	17	X	X	26	0	49	10.4	20	
9	X	X	X	22	7	17	0	14	10	49	2	17	12	8	6	8	14	11	13	8	17	0	X	0	49	11.8	20	
10	27	X	X	10	21	11	14	17	13	18	19	14	15	12	8	13	18	5	X	17	6	X	X	X	27	14.3	18	
11	20	22	X	16	X	12	21	X	8	12	0	5	2	X	10	3	7	7	12	X	3	2	26	7	26	10.3	19	
12	5	5	10	14	X	0	11	1	13	0	4	0	21	4	0	5	X	X	14	6	0	11	6	9	21	6.6	21	
13	16	0	21	X	22	0	36	35	18	14	5	X	X	13	X	3	9	8	0	X	0	X	X	X	36	12.5	16	
14	9	X	11	0	X	X	X	9	15	36	38	0	13	11	2	0	0	0	4	5	14	5	6	1	38	9.0	20	
15	7	X	4	14	X	12	1	31	6	3	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	31	9.8	8
16	P	P	P	R	56	X	12	12	4	0	9	C	C	0	1	P	P	R	14	0	8	6	7	6	56	9.6	16	
17	6	12	6	3	11	8	8	X	8	11	X	X	7	33	30	X	8	3	X	5	0	X	0	12	33	9.5	18	
18	4	4	0	X	11	5	13	1	1	11	7	2	X	X	22	X	6	12	8	4	6	8	4	1	22	6.5	20	
19	X	X	X	18	6	0	X	X	X	0	18	X	21	15	10	14	0	22	X	1	4	10	6	11	22	9.8	16	
20	6	1	3	5	8	0	5	4	0	12	3	9	1	X	12	X	18	X	7	16	10	10	15	11	18	7.4	21	
21	4	3	2	2	5	0	6	1	2	1	8	5	4	13	4	7	2	4	0	12	6	15	3	12	15	5.0	24	
22	0	0	0	0	0	4	6	6	7	4	5	20	0	5	8	8	0	2	6	X	8	13	3	8	20	4.9	23	
23	4	3	7	2	2	0	10	13	13	29	23	13	0	3	X	X	0	4	X	X	1	0	9	0	29	6.8	20	
24	15	9	X	2	9	1	3	4	X	8	9	0	9	27	33	X	14	0	0	X	2	0	3	4	33	7.6	20	
25	1	6	4	15	13	7	3	5	6	1	X	18	0	X	3	6	3	8	X	X	0	10	X	X	18	6.1	18	
26	0	0	0	X	30	30	12	9	14	18	0	4	X	8	4	5	1	X	4	0	4	2	2	10	30	7.5	21	
27	3	10	1	7	6	1	4	7	12	15	5	9	5	0	X	X	5	5	0	3	5	3	7	4	15	5.3	22	
28	10	14	5	14	7	15	12	4	13	22	16	3	8	13	14	19	16	13	24	23	17	20	6	5	24	13.0	24	
29	2	2	7	6	7	0	3	10	4	0	13	X	0	10	6	X	2	7	8	12	9	0	X	X	13	5.4	20	
30	9	16	X	X	8	5	X	0	0	X	6	14	10	X	1	0	1	4	X	0	7	1	0	14	16	5.3	18	
31	12	5	14	12	9	1	7	3	5	6	X	3	8	1	20	8	1	1	2	3	2	8	X	0	20	6.0	22	
HOURLY MAX	27	22	21	22	56	30	36	35	18	49	38	26	37	80	40	19	18	67	49	33	41	20	71	14				
HOURLY AVG	7.5	7.2	6.4	8.8	10.3	6.8	8.5	9.7	8.1	12.0	9.4	8.2	8.6	12.9	11.4	6.5	6.3	10.2	10.3	8.8	7.9	6.0	9.8	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

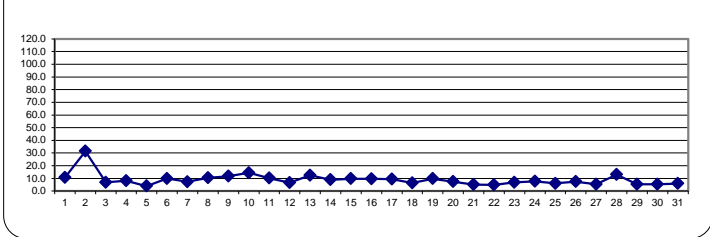
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 24-HR 30 ug/m3

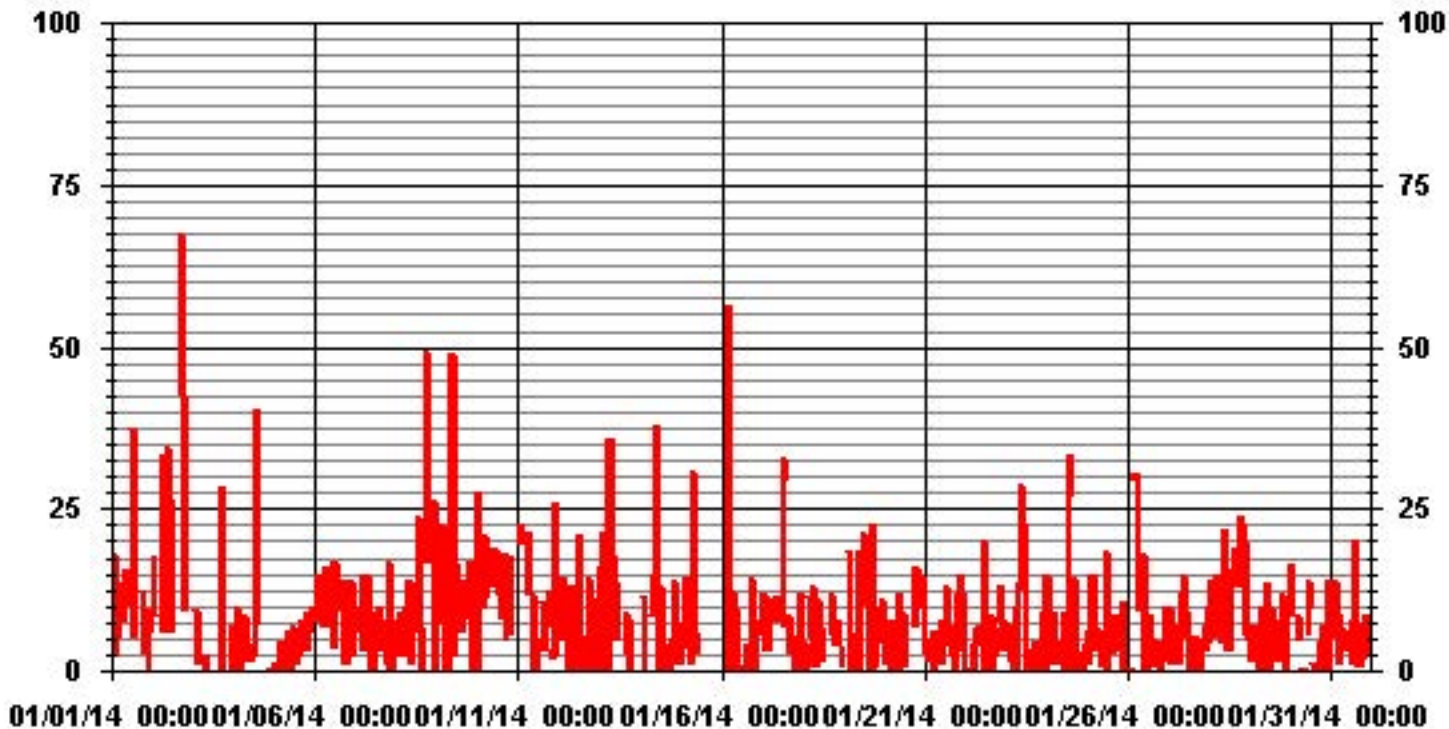
MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	1
NUMBER OF NON-ZERO READINGS:	513
MAXIMUM 1-HR AVERAGE:	80 ug/m3 @ HOUR(S) 13 ON DAY(S) 2
MAXIMUM 24-HR AVERAGE:	31.5 ug/m3 ON DAY(S) 2
VAR-VARIOUS	
MONTHLY CALIBRATION TIME:	5 HRS
OPERATIONAL TIME:	603 HRS
AMD OPERATION UPTIME:	81.0 %
STANDARD DEVIATION:	9.35
MONTHLY AVERAGE:	8.69 ug/m3

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



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

January 2014

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	3.18	1.50	1.00	1.67	5.86	16.75	4.18	2.34	1.17	1.34	2.01	6.70	12.73	15.74	13.90	6.03	96.14
< 60	.00	.00	.00	.16	.33	.67	.16	.00	.16	.00	.33	.00	.16	.50	.33	.50	3.35
< 80	.16	.00	.16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.33
< 120	.00	.00	.00	.16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.16
< 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	3.35	1.50	1.17	2.01	6.19	17.42	4.35	2.34	1.34	1.34	2.34	6.70	12.89	16.24	14.23	6.53	

Calm : .00 %

Total # Operational Hours : 597

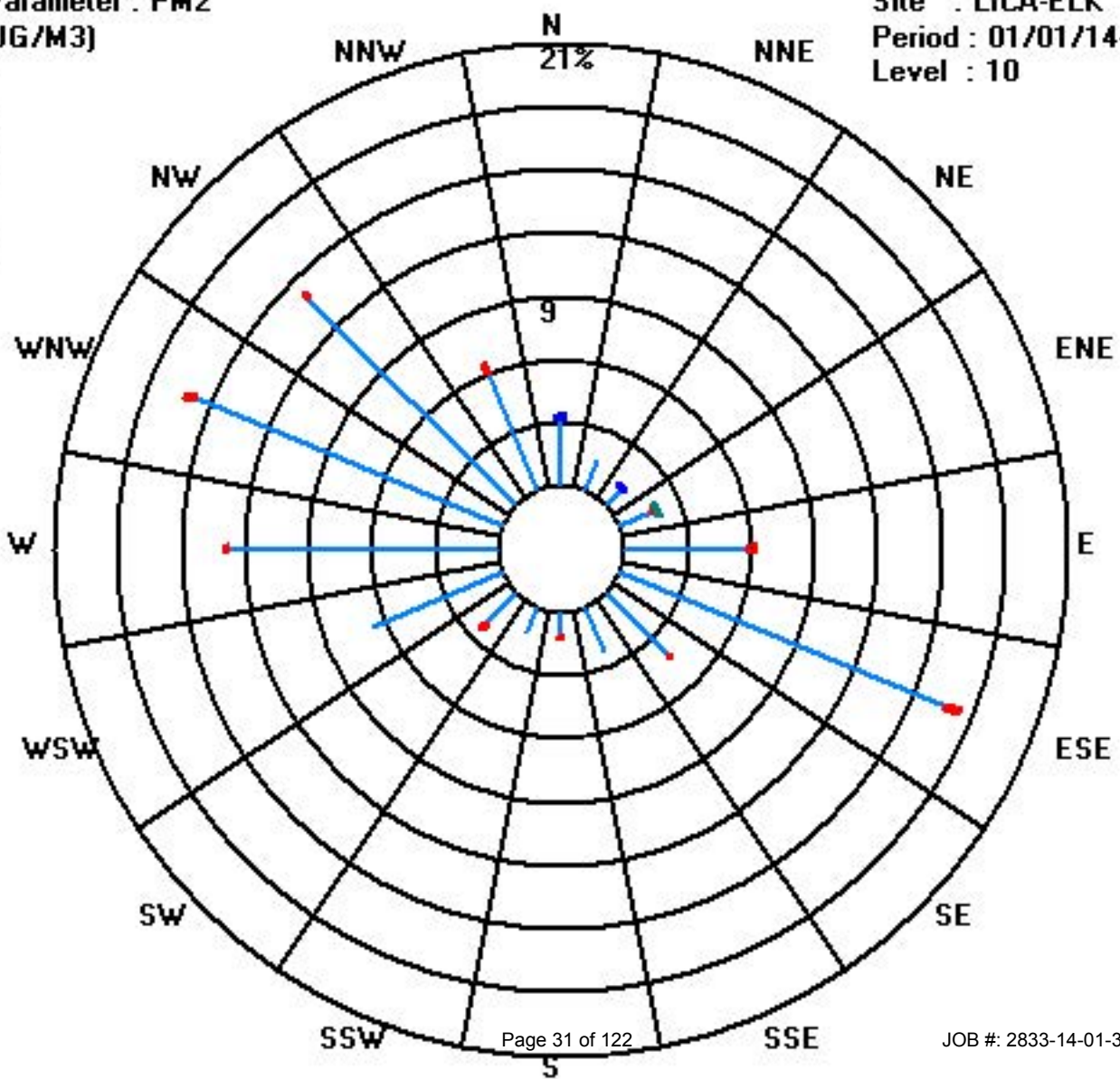
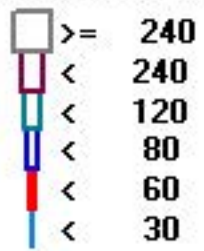
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	19	9	6	10	35	100	25	14	7	8	12	40	76	94	83	36	574
< 60				1	2	4	1		1		2		1	3	2	3	20
< 80	1		1														2
< 120				1													1
< 240																	
>= 240																	
Totals	20	9	7	12	37	104	26	14	8	8	14	40	77	97	85	39	

Calm : .00 %

Total # Operational Hours : 597

Class Limits (UG/M3)



Nitrogen Dioxide

Lakeland Industry & Community Association - Elk Point Site

JANUARY 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOURLY START	HOURLY END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		25.3	25.7	24	26.3	S	25.6	20.8	25.8	26	25.6	22.3	18.3	16.6	16.6	19.8	21.4	20.1	20.8	16.5	13.6	13.7	16.2	17.1	16.7	26.3	20.6	24	
2		10.8	8.9	8	S	5.8	6.9	6.6	7.6	9.6	9.2	6.6	6.9	7.8	6.2	9.7	9.9	10.7	21.2	23.8	26.1	22	22.3	19.3	21.7	26.1	12.5	24	
3		22.1	21.4	S	22.4	12.1	4.9	2.8	2.4	C	C	C	C	C	C	C	C	C	1.1	0.6	0.4	0.1	0.1	0.5	22.4	7.0	24		
4		0.5	S	7.2	10.4	7.3	2	2.3	9	7.2	8.9	5.1	2.3	2.7	0.7	0.5	0.6	0.7	0.4	0.3	0.3	0.2	0.3	0.5	0.7	10.4	3.0	24	
5		S	0.6	0.7	1	1.1	1.4	0.8	6.9	8.4	7.5	5.9	4.8	6.9	2.7	5.6	4	11.8	24.4	25.6	29	27.1	26.8	30.9	S	30.9	10.6	24	
6		25.6	20.6	17	13.6	13.3	10.2	11	13.7	13.1	11.1	9.2	11.3	8.9	9.8	8.8	7.9	10.1	9.3	10	9.8	11.6	9.7	S	7.3	25.6	11.9	24	
7		8.9	8.2	6.4	6	5.2	5.4	2.7	4.6	2.6	2.8	2.4	2.2	4.6	6	7.7	8.5	6.9	6.8	7.2	6	6.2	S	6.7	6	8.9	5.7	24	
8		5.3	7.8	3.1	3.8	3	3	3.3	6.3	5.8	4.9	3.4	3.1	4.6	5	5	5.7	10.9	27.3	26.4	21.7	S	11	8.3	11.2	27.3	8.3	24	
9		9.5	9.4	10.5	14.2	12.2	9.3	9.9	12	11.5	13.6	10.9	10.5	12.1	10.2	8.2	8.4	11.3	14.5	13.9	S	25.1	28.4	29.5	28.3	29.5	14.1	24	
10		28	26.8	25.6	24.2	26	27	26.8	29.4	27.9	25.9	20.3	15.1	16.2	15.4	14.9	17.1	23.5	25.2	S	15.9	12.2	12.7	22	13.2	29.4	21.4	24	
11		12.8	23.3	27.5	25.5	25	18.5	14.4	15.1	13	9.8	7.7	5.3	3.6	3.6	3.4	3.6	6.6	S	3	6.5	11	4.5	4.1	3.2	27.5	10.9	24	
12		5.2	1.8	5.4	2.6	1	3.2	2.7	1.9	1.2	0.6	0.5	0.3	0.4	0.4	2.2	5.4	S	22.8	25.1	29.9	27.5	20.3	12.4	10.3	29.9	8.0	24	
13		9.5	11.1	10.1	11.4	13.9	13.1	18.8	26.2	25.8	5.9	1	1	0.7	0.7	0.5	S	1.4	1.1	2.4	2.5	17.5	13.6	17.7	9.6	26.2	9.4	24	
14		16.3	10.4	27.1	16.1	17	16.8	16.6	24.3	33.2	27.8	20.3	17.5	16.8	16	S	15.9	14.7	25.6	36.7	35.9	13.9	8.3	7	6.3	36.7	19.2	24	
15		2.3	1.2	1.2	2.1	1.8	0.1	0.1	0.2	1.8	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	2.3	1.2	9
16		P	P	P	P	R	4.9	7.5	S	14.5	9.8	5.9	S	9.2	17.6	P	P	R	26.7	21.4	24	26.6	13.5	17.4	26.7	15.3	16		
17		15.2	20.9	16.1	7.8	9.7	8.8	7.3	9.9	10.9	5.4	3.2	S	3.6	0.8	0.7	1	1	0.6	0.8	0.9	1.2	6.9	6.1	15.7	20.9	6.7	24	
18		15	15.5	11	9.9	16.5	17.4	25.6	24.4	28.7	18.5	S	5	6	8.5	8.4	9.3	11.9	12.7	33.9	20.1	24.9	26.1	13.4	5.2	33.9	16.0	24	
19		2.3	1	1.9	4	6.9	2.9	0.7	3.3	4.4	S	5	4	1.3	1.1	1.5	0.4	0.6	0.4	0.5	1	1	1.2	1.3	1.6	6.9	2.1	24	
20		1.7	2	2.7	1.5	5.7	14.4	20.7	30.6	S	18.2	14.8	10.9	8.2	9.9	9.9	10.8	11.7	12.9	13.2	14.8	16.7	13.5	23.5	12.3	30.6	12.2	24	
21		3.2	2.1	1.8	1.6	3	3.7	2.1	S	17.3	18.9	10.7	7.7	3.8	0.9	1.1	1.8	6.2	3.3	2	2.5	3.4	3	2.4	2.2	18.9	4.6	24	
22		2.4	3.1	4.7	8.4	6.5	14	S	10.1	13.8	9.1	5.8	6.3	5	4.6	6.7	4.5	8.8	11.5	11.2	10.8	12.8	12	12.1	8.7	14	8.4	24	
23		9.7	14.2	14.8	14.9	9.8	S	24.4	29	26.9	15.8	12	11.7	7.9	6.3	5.2	5.3	5.7	6.5	5.4	4.1	5.1	4.5	6.3	5.8	29	10.9	24	
24		4.2	3.6	3.8	4	S	4.3	1.7	2.3	2	1.6	2	1.4	1.4	1.2	1.1	1.2	7.2	11.6	11.3	5.9	11.3	13	14.5	14.5	4.9	24		
25		14.9	14.4	20.6	S	15.3	8.4	8.6	4	4.4	4.5	1.2	0.6	0.7	0.3	0.4	0.3	0.2	0.7	0.7	0.5	0.3	0.2	0.2	1.1	20.6	4.5	24	
26		0.5	0.2	S	0.2	0.5	0.3	0.7	0.7	1.3	1.2	0.8	0.6	0.7	0.7	0.5	0.7	0.7	0.7	0.6	0.8	4	6.7	9.2	10.4	10.4	1.9	24	
27		10.2	S	10.9	10.6	13	17.4	24.9	30.4	18.8	32.8	29.7	21	8.7	6.5	5.3	2.7	7.9	24.4	26	21	26.1	36.2	16.7	22.5	36.2	18.4	24	
28		S	26.9	23	17	16.9	16	18.8	19.7	19.9	18.9	12.6	9.7	10	9.3	8.2	14.1	15.9	23.4	27.4	22.3	12.6	7.2	4.2	S	27.4	16.1	24	
29		1.7	1.1	0.7	0.9	0.7	1.8	1.6	1.4	1.9	2.3	2.2	2.4	2.3	1.7	1.8	2.4	2.8	2.7	2.7	3.3	4	5.5	S	2.1	5.5	2.2	24	
30		2.5	2	1.4	2.2	2.2	1.1	0.2	0.1	0.2	0.4	0.3	0.3	0.7	0.7	0.9	3.9	8.4	7.1	4.2	6.1	6.9	S	6.5	11.3	11.3	3.0	24	
31		13.1	7.9	10.8	7.7	4	1.7	1.7	1.3	0.9	0.8	0.6	0.7	0.5	0.6	0.6	0.7	0.7	0.8	0.9	0.7	S	0.6	0.6	0.5	13.1	2.5	24	
HOURLY MAX		28	27	28	26	26	27	27	31	33	33	30	21	17	17	20	21	24	27	37	36	28	36	31	28				
HOURLY AVG		10.0	10.4	10.6	9.7	9.1	8.8	9.5	12.2	12.1	11.3	8.1	6.7	5.8	5.4	5.6	6.2	7.9	11.6	12.4	11.7	12.0	12.0	10.9	9.5				

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

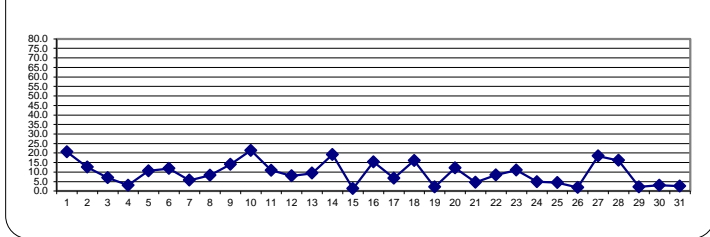
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

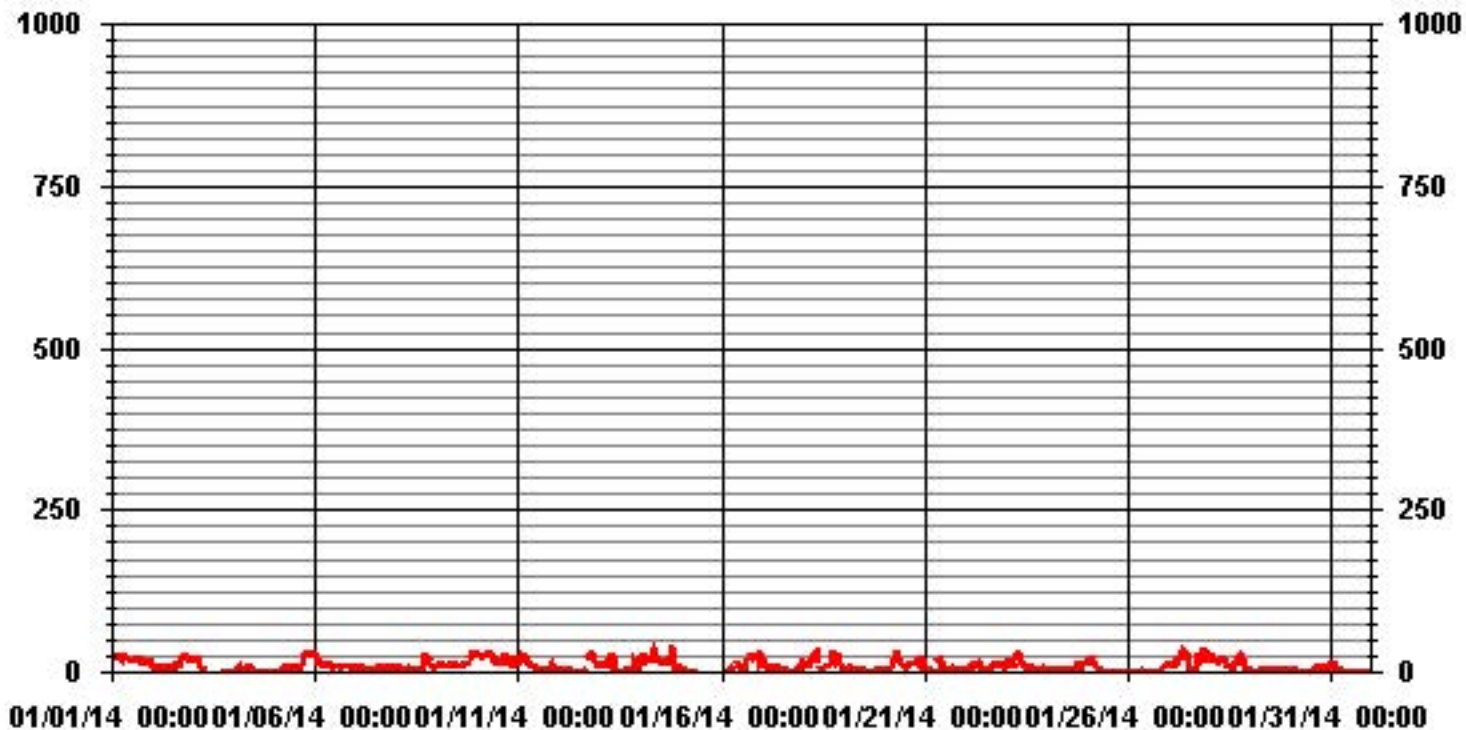
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	677					
MAXIMUM 1-HR AVERAGE:	36.7	PPB	@ HOUR(S)	18	ON DAY(S)	14
MAXIMUM 24-HR AVERAGE:	21.4	PPB			ON DAY(S)	10
					VAR-VARIOUS	
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	721	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	96.9	%	
STANDARD DEVIATION:	8.55		MONTHLY AVERAGE:	9.57	PPB	

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



— LICA35 NO2_ PPB

Lakeland Industry & Community Association - Elk Point Site

JANUARY 2014

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY	1	27.4	26.8	25.5	28.7	S	31.7	27.6	28.8	27.7	27.7	25.1	20.2	17.9	17.8	21.4	22.5	28.9	23.6	22.9	23.1	16.5	20.5	21	25.8	31.7	24.3	24
2	12.7	9.8	9.7	S	7.6	7.9	7.8	10.4	12.5	13.2	7.7	9.4	9.8	7.2	47.9	15.3	11.1	28.1	25.4	37.2	25.2	23.9	22.5	24	47.9	16.8	24	
3	24.3	21.7	S	23.4	22.2	9	4	4.1	C	C	C	C	C	C	C	C	C	C	2.3	1.8	1.8	1.5	1.4	2.4	24.3	9.2	24	
4	2.3	S	17.4	23.1	11.4	11.4	9.3	21.8	10.4	11.4	9.1	6.9	4.8	1.1	1	0.9	1.3	1	0.9	0.9	0.8	0.8	0.8	1.7	23.1	6.5	24	
5	S	1.4	1.6	2.2	2.2	5	2.6	15.8	11.9	12	9.7	11.5	10.7	9.6	14.4	6.8	28.7	40.1	40.7	34.3	28.9	30.8	36.9	S	40.7	16.3	24	
6	31.6	28.4	22.1	17	17	12.8	13.9	17.6	16.4	13	11	15.8	10.6	12.3	12.8	11.2	12.6	13.2	14.3	14.4	15.4	11.9	S	11.3	31.6	15.5	24	
7	11.2	9	7.2	6.5	6	5.9	4.1	5.5	4.1	3.2	3.3	2.5	7.1	8.2	9.4	12.5	8.7	11.4	11.6	7.5	7	S	7.9	7.8	12.5	7.3	24	
8	10.3	10.5	6	6.3	4.1	3.9	4.8	23.7	14	6.9	5.7	4.5	6.9	40.3	28.9	7.8	15.9	40.5	36.8	31.9	S	14.8	S	13.9	40.5	15.4	24	
9	13.1	13.1	14.8	16.2	15	12.7	14.8	15	19.3	17.1	14.3	12.9	20.1	21.2	13.9	13	16.3	20.3	22.7	S	37.4	33.7	32.8	30.1	37.4	19.1	24	
10	34.9	27.9	26.5	26.2	27	31	28.8	31	30.1	27.7	23.8	16.9	21.1	21.1	17.1	23.1	27.3	27.7	S	20.7	19.8	19.5	37.4	18.5	37.4	25.4	24	
11	25	26.2	31	27	29.3	23.9	21	16.6	16.9	11.6	11.8	13.5	4.7	4.3	5	5.7	11.8	S	3.5	17.8	15.1	10.2	10.1	10.5	31	15.3	24	
12	11.5	3.7	9.1	7.3	1.7	4.6	4.2	2.8	2.4	1.5	1.3	1.2	1.2	1.2	11.8	28.5	S	33.9	34.8	43.6	32.3	30.3	16.3	12.1	43.6	12.9	24	
13	11.5	12.8	13.9	18.2	18.6	19.8	25.4	28.7	42.1	29.4	2.1	2	1.2	9	2.2	S	2.4	1.8	3.8	6.1	46.7	18.3	37.2	17.1	46.7	16.1	24	
14	24.5	22.2	33.9	21.2	36.5	30.9	22.4	30.8	42	33.2	22.9	22.1	19	21.8	P	P	P	P	R	41.2	42.3	26.2	13	10.3	9.2	42.3	26.3	20
15	4.4	1.7	2.6	4.4	7.3	0.6	0.7	0.8	3.8	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	7.3	2.9	9
16	P	P	P	P	R	8.4	11.6	S	20.2	18.1	10	S	12.6	26.2	P	P	R	33.8	28.9	29.5	34	18.4	22.8	34	21.1	16		
17	19.7	24.4	22.3	13.8	14.6	14.3	10.7	15.9	16.7	14.6	8.2	S	6.6	1.3	1.6	1.7	2.1	1.4	1.6	1.6	2.4	12	14.2	34.2	34.2	11.1	24	
18	50.3	24.7	24.8	15.6	24.7	27.2	47.8	41.9	35.8	32.2	S	6.1	6.9	10.8	10.3	10.8	14.2	18	44.2	30.6	43.3	44	15.6	8.3	50.3	25.6	24	
19	3.9	3.4	5.1	7	13.1	14.5	3.7	7.3	7	S	9.2	7.8	2.4	2.9	4.8	1	1.3	1	2	1.8	1.8	1.8	2.2	2.4	14.5	4.7	24	
20	2.6	2.7	7.2	2.1	11.8	23.2	23.6	36	S	25.2	17.6	13.9	11.3	13.1	11.2	12.7	13.5	16.3	17.8	19.9	19	15.3	26.6	21.6	36	15.8	24	
21	4.8	3	2.9	2.1	6	5.3	3.8	S	35.3	27.6	19.5	13.8	11.8	2.2	2	3.6	38.3	5.5	2.6	3.9	4	4.2	4.2	6.1	38.3	9.2	24	
22	5.7	9.1	17.1	16.7	11.3	20.1	S	15.4	21.9	15.5	7.6	7.9	6.8	6.8	9.6	6.3	17.8	21.1	14.3	14.8	30.8	19.5	20.9	9.9	30.8	14.2	24	
23	12.8	17.4	18.6	20.6	15.8	S	34.2	31	29.8	25.5	13.9	13.8	9.1	8	7.2	6.4	7.3	12.9	8.4	6	7.9	7.7	21.2	17.2	34.2	15.3	24	
24	7.8	11.4	11	12.9	S	11.2	2.1	3	3	2.1	2.5	1.7	1.7	1.4	1.6	1.6	1.5	13.9	22.5	11.4	20.3	16	20.3	22.5	8.5	24		
25	18.5	16.3	26.7	S	20.1	15.9	14.2	8	9	7	1.9	1.3	1.7	1.2	1.2	1.1	1.3	1.8	1.7	1.5	1.2	1.1	1	2.3	26.7	6.8	24	
26	2	1.2	S	0.2	0.6	0.7	0.8	1	1.5	1.5	1	0.8	0.8	0.8	0.6	0.9	0.8	0.9	0.8	1.2	8.4	8.8	12.6	15.1	15.1	2.7	24	
27	14.4	S	22.3	11.7	20.6	23.2	36	37.2	29.2	42.7	35.2	29.4	12.3	7.3	7.2	9	32.8	33.2	35.4	32.1	41.2	44.8	29.4	33.6	44.8	27.0	24	
28	S	31.4	27.1	20.9	21	18.9	21.7	28.1	28.9	30.1	17.2	11.1	13.9	11.1	9.6	26.2	25.7	39.4	38.4	28.1	22.4	9.7	7.9	S	39.4	22.2	24	
29	1.9	1.9	1.1	1.3	1.6	2.5	2.4	2	2.4	2.9	2.8	3	3	2.2	2.5	3.3	3.6	3.3	3.5	4.1	5.8	6.3	S	2.4	6.3	2.9	24	
30	2.9	2.7	2.1	2.4	2.6	1.9	0.8	0.4	0.6	0.7	0.8	0.8	2.8	1.7	2.2	9.9	17.6	12.9	6.8	9	11.9	S	8	17.4	17.6	5.2	24	
31	19.6	9.8	15.1	8.5	6.8	2.5	2.4	2.2	1.6	1.5	1.2	1.5	1.2	1.2	1.3	1.4	1.4	1.4	1.5	1.4	S	1.1	1.1	0.9	19.6	3.8	24	
HOURLY MAX	50	31	34	29	37	32	48	42	42	43	35	29	21	40	48	29	38	41	44	44	47	45	37	34				
HOURLY AVG	14.7	13.4	15.2	13.0	13.4	13.4	13.6	16.6	17.0	16.3	10.9	9.4	8.1	9.0	10.2	9.4	13.2	16.4	16.8	16.9	18.4	16.4	16.1	14.2				

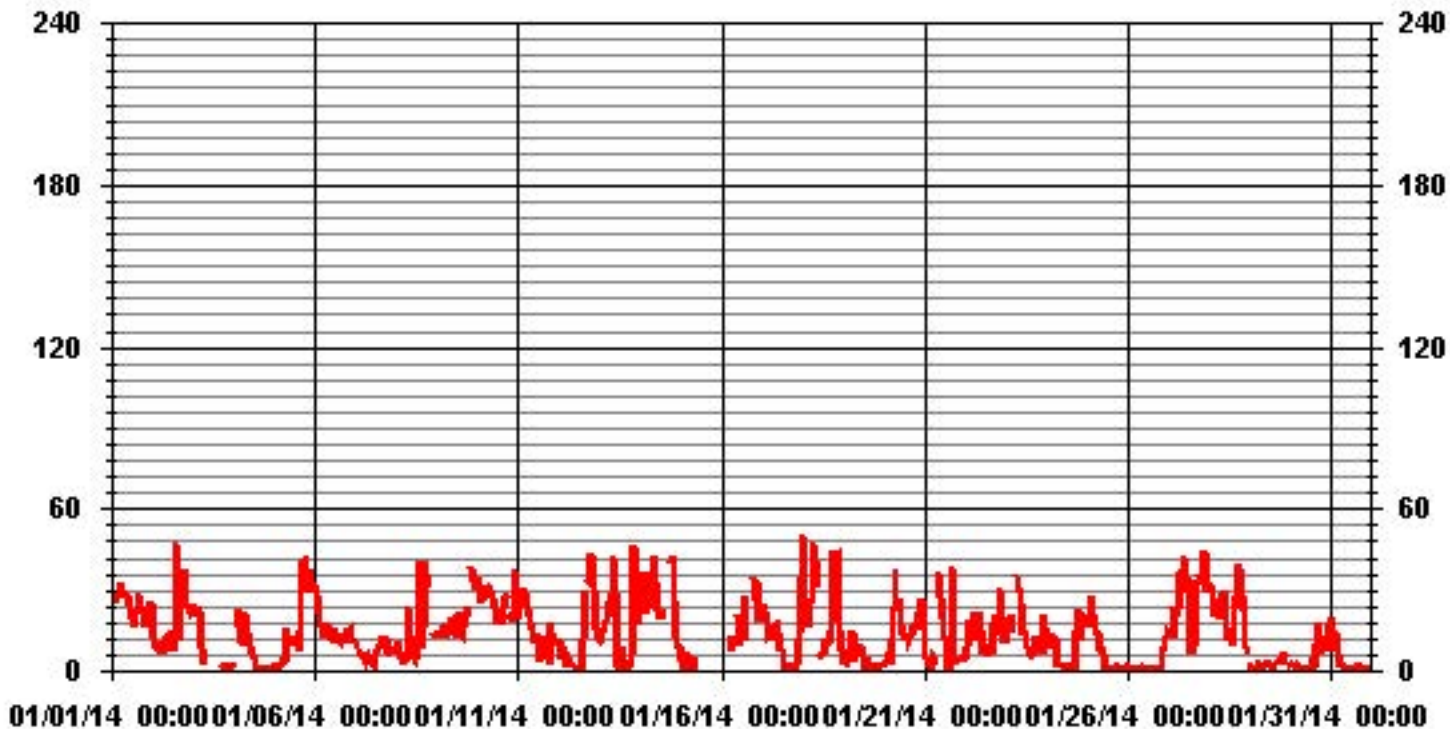
STATUS FLAG CODES

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:	673		
MAXIMUM INSTANTANEOUS VALUE:	50.3 PPB @ HOUR(S) 0 ON DAY(S) 18		
	VAR-VARIOUS		
IZS CALIBRATION TIME:	34 HRS	OPERATIONAL TIME:	717 HRS
MONTHLY CALIBRATION TIME:	10 HRS		
STANDARD DEVIATION:	11.35		

01 Hour Averages



— LICA35 NO2MAX PPB

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

January 2014

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA-ELK
 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	2.95	1.32	1.03	1.92	6.05	16.83	3.98	2.06	1.62	1.62	2.36	6.64	13.88	15.80	14.91	6.94	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	2.95	1.32	1.03	1.92	6.05	16.83	3.98	2.06	1.62	1.62	2.36	6.64	13.88	15.80	14.91	6.94	

Calm : .00 %

Total # Operational Hours : 677

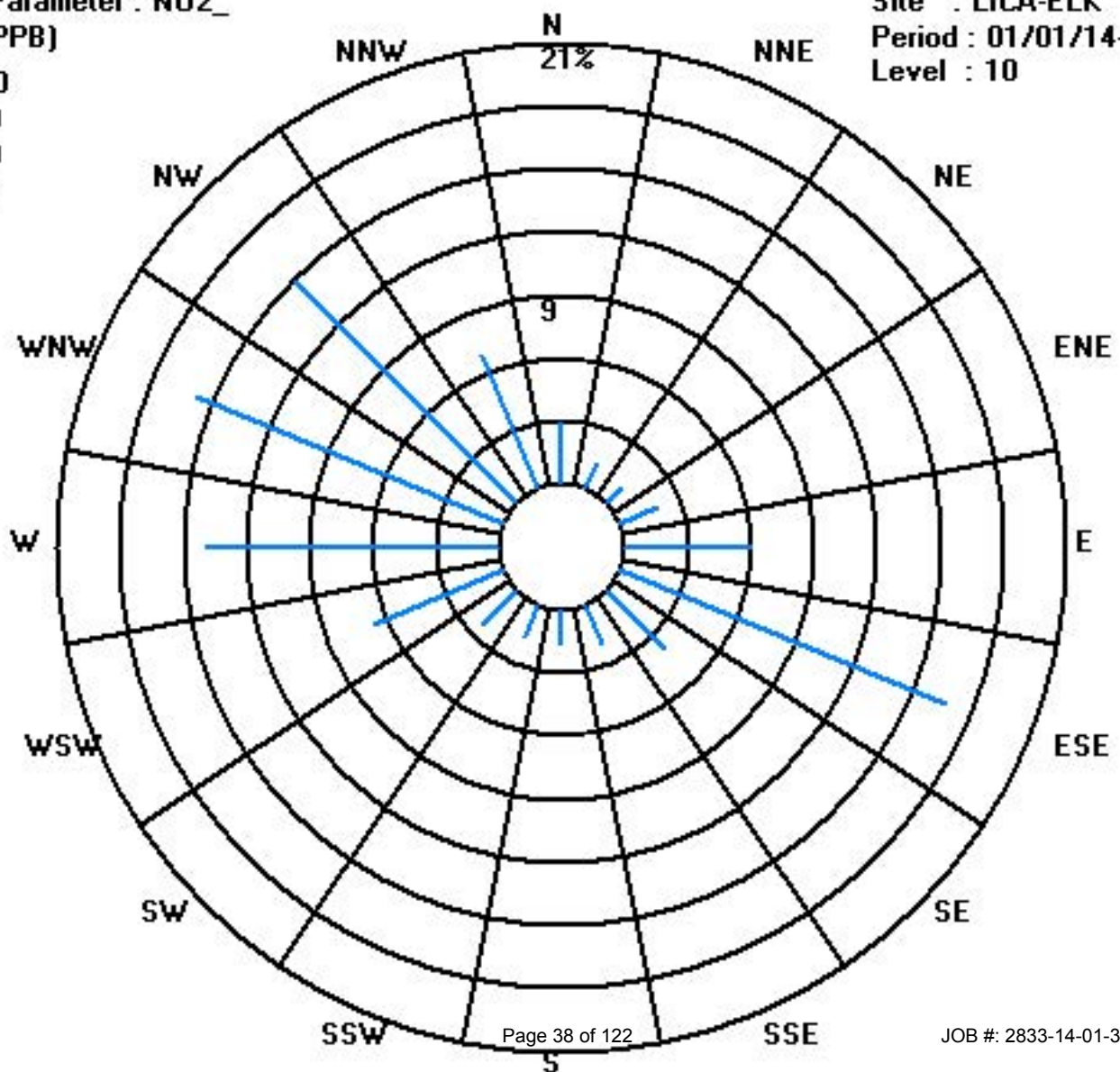
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	20	9	7	13	41	114	27	14	11	11	16	45	94	107	101	47	677
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	20	9	7	13	41	114	27	14	11	11	16	45	94	107	101	47	

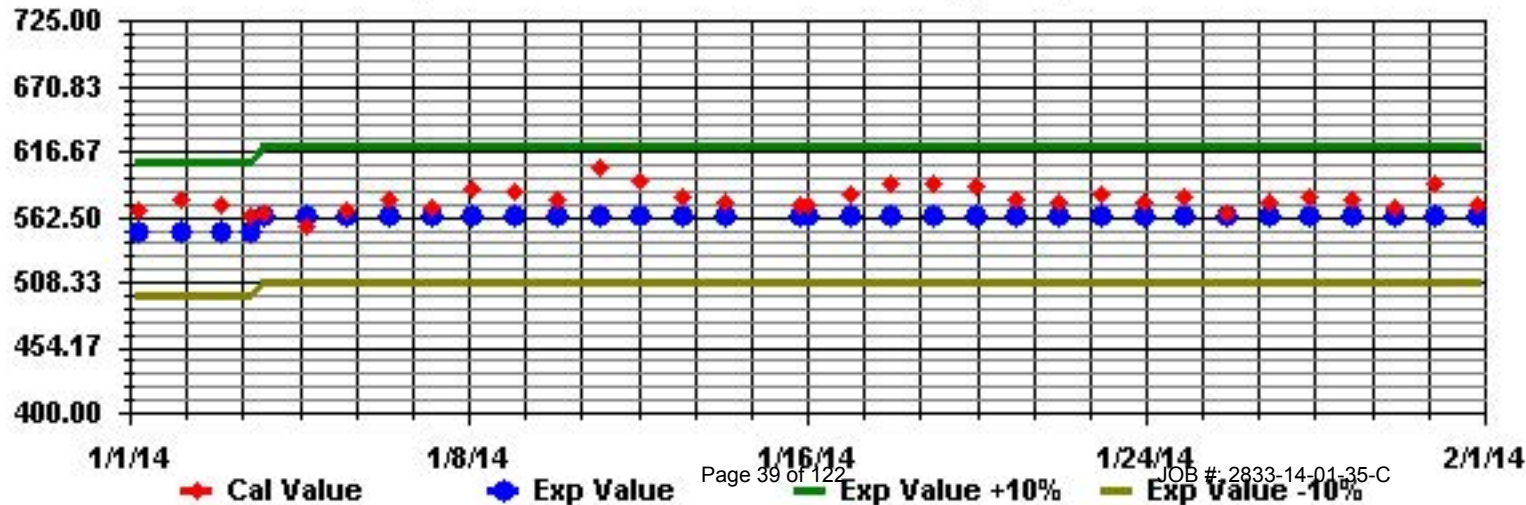
Calm : .00 %

Total # Operational Hours : 677

Class Limits (PPB)



Calibration Graph for Site: LICA35 Parameter: NO2_ Sequence: NO2 Phase: SPAN



Nitric Oxide

Lakeland Industry & Community Association - Elk Point Site

JANUARY 2014

NITRIC OXIDE (NO) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOURLY MAX	HOURLY AVG	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		15	25.7	25.4	64	S	21.6	18.5	35.1	39.1	44.9	34.4	25.1	19.6	17.9	21.2	17.5	4.9	4.9	2.8	1.9	0.9	2	2.5	2.1	64	19.4	24	
2		0.4	0	0	S	3.3	2.4	2.2	2.5	2.4	3.5	3.6	5.1	7.9	4	4.9	3	1.3	14.4	16.1	26.7	10	11.5	2.8	7	26.7	5.9	24	
3		6.2	6	S	29.6	4.3	1.4	0.7	0.5	C	C	C	C	C	C	C	C	C	C	0	0	0	0	0	0	0	29.6	3.7	24
4		0	S	1.1	1	0.6	0.1	0.2	1	0.5	2.1	2.3	1.3	1.4	0.2	0	0	0	0	0	0	0	0	0	0	0	2.3	0.5	24
5		S	0.5	0.2	0.1	0	0.2	0.1	0.9	1	2.8	3	3	4.8	1.6	2.3	0.6	1.6	6.6	8.7	2.6	1.6	2.2	7.6	S	8.7	2.4	24	
6		4.1	1.8	1.2	0.6	0.8	0.8	1	1.7	1.7	2.7	2.9	5.2	3.2	3.6	2.1	1	0.6	0.2	0.2	0.3	0.6	0	S	0.7	5.2	1.6	24	
7		0.3	0.2	0	0	0	0	0	0	0	0.1	0.3	0.3	1.7	2.1	2.3	1.6	0.6	0.9	0.5	0.4	0.1	S	1.1	0.4	2.3	0.6	24	
8		0.7	1.5	0.2	0.3	0.1	0.1	0.3	4.2	2.2	1.5	1	0.9	2.2	2.3	1.4	1.3	1.3	8.3	8.3	2.4	S	1.4	0.9	1.3	8.3	1.9	24	
9		0.7	0.6	0.9	0.7	0.7	0.5	1	0.9	1.5	4.9	6.5	8.1	9.6	6.5	3.1	2.1	1.9	1	1.6	S	13.1	16.3	19.5	15.4	19.5	5.1	24	
10		15.2	11.4	15.4	7	12.4	43.4	50	71.4	58.6	54.7	30.9	19.7	21.6	16.5	8.4	5.7	5.4	2.4	S	1.6	0.9	0.5	6.3	1.3	71.4	20.0	24	
11		1	1.7	5.5	2.4	4.6	1.6	1.5	1.1	1.6	2.3	2.5	1.5	1.2	0.6	0.6	0.2	0.5	S	0.6	0.4	0.5	0.2	0.2	0.3	5.5	1.4	24	
12		0.5	0	0.5	0.2	0.1	0.3	0.3	0.3	0.3	0.5	0.6	0.6	0.6	0.6	1.6	3.2	S	10.3	10.5	29.2	11	4.3	1.4	1.1	29.2	3.4	24	
13		0.7	0.7	0.7	1.5	1.1	0.9	4.2	13.2	18.3	3.7	0.4	0.5	0.3	0.2	0.3	S	0.5	0.1	0	0	8.3	1.2	4.3	0.3	18.3	2.7	24	
14		0.9	0.3	4.1	0.5	1.9	3	1.1	1.3	18.3	18.5	11.2	9.8	8.9	5.1	S	3.4	1.4	4.2	15.7	21.7	1.4	0.5	0.4	0.1	21.7	5.8	24	
15		0	0	0	0	0.1	0.1	0	0.1	0.3	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	0.3	0.1	9
16		P	P	P	P	R	0.5	0.4	S	S	4.4	3.8	2.2	S	4	6.6	P	P	R	2.3	1.4	0.9	1.7	0.5	0.5	6.6	2.2	16	
17		0.6	0.6	0.4	0.1	0.1	0	0.1	0.3	1.1	0.9	0.7	S	2	0.4	0.4	0.2	0.1	0.1	0.1	0.1	0	0.2	2.5	2.5	0.5	24		
18		7.9	0.6	0.6	0.2	0.7	0.8	2.9	2.1	7.7	6.8	S	2.5	2.5	3.4	2.8	1.8	0.6	0	7	1.1	3.7	6.9	0.4	0.1	7.9	2.7	24	
19		0.1	0.1	0	0.1	0.5	0.2	0.1	0.2	0.1	S	1.7	1.6	0.6	0.6	0.5	0.1	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.3	1.7	0.4	24	
20		0.3	0.4	0.3	0	0.6	2.2	3.8	14.4	S	11	11.6	9.6	5.1	6.6	5.4	3.5	1.8	1.6	0.5	0.6	0.5	0.3	1.3	0.4	14.4	3.6	24	
21		0	0	0	0	0	0.1	0	S	13.2	8.2	6.8	5.1	2.4	0.2	0.3	0.2	2.1	0	0	0	0	0	0	0	0	13.2	1.7	24
22		0	0	0.4	0.4	0.5	1.7	S	1.2	3.3	4.2	4	6	4.5	3.6	5.2	1.4	2.3	2	0.5	0.3	2	0.6	0.7	0.2	6	2.0	24	
23		0.3	0.6	0.6	1.1	0.2	S	6.6	6	7.9	7.9	5.6	6.1	3.2	1.7	0.9	0.3	0	0	0	0	0	0	0	0	7.9	2.1	24	
24		0	0	0	0	S	0.5	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	0.2	0	0.4	0.3	0.6	0.6	0.1	24	
25		0.1	0.1	2.8	S	1.9	0.8	1	0.4	0.5	0.6	0.3	0.3	0.5	0.5	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.3	2.8	0.5	24	
26		0.3	0.2	S	0.4	0	0.2	0	0	0	0.1	0.2	0.2	0.2	0.1	0	0	0	0	0	0	0	0	0	0.3	0.4	0.4	0.1	24
27		0.4	S	1.5	0.8	0.8	1.8	9.2	13.5	12.9	81	86.4	37.4	7.5	4.1	2.5	0.3	1.1	4.8	6.7	4	5.9	7.6	1.8	2.2	86.4	12.8	24	
28		S	3.4	2.8	1.7	1.2	1.2	1.7	3.2	6.9	15.7	10.1	7.1	7.1	5.1	2.9	5	3	6.4	6	0.9	0	0	0	S	15.7	4.2	24	
29		0.5	0	0	0	0	0	0	0	0	0.2	0.5	0.7	0.6	0.3	0.3	0.3	0	0	0	0	0	0	0	S	0.4	0.7	24	
30		0.2	0	0	0	0	0	0	0	0	0	0	0	0.2	0.1	0.1	1.2	2.1	0.7	0	0	0	0	S	1.2	0.9	2.1	0.3	24
31		1.1	0.6	0.5	0.5	0.4	0.3	0.3	0.1	0.1	0.3	0.3	0.5	0.4	0.2	0.2	0.3	0.2	0.1	0.1	0	S	0.5	0.3	0.1	1.1	0.3	24	
HOURLY MAX		15	26	25	64	12	43	50	71	59	81	86	37	22	18	21	18	5	14	16	29	13	16	20	15				
HOURLY AVG		2.1	2.0	2.3	4.0	1.3	2.9	3.6	6.1	7.1	10.1	8.3	5.7	4.3	3.2	2.7	2.0	1.2	2.6	3.1	3.3	2.2	2.1	1.9	1.4				

STATUS FLAG CODES

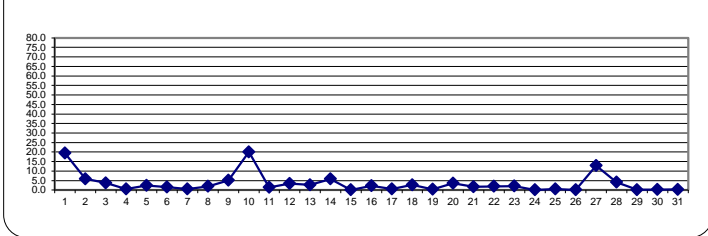
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT: ALBERTA ENVIRONMENT: 1-HR 159 PPB

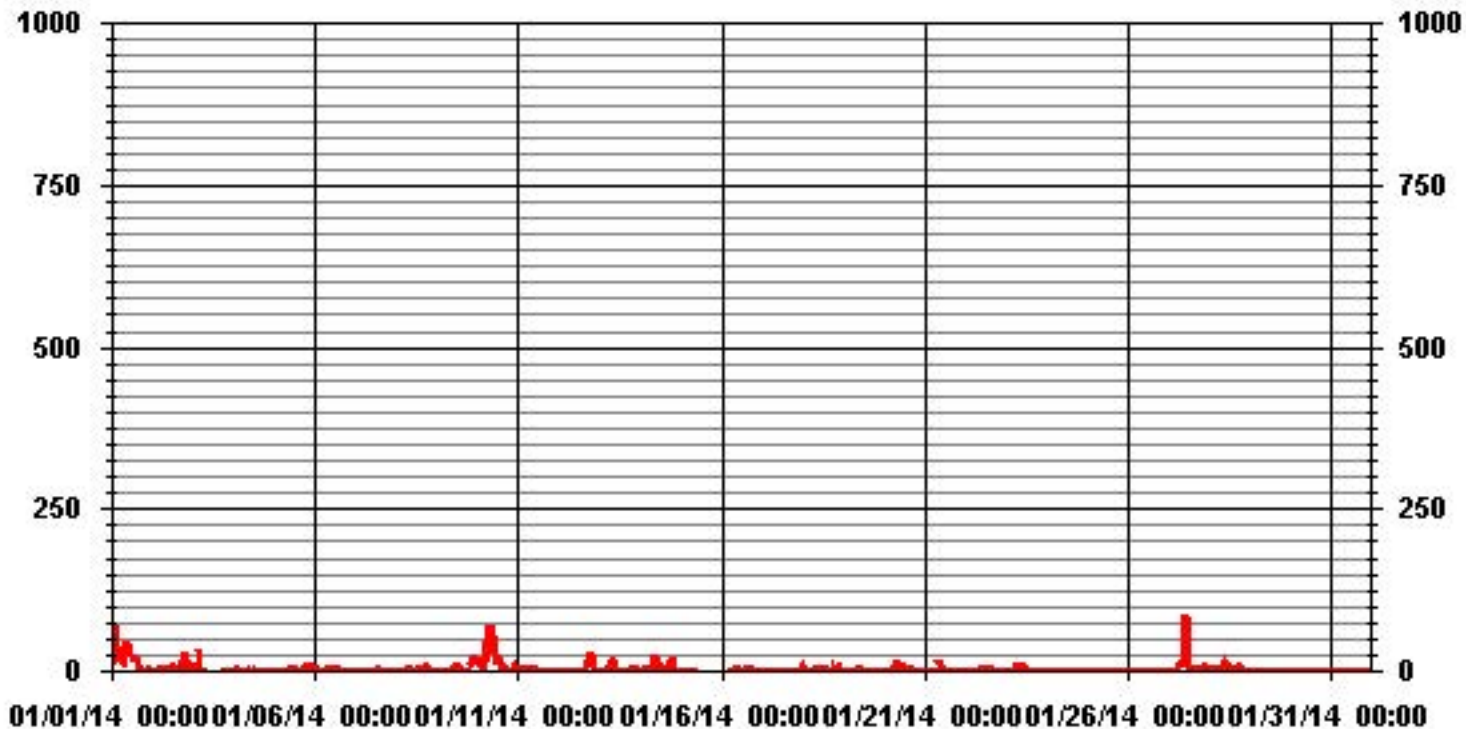
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	554					
MAXIMUM 1-HR AVERAGE:	86.4	PPB	@ HOUR(S)	10	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	20.0	PPB			ON DAY(S)	10
					VAR-VARIOUS	
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	721	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	96.9	%	
STANDARD DEVIATION:	8.76		MONTHLY AVERAGE:	3.57	PPB	

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



Lakeland Industry & Community Association - Elk Point Site

JANUARY 2014

NITRIC OXIDE MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY																												
1	21.1	29.6	48.6	102.6	S	61.2	47.1	47.7	47.8	50.9	53.8	28.8	23.7	19	25.7	24.3	37.2	7.9	7.2	22.9	1.7	5	7.9	9.3	102.6	31.8	24	
2	2.5	0.6	0.6	S	5.5	3.5	3.1	4.8	5.1	5.1	5.1	8.8	9.9	6.3	8.2	8.7	2.5	33.9	26.8	55.3	26.6	21.6	7.4	18.1	55.3	11.7	24	
3	14.7	10.5	S	41.1	17	2.6	1.2	1.3	C	C	C	C	C	C	C	C	C	0.7	0	0	0	0	0	0	0	41.1	6.9	24
4	0	S	3.6	3.7	1.6	1.7	1.3	5.3	1.3	3.4	5.4	4.7	3.3	0.7	0.5	0.5	0.6	0.6	0.6	0.3	0.3	0.5	0.6	5.4	1.8	24		
5	S	1.2	0.9	0.6	0.6	0.6	0.6	3	2.2	4.7	5.9	8.6	8.4	6.9	8.4	1.9	7.6	33.4	43.3	4.8	2.3	6.8	18.4	S	43.3	7.8	24	
6	10.6	3.5	2.2	1.2	1.3	1.8	2.1	3.9	4.7	5.5	4.3	8.6	5.2	7.6	4.4	1.5	1.4	1	0.8	1.7	2.4	0.6	S	1.2	10.6	3.4	24	
7	1	0.7	0.5	0.5	0.5	0.6	0.3	0.2	0.2	0.7	1.2	1	3.4	3.6	3.9	4.7	2.4	2.4	2	1.2	1.4	S	2.1	1	4.7	1.5	24	
8	2.5	2.4	1.1	1.3	1.3	0.9	1.1	19.3	14.2	4.6	2.6	1.9	7.2	28.3	10.8	3.2	2.8	42	23.9	5.9	S	2.3	S	3.8	42	8.3	24	
9	1.7	1.7	3.4	1.6	1.7	1.1	3.1	1.7	5.4	8.1	8.7	13	21.5	24.2	6.2	5.3	4.8	2.1	3.7	S	71.1	74.4	47.3	34	74.4	15.0	24	
10	44.4	14.9	21.3	19.8	19.8	104.5	69.6	109.7	94.7	59.6	50.1	24.4	34.1	34.1	10.5	8.4	11.1	5.6	S	5	5.3	1.2	40	5.8	109.7	34.5	24	
11	4.9	3.4	16	3.5	17.6	3.2	4.6	1.8	2.8	3.4	5.9	11.7	2	1.4	2.2	1.1	2.2	S	1.6	1.4	1.2	1	1	1.2	17.6	4.1	24	
12	1.1	0.6	1.3	1	0.7	0.8	0.9	0.8	0.9	1.2	1.1	1.2	1.2	1.2	9.1	32.1	S	40.3	30.9	121.4	25.1	13.4	3.1	1.8	121.4	12.7	24	
13	2.4	1.4	1.7	7.5	3.1	3.5	14.8	30.7	74.2	33	1.1	1.1	0.8	1.3	1.1	S	1.4	0.6	0.6	0.8	83.9	3.2	41.7	1.5	83.9	13.5	24	
14	2.7	2.3	7.8	1.7	34.7	15.9	2.4	2.5	58.4	36	16.7	15.7	11.1	11.7	P	P	P	R	48	56.3	5.3	1.5	1.4	0.6	58.4	16.6	20	
15	0.5	0.6	0.3	1	0.9	0.6	0.4	0.8	1	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	1	0.7	9
16	P	P	P	P	R	2	1.1	S	S	8.9	7	4	S	5.5	11.6	P	P	R	5.7	2.7	1.7	6.3	1.2	1.1	11.6	4.5	16	
17	2	1.4	1.2	0.7	0.6	0.5	0.9	1.6	3.7	3.8	2.2	S	3.9	0.9	0.7	0.8	0.7	0.4	0.7	0.6	0.7	0.8	1.1	10.7	10.7	1.8	24	
18	119.8	2.2	1.8	0.8	2.3	4.2	26.4	25.5	24.3	17	S	3.4	3.5	4.9	4.1	3	1.6	0.6	19.5	4	14.7	63.7	1	1	119.8	15.2	24	
19	0.7	0.6	0.5	0.9	1.5	1.4	0.8	1	0.8	S	3.4	3.6	1.3	1.5	1.5	0.5	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.8	3.6	1.1	24	
20	0.8	0.9	1.1	0.7	2.5	6.3	6.4	30.5	S	21.8	17.8	12.6	8.8	10.4	6.5	5.8	2.9	4.9	1.3	1.3	1	1	2.3	1.3	30.5	6.5	24	
21	0.6	0.6	0.5	0.3	0.6	0.6	0.4	S	52	15.6	17	11.7	8.7	0.8	0.9	0.9	36.4	0.6	0.7	0.6	0.5	0.5	0.7	0.5	52	6.6	24	
22	0.5	0.9	3.6	3.1	1.6	5.7	S	3.8	6.8	8.8	5.7	9.5	7.8	5.7	8.7	3.6	19.8	7	2.2	1.1	36.9	1.9	2.3	1.2	36.9	6.4	24	
23	2.3	1.6	1.6	2.8	1	S	20.2	10.2	15.4	17.3	7.1	8.6	4.6	3.2	3	1	0.5	0.3	0.3	0.1	0.1	0.1	0.6	0.3	20.2	4.4	24	
24	0	0.9	0.3	1	S	1.9	0.5	0.5	0.4	0.5	0.6	0.4	0.5	0.4	0.5	0.3	1.9	1.7	2	1.2	2.6	1.1	4	4	1.0	24		
25	0.7	0.9	10.5	S	5	1.6	2.1	1.2	1.2	1.6	0.8	0.8	1.2	1.1	0.8	0.7	0.8	1	0.8	0.9	0.8	0.8	0.9	10.5	1.6	24		
26	0.7	1	S	1.4	0.6	0.8	0.5	0.6	0.5	0.7	0.8	0.7	0.8	0.7	0.3	0.3	0.3	0.3	0.4	0.2	0.4	1.2	1.2	2	2	0.7	24	
27	1.2	S	6.4	2.2	2.2	5.5	51.2	25	49.2	101.3	110.5	79.3	12.6	5.3	4.3	1.8	10.9	10.8	17.2	16.1	21.8	15.6	5.9	5.4	110.5	24.4	24	
28	S	9.6	5.9	6.2	2.6	3.7	4.7	14.7	18.5	38.5	16	10.1	12.3	7	5.1	16	15.1	71.5	39.2	5.1	0.9	0.2	0	S	71.5	13.8	24	
29	1.5	0.5	0.6	0.6	0.4	0.4	0.3	0.3	0.5	0.9	1	1.3	1.3	0.8	0.8	0.8	0.7	0.5	0.2	0.3	0.3	0.5	S	1	1.5	0.7	24	
30	0.7	0.4	0.4	0.5	0.5	0.4	0.1	0.4	0.3	0.5	0.5	0.5	2	0.8	1.3	3.5	6.7	2.1	0.9	0.5	0.5	S	2	1.7	6.7	1.2	24	
31	2.2	1.2	1.3	1.2	0.9	0.8	0.7	0.6	0.6	0.7	0.8	1.1	1	0.7	0.7	0.7	0.8	0.8	0.6	0.6	S	1.2	0.8	0.5	2.2	0.9	24	
HOURLY MAX	120	30	49	103	35	105	70	110	95	101	111	79	34	34	26	32	37	72	48	121	84	74	47	34				
HOURLY AVG	8.7	3.4	5.2	7.5	4.6	7.9	9.0	12.0	17.4	16.2	12.6	9.9	7.2	6.8	5.1	5.1	6.6	10.5	9.7	10.8	11.0	8.2	7.1	4.0				

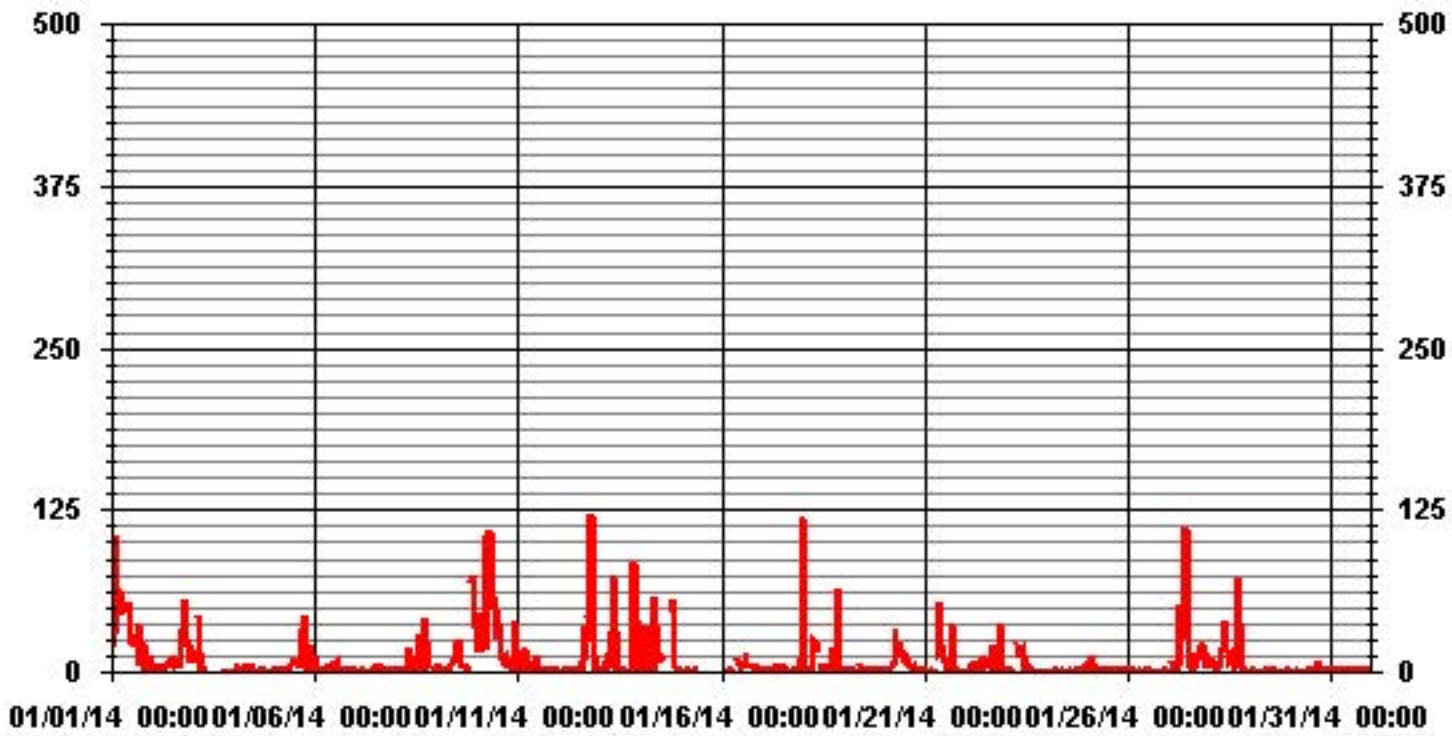
STATUS FLAG CODES

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:	665
MAXIMUM INSTANTANEOUS VALUE:	121.4 PPB @ HOUR(S) 19 ON DAY(S) 12
	VAR-VARIOUS
IZS CALIBRATION TIME:	34 HRS
MONTHLY CALIBRATION TIME:	10 HRS
OPERATIONAL TIME:	717 HRS
STANDARD DEVIATION:	17.17

01 Hour Averages



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

January 2014

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA-ELK
 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	2.95	1.32	1.03	1.92	6.05	16.83	3.98	2.06	1.47	1.47	2.21	6.49	13.88	15.36	14.91	6.94	98.96
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.14	.14	.14	.14	.00	.44	.00	.00	1.03
< 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	2.95	1.32	1.03	1.92	6.05	16.83	3.98	2.06	1.62	1.62	2.36	6.64	13.88	15.80	14.91	6.94	

Calm : .00 %

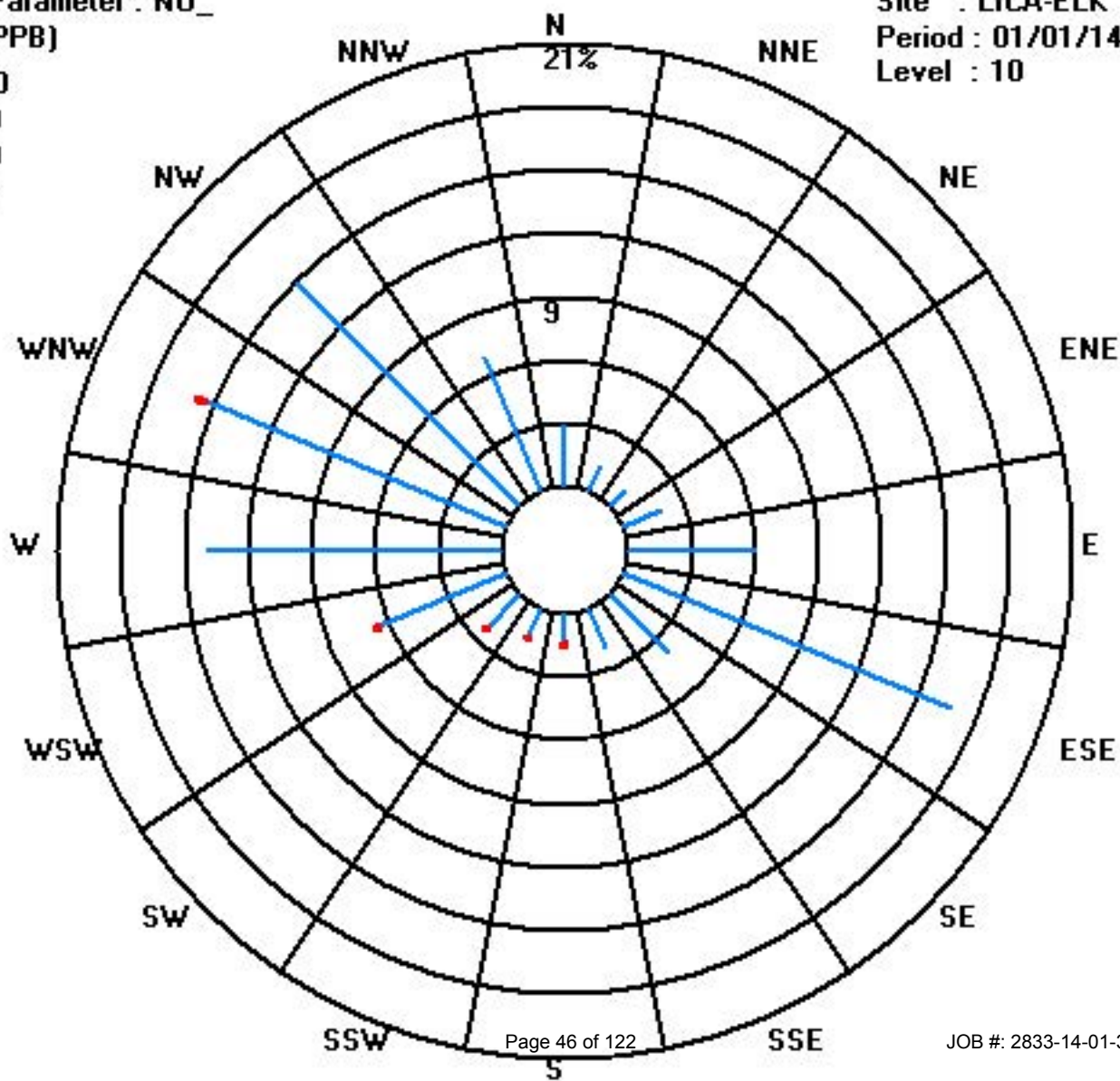
Total # Operational Hours : 677

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	9	7	13	41	114	27	14	10	10	15	44	94	104	101	47	670
< 110.0									1	1	1	1		3			7
< 210.0																	
>= 210.0																	
Totals	20	9	7	13	41	114	27	14	11	11	16	45	94	107	101	47	

Calm : .00 %

Total # Operational Hours : 677



Oxides of Nitrogen

Lakeland Industry & Community Association - Elk Point Site

JANUARY 2014

OXIDES OF NITROGEN (NOx) hourly averages in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																												
1	40.3	51.4	49.4	90.3	S	47.2	39.3	60.9	65.1	70.5	56.7	43.4	36.2	34.5	41	38.9	25	25.7	19.3	15.5	14.6	18.2	19.6	18.8	90.3	40.1	24	
2	11.2	8.9	8	S	9.1	9.3	8.8	10.1	12	12.7	10.2	12	15.7	10.2	14.6	12.9	12	35.6	39.9	52.8	32	33.8	22.1	28.7	52.8	18.4	24	
3	28.3	27.4	S	52	16.4	6.3	3.5	2.9	C	C	C	C	C	C	C	C	C	1.1	0.6	0.4	0.1	0.1	0.1	0.5	52	10.7	24	
4	0.5	S	8.3	11.4	7.9	2.1	2.5	10	7.7	11	7.4	3.6	4.1	0.9	0.5	0.6	0.7	0.4	0.3	0.3	0.2	0.3	0.5	0.8	11.4	3.6	24	
5	S	1.1	0.9	1.1	1.1	1.6	0.9	7.8	9.4	10.3	8.9	7.8	11.7	4.3	7.9	4.6	13.4	31	34.3	31.6	28.7	29	38.5	S	38.5	13.0	24	
6	29.7	22.4	18.2	14.2	14.1	11	12	15.4	14.8	13.8	12.1	16.5	12.1	13.4	10.9	8.9	10.7	9.5	10.2	10.1	12.2	9.7	S	8	29.7	13.5	24	
7	9.2	8.4	6.4	6	5.2	5.4	2.7	4.6	2.6	2.9	2.7	2.5	6.3	8.1	10	10.1	7.5	7.7	7.7	6.4	6.3	S	7.8	6.4	10.1	6.2	24	
8	6	9.3	3.3	4.1	3.1	3.1	3.6	10.5	8	6.4	4.4	4	6.8	7.3	6.4	7	12.2	35.6	34.7	24.1	S	12.4	9.2	12.5	35.6	10.2	24	
9	10.2	10	11.4	14.9	12.9	9.8	10.9	12.9	13	18.5	17.4	18.6	21.7	16.7	11.3	10.5	13.2	15.5	15.5	S	38.2	44.7	49	43.7	49	19.2	24	
10	43.2	38.2	41	31.2	38.4	70.4	76.8	100.8	86.5	80.6	51.2	34.8	37.8	31.9	23.3	22.8	28.9	27.6	S	17.5	13.1	13.2	28.3	14.5	100.8	41.4	24	
11	13.8	25	33	27.9	29.6	20.1	15.9	16.2	14.6	12.1	10.2	6.8	4.8	4.2	4	3.8	7.1	S	3.6	6.9	11.5	4.7	4.3	3.5	33	12.3	24	
12	5.7	1.8	5.9	2.8	1.1	3.5	3	2.2	1.5	1.1	1.1	0.9	1	1	3.8	8.6	S	33.1	35.6	59.1	38.5	24.6	13.8	11.4	59.1	11.4	24	
13	10.2	11.8	10.8	12.9	15	14	23	39.4	44.1	9.6	1.4	1.5	1	0.9	0.8	S	1.9	1.2	2.4	2.5	25.8	14.8	22	9.9	44.1	12.0	24	
14	17.2	10.7	31.2	16.6	18.9	19.8	17.7	25.6	51.5	46.3	31.5	27.3	25.7	21.1	S	19.3	16.1	29.8	52.4	57.6	15.3	8.8	7.4	6.4	57.6	25.0	24	
15	2.3	1.2	1.2	2.1	1.9	0.2	0.1	0.3	2.1	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	2.3	1.3	9
16	P	P	P	P	R	5.4	7.9	S	18.9	13.6	8.1	S	13.2	24.2	P	P	R	29	22.8	24.9	28.3	14	17.9	29	29	17.6	16	
17	15.8	21.5	16.5	7.9	9.8	8.8	7.4	10.2	12	6.3	3.9	S	5.6	1.2	1.1	1.2	1.1	0.7	0.9	1	1.3	6.9	6.3	18.2	21.5	7.2	24	
18	22.9	16.1	11.6	10.1	17.2	18.2	28.5	26.5	36.4	25.3	S	7.5	8.5	11.9	11.2	11.1	12.5	12.7	40.9	21.2	28.6	33	13.8	5.3	40.9	18.7	24	
19	2.4	1.1	1.9	4.1	7.4	3.1	0.8	3.5	4.5	S	6.7	5.6	1.9	1.7	2	0.5	0.8	0.7	0.8	1.3	1.2	1.4	1.5	1.9	7.4	2.5	24	
20	2	2.4	3	1.5	6.3	16.6	24.5	45	S	29.2	26.4	20.5	13.3	16.5	15.3	14.3	13.5	14.5	13.7	15.4	17.2	13.8	24.8	12.7	45	15.8	24	
21	3.2	2.1	1.8	1.6	3	3.8	2.1	S	30.5	27.1	17.5	12.8	6.2	1.1	1.4	2	8.3	3.3	2	2.5	3.4	3	2.4	2.2	30.5	6.2	24	
22	2.4	3.1	5.1	8.8	7	15.7	S	11.3	17.1	13.3	9.8	12.3	9.5	8.2	11.9	5.9	11.1	13.5	11.7	11.1	14.8	12.6	12.8	8.9	17.1	10.3	24	
23	10	14.8	15.4	16	10	S	31	35	34.8	23.7	17.6	17.8	11.1	8	6.1	5.6	5.7	6.5	5.4	4.1	5.1	4.5	6.3	5.8	35	13.1	24	
24	4.2	3.6	3.8	4	S	4.8	1.7	2.3	2	1.6	2	1.4	1.4	1.2	1.1	1.2	1.2	7.4	11.9	11.5	5.9	11.7	13.3	15.1	15.1	5.0	24	
25	15	14.5	23.4	S	17.2	9.2	9.6	4.4	4.9	5.1	1.5	0.9	1.2	0.8	0.7	0.5	0.4	0.9	1	0.8	0.6	0.4	0.4	1.4	23.4	5.0	24	
26	0.8	0.4	S	0.6	0.5	0.5	0.7	0.7	1.3	1.3	1	0.8	0.9	0.8	0.5	0.7	0.7	0.6	0.8	4	6.7	9.5	10.8	10.8	2.0	24		
27	10.6	S	12.4	11.4	13.8	19.2	34.1	43.9	31.7	113.8	116.1	58.4	16.2	10.6	7.8	3	9	29.2	32.7	25	32	43.8	18.5	24.7	116.1	31.2	24	
28	S	30.3	25.8	18.7	18.1	17.2	20.5	22.9	26.8	34.6	22.7	16.8	17.1	14.4	11.1	19.1	18.9	29.8	33.4	23.2	12.6	7.2	4.2	S	34.6	20.2	24	
29	2.2	1.1	0.7	0.9	0.7	1.8	1.6	1.4	1.9	2.5	2.7	3.1	2.9	2	2.1	2.7	2.8	2.7	2.7	3.3	4	5.5	S	2.5	5.5	2.3	24	
30	2.7	2	1.4	2.2	2.2	1.1	0.2	0.1	0.2	0.4	0.3	0.3	0.9	0.8	1	5.1	10.5	7.8	4.2	6.1	6.9	S	7.7	12.2	12.2	3.3	24	
31	14.2	8.5	11.3	8.2	4.4	2	2	1.4	1	1.1	0.9	1.2	0.9	0.8	0.8	1	0.9	0.9	1	0.7	S	1.1	0.9	0.6	14.2	2.9	24	
HOURLY MAX	43	51	49	90	38	70	77	101	87	114	116	58	38	35	41	39	29	36	52	59	39	45	49	44				
HOURLY AVG	12.0	12.5	13.0	13.7	10.4	11.7	13.1	18.2	19.2	21.4	16.4	12.4	10.1	8.5	8.3	8.2	9.1	14.2	15.5	15.0	14.3	14.1	12.8	10.9				

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

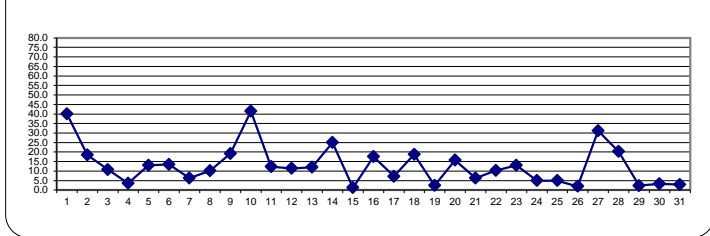
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

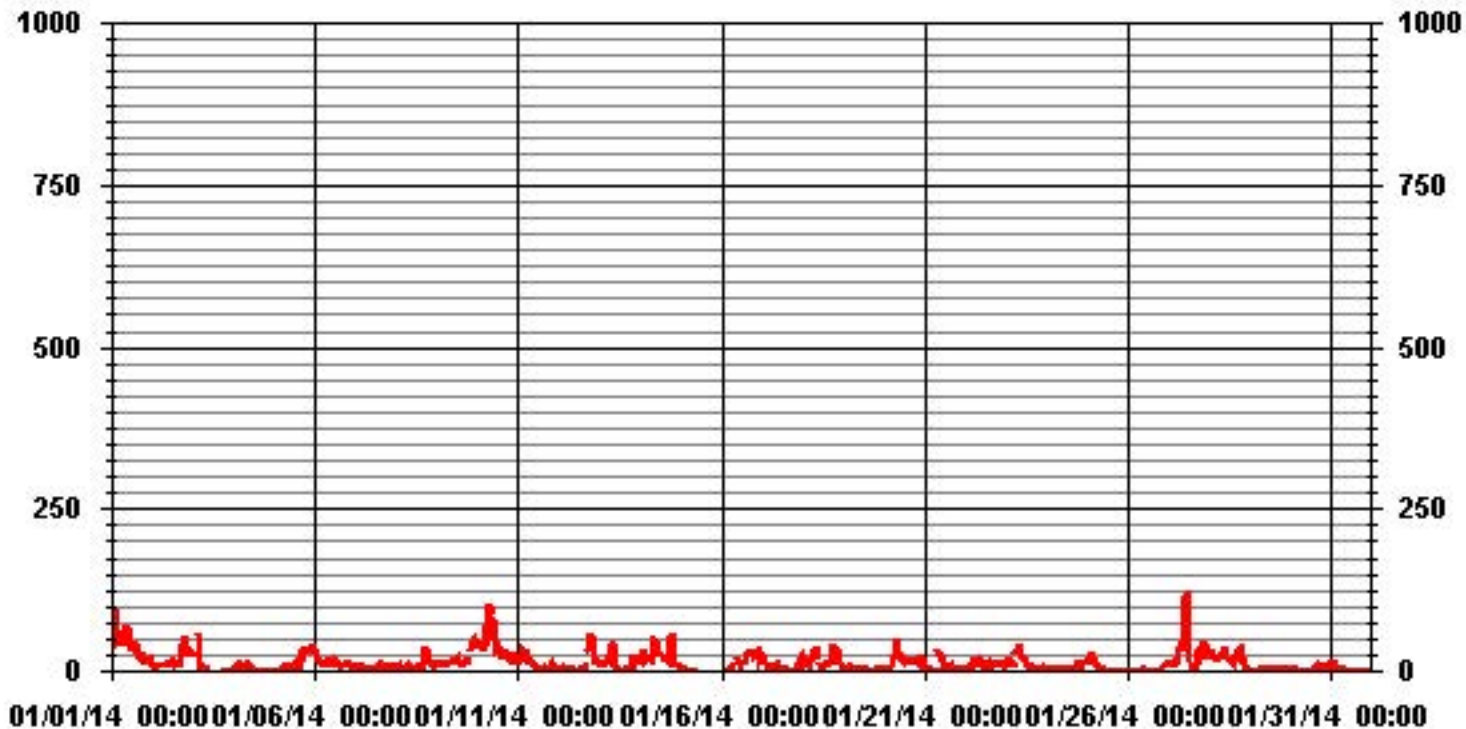
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	677					
MAXIMUM 1-HR AVERAGE:	116.1	PPB	@ HOUR(S)	10	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	41.4	PPB			ON DAY(S)	10
					VAR-VARIOUS	
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	721	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	96.9	%	
STANDARD DEVIATION:	15.31		MONTHLY AVERAGE:	13.14	PPB	

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



— LICA35 NOX_ PPB

Lakeland Industry & Community Association - Elk Point Site

JANUARY 2014

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	46.5	54.7	73.1	130.4	S	89.5	74.7	76.4	74.6	76	78.5	49	41.3	36.5	47	45.4	60	31.6	30	41.5	17.6	25.5	28.5	35.3	130.4	54.9	24	
2	14.4	10	9.7	S	11.4	11.1	10.4	14.8	17.4	18.2	12.5	16.9	18.8	13.7	55.1	24.1	13.5	61.6	52.2	89.4	50.6	45.7	30	42.4	89.4	28.0	24	
3	38.8	32.3	S	64.1	39.2	11.2	4.6	4.6	C	C	C	C	C	C	C	C	C	C	2.5	1.2	1.1	0.6	0.9	1.7	64.1	15.6	24	
4	1.7	S	20.9	26.9	13.1	12.7	10.4	27.2	11.1	14.5	14.6	11.5	8	1.5	1.2	1	1.3	1.1	0.9	0.9	0.8	0.8	1.1	1.9	27.2	8.0	24	
5	S	1.8	1.5	2.1	1.9	5.2	2.5	18.3	13.7	16.7	15.1	19.8	19	16.5	22.7	8.4	36.1	71.2	83.6	38.2	31.1	32.8	52.9	S	83.6	23.2	24	
6	40.7	30.9	22.9	17.3	17.4	13.3	15	20.9	20.3	17.3	14.6	23.8	14.6	18.3	16.4	12	12.9	13.3	14.1	15.3	17.3	11.8	S	12.3	40.7	17.9	24	
7	12	9.6	7.6	6.9	6.4	6.4	4.4	5.8	4.2	3.6	4	3.3	10.5	12	13.1	17.3	10.7	13.7	13.7	8.4	8.4	S	9.7	8.2	17.3	8.7	24	
8	12.4	12.2	6.9	7.1	4.7	4	5.2	36.5	26.9	11.2	7	6.1	13.8	68.8	39.4	10.5	17.7	78.6	60.2	37.4	S	16.5	S	16.7	78.6	22.7	24	
9	13.7	13.8	17.1	17.2	15.7	13	16.2	16.3	24.5	23.4	22.7	25.5	40.6	41.6	19.3	17.9	20.4	21.9	25.7	S	104.1	100.7	79.2	63.8	104.1	32.8	24	
10	74.7	42.6	47.5	45.6	46.1	133.1	97.3	137.9	123.9	86.4	73.6	41.1	55.3	55	25.2	30.1	35.4	32.7	S	24.6	25	20.2	74.4	24.3	137.9	58.8	24	
11	29.5	29.2	46.9	30.2	46.6	27	25.8	18.1	18.2	14.4	17.5	20.3	6.3	5.3	6.8	6.3	14.1	S	4.6	18.9	15.8	10.9	10.8	11.3	46.9	18.9	24	
12	12	4	9.8	7.9	1.8	4.7	4.3	3	2.3	1.5	1.6	1.7	1.6	1.7	20.8	60.5	S	69.4	62.2	159.4	57.1	43.1	19	13.6	159.4	24.5	24	
13	13.6	14	15.6	25.5	21.6	23	40.3	58.4	115.9	62.1	2.4	2.4	1.5	9.5	3	S	3.3	2	3.8	7	122.7	21.5	77.9	17.8	122.7	28.9	24	
14	27	24.8	41.1	22.5	67.2	47.1	25	33	92	67.3	39.3	38	30.2	33.6	P	P	P	P	R	85.9	97.7	31	13.6	11.1	9.8	97.7	41.9	20
15	4.6	1.9	2.7	5.1	8	0.8	0.8	0.7	4.4	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	8	3.2	9
16	P	P	P	P	R	9.5	11.9	S	S	28.9	25.3	13.7	S	17.7	37.5	P	P	R	39.3	30.4	30.7	40.1	19.2	23.4	40.1	25.2	16	
17	21.4	25.5	23.4	14	14.8	14.7	11.1	16.9	18.3	18.2	10.1	S	10.5	1.7	1.7	1.9	2	1.1	1.7	1.6	2.4	12.4	15	44.9	44.9	12.4	24	
18	164.4	26.3	26.6	16	27.3	31.2	74.4	66.8	59.8	48.8	S	8.8	10.1	15.4	13.9	13.2	15.9	18.9	63.6	34.6	57.5	107.1	16.3	9	164.4	40.3	24	
19	4.2	3.5	5.3	7.6	14.3	15.8	4	7.7	7.5	S	12.6	11.1	3.4	3.9	6.2	0.9	1.5	1.3	1.9	1.9	1.8	2	2.2	2.3	15.8	5.3	24	
20	2.6	3.2	7.7	2	13.1	29.1	29.3	66.3	S	47	35.5	26.7	20.2	23.5	17.7	17.8	16.1	19.6	18.6	21	19.8	15.6	28.5	22.7	66.3	21.9	24	
21	5.3	3.3	3.1	2	6	5.5	3.8	S	87.4	43.2	36.5	25.4	20.7	2.7	2.6	4.1	74.7	5.6	2.7	4	4.1	4.3	4	6.5	87.4	15.5	24	
22	6	9.7	20.8	20.1	12.2	25.7	S	19.2	28.6	22.2	12.7	17.2	14.3	12.3	17.6	9.8	36.1	28.3	15.9	15.7	63.9	20.7	22.3	10.1	63.9	20.1	24	
23	15.1	18.9	20.1	23.1	16.6	S	54.8	40.9	41.1	43.1	20.8	22.3	13.4	10.6	10.2	6.9	7.3	13	8.4	5.9	7.7	7.5	22.1	17.9	54.8	19.5	24	
24	7.5	12.2	11.4	14.1	S	13.3	3	3.4	3.4	2.4	3.3	2.1	2	1.9	1.8	1.9	1.8	17.2	15.8	24.8	13	23.1	17.5	25	25	9.6	24	
25	19.5	17.2	37.4	S	25	17.1	15.8	8.4	9.8	8.3	2.2	1.5	2.1	1.4	1.3	1	0.9	1.7	1.7	1.4	1.1	1.1	1.1	2.2	37.4	7.8	24	
26	1.9	1.1	S	1.5	1	1.1	1.2	1.4	1.8	1.8	1.5	1.3	1.3	1.3	1.1	1.3	1.1	1.3	1.3	1.8	9.3	10.3	13.9	17.6	17.6	3.4	24	
27	15.9	S	28.9	13	22.2	28.8	83	62	78.6	139.9	141	108.4	25.2	12.3	11.8	11.1	44.2	44.1	53.2	48.6	55.1	59.6	33	39.1	141	50.4	24	
28	S	40.9	32.6	27.1	23.5	21	26.5	43.1	47.7	64.8	33.5	21.2	26.2	18.5	15.1	42.1	41.3	109.3	76.7	33.3	23.7	9.5	7.5	S	109.3	35.7	24	
29	3.1	2.4	1	1.4	1.6	2.5	2.2	1.9	2.6	3.2	3.4	4.2	3.9	2.6	3.3	3.7	4	3.5	3.5	3.9	6.1	6.5	S	3.4	6.5	3.2	24	
30	3.3	3.1	2.3	2.7	2.9	2	0.9	0.6	0.8	1	1	1.3	4.7	2.7	3.7	13.7	24.8	15.4	7.7	9.3	12.6	S	9.3	18.9	24.8	6.3	24	
31	21.4	10.6	16.2	9.1	7.3	2.5	2.5	1.9	1.6	1.7	1.5	1.8	1.4	1.4	1.3	1.5	1.5	1.4	1.5	1.3	S	2.1	1.5	1.2	21.4	4.1	24	
HOURLY MAX	164	55	73	130	67	133	97	138	124	140	141	108	55	69	55	61	75	109	86	159	123	107	79	64				
HOURLY AVG	22.6	16.4	20.0	20.1	17.5	20.7	22.0	28.0	33.5	31.7	23.0	18.8	15.0	15.3	14.9	14.0	19.2	26.1	26.0	26.9	28.3	23.8	22.6	18.0				

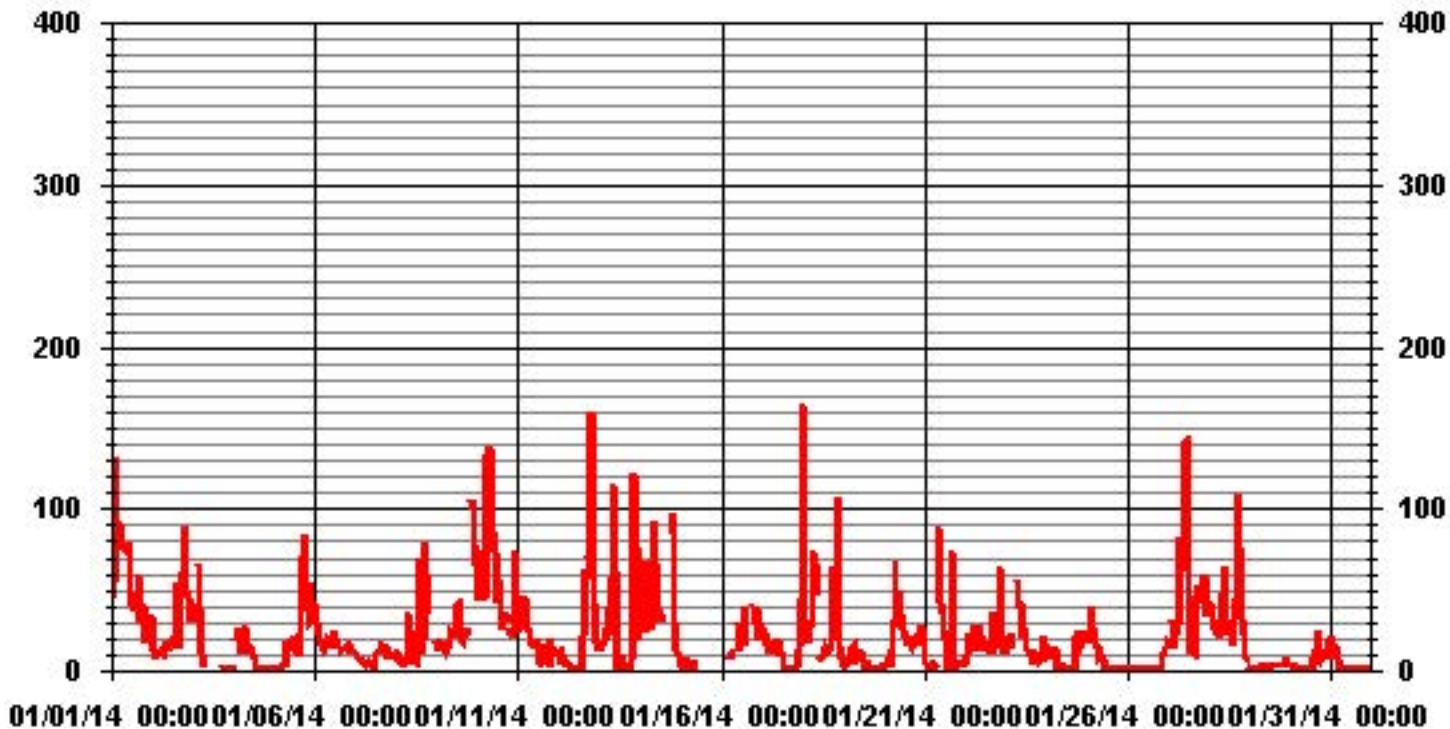
STATUS FLAG CODES

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:	673
MAXIMUM INSTANTANEOUS VALUE:	164.4 PPB @ HOUR(S) 0 ON DAY(S) 18
	VAR-VARIOUS
IZS CALIBRATION TIME:	34 HRS
MONTHLY CALIBRATION TIME:	10 HRS
OPERATIONAL TIME:	717 HRS
STANDARD DEVIATION:	25.55

01 Hour Averages



— LICA35 NOXMAX PPB

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

January 2014

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
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	2.95	1.32	1.03	1.77	5.61	16.54	3.69	1.77	1.47	1.47	2.21	6.49	13.58	15.21	14.77	6.94	96.89
< 110.0	.00	.00	.00	.14	.44	.29	.29	.29	.14	.14	.14	.14	.29	.29	.14	.00	2.80
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.29	.00	.00	.29
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.95	1.32	1.03	1.92	6.05	16.83	3.98	2.06	1.62	1.62	2.36	6.64	13.88	15.80	14.91	6.94	

Calm : .00 %

Total # Operational Hours : 677

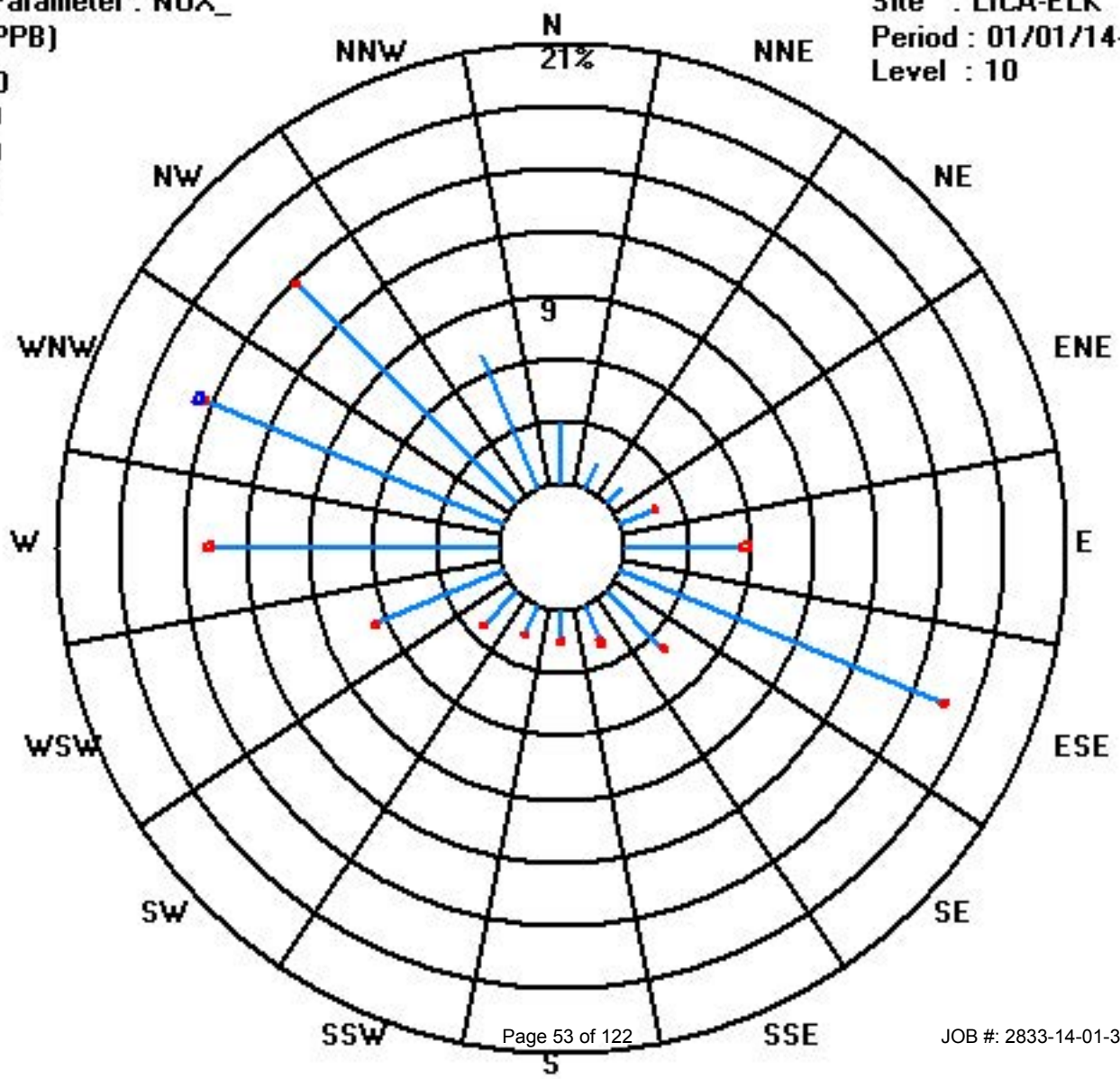
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	20	9	7	12	38	112	25	12	10	10	15	44	92	103	100	47	656
< 110.0				1	3	2	2	2	1	1	1	1	2	2	1		19
< 210.0														2			2
>= 210.0																	
Totals	20	9	7	13	41	114	27	14	11	11	16	45	94	107	101	47	

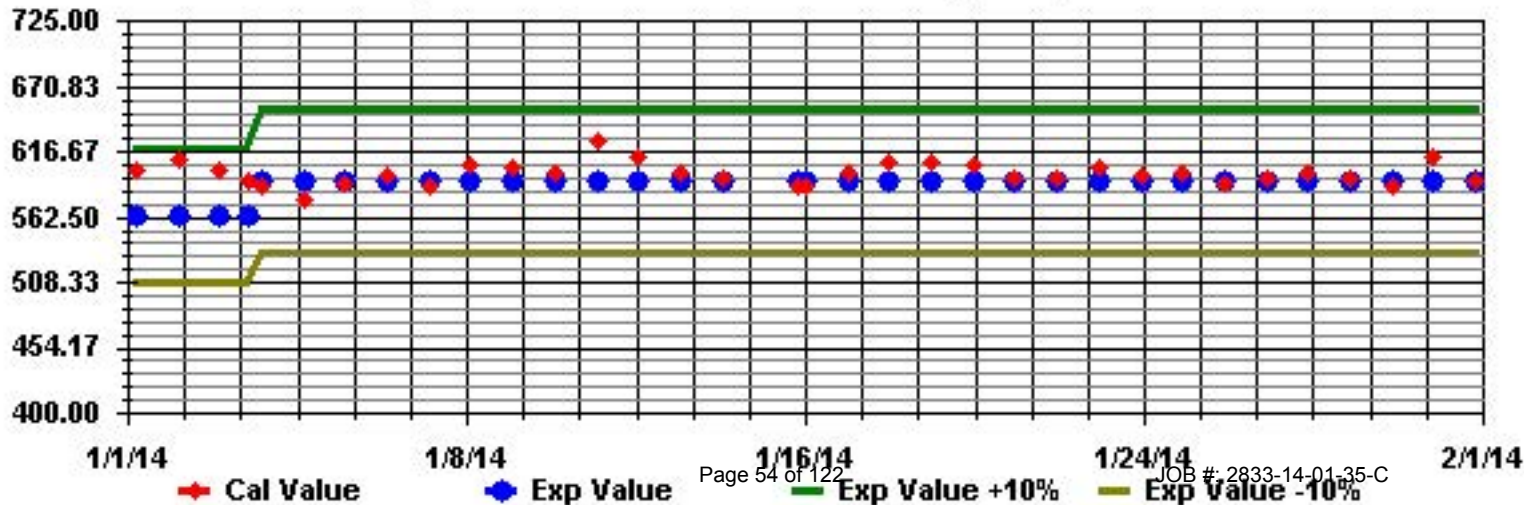
Calm : .00 %

Total # Operational Hours : 677

Class Limits (PPB)



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



Ozone

Lakeland Industry & Community Association - St. Lina Site

JANUARY 2014

OZONE (O3) hourly averages in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																												
1	0	0	0	1	S	1	5	0	1	3	7	11	12	12	9	7	7	6	11	14	14	11	11	11	14	6.7	24	
2	18	19	20	S	21	20	21	21	18	19	21	21	20	21	18	17	16	6	2	1	2	2	4	2	21	14.3	24	
3	1	1	S	1	14	23	30	31	34	33	31	33	35	36	36	36	35	C	C	C	34	35	36	35	36	27.5	24	
4	35	S	29	26	28	35	34	27	29	28	31	33	34	36	36	36	37	37	37	36	35	34	33	33	37	33.0	24	
5	S	33	33	32	32	32	33	27	26	28	31	31	30	33	31	32	24	14	12	8	8	8	5	S	33	24.7	24	
6	8	13	16	19	20	23	22	20	20	22	24	24	27	26	28	28	26	27	26	26	24	25	S	27	28	22.7	24	
7	25	26	26	27	28	27	29	26	29	29	30	31	31	31	29	29	31	32	31	32	31	S	30	31	32	29.2	24	
8	33	31	35	35	35	35	33	31	31	31	34	34	32	32	31	30	24	8	9	13	S	S	S	19	35	28.4	24	
9	20	19	18	14	16	19	18	16	17	15	17	18	19	24	25	26	23	19	19	S	6	3	1	1	26	16.2	24	
10	1	1	1	1	0	1	0	0	1	3	7	13	13	18	20	18	12	10	S	18	22	22	13	21	22	9.4	24	
11	20	8	4	4	5	12	16	15	17	22	26	30	32	32	33	32	30	S	32	28	23	28	29	29	33	22.0	24	
12	28	32	28	31	30	19	20	23	25	27	28	29	30	30	29	25	S	9	5	2	3	9	15	17	32	21.5	24	
13	18	15	16	15	12	13	7	1	2	30	34	34	35	37	37	S	35	36	34	33	21	23	20	26	37	23.2	24	
14	20	25	10	19	18	18	19	11	3	7	10	16	20	21	S	22	22	12	2	4	26	32	33	35	35	17.6	24	
15	40	41	41	40	42	46	45	46	44	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	46	42.8	9	
16	P	P	P	P	R	33	31	S	33	S	25	30	33	S	31	24	P	P	R	17	20	17	14	25	20	33	24.6	16
17	23	15	22	29	27	30	32	32	32	39	41	S	40	42	42	41	41	41	41	40	40	35	35	25	42	34.1	24	
18	26	24	30	29	24	20	12	13	8	23	S	36	36	34	34	33	31	29	10	22	16	17	28	37	37	24.9	24	
19	42	45	43	40	37	39	40	38	37	S	37	38	41	42	41	42	41	39	35	32	32	32	32	31	45	38.1	24	
20	31	30	29	30	25	18	11	3	S	14	18	22	25	23	23	22	21	20	19	17	15	17	10	24	31	20.3	24	
21	35	36	37	36	34	32	33	S	19	19	26	29	34	38	37	35	31	33	34	33	32	32	32	32	38	32.1	24	
22	32	31	28	25	25	19	S	21	18	22	26	26	27	28	26	28	24	21	20	21	19	19	20	23	32	23.9	24	
23	22	17	17	16	21	S	7	2	4	14	21	25	31	34	35	35	34	32	33	34	33	33	30	31	35	24.4	24	
24	31	32	32	31	S	32	35	34	34	34	34	35	35	35	36	36	36	34	29	25	23	26	21	19	16	36	30.5	24
25	16	13	7	S	12	22	24	30	29	30	34	35	35	36	36	37	38	37	37	38	41	42	40	35	42	30.6	24	
26	39	41	S	38	38	38	38	38	37	37	38	38	38	38	38	37	37	37	36	36	32	30	27	24	41	36.1	24	
27	23	S	18	19	16	12	6	3	10	4	6	16	27	31	33	36	30	17	14	17	12	5	18	11	36	16.7	24	
28	S	6	9	13	12	13	11	10	11	13	19	22	22	26	28	21	23	14	10	14	22	25	28	S	28	16.9	24	
29	31	33	35	34	34	32	33	33	32	31	31	32	33	34	33	32	32	31	30	30	28	26	S	32	35	31.8	24	
30	32	32	33	32	32	33	35	35	35	35	35	35	34	34	34	31	26	27	30	28	28	S	28	23	35	31.6	24	
31	21	26	23	27	31	34	34	35	36	36	37	37	37	37	38	38	37	37	37	37	38	S	37	37	38	38	34.3	24
HOURLY MAX	42	45	43	40	42	46	45	46	44	39	41	38	41	42	42	42	41	41	41	41	40	41	42	40	38			
HOURLY AVG	24.0	23.0	22.9	23.7	23.9	24.4	23.8	21.4	22.0	23.2	26.3	28.2	29.8	31.1	31.0	30.1	28.7	24.4	23.1	23.5	22.9	22.9	23.7	24.6				

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

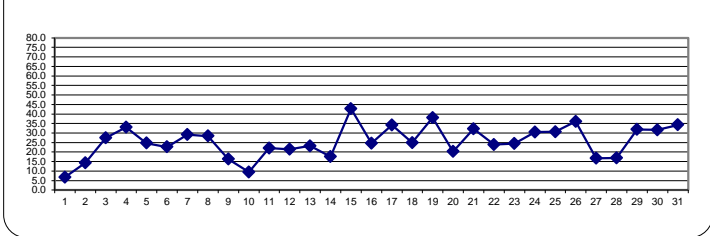
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 82 PPB

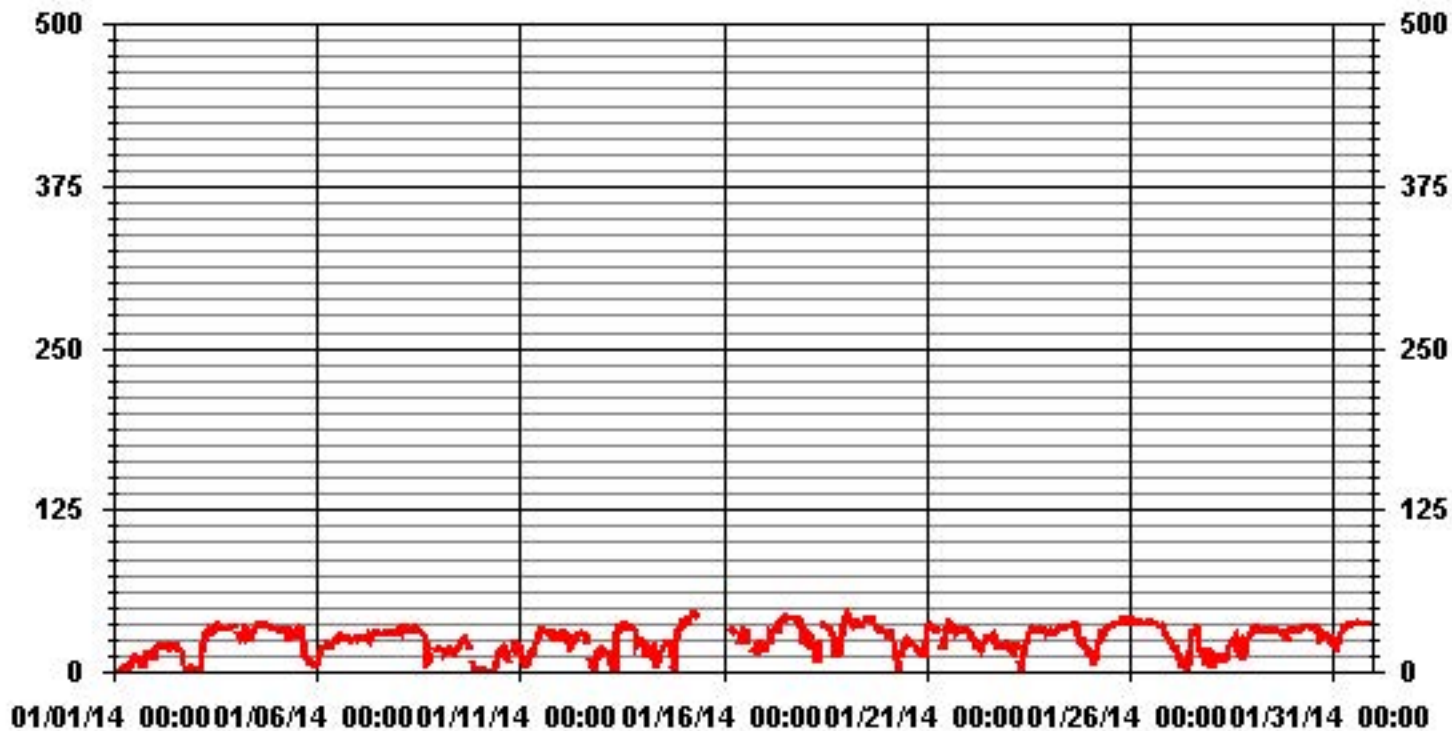
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	675					
MAXIMUM 1-HR AVERAGE:	46	PPB	@ HOUR(S)	5, 7	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	42.8	PPB			ON DAY(S)	15
					VAR-VARIOUS	
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:	721	HRS	
MONTHLY CALIBRATION TIME:	3	HRS	AMD OPERATION UPTIME:	96.9	%	
STANDARD DEVIATION:	10.87		MONTHLY AVERAGE:	25.14	PPB	

24 HOUR AVERAGES FOR JANUARY 2014



01 Hour Averages



Lakeland Industry & Community Association - Elk Point Site

JANUARY 2014

OZONE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1		1	1	1	1	S	2	13	1	2	4	9	12	13	13	11	8	9	10	16	17	16	15	15	17	17	9.0	24	
2		19	20	22	S	23	21	22	22	22	21	22	22	23	22	38	18	17	15	5	1	5	4	6	4	38	17.1	24	
3		3	2	S	5	22	29	32	32	35	34	32	36	35	38	37	37	37	C	C	C	C	36	36	36	38	29.2	24	
4		36	S	33	35	32	36	36	35	32	31	35	35	36	37	37	37	37	37	37	37	36	35	34	33	37	35.2	24	
5		S	34	33	33	34	34	34	34	32	33	33	34	34	35	34	34	33	25	21	13	12	15	10	S	35	28.8	24	
6		12	17	22	22	23	25	24	22	23	24	25	27	28	28	30	30	28	29	28	29	27	26	S	28	30	25.1	24	
7		28	27	26	30	29	29	30	29	29	30	31	32	32	32	31	32	33	34	34	33	32	S	31	33	34	30.7	24	
8		34	35	37	36	36	36	34	33	32	33	35	35	34	34	33	32	30	23	21	18	S	S	S	S	37	32.1	24	
9		23	22	21	16	18	22	22	20	20	19	19	21	22	26	27	28	26	24	S	S	14	10	4	1	28	19.6	24	
10		1	2	2	4	1	1	1	1	2	4	12	15	18	23	22	21	17	16	S	23	27	27	21	28	28	12.6	24	
11		28	13	8	7	9	18	20	17	20	25	29	32	33	34	34	34	32	S	33	32	29	31	31	31	34	25.2	24	
12		31	34	34	33	34	23	22	24	26	28	29	30	31	31	31	30	S	18	17	6	8	16	19	19	34	25.0	24	
13		19	17	18	18	16	16	14	5	7	34	34	35	36	37	37	S	37	36	36	35	30	29	28	30	37	26.3	24	
14		30	30	22	24	23	27	26	20	6	12	12	20	25	25	P	P	P	P	R	11	18	32	48	35	39	48	24.3	20
15		42	42	42	42	45	47	64	49	47	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	64	46.7	9
16		P	P	P	P	R	36	35	S	S	32	34	34	S	34	30	P	P	R	21	24	22	21	28	24	36	28.8	16	
17		27	21	32	32	29	34	35	41	37	43	43	S	42	43	42	42	42	41	41	41	41	41	38	40	43	37.7	24	
18		38	31	37	32	29	24	20	20	16	33	S	37	37	36	36	35	33	32	24	26	27	26	39	39	39	30.7	24	
19		45	45	45	43	42	42	42	40	41	S	41	41	42	42	43	43	42	42	37	34	32	32	32	32	45	40.0	24	
20		31	30	30	31	30	24	16	7	S	17	21	26	28	25	25	24	24	24	22	20	18	18	16	33	33	23.5	24	
21		36	37	37	37	36	33	34	S	29	27	32	33	38	38	38	36	35	35	35	34	33	33	33	34	38	34.5	24	
22		34	34	33	29	29	23	S	25	24	26	27	28	29	29	29	28	27	23	24	23	23	24	24	34	34	27.1	24	
23		24	22	21	22	24	S	15	6	9	20	24	29	34	35	37	36	35	35	35	36	36	34	35	33	37	27.7	24	
24		34	34	34	35	S	35	35	35	35	35	35	36	36	36	36	37	36	35	28	30	30	26	23	22	37	33.0	24	
25		19	16	11	S	17	26	31	32	31	33	35	36	35	36	37	38	39	39	37	41	42	42	42	36	42	32.7	24	
26		41	41	S	39	38	39	38	38	37	37	38	38	38	39	39	38	38	38	37	37	34	32	31	29	41	37.1	24	
27		27	S	24	21	22	22	19	18	21	6	8	24	30	34	36	38	37	29	25	27	24	11	24	20	38	23.8	24	
28		S	9	15	16	16	17	14	15	18	18	23	23	27	27	28	27	27	22	16	17	25	26	31	S	31	20.8	24	
29		31	35	35	35	35	33	34	34	33	32	32	33	35	35	34	33	34	32	31	31	31	29	S	33	35	33.0	24	
30		33	34	34	32	33	34	35	36	36	35	35	35	35	35	34	32	31	32	30	32	S	30	28	36	33.3	24		
31		26	28	27	28	34	34	34	35	36	37	37	37	37	38	38	38	38	38	38	39	S	38	38	38	39	35.3	24	
HOURLY MAX		45	45	45	43	45	47	64	49	47	43	43	41	42	43	43	43	42	42	41	41	42	48	42	40				
HOURLY AVG		26.9	25.5	26.3	26.4	27.1	27.4	27.7	25.0	25.4	26.3	28.3	30.2	31.8	32.6	33.3	32.2	31.7	29.6	27.3	26.9	26.6	26.8	27.2	28.3				

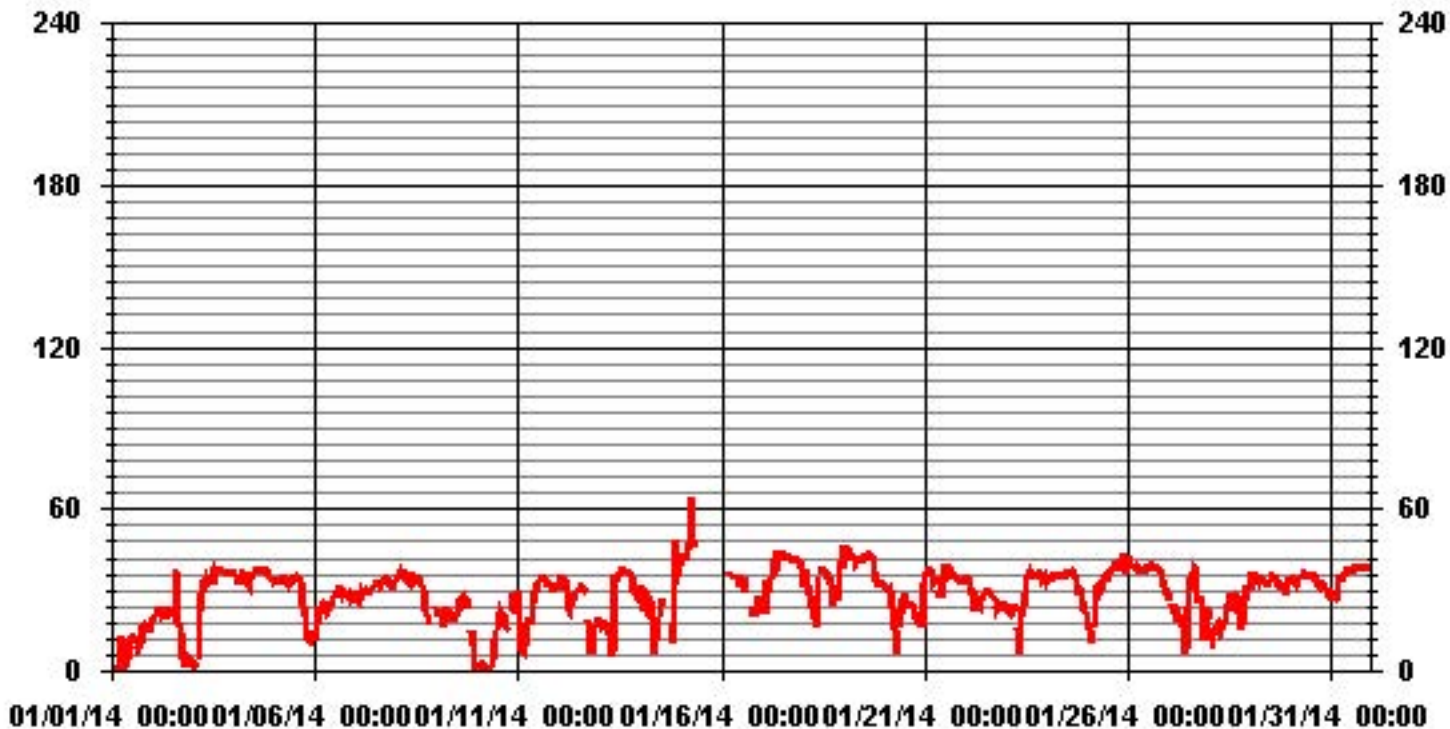
STATUS FLAG CODES

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:	677
MAXIMUM INSTANTANEOUS VALUE:	64 PPB @ HOUR(S) 6 ON DAY(S) 15
	VAR-VARIOUS
IZS CALIBRATION TIME:	36 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	10.03
OPERATIONAL TIME:	717 HRS

01 Hour Averages



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

January 2014

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	3.22	1.31	1.02	1.90	6.01	16.71	3.95	2.05	1.61	1.61	2.19	6.45	13.78	15.68	15.24	7.18	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	3.22	1.31	1.02	1.90	6.01	16.71	3.95	2.05	1.61	1.61	2.19	6.45	13.78	15.68	15.24	7.18	

Calm : .00 %

Total # Operational Hours : 682

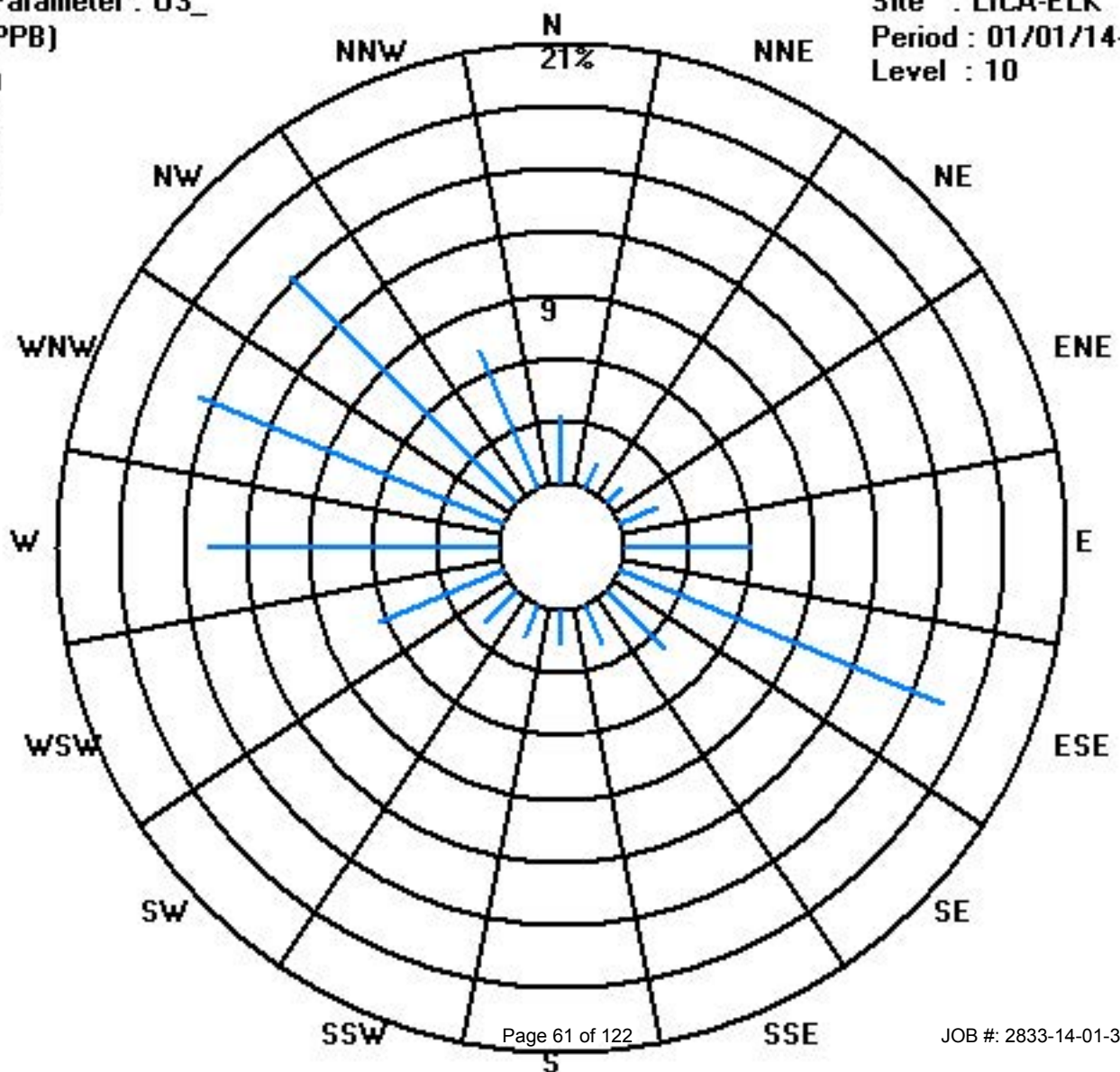
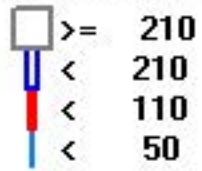
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50	22	9	7	13	41	114	27	14	11	11	15	44	94	107	104	49	682
< 110																	
< 210																	
>= 210																	
Totals	22	9	7	13	41	114	27	14	11	11	15	44	94	107	104	49	

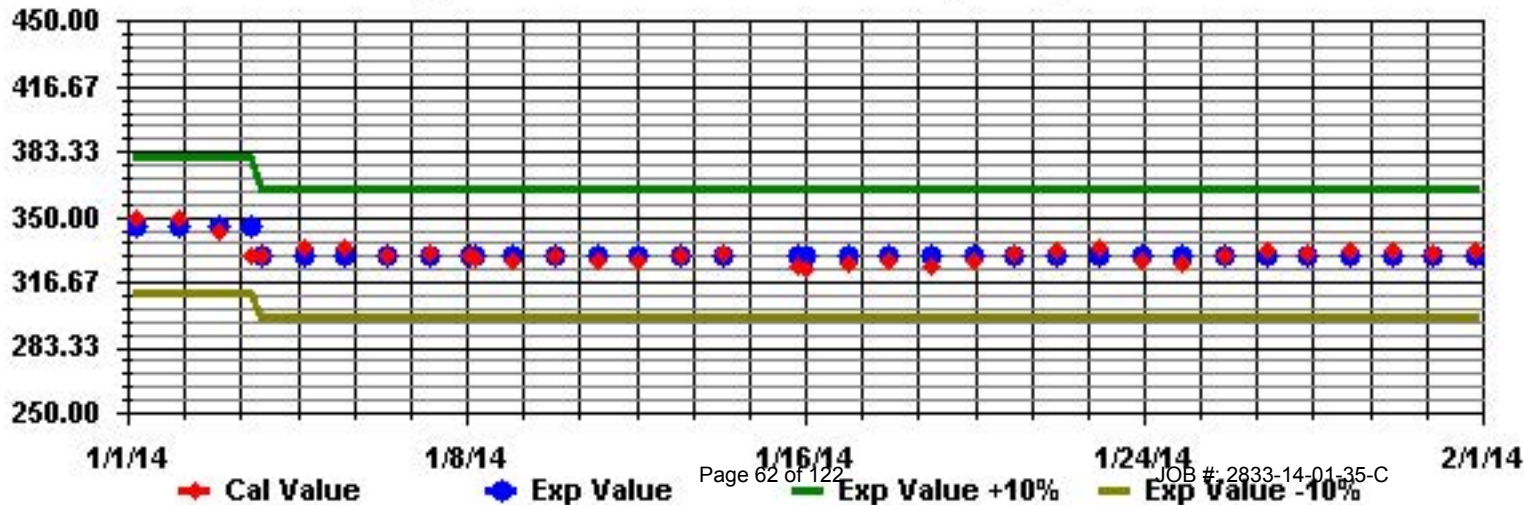
Calm : .00 %

Total # Operational Hours : 682

Class Limits (PPB)



Calibration Graph for Site: LICA35 Parameter: O3_ Sequence: O3 Phase: SPAN



Total Hydrocarbons (55i)

Lakeland Industry & Community Association - Elk Point Site

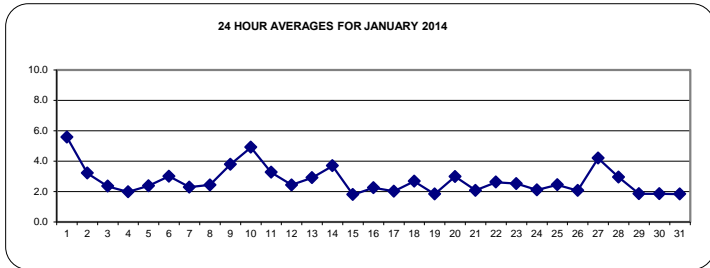
JANUARY 2014

TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST																									DAILY	24-HOUR		
DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	6.3	5.7	6.5	9.3	S	5.9	5.2	6.8	7.5	8.6	6.8	5.9	5.3	5.0	5.4	5.2	4.7	4.2	3.9	3.2	3.5	4.5	4.6	4.3	9.3	5.6	24	
2	3.7	3.3	2.9	S	2.8	2.9	2.9	2.7	2.7	2.7	2.9	2.8	2.9	2.8	2.9	2.8	2.7	2.7	3.3	5.3	4.9	3.7	3.5	4.0	5.3	3.2	24	
3	4.0	4.1	S	4.9	2.6	2.3	2.0	2.0	1.9	1.9	2.5	1.9	C	C	C	1.8	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.8	1.9	4.9	2.4	24
4	1.9	S	2.3	3.0	2.2	2.0	2.0	2.2	2.0	2.1	2.1	2.1	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	3.0	2.0	24
5	S	1.8	1.9	1.9	1.9	1.9	1.9	2.2	2.2	2.0	2.0	2.2	2.2	2.0	2.0	2.1	2.2	2.4	3.7	3.3	3.2	3.5	3.7	S	3.7	2.4	24	
6	3.7	3.5	3.1	3.0	3.1	2.9	2.9	3.2	3.6	3.6	3.4	3.2	3.0	2.9	2.7	2.5	2.5	2.6	2.8	2.6	2.8	2.8	S	2.7	3.7	3.0	24	
7	2.7	2.8	2.5	2.4	2.2	2.3	2.0	2.2	2.0	2.0	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.4	S	2.5	2.4	2.8	2.3	24	
8	2.4	2.7	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.3	2.1	2.0	2.0	2.2	3.7	3.5	4.6	S	2.4	2.2	2.4	4.6	2.4	24	
9	2.4	2.6	2.8	3.9	3.3	2.7	2.8	3.7	3.2	4.0	4.8	4.9	4.4	3.3	2.8	2.7	2.7	2.6	2.7	S	4.7	7.9	6.0	6.4	7.9	3.8	24	
10	4.8	5.5	4.2	6.9	9.3	9.5	8.9	9.4	8.6	7.3	6.3	4.0	3.9	3.1	2.2	2.2	2.3	2.6	S	2.2	2.1	2.3	2.9	2.4	9.5	4.9	24	
11	2.4	5.5	9.2	6.0	5.7	3.8	3.5	3.6	3.7	3.3	2.9	2.5	2.1	2.0	2.0	2.0	S	2.1	2.4	2.4	2.1	2.1	2.0	2.0	9.2	3.3	24	
12	2.1	1.9	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	2.0	S	2.8	3.4	5.5	4.6	3.4	3.1	2.9	5.5	2.4	24		
13	2.8	3.1	3.2	3.4	4.0	3.8	3.9	5.2	8.0	2.5	1.8	1.8	1.8	1.8	1.8	S	1.9	1.9	2.0	2.1	2.2	2.6	2.9	2.4	8.0	2.9	24	
14	2.9	2.3	3.4	2.6	2.9	3.0	2.6	3.1	6.8	5.3	10.0	6.7	3.9	3.8	S	2.8	2.1	4.0	3.7	4.2	2.5	2.2	2.1	2.0	10.0	3.7	24	
15	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	1.8	1.8	9
16	P	P	P	P	R	1.9	1.9	S	1.9	S	2.3	2.2	2.0	S	2.0	2.3	P	P	R	2.3	2.3	2.5	2.9	2.2	2.4	2.9	2.2	16
17	2.3	3.1	2.5	2.0	2.0	2.1	2.0	2.0	2.0	1.9	1.9	S	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.0	2.4	3.1	2.0	24	
18	2.8	3.2	2.6	2.4	2.7	2.8	5.5	3.2	3.9	3.3	S	1.9	1.9	2.0	1.9	1.9	1.9	2.0	3.3	2.2	3.2	3.0	2.2	1.9	5.5	2.7	24	
19	1.8	1.8	1.8	1.9	2.0	1.9	1.8	1.9	1.9	S	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	1.8	24	
20	1.9	1.9	1.9	1.9	2.3	3.0	3.9	5.9	S	5.0	3.9	3.5	2.9	2.9	2.8	2.7	2.5	2.5	3.0	3.1	3.0	2.8	3.0	2.4	5.9	3.0	24	
21	1.9	1.9	1.9	1.8	1.9	2.0	1.9	S	3.2	3.2	2.6	2.2	2.0	1.8	1.9	1.9	2.2	2.0	1.9	1.9	1.9	1.9	2.0	3.2	2.1	24		
22	2.1	2.4	2.6	2.7	2.3	3.5	S	2.6	2.4	2.5	2.5	2.8	2.6	2.4	2.9	2.2	2.8	2.5	2.9	2.6	2.9	2.6	2.8	2.6	3.5	2.6	24	
23	2.9	3.1	4.0	4.1	2.8	S	3.5	3.7	3.8	2.7	2.1	2.1	2.0	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	2.0	2.0	4.1	2.5	24		
24	2.0	1.9	2.0	2.0	S	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.8	1.8	1.8	1.8	2.0	2.2	2.3	2.2	3.1	3.5	3.2	3.5	2.1	24	
25	3.3	5.2	8.8	S	3.5	2.3	2.1	1.9	1.9	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	8.8	2.4	24		
26	1.8	1.7	S	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	S	1.8	1.9	1.9	1.9	1.9	1.9	2.1	2.3	3.4	4.7	4.7	2.1	24	
27	4.1	S	3.8	4.2	4.8	4.9	4.9	6.0	4.7	7.4	7.5	4.3	2.4	2.2	2.1	1.9	2.0	2.3	2.8	3.1	5.1	7.4	3.2	5.3	7.5	4.2	24	
28	S	5.3	4.0	3.3	3.2	3.0	3.7	4.1	3.2	3.0	2.9	2.7	3.0	2.4	2.0	2.5	2.3	2.6	2.8	2.6	2.2	2.2	2.0	S	5.3	3.0	24	
29	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	S	1.9	1.8	1.8	1.9	2.0	2.1	1.9	1.8	1.8	1.8	1.8	S	1.8	2.1	1.9	24	
30	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.1	1.9	1.8	1.9	1.9	S	1.9	2.1	2.1	1.9	24	
31	2.1	1.9	2.1	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	S	1.8	1.8	1.8	2.1	1.8	24	
HOURLY MAX	6	6	9	9	9	10	9	9	9	9	10	7	5	5	5	5	5	4	4	6	5	8	6	6				
HOURLY AVG	2.7	3.0	3.2	3.1	2.9	2.8	2.9	3.2	3.2	3.2	3.2	2.7	2.5	2.3	2.2	2.2	2.2	2.4	2.5	2.6	2.7	2.9	2.7	2.7				

STATUS FLAG CODES

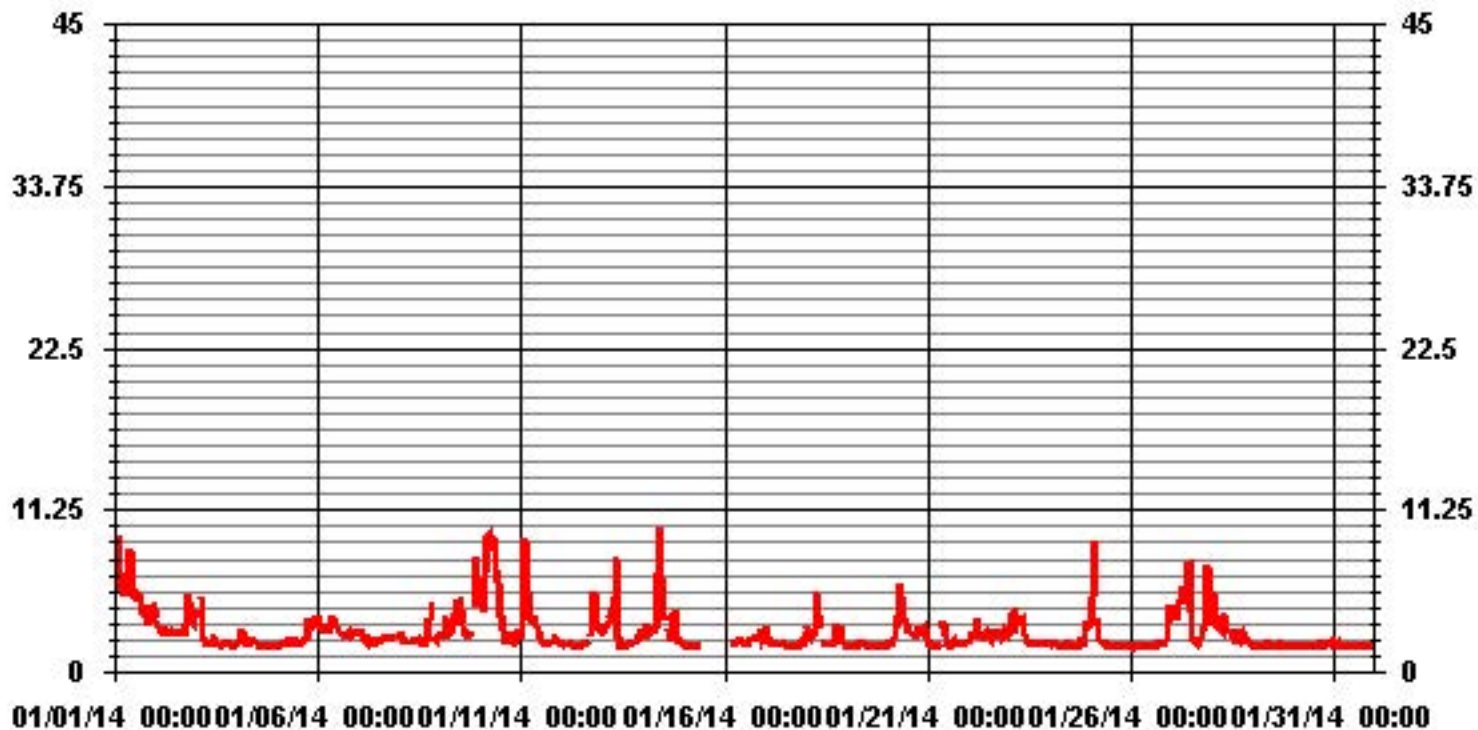
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	682					
MAXIMUM 1-HR AVERAGE:	10.0	PPM	@ HOUR(S)	10	ON DAY(S)	14
MAXIMUM 24-HR AVERAGE:	5.6	PPM			ON DAY(S)	1
					VAR-VARIOUS	
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:	721	HRS	
MONTHLY CALIBRATION TIME:	3	HRS	AMD OPERATION UPTIME:	96.9	%	
STANDARD DEVIATION:	1.38		MONTHLY AVERAGE:	2.75	PPM	

01 Hour Averages



Lakeland Industry & Community Association - Elk Point Site

JANUARY 2014

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	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	25	26	27	28	29	30	31
1	7.61	7.48	13.22	11.94	S	8.67	7.99	8.56	8.82	9.7	8.03	6.47	6.34	5.21	6.61	5.83	5.3	5.59	9.99	4.31	4.06	6.64	4.91	4.72	13.22	7.3	24				
2	4	3.63	3.21	S	3.05	3.08	3.04	3.16	3.47	2.88	3.91	3.47	3.19	2.93	4.59	4.43	2.93	2.91	4.9	9.38	9.44	3.98	3.92	5.17	9.44	4.1	24				
3	4.95	5.26	S	8.4	3.45	3.05	2.19	2.14	1.98	1.91	5.04	1.92	C	C	C	C	2.11	2.09	2.06	2.13	1.98	2.01	1.96	2.07	8.4	3.0	24				
4	2.09	S	3.19	5.43	3.16	2.74	2.63	3.73	2.29	2.29	2.27	3.16	2.11	1.94	1.94	1.88	1.87	1.87	1.87	1.84	1.87	1.86	1.93	1.91	5.43	2.4	24				
5	S	1.92	1.92	2.09	2.25	2.18	2.02	2.65	2.62	2.27	2.19	2.57	2.64	2.9	2.17	2.35	2.53	3.64	6.92	3.85	3.78	4.19	4.64	S	6.92	2.9	24				
6	5.16	4.99	4.02	4.03	3.85	3.15	3.06	3.55	3.75	3.76	3.55	3.51	3.13	3.06	3.04	3.22	2.69	3.1	4.09	3.01	3.62	3.78	S	4.26	5.16	3.6	24				
7	3.11	3.03	2.76	2.62	2.32	2.35	2.24	2.33	2.22	2.21	2.68	2.45	2.47	2.36	2.44	2.46	2.45	2.44	2.44	2.37	2.48	S	3.19	2.73	3.19	2.5	24				
8	3.56	4.13	2.93	2.79	2.36	2.35	2.19	2.17	2.23	2.43	2.34	2.48	2.89	2.47	2.61	2.61	3.15	7.03	4.92	8.94	S	2.99	S	2.89	8.94	3.3	24				
9	2.75	3.1	3.3	7.43	5.42	3.69	3.86	4.81	3.95	5.19	7.37	6.17	5.95	4.11	3.84	3.24	3.51	2.91	4.09	S	7.92	11.78	9.67	10.61	11.78	5.4	24				
10	6.38	7.88	4.93	26.11	11.7	17.53	11.77	15.02	12.25	8.21	8.08	5.1	6.02	5.07	2.69	2.69	2.81	2.91	S	2.46	2.57	2.9	4.5	2.89	26.11	7.5	24				
11	2.84	12.05	16.5	7.21	6.98	5.95	8.37	3.99	4.48	3.65	3.49	2.96	2.75	2.09	2.07	2.4	2.7	S	2.59	2.98	2.57	2.38	2.3	2.26	16.5	4.6	24				
12	2.43	2.06	2.22	2.04	2	2.07	1.93	1.95	1.9	1.88	1.93	1.98	2.02	1.97	2.13	2.32	S	4.08	4.71	8.47	7.1	4.22	4.31	4.11	8.47	3.0	24				
13	3	4.44	4.03	5.5	7.69	6.91	4.96	5.88	22.95	7.05	1.9	1.91	1.92	1.92	2.1	S	2.02	1.98	2.23	2.29	2.62	3.45	4.56	3.56	22.95	4.6	24				
14	3.76	4.81	5.77	3.08	4.24	5.69	3.39	3.54	25.97	10.25	40.6	21.9	5.99	6.48	P	P	P	P	R	7.02	5.42	4.13	3.04	2.43	2.4	40.6	8.5	20			
15	2.21	1.87	1.87	1.94	2.03	1.86	1.84	1.86	1.93	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	2.21	1.9	9			
16	P	P	P	P	R	2.13	2.03	S	2.97	2.8	2.23	S	2.27	2.8	P	P	P	R	2.56	2.94	2.91	3.74	2.74	2.78	3.74	2.7	16				
17	2.79	3.66	3.18	2.53	2.47	2.36	2.29	2.22	2.42	2.1	2.31	S	2.35	1.89	1.92	1.88	1.88	1.9	1.9	1.9	1.96	2.24	2.25	3.28	3.66	2.3	24				
18	6.68	6.85	3.84	3.21	3.34	3.44	19.16	3.94	5.18	4.88	S	2.03	2.05	2.18	2.13	2.15	2.1	2.57	4.37	2.99	5.45	4.65	2.41	2.11	19.16	4.2	24				
19	2	1.94	2.03	2.07	2.25	2.31	1.96	1.98	2.16	S	2.17	2.14	2.04	2.01	2	1.87	1.91	1.88	1.86	1.87	1.87	1.86	1.89	1.89	2.31	2.0	24				
20	2.15	2.03	2.11	1.95	5.05	3.92	7.93	15.61	S	6.67	4.68	5.49	4.96	3.89	3.01	3.27	2.69	3.07	4.05	4.46	3.8	3.07	3.38	2.91	15.61	4.4	24				
21	2.07	2.03	2.04	1.9	2.13	2.42	2.31	S	5.28	4.19	3.32	2.84	2.51	1.93	1.98	2.09	4.42	2.33	2.04	1.97	1.97	2	2.06	2.56	5.28	2.5	24				
22	2.99	4.17	7.25	7.11	3.61	7.06	S	3.37	2.56	2.68	2.61	4.41	3.95	3.3	6.45	2.4	5.69	3.83	4.19	4.26	6.68	3.46	6.34	2.9	7.25	4.4	24				
23	4.45	9.4	12.37	9.89	8.74	S	4.27	4.57	4.58	4.55	2.3	2.39	2.18	2.17	2	2.04	2.01	2.19	2.11	1.99	2.05	2.06	2.63	2.48	12.37	4.1	24				
24	2.29	2.22	2.19	2.62	S	2.22	2.01	1.93	2.05	2	2.02	1.94	2.08	1.96	1.9	1.84	1.91	2.31	2.51	3.31	4.1	8.94	6	6.66	8.94	2.9	24				
25	5.65	10.67	22.97	S	5.72	3.65	2.92	2.23	2.19	2.17	1.98	1.81	2	1.84	1.9	1.82	1.81	1.95	1.95	1.92	1.82	1.81	1.82	1.85	22.97	3.7	24				
26	1.84	1.81	S	1.82	1.85	1.84	1.85	1.85	1.87	1.87	1.88	1.87	S	S	1.89	1.92	1.93	1.93	1.94	2.02	2.47	3.01	14.31	18.25	18.25	3.3	24				
27	11.36	S	6.48	7.54	6.39	9.85	6.52	8.1	7.98	8.07	8.74	6.8	2.74	2.3	2.39	2.16	2.14	3.11	3.84	5.17	16.98	23.2	5.96	9.36	23.2	7.3	24				
28	S	10.15	6.79	4.98	5.11	3.69	5.42	11.8	4.42	3.73	3.24	3.12	4.06	2.64	2.19	4.04	3.28	5.38	4.18	3.38	2.75	2.61	2.69	S	11.8	4.5	24				
29	1.94	1.93	1.86	1.9	1.89	1.88	1.89	1.9	1.96	2.23	S	1.96	1.93	1.91	1.97	2.11	2.33	2.36	1.9	1.87	1.87	1.89	S	1.89	2.36	2.0	24				
30	1.86	1.89	1.88	1.88	1.9	1.94	1.88	1.87	1.93	1.89	1.9	1.94	2.06	2.04	2.04	2.24	2.48	2.14	1.9	2.16	2.19	S	2.04	2.39	2.48	2.0	24				
31	2.43	2.05	2.42	2.07	1.91	1.87	1.87	1.86	1.86	1.88	1.84	1.85	1.85	1.85	1.85	1.84	1.85	1.89	1.85	1.86	S	1.95	2.08	1.88	2.43	1.9	24				
HOURLY MAX	11	12	23	26	12	18	19	16	26	10	41	22	6	6	7	6	6	7	10	9	17	23	14	18							
HOURLY AVG	3.7	4.6	5.3	5.1	4.0	4.1	4.2	4.4	5.1	4.0	4.8	3.8	3.1	2.7	2.7	2.6	2.7	2.9	3.5	3.5	4.0	4.3	4.0	4.0							

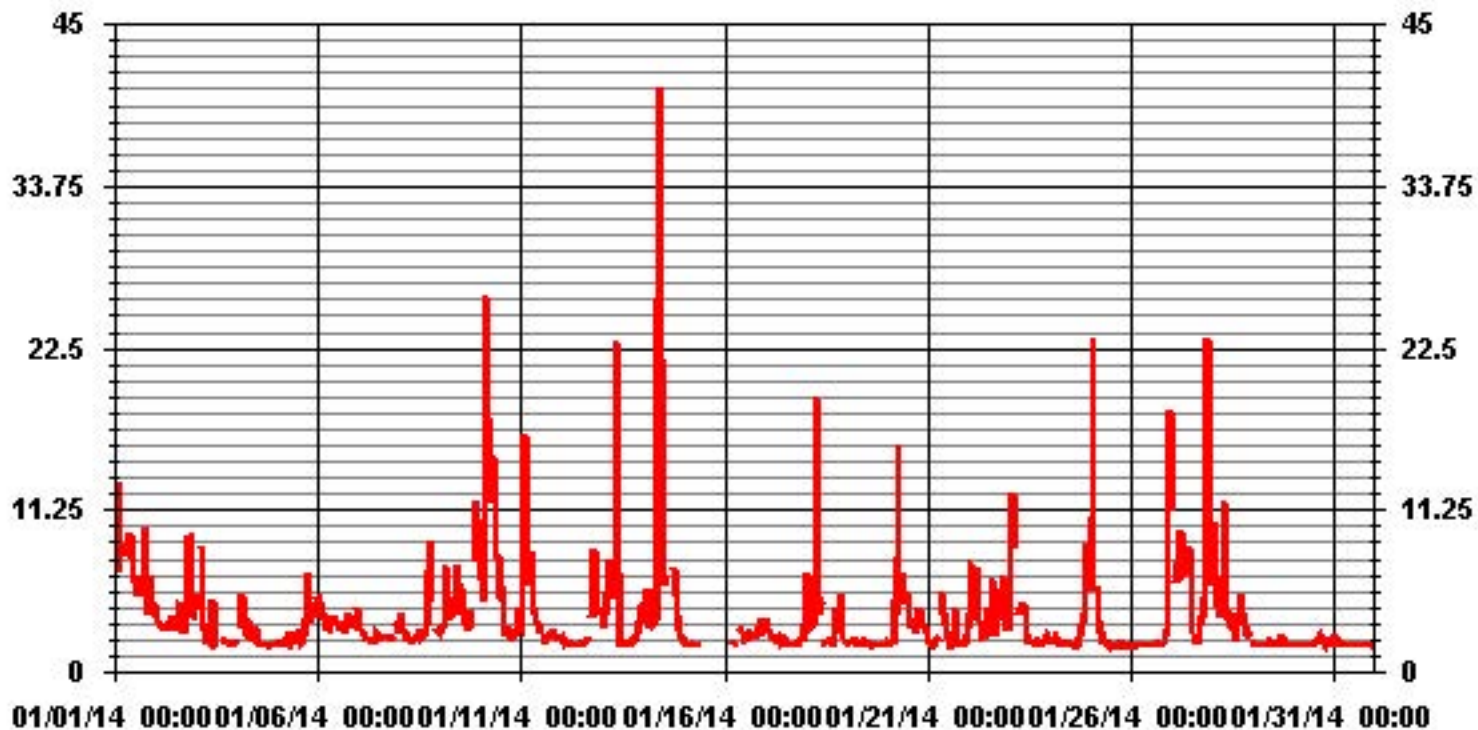
STATUS FLAG CODES

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:	676
MAXIMUM INSTANTANEOUS VALUE:	40.6 PPM @ HOUR(S) 10 ON DAY(S) 14
	VAR-VARIOUS
IZS CALIBRATION TIME:	37 HRS
MONTHLY CALIBRATION TIME:	4 HRS
OPERATIONAL TIME:	717 HRS
STANDARD DEVIATION:	3.49

01 Hour Averages



— LICA35 THC55MAX PPM

LICA35
 THC55 / WDR Joint Frequency Distribution (Percent)

January 2014

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA35
 Parameter : THC55
 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	3.07	1.17	.73	1.31	2.05	8.50	2.19	1.17	.73	1.17	1.17	5.57	11.87	13.63	13.48	6.01	73.90
< 10.0	.14	.00	.29	.58	3.81	8.21	1.75	.87	.87	.43	1.17	1.02	1.90	2.05	1.75	1.02	25.95
< 50.0	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.22	1.17	1.02	1.90	6.01	16.71	3.95	2.05	1.61	1.61	2.34	6.59	13.78	15.68	15.24	7.03	

Calm : .00 %

Total # Operational Hours : 682

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	21	8	5	9	14	58	15	8	5	8	8	38	81	93	92	41	504
< 10.0	1		2	4	26	56	12	6	6	3	8	7	13	14	12	7	177
< 50.0					1												1
>= 50.0																	
Totals	22	8	7	13	41	114	27	14	11	11	16	45	94	107	104	48	

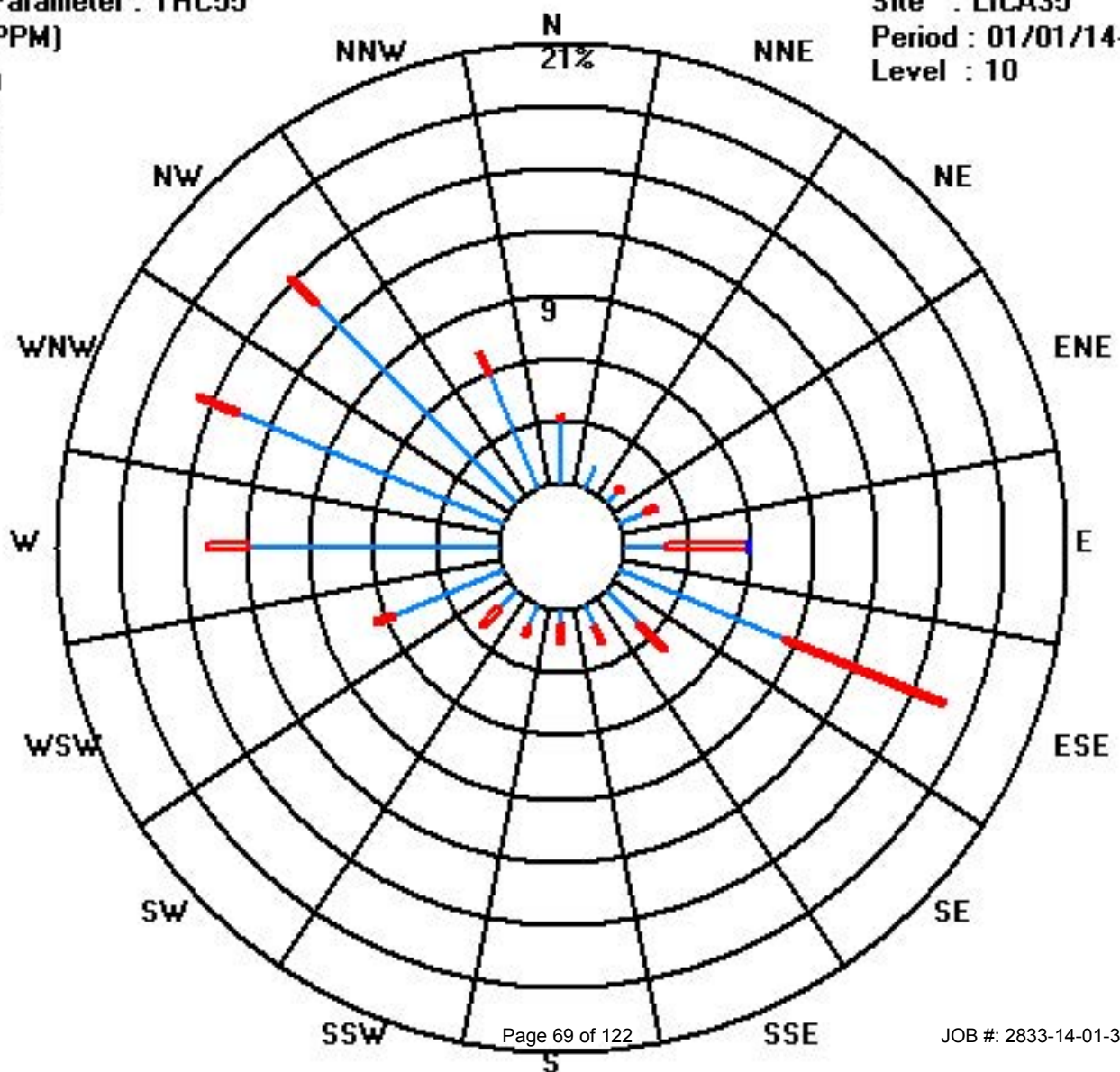
Calm : .00 %

Total # Operational Hours : 682

Class Limits (PPM)

Period : 01/01/14-01/31/14

Level : 10



Methane

Lakeland Industry & Community Association - Elk Point Site

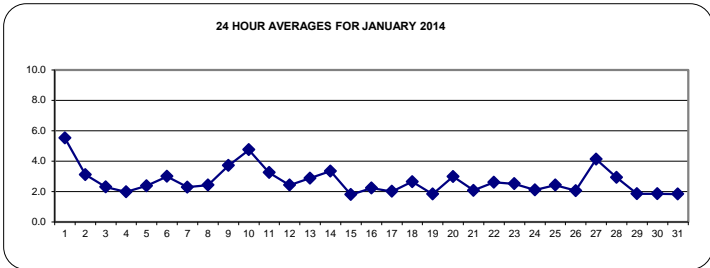
JANUARY 2014

METHANE (CH4) hourly averages in ppm

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	6.1	5.6	6.4	9.0	S	5.9	5.2	6.7	7.4	8.5	6.7	5.8	5.3	4.9	5.4	5.2	4.7	4.2	3.9	3.2	3.5	4.5	4.5	4.3	9.0	5.5	24	
2	3.7	3.3	2.9	S	2.7	2.8	2.7	2.6	2.6	2.6	2.8	2.7	2.7	2.6	2.8	2.7	2.7	2.7	3.2	5.2	4.7	3.5	3.4	3.9	5.2	3.1	24	
3	3.8	4.0	S	4.8	2.6	2.3	2.0	2.0	1.9	1.9	1.9	1.9	C	C	C	1.8	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.8	1.9	4.8	2.3	24
4	1.9	S	2.3	3.0	2.2	2.0	2.0	2.2	2.0	2.1	2.1	2.1	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	3.0	2.0	24
5	S	1.8	1.9	1.9	1.9	1.9	1.9	2.2	2.2	2.0	2.0	2.2	2.2	2.0	2.0	2.1	2.2	2.4	3.7	3.3	3.2	3.5	3.7	S	3.7	2.4	24	
6	3.7	3.5	3.1	3.0	3.1	2.9	2.9	3.2	3.5	3.6	3.4	3.2	3.0	2.9	2.7	2.5	2.5	2.6	2.8	2.6	2.7	2.8	S	2.7	3.7	3.0	24	
7	2.7	2.8	2.5	2.4	2.2	2.3	2.0	2.2	2.0	2.0	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.4	S	2.5	2.4	2.8	2.3	24	
8	2.4	2.7	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.3	2.1	2.0	2.0	2.2	3.7	3.5	4.5	S	2.4	2.2	2.4	4.5	2.4	24	
9	2.4	2.6	2.8	3.9	3.3	2.7	2.8	3.7	3.2	3.9	4.7	4.8	4.3	3.2	2.7	2.7	2.7	2.5	2.7	S	4.6	7.5	5.7	6.1	7.5	3.7	24	
10	4.6	5.2	4.1	6.4	8.9	9.1	8.6	9.2	8.3	7.0	6.1	3.9	3.7	3.0	2.2	2.1	2.3	2.6	S	2.2	2.1	2.3	2.9	2.4	9.2	4.7	24	
11	2.4	5.5	9.0	6.0	5.6	3.7	3.5	3.6	3.7	3.2	2.9	2.5	2.1	2.0	2.0	2.0	S	2.1	2.4	2.4	2.1	2.1	2.0	9.0	3.3	24		
12	2.1	1.9	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	2.0	S	2.7	3.4	5.4	4.6	3.4	3.1	2.9	5.4	2.4	24		
13	2.8	3.1	3.2	3.4	4.0	3.7	3.8	5.1	7.8	2.5	1.8	1.8	1.8	1.8	1.8	S	1.9	1.9	2.0	2.1	2.2	2.5	2.9	2.4	7.8	2.9	24	
14	2.9	2.3	3.4	2.6	2.9	3.0	2.6	3.1	6.5	5.3	4.9	4.3	3.7	3.8	S	2.8	2.1	3.9	3.7	4.2	2.5	2.2	2.1	2.0	6.5	3.3	24	
15	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	1.8	1.8	9	
16	P	P	P	P	R	1.9	1.9	S	1.9	S	2.3	2.2	2.0	S	2.0	2.3	P	P	R	2.3	2.2	2.5	2.8	2.2	2.4	2.8	2.2	16
17	2.2	3.0	2.5	2.0	2.0	2.1	2.0	2.0	2.0	1.9	1.9	S	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.0	2.4	3.0	2.0	24	
18	2.8	3.1	2.6	2.4	2.6	2.8	5.5	3.2	3.8	3.2	S	1.9	1.9	1.9	1.9	1.9	2.0	3.2	2.2	3.1	2.9	2.2	1.9	5.5	2.6	24		
19	1.8	1.8	1.8	1.9	2.0	1.9	1.8	1.9	1.9	S	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	1.8	24	
20	1.9	1.9	1.9	1.9	2.3	3.0	3.8	5.9	S	5.0	3.9	3.5	2.9	2.9	2.8	2.7	2.5	2.5	3.0	3.1	3.0	2.8	3.0	2.4	5.9	3.0	24	
21	1.9	1.9	1.9	1.8	1.9	2.0	1.9	S	3.2	3.2	2.6	2.2	2.0	1.8	1.9	1.9	2.2	2.0	1.9	1.9	1.9	1.9	2.0	3.2	2.1	24		
22	2.1	2.4	2.6	2.7	2.3	3.5	S	2.6	2.4	2.5	2.5	2.8	2.6	2.4	2.9	2.2	2.8	2.5	2.9	2.5	2.9	2.6	2.8	2.6	3.5	2.6	24	
23	2.9	3.1	3.9	4.1	2.8	S	3.4	3.7	3.8	2.7	2.1	2.1	2.0	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	2.0	2.0	4.1	2.5	24		
24	2.0	1.9	2.0	2.0	S	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.8	1.8	1.8	1.8	2.0	2.2	2.3	2.2	3.1	3.5	3.2	3.5	2.1	24	
25	3.3	5.1	8.6	S	3.5	2.3	2.1	1.9	1.9	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	8.6	2.4	24		
26	1.8	1.7	S	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	S	1.8	1.9	1.9	1.9	1.9	1.9	2.1	2.3	3.4	4.7	4.7	2.1	24	
27	4.1	S	3.8	4.2	4.6	4.7	4.7	5.8	4.6	7.2	7.4	4.2	2.4	2.2	2.1	1.9	2.0	2.3	2.8	3.1	5.1	7.4	3.2	5.3	7.4	4.1	24	
28	S	5.3	4.0	3.3	3.2	3.0	3.7	4.0	3.2	3.0	2.9	2.7	3.0	2.4	2.0	2.4	2.3	2.5	2.7	2.5	2.2	2.2	2.0	S	5.3	2.9	24	
29	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	S	1.9	1.8	1.8	1.9	2.0	2.1	1.9	1.8	1.8	1.8	1.8	S	1.8	2.1	1.9	24	
30	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.1	1.9	1.8	1.9	1.9	S	1.9	2.1	2.1	1.9	24	
31	2.1	1.9	2.1	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	S	1.8	1.8	1.8	2.1	1.8	24	
HOURLY MAX	6	6	9	9	9	9	9	9	8	9	7	6	5	5	5	5	5	4	4	5	5	8	6	6				
HOURLY AVG	2.7	3.0	3.2	3.1	2.8	2.8	2.9	3.2	3.2	3.1	2.9	2.6	2.4	2.3	2.2	2.2	2.2	2.4	2.5	2.6	2.7	2.8	2.7	2.7				

STATUS FLAG CODES

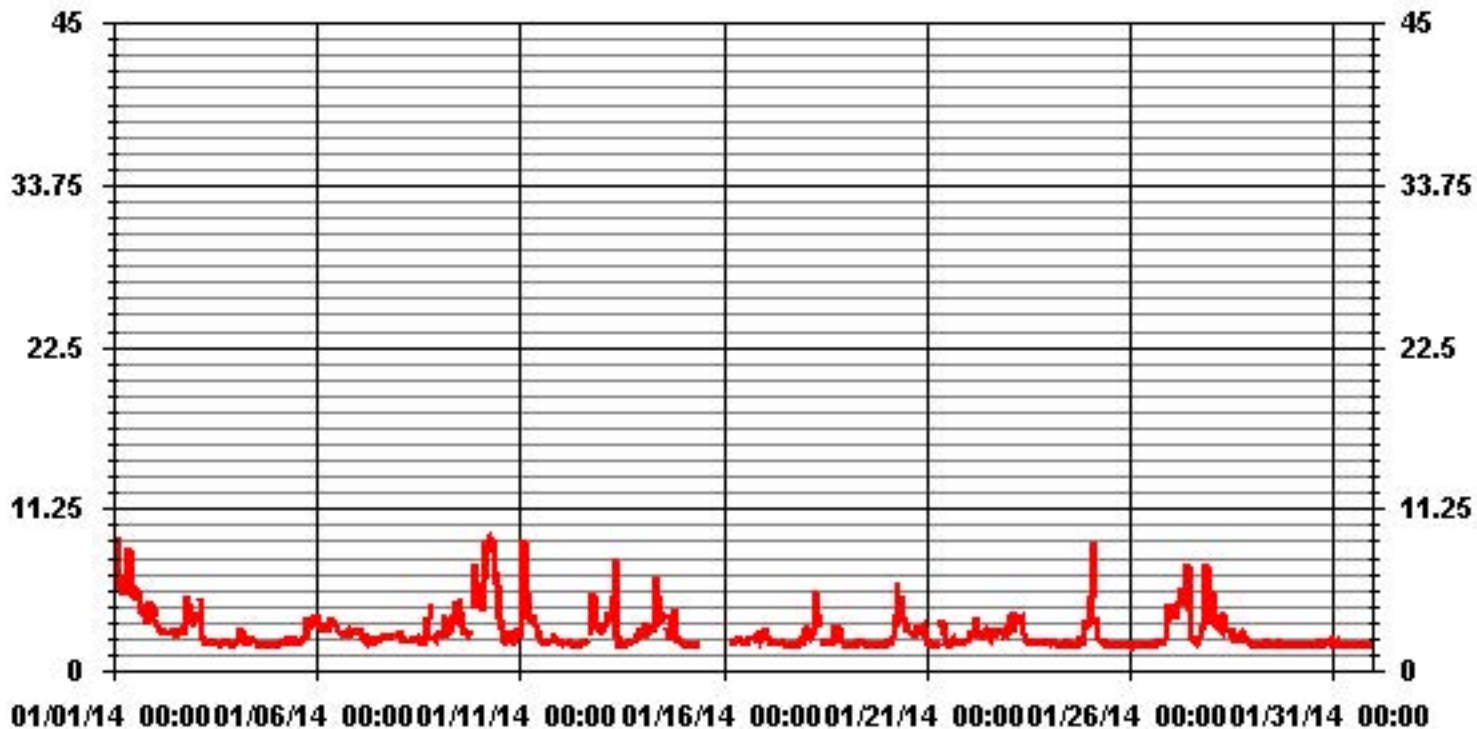
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	682					
MAXIMUM 1-HR AVERAGE:	9.2	PPM	@ HOUR(S)	7	ON DAY(S)	10
MAXIMUM 24-HR AVERAGE:	5.5	PPM			ON DAY(S)	1
					VAR-VARIOUS	
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:	721	HRS	
MONTHLY CALIBRATION TIME:	3	HRS	AMD OPERATION UPTIME:	96.9	%	
STANDARD DEVIATION:	1.31		MONTHLY AVERAGE:	2.72	PPM	

01 Hour Averages



Lakeland Industry & Community Association - Elk Point Site

JANUARY 2014

METHANE MAX instantaneous maximum in ppm

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.				
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	7.37	7.09	13.04	11.6	S	8.4	7.76	8.29	8.74	9.6	7.99	6.49	6.28	5.02	6.62	5.61	5.16	5.52	9.69	4.32	4	6.58	4.78	4.63	13.04	7.2	24				
2	4	3.61	3.14	S	2.83	2.87	2.85	3.08	3.35	2.73	3.72	3.33	3.07	2.76	4.42	4.32	2.84	2.75	4.66	9.2	9.19	3.87	3.78	5.03	9.2	4.0	24				
3	4.78	5.09	S	8.06	3.45	3.05	2.19	2.16	1.98	1.91	1.92	1.92	C	C	C	C	2.12	2.1	2.06	2.14	1.99	2.01	1.96	2.08	8.06	2.8	24				
4	2.1	S	3.19	5.44	3.16	2.74	2.64	3.73	2.3	2.3	2.28	3.17	2.12	1.95	1.94	1.88	1.87	1.86	1.85	1.87	1.86	1.94	1.91	5.44	2.4	24					
5	S	1.92	1.92	2.1	2.25	2.18	2.03	2.66	2.63	2.28	2.19	2.58	2.65	2.9	2.18	2.35	2.53	3.63	6.94	3.84	3.78	4.18	4.63	S	6.94	2.9	24				
6	5.01	4.99	4.02	4.03	3.85	3.16	3.06	3.55	3.74	3.73	3.55	3.44	3.13	3.05	3.04	3.22	2.67	3.1	3.96	2.98	3.61	3.6	S	4.15	5.01	3.6	24				
7	2.99	2.95	2.76	2.59	2.33	2.36	2.24	2.34	2.22	2.21	2.69	2.45	2.47	2.37	2.43	2.46	2.44	2.43	2.37	2.48	S	3.18	2.73	3.18	2.5	24					
8	3.56	4.13	2.93	2.79	2.37	2.3	2.19	2.17	2.23	2.41	2.34	2.47	2.88	2.47	2.61	2.61	3.08	6.9	4.91	8.86	S	3	S	2.7	8.86	3.3	24				
9	2.65	3.11	3.31	7.18	5.25	3.68	3.76	4.78	3.95	5.03	7.08	6.06	5.75	4.1	3.78	3.09	3.34	2.82	4.09	S	7.86	11.1	9.39	10.24	11.1	5.3	24				
10	5.94	7.48	4.74	20.28	11.41	16.59	11.21	14.64	11.68	7.96	7.9	4.98	5.91	4.91	2.57	2.57	2.63	2.84	S	2.46	2.57	2.9	4.44	2.79	20.28	7.0	24				
11	2.84	11.92	16.22	7.07	6.85	5.87	8.26	3.97	4.37	3.5	3.42	2.95	2.75	2.1	2.08	2.4	2.58	S	2.59	2.98	2.57	2.39	2.31	2.27	16.22	4.5	24				
12	2.43	2.07	2.13	2.05	2.01	1.96	1.93	1.95	1.91	1.88	1.93	1.98	2.02	1.97	2.14	2.33	S	3.96	4.7	8.32	7.08	4.22	4.31	4.11	8.32	3.0	24				
13	2.96	4.43	4.03	5.5	7.64	6.82	4.64	5.72	20.28	6.93	1.9	1.91	1.92	1.92	2.11	S	2.03	1.98	2.23	2.3	2.62	3.35	4.31	3.56	20.28	4.4	24				
14	3.76	4.77	5.59	3.09	4.17	5.37	3.4	3.55	20.28	10.11	6.48	4.95	5.69	6.42	P	P	P	R	6.96	5.24	4.12	3.05	2.4	2.33	20.28	5.6	20				
15	2.08	1.86	1.87	1.94	2.03	1.86	1.84	1.85	1.93	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	2.08	1.9	9			
16	P	P	P	P	R	2.13	2.03	S	S	2.82	2.66	2.24	S	2.28	2.66	P	P	R	2.42	2.75	2.79	3.61	2.74	2.74	3.61	2.6	16				
17	2.65	3.6	3.03	2.47	2.44	2.37	2.25	2.18	2.25	2.11	2.31	S	2.35	1.89	1.92	1.88	1.88	1.9	1.9	1.9	1.96	2.25	2.26	3.29	3.6	2.3	24				
18	6.55	6.81	3.65	3.08	3.16	3.44	18.99	3.94	5.09	4.69	S	1.94	1.96	2.05	2.03	2.02	2	2.44	4.23	2.86	5.21	4.56	2.32	2.12	18.99	4.1	24				
19	1.99	1.94	2.04	2.07	2.25	2.31	1.96	1.98	2.16	S	2.17	2.15	2.04	2.01	2	1.86	1.91	1.88	1.86	1.87	1.87	1.86	1.89	1.89	2.31	2.0	24				
20	2.15	2.03	2.02	1.94	4.9	3.77	7.87	15.44	S	6.63	4.67	5.46	4.93	3.88	3	3.28	2.66	3.07	4.04	4.46	3.72	2.99	3.36	2.77	15.44	4.3	24				
21	2.08	2.03	2.05	1.9	2.13	2.41	2.31	S	5.21	4.18	3.28	2.84	2.52	1.93	1.98	2.1	4.42	2.33	2.04	1.98	1.97	2	2.06	2.56	5.21	2.5	24				
22	2.99	4.17	7.28	7.13	3.6	7.08	S	3.38	2.56	2.67	2.59	4.41	3.95	3.3	6.41	2.39	5.71	3.82	4.18	4.25	6.65	3.46	6.28	2.9	7.28	4.4	24				
23	4.39	9.36	12.3	9.9	8.75	S	4.13	4.57	4.51	4.51	2.2	2.24	2.07	2.18	1.95	1.98	2.02	2.19	2.12	1.99	2.06	2.06	2.59	2.36	12.3	4.0	24				
24	2.29	2.22	2.19	2.63	S	2.22	2.01	1.93	1.99	2	2.02	1.95	1.96	1.96	1.9	1.84	1.91	2.32	2.41	3.31	4.1	8.95	5.8	6.61	8.95	2.9	24				
25	5.66	10.49	20.28	S	5.72	3.54	2.93	2.23	2.19	2.17	1.98	1.81	1.89	1.84	1.9	1.82	1.82	1.95	1.95	1.92	1.83	1.82	1.83	1.84	20.28	3.5	24				
26	1.84	1.82	S	1.82	1.85	1.84	1.85	1.85	1.87	1.86	1.87	1.87	S	S	1.89	1.92	1.93	1.93	1.94	2.02	2.46	3.02	14.19	18.11	18.11	3.3	24				
27	11.26	S	6.5	7.16	6.03	9.68	6.34	7.78	7.63	7.93	8.55	6.56	2.74	2.31	2.39	2.16	2.15	3.11	3.62	5.17	16.87	20.28	5.97	9.35	20.28	7.0	24				
28	S	10.07	6.58	4.98	5.11	3.69	5.43	10.46	4.42	3.73	3.24	3.13	4.05	2.65	2.2	3.91	3.28	5.19	4.05	3.28	2.66	2.52	2.7	S	10.46	4.4	24				
29	1.94	1.93	1.86	1.9	1.89	1.88	1.89	1.9	1.96	2.03	S	1.96	1.93	1.91	1.97	2.12	2.33	2.36	1.9	1.87	1.87	1.89	S	1.89	2.36	2.0	24				
30	1.86	1.89	1.87	1.87	1.9	1.94	1.87	1.87	1.93	1.9	1.91	1.94	2.07	2.04	2.05	2.25	2.48	2.15	1.9	2.16	2.2	S	2.04	2.39	2.48	2.0	24				
31	2.42	2.06	2.42	2.07	1.91	1.86	1.87	1.86	1.85	1.88	1.84	1.85	1.85	1.85	1.85	1.84	1.84	1.89	1.85	1.85	S	1.95	2.09	1.89	2.42	1.9	24				
HOURLY MAX	11	12	20	20	11	17	19	15	20	10	9	7	6	6	7	6	6	7	10	9	17	20	14	18							
HOURLY AVG	3.7	4.5	5.1	4.8	4.0	4.0	4.1	4.3	4.7	3.9	3.5	3.1	3.1	2.7	2.6	2.5	2.7	2.9	3.4	3.5	4.0	4.1	3.9	4.0							

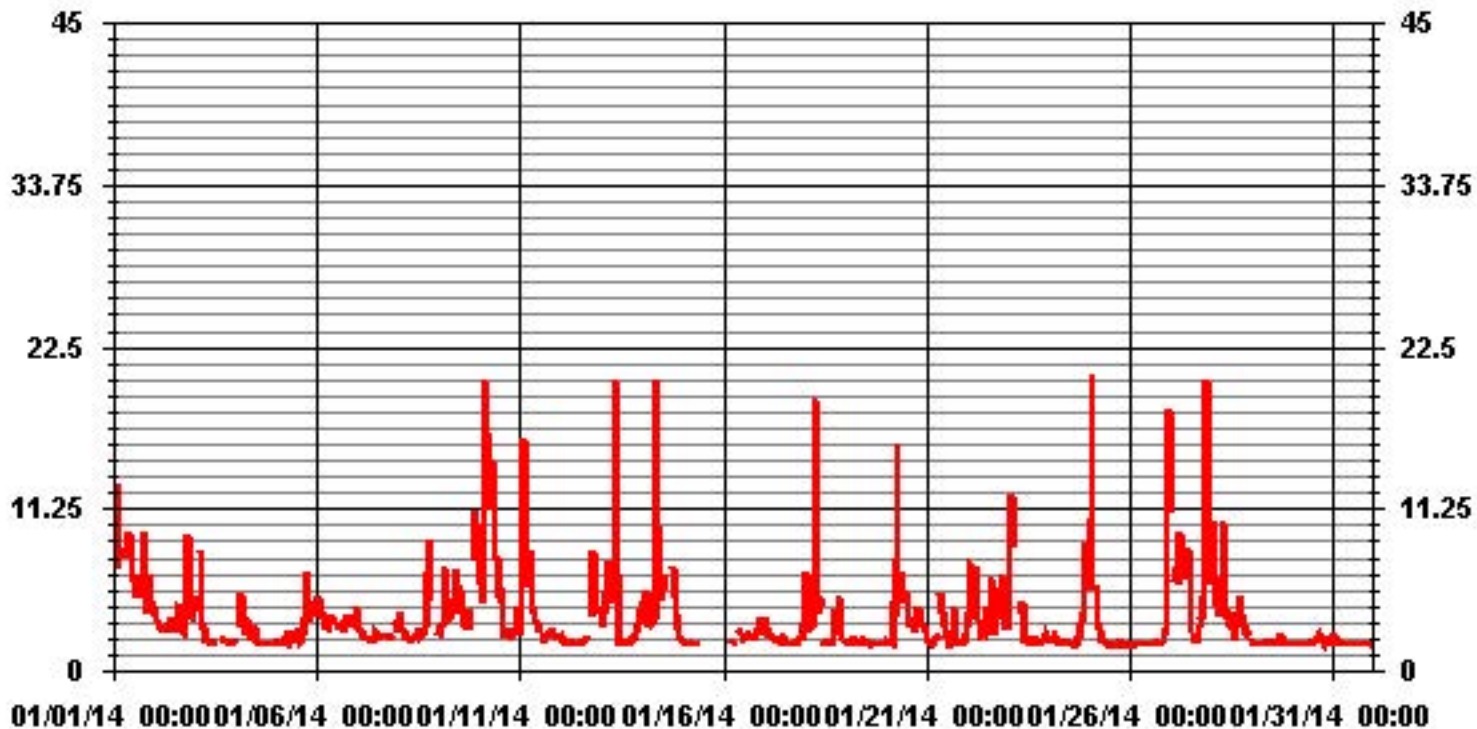
STATUS FLAG CODES

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:	676
MAXIMUM INSTANTANEOUS VALUE:	20.28 PPM @ HOUR(S) VAR ON DAY(S) VAR
	VAR-VARIOUS
IZS CALIBRATION TIME:	37 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	2.89
OPERATIONAL TIME:	717 HRS

01 Hour Averages



LICA35
 METHANE / WDR Joint Frequency Distribution (Percent)

January 2014

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA35
 Parameter : METHANE
 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	3.07	1.17	.73	1.31	2.05	8.50	2.19	1.17	.73	1.17	1.17	5.57	12.02	13.63	13.48	6.01	74.04
< 10.0	.14	.00	.29	.58	3.95	8.21	1.75	.87	.87	.43	1.17	1.02	1.75	2.05	1.75	1.02	25.95
< 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	3.22	1.17	1.02	1.90	6.01	16.71	3.95	2.05	1.61	1.61	2.34	6.59	13.78	15.68	15.24	7.03	

Calm : .00 %

Total # Operational Hours : 682

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	21	8	5	9	14	58	15	8	5	8	8	38	82	93	92	41	505
< 10.0	1		2	4	27	56	12	6	6	3	8	7	12	14	12	7	177
< 50.0																	
>= 50.0																	
Totals	22	8	7	13	41	114	27	14	11	11	16	45	94	107	104	48	

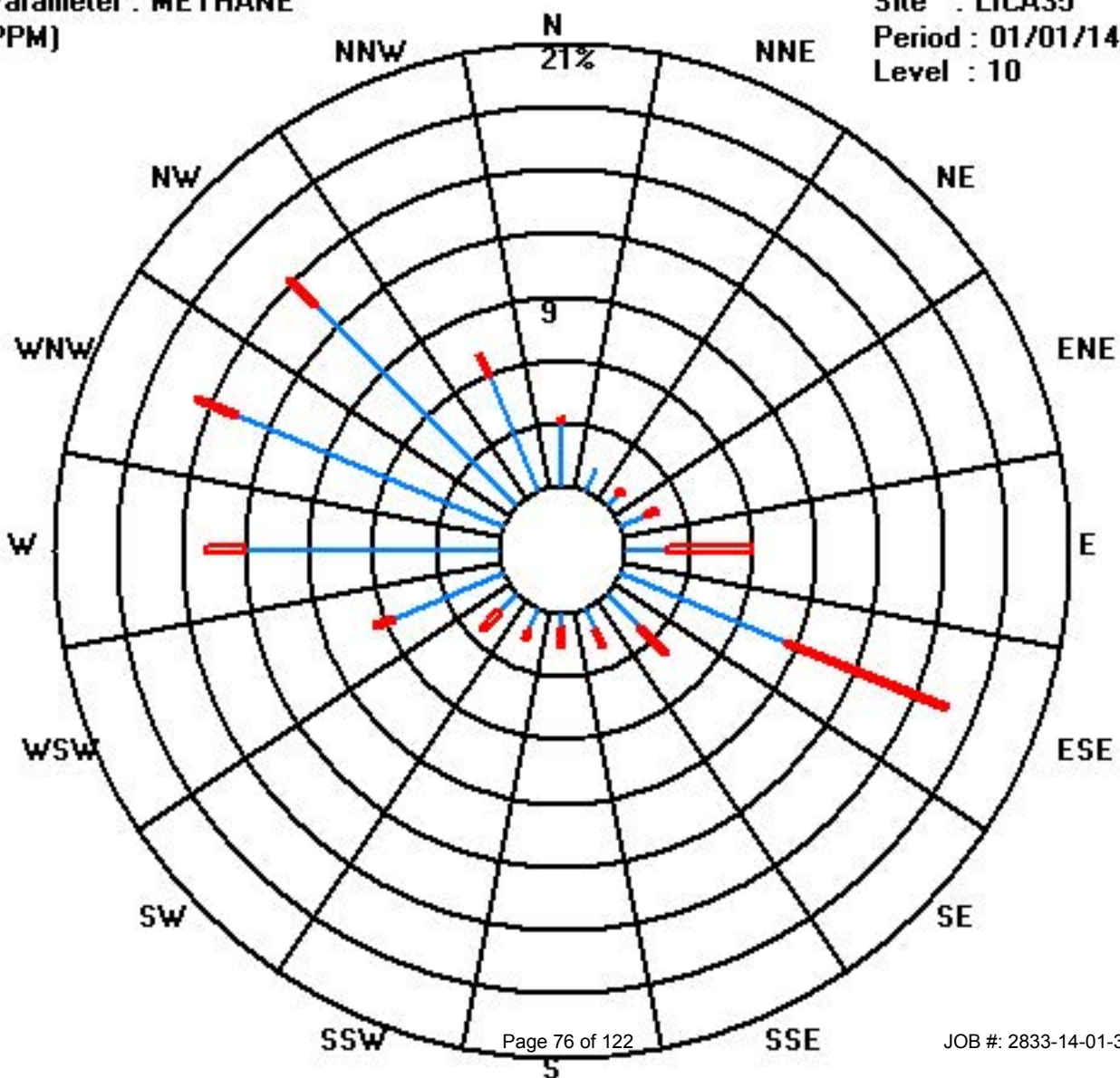
Calm : .00 %

Total # Operational Hours : 682

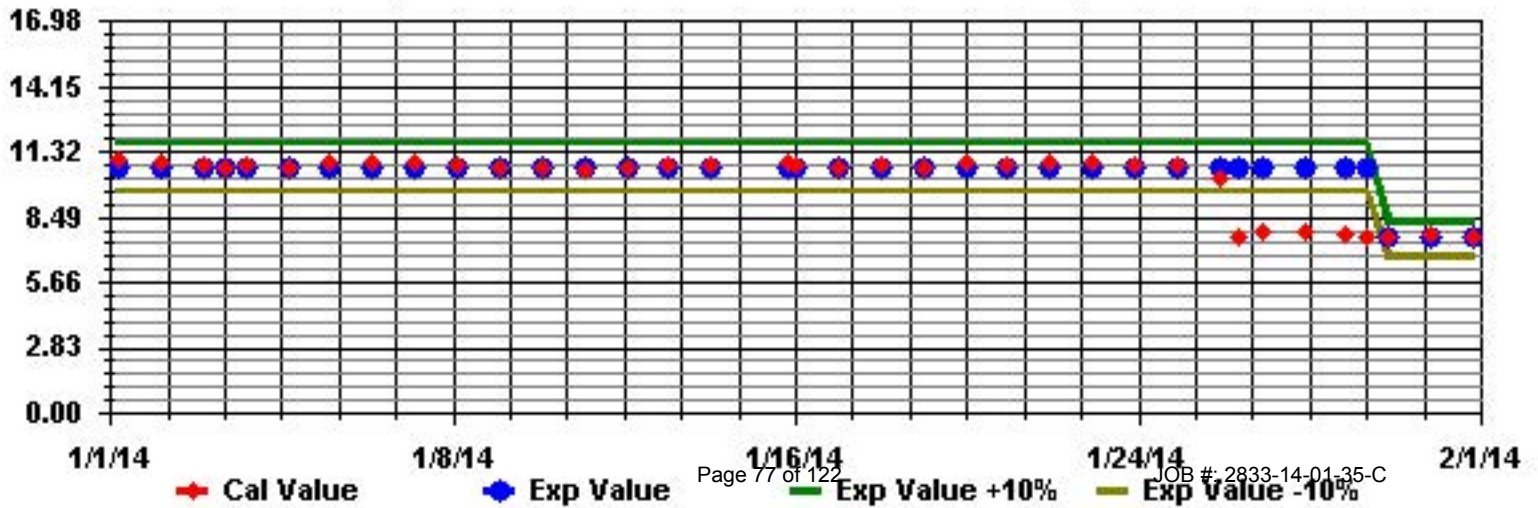
Class Limits (PPM)

Period : 01/01/14-01/31/14

Level : 10



Calibration Graph for Site: LICA35 Parameter: METHANE Sequence: THC55 Phase: SPAN



Non-Methane Hydrocarbons

Lakeland Industry & Community Association - Elk Point Site

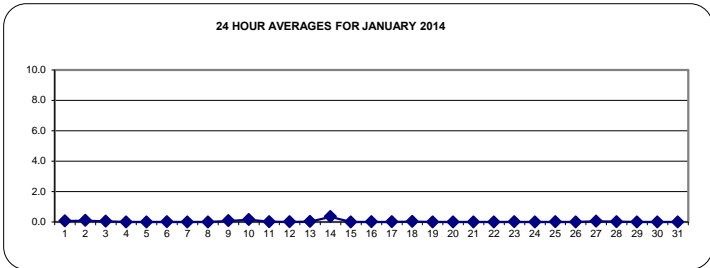
JANUARY 2014

NON-METHANE HYDROCARBONS (NMHC) hourly averages in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																													
1		0.2	0.1	0.1	0.3	S	0	0	0.1	0.1	0.1	0.1	0.1	0	0.1	0	0	0	0	0	0	0	0	0.1	0	0.3	0.1	24	
2		0	0	0	S	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0	0	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	24	
3		0.2	0.1	S	0.1	0	0	0	0	0	0	0.6	0	C	C	C	0	0	0	0	0	0	0	0	0	0.6	0.1	24	
4		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
5		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
6		0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.1	0	S	0	0.1	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	S	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	0.1	S	0	0	0	0.1	0.0	24
9		0	0	0	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.1	0	0	0.1	0	S	0.1	0.4	0.3	0.3	0.4	0.1	24	
10		0.2	0.3	0.1	0.5	0.4	0.4	0.3	0.2	0.3	0.3	0.2	0.1	0.2	0.1	0	0.1	0	0	S	0	0	0	0	0	0	0.5	0.2	24
11		0	0	0.2	0	0.1	0.1	0	0	0	0.1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.2	0.0	24
12		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.1	0	0.1	0	0	0	0	0.1	0.0	24	
13		0	0	0	0	0	0.1	0.1	0.1	0.2	0	0	0	0	0	0	S	0	0	0	0	0	0.1	0	0	0	0.2	0.0	24
14		0	0	0	0	0	0	0	0	0.3	0	5.1	2.4	0.2	0	S	0	0	0.1	0	0	0	0	0	0	0	5.1	0.4	24
15		0	0	0	0	0	0	0	0	0	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	0	0.0	9
16		P	P	P	P	R	0	0	S	S	0	0	0	S	0	0	P	P	R	0	0.1	0	0.1	0	0	0.1	0.0	16	
17		0.1	0.1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
18		0	0.1	0	0	0.1	0	0	0	0.1	0.1	S	0	0	0.1	0	0	0	0	0	0.1	0	0.1	0.1	0	0	0.1	0.0	24
19		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
20		0	0	0	0	0	0	0.1	0	S	0	0	0	0	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	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
22		0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0.1	0.0	24
23		0	0	0.1	0	0	S	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
24		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	24
25		0	0.1	0.2	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.0	24
26		0	0	S	0	0	0	0	0	0	0	0	0	0	0.1	S	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
27		0	S	0	0	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.1	24
28		S	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1	0	0.1	0.1	0.1	0.1	0	0	0	S	0.1	0.0	24
29		0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0	24
30		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
31		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
HOURLY MAX		0	0	0	1	0	0	0	0	0	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HOURLY AVG		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

STATUS FLAG CODES

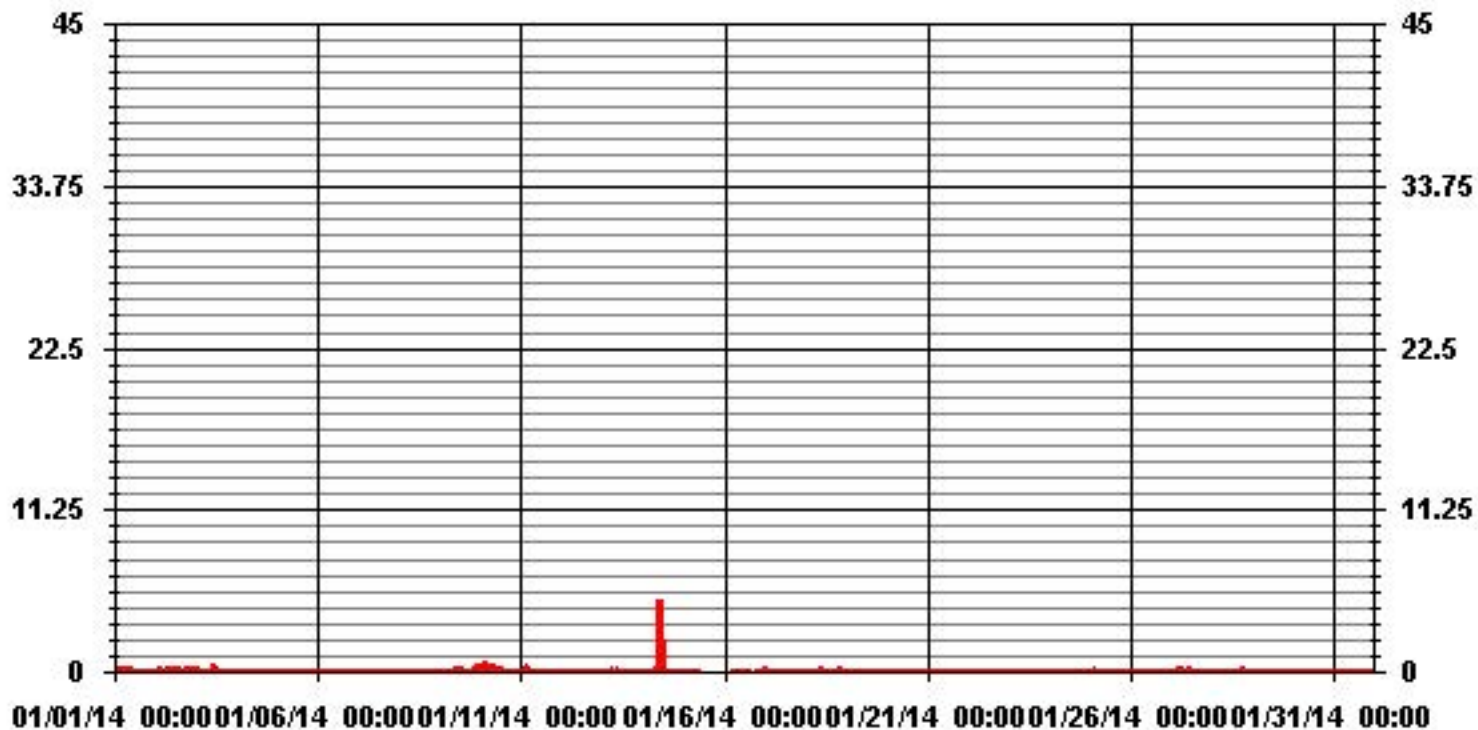
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	110
MAXIMUM 1-HR AVERAGE:	5.1 PPM @ HOUR(S) 10 ON DAY(S) 14
MAXIMUM 24-HR AVERAGE:	0.4 PPM ON DAY(S) 14
	VAR-VARIOUS
IZS CALIBRATION TIME:	36 HRS
MONTHLY CALIBRATION TIME:	3 HRS
OPERATIONAL TIME:	721 HRS
AMD OPERATION UPTIME:	96.9 %
STANDARD DEVIATION:	0.22
MONTHLY AVERAGE:	0.03 PPM

01 Hour Averages



Lakeland Industry & Community Association - Elk Point Site

JANUARY 2014

NON-METHANE HYDROCARBONS MAX instantaneous maximum in ppm

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																												
1	0.34	0.44	0.26	0.43	S	0.31	0.25	0.29	0.32	0.36	0.3	0.25	0.24	0.21	0.21	0.22	0.14	0.14	0.31	0.05	0.14	0.23	0.23	0.23	0.44	0.3	24	
2	0.17	0.15	0.08	S	0.24	0.23	0.22	0.15	0.19	0.19	0.18	0.18	0.19	0.22	0.87	0.23	0.18	0.21	0.26	0.26	0.27	0.24	0.24	0.21	0.87	0.2	24	
3	0.29	0.27	S	0.41	0.14	0.05	0	0	0	0	3.14	0	C	C	C	C	0	0	0	0	0	0	0	0	3.14	0.2	24	
4	0	S	0	0.14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.14	0.0	24
5	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.14	0.16	0.08	0.14	0.11	S	0.16	0.0	24	
6	0.15	0.08	0	0	0	0	0	0	0.18	0.13	0.11	0.09	0.11	0.1	0.11	0	0.14	0.12	0.14	0.15	0.12	0.17	S	0.13	0.18	0.1	24	
7	0.13	0.14	0.06	0.06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.14	0.0	24
8	0	0.01	0	0	0	0.05	0	0	0	0.07	0.04	0.09	0.03	0.12	0	0	0.1	0.17	0.02	0.2	S	0.11	S	0.21	0.21	0.1	24	
9	0.14	0.17	0.24	0.28	0.18	0.15	0.19	0.15	0.17	0.21	0.34	0.27	0.24	0.2	0.14	0.22	0.16	0.19	0.15	S	0.29	0.68	0.7	0.61	0.7	0.3	24	
10	0.45	0.56	0.29	1.5	0.68	0.92	0.55	0.57	0.6	0.52	0.39	0.27	0.29	0.25	0.15	0.19	0.21	0.18	S	0	0.1	0.11	0.32	0.32	1.5	0.4	24	
11	0.13	0.19	0.27	0.27	0.27	0.19	0.18	0.16	0.16	0.18	0.17	0.12	0	0	0	0	0.12	S	0.12	0.1	0.11	0.07	0.09	0	0.27	0.1	24	
12	0.11	0	0.15	0	0	0.11	0	0	0	0	0	0	0	0	0	0	S	0.17	0.21	0.19	0.17	0.13	0.11	0.19	0.21	0.1	24	
13	0.1	0.17	0.13	0.21	0.16	0.16	0.39	0.32	0.26	0.13	0	0	0	0	0	S	0	0	0	0	0.12	0.22	0.24	0	0.39	0.1	24	
14	0.14	0.03	0.17	0.06	0.24	0.32	0.22	0.19	0.3	0.21	20.32	16.94	0.46	0.16	P	P	P	P	R	0.17	0.2	0.14	0.15	0.13	0.24	20.32	2.0	20
15	0.13	0	0	0.06	0	0	0	0	0	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	0.13	0.0	9
16	P	P	P	P	R	0.07	0	S	S	0.2	0.17	0.15	S	0.07	0.14	P	P	P	R	0.21	0.21	0.2	0.23	0.16	0.14	0.23	0.2	16
17	0.17	0.23	0.16	0.12	0.13	0.13	0.12	0.14	0.18	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.23	0.1	24
18	0.17	0.23	0.18	0.18	0.18	0.18	0.19	0.19	0.18	0.25	S	0.12	0.14	0.2	0.17	0.18	0.14	0.19	0.26	0.19	0.28	0.26	0.18	0.11	0.28	0.2	24	
19	0.1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
20	0	0	0.13	0.03	0.15	0.29	0.22	0.15	S	0.19	0.14	0.07	0.03	0.11	0.15	0.1	0.06	0	0.08	0.11	0.15	0.14	0.19	0.14	0.29	0.1	24	
21	0	0	0	0	0	0	0	S	0.11	0.13	0.08	0	0	0.04	0	0	0	0	0	0	0	0	0	0	0	0.13	0.0	24
22	0	0.05	0.06	0	0	0.01	S	0.02	0	0	0.04	0.16	0.16	0	0.05	0	0.12	0	0	0.08	0.12	0.21	0.1	0.01	0.21	0.1	24	
23	0.05	0.1	0.15	0.14	0.1	S	0.25	0.19	0.14	0.18	0.14	0.15	0.12	0.02	0.09	0.12	0	0	0	0	0	0	0.09	0.13	0.25	0.1	24	
24	0.11	0.06	0.19	0	S	0.18	0	0	0.1	0	0	0	0.16	0	0	0	0	0.01	0.13	0.14	0	0.15	0.2	0.19	0.2	0.1	24	
25	0.17	0.2	0.31	S	0.22	0.22	0.13	0	0	0	0	0	0.15	0	0.06	0	0	0	0	0	0	0	0	0	0	0.31	0.1	24
26	0	0	S	0	0	0	0	0	0	0	0	0	S	S	0	0	0	0	0	0	0	0	0.11	0.12	0.12	0.0	24	
27	0.1	S	0.13	0.48	0.38	0.29	0.31	0.35	0.37	0.38	0.34	0.32	0	0	0	0.12	0	0.16	0.22	0.12	0.1	0.21	0.18	0.18	0.48	0.2	24	
28	S	0.18	0.23	0.09	0.08	0.09	0.18	1.34	0.23	0.05	0.08	0	0.07	0.12	0.04	0.14	0.11	0.21	0.16	0.2	0.11	0.09	0.09	S	1.34	0.2	24	
29	0	0	0	0	0	0	0	0	0	0.32	S	0	0	0	0	0	0	0	0	0	0	0	S	0	0.32	0.0	24	
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11	S	0	0	0.11	0.0	24
31	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
HOURLY MAX	0	1	0	2	1	1	1	1	1	1	20	17	0	0	1	0	0	0	0	0	0	1	1	1				
HOURLY AVG	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.9	0.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			

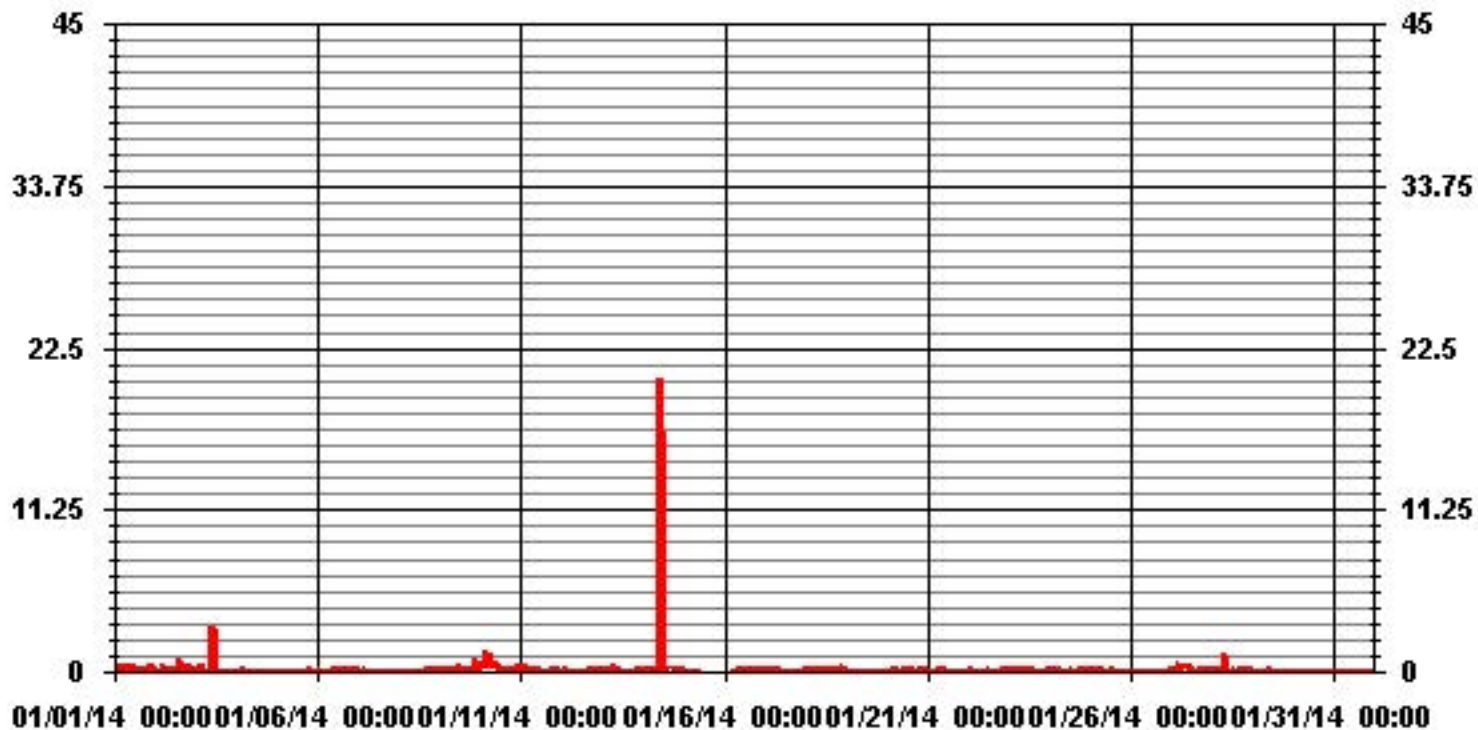
STATUS FLAG CODES

C - 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:	363
MAXIMUM INSTANTANEOUS VALUE:	20.32 PPM @ HOUR(S) 10 ON DAY(S) 13
	VAR-VARIOUS
IZS CALIBRATION TIME:	37 HRS
MONTHLY CALIBRATION TIME:	4 HRS
OPERATIONAL TIME:	717 HRS
STANDARD DEVIATION:	1.03

01 Hour Averages



— LICA35 NMHC MAX PPM

LICA35
 NMHC / WDR Joint Frequency Distribution (Percent)

January 2014

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA35
 Parameter : NMHC
 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	
< .2	2.93	1.17	1.02	1.90	5.71	16.71	3.81	1.90	1.61	1.46	2.05	6.30	13.78	15.39	15.10	6.89	97.80
< .5	.14	.00	.00	.00	.00	.00	.14	.14	.00	.14	.14	.29	.00	.29	.14	.14	1.61
< 1.0	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.29
< 2.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 4.0	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
>= 4.0	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
Totals	3.22	1.17	1.02	1.90	6.01	16.71	3.95	2.05	1.61	1.61	2.34	6.59	13.78	15.68	15.24	7.03	

Calm : .00 %

Total # Operational Hours : 682

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< .2	20	8	7	13	39	114	26	13	11	10	14	43	94	105	103	47	667
< .5	1						1	1		1	1	2		2	1	1	11
< 1.0	1										1						2
< 2.0																	
< 4.0					1												1
>= 4.0					1												1
Totals	22	8	7	13	41	114	27	14	11	11	16	45	94	107	104	48	

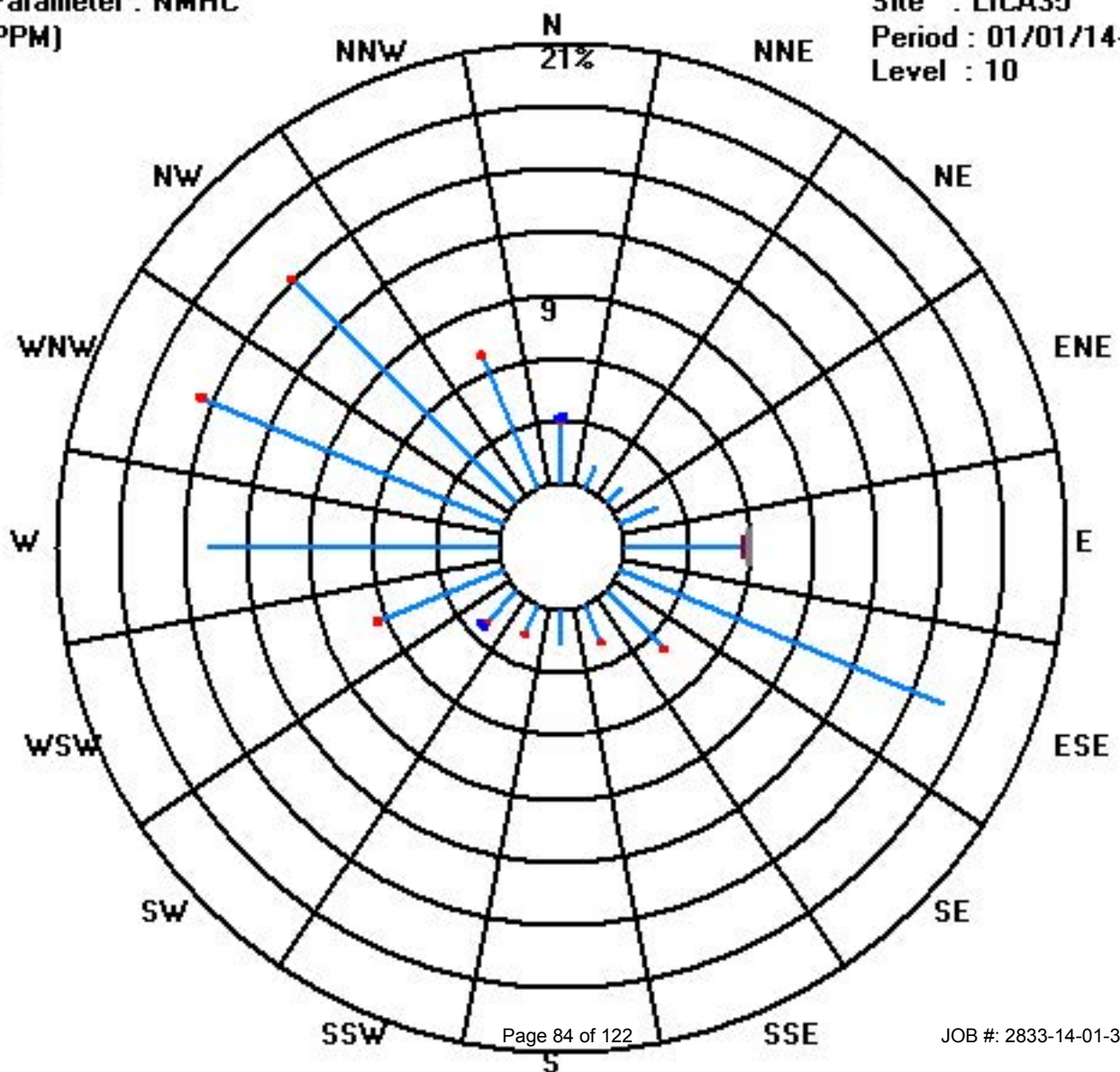
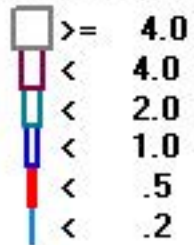
Calm : .00 %

Total # Operational Hours : 682

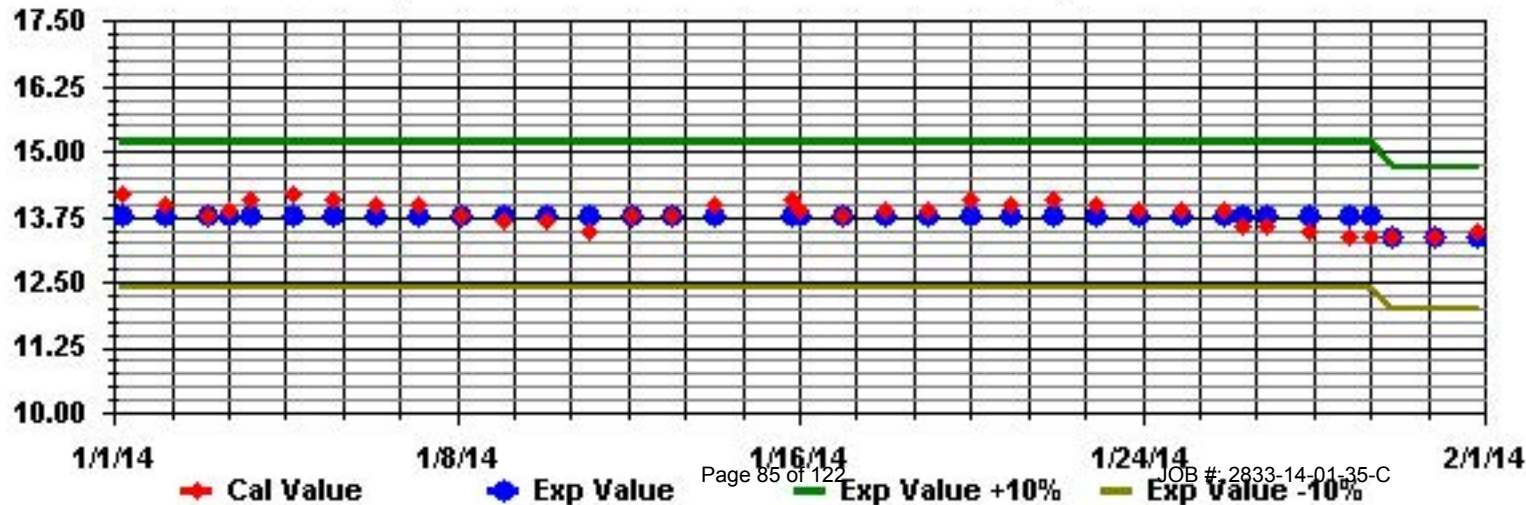
Class Limits (PPM)

Period : 01/01/14-01/31/14

Level : 10



Calibration Graph for Site: LICA35 Parameter: NMHC Sequence: THC55 Phase: SPAN



Vector Wind Speed

Lakeland Industry & Community Association - Elk Point Site

JANUARY 2014

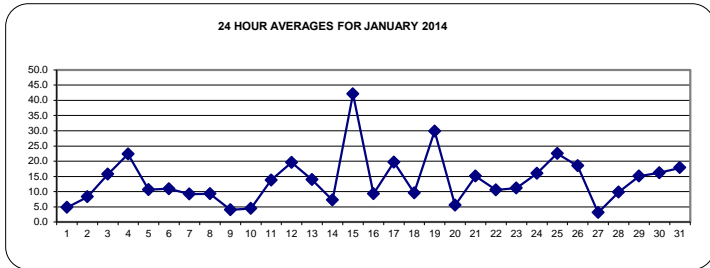
WIND SPEED (WS) hourly averages in km/hr

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	1.4	1.4	2.1	1.8	2.3	3	0.6	1.6	4.1	3.6	3	3.2	2.4	0.8	4.7	6.1	7.8	7.7	7.9	7.7	10.7	8.5	10.3	12	12.0	4.8	24	
2	14.8	15.4	18.4	18.2	16.5	16	17.7	12.9	9.6	11.1	8.7	7.8	6.3	4.8	3.6	2.5	2.3	0.9	1.8	3.7	2.9	0.6	1	1.1	18.4	8.3	24	
3	2.6	4.3	4.5	7.3	14.9	10.9	11.8	16.5	22.7	19.4	23.2	23.9	24	22.4	21.7	21.3	13.8	9.1	15.4	16.7	18.1	16.4	15.8	19.8	24.0	15.7	24	
4	19.7	14.4	14.7	15.3	15.4	20.8	21.4	19.1	17.2	16.4	15.2	20.9	22.7	30.9	33.4	32.9	28.7	31.5	28.2	29.4	28.5	23.6	17.9	17.1	33.4	22.3	24	
5	21.3	20.7	23.2	18.3	16.9	17.2	19.8	15.2	10.7	5.6	6.4	10.1	12	13.3	7.9	11.4	9.5	0.1	1.4	2.4	1.7	1.2	4.3	4.8	23.2	10.6	24	
6	5.4	6.5	10.7	9.5	11.1	12.9	14.1	15	16.3	19.7	20.6	21.1	19.8	17.2	15.2	14.5	9.8	6.2	4	4	3.3	0.9	1.6	2.5	21.1	10.9	24	
7	1.6	1	4.6	5.6	6.7	7.4	6.3	6.8	6.9	10.1	10	6.2	6.1	11.9	13	12.5	13.5	13.2	13.5	12.4	12.9	11.7	12	14.7	14.7	9.2	24	
8	14	15.5	15.5	16.9	14.7	13	14.5	12.6	11.3	8.6	11.8	12.6	12.4	9.4	8.9	5.8	2.7	1.9	0.4	2.4	4.9	4.7	4.7	3.1	16.9	9.3	24	
9	3	3.4	3.8	4.4	5.3	4.3	3.8	5	5.6	6.2	4.6	6.3	4.9	4.8	6.2	7.4	5	4.5	2.4	0.6	1.1	0.9	1	1.8	7.4	4.0	24	
10	0.8	2.2	3.2	0.7	0.4	1.2	1.3	0.5	1.4	0.1	3.2	4.5	0.6	6.5	8.8	6.4	9	6.9	11.6	5.2	5.2	10.9	7.6	9.1	11.6	4.5	24	
11	2.6	4.1	4.1	4.6	5.6	8.3	10.5	10	16.4	16.7	22	30.4	32.1	27.1	24.4	18.8	14	1.5	7.3	9.6	10.9	11.5	19.9	17.7	32.1	13.8	24	
12	17.5	29.1	23.2	27.1	35.2	27.8	28.9	32.7	35.3	35.6	27.9	22.5	21.8	23.2	17.2	11.7	5.3	4.7	1.3	4.5	5.6	9.6	10.4	11.5	35.6	19.6	24	
13	12.4	10.7	6.1	6.1	4.4	1.1	2.1	1.2	1.6	22.6	26.9	32	31	36	26.8	25.9	24.1	23.1	16.2	4.8	2.1	4.8	6.4	5.4	36.0	13.9	24	
14	7.1	10.5	10.8	4.5	6.1	6.5	8.7	3	4.1	1.4	2.7	5.8	6.5	8.9	8.5	6.5	5.4	4.8	2.1	1	7.3	9.8	14.3	26.6	26.6	7.2	24	
15	31.5	27.3	25.3	47.1	52.6	60.9	33.2	48.7	51.8	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	60.9	42.0	9	
16	P	P	P	P	9.4	9.3	6.1	8.8	10.5	10.2	11.9	10.2	11.5	8.3	6	P	P	14.2	16.9	12.7	6.1	3.6	5.6	5.6	16.9	9.3	18	
17	6.3	1.7	6.6	9.7	12.9	5.6	13.1	10.6	10.4	14.4	29.5	34.2	28.7	36.4	35.3	36.5	33	27.2	25.2	23.7	20.2	14.2	14.8	21.4	36.5	19.7	24	
18	16.9	5.8	11	5.4	8.6	0.7	0.3	3.6	5.5	6.3	9.7	13.9	12.3	11.9	9.6	11.1	10.8	12.3	12.1	8.4	12.8	12.3	10.4	18.1	18.1	9.6	24	
19	29.9	33.1	35.1	39.7	32.9	27.2	29.9	19.7	15.2	30.5	31	25.7	32	36.3	37.8	46.3	33.9	37.1	39	25.8	24.8	23.2	16	14.5	46.3	29.9	24	
20	7.9	5	4	4.8	0.1	3.4	3.3	4.3	2.4	5.1	4.6	6.9	7.2	8.8	10.9	10.2	8.8	8.8	5.4	4.2	0.7	1.5	7.8	6.5	10.9	5.5	24	
21	9.3	9.7	6.3	6.7	9.9	14.6	21.5	18.9	11.2	13.7	16.9	18.3	22	27.3	26.1	21.5	18.3	15.7	16.1	14.6	12.2	11	11.4	8.9	27.3	15.1	24	
22	10.3	9.5	9.4	9.8	10.9	9	9.4	8.7	9.4	11.2	10.9	14.5	16.4	15.2	14.7	11.2	10	10.6	8.5	8.6	8	8	9.7	9.6	16.4	10.6	24	
23	8.2	6.5	5.4	4.6	2	1.3	1	5.4	4.9	8.5	10.1	12.5	17.1	13.6	15.2	17.8	23.3	22.1	22.6	17.8	14.7	11.5	10.5	11	23.3	11.2	24	
24	8.7	26.4	24.3	23.6	18.1	14.8	20.2	15.5	14.3	18.3	19.9	22.9	26.3	25.1	22.8	20.5	16.4	7.8	10.6	4.6	5.5	4	5.4	7.9	26.4	16.0	24	
25	4.2	4.1	2.3	2.1	1.3	2.2	9.2	11.1	13.1	15.6	30.3	40.9	37.3	41.9	37.5	37.9	30	22.3	21.3	26.2	36.9	41.4	39.7	31.9	41.9	22.5	24	
26	42.1	46.6	42.2	42.2	30.3	28	23	27.2	18.5	17.3	17.3	16.4	14.8	11.3	11.4	10.4	11.3	8.6	2.3	2.4	4.2	6.4	4.7	3.9	46.6	18.5	24	
27	0.7	1.6	0.8	0.2	0.5	0.9	0.6	0.9	2.1	4.8	1.3	2.4	5.6	7.1	12.6	9.8	4.8	4.7	4.5	3.1	2.8	0.4	1.2	0.6	12.6	3.1	24	
28	1.8	6.4	7.7	5.7	5.6	7.4	7.5	7.7	9.7	9.6	8.8	7.4	3.1	8.1	9.4	8.6	17.7	14.8	14.1	10	9.7	13.8	20.3	19.8	20.3	9.8	24	
29	17	21.2	19.7	12.1	16.3	15.7	17.8	17.3	12.2	8	8	6.2	10.2	11.5	13.1	13.8	10.6	10.3	14.2	20	21.4	23.4	20.5	21	23.4	15.1	24	
30	19	19.9	14.6	14.4	12.2	14	18	22.8	17.6	20.8	22.1	21.8	22.1	21.9	20.2	18.3	12.8	9.1	8.3	6.8	9.5	16.7	14.1	11.7	22.8	16.2	24	
31	10.7	9.4	8.5	20.5	17.8	19.9	20.6	21.2	21.4	22.8	24.6	21.9	23.1	24.9	24.1	22.1	19.6	21	16.1	14.1	9.2	7.5	13.2	14	24.9	17.8	24	
HOURLY MAX	42.1	46.6	42.2	47.1	52.6	60.9	33.2	48.7	51.8	35.6	31.0	40.9	37.3	41.9	37.8	46.3	33.9	37.1	39.0	29.4	36.9	41.4	39.7	31.9				
HOURLY AVG	11.6	12.4	12.3	13.0	12.8	12.4	12.8	13.0	12.7	13.1	14.8	16.1	16.4	17.6	16.9	16.5	14.2	12.1	11.7	10.2	10.5	10.5	11.1	11.8				

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

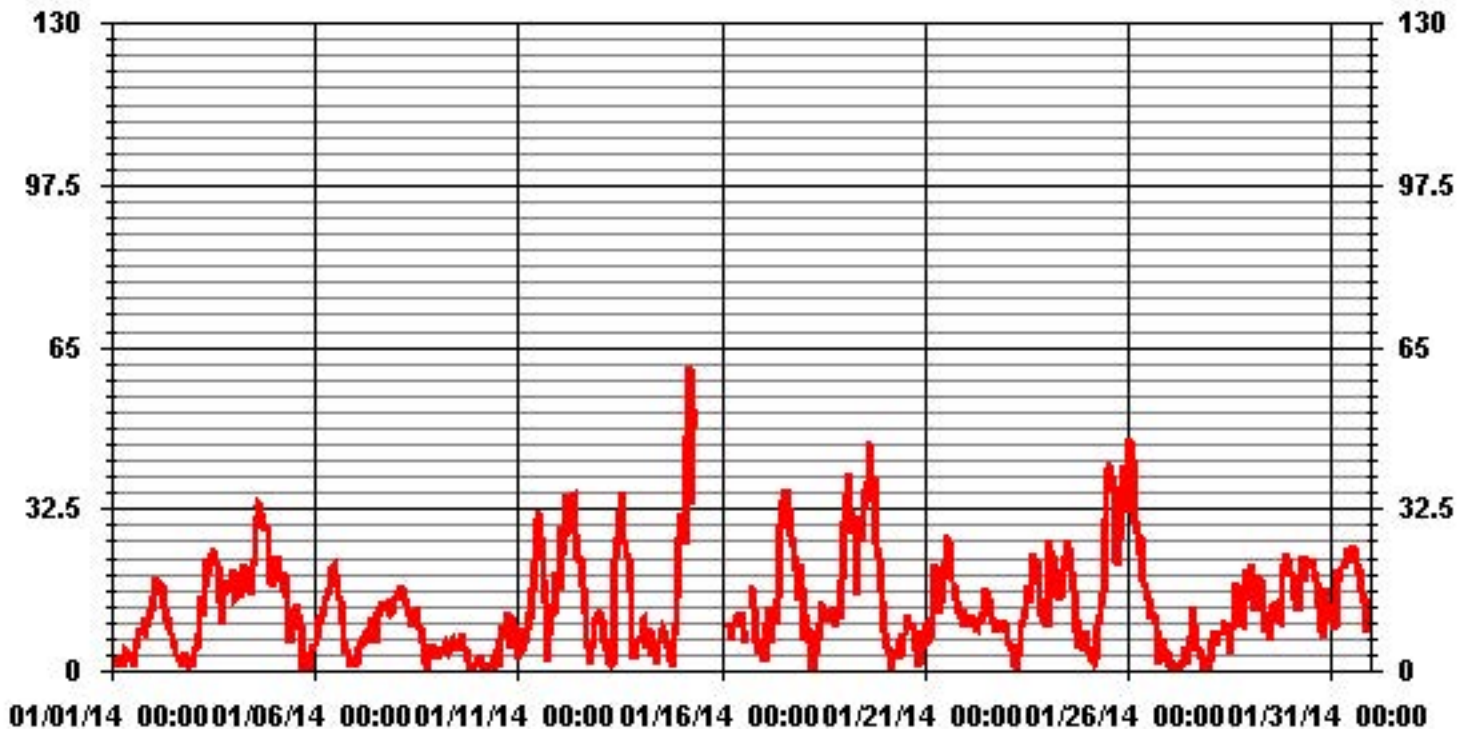
LAST CALIBRATION:	November 24, 2011
DECLINATION:	19 DEGREES FROM MAGNETIC NORTH



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	723
MAXIMUM 1-HR AVERAGE:	60.9 KPH @ HOUR(S) 5 ON DAY(S) 15
MAXIMUM 24-HR AVERAGE:	42.0 KPH ON DAY(S) 15
	VAR-VARIOUS
MONTHLY CALIBRATION TIME:	0 HRS
OPERATIONAL TIME:	723 HRS
AMD OPERATION UPTIME:	97.2 %
STANDARD DEVIATION:	10.00
MONTHLY AVERAGE:	13.18 KPH

01 Hour Averages



— LICA35 WSP KPH

Lakeland Industry & Community Association - Elk Point Site

JANUARY 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	1	4.3	6.2	6.4	5	5.6	6.4	6.7	7.1	7.6	7.5	7.9	7.9	6.5	4.2	9.2	9.3	11.1	13.8	11.1	10.7	16.9	11.4	13.4	19.3	19	9.0	24	
2	2	21	21.2	24.4	25.9	22.5	21.7	24.4	20.3	14	15.5	12.4	11.9	10.3	8.5	11	6.7	5.9	9	6.9	8.1	8.4	4.1	5.8	6.2	26	13.6	24	
3	3	5.1	7.2	8.1	16.2	24.4	23.4	25	43	45.7	32.9	40.3	39.1	38.7	35.3	37.9	41	25.7	13.5	28.9	29	28.3	26.8	28.1	32	46	28.2	24	
4	4	28.7	20.7	19.9	22.2	25.6	38.2	36.4	25.1	24.4	23.5	24.1	28.9	41.9	45	57	46.5	48	61.1	51.2	50.9	47.6	41.5	35.9	28.3	61	36.4	24	
5	5	33.3	32.7	35.4	28	25.8	27.1	27.8	26	20.4	14.3	12.1	16	17	19.2	16.2	19.1	14.8	6.5	6.2	6.3	4.6	5	6.4	7.4	35	17.8	24	
6	6	8.7	11	15.2	12.7	15.5	18.9	19.6	21.1	25.9	26.2	27.4	29	27.3	24	21.3	21.6	16.2	11.8	10.6	7.1	7.6	4.9	4.4	5.8	29	16.4	24	
7	7	4.4	6.3	7.1	10.3	11.2	12.7	10.9	12.2	11.3	17.4	17.2	10.8	9.6	16.4	17.4	19.5	18.8	20.8	17.9	18.9	16.3	16.6	20.5	21	14.2	24	24	
8	8	21.6	22.7	28.2	28.6	24.1	25.1	34.1	23.8	22.1	17.6	24.1	22.8	21.6	16	15.1	12.2	9.1	5.2	4	6.8	8.1	10.1	P	6.5	34	17.8	23	
9	9	8.2	10	9	7.9	7.7	7	7.9	6.9	8	9.1	7.6	10.2	7.9	12.7	11.4	12.8	10.1	8.6	7	6.3	4.5	5.9	4.3	4.6	13	8.2	24	
10	10	4.2	8.4	7.6	3.4	5.5	7.1	4.1	4	11.3	6.1	10.1	8.2	9.6	16.1	18.8	13.4	16	17.9	21.6	15.9	12.4	20.3	14.3	14.7	22	11.3	24	
11	11	12.6	8.1	8.9	7.5	8.1	12.5	13.8	14.7	23.9	25.7	32	43.8	48.6	42.3	45.4	29.9	19.4	12.2	12.1	13.2	21.5	18.6	33.6	32.7	49	22.5	24	
12	12	34.2	47.1	31.3	46.4	51.7	45.2	46.4	47	51.7	54.2	51.8	33	30.1	32.6	27	22.6	12.7	10.9	6.6	8.3	9.5	12.3	14	18.6	54	31.1	24	
13	13	19.4	15.5	10.3	10.4	7.6	7.6	7.7	9.1	47.5	48.5	48.8	50.7	54	44.5	38.1	35.5	33.8	33.2	9.2	8.3	9	11	12.1	54	24.1	24	24	
14	14	15.1	17.7	19	19.1	11.1	11.9	13.3	11.1	8.1	4.8	6.8	8.2	8.7	13.2	12	P	P	P	P	4.8	7.2	21.7	24.3	27.2	44.2	44	14.7	21
15	15	49.8	53.2	53.5	73.5	98.8	98.5	73.7	105.2	77.4	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	105	76.0	9
16	16	P	P	P	P	14.8	15.1	14.2	16.9	15.9	17.2	20.7	20.8	19.2	17.3	10.3	P	P	22.5	25	21.9	16.6	9.9	11.9	12.1	25	16.8	18	
17	17	16.6	10.7	15.9	23.9	34	29.3	23.7	25.3	22.4	33.8	43.5	48.9	49.6	54.2	52.6	55.4	48.8	38.5	37.1	34.3	32.4	26.5	27.2	28.6	55	33.9	24	
18	18	25.5	15.5	18.6	11.9	14.7	7.4	6.1	10.7	9.2	18.9	20.8	22	23	20.6	19.6	20.5	23.4	20.7	23	18.4	20.9	19.6	22.5	33.6	34	18.6	24	
19	19	46.5	53.7	55.7	56.5	48.5	54.3	52.9	34	39.7	43.5	43.9	38.8	50.8	54.3	58.2	80.3	56.5	67.2	78.5	55.2	44.4	42.4	29.7	30.1	80	50.7	24	
20	20	17.2	12.5	11.3	11.9	3.6	6.8	6.6	9.2	7.6	7.1	6.9	11.3	11.6	11.9	15	13.5	13.9	12.6	8.5	8	4.7	8.7	13.8	16.6	17	10.5	24	
21	21	17.4	18	16.3	18.8	22.6	28.2	32.4	24.1	19.1	19.4	22	27.9	33.8	47	37.8	29.2	25.6	22.1	34.1	27.8	29.7	26.1	24	21.4	47	26.0	24	
22	22	20	15	13.7	16.7	16.8	13.3	14.5	12.3	12.4	14.8	15.5	22.8	22.8	21.7	21.1	24.6	17.8	17.3	12.6	11.9	11.4	11.9	13.9	13.3	25	16.2	24	
23	23	12	9.4	8.5	8.3	6	4.8	3.7	10.6	8.2	19.7	21.1	25.2	31.1	29.5	30.6	29.2	31.3	27.3	30.7	28	26.3	20.9	19.8	20.3	31	19.3	24	
24	24	38.2	39.4	32.6	33.3	32.1	29.6	34	28.4	30.5	27.3	30.9	34	38.8	38	37.7	35.1	31.8	17.4	15.4	14.3	10.2	9.2	10.6	11.2	39	27.5	24	
25	25	10.9	7.1	5.5	6.7	8.1	10.5	25.4	27.3	25.2	36.4	54	68.5	59	67.1	64.2	67.4	57.6	40.3	32.3	50.7	59.3	71.9	70.8	59.4	72	41.1	24	
26	26	77.2	80.4	80.9	74.6	54.6	55	48.9	48.9	33.1	29.2	31.3	30.5	23.9	23.6	18.2	17.1	18.9	16.5	6.6	9.6	9.3	9.9	7.3	6	81	33.8	24	
27	27	4.6	4.1	2.5	1.8	2.4	3.1	2.5	3	6.7	8.2	7.8	6.7	11.2	11.7	19.5	15.2	11.1	6.8	7.6	7.9	3.2	5.8	6.9	20	7.0	24		
28	28	6.3	11.3	11.6	10.6	10.4	11.1	10.9	9.9	13.2	12.8	11.6	12.1	11	15.1	16.5	12.7	31.7	18.8	19.9	22.3	18.6	22.5	37.7	38.7	39	16.6	24	
29	29	36.1	37.6	32.6	26.2	30.7	29.6	33.4	31.5	22.2	14.7	14.6	11.9	19.3	18.1	18.5	20.9	16	26.9	36.7	35	44.1	42.9	37.2	38.7	44	28.1	24	
30	30	33.5	35.8	29.8	26.7	20.2	24	31.4	34.9	28.2	35.1	33.2	31.4	31.9	31.9	27.5	25.1	21.4	19.4	17.2	15.3	27.4	30.4	30.9	22.1	36	27.7	24	
31	31	20.3	21.2	26.7	35.5	36.6	32.4	35.8	34.8	36.7	41.3	42.7	38.2	35.4	41.6	39.1	39.1	33.6	33.6	34	24	17.6	14.7	34.8	27.3	43	32.4	24	
HOURLY MAX		77	80	81	75	99	99	74	105	77	54	54	69	59	67	64	80	58	67	79	55	59	72	71	59				
HOURLY AVG		21.8	22.0	21.6	22.7	22.6	23.2	23.5	23.8	22.3	22.7	24.8	25.7	26.7	28.1	27.7	27.7	24.4	21.8	21.5	19.4	20.0	19.4	21.1	21.3				

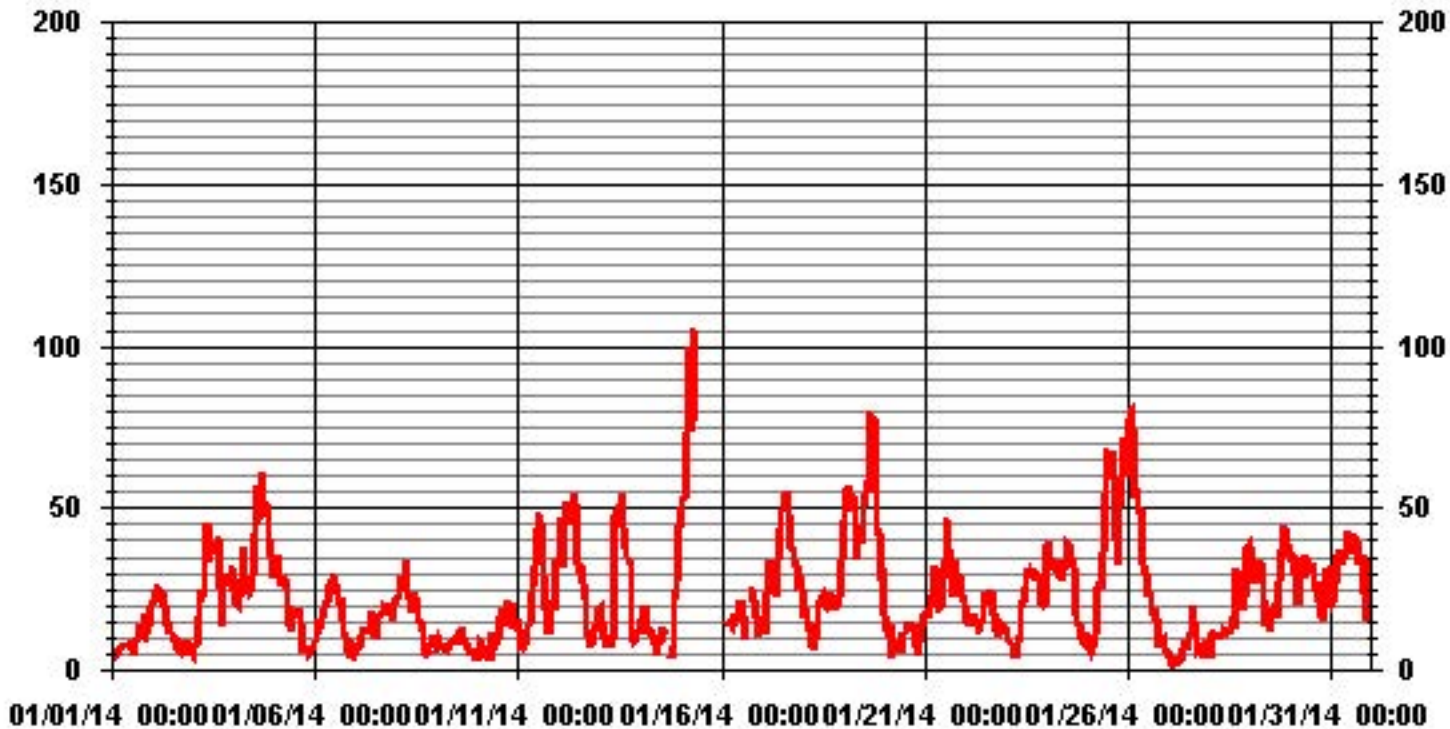
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS VALUE:	105	KPH	@ HOUR(S)	7	ON DAY(S)	15
					VAR-VARIOUS	
OPERATIONAL TIME:				719	HRS	

01 Hour Averages



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

January 2014

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	.55	.41	.27	1.38	3.73	3.04	1.79	1.24	1.24	.96	1.65	2.21	2.07	2.48	1.93	1.79	26.83
< 12.0	.13	.55	.69	.55	1.93	8.02	.69	.41	.13	.55	.55	3.73	5.11	2.21	2.35	.41	28.07
< 20.0	1.24	.27	.00	.00	.13	4.42	1.24	.41	.13	.00	.13	.69	4.42	4.70	2.76	2.48	23.09
< 29.0	1.10	.00	.00	.00	.00	.69	.00	.00	.00	.00	.00	.27	.82	3.59	5.67	1.65	13.83
< 39.0	.13	.00	.00	.00	.00	.27	.00	.00	.00	.00	.00	.13	1.10	1.93	1.93	.41	5.94
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.27	.69	.41	.82	2.21
Totals	3.18	1.24	.96	1.93	5.80	16.45	3.73	2.07	1.52	1.52	2.35	7.05	13.83	15.62	15.07	7.60	

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	
< 6.0	4	3	2	10	27	22	13	9	9	7	12	16	15	18	14	13	194
< 12.0	1	4	5	4	14	58	5	3	1	4	4	27	37	16	17	3	203
< 20.0	9	2			1	32	9	3	1		1	5	32	34	20	18	167
< 29.0	8					5						2	6	26	41	12	100
< 39.0	1					2						1	8	14	14	3	43
>= 39.0													2	5	3	6	16
Totals	23	9	7	14	42	119	27	15	11	11	17	51	100	113	109	55	

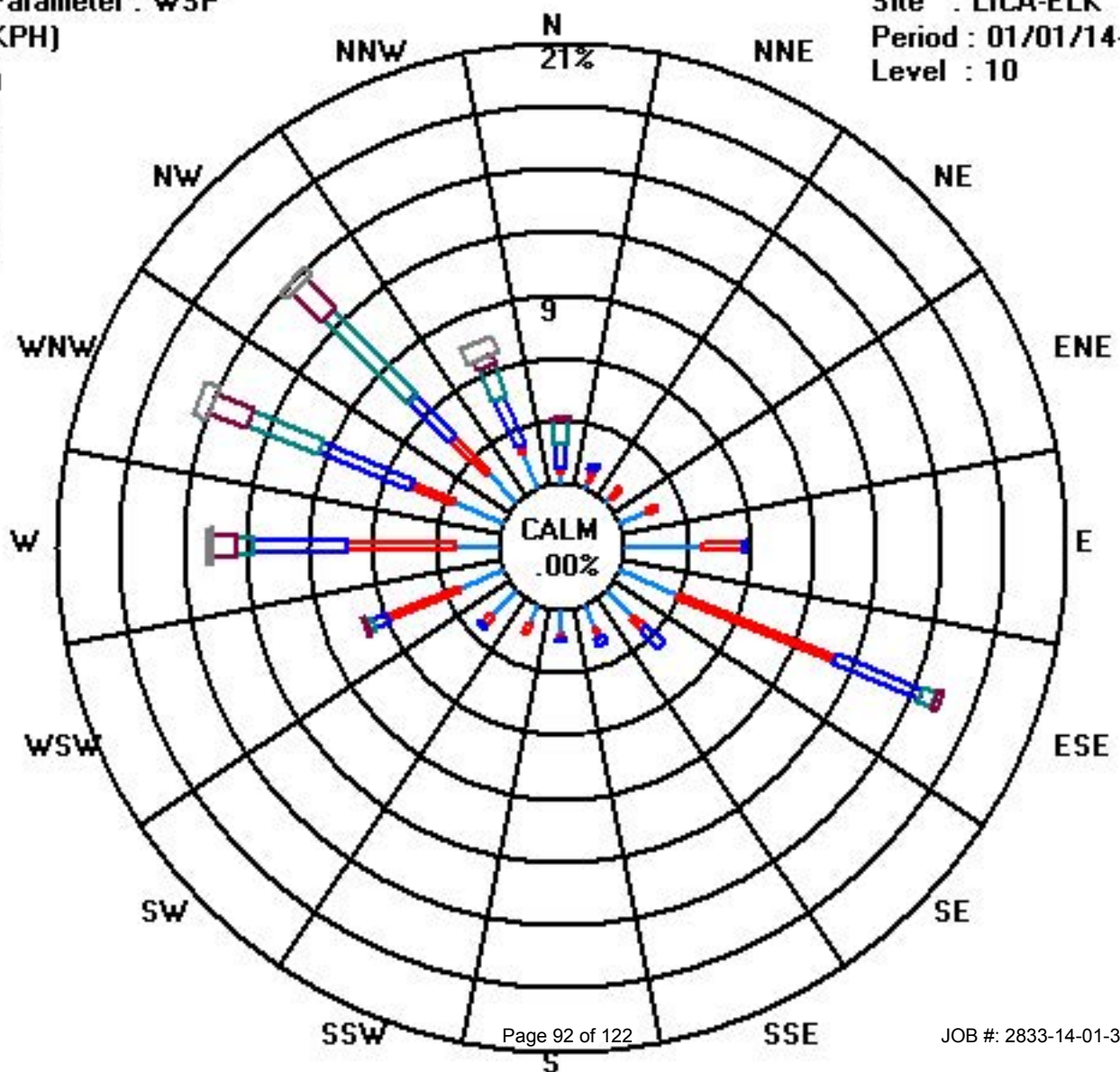
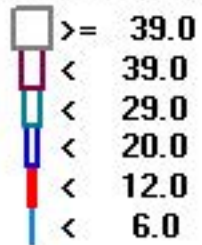
Calm : .00 %

Total # Operational Hours : 723

Class Limits (KPH)

Period : 01/01/14-01/31/14

Level : 10



Vector Wind Direction

Lakeland Industry & Community Association - Elk Point Site

JANUARY 2014

WIND DIRECTION (WD) hourly averages in degrees

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR			
DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	AVG.	QUADRANT	RDGS.		
1	216	267	121	252	321	293	185	152	93	111	100	117	69	310	95	116	120	118	112	118	113	114	112	110	321	NW	24		
2	111	112	109	113	110	109	110	107	109	105	100	105	93	76	94	57	58	351	185	136	82	312	46	181	351	N	24		
3	274	308	284	283	291	309	322	336	346	354	353	346	334	335	318	317	319	314	334	328	332	324	323	302	354	N	24		
4	301	294	282	291	278	298	299	282	281	276	290	285	285	296	302	308	310	330	337	346	346	336	324	316	346	NNW	24		
5	311	311	312	304	300	300	300	286	286	257	257	273	278	284	273	274	283	159	144	295	317	97	135	100	317	NW	24		
6	98	99	109	108	105	112	112	112	110	119	117	111	116	109	103	100	109	89	82	113	136	61	70	112	136	SE	24		
7	129	335	331	16	26	32	50	36	55	65	77	82	110	106	110	110	116	118	117	123	116	120	121	117	335	NNW	24		
8	131	133	141	135	140	146	149	153	152	148	159	164	187	209	204	198	192	100	125	221	274	233	237	234	274	W	24		
9	171	168	171	122	100	87	119	100	107	113	116	113	126	147	170	198	205	238	170	248	249	256	3	341	341	NNW	24		
10	318	307	311	221	285	159	223	187	203	297	325	318	234	271	272	264	250	263	264	278	289	284	274	246	325	NW	24		
11	256	93	125	85	102	93	104	90	116	121	115	120	121	116	111	107	107	357	323	291	278	297	294	287	357	N	24		
12	273	286	283	282	295	320	317	308	306	306	307	303	295	294	294	286	252	229	123	104	102	105	96	100	320	NW	24		
13	112	107	74	99	97	67	226	264	169	313	317	309	307	305	303	295	308	304	295	294	231	206	237	269	317	NW	24		
14	253	260	263	264	206	219	250	286	127	115	85	91	120	103	119	103	94	95	80	57	249	215	234	243	286	WNW	24		
15	245	251	262	278	288	301	315	308	285	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	315	NW	9		
16	P	P	P	P	225	252	267	259	256	255	255	258	253	269	262	P	P	P	P	248	249	253	275	285	288	288	WNW	18	
17	249	248	283	260	271	294	275	267	241	279	282	284	285	297	299	299	301	301	299	297	290	273	274	287	301	WNW	24		
18	278	250	246	255	239	274	284	279	309	277	274	274	264	257	266	276	262	281	285	268	281	269	260	266	309	NW	24		
19	276	276	279	281	281	290	298	270	264	276	282	285	277	278	280	300	298	321	337	356	353	350	2	352	356	N	24		
20	354	344	18	8	253	250	202	139	148	94	108	102	131	106	117	111	114	117	96	90	40	282	251	313	354	N	24		
21	302	298	311	316	300	299	308	299	285	279	283	284	305	319	311	303	301	314	358	18	25	36	56	74	358	N	24		
22	88	85	105	110	114	115	111	105	110	114	116	125	124	123	129	145	141	121	104	105	118	110	114	115	145	SE	24		
23	112	116	103	109	74	323	280	306	310	276	258	264	268	252	259	267	280	278	276	273	264	258	250	247	323	NW	24		
24	260	276	274	282	283	285	290	288	285	291	292	305	307	308	313	320	315	255	259	339	98	160	119	125	339	NNW	24		
25	168	112	162	272	297	297	287	283	270	276	306	310	296	298	307	313	317	310	308	313	315	318	332	358	358	N	24		
26	344	341	336	340	348	343	349	349	349	339	341	347	338	332	319	324	325	326	329	22	73	138	126	135	349	NNW	24		
27	88	339	335	334	334	334	333	328	303	283	289	274	256	270	277	272	272	246	220	227	180	194	272	131	339	NNW	24		
28	112	114	101	114	96	108	102	102	115	114	102	95	112	236	268	281	290	284	278	288	316	298	316	326	326	NW	24		
29	324	342	345	332	343	352	355	3	11	17	21	320	320	321	308	298	303	330	347	351	349	340	343	343	355	N	24		
30	348	339	336	324	317	312	317	315	312	309	304	297	292	291	290	285	280	255	263	267	263	251	259	248	348	NNW	24		
31	254	263	307	307	326	323	319	324	316	316	322	319	313	316	317	315	316	314	328	347	332	314	325	332	347	NNW	24		

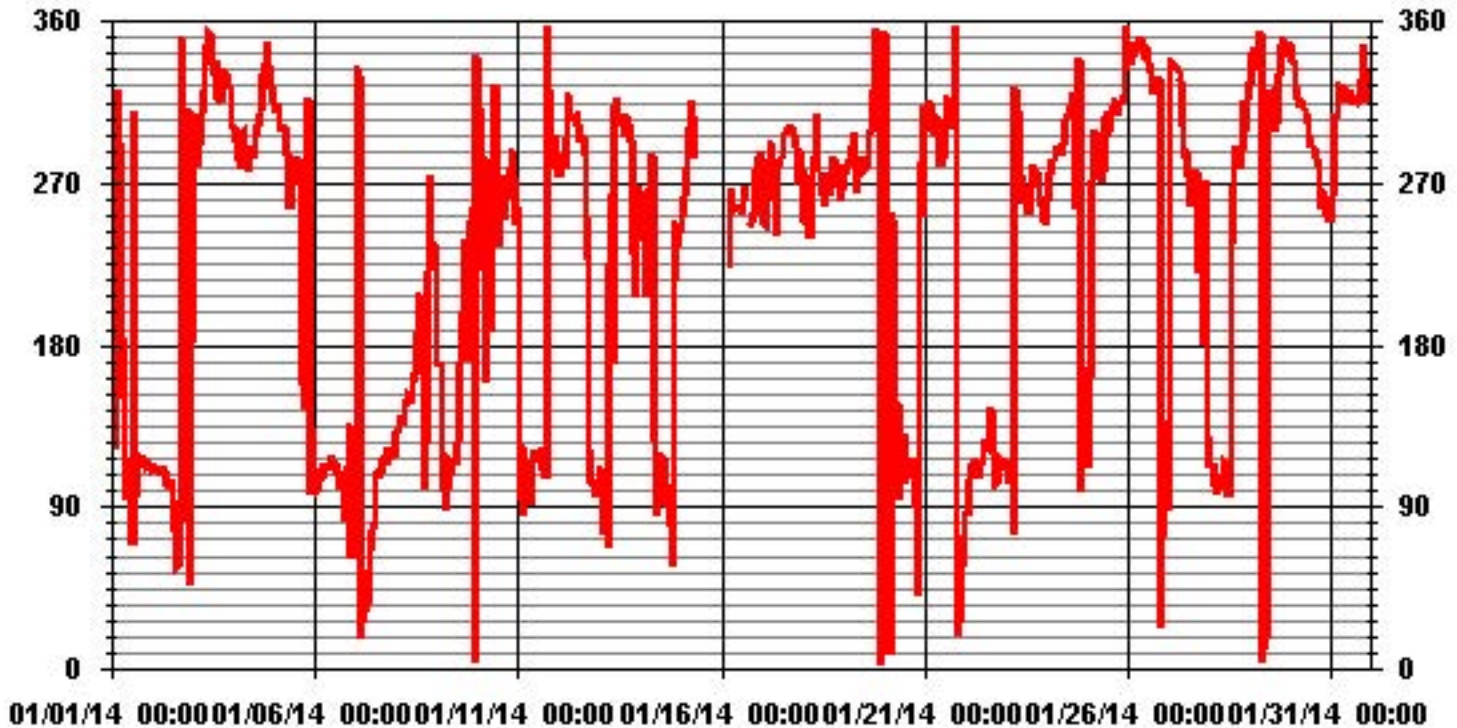
STATUS FLAG CODES

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

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

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	723 HRS
STANDARD DEVIATION:	94.07	AMD OPERATION UPTIME:	97.2 %
		MONTHLY AVERAGE:	304 DEG

01 Hour Averages



Standard Deviation Wind Direction

Lakeland Industry & Community Association - Elk Point Site

JANUARY 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																									
1		25	16	20	12	20	25	27	25	17	34	37	20	44	34	15	10	8	7	7	6	5	4	4	3
2		5	5	6	6	6	6	6	7	7	6	7	12	15	12	23	27	16	53	29	19	35	9	57	29
3		15	8	8	8	6	8	13	15	10	13	12	11	8	8	8	8	9	8	8	7	8	9	8	5
4		6	4	4	7	5	5	4	3	3	5	6	6	6	5	6	7	7	10	9	11	12	8	8	8
5		5	6	5	5	5	5	5	7	14	16	12	6	5	4	9	7	20	52	32	12	11	32	11	10
6		11	11	7	7	7	7	6	6	6	5	5	5	5	7	6	8	14	23	17	11	47	17	15	
7		14	20	9	17	11	9	11	9	12	9	10	11	9	6	6	6	6	6	6	6	6	6	6	6
8		8	8	10	8	9	11	12	12	12	12	12	11	11	11	12	33	16	48	19	9	11	12	14	
9		23	20	19	11	7	10	15	6	6	7	9	10	17	13	11	15	18	19	26	7	16	21	23	
10		32	37	11	17	61	53	36	49	24	29	28	17	39	13	11	10	6	15	11	31	11	10	13	9
11		40	29	14	12	6	5	5	7	6	5	5	6	6	7	7	7	7	40	10	4	8	7	9	7
12		8	5	4	6	7	9	9	6	6	6	7	5	6	4	5	4	13	14	28	21	9	6	5	7
13		6	7	12	11	14	63	41	26	49	9	9	6	5	5	5	4	5	5	6	11	26	11	9	14
14		7	7	10	15	16	11	5	13	22	43	27	8	7	12	7	19	8	33	37	19	24	10	8	
15		7	11	12	8	7	7	14	10	7	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
16		P	P	P	P	9	7	12	12	8	8	11	12	10	9	8			6	7	9	13	20	11	13
17		17	41	22	19	19	49	11	15	10	10	6	5	5	6	5	5	5	5	5	5	6	10	9	3
18		8	24	7	13	8	26	44	20	9	13	13	8	10	8	14	11	15	9	10	12	9	7	11	11
19		6	6	6	5	5	8	7	9	12	6	5	5	6	6	7	7	5	10	11	15	14	13	13	10
20		12	20	17	12	26	7	17	19	28	10	13	11	18	7	5	6	7	8	10	15	42	23	14	12
21		11	11	18	14	12	7	5	4	8	4	3	4	6	7	5	4	4	7	10	11	14	12	13	13
22		8	9	6	6	5	6	6	6	5	5	6	7	7	7	7	10	10	10	5	4	7	5	7	6
23		8	8	10	9	12	26	12	15	9	13	12	10	11	12	12	9	3	3	5	7	10	12	13	9
24		16	5	7	5	8	8	5	7	7	7	5	6	5	5	7	8	8	11	7	40	15	17	11	10
25		15	17	17	11	34	59	22	10	13	10	6	7	6	6	6	8	8	6	5	8	8	9	10	16
26		12	11	9	10	12	12	11	11	11	9	12	12	12	15	13	9	9	8	9	18	15	9	5	6
27		13	4	0	0	0	0	1	0	6	6	32	10	13	8	6	7	6	6	9	13	13	11	14	36
28		7	8	6	19	20	10	8	4	5	4	6	10	27	12	10	7	4	5	6	12	13	6	8	9
29		9	10	9	9	10	11	12	11	12	12	14	15	11	11	5	5	5	7	11	12	13	9	11	10
30		12	9	8	9	9	7	9	8	7	7	6	7	6	7	6	5	6	10	12	13	18	11	12	11
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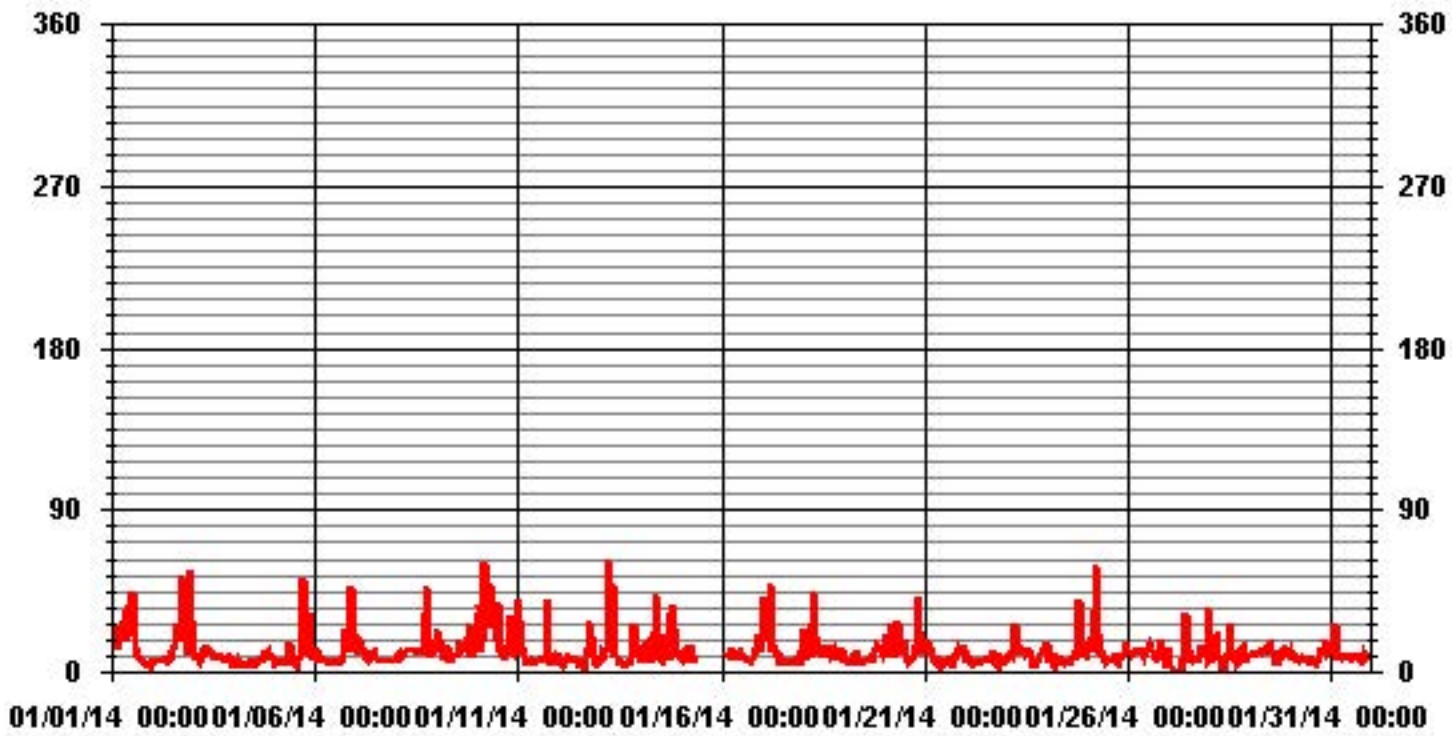
STATUS FLAG CODES

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: 722 HRS

01 Hour Averages



Calibration Reports

Sulphur Dioxide

SO2 Calibration Report

Station Information

Calibration Date	January 3, 2014	Previous Calibration	December 14, 2013
Company	Lakeland Community and Industry Association		
Plant / Location	Portable / Elk Poin Airport		
Start Time (MST)	11:20	End Time (MST)	15:10
Reason:	Monthly Calibration		
Barometric Pressure	27.57 inHg	Station Temperature	23 Deg C
Cal Gas	49.7 ppm	Gas Cyl. #	BAL3165
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	December 29, 2016
		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:	EnviroNics 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
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	619 ccm	31.2 Deg C	626 ccm	28.8 Deg C	
HVPS / Lamp Setting	628	1329.8(94.5%)	640	1442.7(102.5%)	
PMT / RxCell Temp	8.1 Deg C	50 Deg C	8.1 Deg C	50 Deg C	
Converter / IZS Temp	NA Deg C	45 Deg C	NA Deg C	45.0 Deg C	
Offset / Slope	144.7	1.14	149.2	1.095	

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.			
4918	81.8	813	813	1.0000
	No Span Adj.			
4959	40.9	407	405	1.0038
4980	20.5	204	202	1.0087
5000	0	0	0	0.0000
Sum of Least Squares				1.0013
New Correction Factor				1.0000

IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0	Auto Zero	0.0
Auto Span	334.0	Auto Span	334.0
Sample Lines Connected		Sample Lines Connected	YES

Percent Change

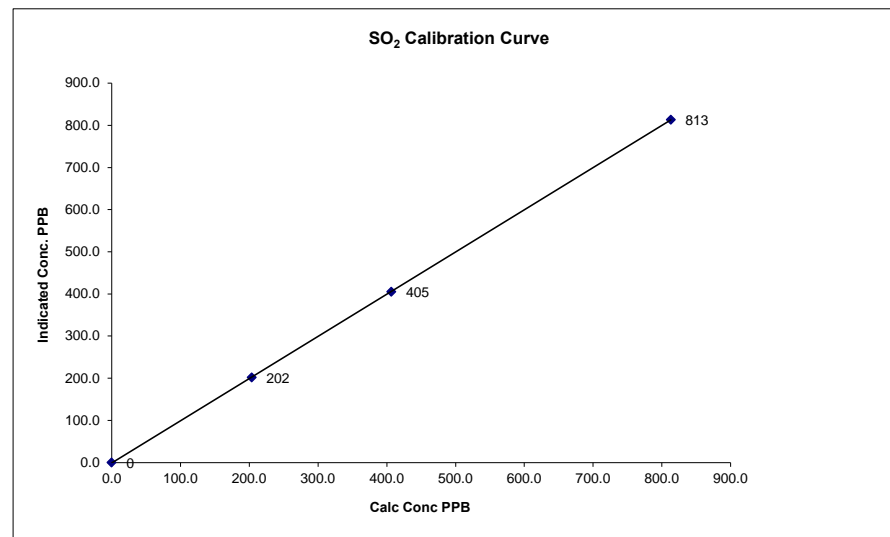
Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	0.0%

Notes: **Change sample filter**
 Adjust UV Lamp. Adjust HVSP.

SO₂ Calibration Curve

Calibration Date	January 3, 2014		
Company	Lakeland Community and Industry Association		
Plant / Location	Portable / Elk Poin Airport		
Start Time (MST)	11:20	End Time (MST)	15:10

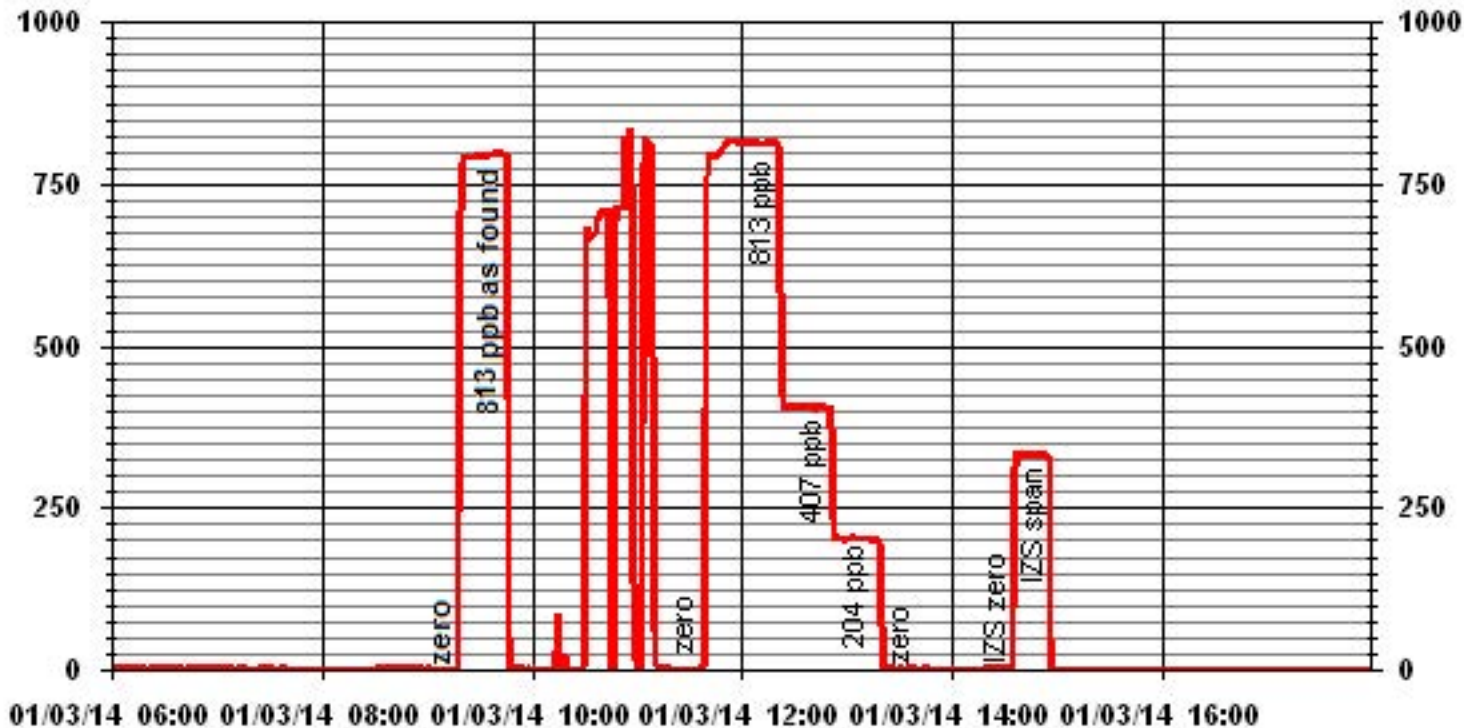
Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	0	n/a		0.999993
204	202	1.0087		1.000361
407	405	1.0038		-0.985458
813	813	1.0002		



Notes:

Calibration Performed by: Limin Li

01 Minute Averages



Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	January 3, 2014	Previous Calibration	December 14, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Portable/ Elk Point Airport		
Start Time (MST)	14:20	End Time (MST)	17:40
Reason:	Monthly Calibration		
Barometric Pressure	27.57	inHg	Station Temperature 23 Deg C
Cal Gas	10.1	ppm	Gas Cyl. # BLM5049 Cal Gas Expiry date December 25, 2015
DAS Output Voltage	0 - 1	Volts	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		After Calibration	
Concentration Range	0 - 100	ppb	
Sample Flow / Box Temp	502 ccm 30.3 Deg C	508 ccm 27.9 Deg C	
HVPS / Lamp Setting	540 1549.5(93.8%)	544 1397(99.8%)	
PMT / RxCell Temp	7.9 Deg C 50 Deg C	7.9 Deg C 50 Deg C	
Converter / IZS Temp	314 Deg C 45 Deg C	314.3 Deg C 45.0 Deg C	
Offset / Slope	107.8 1.17	109.9 1.098	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	0.0000
	No Zero Adj.			
4960	39.6	80	80	1.0000
	No Span Adj.			
4980	19.8	40	40	1.0000
4988	12.0	24	24	1.0000
4996	0	0	0	0.0000
Sum of Least Squares				1.0007
New Correction Factor				

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	58.8	53.7
Sample Lines Connected		NO

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	0.0%

Notes:

Change sample filter.

Adjust UV Lamp and calibrate.

Adjust HVPS.

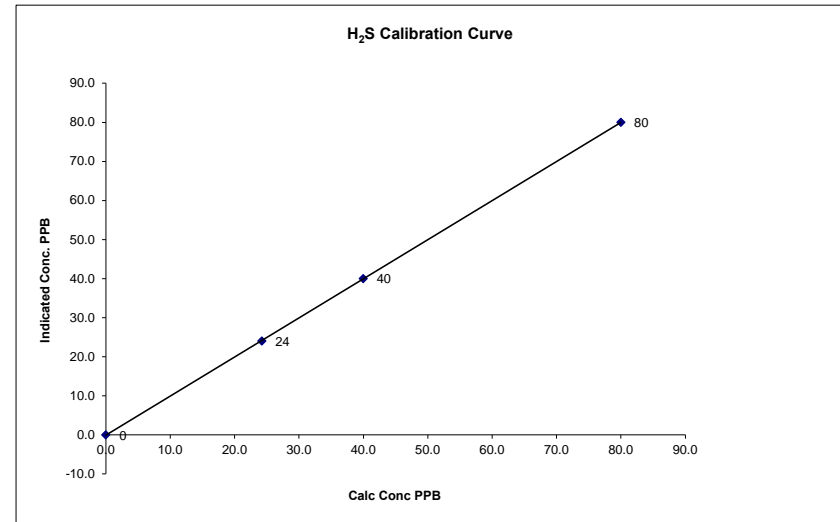
Renew scrubber.

Calibration Performed by: Limin Li

H₂S Calibration Curve

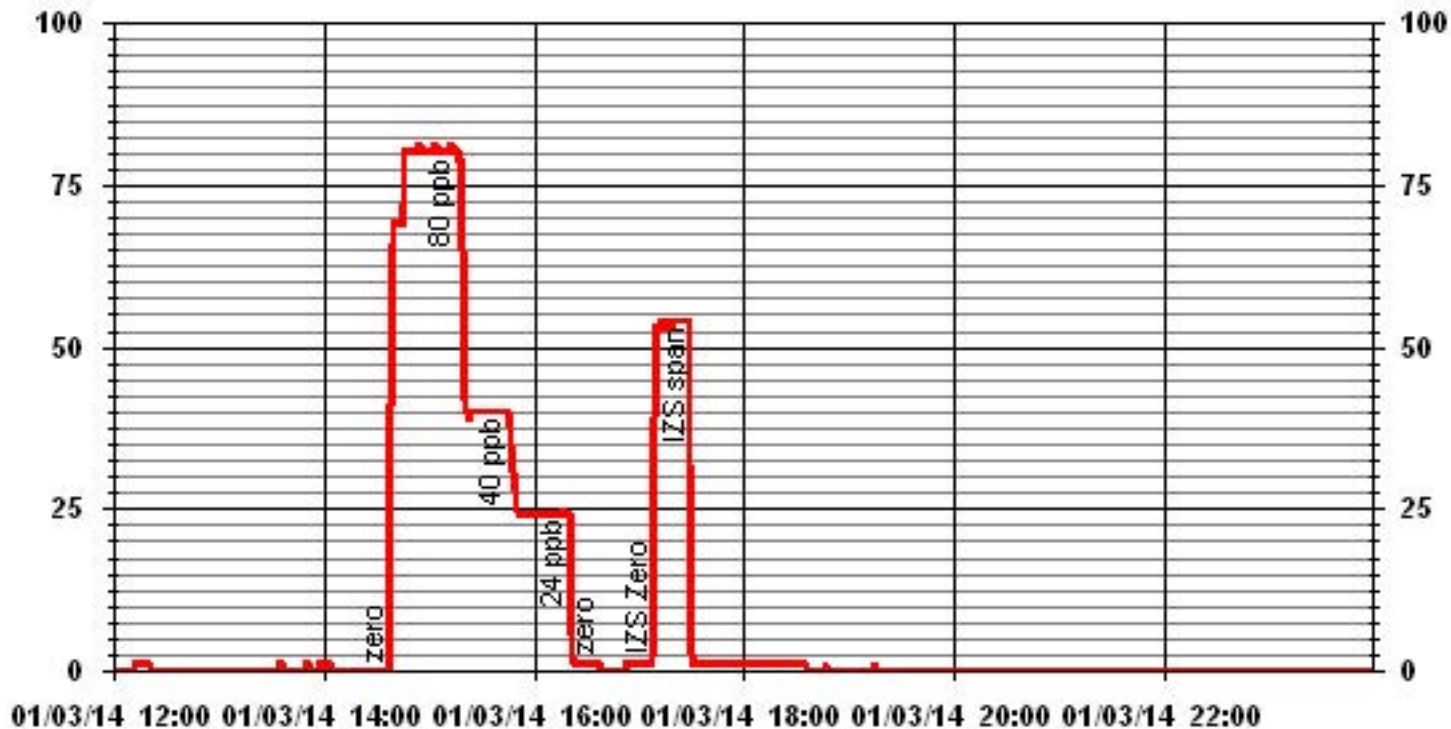
Calibration Date	January 3, 2014
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	Portable/ Elk Point Airport
Start Time (MST)	14:20
End Time (MST)	17:40

Calculated Conc.	Indicated Response	Correction Factor	Correlation Coefficient	Slope	Intercept
ppb	ppb		(≥ 0.995)		
0	0		0.999988	1.000861	-0.090056
24	24	1.0100			
40	40	0.9999			
80	80	1.0000			



Notes:

01 Minute Averages



Total Hydrocarbons (55i)

Methane - Non Methane Hydrocarbon Calibration Report

Station Information

Calibration Date:	January 3, 2013	Previous Calibration	December 14, 2013
Company:	Lakeland Industry and Community Association		
Plant / Location:	ELK Point Airport		
Start Time (MST)	12:20	End Time (MST)	15:10
Reason:	Monthly calibration		
Barometric Pressure:	27.57 inHg	Station Temperature:	22.0 Deg C
Calibrator:	API700	S/N:	831
Cal Gas Concentration:	CH4 609 PPM	C3H8 201 PPM=	552.75 CH4
	Cyl. # LL36542	Cal Gas Expiry Date:	July 11, 2021
DAS make & Model:	ESC8832	S/N :	AO717
Chart Recorder:	N/A	S/N:	N/A
Output Voltage Range:	0-10	Chart Speed:	N/A cm/hr

Analyzer Information

Make / Model	Thermo 55i	S/N :	1236656107	Method:	GC FID
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Analyzer Settings

Concentration Range (PPM)	CH4= 0-20		NMHC= 0-20		THC = 0-40	
	Before Calibration		After Calibration			
Hydrogen Pressure	40.3	psi	40.3	psi		
Air Pressure	32.4	psi	32.4	psi		
Carrier Pressure	31.1	psi	31.1	psi		
Detector Oven	175.1	Deg C	175.1	Deg C		
Filter Temp	175	Deg C	175	Deg C		
Column Oven Temp	75.1	Deg C	75.1	Deg C		
Flame Temp	373.9	Deg C	372.4	Deg C		
Box Temp	30	Deg C	30	Deg C		

Calibration Data

Gas Flows (sccm)		Calculated Concentration		Actual Concentration		Correction factors	
Dilution Flow	Cal Gas Flow	CH4	NMHC	CH4	NMHC	CH4	NMHC
3000	0.00	0.00	0.00	0.00	0.00	0.000	0.000
	No Zero Adj.						
2982	18.00	3.65	3.32	3.67	3.30	0.9956	1.0050
2982	18.00	3.65	3.32	3.67	3.30	0.9956	1.0000
2964	36.00	7.31	6.63	7.34	6.60	0.9956	1.0000
2991	9.00	1.83	1.66	1.83	1.66	1.0000	0.9989
3000	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
Correction Factors:						0.9956	1.0000

Percent Change from Previous Calibration

	CH4	NMHC
Previous Calibration Correction Factor:	1.0028	0.9988
Current Correction Factor Before Span Adjust:	0.9863	0.9757
Percent Change:	1.7%	2.4%

IZS Calibration Data

		Before Calibration		After Calibration	
Auto Zero (ppm)		CH4 0.00	NMHC 0.00	CH4 0.00	NMHC 0.00
Auto Span (ppm)	CH4	10.70	NMHC 13.87	CH4 10.70	NMHC 13.87
Sample Lines Connected		YES			

Notes: Cylinder Pressures
 Span 550 psi
 Hydrogen 1300 psi
 Zero Air 45 psi
 Nitrogen 800 psi

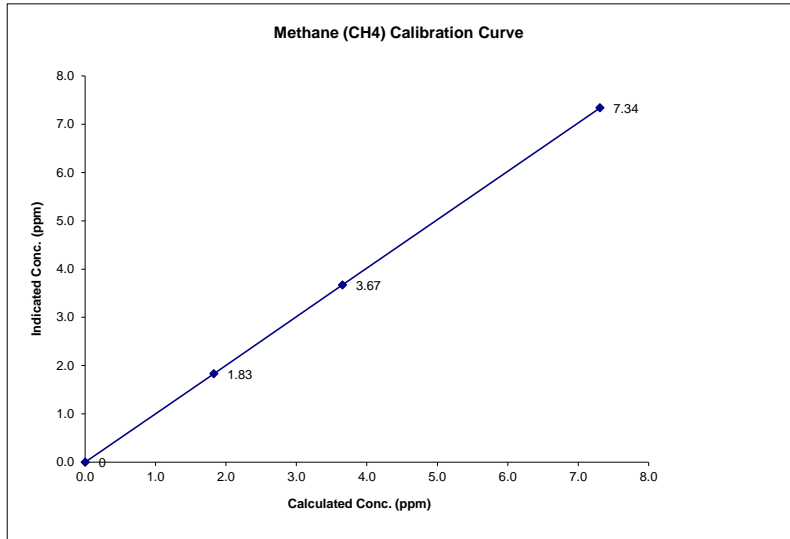
Notes: Change sample filter

Calibration Performed by: Limin Li

Methane (CH4) Calibration Curve

Calibration Date	January 3, 2013		
Company	Lakeland Industry and Community Association		
Plant / Location	ELK Point Airport		
Start Time (MST)	12:20	End Time (MST)	15:10

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999999
0	0	0.0000	Slope (0.85 to 1.15)	1.004613
1.83	1.83	1.0000	Intercept (± 3% F.S.)	-0.002000
3.65	3.67	0.9956		
7.31	7.34	0.9956		

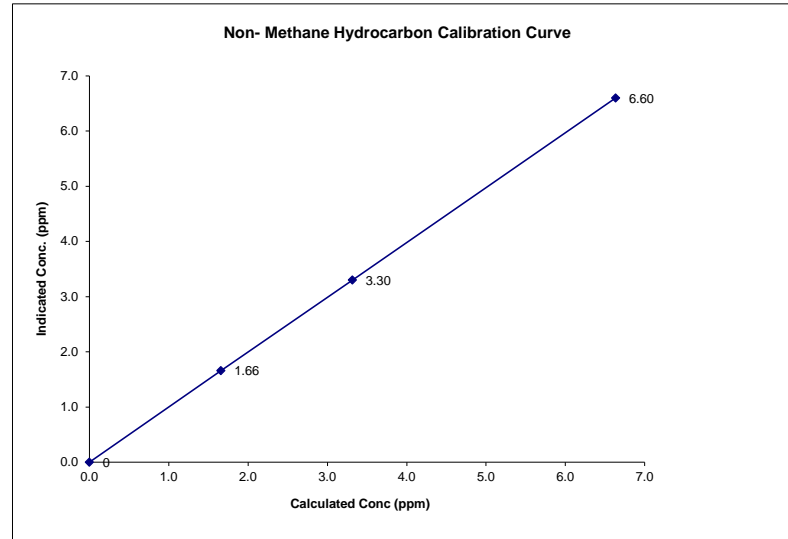


Notes:

Non-Methane Hydrocarbon Calibration Curve

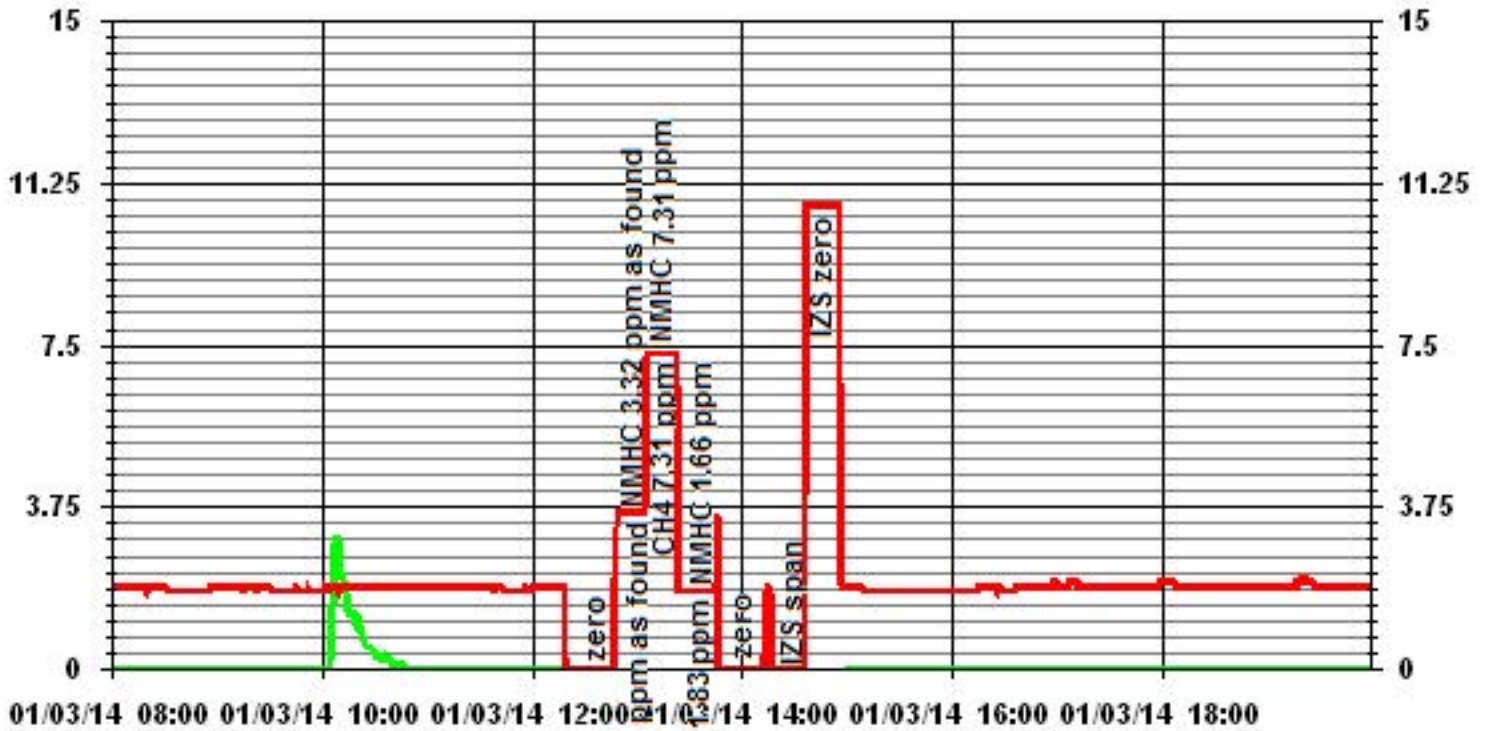
Calibration Date	January 3, 2013		
Company	Lakeland Industry and Community Association		
Plant / Location	ELK Point Airport		
Start Time (MST)	12:20	End Time (MST)	15:10

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999997
0	0	0.0000	Slope (0.85 to 1.15)	0.994508
1.66	1.66	0.9989	Intercept (± 3% F.S.)	0.004000
3.32	3.30	1.0050		
6.63	6.60	1.0000		



Notes:

01 Minute Averages



— LICA35

METHANE

PPM

— LICA35

NMHC

PPM

Particulate Matter 2.5

TEOM 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	January 3, 2013	Make/Model:	Streamline FTS
Station Name:	Lica Portable (CASA # 35)	Serial Number:	Hi 091001,Lo 091099
Location:	Devon Wellsite 13-16-62-5 W4M	Cell s/n:	
Operator:	LICA	Thermometer s/n:	FLUKE 2329070

	<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 (%)	30.0%
Firmware Ver.	1.52	K _o Factor	13125.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-17.3
		Press (ATM)	0.931

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	0.008	Warnings	None
Pump Vacuum <0.40atm	0.34	Pump Gauge (inHg)	-19
Temperature/Pressure		D °C	
Measured Temp (± 2 °C)	-18.1		0.8
Measured Press (± 0.01atm)	0.933	DATM	-0.002
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (± 10.0%)	0.41%
Measured Main Flow (l/min)	2.98	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (± 10.0%)	0.04%
Measured Bypass Flow (l/min)	13.65	Flow Adjusted to Measured?	Yes
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	Base=-0.04 Ref=-0.04	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: 15:00 Finish Time: 16:30

Sample Inlet Cleaned: Yes New Filters Installed: YES
 New Filter Loading %: 20.4%

Comments: Clean switch valve. Change pump.

Auditor/s: Limin Li

TEOM 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	January 16, 2014	Make/Model:	Dwyer
Station Name:	LICA Portable (CASA # 35)	Serial Number:	NA
Location:	ELK Point Air Port	Cell s/n:	NA
Operator:	LICA	Thermometer s/n:	NA
	<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 #	N/A	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A208301003	Filter Load (%)	23.0%
Firmware Ver.	1.52	K _o Factor	13125.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-1.2
		Press (ATM)	0.939

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	0.005	Warnings	None
Pump Vacuum <0.40atm	0.34	Pump Gauge (inHg)	-19
Temperature/Pressure			
Measured Temp (± 2 °C)	-0.40	D °C	-0.8
Measured Press (± 0.01atm)	0.937	DATM	0.002
Flow Audit			
Indicated Main Flow (l/min)	2.99	Main Flow Drift (±10.0%)	-
Measured Main Flow (l/min)	2.98	Flow Adjusted to Measured?	no
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	-
Measured Bypass Flow (l/min)	13.57	Flow Adjusted to Measured?	no
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	-0.06/-0.05	Flow Control = Active	
Aux (< 0.6 l/min)	.00/.00	Report Condition = Actual	
K_o Factor			
Measured	N/A		
K _o Difference (± 2.5%)	N/A		

Start Time: 11:54 **Finish Time:** 12:24

Sample Inlet Cleaned: yes **New Filters Installed:** yes

New Filter Loading %: NA

Comments:

Auditor/s: Kevin Hope

Nitrogen Dioxide

NOx - NO- NO2 Calibration Report

Station Information

Calibration Date	January 3, 2014	Previous Calibration	December 14, 2013
Company	LICA	Plant/Location	ELK Point Airport
Start Time (MST)	9:00	End Time (MST)	9:50
Reason:	As found		
Barometric Pressure	27.57 in HG	Station Temperature	23 Deg C
Cal Gas Concentration	NOx 49.0 ppm	NO	48.9 ppm
Cal Gas Cylinder #	BAL3065	Cal Gas Expiry date	December 29, 2016
DAS Output Voltage	0-1 Volts	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	API 200E	S/N :	593	Method:	Chemiluminescent
Calibrator Make / Model:	Evironics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Evironics 6100	S/N :	4760		

Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0-1000		ppb		
Sample Flow/Conv. Temp	356 ccm	315.6 Deg C	356 ccm	315	Deg C
Ozone Flow / Vacuum	77 ccm	4.3 *Hg-A	77 ccm	4.3	*Hg-A
HVPS / A ZERO	674 Volts	8.7 MV	674 Volts	8.7	MV
Rx/ Temp / PMT Temp	50.0 Deg C	6.7 Deg C	50.0 Deg C	6.7	Deg C
Box Temp / IZS Temp	28.4 Deg C	45.0 Deg C	28.4 Deg C	45.1	Deg C
Offset	1.1 NOx	0.0 NO	1.1 NOx	0.0	NO
Slope	1.197 NOx	1.179 NO	1.197 NOx	1.179	NO
NO2 COEF / Conv Efficiency	NA NO2	0.997	NA NO2	0.997	

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	NA	0	0	NA	1	1	0	NA	NA
	No zero adj.									
4918	81.8	NA	802	800	NA	776	773	3	1.0344	1.0363

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		

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= NA	NO= NA	NO2= NA
				NOx= 1.0344	NO= 1.0363	NO2= NA
				Average Converter Efficiency=		

IZS Calibration Data

	Before Calibration				After Calibration			
	Auto Zero	NOx	NO	NO2	Auto Zero	NOx	NO	NO2
Auto Zero	NA	NOx	NA	NO2	NA	NOx	NA	NO2
Auto Span	NA	NOx	NA	NO2	NA	NOx	NA	NO2
	Sample Lines Connected:				YES			

Percent Change

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	0.999	0.997	1.017
Current Correction Factor Before Span Adjust	1.034	1.036	NA
Percent Change	-3.4%	-3.8%	#VALUE!

Notes

NA : Not Applicable

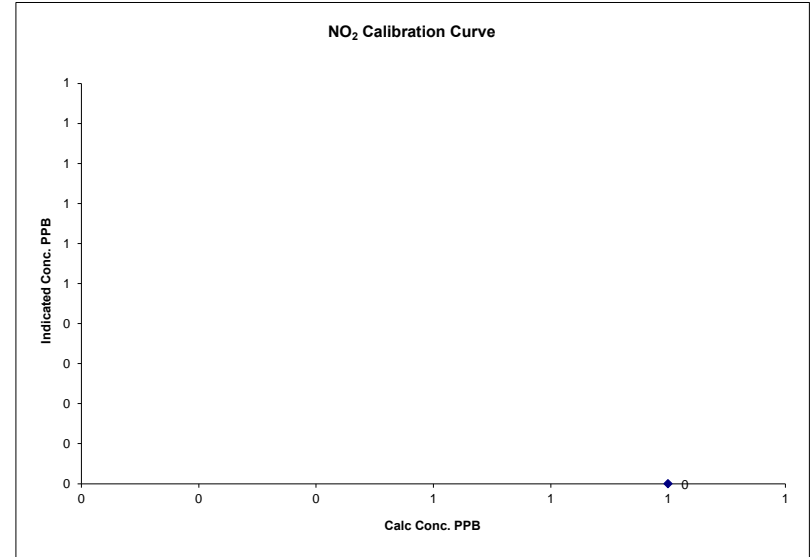
Alarm on sample flow:356 ccm.

Calibration Performed by: Limin Li

NO2 Calibration Curve

Calibration Date	January 3, 2014
Company	LICA
Plant / Location	ELK Point Airport
Start Time (MST)	9:00
End Time (MST)	9:50

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)
3			Slope (0.85 to 1.15)
			Intercept (± 3% F.S.)



Notes:

NOx - NO- NO2 Calibration Report

Station Information

Calibration Date	January 3, 2014	Previous Calibration	December 14, 2013
Company	LICA	Plant/Location	ELK Point Airport
Start Time (MST)	11:20	End Time (MST)	17:50
Reason:	Monthly		
Barometric Pressure	27.57 in HG	Station Temperature	23 Deg C
Cal Gas Concentration	NOx 49.0 ppm	NO	48.9 ppm
Cal Gas Cylinder #	BAL3065	Cal Gas Expiry date	December 29, 2016
DAS Output Voltage	0-1 Volts	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	API 200E	S/N :	593	Method:	Chemiluminescent
Calibrator Make / Model:	Evironics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Evironics 6100	S/N :	4760		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	0-1000			ppb			
Sample Flow/Conv. Temp	356 ccm	315.6	Deg C	482	315	Deg C	
Ozone Flow / Vacuum	77 ccm	4.3	*Hg-A	78	4.6	*Hg-A	
HVPS / A ZERO	674 Volts	8.7	MV	682	9.2	MV	
Rx/ Temp / PMT Temp	50.0 Deg C	6.7	Deg C	50.0	6.7	Deg C	
Box Temp / IZS Temp	28.4 Deg C	45.0	Deg C	26.9	45.2	Deg C	
Offset	1.1 NOx	0.0	NO	0.9	0.8	NO	
Slope	1.197 NOx	1.179	NO	1.074	1.068	NO	
NO2 COEF / Conv Efficiency	NA NO2	0.997		NA	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
5000	0.0	0	0	0	0	0	0	0	0	0
	No Zero Adj.									
4918	81.8	0	802	800	0	802	800	2	1.0000	1.0000
4959	40.9	0	401	400	0	400	400	0	1.0021	1.0000
4980	20.5	0	201	200	0	200	200	0	1.0044	1.0000
5000	0.0	0	0	0	0	0	0	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		
4918	81.8	0	802	800	0	800	800	0	0.00%	
4918	81.8	500	802	0.0	523	792	277	515	1.0155	98.47%
4918	81.8	500	802	0.0	524	801	276	525	0.9981	100.19%
4918	81.8	220	802	0.0	235	799	565	234	1.0043	99.57%
4918	81.8	100	802	0.0	105	798	695	103	1.0194	98.10%

Linearity	Sum of Least Squares		NOx=	NA	NO=	NA	NO2=	1.000	
OK?	Yes	No	Correction Factors:	NOx=	1.0000	NO=	1.0000	NO2=	0.9981
				Average Converter Efficiency= 99.08%					

IZS Calibration Data

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0	NO2	0.0	NOx	0.0	NO2
Auto Span	602 NOx	572	NO2	592	NOx	565	NO2
	Sample Lines Connected:			YES			

Percent Change

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	0.999	0.997	1.017
Current Correction Factor Before Span Adjust	1.000	1.000	0.998
Percent Change	-0.1%	-0.3%	1.8%

Notes

NA : Not Applicable

Adjust HVPS. Check pump. Ok.

Change sample filter.

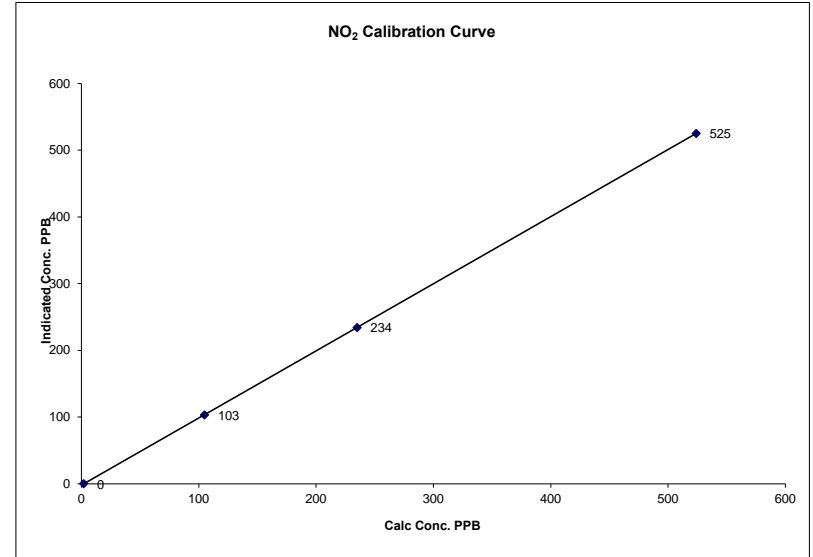
O3:390 NOX:798 NO:387 NO2:411

Calibration Performed by: Limin Li

NO2 Calibration Curve

Calibration Date	January 3, 2014
Company	LICA
Plant / Location	ELK Point Airport
Start Time (MST)	11:20
End Time (MST)	17:50

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999999
2	0	NA	Intercept	(± 3% F.S.)	-2.32858
105	103	1.0194			
235	234	1.0043			
524	525	0.9981			

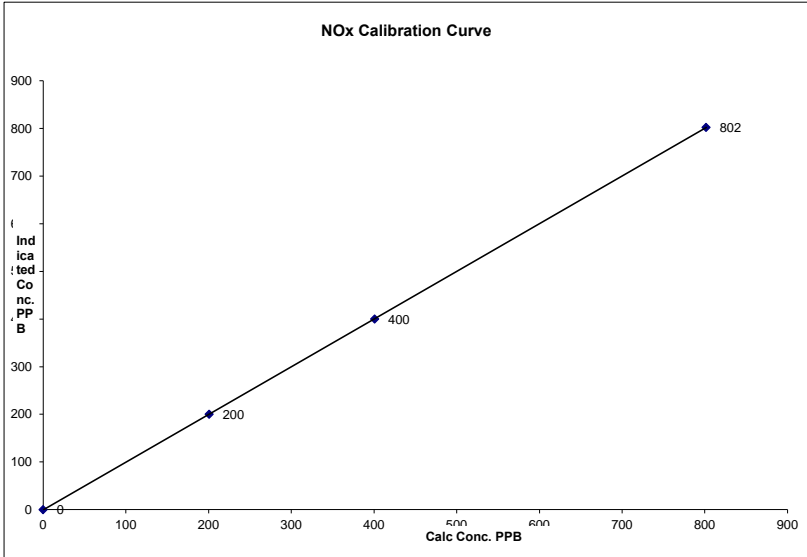


Notes:

NOx Calibration Curve

Calibration Date	January 3, 2014	
Company	LICA	
Plant / Location	ELK Point Airport	
Start Time (MST)	11:20	End Time (MST) 17:50

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	Slope (0.85 to 1.15)	Intercept (± 3% F.S.)
0	0	NA	0.999997	1.000679	-0.58308
201	200	1.0044			
401	400	1.0021			
802	802	1.0000			

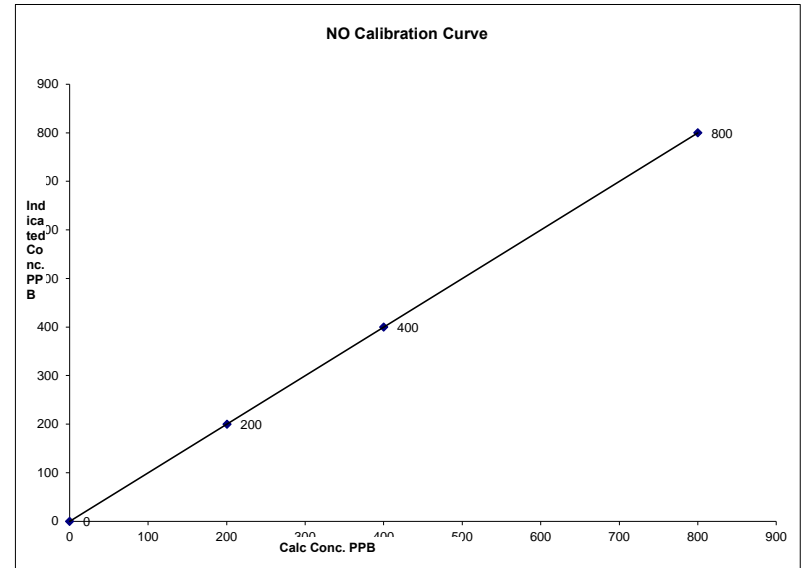


Notes:

NO Calibration Curve

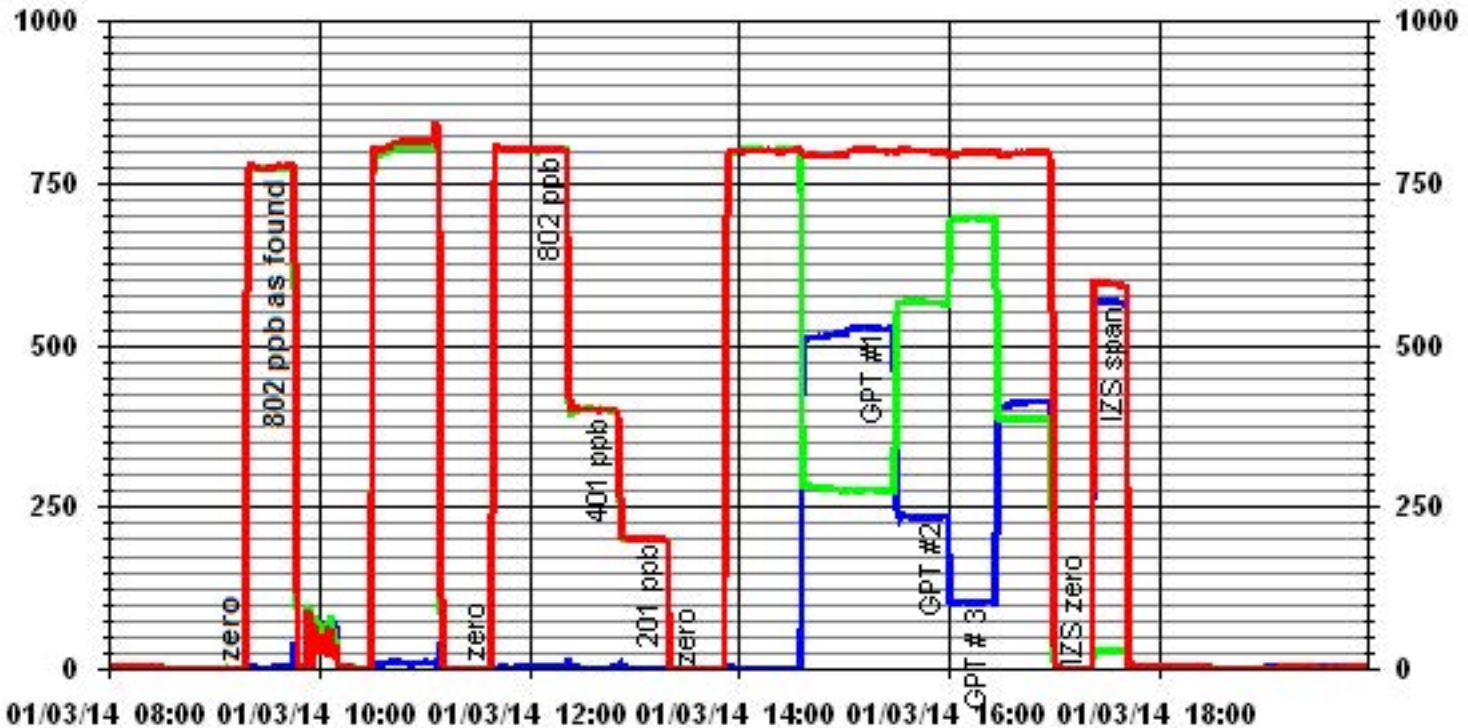
Calibration Date	January 3, 2014	
Company	LICA	
Plant / Location	ELK Point Airport	
Start Time (MST)	11:20	End Time (MST) 17:50

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	Slope (0.85 to 1.15)	Intercept (± 3% F.S.)
0	0	NA	1.000000	1.000153	-0.18266
200	200	1.0000			
400	400	1.0000			
800	800	1.0000			



Notes:

01 Minute Averages



Ozone

O₃ Calibration Report
Station Information

Calibration Date	January 3, 2014	Previous Calibration	December 14, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	ELK Point Airpoint		
Start Time (MST)	17:00	End Time (MST)	20:20
Reason:	Monthly Calibration		
Barometric Pressure	27.91 inHg	Station Temperature	22 Deg C
DAS Output Voltage	0 - 1 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	1002240372	Method:	Photometric
Calibrator Make / Model:	Enviroincs 6100		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	757 ccm	765 ccm	757 ccm	765 ccm	757 ccm	765 ccm	757 ccm	765 ccm
Pressure	699 mmHg		700 mmHg		699 mmHg		700 mmHg	
Bench Lamp	54 Deg C		54.1 Deg C		54 Deg C		54.1 Deg C	
O3 Lamp / Box Temp	68.1 Deg C	25.3 Deg C	68.2 Deg C	32 Deg C	68.1 Deg C	25.3 Deg C	68.2 Deg C	32 Deg C
Offset / Slope	0	1.033	0	0.981	0	1.033	0	0.981

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	0	NA
	No Zero Adj.			
5000	390	413	434	0.9516
5000	390	413	413	1.0000
5000	220	235	237	0.9916
5000	100	105	105	1.0000
5000	0	0	0	NA
			Sum of Least Squares	0.9980
			New Correction Factor	1.0000

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	345.0	345.0
Sample Lines Connected		YES
Previous Calibration Correction Factor:		1.0000
Current Correctio Factor Before Span Adjust:		1.0000
Percent Change:		0.0%

Note: **NA : Not Applicable**

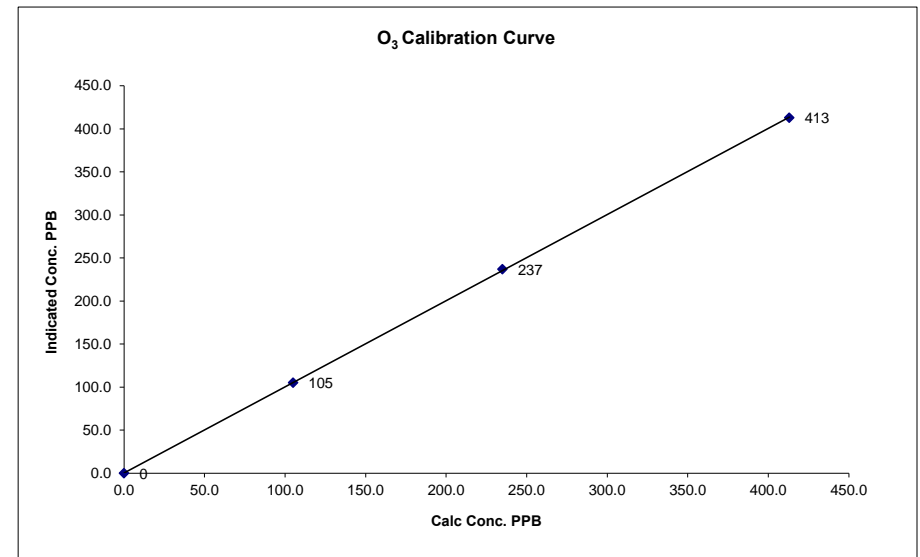
Change sample filter.

Calibration Performed by: Limin Li

O₃ Calibration Curve

Calibration Date	January 3, 2014
Company	Lakeland Industry & Community Association
Plant / Location	ELK Point Airpoint
Start Time (MST)	17:00
End Time (MST)	20:20

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		0.999969
105	105	1.0000		1.000984
235	237	0.9916		
413	413	1.0000		0.314852



Notes:

01 Minute Averages

