



Box 8237  
5107W-50th Street  
Bonnyville, AB T9N 2J5  
Phone: (780) 812-2182  
Fax: (780) 812-2186  
Toll Free: 1-877-737-2182  
E-Mail: [lica2@lica.ca](mailto:lica2@lica.ca)  
Website: <http://www.lica.ca>

Alberta Environment  
Monitoring and Science  
Data Management  
Floor 11 Oxbridge Place  
9820 106 Street  
Edmonton Alberta T5K 2J6

May 8, 2013

**RE: March 2013 Ambient Air Monitoring Monthly Reports**

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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

March 2013

Prepared By:



April 29, 2013

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

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# Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: Cold Lake  
Data Period: March 2013

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Katherine Rapske

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 – March 2013

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION COLD LAKE SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO <sub>2</sub> (PPB)	172	48	0	0	0.51	4	30	7	12.1	342(NNW)	1.3	20	98.5
TRS (PPB)	-	-	-	-	0.00	0	ALL	ALL	VAR	VAR	0.0	ALL	99.9
NO <sub>2</sub> (PPB)	159	-	0	-	6.70	30.9	2	21	1.8	46(NE)	15.4	2	99.9
NO (PPB)	-	-	-	-	0.82	46.3	19	7	1.7	52(NE)	4.7	19	99.9
NO <sub>x</sub> (PPB)	-	-	-	-	7.52	76.4	19	7	1.7	52(NE)	17.3	2	99.9
O <sub>3</sub> (PPB)	82	-	0	-	40.12	69	27, 28	VAR	VAR	VAR	59.0	27	99.9
THC (PPM)	-	-	-	-	2.24	4.2	9	6	1	28(NNE)	2.9	28	98.5
PM 2.5 (UG/M <sup>3</sup> )	-	30	-	0	7.18	32	28	13	1.8	39(NE)	19.9	28	97.3
TEMPERATURE (DEG C)	-	-	-	-	-8.11	11.2	28	15	7.3	250(WSW)	0.4	28	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	66.72	91	31	23	3.6	279(W)	81.5	22	100.0
VECTOR WS (KPH)	-	-	-	-	5.27	19.1	11	4	-	353(N)	12.8	20	100.0
VECTOR WD (DEGREES)	-	-	-	-	62(ENE)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS      NA: NOT AVAILABLE

# Monthly Non-Continuous Data Summary

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

### Passive Ambient Monitoring Network – March 2013

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO <sub>2</sub>	#14	1.2	0.68
H <sub>2</sub> S	#17	0.17	0.10
NO <sub>2</sub>	#28	3.9	0.9
O <sub>3</sub>	#5	47.1	38.3

# 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 inlet filter was changed before the monthly calibration was started on March 8<sup>th</sup>. The hourly data between March 1<sup>st</sup> at hour 14 and hour 23 is missing: reason unknown. The issue did not affect the hourly maximum channel. Data was corrected using daily zero information.

#### Total Reduced Sulphur (PPB)

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

No operational issues were observed during the month. The inlet filter was changed before the monthly calibration was started on March 8<sup>th</sup>. An as found points check was performed on March 28<sup>th</sup> to verify the analyzer's functionality. The result was OK, but the analyzer took long time to reach the target. Further maintenance will be performed next month. Data was corrected using daily zero information.

#### Ozone (PPB)

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

No operational issues were observed during the month. The inlet filter was changed before the monthly calibration was started on March 11<sup>th</sup>. 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

The monthly calibration was performed on March 11<sup>th</sup>. The inlet filter was changed before the monthly calibration was started. The analyzer flamed out on March 30<sup>th</sup> at hour 7 due to running out the Hydrogen gas. The gas cylinder was replaced and the analyzer was re-lit on March 30<sup>th</sup> at hour 16. A daily zero/span check was then performed. 10 hours of data were invalidated due to this event. Data was corrected using daily zero information.

### Nitrogen Dioxide (PPB)

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

No operational issues were observed during the month. The inlet filter was changed before the monthly calibration was started on March 11<sup>th</sup>. Data was corrected using daily zero information.

### Particulate Matter 2.5 (UG/M3)

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

Two Teom audits were performed in March: one was on March 11<sup>th</sup> and the other one was on March 25<sup>th</sup>. Both audits passed the manufacturer requirements. Data was corrected using Alberta air quality guideline. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. Twenty hours of data were invalidated as the data were below –3 ug/m3.

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

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

The wind system is reported as vector wind speed and vector wind direction. No operational issues were observed during the month.

# General Monthly Summary

## AQM STATION – LICA – COLD LAKE SOUTH

### Relative Humidity (PERCENT)

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

### Ambient Temperature (DEGC)

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

### Trailer Temperature (DEGC)

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

### Datalogger

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

### Trailer

The manifold was cleaned on March 11<sup>th</sup>.

### Passive Network

The samplers installed at site #2 had been removed and all samples were missing.  
All samples installed at site #11 were not changed, as the access to the samplers was blocked by snow.

# Continuous Monitoring

# Monthly Summaries, Graphs & Wind Roses

# Sulphur Dioxide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

## SULPHUR DIOXIDE (SO<sub>2</sub>) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	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	MAX.	AVG.		
DAY																												
1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X	X	X	1	1.0	14
2	0	0	0	0	0	0	S	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
3	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
4	0	0	0	1	S	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0.4	24
5	0	0	0	S	0	0	0	0	0	0	0	0	1	3	1	1	0	1	1	1	1	1	0	0	3	0.5	24	
6	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0.1	24	
7	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
8	S	0	0	0	0	0	0	0	0	0	0	1	1	C	C	C	C	3	3	1	0	1	0	S	3	0.6	24	
9	0	0	0	0	0	0	0	0	1	2	2	2	2	2	2	1	1	1	1	0	1	1	S	1	2	0.9	24	
10	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	S	0	0	1	0.5	24	
11	0	0	0	1	1	2	2	1	1	1	1	1	1	1	0	0	0	0	0	0	S	0	0	0	2	0.6	24	
12	0	0	0	0	1	0	0	0	0	1	2	3	2	1	1	1	1	1	1	S	1	1	0	0	3	0.7	24	
13	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	1	0.4	24	
14	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	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	1	0.0	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0	24
17	0	0	0	0	0	0	0	0	2	2	1	1	2	1	S	1	1	1	1	1	0	0	0	0	2	0.6	24	
18	0	0	0	0	0	0	0	0	1	1	1	1	1	S	0	1	1	0	0	0	0	0	0	0	0	1	0.3	24
19	0	0	0	0	0	0	0	1	1	1	1	1	S	2	2	1	1	1	1	2	3	3	3	3	3	3	1.2	24
20	2	2	2	2	2	1	1	1	1	1	1	S	1	1	2	1	1	1	1	1	1	1	1	1	2	1.3	24	
21	1	1	1	1	1	1	0	1	1	1	S	0	0	1	1	1	1	1	1	0	0	0	0	0	1	0.7	24	
22	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	1	0	1	2	2	1	2	0.3	24	
23	1	1	1	1	1	0	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
24	0	0	0	0	0	0	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	0.6	24	
25	0	0	0	0	0	0	S	1	1	1	2	3	3	2	2	Y	1	2	2	1	2	1	1	0	3	1.1	23	
26	0	0	0	0	0	S	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	0.6	24	
27	1	1	2	2	S	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	0	2	1.1	24	
28	0	0	0	S	0	0	0	0	1	1	1	2	2	2	1	1	1	1	1	1	1	1	0	2	0.7	24		
29	0	0	S	0	0	0	1	1	1	1	1	0	0	0	1	1	1	1	1	1	0	0	0	0	1	0.5	24	
30	1	S	1	2	1	2	3	4	2	1	1	0	0	1	1	1	1	1	1	0	0	0	0	0	4	1.0	24	
31	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	S	1	0.0	24	
HOURLY MAX	2	2	2	2	2	2	3	4	2	2	2	3	3	3	2	1	1	3	3	2	3	3	3	3	3			
HOURLY AVG	0.3	0.3	0.3	0.4	0.3	0.3	0.4	0.4	0.6	0.6	0.7	0.7	0.8	0.9	0.7	0.6	0.5	0.7	0.7	0.4	0.5	0.5	0.3	0.3				

### STATUS FLAG CODES

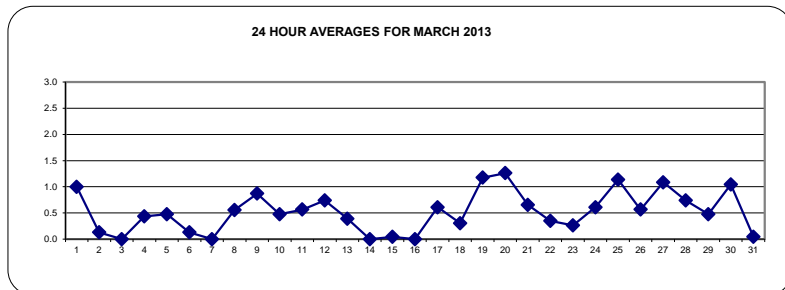
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

### OBJECTIVE LIMIT:

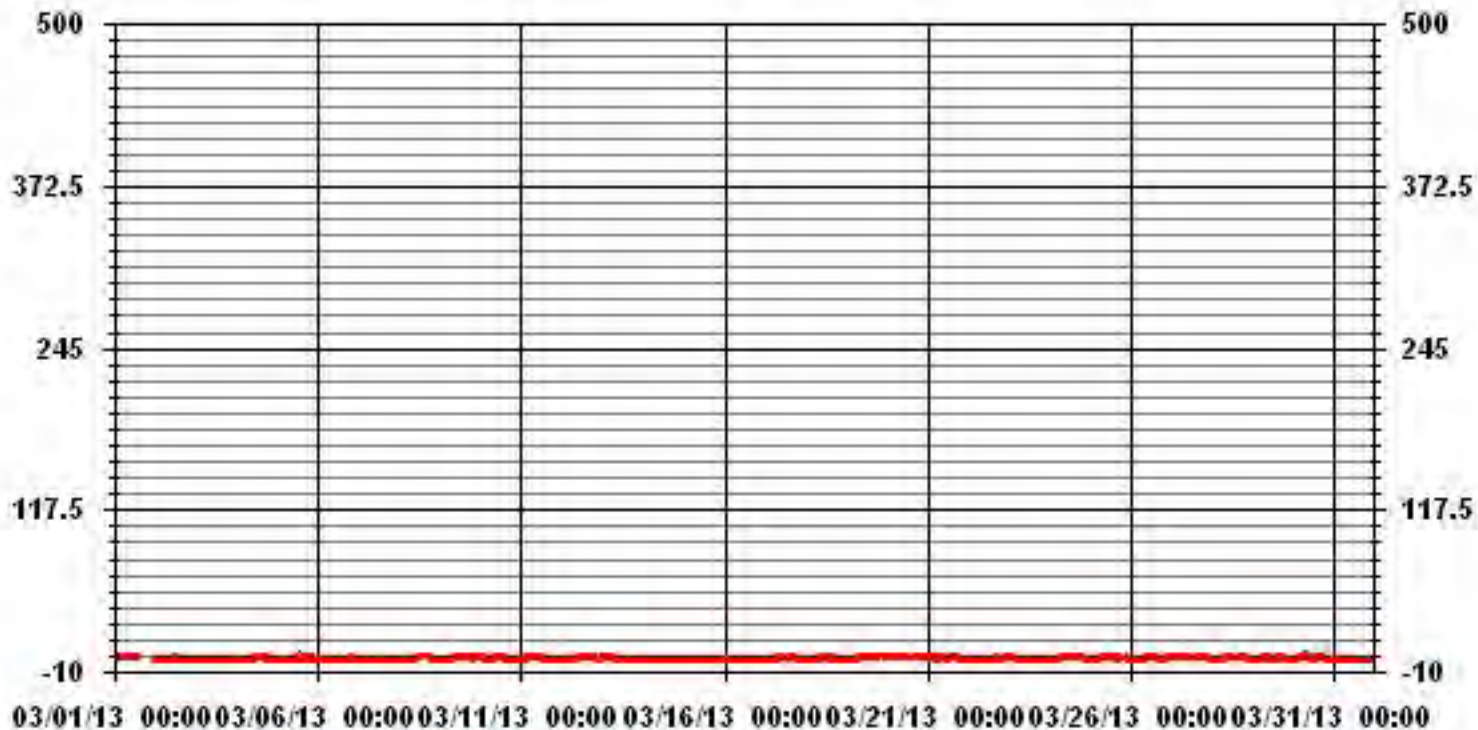
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
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### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	293		
MAXIMUM 1-HR AVERAGE:	4 PPB @ HOUR(S) 7 ON DAY(S) 30		
MAXIMUM 24-HR AVERAGE:	1.3 PPB ON DAY(S) 20		
IZS CALIBRATION TIME:	33 HRS	OPERATIONAL TIME:	733 HRS
MONTHLY CALIBRATION TIME:	4 HRS	AMD OPERATION UPTIME:	98.5 %
STANDARD DEVIATION:	0.69	MONTHLY AVERAGE:	0.51 PPB



### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

## 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	2	2	2	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24
2	1	1	1	1	1	1	S	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
3	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1.0	24
4	1	1	1	1	S	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	1	1	1	1	1	2	1.2	24
5	1	1	1	S	1	1	1	1	1	1	1	1	2	5	2	1	1	1	1	1	1	1	1	1	1	5	1.3	24
6	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	1.0	24
7	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	1.0	24
8	S	1	1	1	1	1	1	1	1	1	1	1	C	C	C	C	C	C	5	2	1	1	1	1	S	5	1.3	24
9	1	1	1	1	1	1	1	1	1	1	2	2	3	3	3	2	1	1	1	1	1	1	S	1	3	1.4	24	
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1.0	24
11	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	2	1.2	24
12	1	1	1	1	1	1	1	1	1	2	3	5	4	1	1	1	1	1	1	1	S	1	1	1	1	5	1.4	24
13	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	1.0	24
14	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1.0	24
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1.0	24
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1.0	24
17	1	1	1	1	1	1	1	1	3	3	2	1	2	2	S	1	2	1	1	1	1	1	1	1	1	3	1.3	24
18	1	1	1	0	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
19	1	1	1	1	1	1	1	1	1	2	2	2	S	2	2	2	2	2	2	2	3	4	3	3	4	1.8	24	
20	3	2	2	2	2	2	2	2	1	1	1	S	2	2	2	2	1	1	1	1	1	1	1	1	3	1.6	24	
21	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
22	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	2	3	1	2	3	2	2	3	1.3	24	
23	2	2	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24	
24	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
25	1	1	1	1	1	1	S	1	1	2	3	4	3	3	2	Y	2	2	2	2	2	2	2	1	4	1.8	23	
26	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
27	1	1	2	2	S	2	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	1	1	1	2	1.5	24	
28	1	1	1	S	1	1	1	1	1	1	2	2	2	2	2	1	1	1	1	1	1	1	1	1	2	1.3	24	
29	1	1	S	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24	
30	1	S	2	3	1	4	5	6	3	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	6	1.8	24	
31	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	
HOURLY MAX	3	2	2	3	2	4	5	6	3	3	3	5	4	5	3	2	2	2	5	2	3	4	3	3				
HOURLY AVG	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.3	1.1	1.2	1.3	1.3	1.4	1.5	1.3	1.2	1.2	1.2	1.3	1.1	1.1	1.2	1.1	1.1				

**STATUS FLAG CODES**

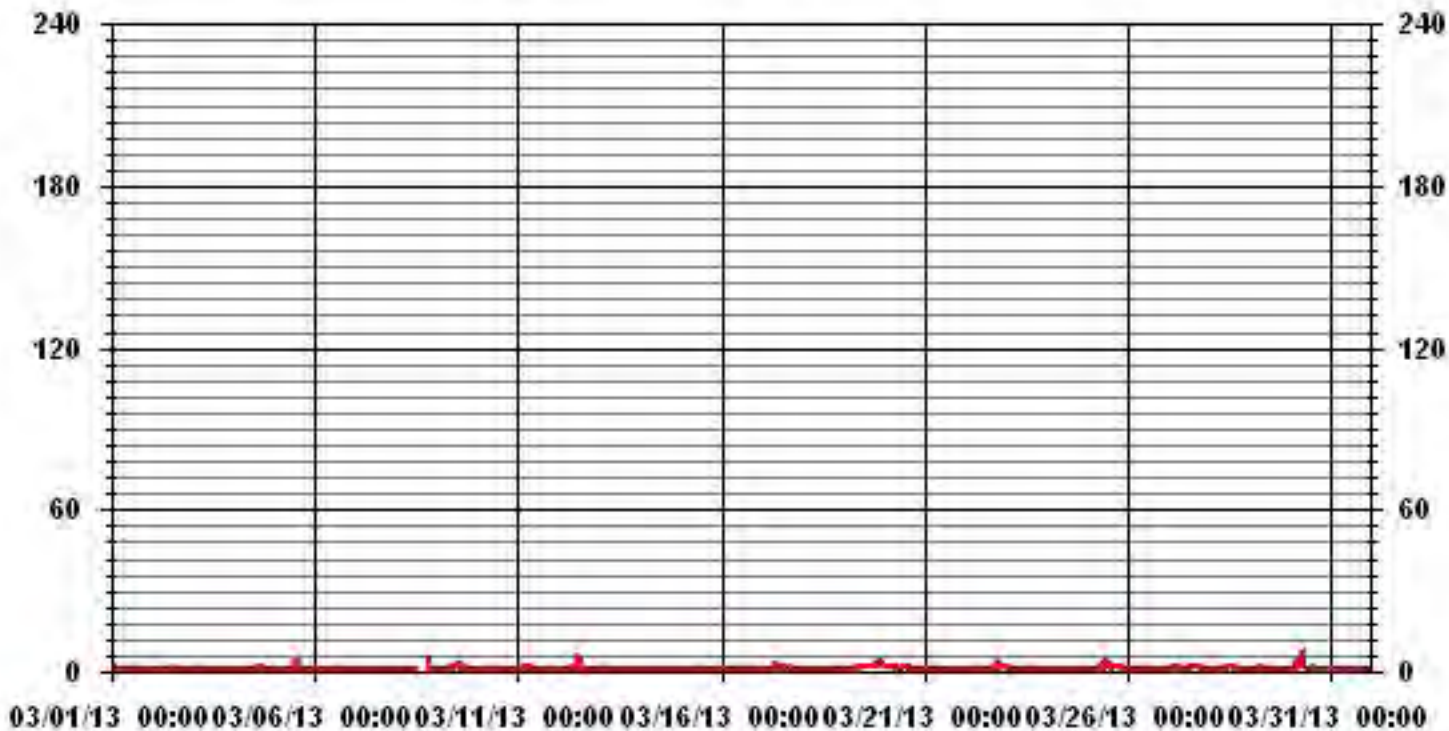
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	701					
MAXIMUM INSTANTANEOUS VALUE:	6	PPB	@ HOUR(S)	7	ON DAY(S)	30
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	0.59					



### 01 Hour Averages



LICA  
SO2\_ / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 01  
Site Name : LICA  
Parameter : SO2\_  
Units : PPB

Wind Parameter : WDR  
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	4.31	12.64	10.48	6.17	8.76	7.04	11.49	3.44	1.58	1.43	2.87	7.90	7.32	4.74	4.88	4.88	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	4.31	12.64	10.48	6.17	8.76	7.04	11.49	3.44	1.58	1.43	2.87	7.90	7.32	4.74	4.88	4.88	

Calm : .00 %

Total # Operational Hours : 696

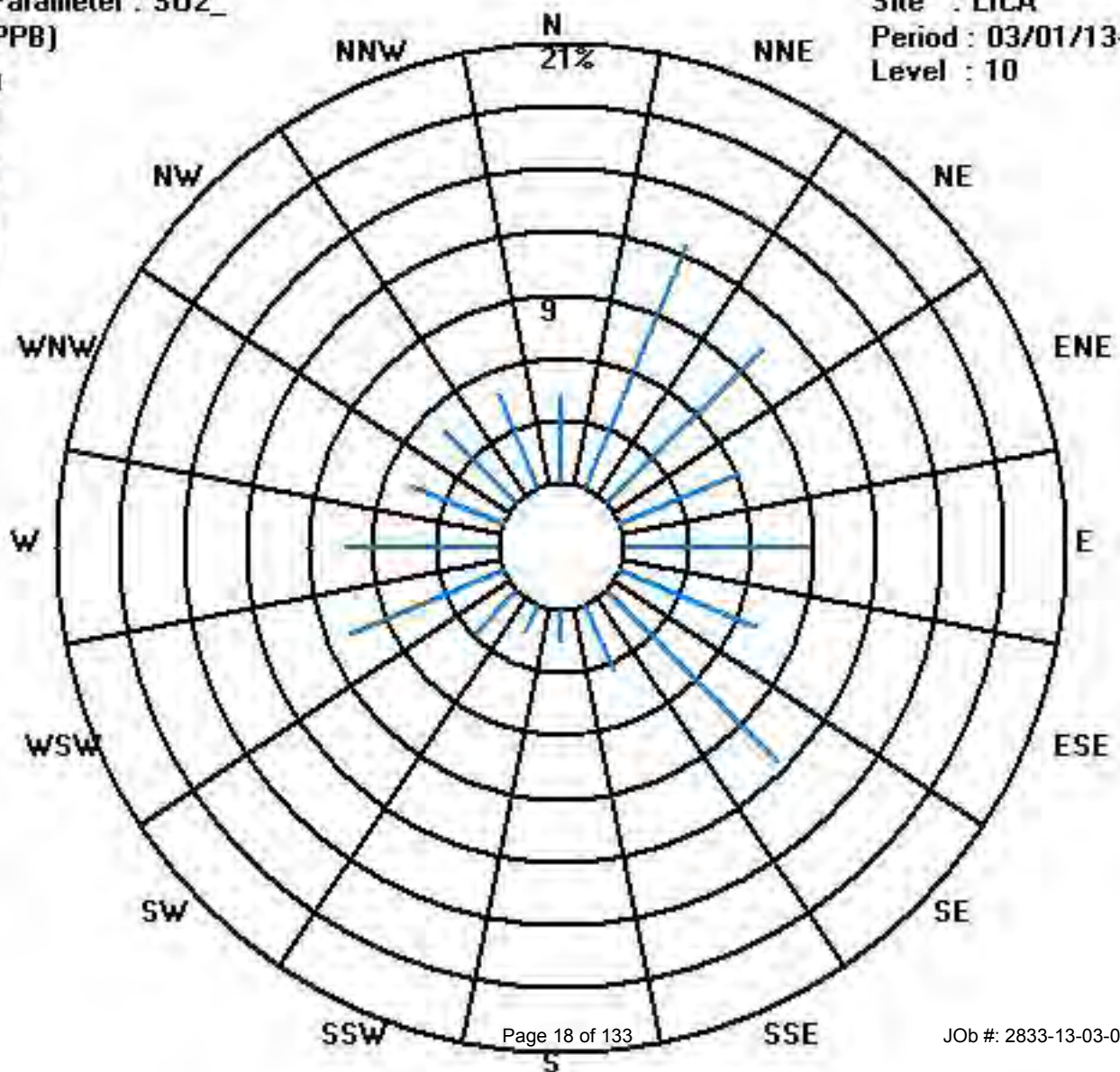
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	30	88	73	43	61	49	80	24	11	10	20	55	51	33	34	34	696
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	30	88	73	43	61	49	80	24	11	10	20	55	51	33	34	34	

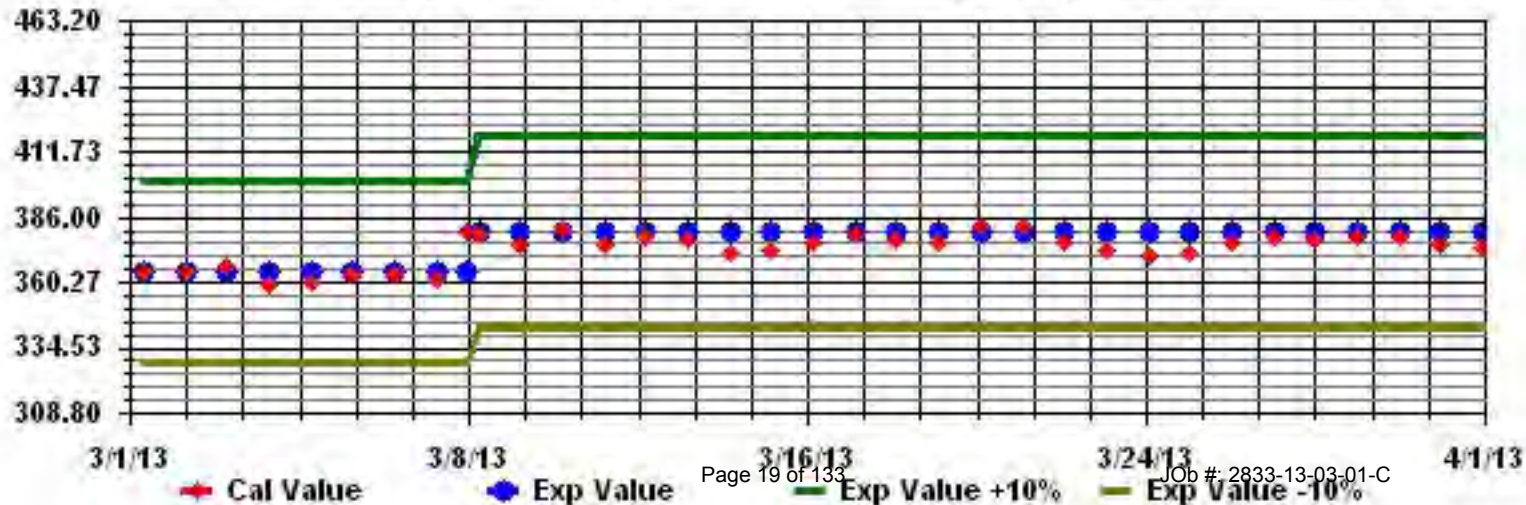
Calm : .00 %

Total # Operational Hours : 696

Class Limits (PPB)



Calibration Graph for Site: LICA Parameter: SO2\_ Sequence: SO2 Phase: SPAll



# Total Reduced Sulphur

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

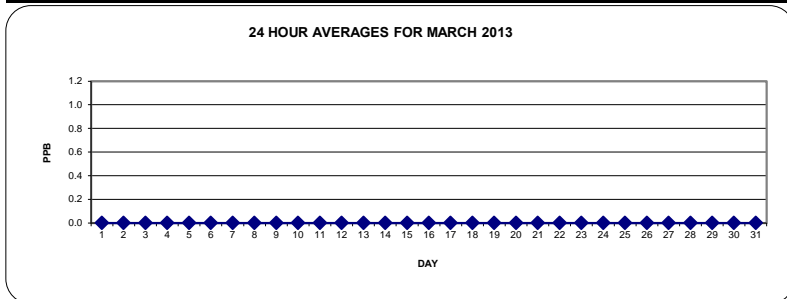
MARCH 2013

## 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		
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	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
2	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
3	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
4	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
5	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
6	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
7	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
8	S	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	S	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	S	0	0	0.0	24
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	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	S	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	S	0	0	0	0	0	0	0	0.0	24
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0	24
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	0	0	0	0	0	0	0	0	0	0	0.0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0	24
18	0	0	0	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
19	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
20	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
21	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
22	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
23	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
24	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
25	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	Y	0	0	0	0	0	0	0	0	0	0	0.0	23
26	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
27	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
28	0	0	0	S	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0.0	24
29	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
30	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
31	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.0	24	
HOURLY MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

### STATUS FLAG CODES

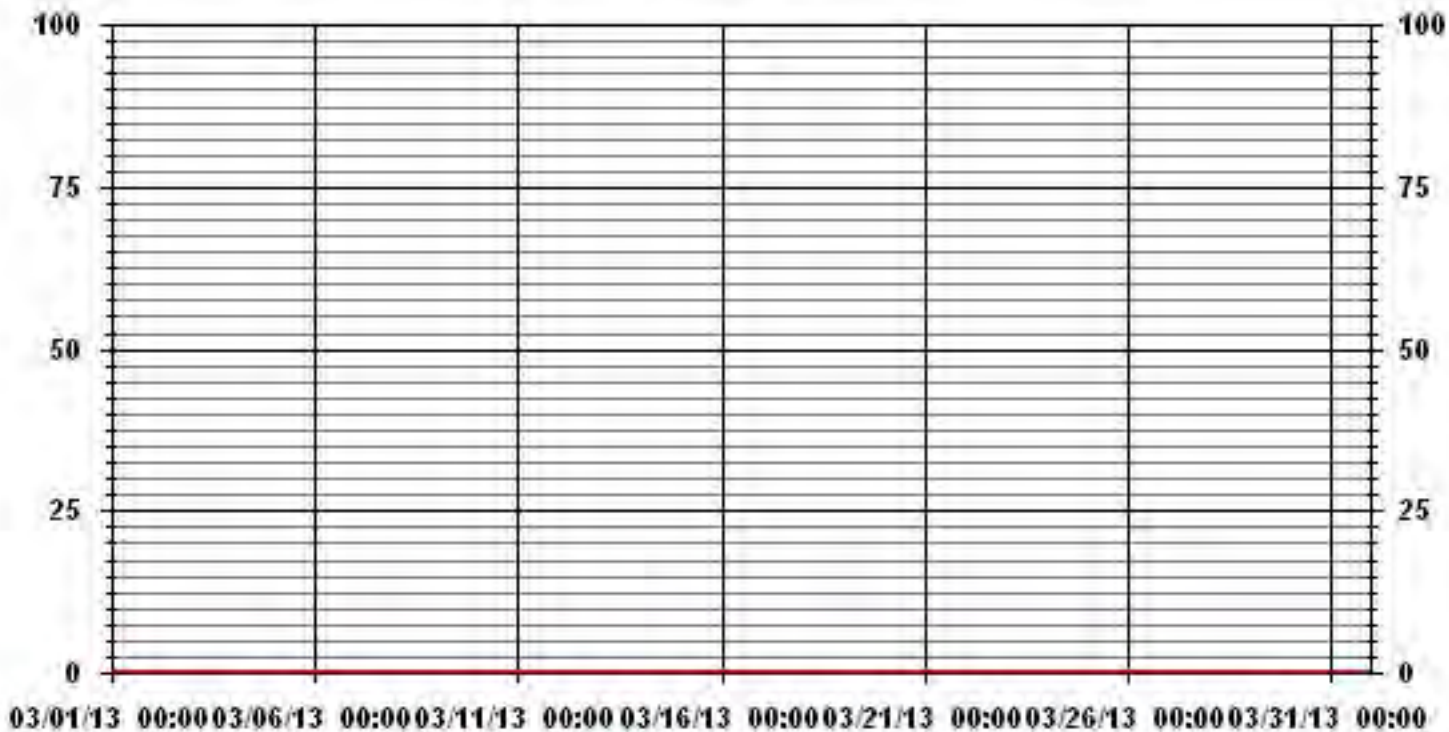
C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR



### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	0
MAXIMUM 1-HR AVERAGE:	0 PPB @ HOUR(S) ALL ON DAY(S) ALL
MAXIMUM 24-HR AVERAGE:	0.0 PPB ON DAY(S) ALL
	VAR-VARIOUS
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	8 HRS
STANDARD DEVIATION:	0.00
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
MONTHLY AVERAGE:	0.00 PPB

### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

## TOTAL REDUCED SULPHUR MAX    instantaneous maximum in ppb

MST

DAY	MST																								DAILY 24-HOUR			
	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	1	0	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
2	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
3	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
4	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	1.0	24
5	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
6	1	0	S	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24
7	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	1.0	24
8	S	1	1	1	1	1	1	0	1	1	1	1	C	C	C	C	C	C	1	1	1	1	1	S	1	0.9	24	
9	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1.0	24
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1.0	24
11	1	1	1	1	1	1	1	1	1	Y	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1.0	23
12	1	0	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
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	S	1	1	1	1	1	1	1	1.0	24
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1.0	24
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1.0	24
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1.0	24
17	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	1.0	24
18	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	1.0	24
19	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	0	1	0	1.0	24
20	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1.0	24
21	1	0	1	1	1	1	1	1	1	0	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24
22	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
23	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
24	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
25	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	Y	1	1	1	1	1	1	1	1	1	1	1.0	23
26	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
27	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1.0	24
28	1	0	1	S	1	1	1	1	1	1	1	1	C	C	C	C	1	1	1	1	1	1	0	1	1	0.9	24	
29	1	0	S	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24
30	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	1.0	24
31	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	
HOURLY MAX	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
HOURLY AVG	1.0	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	1.0				

**STATUS FLAG CODES**

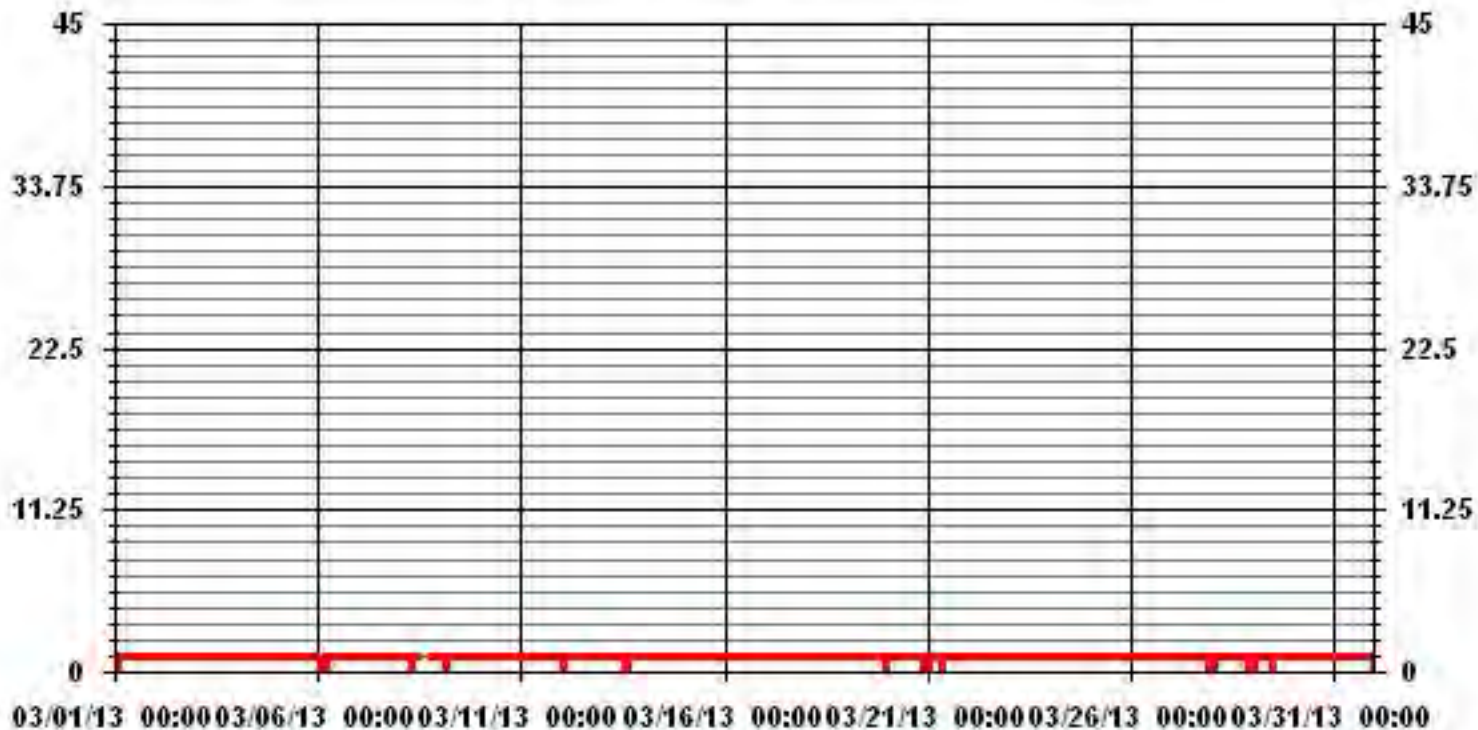
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	683					
MAXIMUM INSTANTANEOUS VALUE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
VAR - VARIOUS						
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	10	HRS				
STANDARD DEVIATION:	0.15					



### 01 Hour Averages



LICA  
 TRS\_ / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 01  
 Site Name : LICA  
 Parameter : TRS\_  
 Units : PPB

Wind Parameter : WDR  
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	4.27	12.53	10.25	6.12	8.68	6.98	11.39	3.41	1.70	1.42	2.99	8.54	7.40	4.70	4.70	4.84	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	4.27	12.53	10.25	6.12	8.68	6.98	11.39	3.41	1.70	1.42	2.99	8.54	7.40	4.70	4.70	4.84	

Calm : .00 %

Total # Operational Hours : 702

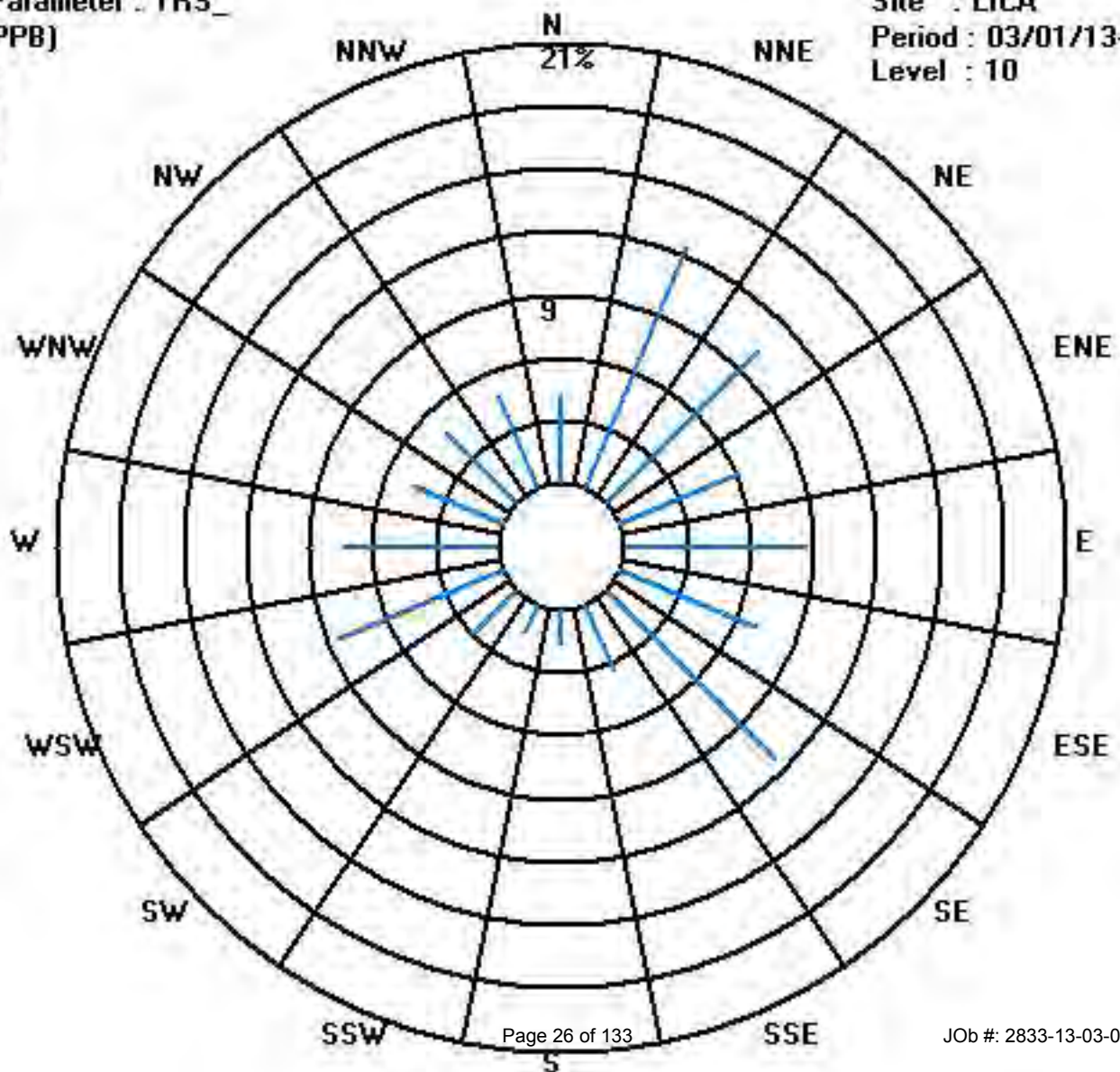
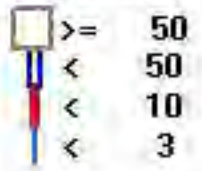
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	30	88	72	43	61	49	80	24	12	10	21	60	52	33	33	34	702
< 10																	
< 50																	
>= 50																	
Totals	30	88	72	43	61	49	80	24	12	10	21	60	52	33	33	34	

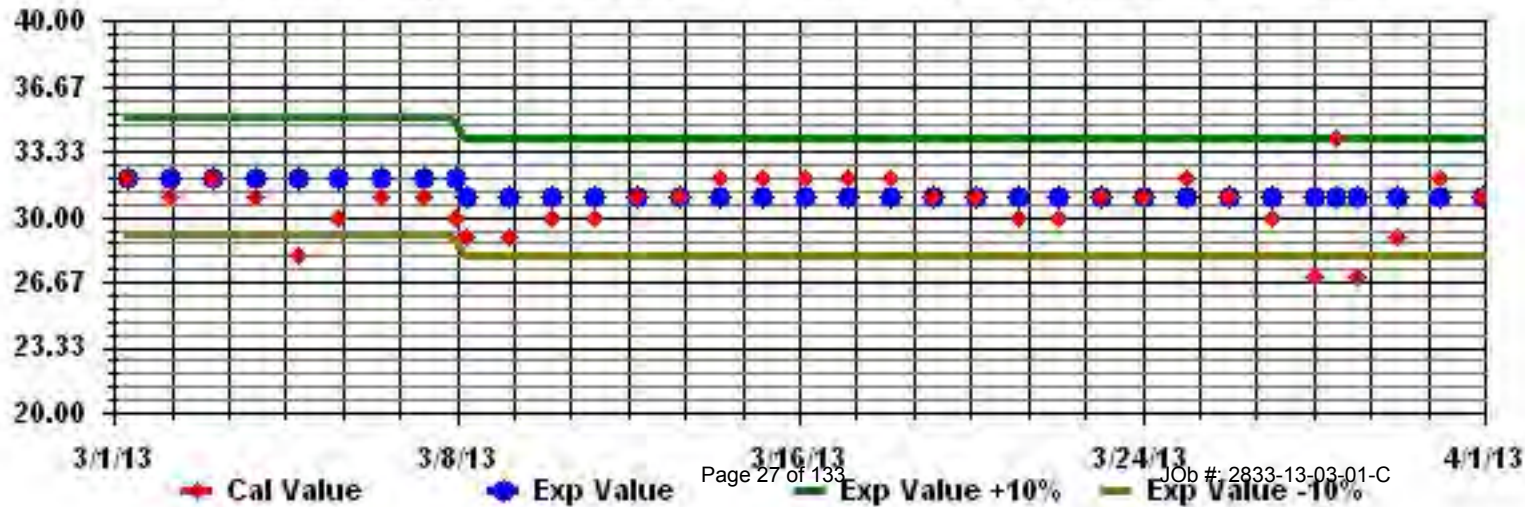
Calm : .00 %

Total # Operational Hours : 702

Class Limits (PPB)



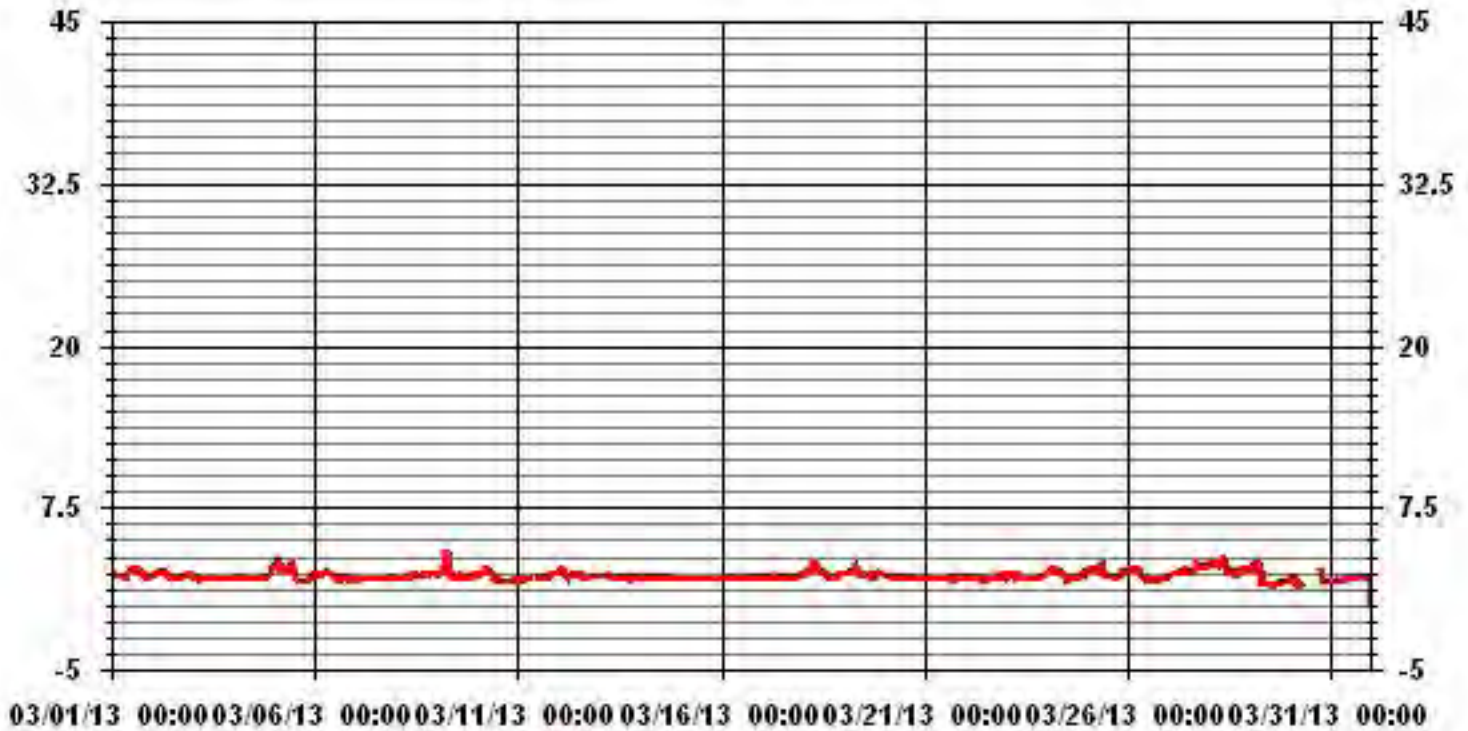
Calibration Graph for Site: LICA Parameter: TRS\_ Sequence: TRS Phase: SPAN



# Total Hydrocarbons



### 01 Hour Averages



— LICA — THC — PPM

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

## TOTAL HYDROCARBONS MAX      instantaneous maximum in ppm

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	2.6	2.4	2.3	2.3	2.3	2.5	2.3	S	2.7	2.4	2.7	2.9	3	2.9	2.9	3	3	2.9	2.6	2.5	2.3	2.2	2.3	2.9	3	2.6	24	
2	2.9	2.7	2.5	2.6	2.8	2.9	S	2.7	3.1	2.5	2.3	2.2	2.2	2.1	2.1	2.4	2.1	2.3	2.3	2.5	2.5	3.1	2.5	2.7	3.1	2.5	24	
3	2.5	2.3	2.3	2.2	2.1	S	2	2.1	2.1	2.2	2.1	2.1	2.1	2	3.4	2.1	2	2	2.1	2	2	2.1	2.1	3.4	2.2	24		
4	2.1	2.2	2.4	2.2	S	2.1	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.3	2.4	2.7	3.1	3.3	3.3	2.3	24	
5	3.2	3.6	4	S	3.1	3.4	3.2	3.3	3.1	3.2	3.4	3.2	2.7	2.3	2	1.9	2	1.9	1.8	1.9	2	2.2	2.4	2.4	4	2.7	24	
6	2.4	2.4	S	2.7	2.5	2.9	2.7	3	2.7	2.6	2.5	2.4	2.3	2.1	3	2.1	2.1	2.4	2.4	2.5	2.2	2	2	1.9	3	2.4	24	
7	1.9	S	2	2	2.1	2.1	2.1	2.1	2.4	2.5	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.9	2.1	2.4	2.9	2.2	24	
8	S	2.1	2.1	2	2	2.5	2.1	2.3	2.2	2.4	2.5	2.5	2.6	2.3	2.4	2.4	2.5	2.4	2.4	2.4	2.5	2.5	2.6	S	2.6	2.4	24	
9	2.5	2.4	2.5	2.7	3.7	4	4.5	4.2	3.3	2.7	2.4	2.2	2.3	2.4	3.4	3.3	2.2	2.3	2.1	2.2	2.6	2.7	S	2.4	4.5	2.8	24	
10	2.5	2.4	2.5	2.6	2.6	2.9	3	3	2.9	2.9	2.1	2.1	2	2	1.9	1.8	1.9	1.8	1.8	1.8	S	1.9	2	3	2.3	2.4	24	
11	2	2	1.9	2	2	2	2.1	2	C	C	C	C	2.1	2.1	2.1	2.3	C	C	2.2	2.3	S	2.4	2.5	2.5	2.5	2.1	24	
12	2.7	2.8	2.9	2.7	2.7	2.2	2.2	2.4	2.4	2.4	2.5	2.5	2.5	2.3	2.2	2.1	2.2	2.2	2.2	S	2.2	2.3	2.3	2.3	2.9	2.4	24	
13	2.3	2.3	2.3	2.3	2.4	2.3	2.5	3	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	S	2.1	2.2	2.9	2.1	2.1	3	2.3	24	
14	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.4	2.2	2.5	2.2	2.2	2.2	2.3	2.2	2.2	2.3	S	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.2	24	
15	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.3	2.2	2.5	2	2.1	2.1	2.1	S	2	2.1	2.1	2.1	2.2	2.1	2.1	2.5	2.1	24	
16	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2	2.4	2	S	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.4	2.1	24	
17	2.1	2.2	2.1	2.2	2.1	2.1	2.3	2.7	2.4	2.4	2.2	2.5	2.1	2.3	S	2.1	2.1	2.1	2.1	2.1	2.3	2.4	2.3	2.4	2.7	2.2	24	
18	2.4	2.5	2.6	3	3	3	3.8	3.8	3.5	3	2.5	2.7	2.8	S	2.3	2.3	2.2	2.4	2.5	2.1	2.2	2.3	2.6	2.6	3.8	2.7	24	
19	2.5	2.5	2.5	2.6	2.7	2.7	3.1	3.8	3.2	2.6	2.4	2.3	S	2.3	2.2	2.3	2.4	2.4	2.4	2.5	2.7	2.6	2.5	2.4	3.8	2.6	24	
20	2.4	2.4	2.3	2.3	2.2	2.2	2.4	2.1	2.2	2.1	2.1	S	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.2	24	
21	2	2	2	2.1	2	2.1	4.1	2.1	2.1	2	S	2.1	2.1	2.1	2.1	2.5	2.1	2.1	2.1	2.1	2.3	2.3	2.1	2.1	2.2	4.1	2.2	24
22	2.1	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.1	S	2	2	2	2	2	2	2.1	2.1	2.1	2	2.2	2.2	2.5	2.6	2.6	2.1	24	
23	2.2	2.4	2.4	2.4	2.5	2.2	2.3	2.6	S	2.1	3	2.4	2.1	2.2	2.2	2	2	2	2.2	2.2	2.2	2.6	2.4	2.4	3	2.3	24	
24	2.6	2.6	3	2.9	2.8	2.9	2.8	S	3.1	2.8	2.4	2.3	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.4	2.4	2.5	2.7	3.1	2.5	24	
25	2.8	2.9	2.9	2.8	3.5	2.9	S	4.3	4.3	2.8	2.7	2.4	2.4	2.3	2.2	Y	2.4	2.1	2.2	2.3	2.6	2.6	2.6	2.7	4.3	2.8	23	
26	2.8	2.8	2.9	2.9	2.9	S	3.3	2.8	2.7	2.3	2.2	1.9	2.1	1.9	1.9	1.9	1.9	1.9	2	2.1	2.1	2.3	2.2	2.2	3.3	2.3	24	
27	2.3	2.4	2.5	2.5	S	2.5	2.5	2.6	2.6	2.7	2.9	2.8	2.8	2.7	2.8	3	3.2	3.1	3.2	3	3	3	3.1	3.1	3.2	2.8	24	
28	3.2	3.4	3.5	S	3.5	3.5	3.3	3.6	3.9	3.9	3.3	3.3	2.6	2.6	2.5	2.7	2.6	2.6	2.7	2.8	2.8	2.8	2.8	2.8	3.9	3.1	24	
29	2.9	3.3	S	3.4	3.4	3.4	3.3	1.8	1.6	1.6	1.7	3.6	1.7	1.6	2	2	1.7	1.8	1.8	1.8	2.1	1.9	1.9	2.2	3.6	2.3	24	
30	2.5	S	2.5	1.9	1.8	1.7	1.7	X	X	X	X	X	X	X	X	X	X	S	S	2.1	1.9	1.9	1.9	1.9	2.5	2.0	14	
31	S	1.9	1.9	1.9	2.1	1.9	1.9	1.9	2	2	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.3	S	2.3	2.1	24	
HOURLY MAX	3	4	4	3	4	4	5	4	4	4	3	4	3	3	3	3	3	3	3	3	3	3	3	3	3			
HOURLY AVG	2.4	2.5	2.5	2.4	2.5	2.5	2.6	2.7	2.6	2.5	2.4	2.4	2.3	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.4	2.3	2.4				

**STATUS FLAG CODES**

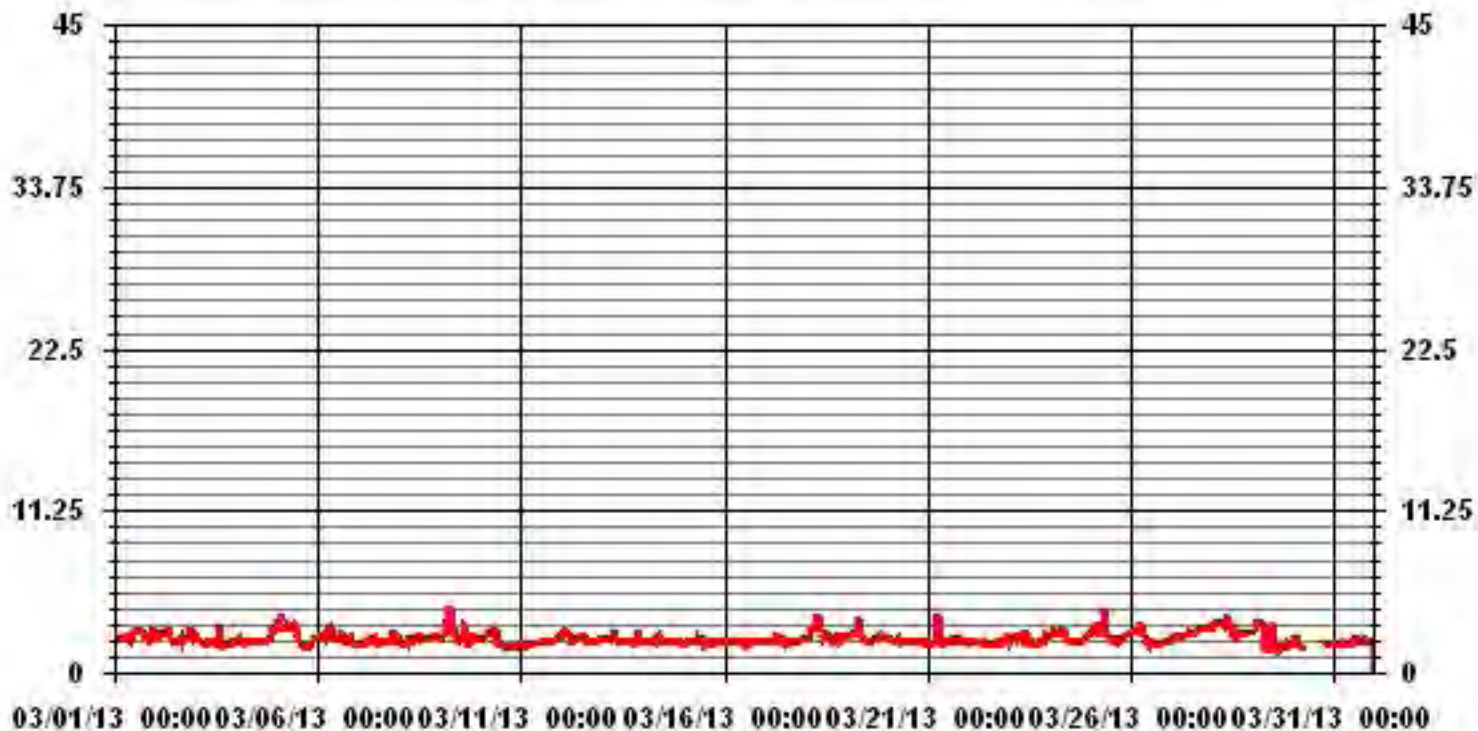
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	692					
MAXIMUM INSTANTANEOUS VALUE:	4.5	PPM	@ HOUR(S)	6	ON DAY(S)	9
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:	733	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	0.44					



### 01 Hour Averages



— LICA THCMAX PPM

LICA  
 THC / WD Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

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

Wind Parameter : WD  
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	3.89	12.24	10.08	5.47	8.50	6.34	11.23	3.60	1.72	1.29	2.88	8.35	6.77	4.32	4.32	3.89	94.95
< 10.0	.14	.28	.28	.43	.14	.28	.14	.00	.14	.14	.28	.43	.72	.43	.57	.57	5.04
< 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	4.03	12.53	10.37	5.90	8.64	6.62	11.38	3.60	1.87	1.44	3.17	8.78	7.49	4.75	4.89	4.46	

Calm : .00 %

Total # Operational Hours : 694

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	27	85	70	38	59	44	78	25	12	9	20	58	47	30	30	27	659
< 10.0	1	2	2	3	1	2	1		1	1	2	3	5	3	4	4	35
< 50.0																	
>= 50.0																	
Totals	28	87	72	41	60	46	79	25	13	10	22	61	52	33	34	31	

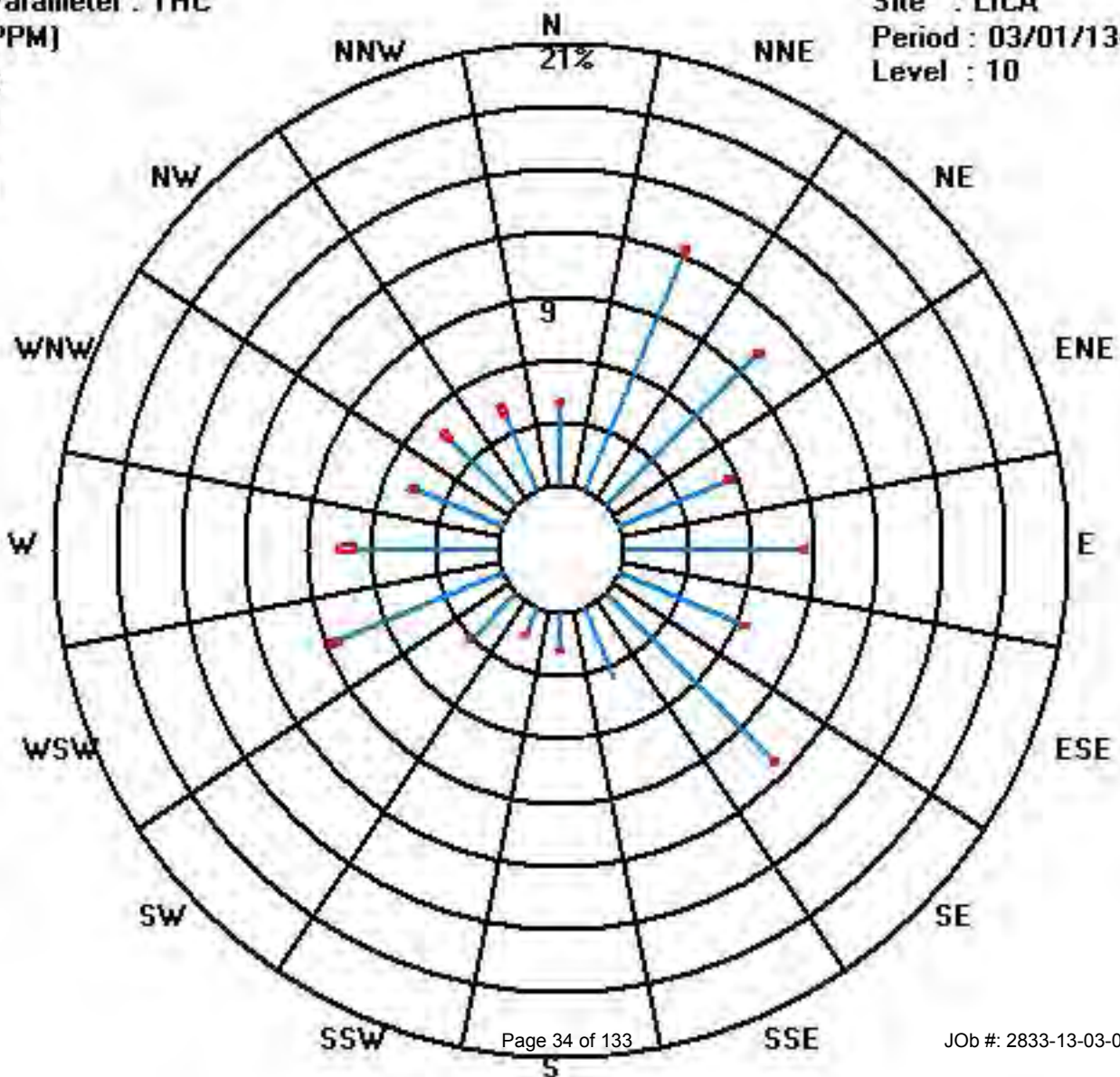
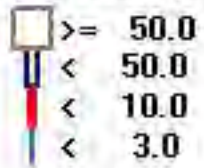
Calm : .00 %

Total # Operational Hours : 694

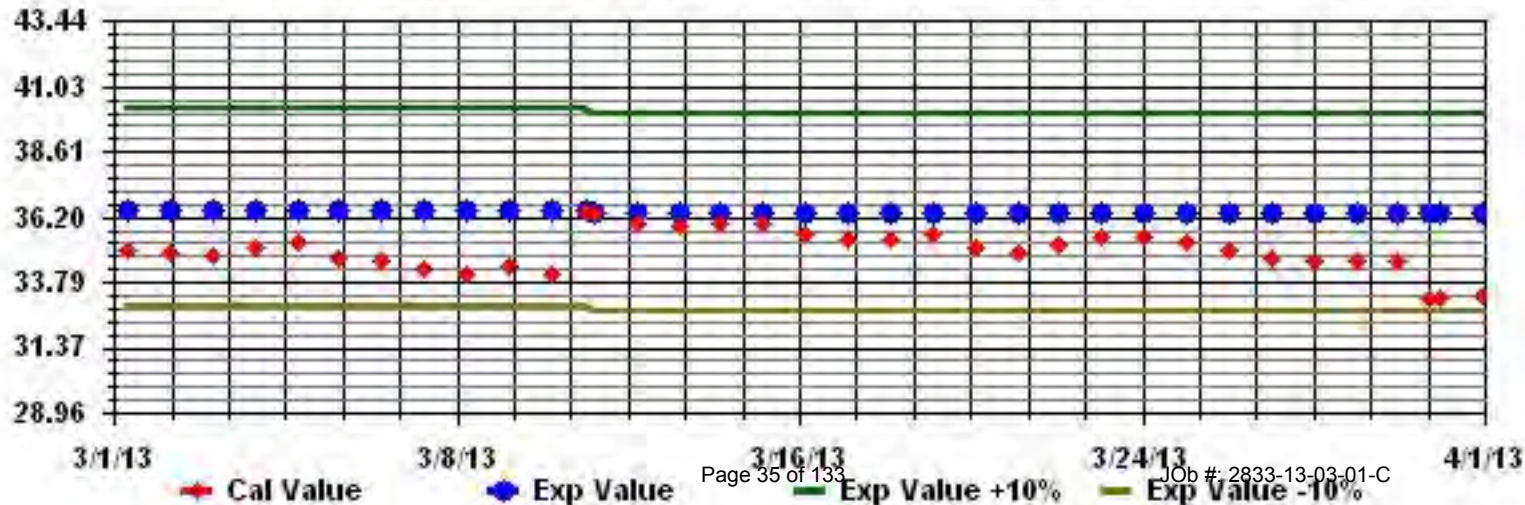
Class Limits (PPM)

Period : 03/01/13-03/31/13

Level : 10



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



# Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

PARTICULATE MATTER 2.5 (PM2.5) hourly averages in ug/m<sup>3</sup>

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	11	7	8	9	3	5	10	11	9	11	12	14	15	17	12	13	11	13	8	6	0	1	2	7	17	9.0	24				
2	7	4	3	3	7	5	8	8	11	10	9	8	5	6	3	2	0	5	3	1	3	5	9	14	14	5.8	24				
3	5	12	5	1	0	5	0	0	1	3	5	6	2	0	2	5	6	3	6	3	0	2	1	X	12	3.2	23				
4	4	2	1	2	0	5	1	0	0	0	6	5	7	5	5	8	3	4	4	3	3	4	4	5	8	3.4	24				
5	1	6	7	2	3	6	0	12	14	14	21	20	18	16	8	7	5	4	5	4	2	7	5	7	21	8.1	24				
6	8	8	1	7	13	1	9	5	10	8	10	9	7	7	5	4	5	5	10	15	5	8	1	X	15	7.0	23				
7	2	0	6	0	8	5	0	3	4	10	2	0	3	X	7	17	15	2	0	5	9	11	2	11	17	5.3	23				
8	2	3	12	3	7	11	2	1	4	6	3	8	12	0	7	7	13	18	15	16	11	20	19	20	20	9.2	24				
9	17	18	19	17	21	18	15	13	26	18	9	12	14	12	13	11	9	6	1	18	3	21	0	14	26	13.5	24				
10	16	18	12	0	8	13	7	17	16	16	19	9	6	8	6	9	0	8	0	2	1	3	2	0	19	8.2	24				
11	0	2	1	9	1	5	1	4	0	9	1	C	C	X	0	8	0	0	0	1	4	2	2	4	9	2.6	23				
12	9	3	8	6	0	2	6	X	2	9	5	3	5	7	X	0	7	4	2	1	3	7	6	6	9	4.6	22				
13	6	8	7	9	9	6	2	11	2	7	7	3	0	0	3	0	5	8	0	5	4	12	7	3	12	5.2	24				
14	12	7	6	5	X	0	0	X	5	X	0	3	2	4	0	4	0	9	30	18	X	5	16	7	30	6.7	20				
15	5	9	X	X	X	8	X	X	1	X	X	13	7	6	8	7	9	0	X	6	2	5	0	0	13	5.4	16				
16	1	7	0	0	4	X	3	1	X	0	4	2	7	3	3	11	8	6	4	0	3	0	5	1	11	3.3	22				
17	10	1	0	1	5	10	13	8	3	5	8	6	0	6	8	9	1	1	5	3	11	3	5	13	5.1	24					
18	11	5	10	4	15	1	4	12	6	8	13	8	4	5	5	7	7	3	5	0	8	0	2	4	15	6.1	24				
19	2	2	5	5	5	4	6	10	15	14	10	6	10	5	6	6	4	10	9	6	9	14	17	18	18	8.3	24				
20	6	17	18	5	6	11	8	8	11	8	9	8	4	9	9	8	4	4	5	5	3	5	7	5	18	7.6	24				
21	0	2	4	4	4	1	3	6	2	4	7	5	3	7	4	2	3	4	4	2	7	7	4	0	7	3.7	24				
22	4	7	7	0	1	9	1	2	2	4	2	6	5	2	2	5	4	1	5	4	3	4	5	8	9	3.9	24				
23	7	1	4	3	5	4	5	7	2	8	5	4	4	2	4	4	5	3	2	3	5	3	2	8	4	4.0	24				
24	1	0	6	2	9	14	11	14	8	10	9	6	6	5	7	5	7	9	9	7	7	6	8	1	14	7.0	24				
25	7	15	4	3	4	8	17	15	21	10	13	10	9	9	8	C	19	7	10	7	10	12	10	7	21	10.2	24				
26	10	13	8	19	17	18	16	14	26	16	7	7	9	8	7	9	10	8	15	4	10	10	9	4	26	11.4	24				
27	10	9	6	7	6	19	12	19	8	14	15	14	17	19	20	18	19	24	17	12	12	17	17	14	24	14.4	24				
28	16	13	17	20	18	17	13	17	23	21	27	31	30	32	19	23	21	20	16	15	19	18	19	12	32	19.9	24				
29	11	13	17	26	20	20	19	3	0	0	5	8	4	5	3	8	4	5	9	7	2	15	9	9	26	9.3	24				
30	6	20	13	3	2	5	6	5	0	5	3	0	4	5	7	2	1	3	6	9	6	2	5	1	20	5.0	24				
31	0	0	6	0	0	3	4	0	0	1	3	5	5	7	6	15	10	2	10	10	2	5	5	12	15	4.6	24				
HOURLY MAX	17	20	19	26	21	20	19	19	26	21	27	31	30	32	20	23	21	24	30	18	19	21	19	20							
HOURLY AVG	6.7	7.5	7.4	5.8	6.9	8.0	6.7	8.0	7.9	8.4	8.4	8.0	7.5	7.6	6.5	7.8	6.9	6.5	7.1	6.4	5.2	7.9	6.6	6.9							

STATUS FLAG CODES

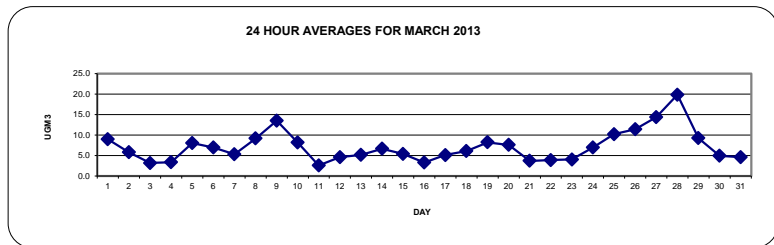
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

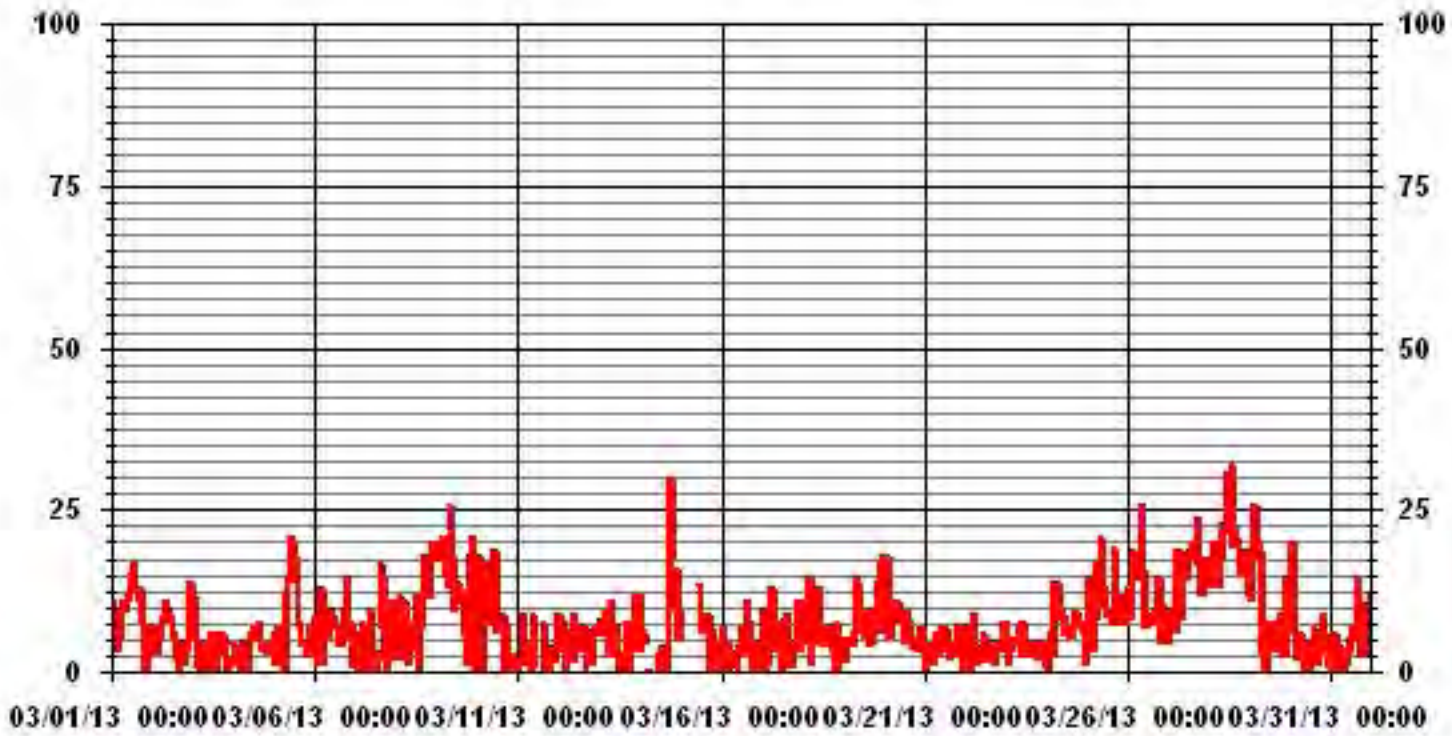
ALBERTA ENVIRONMENT: 1-HR - ug/m<sup>3</sup> 24-HR 30 ug/m<sup>3</sup>

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	655
MAXIMUM 1-HR AVERAGE:	32 UG/M <sup>3</sup> @ HOUR(S) 13 ON DAY(S) 28
MAXIMUM 24-HR AVERAGE:	19.9 UG/M <sup>3</sup> ON DAY(S) 28
IZS CALIBRATION TIME:	3 HRS
MONTHLY CALIBRATION TIME:	3 HRS
STANDARD DEVIATION:	5.80
OPERATIONAL TIME:	724 HRS
AMD OPERATION UPTIME:	97.3 %
MONTHLY AVERAGE:	7.18 UG/M <sup>3</sup>



### 01 Hour Averages



— LICA PM2 UG/M3

LICA  
PM2 / WD Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

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

Wind Parameter : WD  
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	4.16	11.92	9.98	5.40	8.59	7.07	11.65	3.46	1.80	1.38	3.05	8.73	7.76	4.85	4.71	4.85	99.44
< 60	.00	.13	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.13	.00	.55
< 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	4.16	12.06	10.12	5.40	8.59	7.07	11.65	3.46	1.80	1.38	3.05	8.73	7.76	4.99	4.85	4.85	

Calm : .00 %

Total # Operational Hours : 721

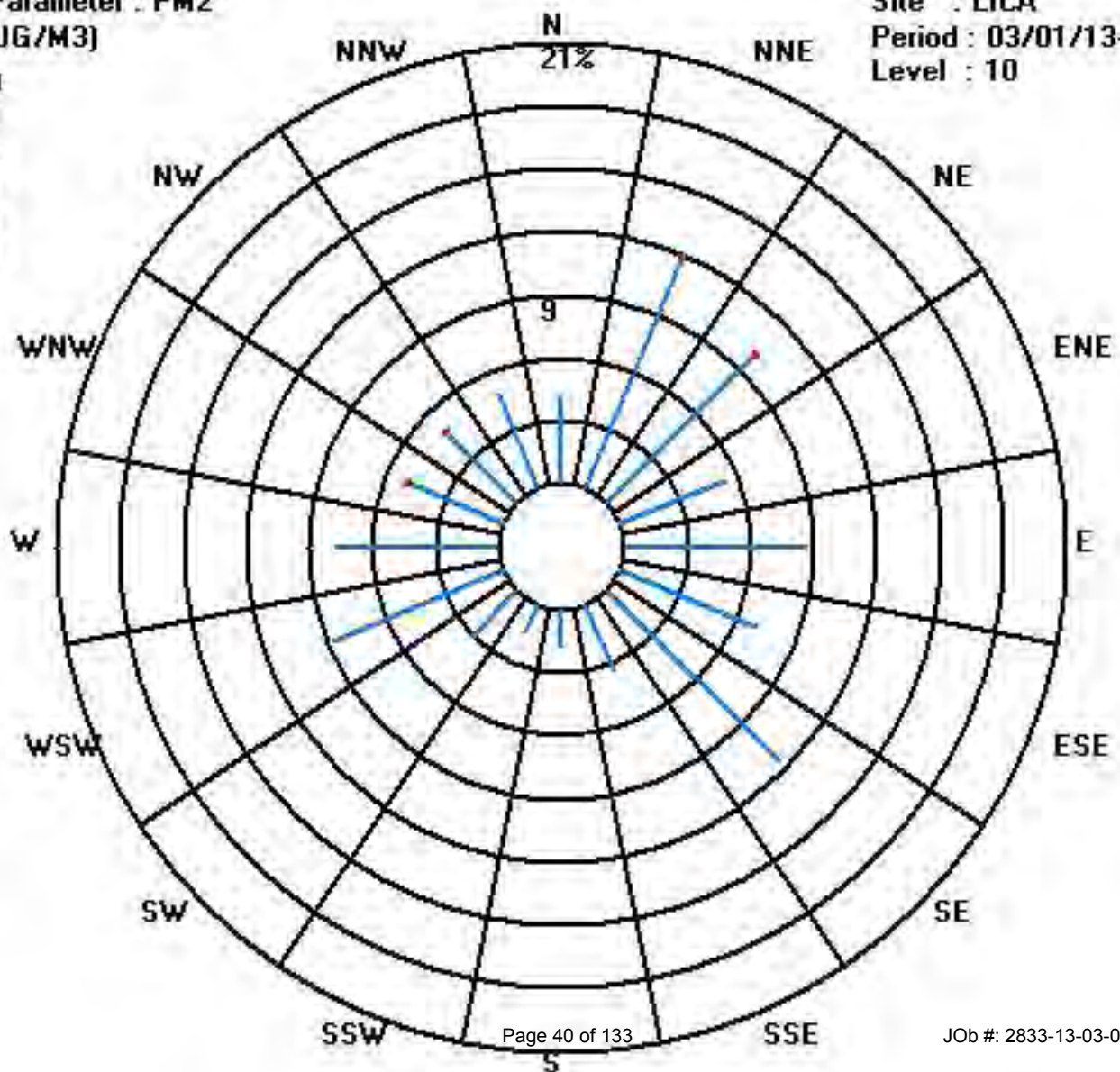
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	30	86	72	39	62	51	84	25	13	10	22	63	56	35	34	35	717
< 60		1	1											1	1		4
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	30	87	73	39	62	51	84	25	13	10	22	63	56	36	35	35	

Calm : .00 %

Total # Operational Hours : 721





# Nitrogen Dioxide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

## NITROGEN DIOXIDE hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	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	6.7	6.6	6.4	5.6	5.1	5.1	5.6	S	6.4	5.4	6.6	7.4	8	8.3	8.5	9.2	10.7	15.7	21.3	13.1	11.6	11.3	11	19.4	21.3	9.3	24
2	21.8	15.4	9.6	11.4	15.9	24.6	S	22.7	17	10.2	9.3	7.5	7.6	7.2	6	5.2	6.3	8.9	14.9	18.3	30.2	30.9	30.7	22.8	30.9	15.4	24
3	17.4	15.1	11.4	10	7.4	S	7	7.9	5.5	5	4.6	4.2	3.9	3.7	4	4.1	3.5	3.7	4.1	3.8	4	3.7	3.9	4.2	17.4	6.2	24
4	4.1	4.1	4.4	4.9	S	5.7	5.7	6	4.5	3.9	4.4	4.5	3.9	4.4	5.1	5.7	6.8	8.6	12.1	10.2	12.5	16.7	19	16.3	19	7.5	24
5	17.3	16.5	12.9	S	16.8	13.4	13.4	15.6	14.2	11.8	9.9	8.2	8.4	7.9	5.6	5.5	5.3	4.7	4.7	6.2	7.1	7.5	6.4	5.3	17.3	9.8	24
6	5.6	5.5	S	4.8	4.6	6.6	7.5	13.2	6.9	6	5.6	4.8	4.4	4.1	4.4	4.8	6	8.4	14.9	23.4	6.2	4.5	4	3.7	23.4	7.0	24
7	3.6	S	3.7	3.9	3.9	4.2	4.6	5.2	4.6	3.7	3.3	2.9	3.2	3.8	5.2	3.3	3.9	6.4	11.5	12.7	15.3	19.7	16	19.4	19.7	7.1	24
8	S	4	3.3	3	3.3	4.3	4.2	5.6	5.5	4.3	4.6	4.9	4.6	4.6	4.8	5.6	6.7	8.3	10.8	12.2	10.7	16.4	15.6	S	16.4	6.7	24
9	12.4	14.8	14.8	15.5	14.8	25.6	28.2	17.2	12.2	10.4	7.5	7	7.8	8.1	8	6.3	5.8	6.2	12	8.9	9.4	7.5	S	6.9	28.2	11.6	24
10	6.5	5.5	6.3	8.3	6.9	8.5	8.5	10.5	9.6	8.1	6.8	6.3	5.7	5.9	4.6	4.2	4.3	4.8	3.5	3.8	3.6	S	4.1	5.2	10.5	6.2	24
11	5.4	4.4	4.1	4	4	4.4	4.8	4.5	C	C	C	C	C	C	2.8	3.4	C	3.4	3.5	8.2	S	11.1	9.9	8.1	11.1	5.4	24
12	17.2	19.3	18	18.1	10.3	4.7	3.9	3.9	3.3	3.4	3.6	3.8	3.2	3.2	3	3.1	2.8	2.7	3	S	3.1	3.2	3.6	6.8	19.3	6.4	24
13	5.1	5.3	5.3	5.1	5.6	9.2	11.2	7	4.2	2.3	2	2	1.8	1.8	2.1	2.1	2.3	2.8	S	2.9	2.4	2.1	1.9	1.7	11.2	3.8	24
14	1.4	1.1	1.1	1.2	1.3	1.4	1.8	1.5	1.2	1.5	2.2	1.1	1.1	1	1	1.2	1.3	S	2.5	2.7	3.2	2.7	2.4	2.1	3.2	1.7	24
15	2.1	2.6	3.3	2.8	2.4	3.1	3	3	3.1	3.3	2.4	2.3	1.2	2.3	2.5	2.3	S	3	3.4	3.7	2.8	4	5.3	3.5	5.3	2.9	24
16	4.2	2.7	2.6	4.3	5.7	6.9	9.1	10	2.1	1.6	1.2	1.2	1	1.6	1.6	S	2.9	3.9	4.7	3.7	3.7	2.6	1.9	2.4	10	3.5	24
17	2.7	3.4	4.1	4	4.2	3.1	3.4	7	6.1	4.5	2.4	2.2	3	2.9	S	1.7	1.9	2	3.4	6	7.5	12.1	9	5.9	12.1	4.5	24
18	6.3	9.4	8.9	7.6	7.7	12	17.5	13.4	12.7	9.7	7.5	5	4.5	S	3.5	3.8	2.4	2.2	3	7.5	9.2	9.1	13.6	18.6	18.6	8.5	24
19	12.6	10.6	8.7	6.2	11.8	13.9	20.4	30.1	24.3	7.6	5.5	5.1	S	3.4	4	3.8	4.3	5.5	7.1	6.9	7.6	7	5.2	4.8	30.1	9.4	24
20	5.3	5.5	5.4	4.8	6.3	5.6	5.1	4.6	3.9	3.5	3	S	2.8	3	3.7	4.1	3.7	3.3	3.5	3.1	3	2.8	2.5	2.5	6.3	4.0	24
21	2.1	2.1	2.2	2.4	3.1	3.3	4.1	4.4	3.6	3.8	S	3.4	2.5	2.3	3.5	3.4	4.3	4.9	4.4	4.9	6.7	6.6	4.5	3.9	6.7	3.8	24
22	4	5.1	4.9	3.4	4.3	6	6.7	3.9	3.5	S	4.4	3.1	1.7	1.8	1.6	2.2	2.8	4	5	2.3	2.7	6.4	9.2	8.7	9.2	4.2	24
23	6.1	8.2	6.3	5	5.7	3.7	4.3	7.8	S	2	1.7	1.7	1.4	1.4	1.2	1.2	1.9	2.2	2.8	8.3	11.2	10	10.5	12.9	12.9	5.1	24
24	12	12	11.2	16.2	13	11.6	12.4	S	7.7	5.8	4.9	3.6	2.8	2	2.4	2.9	3.4	3.5	3.5	5.3	6.3	5.9	4.5	4.4	16.2	6.8	24
25	4.9	6.4	9.6	15.5	19.2	18.6	S	29.7	23.7	8.3	6.9	5.5	5.1	3.6	3.7	Y	4.4	4.6	11.1	9.3	6.2	7.2	8.7	8.5	29.7	10.0	23
26	11.1	12.4	15	16.3	13.6	S	21.4	24.4	15.6	4.6	3.9	2.8	2.6	2.8	3.2	4.3	4.5	4.9	12.9	15.2	11.8	8.1	5.2	3.4	24.4	9.6	24
27	4	4.5	4.8	4.8	S	5.4	6.4	5.3	4.9	5.2	5.8	5.4	5.6	5.7	6	7	8.6	9.3	9.1	8.1	8	7.6	10.3	10.8	10.8	6.6	24
28	7.1	6.9	8.1	S	22.8	26.9	15	17.3	10.6	8.7	9.4	8.5	7.9	9.6	8.5	7.1	7.4	7.5	7.6	7.7	7.6	7.8	8.3	7.7	26.9	10.3	24
29	9.3	7.7	S	9.7	9.5	11.1	9.9	4.4	4.2	3.9	3.2	3.3	2.6	2.6	2.7	2.7	3.3	4	5	5.3	12.1	16	11.6	9.1	16	6.7	24
30	8	S	7.5	6	3.3	4.4	6.2	6.2	5.4	2.9	2.6	1.9	1.9	2.4	2.2	2.1	1.9	2.6	5.5	8.5	6.1	3	2.3	3.3	8.5	4.2	24
31	S	2.3	2.7	3	3.7	2.7	2.3	3.4	2.7	2.2	2.4	2.7	2.6	2.7	3.1	2.6	2.8	3	3.9	4	5.2	5.7	5.8	S	5.8	3.3	24
HOURLY MAX	22	19	18	18	23	27	28	30	24	12	10	9	8	10	9	9	11	16	21	23	30	31	31	23			
HOURLY AVG	7.8	7.6	7.1	7.2	8.1	8.8	8.7	10.2	7.9	5.3	4.7	4.2	3.9	3.9	4.0	4.0	4.4	5.2	7.2	7.9	7.9	8.6	8.2	8.0			

### 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

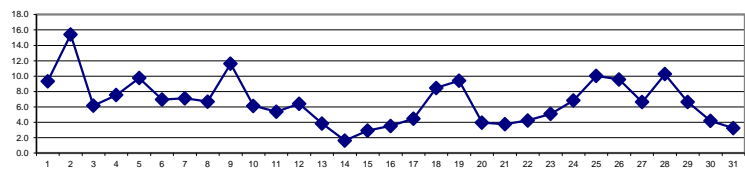
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

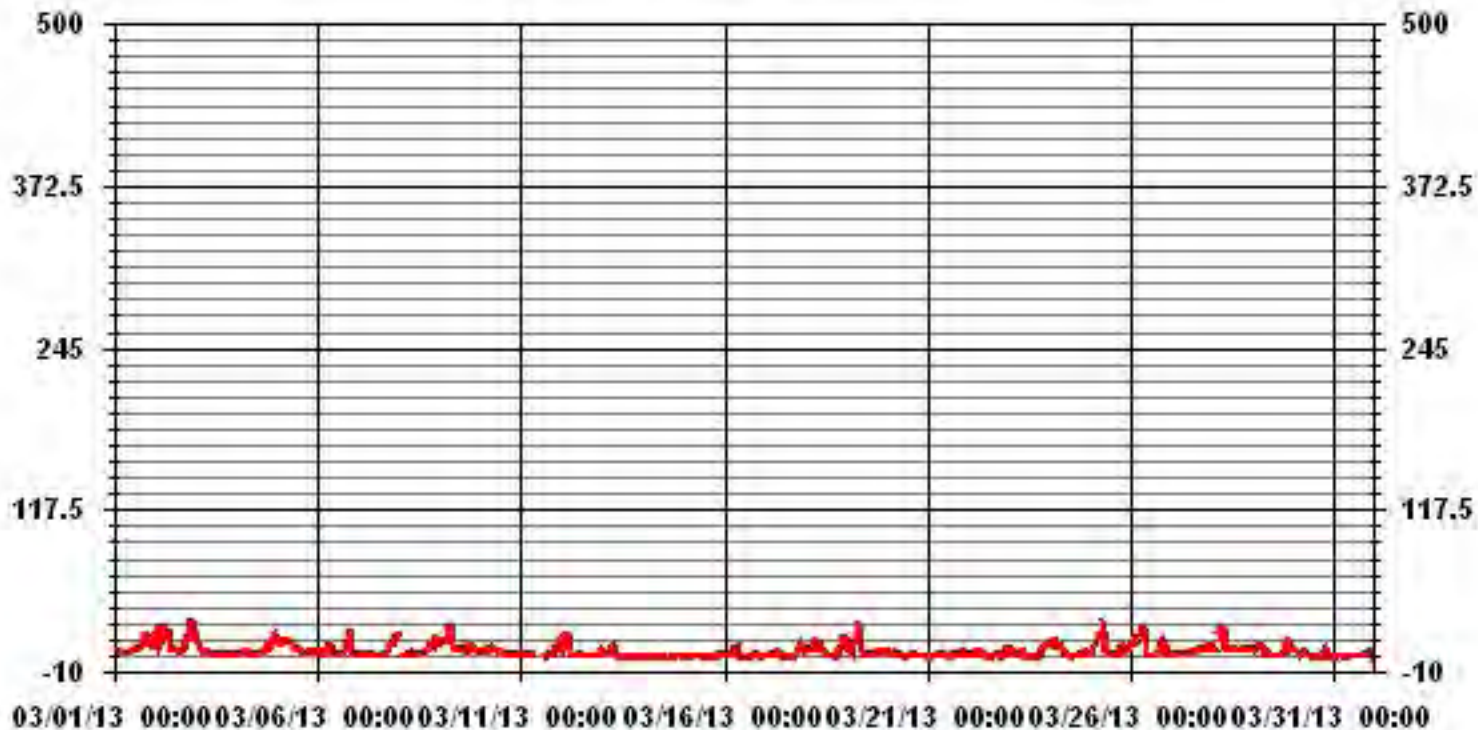
### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	703					
MAXIMUM 1-HR AVERAGE:	30.9	PPB	@ HOUR(S)	21	ON DAY(S)	2
MAXIMUM 24-HR AVERAGE:	15.4	PPB			ON DAY(S)	2
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	5.11		MONTHLY AVERAGE:	6.70	PPB	

24 HOUR AVERAGES FOR MARCH 2013



### 01 Hour Averages



— LICA 1102\_ PPB

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

## NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR 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	8.1	7.5	7.5	6	5.5	6	7	S	9.6	7.5	11.5	10.6	9.6	11.5	9.6	10.6	12	24.1	28	15	13	16	13	30.6	30.6	12.2	24
2	35.5	31.5	18.1	16.5	26	31	S	27.1	21.5	14.5	11	8.1	8.1	8.6	7.5	7	8.6	16.5	21	35	35	35	35	30.6	35.5	21.2	24
3	21	19.5	17.1	15	10.5	S	11	11.6	8	6.5	6	6.5	4.6	5.5	6	4.6	4.1	4.1	5.1	4.5	5.5	4.6	4.6	6	21	8.3	24
4	5.1	5.1	5.1	5.5	S	8	7.5	6.5	6	6.5	9.6	7.5	5.5	6	6	7	10.1	12	23	15.5	20	26	27.5	28.5	28.5	11.3	24
5	20.5	20.5	16.5	S	22.1	18.1	16	20	16	15.5	11.5	10.5	9.1	9.1	7.5	6.5	6.5	7.5	5.5	7.5	12	20	10.5	6	22.1	12.8	24
6	6.5	6	S	6	5.1	17	14.5	23.6	10.5	7	7.5	5.5	5.1	5	8	7	9	11.5	24.1	37.5	11.5	5.1	4.5	4.1	37.5	10.5	24
7	4.5	S	4.5	5	5	7	7	16	7	5.1	4	4.5	4	21.5	20.5	4.5	5.1	19	16.5	19.5	24.6	25	23	30.5	30.5	12.3	24
8	S	5	4.1	4.5	4	14.5	6.5	10	7	6	9	9	5.1	5.1	6.5	7.5	7.5	11.5	17.1	23	15.5	20.5	20.5	S	23	10.0	24
9	15.5	19	18.5	22.1	20	44	34	32.5	15	20.5	9.1	8	16.5	9.1	9.1	8	7	8	32.5	12	14.5	8.5	S	8	44	17.0	24
10	8	6.5	8.6	11.5	12.5	13.5	20	16	14	10.1	8.5	7.5	6.5	6.5	6	5	5.5	6.5	4.1	5.1	4.6	S	4.6	6.5	20	8.6	24
11	8	6	4.6	4.6	4.6	5	6	8	C	C	C	C	C	C	3.4	6.4	C	C	6	11	S	12.5	12.4	15.9	15.9	7.6	23
12	23.4	29.9	23.4	28.4	25.5	9.4	5	6	3.9	8.4	5	7.9	5.5	4	4.4	7.4	8.4	3.5	4	S	4.5	7.1	6.1	9.5	29.9	10.5	24
13	7.5	8	6.6	7.1	11	13	18	10	7.1	3.5	2.5	3	2.5	3.5	4	3	3.5	4.5	S	3.4	3.4	3.4	2.4	2.4	18	5.8	24
14	1.9	1.4	1.4	1.4	1.9	1.9	2.4	1.9	1.9	3.4	14.4	2.4	2.4	2.9	1.9	1.9	1.4	S	3	4	5	4	3.6	3.6	14.4	3.0	24
15	3.6	4	6.6	5.1	4.5	5	4.5	5.6	5.6	5.1	5	15.5	2	10.5	18	4.5	S	5.1	6.5	6.5	8	7.6	8.5	5.1	18	6.6	24
16	6	3.6	4	8.5	9.5	13	13.1	14.5	3.5	6	4	5	2	3	2	S	4	8	15.5	5	9	5	3.5	5	15.5	6.6	24
17	5.6	6	6.5	5.6	6.1	5.1	5.6	10.5	7.6	9	3.6	2.5	3.6	4.5	S	1.9	2.4	2.9	7	10.4	10.4	16.4	11	9.9	16.4	6.7	24
18	10.9	16.4	14.4	12.4	10.9	14.9	27.9	20.4	15.4	14	8.4	7.4	5.9	S	5.4	4.9	3.5	2.4	3.9	20	12.4	14.4	30.9	27.9	30.9	13.3	24
19	14.9	14.4	13.5	9.4	29.9	18.4	27.9	46.9	42.9	8.9	10.9	8.9	S	4	6.9	5	8.4	8.9	13.9	9.9	10.4	7.9	6.5	5.5	46.9	14.5	24
20	6.4	6.4	6.5	6	10.4	10.4	10.4	6.5	5.5	3.9	4.4	S	4	3.5	8.9	7	7	4	6.4	4.4	3.5	3.9	2.9	4.9	10.4	6.0	24
21	2.9	2.9	2.9	2.9	5.5	4.4	6	7.4	5	6	S	8.4	3.5	3.4	6.4	5	8.4	7.4	9.4	7.4	15.9	8.9	9.4	6.5	15.9	6.3	24
22	5.5	6.5	7.4	5.5	6.4	7.9	9.4	7	16.4	S	61.4	5.5	6.4	2.4	2.4	6	4.4	6	8.9	4.4	7	7	11	11.5	61.4	9.4	24
23	7.4	9.9	8.9	6.5	9.9	4.4	6	10.5	S	6.4	3.5	6	4.9	1.9	4.4	1.9	4.9	12	4	17.9	13.9	16.9	17.4	16.4	17.9	8.5	24
24	15.4	19.5	17.9	21.4	18.9	13.9	14.9	S	9.9	8.9	6	5.5	4	2.9	3.4	4	4.4	4.9	4.4	7	9.4	14.9	6	7.9	21.4	9.8	24
25	8.9	10.4	16.9	18.4	33.9	32.4	S	47.9	46.4	13.9	11.4	8.4	6.5	5.5	5.5	Y	6.4	6.5	17.4	16.9	7.9	14.9	12	19.5	47.9	16.7	23
26	14.9	15.4	21.4	22.9	19.5	S	33.9	33	38.9	6	6.4	4	4	4.5	6	6.5	6.4	6.4	26.4	20.4	16.9	11.5	12.4	4.4	38.9	14.9	24
27	5	5	5	7	S	7.9	8.4	6.4	6	6	7.9	6	6	7.4	6.5	8.9	9.9	11.5	11	8.4	8.9	8.5	18.4	17.4	18.4	8.4	24
28	8.9	9.4	13	S	34.4	34.9	30.9	23.9	15.4	10.9	10.5	11	8.9	34.9	19.5	10	8.5	7.9	9.9	8.9	8.2	10.5	10.5	12.5	34.9	15.4	24
29	15.4	15.4	S	12	12.5	14.9	13.9	5.4	9.9	5	4	5	2.9	4.4	4.4	3	4.4	6	7.9	7.9	26	21.4	16.9	13	26	10.1	24
30	10	S	8.9	7.9	5.5	6.5	7	11.5	11	7.9	15.4	3.4	3.5	6.4	2.9	4	3.5	4	13	17.9	13.9	8.4	3.5	4.5	17.9	7.8	24
31	S	2.9	4	4	6	3.5	2.9	7	5	2.5	3.4	4	2.9	3	5.5	3	3.4	3.5	6.5	8.4	7	7.9	8.9	S	8.9	4.8	24
HOURLY MAX	36	32	23	28	34	44	34	48	46	21	61	16	17	35	21	11	12	24	33	38	35	35	35	31			
HOURLY AVG	10.6	10.8	10.1	10.0	13.0	13.3	13.0	15.6	12.8	8.1	9.5	6.8	5.4	6.9	7.0	5.6	6.2	8.1	12.1	12.5	11.9	12.5	11.9	12.2			

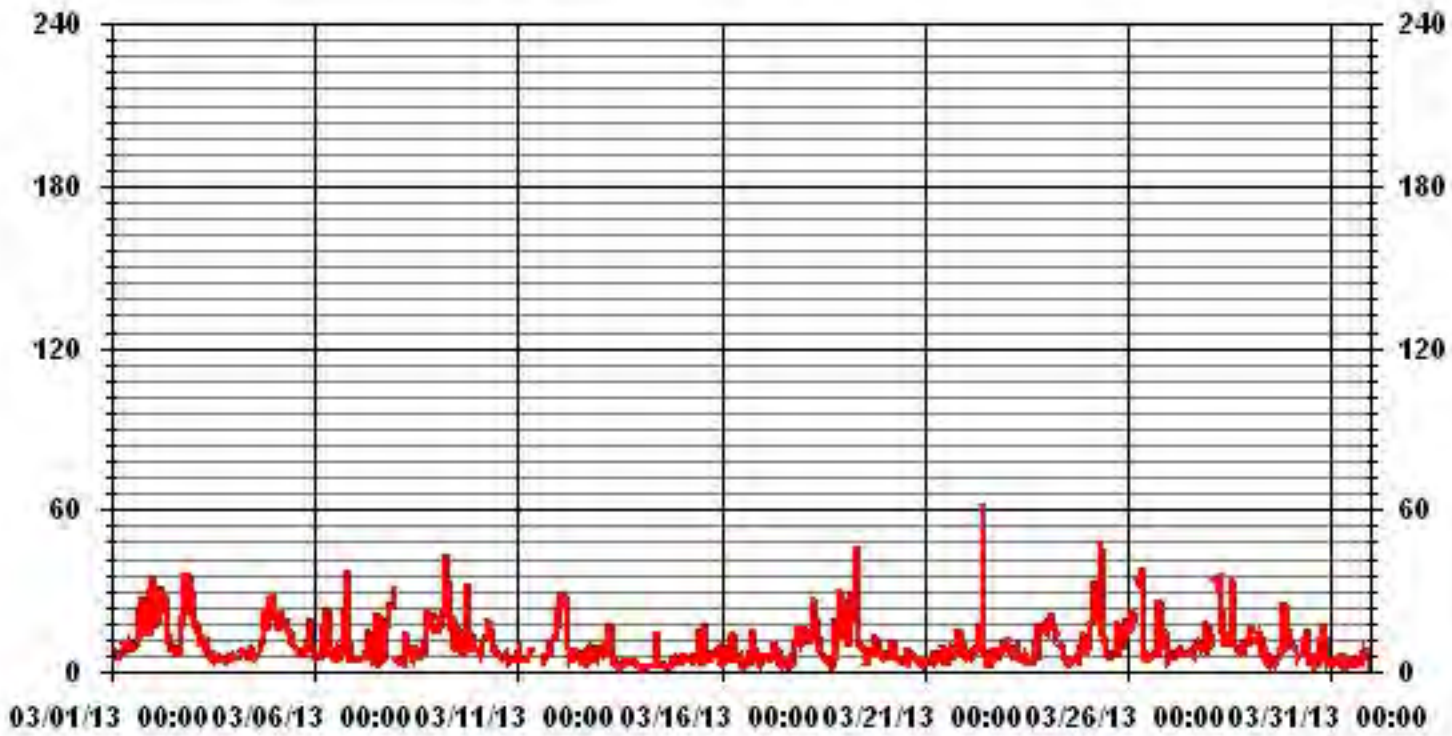
### STATUS FLAG CODES

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:	702
MAXIMUM INSTANTANEOUS VALUE:	61.4 PPB @ HOUR(S) 10 ON DAY(S) 22
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	8 HRS
STANDARD DEVIATION:	8.08
OPERATIONAL TIME:	742 HRS

# 01 Hour Averages



— LICA NO2MAX PPB

LICA  
 NO2\_ / WD Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 01  
 Site Name : LICA  
 Parameter : NO2\_  
 Units : PPB

Wind Parameter : WD  
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	3.98	12.51	10.38	6.11	8.67	6.97	11.37	3.55	1.84	1.42	3.12	8.67	7.39	4.69	4.55	4.69	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	3.98	12.51	10.38	6.11	8.67	6.97	11.37	3.55	1.84	1.42	3.12	8.67	7.39	4.69	4.55	4.69	

Calm : .00 %

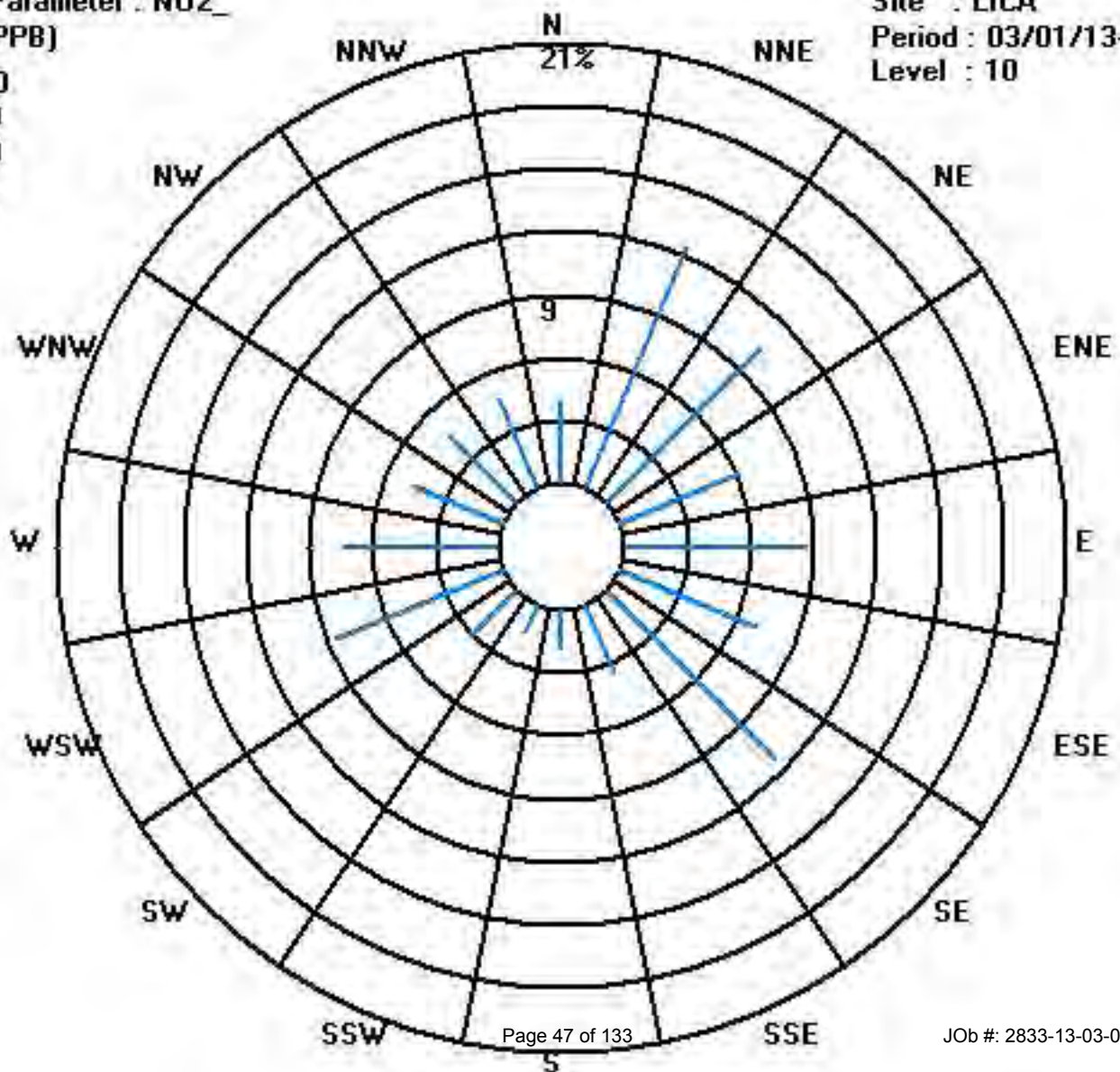
Total # Operational Hours : 703

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	28	88	73	43	61	49	80	25	13	10	22	61	52	33	32	33	703
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	28	88	73	43	61	49	80	25	13	10	22	61	52	33	32	33	

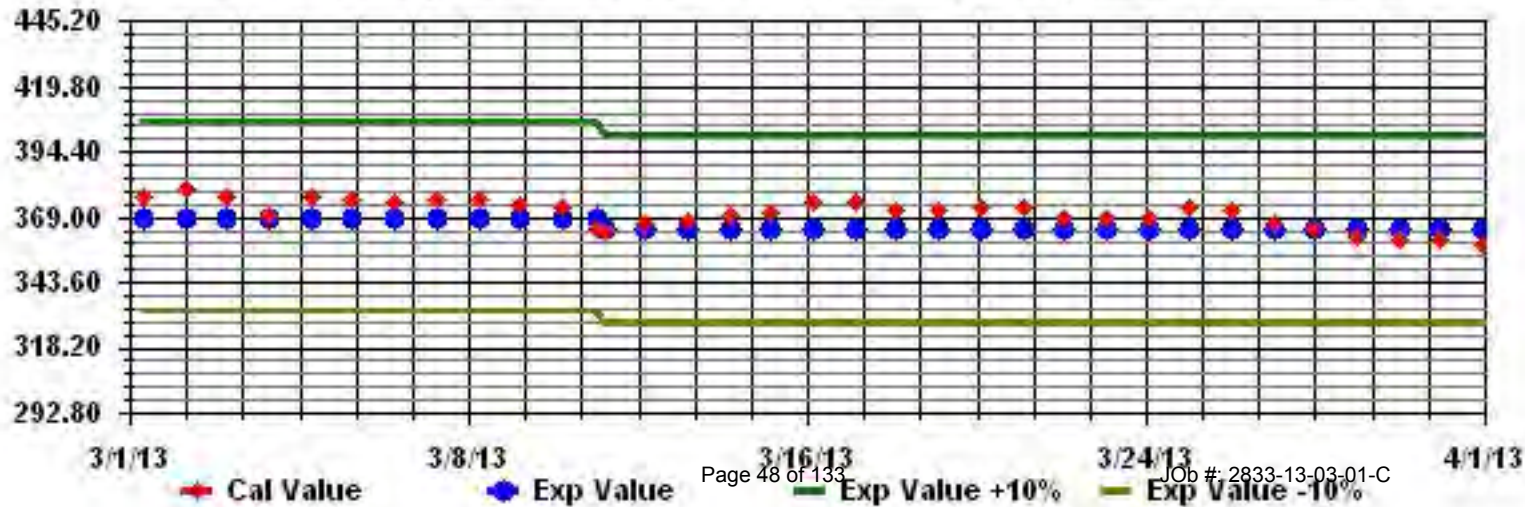
Calm : .00 %

Total # Operational Hours : 703





Calibration Graph for Site: LICA Parameter: NO2\_ Sequence: NO2 Phase: SPAll



# Nitric Oxide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

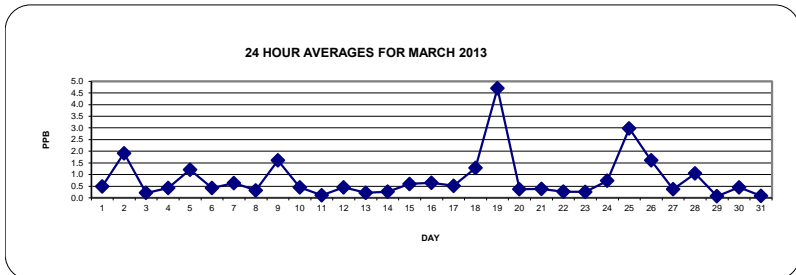
MARCH 2013

NITRIC OXIDE 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	RDGS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
		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.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
DAY																													1		0	0	0	0	0	0	S	0.3	0.5	1.3	1.7	1.7	1.6	1.4	1.2	0.8	0.5	0	0	0.2	0	0	0.2	1.7	0.5	24	2		0.8	0.3	0.2	0.3	0.6	2.1	S	9.1	11.2	4.5	3.6	2.6	2.4	1.9	0.9	0.3	0.4	0.2	0	0.3	0.4	0.9	0.3	0.8	11.2	1.9	24	3		0.1	0.4	0.1	0.3	0.2	S	0.6	0.5	1	0.5	0.6	0.4	0.1	0.1	0	0	0	0	0	0	0	0	0	1	0.2	24	4		0	0	0	0	S	0	0	0.1	0.4	0.4	1	1.1	0.6	0.8	1.1	1.2	1	0.4	0.2	0	0	0.8	0.5	0.2	1.2	0.4	24	5		0	0	0	S	0.3	0.2	0.1	2.1	4.5	4.8	4.8	3.4	3.2	2.6	0.8	0.5	0.3	0	0	0	0.1	0.1	0.1	0	4.8	1.2	24	6		0	0	S	0	0	0.7	0	1	0.8	1.2	1.2	0.9	0.5	0.3	0.4	0.2	0.5	0.7	0.2	1.1	0.1	0	0	0.1	1.2	0.4	24	7		0.1	S	0.2	0.3	0.3	0.4	0.6	1	0.7	0.6	0.6	0.6	0.5	1.1	2.1	0.3	0.5	0.8	0.6	0.3	0.4	1.6	0.2	0.8	2.1	0.6	24	8		S	0.1	0	0	0	0.5	0	0.2	0.5	1.3	1	0.7	0.5	0.3	0	0.5	0.5	0.3	0.1	0.6	0	0.1	0	S	1.3	0.3	24	9		0	0	0	0.2	0.7	3.3	4.3	2.5	3.3	3.6	2.8	2.8	4.1	3.8	3.2	1.3	0.8	0.1	0.1	0	0.2	0	S	0	4.3	1.6	24	10		0.1	0	0	0	0.5	0.1	0.1	1.1	1.9	2.2	1.5	1.1	0.6	0.8	0.2	0	0	0	0	0	0	0	S	0	0.2	2.2	0.5	24	11		0.2	0	0	0	0	0	0.7	C	C	C	C	C	C	0.2	0.4	C	0	0	0.2	S	0	0	0	0	0.7	0.1	24	12		0	0.3	0.2	1.3	2.8	0.4	0.2	0.5	0.4	0.6	1	0.9	0.5	0.5	0.2	0.5	0	0	0.1	S	0	0	0	0.1	2.8	0.5	24	13		0	0.1	0	0	0.1	0.2	1.3	0.7	0.4	0.3	0.1	0.3	0	0.2	0.3	0.2	0.5	0.3	S	0	0.1	0	0	0	1.3	0.2	24	14		0	0	0	0	0	0	0.1	0.1	0.2	0.9	1.9	0.2	0.2	0	0.2	0.2	0.1	S	0.2	0.5	0.5	0.3	0.3	0.2	1.9	0.3	24	15		0.2	0.3	0.4	0.4	0.5	0.5	0.6	0.8	0.9	1.4	1.2	1.4	0.3	1.4	2.1	0.7	S	0.3	0	0	0.1	0.1	0	0.2	2.1	0.6	24	16		0.3	0.2	0.3	0.6	0.8	0.6	0.9	2.9	1.3	0.9	0.6	0.6	0.3	1.2	0.5	S	0.8	0.7	0.6	0.2	0.3	0.2	0	0	2.9	0.6	24	17		0.2	0.3	0.4	0	0	0	0	1.1	2	2.3	1.2	1.1	1.6	1.2	S	0.3	0.2	0	0.1	0	0	0	0	0	2.3	0.5	24	18		0	0	0	0	0	0.1	2	3.1	5	5	4.2	2.8	2.7	S	1.5	0.9	0.5	0.2	0.2	0.3	0.1	0.1	0.7	0.1	5	1.3	24	19		0	0.1	0.3	0	2.3	0.2	3.4	46.3	38	4.1	4.2	2.6	S	1.1	1.6	1.1	1	1.1	0.5	0.2	0	0	0	0	46.3	4.7	24	20		0.1	0	0.1	0.2	0.5	0.5	0.6	0.6	0.7	0.5	0.5	S	0.4	0.6	0.7	1.2	0.7	0.1	0.3	0.1	0.1	0	0	0	1.2	0.4	24	21		0	0	0	0.1	0.2	0.1	0.2	0.4	0.5	0.6	S	1.1	1	0.7	0.9	0.6	0.8	0.5	0.4	0	0.3	0.3	0.1	0.1	1.1	0.4	24	22		0	0.1	0.2	0.1	0.1	0.4	0.3	0.3	1.1	S	0.9	1.1	0.5	0.2	0.1	0.3	0.1	0.1	0.2	0	0	0	0	0	1.1	0.3	24	23		0	0	0	0	0.2	0	0.1	2.4	S	1.1	0.6	0.4	0	0.2	0.2	0	0.2	0.2	0.1	0	0	0	0	0	2.4	0.3	24	24		0.1	0.2	0.2	0.2	0	0	0.6	S	3.8	3.5	3.2	1.8	0.9	0.2	0.4	0.5	0.6	0.4	0.1	0.2	0	0	0	0	3.8	0.7	24	25		0	0	0	0.2	5.5	1.2	S	21.2	22.8	4.6	3.8	2	1.5	0.6	0.6	Y	0.7	0.3	0.2	0	0	0.1	0	0.2	22.8	3.0	23	26		0	0	0.1	0.1	0.2	S	4.1	14.3	11	1	1	0.5	0.6	0.5	0.6	1.1	0.7	0.4	0.8	0.1	0	0	0	0	14.3	1.6	24	27		0	0	0	0	S	0	0	0.3	0.6	0.8	1.3	1.1	1.1	0.9	0.8	0.7	0.6	0.5	0	0	0	0	0	0	1.3	0.4	24	28		0	0	0	S	1	1.1	1.4	6.7	2.4	1.8	2.6	2	1.2	1.7	1.2	0.5	0.5	0	0	0	0	0	0	0	6.7	1.0	24	29		0	0	S	0	0	0	0	0	0.7	0.1	0.2	0.3	0.1	0.1	0	0	0	0.1	0	0	0	0	0	0	0.7	0.1	24	30		0.1	S	0	0	0	0	0.1	1.7	2.8	1.1	1	0.2	0.4	0.6	0.4	0.6	0.4	0.1	0.3	0.4	0.3	0	0	0	2.8	0.5	24	31		S	0	0	0	0.1	0	0	0.4	0.4	0.1	0.3	0.4	0	0	0.1	0	0	0	0	0	0	0	0	S	0.4	0.1	24	HOURLY MAX		1	0	0	1	6	3	4	46	38	5	5	3	4	4	3	1	1	1	1	1	1	1	2	1	1			HOURLY AVG		0.1	0.1	0.1	0.1	0.6	0.4	0.7	4.2	4.1	1.7	1.7	1.2	0.9	0.9	0.8	0.5	0.5	0.3	0.2	0.2	0.1	0.2	0.1	0.1		
1		0	0	0	0	0	0	S	0.3	0.5	1.3	1.7	1.7	1.6	1.4	1.2	0.8	0.5	0	0	0.2	0	0	0.2	1.7	0.5	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
2		0.8	0.3	0.2	0.3	0.6	2.1	S	9.1	11.2	4.5	3.6	2.6	2.4	1.9	0.9	0.3	0.4	0.2	0	0.3	0.4	0.9	0.3	0.8	11.2	1.9	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
3		0.1	0.4	0.1	0.3	0.2	S	0.6	0.5	1	0.5	0.6	0.4	0.1	0.1	0	0	0	0	0	0	0	0	0	1	0.2	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
4		0	0	0	0	S	0	0	0.1	0.4	0.4	1	1.1	0.6	0.8	1.1	1.2	1	0.4	0.2	0	0	0.8	0.5	0.2	1.2	0.4	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
5		0	0	0	S	0.3	0.2	0.1	2.1	4.5	4.8	4.8	3.4	3.2	2.6	0.8	0.5	0.3	0	0	0	0.1	0.1	0.1	0	4.8	1.2	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
6		0	0	S	0	0	0.7	0	1	0.8	1.2	1.2	0.9	0.5	0.3	0.4	0.2	0.5	0.7	0.2	1.1	0.1	0	0	0.1	1.2	0.4	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
7		0.1	S	0.2	0.3	0.3	0.4	0.6	1	0.7	0.6	0.6	0.6	0.5	1.1	2.1	0.3	0.5	0.8	0.6	0.3	0.4	1.6	0.2	0.8	2.1	0.6	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
8		S	0.1	0	0	0	0.5	0	0.2	0.5	1.3	1	0.7	0.5	0.3	0	0.5	0.5	0.3	0.1	0.6	0	0.1	0	S	1.3	0.3	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
9		0	0	0	0.2	0.7	3.3	4.3	2.5	3.3	3.6	2.8	2.8	4.1	3.8	3.2	1.3	0.8	0.1	0.1	0	0.2	0	S	0	4.3	1.6	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
10		0.1	0	0	0	0.5	0.1	0.1	1.1	1.9	2.2	1.5	1.1	0.6	0.8	0.2	0	0	0	0	0	0	0	S	0	0.2	2.2	0.5	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
11		0.2	0	0	0	0	0	0.7	C	C	C	C	C	C	0.2	0.4	C	0	0	0.2	S	0	0	0	0	0.7	0.1	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
12		0	0.3	0.2	1.3	2.8	0.4	0.2	0.5	0.4	0.6	1	0.9	0.5	0.5	0.2	0.5	0	0	0.1	S	0	0	0	0.1	2.8	0.5	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
13		0	0.1	0	0	0.1	0.2	1.3	0.7	0.4	0.3	0.1	0.3	0	0.2	0.3	0.2	0.5	0.3	S	0	0.1	0	0	0	1.3	0.2	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
14		0	0	0	0	0	0	0.1	0.1	0.2	0.9	1.9	0.2	0.2	0	0.2	0.2	0.1	S	0.2	0.5	0.5	0.3	0.3	0.2	1.9	0.3	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
15		0.2	0.3	0.4	0.4	0.5	0.5	0.6	0.8	0.9	1.4	1.2	1.4	0.3	1.4	2.1	0.7	S	0.3	0	0	0.1	0.1	0	0.2	2.1	0.6	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
16		0.3	0.2	0.3	0.6	0.8	0.6	0.9	2.9	1.3	0.9	0.6	0.6	0.3	1.2	0.5	S	0.8	0.7	0.6	0.2	0.3	0.2	0	0	2.9	0.6	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
17		0.2	0.3	0.4	0	0	0	0	1.1	2	2.3	1.2	1.1	1.6	1.2	S	0.3	0.2	0	0.1	0	0	0	0	0	2.3	0.5	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
18		0	0	0	0	0	0.1	2	3.1	5	5	4.2	2.8	2.7	S	1.5	0.9	0.5	0.2	0.2	0.3	0.1	0.1	0.7	0.1	5	1.3	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
19		0	0.1	0.3	0	2.3	0.2	3.4	46.3	38	4.1	4.2	2.6	S	1.1	1.6	1.1	1	1.1	0.5	0.2	0	0	0	0	46.3	4.7	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
20		0.1	0	0.1	0.2	0.5	0.5	0.6	0.6	0.7	0.5	0.5	S	0.4	0.6	0.7	1.2	0.7	0.1	0.3	0.1	0.1	0	0	0	1.2	0.4	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
21		0	0	0	0.1	0.2	0.1	0.2	0.4	0.5	0.6	S	1.1	1	0.7	0.9	0.6	0.8	0.5	0.4	0	0.3	0.3	0.1	0.1	1.1	0.4	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
22		0	0.1	0.2	0.1	0.1	0.4	0.3	0.3	1.1	S	0.9	1.1	0.5	0.2	0.1	0.3	0.1	0.1	0.2	0	0	0	0	0	1.1	0.3	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
23		0	0	0	0	0.2	0	0.1	2.4	S	1.1	0.6	0.4	0	0.2	0.2	0	0.2	0.2	0.1	0	0	0	0	0	2.4	0.3	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
24		0.1	0.2	0.2	0.2	0	0	0.6	S	3.8	3.5	3.2	1.8	0.9	0.2	0.4	0.5	0.6	0.4	0.1	0.2	0	0	0	0	3.8	0.7	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
25		0	0	0	0.2	5.5	1.2	S	21.2	22.8	4.6	3.8	2	1.5	0.6	0.6	Y	0.7	0.3	0.2	0	0	0.1	0	0.2	22.8	3.0	23																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
26		0	0	0.1	0.1	0.2	S	4.1	14.3	11	1	1	0.5	0.6	0.5	0.6	1.1	0.7	0.4	0.8	0.1	0	0	0	0	14.3	1.6	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
27		0	0	0	0	S	0	0	0.3	0.6	0.8	1.3	1.1	1.1	0.9	0.8	0.7	0.6	0.5	0	0	0	0	0	0	1.3	0.4	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
28		0	0	0	S	1	1.1	1.4	6.7	2.4	1.8	2.6	2	1.2	1.7	1.2	0.5	0.5	0	0	0	0	0	0	0	6.7	1.0	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
29		0	0	S	0	0	0	0	0	0.7	0.1	0.2	0.3	0.1	0.1	0	0	0	0.1	0	0	0	0	0	0	0.7	0.1	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
30		0.1	S	0	0	0	0	0.1	1.7	2.8	1.1	1	0.2	0.4	0.6	0.4	0.6	0.4	0.1	0.3	0.4	0.3	0	0	0	2.8	0.5	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
31		S	0	0	0	0.1	0	0	0.4	0.4	0.1	0.3	0.4	0	0	0.1	0	0	0	0	0	0	0	0	S	0.4	0.1	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
HOURLY MAX		1	0	0	1	6	3	4	46	38	5	5	3	4	4	3	1	1	1	1	1	1	1	2	1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
HOURLY AVG		0.1	0.1	0.1	0.1	0.6	0.4	0.7	4.2	4.1	1.7	1.7	1.2	0.9	0.9	0.8	0.5	0.5	0.3	0.2	0.2	0.1	0.2	0.1	0.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

**STATUS FLAG CODES**

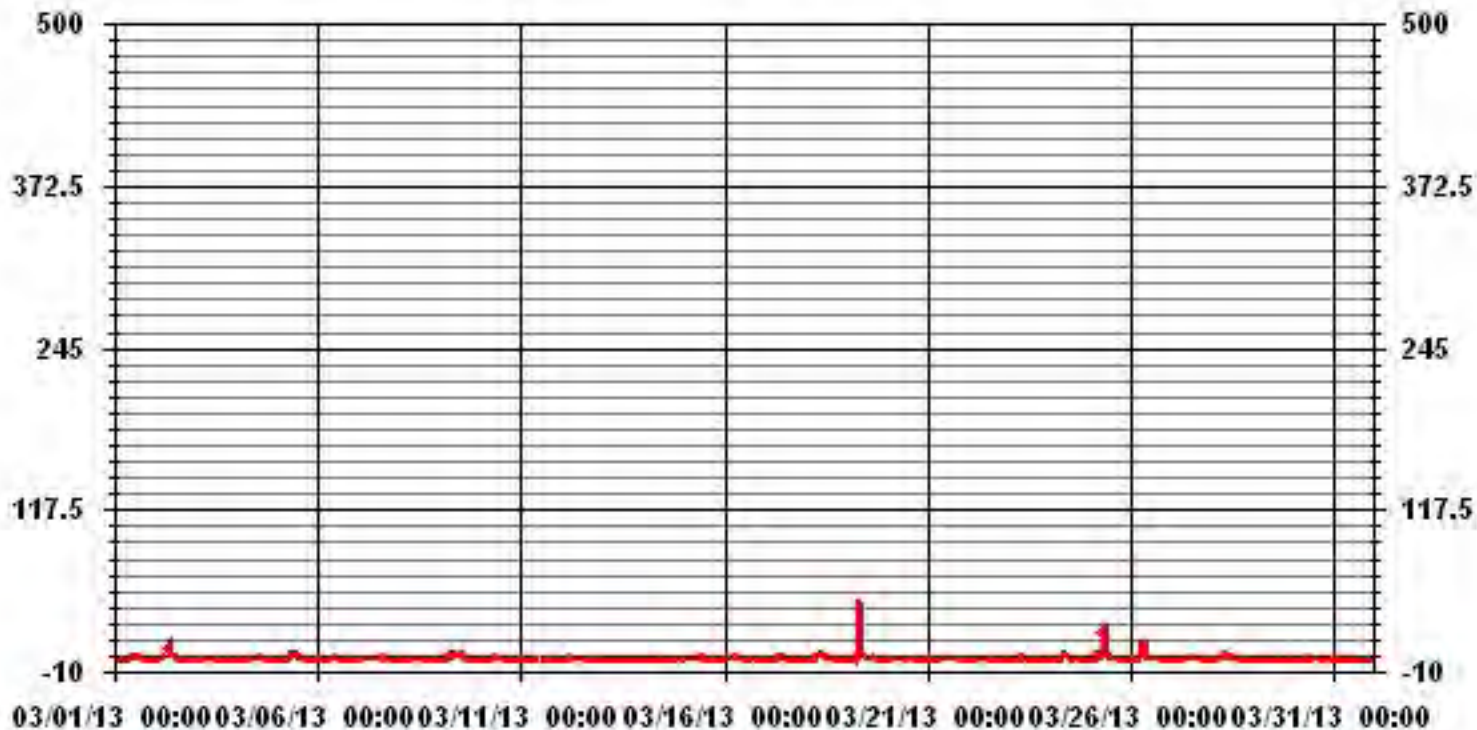
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	475					
MAXIMUM 1-HR AVERAGE:	46.3	PPB	@ HOUR(S)	7	ON DAY(S)	19
MAXIMUM 24-HR AVERAGE:	4.7	PPB			ON DAY(S)	19
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	2.79		MONTHLY AVERAGE:	0.82	PPB	

### 01 Hour Averages



## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

### NITRIC OXIDE MAX instantaneous maximum in ppb

MST

DAY	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	23:00	DAILY MAX.	24-HOUR 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				
1		0.5	0.5	0.5	0.5	0	0.5	0.5	<b>S</b>	2	2	6.9	4.5	3	3	2.5	3	1.6	2	0.5	0.5	2.5	1	1	1.5	6.9	1.8	24	
2		5.5	3	3	4	3	10	<b>S</b>	14	19.5	9.5	5	3.5	3	3	4	0.5	1	2	0.5	3.5	2	8	3.5	10.5	19.5	5.3	24	
3		1.5	2.5	1	1.5	2.5	<b>S</b>	2.5	3	9.5	1.5	2	2.5	0.5	2	0.5	0.5	0.5	0	0	0.5	2	0.5	0.5	0.5	9.5	1.7	24	
4		0.5	0	0	0	<b>S</b>	0.5	0.5	0.6	0.5	2	4.5	3.5	2	2	2.5	2	3	2	4	0	1.4	5.5	8.5	2	8.5	2.1	24	
5		2.5	0	0.5	<b>S</b>	2.5	3	1.5	5	6.4	6.5	6.5	5.9	4	3.5	2	1.5	1	2	0	1	1.1	5	2	0	6.5	2.8	24	
6		0	0	<b>S</b>	0	0.5	5.9	1	2.5	1.9	4	2.5	1.5	1	1	3	1.5	2.5	1.5	2	21.5	3	0.5	0.5	1.5	21.5	2.6	24	
7		0.5	<b>S</b>	1.5	1	1	1	2	16	1.5	2	2	2.5	0.9	18.9	20.9	1	2	4.5	1.5	3	6.5	15.4	3	5.5	20.9	5.0	24	
8		<b>S</b>	0.9	0.7	0.9	0.5	6.5	0.5	1.5	0.9	18.4	5.9	3.5	1	1	1	5.5	1	0.5	3.5	11.9	0.5	3.5	0.5	<b>S</b>	18.4	3.2	24	
9		0	0.5	0.5	2	5.5	16	9	6.5	6.9	8	9	4.5	18	5	5	3.5	2	1.5	3.5	2	2	0.5	<b>S</b>	0.5	18	4.9	24	
10		1	0.5	0.5	0.5	14.5	2.5	1.5	3.5	4	3.5	2	2	2	1	1	0.5	0.9	1	0.5	1	1	<b>S</b>	0.5	1.5	14.5	2.0	24	
11		2	1	0	0.2	0	0	0	5.4	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	1.5	2	<b>C</b>	<b>C</b>	1	1.5	<b>S</b>	1	0	0.5	5.4	1.1	24	
12		1	2	2	5.9	28	8	4	4	1	2	1.5	4	1.5	1.5	1	3.5	0.5	1	1.5	<b>S</b>	0.5	2	0.5	1.5	28	3.4	24	
13		0.5	1	0.5	1	1.5	1	23.5	4	1.5	0.5	0.5	1.5	0.5	1	1.5	0.5	3	3.5	<b>S</b>	1.5	1.5	0.5	1	0.5	23.5	2.3	24	
14		0.5	0.5	0	0	0.5	0.5	0.7	0.7	0.5	3	24	1.5	1.5	0.5	1	0.5	1	<b>S</b>	1	1.5	2	1.5	1	1	24	2.0	24	
15		1	1	1	1.5	1.5	2	3	2.5	3.5	3.5	7.4	1	12.4	15.5	2	<b>S</b>	1.5	1	0.5	2	1	0.5	1	0.5	1	15.5	2.9	24
16		1.5	1	1.5	2	5	3	2	6	9	6.5	2	2	1	13.4	2	<b>S</b>	1.5	2	6.5	0.5	9	3	0.5	0.9	13.4	3.6	24	
17		1.5	1.5	1.5	0.5	0.9	0.5	0.5	2	4	3.5	2.5	2	2	3	<b>S</b>	0.5	0.5	1	1	1.5	0.5	1.5	0.5	0.5	4	1.5	24	
18		0	1	1.5	1.5	0.5	1.5	9.5	7.5	7.5	7.5	6	5	4	<b>S</b>	2.5	2.5	2.5	1	1	2.5	2	3.5	5.5	2.5	9.5	3.4	24	
19		1	2	3	1	44	1.5	12.9	<b>114.5</b>	91.5	5.9	22	5.5	<b>S</b>	2	3.5	2	7.5	9	5.4	1	1.5	1.5	0.5	0.5	<b>114.5</b>	14.7	24	
20		0.5	0.5	0.5	0.5	1.5	6	8	2.5	2	1	1	<b>S</b>	1.5	1	2.5	3.5	4.5	0.9	3	0.5	0.5	0.5	0.5	0.5	8	1.9	24	
21		0.5	0.5	0.5	0.5	1	0.5	1	1	1.5	1.5	<b>S</b>	3.6	4.1	2.6	3.1	1.6	2.1	1.6	3.6	0.1	3.1	1.1	0.6	0.6	4.1	1.6	24	
22		0.1	1.1	2.1	0.6	0.6	1.6	0.6	0.6	12.5	<b>S</b>	5	6.5	8	1.5	1	3	0.9	3	1	0.5	0	0	0.5	0.5	12.5	2.2	24	
23		1	0.5	0	1	2.5	0.5	0.5	3.5	<b>S</b>	12.5	2	1.5	1	1	5.5	0.5	1.5	1.5	2.5	1.5	0.5	0	1	1	12.5	1.9	24	
24		2.5	4	5.5	2.5	0	0.5	2.5	<b>S</b>	8	7.4	4	4	2	0.5	1.5	1	2	2.5	2.5	3.5	0	1	1	1	8	2.6	24	
25		0	0	0.9	1.4	61.5	18	<b>S</b>	46	53.5	10.5	17.5	4.5	3	1.5	1.5	<b>Y</b>	1.5	1.5	1.5	0	0.5	2.5	0.5	5	61.5	10.6	23	
26		0.5	0	1.5	2	3.5	<b>S</b>	23	31	41	2	2.5	1.5	5.5	2	1.5	5.4	2	0.5	7.5	1	0.5	0.9	0.5	0	41	5.9	24	
27		0.5	0	0	0.5	<b>S</b>	0.5	0.9	0.5	1.5	2.5	2.5	2	1.5	2	1	1.5	1	1	0.5	0	0	0	0	0	2.5	0.9	24	
28		0	0	0	<b>S</b>	4.5	5.9	6	11	5	2.5	3.5	3.5	2	11.5	6.5	1	3	0.5	0	0	0.2	0.5	0	0.5	11.5	2.9	24	
29		0.5	0.5	<b>S</b>	0.5	1	0	0.5	0.5	13	1	0.5	1	2	2	0.6	1	0.5	2.5	0	0	0.5	0	0	1.5	13	1.3	24	
30		1.5	<b>S</b>	0.5	0	0.3	0	0.5	4	6.5	7.5	8.5	1.5	2	2.5	1.5	9	13.5	1	4	3	6.5	1.5	0.5	1.5	13.5	3.4	24	
31		<b>S</b>	0.5	0.5	0.5	0.5	0.5	0.5	1.5	1.5	0.5	1.5	1.5	1	0.5	3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	<b>S</b>	3	0.8	24	
HOURLY MAX		6	4	6	6	62	18	24	115	92	18	24	7	18	19	21	9	14	9	8	22	9	15	9	11				
HOURLY AVG		1.0	0.9	1.1	1.2	6.5	3.4	4.1	10.4	10.9	4.8	5.4	3.2	2.8	3.5	3.3	2.1	2.2	1.8	2.0	2.2	1.8	2.1	1.2	1.5				

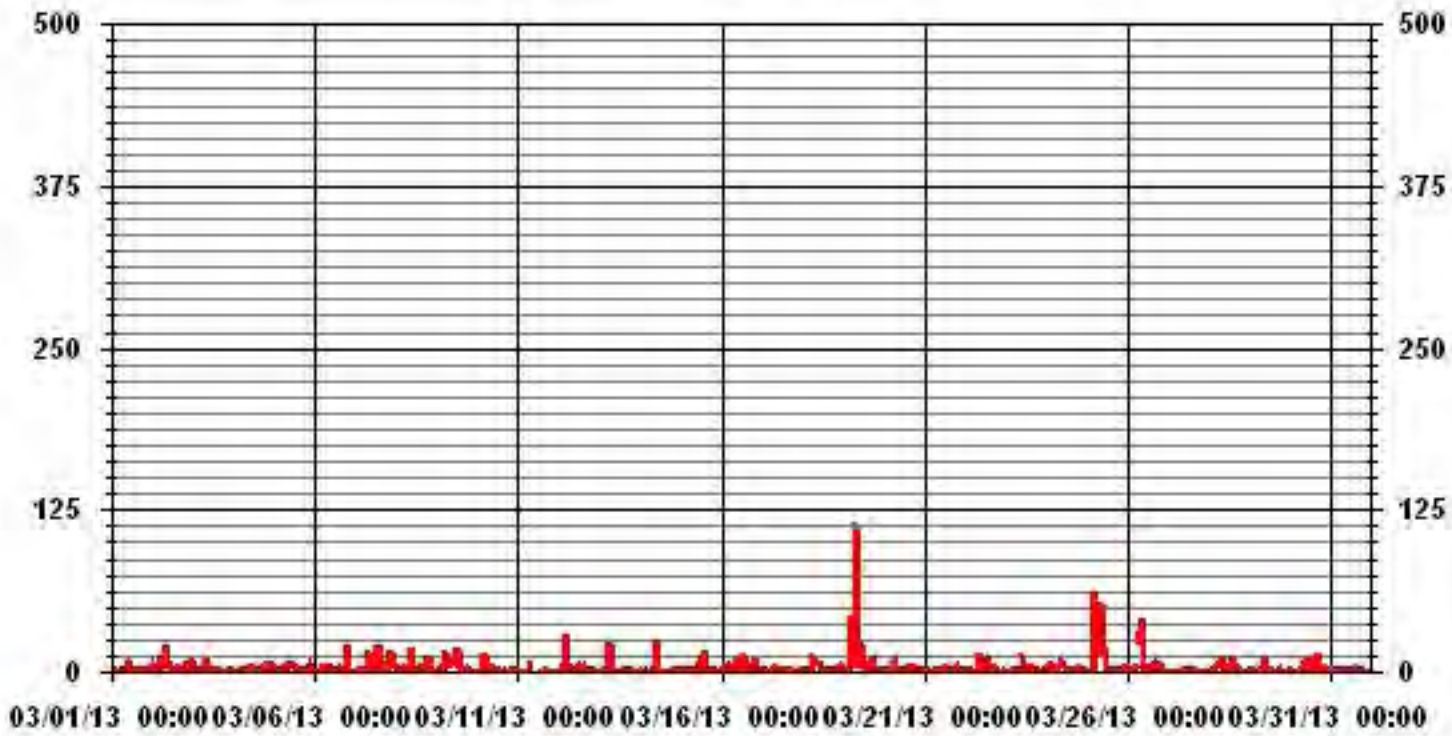
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	648				
MAXIMUM INSTANTANEOUS VALUE:	114.5	PPB	@ HOUR(S)      7      ON DAY(S)      19		
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS
MONTHLY CALIBRATION TIME:	8	HRS			
STANDARD DEVIATION:	7.69				

### 01 Hour Averages



— LICA NOMAX PPB

LICA  
 NO\_ / WD Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 01  
 Site Name : LICA  
 Parameter : NO\_  
 Units : PPB

Wind Parameter : WD  
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	3.98	12.51	10.38	6.11	8.67	6.97	11.37	3.55	1.84	1.42	3.12	8.67	7.39	4.69	4.55	4.69	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	3.98	12.51	10.38	6.11	8.67	6.97	11.37	3.55	1.84	1.42	3.12	8.67	7.39	4.69	4.55	4.69	

Calm : .00 %

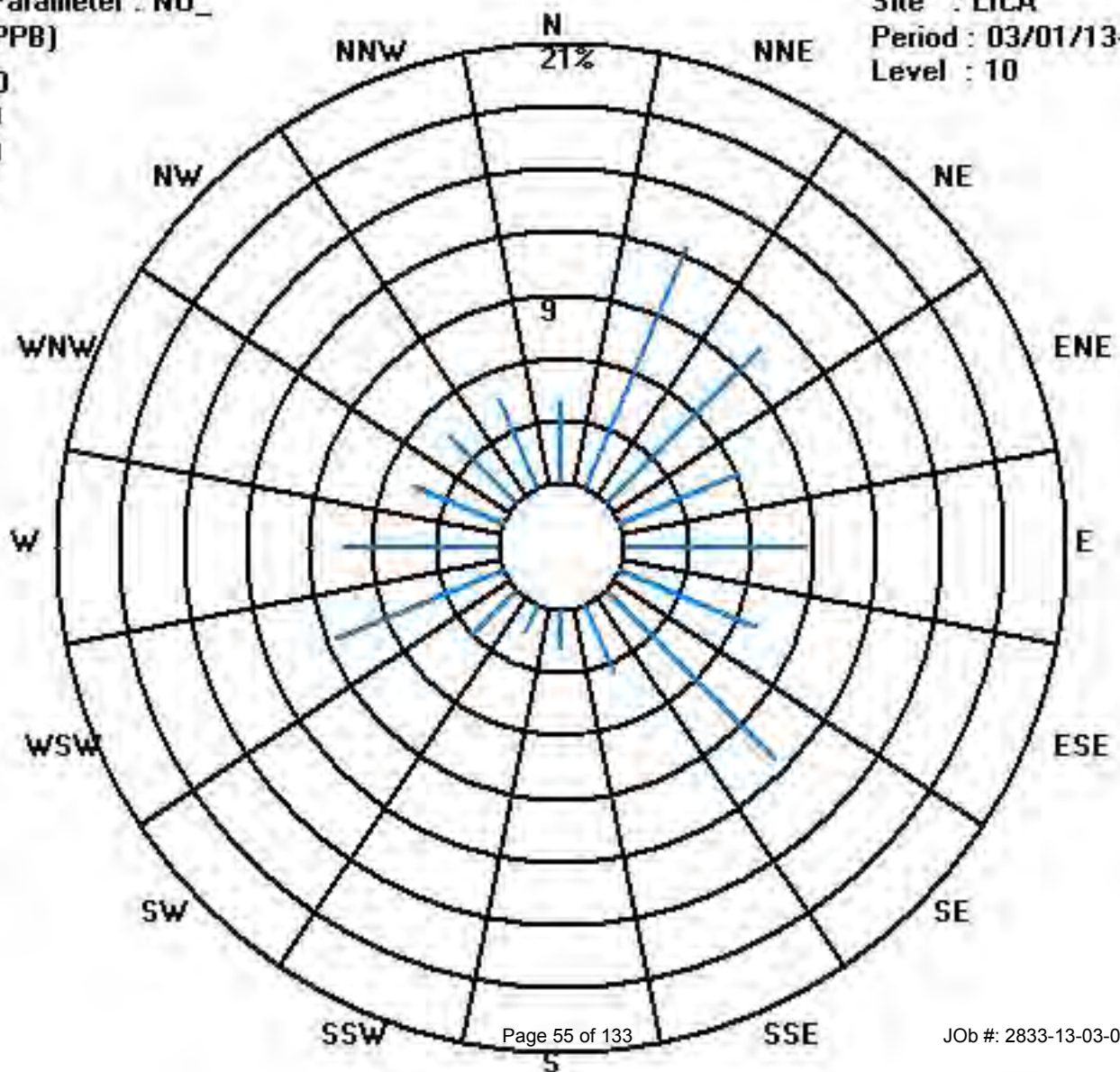
Total # Operational Hours : 703

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	28	88	73	43	61	49	80	25	13	10	22	61	52	33	32	33	703
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	28	88	73	43	61	49	80	25	13	10	22	61	52	33	32	33	

Calm : .00 %

Total # Operational Hours : 703





# Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

OXIDES OF NITROGEN hourly averages in ppb

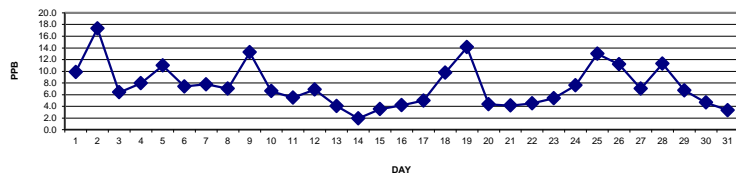
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	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	MAX.	AVG.	
DAY																											
1	6.7	6.6	6.4	5.6	5.1	5.1	5.6	S	6.7	5.9	7.9	9.1	9.7	9.9	9.9	10.4	11.5	16.2	21.3	13.1	11.8	11.3	11	19.6	21.3	9.8	24
2	22.6	15.7	9.8	11.7	16.5	26.7	S	31.8	28.2	14.7	12.9	10.1	10	9.1	6.9	5.5	6.7	9.1	14.9	18.6	30.6	31.8	31	23.6	31.8	17.3	24
3	17.5	15.5	11.5	10.3	7.6	S	7.6	8.4	6.5	5.5	5.2	4.6	4	3.8	4	4.1	3.5	3.7	4.1	3.8	4	3.7	3.9	4.2	17.5	6.4	24
4	4.1	4.1	4.4	4.9	S	5.7	5.7	6.1	4.9	4.3	5.4	5.6	4.5	5.2	6.2	6.9	7.8	9	12.3	10.2	12.5	17.5	19.5	16.5	19.5	8.0	24
5	17.3	16.5	12.9	S	17.1	13.6	13.5	17.7	18.7	16.6	14.7	11.6	11.6	10.5	6.4	6	5.6	4.7	4.7	6.2	7.2	7.6	6.5	5.3	18.7	11.0	24
6	5.6	5.5	S	4.8	4.6	7.3	7.5	14.2	7.7	7.2	6.8	5.7	4.9	4.4	4.8	5	6.5	9.1	15.1	24.5	6.3	4.5	4	3.8	24.5	7.4	24
7	3.7	S	3.9	4.2	4.2	4.6	5.2	6.2	5.3	4.3	3.9	3.5	3.7	4.9	7.3	3.6	4.4	7.2	12.1	13	15.7	21.3	16.2	20.2	21.3	7.8	24
8	S	4.1	3.3	3	3.3	4.8	4.2	5.8	6	5.6	5.6	5.6	5.1	4.9	4.8	6.1	7.2	8.6	10.9	12.8	10.7	16.5	15.6	S	16.5	7.0	24
9	12.4	14.8	14.8	15.7	15.5	28.9	32.5	19.7	15.5	14	10.3	9.8	11.9	11.9	11.2	7.6	6.6	6.3	12.1	8.9	9.6	7.5	S	6.9	32.5	13.2	24
10	6.6	5.5	6.3	8.3	7.4	8.6	8.6	11.6	11.5	10.3	8.3	7.4	6.3	6.7	4.8	4.2	4.3	4.8	3.5	3.8	3.6	S	4.1	5.4	11.6	6.6	24
11	5.6	4.4	4.1	4	4	4.4	4.8	5.2	C	C	C	C	C	C	3	3.8	C	3.4	3.5	8.4	S	11.1	9.9	8.1	11.1	5.5	24
12	17.2	19.6	18.2	19.4	13.1	5.1	4.1	4.4	3.7	4	4.6	4.7	3.7	3.7	3.2	3.6	2.8	2.7	3.1	S	3.1	3.2	3.6	6.9	19.6	6.9	24
13	5.1	5.4	5.3	5.1	5.7	9.4	12.5	7.7	4.6	2.6	2.1	2.3	1.8	2	2.4	2.3	2.8	3.1	S	2.9	2.5	2.1	1.9	1.7	12.5	4.1	24
14	1.4	1.1	1.1	1.2	1.3	1.4	1.9	1.6	1.4	2.4	4.1	1.3	1.3	1	1.2	1.4	1.4	S	2.7	3.2	3.7	3	2.7	2.3	4.1	1.9	24
15	2.3	2.9	3.7	3.2	2.9	3.6	3.6	3.8	4	4.7	3.6	3.7	1.5	3.7	4.6	3	S	3.3	3.4	3.7	2.9	4.1	5.3	3.7	5.3	3.5	24
16	4.5	2.9	2.9	4.9	6.5	7.5	10	12.9	3.4	2.5	1.8	1.8	1.3	2.8	2.1	S	3.7	4.6	5.3	3.9	4	2.8	1.9	2.4	12.9	4.2	24
17	2.9	3.7	4.5	4	4.2	3.1	3.4	8.1	8.1	6.8	3.6	3.3	4.6	4.1	S	2	2.1	2	3.5	6	7.5	12.1	9	5.9	12.1	5.0	24
18	6.3	9.4	8.9	7.6	7.7	12.1	19.5	16.5	17.7	14.7	11.7	7.8	7.2	S	5	4.7	2.9	2.4	3.2	7.8	9.3	9.2	14.3	18.7	19.5	9.8	24
19	12.6	10.7	9	6.2	14.1	14.1	23.8	76.4	62.3	11.7	9.7	7.7	S	4.5	5.6	4.9	5.3	6.6	7.6	7.1	7.6	7	5.2	4.8	76.4	14.1	24
20	5.4	5.5	5.5	5	6.8	6.1	5.7	5.2	4.6	4	3.5	S	3.2	3.6	4.4	5.3	4.4	3.4	3.8	3.2	3.1	2.8	2.5	2.5	6.8	4.3	24
21	2.1	2.1	2.2	2.5	3.3	3.4	4.3	4.8	4.1	4.4	S	4.5	3.5	3	4.4	4	5.1	5.4	4.8	4.9	7	6.9	4.6	4	7	4.1	24
22	4	5.2	5.1	3.5	4.4	6.4	7	4.2	4.6	S	5.3	4.2	2.2	2	1.7	2.5	2.9	4.1	5.2	2.3	2.7	6.4	9.2	8.7	9.2	4.5	24
23	6.1	8.2	6.3	5	5.9	3.7	4.4	10.2	S	3.1	2.3	2.1	1.4	1.6	1.4	1.2	2.1	2.4	3	8.4	11.2	10	10.5	12.9	12.9	5.4	24
24	12.1	12.2	11.4	16.4	13	11.6	13	S	11.5	9.3	8.1	5.4	3.7	2.2	2.8	3.4	4	3.9	3.6	5.5	6.3	5.9	4.5	4.4	16.4	7.6	24
25	4.9	6.4	9.6	15.7	24.7	19.8	S	50.9	46.5	12.9	10.7	7.5	6.6	4.2	4.3	Y	5.1	4.9	11.3	9.3	6.2	7.3	8.7	8.7	50.9	13.0	23
26	11.1	12.4	15.1	16.4	13.8	S	25.5	38.7	26.6	5.6	4.9	3.3	3.2	3.3	3.8	5.4	5.2	5.3	13.7	15.3	11.8	8.1	5.2	3.4	38.7	11.2	24
27	4	4.5	4.8	4.8	S	5.4	6.4	5.6	5.5	6	7.1	6.5	6.7	6.6	6.8	7.7	9.2	9.8	9.1	8.1	8	7.6	10.3	10.8	10.8	7.0	24
28	7.1	6.9	8.1	S	23.8	28	16.4	24	13	10.5	12	10.5	9.1	11.3	9.7	7.6	7.9	7.5	7.6	7.7	7.6	7.8	8.3	7.7	28	11.3	24
29	9.3	7.7	S	9.7	9.5	11.1	9.9	4.4	4.9	4	3.4	3.6	2.7	2.7	2.7	2.7	3.3	4.1	5	5.3	12.1	16	11.6	9.1	16	6.7	24
30	8.1	S	7.5	6	3.3	4.4	6.3	7.9	8.2	4	3.6	2.1	2.3	3	2.6	2.7	2.3	2.7	5.8	8.9	6.4	3	2.3	3.3	8.9	4.6	24
31	S	2.3	2.7	3	3.8	2.7	2.3	3.8	3.1	2.3	2.7	3.1	2.6	2.7	3.2	2.6	2.8	3	3.9	4	5.2	5.7	5.8	S	5.8	3.3	24
HOURLY MAX	23	20	18	19	25	29	33	76	62	17	15	12	12	12	11	10	12	16	21	25	31	32	31	24			
HOURLY AVG	7.9	7.6	7.2	7.3	8.7	9.3	9.5	14.4	12.0	7.0	6.4	5.5	4.8	4.8	4.7	4.5	4.8	5.4	7.3	8.0	8.0	8.8	8.3	8.1			

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

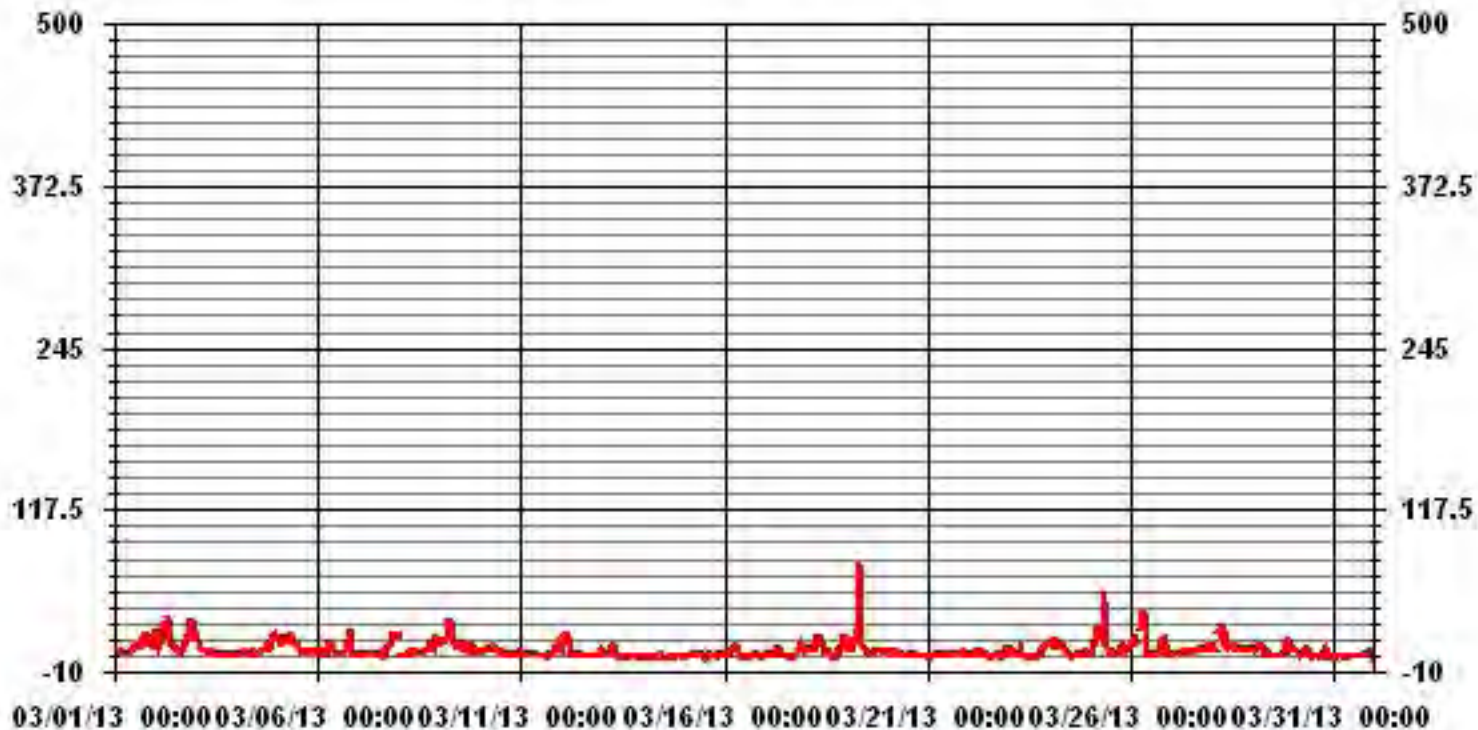
24 HOUR AVERAGES FOR MARCH 2013



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	703
MAXIMUM 1-HR AVERAGE:	76.4 PPB @ HOUR(S) 7 ON DAY(S) 19
MAXIMUM 24-HR AVERAGE:	17.3 PPB ON DAY(S) 2
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	6.71
MONTHLY AVERAGE:	7.52 PPB

### 01 Hour Averages



— LICA NOX\_ PPB

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

## OXIDES OF NITROGEN 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	8.6	7.6	8.1	6.6	5.6	6.6	7	S	11.6	9.6	17	15	12.5	14.6	12	12.5	13	26.5	28.6	15.1	14	16.6	13.1	31	31	13.6	24
2	39.6	33	20.5	19	28.6	41	S	39.4	40.9	24.5	15.5	11.5	11	10.5	10.5	7.5	9	18.4	21	38.4	37	39.9	37	30.5	41	25.4	24
3	21.5	20.4	18	16	11.9	S	12.9	14.5	17	7.5	6.9	8.5	4.5	6.9	6.5	5	4	4	5	4.7	6.9	4.5	5	6	21.5	9.5	24
4	5	5.4	5.4	5.4	S	8	7.9	6.9	6.5	8	13.9	11	6.9	7.5	8	9.5	12.4	12.9	25.9	15.5	21.4	29.4	32.4	30	32.4	12.8	24
5	21.5	20.9	16.5	S	23.6	21	17	23.6	22	22.6	18.1	16.6	12.5	12.5	9.6	7.6	7.6	9.6	5.1	8.1	13	25	11.6	6	25	15.3	24
6	6.6	6.1	S	6	5.4	21.5	14.9	25.4	11.4	8.5	10	6.5	6	5.4	11	8	10	12.4	24	51.9	11.5	5.4	5	5.4	51.9	12.1	24
7	5	S	5	5.4	5.4	7.4	8.5	31.4	8	6.9	5.5	5.5	5	39.9	40.9	5	6.5	20.5	18	20.9	31.4	37.9	25.9	34.4	40.9	16.5	24
8	S	5.5	4.5	5	4.5	16	6.9	11.5	8	10	10.9	11	5.9	6	7.5	11.9	8.5	11.9	16.9	28.9	16	23.5	20	S	28.9	11.4	24
9	16	18.9	18.9	24	24.9	59.4	42.4	38.9	21.5	26.4	16.4	11.5	24.5	12.9	12.9	10.5	8	8.5	35.4	11.9	14.4	9	S	8	59.4	20.7	24
10	9.5	6.9	9	11.9	24.5	15.4	21.5	18.4	17	13.4	10	9.5	8	7.5	6.5	5.4	5.4	6.5	4.5	5.5	S	5	7.5	24.5	10.2	24	
11	9	6.5	4.5	5	4.5	5	6	11.9	C	C	C	C	C	C	4.4	8.5	S	6.5	11.5	S	13	12.5	15.9	15.9	8.3	24	
12	23.5	32	24.9	34.4	35.4	10	5.5	8.9	4.5	9.5	6	11	7	5.5	5.5	10.5	8.5	4	4.5	S	4.5	8.5	6.5	10.5	35.4	12.2	24
13	8	8.9	7	7.9	12	13.5	33.9	11	7.9	3.5	2.9	4	2.9	4	5	3.5	5	5.5	S	4	4.5	3.5	3	3	33.9	7.1	24
14	2	2	1.4	1.5	2.5	2.5	2.9	2.5	2.5	6	35.9	3.5	3.4	3.4	3	2	2.5	S	4	4.5	6.5	5	5	4	35.9	4.7	24
15	4.5	5	7.5	6.5	6	6.5	5.5	7.5	7.5	8.5	7.9	19.5	2.5	16.9	28.9	6	S	6.5	7.5	7	10.5	7.5	8.5	5.5	28.9	8.7	24
16	7	4.5	5.5	10.5	14.4	14.9	14.4	20.5	9.4	11.5	5.5	6.5	2.5	10.4	4	S	5.5	8.9	21.4	5.5	17.5	7.9	3.5	5	21.4	9.4	24
17	7	7.9	7.9	5.5	6.5	5	5.5	12.5	10	12	6	4	6	7	S	2.9	2.5	3.5	8	10.5	10.5	16.5	11	10	16.5	7.7	24
18	11	16.5	15.4	13.5	11.5	14.9	36.9	25	23.5	21.4	13.9	12.5	10	S	7.9	7.4	5	3.5	4.5	21.4	12.5	17.5	35.9	30	36.9	16.2	24
19	14.9	14.9	16	10	66.4	20	37.4	157.4	133.9	14.9	22.4	13.9	S	5.5	10	7	14.9	13.9	17.5	10.5	11	9.5	7	6	157.4	27.6	24
20	7	7	6.5	6.5	11.5	14.9	19	8.9	7	4.5	5.5	S	5	4.5	10.5	9	10	5	7.4	4.5	4	4	3	5	19	7.4	24
21	3	3	3.5	3.5	6.5	4.5	6.5	8.5	6	7	S	12	6.5	5	7.9	5.5	8.9	8.5	13	7.4	19	9.4	9.5	7	19	7.5	24
22	5.5	7	9.5	5.5	6.5	8.5	10	7	26.9	S	62.9	12	11	3.5	3	8.5	4.5	7.4	10	4.5	7	7.4	11	11.5	62.9	10.9	24
23	8.5	10.5	9.5	7.4	12	4.5	6.5	13.9	S	17	5.5	7.4	6	3	10	2.5	6.5	13.5	6	18	14.4	16.9	18	16.4	18	10.2	24
24	15.9	22.4	21.4	22.4	18.9	13.9	17	S	18	16.4	10.5	8.5	5.5	3.5	4.5	5	6	6.5	6.5	10	9.5	15.4	7	8	22.4	11.9	24
25	8.9	10.5	17.5	18.9	89.9	50.4	S	93.4	98.4	24.4	25	13	9.5	7	7	Y	7.5	7.4	19	17.5	8.5	17.5	12	24	98.4	26.7	23
26	14.9	15.4	21.9	24	22.9	S	56.5	63.4	80.4	7.5	8.9	5	7.4	6.5	7.4	8.5	8.5	7	31.5	20.9	17	12	12.5	4.5	80.4	20.2	24
27	5	5	5	7.5	S	8	8.5	7	7	7	10.5	7.4	7.4	9.4	7.4	10.5	11	12.5	11	8.5	8.9	8.5	18.5	17.5	18.5	9.1	24
28	9	8.9	13	S	39	36.9	36.9	34.4	20	13.5	13.9	14.4	11	46.9	25.5	10.5	9	8	10	8.9	8	11	10.5	12.5	46.9	17.9	24
29	15.5	15.5	S	12	12.5	14.9	13.9	5.5	20.9	5.5	4.5	5.5	3.5	6.5	5	4	4.5	8.5	8.5	8	26.4	21.5	17	13	26.4	11.0	24
30	11	S	9.5	7.5	5.5	6.5	8	14.4	15.9	12	24	5	5.5	8.9	4.5	8.5	5	4.5	16.4	20.9	19.9	10	4	6	24	10.1	24
31	S	3.5	4.5	5	6.5	4	3.5	8.5	6	3	4.5	4.5	3.5	3	8	3.5	3.5	3.5	7	8.5	7.4	7.9	9	S	9	5.4	24
HOURLY MAX	40	33	25	34	90	59	57	157	134	26	63	20	25	47	41	13	15	27	35	52	37	40	37	34			
HOURLY AVG	11.2	11.4	11.0	10.8	18.1	15.7	16.3	25.2	23.1	11.8	13.8	9.5	7.3	9.8	9.8	7.1	7.4	9.3	13.5	13.8	13.3	14.1	12.7	12.9			

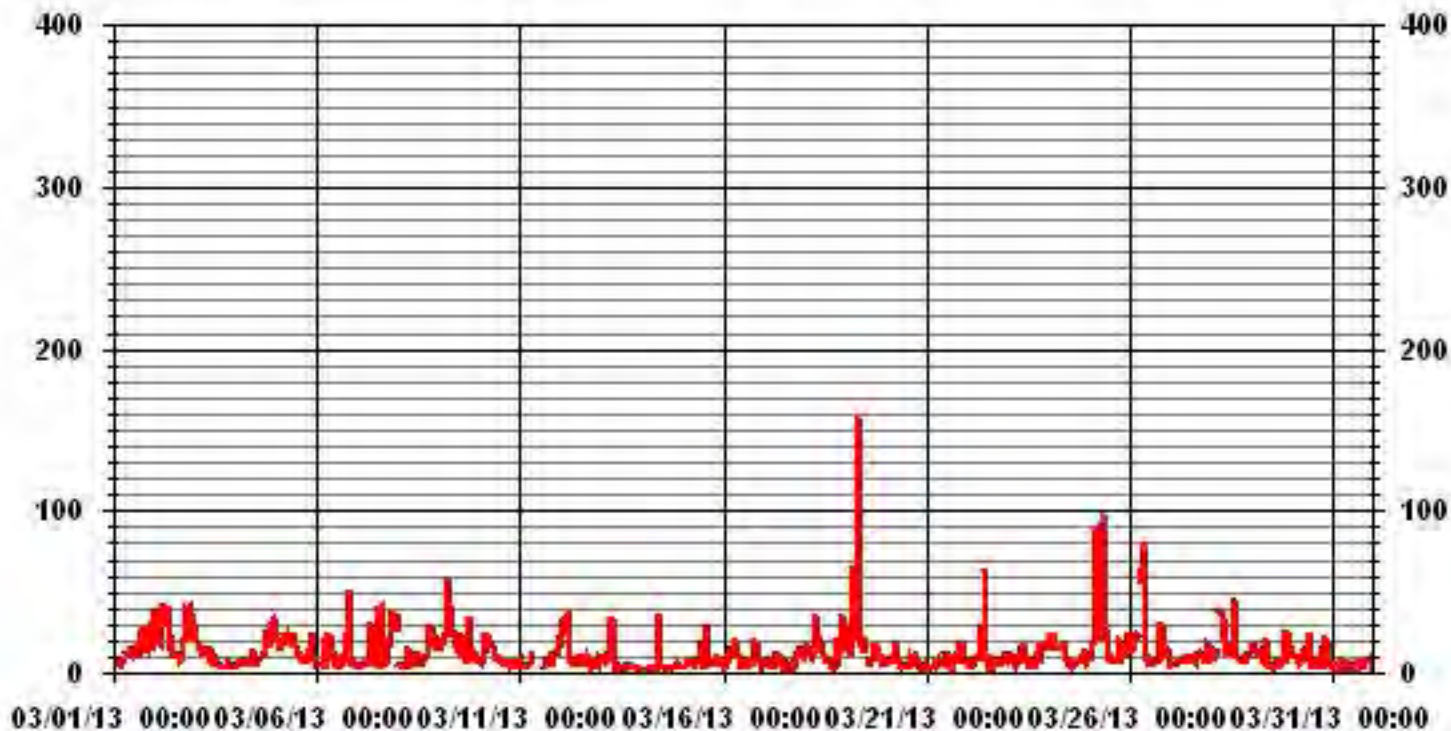
**STATUS FLAG CODES**

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:	702					
MAXIMUM INSTANTANEOUS VALUE:	157.4	PPB	@ HOUR(S)	7	ON DAY(S)	19
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	13.25					

### 01 Hour Averages



LICA  
NOX\_ / WD Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 01  
Site Name : LICA  
Parameter : NOX\_  
Units : PPB

Wind Parameter : WD  
Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	3.98	12.51	10.09	6.11	8.53	6.97	11.37	3.55	1.84	1.42	3.12	8.67	7.39	4.69	4.55	4.69	99.57
< 110.0	.00	.00	.28	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.42
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.98	12.51	10.38	6.11	8.67	6.97	11.37	3.55	1.84	1.42	3.12	8.67	7.39	4.69	4.55	4.69	

Calm : .00 %

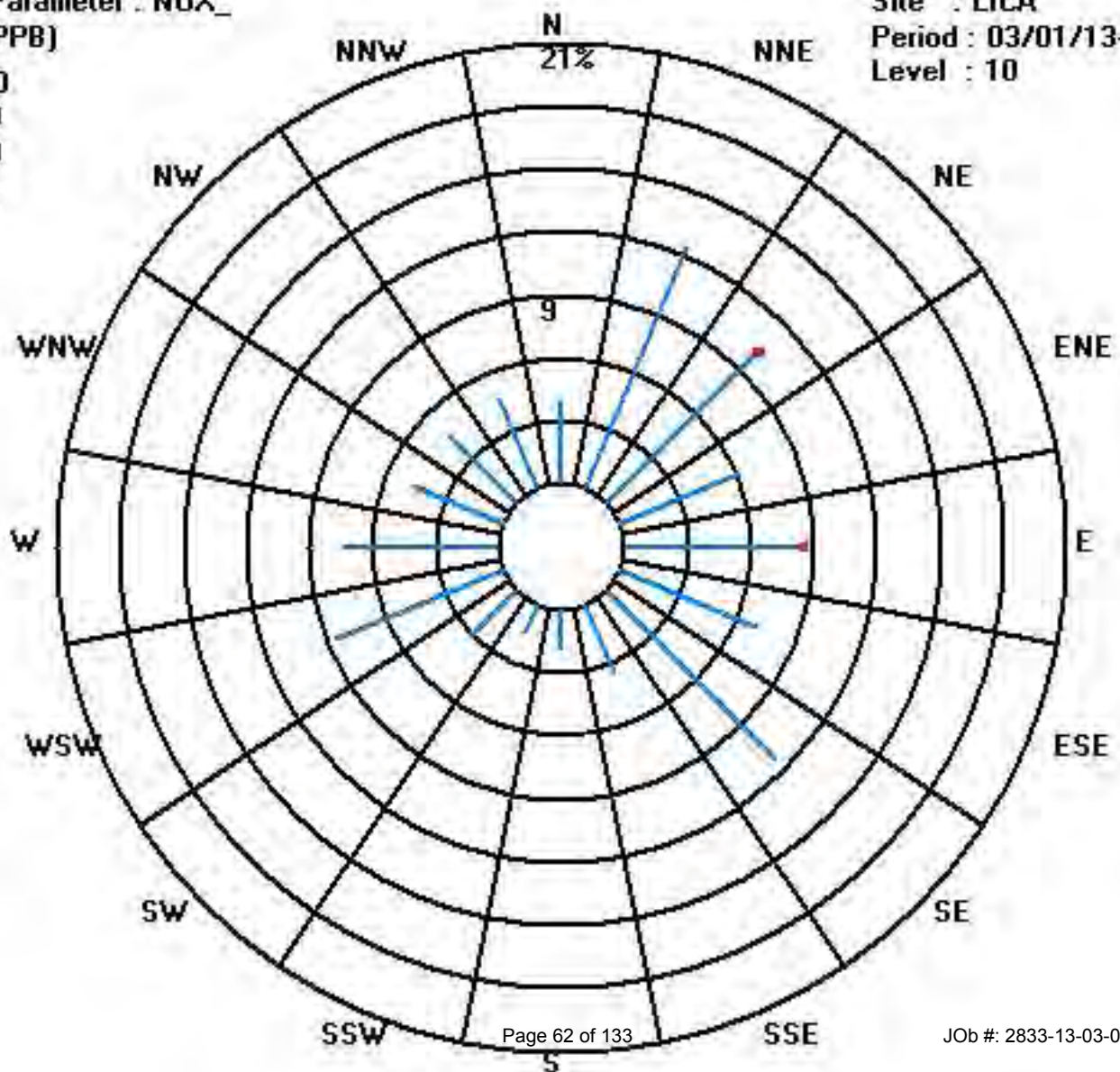
Total # Operational Hours : 703

Distribution By Samples

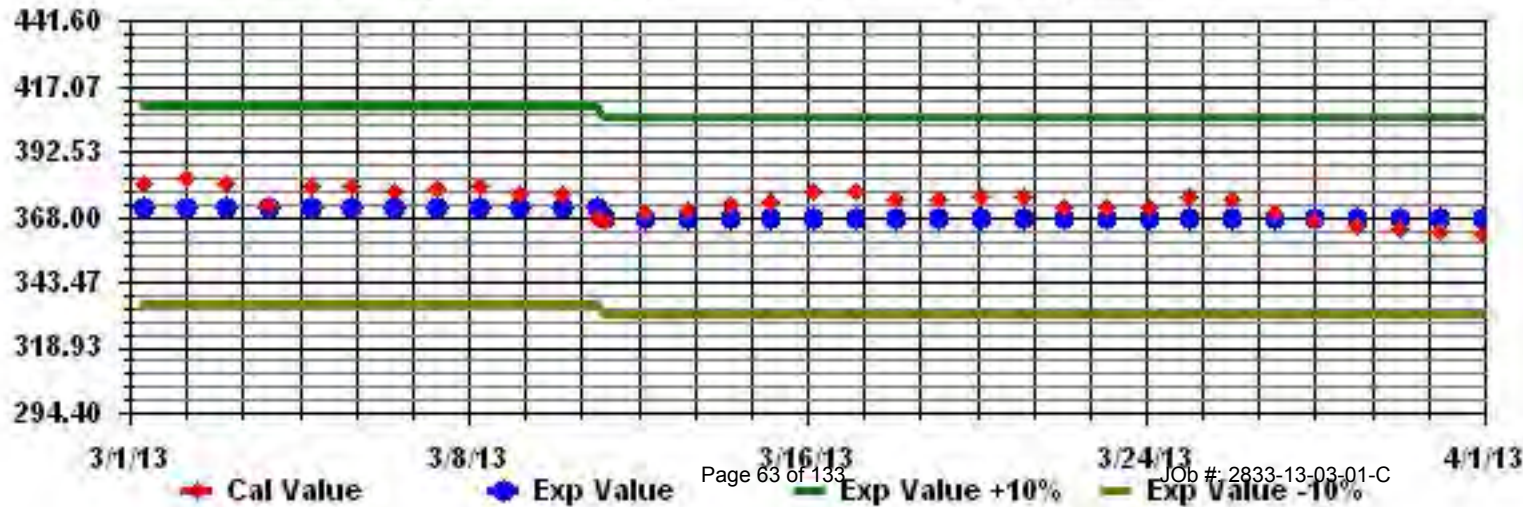
Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	28	88	71	43	60	49	80	25	13	10	22	61	52	33	32	33	700
< 110.0			2		1												3
< 210.0																	
>= 210.0																	
Totals	28	88	73	43	61	49	80	25	13	10	22	61	52	33	32	33	

Calm : .00 %

Total # Operational Hours : 703



Calibration Graph for Site: LICA Parameter: IIOX\_ Sequence: IIO2 Phase: SPAll





# Ozone

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

OZONE (O<sub>3</sub>) hourly averages in ppb

MST

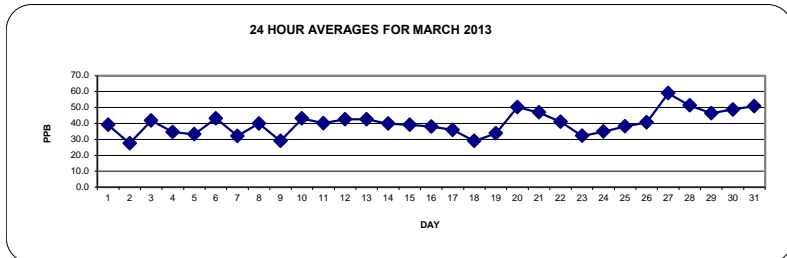
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.		
DAY																												
1	39	39	39	41	41	42	41	S	40	41	41	42	43	44	45	45	43	37	28	37	39	37	34	20	45	39.0	24	
2	15	17	24	26	18	6	S	5	14	29	36	39	42	45	48	51	49	44	32	28	17	13	14	21	51	27.5	24	
3	28	30	36	36	40	S	40	39	42	42	42	43	44	45	46	46	48	46	45	45	45	45	44	43	48	41.7	24	
4	42	41	38	37	S	37	36	36	37	40	40	40	41	41	41	40	38	31	28	22	17	14	15	15	42	34.5	24	
5	13	13	16	S	12	13	15	15	20	27	34	39	41	44	49	50	48	49	49	46	44	43	41	42	50	33.2	24	
6	43	44	S	45	46	44	42	36	42	44	45	47	49	50	50	50	50	48	40	27	44	37	34	35	50	43.1	24	
7	35	S	34	34	35	35	35	35	35	36	37	37	37	37	37	38	37	36	31	27	23	16	17	14	38	32.1	24	
8	S	36	37	37	36	36	35	33	33	34	35	45	49	52	56	55	51	48	44	39	36	27	25	S	56	40.0	24	
9	28	24	20	15	18	9	4	17	24	30	33	35	35	36	37	40	41	42	33	32	35	39	S	41	42	29.0	24	
10	41	44	42	38	34	32	29	28	33	41	46	48	50	50	50	51	51	50	48	47	S	46	44	51	43.0	24		
11	44	45	44	39	37	37	35	39	41	42	44	45	46	C	C	C	C	46	46	41	S	35	29	28	46	40.2	24	
12	22	22	20	20	35	41	42	42	42	42	44	47	49	50	53	53	53	53	51	S	51	51	50	46	53	42.6	24	
13	49	49	48	47	46	43	40	45	45	39	39	39	40	41	41	41	41	40	S	41	41	41	41	41	41	49	42.5	24
14	41	41	41	41	40	38	37	38	38	39	39	40	40	41	41	41	41	S	40	40	40	40	40	39	40	41	39.8	24
15	39	38	38	38	38	38	38	38	39	39	41	40	41	42	42	42	S	40	39	38	39	38	36	39	42	39.1	24	
16	38	39	39	38	36	35	32	31	36	37	38	38	39	40	41	S	38	38	37	38	39	41	42	42	42	37.9	24	
17	41	39	38	38	37	37	36	33	35	37	39	40	39	40	S	42	41	41	39	35	29	22	22	26	42	35.9	24	
18	24	19	19	20	19	17	13	22	26	30	32	37	39	S	41	41	41	42	41	36	32	30	24	20	42	28.9	24	
19	22	21	22	24	19	15	10	8	22	35	37	39	S	44	44	46	46	46	45	45	43	45	50	51	51	33.9	24	
20	51	50	50	50	48	48	50	49	49	50	51	S	51	51	51	51	51	51	51	50	51	50	51	50	51	50.2	24	
21	50	50	50	49	48	48	47	46	47	46	S	47	47	48	47	47	46	45	46	44	44	45	46	45	50	46.9	24	
22	45	44	44	45	44	42	41	42	44	S	46	46	47	47	48	47	47	47	41	39	43	38	24	20	48	41.0	24	
23	23	21	22	23	25	30	27	25	S	38	40	41	41	41	42	43	43	43	42	35	29	26	24	18	43	32.3	24	
24	20	17	15	12	16	22	24	S	30	33	36	41	45	49	49	49	49	49	49	46	43	37	36	34	49	34.8	24	
25	32	30	22	15	12	13	S	17	28	41	46	51	53	55	55	Y	56	56	46	45	48	46	38	33	56	38.1	23	
26	27	26	21	20	22	S	15	17	38	50	51	51	53	54	55	55	56	55	46	38	38	44	49	54	56	40.7	24	
27	53	54	54	53	S	52	52	54	55	55	56	58	59	60	63	66	69	66	68	69	69	68	56	47	69	59.0	24	
28	51	42	34	S	15	9	19	23	47	52	52	57	63	65	67	68	69	68	66	68	69	67	57	51	69	51.3	24	
29	43	45	S	46	44	34	34	50	50	50	51	52	54	55	55	56	57	59	54	48	34	28	32	35	59	46.3	24	
30	49	S	50	50	53	49	46	45	46	48	49	50	51	51	51	52	52	52	48	42	44	47	49	47	53	48.7	24	
31	S	46	45	45	45	46	46	45	46	47	48	50	56	58	58	60	59	58	58	60	52	47	42	S	60	50.8	24	
HOURLY MAX	53	54	54	53	53	52	52	54	55	55	56	58	63	65	67	68	69	68	68	69	69	68	57	54				
HOURLY AVG	36.1	35.4	34.6	35.2	33.1	32.7	33.1	32.9	37.5	40.5	42.3	44.1	46.1	47.4	48.4	48.8	48.7	47.6	44.4	41.9	40.8	38.2	36.7	35.9				

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:

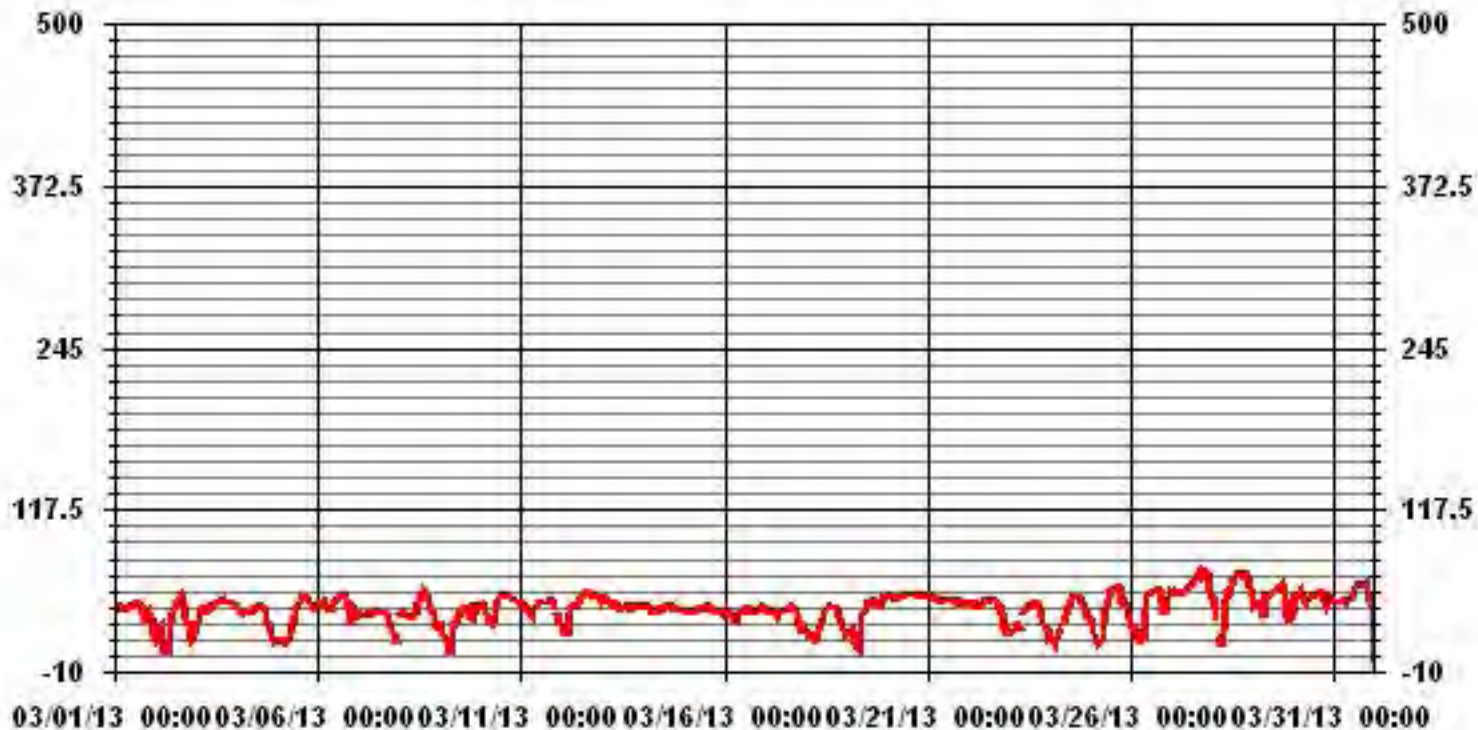
ALBERTA ENVIRONMENT: 1-HR 82 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	706				
MAXIMUM 1-HR AVERAGE:	69	PPB	@ HOUR(S)	VAR	ON DAY(S) 27,28
MAXIMUM 24-HR AVERAGE:	59.0	PPB			ON DAY(S) 27
					VAR-VARIOUS
I/S CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.9	%
STANDARD DEVIATION:	11.60		MONTHLY AVERAGE:	40.12	PPB

### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

**OZONE 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	40	40	40	41	42	42	42	S	42	42	42	43	49	47	46	46	45	43	38	39	41	41	36	35	49	41.8	24	
2	22	20	30	30	30	13	S	11	21	32	39	40	44	46	52	53	51	49	44	38	24	17	19	28	53	32.7	24	
3	31	36	39	38	41	S	43	41	43	43	43	44	45	46	47	47	48	48	46	46	46	46	45	44	48	43.3	24	
4	42	42	39	38	S	39	37	37	39	41	41	42	42	42	42	42	41	40	38	34	28	21	21	20	42	36.9	24	
5	15	16	17	S	15	18	17	18	23	32	37	42	43	47	51	51	49	49	49	48	47	46	44	45	51	35.6	24	
6	45	44	S	46	46	47	45	42	44	44	48	48	50	51	51	51	51	50	47	44	46	41	35	35	51	45.7	24	
7	36	S	35	35	35	35	36	36	37	37	37	38	37	38	38	38	38	37	35	32	27	21	20	18	38	33.7	24	
8	S	37	38	37	37	37	36	35	34	34	38	47	51	54	57	56	54	50	47	45	39	36	30	S	57	42.2	23	
9	32	27	22	19	22	20	8	26	28	35	35	37	38	37	39	41	42	43	41	38	40	40	S	42	43	32.7	24	
10	43	45	44	41	37	38	32	31	37	45	48	50	50	50	51	52	52	52	50	48	48	S	47	45	52	45.0	24	
11	44	46	45	43	38	38	38	40	42	43	46	46	46	C	C	C	C	C	47	44	S	37	33	33	47	41.6	24	
12	27	31	25	33	41	43	43	43	43	43	45	48	50	52	54	54	53	54	52	S	52	52	52	49	54	45.2	24	
13	51	51	49	49	49	46	44	47	48	40	39	40	41	41	42	41	42	41	S	42	43	42	42	42	51	44.0	24	
14	42	42	42	42	41	39	38	38	39	39	40	41	41	42	42	42	42	S	40	41	41	41	41	41	41	42	40.7	24
15	40	39	39	39	39	39	39	39	40	42	45	42	42	43	43	42	S	42	40	39	41	40	39	40	45	40.6	24	
16	39	40	40	40	39	38	35	36	37	38	39	39	41	41	42	S	39	39	39	39	41	42	42	43	43	39.5	24	
17	42	41	39	39	38	38	38	37	36	38	40	41	40	41	S	42	42	42	41	39	33	26	25	28	42	37.7	24	
18	27	22	23	22	20	19	19	31	31	32	36	39	40	S	42	42	42	42	42	41	35	34	31	27	42	32.1	24	
19	26	25	25	27	27	19	13	11	35	37	39	40	S	45	46	47	47	48	48	47	45	48	51	52	52	36.9	24	
20	52	51	51	51	50	50	51	50	50	51	52	S	51	51	51	52	52	52	52	51	51	51	51	51	51	52	51.1	24
21	51	51	50	50	49	49	48	47	48	48	S	48	48	48	48	48	47	47	47	46	45	47	48	46	51	48.0	24	
22	46	46	46	46	46	44	43	43	46	S	47	48	48	48	48	48	48	48	45	45	45	42	25	23	22	48	43.0	24
23	24	22	24	25	30	31	30	34	S	39	41	42	42	42	43	43	44	44	43	42	33	29	30	23	44	34.8	24	
24	25	24	19	18	22	23	27	S	32	35	39	44	48	50	50	50	50	50	50	48	46	40	40	36	50	37.7	24	
25	37	36	28	18	15	18	S	20	41	46	50	54	54	56	56	Y	57	57	54	52	52	50	42	39	57	42.4	23	
26	32	30	26	27	27	S	24	22	50	52	52	53	54	55	56	56	57	57	54	44	46	51	54	55	57	45.0	24	
27	54	55	54	54	S	53	54	55	55	56	57	59	61	62	64	68	71	71	67	70	70	70	70	63	54	71	60.7	24
28	57	48	43	S	28	15	27	42	53	54	54	62	65	68	68	71	70	70	68	69	70	69	63	57	71	56.1	24	
29	48	51	S	51	47	40	49	51	51	51	53	54	56	56	56	58	59	60	59	53	47	34	35	44	60	50.6	24	
30	54	S	53	53	54	52	47	47	47	49	50	51	51	52	53	53	53	53	52	47	46	48	51	50	54	50.7	24	
31	S	46	46	46	47	47	47	46	47	48	49	53	59	60	60	61	61	59	60	65	54	51	45	S	65	52.6	24	
HOURLY MAX	57	55	54	54	54	53	54	55	55	56	57	62	65	68	68	71	71	70	70	70	70	70	63	57				
HOURLY AVG	38.8	38.1	36.9	37.9	36.3	35.5	36.2	36.4	40.6	42.2	44.0	45.8	47.6	48.7	49.6	49.8	49.9	49.3	47.9	45.9	44.0	41.2	39.9	39.4				

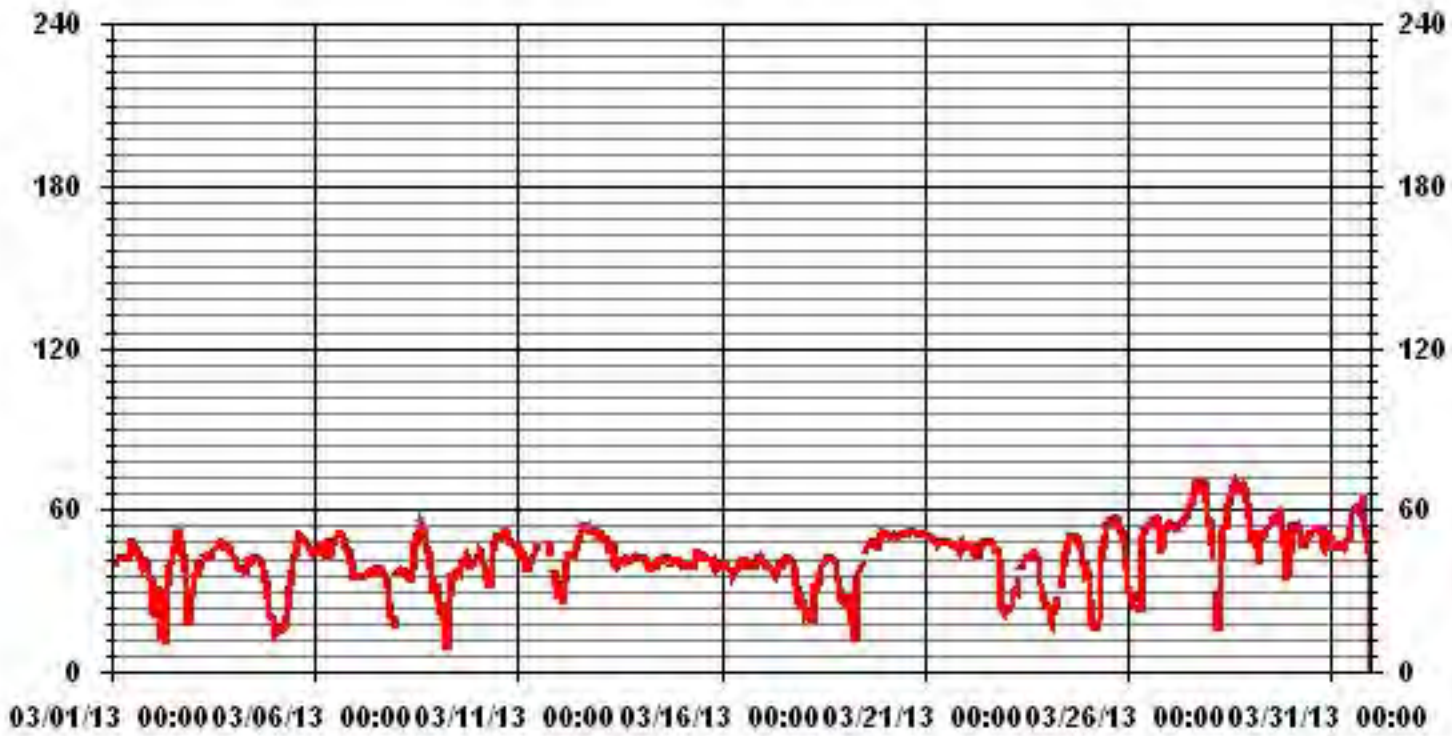
**STATUS FLAG CODES**

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:	705					
MAXIMUM INSTANTANEOUS VALUE:	71	PPB	@ HOUR(S)	16, 15	ON DAY(S)	27, 28
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	10.67					

### 01 Hour Averages



LICA  
O3\_ / WD Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 01  
Site Name : LICA  
Parameter : O3\_  
Units : PPB

Wind Parameter : WD  
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50	4.10	11.75	9.49	5.09	5.66	4.67	7.64	2.54	1.13	.99	1.98	6.37	6.37	4.39	3.96	4.67	80.87
< 110	.14	.70	.84	.99	2.97	2.26	3.68	.99	.70	.42	1.13	2.26	.70	.28	.70	.28	19.12
< 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	4.24	12.46	10.33	6.09	8.64	6.94	11.33	3.54	1.84	1.41	3.11	8.64	7.08	4.67	4.67	4.95	

Calm : .00 %

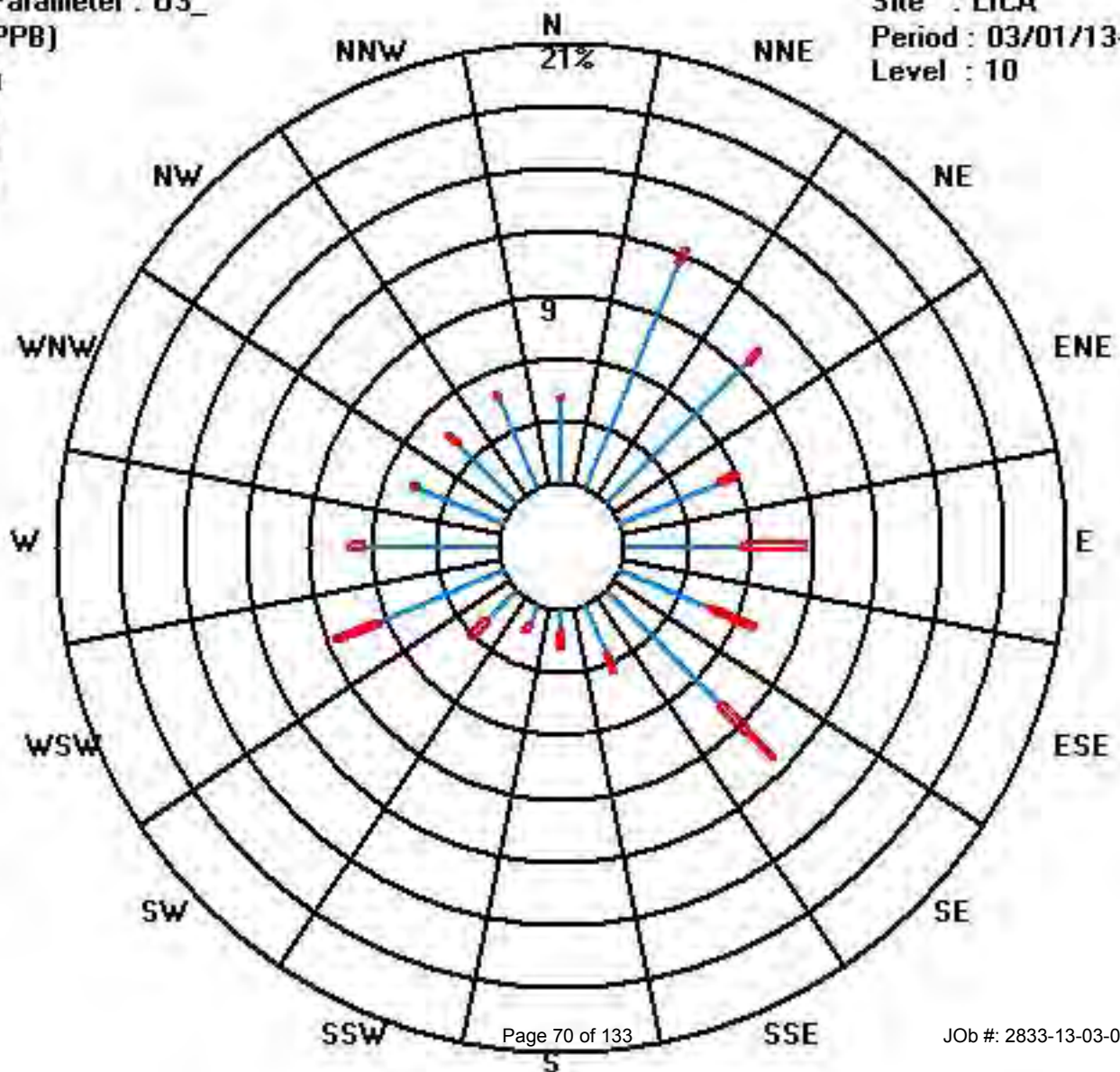
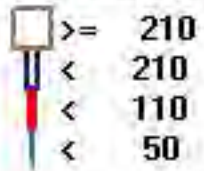
Total # Operational Hours : 706

Distribution By Samples

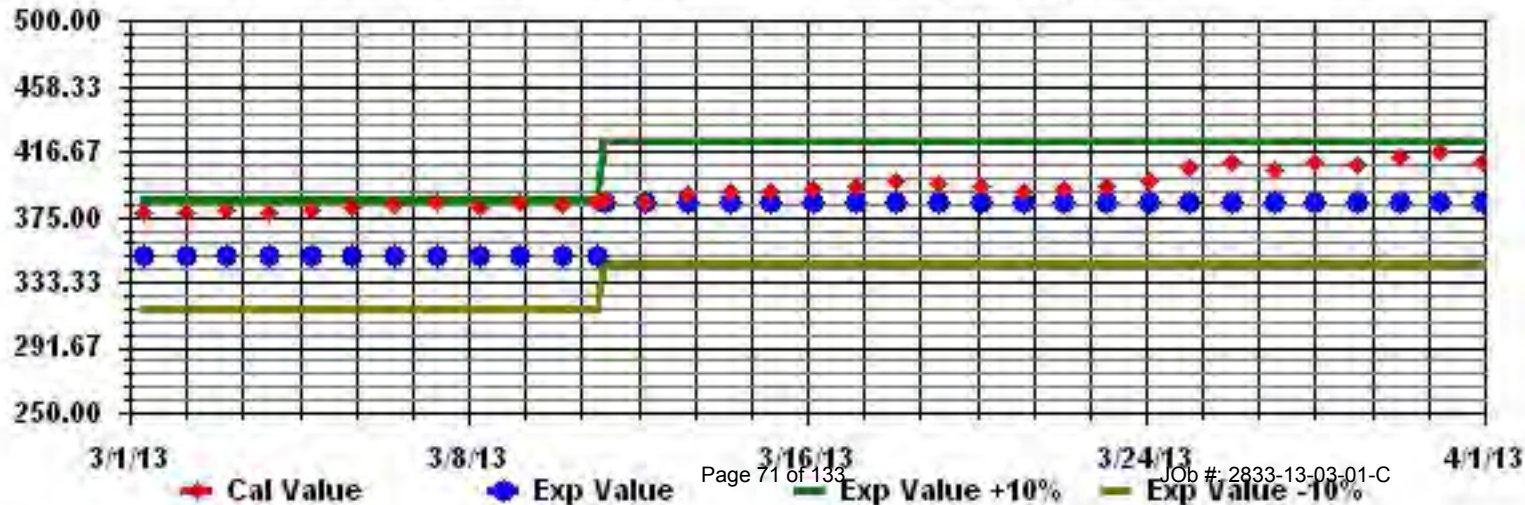
Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50	29	83	67	36	40	33	54	18	8	7	14	45	45	31	28	33	571
< 110	1	5	6	7	21	16	26	7	5	3	8	16	5	2	5	2	135
< 210																	
>= 210																	
Totals	30	88	73	43	61	49	80	25	13	10	22	61	50	33	33	35	

Calm : .00 %

Total # Operational Hours : 706



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





# Ambient Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

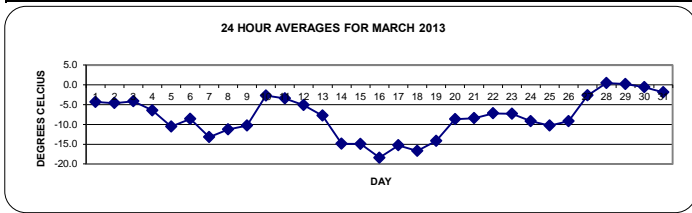
AMBIENT TEMPERATURE hourly averages (Degrees C)

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	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	-8.4	-8.7	-8.7	-8.5	-8.9	-8.7	-8.4	-7.9	-7.7	-7	-4.5	-2.9	-1.6	-0.2	1	1.6	2.4	1.5	-0.8	-0.5	-0.5	-3.3	-5.3	-7	2.4	-4.3	24	
2	2	-8.7	-10.4	-11.7	-12.4	-13.5	-14.1	-14.8	-14.3	-10.6	-5.1	-1.1	0.6	3.1	5	5.1	4.7	3.9	2.1	-1	-2.5	-2.5	-3.4	-3.9	-4.7	5.1	-4.6	24	
3	3	-5.3	-6.1	-6.1	-6.3	-6.3	-7.2	-7.9	-8	-6.7	-5.5	-4.4	-3.2	-1.7	-0.8	-0.4	-0.9	-1.2	-1.8	-2.4	-2.7	-2.9	-3.3	-3.7	-4	-0.4	-4.1	24	
4	4	-4.2	-4.5	-4.7	-5	-5.3	-5.7	-6.1	-6.5	-6.5	-6.2	-5.7	-5	-4.3	-4.2	-3.5	-3.2	-3.4	-4.1	-6.3	-9	-11.1	-12.6	-13.6	-13.9	-3.2	-6.4	24	
5	5	-14.1	-15.2	-16.4	-17.3	-18.3	-18.6	-18.9	-18.7	-18.7	-15.5	-12.2	-9.4	-6.5	-5.1	-3.4	-2.3	-2.1	-2.4	-3.6	-5.3	-7.1	-8.6	-9.5	-11.2	-11.9	-2.1	-10.6	24
6	6	-11.8	-11.8	-12.5	-12.4	-12.3	-12.7	-13.6	-14	-11.6	-9.6	-6.7	-4.8	-3.7	-2.7	-2.3	-1.5	-2.3	-4.5	-6.5	-8.7	-9.3	-9.9	-10.6	-11.1	-1.5	-8.6	24	
7	7	-11.6	-12	-13.1	-14.7	-15.3	-15.2	-15	-15.1	-15.1	-14.6	-14.2	-14.4	-12.9	-11.2	-9.6	-8.4	-7.8	-8.2	-9.8	-12.1	-14.6	-15.9	-17.5	-17.9	-7.8	-13.2	24	
8	8	-16	-14.7	-14.9	-14.9	-14.4	-14.3	-14.3	-14.2	-13.3	-12.4	-10.7	-7.8	-6.8	-5.4	-4.9	-5.7	-6.7	-7.2	-9.1	-11.5	-13.7	-12.7	-12.3	-12.5	-4.9	-11.3	24	
9	9	-12.4	-12.7	-14.1	-15.9	-18.1	-19	-19.8	-17.8	-13.5	-10.4	-8.5	-7.2	-6.5	-5.7	-5.1	-4.6	-4.4	-5.4	-7.6	-9.3	-8.1	-7.1	-6.9	-7	-4.4	-10.3	24	
10	10	-7.9	-7.7	-8.5	-10	-12.4	-13.3	-14.2	-13.9	-10.7	-2.9	0.8	3.1	4.4	4.7	4.5	4.3	3.7	4	3.5	2.1	1.3	1	0.3	-0.5	4.7	-2.7	24	
11	11	-0.7	-0.2	-1	-3	-5.6	-6.6	-6.6	-6.6	-6.2	-5.5	-4.6	-3.2	-2.1	-0.9	0.2	0.1	-0.3	-0.2	-1.3	-2.6	-3.8	-5.3	-7.4	-9.1	0.2	-3.4	24	
12	12	-10	-10.3	-11.6	-12.1	-9.7	-8.6	-9.1	-8.6	-7.8	-7.1	-3.1	-0.2	1.4	1.2	0.7	0.6	0.3	-1.2	-2.5	-3.5	-4.2	-5.1	-6	-6.5	1.4	-5.1	24	
13	13	-6.5	-6.9	-6.9	-7.2	-7.2	-7.2	-7.2	-6.6	-6.5	-8	-8.6	-8.4	-8.2	-7.7	-7.3	-7.2	-7.3	-7.8	-7.6	-7.4	-8	-9	-10.3	-11.4	-6.5	-7.8	24	
14	14	-12.3	-13.3	-14	-14.7	-15.7	-16.9	-17.9	-18.4	-18.2	-17.6	-16.6	-15.5	-14.6	-13.8	-12.8	-12.6	-12.5	-13.1	-13.9	-14.3	-14.1	-14.4	-14.8	-15.2	-12.3	-14.9	24	
15	15	-15.6	-16.1	-16.6	-17.1	-17.6	-17.4	-17.4	-17.4	-16.8	-15.8	-14.7	-13.5	-12.7	-12.1	-12	-12	-11.6	-12.4	-13	-13.3	-14.3	-15	-16.8	-17.5	-11.6	-14.9	24	
16	16	-18.2	-18.8	-19.9	-21.2	-21.8	-22	-21.8	-22	-21.1	-20.3	-19.5	-18.2	-16.9	-16.3	-16	-16	-16.3	-16.3	-16.5	-16.6	-16.5	-16.4	-16.5	-16.6	-16.0	-18.4	24	
17	17	-16.6	-16.8	-16.9	-16.8	-17	-17	-17.8	-17.9	-16.6	-15	-13.3	-11.8	-10.8	-10.4	-10.3	-10.3	-10.5	-10.7	-12	-14.9	-18.2	-20.1	-21.7	-23.3	-10.3	-15.3	24	
18	18	-24.4	-25.2	-26	-25.9	-24.3	-23.9	-23	-20.6	-18.9	-16.7	-14.4	-11.2	-9.9	-9	-8.1	-9.1	-9	-8.9	-9.9	-11.7	-14.6	-17.3	-18.9	-18	-8.1	-16.7	24	
19	19	-20.5	-22.2	-23.6	-24.7	-25.7	-26.4	<b>-26.9</b>	-23.4	-17.9	-14.5	-12.2	-10.4	-7	-5.6	-4.8	-4.4	-4.4	-4.9	-6.6	-8.2	-9.7	-11.1	-12	-12.5	-4.4	-14.2	24	
20	20	-12.7	-13.1	-13.6	-13.8	-14.2	-14.4	-13.9	-13	-11.8	-9.7	-7.1	-5.5	-4.2	-3.3	-3.2	-4.1	-4.7	-5.1	-4.9	-6.3	-7	-7.4	-7.6	-7.9	-3.2	-8.7	24	
21	21	-8.1	-8.2	-8.4	-8.6	-8.4	-8.6	-8.9	-8.9	-8.8	-8.8	-9.5	-8.8	-8.3	-8.2	-8.1	-7.8	-7.9	-7.9	-7.9	-8	-8	-8	-8.2	-7.8	-8.4	-8.4	24	
22	22	-8.2	-8.3	-8.4	-8.6	-8.8	-9	-8.8	-8.4	-7.7	-7.2	-6.9	-6.2	-5.7	-5.8	-4.9	-4.6	-5.5	-5.6	-6.2	-6.9	-7.2	-7.6	-8	-8.3	-4.6	-7.2	24	
23	23	-8.7	-9	-9.3	-9.7	-9.6	-9.4	-10	-8.8	-7.7	-7.2	-6.4	-4.5	-3.6	-3.2	-2.5	-2.5	-2.4	-2.5	-4	-7	-9.3	-11.6	-13	-12.6	-2.4	-7.3	24	
24	24	-13.7	-15.3	-15.4	-14.9	-14.1	-13.9	-13.9	-13.4	-11.8	-9.1	-6.8	-5.1	-3.5	-2.2	-1.6	-2	-2.6	-4.4	-6.6	-8.5	-11.6	-13.5	-15	-1.6	-9.2	24		
25	25	-16.3	-17.5	-18.7	-19.8	-20.8	-21.6	-21.7	-18.5	-13.7	-10.6	-7.5	-5.2	-3.5	-2	-0.9	-0.1	-0.3	-0.6	-1.9	-4.6	-6.4	-9.6	-11.5	-13.2	-0.1	-10.3	24	
26	26	-14.6	-16	-17.1	-18.4	-19.5	-20.2	-20.4	-16.6	-12.4	-10	-7.3	-5.2	-3.4	-1.6	-0.5	-0.7	-0.7	-0.6	-2.2	-4.7	-6.6	-7.5	-7.6	-7	-0.5	-9.2	24	
27	27	-8.2	-8.9	-9.2	-9.6	-9.6	-10	-10.1	-9.1	-7.7	-5.6	-2.8	0.1	2.8	5.1	6.1	6.5	5.8	5.2	3.1	0.8	-0.3	-1	-3	-4.3	6.5	-2.7	24	
28	28	-5.4	-6.6	-7.5	-8.2	-8.6	-9.3	-9.4	-5.7	-2.9	-0.5	2.6	4.2	6.1	8.5	10.3	<b>11.2</b>	10.3	9.6	6.8	4.5	3.1	1.5	-1.4	-2.7	<b>11.2</b>	<b>0.4</b>	24	
29	29	-3.3	-3.7	-4.4	-5	-5	-4.9	-3.7	-0.5	0	0.5	1.3	2.4	3.8	5	5.8	5.9	4.9	4.9	3	0.9	-0.1	-0.7	-1.1	-1.3	5.9	0.2	24	
30	30	-0.1	-0.2	0.7	0.4	-0.7	-1.7	-2.5	-2.2	-2.4	-2.1	-1.6	-1	0	1.1	1.4	1.8	1.5	1.2	0.6	-0.3	-0.7	-1	-1.8	-3.5	1.8	-0.5	24	
31	31	-4.6	-5.1	-5.7	-6.3	-6.3	-6	-6.1	-5.4	-3.9	-2.9	-0.8	0.3	1.4	2.3	2.3	3.2	2.5	1.9	1.9	0.9	0	-1.7	-2.8	-3.4	3.2	-1.8	24	
HOURLY MAX		-0.1	-0.2	0.7	0.4	-0.7	-1.7	-2.5	-0.5	0.0	0.5	2.6	4.2	6.1	8.5	10.3	11.2	10.3	9.6	6.8	4.5	3.1	1.5	0.3	-0.5				
HOURLY AVG		-10.6	-11.1	-11.7	-12.3	-12.7	-13.0	-13.2	-12.3	-10.7	-9.0	-7.2	-5.7	-4.3	-3.3	-2.7	-2.6	-2.8	-3.4	-4.7	-6.2	-7.2	-8.3	-9.3	-9.9				

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

24 HOUR AVERAGES FOR MARCH 2013

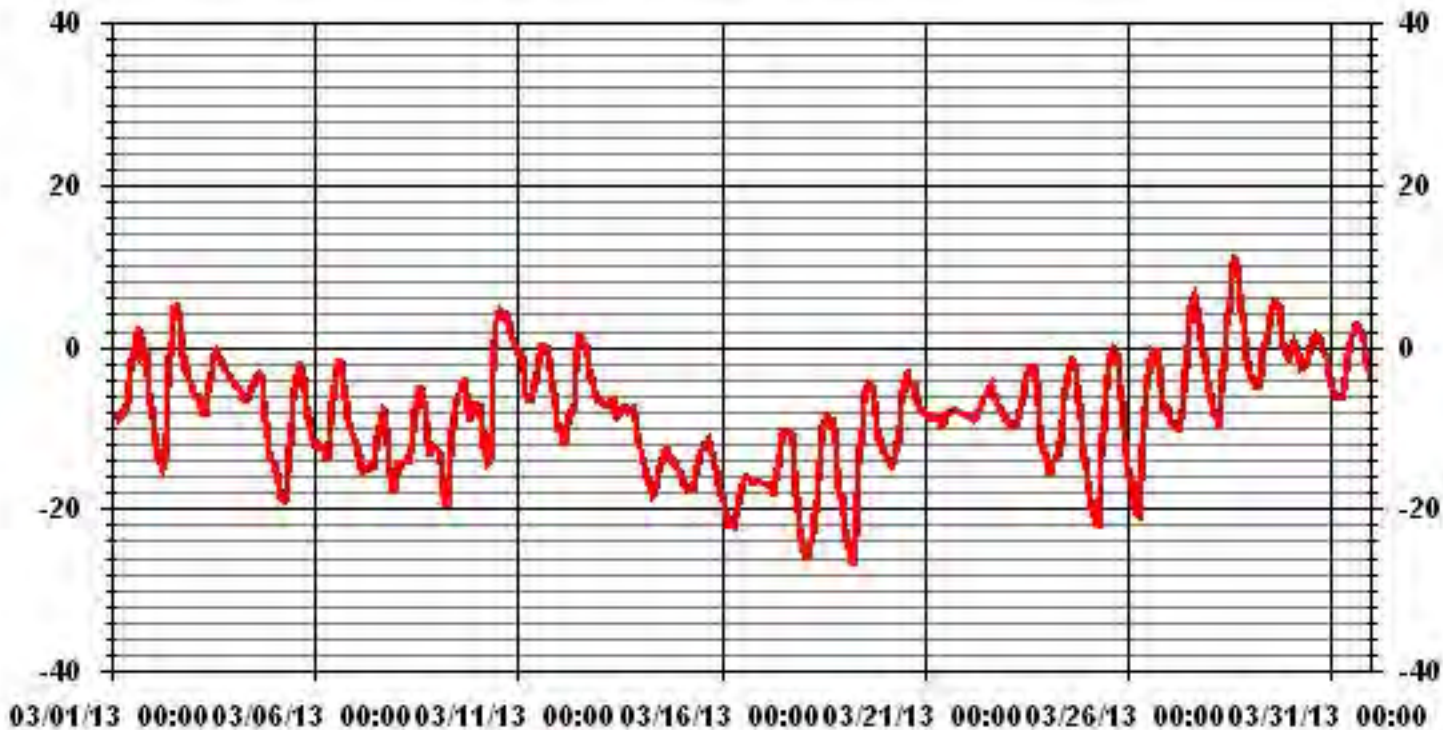


MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-26.9 °C	@ HOUR(S)	6	ON DAY(S)	19
MAXIMUM 1-HR AVERAGE:	11.2 °C	@ HOUR(S)	15	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	0.4 °C			ON DAY(S)	28
				VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	6.78		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	-8.11	°C

\* Outside detection limits of sensor.

# 01 Hour Averages



# Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

RELATIVE HUMIDITY hourly averages (%)

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	85	85	83	81	83	83	82	81	79	76	65	59	56	53	52	52	51	56	66	66	67	75	80	83	85	70.8	24
2	2	85	86	87	87	86	84	82	82	82	78	63	54	43	38	35	35	38	46	61	65	64	68	70	72	87	66.3	24
3	3	73	75	73	71	66	69	75	78	78	78	76	73	69	64	62	63	60	66	72	70	69	73	79	83	83	71.5	24
4	4	82	85	82	81	79	79	79	80	78	71	68	65	62	61	56	55	56	58	67	75	80	82	83	82	85	72.8	24
5	5	81	81	81	80	79	78	77	80	83	83	77	68	62	55	48	47	45	47	53	58	65	69	74	77	83	68.7	24
6	6	80	81	82	79	77	79	81	82	73	65	55	49	46	43	43	41	45	52	60	69	73	78	79	79	82	66.3	24
7	7	77	75	75	75	73	71	69	69	68	66	64	60	57	55	52	49	46	47	52	60	67	71	73	74	77	64.4	24
8	8	73	68	62	65	68	74	77	79	80	79	78	67	62	57	56	59	66	68	76	81	83	83	82	82	83	71.9	24
9	9	82	82	84	82	80	79	78	80	81	79	71	65	62	58	55	51	48	50	59	65	60	58	62	64	84	68.1	24
10	10	65	63	68	74	79	82	82	81	74	57	50	47	45	46	47	45	49	40	34	40	49	58	68	74	82	59.0	24
11	11	72	67	80	75	64	65	69	69	67	62	56	52	50	47	45	48	53	50	55	60	64	68	76	80	80	62.3	24
12	12	83	84	85	86	85	81	82	80	75	73	61	53	48	49	52	53	52	54	55	61	65	68	73	75	86	68.0	24
13	13	75	76	77	78	78	78	78	77	81	81	77	74	72	71	68	71	75	76	73	71	77	85	81	78	85	76.2	24
14	14	76	74	72	71	70	69	70	69	66	63	60	55	53	50	46	44	43	45	47	48	46	45	47	46	76	57.3	24
15	15	52	66	75	77	78	78	78	78	77	75	70	67	66	63	62	62	63	72	77	79	77	77	78	74	79	71.7	24
16	16	74	73	69	67	68	69	68	59	58	54	49	48	52	55	66	70	71	73	74	73	71	70	70	74	74	65.4	24
17	17	70	72	77	78	78	78	78	77	72	68	61	56	53	52	50	49	49	48	53	60	70	75	74	74	78	65.5	24
18	18	74	74	72	72	71	72	73	74	74	72	72	69	63	59	55	63	55	49	50	54	61	68	73	72	74	66.3	24
19	19	75	76	76	74	74	73	72	70	70	69	62	57	54	53	49	46	47	46	50	55	60	65	70	74	76	63.2	24
20	20	76	76	76	76	76	76	74	72	69	67	65	60	56	54	53	55	56	58	61	61	61	60	60	60	76	65.0	24
21	21	63	68	69	70	65	66	67	64	63	67	75	78	73	72	74	73	74	78	80	81	85	88	87	88	88	73.7	24
22	22	88	88	87	87	87	87	87	86	83	77	75	74	70	65	60	64	81	86	88	88	87	87	87	87	88	81.5	24
23	23	86	86	86	86	86	86	85	79	78	75	70	62	58	54	51	51	50	49	59	71	79	81	82	81	86	72.1	24
24	24	82	82	81	81	86	85	85	84	84	79	68	58	53	48	46	46	47	48	54	61	68	75	78	80	86	69.1	24
25	25	81	80	78	77	76	76	75	73	73	69	61	52	47	42	38	36	37	38	45	52	56	68	74	77	81	61.7	24
26	26	81	80	80	78	77	77	76	71	74	69	61	55	49	44	42	45	44	43	50	60	62	64	69	68	81	63.3	24
27	27	72	73	75	78	79	79	78	74	67	61	53	47	44	41	39	38	41	45	54	63	67	70	77	81	81	62.3	24
28	28	83	85	86	86	87	87	86	76	72	64	55	51	46	40	34	32	37	39	49	57	63	69	80	84	87	64.5	24
29	29	85	86	87	89	89	88	82	61	57	53	48	42	34	29	28	32	37	39	46	59	66	71	73	72	89	60.5	24
30	30	67	70	56	43	43	47	49	44	41	41	40	37	33	30	30	28	28	30	32	39	43	44	61	86	86	44.3	24
31	31	86	82	83	85	83	83	85	83	77	74	66	64	61	59	60	56	60	65	66	69	82	87	89	91	91	74.8	24
HOURLY MAX		88	88	87	89	89	88	87	86	84	83	78	78	73	72	74	73	81	86	88	88	87	88	89	91			
HOURLY AVG		76.9	77.4	77.5	77.1	76.5	76.7	76.8	74.9	72.7	69.3	63.8	58.7	54.7	51.7	49.8	50.2	51.7	53.5	58.6	63.6	67.4	71.0	74.5	76.4			

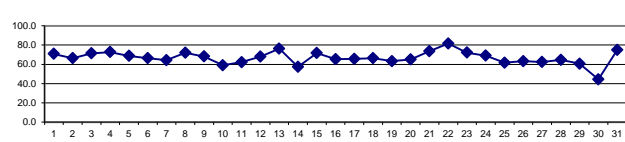
STATUS FLAG CODES

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

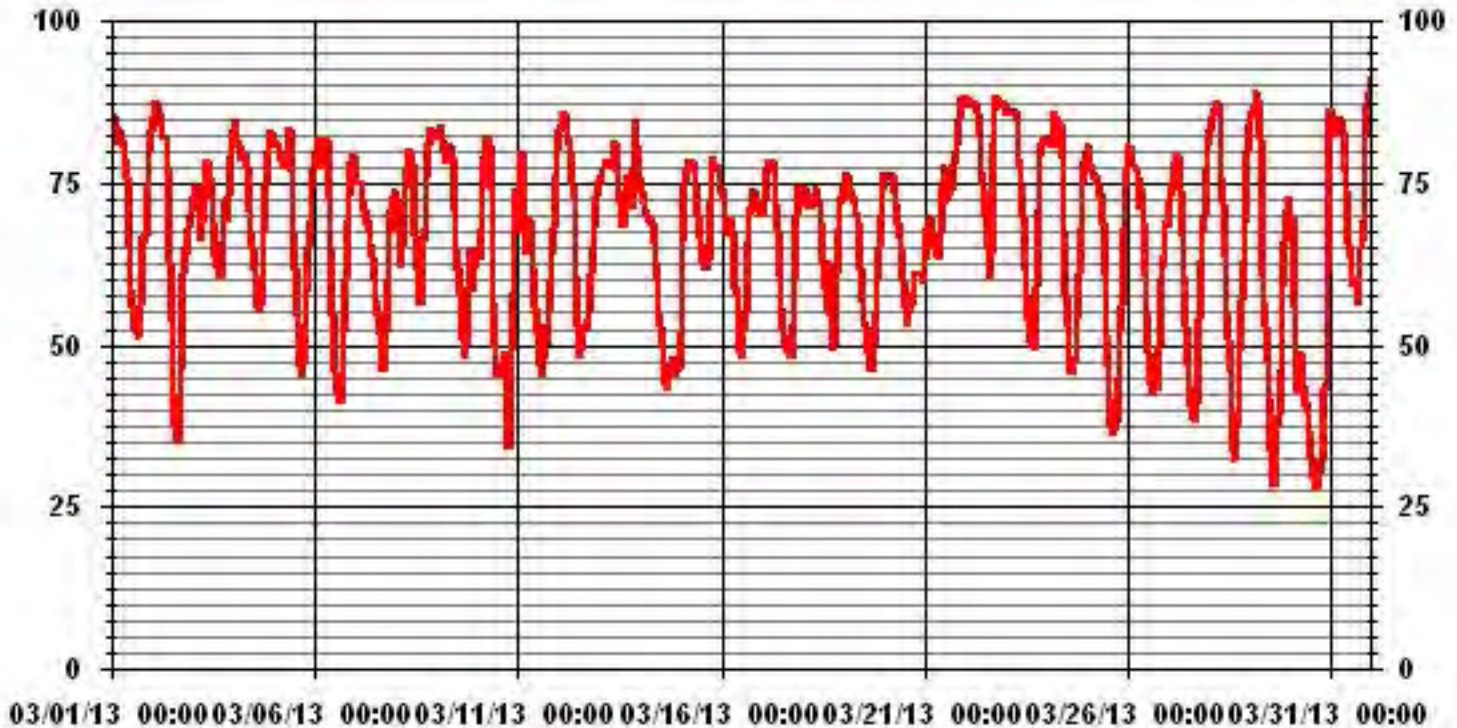
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	91	%	@ HOUR(S)	23	ON DAY(S)	31
MAXIMUM 24-HR AVERAGE:	81.5	%			ON DAY(S)	22
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	14.11		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	66.72	%	

24 HOUR AVERAGES FOR MARCH 2013



### 01 Hour Averages



# Vector Wind Speed

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

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

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	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	6.8	4.9	6.6	9.7	10.1	10.9	6	3.8	3.2	4.2	3.4	5.6	6.5	6.7	7.7	5.7	3.2	1.5	3	4.8	5	3.7	2.5	0.2	10.9	2.7	24	
2	0.4	1.6	2.9	4	0.8	0.4	0.7	0.9	0.9	3.1	2.4	4.7	4.5	5.1	5.2	4.9	4.1	1.4	0.9	0.4	1.2	1.8	0.2	2.2	5.2	1.7	24	
3	1.4	2.4	2.2	3.2	3.8	4.6	4.6	3	6.2	4.8	6.4	8.2	10.1	11.9	9.5	9.6	12.5	9.9	9.8	9.7	8.4	7.6	6.7	5.5	12.5	6.5	24	
4	5.7	6.9	6.5	5.4	6.3	2.8	3.4	4.7	8.7	7.1	6.3	5.9	5.3	6	4	5	4.4	3.8	0.9	0.2	0.2	0.6	0.6	0.7	8.7	2.8	24	
5	0.7	0.3	0.2	0.8	0.2	0.6	0.6	1.3	1	1.7	4.2	5.1	8.2	7.7	9	8.8	6.4	6	3.5	1.8	2.5	2.7	0.8	2.7	9.0	3.2	24	
6	1	1.2	1.4	2.1	2	2.2	1.6	2.1	3.5	3.5	3.6	1.1	5.7	4.7	5.2	3.7	3.8	4.6	1.9	2.6	5.8	8.9	8.7	9.1	9.1	3.8	24	
7	8.1	8.7	8.7	7.9	7.6	6.9	7.8	7.1	7.3	7.8	8.4	9.8	7.4	8.1	8.3	6.7	5.7	3.8	2.4	1.2	0.7	1.6	0.8	1.4	9.8	6.0	24	
8	4.3	5.7	6.6	7.7	6.1	7.1	7.8	6.9	7.4	8.7	7.6	5.4	7.4	7.1	7.1	8.2	8.2	4.1	1.2	1	0.6	0.4	0.5	0.8	8.7	5.3	24	
9	0.9	1.8	0.4	0.9	1.1	0.8	1	2.4	2.2	3	2.4	0.7	1	6.7	7.3	3.6	4.6	3.5	1	0.7	3.3	1.8	4.2	2.2	7.3	2.4	24	
10	4.8	5.1	3.2	1.3	1	1.7	0.3	2.2	2.5	5.9	9.9	9.2	11.8	12.8	15.6	12.4	10.9	9.8	13.3	10.6	9.8	11.7	13.1	9.7	15.6	7.9	24	
11	8.6	11.2	10.1	15.9	19.1	14.5	11.7	14.4	15.3	14.8	13.6	8.5	8.1	11.3	7.8	9.1	8.3	10.8	9.2	6.1	5.3	3.7	1.3	0.5	19.1	10.0	24	
12	1.6	2.4	1.3	1.4	4.4	9.2	11.3	9.7	9.9	8.2	5	9.3	10	11.7	15.3	13.1	10.3	10.5	10.8	9.8	6.9	5.5	2.2	2.1	15.3	7.6	24	
13	3.7	3.6	4.5	2.5	2.2	3.3	4.1	6.2	7.8	9.6	10.2	10.1	11.7	11.3	10.1	8.2	7.7	6.7	6.4	5.9	6.9	7.1	7.2	7.9	11.7	6.9	24	
14	9.2	11.2	10.3	9.1	10	10.6	8.7	10.4	10.7	10.4	9.6	11	10	9.5	8.4	9	9.5	7.4	7.3	7.9	7.6	9	8.6	8.8	11.2	9.3	24	
15	8.4	7.7	8	6	7.3	5.8	6.5	6.9	6	5.4	5	4.3	4.4	3.6	4.2	5.3	3.3	4.3	2.9	3.4	5.3	2.5	3.5	3.9	8.4	5.2	24	
16	3.1	5.5	6.3	4.1	4.4	2.4	3.7	4.4	7	7.4	7	6.3	6.3	6.1	7.6	7.2	8.3	7.3	8.1	6.6	6.2	6	6.2	5.2	8.3	5.9	24	
17	4.2	3.9	4.3	2.7	2.6	2.6	3.8	3.3	3.5	6.5	4.9	3.9	5.1	6.9	9.9	10.1	8.9	6.8	3.6	4.4	0.7	0.3	0.6	1.1	10.1	4.4	24	
18	0.4	0.4	0.8	1.1	1.1	1	0.5	1	3.2	4	3.9	5.5	6.4	9.6	9.8	9.4	9.8	10.8	9.1	5.9	4.9	2	0.9	1.8	10.8	4.3	24	
19	1.4	0.7	0.6	0.8	0.5	0.7	0.5	1.7	2.8	4.4	5.3	5	6.7	7.2	8.2	6.8	6.9	5.8	5.2	6	6.5	9.5	8.7	7.8	9.5	4.6	24	
20	7.2	8.7	9	8.9	9.1	10.1	10.9	12.7	12.5	12.9	14.7	15.7	15.5	18.9	16.3	16.2	16.7	15.4	11.7	13.5	13.2	13.2	12.4	12.4	18.9	12.8	24	
21	13.7	13.1	12.6	12.4	12.5	11.9	11.9	12.5	14.1	13.1	12.2	11.7	12	11.5	8.8	8.1	7.2	5.5	3.6	1.4	2.9	3.8	2.4	2.2	14.1	9.2	24	
22	1.9	2.6	2.9	3	2.8	3.1	2.1	3.5	4.4	2.8	3.5	3.1	5.5	6	3.8	1.5	3	0.9	3.7	5.3	4.9	3.9	3.2	2.5	6.0	3.3	24	
23	2.7	2.8	2.3	2.2	3.4	2.3	1.9	2.5	4.8	6.5	4.8	3.8	3.8	5	3	2.7	2.5	1.2	3.7	4.1	2.5	0.7	0.9	0.6	6.5	2.9	24	
24	1	0.7	0.8	0.9	0.9	1.2	1.3	1.5	0.9	2.1	2.7	5.3	6.1	6.1	6.8	7.1	7.6	6	5.4	4.5	3.3	0.6	0.5	1	7.6	3.1	24	
25	0.8	0.9	1	0.9	0.8	0.8	1	2.2	2.8	3.8	3.2	4.1	4	5.1	4.6	4.2	5.2	3.5	1.8	1.9	4.5	1.4	0.6	0.5	5.2	2.5	24	
26	0.8	0.6	1.1	0.8	0.8	0.8	0.5	0.7	3.7	4.6	5.5	7.7	6	5.6	4.7	6.2	5.3	3	1.8	1.1	2.4	1.8	2.5	3	7.7	3.0	24	
27	5	5.9	6.3	4.8	6.6	5.8	4.4	6.3	5.1	4.9	2.2	4.4	2.6	4.2	3.4	6.9	6.7	5.8	3.1	3.5	4.5	3.2	0.7	0.6	6.9	4.5	24	
28	0.9	0.3	0.4	0.7	0.5	0.9	0.9	1.2	3.3	3.9	3.2	5.2	3.7	1.8	2.5	7.3	6.9	4.2	3.5	3.9	2.7	1.7	0.8	1.1	7.3	2.6	24	
29	1.4	3.4	2.2	3.5	1.8	0.6	2.6	7.2	7	7.2	7.2	7.1	6.4	4.6	0.9	6	5.2	5.6	1	1	0.4	1	0.9	2.6	7.2	3.6	24	
30	5.2	4.8	8	9.4	10.1	9	9.5	12.1	12.9	8.9	7.4	7.2	5.7	4.3	5.1	3.3	4.2	4.4	3.1	4.3	4.5	2.6	3.5	5.1	12.9	6.4	24	
31	5.3	5.2	4.7	3.7	3.6	5.5	4.9	3.8	4.2	6.4	2.9	3.1	4.3	1.1	4.8	5.4	8.1	9	4.3	2.3	1.7	1.3	2.8	3.6	9.0	4.3	24	
HOURLY MAX	13.7	13.1	12.6	15.9	19.1	14.5	11.9	14.4	15.3	14.8	14.7	15.7	15.5	18.9	16.3	16.2	16.7	15.4	13.3	13.5	13.2	13.2	13.1	12.4				
HOURLY AVG	3.9	4.3	4.4	4.4	4.6	4.5	4.4	5.1	6.0	6.4	6.1	6.4	6.8	7.4	7.3	7.2	6.9	5.9	4.7	4.4	4.4	3.9	3.5	3.5				

### STATUS FLAG CODES

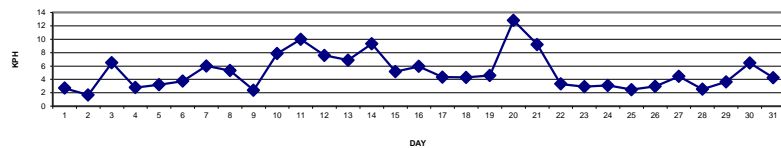
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION: November 28, 2012

### MONTHLY SUMMARY

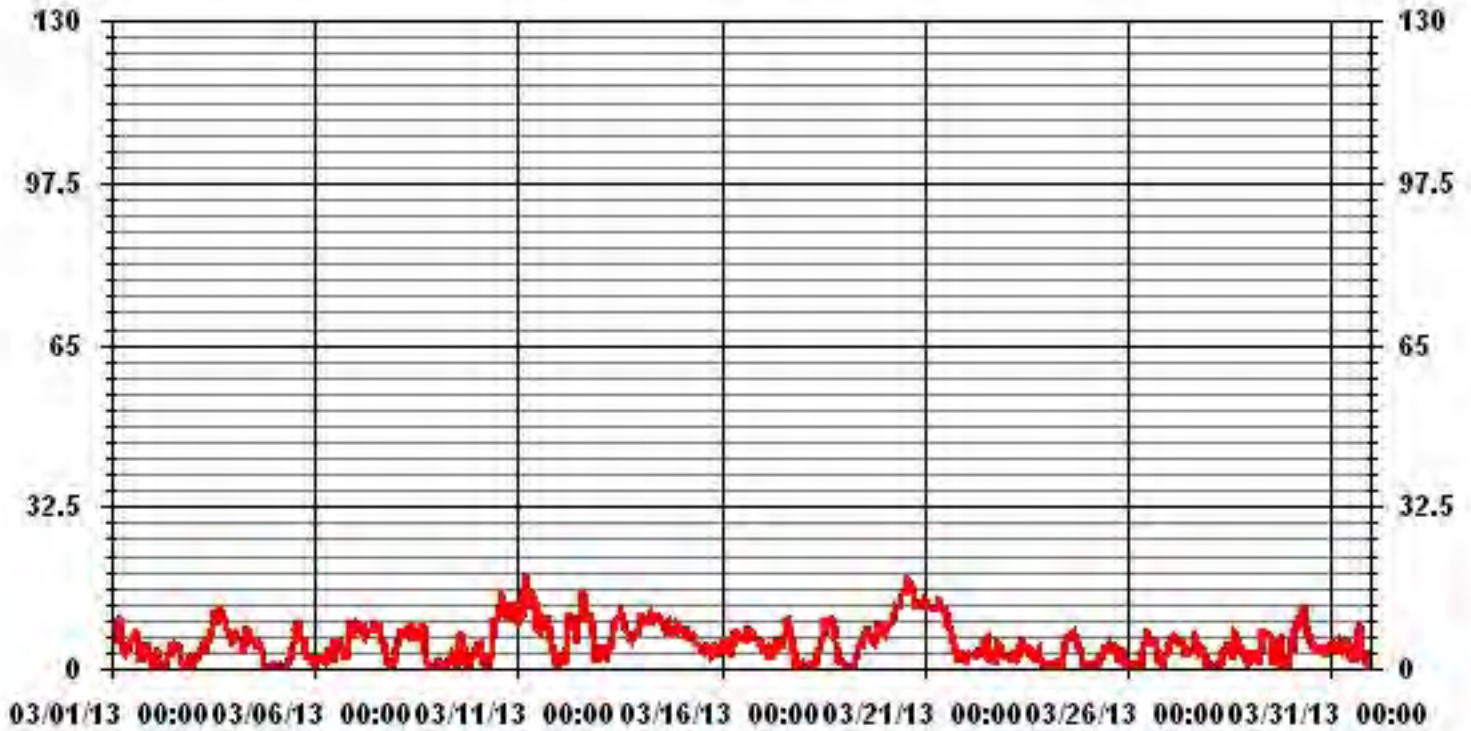
MAXIMUM 1-HR AVERAGE:	19.1	KPH	@ HOUR(S)	4	ON DAY(S)	11
MAXIMUM 24-HR AVERAGE:	12.8	KPH			ON DAY(S)	20
CALMS (≤ 0 KPH)	1.34	%	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	3.70		MONTHLY AVERAGE:	5.27	KPH	

24 HOUR AVERAGES FOR MARCH 2013





### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

## 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	
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.
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.	
DAY																										
1	10.4	9	11.7	15	14.9	16.6	12.9	6.9	5.8	8.5	7.8	8.7	9.6	12.2	11.9	9.2	7.1	4.2	6.2	7.1	6.9	4.9	4.6	3.9	16.6	
2	6.3	5.8	6.3	5.5	4.2	3.4	3.4	2.2	4.7	5.9	6	6.6	7.3	8.1	10.4	7.8	8.4	3.9	1.5	3.5	2.8	3.3	4.3	4.2	10.4	
3	2.9	3.7	3.7	6.2	6.3	7.5	6.5	5.2	10	8.4	11.6	13.9	18	19.5	16.7	16	20	14.5	16.3	15.1	12.5	12.2	9.8	8.4	20	
4	8.5	10.4	8.6	8.5	9.4	5.6	7.1	8	14.2	11.3	10.4	11.3	10.6	9.3	7.3	8.7	6.7	5.7	2.5	2.4	3	2.8	2.4	4.4	14.2	
5	2.3	1.6	2.9	5	2.7	2.2	2	2.8	2.8	5.3	7.7	12.4	12.5	12.6	13	12.8	11.5	11.8	6.8	4.4	4	4.6	3.7	4.9	13	
6	3.6	4.1	4	5.4	5.7	6.1	3.3	4.9	6.3	6.4	8.2	9.2	11.8	10.5	9.6	8.8	8	7.1	5	9.4	11.8	14	14.1	13.2	14.1	
7	14.3	12.6	12.9	11.2	12.4	10.5	11.5	10.6	11.2	12.2	15.9	15.8	11.5	14.1	12.3	11.8	11	7.2	3.5	3	2.8	2.5	0.9	3.6	15.9	
8	8.8	8.6	8.2	10.6	8.2	9.4	10.1	9.7	10.9	13.4	12.5	15.8	13.9	14.3	12.4	15.9	14	10.7	3.5	3.9	2.5	2.8	2.2	2.3	15.9	
9	0.9	3.5	1.9	1	2.9	2.4	2.9	4.6	4.6	8.4	7.2	5.7	6.8	13.2	12.4	11	11.7	9.8	2.8	3	6.6	5.1	6.8	5.3	13.2	
10	7.5	7.8	7.6	3.5	3.3	3.6	3.2	4.5	4.7	12.7	15.7	14.6	18.4	20.5	24.7	20.5	16.3	19.4	20.5	19	16.4	21.2	19.3	15.3	24.7	
11	12	16.9	20.7	23.8	<b>30.6</b>	27.9	18.1	21.6	24.1	22.1	24.3	16.5	15.1	16.4	12.8	15	17.8	16.3	15.6	7.5	7.4	6.3	3.5	8.6	<b>30.6</b>	
12	7.1	8	3.9	5.3	6.8	14.1	15.1	15.6	15	13.6	9.2	17.8	16.4	20.9	21.9	22.6	15.9	17.2	16.8	14.2	9.1	8.3	5.8	4.9	22.6	
13	6.6	7.3	8.6	4.6	4.2	6.7	7	9.7	12.5	16.2	14.2	15.5	18	17	15.1	12.7	12.5	9.9	10.4	10.3	10.5	11.8	12.8	10.9	18	
14	16.2	17	15.4	15	16.6	17.5	14.6	14.8	17.7	15.7	15.6	16.9	15.8	14.7	14.9	14	15.6	11.9	10.9	11.4	12.4	15.2	12.8	15.2	17.7	
15	13.9	14.3	14.1	9.7	10.4	8.6	10.2	10	8.8	10.7	10.8	10.7	7.9	8.2	8.2	8.9	7.2	7	5.7	9	9.4	3.8	6.1	5.7	14.3	
16	5.3	9.6	9.7	7.9	7.3	6.3	6.8	9.2	10.3	13.4	12.9	10.8	11.6	10.9	13.2	11.5	13.5	11.9	12.3	11.3	11.2	10.5	10.8	8.3	13.5	
17	7.9	6.4	7.3	4.4	3.9	5	4.8	4.7	6.5	10.8	11.8	10.1	13.8	11.2	17.7	20	15.3	10.5	6.2	6.1	3.7	1.5	1.3	3.2	20	
18	2.4	2.5	2.7	2.6	3.4	1.6	4.1	3.9	5.6	7.5	6.9	8.9	11.9	14.6	16.5	14.6	15.1	14.8	14	9.7	6.5	4.8	8.3	6.8	16.5	
19	3.8	2.9	1	3.3	2.3	2.3	2.5	3.4	6.9	9.1	9.9	7.4	10.1	12.8	14.5	12.1	11.3	9.3	8.5	8.9	10.5	13.3	13	11.7	14.5	
20	10.5	13.1	12.4	13.3	13.5	15.2	18	19.8	18.2	18.5	21.7	24.3	24.7	27.9	25.1	22.4	25.7	26.7	17.2	22.9	18.6	18.1	18	17.5	27.9	
21	19.8	19	18.4	18.5	19.4	18.7	20	20.1	21.6	20.9	18.2	17.8	17.6	17.9	14.4	13.7	13.3	10.2	7.7	3.2	5.4	6.8	5.1	3.5	21.6	
22	3.4	4.1	4.8	5.4	5.1	4.2	4.1	6.2	7.4	4.5	6.8	7.1	8.4	10.4	8	5.1	5.8	4.9	7.6	8.9	6.7	6.4	5	4	10.4	
23	4.6	5.9	3.5	3.5	6	5	3.5	6	8.2	9.2	8.2	8.7	8.6	10.2	8.1	9.6	6.4	5.4	5.3	4.8	4.1	3.3	1.9	3.5	10.2	
24	4	2.3	2.4	2.3	2.3	3	2.7	2.9	3.1	5.9	6.3	8.8	9	9.8	11.7	10.5	11.4	9.7	9	8	6.2	3	2.4	2.6	11.7	
25	2.6	2.6	2.4	2.4	2	0.8	2.5	3.7	5.8	7.1	6.4	7	7.6	8.6	7.9	7.9	8.6	7.4	3.1	4.3	9	4.8	2.9	2.5	9	
26	2.5	0.9	2.3	1	1	2.3	2.7	3.1	7	8.9	11.3	13.2	11.5	9.6	9	9	8.7	5	4.2	4.3	4.8	5	9.1	10.5	13.2	
27	8.1	8.8	10	7.7	9.7	8.7	8.9	14.3	12.5	9.2	9.2	8.7	10.9	10.3	9.6	12.4	10.3	8.5	6.2	7.7	6.6	6.1	1.7	2.8	14.3	
28	2.4	1.6	3	3.9	3.3	1.1	0.9	3	6.4	7.2	6.8	8.3	8.2	4.9	6.2	12.2	10.5	9.4	6	6.8	7.5	3.8	4.6	3.6	12.2	
29	3.3	5.2	4.7	5.4	4.7	1.9	7.9	10.6	11	13.6	13.5	9.9	10.5	10.3	6.7	11.1	8.6	9.6	3.4	2.3	2.8	3	0.9	6.1	13.6	
30	7.1	6.8	12	15.8	14.1	12.4	14.6	18.4	20.1	19	13.5	10.9	9.3	10.4	11.1	9.4	7.8	7.6	5.9	7.7	7.2	7.8	7.8	11.2	20.1	
31	8.7	8.5	8.6	8.3	5.8	8.3	7	6.9	8.8	11.1	8.7	9.4	9.2	7.5	9.4	11.1	12.9	13	7.7	10.3	7.2	7.9	5.1	5.1	13	
PEAK	19.8	19.0	20.7	23.8	30.6	27.9	20.0	21.6	24.1	22.1	24.3	24.3	24.7	27.9	25.1	22.6	25.7	26.7	20.5	22.9	18.6	21.2	19.3	17.5		

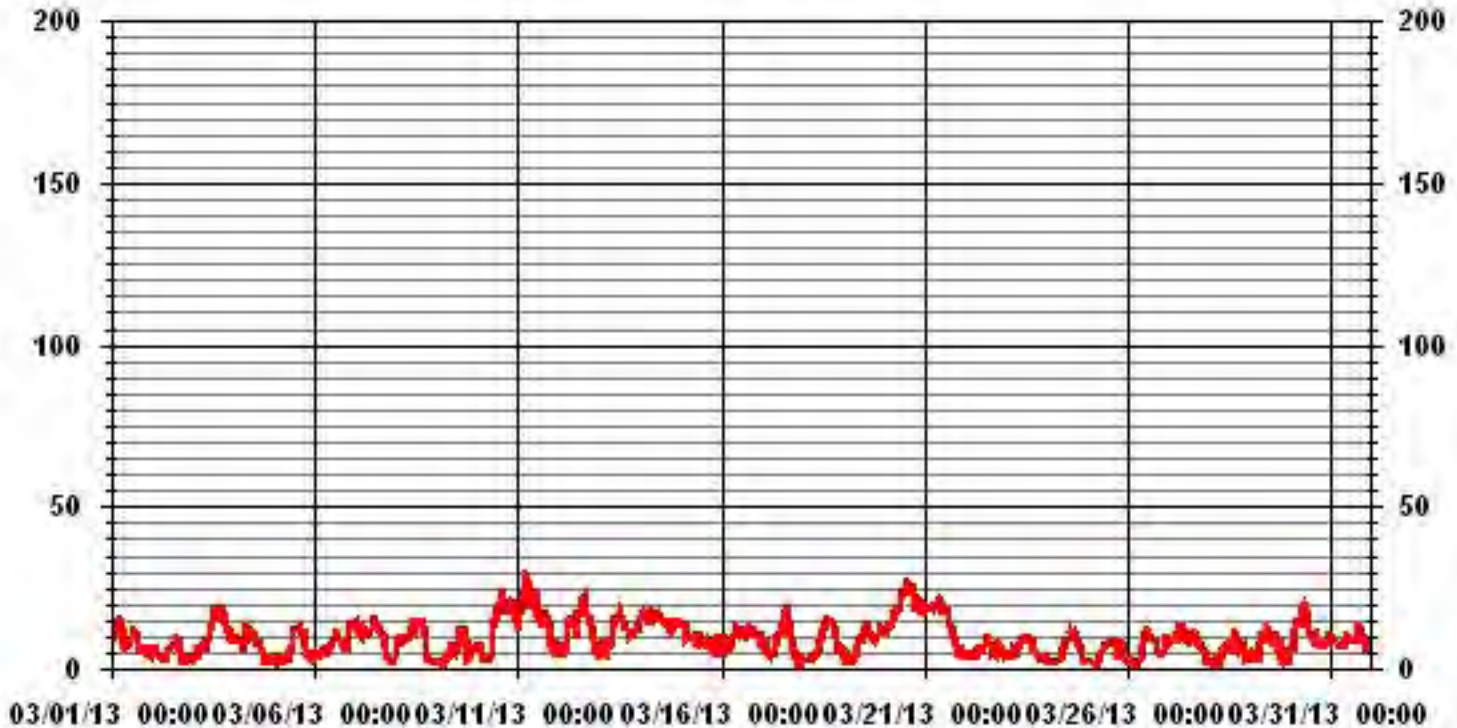
**STATUS FLAG CODES**

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 INSTANTANEOUS READING	30.6	KPH	@ HOUR(S)	4
			ON DAY(S)	11

# 01 Hour Averages



LICA  
WSP / WD Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

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

Wind Parameter : WD  
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	2.68	5.37	6.58	4.56	3.09	4.16	5.91	2.55	1.34	1.07	2.68	4.83	4.83	4.03	3.36	3.09	60.21
< 12.0	.94	6.72	3.89	1.20	2.95	1.88	5.24	.67	.13	.26	.26	3.09	2.55	.67	1.47	.67	32.66
< 20.0	.53	.00	.00	.00	2.55	.94	.26	.00	.00	.00	.00	.40	.13	.13	.00	.80	5.77
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.16	12.09	10.48	5.77	8.60	6.98	11.42	3.22	1.47	1.34	2.95	8.33	7.52	4.83	4.83	4.56	

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	20	40	49	34	23	31	44	19	10	8	20	36	36	30	25	23	448
< 12.0	7	50	29	9	22	14	39	5	1	2	2	23	19	5	11	5	243
< 20.0	4				19	7	2					3	1	1		6	43
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	31	90	78	43	64	52	85	24	11	10	22	62	56	36	36	34	

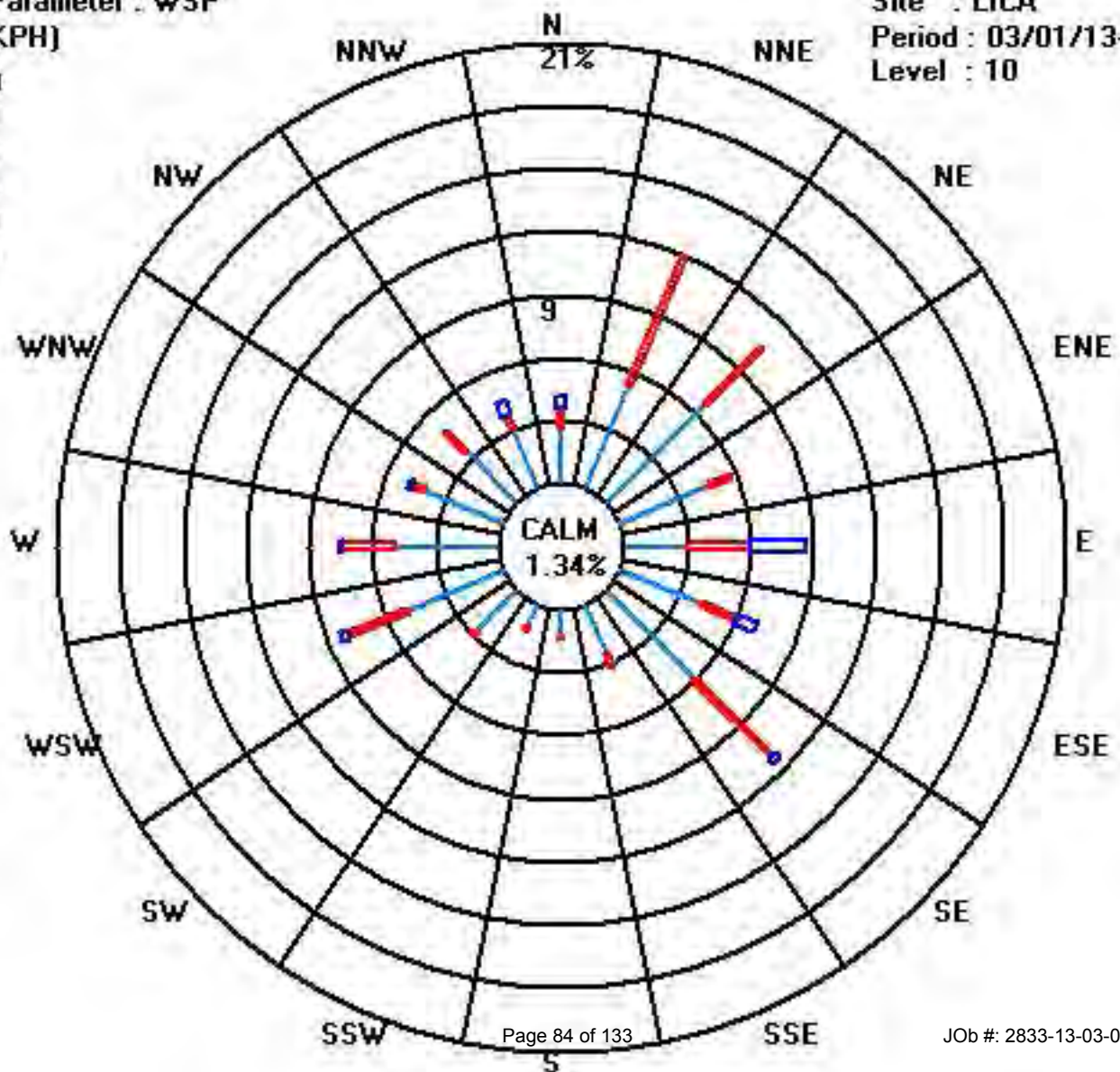
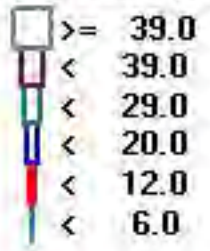
Calm : 1.34 %

Total # Operational Hours : 744

Class Limits (KPH)

Period : 03/01/13-03/31/13

Level : 10



# Vector Wind Direction

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

## VECTOR WIND DIRECTION (WD) 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	24-HOUR	24-HOUR AVG	
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	AVG.	QUADRANT	RDGS.
DAY																											
1	133	122	127	134	136	137	133	125	146	143	220	269	258	248	245	253	240	334	235	239	248	248	261	184	186	S	24
2	82	260	255	257	346	242	286	16	310	285	268	284	263	264	241	243	240	232	280	337	64	46	8	36	267	W	24
3	34	57	25	44	54	43	52	45	51	29	41	27	18	14	20	23	10	15	9	2	13	359	353	352	20	NNE	24
4	348	336	332	341	350	12	6	346	341	16	26	30	39	68	87	115	115	143	190	161	134	69	55	290	16	NNE	24
5	258	325	176	322	22	62	1	296	325	333	305	265	250	249	248	250	213	211	214	158	138	146	158	147	239	WSW	24
6	158	163	141	158	170	161	122	128	159	139	292	150	169	177	147	125	66	46	71	41	29	33	36	40	89	E	24
7	41	48	50	54	50	48	54	38	35	38	39	22	30	31	27	32	42	44	54	87	32	69	64	58	41	NE	24
8	137	130	136	138	138	139	141	140	139	136	145	195	214	164	183	221	239	206	152	150	223	307	70	300	161	SSE	24
9	318	279	325	1	306	72	28	343	275	337	324	298	188	266	251	203	249	240	197	161	145	152	138	137	246	WSW	24
10	133	139	133	112	213	130	243	285	283	250	246	246	243	241	250	243	244	275	283	287	291	286	279	271	258	WSW	24
11	265	291	315	352	353	347	332	339	342	352	347	355	323	313	273	266	247	281	279	262	260	253	235	189	319	NW	24
12	135	96	52	62	116	136	139	137	142	142	134	142	148	149	143	142	148	147	142	143	138	141	126	89	140	SE	24
13	106	106	96	129	121	86	52	57	44	27	22	25	19	14	24	26	44	33	16	27	28	27	28	34	36	NE	24
14	24	10	13	15	21	21	19	15	23	32	38	27	27	26	22	25	24	27	33	48	67	72	80	94	32	NNE	24
15	96	83	70	57	51	51	50	54	52	71	82	49	19	49	47	68	40	28	16	8	19	30	19	34	53	NE	24
16	42	40	44	57	60	53	73	76	103	122	115	98	120	100	96	95	96	98	97	109	126	129	132	128	97	E	24
17	101	74	59	26	24	342	324	309	286	333	11	335	296	276	319	314	325	303	280	261	284	29	22	269	323	NW	24
18	289	13	300	257	291	291	298	277	288	265	256	248	245	238	265	256	280	267	266	256	250	255	27	232	261	W	24
19	246	308	29	234	20	12	317	52	98	97	74	54	109	110	99	103	106	117	127	131	136	134	133	128	111	ESE	24
20	104	100	98	98	103	101	102	100	103	110	117	110	109	105	106	101	101	100	108	101	97	96	97	101	103	ESE	24
21	100	101	99	94	95	97	94	94	95	94	87	89	93	89	82	79	68	62	44	15	46	70	29	29	89	E	24
22	19	45	48	21	31	42	26	350	359	36	47	44	21	40	10	340	254	273	47	1	330	323	324	305	12	NNE	24
23	311	331	343	300	331	335	283	297	15	14	47	30	30	28	6	36	104	8	253	261	249	307	272	325	348	NNW	24
24	275	59	25	288	288	328	308	322	288	264	276	281	281	273	265	265	258	251	245	244	226	156	327	102	267	W	24
25	82	77	62	38	41	39	49	53	89	117	98	109	89	93	80	83	59	75	104	152	235	268	284	320	87	E	24
26	70	9	60	1	354	29	8	6	106	116	115	124	107	95	68	30	35	17	30	175	238	238	155	158	90	E	24
27	137	140	141	136	136	140	138	142	135	142	219	313	133	175	216	259	256	244	199	214	231	224	141	123	175	S	24
28	122	330	12	9	60	300	300	306	275	287	270	298	314	39	342	250	245	221	188	211	207	220	264	242	260	WSW	24
29	233	242	260	274	268	344	359	17	26	25	34	69	47	41	92	252	241	244	185	343	35	224	224	262	351	N	24
30	258	272	316	311	312	318	314	342	343	20	39	72	77	91	118	109	138	116	109	78	103	139	123	105	9	N	24
31	109	125	127	121	122	127	130	107	126	138	101	9	274	100	136	152	137	142	140	344	56	274	263	279	131	SE	24
HOURLY AVG	348	336	343	352	354	347	359	350	359	352	347	355	323	313	342	340	325	334	283	344	330	359	353	352			

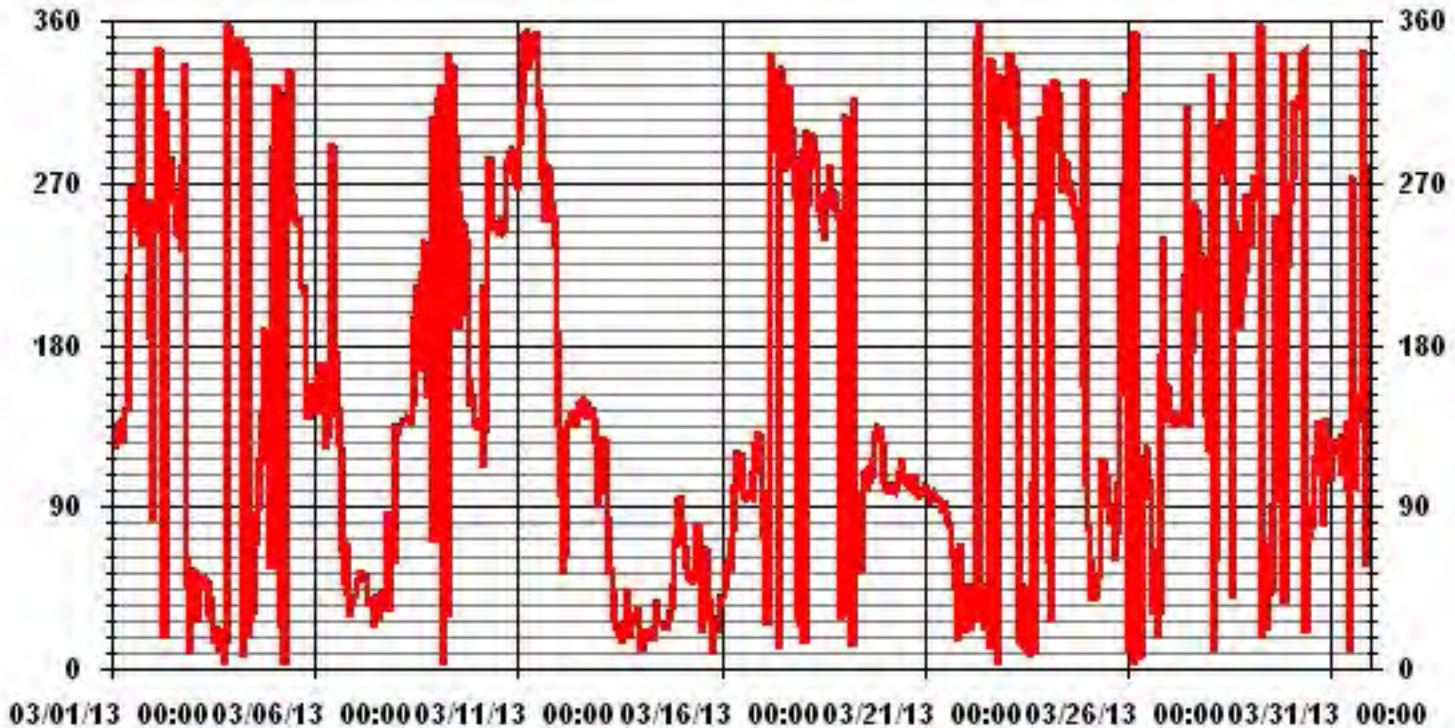
**STATUS FLAG CODES**

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 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	106.34	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	62 DEG

# 01 Hour Averages





# Standard Deviation Wind Direction

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2013

## STANDARD DEVIATION WIND DIRECTION (STDWDIR) 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	18	25	20	19	16	16	25	21	32	28	36	19	18	19	20	17	23	19	15	13	15	9	21	60
2	32	25	12	9	22	33	41	4	30	27	38	19	24	20	25	20	15	28	0	38	16	10	33	20
3	15	17	18	15	15	19	16	16	19	20	21	20	21	21	20	20	16	16	16	17	16	16	15	15
4	14	12	12	13	14	16	15	13	13	20	24	26	27	20	29	29	21	12	25	31	22	25	34	26
5	45	58	40	58	56	35	47	8	36	26	22	24	21	21	22	20	35	35	33	41	22	23	61	28
6	74	63	61	52	58	52	51	30	33	29	44	53	36	41	40	52	25	18	21	31	24	21	20	21
7	21	20	18	17	17	19	17	19	19	21	21	19	21	22	20	24	21	18	16	13	39	12	12	24
8	24	15	13	12	13	12	13	13	13	14	19	43	37	40	41	31	22	32	65	47	44	30	23	16
9	6	8	39	11	6	33	19	11	17	25	46	54	49	29	23	42	32	30	38	49	35	50	21	52
10	16	17	24	48	35	28	64	19	20	20	20	21	21	21	21	21	20	18	19	19	18	20	18	18
11	16	19	17	19	19	16	13	14	17	18	19	25	26	20	25	21	23	18	17	12	11	14	12	67
12	44	26	28	49	21	14	13	15	19	16	28	20	24	25	17	18	23	21	16	15	13	16	37	20
13	23	19	19	48	39	24	19	18	20	20	20	20	19	18	19	20	21	21	18	21	21	21	20	21
14	19	16	17	18	18	18	17	19	20	22	23	21	22	23	25	21	19	20	21	19	19	19	19	20
15	20	19	17	19	17	19	18	17	18	22	30	33	28	29	30	18	26	19	14	11	17	15	11	18
16	18	20	20	18	15	47	21	18	23	24	25	23	33	26	21	22	19	22	20	23	22	22	21	22
17	23	19	17	15	13	14	8	13	22	24	31	41	52	25	20	17	19	17	13	9	35	38	49	19
18	39	30	16	32	41	6	44	69	23	23	24	24	28	22	22	20	20	19	16	13	9	31	57	60
19	29	42	46	28	32	35	28	18	28	25	24	22	25	26	23	24	23	23	20	17	16	19	20	
20	19	18	18	19	21	21	21	21	23	24	25	24	24	22	24	21	21	20	24	21	18	18	19	19
21	20	20	20	18	18	20	19	18	18	20	21	20	21	20	20	20	18	19	15	26	15	17	16	14
22	13	16	15	14	17	17	15	13	16	19	21	25	22	21	24	52	33	59	47	14	11	12	10	10
23	12	19	9	14	13	13	11	16	19	19	23	33	39	29	54	54	48	53	13	7	24	26	4	47
24	32	19	26	21	11	6	16	22	50	56	48	27	24	26	23	21	18	20	16	15	21	53	33	24
25	26	29	12	17	18	13	10	10	20	29	37	30	38	24	29	31	23	19	20	34	16	12	50	22
26	37	28	16	15	22	26	32	35	25	25	25	23	26	27	33	17	18	17	34	43	34	39	41	53
27	16	15	17	21	17	15	27	39	28	32	45	46	42	49	42	28	20	20	34	32	20	31	28	39
28	20	57	58	60	52	0	0	5	26	34	35	30	44	42	38	24	19	33	38	37	43	47	59	40
29	31	20	15	25	9	21	21	19	20	21	21	23	24	28	54	25	22	16	28	8	28	0	0	9
30	17	17	14	13	14	12	12	16	15	22	21	23	31	38	38	53	41	21	15	18	18	37	33	23
31	22	21	19	21	22	19	21	23	24	20	44	32	38	73	33	44	18	14	31	56	29	47	39	11

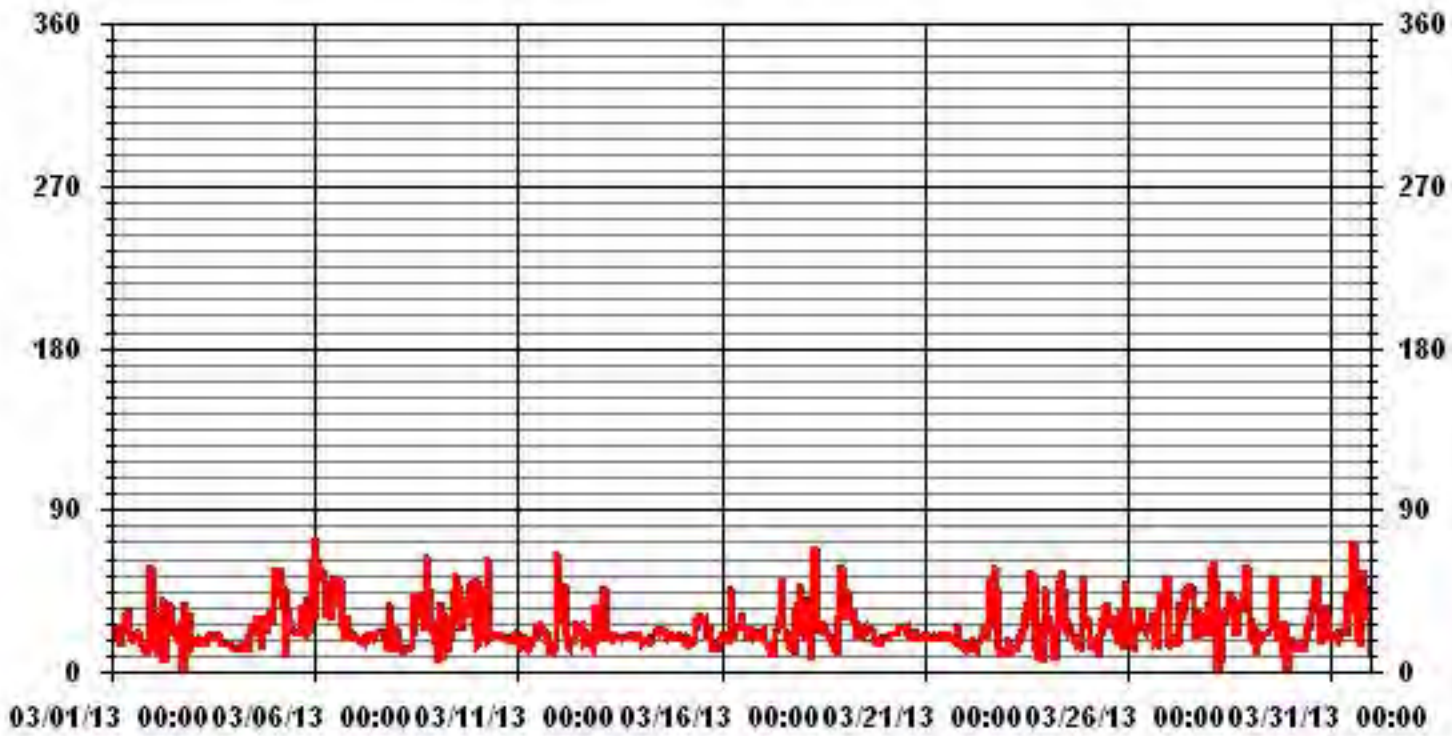
**STATUS FLAG CODES**

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



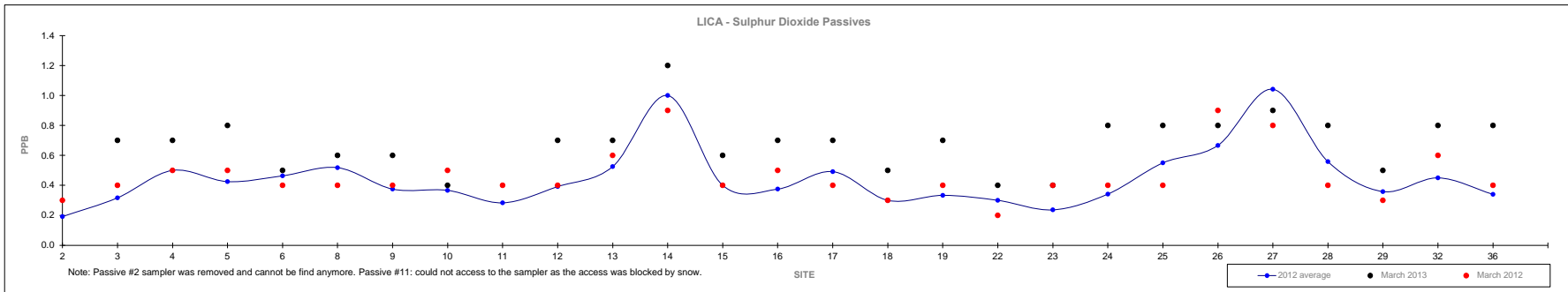
— LICA STDWDIR DEG

# Non-Continuous Monitoring

### Passive Summary Results for March 2013

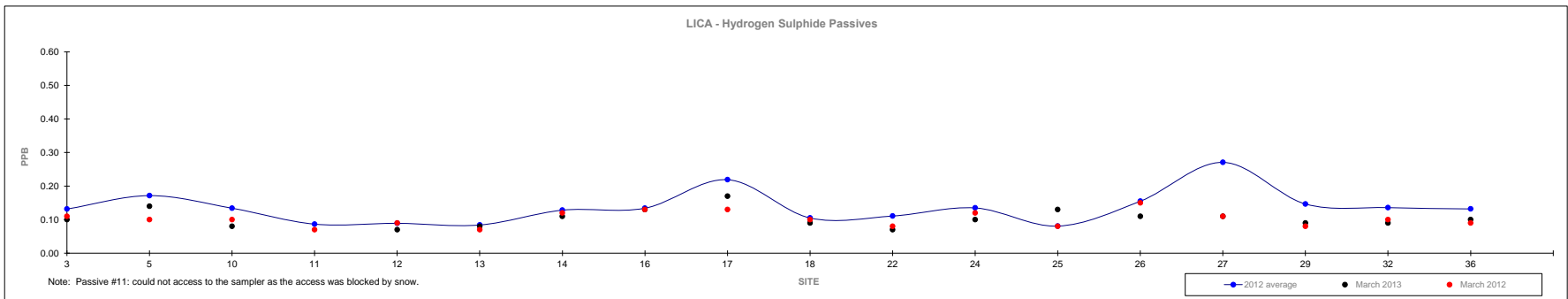
Lakeland Industry & Community Association

	Sulphur Dioxide ppb																												March 2013	Site
	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	25	26	27	28	29	32	36	Reading		
Mean	0.2	0.3	0.5	0.4	0.5	0.5	0.4	0.4	0.3	0.4	0.5	1.0	0.4	0.4	0.5	0.3	0.3	0.3	0.2	0.3	0.6	0.7	1.0	0.6	0.4	0.5	0.3	0.68	-	
Minimum	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.7	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.5	0.4	0.2	0.2	0.1	0.4	VAR	
Maximum	0.3	0.6	0.8	0.7	0.7	1.2	0.7	0.7	0.5	0.9	1.1	1.6	0.7	0.7	1.0	0.6	0.7	0.6	0.4	0.7	0.9	1.1	1.8	1.0	0.6	0.8	0.8	1.2	#14	



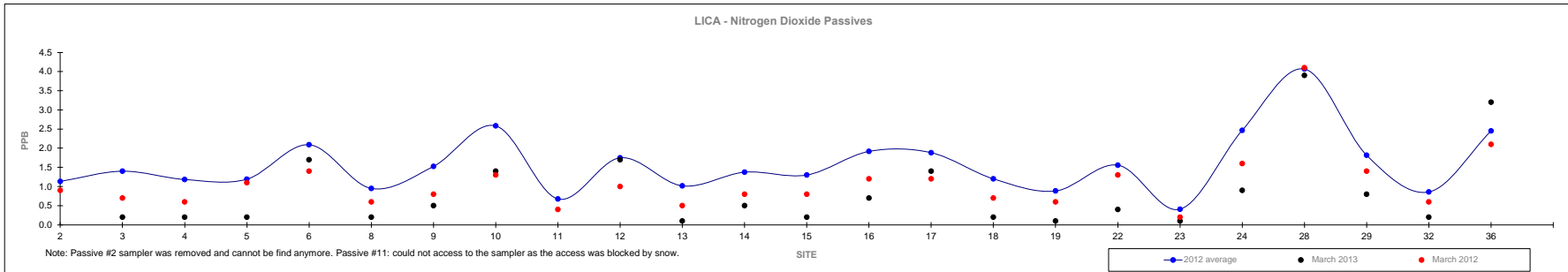
### Passive Summary Results for March 2013 Lakeland Industry & Community Association

	Hydrogen Sulphide ppb																	March 2013		
	3	5	10	11	12	13	14	16	17	18	22	24	25	26	27	29	32	36	Reading	Site
Mean	0.13	0.17	0.13	0.09	0.09	0.08	0.13	0.13	0.22	0.11	0.11	0.14	0.08	0.16	0.27	0.15	0.14	0.13	0.10	-
Minimum	0.09	0.06	0.08	0.04	0.02	0.02	0.06	0.09	0.09	0.06	0.06	0.07	0.03	0.07	0.02	0.06	0.09	0.07	0.07	#12
Maximum	0.21	0.38	0.35	0.15	0.16	0.16	0.20	0.23	0.55	0.16	0.18	0.24	0.17	0.28	0.74	0.49	0.23	0.23	0.17	#17



### Passive Summary Results for March 2013 Lakeland Industry & Community Association

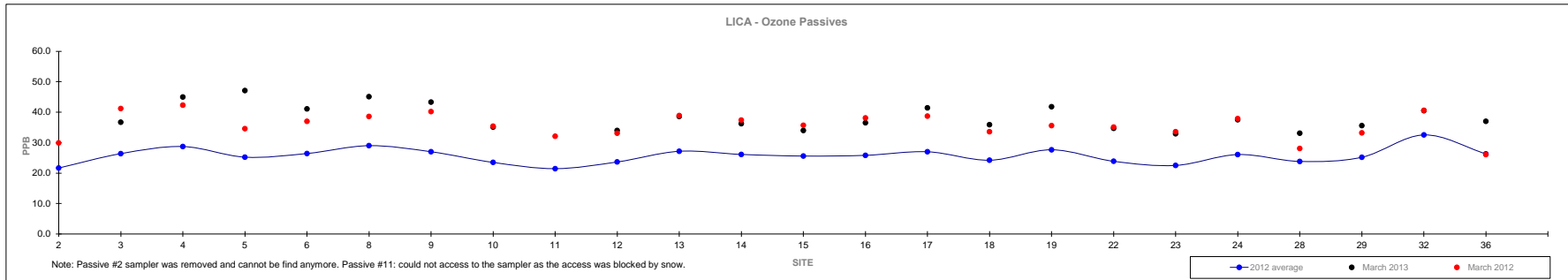
	Nitrogen Dioxide ppb																												March 2013	Site
	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	28	29	32	36	Reading					
Mean	1.1	1.4	1.2	1.2	2.1	1.0	1.5	2.6	0.7	1.8	1.0	1.4	1.3	1.9	1.9	1.2	0.9	1.6	0.4	2.5	4.1	1.8	0.9	2.5	0.9	-				
Minimum	0.4	0.5	0.4	0.3	0.9	0.3	0.7	1.3	0.2	0.4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



### Passive Summary Results for March 2013

Lakeland Industry & Community Association

	Ozone ppb																												March 2013	
	2	3	4	5	6	8	9	10	11	12	2012 13	14	15	16	17	18	19	22	23	24	28	29	32	36	Reading	Site				
Mean	21.7	26.4	28.7	25.2	26.4	29.0	27.0	23.5	21.5	23.7	27.2	26.1	25.6	25.8	27.0	24.2	27.7	23.9	22.5	26.1	23.8	25.2	32.5	26.3	36.3	-				
Minimum	12.8	18.4	18.8	19.0	17.5	21.6	17.6	15.1	12.3	13.9	15.9	17.8	16.8	18.4	16.4	15.8	18.3	15.2	11.8	17.5	17.1	17.5	24.4	20.4	32.9	#23				
Maximum	32.2	41.2	42.3	34.7	37.0	38.8	40.2	35.4	32.1	33.1	38.9	37.4	36.6	38.1	38.7	33.8	35.6	35.2	36.1	37.9	30.2	33.2	40.8	33.1	47.1	#5				





# Calibration Reports

# Sulphur Dioxide

## SO2 Calibration Report

### Station Information

Calibration Date	March 8, 2013	Previous Calibration	February 14, 2013
Company	Lakeland Community and Industry Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	12:55	End Time (MST)	18:00
Reason:	Monthly Calibration		
Barometric Pressure	28.12 inHg	Station Temperature	24 Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	BAL3031
DAS Output Voltage	0 - 10 Volts	Cal Gas Expiry date	December 29, 2016
		Chart Rec. Output	NA Volts

### Equipment Information

Analyzer Make / Model:	Thermo 43i	S/N :	806528242	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	EnviroNics 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	3485		
Chart Recorder Make / Model:	NA	S/N :	NA		
Flow Meter:	EnviroNics 6100	S/N :	4760		

### Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 500 ppb				
Sample Flow / Box Temp	449 ccm	28.3 Deg C	448 ccm	28.7 Deg C	
HVPS / Lamp Setting	-631.6	736	-631.6	737	
PMT / RxCell Temp	OK Deg C	45.2 Deg C	OK Deg C	45.1 Deg C	
Converter / IZS Temp	NA Deg C	45 Deg C	NA Deg C	45.0 Deg C	
Offset / Slope	6.1	1.031	6.3	1.067	

### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	N/A
	No Zero Adj			
4955	39.7	394	377	1.0457
4955	39.7	394	394	1.0000
4975	19.8	197	199	0.9880
4984	9.9	98	100	0.9833
4995	0	0	0	N/A
Sum of Least Squares				0.9974
New Correction Factor				1.0000

### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.2	0.0	
Auto Span	364.1	380.2	
Sample Lines Connected		YES	

### Percent Change

Previous Month's Calibration Correction Factor:	1.0109
Current Correction Factor Before Span Adjust:	1.0457
Percent Change:	-3.3%

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

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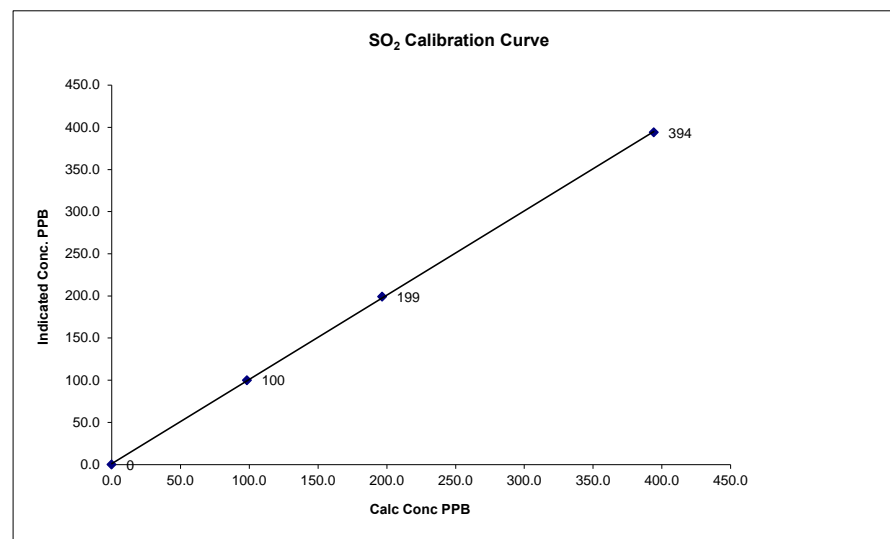
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Calibration Performed by: Waseem Ahmed

## SO<sub>2</sub> Calibration Curve

Calibration Date	March 8, 2013
Company	Lakeland Community and Industry Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	12:55
End Time (MST)	18:00

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		0.999944
98	100	0.9833		0.998594
197	199	0.9880		1.194601
394	394	1.0006		



Notes:

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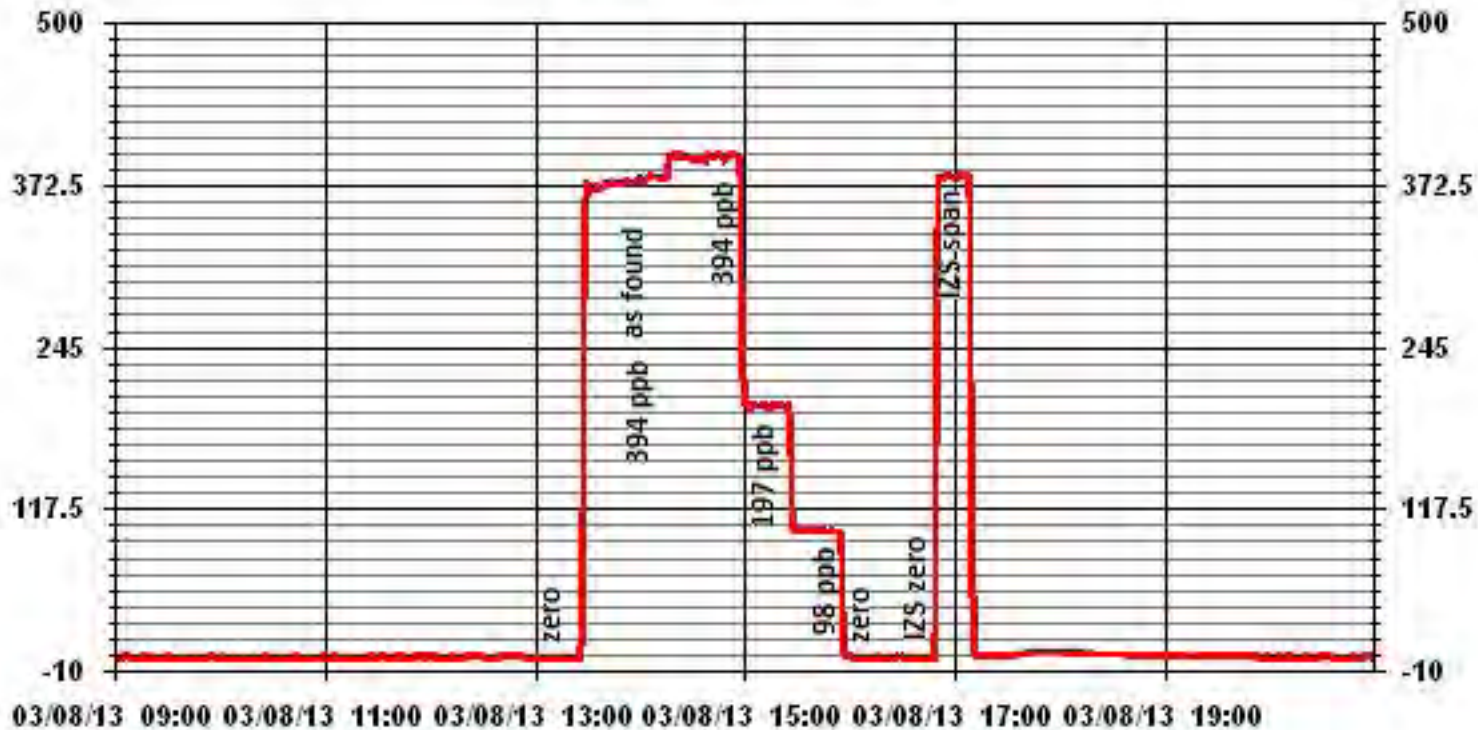


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### 01 Minute Averages



# Total Reduced Sulphur

**TRS Calibration Report**

**Station Information**

Calibration Date	March 8, 2013	Previous Calibration	February 15, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	12:55	End Time (MST)	18:00
Reason:	Monthly Calibration		
Barometric Pressure	28.12 inHg	Station Temperature	24 Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648
DAS Output Voltage	0 - 10 Volts	Cal Gas Expiry date	December 27, 2012
		Chart Rec. Output	NA Volts

**Equipment Information**

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

**Analyzer Settings**

Before Calibration		After Calibration	
Concentration Range	0 - 100	0 - 100	
Sample Flow / Box Temp	501 ccm 31 Deg C	498 ccm 31.2 Deg C	
HVPS / Lamp Setting	-650.1 749	-650.1 749	
PMT / RxCell Temp	OK Deg C 45.2 Deg C	0.1 Deg C 45.2 Deg C	
Converter / IZS Temp	810 Deg C 45 Deg C	810 Deg C 45.0 Deg C	
Offset / Slope	13.4 0.986	13 0.953	

**Calibration Data**

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	0	N/A
	No Zero Adj.			
4960	40.0	80	82	0.9756
4960	40.0	80	81	0.9877
4980	20.0	40	40	1.0000
4990	11.5	23	23	1.0000
5000	0.0	0	0	N/A
		Sum of Least Squares		0.9907
		New Correction Factor		0.9877

**IZS Calibration Data**

Before Calibration		After Calibration	
Auto Zero	0.3	0.0	
Auto Span	32.0	31.0	
Sample Lines Connected		YES	

**Percent Change**

Previous Month's Calibration Correction Factor:	1.0127
Current Correction Factor Before Span Adjust:	0.9756
Percent Change:	3.8%

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

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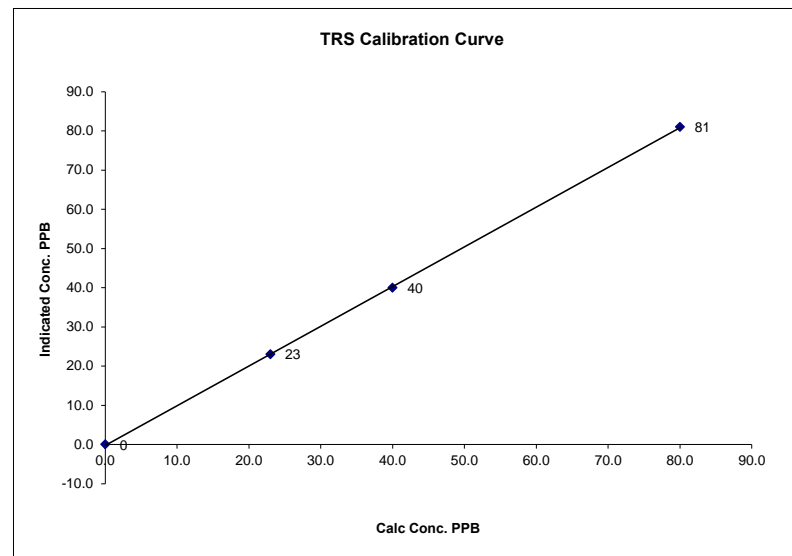
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Calibration Performed by: Waseem Ahmed

**TRS Calibration Curve**

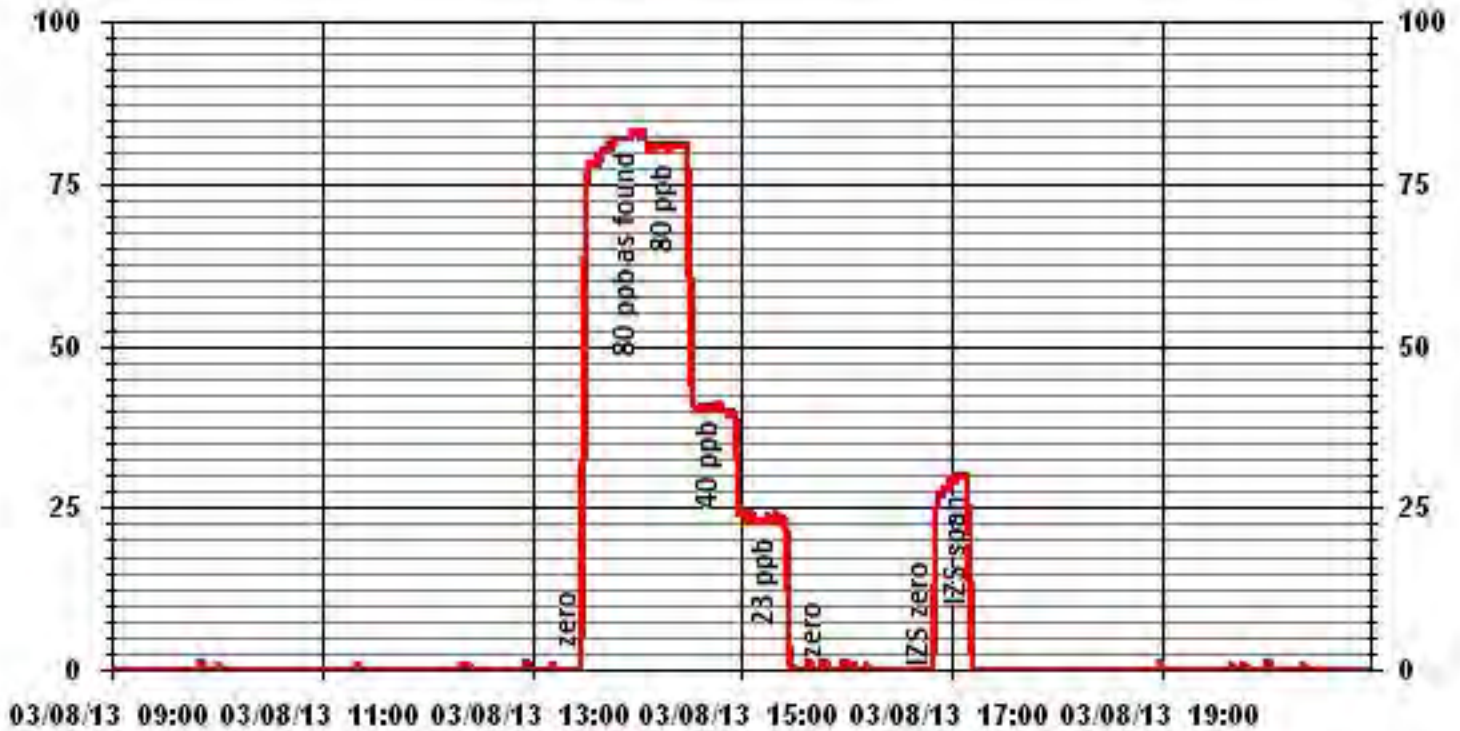
Calibration Date	March 8, 2013
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	12:55
End Time (MST)	18:00

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)	
0	0	n/a	Intercept	0.999950	1.012925
23	23	0.0000			-0.210322
40	40	0.5748			
80	81	0.4938			



Notes:

### 01 Minute Averages



TRS Calibration Report

Station Information

Calibration Date	March 28, 2013	Previous Calibration	March 8, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	13:30	End Time (MST)	15:33
Reason:	As Found		
Barometric Pressure	28.12 inHg	Station Temperature	25 Deg C
Cal Gas	10.1 ppm	Gas Cyl. #	3LM005045
DAS Output Voltage	0 - 10 Volts	Chart Rec. Output	NA Volts
		Cal Gas Expiry date	December 25, 2015

Equipment Information

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

Analyzer Settings

	Before Calibration			After Calibration		
Concentration Range	0 - 100			0 - 100		
Sample Flow / Box Temp	499 ccm	31 Deg C	498 ccm	31.2	Deg C	
HVPS / Lamp Setting	-650.1	750	-650.1	749		
PMT / RxCell Temp	OK	45.1 Deg C	0.1	45.2	Deg C	
Converter / IZS Temp	810	45 Deg C	810	45.0	Deg C	
Offset / Slope	13	0.953	13	0.953		

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	0	N/A
4955	No Zero Adj. 39.9	81	81	1.0000
Sum of Least Squares New Correction Factor				1.0000

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	31.0	31.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9877
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	-1.2%

Notes:

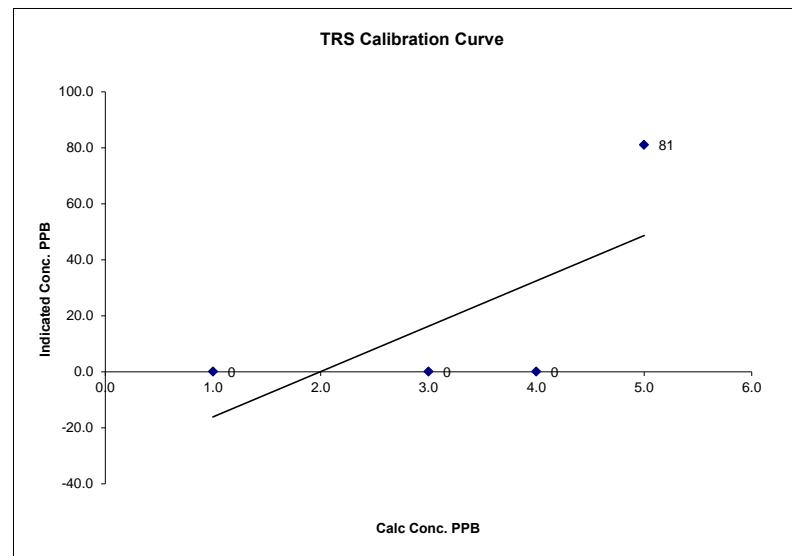
N/A : Not applicable

The analyzer responded slowly (took 60 mins to reach target point).

TRS Calibration Curve

Calibration Date	March 28, 2013		
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	13:30	End Time (MST)	15:33

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	#DIV/0!
	0	n/a	Slope	(0.85 to 1.15)	#DIV/0!
	0	#DIV/0!	Intercept	(± 3% F.S.)	#DIV/0!
81	81	#VALUE!			

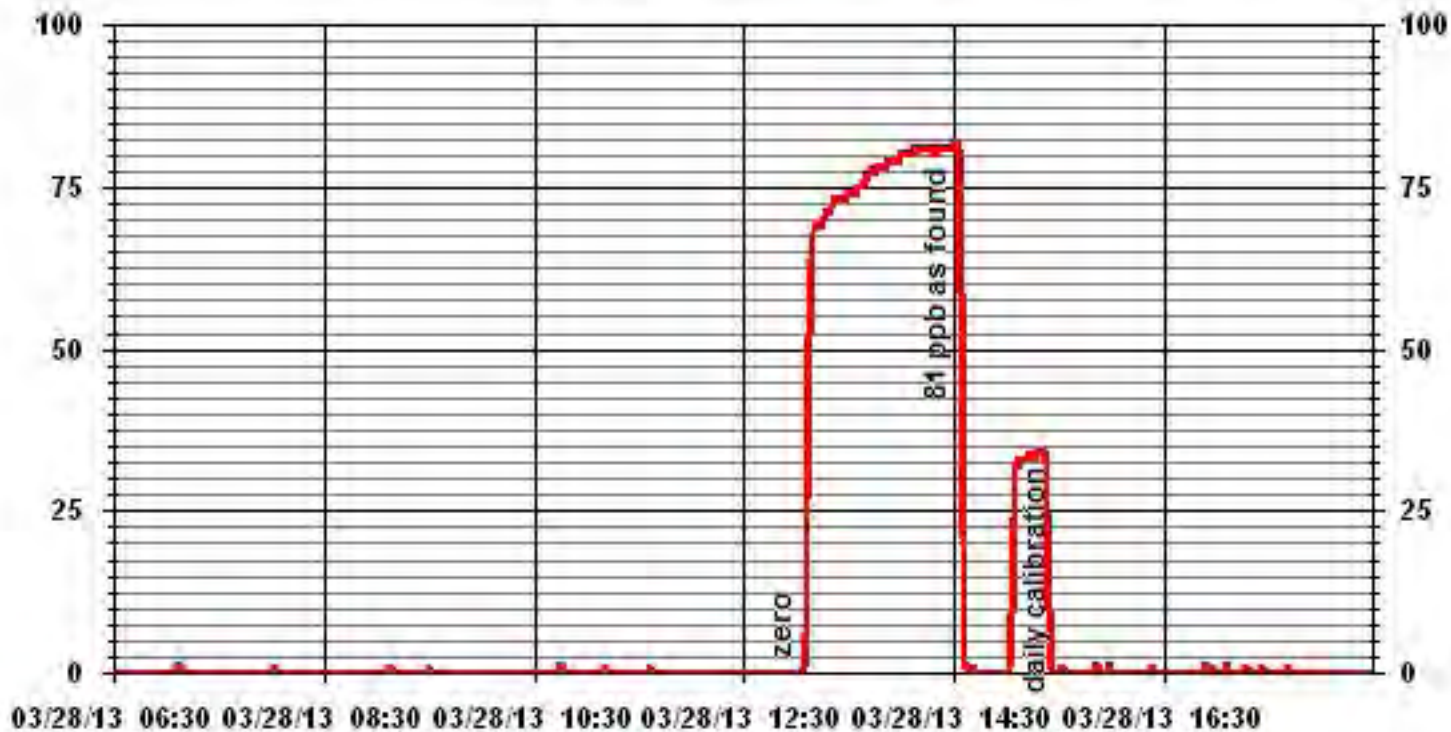


Notes:

Calibration Performed by: Waseem Ahmed



### 01 Minute Averages



# Total Hydrocarbons

### THC Calibration Report

Station Information			
Calibration Date:	March 11, 2013	Previous Calibration	February 14, 2013
Company:	Lakeland Industry and Community Association		
Plant / Location:	LICA1/Cold Lake		
Start Time (MST)	9:00	End Time (MST)	13:00
Reason:	Monthly Calibration		
Barometric Pressure:	28.2 inHg	Station Temperature:	20 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 600 PPM	C3H8 204 PPM	
	TOTAL CH4 1161.0 PPM	Gas Cyl. # LL55310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832	S/N :	3485
Chart Recorder:	NA	S/N:	NA
Output Voltage Range:	0 - 10 VDC	Chart Speed:	NA mm/hr

#### Analyzer Information

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

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

#### Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	0.2	NA
2000	0.0	0.0	0.0	NA
2000	74.0	41.4	38.9	1.0649
2000	74.0	41.4	41.3	1.0030
2000	37.0	21.1	20.7	1.0188
2000	20.0	11.5	11.2	1.0263
2000	0.0	0.0	0.0	NA
New Correction Factor:				1.0030

#### Percent Change

Previous Calibration Correction Factor:	1.0030
Current Correction Factor Before Span Adjust:	1.0649
Percent Change:	-5.8%

#### IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	36.5	36.4
Sample Lines Connected	YES	

Cylinder Pressures			
Span	825 psi	Hydrogen	220 psi
		Zero Air	32 psi

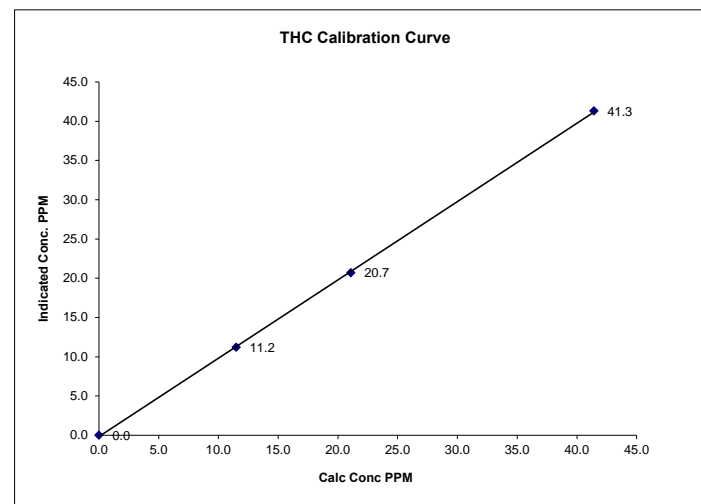
Notes: **NA : Not Applicable**

Calibration Performed by: Waseem Ahmed

### THC Calibration Curve

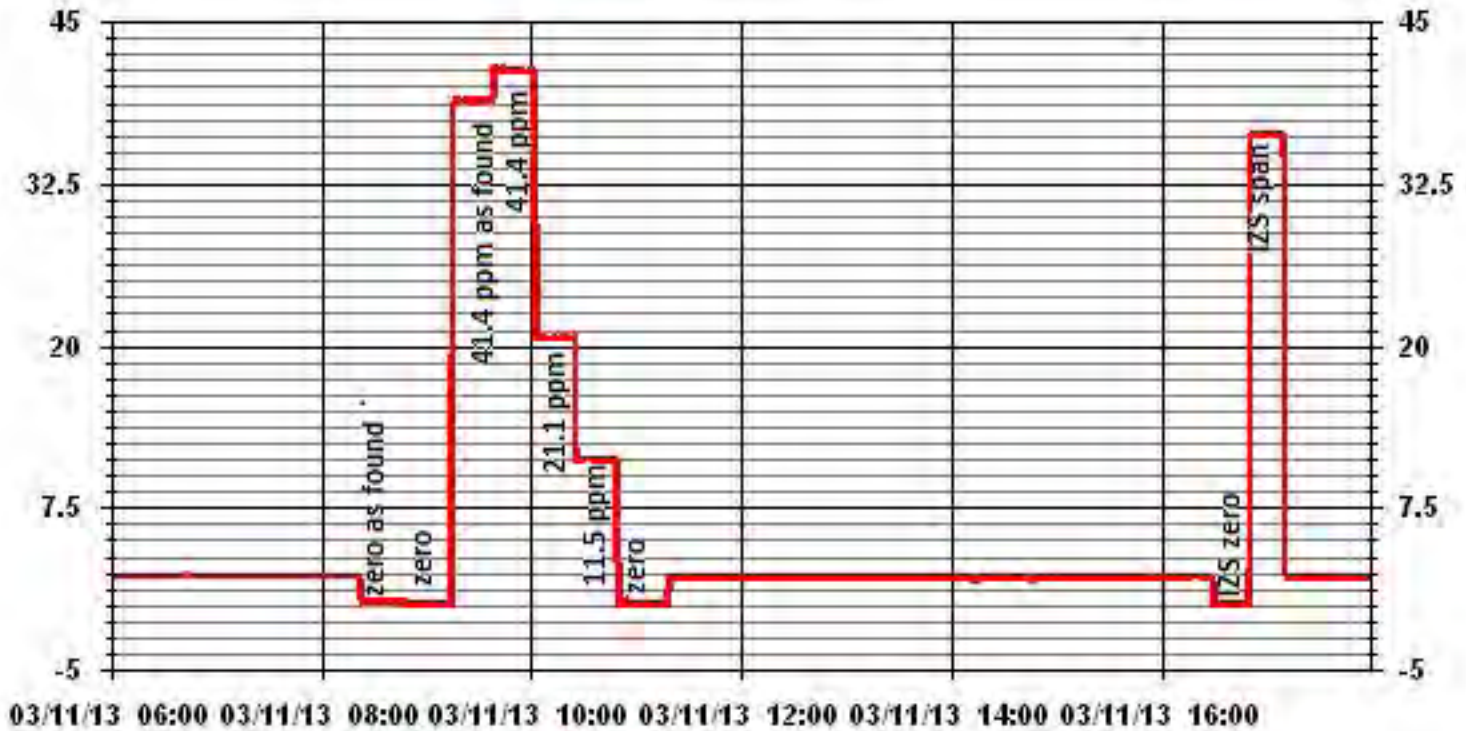
Calibration Date	March 11, 2013
Company	Lakeland Industry and Community Association
Plant / Location	LICA1/Cold Lake
Start Time (MST)	9:00
End Time (MST)	13:00

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	NA	0.999906	0.998066	-0.16614
11.5	11.2	1.0263			
21.1	20.7	1.0188			
41.4	41.3	1.0030			



Notes:

### 01 Minute Averages



# Particulate Matter 2.5

**TEOM 1405F Audit**

	<b><u>Station</u></b>		<b><u>Audit Transfer Standard</u></b>
Date:	March 11, 2013	Make/Model:	Streamline FTS
Station Name:	LICA 1	Serial Number:	Hi 091001, Lo 091099
Location:	Cold Lake South	Cell s/n:	NA
Operator:	LICA	Thermometer s/n:	Station Temp Sensor

	<b><u>Sampler</u></b>		<b><u>Set-up and current Sampler readings</u></b>
Make/Model	Thermo Scientific Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	AMU 1775	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A201620804	Filter Load (%)	26.1%
Firmware Ver.	1.52	K <sub>o</sub> Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-3.1
		Press (ATM)	0.943

**Conversion from mmHg or "Hg to ATM (Atmospheres)**

ATM = (mmHg) X (1.316 X 10<sup>-3</sup>) or ATM = ("Hg) X (3.34207 X 10<sup>-2</sup>)

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

**Audit**

<b>Status</b>			
Noise <0.10ug	0.013	Warnings	None
Pump Vacuum < <b>0.40 atm</b>	0.37	Pump Guage (in Hg)	NA
<b>Temperature/Pressure</b>			
Measured Temp (± 2 °C)	-4.00	Δ °C	0.9
Measured Press (± <b>0.01atm</b> )	0.944	<b>DATM</b>	-0.001
<b>Flow Audit</b>			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (± <b>10.0%</b> )	3.17%
Measured Main Flow (l/min)	2.98	Flow Adjusted to Measured?	YES
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (± <b>10.0%</b> )	1.61%
Measured Bypass Flow (l/min)	13.56	Flow Adjusted to Measured?	YES
<b>Leak Check</b>		<b>Instrument Setup</b>	
Main (< 0.15 l/min)	NA	Flow Control = Active	
Aux (< 0.6 l/min)	NA	Report Conditions = Actual	
<b>K<sub>o</sub> Factor</b>			
Measured	NA		
K <sub>o</sub> Difference (± <b>2.5%</b> )	NA		

**Start Time:** 12:20      **Finish Time:** 13:40

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

**Comments:**

**TEOM 1405F Audit**

	<b><u>Station</u></b>		<b><u>Audit Transfer Standard</u></b>
Date:	March 25, 2013	Make/Model:	Streamline FTS
Station Name:	LICA 1	Serial Number:	Hi 091001, Lo 091099
Location:	Cold Lake South	Cell s/n:	NA
Operator:	LICA	Thermometer s/n:	Station Temp Sensor

	<b><u>Sampler</u></b>		<b><u>Set-up and current Sampler readings</u></b>
Make/Model	Thermo Scientific Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	AMU 1775	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A201620804	Filter Load (%)	25.1%
Firmware Ver.	1.52	K <sub>o</sub> Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-0.4
		Press (ATM)	0.946

**Conversion from mmHg or "Hg to ATM (Atmospheres)**

ATM = (mmHg) X (1.316 X 10<sup>-3</sup>) or ATM = ("Hg) X (3.34207 X 10<sup>-2</sup>)

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

**Audit**

<b>Status</b>			
Noise <0.10ug	0.007	Warnings	None
Pump Vacuum < <b>0.40 atm</b>	0.37	Pump Guage (in Hg)	NA
<b>Temperature/Pressure</b>			
Measured Temp (± 2 °C)	1.46	Δ °C	-1.86
Measured Press (± <b>0.01atm</b> )	0.945	<b>DATM</b>	0.001
<b>Flow Audit</b>			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	1.53%
Measured Main Flow (l/min)	2.94	Flow Adjusted to Measured?	YES
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	0.96%
Measured Bypass Flow (l/min)	13.55	Flow Adjusted to Measured?	YES
<b>Leak Check</b>		<b>Instrument Setup</b>	
Main (< <b>0.15 l/min</b> )	Base=0.02 Ref=0.01	Flow Control = Active	
Aux (< <b>0.6 l/min</b> )	Base=0.00 Ref=0.00	Report Conditions = Actual	
<b>K<sub>o</sub> Factor</b>			
Measured	NA		
K <sub>o</sub> Difference (± <b>2.5%</b> )	NA		

Start Time: 15:55      Finish Time: 17:45

Sample Inlet Cleaned: YES      New Filters Installed: NO  
 New Filter Loading %: NA

Comments:

# Nitrogen Dioxide



**NOx - NO- NO2 Calibration Report**

**Station Information**

Calibration Date	March 11, 2013	Previous Calibration	February 14, 2013
Company	LICA	Plant/Location	Cold Lake South
Start Time (MST)	9:00	End Time (MST)	14:45
Reason:	Monthly Calibration		
Barometric Pressure	28.2 inHg	Station Temperature	24 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO 49.2 ppm	Cal Gas Expiry date
Cal Gas Cylinder #	BAL3031		December 29, 2016
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

**Equipment Information**

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

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range	0 - 500			ppb			
Sample Flow/Conv. Temp	732 ccm	317 Deg C		737 ccm	318 Deg C		
Ozone Flow / Vacuum	OK ccm	178.3 *Hg-A		OK ccm	179 *Hg-A		
HVPS / A ZERO	-821 Volts	NA MV		-821 Volts	NA MV		
Rx/ Temp / PMT Temp	49.5 Deg C	-2.5 Deg C		49.5 Deg C	-2.4 Deg C		
Box Temp / IZS Temp	26.7 Deg C	OK Deg C		28.2 Deg C	OK Deg C		
Offset	3.8 NOx	3.6 NO		5.8 NOx	3.6 NO		
Slope	1.002 NOx	0.920 NO		1.002 NOx	0.920 NO		
NO2 COEF / Conv Efficiency	0.998 NO2	NA		0.998 NO2	NA		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4995	0.0	NA	0	0	NA	2	0	2	NA	NA
4995	0.0	NA	0	0	NA	0	0	0	NA	NA
4955	39.9	NA	394	393	NA	394	393	1	1.0000	1.0000
	No Span Adj.									
4975	19.8	NA	195	195	NA	199	198	1	0.9920	0.9850
4985	9.9	NA	98	98	NA	101	101	0	0.9870	0.9655
5000	0.0	NA	0	0	NA	0	0	0	NA	NA

**Gas Phase Titration Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4956	39.9	NA	394	393	NA	393	392	1	NA	NA
4956	39.9	350	394	NA	323	393	70	323	1.0000	100.00%
	No Adj.									
4955	39.9	150	394	NA	140	392	253	140	1.0000	100.00%
4960	39.9	75	393	NA	70	392	323	70	1.0000	100.00%

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 0.995	NO= 0.996	NO2= 1.000
				NOx= 1.0000	NO= 1.0000	NO2= 1.0000
				Average Converter Efficiency= 100.00%		

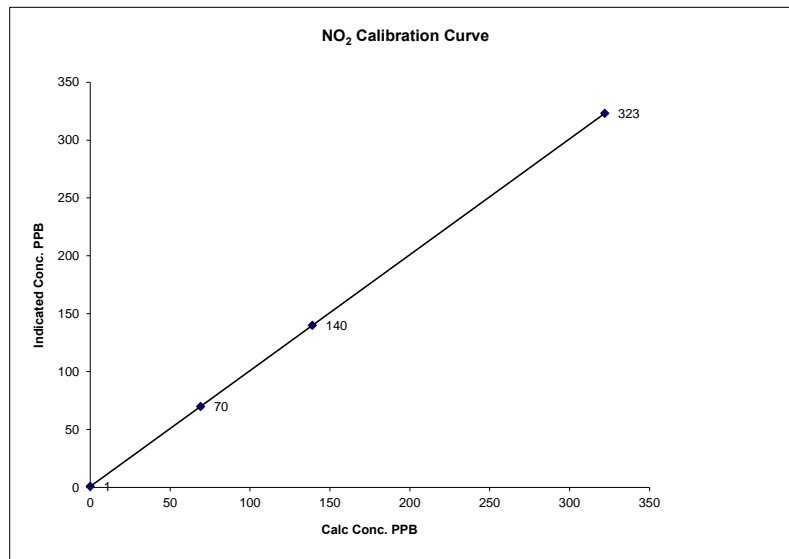
**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		-1.9 NOx	-1.8 NO2		
Auto Span	372 NOx	369 NO2		368 NOx	365 NO2		
				Sample Lines Connected: YES			
Percent Change from Previous Calibration				NOx 1.1%	NO 1.3%	NO2 0.0%	
Notes	NA : Not Applicable						
Calibration Performed by: Waseem Ahmed							

**NO2 Calibration Curve**

Calibration Date	March 11, 2013
Company	LICA
Plant / Location	Cold Lake South
Start Time (MST)	9:00
End Time (MST)	14:45

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	1	N/A	Intercept	1.00000
69	70	0.9857		1.00000
139	140	0.9929		1.00000
322	323	0.9969		1.00000

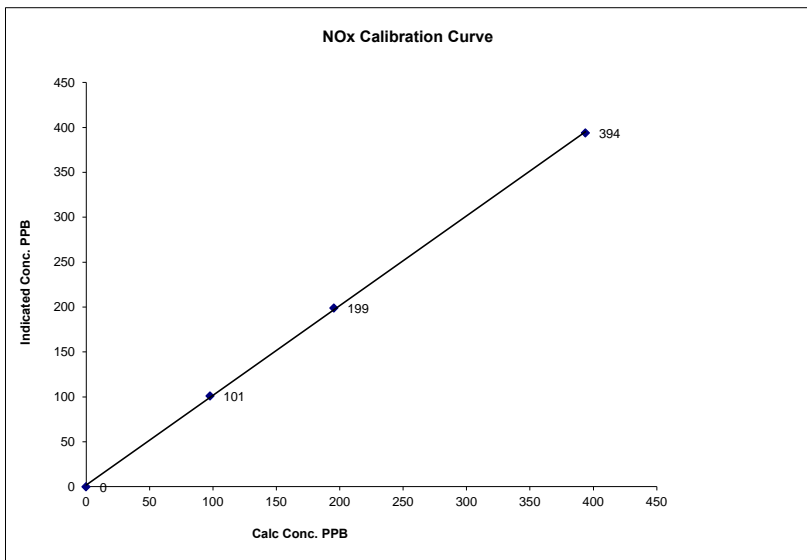


Notes:

### NOx Calibration Curve

Calibration Date	March 11, 2013	
Company	LICA	
Plant / Location	Cold Lake South	
Start Time (MST)	9:00	End Time (MST) 14:45

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999870
0	0	N/A	Slope (0.85 to 1.15)	0.998612
98	101	0.9675	Intercept (± 3% F.S.)	1.99827
195	199	0.9821		
394	394	0.9995		

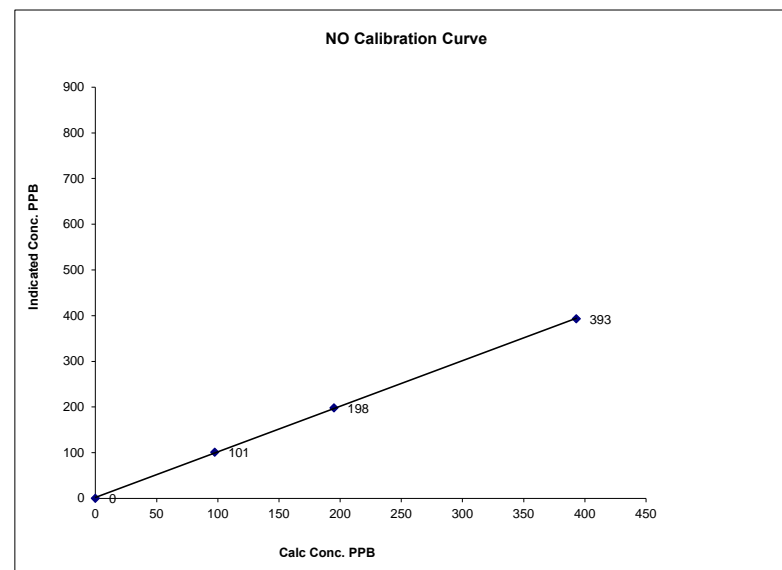


Notes:

### NO Calibration Curve

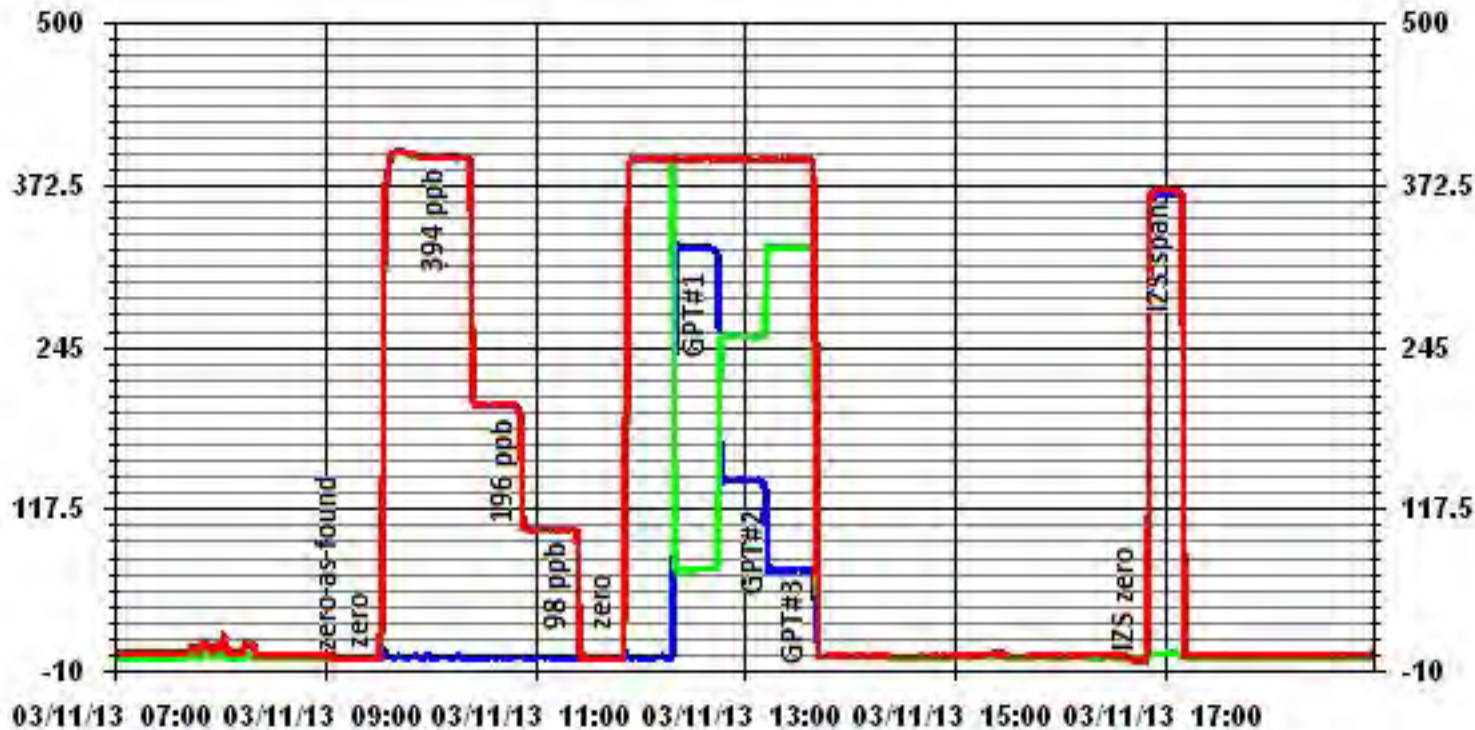
Calibration Date	March 11, 2013	
Company	LICA	
Plant / Location	Cold Lake South	
Start Time (MST)	9:00	End Time (MST) 14:45

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999879
0	0	N/A	Slope (0.85 to 1.15)	0.987681
98	101	0.9655	Intercept (± 3% F.S.)	5.9028
195	198	0.9850		
393	393	1.0000		



Notes:

### 01 Minute Averages



# Ozone

### O<sub>3</sub> Calibration Report

#### Station Information

Calibration Date	March 11, 2013	Previous Calibration	February 14, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	14:45	End Time (MST)	17:30
Reason:	Monthly Calibration		
Barometric Pressure	28.28 inHg	Station Temperature	24 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	705 LPM	745 LPM	-	-	LPM	-	-	LPM
O <sub>3</sub> Set Level	695 mmHg	-	-	-	mmHg	-	-	mmHg
Bench Lamp	28.8 Deg C	-	-	-	Deg C	-	-	Deg C
O <sub>3</sub> Lamp / Box Temp	53.5 Deg	67.5 Deg C	-	-	Deg C	-	-	Deg C
Offset / Slope	-0.2	1.046	-	-				

#### Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	NA
	No Zero Adj			
4995	350	322	324	0.9938
	No Span Adj.			
4995	150	139	139	1.0000
4995	75	69	68	1.0147
4995	0	0	0	NA
Sum of Least Squares				0.9955
New Correction Factor				0.9938

#### IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	351	384
Sample Lines Connected		YES
Previous Calibration Correction Factor:		0.9969
Current Correctio Factor Before Span Adjust:		0.9938
Percent Change:		0.3%

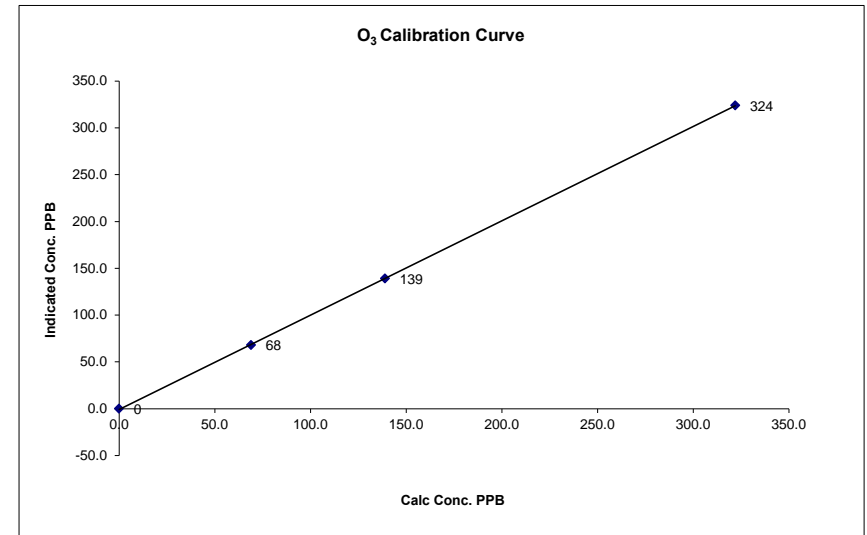
Note: NA : Not Applicable

Calibration Performed by: Waseem Ahmed

### O<sub>3</sub> Calibration Curve

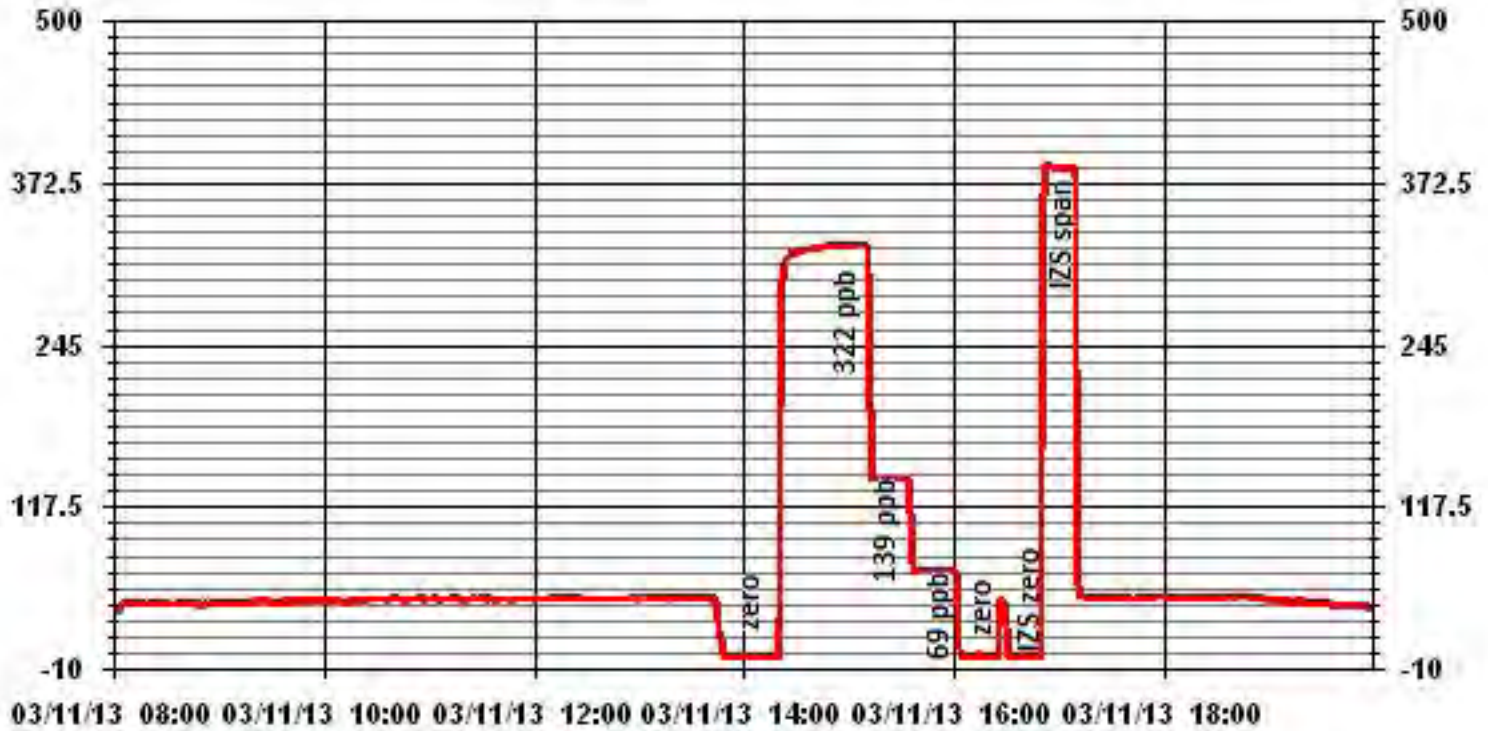
Calibration Date	March 11, 2013
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	14:45
End Time (MST)	17:30

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	0.999977	1.007690	-0.768947
69	68	1.0147			
139	139	1.0000			
322	324	0.9938			



Notes:

# 01 Minute Averages



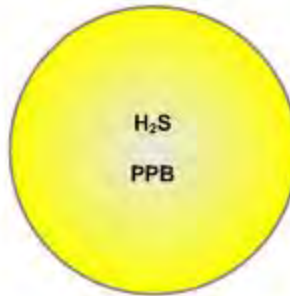
# Passive Bubble Maps

# Lakeland Industry & Community Association H<sub>2</sub>S Passive Bubble Map

MARCH 2013

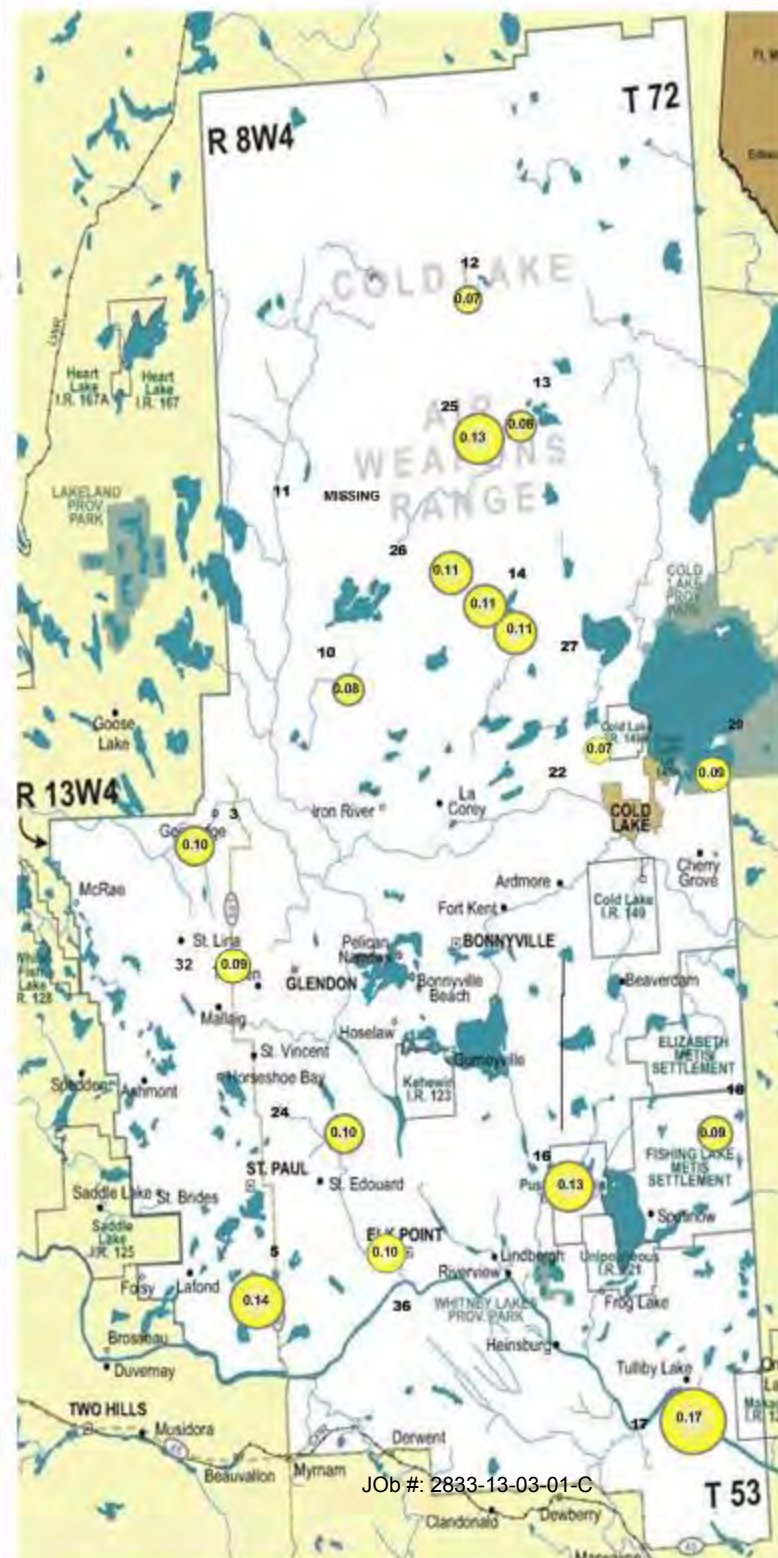
## PASSIVE STATIONS

STATION	CONCENTRATION	DUPLICATE
3 - Therien	0.10 PPB	NA
5 - Lake Eliza	0.14 PPB	NA
10 - La Corey	0.08 PPB	NA
11 - Wolf Lake	MISSING	NA
12 - Foster Creek	0.07 PPB	NA
13 - Primrose	0.08 PPB	NA
14 - Maskwa	0.11 PPB	NA
16 - Frog Lake	0.13 PPB	NA
17 - Clear Range	0.17 PPB	NA
18 - Fishing Lake	0.09 PPB	NA
22 - Cold Lake South	0.07 PPB	NA
24 - Fort George	0.10 PPB	NA
25 - Burnt Lake	0.13 PPB	NA
26 - Mahihkan	0.11 PPB	NA
27 - Mahkeses	0.11 PPB	0.11 PPB
29 - Cold Lake South 2	0.09 PPB	0.08 PPB
32 - St. Lina	0.09 PPB	NA
36 - Elk Point	0.10 PPB	NA



## Summary

Minimum : 0.07 PPB - Foster Creek  
 Maximum: 0.17 PPB - Clear Range  
 Average: 0.10 PPB (Includes Duplicates)





# Lakeland Industry & Community Association NO<sub>2</sub> Passive Bubble Map

MARCH 2013

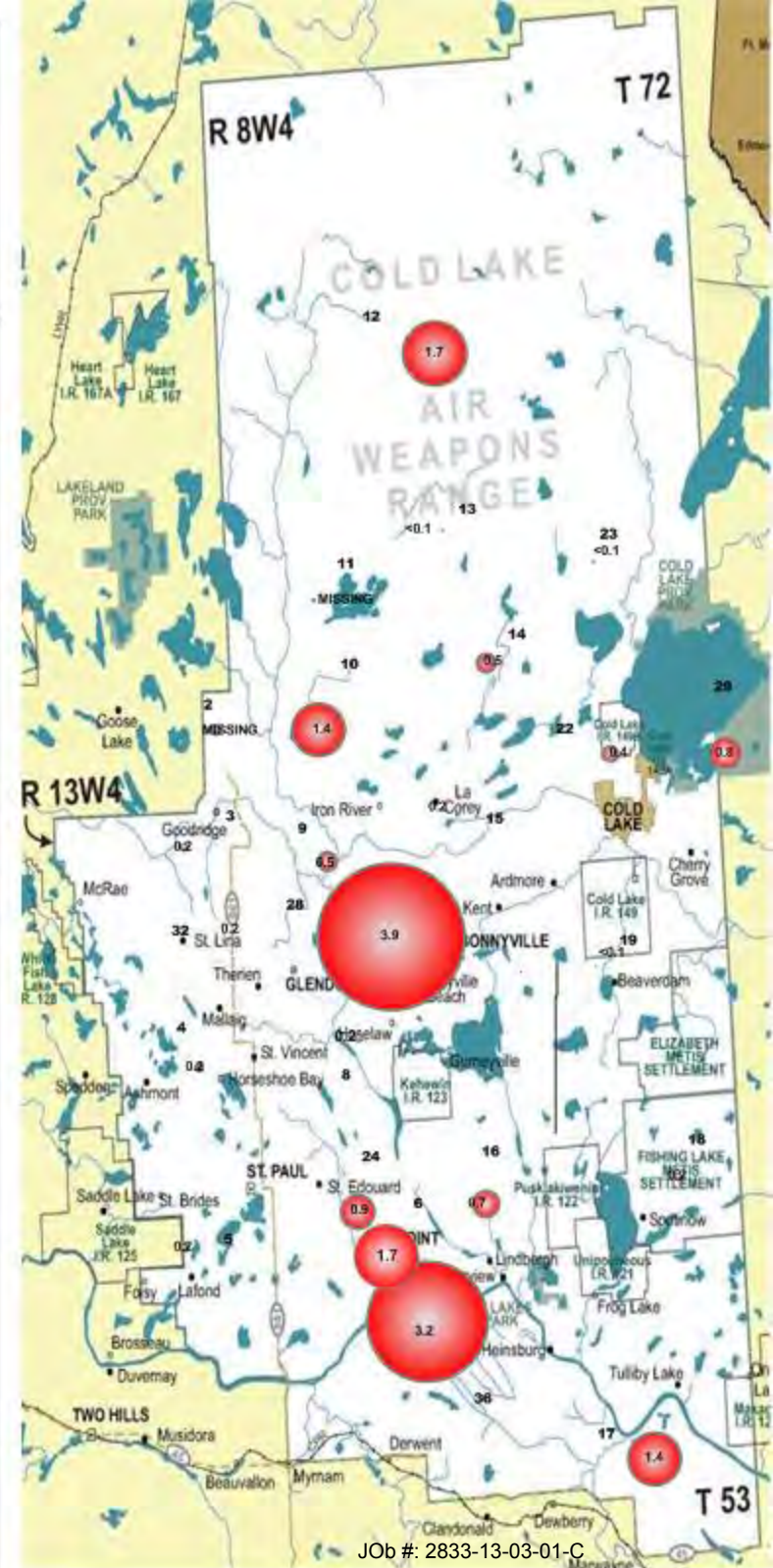
## PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	0.2 PPB	NA
4 – Flat Lake	0.2 PPB	NA
5 – Lake Eliza	0.2 PPB	NA
6 – Telegraph Creek	1.7PPB	NA
8 – Muriel-Kehewin	0.2 PPB	NA
9 – Dupre	0.2 PPB	0.8 PPB
10 – La Corey	0.9 PPB	1.8 PPB
11 – Wolf Lake	MISSING	NA
12 – Foster Creek	1.7 PPB	NA
13 – Primrose	< 0.1 PPB	NA
14 – Maskwa	0.5 PPB	NA
15 – Ardmore	0.2 PPB	NA
16 – Frog Lake	0.7 PPB	NA
17 – Clear Range	1.4 PPB	NA
18 – Fishing Lake	0.2 PPB	NA
19 – Beaverdam	< 0.1 PPB	NA
22 – Cold Lake South	0.4 PPB	NA
23 – Medley-Martineau	< 0.1 PPB	NA
24 – Fort George	0.9 PPB	NA
28 – Town of Bonnyville	3.9 PPB	NA
29 – Cold Lake South 2	0.8 PPB	NA
32 – St. Lina	0.2 PPB	NA
36 – Elk Point	3.2 PPB	NA



## Summary

Minimum : <0.1 PPB – Various Stations  
Maximum: 3.9 PPB – Town of Bonnyville  
Average: 0.9 PPB \*Includes Duplicates



# Lakeland Industry & Community Association O<sub>3</sub> Passive Bubble Map

MARCH 2013

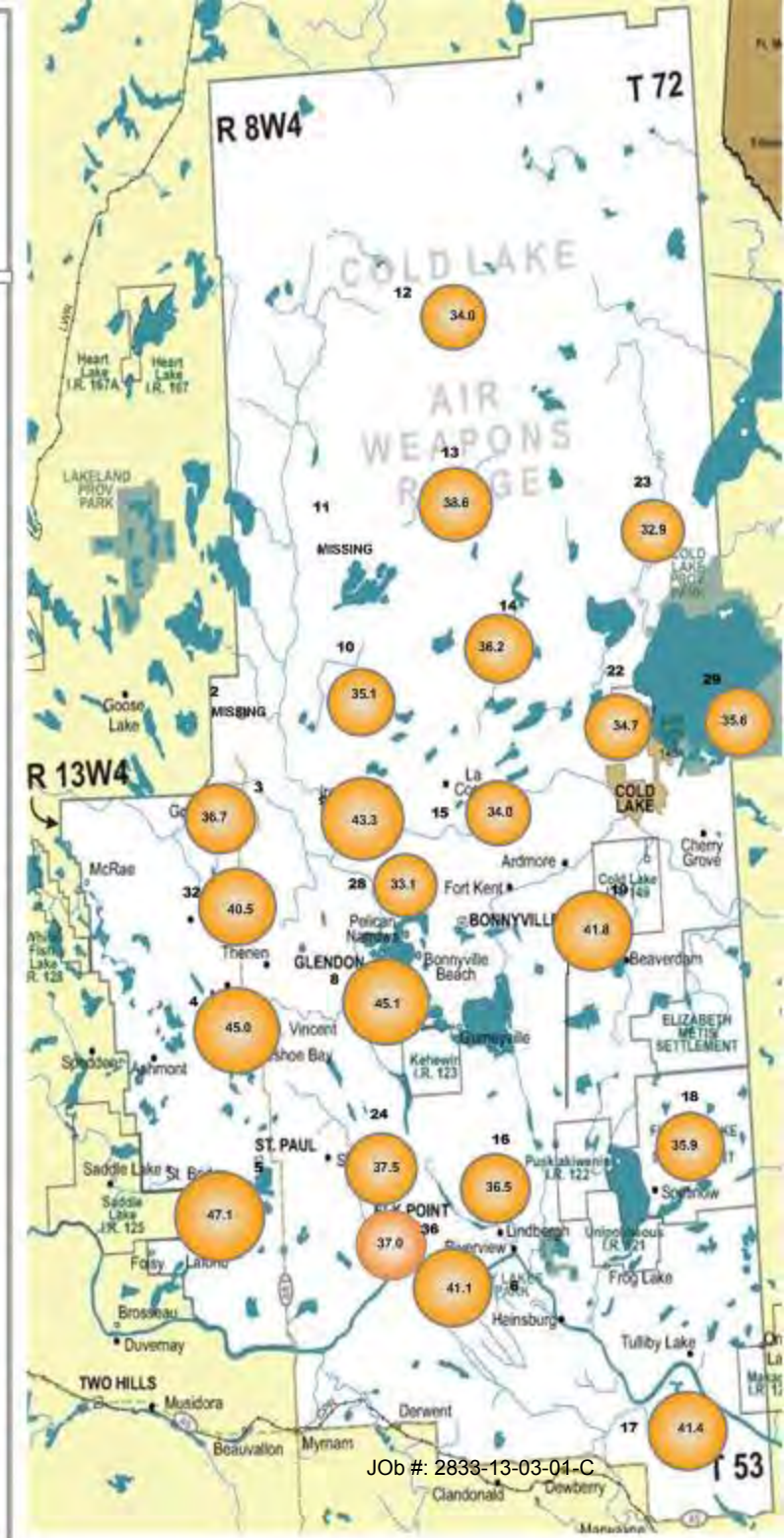
## PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	36.7 PPB	NA
4 – Flat Lake	45.0 PPB	NA
5 – Lake Eliza	47.1 PPB	NA
6 – Telegraph Creek	41.1 PPB	NA
8 – Muriel-Kehewin	45.1 PPB	NA
9 – Dupre	41.4 PPB	45.2 PPB
10 – La Corey	33.6 PPB	36.5 PPB
11 – Wolf Lake	MISSING	NA
12 – Foster Creek	34.0 PPB	NA
13 – Primrose	38.6 PPB	NA
14 – Maskwa	36.2 PPB	NA
15 – Ardmore	34.0 PPB	NA
16 – Frog Lake	36.5 PPB	NA
17 – Clear Range	41.4 PPB	NA
18 – Fishing Lake	35.9 PPB	NA
19 – Beaverdam	41.8 PPB	NA
22 – Cold Lake South	34.7 PPB	NA
23 – Medley-Martineau	32.9 PPB	NA
24 – Fort George	37.5 PPB	NA
28 – Town of Bonnyville	33.1 PPB	NA
29 – Cold Lake South 2	35.6 PPB	NA
32 – St. Lina	40.5 PPB	NA
36 – Elk Point	37.0 PPB	NA



## Summary

Minimum : 32.9 PPB – Medley-Martineau  
 Maximum: 47.1 PPB – Lake Eliza  
 Average: 38.3 PPB \*Includes Duplicates



# Lakeland Industry & Community Association SO<sub>2</sub> Passive Bubble Map

MARCH 2013

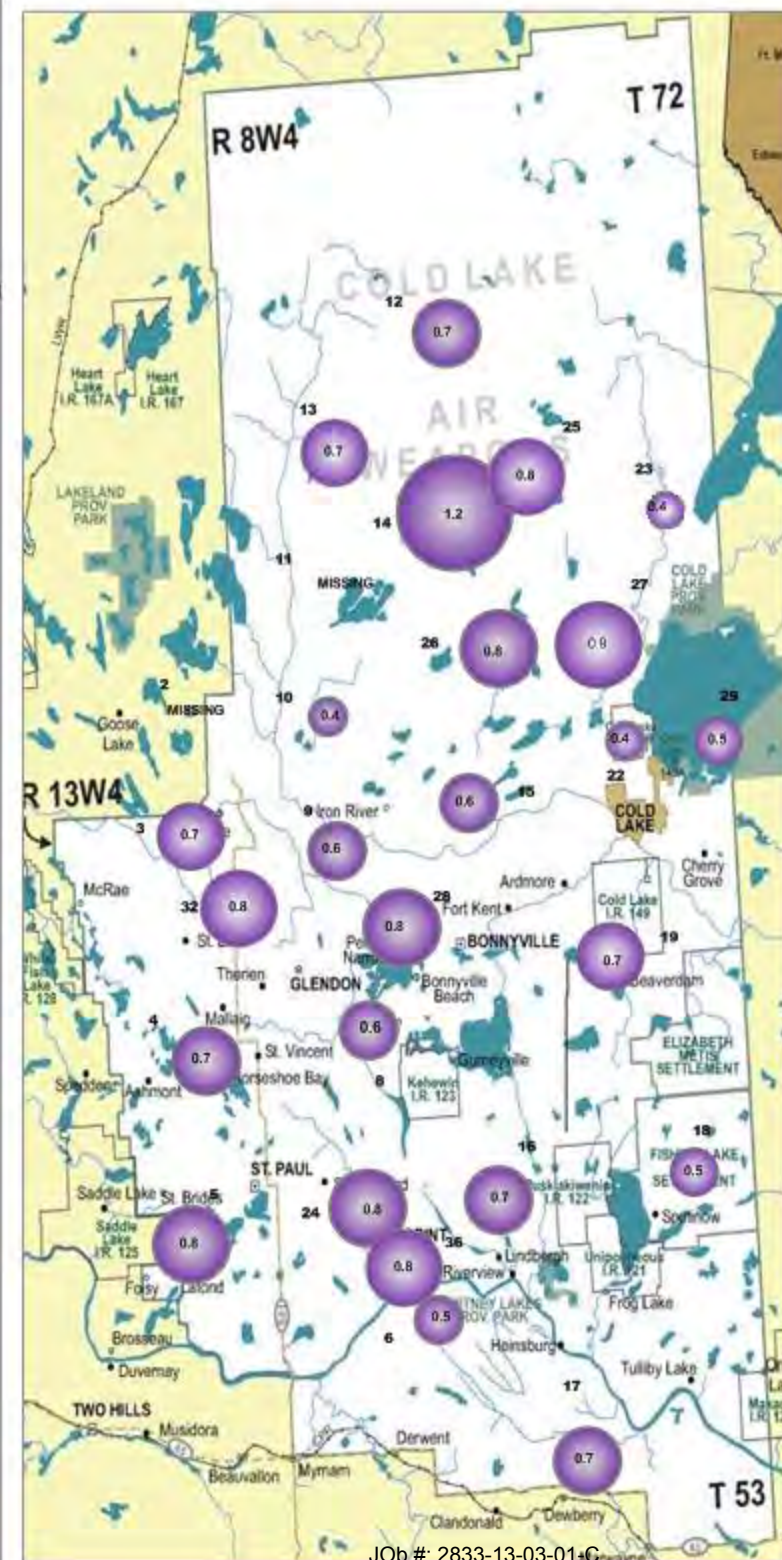
## PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	0.7 PPB	NA
4 – Flat Lake	0.7 PPB	NA
5 – Lake Eliza	0.8 PPB	NA
6 – Telegraph Creek	0.5 PPB	NA
8 – Muriel-Kehewin	0.6 PPB	NA
9 – Dupre	0.6 PPB	NA
10 – La Corey	0.4 PPB	NA
11 – Wolf Lake	MISSING	NA
12 – Foster Creek	0.7 PPB	NA
13 – Primrose	0.7 PPB	NA
14 – Maskwa	1.2 PPB	NA
15 – Ardmore	0.6 PPB	NA
16 – Frog Lake	0.7 PPB	NA
17 – Clear Range	0.7 PPB	NA
18 – Fishing Lake	0.5 PPB	NA
19 – Beaverdam	0.6 PPB	0.8 PPB
22 – Cold Lake South	0.4 PPB	0.4 PPB
23 – Medley-Martineau	0.3 PPB	0.4 PPB
24 – Fort George	0.8 PPB	NA
25 – Burnt Lake	0.8 PPB	NA
26 – Mahikan	0.8 PPB	NA
27 – Mahkeses	0.9 PPB	NA
28 – Town of Bonnyville	0.8 PPB	NA
29 – Cold Lake South 2	0.5 PPB	NA
32 – St. Lina	0.8 PPB	NA
36 – Elk Point	0.8 PPB	NA



## Summary

Minimum : 0.4 PPB – Various Stations  
 Maximum: 1.2 PPB – Maskwa  
 Average: 0.68 PPB \*Includes Duplicates



# Passive Field Data

# Field Notes

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
2	SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	01/29/2013	11:52	NA	NA	All samplers had been removed and samples are missing.
3	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/05/2013	12:23	04/05/2013	15:11	
4	SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/06/2013	16:08	04/04/2013	16:00	
5	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/06/2013	15:32	04/04/2013	15:17	
6	SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/06/2013	13:14	04/04/2013	13:06	
8	SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/06/2013	17:03	04/04/2013	17:01	
9	SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/05/2013	10:30	04/05/2013	10:50	
10	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/05/2013	14:15	04/03/2013	11:30	
11	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	NA	NA	NA	NA	Sample was not changed as the access to the sample was blocked by snow.
12	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/05/2013	17:48	04/03/2013	14:30	
13	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/06/2013	18:48	04/03/2013	17:48	
14	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/06/2013	19:48	04/03/2013	18:58	
15	SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/05/2013	09:45	04/03/2013	09:33	
16	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/06/2013	09:45	04/04/2013	09:50	
17	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/06/2013	12:17	04/04/2013	12:09	
18	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/06/2013	10:36	04/04/2013	10:48	
19	SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/06/2013	09:07	04/04/2013	09:04	
22	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/05/2013	08:45	04/05/2013	09:10	
23	SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/07/2013	16:36	04/03/2013	20:38	
24	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/06/2013	13:48	04/04/2013	13:43	
25	H <sub>2</sub> S/SO <sub>2</sub>	03/05/2013	19:00	04/03/2013	15:45	
26	H <sub>2</sub> S/SO <sub>2</sub>	03/06/2013	19:27	04/03/2013	18:36	
27	H <sub>2</sub> S/SO <sub>2</sub>	03/07/2013	17:42	04/03/2013	19:32	
28	SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/05/2013	10:55	04/05/2013	10:25	
29	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/05/2013	08:45	04/05/2013	08:55	
32	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/05/2013	11:48	04/05/2013	14:45	
36	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	03/06/2013	13:56	04/04/2013	14:01	

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
Duplicate # 19	SO <sub>2</sub>	03/06/2013	09:45	04/04/2013	09:04	
Duplicate # 22	SO <sub>2</sub>	03/07/2013	09:09	04/05/2013	08:55	
Duplicate # 23	SO <sub>2</sub>	03/07/2013	16:36	04/03/2013	20:38	
Duplicate #27	H <sub>2</sub> S	03/07/2013	17:42	04/03/2013	19:32	
Duplicate # 29	H <sub>2</sub> S	03/07/2013	09:12	04/05/2013	09:10	
Duplicate # 09	NO <sub>2</sub>	03/05/2013	10:30	04/05/2013	10:50	
Duplicate # 10	NO <sub>2</sub>	03/05/2013	14:15	04/03/2013	11:30	
Duplicate # 09	O <sub>3</sub>	03/05/2013	10:30	04/05/2013	10:30	
Duplicate # 10	O <sub>3</sub>	03/05/2013	14:15	04/03/2013	11:30	

# Passive Network Laboratory Analysis



Your Project #: 2013/03/05 - 2013/04/03  
Site Location: LICA

**Attention: MICHAEL BISAGA**

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

**Report Date: 2013/04/17**

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B328436**

**Received: 2013/04/12, 08:33**

Sample Matrix: Air  
# Samples Received: 33

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
H2S Passive Analysis (1)	20	2013/04/17	2013/04/17	EINDSOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (1)	25	2013/04/16	2013/04/17	EINDSOP-00148	Tang Passive NO2 in
O3 Passive Analysis (1)	25	2013/04/16	2013/04/17	EINDSOP-00197	EPA 300 R2.1
SO2 Passive Analysis (1)	29	2013/04/16	2013/04/17	EINDSOP-00149	Tang Passive SO2 in

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

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

**Encryption Key**

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

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

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

Total cover pages: 1

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





Maxxam Job #: B328436  
 Report Date: 2013/04/17

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION  
 Client Project #: 2013/03/05 - 2013/04/03  
 Site Location: LICA  
 Sampler Initials: SB

**RESULTS OF CHEMICAL ANALYSES OF AIR**

Maxxam ID		GD0799	GD0800	GD0801	GD0802	GD0803		
Sampling Date		2013/03/05 12:23	2013/03/06 16:08	2013/03/06 15:32	2013/03/06 13:14	2013/03/06 17:03		
	<b>UNITS</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>8</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>								
Calculated H2S	ppb	0.10		0.14			0.02	6747180
Calculated NO2	ppb	0.2	0.2	0.2	1.7	0.2	0.1	6741659
Calculated O3	ppb	36.7	45.0	47.1	41.1	45.1	0.1	6741281
Calculated SO2	ppb	0.7	0.7	0.8	0.5	0.6	0.1	6741784

RDL = Reportable Detection Limit

Maxxam ID		GD0804	GD0805	GD0806	GD0807	GD0808		
Sampling Date		2013/03/05 10:30	2013/03/05 14:15		2013/03/05 17:48	2013/03/06 18:48		
	<b>UNITS</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>								
Calculated H2S	ppb		0.08	MISSING	0.07	0.08	0.02	6747180
Calculated NO2	ppb	0.2	0.9	MISSING	1.7	<0.1	0.1	6741659
Calculated O3	ppb	41.4	33.6	MISSING	34.0	38.6	0.1	6741281
Calculated SO2	ppb	0.6	0.4	MISSING	0.7	0.7	0.1	6741784

RDL = Reportable Detection Limit

Maxxam ID		GD0809	GD0810	GD0811	GD0812	GD0813		
Sampling Date		2013/03/06 19:48	2013/03/05 09:45	2013/03/06 09:45	2013/03/06 12:47	2013/03/06 10:36		
	<b>UNITS</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>								
Calculated H2S	ppb	0.11		0.13	0.17	0.09	0.02	6747180
Calculated NO2	ppb	0.5	0.2	0.7	1.4	0.2	0.1	6741659
Calculated O3	ppb	36.2	34.0	36.5	41.4	35.9	0.1	6741281
Calculated SO2	ppb	1.2	0.6	0.7	0.7	0.5	0.1	6741784

RDL = Reportable Detection Limit



Maxxam Job #: B328436  
 Report Date: 2013/04/17

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION  
 Client Project #: 2013/03/05 - 2013/04/03  
 Site Location: LICA  
 Sampler Initials: SB

**RESULTS OF CHEMICAL ANALYSES OF AIR**

Maxxam ID		GD0814	GD0815		GD0816	GD0817		
Sampling Date		2013/03/06 09:07	2013/03/05 08:45		2013/03/07 16:36	2013/03/06 13:48		
	<b>UNITS</b>	<b>19</b>	<b>22</b>	<b>QC Batch</b>	<b>23</b>	<b>24</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>								
Calculated H2S	ppb		0.07	6747180		0.10	0.02	6747180
Calculated NO2	ppb	<0.1	0.4	6741659	<0.1	0.9	0.1	6741707
Calculated O3	ppb	41.8	34.7	6741281	32.9	37.5	0.1	6741350
Calculated SO2	ppb	0.6	0.4	6741784	0.3	0.8	0.1	6741786
RDL = Reportable Detection Limit								

Maxxam ID		GD0818	GD0819	GD0820	GD0821	GD0822		
Sampling Date		2013/03/05 19:00	2013/03/06 19:47	2013/03/07 17:42	2013/03/05 10:55	2013/03/05 08:45		
	<b>UNITS</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>								
Calculated H2S	ppb	0.13	0.11	0.11		0.09	0.02	6747180
Calculated NO2	ppb				3.9	0.8	0.1	6741707
Calculated O3	ppb				33.1	35.6	0.1	6741350
Calculated SO2	ppb	0.8	0.8	0.9	0.8	0.5	0.1	6741786
RDL = Reportable Detection Limit								

Maxxam ID		GD0823	GD0824		GD0827	GD0828		
Sampling Date		2013/03/05 11:48	2013/03/06 13:56		2013/03/05 10:30	2013/03/05 14:15		
	<b>UNITS</b>	<b>32</b>	<b>36</b>	<b>QC Batch</b>	<b>9 DUP</b>	<b>10 DUP</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>								
Calculated H2S	ppb	0.09	0.10	6747180			0.02	
Calculated NO2	ppb	0.2	3.2	6741707	0.8	1.8	0.1	6741659
Calculated O3	ppb	40.5	37.0	6741350	45.2	36.5	0.1	6741350
Calculated SO2	ppb	0.8	0.8	6741786			0.1	
RDL = Reportable Detection Limit								



Maxxam Job #: B328436  
 Report Date: 2013/04/17

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION  
 Client Project #: 2013/03/05 - 2013/04/03  
 Site Location: LICA  
 Sampler Initials: SB

**RESULTS OF CHEMICAL ANALYSES OF AIR**

Maxxam ID		GD0829	GD0830		GD0831	GD0832		
Sampling Date		2013/03/06 09:45	2013/03/07 09:09		2013/03/07 16:36	2013/03/07 17:42		
	<b>UNITS</b>	<b>19 DUP</b>	<b>22 DUP</b>	<b>QC Batch</b>	<b>23 DUP</b>	<b>27 DUP</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>								
Calculated H2S	ppb					0.11	0.02	6747180
Calculated SO2	ppb	0.8	0.4	6741784	0.4		0.1	6741786

RDL = Reportable Detection Limit

Maxxam ID		GD0833		
Sampling Date		2013/03/07 09:12		
	<b>UNITS</b>	<b>29 DUP</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>				
Calculated H2S	ppb	0.08	0.02	6747180

RDL = Reportable Detection Limit



Maxxam Job #: B328436  
Report Date: 2013/04/17

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION  
Client Project #: 2013/03/05 - 2013/04/03  
Site Location: LICA  
Sampler Initials: SB

**General Comments**

Sample GD0822 (#29) for O3 parameter was returned to the lab. with perforation in filter membrane. - OZ  
1. Sample GD0806(#11) for H2S parameter was not returned to the lab. - AC

**Results relate only to the items tested.**



LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION  
 Attention: MICHAEL BISAGA  
 Client Project #: 2013/03/05 - 2013/04/03  
 P.O. #:  
 Site Location: LICA

Quality Assurance Report  
 Maxxam Job Number: PB328436

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6741281 OZ	Calibration Check	Calculated O3	2013/04/16		99	%	91 - 107
	Spiked Blank	Calculated O3	2013/04/16		99	%	N/A
	Method Blank	Calculated O3	2013/04/16	<0.1		ppb	
6741350 OZ	Calibration Check	Calculated O3	2013/04/16		99	%	91 - 107
	Spiked Blank	Calculated O3	2013/04/16		97	%	N/A
	Method Blank	Calculated O3	2013/04/16	<0.1		ppb	
6741659 DF4	Calibration Check	Calculated NO2	2013/04/16		100	%	76 - 118
	Spiked Blank	Calculated NO2	2013/04/16		99	%	N/A
	Method Blank	Calculated NO2	2013/04/16	<0.1		ppb	
6741707 DF4	Calibration Check	Calculated NO2	2013/04/16		100	%	76 - 118
	Spiked Blank	Calculated NO2	2013/04/16		97	%	N/A
	Method Blank	Calculated NO2	2013/04/16	<0.1		ppb	
6741784 DF4	Calibration Check	Calculated SO2	2013/04/16		100	%	95 - 105
	Spiked Blank	Calculated SO2	2013/04/16		93	%	N/A
	Method Blank	Calculated SO2	2013/04/16	<0.1		ppb	
6741786 DF4	Calibration Check	Calculated SO2	2013/04/16		100	%	95 - 105
	Spiked Blank	Calculated SO2	2013/04/16		105	%	N/A
	Method Blank	Calculated SO2	2013/04/16	<0.1		ppb	
6747180 WC6	Calibration Check	Calculated H2S	2013/04/17		98	%	80 - 120
	Spiked Blank	Calculated H2S	2013/04/17		101	%	N/A

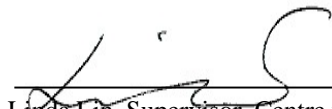
Calibration Check: A calibration standard analyzed at different times to evaluate on-going calibration accuracy.  
 Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.  
 Method Blank: A blank matrix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

**Validation Signature Page**

**Maxxam Job #: B328436**

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

A handwritten signature in black ink, appearing to read "Linda Lin". The signature is written over a horizontal line.

Linda Lin, Supervisor, Centre for Passive Sampling Technology

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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  
March 2013

Prepared By:



April 29, 2013

# Lakeland Industry & Community Association Ambient Air Monitoring Maskwa

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## Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: Maskwa  
Data Period: March 2013

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Katherine Rapske

# Calibration Procedure

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

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

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

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

The calibrations conducted at the LICA - Maskwa Air Monitoring Stations conform to the following Maxxam Standard Operation Procedures:

- CAL SOP-00211
- CAL SOP-00209
- CAL SOP-00213
- CAL SOP-00214
- CAL SOP-00208

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

# MONTHLY CONTINUOUS DATA SUMMARY

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – MASKWA

### Continuous Ambient Monitoring – March 2013

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	0.79	23	30	3	8.4	312(NW)	5.6	20	100.0
H2S (PPB)	10	3	0	0	0.05	4	12	15	12.8	147(SE)	0.4	18	100.0
THC (PPM)	-	-	-	-	2.28	4.6	24	6	0.7	186(S)	2.8	28	100.0
NOx (PPB)	-	-	-	-	3.99	52.0	28	7	1.4	218(SW)	11.7	28	98.8
NO (PPB)	-	-	-	-	0.74	23.5	28	7	1.4	218(SW)	3.0	28	98.8
NO <sub>2</sub> (PPB)	159	-	0	-	3.25	28.9	28	6	0.3	257(WSW)	8.7	28	98.8
VECTOR WS (KPH)	-	-	-	-	6.16	19.2	20	12	-	110(ESE)	12.8	20	100.0
VECTOR WD (DEGREES)	-	-	-	-	109(ESE)	-	-	-	-	-	-	-	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	61.71	87	31	22	3.1	311(NW)	76.5	22	100.0
TEMPERATURE (DEG C)	-	-	-	-	-7.48	10.5	28	14	10.6	190(S)	2.3	28	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	944	954	4, 24	VAR	VAR	VAR	952.2	4	100.0
PRECIPITATION (MM)	-	-	-	-	0.02	1.2	23	9	3.9	9(N)	3.7	22	100.0

NA-NOT APPLICABLE VAR-VARIOUS

# General Monthly Summary

## Equipment Operation

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

### AQM STATION – LICA – Maskwa

#### Sulphur Dioxide (PPB)

- Analyzer make / model - API 100E, S/N: 508

The analyzer was working well throughout the month. The analyzer responded slowly at first span point on March 12<sup>th</sup>. It was suspected that the tubing connected between the calibrator and the calibration gas cylinder was damaged. Replaced the tubing and restarted the calibration. The monthly calibration was then re-started. The inlet filter was changed before the calibration was started. Data was corrected using daily zero information.

#### Hydrogen Sulphide (PPB)

- Analyzer make / model - API 101A, S/N: 511

No operational issues were observed during the month. The monthly calibration was performed on March 12<sup>th</sup>. 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. Following the H2 gas cylinder replacement on March 14<sup>th</sup>, the monthly calibration was performed. The inlet filter was changed before the monthly calibration was started. The analyzer spanned low on March 18<sup>th</sup> due to the span gas cylinder emptying. The span gas was replaced on March 20<sup>th</sup>. A daily zero/span check was then performed. This issue did not affect the data quality. 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

The analyzer was working well throughout the month. The monthly calibration attempted to be performed on March 12<sup>th</sup> and 14<sup>th</sup>. However, the analyzer showed its slow responses on both calibrations. Upon investigation, it was found that the tubing connecting the calibrator and the calibration gas cylinder was damaged. A 3-points calibration was performed on March 19<sup>th</sup> following tubing replacement. The analyzer responded well. The inlet filter was changed on March 12<sup>th</sup>. 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 20<sup>th</sup>, 2011.

No operational issues were observed this month. Hourly maximum readings recorded on March 19<sup>th</sup> at hour 3 and March 25<sup>th</sup> at hour 4 were invalidated as the readings went above the full scale.

### Relative Humidity (PERCENT)

- System make / model - Met One 083

No operational issues were observed during the month.

### Precipitation (MM)

- System make / model - Met One 387

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

No issue was recorded this month.

# Continuous Monitoring



# Monthly Summaries, Graphs & Wind Roses

# Sulphur Dioxide

**LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA**  
**MARCH 2013**  
**SULPHUR DIOXIDE (SO<sub>2</sub>) 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	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.
1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	S	0	0	1	0	0	0	2	0.8	24	
2	0	0	0	1	0	0	0	0	0	2	8	7	5	1	0	0	S	0	0	0	0	0	0	0	8	1.0	24	
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0	24	
4	0	1	1	1	1	0	0	0	0	1	1	1	2	2	S	2	1	1	1	1	0	0	0	0	2	0.7	24	
5	0	0	0	0	0	0	0	1	0	1	2	1	1	S	1	0	0	0	1	2	1	1	1	1	2	0.6	24	
6	1	1	0	0	0	0	0	0	0	0	1	1	S	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
7	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
8	0	0	0	0	0	0	0	0	0	1	S	0	0	2	1	1	1	1	1	1	0	0	0	0	2	0.3	24	
9	0	1	1	1	0	0	1	1	1	S	1	2	6	2	0	0	0	0	0	0	0	0	0	0	6	0.7	24	
10	1	1	1	0	0	0	0	0	S	1	1	1	0	0	0	1	0	0	0	0	3	0	0	0	3	0.4	24	
11	0	1	1	0	1	1	0	S	0	0	0	0	4	1	8	7	6	7	0	0	0	0	0	0	8	1.6	24	
12	0	2	0	0	0	0	S	0	0	1	C	C	C	C	C	C	C	C	0	0	0	0	0	0	2	0.2	24	
13	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	
14	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
15	0	0	0	S	0	0	0	0	0	0	0	0	2	5	2	2	0	0	0	0	0	0	0	0	5	0.5	24	
16	0	0	S	0	0	0	0	0	1	2	0	2	0	0	0	1	3	3	1	4	0	0	0	1	4	0.8	24	
17	1	S	0	0	0	0	0	0	0	0	1	0	1	2	3	3	0	1	0	0	0	0	0	0	3	0.5	24	
18	S	0	0	0	0	0	0	0	0	0	1	1	2	1	0	0	1	0	0	0	0	0	0	S	2	0.3	24	
19	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	2	3	6	6	2	2	S	2	6	1.2	24	
20	8	2	2	1	2	1	1	1	2	4	9	9	8	7	9	7	9	9	9	10	9	S	5	4	10	5.6	24	
21	0	2	2	2	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	2	0.4	24	
22	0	0	0	0	0	0	S	S	0	0	0	0	0	0	2	4	1	1	S	0	0	0	0	0	4	0.4	24	
23	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	S	0	0	0	0	0	0	1	0.1	24	
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0	0	0	0	0	1	0.0	24	
25	0	0	0	0	0	0	S	S	0	0	0	0	0	0	1	1	S	0	1	0	1	0	0	0	1	0.2	24	
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	1	0.0	24	
27	1	1	1	1	2	2	1	2	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	2	1.1	24	
28	1	1	1	0	0	0	0	1	4	5	4	1	2	S	2	1	1	1	0	0	0	0	0	1	5	1.1	24	
29	1	1	3	13	3	2	1	1	0	0	0	3	S	1	1	1	1	1	1	0	0	0	1	1	13	1.6	24	
30	1	18	13	23	13	1	3	2	1	1	1	S	1	1	0	0	0	1	0	3	0	1	0	0	23	3.7	24	
31	0	0	0	0	0	0	2	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0.2	24	
HOURLY MAX		8	18	13	23	13	2	3	2	4	5	9	9	8	7	9	7	9	9	9	10	9	2	5	4			
HOURLY AVG		0.5	1.1	0.9	1.5	0.8	0.3	0.4	0.4	0.4	0.7	1.1	1.2	1.3	0.9	1.0	1.2	1.2	1.0	0.8	0.9	0.6	0.2	0.3	0.4			

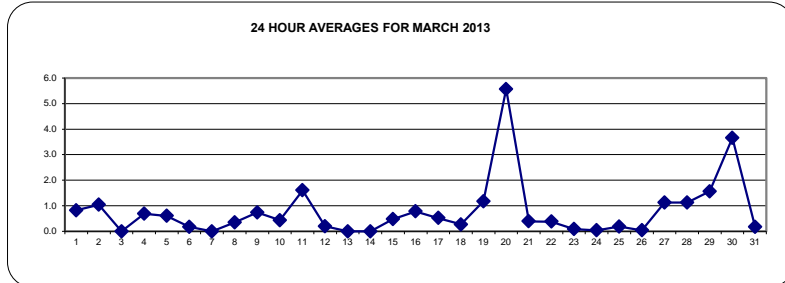
**STATUS FLAG CODES**

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

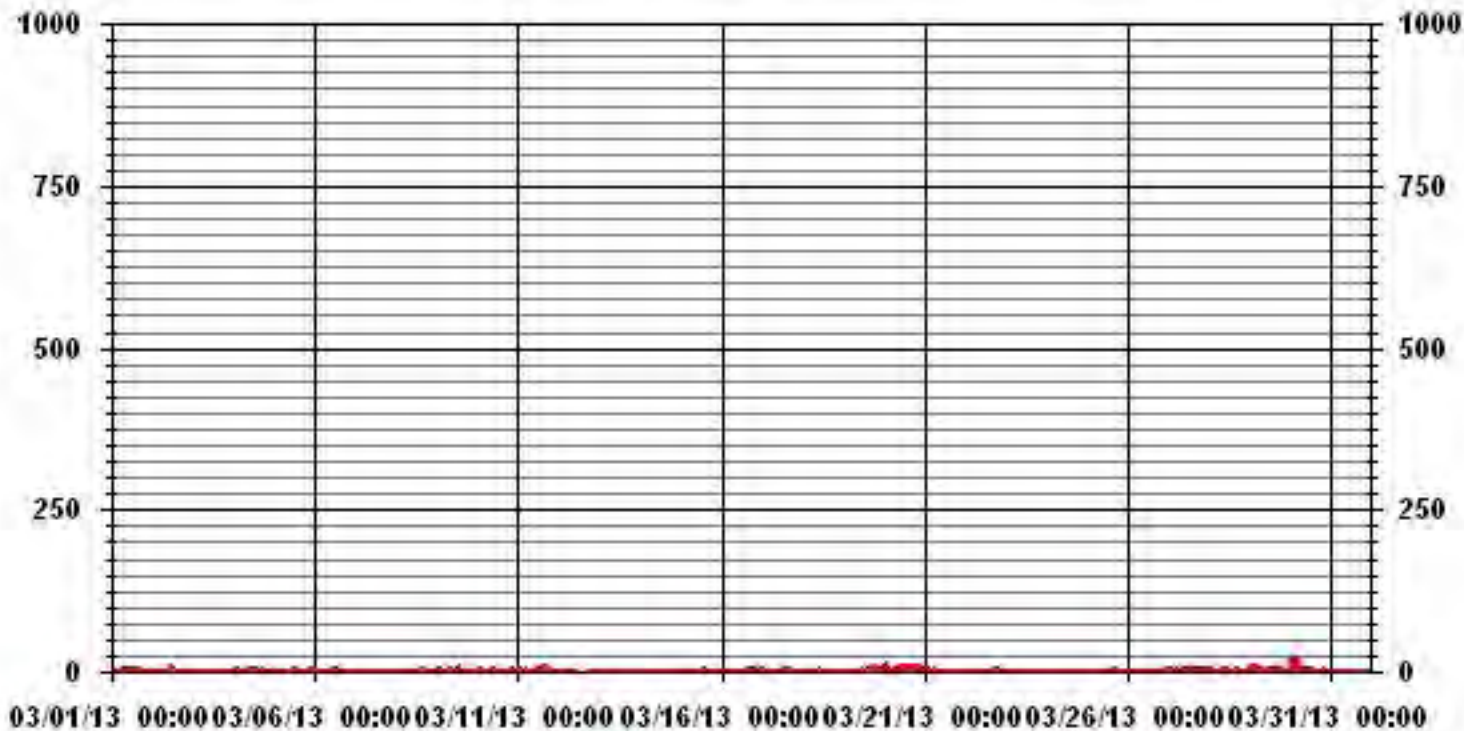
**OBJECTIVE LIMIT:** ALBERTA ENVIRONMENT: 1-HR 172 PPB 24-HR 48 PPB

**MONTHLY SUMMARY**

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	240		
MAXIMUM 1-HR AVERAGE:	23 PPB	@ HOUR(S)	3 ON DAY(S)
MAXIMUM 24-HR AVERAGE:	5.6 PPB		20 ON DAY(S)
IZS CALIBRATION TIME:	36 HRS	OPERATIONAL TIME:	744 HRS
MONTHLY CALIBRATION TIME:	8 HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	2.02	MONTHLY AVERAGE:	0.79 PPB



### 01 Hour Averages



— LICA30 SO2\_ PPB

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2013

## 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	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	MAX.	AVG.		
DAY																												
1	2	1	2	3	1	1	1	1	2	2	1	2	2	2	2	1	S	1	1	1	0	0	0	0	3	1.3	24	
2	1	1	1	3	0	0	0	0	3	6	15	10	10	4	1	0	S	0	0	0	0	0	0	0	15	2.4	24	
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	1	1	1	1	1	0.3	24	
4	1	1	1	1	1	1	1	1	2	2	1	2	3	5	S	4	2	1	1	1	1	1	1	1	5	1.6	24	
5	1	1	1	0	0	0	1	2	1	2	5	2	1	S	2	1	1	1	2	2	2	2	2	2	5	1.5	24	
6	2	1	1	1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	2	0.6	24	
7	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	1	1	1	1	1	1	1	1	1	0.5	24	
8	1	1	1	1	1	1	1	1	1	2	S	0	0	3	2	3	2	1	2	1	1	1	0	0	3	1.2	24	
9	0	4	3	1	1	1	1	2	1	S	4	7	10	4	2	0	0	0	0	0	0	0	1	1	10	1.9	24	
10	2	2	2	1	1	1	1	1	S	2	2	2	1	0	2	2	0	0	0	1	5	1	0	0	5	1.3	24	
11	0	6	4	2	2	2	1	S	0	0	2	9	10	8	16	17	21	30	0	0	0	0	0	0	30	5.7	24	
12	0	7	1	0	0	0	S	0	0	2	C	C	C	C	C	C	C	C	C	1	1	2	0	1	7	1.1	24	
13	1	0	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
14	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
15	0	1	1	S	0	0	0	1	0	0	1	8	9	8	9	1	1	1	1	0	0	1	1	9	2.0	24		
16	1	1	S	0	0	1	1	0	4	6	1	5	1	2	2	3	7	8	3	9	1	1	1	3	9	2.7	24	
17	2	S	0	0	0	0	0	2	1	1	1	3	1	9	14	8	25	3	6	1	0	0	0	0	25	3.3	24	
18	S	0	0	0	0	0	0	0	0	1	3	1	11	5	0	0	9	0	0	0	0	0	0	S	11	1.4	24	
19	0	0	0	0	0	0	0	0	0	1	1	2	2	1	4	6	10	9	10	9	5	3	S	3	10	2.9	24	
20	18	4	5	2	3	1	2	1	13	10	15	12	12	10	13	12	12	14	13	13	13	S	8	11	18	9.4	24	
21	6	7	5	6	3	4	4	1	1	4	1	0	2	2	0	0	0	0	0	0	S	0	0	0	7	2.0	24	
22	1	1	1	1	1	0	S	S	0	1	0	1	0	1	2	12	9	2	1	S	1	0	0	0	12	1.7	22	
23	0	1	1	1	1	0	2	3	0	0	0	0	1	0	4	4	0	0	S	0	0	0	0	0	4	0.8	24	
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	S	1	1	1	0	0	0	1	0.3	24	
25	0	0	0	0	0	0	S	S	0	0	0	0	0	1	2	1	S	1	1	1	2	2	0	0	2	0.5	22	
26	1	1	1	0	0	0	0	0	0	0	0	0	0	2	2	S	1	1	1	1	1	1	1	1	1	2	0.7	24
27	1	2	1	2	3	3	2	2	2	1	1	1	1	2	S	1	1	1	1	1	1	1	1	1	3	1.4	24	
28	1	1	1	1	1	1	2	2	9	11	9	2	3	S	3	2	1	1	1	1	1	1	1	1	11	2.5	24	
29	2	2	15	19	4	3	2	1	1	1	2	11	S	3	1	2	1	1	1	1	1	1	2	2	19	3.4	24	
30	2	38	38	40	34	3	3	3	2	2	9	S	8	6	1	1	1	6	2	5	3	3	1	1	40	9.2	24	
31	1	1	3	1	0	2	5	2	1	1	S	1	1	1	1	1	1	2	1	1	0	1	3	1	5	1.4	24	
HOURLY MAX	18	38	38	40	34	4	5	3	13	11	15	12	12	10	16	17	25	30	13	13	13	3	8	11				
HOURLY AVG	1.6	2.8	3.0	2.9	1.9	0.9	1.1	1.0	1.5	2.0	2.7	2.7	3.2	2.9	3.1	3.3	3.9	3.0	1.8	1.8	1.4	0.8	0.8	1.1				

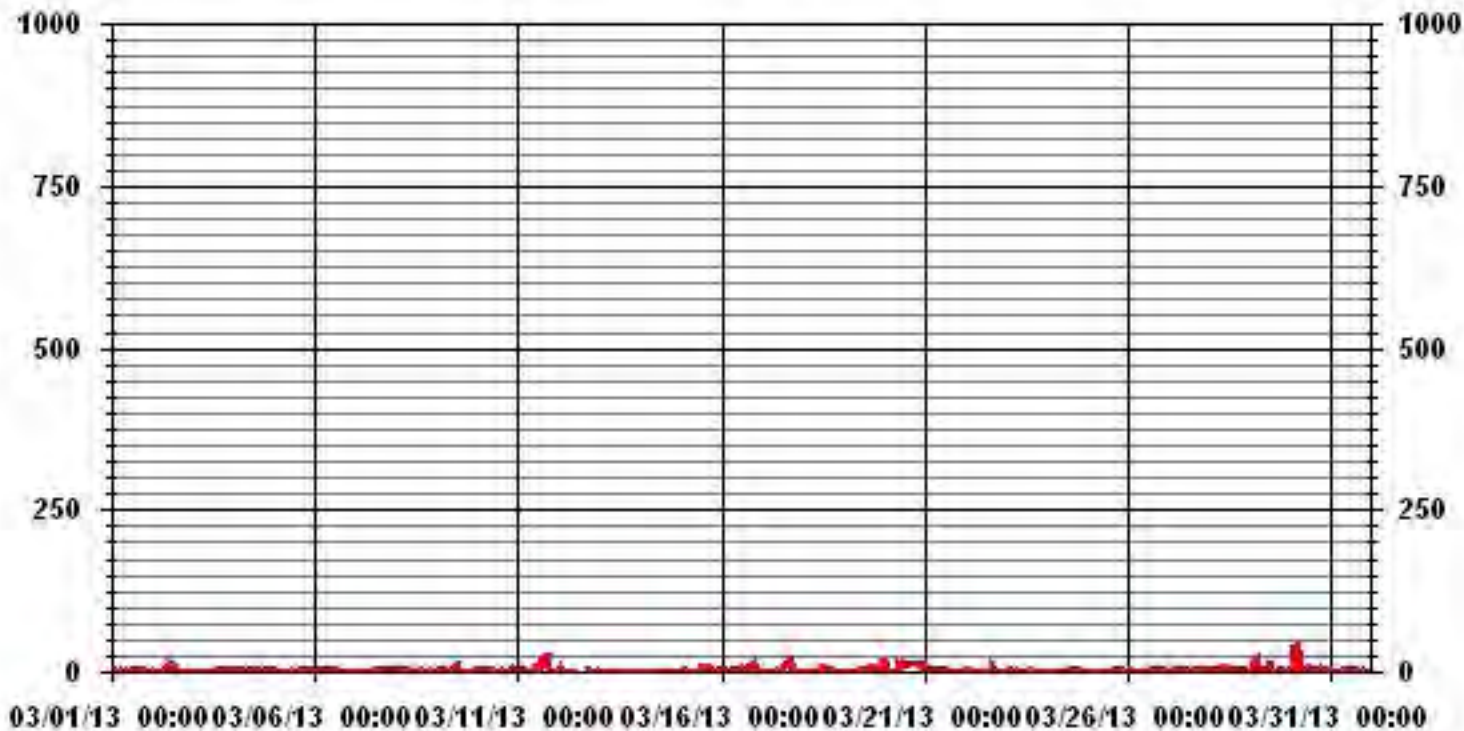
**STATUS FLAG CODES**

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:	448
MAXIMUM INSTANTANEOUS VALUE:	40 PPB @ HOUR(S) 3 ON DAY(S) 30
IZS CALIBRATION TIME:	36 HRS
MONTHLY CALIBRATION TIME:	9 HRS
STANDARD DEVIATION:	4.30
OPERATIONAL TIME:	740 HRS

### 01 Hour Averages



— LICA30 SO2MAX PPB

LICA30  
 SO2\_ / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

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

Wind Parameter : WDR  
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	7.00	7.14	11.14	5.57	5.57	7.57	4.71	4.00	7.28	17.71	4.85	2.57	2.14	3.14	5.14	4.28	99.85
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.14
< 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	7.00	7.14	11.14	5.57	5.57	7.57	4.71	4.00	7.28	17.71	4.85	2.57	2.14	3.14	5.28	4.28	

Calm : .00 %

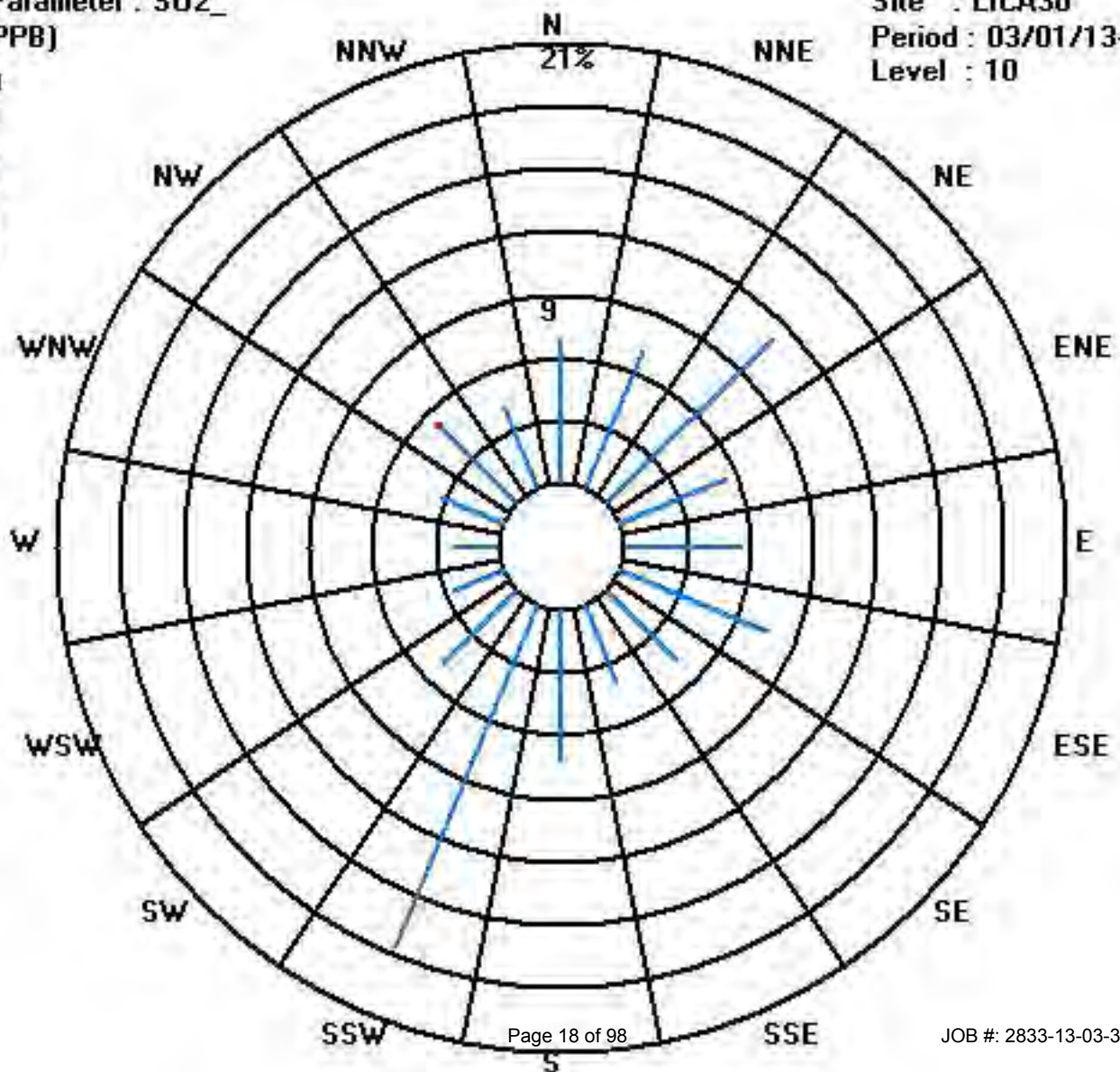
Total # Operational Hours : 700

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	49	50	78	39	39	53	33	28	51	124	34	18	15	22	36	30	699
< 60															1		1
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	49	50	78	39	39	53	33	28	51	124	34	18	15	22	37	30	

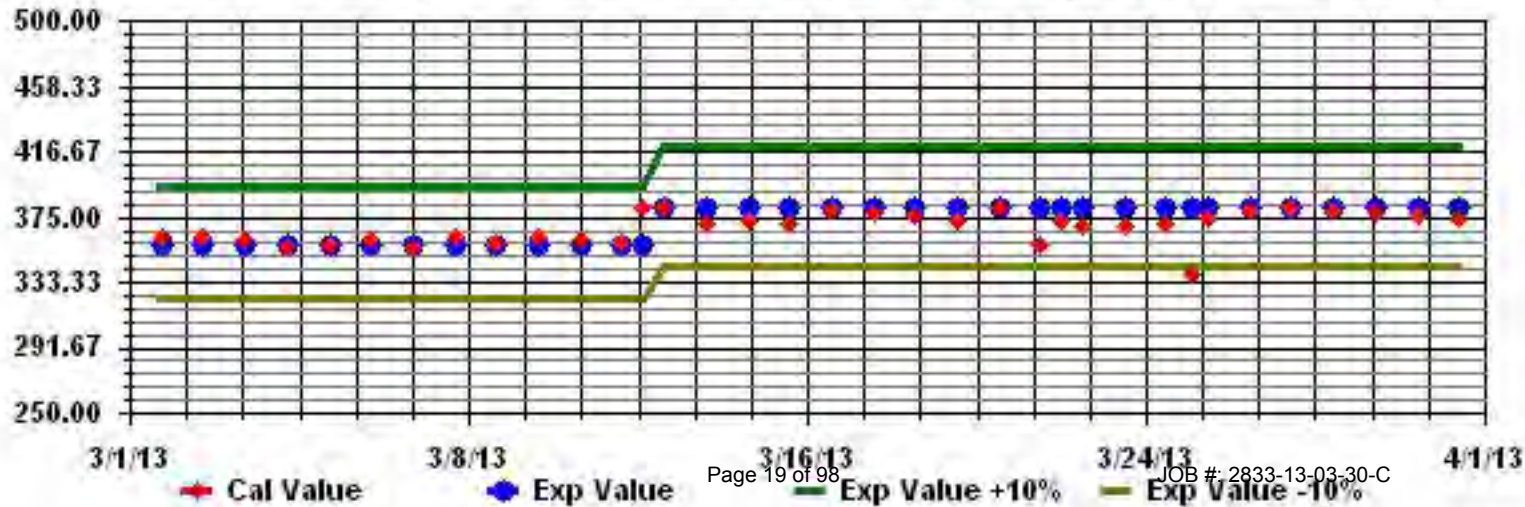
Calm : .00 %

Total # Operational Hours : 700





Calibration Graph for Site: LICA30 Parameter: SO2\_ Sequence: S02 Phase: SPAll



# Hydrogen Sulphide

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2013

HYDROGEN SULPHIDE (H<sub>2</sub>S) 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	HOUR START	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	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0	24
2	0	0	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	S	0	0	0	0	0	0	0	0	1	0.3	24
3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0.0	24
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0	24
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
6	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
7	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
8	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
9	0	1	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
10	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
11	0	0	0	0	0	0	0	S	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	S	0	0	0	C	C	C	C	C	4	0	C	0	0	0	0	0	0	0	4	0.2	24	
13	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
14	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
15	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
16	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
17	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
18	S	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0.4	24	
19	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.1	24	
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	S	0	0	1	0.1	24	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0	24
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0	24
24	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	2	0.2	24	
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
28	0	0	0	0	0	0	1	1	0	0	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
29	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
30	0	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
31	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX	0	1	1	1	1	1	2	1	1	1	1	1	1	1	0	0	4	0	0	0	1	1	1	0	0	0	0	0	
HOURLY AVG	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	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	

**STATUS FLAG CODES**

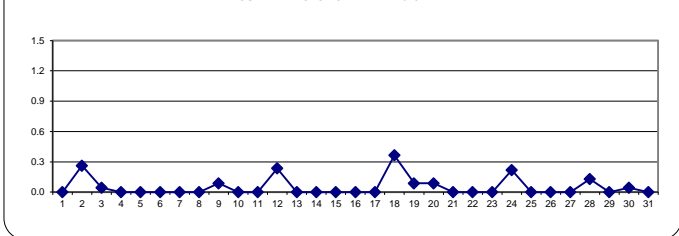
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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

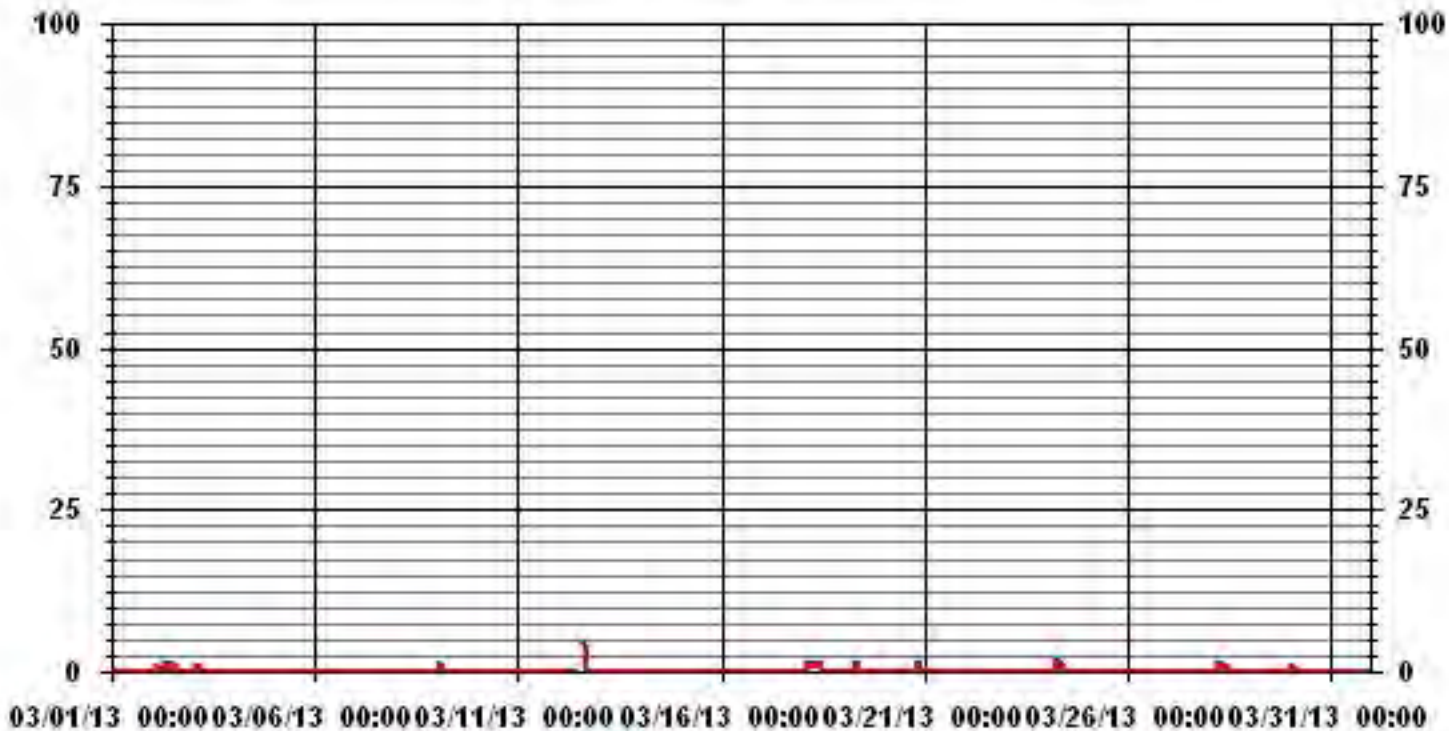
**MONTHLY SUMMARY**

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	30					
MAXIMUM 1-HR AVERAGE:	4	PPB	@ HOUR(S)	15	ON DAY(S)	12
MAXIMUM 24-HR AVERAGE:	0.4	PPB			ON DAY(S)	18
				VAR-VARIOUS		
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.26		MONTHLY AVERAGE:	0.05	PPB	

**24 HOUR AVERAGES FOR MARCH 2013**



### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2013

## HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	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	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	S	1	0	1	0	0	0	1	0.7	24	
2	1	0	0	1	0	0	0	1	1	1	1	1	1	0	0	0	S	0	0	0	0	0	0	1	1	1	0.4	24
3	1	1	1	1	1	0	0	1	0	0	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0.3	24
4	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
5	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
6	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	1	0.1	24	
7	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
8	0	0	0	0	0	0	0	0	0	0	S	0	1	0	0	1	0	1	1	1	1	1	1	1	0	1	0.3	24
9	1	1	1	1	1	0	0	0	0	S	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
10	0	0	0	0	0	1	1	0	S	1	0	0	1	0	1	1	0	1	0	0	1	0	0	0	1	0.3	24	
11	1	1	1	1	0	0	0	S	1	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0	1	0.4	24	
12	0	0	0	0	0	S	0	0	0	C	0	C	C	C	C	0	C	C	0	0	1	1	0	0	1	0.1	24	
13	0	1	1	1	1	S	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
14	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
15	0	0	0	S	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24
16	0	0	S	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
17	0	S	0	0	0	1	1	1	1	0	1	0	0	1	0	1	0	1	0	1	0	0	0	0	0	1	0.3	24
18	S	1	1	1	1	1	1	1	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	S	2	0.7	24
19	0	0	1	0	0	1	1	2	1	1	1	0	0	1	1	0	0	0	0	0	0	1	1	S	0	2	0.5	24
20	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	0.7	24
21	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0.4	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.0	24
23	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
24	0	1	0	0	0	2	3	1	2	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	3	0.4	24
25	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	0.1	24
26	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	S	1	1	0	0	0	0	0	0	0	1	0.2	24
27	0	1	0	0	0	0	0	0	1	0	1	0	1	1	S	1	1	0	1	1	1	1	1	0	0	1	0.5	24
28	0	0	0	1	0	0	3	3	1	1	1	1	0	S	1	1	1	1	0	1	0	1	0	0	3	0.7	24	
29	1	1	1	1	0	0	0	0	0	0	0	0	S	0	1	0	1	0	0	0	0	0	0	0	0	1	0.3	24
30	1	1	1	1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
31	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.0	24
HOURLY MAX	1	1	1	1	1	2	3	3	2	2	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1		
HOURLY AVG	0.3	0.4	0.3	0.4	0.2	0.2	0.4	0.5	0.5	0.3	0.4	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.2	0.2	0.1	0.1				

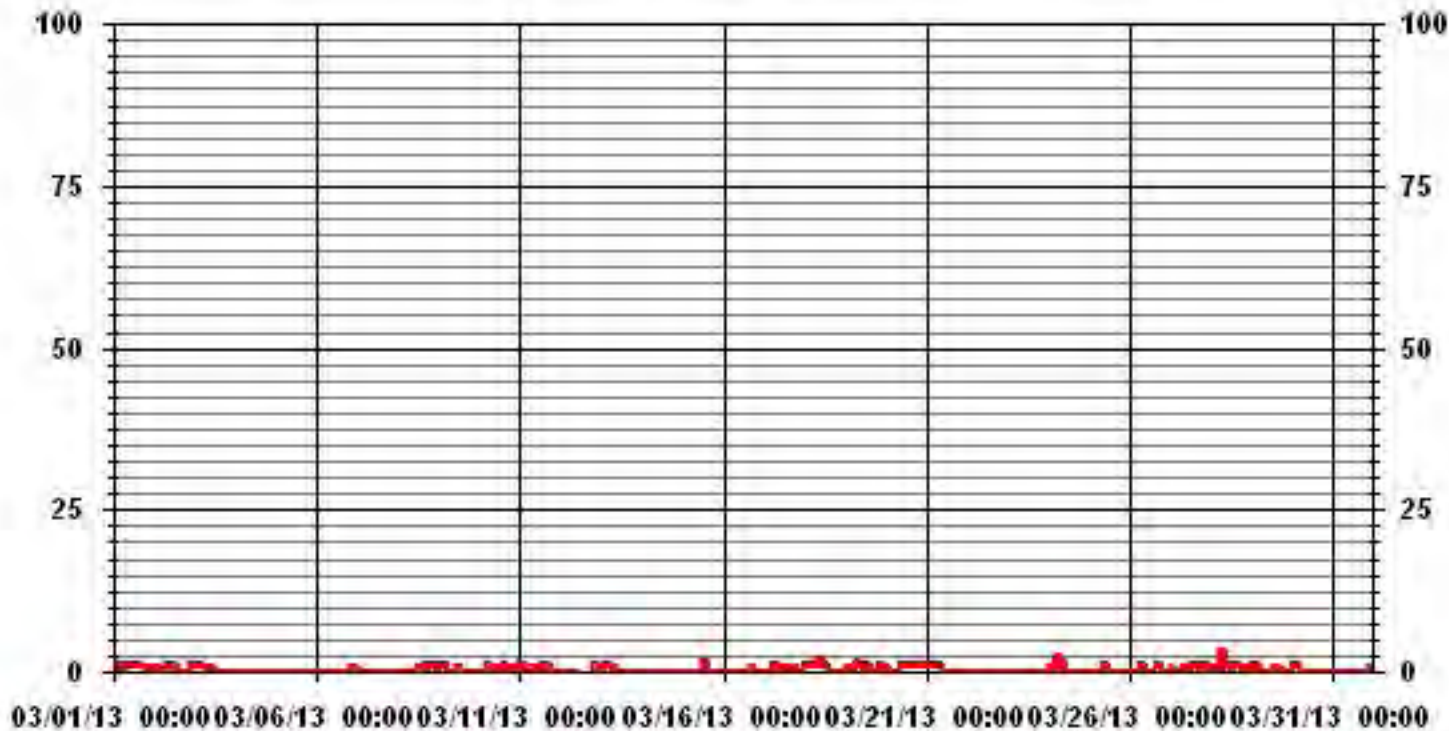
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	182				
MAXIMUM INSTANTANEOUS VALUE:	3	PPB	@ HOUR(S)	VAR	ON DAY(S)
					24, 28
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	8	HRS			
STANDARD DEVIATION:	0.49				

### 01 Hour Averages



LICA30  
H2S\_ / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 30  
Site Name : LICA30  
Parameter : H2S\_  
Units : PPB

Wind Parameter : WDR  
Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	6.94	7.50	11.18	5.52	5.52	7.50	4.67	4.10	7.22	17.56	4.81	2.54	2.12	3.11	5.24	4.24	99.85
< 10	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.14
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	6.94	7.50	11.18	5.52	5.52	7.50	4.67	4.24	7.22	17.56	4.81	2.54	2.12	3.11	5.24	4.24	

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	49	53	79	39	39	53	33	29	51	124	34	18	15	22	37	30	705
< 10								1									1
< 50																	
>= 50																	
Totals	49	53	79	39	39	53	33	30	51	124	34	18	15	22	37	30	

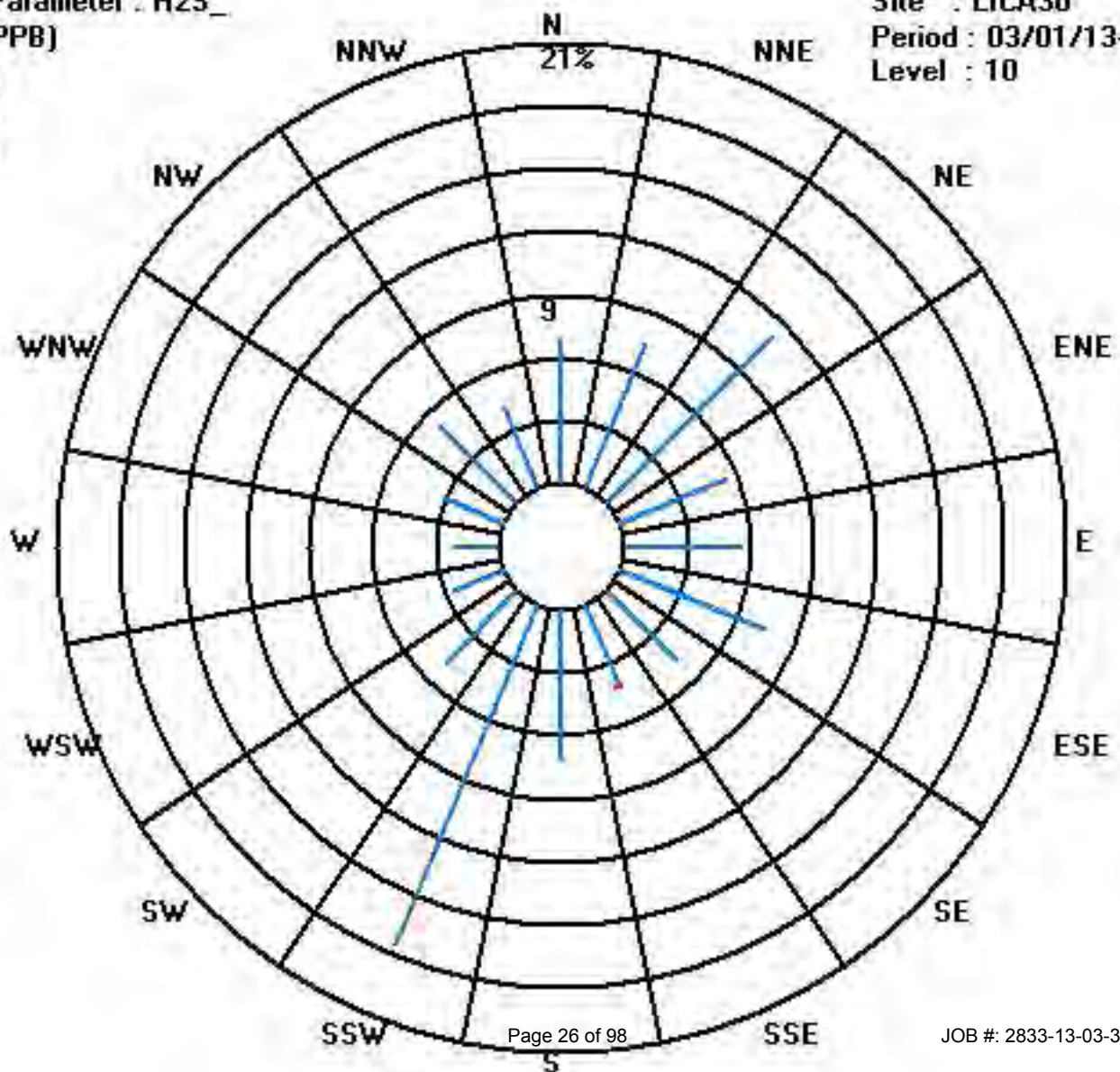
Calm : .00 %

Total # Operational Hours : 706

Class Limits (PPB)

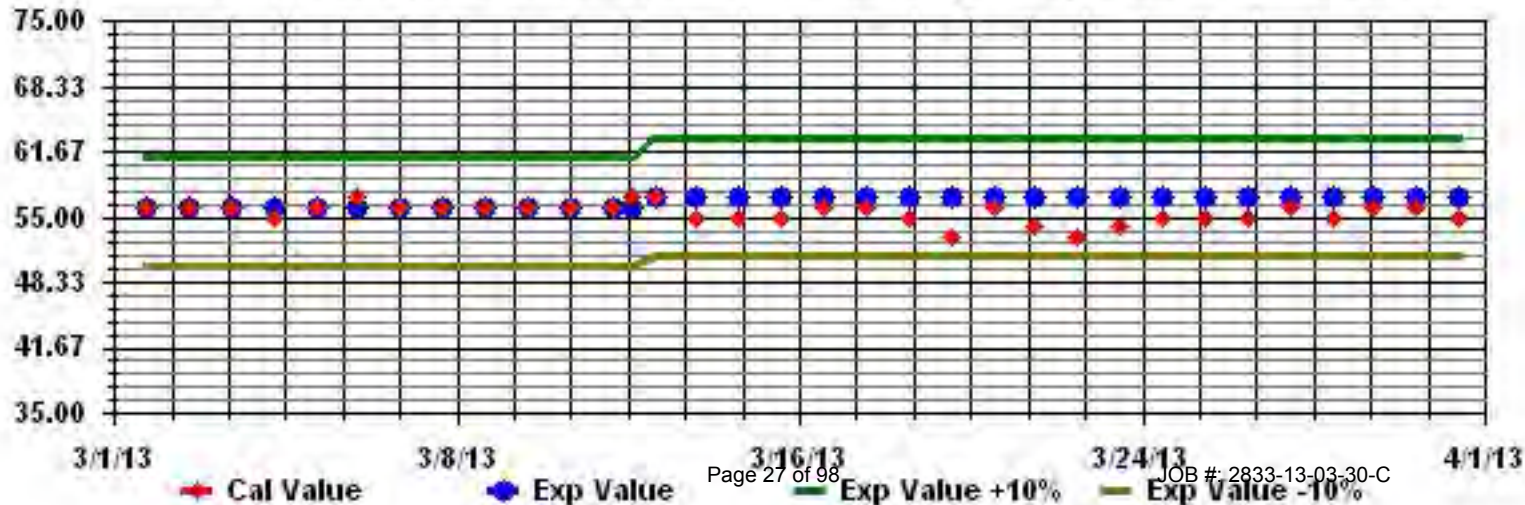
Period : 03/01/13-03/31/13

Level : 10





Calibration Graph for Site: LICA30 Parameter: H2S\_ Sequence: H2S Phase: SPAll



# Total Hydrocarbons

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

MARCH 2013

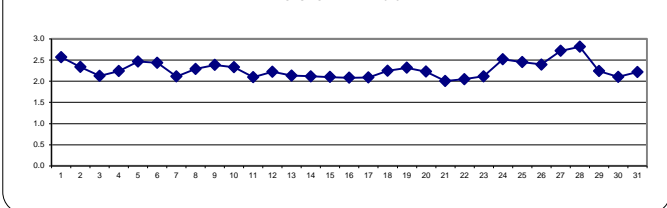
## TOTAL HYDROCARBONS hourly averages in ppm

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	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		2.9	2.8	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.7	2.8	2.8	2.8	2.7	2.7	2.8	S	2.8	2.7	2.6	2.3	2.2	2.1	2.9	2.6	24	
2		2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.5	2.4	2.3	2.2	2.2	2.2	2.6	2.7	S	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.7	2.3	24	
3		2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	24	
4		2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	S	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.2	24	
5		2.4	2.4	2.4	2.7	2.8	2.7	2.7	2.6	2.7	2.8	2.8	2.5	2.5	S	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.3	2.4	2.5	2.8	2.5	24	
6		2.7	2.7	2.7	2.6	2.6	2.6	2.7	2.6	2.5	2.5	2.5	2.4	S	2.3	2.3	2.4	2.4	2.4	2.3	2.3	2.2	2.1	2.1	2.1	2.7	2.4	24	
7		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	24	
8		2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.5	S	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.5	2.5	2.5	2.5	2.3	24	
9		2.5	2.7	2.6	2.6	2.5	2.4	2.4	2.4	2.3	S	2.2	2.2	2.2	2.3	2.2	2.4	2.4	2.4	2.3	2.3	2.4	2.5	2.5	2.7	2.4	24		
10		2.6	2.6	2.5	2.6	2.7	2.9	2.8	2.7	S	2.6	2.5	2.5	2.4	2	2	2	2	2	2	2	2.2	2	2	2	2.9	2.3	24	
11		2	2.1	2.1	2.1	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	2.1	2.1	2.1	2.1	2.1	2.1	24	
12		2.2	2.3	2.2	2.2	2.1	2.1	S	2.1	2.2	2.4	2.4	2.3	2.3	2.4	2.3	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.2	24	
13		2.2	2.2	2.2	2.2	2.2	S	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	
14		2.1	2.1	2.1	2.1	S	2.2	2.2	2.2	C	C	C	C	2.1	C	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	
15		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	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24	
16		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	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2.1	24	
17		2	S	2	2	2	2.1	2.1	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2.2	2.1	2.1	2.1	2.1	2.1	2.3	2.1	24	
18		S	2.1	2.2	2.3	2.4	2.4	2.5	2.7	3	2.4	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2.1	2.1	2.2	2.2	S	3.0	2.3	24	
19		2.2	2.2	2.2	2.2	2.3	2.4	S	2.6	2.5	2.4	2.2	2.3	2.2	2.3	2.4	2.3	2.2	2.3	2.3	2.3	2.3	2.4	S	2.5	2.6	2.3	24	
20		2.5	2.4	2.3	2.3	2.2	2.2	2.2	2.2	S	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	S	2.1	2.1	2.5	2.2	24
21		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2.1	2.1	2.1	2.0	24
22		2.1	2.1	2	2	2	2	2.1	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.0	24
23		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	2.2	S	2.1	2.1	2.1	2.2	2.2	2.1	24	
24		2.3	2.3	2.3	2.3	2.4	3.5	4.6	3.4	3	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.3	S	2.2	2.2	2.2	2.4	2.4	2.5	4.6	2.5	24	
25		2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.7	2.6	2.3	2.2	2.2	2.2	2.3	2.2	S	2.2	2.3	2.3	2.5	2.6	2.5	2.6	2.7	2.5	24
26		2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.7	2.6	2.3	2.1	2.1	2.1	2.1	2.2	S	2.2	2.1	2.1	2.2	2.4	2.5	2.6	2.6	2.7	2.4	24	
27		2.6	2.4	2.4	2.4	2.5	2.5	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.6	S	2.8	2.9	3	2.9	2.9	3	3	2.9	2.9	3.0	2.7	24	
28		3	2.9	2.9	3	3.1	3.1	3.1	3.2	3	2.8	2.6	2.4	2.4	S	2.4	2.8	2.7	2.6	2.6	2.7	2.9	3	2.9	2.7	3.2	2.8	24	
29		2.6	2.5	2.6	2.5	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	S	2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.6	2.2	24	
30		2.3	2.4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2	2	2	2.1	2.1	2.1	2.1	2	2	2.4	2.1	24	
31		2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	S	2.3	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.1	2.4	2.2	24	
HOURLY MAX		3.0	2.9	2.9	3.0	3.1	3.5	4.6	3.4	3.0	2.8	2.8	2.8	2.8	2.8	2.7	2.8	2.9	3.0	2.9	2.9	3.0	3.0	2.9	2.9				
HOURLY AVG		2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3			

### STATUS FLAG CODES

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

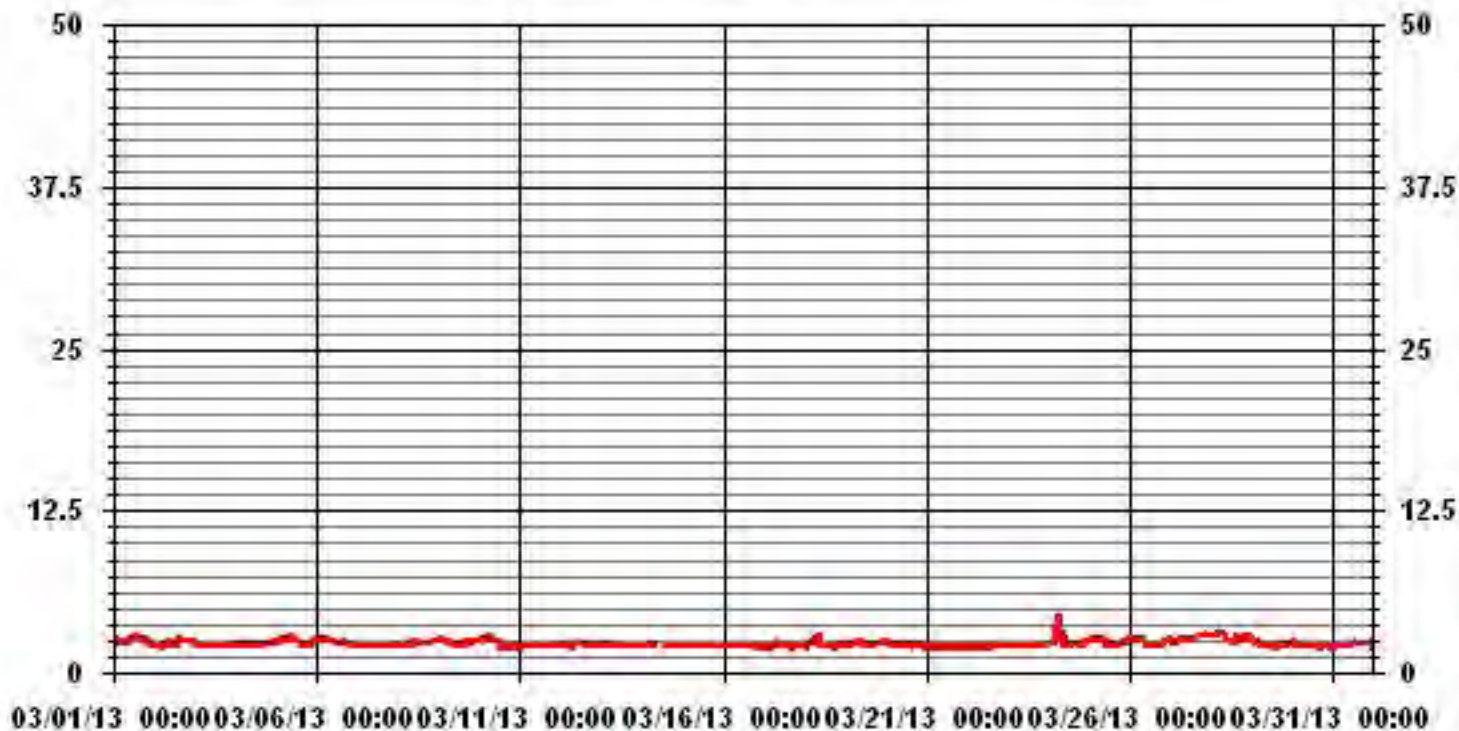
24 AVERAGES FOR MARCH 2013



### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	705		
MAXIMUM 1-HR AVERAGE:	4.6 PPM	@ HOUR(S)	6 ON DAY(S) 24
MAXIMUM 24-HR AVERAGE:	2.8 PPM		ON DAY(S) 28
			VAR- VARIOUS
IZS CALIBRATION TIME:	34 HRS	OPERATIONAL TIME:	744 HRS
MONTHLY CALIBRATION TIME:	5 HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.26	MONTHLY AVERAGE:	2.28 PPM

### 01 Hour Averages



— LICA30 THC PPM

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2013

## TOTAL HYDROCARBONS MAX      instantaneous maximum in ppm

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	3	3.1	2.8	2.4	2.4	2.4	2.4	2.4	2.5	2.7	2.8	2.8	2.8	2.9	2.8	2.7	2.8	S	2.9	2.7	2.7	2.5	2.2	2.2	3.1	2.6	24		
2	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.3	3.3	3	2.4	2.3	2.5	2.8	2.8	S	2.6	2.5	2.7	3.1	2.8	2.5	2.5	2.5	3.3	2.5	24		
3	2.4	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.1	2.2	2.1	2.1	S	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.2	24		
4	2.2	2.2	2.2	2.2	2.2	2.3	2.5	2.2	2.3	2.2	2.2	2.2	2.2	2.2	S	2.2	2.3	2.3	2.3	2.3	2.4	2.6	2.6	2.4	2.6	2.3	24		
5	2.4	2.4	2.5	3	2.9	2.9	2.9	2.7	2.9	2.8	2.9	2.7	2.5	S	2.3	2.2	2.3	2.3	2.2	2.2	2.2	2.4	2.5	2.6	3	2.6	24		
6	2.7	2.8	2.8	2.7	2.7	2.6	2.7	2.7	2.6	2.6	2.5	2.5	S	2.3	2.4	2.4	2.4	2.7	2.4	3.5	2.2	2.2	2.1	2.1	3.5	2.5	24		
7	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	S	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.6	2.8	2.8	2.2	24		
8	2.4	2.2	2.2	2.1	2.1	2.2	2.2	2.3	2.4	2.5	S	2.5	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.4	2.5	2.6	2.5	2.5	2.6	2.3	24		
9	2.6	3.2	2.8	2.7	2.6	2.5	2.4	2.4	2.3	S	2.3	2.2	2.3	2.2	2.4	2.3	2.4	2.4	2.4	2.4	2.3	2.4	2.5	2.6	3.2	2.5	24		
10	2.6	2.6	2.6	2.7	2.8	2.9	2.9	2.8	S	2.7	2.6	2.6	2.6	2	2.1	2.2	2.1	2	2	2.1	2.4	2.1	2	2	2.9	2.4	24		
11	2.1	2.4	2.4	2.1	2.1	2.2	2.1	S	2.1	2.1	2.1	2.3	2.2	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.3	2.4	2.2	24		
12	2.3	2.4	2.3	2.2	2.2	2.1	S	2.2	2.3	2.4	2.4	2.4	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.3	24		
13	2.2	2.2	2.2	2.3	2.3	S	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.1	24		
14	2.1	2.2	2.1	2.2	S	2.2	2.2	C	C	C	C	C	2.2	C	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		
15	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	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.3	2.1	24		
16	2.3	2.1	S	2.2	2.1	2.1	2.2	2.1	2.3	2.3	2.1	2.2	2.1	2.1	2.1	2.2	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.3	2.2	24		
17	2.1	S	2.1	2.1	2.1	2.1	2.1	2.7	2.1	2.1	2.1	3.5	2.3	2.2	2.2	2.2	2.3	2.1	2.4	2.2	2.1	2.1	2.1	2.1	3.5	2.2	24		
18	S	2.1	2.2	2.3	2.6	2.5	2.6	2.9	3.7	2.5	2.3	2.2	2.2	2.1	2.4	2.2	2.4	2.1	2.1	2.1	2.1	2.7	2.5	S	3.7	2.4	24		
19	2.2	2.2	2.2	2.2	2.4	2.5	S	S	2.6	2.5	2.4	2.3	2.3	2.3	2.4	2.4	2.3	2.3	2.4	2.4	2.5	S	2.5	2.6	2.4	24			
20	2.7	2.4	2.5	2.3	2.3	2.2	2.3	2.2	S	2.6	2.5	2.4	2.3	2.5	2.3	2.4	2.3	2.3	2.4	2.3	2.4	S	2.3	2.3	2.7	2.4	24		
21	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.1	2.1	2.2	2.1	2	2.1	2.2	2	2	2	2	2	2	2	S	2.1	2.1	2.1	2.3	2.1	24	
22	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2.1	2.1	2.5	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.5	2.1	24		
23	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.6	S	2.2	2.2	2.2	2.2	2.3	2.6	2.2	24	
24	2.3	2.3	2.3	2.4	2.4	6	6.8	4	4.5	2.6	2.2	2.2	2.3	2.3	2.3	2.3	2.3	S	2.2	2.2	2.3	2.4	2.5	2.5	6.8	2.9	24		
25	2.6	2.6	2.6	2.7	2.6	2.7	3.2	3	3.2	3	2.5	2.3	2.2	2.3	2.3	2.2	S	2.3	2.3	2.3	2.8	2.7	2.6	2.6	3.2	2.6	24		
26	2.8	2.6	2.6	2.7	2.7	2.6	2.7	2.8	3	2.5	2.1	2.1	2.1	2.2	S	2.2	2.2	2.1	2.4	2.5	2.5	2.6	2.7	3	2.5	24			
27	2.6	2.5	2.4	2.5	2.5	2.6	2.7	2.7	2.7	2.7	2.7	2.8	2.8	2.7	S	2.8	3	3	3	3	3	3	3	2.9	3	2.8	24		
28	3	3	3	3.3	3.3	3.1	3.3	3.3	3.2	2.9	2.7	2.5	2.6	S	2.7	2.8	2.8	2.6	2.6	2.8	3	3	3	2.8	3.3	2.9	24		
29	2.6	2.6	2.7	2.7	2.4	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.3	S	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.4	3	3	2.3	24		
30	2.5	2.8	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.8	2.2	24		
31	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	S	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.5	2.3	3.2	2.2	3.2	2.3	24	
HOURLY MAX	3	3	3	3	3	6	7	4	5	3	3	4	3	3	3	3	3	3	3	3	4	3	3	3	3				
HOURLY AVG	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.6	2.4	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4				

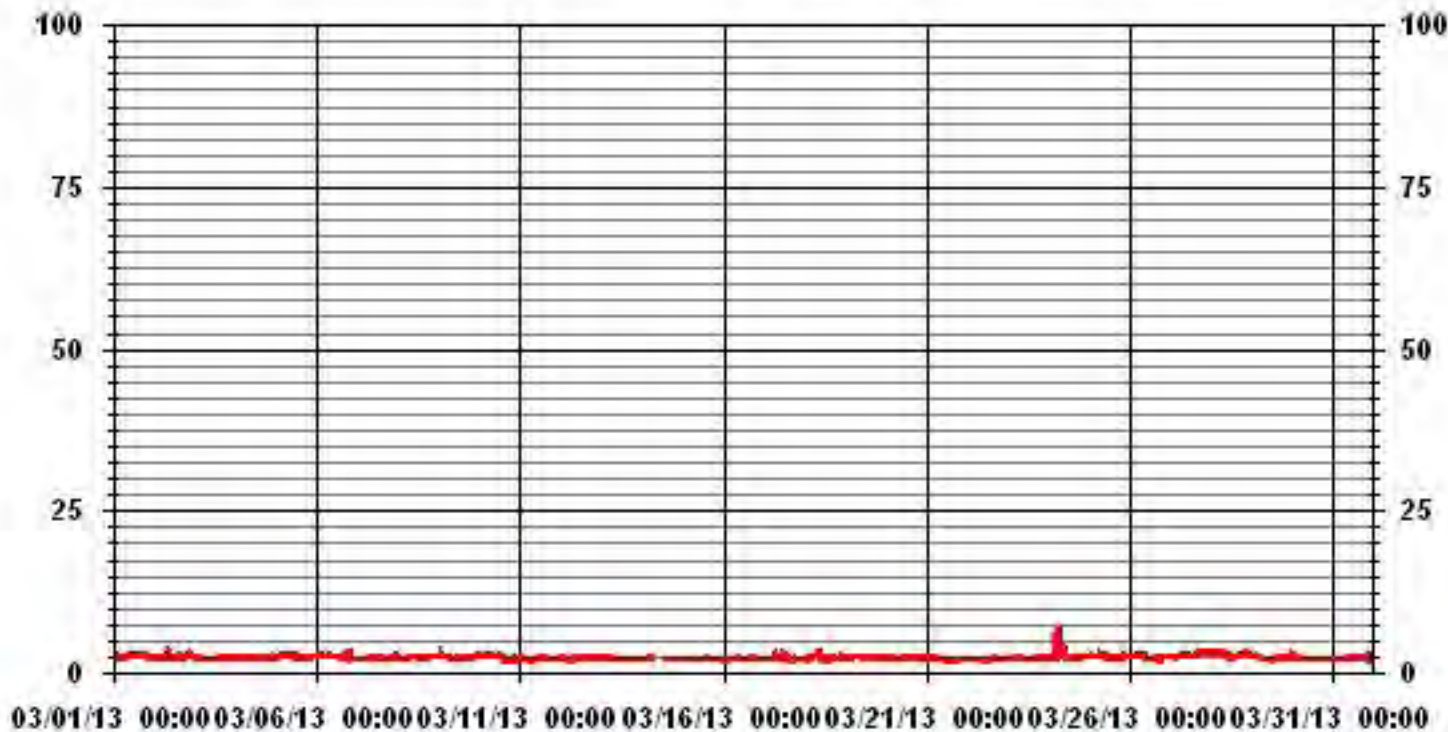
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	703					
MAXIMUM INSTANTANEOUS VALUE:	6.8	PPM	@ HOUR(S)	6	ON DAY(S)	24
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	0.37					

### 01 Hour Averages



LICA30  
 THC / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

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

Wind Parameter : WDR  
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	6.95	7.09	11.20	5.24	5.10	7.51	4.68	4.68	7.51	16.73	4.25	2.26	1.98	3.12	5.10	4.25	97.73
< 10.0	.00	.00	.00	.14	.00	.00	.00	.00	.14	.85	.56	.28	.14	.00	.14	.00	2.26
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	6.95	7.09	11.20	5.39	5.10	7.51	4.68	4.68	7.65	17.58	4.82	2.55	2.12	3.12	5.24	4.25	

Calm : .00 %

Total # Operational Hours : 705

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	49	50	79	37	36	53	33	33	53	118	30	16	14	22	36	30	689
< 10.0				1					1	6	4	2	1		1		16
< 50.0																	
>= 50.0																	
Totals	49	50	79	38	36	53	33	33	54	124	34	18	15	22	37	30	

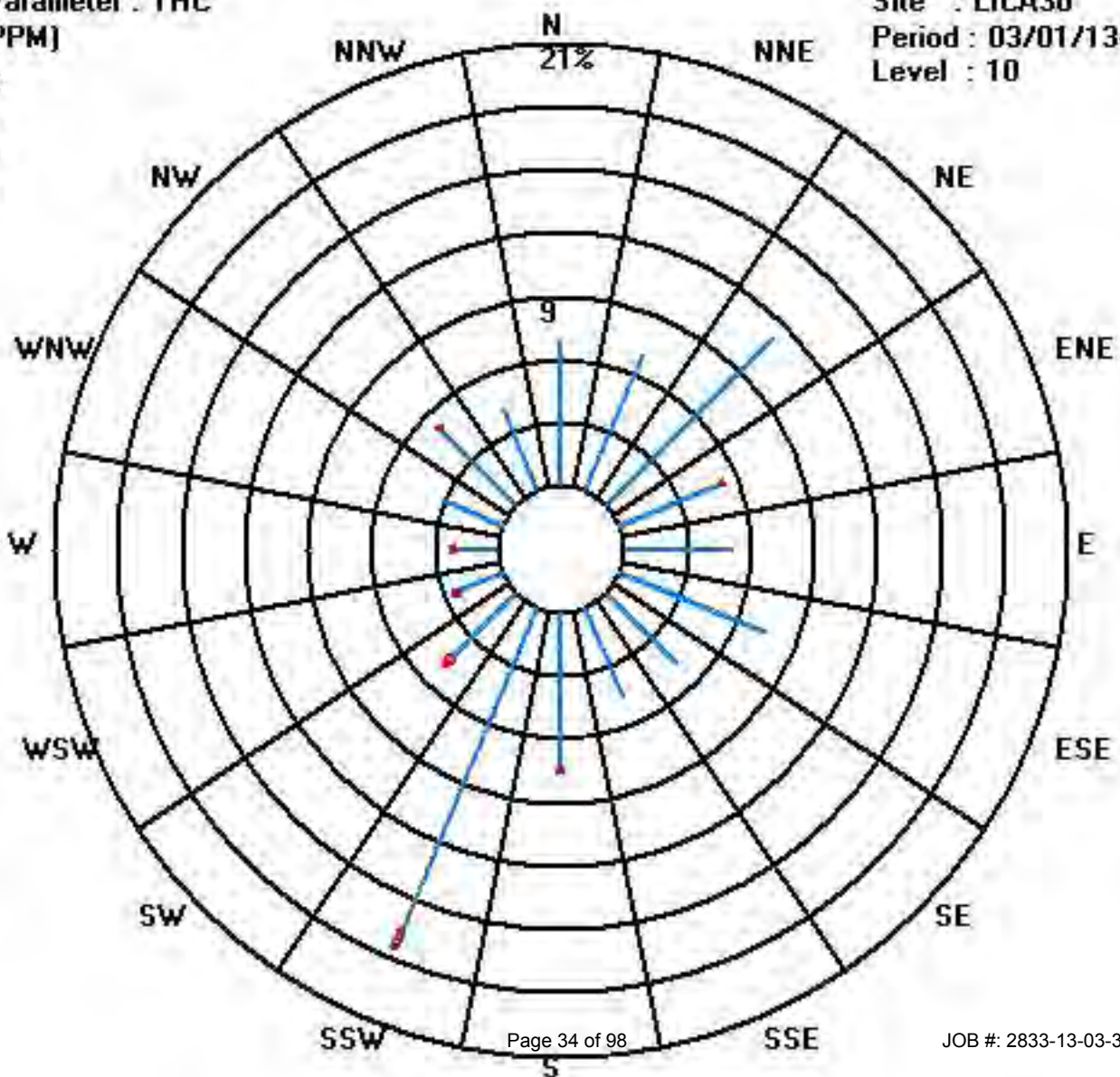
Calm : .00 %

Total # Operational Hours : 705

Class Limits (PPM)

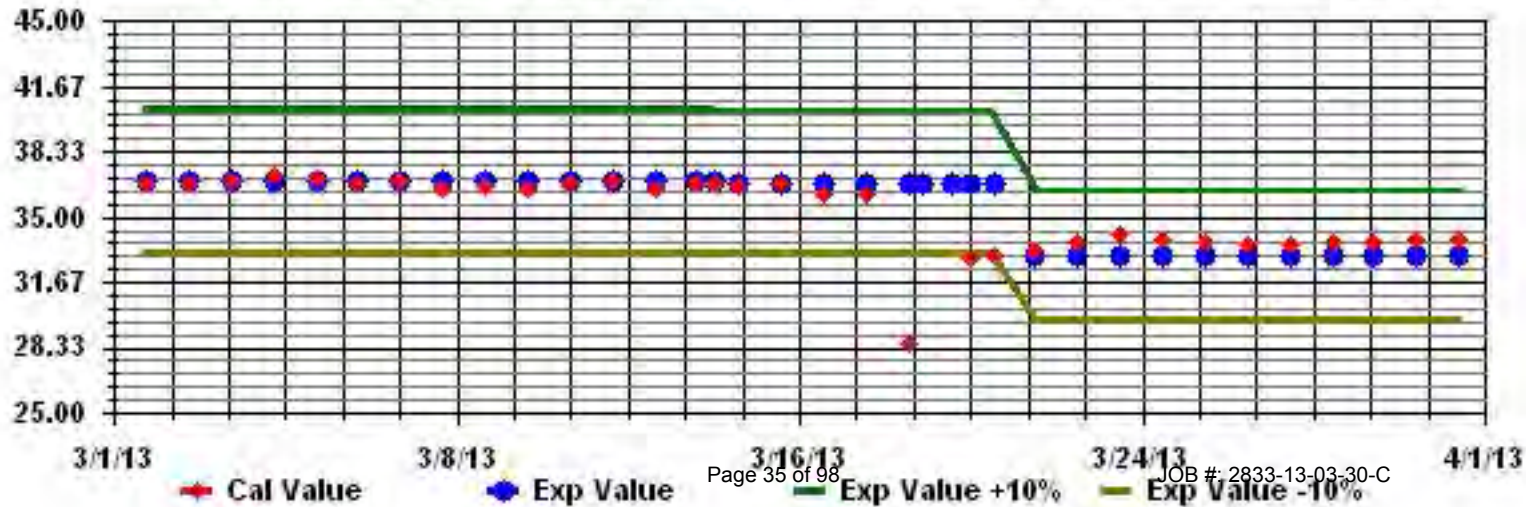
Period : 03/01/13-03/31/13

Level : 10





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



# Nitrogen Dioxide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2013

## NITROGEN DIOXIDE 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	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	6.3	4.3	3.3	4.3	2.7	2.3	2.3	2.6	3.4	4	4.4	4.5	5.9	6.9	7.3	7.3	7.6	S	9.5	7.6	8.4	4.6	1.7	0.5	9.5	4.9	24	
2	2.3	1.2	2.4	10.8	0.7	1.4	1.2	10.1	21.3	13.3	14.3	12.2	8.6	3.9	4.7	5.4	S	6.3	7.5	7.9	6.5	6	5.7	6.3	21.3	7.0	24	
3	5	2.9	0.9	0.1	0	0	0	0	0	0	0	0	0	0	0	S	0.4	0.2	0.3	0.4	0.5	0.9	0.9	0.9	5.0	0.6	24	
4	1.2	2	2.2	2	2.4	2.2	1.6	3.3	3.1	2	1.2	1.4	1.8	1.8	S	2.8	2.6	3	4.1	3.7	4.4	5	5.4	4.5	5.4	2.8	24	
5	4.1	4.2	4.5	7.1	7.6	8.4	8.9	10	6.9	5.8	6.5	4.3	4.7	S	2.4	1.4	1.4	1.5	1.8	1.4	1.5	1.4	2	2.7	10.0	4.4	24	
6	3.6	3.7	3.2	2.7	2.5	3.5	4.1	5	3.8	3.5	2.7	2.9	S	1.5	1.7	1.7	2.1	1.7	1.5	0.9	0.1	0	0	0	5.0	2.3	24	
7	0	0	0	0	0	0	0	0	0	0	0	S	0.5	0.3	0.3	0.1	0.1	0.1	0.2	0.4	0.5	0.1	0.8	0.8	0.8	0.2	24	
8	0.5	0.6	0.4	0.4	0.4	0.5	1	1.9	2.4	2.9	S	2.1	1.5	2	2.2	3.3	4	4.1	5.1	6.3	6.4	8.3	6.4	6	8.3	3.0	24	
9	6.1	9.5	11.1	9.3	6.2	5.1	5.3	6.6	5.9	S	3.3	3.6	7.1	4.3	3.4	2.3	3.3	3.7	3	2.4	1.7	2.2	2.3	3.1	11.1	4.8	24	
10	4.5	3.5	3.2	3.2	3.6	6	8	7.9	S	7.3	6.4	5.3	4.4	1.3	2.2	2	0	0	0	0	8.3	0	0	0	8.3	3.4	24	
11	0	2.1	1.3	0.2	0.3	0.9	0.7	S	0.7	0.8	1.2	1.6	3.9	2.1	8	7.4	5.6	9	0.1	0.5	0.4	0.5	0.6	1.2	9.0	2.1	24	
12	1.6	5.7	1.2	1	0.4	0.2	S	1.8	2	2.7	Y	Y	Y	Y	2.5	1.6	1.6	1.5	1.3	1.9	1.9	2.6	1.7	1.6	5.7	1.8	20	
13	1.6	1.8	1.4	1.7	2.5	S	0.9	0.5	0.8	0.4	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.5	0.5	24
14	0	0	0	0	S	0.6	3.3	Y	Y	Y	Y	0.7	Y	0.1	0	0	0	0	0	0	0	0	0	0	3.3	0.3	19	
15	0	0	0	S	0.1	0	0	0	0.1	0	0.2	0.6	2.4	8.2	3.6	3.7	1.7	1.9	1.2	0.9	0.7	0.5	1.5	2.7	8.2	1.3	24	
16	3.1	2.5	S	0.5	0.4	0.3	0.1	0.3	1.5	3	1.3	3.1	0.4	0.6	1.3	2	3.7	3.8	0.9	5.6	0.4	0.5	0.5	1	5.6	1.6	24	
17	0.7	S	0	0.4	0.2	1.7	4.8	6.7	4.2	2.6	1.8	2.1	1.8	2.4	2.6	3.8	5.3	1.6	1.9	1.9	1.3	3.6	1.9	2.8	6.7	2.4	24	
18	S	2.9	4.3	3.2	3.3	6.6	9.9	14.5	19	8.8	7.4	3.5	3.5	2.7	2.8	2.1	3.1	0.2	0.6	0.6	1.2	1.4	2.2	S	19.0	4.7	24	
19	3.7	3.9	5.1	5.4	5.5	5.8	6.7	17.2	C	C	C	C	C	C	2.1	2.7	3.5	4.6	7.5	8.4	3.7	3.3	S	3.2	17.2	5.4	24	
20	12.1	3.2	3.5	1.5	1.8	0.9	0.9	0.3	5	7.5	7.5	7.7	6.8	6.4	7.9	6.2	9.7	10.9	12	12.7	11.3	S	7.3	7.8	12.7	6.6	24	
21	2.9	3	2.9	3	0.7	1.5	2.3	0.5	0.6	1.5	0.4	0.2	0.6	0.6	0.2	0.1	0.1	0.1	0.1	0.3	S	0.9	1	0.8	3.0	1.1	24	
22	0.5	0.4	0.4	0.3	0.6	1.1	5.3	7.2	6.2	2.1	1.2	0.9	0.6	1.9	2.7	3.9	4.6	1.2	0.9	S	0.8	0.7	0.6	0.3	7.2	1.9	24	
23	0.8	1.4	2.5	3.4	3.3	3.4	6.2	8.1	4.3	1.7	1	0	0	0	1.7	2.9	0.9	1.5	S	1.5	1.4	1.7	3.1	2.2	8.1	2.3	24	
24	1.9	18.2	8.4	4.1	4.8	12.4	11.3	10.5	7.7	3.8	3.6	0.2	0.5	0.4	1	1.4	1.8	S	2.3	1.8	2.4	2.9	3.2	3.6	18.2	4.7	24	
25	5.1	9.8	4.3	2.9	2.1	5.9	4.1	6.3	6.9	5.2	1.5	0.7	1.6	2.5	2.5	1.8	S	1.8	2.3	3.1	3.5	3.4	2.7	3.4	9.8	3.6	24	
26	2.8	2.6	2	2.4	2.5	2.3	10.6	16.5	5.4	1.7	0.5	0.3	1.1	1.5	1.8	S	2.1	2.1	1.3	2.3	2.7	3.4	3.7	3.6	16.5	3.3	24	
27	3.5	3.2	3	4.3	3.9	5.2	5.4	7.6	6.5	5.8	5.1	5.3	7	7.6	S	6.8	6.5	6.9	7.4	7.2	7.1	6.7	6	6	7.6	5.8	24	
28	6.3	5.8	6.1	6.2	6.1	11.2	28.9	28.5	13.8	13.5	12.5	7.8	7.8	S	4.3	5.8	4.7	4.2	4.5	4.5	4.9	4.5	4.4	3.7	28.9	8.7	24	
29	4.4	4.5	8.6	16	4	1.8	0.3	0	0	0	0	0.2	S	3.2	1.8	2.6	2.8	3.6	2.9	2.3	2.7	3.4	2.9	3.5	16.0	3.1	24	
30	4.9	20.2	13.4	21	11	0.9	2.6	2.1	1.4	0.8	1	S	1.8	1.7	1.1	1	1	1.6	1.8	5.4	0.7	1.7	1.2	1.8	21.0	4.4	24	
31	1.5	1.4	2.4	0.7	0.3	1.1	3.4	1.4	1.3	1.5	S	1.1	1.6	1.5	1.5	1.4	1.5	1.5	1.4	1.3	1.6	1.7	3.9	1.6	3.9	1.6	24	
HOURLY MAX	12.1	20.2	13.4	21.0	11.0	12.4	28.9	28.5	21.3	13.5	14.3	12.2	8.6	8.2	8.0	7.4	9.7	10.9	12.0	12.7	11.3	8.3	7.3	7.8				
HOURLY AVG	3.0	4.2	3.4	3.9	2.7	3.1	4.7	6.1	4.8	3.7	3.2	2.8	2.9	2.4	2.5	2.9	2.8	2.7	2.8	3.1	2.9	2.4	2.5	2.5				

### STATUS FLAG CODES

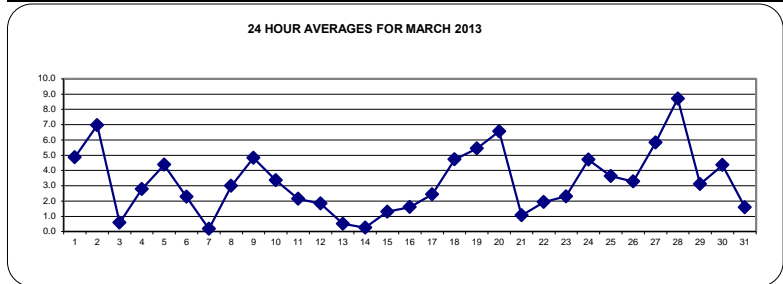
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

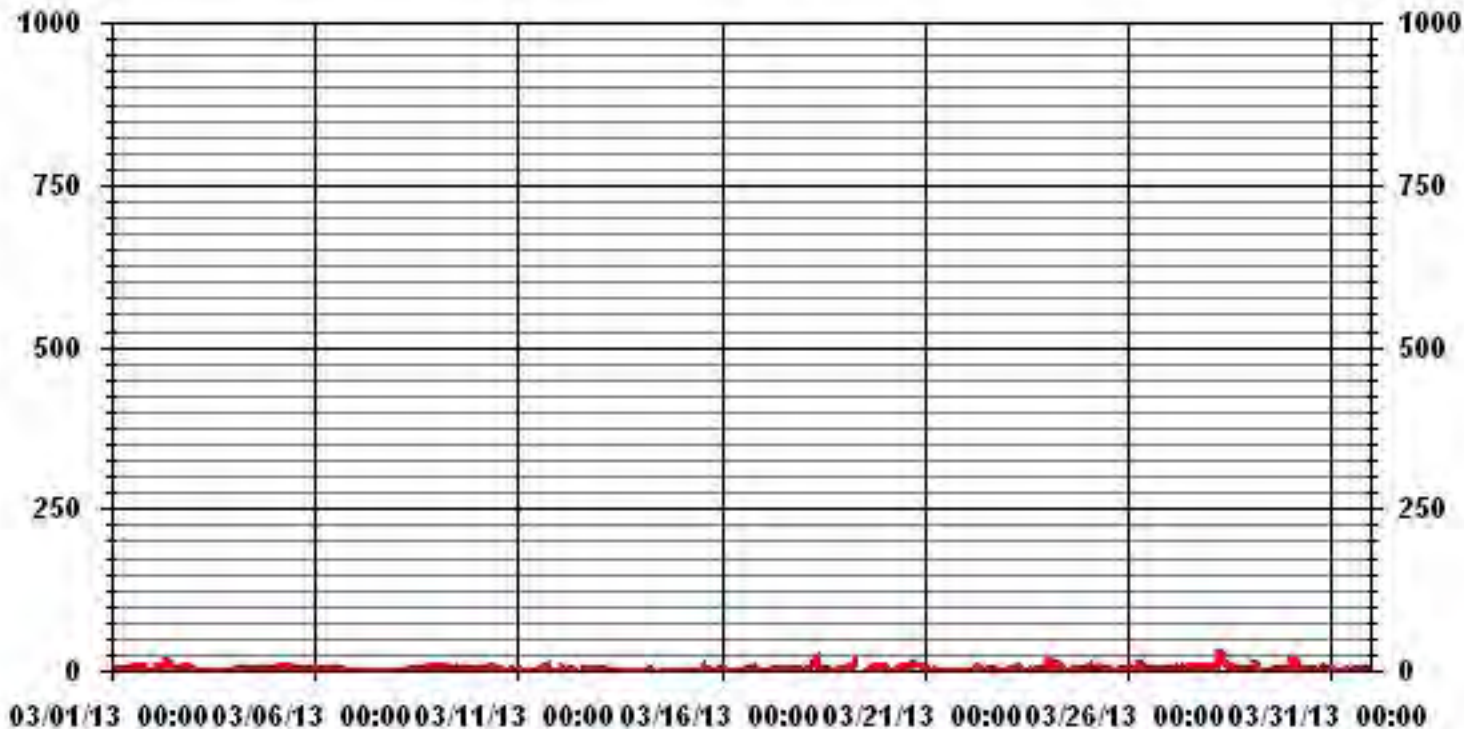
ALBERTA ENVIRONMENT: 1-HR 159 PPB

### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	622					
MAXIMUM 1-HR AVERAGE:	28.9	PPB	@ HOUR(S)	6	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	8.7	PPB			ON DAY(S)	28
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	735	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	98.8	%	
STANDARD DEVIATION:	3.60		MONTHLY AVERAGE:	3.25	PPB	



### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2013

## NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR 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	7.8	5.1	4.3	6.6	3.5	3.1	3.2	3.3	4.2	5	5	5.3	7.6	8.2	17.4	15	8.3	S	12.3	8.2	9.3	7.9	3.6	1.5	17.4	6.8	24
2	6.3	4.7	5	18.9	2.4	2.4	2.1	39.3	31.5	23.3	18	14.9	13.6	7.5	5.9	5.8	S	7.4	8.8	10	8.1	8.2	8.4	8.2	39.3	11.3	24
3	7.4	5.1	2.1	1	0.6	0.6	0.5	0.6	0.6	0.6	0.7	0.6	1.1	1.1	1.2	S	1.1	0.9	1	1.2	1.2	1.6	1.7	1.4	7.4	1.5	24
4	2.3	2.7	3	2.7	3.9	3.2	2.3	5.9	5.6	4.1	2.6	2.3	2.6	3.5	S	3.2	2.8	3.7	4.4	4.2	5.3	5.1	5.7	5.3	5.9	3.8	24
5	4.4	4.6	5.6	8.2	15.2	15.8	28.4	12.2	8.2	6.3	8.5	4.7	5.4	S	3	2.2	2.1	2.2	2.7	2.5	2.5	2.3	3.4	3.6	28.4	6.7	24
6	4.5	4.5	4.2	3.4	5.8	7.7	7.2	6.9	5.5	4.4	3.5	3.6	S	2	2.2	2.4	3.7	2.6	2.8	2.3	1.2	0.7	0.6	0.3	7.7	3.6	24
7	0.4	0.3	0.3	0.2	0.3	0.1	0.2	0.3	1.1	0.9	0.4	S	0.7	0.9	1	0.4	0.5	0.5	0.5	0.9	1.1	0.5	1.8	1.5	1.8	0.6	24
8	0.9	0.8	1	0.7	0.7	0.9	1.5	2.6	2.7	3.1	S	2.6	2.1	2.3	3	4.3	6	5.1	6.6	7.5	7.2	12.1	8.1	6.7	12.1	3.8	24
9	7.2	16.5	13.5	11	7.7	6.2	6.2	8	7.6	S	5	7.3	9.9	5.7	4	2.5	4.2	4.1	3.8	3.4	2.7	2.9	3.2	4.4	16.5	6.4	24
10	6.3	4.2	4.2	4	5.1	8.6	9.6	9.1	S	9	6.9	6.9	5.6	2	4.3	3.1	1	0.2	0	2	12.3	4.9	0.4	0.2	12.3	4.8	24
11	0.2	13.1	8.6	1.1	1.2	2.4	1.5	S	1.6	1.7	2.7	7	8.1	6.7	14.8	16.1	18.6	31.3	0.9	1.5	1.2	1.4	1.4	2.2	31.3	6.3	24
12	3.6	11.8	2.4	2.3	1.2	1.2	S	3.1	2.9	3.3	Y	Y	Y	Y	Y	2.1	2.1	2.7	2.8	2.9	2.9	3.8	2.6	2.4	11.8	3.1	19
13	2.5	5.7	3.6	3.5	4.7	S	1.5	1.1	1.4	0.9	0.6	0.5	0.3	1.4	0.3	0.3	0.4	0.4	0.4	0.1	0.2	0.5	0.4	0.3	5.7	1.3	24
14	0.2	0.3	0.1	0.2	S	1.2	6.7	Y	Y	Y	1.8	Y	Y	Y	0.3	0.4	0.3	0.5	0.5	0.5	0.6	0.6	0.7	0.5	6.7	0.9	18
15	0.6	0.6	0.6	S	0.6	0.6	0.7	0.6	0.7	0.5	1	1.4	7.8	67.7	6.4	9.6	2.1	2.5	2.1	1.8	1.3	1.4	2.8	4.4	67.7	5.1	24
16	3.8	3.9	S	1	1	0.9	0.6	0.7	3.8	5.6	2.8	6.6	1.1	2	2.4	3.2	8.5	9.6	3.4	11.9	1.1	1.1	1.2	3.4	11.9	3.5	24
17	2.9	S	0.8	1.1	1.7	6.7	10.7	12.5	7.7	3.4	2.4	2.9	2.8	6.7	10	7	11.5	7.4	6.3	3.5	2.5	9.3	3	4.4	12.5	5.5	24
18	S	3.9	5.9	3.9	4.5	27	20.6	21.1	23.2	11.7	10.2	4.9	8.2	6.3	4.9	4.1	9.3	1.5	2.1	2.3	1.9	4.1	4.7	S	27.0	8.5	24
19	4.9	6.8	6.8	11.2	7.5	8	11	24	C	C	C	C	C	4.6	7.4	8	9.2	14.1	14.1	8.7	5.6	S	3.8	24.0	9.2	24	
20	24.4	5.3	6.8	2.4	3.8	1.8	2.6	1.6	13.3	11.4	11.2	10.3	9.6	10.3	11.9	12.7	12.8	13.9	16.7	16.3	15.9	S	10.1	12.4	24.4	10.3	24
21	7.9	8.1	6.6	6.9	4	6.2	4.3	1.4	1.7	5	2.2	0.9	2.3	2.3	0.6	0.7	0.7	0.7	0.7	1	S	1.4	1.7	1.7	8.1	3.0	24
22	1.2	1	1.1	0.9	1.3	4.3	8.9	8	8.2	2.9	2.5	1.8	1.3	2.7	3.9	10.7	9	1.9	2	S	1.5	1.8	1.4	1	10.7	3.4	24
23	1.9	2.5	3.9	4.3	4.3	7	16.6	12.3	7.4	3.4	1.9	0.7	0.7	0.9	3.8	3.9	1.9	2.4	S	2.2	2.6	2.6	6.2	3.6	16.6	4.2	24
24	5	32.3	16.3	7.4	8.3	31.6	17.4	13.3	14.6	10.7	8.8	2.2	2.6	1.8	2.3	2.4	2.8	S	3.1	2.9	4.2	3.7	4.4	5.3	32.3	8.8	24
25	14.5	14.8	6.7	4.9	3.9	12.7	8.4	11.6	9.5	10	4.3	2.5	2.9	10.8	3.5	2.5	S	3	2.6	5.4	4.8	4.3	3.4	4.9	14.8	6.6	24
26	3.8	4.2	3.5	4.3	4.6	4.6	35.4	39	13.6	5.8	3	2.3	3.3	3.3	3.6	S	3.2	2.7	2.2	3.8	4.8	5.3	4.7	4.8	39.0	7.2	24
27	4.7	4.1	3.8	5.4	5	8.9	8.8	13.7	8.9	7.7	16.3	7.3	8.2	8.9	S	13.9	7.9	7.6	8.2	8	8.3	7.4	6.8	6.8	16.3	8.1	24
28	6.8	6.6	7.2	7.2	7.1	29.5	58	64	24.1	27.4	36.9	9.6	10.3	S	6.9	7	5.4	4.8	5.1	5.3	5.9	5.8	5.1	4.6	64.0	15.2	24
29	5.5	5	24.4	25	5.7	3.5	1.8	1.5	0	0	0	6.3	S	5.2	2.6	2.9	3.5	4.1	3.5	3.3	4.4	4.8	3.8	4.7	25.0	5.3	24
30	7.2	35.4	33.5	33.8	29.1	2	3.6	3.2	1.9	1.7	4.8	S	14.3	5.1	1.5	1.3	1.3	4.5	4.6	8.6	4.9	4.3	2.6	3.6	35.4	9.3	24
31	3.8	3.8	5.9	2	0.9	2.7	6	3	1.8	2.1	S	1.5	3.4	2.1	2.3	2.3	2.1	4	2.2	2.2	2.3	3	7	2.5	7.0	3.0	24
HOURLY MAX	24.4	35.4	33.5	33.8	29.1	31.6	58.0	64.0	31.5	27.4	36.9	14.9	14.3	67.7	17.4	16.1	18.6	31.3	16.7	16.3	15.9	12.1	10.1	12.4			
HOURLY AVG	5.1	7.3	6.4	6.2	4.9	7.0	9.5	11.2	7.6	6.1	6.1	4.5	5.2	6.8	4.6	5.2	4.9	4.9	4.2	4.7	4.4	3.9	3.7	3.7			

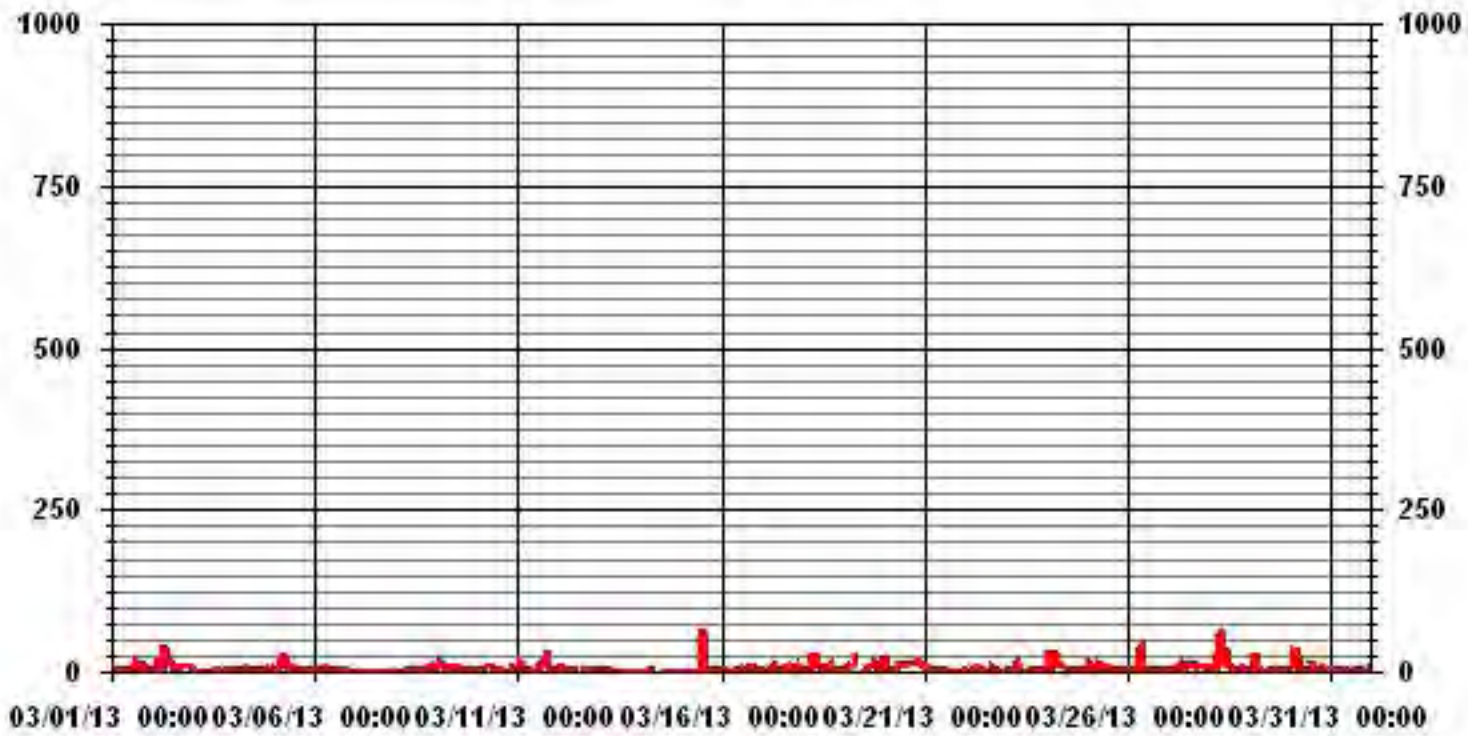
### STATUS FLAG CODES

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

### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	691
MAXIMUM INSTANTANEOUS VALUE:	67.7 PPB @ HOUR(S) 13 ON DAY(S) 15
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	6 HRS
STANDARD DEVIATION:	7.12
OPERATIONAL TIME:	733 HRS

# 01 Hour Averages



— LICA30 NO2MAX PPB

LICA30  
 NO2\_ / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 30  
 Site Name : LICA30  
 Parameter : NO2\_  
 Units : PPB

Wind Parameter : WDR  
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	7.03	7.03	11.19	5.45	5.45	7.60	4.30	4.44	7.31	17.79	4.87	2.58	2.15	3.15	5.30	4.30	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	7.03	7.03	11.19	5.45	5.45	7.60	4.30	4.44	7.31	17.79	4.87	2.58	2.15	3.15	5.30	4.30	

Calm : .00 %

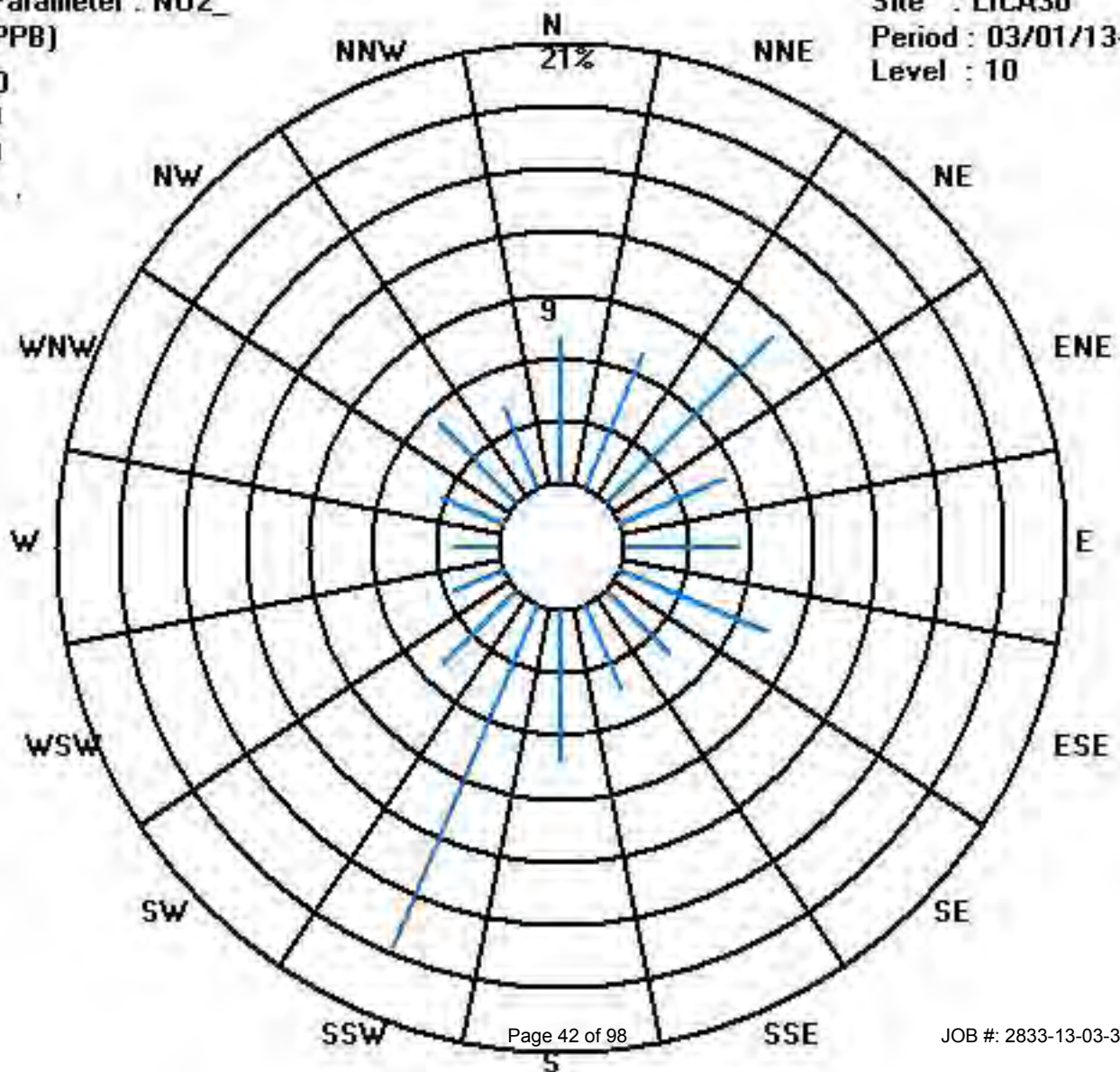
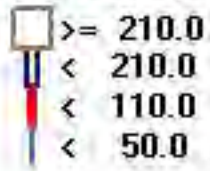
Total # Operational Hours : 697

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	49	49	78	38	38	53	30	31	51	124	34	18	15	22	37	30	697
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	49	49	78	38	38	53	30	31	51	124	34	18	15	22	37	30	

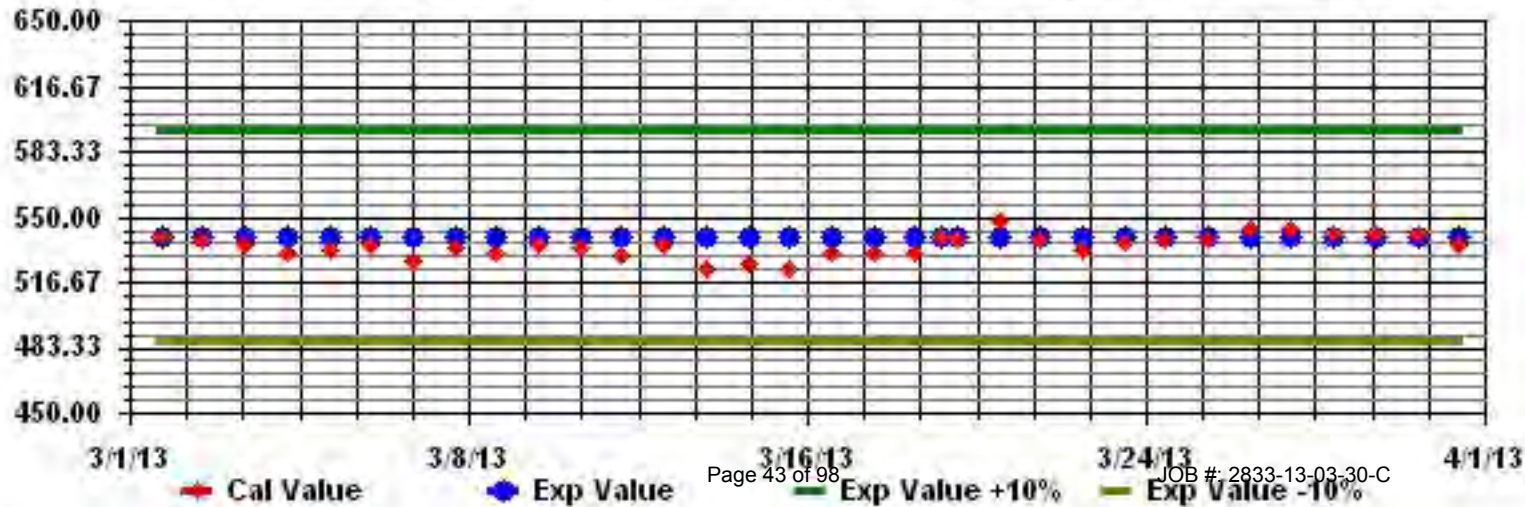
Calm : .00 %

Total # Operational Hours : 697





Calibration Graph for Site: LICA30 Parameter: H02\_ Sequence: H02 Phase: SPAll



# Nitric Oxide

# LAKELAND INDUSTRY & COMMUNITY ASSOICATION - MASKWA

MARCH 2013

## NITRIC OXIDE hourly averages in ppb

MST

DAY	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.	
1	0	0	0	0.1	0	0	0	0	0	0.3	0.9	1	1.5	1.8	2.2	1.9	1.3	0.4	S	0.3	0	0.1	0	0.2	0.2	2.2	0.5	24	
2	0.4	0.2	0.3	0.3	0.4	0.4	0.5	3.6	17.1	8.8	11.7	9.9	6.1	2.2	2	1.5	S	0.1	0	0	0	0	0	0	0	17.1	2.8	24	
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0	24
4	0	0	0	0	0	0	0	0	0	0.7	0.7	0.6	0.7	1	0.8	S	0.5	0.2	0	0	0	0	0	0	0	0	1	0.2	24
5	0	0	0	0	0.5	0.3	1.2	0.6	1.9	2.6	4.1	2.2	1.9	S	0.5	0	0	0	0	0	0	0	0	0	0	4.1	0.7	24	
6	0	0	0	0	0	0	0.1	0.2	0.7	1.3	1	1	S	0.2	0	0	0	0	0	0	0	0	0	0	0	1.3	0.2	24	
7	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
8	0	0	0	0	0	0	0	0	0.1	0.4	S	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.0	24	
9	0	0	0	0	0	0	0	0.5	1.2	S	1.7	2	5.2	2.1	0.9	0	0	0	0	0	0	0	0	0	0	5.2	0.6	24	
10	0	0	0	0	0	0	0	0	S	2.8	2.2	1.6	0.8	0	0	0	0	0	0	0	0	0	0	0	0	2.8	0.3	24	
11	0	0	0	0	0	0	0	S	0	0	0.1	0.6	2.4	0.7	3.7	2.2	1	2.1	0	0	0	0	0	0	0	3.7	0.6	24	
12	0	0	0	0	0	0	S	0.1	0.3	0.7	Y	Y	Y	Y	11.4	0	0	0	0	0	0	0	0	0	0	11.4	0.7	20	
13	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
14	0	0	0	0	S	0	0	Y	Y	Y	0.2	Y	Y	1.6	0	0	0	0	0	0	0	0	0	0	0	1.6	0.1	19	
15	0	0	0	S	0	0	0	0	0	0	0	0	1.1	5.4	1.4	0.6	0	0	0	0	0	0	0	0	0	5.4	0.4	24	
16	0	0	S	0	0	0	0	0	0.5	1.3	0.5	2	0	0	0.1	0.2	0.6	0.3	0	0	0	0	0	0	0	2	0.2	24	
17	0	S	0	0	0	0	0.1	0.9	0.9	1.1	0.5	0.9	0.2	0.3	0.3	0.9	1	0	0	0	0	0	0	0	0	1.1	0.3	24	
18	S	0	0	0	0	1.2	0.7	4.2	9.5	4.2	4.6	1.4	0.9	0.6	0.2	0	0	0	0	0	0	0	0	0	S	9.5	1.3	24	
19	0	0	0.1	0	0.2	0.2	0.7	14.1	C	C	C	C	C	C	1.7	1.6	1.2	0.8	0.3	0.5	0.4	0.6	S	0.1	14.1	1.3	24		
20	0.5	0.4	0.5	0.5	0.5	0.5	0.6	1	2.6	4.2	4.2	4	3.6	2.8	4	2.3	2.3	2	1.5	1.4	1.2	S	0.6	0.5	4.2	1.8	24		
21	0	0.1	0	0.3	0.1	0.1	0.2	0	0	0.3	0	0.1	0.1	0.1	0	0	0.1	0	0	S	0	0	0	0	0.3	0.1	24		
22	0	0	0	0	0	0	0	0.7	1.4	0.3	0	0	0	0	0.3	0.2	0	0	S	0	0	0	0	0	0	1.4	0.1	24	
23	0	0	0	0	0.2	0.2	1	2.5	2.4	1.7	0.6	0	0	0	0	0	0	0	S	0	0	0	0.2	0.2	0.5	2.5	0.4	24	
24	0.6	3.2	1	1.3	1.5	9.1	3.8	8.1	8.9	6.5	6.4	1.9	1.6	1.1	0.9	0.6	0.6	S	0.2	0.1	0.2	0.3	0.5	0.6	9.1	2.6	24		
25	0.8	1.2	1.3	1.4	1.7	1.8	2.7	5.2	7.7	7	3.1	1.8	1.6	1.8	1.1	0.3	S	0	0	0	0	0	0.1	0.2	0.3	7.7	1.8	24	
26	0.4	0.7	0.8	1.1	1.4	1.5	6.7	11.3	5.9	3.3	2.2	1.4	1.3	1	0.5	S	0	0	0	0	0	0	0	0	0	11.3	1.7	24	
27	0	0	0.1	0.1	0.2	0.3	0.8	1.6	1.7	2.3	2.3	1.8	2.1	1.3	S	1.3	0.7	0.2	0	0	0.1	0	0	0	0	2.3	0.7	24	
28	0	0.1	0	0	0	0.7	22.6	23.5	5.7	6.8	5.2	1.9	1.7	S	0.5	0.5	0	0	0	0	0	0	0	0	0	23.5	3.0	24	
29	0	0	0	0.1	0	0	0	0	0	0	0	1.4	S	0.8	0	0.1	0	0	0	0	0	0	0	0	0	1.4	0.1	24	
30	0	2	1.1	2.6	1.2	0	0	0.3	0.4	0.3	0.5	S	0.7	0.5	0	0	0	0	0	0	0	0	0	0	0	2.6	0.4	24	
31	0	0	0	0	0	0	0.1	0.2	0.3	0.3	S	0.3	0.3	0.1	0	0	0	0	0	0	0	0	0	0	0	0.3	0.1	24	
HOURLY MAX	0.8	3.2	1.3	2.6	1.7	9.1	22.6	23.5	17.1	8.8	11.7	9.9	6.1	5.4	11.4	2.3	2.3	2.1	1.5	1.4	1.2	0.6	0.6	0.6					
HOURLY AVG	0.1	0.3	0.2	0.3	0.3	0.5	1.4	2.7	2.5	2.1	2.0	1.5	1.3	0.9	1.1	0.5	0.3	0.2	0.1	0.1	0.1	0.0	0.1	0.1					

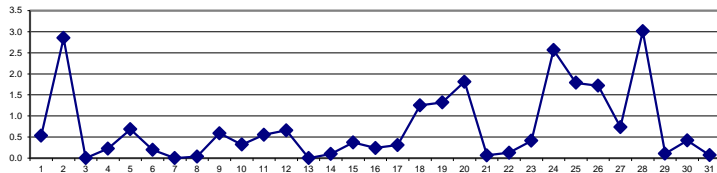
### STATUS FLAG CODES

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

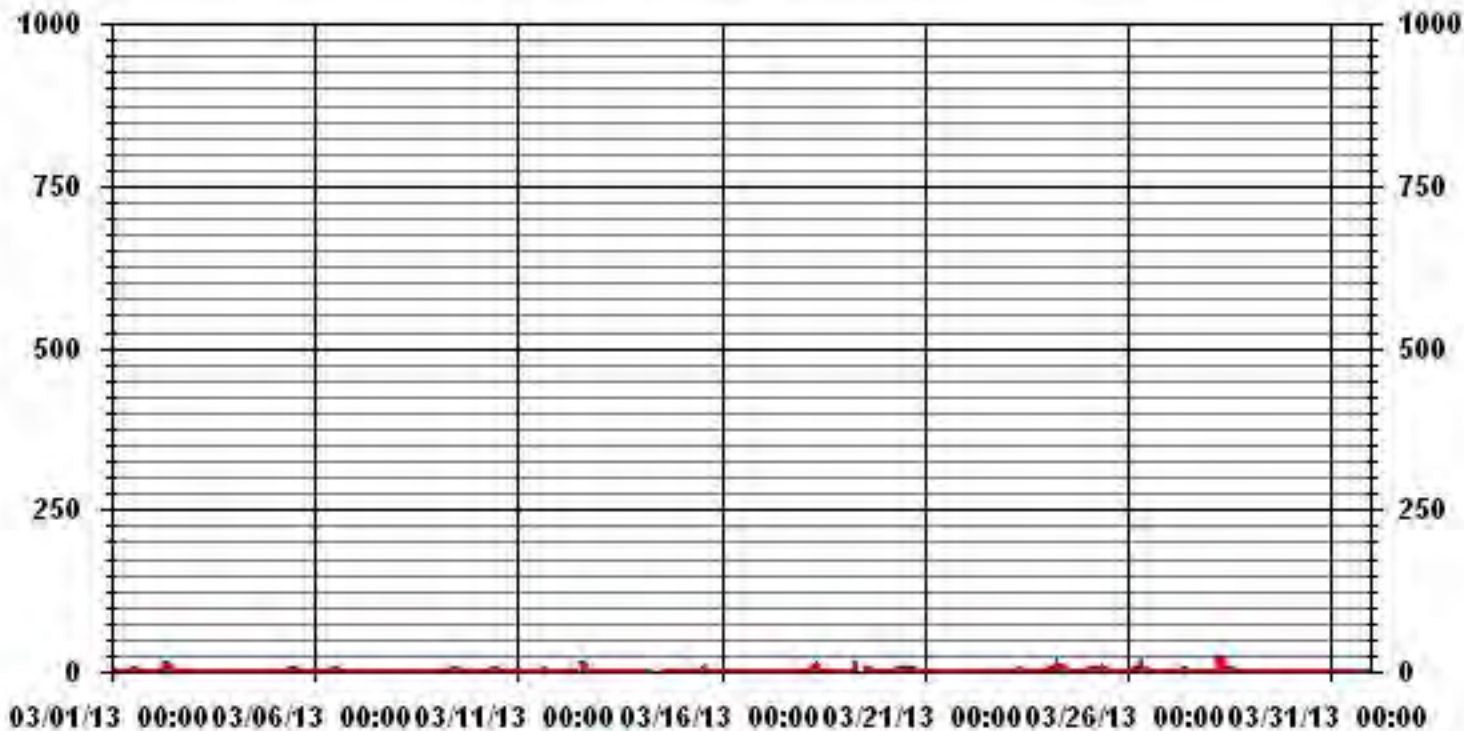
### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	284					
MAXIMUM 1-HR AVERAGE:	23.5	PPB	@ HOUR(S)	7	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	3.0	PPB			ON DAY(S)	28
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	735	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	98.8	%	
STANDARD DEVIATION:	2.11		MONTHLY AVERAGE:	0.74	PPB	

24 HOUR AVERAGES FOR MARCH 2013



### 01 Hour Averages



— LICA30 NO PPB

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2013

## NITRIC OXIDE 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	0.6	0.5	0.5	0.7	0.7	0.6	0.3	0.6	1.1	1.9	1.7	2.3	3.5	4.3	4.9	10.9	1.1	S	0.9	0.7	0.6	0.8	0.8	0.9	10.9	1.8	24	
2	0.9	0.8	0.8	0.9	0.9	0.9	1.1	33.8	30.3	15.3	15.5	12.8	11.1	4.4	2.9	2.2	S	0.7	0.4	0.4	0.5	0.5	0.3	0.5	33.8	6.0	24	
3	0.6	0.7	0.6	0.5	0.4	0.6	0.6	0.7	0.5	0.5	0.4	0.6	0.6	0.4	0.5	S	0.4	0.2	0.5	0.6	0.6	0.4	0.2	0.5	0.7	0.5	24	
4	0.3	0.5	0.4	0.4	0.4	0.3	0.3	0.9	1.4	1.4	1.4	1.5	1.8	2.1	S	1.3	0.8	0.4	0.2	0.3	0.4	0.5	0.6	0.4	2.1	0.8	24	
5	0.2	0.4	0.5	0.6	5.2	3.5	26.7	1.6	4	4	6.5	2.9	2.8	S	1.4	0.5	0.6	0.3	0.1	0.4	0.3	0.2	0.3	0.5	26.7	2.8	24	
6	0.3	0.3	0.2	0.5	1.2	1.2	0.6	1.1	1.4	2.1	1.6	1.6	S	0.9	0.7	0.4	0.5	0.2	0	0	0.2	0	0.2	0.4	2.1	0.7	24	
7	0.4	0.4	0.2	0.2	0.3	0.5	0.3	0.5	0.6	0.5	0.3	S	0.5	0.4	0.4	0.2	0	0.2	0.4	0.2	0.2	0.2	0.5	0.2	0.6	0.3	24	
8	0.3	0.4	0.2	0.3	0.2	0.1	0.5	0.5	0.6	1	S	1.1	0.7	0.6	0.9	0.5	1.4	0.1	0.2	0.3	0.4	0.4	0.4	0.2	1.4	0.5	24	
9	0.3	0.6	0.3	0.4	0.4	0.3	0.3	1.4	2.4	S	3.7	6	8.8	4.1	2.1	0.9	0.4	0.2	0	0	0	0.1	0	0	8.8	1.4	24	
10	0.1	0	0	0	0.1	0.1	0.3	1.7	S	5.5	2.9	2.8	2.2	0.3	1.6	0.3	0	0	0	0	0.7	0.2	0	0.1	5.5	0.8	24	
11	0	1.2	0.3	0	0.1	0.1	0.1	S	0.2	0.4	1.4	5.3	6.4	5.1	7.5	6.6	8	14	0.2	0.2	0.1	0.1	0.2	0.4	14.0	2.5	24	
12	0.1	0.3	0.2	0.1	0	0	S	0.8	0.8	1.7	Y	Y	Y	Y	Y	0.3	0	0	0	0	0.2	0.1	0	0	1.7	0.3	19	
13	0	0.1	0.1	0.3	0.1	S	0.5	0.4	0.5	0.5	0.4	0.5	0.5	0.5	0.4	0.3	0.6	0.3	0.2	0.5	0.4	0.3	0.3	0.3	0.6	0.3	24	
14	0.4	0.6	0.5	0.6	S	0.4	0.6	Y	Y	Y	1.9	Y	Y	Y	0.6	0.5	0.3	0.3	0	0.3	0.3	0.3	0.3	0.4	1.9	0.5	18	
15	0.3	0.4	0.3	S	0.6	0.4	0.4	0.5	0.3	0.4	0.6	1	4.5	54.8	5.3	3.6	0.3	0.3	0	0	0.1	0	0.3	0.4	54.8	3.3	24	
16	0.5	0.4	S	0.4	0.4	0.6	0.5	0.7	1.7	3.7	1.7	5.2	0.8	0.6	1.1	1.2	2.6	1.8	0.4	0.7	0.3	0.3	0.4	0.3	5.2	1.1	24	
17	0.4	S	0.1	0.2	0	1.1	2.9	4.4	1.7	1.9	1.2	2	1.5	3.7	6.1	2.9	5.8	1.4	0	0	0	0.2	0.1	0.2	6.1	1.6	24	
18	S	0.3	0.4	0.3	0.5	22.8	7.2	10	13	6.1	8	3.3	4	3.7	1.6	0.9	3.4	0	0	0	0	0	0	S	22.8	3.9	24	
19	0.6	0.4	0.7	0.6	0.7	0.8	1.9	27.3	C	C	C	C	C	3.4	3.9	2.6	2.4	0.8	1.2	1	1.2	S	0.6	27.3	2.9	24		
20	1.8	1	1.3	1.1	1	0.9	1.1	1.5	5.6	6.4	5.9	5.9	4.8	4.6	5.9	4.8	3.9	3.2	3.1	2.3	2.1	S	1.5	1.2	6.4	3.1	24	
21	0.9	1	0.8	1.2	0.9	1.2	0.9	0.4	0.6	1.3	0.7	0.6	1.2	1.3	0.6	0.5	0.6	0.5	0.5	0.5	0.5	S	0.3	0.1	0.4	1.3	0.7	24
22	0.1	0.2	0.3	0.1	0.1	0.1	0.7	1.5	2.8	1	0.9	0.2	0.3	0.4	1.1	3.8	2.7	0	0	S	0.3	0.4	0.4	0.4	3.8	0.8	24	
23	0.6	0.4	0.5	0.5	0.5	1.7	3.7	3.8	3.4	2.5	1.5	0.5	0.2	0	1.4	1.7	0	0.1	S	0.4	0.2	0.6	0.8	1.1	3.8	1.1	24	
24	1.4	11.7	1.6	1.9	2.2	68.8	8.6	10.7	15	14.5	11.5	2.6	2.6	1.5	1.4	1.6	1	S	0.7	0.6	0.6	0.8	1.1	1.1	68.8	7.1	24	
25	1.4	1.8	1.8	1.9	2.3	2.4	3.8	6.8	9.9	10.5	4.7	2.6	2.2	4.3	1.9	1.3	S	0.8	0.4	0.4	0.4	0.7	0.8	0.9	10.5	2.8	24	
26	1.1	1.2	1.2	1.6	1.8	2	31.8	32	10.1	6.7	3.3	2.5	2.3	1.8	1.6	S	1.7	0.3	0	0	0	0	0.3	0.3	32.0	4.5	24	
27	0.3	0.7	0.6	0.5	0.8	1.5	2.4	5	2.7	3.1	20.7	3	3.2	2.3	S	3.5	2.3	0.6	0.4	0.6	0.6	0.6	0.5	0.5	20.7	2.5	24	
28	0.6	0.6	0.6	0.7	0.5	3.9	94.8	120.2	10.9	26.3	13.9	3.3	3.3	S	1.5	1.4	0.6	0.3	0.2	0.4	0.4	0.6	0.3	0.5	120.2	12.4	24	
29	0.4	0.6	0.6	0.7	0.4	0.5	0.5	0.6	0.4	0.6	0.9	5.3	S	2.2	0.5	0.6	0.6	0.6	0.4	0.1	0.3	0.2	0.2	0.2	5.3	0.8	24	
30	0.4	6	4.4	7	6.3	0.5	0.8	1.1	1	0.8	3.8	S	9.4	2.9	0.8	0.4	0.4	0.4	0.2	0.5	0.4	0.2	0.2	0.2	9.4	2.1	24	
31	0.2	0.2	0.5	0.6	0.3	0.4	0.7	0.7	0.7	0.7	S	0.8	1.7	0.7	0.7	0.4	0.5	0.3	0.2	0.4	0.4	0.5	0.4	0.3	1.7	0.5	24	
HOURLY MAX	1.8	11.7	4.4	7.0	6.3	68.8	94.8	120.2	30.3	26.3	20.7	12.8	11.1	54.8	7.5	10.9	8.0	14.0	3.1	2.3	2.1	1.2	1.5	1.2				
HOURLY AVG	0.5	1.1	0.7	0.8	1.0	3.9	6.5	9.4	4.4	4.3	4.3	2.9	3.1	4.2	2.1	2.0	1.5	1.0	0.3	0.4	0.4	0.4	0.4	0.4				

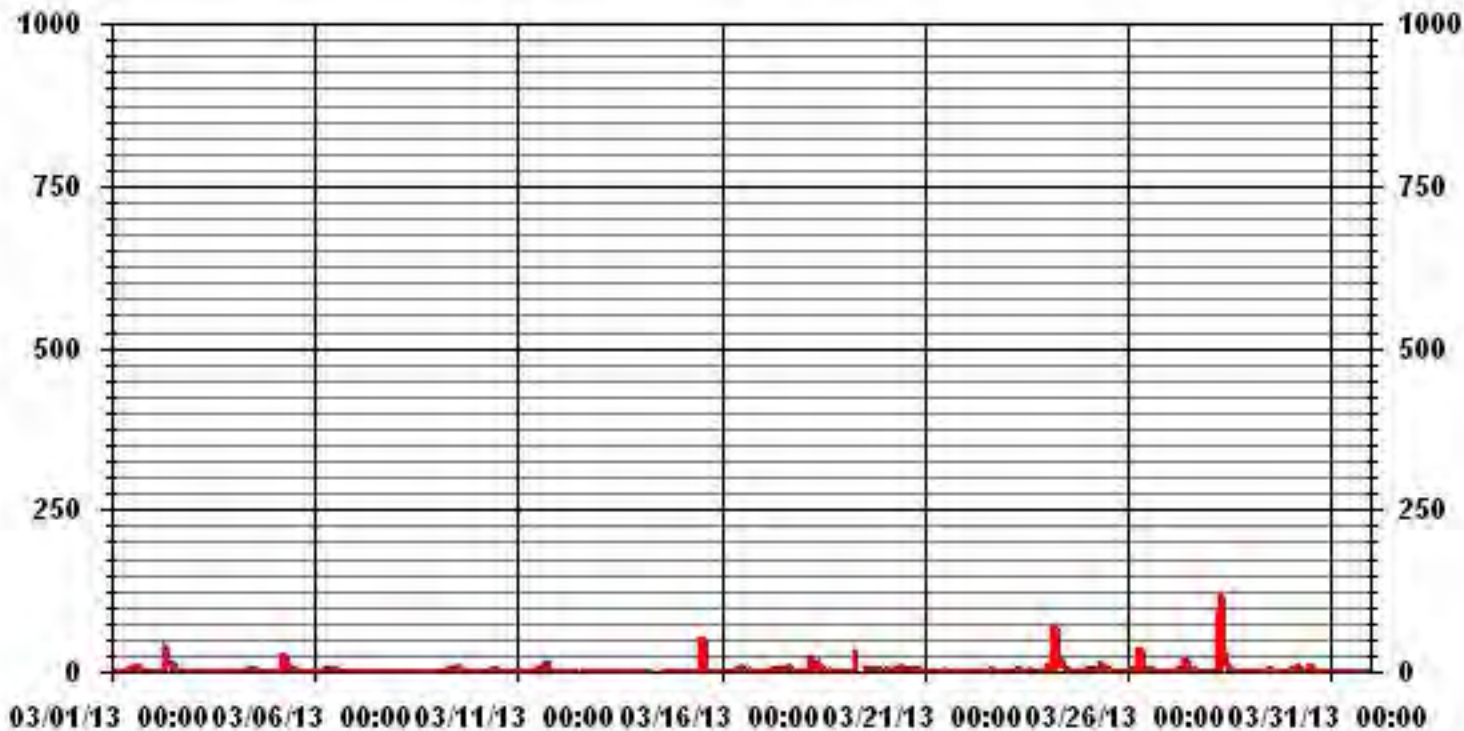
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	645					
MAXIMUM INSTANTANEOUS VALUE:	120.2	PPB	@ HOUR(S)	7	ON DAY(S)	28
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	733	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	7.59					

### 01 Hour Averages



LICA30  
 NO\_ / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 30  
 Site Name : LICA30  
 Parameter : NO\_  
 Units : PPB

Wind Parameter : WDR  
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	7.03	7.03	11.19	5.45	5.45	7.60	4.30	4.44	7.31	17.79	4.87	2.58	2.15	3.15	5.30	4.30	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	7.03	7.03	11.19	5.45	5.45	7.60	4.30	4.44	7.31	17.79	4.87	2.58	2.15	3.15	5.30	4.30	

Calm : .00 %

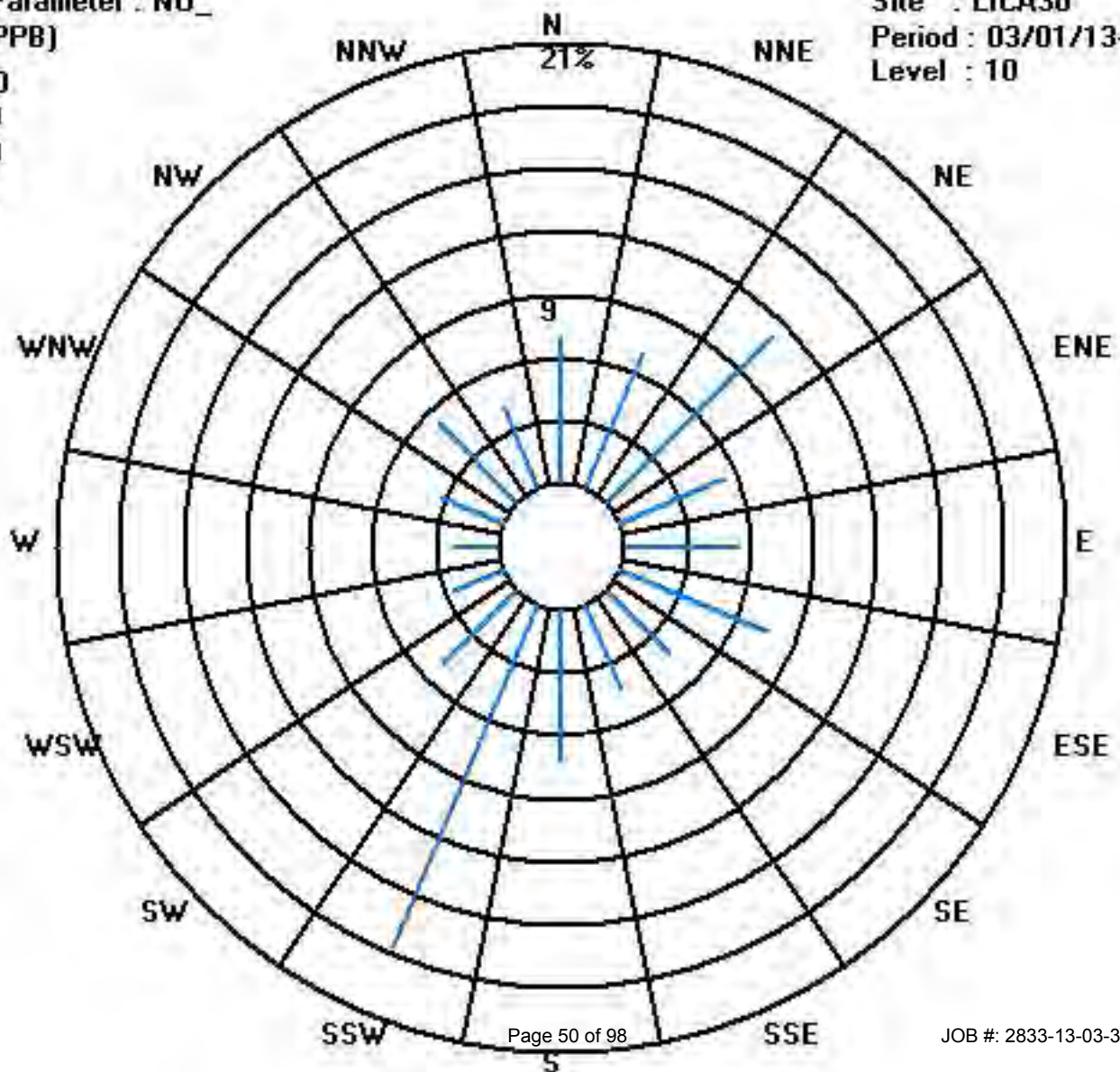
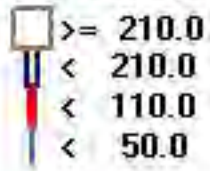
Total # Operational Hours : 697

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	49	49	78	38	38	53	30	31	51	124	34	18	15	22	37	30	697
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	49	49	78	38	38	53	30	31	51	124	34	18	15	22	37	30	

Calm : .00 %

Total # Operational Hours : 697





# Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2013

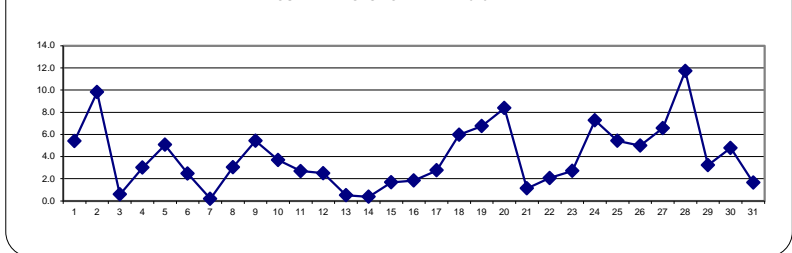
OXIDES OF NITROGEN hourly averages in ppb

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
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				
1	6.3	4.3	3.3	4.4	2.7	2.3	2.3	2.6	3.7	4.9	5.4	6	7.7	9.1	9.2	8.6	8	S	9.8	7.6	8.5	4.6	1.9	0.7	9.8	5.4	24	
2	2.7	1.4	2.7	11.1	1.1	1.8	1.7	13.7	38.4	22.1	26	22.1	14.7	6.1	6.7	6.9	S	6.4	7.5	7.9	6.5	6	5.7	6.3	38.4	9.8	24	
3	5	2.9	0.9	0.1	0	0	0	0	0	0	0	0	0	0	0	S	0.4	0.2	0.3	0.4	0.5	0.9	0.9	0.9	0.9	5.0	0.6	24
4	1.2	2	2.2	2	2.4	2.2	1.6	3.3	3.8	2.7	1.8	2.1	2.8	2.6	S	3.3	2.8	3	4.1	3.7	4.4	5	5.4	4.5	5.4	3.0	24	
5	4.1	4.2	4.5	7.1	8.1	8.7	10.1	10.6	8.8	8.4	10.6	6.5	6.6	S	2.9	1.4	1.4	1.5	1.8	1.4	1.5	1.4	2	2.7	10.6	5.1	24	
6	3.6	3.7	3.2	2.7	2.5	3.5	4.2	5.2	4.5	4.8	3.7	3.9	S	1.7	1.7	1.7	2.1	1.7	1.5	0.9	0.1	0	0	0	5.2	2.5	24	
7	0	0	0	0	0	0	0	0	0	0	0	S	0.5	0.3	0.3	0.1	0.1	0.1	0.2	0.4	0.5	0.1	0.8	0.8	0.8	0.8	0.2	24
8	0.5	0.6	0.4	0.4	0.4	0.5	1	1.9	2.5	3.3	S	2.5	1.5	2	2.2	3.3	4	4.1	5.1	6.3	6.4	8.3	6.4	6	8.3	3.0	24	
9	6.1	9.5	11.1	9.3	6.2	5.1	5.3	7.1	7.1	S	5	5.6	12.3	6.4	4.3	2.3	3.3	3.7	3	2.4	1.7	2.2	2.3	3.1	12.3	5.4	24	
10	4.5	3.5	3.2	3.2	3.6	6	8	7.9	S	10.1	8.6	6.9	5.2	1.3	2.2	2	0	0	0	8.3	0	0	0	0	10.1	3.7	24	
11	0	2.1	1.3	0.2	0.3	0.9	0.7	S	0.7	0.8	1.3	2.2	6.3	2.8	11.7	9.6	6.6	11.1	0.1	0.5	0.4	0.5	0.6	1.2	11.7	2.7	24	
12	1.6	5.7	1.2	1	0.4	0.2	S	1.9	2.3	3.4	Y	Y	Y	Y	13.9	1.6	1.6	1.5	1.3	1.9	1.9	2.6	1.7	1.6	13.9	2.5	20	
13	1.6	1.8	1.4	1.7	2.5	S	0.9	0.5	0.8	0.4	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	2.5	0.5	24	
14	0	0	0	0	S	0.6	3.3	Y	Y	Y	0.9	Y	Y	1.7	0	0	0	0	0	0	0	0	0	0	3.3	0.4	19	
15	0	0	0	S	0.1	0	0	0	0.1	0	0.2	0.6	3.5	13.6	5	4.3	1.7	1.9	1.2	0.9	0.7	0.5	1.5	2.7	13.6	1.7	24	
16	3.1	2.5	S	0.5	0.4	0.3	0.1	0.3	2	4.3	1.8	5.1	0.4	0.6	1.4	2.2	4.3	4.1	0.9	5.6	0.4	0.5	0.5	1	5.6	1.8	24	
17	0.7	S	0	0.4	0.2	1.7	4.9	7.6	5.1	3.7	2.3	3	2	2.7	2.9	4.7	6.3	1.6	1.9	1.9	1.3	3.6	1.9	2.8	7.6	2.7	24	
18	S	2.9	4.3	3.2	3.3	7.8	10.6	18.7	28.5	13	12	4.9	4.4	3.3	3	2.1	3.1	0.2	0.6	0.6	1.2	1.4	2.2	S	28.5	6.0	24	
19	3.7	3.9	5.2	5.4	5.7	6	7.4	31.3	C	C	C	C	C	C	3.8	4.3	4.7	5.4	7.8	8.9	4.1	3.9	S	3.3	31.3	6.8	24	
20	12.6	3.6	4	2	2.3	1.4	1.5	1.3	7.6	11.7	11.7	11.7	10.4	9.2	11.9	8.5	12	12.9	13.5	14.1	12.5	S	7.9	8.3	14.1	8.4	24	
21	2.9	3.1	2.9	3.3	0.8	1.6	2.5	0.5	0.6	1.8	0.4	0.3	0.7	0.7	0.2	0.1	0.2	0.1	0.1	0.3	S	0.9	1	0.8	3.3	1.1	24	
22	0.5	0.4	0.4	0.3	0.6	1.1	5.3	7.9	7.6	2.4	1.2	0.9	0.6	1.9	2.7	4.2	4.8	1.2	0.9	S	0.8	0.7	0.6	0.3	7.9	2.1	24	
23	0.8	1.4	2.5	3.4	3.5	3.6	7.2	10.6	6.7	3.4	1.6	0	0	0	1.7	2.9	0.9	1.5	S	1.5	1.4	1.9	3.3	2.7	10.6	2.7	24	
24	2.5	21.4	9.4	5.4	6.3	21.5	15.1	18.6	16.6	10.3	10	2.1	2.1	1.5	1.9	2	2.4	S	2.5	1.9	2.6	3.2	3.7	4.2	21.5	7.3	24	
25	5.9	11	5.6	4.3	3.8	7.7	6.8	11.5	14.6	12.2	4.6	2.5	3.2	4.3	3.6	2.1	S	1.8	2.3	3.1	3.5	3.5	2.9	3.7	14.6	5.4	24	
26	3.2	3.3	2.8	3.5	3.9	3.8	17.3	27.8	11.3	5	2.7	1.7	2.4	2.5	2.3	S	2.1	2.1	1.3	2.3	2.7	3.4	3.7	3.6	27.8	5.0	24	
27	3.5	3.2	3.1	4.4	4.1	5.5	6.2	9.2	8.2	8.1	7.4	7.1	9.1	8.9	S	8.1	7.2	7.1	7.4	7.2	7.2	6.7	6	6	9.2	6.6	24	
28	6.3	5.9	6.1	6.2	6.1	11.9	51.5	52	19.5	20.3	17.7	9.7	9.5	S	4.8	6.3	4.7	4.2	4.5	4.5	4.9	4.5	4.4	3.7	52.0	11.7	24	
29	4.4	4.5	8.6	16.1	4	1.8	0.3	0	0	0	0	1.6	S	4	1.8	2.7	2.8	3.6	2.9	2.3	2.7	3.4	2.9	3.5	16.1	3.2	24	
30	4.9	22.2	14.5	23.6	12.2	0.9	2.6	2.4	1.8	1.1	1.5	S	2.5	2.2	1.1	1	1	1.6	1.8	5.4	0.7	1.7	1.2	1.8	23.6	4.8	24	
31	1.5	1.4	2.4	0.7	0.3	1.1	3.5	1.6	1.6	1.8	S	1.4	1.9	1.6	1.5	1.4	1.5	1.5	1.4	1.3	1.6	1.7	3.9	1.6	3.9	1.7	24	
HOURLY MAX	12.6	22.2	14.5	23.6	12.2	21.5	51.5	52.0	38.4	22.1	26.0	22.1	14.7	13.6	13.9	9.6	12.0	12.9	13.5	14.1	12.5	8.3	7.9	8.3				
HOURLY AVG	3.1	4.4	3.6	4.2	2.9	3.7	6.1	8.8	7.3	5.7	5.1	4.2	4.2	3.4	3.6	3.4	3.1	2.9	2.9	3.2	3.0	2.4	2.5	2.6				

STATUS FLAG CODES

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

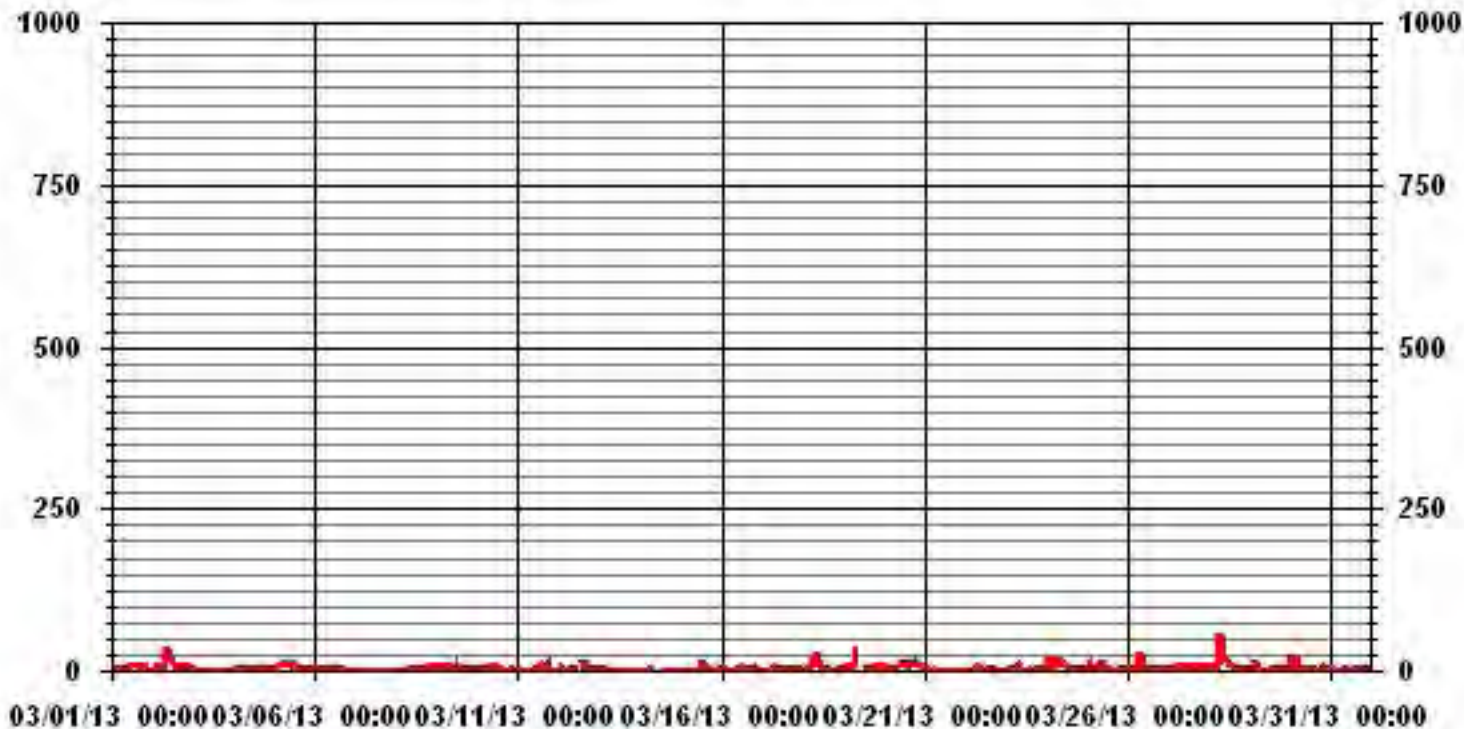
24 HOUR AVERAGES FOR MARCH 2013



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	622
MAXIMUM 1-HR AVERAGE:	52.0 PPB @ HOUR(S) 7 ON DAY(S) 28
MAXIMUM 24-HR AVERAGE:	11.7 PPB ON DAY(S) 28
IZS CALIBRATION TIME:	32 HRS OPERATIONAL TIME: 735 HRS
MONTHLY CALIBRATION TIME:	6 HRS AMD OPERATION UPTIME: 98.8 %
STANDARD DEVIATION:	5.24 MONTHLY AVERAGE: 3.99 PPB

### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2013

## OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
1	7.9	5.3	4.2	7.1	3.5	3	2.9	3.4	4.9	6.6	6.4	7.2	11	12.4	22	24.4	8.9	S	12.6	8.6	9.6	8.2	3.8	1.7	24.4	8.1	24	
2	6.5	5.1	5.2	19	3	2.6	2.4	69.3	61	38.3	33.4	27.3	24.4	11.8	9	8.1	S	7.6	8.8	9.9	8	8	8.2	8.2	69.3	16.7	24	
3	7.1	5	1.8	0.8	0.4	0.4	0.5	0.5	0.2	0.5	0.4	0.3	1.2	0.6	1.1	S	1	0.8	0.9	1.2	1.2	1.4	1.5	1.4	7.1	1.3	24	
4	2.3	2.7	2.8	2.5	4.1	3.1	2.4	6.3	6.2	5.4	3.6	3.4	4.3	5.9	S	4.8	3.7	4.2	4.6	4.4	5.5	5.6	5.9	5.8	6.3	4.3	24	
5	4.8	5	5.8	8.9	20.6	19.7	54.2	14.1	12.3	10.4	15	7.8	8.3	S	4.2	2.6	2.5	2.1	2.4	2.4	2.1	2.1	3	3.5	54.2	9.3	24	
6	4.5	4.5	3.9	3.3	6.4	8.6	7.2	7	6.2	5.7	4.7	4.7	S	2.7	2.3	2.4	4.1	2.3	2.5	1.9	0.7	0.1	0.1	0	8.6	3.7	24	
7	0	0	0	0	0	0	0	0	0.9	0.6	0.2	S	1.1	1.2	1.3	0.6	0.8	0.6	0.8	1	1.3	0.5	1.9	1.8	1.9	0.6	24	
8	1.1	1.2	1.1	1	1	1	1.7	3	3.2	4	S	3.1	2.4	2.7	3.7	4.8	7.3	5	6.2	7.4	6.9	12.3	7.8	6.7	12.3	4.1	24	
9	6.9	16.8	13.4	10.7	7.5	6.2	6.3	8.9	9.1	S	8.9	13.9	18.8	9.9	6.4	3.5	4.6	4.6	3.9	3.2	2.2	2.8	2.8	4.2	18.8	7.6	24	
10	6.1	4.2	3.9	3.7	5	8.4	10.2	11.1	S	14.5	9.9	10	7.7	2.3	6.2	3.8	1.1	0	0.1	1.8	12.8	5	0.4	0.2	14.5	5.6	24	
11	0.1	14.7	9.3	0.9	1.1	2.1	1.5	S	1.8	1.9	3.9	12.6	14.5	12.3	22.3	23.1	26.9	45.2	0.8	1.7	1	1.1	1.2	2	45.2	8.8	24	
12	3.5	11.8	2.4	2.3	1.1	0.9	S	3.4	3.2	4.6	Y	Y	Y	Y	2.2	2.3	2.5	2.5	2.8	2.6	3.7	2.7	2.2	11.8	3.2	19		
13	2.3	5.7	3.1	3.5	4.6	S	1.6	1.2	1.5	1	0.7	0.7	0.4	1.8	0.5	0.5	0.5	0.5	0.2	0.3	0.4	0.2	0.2	0.2	5.7	1.4	24	
14	0.3	0.4	0.1	0.1	S	1.2	6.9	Y	Y	Y	3.2	Y	Y	Y	0	0	0.1	0.3	0.1	0.2	0.2	0.3	0.6	0.3	6.9	0.8	18	
15	0.3	0.5	0.5	S	0.8	0.5	0.8	0.5	0.6	0.3	1.4	2.1	12.4	85.4	12.1	13.4	2.4	2.5	1.7	1.6	1.3	1.2	2.4	4.5	85.4	6.5	24	
16	3.8	3.7	S	1	0.9	0.9	0.7	1.2	5.3	9.2	4.4	11.9	1.8	2.8	3.3	4.2	11.2	11.4	3.7	12.5	1.2	1	1.1	3.4	12.5	4.4	24	
17	2.9	S	0.7	1.1	1.2	7.8	13.7	16.7	9.5	5	2.9	4.6	4.3	10.6	16.5	10.3	17.8	8.7	6.4	3.4	2.5	9.4	2.7	4	17.8	7.1	24	
18	S	3.7	5.9	3.8	4.3	48.6	27.6	30.9	35.6	16.1	18.3	8.2	11.9	10.3	6.7	5	13.1	1	1.7	2	1.8	3.7	4.1	S	48.6	12.0	24	
19	5.2	7	6.9	11.3	7.5	8.1	12.4	50.7	C	C	C	C	C	C	7	10.7	10.4	10.8	14.2	14.3	8.7	5.7	S	3.8	50.7	11.5	24	
20	25.8	5.6	7.4	2.8	3.8	1.9	2.9	1.9	18.1	16.3	16.7	15.7	13.9	13.9	17.3	16.7	16.1	16.5	19.7	18.2	17.7	S	11.3	13.8	25.8	12.8	24	
21	8.8	9.1	7.4	7.9	4.5	7.3	5	1.3	1.9	5.9	2.6	0.9	3	3.3	0.7	0.7	0.8	0.8	0.6	0.9	S	1.5	1.5	1.5	9.1	3.4	24	
22	1.1	1	1	0.9	1.2	4.4	9.4	9.2	10.9	3.9	3.3	2.1	1.5	3.3	4.8	14.9	12.5	1.8	1.5	S	1.6	1.6	1.4	0.9	14.9	4.1	24	
23	1.5	2.3	3.8	4.1	4.2	8.3	19.7	14.5	10.1	5.3	2.9	0.7	0.6	0.3	5.3	5.7	2	2.6	S	2	2.2	2.7	6	3.5	19.7	4.8	24	
24	5.5	42.6	16.6	7.7	8.4	93.7	24.1	21.2	27.6	23.3	18.4	3.1	3.9	2.2	2.6	2.6	3.1	S	3.4	3.2	4.6	4.2	4.7	5.2	93.7	14.4	24	
25	14.8	15.4	7.1	5.5	4.5	13.2	9.5	16.6	17.4	18.5	7.2	4	4.2	13.9	4.7	3.4	S	4	2.9	5.6	4.8	4.6	3.6	5.3	18.5	8.3	24	
26	3.9	4.4	3.6	4.5	5	5.1	64.8	67.8	22	11	4.9	3.8	4.6	4.7	4.7	S	5	2.7	1.9	3.5	4.4	5	4.4	4.7	67.8	10.7	24	
27	4.7	4.1	3.9	5.5	5	9.5	10.4	17.9	10.6	9.6	29.2	10.3	11.2	11.3	S	17.3	10.1	7.8	8.1	8.1	8.1	8.1	7.5	7	6.7	29.2	9.7	24
28	7	6.6	7.3	7.2	7.1	31.4	144.3	182.4	33.7	52.9	50.1	12.9	13.6	S	8.2	8.6	6.2	4.8	5.2	5.4	5.6	5.6	4.9	4.7	182.4	26.8	24	
29	5.5	5.1	24.6	25.3	5.6	3.2	1.7	1.9	0	0	0	11.4	S	7.7	2.6	3.3	3.7	4.4	3.6	3.2	4.3	4.7	3.7	4.5	25.3	5.7	24	
30	7.5	41	37.5	40.5	35.2	1.8	4.1	3.6	2.5	2.2	8.6	S	23.7	8.3	1.8	1.5	1.5	5.1	4.8	8.8	4.9	4.5	2.8	3.8	41.0	11.1	24	
31	3.7	3.6	5.9	1.9	0.8	2.6	6.4	3.2	2.1	2.4	S	2	4.4	2.2	2.3	1.9	2.1	3.7	2	1.8	2.3	3	7	2.5	7.0	3.0	24	
HOURLY MAX	25.8	42.6	37.5	40.5	35.2	93.7	144.3	182.4	61.0	52.9	50.1	27.3	24.4	85.4	22.3	24.4	26.9	45.2	19.7	18.2	17.7	12.3	11.3	13.8				
HOURLY AVG	5.2	7.9	6.6	6.5	5.3	10.2	15.2	19.6	11.4	9.8	9.7	7.1	8.0	9.4	6.4	6.9	6.3	5.7	4.3	4.7	4.4	3.9	3.6	3.7				

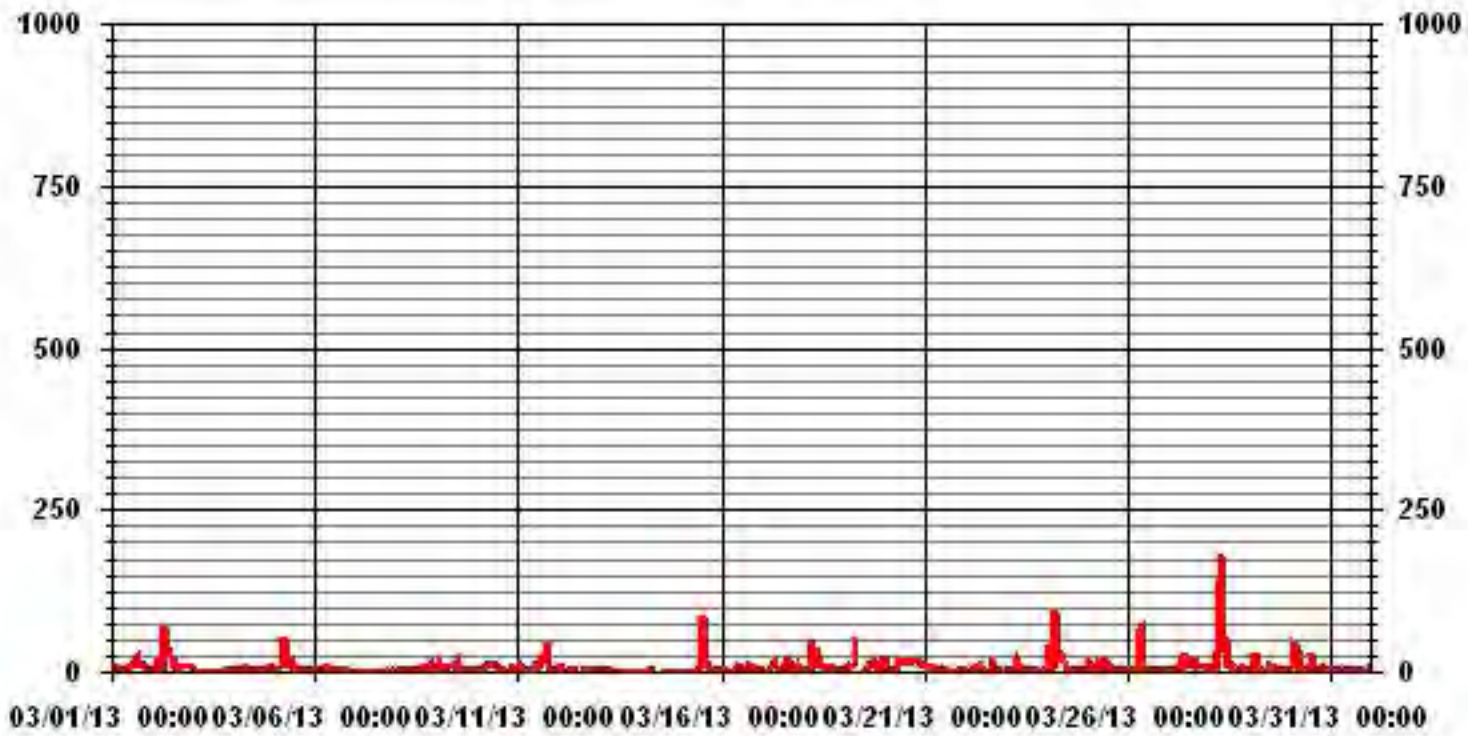
### STATUS FLAG CODES

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

### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	680					
MAXIMUM INSTANTANEOUS VALUE:	182.4	PPB	@ HOUR(S)	7	ON DAY(S)	28
Izs CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	733	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	13.09					

# 01 Hour Averages



LICA30  
NOX\_ / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 30  
Site Name : LICA30  
Parameter : NOX\_  
Units : PPB

Wind Parameter : WDR  
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	7.03	7.03	11.19	5.45	5.45	7.60	4.30	4.44	7.31	17.79	4.73	2.43	2.15	3.15	5.30	4.30	99.71
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.14	.00	.00	.00	.00	.28
< 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	7.03	7.03	11.19	5.45	5.45	7.60	4.30	4.44	7.31	17.79	4.87	2.58	2.15	3.15	5.30	4.30	

Calm : .00 %

Total # Operational Hours : 697

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	49	49	78	38	38	53	30	31	51	124	33	17	15	22	37	30	695
< 110.0											1	1					2
< 210.0																	
>= 210.0																	
Totals	49	49	78	38	38	53	30	31	51	124	34	18	15	22	37	30	

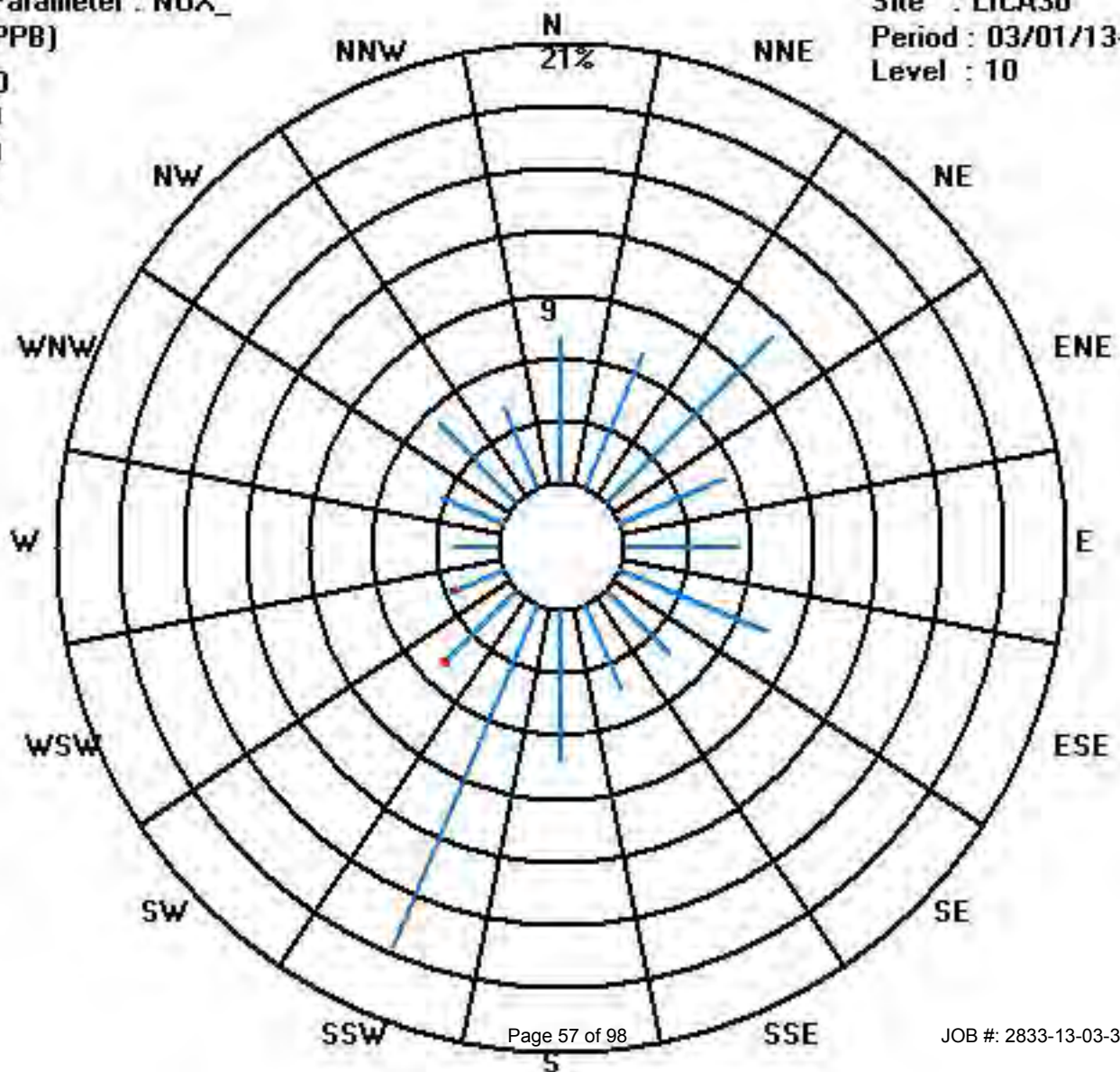
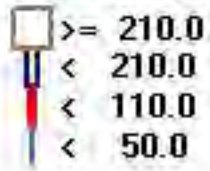
Calm : .00 %

Total # Operational Hours : 697

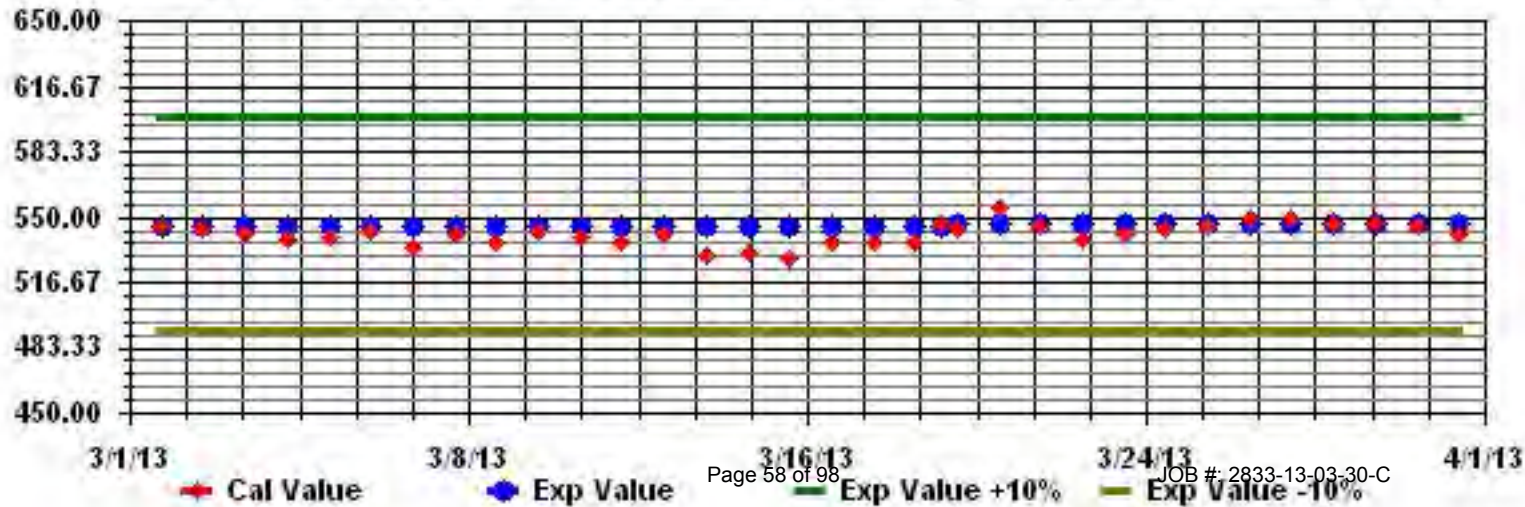
Class Limits (PPB)

Period : 03/01/13-03/31/13

Level : 10



Calibration Graph for Site: LICA30 Parameter: NOX\_ Sequence: NO2 Phase: SPAll





# Temperature

**LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA**  
**MARCH 2013**  
**AMBIENT TEMPERATURE hourly averages (Degrees C)**

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.
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		-11.3	-10.7	-9.8	-8.9	-9.4	-9.1	-8.4	-8.3	-7.2	-5.9	-4.3	-0.9	-0.1	1.3	0.9	1.4	1.4	0.2	-0.8	-1.2	-1.9	-2.4	-2.9	-3.4	1.4	-4.2	24	
2		-4.1	-6.3	-6.1	-6.2	-6.9	-9.7	-11.1	-10.2	-6.2	0.9	4.8	8.4	9.4	9.7	6.9	5.8	4.5	1.9	-1.3	-3.4	-4.2	-4.9	-5.4	-5.4	9.7	-1.6	24	
3		-5.2	-5.8	-6.2	-6.2	-6.3	-6.7	-7.4	-7.2	-5.9	-4.6	-3.6	-2.4	-1.5	-0.9	-0.8	-1.6	-2.3	-3	-3.5	-3.7	-4	-4.3	-4.4	-4.7	-0.8	-4.3	24	
4		-5	-5.2	-5.6	-6.2	-6.8	-7.4	-8.4	-8.5	-7.7	-6.4	-4.1	-1.8	-0.7	0	0.3	-0.5	-1.8	-4.1	-6.2	-7.9	-8.2	-7.9	-7.5	-7.3	0.3	-5.2	24	
5		-7.4	-8.2	-11	-12.4	-12.4	-13.1	-12.6	-12.5	-12.3	-10.5	-6	-3.7	-2.4	-1.6	-1.1	-1.9	-3.1	-4.7	-6.3	-7.7	-8.7	-9.5	-10.6	-10.5	-1.1	-7.9	24	
6		-11.6	-12.5	-13.6	-13.5	-13.8	-13.7	-14.8	-14.1	-10.6	-8.7	-6.1	-4.6	-3.1	-2	-0.9	-0.7	-1.5	-4.2	-7.1	-8.5	-9.5	-11.2	-11.8	-12.3	-0.7	-8.8	24	
7		-12.7	-13.1	-14	-15.3	-15.4	-15.6	-16.4	-16.5	-15.7	-14.4	-13.2	-10	-8.4	-6.9	-6.1	-6.6	-7.2	-8.9	-11.2	-14.4	-16.1	-16.6	-17.2	-16.1	-6.1	-12.8	24	
8		-14.8	-14	-14.8	-14.4	-14	-14	-13.4	-12.1	-10.4	-9.5	-7.5	-6.4	-5.4	-4.9	-5.8	-7	-8.3	-10.2	-12.3	-11.2	-12.2	-14.2	-15.1	-4.9	-11.1	24		
9		-15.1	-14.7	-15.1	-16.6	-16.6	-17	-15.4	-12.6	-10.3	-7.7	-4.5	-1.9	-1.3	-0.1	-1	-2.5	-3.8	-6.1	-7.2	-7.5	-7.1	-7.1	-6.7	-7.5	-0.1	-8.6	24	
10		-7.9	-8.3	-8.1	-9.6	-10.3	-9.8	-10.4	-9	-6.6	-2.1	1.9	5.4	6.7	5.7	5.9	5.3	3.7	2	0.9	0.8	0	-0.8	-1.1	6.7	-1.6	24		
11		-0.9	-1.1	-2.4	-4.8	-6.6	-7.3	-7.6	-7.2	-6.5	-5.8	-2.8	-0.4	1.1	2.5	2.1	1.9	1.1	-0.1	-2.1	-3.3	-4.3	-5.7	-5.7	-7.1	2.5	-3.0	24	
12		-7.1	-7.5	-9.3	-8.5	-8.2	-8.1	-7.9	-8.2	-5.9	-4.1	-1.2	0.9	2.5	3.1	3.2	2	0.5	-1	-2.4	-3	-3.7	-4.4	-4.7	3.2	-3.7	24		
13		-5.4	-5.9	-6.3	-6.8	-6.9	-7	-6.8	-6.6	-7.2	-8	-7.9	-7.1	-6.5	-5.4	-5.5	-6	-6.1	-6.7	-7.5	-8.2	-8.6	-9.6	-12.4	-13.6	-5.4	-7.4	24	
14		-14.5	-15.1	-15.9	-16.8	-17.6	-18.5	-19.3	-19.1	-17.6	-16	-13.9	-12.2	-10.7	-10.4	-10.6	-11.4	-12.7	-13.8	-14.9	-15.2	-15.3	-15.8	-16.1	-16.5	-10.4	-15.0	24	
15		-17	-17.7	-18.4	-18.7	-18.8	-18.9	-18.8	-18.3	-17.6	-16.2	-13.3	-11.6	-9	-8.7	-8	-9.9	-10.9	-12.1	-13.2	-14.4	-17.2	-20	-20.2	-21	-8.0	-15.4	24	
16		-20.5	-20.3	-21	-22.6	-22.9	-23.4	-23.4	-22.7	-20	-18.6	-17.8	-15.5	-14.5	-14.3	-15.1	-15.1	-15.7	-16.6	-17.3	-17.4	-17.2	-17	-17	-17	-14.3	-18.5	24	
17		-17	-17.3	-17.7	-17.9	-19.3	-20.4	-20	-18	-15.5	-12.7	-10.2	-8.3	-9	-9.3	-9.1	-9.1	-9.5	-11.8	-14	-16.9	-19.9	-21.7	-22.7	-24.4	-8.3	-15.5	24	
18		-24.8	-25.4	-24.8	-23.1	-21.8	-20.6	-19.9	-18	-15.6	-13.9	-9.7	-7.4	-8.3	-7.8	-7.9	-7.9	-8.4	-8.7	-10.9	-13.7	-15.5	-17.6	-19.5	-20.4	-7.4	-15.5	24	
19		-22.1	-24	-24.4	-25.6	-26.9	-27.6	-27.9	-23.8	-17.4	-13.2	-7.3	-5.6	-4.5	-3.6	-2.6	-2.4	-3.1	-5.7	-8	-9.9	-11.6	-12.2	-12.5	-12.6	-2.4	-13.9	24	
20		-12.7	-13.7	-13.4	-13.7	-13.9	-14	-14.1	-12.7	-10.1	-7.4	-5.8	-5.2	-4	-4.1	-2.5	-3	-5	-5.6	-7	-7.5	-8.2	-8.6	-8.3	-8.7	-2.5	-8.7	24	
21		-9	-9	-9.3	-9.4	-9.6	-9.6	-9.8	-9.3	-9	-9.1	-9.8	-9.6	-8.5	-8.3	-8.8	-8.6	-8.5	-8.7	-8.9	-8.9	-8.9	-8.9	-9	-8.3	-9.1	24		
22		-9	-9	-9.1	-9.2	-9.3	-9.4	-9.5	-8.6	-7	-5.8	-5.7	-5.4	-4.8	-4.1	-3.5	-4.4	-6.1	-6.9	-7.6	-8.1	-8.7	-9.1	-9.7	-10.5	-3.5	-7.5	24	
23		-10.8	-10.4	-10.6	-10.6	-10.6	-11.1	-11.1	-10	-6.6	-3.5	-3.1	-1.4	1.7	-0.5	-1.6	1.7	-1.9	-1.8	-5	-7.5	-9.7	-11.2	-13.3	-14.8	1.7	-6.8	24	
24		-15.8	-17.3	-18.2	-19.3	-20.2	-19.8	-18.2	-14.7	-10.3	-6.5	-0.9	-0.9	-0.9	-0.4	-0.6	-1	-1.7	-2.9	-5.3	-7.5	-8.9	-10.6	-12.9	-14.8	-0.4	-9.6	24	
25		-16.6	-18.9	-20.3	-21.7	-22.5	-23.6	-23.6	-18.9	-12.3	-5.6	-0.7	1.2	2.7	2.5	2.4	1.4	1.4	-0.6	-3.2	-6.3	-7	-7.6	-9.6	-10.7	2.7	-9.1	24	
26		-13.9	-15.5	-17.7	-18.8	-20	-21.2	-21.5	-17	-10.4	-3.3	-1.1	-0.3	1.4	2.6	2.8	2.5	1.9	0.2	-2.9	-4.3	-5	-6.1	-6.6	-7.6	2.8	-7.6	24	
27		-8	-8.4	-9.1	-9.9	-10	-9.6	-9.1	-7.9	-6	-3.1	-0.5	2.3	4.4	5.3	6	5.8	5.5	3.9	2.3	0.8	-0.2	-1	-1.4	-1.7	6.0	-2.1	24	
28		-2.5	-2.8	-2.9	-5.4	-6.9	-8.4	-8.7	-3.9	1.4	5	7.3	9.4	9.9	10.3	10.5	10.1	9.7	8.2	6	4.1	2.5	1.5	0.5	-0.1	10.5	2.3	24	
29		-1	-1.6	-2.7	-2.3	-2	-1.1	-1	-0.6	0.7	3.3	6.3	8	9.3	9.2	7.4	7.1	5.9	5.7	3	1.4	-0.5	-1.2	-0.3	-0.1	9.3	2.2	24	
30		0.3	0.9	-0.1	-0.9	-1.9	-3.2	-3.7	-2.9	-1.7	-0.8	1.9	2.7	4	4.6	4.4	3.2	2.5	1.5	0	-1	-1.5	-1.8	-2.9	-3.5	4.6	0.0	24	
31		-3.7	-4.8	-6.2	-7.7	-7.4	-6.7	-6.3	-4.9	-2.6	-1.4	0.4	0.6	2.7	5.2	4.7	4	2.9	1.1	0.3	-0.5	-2.3	-3.4	-3.8	-3.8	5.2	-1.8	24	
HOURLY MAX		0.3	0.9	-0.1	-0.9	-1.9	-1.1	-1.0	-0.6	1.4	5.0	7.3	9.4	9.9	10.3	10.5	10.1	9.7	8.2	6.0	4.1	2.5	1.5	0.5	-0.1				
HOURLY AVG		-10.6	-11.1	-11.7	-12.4	-12.7	-13.1	-13.1	-11.8	-9.4	-7.0	-4.5	-2.7	-1.6	-1.0	-1.1	-1.5	-2.4	-3.7	-5.5	-6.9	-7.8	-8.6	-9.3	-9.9				

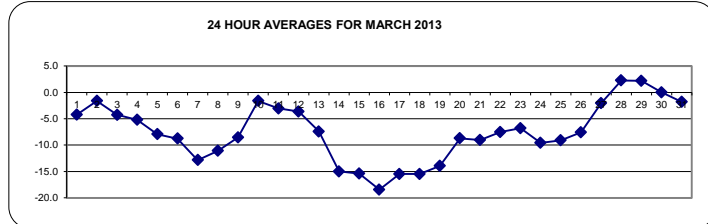
**STATUS FLAG CODES**

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

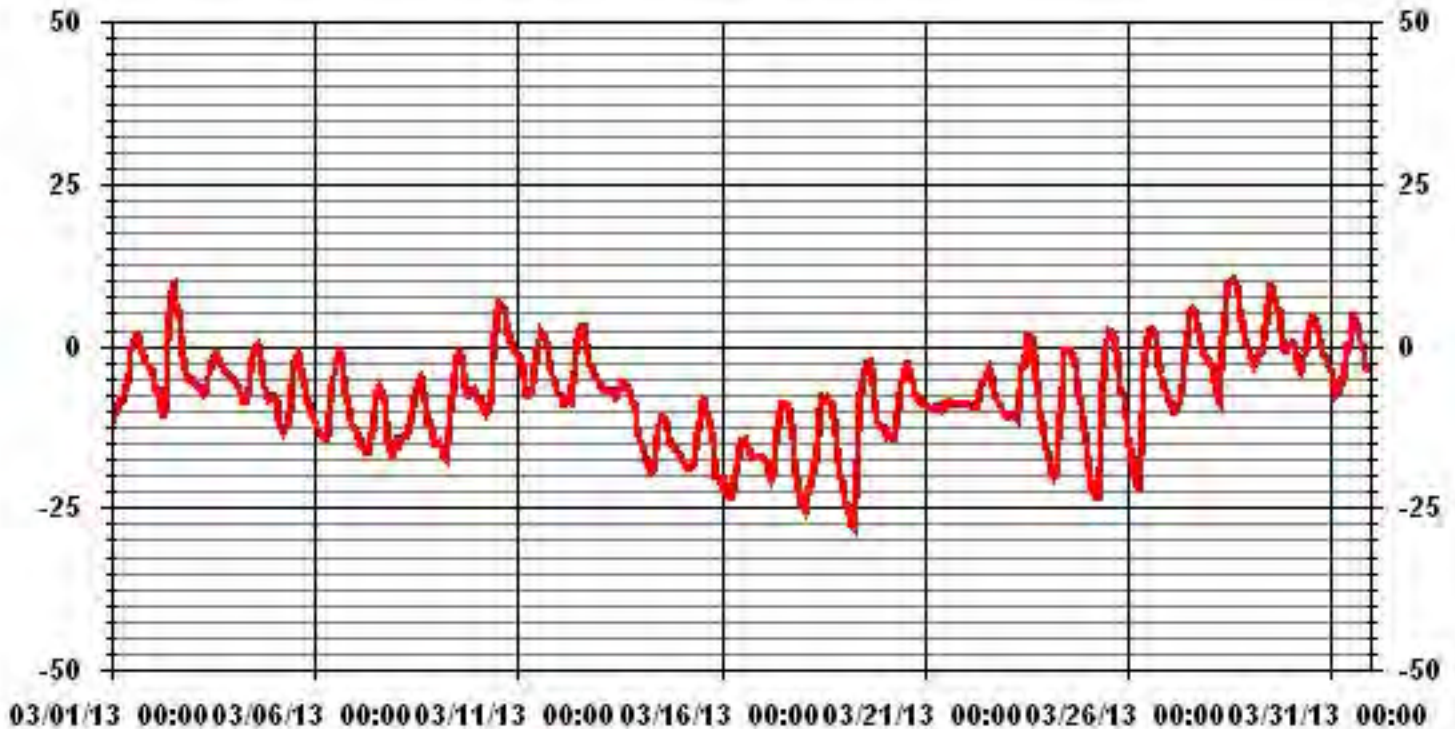
**MONTHLY SUMMARY**

MINIMUM 1-HR AVERAGE:	-27.9 °C	@ HOUR(S)	6	ON DAY(S)	19
MAXIMUM 1-HR AVERAGE:	10.5 °C	@ HOUR(S)	14	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	2.3 °C			ON DAY(S)	28
CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS		
STANDARD DEVIATION:	7.32	AMD OPERATION UPTIME:	100.0 %		
		MONTHLY AVERAGE:	-7.48 °C		

**24 HOUR AVERAGES FOR MARCH 2013**



### 01 Hour Averages



# Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2013

PRECIPITATION hourly averages (mm)

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.	DAILY TOTAL	DAILY 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	0.0	24	
2		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
3		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
4		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	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	0.0	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	0.0	24	
7		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
8		0	0	0	0	0	0	0	0	0	0.1	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0.2	24
9		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
10		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
11		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
12		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
13		0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0.1	0.1	0.1	0	0	0	0	0.3	0	0	0	0.3	0.8	24	
14		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
15		0	0.1	0	0.1	0.2	0.1	0.3	0.2	0	0.1	0.1	0	0.2	0.2	0.4	0	0	0	0	0	0	0	0	0	0	0.4	2.0	24	
16		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	0	0.1	0.2	24	
17		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	0.1	0.1	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	0.0	24	
19		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	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	0.0	24	
21		0	0	0	0	0	0	0	0	0	0	0	0.3	0.3	0.2	0.1	0	0	0	0	0	0.2	0.5	0.3	0.2	0	0.5	2.1	24	
22		0.1	0.1	0.1	0.1	0	0.1	0.1	0.3	0.6	0.8	0	0.1	0.1	0	0	0.1	0.4	0.3	0.2	0.1	0	0	0.1	0	0.8	3.7	24		
23		0	0	0	0	0	0	0	0	0.4	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.2	1.6	24	
24		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
25		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	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	0.0	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	0.0	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	0.0	24	
29		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	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	0.2	0.3	0.3	0.5	24	
31		0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2	24	
HOURLY MAX		0.2	0.1	0.1	0.1	0.2	0.1	0.3	0.3	0.6	1.2	0.1	0.3	0.3	0.2	0.4	0.1	0.4	0.3	0.2	0.2	0.5	0.3	0.2	0.3					

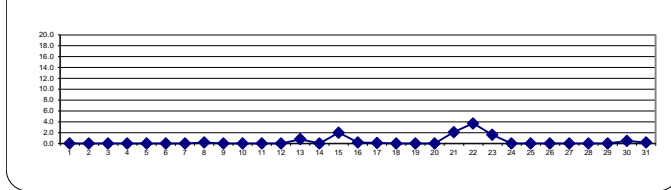
STATUS FLAG CODES

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

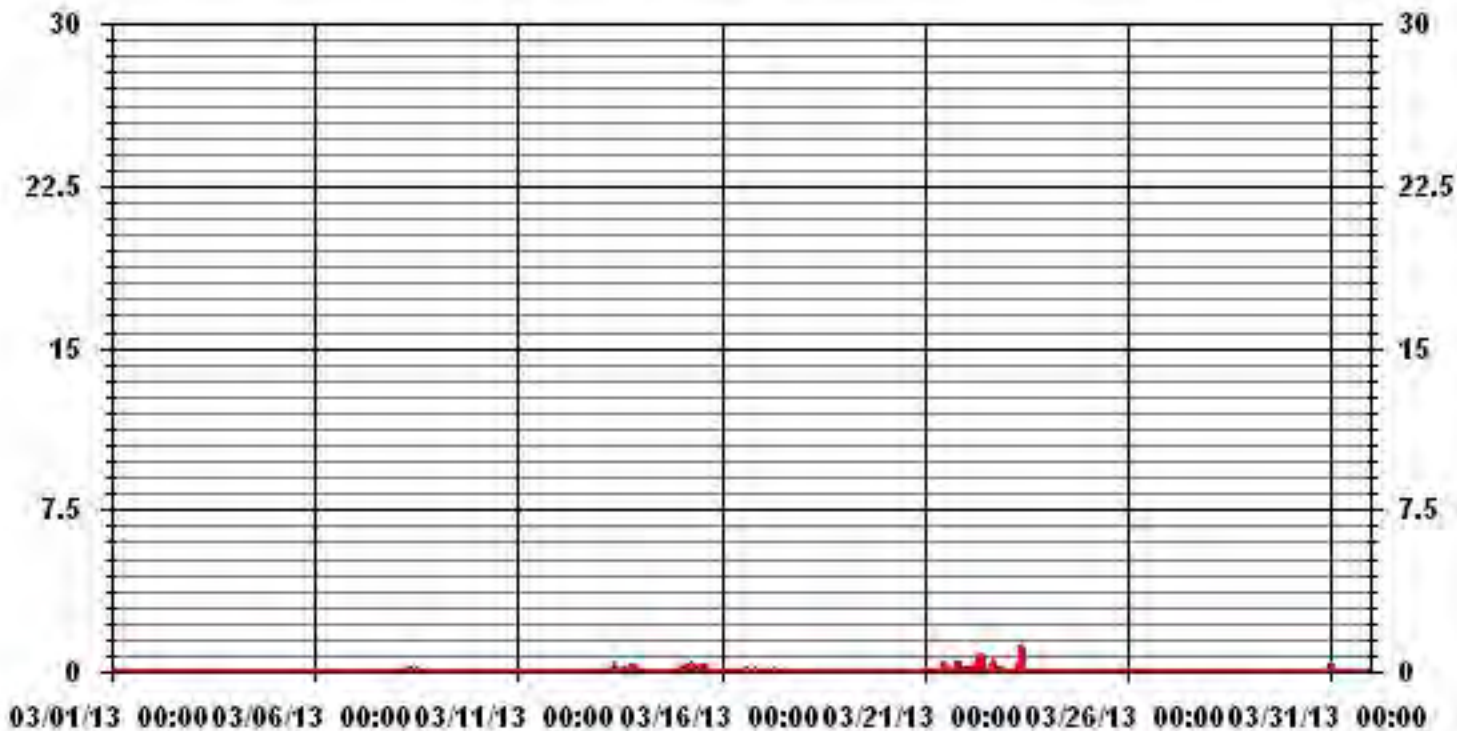
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	1.2	MM	9	ON DAY(S)	23
MAXIMUM DAILY TOTAL	3.7	MM		ON DAY(S)	22
MONTHLY TOTAL	11.4	MM			
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	0.08		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	0.02	MM

DAILY TOTALS FOR MARCH 2013



# 01 Hour Averages



# Relative Humidity

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2013

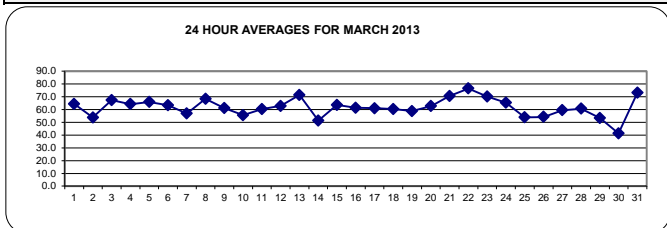
## RELATIVE HUMIDITY hourly averages (%)

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		
HR START	HR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		82	82	82	80	80	79	77	76	72	67	62	53	51	48	49	50	51	54	57	58	60	58	58	57	82	64.3	24	
2		57	64	64	64	66	74	80	78	60	44	35	28	24	21	31	34	37	44	55	63	66	68	67	66	80	53.8	24	
3		57	59	58	57	59	65	72	74	75	73	71	69	66	62	60	63	68	69	72	69	72	76	76	75	76	67.4	24	
4		76	76	74	74	75	76	78	78	74	65	57	49	45	42	40	43	48	56	63	69	71	71	71	71	78	64.3	24	
5		72	74	79	82	82	81	81	80	78	76	72	64	52	47	44	45	46	50	56	59	60	63	68	70	82	65.9	24	
6		75	78	79	79	77	78	77	78	68	61	53	48	45	44	42	41	42	49	58	66	71	71	71	71	79	63.4	24	
7		71	70	69	69	66	63	62	61	60	58	55	47	46	44	42	42	43	46	51	58	62	60	62	60	71	57.0	24	
8		63	62	58	59	65	70	72	73	72	70	69	65	61	57	56	59	65	71	76	81	80	78	80	79	81	68.4	24	
9		77	78	79	77	78	78	78	79	78	68	53	43	38	32	39	40	48	58	60	60	57	54	57	59	79	61.2	24	
10		63	67	65	69	73	73	76	74	68	56	47	40	34	33	38	42	27	32	38	46	56	66	74	77	77	55.6	24	
11		72	75	73	71	68	69	69	68	64	59	51	46	43	39	40	42	44	50	57	62	65	71	72	76	76	60.3	24	
12		75	75	79	78	76	76	74	74	68	63	56	51	47	45	45	49	52	55	57	57	60	63	65	67	79	62.8	24	
13		68	70	70	72	73	73	73	77	78	74	72	70	67	63	63	67	69	70	70	73	77	77	74	73	78	71.4	24	
14		72	71	70	68	67	67	68	65	59	55	50	44	39	35	34	35	38	39	41	41	43	43	44	45	72	51.4	24	
15		50	63	69	71	71	71	70	70	67	61	58	51	50	47	53	59	64	63	62	67	74	71	72	74	74	63.5	24	
16		71	69	68	67	67	65	64	63	57	51	47	44	44	47	54	55	60	65	69	70	70	69	69	69	71	61.4	24	
17		69	70	71	71	73	74	73	72	66	59	51	44	44	46	45	42	42	46	53	62	71	74	74	72	74	61.0	24	
18		70	69	68	68	69	69	70	68	65	65	58	49	50	48	50	44	42	44	49	56	62	68	72	74	74	60.3	24	
19		75	72	72	69	67	67	66	64	62	54	46	46	45	45	42	43	43	49	57	61	65	66	66	69	75	58.8	24	
20		71	73	73	73	73	73	72	68	63	59	57	56	53	54	49	50	55	58	66	62	62	62	61	61	73	62.7	24	
21		62	65	67	67	65	65	67	63	60	62	68	71	69	67	70	73	74	75	78	80	81	81	81	82	82	70.5	24	
22		82	82	81	81	81	81	81	79	73	68	68	68	67	64	64	70	79	81	82	81	80	81	81	81	82	76.5	24	
23		82	80	80	80	80	80	80	78	68	61	59	52	45	49	60	46	60	61	73	82	84	84	81	79	84	70.2	24	
24		78	76	75	74	73	73	75	77	77	72	59	53	49	46	46	46	46	49	57	64	69	74	79	80	80	65.3	24	
25		78	75	74	72	72	70	70	69	64	51	39	34	32	32	32	31	28	34	42	51	53	56	65	69	78	53.9	24	
26		76	78	77	77	75	73	72	69	59	44	41	39	35	31	31	32	33	38	46	48	45	54	62	66	78	54.2	24	
27		68	69	72	74	74	74	72	67	62	54	50	44	41	41	39	41	42	48	55	62	66	69	71	72	74	59.5	24	
28		74	75	75	81	84	85	84	77	63	53	47	42	41	39	34	35	38	44	51	58	64	68	71	74	85	60.7	24	
29		76	79	82	79	75	65	61	57	50	42	34	29	26	26	33	36	38	40	49	53	60	63	61	64	82	53.3	24	
30		63	56	48	46	49	51	50	42	37	35	30	27	23	23	22	24	25	28	33	36	39	50	73	82	82	41.3	24	
31		82	82	83	85	84	82	80	76	71	69	65	65	59	51	52	53	57	68	74	79	83	86	87	81	87	73.1	24	
HOURLY MAX		82	82	83	85	84	85	84	80	78	76	72	71	69	67	70	73	79	81	82	82	84	86	87	82				
HOURLY AVG		71.2	72.1	72.1	72.1	72.2	72.3	72.4	70.8	65.8	59.8	54.3	49.6	46.2	44.2	44.9	46.0	48.4	52.7	58.3	62.2	65.2	67.7	69.8	70.7				

### STATUS FLAG CODES

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

24 HOUR AVERAGES FOR MARCH 2013

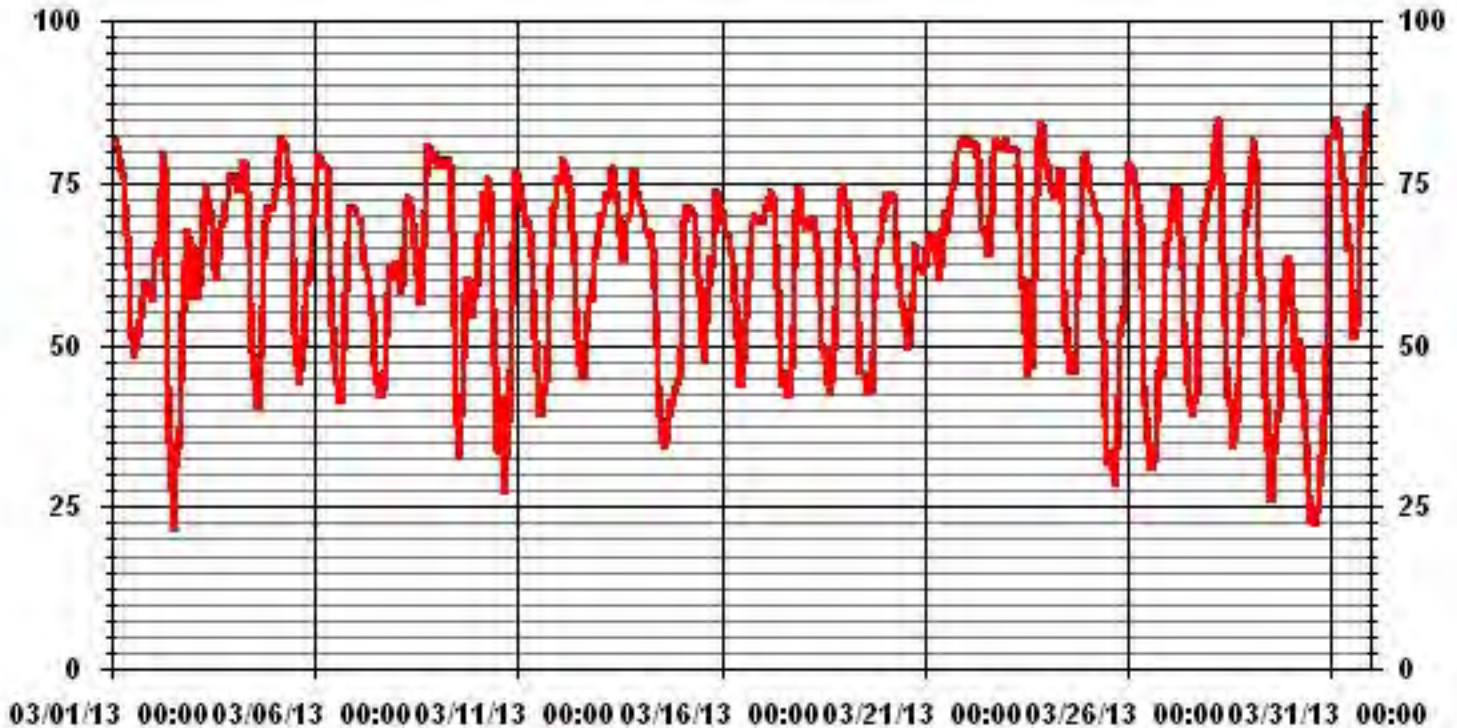


### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	87	%	@ HOUR(S)	22	ON DAY(S)	31
MAXIMUM 24-HR AVERAGE:	76.5	%			ON DAY(S)	22
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	14.40		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	61.71	%	



### 01 Hour Averages



# Barometric Pressure

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2013

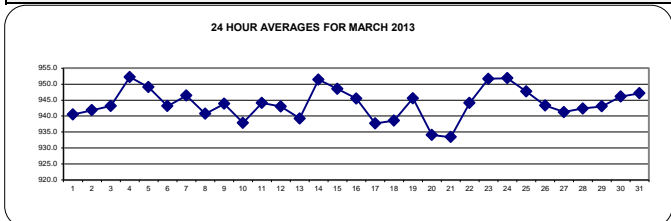
## BAROMETRIC PRESSURE hourly averages (millibar)

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	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		942	942	941	941	940	940	940	940	940	940	941	940	940	940	940	940	940	940	940	940	941	941	941	941	941	942	940.5	24
2		941	941	942	942	942	942	942	942	943	944	944	945	944	944	943	942	942	941	941	940	940	939	939	939	939	945	941.8	24
3		939	938	938	938	938	939	939	940	940	941	942	943	943	943	944	945	946	947	947	948	949	949	949	950	950	950	943.2	24
4		950	951	951	951	951	952	952	952	952	953	953	954	954	954	953	953	953	952	952	952	952	952	952	952	952	954	952.2	24
5		952	952	951	951	950	950	950	950	950	950	951	951	950	950	949	948	948	947	947	947	946	946	946	946	945	952	949.0	24
6		945	944	944	943	943	943	943	942	943	943	943	943	943	943	943	943	943	942	942	942	943	944	944	944	945	943.1	24	
7		944	944	945	945	945	945	946	946	947	947	947	947	948	947	948	947	947	947	947	947	947	947	947	947	947	948	946.4	24
8		946	946	946	945	945	944	944	943	943	942	941	941	940	939	938	938	937	937	937	937	937	937	937	937	937	946	940.7	24
9		937	938	939	940	941	942	943	943	944	945	946	946	947	946	947	946	946	946	946	945	945	945	945	945	944	947	943.8	24
10		943	942	942	941	941	940	940	939	939	938	939	938	938	937	936	935	935	935	935	935	935	936	935	935	935	943	937.9	24
11		935	935	936	938	939	940	942	943	944	945	946	947	947	947	947	947	947	947	947	948	948	948	948	948	948	948	944.1	24
12		948	947	947	947	947	947	946	946	945	945	945	944	943	943	942	941	940	939	939	939	938	938	938	937	948	943.0	24	
13		937	937	936	937	937	937	937	937	937	938	938	938	939	939	940	940	940	940	941	942	943	943	944	945	945	945	939.3	24
14		946	947	949	949	951	951	952	953	953	953	953	954	954	954	954	953	953	952	951	951	951	950	950	949	954	951.4	24	
15		949	949	948	948	947	948	948	948	948	948	948	948	949	949	949	949	948	948	949	949	949	950	950	950	950	948.5	24	
16		950	950	950	950	950	950	950	949	948	948	948	948	947	947	945	944	943	942	942	941	941	940	939	938	950	945.5	24	
17		937	937	937	937	937	937	937	937	937	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	939	937.7	24	
18		939	939	938	938	937	937	937	937	937	938	938	938	938	938	938	938	939	939	940	940	941	942	942	942	942	938.6	24	
19		943	943	944	944	945	946	946	946	945	946	946	947	947	947	946	947	947	947	946	946	946	945	945	944	947	945.6	24	
20		943	942	941	940	939	938	937	937	936	935	934	933	932	931	931	931	931	930	930	930	929	929	929	943	934.1	24		
21		929	929	929	929	930	930	930	931	931	932	933	934	934	935	935	936	936	937	938	938	939	939	939	939	939	933.4	24	
22		939	940	940	940	941	941	942	942	943	943	944	944	945	945	946	946	947	948	948	948	949	949	949	949	949	944.1	24	
23		949	949	949	950	950	950	951	951	952	952	953	953	953	953	953	953	953	953	952	952	952	952	953	953	953	951.7	24	
24		953	952	952	952	952	953	953	953	953	953	954	954	953	953	953	952	952	951	951	950	950	950	950	949	954	951.8	24	
25		949	949	949	949	949	949	949	948	948	948	949	949	949	949	948	948	947	947	946	945	945	945	945	945	949	947.7	24	
26		945	945	944	944	944	944	944	944	943	944	944	944	944	944	944	944	944	943	943	942	942	942	941	941	941	945	943.3	24
27		941	941	940	940	940	940	940	940	940	941	941	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	941.3	24
28		942	942	942	942	942	942	942	943	943	944	944	944	944	944	943	943	942	942	942	941	941	941	941	941	941	944	942.4	24
29		941	941	941	941	942	943	943	943	943	944	944	945	945	945	944	944	944	944	943	943	943	943	942	942	943	945	943.0	24
30		943	944	944	944	944	945	946	947	948	948	948	948	948	948	948	947	946	946	946	945	945	946	946	946	948	946.1	24	
31		946	946	946	946	946	947	947	948	948	948	948	948	948	948	948	947	947	947	947	947	947	947	947	947	948	947.1	24	
HOURLY MAX		953	952	952	952	952	953	953	953	953	954	954	954	954	954	953	953	953	952	952	952	952	953	953	953	953			
HOURLY AVG		943	943	943	943	943	944	944	944	944	944	945	945	945	944	944	944	944	944	944	944	944	944	944	944	944	948	947.1	24

### STATUS FLAG CODES

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

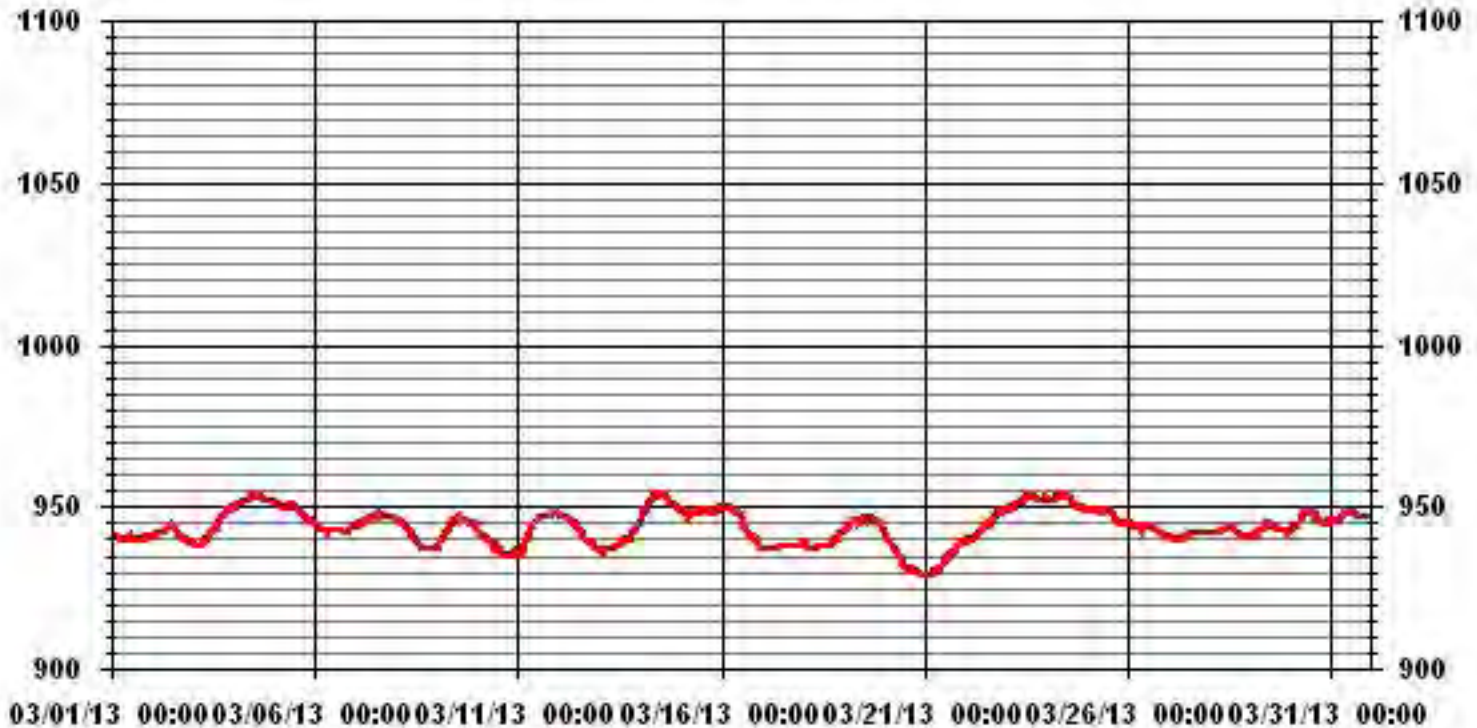
24 HOUR AVERAGES FOR MARCH 2013



### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	954 MB	@ HOUR(S)	VAR	ON DAY(S)	4, 24
MAXIMUM 24-HR AVERAGE:	952.2 MB			ON DAY(S)	4
			VAR-VARIOUS		
CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS		
		AMD OPERATION UPTIME:	100.0 %		
STANDARD DEVIATION:	5.34	MONTHLY AVERAGE:	944 MB		

# 01 Hour Averages



# Vector Wind Speed

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

MARCH 2013

## WIND SPEED hourly averages (km/hr)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	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	4.1	4.6	6	6.8	6	3.4	4.7	4	3.8	7.4	6.9	7.6	7.1	7.7	8.9	7.5	6.7	7	6.4	5.3	4.6	4.6	4.4	4.5	8.9	3.9	24	
2	4.4	2.7	3.7	3.6	4	2.8	1.3	3.6	1.1	2.6	2.5	2.1	0.5	3.9	8.7	7.1	7.1	5.3	3.4	0.7	1.9	3.4	3.3	3.7	8.7	2.1	24	
3	4.5	4.4	3.9	4.3	5.8	7.6	6.1	6.2	8.3	9	8.6	11.3	11.4	13.3	11.7	11	10.4	10.5	8	6.4	5.3	6.3	5.8	6.3	13.3	7.3	24	
4	4.1	4	4.8	4.1	2.8	2.8	3.3	5.7	7.4	9.9	6.2	4.7	4.3	4.4	2.6	5.4	6.9	8.2	6	5.3	6.8	5	6.5	8	9.9	0.5	24	
5	6.6	5.4	2.7	5	5.1	4.4	5.3	6.8	7.2	6.1	4.5	8.5	10.2	10.6	9.9	14	13.7	11	9.1	7.1	6.2	6	5.5	7.1	14	7.2	24	
6	7.1	5.2	3.8	4.9	5.4	6.7	4.9	6.8	8.5	8.7	8.2	9.5	11.9	9	7.1	5.6	4	2.1	3.7	9.2	12.3	13.3	12	11.5	13.3	2.6	24	
7	12.1	12.2	12.8	9.1	9.9	10.1	10.5	10.2	9.3	9.7	10.1	8.1	8.6	7.7	7.6	7.1	7.2	5.6	4.5	3.4	3.5	5	4.8	4.3	12.8	8	24	
8	4.2	7.3	5.4	5.7	5.9	5.3	4.9	3.5	4.1	7.2	9.2	11.1	14	12.9	13.4	13	10.3	9	4.9	4.1	4.8	1.8	0.3	0.9	14	5.8	24	
9	1.5	2.1	2.8	0.5	0.9	2	3	3.2	5.2	7.6	4.1	1.8	4.2	2.1	8.9	8.7	11.1	10.2	8.5	6.6	6.7	5.1	5.8	4.6	11.1	2.5	24	
10	4.5	4.8	5.3	3.6	6.6	7.5	7.4	8.2	8.1	8.4	10.4	8.6	9	11.2	9.6	8.8	14	13.1	9.8	11.5	13.5	12.6	9.7	11.8	14	6.9	24	
11	10.6	10.9	10.2	15.4	11.7	9.8	9.8	10.5	11.5	9.8	9.4	8.8	8.7	8.1	9.3	9.2	7.9	7.8	5.8	5.1	3.6	2.2	0.7	2.2	15.4	7.1	24	
12	3.8	5.9	3.2	8.1	9.2	7.6	5.3	5.7	5.7	6.4	8.7	11.4	10	12.5	12.9	12.8	11.9	10.9	10.7	7.8	6	5.2	3.6	3.9	12.9	7.3	24	
13	5.2	4.4	4.2	3	4.1	6.4	5	9.4	12.7	13.9	11.5	10.4	10.7	8.9	7.2	7.3	7	5.1	7.3	6.6	6.2	7.3	8.3	8.1	13.9	6.7	24	
14	8.7	9.1	9.5	10.7	9.4	7.6	7.7	9	12.6	14.1	12.7	10.6	10.2	11.3	10.2	10.1	9.4	8.9	9.1	8.6	8.8	8.6	8.7	7.3	14.1	8.7	24	
15	7.3	7.6	8.2	7.8	8.1	8.6	7.5	7.5	8.2	8.5	6.1	6.5	3.1	2.9	6.6	5.6	5.8	7.7	6.1	6.5	3.7	3.1	5.3	0.4	8.6	5.4	24	
16	4.3	5.6	7.3	4.5	4.6	4.5	4	4.5	6.4	7.4	5.8	6.9	6.7	6.9	7.6	8	7	7.2	7.4	7.8	7.1	6.3	5.4	4.4	8	5.2	24	
17	3.4	4.3	4.6	3.2	1.6	2.4	1.8	3.1	5.3	4.4	6	5.9	6	7.5	8.1	7.8	8.6	6.1	4.5	1.9	2.8	2.2	2.1	0.7	8.6	2.9	24	
18	1.2	1	1	0.2	1	0.3	0.3	0.9	1.4	4.4	3.6	5.7	6.2	6.2	9.3	8.5	7.5	8.2	5.6	3.7	3.1	0.6	2	2.1	9.3	2.7	24	
19	1.9	1.5	2.2	1.3	0.4	1.3	0.6	2	3.6	6.4	5.8	8	7.9	6.8	7.3	8.3	8.2	7.7	7.1	6.9	6.2	6.3	6.9	6.4	8.3	4.1	24	
20	7.7	6.5	9.2	7.4	7.4	8.4	9.8	11.2	13.7	15.4	17.7	19.1	19.2	18.9	18.2	18.1	15.1	14.8	14.3	12.4	12.1	11.8	13.1	11.9	19.2	12.8	24	
21	13	12.1	12.3	12.2	13.4	12	10.2	10.2	12.1	12.8	11.9	11.1	10.2	10.6	10.3	7.7	5.8	5.1	3.1	2.8	1.7	0.9	1.2	1.8	13.4	8.2	24	
22	2.3	3.5	3	3.1	4.3	2.5	1.7	2.6	2.4	3.6	5.7	6.1	5.7	4.2	3.4	4.9	6.8	5.8	5	4.6	3.7	3	4.4	2.7	6.8	3.5	24	
23	2.3	2.7	1.8	2.1	2.2	1.9	2.1	1.9	2.6	3.9	4.7	3.7	3.5	3.3	3.4	2.7	3.1	2.9	1.7	0.7	1.5	0.9	1.4	0.5	4.7	1.6	24	
24	1.1	0.8	0.7	0.8	0.5	0.8	0.7	0.7	0.8	2	2.6	7.7	9.3	9.5	10.2	10.7	10.2	5.5	3.1	3.8	4.1	3.3	2.1	2.3	10.7	3.7	24	
25	1.3	0.4	0.9	0.6	0.4	0.8	2	2.2	1.6	2.3	1.1	3.9	5.9	5	5.7	6.6	4.3	5.4	3.6	2.4	5.9	7.2	4.8	4.6	7.2	2.4	24	
26	0.5	2.7	0.3	0.2	1	0.6	0.2	2	3	1.4	7	8.2	5.7	5.7	5	5.8	6.5	5.8	3.7	3.8	5.9	4.7	5.6	5.1	8.2	3.1	24	
27	4.4	4.7	3.3	4.4	3.7	2.4	4.7	3.9	4.2	4.1	7.4	7.1	8.8	9.2	8.9	9.5	9.1	9.4	7.1	8.2	8.3	7.5	7.7	7.6	9.5	6.2	24	
28	5	5.6	4.9	2.3	1.1	0.3	0.3	1.4	2.8	3.2	5.4	6.5	7.6	8.8	10.6	11.5	10.6	11.4	8.4	8.5	8.3	7.9	6.4	5.9	11.5	5.9	24	
29	4.1	4.8	2.2	2.8	2.8	5.9	6	9.4	9.1	6.2	2.2	1.2	1.9	6.7	7.9	7.6	7.8	6.6	5.3	2.8	1.4	2.1	2.8	2.6	9.4	1	24	
30	2.9	7.8	6.9	8.4	8.9	6.1	6.6	8.2	7.4	9.2	6.3	5.7	6.9	5.3	5.9	6.1	4.4	3.3	4.7	4.4	3.7	3.1	2.7	1.8	9.2	3.8	24	
31	3.1	5	3.4	2.8	3.3	3.8	3.3	3.9	3.4	4.3	4.8	5.2	5.5	6.2	7.4	9.1	5.5	5.1	4.5	2.3	1.5	1.1	3.1	4	9.1	2	24	
HOURLY MAX	13.0	12.2	12.8	15.4	13.4	12.0	10.5	11.2	13.7	15.4	17.7	19.1	19.2	18.9	18.2	18.1	15.1	14.8	14.3	12.4	13.5	13.3	13.1	11.9				
HOURLY AVG	4.7	5.1	4.9	4.8	4.9	4.7	4.5	5.4	6.2	7.1	7.0	7.5	7.8	8.0	8.5	8.6	8.2	7.5	6.2	5.5	5.5	5.1	5.0	4.8				

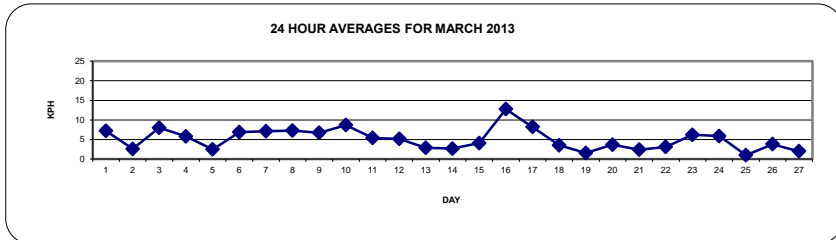
### STATUS FLAG CODES

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

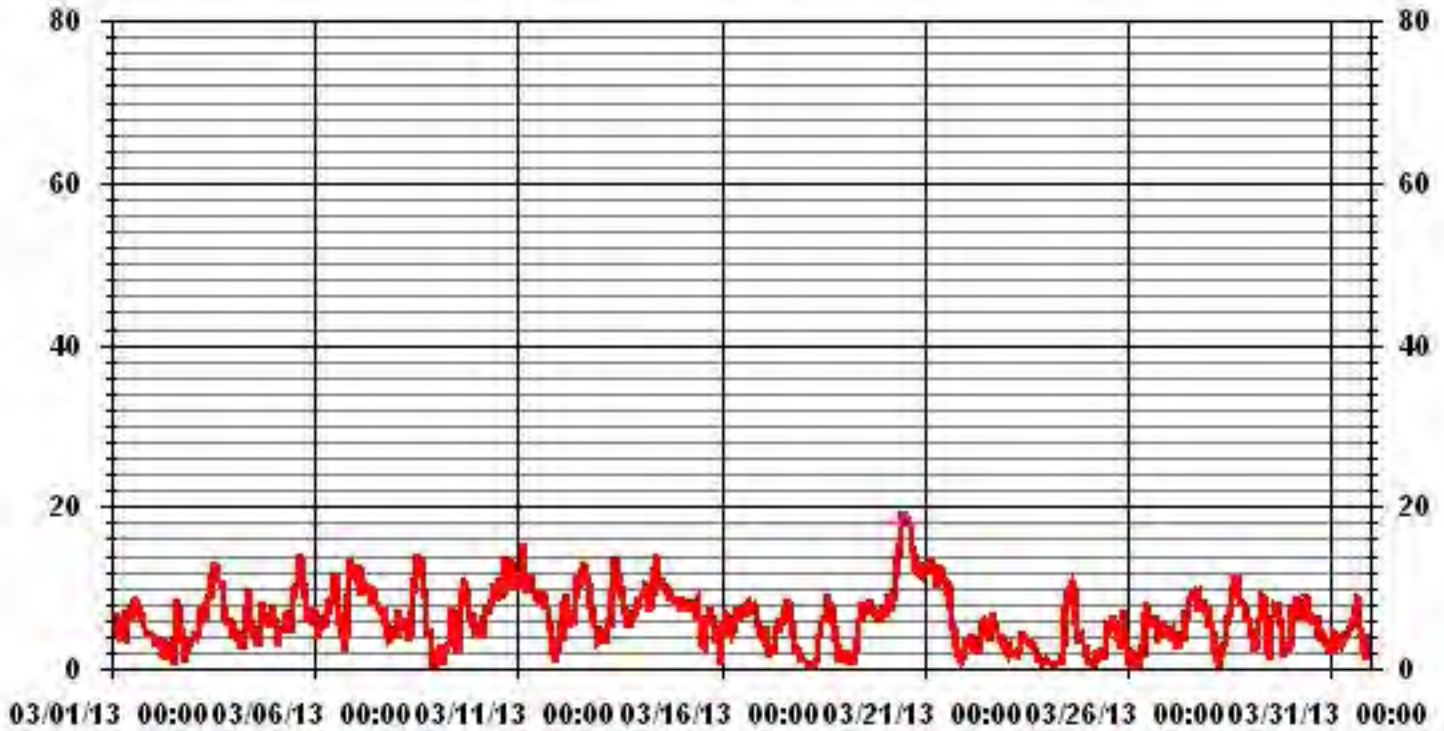
LAST CALIBRATION: December 20, 2011

### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	19.2 KPH	@ HOUR(S)	12	ON DAY(S)	20
MAXIMUM 24-HR AVERAGE:	12.8 KPH			ON DAY(S)	20
CALMS (≤ 1 KPH)	4.57 %	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0 HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	3.51	MONTHLY AVERAGE:	6.16	KPH	



### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2013

## VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST																								DAILY	
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	MAX.
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	16.8	15.3	19.6	22.3	24.1	19.5	23	14.2	13.5	16	16.4	17.5	20.6	17.3	19.7	17.1	14.4	14	15.5	12	12.6	14.6	17.9	14.2	24.1
2	14.6	11.9	20.5	15	13.1	12.7	8.2	8.7	5.5	12.1	11.4	11	14.1	21	17.7	13.7	13.8	9.8	7.7	10.3	11	12.6	13.5	14.1	21
3	13.2	13.9	12	14.5	14.1	17.9	16.8	14.1	20.8	21	17.5	33.5	27.4	29.9	31	35.6	31.1	32.7	23.6	19.2	16.1	21	18.9	20.2	35.6
4	15.2	14	16.7	14	10.9	11	11.9	14.3	15.7	21.8	19.1	16.6	18.4	17.8	12.2	15.6	16.2	17.4	13.2	9.3	11.3	10.9	14.6	15.9	21.8
5	14.1	12.8	31.7	8.1	10	10.9	13.9	17.5	19.7	11.9	9.6	18.8	21.1	31.6	31.3	40.5	37.9	31.5	23.3	17	13.7	13.7	14.4	16.2	40.5
6	14.5	12.9	15.5	12.7	14.7	13.2	12.9	15.1	18.8	19.1	15.8	29.8	31.4	29	16.9	16.3	14	12.9	12.5	30.1	31.9	33.3	30.5	25.6	33.3
7	30.9	26.4	33.1	23.3	23.3	26	28	26.8	19.7	21.7	25.6	26.6	19.5	20.4	25.1	20.6	19.4	18.1	13.3	18.1	12.8	14.6	47.9	72	72
8	20.3	19.4	20.5	16.1	15.5	15.7	14.9	15	17.2	19.9	27.8	31.1	37.5	33.9	34.8	37.8	28.8	27.7	13	10.7	11.8	14.4	10.2	27.5	37.8
9	17.6	16.7	30.4	18.8	15	18.1	14.3	14	19.2	15.2	14.4	13.9	11.2	16.2	27.1	21.6	25.1	23.8	18.1	15.9	16.1	12.4	23.2	13.9	30.4
10	13.9	13.9	14.2	13	15.5	17.5	17.7	18.3	18.2	21.2	26.2	23.2	50.4	45.4	35.4	40.9	50.1	52.1	38.3	47	45.5	45.2	39.8	39.2	52.1
11	39	34.4	38.5	43.5	35.2	35	34.8	41	38.1	36.6	32	26.7	36.9	27.3	32.7	34.4	30.5	27.6	19.2	17.3	13	11.9	9.6	13.5	43.5
12	15.3	23.3	13.4	21.9	24.5	22.7	19.4	17.4	20.6	18.5	24.9	33	35	35.2	35.2	32.5	33.8	32.5	26.5	22.2	20.7	14.1	11.9	13.2	35.2
13	15.6	15.2	14.6	14.1	12.6	14.4	15.5	25.3	24.6	30.7	22.8	22.1	22.1	21.5	18.7	21.1	22.5	17.5	18.9	18	16	20.1	22.3	19	30.7
14	23.2	27.2	27.5	28.9	28.2	18.8	21	21.6	28.1	33.1	27.8	30.8	30.6	33	28	28.9	26	27.2	21.3	22.8	27.7	28.6	28.7	22.5	33.1
15	20.3	18.8	22.5	21.8	21.2	22.7	20	21.4	18.5	19.9	21.9	17.1	16.1	15	22.3	19.9	20.7	17.1	15.4	21.8	17.7	22.9	18.1	81.5	81.5
16	38.1	16.9	19.5	14.9	27.8	22.8	22.3	31.4	29.6	21.4	22.8	21.9	23	22.8	21.1	23.2	24.3	22.9	23.2	27.2	23.1	21.4	18.6	53.5	53.5
17	21	17.1	31.3	31.8	29.8	84	47.1	28.2	33.7	14.2	16.4	19.8	22.7	23.6	27.1	29	30.3	19.4	30.2	14.9	23	46.5	88.4	99	99
18	43.3	41.4	25.2	85.1	22	52.9	56.4	37.6	30.4	13	17.8	22.4	21	19.2	29.4	25.8	24.2	22.8	19.8	17.5	18.4	19.5	28.3	17.8	85.1
19	19.7	24.5	21.8	X	34.1	36.4	36.2	19.4	19.5	14.6	24	21.4	19.7	18.1	22.2	23.3	23.5	22.5	19.9	23.5	18.9	21.8	21.6	22.6	36.4
20	25.1	23.4	35.5	21.9	28	24.1	29.8	35	43.6	46.3	57.2	62.7	71.3	76.5	62	62.6	55.8	47.9	42	40.7	43.4	43.4	48	43.1	76.5
21	41.4	44	38.7	45.8	51.9	37.4	39.2	33.7	37.2	40.9	37.2	36.3	37.2	34.4	34.6	26.1	21.6	21	12	12.4	10.9	10.3	9.8	13.3	51.9
22	9.6	11.1	11.3	10.7	11.3	12.2	10.2	11.5	10.9	12.5	14.6	14.2	13.1	14	16.6	19.4	21.8	20	17.3	14.6	15.5	12.9	13.9	11.6	21.8
23	12.5	10.9	14	12	10.7	13.2	11.5	11.1	11.3	11.1	14.8	15.9	22.3	13.8	13.3	12.2	8.9	12	10.9	8.5	3.9	8.6	8.6	15.5	22.3
24	17.7	19.3	30.4	22.8	41.6	18.4	18.1	17.9	11.3	10.7	12.2	19.2	24.2	28	27.6	30.9	24.9	17	10.9	8	12.6	8.7	10.3	10.2	41.6
25	17.9	16.6	68.6	22.1	X	85.1	68.7	30.7	9.4	12.6	12.6	13.3	16.9	14	16.1	16.4	11.5	11.8	9.6	4.8	19.4	15.5	12.5	10.9	85.1
26	8.7	27.8	20.3	34.7	19.3	18.6	71.5	20	13.1	15.3	23.2	29.3	19	19	17.5	18	18.7	17.7	12	9.3	16.2	14.2	17.2	13.1	71.5
27	13.5	15.3	12.6	15.9	12.4	14.6	14.7	13.3	12.2	12.9	20.1	17.4	21	24.5	28.6	20.7	23.7	22.6	17.9	19.2	17.5	16.8	17	16.4	28.6
28	13.9	14.8	15	11.2	10.2	8.9	15.3	7.1	8	8	12	14.1	17.4	19.3	27.2	27	24.5	30.2	24	27.1	18.6	18.8	15	14.4	30.2
29	11.3	10.7	12.6	10.7	14.2	16.8	14.4	23.4	21.8	16.6	14.4	16.6	15.5	21.4	19.9	19	26.2	14.6	12.5	6.9	5.8	6.1	7.1	7.6	26.2
30	12	29.3	23.2	26.4	26.5	22.1	23.8	27.1	19.7	25.1	22.5	22.5	24.5	20.5	24.7	17.7	12.9	18.6	17.7	15.5	13.3	11.1	10	9.8	29.3
31	15	17.5	16.7	12.2	12.4	15.1	16.2	15.9	16.8	12.2	14.4	13.7	19.4	17.5	31.3	27.3	30	14.8	14.2	12.6	9.3	10.5	12.4	12.9	31.3
PEAK	43.3	44.0	68.6	85.1	51.9	85.1	71.5	41.0	43.6	46.3	57.2	62.7	71.3	76.5	62.0	62.6	55.8	52.1	42.0	47.0	45.5	46.5	88.4	99.0	

**STATUS FLAG CODES**

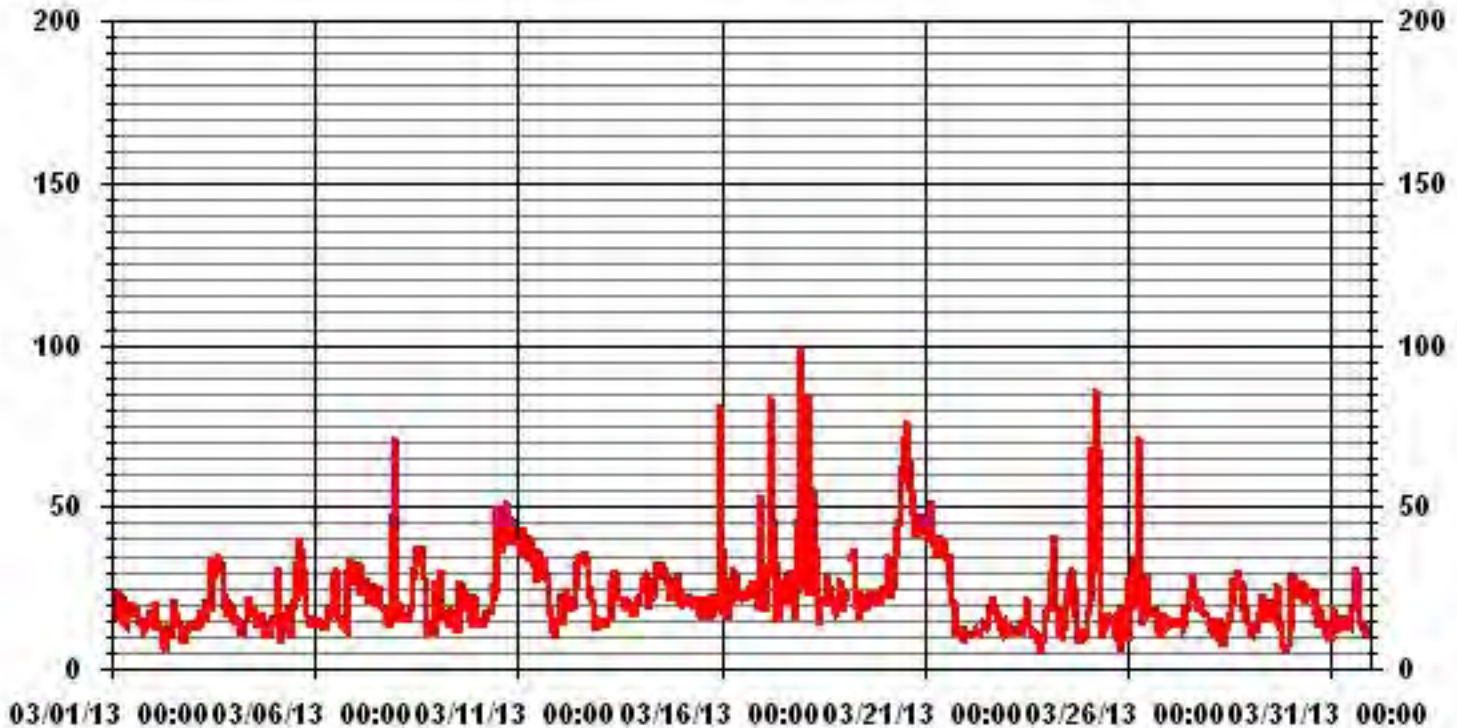
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

**MONTHLY SUMMARY**

MAXIMUM INSTANTANEOUS READING	99	KPH	@ HOUR(S)	23
			ON DAY(S)	17



# 01 Hour Averages



LICA30  
WSP / WDR Joint Frequency Distribution (Percent)

March 2013

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	3.89	4.03	4.16	3.09	1.47	3.22	3.09	3.09	4.03	6.45	4.43	2.15	1.47	1.07	3.09	2.55	51.34
< 12.0	2.95	2.55	6.18	2.28	2.28	2.82	1.34	1.47	3.22	10.48	.53	.26	.40	1.47	2.01	1.88	42.20
< 20.0	.13	.80	.80	.00	1.61	1.34	.00	.26	.40	.53	.00	.00	.13	.40	.00	.00	6.45
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	6.98	7.39	11.15	5.37	5.37	7.39	4.43	4.83	7.66	17.47	4.97	2.41	2.01	2.95	5.10	4.43	

Calm : .00 %

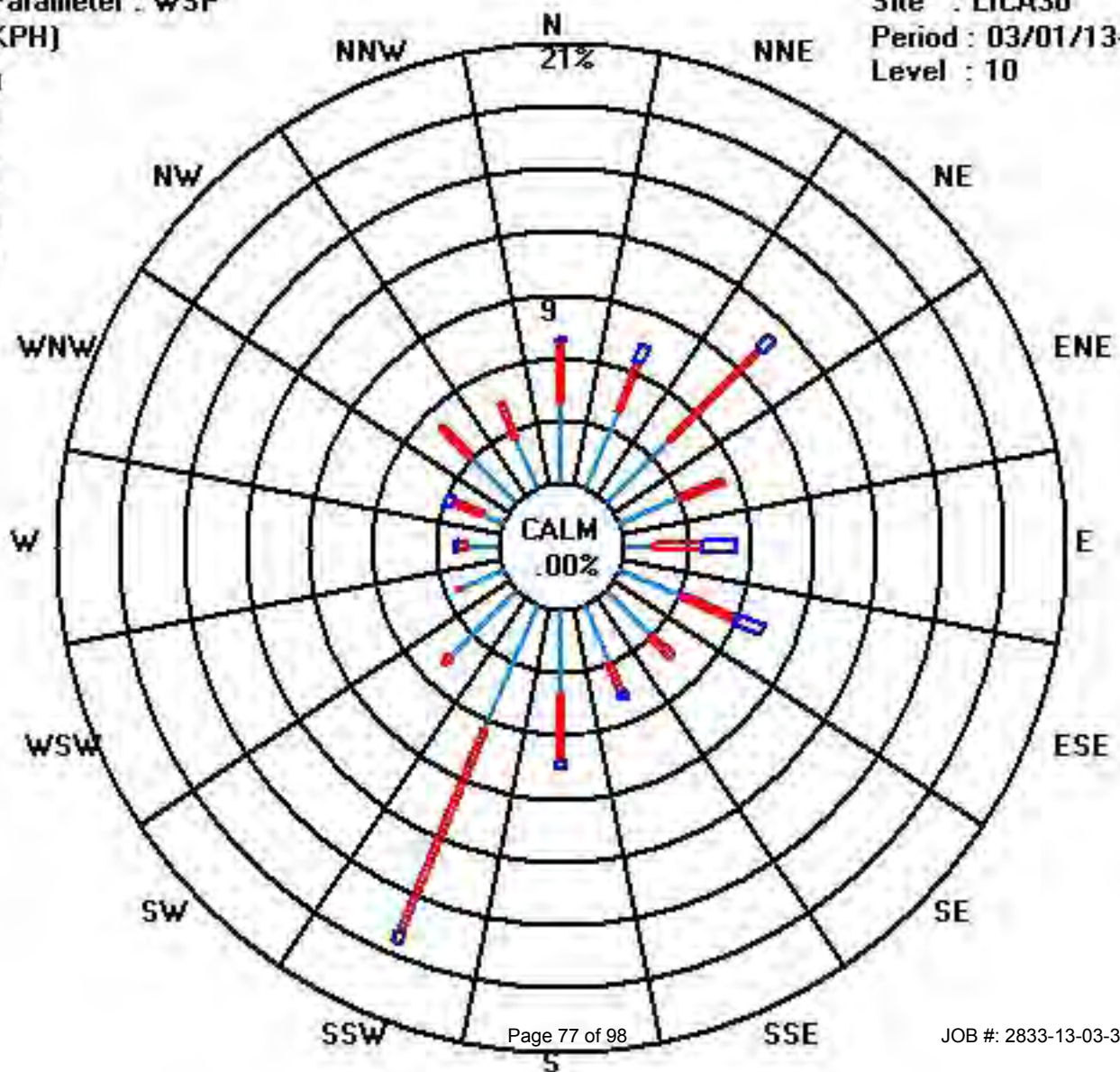
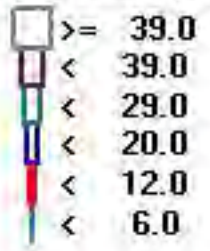
Total # Operational Hours : 744

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	29	30	31	23	11	24	23	23	30	48	33	16	11	8	23	19	382
< 12.0	22	19	46	17	17	21	10	11	24	78	4	2	3	11	15	14	314
< 20.0	1	6	6		12	10		2	3	4			1	3			48
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	52	55	83	40	40	55	33	36	57	130	37	18	15	22	38	33	

Calm : .00 %

Total # Operational Hours : 744



# Vector Wind Direction

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -COLD LAKE- MASKWA

MARCH 2013

## WIND DIRECTION 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	24-HOUR	24-HOUR AVG	
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	AVG.	QUADRANT	RDGS.
DAY 1	73	96	111	115	114	121	112	139	139	193	198	207	207	209	209	212	208	206	212	220	225	244	259	267	188	S	24
2	274	231	260	250	237	224	183	214	283	253	266	246	310	258	209	197	197	200	205	125	107	66	55	68	221	SW	24
3	66	61	48	59	48	40	45	41	46	41	35	39	39	21	13	7	3	6	7	6	1	354	5	5	25	NNE	24
4	2	359	358	3	11	16	6	15	29	27	19	1	341	5	21	202	197	193	186	183	196	200	203	201	349	NNW	24
5	206	206	250	200	208	209	212	198	198	191	206	194	204	216	229	199	201	203	194	185	179	182	191	205	202	SSW	24
6	205	205	207	189	189	186	192	187	199	203	194	196	193	204	200	215	233	347	45	46	46	43	42	41	176	S	24
7	40	39	39	46	39	42	38	41	38	40	44	66	41	44	44	56	47	66	54	60	55	68	67	57	46	NE	24
8	121	132	147	145	139	131	123	103	110	146	165	181	186	183	200	194	205	198	206	207	210	221	108	239	174	S	24
9	217	249	281	323	355	347	3	351	356	14	323	315	206	207	196	197	191	193	199	185	186	184	176	156	202	SSW	24
10	139	148	156	183	206	210	212	212	209	206	206	219	246	259	247	232	283	279	279	286	293	286	281	283	248	WSW	24
11	285	290	343	5	5	344	345	348	342	344	342	334	321	321	307	314	321	302	282	279	269	227	195	107	327	NW	24
12	79	90	102	131	125	126	111	103	133	151	170	173	168	173	154	147	155	151	151	152	150	163	168	136	146	SE	24
13	136	118	74	82	46	39	48	37	26	28	29	30	30	36	49	72	65	61	43	49	26	0	2	2	39	NE	24
14	5	8	5	7	4	9	12	16	25	29	31	58	88	88	67	60	52	48	46	47	57	62	58	57	39	NE	24
15	46	43	52	51	49	40	41	47	44	43	57	22	6	292	310	323	355	27	7	7	3	11	27	26	28	NNE	24
16	27	42	47	34	50	63	44	50	89	117	121	113	149	117	118	118	103	93	80	110	119	116	124	100	95	E	24
17	59	42	44	53	52	310	308	316	325	352	360	330	327	322	322	313	294	327	296	231	185	217	146	189	329	NNW	24
18	204	149	241	129	221	330	113	44	262	218	275	304	294	333	292	291	287	284	276	244	235	360	174	186	279	W	24
19	173	218	211	216	14	30	82	29	34	27	125	152	140	137	126	121	118	113	107	104	104	110	111	111	116	ESE	24
20	97	74	85	69	75	69	71	81	94	103	108	107	110	108	107	108	104	104	101	103	101	95	97	95	98	E	24
21	94	94	97	96	95	96	92	92	97	93	88	89	87	81	77	83	64	67	43	46	3	334	5	64	87	E	24
22	31	26	44	32	27	17	16	18	13	12	16	26	24	19	334	345	321	341	326	320	314	316	319	343	357	N	24
23	332	350	323	339	1	353	311	319	353	9	31	50	80	50	313	316	339	301	341	284	201	189	130	224	353	N	24
24	181	197	150	111	257	214	186	66	312	205	222	185	193	182	194	195	195	218	230	207	210	206	216	204	197	SSW	24
25	176	141	118	24	298	61	51	20	22	335	161	164	146	191	204	204	216	200	198	186	190	196	195	185	187	S	24
26	35	96	152	16	112	86	306	30	22	158	140	139	149	151	157	161	161	153	135	184	192	197	181	189	155	SSE	24
27	160	162	162	136	144	140	161	173	188	189	195	191	196	197	191	189	196	196	205	206	205	206	205	203	190	S	24
28	210	204	211	232	253	196	257	218	226	217	200	202	189	191	190	191	193	194	197	199	201	201	210	213	200	SSW	24
29	223	226	247	301	357	13	16	26	35	47	44	114	160	197	203	198	196	201	193	208	190	208	216	220	206	SSW	24
30	249	306	317	312	315	331	333	356	5	24	343	348	324	343	333	15	15	64	110	103	59	200	198	154	344	NNW	24
31	125	118	90	54	47	118	100	108	138	204	195	199	180	169	189	194	182	61	52	47	11	228	311	327	149	SSE	24
HOURLY AVG	332	359	358	339	357	353	345	356	356	352	360	348	341	343	334	345	355	347	341	320	314	360	319	343			

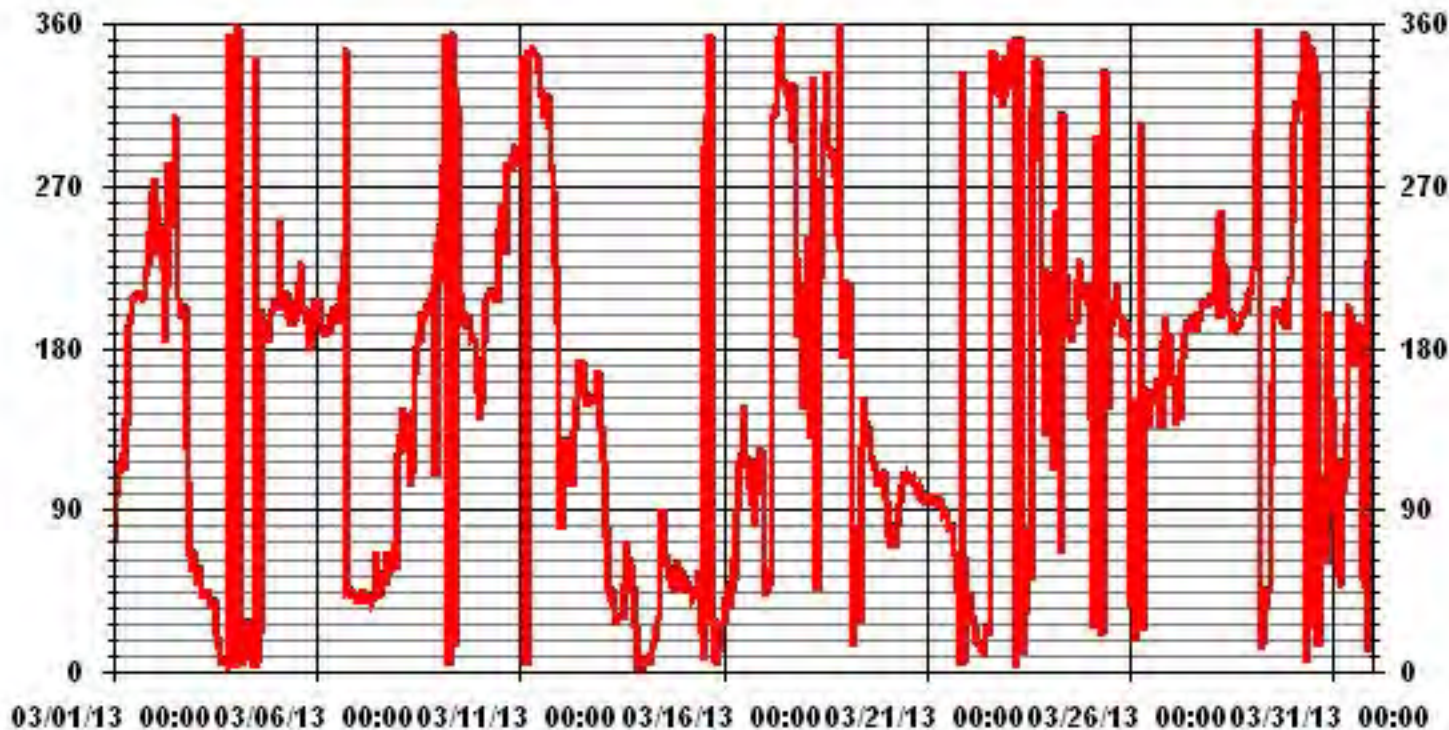
### STATUS FLAG CODES

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

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

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	99.71		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	109	DEG

# 01 Hour Averages



# Standard Deviation Wind Direction

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2013

## STANDARD DEVIATION WIND DIRECTION (STDWDIR) 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	21	27	25	26	26	57	34	29	28	19	20	22	22	21	17	18	16	10	13	15	18	25	28	25
2	28	32	33	32	23	36	63	14	43	39	46	54	65	42	21	18	14	11	48	60	28	18	15	17
3	15	17	17	18	20	17	17	17	20	20	18	21	22	17	20	22	22	22	20	26	22	24	23	23
4	23	28	24	28	22	19	16	15	12	14	31	40	45	42	63	42	20	17	13	12	10	19	15	13
5	15	16	26	11	13	16	19	16	16	18	27	21	20	24	30	19	20	19	16	16	16	15	15	16
6	14	20	27	16	17	14	16	12	18	20	19	20	20	27	33	33	39	30	15	20	21	20	20	19
7	18	17	17	20	19	19	17	18	20	21	22	29	26	28	32	30	26	22	17	14	16	14	20	18
8	35	23	29	24	24	24	23	41	37	27	26	22	20	21	20	19	20	19	18	18	19	41	65	42
9	53	31	25	62	56	48	32	34	33	23	41	66	43	60	22	21	15	14	14	16	17	22	28	30
10	26	26	27	38	17	21	19	17	17	16	17	23	36	38	32	32	29	29	28	25	25	27	30	26
11	23	25	32	25	23	30	32	32	33	37	33	30	37	35	33	35	37	29	27	24	27	26	44	45
12	21	22	44	19	20	33	35	27	34	31	30	22	29	26	24	25	23	22	21	25	25	25	29	19
13	22	27	26	30	21	15	25	16	13	13	14	19	18	24	27	25	28	26	23	23	25	26	23	22
14	21	21	25	21	23	20	20	20	16	18	20	30	31	29	29	29	23	21	20	20	23	24	23	22
15	20	20	22	21	20	18	18	21	20	22	37	35	55	54	33	34	31	18	18	21	23	46	15	38
16	16	17	19	16	19	22	22	26	30	25	33	35	35	38	27	25	30	26	25	23	24	27	27	27
17	23	17	18	20	50	17	46	43	32	32	35	38	35	33	38	34	26	36	26	47	20	28	39	69
18	63	49	68	80	67	67	74	39	63	23	51	41	38	31	23	25	30	27	29	27	33	53	41	42
19	43	32	28	63	56	45	44	40	25	10	32	30	32	33	33	31	27	24	21	22	20	24	26	28
20	25	21	23	23	27	25	25	25	24	26	26	25	26	26	27	24	26	25	24	26	26	27	27	26
21	25	26	26	26	23	25	32	27	25	27	28	28	28	28	25	27	28	29	20	17	27	40	24	40
22	14	11	18	14	12	22	29	21	36	30	25	22	19	28	38	31	34	34	32	33	30	30	30	35
23	42	35	40	33	30	21	18	28	32	35	29	51	52	53	31	46	27	39	38	35	20	32	18	42
24	44	52	73	37	62	32	29	45	68	35	38	24	23	22	22	19	19	29	28	11	15	15	15	15
25	23	48	33	55	63	42	25	24	21	33	57	44	35	39	34	27	30	22	13	8	14	13	16	15
26	52	20	46	56	28	52	61	44	26	41	32	28	43	35	48	34	29	26	17	16	16	24	24	20
27	25	25	41	37	32	52	32	38	35	32	22	23	19	21	22	19	17	16	16	14	15	14	13	14
28	20	16	24	28	44	70	53	45	31	26	17	22	22	18	17	18	16	16	16	15	14	15	17	16
29	19	13	42	20	20	16	16	12	20	30	59	66	73	34	26	20	20	17	13	19	20	20	14	31
30	24	25	31	28	31	37	35	26	26	24	38	38	33	42	34	29	34	34	21	26	24	37	22	27
31	24	24	28	16	20	30	33	28	43	33	39	29	37	30	35	24	39	27	22	40	46	24	30	32

### STATUS FLAG CODES

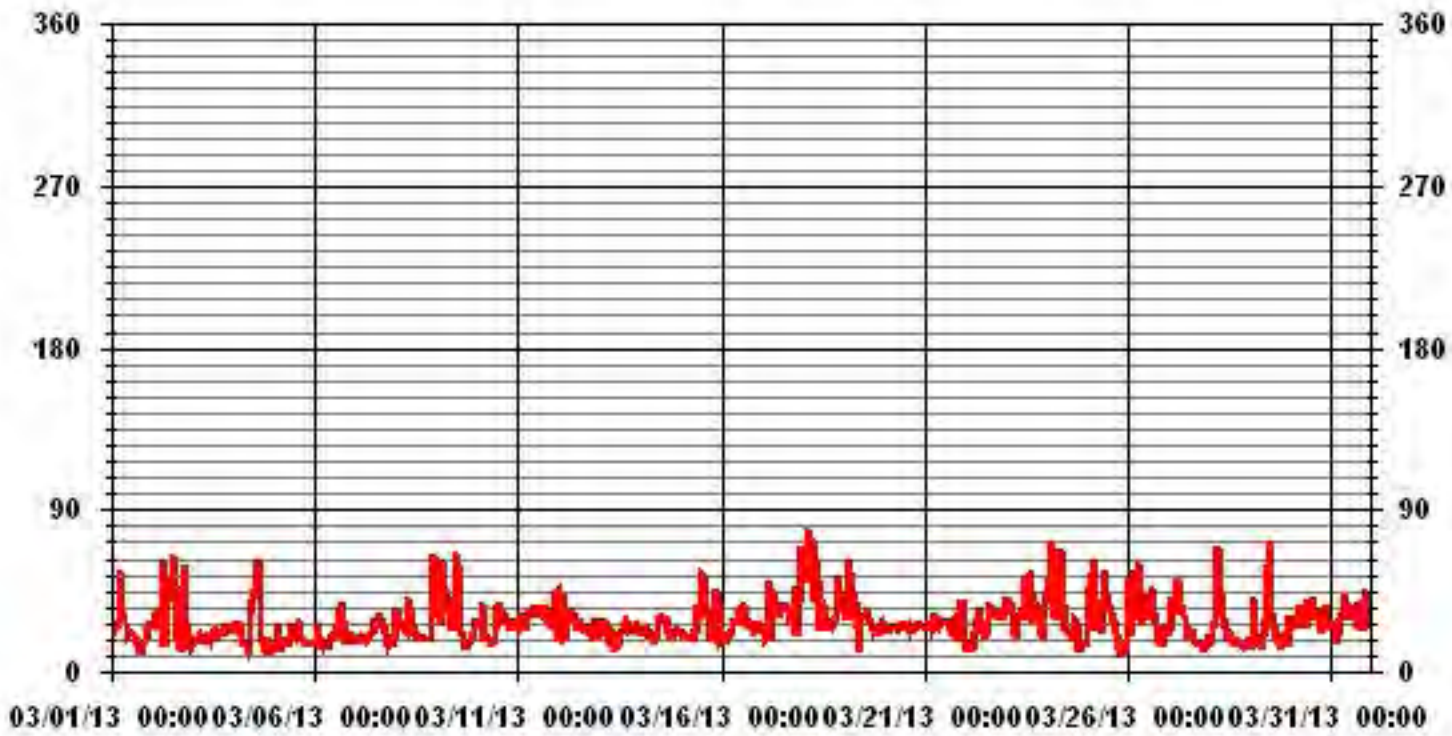
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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	March 12, 2013	Previous Calibration	February 21, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	14:25	End Time (MST)	18:20
Reason:	Monthly Calibration		
Barometric Pressure	27.97 inHg	Station Temperature	22 Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	BAL3031
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 :	508	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 :	AO 791		
Chart Recorder Make / Model:	NA	S/N :	NA		
Flow Meter:	API 700	S/N :	831		

#### Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 1000 ppb				
Sample Flow / Box Temp	594 ccm	31.1 Deg C	592 ccm	31.1 Deg C	
HVPS / Lamp Setting	515	2179	515	2176	
PMT / RxCell Temp	7.7 Deg C	50 Deg C	7.7 Deg C	50 Deg C	
Converter / IZS Temp	NA Deg C	45 Deg C	NA Deg C	45.0 Deg C	
Offset / Slope	67.5	0.998	68.4	1.046	

#### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	N/A
	No zero Adj.			
4920	80.0	794	753	1.0539
4915	80.0	794	795	0.9992
4955	40.0	397	388	1.0237
4980	20.0	198	189	1.0497
4995	0	0	0	N/A
Sum of Least Squares				1.0061
New Correction Factor				0.9992

#### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.3		0.0
Auto Span	358.1		381.3
Sample Lines Connected			YES

#### Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0539
Percent Change:	-5.1%

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

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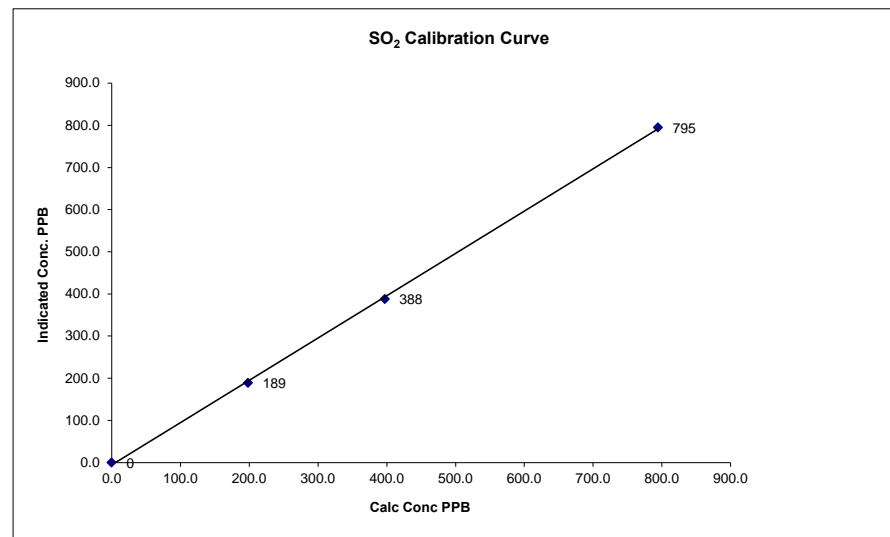
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Calibration Performed by: Waseem Ahmed

### SO2 Calibration Curve

Calibration Date	March 12, 2013
Company	Lakeland Industry & Community Association
Plant / Location	Cold Lake - Maskwa
Start Time (MST)	14:25
End Time (MST)	18:20

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		0.999747
198	189	1.0497		1.003520
397	388	1.0237		
794	795	0.9992		-5.721156



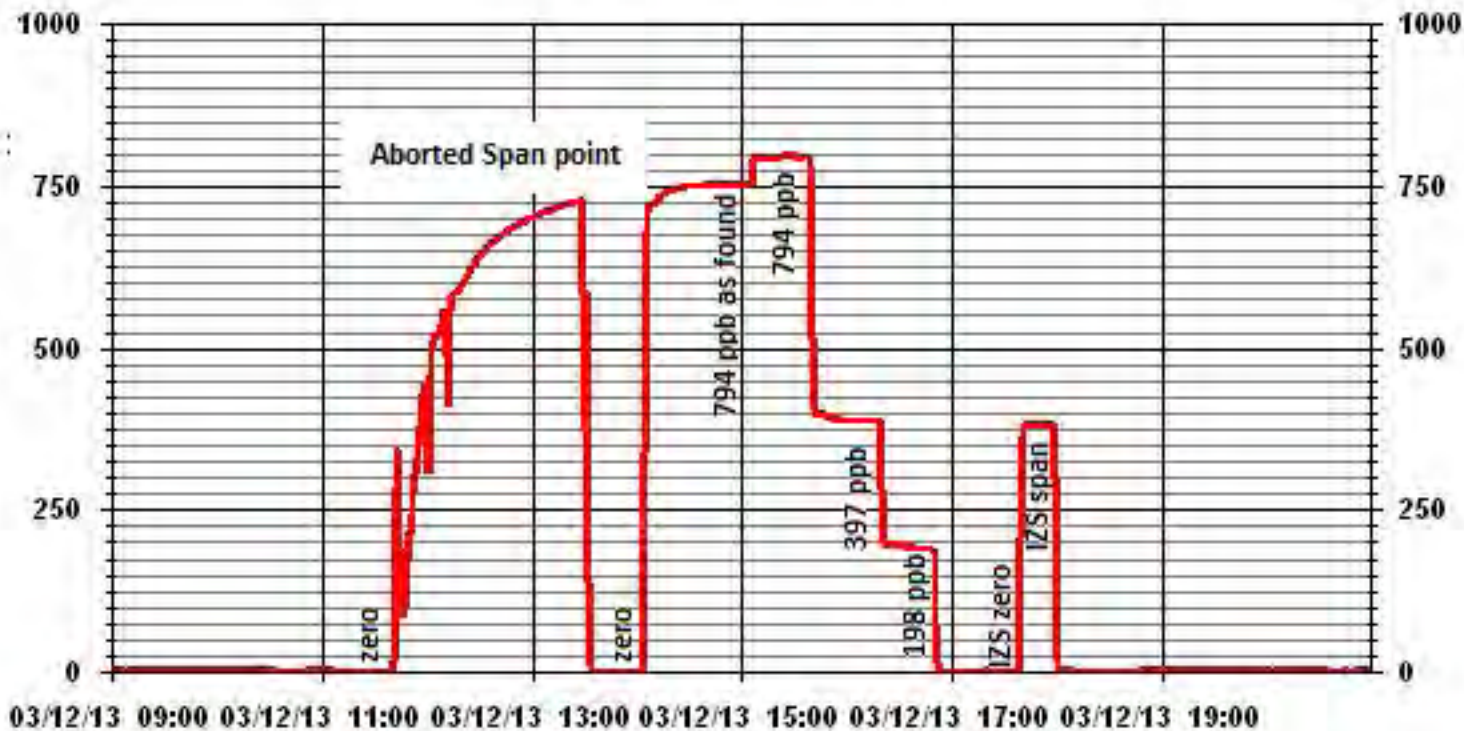
#### Notes:

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# 01 Minute Averages



# Hydrogen Sulphide

## H2S Calibration Report

### Station Information

Calibration Date	March 12, 2013	Previous Calibration	February 21, 2013
Company	Lakelnad Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	11:25	End Time (MST)	14:15
Reason:	Monthly Calibration		
Barometric Pressure	27.97 inHg	Station Temperature	22 Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648
		Cal Gas Expiry date	December 27, 2012
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

### Equipment Information

Analyzer Make / Model:	API 101A	S/N :	324	Method:	Fluorescent
Converter Make / Model:	Internal	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Chart Recorder Make / Model:	Not in use	S/N:	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	607 ccm 30.8 Deg C	604 ccm 30.7 Deg C	
HVPS / Lamp Setting	635 4787	634 4790	
PMT / RxCell Temp	6.7 Deg C 49.5 Deg C	6.7 Deg C 49.4 Deg C	
Converter / IZS Temp	325.2 Deg C 45.2 Deg C	323.4 Deg C 45.3 Deg C	
Offset / Slope	45.2 0.976		

### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	0	NA
	No Zero Adj.			
4960	40.0	80	80	1.0000
	No Span Adj.			
4980	20.0	40	41	0.9756
4988	12.0	24	24	1.0000
5000	0	0	0	NA
Sum of Least Squares New Correction Factor				0.9954

### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0		0.0
Auto Span	55.8		57.0
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: **NA : Not Applicable**

Changed sample inlet filter

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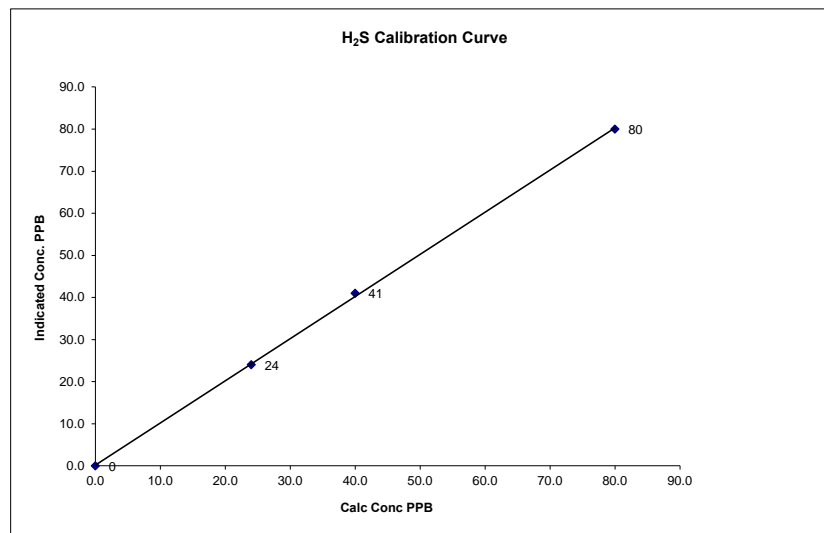
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Calibration Performed by: Waseem Ahmed

## H<sub>2</sub>S Calibration Curve

Calibration Date	March 12, 2013		
Company	Lakelnad Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	11:25	End Time (MST)	14:15

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999781
0	0		Intercept	(± 3% F.S.)	0.207547
24	24	1.0000			
40	41	0.9756			
80	80	1.0000			



Notes:

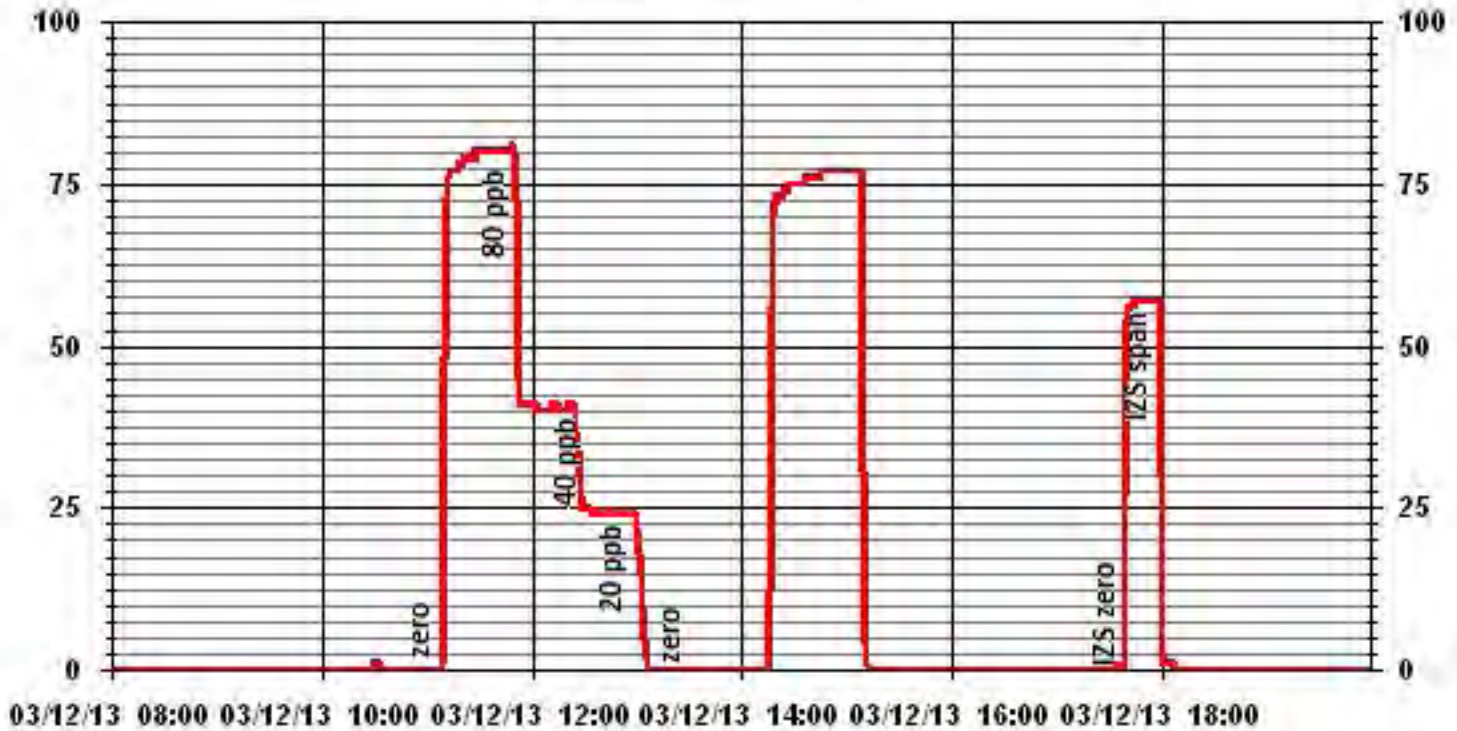
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### 01 Minute Averages



# Total Hydrocarbons

### THC Calibration Report

Station Information			
Calibration Date:	March 14, 2013	Previous Calibration	February 21, 2013
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	Maskwa		
Start Time (MST)	9:51	End Time (MST)	12:15
Reason:	Monthly Calibration		
Barometric Pressure:	28.23 inHg	Station Temperature:	19 Deg C
Calibrator:	Envionics 6100	S/N:	4760
Cal Gas Concentration:	CH4 600 PPM	C3H8 204 PPM	
	TOTAL CH4 1161.0 PPM	Gas Cyl. #	LL155310
		Cal Gas Expiry Date:	September 9, 2013
DAS make & Model:	ESC 8832	S/N :	AO 791
Chart Recorder:	NA	S/N:	NA
Output Voltage Range:	0 - 1 VDC	Chart Speed:	NA mm/hr

#### Analyzer Information

Make / Model	Thermo 51C-LT	S/N :	436609738	Method	Flame Ionization
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#### Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	7.5	psi	7.5	psi
Hydrogen Pressure	8	psi	8	psi
Air Pressure	20	psi	20	psi

#### Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	0.0	NA
	No Zero Adj.			
2000	73.8	41.3	41.6	0.9932
	No Span Adj.			
2000	36.8	21.0	21.0	1.0000
2000	20.0	11.5	11.4	1.0083
2000	0.0	0.0	0.0	NA
New Correction Factor:				0.9932

#### Percent Change

Previous Calibration Correction Factor:	1.0054
Current Correction Factor Before Span Adjust:	0.9932
Percent Change:	1.2%

#### IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	36.7	36.7
Sample Lines Connected	YES	

Cylinder Pressures			
Span	275 psi	Hydrogen 2000 psi	Zero Air 32 psi

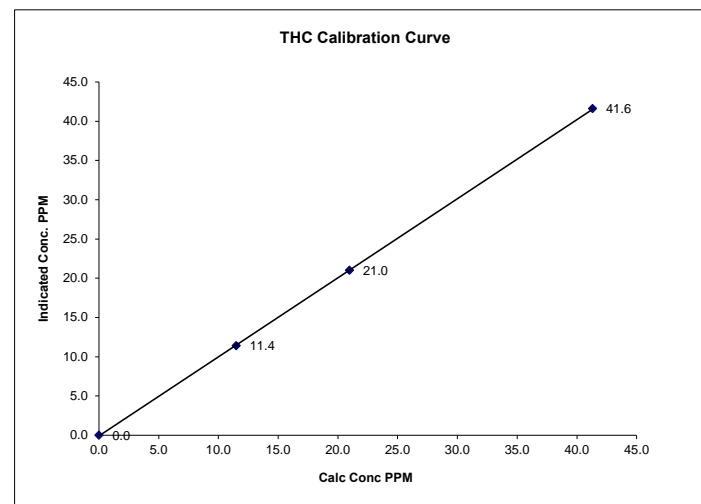
Notes: **NA : Not Applicable**  
 Changed H2 gas before the calibration

Calibration Performed by: Waseem Ahmed

### THC Calibration Curve

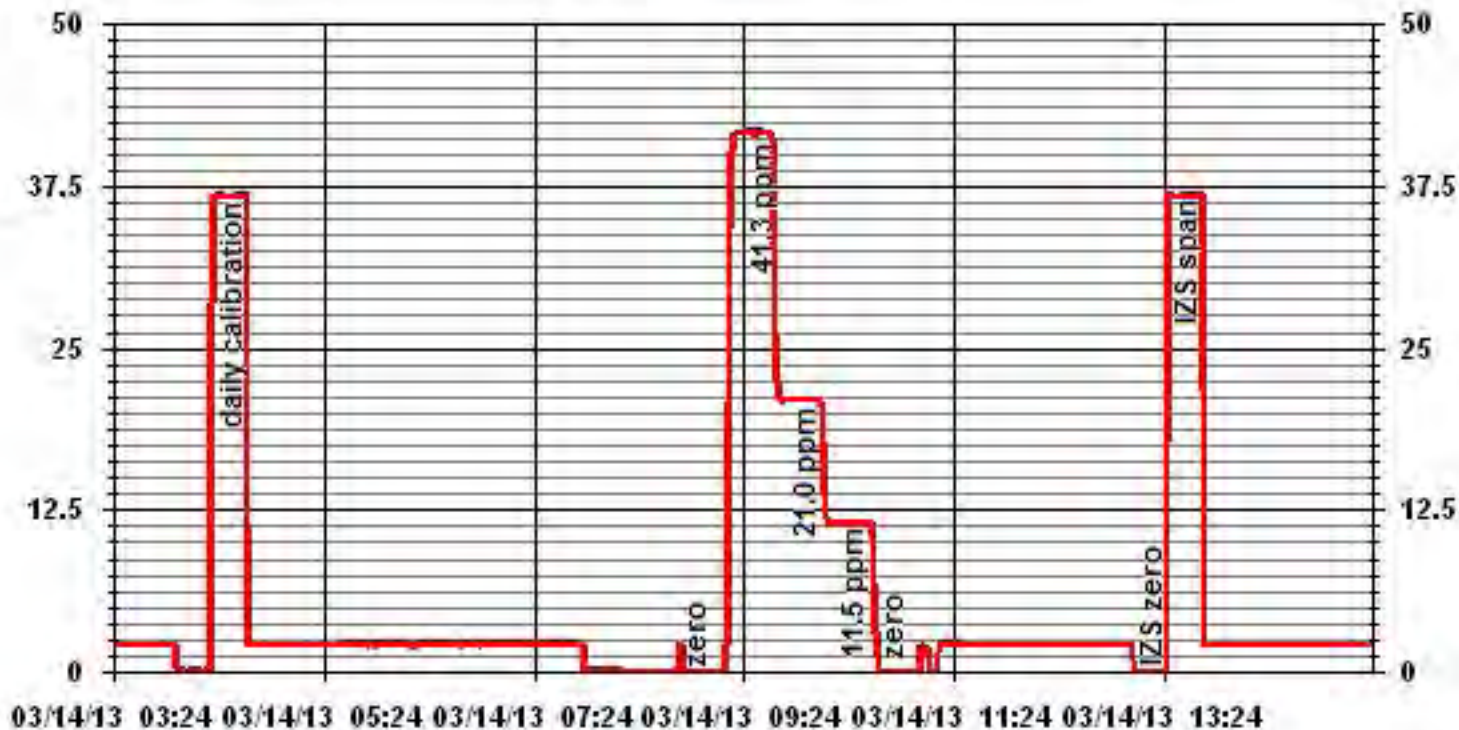
Calibration Date	March 14, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	Maskwa
Start Time (MST)	9:51
End Time (MST)	12:15

Calculated Conc.	Indicated Response	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999976
ppm	ppm		Slope	(0.85 to 1.15)	1.007851
0.0	0.0	NA	Intercept	(± 3% F.S.)	-0.09179
11.5	11.4	1.0083			
21.0	21.0	0.9989			
41.3	41.6	0.9932			



Notes:

### 01 Minute Averages



# Nitrogen Dioxide

**NOx - NO- NO2 Calibration Report**

**Station Information**

Calibration Date	March 19, 2013		Previous Calibration		February 21, 2013	
Company	LICA		Plant/Location		Maskwa	
Start Time (MST)	9:15		End Time (MST)		15:15	
Reason:	Monthly Calibration					
Barometric Pressure	28 inHg	Station Temperature	20 Deg C	MFCF	0	
Cal Gas Concentration	NOx 49.3 ppm	NO	49.2 ppm	Cal Gas Expiry date	December 29, 2016	
Cal Gas Cylinder #	BAL3031					
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts			

**Equipment Information**

Analyzer Make / Model:	TAPI 200E	S/N :	594	Method:	Chemiluminescent
Calibrator Make / Model:	Enviroics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Chart Recorder Make / Model:	N/A	S/N:	NA		
Flow Meter:	Enviroics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range	470 ccm			0 - 1000 ppb			
Sample Flow/Conv. Temp	470 ccm	314 Deg C		448 ccm	315 Deg C		
Ozone Flow / Vacuum	79 ccm	4.4 °Hg-A		79 ccm	4.4 °Hg-A		
HVPS / A ZERO	750 Volts	14.1 MV		750 Volts	15.1 MV		
Rx/ Temp / PMT Temp	50.1 Deg C	6.5 Deg C		50.0 Deg C	6.5 Deg C		
Box Temp / IZS Temp	24.5 Deg C	42.3 Deg C		26.3 Deg C	42.1 Deg C		
Offset	5.1 NOx	0.5 NO		3 NOx	0.9 NO		
Slope	1.090 NOx	1.085 NO		1.111 NOx	1.107 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	NA	0	0	NA	0	1	0	NA	NA
4995	0.0	NA	0	0	NA	1	1	1	NA	NA
4915	79.8	NA	788	786	NA	770	769	1	1.0229	1.0235
4915	79.8	NA	788	786	NA	790	789	1	0.9970	0.9975
4955	39.9	NA	394	393	NA	394	393	1	1.0000	1.0000
4975	19.9	NA	196	196	NA	199	199	0	0.9870	0.9900
4995	0.0	NA	0	0	NA	1	0	1	NA	NA

**Gas Phase Titration Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4915	79.8	NA	788	786	NA	793	791	2	NA	NA
4915	79.8	600	788	NA	552	794	241	553	1.0000	100.18%
	No Adj.									
4915	79.8	300	788	NA	280	796	513	283	0.9929	101.08%
4915	79.8	120	788	NA	112	797	681	116	0.9739	103.64%

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 1.017	NO= 1.016	NO2= 0.995
				NOx= 0.9970	NO= 0.9975	NO2= 1.0000
				Average Converter Efficiency= 101.63%		

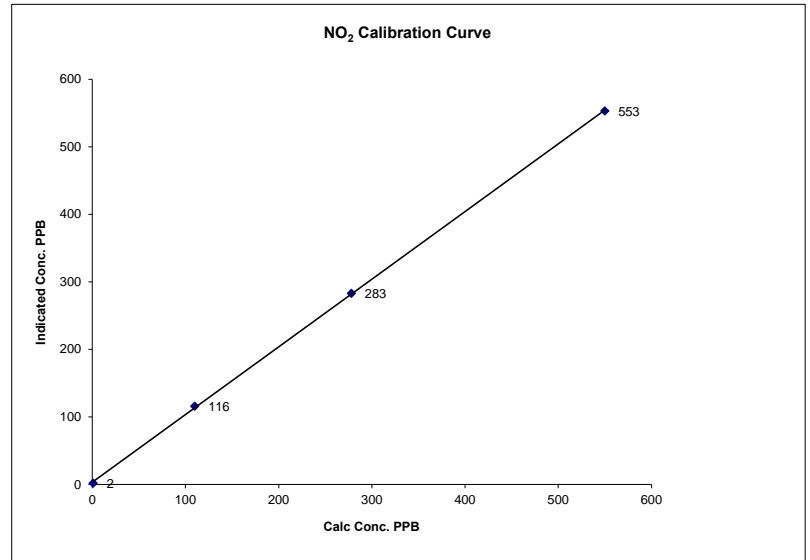
**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	546 NOx	540 NO2		546 NOx	540 NO2		
	Sample Lines Connected YES						
Percent Change from Previous Calibration	NOx -2.2%	NO		NO2 0.3%	NO2	0.4%	
Notes	NA : Not Applicable						
Calibration Performed by:	Waseem Ahmed						

**NO2 Calibration Curve**

Calibration Date	March 19, 2013	
Company	LICA	
Plant / Location	Maskwa	
Start Time (MST)	9:15	End Time (MST) 15:15

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999915
1	2	N/A	Intercept	(± 3% F.S.)	3.50389
110	116	0.9483			
278	283	0.9823			
550	553	0.9946			

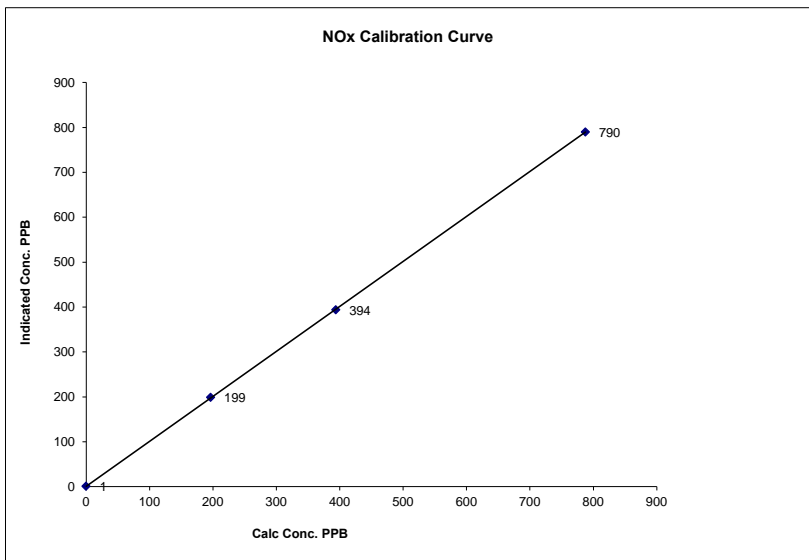


Notes:

### NOx Calibration Curve

Calibration Date	March 19, 2013	
Company	LICA	
Plant / Location	Maskwa	
Start Time (MST)	9:15	End Time (MST) 15:15

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999989
0	1	N/A	Slope (0.85 to 1.15)	1.000956
196	199	0.9870	Intercept (± 3% F.S.)	1.20134
394	394	0.9995		
788	790	0.9970		

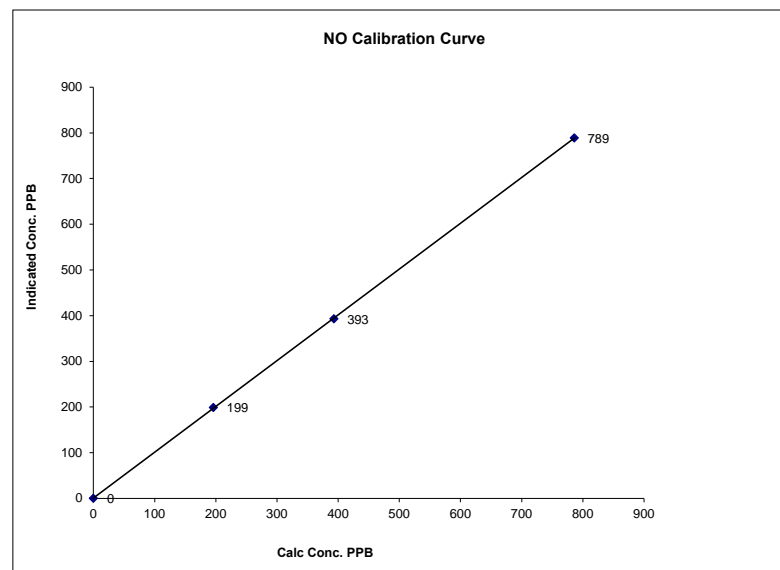


Notes:

### NO Calibration Curve

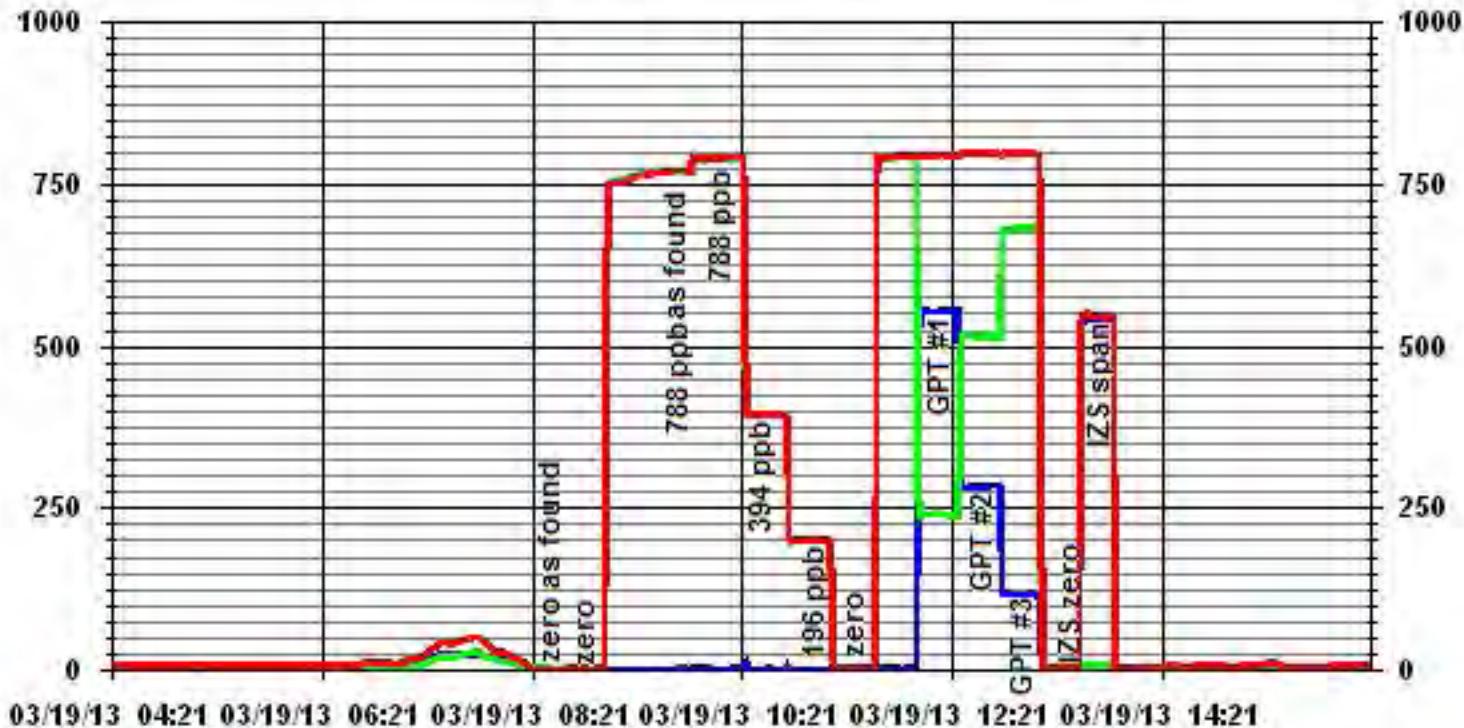
Calibration Date	March 19, 2013	
Company	LICA	
Plant / Location	Maskwa	
Start Time (MST)	9:15	End Time (MST) 15:15

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999980
0	0	N/A	Slope (0.85 to 1.15)	1.001026
196	199	0.9850	Intercept (± 3% F.S.)	-2.9841
393	393	1.0000		
786	789	0.9963		



Notes:

### 01 Minute Averages



— LICA30 IIOX\_ PPB

— LICA30 IIO\_ PPB

— LICA30 IIO2\_ PPB



# Lakeland Industry & Community Association

St. Lina Monitoring Site  
Ambient Air Monitoring  
Data Report  
For  
March 2013

Prepared By:



April 29, 2013

# Lakeland Industry & Community Association

## St. Lina

### Ambient Air Monitoring

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## Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: St. Lina  
Data Period: March 2013

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Katherine Rapske

# Calibration Procedure

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

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

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

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

The calibrations conducted at the LICA – St. Lina Air Monitoring Stations conform to the following Maxxam Standard Operation Procedures:

- CAL SOP-00211
- CAL SOP-00209
- CAL SOP-00213
- CAL SOP-00214
- CAL SOP-00208
- CAL SOP-00215

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

# MONTHLY CONTINUOUS DATA SUMMARY

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – ST. LINA

### Continuous Ambient Monitoring – March 2013

LICA ST. LINA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						OBJECTIVES					EXCEEDENCES		
PARAMETER	1-HR	24-HR	1-HR	24-HR	MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
SO2 (PPB)	172	48	0	0	1.02	11	24	21	9.9	188(S)	2.1	24, 27	100.0
H2S (PPB)	10	3	0	0	1.26	3	12, 13	VAR	VAR	VAR	2.2	12	100.0
THC (PPM)	-	-	-	-	2.25	3.6	25	22	12.7	178(S)	2.9	26	100.0
OZONE (PPB)	82	-	0	-	42.5	69	29	22, 23	10.9, 12	258(WSW), 284(WNW)	56.0	28	100.0
NOx (PPB)	-	-	-	-	2.87	16.0	3	3	10.5	56(NE)	7.5	19	100.0
NO (PPB)	-	-	-	-	0.37	3.6	26	12	11.2	149(SSE)	1.2	19	100.0
NO <sub>2</sub> (PPB)	159	-	0	-	2.50	15.9	3	3	10.5	56(NE)	6.3	19	100.0
PM2.5 (ug/m3)	-	30	-	0	8.28	38	8	22	9.9	244(WSW)	23.4	28	92.3
TEMPERATURE (DEGREE C)	-	-	-	-	-7.00	10.4	2	13	1.8	14(NNE)	2.7	29	100.0
BP (MILLIBAR)	-	-	-	-	927	937	VAR	VAR	VAR	VAR	935.8	4	100.0
RH (%)	-	-	-	-	62.87	86	2	2	8.7	232(SW)	75.5	21	100.0
PRECIPITATION (MM)	-	-	-	-	0.01	0.5	21	22	5.9	338(NNW)	2.1	21	100.0
VECTOR WS (KPH)	-	-	-	-	11.49	33.0	20	21	-	117(ESE)	27.2	20	100.0
VECTOR WD (DEGREES)	-	-	-	-	166(SSE)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS

## General Monthly Summary

### Equipment Operation

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

### AQM STATION – LICA – St. Lina

#### Sulphur Dioxide (PPB)

Analyzer make / model - API 100E, S/N: 468

The analyzer was working well throughout the month. The monthly calibration was performed on March 20<sup>th</sup>. The inlet filter was changed before the monthly calibration was started. 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 March 20<sup>th</sup>. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

#### Ozone (PPB)

Analyzer make / model Thermo 49C, S/N: 49C-54926-302

The analyzer was working well throughout the month. The monthly calibration was performed on March 21<sup>st</sup>. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

# General Monthly Summary

## AQM STATION – LICA – St. Lina

### Total Hydrocarbon (PPM)

Analyzer make / model – Thermo 51C-LT, S/N: 77021-384 replaced to Thermo 51C-LT, S/N: 04366-09739

The analyzer was working well throughout the month. The monthly calibration was performed on March 21<sup>st</sup>. The inlet filter was changed before the monthly calibration was started. 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 3-point calibration was performed on March 20<sup>th</sup>. Due to running out the time, the GPT point calibration could not be performed on the same day. The GPT points calibration was performed on March 21<sup>st</sup>. The inlet filter was changed before the monthly calibration was started. An extra span point was performed on March 20<sup>th</sup> for the reference point for the ozone calibration. An as found points check was performed on March 26<sup>th</sup> to verify the analyzer's functionality: the result was good. Data was corrected using daily zero information.

### Particulate Matter 2.5 (UG/M3)

Analyzer make / model –Thermo Scientific Series 1405F, S/N: 1405A207691003

Two routine Teom audits were performed on March 21<sup>st</sup> and March 26<sup>th</sup>. After the audit was completed on March 21<sup>st</sup>, the hourly readings were stuck at 1 ug/m3. Performed troubleshooting on March 22<sup>nd</sup> by reinstalling the filters and reconfiguring the channel on the datalogger. The channel was left in "Maintenance" mode overnight for stabilization. The channel was put back to the service on March 23<sup>rd</sup> at hour 11. 47 hours of data were invalidated due to this 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. A total of 10 hours of PM 2.5 data was 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.

# General Monthly Summary

## **AQM STATION – LICA – St. Lina**

### **Barometric Pressure (Millibar)**

Analyzer make / model - Met One 092

The BP sensor was working well throughout the month.

### **Relative Humidity (%)**

Analyzer make / model - Met One 083

The RH sensor was working well throughout the month.

### **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 12<sup>th</sup>, 2012 by the manufacturer.

No issues were recorded this month.

### **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**

Both the sample inlet and glass manifold were cleaned on March 21<sup>st</sup>.



# Continuous Monitoring

# Monthly Summaries, Graphs & Wind Roses

# Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2013

SULPHUR DIOXIDE (SO<sub>2</sub>) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	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	1	2	2	2	2	1	1	1	1	1	1	2	2	1	1	1	1	1	1	S	1	1	1	1	1	2	1.3	24
2	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	1.0	24
3	1	1	1	1	1	2	2	3	2	2	1	1	1	1	1	0	S	1	0	0	0	0	0	0	3	1.0	24	
4	0	0	0	0	0	1	1	1	1	0	0	1	1	1	1	0	S	0	0	0	1	0	0	0	1	0.4	24	
5	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	S	1	1	1	1	2	2	1	1	2	0.6	24	
6	1	1	1	1	1	1	1	1	1	1	1	6	1	1	S	0	0	0	0	0	0	0	0	0	6	0.8	24	
7	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	1	1	1	1	1	1	1	0.4	24	
8	1	1	1	1	1	1	1	1	1	2	2	2	S	0	2	1	1	1	1	1	0	0	0	1	2	1.0	24	
9	2	1	1	1	0	0	0	2	2	1	1	S	1	1	1	2	2	1	1	1	1	1	1	1	2	1.1	24	
10	2	2	2	2	1	2	1	2	2	2	S	1	1	0	0	0	0	0	0	0	0	0	0	0	2	0.9	24	
11	0	0	0	0	0	0	0	0	0	S	1	1	1	0	0	0	0	1	0	0	0	0	1	1	1	0.3	24	
12	1	1	1	1	1	1	1	1	S	1	1	2	2	2	2	3	3	2	2	2	2	2	2	2	3	1.7	24	
13	2	2	2	2	2	2	3	S	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	3	0.9	24	
14	0	0	0	0	0	0	S	0	1	0	0	0	0	1	1	1	1	0	0	0	1	1	0	0	1	0.3	24	
15	0	1	1	1	1	S	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0.9	24	
16	1	1	1	1	S	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
17	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
18	0	1	S	1	2	2	3	2	1	1	2	1	2	1	1	1	0	0	0	0	0	0	0	0	3	0.9	24	
19	0	S	1	1	1	2	2	2	2	2	2	2	2	2	3	3	2	2	2	2	2	2	3	2	3	1.9	24	
20	S	2	2	2	2	1	1	1	1	1	1	1	C	C	C	C	1	1	3	2	1	1	1	S	3	1.4	24	
21	1	1	1	1	1	1	1	1	1	1	0	0	0	0	S	0	0	0	0	0	0	0	S	1	1	0.5	24	
22	1	1	1	1	1	1	1	0	1	0	1	0	0	1	3	2	1	0	1	0	0	S	0	0	3	0.7	24	
23	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	S	1	2	1	2	0.3	24
24	1	1	1	1	1	0	1	1	2	2	2	1	0	0	0	0	1	1	5	S	7	11	7	3	11	2.1	24	
25	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	S	2	1	1	1	2	2	3	2.0	24	
26	2	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	S	1	1	1	1	1	1	2	1.2	24	
27	1	2	2	2	2	2	2	1	1	1	2	2	3	2	2	3	S	4	4	3	2	1	2	2	4	2.1	24	
28	1	2	1	1	1	1	1	1	1	2	2	2	2	2	2	S	0	0	0	0	0	0	1	0	2	1.0	24	
29	0	1	1	1	1	2	3	3	2	2	1	1	1	2	S	3	3	3	3	2	2	2	2	3	3	1.9	24	
30	2	2	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	2	1.1	24	
31	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
HOURLY MAX	2	2	2	2	2	2	3	3	2	3	2	6	3	2	3	3	3	4	5	3	7	11	7	3				
HOURLY AVG	0.9	1.1	1.0	1.0	0.9	1.0	1.1	1.1	1.1	1.1	1.0	1.3	1.0	1.0	1.1	1.1	0.9	0.9	1.1	0.8	1.0	1.1	1.1	0.9				

STATUS FLAG CODES

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

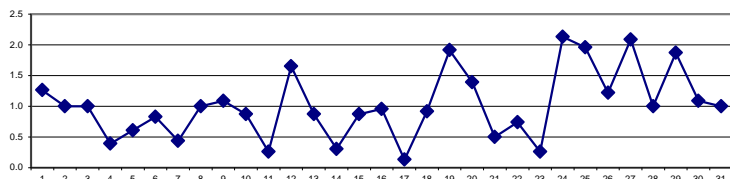
OBJECTIVE LIMIT:

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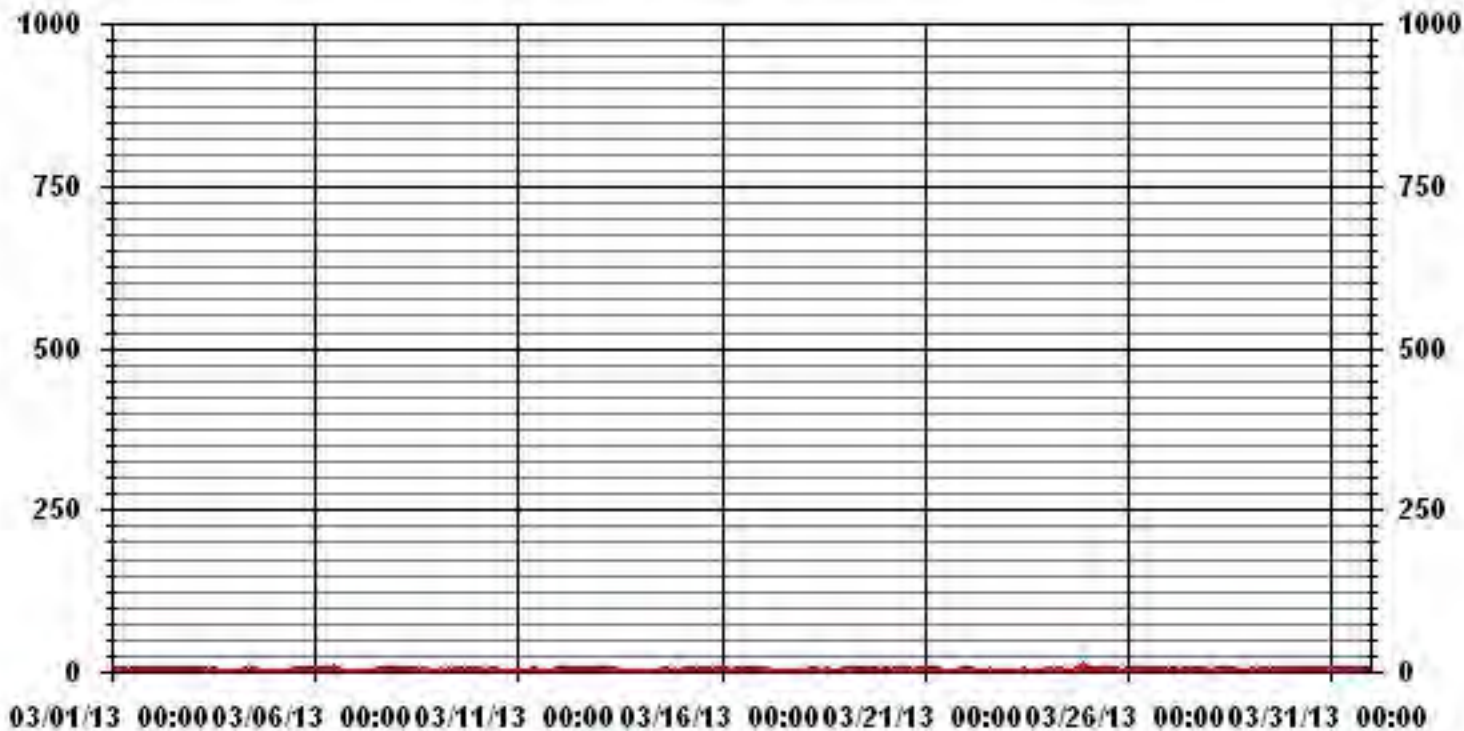
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	507		
MAXIMUM 1-HR AVERAGE:	11 PPB @ HOUR(S) 21 ON DAY(S) 24		
MAXIMUM 24-HR AVERAGE:	2.1 PPB ON DAY(S) 24, 27		
IZS CALIBRATION TIME:	33 HRS	OPERATIONAL TIME:	744 HRS
MONTHLY CALIBRATION TIME:	4 HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.96	MONTHLY AVERAGE:	1.02 PPB

24 HOUR AVERAGES FOR MARCH 2013



### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2013

## 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	2	3	3	3	3	2	2	2	2	2	2	3	3	2	2	2	2	2	2	S	2	2	2	2	3	2.3	24	
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2.0	24
3	2	2	2	2	2	3	3	4	3	3	2	2	2	2	2	1	S	2	2	1	1	1	1	1	4	2.0	24	
4	1	1	1	1	1	2	1	2	2	1	2	2	2	2	1	S	1	1	1	1	2	1	1	2	1	1.4	24	
5	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	S	1	2	2	2	3	3	3	2	3	1.6	24	
6	2	2	2	2	2	2	2	2	2	2	2	12	3	2	S	1	1	1	1	1	1	1	1	1	12	2.1	24	
7	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	2	1	2	1	1	2	1	1	2	2	1.2	24	
8	2	2	2	2	2	2	2	2	2	3	3	3	S	2	3	2	2	2	2	1	1	1	1	3	3	2.0	24	
9	3	2	2	1	1	1	2	3	3	3	2	S	2	2	3	3	3	3	2	2	2	2	2	2	3	2.2	24	
10	3	3	2	3	2	3	2	2	3	3	S	2	2	1	1	1	1	1	1	1	1	1	1	1	3	1.8	24	
11	1	1	1	1	1	1	1	1	0	S	1	2	1	1	1	1	1	1	1	1	1	1	1	2	2	1.1	24	
12	2	2	2	2	2	2	2	2	S	2	2	3	4	3	4	4	4	3	3	3	3	3	3	3	4	2.7	24	
13	3	3	3	3	3	3	4	S	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	4	1.8	24	
14	1	1	1	1	0	1	S	1	2	2	1	1	1	1	1	2	2	1	1	1	1	1	1	1	2	1.1	24	
15	1	1	1	2	1	S	1	1	1	1	2	1	2	2	2	1	2	2	1	1	2	1	2	1	2	1.4	24	
16	2	2	2	2	S	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.9	24	
17	2	2	2	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24
18	1	2	S	2	3	4	4	3	2	2	3	3	3	2	2	2	1	1	1	1	1	1	1	1	4	2.0	24	
19	1	S	2	2	2	3	3	3	3	3	3	3	3	4	4	4	3	3	3	3	3	3	3	3	4	2.9	24	
20	S	3	3	3	2	2	3	2	2	2	2	C	C	C	C	C	C	2	4	4	3	2	2	S	4	2.6	24	
21	2	2	2	2	2	2	2	2	2	2	1	2	1	S	S	1	1	1	1	1	1	1	1	S	2	1.6	24	
22	2	2	2	2	2	2	1	2	2	1	1	1	1	2	5	4	2	1	2	1	1	S	1	1	5	1.8	24	
23	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	S	2	2	2	1.2	24	
24	2	2	2	2	2	1	2	2	3	4	3	3	1	1	1	2	1	3	7	S	9	13	10	5	13	3.5	24	
25	3	3	3	3	2	2	3	3	4	5	4	5	2	3	3	3	3	S	3	3	2	3	3	3	5	3.1	24	
26	3	2	2	2	2	2	2	2	2	2	3	4	3	2	2	2	2	S	2	2	2	2	2	2	4	2.2	24	
27	3	3	3	3	2	3	3	2	2	2	3	3	4	3	4	5	S	5	5	4	3	2	2	3	5	3.1	24	
28	2	2	2	2	2	2	2	2	2	3	3	3	3	3	S	1	1	1	1	1	1	1	1	1	3	1.9	24	
29	1	2	2	2	2	3	4	4	4	3	3	2	2	3	S	4	4	3	3	3	3	3	3	3	4	2.9	24	
30	3	3	2	2	2	2	2	1	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	3	2.0	24	
31	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	1	2	2	2	2	2.0	24	
HOURLY MAX	3	3	3	3	3	4	4	4	4	5	4	12	4	4	5	5	4	5	7	4	9	13	10	5				
HOURLY AVG	1.9	2.0	1.9	2.0	1.8	2.0	2.1	2.0	2.0	2.1	2.1	2.6	2.0	2.0	2.2	2.1	1.8	1.9	2.0	1.7	2.0	2.1	2.0	1.9				

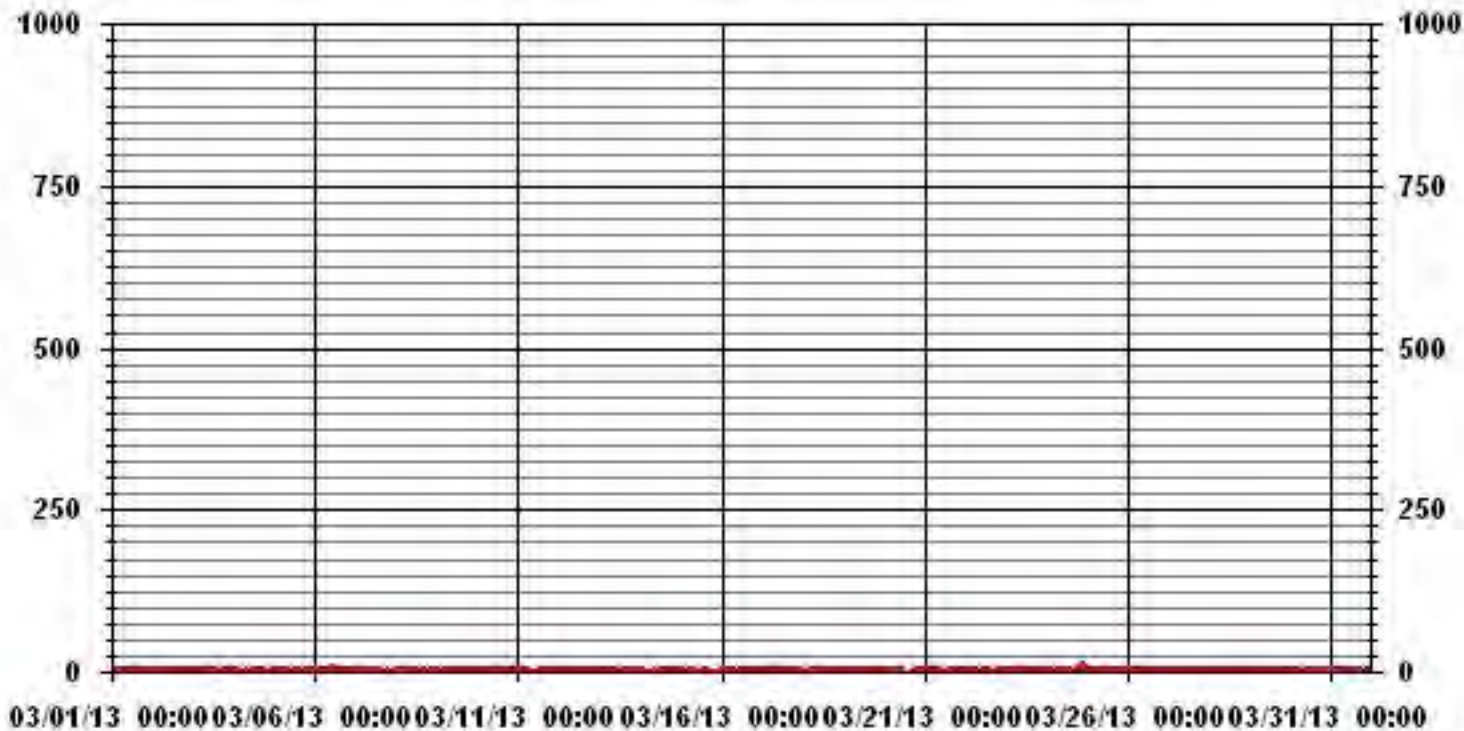
**STATUS FLAG CODES**

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:	702					
MAXIMUM INSTANTANEOUS VALUE:	13	PPB	@ HOUR(S)	21	ON DAY(S)	24
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	1.12					

### 01 Hour Averages



LICA31  
 SO2\_ / WDR Joint Frequency Distribution (Percent)

March 2013

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	7.07	2.40	2.54	8.62	6.08	5.79	3.81	4.66	9.05	13.29	11.31	4.10	3.53	1.98	8.48	7.21	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	7.07	2.40	2.54	8.62	6.08	5.79	3.81	4.66	9.05	13.29	11.31	4.10	3.53	1.98	8.48	7.21	

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	
< 20	50	17	18	61	43	41	27	33	64	94	80	29	25	14	60	51	707
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	50	17	18	61	43	41	27	33	64	94	80	29	25	14	60	51	

Calm : .00 %

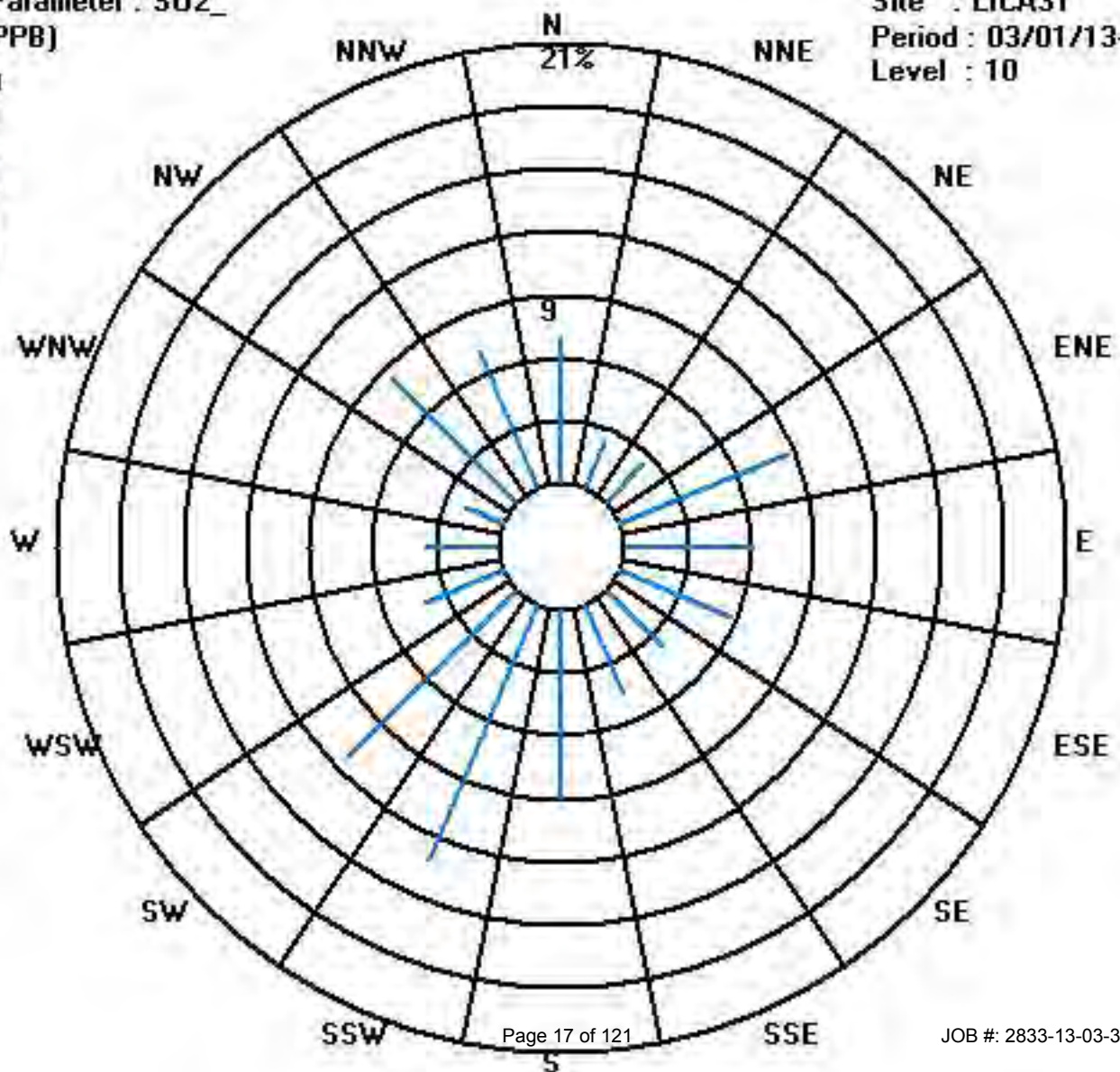
Total # Operational Hours : 707



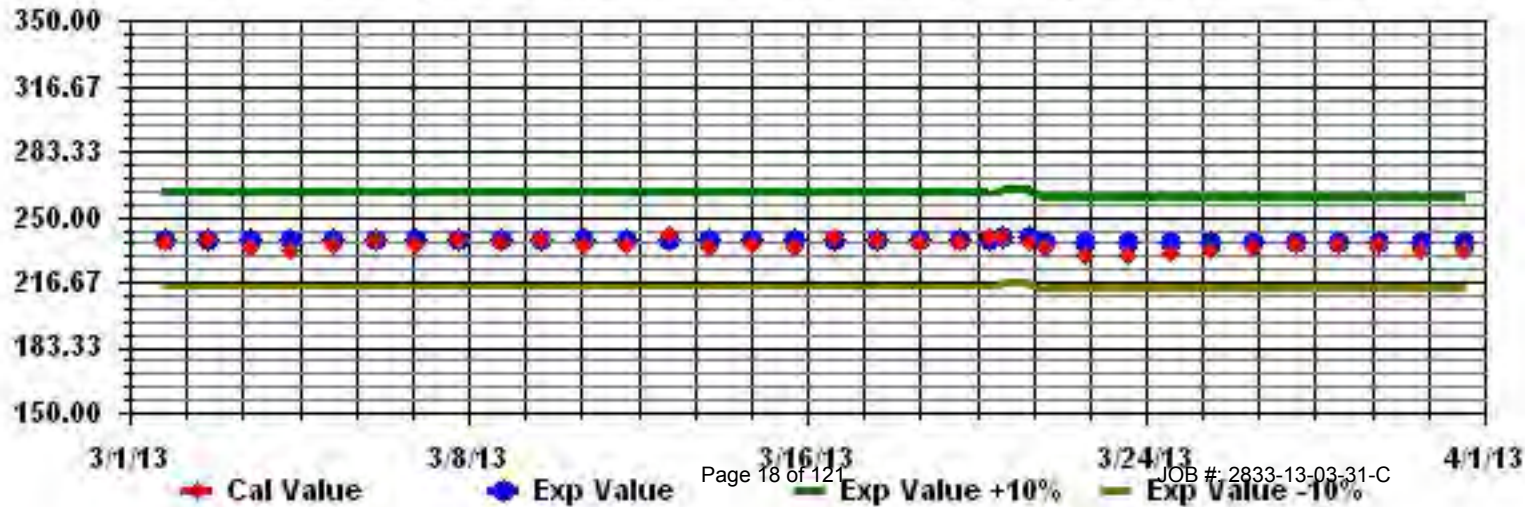
Class Limits (PPB)

Period : 03/01/13-03/31/13

Level : 10



Calibration Graph for Site: LICA31 Parameter: SO2\_ Sequence: S02 Phase: SPAll



# Hydrogen Sulphide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2013

## HYDROGEN SULPHIDE (H<sub>2</sub>S) 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	0:00	DAILY 24-HOUR		
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	MAX.	AVG.	RDGS.	
DAY	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2.0	24
2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	1.9	24
3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	S	2	2	2	2	2	2	2	2	2	1.9	24
4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	1	1	1	1	1	1	1	1	1	2	1.7	24
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1.0	24
6	2	1	1	2	2	1	2	2	2	2	1	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2	1.8	24
7	1	2	2	2	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24
8	1	1	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	1.9	24
9	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2.0	24
10	2	2	2	2	2	2	2	2	2	2	2	S	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	1.5	24
11	1	1	1	1	1	1	1	1	1	1	S	2	1	1	1	1	1	2	2	2	1	1	1	2	1	2	1.2	24	
12	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	3	2	3	2	3	3	3	2.2	24
13	3	3	3	3	3	3	2	S	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.6	24
14	1	1	0	0	0	0	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	24
15	1	2	1	2	2	S	2	2	2	1	2	2	2	2	1	1	1	2	2	2	1	1	1	1	1	1	2	1.5	24
16	2	1	1	1	S	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.7	24
17	2	2	2	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24
18	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	1	1.0	24
19	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	1	1.0	24
20	S	1	1	2	2	2	2	2	2	2	2	2	2	C	C	C	C	0	1	1	1	1	1	1	1	S	2	1.4	24
21	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	S	1	1	0.5	24	
22	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	0.3	24	
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	0	1	1	1.0	24	
24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	1	0.8	24
25	0	0	0	0	0	0	S	S	0	0	0	0	0	0	0	0	0	0	0	S	0	1	1	0	1	1	0.1	24	
26	1	1	1	1	1	1	1	1	1	1	C	C	C	1	1	1	1	1	S	1	1	1	1	1	1	1	1.0	24	
27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1.0	24
28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1.0	24
29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1.0	24
30	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	1	1.0	24
31	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	1	1.0	24
HOURLY MAX		3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	3	2	3	3			
HOURLY AVG		1.4	1.4	1.3	1.4	1.4	1.3	1.4	1.3	1.2	1.2	1.4	1.2	1.2	1.3	1.1	1.2	1.1	1.2	1.3	1.1	1.2	1.2	1.2	1.3				

### STATUS FLAG CODES

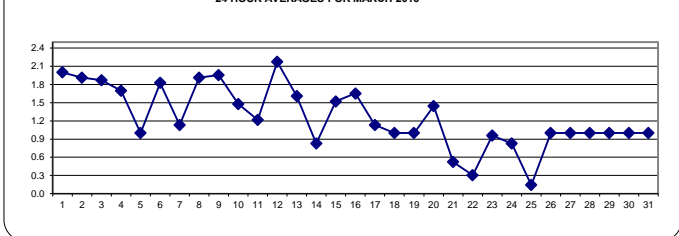
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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

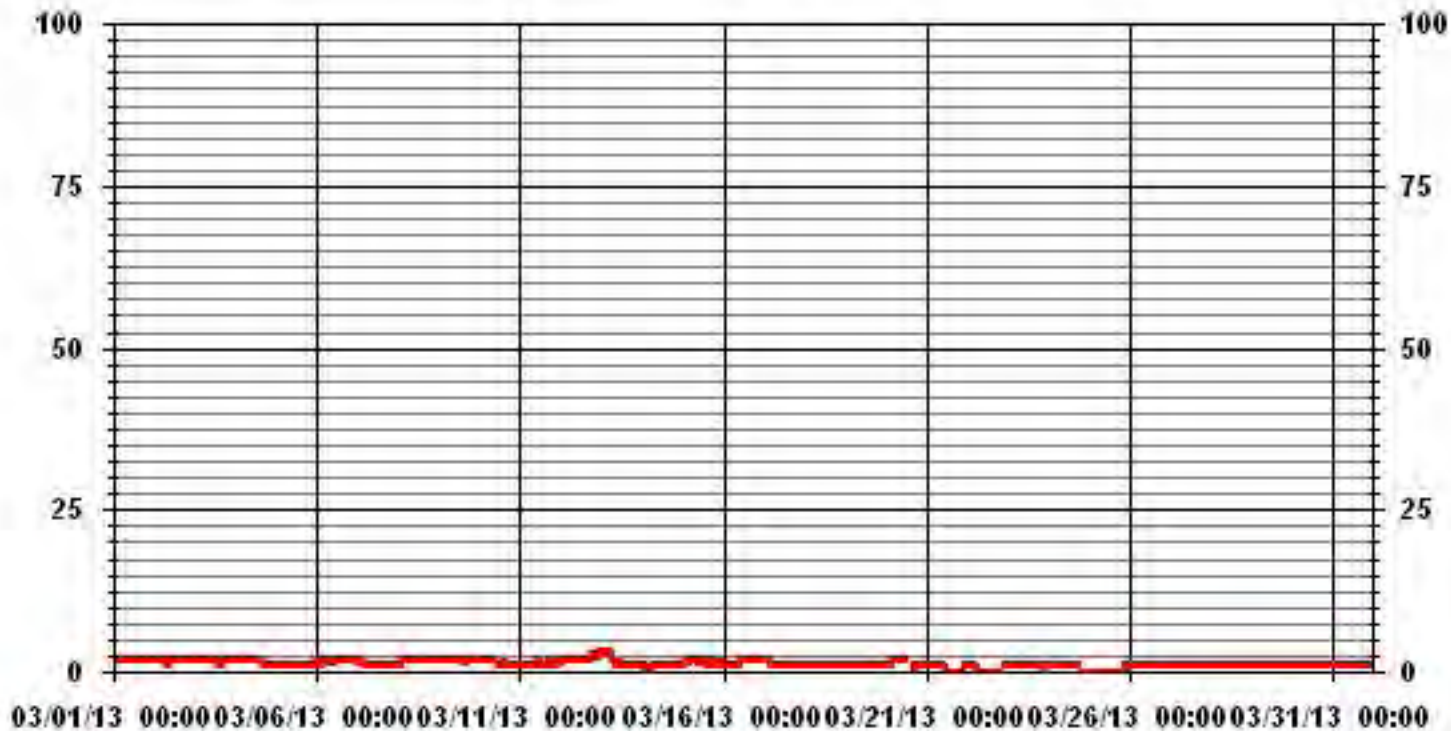
### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF 24-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	648				
MAXIMUM 1-HR AVERAGE:	3	PPB	@ HOUR(S)	VAR	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	2.2	PPB			ON DAY(S)
					VAR-VARIOUS
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.62		MONTHLY AVERAGE:	1.26	PPB

24 HOUR AVERAGES FOR MARCH 2013



### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

MARCH 2013

## HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	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	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	S	2	2	2	2	2	2.0	24
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2.0	24
3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	3	2	2	2	2	2	2	3	2.0	24
4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	1	1	1	1	1	1	1	1	2	1.7	24
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	1	2	2	2	2	2	2	2	2	1.3	24
6	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	2.0	24
7	2	2	2	2	2	2	2	2	2	2	2	2	1	S	2	2	2	2	2	1	1	2	1	2	2	2	1.8	24
8	2	2	2	2	2	2	2	2	2	2	2	2	S	3	2	3	3	3	3	3	3	3	3	3	2	3	2.4	24
9	3	3	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2.1	24
10	2	2	2	2	2	2	3	2	2	3	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2.1	24
11	2	2	2	2	1	1	1	1	1	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.8	24
12	2	2	2	2	2	2	2	2	S	2	2	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	2.5	24
13	3	3	3	3	3	3	3	S	2	2	2	2	2	2	2	2	2	2	1	2	1	1	1	1	1	3	2.1	24
14	1	1	1	1	0	1	S	2	1	1	2	1	1	2	2	1	1	2	2	2	1	2	2	2	2	2	1.4	24
15	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	24
16	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	2.2	24
17	3	3	3	S	2	2	2	2	2	1	1	1	1	2	1	1	1	1	2	1	1	1	2	1	1	3	1.6	24
18	1	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2	1.7	24
19	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	2	2	1.1	24
20	S	2	2	2	2	2	2	2	2	3	3	C	C	C	C	C	C	2	1	2	1	2	1	S	3	1.9	24	
21	2	2	2	2	2	2	1	2	1	2	2	S	0	0	1	1	0	0	0	0	0	0	0	S	1	2	1.0	24
22	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	S	1	1	1	0.7	24
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	S	1	1	1	1	2	1.0	24
24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	1	0.8	24
25	0	0	0	1	0	1	S	S	1	1	1	1	0	1	1	1	1	1	S	1	1	1	1	1	1	1	0.8	24
26	1	1	1	1	1	1	1	1	1	C	C	C	C	1	1	1	1	S	1	1	1	1	1	1	1	1	1.0	24
27	1	1	1	1	1	1	1	1	1	1	2	1	2	2	2	2	1	S	1	1	1	1	1	1	2	2	1.3	24
28	1	1	1	2	2	2	1	1	1	1	1	1	2	2	1	S	2	2	2	2	1	1	2	2	2	2	1.5	24
29	2	2	1	2	2	2	2	2	2	1	1	2	1	1	S	1	2	2	1	1	2	2	2	2	2	2	1.7	24
30	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	1.0	24
31	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	2	1	1	1	1	1	1	1	1	2	1.0	24
HOURLY MAX	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
HOURLY AVG	1.6	1.7	1.6	1.7	1.6	1.6	1.7	1.6	1.6	1.7	1.6	1.6	1.5	1.6	1.6	1.6	1.7	1.6	1.6	1.6	1.6	1.4	1.6	1.7	1.6			

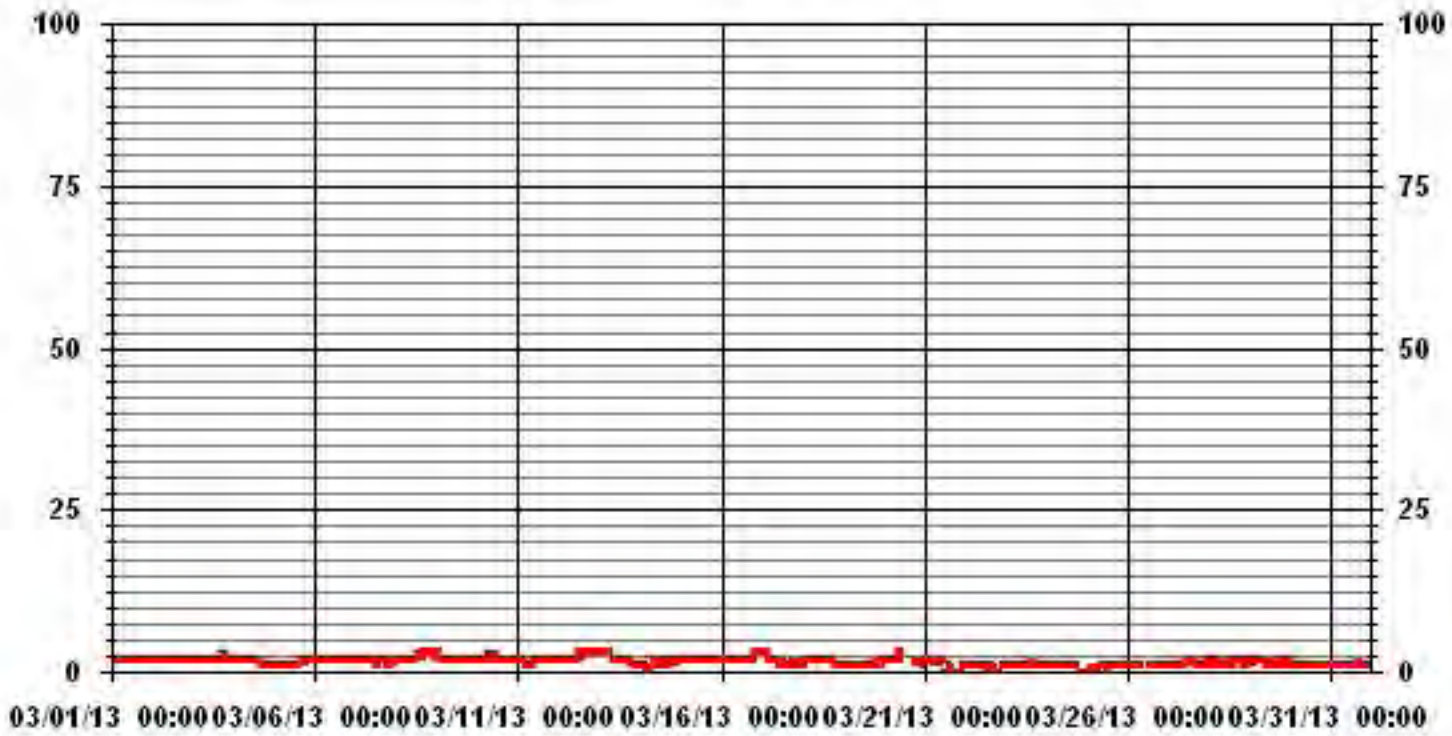
**STATUS FLAG CODES**

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:	674					
MAXIMUM INSTANTANEOUS VALUE:	3	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	11	HRS				
STANDARD DEVIATION:	0.66					

### 01 Hour Averages



LICA31  
H2S\_ / WDR Joint Frequency Distribution (Percent)

March 2013

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	7.11	2.41	2.56	8.25	5.68	5.83	3.55	4.26	8.67	13.37	11.37	4.12	3.55	1.99	8.53	7.25	98.57
< 10	.00	.00	.00	.56	.42	.00	.28	.14	.00	.00	.00	.00	.00	.00	.00	.00	1.42
< 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	7.11	2.41	2.56	8.81	6.11	5.83	3.84	4.40	8.67	13.37	11.37	4.12	3.55	1.99	8.53	7.25	

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	
< 3	50	17	18	58	40	41	25	30	61	94	80	29	25	14	60	51	693
< 10				4	3		2	1									10
< 50																	
>= 50																	
Totals	50	17	18	62	43	41	27	31	61	94	80	29	25	14	60	51	

Calm : .00 %

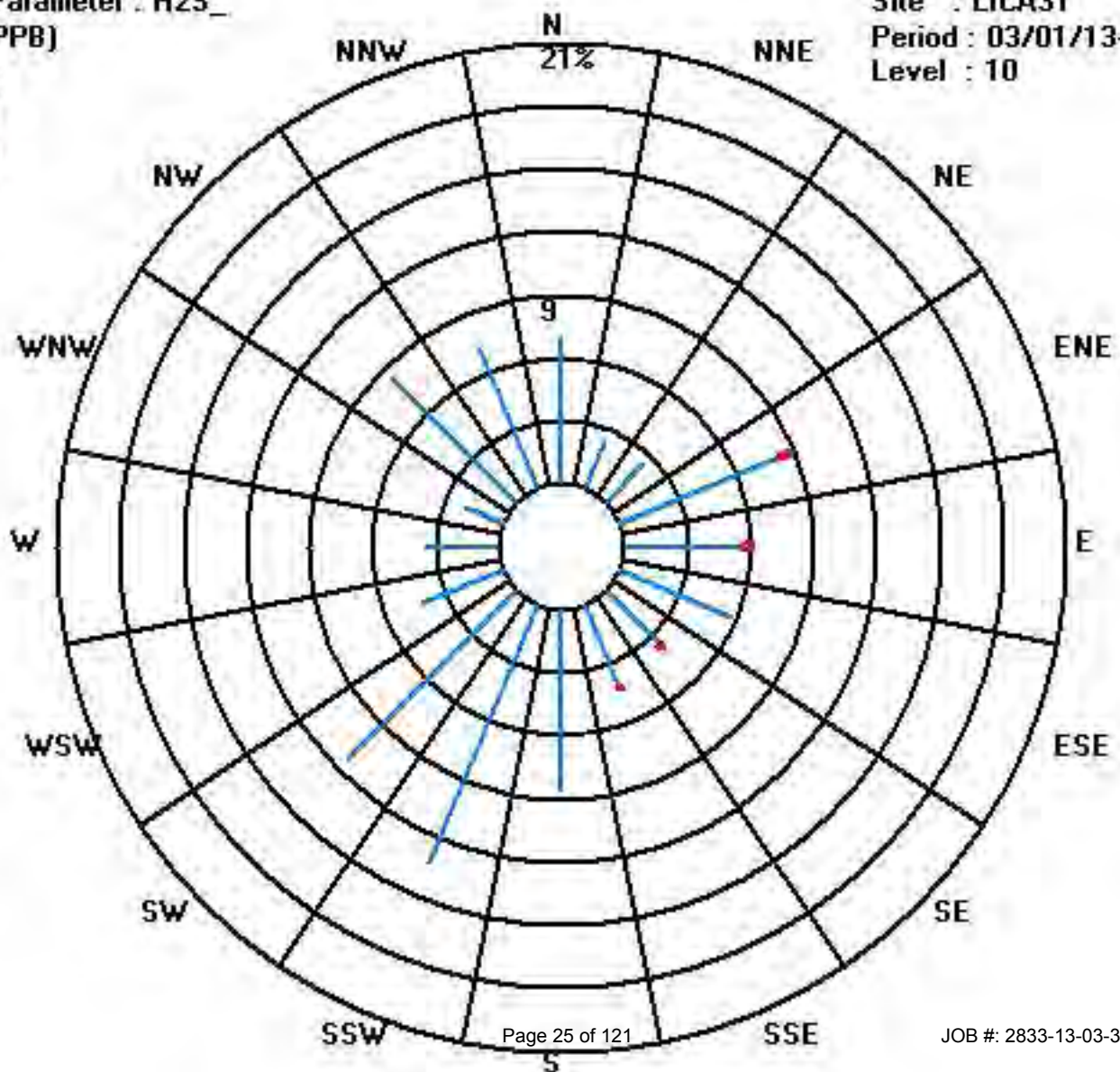
Total # Operational Hours : 703



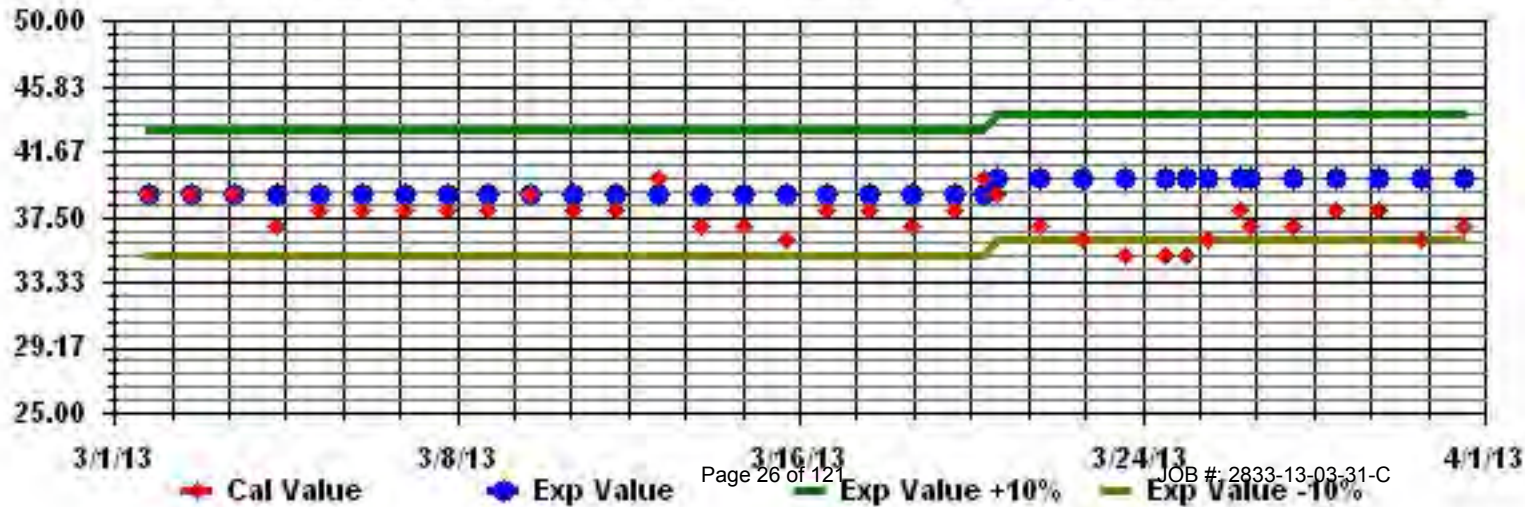
Class Limits (PPB)

Period : 03/01/13-03/31/13

Level : 10



Calibration Graph for Site: LICA31 Parameter: H2S\_ Sequence: H2S Phase: SPAll



# Total Hydrocarbons

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST.LINA

MARCH 2013

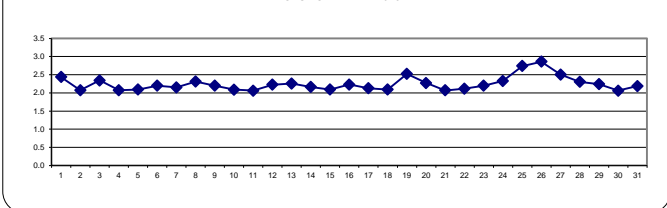
## TOTAL HYDROCARBONS hourly averages in ppm

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	24:00	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		2.9	2.9	2.8	2.9	2.9	2.9	2.8	2.8	2.7	2.7	2.6	2.5	2.3	2.2	2	2	2	2	2	S	2	2.1	2	2.1	2.9	2.4	24	
2		2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2	2	2	2	2.1	2.2	2.1	S	2	2	2	2	2.2	2.2	2.1	24	
3		2.5	2.2	2.6	3.5	3.4	3.1	2.7	2.6	2.6	2.2	2.1	2.1	2.1	2.1	2.1	2.1	S	1.9	1.9	2	2	2	2	2	3.5	2.3	24	
4		2	2	2	2	2.1	2	2.2	2	2	2.2	2.2	2.1	2	2.1	2.1	2.1	S	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24
5		2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2	2	S	2	2	2	2	2.1	2	2.1	2.1	2.1	2.2	2.1	24
6		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	S	2.4	2.4	2.3	2.4	2.5	2.5	2.5	2.4	2.1	2.5	2.2	24	
7		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	S	2.1	2.1	2.1	2.2	2.2	2.2	2.4	2.5	2.2	2.2	2.5	2.2	24	
8		2.4	2.5	2.5	2.5	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.2	S	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.5	2.3	24	
9		2.3	2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	S	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.2	24	
10		2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.2	2.2	S	2.1	2	1.9	1.9	1.9	1.9	2	2	2	2	2	1.9	1.9	2.3	2.1	24	
11		1.9	1.9	2	2	2	2	2	2.1	2.1	S	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	2.2	2.1	24	
12		2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.3	S	2.7	2.5	2.2	2.1	2.1	2	2	2.1	2.1	2.2	2.2	2.6	2.3	2.5	2.5	2.7	2.2	24	
13		2.7	2.4	2.3	2.3	2.6	2.4	2.2	S	2.4	2.5	2.5	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.7	2.3	24
14		2.2	2.2	2.2	2.2	2.2	2.2	S	2	2	2	2.1	2.1	2.1	2.2	2.1	2.2	2.3	2.4	2.2	2.1	2	2.2	2.3	2.3	2.4	2.2	24	
15		2	2.1	2.1	2	2	S	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24
16		2.1	2.2	2.2	2.2	S	2.4	2.6	2.4	2.2	2.3	2.2	2.3	2.2	2.1	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.1	2.1	2.2	2.6	2.2	24	
17		2.5	2.4	2.2	S	2.1	2.1	2.2	2.3	2.2	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.5	2.1	24	
18		2.1	2.1	S	2.1	2.1	2.3	2.1	2.2	2.2	2.2	2.1	2	2	2	2	2	2	2	2.2	2	2.1	2.1	2.1	2.1	2.3	2.1	24	
19		2.1	S	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.9	3.1	3.1	3	2.8	2.7	2.8	2.9	3	3.1	2.5	24	
20		S	2.8	3.1	2.9	2.8	2.7	2.6	2.6	2.3	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	1.9	1.9	S	3.1	2.3	24	
21		2	2	2	2	2	2	2.1	2.2	C	C	C	2.1	2.1	2	S	2.1	2	2.1	2.1	2.1	2.2	2.2	S	2	2.2	2.1	24	
22		2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.1	2.2	2.2	2.1	24	
23		2.2	2.3	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	S	2.2	2.3	2.3	2.2	24	
24		2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	S	2.3	2.3	2.4	2.4	2.4	2.3	24	
25		2.4	2.4	2.4	2.5	2.6	2.6	2.7	2.7	2.8	2.7	2.6	2.5	2.5	2.5	2.6	2.6	2.8	2.8	S	2.8	3	3.5	3.6	3.4	3.6	2.7	24	
26		3.2	2.9	2.7	2.9	3.3	2.8	2.7	2.5	2.6	2.5	2.5	2.5	2.6	2.8	2.8	2.8	2.8	S	3	3.2	3.3	3.3	3.1	3	3.3	2.9	24	
27		3	2.8	2.7	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	S	2.3	2.4	2.4	2.4	2.4	2.4	2.4	3.0	2.5	24	
28		2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.2	2.2	S	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.3	24	
29		2.2	2.3	2.3	2.4	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.4	2.3	2.2	S	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.2	24	
30		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	S	2	2	2	2	2	2	2	2	2	2	2.2	2.1	24	
31		2.2	2.5	2.2	2.2	2.2	2.3	2.3	2.3	2.1	2.1	2.1	2.1	2.1	S	2.2	2.2	2.1	2.1	2	2	2.1	2.1	2.3	2.4	2.2	2.5	2.2	24
HOURLY MAX		3.2	2.9	3.1	3.5	3.4	3.1	2.8	2.8	2.8	2.7	2.6	2.5	2.6	2.8	2.8	2.9	3.1	3.1	3.0	3.2	3.3	3.5	3.6	3.4				
HOURLY AVG		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3				

### STATUS FLAG CODES

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

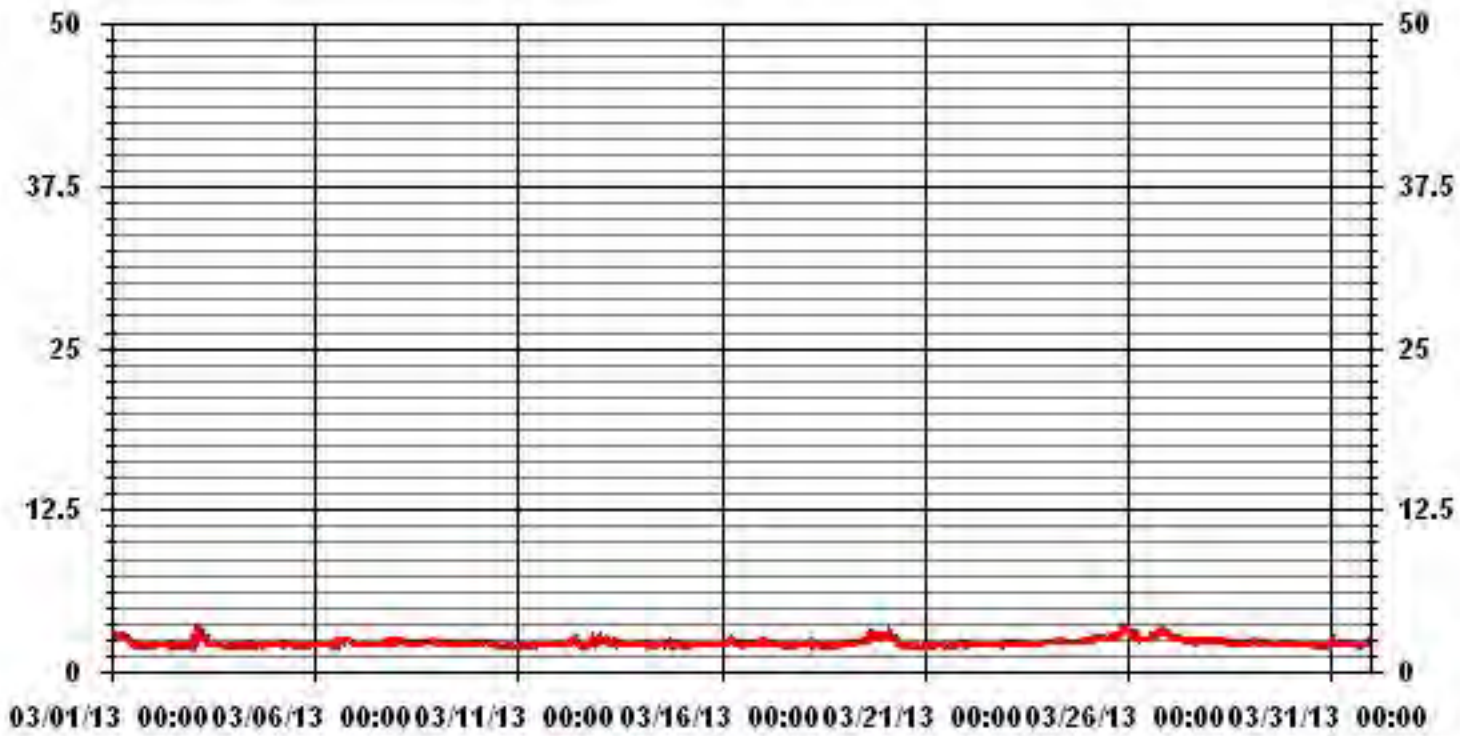
24 AVERAGES FOR MARCH 2013



### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	708
MAXIMUM 1-HR AVERAGE:	3.6 PPM @ HOUR(S) 22 ON DAY(S) 25
MAXIMUM 24-HR AVERAGE:	2.9 PPM ON DAY(S) 26
	VAR- VARIOUS
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	3 HRS
STANDARD DEVIATION:	0.27
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME:	100.0 %
MONTHLY AVERAGE:	2.25 PPM

### 01 Hour Averages



— LICA31 THC PPM

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2013

## TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

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	2.9	2.9	2.9	3	3	2.9	2.9	2.8	2.7	2.7	2.7	2.6	2.4	2.3	2.2	2.1	2	2	2.1	S	2.1	2.1	2.2	2.5	3	2.5	24		
2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.6	2.3	2.2	2.1	2.1	2	2.9	4	3.6	S	2.1	2	2	2.1	2.4	4	2.3	24		
3	3.7	2.2	2.9	3.8	3.6	3.3	2.9	2.8	2.9	2.4	2.2	2.1	2.1	2.2	2.2	2.1	2.1	S	2	2	2	2	2	2	3.8	2.5	24		
4	2	2	2	2.3	2.7	2.5	2.9	2.4	2.5	2.8	2.7	2.5	2.2	2.2	2.1	2.7	S	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.9	2.3	24	
5	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2	S	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24	
6	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	S	2.9	3	2.4	3.6	4	3.6	3.1	2.7	2.2	4	2.5	24		
7	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.2	2.5	2.4	2.4	S	2.3	2.4	2.8	3.3	3.6	3.5	3.2	3.1	3	2.3	3.6	2.5	24		
8	2.5	2.5	2.5	2.5	2.5	2.4	2.3	2.3	2.2	2.2	2.2	2.2	S	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.5	2.3	24		
9	2.5	2.6	2.6	2.3	2.3	2.3	2.4	2.3	2.6	2.5	2.3	S	2.2	2.1	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.6	2.3	24		
10	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.2	S	2.1	2.1	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2.3	2.2	24		
11	2	2	2.1	2	2	2.2	2.2	2.1	2.1	S	2.1	2.2	2.2	2.3	2.3	2.3	2.2	2.4	2.9	2.3	2.1	2.1	2.1	2.2	2.9	2.2	24		
12	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.5	S	2.8	2.6	2.4	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	6.9	2.9	8.2	4.7	8.2	2.8	24		
13	6.5	2.4	2.7	2.6	4.9	2.8	2.3	S	2.5	2.6	2.6	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.6	2.4	2.3	2.2	2.3	2.3	6.5	2.7	24		
14	2.3	2.2	2.2	2.2	2.2	2.2	S	2	2	2	2.6	2.1	2.8	3.1	2.9	3.6	3.2	3.5	3.5	4	2.7	3.1	3.9	3.6	4	2.8	24		
15	3.1	2.7	3.3	3.1	2.9	S	2.3	2.5	3	3.7	3	2.4	2.2	2.5	2.2	2.3	2.3	2.2	2.5	2.6	2.1	2.1	2.1	2.1	3.7	2.6	24		
16	2.1	2.3	2.3	2.4	S	3.3	4	3.5	3.5	4.5	3.7	3.1	3	2.2	2.2	2.4	2.3	2.5	2.2	2.2	2.2	2.2	4.2	4.5	2.9	24			
17	4	4	2.3	S	2.1	2.2	2.3	2.3	2.3	2.3	2.1	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.5	2.1	2.2	2.2	2.1	4	2.4	24			
18	2.1	2.1	S	2.1	5.1	14.7	3	3.3	2.4	2.6	2.6	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.9	2.1	2.3	2.2	2.1	2.1	14.7	3.0	24		
19	2.2	S	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.9	3.4	4.3	3.1	3.1	2.8	2.8	3.3	2.9	3.6	4.3	2.7	24		
20	S	3.5	4	4	3.8	3.3	3.3	3.3	3.1	2.4	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	S	4	2.6	24		
21	2.3	2.5	2.7	2.5	2.5	2.3	2.9	C	C	C	C	C	2.6	S	S	2.2	2.1	2.1	2.4	2.2	2.2	2.9	S	2.1	2.9	2.4	24		
22	2.4	2.9	2.5	2.4	2.5	2.3	2.4	2.5	2.3	2.3	2.3	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.2	2.6	S	2.4	2.5	2.9	2.4	24		
23	2.6	2.6	2.6	2.4	2.5	2.6	2.7	2.6	2.4	2.4	2.5	2.4	2.4	2.2	2.4	2.2	2.3	2.6	2.2	S	2.3	2.3	2.3	2.7	2.4	2.4	24		
24	2.4	2.3	2.3	2.4	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	S	2.3	2.4	2.4	2.4	2.4	2.3	24		
25	2.4	2.4	2.5	2.5	2.6	2.6	2.7	2.9	3	2.8	2.8	2.6	2.5	2.6	2.6	2.8	2.9	2.9	S	3	3.4	3.7	3.7	3.5	3.7	2.8	24		
26	3.4	3.1	2.7	5.7	5.9	5.5	4.3	4.1	2.7	2.6	2.6	2.6	2.6	3	3	2.8	2.9	S	3.2	3.3	3.3	3.3	3.2	3.1	5.9	3.4	24		
27	3	2.9	2.8	2.6	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.4	2.4	2.4	2.4	S	2.4	2.5	2.4	2.4	2.5	2.5	2.4	3	2.6	24		
28	2.4	2.4	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.2	S	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.3	24		
29	2.3	2.3	2.7	2.9	2.4	2.2	2.2	2.2	2.3	2.4	3	2.5	2.4	2.3	S	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.3	3	2.3	24		
30	2.4	2.2	2.4	2.4	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	S	2.1	2.3	2.1	2.2	2.1	2	2.1	2.1	3.1	3.1	2.2	24		
31	4	6.2	3.5	3.8	2.3	2.3	2.3	2.3	2.3	2.1	2.1	2.1	S	2.2	2.2	2.6	2.6	2	2.1	2.1	2.2	2.4	2.5	2.4	6.2	2.6	24		
HOURLY MAX	6.5	6.2	4.0	5.7	5.9	14.7	4.3	4.1	3.5	4.5	3.7	3.7	3.1	3.1	3.0	3.6	4.3	3.6	3.6	4.0	6.9	3.7	8.2	4.7					
HOURLY AVG	2.7	2.6	2.5	2.7	2.8	3.0	2.6	2.5	2.5	2.5	2.5	2.3	2.3	2.3	2.3	2.4	2.5	2.4	2.5	2.4	2.5	2.4	2.6	2.6					

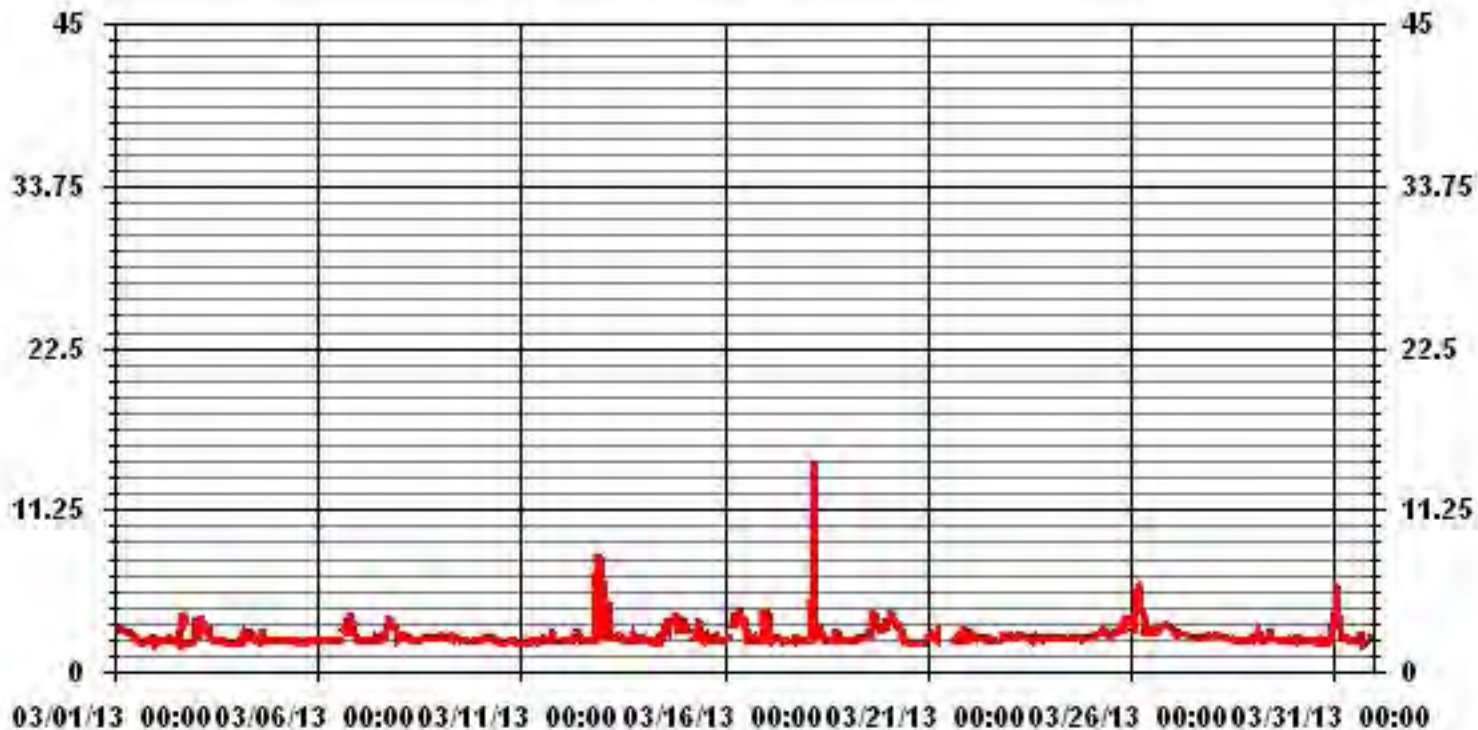
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	705					
MAXIMUM INSTANTANEOUS VALUE:	14.7	PPM	@ HOUR(S)	5	ON DAY(S)	18
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.77					

### 01 Hour Averages



— LICA31 THCMAX PPM

LICA31  
 THC / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

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

Wind Parameter : WDR  
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	7.06	2.40	2.11	8.47	5.64	5.36	4.09	4.37	7.90	12.99	11.29	4.09	3.53	1.97	8.47	7.20	97.03
< 10.0	.00	.00	.42	.00	.14	.42	.28	.28	1.12	.28	.00	.00	.00	.00	.00	.00	2.96
< 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	7.06	2.40	2.54	8.47	5.79	5.79	4.37	4.66	9.03	13.27	11.29	4.09	3.53	1.97	8.47	7.20	

Calm : .00 %

Total # Operational Hours : 708

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	50	17	15	60	40	38	29	31	56	92	80	29	25	14	60	51	687
< 10.0			3		1	3	2	2	8	2							21
< 50.0																	
>= 50.0																	
Totals	50	17	18	60	41	41	31	33	64	94	80	29	25	14	60	51	

Calm : .00 %

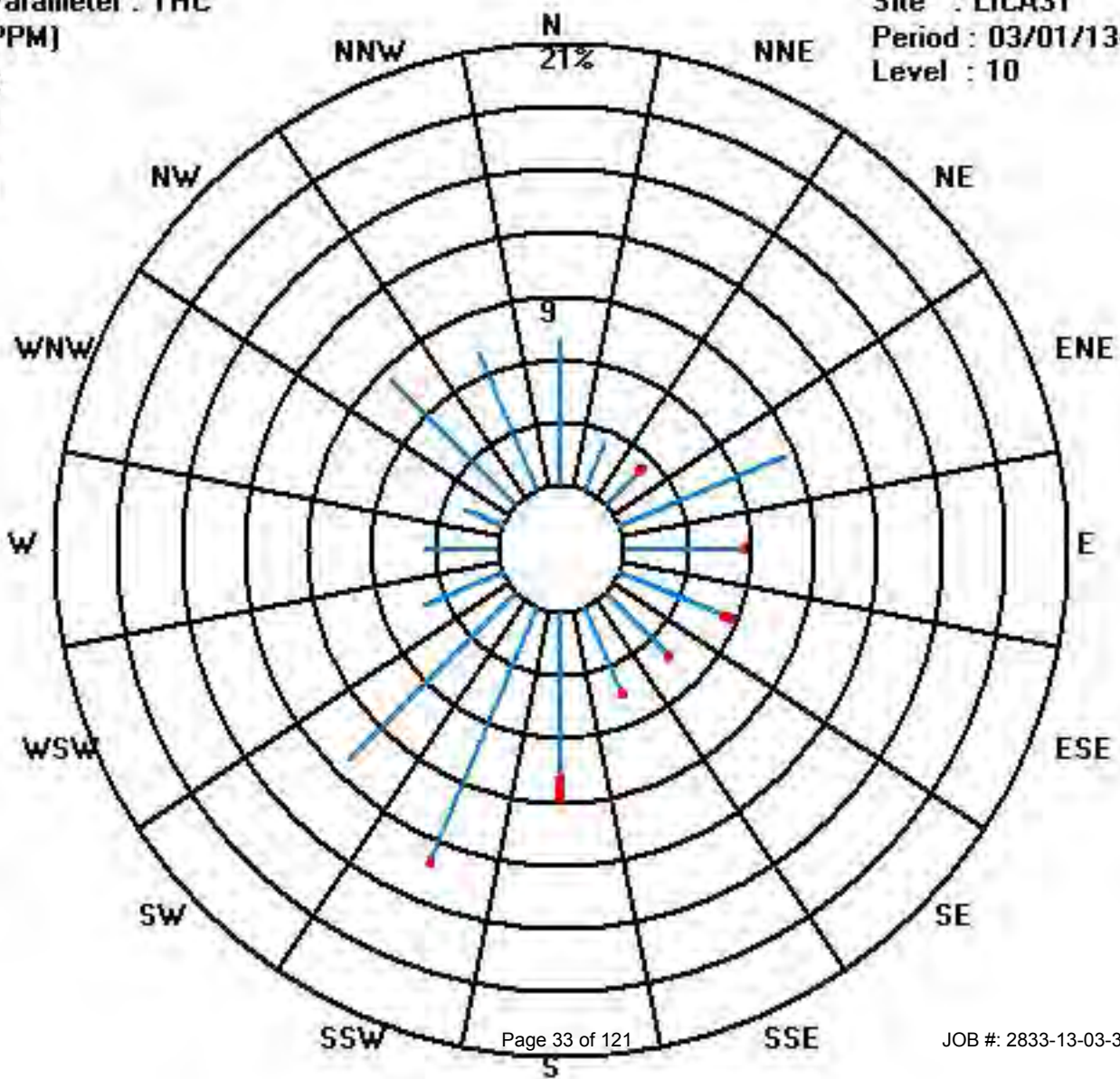
Total # Operational Hours : 708



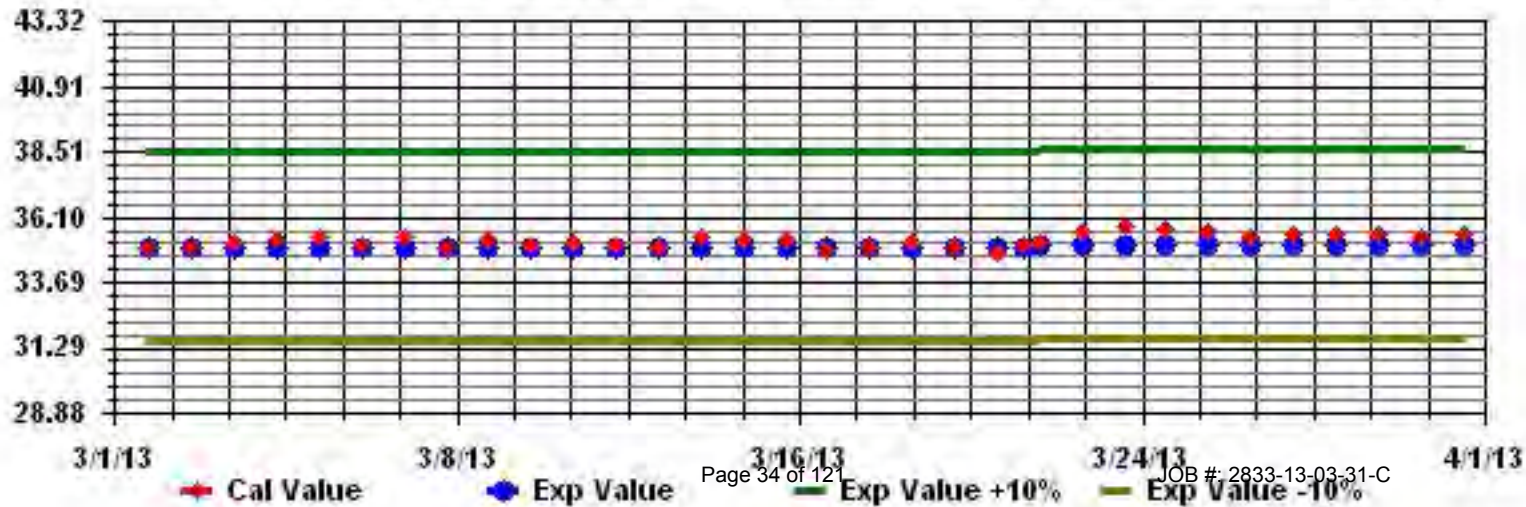
Class Limits (PPM)

Period : 03/01/13-03/31/13

Level : 10



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



# Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2013

OZONE (O<sub>3</sub>) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	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	MAX.	AVG.		
DAY																												
1	31	34	36	36	37	37	37	37	38	38	38	39	40	41	45	45	46	46	46	S	43	40	38	39	46	39.4	24	
2	40	37	34	35	34	31	36	33	33	35	35	44	44	46	48	48	49	49	S	49	49	49	48	45	49	41.3	24	
3	42	43	36	25	27	28	32	33	34	40	42	43	43	42	41	42	S	42	43	45	45	44	42	45	44	39.0	24	
4	42	42	43	43	41	40	40	40	40	40	37	38	39	40	40	41	S	42	42	41	41	40	40	40	40	43	40.5	24
5	40	40	40	39	38	37	37	36	36	36	36	38	42	45	47	S	48	47	47	47	47	46	46	46	48	41.8	24	
6	46	46	45	45	44	43	42	41	41	42	43	43	46	47	S	46	46	46	45	45	45	41	38	34	47	43.5	24	
7	33	33	32	32	31	31	32	33	33	33	35	36	37	S	39	40	40	39	38	37	36	34	34	35	40	34.9	24	
8	35	34	34	34	34	37	39	42	45	47	48	47	S	45	47	48	48	48	48	47	46	44	43	38	48	42.5	24	
9	34	36	36	34	33	33	31	32	31	31	33	S	35	38	41	43	44	43	42	42	42	43	44	45	45	45	37.8	24
10	45	44	44	43	42	41	40	38	38	39	S	43	45	47	49	49	49	47	45	45	44	44	43	43	49	43.8	24	
11	43	42	43	37	34	33	35	37	39	S	39	40	41	43	44	45	46	46	46	45	44	44	45	44	46	41.5	24	
12	42	41	41	40	40	40	38	38	S	39	43	47	50	51	52	52	53	53	52	50	49	49	47	46	53	45.8	24	
13	46	45	44	43	43	43	44	S	43	42	40	34	35	37	38	38	37	36	36	36	36	35	35	34	46	39.1	24	
14	33	33	33	33	31	30	S	31	34	36	37	38	38	38	40	41	41	40	39	39	39	38	38	38	41	36.4	24	
15	38	38	37	37	37	S	36	36	37	37	37	38	38	39	39	40	40	39	39	39	39	38	38	38	40	38.0	24	
16	38	35	33	33	S	36	38	38	38	38	38	38	38	40	40	40	39	39	39	39	39	39	39	39	40	38.0	24	
17	38	38	38	S	38	37	37	37	36	37	38	38	39	40	40	40	39	39	39	39	39	39	36	37	38	40	38.1	24
18	37	36	S	35	35	38	37	37	34	35	37	38	39	39	40	39	39	40	40	40	40	39	38	39	40	37.9	24	
19	38	S	36	35	35	36	35	34	33	34	35	36	37	38	39	39	38	37	37	38	38	39	40	41	41	36.9	24	
20	S	43	43	44	46	47	47	47	47	46	47	47	48	49	50	S	S	53	51	50	50	49	49	S	53	47.7	24	
21	47	47	46	46	45	45	44	44	44	44	45	C	C	C	C	46	46	45	45	44	43	43	S	43	47	44.8	24	
22	42	41	37	27	27	27	26	27	26	26	27	28	30	30	31	34	34	35	35	32	32	S	32	32	42	31.2	24	
23	32	32	32	32	31	31	31	31	31	31	31	33	38	40	40	40	40	40	39	40	S	38	38	38	40	35.2	24	
24	37	37	37	35	36	35	34	31	31	33	36	41	44	46	47	49	49	48	44	S	41	38	42	45	49	39.8	24	
25	46	46	46	46	45	45	45	45	44	45	44	46	49	53	54	54	54	54	S	51	49	46	46	47	54	47.8	24	
26	48	48	47	46	44	46	46	46	46	45	46	47	48	50	50	51	51	S	50	50	50	50	50	50	51	48.0	24	
27	50	51	51	52	52	51	51	51	50	50	51	51	53	57	58	59	S	60	59	57	56	54	52	53	60	53.4	24	
28	54	53	52	51	50	48	47	47	46	47	51	56	57	60	64	S	65	64	62	62	63	64	63	63	65	56.0	24	
29	62	57	53	52	50	46	45	45	45	46	46	47	49	54	S	60	63	64	65	66	66	68	69	69	69	56.0	24	
30	65	57	53	52	52	51	50	49	49	48	48	49	49	S	51	51	52	52	52	51	51	50	52	52	65	51.6	24	
31	51	51	50	49	48	49	49	50	51	53	54	56	S	60	62	60	56	53	53	52	51	50	48	48	62	52.3	24	
HOURLY MAX	65	57	53	52	52	51	51	51	51	53	54	56	57	60	64	60	65	64	65	66	66	68	69	69				
HOURLY AVG	42.5	42.0	41.1	39.7	39.3	39.1	39.4	38.9	39.1	39.8	40.6	42.0	42.5	44.8	45.6	45.7	46.2	46.3	45.4	45.4	45.1	44.5	43.9	43.5				

STATUS FLAG CODES

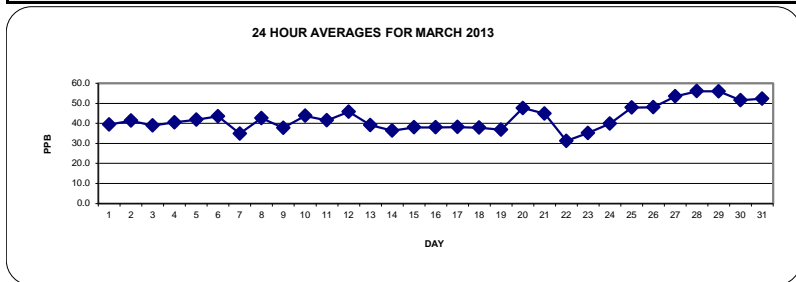
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

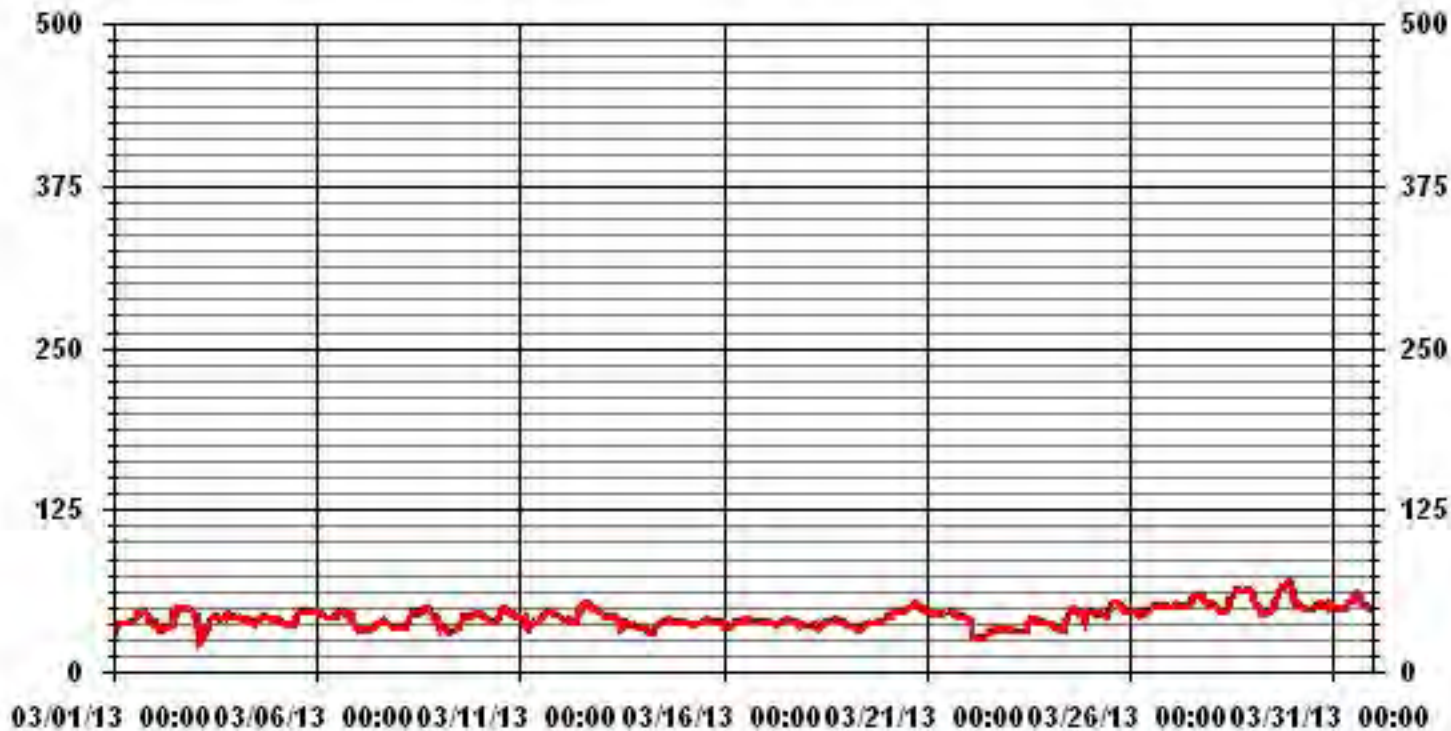
ALBERTA ENVIRONMENT: 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	706
MAXIMUM 1-HR AVERAGE:	69 PPB @ HOUR(S) 22, 23 ON DAY(S) 29
MAXIMUM 24-HR AVERAGE:	56.0 PPB ON DAY(S) 28
	VAR-VARIOUS
I/S CALIBRATION TIME:	34 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	7.56
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME:	100.0 %
MONTHLY AVERAGE:	42.5 PPB



### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2013

## OZONE 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 MAX.	24-HOUR 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	32	35	36	36	37	37	37	37	38	38	39	40	41	42	46	46	47	47	46	S	44	41	39	41	47	40.1	24	
2	41	40	36	37	36	33	39	37	38	38	44	45	45	47	48	49	49	49	S	49	49	49	48	47	49	43.2	24	
3	42	43	42	32	30	30	33	34	38	41	43	43	43	42	42	42	S	43	45	45	45	45	45	43	45	40.4	24	
4	43	43	44	44	42	40	40	40	40	40	39	39	40	40	41	42	S	42	42	42	41	41	40	41	44	41.1	24	
5	41	41	40	39	38	38	38	37	36	36	37	40	44	46	48	S	48	48	47	47	47	46	46	46	48	42.3	24	
6	46	46	46	45	44	44	42	41	42	43	43	44	47	48	S	47	47	46	45	45	45	44	39	37	48	44.2	24	
7	34	33	32	32	31	31	32	33	33	34	35	37	38	S	40	41	40	40	39	37	37	35	35	36	41	35.4	24	
8	36	34	35	35	35	39	41	43	46	48	49	49	S	46	48	48	48	49	49	48	47	45	43	42	49	43.6	24	
9	35	36	36	35	33	33	32	33	32	32	34	S	37	40	43	44	45	44	43	43	43	45	45	45	45	38.6	24	
10	45	44	44	43	42	42	41	39	39	41	S	43	46	48	49	49	50	48	45	45	44	44	44	43	50	44.3	24	
11	43	43	44	39	35	34	36	38	39	S	39	40	42	44	44	45	46	46	46	46	45	45	45	44	46	42.1	24	
12	43	41	41	41	40	40	39	38	S	41	45	49	51	52	52	53	53	53	52	51	50	49	48	47	53	46.5	24	
13	46	46	45	44	44	45	45	S	44	43	41	41	37	38	39	39	38	37	37	36	36	36	36	35	46	40.3	24	
14	34	33	33	34	32	30	S	31	35	36	38	38	38	39	40	42	41	41	40	40	39	39	39	38	42	37.0	24	
15	38	38	38	37	37	S	36	36	37	37	38	38	39	40	40	41	40	40	39	39	38	38	38	39	41	38.3	24	
16	38	37	34	34	S	38	39	38	38	38	38	38	39	40	40	40	40	40	39	39	39	39	39	39	40	38.4	24	
17	39	38	38	S	38	38	37	37	37	38	38	38	40	40	41	41	40	39	39	39	39	39	37	38	38	41	38.6	24
18	38	37	S	35	36	39	38	39	35	36	38	39	39	40	41	41	40	40	40	40	40	40	39	39	41	38.7	24	
19	39	S	36	36	36	36	36	34	33	34	36	37	37	38	39	39	38	38	37	38	39	40	40	42	42	37.3	24	
20	S	44	43	45	47	47	47	48	48	47	47	48	48	49	50	S	S	53	53	50	50	49	49	S	53	48.1	24	
21	48	47	46	46	45	45	45	46	44	45	45	C	C	C	C	46	46	45	45	44	43	43	S	43	48	45.1	24	
22	43	42	41	28	27	27	27	27	27	27	28	29	30	30	33	34	35	36	36	34	32	S	32	32	43	32.0	24	
23	32	32	32	32	31	31	31	31	31	31	32	36	39	40	41	41	41	40	40	41	S	39	39	39	41	35.8	24	
24	38	37	37	36	38	35	35	32	32	35	39	43	45	47	48	49	49	49	47	S	42	40	44	46	49	41.0	24	
25	46	47	46	46	45	45	46	47	46	47	45	47	50	54	54	54	55	55	S	52	50	47	47	47	55	48.6	24	
26	48	48	48	47	45	47	48	47	46	46	47	48	49	50	50	52	52	S	51	50	50	50	50	50	52	48.7	24	
27	51	51	52	52	52	51	51	51	51	50	51	52	55	58	59	59	S	61	60	58	56	54	52	54	61	54.0	24	
28	54	53	53	52	50	49	47	47	46	49	54	57	59	62	65	S	66	65	63	63	64	64	64	64	66	57.0	24	
29	63	61	53	53	52	47	46	45	46	46	47	48	51	56	S	63	64	65	65	66	67	69	<b>70</b>	<b>70</b>	<b>70</b>	57.1	24	
30	67	62	54	52	52	51	50	50	49	48	48	49	50	S	51	52	53	53	52	51	51	51	52	52	67	52.2	24	
31	51	51	50	49	48	49	50	50	52	53	55	57	S	61	63	63	61	53	53	53	51	50	49	49	63	53.1	24	
HOURLY MAX	67	62	54	53	52	51	51	51	52	53	55	57	59	62	65	63	66	65	65	66	67	69	70	70				
HOURLY AVG	43.1	42.8	41.8	40.5	40.0	39.7	40.1	39.5	39.9	40.6	41.7	43.2	43.5	45.6	46.3	46.5	46.9	47.0	46.0	45.9	45.4	45.1	44.5	44.3				

**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:	706					
MAXIMUM INSTANTANEOUS VALUE:	70	PPB	@ HOUR(S)	22, 23	ON DAY(S)	29
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	7.55					

### 01 Hour Averages



LICA31  
O3\_ / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

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

Wind Parameter : WDR  
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	6.23	2.26	2.26	8.07	5.80	5.09	3.54	2.12	7.79	8.64	8.35	3.54	3.54	1.55	8.21	6.09	83.14
< 110	.84	.14	.28	.14	.28	.70	.56	2.54	1.27	4.67	2.97	.56	.00	.42	.28	1.13	16.85
< 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	7.08	2.40	2.54	8.21	6.09	5.80	4.10	4.67	9.06	13.31	11.33	4.10	3.54	1.98	8.49	7.22	

Calm : .00 %

Total # Operational Hours : 706

Distribution By Samples

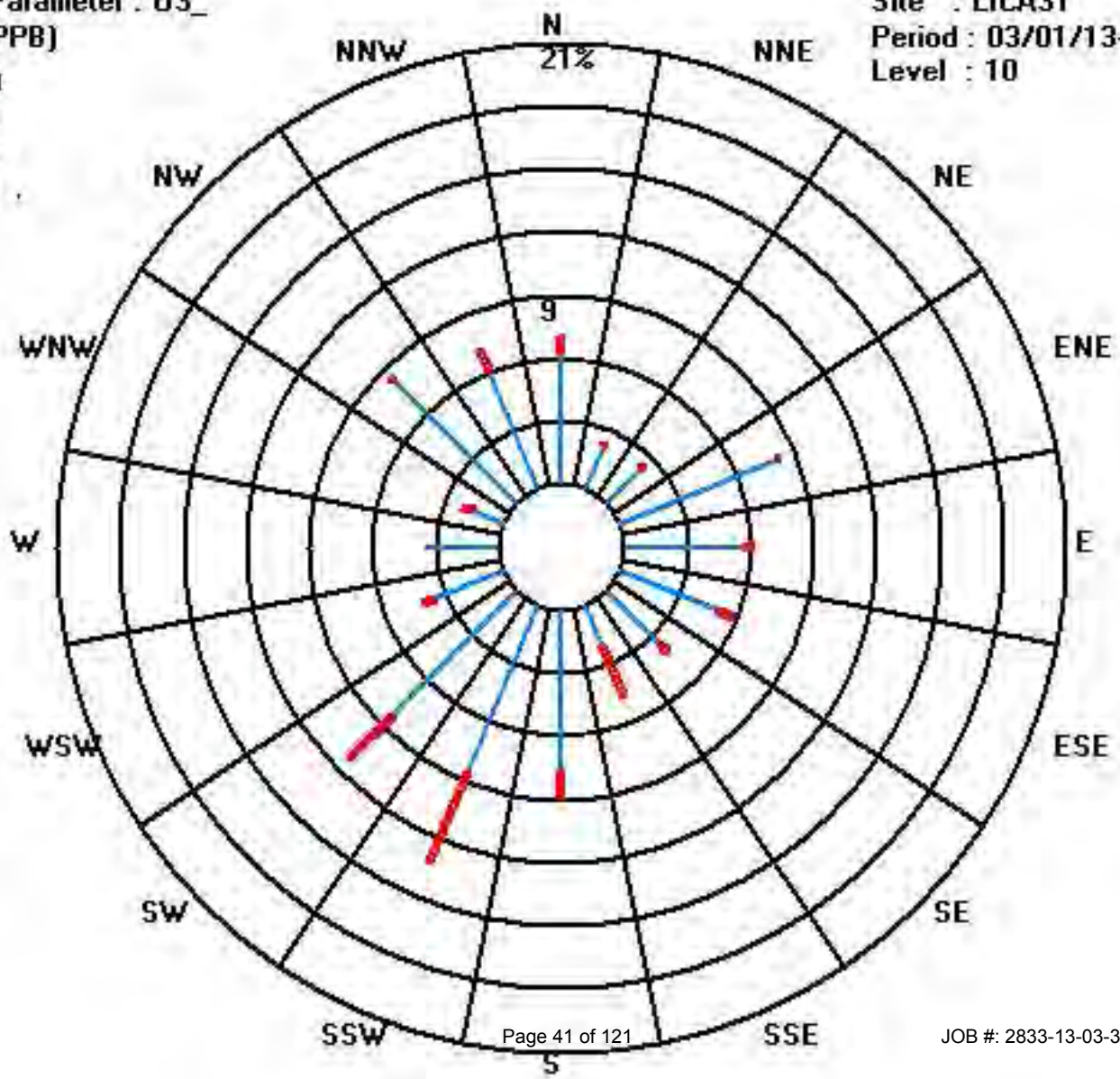
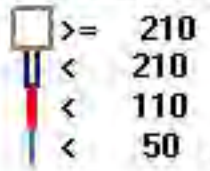
	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	44	16	16	57	41	36	25	15	55	61	59	25	25	11	58	43	587
< 110	6	1	2	1	2	5	4	18	9	33	21	4		3	2	8	119
< 210																	
>= 210																	
Totals	50	17	18	58	43	41	29	33	64	94	80	29	25	14	60	51	

Calm : .00 %

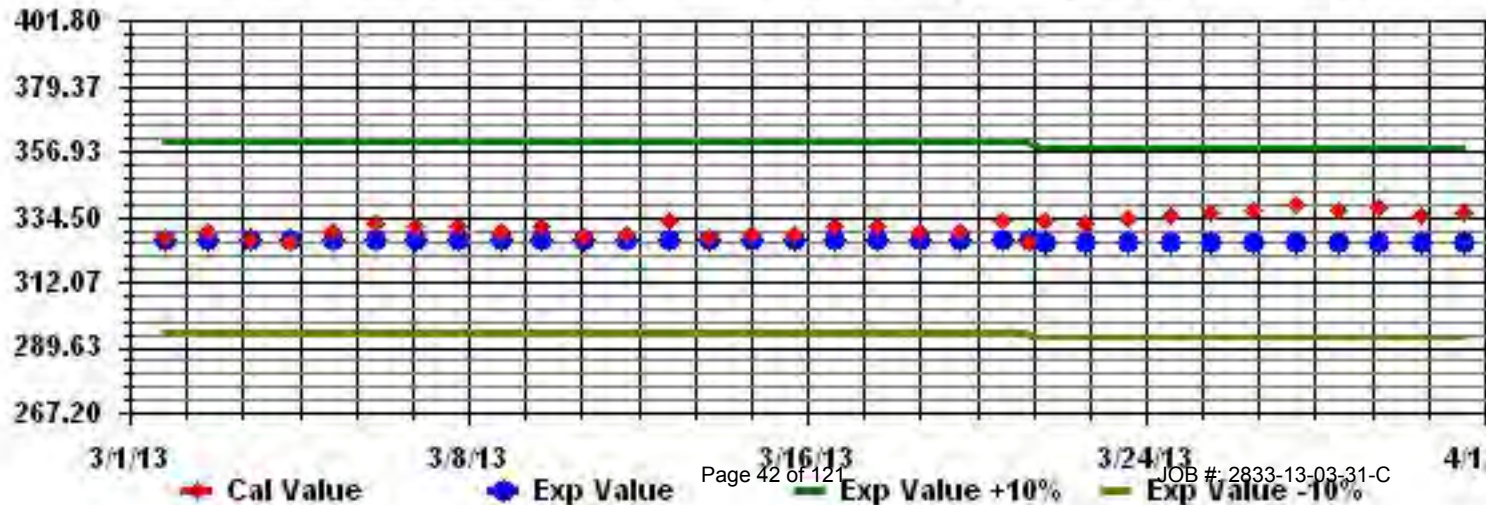
Total # Operational Hours : 706



Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: 03\_ Sequence: 03 Phase: SPAll



# Nitrogen Dioxide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2013

## NITROGEN DIOXIDE 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	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	1	8.7	7.6	6.5	6	5.2	4.8	4.6	4.4	4.2	4.6	4.8	4.7	4.7	4.5	2.7	2.4	1.7	1.3	1.2	S	2.8	3.6	3.6	2.6	8.7	4.2	24	
2	2	1.9	2.4	3.9	3.5	3.6	4.3	3.2	3.3	3.1	2.5	2.5	1.5	1.4	1.1	0.6	0.3	0.8	0.9	S	1.1	0.6	0.6	0.6	2.6	4.3	2.0	24	
3	3	4.9	3.6	7.3	15.9	13.6	11.7	8.8	8.2	9.2	4.4	1.9	2	1.6	2.2	1.6	1.3	1	S	0.8	0.8	0.6	0.5	0.9	1.1	15.9	4.5	24	
4	4	1	0.7	0.6	0.4	0.7	1.1	1.1	0.8	0.8	1.3	2.2	1.2	0.9	1	1.1	1.1	S	1.4	1.7	2	2.2	2.7	3	2.2	3.0	1.4	24	
5	5	1.6	1.7	1.5	1.9	2	2.2	2.9	2.8	3	3.3	4	4.5	3.3	2.6	2.2	S	0.7	1	1.4	1.1	1	1.2	0.9	1.3	4.5	2.1	24	
6	6	1	1	1.1	1.2	1.4	1.5	2.1	2.1	2	1.5	1.5	2.8	1.1	0.8	S	2.4	2.8	2.4	3	2.5	2.6	4.8	4.5	1.9	4.8	2.1	24	
7	7	1.8	1.8	1.8	1.5	1.7	1.5	1	0.9	1.2	1	0.9	0.7	0.6	S	0.9	0.8	0.9	1.3	1.5	1.9	1.7	2.4	2.3	1.5	2.4	1.4	24	
8	8	2.4	3.4	3.2	2.9	2.8	2.4	1.9	2.2	2.3	2.1	2.5	2.5	S	3	4.3	4.9	6	6.6	6.9	6.8	7	7.2	7.7	9	9.0	4.3	24	
9	9	10.1	8	6.4	6.4	6	5.4	5.1	4.1	3.8	3.4	3.2	S	1.5	1.3	1.3	1.9	2.2	2.2	1.4	2.1	1.9	1.4	1.5	2	10.1	3.6	24	
10	10	2.5	2.5	2.9	3.2	3.5	3.7	4.1	5	4.9	5.7	S	4.3	3.6	0.8	0.1	0	0	0	0	0	0	0	0	0	5.7	2.0	24	
11	11	0	0	0	0	0	0	0	0	0	S	0.6	0.4	0.4	0.4	0.6	0.6	0.4	0.6	0.5	1	1.5	2.2	1.5	2	2.2	0.6	24	
12	12	2.8	2.7	2.4	2.8	2.8	3	3.8	4.2	S	4.4	3.5	2.4	1.7	1.6	1.5	1.4	1.3	1.5	1.7	1.8	1.9	2.2	2.2	2.2	4.4	2.4	24	
13	13	2.3	2.3	2.7	3.5	2.9	2.8	2.6	S	3.4	4.9	5	2.2	2	2.3	1.3	0.8	1.7	2.4	2	1.7	1.7	1.6	1.2	1.6	5.0	2.4	24	
14	14	1.9	1.7	1.6	1.2	1.7	1.9	S	1.8	1.1	0.7	0.8	0.8	1.1	1.1	1	0.8	0.8	0.6	0.6	0.6	1.1	0.7	0.7	0.6	1.9	1.1	24	
15	15	0.6	0.8	0.8	0.7	0.5	S	0.7	0.8	0.9	0.9	1	0.9	0.8	0.8	1.2	0.8	0.8	0.4	0.5	0.5	1	0.8	0.8	0.8	1.2	0.8	24	
16	16	0.7	2.5	4.1	4	S	1.6	0.5	0.7	0.7	0.8	0.7	0.8	0.9	0.6	0.9	1.2	1.4	1.5	2	1.6	1.4	1.5	1.3	1.2	4.1	1.4	24	
17	17	1.2	1.1	1.7	S	1.2	1.1	1.5	1.5	1.5	1	1.1	0.9	1.1	0.6	0.7	0.7	0.5	0.8	0.5	0.7	0.7	2.5	1.8	1.5	2.5	1.1	24	
18	18	1.6	2.5	S	3.3	3.4	2.7	2.8	2.6	3.2	3	2.4	2	1.9	2	1.9	1.8	1.2	1.1	1	1	1.5	2.3	2.7	2.2	3.4	2.2	24	
19	19	2.8	S	3.5	4.6	4.6	4.4	4.7	5.2	5.5	4.8	4.6	4.7	5.2	5.5	6	7.7	8.6	9.4	10.7	9.3	9	8.4	7.9	7	10.7	6.3	24	
20	20	S	4.9	4.9	4.3	3.6	3.2	2.9	2.7	2.2	1.7	1.3	3.6	C	C	C	C	3	2.1	2.6	2.4	1.9	1.9	1.9	S	4.9	2.8	24	
21	21	1.5	1.7	1.8	1.7	1.8	1.8	1.7	4.5	C	C	C	3	1	1.3	S	1	0.8	0.9	1.2	1.6	2.2	1.7	S	1.4	4.5	1.7	24	
22	22	1.5	1.5	1.8	1.1	1.2	1	1.1	1.1	1.1	1	0.9	1.2	1.1	0.8	1.7	1.8	1.7	1.2	1.4	1.4	0.9	S	0.7	0.6	1.8	1.2	24	
23	23	0.5	0.5	0.8	1	0.9	1.2	1.4	1.2	0.9	0.9	1.3	1.7	1.3	1.3	1.4	1.5	1.6	1.6	1.7	1.7	S	1.6	1.3	1.2	1.7	1.2	24	
24	24	1.9	1.4	1.6	2.3	1.7	2.5	3.2	5.1	4.1	3.2	2.8	2.9	2	1.4	1.1	1.4	1.7	1.6	3.9	S	5.4	6.9	5.4	3.6	6.9	2.9	24	
25	25	2.8	2.6	2.6	2.6	3.1	3	3.1	3.2	3.4	3.4	3.2	3	2.8	2.7	3.2	3.7	3.7	3.7	S	3.9	4.5	6.4	6.5	6	6.5	3.6	24	
26	26	5.1	4	2.9	3	4.6	3.4	2.6	2	1.9	C	C	C	5.2	3.7	5	4.7	5.1	S	6.5	7.2	7.7	6.6	5.4	4.8	7.7	4.6	24	
27	27	4.3	3.9	3.7	3.1	3.6	3.6	3.5	3.3	3.9	4.3	4.9	6.1	7	7.1	7.4	8.4	S	6.9	7.7	7.5	6.6	6.4	6.8	6	8.4	5.5	24	
28	28	5.3	4.9	4.6	4.5	4.4	4.9	4.3	3.8	4	4	3.8	3.4	3.6	3.4	2.9	S	4.5	4.2	4.2	3.7	3.5	3.1	3	2.9	5.3	4.0	24	
29	29	2.8	3.6	3.7	3	3	3.3	3.2	3.6	3	2.8	3.2	2.9	2.6	2.3	S	2.5	1.9	2.3	2.5	2.5	2.1	2	1.9	2.5	3.7	2.7	24	
30	30	2.1	1	0.1	0	0	0	0	0	0	0	0	0	0	S	0.7	0.5	0.6	0.6	0.6	0.6	1	1.1	0.7	0.4	2.1	0.4	24	
31	31	0.3	0.3	0.4	0.5	1.2	0.8	0.7	0.8	0.9	1	1.2	1.3	S	1.3	1.4	1.3	0.9	0.8	0.7	0.7	0.5	2.2	3.1	1.3	3.1	1.0	24	
HOURLY MAX		10.1	8.0	7.3	15.9	13.6	11.7	8.8	8.2	9.2	5.7	5.0	6.1	7.0	7.1	7.4	8.4	8.6	9.4	10.7	9.3	9.0	8.4	7.9	9.0				
HOURLY AVG		2.6	2.6	2.7	3.0	2.9	2.8	2.6	2.7	2.6	2.6	2.4	2.4	2.2	2.1	2.0	2.1	2.0	2.1	2.4	2.4	2.6	2.9	2.7	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

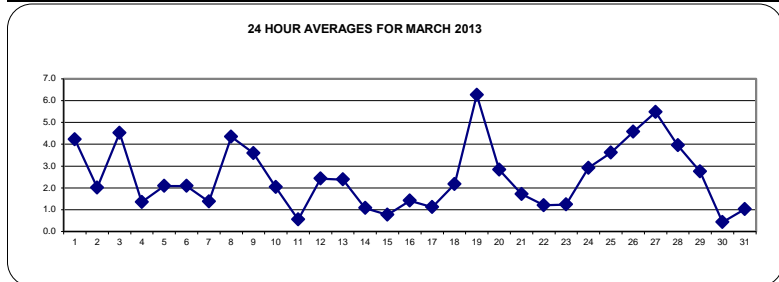
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

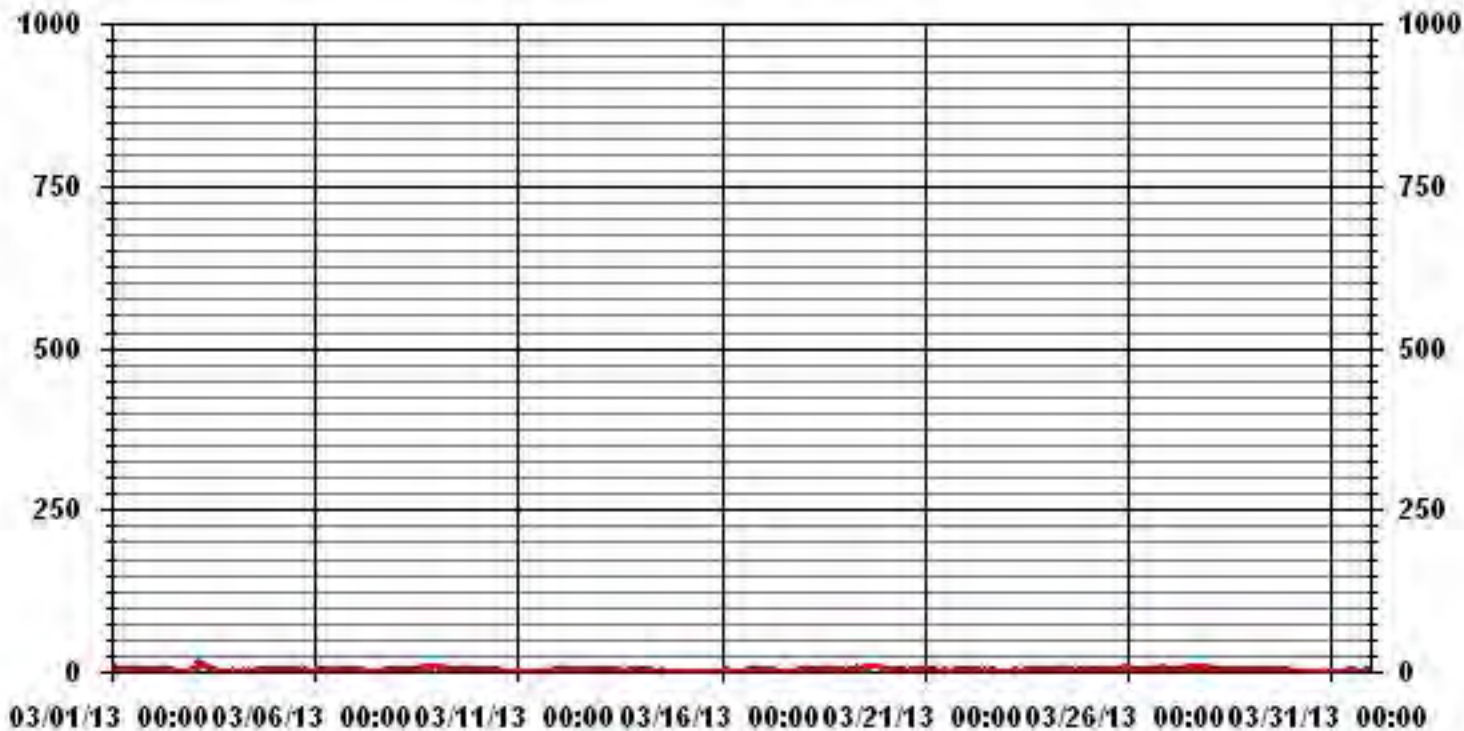
### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	673					
MAXIMUM 1-HR AVERAGE:	15.9	PPB	@ HOUR(S)	3	ON DAY(S)	3
MAXIMUM 24-HR AVERAGE:	6.3	PPB			ON DAY(S)	19
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	2.07		MONTHLY AVERAGE:	2.50	PPB	

24 HOUR AVERAGES FOR MARCH 2013



### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2013

## NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR 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	9.5	8.9	7.3	6.7	6.3	5.3	5.9	5	5	5.4	5.8	5.3	5.8	5.3	4.8	3.4	2.7	2.1	2.2	S	3.4	5	4.3	3.7	9.5	5.2	24	
2	2.6	3.2	5	4.3	4.5	5	5	4.2	4.3	3.4	3.4	2.4	1.9	1.7	1.1	1	1.1	1.3	S	1.8	1.3	1.3	1.3	5.6	5.6	2.9	24	
3	5.6	4.6	10.7	19.5	17.5	13.5	11.4	11.8	12.9	6.2	3.2	2.7	2.4	3.4	2.6	1.9	1.8	S	1.5	1.9	1.2	1.3	1.9	1.7	19.5	6.1	24	
4	1.7	1.5	1.4	1.2	1.7	2.9	2.7	2.2	1.5	2.5	3.1	3.1	1.8	1.8	1.9	1.8	S	2.1	2.2	2.8	2.9	3.9	4.5	3.3	4.5	2.4	24	
5	2.3	2	1.8	2.6	2.6	12	5.8	3.8	3.5	4.1	5.7	5.1	4.4	3.5	3.1	S	1.5	2.1	2.4	1.8	1.5	2.1	1.6	3.6	12.0	3.4	24	
6	1.6	1.6	1.8	1.8	2	2.2	3	3	2.8	2.3	2.2	5.4	1.8	1.5	S	3.3	3.7	3.5	3.8	3.5	3.7	7.4	6	3.1	7.4	3.1	24	
7	2.6	2.4	2.4	2.4	2.6	2.2	1.8	1.7	1.8	1.9	1.6	1.4	1.2	S	1.4	1.4	1.6	2.1	2.7	2.8	3.1	3.4	3.5	2.4	3.5	2.2	24	
8	4.2	4.2	4.2	3.7	3.7	3.3	2.7	2.9	4.3	2.9	3.3	3.4	S	11.5	5.2	6.1	7.2	7.4	7.7	7.6	8	8.5	8.4	11.9	11.9	5.8	24	
9	12.4	9.1	7.3	7.2	6.9	6.6	5.9	4.7	4.4	4.6	4.1	S	2.3	2	2.1	2.9	3.1	2.9	2.8	4.2	3.1	2.6	2.8	3.5	12.4	4.7	24	
10	3.5	3.5	3.7	4.1	4.6	4.7	5	11.4	5.9	6.7	S	5.3	5.2	1.8	0.8	0.6	0.6	0	0	0.3	0	0	0	0	11.4	2.9	24	
11	0	0	0	0	0	0	0	0	0	S	1.4	1	1.2	1	2.2	6.3	1.5	1.6	1.1	3.7	2.9	15.6	2.4	2.6	15.6	1.9	24	
12	3.4	3.4	3.2	3.5	3.8	3.7	4.8	5	S	5.3	4.7	3.5	2.6	2.2	2.3	2.1	2.1	2.1	2.6	2.6	2.7	3	3.1	2.9	5.3	3.2	24	
13	3.1	3.1	3.8	4.4	3.6	3.6	3.6	S	4.5	6	6.3	3.7	2.6	3	2.6	1.7	2.8	4	3.1	2.9	2.6	2.4	2.1	2.4	6.3	3.4	24	
14	2.7	3	2.5	2.2	2.7	2.7	S	2.8	2.2	1.4	1.4	2	2	1.8	2	1.8	1.5	1.8	1.5	1.5	2	1.8	1.8	1.5	3.0	2.0	24	
15	1.7	2	1.7	1.8	1.5	S	1.5	1.5	1.5	1.5	1.7	1.8	2.2	1.6	1.9	1.4	1.5	1.6	1.3	1.4	2.2	1.7	1.6	1.6	2.2	1.7	24	
16	1.7	4.3	5	4.7	S	2.9	1.2	1.7	1.6	1.4	1.4	1.4	1.6	1.4	1.7	2	2.2	2.5	2.8	2.5	2.3	2.3	2.2	2	5.0	2.3	24	
17	2	2	2.8	S	1.7	2	2.5	2.2	2.2	1.7	1.9	1.5	1.7	1.3	1.1	1.5	1.4	1.4	1.7	2.2	2.2	3.3	3	2.4	3.3	2.0	24	
18	2.8	3.3	S	4.1	4.2	3.3	21.7	4.6	4.2	4	3.6	2.8	2.7	2.6	2.7	3.3	1.7	2	1.7	1.7	2.3	3.6	3.5	3	21.7	3.9	24	
19	4.4	S	4.3	6.6	5.5	5.2	5.7	6.3	6.8	6	5.6	5.4	5.9	6.3	7.6	9.1	9.6	10.7	11.7	10.6	10.6	9.3	9.1	8.4	11.7	7.4	24	
20	S	6.1	5.6	4.9	4.6	3.8	3.6	3.3	2.8	2.2	1.9	C	C	C	C	C	C	2.5	3.3	3.1	2.6	2.5	2.5	S	6.1	3.5	24	
21	2.1	2.4	2.5	2.3	2.3	2.4	2.3	C	C	C	C	C	2.1	S	S	1.6	1.5	2	2.3	2.8	3.3	2.8	S	2.2	3.3	2.3	24	
22	2.2	2.5	2.8	2.2	2.2	1.9	2	1.7	1.7	1.8	1.6	1.9	1.7	1.7	2.6	2.4	2.2	1.9	2.3	2.2	1.8	S	1.5	1.5	2.8	2.0	24	
23	1.4	1.3	1.4	1.7	2	2	2.1	2.1	1.7	2.4	2.3	2.8	2	2.2	2.2	2.1	2.4	2.4	2.6	2.3	S	2.6	2.1	2	2.8	2.1	24	
24	3.6	2.1	3.6	3.2	2.9	3.6	5.5	6.6	5.5	5	3.9	5	3.1	2.5	2.2	2.6	2.5	2.9	6	S	6.6	8.2	6.9	4.7	8.2	4.3	24	
25	3.8	3.2	3.5	3.7	4.8	3.8	4.1	4.3	4.3	4.3	4.3	4.3	3.6	3.4	3.8	4.2	4.4	4.5	S	4.6	6.3	7.9	7.5	7.1	7.9	4.6	24	
26	6.5	5.4	4.2	4.1	6.1	4.7	4.1	2.8	C	C	C	C	C	5.1	5.5	5.5	6	S	8.1	8.6	10.2	7.8	6.9	5.8	10.2	6.0	24	
27	5.2	4.7	4.5	4	4.7	4.5	4.3	4.7	16.6	5.2	6	7.5	7.6	8.6	8.2	9.2	S	8.2	9.7	9.5	8.3	7.2	7.9	7.3	16.6	7.1	24	
28	6.6	5.9	5.5	5.5	5.8	6.4	5.3	5.9	5.3	5.7	4.8	4.5	4.8	4.5	3.9	S	5.4	5.8	6.1	11.9	4.3	3.9	4	18.6	18.6	6.1	24	
29	3.7	4.9	4.5	3.8	4.2	5.1	4.7	4.9	4.3	4.3	4.6	4	3.5	3.3	S	3.2	2.9	3.1	3.9	4.4	3.4	2.9	3	3.2	5.1	3.9	24	
30	3.6	2.3	0.7	0.5	0.1	1	1.4	0.2	0	0	0.1	0	0	S	1.2	1.3	1.6	1.7	1.4	1.7	2.8	3.4	2.1	1.7	3.6	1.3	24	
31	1.5	1.4	1.7	1.8	2.3	2.1	1.5	1.8	2	2	2.6	2.2	S	2	2.2	2	1.6	1.5	1.5	1.5	1.6	3.4	3.9	2.6	3.9	2.0	24	
HOURLY MAX	12.4	9.1	10.7	19.5	17.5	13.5	21.7	11.8	16.6	6.7	6.3	7.5	7.6	11.5	8.2	9.2	9.6	10.7	11.7	11.9	10.6	15.6	9.1	18.6				
HOURLY AVG	3.6	3.5	3.6	4.0	3.9	4.1	4.4	3.9	4.1	3.6	3.3	3.3	2.9	3.2	2.9	3.1	2.8	3.0	3.4	3.7	3.6	4.4	3.7	4.1				

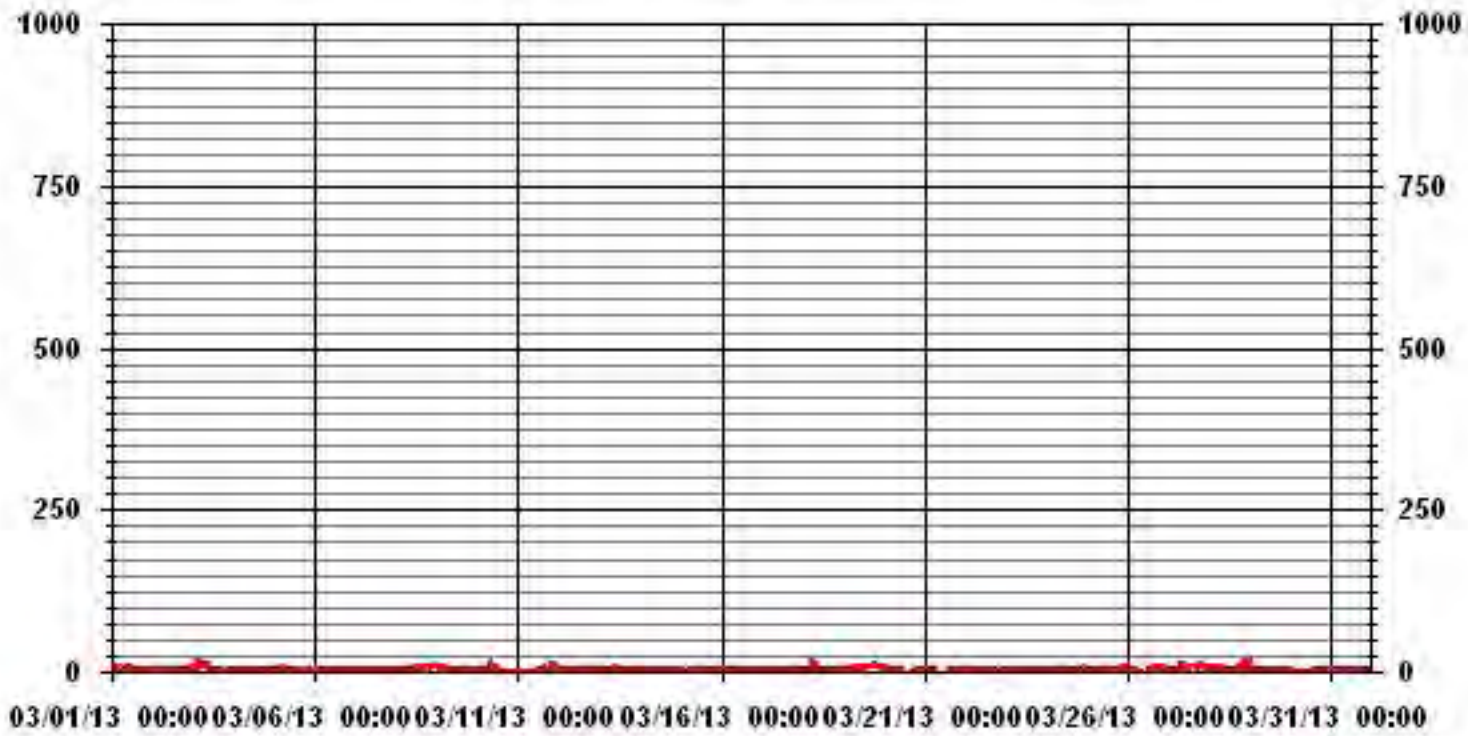
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	675				
MAXIMUM INSTANTANEOUS VALUE:	21.7	PPB	@ HOUR(S)	6	ON DAY(S) 18
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	16	HRS			
STANDARD DEVIATION:	2.67				

### 01 Hour Averages



— LICA31 NO2MAX PPB

LICA31  
 NO2\_ / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 31  
 Site Name : LICA31  
 Parameter : NO2\_  
 Units : PPB

Wind Parameter : WDR  
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	7.13	2.42	2.56	8.55	5.84	5.84	3.85	4.42	8.98	13.40	11.41	4.13	3.56	1.99	8.55	7.27	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	7.13	2.42	2.56	8.55	5.84	5.84	3.85	4.42	8.98	13.40	11.41	4.13	3.56	1.99	8.55	7.27	

Calm : .00 %

Total # Operational Hours : 701

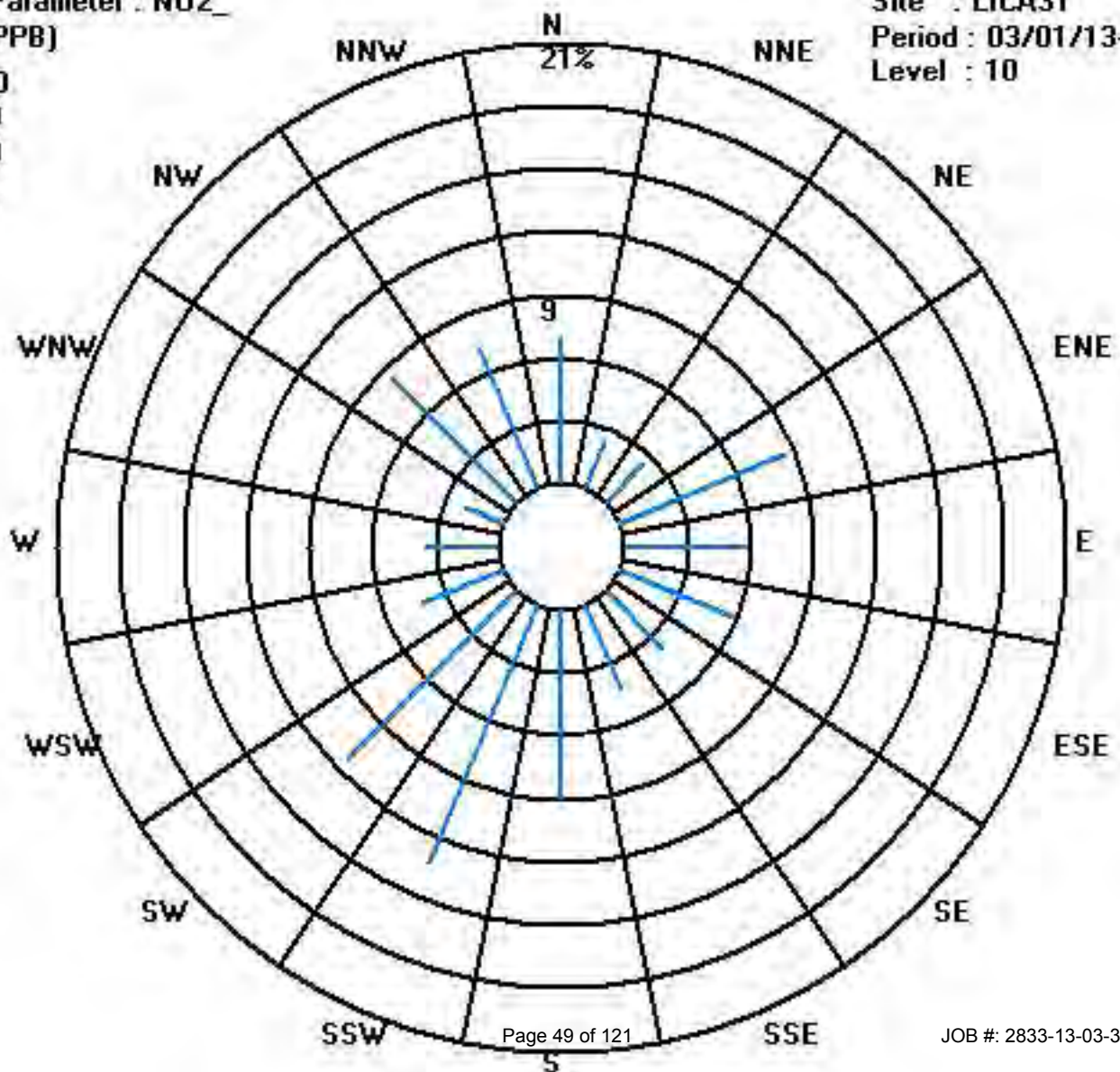
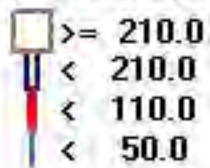
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	50	17	18	60	41	41	27	31	63	94	80	29	25	14	60	51	701
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	50	17	18	60	41	41	27	31	63	94	80	29	25	14	60	51	

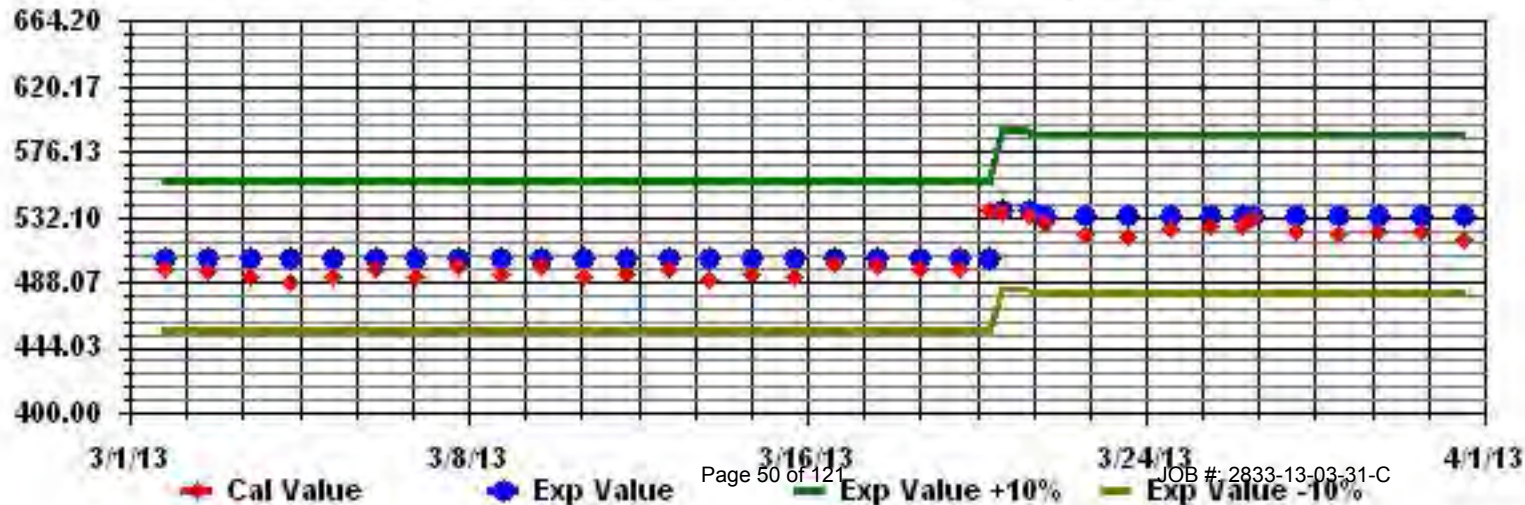
Calm : .00 %

Total # Operational Hours : 701





Calibration Graph for Site: LICA31 Parameter: H02\_ Sequence: H02 Phase: SPAll



# Nitric Oxide

# LAKELAND INDUSTRY & COMMUNITY ASSOICATION - ST. LINA

MARCH 2013

NITRIC OXIDE hourly averages in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR			
	HOUR START	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	0.2	0.2	0.1	0.1	0.1	0	0.2	0.1	0.7	1	1.7	1.5	1.5	1.1	0.7	0.4	0.1	0.1	0.1	S	0.2	0.3	0	0.1	1.7	0.5	24	
2	0	0.2	0	0.1	0.2	0	0.1	0.3	0.8	0.7	1	0.3	0.2	0	0	0	0	0	S	0.1	0.1	0	0	0	1.0	0.2	24	
3	0	0	0	0.1	0.2	0.2	0.2	0.5	2	1.3	0.4	0.1	0.3	0.5	0.2	0.1	0.1	S	0.4	0.5	0.4	0.3	0.5	0.3	2.0	0.4	24	
4	0.2	0.3	0.5	0.3	0.3	0.5	0.4	0.4	0.3	0.6	1.5	1.1	1	0.9	0.8	0.7	S	0.5	0.1	0	0.1	0	0	0.1	1.5	0.5	24	
5	0.1	0.1	0	0	0.1	0.1	0.4	0.1	0.7	1.3	1.8	2.1	0.9	0.5	0.2	S	0.3	0.1	0	0	0.1	0.1	0	0.1	2.1	0.4	24	
6	0	0	0	0	0.1	0	0	0.1	0.4	0.6	0.8	1.4	0.3	0	S	1.5	1.2	0.6	0.5	0.6	0.3	0.3	0.2	0.2	1.5	0.4	24	
7	0.4	0.4	0.2	0.5	0.1	0.3	0.4	0.5	0.6	0.8	1.3	1	0.6	S	0.4	0.2	0	0	0	0	0	0	0	0	1.3	0.3	24	
8	0	0.1	0.2	0.2	0.2	0.1	0	0	0.3	0.3	0.5	0.6	S	1.7	1.3	1.4	1.1	0.4	0	0.2	0.1	0.3	0.2	0	1.7	0.4	24	
9	0	0	0	0	0	0	0	0.3	0.5	1.3	1.5	S	1.1	0.6	0.3	0.4	0.1	0	0	0	0	0	0	0	1.5	0.3	24	
10	0	0	0	0.1	0.1	0.1	0.1	0.6	1.2	1.7	S	3.1	1.6	0.5	0.1	0.1	0	0	0	0	0	0	0	0	3.1	0.4	24	
11	0	0	0	0	0	0	0	0	0	S	0.4	0.3	0.2	0.2	0.4	0.3	0.2	0.1	0	0.1	0	0.1	0.1	0.3	0.4	0.1	24	
12	0	0	0	0.1	0.1	0	0	0.3	S	2.6	1.7	0.7	0.4	0.2	0.3	0.3	0.1	0	0	0	0.1	0	0	0.2	2.6	0.3	24	
13	0	0	0.1	0	0	0	0	S	0.6	0.7	1.1	0.5	0.6	0.7	0	0	0	0	0	0	0	0	0	0	1.1	0.2	24	
14	0	0	0	0	0	0	S	0.7	0.6	0.4	0.6	0.9	0.8	0.7	0.7	0.6	0.4	0.2	0.2	0.3	0.2	0.4	0.2	0.2	0.9	0.4	24	
15	0.2	0.2	0.4	0.1	0.2	S	0.3	0.1	0.2	0.4	0.5	0.5	0.5	0.2	0.2	0	0.1	0	0	0	0	0	0	0	0	0.5	0.2	24
16	0	0	0	0	S	0.6	0.1	0.3	0.4	0.5	0.5	0.5	0.9	0.4	0.6	0.7	0.6	0.5	0.2	0	0.2	0.1	0.2	0.3	0.9	0.3	24	
17	0.2	0	0.2	S	0.1	0	0	0.2	0.5	0.3	0.4	0.4	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.1	24
18	0	0	S	0.4	0.2	0.3	0.6	0.6	0.8	0.8	1.1	0.7	0.8	0.8	0.5	0.5	0.2	0	0	0.2	0	0.2	0.3	0.2	1.1	0.4	24	
19	0.2	S	0.3	0.1	0.1	0	0.2	0.6	1.4	2.2	2.6	3	3	2.9	3.1	3.5	3.1	1.8	0.3	0	0	0	0	0	3.5	1.2	24	
20	S	0.6	0.2	0	0	0.1	0	0.1	0	0.1	0	0	C	C	C	C	2.1	0	0	0	0	0	0.1	S	2.1	0.2	24	
21	0.3	0.4	0	0.1	0	0.1	0	0.1	C	C	C	1.9	0.2	0.2	S	0.3	0	0	0	0	0	0	S	0	1.9	0.2	24	
22	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0.4	0	0	0	0	0	0	0	S	0.3	0.1	0.4	0.0	24
23	0.2	0.1	0	0	0.1	0	0.3	0.2	0.4	0.7	0.7	0.9	0.2	0.1	0	0	0.1	0	0	0	S	0.4	0.3	0.1	0.9	0.2	24	
24	0	0.1	0	0.2	0.3	0.4	0.3	1.7	2.7	2.6	2.1	1.5	0.8	0.4	0.3	0.3	0.3	0.2	0.2	S	0.8	0.5	0.5	0.4	2.7	0.7	24	
25	0.5	0.6	0.4	0.5	0.6	0.5	0.6	0.9	1.6	2	1.9	1.3	1	0.8	0.8	1	0.9	0.6	S	0	0	0	0	0	2.0	0.7	24	
26	0	0	0	0	0	0	0	0.1	0.6	C	C	C	3.6	2	2.2	1.8	1.3	S	0.5	0.3	0	0	0.3	0.1	3.6	0.6	24	
27	0	0.2	0	0	0	0.2	0.1	0.2	0.9	1	1.2	1.5	1	1.4	1.3	1.3	S	1.3	0.7	0.4	0.4	0.3	0.4	0.4	1.5	0.6	24	
28	0.2	0.4	0.3	0.3	0.3	0.5	0.5	0.9	1.2	1.5	1.6	1.4	1.4	1.2	0.7	S	0.7	0.4	0.1	0.7	0.2	0.2	0.2	0.6	1.6	0.7	24	
29	0.2	0.4	0.3	0.4	0.4	0.7	0.6	0.7	1	1.5	2	1.7	1.4	1.1	S	0.4	0	0.2	0.2	0	0	0	0	0	2.0	0.6	24	
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
31	0	0	0	0	0	0	0	0	0	0	0.2	0.2	S	0.5	0.4	0.5	0.3	0.2	0.2	0.2	0.1	0.1	0	0.1	0.5	0.1	24	
HOURLY MAX	0.5	0.6	0.5	0.5	0.6	0.7	0.6	1.7	2.7	2.6	2.6	3.1	3.6	2.9	3.1	3.5	3.1	1.8	0.7	0.7	0.8	0.5	0.5	0.6				
HOURLY AVG	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.7	1.0	1.0	1.0	0.9	0.7	0.6	0.6	0.5	0.2	0.1	0.1	0.1	0.1	0.1	0.1				

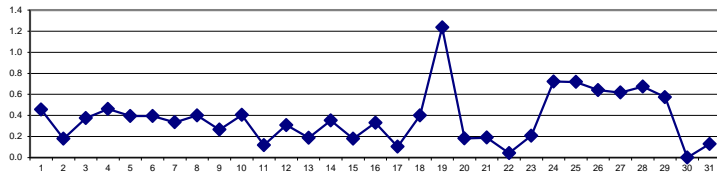
STATUS FLAG CODES

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

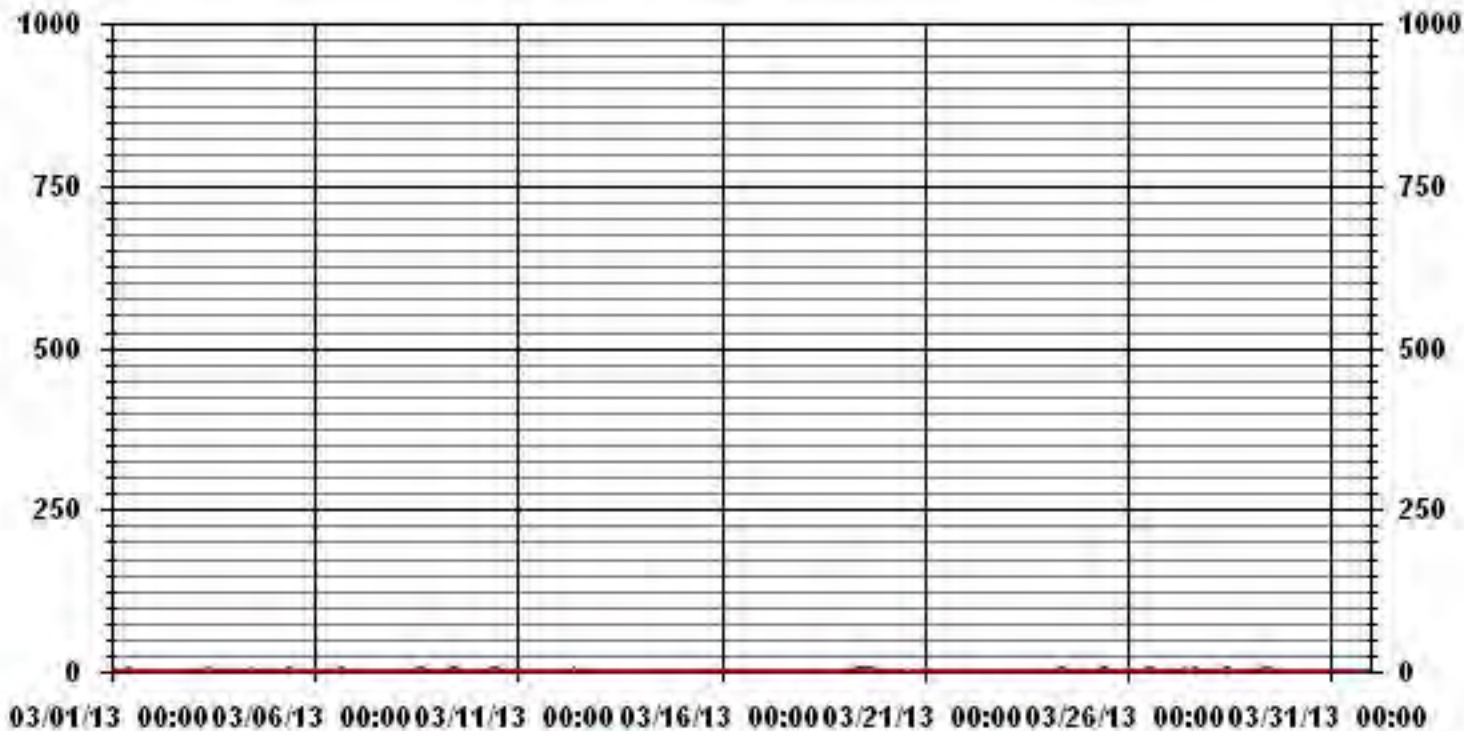
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	444					
MAXIMUM 1-HR AVERAGE:	3.6	PPB	@ HOUR(S)	12	ON DAY(S)	26
MAXIMUM 24-HR AVERAGE:	1.2	PPB			ON DAY(S)	19
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.57		MONTHLY AVERAGE:	0.37	PPB	

24 HOUR AVERAGES FOR MARCH 2013



### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2013

## NITRIC OXIDE 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 MAX.	24-HOUR 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	0.8	0.8	0.8	0.8	0.8	0.6	1.4	1.1	1.4	1.6	3.5	2.1	2.6	2.1	1.9	1.7	1.1	0.9	0.9	S	0.9	1.3	0.7	0.7	3.5	1.3	24
2	0.4	0.7	0.7	0.7	0.7	0.7	0.7	0.9	1.9	1.7	1.8	1.1	1	0.7	0.5	0.4	0.5	0.8	S	0.7	0.5	0.5	0.7	0.5	1.9	0.8	24
3	0.7	0.5	0.8	0.7	0.8	0.7	0.8	2.2	2.9	2.1	1.1	0.8	1.1	1.4	0.8	0.6	0.9	S	1.1	1.1	1.2	0.9	1.1	1.1	2.9	1.1	24
4	0.9	0.8	1.2	0.9	0.9	1.2	1.1	1.1	0.9	1.5	2	1.7	1.6	1.5	1.5	1.5	S	1.2	0.8	0.8	0.6	0.5	0.7	0.8	2.0	1.1	24
5	0.8	0.7	0.7	0.8	0.8	12	2.7	0.8	1.8	2.2	3.4	2.8	2.3	1.6	1.4	S	1.1	1.2	0.6	0.4	0.6	1	0.8	1.1	12.0	1.8	24
6	0.5	0.5	0.7	0.5	0.8	0.8	0.8	0.7	1.2	1.4	1.4	2.8	1	0.7	S	2.2	2	1.4	1.1	1.1	0.9	0.9	0.7	1	2.8	1.1	24
7	1	1.1	0.8	1.1	0.6	0.9	1.1	1	1.1	1.4	2	1.7	1.3	S	0.9	0.6	0.4	0.6	0.4	0.6	0.4	0.7	0.5	0.5	2.0	0.9	24
8	0.7	0.8	0.6	0.6	0.7	0.7	0.8	0.7	1.6	0.8	1.1	1.3	S	14.1	2.4	2.2	2.4	1.2	0.7	1.3	1.2	20.6	0.7	0.5	20.6	2.5	24
9	0.5	0.4	0.3	0.6	0.5	0.7	0.7	1.1	1.3	2.1	2.8	S	1.9	1.5	1	1	0.7	0.7	0.4	0.3	0.7	0.4	0.4	0.5	2.8	0.9	24
10	0.5	0.5	0.5	0.8	1.3	0.7	0.8	12.1	2.2	2.6	S	4	2.8	1.2	0.8	0.9	1	0.8	0.8	0.7	0.8	1	0.8	0.7	12.1	1.7	24
11	0.8	0.9	0.8	0.7	0.7	1.2	0.7	0.9	0.8	S	1	1.7	0.6	0.9	2.6	8.6	0.9	0.7	0.8	0.6	0.6	9.9	0.9	1.1	9.9	1.7	24
12	0.6	0.6	0.6	0.6	0.9	0.9	0.6	0.9	S	3.3	2.8	1.7	1.1	0.8	1	0.8	0.8	0.6	0.6	0.6	0.8	0.5	0.5	0.8	3.3	1.0	24
13	0.6	0.5	0.8	0.6	0.5	0.5	0.6	S	1.3	1.2	2	1.6	1.6	1.3	1	0.5	1	1.3	0.7	0.4	0.4	0.4	0.5	0.3	2.0	0.9	24
14	0.6	0.4	0.5	0.3	0.6	0.6	S	1.3	1.1	1.1	1.2	1.3	1.5	1.3	1.3	1.4	1.2	0.9	0.9	1	1.1	1.1	0.7	0.7	1.5	1.0	24
15	0.7	0.7	0.9	0.9	0.7	S	1.3	0.7	1	1.2	1.3	1.2	1.2	1.2	0.9	1.1	0.9	0.5	0.6	0.5	0.4	0.7	0.4	0.4	1.3	0.8	24
16	0.4	0.4	0.4	0.7	S	1.5	0.6	0.9	1.4	1.2	1.1	1.2	1.4	1.1	1.2	1.5	1.2	1.2	0.7	0.7	0.7	1	1	1.5	1.0	24	
17	0.9	0.4	0.9	S	0.7	0.4	0.7	1.1	1.4	1.1	1.3	1.1	1	0.4	0.5	0.7	0.5	0.6	0.1	0.5	0.5	0.5	0.5	0.2	1.4	0.7	24
18	0.2	0.4	S	1	0.9	1	18.3	1.2	1.4	1.4	1.9	1.4	1.6	2.3	1.2	3	1.3	0.7	0.6	0.7	0.7	0.9	0.9	0.9	18.3	1.9	24
19	1.4	S	1.2	0.7	0.7	0.4	1	1.4	2.4	3.2	3.2	3.5	3.8	3.6	3.8	4.4	4.2	3.1	1.1	0.6	0.6	0.6	0.6	0.4	4.4	2.0	24
20	S	1.2	0.9	0.8	0.4	0.6	0.6	0.9	0.6	0.7	0.8	C	C	C	C	C	C	0.9	0.5	0.6	0.6	0.6	0.7	S	1.2	0.7	24
21	1.2	0.9	0.7	0.6	0.6	0.8	0.6	C	C	C	C	C	0.7	S	S	1.2	0.6	0.5	0.7	0.7	0.6	0.1	S	0.7	1.2	0.7	24
22	0.6	0.3	0.5	0.3	0.8	0.5	0.4	0.5	0.6	0.6	0.9	1.4	1.1	0.6	1.7	1.7	0.9	0.5	0.3	0.4	0.3	S	1.2	0.9	1.7	0.7	24
23	1	0.6	0.6	0.7	0.9	0.7	0.9	0.9	1.5	2.7	1.6	2.1	1	0.8	0.5	0.7	0.7	0.5	0.5	S	1.1	1.1	0.8	2.7	1.0	24	
24	0.4	0.7	0.7	0.7	0.8	1.1	1.2	2.9	4.1	4.1	4.1	3	2	2	1.1	0.9	1	0.8	1	S	1.5	1.2	1	1	4.1	1.6	24
25	1	1.4	1	1.1	1.4	1.2	1.2	1.8	2.3	2.8	3.1	2.2	2.2	1.5	1.5	1.6	1.9	1.4	S	0.6	0.6	0.5	0.4	0.4	3.1	1.4	24
26	0.4	0.5	0.5	0.6	0.7	0.4	0.7	0.7	C	C	C	C	C	2.7	2.9	2.4	2.1	S	1.5	1.2	0.7	0.8	0.8	0.6	2.9	1.1	24
27	0.7	0.9	0.6	0.5	0.6	0.9	0.7	1	7.8	2.2	1.8	2.3	1.9	3.6	2.1	2.1	S	2.8	2.1	1	1.3	1	1	1.3	7.8	1.7	24
28	1	1.3	1	1	1.2	1.2	1.8	2.4	3.3	2.1	2.1	2.1	2	1.3	S	1.8	1.5	0.9	24.8	0.8	1.2	1	10.3	24.8	2.9	24	
29	0.7	1	1	1	1	1.4	1.2	1.2	1.9	2.4	2.6	2.5	1.9	1.6	S	1.3	0.7	0.7	1.1	0.7	0.6	0.7	0.5	2.6	1.2	24	
30	1	0.5	0.8	0.7	0.7	1	1.8	1	0.9	1.3	1.3	1	1.1	S	0.8	0.5	0.5	0.4	0.4	0.4	0.2	0.5	0.8	0.2	1.8	0.8	24
31	0.4	0.2	0.3	0.4	0.2	0.5	0.5	0.7	0.5	0.7	1.8	0.7	S	1.4	1.1	1.1	0.8	1	0.8	0.8	0.8	0.9	0.7	0.7	1.8	0.7	24
HOURLY MAX	1.4	1.4	1.2	1.1	1.4	12.0	18.3	12.1	7.8	4.1	4.1	4.0	3.8	14.1	3.8	8.6	4.2	3.1	2.1	24.8	1.5	20.6	1.2	10.3			
HOURLY AVG	0.7	0.7	0.7	0.7	0.8	1.2	1.5	1.5	1.8	1.9	2.0	1.9	1.6	2.0	1.4	1.7	1.2	1.0	0.8	1.5	0.7	1.7	0.8	1.0			

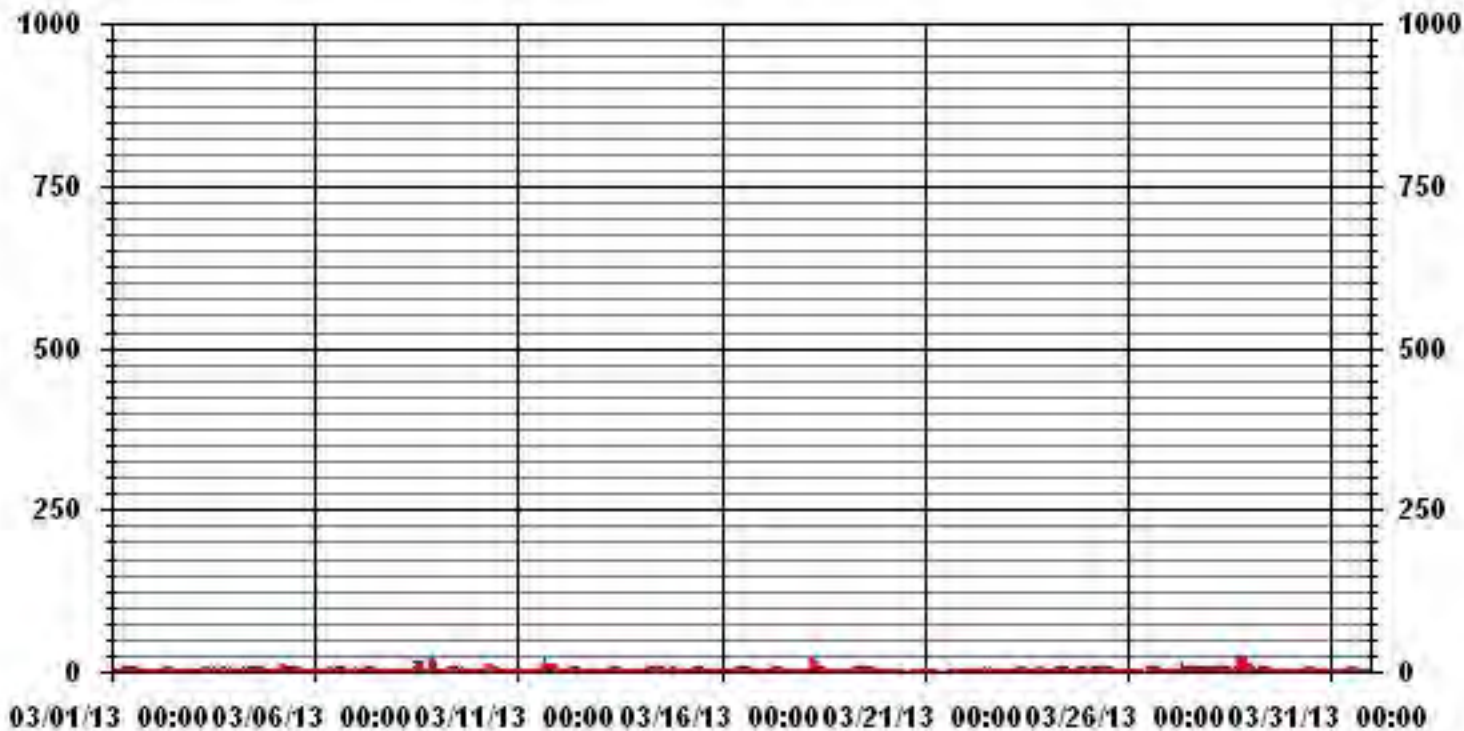
### STATUS FLAG CODES

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:	694
MAXIMUM INSTANTANEOUS VALUE:	24.8 PPB @ HOUR(S) 19 ON DAY(S) 28
IZS CALIBRATION TIME:	34 HRS
MONTHLY CALIBRATION TIME:	16 HRS
STANDARD DEVIATION:	1.79
OPERATIONAL TIME:	744 HRS

### 01 Hour Averages



LICA31  
 NO\_ / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 31  
 Site Name : LICA31  
 Parameter : NO\_  
 Units : PPB

Wind Parameter : WDR  
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	7.13	2.42	2.56	8.55	5.84	5.84	3.85	4.42	8.98	13.40	11.41	4.13	3.56	1.99	8.55	7.27	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	7.13	2.42	2.56	8.55	5.84	5.84	3.85	4.42	8.98	13.40	11.41	4.13	3.56	1.99	8.55	7.27	

Calm : .00 %

Total # Operational Hours : 701

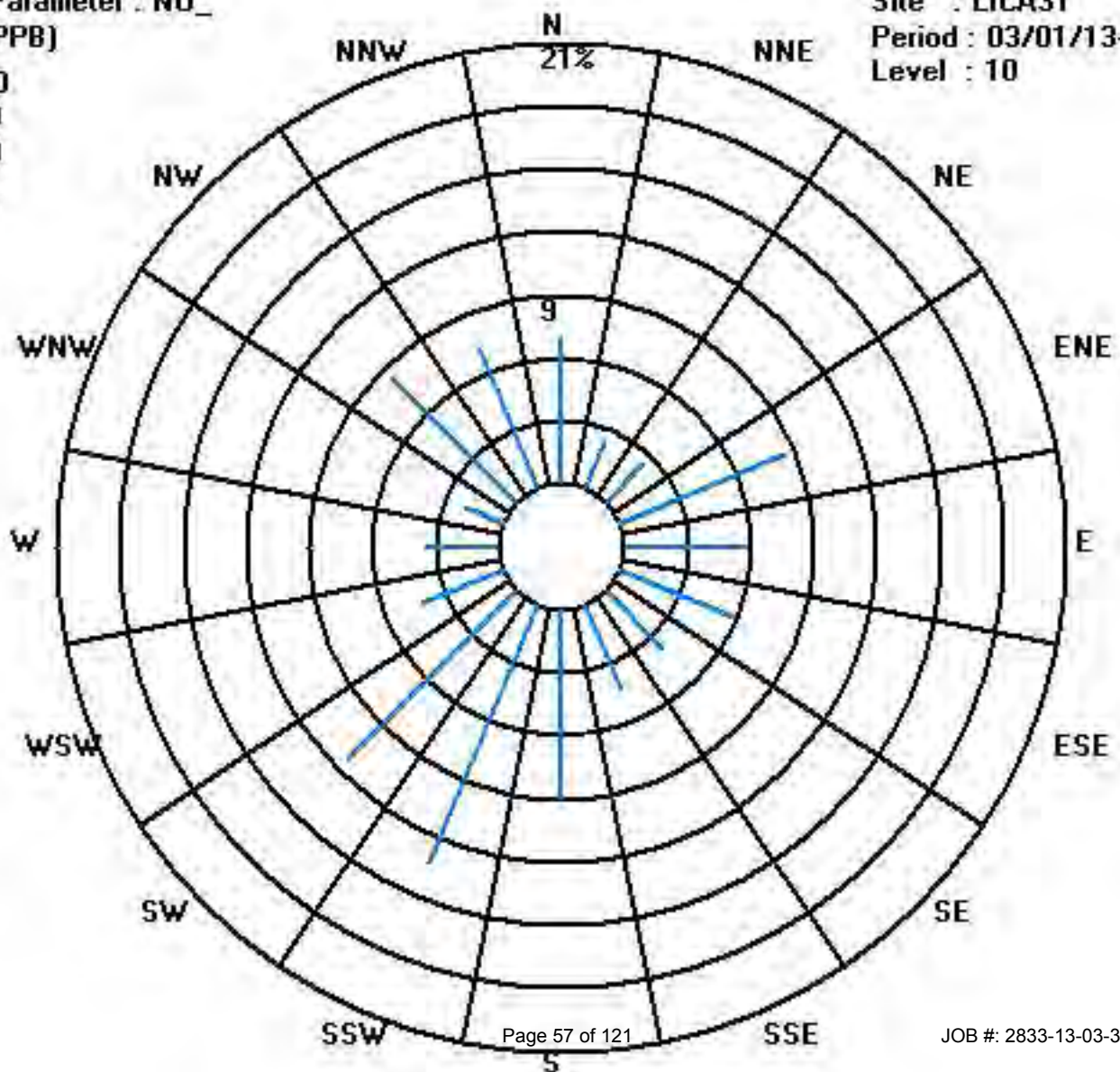
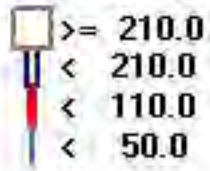
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	50	17	18	60	41	41	27	31	63	94	80	29	25	14	60	51	701
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	50	17	18	60	41	41	27	31	63	94	80	29	25	14	60	51	

Calm : .00 %

Total # Operational Hours : 701





# Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2013

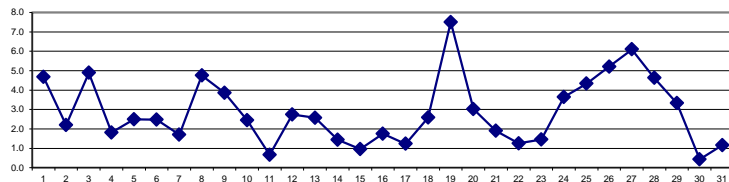
OXIDES OF NITROGEN hourly averages in ppb

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	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	8.9	7.8	6.6	6.1	5.3	4.8	4.8	4.5	4.9	5.6	6.5	6.2	6.2	5.6	3.4	2.8	1.8	1.4	1.3	S	3	3.9	3.6	2.7	8.9	4.7	24	
2	1.9	2.6	3.9	3.6	3.8	4.3	3.3	3.6	3.9	3.2	3.5	1.8	1.6	1.1	0.6	0.3	0.8	0.9	S	1.2	1.3	0.7	0.6	0.6	2.6	4.3	2.2	24
3	4.9	3.6	7.3	16	13.8	11.9	9	8.7	11.2	5.7	2.3	2.1	1.9	2.7	1.8	1.4	1.1	S	1.2	1.3	1	0.8	1.4	1.4	16.0	4.9	24	
4	1.2	1	1.1	0.7	1	1.6	1.5	1.2	1.1	1.9	3.7	2.3	1.9	1.9	1.9	1.8	S	1.9	1.8	2	2.3	2.7	3	2.3	3.7	1.8	24	
5	1.7	1.8	1.5	1.9	2.1	2.3	3.3	2.9	3.7	4.6	5.8	6.6	4.2	3.1	2.4	S	1	1.1	1.4	1.1	1.1	1.3	0.9	1.4	6.6	2.5	24	
6	1	1	1.1	1.2	1.5	1.5	2.1	2.2	2.4	2.1	2.3	4.2	1.4	0.8	S	3.9	4	3	3.5	3.1	2.9	5.1	4.7	2.1	5.1	2.5	24	
7	2.2	2.2	2	2	1.8	1.8	1.4	1.4	1.8	1.8	2.2	1.7	1.2	S	1.3	1	0.9	1.3	1.5	1.9	1.7	2.4	2.3	1.5	2.4	1.7	24	
8	2.4	3.5	3.4	3.1	3	2.5	1.9	2.2	2.6	2.4	3	3.1	S	4.7	5.6	6.3	7.1	7	6.9	7	7.1	7.5	7.9	9	9.0	4.7	24	
9	10.1	8	6.4	6.4	6	5.4	5.1	4.4	4.3	4.7	4.7	S	2.6	1.9	1.6	2.3	2.3	2.2	1.4	2.1	1.9	1.4	1.5	2	10.1	3.9	24	
10	2.5	2.5	2.9	3.3	3.6	3.8	4.2	5.6	6.1	7.4	S	7.4	5.2	1.3	0.2	0.1	0	0	0	0	0	0	0	0	7.4	2.4	24	
11	0	0	0	0	0	0	0	0	0	S	1	0.7	0.6	0.6	1	0.9	0.6	0.7	0.5	1.1	1.5	2.3	1.6	2.3	2.3	0.7	24	
12	2.8	2.7	2.4	2.9	2.9	3	3.8	4.5	S	7	5.2	3.1	2.1	1.8	1.8	1.7	1.4	1.5	1.7	1.8	2	2.2	2.2	2.4	7.0	2.7	24	
13	2.3	2.3	2.8	3.5	2.9	2.8	2.6	S	4	5.6	6.1	2.7	2.6	3	1.3	0.8	1.7	2.4	2	1.7	1.7	1.6	1.2	1.6	6.1	2.6	24	
14	1.9	1.7	1.6	1.2	1.7	1.9	S	2.5	1.7	1.1	1.4	1.7	1.9	1.8	1.7	1.4	1.2	0.8	0.8	0.9	1.3	1.1	0.9	0.8	2.5	1.4	24	
15	0.8	1	1.2	0.8	0.7	S	1	0.9	1.1	1.3	1.5	1.4	1.3	1	1.4	0.8	0.9	0.4	0.5	0.5	1	0.8	0.8	0.8	1.5	1.0	24	
16	0.7	2.5	4.1	4	S	2.2	0.6	1	1.1	1.3	1.2	1.3	1.8	1	1.5	1.9	2	2	2.2	1.6	1.6	1.6	1.5	1.5	4.1	1.7	24	
17	1.4	1.1	1.9	S	1.3	1.1	1.5	1.7	2	1.3	1.5	1.3	1.2	0.6	0.7	0.7	0.5	0.8	0.5	0.7	0.7	2.5	1.8	1.5	2.5	1.2	24	
18	1.6	2.5	S	3.7	3.6	3	3.4	3.2	4	3.8	3.5	2.7	2.7	2.8	2.4	2.3	1.4	1.1	1	1.2	1.5	2.5	3	2.4	4.0	2.6	24	
19	3	S	3.8	4.7	4.7	4.4	4.9	5.8	6.9	7	7.2	7.7	8.2	8.4	9.1	11.2	11.7	11.2	11	9.3	9	8.4	7.9	7	11.7	7.5	24	
20	S	5.5	5.1	4.3	3.6	3.3	2.9	2.8	2.2	1.8	1.3	3.6	C	C	C	C	5.1	2.1	2.6	2.4	1.9	1.9	2	S	5.5	3.0	24	
21	1.8	2.1	1.8	1.8	1.8	1.9	1.7	4.6	C	C	C	4.9	1.2	1.5	S	1.3	0.8	0.9	1.2	1.6	2.2	1.7	S	1.4	4.9	1.9	24	
22	1.5	1.5	1.8	1.1	1.2	1	1.1	1.1	1.1	1	1	1.3	1.1	0.8	2.1	1.8	1.7	1.2	1.4	1.4	0.9	S	1	0.7	2.1	1.3	24	
23	0.7	0.6	0.8	1	1	1.2	1.7	1.4	1.3	1.6	2	2.6	1.5	1.4	1.4	1.5	1.7	1.6	1.7	1.7	S	2	1.6	1.3	2.6	1.4	24	
24	1.9	1.5	1.6	2.5	2	2.9	3.5	6.8	6.8	5.8	4.9	4.4	2.8	1.8	1.4	1.7	2	1.8	4.1	S	6.2	7.4	5.9	4	7.4	3.6	24	
25	3.3	3.2	3	3.1	3.7	3.5	3.7	4.1	5	5.4	5.1	4.3	3.8	3.5	4	4.7	4.6	4.3	S	3.9	4.5	6.4	6.5	6	6.5	4.3	24	
26	5.1	4	2.9	3	4.6	3.4	2.6	2.1	2.5	C	C	C	8.8	5.7	7.2	6.5	6.4	S	7	7.5	7.7	6.6	5.7	4.9	8.8	5.2	24	
27	4.3	4.1	3.7	3.1	3.6	3.8	3.6	3.5	4.8	5.3	6.1	7.6	8	8.5	8.7	9.7	S	8.2	8.4	7.9	7	6.7	7.2	6.4	9.7	6.1	24	
28	5.5	5.3	4.9	4.8	4.7	5.4	4.8	4.7	5.2	5.5	5.4	4.8	5	4.6	3.6	S	5.2	4.6	4.3	4.4	3.7	3.3	3.2	3.5	5.5	4.6	24	
29	3	4	4	3.4	3.4	4	3.8	4.3	4	4.3	5.2	4.6	4	3.4	S	2.9	1.9	2.5	2.7	2.5	2.1	2	1.9	2.5	5.2	3.3	24	
30	2.1	1	0.1	0	0	0	0	0	0	0	0	0	0	S	0.7	0.5	0.6	0.6	0.6	0.6	1	1.1	0.7	0.4	2.1	0.4	24	
31	0.3	0.3	0.4	0.5	1.2	0.8	0.7	0.8	0.9	1	1.4	1.5	S	1.8	1.8	1.8	1.2	1	0.9	0.9	0.6	2.3	3.1	1.4	3.1	1.2	24	
HOURLY MAX	10.1	8.0	7.3	16.0	13.8	11.9	9.0	8.7	11.2	7.4	7.2	7.7	8.8	8.5	9.1	11.2	11.7	11.2	11.0	9.3	9.0	8.4	7.9	9.0				
HOURLY AVG	2.7	2.7	2.8	3.1	3.0	3.0	2.8	3.1	3.3	3.6	3.4	3.4	3.0	2.8	2.6	2.6	2.5	2.4	2.6	2.5	2.7	3.0	2.9	2.6				

STATUS FLAG CODES

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

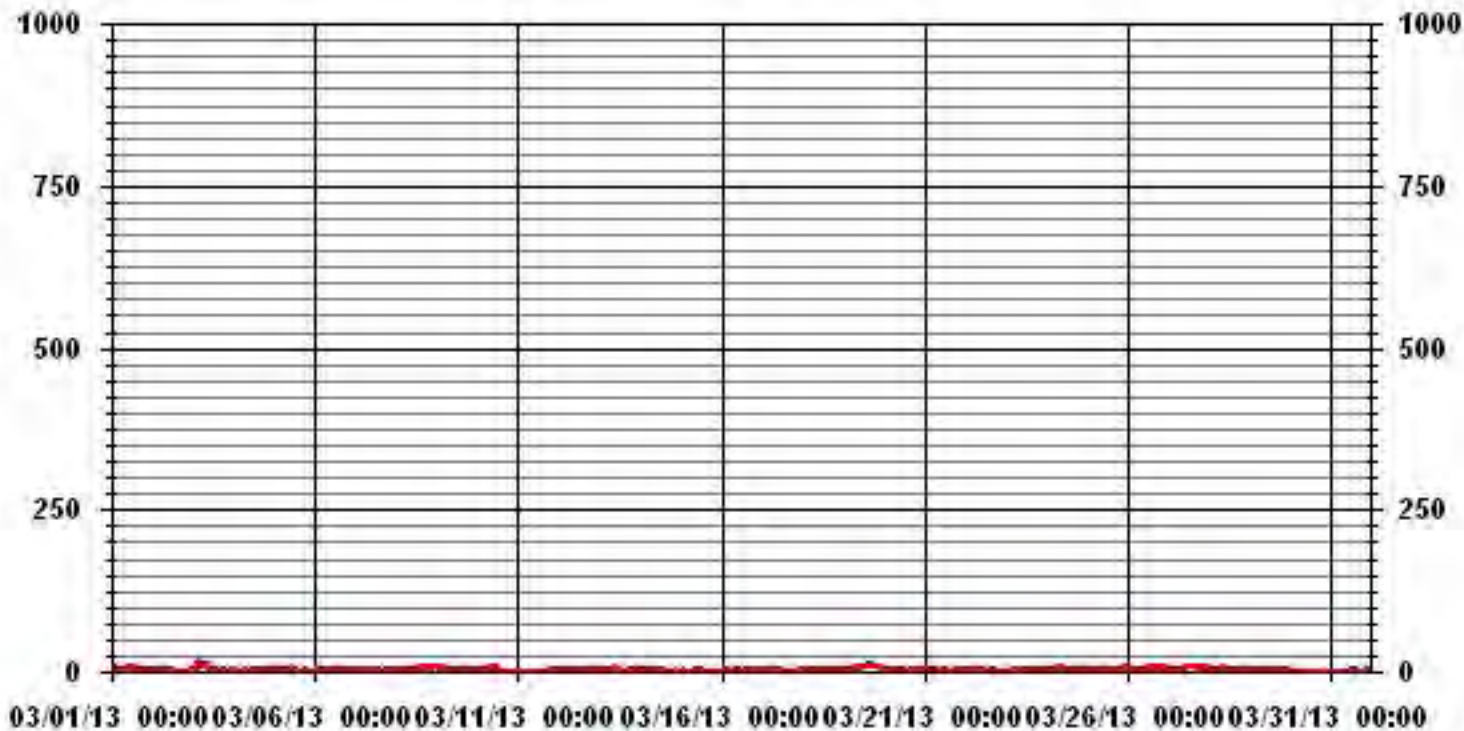
24 HOUR AVERAGES FOR MARCH 2013



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	674
MAXIMUM 1-HR AVERAGE:	16.0 PPB @ HOUR(S) 3 ON DAY(S) 3
MAXIMUM 24-HR AVERAGE:	7.5 PPB ON DAY(S) 19
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	10 HRS
STANDARD DEVIATION:	2.31
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME:	100.0 %
MONTHLY AVERAGE:	2.87 PPB

### 01 Hour Averages



— LICA31 NOX\_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2013

OXIDES OF NITROGEN 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	9.7	9	7.6	6.9	6.3	5.6	7	5.5	5.6	6.1	8.5	7.1	8	6.6	6.1	3.9	3.4	2.1	2.2	S	3.9	5.5	4.3	3.6	9.7	5.8	24
2	2.5	3.6	5.1	4.6	4.7	5	5.4	4.5	5.7	4.9	4.9	3	2.4	2.4	1.2	1	1.3	2	S	2	1.2	1.4	1.2	5.5	5.7	3.3	24
3	5.8	4.5	11	19.4	17.7	13.6	11.7	13.8	15	7.7	3.7	2.8	2.9	3.7	3.1	1.9	1.7	S	1.9	2.2	1.9	1.5	2.2	2.2	19.4	6.6	24
4	1.8	1.6	1.7	1.2	1.8	3.6	3.3	2.4	1.9	3.5	4.4	3.7	2.7	2.5	2.6	2.6	S	2.4	2.3	2.7	3.2	4	5	3.3	5.0	2.8	24
5	2.4	2.3	2.2	2.8	2.8	23.1	8.3	4.6	4.9	6.1	9	7.7	6.3	5	4.5	S	1.7	2.5	2.1	1.7	1.7	2.6	1.5	4.2	23.1	4.8	24
6	1.7	1.5	1.7	2	2.1	2.3	3.1	3	3.6	3.2	3	7.9	2.2	1.7	S	4.8	4.9	3.9	4.1	3.8	3.8	7.5	6.1	3.4	7.9	3.5	24
7	3	2.8	2.7	2.9	2.5	2.4	2	2.2	2.2	2.4	2.8	2.5	1.8	S	1.9	1.5	1.5	2	2.5	2.5	2.6	3.1	3.2	2.4	3.2	2.4	24
8	4	4.1	4.2	3.7	3.5	3.2	2.5	2.9	5.4	2.9	3.7	4	S	24.2	7	8	9.2	8	8.1	8.6	8.8	23.2	8.5	11.6	24.2	7.4	24
9	12.3	8.9	7.1	7.4	6.9	6.8	5.7	5.2	5.3	6.2	6.6	S	3.4	2.8	2.2	3	3.1	3.1	2.5	4.1	3.1	2.3	2.3	3	12.3	4.9	24
10	3.4	3.2	3.6	3.9	5.2	4.5	5	22.8	7.5	8.2	S	8.6	7.4	2.6	0.9	0.7	0.7	0.4	0.3	0.4	0	0.1	0.1	0	22.8	3.9	24
11	0	0.2	0.1	0.1	0	0.6	0.1	0.1	0	S	2	1.4	1.2	1.2	4.2	13.9	1.4	1.8	1.2	4	3.2	24.9	2.4	2.9	24.9	2.9	24
12	3.7	3.7	3.2	3.6	3.5	3.9	4.8	5.6	S	7.9	6.9	4.7	2.9	2.4	2.7	2.2	2.2	2.2	2.2	2.5	2.7	2.7	3	3	7.9	3.6	24
13	2.9	3	3.8	4.2	3.7	3.5	3.8	S	4.6	6.8	7.6	4.6	4	3.8	3.4	1.9	3.4	4.9	3.2	2.8	2.6	2.3	2.1	2.3	7.6	3.7	24
14	2.9	2.6	2.3	1.8	2.9	2.6	S	3.4	2.9	1.8	2.1	2.6	2.5	2.3	2.3	2.4	1.9	1.5	1.6	1.7	1.9	1.9	1.7	1.4	3.4	2.2	24
15	1.6	1.7	1.8	1.6	1.3	S	2	1.5	1.8	2	2.3	2.1	2.5	2.2	2.2	1.9	1.6	1.6	1.6	1.2	2	1.5	1.4	1.4	2.5	1.8	24
16	1.4	4.1	4.7	4.7	S	3.9	1.2	1.5	1.8	1.8	2	2.1	2.4	1.7	2.2	2.5	2.5	2.7	2.7	2.3	2.1	2.2	2.2	2.1	4.7	2.5	24
17	2.1	1.7	2.7	S	1.9	1.9	2.4	2.5	2.8	2.3	2.7	2	2.1	1.3	1.3	1.5	1.5	1.5	1.3	1.8	1.9	3.2	3	2.1	3.2	2.1	24
18	2.7	3.2	S	4.3	4.4	4.2	39.6	5.4	4.9	4.8	5.2	3.6	3.8	4.6	3.2	5.1	2.8	2.3	1.7	2	2.1	3.7	3.7	3.1	39.6	5.2	24
19	5.4	S	4.4	6.7	5.4	5.1	5.9	7	8.3	7.9	7.8	8.3	9.1	9.1	10.5	12.7	12.7	12	11.9	10.2	10.5	9.1	8.9	8	12.7	8.6	24
20	S	6.5	5.8	4.9	4.6	3.9	3.6	3.6	2.8	2.3	2	C	C	C	C	C	C	2.7	3.6	3.4	2.6	2.5	2.7	S	6.5	3.6	24
21	2.5	3	2.5	2.5	2.5	2.5	2.4	C	C	C	C	C	2	S	S	2	1.6	1.5	1.8	2.8	3	2.4	S	2.2	3.0	2.3	24
22	2	2.3	2.8	2	2.2	2.2	2	1.7	1.7	1.7	1.9	2.8	2.1	1.7	3.8	3.7	2.7	2.2	2.2	2	1.5	S	1.7	1.6	3.8	2.2	24
23	1.4	1.4	1.6	1.7	2.4	2.2	2.6	2.4	2.4	4.5	3.2	4.3	2.4	2.1	2.3	2	2.9	2.5	2.5	2.6	S	3.3	2.2	1.9	4.5	2.5	24
24	3.2	2.1	3.4	3.4	2.9	4.1	5.8	8.7	8.9	8.3	7.3	7.5	4	3.5	2	2.6	2.9	3	5.9	S	7.3	8.5	7.3	5.1	8.9	5.1	24
25	4.3	3.7	3.9	3.9	5.7	4.2	4.4	5.5	5.6	6.7	6.6	5.7	5.1	4.3	5	5.5	5.5	5.2	S	4.6	6.1	7.4	7.4	6.7	7.4	5.3	24
26	6	5.2	4	4.3	5.7	4.7	3.8	2.8	C	C	C	C	C	7.4	8.1	7.6	7.2	S	8.2	8.3	9.9	7.6	6.7	5.8	9.9	6.3	24
27	5	4.8	4.4	3.8	4.8	4.6	4.5	4.4	23.5	6.6	7.4	9.2	8.9	11.4	9.7	10.5	S	9.7	11.1	9.8	9	7.7	8	7.4	23.5	8.1	24
28	6.6	6	5.7	5.5	6.5	6.8	5.9	7	6.4	8.4	6.2	5.9	6.2	5.7	4.6	S	6.4	6.8	6.6	34.4	4.5	4.4	4.1	25.6	34.4	8.1	24
29	3.6	5.1	4.6	4.4	4.2	5.6	4.8	5.3	4.7	6.1	6.2	5.8	4.8	4.2	S	4	2.8	3	3.9	4.9	3.7	2.6	2.5	3.2	6.2	4.3	24
30	3.9	2.1	0.8	0.8	0	1.4	2.7	0.5	0.3	0.7	0.7	0.2	0	S	1.5	1.3	1.5	1.4	1.4	1.4	2	3	2.5	1	3.9	1.4	24
31	1.2	0.9	1.1	1.4	1.7	1.5	1.5	1.6	1.7	1.8	3.9	2.4	S	2.6	2.6	2.6	2.1	1.7	1.7	2	1.6	3.2	3.9	2.6	3.9	2.1	24
HOURLY MAX	12.3	9.0	11.0	19.4	17.7	23.1	39.6	22.8	23.5	8.4	9.0	9.2	9.1	24.2	10.5	13.9	12.7	12.0	11.9	34.4	10.5	24.9	8.9	25.6			
HOURLY AVG	3.6	3.5	3.7	4.0	4.0	4.7	5.3	4.7	5.1	4.8	4.7	4.5	3.8	4.6	3.7	4.0	3.3	3.3	3.5	4.6	3.7	5.2	3.7	4.3			

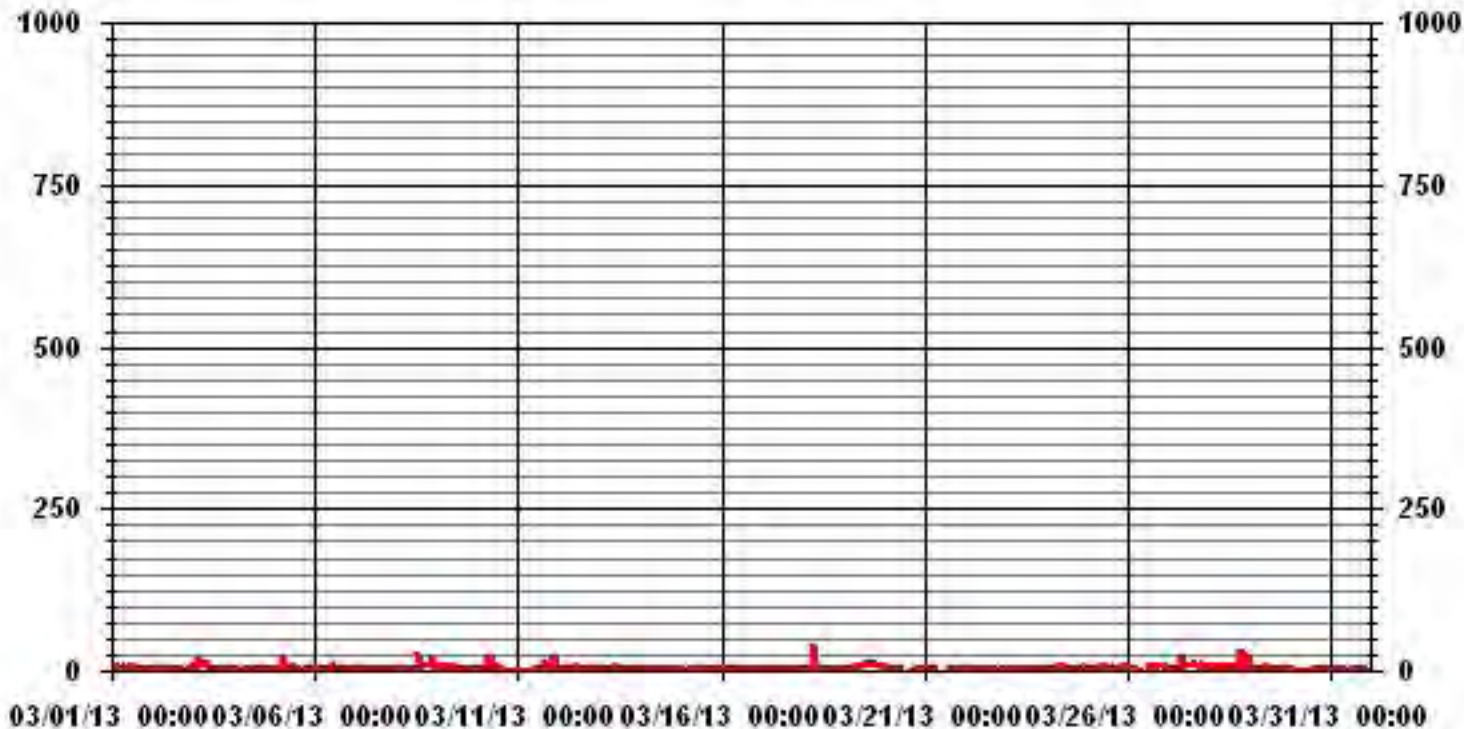
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	687					
MAXIMUM INSTANTANEOUS VALUE:	39.6	PPB	@ HOUR(S)	6	ON DAY(S)	18
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	16	HRS				
STANDARD DEVIATION:	3.75					

### 01 Hour Averages



LICA31  
 NOX\_ / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

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

Wind Parameter : WDR  
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	7.13	2.42	2.56	8.55	5.84	5.84	3.85	4.42	8.98	13.40	11.41	4.13	3.56	1.99	8.55	7.27	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	7.13	2.42	2.56	8.55	5.84	5.84	3.85	4.42	8.98	13.40	11.41	4.13	3.56	1.99	8.55	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
< 50.0	50	17	18	60	41	41	27	31	63	94	80	29	25	14	60	51	701
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	50	17	18	60	41	41	27	31	63	94	80	29	25	14	60	51	

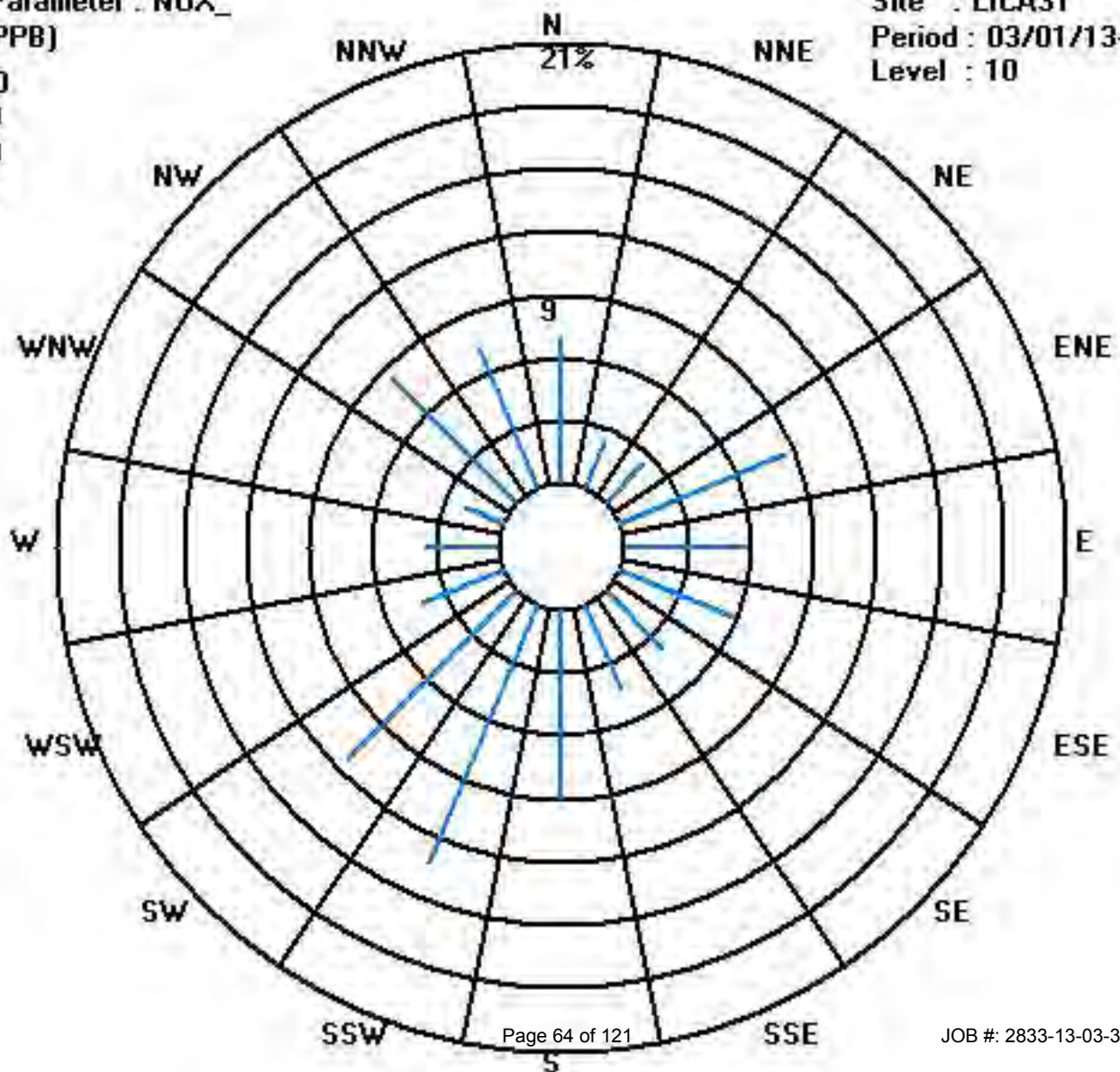
Calm : .00 %

Total # Operational Hours : 701

Class Limits (PPB)

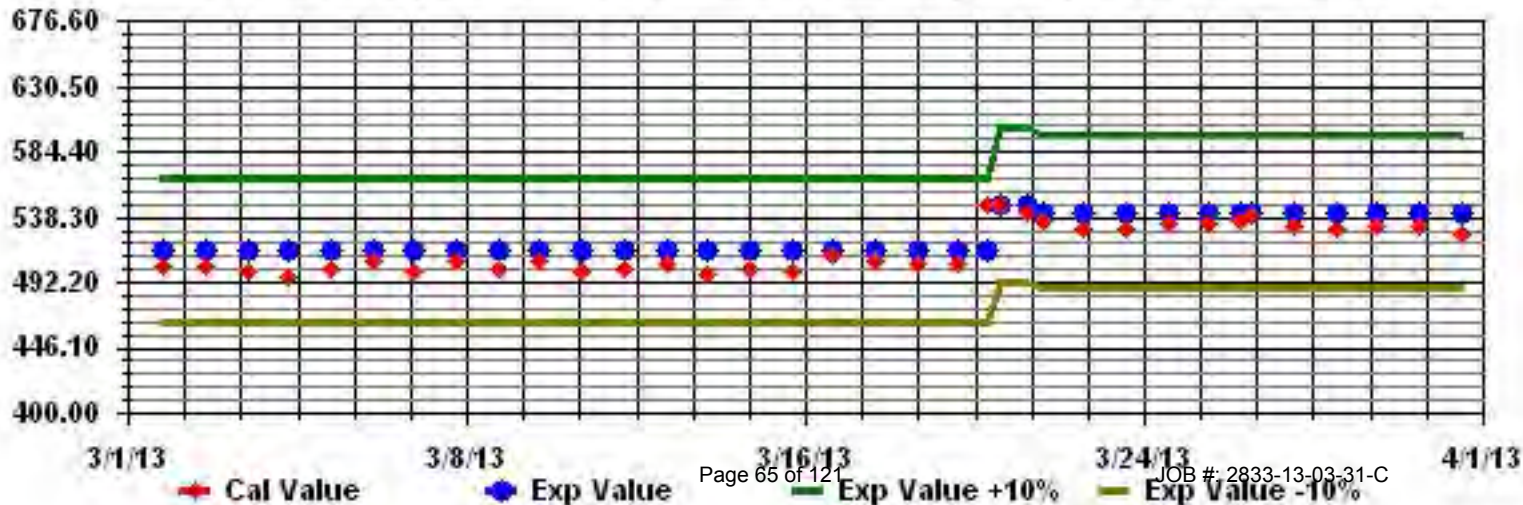
Period : 03/01/13-03/31/13

Level : 10





Calibration Graph for Site: LICA31 Parameter: NOX\_ Sequence: NO2 Phase: SPAll



# Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2013

PARTICULATE MATTER 2.5 (PM2.5) hourly averages in ug/m<sup>3</sup>

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	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY		17	14	12	12	7	10	10	19	15	12	11	13	14	8	5	0	7	9	4	5	0	3	4	7	19	9.1	24		
1		0	8	6	7	8	15	8	7	7	5	6	3	2	0	0	1	3	3	1	3	3	1	2	2	15	4.2	24		
2		6	1	7	7	6	5	2	4	1	1	2	4	8	0	9	0	4	1	7	0	8	0	5	7	9	4.0	24		
3		8	2	6	0	3	0	2	4	6	0	6	6	5	7	3	6	4	5	5	5	7	6	7	4	8	4.5	24		
4		8	5	4	0	12	0	6	14	X	8	12	15	12	11	10	10	9	4	5	9	7	6	8	10	15	8.0	23		
5		10	X	X	0	1	11	8	12	14	8	8	8	8	7	8	12	8	7	5	3	7	7	5	6	14	7.4	22		
6		5	5	X	5	7	3	1	14	X	13	3	3	3	8	5	4	6	6	4	6	2	9	5	9	14	5.7	22		
7		1	7	4	3	6	7	9	8	6	10	11	12	16	20	21	24	27	31	25	28	31	34	38	33	38	17.2	24		
8		27	20	17	17	18	13	X	11	12	9	9	14	11	13	9	15	22	22	11	13	12	13	11	14	27	14.5	23		
9		13	14	16	19	18	21	20	23	22	20	12	10	5	3	4	6	3	5	1	1	0	1	2	3	23	10.1	24		
10		1	0	1	1	3	5	2	2	6	2	5	2	3	0	3	0	2	2	8	0	3	3	5	6	8	2.7	24		
11		10	10	12	13	12	13	15	11	15	10	13	12	9	8	9	8	7	4	6	6	6	6	7	6	15	9.5	24		
12		10	7	7	6	13	4	10	4	8	5	8	2	8	0	8	4	0	6	5	1	1	4	3	0	13	5.2	24		
13		1	5	4	1	4	2	X	2	12	4	4	1	0	2	4	4	5	4	5	0	1	3	4	4	12	3.3	23		
14		3	4	2	4	0	5	0	5	5	6	5	1	1	4	3	1	3	6	0	0	2	5	1	7	7	3.0	24		
15		5	8	X	14	19	9	X	X	10	13	3	5	7	6	3	4	1	8	1	0	6	7	1	0	19	6.2	21		
16		5	8	3	4	1	5	1	3	2	3	0	6	0	1	3	1	0	3	2	6	6	6	5	7	8	3.4	24		
17		5	9	11	9	14	9	9	9	10	18	13	8	7	7	7	4	3	2	0	6	7	4	5	5	18	7.5	24		
18		7	14	15	15	14	18	14	13	16	15	13	12	13	13	16	13	15	15	14	20	14	18	14	16	20	14.5	24		
19		23	17	15	16	14	11	8	10	8	9	8	6	11	9	5	1	6	9	5	5	8	2	5	6	23	9.0	24		
20		10	3	6	0	9	4	9	3	8	2	9	C	X	X	X	X	X	X	X	X	X	X	X	X	10	5.7	12		
21		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	X	0		
22		X	X	X	X	X	X	X	X	X	X	X	2	2	7	3	4	2	1	4	3	1	4	2	6	7	3.2	13		
23		0	2	1	4	3	5	6	10	9	12	12	13	11	6	5	8	7	6	6	7	5	5	4	8	13	6.5	24		
24		7	9	10	6	4	4	9	11	13	10	11	8	9	13	10	10	15	7	8	8	7	8	15	11	15	9.3	24		
25		8	8	14	6	19	11	12	15	7	C	1	5	6	6	4	5	9	8	8	8	7	7	9	13	19	8.5	24		
26		11	10	11	14	10	13	16	12	18	16	21	21	24	26	29	32	28	29	27	25	22	25	34	30	34	21.0	24		
27		28	27	36	34	31	31	31	29	27	34	29	22	23	23	20	25	24	17	14	10	12	11	11	12	36	23.4	24		
28		17	18	24	20	13	9	4	5	7	9	8	5	5	3	8	9	12	11	9	11	15	15	20	20	24	11.5	24		
29		22	10	2	8	5	0	2	3	0	2	3	3	0	0	1	0	0	1	2	0	2	0	0	2	22	2.8	24		
30		1	0	0	1	3	7	3	2	9	5	4	4	5	7	11	5	2	5	2	0	0	0	3	1	11	3.3	24		
31																														
HOURLY MAX		28	27	36	34	31	31	31	29	27	34	29	22	24	26	29	32	28	31	27	28	31	34	38	33					
HOURLY AVG		9.3	8.8	9.5	8.5	9.6	8.6	8.3	9.5	10.1	9.3	8.6	7.8	7.9	7.5	7.8	7.5	8.1	8.1	6.7	6.6	6.9	7.4	8.1	8.7					

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

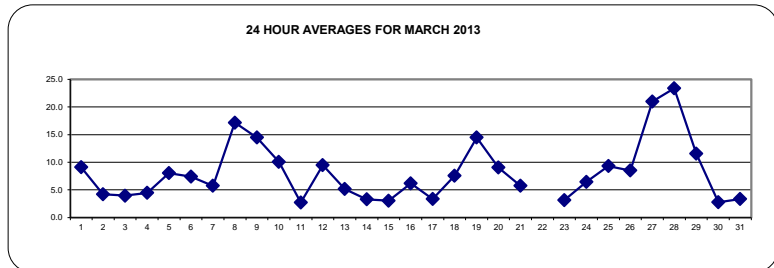
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR - ug/m<sup>3</sup> 24-HR 30 ug/m<sup>3</sup>

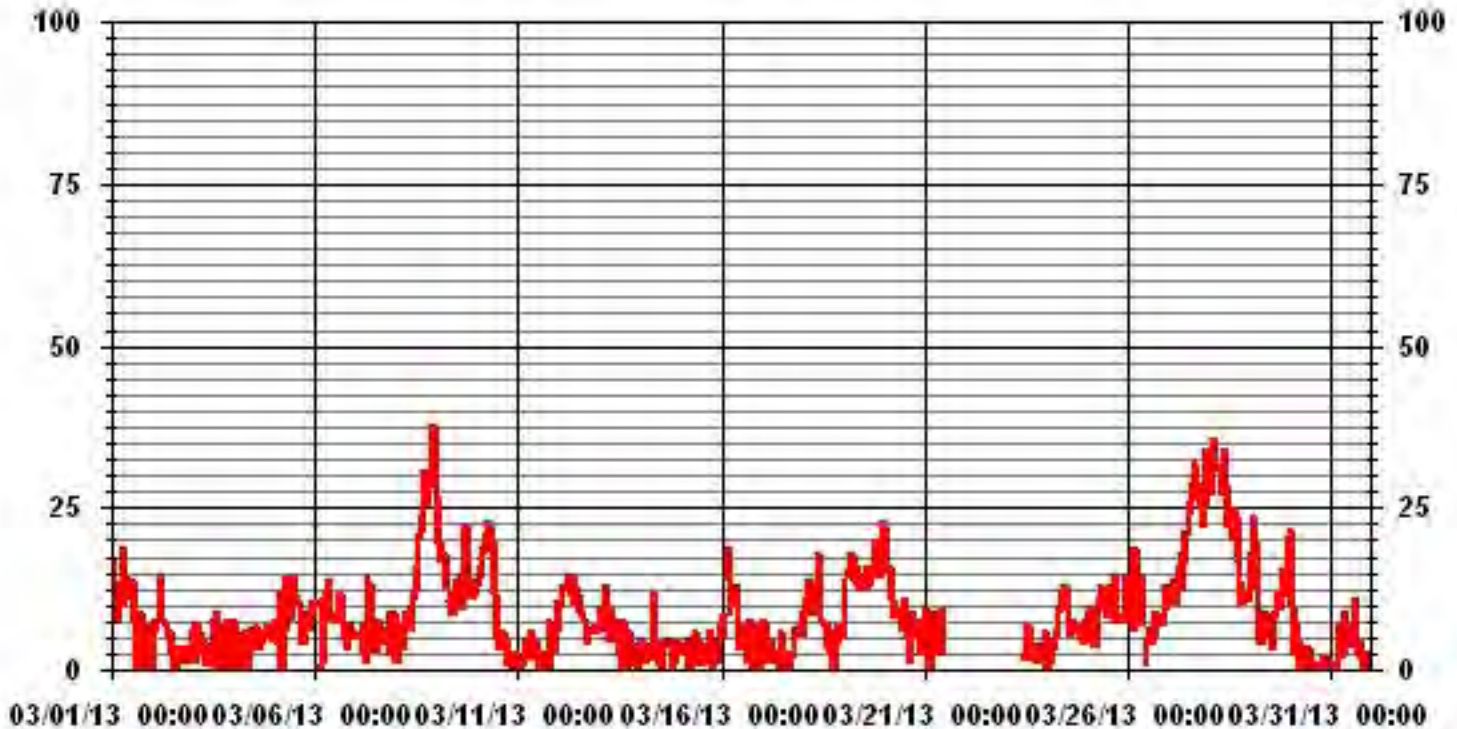
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	633
MAXIMUM 1-HR AVERAGE:	38 UG/M <sup>3</sup> @ HOUR(S) 22 ON DAY(S) 8
MAXIMUM 24-HR AVERAGE:	23.4 UG/M <sup>3</sup> ON DAY(S) 28
MONTHLY CALIBRATION TIME:	2 HRS
MONTHLY OPERATIONAL TIME:	687 HRS
MONTHLY STANDARD DEVIATION:	7.11
MONTHLY AMD OPERATION UPTIME:	92.3 %
MONTHLY AVERAGE:	8.28 UG/M <sup>3</sup>

24 HOUR AVERAGES FOR MARCH 2013



# 01 Hour Averages



LICA31  
 PM2 / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 31  
 Site Name : LICA31  
 Parameter : PM2  
 Units : UG/M3

Wind Parameter : WDR  
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30	7.29	2.33	2.91	7.88	6.13	6.56	4.67	5.10	9.48	13.28	11.38	4.23	3.64	2.04	4.67	6.27	97.95
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.87	.72	.29	.14	.00	.00	.00	2.04
< 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	7.29	2.33	2.91	7.88	6.13	6.56	4.67	5.10	9.48	14.16	12.11	4.52	3.79	2.04	4.67	6.27	

Calm : .00 %

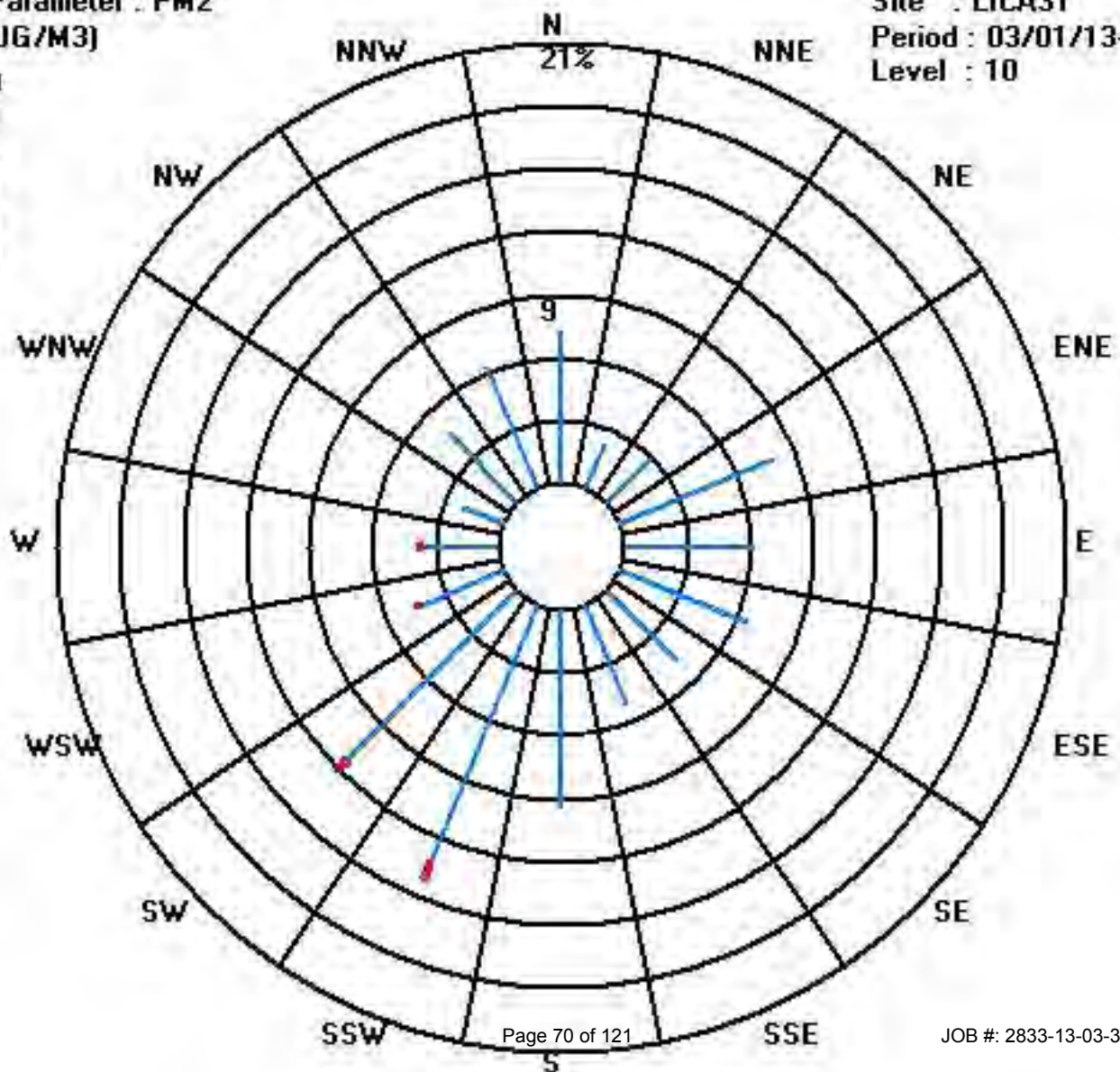
Total # Operational Hours : 685

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30	50	16	20	54	42	45	32	35	65	91	78	29	25	14	32	43	671
< 60										6	5	2	1				14
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	50	16	20	54	42	45	32	35	65	97	83	31	26	14	32	43	

Calm : .00 %

Total # Operational Hours : 685



# Temperature

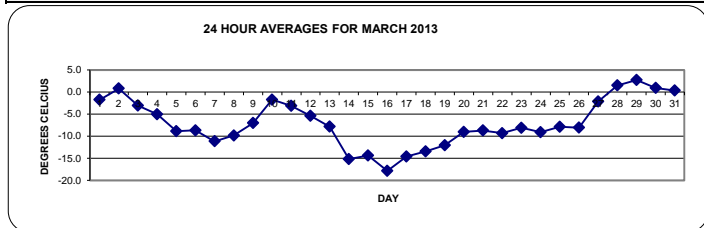
**LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA**  
**MARCH 2013**  
**AMBIENT TEMPERATURE hourly averages (Degrees C)**

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		-7.2	-6.6	-6.2	-7.4	-7.1	-7.4	-7.7	-7.9	-7.2	-5.7	-3.2	-0.1	2.5	4.6	5.8	5.1	5.3	3.7	2.3	1.5	0.9	0.5	-0.1	-0.5	5.8	-1.8	24
2		-1.3	-3	-3.7	-3.5	-3.8	-5.2	-4.6	-5	-4.3	0.2	3.5	7.2	7.9	<b>10.4</b>	8.1	6.8	4.6	2.8	1.3	1	0.5	0.2	-0.1	-0.9	<b>10.4</b>	0.8	24
3		-1.5	-1.9	-2.7	-3.3	-4	-4.4	-4.9	-4.9	-3.6	-3.5	-2.6	-1.7	-1.2	-0.9	-1	-1.3	-1.9	-2.8	-3.2	-3.8	-4.2	-4.3	-4.7	-5	-0.9	-3.1	24
4		-5.3	-5.4	-5.5	-5.6	-5.9	-6.1	-6.2	-5.9	-5	-4	-3.6	-2.8	-1.7	-0.8	-0.8	-0.5	-3.3	-4.7	-6.4	-7.2	-7.5	-8.3	-9	-9.5	-0.5	-5.0	24
5		-8.8	-9.6	-10.1	-12.9	-15.2	-16.7	-16.8	-16.8	-13.6	-8.5	-4.3	-3.3	-2.7	-2.4	-2.4	-3.1	-3.8	-4.9	-6.9	-8.4	-9.2	-10	-10.5	-11.2	-2.4	-8.8	24
6		-11.6	-12.1	-12.4	-13.2	-13.5	-13.9	-14	-13.4	-11.4	-9.8	-7.3	-4.1	-2.5	-2.9	-2.1	-2.9	-4.4	-7.2	-7.9	-7.4	-7.4	-8.1	-8.8	-9.9	-2.1	-8.7	24
7		-11	-11.7	-12.5	-13.4	-13.8	-14.5	-15.1	-15.2	-14.7	-13.4	-11.1	-8.6	-8.2	-7.1	-6.6	-5.9	-6	-8	-10.8	-11.9	-12.1	-12.3	-11.9	-11.8	-5.9	-11.2	24
8		-11.9	-12.2	-12.5	-12.6	-12.6	-12.2	-11.8	-11.8	-11.3	-10.4	-9.7	-9.2	-8.6	-7.4	-6.3	-5.7	-5.3	-6.8	-8.9	-9.7	-10.1	-9.9	-9.9	-9	-5.3	-9.8	24
9		-6.9	-7.2	-8	-9.6	-10.9	-11.9	-13.3	-11.7	-10.8	-7.3	-4.7	-3.6	-1.5	-1.4	-2.5	-3.6	-4.9	-6.2	-7.3	-7.3	-7	-6.7	-7.1	-7.5	-1.4	-7.0	24
10		-7.8	-8.5	-8.4	-8.9	-9.1	-9.2	-9.7	-8.5	-6.1	-0.9	2	3.9	4.6	4.5	3.7	3.9	5.6	4.5	2.1	0.9	0.2	0.4	-0.1	-0.4	5.6	-1.7	24
11		-0.4	-0.9	-2.6	-4.5	-6.3	-6.5	-7.4	-7.2	-6.4	-5.3	-3.3	-1	-0.1	0.9	1.6	1.3	1.4	-0.3	-2.3	-3.6	-4.5	-5.2	-6.1	-6.8	1.6	-3.1	24
12		-7.8	-8.7	-8.5	-8.7	-8.8	-9	-9.3	-9.1	-7.2	-4.6	-2.5	-0.9	0.2	0.3	0.1	-0.4	-1.6	-2.8	-4.1	-5.1	-6.3	-7.3	-8.1	-8.9	0.3	-5.4	24
13		-9.3	-9.4	-9	-8.6	-8.7	-8.7	-8.3	-7.8	-6.9	-5.9	-4.8	-4.4	-4.3	-3.7	-3.6	-4.9	-6.3	-7.3	-8.3	-9.5	-10.3	-11.5	-12.8	-14.1	-3.6	-7.9	24
14		-15.1	-16.1	-16.4	-16.5	-17.3	-18	-18.6	-18.7	-17.3	-16.6	-14.3	-13.9	-13.6	-12.3	-12	-12.3	-12.9	-13.6	-14	-14.2	-14.4	-15.3	-15.7	-15.9	-12.0	-15.2	24
15		-16.2	-16.4	-16.8	-17.2	-17.6	-17.7	-18	-18	-17.1	-14.7	-11.3	-10.7	-9	-8.7	-10	-9	-9.6	-11.9	-14.1	-15.1	-15.8	-16.3	-16.5	-17	-8.7	-14.4	24
16		-17.9	-19	-19.6	-19.8	-19.9	-20.8	<b>-21.2</b>	-20.8	-20	-18.6	-17.2	-16	-15.1	-14.7	-14.8	-15.3	-15.8	-16.5	-17.1	-17.4	-17.6	-17.8	-18.1	-18.2	-14.7	-17.9	24
17		-18.2	-18.2	-18.1	-18.1	-18.1	-18.4	-18.7	-18.2	-15.8	-12.9	-12.3	-9.6	-8.7	-8.6	-8.4	-10	-10.7	-10.7	-13.7	-15	-15.2	-16.8	-17.7	-18.7	-8.4	-14.6	24
18		-19.6	-19.8	-19.8	-18.8	-17.6	-15.5	-14.2	-14.6	-15.5	-13.2	-9.4	-7.8	-8.1	-8.4	-8.3	-8.4	-7.5	-8.8	-11.6	-13.4	-14.2	-15.3	-15.9	-16.8	-7.5	-13.4	24
19		-18.5	-18.6	-18.2	-19.2	-19	-17.9	-17.4	-16.6	-15.5	-11.5	-8.8	-6.7	-5.1	-4.7	-3.9	-4.2	-5	-6.7	-10.1	-11.2	-11.7	-12.4	-12.9	-12.9	-3.9	-12.0	24
20		-12.4	-13	-13.9	-14.2	-13.9	-12.5	-12.8	-12.4	-9.7	-7	-6.3	-5.6	-5.6	-4.5	-4.4	-6.2	-6.4	-6.3	-7.4	-8	-8.4	-8.6	-8.5	-8.6	-4.4	-9.0	24
21		-8.3	-8.1	-8.2	-8.3	-8.4	-8.7	-8.9	-8.9	-8.7	-8.1	-7.6	-6.8	-6.8	-7.9	-7.4	-8.5	-9.3	-9.5	-9.8	-10.1	-10.1	-10.1	-10	-6.8	-8.7	24	
22		-9.9	-10.1	-10.1	-10.4	-10.9	-11.4	-12.2	-12.3	-11.4	-10	-9.2	-7.5	-6.1	-4.9	-4.6	-5.4	-5.3	-7.1	-8.9	-10	-10.7	-11.1	-11.6	-12.3	-4.6	-9.3	24
23		-12.8	-13.3	-14	-14.2	-14	-14	-14	-13.2	-11.3	-7	-4.1	-2.4	-0.8	0.1	0.8	-0.2	-1.6	-3	-6.1	-7.7	-8.9	-9.9	-10.9	-11.7	0.8	-8.1	24
24		-12.9	-12.7	-13	-15.2	-13.6	-14.5	-14.9	-12.5	-8.7	-5.8	-4.1	-3.7	-3.6	-3.3	-3.4	-3.7	-4	-5.2	-7.3	-9	-10.1	-11.3	-12.3	-12.9	-3.3	-9.1	24
25		-13.2	-13.5	-13.8	-13.8	-14	-14.3	-13.9	-10.9	-8.6	-6.3	-4.7	-2.2	-0.8	0	0.3	-0.4	-0.8	-2.5	-5.2	-7.3	-8.8	-10.2	-11.3	-12.3	0.3	-7.9	24
26		-12.6	-12.7	-12.9	-13.5	-15.5	-14.3	-13.4	-11	-8.6	-7.2	-5	-3.2	-2	-1.4	-1.4	-1.6	-2.2	-3.5	-5.6	-7.5	-8.8	-9.3	-9.8	-10.4	-1.4	-8.1	24
27		-10.3	-10	-10.2	-9.3	-8.9	-9.1	-8.6	-7.1	-5.4	-2.2	0.8	3	4.4	4.6	4.9	4.9	5	4.3	1.9	0	-0.5	-0.8	-1.1	-1.7	5.0	-2.1	24
28		-2.4	-2.6	-3.1	-3.8	-4.4	-5.3	-5.4	-3.3	-0.2	2.9	6	6.2	7.1	7.6	7.7	7.1	7.3	6.2	4.1	2.6	1.7	1.1	0	-0.3	7.7	1.5	24
29		-1.1	-0.7	0.6	0.1	-0.2	-0.2	-0.5	0	0.8	2.4	3.6	7.2	6.4	7.1	8.5	8.3	7.1	5.6	3.5	2.4	1.6	1.4	0.8	0.9	8.5	2.7	24
30		1.2	1.5	1	-0.4	-1.3	-2.3	-2.5	-1.1	0.3	1.5	2.5	3.1	4.6	4.5	4.8	4.2	3.3	2.1	0.4	-0.5	-0.9	-1	-1	-1.9	4.8	0.9	24
31		-3.1	-3.8	-4.4	-4.2	-4	-3.9	-3.9	-2	-0.4	0.6	2.3	2.9	3.7	3.5	4.4	6.6	7.5	5.7	3.4	1.9	0.5	-1.1	-1.7	-2.3	7.5	0.3	24
HOURLY MAX		1.2	1.5	1.0	0.1	-0.2	-0.2	-0.5	0.0	0.8	2.9	6.0	7.2	7.9	10.4	8.5	8.3	7.5	6.2	4.1	2.6	1.7	1.4	0.8	0.9			
HOURLY AVG		-9.5	-9.8	-10.1	-10.6	-10.9	-11.1	-11.2	-10.5	-9.1	-6.9	-4.9	-3.3	-2.4	-1.9	-1.7	-2.1	-2.6	-3.9	-5.7	-6.8	-7.4	-8.0	-8.5	-9.0			

**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 MARCH 2013**

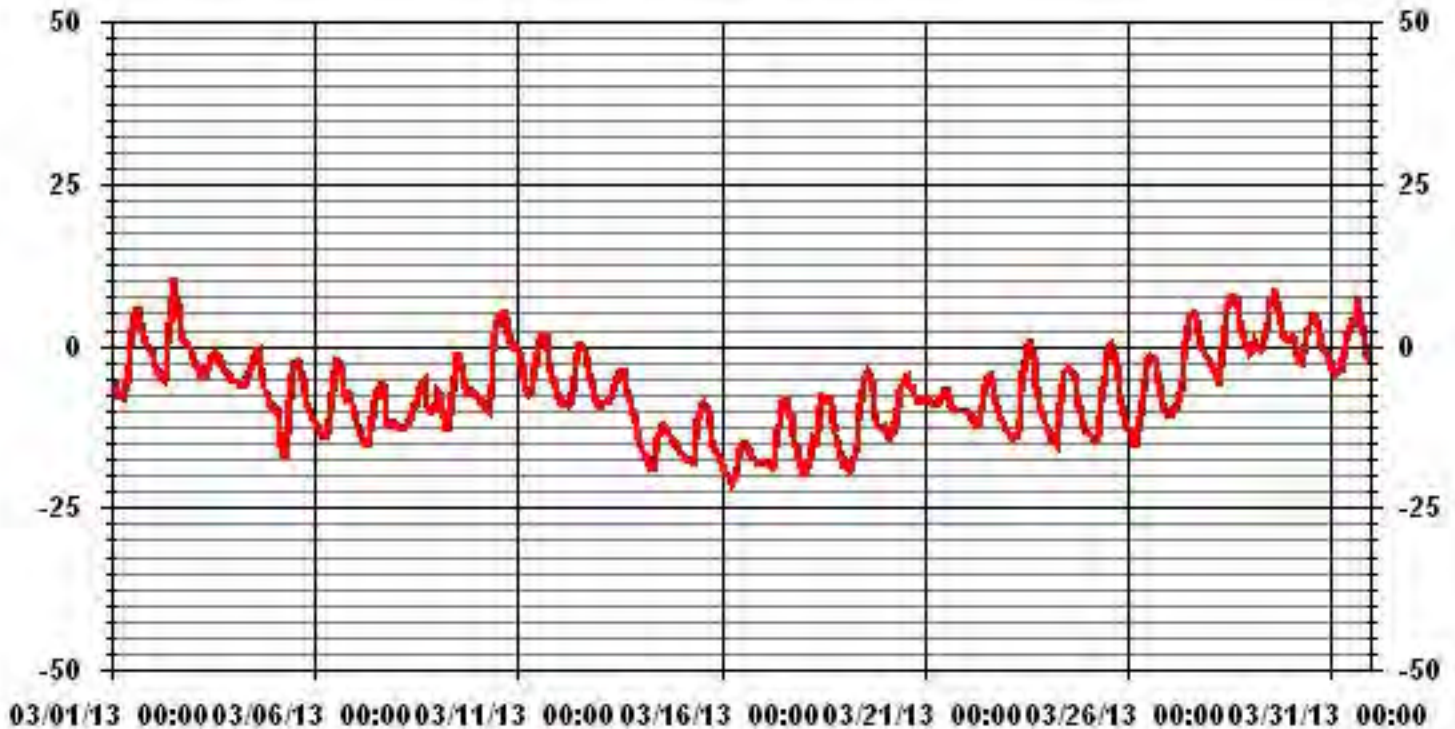


**MONTHLY SUMMARY**

MINIMUM 1-HR AVERAGE:	-21.2 °C	@ HOUR(S)	6	ON DAY(S)	16
MAXIMUM 1-HR AVERAGE:	10.4 °C	@ HOUR(S)	13	ON DAY(S)	2
MAXIMUM 24-HR AVERAGE:	2.7 °C			ON DAY(S)	29
CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS		
STANDARD DEVIATION:	6.52	AMD OPERATION UPTIME:	100.0 %		
		MONTHLY AVERAGE:	-7.00 °C		



# 01 Hour Averages



# Barometric Pressure

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2013

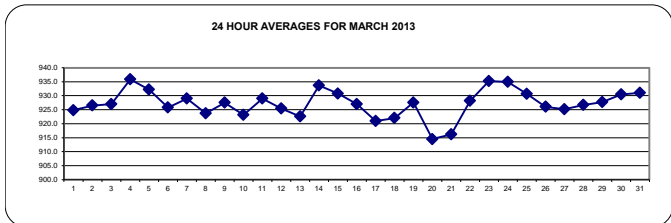
## BAROMETRIC PRESSURE hourly averages (millibar)

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	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		925	924	924	923	923	923	923	923	924	924	925	925	926	926	926	926	926	926	926	926	926	926	926	926	926	926	924.8	24	
2		927	927	927	926	927	927	927	927	927	928	928	928	928	928	928	928	928	928	927	926	925	924	924	923	923	929	926.5	24	
3		923	922	922	922	922	922	923	923	924	924	925	926	927	928	928	929	930	931	931	932	933	933	934	934	934	934	927.0	24	
4		935	935	935	935	935	935	935	936	936	936	937	937	937	937	937	937	936	936	936	936	935	935	935	935	935	937	935.8	24	
5		935	935	934	934	934	933	933	933	933	933	933	934	934	933	933	932	931	931	930	930	929	929	929	928	928	928	935	932.2	24
6		928	927	926	926	925	925	925	925	925	925	925	926	926	926	926	926	926	925	925	925	926	926	927	927	927	928	925.8	24	
7		927	927	927	927	927	927	928	928	929	929	929	930	930	930	931	931	931	930	930	930	930	930	930	930	930	929	931	929.0	24
8		929	928	928	927	927	926	926	925	925	924	924	923	923	922	922	922	921	921	920	920	921	921	921	921	921	921	929	923.7	24
9		922	922	923	924	925	926	926	927	928	928	929	930	930	931	930	930	930	929	929	929	928	928	928	928	927	931	927.5	24	
10		926	926	925	925	925	924	924	924	924	924	924	924	923	922	921	921	921	921	921	921	921	922	921	921	921	926	923.1	24	
11		921	921	922	923	924	925	927	928	929	930	931	931	932	932	932	932	932	932	932	932	932	932	932	932	932	932	929.0	24	
12		931	930	930	930	929	929	928	928	927	927	927	926	925	925	924	924	923	922	922	921	921	921	920	920	920	931	925.4	24	
13		920	919	919	919	919	919	919	920	921	921	922	922	923	923	924	924	924	925	926	926	927	928	928	928	928	928	928	922.6	24
14		929	930	931	932	933	934	934	935	935	936	936	937	937	937	936	935	935	934	933	933	932	932	931	931	931	937	933.7	24	
15		930	930	929	929	928	929	929	929	929	930	931	931	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	930.8	24
16		932	932	932	931	931	931	930	930	930	930	929	929	928	927	926	925	924	923	923	922	922	921	920	920	920	932	927.0	24	
17		920	919	919	919	919	919	920	920	921	921	922	922	923	922	922	922	922	922	922	922	922	922	921	921	921	923	921.0	24	
18		921	921	921	920	920	920	920	920	921	922	922	922	922	922	923	923	924	924	924	924	925	925	925	925	925	925	925	922.0	24
19		925	926	926	926	926	926	927	927	927	928	928	929	929	930	930	930	930	930	930	929	928	927	927	926	925	930	927.6	24	
20		924	923	922	921	919	918	917	916	915	914	914	913	913	912	912	911	911	911	911	911	910	910	910	910	910	910	924	914.5	24
21		910	910	910	911	911	911	912	913	913	914	915	916	917	917	918	919	919	920	921	921	922	922	923	923	923	923	923	916.2	24
22		923	923	924	924	924	925	925	926	926	927	927	928	929	929	930	930	931	931	932	932	932	932	933	933	933	933	933	928.2	24
23		933	933	933	933	933	934	934	934	935	935	936	936	936	937	937	937	937	937	937	936	936	936	936	936	936	936	937	935.3	24
24		936	936	935	935	935	935	935	936	936	936	936	936	936	936	936	936	935	935	934	933	933	932	932	932	932	936	934.9	24	
25		932	932	931	931	931	931	930	930	931	931	932	932	932	932	932	931	931	931	930	929	929	928	928	928	928	932	930.6	24	
26		927	927	927	926	926	926	926	926	926	926	927	927	927	927	927	927	926	926	925	924	924	924	924	924	924	924	927	926.0	24
27		924	923	923	923	923	923	923	923	924	924	925	926	926	926	926	927	927	927	927	927	926	927	927	927	927	927	927	925.2	24
28		927	927	926	926	926	926	926	926	927	927	928	928	928	928	927	927	927	927	927	926	926	926	926	926	926	928	926.7	24	
29		926	926	926	926	927	927	927	928	928	928	929	929	929	929	929	928	928	928	928	927	927	928	928	928	928	929	927.7	24	
30		928	929	929	929	930	930	931	931	932	932	932	932	932	932	932	931	930	930	929	929	929	930	930	930	930	932	930.5	24	
31		929	929	929	930	930	930	931	931	931	932	932	932	932	932	932	932	932	932	931	931	931	931	931	931	931	932	931.0	24	
HOURLY MAX		936	936	935	935	935	935	935	936	936	936	937	937	937	937	937	937	937	937	936	936	936	936	936	936	936	932	931.0	24	
HOURLY AVG		927	926	926	926	926	926	927	927	927	928	928	928	928	928	928	928	928	928	927	927	927	927	927	927	927	932	931.0	24	

### STATUS FLAG CODES

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

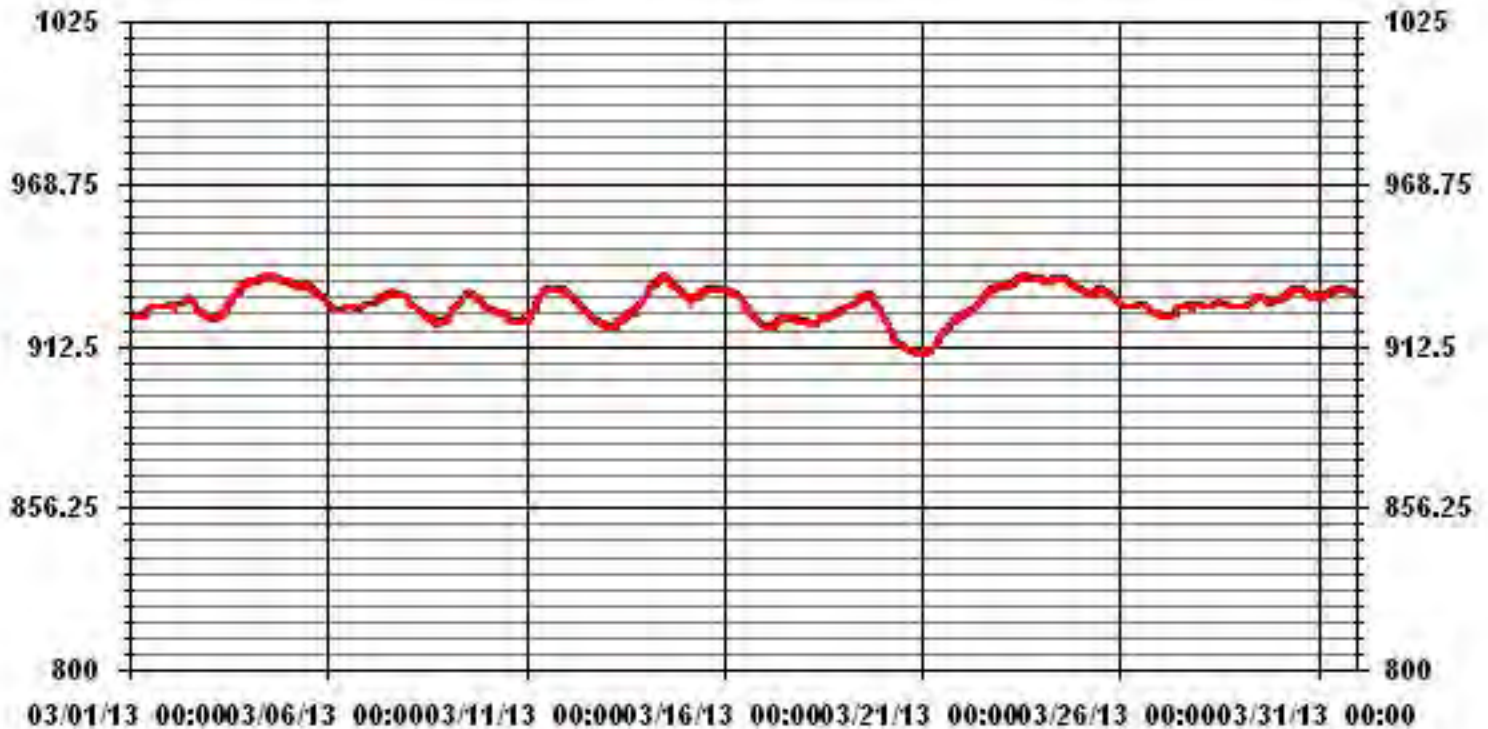
24 HOUR AVERAGES FOR MARCH 2013



### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	937	MB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	935.8	MB			ON DAY(S)	4
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	5.44		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	927	MB	

### 01 Hour Averages



# Relative Humidity

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2013

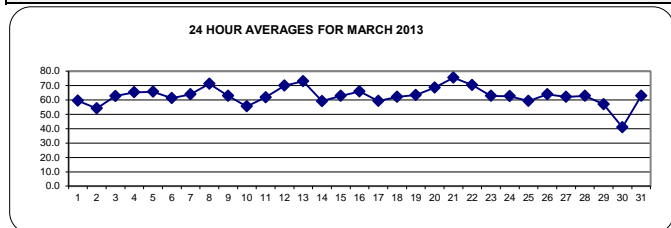
### RELATIVE HUMIDITY hourly averages (%)

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		68	65	62	65	64	66	67	69	68	65	59	53	49	46	41	46	44	47	50	56	61	69	73	76	76	59.5	24	
2		79	84	<b>86</b>	83	81	85	81	80	76	63	51	33	30	23	26	28	35	38	44	38	37	36	37	44	<b>86</b>	54.1	24	
3		50	52	57	58	61	60	58	57	55	62	67	66	67	66	66	65	64	67	68	70	67	66	68	70	70	62.8	24	
4		69	68	67	64	68	71	71	71	67	65	63	58	54	50	50	50	57	61	67	70	72	75	78	81	81	65.3	24	
5		83	82	82	79	76	75	75	74	75	68	63	56	51	49	49	51	50	52	59	62	62	64	68	71	83	65.7	24	
6		72	72	73	75	76	77	77	73	65	59	53	45	42	44	44	46	48	55	58	57	57	62	67	73	77	61.3	24	
7		72	73	74	74	74	73	71	72	70	64	59	56	57	55	53	51	50	54	62	66	65	64	61	64	74	63.9	24	
8		68	71	74	76	77	78	77	76	75	69	65	65	69	66	60	59	58	63	72	77	80	80	80	77	80	71.3	24	
9		67	65	66	71	74	76	79	80	78	67	54	51	43	41	47	53	58	60	60	63	64	62	64	65	80	62.8	24	
10		65	68	70	73	75	76	78	75	67	53	48	44	45	49	44	42	32	29	36	42	50	55	59	57	78	55.5	24	
11		56	67	85	78	70	73	73	72	68	64	57	50	46	44	42	43	45	52	60	63	64	67	71	75	85	61.9	24	
12		79	82	83	83	81	80	79	76	70	61	57	55	55	56	57	58	62	66	67	69	72	75	77	79	83	70.0	24	
13		80	80	80	79	79	79	79	78	77	75	72	67	65	61	58	63	69	72	73	73	73	73	73	74	80	73.0	24	
14		72	72	71	70	70	69	68	66	62	59	52	50	50	48	48	48	48	51	52	52	53	60	63	67	72	59.2	24	
15		72	73	73	73	72	72	72	71	69	65	58	56	51	50	51	45	46	53	60	61	65	67	67	66	73	62.8	24	
16		68	70	71	71	71	67	63	64	64	64	63	63	58	57	60	62	65	68	69	70	69	70	70	71	71	65.9	24	
17		71	71	72	72	72	72	72	71	66	59	55	45	42	41	40	44	45	45	52	57	57	63	68	71	72	59.3	24	
18		74	74	73	72	71	68	62	67	66	62	55	49	50	54	57	57	43	44	50	57	68	70	72	75	75	62.1	24	
19		76	75	74	73	74	74	74	72	72	68	58	49	45	46	45	47	48	51	60	64	67	69	71	72	76	63.5	24	
20		73	73	75	74	73	69	71	72	67	62	60	61	59	59	69	70	68	69	70	71	72	73	73	75	75	68.5	24	
21		72	72	73	73	73	74	74	74	77	78	76	75	74	76	75	74	75	76	77	78	79	79	80	79	80	<b>75.5</b>	24	
22		79	80	80	79	79	78	77	76	73	68	64	61	57	55	54	56	58	64	70	72	75	77	79	79	80	70.4	24	
23		78	78	77	77	77	77	77	76	74	62	51	46	41	39	37	39	43	48	59	65	68	72	73	74	78	62.8	24	
24		78	76	76	78	77	77	76	70	60	51	45	47	49	49	50	50	53	57	60	63	67	71	73	78	78	62.6	24	
25		74	75	76	76	77	77	75	65	57	52	50	45	42	37	34	35	38	45	53	58	64	70	72	75	77	59.3	24	
26		77	78	78	78	78	77	77	75	65	61	55	49	45	43	44	44	46	51	57	65	70	72	73	75	78	63.9	24	
27		74	72	73	74	75	75	74	70	65	55	48	44	43	44	46	47	48	51	59	66	70	72	73	73	75	62.1	24	
28		75	76	78	80	81	82	81	69	58	50	43	42	41	45	46	49	50	55	62	65	66	68	72	74	82	62.8	24	
29		77	76	69	69	67	65	65	62	59	54	48	37	39	38	36	39	45	49	56	59	63	63	67	68	77	57.1	24	
30		66	55	48	51	50	48	47	43	39	34	31	28	25	23	24	23	24	28	37	43	47	49	55	64	66	40.9	24	
31		71	75	81	81	81	82	82	75	68	63	57	56	54	56	53	44	36	38	43	48	57	68	73	69	82	63.0	24	
HOURLY MAX		83	84	86	83	81	85	82	80	78	78	76	75	74	76	75	74	75	76	77	78	80	80	80	81				
HOURLY AVG		72.1	72.6	73.5	73.5	73.4	73.3	72.6	70.7	66.8	61.4	56.1	51.6	49.8	48.7	48.2	49.2	49.9	53.3	58.6	61.8	64.4	66.9	69.3	71.1				

#### 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

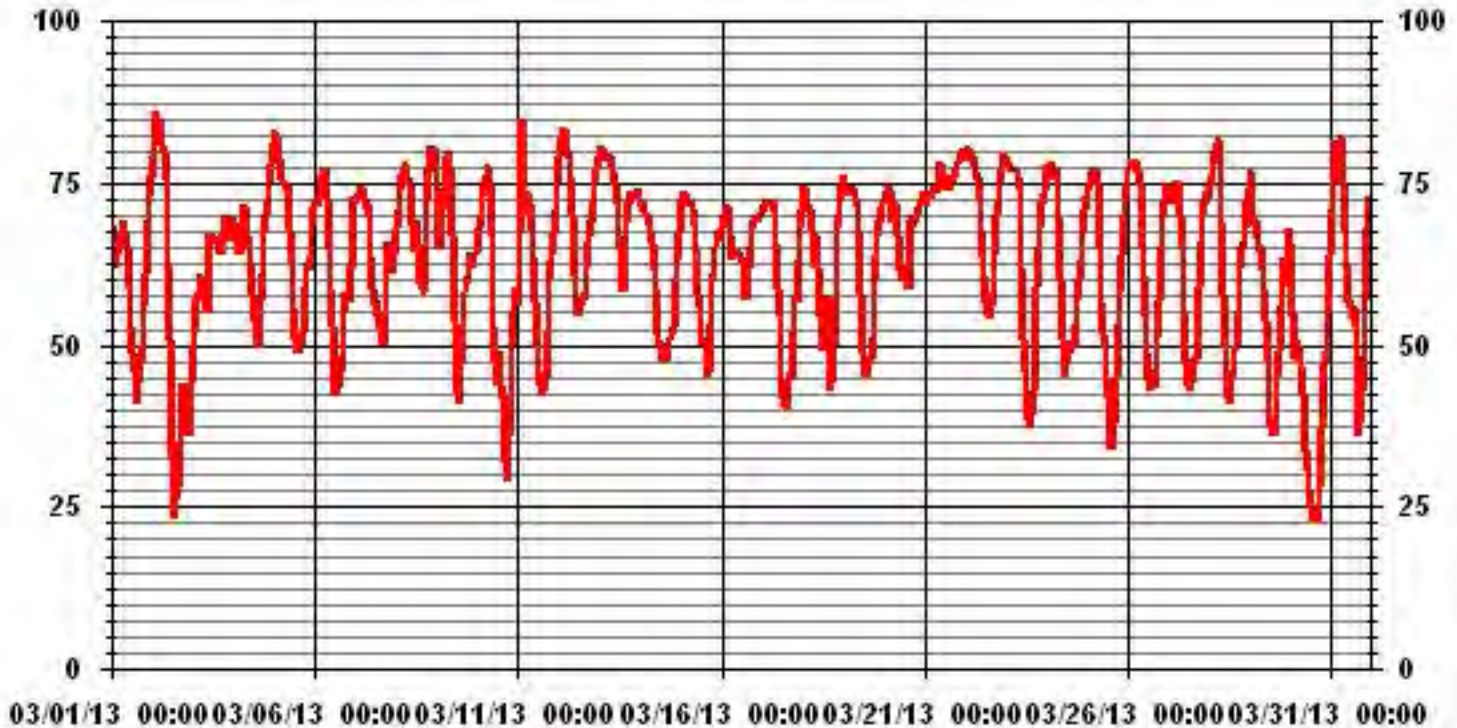
24 HOUR AVERAGES FOR MARCH 2013



#### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	86 %	@ HOUR(S)	2	ON DAY(S)	2
MAXIMUM 24-HR AVERAGE:	75.5 %			ON DAY(S)	21
				VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	12.96		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	62.87	%

# 01 Hour Averages



# Precipitation



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2013

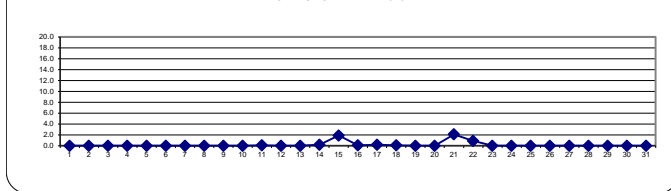
PRECIPITATION hourly averages (mm)

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.	DAILY TOTAL	DAILY RDGS.
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				
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	24
2		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
3		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
4		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	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	0.0	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	0.0	24
7		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
8		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
9		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
10		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
11		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	0.1	0.1	24
12		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
13		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
14		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2	0.2	24
15		0.2	0.3	0.3	0.2	0.3	0.1	0	0.1	0	0	0.2	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0.3	1.9	24
16		0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
17		0.1	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	0.1	0.2	24
18		0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
19		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	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	0.0	24
21		0	0	0	0	0	0	0	0	0	0.1	0.2	0.4	0.4	0	0.1	0	0	0	0	0	0.1	0.1	0.1	0.5	0.1	0.5	2.1	24
22		0.4	0	0	0	0.1	0	0.1	0	0	0	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.9	24
23		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
24		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
25		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	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	0.0	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	0.0	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	0.0	24
29		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	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	0.0	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	0.0	24
HOURLY MAX		0.4	0.3	0.3	0.2	0.3	0.1	0.1	0.1	0.0	0.1	0.2	0.4	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.5	0.2			

STATUS FLAG CODES

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

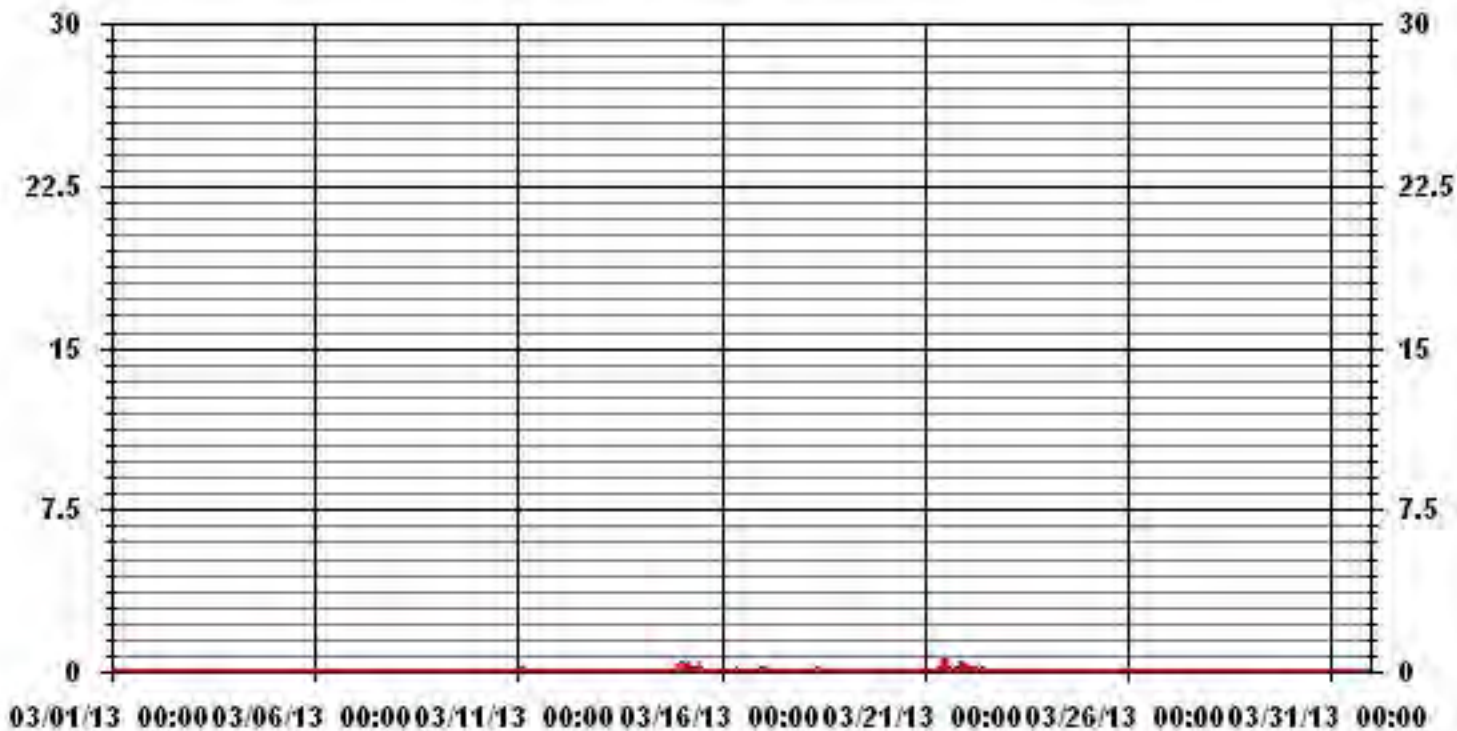
DAILY TOTALS FOR MARCH 2013



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	0.5	MM	HOURLY(S)	22	ON DAY(S)	21
MAXIMUM DAILY TOTAL	2.1	MM			ON DAY(S)	21
MONTHLY TOTAL	5.6	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	0.04		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	0.01	MM	

### 01 Hour Averages



— LICA3T PRECIP MM

# Vector Wind Speed

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

MARCH 2013

## WIND SPEED hourly averages (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 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		15.6	13.9	15.1	13.6	13.5	14.4	14.2	12.9	12.5	13	11.8	11	10.6	7.9	11.9	16	17	12	12.1	11.7	12.5	13.3	11.6	10.4	17	9.9	24	
2		8.5	9.3	8.7	8.8	8.1	8.3	7.9	8.1	8.3	6.8	4.6	3.6	4.7	1.8	2.8	3.4	4.5	3.1	3.1	6.4	6.9	7.1	8.9	8.9	9.3	1.6	24	
3		10.2	9.6	9.5	10.5	11	11.4	10.6	13.7	16.1	15.8	16.2	14.7	14.6	12.7	12.9	16.4	15.4	14.3	13.9	15.4	11.8	12	11.3	10.6	16.4	11.5	24	
4		10	8.2	7.1	6.1	8.2	5.8	4.6	3.8	4.1	7.1	8.6	8.5	5.2	2.7	1.5	3	5.3	5	4.9	6.7	7.7	7.2	6.8	7.4	10	0.5	24	
5		8.4	6.9	8.1	8.3	7.2	6.7	5.2	6.9	7.3	6	5.4	6.4	8.9	11.5	12.4	15.8	16.2	11.5	8.2	10.2	10.1	13.6	12.7	14.5	16.2	9.3	24	
6		13	16.8	15.4	15.2	14.2	15.5	15.8	15	16.8	15.6	10.4	6.9	6.8	9.1	7.6	8.1	8.5	10.5	6.4	9.1	7.5	9.5	13.3	15	16.8	6.5	24	
7		18.6	18.4	17.3	19.7	19.7	18.9	16.7	14.8	16.7	14.2	12.6	11.5	11.6	10.9	9.5	8.5	6.5	6.4	6.5	9.6	13.2	13.7	13.9	9.1	19.7	12.6	24	
8		13.2	13.4	11.3	10.9	10.4	13.6	13.4	14.7	15.3	20.5	20.1	20.6	17.4	18.4	17	15.1	11.7	13.3	14.2	12.6	12	11.4	9.9	10.7	20.6	13.1	24	
9		12.5	11.3	10.8	12.2	11.6	9.9	11.8	10.6	7.6	4.7	5.7	5.9	5	7.6	9.5	9.1	10.2	8.3	8.5	10.5	11.6	13.7	15.9	16.4	16.4	4	24	
10		14.8	14.5	14.1	15.1	10.8	10.8	11.3	11.9	12.7	11.9	13.8	17.1	21.3	28.3	27.9	23.1	18.5	15.7	17.3	14.1	15.8	21.3	17.5	17.9	28.3	13.7	24	
11		17.9	22.4	20.2	26.6	20.9	19	20.6	19.3	17.9	16.2	13.5	11.3	12.1	11.2	11.1	12	12	7.6	5.2	5.3	5.3	7.5	6.9	9.1	26.6	11	24	
12		9.9	10.6	10.7	10	11	12.6	14.2	14.4	15	14.9	20.5	21.9	23.5	23	21	19.5	17.9	15.2	14	10.4	7.1	7.8	8.6	7.8	23.5	13.7	24	
13		7.6	9.1	9.8	9	8.1	13.6	13.8	14.7	10.2	9.5	9.8	9.4	9.9	8.5	9.4	8.6	8.7	8.8	9.4	10.4	13	13.3	13.4	13.7	14.7	8	24	
14		16.1	14.4	15.1	12.6	14.7	14.5	11.8	12.1	13	12.9	12.3	13.4	13.6	10.3	12.8	13.3	15.7	14.7	13.3	13.9	16.8	17.4	18	16.4	18	11	24	
15		17.4	16.1	17.4	19.1	20.9	17.1	15.7	15.5	15.3	10.3	4.8	4.3	5.2	6.7	8.7	11.7	10.2	12.6	8.8	7.4	8.7	9.2	8.6	9.4	20.9	8.3	24	
16		9.3	9.9	11.3	12.3	17.9	20.6	16.6	14.3	11.6	11	12.8	14.1	16.2	16.5	16.5	16.3	14.6	15.4	13.8	14.2	13.3	13.4	10.4	10	20.6	12.8	24	
17		8.7	7.6	5.8	4.8	4.3	5.9	8.8	9.2	9.5	10.8	11.6	8.7	10.7	13.4	16	14.3	10.7	9	4.9	0.7	5.7	7.4	7.6	7.5	16	5.1	24	
18		7.1	7.7	7.7	6.7	5.2	2.8	3.1	2.4	4.4	5.1	6.7	8	11.6	13.8	12.9	8.6	9.9	9.4	5.7	7.2	9.7	9.2	7.9	7.7	13.8	6.4	24	
19		7.9	7.6	7.3	9.5	10.5	11.5	12.2	9.9	8.7	7.1	9	7.8	6.4	6.9	6.3	8.9	8.4	8.5	10.9	12.1	14.5	14.3	14.6	16.5	16.5	8.2	24	
20		19.7	19.4	18.9	23.1	26.1	27.8	29.5	25.2	25.2	31	30.5	28.1	31.7	24.5	27.7	29.3	29	32.3	31.9	32.3	32.2	<b>33</b>	32.1	29.1	<b>33</b>	<b>27.2</b>	24	
21		26.7	25.1	24.4	21.3	23.4	23.3	18.8	15.9	14.4	15.7	14.9	13.5	14.4	14	12.9	13.6	12.6	8.9	4.3	6.5	5.6	5.3	5.9	5.5	26.7	11.9	24	
22		5.8	6.8	8	9.6	10.5	14.4	14.6	14	14.8	13.4	16.9	15.6	15.9	16.1	17.7	18	16.3	14.2	12.2	12.6	10.9	12.9	12.5	11.7	18	13	24	
23		10.8	10.5	9.8	12.2	12.6	10.3	9.7	9.2	10	8	8	8.8	7.9	4.9	5.6	4.9	5.6	3.7	2.5	3.3	7.2	7.6	8	6.8	12.6	7	24	
24		7.8	8.6	6.8	9.4	9.2	8.9	7.1	5.4	3.9	4.7	7.9	10.2	11.2	14.4	14.4	14.6	10.4	8.6	7.2	8	8.7	9.9	11.2	11.8	14.6	7.9	24	
25		12	10.4	11.5	11.2	10.7	11.7	10.4	8.1	5.5	7.5	7.6	7.3	7.3	7.8	6.7	8.2	7.5	8.4	7.9	7.9	10.4	10.9	12.7	11	12.7	8.7	24	
26		11.8	12.4	9.6	7.5	10.3	10.6	9.9	9	8.9	11.8	11	10.9	11.2	11.7	11.2	10.1	10.9	11.1	11.9	12	15.8	15.5	10.5	11	15.8	10.3	24	
27		10.9	13.2	13.6	13	12.4	14.1	11.8	12.1	14.4	11.6	9	8.8	10.3	13.1	11.2	13.4	11.1	10.3	10.5	10.5	10.8	10.2	10.6	10.4	14.4	11.4	24	
28		9.6	10	9.5	7.8	8.3	9.3	9.6	6.9	5.2	5.9	5.6	9.6	9	11.8	11.1	11.6	11	11.9	11.5	12.1	11	13.2	12.4	11.9	13.2	9.5	24	
29		10.1	9.5	10.8	9.9	8.4	9	9.8	10.2	9.8	15.6	4.8	1.7	4.5	5.2	4.4	6.4	8.9	8.5	8.9	9.8	10	10.9	12	13.1	15.6	3.1	24	
30		12	12.5	9.7	10.6	12.3	12.8	12.1	11.9	11	10.9	10.6	9.6	6.5	7.6	5.6	5.4	3.9	2	5.1	5.5	5	6.6	4.4	1.8	12.8	5.7	24	
31		7.6	7.8	7.9	5.6	5.9	4.9	4.2	5.6	8.5	8.7	8.3	8.6	9.1	11.3	11.1	0	4.1	6.8	6.1	8.7	11.7	9	7.9	8.4	11.7	2.1	24	
HOURLY MAX		26.7	25.1	24.4	26.6	26.1	27.8	29.5	25.2	25.2	31.0	30.5	28.1	31.7	28.3	27.9	29.3	29.0	32.3	31.9	32.3	32.2	33.0	32.1	29.1				
HOURLY AVG		12.0	12.1	11.7	12.0	12.2	12.6	12.1	11.5	11.4	11.6	11.1	10.9	11.4	11.7	11.8	11.8	11.4	10.6	9.7	10.2	11.0	11.8	11.5	11.3				

### STATUS FLAG CODES

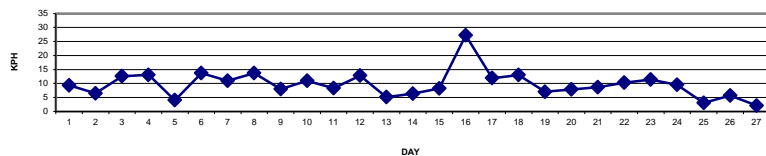
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION: June 12, 2012

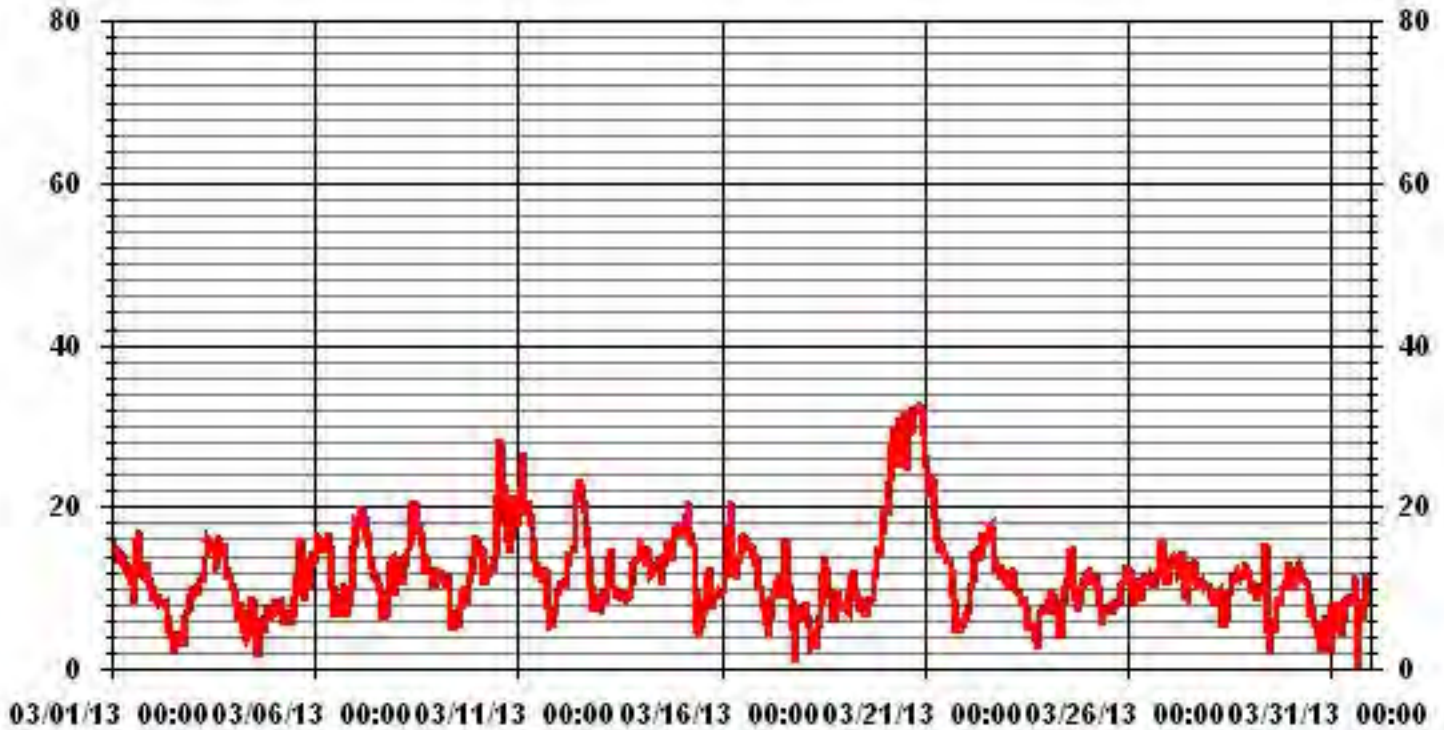
### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	33.0 KPH	@ HOUR(S)	21	ON DAY(S)	20
MAXIMUM 24-HR AVERAGE:	27.2 KPH			ON DAY(S)	20
CALMS (≤ 0 KPH)	0.27 %	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0 HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	5.26	MONTHLY AVERAGE:	11.49	KPH	

24 HOUR AVERAGES FOR MARCH 2013



### 01 Hour Averages



— LICA31 WSP KPH

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2013

### 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
DAY	PEAK	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.
1	32.9	28.7	28.1	28.5	29.8	32.2	25.9	22.8	21.1	21.5	16.5	16.5	16.9	14.7	22.3	34.2	34.4	23	19.1	17.1	18.7	21.9	21.7	19.3	34.4	
2	13.8	11.6	11.9	11.2	10.8	10.3	10.3	11	12.3	11.2	9.5	12.3	10.5	7.5	8.8	10.3	7.9	7.7	11.6	12.5	8.8	9	11.5	13	13.8	
3	15.4	15.1	15.8	17.1	19.3	19.1	18	24.1	28.9	28.7	34.4	26.5	28.3	27.2	31.4	43.2	33.3	32.7	34.3	36.6	28.7	25.2	28.5	25.9	43.2	
4	24.8	18.9	18.4	14.8	15.6	13.4	11	12.7	15.6	15.8	15.4	14.8	14.8	11.6	10.5	12.7	9.4	9.1	12.7	15.4	17.6	16.3	14	14	24.8	
5	11	8.8	11.4	13.8	12.5	10.6	11	12.1	12.3	11	10.8	13.6	16.9	21.3	28.1	32.4	33.5	24.6	19.1	20	21.1	27.4	24.6	26.1	33.5	
6	24.8	30.3	28.3	28.3	25.4	25.9	26.3	25.7	29.2	29.2	23	15.6	20.7	25.4	17.3	15.2	17.8	18	19.3	17.3	15.6	23.3	25.2	30.3	30.3	
7	36	30.9	33.1	35.7	34.7	32.7	29.6	30.9	31.4	27.8	25.7	22.6	19.7	18.9	19.1	15	16	16.9	18	22	19.5	23.2	18.7	36		
8	29.8	26.1	25	27	23.9	29.8	27.5	32.5	36	40.1	44.3	43.8	35.1	32	29	26.6	20.2	21.9	20.2	16.1	14.7	13.8	12.7	18.7	44.3	
9	21.7	24.1	21.9	23.7	23.2	20.8	25.1	28.5	29	13.8	13.2	11	10.8	14.9	18.7	21.5	22.1	19.3	20.4	21.5	22.4	30.1	32	32.2	32.2	
10	25.9	23.5	24.8	21.7	16.2	20.2	18.2	18	23.9	20.6	26.1	40.3	52.6	71.6	67.5	46	49.5	39.9	35.1	28.9	36.8	58.9	36.4	46.7	71.6	
11	44.7	53.4	44.7	72.3	56.3	43.4	49.7	39.2	47.8	38.1	36	26.1	23.5	26.1	24.5	25.2	26.7	22.1	13.6	11.9	11.7	11.4	14	19.8	72.3	
12	19.3	21.7	22.6	20.8	24.4	24.1	26.5	28.5	30.3	32.9	41.4	46.7	48.4	46.9	42.9	41.2	39.4	35.7	31.6	29.4	15.8	12.1	15.2	16.9	48.4	
13	16.2	15.4	16.3	19.5	20.6	28.3	27	29.4	19.7	21.3	18.9	24.2	25.4	16.7	23	22.8	21.3	21.7	19.1	21.1	26.5	34.2	29.6	29	34.2	
14	39.7	31.4	34.9	28.3	33.3	34.9	36.4	31.4	26.1	25.7	29	27	27.2	24.3	28.5	28.7	34.2	32.2	33.6	30.3	42.3	45.1	43	41.4	45.1	
15	35.5	39.2	37.9	41	54.8	34.3	32.9	31.6	30.5	25.7	14	14.9	16.7	21.3	21.7	25.7	22.6	25.2	21.7	14.9	20.9	19.5	20.4	18	54.8	
16	17.4	17.8	19.1	26.1	41	41.9	34.2	31.2	22.8	19.1	24.2	29.8	34	33.8	33.4	32.2	26.8	29.9	29	27.8	25.9	25.9	19.3	20.2	41.9	
17	19.6	19.3	16	17.4	18.7	17.8	20.2	21.3	20.9	27.4	26.5	20.4	26.7	31.1	38.6	29.8	23.7	23.7	26.3	16.9	15.8	14.3	11	15	38.6	
18	10.6	9.9	10.8	13.4	14.1	53.9	25.7	12.8	10.1	13	15.6	18.2	22.4	23.5	20.6	22.8	23.9	19.7	17.1	13.6	14.3	13.4	11.4	12.1	53.9	
19	11.7	11.7	15.9	20	21.1	23.5	25.4	23.7	20.2	19.1	23.2	20.8	17.6	18	18.7	16.5	15.2	16.5	23.9	25.4	27.4	25.7	25.4	30.3	30.3	
20	35.8	36	38.6	40.6	55.2	59.2	63.7	49.8	52.6	57.2	58	56.5	66.8	59.6	69.2	66.4	62.5	76.2	63.3	67.9	67.7	65.1	64.4	57.6	76.2	
21	56.5	49.1	47.8	41.9	48	47.8	40.8	33.3	29.8	39	31.1	30.3	27.9	30.1	24.3	26.3	23.7	19.1	14.5	17.3	15.6	14.8	15.2	15.6	56.5	
22	16.2	13.6	19.7	21.3	22.8	33.3	31.1	29.8	29.5	27	35.5	38.3	32.9	31.4	36.6	39.2	31.8	33.4	29.6	26.1	20.4	25.4	23	24.1	39.2	
23	19.8	21.5	18.2	23.7	22.6	19.3	17.1	18	19.3	14.7	16.7	17.1	15.4	17.1	15.4	16.2	15.4	15.2	13	10.8	11.2	10.3	11.6	13.2	23.7	
24	9.8	10.6	10.1	13.4	14.1	14.3	9.9	7.1	28.5	14.3	14.7	21.5	27.8	26.5	24.8	29.4	22.4	21.3	14	17.6	20.2	19.8	23.7	22.8	29.4	
25	23	20.4	21.1	20.6	19.3	21.7	20.2	19.1	15.2	19.3	19.3	13.4	14.5	14.3	17.8	19.7	17.1	15.4	15.1	18	21.3	22.5	25.4	20.9	25.4	
26	21.9	22.8	20.8	20.9	21.7	18.2	20.6	18.2	23.9	27.4	23.7	26.1	25.7	23.7	21.9	22.1	25.6	27.6	29.8	28.3	34	34	23	24.6	34	
27	27.4	29.4	24.6	22.1	26.7	26.3	26.4	21.1	23.5	22.6	15.6	14.5	19.7	21.5	22.1	22.3	22.3	17.3	18.2	16.2	16.7	16.2	15.8	16	29.4	
28	14.7	15.2	14.9	10.6	12.1	13	15.2	13.6	11.4	9	11.6	21	19.1	31.8	20.6	24.3	23.9	20.4	20.6	20.6	18.2	21.5	16.9	15.8	31.8	
29	12.3	19.5	23.7	18	16.2	15.8	21.3	20.8	21	26.5	25	7.9	11.9	12.1	11	14.9	17.1	16.5	16	16.9	14	16.7	19.1	25	26.5	
30	23	25.4	20.2	22.8	22.4	25.3	23	32.9	30.5	22	30	28.1	18	18.2	15.8	13.8	12.5	11.4	10.8	13.8	11.4	14.3	14.9	10.3	32.9	
31	15.4	13.2	15.2	11.6	14.9	14.3	13.4	19.5	19.7	18.2	15.4	19.1	19.7	24.8	27.6	17.8	26.5	17.3	17.6	24.3	22.6	17.5	13.8	14.8	27.6	
PEAK	56.5	53.4	47.8	72.3	56.3	59.2	63.7	49.8	52.6	57.2	58.0	56.5	66.8	71.6	69.2	66.4	62.5	76.2	63.3	67.9	67.7	65.1	64.4	57.6		

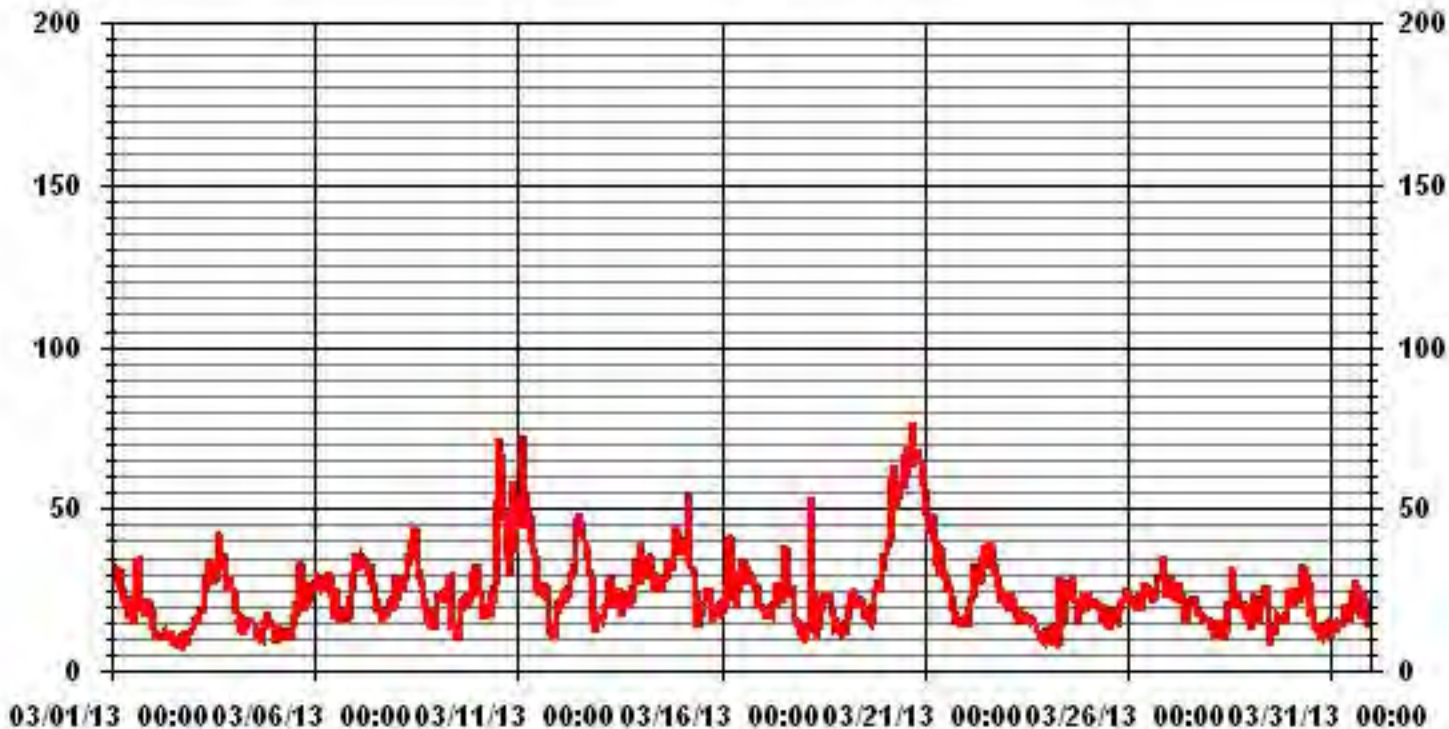
**STATUS FLAG CODES**

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**

MAXIMUM INSTANTANEOUS READING	76.2	KPH	@ HOUR(S)	17
			ON DAY(S)	20

### 01 Hour Averages



— LICA31 WSMAX KPH

LICA31  
WSP / WDR Joint Frequency Distribution (Percent)

March 2013

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	1.34	.67	.40	.53	.13	.53	.53	.80	.53	.67	1.61	.80	.26	.40	.40	1.74	11.42
< 12.0	4.03	1.07	1.74	2.82	2.28	1.61	1.74	1.88	5.91	8.33	6.45	2.28	2.41	.53	4.03	2.55	49.73
< 20.0	1.47	.67	.53	5.24	2.55	1.74	1.20	1.20	2.41	3.89	3.22	.94	.40	.80	3.36	2.55	32.25
< 29.0	.13	.00	.00	.00	.80	.94	.40	.67	.00	.40	.00	.13	.40	.13	.26	.26	4.56
< 39.0	.00	.00	.00	.00	.13	1.20	.40	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.74
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	6.98	2.41	2.68	8.60	5.91	6.04	4.30	4.56	8.87	13.30	11.29	4.16	3.49	1.88	8.06	7.12	

Calm : .26 %

Total # Operational Hours : 744

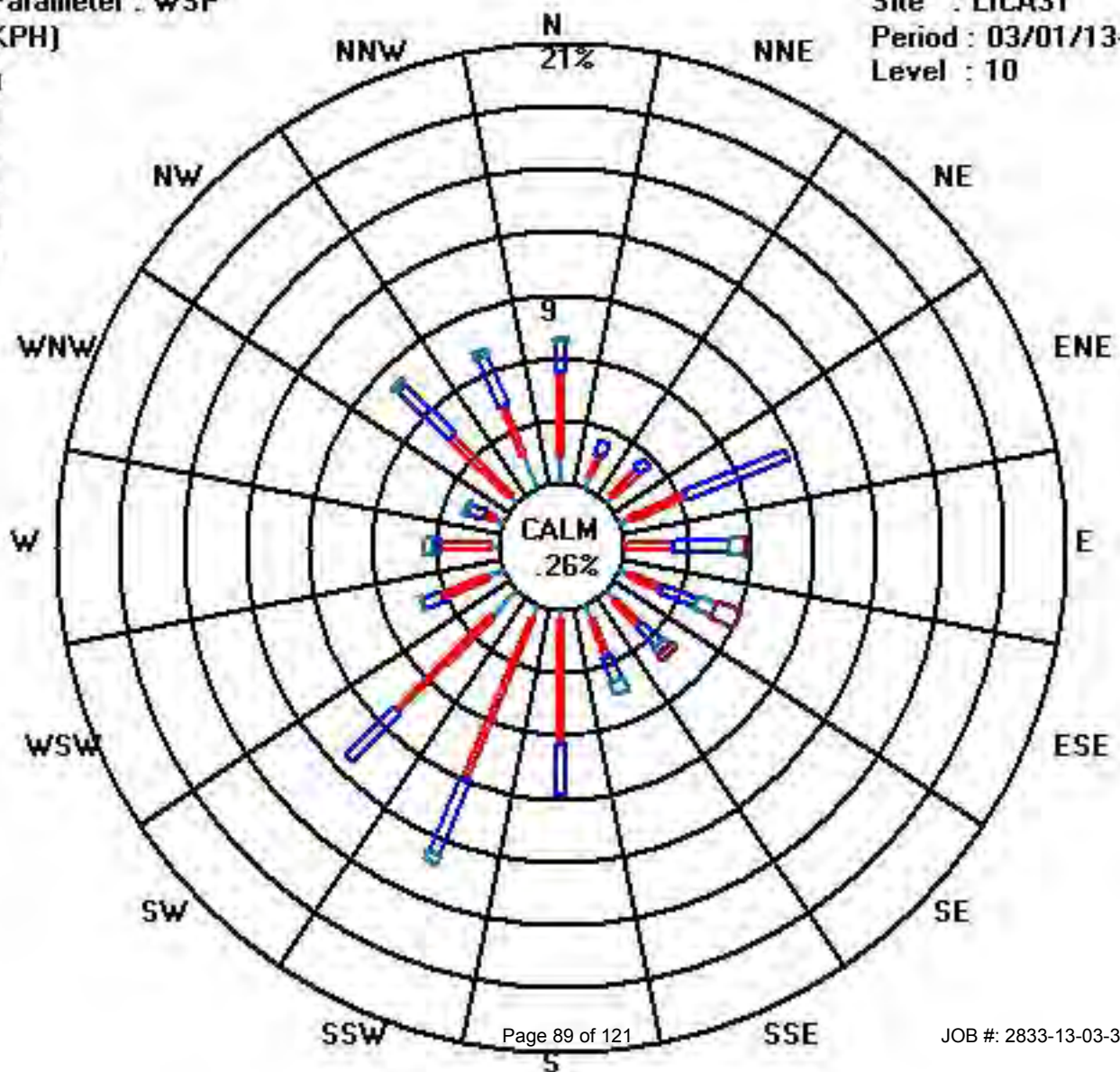
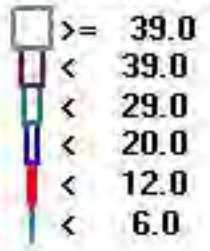
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	10	5	3	4	1	4	4	6	4	5	12	6	2	3	3	13	85
< 12.0	30	8	13	21	17	12	13	14	44	62	48	17	18	4	30	19	370
< 20.0	11	5	4	39	19	13	9	9	18	29	24	7	3	6	25	19	240
< 29.0	1				6	7	3	5		3		1	3	1	2	2	34
< 39.0					1	9	3										13
>= 39.0																	
Totals	52	18	20	64	44	45	32	34	66	99	84	31	26	14	60	53	

Calm : .26 %

Total # Operational Hours : 744





# Vector Wind Direction

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

MARCH 2013

## WIND DIRECTION 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	24-HOUR	24-HOUR AVG		
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	AVG.	QUADRANT	RDGS.	
DAY 1	173	162	158	159	161	184	206	214	222	223	230	235	233	217	248	256	266	263	248	242	247	262	273	310	224	SW	24	
2	282	235	232	253	254	237	275	260	265	275	284	308	227	14	52	69	108	139	146	81	75	59	74	70	258	WSW	24	
3	89	74	55	56	54	49	54	58	61	66	71	60	49	33	10	12	20	8	19	22	24	349	349	345	38	NE	24	
4	356	353	358	348	323	334	327	339	352	85	112	115	132	243	238	122	118	125	159	184	191	191	203	203	109	ESE	24	
5	221	209	225	218	227	227	224	218	223	227	220	214	215	210	205	196	202	210	196	195	187	200	203	203	209	SSW	24	
6	205	196	202	200	204	210	220	214	213	209	208	218	193	189	110	105	94	67	95	86	93	71	78	66	176	S	24	
7	69	65	65	63	65	66	66	59	57	61	69	73	73	73	77	85	77	103	101	91	96	98	109	149	75	ENE	24	
8	169	178	179	185	185	189	189	192	202	196	200	205	216	219	220	218	220	219	229	232	230	243	244	276	209	SSW	24	
9	304	339	341	338	340	350	338	7	350	282	243	234	237	235	228	186	200	195	187	194	200	202	189	194	251	WSW	24	
10	207	203	211	226	217	217	215	223	226	231	236	258	267	272	263	254	282	311	308	304	307	304	293	284	260	WSW	24	
11	284	296	320	342	351	334	336	334	341	350	355	322	309	306	306	320	309	292	328	233	219	203	203	186	319	NW	24	
12	191	184	188	180	175	178	176	178	175	173	165	164	161	165	161	155	162	161	166	164	129	128	133	97	165	SSE	24	
13	88	77	76	68	89	69	63	48	39	42	45	1	18	46	3	7	4	358	336	325	332	339	335	336	24	NNE	24	
14	340	349	353	351	355	5	13	11	34	42	57	61	59	75	73	85	89	92	84	79	75	83	89	88	50	NE	24	
15	79	81	80	76	81	76	72	72	77	76	71	29	357	350	349	328	337	322	322	326	342	5	19	29	45	NE	24	
16	42	58	68	74	83	89	95	97	110	107	112	107	112	122	129	132	124	130	121	121	127	134	132	111	108	ESE	24	
17	91	82	64	52	30	356	359	352	338	349	352	345	316	315	312	329	329	327	348	341	203	218	225	209	337	NNW	24	
18	221	227	233	258	279	313	359	278	236	295	318	270	268	253	245	280	313	323	319	255	258	246	245	247	266	W	24	
19	212	209	205	189	181	181	179	182	198	198	190	205	194	170	153	123	117	136	134	135	135	124	122	109	160	SSE	24	
20	109	106	98	101	102	100	98	94	99	113	115	131	135	134	136	133	129	122	118	119	117	117	119	116	116	ESE	24	
21	113	112	112	111	113	115	105	104	101	95	72	76	68	73	61	61	60	58	12	358	357	335	338	347	89	E	24	
22	346	315	320	309	311	308	313	313	315	320	320	326	326	324	324	325	332	330	343	342	328	334	326	325	324	NW	24	
23	314	316	309	311	316	314	314	309	321	322	322	320	320	336	357	7	4	344	23	195	271	272	275	269	314	NW	24	
24	261	268	266	254	286	278	270	242	191	203	216	211	196	214	216	212	201	198	203	188	189	188	187	192	219	SW	24	
25	191	188	194	188	189	176	172	169	172	186	196	231	233	219	180	172	148	146	158	162	173	169	178	186	182	S	24	
26	193	190	170	132	109	129	127	130	159	170	155	151	149	142	132	154	156	158	167	165	171	177	195	188	159	SSE	24	
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28	216	209	202	214	208	201	220	219	209	219	200	196	201	190	193	194	203	208	210	208	214	231	236	244	210	SSW	24	
29	246	282	322	322	357	9	13	30	57	65	84	228	228	234	238	219	212	206	211	219	235	250	258	284	277	W	24	
30	299	342	333	330	330	336	340	357	1	8	8	8	346	330	349	342	347	54	149	158	190	217	234	62	357	N	24	
31	89	101	110	120	168	156	175	168	197	214	219	202	202	184	192	163	5	9	3	357	33	49	47	42	357	N	24	
HOURLY AVG	356	353	358	351	357	356	359	357	352	350	355	345	357	350	357	342	347	358	348	358	357	349	349	347				

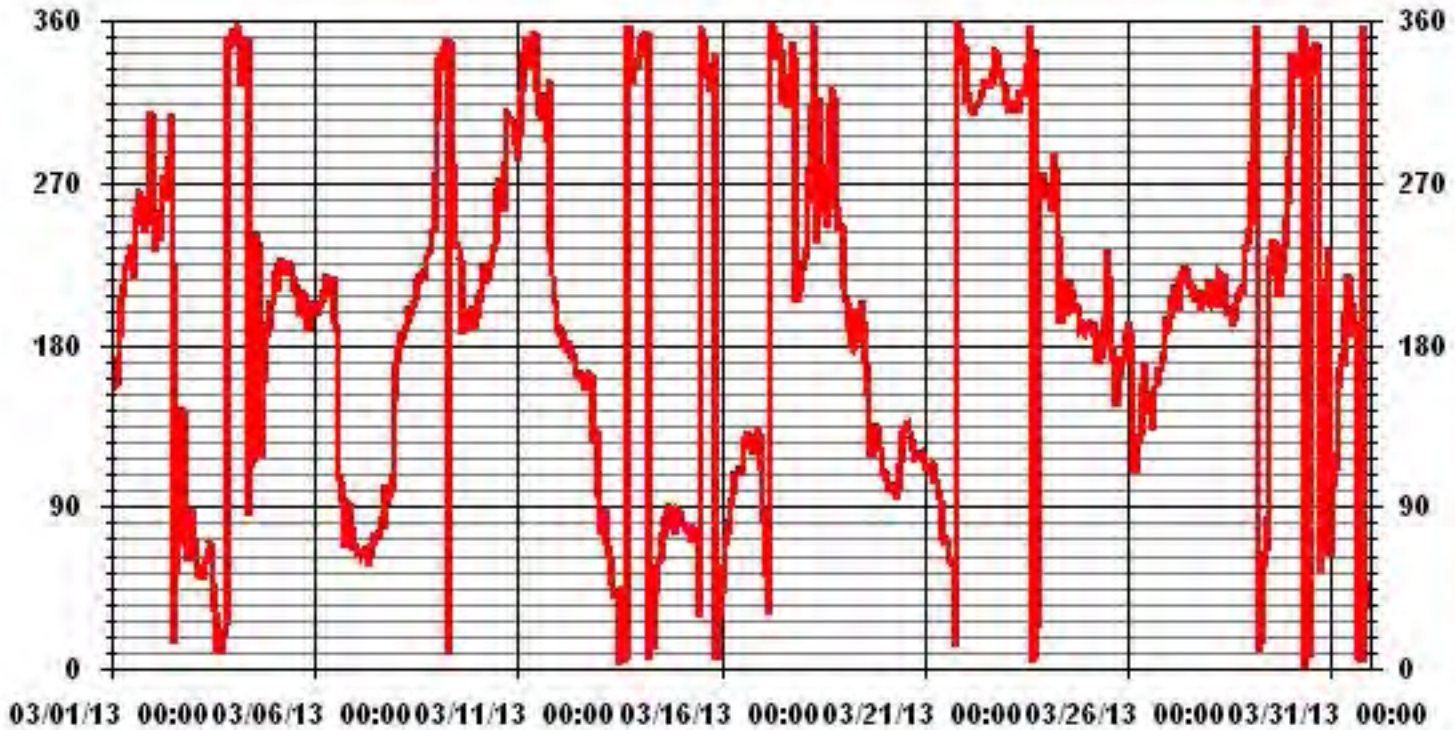
### STATUS FLAG CODES

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

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

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	96.38	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	166 DEG

# 01 Hour Averages



# Standard Deviation Wind Direction

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

MARCH 2013

## STANDARD DEVIATION WIND DIRECTION (STDWDIR) 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	9	11	10	12	11	10	10	9	7	7	6	6	8	10	11	8	7	6	5	4	5	7	10	10
2	7	5	4	6	5	6	7	9	7	12	22	30	11	39	25	22	10	18	13	4	4	4	3	7
3	6	8	8	7	8	8	7	8	9	9	10	11	12	13	16	15	14	18	14	14	13	14	18	13
4	14	14	16	14	12	11	10	11	21	18	13	15	43	52	53	47	13	10	9	5	5	7	5	6
5	5	5	4	5	7	6	8	8	7	9	12	12	14	14	15	14	12	11	9	8	8	9	9	9
6	8	9	10	9	9	8	8	9	9	11	12	16	21	19	26	11	10	9	15	10	12	11	11	11
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10	9	9	10	6	7	7	6	6	7	8	8	10	10	14	11	8	13	15	14	14	15	15	15	13
11	13	15	14	14	15	15	13	12	13	20	17	19	19	19	20	16	17	16	24	10	7	6	8	5
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13	11	8	9	10	16	9	10	10	13	13	14	21	19	16	17	20	17	15	13	13	13	14	13	13
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19	5	5	8	7	6	8	9	12	12	17	15	18	19	23	22	17	14	14	12	11	11	10	9	9
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21	10	11	11	11	10	11	11	10	11	12	12	12	13	11	11	11	11	11	19	13	16	14	12	13
22	14	12	13	14	13	13	14	14	13	15	13	14	14	13	14	13	14	13	13	12	10	11	11	12
23	11	12	11	12	11	12	11	13	13	16	16	15	18	40	35	32	28	26	25	10	11	4	3	7
24	5	3	8	6	7	3	5	6	16	13	13	16	18	14	15	14	14	15	10	6	5	6	8	8
25	7	7	6	6	6	6	7	11	17	13	18	14	17	15	21	15	17	16	11	8	8	8	7	7
26	6	7	7	9	6	11	10	11	15	12	15	18	20	18	19	20	16	14	13	12	10	12	11	9
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28	7	6	7	4	5	5	5	6	7	7	16	13	14	12	14	12	12	11	9	8	10	11	5	3
29	5	10	11	10	14	13	13	12	12	10	46	55	28	25	39	19	15	12	9	8	5	5	5	9
30	12	12	12	11	11	11	12	14	16	21	18	18	27	30	29	28	31	21	12	11	14	12	35	35
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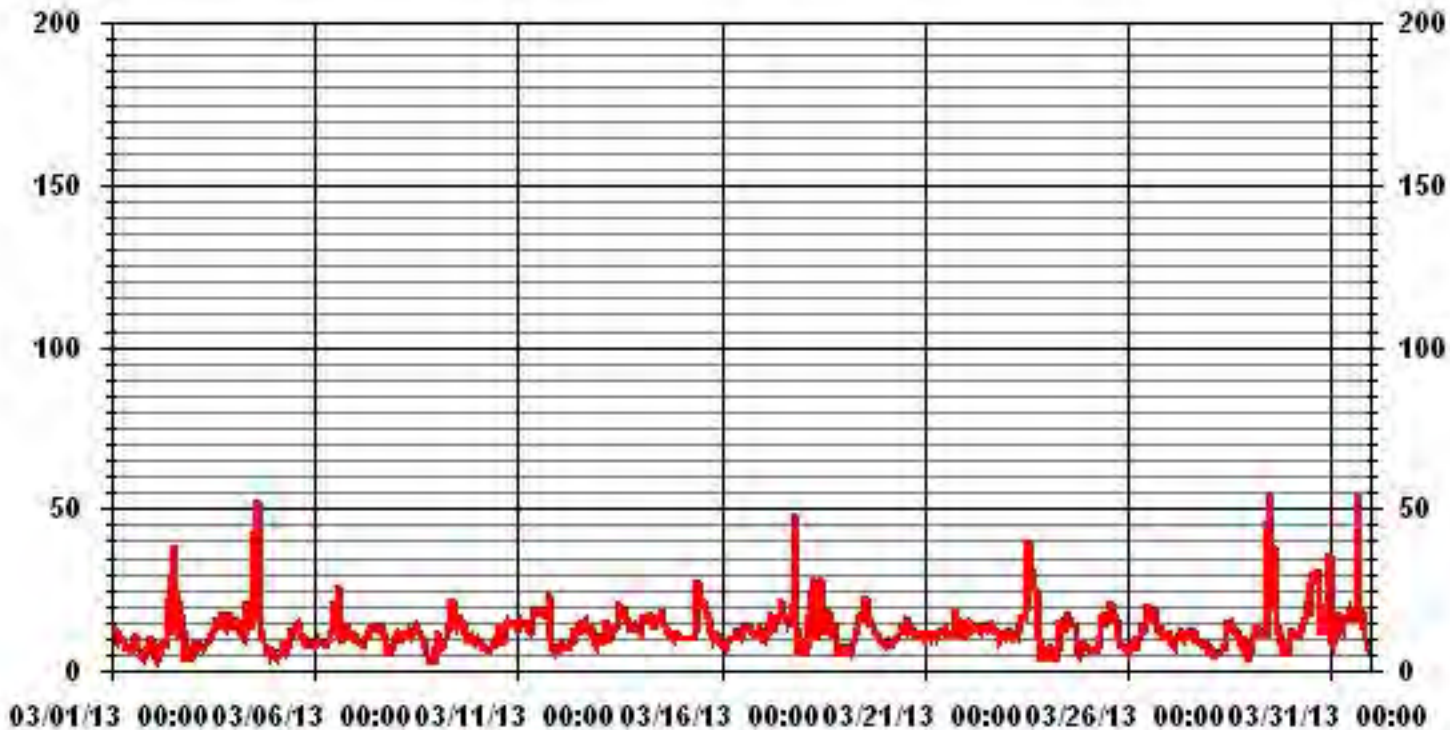
### STATUS FLAG CODES

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: June 12, 2012

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS

# 01 Hour Averages



# Calibration Reports



# Sulphur Dioxide

**SO2 Calibration Report**

**Station Information**

Calibration Date	March 20, 2013	Previous Calibration	February 20, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	12:55	End Time (MST)	16:25
Reason:	Monthly Calibration		
Barometric Pressure	27.25 inHg	Station Temperature	24 Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	BAL3031
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 :	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				
Sample Flow / Box Temp	568 ccm	25.9 Deg C	568 ccm	27.2 Deg C	
HVPS / Lamp Setting	540	2158	540	2159	
PMT / RxCell Temp	7.8 Deg C	50 Deg C	7.8 Deg C	50 Deg C	
Converter / IZS Temp	NA Deg C	40 Deg C	NA Deg C	40.0 Deg C	
Offset / Slope	98.2	1	101.3	0.989	

**Calibration Data**

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	2	N/A
5000	0	0	0	N/A
4915	79.8	792	802	0.9881
4915	79.8	792	791	1.0018
4960	40.0	397	392	1.0122
4980	20.0	198	197	1.0071
5000	0	0	0	N/A
Sum of Least Squares				1.0040
New Correction Factor				1.0018

**IZS alibration Data**

Before Calibration		After Calibration	
Auto Zero	0.7		0.0
Auto Span	238.1		239.6
Sample Lines Connected			YES

**Percent Change**

Previous Month's Calibration Correction Factor:	0.9970
Current Correction Factor Before Span Adjust:	0.9881
Percent Change:	0.9%

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

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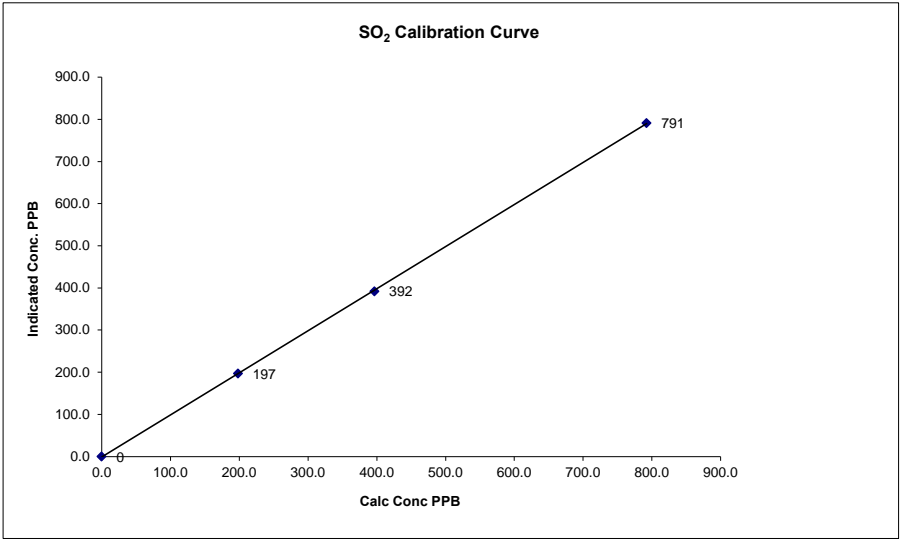


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**SO<sub>2</sub> Calibration Curve**

Calibration Date	March 20, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	12:55
End Time (MST)	16:25

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		0.999967
198	197	1.0071		0.998040
397	392	1.0122		-1.229947
792	791	1.0018		



**Notes:**

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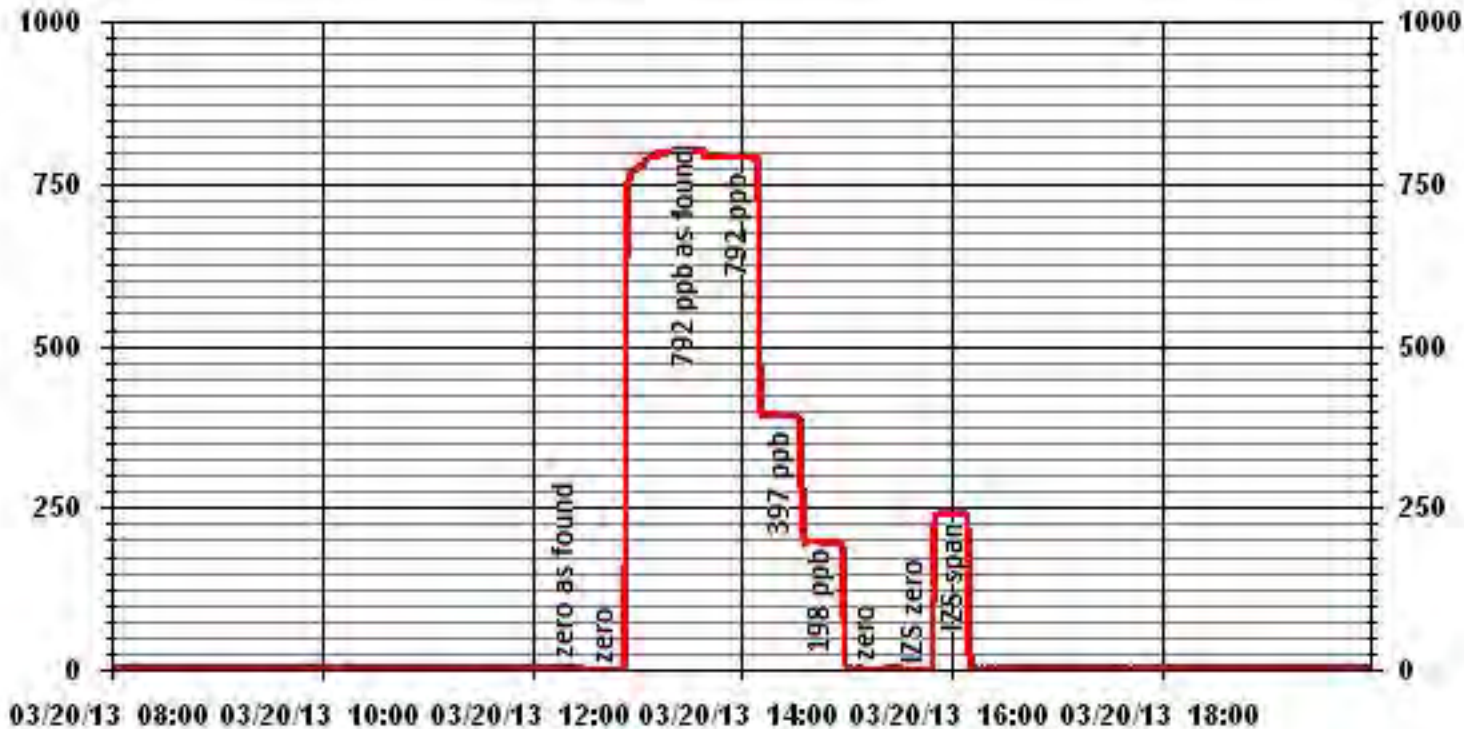
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Calibration Performed by: Waseem Ahmed

### 01 Minute Averages



# Hydrogen Sulphide

## H2S Calibration Report

### Station Information

Calibration Date	March 20, 2013	Previous Calibration	February 19, 2013
Company	<b>LAKELAND INDUSTRY &amp; COMMUNITY ASSOCIATION</b>		
Plant / Location	<b>ST.LINA</b>		
Start Time (MST)	12:55	End Time (MST)	16:10
Reason:	Monthly Calibration		
Barometric Pressure	27.25 inHg	Station Temperature	24 Deg C
Cal Gas	10.1 ppm	Gas Cyl. #	BLM00504
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	December 25, 2015
		Chart Rec. Output	NA Volts

### Equipment Information

Analyzer Make / Model:	API 101E	S/N :	510	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	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		
Sample Flow / Box Temp	520 ccm, 28.6 Deg C	529 ccm, 30.3 Deg C	
HVPS / Lamp Setting	518, 2121	518, 2116	
PMT / RxCell Temp	8.4 Deg C, 50 Deg C	8.4 Deg C, 50 Deg C	
Converter / IZS Temp	314.4 Deg C, 45 Deg C	314.4 Deg C, 45.0 Deg C	
Offset / Slope	105.8, 1.055	109.8, 1.046	

### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	2	NA
5000	0	0	0	1.0000
4960	40.0	81	84	0.9619
4960	40.0	81	82	0.9854
4980	20.0	40	41	0.9854
4988	10.0	20	21	0.9623
5000	0	0	1	NA
Sum of Least Squares				0.9842
New Correction Factor				0.9854

### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0		0.6
Auto Span	38.8		39.9
Sample Lines Connected			YES

### Percent Change

Previous Month's Calibration Correction Factor:	0.9877
Current Correction Factor Before Span Adjust:	0.9619
Percent Change:	2.7%

Notes: **NA : Not Applicable**

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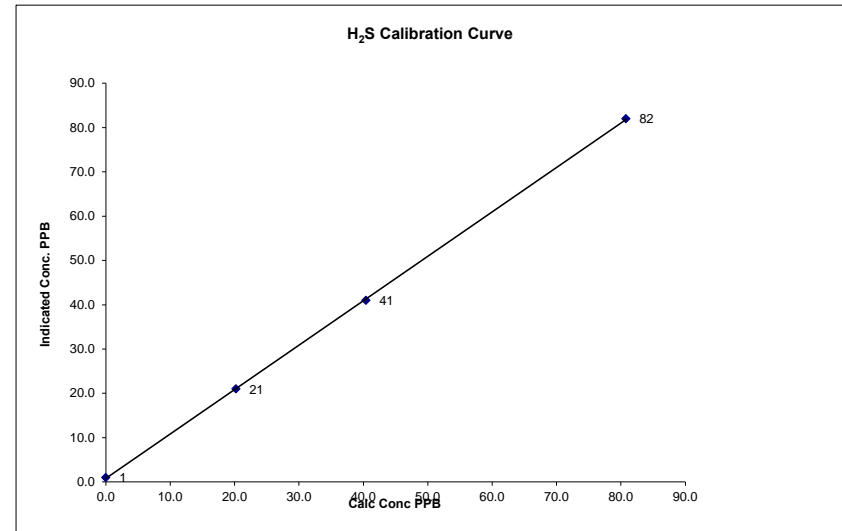
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Calibration Performed by: Waseem Ahmed

## H<sub>2</sub>S Calibration Curve

Calibration Date	March 20, 2013
Company	<b>LAKELAND INDUSTRY &amp; COMMUNITY ASSOCIATION</b>
Plant / Location	<b>ST.LINA</b>
Start Time (MST)	12:55
End Time (MST)	16:10

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	1			0.999952
20	21	0.9623		1.002863
40	41	0.9854		0.796762
81	82	0.9854		



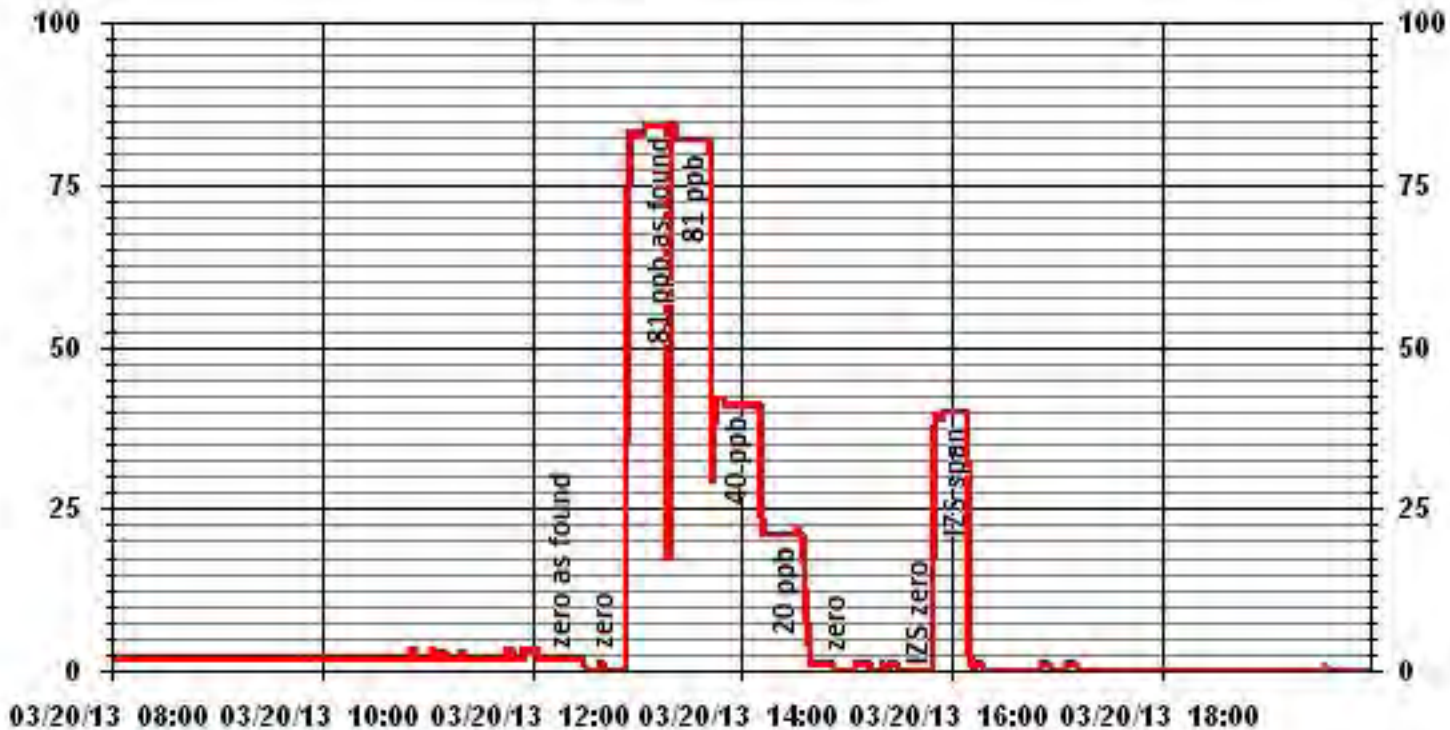
Notes:

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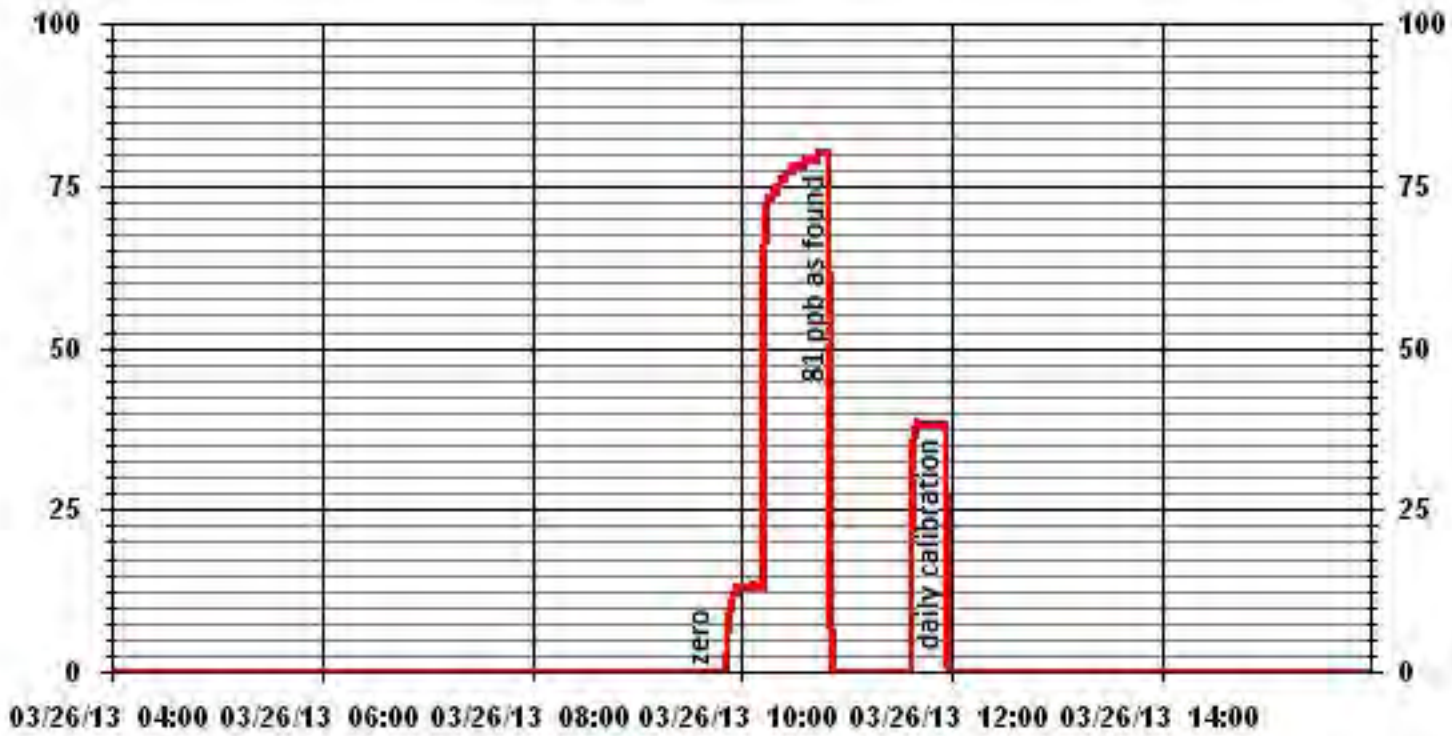
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### 01 Minute Averages





# 01 Minute Averages





# Total Hydrocarbons

### THC Calibration Report

Station Information			
Calibration Date:	March 21, 2013	Previous Calibration	February 19, 2013
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	ST. LINA		
Start Time (MST)	9:00	End Time (MST)	11:30
Reason:	Monthly Calibration		
Barometric Pressure:	27.25 inHg	Station Temperature:	24 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 600 PPM	C3H8 204 PPM	
	TOTAL CH4 1161.0 PPM	Gas Cyl. # LL155310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832	S/N :	AO 717
Chart Recorder:	NA	S/N:	NA
Output Voltage Range:	0 - 10 VDC	Chart Speed:	NA mm/hr

### Analyzer Information

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

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	6.8	psi	6.8	psi
Hydrogen Pressure	9	psi	9	psi
Air Pressure	21	psi	21	psi

### Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	-0.1	NA
2000	0.0	0.0	0.0	NA
1931	69.2	40.2	39.9	1.0067
	No Span Adj.			
1965	34.6	20.1	19.7	1.0198
1983	17.3	10.0	9.8	1.0246
2000	0.0	0.0	0.0	NA
New Correction Factor:				1.0067

### Percent Change

Previous Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0067
Percent Change:	-0.7%

### IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	34.8	35.1
Sample Lines Connected	YES	

Cylinder Pressures			
Span	300 psi	Hydrogen 700 psi	Zero Air 34 psi

Notes: **NA : Not Applicable**

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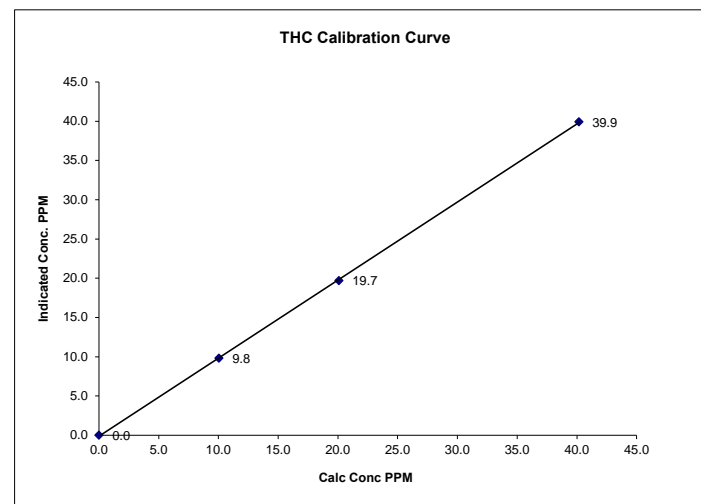
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Calibration Performed by: Waseem Ahmed

### THC Calibration Curve

Calibration Date	March 21, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	9:00
End Time (MST)	11:30

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient	Slope	Intercept
0.0	0.0	NA	(≥ 0.995)	0.999944	0.994123
10.0	9.8	1.0246	(0.85 to 1.15)		(± 3% F.S.) -0.12098
20.1	19.7	1.0198			
40.2	39.9	1.0067			



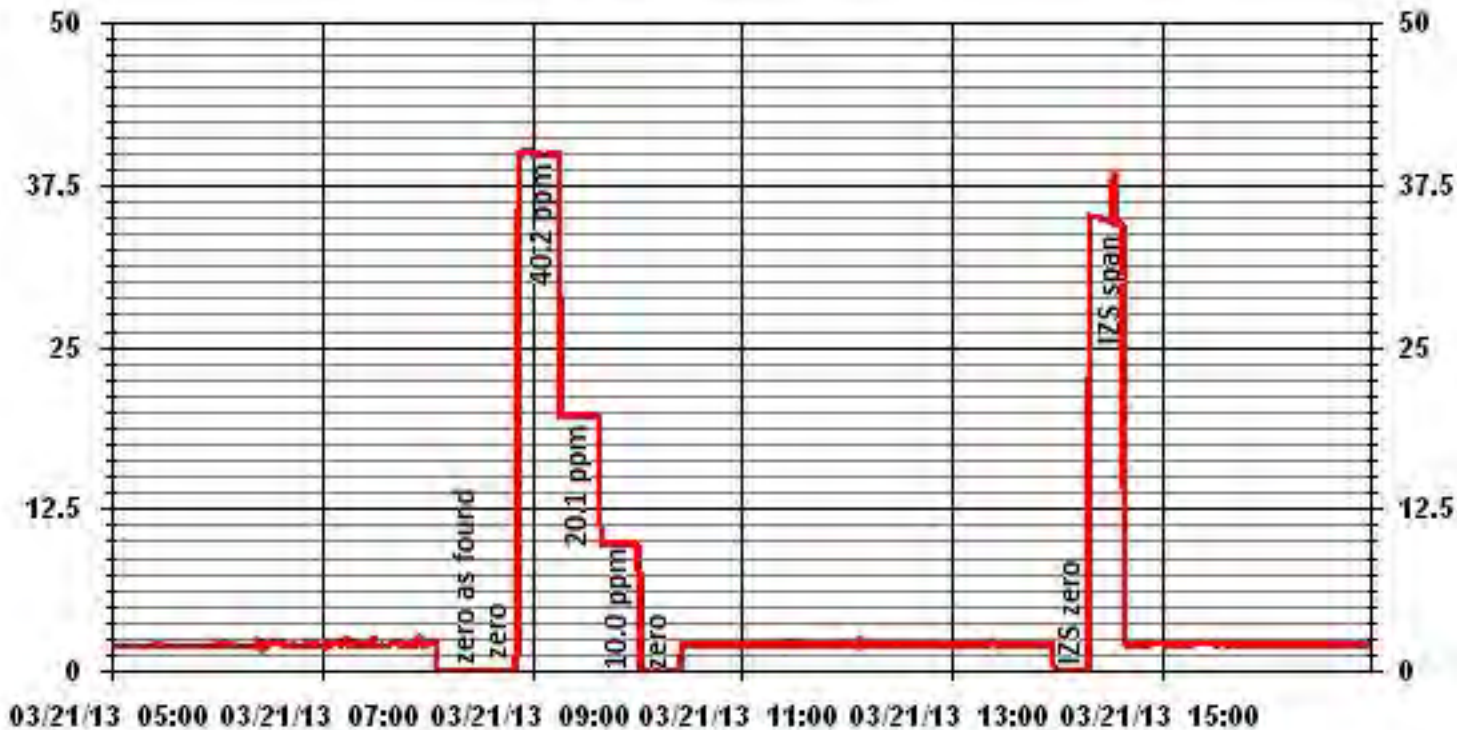
Notes:

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### 01 Minute Averages



# Nitrogen Dioxide

**NOx - NO- NO2 Calibration Report**

**Station Information**

Calibration Date	March 20, 2013	Previous Calibration	February 19, 2013
Company	LICA	Plant/Location	St. Lina
Start Time (MST)	12:55	End Time (MST)	16:25
Reason:	Monthly Calibration (without GPT)		
Barometric Pressure	27.25 inHg	Station Temperature	24 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO 49.2 ppm	Cal Gas Expiry date
Cal Gas Cylinder #	BAL3031		December 29, 2016
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

**Equipment Information**

Analyzer Make / Model:	TAPI 200E	S/N :	592	Method:	Chemiluminescent
Calibrator Make / Model:	Environics 6100	S/N:	4760		
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/Conv. Temp	466 ccm	316 Deg C		466 ccm	315 Deg C		
Ozone Flow / Vacuum	73 ccm	6.1 *Hg-A		72 ccm	6.1 *Hg-A		
HVPS / A ZERO	638 Volts	16.3 MV		638 Volts	16.9 MV		
Rx/ Temp / PMT Temp	49.8 Deg C	6.8 Deg C		50.0 Deg C	6.8 Deg C		
Box Temp / IZS Temp	24.5 Deg C	45.3 Deg C		26.1 Deg C	45.3 Deg C		
Offset	0 NOx	0.3 NO		1.6 NOx	1.1 NO		
Slope	1.074 NOx	1.070 NO		1.146 NOx	1.141 NO		
NO2 COEF / Conv Efficiency	N/A NO2	0.993 N/A		NA NO2	0.993		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4995	0.0	NA	0	0	NA	2	0	2	NA	NA
4995	0.0	NA	0	0	NA	2	1	1	NA	NA
4915	79.8	NA	788	786	NA	740	736	5	1.0673	1.0680
4915	79.8	NA	788	786	NA	791	788	4	0.9983	0.9975
4955	39.9	NA	394	393	NA	395	393	2	1.0021	1.0000
4975	19.8	NA	195	195	NA	200	199	2	0.9870	0.9801
4995	0.0	NA	0	0	NA	3	1	2	NA	NA

**Gas Phase Titration Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		

Linearity OK?	Yes	No	Sum of Least Squares	NOx= 0.995	NO= 0.997	NO2= #VALUE!
			Correction Factors:	NOx= 0.9983	NO= 0.9975	NO2=
				Average Converter Efficiency= #DIV/0!		

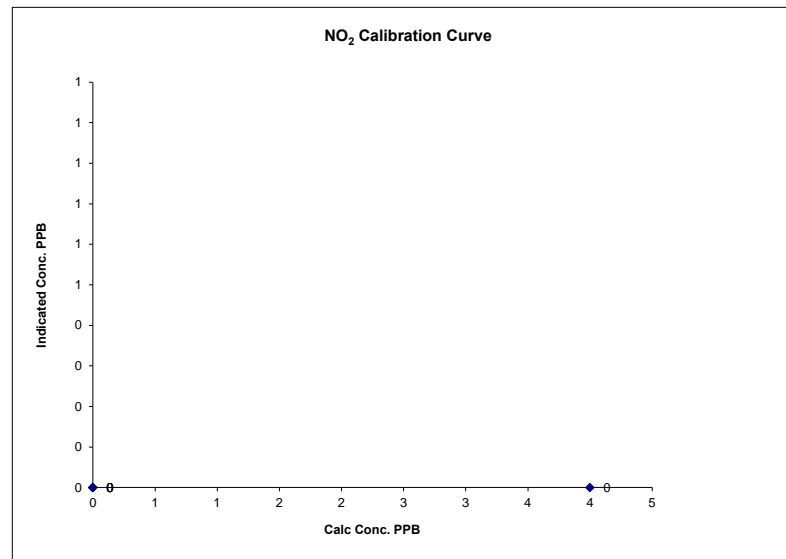
**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.6 NOx	0.8 NO2		0.0 NOx	0.0 NO2		
Auto Span	514 NOx	505 NO2		547 NOx	537 NO2		
	Sample Lines Connected: YES						
Percent Change from Previous Calibration	NOx -5.2%	NO -4.9%		NO2 #VALUE!			
Notes	<b>NA : Not Applicable</b>						
	Due to running out of the time, the GPS calibration cannot be completed. Will do GPT tomorrow.						
Calibration Performed by:	Waseem Ahmed						

**NO2 Calibration Curve**

Calibration Date	March 20, 2013
Company	LICA
Plant / Location	St. Lina
Start Time (MST)	12:55
End Time (MST)	16:25

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	#DIV/0!
4	0	N/A	Intercept	(± 3% F.S.)	0.00000
0	0	#DIV/0!			0.00000
0	0	#DIV/0!			
0	0	#DIV/0!			

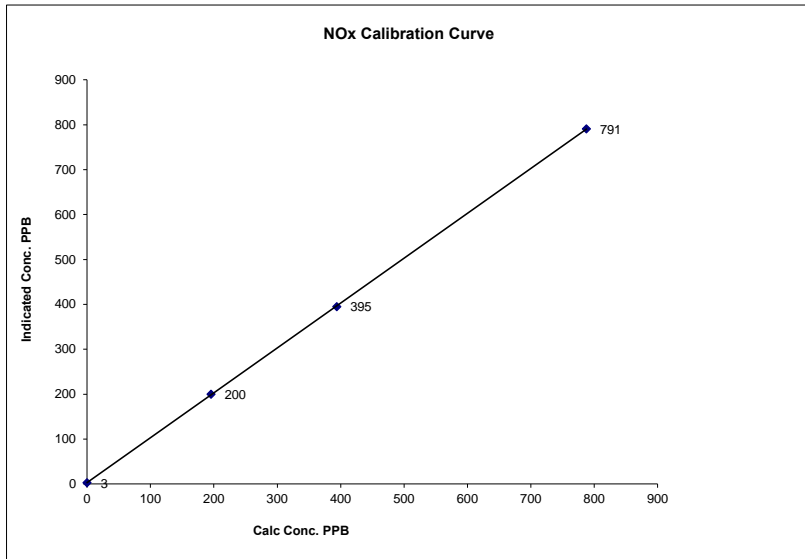


Notes:

### NOx Calibration Curve

Calibration Date	March 20, 2013		
Company	LICA		
Plant / Location	St. Lina		
Start Time (MST)	12:55	End Time (MST)	16:25

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999983
0	3	N/A	Slope (0.85 to 1.15)	0.999508
195	200	0.9772	Intercept (± 3% F.S.)	3.19570
394	395	0.9970		
788	791	0.9958		

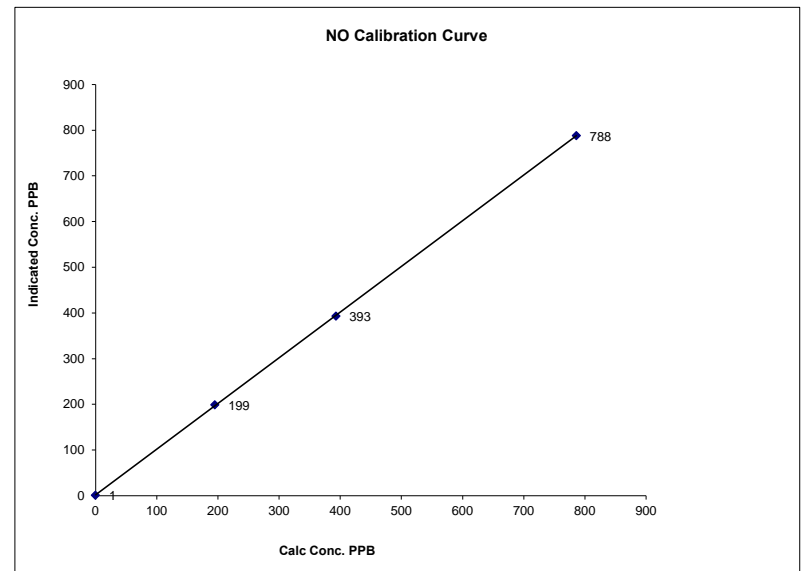


Notes:

### NO Calibration Curve

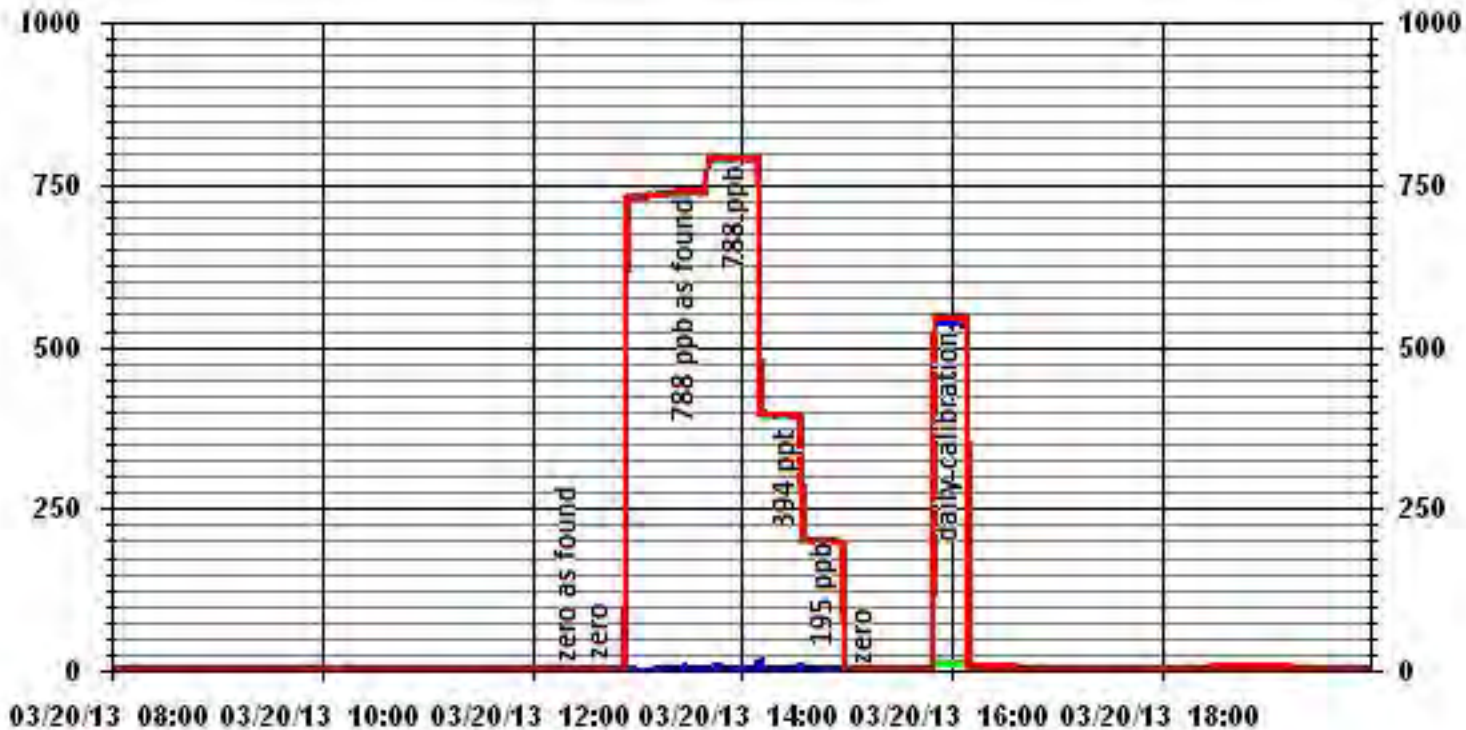
Calibration Date	March 20, 2013		
Company	LICA		
Plant / Location	St. Lina		
Start Time (MST)	12:55	End Time (MST)	16:25

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999975
0	1	N/A	Slope (0.85 to 1.15)	0.997779
195	199	0.9801	Intercept (± 3% F.S.)	-1.9842
393	393	1.0000		
786	788	0.9975		



Notes:

### 01 Minute Averages



— LICA31 IIOX\_ PPB

— LICA31 IIO\_ PPB

— LICA31 IIO2\_ PPB

**NOx - NO- NO2 Calibration Report**

**Station Information**

Calibration Date	March 21, 2013	Previous Calibration	February 19, 2013
Company	LICA	Plant/Location	St. Lina
Start Time (MST)	9:00	End Time (MST)	12:00
Reason:	Monthly Calibration (GPT Part)		
Barometric Pressure	27.25 inHg	Station Temperature	24 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO 49.2 ppm	Cal Gas Expiry date
Cal Gas Cylinder #	BAL3031		December 29, 2016
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

**Equipment Information**

Analyzer Make / Model:	TAPI 200E	S/N :	592	Method:	Chemiluminescent
Calibrator Make / Model:	Envionics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Envionics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range	0 - 1000			ppb			
Sample Flow/Conv. Temp	471 ccm	315 Deg C		473 ccm	314 Deg C		
Ozone Flow / Vacuum	73 ccm	6.1 *Hg-A		73 ccm	6.1 *Hg-A		
HVPS / A ZERO	638 Volts	16.8 MV		638 Volts	16.8 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.9 Deg C		50.1 Deg C	6.9 Deg C		
Box Temp / IZS Temp	26.1 Deg C	45.0 Deg C		26.4 Deg C	45.3 Deg C		
Offset	1.6 NOx	1.1 NO		1.6 NOx	1.1 NO		
Slope	1.146 NOx	1.141 NO		1.146 NOx	1.141 NO		
NO2 COEF / Conv Efficiency	N/A	0.993	N/A	NA	0.993		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4995	0.0	NA	0	0	NA	3	2	3	NA	NA

**Gas Phase Titration Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4915	79.8	0	788	786	0	793	793	2	NA	NA
4915	79.8	600	788	NA	568	787	227	562	1.0161	98.94%
	No Adj									
4915	79.8	300	788	NA	285	791	510	283	1.0179	99.29%
4915	79.8	120	788	NA	115	793	680	114	1.0360	99.12%

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= #VALUE!	NO= #VALUE!	NO2= 1.010
				NOx=	NO=	NO2= 1.0161
			Average Converter Efficiency=	99.12%		

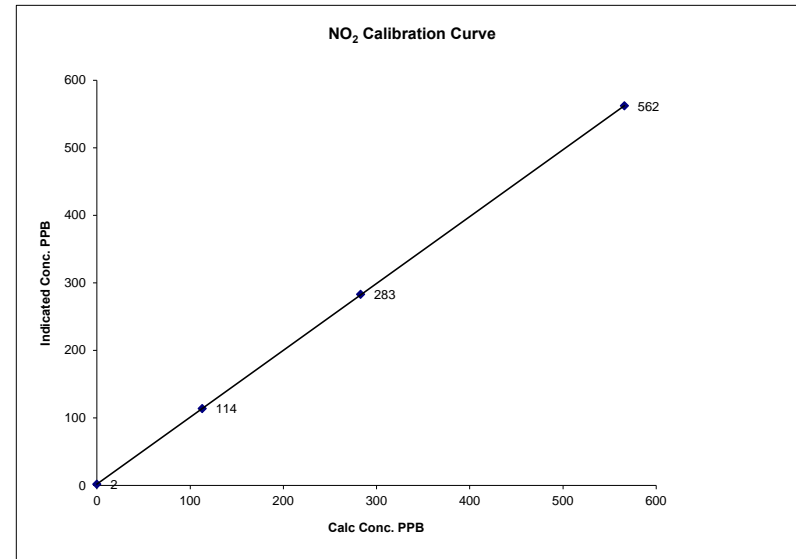
**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0	NOx	0.0	NO2	0.0	NOx	0.0
Auto Span	547	NOx	537	NO2	542	NOx	534
Percent Change from Previous Calibration		NOx	#VALUE!	NO	#VALUE!	NO2	-1.6%
Notes	<b>NA : Not Applicable</b>						
	Additional GPT point was put in for O3 calibration. (dilution 4915, source 79.8, O3 450, Nox 794, NO 369, NO2 425)						
Calibration Performed by:	Waseem Ahmed						

**NO2 Calibration Curve**

Calibration Date	March 21, 2013
Company	LICA
Plant / Location	St. Lina
Start Time (MST)	9:00
End Time (MST)	12:00

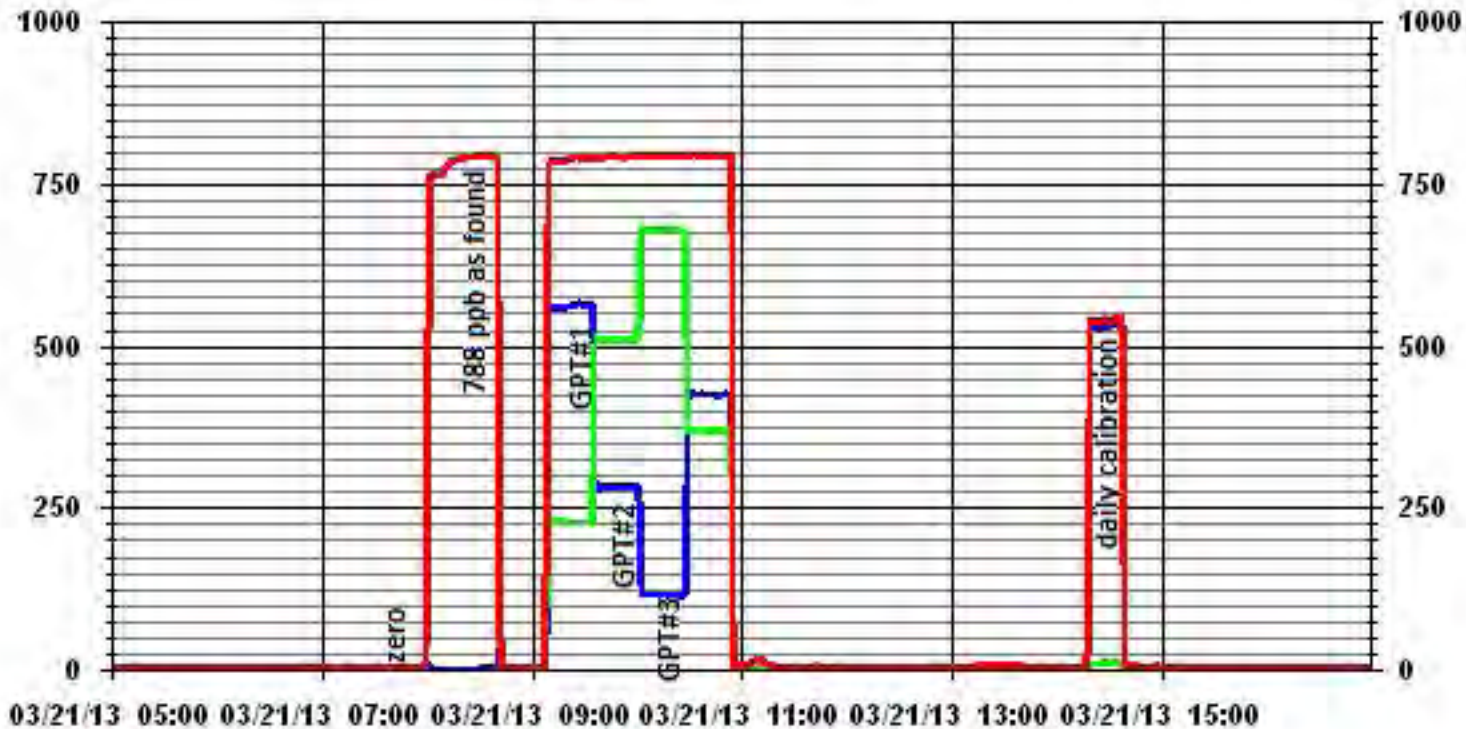
Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	2	N/A			0.999996
113	114	0.9912			0.989494
283	283	1.0000			
566	562	1.0071			2.27663



Notes:



# 01 Minute Averages



— LICA31 IIOX\_ PPB

— LICA31 IIO\_ PPB

— LICA31 IIO2\_ PPB

**NOx - NO- NO2 Calibration Report**

**Station Information**

Calibration Date	March 26, 2013	Previous Calibration	March 20, 2013
Company	LICA	Plant/Location	St. Lina
Start Time (MST)	10:00	End Time (MST)	12:15
Reason:	As Found		
Barometric Pressure	27.66 inHg	Station Temperature	20 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO 49.2 ppm	Cal Gas Expiry date
Cal Gas Cylinder #	BAL3031		December 29, 2016
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

**Equipment Information**

Analyzer Make / Model:	TAPI 200E	S/N :	592	Method:	Chemiluminescent
Calibrator Make / Model:	Envionics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Envionics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range	0 - 1000			ppb			
Sample Flow/Conv. Temp	472 ccm	316 Deg C		472 ccm	316 Deg C		
Ozone Flow / Vacuum	74 ccm	6.2 *Hg-A		74 ccm	6.2 *Hg-A		
HVPS / A ZERO	638 Volts	16.8 MV		638 Volts	16.8 MV		
Rx/ Temp / PMT Temp	49.9 Deg C	6.8 Deg C		49.9 Deg C	6.8 Deg C		
Box Temp / IZS Temp	26.6 Deg C	45.2 Deg C		26.6 Deg C	45.2 Deg C		
Offset	1.6 NOx	1.1 NO		1.6 NOx	1.1 NO		
Slope	1.146 NOx	1.141 NO		1.146 NOx	1.141 NO		
NO2 COEF / Conv Efficiency	N/A NO2	0.993 N/A		NA NO2	0.993		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4995	0.0	NA	0	0	NA	5	2	4	NA	NA
	No Zero Adj.									
4915	79.8	NA	788	786	NA	790	788	3	1.0034	1.0001

**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= #VALUE! NOx= 1.0034	NO= #VALUE! NO= 1.0001	NO2= #VALUE! NO2=
				Average Converter Efficiency= #DIV/0!		

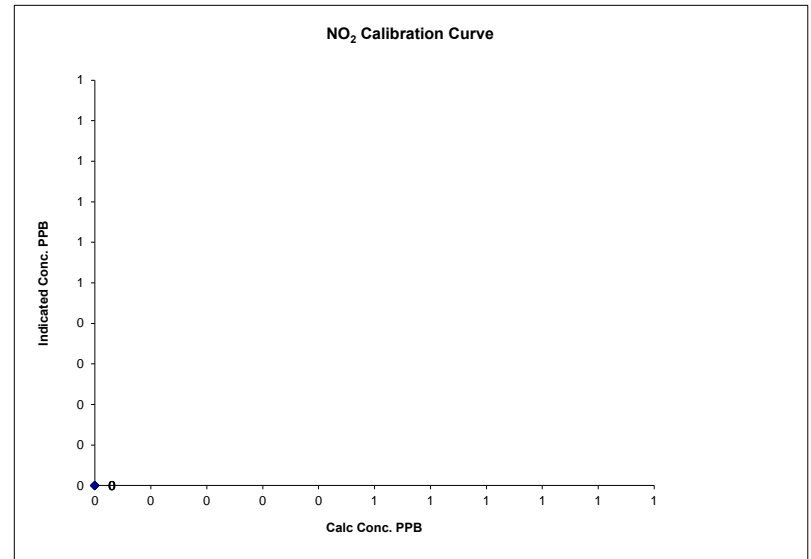
**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	547 NOx	537 NO2		542 NOx	534 NO2		
				Sample Lines Connected: YES			
Percent Change from Previous Calibration				NOx -0.5%	NO -0.3%	NO2 NA	
Notes	<b>NA : Not Applicable</b>						
AF points check was put in to verify the analyzer's functionality.							
Calibration Performed by: Waseem Ahmed							

**NO2 Calibration Curve**

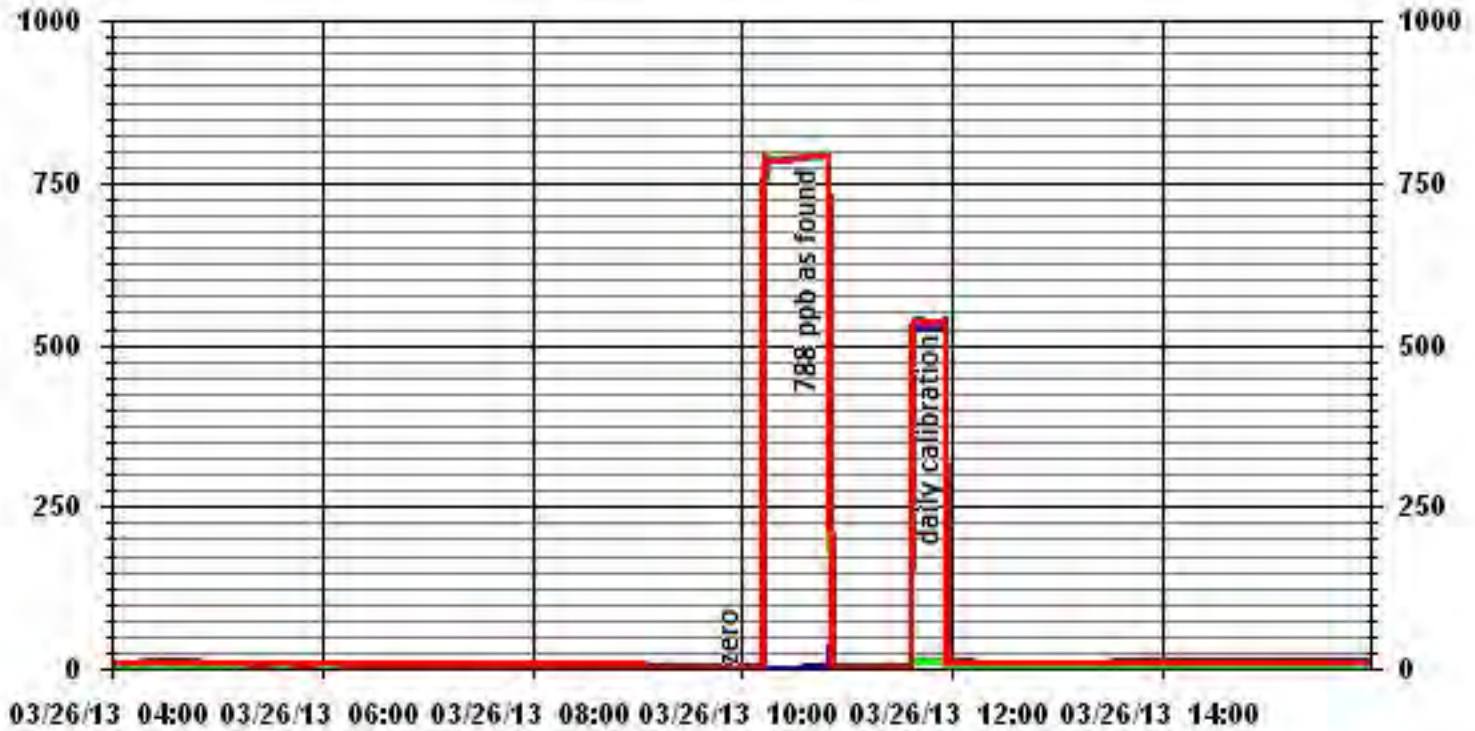
Calibration Date	March 26, 2013	Company	LICA
Plant / Location	St. Lina	Start Time (MST)	10:00
End Time (MST)	12:15		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	#DIV/0!
0	0	N/A	Intercept	(± 3% F.S.)	#DIV/0!
0	0	#DIV/0!			#DIV/0!
0	0	#DIV/0!			#DIV/0!
0	0	#DIV/0!			#DIV/0!



Notes:

### 01 Minute Averages



— LICA31 IIOX\_ PPB

— LICA31 IIO\_ PPB

— LICA31 IIO2\_ PPB

# Ozone

**O<sub>3</sub> Calibration Report**  
**Station Information**

Calibration Date	March 21, 2013	Previous Calibration	February 20, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	12:05	End Time (MST)	14:45
Reason:	Monthly Calibration		
Barometric Pressure	27.3 inHg	Station Temperature	24 Deg C
DAS Output Voltage	0-10 Volts		

**Equipment Information**

Analyzer Make / Model:	Thermo 49C	S/N :	49C-54926-302	Method:	Fluorescent
Calibrator Make / Model:	Envirotronics 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	825 ccm	857 ccm	837 ccm	870 ccm
Pressure	685.1 mmHg		700.9 mmHg	
Bench Temp	56.7 Deg C		56.6 Deg C	
O3 Lamp / Box Temp	80 Deg C	29.1 Deg C	80 Deg C	28.6 Deg C
Offset / Slope	0.1	1.011	0.1	1.011

**Calibration Data**

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	N/A
	No Zero Adj			
4994	450	424	412	1.0291
	No Span Adj.			
4994	300	283	276	1.0254
4994	120	113	111	1.0180
4994	0	0	0	N/A
Sum of Least Squares				N/A
New Correction Factor				0.0000

**IZS Calibration Data**

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	326.9	325.9
Sample Lines Connected		YES
Percent Change from Previous Calibration		-2.6%

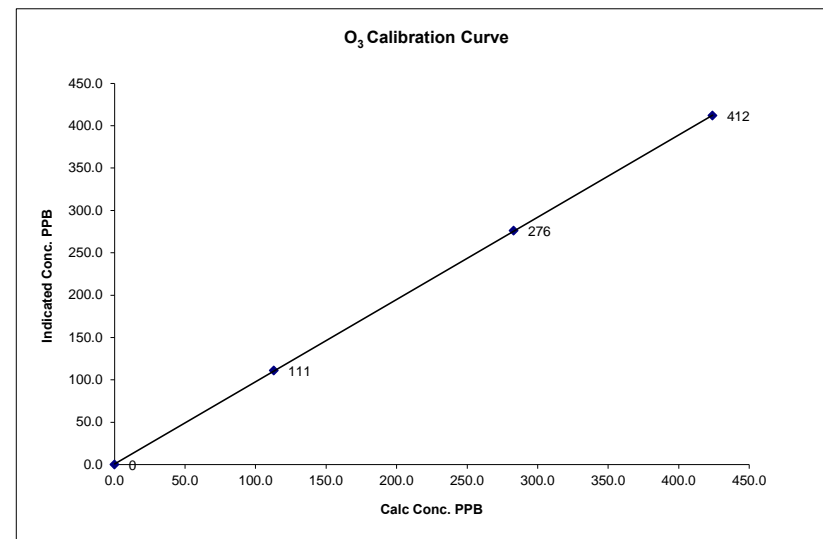
Note: **NA: Not Applicable**

Calibration Performed by: Waseem Ahmed

**O<sub>3</sub> Calibration Curve**

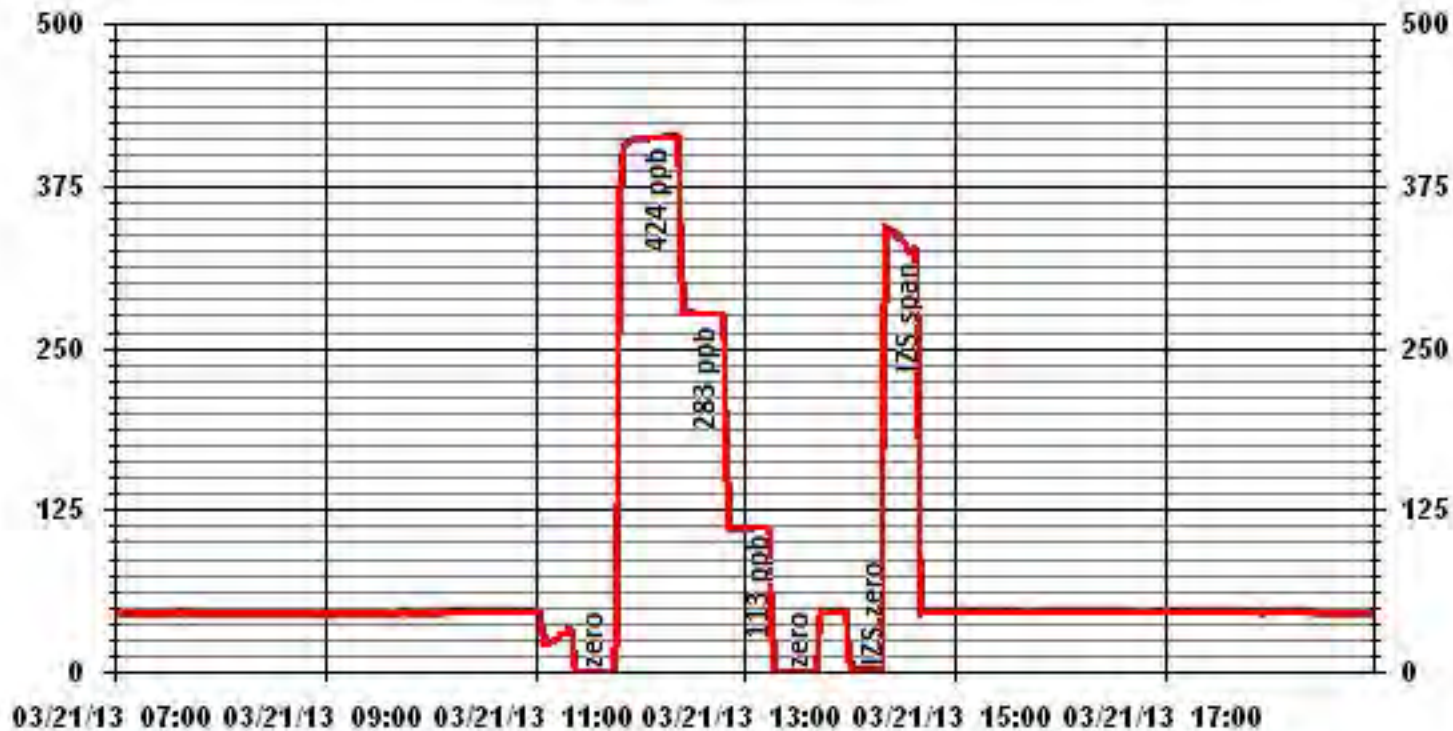
Calibration Date	March 21, 2013
Company	Lakeland Industry & Community Association
Plant / Location	St. Lina
Start Time (MST)	12:05
End Time (MST)	14:45

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999988
0	0	n/a	Intercept	(± 3% F.S.)	0.613642
113	111	1.0180			
283	276	1.0254			
424	412	1.0291			



Notes:

### 01 Minute Averages



# Particulate Matter 2.5

**TEOMÒ 1405F Audit**

	<b><u>Station</u></b>		<b><u>Audit Transfer Standard</u></b>
Date:	March 21, 2013	Make/Model:	Stremline FTS
Station Name:	Lica St. Lina (CASA # 31)	Serial Number:	Lo 091099, Hi 091001
Location:	St. Lina Station	Cell s/n:	NA
Operator:	LICA	Thermometer s/	Fluke 1551A/1735039

	<b><u>Sampler</u></b>		<b><u>Set-up and current Sampler readings</u></b>
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 (%)	30.2%
Firmware Ver.	1.55	K <sub>o</sub> Factor	15634.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-7
		Press (ATM)	0.914

**Conversion from mmHg or "Hg to ATM (Atmospheres)**

ATM = (mmHg) X (1.316 X 10<sup>-3</sup>) or ATM = ("Hg) X (3.34207 X 10<sup>-2</sup>)

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

**Audit**

<b>Status</b>			
Noise <b>&lt;0.10µg</b>	0.003	Warnings	None
Pump Vacuum <b>&lt;0.4atm</b>	0.29	Pump Gauge (inHg)	-19
<b>Temperature/Pressure</b>			
Measured Temp ( <b>± 2 °C</b> )	-6.60	<b>D °C</b>	-0.4
Measured Press ( <b>± 0.01atm</b> )	0.907	<b>DATM</b>	0.007
<b>Flow Audit</b>			
Indicated Main Flow (l/min)	3.01	Main Flow Drift ( <b>±10.0%</b> )	0.38%
Measured Main Flow (l/min)	3.01	Flow Adjusted to Measured?	YES
Indicated Bypass Flow (l/min)	13.65	Bypass Flow Drift ( <b>±10.0%</b> )	1.34%
Measured Bypass Flow (l/min)	13.65	Flow Adjusted to Measured?	YES
<b>Leak Check</b>		<b>Instrument Setup</b>	
Main ( <b>&lt; 0.15 l/min</b> )	Base=-0.01 Ref=-0.00	Flow Control = Active	
Aux ( <b>&lt; 0.6 l/min</b> )	Base=-0.01 Ref=0.04	Report Conditions = Actual	
<b>K<sub>o</sub> Factor</b>			
Measured	NA		
K <sub>o</sub> Difference ( <b>± 2.5%</b> )	NA		

**Start Time:** 12:00      **Finish Time:** 14:20

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

**New Filter Loading %:** 20.2%

**Comments:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**TEOMÒ 1405F Audit**

	<b><u>Station</u></b>		<b><u>Audit Transfer Standard</u></b>
Date:	March 26, 2013	Make/Model:	Stremline FTS
Station Name:	Lica St. Lina (CASA # 31)	Serial Number:	Lo 091099, Hi 091001
Location:	St. Lina Station	Cell s/n:	NA
Operator:	LICA	Thermometer s/	Fluke 1551A/1735039

	<b><u>Sampler</u></b>		<b><u>Set-up and current Sampler readings</u></b>
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 (%)	20.8%
Firmware Ver.	1.55	K <sub>o</sub> Factor	15634.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-7
		Press (ATM)	0.924

**Conversion from mmHg or "Hg to ATM (Atmospheres)**

ATM = (mmHg) X (1.316 X 10<sup>-3</sup>) or ATM = ("Hg) X (3.34207 X 10<sup>-2</sup>)

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

**Audit**

<b>Status</b>			
Noise <b>&lt;0.10µg</b>	0.003	Warnings	None
Pump Vacuum <b>&lt;0.4atm</b>	0.29	Pump Gauge (inHg)	-19
<b>Temperature/Pressure</b>			
Measured Temp ( <b>± 2 °C</b> )	-6.50	<b>D °C</b>	-0.5
Measured Press ( <b>± 0.01atm</b> )	0.925	<b>DATM</b>	-0.001
<b>Flow Audit</b>			
Indicated Main Flow (l/min)	3.01	Main Flow Drift ( <b>±10.0%</b> )	0.66%
Measured Main Flow (l/min)	2.99	Flow Adjusted to Measured?	YES
Indicated Bypass Flow (l/min)	13.65	Bypass Flow Drift ( <b>±10.0%</b> )	1.60%
Measured Bypass Flow (l/min)	13.62	Flow Adjusted to Measured?	YES
<b>Leak Check</b>		<b>Instrument Setup</b>	
Main ( <b>&lt; 0.15 l/min</b> )	NA	Flow Control = Active	
Aux ( <b>&lt; 0.6 l/min</b> )	NA	Report Conditions = Actual	
<b>K<sub>o</sub> Factor</b>			
Measured	NA		
K <sub>o</sub> Difference ( <b>± 2.5%</b> )	NA		

**Start Time:** 10:15      **Finish Time:** 11:20

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

**Comments:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

# Lakeland Industry & Community Association

Portable / Elk Point Airport Monitoring Site

Ambient Air Monitoring Data Report

For

March 2013

Prepared By:



April 30, 2013

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

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# Introduction

The following Ambient Air Monitoring report was prepared for:

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

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

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Katherine Rapske

## 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 – March 2013

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PORTABLE / ELK POINT AIRPORT SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						OBJECTIVES				MONTHLY AVERAGE	1-HOUR		
PARAMETER	1-HR	24-HR	1-HR	24-HR	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)		READING	DAY	
SO <sub>2</sub> (PPB)	172	48	0	0	0.17	7	8	17	9.3	180(S)	0.9	8	100.0
H <sub>2</sub> S (PPB)	10	3	0	0	0.08	2	2, 3	22, 2	3.4, 1.3	72(ENE), 37(NE)	0.7	2, 3	100.0
THC (PPM)	-	-	-	-	4.18	19.8	19	5	5	105(ESE)	8.2	24	99.7
THC (55i) (PPM)	-	-	-	-	3.56	12.39	18	4	2.7	113(ESE)	5.94	25	52.4
Methane (PPM)	-	-	-	-	3.51	11.38	28	22	5.3	111(ESE)	5.89	25	52.4
NMHC (PPM)	-	-	-	-	0.04	0.36	29	1	2	174(S)	0.11	28	52.4
NO <sub>2</sub> (PPB)	159	-	0	-	9.42	42.9	19	2	5.1	314(NW)	23.4	2	100.0
NO (PPB)	-	-	-	-	2.09	41.7	5	8	0	268(W)	7.9	2	100.0
NO <sub>x</sub> (PPB)	-	-	-	-	11.50	72.4	5	8	0	268(W)	31.3	2	100.0
O <sub>3</sub> (PPB)	82	-	0	-	38.38	69	31	VAR	VAR	VAR	54.0	31	100.0
PM 2.5 (UG/M <sup>3</sup> )	-	30	-	0	10.86	83	28	12	9.2	98(S)	27.6	28	95.7
VECTOR WS (KPH)	-	-	-	-	11.24	49.5	20	19	-	116(ESE)	39.1	20	100.0
VECTOR WD (DEGREES)	-	-	-	-	85(E)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS

# General Monthly Summary

## Equipment Operation

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

### AQM STATION – LICA – PORTABLE

#### Sulphur Dioxide (PPB)

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

The analyzer was working well throughout the month. The monthly calibration was performed on March 1<sup>st</sup>. The inlet filter was changed before the month calibration was started. Data was corrected using daily zero information.

#### Hydrogen Sulphide (PPB)

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

The analyzer was working well throughout the month. The monthly calibration was performed on March 1<sup>st</sup>. The inlet filter was changed before the month calibration was started. Data was corrected using daily zero information.

#### THC (PPM)

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

The analyzer was working well throughout the month. The monthly calibration was performed on March 1<sup>st</sup>. The inlet filter was changed before the month calibration was started. The analyzer was put into the Maintenance mode for two hours on March 15<sup>th</sup> for the HC analyzer installation. 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 installed March 15<sup>th</sup>. A reset switch for the canister system was installed, and the solenoid valve was connected and leak tested for volatile capture during concentration events on March 16<sup>th</sup>. An installation calibration was then performed. Data was corrected using daily zero information. The hourly maximum channels for THC(55i), Methane, and NMHC were set on the datalogger on March 18<sup>th</sup>.

Below are the canister events occurring in March; a total of ten canisters were collected.

Date	Time	Concentration	Date	Time	Concentration
03/17/2013	20:45	0.8	03/27/2013	08:50	0.16
03/18/2013	19:45	0.3	03/28/2013	16:40	0.20
03/19/2013	20:30	0.15	03/28/2013	20:10	0.21
03/24/2013	00:35	0.19	03/29/2013	18:20	0.17
03/25/2013	18:00	0.19	03/31/2013	23:10	0.37

### 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 March 1<sup>st</sup>. The inlet filter was changed before the month calibration was started. 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 March 1<sup>st</sup>. The inlet filter was changed before the month calibration was started. Data was corrected using daily zero information.



# General Monthly Summary

## AQM STATION – LICA – PORTABLE

### Particulate Matter 2.5 (ug/m<sup>3</sup>)

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

Two routine Teom audits were performed on March 18<sup>th</sup> and March 26<sup>th</sup>. The PM2.5 channel was left in the “Maintenance” mode after the audit on February 28<sup>th</sup> in order to check the Teom unit stability. The channel was put back to the sampling mode on March 1<sup>st</sup> at hour 8. Nine hours of data were invalidated due to this event this month. Data was corrected using Alberta air quality guideline for PM2.5 analyzer. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. Twenty-three hours of data were invalidated this month as the data were below -3 ug/m<sup>3</sup>.

### 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 November 24, 2011.

No operational issues were observed during the month.

### 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 March 18<sup>th</sup>.

# Continuous Monitoring

# Monthly Summaries, Graphs & Wind Roses

# Sulphur Dioxide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2013

## SULPHUR DIOXIDE (SO<sub>2</sub>) hourly averages in ppb

MST

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

### STATUS FLAG CODES

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

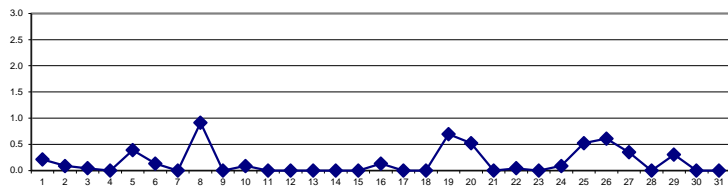
OBJECTIVE LIMIT:

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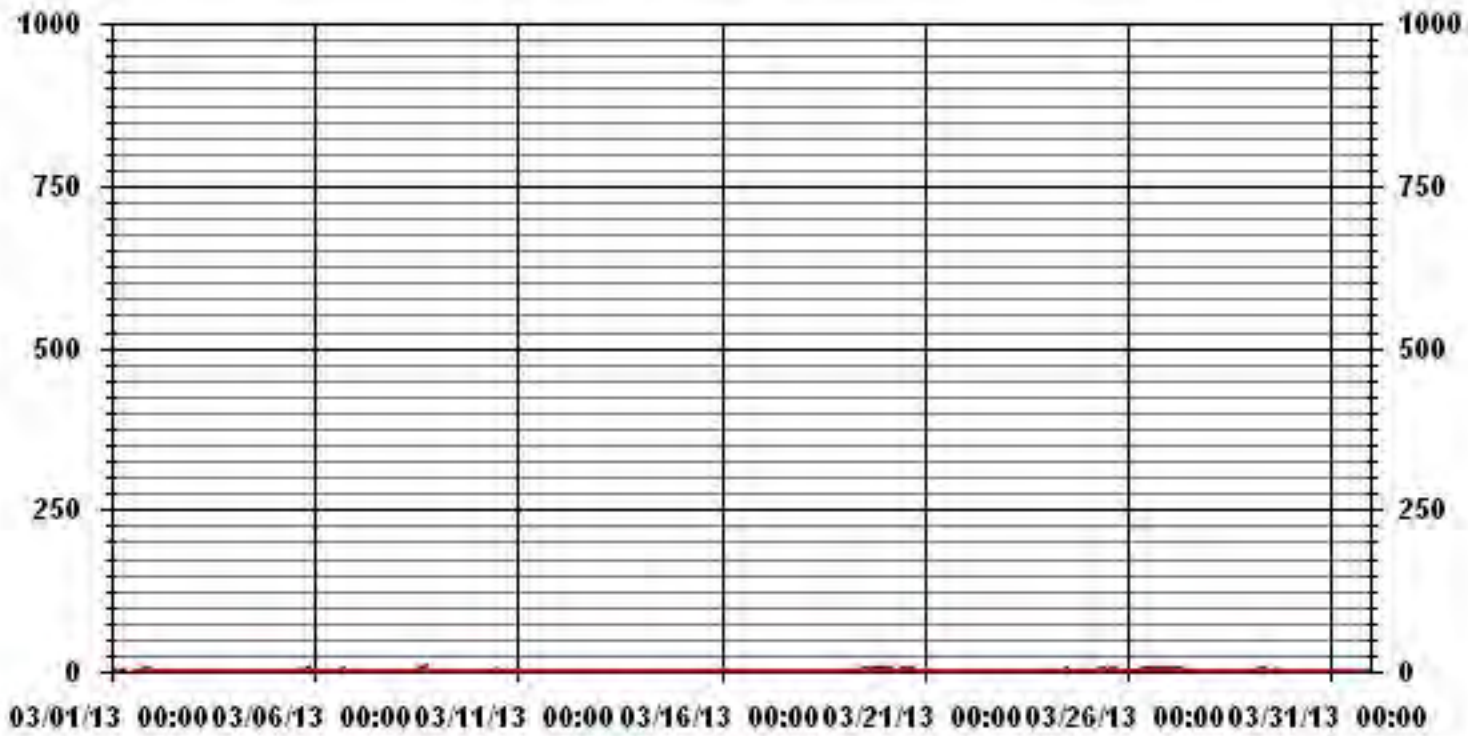
### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	93		
MAXIMUM 1-HR AVERAGE:	7 PPB @ HOUR(S) 17 ON DAY(S) 8		
MAXIMUM 24-HR AVERAGE:	0.9 PPB ON DAY(S) 8		
IZS CALIBRATION TIME:	31 HRS	OPERATIONAL TIME:	744 HRS
MONTHLY CALIBRATION TIME:	5 HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.53	MONTHLY AVERAGE:	0.17 PPB

24 HOUR AVERAGES FOR MARCH 2013



### 01 Hour Averages



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

MARCH 2013

**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	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	MAX.	AVG.		
DAY																												
1	1	1	1	1	1	1	1	1	1	C	C	C	C	C	2	1	2	1	1	1	3	3	3	2	3	1.5	24	
2	3	1	1	1	1	1	1	1	1	0	S	2	2	2	2	2	2	2	1	2	1	1	1	2	3	1.4	24	
3	1	2	2	2	2	2	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.6	24		
4	0	0	0	0	0	0	0	0	S	1	1	2	1	1	1	1	1	1	0	0	0	1	0	1	2	0.5	24	
5	0	0	0	0	1	0	1	S	1	1	1	1	1	1	4	2	2	3	2	2	2	2	1	4	1.3	24		
6	1	1	1	1	1	1	S	1	1	1	1	2	2	2	2	2	2	2	2	2	1	1	1	1	2	1.4	24	
7	1	2	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0.3	24	
8	0	0	0	0	S	0	0	0	0	0	1	1	2	2	6	6	8	9	5	1	1	1	1	1	9	2.0	24	
9	1	1	1	S	0	0	0	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
10	0	0	S	1	1	1	1	1	1	1	2	2	2	2	3	1	1	1	1	1	1	1	1	1	3	1.2	24	
11	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	
12	S	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	1	1	1	1	1	S	2	0.5	24	
13	3	2	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0.3	24	
14	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	S	0	0	3	0.2	24	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	S	1	1	2	2	0.2	24	
16	1	1	1	1	2	1	1	1	1	1	1	2	2	2	2	2	2	2	2	S	0	0	0	0	2	1.2	24	
17	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	
18	0	0	1	0	1	1	3	1	1	1	1	1	Y	0	1	1	1	S	0	0	0	1	1	1	3	0.8	23	
19	1	1	1	1	1	1	0	1	1	1	1	2	3	3	3	3	S	2	2	3	3	3	3	2	3	1.8	24	
20	2	2	2	2	3	2	2	1	2	2	1	2	2	2	2	S	1	3	3	1	1	1	1	1	3	1.8	24	
21	1	1	1	1	1	1	1	1	1	1	1	1	0	0	S	0	0	0	0	0	0	0	0	0	1	0.5	24	
22	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	2	3	0	1	1	1	0	0	3	0.3	24	
23	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	1	1	1	1	1	1	2	2	0.5	24	
24	2	1	1	1	1	2	1	1	1	2	2	S	2	2	2	1	1	2	2	2	2	2	2	1	2	1.6	24	
25	1	1	2	2	1	2	2	2	2	2	S	2	2	3	6	3	2	2	2	1	1	1	1	1	6	1.9	24	
26	1	1	1	1	1	1	1	1	1	S	2	2	2	3	3	2	2	2	2	2	3	2	4	2	4	1.8	24	
27	2	2	2	3	3	2	2	3	S	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	3	1.2	24	
28	0	0	0	0	0	0	0	S	0	0	1	2	0	0	0	1	1	0	0	1	0	0	0	0	2	0.3	24	
29	0	0	0	0	1	1	S	2	3	2	2	2	2	2	1	2	2	2	2	2	1	1	1	1	3	1.4	24	
30	2	1	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24	
31	0	0	0	0	S	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	2	0.9	24	
HOURLY MAX	3	2	2	3	3	2	3	3	3	2	2	2	3	3	6	6	8	9	5	3	3	3	4	2				
HOURLY AVG	0.9	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.8	0.6	0.8	1.0	1.0	1.1	1.4	1.2	1.2	1.5	1.1	0.8	0.8	0.9	0.9	0.8				

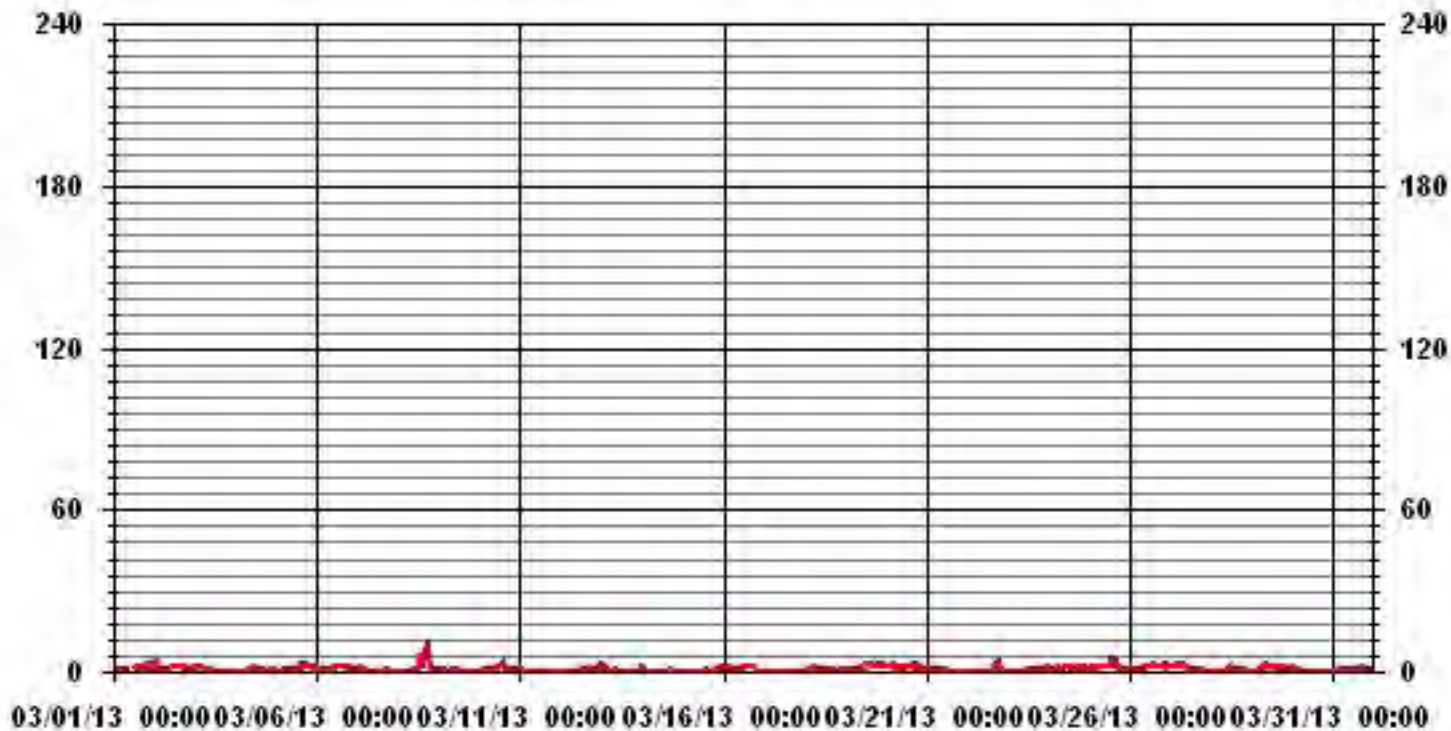
**STATUS FLAG CODES**

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:	412
MAXIMUM INSTANTANEOUS VALUE:	9 PPB @ HOUR(S) 17 ON DAY(S) 8
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	6 HRS
STANDARD DEVIATION:	1.03
OPERATIONAL TIME:	743 HRS

### 01 Hour Averages



— LICA35 SO2MAX PPB



LICA-ELK  
 SO2\_ / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 35  
 Site Name : LICA-ELK  
 Parameter : SO2\_  
 Units : PPB

Wind Parameter : WDR  
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	3.53	2.11	4.37	4.80	11.01	23.02	6.35	1.83	4.23	2.11	1.27	3.67	8.33	7.90	9.88	5.50	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	3.53	2.11	4.37	4.80	11.01	23.02	6.35	1.83	4.23	2.11	1.27	3.67	8.33	7.90	9.88	5.50	

Calm : .00 %

Total # Operational Hours : 708

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	25	15	31	34	78	163	45	13	30	15	9	26	59	56	70	39	708
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	25	15	31	34	78	163	45	13	30	15	9	26	59	56	70	39	

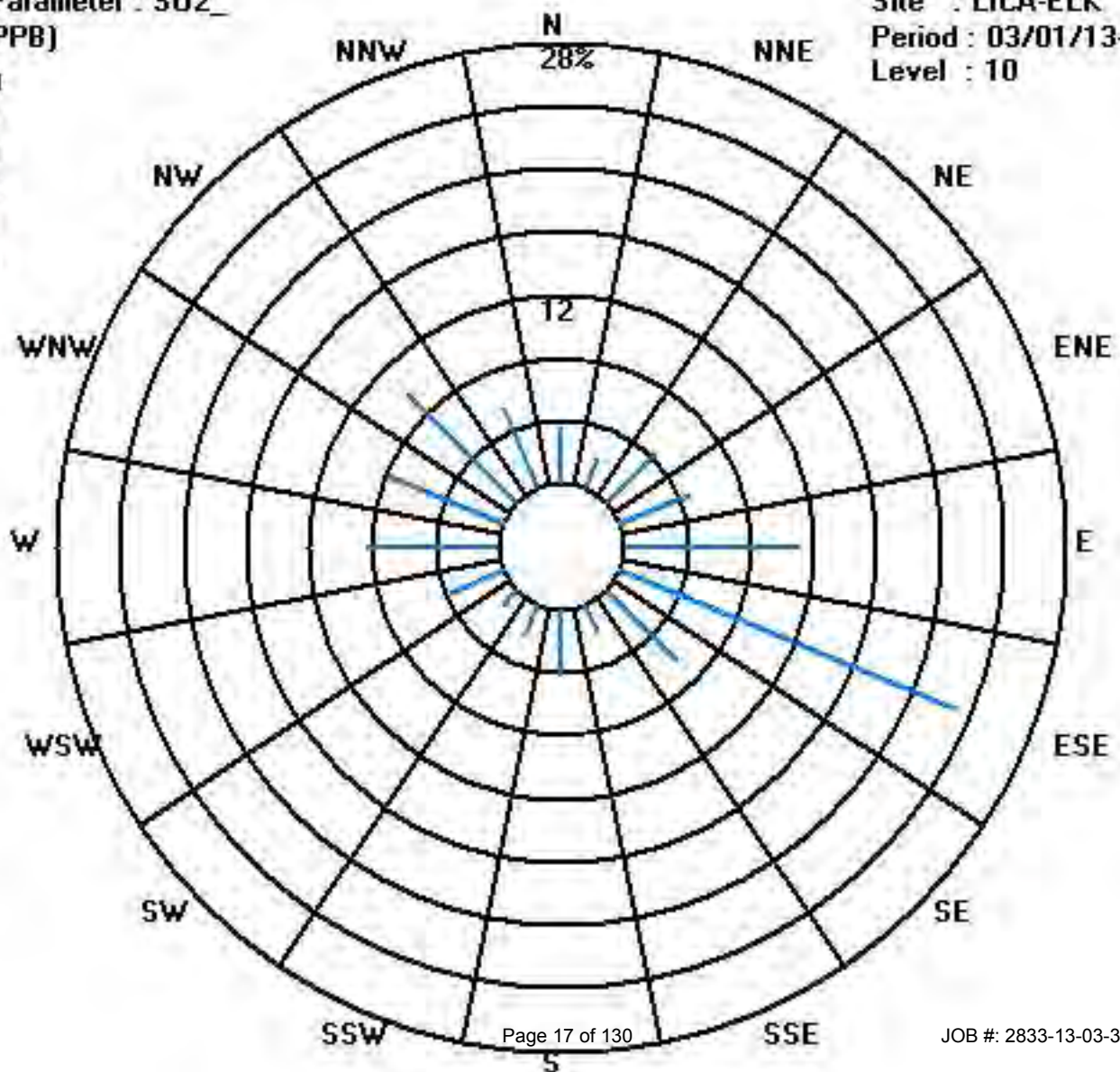
Calm : .00 %

Total # Operational Hours : 708

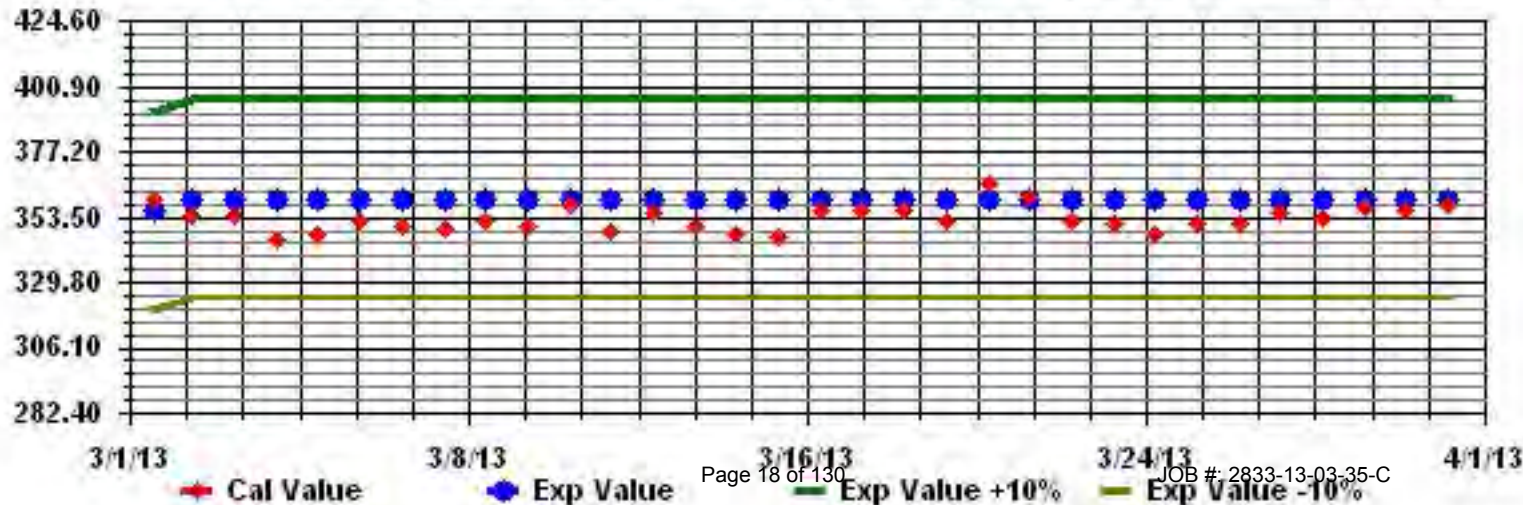
Class Limits (PPB)

Period : 03/01/13-03/31/13

Level : 10



Calibration Graph for Site: LICA35 Parameter: S02\_ Sequence: S02 Phase: SPAll



# Hydrogen Sulphide

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

MARCH 2013

### HYDROGEN SULPHIDE (H<sub>2</sub>S) 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			
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	MAX.	AVG.	RDGS.	
DAY																													
1		0	0	0	0	0	0	0	0	0	C	C	C	C	C	0	0	0	0	1	0	0	0	0	0	1	0.1	24	
2		0	0	0	0	0	0	1	0	0	0	S	1	1	1	1	1	1	1	1	1	1	1	2	1	2	0.7	24	
3		1	1	2	1	1	1	1	1	0	S	1	1	1	1	1	0	0	0	0	1	0	0	0	0	2	0.7	24	
4		0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.0	24	
5		0	0	0	0	0	0	1	S	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
6		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	
7		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	
8		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	
9		1	1	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	24	
10		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	
11		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	
12		S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.0	24	
13		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.0	24	
14		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	24	
15		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	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	S	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	S	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	S	0	0	0	0	0	0	0	0	0	0.0	24	
20		0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	1	0.4	24	
21		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	
22		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	
23		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	
24		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	
25		0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0.1	24	
26		0	0	0	0	1	1	0	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
27		0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
28		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	
29		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	
30		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	
31		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	
HOURLY MAX		1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1				
HOURLY AVG		0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0				

**STATUS FLAG CODES**

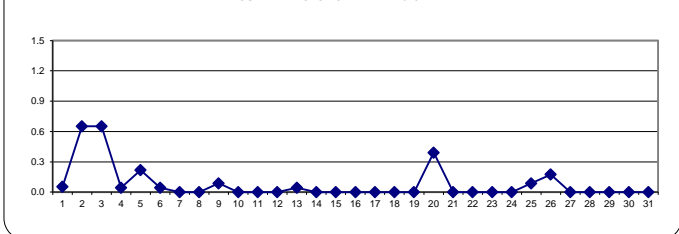
C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR

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

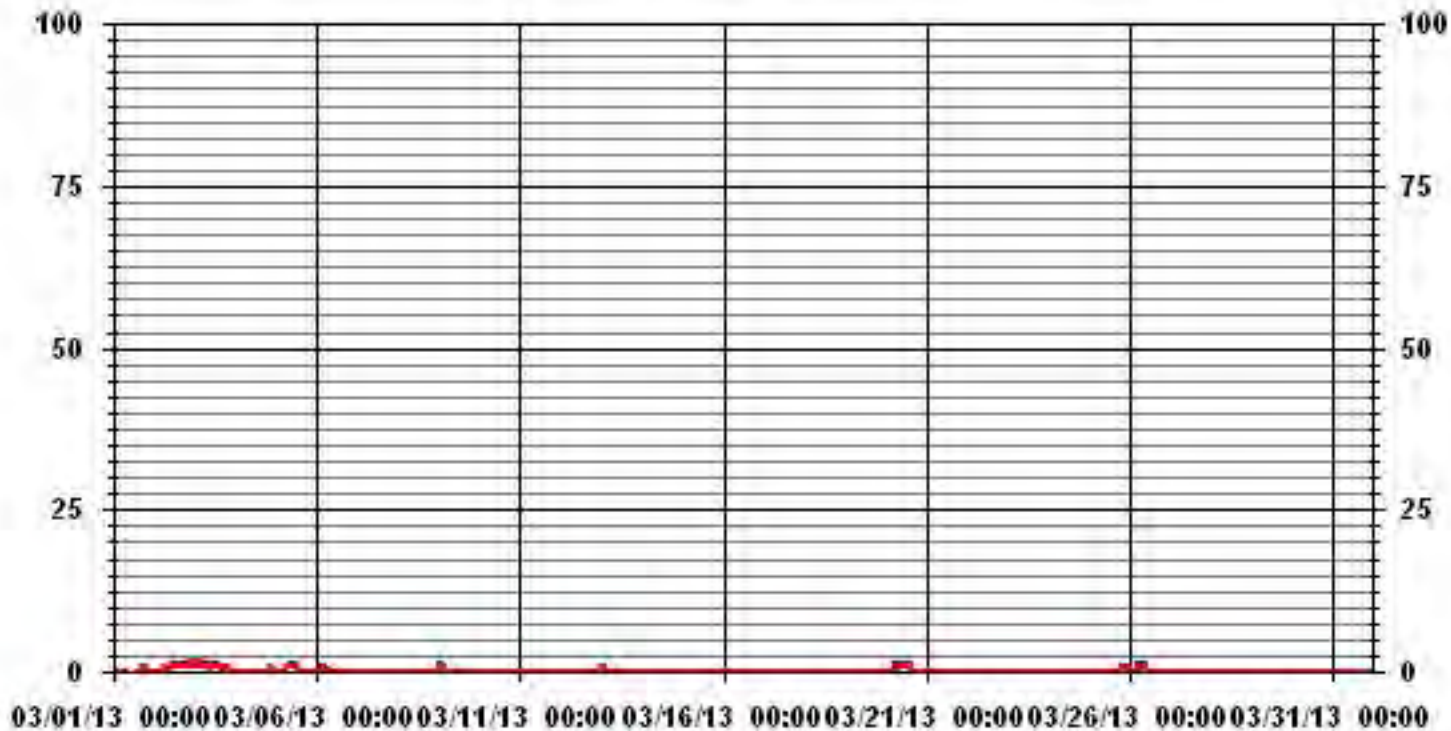
**MONTHLY SUMMARY**

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	54					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	22, 2	ON DAY(S)	2, 3
MAXIMUM 24-HR AVERAGE:	0.7	PPB			ON DAY(S)	2, 3
				VAR-VARIOUS		
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744 HRS		
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	100.0 %		
STANDARD DEVIATION:	0.28		MONTHLY AVERAGE:	0.08 PPB		

**24 HOUR AVERAGES FOR MARCH 2013**



# 01 Hour Averages



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

MARCH 2013

## 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	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	0	0	0	0	C	C	C	C	C	C	C	1	1	1	1	1	1	0	1	0	1	0.4	24	
2		1	1	0	1	1	0	2	0	1	0	S	1	2	3	2	2	1	2	2	2	3	2	2	2	3	1.4	24
3		2	2	2	2	2	2	2	2	1	S	1	2	1	1	1	1	1	1	1	1	1	0	0	1	2	1.3	24
4		1	0	0	1	1	1	0	0	S	0	0	0	0	0	3	0	0	0	0	0	1	1	1	1	3	0.5	24
5		1	1	0	1	1	1	1	S	2	2	1	1	1	1	1	0	0	0	1	1	1	1	1	1	2	0.9	24
6		1	1	1	1	1	1	S	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
7		1	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.1	24
8		0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	0.2	24
9		2	2	1	S	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0.3	24
10		0	0	S	1	0	0	1	1	1	1	0	1	1	1	1	1	1	1	0	0	0	0	1	0	1	0.6	24
11		0	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
12		S	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	1	1	1	1	1	S	1	0.4	24
13		1	1	1	1	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	S	0	1	0.5	24
14		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
15		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
16		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	0.0	24
17		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	S	0	0	0	0	0	1	0.7	24
18		0	1	1	0	0	1	0	0	0	0	0	0	Y	0	0	0	0	S	0	0	0	0	0	0	1	0.1	23
19		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0	0	0	0	1	0.0	24
20		0	0	0	1	1	1	1	1	1	1	1	2	1	1	1	S	0	0	0	0	0	0	0	0	2	0.6	24
21		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
22		0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0	0	1	1	0	0	0	0	0	1	0.1	24
23		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
24		0	0	0	0	1	0	1	1	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	0	1	0.2	24
25		0	0	0	1	0	1	1	1	1	1	S	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0.6	24
26		1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24
27		0	0	0	0	1	0	1	1	S	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0.2	24
28		0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0.1	24
29		0	0	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
30		0	0	0	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
31		0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0.1	24
HOURLY MAX		2	2	2	2	2	2	2	2	2	2	1	2	2	3	3	2	1	2	2	2	3	2	2	2			
HOURLY AVG		0.4	0.4	0.3	0.5	0.4	0.3	0.4	0.4	0.4	0.3	0.2	0.4	0.3	0.3	0.4	0.2	0.2	0.2	0.4	0.4	0.4	0.3	0.3	0.3			

**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	205				
MAXIMUM INSTANTANEOUS VALUE:	3	PPB	@ HOUR(S)	VAR	ON DAY(S) 2, 4
	VAR - VARIOUS				
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	743	HRS
MONTHLY CALIBRATION TIME:	7	HRS			
STANDARD DEVIATION:	0.56				





LICA-ELK  
H2S\_ / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 35  
Site Name : LICA-ELK  
Parameter : H2S\_  
Units : PPB

Wind Parameter : WDR  
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	3.53	2.11	4.37	4.80	11.01	23.02	6.35	1.83	4.23	2.11	1.27	3.67	8.33	7.90	9.88	5.50	100.00
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.53	2.11	4.37	4.80	11.01	23.02	6.35	1.83	4.23	2.11	1.27	3.67	8.33	7.90	9.88	5.50	

Calm : .00 %

Total # Operational Hours : 708

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	25	15	31	34	78	163	45	13	30	15	9	26	59	56	70	39	708
< 10																	
< 50																	
>= 50																	
Totals	25	15	31	34	78	163	45	13	30	15	9	26	59	56	70	39	

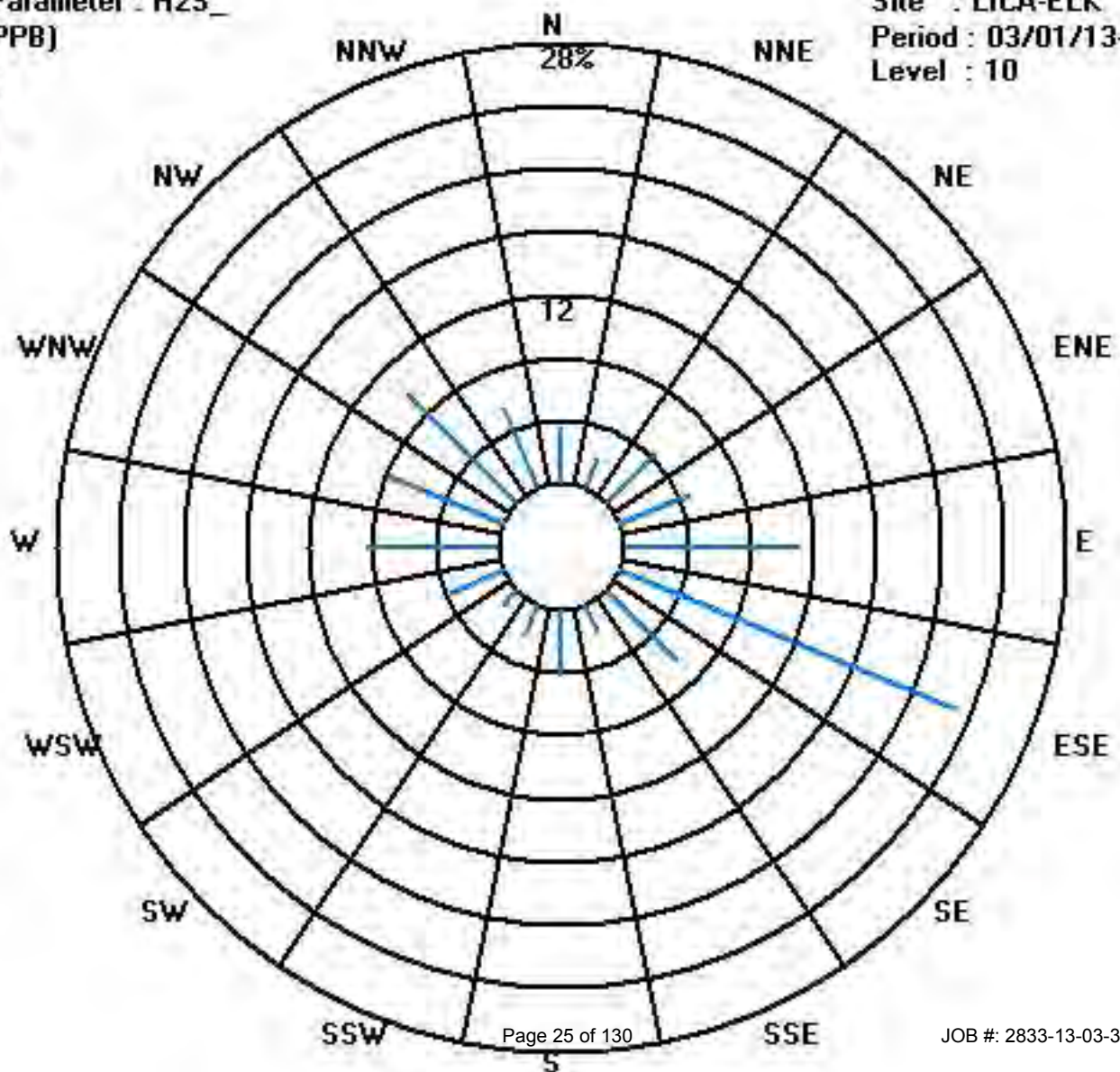
Calm : .00 %

Total # Operational Hours : 708

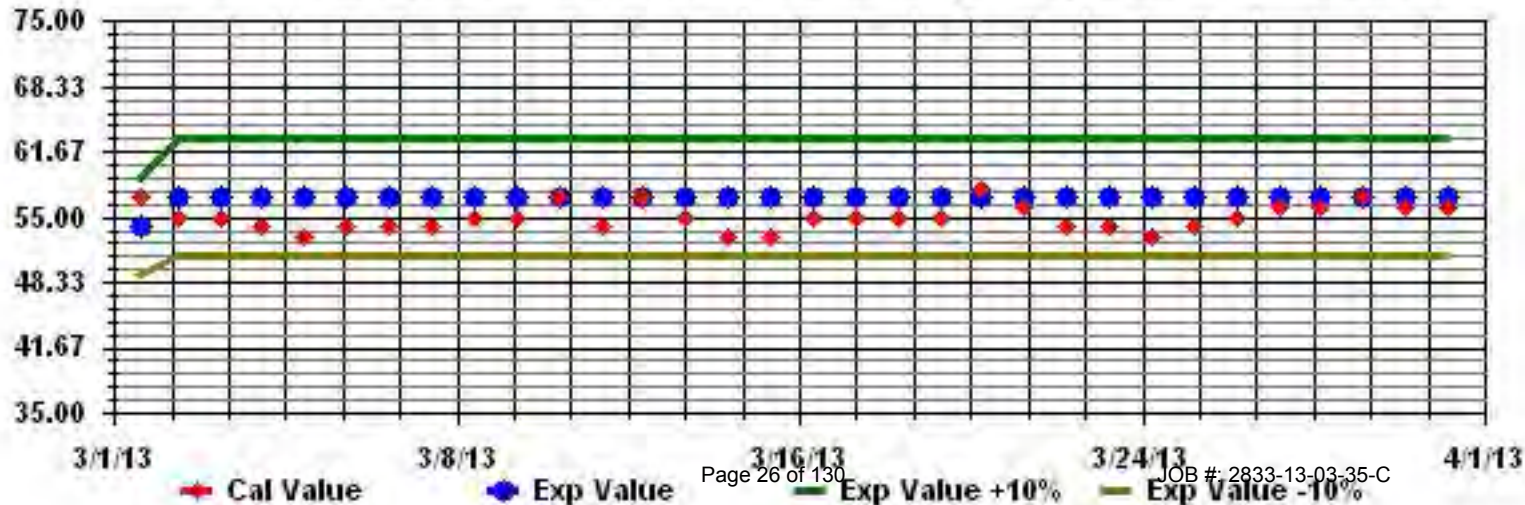
Class Limits (PPB)

Period : 03/01/13-03/31/13

Level : 10



Calibration Graph for Site: LICA35 Parameter: H2S\_ Sequence: H2S Phase: SPAN



# Particulate Matter 2.5

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

MARCH 2013

PARTICULATE MATTER 2.5 (PM2.5) hourly averages in ug/m<sup>3</sup>

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	Y	Y	Y	Y	Y	Y	Y	Y	Y	0	X	2	14	17	17	20	26	22	22	23	14	14	17	10	26	15.6	14
2	17	29	5	24	12	0	35	7	3	13	14	12	13	4	7	0	1	4	4	7	13	13	13	16	35	11.1	24
3	12	12	10	5	4	5	1	0	9	0	0	1	6	4	3	3	4	3	3	3	0	3	X	6	12	4.2	23
4	2	4	4	3	1	2	2	2	0	0	3	0	3	0	0	0	1	5	6	4	0	6	4	8	8	2.5	24
5	5	8	10	16	9	11	6	5	14	5	7	10	10	7	5	4	4	7	8	6	6	7	5	5	16	7.5	24
6	7	3	9	3	15	5	0	19	5	12	6	9	10	8	6	7	3	5	8	8	5	5	7	5	19	7.1	24
7	6	5	6	2	5	3	3	0	X	5	1	0	3	0	3	6	3	4	4	3	8	8	2	5	8	3.7	23
8	0	5	10	5	3	3	4	5	10	8	8	0	7	7	17	14	16	17	17	17	21	16	17	20	21	10.3	24
9	22	26	27	36	34	25	22	17	16	20	11	7	13	8	7	5	3	7	12	14	14	18	21	13	36	16.6	24
10	14	19	17	16	14	21	18	15	23	17	16	14	8	3	0	X	1	0	0	1	2	2	2	1	23	9.7	23
11	2	0	0	1	3	2	0	3	0	1	1	0	1	2	3	5	0	0	0	1	0	4	4	5	5	1.6	24
12	7	6	6	7	7	9	11	7	8	7	7	9	10	8	5	6	8	5	5	7	3	0	5	6	11	6.6	24
13	5	6	7	7	1	4	0	5	0	10	6	10	4	8	3	0	3	0	4	4	2	7	5	4	10	4.4	24
14	X	3	5	X	X	X	3	0	5	0	0	0	4	X	X	4	0	1	3	1	2	0	3	X	5	2.0	17
15	5	0	3	0	1	0	0	3	0	0	4	8	2	3	0	0	0	X	8	3	2	2	0	2	8	2.0	23
16	0	1	1	0	2	X	2	0	0	0	4	0	5	0	0	1	0	1	1	2	3	X	6	0	6	1.3	22
17	0	2	3	1	0	0	2	2	4	1	0	0	X	0	0	0	2	0	4	1	1	1	1	0	4	1.1	23
18	5	18	29	22	X	7	11	15	12	16	12	13	C	C	5	9	4	6	6	9	10	6	8	26	29	11.9	23
19	48	56	51	0	44	16	10	50	22	22	7	15	21	27	26	21	26	19	12	24	14	22	17	16	56	24.4	24
20	17	15	18	16	15	18	20	8	14	13	8	18	17	14	22	18	11	6	24	7	18	10	21	15	24	15.1	24
21	21	19	18	13	20	23	12	3	7	10	6	7	2	6	6	8	5	10	6	0	19	14	3	8	23	10.3	24
22	5	2	5	6	7	9	8	4	5	6	10	6	13	7	8	7	2	7	8	8	5	3	6	6	13	6.4	24
23	0	10	6	4	6	14	0	11	9	1	7	4	11	0	X	X	0	47	45	29	2	12	11	11	47	10.9	22
24	6	9	12	23	0	38	11	18	13	18	16	18	17	10	0	X	50	30	18	21	14	25	13	29	50	17.8	23
25	12	28	X	35	44	31	6	16	20	30	14	12	22	19	15	18	18	22	16	20	25	23	25	22	44	21.4	23
26	25	15	11	27	10	27	21	24	26	25	18	11	4	18	C	C	15	47	41	19	9	20	14	19	47	20.3	24
27	28	22	19	6	19	11	13	27	25	19	19	20	4	X	24	68	50	30	26	21	X	48	43	50	68	26.9	22
28	35	24	32	27	36	28	31	27	24	23	8	15	83	37	32	13	24	25	X	18	24	22	27	20	83	27.6	23
29	15	24	59	48	43	37	26	17	14	14	17	7	23	14	25	15	15	7	17	17	22	17	23	23	59	22.5	24
30	23	28	17	11	3	0	2	3	5	3	6	5	6	1	7	4	6	3	7	9	9	6	3	2	28	7.0	24
31	2	5	3	4	7	3	3	4	7	6	7	9	6	14	12	15	12	11	12	11	7	7	6	12	15	7.7	24
HOURLY MAX	48	56	59	48	44	38	35	50	26	30	19	20	83	37	32	68	50	47	45	29	25	48	43	50			
HOURLY AVG	11.9	13.5	13.9	12.7	13.0	12.6	9.4	10.6	10.3	9.8	8.1	7.8	11.8	8.8	9.2	10.0	10.1	11.7	11.6	10.3	9.1	11.4	11.1	12.2			

STATUS FLAG CODES

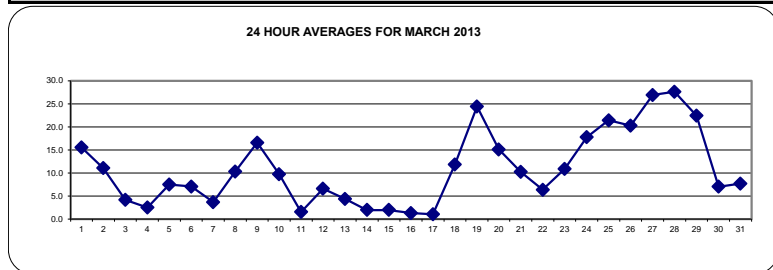
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

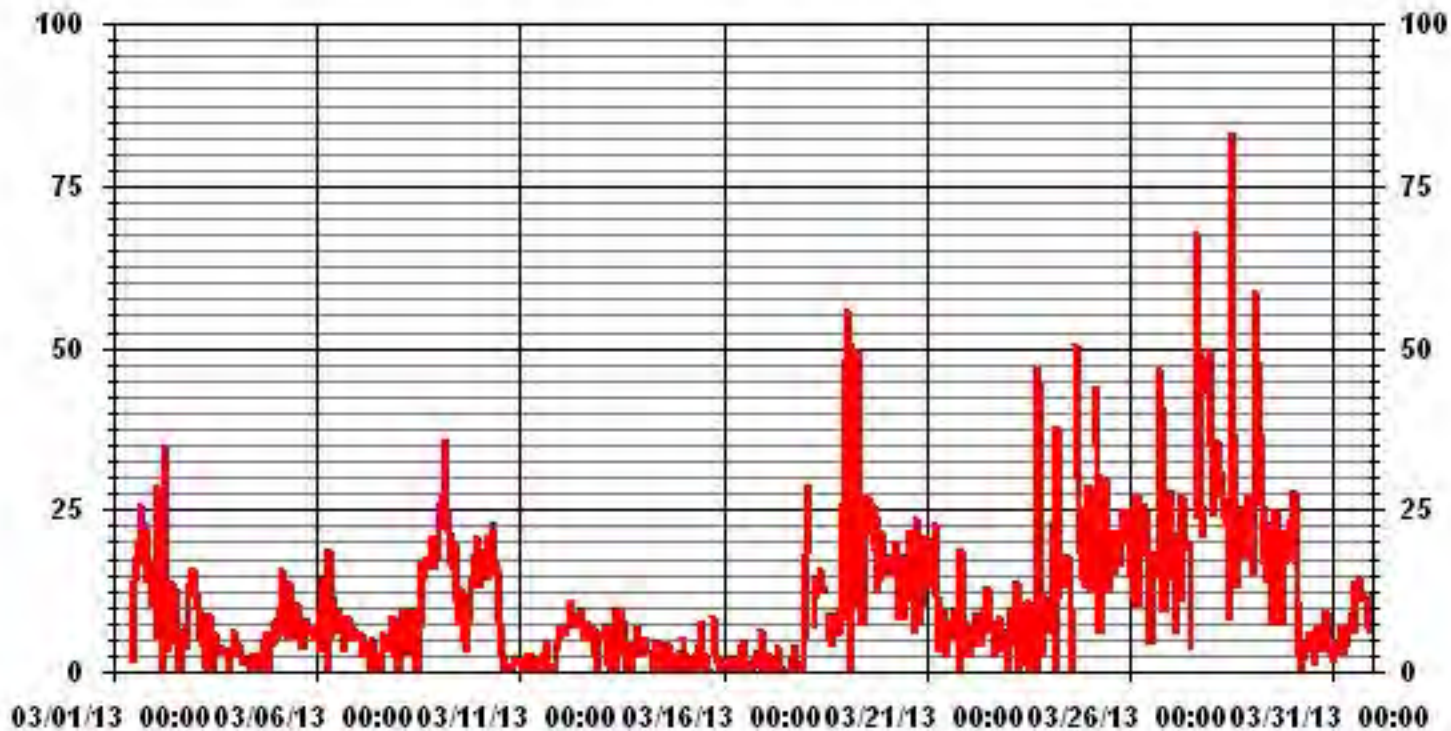
ALBERTA ENVIRONMENT:	1-HR	-	PPB	24-HR	30	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	626
MAXIMUM 1-HR AVERAGE:	83 UG/M <sup>3</sup> @ HOUR(S) 12 ON DAY(S) 28
MAXIMUM 24-HR AVERAGE:	27.6 UG/M <sup>3</sup> ON DAY(S) 28
IZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	10.92
OPERATIONAL TIME:	712 HRS
AMD OPERATION UPTIME:	95.7 %
MONTHLY AVERAGE:	10.86 UG/M <sup>3</sup>



### 01 Hour Averages



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

March 2013

Distribution By % Of Samples

Logger Id : 35  
 Site Name : LICA-ELK  
 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	3.38	1.97	4.23	4.80	10.87	21.18	6.07	1.83	3.53	1.97	1.27	3.67	7.76	7.20	10.16	4.94	94.91
< 60	.00	.00	.00	.00	.98	.84	.42	.00	.56	.14	.00	.14	.56	.70	.42	.00	4.80
< 80	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.14
< 120	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
< 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	3.38	1.97	4.23	4.80	12.00	22.03	6.49	1.83	4.23	2.11	1.27	3.81	8.33	7.90	10.59	4.94	

Calm : .00 %

Total # Operational Hours : 708

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30	24	14	30	34	77	150	43	13	25	14	9	26	55	51	72	35	672
< 60					7	6	3		4	1		1	4	5	3		34
< 80									1								1
< 120					1												1
< 240																	
>= 240																	
Totals	24	14	30	34	85	156	46	13	30	15	9	27	59	56	75	35	

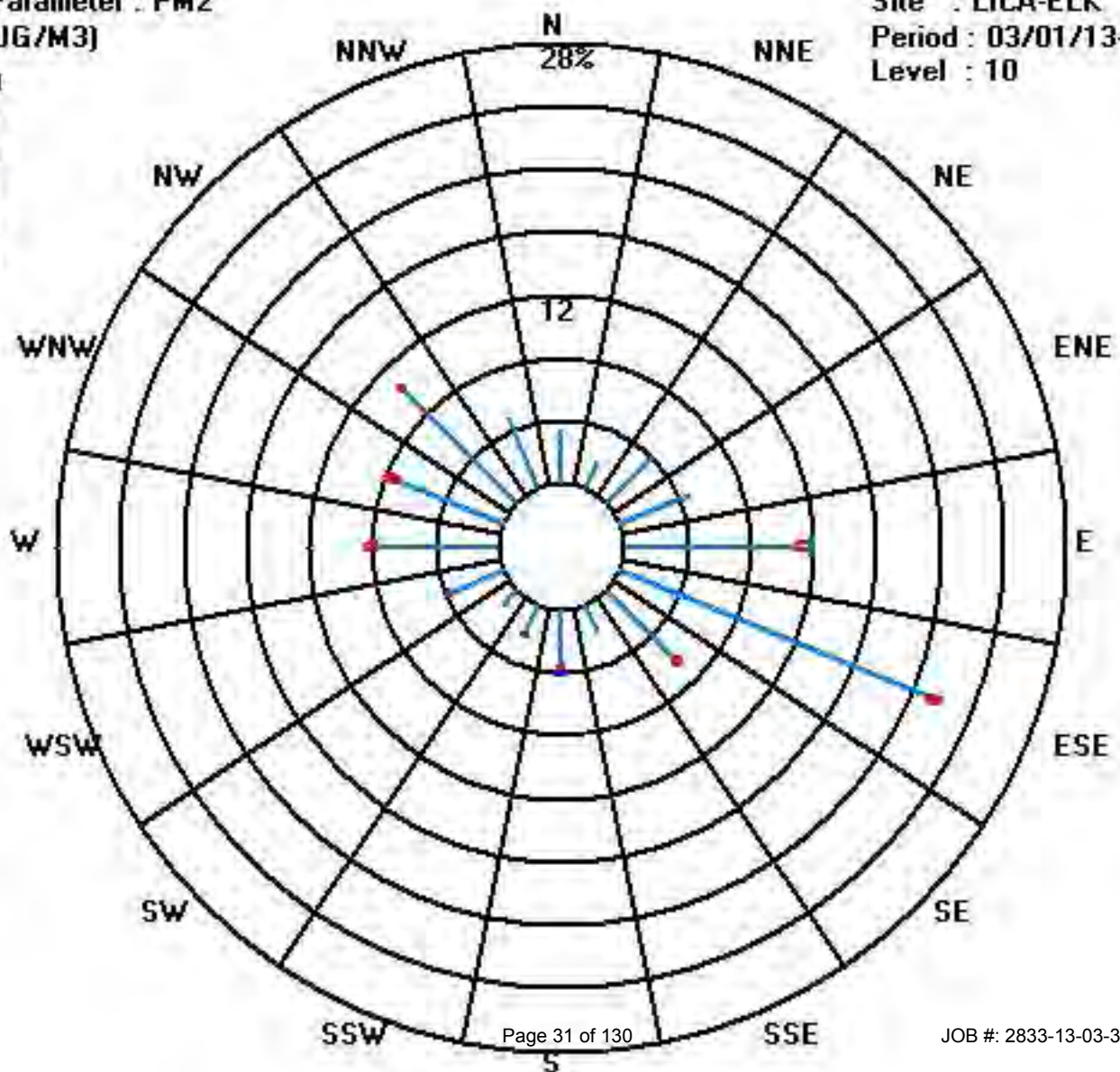
Calm : .00 %

Total # Operational Hours : 708

Class Limits (UG/M3)

Period : 03/01/13-03/31/13

Level : 10





# Nitrogen Dioxide

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

MARCH 2013

## NITROGEN DIOXIDE 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	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	7.5	6.2	6.2	6.2	5.9	6	6.1	12.3	12.9	C	C	C	C	C	C	C	C	33.4	39.1	39	29.9	18.8	16.8	14.7	39.1	16.3	24		
2	32.4	33	30.1	29.4	32.3	32.5	36.3	23.7	22.5	12.4	S	9.4	16.2	17.2	12.1	11.6	15.4	21.7	27.5	24.6	28.4	22.3	21.6	26.4	36.3	23.4	24		
3	21.9	23.9	23.2	12.7	8	6.9	15.3	4.5	2.4	S	0.9	0.7	1	1	0.9	0.7	1.1	1.2	1	1.1	0.9	1	1.2	1	23.9	5.8	24		
4	1.3	1.5	1.7	1.7	1.5	1.5	1.8	1.8	S	2.2	1.7	2	2.2	1.6	2.4	3.5	2.4	5.7	8.1	9.2	18.4	38	23.6	22.8	38	6.8	24		
5	21.5	19	15.6	26.1	20.9	26.2	36.4	S	30.7	23	14.4	16.5	15	5	3.2	3.1	3.8	5.5	9.9	11.1	8	8.7	8.9	7.8	36.4	14.8	24		
6	8.7	10.1	9.1	9.5	8.9	10.7	S	29.1	9.5	8.8	5.8	5.2	4.6	4.5	4.3	4	6.8	14	13.5	10	7.5	4.8	6.2	6	29.1	8.8	24		
7	3.6	2.9	1.9	0.8	0.5	S	0.8	0.4	0.6	0.9	0.9	0.7	0.9	0.9	1.1	3.5	1.3	1.7	2.6	7.7	6.9	24.2	17.5	17.5	24.2	4.3	24		
8	15.1	16	15.9	15.2	S	11.1	11.9	12.7	6.4	4.1	3.4	3.2	3.6	4.2	5	6.2	8	14.3	15.1	24.9	28.1	21	19.3	23.5	28.1	12.5	24		
9	36.2	31.4	33.9	S	26.8	14.5	13.5	22.1	12.3	7.6	6	4.5	4.6	3.5	2.9	3.9	6	7	9.3	13.4	12.6	11.1	13.4	11.6	36.2	13.4	24		
10	12.2	13.1	S	14	12	21.2	33.4	32.7	19.7	16.8	16.3	15.1	8.7	7.8	6.2	3.3	2.7	2.1	9.3	12.1	9.7	8.5	4	3.8	33.4	12.4	24		
11	2	S	2.5	2.1	0.4	0.2	0.3	0.3	0.2	0.2	0.1	0.1	0.8	0.9	0.9	1.4	2.4	5	8.5	8.7	8.6	16.1	26.9	22	26.9	4.8	24		
12	S	30.3	25.8	24.2	14.7	11.3	13	14.1	10.1	9.1	6.9	5.7	4	3.8	3.2	3.7	4.9	5.3	5.4	5.3	5.1	8.1	5.5	S	30.3	10.0	24		
13	5.2	9.5	7.6	8.5	7.4	6.3	6.5	4.3	4.4	2.3	1.5	1.3	1.3	1.7	2.5	2.7	1.3	1	0.9	1.1	1.4	1.5	S	2.1	9.5	3.6	24		
14	1.2	0.9	1.2	0.9	0.8	1.2	1.6	1.8	1.2	0.9	0.5	0.4	0.3	0.4	0.5	0.4	0.5	0.8	0.8	0.6	0.6	S	1.2	1	1.8	0.9	24		
15	0.7	0.7	1.1	0.9	0.6	0.9	1	1.1	1.3	0.7	1.3	1.6	4.1	2.3	1.5	0.6	1.6	1.6	2.5	5.2	S	1	1.6	2.5	5.2	1.6	24		
16	2.5	2.3	2	2.4	4.2	1.6	1.5	1.2	1.7	2.2	1.5	1.1	1.4	1.5	1.8	1.9	2.1	1.8	2.1	S	2.2	2	1.6	1.9	4.2	1.9	24		
17	2.4	2.9	2.7	2.5	2	1.9	1.2	0.9	0.9	1.1	1.1	1.5	1.2	1.1	0.7	0.6	0.7	0.6	S	18.9	20.2	13.2	17.5	27.6	27.6	5.4	24		
18	27.3	22.9	30.2	27.2	32.2	36.2	29	22.3	20.7	19.1	19.3	16.8	16.3	3.1	2.3	2.3	4.5	S	9.7	19	8.4	12.3	16.1	16.1	36.2	18.0	24		
19	30.7	38.2	42.9	41.9	41.7	40.4	35.5	17.3	13.1	10.4	8.7	7.1	7.1	7.8	7.4	8	S	10.8	14	17.1	21	15	9.5	9.3	42.9	19.8	24		
20	10.8	7.9	4.9	4.9	4.6	5	4.9	2.8	2.7	2	1.9	1.9	2.2	2.1	2.2	S	1.9	2.1	2.2	1.7	1.7	1.2	1	1	10.8	3.2	24		
21	1	1	0.9	1.1	1.1	1.5	1.6	1.6	1.8	1.4	1	1.3	1.4	2.2	S	1.5	1.7	1.8	1.3	1.5	1.3	1.4	1.6	1.5	2.2	1.4	24		
22	3.3	7.1	2.9	2	1.7	6	9	4.4	0.5	0.5	0.4	0.4	0.4	S	0.8	1	1.1	1.3	1.2	1	1.1	1.2	1.2	1	9	2.2	24		
23	0.8	2.4	3.7	2.3	3.6	4.5	5.6	5.8	4.7	3	2.9	2.4	S	2.5	2.3	1.8	1.6	2.8	19.6	23.1	24.1	11.3	7.5	8.5	24.1	6.4	24		
24	13.5	18.2	16.8	27.4	26.3	34.2	35.2	28.2	19.4	18	13.5	S	5.5	2.8	2.8	2.8	4.1	5.6	10.5	22.6	19.6	26.1	23.7	21.6	35.2	17.3	24		
25	19	18.9	18.5	17.7	22.9	30.4	30.5	20.9	15.8	12.3	S	7.3	5.5	5.3	5.9	6	7.2	8.1	16.6	20.1	21.4	22.5	20.3	16.6	30.5	16.1	24		
26	21.4	21.8	21.7	24.3	34	36.3	37.5	28.6	17.3	S	8	4.9	3.6	4.6	5.3	6.3	8.1	11.3	8.8	8.5	9	10.6	13.5	10.8	37.5	15.5	24		
27	10.9	11.2	13.6	14.5	11.8	10.6	11.1	11.1	S	7.9	8.4	8.4	8.9	9.9	10.2	10.5	11.6	12.4	20.8	18.5	20.5	19.4	14.6	17	20.8	12.8	24		
28	15.1	11.3	13.8	11.9	14.9	28.2	31.1	S	11.6	13.9	11.1	10.5	12.3	13.2	13	14	13.3	10.5	6.7	18.3	18.2	17.4	16.7	16.8	31.1	14.9	24		
29	15.5	20.6	33.9	15.5	25.5	10.6	S	5.8	4.5	3.6	4	4.7	5.4	6.8	2.2	7.5	7	4.9	9.9	10.1	9.8	18.2	17.7	9.5	33.9	11.0	24		
30	8.5	10.1	1.9	1	0.1	S	0.8	0.7	1	0.6	0.4	0.3	0.4	1.3	1.5	0.4	2.2	3.9	9.9	15	19	13	3.2	1.2	19	4.2	24		
31	2.9	3.2	2.9	3.2	S	7.4	5.4	4.9	3.4	3.2	2.8	2.7	2.8	3.1	3.6	3.5	3.7	4.2	6.1	10.1	7.5	7.2	6	7.6	10.1	4.7	24		
HOURLY MAX	36.2	38.2	42.9	41.9	41.7	40.4	37.5	32.7	30.7	23.0	19.3	16.8	16.3	17.2	13.0	14.0	15.4	33.4	39.1	39.0	29.9	38.0	26.9	27.6					
HOURLY AVG	11.8	13.3	13.0	11.7	12.7	14.0	14.4	10.9	8.7	6.7	5.2	4.7	4.9	4.2	3.7	4.0	4.4	6.7	9.8	12.7	12.4	12.6	11.3	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

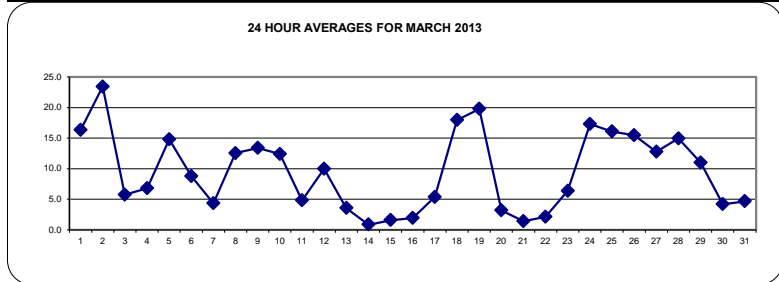
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

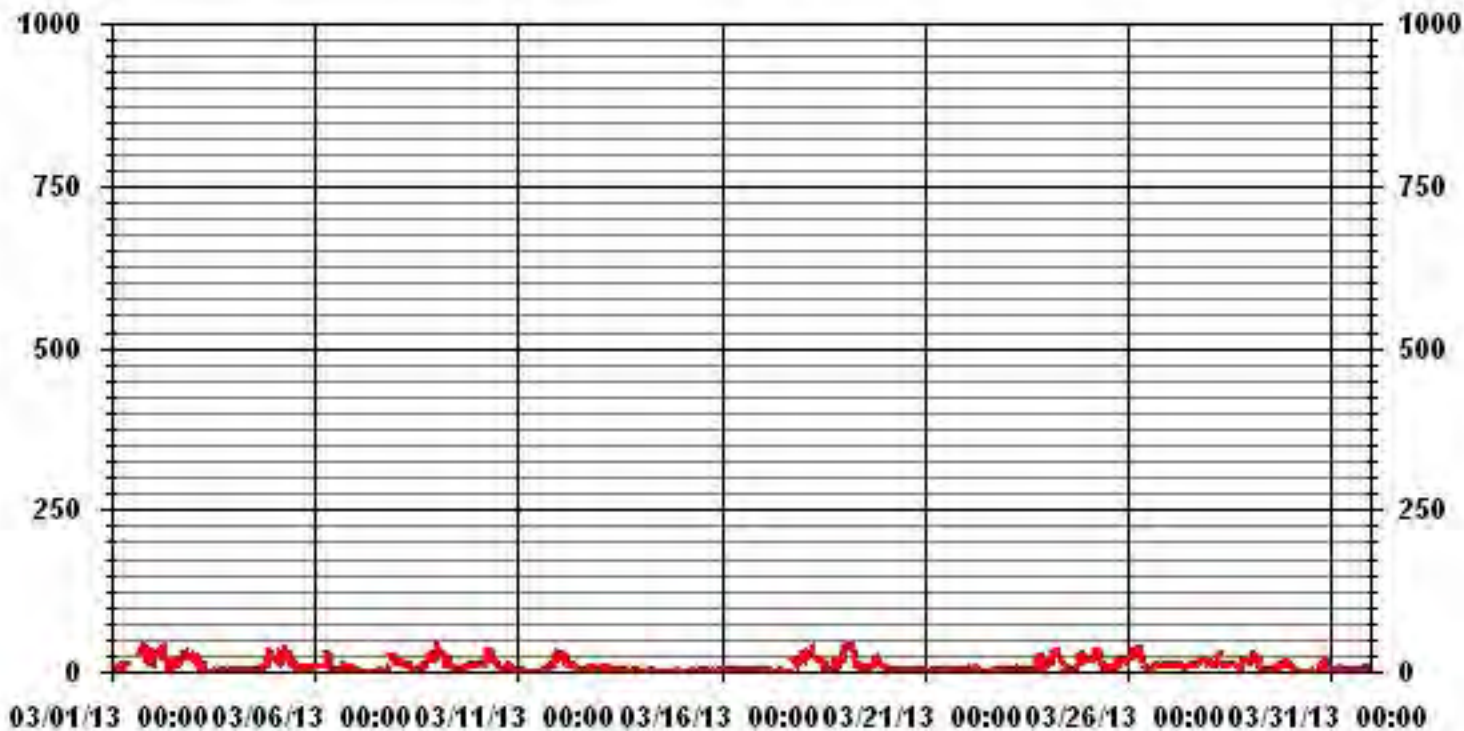
### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	705					
MAXIMUM 1-HR AVERAGE:	42.9	PPB	@ HOUR(S)	2	ON DAY(S)	19
MAXIMUM 24-HR AVERAGE:	23.4	PPB			ON DAY(S)	2
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	9.48		MONTHLY AVERAGE:	9.42	PPB	

24 HOUR AVERAGES FOR MARCH 2013



### 01 Hour Averages



— LICA35 NO2\_ PPB

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

MARCH 2013

## NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR 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	8.6	7.3	7.2	7.5	7.2	8.5	8.3	19.8	C	C	C	C	C	C	C	C	39.8	54.3	48.5	40.4	23	23.8	26.9	54.3	22.1	24		
2	43.3	39.1	34.1	40.7	49.5	36.9	39.3	37	26.1	24.3	S	11.7	33.9	32.3	23.1	18.7	26	34.1	41.9	46.6	50.9	28.8	30	34.3	50.9	34.0	24	
3	24	27.5	27.5	18.3	11.2	12	45.5	9.8	3.9	S	1	1	1.4	1.4	1.1	0.8	1.6	1.5	1.7	1.7	1.2	1.3	1.6	1.3	45.5	8.6	24	
4	1.8	2	2	2.1	1.8	1.8	2.3	2.2	S	2.7	1.9	2.4	2.9	1.8	4.3	6.5	7.9	9.4	13.7	13.7	47.1	44	26.8	35.2	47.1	10.3	24	
5	24.9	23	22.7	33.4	25.3	30.4	39.6	S	36.3	26.6	18.1	20.4	17.9	8.9	5.1	5.1	5.3	12.7	19.2	22.5	11.6	12.2	14.2	13.6	39.6	19.5	24	
6	13.2	14.1	10.9	13.3	10.5	20.1	S	48	19.4	13.9	7.7	6.4	5.6	5.4	6.3	5.8	26.7	43	33.8	17.5	11	6.4	7.3	6.8	48	15.4	24	
7	5.9	3.5	3.1	1.5	1.1	S	1.3	0.9	1.1	1.4	1.7	1.2	1.1	1.1	1.9	18.7	2.3	2.2	5.3	18.4	15.9	45.9	25.9	25.2	45.9	8.1	24	
8	36.9	18	19	32.4	S	14.9	13.6	14.7	11.6	5.5	4.3	4.1	5.7	5	6.3	7.5	10.1	20.3	36.8	34.6	44.1	27.9	25.4	28.5	44.1	18.6	24	
9	43.6	49.2	38.4	S	32.8	21.8	21.8	25.4	18.3	9.9	9.1	6.9	7.3	4.4	7.2	6.5	15.3	10.9	18.5	23	17.8	13.2	16.5	15.1	49.2	18.8	24	
10	16.3	15.9	S	15.8	13.3	28.9	45.6	42	24.2	20.8	19	16.7	14.6	12.5	10.2	4.8	4.5	2.8	15.8	21.1	12.3	22.7	6.9	15.5	45.6	17.5	24	
11	2.7	S	6.1	7.8	1.1	0.8	0.9	0.9	0.8	0.6	0.6	3.2	2.1	2.4	3.8	5.5	31.8	22	12.5	15.5	29.1	37.2	28.6	37.2	9.4	24		
12	S	33.9	29.2	27.7	21.8	16	19.1	17.8	13.6	11.1	8.4	7.2	5.1	4.5	4	4.7	7.4	7.3	7.6	7.7	19	12	7.2	S	33.9	13.3	24	
13	10.1	22.6	11	12.2	8.3	8.5	9.6	7	8.6	3.2	1.9	1.6	1.6	2.2	4.6	8.1	1.5	1.4	1.3	1.6	1.8	2.2	S	2.3	22.6	5.8	24	
14	1.7	1.3	1.5	1.2	1.3	1.6	2.4	2.5	1.6	1.6	0.8	0.9	0.6	0.6	0.7	0.7	0.8	1.1	1.1	1	1	S	1.7	1.7	2.5	1.3	24	
15	1.7	1.2	1.8	1.6	1.1	1.6	1.7	1.5	15.1	1.3	2.8	2.1	7.7	3.7	3	1.1	3.2	2.2	3.8	11	S	1.5	4.5	6.1	15.1	3.5	24	
16	3.3	3.6	2.6	3.5	6	2.2	2.6	1.8	4	3.1	2.3	1.8	6.9	2.3	2.5	2.7	2.9	2.5	3.1	S	3.3	2.6	2.2	3	6.9	3.1	24	
17	3.3	4	4.2	4.3	2.5	2.3	2	1.6	1.3	1.4	1.4	2.8	3.1	3.1	1	1.2	0.9	0.9	S	30	41.1	20.6	24.8	34.7	41.1	8.4	24	
18	34.1	42.6	41.7	35.5	36.7	40.7	34.8	24.7	23.3	22.1	23.5	23.5	Y	8.7	3.3	3.8	6.6	S	16.7	26.6	14.1	29.7	30.3	26.5	42.6	25.0	23	
19	37.2	44.5	62.6	45.3	43.3	47.6	40.7	23.8	17	12.1	9.6	8.5	8.5	8.9	8.4	9.5	S	15.1	19.7	41	52.6	23	16.5	11.1	62.6	26.4	24	
20	12.3	9.2	6.7	6.3	5.3	7.3	8.3	2.9	3.3	2.2	2.2	2.1	2.6	2.5	2.5	S	3	3.2	4	2.4	2.8	1.9	1.9	1.9	12.3	4.2	24	
21	1.6	1.6	1.7	1.9	1.8	3.2	2.3	2.4	3.3	3	2.1	3.5	3.2	3.9	S	2.8	2.9	2.8	2	1.9	1.9	1.8	2.1	2.2	3.9	2.4	24	
22	10.6	20.9	6.7	2.4	3.7	16.8	12.8	10	1.1	1	0.9	0.9	0.9	S	1.2	1.4	6.2	6.4	1.7	1.7	1.7	1.8	1.7	1.5	20.9	5.0	24	
23	1.4	9	8.5	6.2	10.4	16.1	17.5	12.1	8.1	6	6.5	4.3	S	13.6	9.6	3.3	3.6	4.7	39.4	27.7	30.2	15.2	12.6	10.8	39.4	12.0	24	
24	17.2	22.1	25.9	33.6	29.2	46.4	39.6	37.3	27.2	20.8	16.5	S	8.5	3.6	3.4	3.4	4.8	7.9	15.1	35.4	60	48.4	29.5	28.7	60	24.5	24	
25	22.5	24.2	24.4	20.6	30.6	55.6	44.3	35.9	18.2	14.4	S	8.9	6.5	6.2	7.3	21.7	10	12.6	32.8	35.6	30.7	35.9	32.6	22.1	55.6	24.1	24	
26	45.2	37.5	25.5	33.1	42.4	41.2	42.7	49.6	38.2	S	10.6	7	5	6	5.9	6.9	9.8	31.6	10.1	12.9	26.1	13.7	20.9	13.3	49.6	23.3	24	
27	12.8	15.5	16.1	27.7	19.1	13.6	13.4	13.3	S	8.3	9.9	8.8	8.9	10.2	11.8	10.9	12.7	24.6	46.9	39.7	28.8	30.1	24.1	24.6	46.9	18.8	24	
28	18.4	13.9	17.7	14.8	22.3	39.9	37.7	S	16.3	20	11.9	10.8	13.7	14.4	14.4	14.9	15	12.1	8.9	40.7	56.4	23.1	20.9	21	56.4	20.8	24	
29	19.8	26.3	56	26.5	47.8	20.3	S	7.5	5.2	5.4	4.3	7.6	9	14.8	4.2	18.2	17.9	10.9	24.8	51.7	21.9	26.5	26	13.9	56	20.3	24	
30	16.6	27.2	2.8	1.9	1.2	S	1.5	1	1	1	0.7	0.8	0.9	2.6	3.7	1.8	4.9	7.6	23.5	21.6	39.9	16.6	6.5	2	39.9	8.1	24	
31	4.7	4.7	4.8	4.1	S	14.4	9.6	6.6	5.3	4.5	3.6	3.9	3.4	3.6	4.9	4.2	5	5.6	8.4	29.7	15.6	10.1	13.4	12.3	29.7	7.9	24	
HOURLY MAX	45.2	49.2	62.6	45.3	49.5	55.6	45.6	49.6	38.2	26.6	23.5	23.5	33.9	32.3	23.1	21.7	26.7	43.0	54.3	51.7	60.0	48.4	37.2	35.2				
HOURLY AVG	16.5	18.8	17.4	16.1	16.8	19.7	19.3	15.9	12.6	8.9	6.5	6.2	6.8	6.6	5.7	6.9	7.7	12.3	17.8	22.7	23.9	19.0	16.5	15.7				

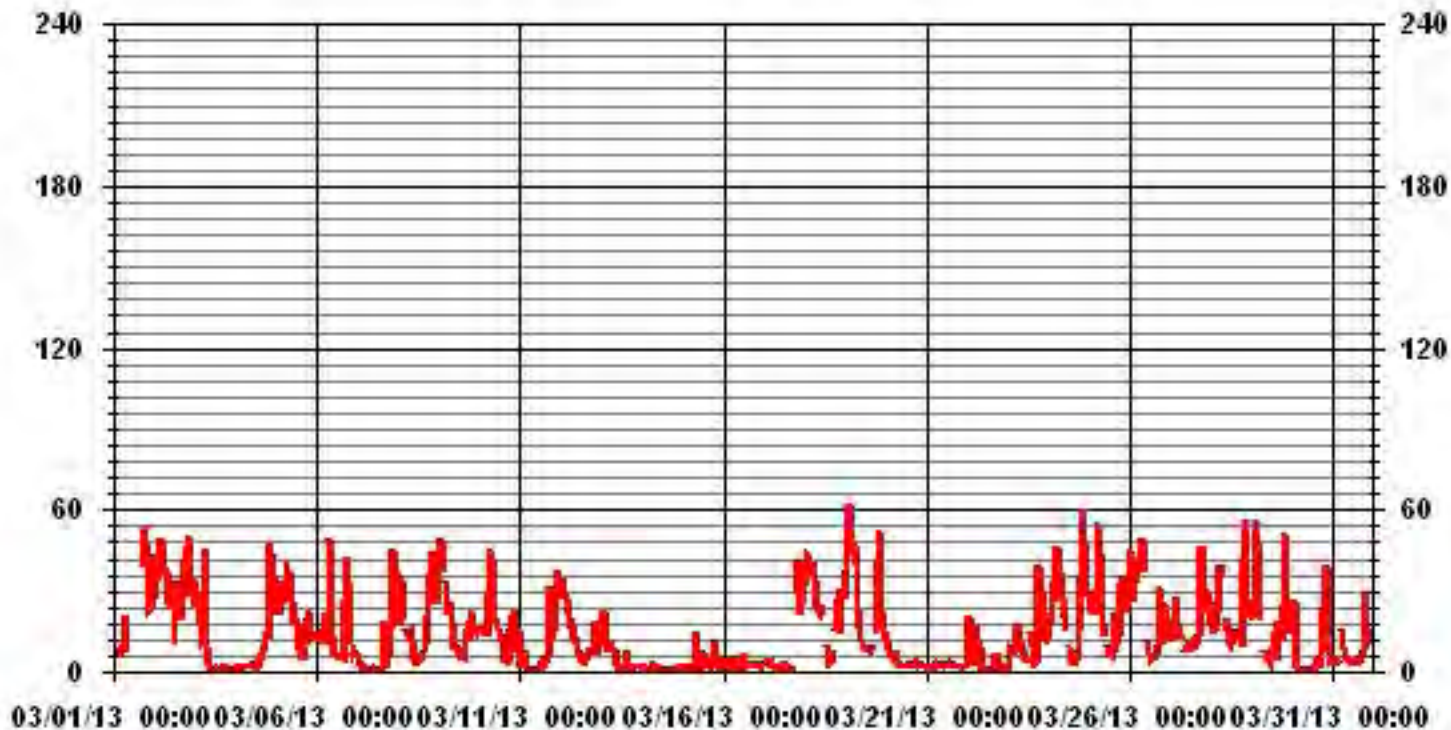
**STATUS FLAG CODES**

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:	703					
MAXIMUM INSTANTANEOUS VALUE:	62.6	PPB	@ HOUR(S)	2	ON DAY(S)	19
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	13.60					

### 01 Hour Averages



— LICA35 NO2MAX PPB

LICA-ELK  
 NO2\_ / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 35  
 Site Name : LICA-ELK  
 Parameter : NO2\_  
 Units : PPB

Wind Parameter : WDR  
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50.0	3.55	2.13	4.26	4.82	11.07	23.01	6.39	1.84	4.26	2.13	1.27	3.69	8.38	7.81	9.94	5.39	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	3.55	2.13	4.26	4.82	11.07	23.01	6.39	1.84	4.26	2.13	1.27	3.69	8.38	7.81	9.94	5.39	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50.0	25	15	30	34	78	162	45	13	30	15	9	26	59	55	70	38	704
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	25	15	30	34	78	162	45	13	30	15	9	26	59	55	70	38	

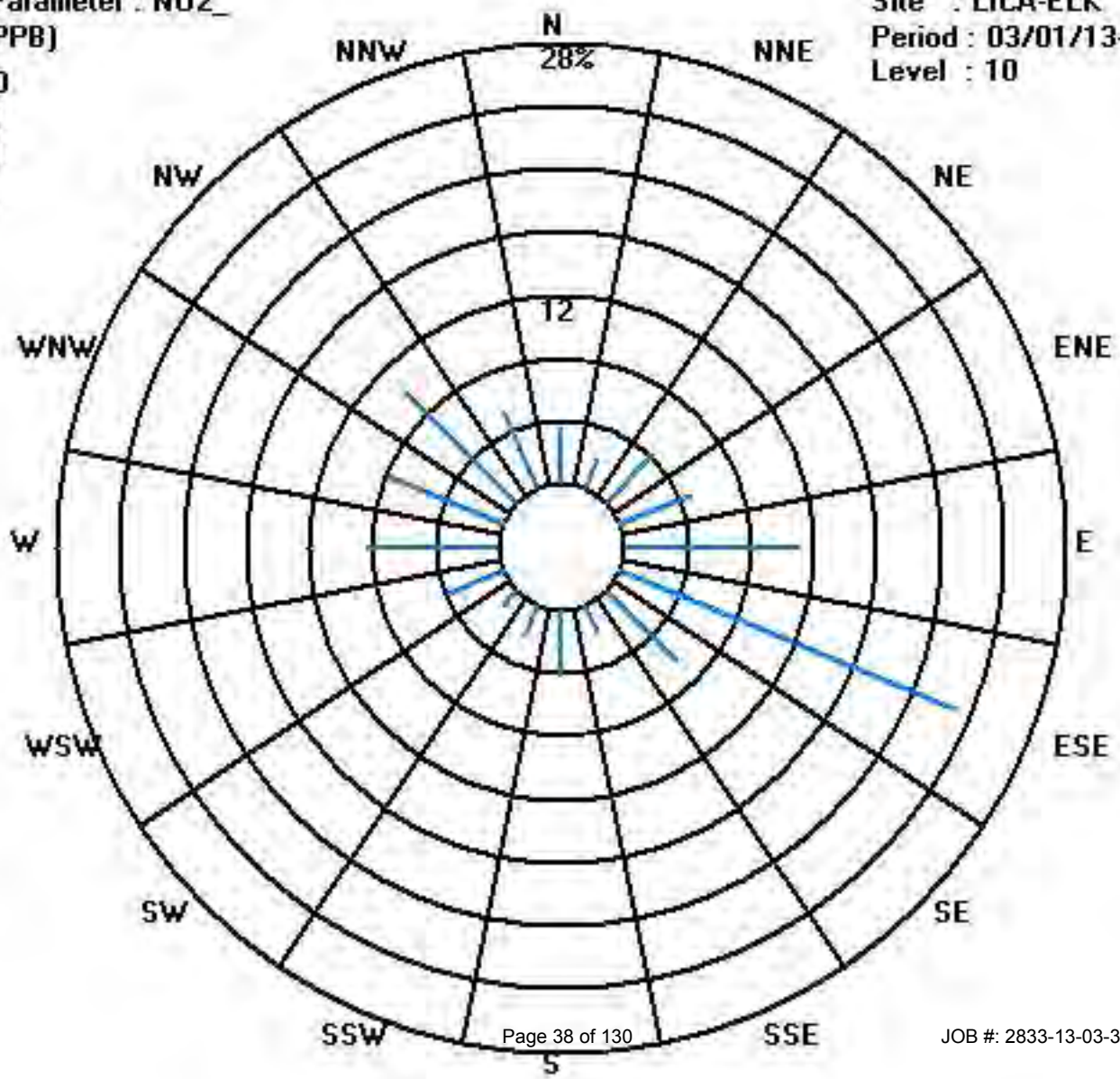
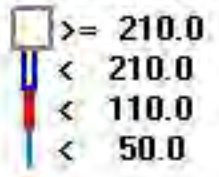
Calm : .00 %

Total # Operational Hours : 704

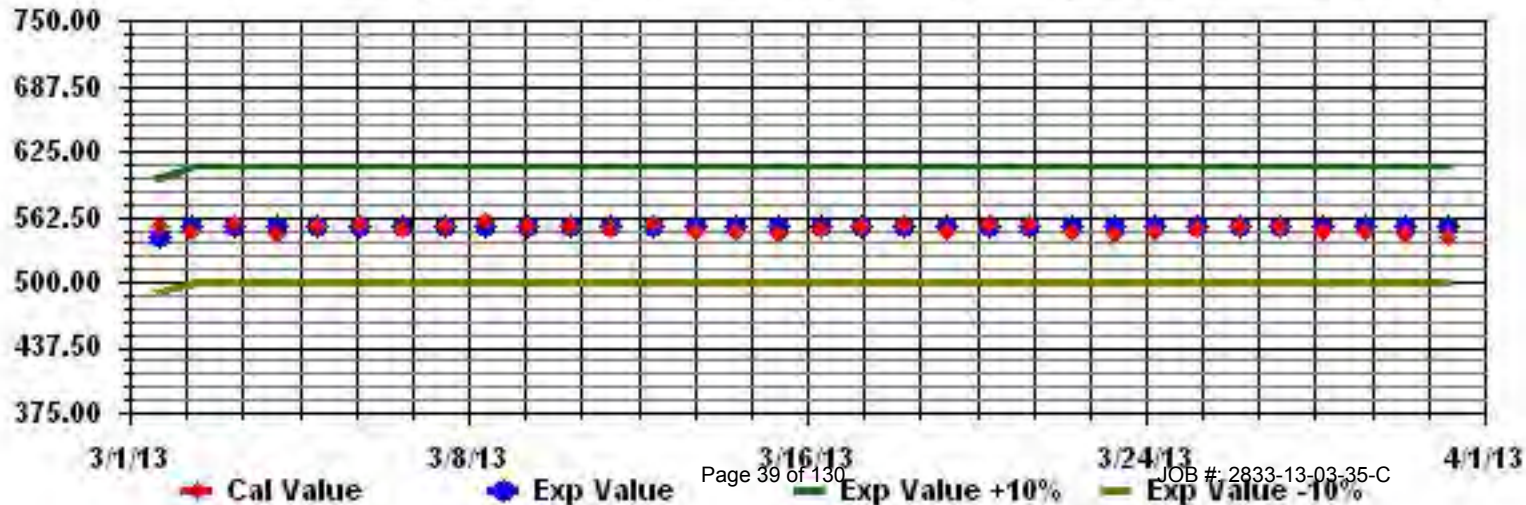
Class Limits (PPB)

Period : 03/01/13-03/31/13

Level : 10



Calibration Graph for Site: LICA35 Parameter: H02\_ Sequence: H02 Phase: SPAll





# Nitric Oxide

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

MARCH 2013

NITRIC OXIDE hourly averages in ppb

MST

DAY	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.
1	0	0	0	0	0	0	0.3	1.7	2.7	C	C	C	C	C	C	C	7.7	7.3	3.4	1.7	0.4	0.3	1	7.7	1.7	24		
2	16.3	4.8	3.4	3.8	7.7	9.7	31	6.9	15.9	10.5	S	9.4	21.1	18.2	5.8	3.8	2.9	2.2	1	1	3.1	0.5	0.3	1.4	31	7.9	24	
3	0.2	0.3	0.3	0.1	0	0	1.2	0.1	0.3	S	0.2	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	1.2	0.1	24
4	0	0	0	0	0	0	0	0	0	S	0.6	0.6	0.9	0.8	0.4	1	1.1	0.2	0.7	0.4	0.3	1.5	6.7	0.1	0.6	6.7	0.7	24
5	0.1	0	0.2	3.6	0.8	0.9	14.1	S	41.7	37.6	20.1	23.2	19.1	3.3	1.9	1.6	1.2	1.1	1	0.5	0.6	0.6	0.6	0.4	41.7	7.6	24	
6	0.2	0.1	0.2	0.3	0.2	0.3	S	9	3.5	5.7	3.9	3.7	3	2.6	2.1	1.6	2.2	3.4	0.8	0.2	0	0	0	0	9	1.9	24	
7	0	0	0	0	0	S	0	0	0	0.2	0.3	0.2	0.2	0.1	0.4	2.1	0.2	0	0	0.3	0	12.3	1.8	0.2	12.3	0.8	24	
8	0.9	0.2	0.1	1.8	S	0.3	0.7	3.4	1.5	1.2	1.3	1.3	1.5	1.7	1.8	2.2	2.3	2.1	1.5	0.5	1.2	0.2	0.3	0.2	3.4	1.2	24	
9	1.7	4.4	1.1	S	1.1	0.4	1.1	6.9	6.4	4	4.7	3.6	3.3	1.8	1.2	1.4	2	1.2	0.5	0.5	0.2	0.1	0	0	6.9	2.1	24	
10	0	0	S	0.1	0	0.8	1.5	12.2	10	13.4	13.5	10.7	3	1.6	1.1	0.2	0	0	0	0	0	0.9	0.6	0	13.5	3.0	24	
11	0	S	0.3	0.1	0	0	0	0.1	0.1	0.1	0.1	0	0.7	0.6	0.6	0.6	1	1.5	0.6	0.1	0.2	0.2	2.5	0.8	2.5	0.4	24	
12	S	1.2	0.8	1.5	0.4	0.3	0.4	2.6	4.2	5.9	4.5	3.6	1.7	1.4	0.8	0.8	1.1	0.7	0.3	0.4	0.4	0.3	0.1	S	5.9	1.5	24	
13	0	0.3	0	0.1	0	0	0	0.3	0.6	0.4	0.1	0.1	0.3	0.3	0.9	1.3	0	0	0	0	0	0	S	0.1	1.3	0.2	24	
14	0	0.1	0	0	0	0	0	0.2	0.4	0.5	0.2	0.2	0	0.1	0.2	0.1	0.1	0	0	0	0	S	0	0	0.5	0.1	24	
15	0	0	0	0	0	0	0	0	0.8	0.2	1.1	1.2	3.9	1.8	0.7	0.3	0.6	0	0	0.9	S	0.1	0	0	3.9	0.5	24	
16	0	0	0	0	0	0	0	0.1	0.7	1.2	0.8	0.5	1	0.8	0.9	0.8	0.7	0.3	0.1	S	0.3	0	0	0	1.2	0.4	24	
17	0.1	0.1	0	0	0	0	0	0.1	0.4	0.5	0.7	1.3	1.1	0.7	0.3	0.2	0	0.1	S	3.3	3.5	1.1	1	1.4	3.5	0.7	24	
18	3.2	3.5	7	2	4.2	11.8	4.7	9.6	14.3	22.6	26.8	22.9	16.5	1.9	1.2	1	2.2	S	1.2	1.9	0.6	0.6	0.6	1.1	26.8	7.0	24	
19	2.1	6	9.9	14.5	14.2	17.5	14.5	8	7.6	8	9.1	6.9	6.5	6.4	5.4	4.7	S	3.4	1.3	1.1	3.7	0.4	0.1	0	17.5	6.6	24	
20	0	0	0	0	0	0.1	0.2	0	0.2	0.2	0.5	0.3	0.3	0.4	0.2	S	0.7	0.4	0.2	0	0.2	0	0	0	0.7	0.2	24	
21	0	0	0	0	0	0	0	0.3	0.4	0.5	0.2	0.7	0.6	0.9	S	0.5	0.1	0.2	0.1	0.1	0.1	0	0	0	0.9	0.2	24	
22	0.3	1.2	0.2	0.2	0.1	1.5	4.4	2.8	0.3	0.4	0.5	0.6	0.6	S	0.4	0.2	0.2	0.3	0	0	0	0	0	0	4.4	0.6	24	
23	0	0.2	0.5	0	0.3	0.3	1.7	2.7	3.5	2.8	3.4	2.1	S	2	1.2	0.3	0	0.1	3.5	1	0.9	0.1	0	0	3.5	1.2	24	
24	0.1	0.4	0.2	1.5	0.9	14.8	20.9	31.5	26.8	27.5	18.2	S	4	1.1	0.9	0.5	0.7	0.8	0.6	1.1	0.8	3.9	0.2	0.8	31.5	6.9	24	
25	0	0.3	0.4	0.4	1	2.8	9.7	10.4	12.5	11.3	S	6.3	3.8	3.4	3.2	3	2.4	1.6	2.2	0.8	0.3	0.5	0.3	0	12.5	3.3	24	
26	2	1.1	0.7	0.9	4.3	4.1	12.8	22	14.3	S	6.2	2.8	1.8	2.1	2.2	2.4	2.2	2	0.2	0	0.1	0	0	0	22	3.7	24	
27	0	0	0	0.1	0	0	0.3	2.2	S	3.2	3.4	3.8	3.4	3	1.9	0.9	0.6	0.3	0.9	0	0	0	0	0	3.8	1.0	24	
28	0	0	0	0	0	1	4.2	S	5.2	8.4	5.4	3.9	3.9	3.1	2.1	1.6	1.2	0.5	0	0.1	0	0	0	0	8.4	1.8	24	
29	0	0.1	2	0	1	0	S	0.5	0.4	0.6	1.3	2.3	2.8	3.2	0.5	3.4	1.9	0.5	0.6	0.1	0	0	0.1	0.1	3.4	0.9	24	
30	0	0.2	0	0	0	S	0	0	0	0	0	0	0	0	0.3	0.4	0	0.4	0.3	0.4	0.1	0.3	0	0	0.4	0.1	24	
31	0	0	0	0	S	0.3	0.3	0.9	1.2	1.3	0.9	0.6	0.4	0.4	0.4	0.2	0.2	0.1	0	0.1	0	0	0	0.3	1.3	0.3	24	
HOURLY MAX	16.3	6.0	9.9	14.5	14.2	17.5	31.0	31.5	41.7	37.6	26.8	23.2	21.1	18.2	5.8	4.7	2.9	7.7	7.3	3.4	3.7	12.3	2.5	1.4				
HOURLY AVG	0.9	0.8	0.9	1.0	1.2	2.3	4.3	4.6	6.1	6.0	4.6	3.9	3.6	2.2	1.4	1.3	0.9	1.1	0.8	0.6	0.7	1.0	0.3	0.3				

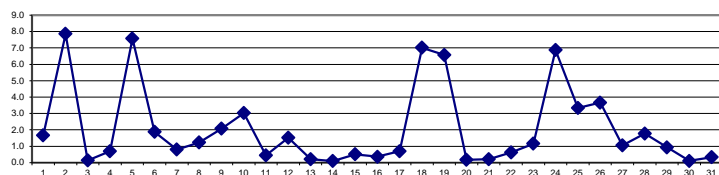
STATUS FLAG CODES

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

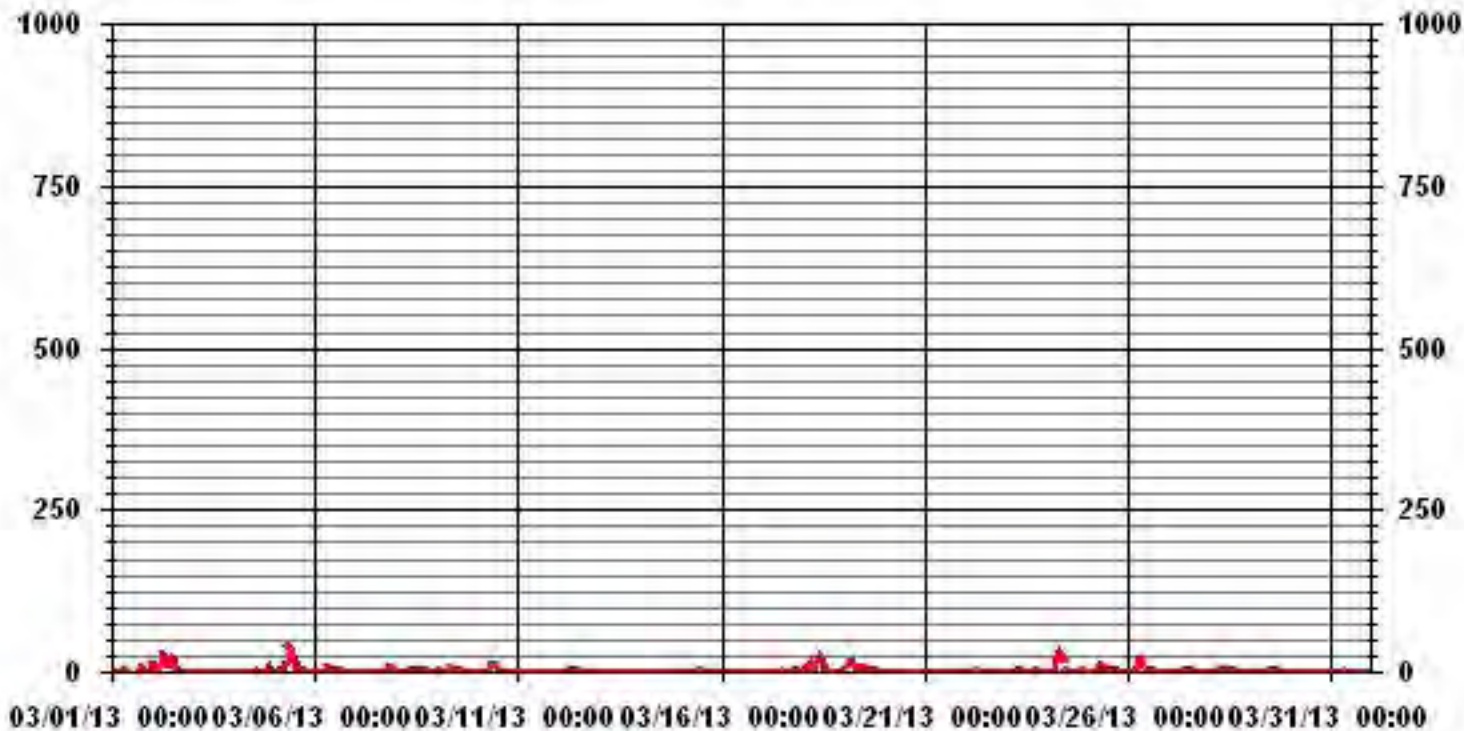
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	508					
MAXIMUM 1-HR AVERAGE:	41.7	PPB	@ HOUR(S)	8	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	7.9	PPB			ON DAY(S)	2
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	4.72		MONTHLY AVERAGE:	2.09	PPB	

24 HOUR AVERAGES FOR MARCH 2013



### 01 Hour Averages



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

MARCH 2013

## NITRIC OXIDE 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	0.4	0.4	0.7	0.4	1	1	1.3	5.2	C	C	C	C	C	C	C	C	17.2	24.6	9.3	4.3	1.4	1.2	4.1	24.6	4.8	24		
2	52.9	15	7	17.6	40.9	24.9	53.8	24.7	24.1	24	S	11.7	100.1	73.7	15.9	16.2	5.8	6.2	3.8	22.4	22.2	1.8	1	4.6	100.1	24.8	24	
3	0.7	1	1.1	0.7	0.3	0.5	44.6	0.5	0.8	S	0.8	0.3	7.6	0.7	1	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.3	0.3	44.6	2.8	24	
4	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	S	1	1	1.4	1.6	0.8	4	2.7	2.3	2.7	1.4	1.9	33.9	25.4	0.9	4.6	33.9	3.8	24	
5	1	1.1	5.8	12.3	3.2	2.1	31.1	S	56.3	50	31.8	28.9	26.4	6.9	3.4	3.2	2.7	2.4	3.5	1.5	1.5	2.3	2.4	2.2	56.3	12.3	24	
6	0.7	0.7	0.7	1.4	0.9	1.6	S	28.7	8.1	10.1	5.4	5.5	4.1	3.6	3.4	3.2	28	34.1	14.7	2	0.4	0.3	0.5	0.3	34.1	6.9	24	
7	0.1	0.1	0.2	0.2	0.2	S	0.4	0.2	0.5	0.5	1.5	0.7	0.6	0.6	1.1	17.2	0.8	0.5	1.3	1.9	1.3	73.8	7.4	1.8	73.8	4.9	24	
8	43.3	1.1	0.9	25.1	S	1.6	1.9	5.9	4.4	2.6	2.2	2	3	3	2.8	3.4	3.4	12.2	15	1.6	6.2	1.4	2	1.1	43.3	6.4	24	
9	4.9	24	3.3	S	3	1.9	3.3	11	9.7	6.5	9.9	6.3	7.4	3.2	4.9	3.6	6.7	3	11.3	3	1	1.4	0.5	0.3	24	5.7	24	
10	1.2	0.4	S	0.6	0.4	2.8	16.3	21.5	17.2	20	17.5	12.6	9.4	3.3	3.2	1	0.6	0.4	0.4	1.5	0.9	3.7	1.9	0.7	21.5	6.0	24	
11	0.2	S	1.5	1.8	0.3	0.3	0.3	0.6	0.4	0.4	0.7	0.4	3.2	1.9	1.9	2	3.3	17.2	2.3	0.8	0.9	0.9	6.9	2.2	17.2	2.2	24	
12	S	2.8	1.7	5.4	1.2	0.7	1.5	5.7	6.2	7.4	6.1	5	2.8	2.3	1.5	1.6	2.4	1.9	0.9	1.4	9.4	1.3	0.4	S	9.4	3.2	24	
13	0.5	2.5	0.6	0.6	0.4	0.3	0.3	0.9	2.2	0.9	0.7	0.6	0.7	0.9	3	6.6	0.5	0.3	0.3	0.4	0.4	0.4	S	0.6	6.6	1.1	24	
14	0.4	0.5	0.5	0.5	0.4	0.4	0.4	0.8	0.9	1.1	0.7	0.8	0.4	0.7	0.5	0.5	0.5	0.4	0.4	0.6	0.6	S	0.6	0.3	1.1	0.6	24	
15	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.8	30.5	0.7	3.4	1.9	9.3	3.8	1.7	0.7	2	0.5	0.6	3.1	S	0.6	0.4	0.4	30.5	2.7	24	
16	0.4	0.4	0.4	0.4	0.4	0.4	0.7	0.7	2.5	2.1	1.9	1.4	9.2	2.4	2.3	1.8	1.7	1.1	0.9	S	1.2	0.4	0.4	0.5	9.2	1.5	24	
17	0.5	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.8	1	1.3	3.1	3.4	3.3	1	0.8	0.6	0.5	S	9.6	27.3	4.9	2.9	3.2	27.3	2.9	24	
18	8.1	41.7	34.9	8.4	8.7	30.2	6.5	14.9	16.2	33.6	35.6	35.3	Y	3.9	2.2	2.6	4	S	2.8	6.2	2.4	2.8	2.9	5	41.7	14.0	23	
19	6.6	16.1	55.1	25.1	27.9	32.2	25	11.6	11.9	9.3	10.6	8.8	8	7.9	6.5	6.1	S	5.4	3.7	18	63.4	2.5	2.3	0.4	63.4	15.8	24	
20	0.4	0.5	0.4	0.9	0.6	0.9	1.4	0.8	1.4	0.8	1.2	1	1.3	1.6	1.4	S	1.8	1.1	1.2	0.5	1.2	0.9	0.4	0.3	1.8	1.0	24	
21	0.3	0.5	0.5	0.5	0.4	1	0.7	1.2	1.2	1.4	0.9	2.2	1.6	2	S	1.2	0.7	0.7	0.6	0.5	0.6	0.5	0.5	0.5	2.2	0.9	24	
22	1.6	5.8	1.3	0.5	0.7	4.5	7.7	7.4	0.8	0.8	1	1.2	1.1	S	1.1	0.8	3.2	3.3	0.6	0.3	0.3	0.3	0.5	0.4	7.7	2.0	24	
23	0.4	1.8	1.8	1.1	1.9	2.6	10	9.1	6.9	6.4	9.3	4.8	S	11.4	17.3	1.9	0.6	1.5	22.5	3.8	4.2	0.5	0.6	0.5	22.5	5.3	24	
24	0.8	1	1.3	4.3	2.6	85.6	43.1	67.9	42	33.8	25.3	S	8.2	2.2	1.9	1.3	1.7	1.9	1.4	4.3	14.1	20.4	0.7	3.4	85.6	16.1	24	
25	0.6	1.8	1.5	1.8	3.3	20.8	67.6	26.6	17.3	14.3	S	8.8	5	4.4	4.4	21	4.4	3.5	18.5	2.5	1.7	1.7	1.6	0.7	67.6	10.2	24	
26	19.9	7.5	2.2	6	14.7	10.9	26.9	62.8	46	S	9.6	4.8	3	3.5	2.9	3.9	3.5	11.3	1.2	0.7	8	0.2	0.2	0.3	62.8	10.9	24	
27	0.1	0.2	0.4	3.4	0.9	0.3	1.1	3.4	S	4.7	6.1	4.9	4.6	4.2	3.2	1.7	1.5	3.5	25.3	3.2	0.1	0.3	0.1	0.2	25.3	3.2	24	
28	0.1	0.2	0.3	0.1	0.4	4.2	11.6	S	9.4	14.7	6.5	4.8	5.8	5	3.5	2.5	2.3	2.2	0.1	11.5	7.7	0.1	0.1	0.5	14.7	4.1	24	
29	1.8	1.2	34.5	0.7	8	0.4	S	1	0.9	2.2	1.9	4.8	5.1	8.2	1.7	12.3	6.2	3.2	4.3	8.6	0.2	1.5	1.1	1.6	34.5	4.8	24	
30	1.1	2.4	0	0.1	0.1	S	0.3	0.4	0.4	0.5	0.4	0.4	0.4	1.4	1.7	0.7	1.4	1.6	2.1	1.1	3	0.4	0.4	0.1	3	0.9	24	
31	0.4	0.4	0.5	0.3	S	1.5	1.3	2.2	2.4	2.1	1.5	1.8	1.2	1	1.2	0.6	0.9	0.9	0.7	3.3	0.5	0.3	0.5	1	3.3	1.2	24	
HOURLY MAX	52.9	41.7	55.1	25.1	40.9	85.6	67.6	67.9	56.3	50.0	35.6	35.3	100.1	73.7	17.3	21.0	28.0	34.1	25.3	22.4	63.4	73.8	7.4	5.0				
HOURLY AVG	5.0	4.4	5.3	4.0	4.3	8.1	12.4	10.9	11.5	9.0	7.0	5.7	8.4	5.8	3.5	4.2	3.2	4.7	5.6	4.2	7.3	5.1	1.4	1.4				

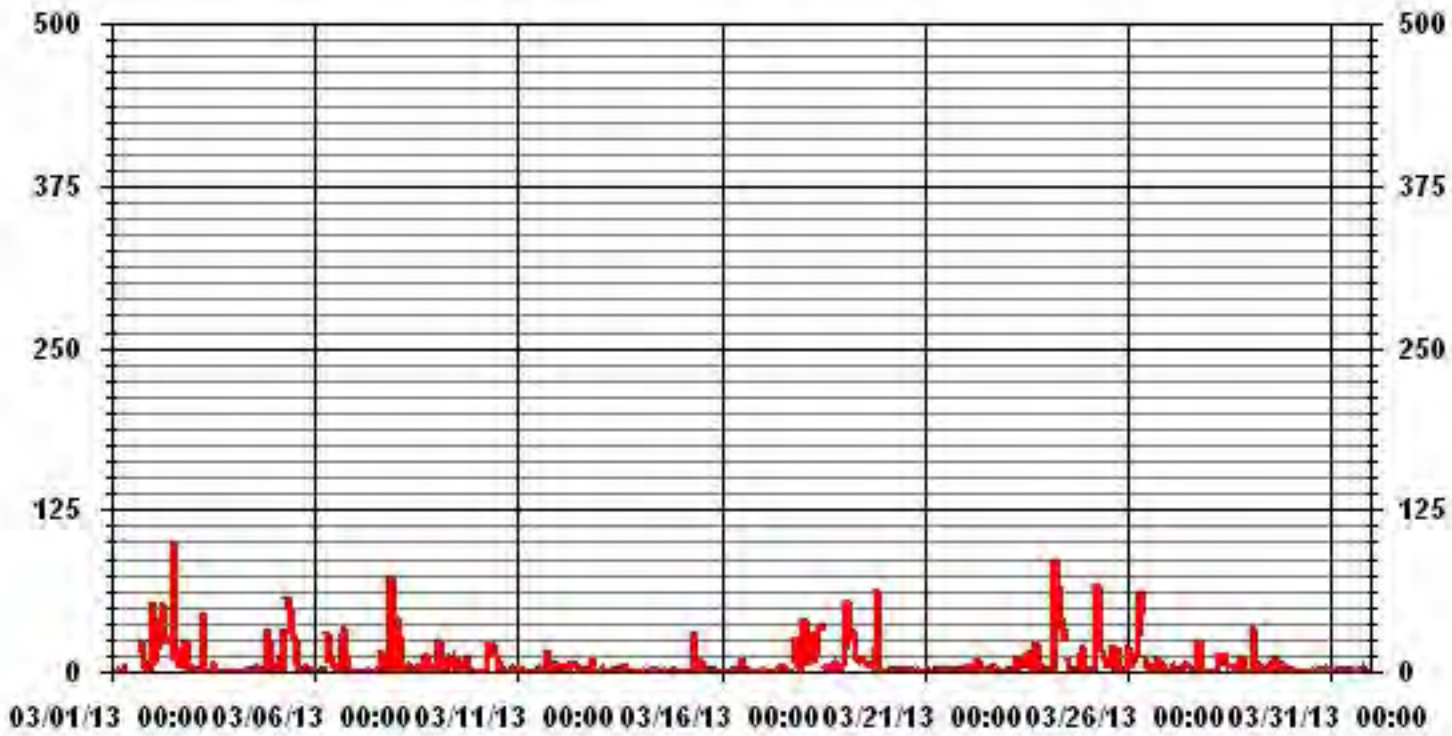
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	702					
MAXIMUM INSTANTANEOUS VALUE:	100.1	PPB	@ HOUR(S)	12	ON DAY(S)	2
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	11.58					

# 01 Hour Averages



LICA-ELK  
 NO\_ / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 35  
 Site Name : LICA-ELK  
 Parameter : NO\_  
 Units : PPB

Wind Parameter : WDR  
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50.0	3.54	2.12	4.39	4.82	11.06	22.97	6.38	1.84	4.25	2.12	1.27	3.68	8.36	7.80	9.92	5.39	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	3.54	2.12	4.39	4.82	11.06	22.97	6.38	1.84	4.25	2.12	1.27	3.68	8.36	7.80	9.92	5.39	

Calm : .00 %

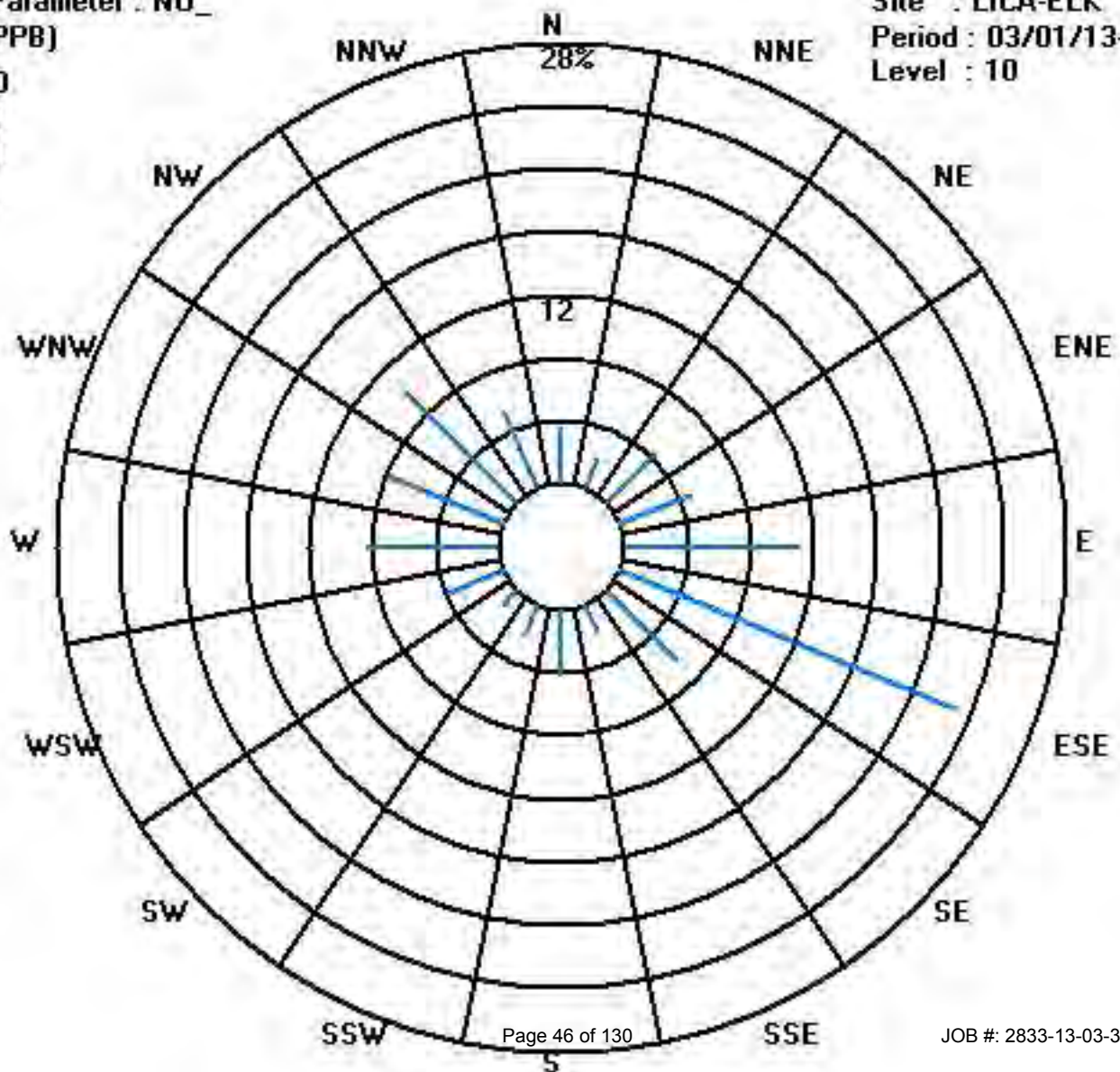
Total # Operational Hours : 705

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50.0	25	15	31	34	78	162	45	13	30	15	9	26	59	55	70	38	705
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	25	15	31	34	78	162	45	13	30	15	9	26	59	55	70	38	

Calm : .00 %

Total # Operational Hours : 705



# Oxides of Nitrogen



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

MARCH 2013

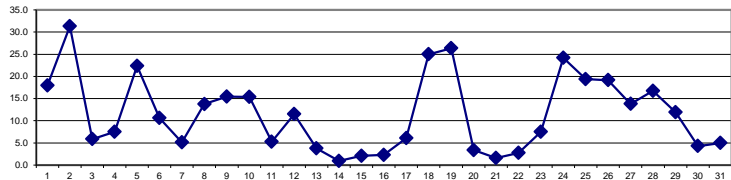
OXIDES OF NITROGEN hourly averages in ppb

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	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	7.5	6.2	6.2	6.2	5.9	6	6.4	14	15.6	C	C	C	C	C	C	C	C	41.1	46.4	42.4	31.6	19.2	17.1	15.7	46.4	18.0	24
2	48.7	37.8	33.5	33.2	40	42.2	67.3	30.6	38.4	22.9	S	18.8	37.3	35.4	17.9	15.4	18.3	23.9	28.5	25.6	31.5	22.8	21.9	27.8	67.3	31.3	24
3	22.1	24.2	23.5	12.8	8	6.9	16.5	4.6	2.7	S	1.1	0.7	1	1.1	1	0.7	1.1	1.2	1	1.1	0.9	1	1.2	1	24.2	5.9	24
4	1.3	1.5	1.7	1.7	1.5	1.5	1.8	1.8	S	2.8	2.3	2.9	3	2	3.4	4.6	2.6	6.4	8.5	9.5	19.9	44.7	23.7	23.4	44.7	7.5	24
5	21.6	19	15.8	29.7	21.7	27.1	50.5	S	72.4	60.6	34.5	39.7	34.1	8.3	5.1	4.7	5	6.6	10.9	11.6	8.6	9.3	9.5	8.2	72.4	22.4	24
6	8.9	10.2	9.3	9.8	9.1	11	S	38.1	13	14.5	9.7	8.9	7.6	7.1	6.4	5.6	9	17.4	14.3	10.2	7.5	4.8	6.2	6	38.1	10.6	24
7	3.6	2.9	1.9	0.8	0.5	S	0.8	0.4	0.6	1.1	1.2	0.9	1.1	1	1.5	5.6	1.5	1.7	2.6	8	6.9	36.5	19.3	17.7	36.5	5.1	24
8	16	16.2	16	17	S	11.4	12.6	16.1	7.9	5.3	4.7	4.5	5.1	5.9	6.8	8.4	10.3	16.4	16.6	25.4	29.3	21.2	19.6	23.7	29.3	13.8	24
9	37.9	35.8	35	S	27.9	14.9	14.6	29	18.7	11.6	10.7	8.1	7.9	5.3	4.1	5.3	8	8.2	9.8	13.9	12.8	11.2	13.4	11.6	37.9	15.5	24
10	12.2	13.1	S	14.1	12	22	34.9	44.9	29.7	30.2	29.8	25.8	11.7	9.4	7.3	3.5	2.7	2.1	9.3	12.1	9.7	9.4	4.6	3.8	44.9	15.4	24
11	2	S	2.8	2.2	0.4	0.2	0.3	0.4	0.3	0.3	0.2	0.1	1.5	1.5	1.5	2	3.4	6.5	9.1	8.8	8.8	16.3	29.4	22.8	29.4	5.3	24
12	S	31.5	26.6	25.7	15.1	11.6	13.4	16.7	14.3	15	11.4	9.3	5.7	5.2	4	4.5	6	6	5.7	5.7	5.5	8.4	5.6	S	31.5	11.5	24
13	5.2	9.8	7.6	8.6	7.4	6.3	6.5	4.6	5	2.7	1.6	1.4	1.6	2	3.4	4	1.3	1	0.9	1.1	1.4	1.5	S	2.2	9.8	3.8	24
14	1.2	1	1.2	0.9	0.8	1.2	1.6	2	1.6	1.4	0.7	0.6	0.3	0.5	0.7	0.5	0.6	0.8	0.8	0.6	0.6	S	1.2	1	2	0.9	24
15	0.7	0.7	1.1	0.9	0.6	0.9	1	1.1	2.1	0.9	2.4	2.8	8	4.1	2.2	0.9	2.2	1.6	2.5	6.1	S	1.1	1.6	2.5	8	2.1	24
16	2.5	2.3	2	2.4	4.2	1.6	1.5	1.3	2.4	3.4	2.3	1.6	2.4	2.3	2.7	2.7	2.8	2.1	2.2	S	2.5	2	1.6	1.9	4.2	2.3	24
17	2.5	3	2.7	2.5	2	1.9	1.2	1	1.3	1.6	1.8	2.8	2.3	1.8	1	0.8	0.7	0.7	S	22.2	23.7	14.3	18.5	29	29	6.1	24
18	30.5	26.4	37.2	29.2	36.4	48	33.7	31.9	35	41.7	46.1	39.7	32.8	5	3.5	3.3	6.7	S	10.9	20.9	9	12.9	16.7	17.2	48	25.0	24
19	32.8	44.2	52.8	56.4	55.9	57.9	50	25.3	20.7	18.4	17.8	14	13.6	14.2	12.8	12.7	S	14.2	15.3	18.2	24.7	15.4	9.6	9.3	57.9	26.4	24
20	10.8	7.9	4.9	4.9	4.6	5.1	5.1	2.8	2.9	2.2	2.4	2.2	2.5	2.5	2.4	S	2.6	2.5	2.4	1.7	1.9	1.2	1	1	10.8	3.4	24
21	1	1	0.9	1.1	1.1	1.5	1.6	1.9	2.2	1.9	1.2	2	2	3.1	S	2	1.8	2	1.4	1.6	1.4	1.4	1.6	1.5	3.1	1.6	24
22	3.6	8.3	3.1	2.2	1.8	7.5	13.4	7.2	0.8	0.9	0.9	1	1	S	1.2	1.2	1.3	1.6	1.2	1	1.1	1.2	1.2	1	13.4	2.8	24
23	0.8	2.6	4.2	2.3	3.9	4.8	7.3	8.5	8.2	5.8	6.3	4.5	S	4.5	3.5	2.1	1.6	2.9	23.1	24.1	25	11.4	7.5	8.5	25	7.5	24
24	13.6	18.6	17	28.9	27.2	49	56.1	59.7	46.2	45.5	31.7	S	9.5	3.9	3.7	3.3	4.8	6.4	11.1	23.7	20.4	30	23.9	22.4	59.7	24.2	24
25	19	19.2	18.9	18.1	23.9	33.2	40.2	31.3	28.3	23.6	S	13.6	9.3	8.7	9.1	9	9.6	9.7	18.8	20.9	21.7	23	20.6	16.6	40.2	19.4	24
26	23.4	22.9	22.4	25.2	38.3	40.4	50.3	50.6	31.6	S	14.2	7.7	5.4	6.7	7.5	8.7	10.3	13.3	9	8.5	9.1	10.6	13.5	10.8	50.6	19.1	24
27	10.9	11.2	13.6	14.6	11.8	10.6	11.4	13.3	S	11.1	11.8	12.2	12.3	12.9	12.1	11.4	12.2	12.7	21.7	18.5	20.5	19.4	14.6	17	21.7	13.8	24
28	15.1	11.3	13.8	11.9	14.9	29.2	35.3	S	16.8	22.3	16.5	14.4	16.2	16.3	15.1	15.6	14.5	11	6.7	18.4	18.2	17.4	16.7	16.8	35.3	16.7	24
29	15.5	20.7	35.9	15.5	26.5	10.6	S	6.3	4.9	4.2	5.3	7	8.2	10	2.7	10.9	8.9	5.4	10.5	10.2	9.8	18.2	17.8	9.6	35.9	11.9	24
30	8.5	10.3	1.9	1	0.1	S	0.8	0.7	1	0.6	0.4	0.3	0.4	1.6	1.9	0.4	2.6	4.2	10.3	15.1	19.3	13	3.2	1.2	19.3	4.3	24
31	2.9	3.2	2.9	3.2	S	7.7	5.7	5.8	4.6	4.5	3.7	3.3	3.2	3.5	4	3.7	3.9	4.3	6.1	10.2	7.5	7.2	6	7.9	10.2	5.0	24
HOURLY MAX	48.7	44.2	52.8	56.4	55.9	57.9	67.3	59.7	72.4	60.6	46.1	39.7	37.3	35.4	17.9	15.6	18.3	41.1	46.4	42.4	31.6	44.7	29.4	29.0			
HOURLY AVG	12.7	14.1	13.9	12.8	13.9	16.3	18.7	15.6	14.8	12.8	9.7	8.6	8.5	6.4	5.1	5.3	5.4	7.8	10.6	13.2	13.0	13.5	11.6	11.3			

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

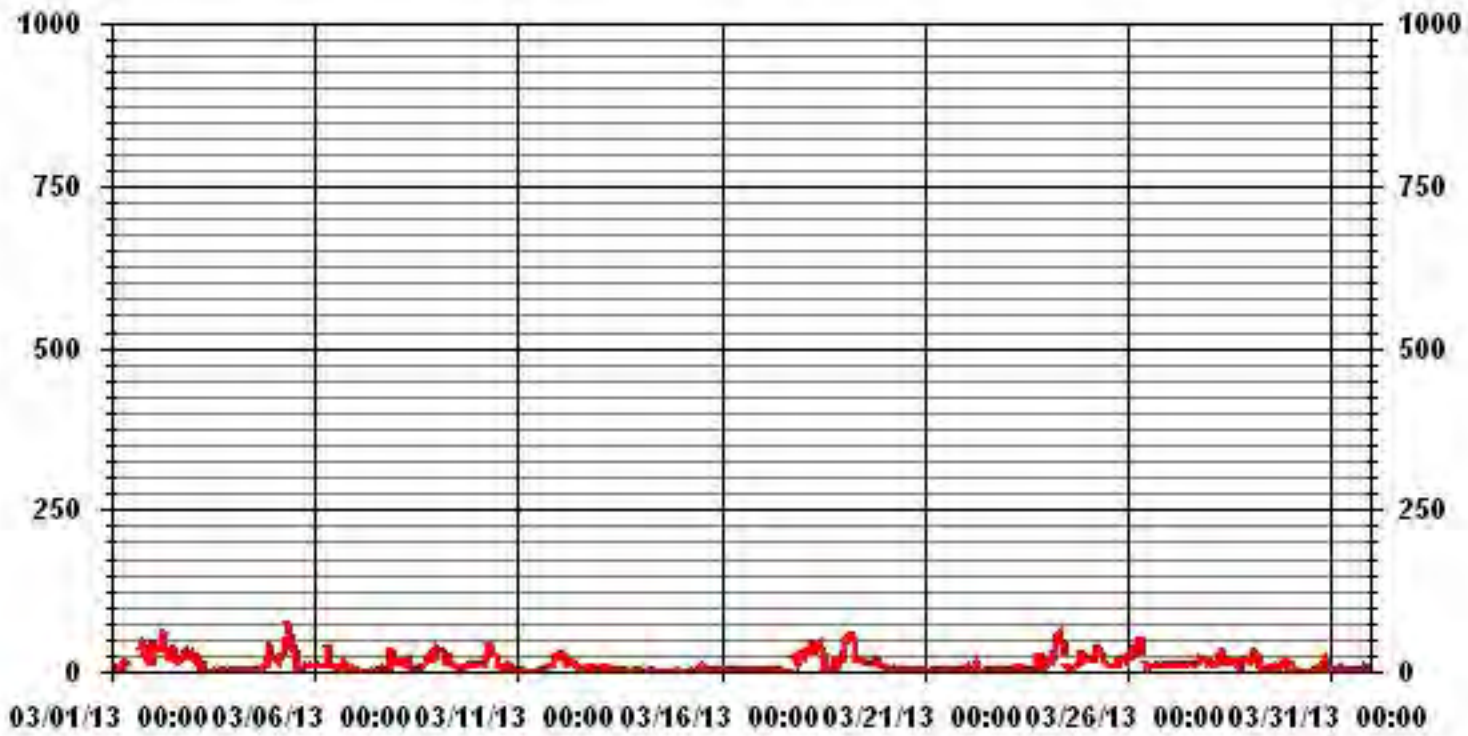
24 HOUR AVERAGES FOR MARCH 2013



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	705					
MAXIMUM 1-HR AVERAGE:	72.4	PPB	@ HOUR(S)	8	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	31.3	PPB			ON DAY(S)	2
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	12.42		MONTHLY AVERAGE:	11.50	PPB	

### 01 Hour Averages



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

MARCH 2013

## OXIDES OF NITROGEN 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	8.7	7.3	7.5	7.8	7.7	9.2	9.3	25.1	C	C	C	C	C	C	C	C	57.1	79	57.3	44.7	23.4	24.8	30.6	79	26.6	24		
2	95.8	52.1	40.7	58.1	90.5	61.1	90	61.7	48.4	48.4	S	23.5	130.5	105.8	35.3	31.2	32.2	40.1	44.1	69	70.4	29.8	30.4	38.5	130.5	57.7	24	
3	24.4	28.4	28.2	18.6	11	12.1	85.9	9.8	4.2	S	1.6	1.2	8.7	2	1.7	1.1	1.8	1.8	1.7	2	1.3	1.5	1.8	1.5	85.9	11.0	24	
4	2	2.1	2.2	2.2	1.9	1.9	2.4	2.4	S	3.4	2.9	3.9	4.1	2.8	8.3	9.4	9.9	12.3	15.4	15.1	78	68.7	28.1	40.1	78	13.9	24	
5	26.1	24.3	29	46.2	28.8	32.5	68.9	S	90	74.7	50.1	49.4	44.1	15.8	8.4	7.9	7.7	13.9	22.8	23.4	12.9	13.6	16.4	15.4	90	31.4	24	
6	13.7	14.4	11.2	14.4	10.8	21.7	S	74.3	25.6	24.1	13	11.9	9.4	8.9	9.5	8.7	51.1	71.9	48	19.5	11.2	6.3	7.4	6.7	74.3	21.5	24	
7	5.6	3.5	3	1.4	1.1	S	1.5	0.9	1.3	1.6	3.2	1.5	1.5	1.5	3	36.5	3	2.1	6.1	19.7	17.2	113.9	32.3	26.9	113.9	12.5	24	
8	77.2	19.2	19.8	57.6	S	16.7	15.1	20.5	16.1	7.8	6	6	8.8	7.4	9.1	10.7	12	28.8	47.6	36.1	50.3	29.4	26.9	29.1	77.2	24.3	24	
9	48.7	73.3	41	S	34.5	22.8	24.4	36.2	26.2	16.7	19.1	13.4	14.8	7.7	12.2	10	21.8	13.7	30.1	26.5	18.1	13.9	16.7	15.5	73.3	24.2	24	
10	17.4	16.2	S	16.3	13.5	30.1	60.5	60.9	40.5	38.3	35.4	29	24.4	16.3	13.7	5.9	4.9	2.9	16.3	21.5	12.7	24.9	8.7	16.6	60.9	22.9	24	
11	3	S	6.3	9.4	1	0.5	0.8	0.9	0.9	0.7	0.6	0.5	6.1	3.8	3.7	5.6	8.5	48.8	23.8	13	15.8	29.7	43.8	30	48.8	11.2	24	
12	S	36.5	30.3	32.5	22.6	16.5	20.3	22.8	19.8	18.5	14.2	12	7.7	6.7	5.3	6.2	9.3	9.2	8.2	8.3	28.4	13.1	7.5	S	36.5	16.2	24	
13	10.4	25.2	11.4	12.7	8.5	8.7	9.9	7.5	10.7	3.8	2.1	2	2.1	2.7	7.5	14.8	1.7	1.5	1.5	1.6	1.9	2.4	S	2.8	25.2	6.7	24	
14	2.1	1.5	1.8	1.3	1.3	1.8	2.8	2.9	2.1	2.2	1.3	1.5	0.7	1.1	1.1	1.1	1.2	1.3	1.3	1.1	1.1	S	2	2	2.9	1.6	24	
15	1.9	1.3	1.8	1.6	1	1.6	1.8	1.8	45.4	1.6	5.9	3.8	17.3	7.3	4.2	1.4	5.1	2.6	4.4	13.5	S	1.5	4.7	6.2	45.4	6.0	24	
16	3.4	3.5	2.7	3.3	6	2.2	2.8	2	6.1	4.9	4.1	2.9	12.2	4.8	4.5	4.2	4.2	3.5	3.8	S	3.6	2.8	2.5	3.4	12.2	4.1	24	
17	3.4	4	4.3	4.6	2.7	2.4	1.9	1.6	2	2.1	2.5	5.8	6.5	6.2	1.6	1.5	1.2	1.1	S	39.5	65.8	25.3	26.3	37.1	65.8	10.8	24	
18	38.8	82.8	76.6	43.6	45.2	70.7	40.5	39.6	38.4	55.4	59.1	58.7	Y	10.9	5.3	5.9	10.3	S	18.6	32.8	16.2	32.4	32.7	27.8	82.8	38.3	23	
19	42.7	60.1	117.6	70.4	71.4	73.6	65	30.3	28.5	20	20	16.9	16.3	16.8	14.6	15.2	S	20.3	21.5	56.3	107.8	25.4	18.8	11.2	117.6	40.9	24	
20	12.5	9.5	6.6	7.1	6	8	9.8	3.9	4.6	2.9	3.2	3	3.9	4.2	3.9	S	4.2	4.1	4.9	2.5	3.3	2.2	1.6	1.6	12.5	4.9	24	
21	1.6	1.6	1.7	2	1.9	4	2.6	3.1	3.6	4.1	2.5	5.2	4.4	5.5	S	3.4	3.4	3.3	2.3	2.1	1.9	2	2.2	2.2	5.5	2.9	24	
22	11.9	26.7	7.8	2.7	4.2	21	20.5	16.9	1.3	1.3	1.3	1.4	1.5	S	1.7	1.7	9.3	9.2	1.9	1.6	1.5	1.5	1.7	1.6	26.7	6.5	24	
23	1.3	10.6	10.2	6.8	10.7	18.4	27.5	21	14.7	12.1	16	9	S	23.8	23.2	5.5	4.7	6.4	59.8	31.9	33.7	15.8	13.1	11	59.8	16.8	24	
24	17.7	23	26.9	37.8	30.4	128.4	80.5	104.2	69.4	53.8	41.6	S	16.8	5.6	5.4	5.1	6.9	9.4	16.6	40	73.9	68.8	30.2	32.2	128.4	40.2	24	
25	23.1	26.1	26.1	22.2	34.1	75.4	108	63.1	35.6	27.7	S	17.5	11.6	10.3	11.5	41.8	13.4	15.3	51.4	38	31.3	37.7	34.3	23	108	33.8	24	
26	64.4	44.9	27	39.1	57.2	51.8	66.1	108	83.8	S	20.2	11.7	8	9.6	8.9	11	13.5	43.2	11	13.8	34.4	13.8	21.2	13.3	108	33.7	24	
27	12.8	15.3	16.2	31	20.1	14	13.7	16.5	S	13.6	16.6	13.8	14	15.4	15.1	13.3	15.3	29.4	73.9	42.3	30.1	31	25	25.6	73.9	22.3	24	
28	19.1	14.3	18.7	15.6	23.2	44.6	48.5	S	25.9	34.6	18.6	15.6	20.1	20	18.4	18.4	17.6	14.8	9.2	51.2	64.6	23.5	21	21.7	64.6	25.2	24	
29	21.8	26.8	90	26.7	55.8	20.7	S	8.2	5.8	7.7	6.2	12.6	14.3	23.3	5.8	30.9	24.4	14.1	29.2	59.9	22.2	27.2	26.6	14.3	90	25.0	24	
30	17.4	29.8	2.7	1.7	0.9	S	1.6	1.3	1.5	1.3	0.9	1	0.9	4.1	5.4	2.3	6.2	9.1	25.7	22.3	43.4	16.8	6.7	1.9	43.4	8.9	24	
31	4.9	4.6	5.2	4.2	S	15.9	10.8	7.5	7.5	6	5	5.5	4.4	4.2	5.7	4.6	5.8	6.5	8.5	32	15.7	10.1	13.8	13	32	8.8	24	
HOURLY MAX	95.8	82.8	117.6	70.4	90.5	128.4	108.0	108.0	90.0	74.7	59.1	58.7	130.5	105.8	35.3	41.8	51.1	71.9	79.0	69.0	107.8	113.9	43.8	40.1				
HOURLY AVG	21.1	23.0	22.5	20.0	20.8	27.2	30.8	26.0	23.6	17.5	13.3	11.7	14.8	12.2	8.8	10.9	10.7	16.6	23.0	26.5	30.4	23.6	17.6	16.8				

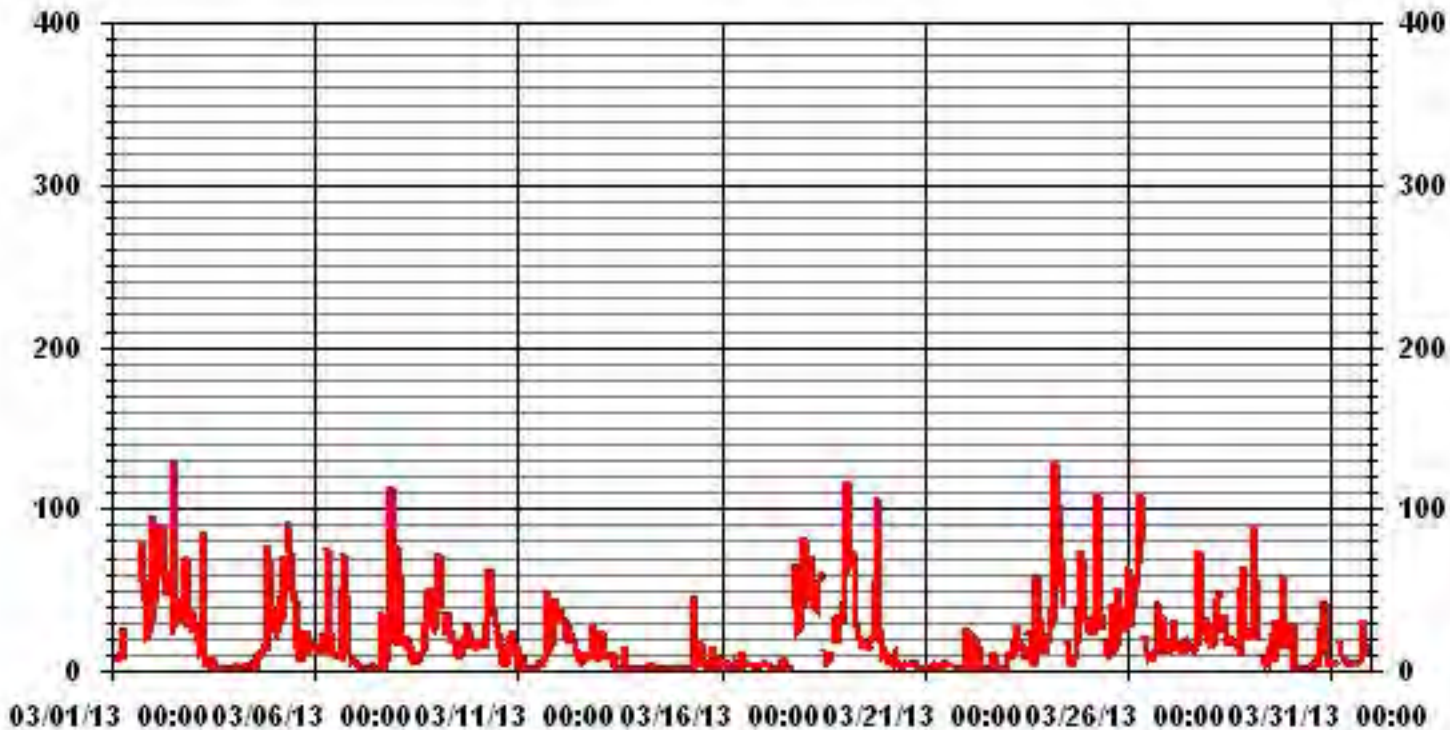
**STATUS FLAG CODES**

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:	703				
MAXIMUM INSTANTANEOUS VALUE:	130.5	PPB	@ HOUR(S)	12	ON DAY(S) 2
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	743	HRS
MONTHLY CALIBRATION TIME:	9	HRS			
STANDARD DEVIATION:	22.17				

# 01 Hour Averages



LICA-ELK  
 NOX\_ / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 35  
 Site Name : LICA-ELK  
 Parameter : NOX\_  
 Units : PPB

Wind Parameter : WDR  
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50.0	3.54	2.12	4.25	4.82	11.06	22.41	6.24	1.84	4.25	2.12	1.27	3.54	7.80	7.65	9.78	5.39	98.15
< 110.0	.00	.00	.14	.00	.00	.56	.14	.00	.00	.00	.00	.14	.56	.14	.14	.00	1.84
< 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	3.54	2.12	4.39	4.82	11.06	22.97	6.38	1.84	4.25	2.12	1.27	3.68	8.36	7.80	9.92	5.39	

Calm : .00 %

Total # Operational Hours : 705

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50.0	25	15	30	34	78	158	44	13	30	15	9	25	55	54	69	38	692
< 110.0			1			4	1					1	4	1	1		13
< 210.0																	
>= 210.0																	
Totals	25	15	31	34	78	162	45	13	30	15	9	26	59	55	70	38	

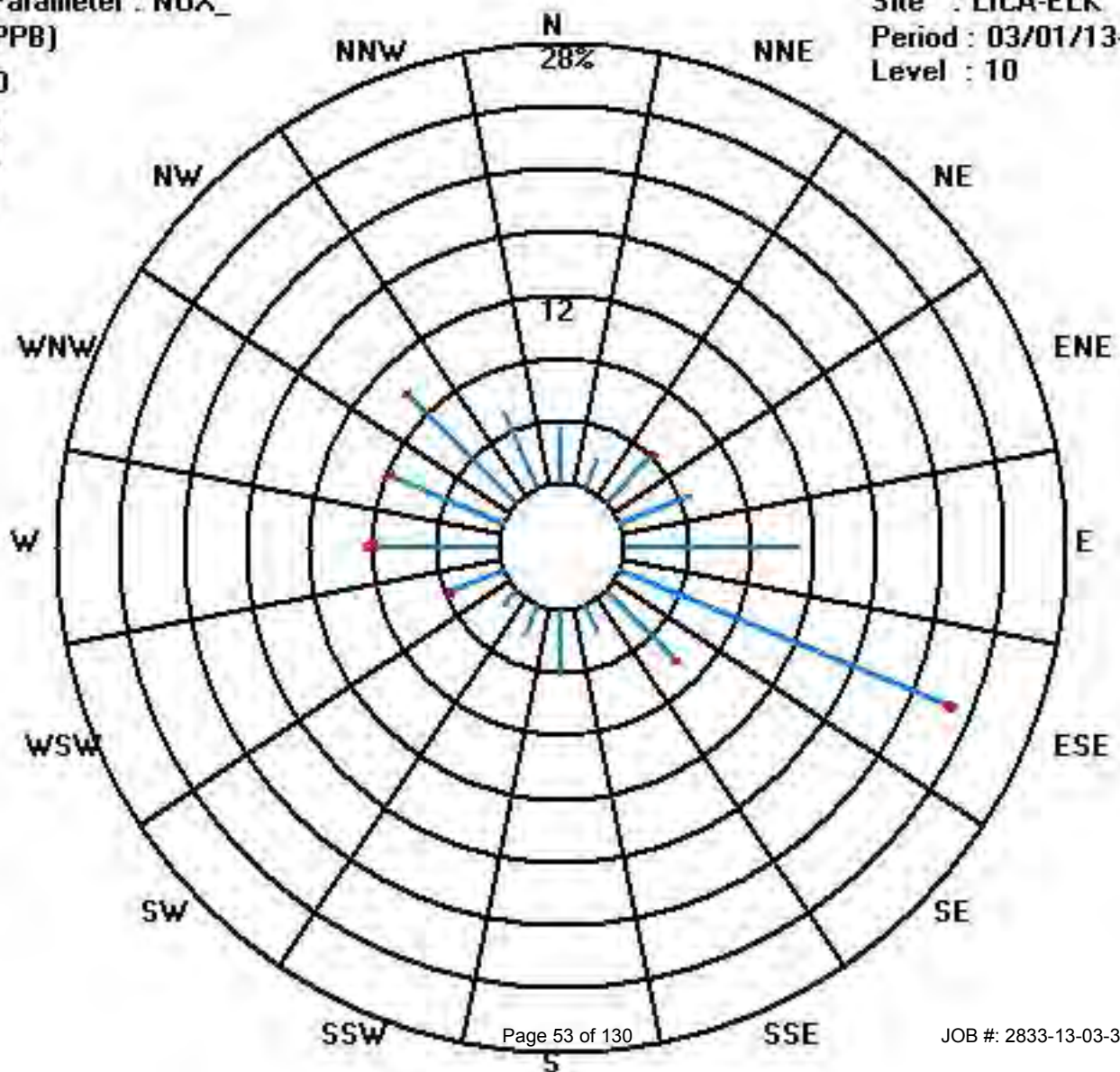
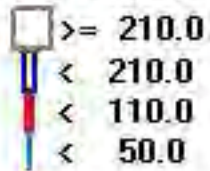
Calm : .00 %

Total # Operational Hours : 705

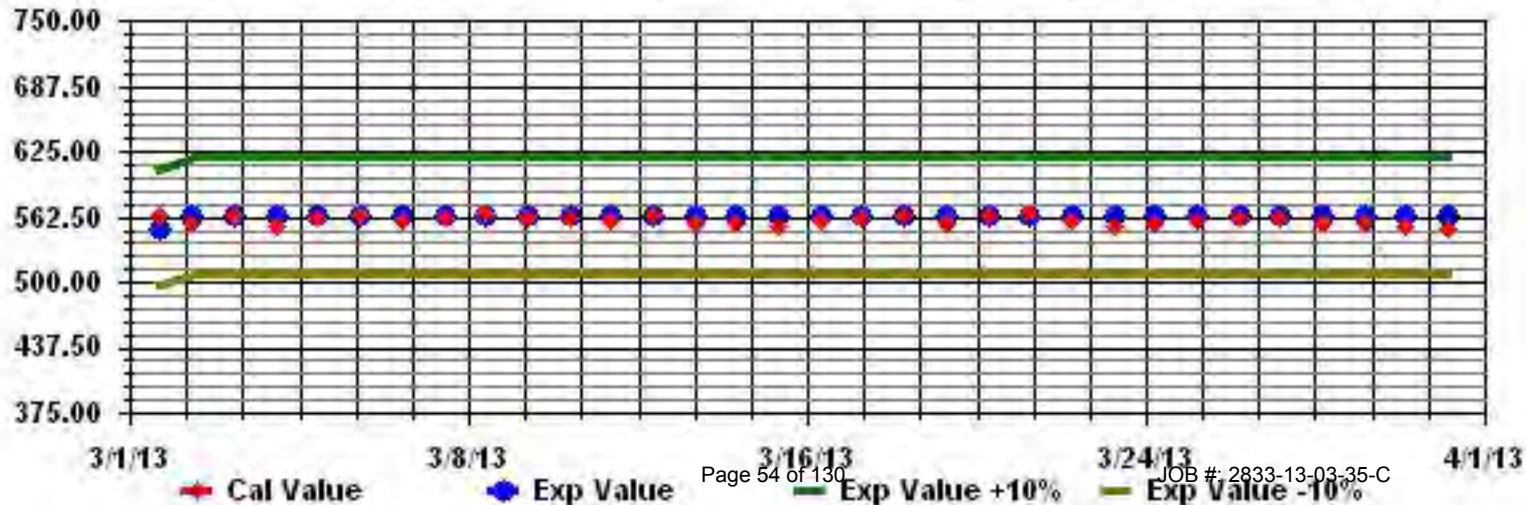
Class Limits (PPB)

Period : 03/01/13-03/31/13

Level : 10



Calibration Graph for Site: LICA35 Parameter: NOX\_ Sequence: NO2 Phase: SPAll



# Ozone



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

MARCH 2013

OZONE (O<sub>3</sub>) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	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	MAX.	AVG.		
DAY																												
1	35	36	37	38	38	38	38	31	33	35	37	37	38	38	33	31	C	C	C	10	19	27	27	28	38	32.6	24	
2	10	9	10	9	8	5	1	13	14	24	S	27	24	30	40	41	36	30	22	21	17	20	20	14	41	19.3	24	
3	17	14	14	29	37	40	30	40	43	S	46	46	46	46	46	45	44	44	44	45	46	46	45	46	46	39.2	24	
4	44	42	41	41	40	38	37	38	S	40	41	41	42	43	43	42	44	41	39	38	26	8	19	18	44	36.8	24	
5	17	19	21	11	16	10	2	S	10	16	24	26	31	45	47	47	47	45	41	39	42	40	41	41	47	29.5	24	
6	39	36	36	37	37	34	S	21	37	38	41	43	45	46	47	48	45	37	38	39	41	43	41	40	48	39.5	24	
7	43	43	40	38	37	S	37	37	37	36	37	38	39	41	42	40	39	39	38	32	31	16	20	20	43	35.7	24	
8	21	21	20	21	S	23	22	22	35	43	47	50	51	50	47	47	47	40	39	27	24	31	31	24	51	34.0	24	
9	11	17	12	S	16	27	27	19	29	32	33	36	37	40	43	44	41	41	38	36	38	38	34	34	44	31.4	24	
10	33	31	S	31	33	23	13	15	27	31	32	35	46	48	49	51	52	51	43	39	39	39	43	42	52	36.8	24	
11	43	S	43	44	39	38	37	39	41	43	44	44	43	43	45	45	45	43	39	39	40	30	20	24	45	39.6	24	
12	S	13	14	16	26	30	28	28	33	36	41	44	50	53	54	54	53	51	49	48	48	45	47	S	54	39.1	24	
13	46	42	42	39	40	40	41	43	43	47	50	50	50	51	48	42	43	43	42	41	41	40	S	37	51	43.5	24	
14	39	40	40	40	39	38	37	36	36	38	40	41	42	42	43	43	42	41	41	41	42	S	42	41	43	40.2	24	
15	41	40	40	40	40	39	39	39	39	40	40	41	39	42	43	43	42	41	40	38	S	41	39	38	43	40.2	24	
16	37	38	39	38	36	40	39	39	38	38	39	39	39	40	40	41	41	41	41	S	41	40	41	40	41	39.3	24	
17	40	39	39	39	39	39	41	41	41	41	40	40	41	42	42	43	43	43	S	25	24	29	23	13	43	36.8	24	
18	14	18	12	12	6	2	8	16	20	22	24	28	35	42	43	42	41	S	35	27	37	31	29	29	43	24.9	24	
19	13	6	3	2	1	2	7	23	29	33	36	38	39	41	42	43	S	40	37	35	30	36	43	44	44	27.1	24	
20	42	46	49	50	51	50	49	50	49	49	49	51	52	53	54	S	55	54	52	52	51	51	51	50	55	50.4	24	
21	49	49	49	48	47	47	47	47	47	47	47	48	48	48	S	49	48	48	48	46	46	46	45	45	49	47.4	24	
22	42	36	41	42	43	37	24	27	30	31	32	32	32	S	33	34	34	35	35	34	32	31	31	32	43	33.9	24	
23	33	31	31	32	30	29	27	27	29	31	32	35	S	40	41	42	43	42	27	22	21	32	36	33	43	32.4	24	
24	25	21	22	11	11	5	5	12	20	23	28	S	41	46	48	49	49	48	43	29	31	24	24	24	49	27.8	24	
25	26	25	26	27	21	15	15	24	29	35	S	44	47	49	49	51	51	49	42	38	36	33	34	35	51	34.8	24	
26	30	27	27	21	11	9	9	19	30	S	45	50	52	53	53	53	54	53	54	53	51	48	43	44	54	38.7	24	
27	43	42	40	40	42	43	43	45	S	51	52	55	58	61	65	67	67	66	56	58	54	52	55	49	67	52.3	24	
28	49	53	47	49	44	29	27	S	43	45	50	54	56	59	61	63	65	66	67	53	53	50	50	46	67	51.3	24	
29	46	36	24	42	30	45	S	49	49	50	50	50	51	52	58	54	58	59	56	60	59	49	51	61	61	49.5	24	
30	63	59	63	58	55	S	53	51	50	50	51	51	52	53	53	54	52	51	44	39	34	38	50	53	63	51.2	24	
31	49	47	47	47	S	43	44	44	45	47	50	55	59	63	67	69	69	69	64	56	55	53	52	47	69	54.0	24	
HOURLY MAX	63	59	63	58	55	50	53	51	50	51	52	55	59	63	67	69	69	69	67	60	59	53	55	61				
HOURLY AVG	34.7	32.5	32.3	33.1	31.5	29.6	28.5	32.2	34.7	37.7	40.7	42.3	44.2	46.7	47.3	47.3	48.0	46.6	43.2	38.7	38.3	36.9	37.6	36.4				

**STATUS FLAG CODES**

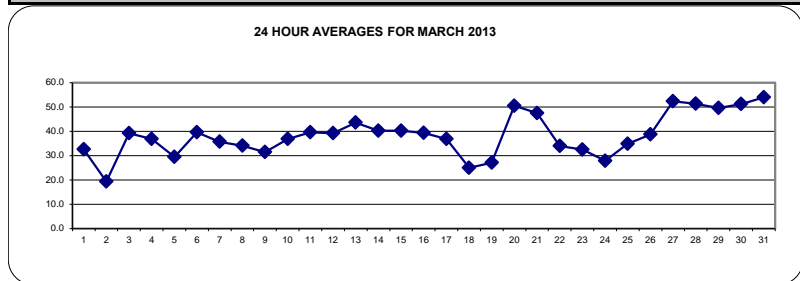
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

**OBJECTIVE LIMIT:**

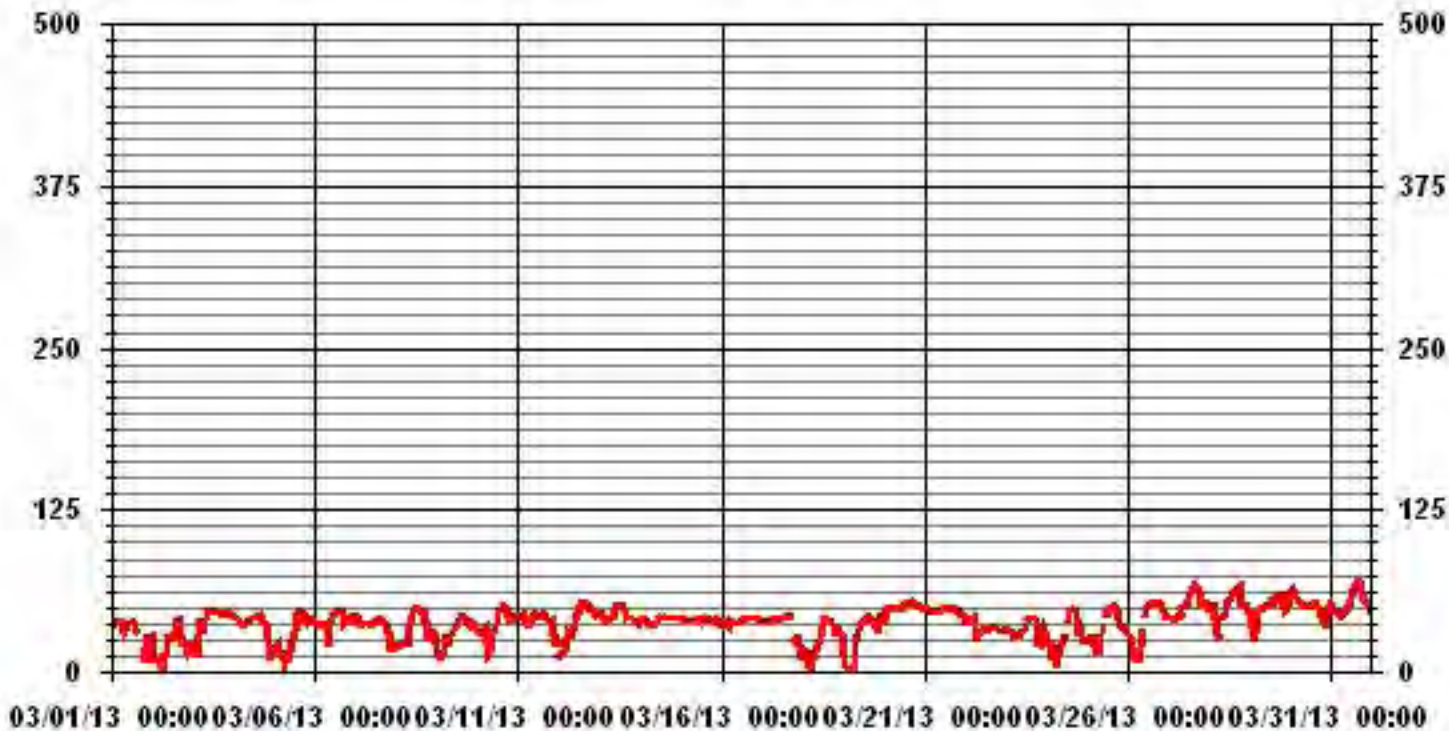
**ALBERTA ENVIRONMENT:** 1-HR 82 PPB

**MONTHLY SUMMARY**

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	710				
MAXIMUM 1-HR AVERAGE:	69	PPB	@ HOUR(S)	VAR	ON DAY(S) 31
MAXIMUM 24-HR AVERAGE:	54.0	PPB			ON DAY(S) 31
					VAR-VARIOUS
I/S CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	3	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	12.59		MONTHLY AVERAGE:	38.38	PPB



# 01 Hour Averages



— LICA35 O3\_ PPB

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

MARCH 2013

**OZONE 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	37	37	39	39	40	39	40	38	38	38	39	38	39	40	38	C	C	C	C	19	28	30	32	32	40	36.0	24
2	22	20	18	18	17	10	5	24	18	29	S	28	29	36	44	45	42	42	42	27	24	26	25	21	45	26.6	24
3	18	17	21	37	41	43	36	42	45	S	47	47	47	47	47	47	46	45	45	47	46	46	46	46	47	41.3	24
4	45	43	42	42	40	39	38	39	S	41	42	42	44	44	44	45	45	44	43	42	38	19	21	23	45	39.3	24
5	24	24	25	19	20	17	7	S	15	21	26	27	41	47	48	49	49	48	47	45	45	44	45	44	49	33.8	24
6	43	39	40	40	40	39	S	40	40	40	43	44	46	48	50	48	48	45	44	44	43	45	42	41	50	43.1	24
7	44	43	42	38	38	S	37	38	37	37	39	41	42	43	42	40	39	39	36	33	25	26	26	44	37.5	24	
8	23	23	25	28	S	26	24	27	42	46	48	51	52	52	50	49	49	45	46	40	33	39	39	33	52	38.7	24
9	18	28	21	S	23	32	31	24	32	34	37	38	40	41	44	46	46	44	44	42	43	41	37	39	46	35.9	24
10	37	43	S	36	36	35	20	28	32	34	35	37	49	52	52	52	53	53	50	45	44	46	46	46	53	41.8	24
11	45	S	45	47	40	39	38	41	43	44	45	44	44	44	46	47	48	47	46	44	44	42	27	36	48	42.9	24
12	S	20	18	24	34	34	31	35	35	40	42	47	52	54	55	55	55	53	51	50	50	49	49	S	55	42.4	24
13	48	48	44	43	42	41	43	43	46	49	50	51	51	51	51	44	44	43	43	42	42	41	S	38	51	45.1	24
14	40	41	40	40	40	39	38	37	37	40	41	42	42	43	43	43	43	42	42	42	44	S	44	42	44	41.1	24
15	42	41	41	40	40	40	40	40	40	41	41	41	42	44	44	44	44	43	41	42	S	41	40	39	44	41.3	24
16	39	39	40	39	40	40	40	39	39	39	40	40	40	41	41	42	42	42	42	S	41	41	41	41	42	40.3	24
17	41	40	40	40	40	40	41	41	42	41	41	41	42	43	43	43	44	43	S	33	33	36	30	24	44	39.2	24
18	25	27	22	20	14	6	16	19	23	24	26	32	Y	43	44	44	44	S	42	34	40	40	38	34	44	29.9	23
19	26	13	5	5	3	5	19	28	32	36	37	39	41	43	43	44	S	43	42	40	40	42	46	46	46	31.2	24
20	45	47	50	51	52	52	51	51	50	50	50	51	53	54	54	S	56	56	54	53	52	52	52	51	56	51.6	24
21	50	49	49	48	48	48	48	48	48	49	49	49	49	49	S	49	49	49	49	48	47	46	45	45	50	48.2	24
22	45	42	43	43	44	45	36	30	31	32	33	34	33	S	34	34	34	36	36	35	33	32	32	33	45	36.1	24
23	33	33	33	33	33	32	31	32	31	33	35	36	S	42	42	44	44	45	43	29	31	36	38	36	45	35.9	24
24	31	29	31	21	16	16	11	17	22	26	31	S	45	48	49	50	51	51	49	42	39	34	29	28	51	33.3	24
25	30	29	30	29	29	24	20	29	34	37	S	46	49	50	50	53	53	53	49	50	42	40	41	39	53	39.4	24
26	37	33	32	30	19	16	16	26	35	S	47	52	53	54	54	55	56	56	56	55	54	53	47	46	56	42.7	24
27	45	45	45	45	46	46	46	48	S	52	54	57	60	64	68	69	70	70	69	68	66	60	60	55	70	56.9	24
28	55	55	52	52	51	46	41	S	45	50	52	55	59	61	63	66	69	69	69	65	61	56	53	55	69	56.5	24
29	50	48	38	53	47	51	S	50	50	50	50	53	55	56	59	60	64	65	65	65	66	56	62	69	69	55.7	24
30	69	67	66	60	56	S	54	53	51	51	51	52	53	55	55	55	55	54	52	51	45	52	54	54	69	55.0	24
31	52	48	48	48	S	46	46	45	47	49	54	57	61	65	69	70	70	70	69	62	59	59	56	52	70	56.6	24
HOURLY MAX	69	67	66	60	56	52	54	53	51	52	54	57	61	65	69	70	70	70	69	68	66	60	62	69			
HOURLY AVG	38.6	37.0	36.2	36.9	35.5	34.0	32.6	36.3	37.2	39.8	42.2	43.7	46.6	48.4	48.9	49.4	50.1	49.5	48.6	44.6	43.5	42.3	41.4	40.5			

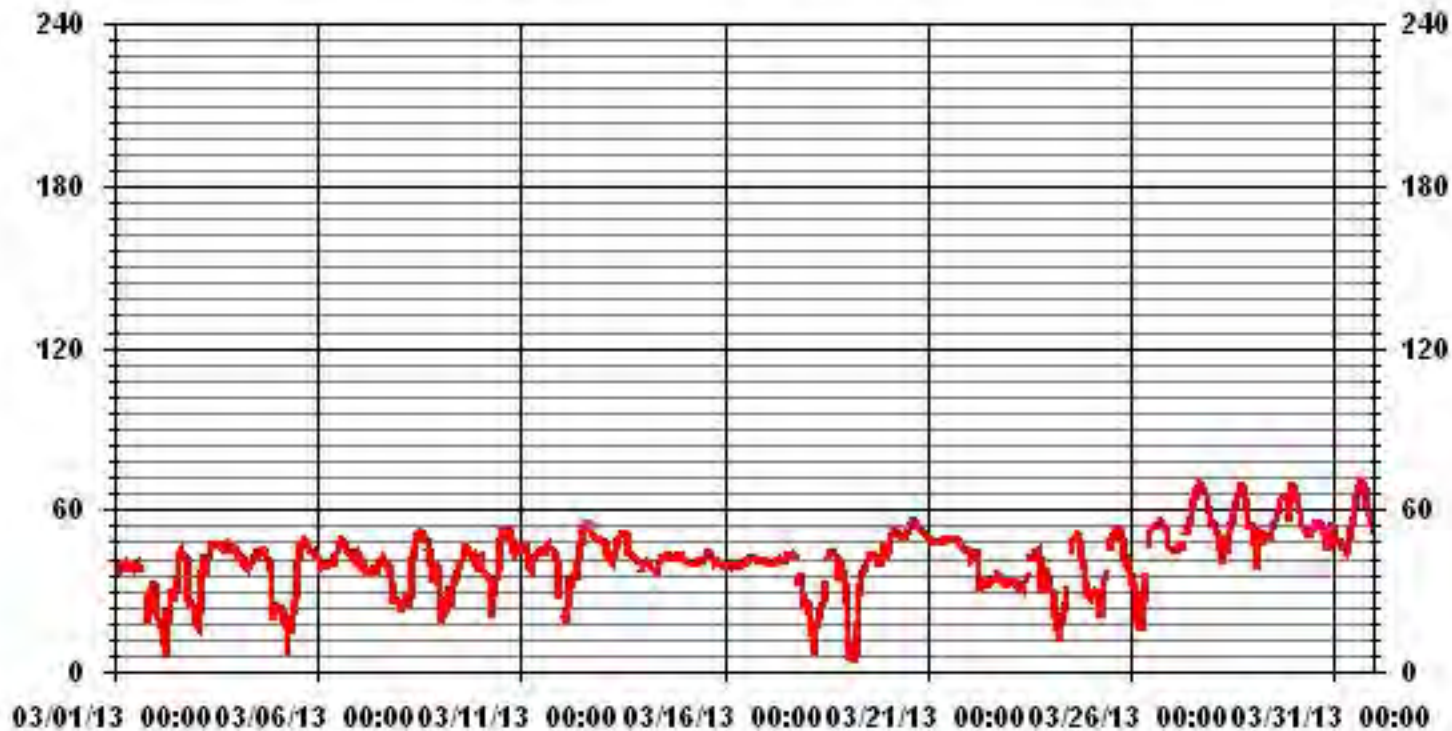
**STATUS FLAG CODES**

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:	708				
MAXIMUM INSTANTANEOUS VALUE:	70	PPB	@ HOUR(S)	VAR	ON DAY(S) 27, 31
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	743	HRS
MONTHLY CALIBRATION TIME:	4	HRS			
STANDARD DEVIATION:	11.50				

### 01 Hour Averages



— LICA35 O3MAX PPB

LICA-ELK  
 O3\_ / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 35  
 Site Name : LICA-ELK  
 Parameter : O3\_  
 Units : PPB

Wind Parameter : WDR  
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	3.38	2.11	3.66	4.36	10.70	17.60	4.22	1.26	1.97	1.83	1.26	3.38	6.90	6.90	9.01	4.78	83.38
< 110	.14	.00	.70	.42	.70	5.21	1.97	.56	2.25	.42	.00	.28	1.40	.98	.84	.70	16.61
< 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	3.52	2.11	4.36	4.78	11.40	22.81	6.19	1.83	4.22	2.25	1.26	3.66	8.30	7.88	9.85	5.49	

Calm : .00 %

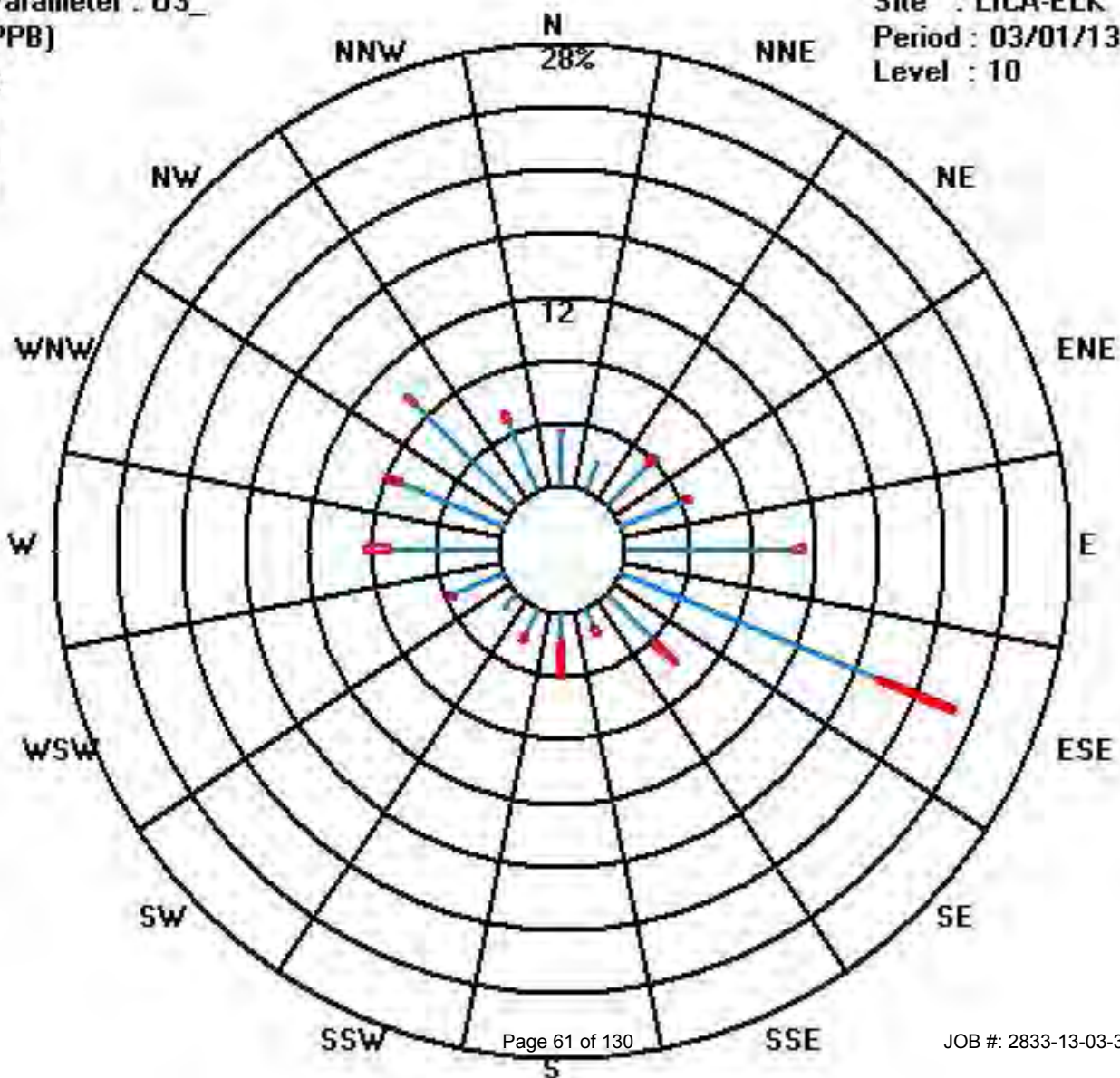
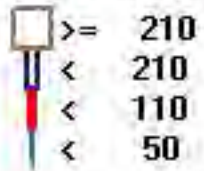
Total # Operational Hours : 710

Distribution By Samples

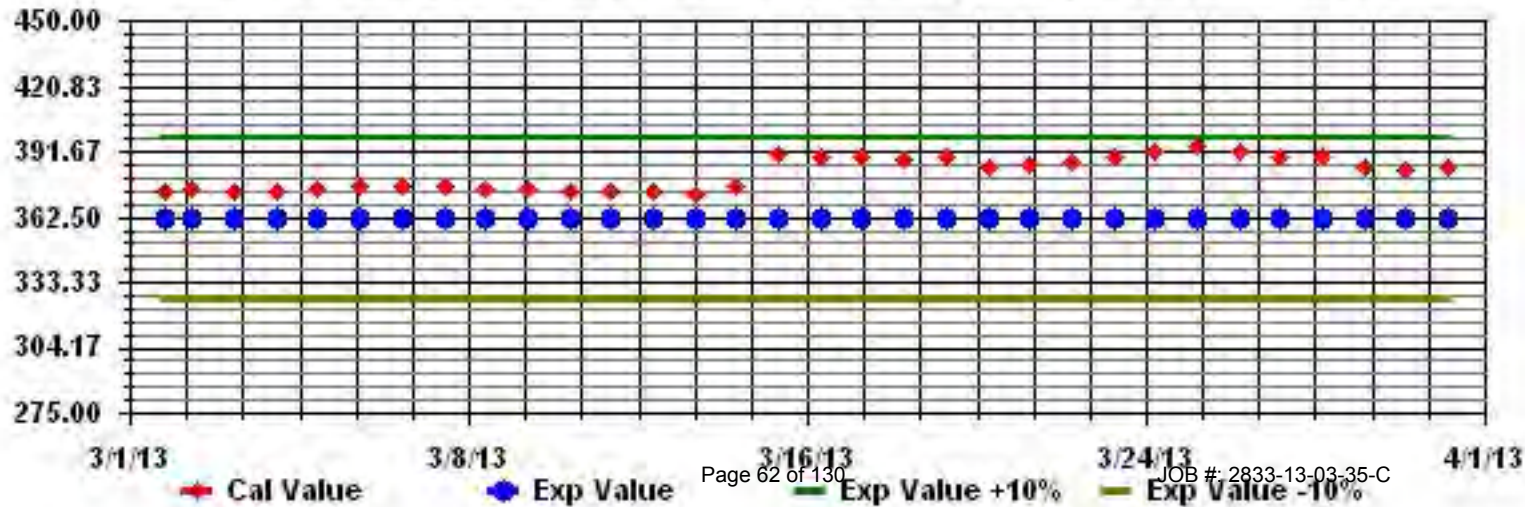
	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	24	15	26	31	76	125	30	9	14	13	9	24	49	49	64	34	592
< 110	1		5	3	5	37	14	4	16	3		2	10	7	6	5	118
< 210																	
>= 210																	
Totals	25	15	31	34	81	162	44	13	30	16	9	26	59	56	70	39	

Calm : .00 %

Total # Operational Hours : 710



Calibration Graph for Site: LICA35 Parameter: 03\_ Sequence: 03 Phase: SPAll



# Total Hydrocarbons



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

MARCH 2013

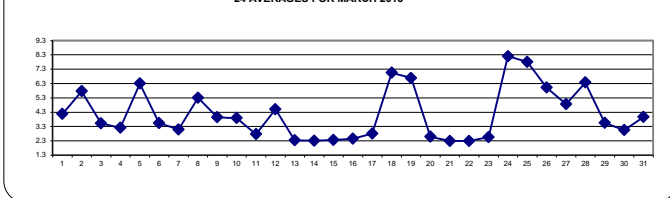
### TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST																										DAILY 24-HOUR			
DAY	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.
1		3.6	3.4	3.1	3.2	3	3.3	3.5	3.7	4	4.3	4.7	5	4.7	C	C	C	C	C	7.9	9.4	5.4	3	2.1	2	9.4	4.2	24	
2		6	7	6.2	4.9	5.7	6.9	9.9	5.9	5.3	3.5	S	2.9	4.4	4.6	2.6	4.1	4.2	4.2	6.8	6.7	8.9	6.7	7.5	7.6	9.9	5.8	24	
3		10.4	11.1	10.5	5.8	3.3	2.9	3.4	2.5	1.9	S	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	11.1	3.5	24	
4		2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.3	S	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.6	3.1	3.4	4.5	6.4	9.2	9.2	9.2	3.2	24	
5		11.4	11.8	6.9	7.7	11	10.8	11.1	S	9.5	8.4	7.3	9.3	7.7	2.9	1.9	1.7	2.4	2.6	3.7	3.9	2.9	3.1	3.7	3.1	11.8	6.3	24	
6		5.5	6.5	3.9	3.7	5.7	3.2	S	3.9	3.3	3.7	3.2	2.8	2.7	2.7	2.5	2.2	2.3	4	3.3	3.4	3.4	2.9	3.3	3.3	6.5	3.5	24	
7		2.8	2.5	2.4	2.2	2.1	S	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.2	2.3	2.2	2.2	2.3	2.7	3	6.3	8.4	10	10.0	3.1	24	
8		8.4	8.3	8.5	6.8	S	3.8	4.2	4.9	2.9	3.1	2.9	2.8	2.8	2.8	2.8	2.9	3.2	4.2	4	6.7	8.2	7.8	6.7	13.4	13.4	5.3	24	
9		8.1	7.9	9.1	S	6.3	4.5	3.3	4	3.6	3	2.7	2.5	2.5	2.4	2.3	2.3	2.5	3.5	2.5	4.5	2.7	3.2	4.7	2.7	9.1	3.9	24	
10		2.1	3.1	S	4.1	5.4	7.5	7	6.2	6.2	6.5	5.9	5	3.5	2.9	2.3	2.1	2.1	2.1	2.4	3	2.8	2.6	2.3	2.2	7.5	3.9	24	
11		2.2	S	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.9	2.9	3	4	5.3	6.3	6.3	2.8	24		
12		S	10.1	8.6	9	6	4	4.7	5.2	4.9	4.9	4.2	3.6	2.8	2.7	2	2.5	2.9	3	3.3	3.2	3.2	5.2	3	S	10.1	4.5	24	
13		2.7	3.7	3.2	4.2	4.2	3.8	3	2.7	2.5	1.9	1.7	1.8	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	S	2.1	4.2	2.3	24	
14		2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	S	2.5	2.5	2.5	2.3	24	
15		2.4	2.3	2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.4	2.5	2.7	2.6	Y	Y	2.5	2.5	2.5	2.4	S	2.1	2.2	2.3	2.7	2.3	22	
16		2.3	2.4	2.5	2.7	2.9	2.3	2.4	2.3	2.3	2.5	2.3	S	2.4	2.3	2.4	2.6	2.4	2.2	2.3	S	2.8	2.6	2.5	2.4	2.9	2.4	24	
17		2.5	2.7	2.8	2.7	2.5	2.6	2.3	2.2	2.1	2.1	2.2	2.3	2.3	2.1	2.1	2	2	S	2.9	4.3	4.2	5.2	6.1	6.1	2.8	24		
18		6.7	5.5	6.8	8.8	19.5	16.5	14	9.2	10.3	10.5	11.5	7.7	4.5	2.6	2.3	2.2	2.4	S	2.6	3.4	3	3.6	4.3	4.4	19.5	7.1	24	
19		7.9	7.9	10.5	16	17.3	19.8	11.2	S	S	3.6	3.6	2.6	2.3	2.2	2.2	2.1	S	3.4	6.5	3.9	5.8	4.1	3.3	4.2	19.8	6.7	24	
20		4.6	3.7	2.6	2.7	2.3	3.1	2.8	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.3	S	2.3	2.3	2.2	2.3	2.3	2.4	2.2	4.6	2.6	24		
21		2.3	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	S	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.2	2.2	2.4	2.3	24	
22		2.5	2.7	2.4	2.3	2.3	2.4	2.5	2.4	2.2	2.3	2.3	2.3	S	2.1	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.7	2.3	24	
23		2.2	2.3	2.4	2.3	2.4	2.5	2.4	2.4	2.4	2.6	2.5	2.4	S	2	2	1.8	1.9	2	3	3.3	3.8	3.4	3.4	3.4	3.8	2.6	24	
24		5.6	8	5.2	7.4	8.3	11.1	15.2	18.3	12.9	11.9	8.9	S	2.9	2.7	2.7	2.6	2.9	2.8	5.4	8.2	9.3	11	10	15.3	18.3	8.2	24	
25		6.4	11.2	10.6	11.3	11.2	7.5	8.9	7.1	7.4	7	S	3.8	4.9	4.3	4	3.9	3.8	4.8	13.3	8.5	9.9	9.9	9.7	10.1	13.3	7.8	24	
26		12.8	10.8	10	9.8	9	9.9	15.5	10.5	6.9	S	2.6	2.5	2.2	2.3	2.3	2.3	2.6	4.8	2.9	3.7	3.9	4	3.6	3.6	15.5	6.0	24	
27		4.5	3.9	4.3	4.7	4.4	4.4	4.2	4.1	S	3.9	4.5	3.9	3.7	3.5	2.9	2.3	2.3	2.2	8.5	12.5	5.3	9.2	5.9	6.5	12.5	4.9	24	
28		7.6	7	8.1	7.4	6.8	7.1	7	S	4.9	6.4	5	3.4	3.1	3.5	3.4	3.6	4.2	3.4	2.5	2.3	7.2	12.2	19.6	10.7	19.6	6.4	24	
29		8.6	12.1	7.6	3.7	4.1	2.9	S	2.4	2.1	2.2	2.5	2.4	2.5	2.3	2	2.2	2.2	2.3	2.4	2.5	3.1	4.3	3.1	2.2	12.1	3.6	24	
30		3.3	2.9	2.2	2.2	2.2	S	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.2	2.3	3.3	9.8	5.4	6.6	3.2	2.7	9.8	3.0	24	
31		3.2	3.2	3.8	3.7	S	4.9	4.2	3.8	4	4	3.6	3.4	3.4	3.5	3.5	3.4	3.2	3.1	3.9	5.7	4.4	6	4.2	5.1	6.0	4.0	24	
HOURLY MAX		12.8	12.1	10.6	16.0	19.5	19.8	15.5	18.3	12.9	11.9	11.5	9.3	7.7	4.6	4.0	4.1	4.2	4.8	13.3	12.5	9.9	12.2	19.6	15.3				
HOURLY AVG		5.1	5.7	5.2	5.0	5.5	5.5	5.5	4.4	4.2	4.0	3.6	3.2	3.0	2.6	2.4	2.4	2.5	2.8	3.8	4.4	4.3	4.8	4.9	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

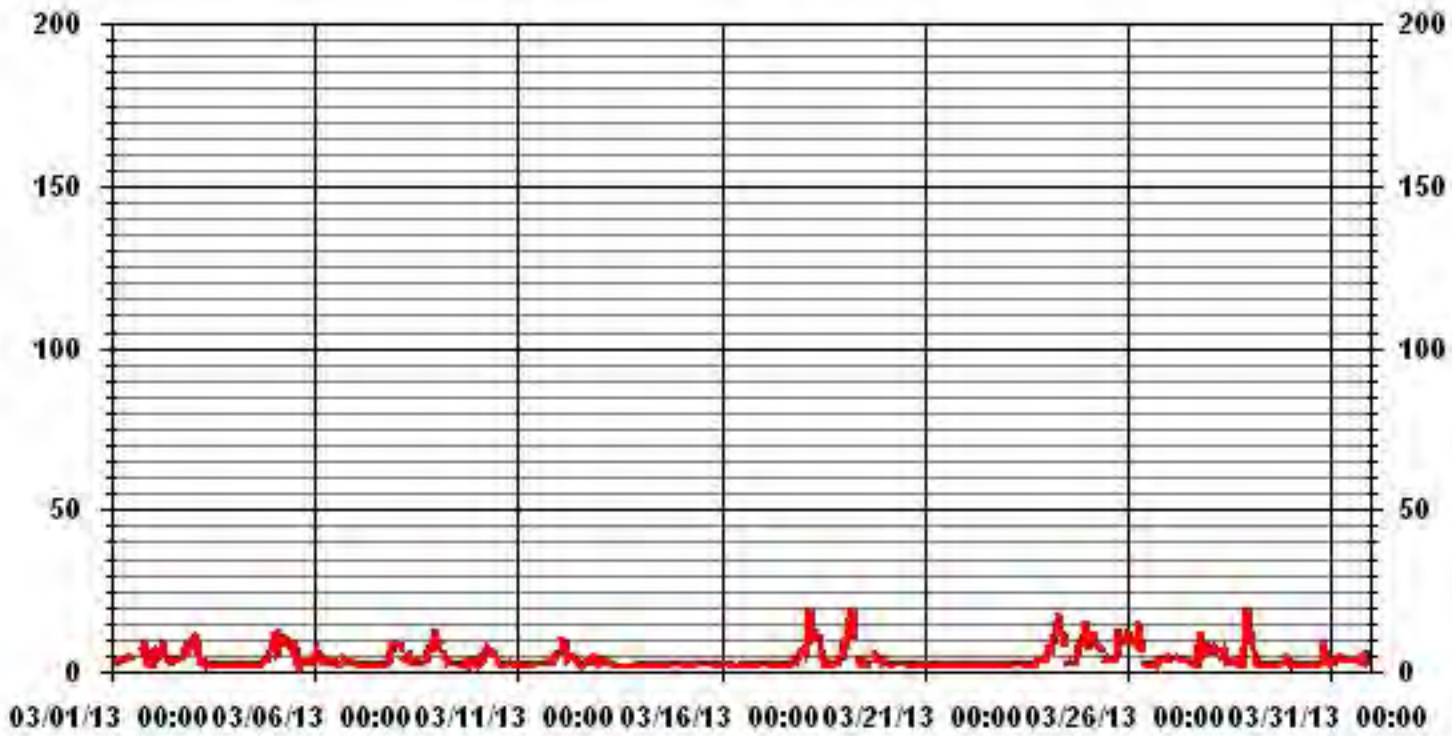
24 AVERAGES FOR MARCH 2013



**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	703					
MAXIMUM 1-HR AVERAGE:	19.8	PPM	@ HOUR(S)	5	ON DAY(S)	19
MAXIMUM 24-HR AVERAGE:	8.2	PPM			ON DAY(S)	24
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	2.99		MONTHLY AVERAGE:	4.18	PPM	

### 01 Hour Averages



— LICA35 THC PPM

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

MARCH 2013

## TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	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	3.7	3.6	3.2	3.3	3.4	5.6	4.9	4.6	4.4	4.6	5.1	5.4	5.4	C	C	C	C	C	15.4	18.7	8.8	3.4	2.7	3.8	18.7	5.8	24	
2	22.8	13.3	12.5	8.9	10.5	9.3	12.6	9.5	6	6	S	3.7	5.5	7.9	4	15.9	5.1	9.7	11.3	10.5	15.6	10.6	14	11.4	22.8	10.3	24	
3	24.1	29.2	11.7	8.1	4.4	5.3	5.5	2.8	2.3	S	2.1	2.1	2.2	2.3	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.4	29.2	5.4	24	
4	2.5	2.4	2.5	2.5	2.6	2.4	2.4	2.4	S	2.2	2.2	2.2	2.3	2.3	2.3	2.5	2.8	3.3	6	5.1	9.9	11.9	25.9	25.9	25.9	4.5	24	
5	21.3	24.5	8	9.2	16.2	15	15.2	S	11.9	10.1	7.9	13.9	9.5	5.3	3.4	3.7	4.5	4.9	11.1	7.6	3.3	8.9	6.1	5.5	24.5	9.9	24	
6	21.1	21.6	4.5	8.1	10.5	5.6	S	5.9	3.6	5.1	3.9	2.9	3.2	3.3	3.8	2.4	8.6	12.3	13.4	7.3	4.1	3.2	3.5	3.5	21.6	7.0	24	
7	3.3	2.7	2.7	2.3	2.2	S	2.2	2.2	2.3	2.3	2.4	2.3	2.3	2.2	2.9	2.2	2.3	2.6	3.1	3.1	9.8	13.4	38.1	38.1	38.1	4.8	24	
8	15.9	23.4	16.7	13.6	S	4.9	5.4	7.6	5.3	4.8	5.1	4.8	8.4	3.8	3.9	9.5	4.9	7.2	5.1	12.9	11	9.6	10.7	54.3	54.3	10.8	24	
9	9.8	10.5	14.2	S	12.3	7	3.7	4.3	4.1	3.2	3	2.9	2.7	2.5	2.5	2.4	5	6.8	6.6	15.1	7	9.5	25.4	4.4	25.4	7.2	24	
10	2.3	6.5	S	6.2	7	12.8	10.4	8.7	8.9	8.9	7.5	6.1	6.4	4.1	2.6	2.3	2.2	2.2	2.9	3.9	3.1	3.3	3.4	2.4	12.8	5.4	24	
11	2.2	S	2.3	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.6	2.6	2.5	2.6	2.5	3.1	3.5	3.1	3.3	5.4	8.9	6.9	8.9	3.2	24	
12	S	15.2	12.6	31.8	10.6	4.2	5.6	5.6	5	8	5.3	4.8	5.1	6.2	3.6	5.3	5.2	5.2	6.5	6.3	9	12.1	7.4	S	31.8	8.2	24	
13	5.5	5.8	4.2	6.4	4.5	4.6	4.6	4.8	4.2	2.1	1.8	1.9	1.7	1.7	1.9	1.9	1.7	1.7	1.7	1.6	1.7	1.7	S	2.2	6.4	3.0	24	
14	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.5	2.4	2.5	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	S	3.3	3.5	3.5	3.5	2.5	24	
15	4	3.3	2.4	2.4	2.3	2.4	2.3	2.3	2.3	2.3	3.6	2.8	2.8	2.9	Y	Y	2.7	2.6	2.7	2.7	S	2.1	2.6	2.6	4	2.7	22	
16	2.6	2.5	3.3	3	3.5	2.5	3.2	2.8	2.6	3.9	3.3	S	4.7	2.6	3.6	4.2	2.7	2.4	3.5	S	3.9	3.2	5	2.7	5	3.3	24	
17	3.7	3.6	3.7	3.2	2.7	2.7	2.5	2.4	2.2	2.2	2.3	2.4	2.4	2.3	2.2	2.1	2.1	2	S	4.3	7.1	6.2	8.3	7	8.3	3.5	24	
18	8.3	6.3	9.1	18.5	54.5	33.3	26.5	10.6	11.5	11.5	12.5	9.7	Y	2.9	2.5	2.4	3.2	S	3.1	5.6	3.7	6.1	6.1	7.1	54.5	11.6	23	
19	13.3	9.2	13.5	35.2	29.8	36.8	23.4	S	S	4.4	5.2	4.7	3.7	3.2	4.5	4.4	S	23	27.9	5.9	29.9	4.8	3.7	5.7	36.8	13.9	24	
20	6	4.4	3.6	3.4	2.7	3.6	3	2.7	2.5	3.1	3.3	3.5	3.2	3.4	3.1	S	2.9	2.9	2.5	2.6	2.7	2.5	2.7	2.3	6	3.2	24	
21	2.8	2.4	2.3	2.4	2.5	2.5	2.5	2.4	2.5	2.5	2.7	2.6	2.7	2.9	S	2.9	2.4	2.6	2.4	2.5	2.4	2.4	2.3	2.3	2.9	2.5	24	
22	2.6	3.1	2.7	2.4	2.4	2.7	2.7	2.6	2.3	2.3	2.3	2.4	2.4	S	2.2	2.2	2.3	2.2	2.2	2.3	2.3	2.3	2.3	2.3	3.1	2.4	24	
23	2.3	2.5	2.8	2.4	3	3.8	2.6	2.7	2.6	3.2	3.3	2.6	S	2.1	2.1	2	2.5	2.3	4.8	3.6	4.6	3.7	3.8	3.8	4.8	3.0	24	
24	8.1	9.8	7.6	9.4	11.3	14.9	27	25.4	17.8	15.3	11.6	S	3.8	8.7	2.9	2.5	2.9	5.2	24.4	14.7	19.1	14.9	13.1	52.4	52.4	14.0	24	
25	9	41.5	14.8	24.5	20.7	11.5	14.2	9.4	10.1	9.3	S	4.7	3.2	2.2	4.2	2.7	1.4	24.4	35.2	16.1	15	13.7	13.7	29.1	41.5	14.4	24	
26	49.7	14.6	22.1	15.9	17	23.5	35	15.9	9.6	S	4.1	3.1	2.3	3.2	2.7	2.5	5.2	13.5	12.1	12.3	9.5	7.9	4.7	4.8	49.7	12.7	24	
27	9.8	5.7	5.8	6.3	5.9	8.1	5.7	4.2	S	4.5	6.1	4.3	4.3	4.1	4.2	4.4	4.1	5.2	28.4	48.2	7.6	28.6	9.3	8.6	48.2	9.7	24	
28	10.2	9.7	10.8	12.2	7.7	8.3	8.6	S	5.8	9.1	7	5.3	4.7	7.9	3.8	5.5	5	3.3	0.8	6.2	12.4	19.1	49.4	22.1	49.4	10.2	24	
29	12.1	33.5	13.2	5.9	5.6	4.9	S	1.2	0.8	1.6	1.6	1.1	1.4	1.4	0.7	1.6	2.2	1.3	5.2	3.3	4.9	5	4	3.3	33.5	5.0	24	
30	4.5	3.6	2.3	2.2	2.2	S	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.2	2.4	2.4	8.1	34.3	6.6	8.4	5.1	4.1	34.3	4.7	24	
31	5	4.3	5.9	5.3	S	6.7	6	4.2	7.3	6.1	4.4	4.1	7.5	4.4	4.7	4.4	4.2	4	8.9	12	9.6	17.7	5.7	6.4	17.7	6.5	24	
HOURLY MAX	49.7	41.5	22.1	35.2	54.5	36.8	35.0	25.4	17.8	15.3	12.5	13.9	9.5	8.7	4.7	15.9	8.6	24.4	35.2	48.2	29.9	28.6	49.4	54.3				
HOURLY AVG	9.7	10.7	7.4	8.7	9.1	8.6	8.4	5.5	5.2	5.0	4.4	3.9	3.8	3.6	3.0	3.6	3.3	5.6	8.7	9.2	7.4	7.9	8.5	11.0				

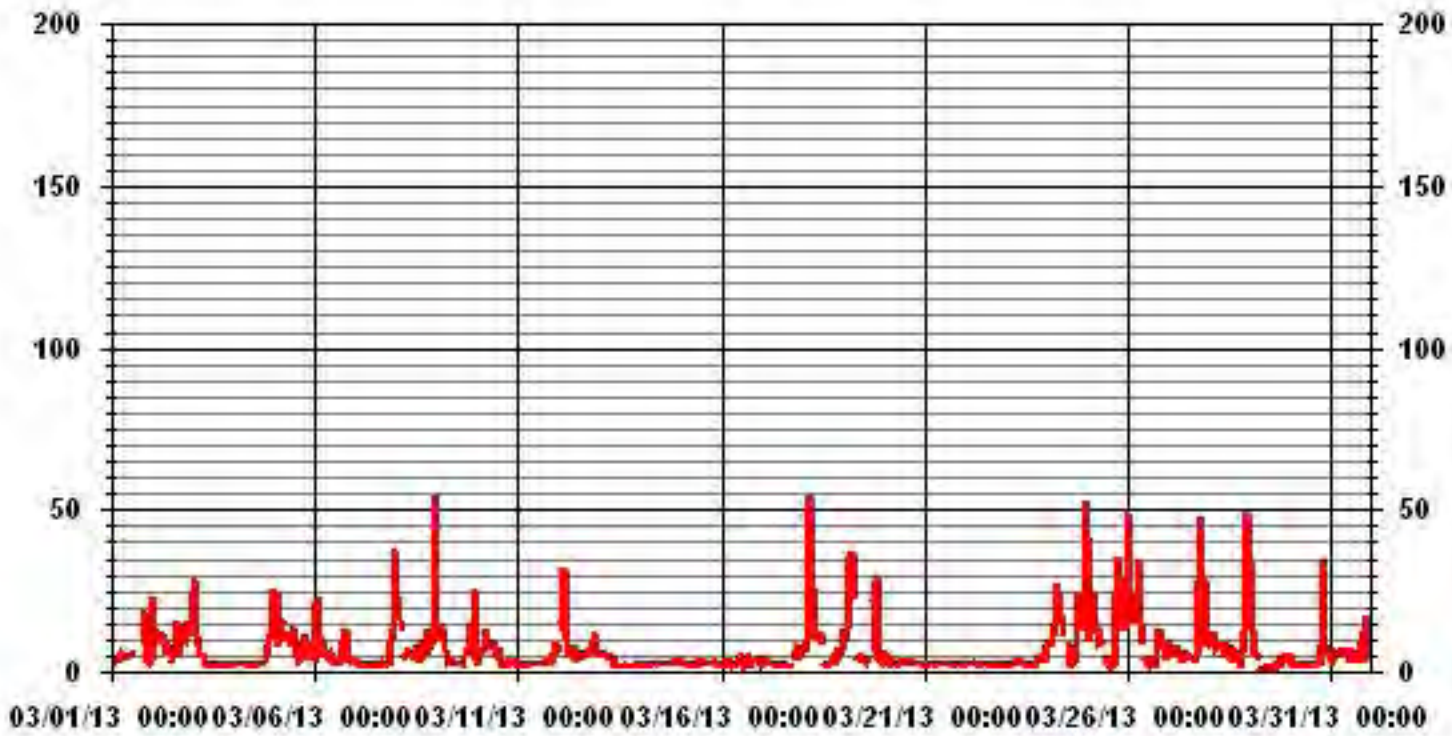
**STATUS FLAG CODES**

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**

NUMBER OF NON-ZERO READINGS:	702					
MAXIMUM INSTANTANEOUS VALUE:	54.5	PPB	@ HOUR(S)	4	ON DAY(S)	18
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	741	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	7.63					

# 01 Hour Averages



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

March 2013

Distribution By % Of Samples

Logger Id : 35  
 Site Name : LICA-ELK  
 Parameter : THC  
 Units : PPM

Wind Parameter : WDR  
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	3.12	1.56	3.69	2.84	2.41	9.24	1.28	.56	1.84	1.28	.14	.85	4.69	5.54	8.53	4.83	52.48
< 10.0	.42	.42	.42	1.84	7.39	11.23	4.26	1.28	2.27	.85	1.13	2.70	3.41	1.84	.99	.42	40.96
< 50.0	.00	.14	.28	.14	1.42	2.56	.71	.00	.14	.00	.00	.14	.28	.28	.28	.14	6.54
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.55	2.13	4.40	4.83	11.23	23.04	6.25	1.84	4.26	2.13	1.28	3.69	8.39	7.68	9.81	5.40	

Calm : .00 %

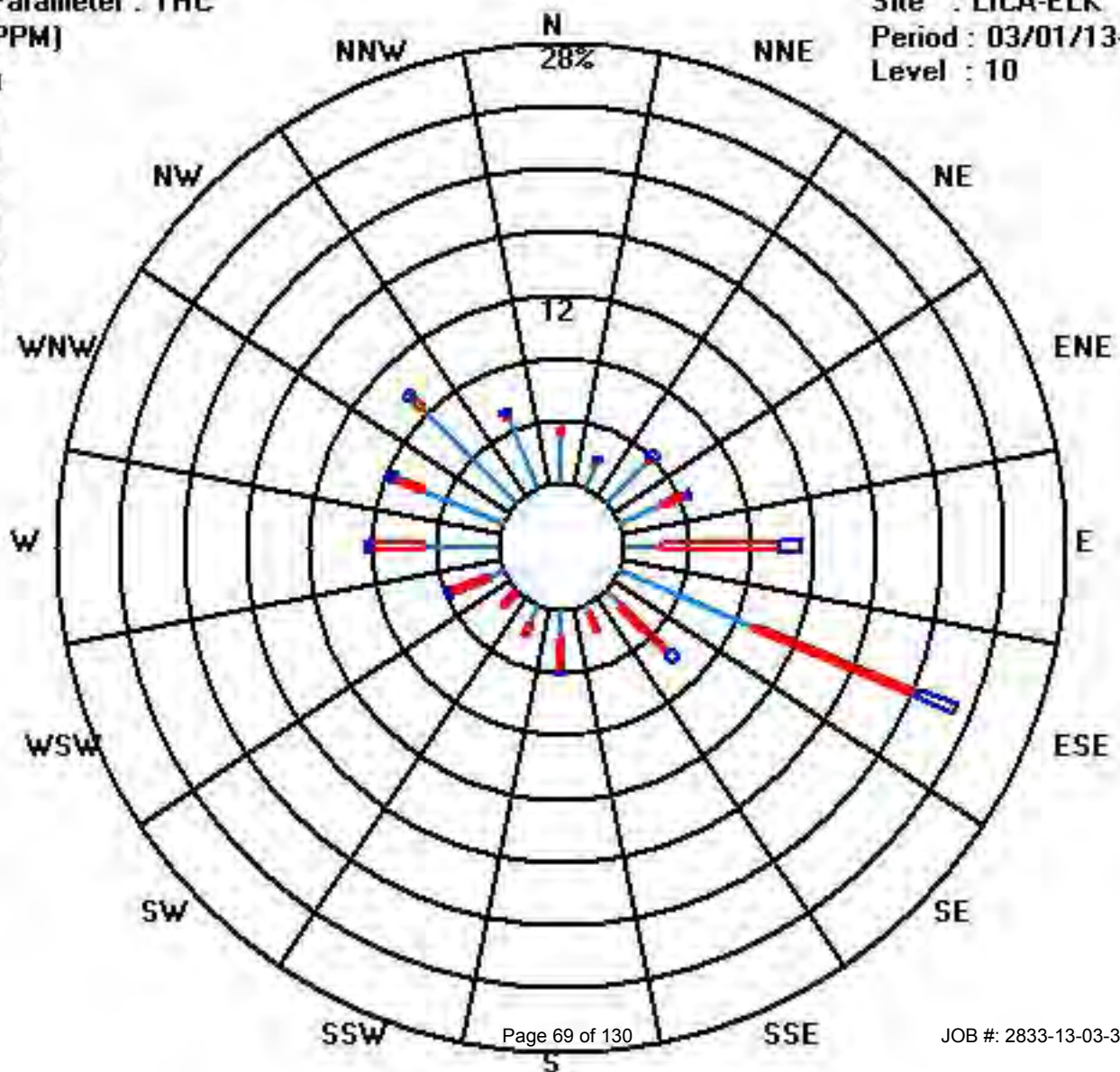
Total # Operational Hours : 703

Distribution By Samples

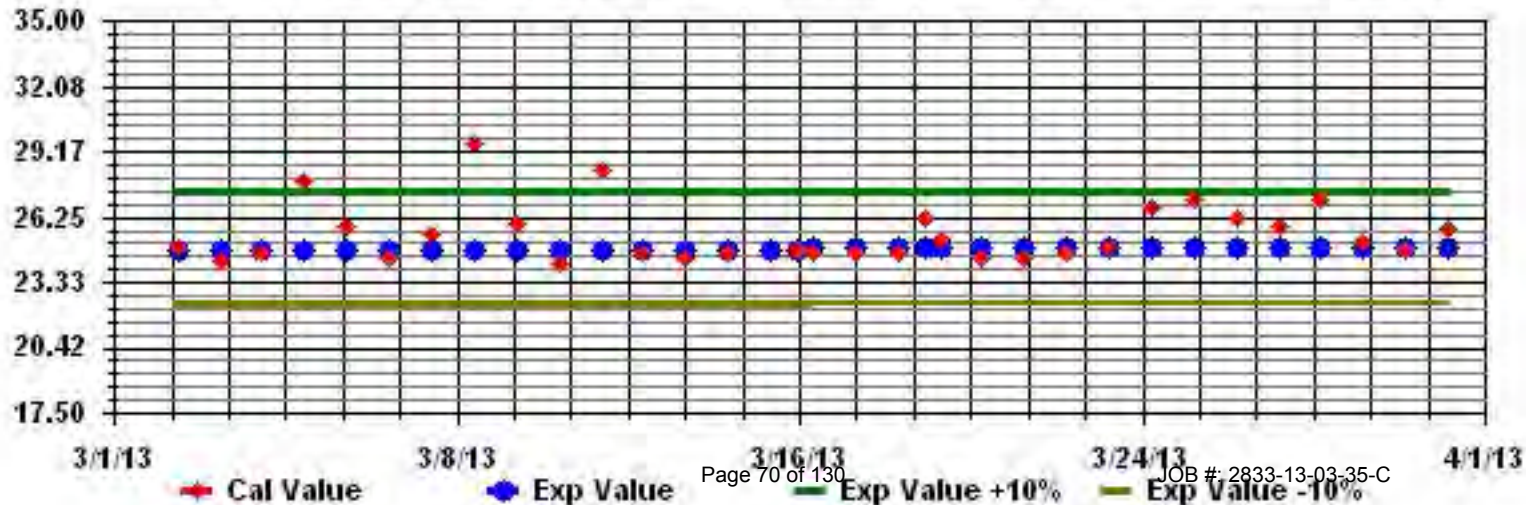
Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	22	11	26	20	17	65	9	4	13	9	1	6	33	39	60	34	369
< 10.0	3	3	3	13	52	79	30	9	16	6	8	19	24	13	7	3	288
< 50.0		1	2	1	10	18	5		1			1	2	2	2	1	46
>= 50.0																	
Totals	25	15	31	34	79	162	44	13	30	15	9	26	59	54	69	38	

Calm : .00 %

Total # Operational Hours : 703



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



# Total Hydrocarbons (55i)



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2013

TOTAL HYDROCARBONS (55i) 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	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																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													
13																													
14																													
15																					C	C	C	1.92	2.01	2.02	2.02	1.98	6
16		2.07	2.09	2.15	2.24	2.38	2.06	2.14	2.02	C	C	C	C	2.05	2.07	2.14	2.26	2.13	2.08	2.09	S	2.35	2.25	2.15	2.13	2.38	2.15	24	
17		2.17	2.35	2.4	2.32	2.25	2.25	2.11	2.03	1.99	2	2.02	2.08	2.04	1.98	1.97	1.97	1.96	1.95	S	2.35	3.12	3	3.58	4	4.00	2.34	24	
18		4.32	3.54	4.44	5.88	12.39	9.3	8.14	5.62	6.18	6.39	7.01	4.8	3.12	2.21	2.06	1.98	2.07	S	2.35	2.77	2.5	2.92	3.18	3.29	12.39	4.63	24	
19		5.1	5.12	6.46	10.25	10.63	10.66	6.72	S	S	3.81	3.75	3.21	3.06	3.06	3.02	2.97	S	2.96	4.74	3.08	4.19	3.28	2.9	3.46	10.66	4.88	24	
20		3.66	3.19	2.56	2.64	2.48	2.36	2.24	2.14	2.12	2.16	2.11	2.09	2.1	2.09	2.05	S	2.03	2.04	2.01	2.04	2.04	2.08	2.08	2	3.66	2.27	24	
21		2.05	2.03	2	2	2.03	2.04	2.03	2.03	2.03	2.01	2.02	2	2	2.02	S	2.07	2.05	2.06	2.03	2.04	2.04	2.02	1.97	1.99	2.07	2.02	24	
22		2.1	2.24	2.05	2.02	2.01	2.05	2.07	2.01	1.95	1.95	1.94	1.94	1.95	S	1.94	1.94	1.94	1.94	1.94	1.95	1.97	1.96	1.97	1.96	2.24	1.99	24	
23		1.94	1.98	2.05	2	2.07	2.08	2.04	2.06	2.03	2.13	2.1	2.03	S	2	2.02	2	2.01	2.05	2.6	2.61	2.88	2.59	2.61	2.59	2.88	2.19	24	
24		3.73	5.17	3.46	4.8	4.87	6.65	8.88	10.65	7.2	7.28	5.4	S	2.84	2.38	2.39	2.37	2.49	2.99	5.07	5.65	6.42	7.83	7.02	10.3	10.65	5.47	24	
25		4.65	7.9	7.6	8.39	7.81	5.68	6.55	5.64	5.79	5.65	S	4.11	3.35	3.09	3.02	2.95	2.96	3.39	9.78	6.33	8.11	8.14	7.62	8.18	9.78	5.94	24	
26		9.89	8.59	7.82	7.53	6.82	7.58	11.17	7.73	5.8	S	3.39	2.7	2.56	2.67	2.67	2.72	2.94	4.29	2.94	3.33	3.43	3.56	3.29	3.33	11.17	5.08	24	
27		3.86	3.39	3.78	3.98	3.71	3.77	3.67	3.62	S	3.53	3.93	3.56	3.56	3.54	3.2	2.84	2.84	2.8	6.29	7.74	4.21	6.82	4.61	5.05	7.74	4.10	24	
28		5.43	5.1	5.95	5.2	4.93	5.2	5.18	S	4.88	5.73	4.94	4.15	4.06	4.3	3.05	3.35	3.46	3.08	2.6	3.57	6.42	8.84	11.83	7.96	11.83	5.18	24	
29		6.55	9.43	5.98	3.69	3.99	3.18	S	2.26	2.14	2.18	2.34	2.3	2.33	2.21	2.08	2.18	2.22	2.16	3.04	3.17	3.47	4.13	3.45	2.93	9.43	3.37	24	
30		2.64	2.35	2.05	2.02	1.99	S	1.95	1.97	1.97	1.95	1.95	1.96	1.96	1.99	1.99	1.95	1.99	2.04	2.58	6.47	3.67	4.48	2.44	2.25	6.47	2.46	24	
31		2.59	2.52	2.85	2.78	S	3.32	2.92	2.68	2.86	2.87	2.6	2.55	2.54	2.61	2.68	2.57	2.5	2.41	2.89	3.76	3.08	4.35	2.74	3.43	4.35	2.87	24	
HOURLY MAX		9.9	9.4	7.8	10.3	12.4	10.7	11.2	10.7	7.2	7.3	7.0	4.8	4.1	4.3	3.2	3.4	3.5	4.3	9.8	7.7	8.1	8.8	11.8	10.3				
HOURLY AVG		3.9	4.2	4.0	4.2	4.7	4.5	4.5	3.7	3.6	3.5	3.3	2.8	2.6	2.5	2.4	2.4	2.4	2.5	3.5	3.8	3.7	4.1	3.9	3.9				

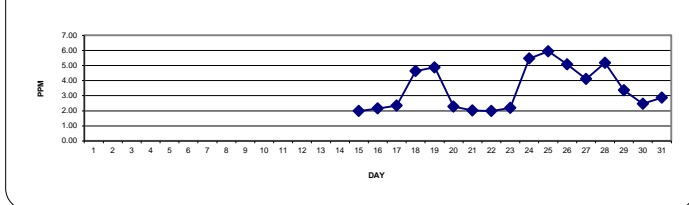
**STATUS FLAG CODES**

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

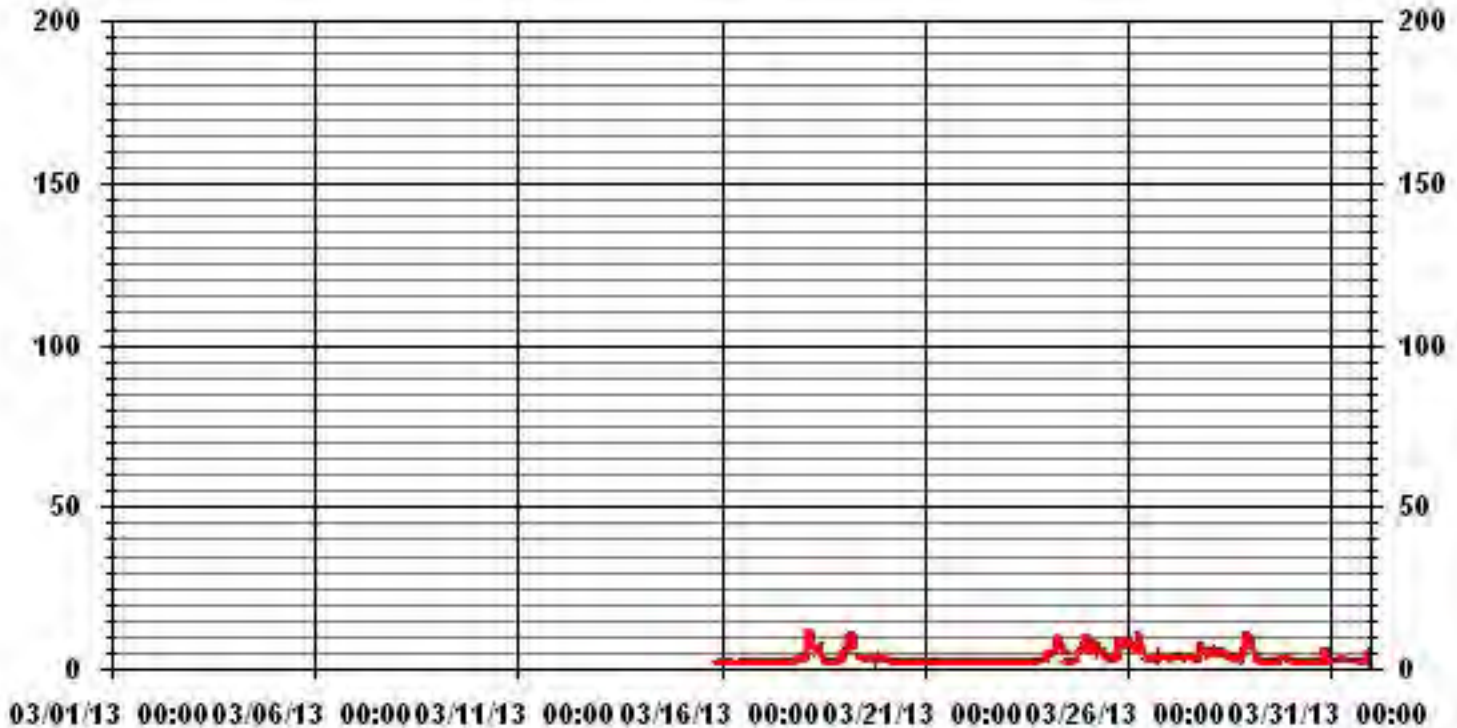
**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	365					
MAXIMUM 1-HR AVERAGE:	12.39	PPM	@ HOUR(S)	4	ON DAY(S)	18
MAXIMUM 24-HR AVERAGE:	5.94	PPM			ON DAY(S)	25
IZS CALIBRATION TIME:	18	HRS	OPERATIONAL TIME:	390	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	52.4	%	
STANDARD DEVIATION:	2.12		MONTHLY AVERAGE:	3.56	PPM	

**24 AVERAGES FOR MARCH 2013**



# 01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2013

TOTAL HYDROCARBONS (THC) MAX (55i) 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	24:00	DAILY	24-HOUR		
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	MAX.	AVG.	RDGS.		
DAY																														
1																														
2																														
3																														
4																														
5																														
6																														
7																														
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9																														
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16																														
17																														
18																														
19		8.75	6.04	8.59	27.31	14.84	23.31	14.81	S	S	4.44	5	4.73	5.06	3.94	4.74	4.57	S	2.63	2.37	2.34	2.34	2.31	2.23	2.33	2.03	4.84	2.68	24	
20		4.84	4.02	3.13	3.06	2.86	2.66	2.3	2.19	2.19	2.61	2.49	2.79	2.79	2.36	2.66	S	2.63	2.37	2.34	2.34	2.31	2.23	2.33	2.03	4.84	2.68	24		
21		2.4	2.13	2.07	2.13	2.17	2.19	2.23	2.08	2.13	2.14	2.25	2.16	2.1	2.45	S	2.39	2.09	2.15	2.09	2.17	2.13	2.09	1.99	2.04	2.45	2.16	24		
22		2.29	2.57	2.17	2.05	2.09	2.24	2.2	2.12	1.97	1.97	1.97	1.95	1.97	S	1.97	1.95	1.97	1.95	1.97	1.97	2	2	1.97	2	2.57	2.06	24		
23		1.95	2.13	2.27	2.05	2.41	3.02	2.21	2.24	2.14	2.56	2.71	2.22	S	2.08	2.15	2.16	2.54	2.23	3.83	2.74	3.52	2.7	2.84	2.81	3.83	2.50	24		
24		5.85	6.36	5.02	5.97	6.55	9.9	16.18	16.18	9.61	9.77	6.93	S	4.19	4.09	3.49	3.09	3.12	5.68	18.41	10.93	14.15	10.67	10.54	26.97	26.97	9.29	24		
25		5.85	23.79	10.55	19.75	13.89	8.29	10.79	7.86	7.19	7.06	S	4.64	3.74	3.41	4.63	3.12	3.1	20.44	23.77	14.35	12.84	11.71	11.42	21.79	23.79	11.04	24		
26		27.09	11.75	18.68	12.64	9.67	18.2	24.27	12.29	6.94	S	4.51	3.06	2.68	3.18	2.79	2.78	4.98	11.47	4.85	8.13	6.65	5.91	4.06	4.25	27.09	9.17	24		
27		8.8	4.57	4.93	5.16	4.88	7.13	4.77	3.72	S	3.69	5.5	3.75	3.92	3.89	3.83	4.29	3.78	4.93	24.24	26.37	5.76	17.9	7.55	7.55	26.37	7.43	24		
28		8.07	7.04	7.58	9.14	5.79	6.26	6.69	S	5.66	8.21	6.64	5.57	5.4	7.55	4.12	5.52	5.26	4.33	2.85	5.82	11.11	15.69	26.42	16.68	26.42	8.15	24		
29		8.88	21.98	9.96	4.95	5.08	4.36	S	2.41	2.2	3.03	2.92	2.47	2.54	2.54	2.22	2.72	3.12	2.61	5.37	3.72	4.59	4.66	4.05	3.76	21.98	4.79	24		
30		3.89	2.78	2.2	2.05	2.02	S	1.97	2	1.99	2.1	1.97	1.97	1.97	2.09	2.13	1.99	2.13	2.12	5.86	25.84	4.85	5.98	3.01	3.55	25.84	3.76	24		
31		3.95	2.79	4.55	3.8	S	4.91	4.91	3.02	4.99	4.81	2.91	3.11	2.91	2.97	3.49	2.75	3.11	3.07	6.01	6.97	5.96	13.65	3.72	4.18	13.65	4.46	24		
HOURLY MAX		27.09	23.79	18.68	27.31	14.84	23.31	24.27	16.18	9.61	9.77	6.93	5.57	5.40	7.55	4.74	5.52	5.26	20.44	24.24	26.37	20.91	17.90	26.42	26.97					
HOURLY AVG		7.1	7.5	6.3	7.7	6.0	7.7	7.8	5.1	4.3	4.4	3.8	3.2	3.3	3.4	3.2	3.1	3.2	5.7	8.8	8.6	7.1	7.4	6.3	7.7					

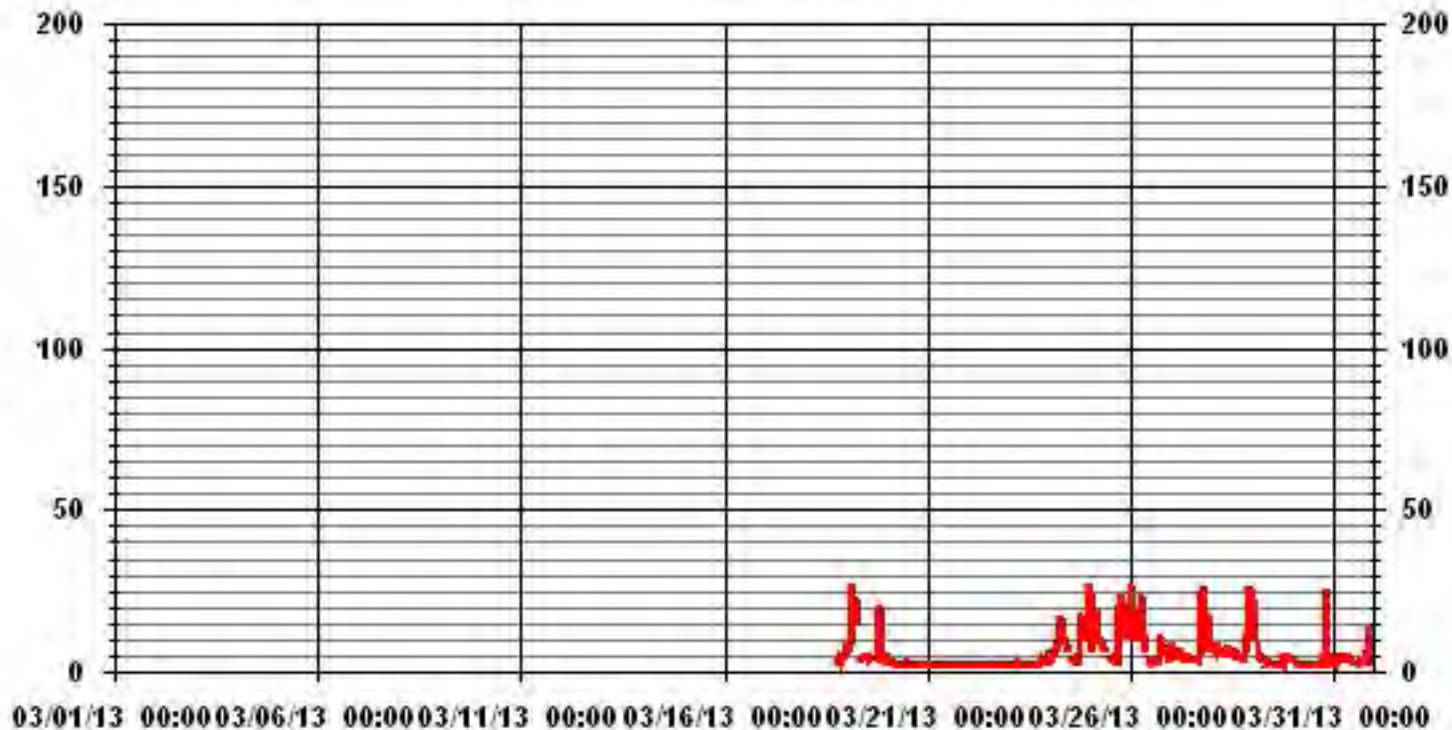
STATUS FLAG CODES

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:	303					
MAXIMUM INSTANTANEOUS VALUE:	27.31	PPM	@ HOUR(S)	3	ON DAY(S)	19
IZS CALIBRATION TIME:	16	HRS	OPERATIONAL TIME:	319	HRS	
MONTHLY CALIBRATION TIME:	0	HRS				
STANDARD DEVIATION:	5.59					

# 01 Hour Averages



— LICA35 THC55MAX PPM

LICA35  
 THC55 / WDR Joint Frequency Distribution (Percent)

March 2013

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	
< 3.00	1.36	.27	.82	1.64	1.64	16.43	1.91	.82	2.73	1.64	.00	1.36	4.38	6.84	13.42	2.46	57.80
< 10.00	.00	.00	.00	.54	8.76	16.16	2.46	.27	1.91	.82	.27	1.64	2.19	1.91	2.19	.82	40.00
< 50.00	.00	.00	.27	.00	.27	1.09	.27	.00	.00	.00	.00	.27	.00	.00	.00	.00	2.19
>= 50.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.36	.27	1.09	2.19	10.68	33.69	4.65	1.09	4.65	2.46	.27	3.28	6.57	8.76	15.61	3.28	

Calm : .00 %

Total # Operational Hours : 365

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.00	5	1	3	6	6	60	7	3	10	6		5	16	25	49	9	211
< 10.00				2	32	59	9	1	7	3	1	6	8	7	8	3	146
< 50.00			1		1	4	1					1					8
>= 50.00																	
Totals	5	1	4	8	39	123	17	4	17	9	1	12	24	32	57	12	

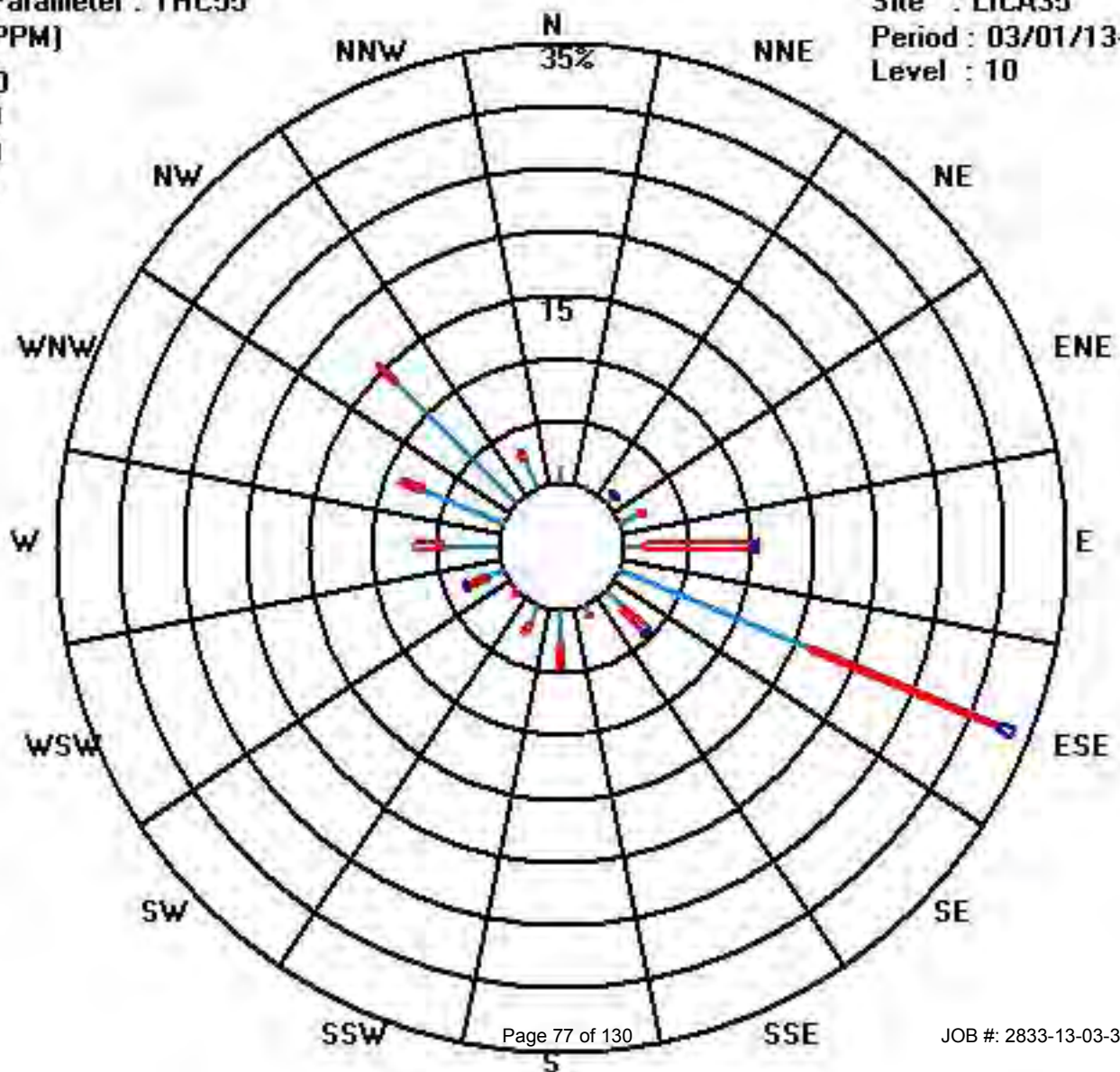
Calm : .00 %

Total # Operational Hours : 365

Class Limits (PPM)

Period : 03/01/13-03/31/13

Level : 10



# Methane

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2013

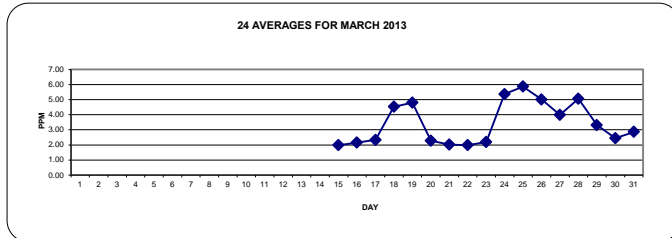
METHANE hourly averages in ppm

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	24:00	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	2																												
3	3																												
4	4																												
5	5																												
6	6																												
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8	8																												
9	9																												
10	10																												
11	11																												
12	12																												
13	13																												
14	14																												
15	15																												
16	16	2.07	2.09	2.15	2.24	2.39	2.06	2.14	1.98	C	C	C	C	2.05	2.08	2.15	2.27	2.14	2.09	2.1	S	C	1.92	2.01	2.02	2.02	1.98	6	
17	17	2.17	2.35	2.41	2.32	2.26	2.26	2.11	2.04	1.99	2	2.02	2.09	2.05	1.98	1.97	1.97	1.96	1.94	S	S	2.35	2.26	2.15	2.14	2.39	2.15	24	
18	18	4.3	3.54	4.12	5.58	11.34	9.19	8.08	5.58	6.18	6.29	6.8	4.79	3.12	2.21	2.06	1.98	2.07	S	S	2.35	2.73	2.5	2.9	3.16	3.28	11.34	4.53	24
19	19	5.05	5.08	6.43	9.79	10.37	10.45	6.67	S	S	3.8	3.74	3.21	3.06	3.05	3.02	2.97	S	S	2.95	4.7	3.08	4.15	3.27	2.86	3.33	10.45	4.81	24
20	20	3.52	3.1	2.55	2.64	2.48	2.37	2.24	2.15	2.13	2.17	2.12	2.09	2.11	2.1	2.05	S	S	2.04	2.04	2.01	2.04	2.05	2.08	2.08	2	3.52	2.27	24
21	21	2.06	2.03	2	2	2.03	2.04	2.03	2.03	2.03	2.01	2.02	2	2	2.02	S	S	2.07	2.06	2.06	2.03	2.04	2.04	2.02	1.97	1.99	2.07	2.03	24
22	22	2.11	2.24	2.06	2.02	2.01	2.05	2.07	2.01	1.95	1.95	1.94	1.94	1.95	S	S	1.94	1.94	1.94	1.94	1.94	1.95	1.97	1.96	1.97	1.96	2.24	1.99	24
23	23	1.94	1.98	2.06	2	2.07	2.08	2.04	2.06	2.04	2.13	2.1	2.03	S	2	2.02	2	2.01	2.05	2.6	2.62	2.88	2.59	2.62	2.59	2.88	2.20	24	
24	24	3.66	4.98	3.44	4.76	4.82	6.46	8.67	10.44	7.12	7.19	5.37	S	2.84	2.37	2.39	2.37	2.49	2.95	4.86	5.56	6.4	7.81	6.94	9.61	10.44	5.37	24	
25	25	4.56	7.78	7.53	8.29	7.74	5.66	6.53	5.61	5.76	5.58	S	4.07	3.34	3.09	3.01	2.95	2.96	3.38	9.59	6.23	7.95	7.97	7.48	8.03	9.59	5.87	24	
26	26	9.3	8.47	7.71	7.45	6.7	7.46	10.91	7.6	5.71	S	3.39	2.7	2.57	2.67	2.67	2.72	2.95	4.28	2.94	3.32	3.43	3.54	3.29	3.33	10.91	5.00	24	
27	27	3.85	3.38	3.74	3.94	3.66	3.71	3.6	3.5	S	3.37	3.75	3.41	3.41	3.39	3.14	2.83	2.84	2.79	6.19	7.41	4.06	6.63	4.44	4.86	7.41	4.00	24	
28	28	5.25	4.93	5.77	5.01	4.75	5.01	5	S	4.7	5.56	4.82	4.08	4	4.28	3.05	3.35	3.42	3.06	2.59	3.54	6.34	8.71	11.38	7.79	11.38	5.06	24	
29	29	6.42	9.05	5.77	3.61	3.91	3.15	S	2.26	2.14	2.18	2.34	2.3	2.33	2.21	2.08	2.18	2.22	2.15	3.02	3.16	3.44	4.02	3.4	2.89	9.05	3.31	24	
30	30	2.62	2.34	2.05	2.02	1.99	S	1.95	1.97	1.97	1.95	1.95	1.96	1.99	1.98	1.94	1.99	2.04	2.57	6.31	3.65	4.43	2.44	2.25	6.31	2.45	24		
31	31	2.58	2.53	2.85	2.78	S	3.3	2.92	2.69	2.86	2.87	2.6	2.54	2.54	2.61	2.68	2.56	2.5	2.41	2.88	3.72	3.06	4.32	2.73	3.24	4.32	2.86	24	
HOURLY MAX		9.3	9.1	7.7	9.8	11.3	10.5	10.9	10.4	7.1	7.2	6.8	4.8	4.0	4.3	3.1	3.4	3.4	4.3	9.6	7.4	8.0	8.7	11.4	9.6				
HOURLY AVG		3.8	4.1	3.9	4.2	4.6	4.5	4.5	3.7	3.6	3.5	3.2	2.8	2.6	2.5	2.4	2.4	2.4	2.5	3.5	3.7	3.7	4.1	3.8	3.8				

**STATUS FLAG CODES**

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

**24 AVERAGES FOR MARCH 2013**

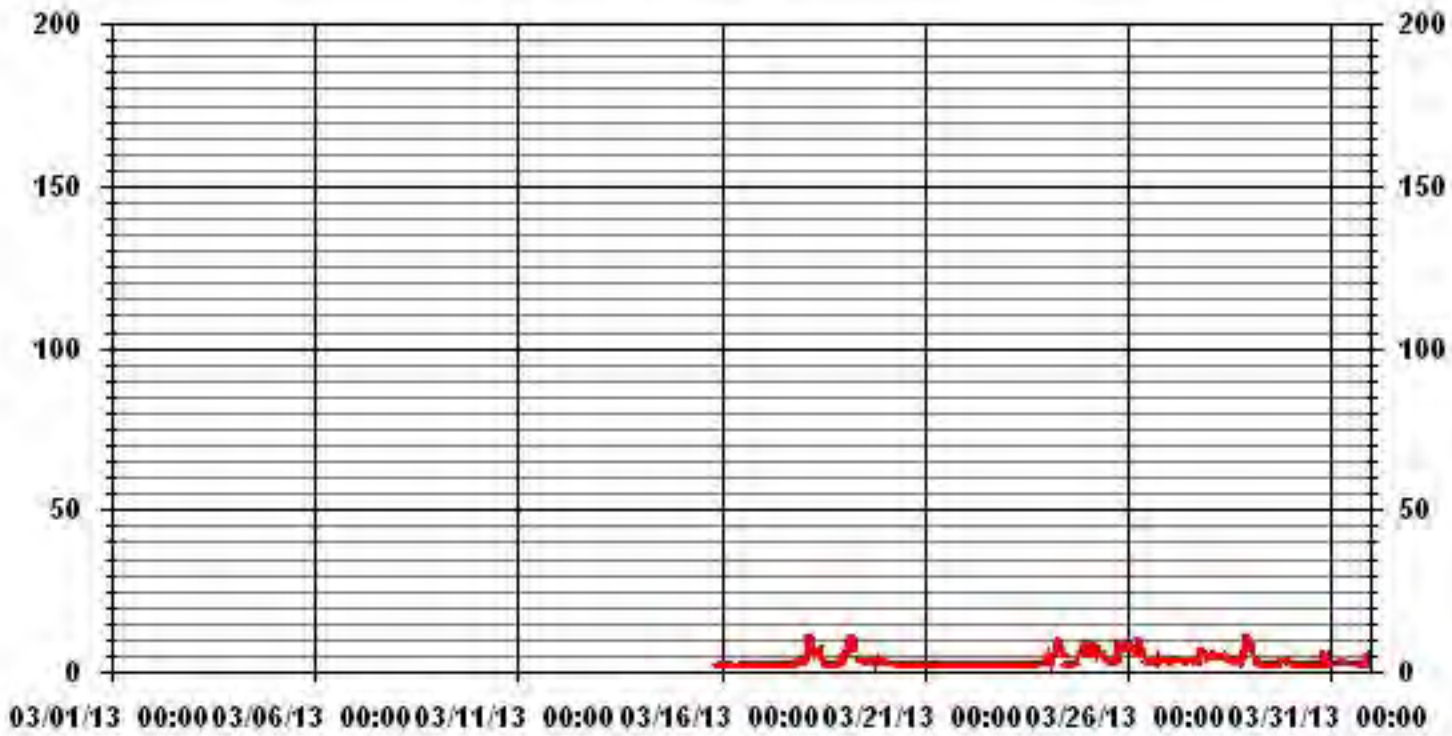


**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	365					
MAXIMUM 1-HR AVERAGE:	11.38	PPM	@ HOUR(S)	22	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	5.87	PPM			ON DAY(S)	25
IZS CALIBRATION TIME:	18	HRS	OPERATIONAL TIME:	390	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	52.4	%	
STANDARD DEVIATION:	2.05		MONTHLY AVERAGE:	3.51	PPM	



# 01 Hour Averages



— LICA35 METHANE PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2013

METHANE MAX 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	24:00	DAILY	24-HOUR								
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	MAX.	AVG.	RDGS.								
DAY																																				
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17																																				
18																																				
19		8.64	5.85	8.51	20.28	14.62	20.28	14.71	S	S	4.44	4.92	4.63	4.91	3.94	4.69	4.56	S	10.76	19.15	4.58	20.28	3.6	3.11	4.17	20.28	5.49	5.49	3.98	7						
20		4.67	4.02	3.14	3.06	2.86	2.66	2.31	2.19	2.19	2.62	2.48	2.79	2.79	2.37	2.67	S	2.63	2.38	2.35	2.35	2.32	2.23	2.32	2.04	4.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67		
21		2.39	2.14	2.07	2.14	2.17	2.19	2.23	2.09	2.14	2.14	2.25	2.16	2.11	2.45	S	2.38	2.11	2.15	2.1	2.17	2.14	2.1	1.99	2.04	2.45	2.17	2.4	2.4	2.4	2.4	2.4	2.4	2.4		
22		2.29	2.49	2.16	2.05	2.1	2.25	2.2	2.13	1.97	1.97	1.97	1.95	1.98	S	1.97	1.95	1.97	1.95	1.97	1.97	2	2	1.97	1.99	2.49	2.05	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	
23		1.95	2.13	2.28	2.06	2.41	3.02	2.21	2.25	2.15	2.56	2.71	2.22	S	2.08	2.15	2.16	2.55	2.23	3.82	2.75	3.47	2.72	2.84	2.82	3.82	2.50	2.4	2.4	2.4	2.4	2.4	2.4	2.4		
24		5.86	6.07	4.77	5.82	6.32	9.75	15.83	15.83	9.47	9.64	6.81	S	4.18	3.79	3.33	3.1	3.13	5.36	17.56	10.48	14.03	10.68	10.55	20.28	20.28	8.81	2.4	2.4	2.4	2.4	2.4	2.4	2.4		
25		5.81	20.28	10.42	19.41	13.72	8.24	10.67	7.87	7.12	6.85	S	4.5	3.74	3.38	4.63	3.12	3.1	20.13	20.28	14.16	12.64	11.46	11.25	20.28	20.28	10.57	2.4	2.4	2.4	2.4	2.4	2.4	2.4		
26		20.28	11.55	18.4	12.48	9.36	17.85	20.28	12.11	6.74	S	4.35	3.06	2.69	3.19	2.75	2.78	4.98	11.36	4.84	8	6.56	5.92	4.05	4.1	20.28	8.59	2.4	2.4	2.4	2.4	2.4	2.4	2.4		
27		8.82	4.57	4.82	5.04	4.77	7.03	4.64	3.59	S	3.5	5.23	3.59	3.75	3.71	3.82	4.09	3.68	4.73	20.28	20.28	5.54	17.69	7.35	7.35	20.28	6.86	2.4	2.4	2.4	2.4	2.4	2.4	2.4		
28		7.8	6.85	7.3	8.99	5.6	6.09	6.51	S	5.4	7.89	6.4	5.43	5.34	7.57	4.12	5.53	5.05	4.33	2.77	5.83	10.85	15.56	20.28	16.4	20.28	7.73	2.4	2.4	2.4	2.4	2.4	2.4	2.4		
29		8.75	20.28	9.5	4.82	4.88	4.36	S	2.34	2.2	2.92	2.82	2.38	2.54	2.54	2.09	2.73	3.12	2.33	5.14	3.71	4.43	4.5	3.89	3.6	20.28	4.60	2.4	2.4	2.4	2.4	2.4	2.4	2.4		
30		3.89	2.74	2.08	2.04	2.03	S	1.96	2	1.98	1.98	1.97	1.97	1.96	2.1	2.13	1.98	2.14	2.13	5.77	20.28	4.76	5.84	3.02	3.55	20.28	3.49	2.4	2.4	2.4	2.4	2.4	2.4	2.4		
31		3.9	2.79	4.45	3.79	S	4.9	4.9	3.03	4.92	4.8	2.9	3.12	2.9	2.97	3.49	2.75	3.11	3.07	5.88	6.88	5.9	13.53	3.71	3.73	13.53	4.41	2.4	2.4	2.4	2.4	2.4	2.4	2.4		
HOURLY MAX		20.28	20.28	18.40	20.28	14.62	20.28	20.28	15.83	9.47	9.64	6.81	5.43	5.34	7.57	4.69	5.53	5.05	20.13	20.28	20.28	20.28	17.69	20.28	20.28											
HOURLY AVG		6.54	7.06	6.15	7.08	5.90	7.39	7.37	5.04	4.21	4.28	3.73	3.15	3.24	3.34	3.15	3.09	3.13	5.61	8.19	7.67	6.99	7.31	5.76	6.99											

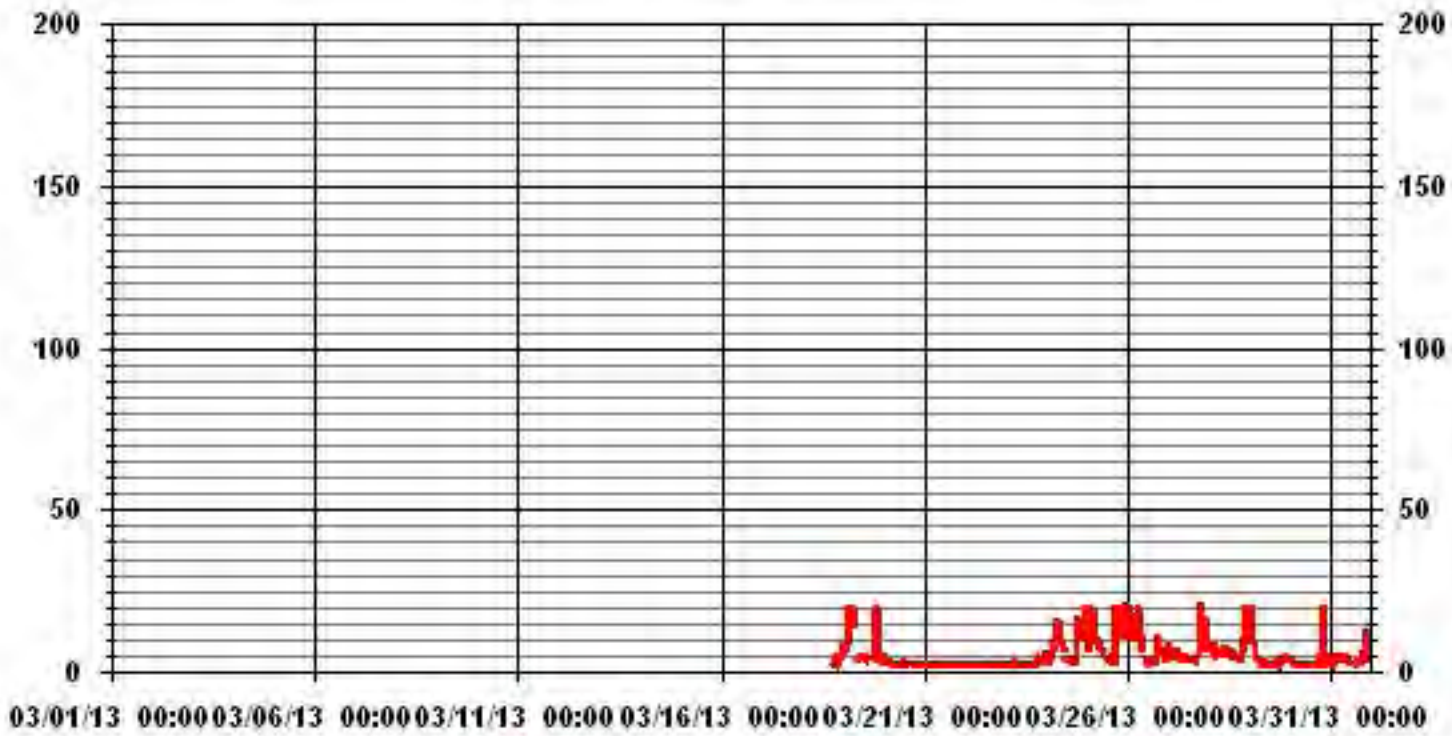
STATUS FLAG CODES

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:	303					
MAXIMUM INSTANTANEOUS VALUE:	20.28	PPM	@ HOUR(S)	VAR	ON DAY(S)	VAR
IZS CALIBRATION TIME:	16	HRS	OPERATIONAL TIME:	319	HRS	
MONTHLY CALIBRATION TIME:	0	HRS				
STANDARD DEVIATION:	4.91					

# 01 Hour Averages



LICA35  
METHANE / WDR Joint Frequency Distribution (Percent)

March 2013

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	
< 3.00	1.36	.27	.82	1.64	1.64	16.43	1.91	.82	2.73	1.64	.00	1.91	4.38	6.84	13.42	2.46	58.35
< 10.00	.00	.00	.00	.54	9.04	16.16	2.46	.27	1.91	.82	.27	1.36	2.19	1.91	2.19	.82	40.00
< 50.00	.00	.00	.27	.00	.00	1.09	.27	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.64
>= 50.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.36	.27	1.09	2.19	10.68	33.69	4.65	1.09	4.65	2.46	.27	3.28	6.57	8.76	15.61	3.28	

Calm : .00 %

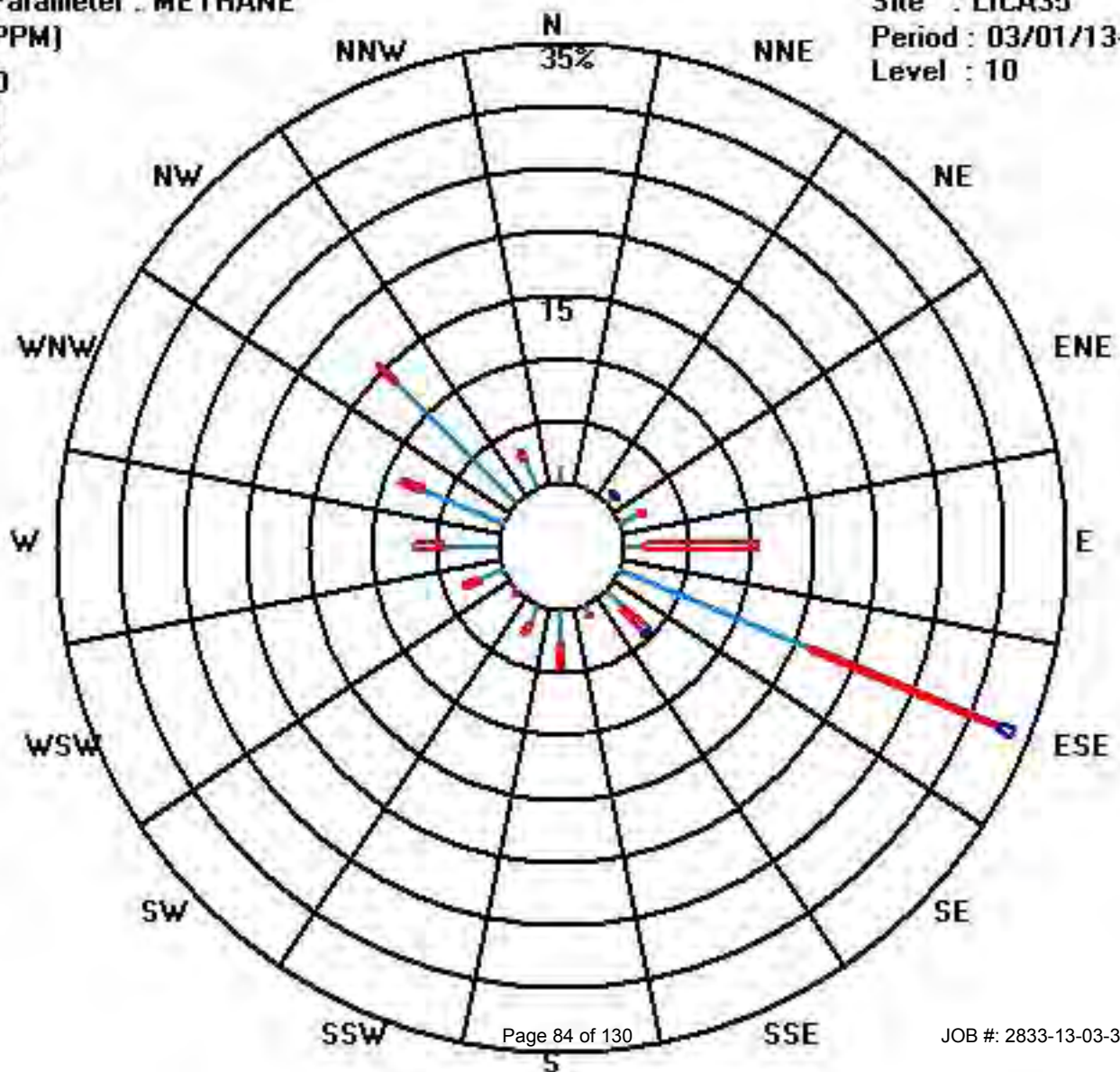
Total # Operational Hours : 365

Distribution By Samples

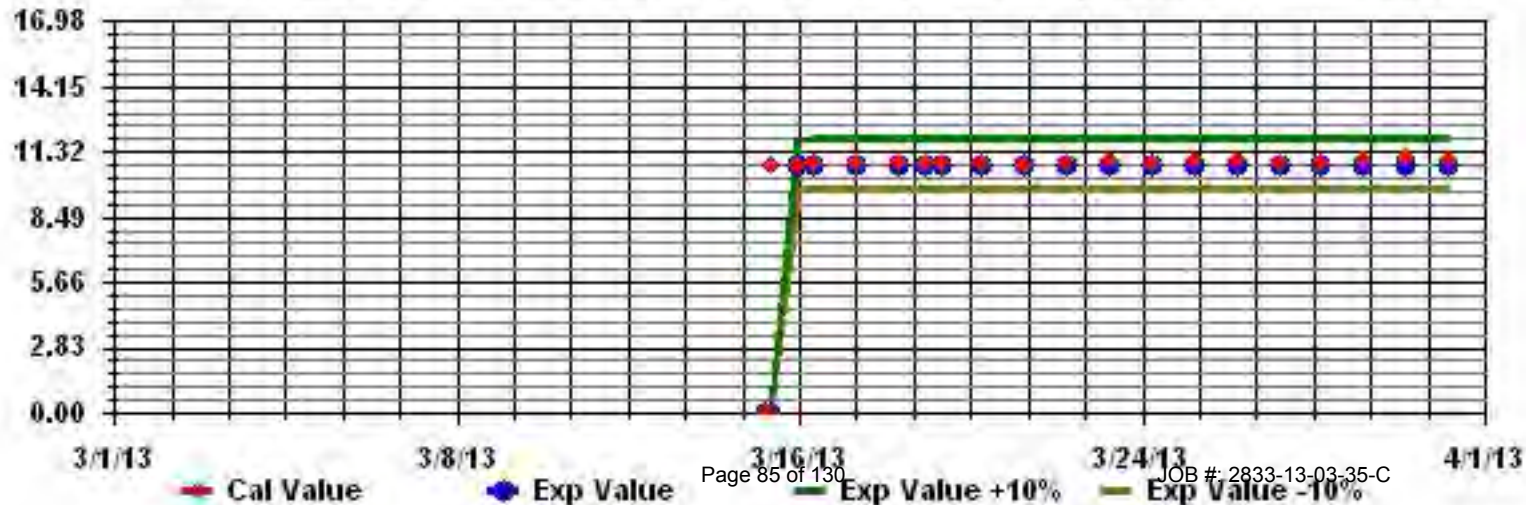
Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.00	5	1	3	6	6	60	7	3	10	6		7	16	25	49	9	213
< 10.00				2	33	59	9	1	7	3	1	5	8	7	8	3	146
< 50.00			1				4	1									6
>= 50.00																	
Totals	5	1	4	8	39	123	17	4	17	9	1	12	24	32	57	12	

Calm : .00 %

Total # Operational Hours : 365



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



# Non-Methane Hydrocarbons

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

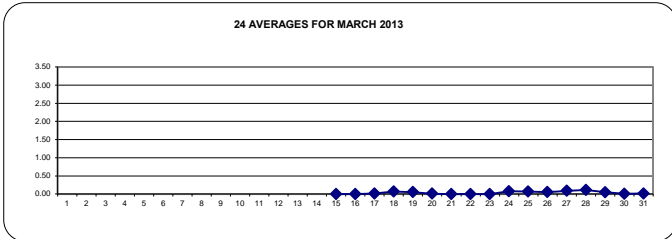
MARCH 2013

## NON-METHANE HYDROCARBONS 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	24-HOUR			
DAY	HOURLY MAX	HOURLY AVG																										MAX.	AVG.	RDGS.	
1																															
2																															
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10																															
11																															
12																															
13																															
14																															
15																															
16	0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	S	0	0	0	0	0	0	0.00	6		
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.2	0.04	0.07	0.01	0.2	0.01	24		
18	0.01	0	0.31	0.3	0.31	0.11	0.07	0.04	0.01	0.12	0.22	0	0	0	0	0	0	0	0	0	S	0	0.04	0	0.02	0.02	0.01	0.31	0.07	24	
19	0.04	0.03	0.04	0.32	0.27	0.14	0.05	S	S	0	0	0	0	0	0	0	0	S	0.01	0.04	0	0.03	0.01	0.04	0.12	0.32	0.05	24			
20	0.15	0.09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.15	0.01	24		
21	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	0.00	24			
22	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	0.00	24			
23	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	0.00	24			
24	0.06	0.19	0.02	0.03	0.04	0.2	0.22	0.21	0.1	0.1	0.03	S	0	0.01	0	0	0	0	0.03	0.21	0.09	0.02	0.03	0.09	0.11	0.22	0.08	24			
25	0.09	0.07	0.08	0.12	0.08	0.03	0.02	0.03	0.03	0.07	S	0.04	0	0	0	0	0	0	0	0.13	0.1	0.16	0.18	0.15	0.13	0.18	0.07	24			
26	0.15	0.14	0.13	0.1	0.13	0.13	0.15	0.14	0.1	S	0	0	0	0	0	0	0	0	0.01	0	0	0	0.02	0	0	0.15	0.05	24			
27	0	0.01	0.03	0.03	0.04	0.05	0.07	0.12	S	0.16	0.18	0.14	0.14	0.15	0.06	0.02	0	0	0.04	0.13	0.14	0.19	0.16	0.19	0.19	0.09	24				
28	0.18	0.18	0.19	0.18	0.18	0.19	0.17	S	0.18	0.17	0.12	0.06	0.05	0.02	0	0	0.04	0.01	0	0.02	0.09	0.14	0.19	0.18	0.19	0.11	24				
29	0.15	0.36	0.22	0.07	0.08	0.03	S	0	0	0	0	0	0	0	0	0	0	0.01	0.02	0.01	0.02	0.1	0.04	0.04	0.36	0.05	24				
30	0.01	0.01	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	0.01	0.05	0	0	0.05	0.00	24			
31	0	0	0	0	S	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03	0.02	0.03	0.02	0.19	0.19	0.01	24			
HOURLY MAX	0.18	0.36	0.31	0.32	0.31	0.2	0.22	0.21	0.18	0.17	0.22	0.14	0.14	0.15	0.06	0.02	0.04	0.03	0.21	0.13	0.2	0.19	0.19	0.19							
HOURLY AVG	0.05	0.07	0.06	0.07	0.08	0.06	0.05	0.04	0.03	0.04	0.04	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.03	0.03	0.04	0.05	0.05	0.06							

### 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

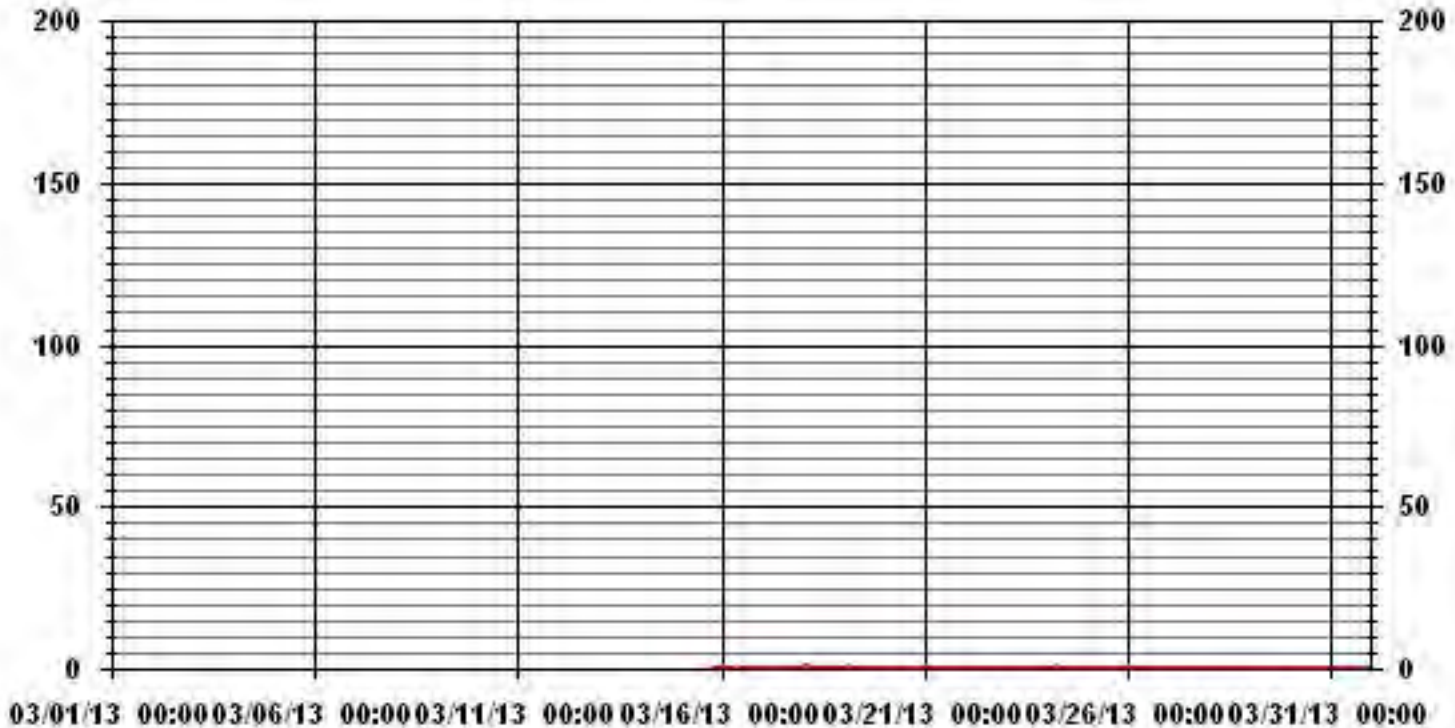


### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	144
MAXIMUM 1-HR AVERAGE:	0.36 PPM @ HOUR(S) 1 ON DAY(S) 29
MAXIMUM 24-HR AVERAGE:	0.11 PPM ON DAY(S) 28
IZS CALIBRATION TIME:	18 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	0.07
OPERATIONAL TIME:	390 HRS
AMD OPERATION UPTIME:	52.4 %
MONTHLY AVERAGE:	0.04 PPM



# 01 Hour Averages



— LICA35 TIMHC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2013

NON-METHANE HYDROCARBONS MAX 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	24-HOUR		
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	MAX.	AVG.	RDGS.		
DAY																														
1																														
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														
13																														
14																														
15																														
16																														
17																														
18																														
19		0.22	0.28	0.24	1.17	0.67	0.29	0.22	S	S	0.14	0.08	0.09	0.14	0.09	0.09	0.1	S	0.23	0.23	0.11	0.32	0.13	0.16	0.2	1.17	0.25	24		
20		0.23	0.17	0.1	0.09	0	0	0	0	0	0	0	0	0	0.09	S	0	0	0	0	0	0	0	0	0	0	0	0.23	0.03	24
21		0	0	0	0	0	0	0.1	0	0	0	0	0	0	0.02	S	0	0	0	0	0	0	0	0	0	0	0	0.1	0.01	24
22		0	0.07	0	0	0	0	0	0	0.06	0	0	0	0	S	0	0	0	0	0	0	0.01	0	0	0	0	0	0.07	0.01	24
23		0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.15	0.09	0	0.06	0.15	0.01	24	
24		0.27	0.32	0.26	0.19	0.27	0.41	0.45	0.51	0.26	0.28	0.24	S	0.12	0.29	0.15	0.07	0	0.38	1.1	0.46	0.19	0.17	0.32	0.32	1.1	0.31	24		
25		0.22	0.26	0.2	0.32	0.18	0.21	0.15	0.23	0.23	0.28	S	0.21	0.14	0.11	0.17	0.11	0.08	0.28	0.29	0.23	0.29	0.29	0.24	0.25	0.32	0.22	24		
26		0.37	0.27	0.31	0.19	0.32	0.34	0.32	0.34	0.27	S	0.16	0	0.02	0.01	0.1	0.02	0.03	0.14	0.06	0.15	0.13	0.15	0.11	0.16	0.37	0.17	24		
27		0.11	0.15	0.12	0.17	0.18	0.19	0.19	0.19	S	0.22	0.27	0.22	0.21	0.22	0.19	0.2	0.17	0.19	0.25	0.3	0.25	0.33	0.24	0.31	0.33	0.21	24		
28		0.29	0.27	0.31	0.31	0.24	0.34	0.26	S	0.29	0.35	0.25	0.23	0.2	0.18	0.12	0.05	0.26	0.17	0.14	0.21	0.26	0.3	0.4	0.33	0.4	0.25	24		
29		0.27	0.71	0.47	0.28	0.25	0.18	S	0.09	0	0.1	0.09	0.14	0.07	0.03	0.15	0.03	0	0.39	0.29	0.15	0.17	0.23	0.21	0.16	0.71	0.19	24		
30		0.16	0.21	0.16	0	0	S	0	0	0	0.15	0	0	0	0	0	0	0.01	0	0.12	0.19	0.13	0.22	0	0	0.22	0.06	24		
31		0.12	0	0.11	0	S	0.16	0.15	0	0.07	0.09	0.11	0.19	0.09	0.17	0.15	0.22	0	0.07	0.13	0.16	0.16	0.17	0.16	0.55	0.55	0.13	24		
HOURLY MAX		0.37	0.71	0.47	1.17	0.67	0.41	0.45	0.51	0.29	0.35	0.27	0.23	0.21	0.29	0.19	0.22	0.26	0.39	1.1	0.46	0.32	0.33	0.4	0.55					
HOURLY AVG		0.1738	0.2085	0.1754	0.2092	0.1758	0.1767	0.1533	0.1291	0.1018	0.1342	0.1	0.09	0.0825	0.0933	0.1008	0.0667	0.0458	0.1423	0.1864	0.1714	0.1571	0.1636	0.1479	0.1771					

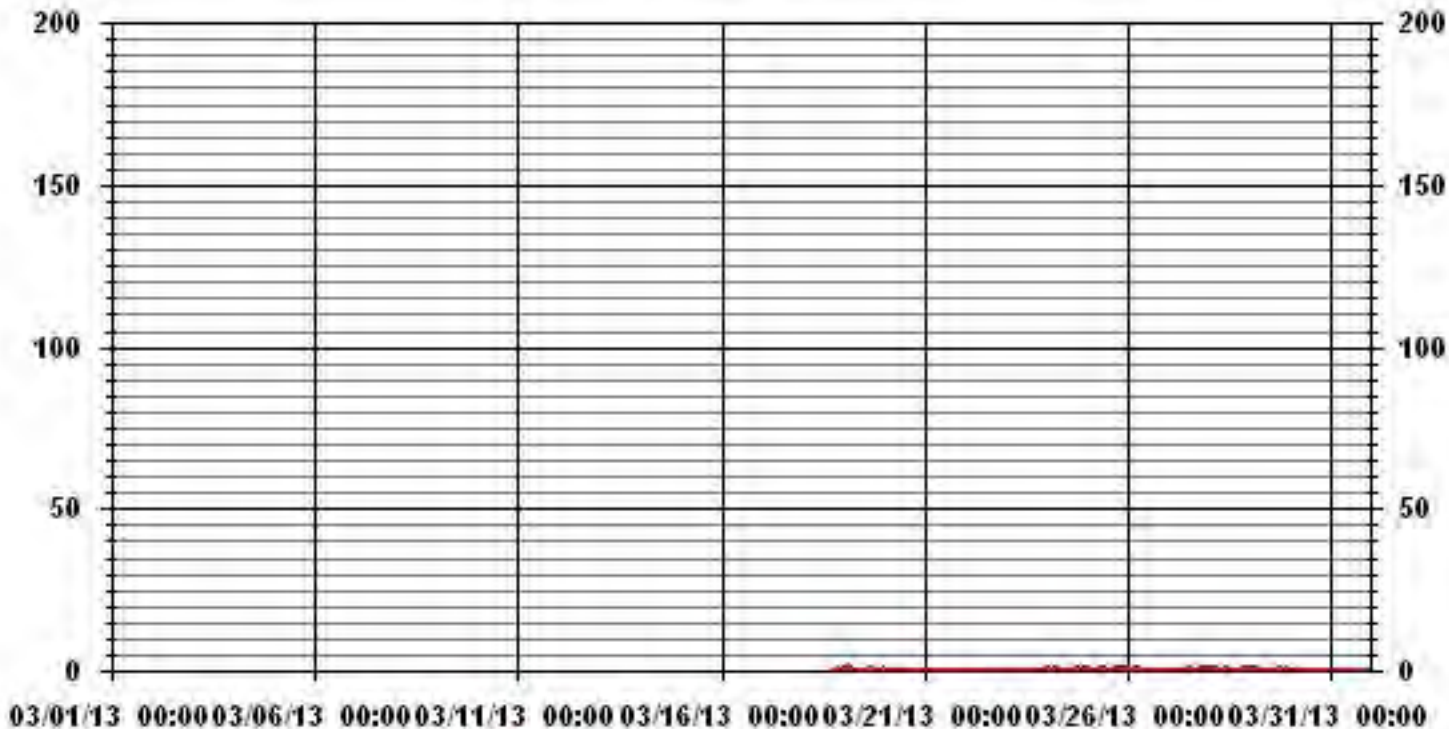
STATUS FLAG CODES

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:	201					
MAXIMUM INSTANTANEOUS VALUE:	1.17	PPM	@ HOUR(S)	3	ON DAY(S)	19
IZS CALIBRATION TIME:	16	HRS	OPERATIONAL TIME:	319	HRS	
MONTHLY CALIBRATION TIME:	0	HRS				
STANDARD DEVIATION:	0.15					

### 01 Hour Averages



— LICA35 IMHCMAX PPM

LICA35  
 NMHC / WDR Joint Frequency Distribution (Percent)

March 2013

Distribution By % Of Samples

Logger Id : 35  
 Site Name : LICA35  
 Parameter : NMHC  
 Units : PPM

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
< .25	1.36	.27	1.09	2.19	10.68	33.15	4.65	1.09	4.38	2.46	.27	3.01	6.30	8.76	15.34	3.28	98.35
< .50	.00	.00	.00	.00	.00	.54	.00	.00	.27	.00	.00	.27	.27	.00	.27	.00	1.64
< 1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 2.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 4.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 4.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.36	.27	1.09	2.19	10.68	33.69	4.65	1.09	4.65	2.46	.27	3.28	6.57	8.76	15.61	3.28	

Calm : .00 %

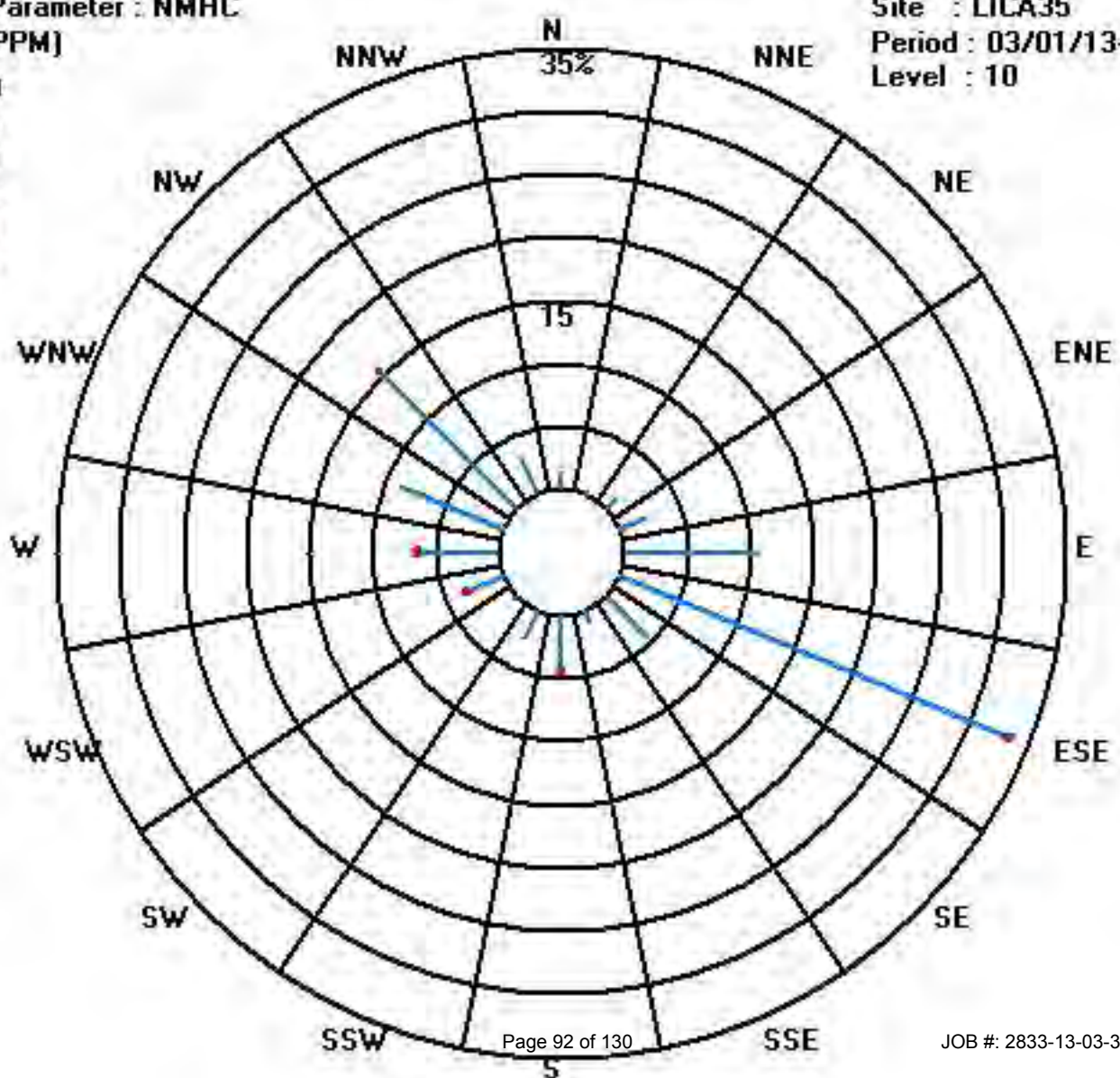
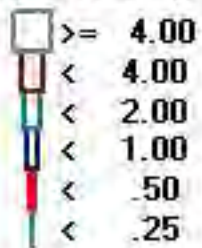
Total # Operational Hours : 365

Distribution By Samples

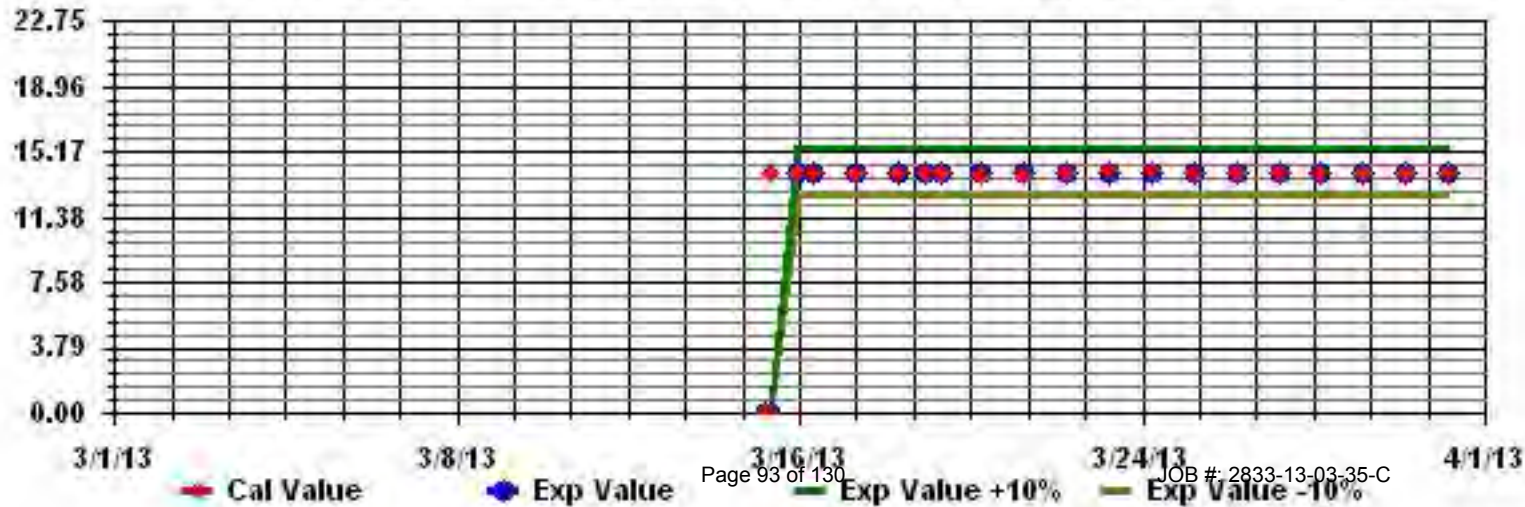
	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< .25	5	1	4	8	39	121	17	4	16	9	1	11	23	32	56	12	359
< .50						2			1			1	1		1		6
< 1.00																	
< 2.00																	
< 4.00																	
>= 4.00																	
Totals	5	1	4	8	39	123	17	4	17	9	1	12	24	32	57	12	

Calm : .00 %

Total # Operational Hours : 365



Calibration Graph for Site: LICA35 Parameter: HMHC Sequence: THC55 Phase: SPAll



# Vector Wind Speed

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

MARCH 2013

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

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	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	13	14	15.7	13.8	16.2	16.3	12.8	7.7	5.7	6.7	3.9	4.4	3.6	1.1	3.2	0.9	4.2	3.8	2.4	4.5	8.2	9.6	9.2	10.2	16.3	8.0	24	
2	7.6	3.4	4.7	8.9	9.3	7.6	4.8	6.6	3.6	4.2	2.5	0	1	1.9	1.6	1.7	0.1	2.3	1.1	2.5	3.8	3	3.4	2.5	9.3	3.7	24	
3	2.7	2.4	1.3	6.5	7.9	9.6	1.8	8.7	9.9	10.2	16.1	18.3	18.2	19.6	21.6	21.1	18.8	21.8	20.6	19.6	18.2	16.8	16.7	17	21.8	13.6	24	
4	15.5	12.2	10	10.3	10.8	8.5	4.7	8.5	8.6	7	5.2	5.4	7.3	10.8	10.9	9.3	7.1	7.2	7.5	4.9	1.1	0.9	2.4	2.8	15.5	7.5	24	
5	5.7	5.7	2.3	1.5	0.3	0	0	0	0	0	0.3	1.4	3.3	11.2	13.6	15.8	16.5	12.1	8	6.8	8.3	8.4	10	9.4	16.5	5.9	24	
6	8.9	4.6	3.8	6.4	6.2	7	4.9	3.9	5.8	7.4	9.6	10	11.9	12.9	12	9.4	8.3	8.9	5.8	5.4	5.3	5.6	6.7	5.3	12.9	7.3	24	
7	7.4	8.7	11.6	13.7	15	15.2	13.1	16.3	13.4	12.5	11.2	9.2	5.9	4.8	1.1	7.8	10.2	10.7	7.7	4.2	4.6	3.7	5.3	5	16.3	9.1	24	
8	7.2	8.5	7.4	7.9	7.8	8.5	10.3	9.3	9.6	13.4	20.3	20.3	19.1	17.7	19.7	16.9	14.1	9.3	6.3	4.5	3.1	2.6	0.5	0.5	20.3	10.2	24	
9	4.2	3.7	1.1	1.8	2.1	6.3	9.1	8.5	10.2	6.7	7.9	13	12.3	11.4	11.8	9	5.8	10.2	9	7	9.1	9.5	8.8	9.9	13.0	7.9	24	
10	9.2	7.4	7.6	6.2	2.3	3.7	0.5	1.3	1.4	1.1	3.4	1.4	8	15.7	31.6	28.3	23.8	15.5	10	12.3	11.8	15.2	28.9	16.1	31.6	10.9	24	
11	18.2	28.3	30.4	31.3	36.9	29.7	26.9	24.4	22.9	22.6	21.9	18.9	18.7	21.9	19.5	17.1	17.6	14.1	9.3	9.3	9.1	4.4	5.7	5.2	36.9	19.3	24	
12	0.8	5.2	4.6	8.2	7.8	7.2	6.4	10	11.8	12.6	12.7	17.1	24	30	26.4	27	22.4	24.2	23	19.6	18.6	13.5	10.6	8.3	30.0	14.7	24	
13	7.3	8.8	5.2	4.3	6.5	6.7	8.2	5.9	6.6	9.3	14.9	13.7	11.1	2.6	5.7	15.5	10.5	11.3	11.4	12.8	13.7	10.8	18.1	18.9	18.9	10.0	24	
14	19.9	20.6	19.3	15.9	19.5	19.7	15.7	15.7	16.8	13.3	14.4	15.2	10.6	6.8	10.3	9.3	11.9	12.7	10.3	9.6	11	18.4	18.7	18.4	20.6	14.8	24	
15	17.9	14.9	15.3	13.3	12.6	12	10.6	9.5	9.9	10	5.8	3.1	6	10.6	13.4	16.4	13.1	10	9.8	15.6	14.4	10.9	7.8	7.8	17.9	11.3	24	
16	6.8	4.1	5.2	9.2	9.1	11.9	14.4	15.6	13.8	13.9	15.6	19.8	19.8	23.1	22.1	24.4	24.5	25.6	22.7	23.3	20.9	19.8	17.3	13.2	25.6	16.5	24	
17	13.1	9.1	4.9	1.3	4.1	6.6	9.3	7.9	10.1	13.2	12.5	14	14.1	18.1	19.8	17	18.3	16.3	10.1	8.9	8	10.7	5.7	3.9	19.8	10.7	24	
18	4.8	4.6	3.4	1.3	2.7	5.5	3.4	1.3	0.2	0.3	1.1	6	9.3	9.9	12.2	15.5	16	13.8	8.2	8.8	11.7	11.3	6.3	4.7	16.0	6.8	24	
19	4.5	6	5.1	0.9	3	5	5.4	6.5	6.5	7.5	8.7	10.6	11.8	12.9	11.6	10.7	11.6	12.1	11.3	12.2	11.7	15.6	15.9	15.8	15.9	9.3	24	
20	16.2	17.3	24.4	27.1	24.6	26.4	29.5	36.6	45.1	44.9	46	47.3	45.3	45.4	49	49.5	45.4	45.2	43.3	<b>45.9</b>	47.7	48.7	45	42.1	<b>49.5</b>	<b>39.1</b>	24	
21	43	44.6	40.7	36.3	38.8	36.4	32	32.5	30.6	30.2	27	29.9	22.5	20	17.1	10.3	4.8	4.7	3.3	6.9	4.4	7.9	10.5	9.4	44.6	22.7	24	
22	10.9	12.7	13.2	10.7	13.3	13.6	16.7	20.5	18.9	20.3	22.2	21	20.5	20.8	20.2	19.2	18.6	20.1	20	19.3	17.8	17.4	15.3	16	22.2	17.5	24	
23	15.6	15.3	13.8	13.5	13	13.6	14.2	14.9	11.2	13.1	10.7	9.3	7.8	9.7	10.8	10.5	9.2	6.5	7.8	7.5	8.6	13.2	10.7	7.1	15.6	11.2	24	
24	3.7	5.9	1.9	2.8	2.6	1.1	0.5	0	1.1	0.8	1.4	0.3	3.1	7.3	8.8	9.8	10.3	9.8	7.8	5.8	5.4	5.8	3.8	6.5	10.3	4.4	24	
25	3.6	3.7	2.1	4.4	3.3	1.9	1.8	1.4	2.6	8.1	6.5	7	8	9.6	9.8	11.7	11.7	11.6	10.7	8.5	5.6	3.5	4.4	4	11.7	6.1	24	
26	5.3	4.4	5.1	4.4	2.2	3.2	4.2	2.3	4.4	8.5	10.3	12.7	14.3	12.4	11.2	12.1	12.2	11.8	12.9	12.4	10.3	10.8	9.5	12.4	14.3	8.7	24	
27	6.9	6.4	9.7	8.2	9.7	9.5	10.1	12	13	9.8	9.9	11	10.2	12.5	9.9	11.8	11.6	9.5	8.3	8	8.6	7.4	6.3	6.6	13.0	9.5	24	
28	5.8	4.9	5.4	5.2	4.5	4.2	6	4.5	2.1	6.3	5.7	6.2	9.2	6.8	9.1	11.9	11.8	10.6	8.6	7.4	4.7	6.3	5.3	4.2	11.9	6.5	24	
29	2.9	2	8.2	9.9	7.8	10.4	6.9	9.8	9.3	7.9	3.7	6.3	11.8	11.5	8.4	8.9	6.7	1	5.6	8.6	5	3.3	7.8	7.4	11.8	7.1	24	
30	10.6	13.5	12.1	12.6	12.7	6.6	7.2	9.2	17.6	22.1	16.4	14.7	13.7	9.7	12.8	10.9	7.7	5.6	1.5	4.4	4.4	2.6	3.2	5.8	22.1	9.9	24	
31	9.9	11	11.2	8.4	7.2	8.2	7.7	8.6	10.5	8.5	6.9	9.4	10.6	10.5	10.9	11.4	11.5	9	8.2	6.9	9.3	5.1	2	2.3	11.5	8.6	24	
HOURLY MAX	43.0	44.6	40.7	36.3	38.8	36.4	32.0	36.6	45.1	44.9	46.0	47.3	45.3	45.4	49.0	49.5	45.4	45.2	43.3	45.9	47.7	48.7	45.0	42.1				
HOURLY AVG	10.0	10.1	9.9	9.9	10.3	10.4	9.6	10.3	10.7	11.4	11.4	12.2	12.7	13.5	14.4	14.6	13.4	12.5	10.7	10.8	10.5	10.4	10.4	9.6				

### STATUS FLAG CODES

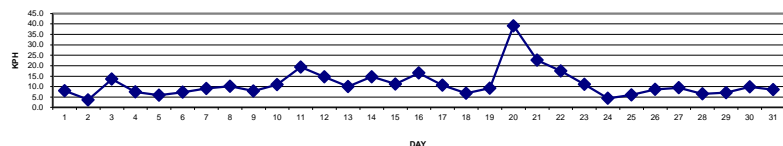
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION: November 24, 2011

### MONTHLY SUMMARY

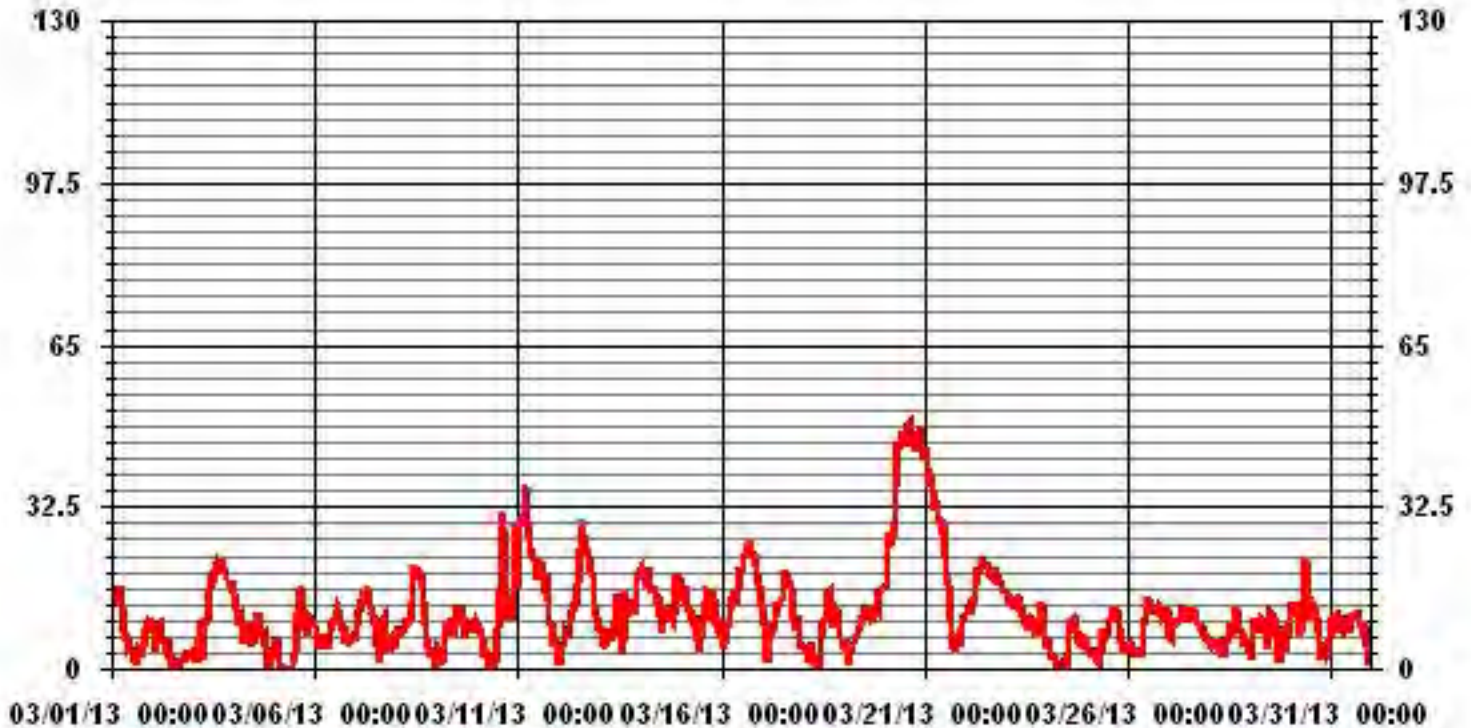
MAXIMUM 1-HR AVERAGE:	49.5	KPH	@ HOUR(S)	19	ON DAY(S)	20
MAXIMUM 24-HR AVERAGE:	39.1	KPH			ON DAY(S)	20
CALMS (≤ 0 KPH)	1.75	%	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	8.69		MONTHLY AVERAGE:	11.24	KPH	

24 HOUR AVERAGES FOR MARCH 2013





# 01 Hour Averages



— LICA35 WSP KPH

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

MARCH 2013

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST																								DAILY	
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	MAX.
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	19.6	19.7	20.9	20.3	22.1	24.4	22.5	13.6	8.2	11	6.3	7.4	8.8	10.4	9.4	5	9	7	5.5	11.3	12.8	15.4	15.8	16.7	24.4
2	16.2	7.6	8.4	13.2	12.9	12.4	11.9	15.9	9.4	7.8	8.3	1.6	4.4	4.7	5	5.1	2.6	5.2	5.5	5.9	7.8	9.6	7.9	5.3	16.2
3	5.1	5.8	4.7	12.1	15.5	17.9	9	17.4	16.6	21.7	29	34.9	31.4	35	38.2	36.9	31.8	40	39.2	42.8	32.5	30	27.6	29.6	42.8
4	23.1	20.5	19.8	17.2	19.5	14.8	9.7	13.6	13.2	12.1	14.3	9.6	13.2	15.7	14.4	12.2	9.5	9.6	10.8	8.9	4.6	4.1	4.6	5.1	23.1
5	9.4	8.2	5.9	3.7	2.1	1.5	0	1	0	0	3.8	4.2	9.9	21.6	22.9	26.1	27.3	20.9	12.5	10.4	14	14.8	20.3	16.4	27.3
6	16.1	11.1	13.5	11.2	9.8	9.3	6.8	5.5	9.2	10	13.5	13.7	17.8	17.5	16.3	14.3	12	12.2	10.6	10.5	8.2	8.8	11	11.1	17.8
7	12.4	15.1	19.3	23.4	29.3	24.5	26.7	25.6	23	20.3	18.2	18.2	14	14.8	8.4	16.1	16.7	15.6	13.6	8.6	8	6	7.8	8	29.3
8	9.7	11	12.3	10.7	11.8	11.7	14.8	12.9	19.2	31.7	32.4	32.2	31.2	29.8	28.5	25.8	22.5	15.6	9.5	6.1	5.1	4.6	3.4	5.8	32.4
9	10.8	7.9	4.4	5.8	5.7	11.3	13	12.4	13.7	10.9	14.6	17.7	15.5	18.5	19.4	14.8	12.2	15.6	14.5	11.1	14.8	14.5	12	13	19.4
10	12.6	9.6	10.1	10.6	7.7	7.3	4.4	5.1	4.6	4.2	7.5	4.8	18.7	45.6	57.6	57.7	52.2	32.4	19.6	24	21.9	39.1	50	27.1	57.7
11	38.7	41.7	48.5	62.1	60.6	52.7	45.5	43.1	42.3	36.4	34.9	32.7	27.3	30.5	27.5	24.5	29	20	14.5	14.1	15.7	8.1	11.5	9.2	62.1
12	7.6	8.2	6.6	11.6	12	11.9	12.5	14	15.3	18.2	18.2	26.2	39.3	42.8	46	42.5	34.8	37.4	37.8	27.4	25.6	21.6	15.7	13.8	46
13	12.4	13.6	7.9	8.7	10.1	11.6	15.8	11.4	14	20.6	25.6	23.6	22.1	13.5	19.1	24.7	18.7	16.8	19	20.7	21.7	20	28.7	31.8	31.8
14	32.2	34.3	31.6	27.2	32.8	31.9	27.6	31.4	28.5	28.3	25.8	26.7	25.5	21.9	23.4	18.8	21.4	23.1	17.8	15.5	28.1	29.4	28	27.3	34.3
15	25.5	25.6	24.2	21.1	20.9	20.4	19.1	15.7	17	16.3	12.6	8.5	10.7	18.1	21.9	27.8	22.5	17.7	17.9	21.6	21.4	20.6	12.9	11.3	27.8
16	9.4	8.2	12.7	17.8	20	19.5	21	23.7	19.4	20.6	22	28	26.8	31.2	32.6	31.6	32.6	35.7	31.9	35.8	31.1	30.8	28.4	25.8	35.8
17	20.5	14.8	9.7	4.4	7.1	11.9	13.8	11.1	15.7	19.5	22.5	19.9	24.2	31.9	34.2	31.5	29.3	26.1	17.6	11.8	12.1	14.6	11.9	6.6	34.2
18	7	7.2	7.4	4.6	5.6	9.3	6.6	4.3	2.7	2.8	7.7	9.1	17.6	17.7	17.6	23.4	21.6	19.7	13	12.4	16.1	17.9	12.4	7.5	23.4
19	6.5	7.7	7.3	5.1	6.2	7	7.8	8.9	9.9	11.7	12.5	15.6	16.6	17.5	16.7	15.8	15.8	16.4	15.1	16.1	15	20.3	24.7	21.3	24.7
20	26.2	24.9	35.5	38	35.9	39.7	49.3	51.6	64.9	63.2	71.8	69.9	64.1	73.3	72.9	72.4	67.2	70.9	68.5	66.6	68.7	72.5	69	62.6	73.3
21	70.3	66.1	59.9	55.3	57.8	59.4	50.9	48.4	44.8	51.4	46.2	46.4	37.1	34.6	31.4	25.5	11.9	9.3	10.2	13.8	9	13.9	14.8	15.5	70.3
22	14.4	18.3	19.9	17.1	20.7	21.2	23.5	29.7	30.9	32.6	35.1	32.4	30.9	31.7	31.5	29.3	29.5	30.9	33.8	30.5	28.3	28.2	23.9	24.6	35.1
23	21.8	21.9	19.6	19.3	17.7	17.8	17.4	19.3	18	16.3	15.4	14.1	13.4	17.7	17.8	18.8	15.5	11.3	12.6	10.8	12.9	15.5	15	10.9	21.9
24	10.1	13.3	6.3	7.1	4	3.3	2.4	1.4	3.6	3.5	5.4	4.1	11.9	12.1	13.9	14.2	14.3	13.9	12.4	8.3	7	6.9	5.9	7.8	14.3
25	6.3	5.5	3.6	6.4	4.8	3	3	2.1	10	11	9.3	11	11.4	14	13.5	15.1	15.3	16.5	14.4	11.9	7.6	5.5	5.9	6.5	16.5
26	7.6	6.7	7.3	5.7	4.4	7.1	5.8	3.9	9.7	11.2	14.7	17.9	20.6	18.4	14.7	17.6	16.9	16	18.5	17.2	15.9	14.9	16.5	19.9	20.6
27	11	12.5	13.8	13.3	13.4	12.2	15	17	20.4	15.6	13.5	15.1	14.2	18	18.3	17.3	19	18.5	11.3	10.6	10.6	9.7	8.3	9.5	20.4
28	7.4	6.3	7.2	7.3	7.5	7.3	7.5	7.7	6.6	8.4	7.9	9.3	12.8	12.6	15.4	17	17.4	15.6	13.3	13	7.1	8.2	7.6	10.1	17.4
29	8.1	7.9	18.8	19.7	15.1	14.4	15.6	23.2	19.7	19.5	15.7	14.9	16.4	16.1	11.6	13.3	9.9	4.4	9.4	12.8	10	7.2	14.3	11.9	23.2
30	15.2	24.9	20.5	22.7	28.5	17	14.7	19.5	29.7	32.7	31.1	25.5	21.7	17.6	19.4	19.8	12.7	10.5	10.9	7.6	7.2	15.5	16.8	11	32.7
31	13.9	14.7	16.7	14.7	11.5	11.3	10.7	13.5	16.2	15.1	13.2	16.3	17.9	17.9	16.9	17.8	18.3	18.1	14.4	11.3	14.5	9.6	5.6	5.8	18.3
PEAK	70.3	66.1	59.9	62.1	60.6	59.4	50.9	51.6	64.9	63.2	71.8	69.9	64.1	73.3	72.9	72.4	67.2	70.9	68.5	66.6	68.7	72.5	69.0	62.6	

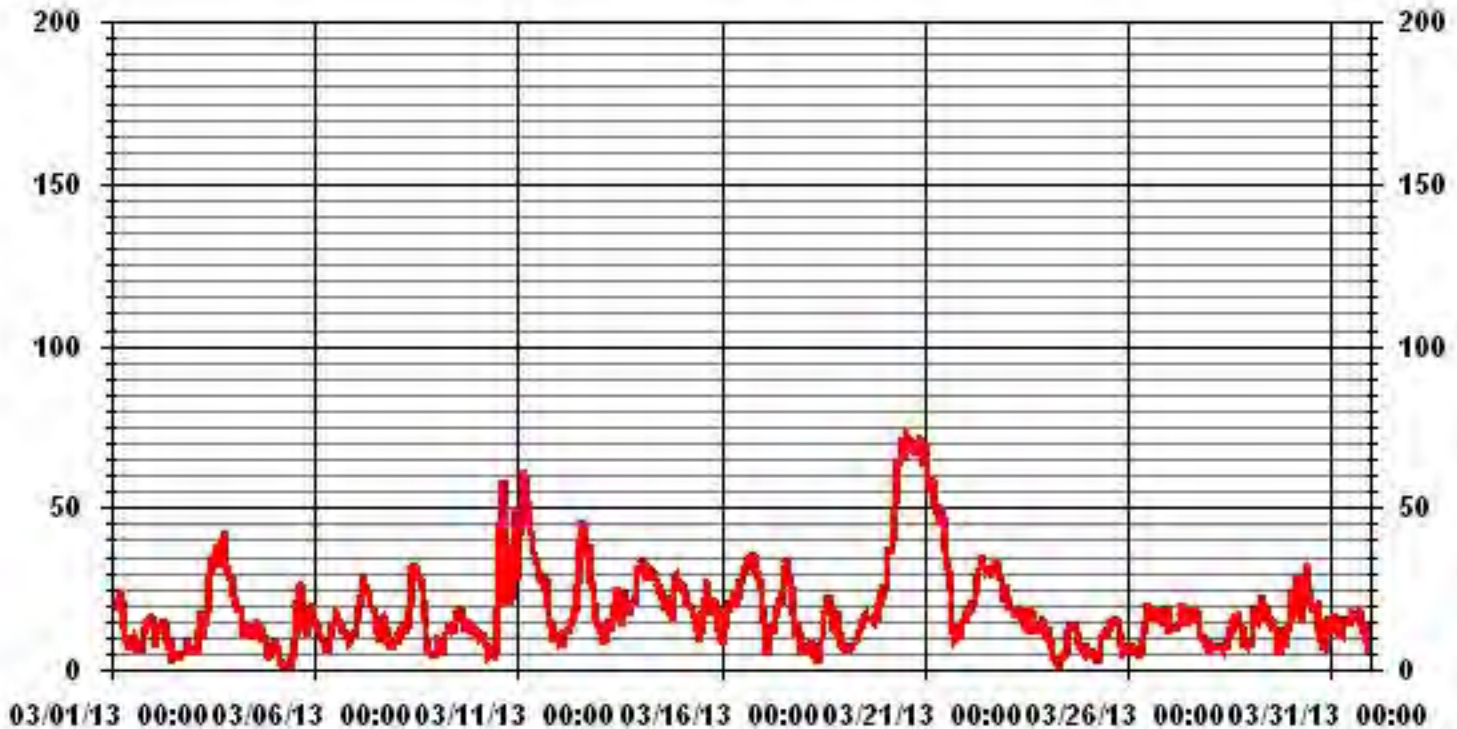
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS READING	73.3	KPH	@ HOUR(S)	13
			ON DAY(S)	20

# 01 Hour Averages



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

March 2013

Distribution By % Of Samples

Logger Id : 35  
Site Name : LICA-ELK  
Parameter : WSP  
Units : KPH

Wind Parameter : WDR  
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	.94	.53	.67	2.28	6.45	4.03	2.28	.26	.26	.67	.94	1.61	1.47	1.74	1.20	.80	26.20
< 12.0	.80	.67	2.01	1.74	4.16	8.06	2.28	1.47	2.55	1.20	.26	1.61	4.83	2.68	3.49	1.34	39.24
< 20.0	1.07	.80	1.47	.67	1.07	4.97	.67	.13	.94	.26	.00	.26	1.20	2.55	4.30	2.01	22.44
< 29.0	.53	.00	.00	.00	.13	1.88	.80	.00	.26	.00	.00	.00	.40	.26	1.20	.94	6.45
< 39.0	.00	.00	.00	.00	.00	1.34	.13	.00	.00	.00	.00	.00	.00	.40	.00	.26	2.15
>= 39.0	.00	.00	.00	.00	.00	2.41	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.55
Totals	3.36	2.01	4.16	4.70	11.82	22.71	6.31	1.88	4.03	2.15	1.20	3.49	7.93	7.66	10.21	5.37	

Calm : .94 %

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	7	4	5	17	48	30	17	2	2	5	7	12	11	13	9	6	195
< 12.0	6	5	15	13	31	60	17	11	19	9	2	12	36	20	26	10	292
< 20.0	8	6	11	5	8	37	5	1	7	2		2	9	19	32	15	167
< 29.0	4				1	14	6		2				3	2	9	7	48
< 39.0						10	1							3		2	16
>= 39.0						18	1										19
Totals	25	15	31	35	88	169	47	14	30	16	9	26	59	57	76	40	

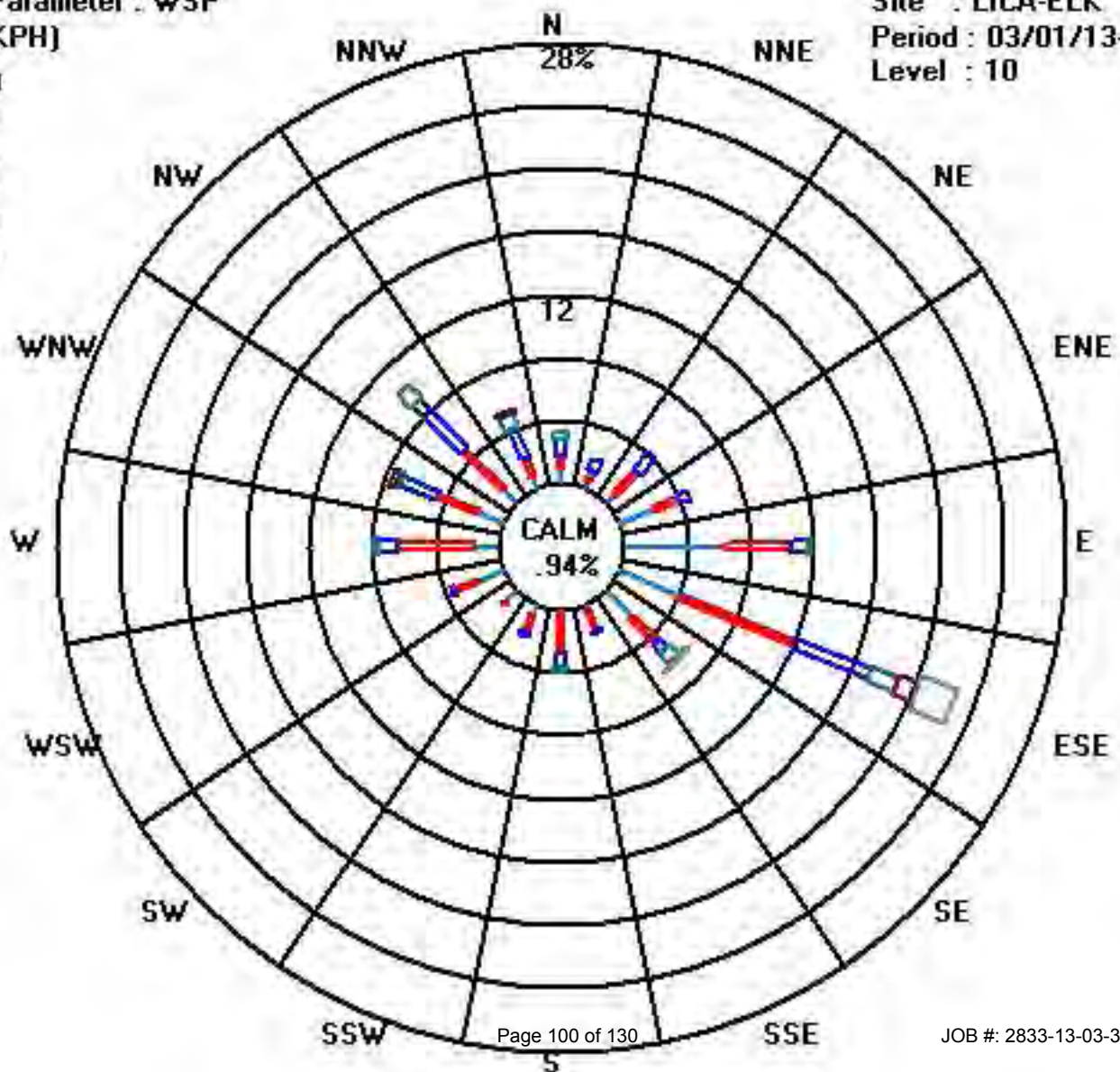
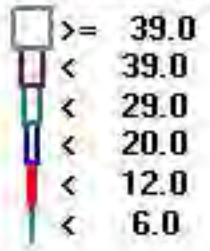
Calm : .94 %

Total # Operational Hours : 744

Class Limits (KPH)

Period : 03/01/13-03/31/13

Level : 10



# Vector Wind Direction

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

MARCH 2013

## VECTOR WIND DIRECTION (WD) 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	24-HOUR	24-HOUR AVG		
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	AVG.	QUADRANT	RDGS.	
DAY																												
1	115	110	109	111	114	118	124	122	114	111	87	83	97	212	303	344	109	130	118	234	256	258	266	268	125	SE	24	
2	289	291	270	234	250	265	286	283	240	280	269	246	294	220	237	214	236	237	71	86	95	115	72	97	260	WSW	24	
3	30	95	37	38	67	68	20	12	35	63	51	49	30	28	3	6	350	358	358	360	355	343	344	337	13	NNE	24	
4	336	332	327	323	325	332	343	316	314	332	5	279	270	278	277	277	282	222	210	214	333	126	84	100	306	NW	24	
5	114	107	80	67	137	109	266	283	268	278	133	66	124	194	196	192	184	189	192	166	166	172	185	168	175	S	24	
6	149	101	95	116	114	97	96	105	95	94	99	106	113	114	115	99	104	128	134	139	84	77	31	17	105	ESE	24	
7	56	59	55	41	51	37	28	46	43	32	32	46	63	90	66	304	323	328	350	11	40	89	100	124	37	NE	24	
8	119	128	100	116	117	115	115	124	153	167	178	178	179	184	190	187	186	180	153	129	92	68	166	289	160	SSE	24	
9	277	313	235	238	273	286	291	268	274	256	277	278	278	261	276	278	251	197	188	151	142	128	126	105	248	WSW	24	
10	99	99	102	110	86	139	349	82	136	51	100	4	243	276	289	274	263	253	257	272	267	284	299	263	273	W	24	
11	266	277	284	303	329	330	329	330	329	332	333	323	299	283	279	289	296	282	269	259	258	311	278	258	304	WNW	24	
12	160	105	96	117	88	83	73	96	107	112	114	121	129	133	141	130	125	125	128	128	126	128	103	83	121	ESE	24	
13	82	95	68	77	71	61	60	59	82	46	45	41	53	47	302	310	354	4	351	1	342	343	320	321	15	NNE	24	
14	346	338	336	338	343	353	357	1	8	19	32	36	41	46	29	33	34	34	41	42	64	82	92	89	21	NNE	24	
15	83	78	69	70	68	68	56	60	65	81	117	82	304	279	299	319	313	337	294	301	313	319	318	324	12	NNE	24	
16	334	7	52	56	62	68	89	85	102	117	114	109	114	113	114	121	116	118	118	117	115	117	121	116	107	ESE	24	
17	107	95	91	24	322	325	333	316	318	317	327	307	307	318	321	323	322	319	306	292	254	250	255	296	315	NW	24	
18	287	300	280	312	113	119	90	110	146	337	313	306	277	265	282	288	290	282	271	253	248	249	261	272	274	W	24	
19	287	305	314	247	119	105	108	96	90	101	105	101	109	107	112	112	113	117	109	110	109	107	105	99	106	ESE	24	
20	102	118	121	115	118	118	117	119	119	120	123	121	123	125	121	122	120	120	118	116	114	117	116	116	119	ESE	24	
21	112	113	113	109	114	112	105	109	111	105	98	105	104	114	100	87	74	60	359	330	319	321	322	319	105	ESE	24	
22	307	304	311	324	309	304	300	304	312	321	321	323	323	323	322	316	315	314	319	318	322	324	320	313	316	NW	24	
23	310	307	294	293	283	291	295	296	298	281	282	275	275	291	291	303	295	293	272	274	269	252	263	269	287	WNW	24	
24	256	245	313	311	328	303	281	50	97	92	103	131	254	199	203	198	195	187	188	174	131	103	89	89	189	S	24	
25	82	95	96	112	112	79	108	92	108	98	89	92	103	105	111	112	112	117	128	119	117	93	86	76	106	ESE	24	
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28	88	74	88	79	82	86	102	88	108	107	92	85	98	146	175	181	179	174	157	141	124	119	111	111	126	SE	24	
29	344	174	265	261	297	318	306	7	8	46	68	266	281	290	290	288	286	290	206	213	245	296	263	278	290	WNW	24	
30	272	302	328	329	325	328	319	325	335	339	340	314	309	287	277	307	278	262	205	130	111	202	205	70	314	NW	24	
31	108	111	124	138	129	115	124	112	123	134	158	181	181	182	179	176	175	167	145	107	90	102	10	226	142	SE	24	
HOURLY AVG	346	338	336	338	343	353	357	330	335	339	340	323	323	323	322	344	354	358	359	360	355	343	344	337				

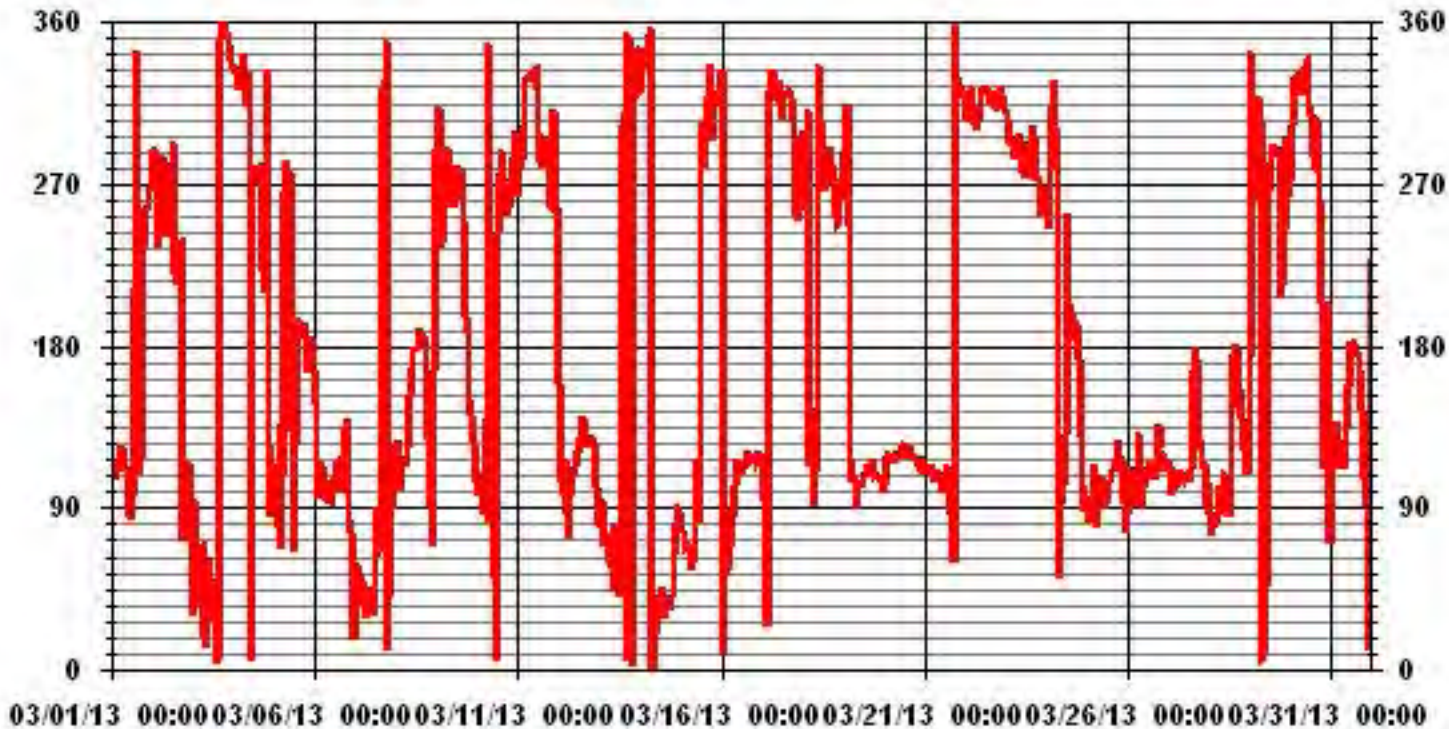
**STATUS FLAG CODES**

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

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

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	100.54	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	85 DEG

### 01 Hour Averages





# Standard Deviation Wind Direction

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

MARCH 2013

**STANDARD DEVIATION WIND DIRECTION (STDWDIR) 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	6	6	6	6	6	6	6	7	10	9	12	15	31	45	18	44	14	23	16	27	8	8	9	11	
2	21	17	9	4	6	14	14	21	20	16	18	11	30	23	11	17	6	12	50	14	19	30	13	29	
3	17	28	46	21	11	14	22	8	10	14	14	14	13	13	16	13	11	14	14	14	13	9	9	8	
4	7	8	8	7	8	10	16	6	6	14	19	16	12	6	3	4	7	5	5	37	17	31	34	13	
5	7	6	35	21	28	55	15	11	11	33	45	30	22	10	10	9	8	6	5	6	7	8	8	9	
6	9	28	27	11	10	8	7	7	6	6	7	8	8	8	7	8	7	10	14	13	11	10	7	14	
7	12	9	9	9	12	9	10	9	11	11	14	17	29	30	55	7	6	6	16	13	8	11	10	7	
8	4	5	7	4	5	5	5	5	13	12	8	10	11	10	8	9	7	9	7	5	11	11	16	53	
9	12	13	30	21	19	8	6	8	6	10	6	4	4	12	6	9	13	6	7	12	9	6	5	5	
10	5	6	5	20	38	23	36	59	50	39	26	48	18	15	7	12	13	11	10	15	11	9	5	9	
11	10	6	6	7	9	9	9	9	9	10	9	9	9	5	6	6	6	3	7	7	7	15	10	8	
12	49	13	9	5	7	12	14	7	5	6	8	7	9	8	10	7	6	6	6	6	5	5	7	9	
13	10	7	9	17	9	15	18	18	11	18	12	15	17	54	43	7	17	12	12	12	8	9	8	8	
14	9	10	9	8	9	12	13	13	14	17	14	15	24	31	18	19	16	11	11	11	12	9	7	8	
15	8	9	9	9	9	9	10	10	13	10	12	28	9	9	12	8	10	14	8	4	6	7	8	5	
16	9	15	23	10	10	10	7	8	9	8	9	7	7	7	6	8	6	6	6	6	6	5	6	6	
17	6	9	8	23	7	6	6	7	8	7	13	8	10	10	10	10	8	7	5	7	8	4	11	13	
18	9	8	18	16	43	8	16	22	40	26	34	7	11	14	8	5	5	6	8	7	4	5	13	7	
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21	7	7	7	7	7	7	7	7	7	7	7	8	7	10	9	9	11	17	16	12	9	9	7	6	
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24	23	11	15	20	6	13	20	28	41	50	30	52	24	13	11	10	7	8	6	6	6	4	13	2	
25	6	2	6	5	5	8	7	4	5	6	6	9	7	8	7	6	5	4	4	4	4	14	8	6	
26	4	9	6	4	13	14	5	7	8	8	7	7	8	8	7	6	6	8	8	4	5	7	5	6	
27	10	17	6	16	8	5	5	7	6	8	7	7	7	6	10	8	9	11	9	3	5	6	6	4	
28	5	7	8	11	9	10	4	13	42	7	8	10	7	17	11	5	6	7	8	7	5	8	20	32	
29	34	20	12	16	10	5	24	33	17	21	39	19	3	4	4	4	3	9	12	6	12	19	11	9	
30	8	8	8	7	10	17	17	13	10	8	13	12	11	14	10	15	6	11	32	9	8	18	60	16	
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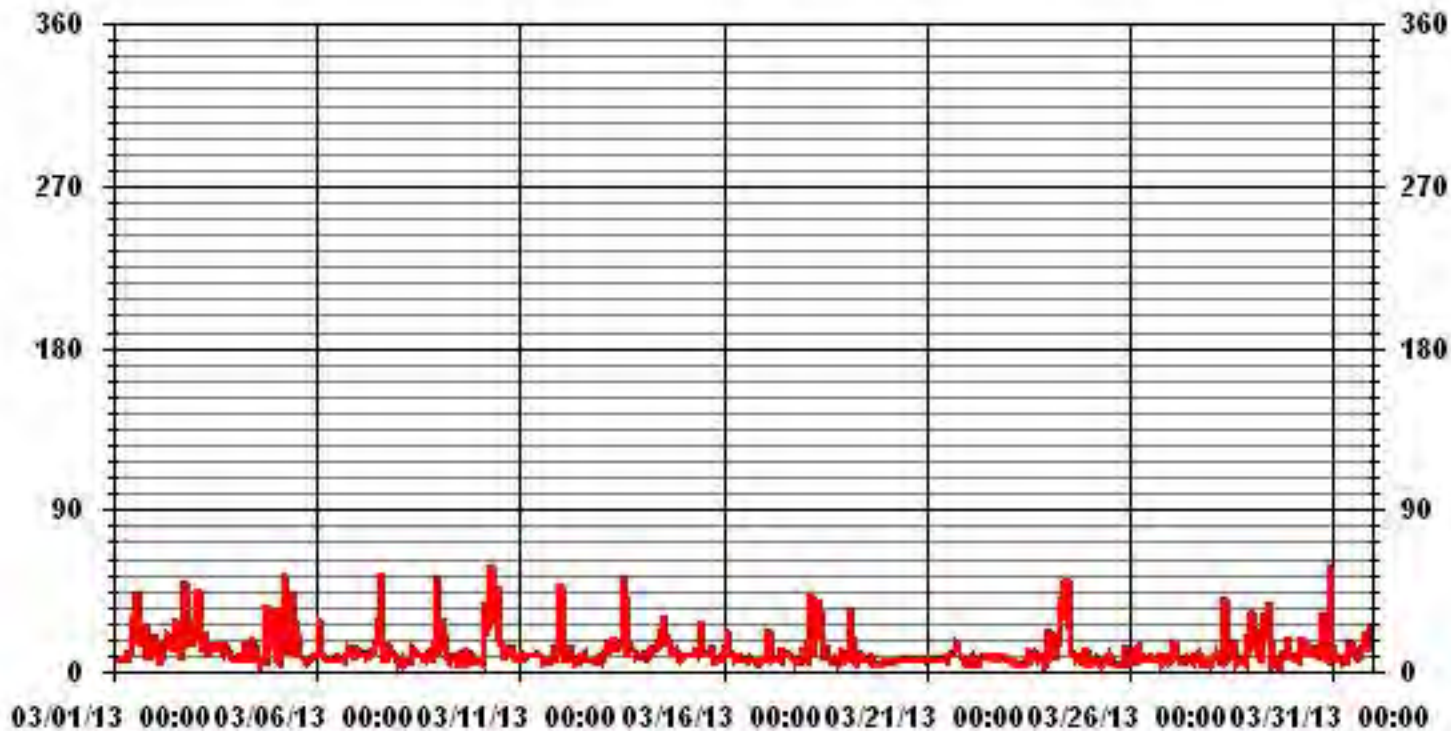
**STATUS FLAG CODES**

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

LAST CALIBRATION: November 24, 2011

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS

### 01 Hour Averages



# Calibration Reports

# Sulphur Dioxide

### SO2 Calibration Report

#### Station Information

Calibration Date	March 1, 2013	Previous Calibration	February 12, 2013
Company	Lakeland Community and Industry Association		
Plant / Location	Portable / Elk Poin Airport		
Start Time (MST)	8:45	End Time (MST)	13:30
Reason:	Monthly Calibration		
Barometric Pressure	27.89 inHg	Station Temperature	25 Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	BAL3031
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	626 ccm	31.2 Deg C	623 ccm	35.5 Deg C	
HVPS / Lamp Setting	612	1608	612	1601	
PMT / RxCell Temp	8.1 Deg C	50 Deg C	8.2 Deg C	50 Deg C	
Converter / IZS Temp	NA Deg C	45 Deg C	NA Deg C	45.0 Deg C	
Offset / Slope	104.1	1.25	104.7	1.251	

#### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	1	N/A
5000	0	0	0	N/A
4914	81.1	805	805	1.0000
	No Span Adj.			
4953	40.6	403	399	1.0107
4980	20.3	201	199	1.0119
5000	0	0	0	N/A
		Sum of Least Squares		1.0029
		New Correction Factor		1.0000

#### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0	Auto Zero	0.0
Auto Span	356.0	Auto Span	359.8
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: **N/A : Not applicable**

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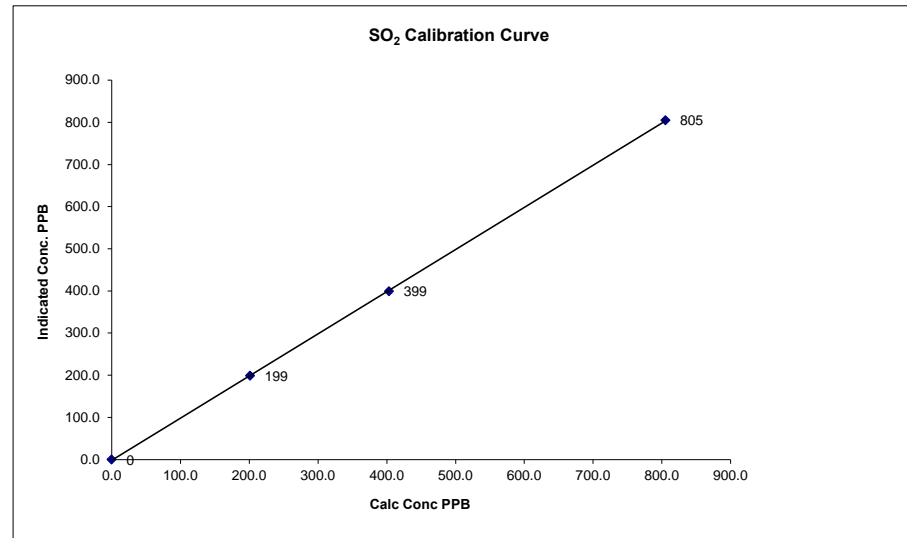


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### SO2 Calibration Curve

Calibration Date	March 1, 2013
Company	Lakeland Community and Industry Association
Plant / Location	Portable / Elk Poin Airport
Start Time (MST)	8:45
End Time (MST)	13:30

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	0	n/a		0.999967
201	199	1.0119		1.000012
403	399	1.0107		-1.737387
805	805	1.0004		



#### Notes:

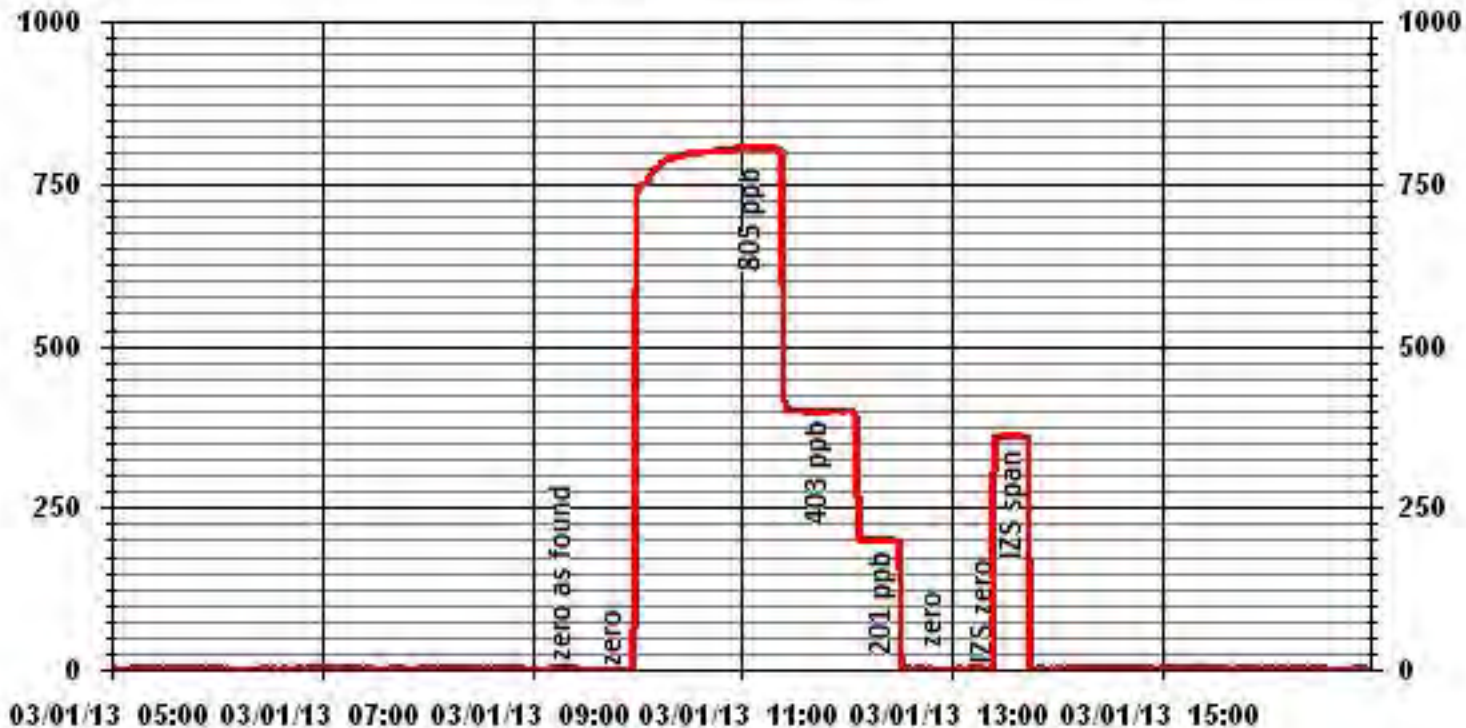
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Calibration Performed by: Waseem Ahmed / Limin Li

### 01 Minute Averages



# Hydrogen Sulphide



## H2S Calibration Report

### Station Information

Calibration Date	March 1, 2013	Previous Calibration	February 12, 2013
Company	<b>LAKELAND INDUSTRY &amp; COMMUNITY ASSOCIATION</b>		
Plant / Location	<b>Portable/ Elk Point Airport</b>		
Start Time (MST)	8:45	End Time (MST)	14:15
Reason:	Monthly Calibration		
Barometric Pressure	27.89 inHg	Station Temperature	25 Deg C
Cal Gas	10.1 ppm	Gas Cyl. #	BLM00504
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	December 25, 2015
		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	512 ccm, 30.8 Deg C	509 ccm, 35.7 Deg C	
HVPS / Lamp Setting	540, 1826	540, 1817	
PMT / RxCell Temp	7.9 Deg C, 50.0 Deg C	8 Deg C, 50.0 Deg C	
Converter / IZS Temp	315.0 Deg C, 45.0 Deg C	315 Deg C, 45.0 Deg C	
Offset / Slope	101.3, 0.97	102.4, 1.013	

### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	1	NA
4995	0	0	0	NA
4960	40.0	81	78	1.0359
4960	40.0	81	81	1.0000
4977	20.0	40	41	0.9860
4988	12.0	24	24	1.0000
4996	0	0	0	NA
Sum of Least Squares				0.9962
New Correction Factor				1.0000

### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.4		0.0
Auto Span	54.0		57.1
Sample Lines Connected			YES

### Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0359
Percent Change:	-3.5%

Notes: **NA : Not Applicable**

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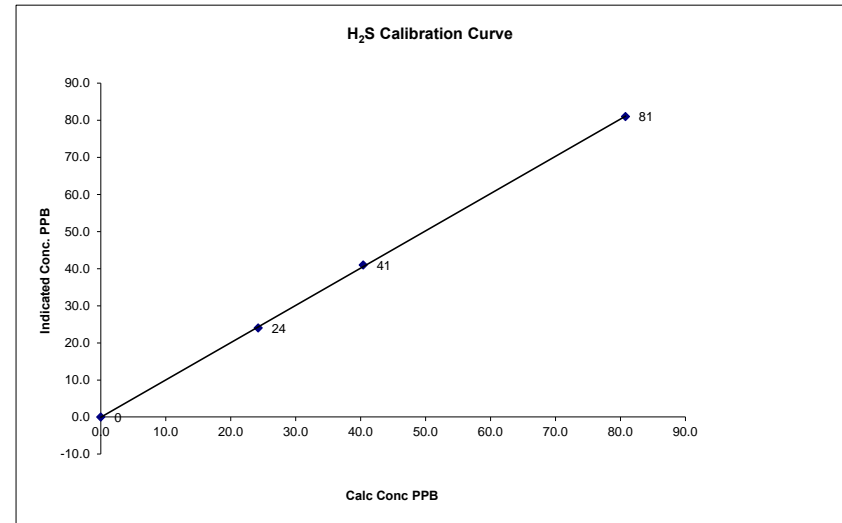
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Calibration Performed by: Waseem Ahmed / Limin Li

## H<sub>2</sub>S Calibration Curve

Calibration Date	March 1, 2013
Company	<b>LAKELAND INDUSTRY &amp; COMMUNITY ASSOCIATION</b>
Plant / Location	<b>Portable/ Elk Point Airport</b>
Start Time (MST)	8:45
End Time (MST)	14:15

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	0			0.999914
24	24	1.0100		1.004084
40	41	0.9860		-0.014597
81	81	0.9975		



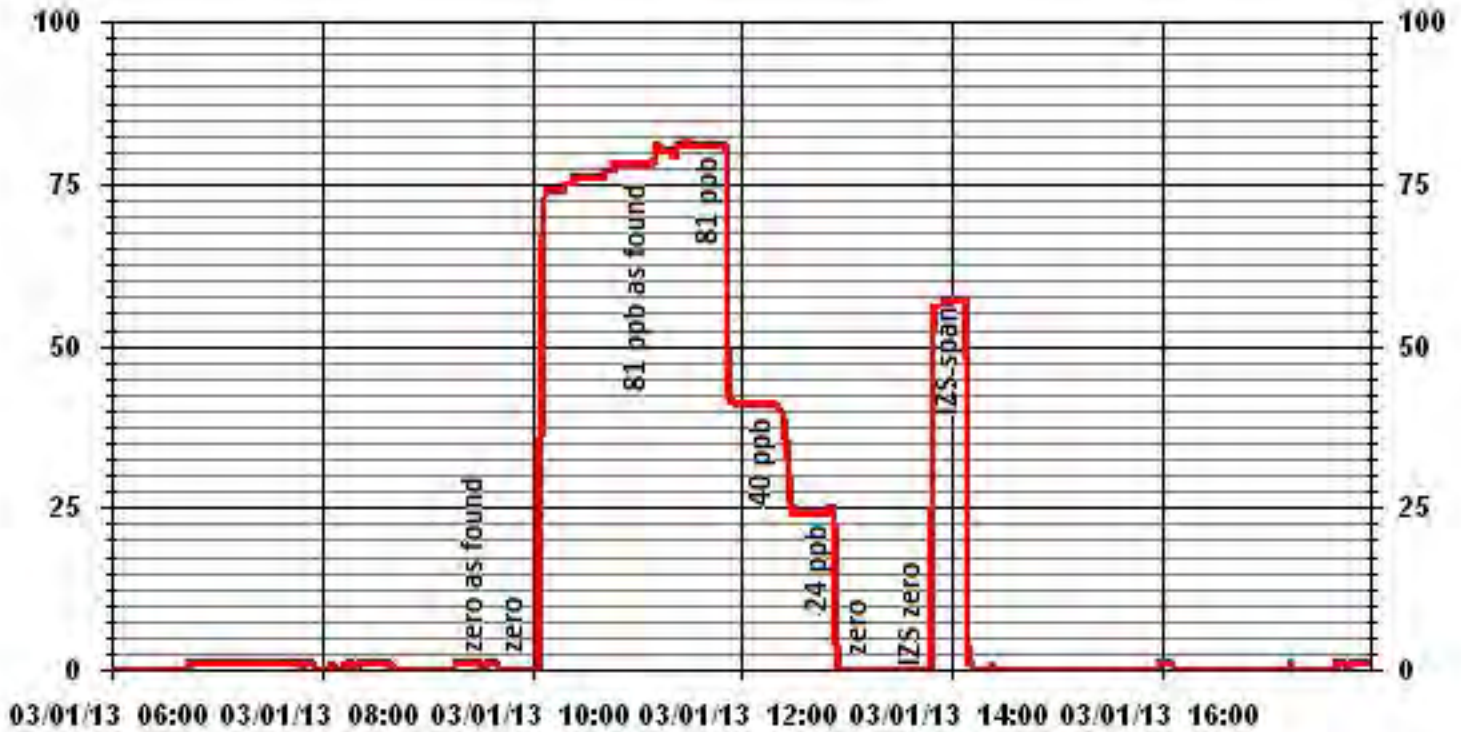
Notes:

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### 01 Minute Averages



# Total Hydrocarbons

### THC Calibration Report

Station Information			
Calibration Date:	March 1, 2013	Previous Calibration	February 13, 2013
Company:	Lakeland Industry and Community Association		
Plant / Location:	LICA Portable Station / Elk Point Airport		
Start Time (MST)	-	End Time (MST)	-
Reason:	Monthly Calibration		
Barometric Pressure:	27.89 inHg	Station Temperature:	25 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 600 PPM	C3H8 204 PPM	
	TOTAL CH4 1161.0 PPM	Gas Cyl. # LL155310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832	S/N :	AO 717
Chart Recorder:	NA	S/N:	NA
Output Voltage Range:	0 - 10 VDC	Chart Speed:	NA mm/hr

#### Analyzer Information

Make / Model	Thermo 51C	S/N :	04366-09739	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	11	psi	11	psi
Air Pressure	20	psi	20	psi

#### Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	1.2	NA
	No Zero Adj.			
2000	74.0	41.4	42.8	0.9679
	No Span Adj.			
2000	37.0	21.1	22.2	0.9499
2000	20.0	11.5	12.7	0.9051
2000	0.0	0.0	1.2	NA
New Correction Factor:				0.9679

#### Percent Change

Previous Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9679
Percent Change:	3.3%

#### IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	24.2	24.8
Sample Lines Connected		YES

Cylinder Pressures			
Span	1200 psi	Hydrogen	900 psi
		Zero Air	33 psi

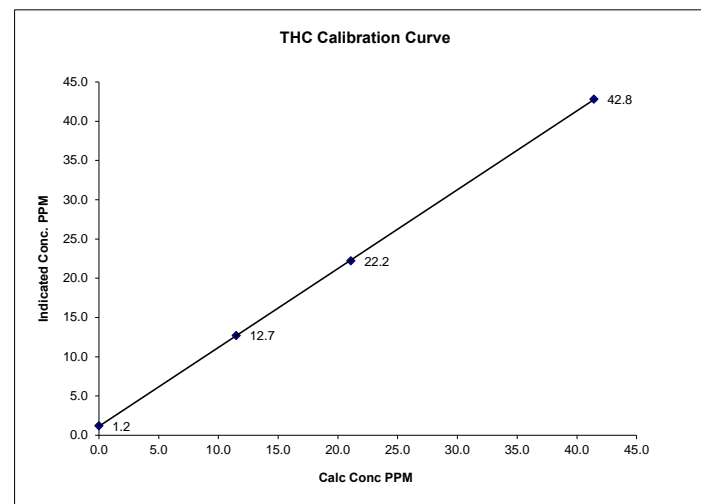
Notes: **NA : Not Applicable**

Calibration Performed by: Waseem Ahmed / Limin Li

### THC Calibration Curve

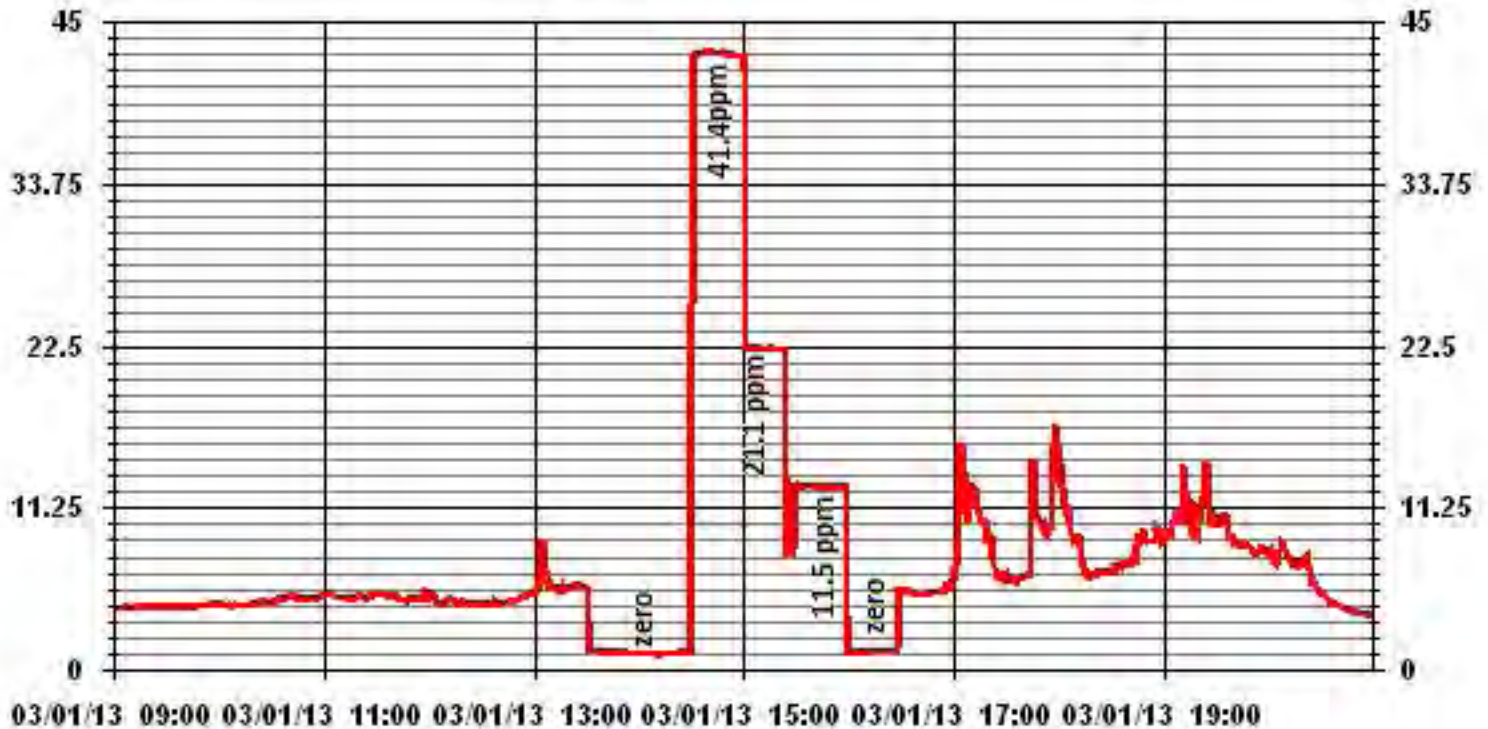
Calibration Date	March 1, 2013
Company	Lakeland Industry and Community Association
Plant / Location	LICA Portable Station / Elk Point Airport
Start Time (MST)	-
End Time (MST)	-

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient	Slope	Intercept	(≥ 0.995)	(0.85 to 1.15)	(± 3% F.S.)
0.0	1.2	NA	0.999977	1.004076	1.14766			
11.5	12.7	0.9051						
21.1	22.2	0.9499						
41.4	42.8	0.9679						



Notes:

### 01 Minute Averages



# Total Hydrocarbons (55i)

**Methane - Non Methane Hydrocarbon Calibration Report**

**Station Information**

Calibration Date:	March 16, 2013	Previous Calibration	March 15, 2013
Company:	LICA		
Plant / Location:	ELK POINT AIRPORT		
Start Time (MST)	8:55	End Time (MST)	11:30
Reason:	Installation Calibration		
Barometric Pressure:	28.13 inHg	Station Temperature:	18.5 Deg C
Calibrator:	API700	S/N:	831
Cal Gas Concentration:	CH4 600 PPM	C3H8 204 PPM=	561 CH4
	Cyl. # LL155310	Cal Gas Expiry Date:	September 9, 2013
DAS make & Model:	ESC 8832	S/N :	AO717
Chart Recorder:	NA	S/N:	NA
Output Voltage Range:	0-10	Chart Speed:	NA 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
	Befor 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	75.3	Deg C	75.3 Deg C
Flame Temp	366.8	Deg C	366.8 Deg C
Box Temp	31.2	Deg C	31.2 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	NA	NA
	No adj. needed						
2982	18.00	3.60	3.37	3.59	3.42	1.0028	0.9842
2982	18.00	3.60	3.37	3.62	3.40	0.9945	1.0000
2964	36.00	7.20	6.73	7.17	6.68	1.0042	1.0078
2991	9.00	1.80	1.68	1.89	1.80	0.9524	0.9350
3000	0.00	0.00	0.00	0.00	0.00	NA	NA
						Correction Factors:	0.9945 1.0000

**Percent Change from Previous Calibration**

Previous Calibration Correction Factor:	CH4	NMHC
Current Correction Factor Before Span Adjust:	#REF!	#REF!
Percent Change:	1.0028	0.9842
	#REF!	#REF!

**IZS Calibration Data**

		Before Calibration		After Calibration	
Auto Zero (ppm)	CH4	0.0	NMHC 0.0	CH4	0.00 NMHC 0.00
Auto Span (ppm)	CH4	10.8	NMHC 13.95	CH4	10.82 NMHC 13.96
Sample Lines Connected		YES			

Notes: Cylinder Pressures  
 Span 2000 psi  
 Hydrogen 2600 psi  
 Zero Air 45 psi  
 Nitrogen 2100 psi

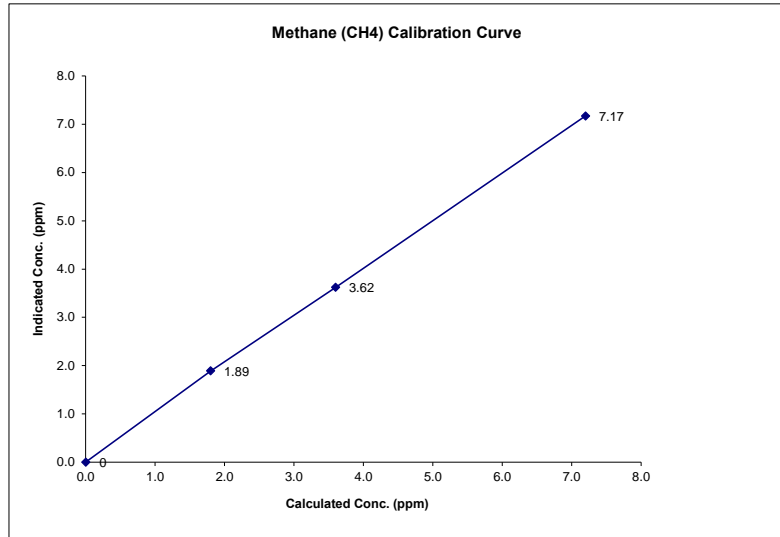
Notes: **NA : Not Applicable**

Calibration Performed by: Limin Li / Waseem Ahmed

### Methane (CH4) Calibration Curve

Calibration Date	March 16, 2013		
Company	LICA		
Plant / Location	ELK POINT AIRPORT		
Start Time (MST)	8:55	End Time (MST)	11:30

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999790
0	0	NA	Slope	(0.85 to 1.15)	0.991746
1.80	1.89	0.9524	Intercept	(± 3% F.S.)	0.046000
3.60	3.62	1.0028			
7.20	7.17	1.0042			

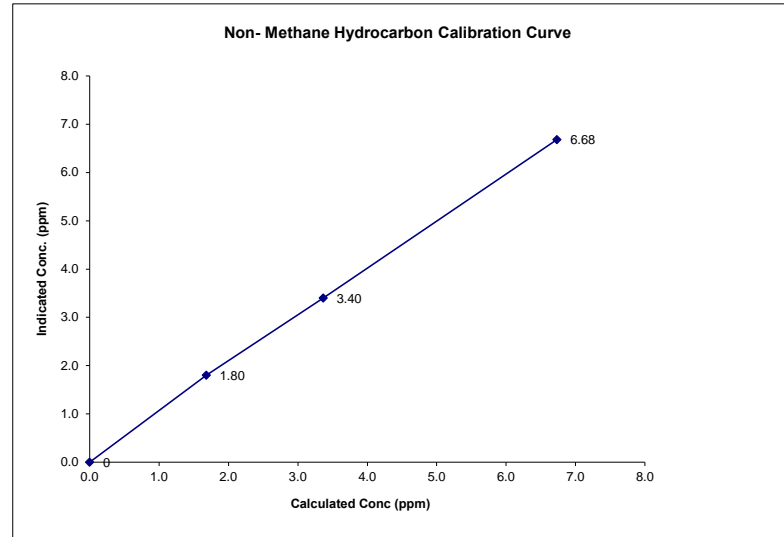


Notes:

### Non-Methane Hydrocarbon Calibration Curve

Calibration Date	March 16, 2013		
Company	LICA		
Plant / Location	ELK POINT AIRPORT		
Start Time (MST)	8:55	End Time (MST)	11:30

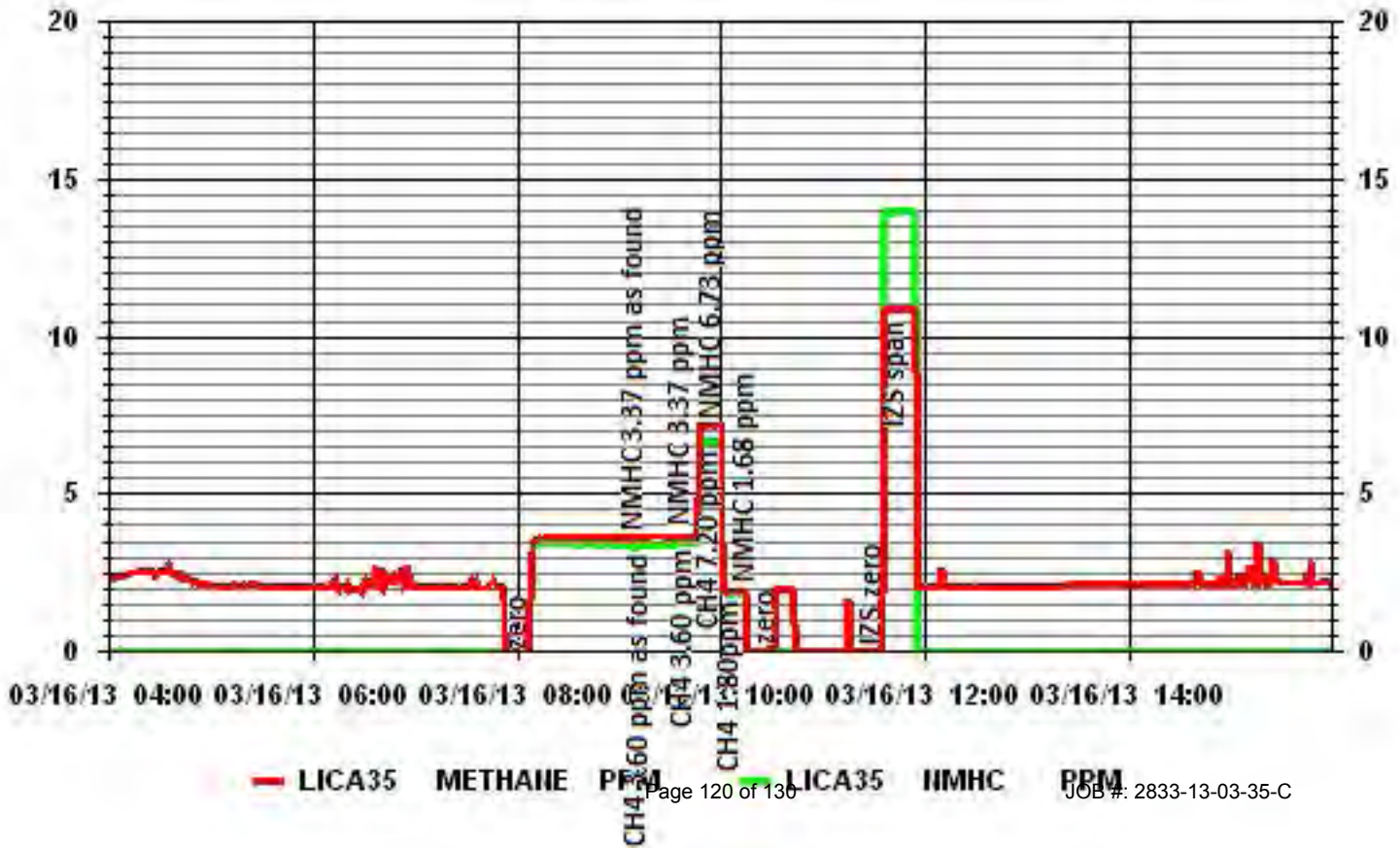
Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999557
0	0	NA	Slope	(0.85 to 1.15)	0.986673
1.68	1.80	0.9350	Intercept	(± 3% F.S.)	0.064000
3.37	3.40	0.9842			
6.73	6.68	1.0078			



Notes:



# 01 Minute Averages



# Particulate Matter 2.5

**TEOM 1405F Audit**

	<b><u>Station</u></b>		<b><u>Audit Transfer Standard</u></b>
Date:	March 18, 2013	Make/Model:	Streamline FTS
Station Name:	Lica Portable (CASA # 35)	Serial Number:	Hi 091001, Low 091099
Location:	Elk Point Airport	Cell s/n:	NA
Operator:	LICA	Thermometer s/n:	Fluke 1551A / 1735039

	<b><u>Sampler</u></b>		<b><u>Set-up and current Sampler readings</u></b>
Make/Model	Thermo Scientific Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	NA	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A208301003	Filter Load (%)	24.1%
Firmware Ver.	1.52	K <sub>o</sub> Factor	13125
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-10.0
		Press (ATM)	0.940

**Conversion from mmHg or "Hg to ATM (Atmospheres)**

ATM = (mmHg) X (1.316 X 10<sup>-3</sup>) or ATM = ("Hg) X (3.34207 X 10<sup>-2</sup>)

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

**Audit**

<b>Status</b>			
Noise <0.10µg	0.004	Warnings	None
Pump Vacuum <0.40atm	0.34	Pump Gauge (inHg)	-18
<b>Temperature/Pressure</b>		<b>D °C</b>	
Measured Temp (± 2 °C)	-9.9		-0.1
Measured Press (± 0.01atm)	0.930	<b>DATM</b>	0.010
<b>Flow Audit</b>			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	0.25%
Measured Main Flow (l/min)	2.95	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	0.03%
Measured Bypass Flow (l/min)	13.73	Flow Adjusted to Measured?	Yes
<b>Leak Check</b>		<b>Instrument Setup</b>	
Main (< 0.15 l/min)	NA	Flow Control = Active	
Aux (< 0.6 l/min)	NA	Report Conditions = Actual	
<b>K<sub>o</sub> Factor</b>			
Measured	NA		
K <sub>o</sub> Difference (± 2.5%)	NA		

Start Time: 13:00 Finish Time: 14:50

Sample Inlet Cleaned: Yes New Filters Installed: Yes  
 New Filter Loading %: 25.7%

Comments:

**TEOM 1405F Audit**

	<b><u>Station</u></b>		<b><u>Audit Transfer Standard</u></b>
Date:	March 26, 2013	Make/Model:	Streamline FTS
Station Name:	Lica Portable (CASA # 35)	Serial Number:	Hi 091001, Low 091099
Location:	Elk Point Airport	Cell s/n:	NA
Operator:	LICA	Thermometer s/n:	Fluke 1551A / 1735039

	<b><u>Sampler</u></b>		<b><u>Set-up and current Sampler readings</u></b>
Make/Model	Thermo Scientific Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	NA	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A208301003	Filter Load (%)	32.7%
Firmware Ver.	1.52	K <sub>o</sub> Factor	13125
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-7.0
		Press (ATM)	0.935

**Conversion from mmHg or "Hg to ATM (Atmospheres)**

ATM = (mmHg) X (1.316 X 10<sup>-3</sup>) or ATM = ("Hg) X (3.34207 X 10<sup>-2</sup>)

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

**Audit**

<b>Status</b>			
Noise <b>&lt;0.10µg</b>	0.006	Warnings	None
Pump Vacuum <b>&lt;0.40atm</b>	0.34	Pump Gauge (inHg)	-18
<b>Temperature/Pressure</b>		<b>D °C</b>	
Measured Temp (± 2 °C)	-6.3		-0.7
Measured Press (± <b>0.01atm</b> )	0.938	<b>DATM</b>	-0.003
<b>Flow Audit</b>			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (± <b>10.0%</b> )	0.06%
Measured Main Flow (l/min)	3.05	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (± <b>10.0%</b> )	0.79%
Measured Bypass Flow (l/min)	13.52	Flow Adjusted to Measured?	Yes
<b>Leak Check</b>		<b>Instrument Setup</b>	
Main (< <b>0.15 l/min</b> )	NA	Flow Control = Active	
Aux (< <b>0.6 l/min</b> )	NA	Report Conditions = Actual	
<b>K<sub>o</sub> Factor</b>			
Measured	NA		
K <sub>o</sub> Difference (± <b>2.5%</b> )	NA		

Start Time: 15:05      Finish Time: 16:05

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

Comments: Forgot to put channel into M mode.

Auditor/s: Waseem Ahmed

# Nitrogen Dioxide

**NOx - NO- NO2 Calibration Report**  
**Station Information**

Calibration Date	March 1, 2013	Previous Calibration	February 12, 2013
Company	LICA	Plant/Location	Lica Portable/ Elk Point Airport
Start Time (MST)	8:45	End Time (MST)	15:45
Reason:	Monthly Calibration		
Barometric Pressure	27.89 inHg	Station Temperature	19 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO	49.2 ppm
Cal Gas Cylinder #	BAL3031	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:	Envionics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO 717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Envionics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration		After Calibration	
Concentration Range	0 - 1000	0 - 1000	
Sample Flow/Conv. Temp	472 ccm 316 Deg C	477 ccm 315 Deg C	
Ozone Flow / Vacuum	78 ccm 4.8 "Hg-A	78 ccm 4.9 "Hg-A	
HVPS / A ZERO	638 Volts 7.6 MV	638 Volts 7.7 MV	
Rx/ Temp / PMT Temp	50.0 Deg C 6.7 Deg C	50.0 Deg C 6.8 Deg C	
Box Temp / IZS Temp	31.0 Deg C 45.0 Deg C	36 Deg C 45 Deg C	
Offset	0.3 NOx 0.3 NO	2 NOx -0.1 NO	
Slope	1.174 NOx 1.168 NO	1.187 NOx 1.177 NO	
NO2 COEF / Conv Efficiency	NA NO2 0.996	NA NO2 0.996	

**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	0	1	NA	NA
5000	0.0	NA	0	0	NA	0	0	0	NA	NA
4914	81.1	NA	800	799	NA	792	790	2	1.0119	1.0111
4914	81.1	NA	800	799	NA	799	797	2	1.0030	1.0023
4953	40.6	NA	401	400	NA	397	397	0	1.0122	1.0076
4980	20.3	NA	200	200	NA	199	199	0	1.0108	1.0037
5000	0.0	NA	0	0	NA	-1	0	-1	NA	NA

**Gas Phase Titration Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4914	81.1	NA	800	799	NA	801	798	3	NA	
4914	81.1	600	800	NA	541	801	260	541	1.0000	100.00%
		No adj.								
4914	81.1	300	800	NA	275	799	526	274	1.0036	99.63%
4914	81.1	120	800	NA	113	799	688	111	1.0180	98.18%

Linearity	Sum of Least Squares		NOx=	1.001	NO=	1.001	NO2=	0.997	
OK?	Yes	No	Correction Factors:	NOx=	1.0030	NO=	1.0023	NO2=	1.0000
				Average Converter Efficiency=					

**Before Calibration**      **After Calibration**

Auto Zero	0.0	NOx	0.0	NO2	0.0	NOx	0.0	NO2	
Auto Span	552	NOx	545	NO2		563	NOx	555	NO2
		Sample Lines Connected							
		YES							
Percent Change from Previous Calibration		NOx	-1.2%	NO	-1.1%	NO2	0.4%		

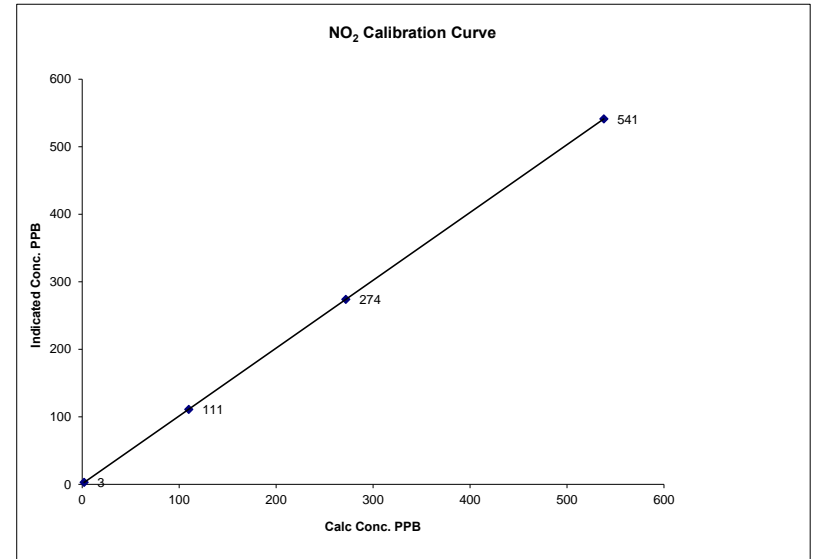
Notes: **NA : Not Applicable**  
Additional point done for ozone cal O3 St. Pt. 450 Nox=801, NO=390, NO2=411

Calibration Performed by: Waseem Ahmed / Limin Li

**NO2 Calibration Curve**

Calibration Date	March 1, 2013	Company	LICA
Plant / Location	Lica Portable/ Elk Point Airport		
Start Time (MST)	8:45	End Time (MST)	15:45

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999999
2	3	N/A	Intercept	(± 3% F.S.)	0.82170
110	111	0.9910			
272	274	0.9927			
538	541	0.9945			

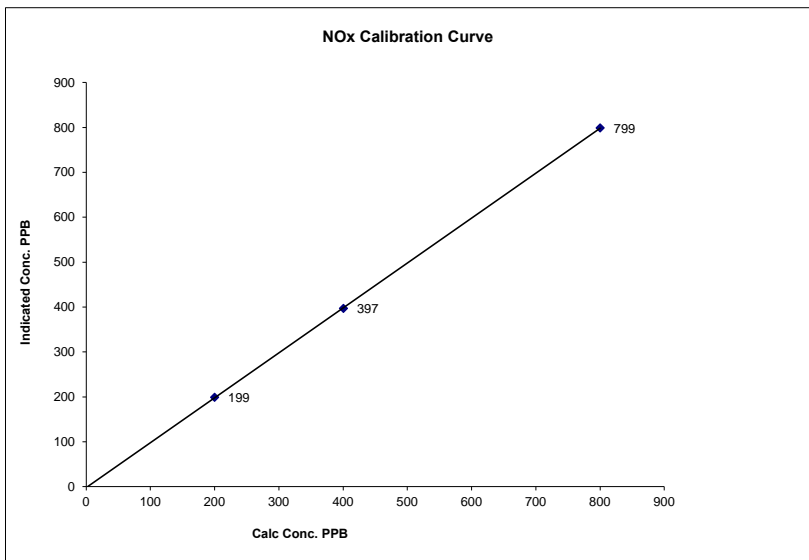


Notes:

### NOx Calibration Curve

Calibration Date	March 1, 2013		
Company	LICA		
Plant / Location	Lica Portable/ Elk Point Airport		
Start Time (MST)	8:45	End Time (MST)	15:45

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999986
0	-1	N/A	Slope (0.85 to 1.15)	0.999102
200	199	1.0058	Intercept (± 3% F.S.)	-1.53684
401	397	1.0096		
800	799	1.0018		

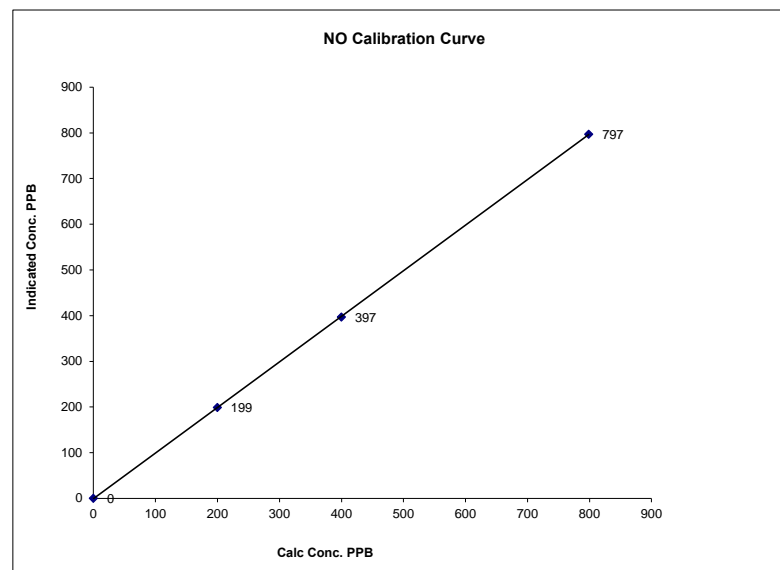


Notes:

### NO Calibration Curve

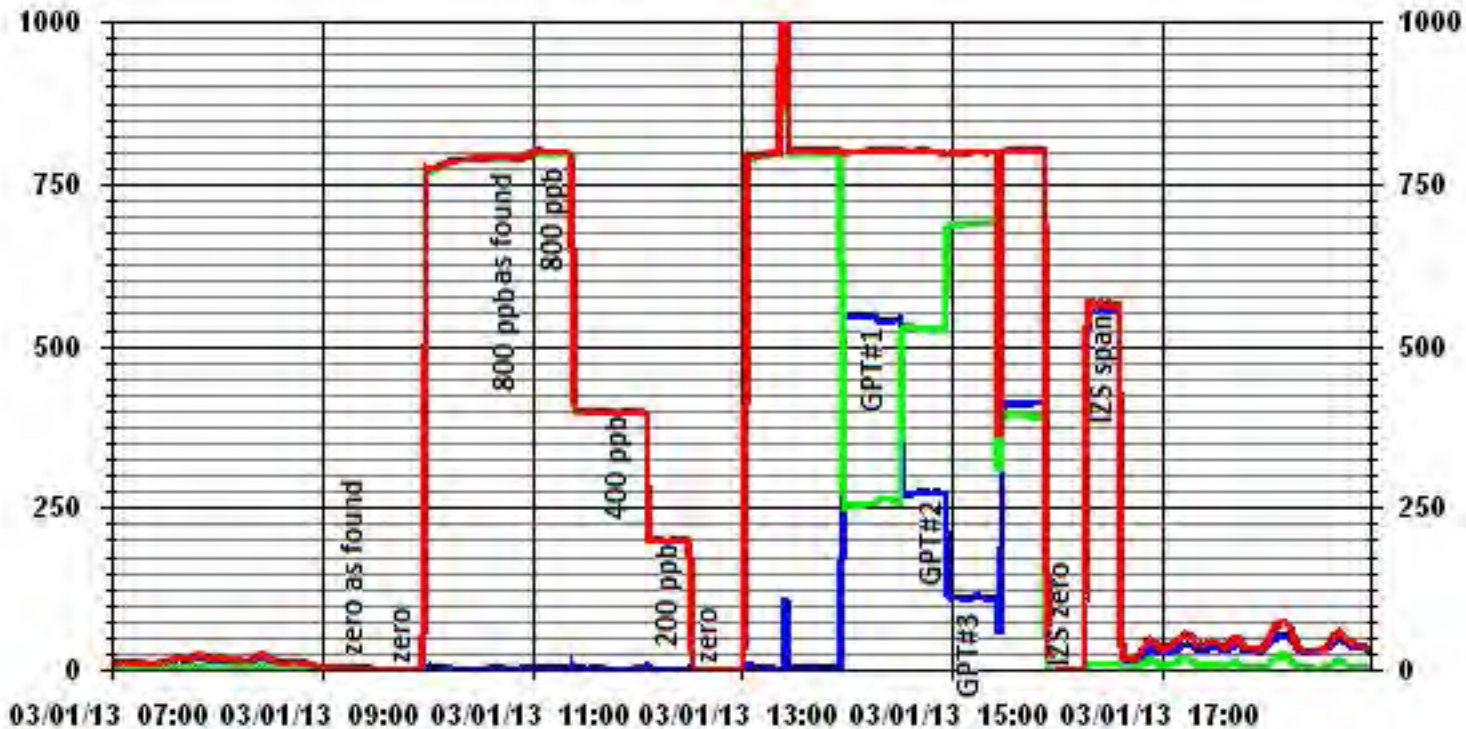
Calibration Date	March 1, 2013		
Company	LICA		
Plant / Location	Lica Portable/ Elk Point Airport		
Start Time (MST)	8:45	End Time (MST)	15:45

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999991
0	0	N/A	Slope (0.85 to 1.15)	0.998902
200	199	1.0037	Intercept (± 3% F.S.)	-4.2289
400	397	1.0076		
799	797	1.0023		



Notes:

### 01 Minute Averages





# Ozone

### O<sub>3</sub> Calibration Report

#### Station Information

Calibration Date	March 1, 2013	Previous Calibration	February 13, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	Elk Point Station		
Start Time (MST)	16:00	End Time (MST)	19:00
Reason:	Monthly Calibration		
Barometric Pressure	27.89 inHg	Station Temperature	25 Deg C
DAS Output Voltage	0 - 1 Volts		

#### Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	1002240372	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	750 LPM	759 ccm	760 LPM	766 ccm	
O <sub>3</sub> Set Level	692 mmHg		704 mmHg		
Bench Lamp	54.1 Deg C		54.1 Deg C		
O <sub>3</sub> Lamp / Box Temp	68.2 Deg	31.7 Deg C	68.2 Deg C	31.7 Deg C	
Offset / Slope	-0.2	1.016	-0.2	1.016	

#### Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	0	NA
	No Zero Adj.			
5000	450	408	409	0.9976
	No Span Adj.			
5000	300	272	273	0.9963
5000	120	110	109	1.0092
5000	0	0	0	NA
Sum of Least Squares				0.9977
New Correction Factor				0.9976

#### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0	Auto Zero	0.0
Auto Span	362	Auto Span	362
Sample Lines Connected		YES	
Previous Calibration Correction Factor:		0.9975	
Current Correctio Factor Before Span Adjust:		0.9976	
Percent Change:		0.0%	

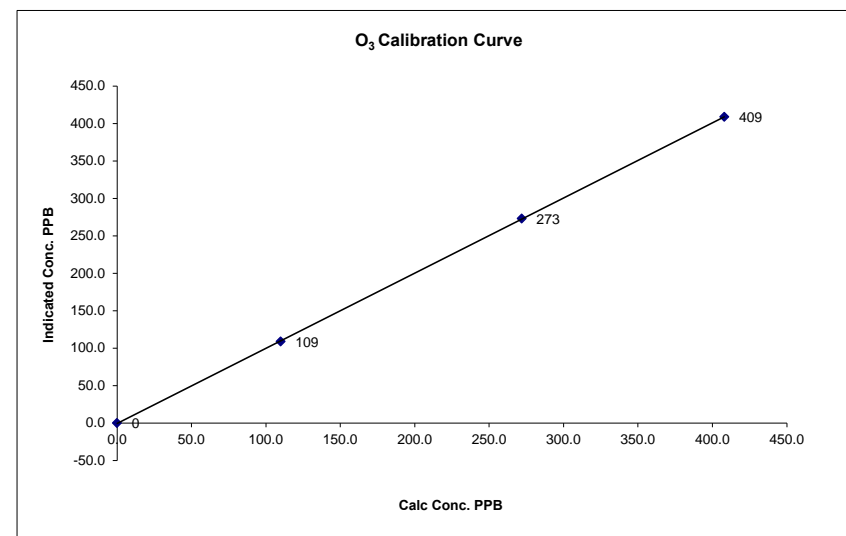
Note: NA : Not Applicable

Calibration Performed by: Waseem Ahmed / Limin Li

### O<sub>3</sub> Calibration Curve

Calibration Date	March 1, 2013		
Company	Lakeland Industry & Community Association		
Plant / Location	Elk Point Station		
Start Time (MST)	16:00	End Time (MST)	19:00

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
0	0	n/a	Slope (0.85 to 1.15)	0.999987
110	109	1.0092	Intercept (± 3% F.S.)	1.003859
272	273	0.9963		-0.512189
408	409	0.9976		



Notes:

### 01 Minute Averages

