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December 11, 2013

**RE: October 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

October 2013

Prepared By:



November 20, 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: October 2013

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Lili Zhou

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

## Calibration Procedure

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

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

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

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

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

# MONTHLY CONTINUOUS DATA SUMMARY

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

### Continuous Ambient Monitoring – October 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	0.05	2	23	VAR	VAR	VAR	0.7	23	100.0
TRS (PPB)	-	-	-	-	0.00	1	1	0, 1	12.7, 11.2	287(WNW), 282(W)	0.1	ALL	100.0
NO <sub>2</sub> (PPB)	159	-	0	-	3.54	14.3	30	20	3.7	254(WSW)	6.6	30	100.0
NO (PPB)	-	-	-	-	0.73	28.5	4	7	0.8	101(E)	2.7	4	100.0
NO <sub>x</sub> (PPB)	-	-	-	-	4.27	34.0	4	7	0.8	101(E)	8.8	31	100.0
O <sub>3</sub> (PPB)	82	-	0	-	18.99	39	14	14	11	242(WSW)	29.5	27	100.0
THC (PPM)	-	-	-	-	2.29	5.2	17	14	15.9	320(NW)	3.0	17	99.9
PM 2.5 (UG/M <sup>3</sup> )	-	30	-	0	5.36	57	21	10	4.6	294(WNW)	10.3	15	87.0
TEMPERATURE (DEG C)	-	-	-	-	3.55	16.7	5	14	18.2	275(W)	9.0	5	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	71.50	96	3	VAR	VAR	VAR	91.9	1	100.0
VECTOR WS (KPH)	-	-	-	-	5.55	18.9	5	15	-	275(W)	9.4	8	100.0
VECTOR WD (DEGREES)	-	-	-	-	276(W)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS      NA: NOT AVAILABLE

# Monthly Non-Continuous Data Summary

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

### Passive Ambient Monitoring Network – October 2013

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO <sub>2</sub>	#27	1.4	0.37
H <sub>2</sub> S	#27	0.88	0.14
NO <sub>2</sub>	#28	6.3	2.4
O <sub>3</sub>	#13	20.9	15.9

# 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. Following the as found points check on October 2<sup>nd</sup>, the inlet filter was changed. After that, a 3-points calibration was performed. 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. Following the as found points check on October 2<sup>nd</sup>, the inlet filter was changed. After that, a 3-points calibration was performed. 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. Following the as found points check on October 3<sup>rd</sup>, the inlet filter was changed and the sample pump was replaced (as the pump made noisy sound). After that, a 3-points calibration was performed. Data was corrected using daily zero information.



# General Monthly Summary

## AQM STATION – LICA – COLD LAKE SOUTH

### Total Hydrocarbon (PPM)

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

No operational issues were observed during the month. The monthly calibration was performed on October 2<sup>nd</sup>. The inlet filter was changed before the monthly calibration was started. The channel was put into the Maintenance mode on October 10<sup>th</sup> during hour 8 while maintenance was performing on the Teom unit. 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. Following the as found points check on October 2<sup>nd</sup>, the inlet filter was changed and the sample pump was rebuilt. After that, a 3-points calibration was performed. 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 October: one was on October 3<sup>rd</sup> and the other was on October 21<sup>st</sup>. The Teom filter and the FDMS filter were replaced on October 3<sup>rd</sup>. It was noticed that the unit started recording many negative hourly readings. A trip was made on October 10<sup>th</sup>. The switch valve was cleaned on October 10<sup>th</sup>. Data was corrected using Alberta air quality guideline. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. Ninety-five hours of data were invalidated as the data were below –3 ug/m3. AESRD Ref # 277547.

### Relative Humidity (PERCENT)

- System make / model - Rotronic Hygroclip-S3

No operational issues were observed during the month.

# General Monthly Summary

## AQM STATION – LICA – COLD LAKE SOUTH

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

- System make / model –MetOne, S/N: F1644

The wind system is reported as vector wind speed and vector wind direction. The last wind system calibration was performed on December 18<sup>th</sup>, 2012.

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

No issue was recorded this month.

### Passive Network

The samplers installed at site #2 had been removed, so no sample filters were installed.

# Continuous Monitoring

# Monthly Summaries, Graphs & Wind Roses

# Sulphur Dioxide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

OCTOBER 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	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
2	0	S	0	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
3	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0	24
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	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	S	0	0	0	0	0	0.0	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	0	0	0	0	0	0	0	0.0	24
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0	24
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0	24
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
14	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	1	0	0	0	0	0	0	0	0	1	0.1	24
15	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
16	0	0	0	0	0	1	1	0	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
17	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
18	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
19	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
20	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
21	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.0	24
22	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
23	0	0	0	S	0	1	2	1	2	2	2	2	1	1	1	1	1	0	0	0	0	0	0	0	2	0.7	24	
24	0	1	S	1	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
25	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
26	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	S	1	0.1	24	
27	1	0	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	
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	1	0.0	24	
29	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0.1	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0	24
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0	24
HOURLY MAX	1	1	0	1	0	1	2	1	2	2	2	2	1	1	1	1	1	1	1	1	0	0	0	1				
HOURLY AVG	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	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

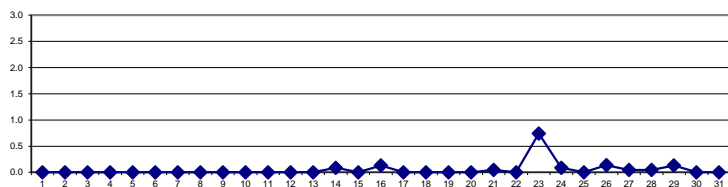
OBJECTIVE LIMIT:

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

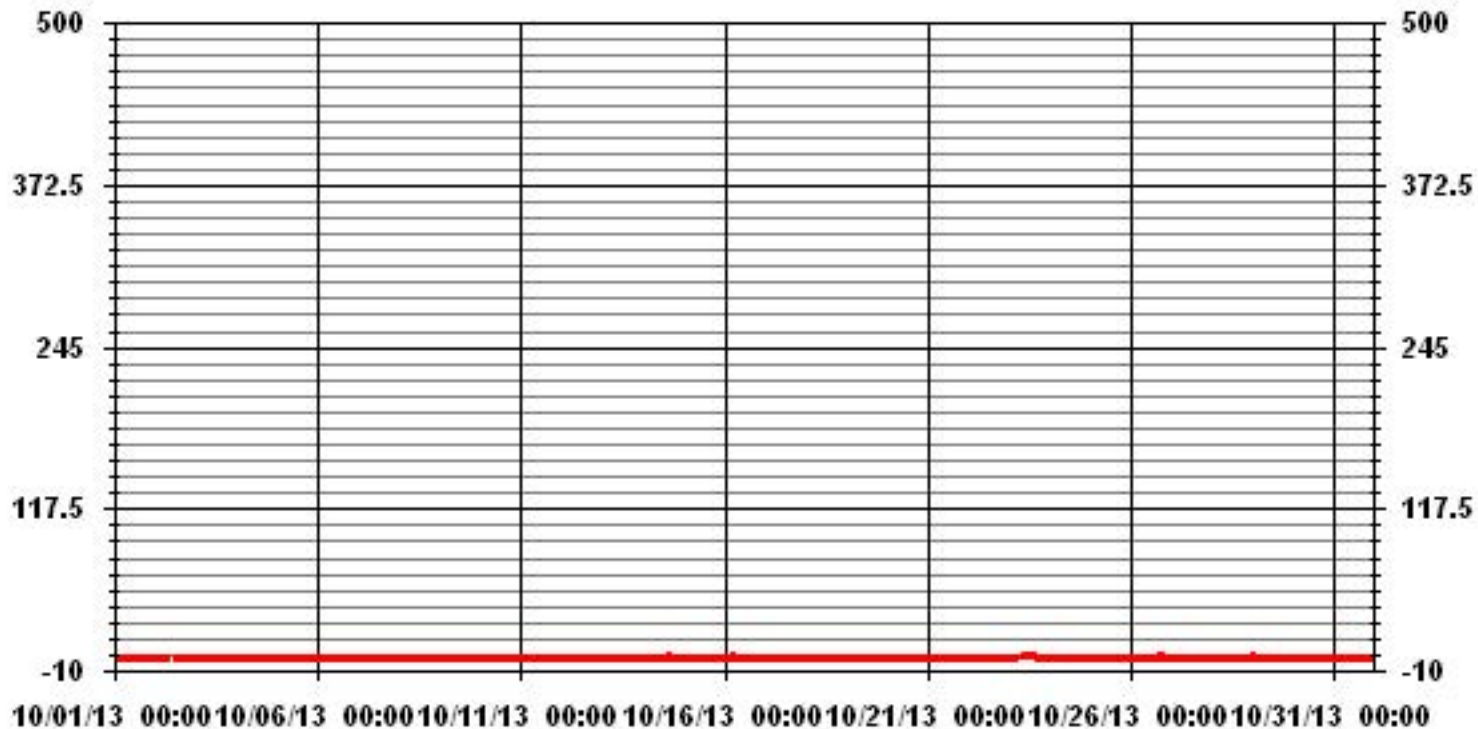
### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	28
MAXIMUM 1-HR AVERAGE:	2 PPB @ HOUR(S) VAR ON DAY(S) 23
MAXIMUM 24-HR AVERAGE:	0.7 PPB ON DAY(S) 23
IZS CALIBRATION TIME:	33 HRS
OPERATIONAL TIME:	744 HRS
MONTHLY CALIBRATION TIME:	5 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.24
MONTHLY AVERAGE:	0.05 PPB

24 HOUR AVERAGES FOR OCTOBER 2013



### 01 Hour Averages



— LICA SO2\_ PPB

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

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

**STATUS FLAG CODES**

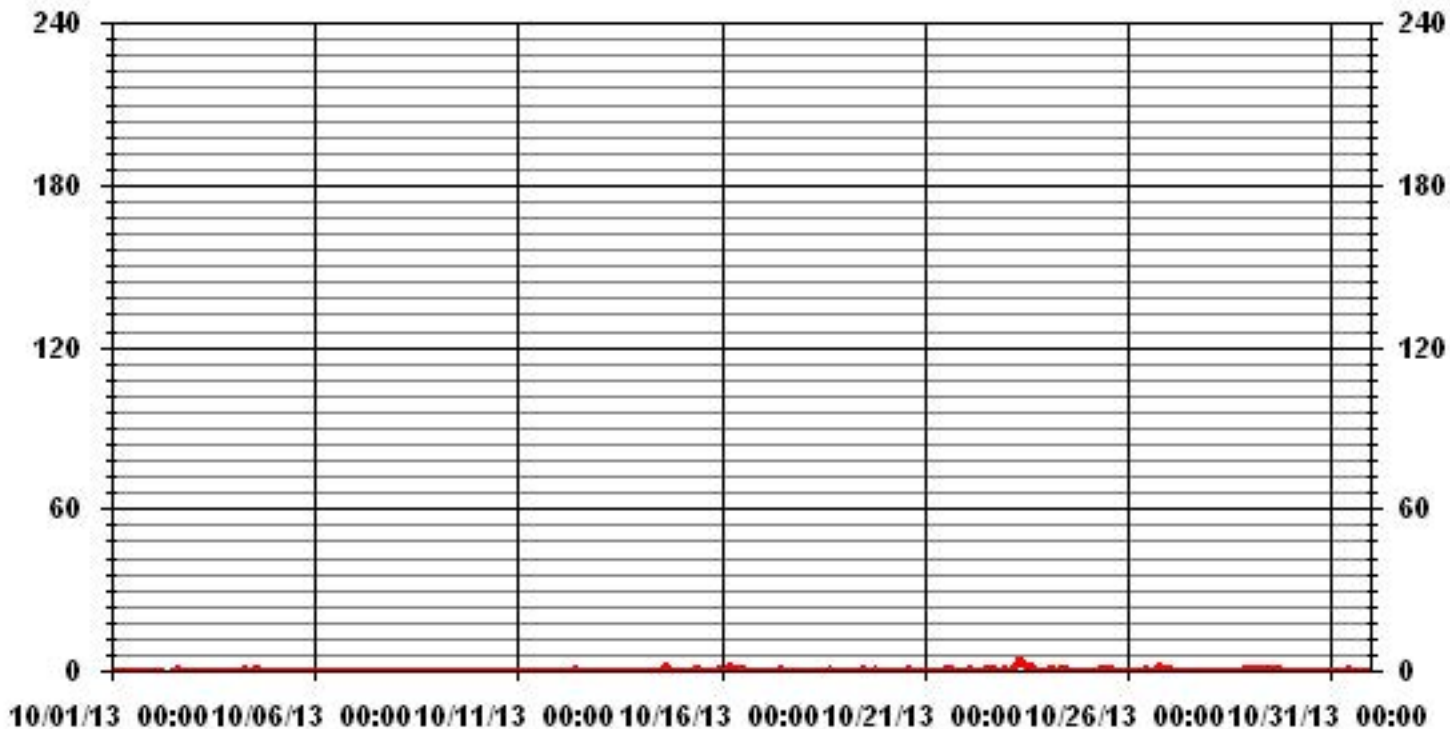
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	102
MAXIMUM INSTANTANEOUS VALUE:	4 PPB @ HOUR(S) 8,9 ON DAY(S) 23
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	6 HRS
STANDARD DEVIATION:	0.46
OPERATIONAL TIME:	744 HRS



### 01 Hour Averages



— LICA SO2MAX PPB

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

October 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	1.84	1.98	3.25	1.55	1.13	3.25	10.19	2.26	3.25	6.09	10.33	21.10	13.73	7.93	7.50	4.53	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	1.84	1.98	3.25	1.55	1.13	3.25	10.19	2.26	3.25	6.09	10.33	21.10	13.73	7.93	7.50	4.53	

Calm : .00 %

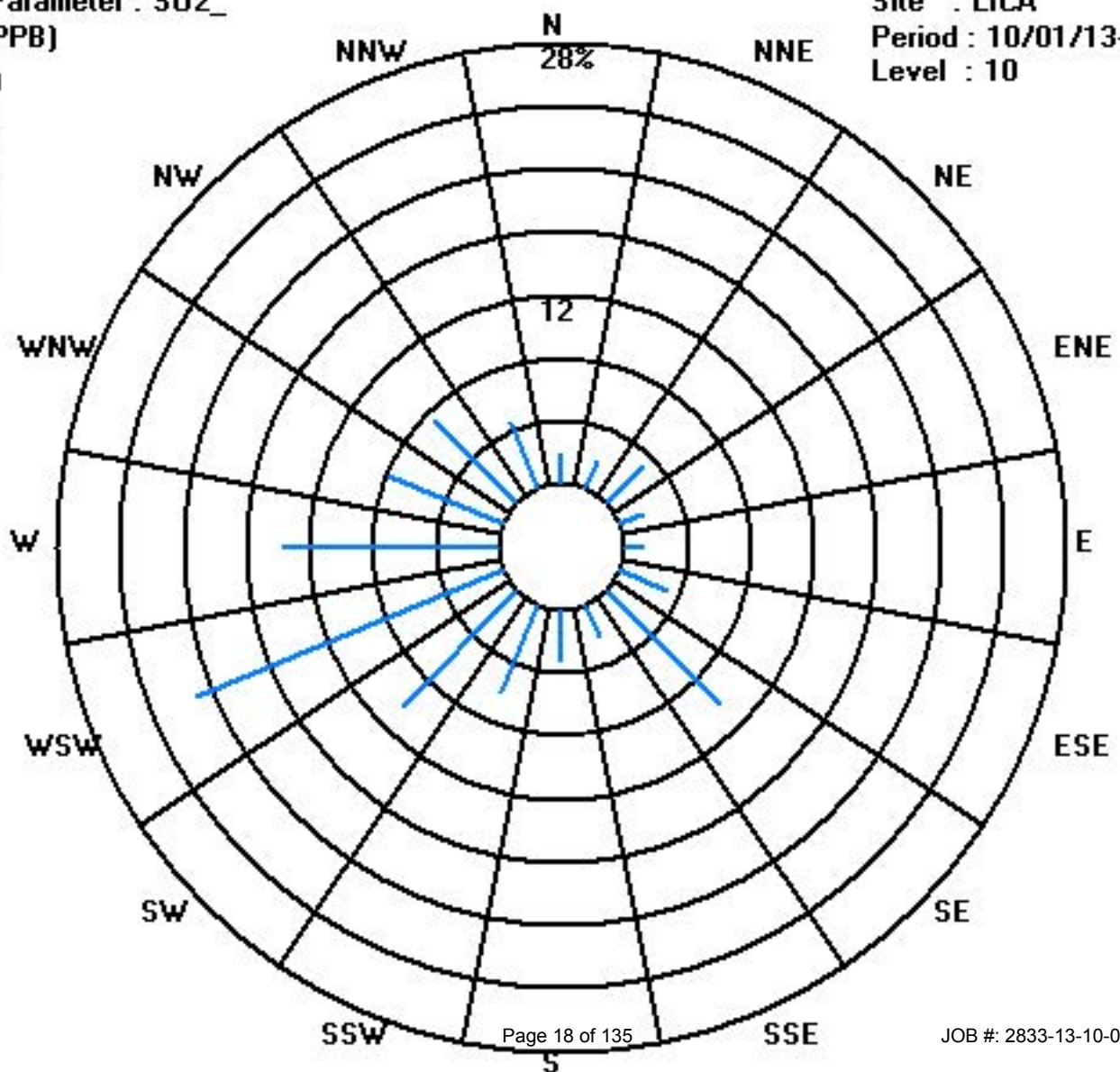
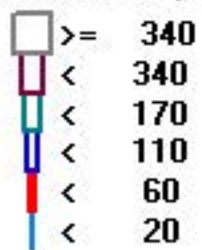
Total # Operational Hours : 706

Distribution By Samples

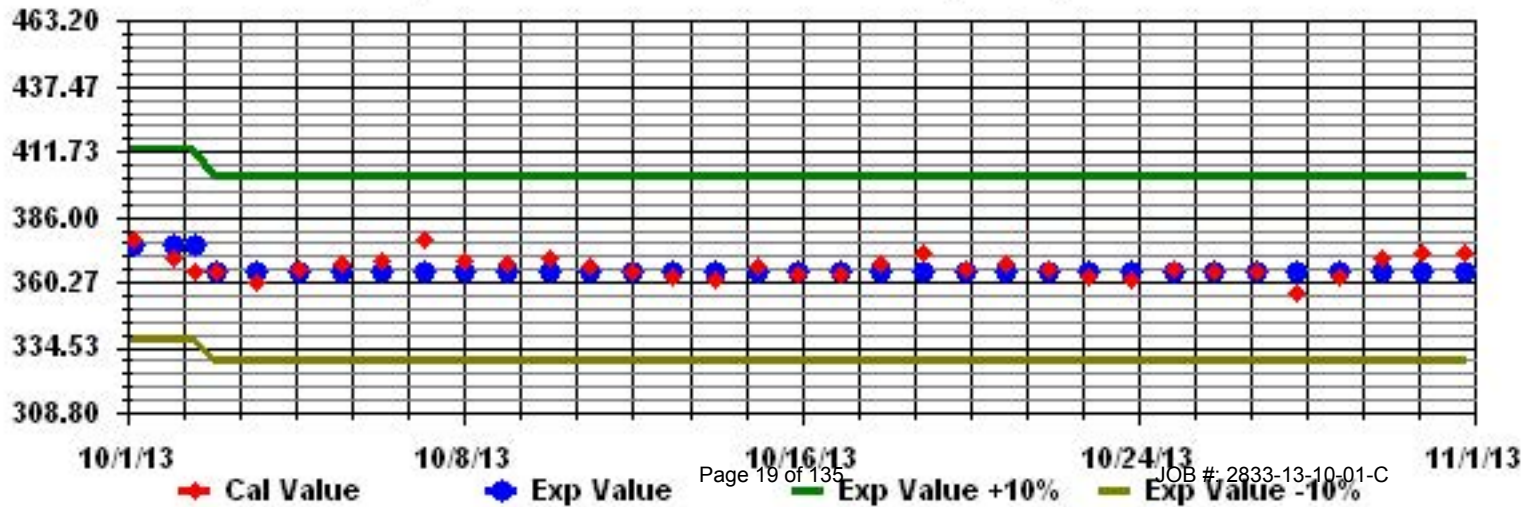
Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	13	14	23	11	8	23	72	16	23	43	73	149	97	56	53	32	706
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	13	14	23	11	8	23	72	16	23	43	73	149	97	56	53	32	

Calm : .00 %

Total # Operational Hours : 706



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



# Total Reduced Sulphur

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

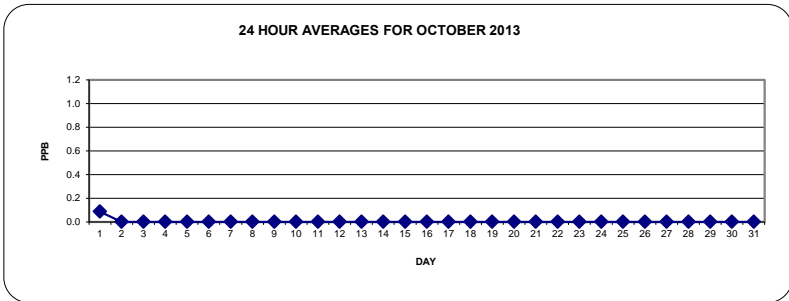
OCTOBER 2013

## 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	RDGS.		
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.	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				
DAY																												
1	I	I	S	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	
2	0	S	0	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
3	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0	24	
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0	24	
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	24	
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	0	0	0	0	0.0	24	
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0	24	
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0	24	
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0	24	
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0	24	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
13	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	
14	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
15	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
16	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
17	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	
18	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	
19	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
20	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
21	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	
22	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
23	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
24	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
25	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
26	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0	24	
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	0	0	0	0	0.0	24	
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0	24	
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0	24	
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0	24	
HOURLY MAX	1	1	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				

STATUS FLAG CODES

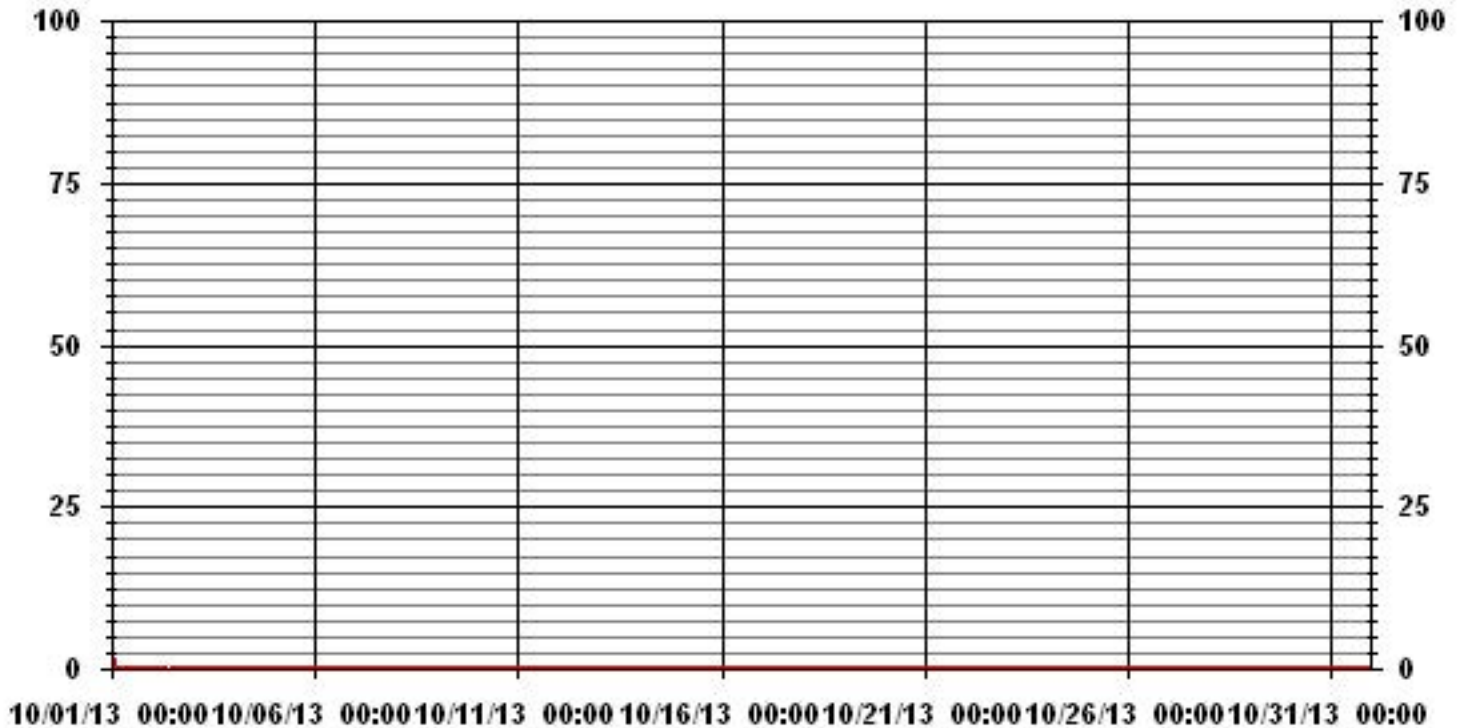
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	2					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	0,1	ON DAY(S)	1
MAXIMUM 24-HR AVERAGE:	0.1	PPB			ON DAY(S)	ALL
				VAR-VARIOUS		
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.05		MONTHLY AVERAGE:	0.00	PPB	

### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

OCTOBER 2013

## TOTAL REDUCED SULPHUR MAX    instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR			
DAY	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	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	0.1	24	
2	0	S	0	0	0	0	0	C	C	C	C	C	C	0	0	1	0	0	0	0	0	0	0	0	0	1	0.1	24	
3	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	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	S	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	S	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	S	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	S	0	0	0	0	0	0	0.0	24	
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	0	0	0	0	0	0	0	0	0	0.0	24	
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	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	S	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
14	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
15	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
16	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
17	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	1	0.0	24
18	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	
19	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
20	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
21	0	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	
22	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
23	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
24	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
25	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
26	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	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	S	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	S	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	S	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	S	0	0	0	0	0	0.0	24	
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0	24	
HOURLY MAX		1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	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			

**STATUS FLAG CODES**

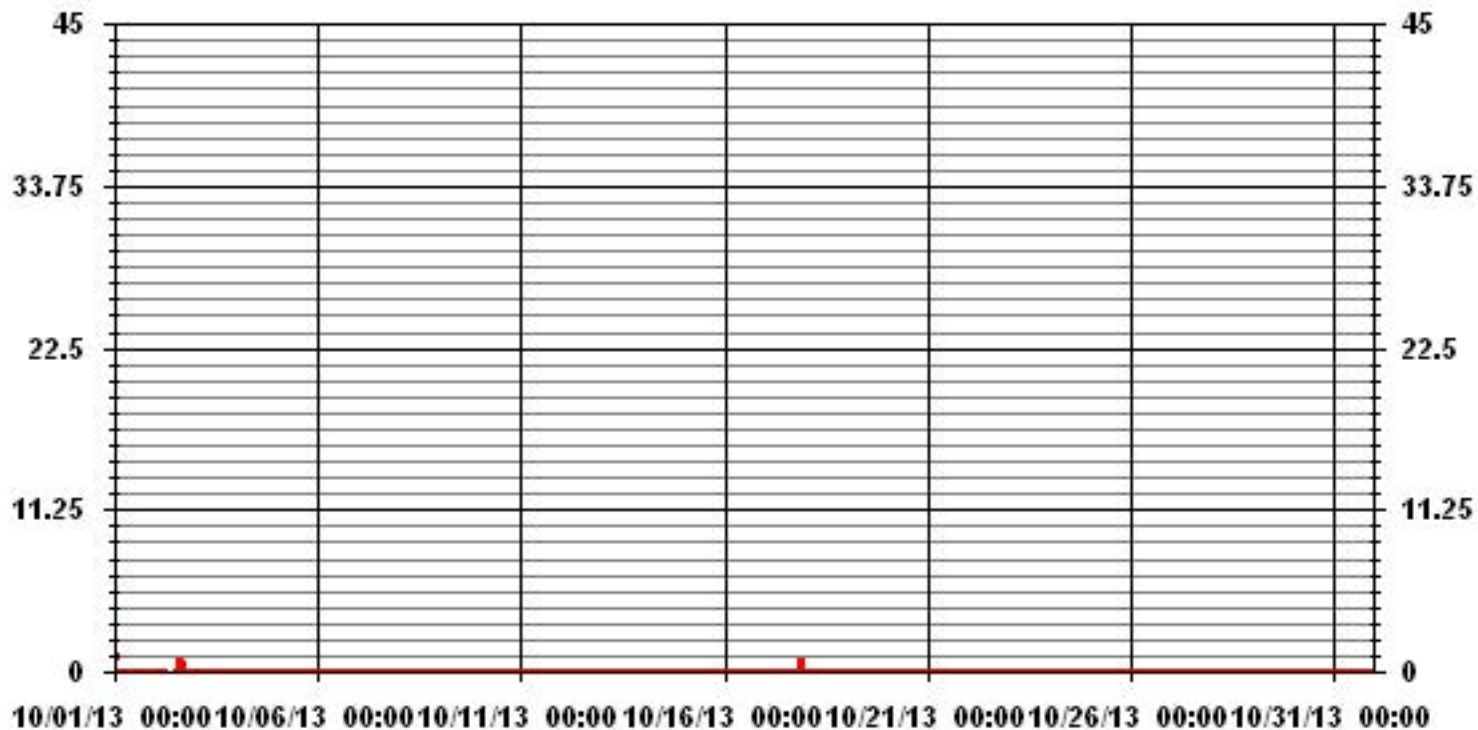
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	4					
MAXIMUM INSTANTANEOUS VALUE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	0.08					



### 01 Hour Averages



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

October 2013

Distribution By % Of Samples

Logger Id : 01  
 Site Name : LICA  
 Parameter : TRS\_  
 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	1.84	1.98	3.25	1.55	1.13	3.25	10.19	2.26	3.25	6.09	10.33	21.10	13.73	7.93	7.50	4.53	100.00
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.84	1.98	3.25	1.55	1.13	3.25	10.19	2.26	3.25	6.09	10.33	21.10	13.73	7.93	7.50	4.53	

Calm : .00 %

Total # Operational Hours : 706

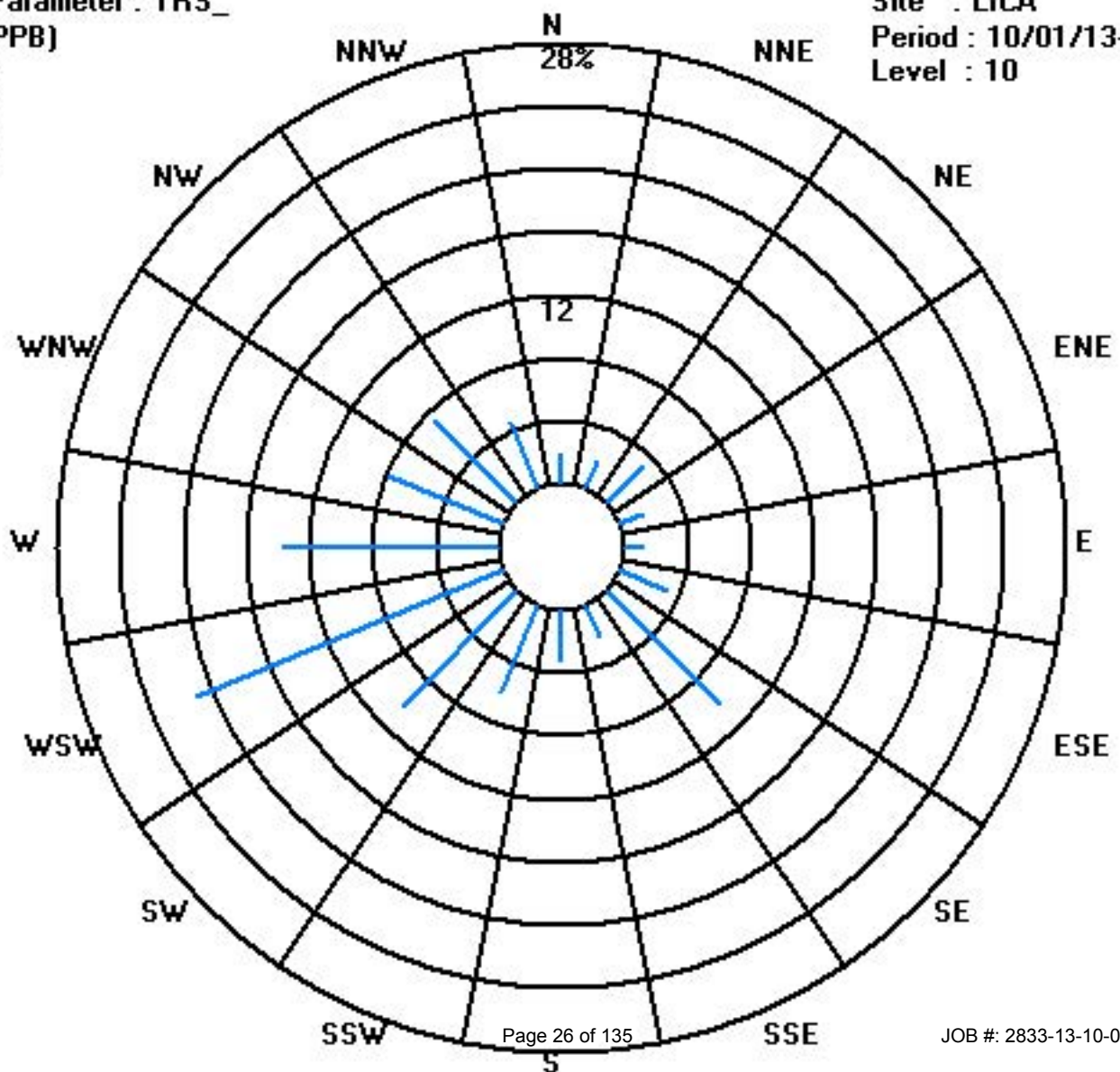
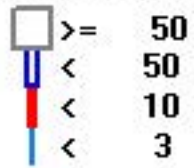
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	13	14	23	11	8	23	72	16	23	43	73	149	97	56	53	32	706
< 10																	
< 50																	
>= 50																	
Totals	13	14	23	11	8	23	72	16	23	43	73	149	97	56	53	32	

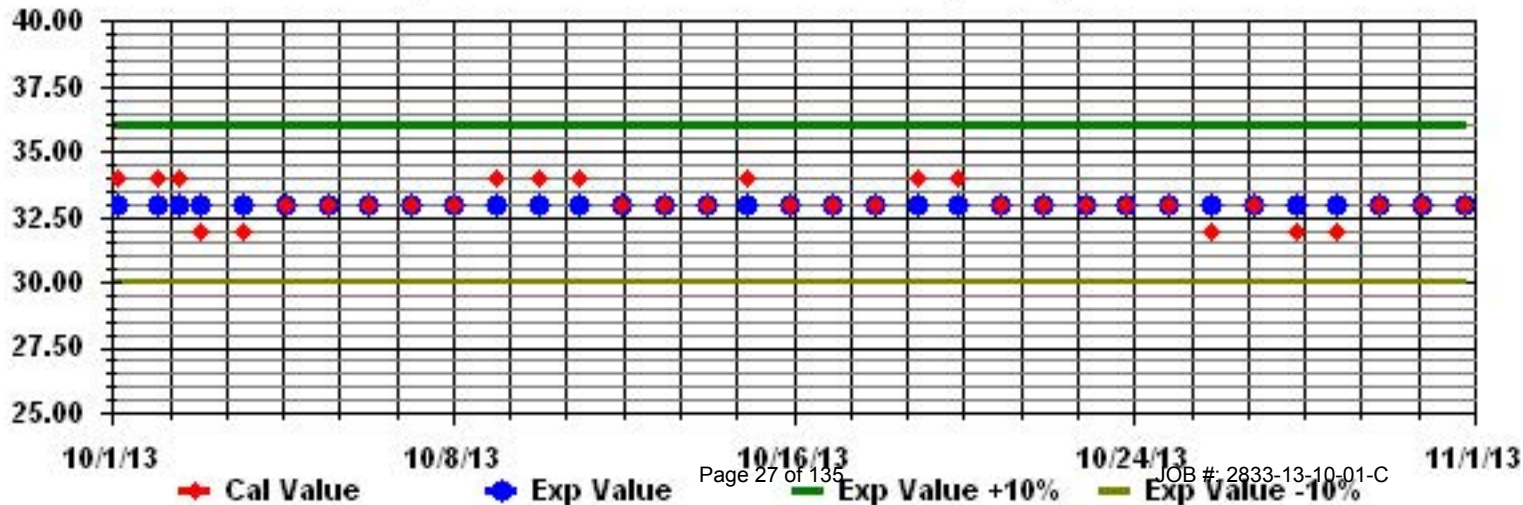
Calm : .00 %

Total # Operational Hours : 706

Class Limits (PPB)



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



# Total Hydrocarbons

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

OCTOBER 2013

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

MST																										DAILY 24-HOUR		
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	1.9	1.9	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	2.0	24
2	2	S	2	2	2	2	2	2	2.1	2.1	2.1	2.1	C	C	C	2	2	2.1	2.2	2.2	2.2	2.3	2.4	2.4	2.4	2.1	24	
3	S	2.3	2.3	2.3	2.3	2.5	2.9	2.9	2.6	2.3	2.1	2	2.1	2	2.1	2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	S	2.9	2.3	24	
4	2.4	2.5	2.7	2.8	2.9	3	3.4	4	3.4	3	2.7	2.4	2.1	2.1	2.2	2.2	2.1	2.1	2.2	2.3	2.2	2.3	S	2.1	4.0	2.6	24	
5	2.2	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.1	2	2	1.9	1.9	1.9	1.9	1.9	1.9	2	2	S	2	2	2.3	2.1	24		
6	2	2	2.1	2.2	2.2	2.3	2.3	2.4	2.2	2	2	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	S	2	1.9	2.1	2.4	2.0	24	
7	1.9	1.8	1.8	1.9	1.9	1.9	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.8	1.9	2	2	2.2	S	2.7	2.8	3	3.3	3.3	2.0	24	
8	2.8	2.4	2.2	2.1	2.1	2.2	2.2	2.3	2.2	2.1	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2.8	2.1	24
9	2	2	2	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2	2	2	2	2	2	2	S	2.3	2.4	2.4	2.5	2.5	2.4	2.5	2.2	24
10	2.5	2.6	2.5	2.6	2.6	2.8	2.7	3.1	Y	2.7	2.6	2.6	2.3	2.3	2.3	2.1	S	2	2	2.1	2.2	2.2	2.3	2.3	3.1	2.4	23	
11	2.5	2.9	3.4	3.3	3.4	3.3	2.8	2.7	2.8	2.6	2.5	2.2	2	2	S	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	3.4	2.5	24
12	2.5	2.7	2.8	2.9	3	3.2	3.3	3.3	3.1	2.7	2.4	2.1	2	2	S	2	2.1	2.1	2.2	2.2	2.3	2.5	2.7	2.7	3.3	2.6	24	
13	2.8	2.7	2.7	2.5	2.4	2.4	2.4	2.4	2.5	2.4	2.5	2.3	2.2	S	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.5	2.6	2.8	2.4	24	
14	2.8	2.9	3	3.1	3.2	3.2	3.2	3.3	3.3	3.4	2.9	2.4	S	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.5	3.4	2.7	24	
15	2.7	2.8	2.8	2.7	2.8	2.8	2.8	2.8	2.5	2.2	2.1	S	2	2	2	2	2	2	2	2	2	2	2	2.1	2.2	2.8	2.3	24
16	2.1	2.1	2	2	2.1	2.2	2.2	2.1	2.1	2.1	S	2	2	2	2	2	2	2	2.1	2.2	2.2	2.3	2.6	2.7	2.7	2.2	24	
17	2.9	3	3.2	3.3	3.4	3	2.9	2.8	3.1	S	1.9	1.9	1.9	3.5	5.2	3.4	3.3	3	2.9	2.9	2.8	2.9	2.8	2.6	5.2	3.0	24	
18	2.4	2.3	2.2	2.4	2.5	2.5	2.7	2.6	S	2.5	2.3	2	2.1	2.1	2	1.9	1.9	1.9	2	2.1	2.2	2.4	2.5	2.8	2.8	2.3	24	
19	2.8	2.9	2.9	2.4	2.3	2.5	2.7	S	2.4	2.1	2	2	2	2	2	2.1	2.1	2.1	2.2	2.1	2	2	2	2	2	2.9	2.2	24
20	2.1	2.1	2.1	2.2	2.1	2.1	S	2	2	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.3	2.6	2.7	3.1	3.1	2.2	24	
21	3.1	3.2	3.3	3.3	3.3	S	2.8	2.6	2.6	2.1	2	1.9	1.8	1.8	1.8	1.8	1.9	1.9	2	2	2	1.9	1.9	3.3	2.3	24		
22	1.9	1.9	1.9	2	S	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.3	2.1	24	
23	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.5	2.5	2.5	2.5	2.2	24	
24	2.5	2.2	S	2.1	2.1	2.2	2.2	2.3	2.5	2.7	2.7	2.5	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.5	2.6	2.7	2.7	2.7	2.4	24	
25	2.7	S	2.5	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.9	3.2	3.2	2.3	24	
26	S	2.2	2.2	2.3	2.5	2.6	2.5	2.5	2.6	2.4	2.2	2.4	2.6	2.4	2	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.8	1.8	S	2.6	2.2	24
27	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	S	2.1	2.2	24	
28	2.3	2.5	2.3	2.3	2.3	2.3	2.5	2.6	2.5	2.4	2.4	2.4	2.3	2.3	2.4	2.4	2.3	2.3	2.3	2.3	2.2	S	2.2	2.2	2.6	2.3	24	
29	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2	2	2.1	2.2	2.1	2.1	S	2.3	2.2	2.4	2.4	2.2	24	
30	2.4	2.3	2.4	2.4	2.5	2.6	2.6	2.5	2.6	2.7	2.6	2.3	2.3	2.3	2.1	2.1	2.1	2.2	2.3	S	2.4	2.5	2.4	2.5	2.7	2.4	24	
31	2.6	2.9	3.1	3.2	3.1	2.9	2.7	2.9	3.2	2.7	2.5	2.7	2.8	2.3	2	1.9	1.9	1.9	S	2	2.1	2.1	2.1	2.3	3.2	2.5	24	
HOURLY MAX	3.1	3.2	3.4	3.3	3.4	3.3	3.4	4.0	3.4	3.4	2.9	2.7	2.8	3.5	5.2	3.4	3.3	3.0	2.9	2.9	2.8	2.9	3.0	3.3				
HOURLY AVG	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.3	2.2	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.4				

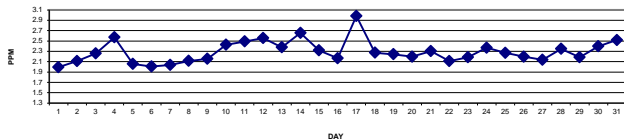
**STATUS FLAG IZSOSES**

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

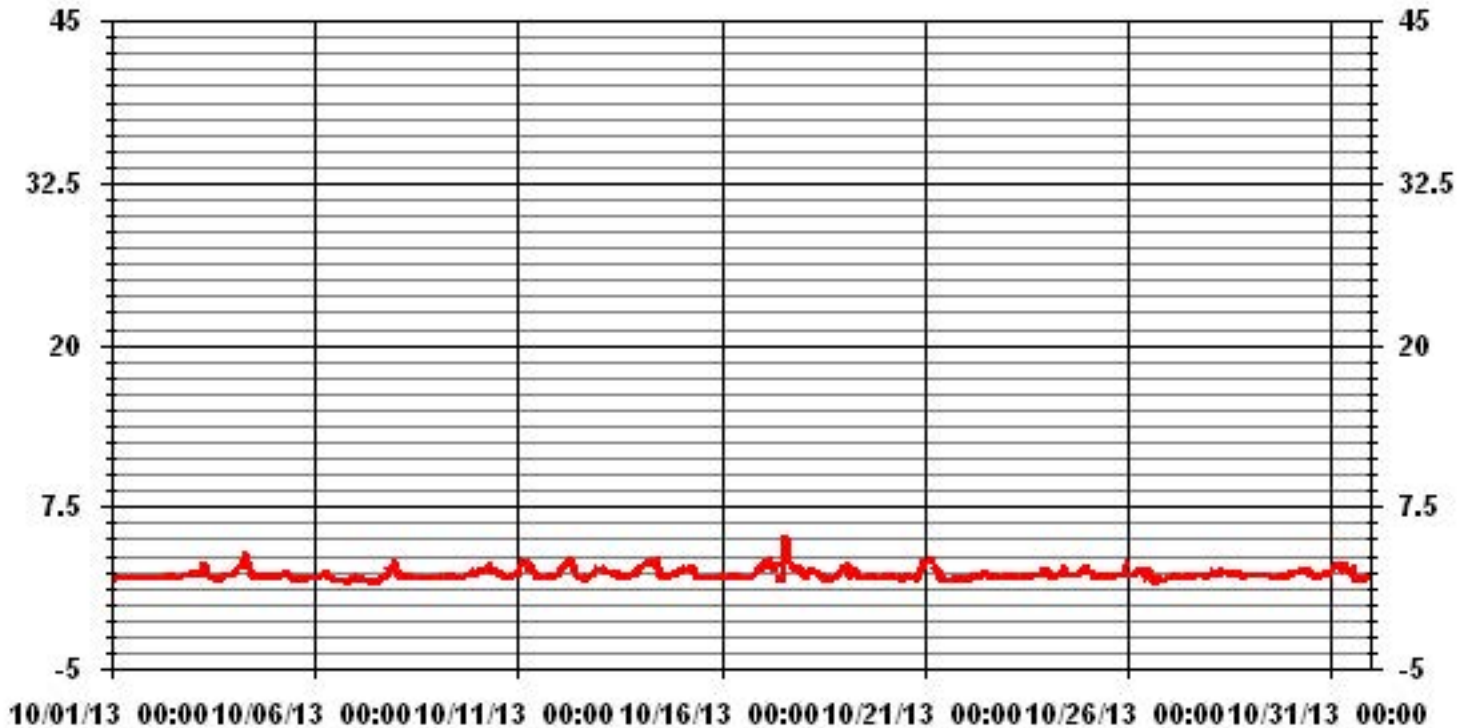
**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	707					
MAXIMUM 1-HR AVERAGE:	5.2	PPM	@ HOUR(S)	14	ON DAY(S)	17
MAXIMUM 24-HR AVERAGE:	3.0	PPM			ON DAY(S)	17
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.38		MONTHLY AVERAGE:	2.29	PPM	

**24 AVERAGES FOR OCTOBER 2013**



### 01 Hour Averages



— LICA THC PPM

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

OCTOBER 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	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	1.9	1.9	S	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	24
2	2.0	S	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	C	C	C	C	2.1	2.1	2.2	2.3	2.2	2.3	2.5	2.5	2.6	2.6	2.6	2.2	24	
3	S	2.5	2.5	2.4	2.4	2.9	3.0	3.0	2.8	2.8	2.2	2.1	2.1	2.5	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.3	S	3.0	2.4	24	
4	2.4	2.7	2.8	3.0	3.0	3.2	3.8	4.3	4.2	3.1	2.9	2.6	2.2	2.2	2.4	2.3	2.1	2.2	4.5	2.5	2.3	2.4	S	2.2	4.5	2.8	24		
5	2.3	2.2	2.2	2.2	2.2	2.3	2.5	2.5	2.4	2.3	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	S	2.2	2.1	2.5	2.2	24		
6	2.2	2.1	2.3	2.2	2.3	2.3	2.4	2.7	2.4	2.4	2.1	2.0	1.9	1.8	1.9	1.8	1.9	2.0	2.0	2.0	S	2.2	2.1	2.2	2.7	2.1	24		
7	2.0	1.9	1.9	2.0	2.0	1.9	1.9	1.8	1.9	1.8	1.9	1.8	1.8	1.8	2.0	2.0	2.2	2.2	2.4	S	2.8	3.0	3.2	4.0	4.0	2.2	24		
8	3.1	2.5	2.5	2.2	2.2	2.2	2.3	2.4	2.3	2.2	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.1	S	2.0	2.1	2.1	2.1	2.1	3.1	2.2	24		
9	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.5	2.2	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.2	S	2.7	2.4	2.5	2.6	2.5	2.5	2.7	2.2	24		
10	2.6	2.9	2.7	2.7	2.8	2.9	3.0	Y	Y	2.8	2.9	2.8	2.5	2.4	2.4	2.2	S	2.0	2.1	2.3	2.3	2.5	2.5	2.4	3.0	2.6	22		
11	2.8	3.5	3.5	3.5	3.4	3.5	3.1	2.9	3.0	2.7	2.7	2.5	2.1	2.1	2.0	S	2.1	2.1	2.1	2.2	2.1	2.1	2.3	2.5	3.5	2.6	24		
12	2.6	2.8	2.9	3.0	3.2	3.3	3.3	3.5	3.3	3.0	2.5	2.4	2.1	2.1	S	2.0	2.1	2.3	2.3	2.5	2.4	2.7	2.8	2.8	3.5	2.7	24		
13	3.0	3.0	2.8	2.7	2.5	2.4	2.5	2.5	2.6	2.6	2.4	2.3	S	2.1	2.1	2.1	2.2	2.7	2.4	2.5	2.4	2.6	2.8	3.0	2.5	24			
14	3.0	3.0	3.2	3.2	3.8	3.3	3.3	3.4	3.5	3.9	3.1	2.7	S	2.2	2.2	2.2	2.2	2.5	2.3	2.4	2.3	2.4	2.5	2.8	3.9	2.8	24		
15	2.9	3.1	3.2	2.8	2.8	3.0	3.1	3.0	2.9	2.3	2.2	S	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.2	2.4	3.2	2.5	24		
16	2.1	2.2	2.1	2.4	2.2	2.3	2.2	2.2	2.2	2.3	S	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.5	2.7	2.8	2.9	2.9	2.3	24		
17	3.0	3.2	3.4	3.5	3.6	3.3	3.0	3.0	3.1	S	2.0	1.9	2.1	6.0	6.5	4.0	3.5	3.1	3.0	3.0	3.0	3.4	3.0	2.7	6.5	3.3	24		
18	2.6	2.4	2.3	2.5	2.6	2.6	2.8	2.8	S	2.6	2.5	2.2	2.1	2.3	2.1	2.2	2.0	2.1	2.2	2.3	2.5	2.6	2.8	3.0	3.0	2.4	24		
19	2.9	3.0	3.1	2.6	2.4	2.6	2.7	S	2.6	2.5	2.1	2.0	2.3	2.0	2.1	2.1	2.2	2.2	2.3	2.2	2.1	2.1	2.1	3.1	2.4	24			
20	2.3	2.2	2.2	2.3	2.8	2.1	S	2.1	2.2	2.1	2.1	2.1	2.1	2.2	4.1	2.2	2.1	2.2	2.2	2.3	2.4	2.8	2.9	3.2	4.1	2.4	24		
21	3.2	3.4	3.6	3.7	3.4	S	3.0	2.8	2.7	2.4	2.0	2.1	1.9	1.8	1.9	1.9	2.4	2.1	2.1	2.2	2.3	2.2	2.1	1.9	3.7	2.5	24		
22	1.9	2.0	2.0	2.1	S	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.3	2.4	2.4	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.2	2.4	2.2	24		
23	2.1	2.2	2.2	S	2.1	2.1	2.1	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.3	2.4	2.4	2.6	2.6	2.6	2.6	2.3	24		
24	2.6	2.5	S	2.4	2.3	2.3	2.3	2.4	2.6	2.8	2.8	2.6	2.4	2.3	2.2	2.3	2.2	2.4	2.8	2.6	2.6	2.7	2.7	2.7	2.8	2.5	24		
25	2.8	S	2.6	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.1	2.2	2.3	2.3	2.4	2.4	2.5	3.2	3.4	3.4	2.4	24		
26	S	2.5	2.3	2.5	2.8	2.8	2.7	2.6	2.8	2.8	2.3	2.2	2.6	2.6	2.2	2.0	1.9	2.0	2.4	1.9	1.9	1.9	1.9	S	2.8	2.4	24		
27	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	S	2.3	2.3	2.2	24		
28	2.4	2.5	2.5	2.6	2.4	2.4	3.2	3.0	2.8	2.5	2.5	2.7	2.4	2.4	2.5	2.6	2.4	2.4	2.4	2.3	2.3	S	2.3	2.2	3.2	2.5	24		
29	2.3	2.2	2.3	2.3	2.3	2.2	2.2	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.1	2.0	2.2	2.2	2.2	2.2	S	2.3	2.4	2.5	2.5	2.2	24		
30	2.5	2.4	2.4	2.6	2.6	2.7	2.7	2.8	2.7	2.8	2.8	2.8	2.6	2.6	2.5	2.3	2.2	2.1	2.4	2.4	S	2.5	2.6	2.6	2.6	2.8	2.5	24	
31	2.7	3.4	3.4	3.4	3.3	3.8	4.5	3.1	3.4	3.2	2.6	2.7	2.9	2.6	2.1	2.0	2.0	2.0	S	2.1	2.1	2.1	2.2	2.4	4.5	2.8	24		
HOURLY MAX	3.2	3.5	3.6	3.7	3.8	3.8	4.5	4.3	4.2	3.9	3.1	2.8	2.9	6.0	6.5	4.0	3.5	3.1	4.5	3.0	3.0	3.4	3.2	4.0					
HOURLY AVG	2.5	2.6	2.6	2.6	2.6	2.6	2.7	2.6	2.6	2.5	2.3	2.3	2.2	2.3	2.4	2.2	2.2	2.2	2.4	2.3	2.3	2.4	2.5	2.6					

#### STATUS FLAG CODES

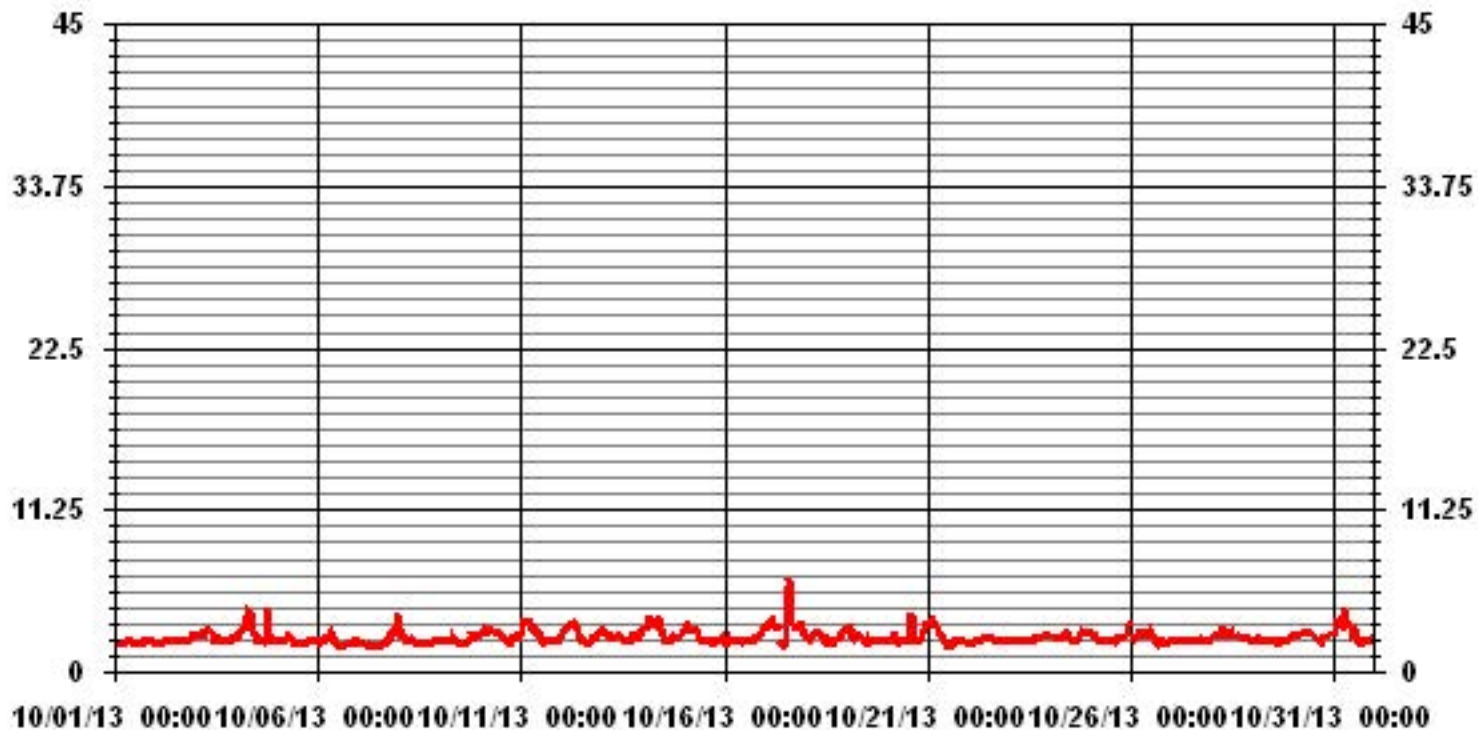
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

#### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	705					
MAXIMUM INSTANTANEOUS VALUE:	6.5	PPM	@ HOUR(S)	14	ON DAY(S)	17
S CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	0.48					



### 01 Hour Averages



— LICA THCMAX PPM

LICA  
 THC / WD Joint Frequency Distribution (Percent)

October 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	1.83	2.26	3.11	1.41	.70	2.82	10.04	2.26	2.68	5.65	9.75	18.38	13.29	7.77	6.78	4.52	93.35
< 10.0	.00	.00	.14	.00	.42	.42	.14	.00	.56	.42	.56	2.68	.42	.14	.70	.00	6.64
< 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	1.83	2.26	3.25	1.41	1.13	3.25	10.18	2.26	3.25	6.08	10.32	21.07	13.71	7.92	7.49	4.52	

Calm : .00 %

Total # Operational Hours : 707

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	13	16	22	10	5	20	71	16	19	40	69	130	94	55	48	32	660
< 10.0			1		3	3	1		4	3	4	19	3	1	5		47
< 50.0																	
>= 50.0																	
Totals	13	16	23	10	8	23	72	16	23	43	73	149	97	56	53	32	

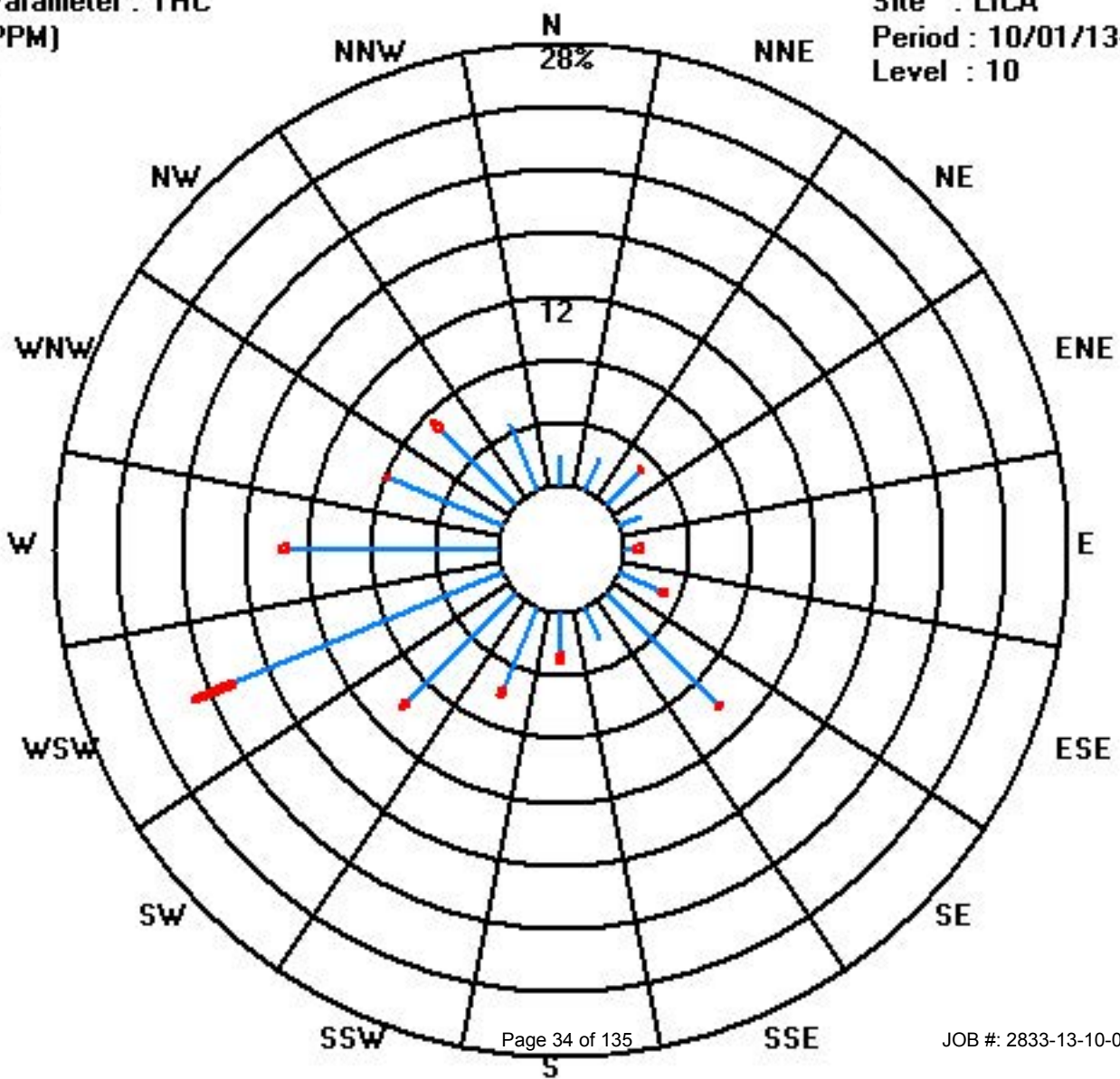
Calm : .00 %

Total # Operational Hours : 707

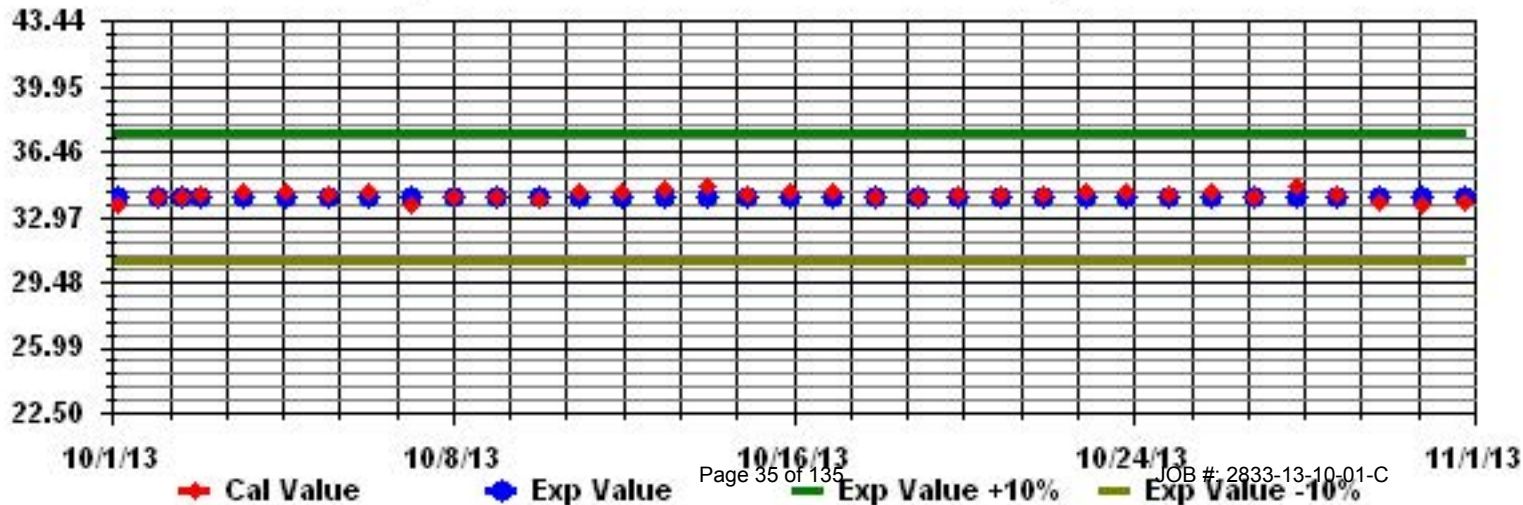
Class Limits (PPM)

Period : 10/01/13-10/31/13

Level : 10



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



# Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

OCTOBER 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	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	5	0	3	4	1	5	9	X	13	2	7	4	10	11	6	7	3	0	1	4	3	0	5	2	13	4.6	23	
2	2	2	1	0	3	0	4	0	4	X	X	4	0	X	X	0	1	X	0	0	0	3	3	5	0	5	1.6	19	
3	3	0	1	2	4	0	7	8	9	3	3	C	0	0	1	X	6	X	X	13	8	3	8	1	27	27	5.2	21	
4	4	0	9	13	X	10	5	4	6	0	X	0	0	11	6	14	0	13	10	1	4	10	2	31	24	31	7.9	22	
5	5	30	22	11	X	5	8	X	X	0	0	1	11	X	X	19	15	19	17	6	0	4	0	X	X	30	9.9	17	
6	6	11	X	X	0	0	8	6	6	16	2	0	X	X	X	0	4	3	15	X	5	2	0	6	16	16	4.9	17	
7	7	3	1	9	0	7	4	1	X	3	0	X	4	12	X	9	4	4	0	9	2	6	4	4	2	12	4.2	21	
8	8	0	6	0	X	4	5	11	2	0	1	4	X	4	4	1	1	0	0	5	0	6	0	1	X	11	2.6	21	
9	9	0	4	X	X	X	X	X	1	X	X	0	0	3	0	2	6	X	8	0	6	4	X	7	8	7	8	2.7	15
10	10	0	14	X	6	X	X	8	Y	Y	0	5	1	17	X	X	45	5	X	X	X	3	4	4	0	45	8.0	14	
11	11	3	9	5	4	0	0	4	15	X	8	12	X	4	4	0	7	17	2	1	12	4	4	0	9	17	5.6	22	
12	12	8	3	6	0	1	4	6	3	0	14	10	0	5	5	8	1	4	7	9	X	5	5	4	5	14	4.9	23	
13	13	11	3	6	0	5	4	2	5	8	7	5	10	1	1	11	2	3	2	0	X	X	0	6	9	11	4.6	22	
14	14	2	4	10	11	10	3	8	10	0	22	9	13	8	9	13	21	9	2	12	15	11	9	5	8	22	9.3	24	
15	15	9	4	7	4	5	6	3	10	9	18	12	X	28	21	28	33	0	0	0	1	10	X	9	X	33	10.3	21	
16	16	1	X	7	2	6	0	4	X	0	15	19	X	5	4	8	2	X	X	9	10	0	1	6	0	19	5.2	19	
17	17	0	4	0	4	4	4	3	6	1	10	4	X	8	1	X	X	X	X	2	0	2	1	4	2	10	3.2	19	
18	18	2	1	0	0	2	3	4	0	6	0	X	9	3	0	0	X	0	1	8	0	8	0	0	8	9	2.5	22	
19	19	8	9	4	1	0	0	10	11	5	9	6	X	0	2	0	0	8	X	1	0	0	0	0	0	11	3.4	22	
20	20	5	1	0	0	0	1	0	1	1	5	2	0	6	5	10	X	1	2	0	2	2	6	4	11	11	2.8	23	
21	21	11	0	15	0	2	8	2	C	7	7	57	6	0	9	5	5	1	0	0	X	4	2	5	1	57	6.7	23	
22	22	0	9	6	9	4	13	11	0	6	5	8	0	X	0	17	3	8	5	1	4	6	9	5	X	17	5.9	22	
23	23	14	X	8	7	16	3	5	6	0	0	11	X	X	19	19	33	9	0	10	5	1	7	6	6	33	8.8	21	
24	24	0	5	7	4	3	2	1	4	10	5	4	5	0	8	2	3	8	0	X	0	8	12	8	6	12	4.6	23	
25	25	15	4	0	12	2	0	1	0	0	1	X	2	0	3	4	3	1	0	1	0	0	5	6	1	15	2.7	23	
26	26	5	4	1	5	0	6	0	6	3	7	4	11	0	0	2	5	0	X	9	6	4	4	X	10	11	4.2	22	
27	27	X	0	0	4	X	0	X	1	2	4	2	5	6	12	3	0	0	4	X	X	4	3	6	3	12	3.1	19	
28	28	6	5	5	3	2	0	5	X	0	10	0	5	1	7	5	3	0	4	1	0	0	16	13	23	23	5.0	23	
29	29	13	X	X	X	19	X	X	X	0	1	9	12	6	7	0	0	13	5	7	4	8	3	X	4	19	6.5	17	
30	30	4	6	6	6	10	8	12	10	10	8	8	0	2	0	45	11	0	11	X	3	0	0	3	8	45	7.4	23	
31	31	5	6	3	6	5	10	8	5	7	16	11	11	5	4	1	10	4	8	17	3	12	10	10	9	17	7.8	24	
HOURLY MAX		30	22	15	12	19	13	12	15	16	22	57	13	28	21	45	45	19	17	17	15	12	16	31	27				
HOURLY AVG		5.8	5.0	5.0	3.8	4.4	4.3	5.0	5.3	4.1	6.4	7.9	4.7	5.5	5.6	8.5	8.0	5.2	3.5	5.4	3.3	4.6	4.1	5.6	7.1				

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

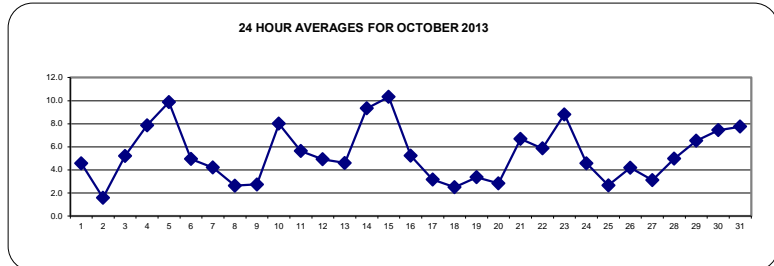
OBJECTIVE LIMIT:

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

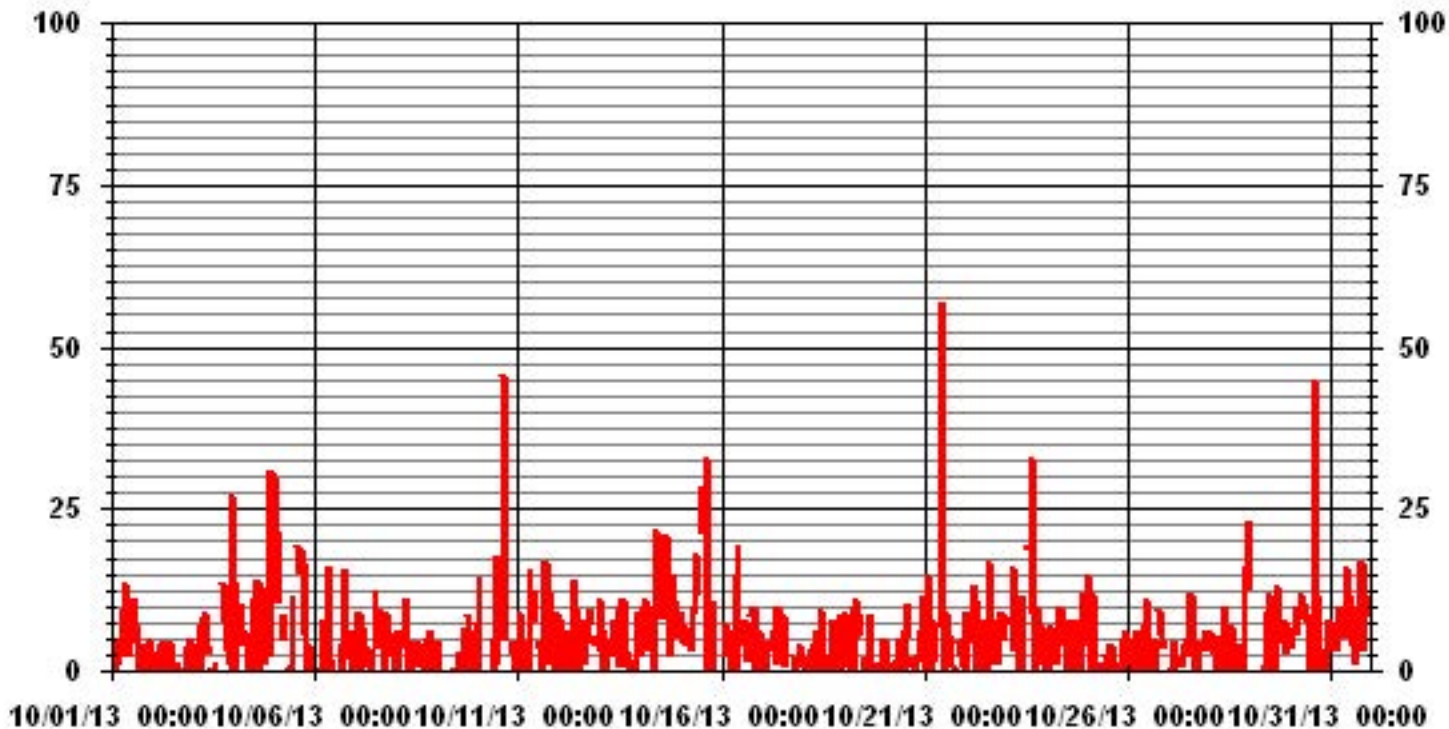
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	501
MAXIMUM 1-HR AVERAGE:	57 UG/M <sup>3</sup> @ HOUR(S) 10 ON DAY(S) 21
MAXIMUM 24-HR AVERAGE:	10.3 UG/M <sup>3</sup> ON DAY(S) 15
IZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	2 HRS
STANDARD DEVIATION:	6.11
OPERATIONAL TIME:	647 HRS
AMD OPERATION UPTIME:	87.0 %
MONTHLY AVERAGE:	5.35 UG/M <sup>3</sup>

24 HOUR AVERAGES FOR OCTOBER 2013



### 01 Hour Averages



— LICA PM2 UG/M3

LICA  
PM2 / WD Joint Frequency Distribution (Percent)

October 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	1.86	2.01	3.72	.93	1.24	3.10	10.07	2.63	3.41	5.42	10.69	21.55	12.86	7.90	7.28	4.18	98.91
< 60	.00	.00	.00	.15	.00	.00	.31	.00	.00	.00	.00	.00	.46	.15	.00	.00	1.08
< 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	1.86	2.01	3.72	1.08	1.24	3.10	10.38	2.63	3.41	5.42	10.69	21.55	13.33	8.06	7.28	4.18	

Calm : .00 %

Total # Operational Hours : 645

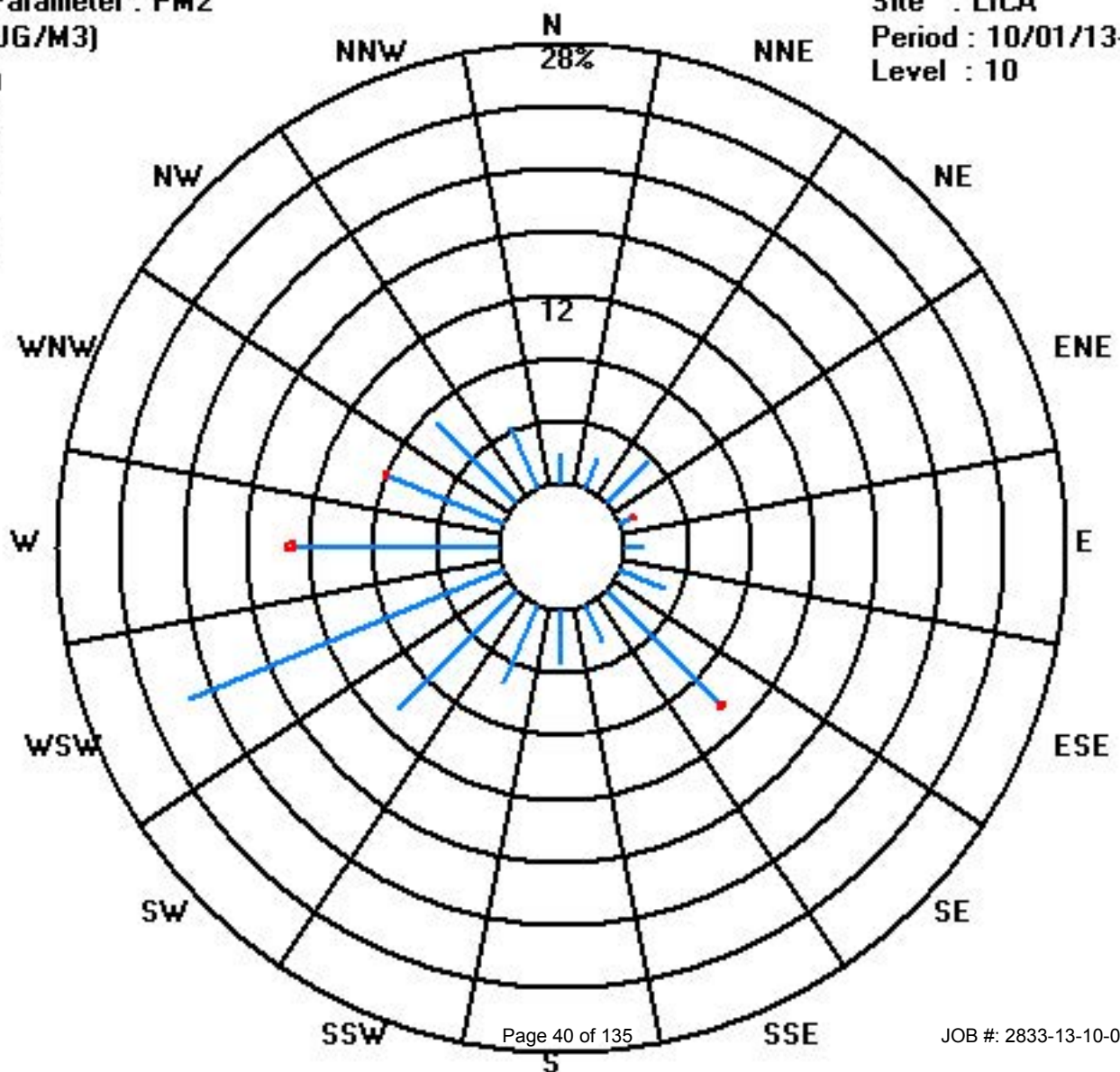
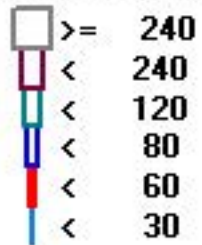
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	12	13	24	6	8	20	65	17	22	35	69	139	83	51	47	27	638
< 60				1			2						3	1			7
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	12	13	24	7	8	20	67	17	22	35	69	139	86	52	47	27	

Calm : .00 %

Total # Operational Hours : 645





# Nitrogen Dioxide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

OCTOBER 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	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		0.6	0.4	S	0.4	0.3	0.5	1.4	1.9	1	0.9	1.3	0.9	0.1	0.1	0.2	0.2	0.8	0.7	0.1	0.6	1.2	0.6	0.4	0.2	1.9	0.6	24
2		0.1	S	0.3	0.3	0.7	0.3	C	C	C	C	C	C	C	C	C	0.3	1.2	2.7	3.1	1.8	1.8	1.9	1.9	3.1	1.3	24	
3		S	1.5	2	2.2	3.1	4.1	6.2	5.6	5.6	2.3	1.1	0.6	0.9	3.7	4.2	3.7	2.6	3.7	3.3	2.6	2.1	2.7	2	S	6.2	3.0	24
4		1	1.7	1.9	1.8	1.7	1.7	3.2	5.5	3.6	2	1.8	1.5	1.5	1.7	1.7	1.7	1.5	2	2.8	2.2	1.8	1.5	S	1.5	5.5	2.1	24
5		1.5	1.4	1.3	1.7	2.1	2.4	2.8	3.5	4.2	3	2.4	1.6	0.8	0.6	0.3	0.3	0.5	1.4	1.9	2.5	2.6	S	3.1	2.7	4.2	1.9	24
6		2.6	2.9	7.1	5	5.2	3.7	3.6	4.8	4.4	3	2.7	1	0.9	0.6	0.5	0.6	0.9	1.5	4.1	S	3.7	2.5	1.9	7.1	2.8	24	
7		1.1	1	0.8	0.7	2.4	2.5	3	2.3	2.1	2.2	2.2	1.4	1	0.7	1.2	1.7	3.1	5.4	9.7	S	8.2	8.3	6.3	8.5	9.7	3.3	24
8		7.7	2.8	2	1.6	1	2	3.3	4	3.3	2.3	1	0.6	0.4	0.4	0.3	0.4	0.6	0.9	S	0.3	0.2	0	0	0.4	7.7	1.5	24
9		0.1	0.2	0.3	0.9	2	2.4	2.9	3.9	1.3	0.6	0.6	0.5	0.5	0.5	0.6	0.8	1	S	4.5	2.7	2	1.8	1.9	2.1	4.5	1.5	24
10		2.4	1.7	2.6	3.8	6.4	7.4	7.6	5.1	5.5	6.1	4.5	4.2	2.7	1.8	2.1	0.9	S	1.4	1.8	6.8	5.7	5.6	3.7	3.7	7.6	4.1	24
11		5.2	6.4	9.6	7.7	7.4	8.7	9.6	10.2	8.4	5.6	4.5	2.2	0.8	0.9	0.6	S	0.6	0.5	2.1	4.1	3.4	2.8	3.1	4.8	10.2	4.7	24
12		6.7	7.5	5.8	5.6	6.9	8.1	7.5	6.1	5.4	5	4.1	1.6	0.5	0.2	S	0.6	1.4	1.9	7.2	6	8.9	7.1	4.9	3.6	8.9	4.9	24
13		3.5	3.5	4.6	4.3	3.4	4.1	4.5	5.4	5	4.8	3.8	2.5	1	S	0.5	0.5	0.6	1	5.4	2.8	2.5	2.8	4.1	7.5	7.5	3.4	24
14		6.9	5.7	4.1	4.7	6.1	6	6.4	5.7	4.8	4.2	3.2	1.4	S	0.7	0.9	2	2.1	3.4	5.4	3.3	3.4	3.3	3.2	2.9	6.9	3.9	24
15		2.5	2.3	3.4	5	6.5	4.1	9.1	9.8	6.6	4.2	3.8	S	0.6	0.7	1	1.3	0.8	0.4	0.7	1.6	1.8	1.2	2.6	4	9.8	3.2	24
16		1.7	0.2	0.2	1.1	1.9	3.6	4.2	3.3	2.5	2.6	S	1	1.1	1.1	0.8	0.4	0.5	1.8	8.2	8.3	8.4	9.5	9.4	11.5	11.5	3.6	24
17		8.6	6.6	7.4	7.4	8.4	8	8.5	10	12.4	S	2.3	1.2	0.6	0.6	0.8	0.9	0.8	1.1	8.2	10.3	8.4	7.1	6.9	6.3	12.4	5.8	24
18		5.4	4.2	4.6	5.1	6.1	5.8	7.6	8.1	S	8.3	9.6	4.3	3.5	3.3	1.9	1.8	2.4	6.5	14.1	8.4	7	6.4	9	7	14.1	6.1	24
19		5.8	5.4	5.1	4.2	4.3	5.9	8.4	S	6.3	3	1.8	2.4	1.8	1.8	1.6	2.8	3.8	4	4.1	3	0.2	0.4	0.3	0.2	8.4	3.3	24
20		1.1	0.5	0.2	0.2	0.3	0.2	S	0.5	0.6	0.7	0.8	0.5	0.6	0.7	0.7	0.9	1.2	1.2	1	1	1.5	2.3	2.8	3.6	3.6	1.0	24
21		3.7	3.3	3.2	5.3	8.1	S	9.3	10.7	8.5	3.6	2.5	1.7	1.6	1.2	1.3	2.5	3.9	6.9	11.5	11	9.4	7.1	3.5	1.1	11.5	5.3	24
22		1.8	0.7	0.7	0.9	S	3.5	2.4	3.3	3.3	1.9	2.6	2.8	3.6	3.9	3.2	1.2	1.7	1.4	1.3	1.4	1.4	2	2.2	1.6	3.9	2.1	24
23		1.1	0.6	0.5	S	0.9	1.9	1.9	2	3.6	4.3	5.2	2.1	2	1.1	2.2	4.1	5.8	6.6	11.2	10.9	13.9	13.5	12.4	12.1	13.9	5.2	24
24		10.5	1.9	S	1	1.1	1.2	1.4	2	2.1	1.7	2	1.4	1.2	1.1	1.5	2	2.6	4.5	10.7	9.7	9.3	9.9	9.8	10.1	10.7	4.3	24
25		9.7	S	6.2	4.5	2.9	1.7	1.5	1.6	1.1	0.9	1.2	1.3	1.3	0.7	1.9	1.5	1.8	7	7.6	9.2	7.8	8	8.9	12.6	12.6	4.4	24
26		S	2.1	4.3	3.5	5	10.8	5.8	7.1	6.4	6.6	5.9	7.5	7.5	7.3	4.8	3.9	2.7	3.4	2.8	3.1	2.8	0.8	0.7	S	10.8	4.8	24
27		0.3	0.3	0.3	0.1	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.5	0.2	0.2	0.2	0.5	1	3.7	5.5	3.1	1.9	1	S	2.5	5.5	1.1	24
28		3.7	3.1	1.3	1.3	1.2	4.9	11.8	11.1	4.2	2.6	2.3	1.9	1.4	1.4	2	2.7	2.2	3.3	2.8	2.6	2.3	S	2	1.9	11.8	3.2	24
29		2.1	2.5	2.2	2.3	2.2	2	2.8	2.6	2.2	2.4	2.9	3.3	3	3.4	2.5	3	4	9.7	6.2	4.3	S	2.9	3.1	3.8	9.7	3.3	24
30		3.5	3.3	3.7	4.1	5.2	6.5	7.2	11.3	8.9	8.5	8.4	6.5	5.6	5.7	4.1	3.4	3.5	7.9	9.3	S	14.3	9.1	7.3	4.9	14.3	6.6	24
31		4.4	9.8	10.1	12.5	10	7.9	8.2	12	13.2	9.6	9.7	8.8	9.1	5.4	3	2.3	1.7	1.3	S	1.1	1.2	1.2	1.8	4.8	13.2	6.5	24
	HOURLY MAX	10.5	9.8	10.1	12.5	10.0	10.8	11.8	12.0	13.2	9.6	9.7	8.8	9.1	7.3	4.8	4.1	5.8	9.7	14.1	11.0	14.3	13.5	12.4	12.6			
	HOURLY AVG	3.6	2.9	3.3	3.3	3.8	4.1	5.3	5.5	4.7	3.6	3.3	2.3	1.9	1.8	1.6	1.7	1.9	3.2	5.3	4.5	4.7	4.3	4.1	4.5			

### 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

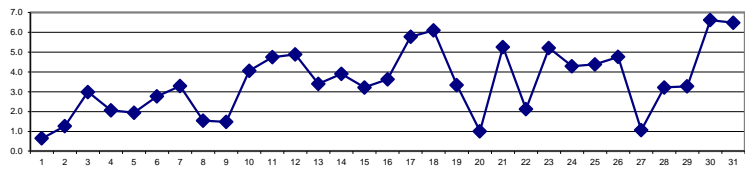
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

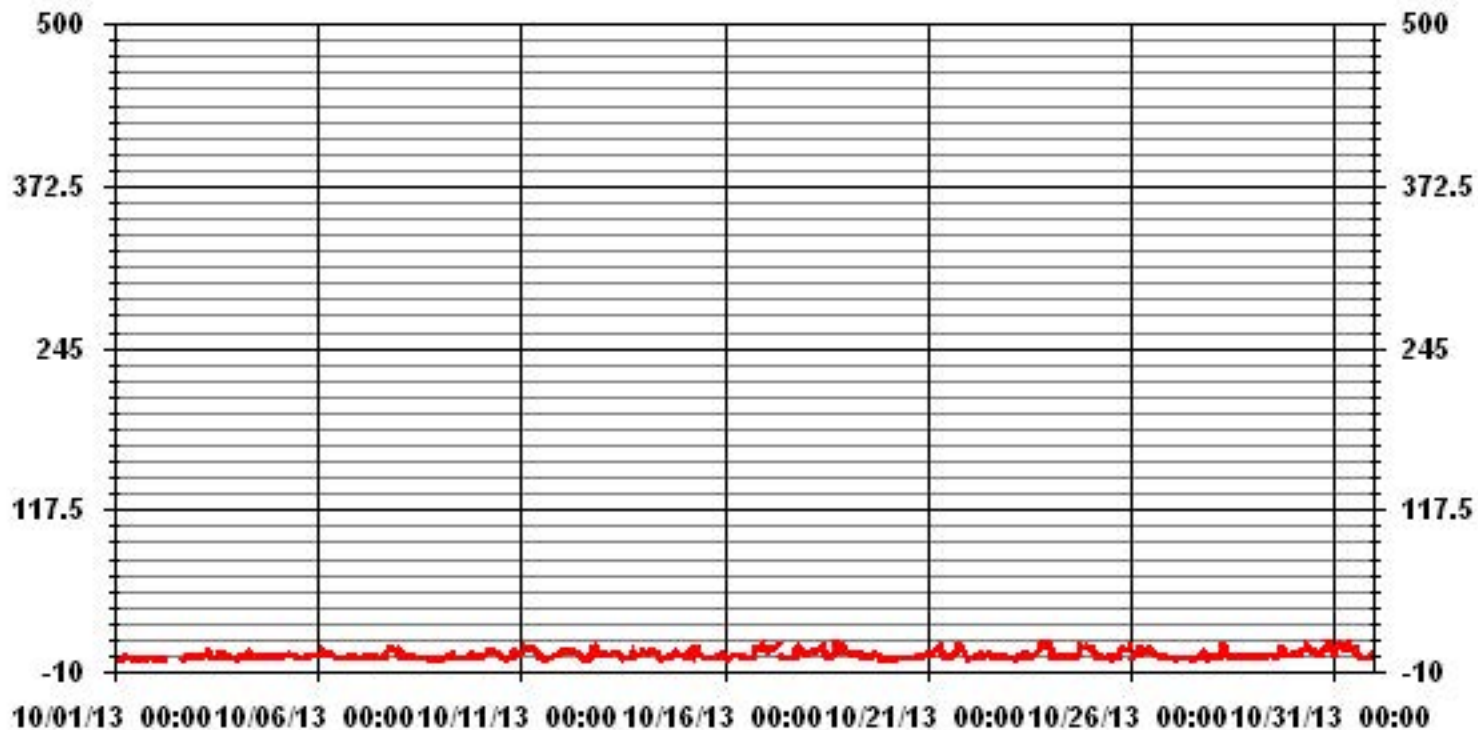
### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	699				
MAXIMUM 1-HR AVERAGE:	14.3	PPB	@ HOUR(S)	20	ON DAY(S) 30
MAXIMUM 24-HR AVERAGE:	6.6	PPB			ON DAY(S) 30
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	3.02		MONTHLY AVERAGE:	3.54	PPB

24 HOUR AVERAGES FOR OCTOBER 2013



### 01 Hour Averages



— LICA NO2\_ PPB

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

OCTOBER 2013

### NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
1	1.5	1.0	S	1.0	1.0	1.5	2.5	2.5	2.0	2.0	2.0	1.5	1.0	1.5	1.5	2.0	2.0	0.5	9.0	3.5	2.0	2.5	1.5	9.0	2.1	24	
2	1.0	S	1.0	1.5	3.5	1.0	C	C	C	C	C	C	C	C	C	2.0	13.9	7.4	4.5	3.0	2.0	2.5	2.5	13.9	3.5	24	
3	S	2.1	4.6	4.6	5.1	6.5	7.1	7.0	7.1	5.1	2.5	0.6	4.1	11.1	9.1	4.6	7.0	6.5	5.1	3.6	3.1	5.1	3.1	S	11.1	5.2	24
4	1.6	3.1	3.1	3.1	3.1	2.6	5.6	8.6	7.5	3.0	4.1	5.1	3.1	3.1	2.1	3.1	3.1	6.0	7.5	4.1	2.1	2.6	S	2.1	8.6	3.9	24
5	2.1	2.1	2.1	2.6	6.0	3.6	3.6	5.6	6.5	3.6	3.1	2.1	2.1	1.1	0.6	0.6	1.0	2.6	3.1	4.6	3.6	S	4.1	3.6	6.5	3.0	24
6	3.6	5.6	11.1	10.1	7.6	4.6	7.6	6.6	6.0	4.1	4.1	2.1	1.6	1.0	0.6	1.6	1.5	2.1	2.1	8.6	S	6.0	6.0	3.6	11.1	4.7	24
7	2.1	1.6	1.6	2.6	17.6	4.1	4.6	4.1	3.1	3.6	5.1	3.6	1.6	1.1	2.1	2.6	4.6	11.6	14.6	S	9.6	11.6	8.1	10.1	17.6	5.7	24
8	9.6	5.1	2.6	2.6	2.1	3.1	4.1	5.6	5.6	4.1	2.1	1.1	1.0	0.6	1.1	1.1	1.1	1.6	S	1.0	2.1	0.6	0.6	1.1	9.6	2.6	24
9	1.0	0.6	0.7	2.1	4.1	4.6	5.1	6.5	2.6	1.0	2.6	1.0	1.1	1.6	1.1	1.6	2.1	S	8.1	4.2	2.7	2.2	2.7	4.2	8.1	2.8	24
10	3.7	4.7	8.2	8.7	24.7	11.2	10.7	7.6	8.1	10.2	6.1	5.2	5.2	2.7	3.2	1.7	S	2.2	4.2	12.2	8.7	8.7	4.7	4.2	24.7	7.3	24
11	7.7	10.2	12.2	10.7	9.7	10.2	12.2	12.6	10.6	6.3	6.2	3.7	1.2	1.7	1.2	S	2.1	1.0	4.1	7.5	6.6	3.6	5.6	9.6	12.6	6.8	24
12	9.1	11.1	7.1	10.1	9.6	10.1	11.1	9.1	7.1	5.6	6.5	3.1	1.6	0.6	S	1.2	2.2	4.2	12.2	9.2	15.1	14.1	8.7	6.1	15.1	7.6	24
13	4.7	4.7	6.7	5.2	4.2	5.2	5.7	6.6	7.6	7.2	5.2	3.2	2.2	S	1.0	1.0	1.1	1.6	9.1	4.1	3.6	5.6	9.1	17.1	17.1	5.3	24
14	11.1	8.0	6.0	6.5	11.6	11.1	8.5	8.0	6.6	7.5	5.1	3.6	S	1.1	2.2	4.2	4.2	6.6	9.7	6.1	5.2	5.7	6.1	4.2	11.6	6.5	24
15	5.2	3.2	6.7	9.7	10.7	6.7	16.2	14.1	11.1	5.2	5.2	S	1.6	1.7	1.7	2.7	1.7	1.1	1.7	4.2	3.7	3.2	7.1	7.2	16.2	5.7	24
16	3.7	0.7	0.7	2.2	4.2	5.7	5.7	10.2	3.7	3.2	S	2.2	4.7	3.7	1.7	1.1	1.1	5.2	11.2	10.2	10.2	11.7	10.2	14.7	14.7	5.6	24
17	13.7	10.2	9.1	9.2	12.2	9.7	9.2	14.6	14.1	S	9.1	1.6	0.6	1.0	1.0	1.0	1.1	1.6	14.0	12.1	10.6	10.1	10.1	10.6	14.6	8.1	24
18	8.1	6.5	7.1	7.5	7.1	7.1	9.1	10.1	S	10.1	28.1	6.0	4.6	4.1	2.6	3.1	4.6	14.6	23.1	18.1	13.0	9.1	12.5	12.1	28.1	9.9	24
19	6.5	6.6	6.1	5.6	5.1	6.6	25.5	S	7.7	5.2	3.7	3.7	2.2	2.2	2.2	3.7	4.2	4.3	5.2	5.7	0.7	6.7	1.7	0.7	25.5	5.3	24
20	2.2	1.7	2.7	0.7	9.7	3.7	S	1.3	2.3	1.3	8.8	2.8	1.8	0.9	2.3	1.8	3.3	3.3	6.2	1.8	2.3	3.3	4.3	3.8	9.7	3.1	24
21	4.8	6.3	5.8	8.3	10.3	S	10.7	14.7	11.7	5.2	3.7	3.7	2.2	2.2	2.7	4.2	8.7	11.7	16.7	13.1	12.2	9.7	6.2	2.7	16.7	7.7	24
22	4.2	1.7	1.2	3.7	S	6.0	3.6	6.6	8.6	3.6	3.6	3.6	4.1	11.1	5.1	1.6	2.6	2.1	2.1	2.1	2.1	4.6	3.1	2.5	11.1	3.9	24
23	1.6	1.1	1.6	S	2.8	3.8	3.8	4.3	5.8	6.2	7.3	2.8	7.7	1.8	6.8	6.2	15.2	12.3	16.8	15.8	18.3	15.3	15.8	14.2	18.3	8.1	24
24	13.2	6.3	S	1.6	1.6	1.6	2.5	3.1	2.6	2.1	6.5	2.1	1.6	1.6	2.6	3.1	4.6	7.5	16.1	12.1	11.6	10.6	11.6	11.6	16.1	6.0	24
25	12.5	S	8.2	7.1	4.2	2.7	3.2	3.2	1.7	1.2	1.7	1.7	18.2	1.7	12.6	2.2	3.2	24.7	10.7	12.6	11.7	13.6	12.2	17.2	24.7	8.2	24
26	S	4.6	7.5	9.1	10.1	16.6	16.1	24.1	8.0	8.0	7.1	10.6	8.6	8.6	6.0	4.6	3.6	4.1	4.1	4.1	4.1	1.6	1.6	S	24.1	7.9	24
27	0.6	1.1	1.0	1.0	2.6	1.6	1.6	1.0	1.6	3.0	3.6	1.0	1.0	1.0	1.0	2.1	2.5	7.5	7.5	4.6	3.6	2.1	S	6.6	7.5	2.6	24
28	7.6	5.7	5.7	3.7	1.7	10.2	14.6	22.6	7.6	3.2	2.7	3.1	2.2	2.2	3.2	3.7	5.2	9.2	4.7	4.6	3.7	S	2.8	2.8	22.6	5.8	24
29	2.8	3.3	2.8	2.8	2.8	3.8	3.8	4.8	2.8	3.3	3.8	5.3	5.8	19.7	6.2	4.8	5.8	16.8	9.3	7.3	S	3.8	5.8	5.8	19.7	5.8	24
30	3.8	3.8	4.3	5.8	6.2	8.3	8.8	15.3	12.3	10.8	11.8	8.3	7.3	7.7	6.2	6.8	6.7	10.8	13.7	S	19.2	14.2	10.8	6.8	19.2	9.1	24
31	5.8	17.8	14.3	16.8	13.2	10.8	12.3	15.8	25.2	12.7	10.8	10.8	10.3	9.3	4.3	3.3	2.3	1.8	S	1.6	2.6	2.6	4.1	7.1	25.2	9.4	24
HOURLY MAX	13.7	17.8	14.3	16.8	24.7	16.6	25.5	24.1	25.2	12.7	28.1	10.8	18.2	19.7	12.6	6.8	15.2	24.7	23.1	18.1	19.2	15.3	15.8	17.2			
HOURLY AVG	5.3	4.8	5.2	5.5	7.1	6.1	8.1	8.8	7.1	5.1	5.9	3.6	3.8	3.7	3.2	2.8	3.7	6.7	8.6	7.2	6.8	6.6	6.3	6.8			

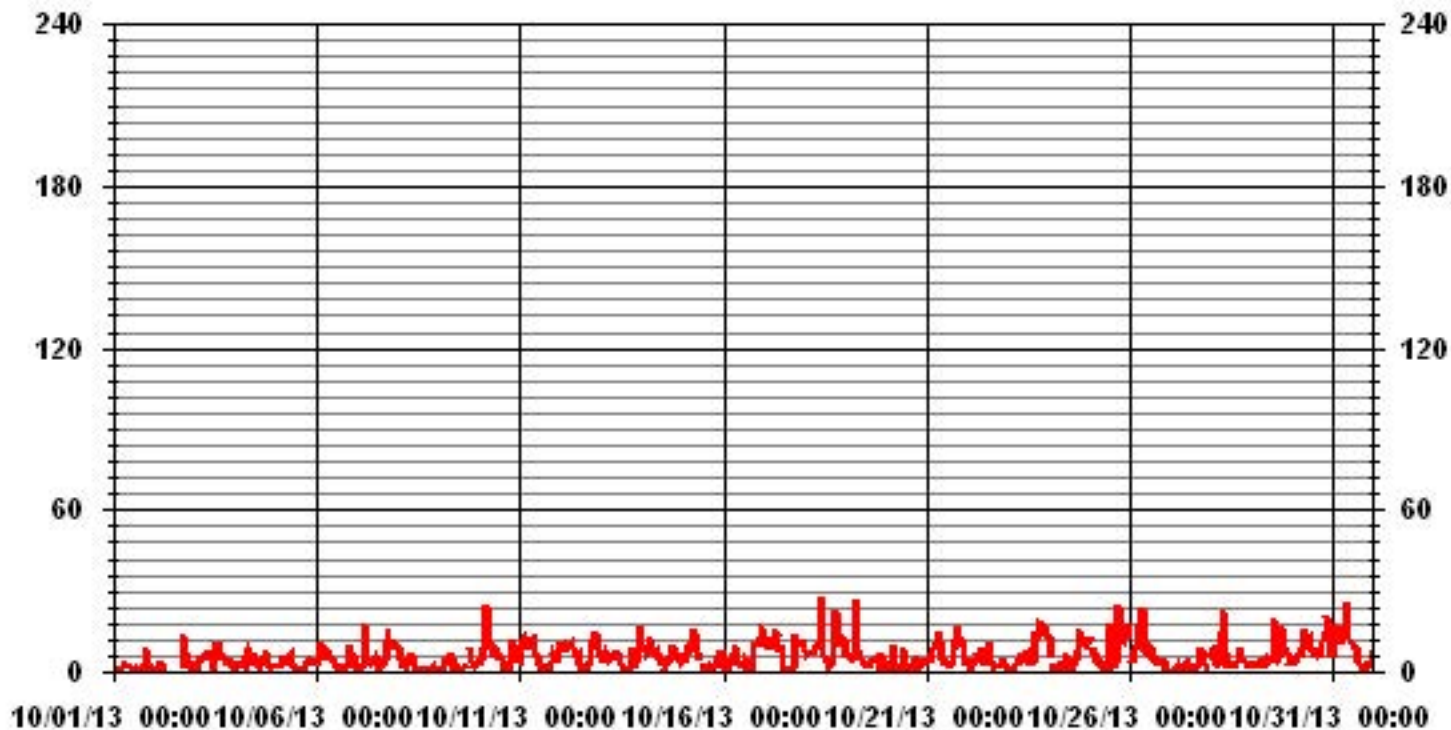
**STATUS FLAG CODES**

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:	701				
MAXIMUM INSTANTANEOUS VALUE:	28.1	PPB	@ HOUR(S)	10	ON DAY(S) 18
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	10	HRS			
STANDARD DEVIATION:	4.57				

# 01 Hour Averages



— LICA NO2MAX PPB

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

October 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	1.57	1.57	3.28	1.57	1.14	3.28	10.28	2.28	3.28	6.14	10.42	21.14	13.85	8.00	7.57	4.57	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.57	1.57	3.28	1.57	1.14	3.28	10.28	2.28	3.28	6.14	10.42	21.14	13.85	8.00	7.57	4.57	

Calm : .00 %

Total # Operational Hours : 700

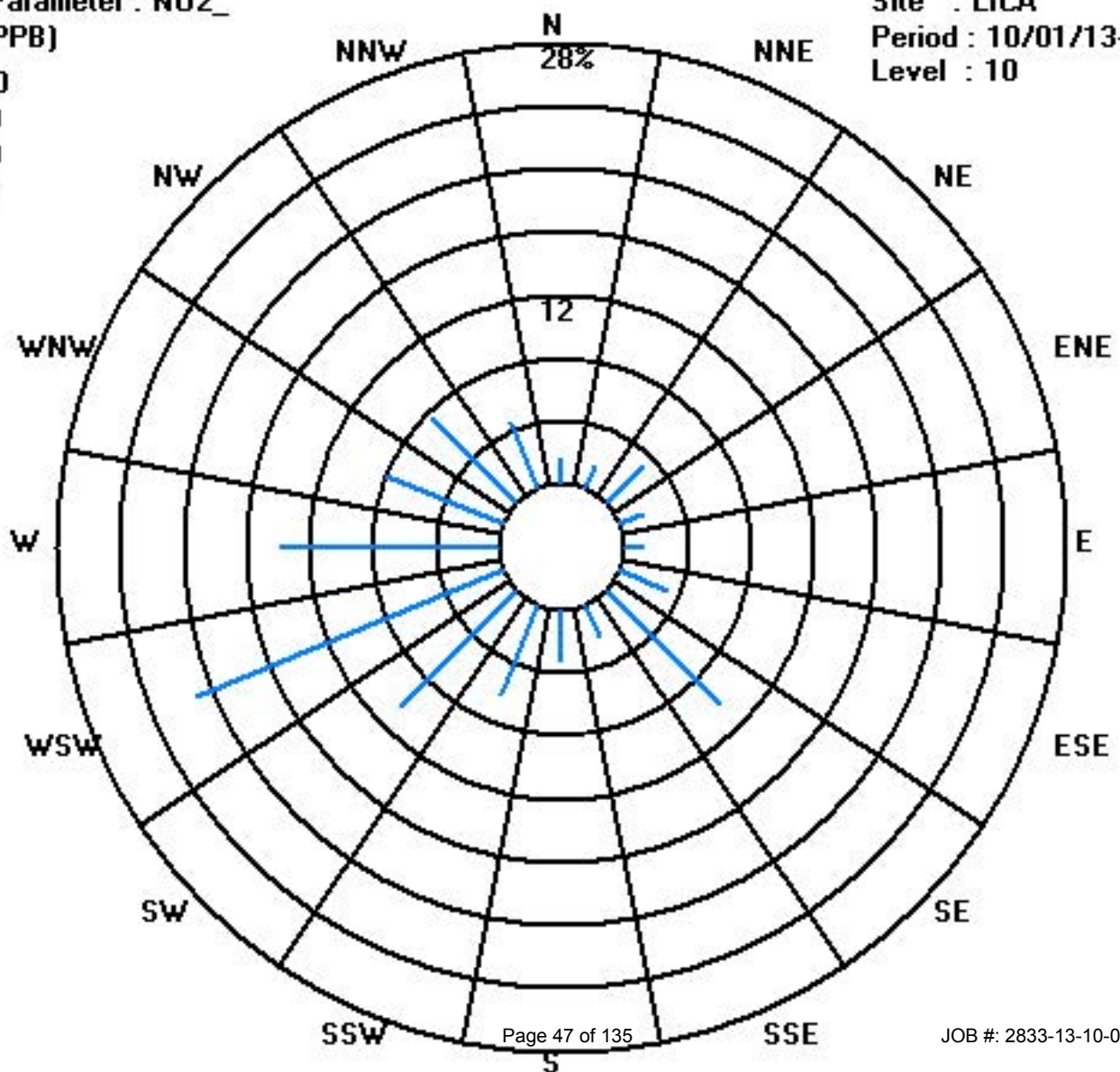
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	11	11	23	11	8	23	72	16	23	43	73	148	97	56	53	32	700
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	11	11	23	11	8	23	72	16	23	43	73	148	97	56	53	32	

Calm : .00 %

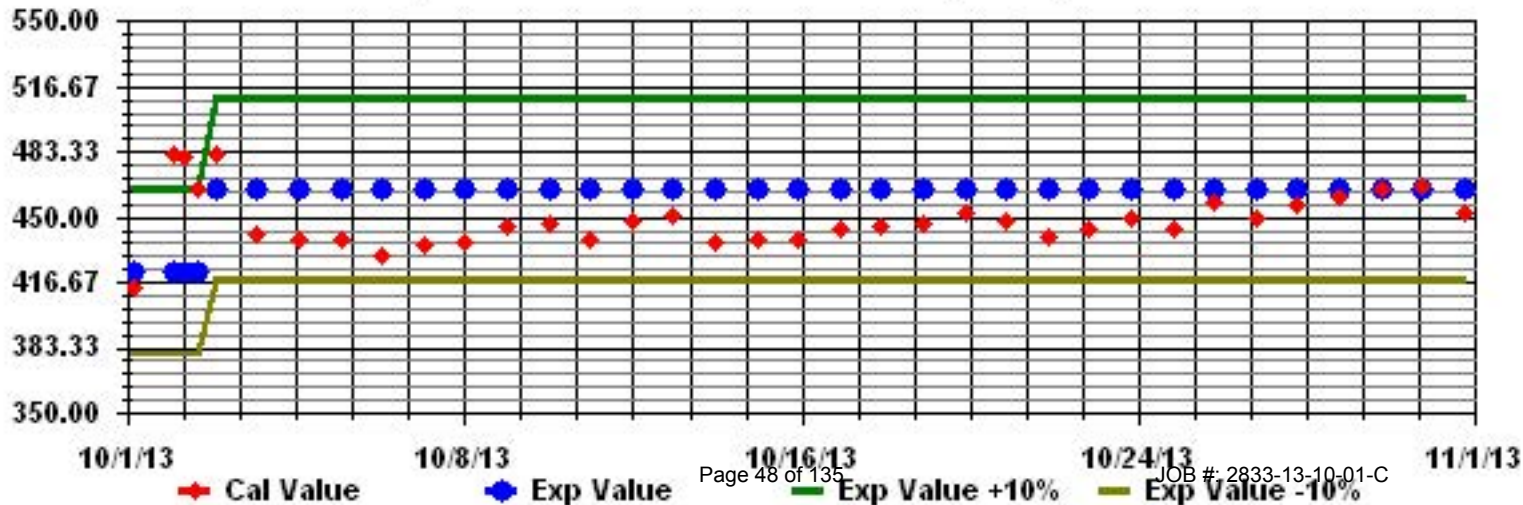
Total # Operational Hours : 700

Class Limits (PPB)





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



# Nitric Oxide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

OCTOBER 2013

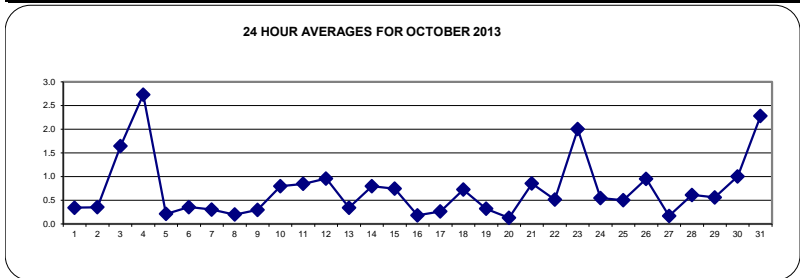
NITRIC OXIDE hourly averages in ppb

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	0.2	0.2	S	0.1	0.2	0.3	0.2	0.4	0.6	0.7	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.1	0	1.8	0.3	0.2	0.3	0.3	1.8	0.3	24
2	0.2	S	0	0	0.2	0	C	C	C	C	C	C	C	C	C	0	1.6	0.5	0.5	0.5	0.3	0.6	0.2	1.6	0.4	24	
3	S	0.1	0.2	0.4	0.7	1.1	4.5	9.9	7.9	1.1	0.4	0	0.2	2.7	1.9	1.4	0.3	0.1	0.1	0.1	0.6	1.6	0.8	S	9.9	1.6	24
4	0.2	0.7	0.7	0.8	1.8	4.1	9.9	28.5	6.3	2.4	1.8	1.2	0.9	0.9	0.6	0.6	0.1	0.4	0.4	0.2	0	0.2	S	0	28.5	2.7	24
5	0	0	0	0	0.1	0	0	0.6	1.2	1	0.9	0.9	0.2	0	0	0	0	0	0	0	0	S	0	0	1.2	0.2	24
6	0	0.2	0.2	0.3	0.1	0.1	0.3	1.2	2	1.4	1.4	0.5	0.3	0	0	0	0	0	0	0.1	S	0	0	0.1	2	0.4	24
7	0	0	0	0.1	0.5	0.1	0.3	0.6	0.5	0.9	0.8	0.5	0.2	0.3	0.4	0.6	0.6	0.1	0.3	S	0	0.1	0	0.1	0.9	0.3	24
8	0.1	0	0	0	0	0	0.2	0.5	1.1	1.2	0.3	0.2	0.3	0.2	0.3	0.1	0.1	0	S	0	0	0	0	0	1.2	0.2	24
9	0.1	0.1	0	0.1	0.4	0.2	0.8	2	0.6	0.2	0.6	0.2	0.1	0.2	0.1	0.1	0	S	0.7	0.3	0	0	0	0	2	0.3	24
10	0	0.1	0.2	0.4	2.2	1.2	1.5	0.7	1.8	3.7	2.8	1.8	0.9	0.5	0.5	0.1	S	0	0	0	0	0	0	0	3.7	0.8	24
11	0.1	0.1	0.1	1	0.7	0.4	0.5	2.6	5.1	4.2	3.1	1.2	0.2	0.1	0	S	0	0	0	0	0	0	0	0.1	5.1	0.8	24
12	0.1	0.1	0.1	0.2	0.1	0.4	1.8	4.2	4.3	4.7	3.8	1	0.2	0	S	0	0	0	0	0.1	0.7	0	0	0.2	4.7	1.0	24
13	0	0.1	0.1	0	0	0	0	0.3	1	1.6	1.7	1.1	0.3	S	0	0	0	0	0	0	0.1	0	0.2	1.4	1.7	0.3	24
14	0.2	0.1	0.1	0.2	2.8	1.3	1.5	3.9	3.6	2.3	1.4	0.6	S	0	0.1	0.2	0	0	0	0	0	0.1	0	0	3.9	0.8	24
15	0	0	0.1	0.3	0.8	0	2.3	6.8	3.9	1.5	1.3	S	0	0	0	0	0	0	0	0	0	0	0	0.1	6.8	0.7	24
16	0	0	0	0	0	0	0	0.5	0.6	1.2	S	0.5	0.6	0.2	0.1	0	0	0	0	0.1	0.1	0.2	0	0.1	1.2	0.2	24
17	0.1	0.1	0	0.1	0.4	0.3	0.1	1.1	1.7	S	1.1	0.5	0	0	0	0	0	0	0	0	0.1	0.1	0.1	0.3	1.7	0.3	24
18	0.2	0.2	0.4	0.2	0.2	0.1	0.2	0.5	S	1.1	6.7	1	1	0.8	0.5	0.2	0	0	0.3	2.2	0.2	0.2	0.3	0.2	6.7	0.7	24
19	0.1	0	0.1	0.2	0	0	4.5	S	1	0.4	0.1	0.2	0.2	0.1	0	0.2	0.3	0	0	0	0	0	0	0	4.5	0.3	24
20	0	0	0.1	0	0.3	0.1	S	0	0.3	0.2	0.1	0.4	0.1	0.1	0.3	0.2	0.2	0.4	0.2	0	0	0	0	0	0.4	0.1	24
21	0.1	0.2	0.4	0.2	0.7	S	1.1	3.5	4.2	1.9	1.1	0.7	0.5	0.5	0.6	0.5	0.4	0.4	0.6	0.6	0.9	0.3	0.1	0.1	4.2	0.9	24
22	0.2	0	0	0.3	S	0.8	0.1	0.3	1.4	0.5	1	1.2	2	2.9	1.2	0	0	0	0	0	0	0	0	0	2.9	0.5	24
23	0	0	0	S	0.1	0	0	0	0.4	0.8	1.5	1.1	1.5	0.5	0.8	0.5	1.4	0.2	0.7	1.4	4.7	11	11	8.4	11	2.0	24
24	5.7	0.1	S	0.4	0	0	0	0.1	0.7	0.9	0.7	0.6	0.5	0.2	0.2	0.2	0.2	0	0.4	0.2	0.3	0.4	0.4	0.4	5.7	0.5	24
25	0.3	S	0.2	0.3	0.2	0	0	0	0.1	0.4	0.6	0.5	0.9	0.3	1.3	0.3	0	1.1	0.2	0.3	0.1	0.9	1	2.5	2.5	0.5	24
26	S	0.1	0.2	0.1	0.2	1.5	0.7	2.3	1.7	1.7	2.1	2.6	3.7	2.4	1.1	0.4	0	0	0	0	0	0	0.1	S	3.7	1.0	24
27	0	0.1	0.2	0.1	0.1	0.4	0.3	0.1	0.3	0.3	0.1	0.3	0.1	0.1	0.2	0.3	0.3	0.1	0.1	0.1	0.1	0	S	0	0.4	0.2	24
28	0.4	0.4	0	0	0	0.2	1.4	4.2	1.2	1	1.3	1	0.6	0.6	0.7	0.6	0.2	0.1	0.1	0.1	0	S	0	0	4.2	0.6	24
29	0	0	0	0	0	0	0	0.1	0.4	1.3	1.6	1.9	1.8	1.9	1	0.6	0.2	1.6	0.2	0	S	0	0.2	0.1	1.9	0.6	24
30	0	0	0	0.2	0	0.3	0.5	3	4.2	4.7	3.9	2	1.1	1.1	0.8	0.5	0.1	0	0	S	0.5	0	0.2	0	4.7	1.0	24
31	0	2.6	4.1	6.5	7.1	6.8	3.5	6.1	4	3.2	3.4	1.6	1.6	0.8	0.2	0.1	0	0	S	0	0	0.1	0.4	0.3	7.1	2.3	24
HOURLY MAX	5.7	2.6	4.1	6.5	7.1	6.8	9.9	28.5	7.9	4.7	6.7	2.6	3.7	2.9	1.9	1.4	1.4	1.6	0.7	2.2	4.7	11.0	11.0	8.4			
HOURLY AVG	0.3	0.2	0.3	0.4	0.7	0.7	1.2	2.9	2.1	1.6	1.6	0.9	0.7	0.6	0.4	0.3	0.2	0.2	0.2	0.3	0.3	0.5	0.5	0.5			

**STATUS FLAG CODES**

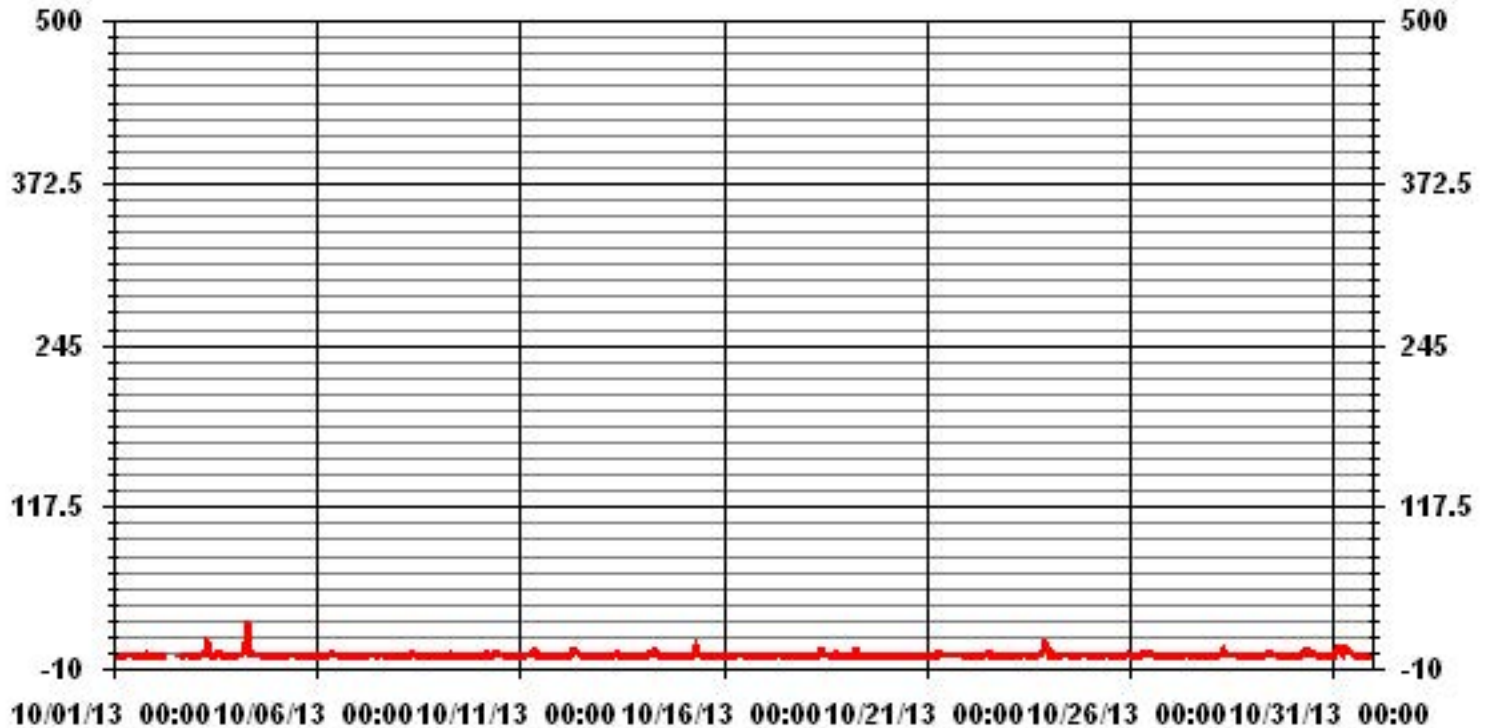
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	484					
MAXIMUM 1-HR AVERAGE:	28.5	PPB	@ HOUR(S)	7	ON DAY(S)	4
MAXIMUM 24-HR AVERAGE:	2.7	PPB			ON DAY(S)	4
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	1.74		MONTHLY AVERAGE:	0.73	PPB	

# 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

OCTOBER 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	0.3	0.8	S	0.7	0.7	1.7	1.2	1.2	1.7	1.2	0.7	0.7	2.2	0.7	0.2	0.2	0.2	0.2	32.2	1.7	1.2	3.2	1.7	32.2	2.4	24		
2	0.7	S	0.0	1.0	3.5	1.0	C	C	C	C	C	C	C	C	C	0.5	30.0	5.0	1.1	2.5	1.0	2.0	1.0	30.0	3.8	24		
3	S	0.5	3.5	1.5	3.0	2.5	8.0	16.0	14.0	3.5	1.0	0.5	2.5	14.0	5.5	2.5	3.5	0.5	1.5	0.5	3.5	4.0	2.0	S	16.0	4.3	24	
4	0.5	3.0	1.5	3.5	8.5	14.5	15.5	43.0	22.0	4.5	6.5	3.0	4.0	2.0	1.0	2.0	1.5	10.0	5.0	1.5	0.1	7.5	S	0.0	43.0	7.0	24	
5	0.5	0.0	0.0	0.0	2.5	0.0	0.0	1.5	2.5	1.5	1.0	6.5	0.5	1.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	S	0.5	1.0	6.5	0.8	24	
6	0.5	3.5	2.5	5.0	1.0	2.0	3.5	2.5	3.0	3.0	2.5	1.0	1.0	0.5	0.5	1.5	0.0	0.0	0.0	1.0	S	1.0	0.5	1.5	5.0	1.6	24	
7	0.5	0.5	0.5	3.0	10.0	1.0	1.0	2.0	2.5	10.5	6.0	2.0	1.5	1.0	0.5	6.0	5.0	0.5	1.5	S	0.0	0.5	0.5	1.5	10.5	2.5	24	
8	2.0	0.5	0.5	1.0	0.0	1.0	1.5	2.5	3.0	2.5	0.5	1.0	0.5	0.5	0.5	0.5	0.5	0.5	S	0.0	0.5	0.5	0.0	0.0	3.0	0.9	24	
9	1.5	1.0	1.0	2.0	3.0	2.0	4.5	8.5	2.0	1.0	1.5	2.0	0.5	2.5	0.5	1.0	1.0	S	9.0	3.0	0.5	0.0	0.0	0.5	9.0	2.1	24	
10	0.0	3.5	4.0	4.5	22.5	5.0	5.0	4.5	10.5	14.5	6.0	3.5	2.5	1.0	1.0	0.6	S	0.0	0.5	0.5	0.5	1.0	0.5	0.5	22.5	4.0	24	
11	1.0	1.5	2.5	15.0	3.0	5.0	1.5	4.5	7.9	5.5	5.0	2.0	0.5	1.0	0.5	S	1.5	0.0	0.0	0.0	1.0	0.5	1.0	3.0	15.0	2.8	24	
12	3.0	1.5	2.0	1.0	2.0	1.5	12.0	7.0	5.5	5.5	5.0	2.0	1.0	0.5	S	0.5	0.0	0.3	0.5	6.5	6.5	0.5	1.0	1.5	12.0	2.9	24	
13	0.5	1.0	2.0	0.5	1.0	1.0	1.0	1.0	2.5	2.5	2.5	1.5	1.0	S	0.1	0.0	0.0	0.5	0.0	0.0	3.0	0.5	5.5	16.0	16.0	1.9	24	
14	3.0	1.5	1.5	1.5	19.5	4.5	4.0	7.0	4.5	5.0	2.5	2.0	S	0.5	0.5	0.5	0.5	0.5	1.0	0.5	0.5	1.0	0.5	0.0	19.5	2.7	24	
15	1.0	0.5	0.5	2.0	2.5	0.5	6.5	21.0	21.0	2.5	2.5	S	0.5	0.0	0.5	0.5	0.0	0.0	0.0	1.0	1.5	0.5	1.5	0.5	21.0	2.9	24	
16	0.0	0.0	0.0	0.0	0.1	0.3	0.0	9.0	1.0	1.5	S	1.0	3.0	2.5	0.5	0.5	0.5	0.5	2.5	2.5	1.5	0.5	1.5	9.0	1.3	24		
17	0.5	2.0	0.5	1.0	4.5	1.5	0.5	4.0	3.0	S	6.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	1.0	2.5	3.0	0.5	4.0	6.0	1.6	24	
18	2.0	2.5	5.0	2.0	3.0	1.5	1.5	1.5	S	1.5	29.5	3.0	2.0	1.5	0.5	1.0	0.5	1.0	3.5	48.5	1.5	2.0	1.0	4.5	48.5	5.2	24	
19	1.5	0.5	1.5	3.0	1.0	0.0	44.0	S	1.5	1.5	0.5	0.6	0.5	0.5	0.5	0.5	0.0	0.0	0.5	0.0	1.5	1.0	0.0	44.0	2.7	24		
20	0.5	0.0	2.0	0.0	8.0	4.5	S	0.5	4.0	1.0	1.0	6.5	1.0	0.5	3.0	2.0	2.5	3.0	2.0	0.5	1.0	0.0	0.5	1.0	8.0	2.0	24	
21	1.5	1.5	2.0	2.5	3.5	S	3.0	8.5	7.5	3.5	3.5	1.5	1.0	1.0	2.0	2.0	1.5	2.5	3.5	3.5	4.0	1.5	0.5	1.0	8.5	2.7	24	
22	2.0	0.5	0.1	8.0	S	11.0	1.0	3.0	21.0	1.0	1.5	1.5	2.5	9.5	2.5	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.5	21.0	2.9	24		
23	0.5	0.5	0.5	S	3.0	0.5	0.5	1.0	1.0	1.5	2.0	1.5	14.0	2.5	4.0	1.0	21.5	4.0	5.5	7.0	11.5	20.0	22.0	16.0	22.0	6.2	24	
24	9.0	1.0	S	12.5	1.0	1.0	0.5	0.5	1.5	1.5	2.5	2.0	0.5	0.5	2.0	1.0	3.0	0.5	2.0	1.0	3.5	2.5	3.5	3.0	12.5	2.4	24	
25	2.0	S	1.5	2.0	2.0	0.5	0.0	0.0	0.5	0.5	1.0	1.0	12.5	1.0	11.5	0.5	0.0	23.5	1.5	1.0	1.0	5.5	5.0	5.5	23.5	3.5	24	
26	S	1.6	2.0	2.0	2.0	8.0	11.5	24.0	3.5	2.5	3.5	5.5	5.0	3.0	1.5	1.0	0.5	0.0	0.1	0.0	0.5	1.0	1.0	S	24.0	3.6	24	
27	0.5	1.0	1.0	1.0	1.0	2.0	1.5	1.0	1.5	1.5	1.0	0.5	4.5	1.0	1.0	1.5	2.0	2.0	2.0	0.5	0.5	0.5	S	2.5	4.5	1.4	24	
28	4.5	4.0	2.0	1.0	0.7	1.5	16.0	26.0	3.5	1.5	2.0	1.5	1.0	1.2	1.0	1.0	3.0	2.0	1.5	2.5	0.5	S	0.0	0.1	26.0	3.4	24	
29	0.0	0.5	0.0	0.0	0.0	0.5	0.5	1.5	1.0	4.0	2.5	3.5	3.5	10.5	4.5	2.0	2.0	8.5	2.0	0.5	S	0.0	2.0	1.0	10.5	2.2	24	
30	0.0	0.0	0.5	2.0	1.5	2.5	2.5	7.0	8.0	7.0	6.0	4.0	2.0	2.0	2.0	2.5	0.5	0.5	S	2.5	0.5	1.5	0.1	8.0	2.5	24		
31	1.0	10.5	8.5	13.5	14.5	21.5	14.0	12.0	15.0	5.0	5.5	2.5	2.0	1.5	1.0	1.0	0.0	0.0	S	0.0	0.5	1.0	2.5	2.5	21.5	5.9	24	
HOURLY MAX	9	11	9	15	23	22	44	43	22	15	30	7	14	14	12	6	22	30	9	49	12	20	22	16				
HOURLY AVG	1.4	1.6	1.7	3.1	4.3	3.3	5.6	7.6	6.1	3.4	3.8	2.2	2.5	2.2	1.7	1.1	1.8	3.0	1.7	4.0	1.8	2.1	2.0	2.5				

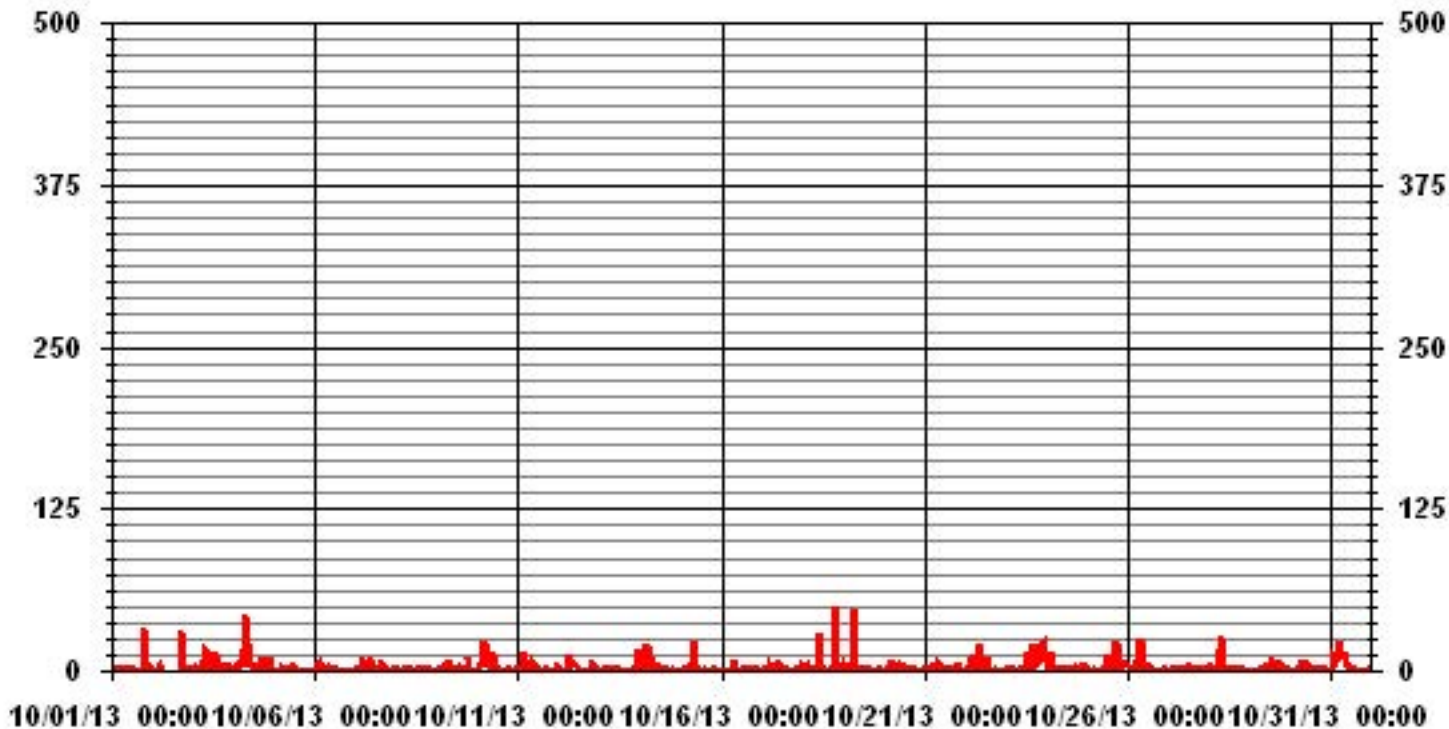
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	624					
MAXIMUM INSTANTANEOUS VALUE:	48.5	PPB	@ HOUR(S)	19	ON DAY(S)	18
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	10	HRS				
STANDARD DEVIATION:	5.15					

### 01 Hour Averages



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

October 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	1.56	1.56	3.28	1.56	1.14	3.28	10.27	2.28	3.28	6.13	10.41	21.25	13.83	7.98	7.56	4.56	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	1.56	1.56	3.28	1.56	1.14	3.28	10.27	2.28	3.28	6.13	10.41	21.25	13.83	7.98	7.56	4.56	

Calm : .00 %

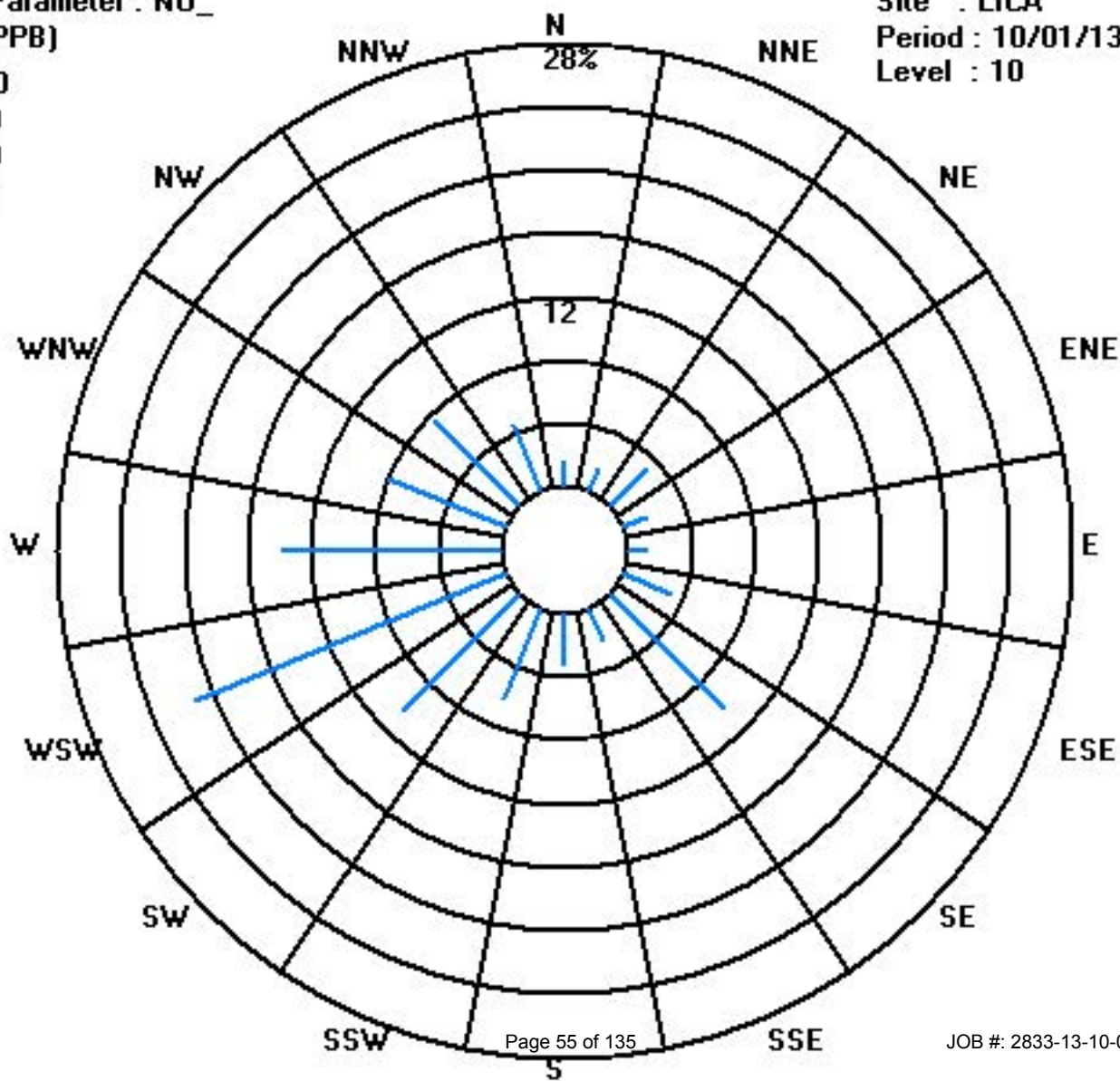
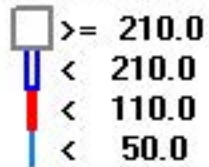
Total # Operational Hours : 701

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	11	11	23	11	8	23	72	16	23	43	73	149	97	56	53	32	701
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	11	11	23	11	8	23	72	16	23	43	73	149	97	56	53	32	

Calm : .00 %

Total # Operational Hours : 701

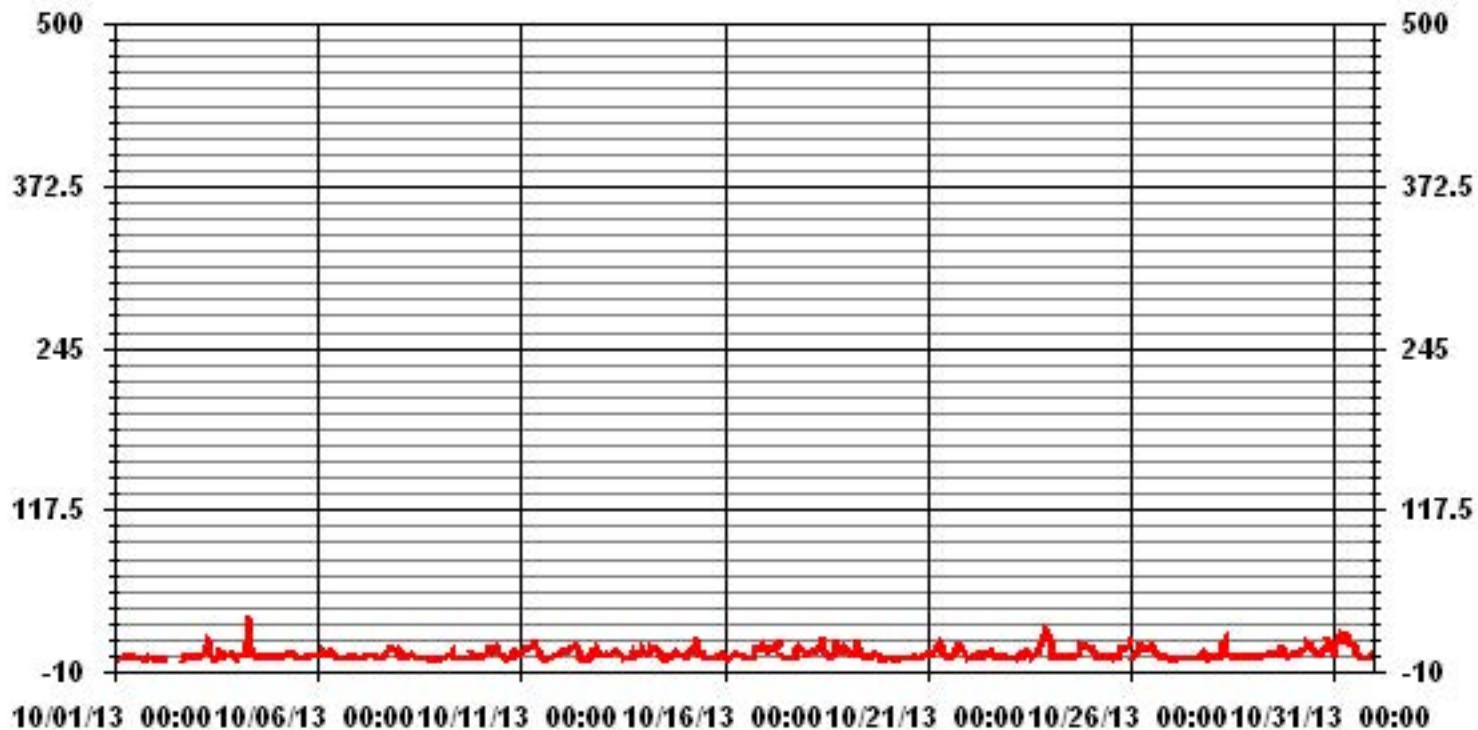




# Oxides of Nitrogen



### 01 Hour Averages



— LICA NOX\_ PPB

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

OCTOBER 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 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	1.5	1.0	S	1.0	2.0	2.5	3.0	3.0	3.5	2.5	2.0	2.5	3.5	1.5	1.5	2.0	2.0	2.0	0.5	35.5	5.0	2.5	5.5	2.0	35.5	3.8	24	
2	1.5	S	1.0	2.5	7.0	1.0	C	C	C	C	C	C	C	C	C	2.0	32.9	10.0	5.5	4.5	3.0	4.0	2.5	32.9	6.0	24		
3	S	2.5	6.5	5.0	7.5	8.0	14.5	22.0	21.0	8.5	3.5	1.0	7.0	21.0	14.5	7.0	10.5	7.0	6.5	4.0	6.0	9.0	4.5	S	22.0	9.0	24	
4	2.0	5.5	4.5	7.0	9.0	16.0	21.0	49.0	28.0	7.0	10.5	8.0	5.0	5.0	3.0	3.5	4.5	14.5	9.0	5.5	2.8	3.5	S	2.0	49.0	9.8	24	
5	2.5	2.0	2.0	2.5	8.5	3.5	3.5	7.4	9.0	5.5	3.5	3.0	2.5	1.5	0.5	0.5	1.0	2.5	3.0	5.0	3.5	S	4.0	4.5	9.0	3.5	24	
6	3.5	8.5	12.0	13.5	7.5	5.5	10.5	8.5	9.0	6.5	5.5	3.0	2.0	1.0	1.0	2.0	1.0	1.5	2.0	9.5	S	7.0	6.0	5.0	13.5	5.7	24	
7	2.5	2.0	2.0	5.0	27.4	4.5	5.0	4.0	12.4	8.5	4.5	3.0	2.0	2.5	6.0	7.5	12.0	16.0	S	9.5	12.0	8.5	10.0	27.4	7.5	24		
8	10.0	5.0	3.0	3.5	2.0	3.5	5.5	6.5	8.0	6.0	2.5	2.0	1.0	1.0	1.5	1.5	1.0	2.0	S	0.5	2.5	0.5	0.5	1.0	10.0	3.1	24	
9	1.5	1.0	1.0	2.5	6.5	5.9	8.5	13.4	4.0	2.0	3.5	3.0	1.5	3.5	1.0	2.5	2.5	S	15.5	5.9	3.0	2.0	2.5	4.5	15.5	4.2	24	
10	4.0	8.0	12.0	12.0	46.5	13.0	15.0	11.0	14.9	23.0	10.5	7.0	7.0	3.5	4.0	1.5	S	2.2	4.7	12.6	9.2	9.7	5.2	4.7	46.5	10.5	24	
11	8.7	10.2	12.6	19.2	11.7	11.2	13.6	15.7	18.1	11.7	10.7	5.7	1.7	2.7	1.7	S	3.5	1.0	4.0	7.5	6.5	4.0	6.0	12.0	19.2	8.7	24	
12	11.0	11.5	8.5	10.5	9.5	11.0	22.5	16.0	12.0	10.5	11.5	4.5	2.0	1.0	S	1.5	2.0	4.0	12.9	12.9	15.5	14.0	9.5	7.0	22.5	9.6	24	
13	4.5	5.0	6.5	5.0	4.0	5.5	6.0	7.5	9.5	9.0	7.0	4.5	2.5	S	1.0	1.0	1.0	2.0	9.0	4.0	4.5	5.5	14.5	32.9	32.9	6.6	24	
14	13.4	8.5	5.9	8.0	28.5	13.9	12.4	13.9	10.0	12.0	7.0	5.0	S	1.1	2.6	4.6	4.6	6.6	9.6	6.6	5.6	6.1	6.1	4.1	28.5	8.5	24	
15	5.6	3.1	6.6	11.6	12.1	6.6	22.1	32.0	32.0	7.1	6.1	S	2.0	1.5	2.0	2.5	1.5	1.0	1.5	4.0	4.5	7.0	8.0	32.0	8.0	24		
16	3.5	1.0	0.5	2.0	4.0	5.5	5.5	19.0	4.5	4.5	S	2.6	7.1	6.1	1.6	1.1	1.6	5.1	10.6	10.6	11.1	12.1	10.1	15.1	19.0	6.3	24	
17	14.1	11.6	8.6	10.1	14.1	9.6	9.7	17.6	16.6	S	14.6	2.1	1.1	1.1	1.1	1.1	1.6	1.6	14.1	12.5	13.1	12.1	10.1	11.6	17.6	9.1	24	
18	10.1	8.6	11.6	8.6	8.1	7.5	10.1	11.1	S	11.1	48.6	7.6	5.6	5.1	3.1	4.1	5.1	14.6	25.5	65.0	14.1	10.6	13.0	16.1	65.0	14.1	24	
19	7.6	7.1	6.6	7.1	5.1	6.6	59.6	S	8.6	6.1	4.1	2.6	2.6	2.1	4.1	4.6	4.6	5.1	6.1	0.6	8.1	2.1	0.6	59.6	7.2	24		
20	2.1	1.6	4.1	1.1	14.1	4.6	S	1.7	3.7	1.7	9.2	7.2	2.7	1.2	3.7	3.2	4.7	6.2	7.2	2.2	2.7	3.2	4.7	4.7	14.1	4.2	24	
21	6.2	7.7	7.7	10.7	13.2	S	12.4	21.5	17.5	8.5	7.0	4.5	3.0	2.5	4.5	6.0	9.5	12.4	20.0	15.0	16.0	10.5	7.0	3.5	21.5	9.9	24	
22	5.5	2.0	1.0	11.5	S	8.0	4.5	9.5	13.4	4.0	5.0	5.0	6.5	17.5	7.5	1.5	2.5	2.0	2.0	2.0	2.0	4.5	3.0	2.5	17.5	5.3	24	
23	1.5	1.0	1.5	S	5.2	3.7	3.7	5.2	6.2	8.1	8.7	3.7	18.2	3.2	10.7	6.7	35.2	12.6	18.7	21.2	28.2	34.1	36.7	27.7	36.7	13.1	24	
24	21.7	7.7	S	14.1	1.6	2.1	3.1	3.1	4.1	3.1	8.6	4.1	2.1	1.6	4.1	4.1	7.6	7.6	17.6	12.1	15.1	12.5	14.6	14.1	21.7	8.1	24	
25	13.6	S	8.6	8.1	5.1	3.1	3.1	3.1	3.1	2.1	1.6	2.6	2.1	30.1	2.1	24.1	2.6	3.1	47.5	12.1	13.5	11.6	18.6	16.1	22.6	47.5	11.2	24
26	S	5.1	7.6	10.6	12.1	23.1	24.1	48.0	10.1	10.6	9.6	15.1	12.5	11.1	8.1	5.6	3.6	4.6	4.1	4.1	4.1	2.1	2.6	S	48.0	10.8	24	
27	1.0	2.0	1.5	1.5	3.0	3.5	2.5	1.5	2.5	4.0	4.0	1.5	4.0	1.5	1.0	3.0	3.5	9.5	9.5	4.5	3.5	2.5	S	8.5	9.5	3.5	24	
28	11.5	9.5	7.0	4.5	2.0	11.5	26.9	43.5	11.0	4.0	4.0	4.5	3.0	2.5	3.5	4.5	7.9	11.0	6.0	6.0	3.5	S	2.6	2.6	43.5	8.4	24	
29	2.6	3.1	2.6	2.6	2.9	4.1	4.1	6.1	3.1	6.1	6.1	6.1	8.6	8.6	30.1	9.6	6.1	7.1	25.1	9.6	7.6	S	3.6	6.6	6.0	30.1	7.5	24
30	3.6	3.6	4.6	6.6	6.6	9.6	10.1	21.1	19.1	17.1	16.1	11.6	8.6	9.1	8.1	8.1	7.1	10.6	14.1	S	20.7	14.2	11.2	6.7	21.1	10.8	24	
31	6.2	28.2	22.2	29.7	26.7	31.2	25.2	26.7	33.1	16.7	15.7	13.1	11.7	10.7	5.2	3.7	2.7	1.7	S	1.6	3.1	3.6	5.6	7.6	33.1	14.4	24	
HOURLY MAX	21.7	28.2	22.2	29.7	46.5	31.2	59.6	49.0	33.1	23.0	48.6	15.1	30.1	30.1	24.1	8.1	35.2	47.5	25.5	65.0	28.2	34.1	36.7	32.9				
HOURLY AVG	6.3	6.0	6.2	7.9	10.5	8.2	12.7	15.5	11.7	8.0	8.8	5.2	5.8	5.3	4.6	3.5	5.1	8.9	9.7	10.4	8.0	8.1	7.9	8.6				

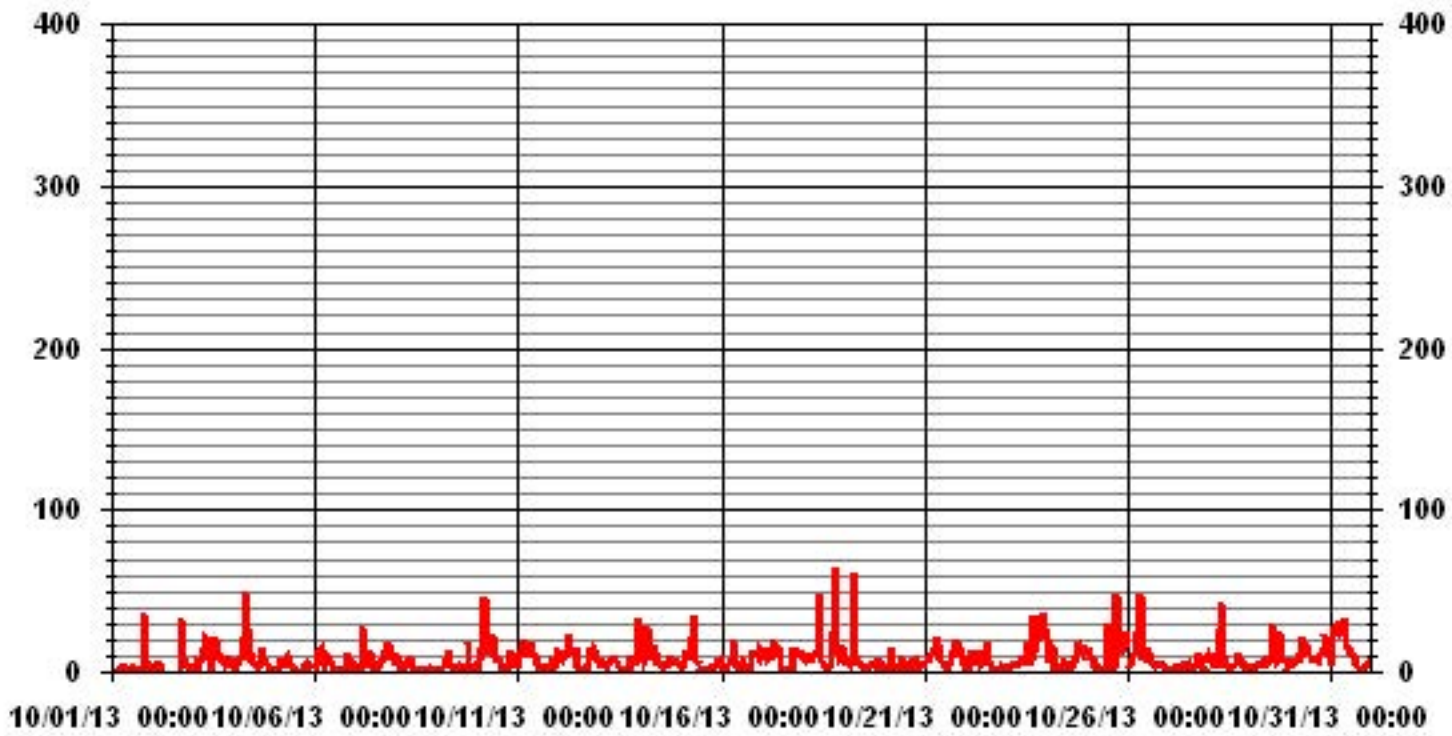
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	701
MAXIMUM INSTANTANEOUS VALUE:	65.0 PPB @ HOUR(S) 19 ON DAY(S) 18
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	10 HRS
STANDARD DEVIATION:	8.03
OPERATIONAL TIME:	744 HRS

### 01 Hour Averages



— LICA NOXMAX PPB

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

October 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	1.56	1.56	3.28	1.56	1.14	3.28	10.27	2.28	3.28	6.13	10.41	21.25	13.83	7.98	7.56	4.56	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	1.56	1.56	3.28	1.56	1.14	3.28	10.27	2.28	3.28	6.13	10.41	21.25	13.83	7.98	7.56	4.56	

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	11	11	23	11	8	23	72	16	23	43	73	149	97	56	53	32	701
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	11	11	23	11	8	23	72	16	23	43	73	149	97	56	53	32	

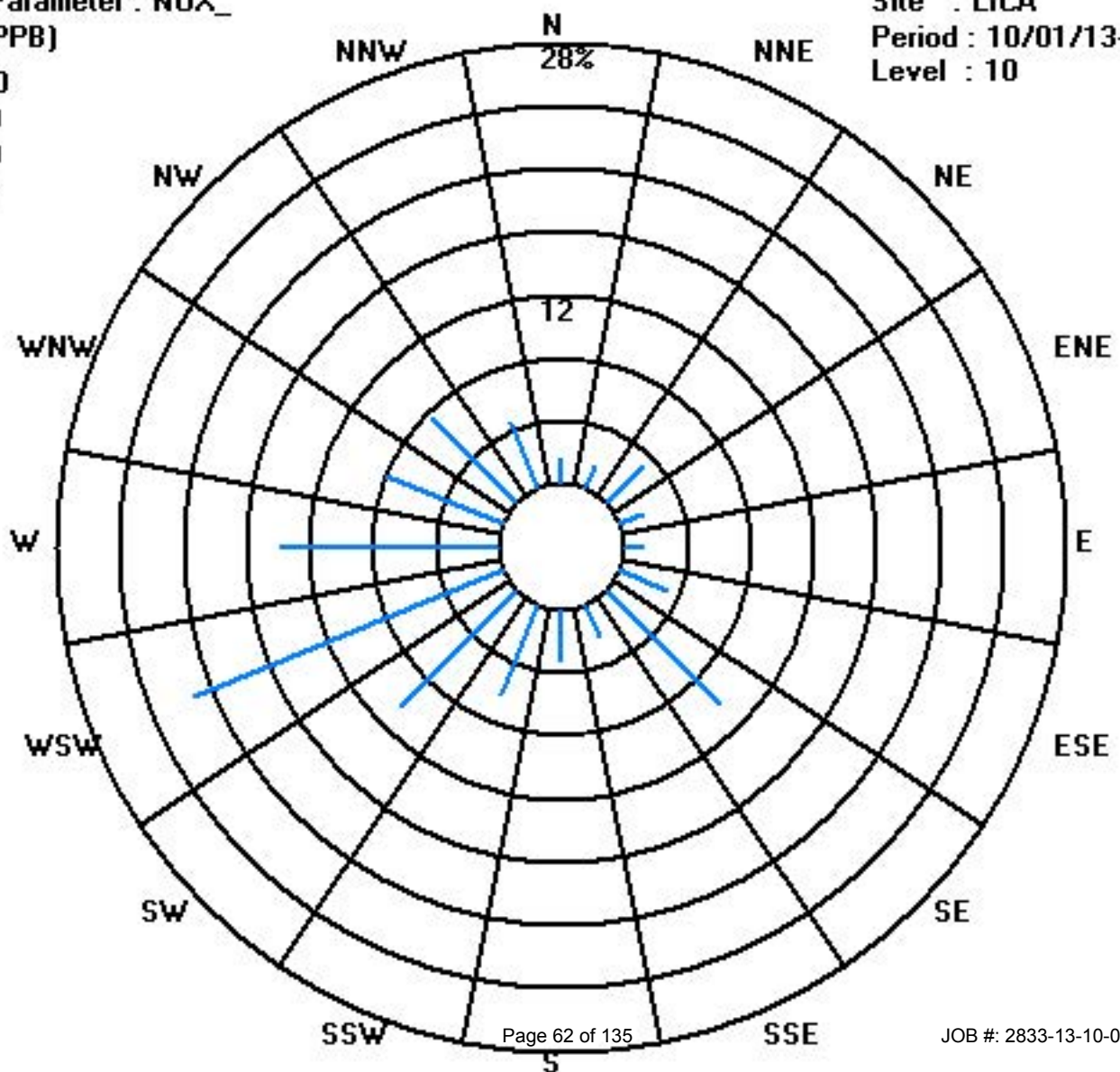
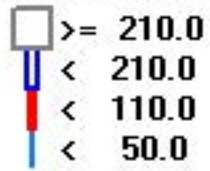
Calm : .00 %

Total # Operational Hours : 701

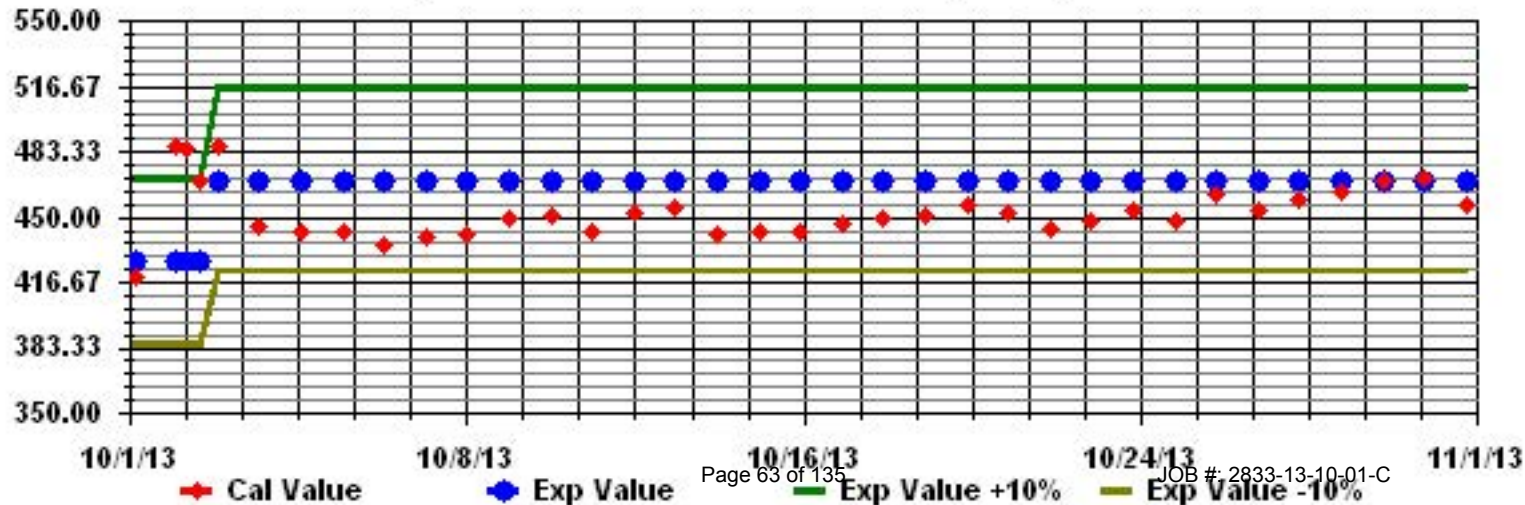
Class Limits (PPB)

Period : 10/01/13-10/31/13

Level : 10



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





# Ozone

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

OCTOBER 2013

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

MST

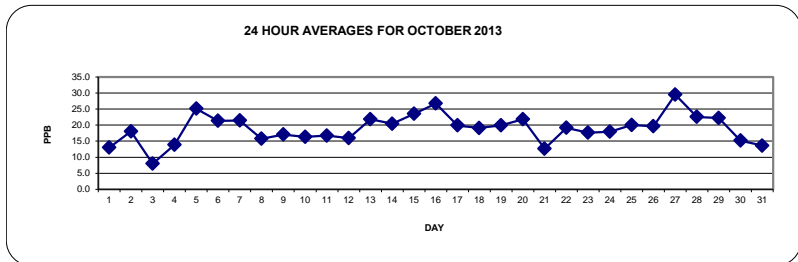
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	13	13	S	13	12	11	10	8	8	8	9	12	16	17	16	16	15	15	14	13	14	15	15	16	17	13.0	24	
2	17	S	19	19	20	21	21	23	25	27	27	28	27	27	26	24	27	19	7	4	3	2	1	1	28	18.0	24	
3	S	1	1	1	2	1	1	C	C	C	C	C	22	17	17	17	23	13	10	5	2	1	1	S	23	7.9	24	
4	1	1	1	1	1	1	1	1	7	12	17	18	21	25	25	24	27	24	22	20	21	23	S	24	27	13.8	24	
5	23	26	27	25	23	21	19	15	17	21	24	26	32	35	37	37	35	33	30	23	20	S	11	18	37	25.1	24	
6	14	17	16	17	16	18	8	15	17	21	23	28	30	31	32	32	30	27	26	21	S	16	19	17	32	21.3	24	
7	22	26	27	27	25	23	22	23	22	22	23	24	25	27	28	28	25	20	10	S	12	9	12	11	28	21.4	24	
8	16	21	25	26	24	21	18	15	17	20	20	16	12	11	11	10	9	S	10	11	12	13	13	26	15.7	24		
9	13	13	13	12	10	9	8	9	12	17	16	18	22	24	26	27	26	S	18	20	20	20	20	19	27	17.0	24	
10	16	13	10	7	6	4	7	10	10	11	16	20	28	29	30	34	S	34	31	19	15	9	9	8	34	16.3	24	
11	7	6	7	4	5	8	11	11	13	15	19	25	30	29	29	S	31	29	25	20	20	19	13	8	31	16.7	24	
12	8	9	8	6	7	4	2	3	10	13	17	25	28	29	S	32	31	28	16	17	11	16	23	23	32	15.9	24	
13	22	21	16	18	20	19	17	16	18	20	23	27	33	S	36	37	35	32	22	20	17	14	11	8	37	21.8	24	
14	10	8	8	9	6	5	3	2	10	20	25	32	S	38	39	37	37	31	23	27	29	27	23	21	39	20.4	24	
15	16	13	12	10	6	8	3	3	20	26	28	S	33	32	31	31	34	36	36	35	34	34	32	28	36	23.5	24	
16	29	31	32	29	26	24	23	24	24	24	S	30	33	35	36	36	35	33	24	21	18	18	17	13	36	26.7	24	
17	11	10	9	8	9	14	16	15	14	S	32	33	33	34	34	34	34	34	24	14	14	10	11	10	34	19.9	24	
18	19	21	21	20	18	18	15	15	S	17	19	24	25	28	30	32	30	23	11	13	12	12	7	9	32	19.1	24	
19	11	13	16	18	17	16	14	S	18	24	27	26	26	24	22	19	15	17	16	17	23	26	26	28	28	20.0	24	
20	24	21	22	26	26	27	S	29	28	26	27	26	24	23	22	21	20	20	21	19	16	13	11	10	29	21.8	24	
21	9	4	2	3	3	S	5	5	8	15	18	22	27	30	24	21	18	15	10	7	6	9	12	17	30	12.6	24	
22	18	18	18	S	17	16	13	12	12	12	13	13	14	18	33	32	31	27	26	25	21	17	16	33	19.1	24		
23	16	18	20	S	24	24	24	23	22	23	22	25	26	28	29	26	20	16	8	6	2	1	1	1	29	17.6	24	
24	2	19	S	20	19	18	17	18	18	21	24	26	27	29	27	26	26	20	9	9	11	10	9	8	29	18.0	24	
25	8	S	15	20	23	26	29	28	27	26	25	26	27	28	28	29	28	19	12	9	9	8	7	4	29	20.0	24	
26	S	20	16	18	15	9	14	10	11	15	17	17	18	19	22	24	28	26	25	25	26	28	28	S	28	19.6	24	
27	27	28	27	29	29	30	31	32	33	33	33	33	33	33	33	32	32	31	27	21	25	28	29	S	23	33	29.5	24
28	17	18	22	19	16	12	7	8	18	22	24	27	29	31	31	29	30	28	26	25	26	S	27	27	31	22.6	24	
29	25	24	22	22	23	23	21	21	21	22	23	23	24	25	27	27	24	16	19	21	S	21	19	18	27	22.2	24	
30	18	18	16	14	13	11	10	4	7	11	15	20	21	21	25	27	26	18	15	S	11	10	9	9	27	15.2	24	
31	6	4	2	1	1	1	2	3	8	11	13	17	17	21	22	23	23	24	S	25	25	25	23	16	25	13.6	24	
HOURLY MAX	29	31	32	29	29	30	31	32	33	33	33	33	33	38	39	37	37	36	36	35	34	34	32	28				
HOURLY AVG	15.1	15.7	15.5	15.3	14.8	14.8	13.2	13.9	16.4	19.1	21.3	23.7	25.4	26.5	27.1	27.5	26.9	23.9	19.2	17.8	16.6	15.8	14.7	14.6				

### STATUS FLAG CODES

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

OBJECTIVE LIMIT:

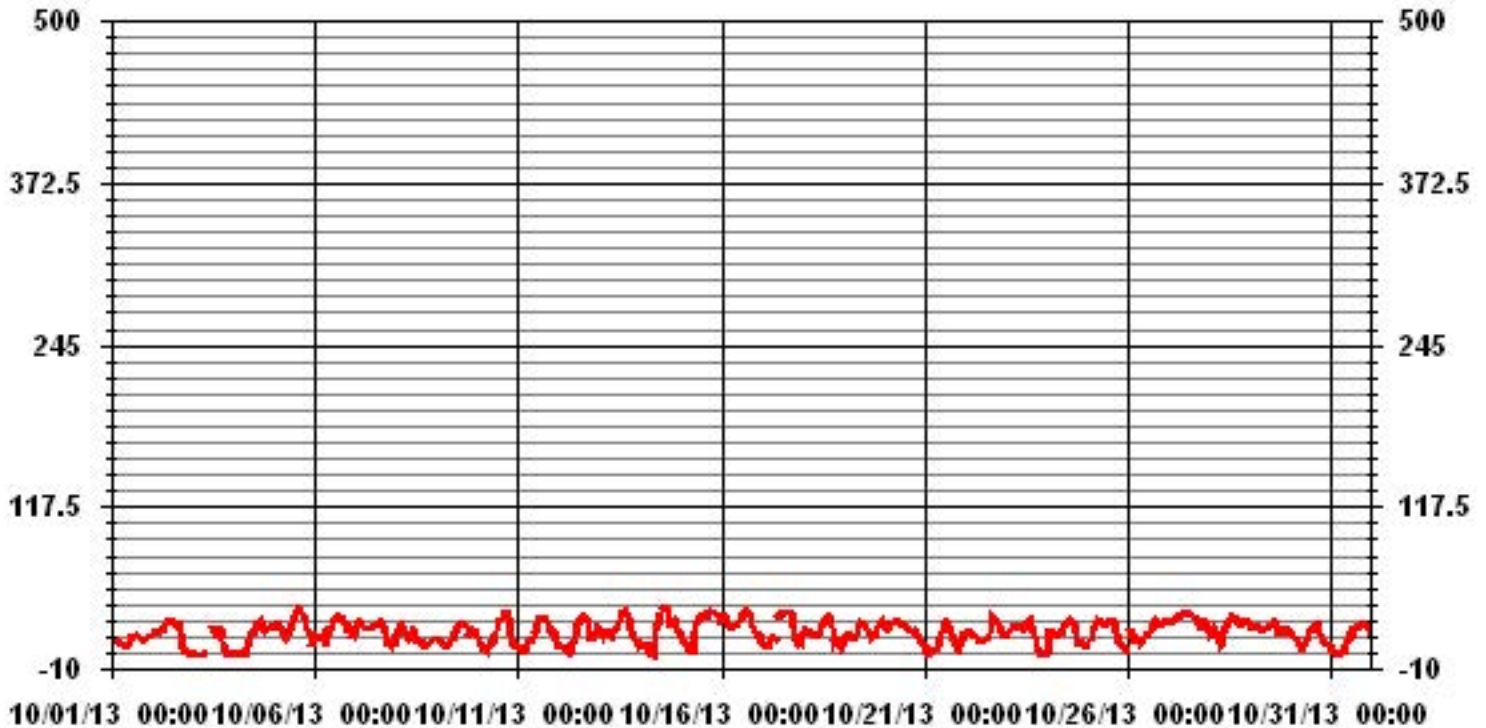
ALBERTA ENVIRONMENT: 1-HR 82 PPB



### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	706				
MAXIMUM 1-HR AVERAGE:	39	PPB	@ HOUR(S)	14	
MAXIMUM 24-HR AVERAGE:	29.5	PPB		ON DAY(S) 27	
				VAR-VARIOUS	
IJS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	8.84		MONTHLY AVERAGE:	18.99	PPB

# 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

OCTOBER 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	14	14	S	14	13	12	11	9	8	9	10	16	18	18	18	17	17	15	15	14	15	17	16	17	18	14.2	24	
2	19	S	19	21	22	22	23	26	28	28	30	29	29	30	30	27	29	25	12	6	4	3	2	2	30	20.3	24	
3	S	2	3	3	3	2	1	C	C	C	C	C	C	19	19	18	29	19	14	9	5	1	2	S	29	9.3	24	
4	3	2	2	1	1	1	1	4	11	14	18	20	23	29	29	27	28	26	23	22	22	23	S	25	29	15.4	24	
5	25	28	28	27	24	22	20	19	19	23	25	29	34	37	38	38	37	35	32	28	23	S	15	22	38	27.3	24	
6	20	20	18	19	20	20	14	17	19	22	25	29	32	32	33	32	32	29	28	27	S	21	22	22	33	24.0	24	
7	25	26	28	28	27	24	23	24	23	24	25	26	28	29	28	28	23	17	S	13	13	14	12	29	23.1	24		
8	20	24	28	27	26	24	20	17	19	21	22	19	14	11	11	11	11	10	S	11	12	13	14	13	28	17.3	24	
9	13	14	14	14	11	10	10	11	15	18	17	20	24	26	27	27	27	S	20	21	21	21	20	20	27	18.3	24	
10	20	19	18	11	10	6	12	12	12	13	20	26	30	31	33	36	S	35	33	29	21	15	14	12	36	20.3	24	
11	10	8	10	6	8	11	12	12	15	16	23	29	31	31	31	S	32	30	28	23	22	21	19	12	32	19.1	24	
12	11	11	10	9	9	7	5	6	12	15	21	27	30	30	S	34	33	31	21	22	19	22	24	25	34	18.9	24	
13	23	24	20	21	21	20	18	17	19	23	25	32	36	S	38	38	37	34	29	23	21	17	15	11	38	24.4	24	
14	13	11	11	13	10	10	5	4	17	24	29	35	S	39	41	38	38	37	31	31	32	31	28	28	41	24.2	24	
15	22	17	20	17	11	12	6	4	26	27	29	S	34	34	32	33	36	39	38	37	35	35	35	31	39	26.5	24	
16	31	33	33	32	28	28	24	25	25	26	S	33	35	37	37	37	37	35	28	24	22	20	18	17	37	28.9	24	
17	14	13	12	10	12	16	17	17	16	S	35	35	35	35	36	35	35	35	35	35	19	18	13	17	14	36	22.8	24
18	21	22	22	22	19	19	17	17	S	18	23	25	27	30	32	33	32	27	21	17	16	17	11	11	33	21.7	24	
19	16	17	18	18	18	17	16	S	21	29	29	28	27	26	23	22	16	18	17	22	25	28	27	30	30	22.1	24	
20	29	26	26	27	28	28	S	30	29	27	27	27	26	24	23	21	21	21	22	21	18	15	13	11	30	23.5	24	
21	10	7	3	4	4	S	7	7	12	18	20	26	30	31	26	23	21	20	13	10	10	14	17	19	31	15.3	24	
22	19	20	19	19	S	19	17	15	14	14	14	14	15	17	30	35	34	33	29	28	26	24	18	18	35	21.3	24	
23	18	20	22	S	26	25	25	25	23	25	25	26	28	30	30	30	26	24	13	11	5	2	2	2	30	20.1	24	
24	8	23	S	21	19	19	18	19	20	23	26	27	28	29	28	27	27	25	15	11	13	11	10	9	29	19.8	24	
25	11	S	19	22	24	30	30	30	29	27	26	27	28	29	30	30	29	27	16	14	13	12	11	9	30	22.7	24	
26	S	22	19	20	18	18	20	16	16	16	18	18	19	21	24	24	31	29	28	27	28	29	29	S	31	22.3	24	
27	28	29	29	30	30	31	33	33	34	34	34	34	34	33	32	32	33	31	24	27	30	30	S	28	34	31.0	24	
28	20	21	24	22	18	17	10	14	21	23	26	29	30	32	32	31	31	29	28	26	27	S	28	28	32	24.7	24	
29	26	25	23	23	23	24	22	22	22	22	23	24	24	26	27	28	26	22	21	22	S	21	21	19	28	23.3	24	
30	19	18	17	16	14	12	11	8	10	14	17	22	22	23	26	28	27	22	19	S	14	15	14	12	28	17.4	24	
31	11	11	5	2	1	3	7	7	10	12	14	20	19	23	23	24	23	25	S	25	26	26	25	18	26	15.7	24	
HOURLY MAX	31	33	33	32	30	31	33	33	34	34	35	35	36	39	41	38	38	39	38	37	35	35	35	31				
HOURLY AVG	17.9	18.2	17.9	17.3	16.6	17.0	15.2	16.1	18.8	20.8	23.3	25.9	27.2	28.0	28.9	28.8	28.8	27.0	23.1	20.9	19.2	18.3	17.3	17.1				

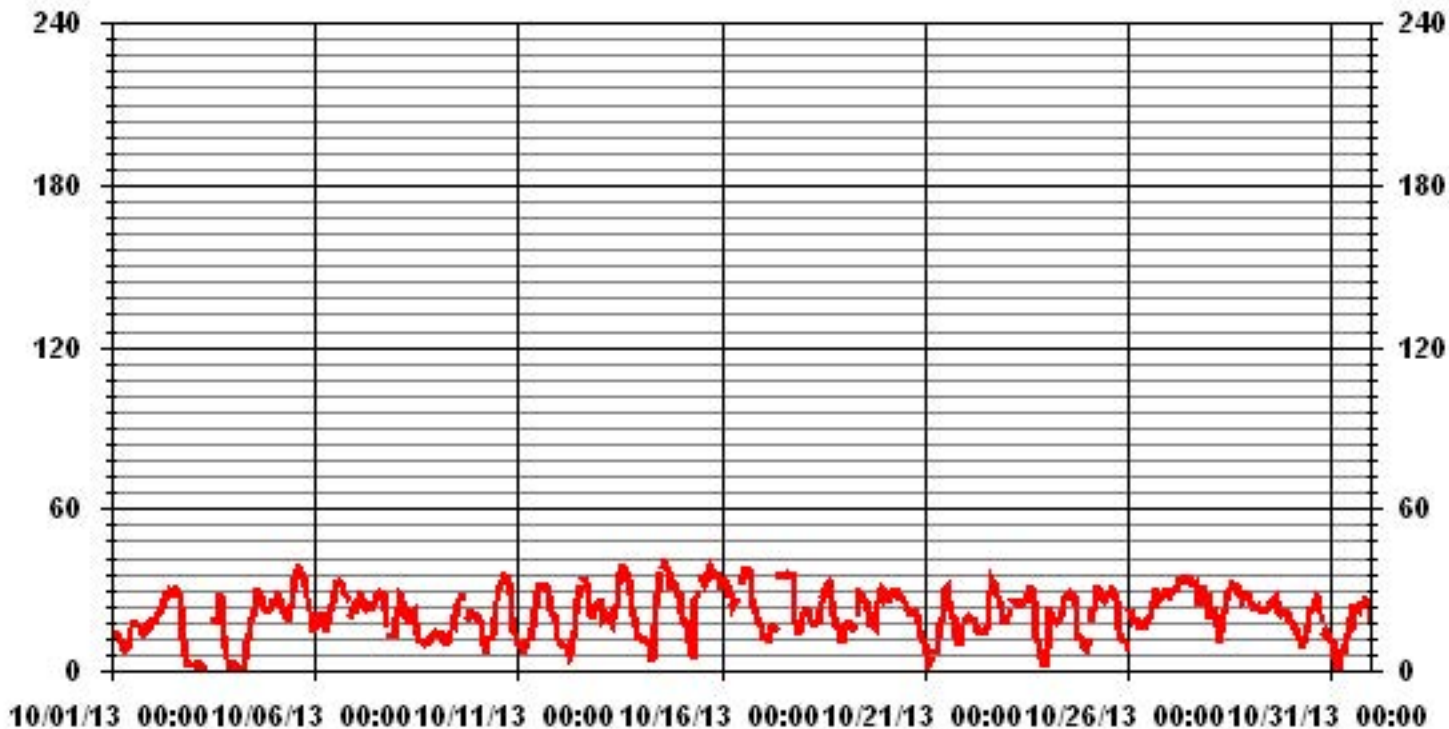
### STATUS FLAG CODES

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:	705					
MAXIMUM INSTANTANEOUS VALUE:	41	PPB	@ HOUR(S)	14	ON DAY(S)	14
S CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	8.61					

# 01 Hour Averages



— LICA O3MAX PPB

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

October 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	1.98	2.54	3.25	1.55	1.13	3.25	10.19	2.26	3.25	6.09	10.33	20.96	13.59	7.93	7.36	4.24	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.98	2.54	3.25	1.55	1.13	3.25	10.19	2.26	3.25	6.09	10.33	20.96	13.59	7.93	7.36	4.24	

Calm : .00 %

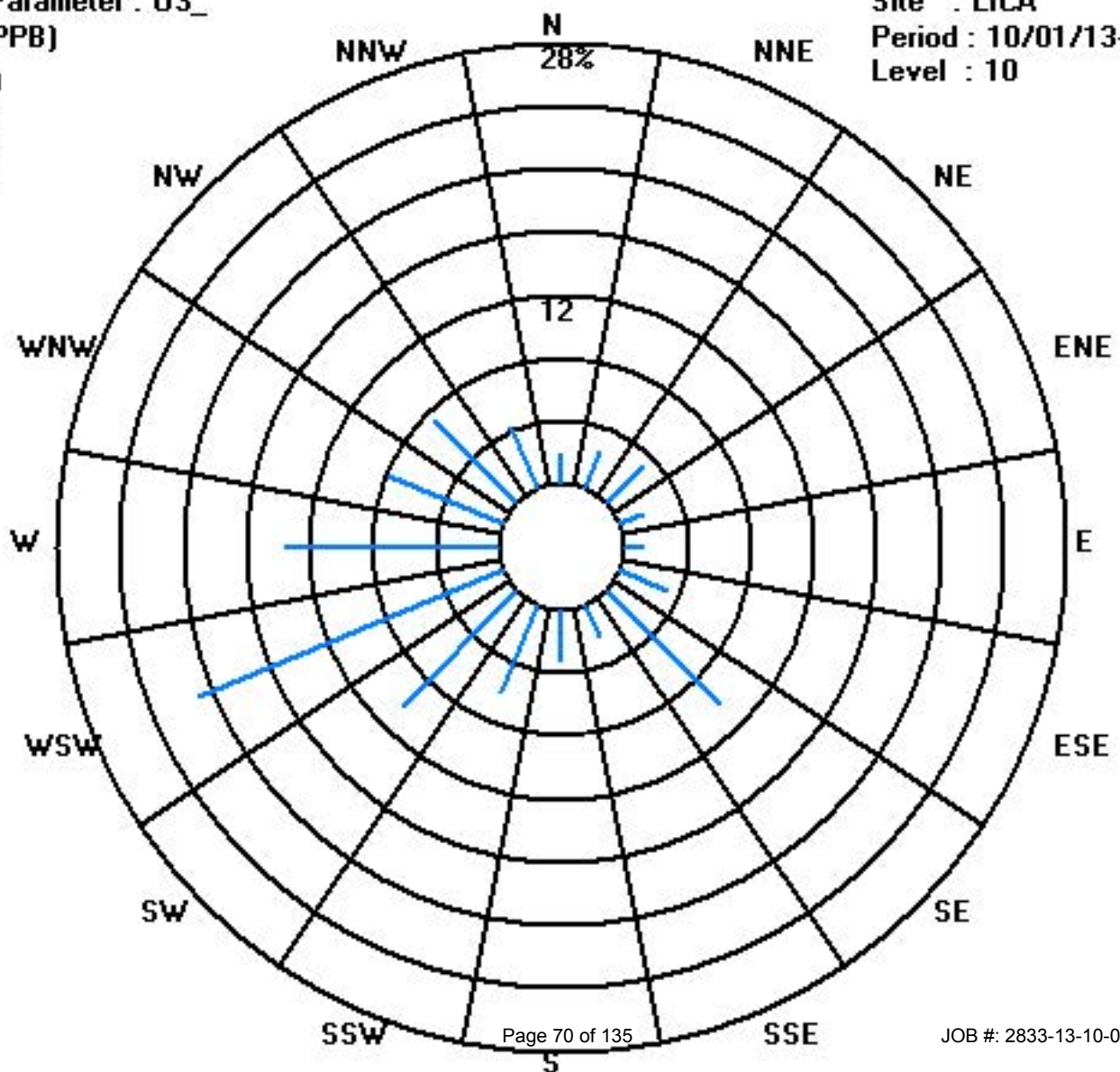
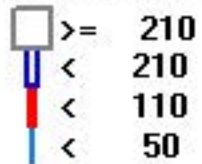
Total # Operational Hours : 706

Distribution By Samples

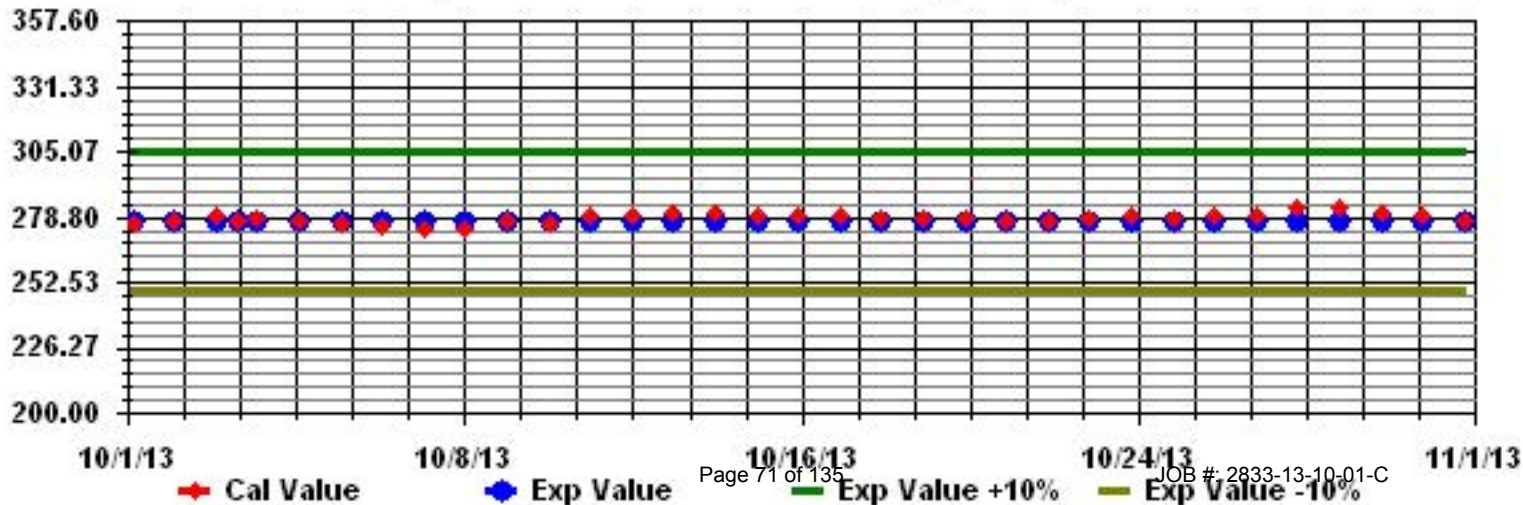
Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50	14	18	23	11	8	23	72	16	23	43	73	148	96	56	52	30	706
< 110																	
< 210																	
>= 210																	
Totals	14	18	23	11	8	23	72	16	23	43	73	148	96	56	52	30	

Calm : .00 %

Total # Operational Hours : 706



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

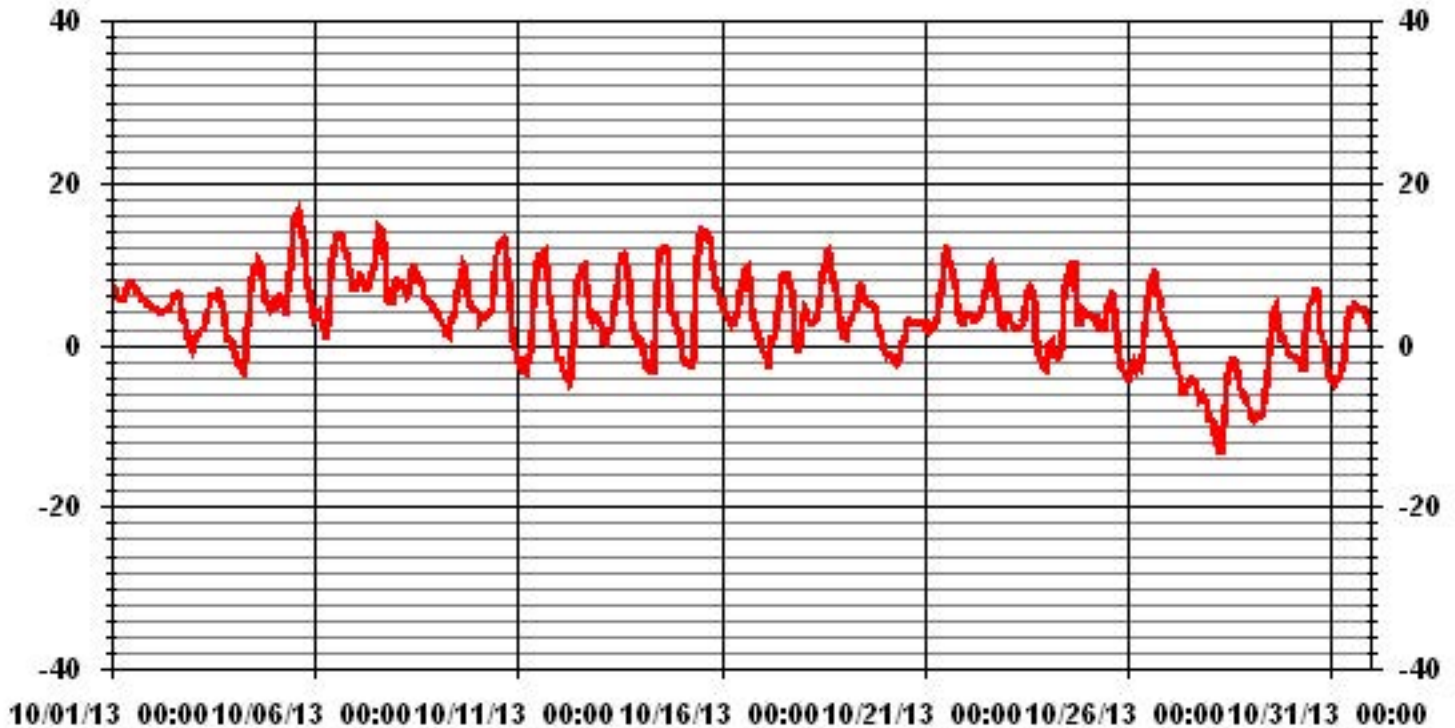




# Ambient Temperature



### 01 Hour Averages



# Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

OCTOBER 2013

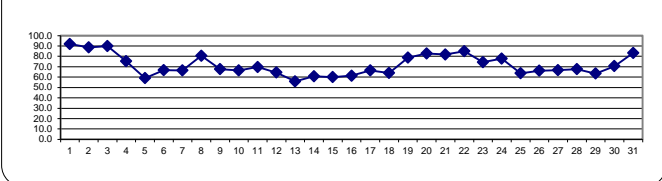
RELATIVE HUMIDITY hourly averages (%)

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	83	89	86	90	93	94	94	95	95	95	94	93	90	90	91	91	91	92	94	95	94	92	92	93	95	91.9	24	
2	2	94	93	93	92	93	92	92	92	90	90	90	86	81	78	78	74	74	74	83	92	94	95	94	94	95	95	88.7	24
3	3	95	95	96	96	96	96	96	96	96	93	84	77	77	84	77	74	78	89	91	93	94	95	95	95	96	89.9	24	
4	4	95	95	95	95	94	93	93	92	87	85	77	66	55	48	48	51	52	59	66	72	74	74	74	70	95	75.4	24	
5	5	69	60	58	58	61	64	69	71	66	63	58	49	42	36	32	34	38	46	56	66	72	79	85	82	85	58.9	24	
6	6	85	82	80	83	86	85	90	88	77	69	60	50	45	43	42	42	45	51	55	60	66	70	71	76	90	66.7	24	
7	7	74	71	67	65	66	68	69	68	66	64	62	60	58	52	45	45	50	59	73	81	80	85	85	84	85	66.5	24	
8	8	81	83	88	93	93	91	92	92	87	78	70	66	72	70	68	73	84	83	80	79	78	79	77	77	93	80.6	24	
9	9	79	79	79	82	88	87	89	90	82	73	70	65	57	50	45	42	43	50	58	59	61	63	65	67	90	67.6	24	
10	10	71	78	78	82	83	84	81	80	81	75	64	57	51	44	43	36	33	36	45	63	72	81	88	88	88	66.4	24	
11	11	88	88	83	86	87	86	83	82	75	68	57	50	45	48	44	42	47	53	60	68	76	81	86	89	89	69.7	24	
12	12	90	90	91	91	92	91	90	90	86	75	61	46	39	37	34	31	36	43	53	56	60	56	52	54	92	64.3	24	
13	13	58	60	69	69	68	68	70	69	65	56	50	40	30	28	28	29	34	41	54	62	68	72	77	75	77	55.8	24	
14	14	76	80	84	84	85	86	86	86	76	62	50	40	33	30	30	31	33	44	55	56	55	62	67	67	86	60.8	24	
15	15	75	80	81	82	82	85	85	84	64	54	49	47	48	50	52	51	46	40	41	45	47	48	49	56	85	60.0	24	
16	16	63	66	65	71	74	75	72	76	73	69	65	57	47	42	38	36	40	48	55	61	67	67	71	74	76	61.3	24	
17	17	79	82	81	83	85	78	74	73	71	68	58	51	43	42	43	45	48	51	58	70	75	79	79	77	85	66.4	24	
18	18	72	69	71	73	75	76	77	74	70	67	61	56	51	47	43	42	46	53	60	62	66	71	73	78	78	63.9	24	
19	19	81	82	80	79	79	77	76	74	72	65	65	68	81	86	88	86	84	82	82	85	84	79	78	77	88	78.8	24	
20	20	80	83	82	79	80	78	81	89	87	86	83	81	80	79	79	78	79	80	80	83	85	88	92	92	92	82.7	24	
21	21	92	93	94	95	95	94	93	93	90	82	76	68	58	50	62	65	68	73	78	83	87	90	92	92	95	81.8	24	
22	22	92	91	90	90	91	92	93	93	95	95	92	89	85	81	77	67	67	67	75	77	80	85	88	86	95	84.9	24	
23	23	84	83	81	80	78	76	74	76	75	74	72	65	59	56	53	55	62	71	79	84	86	86	87	89	89	74.4	24	
24	24	88	88	87	90	92	91	89	86	79	68	62	57	55	57	57	58	70	80	87	83	82	83	84	92	77.7	24		
25	25	84	81	78	74	70	68	57	58	61	61	57	54	49	46	42	41	45	57	67	71	75	76	78	81	84	63.8	24	
26	26	82	76	76	75	78	79	77	80	77	71	64	58	53	51	50	49	48	54	59	66	63	64	67	72	82	66.2	24	
27	27	69	68	72	74	73	72	68	68	69	68	65	64	62	61	61	59	61	64	69	65	61	64	68	74	74	66.6	24	
28	28	80	80	80	84	85	84	83	83	79	71	64	57	51	46	43	45	47	54	61	64	64	69	74	75	85	67.6	24	
29	29	77	78	80	79	78	76	77	76	72	65	58	54	48	43	41	40	44	52	57	59	63	65	69	71	80	63.4	24	
30	30	71	72	72	74	75	77	80	83	79	71	64	60	59	59	55	52	57	69	69	73	75	80	83	84	84	70.5	24	
31	31	86	85	85	86	85	86	87	86	81	80	73	72	79	83	86	89	89	86	84	81	77	80	83	89	89	83.3	24	
HOURLY MAX		95	95	96	96	96	96	96	96	96	95	94	93	90	90	91	91	91	92	94	95	95	95	95	95				
HOURLY AVG		80.4	80.6	80.7	81.7	82.6	82.3	81.9	82.1	78.4	73.3	67.1	61.5	57.6	55.3	54.0	53.3	55.7	61.3	67.3	71.6	73.6	76.0	78.1	79.5				

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

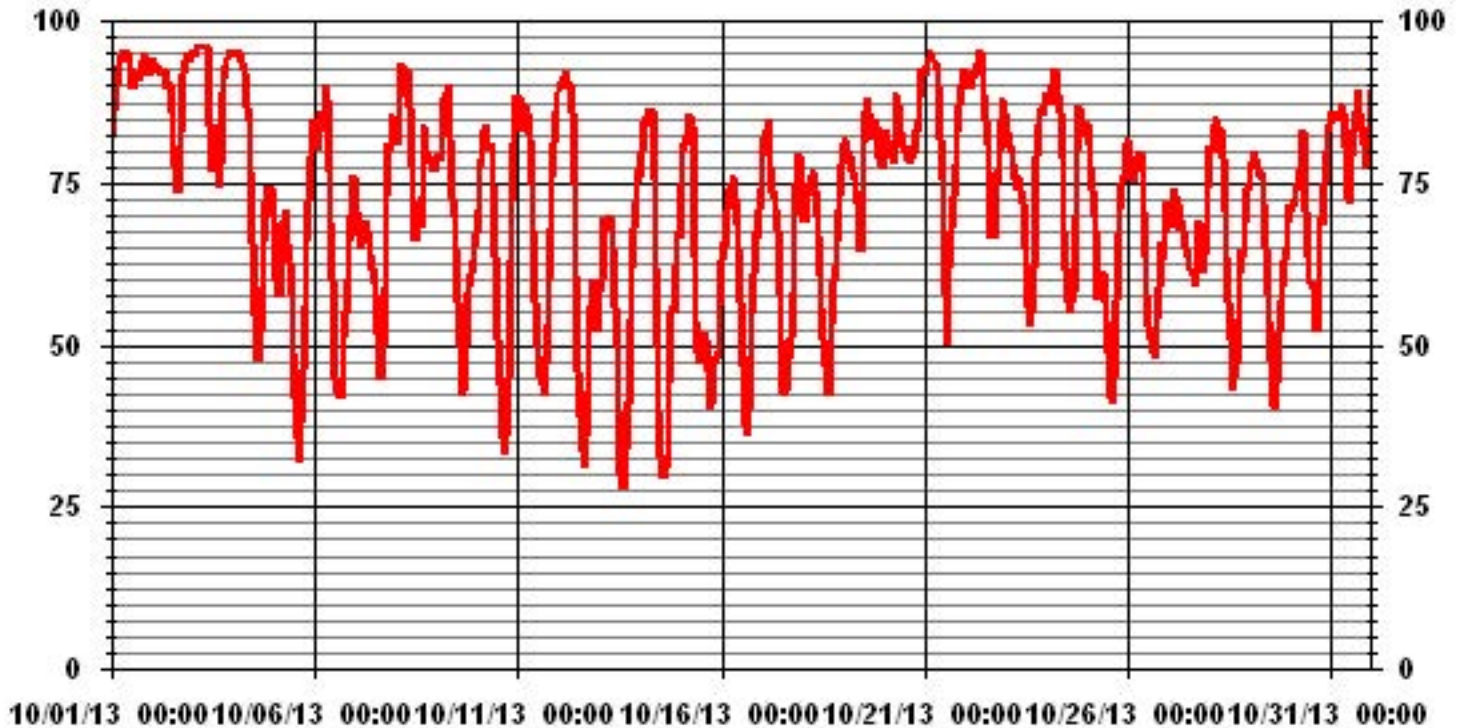
24 HOUR AVERAGES FOR OCTOBER 2013



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	96	%	@ HOUR(S)	VAR	ON DAY(S)	3
MAXIMUM 24-HR AVERAGE:	91.9	%			ON DAY(S)	1
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		744	HRS
STANDARD DEVIATION:	16.21		AMD OPERATION UPTIME:		100.0	%
			MONTHLY AVERAGE:		71.50	%

### 01 Hour Averages

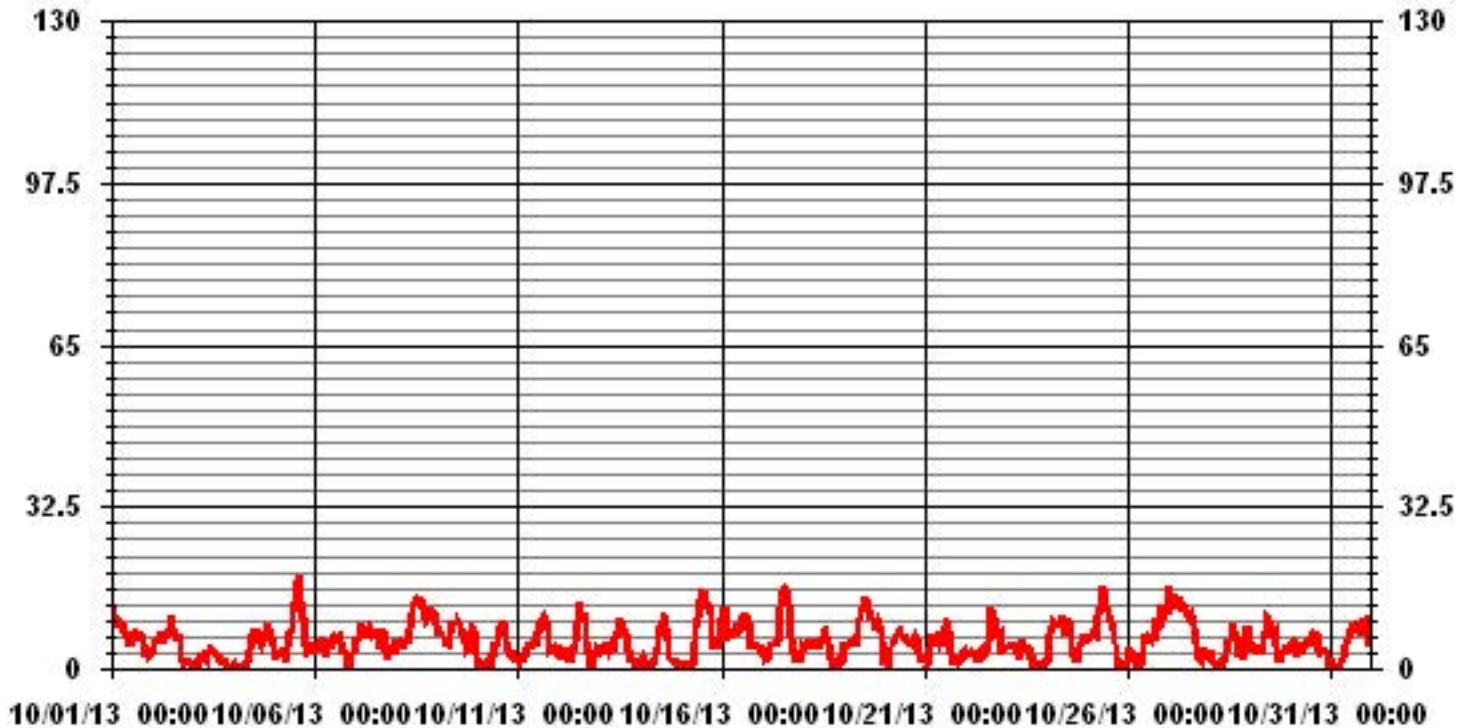


# Vector Wind Speed





# 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

OCTOBER 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	20.4	16.1	15.7	16.1	14.1	12.9	13.3	15	11.2	11.9	8.1	9.2	12.2	11.5	9.8	11.3	10.1	9.4	9	9.2	4.9	9.1	5.9	6.3	20.4
2	6.7	8.3	10.1	10.1	10.2	11.9	11.2	11.4	11	12.2	13.3	16.8	13.9	12.8	13.2	11.1	11	5.8	2.4	2.4	2.8	3.2	3.1	2	16.8
3	3.8	2	3.7	3.2	5	3.7	4.7	3.4	3.4	6.1	8.7	8.2	7	13.9	6.2	5.6	12.5	3.7	3.7	2.1	3.3	1.7	2.6	2.6	13.9
4	3.4	1.9	2.7	1.1	2.1	1.4	2.6	3.1	4.6	7.4	12	10.1	16.3	13.6	13.5	11.8	9.2	8.3	8.3	9.5	11.1	10.4	9.2	8.2	16.3
5	7.8	6.2	7	6.8	5.8	6.8	6.9	2.4	10.9	11.2	14.4	19.9	23.4	<b>32.1</b>	28.3	25.8	21.1	14.8	11.9	6.1	4.9	5.5	5.5	7.2	<b>32.1</b>
6	5.7	7.1	7.1	6	8.9	9	5.3	8.3	8.9	8.9	8.4	10.6	10.9	11.6	11.2	10	7	6.3	6.3	2.6	2	4.6	5.7	5.3	11.6
7	9.5	9.8	12.3	12.8	11.5	11.1	9.9	12.2	15.8	11.6	11.7	15.2	11.9	12.2	10.6	9.6	12.8	7.4	4	6.6	7.5	5.4	7.2	6.7	15.8
8	9.3	7.2	9	9	8.8	9.1	9	9.2	15.2	16.7	18.6	22.1	21	20.8	20.3	19.9	19.1	14.5	16	19.3	19	17	17.8	15.9	22.1
9	11.3	13.5	12.7	9.7	8	9.6	7.9	7.8	12.5	14.7	15.2	13.8	17.2	16.9	16.9	15.3	11.1	8.2	6.9	10.2	11.2	10.8	11.2	6.4	17.2
10	2.5	4.7	3.3	3.5	2.7	2.5	6.2	5.5	14.1	6.3	8.2	8.1	14.2	14.2	14.8	12.9	12.2	10.3	6.1	4.2	5.4	4.4	3.9	3.5	14.8
11	3.1	4	6.5	3.9	4.2	6.7	7.4	7.5	6.3	9	9.5	13.3	18.3	17.1	16.9	19.1	13.6	13	5.8	6	4.9	5.8	4.8	5	19.1
12	5.3	5.4	5.2	4.4	6.1	5	3.7	7.3	7.5	7.9	13.9	16.7	18.7	18.3	19.8	16.5	12.2	5.7	3	5.4	3.8	5.6	7.5	6.8	19.8
13	5.4	5.4	5.6	6.7	6.9	5.3	5.7	7.6	7	10.5	12.7	12.8	17.6	15.6	16.1	14	11.4	9.2	3.6	2.5	4	2.3	1.3	7.4	17.6
14	4.1	3.8	4.8	4.3	1.9	2.1	1.5	2.3	4.6	6.8	7.2	11	14.3	15.1	18.3	13.8	9.3	4.4	3.6	3.8	5.1	3.5	2.8	2.5	18.3
15	1.8	1.3	3.2	2.7	2.9	1.9	2.5	3.2	8.1	13.5	14.9	22.2	26.1	20.6	21.8	19	22.3	19.2	13.6	9	6.6	9.1	7.6	13.6	26.1
16	15.1	18.7	20.3	13.9	10.2	10.1	9.7	10.2	14.6	13	12.2	14.5	16.6	17.5	17.5	22.7	18.5	9.9	5.9	7.3	6.3	6.1	4.8	5.4	22.7
17	4.4	4.1	3.8	3.9	7.6	7.3	7.4	7.3	7.6	17.9	19	21.4	24.4	24.2	23.8	19.2	19.7	11.9	4.9	4.8	4.8	4.5	5.2	5.4	24.4
18	7.3	6.4	8.7	8.1	7	6.6	7.6	7.2	6.9	8	8.1	9.6	12.7	11.5	11	9.5	5.1	2.2	3.1	3	3.9	5.6	4.2	4.4	12.7
19	7.1	6.6	9.7	7.7	8.3	7.8	9.4	8.2	10	19.9	18.7	17.7	24.7	21.4	18.6	19	17.6	15.1	13	16.1	15	15.5	12.4	10.9	24.7
20	6.7	5.4	2.3	6.3	7.1	8.3	9.7	9.4	12.7	11.2	10.3	10.1	10.1	8.8	9.6	9	8.5	8.2	10.8	8.3	8.7	5.8	3.6	5.4	12.7
21	6.7	4.3	2.7	7.4	8.5	8.4	9.4	8.2	10.1	11.6	9.1	12.4	20.1	15.9	12.4	7	3	5.3	3.6	3.7	3.8	3.8	6.1	7	20.1
22	5.3	6.8	4.1	5.9	6	5.5	6.1	8.2	6.4	6.2	6.5	7.2	8.8	7.8	13.5	21.3	14.8	17	14.5	10.6	10.3	6.9	5.8	8	21.3
23	11	7.7	7.6	7.6	8.8	9.2	7.8	4.7	9.2	12	9.3	9.3	10	12.3	9.8	8.3	2	3.1	3.5	4.8	3	2.5	1.9	3	12.3
24	3.5	11.9	10.8	10.6	13.1	13.7	11.5	13	13	15.4	12.8	19	13.8	18.6	17.9	7.7	7.9	5.3	4.4	6.3	6.7	8.1	8.1	7.9	19
25	9	9.3	9.9	9.6	11	15.6	15.6	20.2	26.3	23.8	20.9	18.9	19.1	17	19.9	13.5	9.3	3.8	2.9	4	3.4	2.9	3.2	3.9	26.3
26	5.7	6.7	3.6	5.8	3.7	4.5	4	3.5	9.6	11.7	11.8	9	10.6	11.2	10.1	8.4	17.3	14	21.4	19.6	16.8	16.8	19.7	20.7	21.4
27	26.5	22.1	18.1	20.8	22.4	19.1	20.9	18.1	17.3	19.2	19	16.7	16.9	16.8	15.7	14.8	8.8	6.5	3.4	4.9	7.8	8.4	7.2	6.3	26.5
28	6.1	7.1	4.6	3.3	2.3	3.6	2.7	2.9	4.9	5.3	8	11.9	12.1	14.6	17.4	15.2	12.7	5.3	6.9	4.3	8.6	10.8	13.8	12.4	17.4
29	8.1	7.4	9.1	8	5.5	7.1	8.3	8.3	11.2	14.4	15.5	15.4	14.9	12.2	13.6	12.8	6.3	3.1	4.1	6.8	9.9	8	7.1	7.8	15.5
30	9.4	8.9	8	4.4	5.9	8.3	7	4.8	6.2	8.6	9.7	10.5	10.9	9.7	12.6	11.7	8.4	4.7	4.8	6	5.8	4.2	3.5	2	12.6
31	5.4	3.8	3	2	3	2.7	5	4.9	7	9.1	9.8	12	12.9	13.6	12.4	14.5	14.1	12.3	12.5	14.7	15.9	11.8	8.1	7.7	15.9
PEAK	26.5	22.1	20.3	20.8	22.4	19.1	20.9	20.2	26.3	23.8	20.9	22.2	26.1	32.1	28.3	25.8	22.3	19.2	21.4	19.6	19.6	17.0	19.7	20.7	

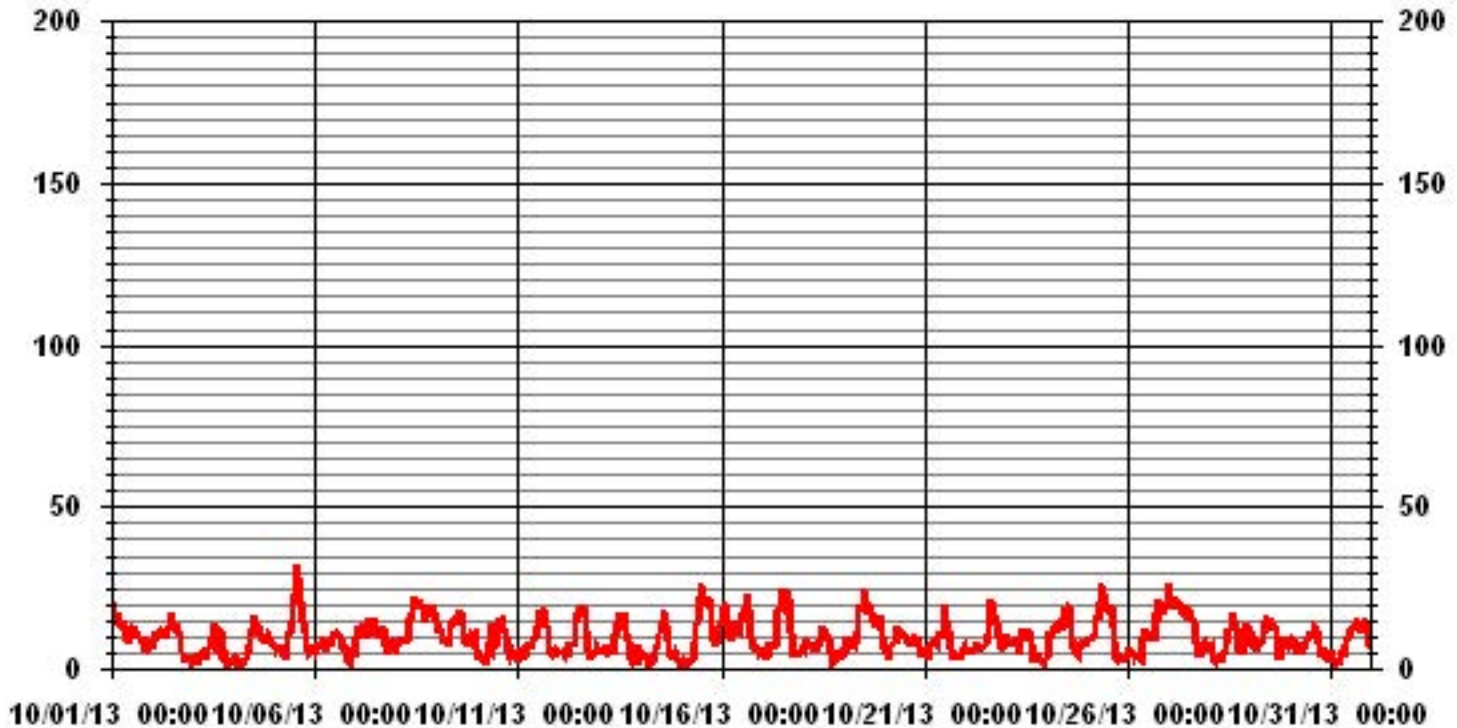
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

MAXIMUM INSTANTANEOUS READING	32.1	KPH	@ HOUR(S)	13
			ON DAY(S)	5

# 01 Hour Averages



— LICA WSMAX KPH

LICA  
WSP / WD Joint Frequency Distribution (Percent)

October 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	.80	.53	1.47	.67	1.07	2.15	5.91	2.28	2.82	4.70	7.39	17.60	6.31	2.28	1.74	1.07	58.87	
< 12.0	1.07	1.74	1.47	.13	.00	1.07	4.30	.13	.13	.80	2.68	3.22	5.91	4.97	3.62	2.68	34.00	
< 20.0	.00	.13	.40	.67	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.47	.80	2.15	.67	6.31
< 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	1.88	2.41	3.36	1.47	1.07	3.22	10.21	2.41	2.95	5.51	10.08	20.83	13.70	8.06	7.52	4.43		

Calm : .80 %

Total # Operational Hours : 744

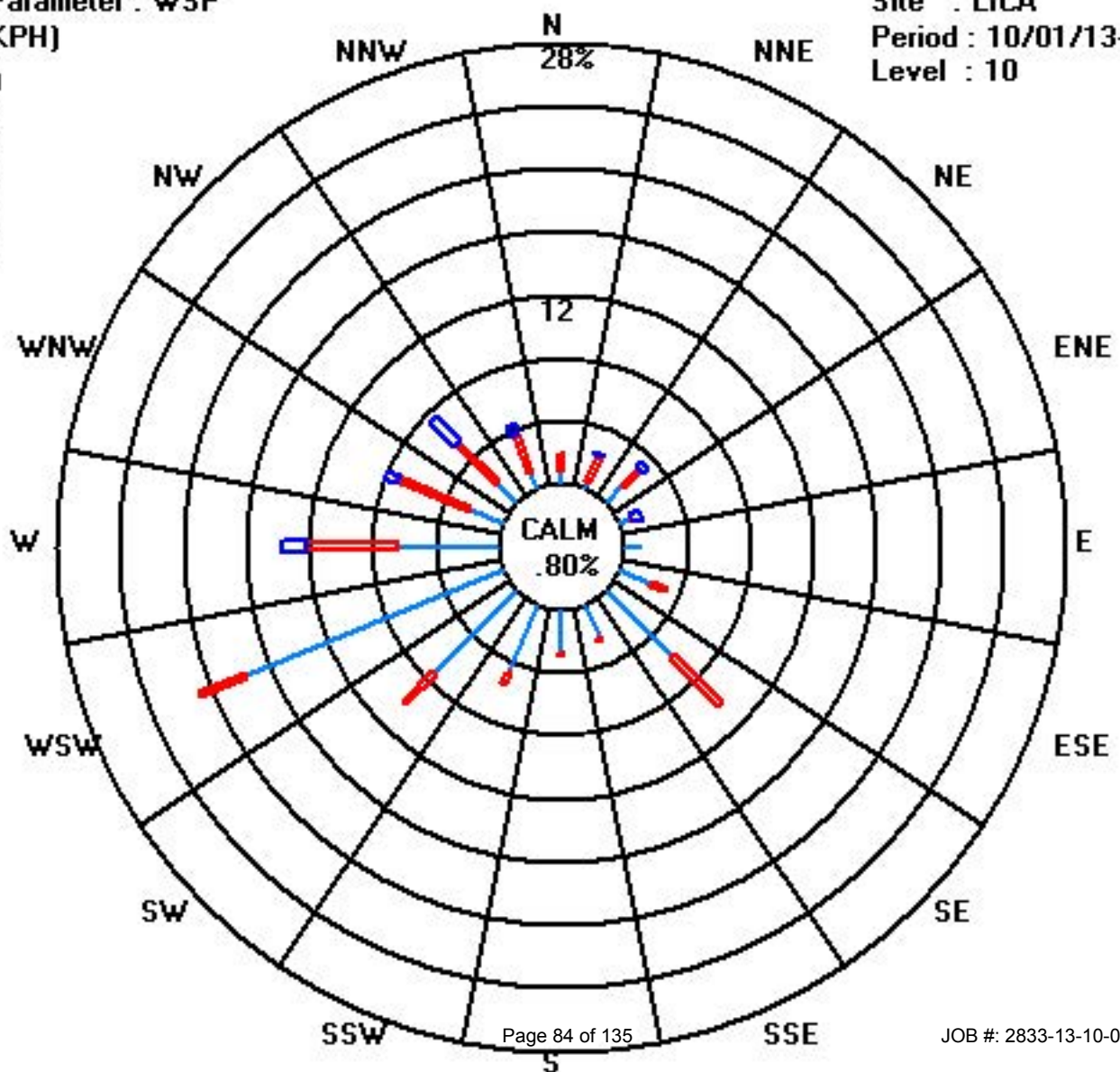
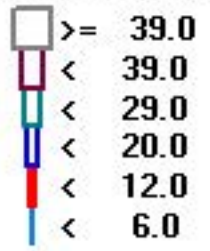
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	6	4	11	5	8	16	44	17	21	35	55	131	47	17	13	8	438
< 12.0	8	13	11	1		8	32	1	1	6	20	24	44	37	27	20	253
< 20.0		1	3	5									11	6	16	5	47
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	14	18	25	11	8	24	76	18	22	41	75	155	102	60	56	33	

Calm : .80 %

Total # Operational Hours : 744

Class Limits (KPH)



# Vector Wind Direction

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

OCTOBER 2013

**VECTOR WIND DIRECTION (WD) hourly averages in degrees**

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG		
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	AVG.	QUADRANT	RDGS.	
DAY																													
1		287	282	290	291	279	279	279	281	283	291	302	320	355	1	335	329	335	331	316	333	20	56	37	49	308	NW	24	
2		29	40	34	35	23	15	17	18	23	12	17	4	13	15	11	5	352	306	211	230	225	247	224	201	14	NNE	24	
3		252	235	259	252	252	251	256	251	266	317	348	341	359	52	133	150	12	195	170	183	232	140	238	189	295	WNW	24	
4		176	164	173	192	248	203	121	101	197	176	187	198	206	189	198	176	179	144	138	140	142	140	139	140	164	SSE	24	
5		144	163	206	217	205	230	230	203	233	241	246	252	270	274	275	275	265	246	229	225	243	250	249	256	WSW	24		
6		242	261	255	257	249	249	226	244	245	270	272	244	246	249	254	251	254	237	227	137	123	124	132	132	245	WSW	24	
7		134	132	130	133	123	115	106	112	105	105	104	125	123	141	236	260	251	262	237	248	265	244	238	253	145	SE	24	
8		256	230	234	238	231	239	250	250	262	272	277	277	281	281	286	290	284	282	287	300	306	300	302	308	279	W	24	
9		280	285	293	269	257	264	257	264	240	260	249	242	236	233	228	219	188	152	135	136	138	140	140	141	228	SW	24	
10		139	216	127	148	114	105	123	245	74	299	262	264	275	282	281	273	277	289	301	262	258	253	250	251	271	W	24	
11		272	244	250	224	229	244	251	257	255	244	272	277	289	310	302	294	287	304	290	269	266	259	250	256	277	W	24	
12		252	255	251	241	246	248	241	185	246	266	274	309	318	302	304	327	310	299	260	226	91	242	243	255	285	WNW	24	
13		247	245	241	237	241	242	238	244	251	254	256	257	278	273	269	282	293	297	253	215	241	251	164	119	260	WSW	24	
14		236	255	245	247	115	186	80	188	248	237	237	244	243	246	242	236	232	188	144	153	173	203	214	131	231	SW	24	
15		149	185	175	145	160	233	207	251	234	247	253	281	303	284	280	277	282	301	308	292	282	305	318	324	283	W	24	
16		332	336	344	330	310	310	310	300	312	308	305	303	316	315	338	299	291	277	258	255	254	261	252	252	308	NW	24	
17		244	239	239	236	247	242	239	255	282	320	333	320	315	315	320	318	317	310	253	244	241	261	252	236	299	WNW	24	
18		272	273	274	265	251	242	239	239	243	234	240	249	263	267	277	284	276	222	198	252	171	251	212	239	256	WSW	24	
19		254	245	242	244	243	245	256	264	283	299	317	332	320	320	336	339	331	334	328	4	17	21	29	39	321	NW	24	
20		50	161	230	145	143	143	143	138	137	140	144	132	139	133	146	144	135	138	141	142	149	149	154	144	141	SE	24	
21		212	38	240	262	264	266	269	262	266	283	294	307	331	332	34	39	11	88	73	124	110	89	129	119	301	WNW	24	
22		99	142	139	138	137	127	135	147	195	295	328	313	270	277	288	322	319	327	336	330	324	299	312	349	317	NW	24	
23		353	339	340	347	358	11	324	319	311	309	289	259	262	289	334	76	210	259	196	121	105	75	160	85	324	NW	24	
24		160	134	136	134	135	138	137	139	138	143	158	192	198	209	219	213	209	257	234	256	260	270	263	266	175	S	24	
25		271	279	278	269	278	295	316	330	320	328	320	311	310	310	317	310	314	220	143	221	233	134	122	122	308	NW	24	
26		148	133	119	134	121	192	197	264	233	250	267	272	274	264	282	274	323	331	351	20	13	21	47	44	342	NNW	24	
27		57	62	62	55	59	49	62	45	50	53	62	55	41	35	40	42	35	71	137	135	122	126	131	272	56	NE	24	
28		275	263	175	255	221	205	138	144	194	193	210	224	219	227	229	216	222	195	175	187	218	226	226	225	220	SW	24	
29		219	200	182	192	204	213	200	210	222	227	236	230	221	223	227	213	206	139	200	223	220	214	238	232	219	SW	24	
30		226	228	229	237	241	246	255	257	233	251	268	261	258	256	259	251	250	234	236	238	254	231	173	205	246	WSW	24	
31		238	196	89	263	228	217	284	241	255	252	262	271	269	278	278	280	287	296	297	301	305	296	269	257	280	W	24	
HOURLY AVG		353	339	344	347	358	310	324	330	320	328	348	341	359	332	338	339	352	334	351	333	324	305	318	349				

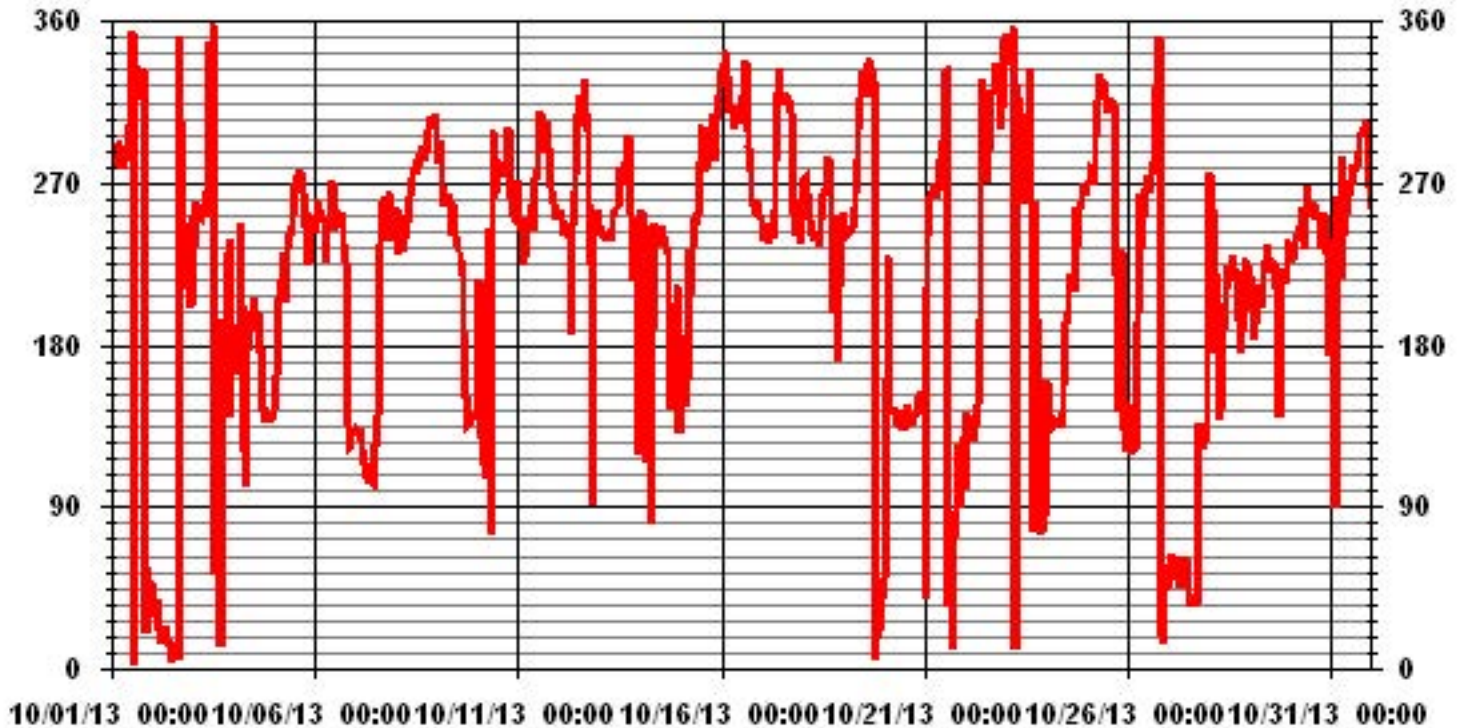
**STATUS FLAG CODES**

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:	81.15		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	276	DEG

# 01 Hour Averages





# Standard Deviation Wind Direction

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

OCTOBER 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	20	20	20	20	20	20	21	20	21	21	22	19	18	15	15	14	14	13	17	26	26	24	24	
2	24	21	21	21	20	20	23	25	21	20	22	18	25	23	28	20	17	56	39	35	21	19	34	38	
3	57	52	33	44	19	17	17	25	35	17	18	32	33	29	31	41	51	48	22	50	60	65	42	72	
4	44	35	53	63	54	58	41	41	66	40	44	37	40	41	44	38	39	16	12	12	12	13	12	19	
5	49	51	38	35	46	20	20	32	24	22	23	22	23	21	22	21	20	17	20	18	17	13	13	11	
6	13	13	11	9	11	11	38	15	21	23	36	32	30	29	25	25	23	18	20	31	31	17	23	18	
7	12	15	18	14	20	22	23	24	22	22	24	26	24	31	41	30	21	17	27	12	12	12	15	15	
8	17	20	20	25	17	19	17	19	18	20	21	21	20	20	20	22	21	21	20	20	17	19	18	16	
9	20	19	19	17	15	16	15	18	23	22	24	23	24	28	28	33	39	24	12	12	12	12	12	22	
10	46	34	37	54	46	52	38	59	66	41	28	29	25	22	24	22	19	16	12	9	33	8	8	12	
11	25	25	42	39	31	21	17	16	22	27	29	27	29	19	22	22	20	15	15	13	12	12	9	10	
12	9	8	10	12	16	12	28	37	17	26	28	21	17	23	24	20	12	25	37	36	58	14	17	17	
13	16	15	12	16	16	15	13	15	18	20	21	25	26	26	27	23	19	15	25	32	38	43	35	47	
14	45	53	27	46	25	45	41	37	28	22	37	27	26	27	23	23	21	23	27	43	49	60	54	56	
15	35	56	38	35	47	55	62	57	22	21	22	21	20	19	20	21	19	17	12	17	17	14	13	17	
16	14	17	16	13	12	13	12	16	16	20	23	24	26	23	22	22	19	16	11	9	9	13	11	10	
17	16	26	27	52	36	14	17	17	20	17	18	20	19	17	17	19	17	14	13	10	28	50	13	31	
18	17	16	19	15	12	16	16	16	18	19	22	22	23	24	26	22	21	50	34	42	46	48	41	31	
19	9	13	15	16	16	16	18	16	18	17	14	14	14	15	15	16	15	14	13	19	19	20	23	20	
20	45	61	47	27	20	14	16	15	13	13	17	22	21	24	21	21	18	16	13	13	43	38	43	32	
21	56	57	48	16	13	13	15	13	16	21	22	19	22	25	21	22	40	18	20	55	17	15	19	16	
22	26	39	15	21	15	22	28	58	47	53	26	23	35	25	25	15	15	15	15	13	13	33	13	17	
23	20	18	23	17	17	19	21	23	18	24	26	39	42	45	51	51	35	48	45	49	57	39	65	34	
24	46	14	13	13	12	14	13	14	13	17	35	40	38	35	33	39	37	30	23	10	12	16	14	15	
25	15	16	16	16	17	17	14	15	15	16	18	20	19	21	22	18	13	57	54	54	41	63	55	53	
26	34	16	27	15	32	35	43	56	26	20	20	23	21	25	20	18	16	14	17	20	17	19	20	20	
27	17	16	18	18	18	21	19	19	20	19	20	21	23	22	23	21	21	23	20	34	22	23	25	34	
28	36	17	55	26	39	38	20	60	53	38	40	32	39	29	27	30	26	36	44	39	25	19	18	24	
29	30	37	38	38	38	37	39	34	29	25	20	21	30	29	27	32	38	50	48	33	27	29	29	21	
30	18	15	17	32	14	15	21	18	18	20	20	19	19	19	21	18	15	12	13	14	9	13	26	62	
31	45	41	57	74	56	42	44	45	15	20	19	19	18	20	20	19	18	18	17	17	15	16	16	14	

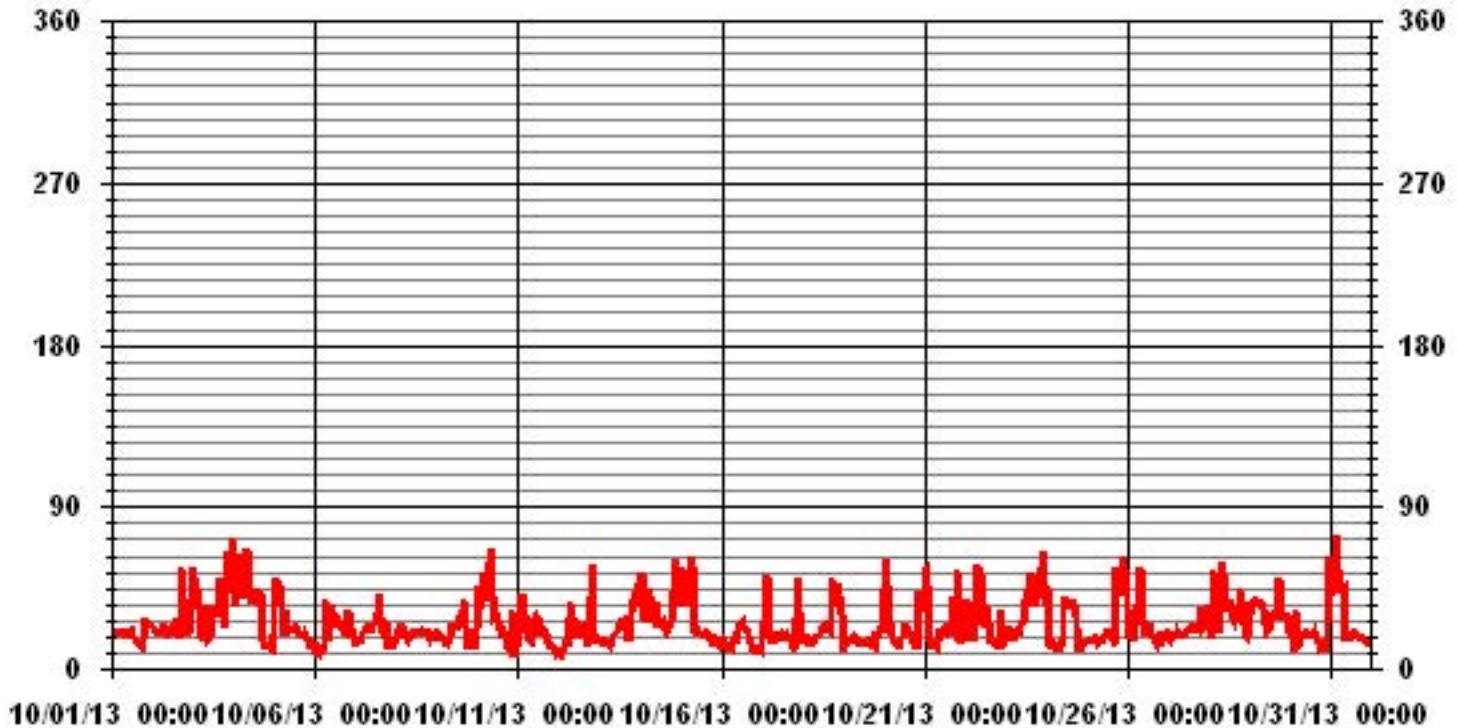
### STATUS FLAG CODES

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



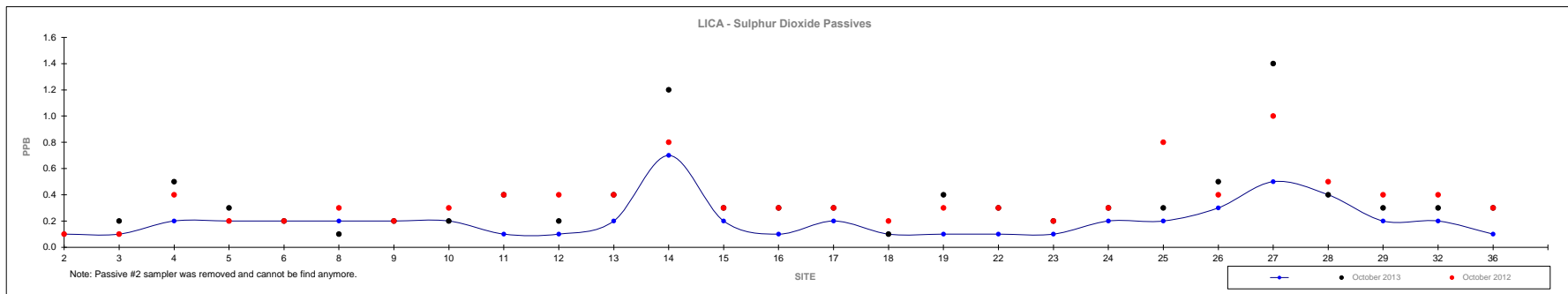
— LICA STDWDIR DEG

# Non-Continuous Monitoring

### Passive Summary Results for October 2013

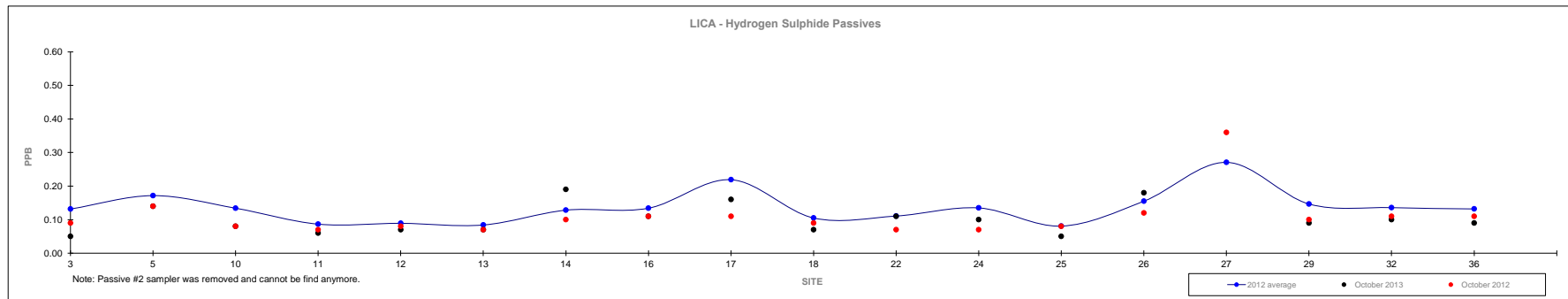
Lakeland Industry & Community Association

	Sulphur Dioxide ppb																																October 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	0.37	-					
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	<0.1	#8					
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	1.4	#27					



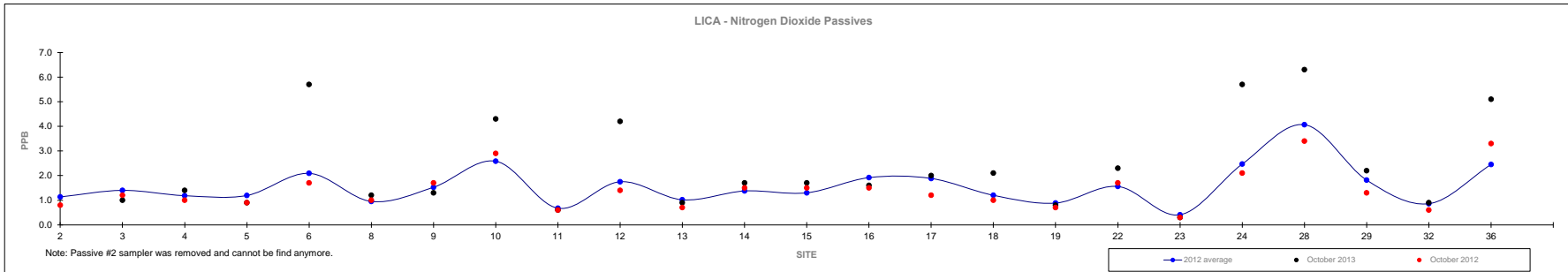
### Passive Summary Results for October 2013 Lakeland Industry & Community Association

	Hydrogen Sulphide ppb																October 2013			
	3	5	10	11	12	13	14	2012 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	0.14	-
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	0.05	#3, #25
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	0.88	#27



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

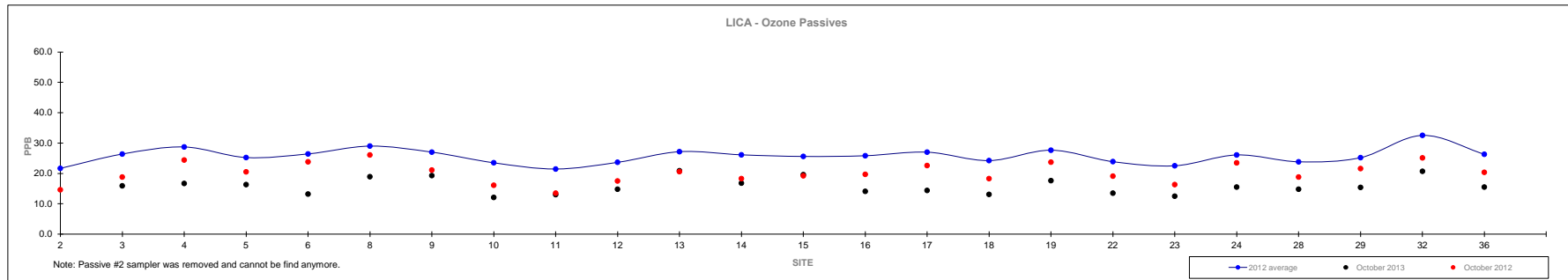
	Nitrogen Dioxide ppb																												October 2013	
	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	28	29	32	36	Reading	Site				
Mean	1.1	1.4	1.2	1.2	2.1	1.0	1.5	2.6	0.7	1.8	1.0	1.4	1.3	1.9	1.9	1.2	0.9	1.6	0.4	2.5	4.1	1.8	0.9	2.5	2.4	-				
Minimum	0.4	0.5	0.4	0.3	0.9	0.3	0.7	1.3	0.2	0.4	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	0.3	#23				
Maximum	3.6	3.6	3.6	3.2	4.7	2.1	3.6	5.2	1.8	4.4	2.5	3.2	2.9	4.9	3.9	2.7	2.0	3.2	1.2	6.0	8.6	4.8	2.4	6.6	6.3	#28				



### Passive Summary Results for October 2013

Lakeland Industry & Community Association

	Ozone ppb																										October 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	15.9	-		
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	12.1	#10		
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	20.9	#13		





# Calibration Reports

# Sulphur Dioxide

## SO2 Calibration Report

### Station Information

Calibration Date	October 2, 2013	Previous Calibration	September 18, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake South		
Start Time (MST)	8:00	End Time (MST)	9:05
Reason:	As found		
Barometric Pressure	28.1 in HG	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	N/A Volts

### Equipment Information

Analyzer Make / Model:	Thermo 43i	S/N :	806528242	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	EnviroNics 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	A3485K		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	EnviroNics 6100	S/N :	4760		

### Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	0-500 ppb						
Sample Flow / Box Temp	450 ccm	29.4 Deg C	449 ccm	29.8 Deg C			
HVPS / Lamp Setting	-632.3	726	-632.3	725			
PMT / RxCell Temp	OK Deg C	45 Deg C	OK Deg C	45 Deg C			
Converter / IZS Temp	N/A Deg C	45 Deg C	N/A Deg C	45.0 Deg C			
Offset / Slope	6.7	1.054	6.7	1.054			

### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	N/A
	No zero adj.			
4920	39.87	399	399	1.0000
Sum of Least Squares				
New Correction Factor				1.0000

### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0	Auto Zero	0.0
Auto Span	375.3	Auto Span	375.3
Sample Lines Connected		Sample Lines Connected	Yes

### Percent Change

Previous Month's Calibration Correction Factor:	0.9968
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	-0.3%

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

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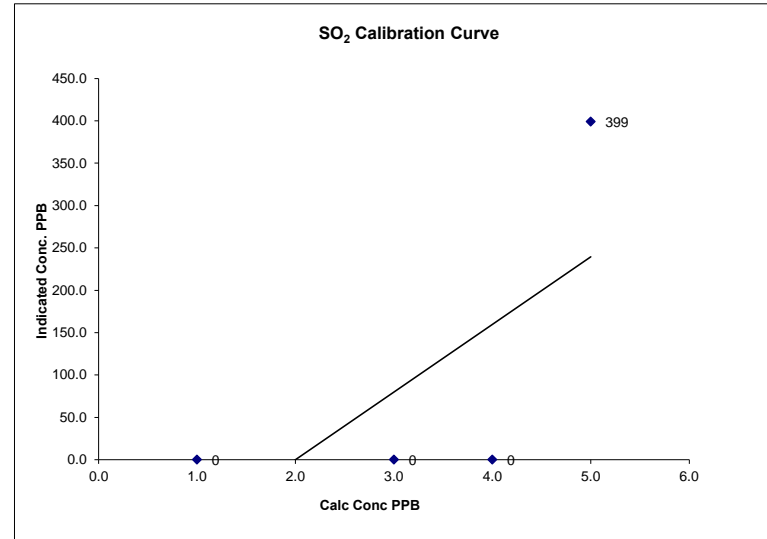


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## SO<sub>2</sub> Calibration Curve

Calibration Date	October 2, 2013
Company	Lakeland Industry & Community Association
Plant / Location	Cold Lake South
Start Time (MST)	8:00
End Time (MST)	9:05

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0		N/A		
399	399	1.0000		



#### Notes:

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Calibration Performed by: Waseem Ahmed

## SO2 Calibration Report

### Station Information

Calibration Date	October 2, 2013	Previous Calibration	September 18, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake South		
Start Time (MST)	9:40	End Time (MST)	11:51
Reason:	Monthly calibration		
Barometric Pressure	28.14 in HG	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	N/A Volts

### Equipment Information

Analyzer Make / Model:	Thermo 43i	S/N :	806528242	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	EnviroNics 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	A3485K		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	EnviroNics 6100	S/N :	4760		

### Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0-500 ppb				
Sample Flow / Box Temp	450 ccm	29.4 Deg C	451 ccm	29.2	Deg C
HVPS / Lamp Setting	-632.3	726	-632	724	
PMT / RxCell Temp	OK Deg C	45 Deg C	OK Deg C	45	Deg C
Converter / IZS Temp	N/A Deg C	45 Deg C	N/A Deg C	45.0	Deg C
Offset / Slope	6.7	1.054	6.7	1.054	

### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	N/A
	No zero adj.			
4961	39.96	396	395	1.0034
	No span adj.			
4980	20.0	199	200	0.9935
4989	10.0	100	102	0.9766
5000	0	0	0	N/A
Sum of Least Squares				1.0001
New Correction Factor				1.0034

### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0	0.0	
Auto Span	375.3	365.0	
Sample Lines Connected		Yes	

### Percent Change

Previous Month's Calibration Correction Factor:	0.9968
Current Correction Factor Before Span Adjust:	1.0034
Percent Change:	-0.7%

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

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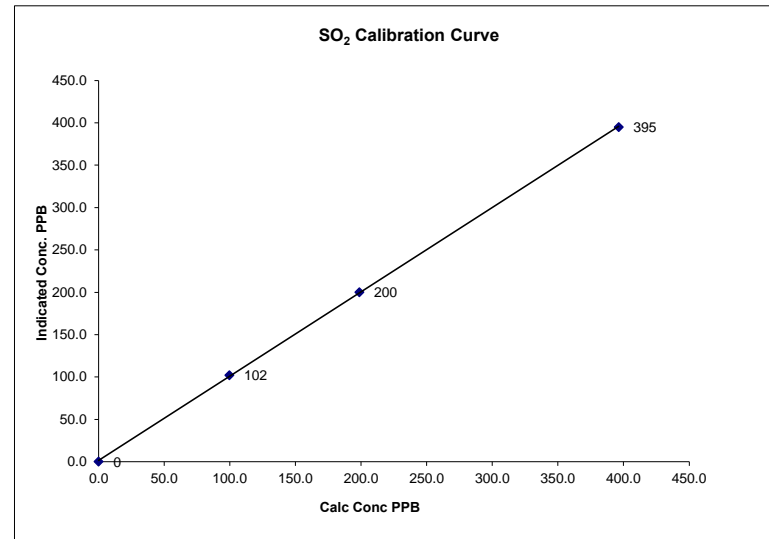
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Calibration Performed by: Waseem Ahmed

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

Calibration Date	October 2, 2013
Company	Lakeland Industry & Community Association
Plant / Location	Cold Lake South
Start Time (MST)	9:40
End Time (MST)	11:51

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	0	N/A		0.999935
100	102	0.9766		0.994882
199	200	0.9935		1.478977
396	395	1.0034		



Notes:

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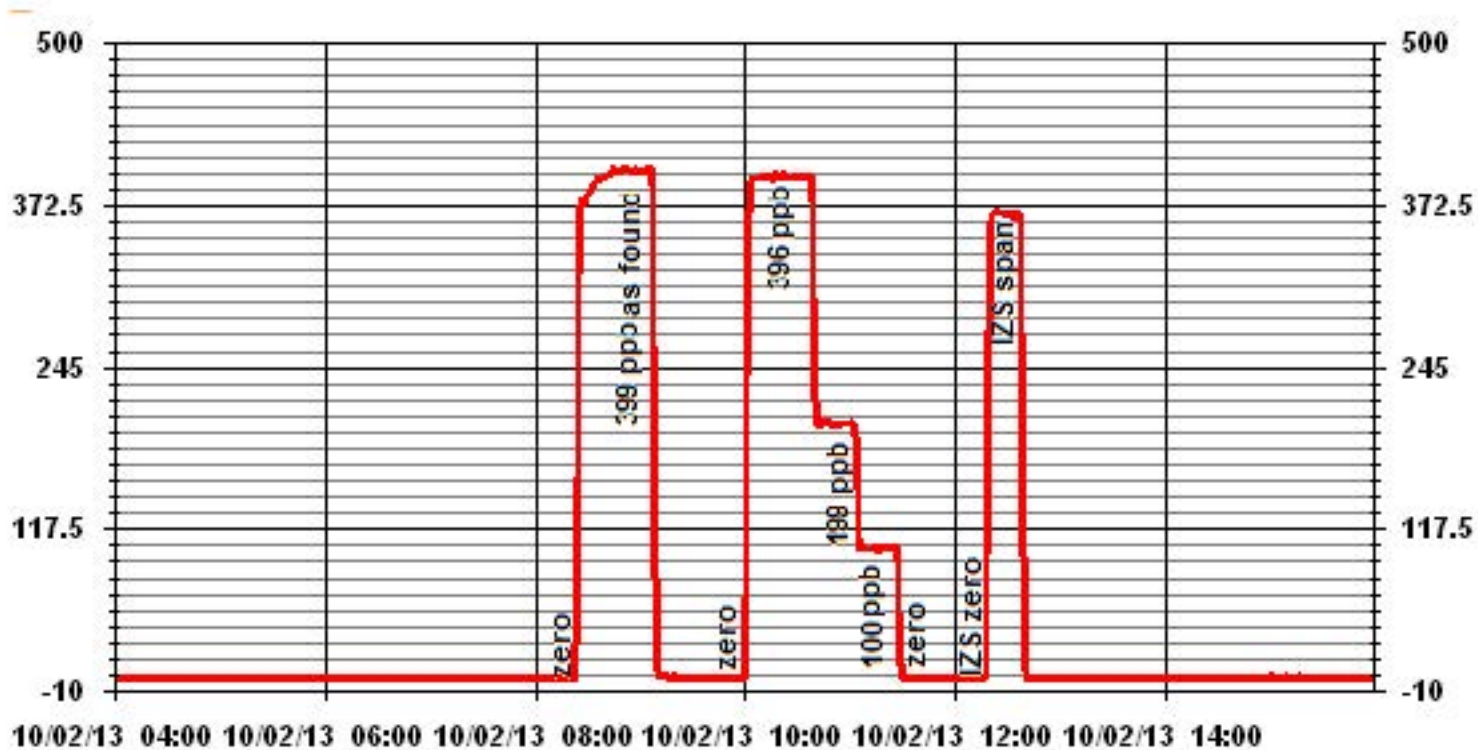


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# 01 Minute Averages



# Total Reduced Sulphur



### TRS Calibration Report

#### Station Information

Calibration Date	October 2, 2013	Previous Calibration	September 18, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake South		
Start Time (MST)	9:40	End Time (MST)	12:00
Reason:	Monthly calibration		
Barometric Pressure	28.14 in HG	Station Temperature	24 Deg C
Cal Gas	10.1 ppm	Gas Cyl. #	BLM005049
DAS Output Voltage	0-10 Volts	Cal Gas Expiry date	December 25, 2015
		Chart Rec. Output	N/A Volts

#### Equipment Information

Analyzer Make / Model:	Thermo 450i	S/N :	812728560	Method:	Fluorescent
Converter Make / Model:	CND 101	S/N :	501		
Calibrator Make / Model:	API 700	S/N :	690	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	A3485K		
Chart Recorder Make / Model:	N/A	S/N:	S/N:	N/A	N/A
Flow Meter:	API 700	S/N :	690		

#### Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0-100		
Sample Flow / Box Temp	488 ccm, 32.1 Deg C	492 ccm, 32.4 Deg C	
HVPS / Lamp Setting	-650.8, 741	-650.5, 747	
PMT / RxCell Temp	OK, 45 Deg C	OK, 45 Deg C	
Converter / IZS Temp	810, 45 Deg C	810, 45.0 Deg C	
Offset / Slope	12.8, 0.888	12.7, 0.878	

#### 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.			
4958	40	81	81	1.0000
4978	20.0	40	40	1.0000
4990	12.0	24	24	1.0000
5000	0.0	0	0	N/A
Sum of Least Squares				1.0010
New Correction Factor				1.0000

#### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0		0.0
Auto Span	33.0		33.0
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%

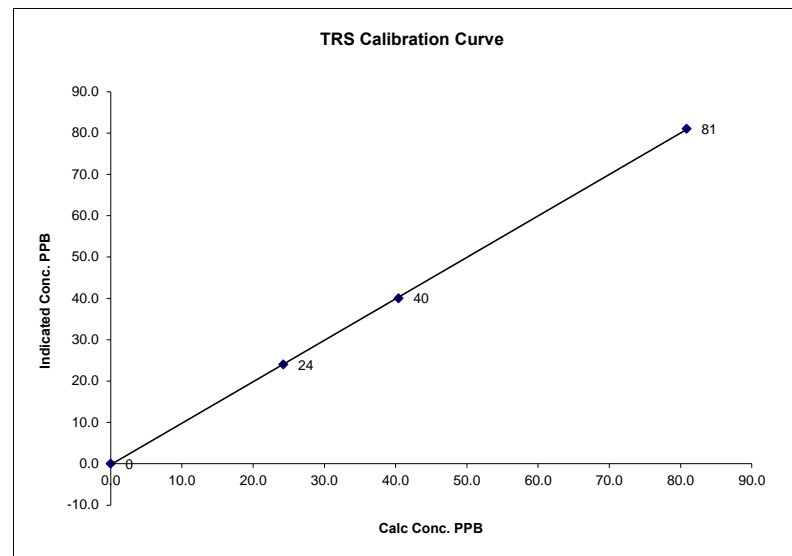
Notes: **N/A : Not applicable**

Calibration Performed by: Waseem Ahmed

### TRS Calibration Curve

Calibration Date	October 2, 2013
Company	Lakeland Industry & Community Association
Plant / Location	Cold Lake South
Start Time (MST)	9:40
End Time (MST)	12:00

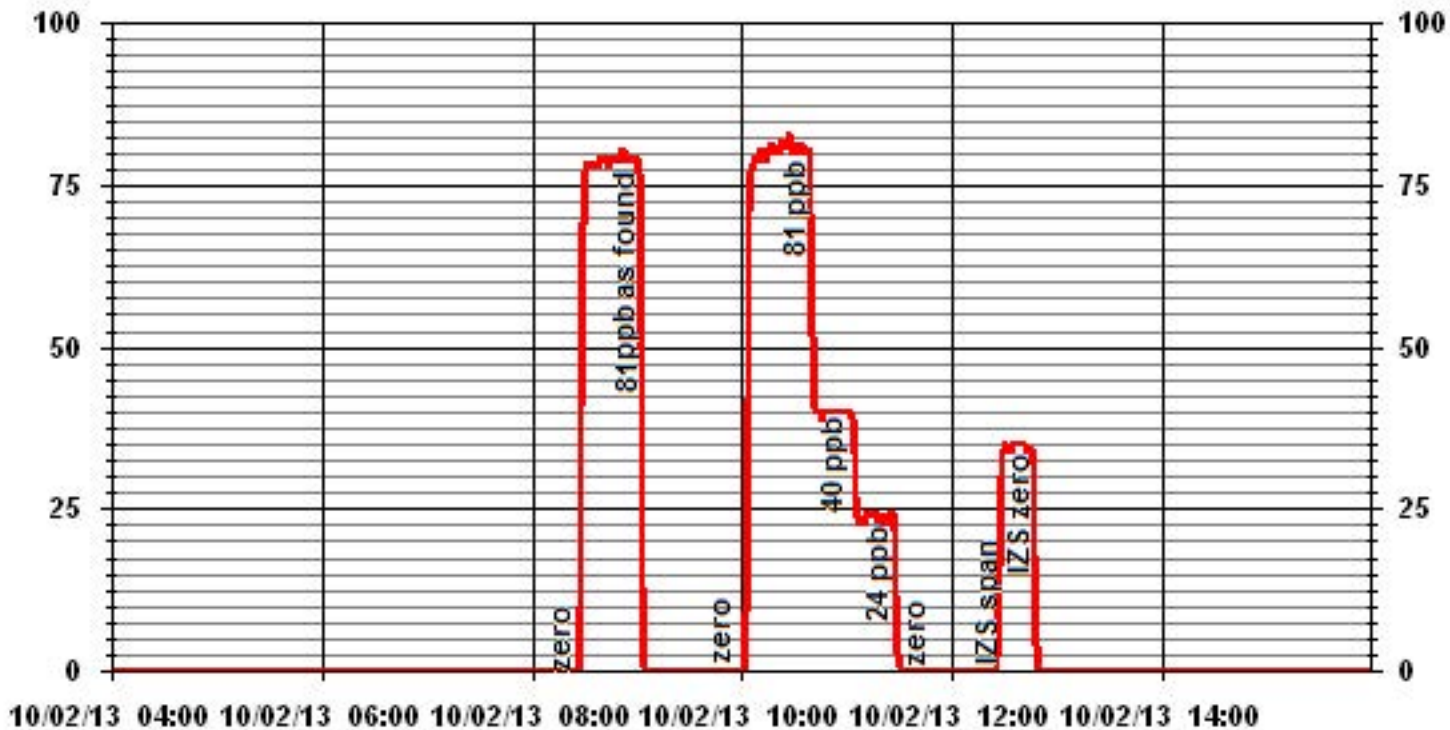
Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999949
0	0	N/A	Slope	(0.85 to 1.15)	1.002473
24	24	1.0000	Intercept	(± 3% F.S.)	-0.209662
40	40	1.0000			
81	81	1.0000			



Notes:



# 01 Minute Averages



# Total Hydrocarbons

### THC Calibration Report

#### Station Information

Calibration Date:	October 2, 2013	Previous Calibration	September 18, 2013
Company:	Lakeland Industry & Community Association		
Plant / Location:	Cold Lake South		
Start Time (MST)	12:05	End Time (MST)	13:54
Reason:	Monthly calibration		
Barometric Pressure:	28.17 in HG	Station Temperature:	24 Deg C
Calibrator:	API 700	S/N:	690
Cal Gas Concentration:	CH4 593 PPM	C3H8 205 PPM	
	TOTAL CH4 1156.8 PPM	Gas Cyl. # LL84567	Cal Gas Expiry Date: June 7, 2014
DAS make & Model:	ESC 8832	S/N :	A3485K
Chart Recorder:	N/A	S/N:	N/A
Output Voltage Range:	0-10 VDC	Chart Speed:	N/A mm/hr

#### Analyzer Information

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

	Before Calibration		After Calibration	
Concentration Range	0-50	ppm	0-50	ppm
Sample Pressure	6.5	psi	6.5	psi
Hydrogen Pressure	9	psi	9	psi
Air Pressure	20	psi	20	psi

#### Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
1995	0.0	0.0	0.0	N/A
	No zero adj.			
1995	74.0	41.4	41.4	1.0000
	No span adj.			
1995	37.0	21.1	20.9	1.0078
1995	20.0	11.5	11.1	1.0344
1995	0.0	0.0	-0.1	N/A
New Correction Factor:				1.0000

#### Percent Change

Previous Calibration Correction Factor:	1.0018
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	0.2%

#### IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	34.0	34.0
Sample Lines Connected		Yes

Cylinder Pressures			
Span	1850 psi	Hydrogen 1000 psi	Zero Air 34 psi

Notes: **N/A : Not Applicable**

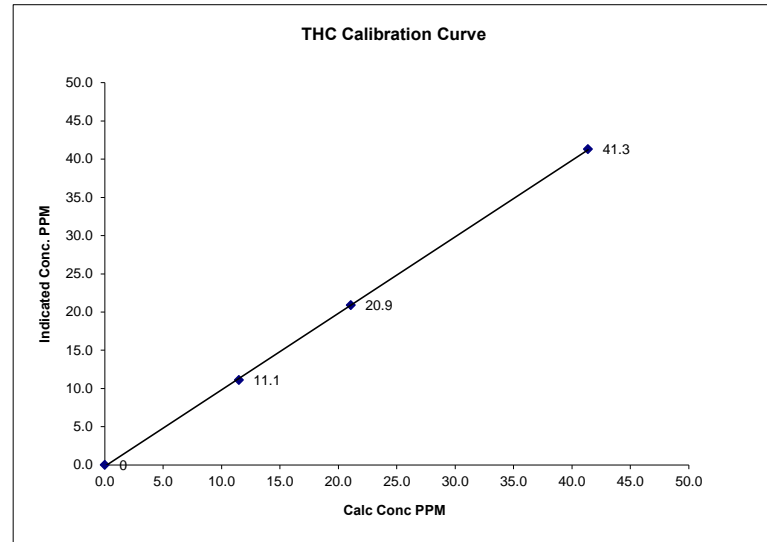
Calibration Performed by: Waseem Ahmed

No Zero Adj.  
No Span Adj.

### THC Calibration Curve

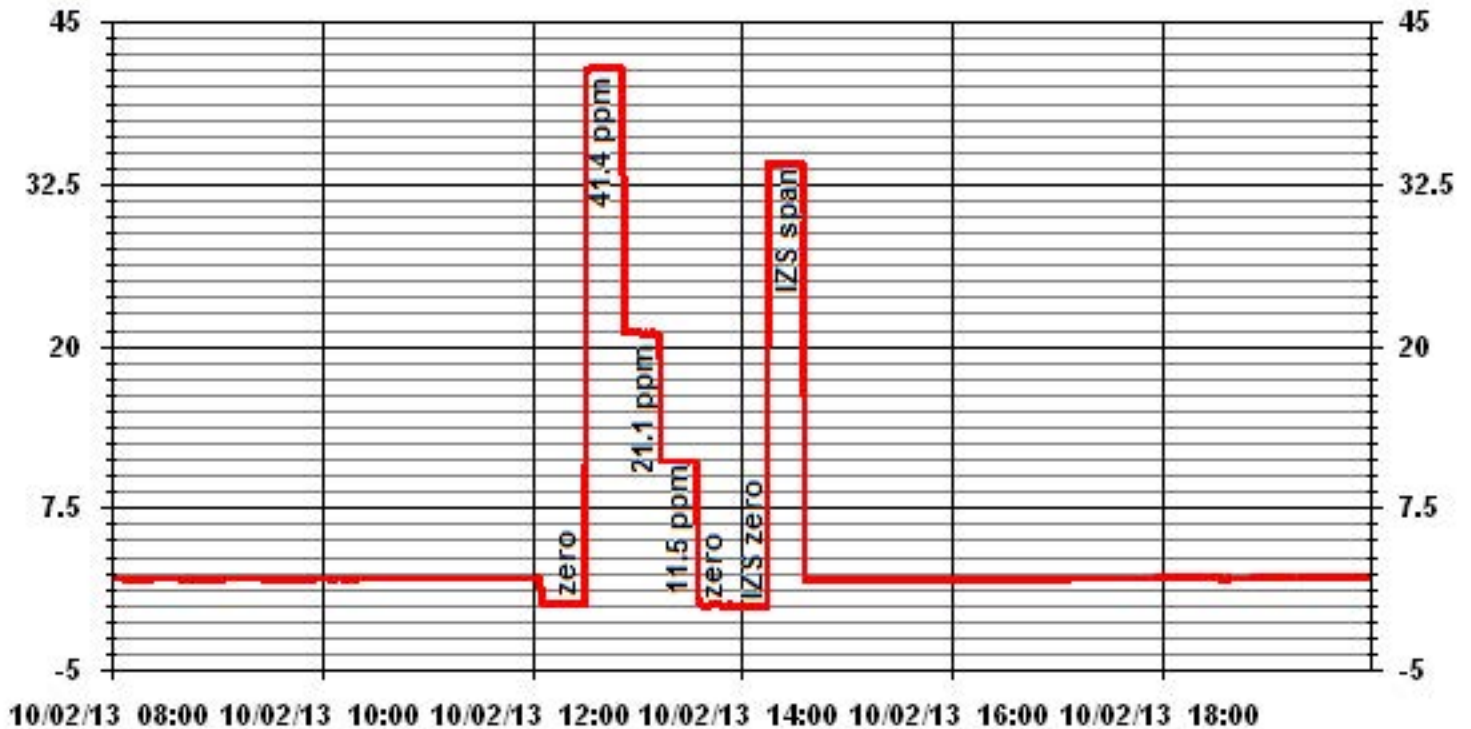
Calibration Date	October 2, 2013			
Company	Lakeland Industry & Community Association			
Plant / Location	Cold Lake South			
Start Time (MST)	12:05	End Time (MST)	13:54	

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999895
0.0	0.0	N/A	Slope	(0.85 to 1.15)	1.003126
11.5	11.1	1.0344	Intercept	(± 3% F.S.)	-0.18693
21.1	20.9	1.0078			
41.4	41.4	1.0000			



Notes:

### 01 Minute Averages



# Particulate Matter 2.5

**TEOM 1405F Audit**

<b><u>Station</u></b>		<b><u>Audit Transfer Standard</u></b>	
Date:	<u>October 3, 2013</u>	Make/Model:	<u>Streamline FTS</u>
Station Name:	<u>LICA 1</u>	Serial Number:	<u>LO 091099, HI 091001</u>
Location:	<u>Cold Lake South</u>	Cell s/n:	<u>N/A</u>
Operator:	<u>LICA</u>	Thermometer s/n:	<u>Station Temp. Sensor</u>
<b><u>Sampler</u></b>		<b><u>Set-up and current Sampler readings</u></b>	
Make/Model	<u>Thermo TEOM Series 1405F</u>	F-Main Set Pt (l/min)	<u>3.00</u>
Unit #	<u>AMU 1775</u>	F-Aux Set Pt (l/min)	<u>13.67</u>
Unit s/n	<u>1405A201620804</u>	Filter Load (%)	<u>17.0%</u>
Firmware Ver.	<u>1.52</u>	K <sub>o</sub> Factor	<u>14578.0</u>
Parameter	<u>PM 2.5 (with FDMS)</u>	Temp (°C)	<u>5.8</u>
		Press (ATM)	<u>0.942</u>

**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	<u>0.004</u>	Warnings	<u>None</u>
Pump Vacuum <0.40atm	<u>0.35</u>	Pump Gauge (inHg)	<u>N/A</u>
<b>Temperature/Pressure</b>		<b>D °C</b>	
Measured Temp (± 2 °C)	<u>5.6</u>		<u>0.2</u>
Measured Press (± 0.01atm)	<u>0.940</u>	<b>DATM</b>	<u>0.002</u>
<b>Flow Audit</b>			
Indicated Main Flow (l/min)	<u>3.00</u>	Main Flow Drift (±10.0%)	<u>2.53%</u>
Measured Main Flow (l/min)	<u>3.03</u>	Flow Adjusted to Measured?	<u>Yes</u>
Indicated Bypass Flow (l/min)	<u>13.68</u>	Bypass Flow Drift (±10.0%)	<u>1.41%</u>
Measured Bypass Flow (l/min)	<u>13.81</u>	Flow Adjusted to Measured?	<u>Yes</u>
<b>Leak Check</b>		<b>Instrument Setup</b>	
Main (< 0.15 l/min)	<u>Base= 0.02 Ref = 0.02</u>	Flow Control=Active	
Aux (< 0.6 l/min)	<u>Base= 0.00 Ref = 0.00</u>	Report Conditions=Actual	
<b>K<sub>o</sub> Factor</b>			
Measured	<u>N/A</u>		
K <sub>o</sub> Difference (± 2.5%)	<u>N/A</u>		

**Start Time:** 10:40      **Finish Time:** 11:40

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

**Comments:**      **New Filter Loading %:** 15.3%

**Auditor/s:** Waseem Ahmed

**TEOM 1405F Audit**

<b><u>Station</u></b>		<b><u>Audit Transfer Standard</u></b>	
Date:	<u>October 21, 2013</u>	Make/Model:	<u>Streamline FTS</u>
Station Name:	<u>LICA 1</u>	Serial Number:	<u>LO 091099, HI 091001</u>
Location:	<u>Cold Lake South</u>	Cell s/n:	<u>N/A</u>
Operator:	<u>LICA</u>	Thermometer s/n:	<u>Station Temp. Sensor</u>
<b><u>Sampler</u></b>		<b><u>Set-up and current Sampler readings</u></b>	
Make/Model	<u>Thermo TEOM Series 1405F</u>	F-Main Set Pt (l/min)	<u>3.00</u>
Unit #	<u>AMU 1775</u>	F-Aux Set Pt (l/min)	<u>13.67</u>
Unit s/n	<u>1405A201620804</u>	Filter Load (%)	<u>19.2%</u>
Firmware Ver.	<u>1.52</u>	K <sub>o</sub> Factor	<u>14578.0</u>
Parameter	<u>PM 2.5 (with FDMS)</u>	Temp (°C)	<u>3.6</u>
		Press (ATM)	<u>0.935</u>

**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	<u>0.008</u>	Warnings	<u>None</u>
Pump Vacuum <0.40atm	<u>0.35</u>	Pump Gauge (inHg)	<u>N/A</u>
<b>Temperature/Pressure</b>		<b>D °C</b>	
Measured Temp (± 2 °C)	<u>3.5</u>		<u>0.1</u>
Measured Press (± 0.01atm)	<u>0.934</u>	<b>DATM</b>	<u>0.001</u>
<b>Flow Audit</b>			
Indicated Main Flow (l/min)	<u>3.00</u>	Main Flow Drift (±10.0%)	<u>2.32%</u>
Measured Main Flow (l/min)	<u>3.00</u>	Flow Adjusted to Measured?	<u>Yes</u>
Indicated Bypass Flow (l/min)	<u>13.66</u>	Bypass Flow Drift (±10.0%)	<u>2.07%</u>
Measured Bypass Flow (l/min)	<u>13.77</u>	Flow Adjusted to Measured?	<u>Yes</u>
<b>Leak Check</b>		<b>Instrument Setup</b>	
Main (< 0.15 l/min)	<u>Base= NA Ref = NA</u>	Flow Control=Active	
Aux (< 0.6 l/min)	<u>Base= NA Ref = NA</u>	Report Conditions=Actual	
<b>K<sub>o</sub> Factor</b>			
Measured	<u>N/A</u>		
K <sub>o</sub> Difference (± 2.5%)	<u>N/A</u>		

**Start Time:** 7:30      **Finish Time:** 8:30

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

**New Filter Loading %:** NA

**Comments:**

**Auditor/s:** Waseem Ahmed

# Nitrogen Dioxide



**NOx - NO- NO2 Calibration Report**  
Station Information

Calibration Date	October 2, 2013	Previous Calibration	September 18, 2013
Company	LICA	Plant/Location	Cold Lake South
Start Time (MST)	8:00	End Time (MST)	8:48
Reason:	As found		
Barometric Pressure	28.1 in HG	Station Temperature	24 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	0-10 Volts	Chart Rec. Output	N/A 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 :	A3485K		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	Enviro-nics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range							
Sample Flow/Conv. Temp	682 ccm	317 Deg C		682 ccm	317 Deg C		
Ozone Flow / Vacuum	OK ccm	198.3 *Hg-A		OK ccm	198.3 *Hg-A		
HVPS / A ZERO	-821 Volts	N/A MV		-821 Volts	N/A MV		
Rx/ Temp / PMT Temp	49.7 Deg C	-2.5 Deg C		49.7 Deg C	-2.5 Deg C		
Box Temp / IZS Temp	27.8 Deg C	OK Deg C		27.8 Deg C	OK Deg C		
Offset	4.6 NOx	4.3 NO		4.6 NOx	4.3 NO		
Slope	1.003 NOx	1.076 NO		1.003 NOx	1.076 NO		
NO2 COEF / Conv Efficiency	0.998 NO2	N/A		0.998 NO2	N/A		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	0	0	0	NA	NA
	No zero adj.									
4920	39.9	NA	396	395	NA	395	394	1	1.0033	1.0038

**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= 1.0033	NO= 1.0038	NO2=
			Average Converter Efficiency=			

**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	427 NOx	422 NO2		427 NOx	422 NO2		
	Sample Lines Connected:			YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	1.000	0.999	
Current Correction Factor Before Span Adjust	1.003	1.004	
Percent Change	-0.3%	-0.5%	

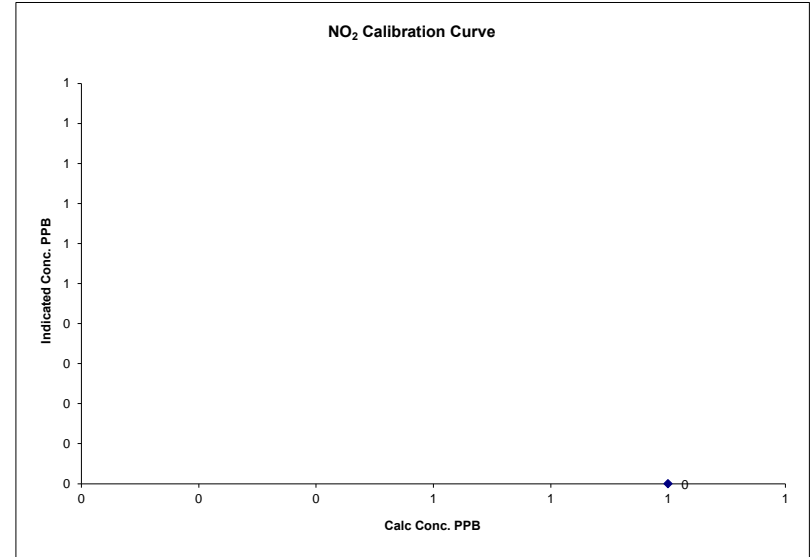
Notes: **NA : Not Applicable**

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

Calibration Date	October 2, 2013
Company	LICA
Plant / Location	Cold Lake South
Start Time (MST)	8:00
End Time (MST)	8:48

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



Notes:

**NOx - NO- NO2 Calibration Report**  
**Station Information**

Calibration Date	October 2, 2013	Previous Calibration	September 18, 2013
Company	LICA	Plant/Location	Cold Lake South
Start Time (MST)	9:40	End Time (MST)	13:43
Reason:	Monthly calibration		
Barometric Pressure	28.14 in HG	Station Temperature	24 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	0-10 Volts	Chart Rec. Output	N/A Volts

**Equipment Information**

Analyzer Make / Model:	Thermo 42C	S/N :	427408716	Method:	Chemiluminescent
Calibrator Make / Model:	EnviroNics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	A3485K		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	EnviroNics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range	0 - 500			ppb			
Sample Flow/Conv. Temp	743 ccm	318 Deg C		743 ccm	317 Deg C		
Ozone Flow / Vacuum	OK ccm	177.3 *Hg-A		OK ccm	177.3 *Hg-A		
HVPS / A ZERO	-821 Volts	N/A MV		-821 Volts	N/A MV		
Rx/ Temp / PMT Temp	49.6 Deg C	-2.5 Deg C		49.7 Deg C	-2.5 Deg C		
Box Temp / IZS Temp	28.0 Deg C	OK Deg C		28.0 Deg C	OK Deg C		
Offset	4.6 NOx	4.3 NO		5.9 NOx	5.0 NO		
Slope	1.003 NOx	1.076 NO		1.005 NOx	1.297 NO		
NO2 COEF / Conv Efficiency	0.998 NO2	N/A		0.998 NO2	N/A		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	0	0	0	NA	NA
	No zero adj.									
4961	40.0	NA	394	393	NA	394	393	1	1.0000	1.0000
	No span adj.									
4980	20.0	NA	197	197	NA	199	199	0	0.9924	0.9904
4989	10.0	NA	99	99	NA	101	101	0	0.9803	0.9783
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		
4961	40.0	NA	394	393	NA	394	393	1	NA	NA
4961	40.0	350	394	NA	303	394	91	303	1.0000	100.00%
	No adj.									
4961	40.0	150	394	NA	132	394	262	132	1.0000	100.00%
4961	40.0	75	394	NA	64	394	330	64	1.0000	100.00%

Linearity	Sum of Least Squares		NOx= 0.997	NO= 0.997	NO2= 1.000
OK?	Yes	No	Correction Factors: 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		0.0 NOx	0.0 NO2		
Auto Span	427 NOx	422 NO2		469 NOx	464 NO2		
	Sample Lines Connected:			YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	1.000	0.999	1.000
Current Correction Factor Before Span Adjust	1.000	1.000	1.000
Percent Change	0.0%	-0.1%	0.0%

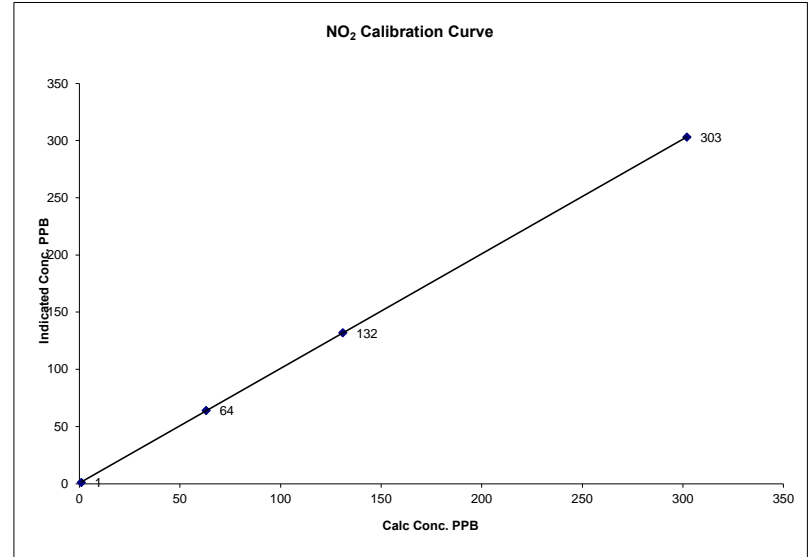
Notes: **NA : Not Applicable**

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

Calibration Date	October 2, 2013
Company	LICA
Plant / Location	Cold Lake South
Start Time (MST)	9:40
End Time (MST)	13:43

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999991
1	1	NA	Intercept	(± 3% F.S.)	0.44725
63	64	0.9844			
131	132	0.9924			
302	303	0.9967			

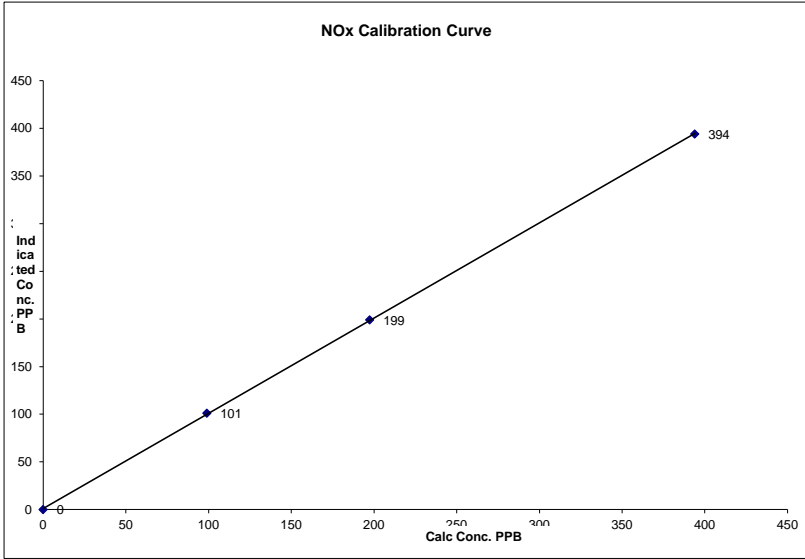


Notes:

**NOx Calibration Curve**

Calibration Date	October 2, 2013	
Company	LICA	
Plant / Location	Cold Lake South	
Start Time (MST)	9:40	End Time (MST) 13:43

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	( $\geq 0.995$ )	0.999965
0	0	NA	Intercept	( $\pm 3\%$ F.S.)	1.08027
99	101	0.9803			
197	199	0.9924			
394	394	1.0000			

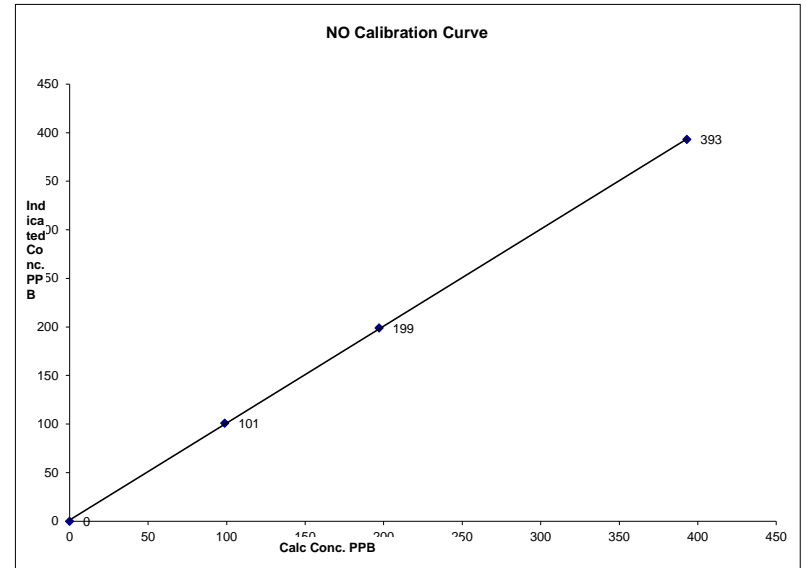


Notes:

**NO Calibration Curve**

Calibration Date	October 2, 2013	
Company	LICA	
Plant / Location	Cold Lake South	
Start Time (MST)	9:40	End Time (MST) 13:43

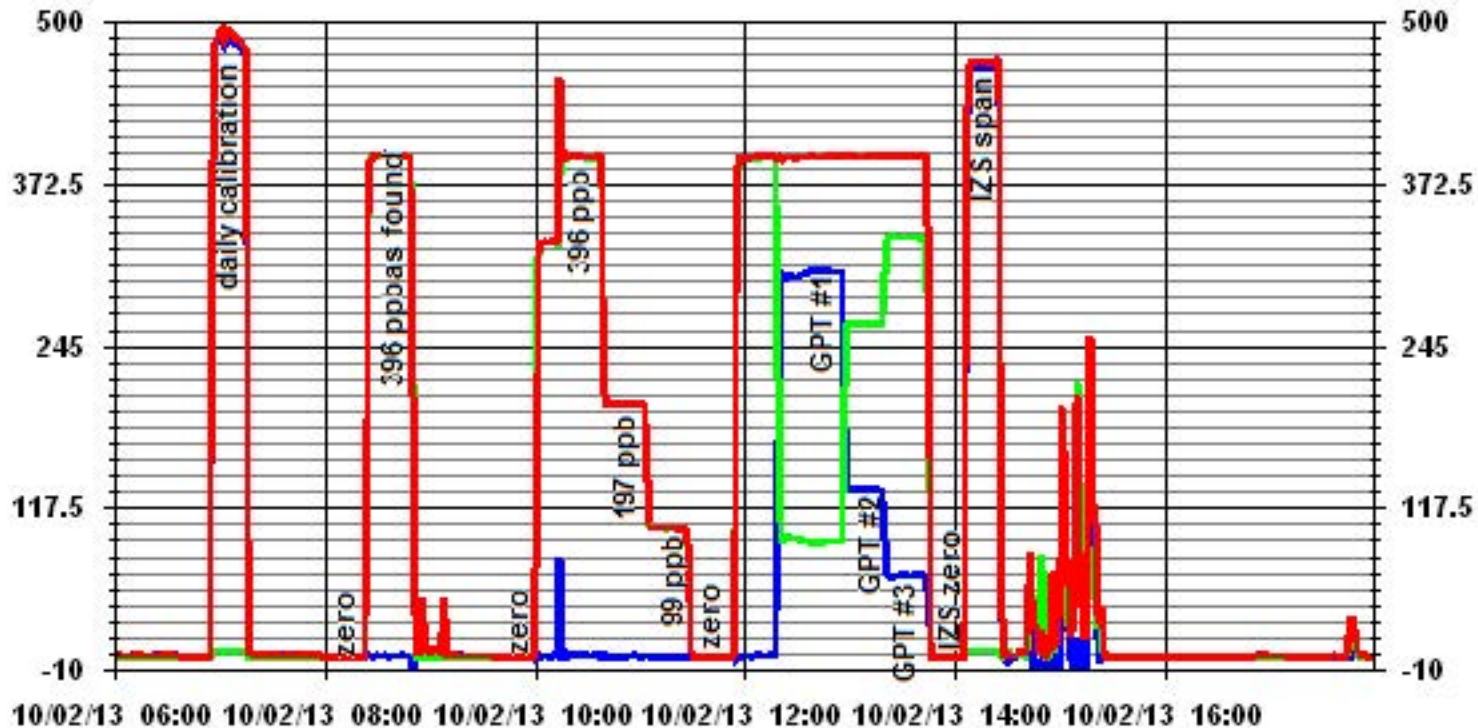
Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	( $\geq 0.995$ )	0.999949
0	0	NA	Intercept	( $\pm 3\%$ F.S.)	1.28070
99	101	0.9783			
197	199	0.9904			
393	393	1.0000			



Notes:

# Ozone

### 01 Minute Averages



— LICA NOX\_ PPB    
 — LICA NO\_ PPB    
 — LICA NO2\_ PPB



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

#### Station Information

Calibration Date	October 3, 2013	Previous Calibration	September 18, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	9:05	End Time (MST)	11:27
Reason:	Monthly Calibration		
Barometric Pressure	28.41 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	716 LPM	757 LPM		716 LPM	756 LPM		
O <sub>3</sub> Set Level	713 mmHg			713 mmHg			
Bench Lamp	29 Deg C			29 Deg C			
O <sub>3</sub> Lamp / Box Temp	53.5 Deg	67.5 Deg C		53.5 Deg C	67.5 Deg C		
Offset / Slope	-0.1	1.035		-0.1	1.035		

#### 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	302	302	1.0000
	No Span Adj.			
4995	150	131	130	
4995	75	63	63	
4995	0	0	0	
Sum of Least Squares				1.0012
New Correction Factor				1.0000

#### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0	Auto Zero	0.0
Auto Span	277	Auto Span	277
Sample Lines Connected		YES	
Previous Calibration Correction Factor:		1.0000	
Current Correctio Factor Before Span Adjust:		1.0000	
Percent Change:		0.0%	

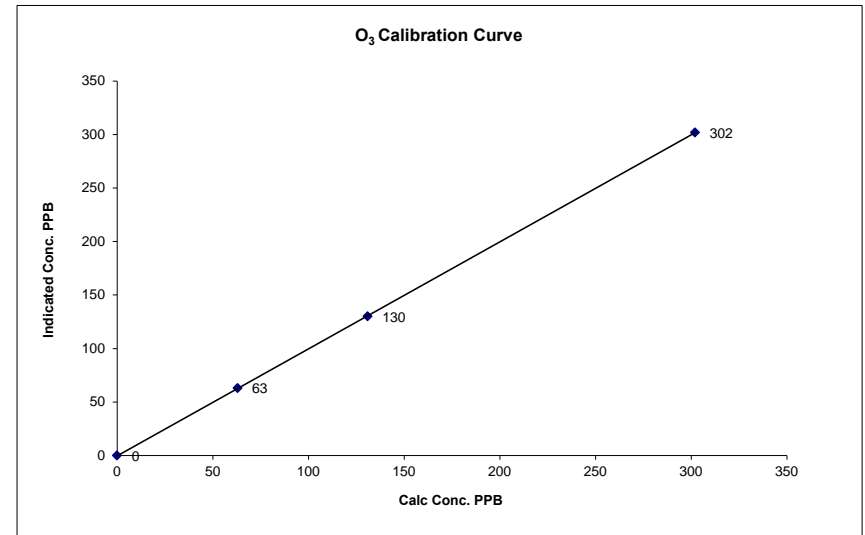
Note: NA : Not Applicable

Calibration Performed by: Waseem Ahmed

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

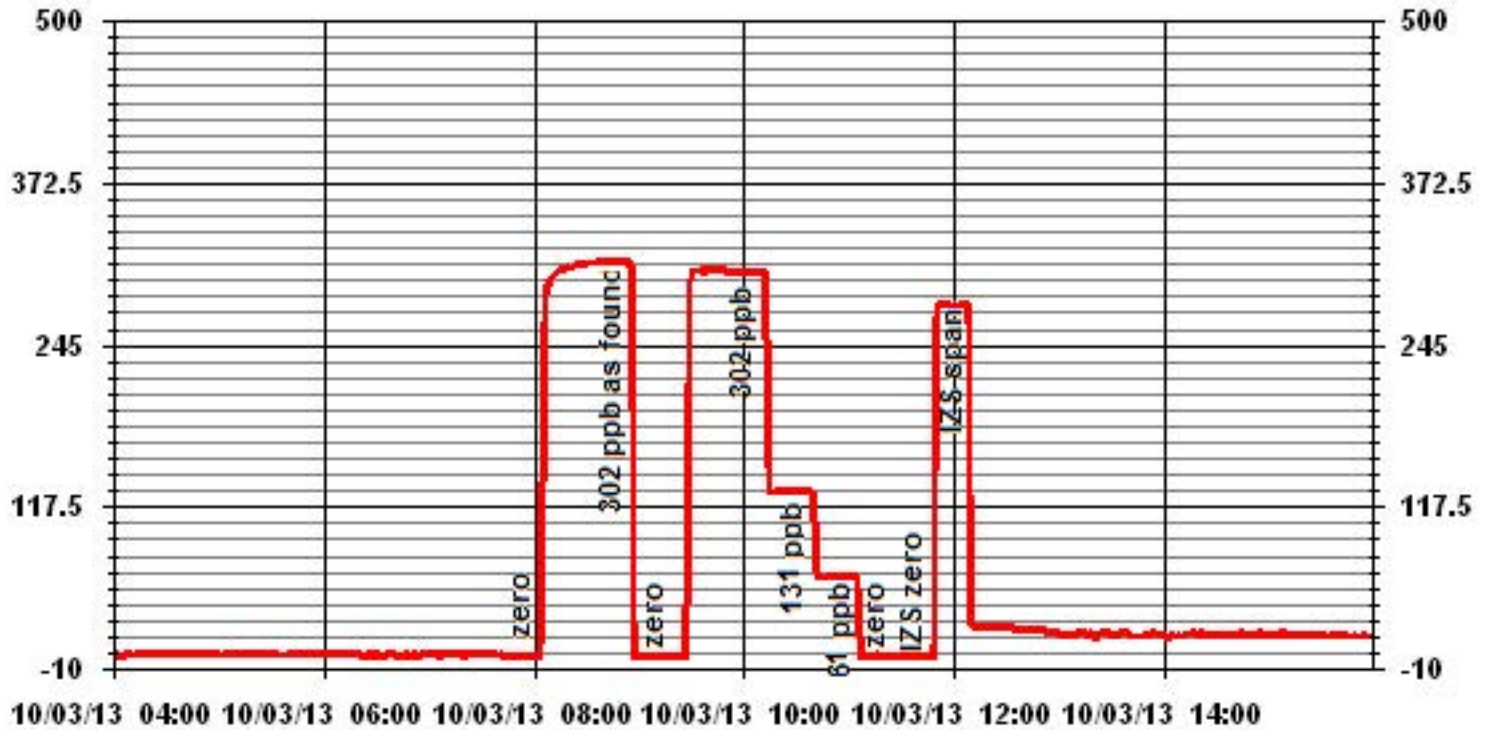
Calibration Date	October 3, 2013
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	9:05
End Time (MST)	11:27

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	0.999985	0.999862	-0.232923
63	63	1.0000			
131	130	1.0077			
302	302	1.0000			



Notes:

# 01 Minute Averages





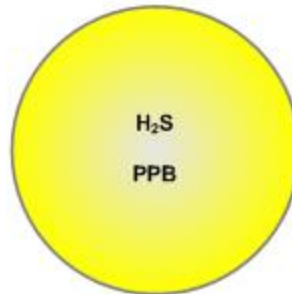
# Passive Bubble Maps

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

OCTOBER 2013

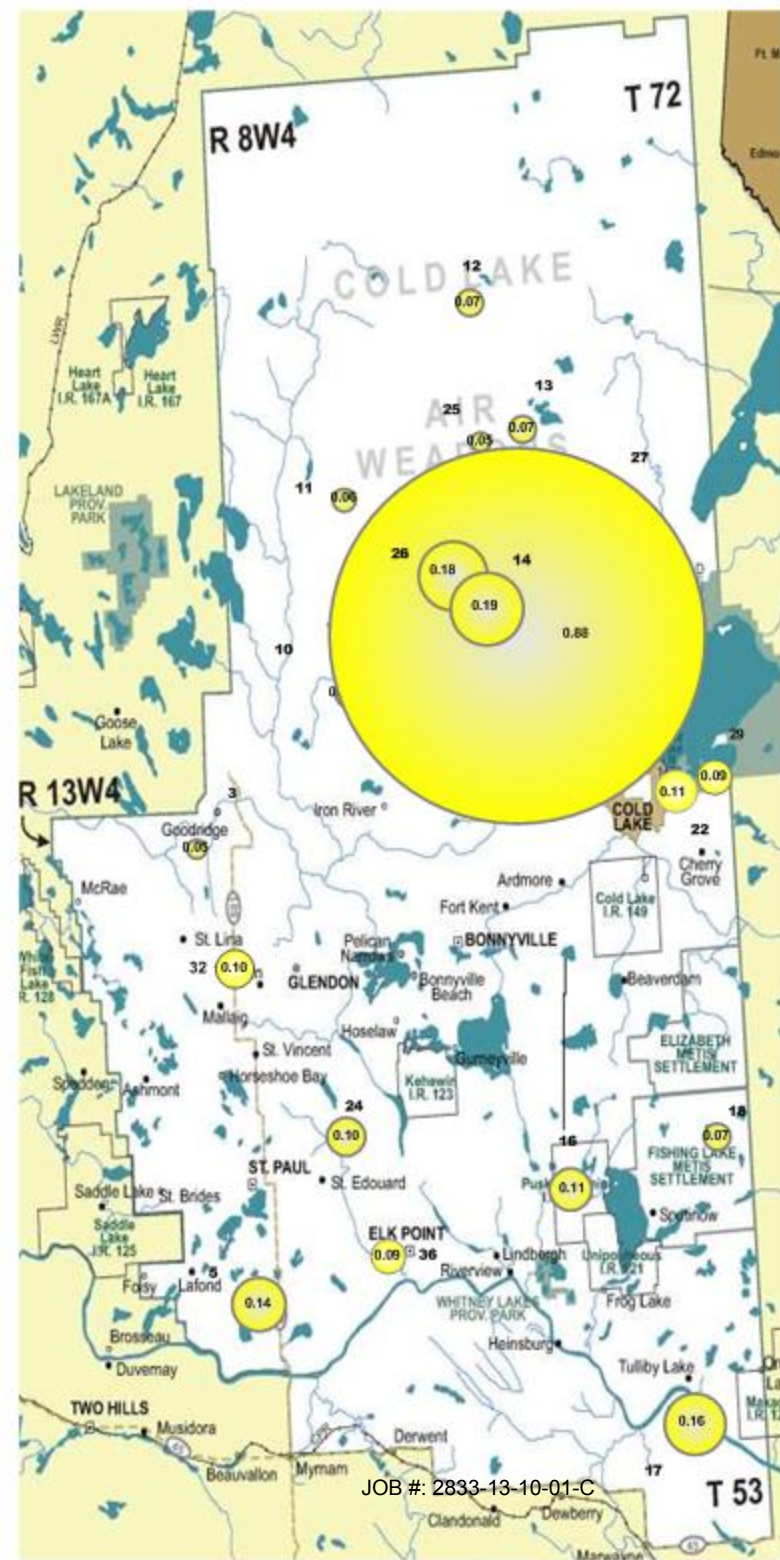
## PASSIVE STATIONS

Station	Reading	Duplicate
3 – Therien	0.05 PPB	NA
5 – Lake Eliza	0.14 PPB	NA
10 – La Corey	0.08 PPB	NA
11 – Wolf Lake	0.06 PPB	NA
12 – Foster Creek	0.07 PPB	NA
13 – Primrose	0.07 PPB	NA
14 – Maskwa	0.19 PPB	NA
16 – Frog Lake	0.11 PPB	NA
17 – Clear Range	0.16 PPB	NA
18 – Fishing Lake	0.07 PPB	NA
22 – Cold Lake South	0.13 PPB	0.08 PPB
24 – Fort George	0.10 PPB	0.10 PPB
25 – Burnt Lake	0.05 PPB	NA
26 – Mahihkan	0.18 PPB	NA
27 – Mahkeses	0.88 PPB	NA
29 – Cold Lake South 2	0.09 PPB	NA
32 – St. Lina	0.10 PPB	NA
36 – Elk Point	0.09 PPB	NA



## Summary

Minimum : 0.05 PPB – Therien and Burnt Lake  
 Maximum: 0.88 PPB – Mahkeses  
 Average: 0.37 PPB (Includes Duplicates)

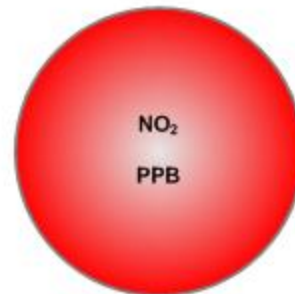


# Lakeland Industry & Community Association NO<sub>2</sub> Passive Bubble Map

OCTOBER 2013

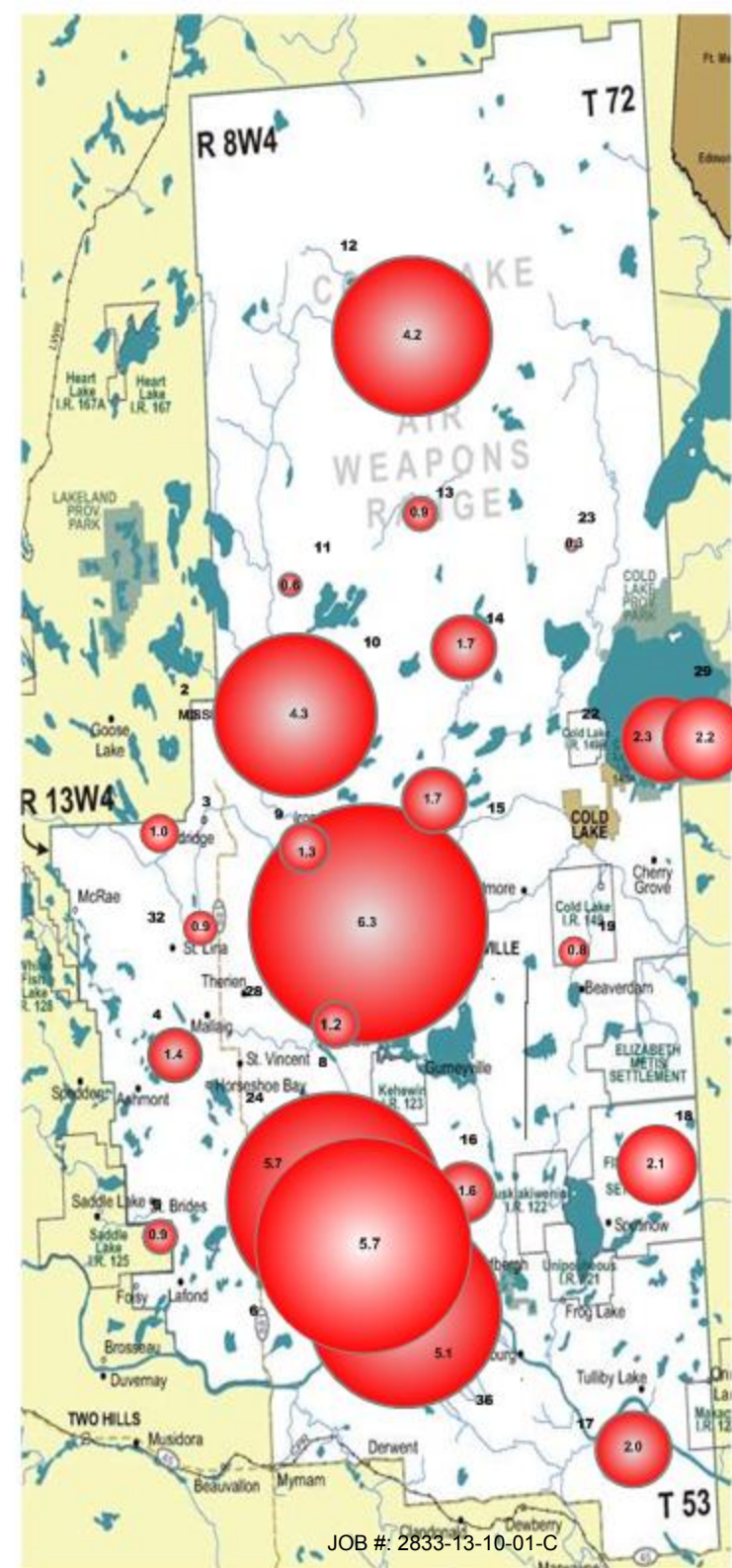
## PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	1.0 PPB	NA
4 – Flat Lake	1.4 PPB	NA
5 – Lake Eliza	0.9 PPB	NA
6 – Telegraph Creek	5.7 PPB	NA
8 – Muriel-Kehewin	1.2 PPB	NA
9 – Dupre	1.3 PPB	NA
10 – La Corey	4.3 PPB	NA
11 – Wolf Lake	0.6 PPB	NA
12 – Foster Creek	4.2 PPB	NA
13 – Primrose	0.9 PPB	NA
14 – Maskwa	1.7 PPB	NA
15 – Ardmore	1.7 PPB	NA
16 – Frog Lake	1.6 PPB	NA
17 – Clear Range	2.0 PPB	NA
18 – Fishing Lake	2.1 PPB	NA
19 – Beaverdam	0.8 PPB	NA
22 – Cold Lake South	2.3 PPB	NA
23 – Medley-Martineau	0.3 PPB	NA
24 – Fort George	5.7 PPB	NA
28 – Town of Bonnyville	6.3 PPB	NA
29 – Cold Lake South 2	1.7 PPB	2.7 PPB
32 – St. Lina	0.6 PPB	1.2 PPB
36 – Elk Point	5.1 PPB	NA



## Summary

Minimum : 0.3 PPB – Medley-Martineau  
Maximum: 6.3PPB – Town of Bonnyville  
Average: 2.3 PPB \*Includes Duplicates

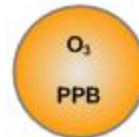


# Lakeland Industry & Community Association O<sub>3</sub> Passive Bubble Map

OCTOBER 2013

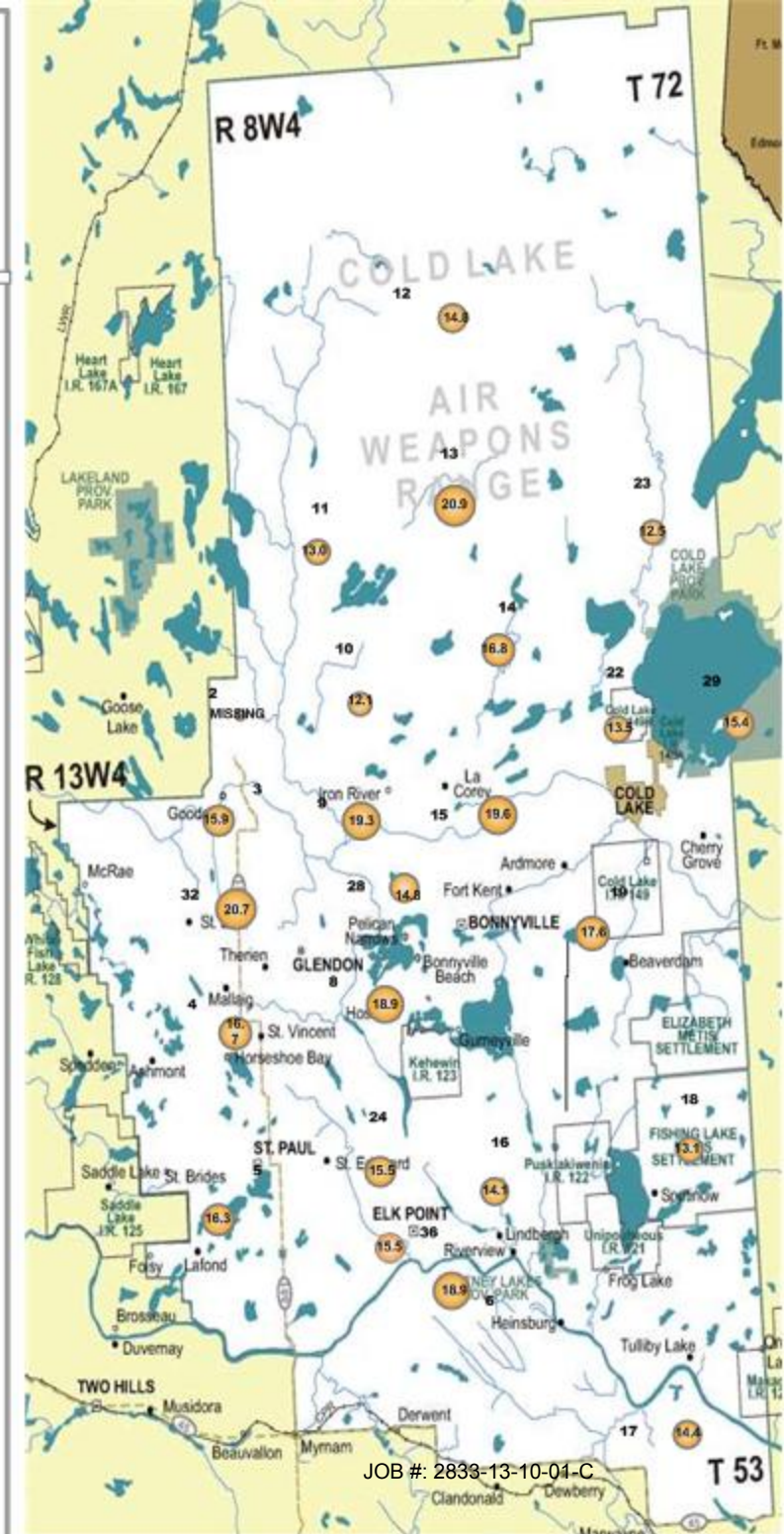
## PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	15.9 PPB	NA
4 – Flat Lake	16.7 PPB	NA
5 – Lake Eliza	16.3 PPB	NA
6 – Telegraph Creek	13.2 PPB	NA
8 – Muriel-Kehewin	18.9 PPB	NA
9 – Dupre	19.3 PPB	NA
10 – La Corey	12.1 PPB	NA
11 – Wolf Lake	13.0 PPB	NA
12 – Foster Creek	14.8 PPB	NA
13 – Primrose	20.9 PPB	NA
14 – Maskwa	16.8 PPB	NA
15 – Ardmore	19.6 PPB	NA
16 – Frog Lake	14.1 PPB	NA
17 – Clear Range	14.4 PPB	NA
18 – Fishing Lake	13.1 PPB	NA
19 – Beaverdam	17.6 PPB	NA
22 – Cold Lake South	13.5 PPB	NA
23 – Medley-Martineau	12.5 PPB	NA
24 – Fort George	15.5 PPB	NA
28 – Town of Bonnyville	14.8 PPB	NA
29 – Cold Lake South 2	15.1 PPB	15.7 PPB
32 – St. Lina	20.2 PPB	21.1 PPB
36 – Elk Point	15.5 PPB	NA



## Summary

Minimum : 12.1 PPB – La Corey  
 Maximum: 20.9 PPB – Primrose  
 Average: 15.8 PPB \*Includes Duplicates



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

OCTOBER 2013

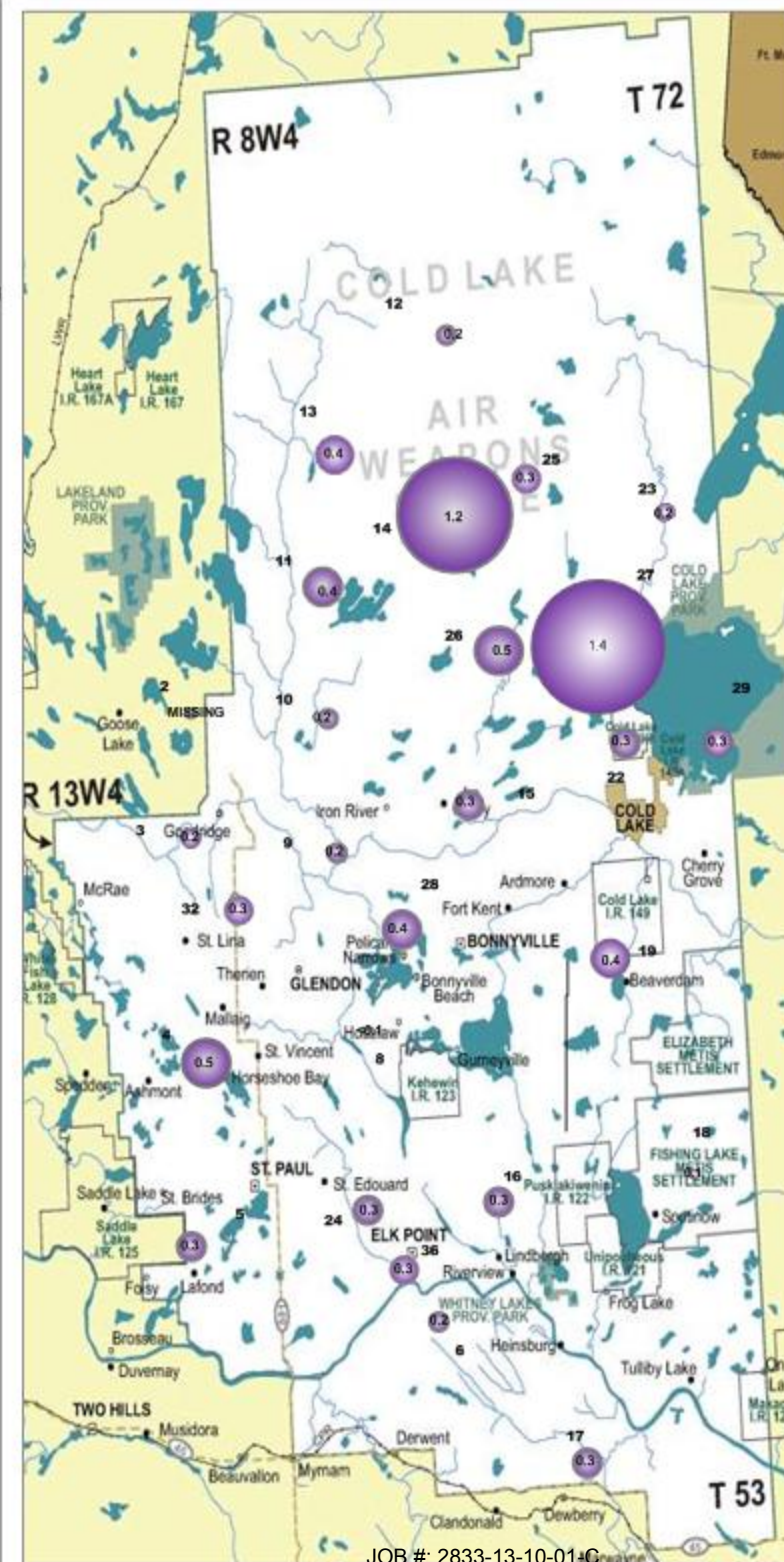
## PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	0.2 PPB	NA
4 – Flat Lake	0.5 PPB	NA
5 – Lake Eliza	0.3 PPB	NA
6 – Telegraph Creek	1.2 PPB	NA
8 – Muriel-Kehewin	<0.1 PPB	NA
9 – Dupre	0.2 PPB	NA
10 – La Corey	0.2 PPB	NA
11 – Wolf Lake	0.4 PPB	NA
12 – Foster Creek	0.2 PPB	NA
13 – Primrose	0.4 PPB	NA
14 – Maskwa	1.1 PPB	1.2 PPB
15 – Ardmore	0.3 PPB	0.2 PPB
16 – Frog Lake	0.3 PPB	0.2 PPB
17 – Clear Range	0.3 PPB	NA
18 – Fishing Lake	0.1 PPB	NA
19 – Beaverdam	0.4 PPB	NA
22 – Cold Lake South	0.3 PPB	NA
23 – Medley-Martineau	0.2 PPB	NA
24 – Fort George	0.3 PPB	NA
25 – Burnt Lake	0.3 PPB	NA
26 – Mahikan	0.5 PPB	NA
27 – Mahkeses	1.4 PPB	NA
28 – Town of Bonnyville	0.4 PPB	NA
29 – Cold Lake South 2	0.3 PPB	NA
32 – St. Lina	0.3 PPB	NA
36 – Elk Point	0.3 PPB	NA



## Summary

Minimum : <0.1 PPB –Muriel-Kehewin  
Maximum: 1.4 PPB –Mahkeses  
Average: 0.37 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>	NA	NA	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>	09/26/2013	16:40	11/01/2013		
4	SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/26/2013	15:20	11/01/2013		
5	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/26/2013	14:10	11/01/2013		
6	SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/26/2013	12:20	11/01/2013		
8	SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/26/2013	18:05	11/01/2013		
9	SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/26/2013	17:15	11/01/2013		
10	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/27/2013	09:00	11/04/2013		
11	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/27/2013	09:40	11/04/2013		
12	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/27/2013	11:00	11/04/2013		
13	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/27/2013	13:55	11/04/2013		
14	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/27/2013	14:50	11/04/2013		
15	SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/27/2013	15:33	11/05/2013		
16	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/26/2013	09:35	11/01/2013		
17	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/26/2013	11:30	11/01/2013		
18	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/26/2013	10:15	11/01/2013		
19	SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/26/2013	08:55	11/01/2013		
22	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/26/2013	19:15	11/05/2013		
23	SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/27/2013	16:20	11/05/2013		
24	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/26/2013	12:54	11/01/2013		
25	H <sub>2</sub> S/SO <sub>2</sub>	09/27/2013	12:15	11/04/2013		
26	H <sub>2</sub> S/SO <sub>2</sub>	09/27/2013	14:30	11/04/2013		
27	H <sub>2</sub> S/SO <sub>2</sub>	09/27/2013	15:03	11/04/2013		
28	SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/26/2013	17:30	11/01/2013		
29	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/26/2013	19:20	11/05/2013		
32	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/26/2013	16:00	11/01/2013		
36	H <sub>2</sub> S/SO <sub>2</sub> /NO <sub>2</sub> /O <sub>3</sub>	09/26/2013	13:10	11/01/2013		

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
Duplicate # 14	SO <sub>2</sub>	09/27/2013	14:50	11/04/2013	09:40	
Duplicate # 15	SO <sub>2</sub>	09/27/2013	15:33	11/05/2013	11:00	
Duplicate # 16	SO <sub>2</sub>	09/26/2013	09:35	11/01/2013	13:55	
Duplicate # 22	H <sub>2</sub> S	09/26/2013	19:15	11/05/2013	11:30	
Duplicate # 24	H <sub>2</sub> S	09/26/2013	12:54	11/01/2013	10:15	
Duplicate # 29	NO <sub>2</sub>	09/26/2013	19:20	11/05/2013	12:54	
Duplicate # 32	NO <sub>2</sub>	09/26/2013	16:00	11/01/2013	17:30	
Duplicate # 29	O <sub>3</sub>	09/26/2013	19:20	11/05/2013	12:54	
Duplicate # 32	O <sub>3</sub>	09/26/2013	16:00	11/01/2013	17:30	



# Passive Network Laboratory Analysis



Your Project #: 2013/09/26 - 2013/11/01  
Site Location: LICA

**Attention: MICHAEL BISAGA**

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

**Report Date: 2013/11/18**

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B3A4650**

**Received: 2013/11/12, 08:43**

Sample Matrix: Air  
# Samples Received: 33

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
H2S Passive Analysis (1)	20	2013/11/18	2013/11/18	PTC SOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (1)	25	2013/11/18	2013/11/18	PTC SOP-00148	Tang Passive NO2 in
O3 Passive Analysis (1)	25	2013/11/14	2013/11/18	PTC SOP-00197	EPA 300 R2.1
SO2 Passive Analysis (1)	29	2013/11/18	2013/11/18	PTC SOP-00149	Tang Passive SO2 in

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

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

**Encryption Key**

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

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

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

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 #: B3A4650  
 Report Date: 2013/11/18

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION  
 Client Project #: 2013/09/26 - 2013/11/01  
 Site Location: LICA  
 Sampler Initials: WA

**RESULTS OF CHEMICAL ANALYSES OF AIR**

Maxxam ID		IB6340	IB6341	IB6342	IB6343	IB6344		
Sampling Date		2013/09/26 16:40	2013/09/26 15:20	2013/09/26 14:10	2013/09/26 12:20	2013/09/26 18:05		
	<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	0.05		0.14			0.02	7285622
Calculated NO2	ppb	1.0	1.4	0.9	5.7	1.2	0.1	7285236
Calculated O3	ppb	15.9	16.7	16.3	13.2	18.9	0.1	7279200
Calculated SO2	ppb	0.2	0.5	0.3	0.2	<0.1	0.1	7285220
RDL = Reportable Detection Limit								

Maxxam ID		IB6345	IB6346	IB6347	IB6348	IB6349		
Sampling Date		2013/09/26 17:15	2013/09/27 09:00	2013/09/27 09:40	2013/09/27 11:00	2013/09/27 13:55		
	<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	0.06	0.07	0.07	0.02	7285622
Calculated NO2	ppb	1.3	4.3	0.6	4.2	0.9	0.1	7285236
Calculated O3	ppb	19.3	12.1	13.0	14.8	20.9	0.1	7279200
Calculated SO2	ppb	0.2	0.2	0.4	0.2	0.4	0.1	7285220
RDL = Reportable Detection Limit								

Maxxam ID		IB6350	IB6351	IB6352	IB6353	IB6354		
Sampling Date		2013/09/27 14:50	2013/09/27 15:33	2013/09/26 09:35	2013/09/26 11:30	2013/09/26 10:15		
	<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	0.19		0.11	0.16	0.07	0.02	7285622
Calculated NO2	ppb	1.7	1.7	1.6	2.0	2.1	0.1	7285236
Calculated O3	ppb	16.8	19.6	14.1	14.4	13.1	0.1	7279200
Calculated SO2	ppb	1.1	0.3	0.3	0.3	0.1	0.1	7285220
RDL = Reportable Detection Limit								



Maxxam Job #: B3A4650  
Report Date: 2013/11/18

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION  
Client Project #: 2013/09/26 - 2013/11/01  
Site Location: LICA  
Sampler Initials: WA

**RESULTS OF CHEMICAL ANALYSES OF AIR**

Maxxam ID		IB6355	IB6356		IB6357	IB6358		
Sampling Date		2013/09/26 08:55	2013/09/26 19:15		2013/09/27 16:20	2013/09/26 12:54		
	<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		0.13	7285622		0.10	0.02	7285622
Calculated NO2	ppb	0.8	2.3	7285236	0.3	5.7	0.1	7285237
Calculated O3	ppb	17.6	13.5	7279200	12.5	15.5	0.1	7279200
Calculated SO2	ppb	0.4	0.3	7285224	0.2	0.3	0.1	7285224
RDL = Reportable Detection Limit								

Maxxam ID		IB6359	IB6360	IB6361	IB6362		
Sampling Date		2013/09/27 12:15	2013/09/27 14:30	2013/09/27 15:03	2013/09/26 17:30		
	<b>UNITS</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>								
Calculated H2S	ppb	0.05	0.18	0.88			0.02	7285622
Calculated NO2	ppb				6.3		0.1	7285237
Calculated O3	ppb				14.8		0.1	7279200
Calculated SO2	ppb	0.3	0.5	1.4	0.4		0.1	7285224
RDL = Reportable Detection Limit								

Maxxam ID		IB6363	IB6364	IB6365	IB6368	IB6369		
Sampling Date		2013/09/26 19:20	2013/09/26 16:00	2013/09/26 13:10	2013/09/26 19:20	2013/09/26 16:00		
	<b>UNITS</b>	<b>29</b>	<b>32</b>	<b>36</b>	<b>29 DUP</b>	<b>32 DUP</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>								
Calculated H2S	ppb	0.09	0.10	0.09			0.02	7285622
Calculated NO2	ppb	1.7	0.6	5.1	2.7	1.2	0.1	7285237
Calculated O3	ppb	15.1	20.2	15.5	15.7	21.1	0.1	7279210
Calculated SO2	ppb	0.3	0.3	0.3			0.1	7285224
RDL = Reportable Detection Limit								



Maxxam Job #: B3A4650  
Report Date: 2013/11/18

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION  
Client Project #: 2013/09/26 - 2013/11/01  
Site Location: LICA  
Sampler Initials: WA

### RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		IB6370	IB6371	IB6372	IB6373	IB6374		
Sampling Date		2013/09/27 14:50	2013/09/27 15:33	2013/09/26 09:35	2013/09/26 19:15	2013/09/26 12:54		
	<b>UNITS</b>	<b>14 DUP</b>	<b>15 DUP</b>	<b>16DUP</b>	<b>22 DUP</b>	<b>24 DUP</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Passive Monitoring</b>								
Calculated H2S	ppb				0.08	0.10	0.02	7285622
Calculated SO2	ppb	1.2	0.2	0.2			0.1	7285220

RDL = Reportable Detection Limit



Maxxam Job #: B3A4650  
Report Date: 2013/11/18

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION  
Client Project #: 2013/09/26 - 2013/11/01  
Site Location: LICA  
Sampler Initials: WA

**General Comments**

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



LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION  
 Attention: MICHAEL BISAGA  
 Client Project #: 2013/09/26 - 2013/11/01  
 P.O. #:  
 Site Location: LICA

Quality Assurance Report  
 Maxxam Job Number: PB3A4650

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7279200 OZ	Calibration Check	Calculated O3	2013/11/14		100	%	91 - 107
	Spiked Blank	Calculated O3	2013/11/14		100	%	96 - 103
	Method Blank	Calculated O3	2013/11/14	<0.1		ppb	
7279210 OZ	Calibration Check	Calculated O3	2013/11/14		100	%	91 - 107
	Spiked Blank	Calculated O3	2013/11/14		99	%	96 - 103
	Method Blank	Calculated O3	2013/11/14	<0.1		ppb	
7285220 DF4	Calibration Check	Calculated SO2	2013/11/18		101	%	95 - 105
	Spiked Blank	Calculated SO2	2013/11/18		100	%	90 - 110
	Method Blank	Calculated SO2	2013/11/18	<0.1		ppb	
7285224 DF4	Calibration Check	Calculated SO2	2013/11/18		100	%	95 - 105
	Spiked Blank	Calculated SO2	2013/11/18		102	%	90 - 110
	Method Blank	Calculated SO2	2013/11/18	<0.1		ppb	
7285236 DF4	Calibration Check	Calculated NO2	2013/11/18		100	%	76 - 118
	Spiked Blank	Calculated NO2	2013/11/18		102	%	93 - 105
	Method Blank	Calculated NO2	2013/11/18	<0.1		ppb	
7285237 DF4	Calibration Check	Calculated NO2	2013/11/18		99	%	76 - 118
	Spiked Blank	Calculated NO2	2013/11/18		99	%	93 - 105
	Method Blank	Calculated NO2	2013/11/18	<0.1		ppb	
7285622 LL	Calibration Check	Calculated H2S	2013/11/18		100	%	93 - 107
	Spiked Blank	Calculated H2S	2013/11/18		105	%	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 #: B3A4650

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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 "Carmen Toker". The signature is written in a cursive style with a large initial 'C' and 'T'.

---

Carmen Toker, CT, Manager Air Laboratory Services

---

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  
October 2013

Prepared By:



November 20, 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: October 2013

The monthly ambient data report:

- Prepared by Lili Zhou
- Reviewed by Lily Lin

# Calibration Procedure

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

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

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

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

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

- 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 – October 2013

LICA MASKWA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO2 (PPB)	172	48	0	0	0.86	17	15, 31	18, 19	8, 8.5	304(WNW), 301(WNW)	2.5	15	100.0
H2S (PPB)	10	3	0	0	0.12	3	VAR	VAR	VAR	VAR	0.5	7	100.0
THC (PPM)	-	-	-	-	2.18	5.4	17	13	10.1	313(NW)	2.4	17, 31	100.0
NOx (PPB)	-	-	-	-	4.64	36.7	31	19	8.5	301(WNW)	12.0	31	100.0
NO (PPB)	-	-	-	-	0.96	15.8	31	19	8.5	301(WNW)	2.3	21	100.0
NO <sub>2</sub> (PPB)	159	-	0	-	3.68	24.7	15	18	8	304(WNW)	9.9	31	100.0
VECTOR WS (KPH)	-	-	-	-	5.84	17.1	27	8	-	28(NNE)	9.9	27	100.0
VECTOR WD (DEGREES)	-	-	-	-	258(WSW)	-	-	-	-	-	-	-	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	70.44	92	3, 4	VAR	VAR	VAR	89.1	1	100.0
TEMPERATURE (DEG C)	-	-	-	-	3.36	15.8	5	13	11.8	269(W)	8.8	7	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	942	961	27, 28	VAR	VAR	VAR	955.5	27	100.0
PRECIPITATION (MM)	-	-	-	-	0.03	1.3	1	14	4.4	16(NNE)	13.2	1	100.0

NA-NOT AVAILABLE VAR-VARIOUS

# General Monthly Summary

## Equipment Operation

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

### AQM STATION – LICA – Maskwa

#### Sulphur Dioxide (PPB)

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

The analyzer spanned high on October 9<sup>th</sup>. An as found points check was performed on October 9<sup>th</sup> to verify the analyzer's functionality. The result was good. No issue could be identified. No data was discarded due to this event. The monthly calibration was performed on October 17<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: 511

No operational issues were observed during the month. An as found points check was performed on October 9<sup>th</sup> to verify the analyzer's functionality. The result was good. The monthly calibration was performed on October 17<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. The monthly calibration was performed on October 17<sup>th</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 – Maskwa

### Nitrogen Dioxide (PPB)

- Analyzer make / model - API 200E, S/N: 594

No operational issues were observed during the month. The monthly calibration was performed on October 17<sup>th</sup>. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

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

- System make / model - MetOne 50.5H Sonic, S/N: H10703

The wind system is reported as vector wind speed and vector wind direction. The last wind system calibration was performed by manufacturer on December 20<sup>th</sup>, 2011.

No operational issues were observed this month.

### Relative Humidity (PERCENT)

- System make / model - Met One 083

No operational issues were observed during the month.

### Precipitation (MM)

- System make / model - Met One 387

No operational issues were observed during the month.

# General Monthly Summary

## **AQM STATION – LICA – Maskwa**

### **Barometric Pressure (MILLIBAR)**

- System make / model - Met One 092

No operation issues were observed during the month.

### **Ambient Temperature (DEGC)**

- System make / model - Met One 060

No operational issues were observed during the month.

### **Trailer Temperature (DEG C)**

- System make / model – R&R 61

No operational issues were observed during the month.

### **Standard Deviation Wind Direction (DEG)**

- System make / model –Met One 50.5H

No operational issues were observed during the month.



# General Monthly Summary

## AQM STATION – LICA – Maskwa

### Datalogger

- System make / model - ESC 8832
- Software make/version - ESC v 5.51a

No operational issues were observed during the month.

### Trailer

The manifold was cleaned on October 17<sup>th</sup>.

# Continuous Monitoring

# Monthly Summaries, Graphs & Wind Roses

# Sulphur Dioxide

**LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA**  
**OCTOBER 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 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		0	0	1	2	1	0	1	0	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
2		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
3		0	0	0	0	0	0	0	0	S	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	0.1	24
4		0	0	0	0	0	0	0	S	0	0	0	0	0	0	1	1	0	0	1	1	2	2	2	1	2	0.5	24
5		1	1	1	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
6		0	0	0	0	0	S	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24
7		0	0	0	0	S	9	10	5	7	3	5	2	1	1	1	1	1	1	1	1	1	1	1	1	10	2.3	24
8		1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	5	5	0.6	24
9		4	1	S	0	0	0	S	0	0	0	0	0	0	C	C	C	C	0	1	1	1	1	2	1	4	0.6	24
10		1	S	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	0	0	0	0	2	0.2	24
11		S	1	1	1	0	0	S	1	7	3	1	6	1	0	0	1	0	6	2	0	1	0	2	S	7	1.6	24
12		3	3	1	1	0	2	3	3	1	0	1	1	3	4	1	1	4	0	0	0	0	0	S	0	4	1.4	24
13		0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	S	0	0	1	0.0	24
14		0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0.0	24
15		0	0	0	0	0	0	0	0	1	1	0	1	2	2	0	2	0	7	17	S	6	15	3	0	17	2.5	24
16		0	0	0	0	0	0	5	7	5	7	3	3	1	1	2	6	3	0	S	0	0	1	9	1	9	2.3	24
17		0	0	0	0	0	0	0	0	5	0	0	C	C	C	C	0	4	S	0	0	0	0	0	2	5	0.6	24
18		1	3	3	0	0	0	0	0	0	0	0	0	0	2	1	S	0	0	0	0	0	1	0	1	3	0.6	24
19		1	1	1	1	1	1	4	5	13	12	1	1	2	1	1	S	0	1	1	0	0	0	0	0	13	2.1	24
20		0	0	0	0	0	1	0	0	0	1	0	0	1	0	S	1	1	1	0	0	0	0	0	0	1	0.3	24
21		0	0	1	2	1	0	0	2	2	12	9	4	3	S	0	0	1	1	1	0	0	0	1	0	12	1.7	24
22		0	0	1	1	0	0	0	0	0	1	2	S	2	3	1	0	0	0	0	0	0	0	1	1	3	0.6	24
23		0	0	0	1	1	1	1	1	1	3	4	S	4	1	0	0	0	0	0	0	0	0	0	0	4	0.8	24
24		0	0	0	0	0	0	0	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
25		0	7	8	7	12	9	0	0	0	S	3	2	1	5	2	2	0	0	0	0	0	0	0	0	12	2.5	24
26		0	0	0	0	0	0	0	0	S	0	1	2	4	2	3	4	1	0	1	1	1	0	0	0	4	0.9	24
27		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
28		0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0.2	24
29		2	2	2	1	1	S	0	0	0	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	1.1	24
30		1	1	1	1	S	0	0	0	2	3	5	3	0	0	0	0	0	0	0	0	0	0	0	0	5	0.7	24
31		0	0	0	S	0	0	1	1	0	1	1	0	0	0	0	0	1	3	4	17	9	1	0	0	17	1.7	24
HOURLY MAX		4	7	8	7	12	9	10	7	13	12	9	6	4	5	3	6	4	7	17	17	9	15	9	5			
HOURLY AVG		0.5	0.7	0.7	0.6	0.6	0.8	0.9	0.9	1.7	1.8	1.2	1.0	0.9	0.8	0.7	0.8	0.6	0.8	1.0	0.7	0.9	0.9	0.9	0.5			

**STATUS FLAG CODES**

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

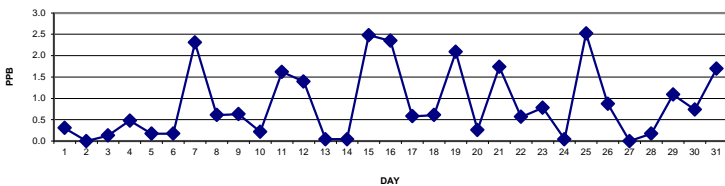
**OBJECTIVE LIMIT:**

<b>ALBERTA ENVIRONMENT:</b>	1-HR	172	PPB	24-HR	48	PPB
-----------------------------	------	-----	-----	-------	----	-----

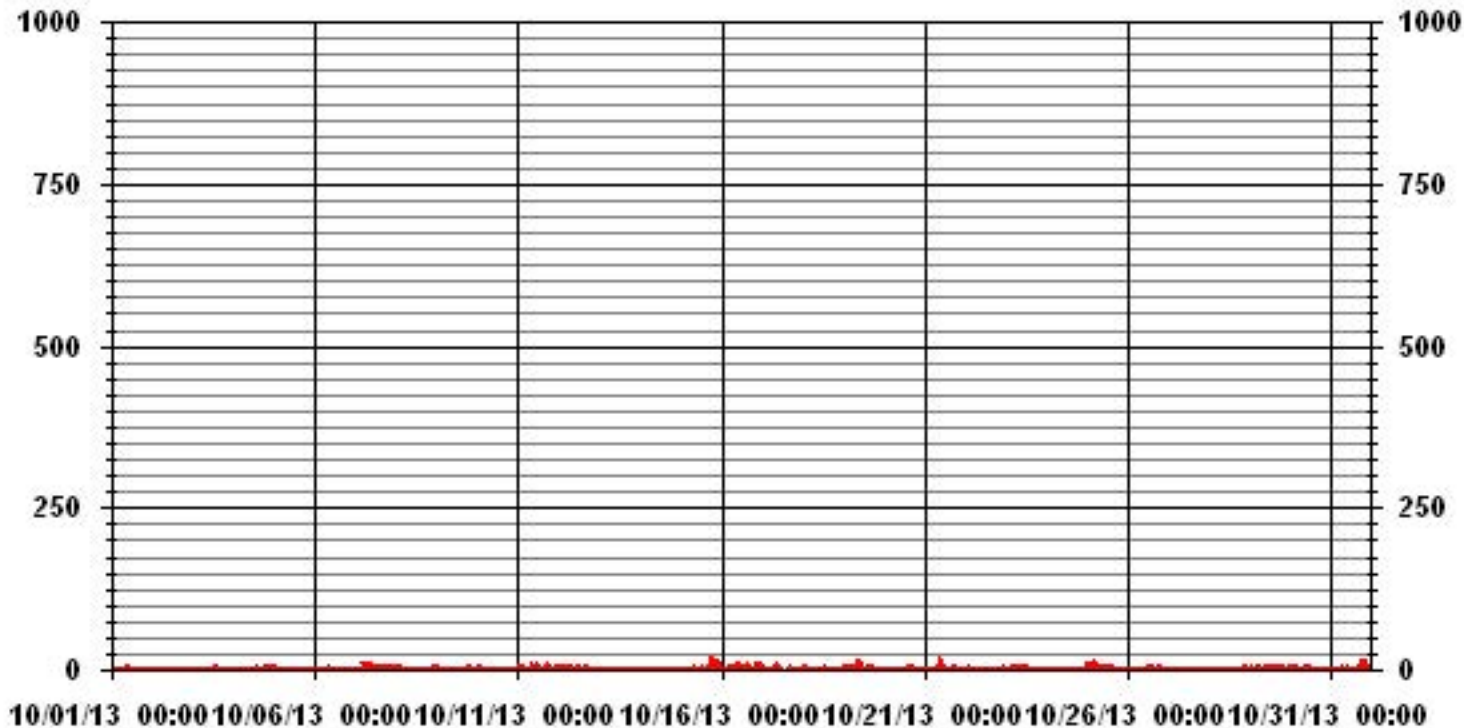
**MONTHLY SUMMARY**

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	247					
MAXIMUM 1-HR AVERAGE:	17	PPB	@ HOUR(S)	18, 19	ON DAY(S)	15, 31
MAXIMUM 24-HR AVERAGE:	2.5	PPB			ON DAY(S)	15
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	744 HRS		
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0 %		
STANDARD DEVIATION:	2.01		MONTHLY AVERAGE:	0.86 PPB		

**24 HOUR AVERAGES FOR OCTOBER 2013**



### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

OCTOBER 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	0	0	2	4	2	1	1	1	3	3	S	1	1	1	1	0	0	0	0	0	0	0	0	0	4	0.9	24	
2	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
3	0	0	0	0	0	0	0	0	S	0	1	1	2	3	2	0	2	2	0	0	0	0	0	0	3	0.6	24	
4	0	0	0	0	0	0	0	S	0	0	0	1	1	1	1	1	1	1	3	1	2	3	2	2	3	0.9	24	
5	1	1	1	1	1	1	S	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24	
6	0	0	0	0	0	S	0	2	3	2	1	1	0	1	0	0	0	0	0	0	0	1	1	1	1	3	0.6	24
7	1	1	1	1	S	17	14	10	10	5	9	5	2	2	1	1	2	1	1	1	1	1	1	1	17	3.9	24	
8	1	1	1	S	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	7	4	13	12	13	1.9	24
9	14	5	S	1	1	1	S	1	1	1	1	1	1	1	C	C	C	1	3	4	2	2	2	2	14	2.4	24	
10	1	S	0	0	0	0	0	0	0	3	2	1	1	0	0	0	0	8	4	0	0	0	1	0	8	0.9	24	
11	S	2	3	2	1	1	S	S	12	11	4	13	3	2	3	4	1	13	9	5	2	1	4	S	13	4.8	24	
12	4	6	2	2	2	5	5	5	4	2	3	6	12	14	6	7	14	2	1	0	0	0	S	0	14	4.4	24	
13	1	0	1	1	1	0	0	0	0	0	0	0	0	3	7	3	2	0	0	0	0	S	0	0	7	0.8	24	
14	0	0	0	0	0	0	0	0	0	4	3	0	0	0	2	1	1	0	0	0	S	0	0	0	4	0.5	24	
15	0	0	0	0	0	0	1	2	2	2	13	38	27	1	18	1	22	25	S	17	32	15	1	38	9.5	24		
16	0	1	1	1	1	1	17	18	9	13	12	12	5	6	10	14	10	1	S	0	0	7	16	2	18	6.8	24	
17	1	1	0	0	0	0	0	0	19	1	0	C	C	C	C	C	16	S	1	0	0	0	0	7	19	2.6	24	
18	2	10	12	1	1	1	1	1	1	1	1	1	1	10	4	1	S	1	1	1	1	1	1	1	12	2.4	24	
19	1	1	1	1	2	5	6	7	24	25	5	3	6	1	1	S	1	1	1	1	0	0	0	0	25	4.0	24	
20	0	0	0	0	1	2	0	0	1	1	1	1	2	1	S	2	1	1	1	1	1	1	1	1	2	0.9	24	
21	1	1	4	4	1	1	1	4	4	23	18	10	8	S	1	3	3	2	4	1	1	1	1	1	23	4.3	24	
22	1	1	1	1	1	1	0	1	1	1	3	9	S	10	9	4	2	0	0	0	0	2	2	10	2.2	24		
23	0	0	0	1	1	1	2	3	3	8	6	S	9	4	0	1	0	0	0	0	0	0	0	0	9	1.7	24	
24	0	0	1	1	1	0	0	1	2	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	2	0.9	24	
25	1	19	21	15	22	20	2	1	0	S	17	12	3	15	8	12	0	0	0	0	0	0	0	0	22	7.3	24	
26	0	0	0	0	0	1	1	2	S	1	3	4	6	7	11	10	4	1	2	2	2	1	1	1	11	2.6	24	
27	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	0.0	24	
28	0	0	0	0	0	0	S	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	0.7	24	
29	2	3	2	2	2	S	1	1	1	1	1	2	2	1	1	1	1	1	1	2	2	2	2	2	3	1.6	24	
30	2	2	1	2	S	1	1	2	3	9	13	7	2	1	1	1	0	0	0	0	1	1	1	1	13	2.3	24	
31	1	0	1	S	0	1	2	2	1	2	1	1	1	1	1	1	2	6	8	24	21	2	1	0	24	3.5	24	
HOURLY MAX	14	19	21	15	22	20	17	18	24	25	18	13	38	27	11	18	16	22	25	24	21	32	16	12				
HOURLY AVG	1.2	1.8	1.9	1.4	1.4	2.1	2.0	2.3	3.6	4.2	3.8	3.7	3.7	3.9	2.7	3.1	2.3	2.2	2.3	1.6	2.1	2.1	2.3	1.3				

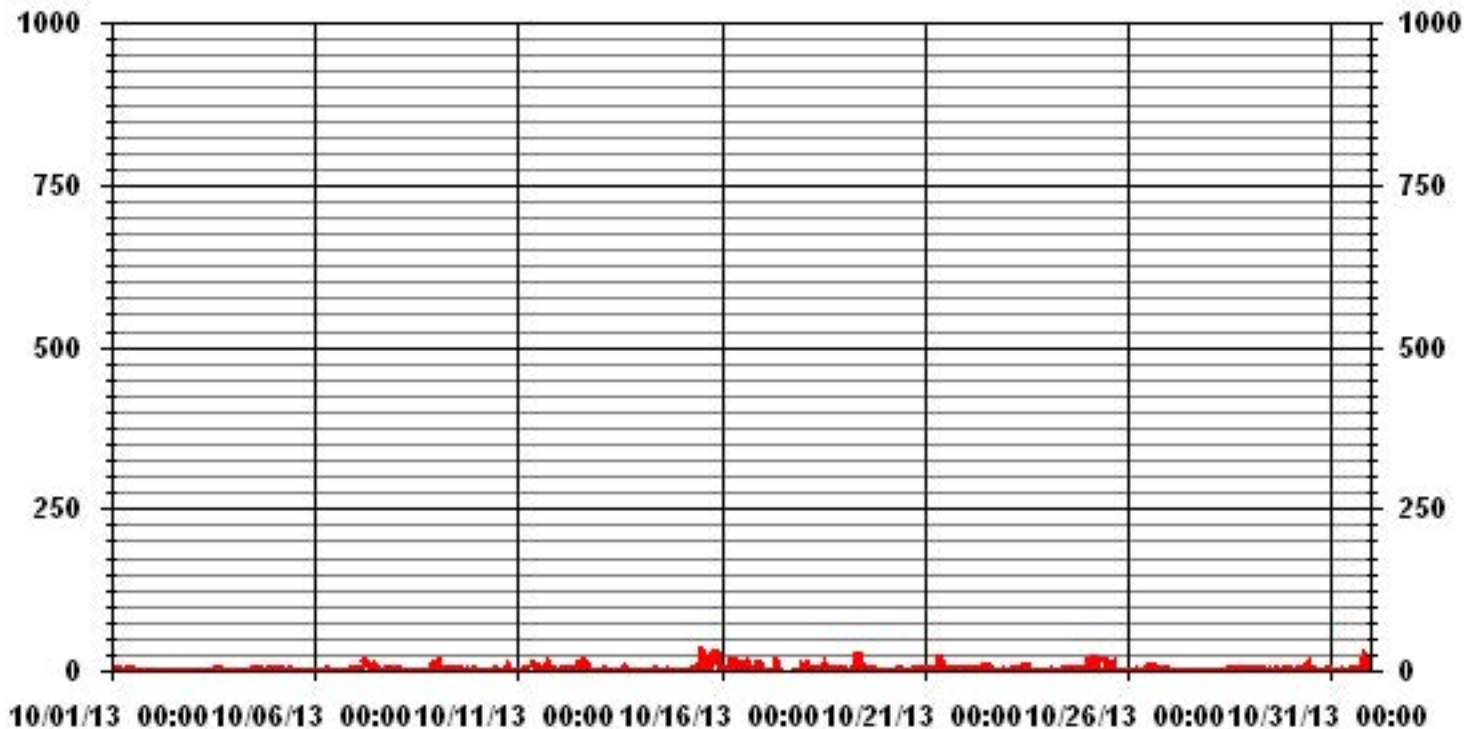
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	445
MAXIMUM INSTANTANEOUS VALUE:	38 PPB @ HOUR(S) 12 ON DAY(S) 15
IZS CALIBRATION TIME:	35 HRS
MONTHLY CALIBRATION TIME:	8 HRS
STANDARD DEVIATION:	4.69
OPERATIONAL TIME:	744 HRS

### 01 Hour Averages





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

October 2013

Distribution By % Of Samples

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

Wind Parameter : WDR  
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	4.69	6.11	2.27	1.42	1.42	1.13	3.69	4.40	5.68	16.64	10.38	7.39	11.37	12.09	5.97	5.26	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	4.69	6.11	2.27	1.42	1.42	1.13	3.69	4.40	5.68	16.64	10.38	7.39	11.37	12.09	5.97	5.26	

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	
< 20	33	43	16	10	10	8	26	31	40	117	73	52	80	85	42	37	703
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	33	43	16	10	10	8	26	31	40	117	73	52	80	85	42	37	

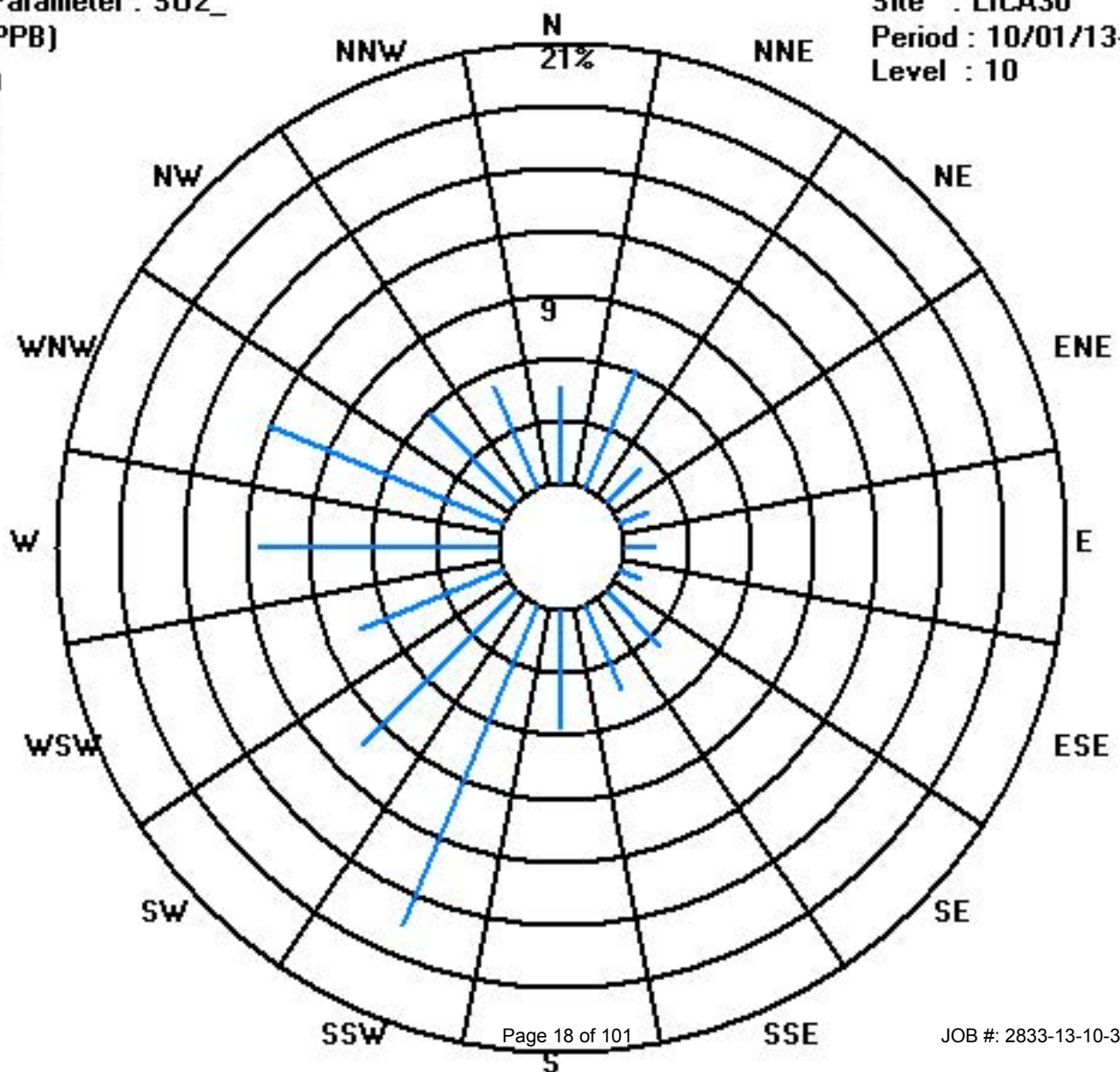
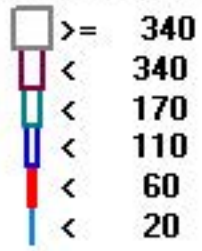
Calm : .00 %

Total # Operational Hours : 703

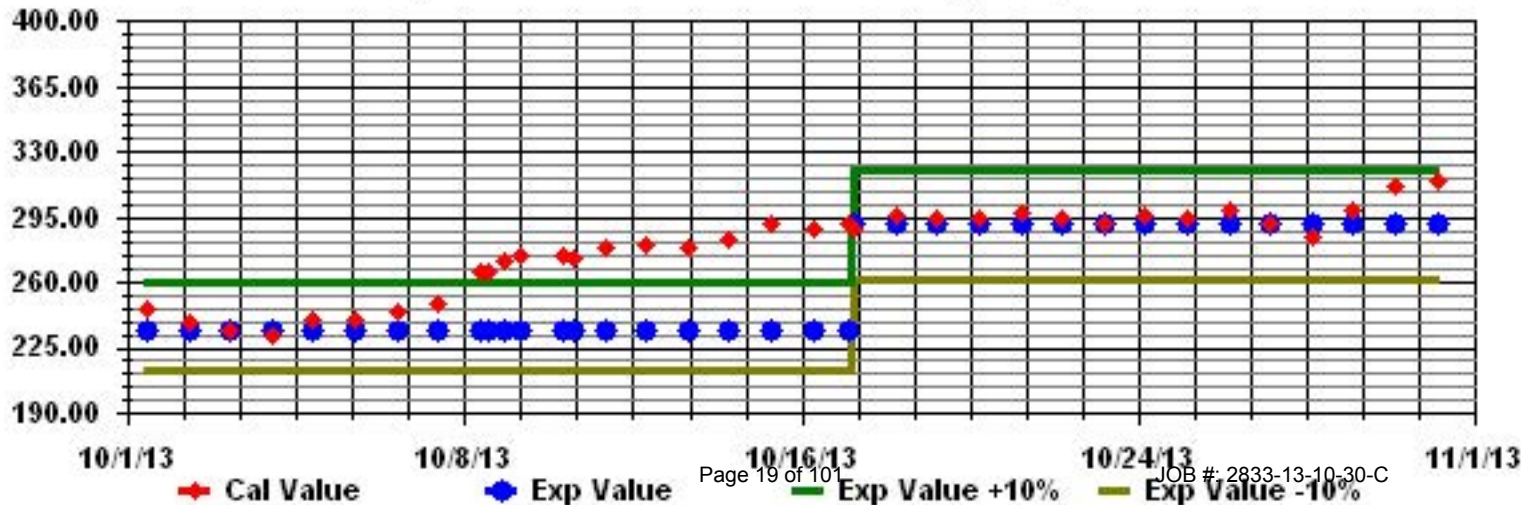
Class Limits (PPB)

Period : 10/01/13-10/31/13

Level : 10



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



# Hydrogen Sulphide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

OCTOBER 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	1	1	1	1	1	1	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
2	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	
3	0	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
4	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
5	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
6	0	0	0	0	0	0	S	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
7	0	0	1	3	S	1	1	0	0	1	1	1	1	1	0	0	0	0	0	0	1	1	0	0	0	3	0.5	24	
8	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	0.3	24
9	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	C	C	0	0	0	0	0	0	0	0	0	1	0.0	24
10	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.0	24	
11	S	1	1	1	1	1	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	S	1	0.5	24	
12	1	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.2	24	
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	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	1	S	0	0	0	1	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	0	1	3	3	0.2	24	
17	3	1	0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	S	0	0	0	0	0	0	3	0.2	24	
18	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	S	0	0	0	0	0	0	0	0	1	0.2	24	
19	0	0	0	0	1	0	1	2	2	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	2	0.3	24	
20	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	
21	0	0	0	1	0	0	0	1	0	0	0	0	0	S	0	0	1	1	0	0	0	0	0	0	0	1	0.2	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	0.0	24	
23	0	0	0	0	0	0	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
24	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.0	24	
25	0	1	1	1	1	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0.4	24
26	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0.1	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	0.0	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	0.0	24	
29	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	
30	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
31	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	
HOURLY MAX		3	1	1	3	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3			
HOURLY AVG		0.2	0.2	0.2	0.3	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.2			

### STATUS FLAG CODES

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

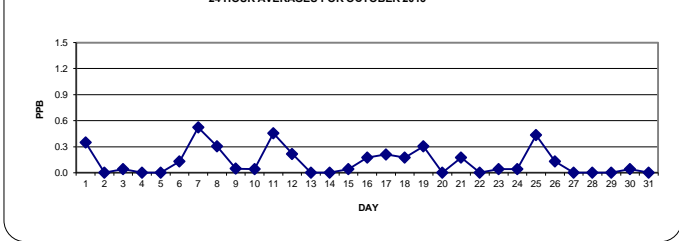
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	10	PPB	24-HR	3	PPB
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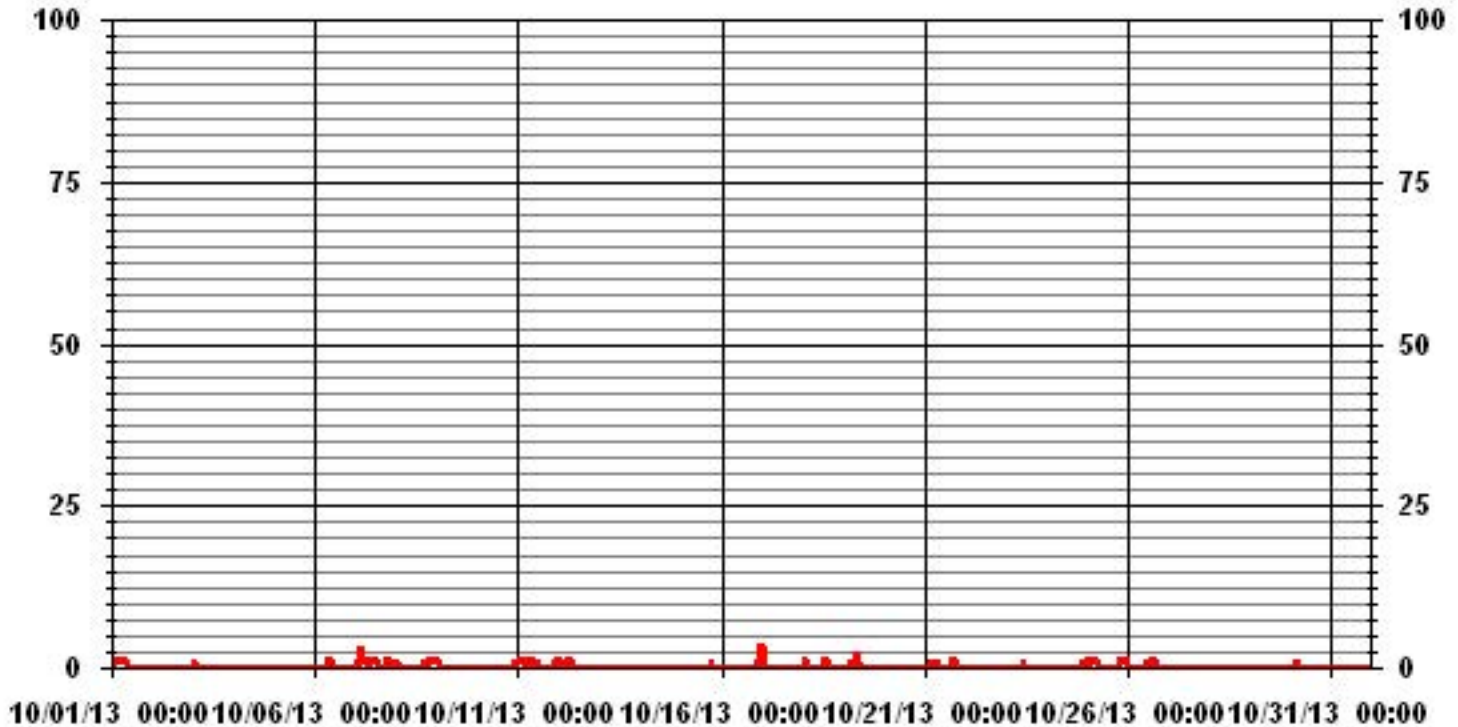
### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	80					
MAXIMUM 1-HR AVERAGE:	3	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.5	PPB			ON DAY(S)	7
				VAR-VARIOUS		
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.37		MONTHLY AVERAGE:	0.12	PPB	

24 HOUR AVERAGES FOR OCTOBER 2013



# 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

OCTOBER 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	2	2	2	1	1	2	2	2	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.7	24
2	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.0	24
3	1	1	1	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
4	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0.1	24
5	1	0	0	0	0	0	S	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0.3	24
6	0	0	0	2	0	S	0	2	2	2	1	0	0	0	1	0	0	1	0	0	0	1	1	0	2	0.6	24	
7	0	0	5	6	S	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	6	1.3	24
8	1	2	1	S	1	1	1	1	1	1	1	0	0	0	1	0	1	1	2	1	2	2	1	2	2	1.0	24	
9	1	1	S	1	1	0	0	0	0	0	0	0	1	1	C	C	C	1	1	1	3	1	1	1	3	0.8	24	
10	1	S	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	2	2	1.0	24
11	S	2	2	2	2	0	2	2	2	2	1	1	1	0	1	1	1	2	0	0	1	1	1	S	2	1.2	24	
12	2	3	1	1	1	1	1	2	1	1	0	1	1	1	1	1	1	0	0	0	0	1	S	1	3	1.0	24	
13	1	0	1	1	0	0	0	1	2	0	0	0	0	1	0	1	1	0	0	0	0	S	1	0	2	0.4	24	
14	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0.1	24
15	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	1	1	1	S	1	1	0	0	1	0.4	24	
16	1	1	0	0	0	0	1	1	0	1	1	0	0	0	1	2	0	0	S	0	0	1	1	5	5	0.7	24	
17	6	3	1	0	0	0	0	0	2	0	1	C	C	C	C	0	1	S	0	0	0	0	1	1	6	0.8	24	
18	1	2	2	1	1	1	0	1	1	1	1	1	1	1	1	S	1	0	0	1	0	1	1	1	2	0.9	24	
19	1	1	0	1	1	1	1	3	3	2	1	1	1	0	0	S	1	1	1	1	1	1	0	0	3	1.0	24	
20	0	0	0	0	0	0	0	1	1	1	1	1	0	0	S	1	1	1	0	1	1	1	0	0	1	0.5	24	
21	0	1	1	2	1	1	1	1	1	2	1	1	1	S	1	1	1	1	1	1	1	1	1	0	2	1.0	24	
22	1	1	1	1	1	1	1	1	1	1	1	1	S	1	0	0	0	0	0	0	1	1	0	0	1	0.7	24	
23	0	0	2	0	0	0	0	0	0	1	1	S	1	0	0	1	1	1	1	0	0	1	1	0	2	0.5	24	
24	1	1	0	0	1	0	0	1	1	0	S	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0.7	24	
25	1	3	2	2	2	2	1	0	0	S	1	1	1	0	1	0	0	0	1	2	2	2	2	2	3	1.2	24	
26	1	1	1	1	1	1	1	0	S	0	1	1	1	1	2	2	1	1	0	1	1	0	1	2	2	0.9	24	
27	1	1	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	
28	0	0	0	0	0	1	S	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1	0	1	0.2	24	
29	0	0	0	0	0	S	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	24	
30	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
31	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	6	3	5	6	2	2	2	3	3	2	1	2	1	1	2	2	1	2	2	2	3	2	2	5				
HOURLY AVG	0.8	0.9	0.8	0.9	0.5	0.4	0.5	0.8	0.8	0.7	0.6	0.5	0.4	0.3	0.5	0.6	0.5	0.6	0.4	0.4	0.7	0.7	0.6	0.7				

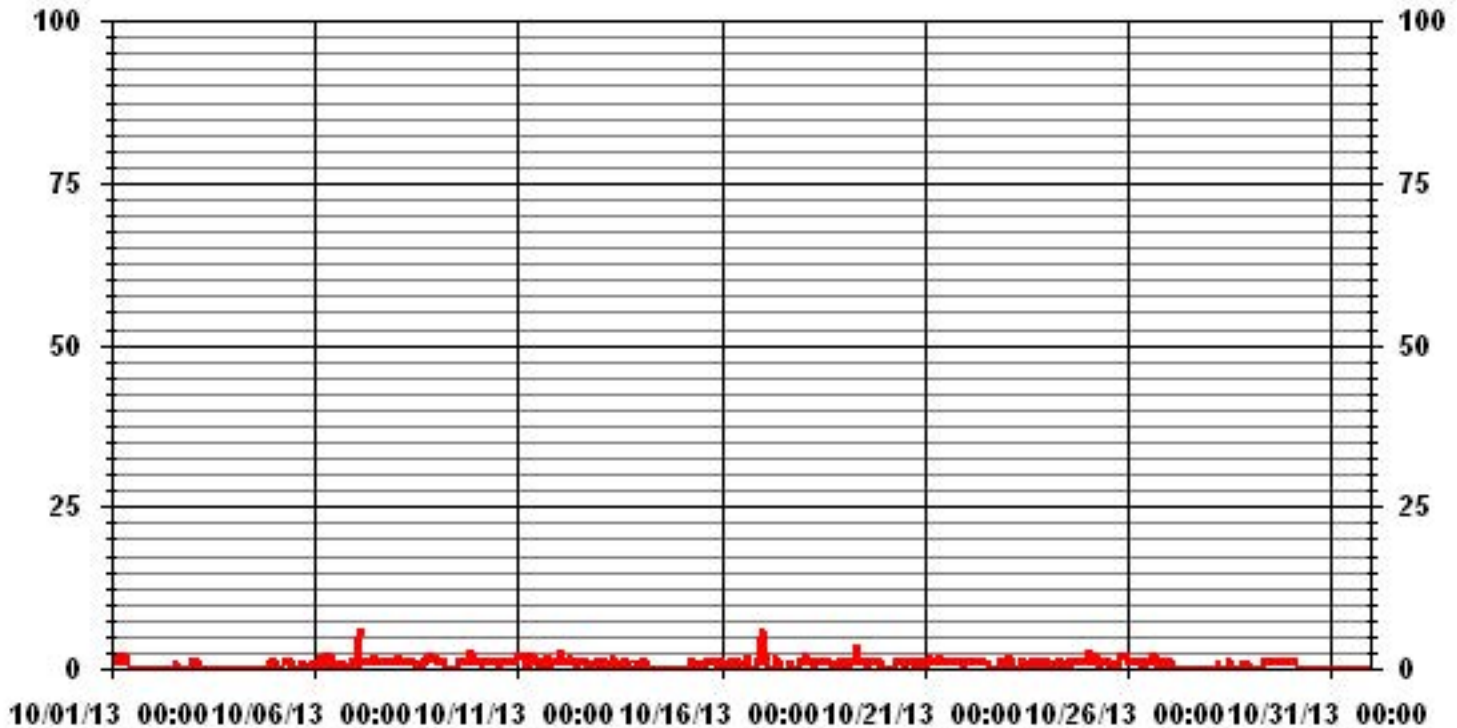
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	354					
MAXIMUM INSTANTANEOUS VALUE:	6	PPB	@ HOUR(S)	3, 0	ON DAY(S)	7, 17
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	0.75					

# 01 Hour Averages





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

October 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	4.67	6.09	2.26	1.41	1.41	.99	3.68	4.39	5.80	16.57	10.33	7.22	11.47	12.03	5.94	5.24	99.57
< 10	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.28	.00	.00	.00	.00	.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	4.67	6.09	2.26	1.41	1.41	1.13	3.68	4.39	5.80	16.57	10.33	7.50	11.47	12.03	5.94	5.24	

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	33	43	16	10	10	7	26	31	41	117	73	51	81	85	42	37	703
< 10						1						2					3
< 50																	
>= 50																	
Totals	33	43	16	10	10	8	26	31	41	117	73	53	81	85	42	37	

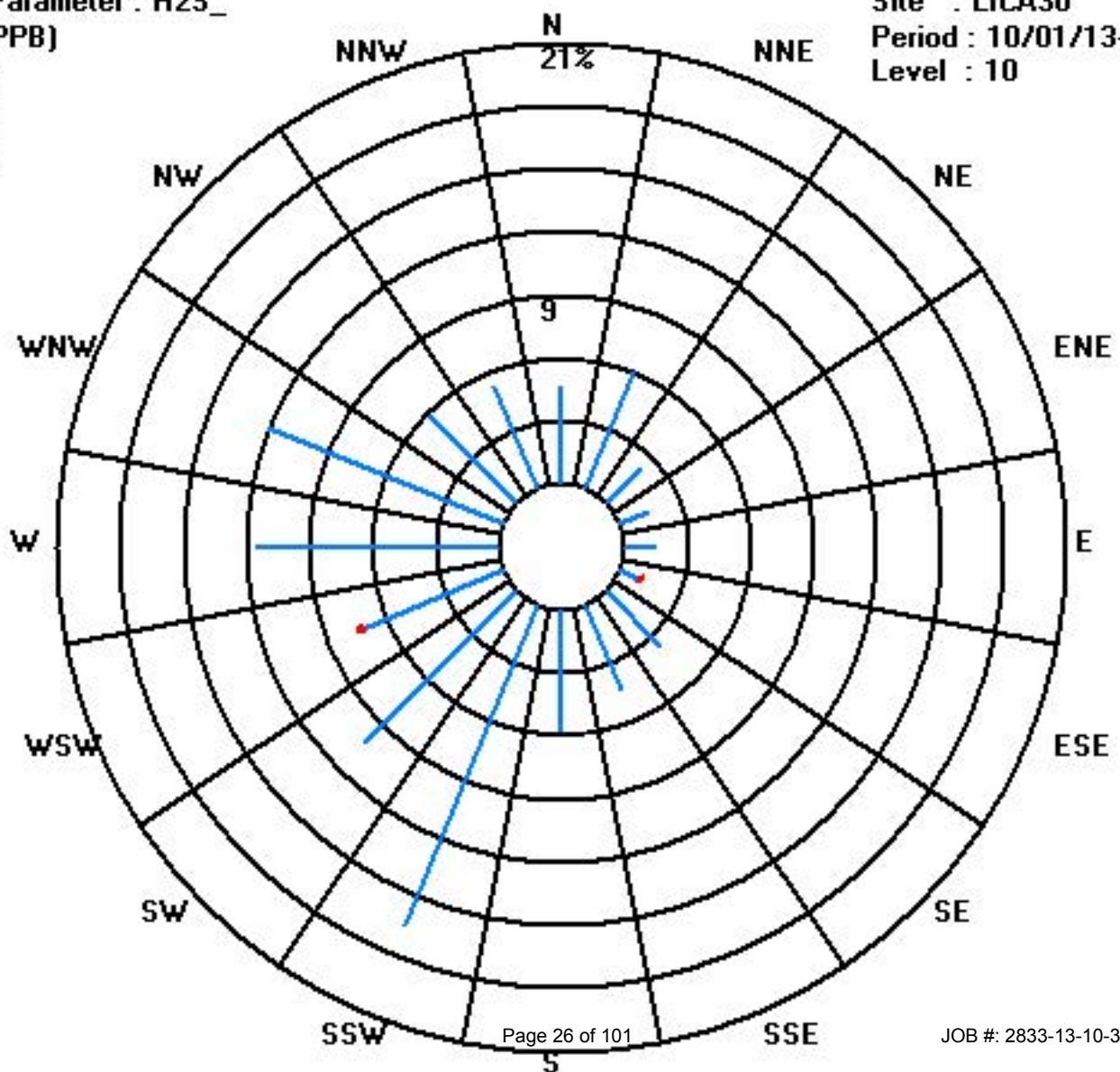
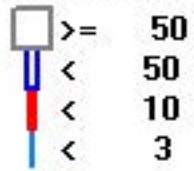
Calm : .00 %

Total # Operational Hours : 706

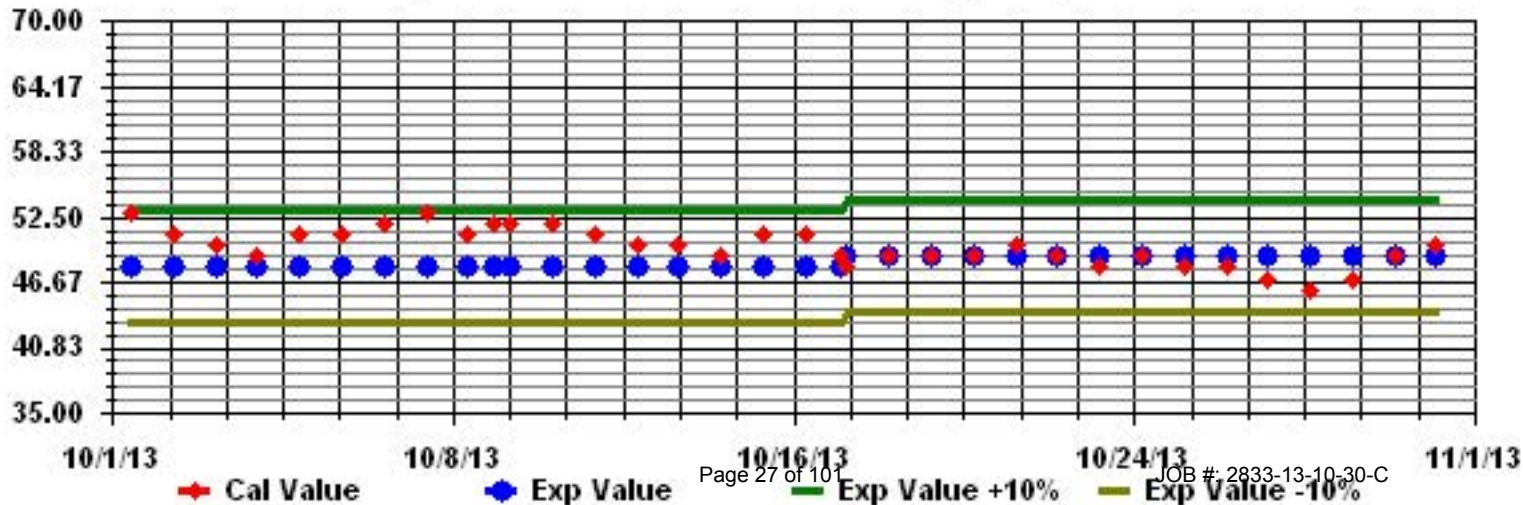
Class Limits (PPB)

Period : 10/01/13-10/31/13

Level : 10



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



# Total Hydrocarbons

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

OCTOBER 2013

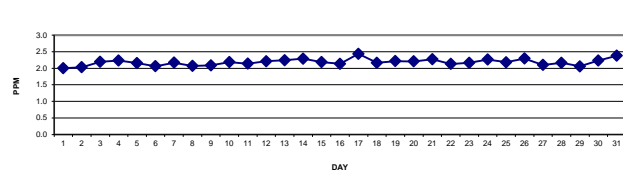
## TOTAL HYDROCARBONS hourly averages in ppm

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	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.
1	1.7	2	2.2	2.1	2	2	2.1	2.1	2.1	1.7	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.2	2.0	24
2	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	2.2	2.0	24
3	2.2	2.3	2.4	2.5	2.4	2.3	2.3	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	2.2	2.5	2.2	24
4	2.4	2.3	2.3	2.3	2.3	2.4	2.4	S	2.3	2.3	2.3	2.4	2.2	2.1	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.4	2.2	24
5	2.2	2.2	2.2	2.2	2.2	2.3	S	2.3	2.3	2.3	2.4	2.2	2	2	2	2	2	2	2	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.4	2.2	24
6	2	2	2	2	2	S	2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2	2	2.1	2	2	2	2.1	2.1	2.2	2.1	24	
7	2.1	2	2.1	2.1	S	2.3	2.4	2.2	2.2	2.1	2.1	2	2	2	2	2	2	2.2	2.2	2.3	2.3	2.4	2.4	2.3	2.2	2.4	2.2	24	
8	2	1.9	1.9	S	2	2	2	1.9	1.9	2	2	2	2	2	2	2.1	2	2.1	2.1	2.1	2.3	2.3	2.3	2.3	2.4	2.4	2.1	24	
9	2.3	2.3	S	2.1	2.1	2	2	2	2	2	2.1	2.1	2.1	2	2	2	2	2	2	2	2.1	2.1	2.1	2.2	2.2	2.3	2.1	24	
10	2.3	S	2.3	2.3	2.3	2.4	2.3	2.4	2.5	2.4	2.2	2.2	2.1	2	2	2	2	2.2	2.1	2	2	2	2	2.2	2.1	2.5	2.2	24	
11	S	2.2	2.1	2.2	2.4	2.2	2.4	2.2	2.3	2.1	2	2.1	2	2	2	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2.2	S	2.4	2.1	24	
12	2.5	2.7	2.2	2.2	2.2	2.2	2.3	2.5	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.2	2.2	S	2.2	2.7	2.2	24	
13	2.4	2.4	2.5	2.4	2.4	2.3	2.2	2.4	2.4	2.3	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	S	2.2	2.2	2.5	2.2	24
14	2.2	2.2	2.3	2.3	2.4	2.6	2.7	2.7	2.5	2.4	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.2	2.3	2.3	2.7	2.3	24	
15	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.5	2.4	2.1	2.1	2	2	2	2	2	2	2.3	S	2.4	2.1	2.1	2	2.5	2.2	24	
16	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	2.2	2.1	2	S	2.1	2.1	2.3	2.4	2.8	2.8	2.1	24	
17	2.8	2.4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.1	2	2.1	2.9	5.4	C	C	C	C	2.7	2.4	2.2	2.2	2.1	2.4	5.4	2.4	24	
18	2.1	2.3	2.3	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	S	2	2.1	2	2	2.1	2.3	2.8	2.2	24	
19	2.7	2.3	2.4	2.6	2.2	2.1	2.1	2.6	2.5	2.3	2	2	2	2	2	2.1	S	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.7	2.2	24
20	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	S	2.1	2.2	2.2	2.2	2.2	2.3	2.6	2.7	2.9	2.9	2.2	24	
21	2.9	3	2.9	2.7	2.4	2.2	2.2	2.2	2.2	2.3	2.1	2.1	2	S	2	2	2	2.1	2.3	2.2	2.1	2.1	2.1	2.1	2.1	3.0	2.3	24	
22	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.3	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.1	24	
23	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	S	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.2	2.3	2.2	24	
24	2.2	2.2	2.1	2.1	2.1	2.2	2.3	2.4	2.5	2.6	S	2.6	2.4	2.3	2.2	2.2	2.2	2.4	2.3	2.2	2.2	2.2	2.1	2.1	2.6	2.3	24		
25	2.1	2.4	2.4	2.4	2.2	2.2	2.1	2.1	2.1	S	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.2	24	
26	2.2	2.4	2.5	2.5	2.5	2.6	2.6	2.6	S	2.5	2.4	2.2	2.2	2.1	2.3	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.3	24	
27	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	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24	
28	2.1	2.1	2.2	2.3	2.3	2.3	S	2.1	2.3	2.4	2.2	2.3	2.3	2.1	2.2	2.2	2	2	2.1	2.1	2.1	2.1	2	2	2.4	2.2	24		
29	2	2	2	2.1	2.2	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2.1	2	2	2	2	2.1	2.1	2.2	2.1	24	
30	2	2	2	2.1	S	2.4	2.4	2.5	2.7	2.5	2.1	2.1	2.1	2	2	2	2	2	2.1	2.1	2.1	2.3	2.5	2.6	2.7	2.7	2.2	24	
31	2.8	2.7	2.9	S	2.5	2.6	2.5	2.5	2.6	2.9	2.9	2.3	2	2	2	2	2	2.1	2.4	2.4	2.3	2.2	2.1	2	2	2.9	2.4	24	
HOURLY MAX	2.9	3.0	2.9	2.7	2.5	2.6	2.7	2.7	2.7	2.9	2.9	2.6	2.9	5.4	2.3	2.3	2.3	2.2	2.4	2.7	2.4	2.4	2.6	2.7	2.9				
HOURLY AVG	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.2	2.2			

### STATUS FLAG CODES

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

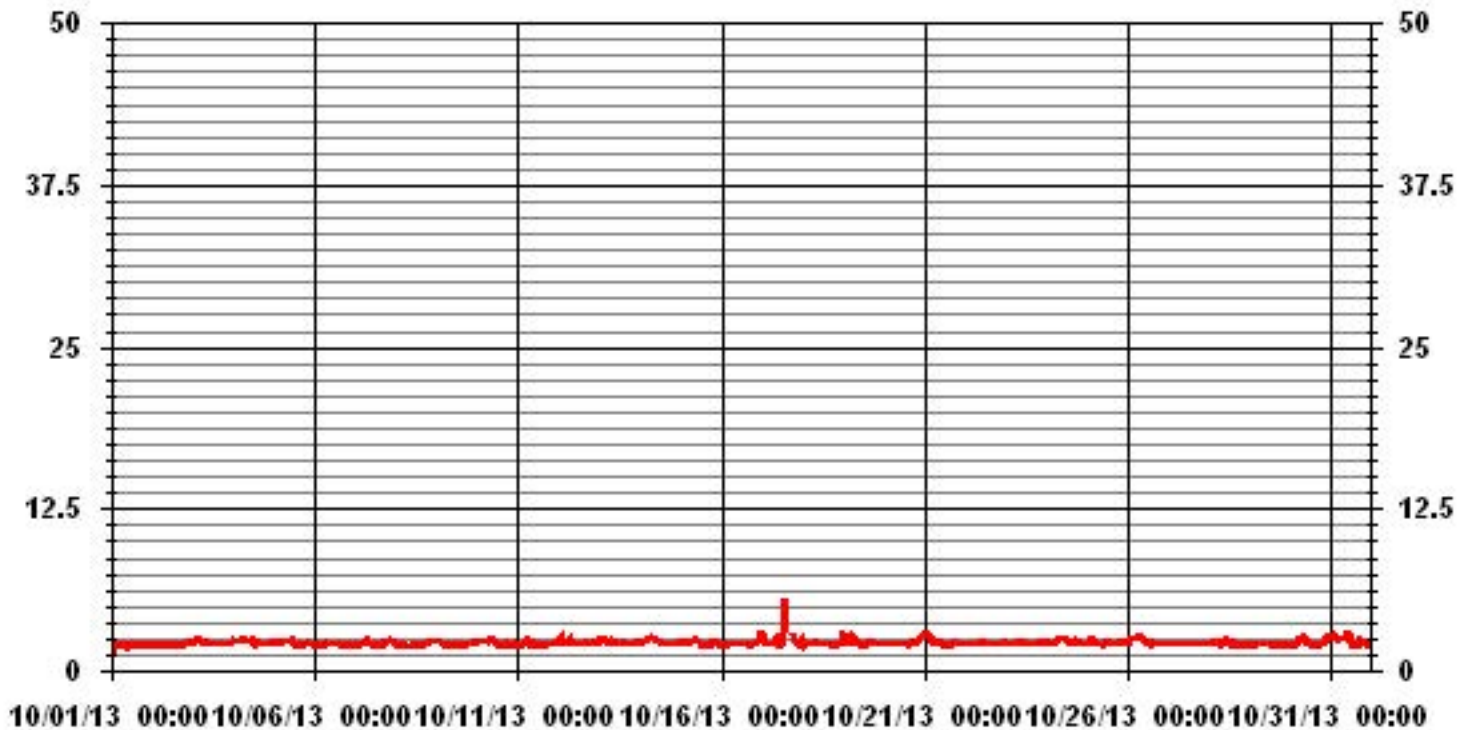
24 AVERAGES FOR OCTOBER 2013



### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	709			
MAXIMUM 1-HR AVERAGE:	5.4	PPM	@ HOUR(S)	13 ON DAY(S)
MAXIMUM 24-HR AVERAGE:	2.4	PPM		17,31 ON DAY(S)
				VAR- VARIOUS
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0
STANDARD DEVIATION:	0.22		MONTHLY AVERAGE:	2.18
				PPM

### 01 Hour Averages



— LICA30 THC PPM

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

OCTOBER 2013

## TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST																										DAILY	24-HOUR		
HOUR START	HOUR END	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.	RDGS.	
DAY	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	1	1.8	2.1	2.5	2.3	2.2	2.2	2.3	2.4	2.5	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2.5	2.1	24	
2	2	2	2	2	2	2.1	2	2	2	2	S	2	2	2	2	2	2	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.3	2.1	24	
3	3	2.4	2.4	2.4	2.6	2.5	2.4	2.3	2.3	S	2.2	2.2	2.1	2.1	2.3	2.1	2.1	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.6	2.3	24
4	4	2.5	2.4	2.3	2.3	2.3	2.6	2.6	S	2.4	2.4	2.3	2.5	2.4	2.1	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.6	2.3	24
5	5	2.2	2.2	2.2	2.2	2.2	2.3	S	2.3	2.3	2.4	2.4	2.3	2	2	2	2	2	2	2.2	2.2	2.2	2.2	2.1	2.1	2.4	2.2	24	
6	6	2.1	2	2	2	2.1	S	2.1	2.6	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2	2.1	2	2.1	2	2	2	2.1	2.1	2.6	2.1	24	
7	7	2.1	2.1	2.1	2.1	S	2.6	2.5	2.3	2.4	2.2	2.2	2	2	2	2	2.2	2.2	2.3	2.3	2.4	2.4	2.4	2.4	2.3	2.6	2.2	24	
8	8	2.1	1.9	1.9	S	2.1	2.1	2	1.9	2	2.3	2.3	2.1	2.3	2.2	2.3	2.1	2.3	2.3	2.4	2.5	2.6	2.5	2.6	2.6	2.6	2.2	24	
9	9	2.6	2.5	S	2.1	2.3	2.1	2.1	2.1	2.2	2.1	2.1	2	2	2	2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.6	2.1	24	
10	10	2.3	S	2.4	2.3	2.3	2.4	2.4	2.6	2.5	2.6	2.5	2.3	2.3	2.1	2	2	2	2.6	2.4	2.1	2.1	2.1	2.1	2.8	2.1	2.8	2.3	24
11	11	S	2.6	2.5	2.8	3	2.4	2.5	2.7	2.5	2.4	2.1	2.3	2.2	2.1	2.3	2.4	2.2	2.5	2.2	2.2	2.4	2.2	2.6	S	3	2.4	24	
12	12	2.9	3.5	2.8	2.3	2.3	2.4	2.8	3.2	2.8	2.1	2.1	2.3	2.3	2.2	2.2	2.4	2.3	2.4	2.1	2.1	2.1	2.3	2.3	S	2.4	3.5	2.5	24
13	13	2.5	2.4	2.6	2.5	2.5	2.3	2.3	2.5	2.5	2.4	2.3	2.3	2.1	2.4	2.5	2.6	2.4	2.1	2.1	2.1	2.1	S	2.2	2.5	2.6	2.4	24	
14	14	2.3	2.3	2.3	2.4	2.6	2.7	2.7	2.7	2.7	2.5	2.4	2.4	2.3	2.1	2.1	2.1	2.1	2.2	2.2	2.2	S	2.3	2.3	2.3	2.7	2.4	24	
15	15	2.3	2.2	2.2	2.2	2.2	2.3	2.4	2.4	2.4	2.6	2.6	2.3	2.3	2.2	2	2.4	2.2	2.2	2.6	S	2.8	2.7	2.7	2	2.8	2.4	24	
16	16	2	2	2.1	2.1	2.1	2.1	2.4	2.5	2.3	2.2	2.4	2.3	2.3	2.3	2.4	2.6	2.4	2.1	S	2.1	2.1	3	2.7	3.5	3.5	2.3	24	
17	17	3.6	2.8	2.3	2.1	2.1	2.1	2.1	2.4	3.1	2.2	2.1	2.9	5.9	C	C	C	C	C	2.8	2.6	2.3	2.2	2.1	2.9	5.9	2.7	24	
18	18	2.2	2.9	2.9	2.1	2.1	2.1	2.1	2.2	2.3	2.2	2.2	2.1	2.2	2.5	2.3	2.1	S	2.1	2.1	2.1	2.1	2.1	2.6	2.9	2.9	2.3	24	
19	19	2.9	2.5	2.6	2.7	2.5	2.2	2.5	2.9	2.8	2.7	2.1	2.1	2	2.1	2.1	S	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.9	2.3	24	
20	20	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	S	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.6	2.9	2.9	2.9	2.2	24
21	21	2.9	3	3	2.8	2.5	2.3	2.2	2.3	2.4	3.1	2.3	2.1	2.1	S	2.1	2.1	2.2	2.6	2.7	2.1	2.2	2.1	2.3	2.1	3.1	2.4	24	
22	22	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.7	2.6	2.6	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.7	2.2	24	
23	23	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5	S	2.4	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.9	2.2	2.9	2.3	24	
24	24	2.4	2.4	2.1	2.1	2.1	2.2	2.4	2.4	2.6	2.7	S	2.7	2.5	2.3	2.2	2.2	2.2	2.2	3.2	2.3	2.2	2.2	2.2	2.2	3.2	2.3	24	
25	25	2.2	2.8	2.7	2.7	2.6	2.7	2.1	2.1	S	2.1	2.4	2.5	2.5	2.3	2.2	2.1	2.2	2.1	2.3	2.2	2.2	2.2	2.2	2.2	2.8	2.3	24	
26	26	2.3	2.5	2.6	2.6	2.6	2.7	2.7	S	2.5	2.5	2.4	2.4	2.3	2.7	2.7	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.7	2.4	24	
27	27	2.1	2.1	2.1	2.1	2.1	2.1	2.2	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.1	2.1	2.3	2.1	24	
28	28	2.1	2.2	2.4	2.3	2.3	2.3	S	2.2	2.4	2.4	2.3	2.5	2.5	2.2	2.3	2.4	2.1	2.1	2.2	2.2	2.2	2.1	2	2	2.5	2.2	24	
29	29	2	2	2.1	2.2	2.2	S	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2.1	2.1	2	2	2.1	2.1	2.1	2.2	2.1	2.4	24	
30	30	2.1	2	2.1	2.2	S	2.5	2.5	2.9	3.2	3.1	2.3	2.4	2.2	2.1	2	2	2	2.1	2.1	2.2	2.4	2.6	2.7	2.8	3.2	2.4	24	
31	31	2.8	2.8	3	S	2.6	2.7	2.6	2.6	2.8	3	3	2.9	2	2.1	2	2.1	2.4	2.5	2.5	2.8	2.5	2.4	2	2	3	2.5	24	
HOURLY MAX		3.6	3.5	3.0	2.8	3.0	2.7	2.8	3.2	3.2	3.1	3.0	2.9	5.9	2.5	2.7	2.7	2.4	3.2	2.8	2.8	2.8	3.0	2.9	3.5				
HOURLY AVG		2.3	2.4	2.4	2.3	2.3	2.3	2.4	2.4	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	2.3	2.3	2.3				

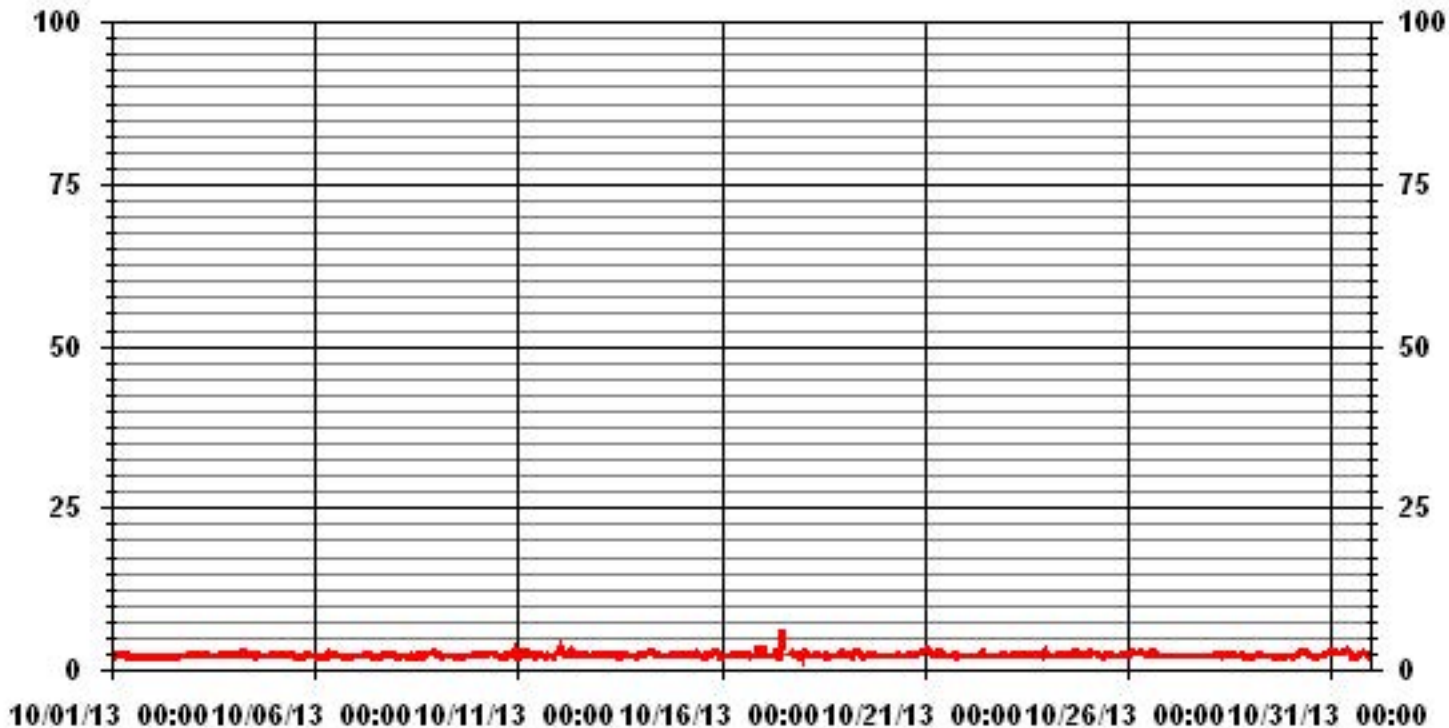
### STATUS FLAG CODES

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

### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	708					
MAXIMUM INSTANTANEOUS VALUE:	5.9	PPM	@ HOUR(S)	12	ON DAY(S)	17
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.29					

### 01 Hour Averages



— LICA30 THCMAX PPM



LICA30  
 THC / WDR Joint Frequency Distribution (Percent)

October 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	4.65	6.06	2.25	1.41	1.41	1.12	3.66	4.37	5.78	16.78	10.15	7.47	11.42	11.98	6.06	5.07	99.71
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.14	.00	.28
< 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	4.65	6.06	2.25	1.41	1.41	1.12	3.66	4.37	5.78	16.78	10.29	7.47	11.42	11.98	6.20	5.07	

Calm : .00 %

Total # Operational Hours : 709

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	33	43	16	10	10	8	26	31	41	119	72	53	81	85	43	36	707
< 10.0											1				1		2
< 50.0																	
>= 50.0																	
Totals	33	43	16	10	10	8	26	31	41	119	73	53	81	85	44	36	

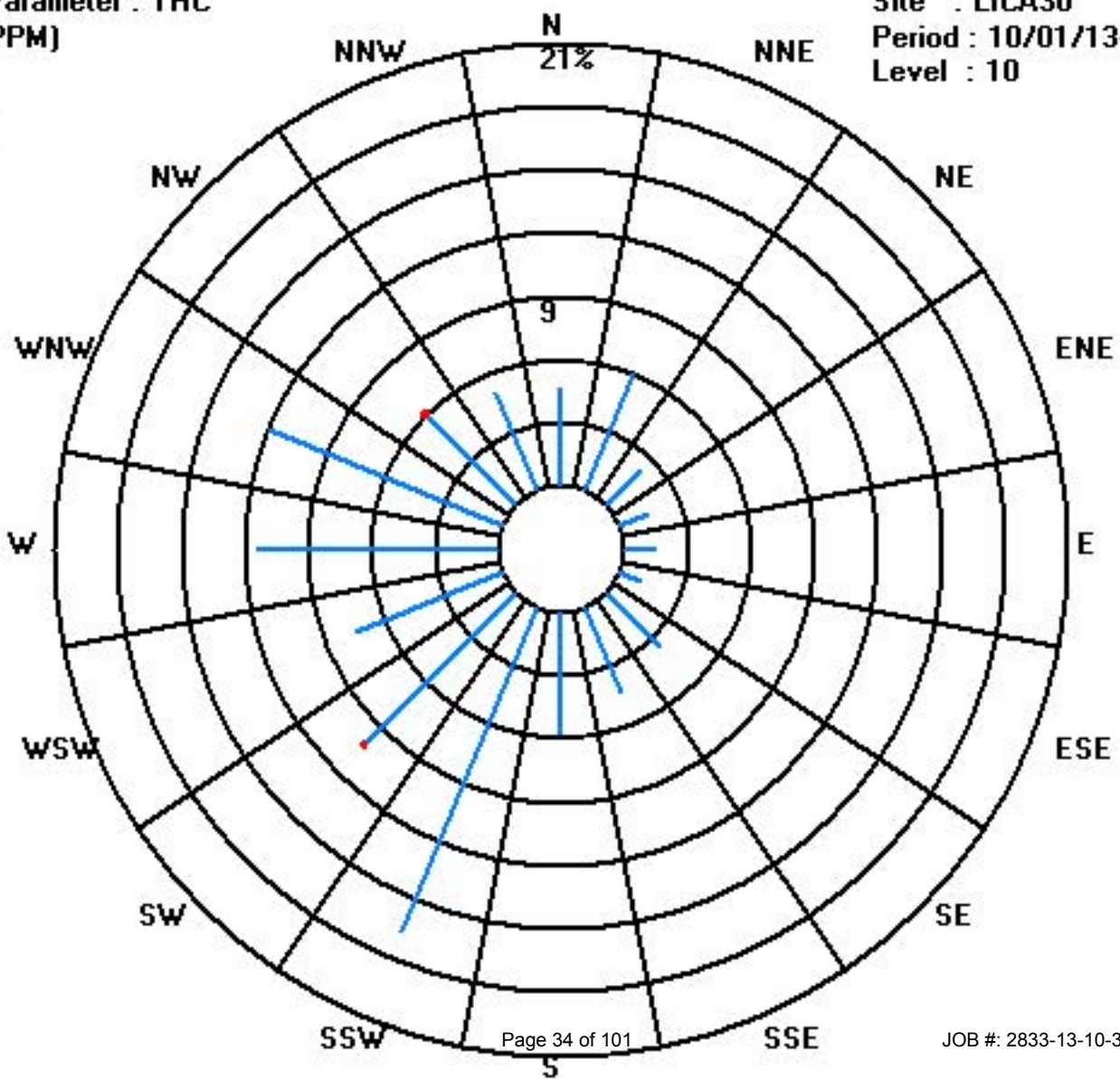
Calm : .00 %

Total # Operational Hours : 709

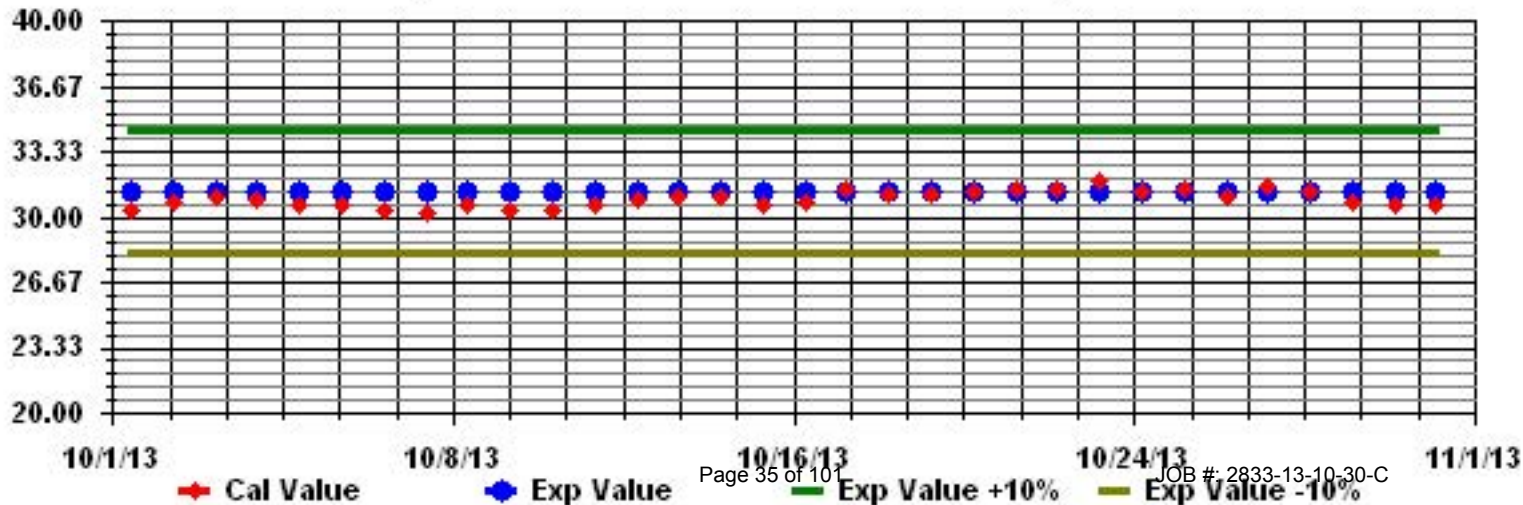
Class Limits (PPM)

Period : 10/01/13-10/31/13

Level : 10



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



# Nitrogen Dioxide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

OCTOBER 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	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	1	1.1	8.2	6.8	6.5	4.1	7.9	8.4	4.7	5.1	4	S	0.2	0.2	0.2	0.3	0.3	0.4	0	0.1	0	0	0.1	0.1	0.1	0.1	8.4	2.6	24
2	2	0	0	0	0	0.1	0.2	0.3	0.1	0.4	S	0.2	0.1	0	0	0	0	0	0	0.1	0.2	0.2	0	1.6	4.1	4.1	0.3	24	
3	3	5.8	4.3	4.5	4.3	4.2	1.9	1.8	2.4	S	1.1	1.1	1.5	1.6	3	2.1	0	2.9	3.3	1	0.5	1.3	0.7	0.7	1.9	5.8	2.3	24	
4	4	1.6	0.6	1.2	0.8	0.9	0.6	3.2	S	3.6	3.5	2.3	2.6	2	1.5	2.2	2.9	1.7	1	2.4	2.3	2.5	2.9	2.5	1.8	3.6	2.0	24	
5	5	1.2	1.1	1.2	1.2	1.4	3.3	S	4.7	5.5	5.1	4.9	2	0.5	0	0	0	0	0	0.9	2.1	2.4	1.9	1.2	1.3	5.5	1.8	24	
6	6	1	0.5	0.3	0.4	2.1	S	3.2	11.6	13.1	11.5	2.3	2.1	2.2	1.9	1.4	0.1	0.5	0.3	0.4	1.3	0.6	1.1	2.3	1.6	13.1	2.7	24	
7	7	0.9	0.6	0.3	0.7	S	13.2	14.9	6.7	8.5	3.8	5.8	1.9	1.2	1	0.9	1.2	2.9	3	2.8	2.1	2.5	2.6	2.2	2.1	14.9	3.6	24	
8	8	2	0.3	0.4	S	2.4	4.6	5.1	1.8	1.3	1.6	1.4	0.9	0.9	1	1.9	1.1	4	3.3	4.3	7.9	6	4.8	5.8	7.5	7.9	3.1	24	
9	9	8.2	4.4	S	3	2.3	2	2.3	1.6	1.9	2.5	1.9	2.3	1.5	1.8	1.6	1.7	2.3	2.3	2.9	3.5	3	3.1	3.4	3	8.2	2.7	24	
10	10	3.2	S	2.3	3	3.4	4.1	4.2	7.6	6.4	6.4	3.5	4	2.8	1	1.2	0.2	0	8	15.9	2.4	4.4	3.6	7	6.1	15.9	4.4	24	
11	11	S	11.6	16.9	8.6	7.3	5.9	17	8.9	11.7	9.5	5	8.7	1.8	0.5	0.7	3.2	0.3	10.5	5.7	1.9	5.4	6	16.6	S	17.0	7.4	24	
12	12	7.6	11.8	4.9	15.4	7.4	12.9	15.8	9.2	3.2	0.5	1.2	1.6	3.2	4.4	2.1	2.7	7.4	2.4	4.1	1.4	1.3	1.2	S	3.2	15.8	5.4	24	
13	13	7.1	5.4	6.8	7.2	6.3	6.4	6	5.7	4.4	3.3	1.5	0.9	0.7	1.5	4.5	3.6	2	2.4	0.4	0.6	1.2	S	5.9	4	7.2	3.8	24	
14	14	4.4	5.3	5.2	3.8	5.5	6	11.7	9.4	7.7	9.3	3.7	2	1.7	0.8	2	2	1.6	2.3	2.2	2.5	S	4	4.1	3.6	11.7	4.4	24	
15	15	3.5	2.7	2.5	2.5	2.4	4.2	4.3	5.9	7.4	7.9	5.7	3.4	3.9	3.1	1	4.6	0.6	10	24.7	S	14.8	15.8	5.2	0.1	24.7	5.9	24	
16	16	0.4	0.9	0.4	0.9	1	0.9	7.5	9.2	5.9	6.4	4.5	3.2	1.1	1.6	3.6	9	5	1.1	S	0.7	1	5.8	14.7	14.8	14.8	4.3	24	
17	17	10.8	11.9	1	1.1	1.8	5	10.7	7.8	11.9	1.4	1.3	C	C	C	C	C	C	3.6	1.2	0.7	0.8	0.8	0.5	7.3	11.9	4.4	24	
18	18	4.7	5.9	6.6	2.1	4.1	1.2	5.4	5.3	8	6.2	3	2.1	2.2	5.2	4.5	1.7	S	1.4	2.2	1.5	2.5	1.6	6.1	11.4	11.4	4.1	24	
19	19	9.8	4.9	4.9	9.8	4.9	6	19.2	15.4	18.1	12.8	1.3	1.3	2.5	1.1	2.5	S	5.5	6.4	6.4	1.9	0.2	0.1	0.1	0.3	19.2	5.9	24	
20	20	0.3	0	0.3	0.6	0.5	2.6	1.1	1.3	2	2.4	1.2	1.9	1.9	1.6	S	2.3	2.8	2.8	2	1.5	1.7	3	3.5	4.4	4.4	1.8	24	
21	21	4.3	4.5	6.7	10.6	3.9	2	4.1	14.7	10.3	11.6	9	3.6	3.7	S	1	0.7	1	3	2.2	0.8	0.7	0.7	0.9	0.7	14.7	4.4	24	
22	22	0.8	1.3	1.2	1.8	1.3	1	0.9	1.9	2.6	3.4	4.8	4.9	S	3.2	3.9	1.5	1.2	0.6	0.7	1	1.2	1.1	1.4	1.6	4.9	1.9	24	
23	23	1.1	0.5	0.8	1.4	1.9	3.1	4	6	5.2	8.5	10.1	S	6.5	1	0.8	1.3	0.5	0.2	0.7	1.2	1	1	0.6	3.3	10.1	2.6	24	
24	24	2.6	1	0.7	0.6	0	0.2	2.5	2.5	3	2.1	S	2.7	2.4	2.2	2.1	2.9	3.6	3.7	3.7	3.1	3.3	3.7	2.9	2.3	3.7	2.3	24	
25	25	2.5	12.9	12.8	11.5	16	11.5	0.5	0.5	0.3	S	2.8	2.4	1.3	5.7	3.4	2.7	0	0.4	1.1	2.4	1.6	1.1	1.7	2.6	16.0	4.2	24	
26	26	3.1	3.4	3.5	3.2	2.9	3.6	4.5	6.5	S	6.1	6.7	7.2	11.7	8.3	7	9.1	1.7	1	1.1	2.8	1.1	0.2	0	0	11.7	4.1	24	
27	27	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.1	0	0	0.1	0.3	0.5	0.4	0.5	0.1	24	
28	28	0.1	0.5	0.9	1	2.8	1.3	S	6.7	6.2	3.9	2.3	3.3	3.7	2	2.1	2.4	1.2	1	2.2	1.6	1.5	1.6	1.8	2.1	6.7	2.3	24	
29	29	1.4	1.4	1.8	2.6	2.9	S	3.3	3.3	3.6	3.3	3.4	3.7	3.6	3.8	3.4	3.4	3.5	2.9	2.1	2.3	3.3	3.6	3.2	3.1	3.8	3.0	24	
30	30	2.5	2.8	2.7	5.8	S	11.6	15	14	12.5	10.3	8.5	5.2	4.3	6.3	6.1	3.3	3	2.9	2	1.4	6.5	7.9	8.5	10.4	15.0	6.7	24	
31	31	12.2	8.5	12.3	S	8.2	12.7	13.9	16.6	15.2	15	16	7.2	2.4	4.3	2.8	2.8	11.1	10	11.6	20.9	13.8	8.2	0.6	0.6	20.9	9.9	24	
HOURLY MAX		12.2	12.9	16.9	15.4	16.0	13.2	19.2	16.6	18.1	15.0	16.0	8.7	11.7	8.3	7.0	9.1	11.1	10.5	24.7	20.9	14.8	15.8	16.6	14.8				
HOURLY AVG		3.5	3.9	3.7	3.8	3.5	4.7	6.6	6.6	6.4	5.6	4.0	2.9	2.5	2.3	2.2	2.3	2.3	2.9	3.6	2.4	2.9	3.0	3.5	3.5				

### STATUS FLAG CODES

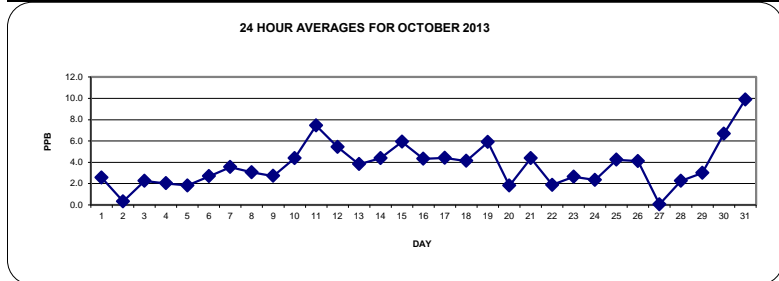
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

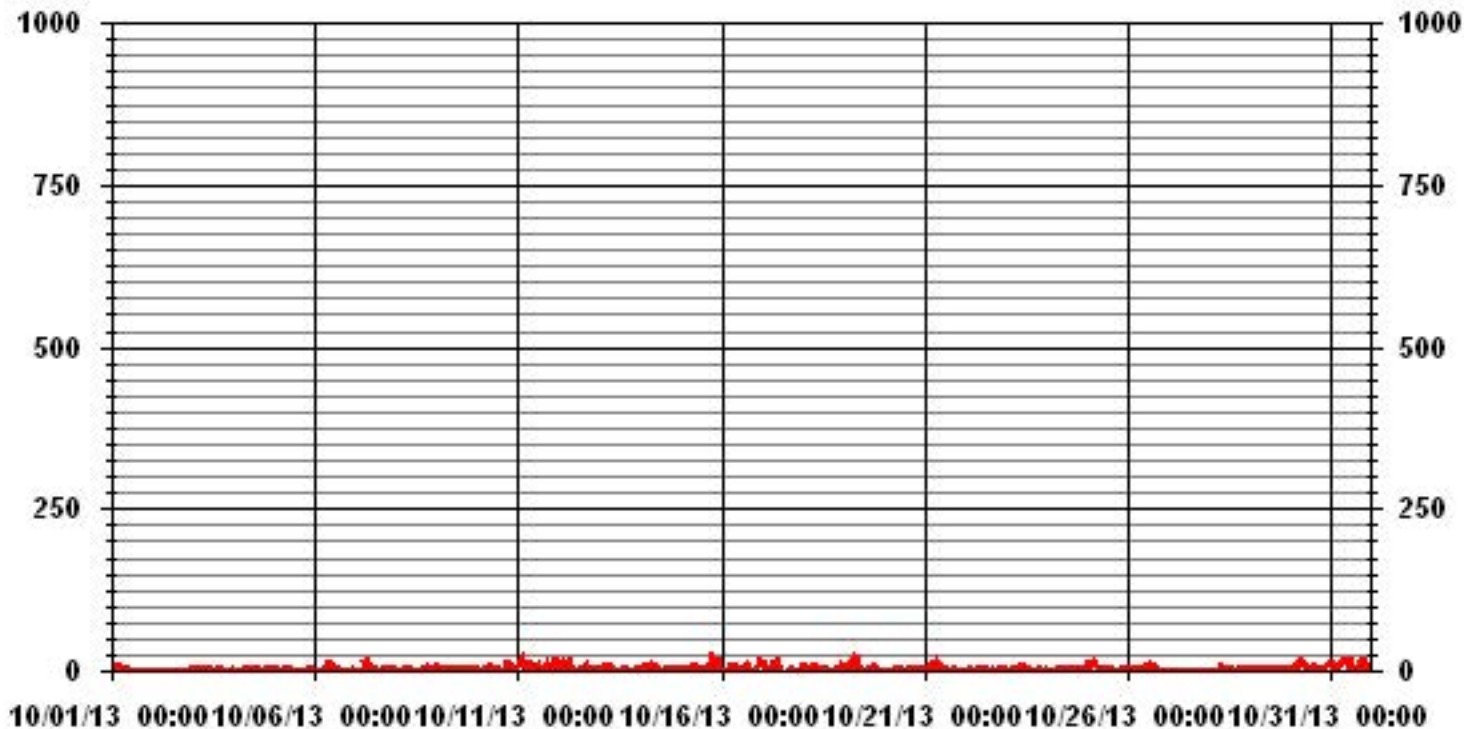
ALBERTA ENVIRONMENT: 1-HR 159 PPB

### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	663					
MAXIMUM 1-HR AVERAGE:	24.7	PPB	@ HOUR(S)	18	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	9.9	PPB			ON DAY(S)	31
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	3.85		MONTHLY AVERAGE:	3.68	PPB	



### 01 Hour Averages



— LICA30 IIO2\_ PPB

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

OCTOBER 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	5.8	10.1	10.5	10.9	7.3	9.7	10.1	7.4	8.8	9.2	S	0.4	0.7	0.6	0.8	1	1	0.6	0.4	0.5	0.6	0.6	0.8	1.1	10.9	4.3	24	
2	0.4	0.6	0.7	0.4	0.6	0.8	1.4	1.1	1.4	S	0.7	1	0.4	0.6	0.4	0.6	0.4	0.5	0.7	0.8	0.8	1.1	3.8	5.7	5.7	1.1	24	
3	7.1	5.9	5.9	5.4	5.3	3.6	2.3	3.3	S	1.4	1.5	2.7	1.9	4.9	2.6	0.6	11.8	11.4	1.7	1.7	2.8	1.5	1.4	2.9	11.8	3.9	24	
4	2.8	1.3	2.1	1.5	1.6	1.7	6.3	S	5.6	4.7	2.5	2.6	2	1.5	2.7	2.8	2.3	1.9	3.6	3.1	3.3	3.7	3.1	2.6	6.3	2.8	24	
5	1.8	1.7	1.6	1.8	2.1	6.1	S	5.8	6.9	6.3	6	3.6	1.1	0.6	0.7	0.4	0.6	0.8	2.3	2.8	3.2	3.2	2.1	3.4	6.9	2.8	24	
6	3.2	1.1	1.1	1.1	4.3	S	4.2	15.5	14.9	15.2	4.5	2.7	2.8	2.7	2.1	1.1	2.3	1.3	1.9	2.1	1.5	1.6	3.2	2.4	15.5	4.0	24	
7	1.8	1.3	1.7	2.1	S	20.4	18.5	13.1	13.8	6.2	9.2	5	1.4	1.2	1.2	1.7	3.7	4.1	3.7	2.8	3	3.1	2.9	4.5	20.4	5.5	24	
8	7.2	1.1	1.2	S	4.3	14.3	11	3.7	2.2	4.6	2.8	2.3	1.6	1.8	5.1	2.4	6.8	7.5	8.3	9	8.9	6.4	11.5	11.6	14.3	5.9	24	
9	12.1	8.6	S	6.7	5.9	2.2	2.3	1.9	2.2	3	2.5	2.9	1.1	1.4	1.3	1.8	21.4	2.2	3	4	2.7	3	3.2	2.8	21.4	4.3	24	
10	3.1	S	2.8	6.8	4.4	6.4	6.1	15	7.4	11.1	9	5.1	4.1	1.5	14.6	1.7	0.7	18.6	25.7	7.8	7.1	7	11	12.3	25.7	8.2	24	
11	S	22.7	22.4	11.5	9.8	10.3	20.9	14.6	13.9	16.5	8.9	12.5	3.4	2.7	6	9	1.7	19.3	14.6	9.1	11.8	13.3	22.8	S	22.8	12.6	24	
12	10.6	18	15.3	20.6	16.3	21.4	21.4	14.1	7.9	3.3	4.4	8.8	11.5	13.3	7.6	11.7	19	4.7	6.3	3.2	3	3	S	5	21.4	10.9	24	
13	9.2	6.3	9.2	9	8	10.5	9.9	7.7	5.4	4.8	3	3.1	2	5.4	10.4	7.9	6.3	6.7	1	1.4	2	S	8.6	5.5	10.5	6.2	24	
14	5.9	7.7	7.3	4.7	9.9	8.5	15.7	14.1	9.7	13.7	9.6	2.3	2.1	1.3	2.9	2.6	3	3.2	2.9	3.2	S	4.3	4.3	3.8	15.7	6.2	24	
15	4	3.1	2.6	3.3	3.6	8.4	5.2	7.5	8.6	7.6	10.8	31.6	24.7	2.2	22.6	2.6	26.5	29.2	S	22.9	33.4	19.7	0.8	33.4	12.6	24		
16	1.4	1.6	2	2	2.8	1.8	19.9	19.9	10.6	12.4	21.4	12.7	4.6	6.4	11.2	19.6	14.4	3	S	1.3	1.6	12.6	21.7	21.9	21.9	9.9	24	
17	18.2	20.4	3.2	2.4	5.7	15	15.8	10.8	24.8	3.3	2.3	C	C	C	C	C	C	C	C	2.8	1.9	1.9	1.9	2.1	16.7	24.8	8.8	24
18	10.4	23.6	15.5	4.8	7.8	4.3	11.1	8.2	10.6	11.5	6	3.7	3.6	15.5	7	3.3	S	1.8	4.1	2.7	7.3	3.7	9.3	12.9	23.6	8.2	24	
19	13.2	7.1	8.9	15.4	10.6	21.2	26.1	22.7	22.5	21.7	5.5	3.8	7.8	2.2	4.8	S	6.3	6.9	7.7	5.9	0.7	0.7	0.7	0.7	26.1	9.7	24	
20	0.7	0.4	0.8	1.3	1.3	3.7	1.9	3.1	4	3.9	2.6	3.8	2.9	2.1	S	3	3.4	3.6	3.4	2	2.6	3.6	4.2	5.3	5.3	2.8	24	
21	5	5.3	12.3	12.8	7.9	2.9	11	16	16.6	16.8	14.3	9.1	6.8	S	1.8	2.7	2.7	5	6.4	1.6	1.7	1.7	2.3	2.1	16.8	7.2	24	
22	1.4	2.4	2.4	2.8	3.1	2.1	1.7	3.9	4	5.8	7.8	8.3	S	12.6	9.8	4.2	3.3	1.3	1.3	1.8	1.9	1.9	2.2	2.3	12.6	3.8	24	
23	2.2	1.2	1.8	2.3	2.7	8.4	7.2	8.3	10.5	12.7	13.5	S	9.8	4.9	1.8	2.7	2.6	1	2.1	2.7	3.4	2.3	2.5	7.5	13.5	5.0	24	
24	4.2	2.9	2.3	2.3	1.3	2.4	4.7	4.7	4.4	3.8	S	2.4	2	1.9	2.1	3.1	4.1	5	4	3.5	3.5	4	3.4	2.4	5.0	3.2	24	
25	4.4	23.2	23.1	20.6	22.9	22	1.3	1.2	0.6	S	11.4	8.9	2.2	12.7	8.2	12.4	0.6	2.1	2.1	4.8	2.7	2	2.5	3.9	23.2	8.5	24	
26	4.7	4.5	4.3	4.1	3.6	5.8	6.6	8.4	S	8.3	11.4	11.4	12.7	19.9	14.2	16.3	5.5	1.7	2.5	3.9	2.6	0.9	0.6	0.3	19.9	6.7	24	
27	0.3	0.3	0.2	0.2	0.3	0.3	0.5	S	0.3	0.5	0.7	0.6	0.4	0.2	0.4	0.3	0.5	0.6	0.6	0.9	1.1	1.9	2	1.9	2.0	0.7	24	
28	2	2.8	3.2	3.5	10.5	4.7	S	11.3	10.7	5.1	2.7	4	4.2	2.2	2.9	3.3	2.2	2.2	3.3	2.7	2.5	2.6	2.8	2.9	11.3	4.1	24	
29	2.7	2.5	3.1	3.5	3.8	S	3.7	3.9	4.7	3.7	3.9	4.1	3.4	3.1	3.6	3.9	5.4	5.4	3	3.5	4.3	4.6	3.9	4.1	5.4	3.8	24	
30	3.5	3.5	3.7	10.7	S	16.9	16.6	16.2	14.9	17.8	16.3	11.6	7.2	8.5	7.3	10	5	3.9	3.4	5.5	8.3	9.7	9.9	13.1	17.8	9.7	24	
31	14.1	10.8	15.1	S	8.8	15.2	15.5	18.2	17.3	16.8	17	15.5	2.6	6.7	4.3	3.4	15.6	13.7	16.6	24.3	23.9	12.7	1.4	1.1	24.3	12.6	24	
HOURLY MAX	18.2	23.6	23.1	20.6	22.9	22.0	26.1	22.7	24.8	21.7	21.4	15.5	31.6	24.7	14.6	22.6	21.4	26.5	29.2	24.3	23.9	33.4	22.8	21.9				
HOURLY AVG	5.4	6.7	6.2	6.0	6.1	8.7	9.6	9.7	9.1	8.7	7.2	5.7	4.8	5.6	4.8	5.4	5.4	5.6	5.6	4.0	4.8	5.1	5.7	5.5				

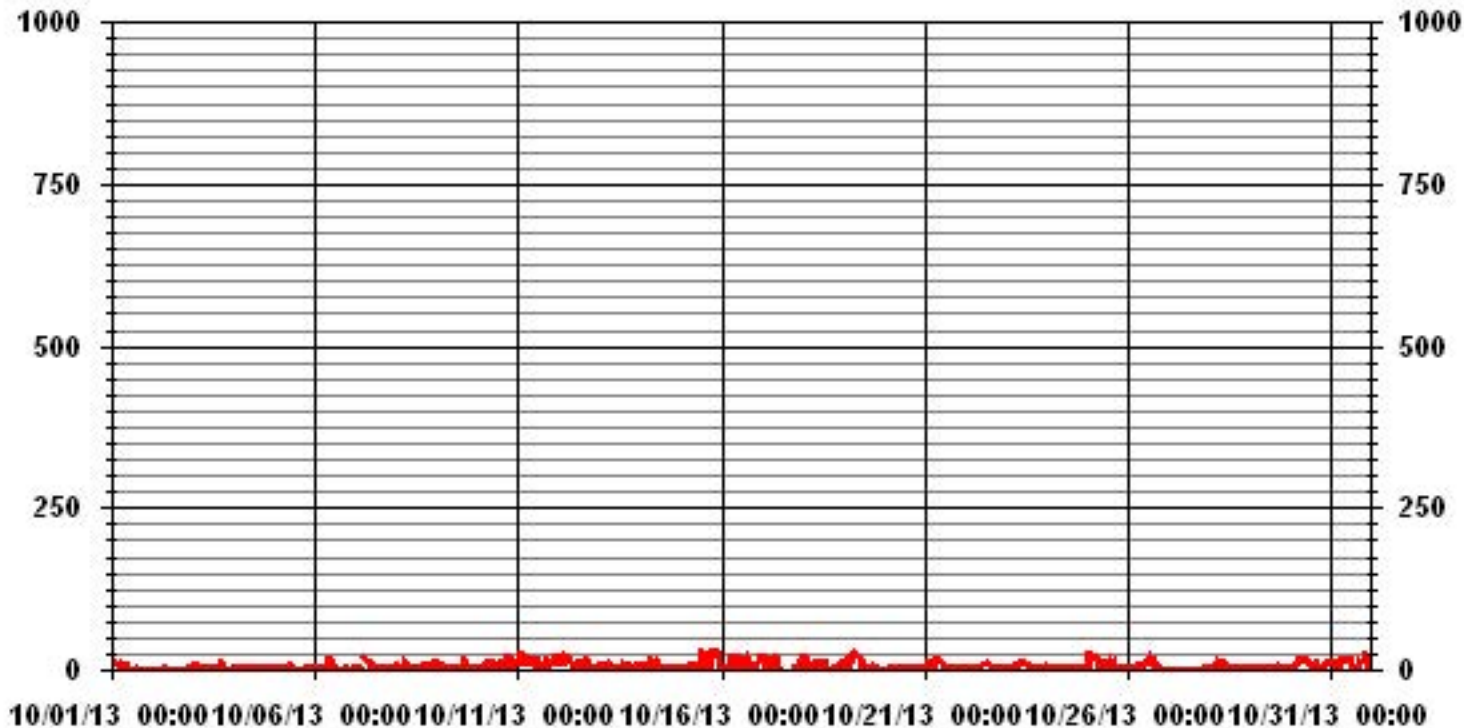
### STATUS FLAG CODES

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

### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	706
MAXIMUM INSTANTANEOUS VALUE:	33.4 PPB @ HOUR(S) 21 ON DAY(S) 15
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	6.03
OPERATIONAL TIME:	744 HRS

# 01 Hour Averages



— LICA30 NO2MAX PPB



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

October 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	4.66	6.08	2.26	1.41	1.41	1.13	3.67	4.38	5.79	16.83	10.32	7.49	11.45	12.16	5.79	5.09	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	4.66	6.08	2.26	1.41	1.41	1.13	3.67	4.38	5.79	16.83	10.32	7.49	11.45	12.16	5.79	5.09	

Calm : .00 %

Total # Operational Hours : 707

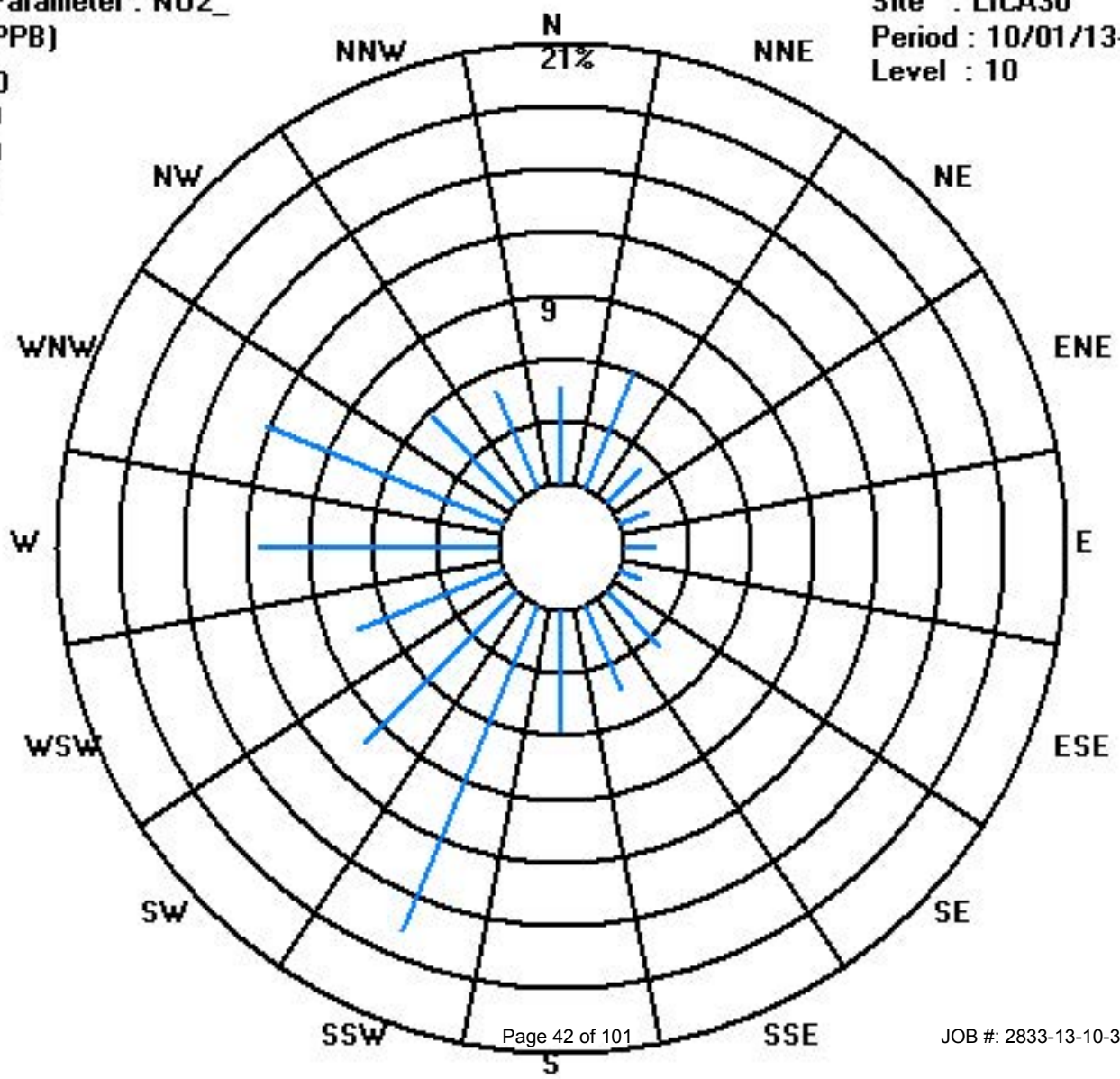
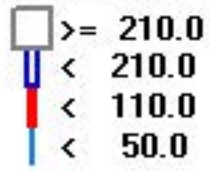
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	33	43	16	10	10	8	26	31	41	119	73	53	81	86	41	36	707
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	33	43	16	10	10	8	26	31	41	119	73	53	81	86	41	36	

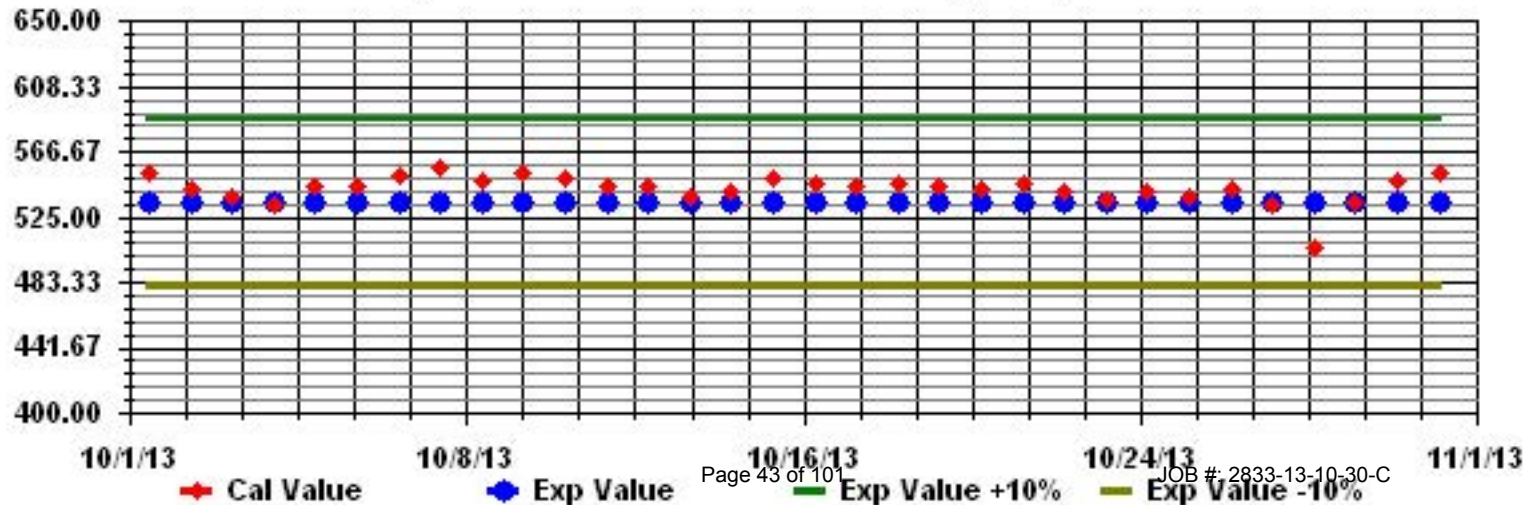
Calm : .00 %

Total # Operational Hours : 707

Class Limits (PPB)



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



# Nitric Oxide

# LAKELAND INDUSTRY & COMMUNITY ASSOICATION - MASKWA

OCTOBER 2013

NITRIC OXIDE 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	0	2.2	5.6	8.3	1.2	3.1	4.6	2.5	8	6.1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	8.3	1.8	24	
2	0	0	0	0	0.1	0.2	0	0	0.1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.4	0.0	24	
3	2	0	0.7	0.6	0.6	0	0.4	0.4	S	0.4	0.3	0.5	0.7	1.2	0.4	0	0.1	0.2	0	0	0	0	0	0.7	2.0	0.4	24	
4	0.5	0	0	0.2	0.2	0.7	1.5	S	2.3	2.3	1.2	1.4	0.3	0	0	0	0	0	0	0	0	0	0	0	2.3	0.5	24	
5	0	0	0	0	0	0	S	0.7	2.1	1.9	1.9	0.2	0	0	0	0	0	0	0	0	0	0	0	0	2.1	0.3	24	
6	0	0	0	0	0	S	0.1	6	10.4	7.9	0.8	0.5	0.2	0	0	0	0	0	0	0	0	0	0	0	10.4	1.1	24	
7	0	0	0	0	S	2	2.4	0.9	2	0.6	1.3	0.2	0	0	0	0	0	0	0	0	0	0	0	0	2.4	0.4	24	
8	0	0	0	S	0	0.6	0.3	0	0.1	0	0	0	0	0.1	0.9	0.1	2.1	1.2	1.8	4	4	2.5	6.3	7.5	7.5	1.4	24	
9	6.6	2.1	S	0.1	0	0.1	0	0	0.5	0.9	0.4	0.7	0	0	0	0	0	0	0	0	0	0	0	0	6.6	0.5	24	
10	0	S	0	0.8	0	0	0.1	1.2	1.7	2.7	0.9	1.1	0.5	0	0	0	0	0	0	0	0	0	0	0.2	2.7	0.4	24	
11	S	1.3	4.9	0.1	0	0.3	3.7	3.2	8.6	5.8	2.5	6	0	0	0	0.1	0	2.8	0.2	0	0	2	S	8.6	1.9	24		
12	0.8	2	1.1	2.6	1.4	5.6	8.5	4.5	3.6	1.8	2.3	2.4	3.3	4.2	1.5	1.1	2.4	0.4	0.4	0.5	0.5	0.6	S	0	8.5	2.2	24	
13	0	0	0	0	0	0.7	0.5	1	0.8	1.1	0	0	0	0	0	0	0	0	0	0	0	0	S	0.1	0.3	1.1	0.2	24
14	0.1	0.1	0	0.1	0.9	1.2	10.4	6.9	5	5.7	1.7	0.4	0.2	0	0	0	0	0	0	0	0	S	0	0	10.4	1.4	24	
15	0	0	0	0.1	0.2	0.5	0	0.7	2.4	3.7	1.6	1.3	1.4	0.8	0	0.6	0	1.9	5.9	S	1	5.9	0.8	0.1	5.9	1.3	24	
16	0.2	0.2	0.3	0.5	0.3	0.4	3.3	5.3	3.5	5.4	3.2	2.2	0.5	0.6	1.2	3.2	0.9	0	S	0	0	0.5	2.7	0.5	5.4	1.5	24	
17	0.3	0.6	0.2	0.3	0.4	1.2	1.4	0.7	3.9	0.3	0.2	C	C	C	C	C	C	0.5	0.3	0.4	0.5	0.5	0.3	1.1	3.9	0.7	24	
18	0.5	2.1	1.1	0.7	1	0.6	0.9	0.9	1.6	1.6	0.8	0.8	0.7	2.3	1.5	0	S	0.1	0.1	0.1	0.4	0.4	0.4	0.4	0.4	2.3	0.8	24
19	0.3	0.6	0.7	1.4	1.4	1.8	3.3	3.9	11.6	8.3	0.9	0.7	1.3	0.5	0.7	S	0.3	0	0	0	0	0	0	0	11.6	1.6	24	
20	0	0	0.1	0.1	0.2	0.2	0.3	0.1	0.3	0.5	0.6	0.5	0.7	0.3	S	0.2	0.1	0.1	0	0.1	0	0	0	0.1	0.7	0.2	24	
21	0	0	2.9	7.5	0.2	0.2	0.8	7.9	7.3	14	7	1.7	1.3	S	0.1	0	0	0	0.1	0.1	0.2	0.3	0.3	0.3	14.0	2.3	24	
22	0.2	0.2	0.2	0.3	0.2	0.1	0.3	0.4	0.8	1.5	2.5	3.8	S	1	1	0.1	0	0	0	0	0.1	0.1	0.3	0.1	3.8	0.6	24	
23	0.2	0.2	0.2	0.1	0.1	0.8	0.4	0.5	1	2.5	5	S	5.3	0.5	0	0	0	0	0.2	0	0.2	0.2	0.5	0.5	5.3	0.8	24	
24	0.5	0.5	0.6	0.5	0.6	0.6	0.8	0.8	1.4	1.4	S	0.5	0.1	0	0	0	0	0	0	0	0	0	0	0	1.4	0.4	24	
25	0	3.9	3.6	3.1	5.6	4.1	0	0	0	S	2.8	1.8	0.5	3.9	1.2	0.6	0	0	0	0	0	0.1	0.1	0.3	5.6	1.4	24	
26	0.4	0.5	0.5	0.4	0.3	0.3	0.6	0.8	S	1.1	2	2.2	5.7	3.2	1.7	1	0	0	0	0	0	0	0	0	5.7	0.9	24	
27	0	0	0	0	0	0	0	S	0	0.2	0.2	0	0	0	0	0	0	0	0.1	0.3	0.7	0.8	1.1	1.3	1.3	0.2	24	
28	1.6	1.7	1.8	1.8	3	2.4	S	2.1	2.5	1.7	0.4	0.8	0.6	0	0	0	0	0	0	0	0	0	0	0	3.0	0.9	24	
29	0	0	0	0	0	S	0	0	0.5	0.9	1.4	1.4	0.9	0	0	0	0	0	0	0	0	0	0	0	1.4	0.2	24	
30	0	0	0	0	S	2.2	4	3.9	4.8	6.5	5.9	1.5	0.4	0.8	0.3	0	0	0	0	0	0	0	0	0	6.5	1.3	24	
31	0	0	0	S	0	1.2	0.8	2	4.3	6.4	7.8	1.7	0	0.3	0	0	0.4	1.8	2.9	15.8	4.8	0	0	0	15.8	2.2	24	
HOURLY MAX	6.6	3.9	5.6	8.3	5.6	5.6	10.4	7.9	11.6	14.0	7.8	6.0	5.7	4.2	1.7	3.2	2.4	2.8	5.9	15.8	4.8	5.9	6.3	7.5				
HOURLY AVG	0.5	0.6	0.8	1.0	0.6	1.1	1.7	2.0	3.1	3.2	1.9	1.2	0.8	0.7	0.4	0.2	0.2	0.3	0.4	0.7	0.4	0.4	0.5	0.5				

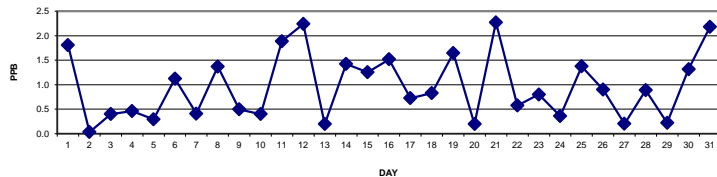
STATUS FLAG CODES

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

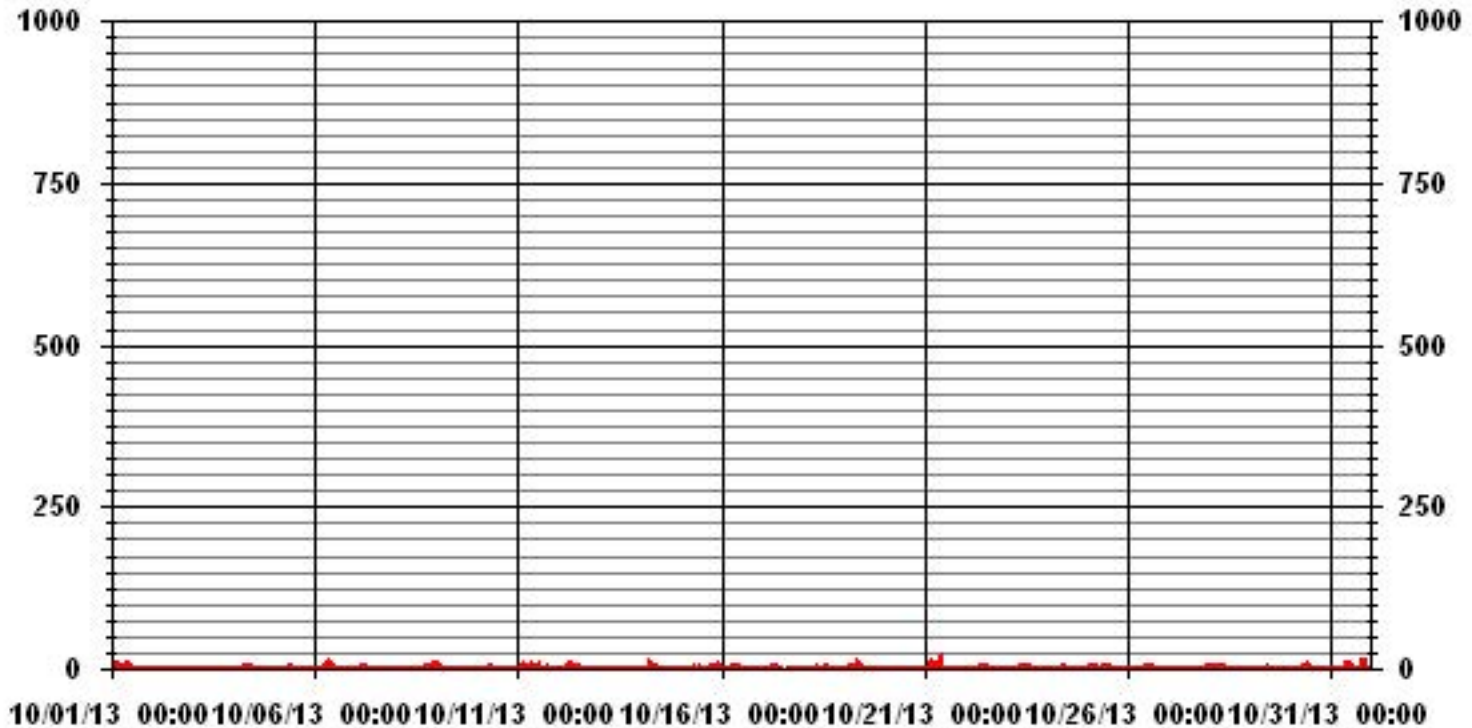
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	398					
MAXIMUM 1-HR AVERAGE:	15.8	PPB	@ HOUR(S)	19	ON DAY(S)	31
MAXIMUM 24-HR AVERAGE:	2.3	PPB			ON DAY(S)	21
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	1.89		MONTHLY AVERAGE:	0.96	PPB	

24 HOUR AVERAGES FOR OCTOBER 2013



# 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

OCTOBER 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	1.1	3.3	11.5	17.5	3.2	6.6	7.9	4.7	19.9	18.5	S	0.5	0.3	0.4	0.5	0.3	0.3	0.3	0.3	0.4	0.5	0.4	0.4	0.4	19.9	4.3	24
2	0.5	0.5	0.4	0.7	0.6	0.8	0.5	0.5	S	0.3	0.3	0	0	0	0	0	0	0.1	0.1	0.1	0.3	0.3	0.3	1.7	1.7	0.4	24
3	6.5	1.1	2.5	1.7	1.4	0.6	2.4	1.1	S	1	0.9	1.4	1.4	3.4	1.5	0	4.2	3.5	0.3	0.3	0.4	0.4	0.4	2.9	6.5	1.7	24
4	2.3	0.6	0.6	0.6	0.6	2	3.7	S	8.3	5.6	2.2	2.4	2.2	0.2	0.5	0.4	0	0	0	0	0	0	0	0	8.3	1.4	24
5	0	0	0	0	0	0	S	1.8	3.5	3	2.7	1.4	0.1	0	0.2	0	0	0	0	0	0	0	0.1	0.3	3.5	0.6	24
6	0.2	0.2	0.3	0.2	0.4	S	0.6	11.7	13.7	12.3	2.5	1.3	1.5	0.3	0	0	0.5	0	0	0	0	0	0.1	0	13.7	2.0	24
7	0.1	0.2	0.1	0	S	5	4	2.5	4.3	1.4	2.8	1.3	0.6	0.5	0.2	0	0	0	0	0.1	0.3	0.4	0.2	0.4	5.0	1.1	24
8	0.6	0.4	0.5	S	0.3	9.3	2.5	1.7	1.2	1.7	0.9	1.1	1	1.4	5.5	1.4	4.5	5.4	6	5.6	11.7	5.6	23.1	20.8	23.1	4.9	24
9	23.3	8.1	S	1.7	1.5	1.7	1.5	1.4	3.6	5.1	2	3	0.5	1.1	0.2	0.1	4.6	0	0	0.2	0.2	0	0	0	23.3	2.6	24
10	0.1	S	0.5	8.2	0.6	0.7	0.9	26.9	3	6.1	3.7	2.7	1.7	0.6	13.2	0.2	0	1.8	1.2	0.1	0.2	0.4	0.6	1.8	26.9	3.3	24
11	S	7.6	9.6	0.6	0.6	1	6.2	8.4	13.7	13.4	6.1	11.2	2	1.4	3.1	3.2	0.2	9.8	3.4	3.1	0.2	0.7	6	S	13.7	5.1	24
12	2.9	4.3	2.2	4.9	2.9	19.3	20.1	6.2	6.7	3.1	4.9	9.6	12.1	13.2	6.1	4.8	8.4	1	1	1	1.3	1.2	S	0.2	20.1	6.0	24
13	0.4	0.4	0.4	0.4	0.4	3.3	3.2	3.2	1.6	3.2	1.2	1.3	1.2	1.4	2.5	0.8	0.3	0.1	0.1	0.2	0	S	0.7	0.8	3.3	1.2	24
14	0.8	0.6	0.5	0.6	5.5	5.6	19.4	16.7	8.4	10.1	5.4	1	1.5	0.3	0.6	0.4	0	0	0	0.3	S	0.6	0.6	0.4	19.4	3.4	24
15	0.4	0.4	0.5	1	1.1	4.1	1.1	2.3	3.8	5.8	3.8	10	35	20.1	1.1	10.8	0.5	9.7	9.8	S	5.4	17.2	4	0.6	35.0	6.5	24
16	0.8	0.8	0.7	1	0.8	1.1	12.8	13.9	6.7	11.6	28.8	10	2.9	3.4	5.6	8.6	3.4	0.5	S	0.7	0.5	3.4	5.5	1.4	28.8	5.4	24
17	0.9	1.7	0.6	0.7	0.8	4.6	5.3	1.2	12	0.9	0.8	C	C	C	C	C	C	C	0.8	0.9	1	1.1	0.9	3.2	12.0	2.2	24
18	0.9	18.5	4.9	2.5	3.1	1.2	2.7	2.1	4.7	6	3.6	2.6	2.7	10.5	3.2	0.6	S	0.7	0.8	0.8	3.2	0.7	1.2	1	18.5	3.4	24
19	0.8	1.2	1.1	7.2	3.7	6.8	18.1	7	18.8	18.5	2.7	1.6	4.1	1	1.4	S	1	0.6	0.7	0.5	0.3	0.5	0.5	0.7	18.8	4.3	24
20	0.5	0.5	0.7	0.7	0.6	0.6	0.8	0.8	0.9	1.1	1	1.4	1.2	1.2	S	0.8	0.7	0.5	0.5	0.5	0.4	0.7	0.6	0.6	1.4	0.8	24
21	0.5	0.5	17	17.9	1.7	1	3.4	12.9	20.3	29.2	15.6	5.3	4.8	S	0.9	0.6	0.3	0.3	0.7	0.7	0.7	0.8	1	0.9	29.2	6.0	24
22	0.9	0.7	0.7	0.8	0.9	0.7	0.8	1.1	1.5	2.9	4.7	11.2	S	5	3.7	1.2	0.8	0.2	0.4	0.5	0.5	0.8	0.9	0.8	11.2	1.8	24
23	0.8	0.9	0.7	0.8	0.7	5.1	1.5	1	2.7	4.9	6.6	S	9.7	3.5	0.5	0.8	0.6	0.4	0.9	0.6	0.7	0.8	1.2	1	9.7	2.0	24
24	1	1	1.1	1.2	1.1	1.3	1.4	1.6	2	2.2	S	1	0.9	0.1	0	0.7	0.7	0	0	0	0	0	0	0	2.2	0.8	24
25	0	14.9	14.5	9.2	12	11.6	0.1	0.2	0	S	13.8	8.8	1.8	12.3	4.2	6.6	0	0.3	0.3	0.5	0.5	0.6	0.6	0.9	14.9	4.9	24
26	0.8	1.1	1.2	1	0.8	0.8	2.2	1.8	S	4	6.4	6.4	8.8	45.2	8.5	4.8	1.1	0	0	0	0	0	0	0	45.2	4.1	24
27	0	0	0	0	0.1	0.1	0.1	S	0.5	0.9	0.7	0.7	0.6	0.4	0.2	0.5	0.5	0.6	0.7	0.9	1.1	1.4	1.7	1.8	1.8	0.6	24
28	2	2.2	2.2	2.4	7.3	2.8	S	10.9	8.8	2.4	1.4	2	1.6	0.2	0	0	0	0	0	0	0	0	0	0	10.9	2.0	24
29	0	0	0	0	0	S	1.3	1.3	1.9	2.1	3.5	3.1	2.3	0.8	0.5	0.4	0	0	0	0	0	0	0	0	3.5	0.7	24
30	0	0	0	0.1	S	6.3	5.8	7.9	8.5	17.2	18.1	4.4	1.3	2	1.7	4.5	0	0	0	0.4	0.6	0	0	0.2	18.1	3.4	24
31	0.3	0.4	0.4	S	0.7	5.9	2.4	3.4	7.2	7.9	11.5	7.8	0.3	4.7	1.7	1.7	1.5	5	7.8	23.4	18.5	0.7	0.3	0.3	23.4	4.9	24
HOURLY MAX	23.3	18.5	17.0	17.9	12.0	19.3	20.1	26.9	20.3	29.2	28.8	11.2	35.0	45.2	13.2	10.8	8.4	9.8	9.8	23.4	18.5	17.2	23.1	20.8			
HOURLY AVG	1.6	2.4	2.5	2.9	1.8	3.8	4.6	5.4	6.5	7.0	5.5	4.0	3.6	4.6	2.3	1.9	1.2	1.4	1.2	1.4	1.6	1.3	1.7	1.4			

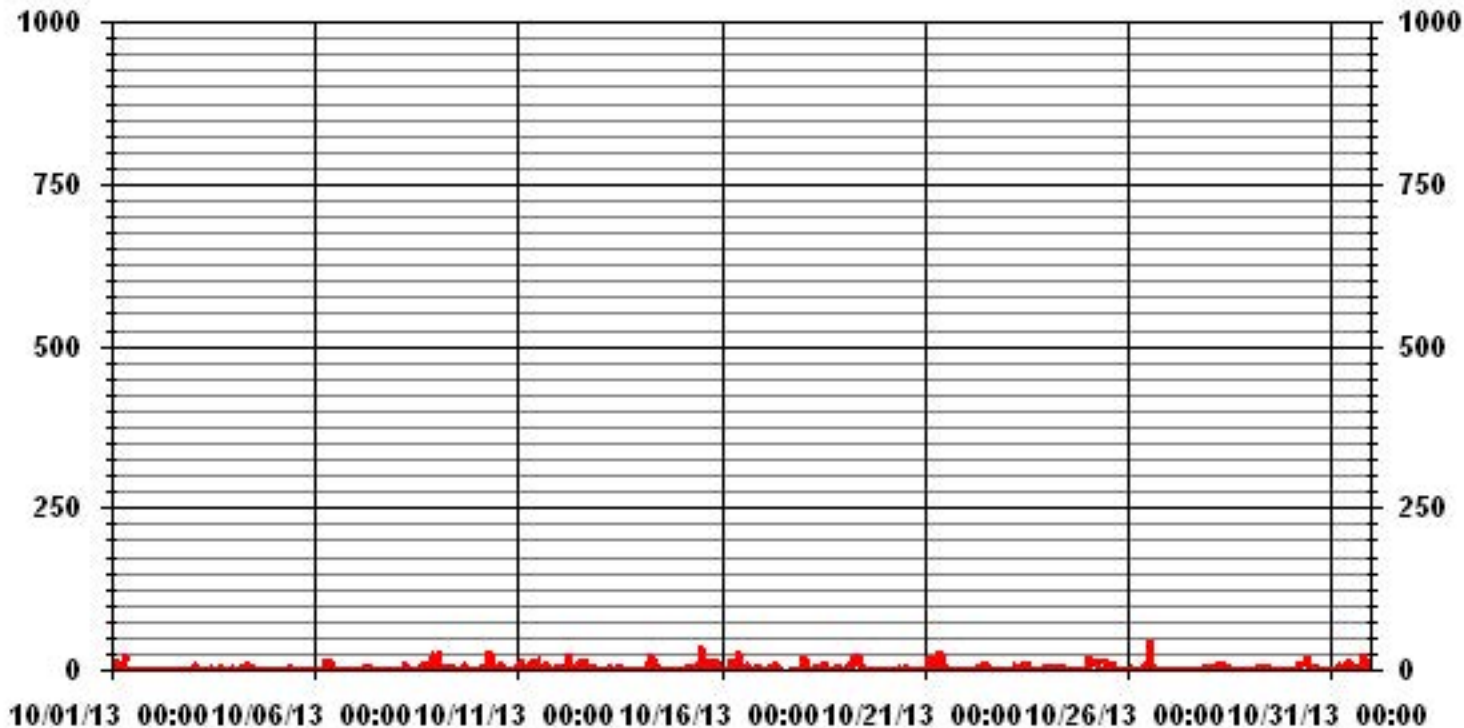
**STATUS FLAG CODES**

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:	601					
MAXIMUM INSTANTANEOUS VALUE:	45.2	PPB	@ HOUR(S)	13	ON DAY(S)	26
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	5.02					

# 01 Hour Averages





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

October 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	4.66	6.08	2.26	1.41	1.41	1.13	3.67	4.38	5.79	16.83	10.32	7.49	11.45	12.16	5.79	5.09	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	4.66	6.08	2.26	1.41	1.41	1.13	3.67	4.38	5.79	16.83	10.32	7.49	11.45	12.16	5.79	5.09	

Calm : .00 %

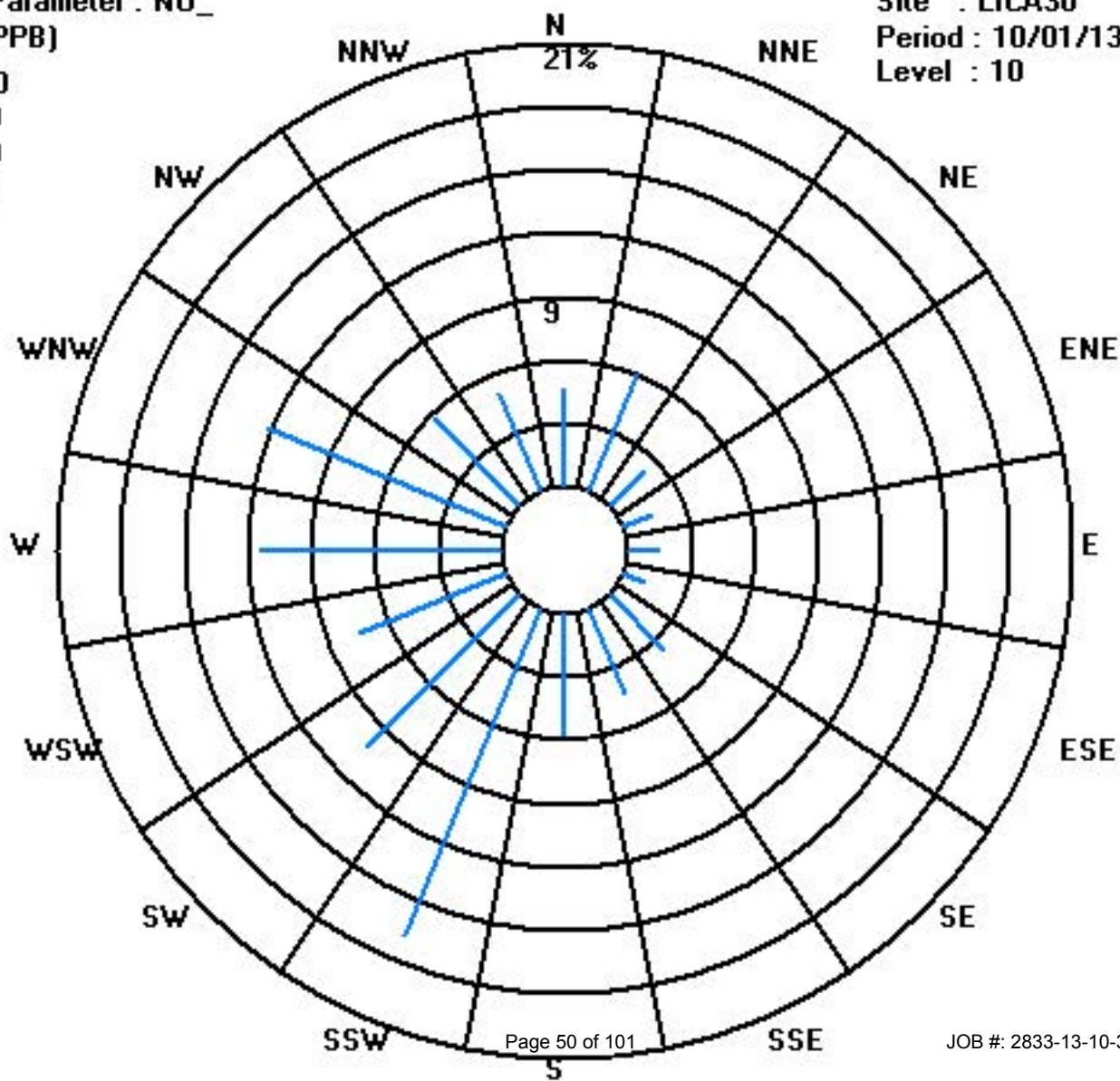
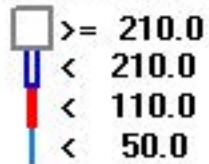
Total # Operational Hours : 707

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	33	43	16	10	10	8	26	31	41	119	73	53	81	86	41	36	707
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	33	43	16	10	10	8	26	31	41	119	73	53	81	86	41	36	

Calm : .00 %

Total # Operational Hours : 707



# Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

OCTOBER 2013

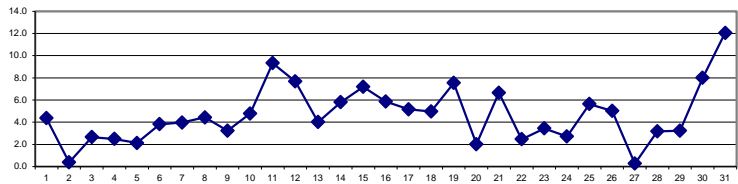
OXIDES OF NITROGEN hourly averages in ppb

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	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	10.4	12.4	14.8	5.3	11	13	7.2	13.1	10.1	S	0.2	0.2	0.2	0.3	0.3	0.4	0	0.1	0	0	0.1	0.1	0.1	14.8	4.4	24	
2	0	0	0	0	0.2	0.4	0.3	0.1	0.5	S	0.2	0.1	0	0	0	0	0	0	0.1	0.2	0.2	0	1.6	4.5	4.5	0.4	24	
3	7.8	4.3	5.2	4.9	4.8	1.9	2.2	2.8	S	1.5	1.4	2	2.3	4.2	2.5	0	3	3.5	1	0.5	1.3	0.7	0.7	2.6	7.8	2.7	24	
4	2.1	0.6	1.2	1	1.1	1.3	4.7	S	5.9	5.8	3.5	4	2.3	1.5	2.2	2.9	1.7	1	2.4	2.3	2.5	2.9	2.5	1.8	5.9	2.5	24	
5	1.2	1.1	1.2	1.2	1.4	3.3	S	5.4	7.6	7	6.8	2.2	0.5	0	0	0	0	0	0.9	2.1	2.4	1.9	1.2	1.3	7.6	2.1	24	
6	1	0.5	0.3	0.4	2.1	S	3.3	17.6	23.5	19.4	3.1	2.6	2.4	1.9	1.4	0.1	0.5	0.3	0.4	1.3	0.6	1.1	2.3	1.6	23.5	3.8	24	
7	0.9	0.6	0.3	0.7	S	15.2	17.3	7.6	10.5	4.4	7.1	2.1	1.2	1	0.9	1.2	2.9	3	2.8	2.1	2.5	2.6	2.2	2.1	17.3	4.0	24	
8	2	0.3	0.4	S	2.4	5.2	5.4	1.8	1.4	1.6	1.4	0.9	0.9	1.1	2.8	1.2	6.1	4.5	6.1	11.9	10	7.3	12.1	15	15	4.4	24	
9	14.8	6.5	S	3.1	2.3	2.1	2.3	1.6	2.4	3.4	2.3	3	1.5	1.8	1.6	1.7	2.3	2.3	2.9	3.5	3	3.1	3.4	3	14.8	3.2	24	
10	3.2	S	2.3	3.8	3.4	4.1	4.3	8.8	8.1	9.1	4.4	5.1	3.3	1	1.2	0.2	0	8	15.9	2.4	4.4	3.6	7	6.3	15.9	4.8	24	
11	S	12.9	21.8	8.7	7.3	6.2	20.7	12.1	20.3	15.3	7.5	14.7	1.8	0.5	0.7	3.3	0.3	13.3	5.9	1.9	5.4	6	18.6	S	21.8	9.3	24	
12	8.4	13.8	6	18	8.8	18.5	24.3	13.7	6.8	2.3	3.5	4	6.5	8.6	3.6	3.8	9.8	2.8	4.5	1.9	1.8	1.8	S	3.2	24.3	7.7	24	
13	7.1	5.4	6.8	7.2	6.3	7.1	6.5	6.7	5.2	4.4	1.5	0.9	0.7	1.5	4.5	3.6	2	2.4	0.4	0.6	1.2	S	6	4.3	7.2	4.0	24	
14	4.5	5.4	5.2	3.9	6.4	7.2	22.1	16.3	12.7	15	5.4	2.4	1.9	0.8	2	2	1.6	2.3	2.2	2.5	S	4	4.1	3.6	22.1	5.8	24	
15	3.5	2.7	2.5	2.6	2.6	4.7	4.3	6.6	9.8	11.6	7.3	4.7	5.3	3.9	1	5.2	0.6	11.9	30.6	S	15.8	21.7	6	0.2	30.6	7.2	24	
16	0.6	1.1	0.7	1.4	1.3	1.3	10.8	14.5	9.4	11.8	7.7	5.4	1.6	2.2	4.8	12.2	5.9	1.1	S	0.7	1	6.3	17.4	15.3	17.4	5.8	24	
17	11.1	12.5	1.2	1.4	2.2	6.2	12.1	8.5	15.8	1.7	1.5	C	C	C	C	C	C	4.1	1.5	1.1	1.3	1.3	0.8	8.4	15.8	5.2	24	
18	5.2	8	7.7	2.8	5.1	1.8	6.3	6.2	9.6	7.8	3.8	2.9	2.9	7.5	6	1.7	S	1.5	2.3	1.6	2.9	2	6.5	11.8	11.8	5.0	24	
19	10.1	5.5	5.6	11.2	6.3	7.8	22.5	19.3	29.7	21.1	2.2	2	3.8	1.6	3.2	S	5.8	6.4	6.4	1.9	0.2	0.1	0.1	0.4	29.7	7.5	24	
20	0.3	0	0.4	0.7	0.7	2.8	1.4	1.4	2.3	2.9	1.8	2.4	2.6	1.9	S	2.5	2.9	2.9	2	1.6	1.7	3	3.5	4.5	4.5	2.0	24	
21	4.3	4.5	9.6	18.1	4.1	2.2	4.9	22.6	17.6	25.6	16	5.3	5	S	1.1	0.7	1	3	2.3	0.9	0.9	1	1.2	1	25.6	6.6	24	
22	1	1.5	1.4	2.1	1.5	1.1	1.2	2.3	3.4	4.9	7.3	8.7	S	4.2	4.9	1.6	1.2	0.6	0.7	1	1.3	1.2	1.7	1.7	8.7	2.5	24	
23	1.3	0.7	1	1.5	2	3.9	4.4	6.5	6.2	11	15.1	S	11.8	1.5	0.8	1.3	0.5	0.2	0.9	1.2	1.2	1.2	1.1	3.8	15.1	3.4	24	
24	3.1	1.5	1.3	1.1	0.6	0.8	3.3	3.3	4.4	3.5	S	3.2	2.5	2.2	2.1	2.9	3.6	3.7	3.7	3.1	3.3	3.7	2.9	2.3	4.4	2.7	24	
25	2.5	16.8	16.4	14.6	21.6	15.6	0.5	0.5	0.3	S	5.6	4.2	1.8	9.6	4.6	3.3	0	0.4	1.1	2.4	1.6	1.2	1.8	2.9	21.6	5.6	24	
26	3.5	3.9	4	3.6	3.2	3.9	5.1	7.3	S	7.2	8.7	9.4	17.4	11.5	8.7	10.1	1.7	1	1.1	2.8	1.1	0.2	0	0	17.4	5.0	24	
27	0	0	0	0	0	0	0	S	0	0.2	0.2	0	0	0	0	0	0	0.1	0.1	0.3	0.8	1.1	1.6	1.7	1.7	0.3	24	
28	1.7	2.2	2.7	2.8	5.8	3.7	S	8.8	8.7	5.6	2.7	4.1	4.3	2	2.1	2.4	1.2	1	2.2	1.6	1.5	1.6	1.8	2.1	8.8	3.2	24	
29	1.4	1.4	1.8	2.6	2.9	S	3.3	3.3	4.1	4.2	4.8	5.1	4.5	3.8	3.4	3.4	3.5	2.9	2.1	2.3	3.3	3.6	3.2	3.1	5.1	3.2	24	
30	2.5	2.8	2.7	5.8	S	13.8	19	17.9	17.3	16.8	14.4	6.7	4.7	7.1	6.4	3.3	3	2.9	2	1.4	6.5	7.9	8.5	10.4	19	8.0	24	
31	12.2	8.5	12.3	S	8.2	13.9	14.7	18.6	19.5	21.4	23.8	8.9	2.4	4.6	2.8	2.8	11.5	11.8	14.5	36.7	18.6	8.2	0.6	0.6	36.7	12.0	24	
HOURLY MAX	14.8	16.8	21.8	18.1	21.6	18.5	24.3	22.6	29.7	25.6	23.8	14.7	17.4	11.5	8.7	12.2	11.5	13.3	30.6	36.7	18.6	21.7	18.6	15.3				
HOURLY AVG	3.9	4.5	4.5	4.8	4.1	5.8	8.3	8.6	9.5	8.8	5.9	4.0	3.3	3.0	2.6	2.5	2.5	3.2	4.0	3.1	3.3	3.3	4.0	4.0				

STATUS FLAG CODES

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

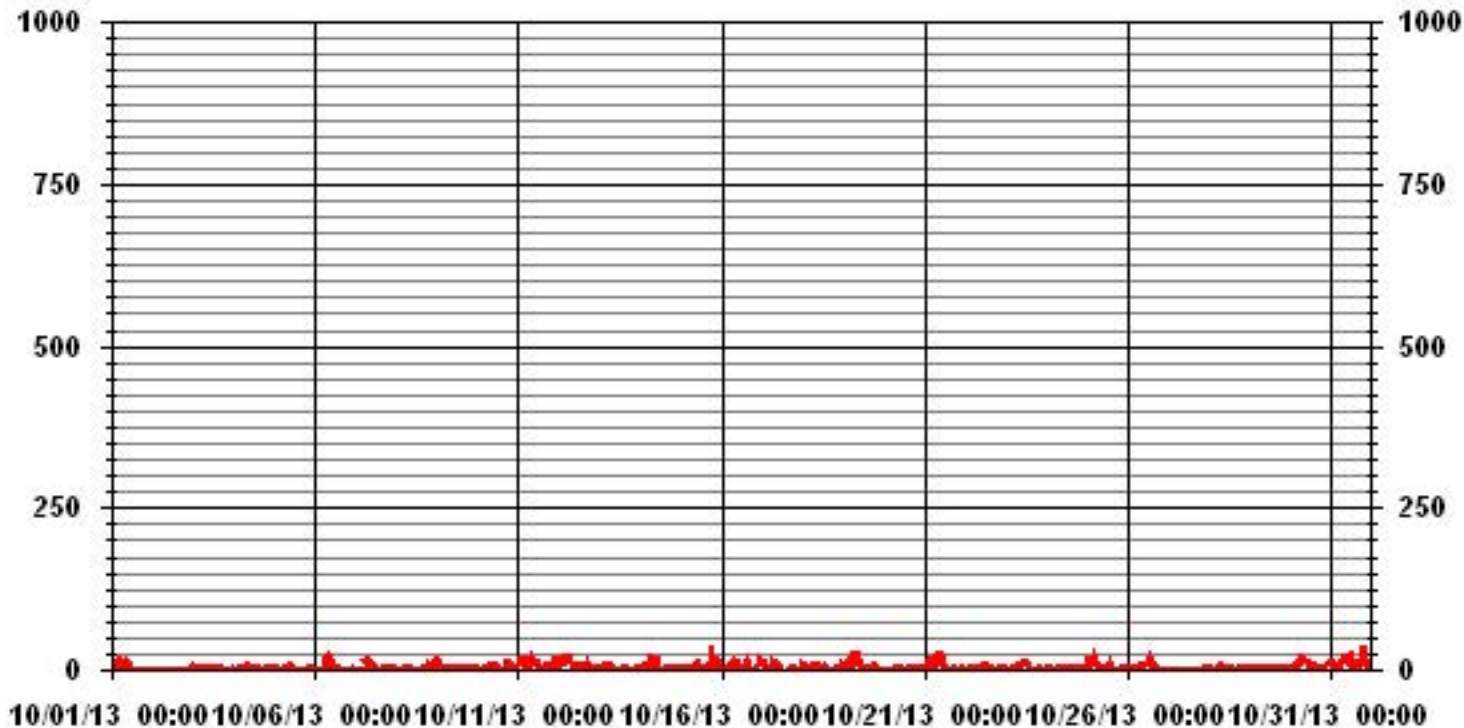
24 HOUR AVERAGES FOR OCTOBER 2013



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	668					
MAXIMUM 1-HR AVERAGE:	36.7	PPB	@ HOUR(S)	19	ON DAY(S)	31
MAXIMUM 24-HR AVERAGE:	12.0	PPB			ON DAY(S)	31
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	5.31		MONTHLY AVERAGE:	4.64	PPB	

### 01 Hour Averages



— LICA30 NOX\_ PPB

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

OCTOBER 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 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	6.2	12.8	19.5	27.8	9.4	15.9	17	11.7	27.8	27.3	S	0.9	0.7	0.9	1.3	1.1	1.4	0.8	0.6	0.5	0.5	0.8	1.4	1.3	27.8	8.2	24	
2	0.5	0.6	0.6	0.7	0.8	1.3	1.4	1.1	1.9	S	0.9	1.3	0.5	0.6	0.5	0.8	0.3	0.4	0.7	0.7	0.7	1.2	3.8	6.7	6.7	1.2	24	
3	13.5	7	7.9	6.7	6.6	3.8	4.1	4.1	S	2.2	1.9	4.2	3.2	8.6	4	0.7	16.2	15.5	1.6	1.7	2.9	1.7	1.5	5.1	16.2	5.4	24	
4	4.4	1.3	1.9	1.6	1.6	2.5	9.6	S	14	10.3	4.5	5.2	4	2.2	3.8	3.9	2.6	1.7	3.4	3	3	3.6	3.3	2.4	14.0	4.1	24	
5	1.9	1.5	1.9	1.8	2.1	6.4	S	7.4	9.4	9.1	8.4	5.3	1.6	0.5	1.2	0.3	0.6	0.4	2.3	2.7	3	3	1.9	3.3	9.4	3.3	24	
6	3.1	1	1	1.2	4.5	S	4.8	26.9	28.2	27.5	7	4.3	4.6	3.3	2.6	1.2	2.9	1.1	1.4	1.9	1.4	1.8	3.3	2.2	28.2	6.0	24	
7	1.6	1.2	1.4	2	S	25.3	21.9	15	18.1	7.6	11.6	6.7	2	2	1.7	2.2	4.3	4.7	3.4	2.8	3.2	3.3	2.7	4.7	25.3	6.5	24	
8	7.6	1.1	1.4	S	4.1	21.5	12.9	4.3	2.5	6	3.4	3.2	2.3	2.6	10.5	3.9	11	12.9	13.3	14.4	19.7	11	34.3	32	34.3	10.3	24	
9	34.9	16.4	S	9.3	8.5	4.4	4.4	4.3	6.5	8.5	4.9	6.8	2.2	3.2	2.2	3.2	24.3	3	4.1	5.1	3.6	3.7	3.9	3.4	34.9	7.4	24	
10	3.8	S	3	14.9	4.3	6.2	7	38.1	9.1	17.2	13	7.5	5.6	2.3	26.2	2.3	0.5	20.4	27.4	7.7	7	7.1	11	14	38.1	11.1	24	
11	S	30	31.1	11.9	9.7	11	26.5	21.5	27.3	28.5	15.3	23.9	5.5	4.2	9.7	12.9	2.4	29.4	18.7	12.6	12	14	28	S	31.1	17.6	24	
12	12.7	21.2	16.3	24.4	18	39.2	40	18.9	13.2	5	8.2	17.4	22.8	25.6	13.4	16.1	27.3	5	6.3	3.1	2.9	2.8	S	5	40.0	15.9	24	
13	9.3	6.5	9.4	8.8	7.9	13.7	12.8	10.9	6.2	7.1	4.3	4.5	3.1	6.3	13.3	8.8	6.9	6.6	1.1	1.3	2	S	9.1	5.6	13.7	7.2	24	
14	6.4	8	7.8	4.9	15.3	13.5	34.4	30.3	15.8	23.2	14.7	3.2	3.5	1.7	3.8	3.1	3	3.4	2.9	3.2	S	4.7	4.9	4.4	34.4	9.4	24	
15	4.4	3.4	3.1	4.1	4.8	12.5	6.2	9.8	12.1	14.4	11.5	21.3	66	45.4	4	33.9	2.7	36.4	39.5	S	27.3	50.3	23.5	0.8	66.0	19.0	24	
16	1.5	1.6	2	2.6	2.5	2.2	32.3	32.4	17	23.3	48.4	22.1	7.5	9.8	16.6	28.3	17.5	2.9	S	1.5	1.6	16	26.4	22.7	48.4	14.7	24	
17	18.4	21.3	3.2	2.4	5.8	19.2	20.7	11.1	36.1	3.5	2.7	C	C	C	C	C	C	C	C	2.8	1.8	2	2.2	1.9	19.1	36.1	10.2	24
18	10.5	39	19.5	6.5	9.5	4.5	12.6	9.1	13.9	16.5	8.9	5.7	5.5	25.6	10	3.8	S	2	4.1	2.7	8.5	3.8	9.5	13	39.0	10.6	24	
19	13.2	7.5	8.8	21.3	12.2	23.9	34.1	27.2	40.4	39.4	7.7	4.6	11.4	2.5	5.1	S	6.8	7.2	8.4	6.2	0.9	0.8	0.7	0.9	40.4	12.7	24	
20	1	0.7	0.9	1.3	1.4	4	2.2	3.7	4.3	4.6	3.5	4.8	3.5	3	S	3.4	3.6	3.6	3.6	2.1	2.7	3.6	4.1	5.7	5.7	3.1	24	
21	5.3	5.3	28.9	29.7	9.6	3.5	14.3	28.6	36.7	45.7	29.9	14.5	12	S	2.9	3.3	2.9	5.3	6.9	1.7	1.5	1.8	2.3	2.3	45.7	12.8	24	
22	1.6	2.5	2.4	2.9	3.2	2.3	1.7	4.3	4.5	8.1	11.9	19.3	S	17.6	13.5	5.4	4	1.1	1.1	1.9	2	2.1	2.5	2.4	19.3	5.1	24	
23	2.2	1.3	1.8	2	2.8	13.1	8	8.7	12.5	17	19.6	S	19.1	8.6	2.2	3.3	2.4	1	2.2	2.4	3.1	2.1	2.4	7.5	19.6	6.3	24	
24	4.1	2.9	2.4	2.2	0.9	2.3	5.2	5.3	5.5	5.1	S	4.1	3.2	2.9	3.2	5.1	4.9	5.7	4.5	3.9	4.1	4.4	3.7	2.9	5.7	3.8	24	
25	5	38.8	38.3	30.7	35.6	34	1.9	1.9	0.9	S	25.2	17.8	4	24.9	12.8	19.1	0.5	2	2.2	5	3	2	2.8	4.1	38.8	13.6	24	
26	4.8	4.9	4.5	4.4	3.8	6.2	8.2	9.1	S	11.3	18.3	18.3	21.7	63.8	22.4	21.4	7.2	1.9	2.4	3.7	2.5	1	0.7	0.4	63.8	10.6	24	
27	0.4	0.1	0.2	0.2	0.2	0.1	0.4	S	0.6	0.8	0.7	0.4	0.6	0.3	0.3	0.3	0.6	0.6	0.6	0.8	1.3	1.9	2.3	2.1	2.3	0.7	24	
28	2.2	3.1	3.3	4.1	15.5	5.4	S	21.7	19.4	7.1	3.9	6.5	6.2	3.1	3.6	4.3	2.1	2	2.9	2.4	2.7	2.2	2.6	2.9	21.7	5.6	24	
29	1.9	2.2	2.6	3.4	3.7	S	4.9	5.2	6.8	5.9	7.5	7.8	5.7	4.9	5.2	5.7	5.6	5.6	2.7	3.5	4	4.8	3.7	3.7	7.8	4.7	24	
30	3.3	3.4	3.4	12.5	S	22.7	21.9	23.8	22.3	34.9	34.1	16.4	8.6	10.4	9.3	15	4.9	3.7	3.1	6.4	8.3	9.6	9.7	13.6	34.9	13.1	24	
31	14	10.8	15.2	S	9.5	19.1	17.6	21.3	24.3	24.6	28.6	23.6	3.1	10.7	5	5.6	17.5	19.2	24.7	47.4	42.6	13.1	1.7	1.2	47.4	17.4	24	
HOURLY MAX	34.9	39.0	38.3	30.7	35.6	39.2	40.0	38.1	40.4	45.7	48.4	23.9	66.0	63.8	26.2	33.9	27.3	36.4	39.5	47.4	42.6	50.3	34.3	32.0				
HOURLY AVG	6.7	8.6	8.1	8.5	7.4	11.7	13.4	14.4	15.1	15.2	12.4	9.7	8.3	10.3	7.3	7.5	6.4	6.9	6.6	5.1	6.0	6.0	7.0	6.5				

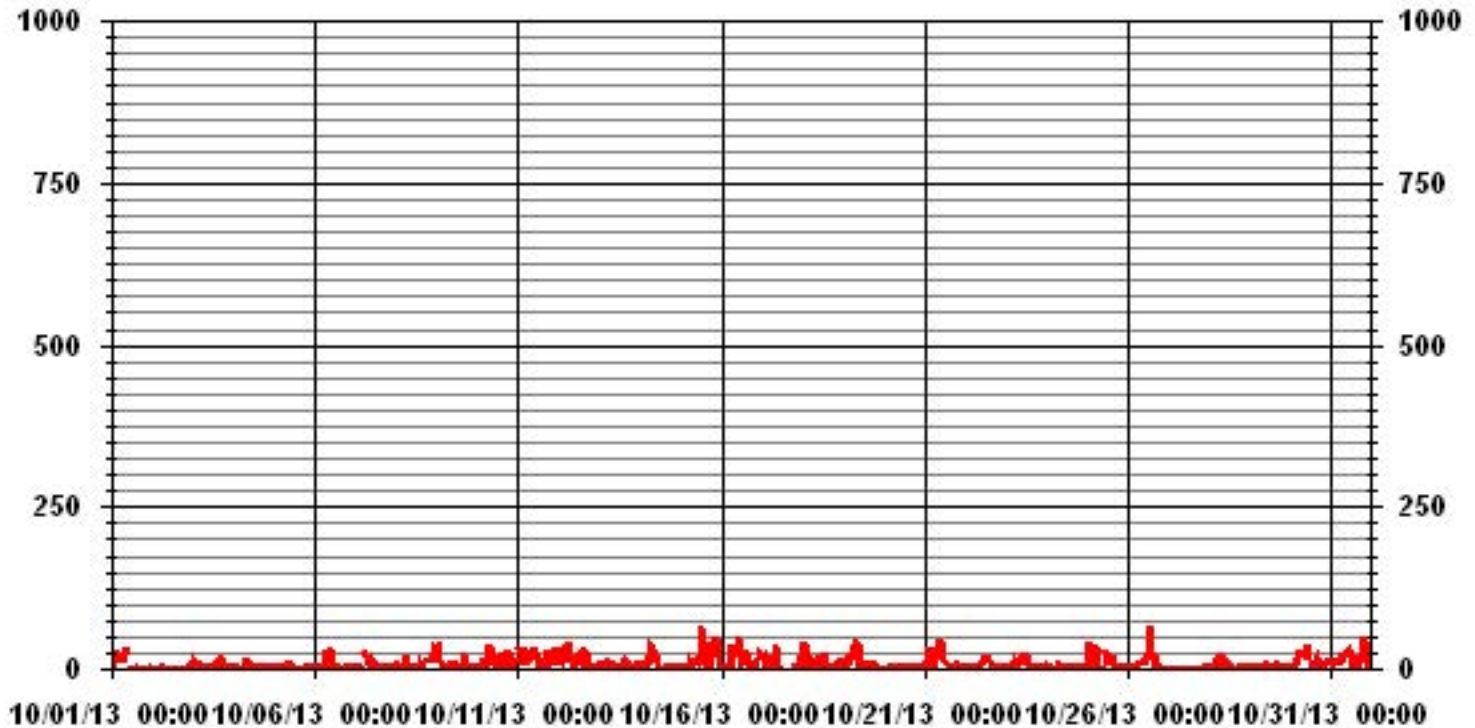
### STATUS FLAG CODES

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

### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	706					
MAXIMUM INSTANTANEOUS VALUE:	66.0	PPB	@ HOUR(S)	12	ON DAY(S)	15
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	10.06					

# 01 Hour Averages



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

October 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	4.66	6.08	2.26	1.41	1.41	1.13	3.67	4.38	5.79	16.83	10.32	7.49	11.45	12.16	5.79	5.09	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	4.66	6.08	2.26	1.41	1.41	1.13	3.67	4.38	5.79	16.83	10.32	7.49	11.45	12.16	5.79	5.09	

Calm : .00 %

Total # Operational Hours : 707

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	33	43	16	10	10	8	26	31	41	119	73	53	81	86	41	36	707
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	33	43	16	10	10	8	26	31	41	119	73	53	81	86	41	36	

Calm : .00 %

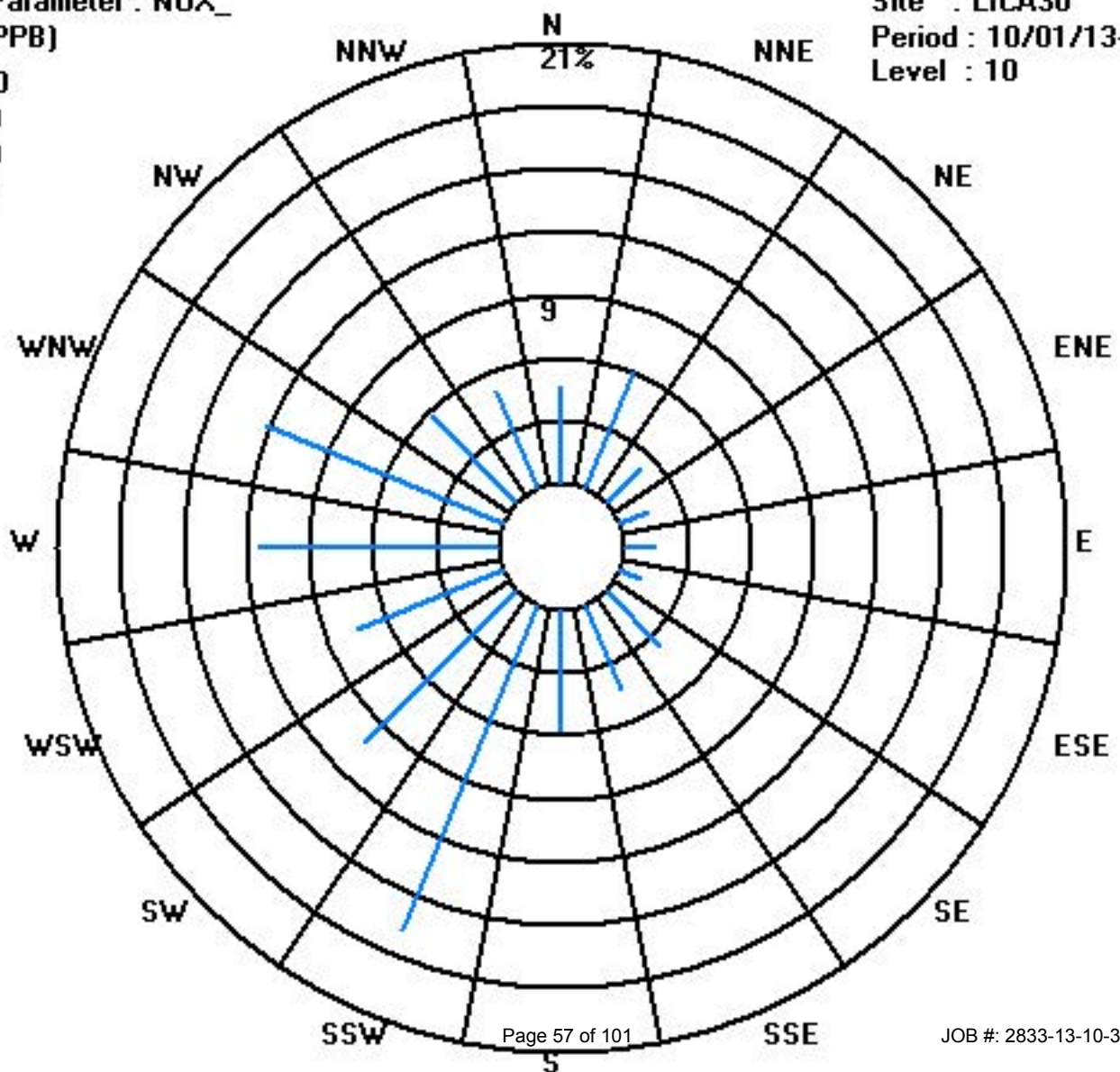
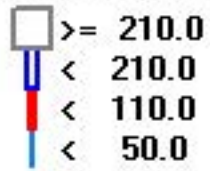
Total # Operational Hours : 707



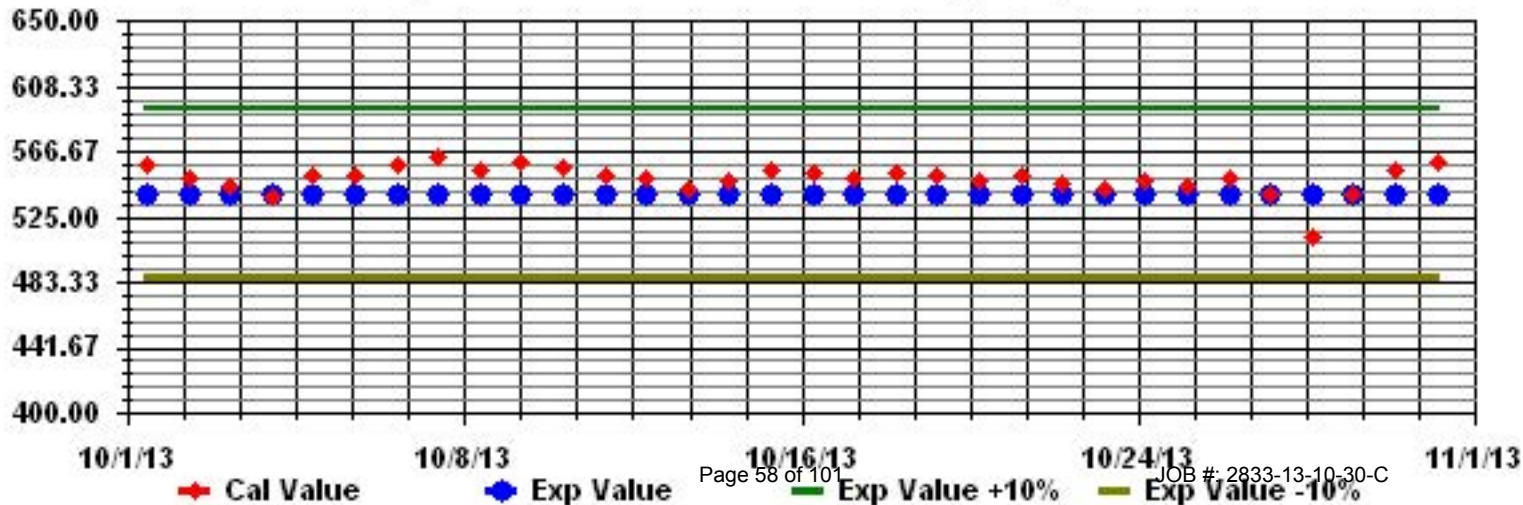
Class Limits (PPB)

Period : 10/01/13-10/31/13

Level : 10



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



# Temperature

**LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA**  
**OCTOBER 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	5.8	5.8	5.8	5.7	5.4	5.3	5.3	5.5	6.2	7.2	7.6	6.7	6.5	6.6	6.5	6.1	5.5	5.1	4.9	4.7	4.3	4	3.5	3.2	7.6	5.6	24	
2	3.1	2.8	2.7	2.5	2.7	2.9	3	3.1	3.4	3.8	4.7	5.1	4.7	5.9	5.8	6.1	6	3.9	2.3	2.1	1.3	0	-0.8	-0.6	6.1	3.2	24	
3	0.3	0.6	0.9	1	1.2	1.4	1.7	2.3	3.2	4.3	5.3	6.3	6.8	7.8	8.6	3.8	4.8	4.1	1.3	-0.4	-0.9	-0.3	0.3	0.6	8.6	2.7	24	
4	-0.7	-1.8	-2.6	-3	-3.6	-3.9	-3.3	-0.4	0.7	2.8	4.9	7.7	9.3	9.8	10	9.5	8.6	7.3	5.9	5.7	5.7	5.1	4.9	5.2	10.0	3.5	24	
5	5.1	5.6	5.2	4.9	5	4.5	3.9	4.6	6.5	7.9	10	13.9	15.3	15.8	15.7	15.3	13.6	11.7	9.3	8.5	7.6	6.2	5.7	6	15.8	8.7	24	
6	4.9	5.6	5.4	4.8	4.4	3.2	1.8	3.6	7.4	9.2	11.7	12.5	13	13	13.2	12.8	12.3	11.4	10.6	9.9	9.6	8.9	6.9	4.6	13.2	8.4	24	
7	6.6	8.4	9	8.4	7.8	7.6	6.9	7.2	8.3	9.2	9.8	10.7	11.6	13	13.6	13.8	12.1	9	7.4	6.5	5.7	5.3	5.6	6.5	13.8	8.8	24	
8	8.2	7.7	7.4	7.1	7	6.8	6.9	7	9.4	9.7	9.3	8.5	8.1	7.9	6.8	5.8	5.2	4.7	4.5	4.4	4.3	4	3.5	3.2	9.7	6.6	24	
9	2.9	2.3	1.9	1.6	1.4	0.1	0.5	1.3	2.2	2.8	4	4.8	5.7	7.3	8.6	9.2	8.6	6.7	5.2	5.2	5.5	5.2	5	5.3	9.2	4.3	24	
10	5.4	4.9	3.8	3.3	3.9	4.5	4.3	4.5	5.6	7.9	9.1	10.9	12.1	13.4	14.2	13.3	11.4	8.7	6.1	3.1	1.8	1.5	1.1	0.5	14.2	6.5	24	
11	-0.1	-0.5	-0.5	-1.4	-2.1	-1.5	-0.5	1.4	5.9	7.8	9.9	10.9	11.3	12.1	12.3	10.8	8.6	7.7	5.7	4	1.7	0.6	0.4	0.3	12.3	4.4	24	
12	-0.2	-1.2	-1.9	-2.4	-2.6	-2.6	-2.1	-1.1	2.7	5.5	7.3	8.7	9.1	9.9	9.6	9.1	7	4.6	4.5	3.8	4.2	4.8	4.9	4.3	9.9	3.6	24	
13	3.4	1.1	1.5	1.9	1.9	2.2	2.4	2.4	4.2	7.2	9.4	11.3	10.4	10.2	10	9.1	8.4	7.5	6.5	4.2	1.8	1.5	2.7	2.6	11.3	5.2	24	
14	1.3	-0.3	-1.5	-2.9	-3.1	-3.2	-3.6	-3.1	1.7	6.2	8.6	10	11.1	11.5	11.7	11.5	9.9	6.9	4.8	5.1	4.8	2.8	4.1	3.7	11.7	4.1	24	
15	3.5	3.2	2.8	2.3	2	1.6	1.2	1.7	4.5	7.9	11	14.2	13.9	13.2	13.6	12.4	11	9.9	9	7.9	7	6.1	5.7	14.2	7.5	24		
16	4.1	3.8	3.5	2.6	2.4	2.9	2	1.3	2.4	4.9	5.6	7.5	8.5	9.3	9.6	8.6	7.4	3.6	1.6	0.4	0.6	0.9	1.4	0.6	9.6	4.0	24	
17	0.3	0.2	-0.4	-2.7	-2.2	-0.4	0.4	1.5	3.9	4.9	6.6	8.6	9	8	8.3	8.4	6.8	5.1	2.3	1.2	0.5	1.5	3	4	9.0	3.3	24	
18	3.8	3.7	3.2	2.7	2.6	2.9	2.8	2.9	3.6	5.3	7.5	8.8	10	11.3	12.8	10.9	9.5	8	6.9	6.2	5.2	5.9	4.2	12.8	6.1	24		
19	3.1	2.8	1.9	1.9	3.1	4	5.1	5.5	6	6.5	6.9	6.3	5.4	4.8	4.5	4.2	4.1	4.1	4.1	3.2	2.3	1	0.2	-0.7	6.9	3.8	24	
20	-1.9	-2.2	-1.7	-1.5	-1.2	-1.3	-1.6	-1.5	-1.4	-1	-0.1	0.3	1.1	2.3	2.5	2.6	2.5	2.3	2.1	2	2	2.3	2	2.4	2.6	0.5	24	
21	1.6	1.2	1.6	2.2	2.2	2.1	2.8	3.3	3.9	7.4	8.5	10.5	11.8	12.8	11.3	10.8	9.8	7.4	6.3	4.3	3	2.7	3.6	3.9	12.8	5.6	24	
22	3.8	3.4	3.2	3.2	3.1	2.8	2.6	2.8	3	4	5	6.7	9.2	9.2	9.9	8.7	7.5	5.9	3.9	2.9	2.7	3	3.3	1.6	9.9	4.6	24	
23	0.8	2	2	1.7	1.4	0.8	0.7	0.3	0.6	1.1	2.4	5.1	7	7.2	8.1	5.2	2.4	-0.3	-2.1	-2.7	-3.7	-4.2	-4.9	-3.6	8.1	1.1	24	
24	-2.7	-2	-0.6	-1.1	-0.9	-0.8	-1.1	-1	-0.1	1.5	4.4	6.6	8.6	8.6	9.2	9.3	8.3	4.8	4	4.1	4	4.6	4.4	5.3	9.3	3.2	24	
25	6.1	5.7	5.7	5.1	4.4	3.9	2.3	1	2	3.2	4.2	5.2	6	6.1	5.1	3.2	0.2	-1.4	-2.3	-3.2	-4.1	-4.1	-4.5	6.1	2.1	24		
26	-2.1	-0.6	-0.5	-0.7	-0.4	-1.5	-1	-1.1	-0.1	1.1	3.3	5.7	9.2	9.1	10	9.2	7	5.4	4.4	3.2	2.6	2	1.3	1	10.0	2.8	24	
27	0.1	-1.2	-1.8	-2.6	-3.2	-3.8	-4.9	-6.2	-6.8	-6.6	-5.2	-4.1	-4	-3.7	-3.8	-4.2	-6	-8.2	-10.5	-11.3	-12.2	-12.8	-13	-13.5	0.1	-6.2	24	
28	-14.1	-14.7	-15.3	-15.7	-16.3	-16.6	-17.3	-16.9	-11.3	-7.8	-5.4	-3.8	-2.8	-2.3	-2.3	-2.9	-3.9	-4.8	-5.8	-6.4	-6.3	-6.7	-7.5	-8.1	-2.3	-9.0	24	
29	-8.7	-9.1	-9.2	-10	-10	-9.2	-8.9	-8.6	-7.5	-5.5	-3.8	-1.5	0.1	1.5	2.7	2.8	2.2	1.3	1.4	1.3	0.7	0.1	-0.6	-0.9	2.8	-3.3	24	
30	-1	-1.2	-1.4	-1.8	-2.4	-3	-3.2	-2.9	-0.7	2	5.2	5.9	5.8	6.3	6.8	7.1	4.4	3	2.2	1.3	0.3	-0.7	-1.2	-2.6	7.1	1.2	24	
31	-3.8	-4	-1.5	-1.5	-0.8	-0.5	-0.4	0.2	0.7	1.3	2.4	4.4	5.5	4.7	4.5	4.4	4.1	3.8	3.6	3.5	3.2	2.4	1.6	1.4	5.5	1.6	24	
HOURLY MAX	8.2	8.4	9.0	8.4	7.8	7.6	6.9	7.2	9.4	9.7	11.7	14.2	15.3	15.8	15.7	15.3	13.6	11.7	10.6	9.9	9.6	8.9	6.9	6.5				
HOURLY AVG	1.3	1.0	0.9	0.5	0.4	0.4	0.3	0.7	2.2	3.9	5.5	6.9	7.7	8.1	8.4	7.7	6.6	4.9	3.6	2.8	2.2	1.8	1.6	1.3				

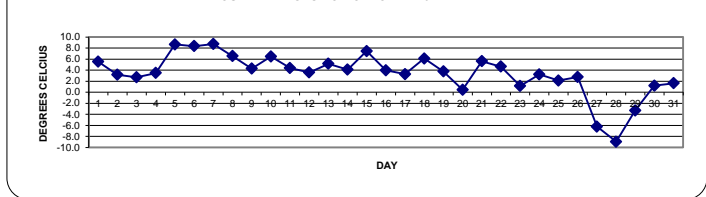
**STATUS FLAG CODES**

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

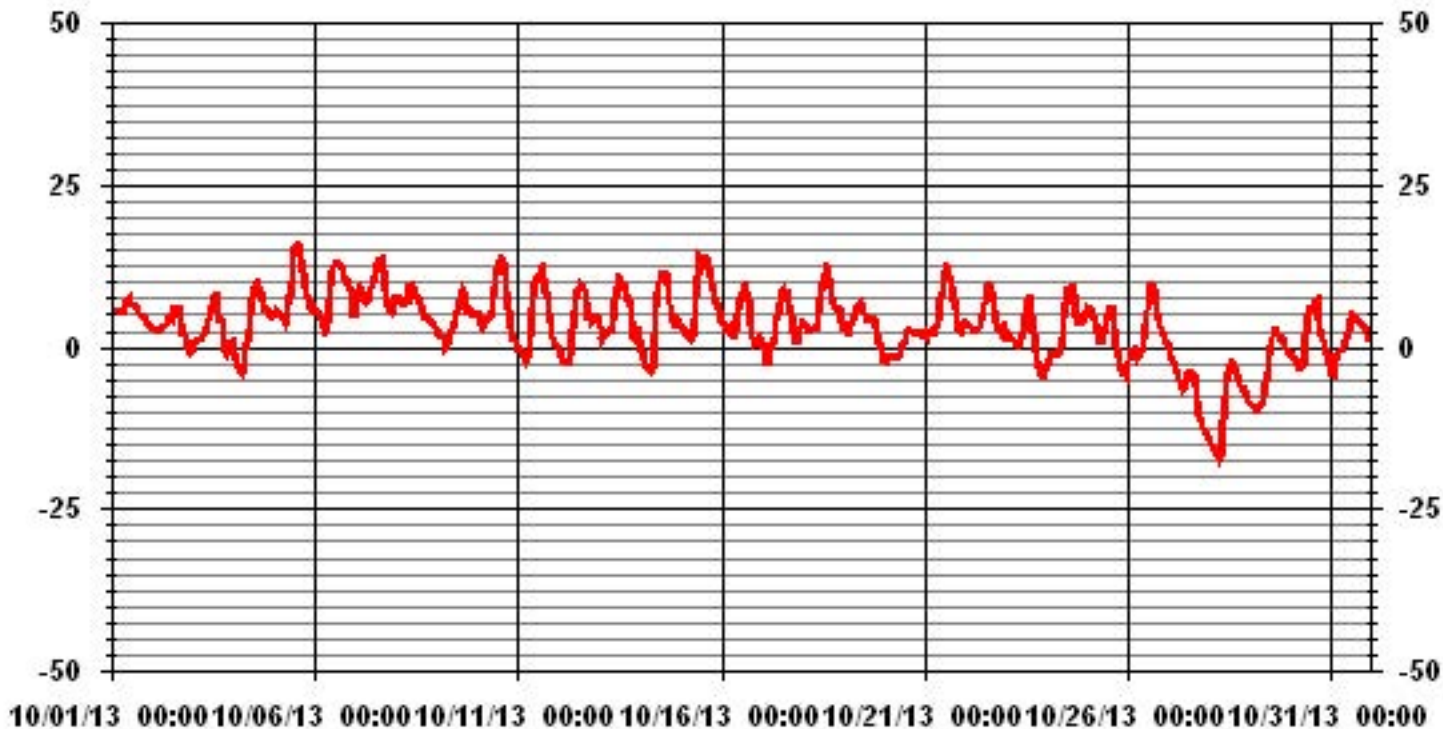
**MONTHLY SUMMARY**

MINIMUM 1-HR AVERAGE:	-17.3 °C	@ HOUR(S)	6	ON DAY(S)	28	
MAXIMUM 1-HR AVERAGE:	15.8 °C	@ HOUR(S)	13	ON DAY(S)	5	
MAXIMUM 24-HR AVERAGE:	8.8 °C			ON DAY(S)	7	
CALIBRATION TIME:	0	HRS		OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	5.24			AMD OPERATION UPTIME:	100.0	%
				MONTHLY AVERAGE:	3.36	°C

**24 HOUR AVERAGES FOR OCTOBER 2012**



### 01 Hour Averages



# Precipitation

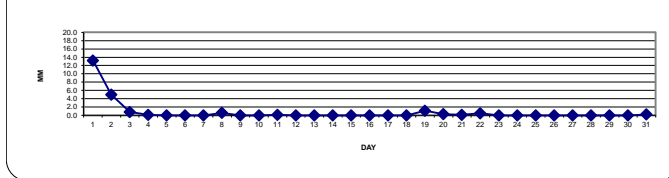
**LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA**  
**OCTOBER 2013**  
**PRECIPITATION hourly averages (mm)**

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	23:00	DAILY	DAILY		
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.	TOTAL	RDGS.		
1		0	0.1	0.1	0.2	0.4	0.4	0.5	0.7	0.6	0.2	0.5	0.4	0.7	1	1.3	1.2	0.9	0.9	0.8	0.6	0.7	0.4	0.5	0.1	1.3	13.2	24		
2		0.6	0.4	0.9	0.6	0.7	0.5	0.5	0.2	0.2	0	0	0.1	0.2	0.1	0	0	0	0	0	0	0	0	0	0	0	0.9	5.0	24	
3		0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0	0.6	0	0	0	0	0	0	0	0	0	0.6	0.8	24	
4		0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	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		0.1	0.1	0.1	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0.1	0.6	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	0.1	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	0.0	0.0	24	
15		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
16		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
17		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	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	0.4	0.3	0.3	0.1	0	0	0	0	0	0	0	0	0	0	0	0.4	1.1	24
20		0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0.2	0.3	24	
21		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	
22		0	0	0	0	0	0	0.1	0.3	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0.3	0.5	24	
23		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	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	0.2	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2	24	
HOURLY MAX		0.6	0.4	0.9	0.6	0.7	0.5	0.5	0.7	0.6	0.2	0.5	0.4	0.7	1.0	1.3	1.2	0.9	0.9	0.8	0.6	0.7	0.4	0.5	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

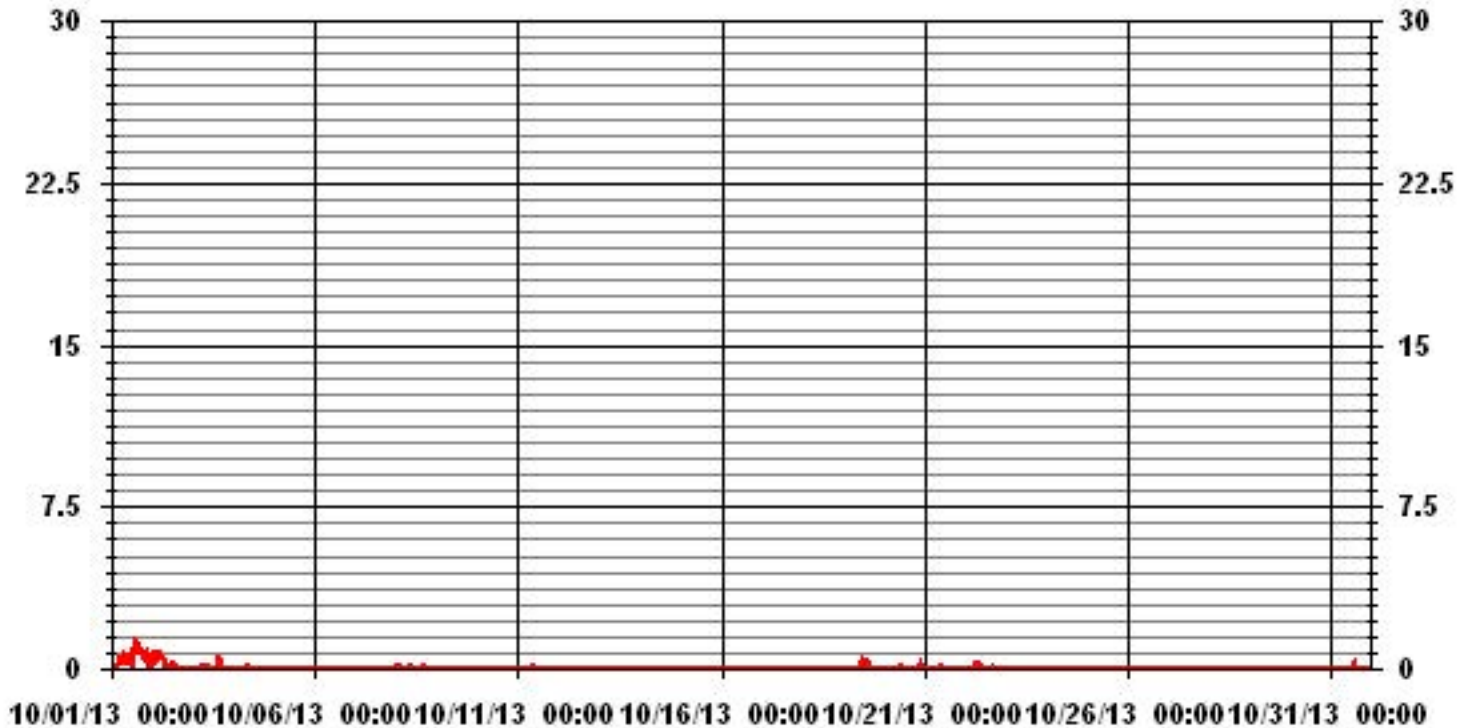
**DAILY TOTALS FOR OCTOBER 2013**



**MONTHLY SUMMARY**

MAXIMUM 1-HR AVERAGE:	1.3	MM	HOUR(S)	14	ON DAY(S)	1
MAXIMUM DAILY TOTAL	13.2	MM			ON DAY(S)	1
MONTHLY TOTAL	22.0	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	0.13		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	0.03	MM	

# 01 Hour Averages





# Relative Humidity

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

OCTOBER 2013

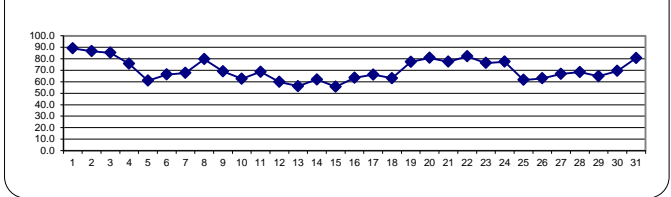
### RELATIVE HUMIDITY hourly averages (%)

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	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		90	90	89	89	89	90	90	90	90	88	86	87	87	88	88	89	90	91	91	91	90	90	89	90	91	<b>89.1</b>	24	
2		90	90	90	90	91	91	90	89	88	86	83	81	82	78	76	75	76	86	90	91	91	91	91	91	91	<b>92</b>	85.3	24
3		92	92	92	92	92	92	92	92	92	89	81	76	69	60	57	81	83	80	88	90	91	91	91	91	91	<b>92</b>	75.7	24
4		91	91	91	91	91	91	91	91	92	91	87	71	59	51	51	55	57	62	69	70	69	71	69	65	<b>92</b>	75.7	24	
5		63	60	62	64	65	67	70	68	66	66	64	52	45	40	37	38	45	54	64	69	72	77	78	76	78	60.9	24	
6		78	74	75	79	80	84	89	85	73	66	57	52	47	48	48	48	49	53	58	63	63	66	74	82	89	66.3	24	
7		73	68	65	66	68	70	74	71	66	64	63	59	57	53	52	51	56	66	73	78	82	84	84	82	84	67.7	24	
8		80	84	86	87	86	86	85	84	75	72	68	70	69	69	75	81	83	83	83	82	82	81	80	80	82	87	79.6	24
9		82	85	83	82	82	86	86	84	79	78	70	67	62	56	50	48	50	56	60	61	60	61	63	63	86	68.9	24	
10		64	68	73	76	75	72	75	75	73	66	62	56	47	43	35	32	37	50	58	68	73	73	72	76	76	62.5	24	
11		78	80	81	84	87	86	84	81	68	62	55	52	49	45	44	47	54	57	65	71	77	79	81	80	87	68.6	24	
12		80	83	85	85	85	85	83	81	69	61	56	48	40	36	35	35	41	47	49	52	53	49	49	51	85	59.9	24	
13		55	61	61	63	65	66	67	68	64	55	46	35	34	34	36	43	47	51	55	62	69	71	68	70	71	56.1	24	
14		76	81	85	88	89	89	89	89	77	57	46	42	38	34	34	33	38	48	55	56	58	64	60	61	89	62.0	24	
15		63	63	63	64	65	66	68	67	60	55	53	49	53	55	54	46	49	42	43	43	46	50	55	63	68	55.6	24	
16		69	69	71	72	73	72	76	79	75	66	62	54	46	43	42	43	46	58	65	70	70	69	66	68	79	63.5	24	
17		70	71	75	83	84	76	75	74	69	64	57	48	44	48	50	50	54	59	68	74	77	75	72	69	84	66.1	24	
18		69	70	72	74	74	74	75	75	72	67	58	53	51	47	43	48	52	57	60	63	66	63	62	68	75	63.0	24	
19		73	75	79	79	77	75	72	70	68	67	66	74	82	85	85	83	82	83	83	83	81	79	78	77	85	77.3	24	
20		76	77	75	76	78	79	82	81	84	84	82	82	80	78	77	77	78	81	82	83	84	86	89	88	89	80.8	24	
21		89	90	91	90	90	91	91	89	87	75	70	61	55	50	54	54	57	66	71	83	87	90	89	88	91	77.4	24	
22		88	88	89	88	88	88	89	90	90	89	86	83	74	71	67	69	71	74	78	82	83	82	80	83	90	82.1	24	
23		85	81	79	79	78	78	79	80	80	79	75	65	58	55	51	59	69	78	84	87	88	89	88	88	89	76.3	24	
24		88	88	88	88	87	87	86	86	82	78	71	65	59	60	61	62	66	78	82	81	81	80	80	75	88	77.5	24	
25		68	65	60	57	56	55	59	63	65	61	58	54	50	47	45	47	53	62	67	72	75	79	80	80	80	61.6	24	
26		72	69	69	68	65	69	68	70	67	65	61	56	48	49	47	48	55	62	65	67	65	67	70	69	72	63.0	24	
27		71	72	72	70	66	66	65	67	67	67	61	55	53	51	50	52	59	66	74	77	80	81	81	82	82	66.9	24	
28		81	81	80	79	78	78	77	77	80	77	68	62	57	52	51	51	53	56	60	62	64	69	73	76	81	68.4	24	
29		78	78	76	78	79	76	76	75	72	65	62	57	54	51	48	48	50	54	55	58	62	66	69	70	79	64.9	24	
30		71	72	73	74	76	79	80	82	78	72	60	56	56	55	53	52	60	65	68	71	74	77	78	83	83	69.4	24	
31		87	87	82	82	80	80	78	77	76	75	73	77	76	82	84	84	84	83	81	79	78	80	85	87	87	80.7	24	
HOURLY MAX		92	92	92	92	92	92	92	92	92	91	87	87	87	87	88	88	89	90	91	91	91	91	91	91	91			
HOURLY AVG		77.1	77.5	77.8	78.6	78.7	78.8	79.4	79.0	75.6	71.2	66.0	61.3	57.5	55.3	54.2	55.7	59.5	64.7	69.2	72.2	73.9	75.2	75.6	76.5				

**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

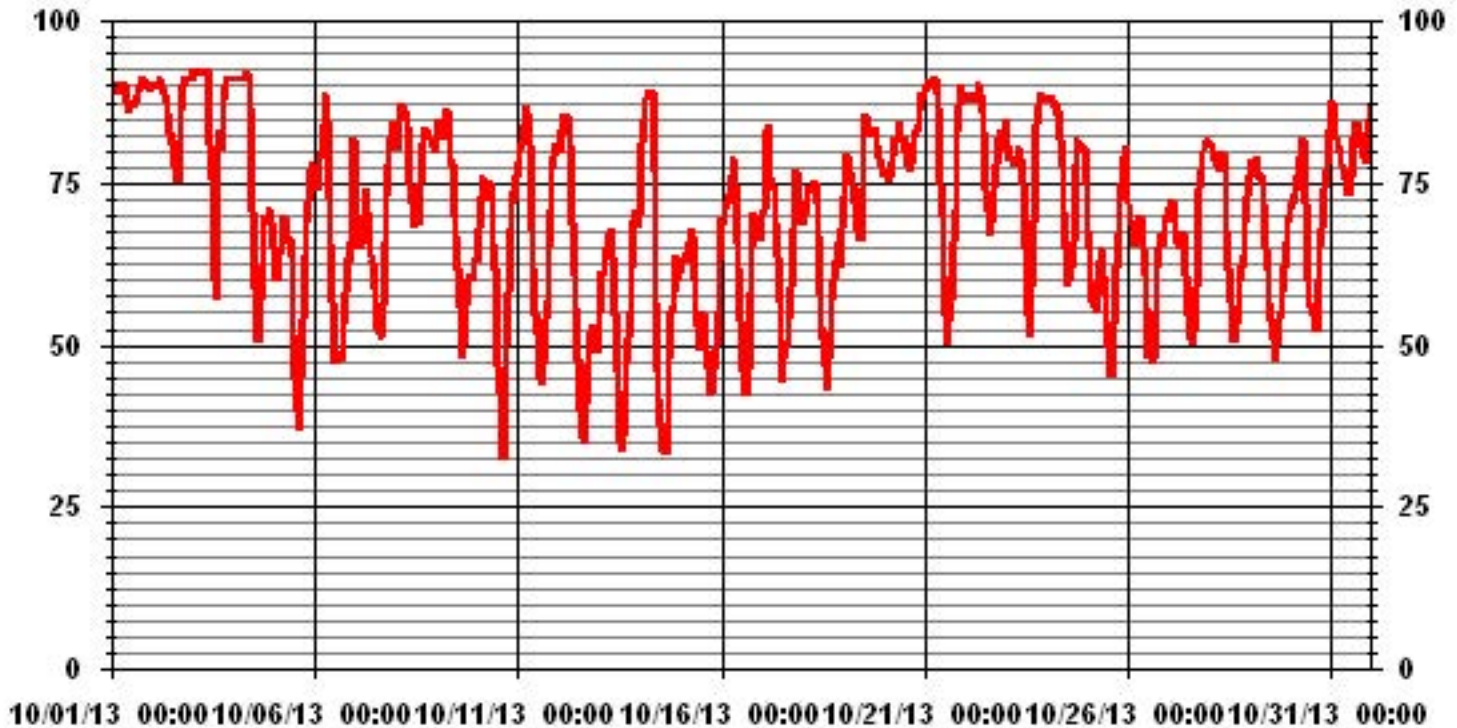
**24 HOUR AVERAGES FOR OCTOBER 2013**



**MONTHLY SUMMARY**

MAXIMUM 1-HR AVERAGE:	92 %	@ HOUR(S)	VAR	ON DAY(S)	3, 4
MAXIMUM 24-HR AVERAGE:	89.1 %			ON DAY(S)	1
VAR-VARIOUS					
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	14.32		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	70.44	%

### 01 Hour Averages



# Barometric Pressure

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

OCTOBER 2013

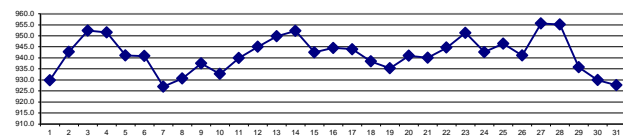
### BAROMETRIC PRESSURE hourly averages (millibar)

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		
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	923	923	924	924	925	926	927	927	928	928	929	930	931	931	931	933	933	934	934	934	935	935	936	936	936	936	929.9	24
2	2	937	937	938	938	939	939	938	941	942	942	943	943	944	944	945	945	945	946	946	946	947	947	947	947	947	947	942.8	24
3	3	948	948	949	949	950	950	951	950	952	952	953	953	953	954	954	954	954	954	954	955	955	955	955	955	955	955	952.3	24
4	4	955	954	955	954	954	954	954	954	953	954	955	954	954	953	952	952	951	949	948	947	946	946	945	944	944	945	951.5	24
5	5	943	943	942	942	941	941	941	941	941	941	941	942	942	941	941	941	941	940	940	940	940	940	940	940	940	943	941.0	24
6	6	940	940	941	941	941	941	941	942	943	943	944	943	943	942	942	942	941	941	940	939	939	938	937	936	944	940.8	24	
7	7	936	935	934	933	932	931	930	929	928	927	926	925	924	924	924	924	923	923	923	923	923	922	923	924	936	927.0	24	
8	8	924	923	924	925	925	925	926	926	927	928	929	930	931	932	933	933	934	934	936	937	937	938	939	939	939	939	930.6	24
9	9	940	940	940	940	941	941	941	941	941	941	941	940	939	938	937	936	936	935	933	933	932	932	931	931	941	937.5	24	
10	10	931	931	931	930	930	930	931	931	932	932	932	933	933	933	934	934	934	934	934	935	935	936	936	936	941	932.7	24	
11	11	936	937	937	938	938	938	939	939	940	941	941	941	941	941	941	941	941	941	941	941	941	941	941	942	942	939.9	24	
12	12	942	942	942	942	942	943	943	944	945	946	946	946	946	946	946	946	946	946	946	947	947	947	947	948	948	945.0	24	
13	13	948	947	947	948	948	948	948	949	949	950	950	951	950	950	950	951	951	951	951	951	951	952	952	952	952	949.8	24	
14	14	952	952	952	952	952	952	952	953	953	954	955	955	954	954	953	953	953	952	951	951	950	950	949	949	955	952.2	24	
15	15	948	947	946	945	944	943	942	942	942	942	941	942	941	941	941	941	941	942	941	941	941	942	942	942	948	942.5	24	
16	16	942	943	943	943	944	944	944	945	946	946	946	946	946	946	946	945	944	944	944	944	944	944	944	944	944	946	944.5	24
17	17	944	944	944	943	943	943	943	943	944	944	944	945	945	945	945	945	945	944	943	943	943	943	943	943	943	945	943.9	24
18	18	943	942	942	941	941	941	940	940	940	939	939	939	938	938	937	937	936	936	936	935	935	934	934	945	943	943	938.4	24
19	19	933	932	932	931	931	930	931	931	931	931	932	933	934	935	936	937	938	939	940	941	942	942	943	943	943	943	935.3	24
20	20	943	943	942	943	942	942	942	942	942	942	942	942	941	941	941	941	941	941	940	939	939	938	938	937	943	941.0	24	
21	21	937	936	937	937	937	937	937	937	938	939	940	940	941	941	942	942	942	942	942	942	943	943	944	944	944	944	940.0	24
22	22	944	944	944	944	943	943	943	943	942	943	943	944	944	944	944	945	945	946	946	946	947	948	948	948	948	948	944.6	24
23	23	949	949	950	950	950	950	951	951	952	952	952	953	953	953	953	952	952	952	952	951	952	951	951	951	951	953	951.3	24
24	24	951	951	950	950	949	948	947	946	945	944	943	942	940	939	938	938	937	937	937	938	938	939	939	939	951	942.6	24	
25	25	940	940	941	941	942	943	944	945	947	948	948	949	949	950	950	950	949	949	949	948	948	948	948	947	950	946.5	24	
26	26	946	945	944	943	942	941	940	939	939	939	939	939	939	939	939	940	940	941	942	942	942	943	943	944	946	941.1	24	
27	27	945	945	947	948	949	950	952	953	955	956	957	958	958	958	959	959	960	960	960	961	960	961	961	961	961	961	955.5	24
28	28	961	961	960	960	960	960	959	959	959	959	958	957	957	956	954	953	952	951	950	949	948	947	947	946	961	955.1	24	
29	29	945	944	942	941	940	939	938	937	937	936	937	936	936	936	935	934	933	933	932	932	931	930	930	930	945	935.8	24	
30	30	929	929	929	929	929	929	929	930	930	931	932	931	932	932	931	931	931	931	930	930	929	929	928	928	932	930.0	24	
31	31	927	927	926	926	926	926	925	925	925	925	925	926	926	926	927	927	928	929	930	931	932	933	933	933	933	933	927.7	24
	HOURLY MAX	961	961	960	960	960	960	959	959	959	959	958	958	958	958	959	959	960	960	960	961	960	961	961	961	961			
	HOURLY AVG	941	941	941	941	941	941	941	941	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942			

#### 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 OCTOBER 2013



#### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	961	MB	@ HOUR(S)	VAR	ON DAY(S)	27, 28
MAXIMUM 24-HR AVERAGE:	955.5	MB			ON DAY(S)	27
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	8.45		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	942	MB	

### 01 Hour Averages



# Vector Wind Speed

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

OCTOBER 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	8.2	10	9.4	8.5	9.4	7.1	6.8	5.9	5.4	4.5	4.3	7.5	5.5	5.9	4.4	5.2	3.8	2.4	3.3	3.8	5.8	6	6.9	5.1	10	4.6	24
2	7.5	5.7	7	4.7	4.6	4.9	5.4	7.2	7.4	9.2	7.4	7.7	7.4	5.6	7	6.1	3.3	0.9	0.8	0.7	1.1	1	1.7	1.9	9.2	4.3	24
3	1.7	1.3	1.7	1.7	0.3	0.4	0.9	1.2	2.5	2.6	2.7	4.2	5.5	3.4	3	2.5	0.8	1.3	1	1	2.1	1.1	0.9	1.7	5.5	0.7	24
4	0.9	1.9	0.9	1	1	1	2.9	5	2.8	3.4	6.4	8.2	9.9	12.1	11.2	9.5	6.1	7.3	7.7	9.7	11.7	9	8.7	9.2	12.1	5.8	24
5	8.9	8.6	7	6.2	7.4	7.7	6.9	9.2	8.4	8.4	7.5	8.9	10.9	11.8	12.3	10.5	8.6	5.5	3	3.5	3.4	2.9	3.2	4.5	12.3	6.3	24
6	5.2	6.2	6.7	6.9	6.3	4.8	3.9	4	4.1	4.7	3.4	8.1	9	6.3	6.2	6.7	5.8	4.5	5.2	4.9	4.5	4.1	3.6	3.9	9	4	24
7	6.7	7.9	8	7.6	7.1	8	6.6	6.1	6.4	7	7.7	10.2	8.5	8.4	5	4	5.1	3.6	4.1	4	4.2	4.3	4.9	6.1	10.2	3.2	24
8	6.3	3.2	3.8	4.6	5.9	4.8	6	3.9	5.5	9.9	10.2	10.2	10.2	10.4	10.1	10.7	9.6	8.7	8.6	8.7	9.3	9.1	9.3	6.5	10.7	7.3	24
9	7.1	6.9	6.7	6.2	6.7	3.6	3.2	3.8	5	4.5	5.5	8	7.9	9.4	11.4	11.5	11.8	7.4	8.2	10.1	10.7	9.4	8.8	8.8	11.8	5.4	24
10	7.9	4.5	0.9	2.4	3.3	4.5	1.9	3	2.1	3.9	6.1	5.7	5.8	5.3	6.6	6.6	6.8	5.3	2.9	1.2	1.8	2.6	2.5	2.6	7.9	3	24
11	2.7	2.8	3	1.7	1.3	1.9	2.5	3.2	4	3.6	6.9	6.5	7.1	7.3	7.8	8.6	7.2	6.2	4.5	3.3	2.7	3.1	4.3	4.4	8.6	4.2	24
12	5	3.2	3.2	2.7	3.5	3.9	4.4	2.7	4.5	5	6.1	6.5	8.2	7.6	7.1	5.6	2.7	1.8	0.6	1.4	3.5	3.6	3.2	4.4	8.2	3.2	24
13	3.5	3.4	4.2	3.9	4.4	3.4	3.3	4	2.9	3.7	5.5	5.8	6.3	6.7	7	7.2	6.6	5.2	3	2.6	2.2	2.4	2	0.7	7.2	3.5	24
14	0.9	1	2.4	0.7	1.6	1.6	1.7	1.5	3.7	4.1	7	7.7	8.7	8.8	8.5	6.8	6.5	4.4	4.6	7.1	6.5	4.3	6.6	6.2	8.8	4.5	24
15	7.1	9.7	9.4	9.6	7.2	6.4	6.8	6.4	6.3	7.1	6.7	10.1	11.3	9.9	7.6	9.5	11.4	8.2	8	8	7.1	5.5	4.2	6.8	11.4	5.7	24
16	5.6	6	6.5	5.3	4.3	5.9	5.2	5.5	5.5	5.2	5.4	8	7.5	6.7	7.1	7.6	5.4	1.7	1.8	1.8	2.3	3.9	3.3	3.3	8	4.6	24
17	2.5	2.1	2.4	2	2.7	2.5	2.5	3.5	4.8	5.5	7.2	9	10.6	10.1	9.3	8.9	7.1	2.8	2.5	2.5	2.4	3.7	3.8	4.1	10.6	3.8	24
18	2.7	3.3	3.3	3	3.2	3.8	2.6	3.3	2.7	2.3	3.3	5.1	5.8	5.7	5	3.8	2.4	0.7	0.9	1	2	4.3	5.2	4.6	5.8	2.9	24
19	3.5	3.2	3.6	3.1	4.1	6.1	6.6	8	7.4	8.4	7.9	8.4	8.4	7.5	7.1	7.9	5.9	6.1	5	10	9.5	11.9	8.8	6.7	11.9	4.8	24
20	5.2	1.8	1.8	1.4	1.9	2.9	3.5	3.4	4.2	3.9	4	4.3	4.2	3.8	3.8	3.2	4.1	3.4	3.9	3.2	4.2	4.5	3.5	4.6	5.2	2.8	24
21	2.4	2.4	2.9	4	3.8	5	5.3	4.9	5.4	7.5	6.8	7.9	7.1	8.9	6.9	5	3.1	0.8	1.9	2.7	3.2	3.6	3.3	3.5	8.9	2.5	24
22	5.3	4.4	4.7	3.9	4	3.6	1.1	2.2	5.3	0.9	1.5	2.7	6.2	6.7	6.7	6.6	7.6	7.5	4.2	3.1	3.8	3.7	4.4	4.4	7.6	1.5	24
23	3.5	3.9	3.3	5.3	2.2	2.4	2.2	3.5	3.6	4.2	4.6	4.4	3.9	5.4	6.1	4.6	2.1	0.7	2.2	4.4	2.6	3.1	2.6	4.5	6.1	2.5	24
24	0.9	3.8	8.8	9.2	9.3	9.7	9.1	9.1	10.3	8.4	10.6	13.7	15.8	15.3	12.9	10.1	6.9	3	4.5	5.5	5.9	6.4	6.9	8.4	15.8	5.9	24
25	9.3	9.9	11.2	10.4	10.5	12.1	9.6	8.6	10.1	9.4	9.6	9.2	8.8	8.1	7.6	6.5	4.6	1	3.6	1.7	3.3	3.4	5.5	4	12.1	5.4	24
26	6.8	8.9	6.4	7.3	7.6	5.7	6.4	4.4	5.9	4.5	5.9	5	5.8	5.7	6.8	7.8	7.1	5.5	13.5	12.4	11.1	12.7	12.2	12.6	13.5	2.1	24
27	16.4	15.4	13	14.6	15.4	16.8	15.7	15.1	17.1	15.2	11.9	11.4	12.2	12	9.5	6.8	4.9	3.9	2.8	3.3	3.3	3	3.8	1.3	17.1	9.9	24
28	2.2	2.6	2	2.3	1.4	1.8	0.4	2.4	6.7	7.2	7.4	8.4	8.6	9.7	12.5	12.1	10.5	9.2	9.5	9.6	12.1	11.4	11	10.9	12.5	7	24
29	10.8	10.9	10.9	7.5	7.2	8.7	9	8.5	9.1	9.8	9.9	10.5	12.1	11.4	10	8.5	7.8	7.1	9.9	13.1	14	9	7.4	7.3	14	9.5	24
30	8.2	8	6.2	5	5.4	5.1	4.9	3.6	2.5	3.4	7.3	5.7	4.9	5.5	4.6	4.6	4.6	5.4	4.8	5.7	5.1	5.5	4.7	3.4	8.2	4.4	24
31	3.9	4.4	5.8	5	6.1	5.3	7.4	3.7	5.2	5.5	5.3	7.6	10.2	9.2	9	9.1	8.2	7.8	9.1	8.5	7.4	4.6	4	4.4	10.2	5.3	24
HOURLY MAX	16.4	15.4	13.0	14.6	15.4	16.8	15.7	15.1	17.1	15.2	11.9	13.7	15.8	15.3	12.9	12.1	11.8	9.2	13.5	13.1	14.0	12.7	12.2	12.6			
HOURLY AVG	5.4	5.4	5.4	5.1	5.1	5.2	5.0	5.1	5.7	5.9	6.5	7.6	8.2	8.1	7.7	7.2	6.1	4.5	4.7	5.1	5.4	5.3	5.2	5.2			

STATUS FLAG CODES

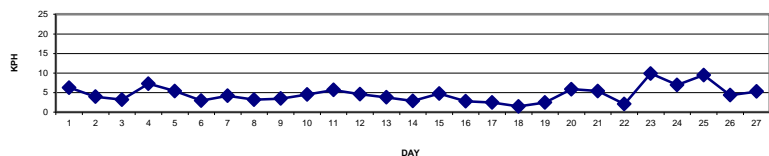
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION: December 20, 2011

MONTHLY SUMMARY

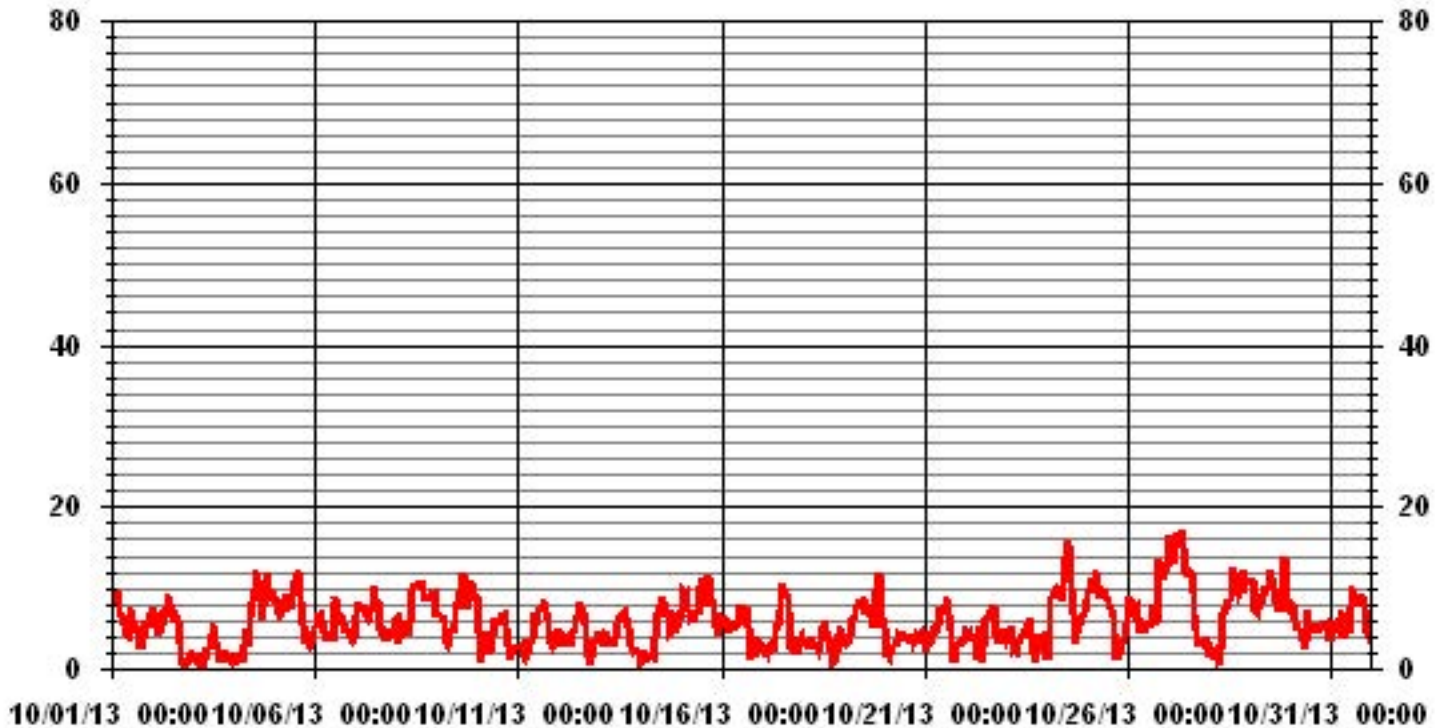
MAXIMUM 1-HR AVERAGE:	17.1	KPH	@ HOUR(S)	8	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	9.9	KPH			ON DAY(S)	27
CALMS (≤ 1 KPH)	1.61	%	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	3.15		MONTHLY AVERAGE:	5.84	KPH	

24 HOUR AVERAGES FOR OCTOBER 2013





# 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

OCTOBER 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	33.3	39.6	32.1	29.9	35.2	28.2	21.8	21.8	18.6	15	16.8	19	14.8	15.6	11.6	15.4	10.9	7.6	9.6	11.5	16.1	15.5	20.3	13.7	39.6		
2	20.8	17.5	22.5	18.8	16.2	15.5	15.7	22.3	19	21.4	20.3	21.4	25.6	21.8	15.5	16.8	13.5	3.9	9.4	3.5	3	6.9	4.3	3.9	25.6		
3	5	3.4	3.6	2.8	2.6	4.5	4.8	6.8	7.6	7.4	8.5	14.6	15.7	13.9	20.7	17.7	14.4	10.2	10	9.3	4.3	9.7	10.7	4.8	20.7		
4	2.8	5	4.8	9.3	8.7	10.2	9	14	10	10.9	19.7	25.6	33.4	35.6	32	29.1	17.7	21	20.9	33.2	30.9	25.7	23.6	25.3	35.6		
5	24.9	23.8	17.7	14.3	17.3	16.3	17.8	18.4	20.2	25.1	22	38.9	42.8	56.7	54.7	42.2	43.4	30.2	13.7	13.1	13.8	12.8	14.6	13.3	56.7		
6	16.6	18.3	19.3	19.7	18.8	15.5	11.5	11.5	12.8	10.8	16.4	19.9	24.7	19	16.8	16.3	12.6	9.3	11.5	9.1	10.4	8.4	8.6	10.4	24.7		
7	15.7	16.4	21.9	19.1	17.8	24.8	19.6	20.2	24.9	19.8	21.7	29.7	22.7	30.9	17.1	14	17.8	9.1	10.4	15.4	12.7	20.6	15.2	22.5	30.9		
8	20	14.8	9.7	11	13.3	13.6	20.2	20.3	22	31.5	35.3	36.8	34.3	38	38.9	39.6	36.7	33.9	27.3	34.3	28.4	30.2	28	26.2	39.6		
9	24.5	25.1	18.7	22.1	29.1	15	14.4	19.2	19	17.2	20.3	26	29.1	28.6	40.3	27.4	32.3	20.2	20.6	24	28	23.4	20.1	17.7	40.3		
10	24.5	12.2	6.5	9.1	10.4	10.9	9.8	11.2	10	11.5	16.8	20.1	19.6	22	27.5	32.1	30.4	19.9	15.9	6.1	6.5	10.2	8.7	9.1	32.1		
11	11.1	10.7	12	10.9	11.5	11.1	12.2	10.9	12.2	13.7	22.9	23.6	26	30.6	32.6	30.1	33.8	24.3	17.3	14.4	9.8	11.8	13.5	19.2	33.8		
12	16.4	12.9	12.4	12	13.8	15.5	17.2	13.5	17.2	18.6	19.4	27.5	32.6	25.8	27.3	23.8	16.6	6.9	5.9	4.8	9.7	10.7	12.2	13.3	32.6		
13	10	9.1	9.8	8.5	13.1	8.3	7.1	9.1	8.5	11.4	15.5	27.1	25.1	22.7	24.4	22	22.5	18.1	11.1	12.8	8.7	9.6	6.1	4.3	27.1		
14	4.8	10.2	10.3	5	10.2	10.2	9.1	9.3	9.3	12.2	18.8	21.6	31	29.5	27.1	23.7	19.5	9.7	10.4	16.6	16.4	13.3	14.1	15	31		
15	18.3	21.6	19.2	22.1	15.9	16.1	18.7	18.3	21.4	17.4	27.7	37.6	52.7	31	32.3	34.8	41.7	32.1	22.5	24	22.3	21.4	19	24.2	52.7		
16	20.8	23.6	25	21	16.4	22.5	18.6	21.6	19.4	22.7	25.1	24.5	28.2	31.3	30.8	34.8	24	11.2	9.2	8.9	10.4	10.9	13.7	12.6	34.8		
17	10.7	10.9	10.9	10.4	6.3	11.4	12	12.9	17.5	33.5	27.3	33.9	40.4	38.7	31.7	32.8	29.3	13.3	8.5	10.7	11.2	13.2	13.3	11.8	40.4		
18	8.7	15.9	12.9	14.6	10.4	20.1	10.2	8.7	7.6	8.3	12.7	24.5	19.3	20.7	23.6	15.7	12.2	7.1	5.4	7.1	5.8	9.6	9.8	10.4	24.5		
19	8.3	9.8	10	14.6	12.2	19.5	29.2	31.3	26	31	26	33.7	31.3	30.6	29.3	31.3	21.4	21	18.3	24.5	23.5	28.6	24.3	14.8	33.7		
20	12.6	13.7	12.6	13.7	13.5	10.7	10.3	8.3	13.9	13.9	13.5	13.3	14.8	10.4	14.6	9.8	10.9	8.9	12.9	11.3	14.4	13.5	11.8	14.4	14.8		
21	14.8	10.9	14.2	13.3	13.9	16.4	14	14.4	16.6	30.4	25.3	29.7	25.3	29.3	24.9	20.7	11.1	6.1	7.4	8.3	10.5	13.1	12	10.7	30.4		
22	12.9	15.6	15.7	13.8	13	16.6	12	13.7	19.7	6.9	7.1	8.9	23.4	24.5	35.7	34.2	27.8	29.7	14.8	13.7	12.2	11.1	16.2	14.4	35.7		
23	12.4	14.8	10.9	12.9	8.8	8.6	9.9	9.5	11.9	13	14.5	14.4	14.2	17.7	17.6	14.7	10.1	6.8	11.9	14.1	11.1	13.3	13.8	15.2	17.7		
24	11.9	12.6	23.6	25.2	27.3	24.9	19.6	26.1	26.9	24.8	32.3	34.7	40.5	42.2	33.2	22.5	20.9	9.9	13.1	15.1	17.7	18.8	21.6	21.9	42.2		
25	26.3	30.4	37.6	31.4	31.8	46.4	33.3	29.7	40.8	31	32.3	26.3	25.2	33.6	22.4	23.4	15.1	6.9	12.4	12.5	6	7.1	10.8	12.2	46.4		
26	17.5	24.8	14.2	23.2	23.2	17.7	17.3	12.9	15.5	13.8	16.9	14.1	15.4	18.9	23.2	31.1	28.5	25.4	41.6	36.6	29.5	32.6	28.7	33.4	41.6		
27	36.9	34.6	37.9	37.8	32.6	37.5	38.1	33.6	36.6	32.5	30.7	28.7	28.3	26	26	19.4	18.8	17.5	19	13.2	19.6	18.2	21.3	14.5	38.1		
28	17.1	16.7	31.2	<b>82.5</b>	21.6	22.3	82.4	63.5	14.5	15.2	16.9	21.4	23.5	29.6	35.5	30.7	28	31.4	22	22.2	29.1	27.2	28.5	28	<b>82.5</b>		
29	27.1	34.4	31.8	18.7	16.9	24.8	19.8	22.6	28.2	26.6	25.5	27.4	28.4	31.1	27	23.9	20.3	16.3	27.2	29.2	33.9	32.4	23.7	20	34.4		
30	23.3	24.4	19.3	17.6	16.5	14.1	13.3	14.5	15	14.1	28.7	20.4	16	16.6	16.8	13.9	10.4	11.9	11.7	14.5	15.5	11.1	13.3	10.2	28.7		
31	8.1	14.7	15.1	12.5	15.1	13.4	16.9	9.7	14.4	12.1	14.6	26.9	31.8	28.6	28.4	25.8	30.8	27.8	33.6	26.1	20.3	18.3	16.2	17.7	33.6		
PEAK	36.9	39.6	37.9	82.5	35.2	46.4	82.4	63.5	40.8	33.5	35.3	38.9	52.7	56.7	54.7	42.2	43.4	33.9	41.6	36.6	33.9	32.6	28.7	33.4			

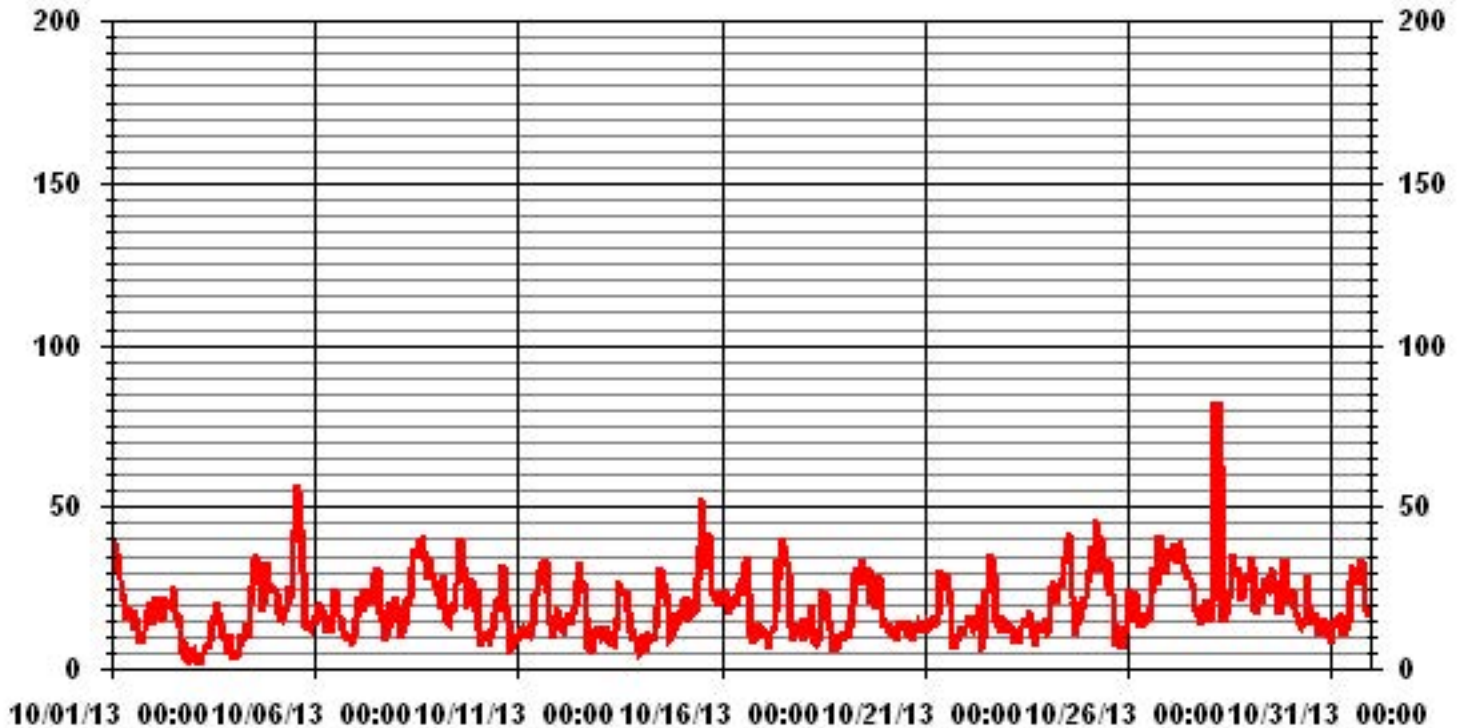
**STATUS FLAG CODES**

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 INSTANTANEOUS READING	82.5	KPH	@ HOUR(S)	3
			ON DAY(S)	28

# 01 Hour Averages



LICA30  
WSP / WDR Joint Frequency Distribution (Percent)

October 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	4.03	2.15	.94	1.20	.80	.67	2.01	2.68	2.68	7.12	7.39	7.66	8.19	3.49	2.41	2.01	55.51
< 12.0	.80	2.41	.53	.13	.53	.53	1.47	1.74	2.55	8.33	3.09	.00	3.09	8.33	3.76	3.09	40.45
< 20.0	.00	1.47	.80	.00	.00	.00	.00	.00	.26	1.20	.00	.00	.13	.00	.13	.00	4.03
< 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	4.83	6.04	2.28	1.34	1.34	1.20	3.49	4.43	5.51	16.66	10.48	7.66	11.42	11.82	6.31	5.10	

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	30	16	7	9	6	5	15	20	20	53	55	57	61	26	18	15	413
< 12.0	6	18	4	1	4	4	11	13	19	62	23		23	62	28	23	301
< 20.0		11	6						2	9			1		1		30
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	36	45	17	10	10	9	26	33	41	124	78	57	85	88	47	38	

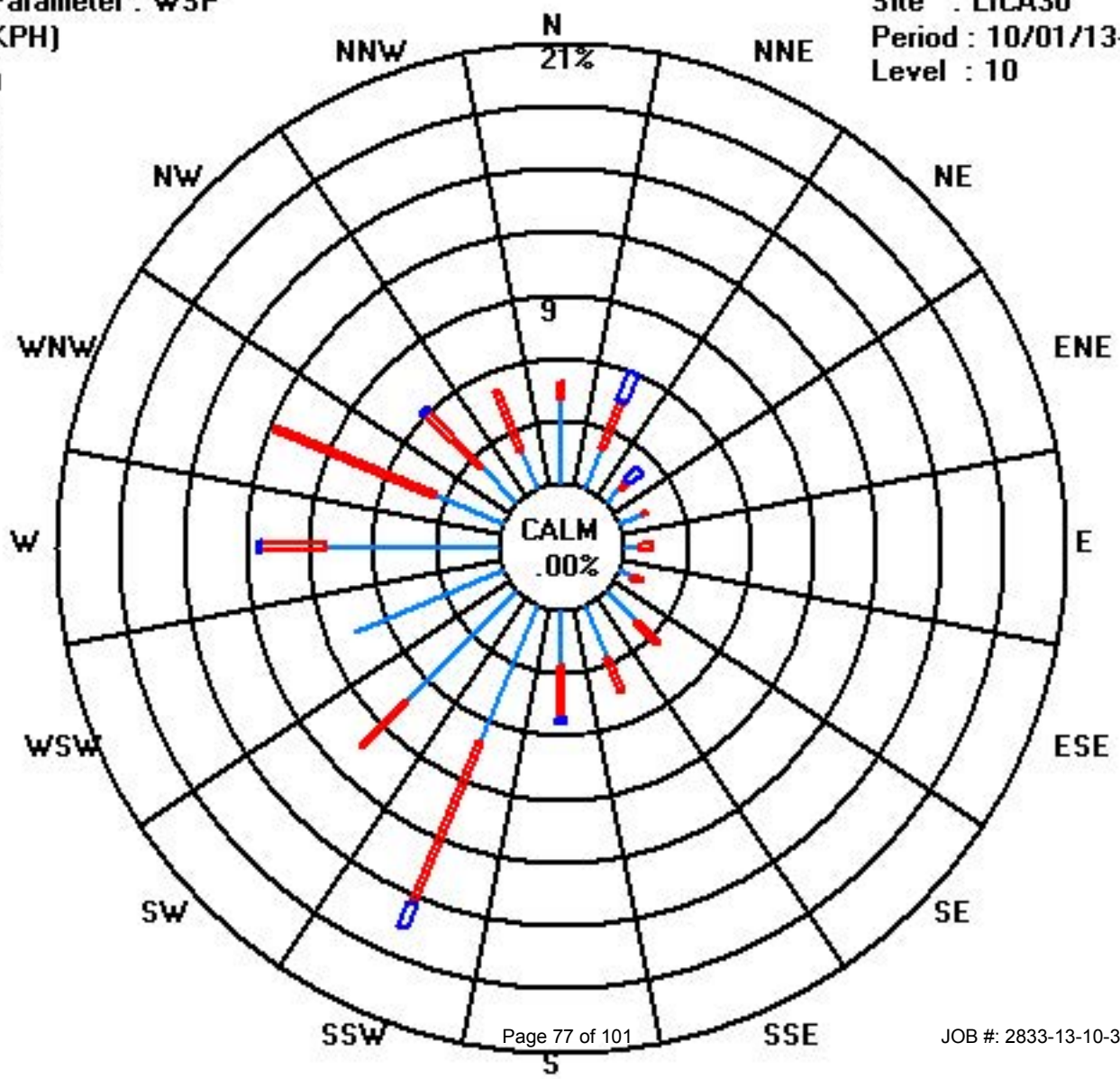
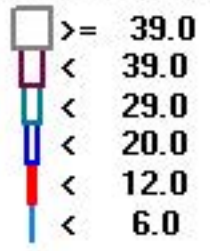
Calm : .00 %

Total # Operational Hours : 744

Class Limits (KPH)

Period : 10/01/13-10/31/13

Level : 10



# Vector Wind Direction

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

OCTOBER 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	282	291	296	295	291	288	291	296	305	319	354	21	12	19	16	19	8	351	359	9	21	21	17	10	333	NNW	24
2	18	12	13	11	17	9	15	24	22	26	22	22	25	3	36	21	14	21	124	140	161	192	216	193	20	NNE	24
3	227	185	207	198	203	349	334	8	12	14	357	346	358	302	261	31	263	284	171	195	206	199	240	209	313	NW	24
4	198	204	208	197	207	225	197	198	203	215	197	176	188	192	193	190	176	157	143	152	159	160	166	177	178	S	24
5	189	191	193	205	201	211	211	208	212	216	227	260	276	269	267	270	269	259	253	245	247	250	254	230	235	SW	24
6	270	271	278	280	272	258	244	260	253	280	255	209	208	226	213	206	211	201	192	185	176	130	139	128	228	SW	24
7	145	139	128	120	106	104	98	85	86	83	102	126	135	169	237	228	238	238	228	249	246	249	260	276	144	SE	24
8	278	244	238	218	215	238	266	260	279	288	287	286	287	283	287	288	283	289	293	292	294	294	297	280	280	W	24
9	291	288	279	279	278	265	269	250	249	239	240	233	221	215	206	200	190	171	153	147	156	166	170	191	211	SSW	24
10	196	212	124	157	166	193	190	198	198	226	214	222	293	289	269	272	280	290	275	251	235	283	268	254	242	WSW	24
11	268	252	248	269	250	269	239	260	294	270	286	300	285	282	282	288	290	310	323	328	260	276	286	281	284	WNW	24
12	286	277	271	247	240	269	275	287	316	327	320	314	317	314	329	329	314	239	189	181	212	228	232	215	290	WNW	24
13	219	215	213	213	211	224	224	213	222	235	226	258	285	288	294	291	288	280	269	254	261	261	243	177	254	WSW	24
14	107	130	213	173	212	214	210	251	211	212	215	218	205	220	221	222	213	190	191	197	202	211	208	208	210	SSW	24
15	207	205	202	203	210	213	211	219	226	210	231	289	289	285	277	287	283	315	304	292	296	315	329	343	260	WSW	24
16	352	344	350	351	334	326	315	313	315	315	313	314	330	336	309	306	287	281	253	255	279	289	280	255	317	NW	24
17	253	243	230	205	213	238	251	273	316	344	336	316	315	313	323	336	321	282	237	239	255	261	269	288	300	WNW	24
18	265	283	272	265	263	266	237	227	229	250	246	268	282	296	276	260	257	138	207	192	206	209	207	215	252	WSW	24
19	222	227	220	239	263	276	283	294	300	311	328	327	328	333	345	351	341	329	339	21	20	29	32	35	334	NNW	24
20	36	38	80	90	110	166	171	173	167	136	126	147	152	144	149	167	147	165	172	159	184	203	188	200	156	SSE	24
21	222	231	273	266	261	274	281	282	279	304	315	318	326	356	3	333	319	262	76	78	85	83	107	129	315	NW	24
22	164	188	165	154	134	135	104	194	202	305	349	323	320	322	325	327	327	354	359	352	359	3	3	12	335	NNW	24
23	2	10	356	20	351	355	334	11	2	308	299	287	297	347	358	355	29	346	58	87	59	121	60	76	3	N	24
24	54	130	141	133	131	141	143	158	159	165	163	183	185	199	207	199	207	242	246	271	274	277	280	284	185	S	24
25	285	296	297	295	303	313	330	338	338	339	332	316	311	312	330	325	353	73	164	154	176	177	171	155	313	NW	24
26	177	184	185	180	192	212	218	235	230	251	275	286	289	280	295	328	333	340	12	18	14	24	29	30	321	NW	24
27	35	34	43	42	28	29	25	36	28	32	51	32	31	36	44	61	59	49	49	40	40	66	82	167	38	NE	24
28	203	224	233	266	204	164	247	228	205	208	210	197	206	209	195	202	200	189	187	195	203	209	210	205	203	SSW	24
29	200	198	195	191	199	207	206	208	211	216	209	200	196	199	206	203	198	202	205	207	206	215	221	220	205	SSW	24
30	218	219	226	228	223	229	233	253	275	302	316	316	275	272	258	236	226	223	224	217	217	212	217	217	239	WSW	24
31	201	205	206	217	210	220	212	221	220	221	220	275	284	286	284	284	288	298	298	301	291	282	272	268	262	W	24
HOURLY AVG	352	344	356	351	351	355	334	338	338	344	357	346	358	356	358	355	353	354	359	352	359	315	329	343			

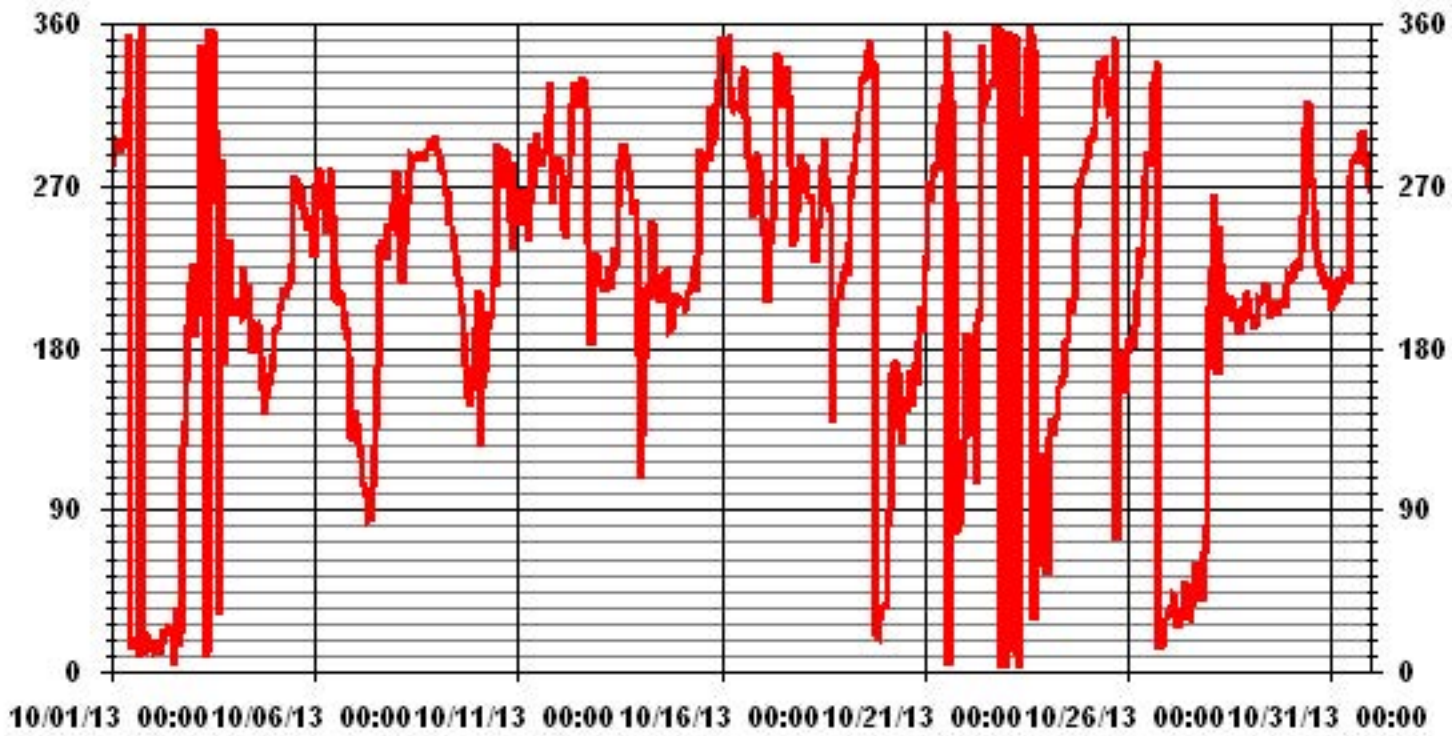
**STATUS FLAG CODES**

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:	89.17	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	258 DEG

### 01 Hour Averages



— LICA30 WDR DEG



# Standard Deviation Wind Direction

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

OCTOBER 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	31	31	31	31	29	33	32	29	32	35	35	21	21	23	21	21	22	35	25	20	18	19	18	19
2	19	21	21	20	28	21	19	18	18	18	22	23	22	32	20	20	30	49	34	34	27	31	29	13
3	25	24	13	9	54	48	56	36	27	38	38	34	32	43	44	51	51	59	53	42	13	56	37	18
4	48	14	51	28	41	53	17	23	34	35	24	28	25	23	25	23	21	20	19	21	21	22	22	22
5	20	22	25	24	19	17	17	18	20	21	31	38	35	38	35	37	37	36	42	33	32	32	32	22
6	30	30	28	25	30	27	32	36	37	30	41	29	30	38	31	23	23	18	14	13	17	15	22	23
7	20	20	23	23	24	25	25	28	34	29	28	28	29	31	47	38	32	25	31	33	30	30	26	27
8	28	33	30	16	19	26	31	32	36	27	30	28	30	30	30	27	31	28	29	28	26	28	27	33
9	30	29	27	27	29	28	35	41	37	38	38	32	31	29	22	22	20	19	15	17	21	21	21	18
10	18	24	51	40	32	23	53	34	32	27	26	30	32	39	38	34	31	29	40	37	28	30	29	29
11	28	31	31	43	41	38	28	32	26	37	34	33	37	37	36	30	31	34	37	39	29	29	29	25
12	24	28	26	31	27	33	31	43	36	35	32	40	36	34	35	34	44	36	67	54	20	24	28	17
13	32	19	16	14	22	15	14	15	32	31	34	44	34	34	28	26	25	26	26	29	39	28	30	50
14	50	48	38	40	24	25	23	18	20	26	26	27	30	30	32	33	21	13	14	12	15	16	16	16
15	15	14	14	13	17	19	18	22	25	21	30	33	27	31	35	28	27	35	26	26	24	36	37	34
16	28	31	34	29	35	35	36	33	34	35	39	32	39	39	40	33	31	54	41	35	30	21	27	29
17	28	33	20	38	16	22	25	26	31	33	36	36	35	34	36	36	37	34	26	29	31	25	25	23
18	32	26	24	28	30	26	25	17	20	33	36	29	30	35	32	30	29	58	36	50	22	14	12	14
19	16	18	16	20	26	26	26	24	26	29	38	35	34	34	35	30	35	33	34	21	23	14	17	18
20	16	36	38	52	31	24	25	26	26	29	32	31	31	34	30	31	22	21	26	26	25	28	22	25
21	35	27	35	26	24	23	22	24	22	29	36	34	34	29	29	38	37	50	44	29	23	27	25	28
22	19	27	26	30	28	27	43	52	39	46	51	37	35	36	36	39	34	27	23	24	26	23	22	13
23	22	21	31	19	36	32	31	30	33	38	34	41	50	44	36	29	47	43	42	19	33	32	43	22
24	52	22	21	19	21	20	19	25	24	27	25	22	22	21	23	19	25	34	25	24	22	23	21	21
25	21	22	26	25	29	31	36	34	37	33	33	33	31	33	36	35	31	24	37	45	30	37	17	26
26	20	20	21	21	25	28	26	28	27	35	33	35	36	36	33	28	34	32	20	19	19	15	15	14
27	18	17	22	22	15	15	15	19	15	19	25	23	23	21	25	29	22	19	25	24	20	32	21	47
28	56	24	38	33	59	42	71	30	21	22	28	23	32	28	21	21	19	19	19	18	18	20	20	19
29	18	19	19	21	20	20	18	21	24	25	23	23	19	21	22	19	18	19	19	18	17	24	23	26
30	24	25	28	31	25	21	19	39	41	43	33	35	32	33	29	30	16	14	16	13	15	13	18	26
31	17	16	20	23	19	26	19	46	44	21	20	29	27	25	26	25	26	25	23	23	25	29	25	27

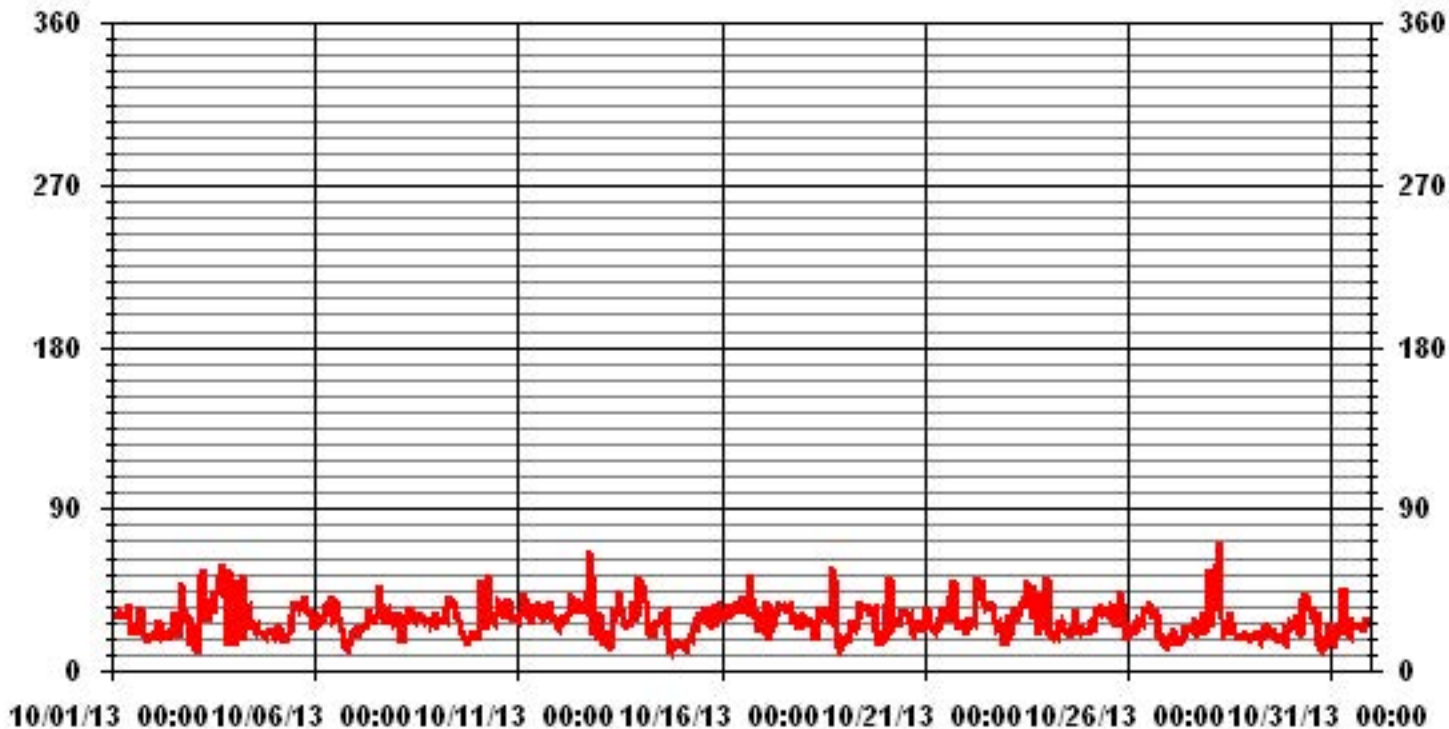
### STATUS FLAG CODES

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

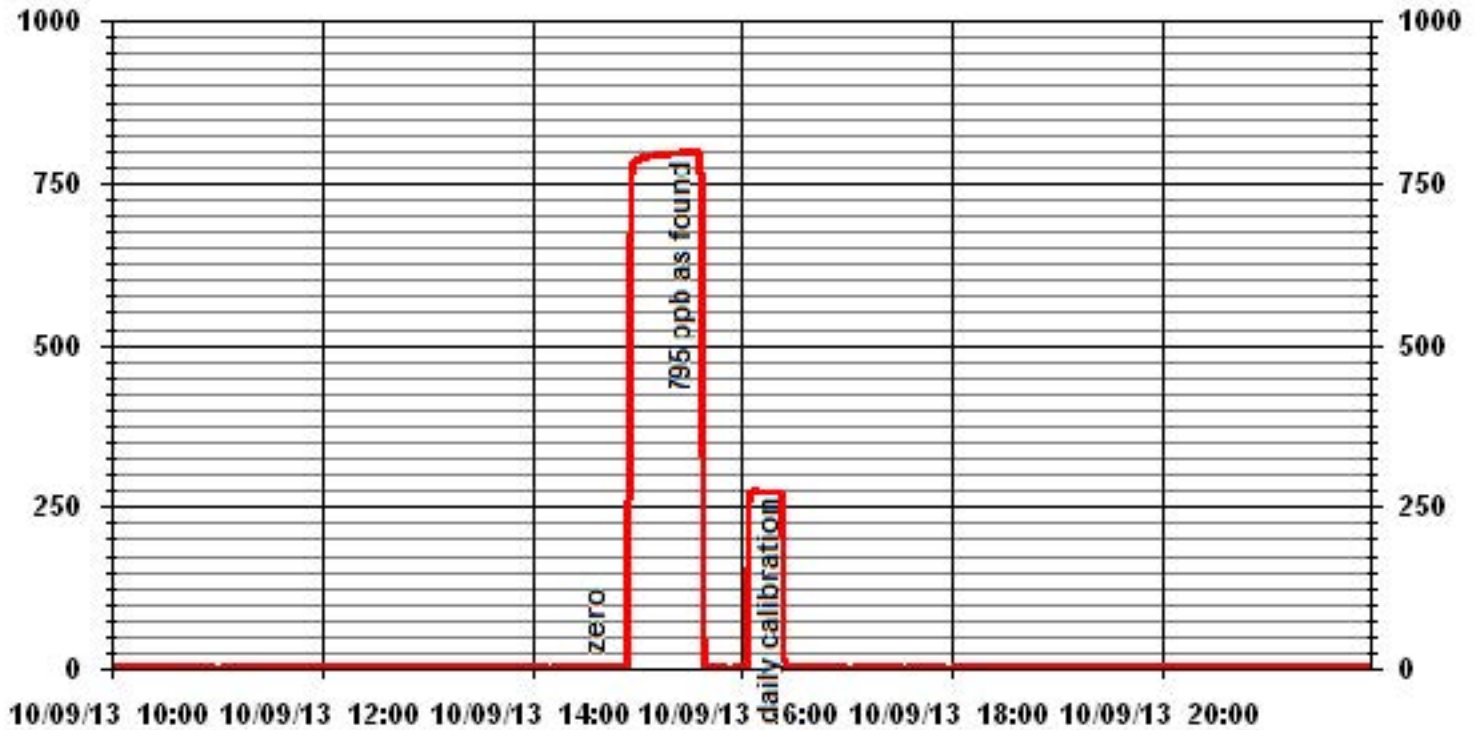


# Calibration Reports

# Sulphur Dioxide



### 01 Minute Averages



## SO2 Calibration Report

### Station Information

Calibration Date	October 17, 2013	Previous Calibration	September 11, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	LICA Maskwa		
Start Time (MST)	11:10	End Time (MST)	14:21
Reason:	Monthly calibration		
Barometric Pressure	27.93 in HG	Station Temperature	22 Deg C
Cal Gas	49.7 ppm	Gas Cyl. #	BAL3165
DAS Output Voltage	0-1 Volts	Cal Gas Expiry date	December 29, 2016
		Chart Rec. Output	N/A Volts

### Equipment Information

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

### Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0-1000 ppb				
Sample Flow / Box Temp	509 ccm	28.7 Deg C	506 ccm	31.2 Deg C	
HVPS / Lamp Setting	491	3076	491	3066	
PMT / RxCell Temp	7.7 Deg C	50 Deg C	7.7 Deg C	50 Deg C	
Converter / IZS Temp	N/A Deg C	45 Deg C	N/A Deg C	45.0 Deg C	
Offset / Slope	77.5	1.1	79.2	1.097	

### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	1	N/A
4994	0	0	0	N/A
4920	80.5	800	802	0.9975
4920	80.5	800	800	1.0000
4960	40.3	400	397	1.0082
4978	20.1	199	199	1.0000
4994	0	0	0	N/A
Sum of Least Squares				1.0017
New Correction Factor				1.0000

### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0		0.0
Auto Span	235.0		290.5
Sample Lines Connected			Yes

### Percent Change

Previous Month's Calibration Correction Factor:	0.9992
Current Correction Factor Before Span Adjust:	0.9975
Percent Change:	0.2%

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

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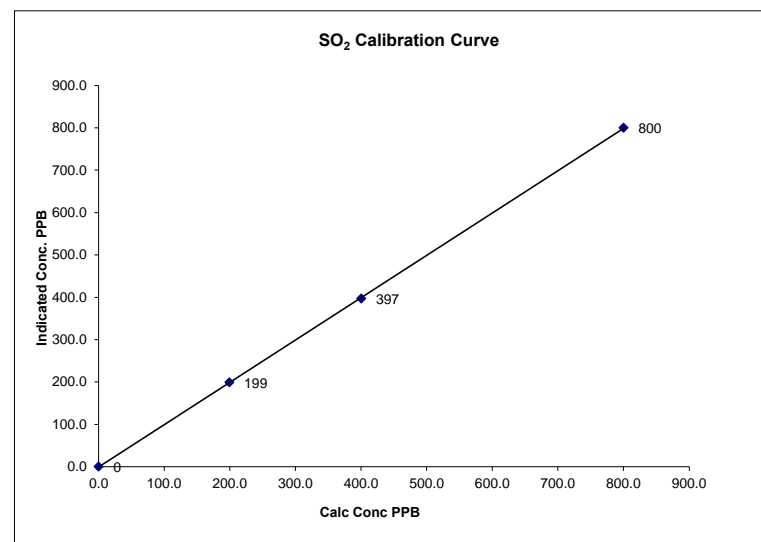
---

Calibration Performed by: Waseem Ahmed

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

Calibration Date	October 17, 2013
Company	Lakeland Industry & Community Association
Plant / Location	LICA Maskwa
Start Time (MST)	11:10
End Time (MST)	14:21

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		0.999979
199	199	1.0000		0.999745
400	397	1.0082		-0.842719
800	800	1.0000		



Notes:

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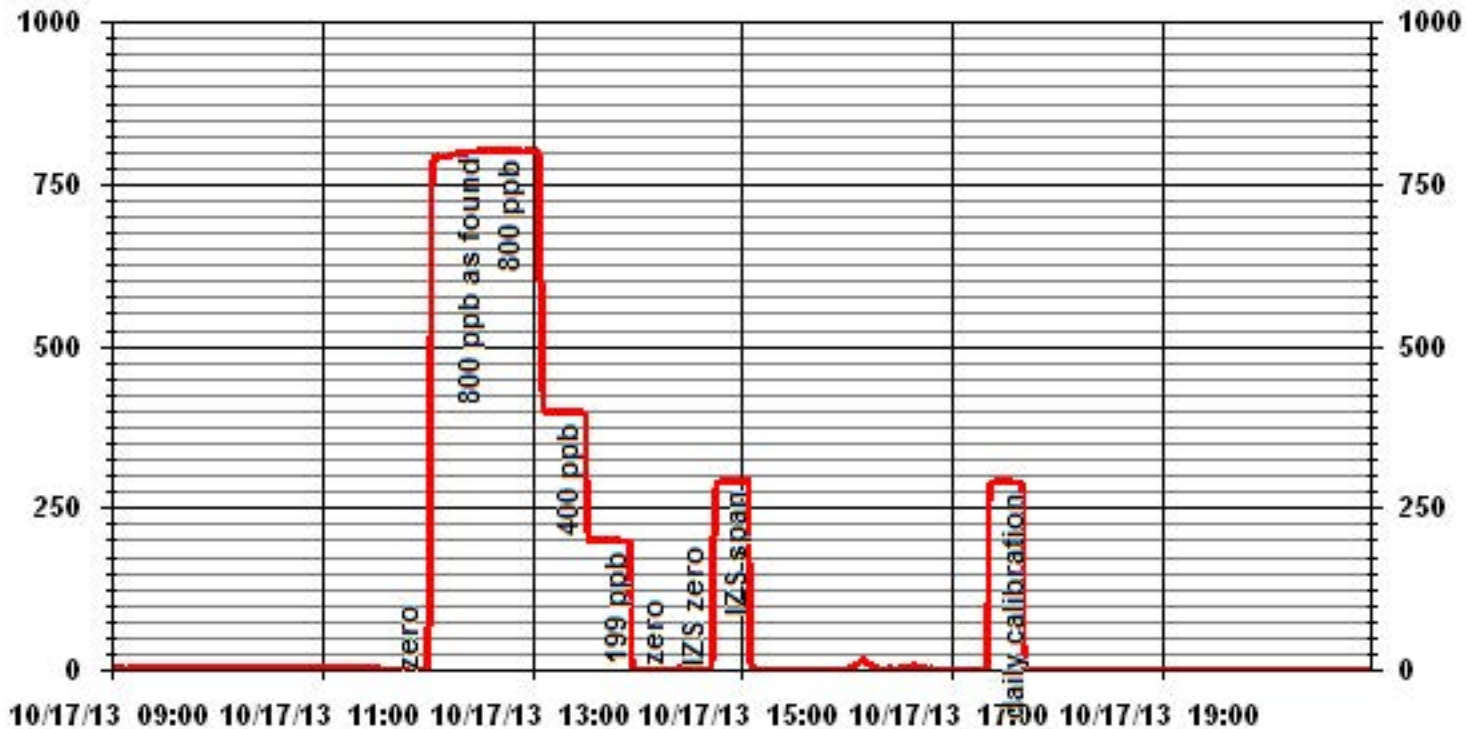
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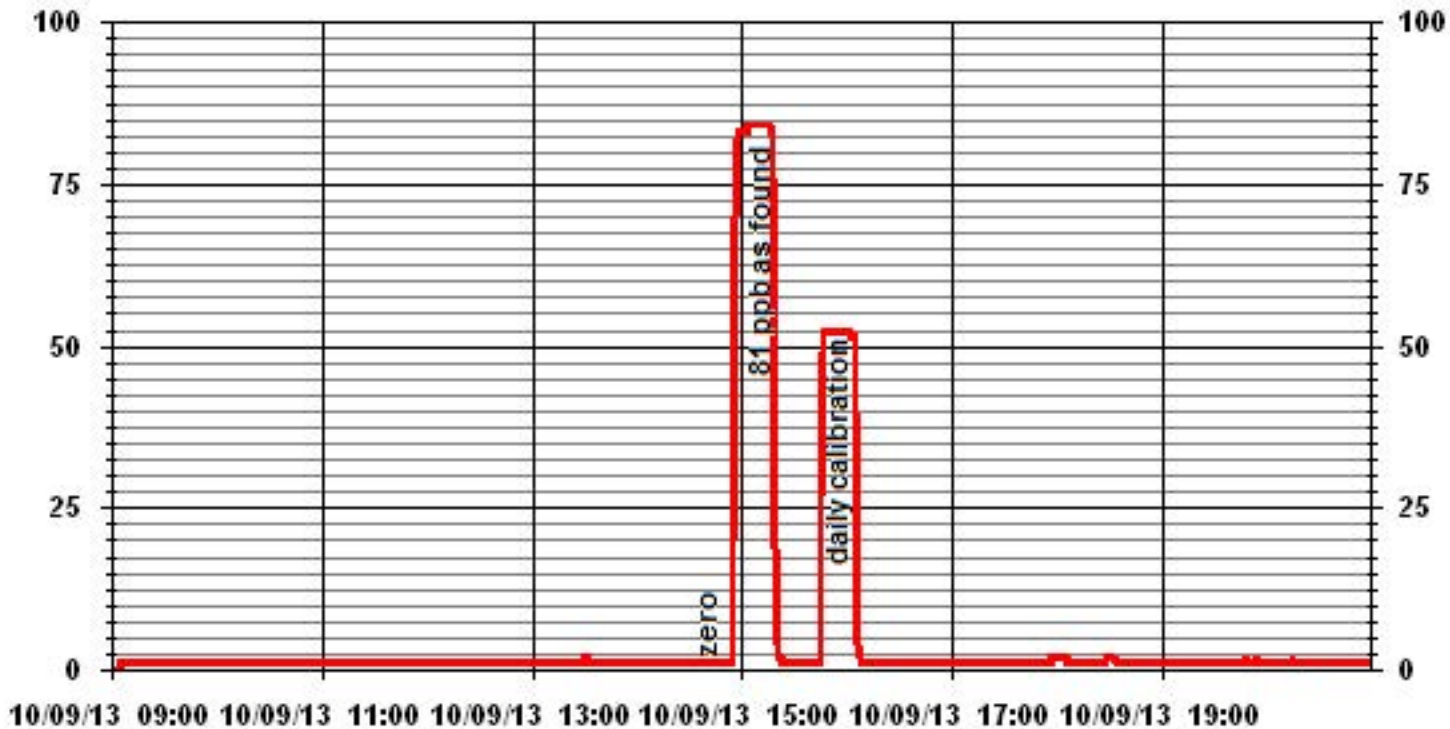
### 01 Minute Averages



# Hydrogen Sulphide



# 01 Minute Averages



## H2S Calibration Report

### Station Information

Calibration Date	October 17, 2013	Previous Calibration	September 11, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	LICA Maskwa		
Start Time (MST)	11:10	End Time (MST)	13:52
Reason:	Monthly calibration		
Barometric Pressure	27.92 in HG	Station Temperature	22 Deg C
Cal Gas	10.1 ppm	Gas Cyl. #	BLM00504 Cal Gas Expiry date
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts
		December 25, 2015	

### Equipment Information

Analyzer Make / Model:	API 101E	S/N :	511	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	API 700	S/N :	690	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO791		
Chart Recorder Make / Model:	N/A	S/N:	S/N:	N/A	
Flow Meter:	API 700	S/N :	690		

### Analyzer Settings

		Before Calibration		After Calibration	
Concentration Range		0-100 ppb			
Sample Flow / Box Temp	669 ccm	29.9 Deg C	666 ccm	30.9 Deg C	
HVPS / Lamp Setting	584	3554	584	3552	
PMT / RxCell Temp	7.9 Deg C	50 Deg C	7.9 Deg C	50 Deg C	
Converter / IZS Temp	314.7 Deg C	45 Deg C	315.4 Deg C	45.0 Deg C	
Offset / Slope	29.4	1.188	30.8	1.161	

### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	1	NA
5000	0	0	0	NA
4958	40.0	81	84	0.9623
4958	40.0	81	81	1.0000
4978	20.1	41	40	1.0154
4988	12.0	24	24	1.0000
5000	0	0	0	NA
Sum of Least Squares				1.0020
New Correction Factor				1.0000

### IZS Calibration Data

		Before Calibration	After Calibration
Auto Zero		0.0	0.0
Auto Span		48.0	49.0
Sample Lines Connected			Yes

### Percent Change

Previous Month's Calibration Correction Factor:	0.9731
Current Correction Factor Before Span Adjust:	0.9623
Percent Change:	1.1%

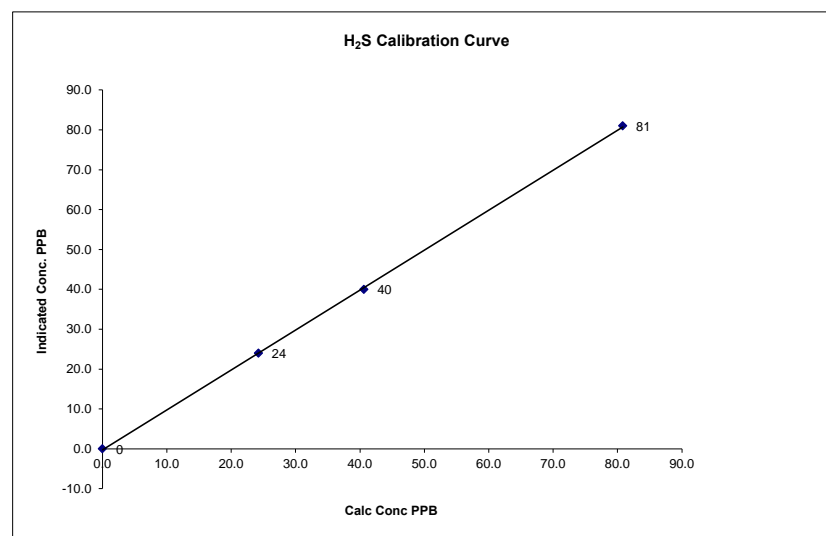
Notes:	<b>NA : Not Applicable</b>

Calibration Performed by: Waseem Ahmed

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

Calibration Date	October 17, 2013
Company	Lakeland Industry & Community Association
Plant / Location	LICA Maskwa
Start Time (MST)	11:10
End Time (MST)	13:52

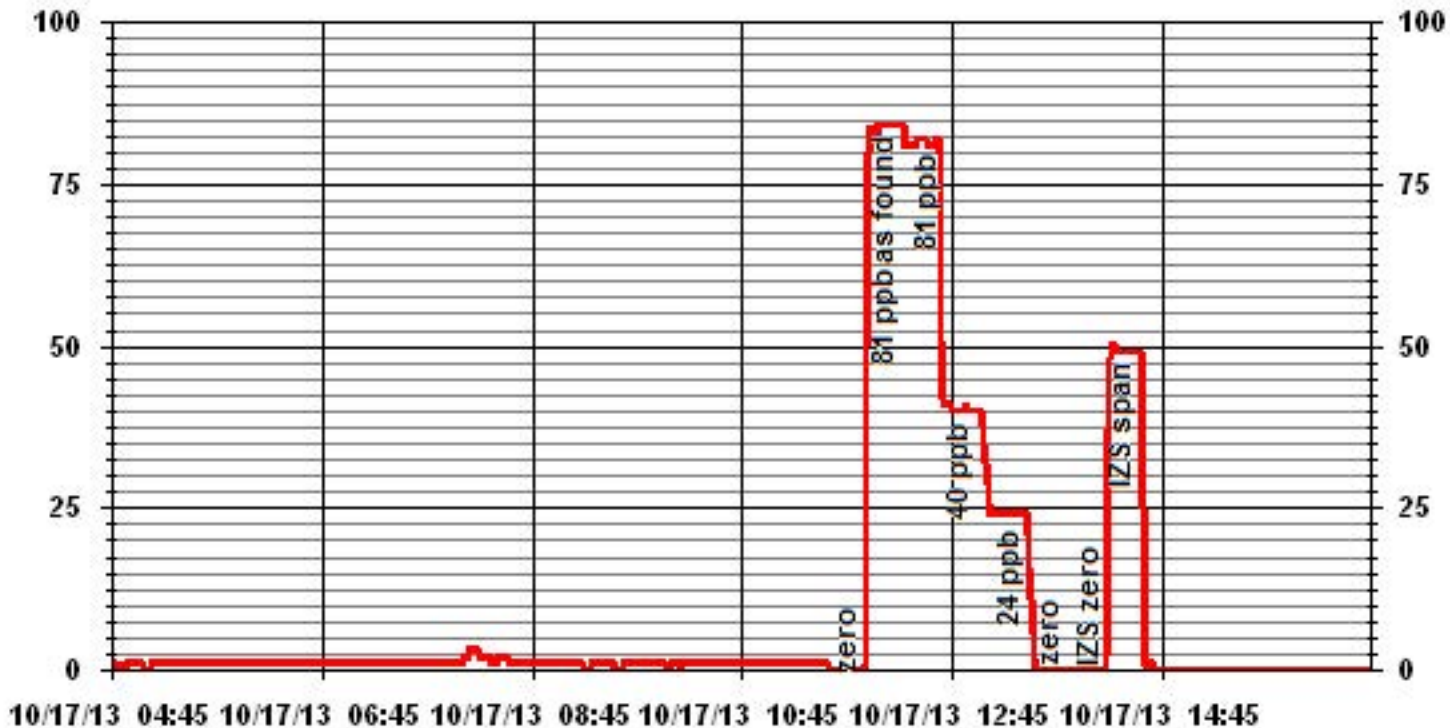
Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999905
0	0	NA	Intercept	(± 3% F.S.)	-0.254222
24	24	1.0100			
41	40	1.0154			
81	81	0.9979			



**Notes:**

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# 01 Minute Averages



# Total Hydrocarbons

### THC Calibration Report

Station Information			
Calibration Date:	October 17, 2013	Previous Calibration	September 11, 2013
Company:	Lakeland Industry & Community Association		
Plant / Location:	LICA Maskwa		
Start Time (MST)	14:14	End Time (MST)	16:40
Reason:	Monthly calibration		
Barometric Pressure:	27.92 in HG	Station Temperature:	25 Deg C
Calibrator:	API 700	S/N:	690
Cal Gas Concentration:	CH4 593 PPM	C3H8 205 PPM	
	TOTAL CH4 1156.8 PPM	Gas Cyl. # LL84567	Cal Gas Expiry Date: June 7, 2013
DAS make & Model:	ESC 8832	S/N :	AO791
Chart Recorder:	N/A	S/N:	N/A
Output Voltage Range:	0-10 VDC	Chart Speed:	N/A mm/hr

#### Analyzer Information

Make / Model	Thermo 51C-LT	S/N :	436609738	Method	Flame Ionization
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#### 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
1995	0.0	0.0	-0.4	N/A
1995	0.0	0.0	0.0	N/A
1995	74.0	41.4	40.7	1.0165
1995	74.0	41.4	41.5	0.9969
1995	37.0	21.1	21.2	0.9935
1995	20.0	11.5	11.3	1.0161
1995	0.0	0.0	0.0	N/A
New Correction Factor:				0.9969

#### Percent Change

Previous Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0165
Percent Change:	-1.6%

#### IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	31.27	31.27
Sample Lines Connected	Yes	

Cylinder Pressures			
Span	1500 psi	Hydrogen	1650 psi
		Zero Air	32 psi

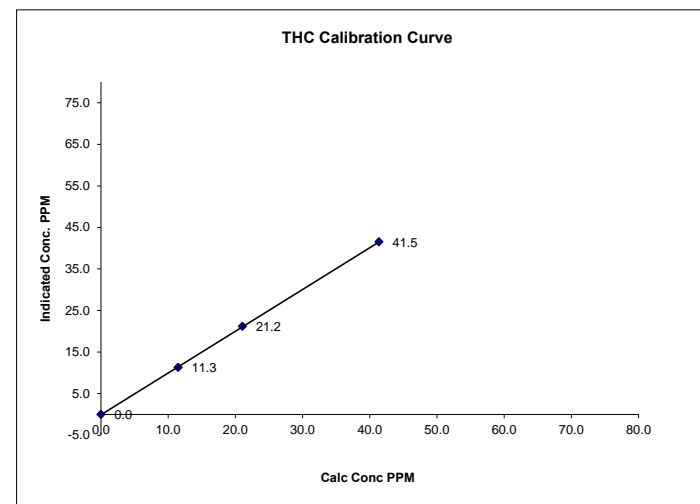
Notes: N/A : Not Applicable

Calibration Performed by: Waseem Ahmed

### THC Calibration Curve

Calibration Date	October 17, 2013		
Company	Lakeland Industry & Community Association		
Plant / Location	LICA Maskwa		
Start Time (MST)	14:14	End Time (MST)	16:40

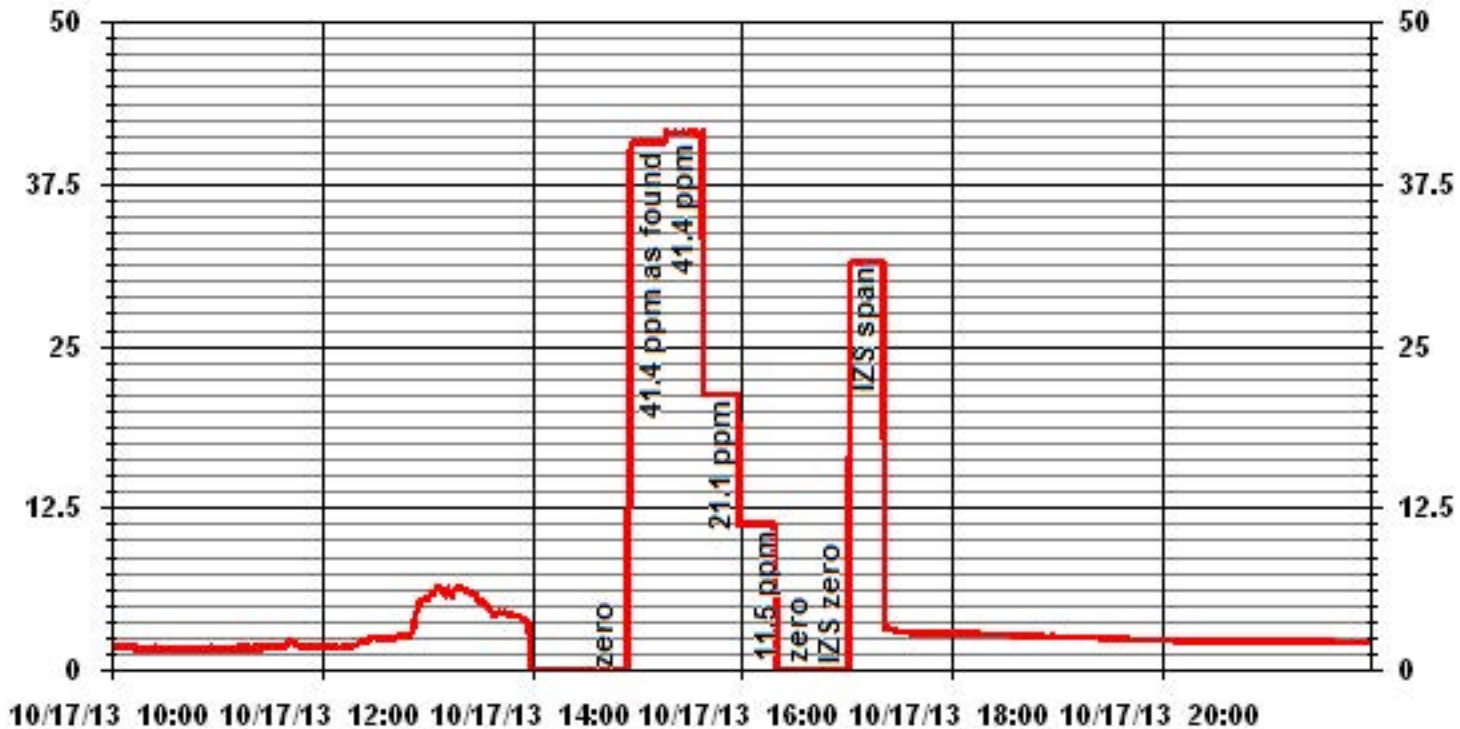
Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient (≥ 0.995)	Slope (0.85 to 1.15)	Intercept (± 3% F.S.)
0.0	0.0	N/A	0.999953	1.004933	-0.07033
11.5	11.3	1.0161			
21.1	21.2	0.9935			
41.4	41.5	0.9969			



Notes:



# 01 Minute Averages



# Nitrogen Dioxide

**NOx - NO- NO2 Calibration Report**  
**Station Information**

Calibration Date	October 17, 2013	Previous Calibration	September 11, 2013
Company	LICA	Plant/Location	LICA Maskwa
Start Time (MST)	11:10	End Time (MST)	16:24
Reason:	Monthly calibration		
Barometric Pressure	27.93 in Hg	Station Temperature	22 Deg C
Cal Gas Concentration	NOx 49.0 ppm	NO 48.9 ppm	Cal Gas Expiry date December 29, 2016
Cal Gas Cylinder #	BAL 3165	MFCF	N/A
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts

**Equipment Information**

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

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range	0-1000			ppb			
Sample Flow/Conv. Temp	458 ccm	314.1 Deg C		458 ccm	315.4 Deg C		
Ozone Flow / Vacuum	79 ccm	4.8 °Hg-A		79 ccm	4.9 °Hg-A		
HVPS / A ZERO	751 Volts	14.7 MV		751 Volts	15.4 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.6 Deg C		50.0 Deg C	6.6 Deg C		
Box Temp / IZS Temp	28.4 Deg C	42.2 Deg C		31.9 Deg C	42.2 Deg C		
Offset	0.4 NOx	0.0 NO		0.4 NOx	0.3 NO		
Slope	1.104 NOx	1.096 NO		1.093 NOx	1.087 NO		
NO2 COEF / Conv Efficiency	N/A NO2	0.994		N/A NO2	0.994		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	1	1	0	NA	NA
4994	0.0	NA	0	0	NA	1	0	0	NA	NA
4920	80.5	NA	789	787	NA	797	791	5	0.9909	0.9963
4920	80.5	NA	789	787	NA	790	787	3	0.9997	1.0000
4960	40.3	NA	395	394	NA	394	392	1	1.0041	1.0072
4978	20.1	NA	197	196	NA	199	198	1	0.9933	0.9963
4994	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		
4920	80.5	NA	789	787	NA	795	790	4	NA	NA
4920	80.5	600	789	NA	531	793	263	530	1.0019	99.81%
		No adj.								
4920	80.5	300	789	NA	264	795	530	265	0.9962	100.38%
4920	80.5	120	789	NA	107	794	687	107	1.0000	100.00%

Linearity	Sum of Least Squares		NOx=	0.999	NO=	1.001	NO2=	1.001	
OK?	Yes	No	Correction Factors:	NOx=	0.9997	NO=	1.0000	NO2=	1.0019
				Average Converter Efficiency= 100.06%					

**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	540 NOx	534 NO2		540 NOx	534 NO2		
	Sample Lines Connected:			YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	0.997	1.000	0.998
Current Correction Factor Before Span Adjust	0.991	0.996	1.002
Percent Change	0.6%	0.4%	-0.4%

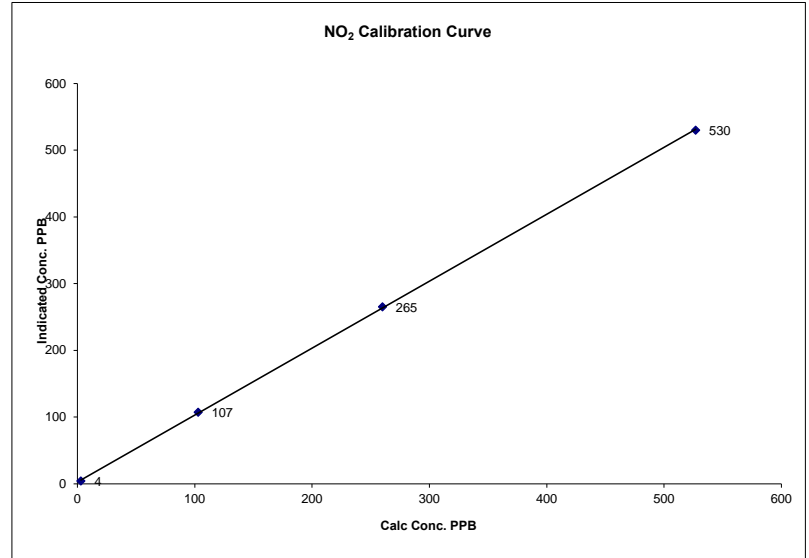
Notes: **NA : Not Applicable**

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

Calibration Date	October 17, 2013
Company	LICA
Plant / Location	LICA Maskwa
Start Time (MST)	11:10
End Time (MST)	16:24

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999951
3	4	NA	Intercept	(± 3% F.S.)	2.68861
103	107	0.9626			
260	265	0.9811			
527	530	0.9943			

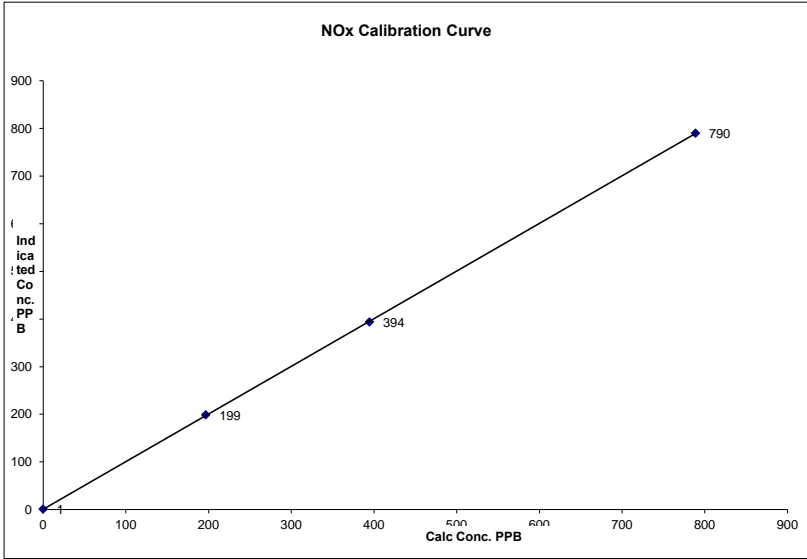


Notes:

**NOx Calibration Curve**

Calibration Date	October 17, 2013	
Company	LICA	
Plant / Location	LICA Maskwa	
Start Time (MST)	11:10	End Time (MST) 16:24

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999987
0	1	NA	Slope (0.85 to 1.15)	0.999540
197	199	0.9933	Intercept (± 3% F.S.)	1.15530
395	394	1.0041		
789	790	0.9997		

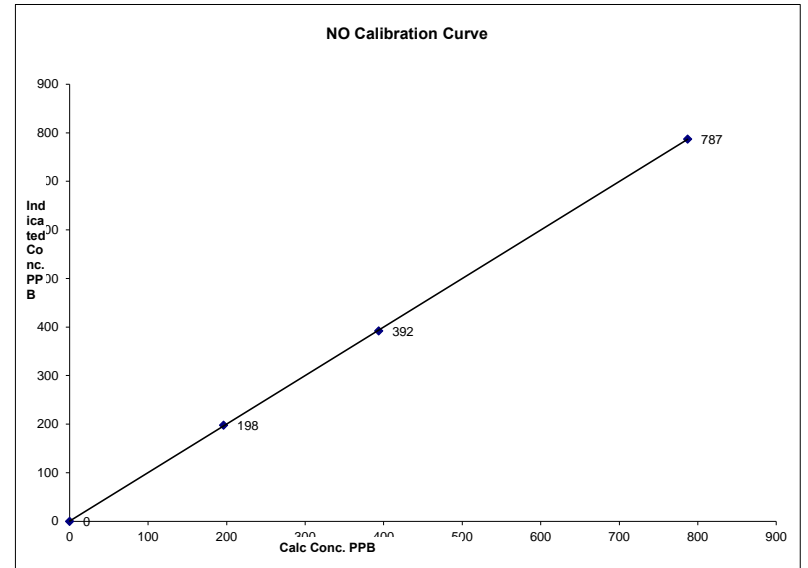


Notes:

**NO Calibration Curve**

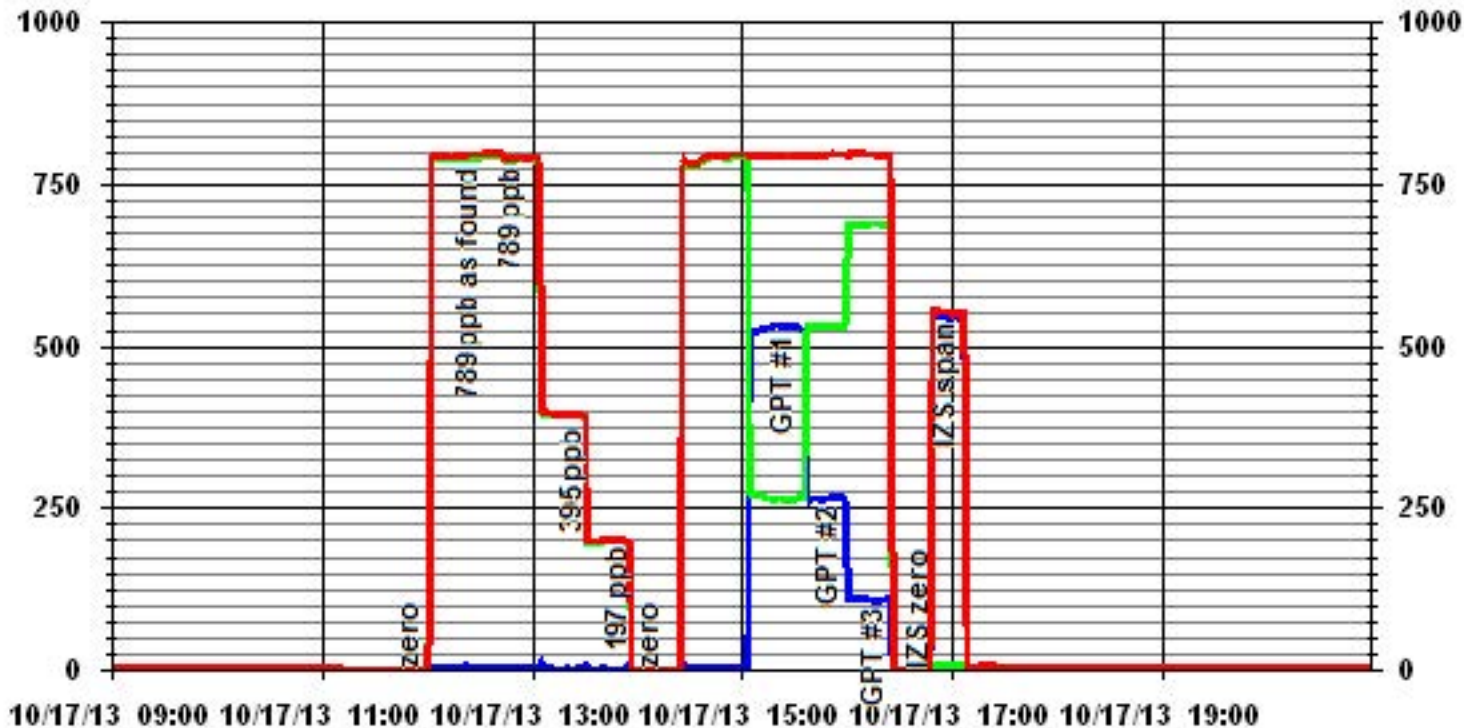
Calibration Date	October 17, 2013	
Company	LICA	
Plant / Location	LICA Maskwa	
Start Time (MST)	11:10	End Time (MST) 16:24

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999983
0	0	NA	Slope (0.85 to 1.15)	0.998825
196	198	0.9963	Intercept (± 3% F.S.)	0.35509
394	392	1.0072		
787	787	1.0000		



Notes:

### 01 Minute Averages



— LICA30 NOX\_ PPB

— LICA30 NO\_ PPB

— LICA30 NO2\_ PPB

# Lakeland Industry & Community Association

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

Prepared By:



November 20, 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: October 2013

The monthly ambient data report:

- Prepared by Lili Zhou
- Reviewed by Lily Lin



# Calibration Procedure

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

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

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

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

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

- 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 – October 2013

LICA ST. LINA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)			
						OBJECTIVES					EXCEEDENCES					1-HOUR
PARAMETER	1-HR		24-HR		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY				
	SO <sub>2</sub> (PPB)	172	48	0									0	0.93	5	29
H <sub>2</sub> S (PPB)	10	3	0	0	0.69	3	17, 29	VAR	VAR	VAR	1.9	15	99.5			
THC (PPM)	-	-	-	-	2.07	3.4	17	10	17	326(NW)	2.2	VAR	99.5			
OZONE (PPB)	82	-	0	-	26.2	39	14, 15	VAR	VAR	VAR	32.4	15	99.5			
NO <sub>x</sub> (PPB)	-	-	-	-	1.64	10.3	31	2	10.8	229(SW)	3.3	24	99.5			
NO (PPB)	-	-	-	-	0.30	4.2	29	11	15.4	214(SSW)	0.9	29	99.5			
NO <sub>2</sub> (PPB)	159	-	0	-	1.34	10.3	31	2	10.8	229(SW)	2.9	30	99.5			
PM <sub>2.5</sub> (ug/m3)	-	30	-	0	1.85	11	31	9	11	287(WNW)	5.0	14	98.9			
TEMPERATURE (DEGREE C)	-	-	-	-	4.41	16.0	5	14	17.8	279(W)	8.9	VAR	99.5			
BP (MILLIBAR)	-	-	-	-	926	944	27, 28	VAR	VAR	VAR	938.5	27	99.5			
RH (%)	-	-	-	-	65.95	89	VAR	VAR	VAR	VAR	86.7	1	99.5			
PRECIPITATION (MM)	-	-	-	-	0.03	1.6	22	8	4	29(NNE)	8.1	1	99.7			
VECTOR WS (KPH)	-	-	-	-	10.68	25.8	24	13	-	221(SW)	20.7	4	98.8			
VECTOR WD (DEGREES)	-	-	-	-	277(W)	-	-	-	-	-	-	-*	98.8			

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. Following the as found points check on October 8<sup>th</sup>, the analog output was calibrated. The 3-points calibration was performed after the maintenance. Hourly data collected on October 17<sup>th</sup> between hour 14 and hour 17 are missing due to a power failure event. Data was corrected using daily zero information.

#### Hydrogen Sulphide (PPB)

Analyzer make / model - API 101E, S/N: 510

The monthly calibration was performed on October 8<sup>th</sup>. The inlet filter was changed before the calibration was started. The analyzer spanned low on October 17<sup>th</sup>. An as found points check was performed on October 18<sup>th</sup>. The result was within the acceptable range. No issue could be identified. No data was invalidated due to this event. Another as found points check was performed to verify the analyzer's functionality on October 22<sup>nd</sup>. The result was fine. Hourly data collected on October 17<sup>th</sup> between hour 14 and hour 17 are missing due to a power failure event. Data was corrected using daily zero information.

# General Monthly Summary

## AQM STATION – LICA – St. Lina

### **Total Hydrocarbon (PPM)**

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

No operational issue was observed this month. The monthly calibration was performed on October 8<sup>th</sup>. The inlet filter was changed before the monthly calibration was started. Hourly data collected on October 17<sup>th</sup> between hour 14 and hour 17 are missing due to a power failure event. 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. Following the as found points check on October 8<sup>th</sup>, the analog output was calibrated. The 3-points calibration was performed after the maintenance. Hourly data collected on October 17<sup>th</sup> between hour 14 and hour 17 are missing due to a power failure event. Data was corrected using daily zero information.

### **Ozone (PPB)**

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

The analyzer was working well throughout the month. The monthly calibration was performed on October 22<sup>nd</sup>. The inlet filter was changed before the calibration was started. Hourly data collected on October 17<sup>th</sup> between hour 14 and hour 17 are missing due to a power failure event. Data was corrected using daily zero information.

# General Monthly Summary

## AQM STATION – LICA – St. Lina

### Particulate Matter 2.5 (UG/M3)

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

Two Teom audits were performed in October: one was on October 18<sup>th</sup> and the other one was on October 22<sup>nd</sup>. Both audits passed the manufacturer requirements. The sample inlet was cleaned and both the flow audit and leak check were performed on October 18<sup>th</sup>. Hourly data collected on October 17<sup>th</sup> between hour 14 and hour 17 are missing due to a power failure event. Data was corrected using Alberta air quality guideline. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. Four hour of data were invalidated as the data were below –3 ug/m3.

### Temperature (Degree C)

Analyzer make / model – Met One 060

The temperature sensor was working well throughout the month. Hourly data collected on October 17<sup>th</sup> between hour 14 and hour 17 are missing due to a power failure event.

### Barometric Pressure (Millibar)

Analyzer make / model - Met One 092

The BP sensor was working well throughout the month. Hourly data collected on October 17<sup>th</sup> between hour 14 and hour 17 are missing due to a power failure event.

### Relative Humidity (%)

Analyzer make / model - Met One 083

The RH sensor was working well throughout the month. Hourly data collected on October 17<sup>th</sup> between hour 14 and hour 17 are missing due to a power failure event.

# General Monthly Summary

## AQM STATION – LICA – St. Lina

### Precipitation (MM)

Analyzer make / model - Met One 387

No issues were recorded this month. The screen on the rain gauge was removed on October 22<sup>nd</sup>. Hourly data collected on October 17<sup>th</sup> between hour 15 and hour 16 are missing due to a power failure event.

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

Five hours of data for both WS and WD collected on October 4<sup>th</sup> were invalidated due to the wind system to be frozen.

Hourly data collected on October 17<sup>th</sup> between hour 14 and hour 17 are missing due to a power failure event.

### Datalogger

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

Software make/version - ESC v 5.51a

The station is connected to a modem to allow for daily polling of the station.

### Trailer

The glass manifold was cleaned on October 22<sup>nd</sup>.

# Continuous Monitoring

# Monthly Summaries, Graphs & Wind Roses



# Sulphur Dioxide

**LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA**  
**OCTOBER 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	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	1	0	1	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	1	0	0	0	0	0	1	0.3	24	
2	0	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
3	0	1	1	1	1	1	0	0	0	0	0	0	S	1	1	1	1	1	0	0	0	0	0	0	1	0.4	24	
4	0	0	0	0	0	0	0	0	0	0	S	1	2	2	1	1	1	1	1	2	1	2	2	2	2	2	0.8	24
5	2	2	2	2	2	2	2	2	2	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.8	24
6	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0.3	24
7	1	1	1	2	2	2	2	S	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	2	1.3	24
8	1	1	1	1	1	1	S	1	1	C	C	C	C	C	C	C	1	0	0	0	0	0	0	0	0	1	0.5	24
9	0	0	0	0	0	S	1	1	1	1	1	1	1	2	2	2	2	2	3	2	2	2	2	2	2	3	1.3	24
10	2	2	2	2	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	2	1.0	24	
11	0	0	0	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24
12	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
13	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0.9	24
14	S	1	1	2	2	2	3	3	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	S	3	1.5	24	
15	1	1	1	1	1	1	1	2	2	1	1	1	1	0	0	1	0	0	0	0	0	0	S	0	2	0.7	24	
16	0	0	0	0	0	0	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	S	1	1	1	1	0.6	24
17	1	1	1	1	1	0	1	1	0	0	0	0	0	0	P	P	P	P	0	0	S	0	0	0	1	0.4	20	
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	S	0	0	0	0	1	0.0	24
19	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	S	1	0	0	0	0	1	0.6	24	
20	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
21	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0.0	24	
22	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	S	2	2	1	2	2	2	2	2	1	2	0.6	24
23	1	2	1	1	1	2	2	2	2	2	2	1	1	1	1	S	1	1	1	1	1	1	1	1	1	2	1.3	24
24	1	1	1	2	2	2	2	2	2	3	3	3	2	S	1	1	2	2	2	2	2	2	2	2	1	3	1.9	24
25	1	1	1	1	1	1	1	1	1	1	1	1	S	2	2	2	2	2	2	2	2	2	2	2	2	2	1.5	24
26	2	2	2	2	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0.4	24
27	1	2	1	1	1	1	1	0	0	0	S	1	1	1	1	1	1	1	1	1	2	1	1	1	2	1.0	24	
28	1	1	1	1	1	1	1	1	1	2	S	2	2	2	2	1	2	3	3	1	1	2	1	2	3	1.6	24	
29	1	1	2	2	2	2	2	2	S	2	3	5	3	2	2	2	2	2	2	2	2	2	2	3	5	2.2	24	
30	3	2	3	3	3	3	2	S	2	2	3	3	2	2	3	2	2	2	2	2	2	3	3	3	3	3	2.5	24
31	3	3	4	3	3	3	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	4	2.1	24
HOURLY MAX	3	3	4	3	3	3	3	3	3	2	3	3	5	3	2	3	2	2	3	3	2	3	3	3	3	3		
HOURLY AVG	0.9	0.9	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.0	1.0	0.9	0.9	0.9	0.8			

**STATUS FLAG CODES**

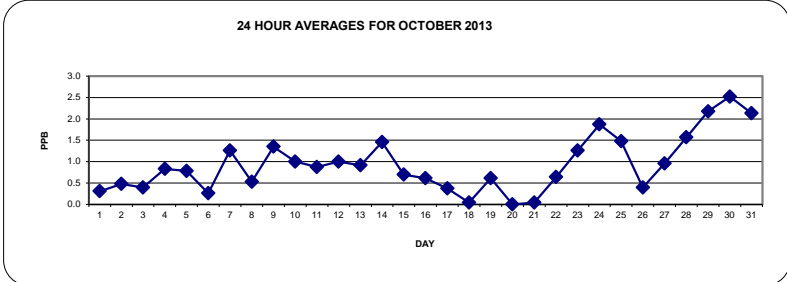
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

**OBJECTIVE LIMIT:**

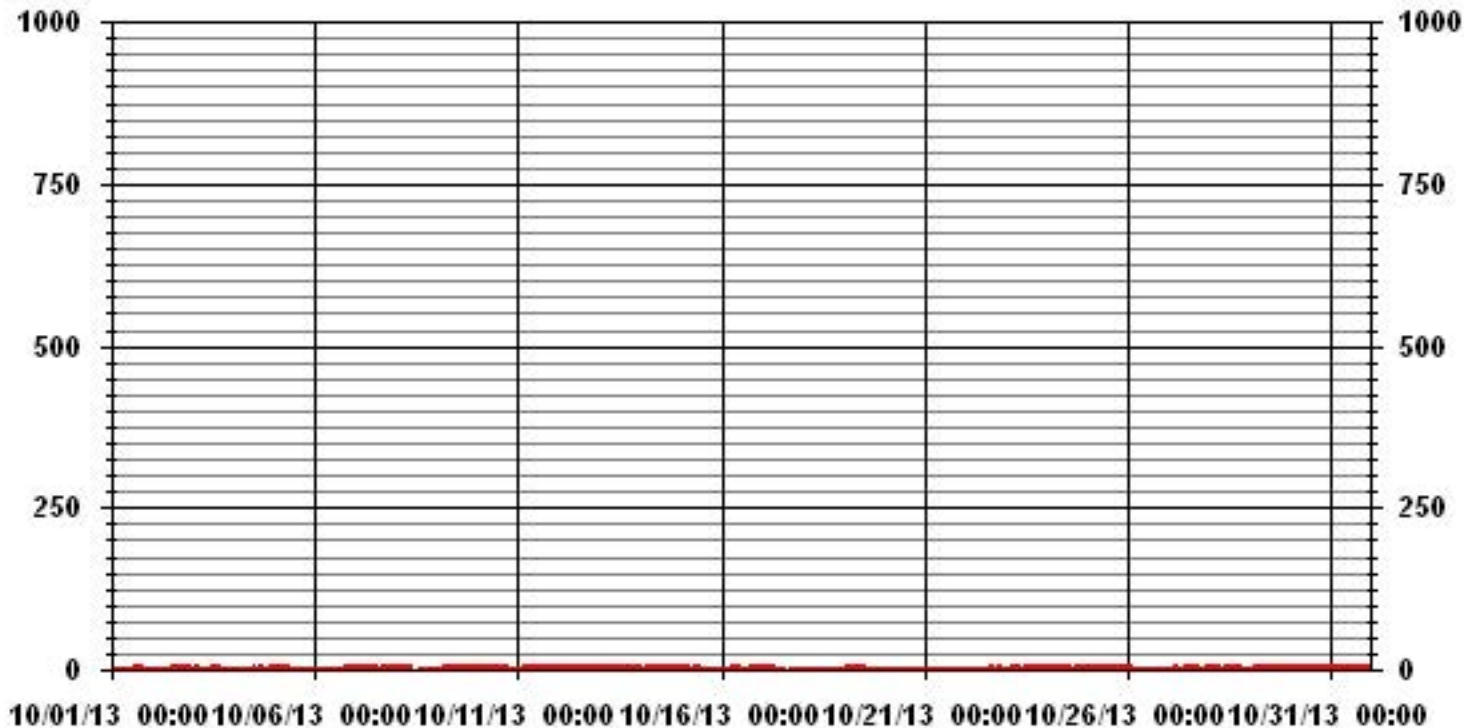
<b>ALBERTA ENVIRONMENT:</b>	1-HR	172	PPB	24-HR	48	PPB
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**MONTHLY SUMMARY**

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	455
MAXIMUM 1-HR AVERAGE:	5 PPB @ HOUR(S) 11 ON DAY(S) 29
MAXIMUM 24-HR AVERAGE:	2.5 PPB ON DAY(S) 30
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	6 HRS
STANDARD DEVIATION:	0.86
OPERATIONAL TIME:	740 HRS
AMD OPERATION UPTIME:	99.5 %
MONTHLY AVERAGE:	0.93 PPB



### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

OCTOBER 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	1	2	1	1	1	1	1	1	1	1	1	1	S	2	2	2	2	2	2	1	1	1	2	1	2	1.3	24
2	1	1	1	1	1	1	1	1	1	1	1	1	S	2	2	2	2	2	2	2	2	2	2	2	2	2	1.5	24
3	2	2	2	2	2	1	2	1	1	1	1	S	2	3	2	2	2	2	2	1	1	1	2	1	3	1.7	24	
4	1	1	1	1	1	1	1	1	1	1	S	2	3	3	2	2	2	2	2	3	2	3	3	3	3	1.8	24	
5	3	3	3	3	3	3	3	3	3	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1.2	24	
6	0	0	0	0	0	0	0	0	S	1	2	2	1	1	1	2	1	2	2	2	2	2	2	2	2	1.0	24	
7	2	2	2	3	3	3	3	S	2	2	2	2	2	2	3	3	3	2	2	3	2	2	2	2	3	2.3	24	
8	2	2	2	2	2	S	2	2	C	C	C	C	C	C	2	2	1	1	1	1	1	1	1	1	2	1.6	24	
9	1	1	1	1	1	S	2	2	2	2	2	2	3	3	3	5	5	3	3	3	3	3	3	3	3	2.5	24	
10	4	3	3	3	S	2	2	2	2	2	2	2	2	2	1	1	1	2	1	1	1	1	1	1	4	1.9	24	
11	1	1	1	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.9	24	
12	2	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	24
13	2	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2.0	24
14	S	2	2	3	3	3	5	4	2	2	2	2	3	3	3	3	2	2	2	2	2	2	2	S	5	2.5	24	
15	2	2	2	2	2	2	2	3	3	2	2	2	2	2	2	2	1	1	1	1	1	S	1	3	1.8	24		
16	1	1	1	2	1	1	1	2	2	2	2	2	1	2	2	2	2	2	2	2	2	S	2	2	2	1.7	24	
17	2	2	2	2	2	1	2	2	2	1	1	1	1	1	P	P	P	P	4	0	S	0	0	0	4	1.4	20	
18	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	S	1	2	2	2	2	1.2	24	
19	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	S	2	2	1	1	1	1	2	1.8	24	
20	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	
21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	2	1	1	1	2	1.0	24	
22	1	1	1	1	1	1	1	1	1	1	1	1	Y	1	1	S	3	3	3	3	2	2	2	2	3	1.6	23	
23	3	3	2	2	2	2	3	3	3	3	2	2	2	S	2	2	2	2	2	2	2	2	2	2	3	2.3	24	
24	3	2	3	2	3	3	3	3	3	4	4	4	4	S	2	3	3	3	3	3	3	3	3	3	4	3.0	24	
25	2	2	2	2	2	2	2	2	2	2	2	S	3	3	3	3	3	3	3	3	3	3	3	3	3	2.5	24	
26	3	3	3	3	1	1	1	1	1	1	1	S	1	1	1	1	1	1	0	1	3	2	1	3	1.4	24		
27	2	3	3	2	2	2	2	1	1	1	S	2	2	2	2	2	2	2	2	3	2	2	2	3	2.0	24		
28	2	2	2	2	2	2	2	2	3	S	3	3	3	3	4	4	4	5	6	2	2	3	3	2	6	2.8	24	
29	2	2	3	3	3	3	3	3	S	3	5	9	4	3	3	3	3	3	3	3	3	3	4	4	9	3.4	24	
30	3	3	4	4	4	4	3	S	3	3	4	4	3	3	4	3	3	3	3	3	4	4	4	4	4	3.5	24	
31	4	4	5	5	4	4	S	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	5	3.2	24	
HOURLY MAX	4	4	5	5	4	4	5	4	3	4	5	9	4	3	4	4	5	5	6	3	4	4	4	4	4			
HOURLY AVG	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.8	1.9	2.1	2.0	2.0	2.0	2.0	2.2	2.1	2.2	1.9	2.0	1.9	2.0	1.8				

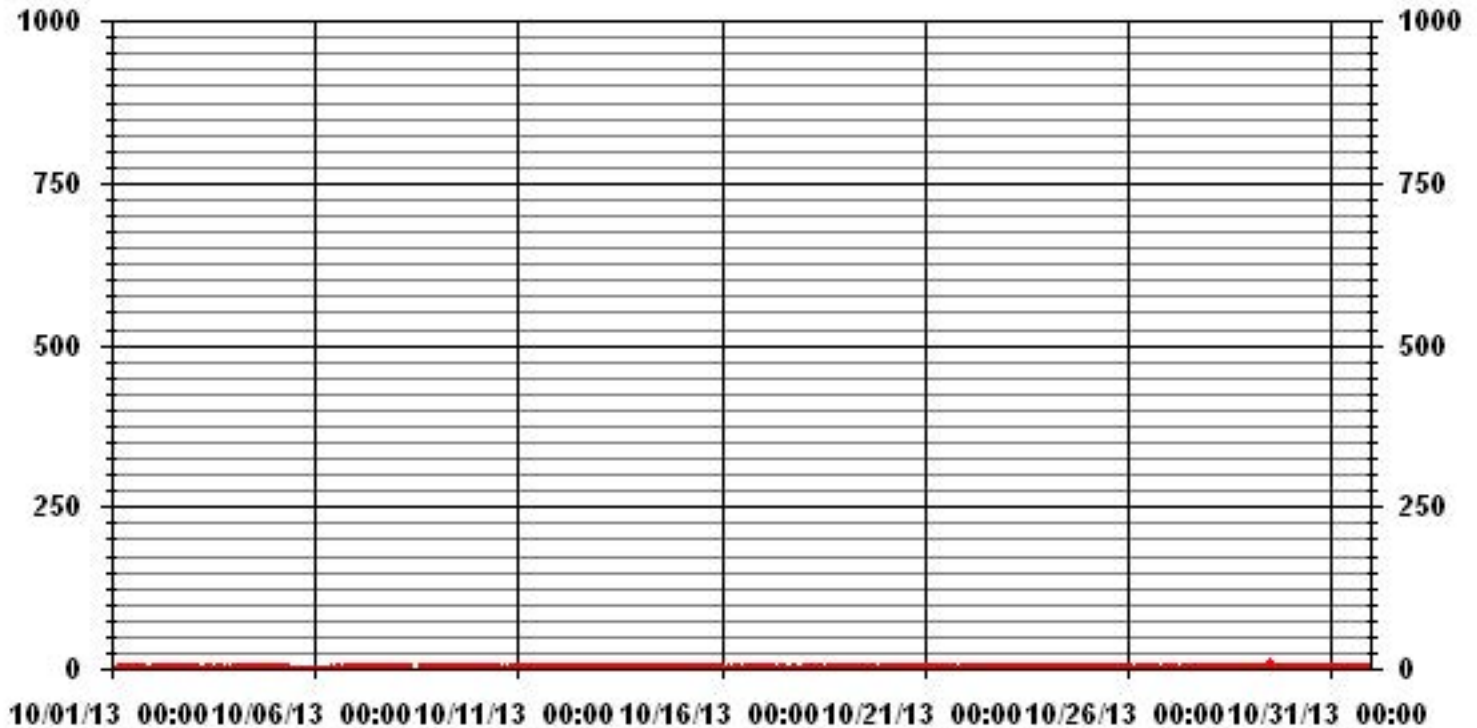
**STATUS FLAG CODES**

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:	674			
MAXIMUM INSTANTANEOUS VALUE:	9	PPB	@ HOUR(S)	11 ON DAY(S) 29
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	739 HRS
MONTHLY CALIBRATION TIME:	6	HRS		
STANDARD DEVIATION:	0.99			

# 01 Hour Averages



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

October 2013

Distribution By % Of Samples

Logger Id : 31  
 Site Name : LICA31  
 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	3.85	3.28	2.99	1.14	.57	1.99	2.42	1.85	4.99	7.56	10.27	7.13	11.69	13.98	17.68	8.55	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	3.85	3.28	2.99	1.14	.57	1.99	2.42	1.85	4.99	7.56	10.27	7.13	11.69	13.98	17.68	8.55	

Calm : .00 %

Total # Operational Hours : 701

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	27	23	21	8	4	14	17	13	35	53	72	50	82	98	124	60	701
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	27	23	21	8	4	14	17	13	35	53	72	50	82	98	124	60	

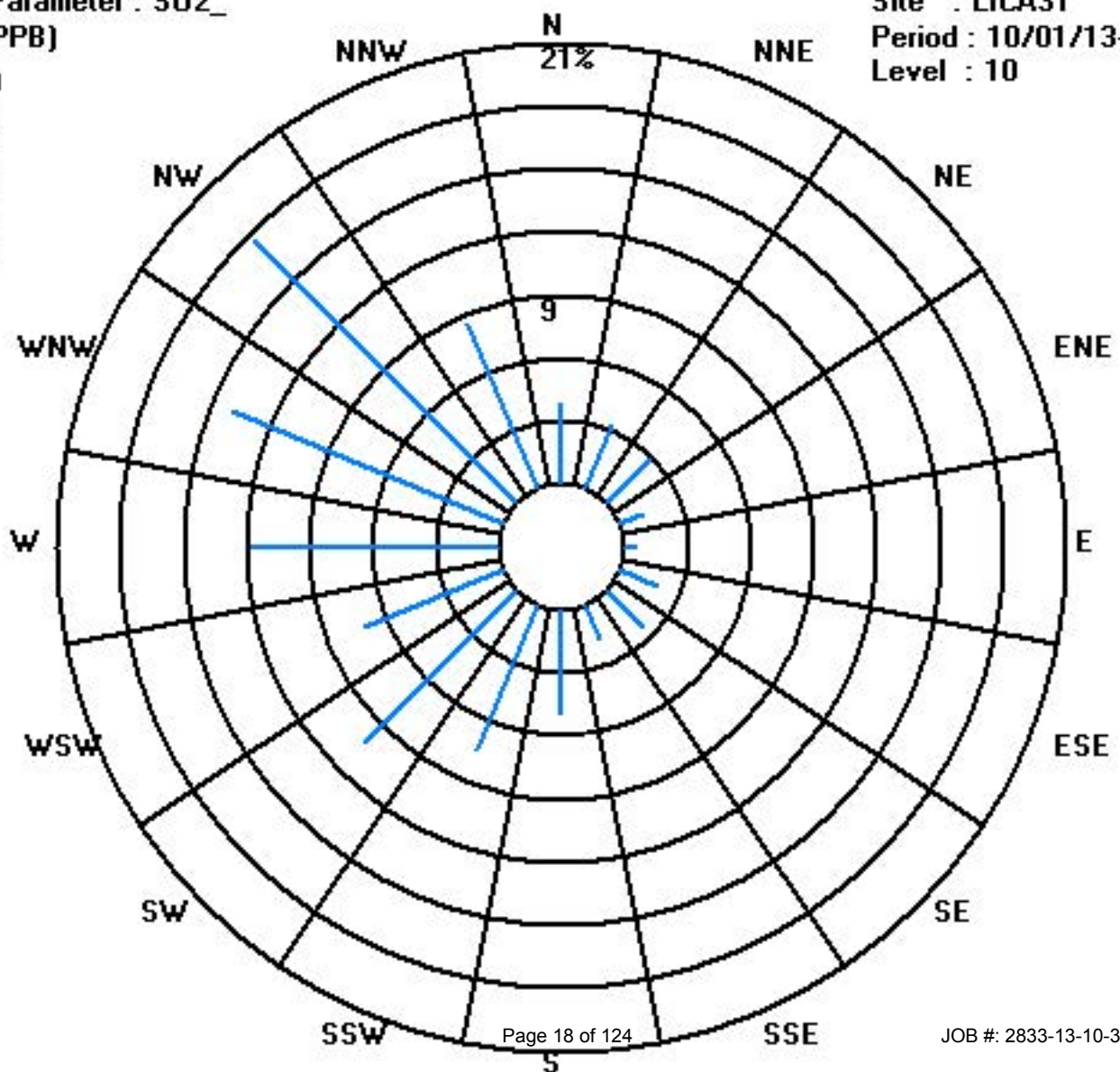
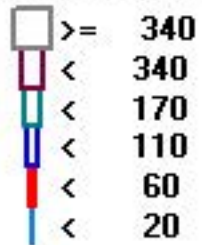
Calm : .00 %

Total # Operational Hours : 701

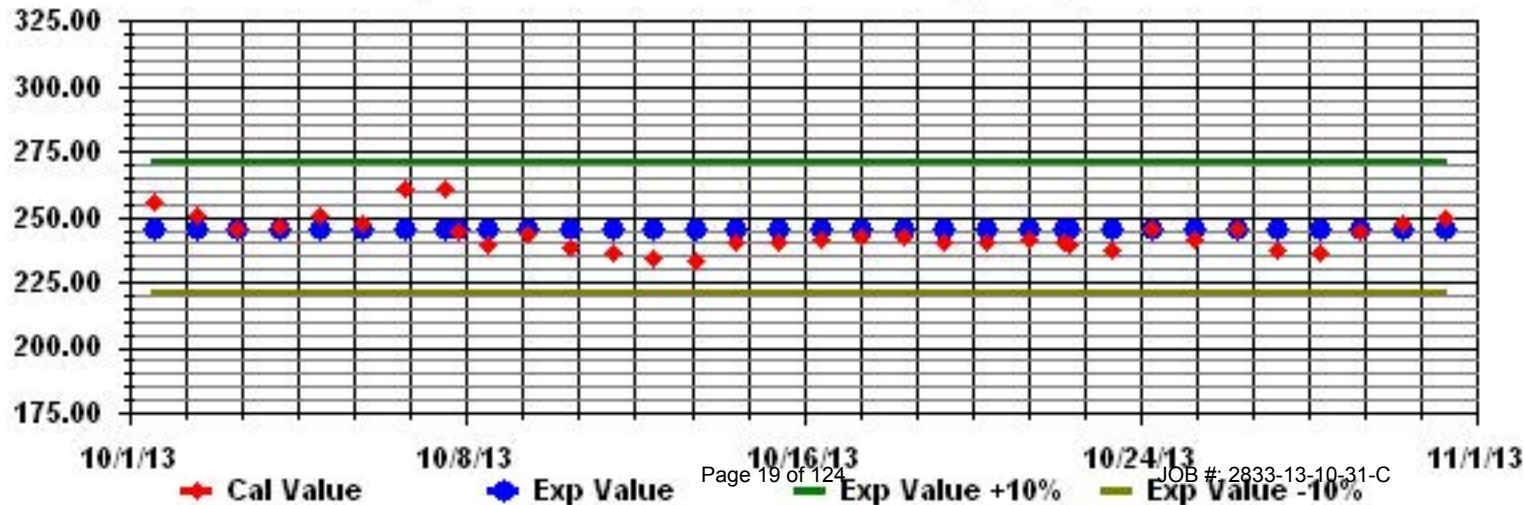
Class Limits (PPB)

Period : 10/01/13-10/31/13

Level : 10



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





# Hydrogen Sulphide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

OCTOBER 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			
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
1	0	0	0	0	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	
2	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	
3	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	
4	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	
5	0	0	0	0	0	0	0	1	1	0	S	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0.2	24	
6	0	0	0	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0.3	24	
7	1	1	1	1	2	2	2	2	S	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1.2	24	
8	1	1	1	1	1	1	1	S	1	1	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24	
9	0	0	0	0	0	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	1.0	24	
10	2	2	2	2	S	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	2	0.7	24	
11	0	0	0	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0.8	24	
12	1	1	S	1	1	0	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.5	24	
13	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	
14	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	S	1	1.0	24
15	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	1	2	1.9	24
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	0	0	1	0.9	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	P	P	P	P	3	1	S	1	1	1	1	3	0.4	20	
18	1	2	2	2	2	2	S	1	1	1	C	C	1	1	1	1	1	1	1	1	S	1	1	1	1	1	2	1.3	24	
19	1	1	1	1	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	S	1	1	1	1	0	2	1.0	24	
20	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	0.9	24	
21	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	
22	1	1	1	1	1	1	1	1	1	1	C	C	C	C	0	1	S	1	1	0	0	0	0	0	0	0	1	0.6	24	
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	1	1	1	1	1	1	1	0.4	24	
24	1	1	1	1	1	1	2	2	2	2	2	2	2	2	S	1	0	1	1	0	1	0	0	0	0	0	2	1.1	24	
25	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	1	1	1	1	0.1	24	
26	1	1	1	1	1	1	1	1	1	1	1	1	S	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.5	24	
27	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	1	1	0	0	0	0	1	0	0	0	1	0.3	24	
28	0	0	1	1	0	1	1	1	1	1	S	0	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1.0	24	
29	2	2	2	2	2	2	3	3	S	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	2	2	3	1.6	24	
30	1	2	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	1.2	24	
31	2	2	2	2	2	2	S	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	2	1.0	24		
HOURLY MAX		2	2	2	2	2	2	3	3	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2			
HOURLY AVG		0.6	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.8	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.6				

### STATUS FLAG CODES

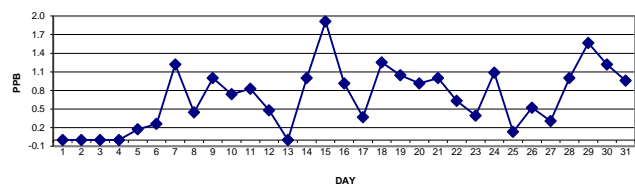
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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

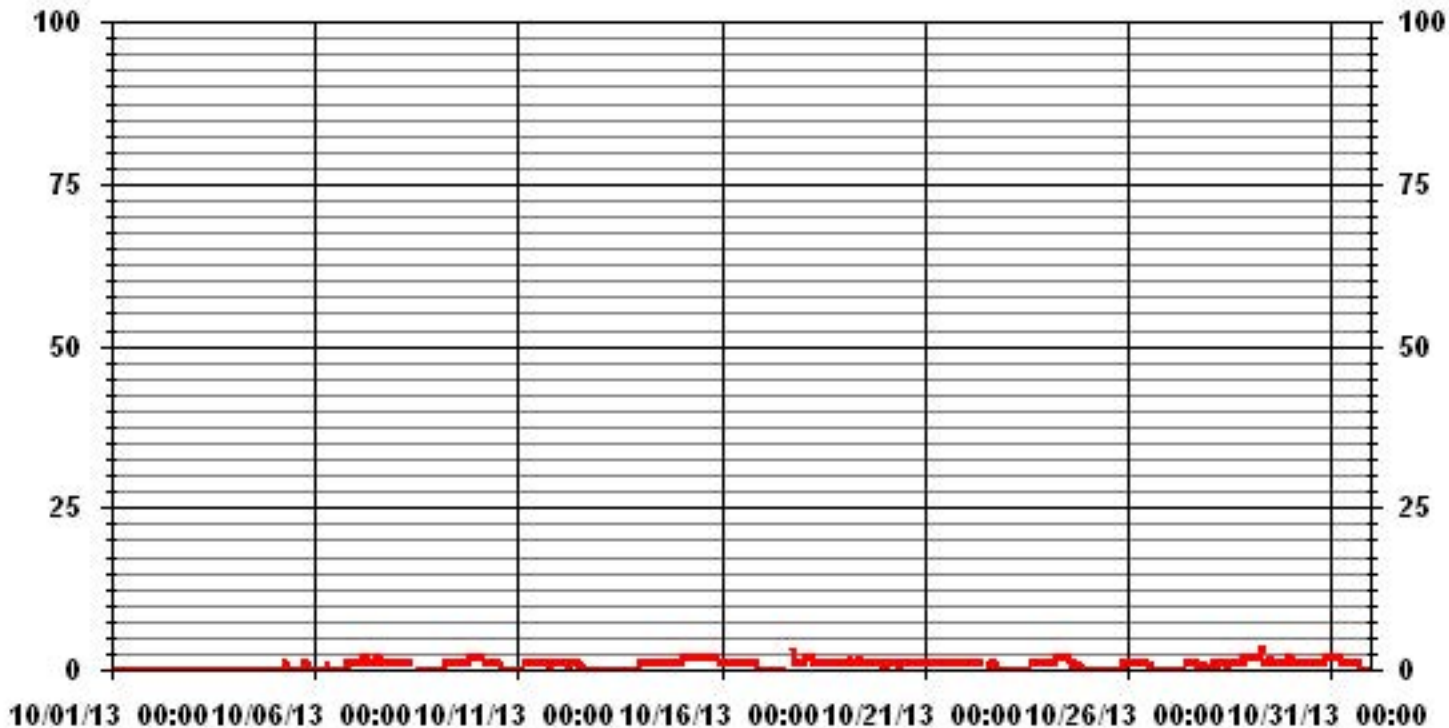
### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	400
MAXIMUM 1-HR AVERAGE:	3 PPB @ HOUR(S) VAR ON DAY(S) 17, 29
MAXIMUM 24-HR AVERAGE:	1.9 PPB VAR-VARIOUS ON DAY(S) 15
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	11 HRS
OPERATIONAL TIME:	740 HRS
AMD OPERATION UPTIME:	99.5 %
STANDARD DEVIATION:	0.67
MONTHLY AVERAGE:	0.69 PPB

24 HOUR AVERAGES FOR OCTOBER 2013



### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

OCTOBER 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0	0	0	0	0	0	0	0	0	1	0.0	24	
2	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	0	0	1	0	0	0	1	0	0	1	0	1	0.2	24
3	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
4	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
5	0	1	1	1	1	1	1	1	1	S	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0.9	24
6	1	0	0	1	1	0	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24
7	1	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	2	2	1.7	24	
8	2	1	2	1	1	1	S	1	1	C	C	C	C	C	0	1	1	0	0	0	0	0	0	0	2	0.7	24		
9	0	0	0	0	0	S	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	1.3	24	
10	2	2	2	2	S	1	2	1	2	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	2	1.2	24	
11	0	1	0	S	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
12	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
13	1	S	1	0	0	1	1	1	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0.4	24	
14	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	2	1	2	2	S	2	1.2	24		
15	2	2	2	2	2	2	2	2	3	2	3	3	2	2	2	2	2	2	2	2	2	2	3	S	1	3	2.1	24	
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	S	0	0	2	1.0	24	
17	1	0	0	0	1	1	0	1	0	0	0	0	0	0	P	P	P	P	7	1	S	2	2	2	7	0.9	20		
18	2	2	2	2	2	2	S	1	1	1	C	C	1	1	1	2	1	1	1	S	2	2	2	2	2	2	1.6	24	
19	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	S	1	1	1	1	1	2	1.6	24	
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	2	2	2	2	2	1	2	1.2	24	
21	2	2	2	2	2	2	2	1	1	2	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	2	1.3	24	
22	1	1	1	1	1	1	1	1	1	C	C	C	C	C	1	S	1	1	1	1	1	1	1	1	1	1	1	1.0	24
23	1	1	0	1	1	0	1	0	0	0	0	0	0	1	S	1	1	1	1	1	1	2	2	2	2	0.8	24		
24	1	2	2	2	2	2	2	2	2	2	2	3	3	S	1	1	1	1	1	1	1	0	1	1	3	1.6	24		
25	0	0	0	0	0	0	0	0	0	0	0	0	S	1	1	1	1	1	1	1	1	1	1	1	1	0.5	24		
26	1	1	1	1	1	2	2	2	2	2	2	S	1	1	1	1	1	1	1	1	1	1	0	0	2	1.1	24		
27	0	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	0.6	24	
28	1	1	1	1	1	1	1	1	2	S	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	1.4	24	
29	2	2	3	3	3	3	3	3	S	1	1	1	2	2	1	2	2	1	2	2	2	2	2	2	2	3	2.0	24	
30	2	2	2	2	2	2	2	S	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	24	
31	2	2	2	2	2	2	S	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	2	1.3	24		
HOURLY MAX	2	2	3	3	3	3	3	3	3	2	3	3	3	2	2	2	2	2	7	2	2	3	2	2					
HOURLY AVG	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.0	1.1	0.9	1.0	1.0	1.0	1.1	1.0	1.1	1.0	1.0	1.2	1.0	1.0	1.1	1.0	1.0					

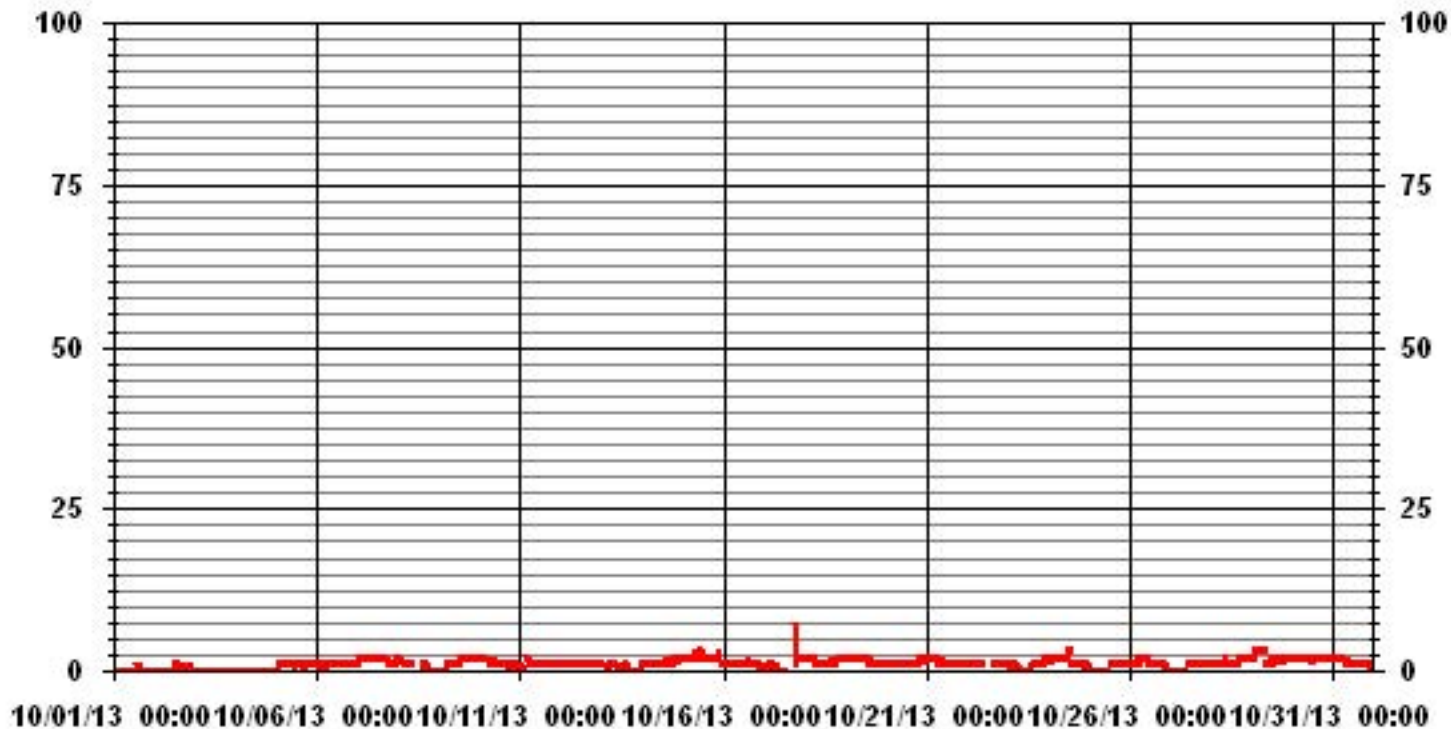
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	524					
MAXIMUM INSTANTANEOUS VALUE:	7	PPB	@ HOUR(S)	18	ON DAY(S)	17
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	12	HRS				
STANDARD DEVIATION:	0.78					

# 01 Hour Averages



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

October 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	3.87	3.30	3.01	1.00	.57	2.01	2.44	1.86	5.02	7.61	10.05	7.04	11.35	13.79	17.95	8.62	99.56
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.28	.00	.00	.14	.00	.00	.43
< 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	3.87	3.30	3.01	1.00	.57	2.01	2.44	1.86	5.02	7.61	10.34	7.04	11.35	13.93	17.95	8.62	

Calm : .00 %

Total # Operational Hours : 696

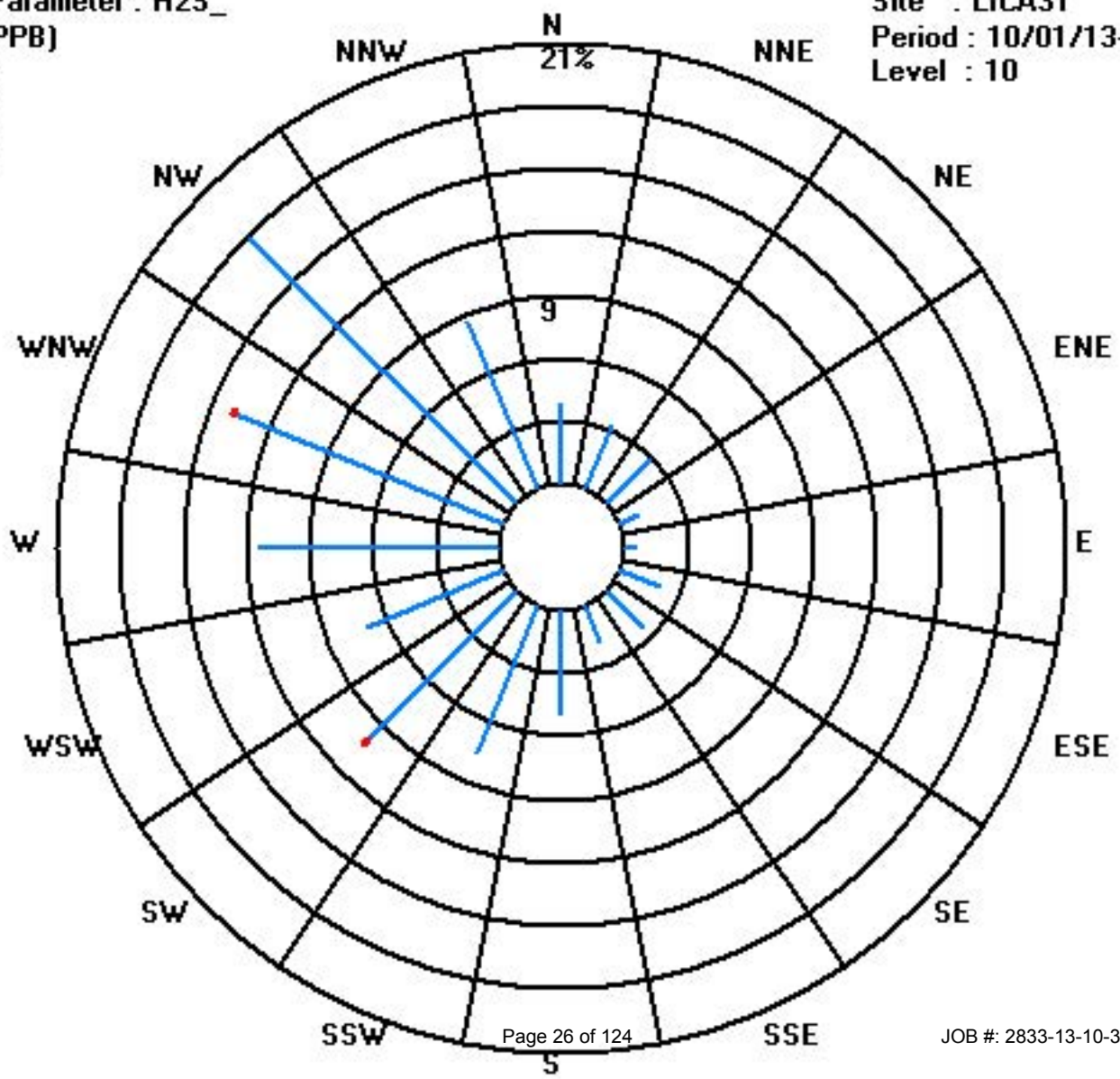
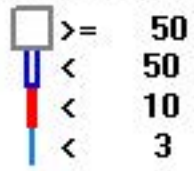
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	27	23	21	7	4	14	17	13	35	53	70	49	79	96	125	60	693
< 10											2			1			3
< 50																	
>= 50																	
Totals	27	23	21	7	4	14	17	13	35	53	72	49	79	97	125	60	

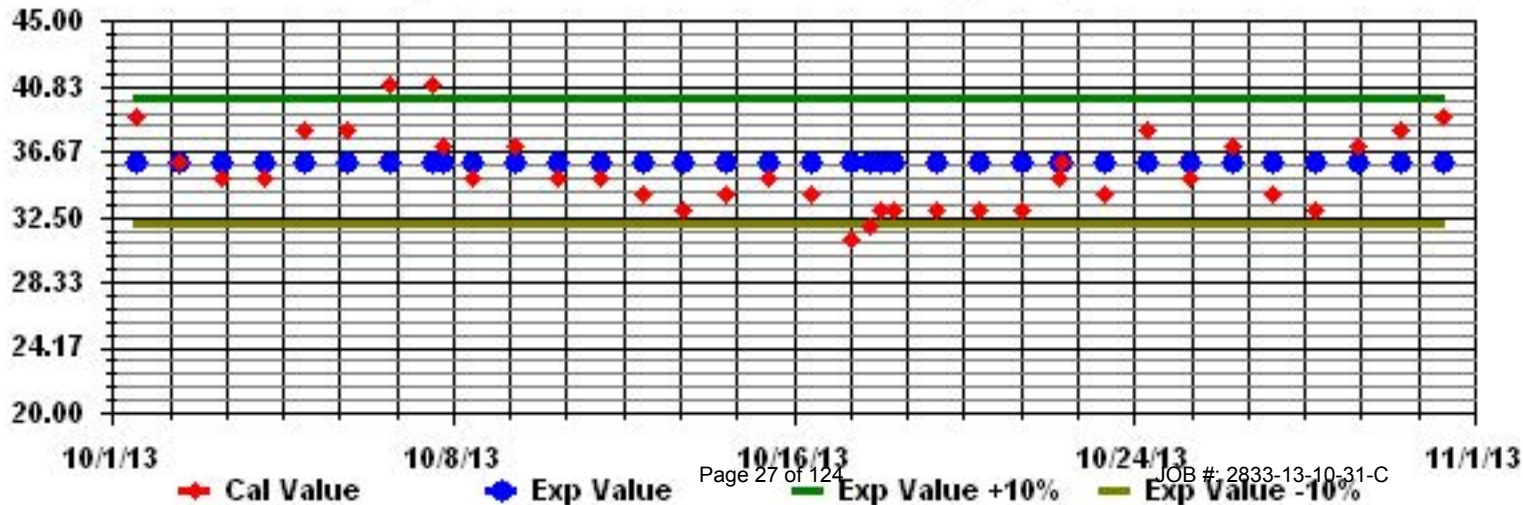
Calm : .00 %

Total # Operational Hours : 696

Class Limits (PPB)



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





# Total Hydrocarbons

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST.LINA

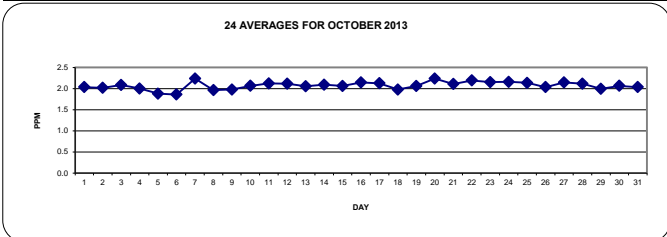
OCTOBER 2013

## 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	2	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	S	1.9	1.9	1.9	2.2	2	1.9	1.9	2	1.9	1.9	1.9	1.9	2.2	2.0	24	
2		1.9	2	2	1.9	2	2	2	2	2	2	2	2	S	1.9	1.9	1.9	1.9	2.2	2.6	2.1	2	2.1	2.1	2.1	2.6	2.0	24		
3		2.1	2.5	2.3	2.3	2.1	2.2	2.1	2.1	2.1	2.1	2.1	S	1.9	1.9	1.9	1.9	2.2	2.2	1.9	2	2	2	2	2	2.5	2.1	24		
4		2.1	2.1	2.2	2.1	2.2	2.2	2.1	2.1	2.1	2.1	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	2.0	24	
5		1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	S	1.9	1.9	1.8	1.8	1.8	1.8	1.9	1.8	1.9	1.9	1.8	1.9	1.9	1.9	2.0	1.9	24		
6		1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	S	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2	2.0	1.9	24		
7		2.1	2.3	2.4	2.6	2.6	2.5	S	2.5	2.3	2.4	2.4	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2	2	1.9	1.9	1.8	2.6	2.2	24		
8		1.8	1.8	1.8	1.8	1.9	1.9	S	1.9	1.9	1.9	2	2	2	C	C	C	C	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	24		
9		2.1	2.1	2.1	2.2	2.1	S	2	2	2	2.1	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	2.0	24		
10		1.9	2.1	1.9	2.3	S	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2.3	2.2	2	2	2.1	2.1	2.1	2.3	2.1	24		
11		2.1	2.1	2.1	S	2.1	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2	2.1	2	2.1	2.1	2.1	2.2	2.3	2.1	2.2	2.2	2.3	2.1	24		
12		2.2	2.2	S	2	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2	2	2	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	24		
13		2.2	S	2	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.2	2.1	24
14		S	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.1	2	2	2	1.9	1.9	2	2	2	2	2	2.1	2.1	S	2.3	2.1	24	
15		2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.4	2.2	S	2.2	2.4	2.1	24		
16		2.2	2.1	2.1	2.1	2.1	2.1	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2	2.1	2.3	2.1	2.4	2.2	S	2.1	2.1	2.4	2.1	24		
17		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	3.4	2.3	2	2	P	P	P	P	1.6	2.1	S	2	2	2	3.4	2.1	20		
18		2.3	2	2	2	2	2	2	2	2	2	2	1.9	1.9	1.8	1.8	1.9	1.9	2	1.9	S	2	2	2.1	2	2.3	2.0	24		
19		2.1	2	2.1	2.1	2.1	2.1	2.1	2.3	2.2	2.2	2	2	2	2	2	2	2	2.1	S	2	2	2	2	2	2.3	2.1	24		
20		2	2	2	2.1	2.1	2	2.1	2.2	2.3	2.4	2.5	2.4	2.4	2.3	2.2	2.2	2.4	S	2.7	2.5	2.3	2.2	2.1	2.1	2.7	2.2	24		
21		2.1	2.1	2.1	2.1	2	2	2	2.2	2.3	2.1	2.1	2	2.1	2.1	2	2	S	2	2.2	2.7	2.4	2	1.9	2	2.7	2.1	24		
22		2	2.1	2.3	2.1	2	2.1	2	2.3	2.4	2.6	2.3	2.1	2.6	2.2	2.1	S	2	2	2	2.1	2.5	2.3	2.2	2.1	2.6	2.2	24		
23		2.1	2.1	2.2	2.3	2.2	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.1	S	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.2	24	
24		2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.4	2.3	2.2	2	2	1.9	S	2.1	2.1	2.1	2.1	2.2	2.3	2.2	2.2	2.2	2.2	2.4	2.2	24		
25		2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.3	S	2	2	2	2	2	2	2.1	2	2.1	2.1	2.1	2.1	2.3	2.1	24	
26		2.1	2.1	2	2	2	2	2.1	2.1	2.1	2	2	S	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.0	24	
27		2.1	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.3	2.1	24		
28		2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	S	2.2	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2.3	2.1	24	
29		2	2	2	1.9	1.9	1.9	1.9	1.9	S	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.0	24	
30		2	2	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	2.1	2.1	2.1	2.1	2.1	24	
31		2.1	2.1	2.1	2.1	2.1	2.2	S	2.1	2.1	2	1.9	1.9	1.9	1.9	2	2	2	2	2	2.1	2.1	2	2	2	2.2	2.0	24		
HOURLY MAX		2.3	2.5	2.4	2.6	2.6	2.5	2.4	2.5	2.6	3.4	2.4	2.6	2.3	2.2	2.2	2.4	2.3	2.7	2.7	2.5	2.3	2.2	2.2						
HOURLY AVG		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0						

### STATUS FLAG CODES

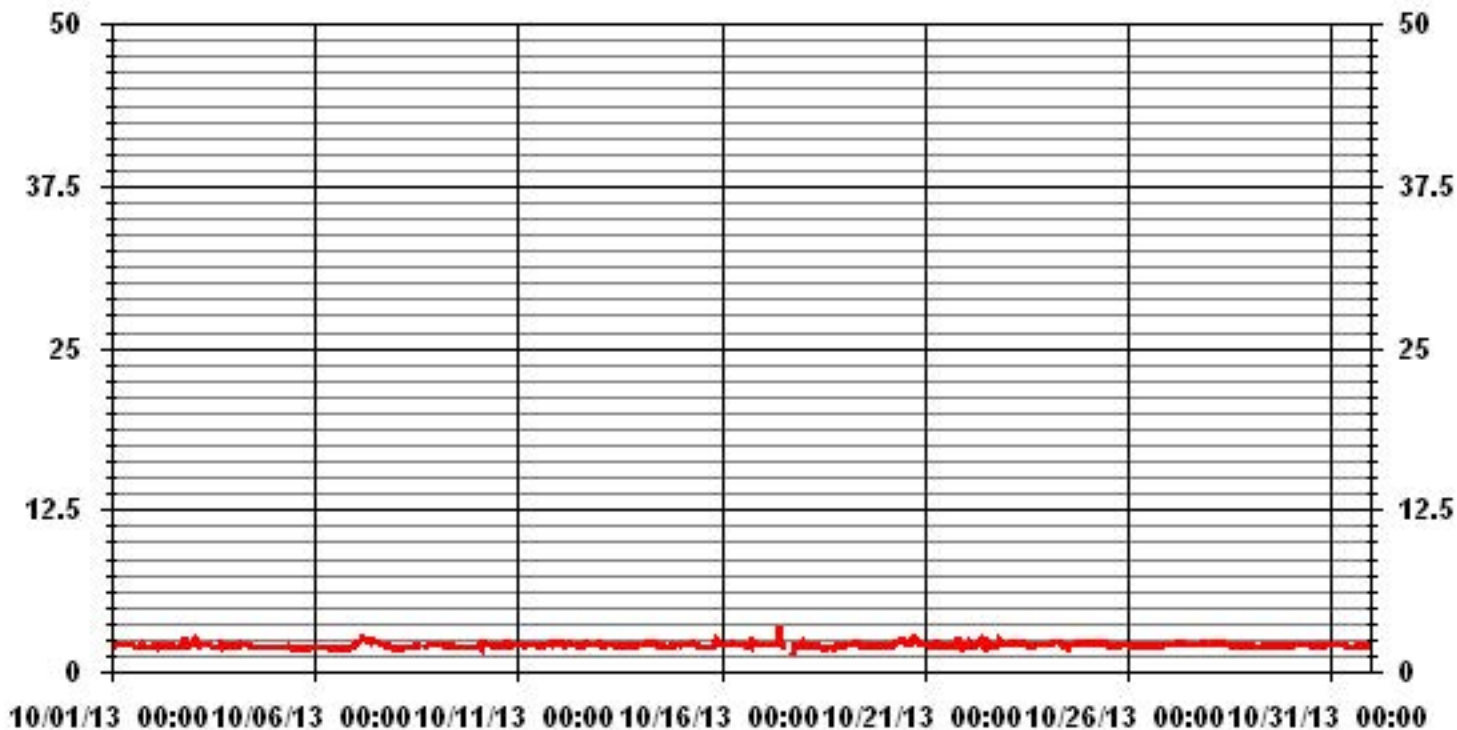
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	704
MAXIMUM 1-HR AVERAGE:	3.4 PPM @ HOUR(S) 10 ON DAY(S) 17
MAXIMUM 24-HR AVERAGE:	2.2 PPM ON DAY(S) VAR
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	0.15
OPERATIONAL TIME:	740 HRS
AMD OPERATION UPTIME:	99.5 %
MONTHLY AVERAGE:	2.07 PPM

### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

OCTOBER 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	2.2	2.1	2.1	2.1	2.2	2.1	2.3	2.7	2.5	2.3	2.3	2.8	2.7	S	2.5	2	2.1	3.3	3.4	2	1.9	2.1	2	2	2	3.4	2.3	24	
2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	S	1.9	1.9	2.1	2.3	2.5	4.2	6.3	2.7	2.8	3	2.6	6.3	2.5	24		
3	2.4	5.7	4.5	3.5	2.4	2.5	2.4	2.9	2.1	2.1	2.2	S	2	2	2	2.3	6.9	5.8	2	2.3	2.9	2	2	2.2	6.9	2.9	24		
4	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	S	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	2.0	24
5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	2.2	S	2	2.6	2.1	1.9	1.8	1.9	2.2	2.3	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.6	2.0	24	
6	1.9	1.9	1.9	1.9	1.9	1.9	2	2	S	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	2	2.1	2.1	2.1	1.9	1.9	24	
7	2.2	2.3	2.5	2.9	2.8	2.7	2.7	S	2.6	2.4	2.4	2.4	2.4	2.3	2.4	2.2	2.2	2.3	2.2	2.2	2.1	2	2.1	2.2	2.9	2.4	24		
8	2.7	2	1.9	1.9	1.9	1.9	S	1.9	2	2.1	2.1	2	C	C	C	C	C	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.7	2.1	24		
9	2.2	2.2	2.3	2.4	2.2	S	2	2.1	2.1	2.1	2.1	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2.4	2.0	24		
10	2	2.9	2	24.1	S	2.1	2.2	2.2	2.2	2.1	4.3	2.7	2.1	2.1	2.2	2.9	2.6	4.2	4.2	2.2	3	3.1	3	2.1	24.1	3.6	24		
11	2.1	2.1	2.2	S	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.3	2.2	2.1	2.2	2.1	2.2	2.3	2.4	4.3	4.8	2.3	2.7	2.6	4.8	2.5	24		
12	2.8	2.2	S	2.1	2.1	2.6	2.5	2.3	2.4	2.4	2.3	2.2	2.2	2.1	2.1	2.9	3.3	3.9	2.5	2.1	2.1	2.1	2.2	2.5	3.9	2.4	24		
13	2.2	S	2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2	2.1	2	2	2	2	2.1	2.4	2.1	24			
14	S	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.1	2.1	2.1	2	2	2	2	2	2.1	2.1	2.1	S	2.3	2.1	24		
15	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2	2	1.9	2.1	2.9	2.2	2	2.1	2	2.9	3.7	3.6	S	3.9	3.9	2.4	24		
16	2.8	2.4	2.5	2.5	2.2	2.2	2.8	2.5	2.7	2.4	2.3	2.2	2.2	2.3	2.2	3.1	8	2.3	4	3.4	S	2.7	2.1	8	2.8	24			
17	2.3	2.1	2.6	2.1	2.1	2.1	2.1	2.1	2.2	2.2	4.9	3	2.1	2.2	P	P	P	P	2.4	2.3	S	2	2	2.1	4.9	2.4	20		
18	4.3	3.1	2	2	2	2	2	2	2.1	2	2.1	2	2	1.9	2	2	2.3	3.4	2.5	S	2.1	2.1	2.1	2.1	4.3	2.3	24		
19	2.1	2.1	2.1	2.1	2.1	2.1	2.1	3.7	2.8	2.7	2.7	2.4	2.4	2.2	2.7	2.1	2.1	2.1	S	2	2.1	2.2	2.3	2.1	3.7	2.3	24		
20	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.5	2.5	2.5	2.4	2.4	2.3	2.3	2.5	S	2.7	2.6	2.5	2.2	2.2	2.2	2.7	2.3	24		
21	2.1	2.2	2.3	2.9	2.1	2.1	2.3	2.9	2.9	2.9	2.6	2.4	3.1	2.9	2.2	3.5	S	2.3	4.6	5.9	8.9	2	2	2	8.9	3.0	24		
22	2.2	2.3	6.3	3.1	2.1	2.1	2.1	6	2.6	3.8	2.6	2.6	Y	3.1	2.4	S	2.3	2.1	2.1	3.1	4	3.6	2.8	2.4	6.3	3.0	23		
23	2.2	2.2	2.2	3.6	3.5	4.2	2.8	2.9	2.3	2.5	2.4	2.3	2.2	S	2.2	2	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.2	4.2	2.5	24		
24	2.1	2.2	2.2	2.2	2.3	2.4	2.4	2.5	2.4	2.2	2.1	2	2	S	2.1	2.2	2.1	2.2	2.5	2.5	2.5	2.2	2.2	2.3	2.5	2.3	24		
25	2.4	2.3	2.4	2.4	2.4	2.4	2.4	2.5	2.4	2.3	2.3	2.5	S	2.2	2.2	2.3	2.3	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.5	2.3	24		
26	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	2.3	2.1	2.4	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.4	2.1	24		
27	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	S	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.3	2.2	24		
28	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.4	S	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	2.4	2.2	24		
29	2	2	2	2	2	1.9	1.9	S	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2.1	2.1	2.0	24		
30	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	2.2	2.3	2.4	2.3	2.2	2.4	2.3	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.2	24		
31	2.1	2.2	2.2	2.2	2.2	2.2	S	2.4	2.1	2.1	2	2	2.1	2.2	2.1	2.1	2.2	2.2	2.2	2.3	2.5	2.2	2.1	2.1	2.5	2.2	24		
HOURLY MAX	4.3	5.7	6.3	24.1	3.5	4.2	2.8	6.0	2.9	3.8	4.9	3.0	3.1	3.1	2.9	3.5	6.9	8.0	4.6	6.3	8.9	3.6	3.0	3.9					
HOURLY AVG	2.3	2.3	2.4	3.0	2.2	2.2	2.5	2.3	2.3	2.3	2.4	2.3	2.2	2.2	2.2	2.2	2.4	2.7	2.4	2.6	2.7	2.2	2.2	2.2					

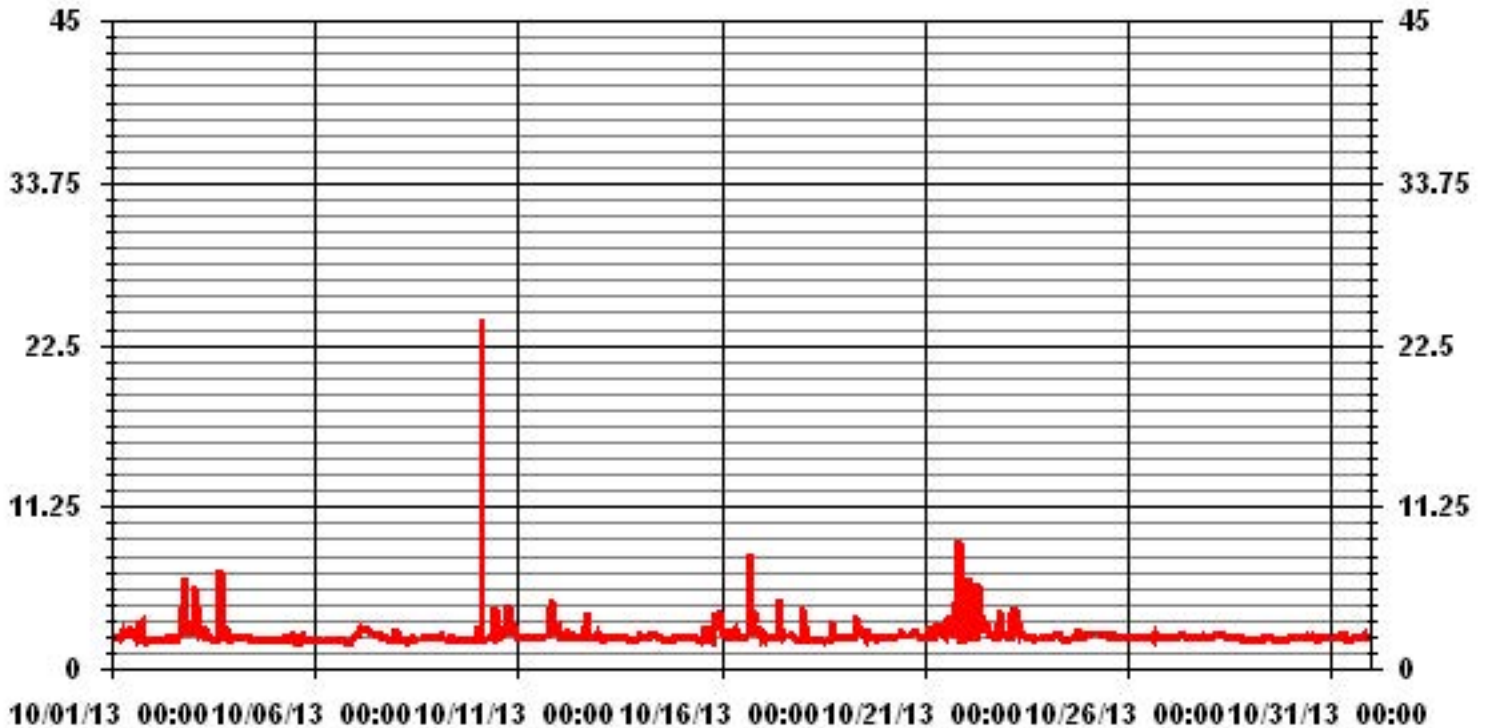
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	702					
MAXIMUM INSTANTANEOUS VALUE:	24.1	PPM	@ HOUR(S)	3	ON DAY(S)	10
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	739	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	1.05					

# 01 Hour Averages



LICA31  
 THC / WDR Joint Frequency Distribution (Percent)

October 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	3.83	3.26	2.98	1.13	.56	1.98	2.41	1.84	4.97	7.52	10.22	7.10	11.64	14.06	17.75	8.52	99.85
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.14
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.83	3.26	2.98	1.13	.56	1.98	2.41	1.84	4.97	7.52	10.22	7.10	11.64	14.06	17.89	8.52	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	27	23	21	8	4	14	17	13	35	53	72	50	82	99	125	60	703
< 10.0															1		1
< 50.0																	
>= 50.0																	
Totals	27	23	21	8	4	14	17	13	35	53	72	50	82	99	126	60	

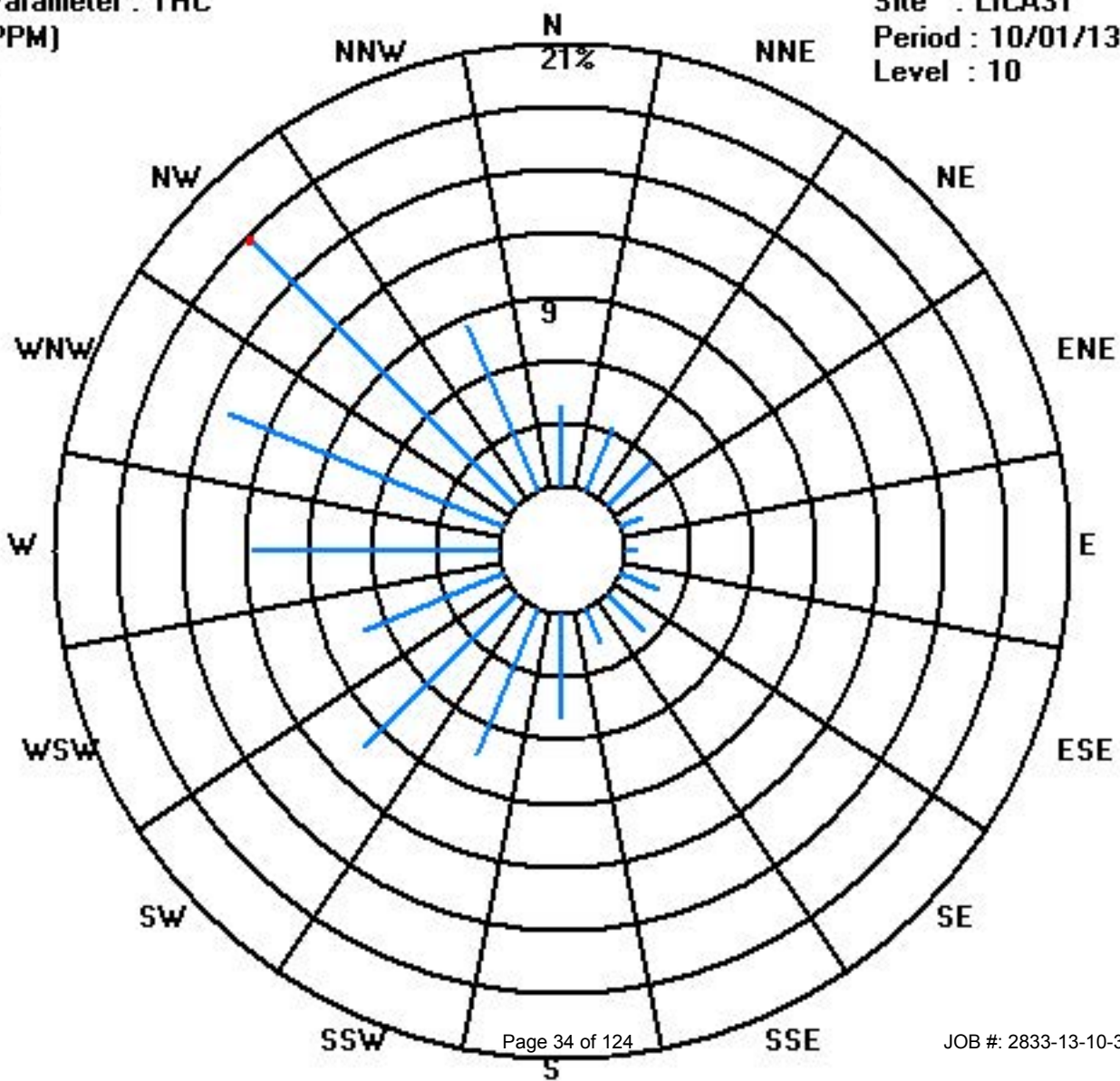
Calm : .00 %

Total # Operational Hours : 704

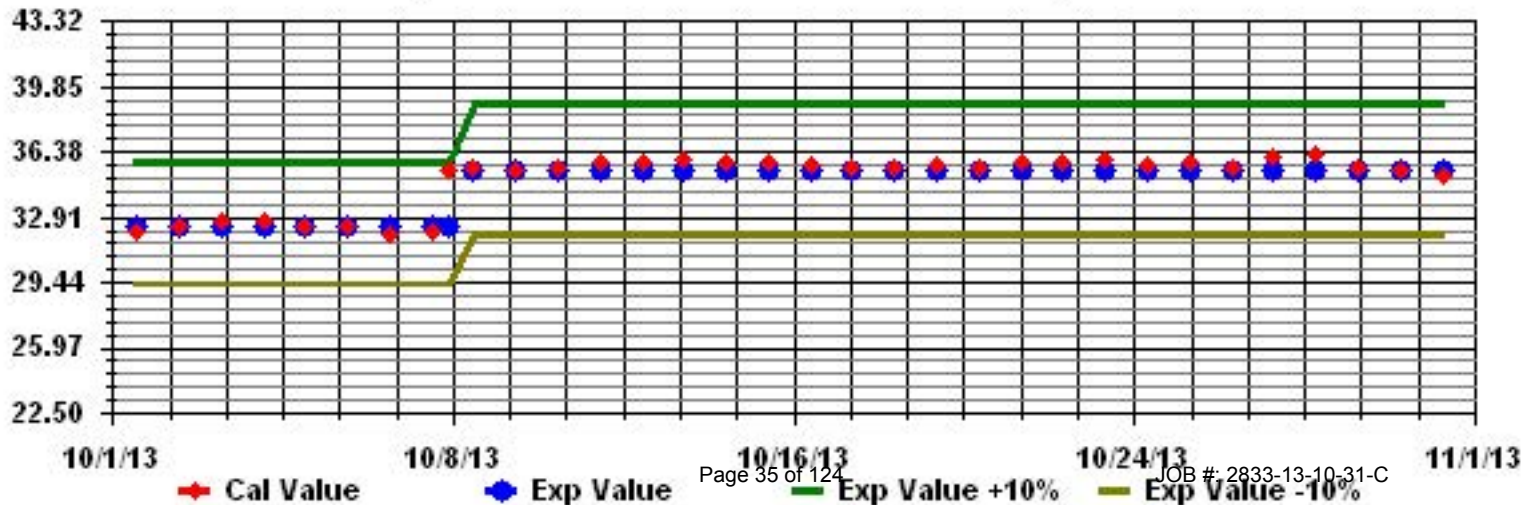
Class Limits (PPM)

Period : 10/01/13-10/31/13

Level : 10



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





# Ozone

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

OCTOBER 2013

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

MST

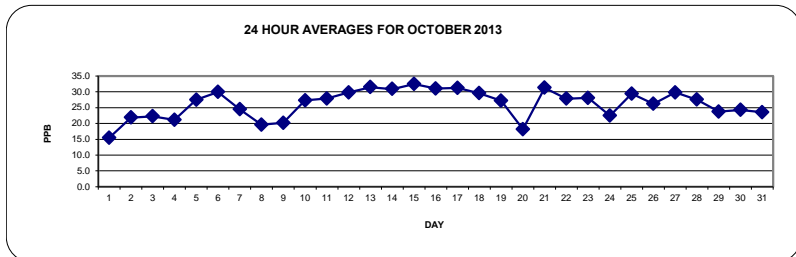
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	
DAY																											
1	19	19	18	17	16	15	14	13	12	12	13	14	13	S	14	15	17	17	17	17	16	15	17	16	19	15.5	24
2	16	15	16	19	22	21	20	22	23	23	23	24	S	26	26	25	26	26	21	18	16	20	26	29	29	21.9	24
3	29	28	24	24	25	26	22	15	11	12	13	S	20	21	24	24	25	25	25	25	21	25	25	23	29	22.3	24
4	20	15	10	10	9	9	9	11	12	13	S	25	28	28	31	32	31	29	27	27	27	27	28	28	32	21.1	24
5	27	26	24	21	19	18	16	16	16	S	24	30	35	36	36	35	33	32	30	30	31	32	33	32	36	27.5	24
6	32	32	31	30	29	28	26	23	S	26	28	29	30	33	34	34	34	34	31	31	31	29	27	27	34	30.0	24
7	26	24	22	19	19	20	19	S	19	20	20	20	22	24	26	28	28	26	27	26	29	35	36	36	36	24.5	24
8	36	34	31	30	29	28	S	23	23	20	16	16	S	S	14	12	12	12	12	12	12	12	12	12	36	19.6	24
9	13	13	15	15	14	S	15	14	14	16	22	23	26	27	25	26	26	25	25	24	23	21	21	21	27	20.2	24
10	20	22	18	18	S	17	16	15	16	19	26	30	32	36	36	36	35	35	35	35	34	33	32	31	36	27.3	24
11	30	28	27	S	24	21	21	21	20	23	26	27	29	31	31	31	31	31	31	31	32	32	32	31	32	27.9	24
12	30	29	S	28	27	27	27	26	23	22	25	27	32	35	36	35	34	34	35	33	31	30	29	30	36	29.8	24
13	30	S	31	28	23	23	22	23	21	25	31	37	38	38	38	38	35	35	34	35	36	35	35	33	38	31.5	24
14	S	27	28	27	25	25	24	24	21	22	27	33	36	37	37	38	39	39	37	35	34	32	32	S	39	30.9	24
15	32	31	30	30	28	26	24	23	24	30	33	35	34	33	33	37	37	38	38	39	39	38	S	34	39	32.4	24
16	33	29	28	26	24	23	23	25	25	28	30	33	35	37	36	36	36	35	35	35	35	S	33	33	37	31.0	24
17	33	32	32	31	31	30	31	31	31	29	29	31	33	35	P	P	P	P	32	31	S	30	30	31	35	31.2	20
18	31	31	31	29	29	27	25	21	19	21	24	31	33	36	38	37	36	34	32	S	29	29	28	28	38	29.5	24
19	28	28	26	26	26	25	26	30	32	33	33	33	33	31	29	27	25	25	S	22	23	22	21	21	33	27.2	24
20	22	24	17	17	18	19	18	15	14	15	17	18	20	23	24	22	18	S	13	13	16	17	19	19	24	18.2	24
21	19	24	25	26	26	27	28	28	28	29	32	34	36	37	38	37	S	36	35	35	35	35	35	34	38	31.3	24
22	33	30	23	24	24	23	23	24	9	C	C	C	C	31	35	S	37	34	33	32	31	29	28	25	37	27.8	24
23	25	24	21	17	17	25	27	27	28	28	28	28	29	31	S	33	33	34	35	34	33	31	30	27	35	28.0	24
24	27	25	23	24	22	20	20	20	22	22	23	25	28	S	27	26	26	23	20	17	18	18	19	21	28	22.4	24
25	24	27	29	28	30	30	31	31	30	29	29	29	S	30	32	32	31	31	31	30	30	28	27	27	32	29.4	24
26	27	26	27	26	24	21	18	18	20	21	22	S	29	33	34	30	29	28	29	30	31	27	24	28	34	26.2	24
27	26	25	25	26	26	28	29	30	31	32	S	33	33	33	32	32	32	31	30	29	29	30	32	31	33	29.8	24
28	31	29	29	27	25	22	22	22	21	S	26	29	32	31	32	31	31	30	27	28	28	27	27	26	32	27.5	24
29	26	25	24	25	25	25	24	23	S	22	22	21	24	26	27	26	26	25	24	23	21	20	18	27	27	23.7	24
30	17	15	14	12	11	13	16	S	25	27	29	31	32	32	33	34	33	28	27	27	27	26	26	23	34	24.3	24
31	20	16	13	14	14	15	S	23	24	29	27	26	26	24	26	25	29	31	29	25	25	27	27	26	31	23.5	24
HOURLY MAX	36	34	32	31	31	30	31	31	32	33	33	37	38	38	38	38	39	39	38	39	39	38	35	36			
HOURLY AVG	26.1	25.1	23.7	23.1	22.7	22.6	21.9	22.0	21.2	23.1	24.9	27.6	29.1	31.3	31.1	30.2	29.8	29.8	28.5	27.7	27.4	26.9	27.0	26.7			

### STATUS FLAG CODES

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

### OBJECTIVE LIMIT:

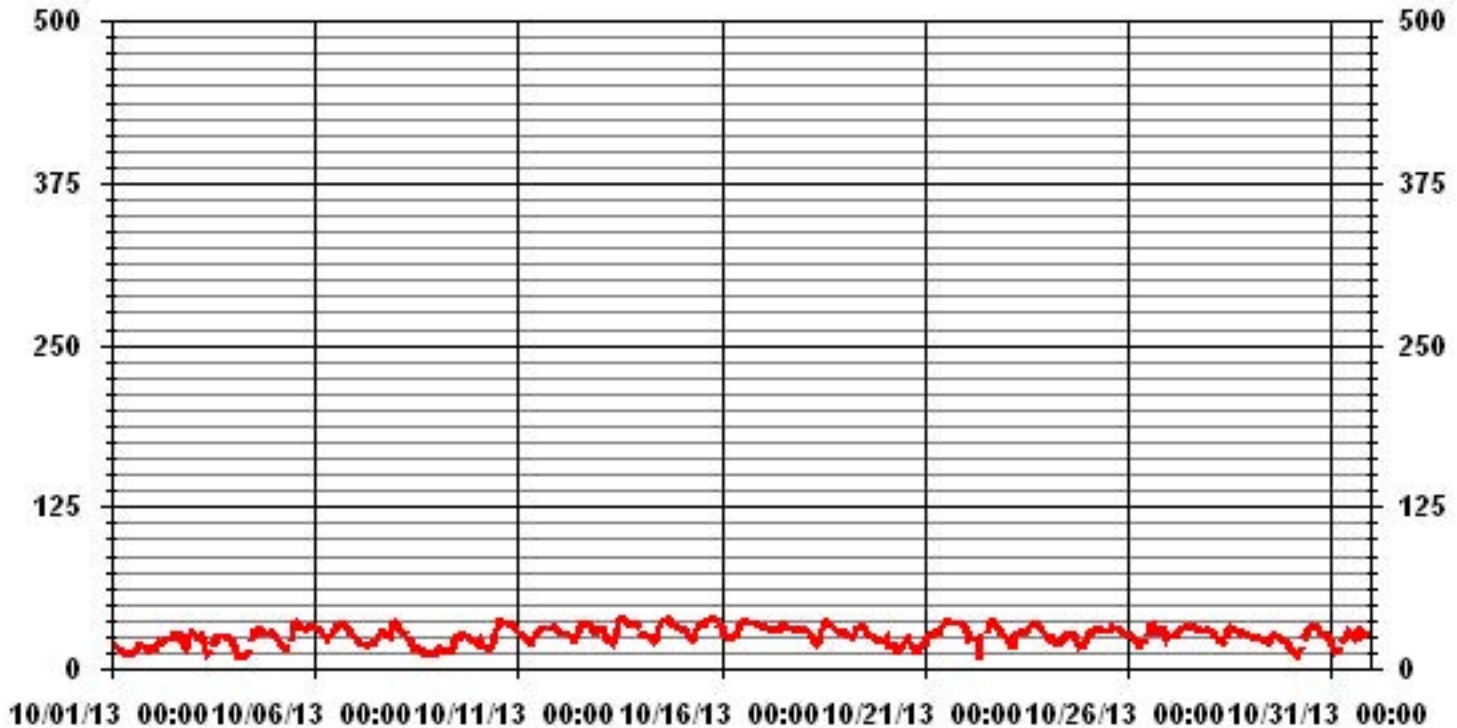
ALBERTA ENVIRONMENT: 1-HR 82 PPB



### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	702				
MAXIMUM 1-HR AVERAGE:	39	PPB	@ HOUR(S)	VAR	ON DAY(S) 14, 15
MAXIMUM 24-HR AVERAGE:	32.4	PPB			ON DAY(S) 15
					VAR-VARIOUS
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	740	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.5	%
STANDARD DEVIATION:	6.62		MONTHLY AVERAGE:	26.2	PPB

### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

OCTOBER 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	19	19	19	18	17	16	15	14	13	13	14	14	S	15	16	19	19	18	18	17	17	18	17	19	19	16.5	24
2	17	17	17	21	23	23	22	23	25	24	25	26	S	22	28	26	28	26	20	19	28	30	31	31	31	24.1	24
3	30	30	30	25	27	27	27	18	13	13	18	S	22	22	26	26	26	26	25	25	26	26	26	30	24.3	24	
4	23	17	13	11	10	9	10	11	12	15	S	27	30	31	32	32	32	31	28	28	28	28	28	29	32	22.4	24
5	28	27	25	22	21	19	18	16	17	S	26	34	36	37	36	36	34	33	32	31	32	34	34	34	37	28.8	24
6	33	33	32	32	30	29	27	25	S	27	29	30	31	35	35	35	35	35	32	31	31	30	28	27	35	31.0	24
7	26	25	24	21	20	20	20	S	20	21	21	21	23	25	28	28	30	29	27	28	27	34	36	37	37	25.7	24
8	37	35	34	31	30	29	S	24	24	23	17	16	17	C	C	15	13	12	12	12	12	12	13	12	37	20.5	24
9	13	14	15	15	15	S	16	14	16	18	24	24	28	29	26	27	27	26	26	24	24	22	22	21	29	21.1	24
10	21	23	21	20	S	18	17	16	18	24	28	31	34	37	37	37	36	36	35	35	35	34	33	31	37	28.6	24
11	30	29	28	S	25	22	22	22	22	25	27	28	31	32	32	32	32	31	31	32	33	32	32	32	33	28.8	24
12	31	29	S	29	28	27	27	26	25	23	26	30	34	35	36	36	35	35	35	35	33	31	30	31	36	30.7	24
13	30	S	32	31	24	24	25	24	23	27	35	39	39	39	39	38	37	35	35	37	36	36	36	36	39	32.9	24
14	S	30	30	29	28	28	25	25	22	24	30	37	37	38	39	39	40	39	39	36	34	34	32	S	40	32.5	24
15	33	31	31	31	30	27	26	24	27	32	35	35	35	34	35	38	39	39	39	39	39	S	35	39	39	33.6	24
16	33	31	29	27	25	24	25	26	26	30	33	34	37	37	36	37	37	36	36	36	35	S	34	33	37	32.0	24
17	33	32	32	32	33	31	31	32	32	30	30	32	35	35	P	P	P	P	33	31	S	30	31	32	35	31.9	20
18	32	32	32	31	30	28	27	22	20	23	28	33	36	38	38	38	37	36	33	S	29	29	29	29	38	30.9	24
19	29	30	27	28	28	26	28	32	33	33	34	34	33	30	29	26	25	S	23	24	23	22	21	34	28.3	24	
20	25	27	19	19	19	20	19	17	15	16	17	20	22	24	25	24	20	S	14	13	17	17	20	19	27	19.5	24
21	21	26	26	27	27	28	28	28	29	31	33	37	37	38	38	38	S	37	36	36	36	35	36	35	38	32.3	24
22	36	32	25	26	26	25	24	28	19	C	C	C	C	35	38	S	38	36	34	33	32	31	30	27	38	30.3	24
23	27	25	24	20	23	30	30	29	30	29	29	29	31	32	S	34	34	35	36	35	34	32	28	36	29.9	24	
24	28	26	25	25	22	21	21	22	22	24	27	29	S	27	27	27	25	22	18	18	19	20	23	29	23.5	24	
25	26	29	29	30	30	32	32	31	30	30	30	30	S	31	32	33	32	32	31	32	32	30	28	28	33	30.4	24
26	28	27	27	27	25	23	19	19	20	22	24	S	31	34	34	33	30	29	29	31	32	30	27	28	34	27.3	24
27	28	25	25	28	27	29	30	31	32	33	S	34	34	34	33	33	33	32	31	30	30	31	32	34	30.7	24	
28	31	31	29	29	26	24	23	22	S	28	31	32	32	33	33	32	32	28	29	28	28	28	27	33	28.7	24	
29	26	25	25	26	26	25	25	24	S	23	23	24	25	27	28	26	26	26	25	24	23	22	21	19	28	24.5	24
30	18	16	14	13	11	16	20	S	27	27	31	32	32	33	34	35	34	32	27	28	27	27	26	26	35	25.5	24
31	21	19	14	15	15	16	S	25	28	31	29	27	27	25	27	28	33	32	32	27	26	27	28	26	33	25.1	24
HOURLY MAX	37	35	34	32	33	32	32	32	33	33	35	39	39	39	39	39	40	39	39	39	39	39	39	36	37		
HOURLY AVG	27.1	26.4	25.1	24.6	24.0	23.9	23.4	23.1	22.8	24.6	26.7	29.1	30.5	32.5	32.0	31.3	31.1	31.0	29.6	28.6	28.3	28.3	28.1	27.7			

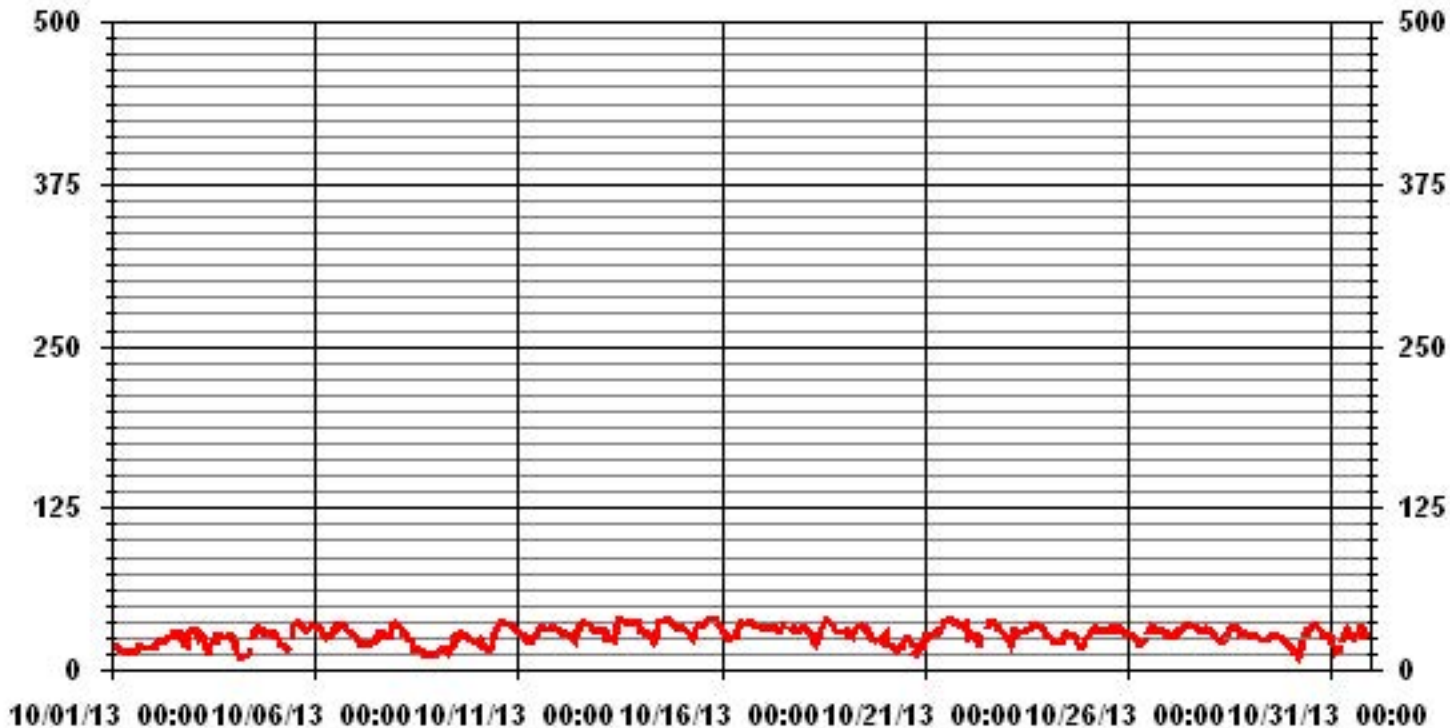
**STATUS FLAG CODES**

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:	702					
MAXIMUM INSTANTANEOUS VALUE:	40	PPB	@ HOUR(S)	16	ON DAY(S)	14
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	6.56					

# 01 Hour Averages



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

October 2013

Distribution By % Of Samples

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

Wind Parameter : WDR  
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50	3.84	3.27	2.99	.99	.56	1.99	2.42	1.85	4.98	7.54	10.25	7.12	11.53	13.96	18.09	8.54	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.84	3.27	2.99	.99	.56	1.99	2.42	1.85	4.98	7.54	10.25	7.12	11.53	13.96	18.09	8.54	

Calm : .00 %

Total # Operational Hours : 702

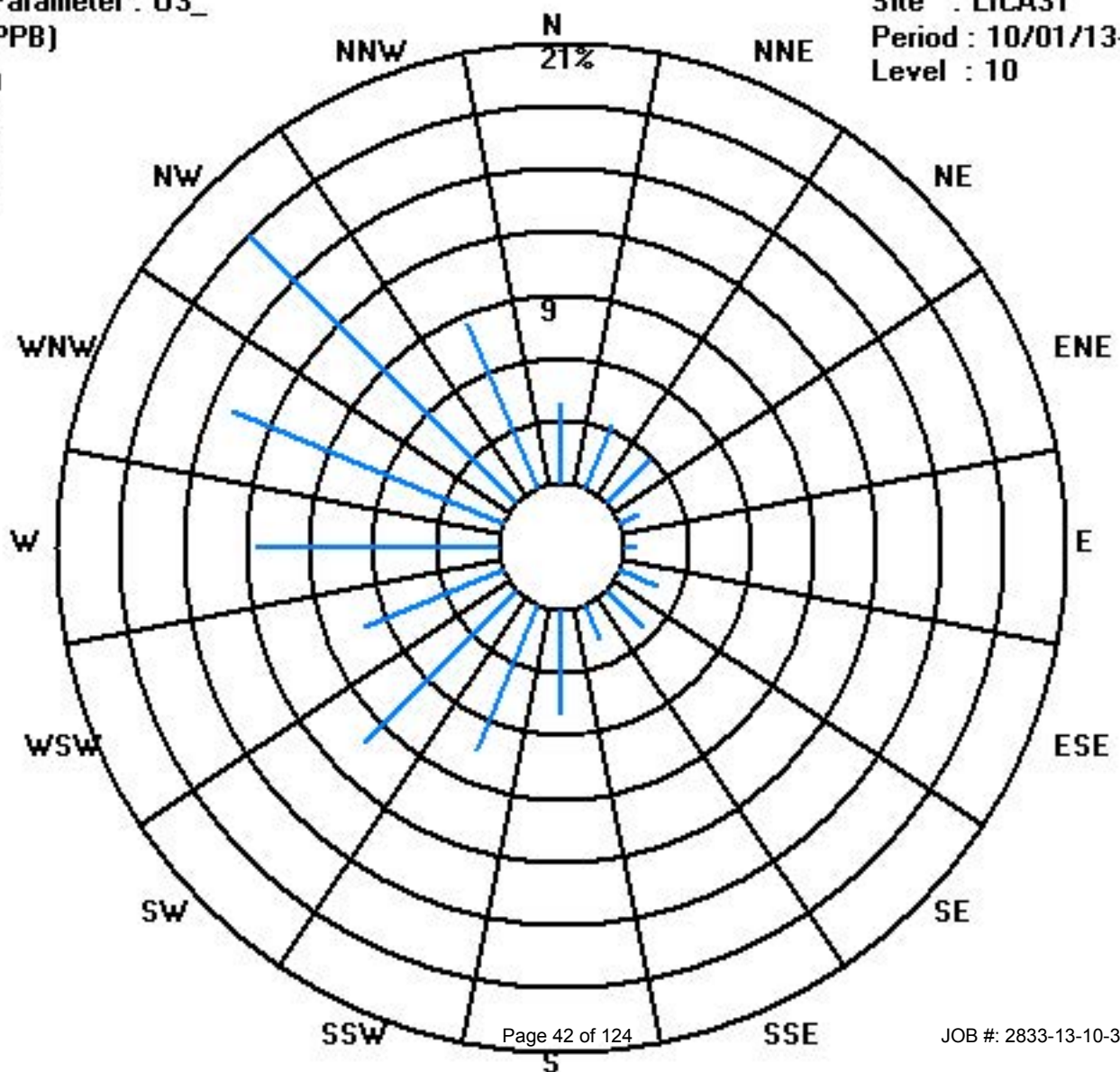
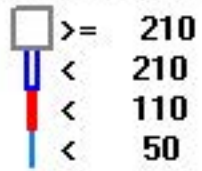
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50	27	23	21	7	4	14	17	13	35	53	72	50	81	98	127	60	702
< 110																	
< 210																	
>= 210																	
Totals	27	23	21	7	4	14	17	13	35	53	72	50	81	98	127	60	

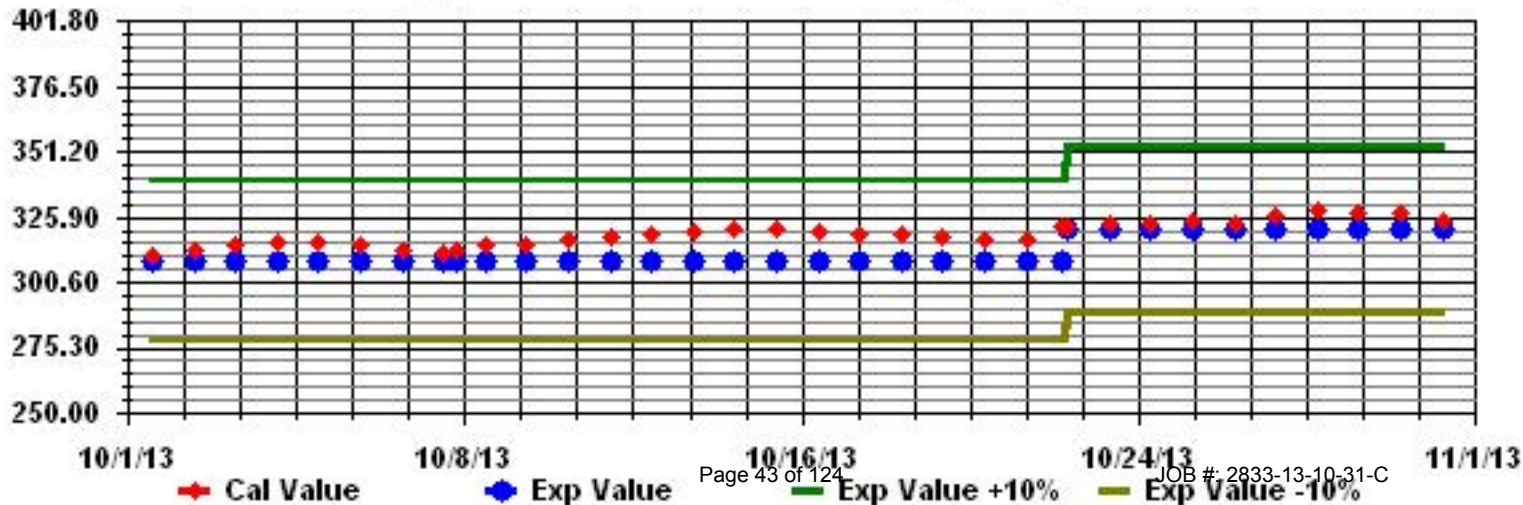
Calm : .00 %

Total # Operational Hours : 702

Class Limits (PPB)



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





# Nitrogen Dioxide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

OCTOBER 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	24:00	24:00	24:00
DAY	HOURLY MAX	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.	RDGS.		
1	0.6	0.7	0.7	0.7	0.5	0.6	0.6	0.6	0.7	0.8	0.8	0.6	0.7	0.6	S	0.2	0.5	0.4	0.4	0.5	0.1	0.2	0.2	0.2	0.1	0.8	0.5	24		
2	0.1	0.1	0.2	0	0.1	0.1	0.1	0.1	0.3	0.4	0.4	0.2	0.1	S	0.4	0.5	0.7	0.7	1.1	1.1	1.1	1.3	0.9	0.7	0.6	1.3	0.5	24		
3	0.4	0.5	0.6	0.7	0.6	0.6	1	1.3	1.3	1.6	1.7	S	0.7	1	0.5	1.1	0.5	0.9	0.9	1	0.9	0.7	0.7	0.9	1.7	0.9	24			
4	1.1	1.2	1.4	1.6	1.7	3.4	3.3	1.9	1.5	1.8	S	1.4	2	1.8	1.2	1	0.9	1.2	1.2	1.4	1.6	1.5	1.7	1.5	3.4	1.6	24			
5	1.4	1.6	1.7	2.3	2.1	2.5	3.3	3.8	4.4	S	2.5	1	0.3	0.3	0.2	0.2	0.7	1.3	1.5	1.4	0.6	0.6	0.5	0.6	4.4	1.5	24			
6	0.4	0.5	0.2	0	0.3	0.3	0.5	1.1	S	0.6	0.5	0.6	0.5	0.4	0.3	0.6	0.7	0.7	0.9	0.9	0.9	1.9	2.4	2.1	2.4	0.8	24			
7	2.3	3.2	3.2	3.4	3.2	3	3.2	S	3.1	2.8	3.1	3.1	2.5	2.5	2.7	2.9	2.2	2.1	2.8	2.1	2.2	1.1	0.3	0.1	3.4	2.5	24			
8	0	0.1	0.3	0.3	0.3	0.5	S	0.7	0.6	C	C	C	C	C	C	C	C	0.5	0.6	0.5	0.5	0	0.4	0.2	0.7	0.4	24			
9	0.2	0.3	0.1	0.5	0.3	S	0.3	0.5	1	1.2	0.7	1.1	1.2	1.2	1.8	1.4	1.5	1.8	1.3	1.3	1.6	1.9	2.1	2.1	2.1	1.1	24			
10	2.2	2.1	2.1	4.2	S	2	2.9	2.6	2.7	2.3	1.4	1	1	0.7	0.7	0.6	0.7	0.7	0.8	0.9	0.6	0.6	0.8	0.8	4.2	1.5	24			
11	1	0.8	0.9	S	0.8	1.4	1.7	1.4	1.4	0.9	0.6	0.6	0.3	0.2	0.3	0.3	0.2	0.4	0.2	0.1	0.3	0.1	0.4	0.4	1.7	0.6	24			
12	0.6	0.6	S	0	0.3	0.3	0.5	0.8	0.9	1	0.7	0.2	0.2	0	0.1	0	0.7	0.2	0	0.2	1.3	1.8	1	0.5	1.8	0.5	24			
13	0.8	S	1	1.6	2.7	2.4	3.4	2.9	2.9	2	1.1	0.6	0.7	0.6	0.6	0.3	0.8	0.9	1.2	0.9	0.6	0.7	1	0.9	3.4	1.3	24			
14	S	1.9	1.9	2.6	2.4	2.5	2.6	2.8	2.6	3.7	3.1	2.3	2.1	2.5	2.6	2.6	2.4	2.2	3.2	3.3	3.7	3.5	3.1	S	3.7	2.7	24			
15	2	2.1	2.2	2.2	2.7	2.9	3.4	4.4	5.3	3.5	2	0.9	0.5	0.5	0.6	0	0.3	0.9	0.3	0	0.3	0.4	S	0.2	5.3	1.6	24			
16	0.4	0.4	0.3	0.5	0.7	0.7	0.8	0.5	0.5	0.4	0.7	0.3	0.3	0.1	0.2	0.4	0.3	0.5	0.4	0.6	0.3	S	0.5	0.3	0.8	0.4	24			
17	0.6	0.5	0.6	0.7	0.6	0.7	0.8	1	1.1	0.9	0.7	0.4	0.4	0.1	P	P	P	P	0.5	0.3	S	0	0	0	1.1	0.5	20			
18	0	0	0	0.2	0.4	0.5	0.8	1.6	2.2	1.9	1.1	0.4	0.2	0	0	0	0.4	0.6	0.8	S	1.3	1.5	2.1	1.7	2.2	0.8	24			
19	1.8	1.8	1.9	1.8	1.6	1.5	1.4	0.9	0.8	0.5	0.8	0.5	0.6	0.3	0.4	0.3	0.6	0.8	S	1	1	0.9	1	0.9	1.9	1.0	24			
20	1	1.1	1.2	1.1	0.9	0.7	1	1.7	2.5	2	2	1.8	2.1	1.8	1.7	1.8	2.8	S	3.5	3.3	2.9	3.3	3.6	3.7	3.7	2.1	24			
21	3.3	2.2	1.4	0.9	1.6	1	0.8	0.5	0.8	0.7	0.7	0.5	0.3	0.2	0	0.4	S	0.3	0.8	0.7	1.1	0.9	0.8	0.8	3.3	0.9	24			
22	1	1.3	2.5	2.4	1.9	1.8	1.3	1.9	4.2	4	2.2	1.3	1.1	0.8	1	S	0	0.4	0.6	0.8	0.5	0.5	0.7	0.8	4.2	1.4	24			
23	0.7	0.6	0.6	0.9	1.6	0.9	0.4	0.8	0.6	0.6	0.3	0.3	0.4	0.4	S	0	0.4	0.6	0.6	0.6	0.7	1.4	1.2	1.4	1.6	0.7	24			
24	1	1.4	1.5	1	1.4	1.8	2	2.3	1.9	2	2.1	1.9	2	S	1.6	2.5	2.9	4	5.8	6.5	5.1	4.5	3.5	2.6	6.5	2.7	24			
25	1.7	1.2	0.8	0.9	0.6	0.3	0.4	0.3	0.4	0.5	0.2	0.3	S	0	0.1	0.2	0.9	0.7	0.6	0.6	0.8	1.5	1.7	1.3	1.7	0.7	24			
26	1.2	1.1	1.1	1.4	1.7	2.5	3.4	4.8	4.3	3.4	3.1	S	1.3	1	0.8	1.3	1.8	1.7	1.5	0.8	0.4	1.4	2.5	1.2	4.8	1.9	24			
27	1.4	1.1	0.7	0.6	0.9	0.7	0.5	0.4	0.3	0.3	S	0	0.2	0.6	0.6	0.7	0.7	0.9	0.3	1.1	0.8	0.3	0	0.2	1.4	0.6	24			
28	0.2	0.9	1	1.1	1.1	1.9	2.6	2.4	2.9	S	1.3	0.8	0.5	0.5	0.8	1.4	1.8	2.6	3.1	1.6	1.5	1.5	1.4	1.2	3.1	1.5	24			
29	1.1	1.4	1.9	1.9	1.6	2	1.9	2.1	S	1.9	2.7	4.6	2.5	2.3	2.4	2.7	2.8	2.8	2.7	2.7	2.8	2.7	2.9	3.2	4.6	2.4	24			
30	3.6	4	4.8	5.9	6.8	7.6	6.7	S	2.5	1.8	1.4	1	0.7	0.7	0.8	0.8	0.4	1.9	1.6	1.6	2.2	2.6	2.8	3.5	7.6	2.9	24			
31	4.7	8.2	10.3	8.9	7.2	7.1	S	4.6	4.3	1.7	0.8	0.2	0	0.2	0	0.4	0	0	0	0	0	0	0	0	10.3	2.5	24			
HOURLY MAX	4.7	8.2	10.3	8.9	7.2	7.6	6.7	4.8	5.3	4.0	3.1	4.6	2.5	2.5	2.7	2.9	2.9	4.0	5.8	6.5	5.1	4.5	3.6	3.7						
HOURLY AVG	1.2	1.4	1.6	1.7	1.6	1.8	1.8	1.8	2.0	1.6	1.4	1.0	0.9	0.8	0.8	0.9	1.0	1.1	1.3	1.2	1.3	1.3	1.3	1.1						

### STATUS FLAG CODES

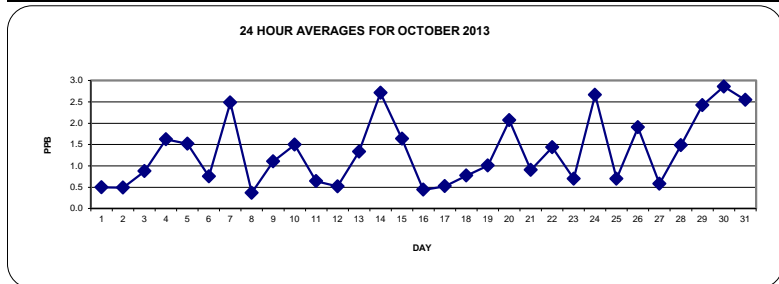
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

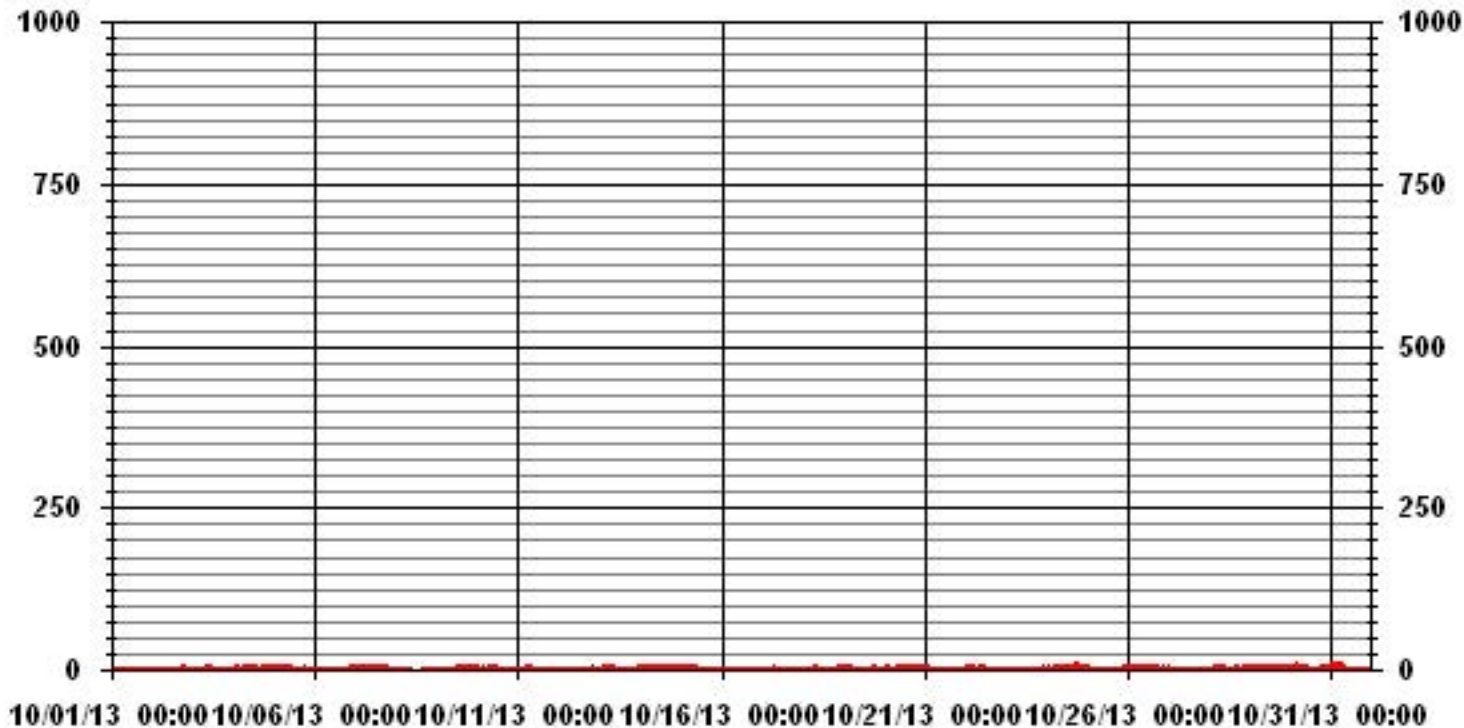
ALBERTA ENVIRONMENT: 1-HR 159 PPB

### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	665				
MAXIMUM 1-HR AVERAGE:	10.3	PPB	@ HOUR(S)	2	ON DAY(S) 31
MAXIMUM 24-HR AVERAGE:	2.9	PPB			ON DAY(S) 30
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	99.5	%
STANDARD DEVIATION:	1.29		MONTHLY AVERAGE:	1.34	PPB



# 01 Hour Averages



— LICA31 NO2\_ PPB

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

OCTOBER 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	1.9	2.2	2.1	2.1	1.9	2	2.1	2.1	2.5	16.3	2.3	2.1	2	S	1.4	1.4	1.6	2	1.7	1.1	0.8	0.8	0.9	1	16.3	2.4	24	
2	1	1	0.9	0.7	0.7	0.9	0.8	1	1.8	1.1	1	0.8	S	1	1.1	1.7	2	2.3	2.3	2.2	2.4	2.1	1.3	1.3	1.3	2.4	1.4	24
3	1.2	1.3	1.6	1.6	1.5	1.6	2.1	2.3	2	2.4	2.5	S	1.5	1.4	1.3	2.5	1.4	3.9	2.3	1.8	2.1	1.6	1.4	2.3	3.9	1.9	24	
4	2.1	2.2	2.2	2.2	3	4.2	4.3	2.7	2.2	2.5	S	2.2	2.8	2.8	1.7	1.6	1.4	2	2	2.8	2.5	2.2	2.1	2	4.3	2.4	24	
5	1.9	2	2.4	3	3.3	3.3	4.1	18.6	14.4	S	4.2	2.2	0.8	1	0.8	0.8	2.3	5	18.4	3.6	1.4	1.3	1.2	1.4	18.6	4.2	24	
6	1.6	1.2	0.8	0.8	0.8	1.2	1.2	2.4	S	1.2	1	1.6	1.3	1	1.2	1.5	1.9	1.4	1.6	1.8	1.8	2.9	3.5	3.2	3.5	1.6	24	
7	3.2	4	4.2	4.7	4.1	3.8	4	S	3.7	3.6	3.8	4	2.9	2.8	3.6	3.3	3	3.3	5.1	3.2	3.1	2.3	1.5	1	5.1	3.4	24	
8	0.9	1.2	1.3	1.6	1.2	1.3	S	1.4	1.2	C	C	C	C	C	C	C	C	C	1.3	1.4	1.6	1.4	1.3	1.4	1.4	1.6	1.3	24
9	1.2	1.3	1.3	7.7	1.3	S	1	1.9	2.1	10.9	1.6	2.1	1.8	2	2.9	2.1	3.6	3.7	2.2	2.4	2.7	3.2	3	3.2	10.9	2.8	24	
10	3.3	3.1	3.2	18.7	S	3	4.3	4.7	3.7	3.3	2.3	1.5	1.8	2.9	2.8	3.6	1.3	1.5	2.1	1.6	1.5	1.5	1.4	1.8	18.7	3.3	24	
11	1.7	1.8	1.8	S	1.5	2.3	2.3	2.2	2.3	2.2	1.6	15.1	1.3	1.1	1.7	1.4	1.4	1.5	1.3	1.4	1.2	1	1.3	1.4	15.1	2.2	24	
12	1.5	1.4	S	1.1	1.5	1.3	1.5	1.9	1.8	6.5	8.4	1.3	1.2	1.2	1	1.3	9.4	2.4	1	3	3.1	4.1	2.4	1.9	9.4	2.6	24	
13	2.1	S	2.1	2.4	4	3.9	4.1	3.7	4	3	1.9	1.3	5.4	1.2	1.3	1	2	2.3	3.5	1.6	2	2.2	1.8	2	5.4	2.6	24	
14	S	2.7	2.9	3.3	3.4	3.1	3.3	5.2	3.4	4.5	3.7	3.1	3.1	3.9	2.9	3.2	10.3	3.3	5.5	5.1	4.7	3.9	3.9	S	10.3	4.0	24	
15	3.2	3.2	3.2	3	3.6	3.7	4.8	5.7	12.1	7.2	6	1.6	1.8	1.7	1.8	1.1	1.4	17.9	1.1	1.1	1.2	1.1	S	1.5	17.9	3.9	24	
16	1.6	1.4	1.4	1.8	2	3.1	3	2.2	2	2	15.6	8.8	1.6	1.2	1.3	1.8	1.4	3.4	1.3	2.8	1.4	S	1.4	1.4	15.6	2.8	24	
17	1.3	1.4	1.5	1.7	11.1	2.1	1.6	2.1	9.1	1.8	1.9	1.5	1.3	1.2	P	P	P	P	2.5	1.4	S	0.3	0.7	0.6	11.1	2.4	20	
18	0.8	0.7	0.7	1.2	1.5	1.4	1.9	3.4	3.4	3	2.6	1.3	0.9	0.7	0.6	0.4	1.6	19.6	9.1	S	2	2	3.7	2.7	19.6	2.8	24	
19	2.7	2.5	3	2.6	2.5	2.9	2.4	2	1.5	1.5	1.7	1.5	1.4	1.3	1.3	1.4	1.5	1.5	S	1.6	1.7	1.5	1.7	1.5	3	1.9	24	
20	1.9	1.8	1.7	1.7	1.6	1.2	1.8	2.5	3.3	2.7	2.8	2.6	2.9	2.5	2.4	2.8	3.7	S	4.8	4.6	3.7	4.2	4.4	4.8	4.8	2.9	24	
21	4.6	3.5	2.4	2.2	7.4	2.1	1.8	2	1.7	1.8	13.3	1.7	2.8	6.8	1	14.9	S	1.8	1.8	2.6	3.5	1.6	1.6	1.7	14.9	3.7	24	
22	2.1	2.7	3.6	3.4	2.9	3.1	2.2	5.1	8.7	8.5	4	12.5	Y	1.6	2.1	S	0.8	1.2	1.3	1.8	2.1	1.5	1.4	1.7	12.5	3.4	23	
23	1.6	1.2	1.5	1.8	17.6	2.6	2.2	2.3	2.8	2.7	1.2	1.2	1.1	1.1	S	1	1.3	1.6	2	1.3	2.6	2.9	2.4	2.6	17.6	2.5	24	
24	2	2.4	2.7	1.8	2.3	3	3	3.2	2.7	3	3.1	2.9	3.2	S	2.7	15.3	9	6.3	7.2	7.8	6.3	5.8	4.7	3.5	15.3	4.5	24	
25	2.9	2.3	1.8	1.9	1.5	1.2	1.3	1.3	1.1	1.9	1.1	1.4	S	0.6	0.7	1.3	3.2	1.4	1.4	1.7	2	2.8	2.8	2.6	3.2	1.7	24	
26	2.3	2	2	2.4	2.6	3.5	11.1	6	7.6	8.7	4.4	S	2.1	2	1.8	2	2.6	2.5	2.8	1.7	1	4.1	4.3	2.1	11.1	3.5	24	
27	2.3	2.3	1.7	1.6	1.9	1.6	1.4	1.5	1.3	1.1	S	1	1.2	1.3	1.5	1.3	1.7	3.4	1.6	1.8	1.5	1.2	1.2	1	3.4	1.6	24	
28	1	3.4	2.6	1.8	2.1	4.5	4.2	5.3	4.2	S	2.1	1.8	1.6	1.4	2.5	2.9	3.7	4.9	4.8	2.8	2.6	2.5	2.4	2.2	5.3	2.9	24	
29	2.1	2.5	2.8	3	2.7	9.8	2.9	9.1	S	2.6	4.1	6.7	3.5	3	3.2	3.9	3.5	3.5	3.2	3.3	3.3	3.3	3.5	3.9	9.8	3.9	24	
30	4.4	4.7	5.7	6.9	11.4	8.7	8.5	S	3.7	3.2	2.4	2	1.8	1.9	2.5	3.2	1.3	6.1	2.7	2.4	3.4	3.8	3.7	4.9	11.4	4.3	24	
31	5.7	11.8	11.6	10.8	8.3	8.5	S	6.5	17.6	3.1	6.7	12.6	3.7	1.6	1.5	2.4	2	1.5	1.4	1.5	1.5	1.3	1.6	1.4	17.6	5.4	24	
HOURLY MAX	5.7	11.8	11.6	18.7	17.6	9.8	11.1	18.6	17.6	16.3	15.6	15.1	5.4	6.8	3.6	15.3	10.3	19.6	18.4	7.8	6.3	5.8	4.7	4.9				
HOURLY AVG	2.2	2.5	2.6	3.3	3.7	3.2	3.1	3.8	4.4	4.0	3.8	3.5	2.1	1.9	1.8	2.9	2.9	3.9	3.3	2.4	2.4	2.3	2.3	2.1				

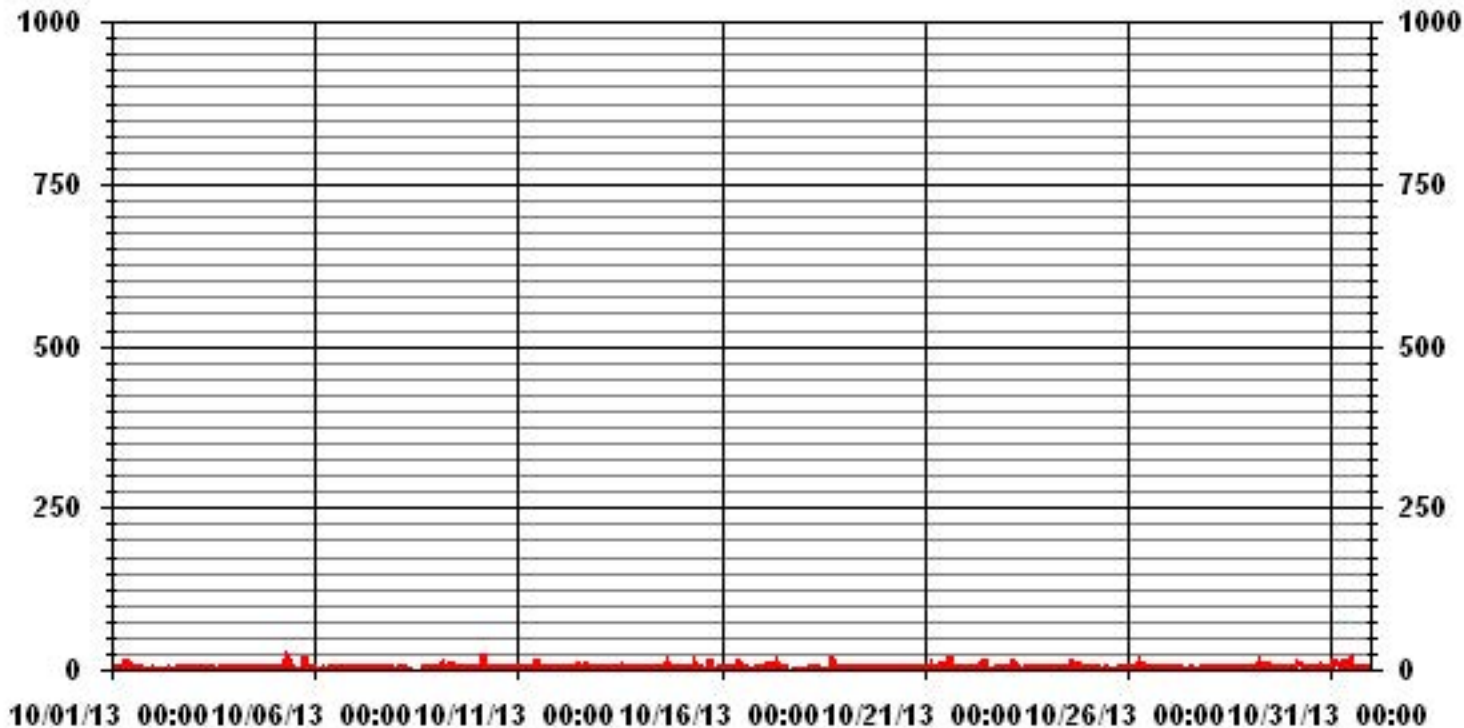
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	699					
MAXIMUM INSTANTANEOUS VALUE:	19.6	PPB	@ HOUR(S)	17	ON DAY(S)	18
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	739	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	2.75					

# 01 Hour Averages



— LICA31 NO2MAX PPB

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

October 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	3.86	3.14	3.00	1.14	.57	2.00	2.43	1.85	5.00	7.58	10.30	7.15	11.73	14.02	17.59	8.58	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.86	3.14	3.00	1.14	.57	2.00	2.43	1.85	5.00	7.58	10.30	7.15	11.73	14.02	17.59	8.58	

Calm : .00 %

Total # Operational Hours : 699

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	27	22	21	8	4	14	17	13	35	53	72	50	82	98	123	60	699
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	27	22	21	8	4	14	17	13	35	53	72	50	82	98	123	60	

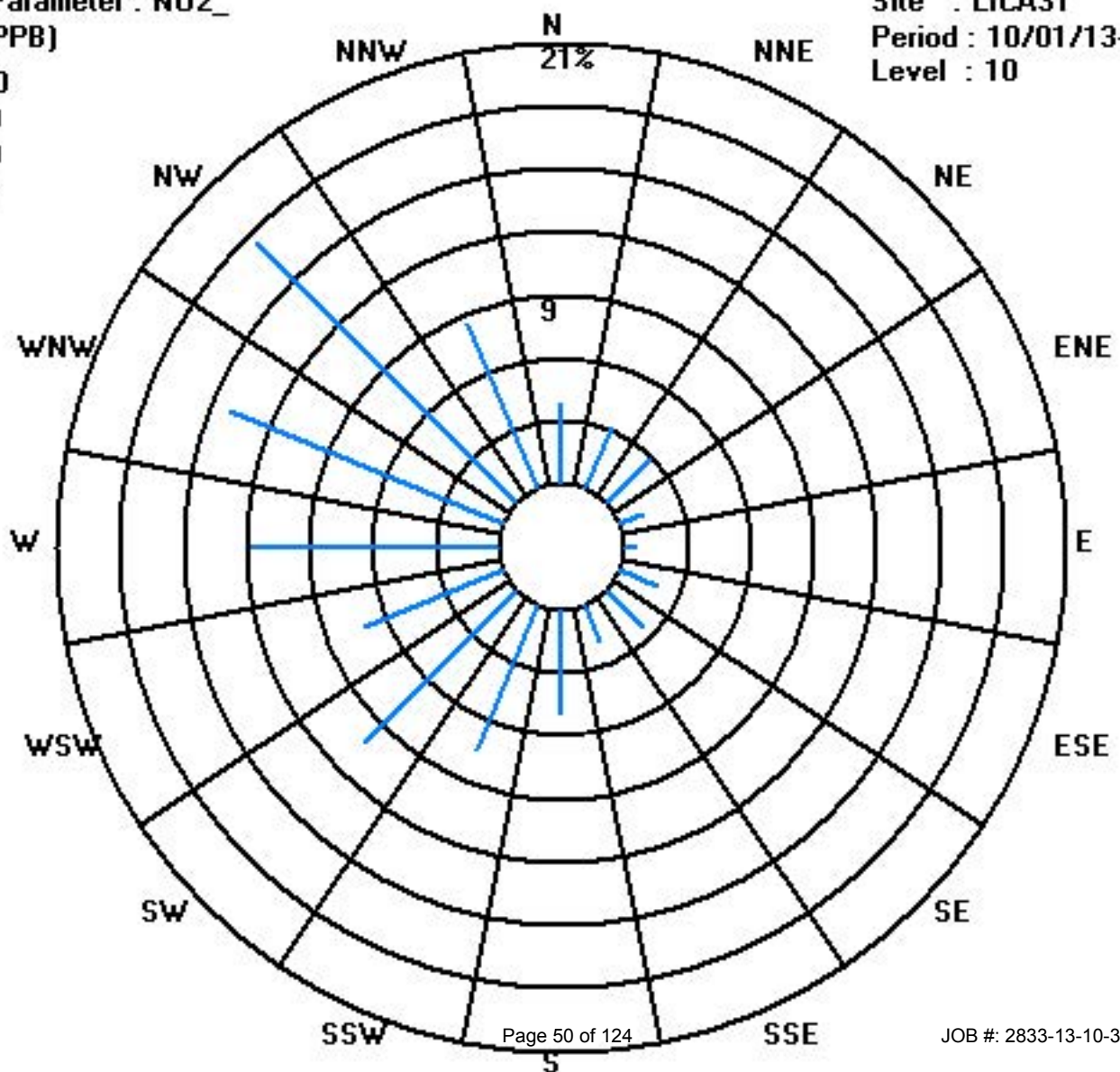
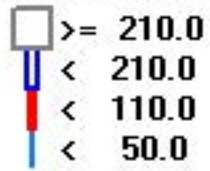
Calm : .00 %

Total # Operational Hours : 699

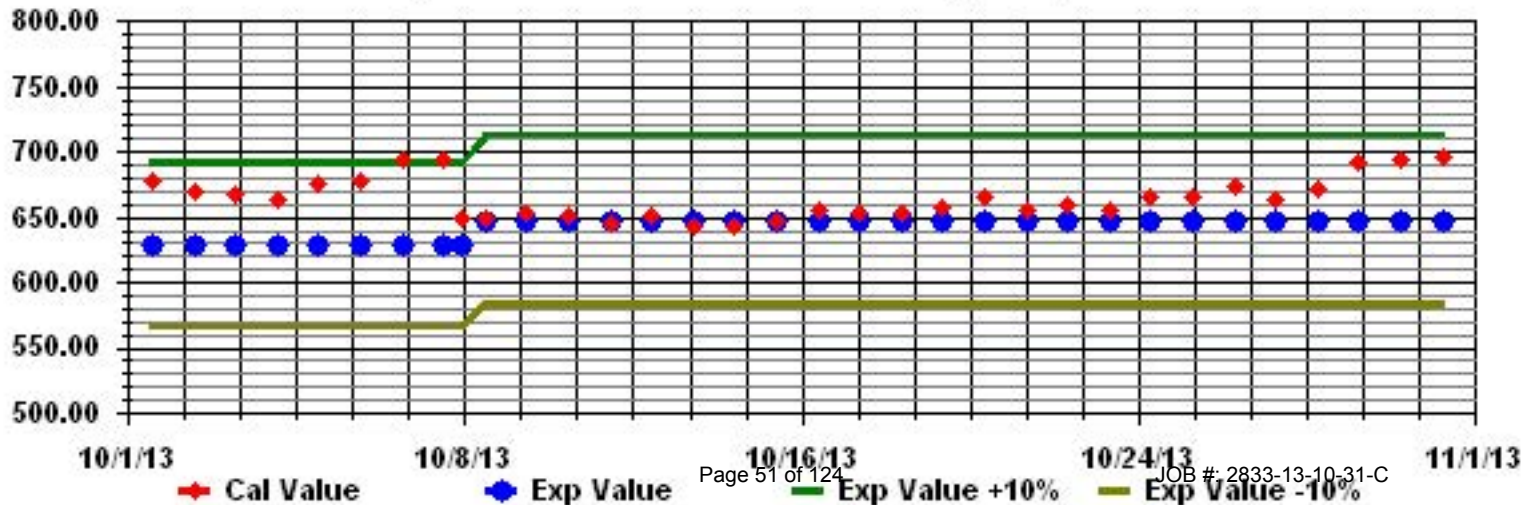
Class Limits (PPB)

Period : 10/01/13-10/31/13

Level : 10



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





# Nitric Oxide

# LAKELAND INDUSTRY & COMMUNITY ASSOICATION - ST. LINA

OCTOBER 2013

NITRIC OXIDE 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	0	0.1	0	0.1	0.1	0.2	0.2	0.2	0.4	0.5	0.4	0.3	0.5	S	1.1	0.2	0.3	0.5	0.1	0.1	0.2	0	0	0	1.1	0.2	24		
2	0.1	0.2	0	0	0	0	0.1	0.1	0.2	0.1	0	0.2	S	0.6	0	0	0	0	0.3	0	0	0	0	0	0.6	0.1	24		
3	0	0	0	0	0	0	0	0.2	0.3	0.4	0.3	S	0.4	0	0	0.2	0	0	0	0	0	0	0	0	0.4	0.1	24		
4	0	0	0	0	0	0	0.2	0.4	0.7	1.2	S	1.6	1	0.7	0.1	0	0	0	0	0	0	0	0	0	1.6	0.3	24		
5	0	0	0	0	0	0	0	0.6	2	S	1.9	0.6	0.1	0.1	0	0	0.2	0.2	0.9	0.2	0	0	0.1	0	2	0.3	24		
6	0	0	0.1	0.1	0.3	0.1	0.2	0.1	S	1.1	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	1.1	0.1	24		
7	0.1	0	0	0	0	0	0	S	1	0.5	0.7	0.7	0.9	0.5	0.3	0	0	0	0	0	0	0	0	0	1	0.2	24		
8	0	0	0	0	0	0	S	1.1	0.4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	1.1	0.1	24		
9	0	0	0	0	0	S	0.5	0	0.1	0.3	0	0.3	0.1	0.1	0.4	0.1	0	0	0	0	0	0	0	0	0.5	0.1	24		
10	0	0	0	1.7	S	0.9	0.4	0.3	0.6	1	0.2	0	0.1	0	0.1	0	0.2	0	0	0	0	0	0	0	1.7	0.2	24		
11	0.2	0	0.1	S	0.6	0.1	0.1	0.2	0.3	0.6	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.1	24		
12	0	0	S	0.6	0	0	0	0.2	0.1	0.3	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.1	24		
13	0	S	0.4	0.2	0.1	0.1	0.1	0.4	0.4	0.3	0.4	0.2	0.1	0	0	0	0.2	0	0.1	0	0.1	0	0	0.1	0.4	0.1	24		
14	S	0.9	0.5	0.3	0.3	0.3	0	0.6	0.9	1.7	1.3	0.7	0.6	0.8	0.5	0.6	0.2	0	0	0	0	0	0	0.1	S	1.7	0.5	24	
15	0.6	0.2	0.1	0.2	0.1	0.4	0.3	1.1	2.1	1.4	0.9	0.2	0	0	0	0	0	0	0	0	0	0	0	0	S	1	2.1	0.4	24
16	0.4	0	0	0.1	0.3	0.2	0.4	0.7	0.5	0.7	0.7	0.4	0.3	0	0	0.3	0	0	0.1	0.1	0	S	0.6	0.5	0.7	0.3	24		
17	0.1	0.3	0.4	0.4	0.8	0.5	0.3	0.4	0.5	0.5	0.7	0.6	0.4	0.4	P	P	P	P	1.6	0	S	0.9	0.8	0.4	1.6	0.5	20		
18	0.3	0.1	0.4	0.2	0	0.3	0.3	0.6	0.6	0.9	1.1	0.7	0.5	0.1	0	0.1	0.2	0.5	0.4	S	1	0.2	0.4	0.3	1.1	0.4	24		
19	0	0	0.1	0	0.1	0.3	0.2	0.2	0.1	0.4	0.2	0.4	0.1	0	0	0	0.1	0.1	S	1	0.4	0.5	0.4	0.3	1	0.2	24		
20	0.3	0	0.1	0.3	0.3	0.5	0.3	0.3	0.4	0.5	1	0.9	1	0.8	0.5	0.4	0.6	S	1.1	0.7	0.3	0.1	0	0.1	1.1	0.5	24		
21	0	0	0.1	0	0	0	0	0	0.1	0.3	0	0	0	0	0	0.1	S	1	0.4	0.3	0.3	0	0	0	1	0.1	24		
22	0	0	0.1	0	0.1	0	0.1	0.2	1.1	2.3	0.8	0.7	0	0.1	0.1	S	0.5	0	0.1	0.2	0.2	0.1	0	0.3	2.3	0.3	24		
23	0.1	0.1	0.2	0.1	2	0.6	0.3	0.6	0.3	0.3	0.3	0.4	0.2	0.1	S	1.2	0.6	0.4	0.5	0.6	0.6	0.4	0.4	0.3	2	0.5	24		
24	0.4	0.4	0.3	0.6	0.6	0.1	0.2	0.6	0.8	1.2	1.5	1.2	1	S	1.5	1.7	0.7	0.3	0.4	0.2	0.2	0.3	0.1	0.2	1.7	0.6	24		
25	0.2	0	0	0	0.1	0	0.2	0.5	0.2	0.4	0.2	0.2	S	1.2	0.7	0.5	0.4	0.3	0.4	0.7	0.5	0.6	0.5	0.7	1.2	0.4	24		
26	0.3	0.4	0.5	0.5	0.5	0.5	0.7	1.1	1.4	1.6	1.2	S	1.6	0.7	0.3	0.5	0.7	0.4	0.3	0.3	0.3	0.3	0.3	0.4	1.6	0.6	24		
27	0.6	0.5	0.5	0.5	0.4	0.6	0.5	0.3	0.6	0.6	S	1.3	0.7	0.6	0.5	0.5	0.5	0.3	0	0.1	0.1	0.3	0	0.1	1.3	0.4	24		
28	0.1	0.1	0	0.1	0	0.4	0.3	0.5	1.2	S	1.7	0.8	0.5	0.6	0.5	0.5	0.4	0.3	0	0.2	0.2	0	0.1	0.1	1.7	0.4	24		
29	0	0.1	0.2	0.3	0.2	0	0.5	S	2.3	2.6	4.2	2.1	1.8	1.2	1.3	0.6	0.5	0.5	0.6	0.5	0.4	0.3	0.6	4.2	0.9	24			
30	0.6	0.6	0.7	0.7	0.8	1	0.6	S	0.9	1	0.3	0.1	0.2	0	0	0.3	0	0	0	0	0	0	0	0	1	0.3	24		
31	0	0	0	0.4	0.2	0.5	S	0.5	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.8	0.1	24		
HOURLY MAX	0.6	0.9	0.7	1.7	2.0	1.0	0.7	1.1	2.1	2.3	2.6	4.2	2.1	1.8	1.5	1.7	0.7	1.0	1.6	1.0	1.0	0.9	0.8	1.0					
HOURLY AVG	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.4	0.7	0.8	0.7	0.6	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2					

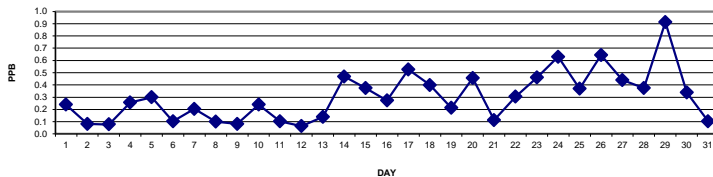
STATUS FLAG CODES

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

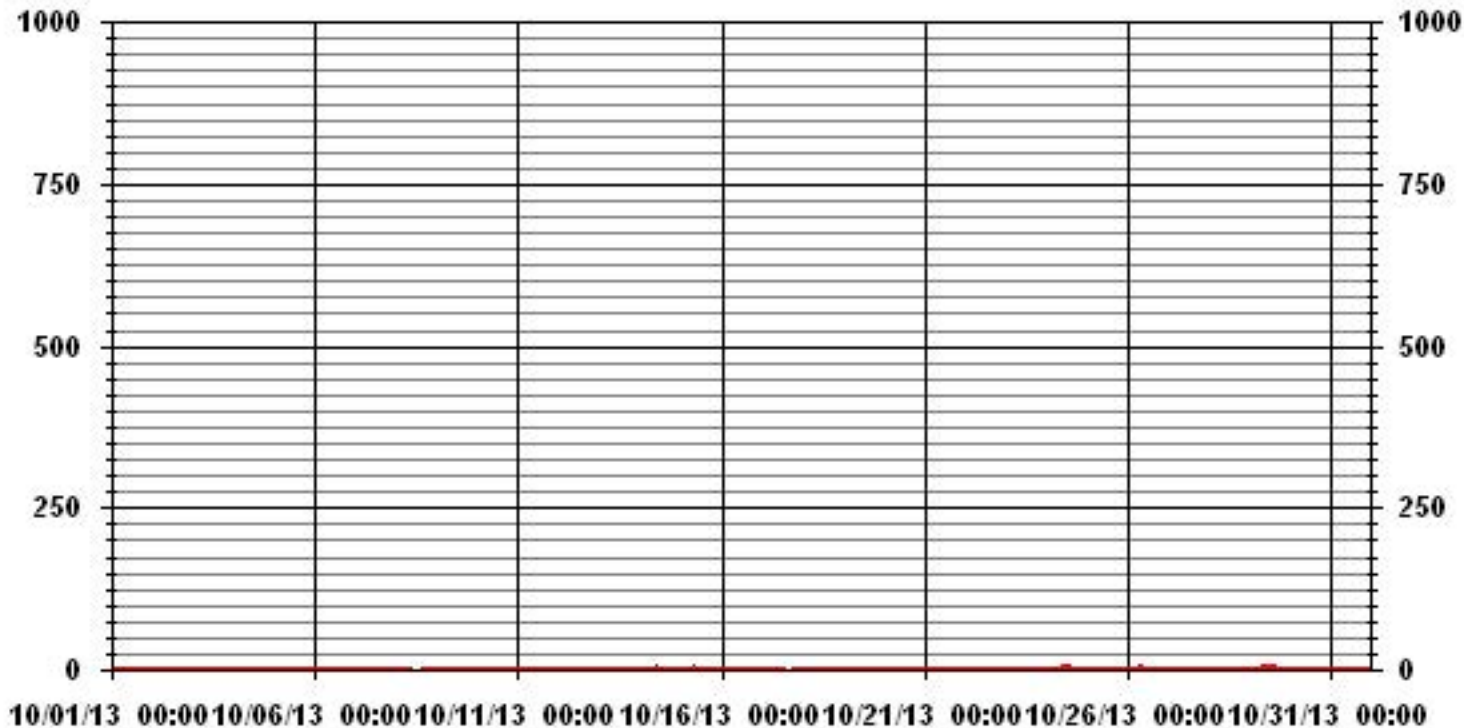
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	430
MAXIMUM 1-HR AVERAGE:	4.2 PPB @ HOUR(S) 11 ON DAY(S) 29
MAXIMUM 24-HR AVERAGE:	0.9 PPB ON DAY(S) 29
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	8 HRS
STANDARD DEVIATION:	0.43
OPERATIONAL TIME:	740 HRS
AMD OPERATION UPTIME:	99.5 %
MONTHLY AVERAGE:	0.30 PPB

24 HOUR AVERAGES FOR OCTOBER 2013



### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

OCTOBER 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	0.6	0.9	0.6	0.7	0.8	0.9	0.8	0.8	2.3	21.6	1.3	1.1	1.5	S	2.7	1.1	1.8	1.4	1.1	0.7	0.9	0.7	0.6	0.8	21.6	2.0	24	
2	0.9	0.9	0.9	0.8	0.6	0.6	0.9	0.8	0.9	0.8	0.9	0.9	S	1.8	0.7	1.1	1.1	1.4	2.8	1	1.5	1	0.7	0.7	2.8	1.0	24	
3	0.7	0.7	0.7	0.7	0.5	0.5	0.6	0.8	1.3	1.3	1	S	1.7	0.6	0.5	2.1	0.9	1.9	0.3	0.3	0.6	0.3	0.4	0.4	2.1	0.8	24	
4	0.2	0.4	0.5	0.4	0.4	0.6	0.9	1.2	1.3	1.9	S	3.1	2	2.1	0.8	0.5	0.7	0.7	0.2	0.4	0.6	0.4	0.8	0.8	3.1	0.9	24	
5	0.7	0.6	0.6	0.9	0.7	0.6	0.6	20.6	34.9	S	3.9	1.8	1	0.7	0.7	0.6	1.2	1.8	20.3	1.4	0.3	0.6	0.7	0.7	34.9	4.2	24	
6	0.3	0.6	0.7	0.9	1	0.8	0.9	1	S	2.9	1.1	0.6	0.5	0.7	0.7	1.4	0.8	0.8	0.6	0.6	0.4	0.6	0.5	0.6	2.9	0.8	24	
7	0.8	0.3	0.3	0.3	0.3	0.7	0.4	S	1.7	1.1	1.4	1.6	1.8	1.2	1.2	0.8	0.5	0.6	1.2	0.7	0.8	0.2	0	0.2	1.8	0.8	24	
8	0	0	0.1	0.3	0.6	0.4	S	2.7	1	C	C	C	C	C	C	C	C	C	0.9	1.9	0.9	0.4	0.2	0.4	0.2	2.7	0.7	24
9	0.2	0.4	0.2	11.2	0.2	S	2.1	1.5	1.7	11.5	0.4	1.1	0.7	1.5	2.5	0.9	0.7	0.4	0.4	0.2	0.3	0.2	0.5	0.4	11.5	1.7	24	
10	0.3	0.5	0.4	28.6	S	2.2	1.5	1.6	2.3	2.3	0.9	0.9	1.8	2	2.1	8.1	1.5	0.9	1	0.7	0.5	0.7	0.7	0.5	28.6	2.7	24	
11	1	0.5	0.8	S	1.8	0.7	0.9	1.4	1.2	2	2.3	9.3	0.9	0.5	1.2	0.3	0.5	0.5	0.4	0.2	0.5	0.3	0.9	0.3	9.3	1.2	24	
12	0.3	0.5	S	2	0.7	0.5	0.5	2.3	0.8	15	16.1	1.2	0.9	0.6	0.9	0.4	10	1	0.3	0.3	0.6	0.3	0.1	0.1	16.1	2.4	24	
13	0.4	S	1.7	1.2	0.9	0.9	0.8	1.1	1.4	1.1	1.2	0.9	10.8	1.2	1.2	0.7	1.2	0.6	1.1	0.9	1	1	1	0.8	10.8	1.4	24	
14	S	2.2	1.5	1.1	1.8	0.8	0.8	1.9	2.2	2.2	2	2	2.3	1.6	1.7	11.7	2.1	1.3	0.5	0.7	2	2.2	S	11.7	2.1	24		
15	1.5	0.8	0.7	0.8	0.9	1	2	18.7	10	9.2	9	3.1	1.3	1	1.5	0.3	1	19.3	0.5	0.2	0.6	0.5	S	2.1	19.3	3.7	24	
16	1.1	0.9	0.6	0.8	2	1.6	2	3	1.4	2.8	10.5	1.9	1.1	1	1	1.5	1.1	1.7	1	1.5	0.9	S	1.4	1.4	10.5	1.8	24	
17	0.7	1	1.1	1.2	16.3	1.9	0.9	1.4	7.8	1.4	2.2	1.6	1.2	1.4	P	P	P	P	13.4	0.9	S	1.9	1.6	1.3	16.3	3.1	20	
18	0.8	1.1	1.2	0.9	0.6	1.1	0.9	2	1.4	2.1	2.7	1.5	1.6	0.8	0.8	0.9	0.9	17	13.3	S	2.6	1	2.4	1.2	17	2.6	24	
19	1.1	0.7	0.8	0.6	0.9	2.2	0.9	0.9	1	1.1	1.2	1	0.8	0.8	0.6	0.8	1	S	1.8	0.9	1.3	1.2	0.9	2.2	1.0	24		
20	0.9	0.9	0.9	0.9	1.1	1.2	0.9	1.1	1.4	1.1	1.8	1.5	1.7	1.5	0.7	1.5	2	S	3.8	2.2	1	0.8	0.7	1	3.8	1.3	24	
21	0.6	0.6	0.8	0.6	17.3	0.9	1.7	0.7	1	1.7	13.9	0.8	6.6	9.7	0.6	15.3	S	2.5	1.3	1.4	2.3	0.6	0.6	0.6	17.3	3.6	24	
22	0.6	0.6	0.9	0.7	0.8	0.7	0.7	1.7	6	45.8	3	33.9	Y	1.1	0.8	S	1.8	0.9	0.9	1.2	1.2	0.9	0.7	1	45.8	4.8	23	
23	0.9	0.7	1.1	0.9	44.5	2.3	1	2.3	1.5	1.5	1.1	1.9	1.1	1.1	S	2.2	1.5	1.2	1.1	1.4	1.1	1.3	1.2	0.9	44.5	3.2	24	
24	1.2	1.2	0.9	1.2	1.5	0.9	1.1	1.5	1.5	1.8	3.6	1.8	1.7	S	2.6	29.3	7.8	2.3	2.2	2.3	1.2	1.1	0.7	0.9	29.3	3.1	24	
25	1	0.4	0.9	0.9	0.9	0.9	0.8	1.5	1.2	1.8	0.9	0.9	S	2.5	1.8	1.5	1.4	1.1	1.2	1.4	1.2	1.4	1.2	1.4	2.5	1.2	24	
26	0.9	1.2	1.2	1.2	1.2	1.2	13.8	3.6	14.9	16.4	2.5	S	3.6	1.6	0.8	1.3	1.8	1.9	1.3	1.1	1.2	1.1	0.9	0.9	16.4	3.3	24	
27	1.3	1.3	1.2	1.2	1.2	1.4	1.3	1.1	1.3	1.3	S	2.4	1.4	1.2	1.3	1.1	1.4	1.1	0.5	0.9	0.8	1	0.6	0.8	2.4	1.2	24	
28	0.8	1	0.8	0.8	0.7	3.4	1.2	1.8	3.1	S	3	1.5	1.2	1.3	2.4	1	2.3	1.3	0.7	1	1.2	0.8	1	0.7	3.4	1.4	24	
29	0.6	0.8	1	1.8	0.9	8.6	0.8	10.6	S	3.3	4.1	7	3.1	3	1.9	2.4	1.4	1.9	1.6	1.4	1.3	1.1	0.9	1.2	10.6	2.6	24	
30	1.2	1.5	1.4	1.3	11.3	3	1.4	S	1.9	19.6	1.7	0.9	0.9	0.8	1.3	1.9	0.4	12.7	0.6	1.3	0.9	0.9	0.7	0.5	19.6	3.0	24	
31	0.8	0.5	0.8	1.1	2.1	1.9	S	2.1	36.6	1	6.9	8	9.1	0.5	1.4	0.9	0.1	0.3	0.1	0.1	0	0.3	0	0	36.6	3.2	24	
HOURLY MAX	1.5	2.2	1.7	28.6	44.5	8.6	13.8	20.6	36.6	45.8	16.1	33.9	10.8	9.7	2.7	29.3	11.7	19.3	20.3	2.3	2.6	2.0	2.4	2.1				
HOURLY AVG	0.7	0.8	0.8	2.2	3.8	1.5	1.5	3.2	5.0	6.3	3.6	3.4	2.3	1.6	1.3	2.9	2.1	2.8	2.5	1.0	0.9	0.8	0.8	0.8				

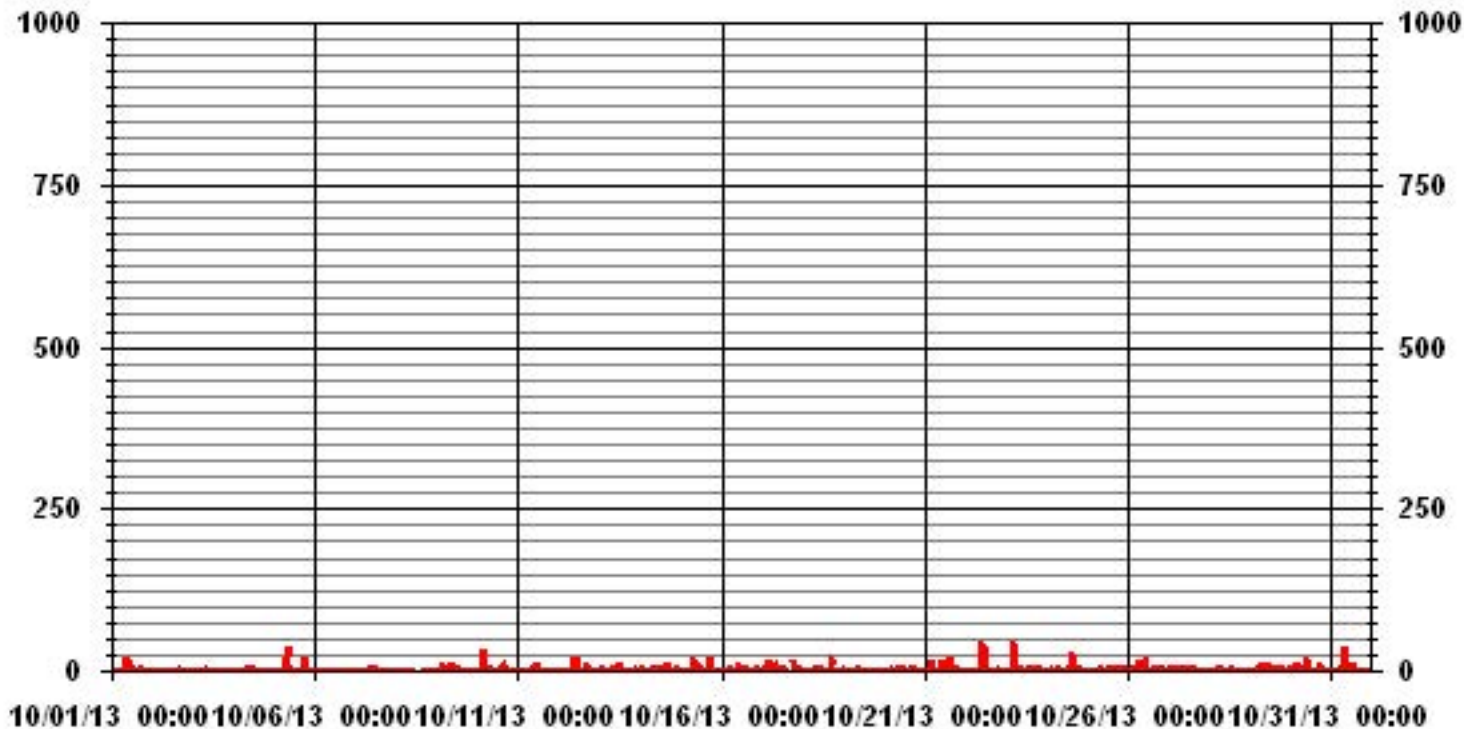
**STATUS FLAG CODES**

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:	693					
MAXIMUM INSTANTANEOUS VALUE:	45.8	PPB	@ HOUR(S)	9	ON DAY(S)	22
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	739	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	4.58					

### 01 Hour Averages



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

October 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	3.85	3.28	3.00	1.14	.57	2.00	2.42	1.85	5.00	7.57	10.28	7.14	11.71	14.00	17.57	8.57	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.85	3.28	3.00	1.14	.57	2.00	2.42	1.85	5.00	7.57	10.28	7.14	11.71	14.00	17.57	8.57	

Calm : .00 %

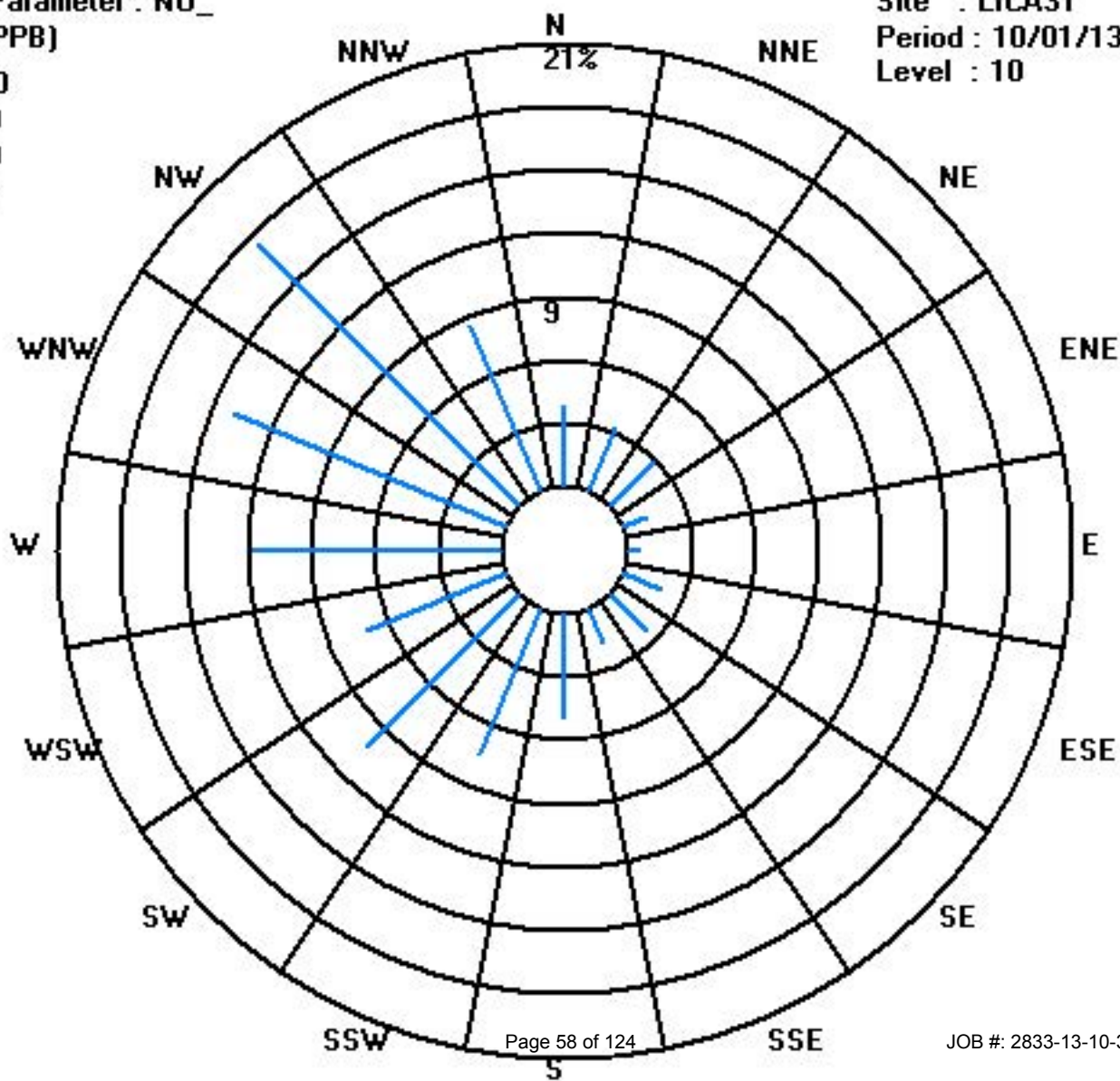
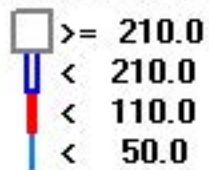
Total # Operational Hours : 700

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	27	23	21	8	4	14	17	13	35	53	72	50	82	98	123	60	700
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	27	23	21	8	4	14	17	13	35	53	72	50	82	98	123	60	

Calm : .00 %

Total # Operational Hours : 700



# Oxides of Nitrogen



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

OCTOBER 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	0.6	0.8	0.7	0.8	0.6	0.8	0.8	0.9	1.2	1.3	1	1	1.1	S	1.3	0.7	0.7	0.9	0.6	0.2	0.4	0.2	0.2	0.1	1.3	0.7	24
2	0.2	0.3	0.2	0	0.1	0.1	0.2	0.4	0.6	0.5	0.2	0.3	S	1	0.5	0.7	0.7	1.1	1.4	1.1	1.3	0.9	0.7	0.6	1.4	0.6	24
3	0.4	0.5	0.6	0.7	0.6	0.6	1	1.5	1.6	2	2	S	1.1	1	0.5	1.3	0.5	0.9	0.9	1	0.9	0.7	0.7	0.9	2	1.0	24
4	1.1	1.2	1.4	1.6	1.7	3.4	3.5	2.3	2.2	3	S	3	3	2.5	1.3	1	0.9	1.2	1.2	1.4	1.6	1.5	1.7	1.5	3.5	1.9	24
5	1.4	1.6	1.7	2.3	2.1	2.5	3.3	4.4	6.4	S	4.4	1.6	0.4	0.4	0.2	0.2	0.9	1.5	2.4	1.6	0.6	0.6	0.6	0.6	6.4	1.8	24
6	0.4	0.5	0.3	0.1	0.6	0.4	0.7	1.2	S	1.7	0.9	0.6	0.5	0.4	0.3	0.6	0.7	0.7	0.9	0.9	0.9	1.9	2.4	2.1	2.4	0.9	24
7	2.4	3.2	3.2	3.4	3.2	3	3.2	S	4.1	3.3	3.8	3.8	3.4	3	3	2.9	2.2	2.1	2.8	2.1	2.2	1.1	0.3	0.1	4.1	2.7	24
8	0	0.1	0.3	0.3	0.3	0.5	S	1.8	1	C	C	C	C	C	C	C	C	0.5	0.6	0.5	0.5	0	0.4	0.2	1.8	0.5	24
9	0.2	0.3	0.1	0.5	0.3	S	0.8	0.5	1.1	1.5	0.7	1.4	1.3	1.3	2.2	1.5	1.5	1.8	1.3	1.3	1.6	1.9	2.1	2.1	2.2	1.2	24
10	2.2	2.1	2.1	5.9	S	2.9	3.3	2.9	3.3	3.3	1.6	1	1.1	0.7	0.8	0.6	0.9	0.7	0.8	0.9	0.6	0.6	0.8	0.8	5.9	1.7	24
11	1.2	0.8	1	S	1.4	1.5	1.8	1.6	1.7	1.5	0.8	0.6	0.3	0.2	0.3	0.3	0.2	0.4	0.2	0.1	0.3	0.1	0.4	0.4	1.8	0.7	24
12	0.6	0.6	S	0.6	0.3	0.3	0.5	1	1	1.3	1	0.2	0.2	0	0.1	0	0.7	0.2	0	0.2	1.3	1.8	1	0.5	1.8	0.6	24
13	0.8	S	1.4	1.8	2.8	2.5	3.5	3.3	3.3	2.3	1.5	0.8	0.8	0.6	0.6	0.3	1	0.9	1.3	0.9	0.7	0.7	1	1	3.5	1.5	24
14	S	2.8	2.4	2.9	2.7	2.8	2.6	3.4	3.5	5.4	4.4	3	2.7	3.3	3.1	3.2	2.6	2.2	3.2	3.3	3.7	3.5	3.2	S	5.4	3.2	24
15	2.6	2.3	2.3	2.4	2.8	3.3	3.7	5.5	7.4	4.9	2.9	1.1	0.5	0.5	0.6	0	0.3	0.9	0.3	0	0.3	0.4	S	1.2	7.4	2.0	24
16	0.8	0.4	0.3	0.6	1	0.9	1.2	1.2	1	1.1	1.4	0.7	0.6	0.1	0.2	0.7	0.3	0.5	0.5	0.7	0.3	S	1.1	0.8	1.4	0.7	24
17	0.7	0.8	1	1.1	1.4	1.2	1.1	1.4	1.6	1.4	1.4	1	0.8	0.5	P	P	P	P	2.1	0.3	S	0.9	0.8	0.4	2.1	1.0	20
18	0.3	0.1	0.4	0.4	0.4	0.8	1.1	2.2	2.8	2.8	2.2	1.1	0.7	0.1	0	0.1	0.6	1.1	1.2	S	2.3	1.7	2.5	2	2.8	1.2	24
19	1.8	1.8	2	1.8	1.7	1.8	1.6	1.1	0.9	0.9	1	0.9	0.7	0.3	0.4	0.3	0.7	0.9	S	2	1.4	1.4	1.4	1.2	2	1.2	24
20	1.3	1.1	1.3	1.4	1.2	1.2	1.3	2	2.9	2.5	3	2.7	3.1	2.6	2.2	2.2	3.4	S	4.6	4	3.2	3.4	3.6	3.8	4.6	2.5	24
21	3.3	2.2	1.5	0.9	1.6	1	0.8	0.5	0.9	1	0.7	0.5	0.3	0.2	0	0.5	S	1.3	1.2	1	1.4	0.9	0.8	0.8	3.3	1.0	24
22	1	1.3	2.6	2.4	2	1.8	1.4	2.1	5.3	6.3	3	2	1.1	0.9	1.1	S	0.5	0.4	0.7	1	0.7	0.6	0.7	1.1	6.3	1.7	24
23	0.8	0.7	0.8	1	3.6	1.5	0.7	1.4	0.9	0.9	0.6	0.7	0.6	0.5	S	1.2	1	1	1.1	1.2	1.3	1.8	1.6	1.7	3.6	1.2	24
24	1.4	1.8	1.8	1.6	2	1.9	2.2	2.9	2.7	3.2	3.6	3.1	3	S	3.1	4.2	3.6	4.3	6.2	6.7	5.3	4.8	3.6	2.8	6.7	3.3	24
25	1.9	1.2	0.8	0.9	0.7	0.3	0.6	0.8	0.6	0.9	0.4	0.5	S	1.2	0.8	0.7	1.3	1	1	1.3	1.3	2.1	2.2	2	2.2	1.1	24
26	1.5	1.5	1.6	1.9	2.2	3	4.1	5.9	5.7	5	4.3	S	2.9	1.7	1.1	1.8	2.5	2.1	1.8	1.1	0.7	1.7	2.8	1.6	5.9	2.5	24
27	2	1.6	1.2	1.1	1.3	1.3	1	0.7	0.9	0.9	S	1.3	0.9	1.2	1.1	1.2	1.2	1.2	0.3	1.2	0.9	0.6	0	0.3	2	1.0	24
28	0.3	1	1	1.2	1.1	2.3	2.9	2.9	4.1	S	3	1.6	1	1.1	1.3	1.9	2.2	2.9	3.1	1.8	1.7	1.5	1.5	1.3	4.1	1.9	24
29	1.1	1.5	2.1	2.2	1.8	2.2	1.9	2.6	S	4.2	5.3	8.8	4.6	4.1	3.6	4	3.4	3.3	3.2	3.3	3.3	3.1	3.2	3.8	8.8	3.3	24
30	4.2	4.6	5.5	6.6	7.6	8.6	7.3	S	3.4	2.8	1.7	1.1	0.9	0.7	0.8	1.1	0.4	1.9	1.6	1.6	2.2	2.6	2.8	3.5	8.6	3.2	24
31	4.7	8.2	10.3	9.3	7.4	7.6	S	5.1	5.1	1.7	0.8	0.2	0	0.2	0	0.4	0	0	0	0	0	0	0	0	10.3	2.7	24
HOURLY MAX	4.7	8.2	10.3	9.3	7.6	8.6	7.3	5.9	7.4	6.3	5.3	8.8	4.6	4.1	3.6	4.2	3.6	4.3	6.2	6.7	5.3	4.8	3.6	3.8			
HOURLY AVG	1.4	1.6	1.7	1.9	1.9	2.1	2.0	2.2	2.7	2.4	2.1	1.6	1.3	1.1	1.1	1.2	1.2	1.3	1.6	1.4	1.4	1.4	1.5	1.3			

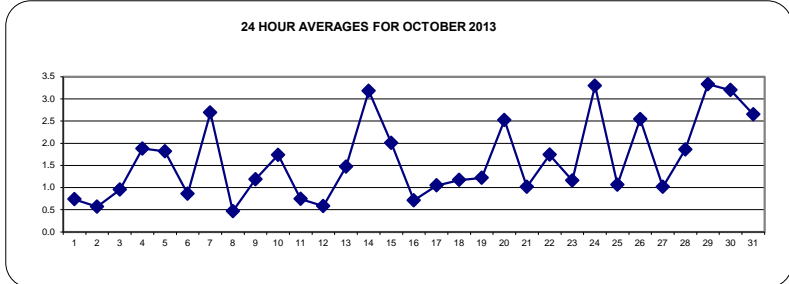
STATUS FLAG CODES

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

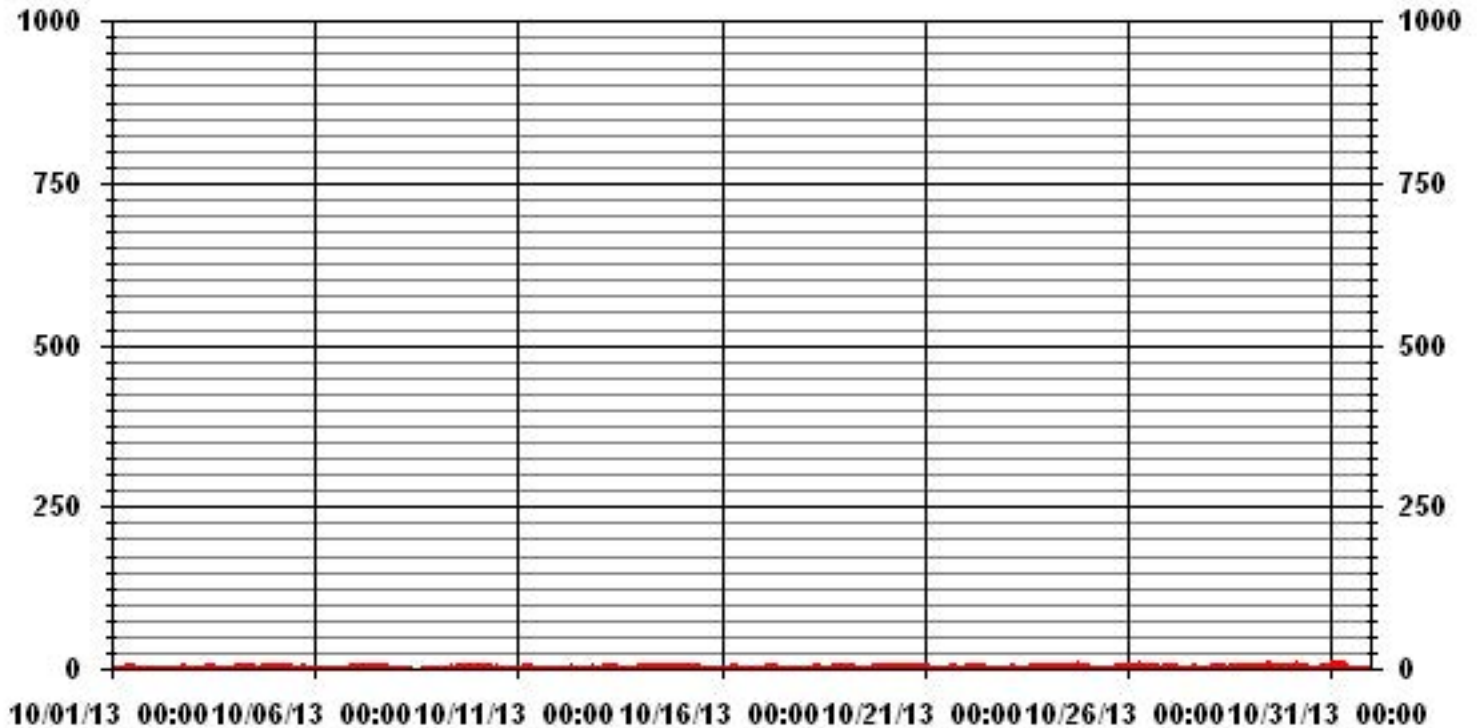
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	679					
MAXIMUM 1-HR AVERAGE:	10.3	PPB	@ HOUR(S)	2	ON DAY(S)	31
MAXIMUM 24-HR AVERAGE:	3.3	PPB			ON DAY(S)	24
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	99.5	%	
STANDARD DEVIATION:	1.49		MONTHLY AVERAGE:	1.64	PPB	

24 HOUR AVERAGES FOR OCTOBER 2013



### 01 Hour Averages



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

OCTOBER 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 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	1.3	1.6	1.4	1.4	1.3	1.4	1.5	1.5	3.4	36.5	1.8	1.8	2	S	2.8	1.7	2.6	2.7	2.1	0.9	1	0.7	0.7	0.8	36.5	3.2	24
2	0.9	1.2	1.2	0.8	0.7	0.8	0.8	1.2	2.2	1.1	1	1.2	S	2.1	1.1	2.5	2.7	3.5	4.8	2.7	3.5	2.6	1.3	1.4	4.8	1.8	24
3	1.1	1.1	1.4	1.6	1.4	1.6	2.2	2.2	2.7	2.8	2.7	S	2	1.6	1.8	4.4	2	5.4	2.6	2	1.8	1.6	1.6	1.9	5.4	2.2	24
4	1.8	2.1	2.6	2.2	3	4.7	4.4	3.3	2.8	3.8	S	3.9	4.2	4.6	2.1	1.8	1.7	2	2.1	2.3	2.4	2.2	2.4	2.4	4.7	2.8	24
5	2.1	2.3	2.4	3.1	3.8	3.5	4.3	36.9	46.6	S	7.7	3.6	1.2	1.3	1.1	1	3.1	6.6	38.8	4.4	1.4	1.1	1.4	1.4	46.6	7.8	24
6	1.3	1.1	1.1	1.1	1.5	1.1	1.5	2.9	S	3.7	1.5	1.6	1.2	1.3	1.2	2.7	2.3	1.6	1.6	1.9	1.8	2.7	3.2	2.9	3.7	1.9	24
7	3.2	3.8	4.1	4.1	4	3.7	3.9	S	4.9	4.4	4.4	4.6	4	3.9	4.8	3.7	3.7	3.8	6.3	3.8	3.7	2.1	1.1	0.8	6.3	3.8	24
8	0.5	0.9	1.2	1.7	1.1	1.2	S	3.2	1.6	C	C	C	C	C	C	C	C	1.6	2.3	2	1	0.7	1.2	1	3.2	1.4	24
9	0.7	1.1	0.7	15.9	1	S	2.2	3.2	3.5	21.8	1.3	2.8	2	2.9	5.2	2.4	3.8	3.9	2.2	2.2	2.3	2.5	2.8	2.8	21.8	3.9	24
10	2.8	2.8	2.9	47.6	S	3.9	5.5	5.9	5.1	5.3	2.8	1.9	2.8	4.6	4.7	11.1	2.5	2	2.8	1.8	1.3	1.6	1.5	1.4	47.6	5.4	24
11	2	1.6	1.6	S	2.2	2.2	2.5	3	2.8	3.6	3.6	24.2	1	0.9	3	1.1	1.3	1.5	1.2	1.1	1.1	0.9	1.6	1.1	24.2	2.8	24
12	1.1	1.2	S	1.3	1.2	1.2	1.2	3.3	1.8	1.7	23.9	1.9	1.4	1.4	1.1	0.9	18.7	2.8	0.5	2.6	3	3.7	1.8	1.3	23.9	4.1	24
13	1.4	S	2.7	2.7	4.2	4	4.4	4.5	4.3	3.3	2.6	1.5	14.9	2.2	2.3	1	2.7	2.2	4.5	2	2.6	2.5	2.3	2.1	14.9	3.3	24
14	S	4.2	3.3	3.8	4.9	3.7	3.8	6.6	5.5	6.8	5.8	5.1	5	5.8	4.7	4.7	21.9	4.8	6.2	5.6	5.4	5.7	5.8	S	21.9	5.9	24
15	3.5	3	2.9	3.2	4	4	5.4	18.2	18.4	16.4	14.4	3.8	2.3	2	2.6	1	2.1	33.7	1.4	0.9	1	1.3	S	1.8	33.7	6.4	24
16	1.6	1	1	1.4	3.2	3.9	4.2	4.5	2.2	4	25.6	9.5	2	1.4	1.4	2.7	1.6	4.6	1.6	3.4	1	S	2.1	2.1	25.6	3.7	24
17	1.3	1.5	1.8	1.8	27	3.2	1.7	2.6	16.4	2.1	3.2	2.3	2	1.9	P	P	P	P	13.6	1.4	S	1.2	1.9	1.2	27	4.6	20
18	0.7	0.9	1.3	1	1.3	1.7	2.1	4.8	3.7	4.1	4.4	2.1	1.9	0.8	0.7	0.7	2.3	35.4	21.3	S	3.8	2.4	5.7	3.4	35.4	4.6	24
19	3.3	2.6	2.7	2.6	2.7	4.1	2.4	1.8	1.9	1.7	1.9	1.8	1.5	1	1.2	1.4	1.3	1.7	S	2.8	2.1	2.1	1.9	4.1	2.1	24	
20	2.3	1.9	1.8	2	1.9	1.8	2	3.1	4	3.4	3.7	3.5	3.8	3.5	2.9	3.5	5.3	S	8	5.5	4	4.6	4.6	4.5	8	3.5	24
21	4	3.2	2.2	2	22.2	1.8	3	2.1	2.1	2.9	25.2	2.2	3.7	16	0.8	28.6	S	2.9	2.8	3.6	5.3	1.5	1.5	1.5	28.6	6.1	24
22	1.8	2.6	3.5	3.4	3	3.2	2.3	6.3	14.3	53.1	6.3	43.7	Y	2.3	2.3	S	1.5	1.3	1.6	2.3	2.6	1.8	1.5	1.9	53.1	7.4	23
23	1.7	1.4	1.5	1.7	58	4.5	2.5	3.8	3.8	3.7	1.5	2.1	1.5	1.6	S	2	1.9	1.9	2.3	2	3	3.3	2.4	2.5	58	4.8	24
24	2.1	2.5	2.6	2.3	2.6	2.6	3.1	3.6	3.5	4.2	5.5	4	4.1	S	4.3	43.4	14.5	8	8.7	8.9	6.5	5.9	4.4	3.6	43.4	6.6	24
25	2.7	2.1	1.4	1.6	1.6	1.1	1.2	1.6	1.9	3.2	1.1	1.8	S	2.1	1.9	2.6	4.3	1.9	1.7	2.4	2.1	3.1	3.2	2.9	4.3	2.2	24
26	2.2	2.1	2.4	2.9	3	4	23.5	8.7	17.2	23.6	5.7	S	4.4	3.4	2.5	2.6	3.9	4.1	3.7	2.2	1.5	4.7	4.7	2.4	23.6	5.9	24
27	2.7	2.5	2.2	1.8	2.4	2.2	2	1.5	1.8	1.6	S	1.9	1.6	1.9	1.8	1.9	1.8	4	1	2.1	1.6	1.2	0.9	1	4	1.9	24
28	1	3.4	2.7	2	2.1	7.2	5.1	6.6	6.8	S	4.3	2.7	2	2	3.7	3	5.1	5.1	4.8	2.8	3.2	2.4	2.4	1.9	7.2	3.6	24
29	1.8	2.4	2.7	4	2.6	17.6	3.1	14	S	4.9	7.9	13.1	5.7	5.2	4.5	5.7	4	5.2	4.6	4	4.3	4	4.3	4.5	17.6	5.7	24
30	5	5.4	6.6	7.6	20.4	11.2	9	S	5.1	20.9	3	2.2	1.9	2.1	3.1	4.7	1.3	14.6	2.7	2.9	3.5	4.2	3.7	4.7	20.9	6.3	24
31	5.6	11.7	11.4	11.1	9.3	9.7	S	8	50.4	3.3	13.4	19.8	11.6	1.3	1.1	2.8	1.6	0.8	0.7	1.1	0.6	0.8	0.5	0.5	50.4	7.7	24
HOURLY MAX	5.6	11.7	11.4	47.6	58.0	17.6	23.5	36.9	50.4	53.1	25.6	43.7	14.9	16.0	5.2	43.4	21.9	35.4	38.8	8.9	6.5	5.9	5.8	4.7			
HOURLY AVG	2.1	2.5	2.6	4.7	6.6	3.9	3.8	5.8	8.3	9.4	6.7	6.1	3.4	2.9	2.5	5.2	4.3	5.8	5.3	2.8	2.6	2.5	2.5	2.1			

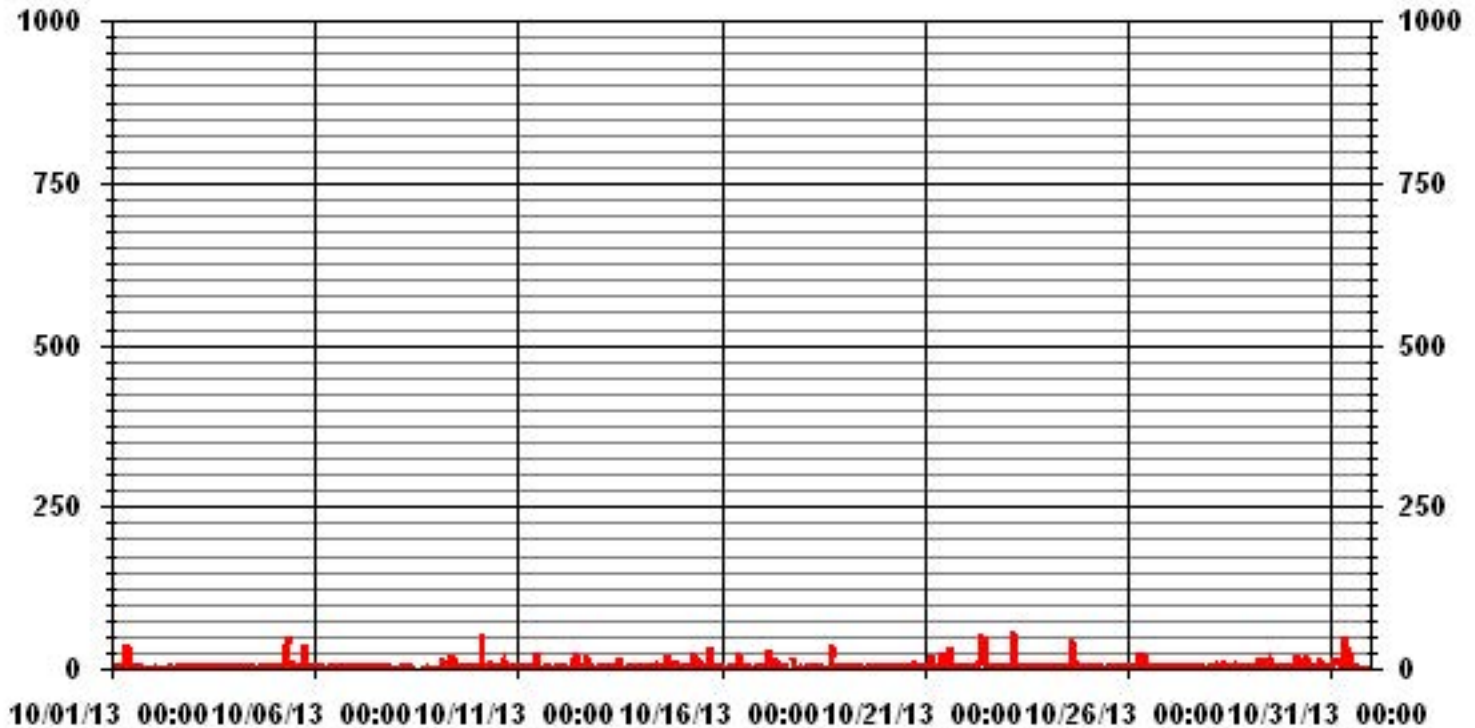
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	699					
MAXIMUM INSTANTANEOUS VALUE:	58.0	PPB	@ HOUR(S)	4	ON DAY(S)	23
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	739	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	6.64					

# 01 Hour Averages



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

October 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	3.85	3.28	3.00	1.14	.57	2.00	2.42	1.85	5.00	7.57	10.28	7.14	11.71	14.00	17.57	8.57	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.85	3.28	3.00	1.14	.57	2.00	2.42	1.85	5.00	7.57	10.28	7.14	11.71	14.00	17.57	8.57	

Calm : .00 %

Total # Operational Hours : 700

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	27	23	21	8	4	14	17	13	35	53	72	50	82	98	123	60	700
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	27	23	21	8	4	14	17	13	35	53	72	50	82	98	123	60	

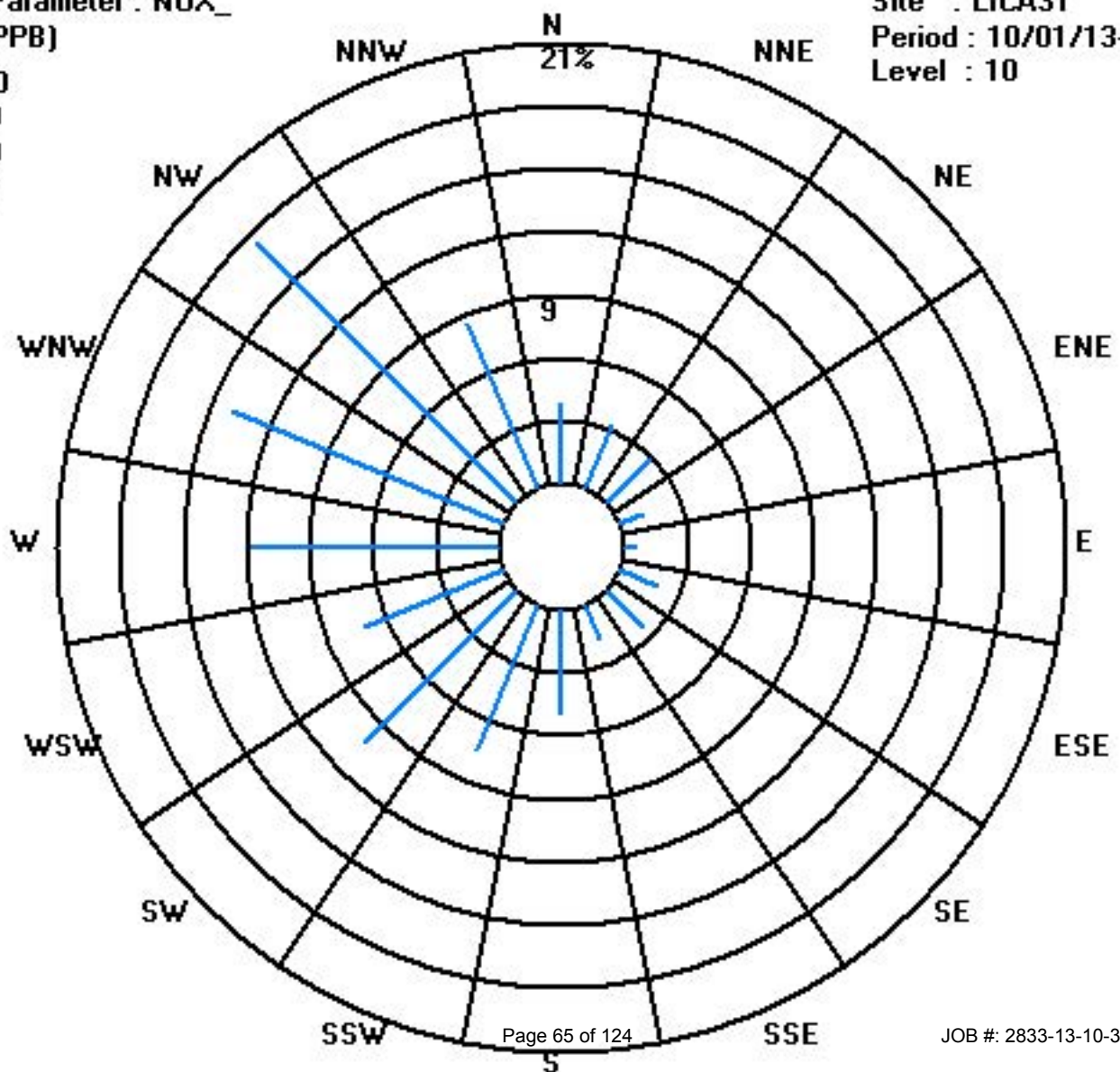
Calm : .00 %

Total # Operational Hours : 700

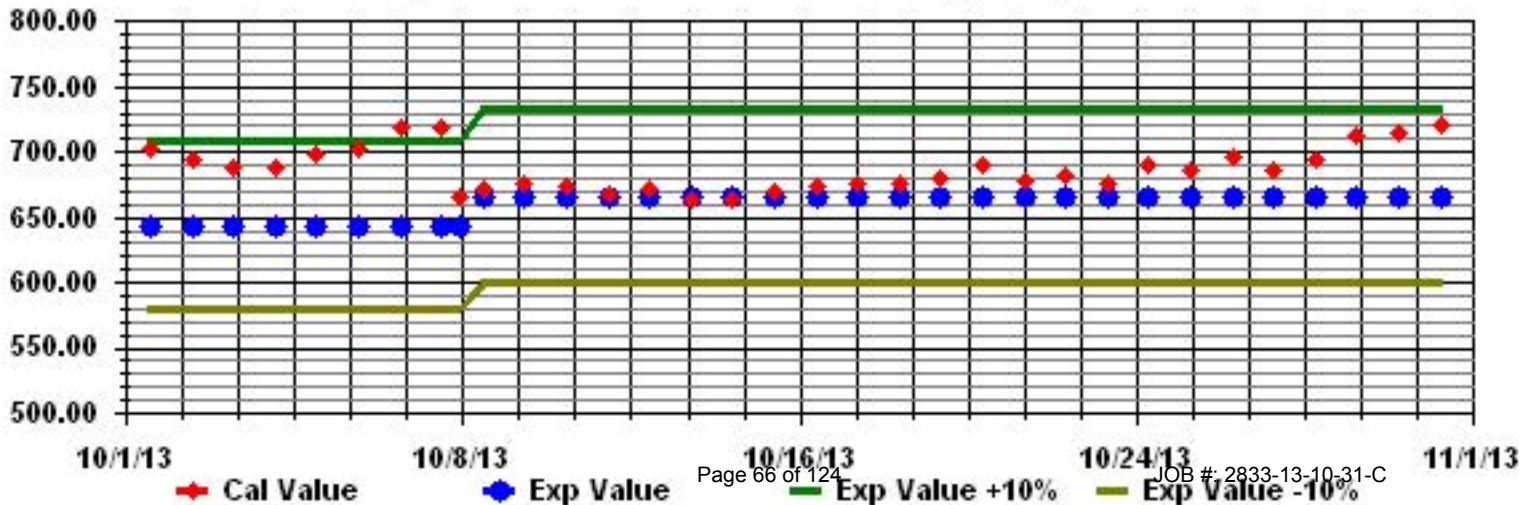
Class Limits (PPB)

Period : 10/01/13-10/31/13

Level : 10



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



# Particulate Matter 2.5



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

OCTOBER 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		1	1	1	0	2	1	1	1	1	2	2	1	1	1	1	0	0	0	0	0	0	1	0	0	0	2	0.8	24	
2		0	0	0	0	0	1	2	2	2	2	1	1	0	0	1	3	2	2	2	2	1	0	0	0	3	1.0	24		
3		1	1	2	4	3	2	5	5	4	1	2	1	1	2	0	2	2	2	3	3	2	1	1	1	5	2.1	24		
4		2	2	0	0	0	0	0	1	3	2	0	1	1	1	1	0	0	0	1	1	0	0	0	0	3	0.7	24		
5		1	2	1	2	3	3	2	4	4	3	0	0	0	0	2	1	1	1	1	1	0	1	1	0	4	1.4	24		
6		0	2	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24		
7		0	0	0	0	0	0	0	0	0	0	0	2	2	3	4	3	5	4	3	2	3	1	3	1	5	1.5	24		
8		0	0	1	1	1	1	2	2	1	0	1	1	1	1	3	6	0	2	1	1	1	0	0	0	6	1.1	24		
9		0	0	0	0	0	0	0	0	0	0	0	0	X	0	0	0	0	0	0	0	0	1	2	2	2	0.3	23		
10		3	2	3	2	3	3	3	4	3	2	1	1	0	0	1	1	2	2	2	4	5	3	3	2	5	2.3	24		
11		2	3	2	2	2	3	2	2	2	2	2	2	1	1	1	3	2	1	1	1	1	1	1	1	3	1.7	24		
12		1	1	1	1	1	1	2	3	3	2	1	0	0	0	0	1	1	1	1	2	3	3	3	2	3	1.4	24		
13		2	4	4	4	4	5	5	6	6	5	1	1	2	3	3	3	5	5	4	4	3	3	3	4	6	3.7	24		
14		4	3	4	3	5	5	5	7	7	7	5	3	3	5	3	4	5	5	6	6	6	6	6	6	7	5.0	24		
15		5	5	4	4	5	4	5	5	6	5	3	5	3	3	1	0	1	0	1	0	0	1	1	1	6	2.8	24		
16		2	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	1	2	2	2	2	2	1	2	2	0.8	24		
17		2	2	0	0	1	0	1	1	1	2	1	0	1	0	P	P	P	P	3	4	4	1	0	0	4	1.2	20		
18		1	0	1	0	0	0	0	2	2	1	C	C	C	0	0	1	0	2	3	3	4	2	3	5	5	1.4	24		
19		5	4	3	2	3	3	4	3	2	3	2	2	3	5	4	3	3	1	2	1	2	1	1	1	5	2.6	24		
20		1	2	0	0	0	0	0	0	2	1	2	0	2	3	2	1	2	2	2	1	2	2	2	3	3	1.3	24		
21		3	4	4	4	3	4	4	3	2	3	1	0	1	1	2	1	2	2	2	1	1	2	0	3	4	2.2	24		
22		2	1	3	1	0	2	0	2	3	4	3	C	C	X	0	0	1	0	2	2	2	1	1	1	4	1.5	23		
23		0	1	3	2	1	1	1	3	3	1	2	3	1	1	1	0	1	3	1	1	0	0	6	5	6	1.7	24		
24		1	6	5	4	0	2	1	0	0	1	0	0	0	0	2	2	3	4	5	6	6	7	6	5	7	2.8	24		
25		3	3	3	2	1	1	2	1	2	2	0	0	0	0	0	0	0	0	0	0	0	6	1	1	6	1.2	24		
26		0	0	0	0	0	1	3	4	3	4	3	2	3	3	4	5	4	4	4	3	3	4	4	2	5	2.6	24		
27		3	2	3	2	2	2	3	3	2	3	2	0	X	0	3	1	2	2	1	1	1	1	0	0	3	1.7	23		
28		0	0	0	1	0	0	0	2	1	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	2	0.4	24		
29		0	0	0	0	0	X	0	1	1	2	2	1	0	1	1	1	1	2	3	2	2	4	2	3	4	1.3	23		
30		4	4	3	4	4	5	5	5	3	4	4	3	3	3	2	3	3	4	7	4	6	6	6	7	7	4.3	24		
31		6	6	7	6	7	5	5	4	6	11	1	1	1	2	3	4	4	4	5	6	4	3	2	3	11	4.4	24		
HOURLY MAX		6	6	7	6	7	5	5	7	7	11	5	5	3	5	4	6	5	5	7	6	6	7	6	7					
HOURLY AVG		1.8	2.0	1.9	1.7	1.7	1.8	2.0	2.5	2.5	2.5	1.4	1.1	1.1	1.3	1.4	1.6	1.8	1.9	2.3	2.1	2.1	2.1	1.9	2.0					

STATUS FLAG CODES

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

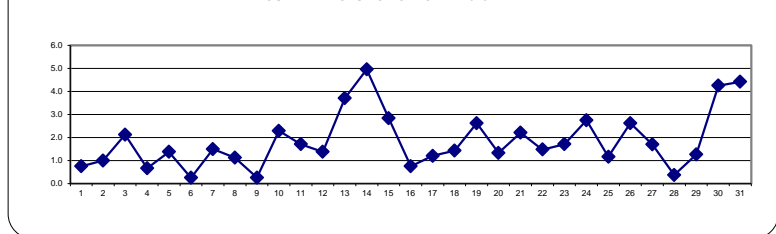
OBJECTIVE LIMIT:

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

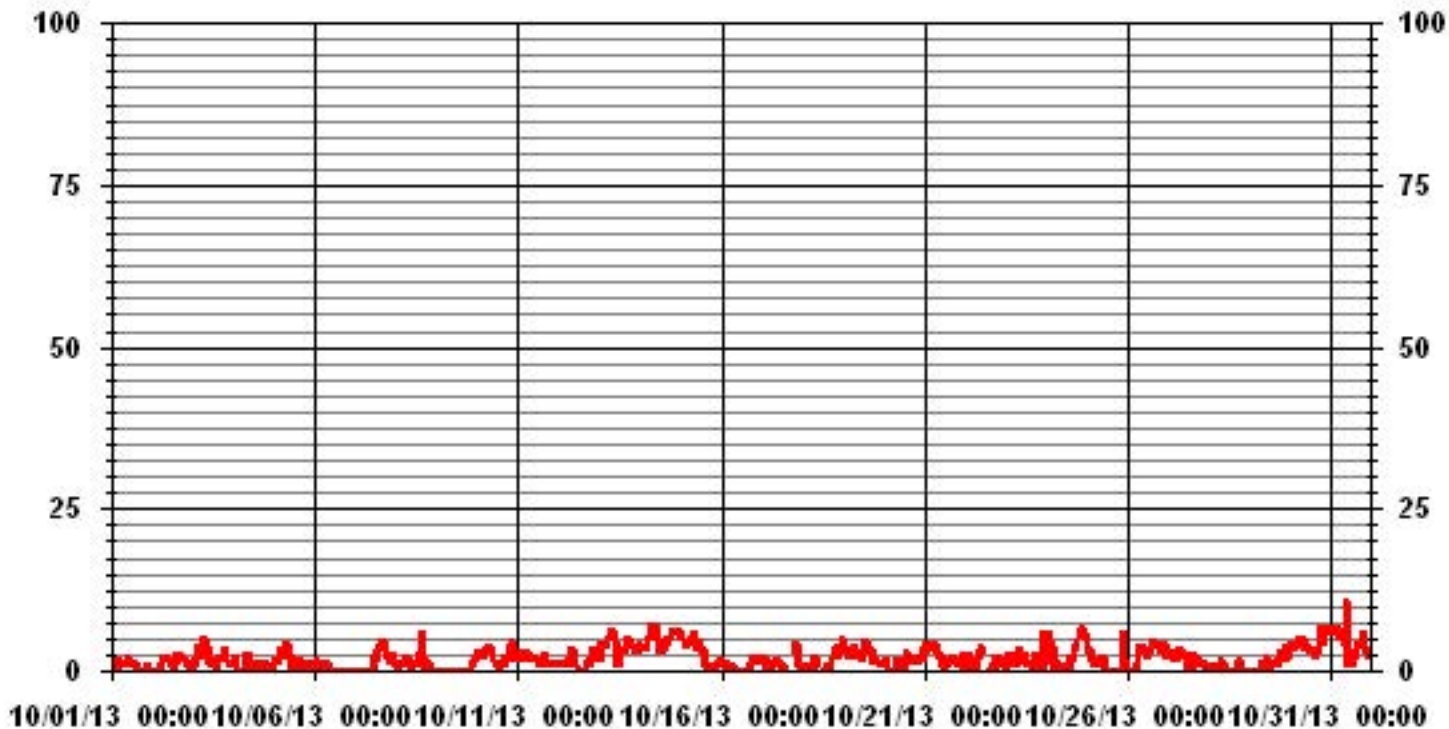
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	528
MAXIMUM 1-HR AVERAGE:	11 UG/M <sup>3</sup> @ HOUR(S) 9 ON DAY(S) 31
MAXIMUM 24-HR AVERAGE:	5.0 UG/M <sup>3</sup> ON DAY(S) 14
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION:	1.77
OPERATIONAL TIME:	736 HRS
AMD OPERATION UPTIME:	98.9 %
MONTHLY AVERAGE:	1.85 UG/M <sup>3</sup>

24 HOUR AVERAGES FOR OCTOBER 2013



# 01 Hour Averages



— LICA31 PM2 UG/M3

LICA31  
 PM2 / WDR Joint Frequency Distribution (Percent)

October 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	3.82	3.41	2.86	1.09	.54	2.04	2.32	1.77	5.19	7.24	10.24	6.83	11.61	14.61	17.75	8.46	99.86
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00	.13
< 80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.82	3.41	2.86	1.09	.54	2.04	2.32	1.77	5.19	7.24	10.24	6.83	11.74	14.61	17.75	8.46	

Calm : .00 %

Total # Operational Hours : 732

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30	28	25	21	8	4	15	17	13	38	53	75	50	85	107	130	62	731
< 60													1				1
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	28	25	21	8	4	15	17	13	38	53	75	50	86	107	130	62	

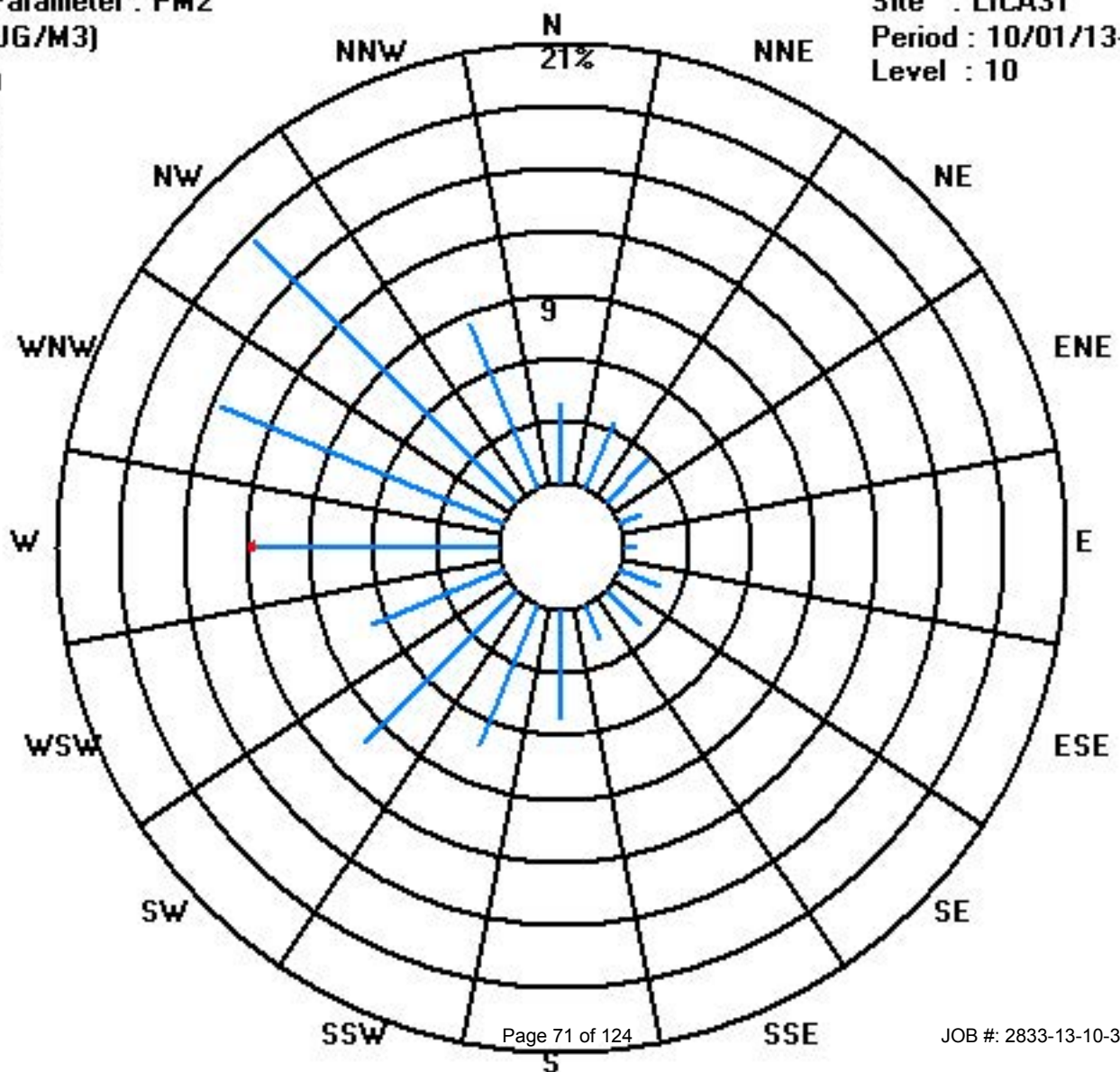
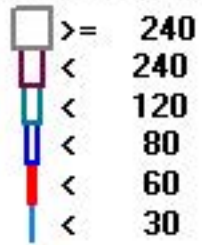
Calm : .00 %

Total # Operational Hours : 732

Class Limits (UG/M3)

Period : 10/01/13-10/31/13

Level : 10



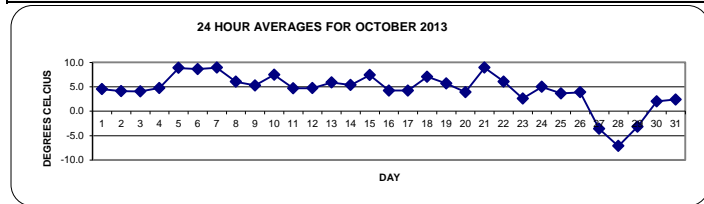
# Temperature

**LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA**  
**OCTOBER 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.
DAY	HOUREND	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	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		5.2	5.1	4.8	4.7	4.5	4.4	4.2	4.2	4.3	5	5.5	5.3	5.2	5	5	4.9	4.7	4.4	4.3	4	3.8	3.8	3.6	3.4	5.5	4.6	24	
2		3.2	2.8	2.4	2.5	1.9	2.2	2.9	3.4	3.8	4.4	5	5.9	6.3	7	7.4	6.1	5.5	4.7	4.1	3.9	3.8	3.5	3.3	3.1	7.4	4.1	24	
3		2.9	2.8	2.7	2.5	2.3	2.2	2.2	2.5	3.4	4.3	4.5	4.9	5.9	6.9	8.9	7.7	7.3	5	3.9	3.5	2.3	3	3.2	2.3	8.9	4.0	24	
4		1.3	0.5	-0.9	-1.5	-1.9	-1.8	-1.7	-0.8	1	4.2	7.5	8.8	9.9	10	10.7	11.3	10.5	8.8	7.2	6.8	6.5	6.1	6.1	5.8	11.3	4.8	24	
5		5.7	5.4	4.8	3.8	3.1	2.9	2.6	3.7	6.4	9.5	13	14.4	15.7	15.4	16	15	12.4	11.5	9	8.8	8.3	8.9	8.9	7.9	16.0	8.9	24	
6		7.1	6.2	5.5	5.4	5.3	5.4	4.7	5	7	10.6	11.4	13.1	12.3	12.6	12.3	11.7	12	10.7	9.5	8.6	8.2	7.9	7.5	7.5	13.1	8.6	24	
7		7.4	7.3	6.7	5.8	5.2	5.1	4.4	4.6	5.5	6.4	7.3	8.6	11.7	14.4	15.7	15.8	14.1	11.4	10.3	10.3	9.4	9.5	9.3	8.5	15.8	8.9	24	
8		7.7	6.9	6.6	6.7	6.5	5.8	5.2	6.3	9.4	7.8	7.1	7	7.2	7	6.3	5.6	5.1	4.6	4.4	4.1	3.8	3.6	3.3	9.4	6.0	24		
9		2.9	2.8	2.6	2	1.5	1.3	1.3	1.6	2.6	3.6	5.6	7.2	9	10.2	10.5	10.3	9.8	8.1	6.4	5.9	5.7	5.2	5.3	5.4	10.5	5.3	24	
10		5.3	6.2	4.9	4.8	4.9	4.6	4.2	4.3	5.3	8.5	10.7	12	13.4	14	12.4	12.9	11.4	9.1	7.3	6.1	5.1	4.7	4	2.8	14.0	7.5	24	
11		2.7	2.3	1.6	0.3	-0.6	-1.3	-0.9	1.9	4	7.3	9.8	11.1	11.4	11.2	9.7	8.8	8.8	6.2	4.7	4.1	3.3	2.7	2	1.7	11.4	4.7	24	
12		1.1	0.8	0.4	0.1	-0.2	-0.2	0.2	1.6	3	5.9	8	9.6	10.4	10.7	10.8	10.5	7.5	6.2	5.6	5.2	4.8	4.4	3.8	3.6	10.8	4.7	24	
13		3.2	3.2	3.3	2.3	1.6	1.5	2	2.5	3	4.8	9.6	11.4	11.6	11.4	11.4	10	8.8	7.2	6.4	5.7	5.4	5.3	5.4	4.1	11.6	5.9	24	
14		2.3	1.9	1.8	1.1	-0.2	-0.2	-0.7	0.4	2.7	5.2	8.4	10.4	11.4	12.3	12.5	12.4	11.3	8.6	7.1	5.7	4.7	3.7	3.3	3.3	12.5	5.4	24	
15		2.6	1.9	1.8	2.1	1.5	0.8	0.2	1.9	5.7	9.7	13.5	15.1	14.5	13.1	13.4	13.4	12.2	10.7	9.6	8.9	8.1	7.1	5.7	4.5	15.1	7.4	24	
16		3.4	2.2	1.8	0.8	0.8	0.2	-0.6	0	1.6	5	7	8	8.5	8.6	8.9	9.2	8.7	6	4.8	4.1	3.5	2.9	3.2	2.9	9.2	4.2	24	
17		3.2	3	3.1	2.4	2.4	2.1	2.6	2.9	3.7	4.6	6.1	7.9	8.1	7.8	P	P	P	P	5.7	4.5	3.4	3.1	3.7	4.4	8.1	4.2	20	
18		4	4	3.8	3	2.6	2.2	2.4	2.1	2.6	4.3	7.8	11.5	13.2	14.3	13	12.3	11.3	10.5	9.3	8.3	7.5	6.9	6.2	6.5	14.3	7.1	24	
19		5.9	5.6	4.6	4.5	4.6	4.3	4.8	6.7	7.8	8.6	9	9	9	7.5	6.4	5.7	5.1	4.7	4.3	3.7	3.9	3.8	3.5	3.5	9.0	5.7	24	
20		3.5	3.2	2.2	2	1.2	0.9	0.4	1	2.1	3.2	4.1	5.2	6	6.2	6.6	6.5	6	5.1	4.7	4.4	4.5	4.5	5.1	5.3	6.6	3.9	24	
21		5.8	7.1	7.5	7.3	6.7	6.3	6.4	6.8	7.7	9.3	10.3	12.3	13.2	13.7	13.2	12.6	11.3	9.7	9.1	8.9	7.9	7.5	7.4	6.7	13.7	8.9	24	
22		6.5	5.5	4.6	5.3	5.4	5.4	5.7	6.2	5.3	4.7	6.6	7.9	9.9	11	10.9	9.4	8.8	7.5	5.7	4.2	3	2.5	2.1	1.8	11.0	6.1	24	
23		1.2	1	0.8	1	0.9	0.9	0.8	0.5	0.7	1.1	2.5	4.6	6.9	8.5	8.7	8.4	5.9	2.3	1.8	1.3	0.9	0.2	1	0.4	8.7	2.6	24	
24		0.8	0.6	-0.3	-0.7	-1.3	-1.7	-1.6	-1.3	0.8	2.9	5.5	6.9	10.2	11.1	11.6	12.2	12.3	9.6	8.7	8.1	7.6	6.2	6.1	5.8	12.3	5.0	24	
25		6.1	5.5	5	4.2	4.1	3.7	2.9	2.7	3.4	2.6	3.3	5.4	6.5	7	7.7	7.3	5.4	2.3	1.5	1.2	0.6	-0.2	-0.2	0	7.7	3.7	24	
26		-0.5	-0.8	-0.1	-0.2	-0.7	-0.9	-0.9	0.2	2.1	4.1	6	8.8	11	11.3	10.4	8.9	7.6	6.5	5.5	4.6	3.7	3	2.1	1.4	11.3	3.9	24	
27		0.8	0.5	0	-0.9	-1.9	-2.6	-3.2	-3.9	-4.2	-3.4	-2	-2.2	-0.9	-1.1	-0.9	-1.4	-3.3	-5.8	-7	-7.9	-8.6	-8.8	-8.7	-9.2	0.8	-3.6	24	
28		-9.4	-9.9	-10.2	-10.6	-11.2	-11.2	-11.9	-11.3	-9.3	-6.4	-4.5	-3.1	-2.3	-2	-1.6	-2	-3.3	-4.9	-5.7	-6.5	-7.4	-8.3	-8.9	-9.3	-1.6	-7.1	24	
29		-9.6	-9.8	-9.6	-9.2	-9.1	-8.9	-8.9	-8.9	-7.2	-4.9	-2.3	-0.1	2	3.7	4.2	4.6	3.7	1.7	0.7	0	-1	-1.8	-2.3	-2.7	4.6	-3.2	24	
30		-3	-3.1	-2.8	-2.6	-2.8	-1.6	-1	-0.2	2.4	4.9	4.7	5.7	6.7	6.9	7.4	6.9	5	3.6	2.9	2.7	2.3	1.6	1.7	0.4	7.4	2.0	24	
31		-0.2	-0.6	-0.9	-1.1	-1.3	-0.2	1.4	3.1	3.2	3.8	4.1	4.5	4.9	5.3	5.3	4.3	3.5	3.3	3.3	3.2	3	2.7	1.8	1	5.3	2.4	24	
HOURLY MAX		7.7	7.3	7.5	7.3	6.7	6.3	6.4	6.8	9.4	10.6	13.5	15.1	15.7	15.4	16.0	15.8	14.1	11.5	10.3	10.3	9.4	9.5	9.3	8.5				
HOURLY AVG		2.6	2.3	1.9	1.5	1.2	1.0	1.0	1.6	2.9	4.6	6.3	7.6	8.7	9.1	9.2	8.7	7.7	6.0	5.0	4.4	3.8	3.4	3.2	2.8				

**STATUS FLAG CODES**

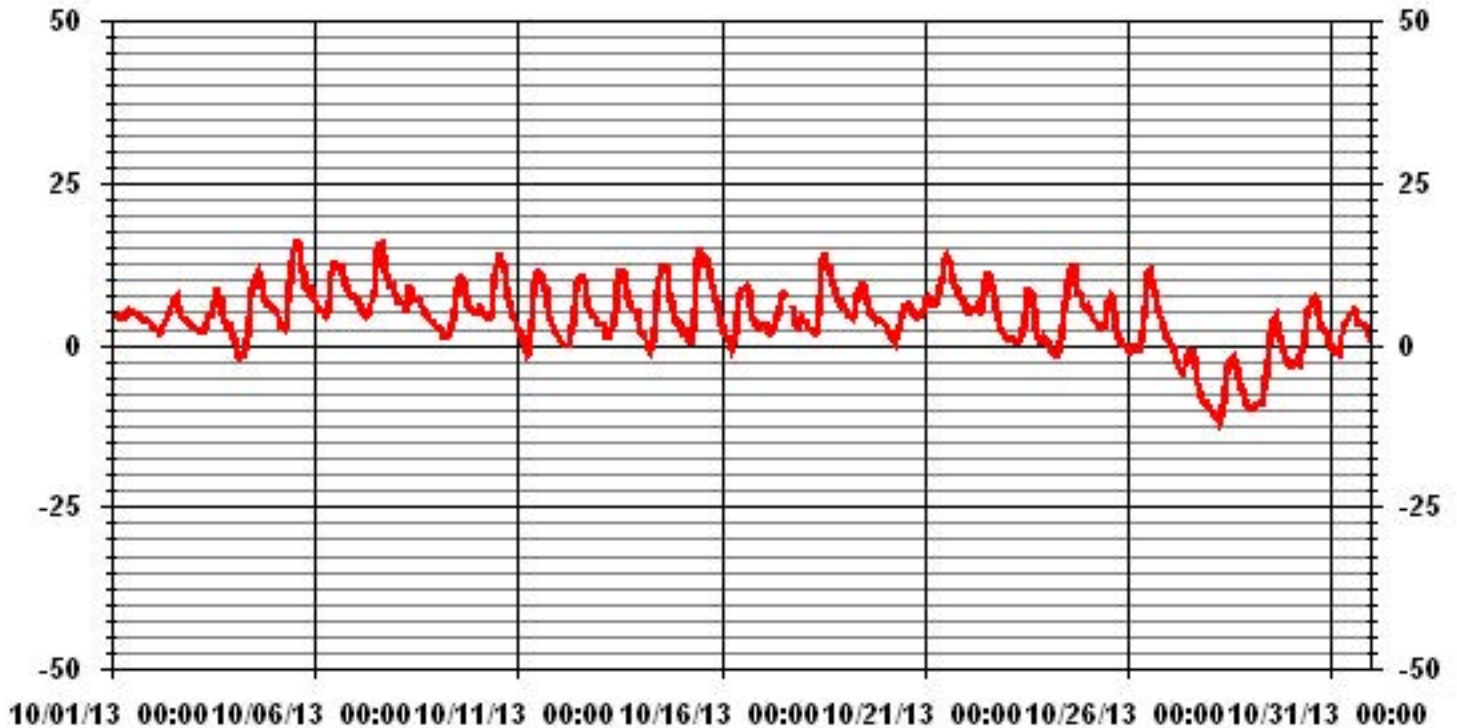
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



**MONTHLY SUMMARY**

MINIMUM 1-HR AVERAGE:	-11.9 °C	@ HOUR(S)	6	ON DAY(S)	28
MAXIMUM 1-HR AVERAGE:	16.0 °C	@ HOUR(S)	14	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	8.9 °C			ON DAY(S)	VAR
CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	740 HRS		
		AMD OPERATION UPTIME:	99.5 %		
STANDARD DEVIATION:	4.84	MONTHLY AVERAGE:	4.41 °C		

### 01 Hour Averages



# Barometric Pressure



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

OCTOBER 2013

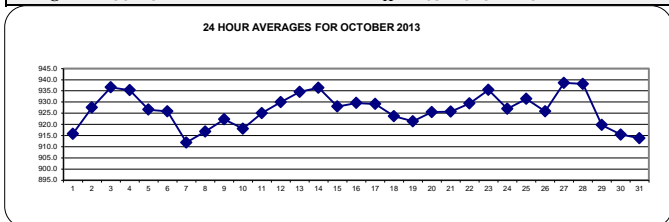
## BAROMETRIC PRESSURE hourly averages (millibar)

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		910	910	911	911	912	912	913	913	914	915	915	916	916	917	917	918	918	919	919	920	920	920	921	921	921	921	915.8	24
2		921	922	922	923	923	924	925	926	926	927	928	928	929	929	929	930	930	930	931	931	932	932	932	932	932	932	927.6	24
3		933	933	933	933	934	934	935	935	936	936	937	937	938	938	938	938	938	938	938	938	939	939	939	939	939	939	936.5	24
4		939	939	939	938	938	938	938	938	938	938	938	937	937	936	936	935	934	933	932	931	930	929	929	928	928	939	935.3	24
5		927	927	927	926	926	927	926	926	927	927	928	927	927	927	927	927	927	926	926	926	926	926	926	926	926	928	926.6	24
6		926	927	927	927	927	927	927	927	928	928	928	928	928	927	927	926	926	925	924	923	923	922	921	921	921	928	925.8	24
7		920	919	918	916	915	914	913	912	911	910	910	909	909	909	910	910	910	910	910	910	910	910	910	910	910	920	911.9	24
8		910	910	910	911	911	911	912	913	913	914	915	916	917	918	919	920	920	921	922	923	923	924	925	925	925	916.8	24	
9		925	926	926	926	926	926	926	926	926	926	925	924	923	922	922	921	920	919	918	917	916	916	916	916	916	922.3	24	
10		916	915	916	915	915	915	916	916	917	917	918	918	918	919	919	919	920	920	920	921	921	921	921	922	922	918.1	24	
11		922	922	923	923	923	923	924	924	925	925	926	926	926	926	926	926	926	926	926	926	926	927	927	927	927	927	925.1	24
12		927	927	927	928	928	928	928	929	929	930	930	931	931	931	931	931	931	931	931	932	932	932	932	932	932	930.0	24	
13		932	932	933	933	933	933	933	933	934	934	935	935	935	935	935	935	935	935	935	936	936	937	937	937	937	937	934.5	24
14		937	936	936	936	936	936	936	937	937	938	938	939	938	938	938	937	937	936	936	935	935	934	934	933	939	936.4	24	
15		932	931	930	930	929	928	928	927	927	927	928	928	928	928	927	927	927	927	927	927	927	927	927	927	932	928.0	24	
16		928	928	928	928	929	929	929	930	930	931	931	931	931	931	930	930	930	930	929	929	929	929	929	929	931	929.6	24	
17		929	929	929	929	929	929	929	929	929	929	930	930	930	930	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	930	929	929	929	928	928	930	929.2	20	
18		928	928	927	927	926	926	925	925	925	924	924	924	924	923	923	922	922	922	921	921	920	919	919	920	928	923.7	24	
19		919	919	918	918	917	917	917	918	918	919	919	919	920	921	922	923	924	925	925	926	927	927	927	927	927	927	921.3	24
20		927	927	927	927	926	926	926	926	926	926	926	926	926	926	926	926	926	925	925	924	924	923	923	923	927	925.5	24	
21		922	923	923	923	923	924	924	925	925	926	926	926	927	927	927	927	928	928	928	928	928	928	928	928	928	928	925.7	24
22		928	928	928	928	928	928	927	928	928	928	928	929	929	929	930	930	930	931	931	931	932	932	932	933	933	929.4	24	
23		933	933	934	934	934	935	935	935	936	936	936	937	937	937	937	936	936	936	936	936	936	935	935	935	937	935.5	24	
24		935	934	934	933	932	931	930	928	927	927	926	925	925	923	923	923	923	924	924	924	924	925	925	925	935	927.0	24	
25		926	927	927	928	928	929	930	930	931	933	933	934	934	934	934	935	934	934	933	933	933	932	932	931	935	931.5	24	
26		930	929	928	927	926	925	924	924	924	924	925	925	925	925	925	925	925	926	926	926	926	927	927	930	925.8	24		
27		928	929	930	931	932	933	934	936	938	939	940	941	941	941	942	942	943	943	943	944	943	944	944	944	944	<b>944</b>	<b>938.5</b>	24
28		944	944	943	943	943	942	942	942	941	941	941	940	940	939	938	937	936	934	933	932	931	930	930	929	<b>944</b>	938.1	24	
29		928	926	925	924	923	922	922	921	920	920	920	920	919	919	918	918	917	916	916	915	915	915	914	928	919.7	24		
30		914	914	914	914	914	915	915	916	916	917	917	917	917	917	917	917	916	916	915	915	914	914	913	917	915.5	24		
31		913	912	912	911	911	911	911	911	911	912	912	912	912	912	913	914	915	916	917	917	918	919	919	919	919	919	913.8	24
HOURLY MAX		944	944	943	943	943	942	942	942	941	941	941	941	941	941	942	942	943	943	943	944	943	944	944	944	944			
HOURLY AVG		926	926	926	926	926	926	926	926	926	927	927	927	927	927	927	927	927	927	927	927	927	927	927	927	926			

### 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 OCTOBER 2013



### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	944	MB	@ HOUR(S)	VAR	ON DAY(S)	27, 28
MAXIMUM 24-HR AVERAGE:	938.5	MB			ON DAY(S)	27
				VAR-VARIOUS		
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	740	HRS	
			AMD OPERATION UPTIME:	99.5	%	
STANDARD DEVIATION:	7.84		MONTHLY AVERAGE:	926	MB	

### 01 Hour Averages



# Relative Humidity

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

OCTOBER 2013

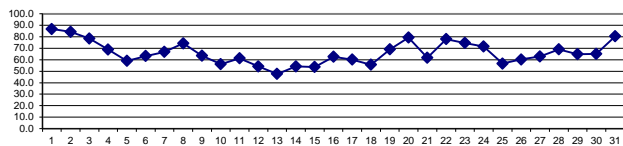
### RELATIVE HUMIDITY hourly averages (%)

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 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		84	84	86	85	85	85	86	87	88	86	85	85	87	87	88	88	88	88	88	88	88	88	88	88	88	88	86.7	24
2		88	88	89	89	88	89	89	89	87	86	84	80	75	72	69	76	80	83	86	88	88	88	88	86	84	89	84.2	24
3		85	85	87	88	88	87	88	89	89	86	84	81	76	69	58	60	67	72	75	80	76	73	78	89	78.4	24		
4		84	88	89	89	89	89	89	89	88	84	65	55	50	52	49	48	51	58	63	62	58	55	54	55	89	68.9	24	
5		55	57	60	64	68	71	74	74	71	64	53	46	39	39	40	44	54	58	67	67	66	61	61	64	74	59.0	24	
6		65	68	70	70	72	73	76	76	71	59	55	50	52	51	53	55	55	59	63	64	64	64	66	66	76	63.2	24	
7		68	67	70	74	76	76	79	78	76	72	70	66	57	50	47	47	52	61	65	65	69	69	72	77	79	66.8	24	
8		82	84	83	80	80	82	84	80	69	70	69	68	67	64	65	67	68	71	74	75	74	74	75	77	84	74.3	24	
9		77	78	77	77	80	80	80	80	78	73	62	55	47	42	43	43	44	48	55	57	59	62	63	65	80	63.5	24	
10		67	63	70	71	71	74	76	77	74	62	53	47	43	33	32	36	40	46	50	54	55	57	61	77	56.0	24		
11		61	64	67	73	76	77	77	66	63	54	48	46	43	42	46	52	52	58	63	65	66	69	69	70	77	61.1	24	
12		73	75	76	78	79	79	77	71	67	60	52	43	34	30	28	29	35	39	40	43	46	47	50	50	79	54.2	24	
13		52	53	53	58	64	66	64	63	64	57	40	29	27	28	27	31	36	41	45	48	49	48	47	53	66	47.6	24	
14		64	65	64	66	72	71	74	68	62	55	47	39	34	33	33	34	37	43	48	53	56	59	61	60	74	54.1	24	
15		62	64	63	62	65	67	69	63	57	54	48	45	49	53	52	42	42	41	43	43	43	48	54	61	69	53.8	24	
16		68	75	76	82	83	85	87	84	76	66	58	51	48	48	46	42	43	51	51	53	56	58	58	59	87	62.7	24	
17		58	60	59	62	61	64	64	65	64	59	54	47	49	52	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	60	65	68	69	64	60	69	60.2	20	
18		62	62	63	65	66	68	67	71	71	66	55	42	38	35	37	39	42	46	50	54	57	58	61	61	71	55.7	24	
19		63	63	66	66	66	68	67	62	57	55	54	55	57	69	76	78	78	78	78	80	79	80	81	82	82	69.1	24	
20		82	80	84	84	86	84	84	85	84	82	79	75	72	72	71	72	73	75	78	81	82	82	79	78	86	79.3	24	
21		76	72	71	72	74	77	75	72	69	63	58	51	46	43	43	45	50	56	58	59	61	63	62	66	77	61.8	24	
22		65	71	78	81	82	85	88	89	88	89	89	87	79	69	64	64	63	65	68	74	79	83	85	86	89	78.0	24	
23		87	88	88	88	88	86	84	84	83	81	76	68	60	54	51	51	57	68	69	71	73	77	78	81	88	74.6	24	
24		79	80	83	82	85	87	87	85	80	76	69	66	58	57	56	55	54	61	64	66	68	72	72	73	87	71.5	24	
25		68	66	64	65	60	60	58	56	56	58	56	50	46	45	41	40	45	54	58	59	61	65	64	63	68	56.6	24	
26		64	65	61	61	64	68	70	69	65	60	56	49	42	42	44	50	54	57	62	67	69	69	69	68	70	60.2	24	
27		70	71	71	71	73	70	68	66	62	57	52	51	47	47	47	47	51	59	65	68	72	73	73	77	77	62.8	24	
28		77	77	79	81	83	83	81	80	74	69	64	60	53	52	49	49	51	56	62	69	74	77	78	78	83	69.0	24	
29		78	77	76	76	75	74	74	74	68	63	57	54	50	45	44	44	48	57	63	67	70	73	74	76	78	64.9	24	
30		76	77	76	76	78	76	75	73	64	58	59	55	52	50	49	49	55	61	64	64	65	68	69	73	78	65.1	24	
31		76	78	78	78	78	75	72	66	69	82	86	85	84	84	81	85	85	83	81	84	84	84	85	86	86	80.4	24	
HOURLY MAX		88	88	89	89	89	89	89	89	89	89	89	87	87	87	88	88	88	88	88	88	88	88	88	88	88			
HOURLY AVG		71.5	72.4	73.5	74.6	76.0	76.6	76.9	75.2	72.1	67.9	62.5	57.5	53.6	51.9	51.0	51.9	54.6	59.4	62.9	65.3	67.0	68.2	68.6	70.2				

#### STATUS FLAG CODES

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

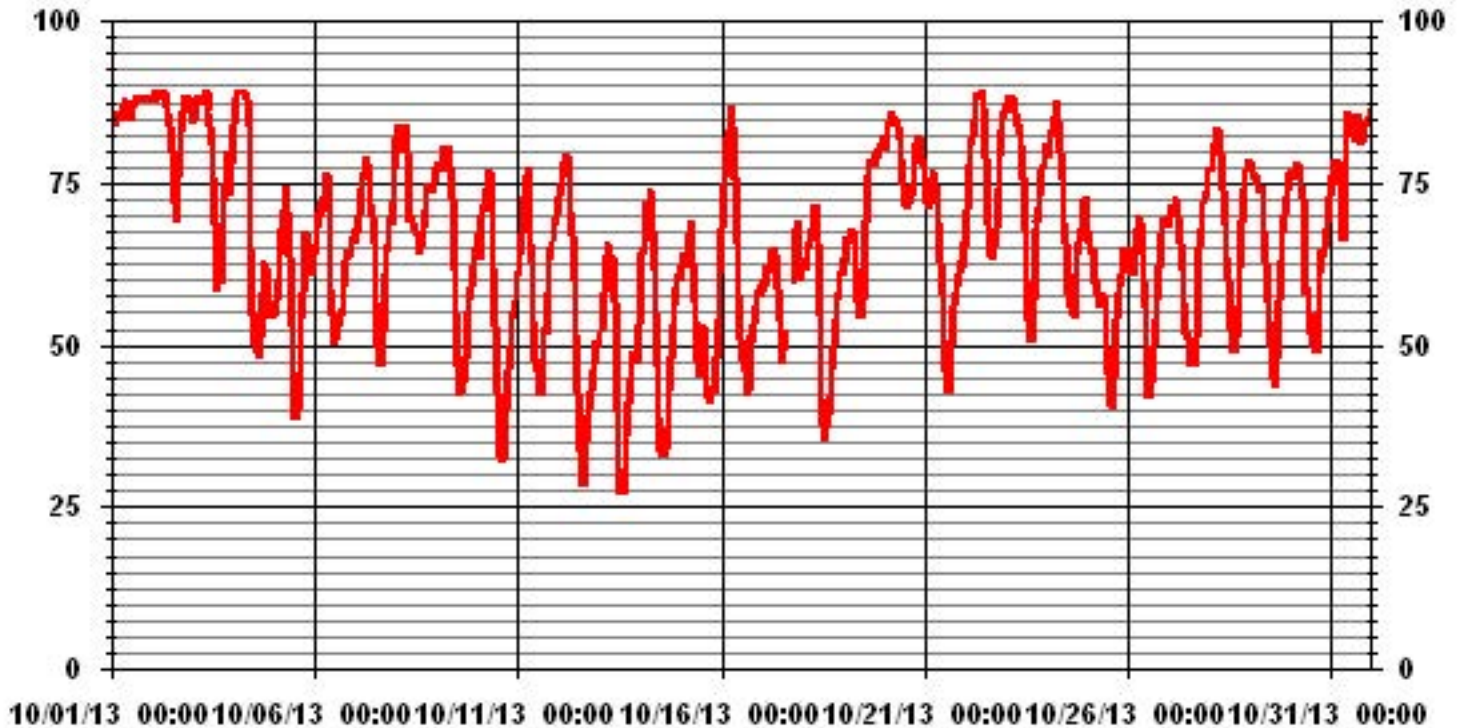
24 HOUR AVERAGES FOR OCTOBER 2013



#### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	89	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	86.7	%			ON DAY(S)	1
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	740	HRS	
STANDARD DEVIATION:	14.43		AMD OPERATION UPTIME:	99.5	%	
			MONTHLY AVERAGE:	65.95	%	

### 01 Hour Averages



# Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

OCTOBER 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	DAILY	
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.	TOTAL	RDGS.	
DAY																													
1		0	0	0	0	0	0	0.1	0	0.1	0.1	0.5	1	0.8	0.8	0.6	0.5	0.4	0.4	0.3	0.4	0.7	0.8	0.6	1.0	8.1	24		
2		0.5	0.6	0.6	0.4	1.5	0.9	0.5	0.2	0.2	0.1	0.1	0	0	0	0	0.1	0.1	0.2	0.1	0.1	0.2	0	0	0	1.5	6.4	24	
3		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	
4		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	
5		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
6		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
7		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0.1	24	
8		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
9		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
10		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
11		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
12		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
13		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
14		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
15		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
16		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
17		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	P	P	0	0	0	0	0	0	0	0.0	0.0	22	
18		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
19		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0.1	0	0	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	0	0	0	0.0	0.0	24	
22		0	0	0	0.1	0	0	0.2	0.1	1.6	0.4	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	2.5	24	
23		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
24		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
25		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
26		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
27		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
28		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
29		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
30		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
31		0	0	0	0	0	0	0	0	0	0	0.2	0.6	0.1	0.3	0.4	0.6	0	0	0	0	0	0	0	0	0.6	2.2	24	
HOURLY MAX		0.5	0.6	0.6	0.4	1.5	0.9	0.5	0.2	1.6	0.4	0.2	0.6	1.0	0.8	0.8	0.6	0.5	0.4	0.4	0.3	0.4	0.7	0.8	0.6				

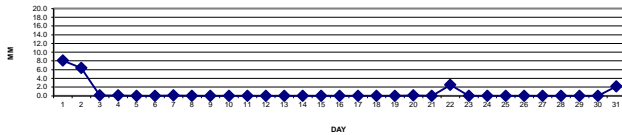
STATUS FLAG CODES

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

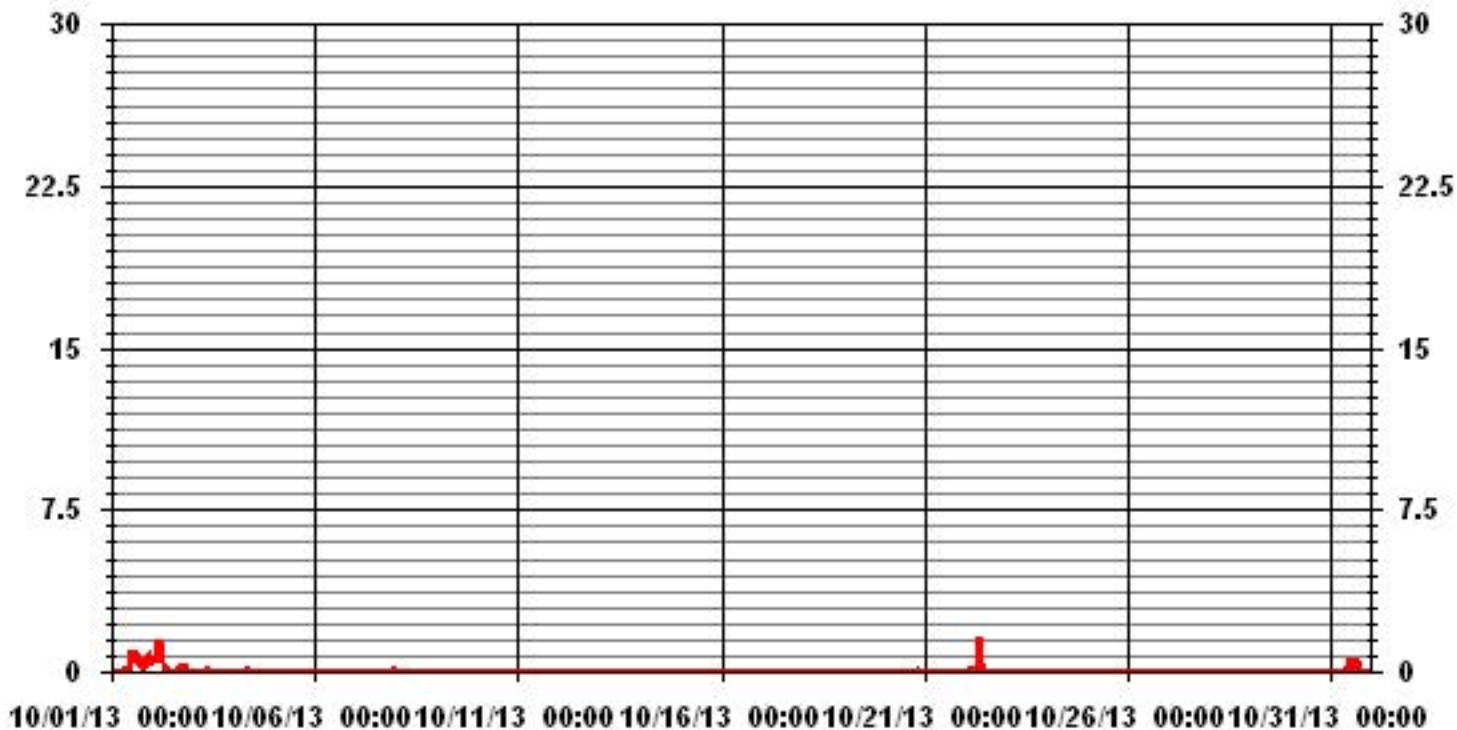
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	1.6	MM	8	HOUR(S)	22	ON DAY(S)
MAXIMUM DAILY TOTAL	8.1	MM	1	ON DAY(S)		
MONTHLY TOTAL	19.6	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	742	HRS	
STANDARD DEVIATION:	0.13		AMD OPERATION UPTIME:	99.7	%	
			MONTHLY AVERAGE:	0.03	MM	

DAILY TOTALS FOR OCTOBER 2013



### 01 Hour Averages





# Vector Wind Speed

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

OCTOBER 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	16.7	18	15.3	16.1	15.1	15.9	13.9	13.8	12.5	11.9	10.7	11.2	11	11.8	10.8	10.6	9.7	7.6	6.4	6.1	5.6	4.2	6	6.1	18	10.5	24
2	6.7	8.6	7.8	10.3	11.5	7	7.5	8.9	9.1	9.5	8.3	7.7	9.2	6.7	6.7	6.5	5.7	3.9	4.5	3.9	2.3	4.4	5.8	6.3	11.5	6.1	24
3	5.7	6.2	6.3	6.5	6.3	6	5.8	3.5	3.6	4.1	3.4	3.3	3.9	3.5	2.6	1.7	3.1	4.3	3.5	2.9	3.4	4	1.4	3.9	6.5	2.6	24
4	5.2	5	4.8	5.9	X	X	X	X	X	8.7	11.8	19	17.3	15.5	13.2	13.1	12.8	10.7	10.5	14.4	13.1	12.8	15.1	15.8	15.5	<b>20.7</b>	19
5	14	10.7	12.4	10.5	10.8	9.8	7.1	6.8	7.3	10.3	13.8	15.7	19	17	17.8	16.2	7	5.5	7.2	8	10.7	9.4	7.9	8.8	19	9.8	24
6	9.2	8.1	9.4	9.8	10	7.5	7.4	7.6	7.1	6.1	10.4	11.9	11.4	11	10.6	6.4	3.8	4.3	8.1	9.4	10.6	11.5	10	8.9	11.9	5	24
7	9	9.7	9.4	10.8	12.4	11.9	13.3	13.3	11.7	9.9	8.2	6.8	8.3	7.2	9.2	12.6	11.2	7.6	7.4	8.1	10.1	10	11.7	11.9	13.3	0.9	24
8	9	7.9	10.5	11.3	11.7	9.3	7	8.9	12.5	17.9	18.8	19.1	18.1	18.8	19.9	19.8	19.8	17.4	15.4	16.2	16.3	15.6	13.6	10.2	19.9	14	24
9	10.6	12.2	13.3	10.4	11.2	10	8.5	7	10	12.4	18.9	17.4	15.9	17.5	16.9	16.9	16	10.7	10.8	11	12.4	12.5	11.2	9.8	18.9	9.7	24
10	8.6	4.7	3.6	3	4.8	6.5	7.4	7.2	7.2	5.4	4.7	8.2	9.7	11.9	12.8	13.1	9.7	9	7.4	7.9	7.8	8.5	8.9	10.9	13.1	6.4	24
11	10.8	10.5	9.6	10.4	9.5	9.4	9.7	8.9	9.4	8.2	9.8	9.3	10.9	13.6	9.2	11.9	13.6	9.6	8.3	8.6	9.2	10.9	10.7	10.4	13.6	9.4	24
12	10.3	11.4	10.4	9.6	9.7	9.4	10.8	10.5	9.3	6.9	8	9.3	12.7	14.3	13.2	10.1	6.2	4.7	3	4.6	5.1	5.7	6.8	7.6	14.3	7.5	24
13	7.4	7.5	6.4	5.3	6	5.9	7.2	8.7	7.4	7.4	8.4	8.1	7.2	10.3	6.8	9.7	7.5	6.1	6	8.4	9.6	8.9	8.7	4.2	10.3	6	24
14	5.9	6.3	6	7.4	7.9	7.5	6	6.3	5.4	6.5	8.2	9.6	13.5	14.5	15.2	15.8	13.5	9.3	8.1	9	10.1	10.6	12.4	11.7	15.8	9.2	24
15	10.8	10	10.5	11.4	11.4	11.8	12.7	12	11.5	15.3	16.9	19.4	19.6	18.1	15.9	17.4	18.2	17	14.6	13.9	11.9	11.4	11.4	10.9	19.6	10.9	24
16	10.6	11.5	10.2	11.1	10.8	9.8	9.4	10.4	9.7	9.8	10.5	12.1	12.1	14.3	13.8	10.9	9.4	6.4	8.7	8.7	8.5	9.2	9.9	8.9	14.3	10	24
17	9.4	9.9	8.9	8.6	9.2	8.3	9.8	10.9	11.9	16.1	17	19.7	18.4	19.2	<b>P</b>	<b>P</b>	<b>P</b>	<b>P</b>	7.2	10.7	10	11.3	11.6	11.7	19.7	11.1	20
18	9.5	8.3	9.6	9	9	9	9.3	8.2	9.8	10.5	9.7	10.8	10.7	10.9	11.8	9.5	4.8	6.7	5.4	6.5	6.2	7.3	8.6	10.6	11.8	8.3	24
19	12.9	12.1	14.1	12.7	12.9	12	10.7	15.2	18.1	19	22.6	20.8	21	24.3	22.7	20.1	17.3	14.6	13	9.6	11.7	9.5	7.1	4.5	24.3	12.8	24
20	3.6	2.8	4.9	5.5	6.9	7.4	6.6	5.6	5.7	7.3	7.1	7.1	8	6.1	5	6.4	6.2	6.3	7.2	10.4	13.2	10.5	12.8	12	13.2	4.7	24
21	11	11.4	11.7	12.5	11.9	11.1	12.9	13.3	11.3	11.9	11	13.6	12.9	15.1	13.8	10.8	7.6	5.5	6.6	6.3	5.3	5.8	3.4	2.2	15.1	9.2	24
22	3.7	6	7	6.2	7.1	7.5	8.3	3.9	4	1.8	6.8	7.3	7.1	11.1	13.4	12.5	13.2	12.4	11.9	6.1	5.1	5.8	8.2	9.4	13.4	5.8	24
23	8.3	10.3	5.2	2.4	2.1	3.4	4.1	4.4	3.2	4.5	3.7	3.9	3.9	3.1	3.9	3.2	6	5.7	6.3	7.1	3.3	7.1	6.5	7.4	10.3	2.4	24
24	7.9	10.3	11.6	13.6	12.8	12.2	14.2	17.1	17.8	21.2	20.6	23	25.4	<b>25.8</b>	20.1	11.6	8.6	11.4	10	11.6	11.1	11.7	11.7	12.3	<b>25.8</b>	10.4	24
25	14	12.9	13.3	15	16.3	17.7	15.2	13.4	16.2	16.6	16	13	12.2	11.9	11	9.1	5.2	4.3	5.4	7.9	6.7	10	11.7	13.6	17.7	7.3	24
26	16	15.9	18.3	15.8	14.5	17.5	15.5	15	12.2	12.4	13.4	12.7	12	12.8	15.1	13.2	12.4	11.5	11.5	15	14.4	15.4	18.1	15.2	18.3	4.8	24
27	12.8	13.3	15	15.1	14.9	16.1	17.8	16.4	15.8	17	16.7	13.6	13	12.9	9.2	8.3	7.3	7.4	6.7	8.8	9.4	7.3	7.4	7.1	17.8	10.8	24
28	6.6	7	7.2	7.6	7.7	7	6.7	6.7	5.6	6.4	9	11.3	14.1	14.7	16.2	16.3	13.6	14.2	17.1	18.3	20.3	21.2	18.9	17.5	21.2	11.9	24
29	19.4	20.5	22.8	20.6	18.6	17.5	21.8	18.4	20.2	20.4	17.4	15.4	15.7	15.2	13.8	13.8	14.7	15.7	18.5	20	18	19	18.2	16.7	22.8	17.9	24
30	14.9	14.8	13	11.6	12	12.2	10.9	11.1	11.9	11.5	13.4	13.1	10.9	7.7	6.1	6.2	7.5	11.5	11.6	10.9	10	9.7	11.2	9.9	14.9	9.2	24
31	9.7	9.7	10.8	12.6	12.7	11.8	11.4	10.4	8.9	11	11.6	15.2	15.1	12.9	18.5	18.2	16.2	16	15.6	13.3	10.9	9.5	10.6	12.4	18.5	10.9	24
HOURLY MAX	19.4	20.5	22.8	20.6	18.6	17.7	21.8	18.4	20.2	21.2	22.6	23.0	25.4	25.8	22.7	20.1	19.8	17.4	18.5	20.0	20.3	21.2	18.9	17.5			
HOURLY AVG	10.0	10.1	10.3	10.3	10.6	10.3	10.3	10.1	10.2	10.9	11.8	12.5	12.9	13.2	12.5	11.7	10.3	9.2	9.2	9.8	9.8	10.0	10.2	10.0			

### STATUS FLAG CODES

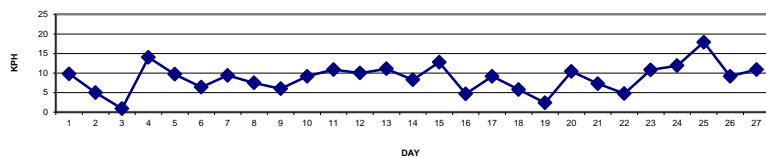
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION: June 12, 2012

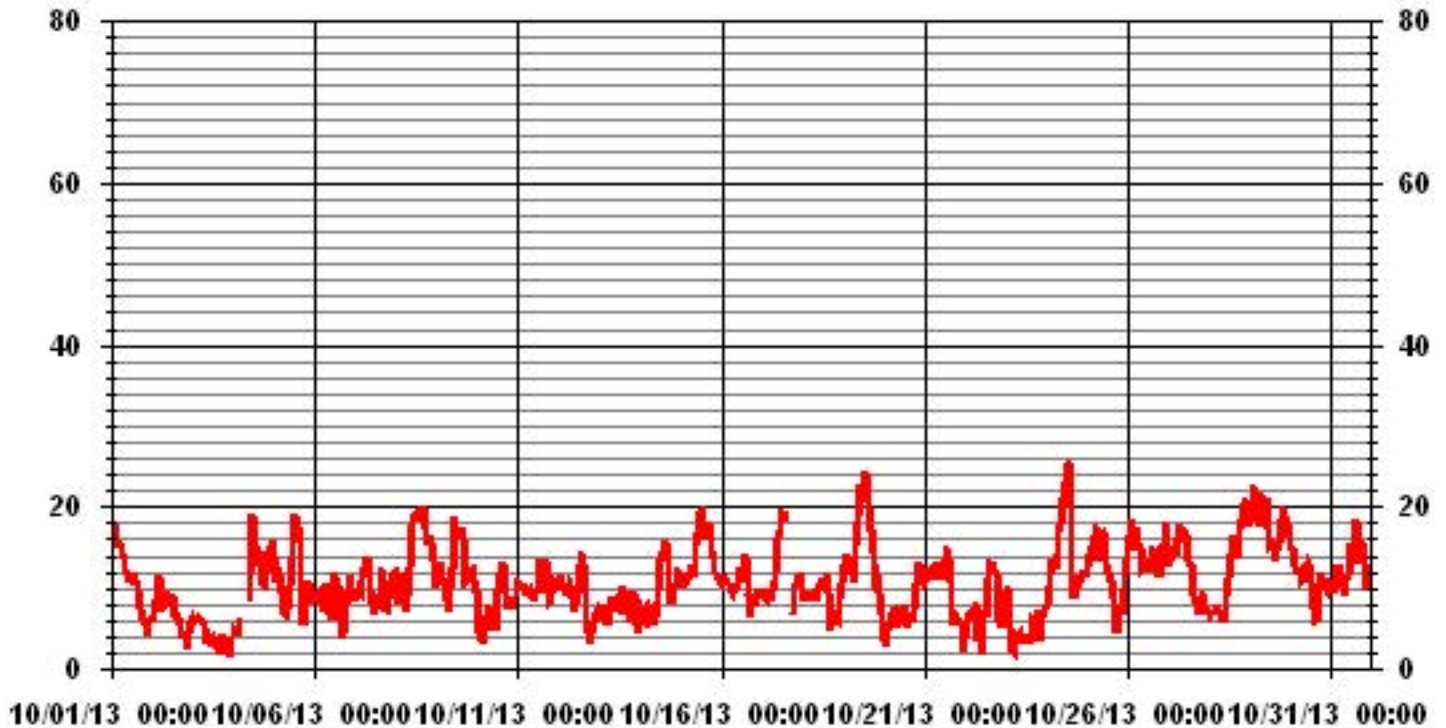
### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	25.8	KPH	@ HOUR(S)	13	ON DAY(S)	24
MAXIMUM 24-HR AVERAGE:	20.7	KPH			ON DAY(S)	4
CALMS (≤ 0 KPH)	0.00	%	OPERATIONAL TIME:	735	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:	98.8	%	
STANDARD DEVIATION:	4.39		MONTHLY AVERAGE:	10.68	KPH	

24 HOUR AVERAGES FOR OCTOBER 2013



# 01 Hour Averages



— LICA31 WSP KPH

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

OCTOBER 2013

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

MST																									
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY
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	45.8	49	38.5	49	36.4	34.6	32.3	29.6	29.6	31.1	27.2	25.4	24.5	25.4	24.8	23	24.1	23.9	20.2	18.4	15.8	15.4	17.3	17.2	49
2	20.6	24.3	22.4	29.8	33.3	19.7	22.3	22.1	29.8	29.6	23.9	24.1	31.6	24.3	23	18.9	14.1	13.9	9.4	8.3	6.6	8.3	11.9	11.4	33.3
3	10.3	12.3	11.9	11.6	12.8	10.5	11.4	8.6	9.7	12.1	14.7	9.4	11.8	12.7	11.6	7.1	7.1	7	5.7	5.1	8.1	7	2.7	6.8	14.7
4	7.9	8.8	16	X	X	X	X	X	X	18.9	34.4	42	40.3	37.7	35.5	35.5	32.9	28.3	21	35.9	32.9	30	33.1	35.3	42
5	29.8	26.3	21.7	18.9	16.7	16.2	16.7	12.9	14.2	19.3	32	41.2	55.4	38.3	50.6	44.4	26.1	11	12.1	13.2	19.5	16	15.6	18.9	55.4
6	18	16.2	18.6	18	16.4	14	10.8	11	12.9	14.2	20.4	23.7	21.7	21.7	22.1	13.4	9.9	10.5	14.5	16.7	20.6	24.5	20.8	19.1	24.5
7	18	20	17.5	24.5	22.1	24.5	23	27.9	23.7	20.8	18.6	23	24.1	22.1	28.3	29.6	32.4	19.5	15.6	17.7	18.3	17.8	34.2	30.9	34.2
8	19.5	14.9	20.6	21.1	20.4	18.2	12.5	21.2	32.6	43.2	44.1	43.6	45.1	41.8	53.2	47.3	43.9	46.2	38.1	36.4	40.3	37.4	32.9	24.8	53.2
9	26.3	30.9	31.3	26.3	23.9	19.9	17.5	13.8	18.2	28.7	35	37.2	34	34.6	41.4	39.5	38.5	30.4	25.2	29.2	27.6	27.2	24.1	19.1	41.4
10	13.6	11.4	9.9	13	11.5	12.5	13.6	12.7	14.7	11.3	18.2	19.1	29.6	28.5	32.4	27.8	23.2	21.5	13.2	13.4	12.9	15.6	16.2	15.1	32.4
11	17.3	18.6	17.3	16.9	16.3	14.3	16.7	16.4	17.5	18	23	21.7	30	29.6	22.6	34.8	34.6	27	16	15.1	17.1	18.2	19.6	20.2	34.8
12	24.1	21.3	19.7	16.9	16.7	17.5	20.4	20.2	20.8	13.6	16.9	23	35.5	37.2	37.5	29.8	18.5	8.1	7.5	7.9	8.1	13.6	11.2	11	37.5
13	10.1	11.9	10.5	8.3	7.5	7.7	11.2	13.4	11.4	12.3	19.5	21	23.4	25	21.5	24.5	23.1	14.7	11	15.4	18.6	15.8	14.5	11.8	25
14	7.9	9	7.9	9.4	11.7	12.1	8.6	9.9	13.2	13.6	16.4	26.3	30.7	30.4	30.2	29.8	23.7	16	14	15.1	15.8	19.5	22.2	21.7	30.7
15	20.2	19.1	21	25.4	21.5	17.3	17.1	18	23.9	33.8	36.6	50.1	45.1	46	43.6	42	43.2	45.2	32.9	30.9	24.5	24.1	23	27.4	50.1
16	24.3	22.3	25.2	23.5	21.7	20.9	18.4	21.5	18.6	22.3	24.1	26.7	28.7	32.9	30.7	32	21.9	13.8	17.5	16.2	17.3	17.5	17.3	18.2	32.9
17	16.2	19.1	19.1	13.6	13.9	11.2	14.3	19.9	27.8	38.3	39.4	49.5	50.1	53	P	P	P	P	15.6	19.9	19.5	20.4	21	21.7	53
18	19.5	18.7	15.8	14.7	13.4	12.5	13.4	12.7	15.8	16.2	17.5	22.3	24.1	25.6	26.3	23.2	11.4	16.4	10.5	9.3	8.8	10.3	16.9	19.7	26.3
19	18.9	18.2	20.2	18.6	18.2	15.8	21.9	34.5	39.2	43.6	50.3	52.7	48.6	56.9	57.2	49.9	39.6	40.1	35.5	22.8	27.2	20.4	13.8	11.4	57.2
20	9.9	11	9.5	14.3	14.7	12.5	12.3	10.4	12.9	13	15.6	17.5	16.9	15.2	13.8	12.9	13	12.1	13.6	19.1	22.8	17.1	19.3	16.7	22.8
21	15.8	26.3	25.2	23.7	22.1	21	26.5	26.3	23.7	28.9	23.9	30.9	33.5	32.6	32.5	30.7	23.2	10.5	11	10.1	10.3	8.6	9	6.2	33.5
22	9.2	9.9	17.3	14.3	13	11	11.9	8.1	8.6	7.5	14.7	13.8	19.3	25.4	31.5	36.4	33.5	29.4	25.8	16.2	8.8	14.5	16.3	17.5	36.4
23	16.7	19.5	13.6	11	5.9	10.3	11	13.8	9.2	14.8	12.7	15.8	12.3	11.6	14.2	11.2	11.9	7.2	8.1	9.4	7.7	10.5	11.6	12.7	19.5
24	12.5	21.3	25.9	29.6	31.1	26.1	29.2	38.6	38.3	41.2	47.5	47.5	48.8	47.8	36.1	24.1	14.2	18.2	19.3	20.4	23.5	19.5	20.8	27.2	48.8
25	28.7	26.3	26.1	36.8	37	39	31.6	29.2	37.7	38.1	42.5	27.8	25.4	26.1	22.1	18.9	14.9	7.7	7.9	10.6	11.2	15.6	26.5	29.8	42.5
26	31.6	33.3	33.5	29.6	23.2	26.1	21.1	21.5	17.3	19.1	21	21.1	32	35.3	32.6	26.7	26.1	32.7	34	35.3	29.6	37.5	41.8	34.6	41.8
27	32.7	31.8	33.3	29.8	34.4	38.6	39.7	33.3	33.5	39.1	37.7	37	27.6	27.6	23	17.6	16.9	18.9	15.8	12.6	14.3	10.6	11.4	9.7	39.7
28	8.8	8.8	10.1	11.3	10.3	10.6	13.7	17.8	15.4	14.5	17.3	24.1	28.5	28.1	31.6	33.8	35.1	31.6	29.6	38.6	36.4	41	41.6	36.4	41.6
29	37.1	41.4	43.8	40.1	34.2	34.9	35.1	35.5	36	34.9	31.3	28.7	27.4	31.4	27.8	29.4	26.5	26.9	34.7	35.9	35.9	32.7	26.7	23.9	43.8
30	23.7	21.7	20	15.8	14.8	18.2	17.8	22.1	21.7	27.8	26.8	25.2	25.6	19.3	13.8	14	14.3	15.8	15.8	18.6	15.4	14.3	15.4	15.8	27.8
31	14.3	14.9	18.2	17.1	19.5	17.8	23	23.9	20	24.1	26.1	37.5	36.4	32	43.4	43.4	42.5	33.5	35.3	31.1	22.9	19.3	16.5	16.9	43.4
PEAK	45.8	49.0	43.8	49.0	37.0	39.0	39.7	38.6	39.2	43.6	50.3	52.7	55.4	56.9	57.2	49.9	43.9	46.2	38.1	38.6	40.3	41.0	41.8	36.4	

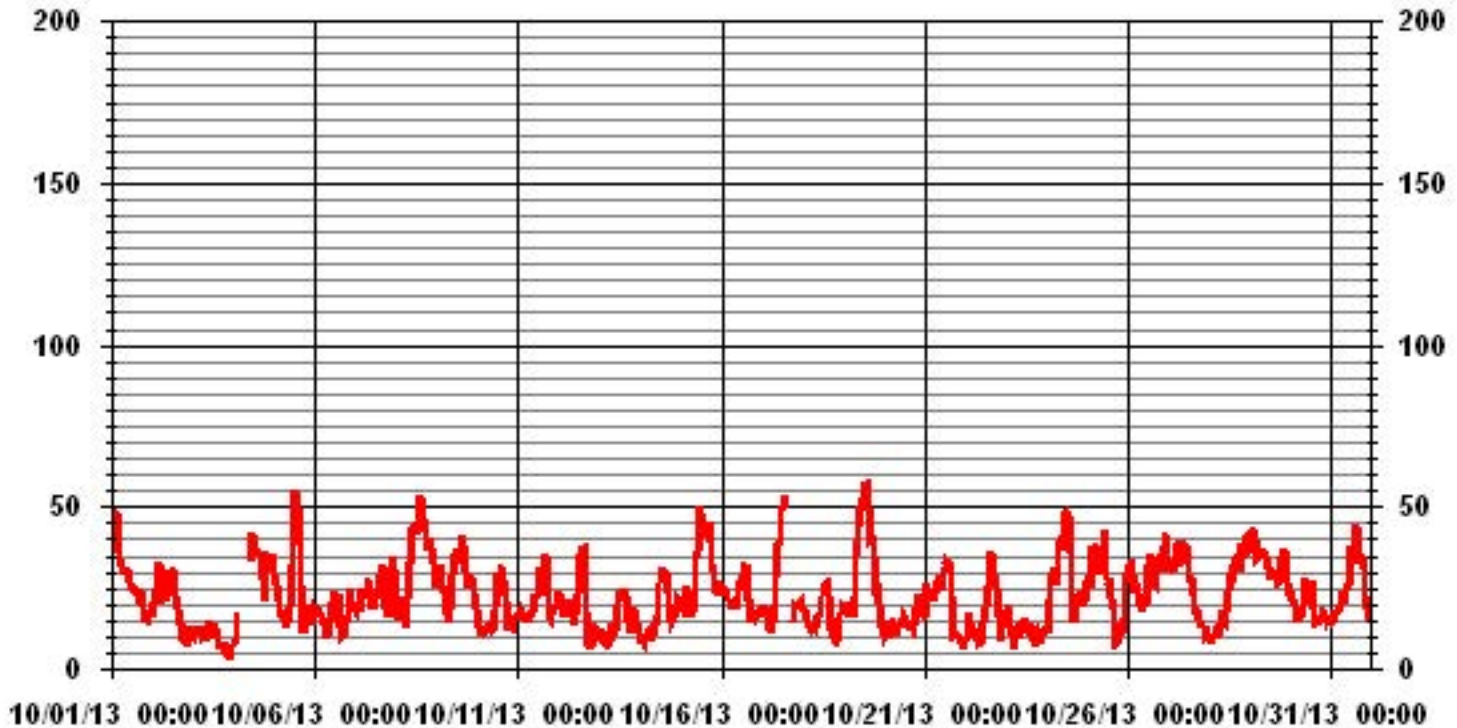
**STATUS FLAG CODES**

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

MAXIMUM INSTANTANEOUS READING	57.2	KPH	@ HOUR(S)	14
			ON DAY(S)	19

# 01 Hour Averages



LICA31  
WSP / WDR Joint Frequency Distribution (Percent)

October 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	1.35	.81	.40	.40	.27	.40	.67	.13	.27	1.21	.94	.27	.54	1.21	1.75	1.75	12.43
< 12.0	1.62	2.02	.67	.13	.13	1.35	1.62	1.62	2.56	2.43	3.91	4.72	9.18	10.67	7.70	3.51	53.91
< 20.0	.54	.13	1.89	.54	.13	.27	.00	.00	2.29	2.70	4.45	1.75	2.16	2.56	8.24	2.43	30.13
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.81	1.08	.13	.00	.00	.00	.81	2.83
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.27	.40	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.67
Totals	3.78	3.37	2.97	1.08	.54	2.02	2.29	1.75	5.13	7.16	10.40	6.89	11.89	14.45	17.70	8.51	

Calm : .00 %

Total # Operational Hours : 740

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	10	6	3	3	2	3	5	1	2	9	7	2	4	9	13	13	92
< 12.0	12	15	5	1	1	10	12	12	19	18	29	35	68	79	57	26	399
< 20.0	4	1	14	4	1	2			17	20	33	13	16	19	61	18	223
< 29.0										6	8	1				6	21
< 39.0																	
>= 39.0	2	3															5
Totals	28	25	22	8	4	15	17	13	38	53	77	51	88	107	131	63	

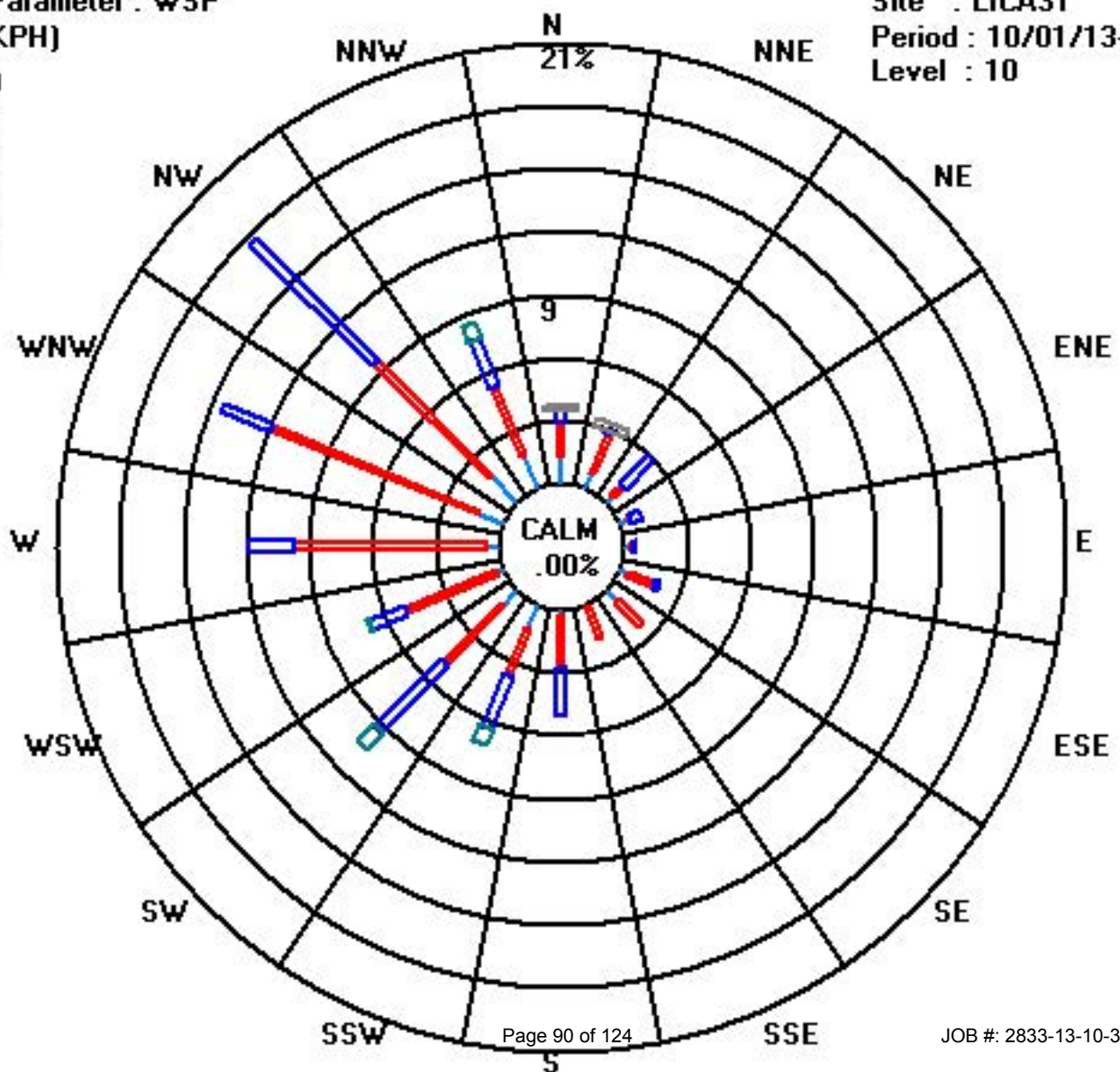
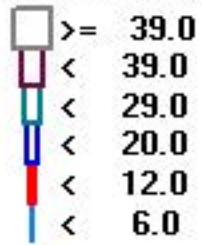
Calm : .00 %

Total # Operational Hours : 740

Class Limits (KPH)

Period : 10/01/13-10/31/13

Level : 10



# Vector Wind Direction



# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

OCTOBER 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	307	305	309	311	308	304	306	307	307	311	302	301	293	296	297	294	316	320	338	15	359	1	10	11	312	NW	24
2	18	28	29	22	23	19	9	9	9	17	38	28	20	25	22	358	346	340	302	307	319	281	303	299	8	N	24
3	298	306	318	309	310	313	309	348	28	18	25	28	13	4	344	289	284	316	347	260	90	140	200	197	326	NW	24
4	207	205	207	335	X	X	X	X	X	185	186	191	197	193	190	192	181	164	168	177	188	187	195	198	13	NNE	19
5	201	227	236	238	241	236	225	222	231	248	258	280	290	294	279	286	320	257	232	248	266	266	273	267	259	WSW	24
6	288	277	282	280	275	276	266	260	264	260	254	254	258	256	257	257	220	152	136	136	131	141	153	147	240	WSW	24
7	136	135	127	102	102	109	99	104	109	127	151	183	217	277	322	307	315	301	289	290	272	270	301	282	169	SSE	24
8	275	284	268	279	281	276	263	274	290	306	307	307	302	303	315	312	304	306	301	306	308	308	309	301	299	WNW	24
9	298	297	296	311	281	282	266	246	248	247	242	235	225	227	208	203	196	179	172	179	186	187	193	206	230	SW	24
10	253	318	201	211	184	178	194	233	239	227	286	305	273	290	288	290	287	308	300	294	293	300	287	278	274	W	24
11	285	290	289	277	268	262	288	279	267	298	319	332	302	302	320	339	328	335	317	308	297	289	299	310	301	WNW	24
12	296	291	293	295	291	301	314	307	320	318	293	309	327	333	333	331	330	324	275	215	206	220	229	267	302	WNW	24
13	264	266	270	242	222	227	258	273	266	267	270	295	307	280	279	279	351	354	341	344	338	333	333	296	291	WNW	24
14	221	226	242	243	236	242	220	208	212	216	223	212	215	237	237	240	240	226	214	199	201	205	212	216	223	SW	24
15	205	207	220	224	227	234	231	231	242	260	273	301	309	307	297	309	303	310	313	320	313	309	323	322	282	W	24
16	314	332	331	327	339	335	315	309	309	313	315	311	312	316	330	330	289	289	296	310	293	297	298	297	314	NW	24
17	304	288	288	281	271	263	272	267	293	323	326	329	327	326	P	P	P	P	290	289	287	283	290	296	300	WNW	20
18	306	300	279	269	277	261	266	256	252	251	252	264	272	302	309	315	302	307	267	262	273	259	267	290	278	W	24
19	279	269	264	272	270	260	278	311	318	320	329	335	334	339	337	346	351	353	5	8	347	341	339	356	323	NW	24
20	10	68	129	119	116	104	113	124	137	149	155	146	124	140	184	185	199	181	191	212	223	221	237	248	173	S	24
21	267	300	314	303	299	295	304	307	312	322	320	327	324	326	329	332	330	342	314	312	318	357	57	143	316	NW	24
22	88	182	243	297	269	266	257	309	29	67	289	279	317	330	329	335	328	350	347	8	323	339	319	337	319	NW	24
23	4	38	35	10	306	319	316	324	345	300	328	337	349	335	345	350	34	37	29	60	103	170	154	167	14	NNE	24
24	168	173	176	172	176	173	174	179	185	194	200	202	221	221	238	237	258	274	305	312	302	291	295	301	217	SW	24
25	307	305	314	317	316	316	318	319	334	346	338	321	317	302	308	322	352	55	105	118	161	170	173	177	316	NW	24
26	183	189	199	212	219	235	254	269	268	259	256	259	284	312	320	329	328	343	7	28	42	48	56	52	281	W	24
27	54	48	59	62	60	51	44	43	53	46	55	64	53	44	35	29	39	17	81	106	103	110	130	172	58	ENE	24
28	168	173	183	205	224	201	201	195	220	220	209	210	221	220	215	212	213	212	216	217	214	217	221	219	212	SSW	24
29	212	207	204	213	217	221	225	220	226	229	226	214	213	216	214	212	210	215	215	217	212	222	225	230	217	SW	24
30	225	227	230	233	239	274	282	299	301	308	317	318	315	310	284	282	249	241	241	238	240	250	257	237	264	W	24
31	232	228	229	230	238	262	282	299	274	287	280	292	305	304	315	328	322	316	314	309	307	297	279	269	288	WNW	24
HOURLY AVG	314	332	331	335	339	335	318	348	345	346	338	337	349	339	345	358	352	354	347	344	359	357	339	356			

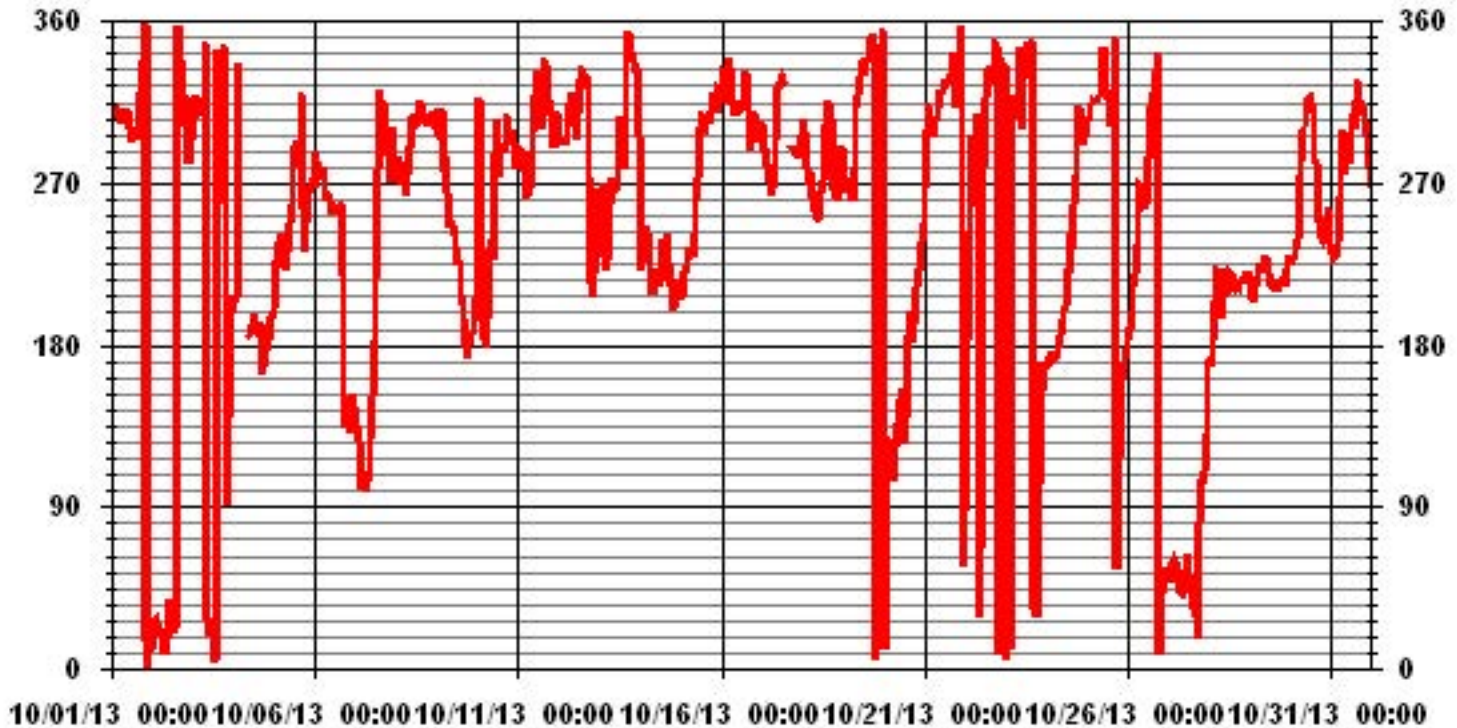
**STATUS FLAG CODES**

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:	735 HRS
STANDARD DEVIATION:	87.12	AMD OPERATION UPTIME:	98.8 %
		MONTHLY AVERAGE:	277 DEG

### 01 Hour Averages



# Standard Deviation Wind Direction

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

OCTOBER 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	17	16	16	17	17	16	17	17	17	17	18	17	17	18	16	16	16	17	19	20	21	26	19	25
2	21	23	22	21	20	23	21	22	22	23	26	25	24	28	25	22	23	21	12	13	21	8	9	10
3	11	10	12	12	12	12	12	19	21	24	44	28	34	38	51	45	27	10	7	11	40	14	13	15
4	8	12	19	42	X	X	X	X	X	16	18	17	17	17	21	18	16	15	14	13	12	13	12	11
5	13	16	9	9	5	6	10	13	13	12	13	17	19	17	16	18	19	12	8	9	8	9	9	9
6	12	10	10	9	7	10	6	6	11	19	15	17	15	17	14	16	22	13	9	10	10	13	14	15
7	12	13	11	11	12	11	9	10	12	14	20	23	25	33	22	20	17	15	11	13	7	10	15	14
8	12	10	8	11	12	10	13	11	17	16	17	17	17	16	17	18	16	16	16	15	17	17	16	18
9	16	17	16	17	15	14	12	12	12	13	14	17	17	15	17	16	15	12	12	11	10	9	9	14
10	7	32	27	47	16	13	10	8	9	16	49	20	28	25	20	18	16	14	11	10	9	10	9	6
11	9	11	10	6	9	5	10	10	11	18	19	23	25	21	22	17	17	13	10	11	10	10	12	12
12	11	11	11	11	10	12	11	13	14	18	20	24	23	20	21	20	13	9	13	7	6	9	9	8
13	4	5	6	8	6	9	7	5	7	9	22	30	30	25	31	19	21	15	11	11	10	9	9	16
14	9	6	4	6	4	5	6	7	11	14	17	20	19	16	14	13	9	7	8	8	8	9	10	11
15	10	11	10	10	8	6	5	6	10	10	15	18	17	17	17	16	15	15	14	13	13	14	12	12
16	12	12	14	14	14	13	13	12	12	18	20	20	20	22	18	16	16	12	11	11	12	10	12	11
17	12	11	12	10	7	4	6	8	13	15	16	15	16	17	P	P	P	P	12	12	10	9	11	12
18	13	11	7	5	8	6	7	4	6	7	12	14	19	21	17	16	16	13	10	5	5	5	6	11
19	6	5	4	6	5	5	9	13	14	14	15	15	15	15	16	15	15	16	16	15	19	14	13	17
20	22	20	15	13	12	10	14	13	15	17	18	20	19	28	36	17	16	11	12	11	7	7	6	4
21	5	11	13	12	11	11	12	12	13	14	15	16	16	16	17	15	14	13	9	10	14	11	21	22
22	16	8	16	13	7	5	5	15	16	23	14	18	21	17	16	15	15	14	13	14	9	18	12	11
23	12	10	14	21	33	31	22	23	35	45	33	53	40	48	47	23	12	5	5	4	12	6	7	8
24	9	11	10	10	10	10	10	10	11	12	13	13	12	11	9	9	9	7	10	10	10	9	10	12
25	12	13	13	13	13	14	14	13	14	15	16	17	21	19	20	16	15	13	11	11	15	8	9	10
26	8	9	10	10	8	5	5	5	5	7	7	9	17	17	15	13	13	14	20	12	12	12	12	12
27	12	12	13	12	11	12	12	12	14	13	15	16	16	17	21	18	10	10	10	6	5	4	6	5
28	5	4	5	8	5	7	8	20	25	13	14	16	16	16	15	14	12	11	10	10	10	10	10	11
29	10	11	11	10	10	9	8	10	9	9	11	13	12	13	12	12	11	8	9	10	9	10	7	6
30	6	7	6	6	4	7	7	11	12	14	12	13	15	17	18	12	8	5	4	5	5	6	3	6
31	6	7	5	4	6	5	10	13	10	14	13	15	15	16	15	14	13	14	15	14	15	13	8	6

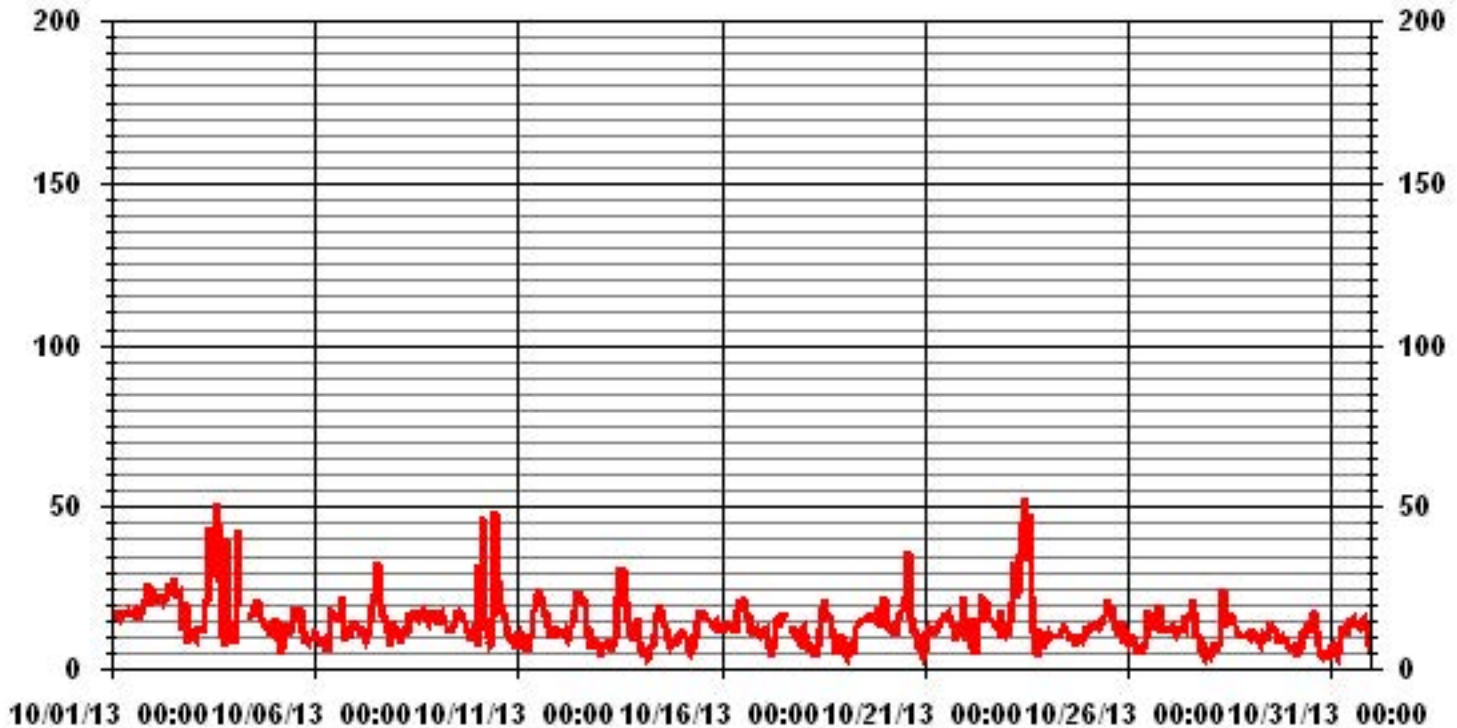
### STATUS FLAG CODES

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

LAST CALIBRATION: June 12, 2012

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 735 HRS

# 01 Hour Averages



# Calibration Reports

# Sulphur Dioxide





### SO2 Calibration Report

#### Station Information

Calibration Date	October 8, 2013	Previous Calibration	September 4, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	11:15	End Time (MST)	13:28
Reason:	Monthly calibration		
Barometric Pressure	27.27 in HG	Station Temperature	21 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	N/A Volts

#### Equipment Information

Analyzer Make / Model:	API 100E	S/N :	468	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	EnviroNics 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	N/A	S/N:	N/A		
Flow Meter:	EnviroNics 6100	S/N :	4760		

#### Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 1000 ppb				
Sample Flow / Box Temp	562 ccm	30.3 Deg C	564 ccm	30.3 Deg C	
HVPS / Lamp Setting	580	1831	580	1831	
PMT / RxCell Temp	7.8 Deg C	50 Deg C	7.8 Deg C	50 Deg C	
Converter / IZS Temp	N/A Deg C	40 Deg C	N/A Deg C	40 Deg C	
Offset / Slope	127.9	1.074	163	0.81	

#### 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	80.8	801	802	0.9988
	No span adj.			
4960	40.4	401	398	1.0064
4980	20.2	201	202	0.9939
5000	0	0	0	N/A
Sum of Least Squares				1.0000
New Correction Factor				0.9988

#### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0		-0.9
Auto Span	246.0		246.0
Sample Lines Connected			Yes

#### Percent Change

Previous Month's Calibration Correction Factor:	NA
Current Correction Factor Before Span Adjust:	0.9988
Percent Change:	#VALUE!

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

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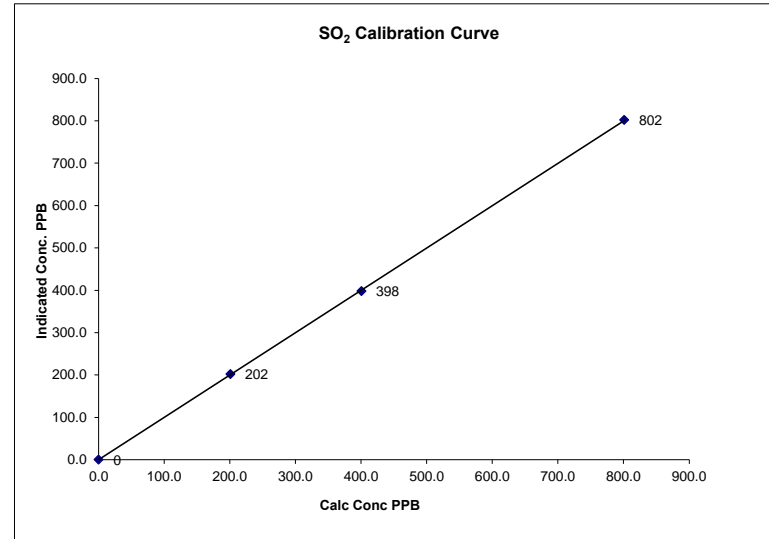


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### SO<sub>2</sub> Calibration Curve

Calibration Date	October 8, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	11:15
End Time (MST)	13:28

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		0.999975
201	202	0.9939		1.000375
401	398	1.0064		-0.213518
801	802	0.9988		



Notes:

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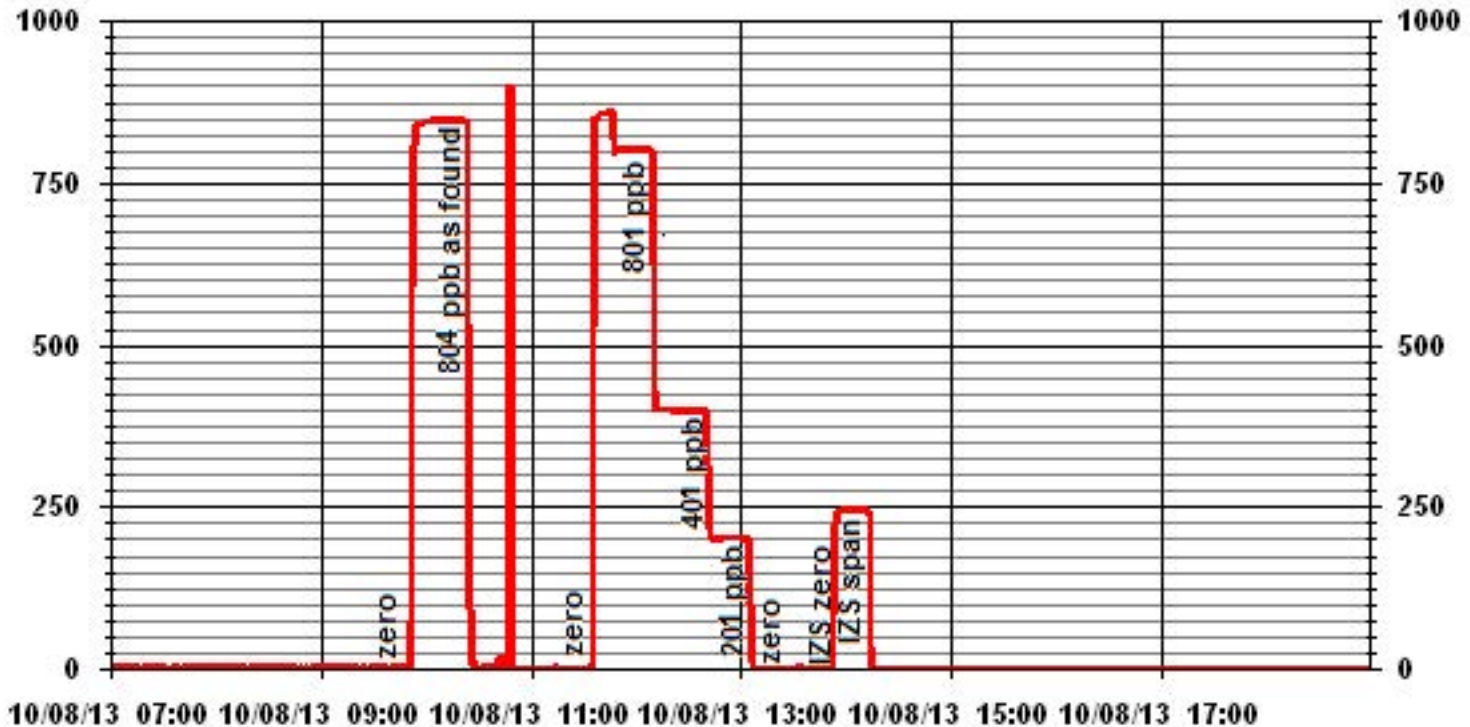
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Calibration Performed by: Waseem Ahmed

### 01 Minute Averages



# Hydrogen Sulphide



## H2S Calibration Report

### Station Information

Calibration Date	October 8, 2013	Previous Calibration	September 10, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	10:30	End Time (MST)	12:50
Reason:	Monthly calibration		
Barometric Pressure	27.23 in HG	Station Temperature	21 Deg C
Cal Gas	10.1 ppm	Gas Cyl. #	BLM00504 Cal Gas Expiry date
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts
		December 25, 2015	

### Equipment Information

Analyzer Make / Model:	API 101E	S/N :	510	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	API 700	S/N :	690	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	N/A	S/N:	S/N:	N/A	
Flow Meter:	API 700	S/N :	690		

### Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 100 ppb		
Sample Flow / Box Temp	551 ccm 33.2 Deg C	552 ccm 33.7 Deg C	
HVPS / Lamp Setting	530 1767	530 1767	
PMT / RxCell Temp	8.4 Deg C 50 Deg C	8.4 Deg C 50 Deg C	
Converter / IZS Temp	315 Deg C 45 Deg C	314.5 Deg C 45.0 Deg C	
Offset / Slope	117.1 1.046	119.6 1.049	

### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	0	NA
	No zero adj.			
4958	40.0	81	82	0.9858
	No span adj.			
4980	20.0	40	40	1.0000
4990	11.5	23	24	0.9676
5000	0	0	-1	NA
Sum of Least Squares				0.9891
New Correction Factor				0.9858

### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0		-1.0
Auto Span	36.0		36.0
Sample Lines Connected			YES

### Percent Change

Previous Month's Calibration Correction Factor:	NA
Current Correction Factor Before Span Adjust:	0.9858
Percent Change:	#VALUE!

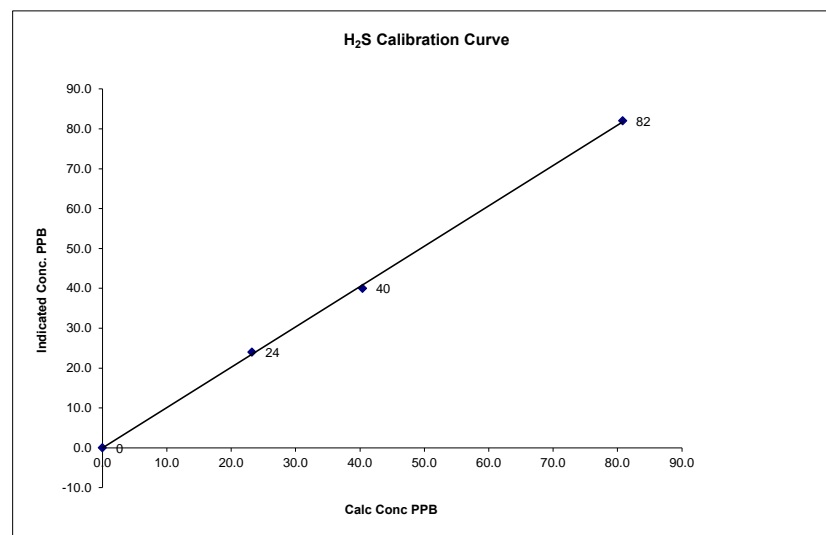
Notes:	NA : Not Applicable

Calibration Performed by: Waseem Ahmed

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

Calibration Date	October 8, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	10:30
End Time (MST)	12:50

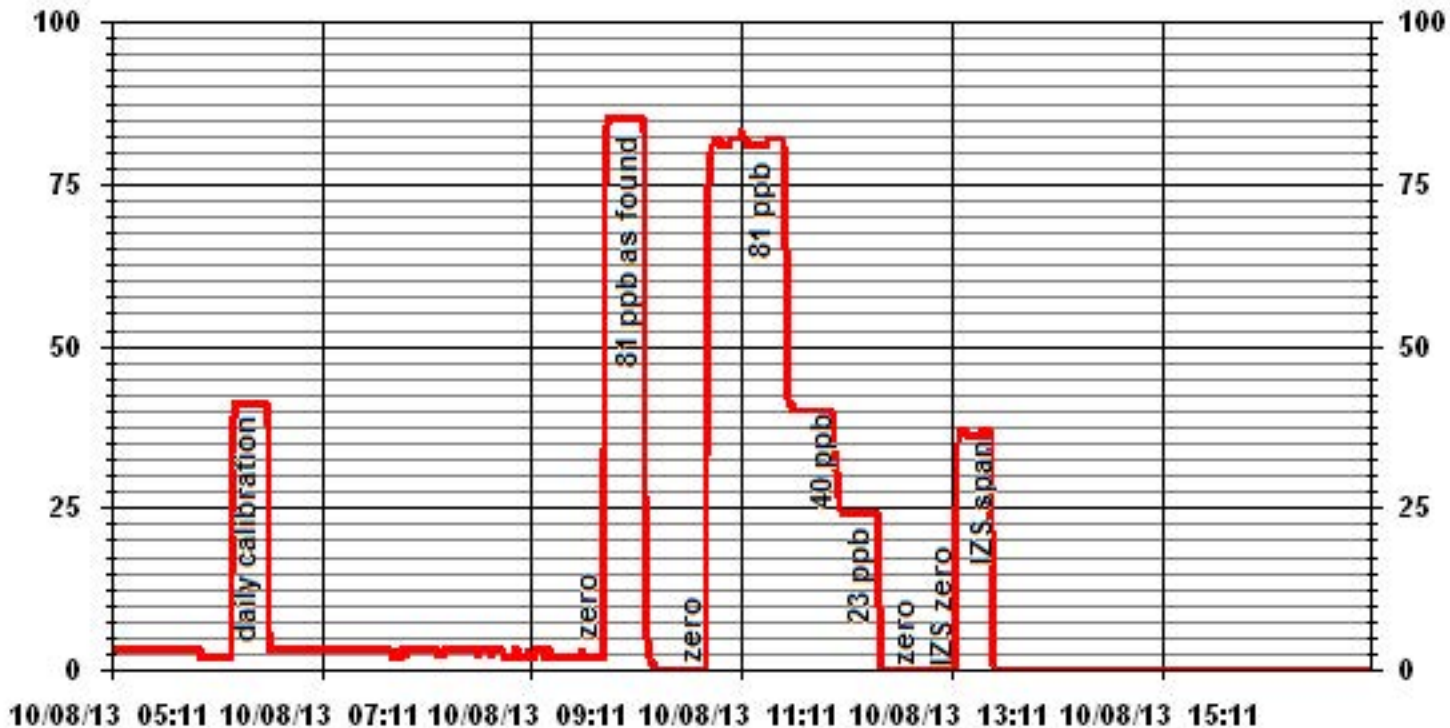
Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999703
0	0	NA	Intercept	(± 3% F.S.)	-0.032964
23	24	0.9676			
40	40	1.0100			
81	82	0.9858			



Notes:

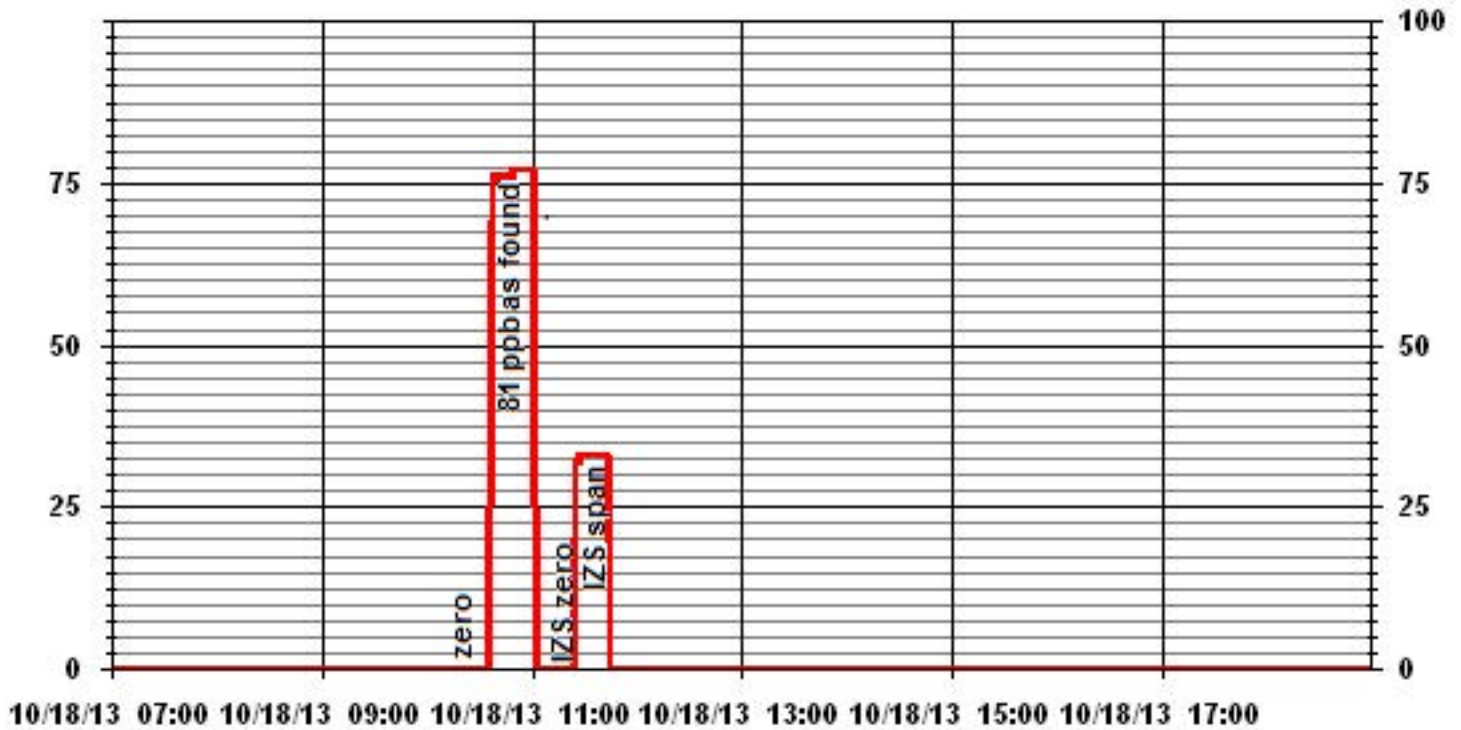
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### 01 Minute Averages





# 01 Minute Averages







## H2S Calibration Report

### Station Information

Calibration Date	October 22, 2013	Previous Calibration	October 8, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	10:27	End Time (MST)	12:15
Reason:	2nd Monthly calibration		
Barometric Pressure	27.65 in HG	Station Temperature	20 Deg C
Cal Gas	10.1 ppm	Gas Cyl. #	BLM00504 Cal Gas Expiry date
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts
			December 25, 2015

### Equipment Information

Analyzer Make / Model:	API 101E	S/N :	510	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	API 700	S/N :	690	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	N/A	S/N:	S/N:	N/A	
Flow Meter:	API 700	S/N :	690		

### Analyzer Settings

		Before Calibration		After Calibration	
Concentration Range		0 - 100 ppb			
Sample Flow / Box Temp	558 ccm	32.9 Deg C	559 ccm	32.9 Deg C	
HVPS / Lamp Setting	530	1832	530	1831	
PMT / RxCell Temp	8.4 Deg C	50 Deg C	8.4 Deg C	50 Deg C	
Converter / IZS Temp	315 Deg C	45 Deg C	315.4 Deg C	45.0 Deg C	
Offset / Slope	119.6	1.049	115.9	1.087	

### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	0	NA
	No zero adj.			
4958	40.0	81	82	0.9858
	No span adj.			
4977	20.0	40	40	1.0000
4988	12.0	24	24	1.0000
5000	0	0	-1	NA
Sum of Least Squares				0.9919
New Correction Factor				0.9858

### IZS Calibration Data

		Before Calibration	After Calibration
Auto Zero		-1.0	-1.0
Auto Span		36.0	36.0
Sample Lines Connected			YES

### Percent Change

Previous Month's Calibration Correction Factor:	NA
Current Correction Factor Before Span Adjust:	0.9858
Percent Change:	#VALUE!

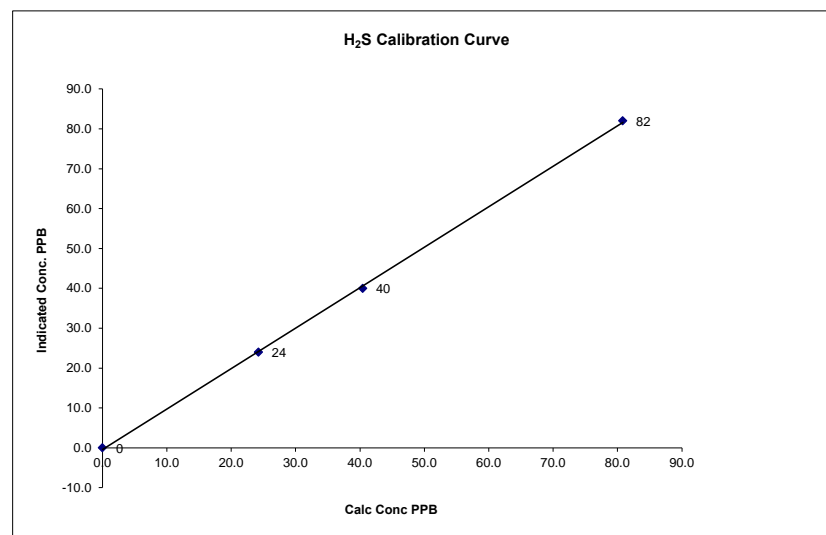
Notes:	NA : Not Applicable

Calibration Performed by: Waseem Ahmed

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

Calibration Date	October 22, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	10:27
End Time (MST)	12:15

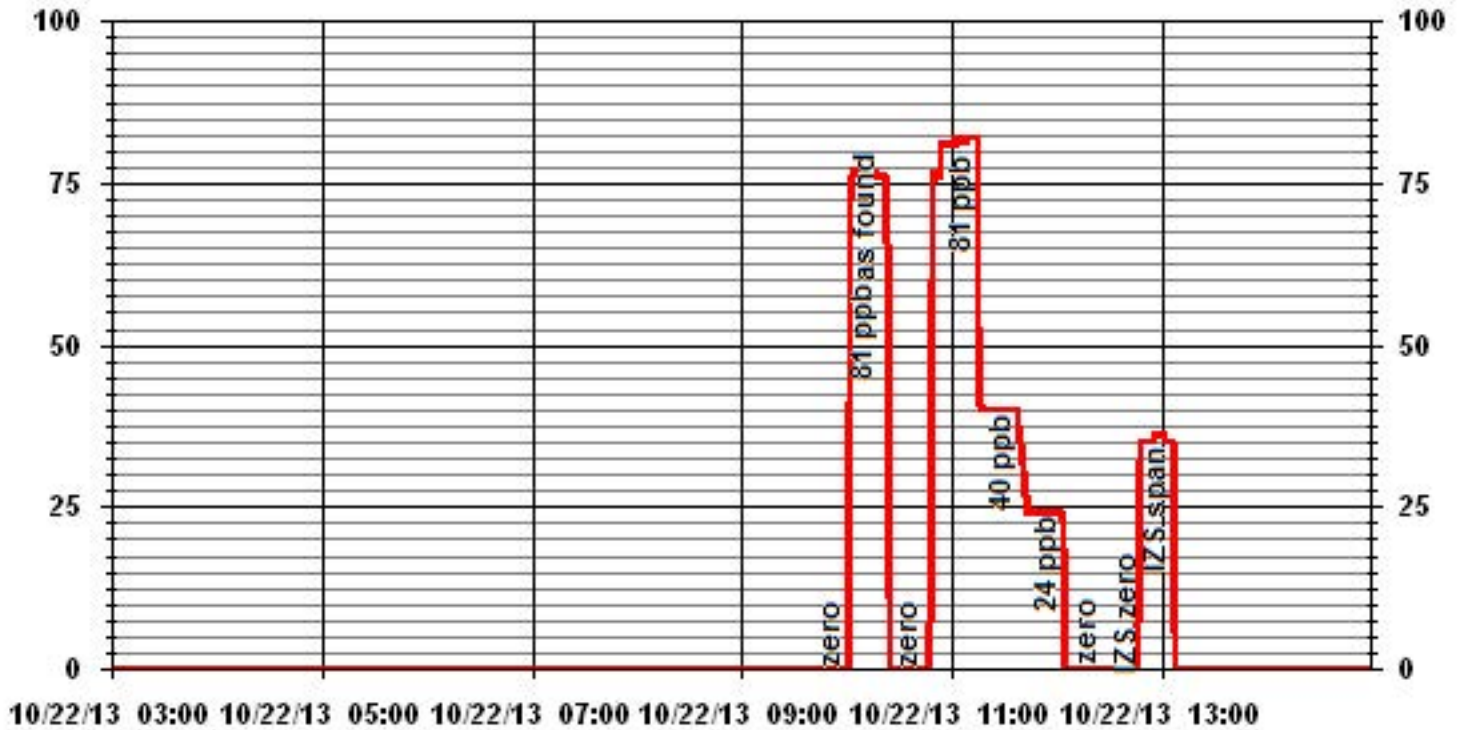
Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999797
0	0	NA	Intercept	(0.85 to 1.15)	1.015334
24	24	1.0100		(± 3% F.S.)	-0.431917
40	40	1.0106			
81	82	0.9858			



Notes:

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# 01 Minute Averages



# Total Hydrocarbons

### THC Calibration Report

Station Information			
Calibration Date:	October 8, 2013	Previous Calibration	September 17, 2013
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	ST. LINA		
Start Time (MST)	13:07	End Time (MST)	15:35
Reason:	Monthly calibration		
Barometric Pressure:	27.31 in HG	Station Temperature:	21 Deg C
Calibrator:	API 700	S/N:	690
Cal Gas Concentration:	CH4 593 PPM	C3H8 205 PPM	
	TOTAL CH4 1156.8 PPM	Gas Cyl. # LL84567	Cal Gas Expiry Date: June 7, 2014
DAS make & Model:	ESC 8832	S/N :	AO717
Chart Recorder:	N/A	S/N:	N/A
Output Voltage Range:	0-10 VDC	Chart Speed:	N/A mm/hr

#### Analyzer Information

Make / Model	Thermo 51C-LT	S/N :	043669739	Method	Flame Ionization
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#### Analyzer Settings

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

#### Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	0.0	N/A
2000	0.0	0.0	0.0	N/A
2000	74.0	41.3	40.7	1.0141
2000	74.0	41.3	41.6	0.9921
2000	37.0	21.0	21.1	0.9958
2000	20.0	11.5	11.2	1.0226
2000	0.0	0.0	0.0	N/A
New Correction Factor:				0.9921

#### Percent Change

Previous Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0141
Percent Change:	-1.4%

#### IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	32.5	35.4
Sample Lines Connected	Yes	

Cylinder Pressures			
Span	2000 psi	Hydrogen	1300 psi
		Zero Air	32 psi

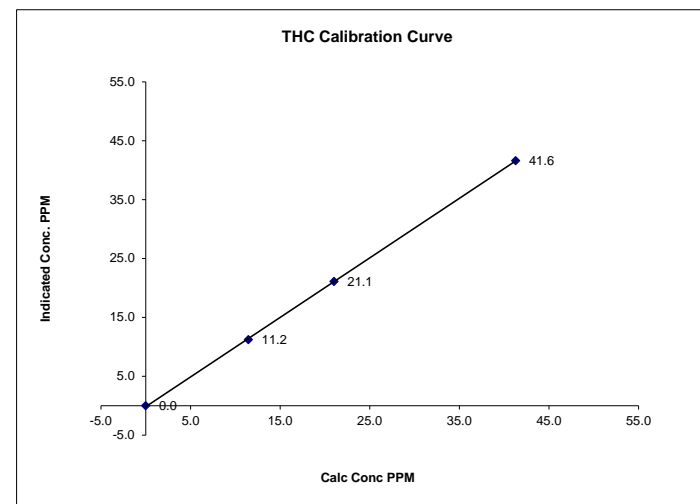
Notes: **N/A : Not Applicable**  
 Change sample filter.

Calibration Performed by: Waseem Ahmed

### THC Calibration Curve

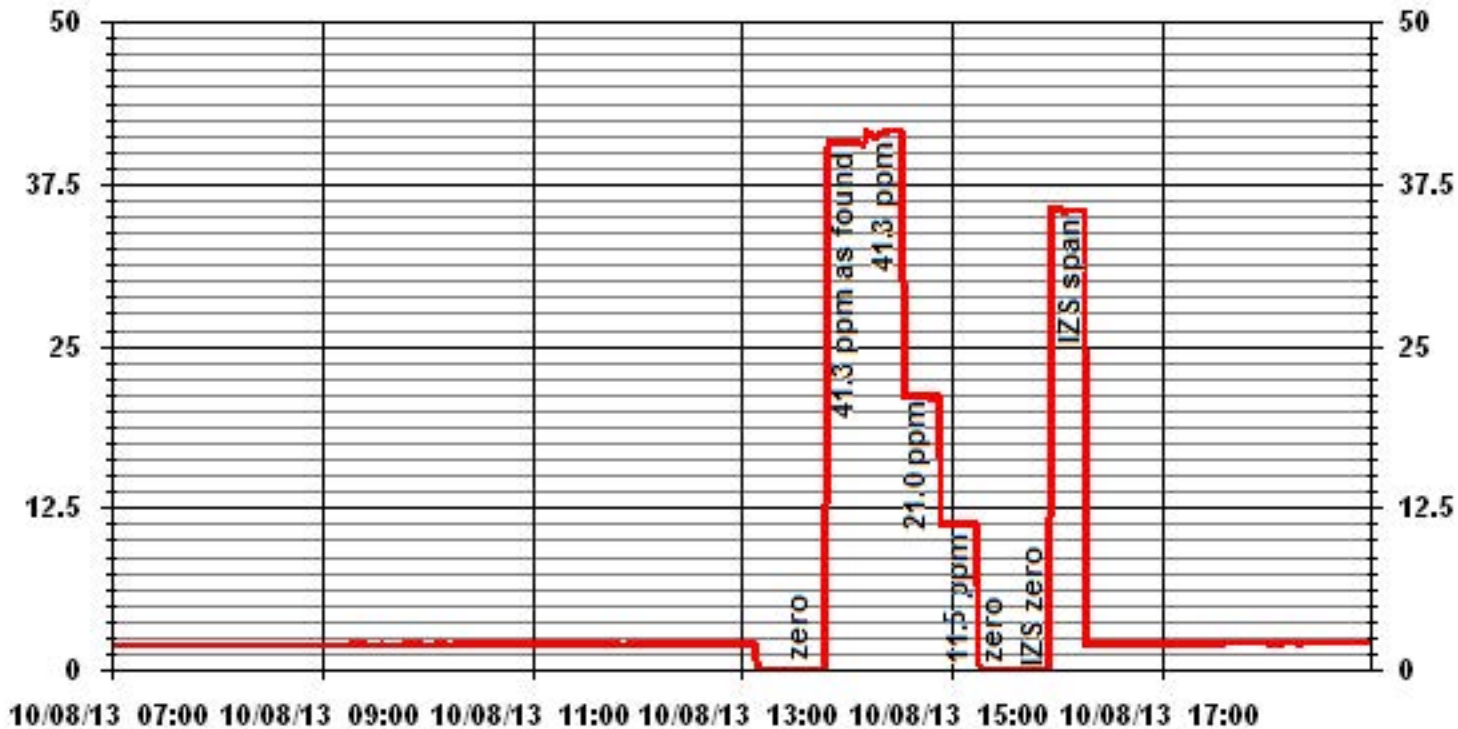
Calibration Date	October 8, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	13:07
End Time (MST)	15:35

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	N/A	0.999920	1.010330	-0.14963
11.5	11.2	1.0226			
21.0	21.1	0.9958			
41.3	41.6	0.9921			



Notes:

### 01 Minute Averages



# Nitrogen Dioxide

**NOx - NO- NO2 Calibration Report**

**Station Information**

Calibration Date	October 8, 2013	Previous Calibration	September 10, 2013
Company	LICA	Plant/Location	St. Lina
Start Time (MST)	9:30	End Time (MST)	10:22
Reason:	AF		
Barometric Pressure	27.23 in HG	Station Temperature	21 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO	49.2 ppm
Cal Gas Cylinder #	BAL3031	Cal Gas Expiry date	December 29, 2013
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts

**Equipment Information**

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

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range	0 - 1000			ppb			
Sample Flow/Conv. Temp	474 ccm	314.5 Deg C		474 ccm	315.5 Deg C		
Ozone Flow / Vacuum	73 ccm	5.4 *Hg-A		73 ccm	5.4 *Hg-A		
HVPS / A ZERO	670 Volts	24.4 MV		670 Volts	23.8 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.8 Deg C		50.0 Deg C	6.8 Deg C		
Box Temp / IZS Temp	29.5 Deg C	45.4 Deg C		29.5 Deg C	45.4 Deg C		
Offset	0 NOx	-0.1 NO		0 NOx	-0.1 NO		
Slope	0.997 NOx	0.994 NO		0.997 NOx	0.994 NO		
NO2 COEF / Conv Efficiency	N/A NO2	0.993		N/A 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	1	0	1	NA	NA
	No zero adj.									
4920	81.1	NA	799	798	NA	853	854	0	0.9383	0.9342

**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= 0.9383	NO= 0.9342	NO2=
				Average Converter Efficiency=		

**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	643 NOx	628 NO2		643 NOx	628 NO2		
Sample Lines Connected:				YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	0.999	0.998	
Current Correction Factor Before Span Adjust	0.938	0.934	
Percent Change	6.4%	6.8%	

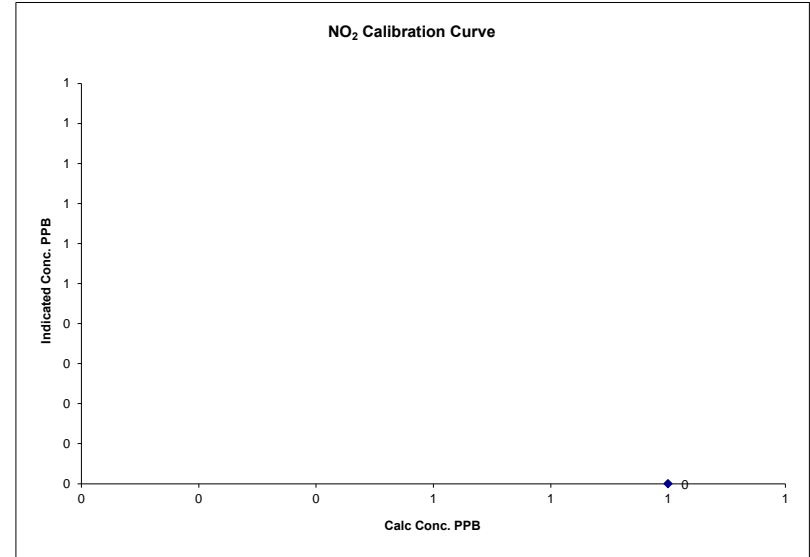
Notes: **NA : Not Applicable**

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

Calibration Date	October 8, 2013
Company	LICA
Plant / Location	St. Lina
Start Time (MST)	9:30
End Time (MST)	10:22

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



Notes:



**NOx - NO- NO2 Calibration Report**  
**Station Information**

Calibration Date	October 8, 2013	Previous Calibration	September 10, 2013
Company	LICA	Plant/Location	St. Lina
Start Time (MST)	11:15	End Time (MST)	15:31
Reason:	Monthly calibration		
Barometric Pressure	27.27 in HG	Station Temperature	21 Deg C
Cal Gas Concentration	NOx 49.3 ppm	NO	49.2 ppm
Cal Gas Cylinder #	BAL3031	Cal Gas Expiry date	December 29, 2013
DAS Output Voltage	0-1 Volts	Chart Rec. Output	N/A Volts

**Equipment Information**

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

**Analyzer Settings**

		Before Calibration		0 - 1000		After Calibration	
Concentration Range							
Sample Flow/Conv. Temp	474 ccm	314.5	Deg C	474 ccm	315.5	Deg C	
Ozone Flow / Vacuum	73 ccm	5.4	"Hg-A	73 ccm	5.4	"Hg-A	
HVPS / A ZERO	670 Volts	24.4	MV	670 Volts	23.8	MV	
Rx/ Temp / PMT Temp	50.0 Deg C	6.8	Deg C	50.0 Deg C	6.8	Deg C	
Box Temp / IZS Temp	29.5 Deg C	45.4	Deg C	29.5 Deg C	45.4	Deg C	
Offset	0 NOx	-0.1	NO	0 NOx	-0.1	NO	
Slope	0.997 NOx	0.994	NO	0.997 NOx	0.994	NO	
NO2 COEF / Conv Efficiency	N/A NO2	0.993		N/A 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	0	0	0	NA	NA
	No zero adj.									
4920	80.8	NA	796	795	NA	796	795	1	1.0000	1.0000
	No span adj.									
4960	40.4	NA	398	397	NA	397	397	0	1.0028	1.0000
4980	20.2	NA	200	199	NA	202	202	0	0.9879	0.9859
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		
4920	81.0	NA	798	797	NA	803	802	1	NA	
4920	81.0	600	798	NA	523	805	280	524	0.9981	100.19%
	No adj.									
4920	81.0	300	799	NA	263	805	540	265	0.9925	100.76%
4920	81.0	120	799	NA	106	805	697	108	0.9815	101.90%

Linearity	Sum of Least Squares	NOx= 1.000	NO= 0.999	NO2= 0.996
OK?	Correction Factors:	NOx= 1.0000	NO= 1.0000	NO2= 0.9981
		Average Converter Efficiency= 100.95%		

**IZS Calibration Data**

		Before Calibration			After Calibration		
Auto Zero	0.0 NOx	0.0	NO2		0.0 NOx	0.0	NO2
Auto Span	643 NOx	628	NO2		666 NOx	648	NO2
	Sample Lines Connected:	YES					

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	NA	NA	1.002
Current Correction Factor Before Span Adjust	1.000	1.000	0.998
Percent Change	#VALUE!	#VALUE!	0.4%

**Notes**      **NA : Not Applicable**

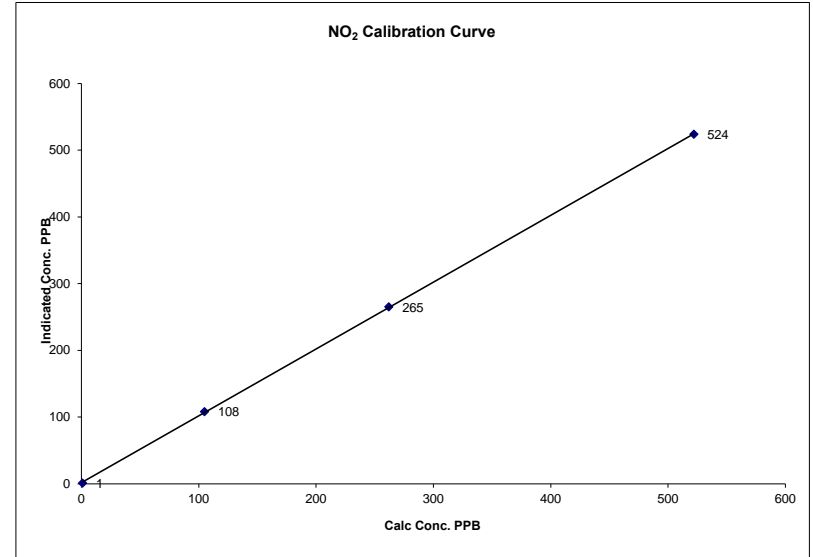
O3= 450      FLOW=4920      SOURCE FLOW 81  
NOX      803      406      NO2=      397

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

Calibration Date	October 8, 2013	Company	LICA
Plant / Location	St. Lina	Start Time (MST)	11:15
End Time (MST)	15:31		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999967
1	1	NA	Intercept	(± 3% F.S.)	1.47309
105	108	0.9722			
262	265	0.9887			
522	524	0.9962			

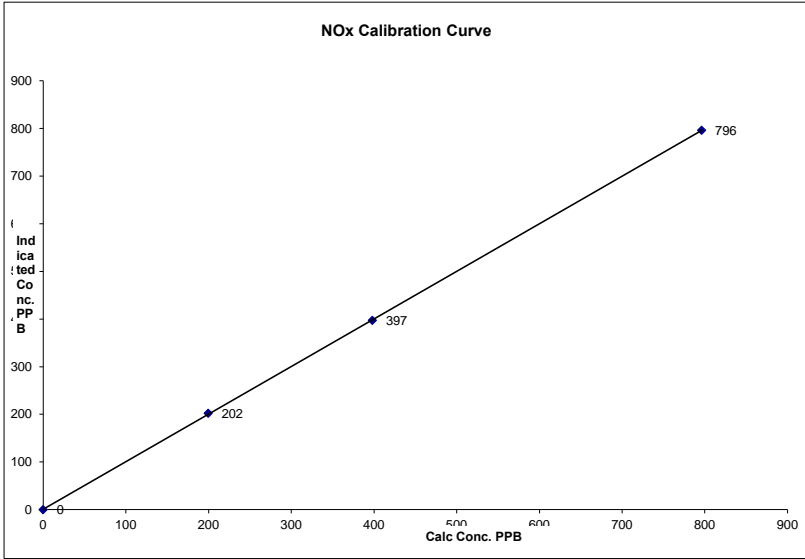


Notes:

**NOx Calibration Curve**

Calibration Date	October 8, 2013	
Company	LICA	
Plant / Location	St. Lina	
Start Time (MST)	11:15	End Time (MST) 15:31

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999982
0	0	NA	Slope (0.85 to 1.15)	0.998567
200	202	0.9879	Intercept (± 3% F.S.)	0.78782
398	397	1.0028		
796	796	1.0000		

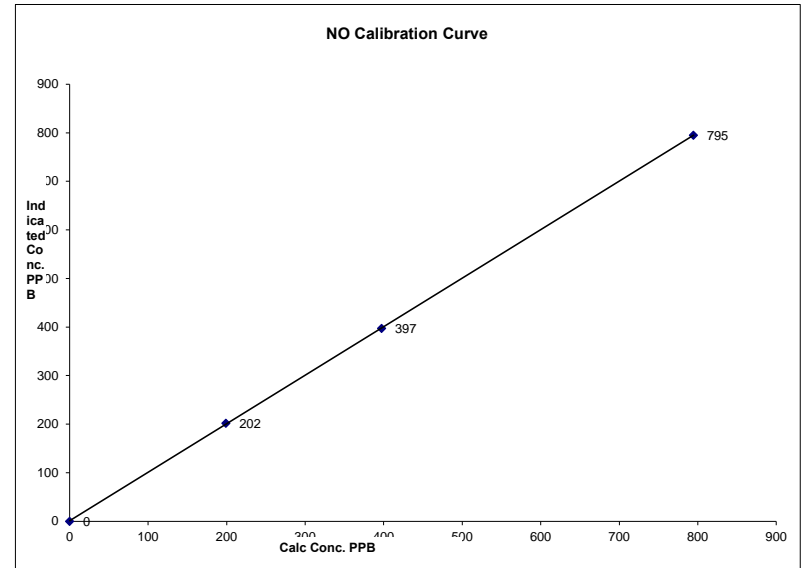


Notes:

**NO Calibration Curve**

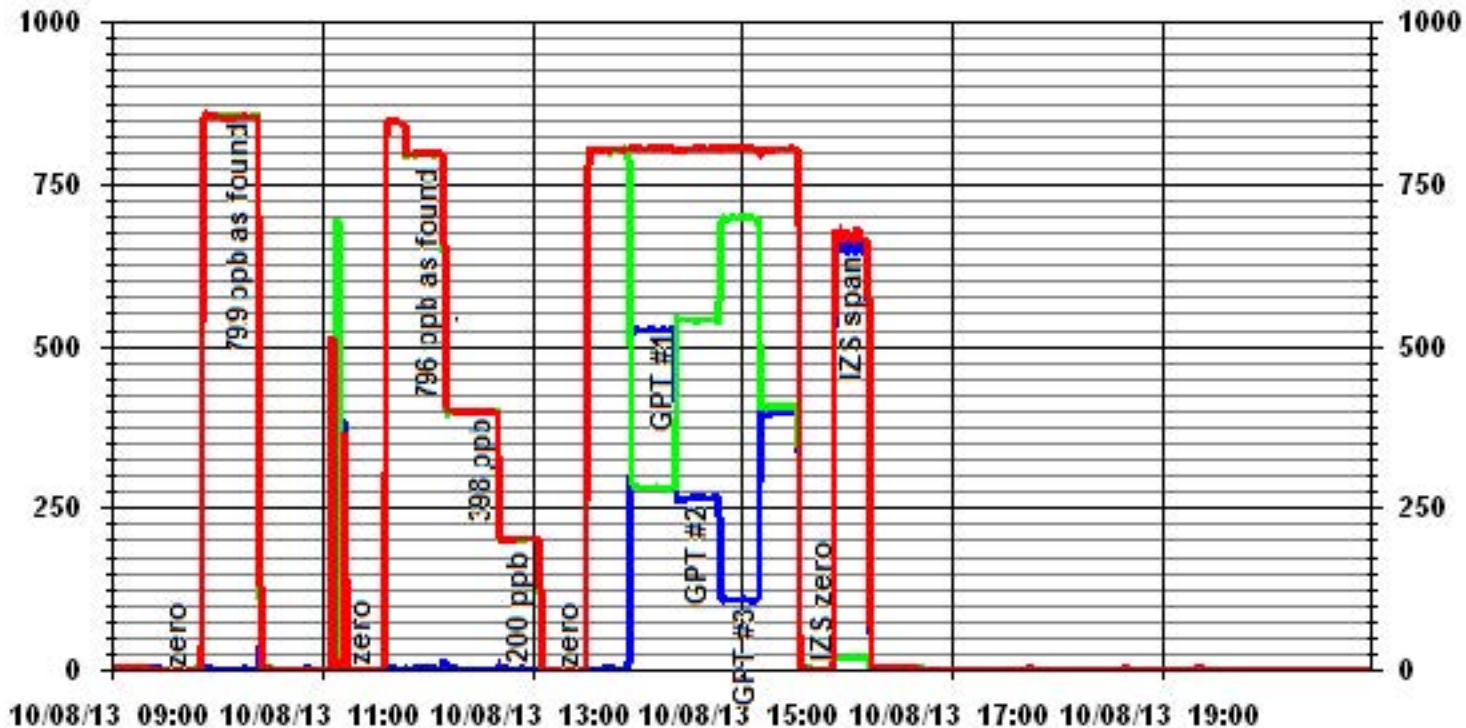
Calibration Date	October 8, 2013	
Company	LICA	
Plant / Location	St. Lina	
Start Time (MST)	11:15	End Time (MST) 15:31

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999983
0	0	NA	Slope (0.85 to 1.15)	0.999302
199	202	0.9859	Intercept (± 3% F.S.)	0.98805
397	397	1.0000		
795	795	1.0000		



Notes:

### 01 Minute Averages



— LICA31 NOX\_ PPB

— LICA31 NO\_ PPB

— LICA31 NO2\_ PPB

# Ozone

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

#### Station Information

Calibration Date	October 22, 2013	Previous Calibration	September 10, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	9:10	End Time (MST)	12:05
Reason:	Monthly calibration		
Barometric Pressure	27.63 in HG	Station Temperature	20 Deg C
DAS Output Voltage	0-10 Volts		

#### Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	1002240371	Method:	Photometric
Calibrator Make / Model:	Enviroics 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO717		

#### Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range	0-500 ppb							
Cell A Flow / Cell B Flow	735 LPM	730 LPM	735 LPM	731 LPM	735 LPM	731 LPM	731 LPM	731 LPM
O <sub>3</sub> Set Level	678 mmHg	678 mmHg	679 mmHg	679 mmHg	678 mmHg	679 mmHg	679 mmHg	679 mmHg
Bench Lamp	53.5 Deg C	53.5 Deg C	53.5 Deg C	53.5 Deg C	53.5 Deg C	53.5 Deg C	53.5 Deg C	53.5 Deg C
O <sub>3</sub> Lamp / Box Temp	67.7 Deg	25.2 Deg C	67.7 Deg C	25.9 Deg C	67.7 Deg C	25.9 Deg C	67.7 Deg C	25.9 Deg C
Offset / Slope	-0.2	0.985	-0.2	1.002	-0.2	1.002	-0.2	1.002

#### Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	N/A
	No zero adj			
4995	450	396	389	1.0180
4995	450	396	396	1.0000
4995	300	262	265	0.9887
4995	120	105	105	1.0000
4995	0	0	0	N/A
Sum of Least Squares				0.9967
New Correction Factor				1.0000

#### IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0
Auto Span	309	321
Sample Lines Connected		Yes
Previous Calibration Correction Factor:		1.0026
Current Correctio Factor Before Span Adjust:		1.0180
Percent Change:		-1.5%

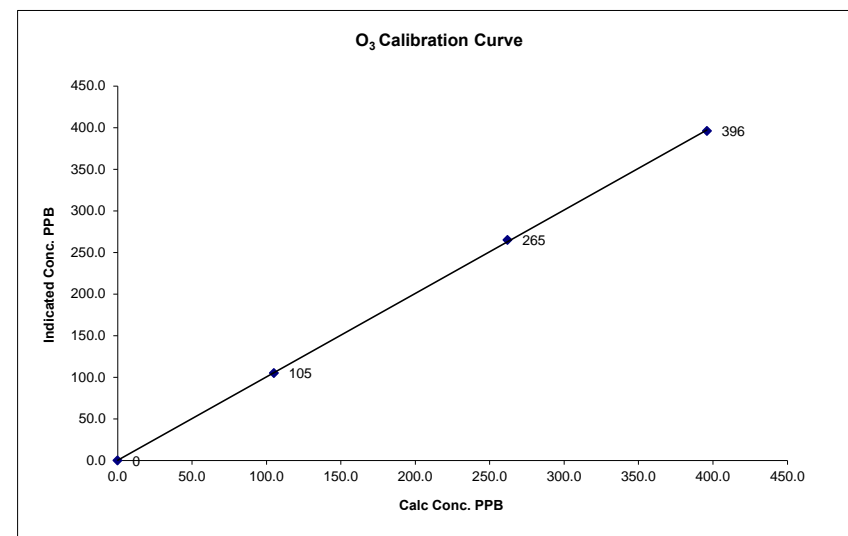
Note: N/A : Not Applicable  
Change sample filter

Calibration Performed by: Waseem Ahmed

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

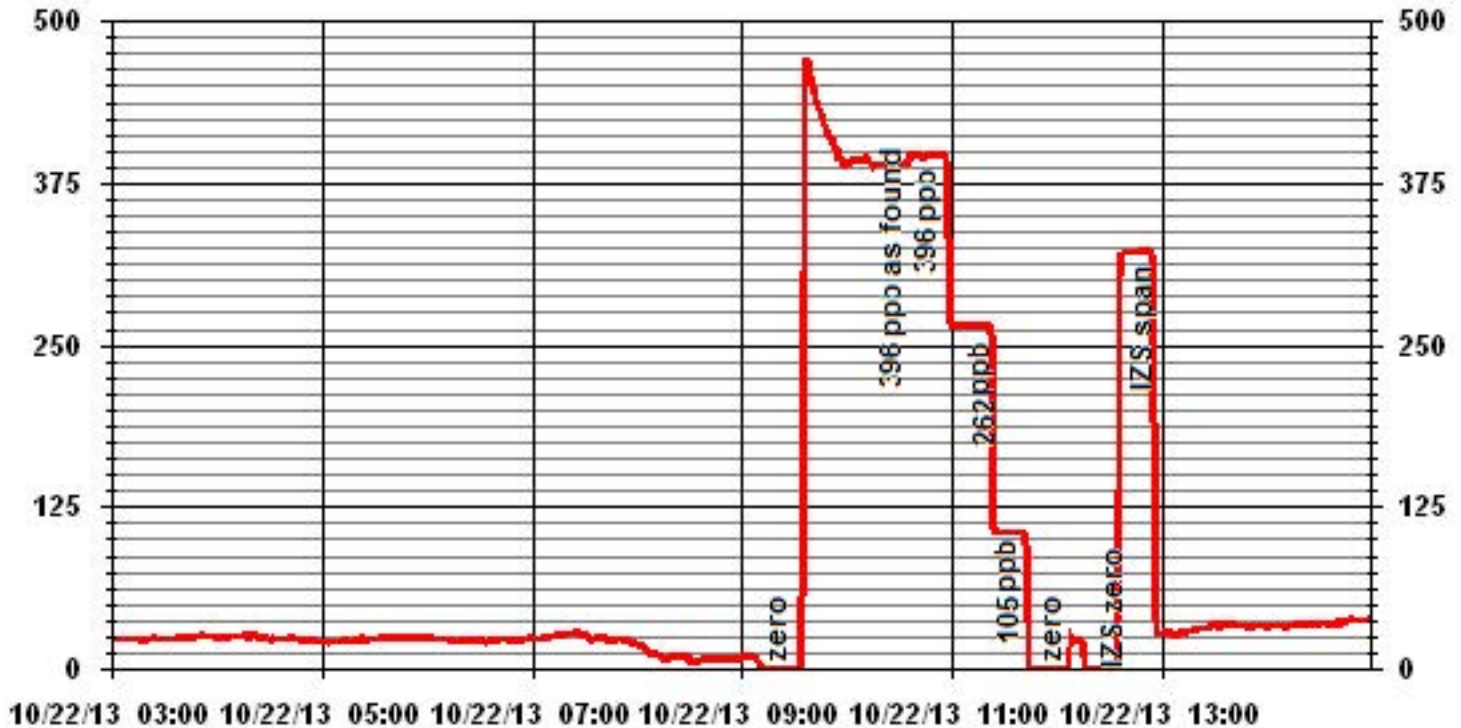
Calibration Date	October 22, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	9:10
End Time (MST)	12:05

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
0	0	N/A	Slope (0.85 to 1.15)	0.999932
105	105	1.0000	Intercept (± 3% F.S.)	1.002350
262	265	0.9887		0.301665
396	396	1.0000		



Notes:

# 01 Minute Averages



# Particulate Matter 2.5

**TEOM® Calibration**

	<u>Station</u>		<u>Transfer Standard</u>
Date:	October 18, 2013	Make/Model:	Streamline FTA
Station Name:	LICA St.Lina (CASA#31)	Serial Number:	Hi 091001, Lo 091099
Location:	St. Lina Station	Cell s/n:	N/A
Operator:	LICA	Thermometer:	Station Temp. & pres. Sensor

	<u>Sampler</u>		<u>Set-up and current Sampler readings</u>
Make/Model	R&P Teom 1400a	F-Main Set Pt (l/min)	3.00
Unit #	20001	F-Aux Set Pt (l/min)	13.67
Control unit s/n	140AB228720001	Filter Load (%)	28%
Transducer s/n	1200C153540001	K <sub>o</sub> Factor	15003
Parameter	PM2.5	Temp (°C)	10.5
		Press (ATM)	0.920

**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**

Calibration

<b>Zero flow</b>				
	<b>Pump Off</b>		<b>Pump On (Time to reach set points)</b>	
F-Main (l/min)	0.05		<b>(45-60 Sec)</b>	50
F-Aux (l/min)	0.13		<b>(45-60 Sec)</b>	50
<b>Temperature/Pressure</b>				
Measured Temp (± 1 °C)	10	Δ °C	-0.5	
Measured Press (± 1.5% ATM)	0.922	Δ % ATM	0.2%	
<b>Flow Audit</b>				
Indicated Main/Aux Flow (l/min)	2.98	/	13.61	Δ % from Set-pt
Total Flow = Main + Aux (l/min)	16.59			(± 2%) 0.7% / 0.4%
Measured Total Flow (l/min)	16.85			(± 2%) 0.5%
Measured Main Flow (l/min)	3.000			(± 1.0 l/min. (5.65%)) -1.5%
				(± 0.2 l/min. (6.25%)) -0.7%
<b>Leak Check</b>				<b>Actual leakage = Pump On - Pump Off</b>
Main (< 0.15 l/min)	0.11			0.06
Aux (< 0.15 l/min)	0.15			0.02
<b>K<sub>o</sub> Factor</b>				
Measured	na			
K <sub>o</sub> Difference (± 2.5%)	na			

Start Time: 10:40 Finish Time: 12:00  
 Sample Inlet Cleaned: Yes Sample Inlet Connected: Yes  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 Calibrator/s: Waseem Ahmed



**TEOM® Calibration**

	<u>Station</u>		<u>Transfer Standard</u>
Date:	October 22, 2013	Make/Model:	Streamline FTA
Station Name:	LICA St.Lina (CASA#31)	Serial Number:	Hi 091001, Lo 091099
Location:	St. Lina Station	Cell s/n:	N/A
Operator:	LICA	Thermometer:	Station Temp. & pres. Sensor

	<u>Sampler</u>		<u>Set-up and current Sampler readings</u>
Make/Model	R&P Teom 1400a	F-Main Set Pt (l/min)	3.00
Unit #	20001	F-Aux Set Pt (l/min)	13.67
Control unit s/n	140AB228720001	Filter Load (%)	21%
Transducer s/n	1200C153540001	K <sub>o</sub> Factor	15003
Parameter	PM2.5	Temp (°C)	8.8
		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**

Calibration

<b>Zero flow</b>				
	<b>Pump Off</b>		<b>Pump On (Time to reach set points)</b>	
F-Main (l/min)	0.06		<b>(45-60 Sec)</b> 50	
F-Aux (l/min)	0.14		<b>(45-60 Sec)</b> 50	
<b>Temperature/Pressure</b>				
Measured Temp (± 1 °C)	8.2	Δ °C	-0.6	
Measured Press (± 1.5% ATM)	0.926	Δ % ATM	0.2%	
<b>Flow Audit</b>				
Indicated Main/Aux Flow (l/min)	2.98	/	13.62	Δ % from Set-pt
Total Flow = Main + Aux (l/min)	16.60			(± 2%) 0.7% / 0.4%
Measured Total Flow (l/min)	16.86			(± 2%) 0.4%
Measured Main Flow (l/min)	3.000			(± 1.0 l/min. (5.65%)) -1.5%
				(± 0.2 l/min. (6.25%)) -0.7%
<b>Leak Check</b>				
Main (< 0.15 l/min)	0.13	<b>Actual leakage = Pump On - Pump Off</b>		
Aux (< 0.15 l/min)	0.14	0.07		
		0.00		
<b>K<sub>o</sub> Factor</b>				
Measured	na			
K <sub>o</sub> Difference (± 2.5%)	na			

Start Time: 11:40 Finish Time: 12:45  
 Sample Inlet Cleaned: NA Sample Inlet Connected: Yes

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

Calibrator/s: Waseem Ahmed

# Lakeland Industry & Community Association

Portable / Elk Point Airport Monitoring Site

Ambient Air Monitoring Data Report

For

October 2013

Prepared By:



November 20, 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: October 2013

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Lili Zhou

## Calibration Procedure

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

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

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

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

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

# MONTHLY CONTINUOUS DATA SUMMARY

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

### – PORTABLE – ELK POINT AIRPORT –

### Continuous Ambient Monitoring – October 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	0.05	3	29	16	11	196(SSW)	0.4	7, 24	100.0
H <sub>2</sub> S (PPB)	10	3	0	0	0.06	1	VAR	VAR	VAR	VAR	0.7	5	100.0
THC (55i) (PPM)	-	-	-	-	2.71	8.3	28	5	1.8	140(SE)	4.41	14	100.0
Methane (PPM)	-	-	-	-	2.68	8.1	28	5	1.8	140(SE)	4.31	14	100.0
NMHC (PPM)	-	-	-	-	0.03	0.4	14, 28	1, 4	2.2, 1	306(NW), 127(SE)	0.10	13, 14	100.0
NO <sub>2</sub> (PPB)	159	-	0	-	6.99	29.5	13	13	18.2	290(WNW)	15.4	13	99.7
NO (PPB)	-	-	-	-	3.63	82.1	28	5	1.8	140(SE)	18.0	28	99.7
NO <sub>x</sub> (PPB)	-	-	-	-	10.62	102.2	28	5	1.8	140(SE)	29.3	14	99.7
O <sub>3</sub> (PPB)	82	-	0	-	18.07	40	14	15	12.6	226(SW)	28.6	27	99.9
PM 2.5 (UG/M <sup>3</sup> )	-	30	-	0	7.44	39	5	17	12.3	273(W)	13.0	5	98.4
VECTOR WS (KPH)	-	-	-	-	11.33	32.7	15	14	-	232(SW)	20.7	8	100.0
VECTOR WD (DEGREES)	-	-	-	-	287(WNW)	-	-	-	-	-	-	-	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 October 15<sup>th</sup>. The inlet filter was changed before the 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 October 15<sup>th</sup>. The inlet filter was changed before the calibration was started. Data was corrected using daily zero information.

#### THC 55i (PPM)

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

The analyzer spanned low on October 10<sup>th</sup> due to emptying the span gas. The span gas was replaced on October 11<sup>th</sup>. An as found points check was performed following the gas replacement. The issue did not affect data quality. The monthly calibration was performed on October 15<sup>th</sup>. The inlet filter was changed before the calibration was started. The H2 gas cylinder was replaced on October 24<sup>th</sup>. Data was corrected using daily zero information.

No canister was collected this month as per client request.

# General Monthly Summary

## AQM STATION – LICA – PORTABLE

### Ozone (PPB)

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

The analyzer was working well throughout the month. The monthly calibration was performed on October 23<sup>rd</sup>. The inlet filter was changed before the calibration was started. Data was corrected using daily zero information.

### Nitrogen Dioxide (PPB)

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

The monthly calibration was performed on October 15<sup>th</sup>. The inlet filter was changed before the monthly calibration was started. The analyzer spanned high on October 24<sup>th</sup>. An as found points check was performed on October 24<sup>th</sup>, and the result was within the acceptable range. Following the as found points check, troubleshooting was performed, including the pump check, the zero/span solenoid valve check and the permeation tube replacement. As the new perm tube required time to stabilize. The expected span value was not changed until October 28<sup>th</sup>. As the analyzer passed the as found points check, all data were kept. Data was corrected using daily zero information.

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

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

Two Teom audits were performed in October: one was on October 11<sup>th</sup> and the other one was on October 23<sup>rd</sup>. Both audits passed the manufacturer requirements. The sample inlet was cleaned and the pump was rebuilt on October 11<sup>th</sup>. The PM2.5 channel was put into the Maintenance mode for two hours on October 15<sup>th</sup> while the maintenance was performed on the manifold system. 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. Ten hours of data were invalidated as the data were below –3 ug/m<sup>3</sup>.



# General Monthly Summary

## AQM STATION – LICA – PORTABLE

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

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

The wind system is reported as vector wind speed and vector wind direction. 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 October 15<sup>th</sup>.

# Continuous Monitoring

# Monthly Summaries, Graphs & Wind Roses

# Sulphur Dioxide

# LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

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

### STATUS FLAG CODES

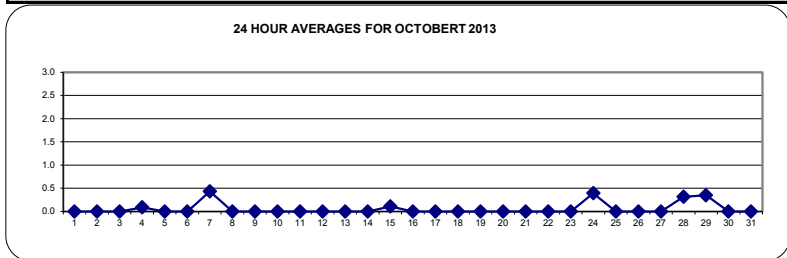
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

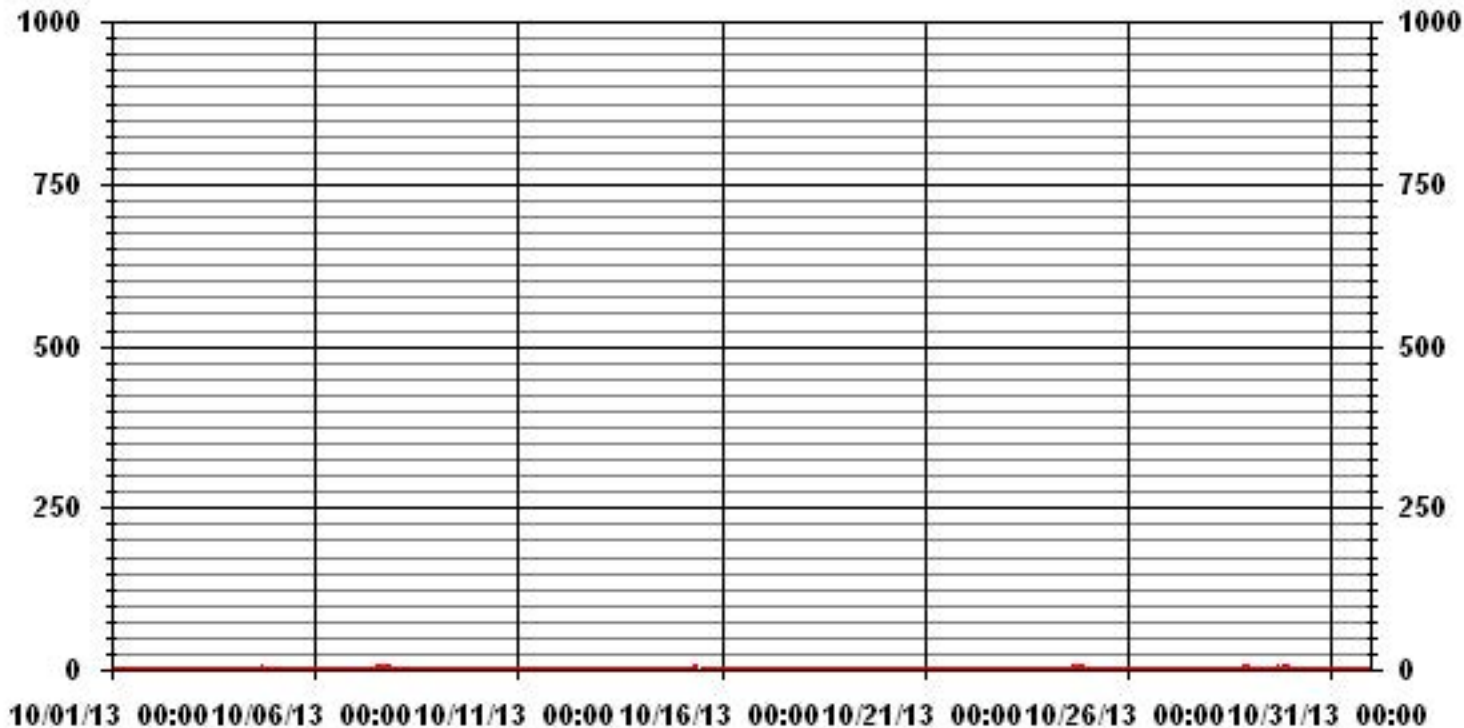
ALBERTA ENVIRONMENT: 1-HR 172 PPB 24-HR 48 PPB

### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	32
MAXIMUM 1-HR AVERAGE:	3 PPB @ HOUR(S) 16 ON DAY(S) 29
MAXIMUM 24-HR AVERAGE:	0.4 PPB ON DAY(S) 7, 24
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION:	0.27
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME:	100.0 %
MONTHLY AVERAGE:	0.05 PPB



### 01 Hour Averages



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

OCTOBER 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	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
2	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
3	0	1	S	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0.2	24
4	0	S	1	0	1	0	1	1	1	0	1	1	2	1	1	1	1	2	2	1	2	2	1	1	2	1.0	24	
5	S	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	S	1	0.1	24	
6	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	2	1	2	S	0	2	1.0	24	
7	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	2	3	3	2	S	0	0	3	1.7	24	
8	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	0.0	24	
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	S	0	0	0	0	2	0.1	24	
10	0	0	4	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	S	0	0	0	0	0	4	0.3	24	
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0	0	0	0	1	0.0	24	
12	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	
13	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	
14	0	0	0	0	0	0	0	0	0	0	1	0	1	2	S	1	1	1	2	1	1	1	1	1	1	2	0.6	24
15	1	1	1	1	2	4	2	2	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	4	0.8	24	
16	0	0	0	0	0	0	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
17	0	0	0	0	0	0	0	0	0	0	0	S	1	0	0	0	1	1	1	1	1	1	1	1	1	1	0.4	24
18	1	1	1	1	1	1	1	1	1	2	S	0	0	0	0	0	0	0	0	2	0	1	0	0	2	0.6	24	
19	0	0	0	0	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
20	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1	0.2	24	
21	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	
22	0	0	0	0	0	S	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
23	0	0	0	0	0	S	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
24	0	0	0	0	S	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	6	2	2	6	1.4	24	
25	2	2	1	S	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24	
26	0	0	S	0	1	0	0	1	1	1	1	1	0	0	1	1	1	1	1	1	0	2	3	1	3	0.8	24	
27	0	S	1	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	
28	S	0	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	2	2	2	3	3	3	S	3	1.5	24	
29	1	1	1	0	0	1	1	1	1	1	1	1	1	1	2	4	4	4	4	2	2	2	2	S	0	4	1.5	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	S	0	1	1	0.1	24	
31	0	0	1	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	S	0	1	0	1	0.4	24	
HOURLY MAX	2	2	4	1	2	4	2	2	2	2	2	2	2	2	3	4	4	4	4	3	3	6	3	3	2			
HOURLY AVG	0.3	0.3	0.6	0.3	0.4	0.5	0.4	0.4	0.3	0.4	0.3	0.3	0.4	0.3	0.4	0.6	0.5	0.6	0.6	0.6	0.6	0.8	0.6	0.3	0.3			

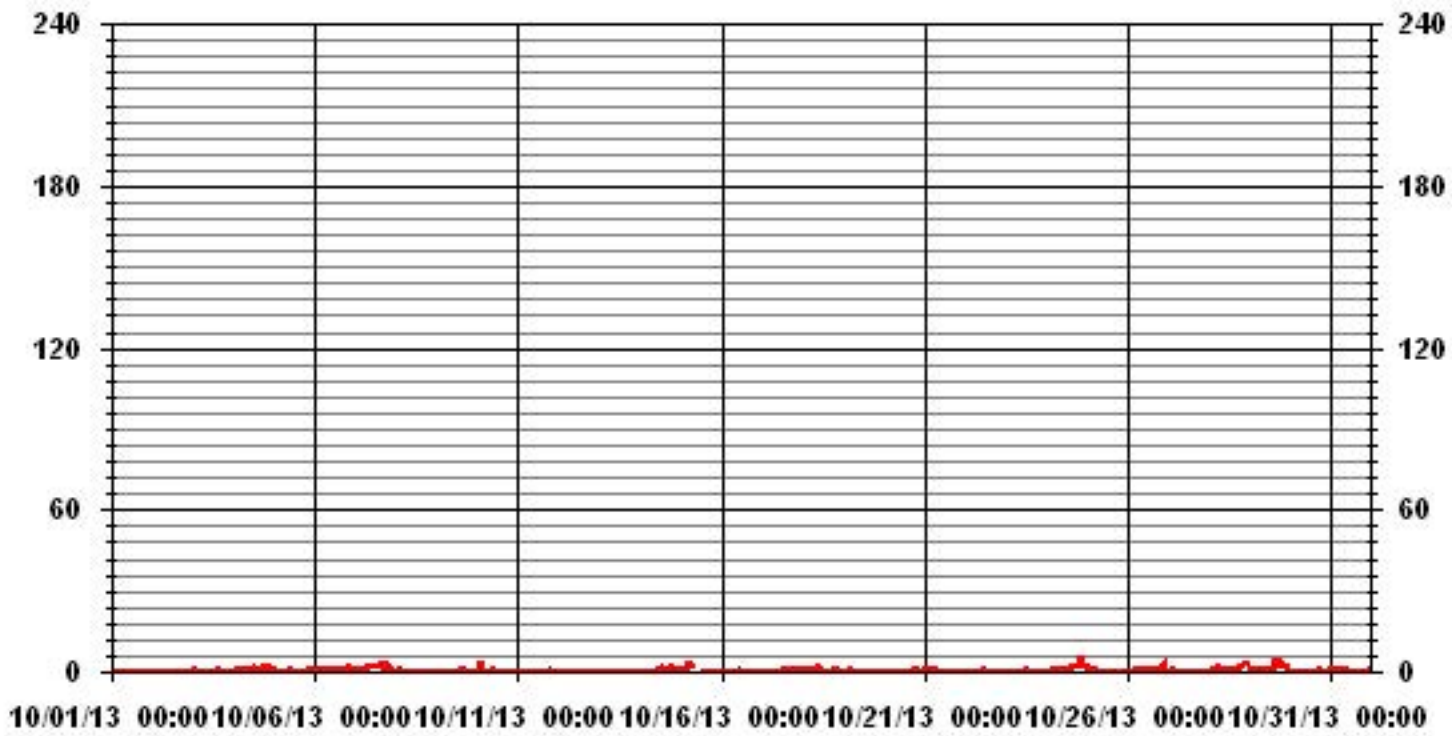
**STATUS FLAG CODES**

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:	221
MAXIMUM INSTANTANEOUS VALUE:	6 PPB @ HOUR(S) 20 ON DAY(S) 24
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	6 HRS
STANDARD DEVIATION:	0.76
OPERATIONAL TIME:	744 HRS

# 01 Hour Averages





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

October 2013

Distribution By % Of Samples

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

Wind Parameter : WDR  
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	1.27	2.12	1.55	.99	3.96	6.93	3.96	1.55	2.97	3.81	2.12	11.31	18.95	21.92	12.44	4.10	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	1.27	2.12	1.55	.99	3.96	6.93	3.96	1.55	2.97	3.81	2.12	11.31	18.95	21.92	12.44	4.10	

Calm : .00 %

Total # Operational Hours : 707

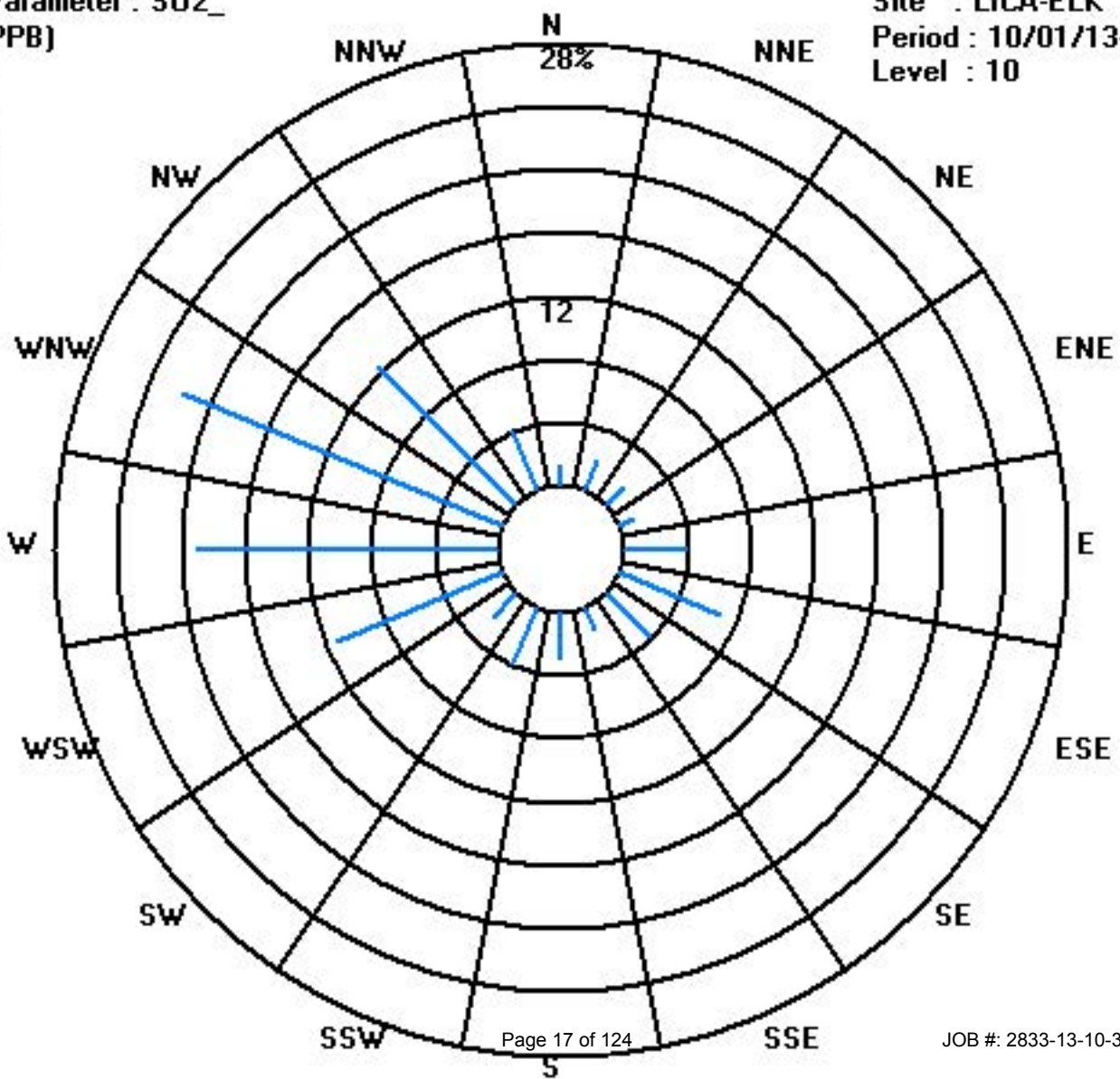
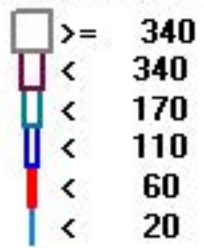
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	9	15	11	7	28	49	28	11	21	27	15	80	134	155	88	29	707
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	9	15	11	7	28	49	28	11	21	27	15	80	134	155	88	29	

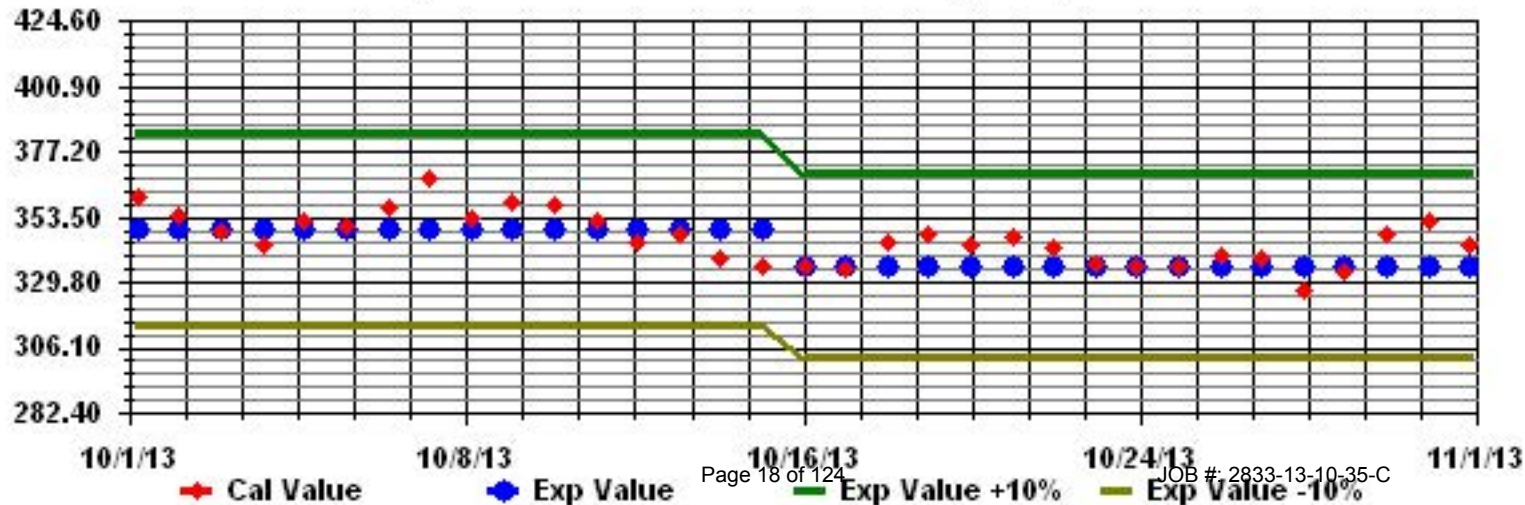
Calm : .00 %

Total # Operational Hours : 707

Class Limits (PPB)



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



# Hydrogen Sulphide

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

OCTOBER 2013

## HYDROGEN SULPHIDE (H2S) hourly averages in ppb

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

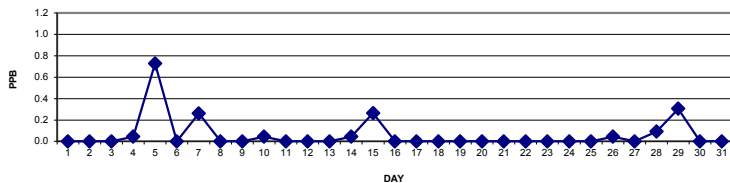
### OBJECTIVE LIMIT:

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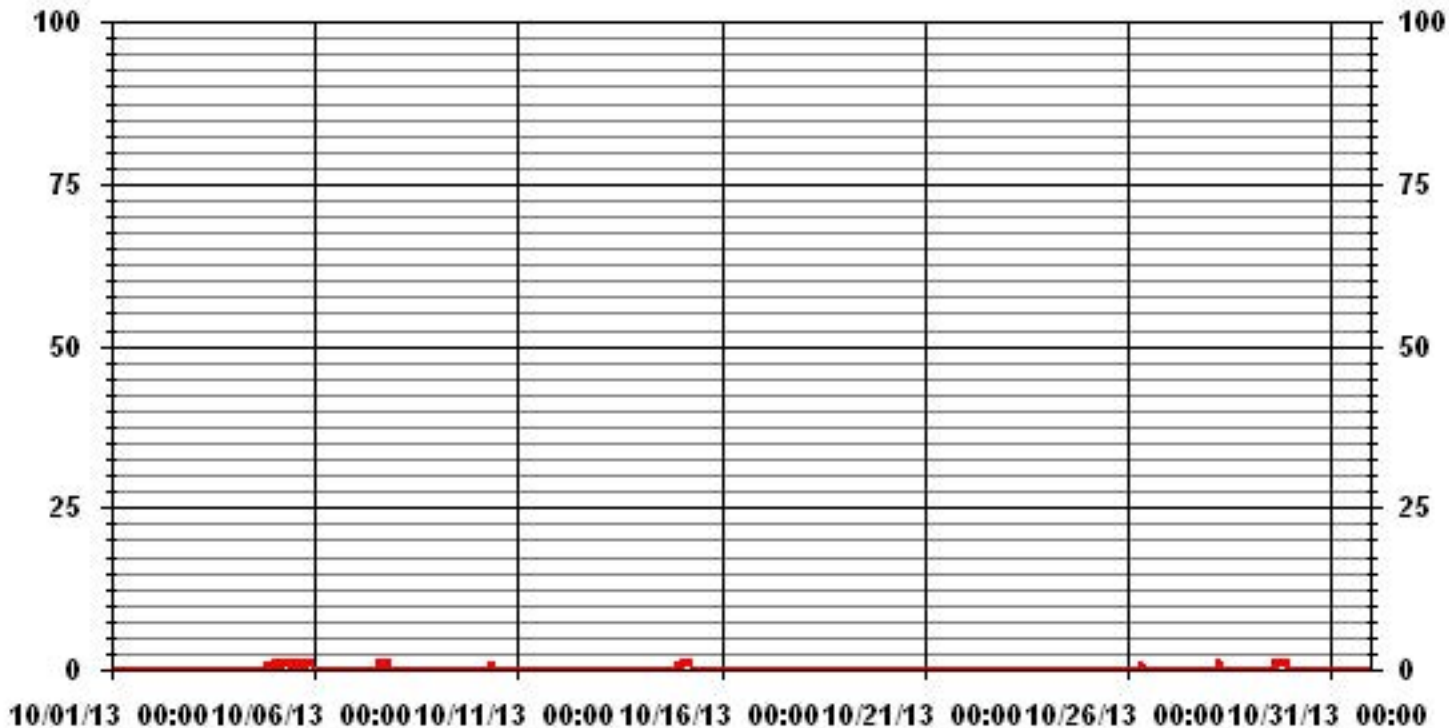
### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0			
NUMBER OF 24-HR EXCEEDENCES:	0			
NUMBER OF NON-ZERO READINGS:	40			
MAXIMUM 1-HR AVERAGE:	1 PPB @ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.7 PPB		ON DAY(S)	5
			VAR-VARIOUS	
IZS CALIBRATION TIME:	33 HRS	OPERATIONAL TIME:	744 HRS	
MONTHLY CALIBRATION TIME:	4 HRS	AMD OPERATION UPTIME:	100.0 %	
STANDARD DEVIATION:	0.23	MONTHLY AVERAGE:	0.06 PPB	

24 HOUR AVERAGES FOR OCTOBER 2013



### 01 Hour Averages



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

OCTOBER 2013

## HYDROGEN SULPHIDE MAX     instantaneous maximum in ppb

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

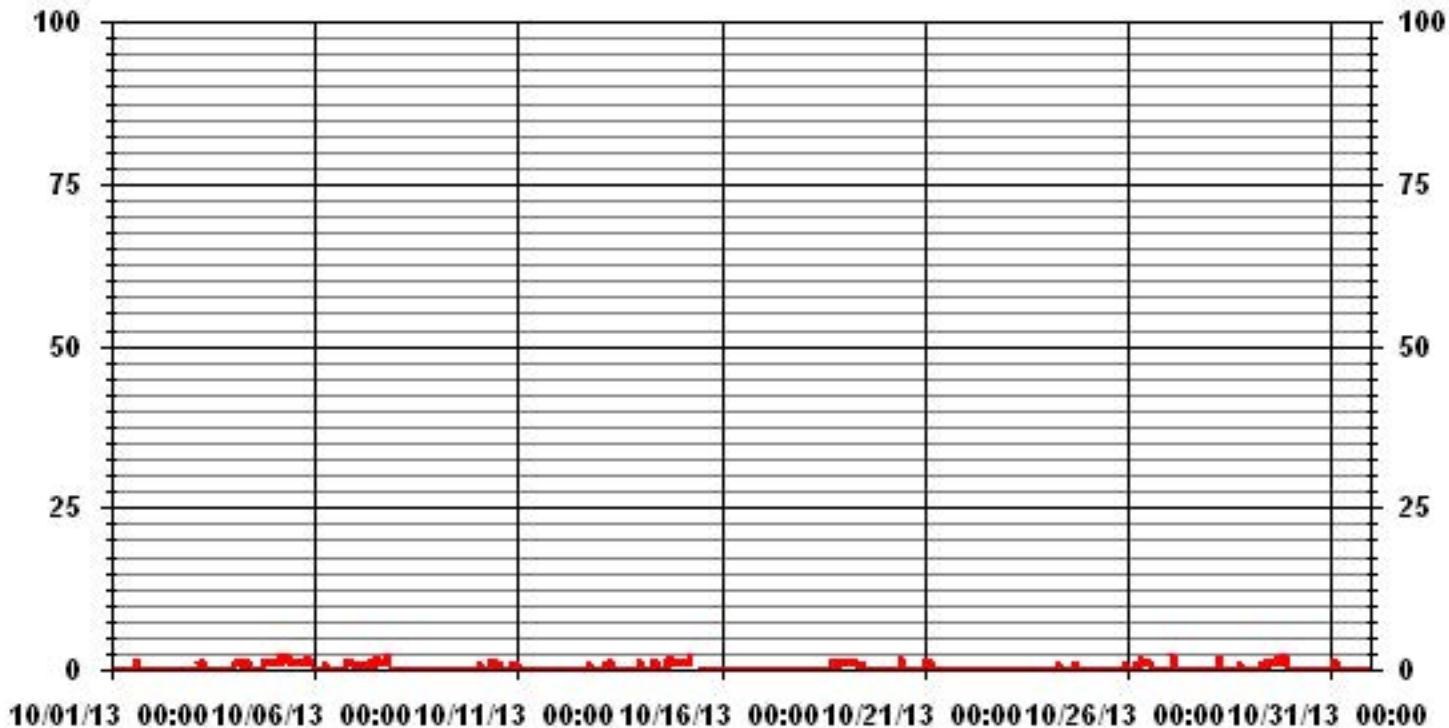
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	138					
MAXIMUM INSTANTANEOUS VALUE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
VAR - VARIOUS						
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744 HRS		
MONTHLY CALIBRATION TIME:	5 HRS					
STANDARD DEVIATION:	0.47					

# 01 Hour Averages





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

October 2013

Distribution By % Of Samples

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

Wind Parameter : WDR  
Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	1.27	2.12	1.55	.99	3.96	6.93	3.96	1.55	2.97	3.81	2.12	11.31	18.81	22.06	12.44	4.10	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	1.27	2.12	1.55	.99	3.96	6.93	3.96	1.55	2.97	3.81	2.12	11.31	18.81	22.06	12.44	4.10	

Calm : .00 %

Total # Operational Hours : 707

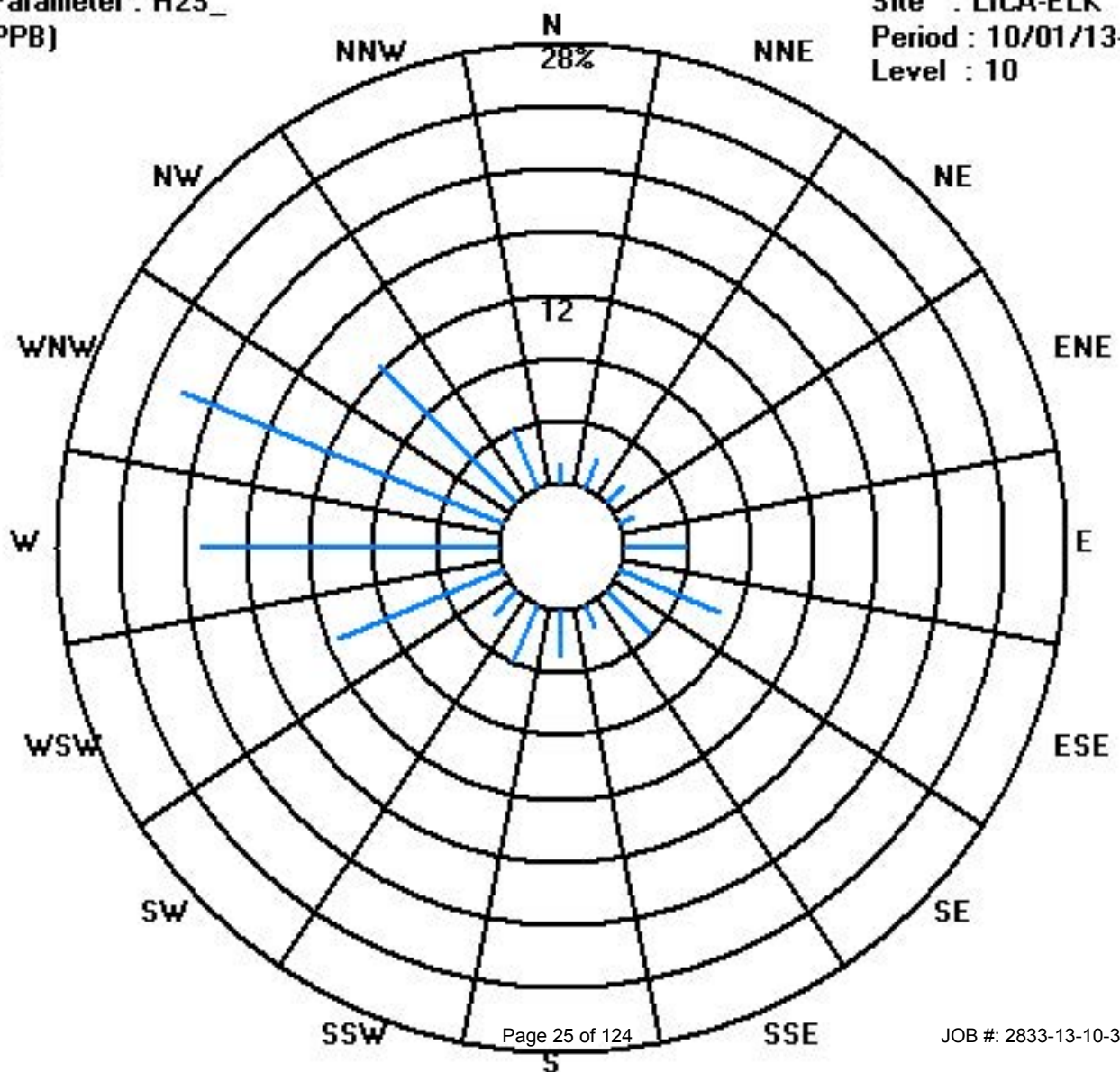
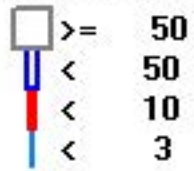
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	9	15	11	7	28	49	28	11	21	27	15	80	133	156	88	29	707
< 10																	
< 50																	
>= 50																	
Totals	9	15	11	7	28	49	28	11	21	27	15	80	133	156	88	29	

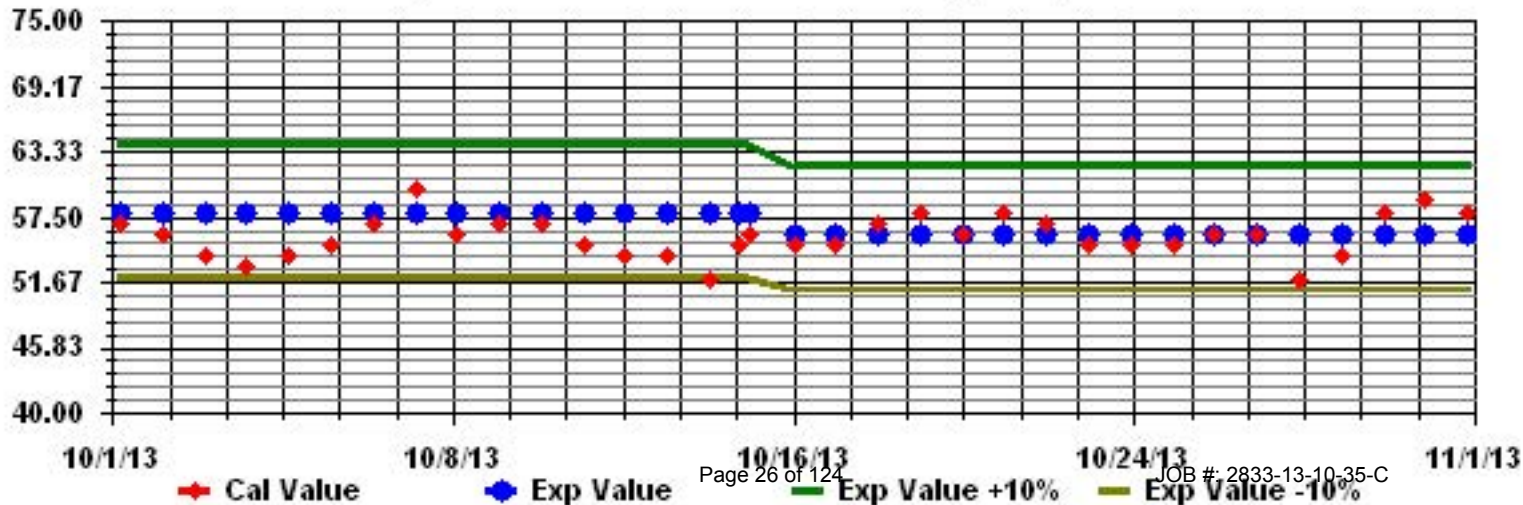
Calm : .00 %

Total # Operational Hours : 707

Class Limits (PPB)



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



# Particulate Matter 2.5

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

OCTOBER 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	
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		4	1	4	1	1	2	2	5	2	7	0	0	1	5	0	0	5	12	5	4	4	7	0	4	12	3.2	24
2		7	6	4	5	X	5	0	X	0	3	0	5	0	2	5	2	0	3	0	4	2	4	0	0	7	2.6	22
3		1	2	0	5	7	11	8	4	4	5	6	2	2	5	1	3	4	2	12	9	9	9	8	14	14	5.5	24
4		10	5	9	7	5	3	0	5	3	4	7	9	1	0	5	2	4	2	2	10	8	9	9	13	13	5.5	24
5		9	9	14	9	9	11	10	9	9	5	4	1	5	0	0	1	4	0	7	0	5	9	13	6	14	6.2	24
6		9	3	12	X	7	0	6	4	7	X	0	0	3	X	3	2	0	0	4	4	12	5	9	6	12	4.6	21
7		9	8	9	5	9	6	7	5	7	5	11	X	3	0	2	3	5	3	8	4	7	5	7	34	34	7.0	23
8		2	9	9	8	8	7	7	3	2	1	0	0	2	8	X	0	0	4	0	0	0	2	0	2	9	3.2	23
9		1	1	0	1	1	0	1	1	0	3	4	0	4	0	4	2	2	4	7	7	8	7	12	12	3.1	24	
10		10	7	8	9	6	7	7	9	7	13	14	8	2	0	0	1	0	6	2	7	9	14	9	11	14	6.9	24
11		7	9	2	7	1	10	6	5	2	4	C	C	C	0	10	6	6	6	2	3	5	8	9	8	10	5.5	24
12		7	7	7	13	8	8	9	9	2	2	6	1	1	5	6	5	3	3	3	7	10	11	11	8	13	6.3	24
13		7	10	12	13	11	11	16	16	18	18	13	7	6	8	X	8	10	6	10	16	19	18	17	21	21	12.7	23
14		17	8	5	7	3	7	10	10	17	8	11	9	9	8	9	6	10	8	13	15	15	15	18	18	18	10.7	24
15		17	18	16	13	16	16	20	13	15	Y	Y	22	13	0	17	7	7	8	7	2	5	1	3	7	22	11.0	22
16		7	4	7	4	5	4	5	7	2	7	4	3	11	3	0	0	0	1	5	3	9	9	11	11	11	5.1	24
17		11	11	10	9	8	10	10	10	2	X	2	8	2	4	7	3	8	5	3	5	7	9	6	7	11	6.8	23
18		9	6	8	6	6	6	6	9	14	13	7	5	7	5	3	8	9	6	7	15	15	16	13	13	16	8.8	24
19		15	10	14	15	11	11	13	14	5	6	5	2	10	4	10	1	5	1	5	10	7	3	7	0	15	7.7	24
20		2	3	4	0	7	7	10	10	10	11	12	12	13	11	11	9	14	16	12	14	16	8	12	13	16	9.9	24
21		14	15	12	10	8	12	11	10	7	7	19	1	4	4	4	6	7	3	3	6	9	10	12	11	19	8.5	24
22		15	10	14	15	14	14	15	15	16	16	11	11	3	10	7	1	2	4	0	2	5	0	6	2	16	8.7	24
23		5	5	8	6	3	2	8	10	C	2	12	11	0	6	4	9	30	39	33	35	19	13	13	26	39	13.0	24
24		23	19	14	19	16	15	11	16	12	13	3	11	4	5	5	3	10	7	4	7	7	13	8	13	23	10.8	24
25		11	5	5	10	4	11	7	9	0	3	4	2	8	5	8	4	4	1	6	2	5	3	3	9	11	5.4	24
26		10	18	11	12	10	14	9	8	8	16	10	0	5	1	17	4	7	11	9	5	5	9	4	4	18	8.6	24
27		6	1	6	6	5	2	6	5	4	7	4	5	5	0	4	7	4	7	6	5	7	8	9	11	11	5.4	24
28		9	6	7	9	10	8	6	8	9	14	10	11	9	4	9	8	3	3	2	6	13	8	7	8	14	7.8	24
29		9	9	7	6	8	8	11	10	15	5	7	7	6	6	10	6	5	10	8	8	7	10	13	18	18	8.7	24
30		14	15	11	17	14	10	18	22	14	11	15	4	10	9	7	1	1	5	10	4	4	11	14	16	22	10.7	24
31		6	15	13	19	13	14	15	16	12	12	13	0	6	8	4	10	4	9	6	9	10	12	X	15	19	10.5	23
HOURLY MAX		23	19	16	19	16	16	20	22	18	18	19	22	13	11	17	10	30	39	33	35	19	18	18	34			
HOURLY AVG		9.1	8.2	8.5	8.9	7.8	8.1	8.7	9.2	7.5	7.9	7.4	5.4	5.2	4.2	5.9	4.2	5.6	6.2	6.4	7.4	8.5	8.6	8.6	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

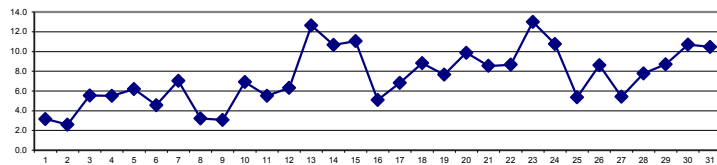
OBJECTIVE LIMIT:

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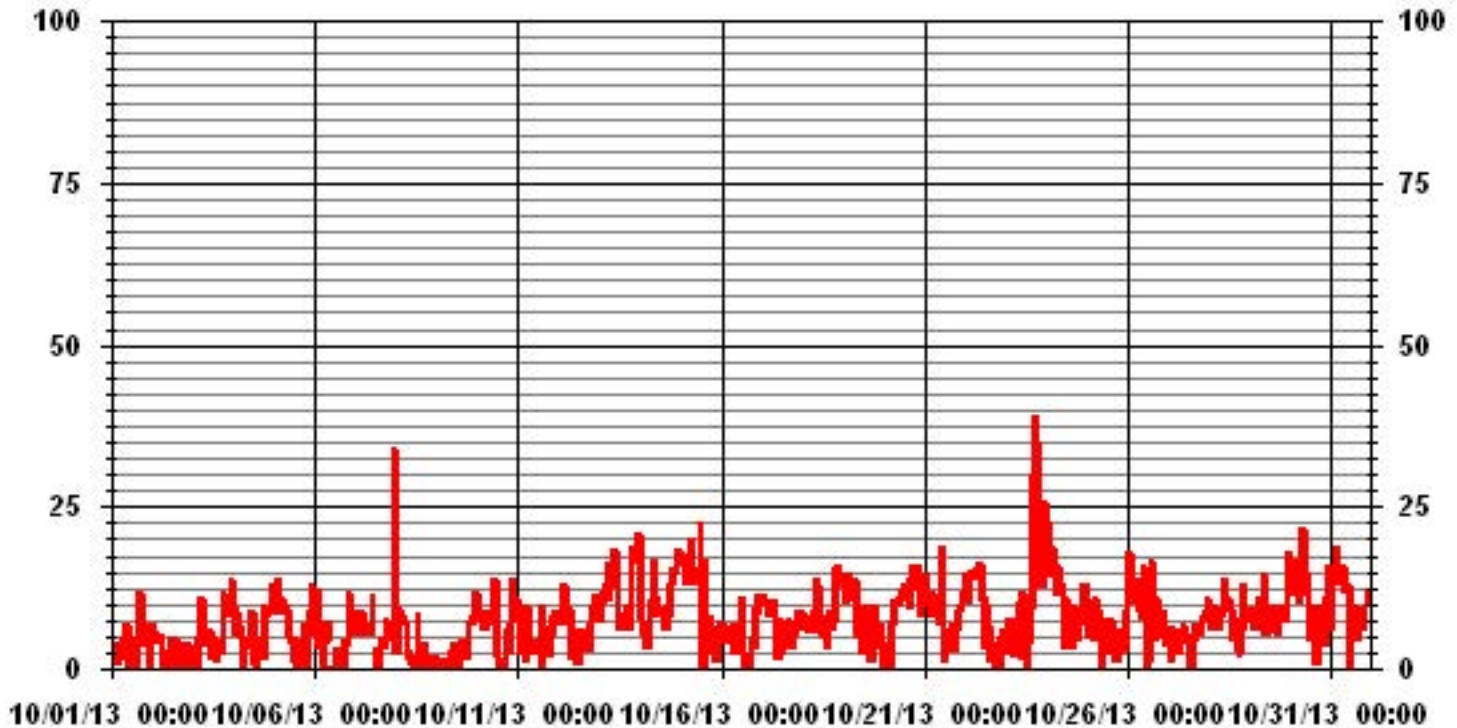
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	672		
MAXIMUM 1-HR AVERAGE:	39 UG/M <sup>3</sup> @ HOUR(S) 17 ON DAY(S) 5		
MAXIMUM 24-HR AVERAGE:	13.0 UG/M <sup>3</sup> ON DAY(S) 5		
IZS CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	732 HRS
MONTHLY CALIBRATION TIME:	4 HRS	AMD OPERATION UPTIME:	98.4 %
STANDARD DEVIATION:	5.29	MONTHLY AVERAGE:	7.44 UG/M <sup>3</sup>

24 HOUR AVERAGES FOR OCTOBER 2013



# 01 Hour Averages



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

October 2013

Distribution By % Of Samples

Logger Id : 35  
 Site Name : LICA-ELK  
 Parameter : PM2  
 Units : UG/M3

Wind Parameter : WDR  
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	1.23	2.06	1.64	.96	4.25	7.00	3.84	1.64	3.02	3.84	2.33	11.12	18.68	20.87	12.91	3.84	99.31
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.41	.13	.00	.00	.68
< 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	1.23	2.06	1.64	.96	4.25	7.00	3.84	1.64	3.02	3.84	2.33	11.26	19.09	21.01	12.91	3.84	

Calm : .00 %

Total # Operational Hours : 728

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	9	15	12	7	31	51	28	12	22	28	17	81	136	152	94	28	723
< 60												1	3	1			5
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	9	15	12	7	31	51	28	12	22	28	17	82	139	153	94	28	

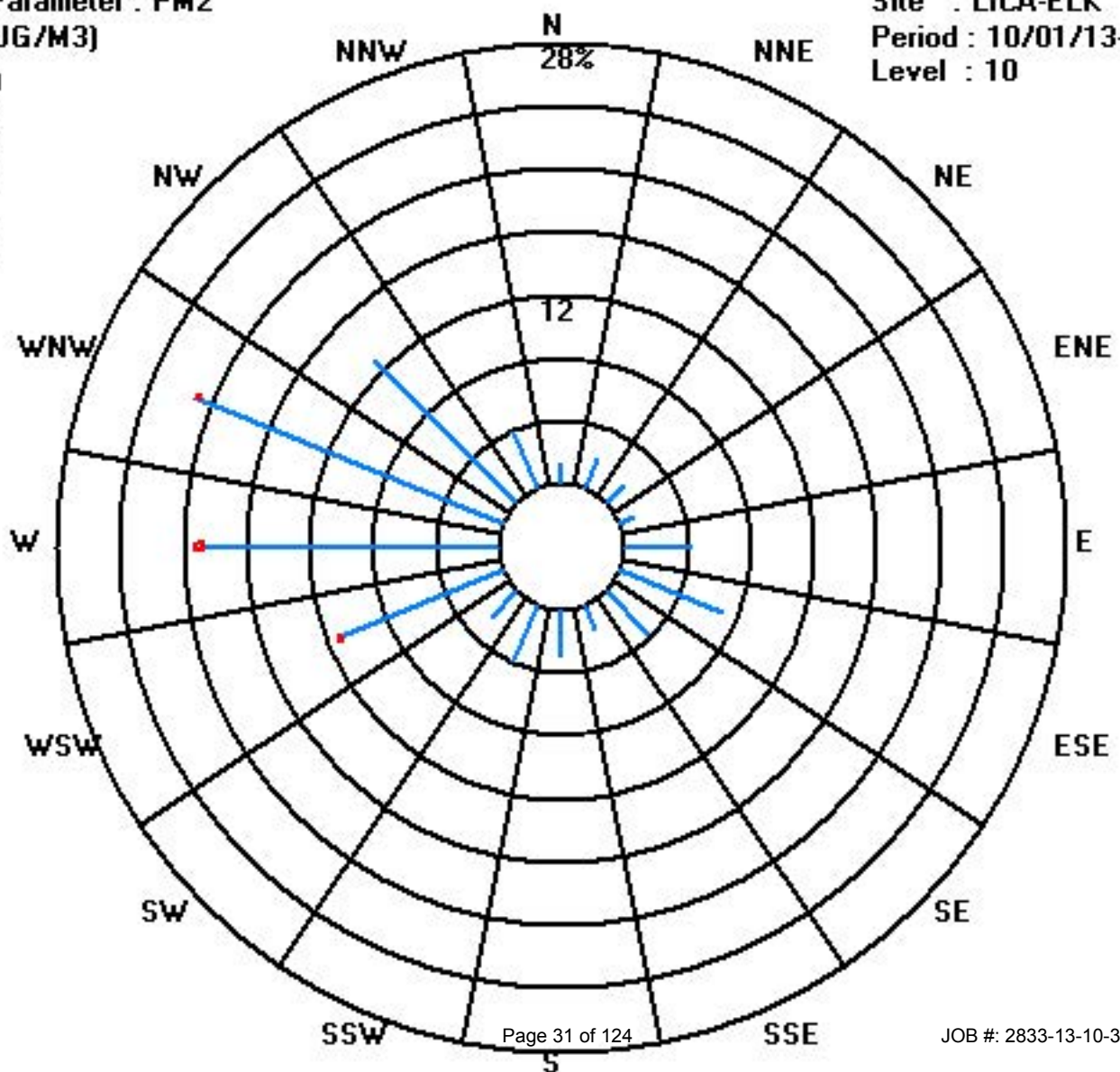
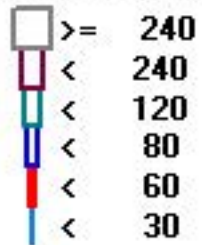
Calm : .00 %

Total # Operational Hours : 728

Class Limits (UG/M3)

Period : 10/01/13-10/31/13

Level : 10





# Nitrogen Dioxide

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

OCTOBER 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	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	0.1	0	0	0	S	3.8	1.6	1.8	1.3	1.4	1.1	1.3	1.4	1.6	1.6	1.6	2	2	2.4	3.3	1.9	1.6	1.1	2.6	3.8	1.5	24	
2	3.3	2.1	0.8	S	2.9	1.6	1.5	1.4	1.4	0.7	0.1	0	0	0.1	0	0.2	0.1	0.2	1.3	6.6	12.6	9.4	13.4	12.2	13.4	3.1	24	
3	12.7	11.2	S	13.5	12.4	15.9	16.4	12.9	4.6	1.9	0.9	1	1	1.5	0.4	0	0.2	1.4	11.9	13.4	12.4	11.8	4.1	8.5	16.4	7.4	24	
4	9.5	S	11.1	10.2	9	7.1	8.2	7.5	7.3	5.5	3	2.1	2.1	1.3	1.4	2.2	3.3	3.8	5.4	5.8	3.3	4.8	8.5	9.1	11.1	5.7	24	
5	S	8.1	10.7	10.2	14.6	18.6	17.6	15.4	13.7	6.7	1.1	0.8	0	0	0	0	2.1	0.8	1.2	10.2	22	10.4	2.4	S	22	7.6	24	
6	13.6	6.1	6.7	9.8	5.6	6.9	4.9	8.8	6.7	2.7	1.4	1.5	0.9	0.9	0.9	1	1.3	10.6	12.1	21.5	17.8	14.1	S	15.8	21.5	7.5	24	
7	14.6	13.2	10.3	9.2	7.4	8.2	6.8	6.2	4.1	3.3	3.7	3.2	3.2	2.2	2.3	2	3.3	10.3	6.2	7.2	4.6	S	7.4	10.4	14.6	6.5	24	
8	6.5	4.7	3.5	3.9	3.4	5	13.3	8.8	3.2	0	0	0	0	0	0	0	0	0	0	0	0	S	2.1	1.3	1	13.3	2.5	24
9	1.4	0.9	0.8	1.7	1.6	3.6	4.5	2.9	2.7	0.8	0.5	0.9	0.7	0.9	1.3	3	3.6	4.6	15.2	S	7.4	5.4	9.3	5	15.2	3.4	24	
10	5.7	7.4	9.3	8.3	10.3	9.5	11.5	10.1	11.8	11.3	12.4	15.4	1.3	0	0	0	1.3	6.6	S	16.3	19.7	18.3	19.4	15.3	19.7	9.6	24	
11	10.2	9.2	6.4	9.3	12.7	9.4	8.7	7.8	3.9	4.3	1.8	0.4	0	0.2	0	0.2	0.3	S	4.5	3.1	6.6	5.1	5.1	6.8	12.7	5.0	24	
12	6.7	8.7	8.2	8.7	9.9	8.4	7.7	11.1	7	2.6	0.6	0.1	0	0	0	0	S	4.2	23.8	18.6	27.4	25.3	26.2	22.3	27.4	9.9	24	
13	26.1	18.3	17	19.4	24.3	22.8	23	21.9	18	6.1	2.9	1.2	0.2	0.4	0.5	S	2	11	19.3	19.9	22.4	22.3	26.2	29.5	29.5	15.4	24	
14	28.3	21.6	20	20.7	13.6	17.5	20.4	16.6	17.7	17.9	16.8	8	2.4	2.5	S	3	5.2	11.3	12.9	12.9	6.5	15.5	17.4	17.5	28.3	14.2	24	
15	18.3	9.4	7.5	5.4	8.2	17.3	17.7	11.3	5.9	C	C	C	C	C	C	C	3.1	1.3	1.1	0.9	2.1	6.7	6.5	2.3	18.3	7.4	24	
16	1.5	1.2	0.5	2.2	0.9	0.6	0.5	5.5	0.5	0.2	0.5	0	S	1.2	1.2	0.8	1.3	11.4	21.9	16.1	11.5	9.2	10.9	12.6	21.9	4.9	24	
17	14.5	7.5	6.4	5.5	7.5	6.4	8.9	10.6	6.8	6	1.6	S	0.9	0.5	0.3	0.2	0.3	1.3	11.1	13.7	13.3	7.3	3.8	3.6	14.5	6.0	24	
18	3.7	17.4	13.1	6.4	13.2	11.5	11.8	16.8	9.2	5.3	S	5.2	3	1.4	1.5	3.3	5.8	8.3	24.9	13	14.2	20.7	16.7	13.6	24.9	10.4	24	
19	14.1	6.6	10.9	4.8	4.4	5.2	4.8	S	3.5	S	0.6	0	0	0	0	0	0.1	1.2	2.4	2.5	1.8	1.1	1	0.4	14.1	3.0	24	
20	0	0	0.3	1.1	1.3	3.2	3.6	3.1	S	4.9	3.9	3.2	3.3	3	3.7	3.7	4.7	5.9	6.8	7.9	8	8.8	9.9	8.3	9.9	4.3	24	
21	7.7	7.1	12.7	15.4	3.6	3.5	7.2	S	5	0.9	0.3	0	0	0	0	0	0	1	14.7	13	18.3	24.9	21.2	15.5	24.9	7.5	24	
22	11.3	9.1	6.8	6	6.3	8.5	S	10.4	7.3	8.6	8.5	10	10.3	4	0.7	0.5	0.3	0.2	0.1	0.1	0.1	0.9	3.3	5.3	11.3	5.2	24	
23	1.1	1.1	1.2	1.6	1.6	S	18.3	14.1	5	7.9	1.2	1.2	1.2	1.3	1.4	1.9	7.2	21.3	13.4	19.8	26.6	23.4	22.7	17.4	26.6	9.2	24	
24	14.8	15.3	14.6	11.9	S	11	S	10	6.7	C	Y	Y	C	C	4	2.9	12.7	22.5	16.6	16.9	10.3	9	11	8.1	22.5	11.7	22	
25	10.2	5	1.1	S	1.6	2.4	3.9	4.1	1.3	0	0.1	0.1	0.1	0.1	0	0.2	2.3	5.6	17.6	19.6	23.1	22.6	22	19.1	23.1	7.0	24	
26	16	15.2	S	8.4	11.8	14.4	9.1	13.5	15.8	8.2	6.5	5.3	2.7	1.8	1.4	1.6	0.7	1.1	1.4	1	0.6	1.9	0.9	0	16	6.1	24	
27	0	S	0.9	0.5	0	0	0	0	0.5	0.5	0.1	0.2	0.2	0.2	0.4	0.6	0.1	0.6	2.1	2.8	6.3	8	7	11	11	1.8	24	
28	S	16	16.8	18	18.5	20.1	17.6	16.3	14.4	11.4	10.4	7.5	2.6	1.4	1.8	2.9	8.1	18.3	13.6	1.7	1.7	1.4	3.2	S	20.1	10.2	24	
29	7.7	9.3	3.6	3	3.5	9.7	9.9	7	4.9	2.2	1.6	1.8	2	1.3	1.3	2.5	7.3	9.7	2.5	11.5	11.6	9	S	13	13	5.9	24	
30	11.4	8.9	9	8.1	4.2	6.1	10	10.2	9.8	6.2	5.8	1.4	0.8	0.3	1	1.6	18.1	23.3	24.8	11.2	10.5	S	19.5	14.8	24.8	9.4	24	
31	18.7	23.3	21.3	20.6	19.1	19	18.8	14.4	9	10.9	7	2.9	1.9	1.2	1.7	0.9	0.2	0.3	0.3	0.4	S	2	4.6	6	23.3	8.9	24	
HOURLY MAX	28.3	23.3	21.3	20.7	24.3	22.8	23.0	21.9	18.0	17.9	16.8	15.4	10.3	4.0	4.0	3.7	18.1	23.3	24.9	21.5	27.4	25.3	26.2	29.5				
HOURLY AVG	10.0	9.1	8.0	8.4	8.0	9.2	9.9	9.7	7.0	4.9	3.4	2.7	1.5	1.0	1.0	1.3	3.2	6.7	9.7	9.7	11.2	10.4	10.6	10.6				

### STATUS FLAG CODES

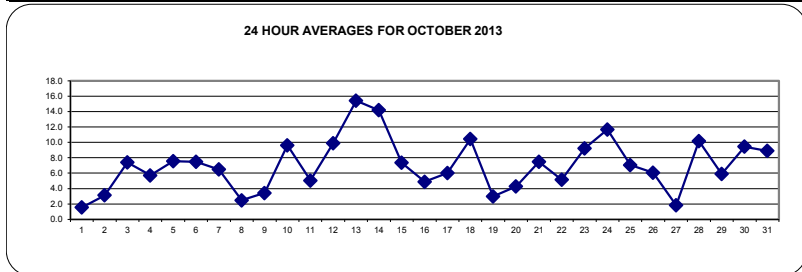
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

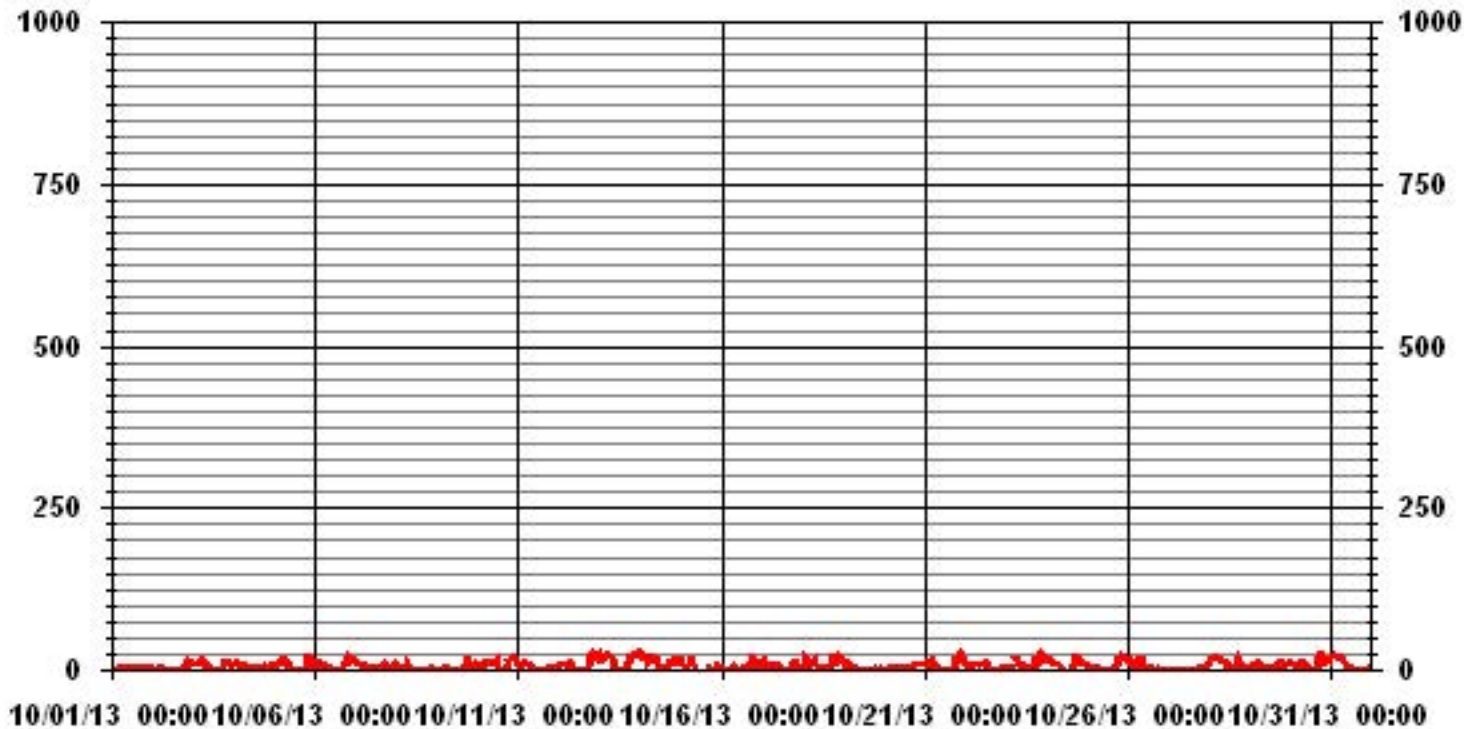
ALBERTA ENVIRONMENT: 1-HR 159 PPB

### MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	645					
MAXIMUM 1-HR AVERAGE:	29.5	PPB	@ HOUR(S)	13	ON DAY(S)	13
MAXIMUM 24-HR AVERAGE:	15.4	PPB			ON DAY(S)	13
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	6.76		MONTHLY AVERAGE:	6.99	PPB	



### 01 Hour Averages



— LICA35 NO2\_ PPB

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

OCTOBER 2013

## NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	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		3.5	3.3	3.8	3.8	S	7.1	2.4	2.7	2.2	2.2	1.6	2.3	2.5	2.7	3.2	2.1	3.2	3.3	3.5	5.8	3.8	3.8	1.6	4.6	7.1	3.3	24
2		5.3	4.9	1.9	S	5.1	2.5	2.1	2.1	2.1	1.4	0.8	0.7	0.5	0.7	0.7	1	0.9	0.9	3.1	14.4	16.5	14.8	19	14.8	19	5.1	24
3		14.5	13.1	S	16.7	16.3	17.6	17.5	15.6	6.3	3.1	2	2.2	2	2.3	1.7	0.4	1.3	5.1	16.9	28	19.3	14.1	6.5	10.8	28	10.1	24
4		11.9	S	13.5	13	11.1	8	9.5	9.7	8.7	14.9	3.4	2.9	4.4	2.8	3.6	4.6	6.8	6.6	9.1	10.3	5.9	15.2	16.2	24.5	24.5	9.4	24
5		S	17.4	13.6	13.5	21	20.4	19.2	17.9	15.5	11.7	2.1	1.8	0.7	0	0.4	0.1	7.2	5.7	7.6	19.3	33.1	21.7	10.2	S	33.1	11.8	24
6		26	10.5	9.3	21.1	8	10	5.9	13.4	12.6	4	2.4	2.4	1.3	1.5	2.1	2	2.9	19.1	18.4	26.3	29.6	24.9	S	19.8	29.6	11.9	24
7		17.4	15.8	12.5	12.7	11	10.1	10.8	10.1	6.7	6	6.3	4.7	4.8	3.6	3.3	3	4.7	17.1	10.7	13.5	8.9	S	9.3	20.4	20.4	9.7	24
8		11	8.1	4.7	8.2	6.6	8.5	22.2	21	7.6	0.7	0.4	0.7	1.5	0.5	0.6	0.6	0.8	1.5	1.4	0.7	S	3.7	2.3	2.1	22.2	5.0	24
9		4	3.6	2.9	4	4.6	9	7.3	5.1	5.2	1.8	1.3	2.3	1.5	2.2	2.9	5.4	8.2	9	28.5	S	10.9	12.3	19.5	6.2	28.5	6.9	24
10		9.2	9.8	17.2	13.9	14.2	12.5	14.6	12.7	13.7	12.3	15.1	19.1	6.1	0.8	1	2.1	4.6	17.5	S	28.4	22.2	22.1	24	18.1	28.4	13.5	24
11		12.8	14.1	8.4	12.1	14.5	13.7	15.4	11.8	7.3	5.3	4.5	1.8	0.6	1.7	0.7	1.2	1.1	S	6	5	11.5	7.7	7	8.4	15.4	7.5	24
12		8.8	12.9	11	10.1	11.6	9.3	11.5	13.2	8.9	8.5	1.6	0.6	0.5	0.3	0.4	0.4	S	11.6	39.2	25.3	32.8	32.4	28.8	29.3	39.2	13.4	24
13		28.4	24.8	22.4	25.1	25.6	31.4	25.3	26.8	21.4	10.3	4	2.8	0.6	0.9	1.2	S	4.4	35.1	26.1	34.2	32	32.2	30.4	31.3	35.1	20.7	24
14		38.9	24.6	21.6	22	18.6	18.6	27.8	19.6	21.7	20.8	17.6	16.8	3.7	3.3	S	5.7	10.6	37.8	45	35	12.6	17.8	19.5	21.6	45	20.9	24
15		24	19.3	10.1	7.4	14.2	23.5	20.7	15.8	C	C	C	C	C	C	C	C	4.5	4.1	2.7	2.4	5.3	14.1	10.8	4.5	24	11.5	24
16		2.6	2.5	1.5	5.7	3.4	1.8	1.3	8	3.9	1.5	2.5	0.8	S	1.6	1.5	1.2	3.3	23.3	30.8	30.7	19.2	13.3	13.1	15.8	30.8	8.2	24
17		17.2	12	10.5	6.5	9.8	8.7	11.2	14.9	9.2	9.9	2.3	S	1.9	1.1	1	0.8	0.9	6.4	27.8	19.2	18.3	13	5.6	5.8	27.8	9.3	24
18		5.5	25.9	20.6	10.2	22	16.4	16	22.2	13	7.1	S	6.4	4.5	2.1	2.1	5.9	13.5	17	30.7	26.4	23.4	24.4	23.3	23.3	30.7	15.7	24
19		22.4	9.2	20.1	8.1	7.1	10.8	5.4	S	S	2.3	1.4	1	0.9	1.1	1.3	1.9	3.1	4.1	4.2	3.3	2.7	2.6	2.1	22.4	5.5	24	
20		1.6	2.7	2.2	3.7	4.2	7.9	7.3	6.3	S	6.7	5.4	4	4.2	3.9	4.5	4.4	6.6	7.4	8.8	12.9	9.8	12.6	12.2	9.9	12.9	6.5	24
21		9	10.3	15.3	17.8	13.2	5.6	11.6	S	10.7	1.5	1.2	0.6	0.4	0.4	0.4	0.6	0.5	12.8	21.3	19.8	25.1	29.1	25.6	23	29.1	11.1	24
22		13.5	11	8.3	7	7.8	12.5	S	12	9.9	29.5	9.5	11	11.9	9.3	1.2	1.5	0.8	0.9	0.7	0.7	0.8	2	6.2	12.8	29.5	7.9	24
23		3.5	1.8	1.7	5.1	4.4	S	20.6	17.2	9.9	13.2	2.6	1.6	2	2.7	2.1	3	16.8	34.5	18.8	29.4	30.9	26.9	29.4	20.5	34.5	13.0	24
24		18.3	16.5	16.3	13.4	S	14.2	S	S	10.5	C	Y	Y	C	C	6.2	4.5	25.2	35	21.4	19.5	18	17.4	13.6	10.7	35	16.3	22
25		10.8	9.5	4	S	3.5	8.1	8.1	5.7	6.7	0.6	0.7	0.8	1.1	0.8	0.5	0.9	4.1	24.1	25.3	35.4	29.7	26.3	26.2	20.4	35.4	11.0	24
26		16.7	17.2	S	11	16.2	18.2	16.6	20.6	20.2	11.9	7.8	8	3.4	3.2	2.5	2.9	1.5	2.2	2.4	2.1	1.7	2.8	2.3	0.9	20.6	8.4	24
27		0.3	S	1.3	1.1	0.5	0.5	0.5	0.8	0.8	1.1	0.8	0.7	0.6	0.8	1	1.3	1	1.5	2.7	3.9	29.9	13.3	12.5	17.4	29.9	4.1	24
28		S	21.5	20.1	19.7	22.7	23.9	24.6	18.2	16.7	13.5	11.3	10	4.1	3.2	3.5	31	16.9	37.3	27.5	4.3	2.3	2.1	6.3	S	37.3	15.5	24
29		11.9	13.1	4.8	4.8	6.3	14.1	15	14.3	10.9	3.1	2.3	2.7	4.7	2.4	3	4.9	11.7	24.7	7.6	22.7	15.4	11.8	S	16.4	24.7	9.9	24
30		14.6	10.3	11	11.3	5.5	11.2	11.9	11.9	12.6	8.1	9.6	2.5	2	0.8	3.4	5.3	25	26.9	28	26.4	14.2	S	22.2	17.6	28	12.7	24
31		24.8	24	22.4	22	19.8	20	20.7	19.2	12.8	13.6	9.9	5.4	3.6	2.7	4.3	1.8	0.7	0.9	0.9	1.1	S	3.3	10.5	12.1	24.8	11.2	24
HOURLY MAX		38.9	25.9	22.4	25.1	25.6	31.4	27.8	26.8	21.7	29.5	17.6	19.1	11.9	9.3	6.2	31.0	25.2	37.8	45.0	35.4	33.1	32.4	30.4	31.3			
HOURLY AVG		13.4	12.7	10.8	11.4	11.3	12.5	13.2	13.2	10.2	8.0	4.7	4.2	2.7	2.0	2.1	3.4	6.4	14.4	15.9	16.9	16.8	15.1	14.4	14.7			

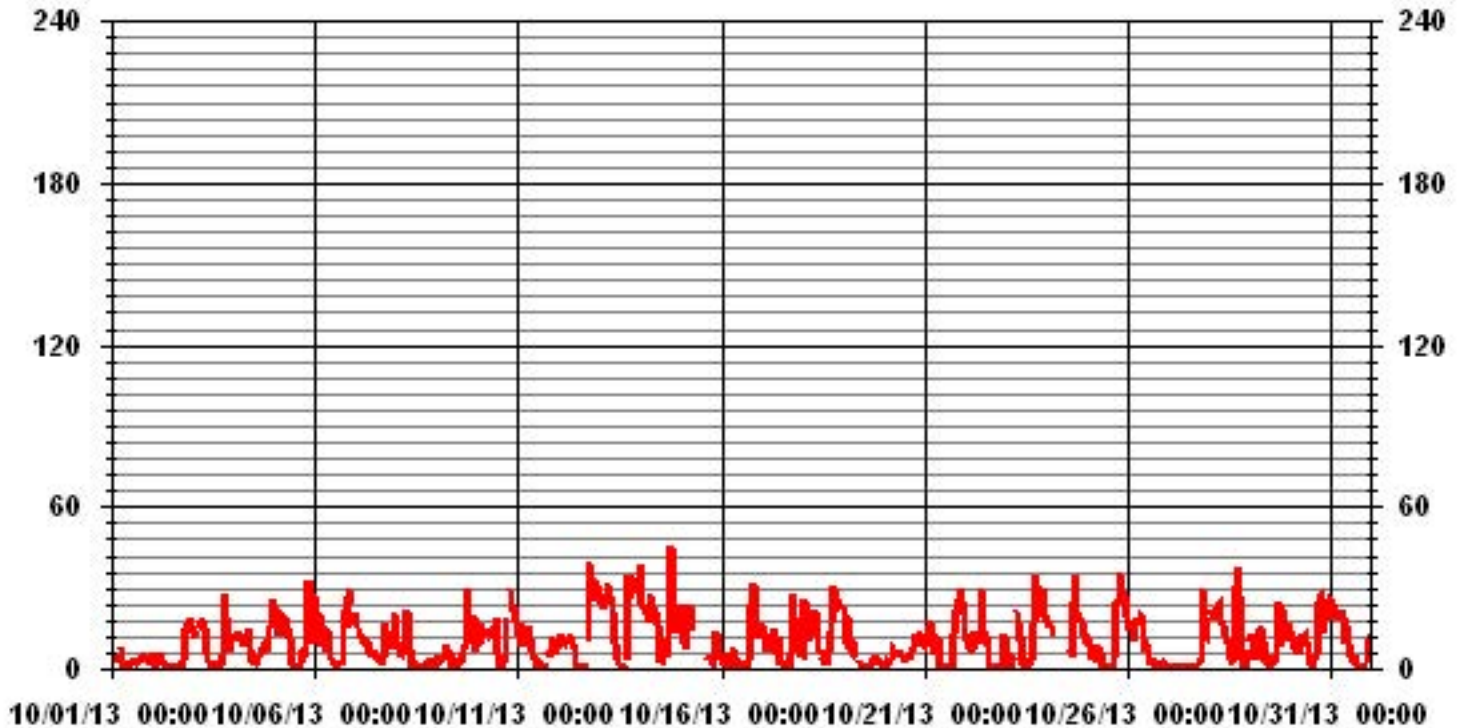
**STATUS FLAG CODES**

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:	695					
MAXIMUM INSTANTANEOUS VALUE:	45.0	PPB	@ HOUR(S)	18	ON DAY(S)	14
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	11	HRS				
STANDARD DEVIATION:	9.04					

# 01 Hour Averages



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

October 2013

Distribution By % Of Samples

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

Wind Parameter : WDR  
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	1.28	2.14	1.57	1.00	4.01	6.87	3.86	1.43	2.57	3.86	2.14	11.46	19.05	21.91	12.60	4.15	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	1.28	2.14	1.57	1.00	4.01	6.87	3.86	1.43	2.57	3.86	2.14	11.46	19.05	21.91	12.60	4.15	

Calm : .00 %

Total # Operational Hours : 698

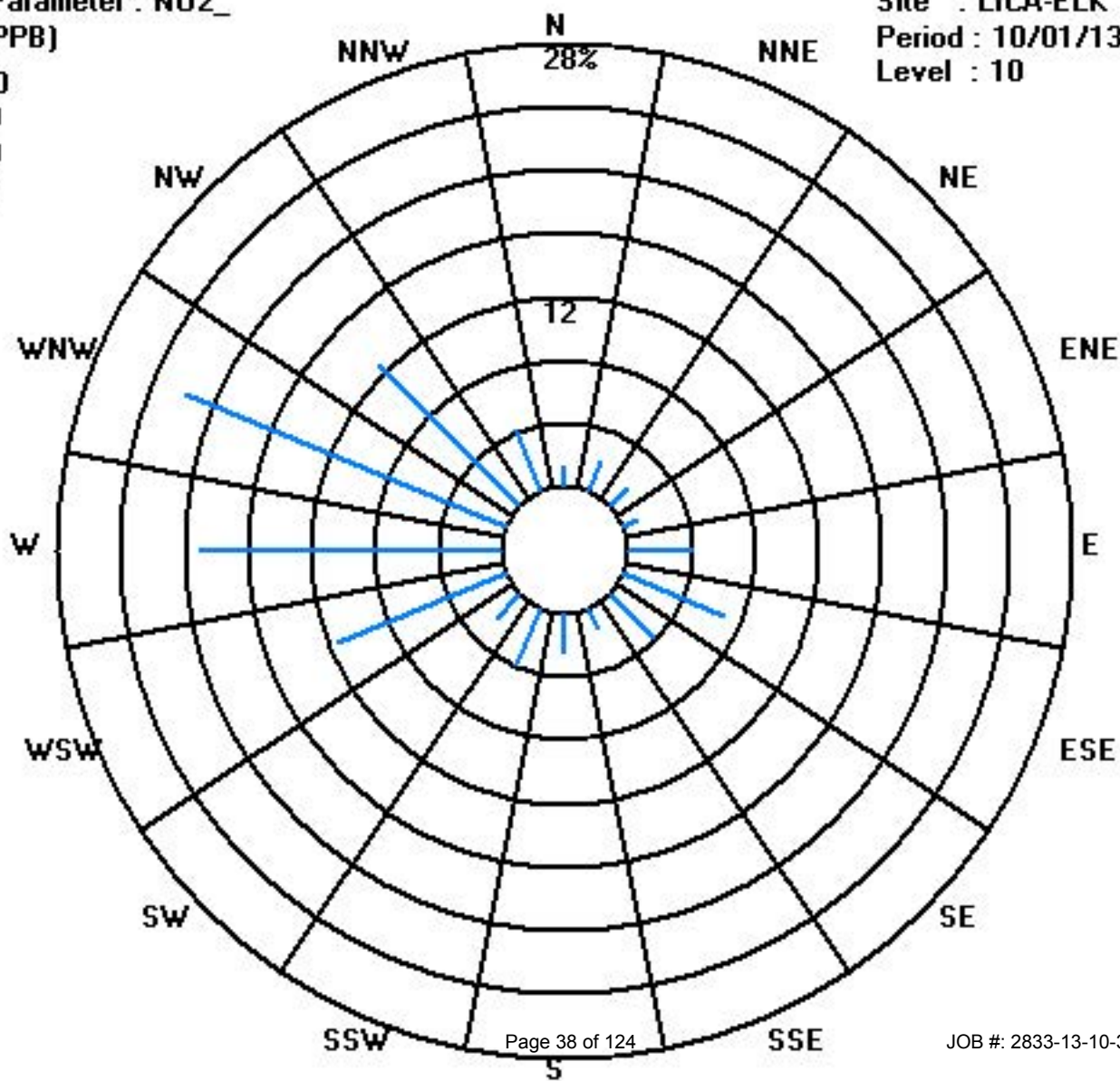
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	9	15	11	7	28	48	27	10	18	27	15	80	133	153	88	29	698
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	9	15	11	7	28	48	27	10	18	27	15	80	133	153	88	29	

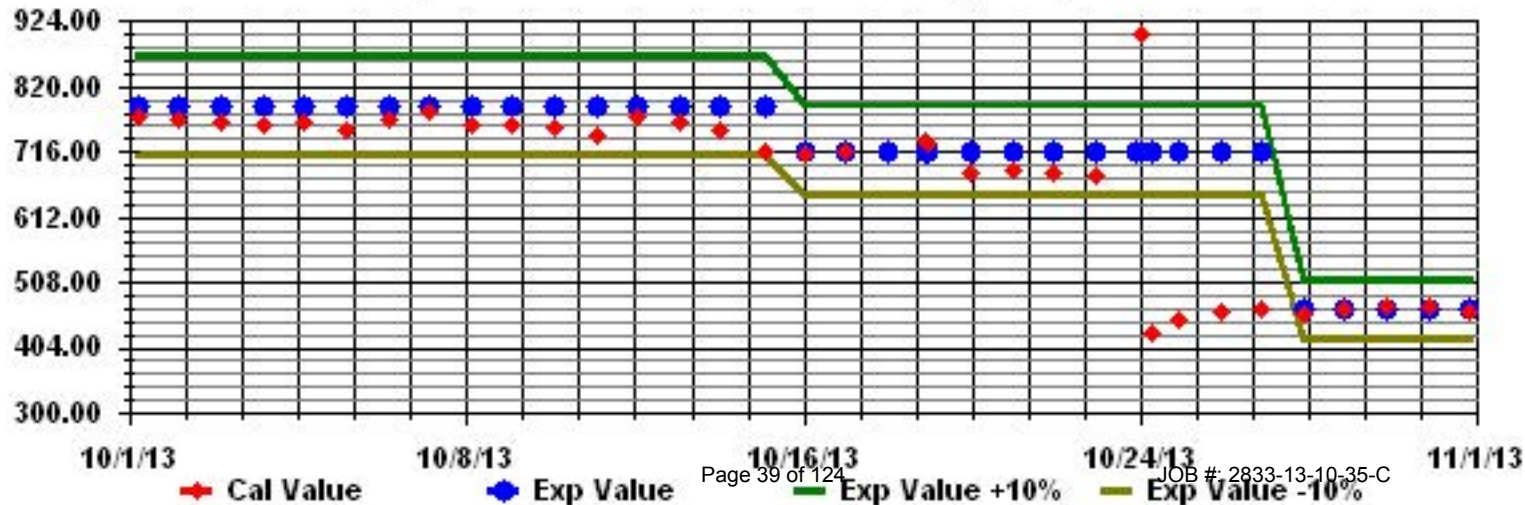
Calm : .00 %

Total # Operational Hours : 698

Class Limits (PPB)



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





# Nitric Oxide

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

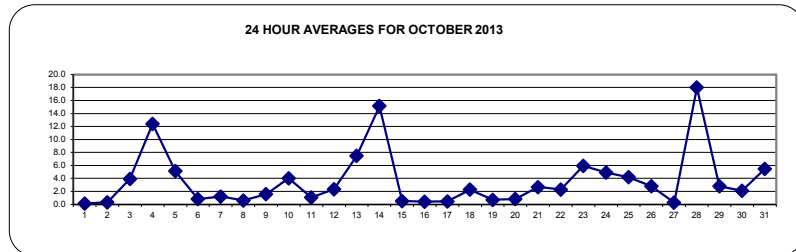
OCTOBER 2013

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.	
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.		
1	1	0	0	0.1	0	S	0.5	0.1	0.2	0.1	0.2	0.1	0.2	0.3	0.4	0.5	0	0	0	0	0	0	0	0	0	0.5	0.1	24	
2	2	0.1	0	0	S	0.4	0	0.1	0	0	0	0.1	0.1	0.1	0	0	0.1	0	0	0	0.1	1	0.8	2.1	2.1	2.1	0.3	24	
3	3	4.1	1.2	S	2.9	2.5	11.8	19.7	5.3	1.5	1.6	1.1	0.9	1	1.5	0.9	1.3	0.1	0.4	4.6	4.1	2.1	9.7	1.3	10.6	19.7	3.9	24	
4	4	35.4	S	33.4	39.5	38	28.3	27.5	22.2	14.5	11.3	7	5.6	3.4	2.2	1.9	2.4	1.5	0.7	0.7	0.4	0.4	2.1	2.5	3.9	39.5	12.4	24	
5	5	S	2.1	1.3	0.5	5.8	9.1	27.7	32	16.4	3.4	1.6	1.3	0.3	0	0	0	0.1	0	0	0.8	9.7	0.4	0	S	32	5.1	24	
6	6	0.6	0	0	0.4	0	0	0	0.5	1.1	0.8	0.4	0.4	0	0	0.2	0	0	0.6	1	5.6	5.3	1	S	1.4	5.6	0.8	24	
7	7	1.6	0.8	0.6	0.7	0.3	0.8	0.6	1.3	1.6	1.7	2	1.9	2.7	2.2	1.7	1	0.9	1.8	0.4	1.2	0.1	S	0.7	0.8	2.7	1.2	24	
8	8	0.3	0.3	0	0	0	0.1	3.7	2.7	1.7	0.4	0.3	0.4	0.2	0.3	0.2	0.5	0.3	0.2	0.2	S	0.9	0.4	0.4	0.4	3.7	0.6	24	
9	9	0.6	0.4	0.4	0.6	0.4	0.5	0.6	0.9	2.4	1	0.8	0.9	0.5	0.9	1.3	2.3	2.2	1.5	7.2	S	2.3	1.6	6.1	0.3	7.2	1.6	24	
10	10	0.4	0.7	3.5	0.8	0.8	1.5	5.3	4.5	10	13.9	20.7	16.7	1.1	0.5	0.3	0.3	0.4	0.6	S	3.5	2.3	1.2	2.4	1	20.7	4.0	24	
11	11	0.9	1	0.4	0.9	1.1	1.6	2.5	3	2.8	4.3	1.8	0.7	0.4	0.2	0.3	0.2	S	1	0.2	0.2	0.1	0.1	0.1	4.3	1.1	24		
12	12	0.2	0.1	0.1	0.3	0.6	0.8	1.7	3.1	4	1.5	0.4	0	0	0	0	0	S	1.4	11	2.4	8.6	5	8.9	3.4	11	2.3	24	
13	13	5.8	2.1	2.4	3.4	14.7	16.9	14.3	28.7	18.4	3.6	1.4	0.4	0.1	0	0	S	0.8	1.9	1.3	3.5	3.4	3.9	6.6	38.6	38.6	7.5	24	
14	14	38.1	19.5	5.9	25.4	3.5	9.1	36.9	36	60.4	54.3	35.1	7.9	0.8	0.4	S	1.1	1	2.8	6.1	2	0.3	0.3	0.6	0.6	60.4	15.1	24	
15	15	0.8	0.6	0.3	0.2	0.3	2	1	1.5	1.7	C	C	C	C	C	C	C	0.2	0	0	0	0	0	0	0	2	0.5	24	
16	16	0	0	0	0	0	S	0	0	0	0	0	0	0	S	0.4	0	0	0	1.5	4	1.1	0.8	0.5	0.3	0.5	4	0.4	24
17	17	0.4	0.5	0	0	0.3	0	0.8	0.9	0.7	0.9	0	S	0.6	0.2	0.3	0.2	0.3	0.1	2.6	0.4	0.4	0.5	0.3	0.1	2.6	0.5	24	
18	18	0	6.6	1.1	0.2	2.8	1.1	1.4	4.9	1.9	1.6	S	2.8	1.3	0.6	0.6	0.5	0.4	0.4	6.8	1.3	2.8	7	1.5	4.6	7	2.3	24	
19	19	9.3	0.2	1.2	0.1	0.1	0.4	0.2	S	1.1	S	0.7	0.4	0.3	0.3	0.1	0.2	0.2	0.1	0.2	0.2	0.1	0	0.1	0	9.3	0.7	24	
20	20	0	0	0	0.1	0.2	0.7	0.5	0.7	S	2	1.5	1.2	1.5	1.3	1.2	0.7	0.6	0.4	0.7	1.6	0.6	1.2	1.2	1	2	0.8	24	
21	21	0.6	0.6	7.9	6.2	0.2	0.2	1.2	S	1.1	0	0	0	0	0	0	0	0	0	1.1	0.1	1.3	17.3	15.8	7.8	17.3	2.7	24	
22	22	0.6	0.5	0.1	0	0	2	S	3.4	2.9	8.2	9.4	12.8	10.6	2	0	0	0.1	0	0	0	0	0	0	0	12.8	2.3	24	
23	23	0	0	0	0	0	S	10.4	5.3	1.1	3.5	0	0.1	0.2	0.5	0.5	0.2	0.4	3.7	0.9	4.2	22.8	24.7	30.5	27.5	30.5	5.9	24	
24	24	14.5	13.7	12.2	6.8	S	3.7	S	5.5	5	C	Y	Y	C	C	2.4	0.8	4.5	9.7	1.6	1.4	0.5	0.8	0.4	0	14.5	4.9	22	
25	25	0	0	0	S	0.4	0.3	0.3	0.2	0.2	0.1	0.2	0.2	0.1	0	0.1	0.2	2.3	5.8	8.8	16.4	26	23.6	11.1	26	4.2	24		
26	26	7.4	2.3	S	0.8	4.6	6.1	0.9	9.4	21	4.8	3.4	2.1	0.7	0.3	0.1	0.2	0	0	0	0	0	0	0	0	21	2.8	24	
27	27	0	S	0.1	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	1.1	1	0.8	3.1	3.1	0.3	24	
28	28	S	9.1	5.1	24.6	38.2	82.1	74.7	37.7	38.2	27.2	21.5	9.5	2.3	1.2	1.5	1.8	3.4	7.6	8.7	0.5	0.2	0	0.6	S	82.1	18.0	24	
29	29	3.8	3.4	0.2	0.2	0.5	2.6	3.3	2.1	2.3	1.5	1.1	1.4	1.7	1.1	0.7	0.8	1.8	6.4	0.5	8.7	8.1	4.4	S	7.1	8.7	2.8	24	
30	30	1.9	0.9	1.1	0.7	0.4	1.5	3.9	2	5.5	3.7	3.8	0.5	0.2	0	0.1	0.2	4.7	3.7	6.4	1.9	0.6	S	3.1	1.1	6.4	2.1	24	
31	31	4.4	12.5	19.5	23.9	15.7	14.5	17.2	6.9	2.3	4.2	1.8	0.5	0.3	0.2	0.3	0	0	0	0	0	0	S	0.4	0.3	0.2	23.9	5.4	24
HOURLY MAX		38.1	19.5	33.4	39.5	38.2	82.1	74.7	37.7	60.4	54.3	35.1	16.7	10.6	2.2	2.4	2.4	4.7	9.7	11.0	8.8	22.8	26.0	30.5	38.6				
HOURLY AVG		4.5	2.7	3.3	4.8	4.5	6.8	8.8	7.6	7.3	5.6	4.2	2.5	1.1	0.6	0.5	0.5	0.8	1.6	2.4	1.8	3.2	3.8	3.8	4.4				

**STATUS FLAG CODES**

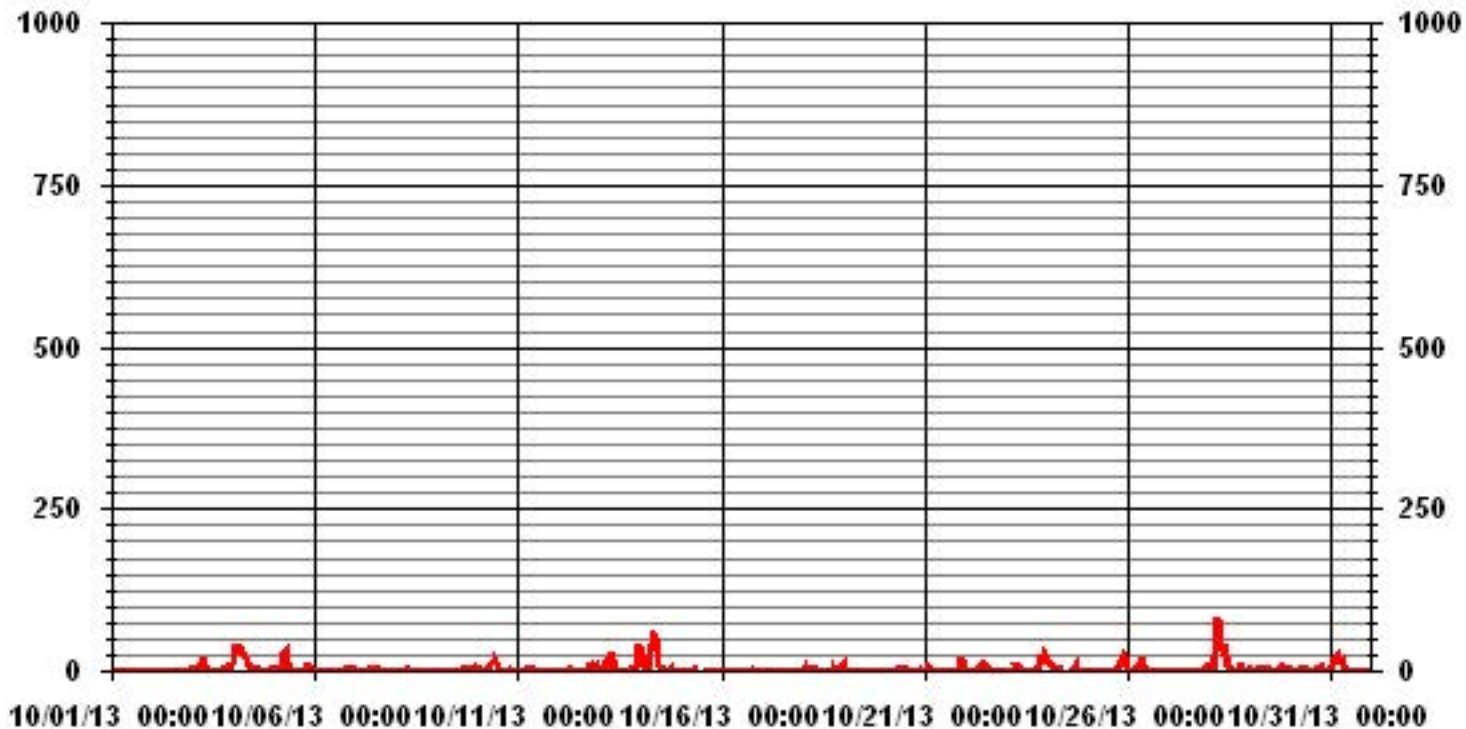
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	555					
MAXIMUM 1-HR AVERAGE:	82.1	PPB	@ HOUR(S)	5	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	18.0	PPB			ON DAY(S)	28
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	8.42		MONTHLY AVERAGE:	3.63	PPB	

### 01 Hour Averages



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

OCTOBER 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	0.8	0.8	0.9	0.8	S	1.8	0.6	0.8	0.8	0.8	0.7	1.2	1.2	1.1	1.6	0.7	0.7	0.5	0.5	0.9	0.4	0.4	0.5	1.8	0.8	24		
2	0.8	0.5	0.2	S	1.3	0.5	0.7	0.6	0.5	0.5	0.6	0.5	0.7	0.7	0.4	0.6	0.4	0.4	1.4	4.6	5	8.2	7	8.2	1.6	24		
3	9.8	2.9	S	5.1	4.2	19.7	28.5	9.9	2.1	2.1	2	1.5	1.7	2.1	1.8	12	1.1	0.9	13.4	54.2	6.3	18.2	3	23.5	54.2	9.8	24	
4	43.2	S	55.4	53.2	45.5	33.3	42.5	30.2	18.2	35.1	8.2	7.7	7.4	4.4	3.3	4.1	2.9	2.6	1.9	1.4	2.1	10	7.8	36.4	55.4	19.9	24	
5	S	12	6.4	3.1	20.5	26.3	54.4	52.4	24.3	6.8	2.8	2.3	1	0.5	0.4	0.7	1	0.4	0.6	4.3	46	2.1	0.2	S	54.4	12.2	24	
6	2.1	0.5	0.4	1.9	0.3	0.3	0.2	2.5	2.3	1.7	0.9	0.9	0.7	0.5	1.3	0.6	0.5	2.3	3.8	15	34.7	20.1	S	3.1	34.7	4.2	24	
7	3.5	1.4	1.4	2	1.2	3	1.7	2.6	4	3.4	4.3	4	4.1	3.1	2.8	1.7	1.6	5.1	1	4.6	0.7	S	1.2	2.9	5.1	2.7	24	
8	0.9	1.2	0.5	0.7	0.6	0.6	28.4	9.8	4.1	0.8	0.9	0.9	1.1	0.8	0.9	0.8	0.9	0.8	0.8	0.8	S	1.8	1	1.2	28.4	2.6	24	
9	1.8	1.5	1.2	1.4	1.3	2.4	1.5	2.3	4.7	1.9	1.6	2.1	1.6	2.2	2.5	5	5.8	6.3	38.7	S	9.2	9.3	26.5	1	38.7	5.7	24	
10	1	2.9	12.1	4.6	1.7	5.9	17.3	10.1	13	19.2	38.8	26.1	3.5	0.9	0.8	0.9	1.4	2.1	S	15.4	5.9	4.1	7.4	1.8	38.8	8.6	24	
11	1.8	4	1.2	2.8	2.3	4.6	7.1	6.4	4.9	5.5	5.5	1.6	0.9	2.8	2.2	0.9	0.6	S	2.9	0.8	0.8	0.7	0.4	0.6	7.1	2.7	24	
12	0.7	0.6	0.7	0.8	1.7	1.9	5.3	5.1	7	6.6	1.2	0.4	0.2	0.2	0.5	0.3	S	2.7	73	4.3	16.8	13.6	16.2	10.6	73	7.4	24	
13	11.9	5.3	6.7	9.3	34.5	41.5	37.5	41.2	32.9	5.8	3.1	1.3	0.4	0.6	0.4	S	2	17.1	3.6	20.8	17.5	10.7	11.7	65.9	65.9	16.6	24	
14	88.8	32.1	13.8	40.6	14.4	16.2	65.5	52.9	79.5	76.4	43.5	28.1	1.7	1	S	2.1	1.7	29.8	71.4	11.4	1.7	0.9	1.2	1.2	88.8	29.4	24	
15	1.7	2.1	0.9	1	0.8	9.3	3.4	2.7	C	C	C	C	C	C	C	1	0.3	0	0	0.1	0.3	0.2	0	9.3	1.5	24		
16	0	0	0	0	0	0	0	1.4	0.7	0.1	0.3	0	S	1.3	0.6	0.4	0.4	5.8	12.8	7.7	5.2	2.1	1.4	1.9	12.8	1.8	24	
17	1	4.7	0.5	0.6	2.2	0.4	2.4	2.4	1.6	2.5	0.5	S	1.5	0.7	0.7	0.8	0.9	0.5	16.3	1.1	0.9	1.5	0.9	0.7	16.3	2.0	24	
18	0.4	21.3	4.7	0.8	12.5	3.5	4.1	10	3	2.6	S	4.3	2.4	1.4	1.2	1.3	1.6	2	26.5	15	15.3	14.1	4.3	14	26.5	7.2	24	
19	29.8	0.8	5.9	0.7	0.6	2.7	0.8	S	2.3	S	1.4	1	0.8	0.8	0.7	0.7	0.8	0.7	0.9	0.8	0.6	0.7	0.5	0.4	29.8	2.5	24	
20	0.5	0.6	0.4	1.4	1.7	2.3	2.1	3	S	3.4	3	2.1	2.5	2.1	2	1.4	1.5	1.6	2.2	6.9	1.5	7.2	3	2.5	7.2	2.4	24	
21	1.3	3.3	14.6	12.1	4	1.1	3.4	S	3.8	0.5	0.6	1.4	0.6	0.6	1.3	1.3	0.1	1.7	2.8	1	8.6	68.5	60.9	34.3	68.5	9.9	24	
22	1.8	2.2	0.9	0.9	0.5	5.9	S	5.9	5	48.7	16.3	17.8	15.8	8.1	0.5	0.3	0.6	0.4	0.3	0.2	0.2	0.6	0.6	0.8	48.7	5.8	24	
23	0.3	0.2	0.6	1.4	0.4	S	20.4	12.4	5.1	10.4	0.9	1.3	1.9	1.5	1.2	1	1.7	35.2	3.5	21.6	37.3	59.4	51.5	50	59.4	13.9	24	
24	31.2	21.8	17.2	9.3	S	11.2	S	S	11.2	C	Y	Y	C	C	5.3	2.4	29.7	50.8	3.3	4.4	6.1	24.8	3.5	0.6	50.8	14.6	22	
25	0.9	0.2	0	S	1	1.2	1.1	0.8	1.3	0.5	0.6	0.7	0.7	0.7	0.6	0.7	0.8	15.9	41.8	44.5	74.7	77.2	34	17.8	77.2	13.8	24	
26	10.2	4.7	S	1.8	21.7	16.3	9.3	24.9	37.8	10.9	5.4	3.8	1.3	0.9	0.7	0.9	0.7	0.3	0.5	0.4	0.4	0.6	0.3	0.2	37.8	6.7	24	
27	0.1	S	0.9	0.5	0.2	0.1	0.1	0.3	0.5	0.6	0.3	0.5	0.4	0.3	0.9	0.7	0.2	0.4	0.5	0.5	19.5	3.4	5.6	16.4	19.5	2.3	24	
28	S	43.6	9.9	38.7	47.3	101.3	133.5	48	50.1	38.1	24.8	16.7	4.8	4.5	2.6	18.3	9.8	29.2	50	1.6	0.7	0.5	3.9	S	133.5	30.8	24	
29	8.2	7	0.8	0.8	2.4	8.6	7	16.9	6	2.5	1.7	2.2	4.5	2.6	2.4	1.9	4.3	43.8	3.7	45.5	18.7	16.8	S	18.8	45.5	9.9	24	
30	3.8	1.5	3.1	1.6	1	5.7	8.1	4.1	9.6	5.9	6.9	1.1	1.6	0.6	0.8	1.1	8.9	9.2	21.7	9.4	1.3	S	6.9	1.7	21.7	5.0	24	
31	14.2	23.9	27.3	31.9	19.7	26.7	26.9	23.1	4.8	6.3	3.2	1.4	0.9	0.9	1.1	0.5	0.3	0.6	0.4	0.6	S	1.2	1.6	1.1	31.9	9.5	24	
HOURLY MAX	88.8	43.6	55.4	53.2	47.3	101.3	133.5	52.9	79.5	76.4	43.5	28.1	15.8	8.1	5.3	18.3	29.7	50.8	73.0	54.2	74.7	77.2	60.9	65.9				
HOURLY AVG	9.4	7.0	6.5	7.9	8.5	11.8	17.7	13.7	11.8	10.7	6.4	4.7	2.4	1.7	1.4	2.2	2.8	9.0	13.3	9.9	11.6	13.0	9.1	10.9				

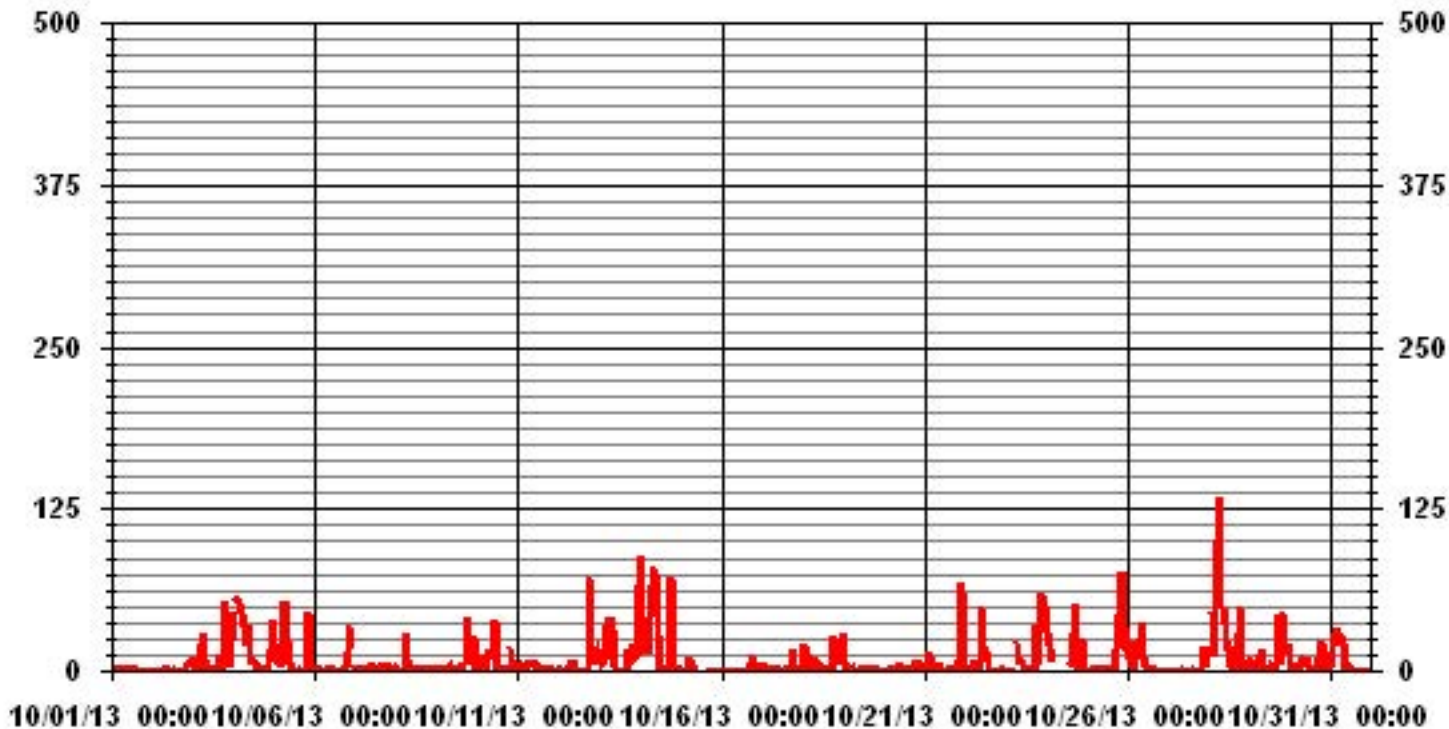
**STATUS FLAG CODES**

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

**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	684					
MAXIMUM INSTANTANEOUS VALUE:	133.5	PPB	@ HOUR(S)	6	ON DAY(S)	28
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	11	HRS				
STANDARD DEVIATION:	15.38					

# 01 Hour Averages



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

October 2013

Distribution By % Of Samples

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

Wind Parameter : WDR  
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	1.29	2.15	1.57	.86	4.01	6.74	3.73	1.29	2.58	3.87	2.15	11.47	19.08	21.95	12.48	4.16	99.42
< 110.0	.00	.00	.00	.14	.00	.14	.14	.14	.00	.00	.00	.00	.00	.00	.00	.00	.57
< 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	1.29	2.15	1.57	1.00	4.01	6.88	3.87	1.43	2.58	3.87	2.15	11.47	19.08	21.95	12.48	4.16	

Calm : .00 %

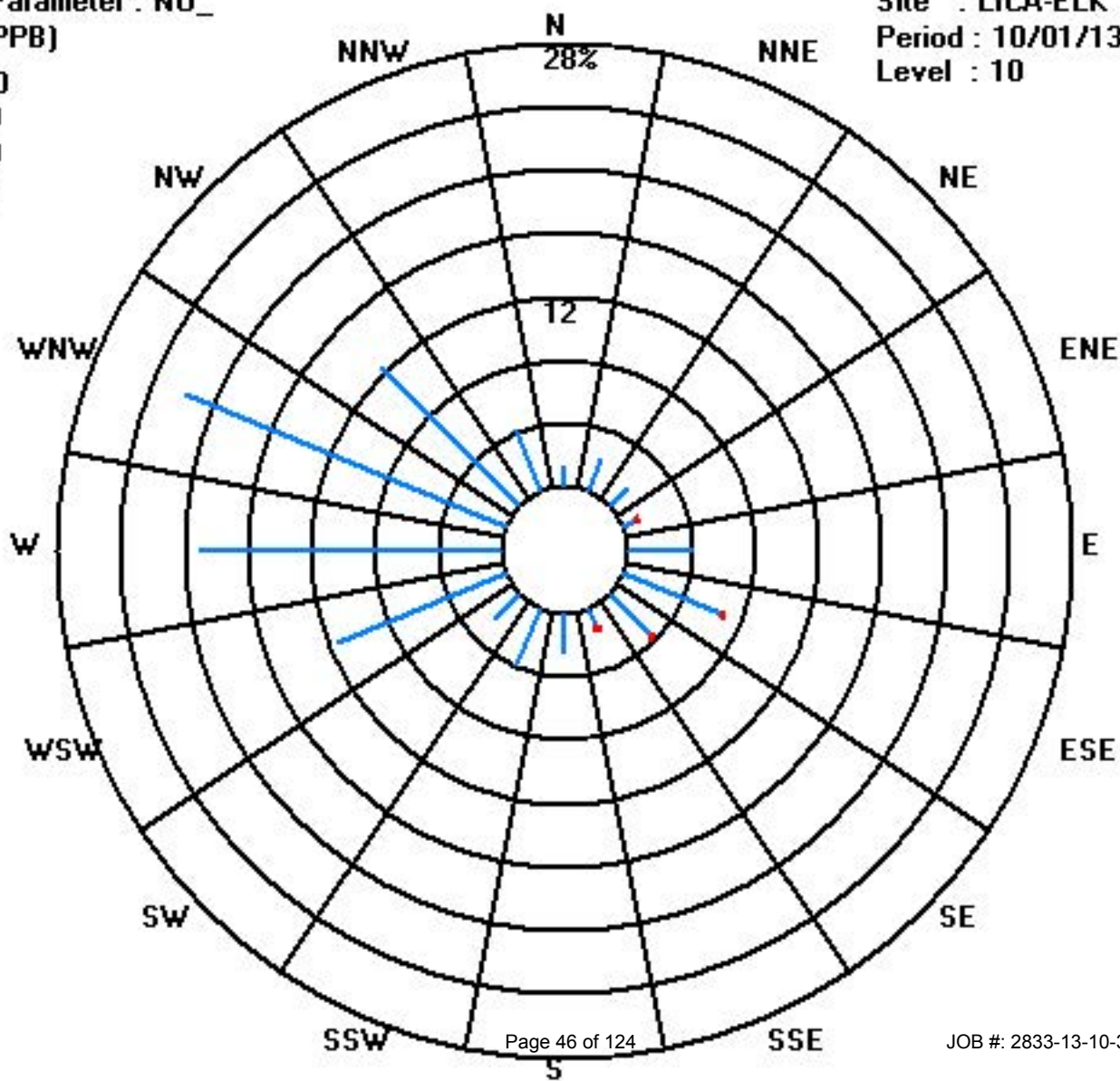
Total # Operational Hours : 697

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	9	15	11	6	28	47	26	9	18	27	15	80	133	153	87	29	693
< 110.0				1		1	1	1									4
< 210.0																	
>= 210.0																	
Totals	9	15	11	7	28	48	27	10	18	27	15	80	133	153	87	29	

Calm : .00 %

Total # Operational Hours : 697



# Oxides of Nitrogen



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

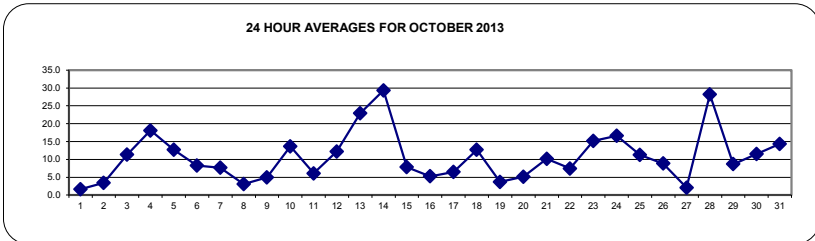
OCTOBER 2013

OXIDES OF NITROGEN 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	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	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	0.1	0	0.1	0	S	4.3	1.7	2	1.4	1.6	1.2	1.5	1.7	2	2.1	1.6	2	2	2.4	3.3	1.9	1.6	1.1	2.6	4.3	1.7	24
2	3.4	2.1	0.8	S	3.3	1.6	1.6	1.4	1.4	0.7	0.2	0.1	0.1	0.1	0	0.3	0.1	0.2	1.3	6.7	13.6	10.2	15.5	14.3	15.5	3.4	24
3	16.8	12.4	S	16.4	14.9	27.7	36.1	18.2	6.1	3.5	2	1.9	2	3	1.3	1.3	0.3	1.8	16.5	17.5	14.5	21.5	5.4	19.1	36.1	11.3	24
4	44.9	S	44.5	49.7	47	35.4	35.7	29.7	21.8	16.8	10	7.7	5.5	3.5	3.3	4.6	4.8	4.5	6.1	6.2	3.7	6.9	11	13	49.7	18.1	24
5	S	10.2	12	10.7	20.4	27.7	45.3	47.4	30.1	10.1	2.7	2.1	0.3	0	0	0	2.2	0.8	1.2	11	31.7	10.8	2.4	S	47.4	12.7	24
6	14.2	6.1	6.7	10.2	5.6	6.9	4.9	9.3	7.8	3.5	1.8	1.9	0.9	0.9	1.1	1	1.3	11.2	13.1	27.1	23.1	15.1	S	17.2	27.1	8.3	24
7	16.2	14	10.9	9.9	7.7	9	7.4	7.5	5.7	5	5.7	5.1	5.9	4.4	4	3	4.2	12.1	6.6	8.4	4.7	S	8.1	11.2	16.2	7.7	24
8	6.8	5	3.5	3.9	3.4	5.1	17	11.5	4.9	0.4	0.3	0.3	0.4	0.2	0.3	0.2	0.5	0.3	0.2	0.2	S	3	1.7	1.4	17	3.1	24
9	2	1.3	1.2	2.3	2	4.1	5.1	3.8	5.1	1.8	1.3	1.8	1.2	1.8	2.6	5.3	5.8	6.1	22.4	S	9.7	7	15.4	5.3	22.4	5.0	24
10	6.1	8.1	12.8	9.1	11.1	11	16.8	14.6	21.8	25.2	33.1	32.1	2.4	0.5	0.3	0.3	1.7	7.2	S	19.8	22	19.5	21.8	16.3	33.1	13.6	24
11	11.1	10.2	6.8	10.2	13.8	11	11.2	10.8	6.7	8.6	3.6	1.1	0.4	0.6	0.2	0.5	0.5	S	5.5	3.3	6.8	5.2	5.2	6.9	13.8	6.1	24
12	6.9	8.8	8.3	9	10.5	9.2	9.4	14.2	11	4.1	1	0.1	0	0	0	0	S	5.6	34.8	21	36	30.3	35.1	25.7	36	12.2	24
13	31.9	20.4	19.4	22.8	39	39.7	37.3	50.6	36.4	9.7	4.3	1.6	0.3	0.4	0.5	S	2.8	12.9	20.6	23.4	25.8	26.2	32.8	68.1	68.1	22.9	24
14	66.4	41.1	25.9	46.1	17.1	26.6	57.3	52.6	78.1	72.2	51.9	15.9	3.2	2.9	S	4.1	6.2	14.1	19	14.9	6.8	15.8	18	18.1	78.1	29.3	24
15	19.1	10	7.8	5.6	8.5	19.3	18.7	12.8	7.6	C	C	C	C	C	C	C	3.3	1.3	1.1	0.9	2.1	6.7	6.5	2.3	19.3	7.9	24
16	1.5	1.2	0.5	2.2	0.9	0.6	0.5	5.5	0.5	0.2	0.5	0	S	1.6	1.2	0.8	1.3	12.9	25.9	17.2	12.3	9.7	11.2	13.1	25.9	5.3	24
17	14.9	8	6.4	5.5	7.8	6.4	9.7	11.5	7.5	6.9	1.6	S	1.5	0.7	0.6	0.4	0.6	1.4	13.7	14.1	13.7	7.8	4.1	3.7	14.9	6.5	24
18	3.7	24	14.2	6.6	16	12.6	13.2	21.7	11.1	6.9	S	8	4.3	2	2.1	3.8	6.2	8.7	31.7	14.3	17	27.7	18.2	18.2	31.7	12.7	24
19	23.4	6.8	12.1	4.9	4.5	5.6	5	S	4.6	S	1.3	0.4	0.3	0.3	0.1	0.2	0.3	1.3	2.6	2.7	1.9	1.1	1.1	0.4	23.4	3.7	24
20	0	0	0.3	1.2	1.5	3.9	4.1	3.8	S	6.9	5.4	4.4	4.8	4.3	4.9	4.4	5.3	6.3	7.5	9.5	8.6	10	11.1	9.3	11.1	5.1	24
21	8.3	7.7	20.6	21.6	3.8	3.7	8.4	S	6.1	0.9	0.3	0	0	0	0	0	0	1	15.8	13.1	19.6	42.2	37	23.3	42.2	10.1	24
22	11.9	9.6	6.9	6	6.3	10.5	S	13.8	10.2	16.8	17.9	22.8	20.9	6	0.7	0.5	0.4	0.2	0.1	0.1	0.1	0.9	3.3	5.3	22.8	7.4	24
23	1.1	1.1	1.2	1.6	1.6	S	28.7	19.4	6.1	11.4	1.2	1.3	1.4	1.8	1.9	2.1	7.6	25	14.3	24	49.4	48.1	53.2	44.9	53.2	15.1	24
24	29.3	29	26.8	18.7	S	14.7	S	15.5	11.7	C	Y	Y	C	C	6.4	3.7	17.2	32.2	18.2	18.3	10.8	9.8	11.4	8.1	32.2	16.6	22
25	10.2	5	1.1	S	2	2.7	4.2	4.3	1.5	0.1	0.3	0.3	0.3	0.2	0	0.3	2.5	7.9	23.4	28.4	39.5	48.6	45.6	30.2	48.6	11.2	24
26	23.4	17.5	S	9.2	16.4	20.5	10	22.9	36.8	13	9.9	7.4	3.4	2.1	1.5	1.8	0.7	1.1	1.4	1	0.6	1.9	0.9	0	36.8	8.8	24
27	0	S	1	0.5	0	0	0	0	0.5	0.5	0.1	0.2	0.2	0.2	0.5	0.6	0.1	0.6	2.1	2.8	7.4	9	7.8	14.1	14.1	2.1	24
28	S	25.1	21.9	42.6	56.7	102.2	92.3	54	52.6	38.6	31.9	17	4.9	2.6	3.3	4.7	11.5	25.9	22.3	2.2	1.9	1.4	3.8	S	102.2	28.2	24
29	11.5	12.7	3.8	3.2	4	12.3	13.2	9.1	7.2	3.7	2.7	3.2	3.7	2.4	2	3.3	9.1	16.1	3	20.2	19.7	13.4	S	20.1	20.2	8.7	24
30	13.3	9.8	10.1	8.8	4.6	7.6	13.9	12.2	15.3	9.9	9.6	1.9	1	0.3	1.1	1.8	22.8	27	31.2	13.1	11.1	S	22.6	15.9	31.2	11.5	24
31	23.1	35.8	40.8	44.5	34.8	33.5	36	21.3	11.3	15.1	8.8	3.4	2.2	1.4	2	0.9	0.2	0.3	0.3	0.4	S	2.4	4.9	6.2	44.5	14.3	24
HOURLY MAX	66.4	41.1	44.5	49.7	56.7	102.2	92.3	54.0	78.1	72.2	51.9	32.1	20.9	6.0	6.4	5.3	22.8	32.2	34.8	28.4	49.4	48.6	53.2	68.1			
HOURLY AVG	14.5	11.8	11.3	13.2	12.6	15.8	18.8	17.3	14.3	10.5	7.5	5.1	2.6	1.6	1.5	1.8	4.1	8.3	12.1	11.5	14.3	14.3	14.4	15.0			

STATUS FLAG CODES

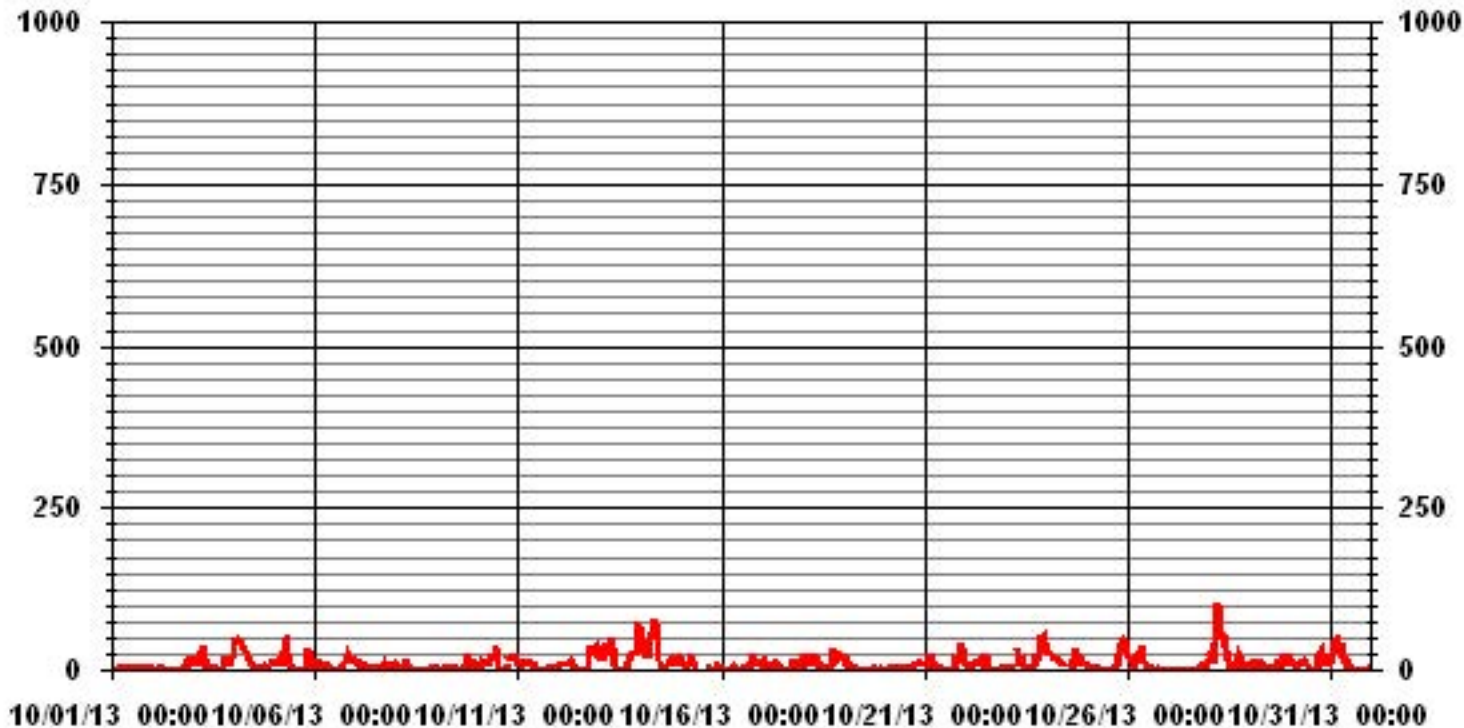
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	672
MAXIMUM 1-HR AVERAGE:	102.2 PPB @ HOUR(S) 5 ON DAY(S) 28
MAXIMUM 24-HR AVERAGE:	29.3 PPB ON DAY(S) 14
IZS CALIBRATION TIME:	34 HRS
MONTHLY CALIBRATION TIME:	10 HRS
STANDARD DEVIATION:	13.31
OPERATIONAL TIME:	742 HRS
AMD OPERATION UPTIME:	99.7 %
MONTHLY AVERAGE:	10.62 PPB

# 01 Hour Averages



— LICA35 POX\_ PPB

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

OCTOBER 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	1.9	1.9	2.4	2.1	S	8.8	2.6	2.7	2.4	2.5	1.8	3.4	3.2	3.4	4.2	2.5	3.2	3.6	3.7	6.7	4.1	3.8	1.8	4.7	8.8	3.4	24	
2	5.9	4.9	1.5	S	6.1	2.5	2.3	1.9	2	1.4	0.7	0.7	0.7	0.6	0.6	0.7	0.6	0.7	2.9	15.3	20.6	19.9	27.2	21.5	27.2	6.1	24	
3	24.2	15	S	21.4	20	36.9	44.9	25	7.6	4.7	3.2	3.3	3.1	3.9	3.1	11.3	1.7	5.6	29.7	76.1	22.7	31.5	7.9	32.4	76.1	18.9	24	
4	54.6	S	68.5	65.4	56.4	41.1	50.9	39.6	26.8	47.3	11.7	10	11.6	6.9	6.3	8.2	9.3	8.9	10.7	11	7.6	25.1	23.1	56.9	68.5	28.6	24	
5	S	29.1	19.5	16.6	40.5	45.8	72.4	70.1	39.8	18.5	4.6	3.8	1.2	0	0.3	0.4	7.9	5.6	7.4	23.4	76	24	10.2	S	76	23.5	23	
6	28.3	11.1	9.6	23	8.2	10.1	6	15.9	15.1	5.2	3.3	3.3	1.9	2	3.1	2.3	3.2	21.5	20.5	41.6	61.7	45	S	21.6	61.7	15.8	24	
7	20.6	16.8	13.5	14.5	11.8	11.6	11.5	12.2	10.3	9.1	10.7	8.1	8.4	6.3	5.3	3.8	5.7	21.7	11.4	17.6	9.1	S	9.9	22.9	22.9	11.9	24	
8	11.3	8.1	4.7	8.2	6.8	8.8	49.6	30.8	10.7	0.6	0.7	0.7	1.7	0.3	0.8	0.4	0.9	1.7	1.7	0.6	S	4.8	2.4	2.6	49.6	6.9	24	
9	5.3	4.6	3.7	4.7	5.4	10.9	8.4	6.9	9.3	3	2.3	3.6	2.3	3.7	4.7	9.8	13.4	14.8	60.2	S	20	21.4	45.6	6.5	60.2	11.8	24	
10	9.7	12	29.3	18.2	15.4	18	31.2	21.9	25.8	30.5	53.8	44.6	9.1	1	1	2.1	5.4	19.1	S	43.3	27.8	26.3	29.1	19.6	53.8	21.5	24	
11	13.8	18.2	9.3	14.2	15.6	17.7	22	17.6	12.1	10.3	9.6	2.7	0.9	4.3	2.5	1.5	1.1	S	7.5	5.5	12.3	7.8	7.2	8.8	22	9.7	24	
12	9.4	13.6	11.4	10.8	12.8	11	14.8	16.5	16	15.4	2.6	0.9	0.5	0.1	0.6	0.4	S	13	110.8	28.4	49.9	45.4	45	40.1	110.8	20.4	24	
13	38.9	28.9	29.3	34.5	60.3	69.1	63.2	67.9	51.7	16.1	7.3	4.2	0.8	1.1	1.4	S	5	50.6	28.9	54.9	49.6	39.6	37.1	96.8	96.8	36.4	24	
14	119.9	51.8	35.3	62.3	33.2	33.5	91.8	71.3	100.9	97	60.5	45	5.3	4	S	7.4	12.1	64	109.7	46.5	13	18.5	20.4	22.2	119.9	48.9	24	
15	25.3	20.8	10.6	8.1	14.5	32.8	23.3	16.6	C	C	C	C	C	C	C	C	4.8	4.4	2.4	5	14.5	10.4	4.4	32.8	12.5	24		
16	2.3	2.3	1.3	5.5	3.2	1.3	1.1	8.8	4.7	1.6	2.6	0.5	S	2.8	1.9	1.6	3.6	29.5	39	38.7	24.8	15.4	14.4	16.6	39	9.7	24	
17	18.3	16.8	11	7.1	11.6	9.2	13.8	17.4	10.2	12.4	2.8	S	2.8	1.4	1.4	0.9	1.2	6.5	44.2	20.1	18.5	13.7	5.7	6	44.2	11.0	24	
18	5.6	47.3	25.3	10.6	34.1	18.1	20.2	32.2	15.6	9.4	S	11.3	6.7	3.4	3.2	7.1	15.2	19.2	57.3	42	38.8	38.5	27.7	37.4	57.3	22.9	24	
19	51.2	9.9	26.2	8.8	7.7	13.6	6.3	S	8.4	S	2.6	0.9	0.4	0.4	0.3	0.4	1.1	2.3	3.5	3.4	2.5	2	1.7	1.1	51.2	7.0	24	
20	0.6	1.9	1.3	3.2	4.5	8.8	8	8.3	S	10.2	8.3	5.9	6.3	5.9	5.9	5.2	8	8.7	10.5	19.8	10.5	19.4	14.6	11.6	19.8	8.1	24	
21	10	13.3	28.7	29.3	17.1	5.9	14.8	S	14.3	1.6	1.4	1.5	0.3	0.3	1.1	1.1	0.3	14.3	24.3	20.6	32.9	94.5	79.8	56.4	94.5	20.2	24	
22	15.2	13.2	9	7.5	8	18.4	S	17.5	14.7	61.2	25.7	28.1	27.5	17.4	1.6	1.7	1	1	0.6	0.6	0.8	1.9	6.1	13.3	61.2	12.7	24	
23	3.7	1.6	1.8	6.2	4.5	S	39.9	29.1	15.1	23.7	3.1	2.7	3	3.8	3	3.7	18.4	67.4	22.2	50.9	64.9	80.7	79.6	68.9	80.7	26.0	24	
24	47.3	37.6	33.4	21.5	S	25.1	S	S	21.6	C	Y	Y	C	C	11.6	6.9	54	80.3	24.3	21.5	24.4	42	17.3	11.3	80.3	30.0	22	
25	11.7	9.6	4	S	4.1	8.8	8.5	6.1	7.9	0.6	0.7	1	1.2	1.1	0.6	1	4.4	39.9	64.6	68.8	98.5	96.8	59.3	37.4	98.5	23.3	24	
26	25.9	21.7	S	12.6	37.9	33.4	26.1	45.5	55.9	22.5	12.6	11.5	4.1	3.6	2.4	3.2	1.5	1.8	2.4	1.8	1.3	2.7	1.8	0.3	55.9	14.5	24	
27	0.1	S	2.1	1.3	0.6	0.5	0.5	0.8	1.2	1.1	0.9	0.6	0.8	0.9	1.7	1.8	1	1.5	2.8	3.9	48.7	15	17.9	34	48.7	6.1	24	
28	S	63.6	29.5	55.7	66	121.8	154.8	65	66.5	51.1	35.9	26.7	8.2	6.1	5.5	49.1	27.1	62.7	72.6	4.7	2.8	2.1	9.9	S	154.8	44.9	24	
29	20	19.2	5.2	5.3	8.4	22.7	21.1	27.3	16.7	5.1	3.5	4.4	8.7	4.7	5.2	6.8	15.6	68.2	11.3	66.8	31.3	29.3	S	34.9	68.2	19.2	24	
30	18.5	11.8	14	12.8	6.3	16.8	19.5	15.5	22.1	13.3	16.2	3	3.1	1.1	4.1	6	33.8	36	49.7	36	15.4	S	29.4	19.4	49.7	17.6	24	
31	37.1	46.2	48.6	53.3	38.1	45.5	46.5	42.8	17.8	19.7	12.8	6.9	4.3	2.9	4.9	2.1	0.7	0.9	0.8	0.9	S	4.1	12.4	13.2	53.3	20.1	24	
HOURLY MAX	119.9	63.6	68.5	65.4	66.0	121.8	154.8	71.3	100.9	97.0	60.5	45.0	27.5	17.4	11.6	49.1	54.0	80.3	110.8	76.1	98.5	96.8	79.8	96.8				
HOURLY AVG	22.0	19.1	16.9	18.8	19.3	23.6	30.2	26.2	21.5	17.7	10.8	8.5	4.6	3.2	3.0	5.2	8.7	22.5	27.9	25.8	27.4	27.1	22.6	24.9				

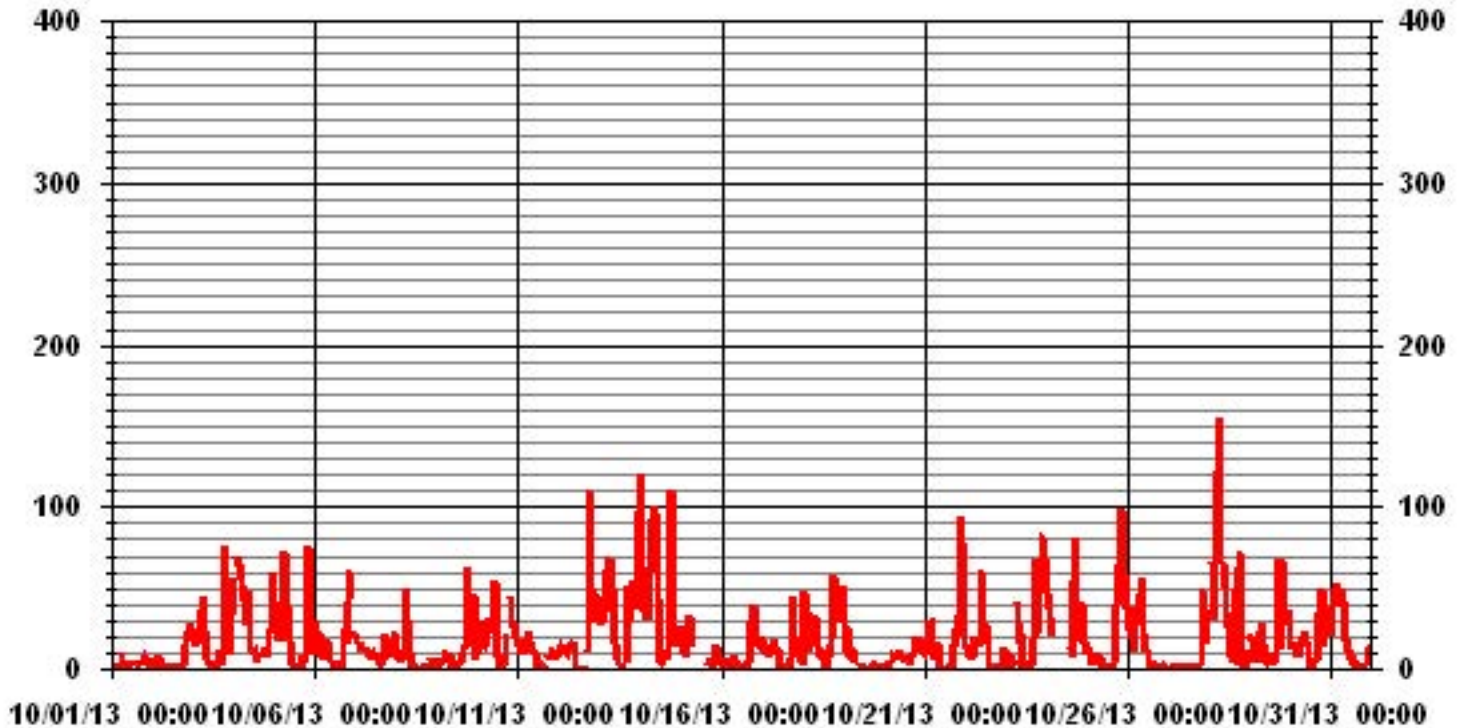
**STATUS FLAG CODES**

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:	695
MAXIMUM INSTANTANEOUS VALUE:	154.8 PPB @ HOUR(S) 6 ON DAY(S) 28
I/ZS CALIBRATION TIME:	35 HRS
MONTHLY CALIBRATION TIME:	11 HRS
STANDARD DEVIATION:	21.70
OPERATIONAL TIME:	741 HRS

# 01 Hour Averages



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

October 2013

Distribution By % Of Samples

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

Wind Parameter : WDR  
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	1.28	2.00	1.57	.85	3.86	6.59	3.58	1.28	2.57	3.72	2.14	11.31	18.76	21.63	12.60	4.15	97.99
< 110.0	.00	.14	.00	.14	.14	.28	.28	.14	.00	.14	.00	.14	.28	.28	.00	.00	2.00
< 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	1.28	2.14	1.57	1.00	4.01	6.87	3.86	1.43	2.57	3.86	2.14	11.46	19.05	21.91	12.60	4.15	

Calm : .00 %

Total # Operational Hours : 698

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	9	14	11	6	27	46	25	9	18	26	15	79	131	151	88	29	684
< 110.0		1		1	1	2	2	1		1		1	2	2			14
< 210.0																	
>= 210.0																	
Totals	9	15	11	7	28	48	27	10	18	27	15	80	133	153	88	29	

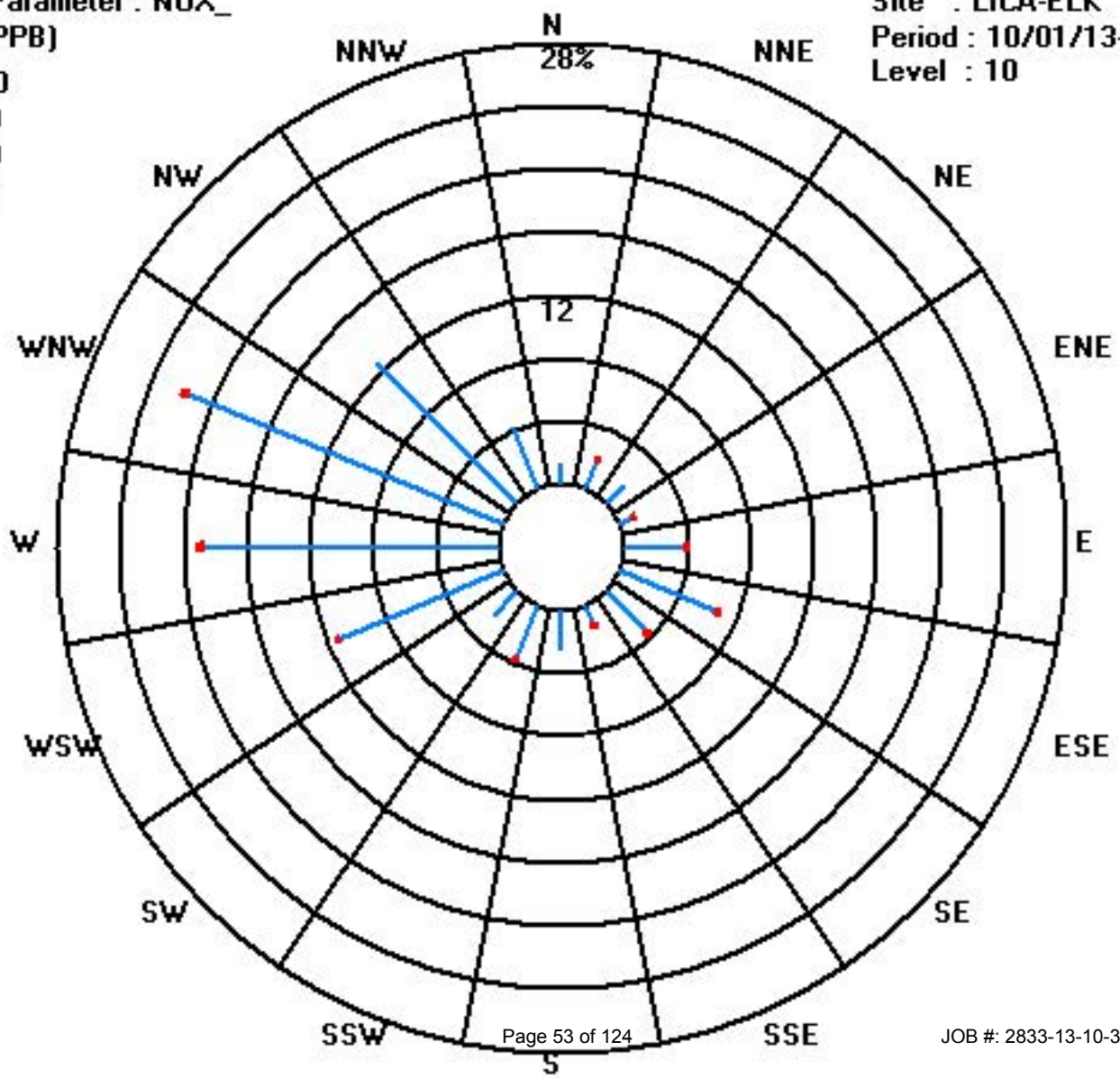
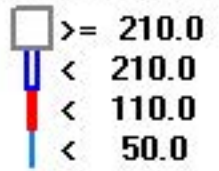
Calm : .00 %

Total # Operational Hours : 698

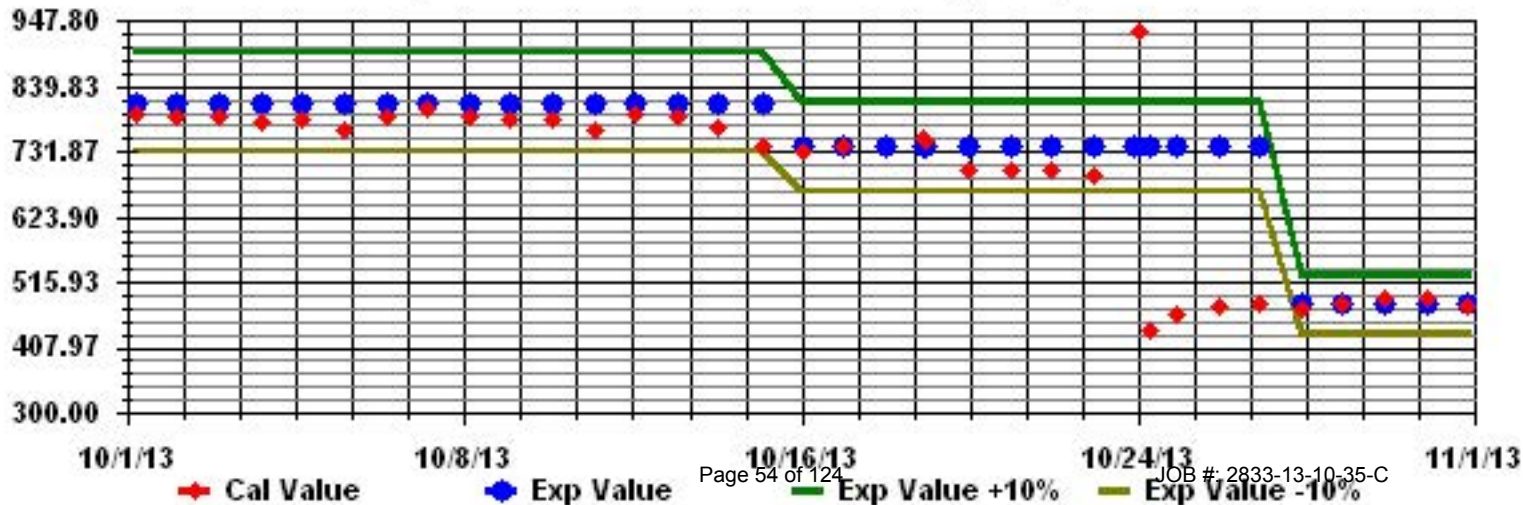
Class Limits (PPB)

Period : 10/01/13-10/31/13

Level : 10



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

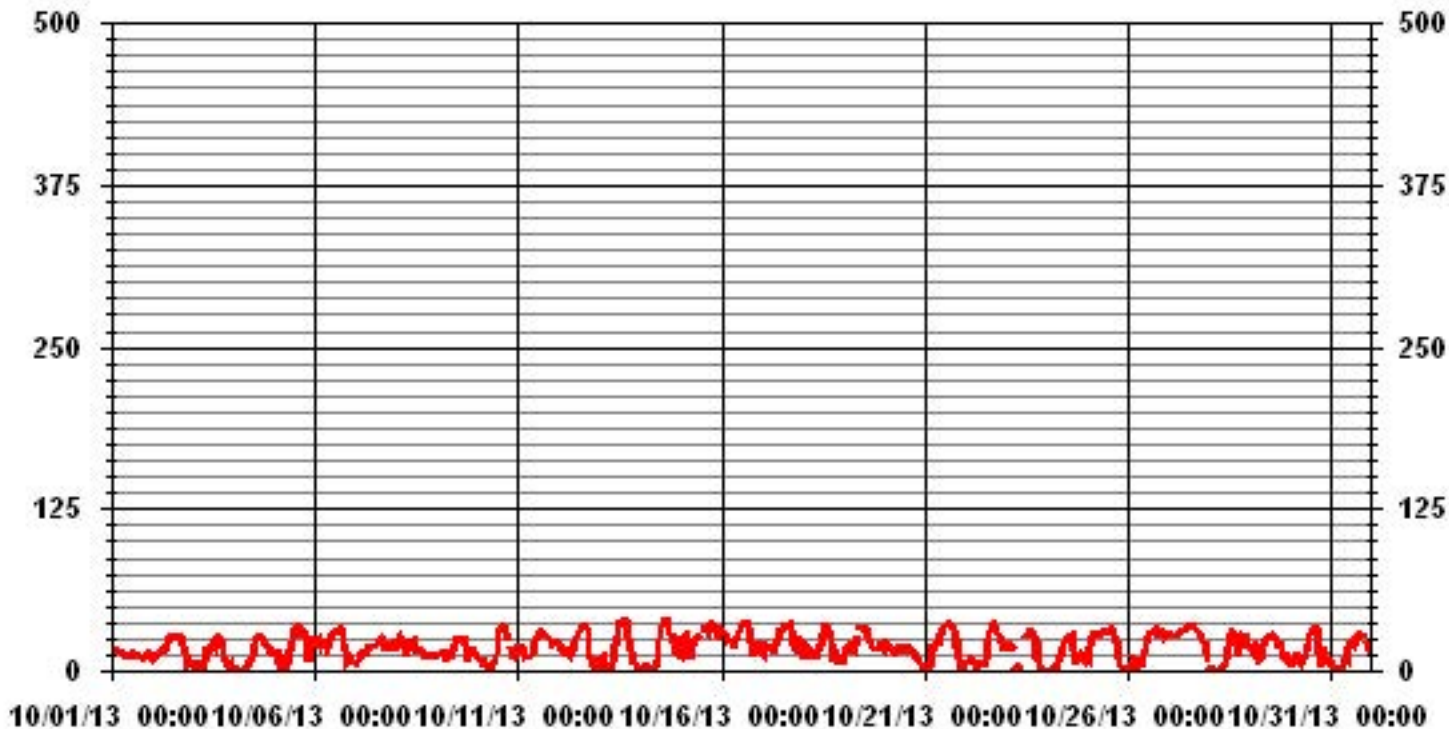


# Ozone





### 01 Hour Averages



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

OCTOBER 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	16	16	17	18	S	16	15	14	13	12	12	13	14	14	14	13	13	12	13	14	14	14	14	14	18	14.1	24	
2	12	12	13	S	15	16	15	18	22	25	26	28	28	27	28	28	27	27	24	23	10	11	10	9	28	19.7	24	
3	8	5	S	S	16	14	6	3	17	17	17	19	23	24	24	26	28	27	24	17	13	13	7	7	4	28	15.6	24
4	1	S	1	1	1	1	1	4	6	9	9	19	25	29	29	30	31	30	25	23	23	25	20	19	31	15.7	24	
5	S	20	11	12	9	4	1	4	11	21	23	29	34	35	35	35	34	34	31	28	24	25	26	S	35	22.1	24	
6	26	29	26	26	27	25	26	24	24	27	29	31	31	31	33	35	34	31	26	13	20	13	S	11	35	26.0	24	
7	10	10	13	15	16	17	17	20	21	22	21	21	21	24	25	26	24	23	24	25	22	S	23	24	26	20.2	24	
8	29	26	27	26	24	23	20	20	25	25	27	25	18	17	17	17	17	14	12	11	S	12	12	12	29	19.8	24	
9	12	13	14	14	15	13	13	14	15	18	22	24	27	27	26	26	27	26	20	S	18	18	15	16	27	18.8	24	
10	14	13	12	11	8	7	5	7	5	7	11	25	32	32	34	36	36	33	S	22	19	18	15	17	36	18.2	24	
11	20	21	21	18	13	15	16	16	17	18	25	28	31	31	31	31	30	S	27	26	25	24	25	25	31	23.2	24	
12	22	21	20	18	16	17	18	17	18	26	28	29	33	34	36	36	S	35	25	20	11	12	6	10	36	22.1	24	
13	8	16	17	16	4	7	3	3	15	25	28	37	39	39	39	S	40	35	23	22	13	12	3	1	40	19.3	24	
14	1	4	5	5	12	3	2	2	3	6	11	34	36	38	S	41	40	37	35	34	35	26	17	17	41	19.3	24	
15	17	30	30	30	30	18	17	24	26	26	30	Y	S	S	33	33	32	37	38	38	36	35	32	34	38	30.0	23	
16	33	31	31	29	28	26	26	23	26	29	34	35	S	38	38	38	38	33	21	25	27	25	21	20	38	29.3	24	
17	20	23	22	23	22	23	20	17	24	30	31	S	34	36	36	36	36	36	32	23	22	26	27	27	36	27.2	24	
18	26	25	22	24	20	16	16	18	18	20	S	25	32	37	36	34	32	29	13	22	22	16	22	20	37	23.7	24	
19	20	20	21	21	23	23	22	23	26	S	34	34	33	33	33	28	25	22	19	18	20	21	22	20	34	24.4	24	
20	25	24	23	23	22	21	18	19	S	20	20	18	18	18	18	17	16	17	15	13	10	7	5	25	17.6	24		
21	4	3	3	10	22	22	21	S	27	31	34	35	37	37	38	37	37	35	26	25	20	7	3	9	38	22.7	24	
22	9	8	11	11	11	12	S	5	7	7	7	6	12	33	35	37	37	39	35	31	29	27	24	22	39	19.8	24	
23	22	21	22	22	21	S	4	10	C	C	C	C	C	31	32	32	33	26	26	19	1	1	2	1	33	18.1	24	
24	1	1	1	2	S	5	8	10	15	19	24	27	27	28	30	30	27	14	16	17	16	14	12	14	30	15.6	24	
25	12	26	29	S	30	30	31	30	32	32	31	30	31	32	33	33	32	31	23	16	10	1	1	1	33	24.2	24	
26	2	6	S	12	10	8	12	11	11	17	19	26	29	32	33	34	34	31	29	32	33	28	31	30	34	22.2	24	
27	30	S	28	28	28	29	30	30	31	32	34	35	36	35	35	35	34	33	30	29	30	27	25	16	36	30.4	24	
28	S	6	6	4	1	5	1	2	5	9	12	30	31	33	34	33	31	23	25	28	27	27	25	S	34	18.1	24	
29	21	21	22	22	21	14	17	18	24	25	26	28	29	29	29	29	24	24	25	19	16	16	S	12	29	22.2	24	
30	12	10	9	13	14	13	9	13	13	19	26	30	34	35	35	35	30	15	8	23	24	S	13	13	35	19.4	24	
31	13	2	1	1	1	1	5	14	16	16	24	24	25	25	24	26	30	30	31	30	S	24	23	20	31	17.7	24	
HOURLY MAX	33	31	31	30	30	30	31	30	32	32	34	37	39	39	39	41	40	39	38	38	36	35	32	34				
HOURLY AVG	15.4	16.0	16.5	16.2	16.5	14.5	13.7	14.9	17.7	20.3	23.3	26.8	28.8	30.5	30.8	31.0	30.3	27.9	23.8	22.8	20.4	18.0	16.7	15.3				

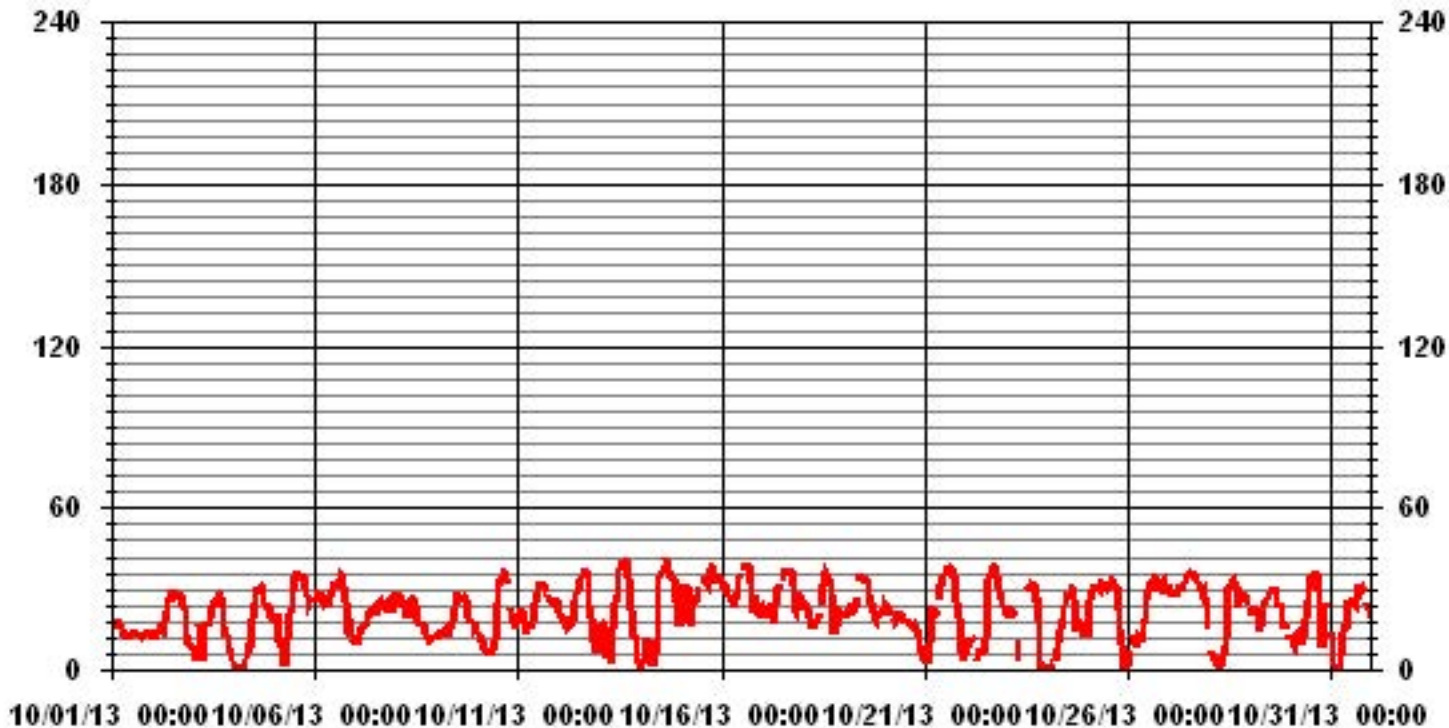
**STATUS FLAG CODES**

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:	705					
MAXIMUM INSTANTANEOUS VALUE:	41	PPB	@ HOUR(S)	15	ON DAY(S)	14
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	9.85					

### 01 Hour Averages



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

October 2013

Distribution By % Of Samples

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

Wind Parameter : WDR  
Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50	1.27	2.12	1.55	.99	3.96	6.94	3.96	1.55	2.97	3.82	2.12	11.61	18.98	21.67	12.32	4.10	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.27	2.12	1.55	.99	3.96	6.94	3.96	1.55	2.97	3.82	2.12	11.61	18.98	21.67	12.32	4.10	

Calm : .00 %

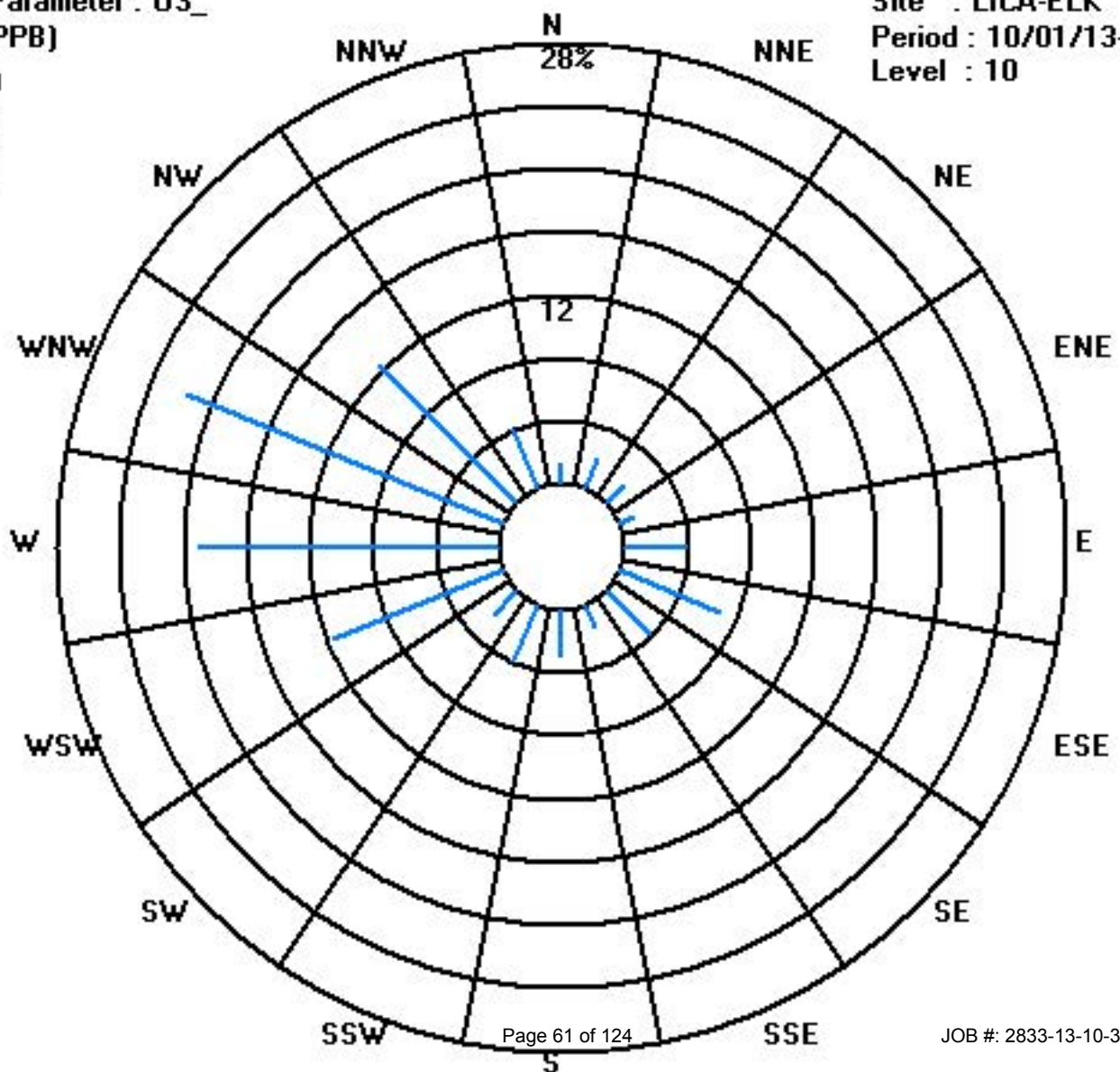
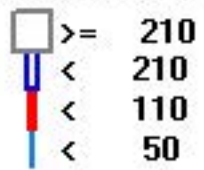
Total # Operational Hours : 706

Distribution By Samples

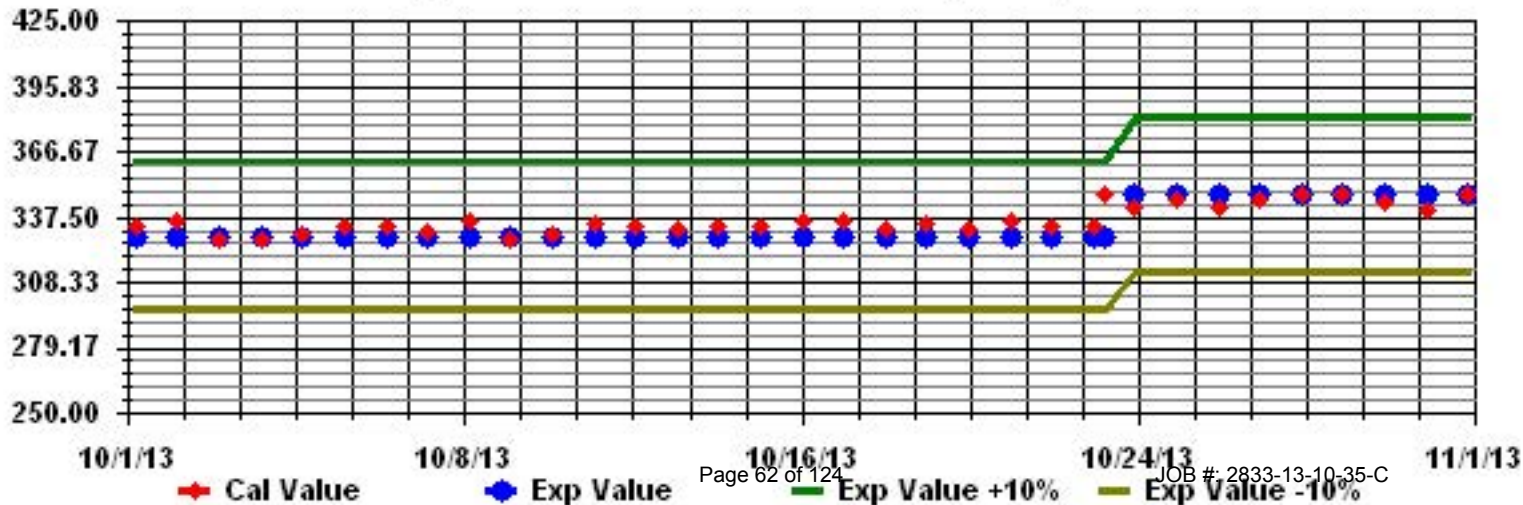
Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50	9	15	11	7	28	49	28	11	21	27	15	82	134	153	87	29	706
< 110																	
< 210																	
>= 210																	
Totals	9	15	11	7	28	49	28	11	21	27	15	82	134	153	87	29	

Calm : .00 %

Total # Operational Hours : 706



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



# Total Hydrocarbons (55i)



## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

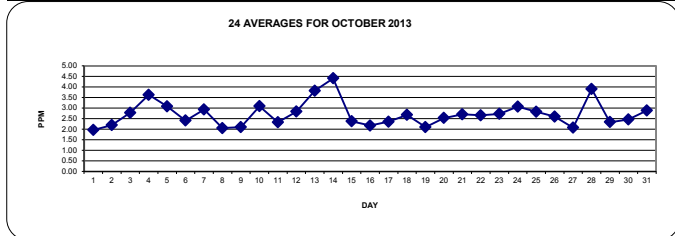
OCTOBER 2013

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	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1		1.9	1.9	1.9	1.9	S	2	1.9	1.9	1.9	2	1.9	2	2	2	2	1.9	1.9	2	2.2	2	1.9	2	2.1	2.2	1.97	24	
2		2.1	2	1.9	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.4	3.3	3.5	3.4	3.2	3.5	2.19	24	
3		4.4	2.9	S	2.7	3.2	3	2.8	2.7	2.5	2.2	2	2	2	1.9	1.9	1.9	2	2.6	3	3.4	6.2	2.9	3.7	6.2	2.78	24	
4		5.9	S	6.2	6.9	7.1	6.7	6.2	5.4	4.7	3.4	2.8	2.6	2	1.9	1.8	1.8	1.9	1.9	2.1	2.1	2	3	2.5	2.6	7.1	3.63	24
5		S	2.9	4.1	3.9	4.4	4	5.6	5.6	4.2	2.7	2	2	1.9	1.9	1.9	1.9	2.1	1.9	2.2	2.5	4	3.6	2.5	S	5.6	3.08	24
6		2.5	2.2	2.3	2.7	2.2	2.1	2.1	2.3	2.2	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.8	3.5	3	3.5	S	4.4	4.4	2.41	24
7		4.9	5.4	4.6	4.7	3.8	3.5	3.3	2.5	2.3	2.2	2.3	2.3	2.3	2.4	2.2	2.1	2.2	2.5	2.4	2.4	2.2	S	2.3	2.6	5.4	2.93	24
8		2.4	2.3	2.2	2.7	2.4	2.1	2.4	2.1	2	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	S	1.9	1.9	1.9	2.7	2.05	24
9		2	1.9	1.9	2	2	2	2	2	2.1	1.9	1.9	1.9	1.9	1.9	1.9	2	2.2	2.1	2.9	S	2.3	2.5	2.5	2.4	2.9	2.10	24
10		3	2.9	3.6	3.9	4.1	3.6	4	3.7	3.9	3.9	4.7	3.7	2	1.9	1.9	1.9	2	2.2	S	2.6	2.8	2.8	2.9	3	4.7	3.09	24
11		2.9	2.6	2.7	3.2	3.5	2.7	S	2.5	2.1	2.2	S	1.9	1.9	1.9	1.9	1.9	1.9	S	2.1	2	2.2	2.2	2.3	2.4	3.5	2.33	24
12		2.4	2.4	2.7	2.9	2.9	2.6	2.4	2.9	2.5	2	1.9	1.9	1.9	1.9	1.9	S	1.9	3.3	3.5	4.9	4.4	5.5	4.6	5.5	2.83	24	
13		5.2	4.3	3.9	3.6	4.1	5.1	5.4	6.1	5.1	2.7	2.1	1.9	1.9	1.9	S	1.9	2.3	2.7	2.8	5	4.8	5.6	7.6	7.6	3.82	24	
14		8.1	8	4.5	5.4	3.6	4.5	6.2	5.5	7.7	7.1	7.2	3.4	2.2	2	S	1.9	2	2.2	3.5	2.7	2.5	3.3	3.8	4.1	8.1	4.41	24
15		3.9	3.2	2.4	2.4	2.5	3.5	3.5	2.6	2.2	2	C	C	C	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	2.2	2.3	2	3.9	2.37	24
16		1.9	1.9	1.9	2	2	1.9	1.9	2.1	1.9	1.9	1.9	1.8	S	1.8	1.8	1.8	1.9	2.3	3.4	3	3	2.6	2.6	2.7	3.4	2.17	24
17		3.2	2.6	2.7	2.4	2.7	2.5	2.3	2.4	2	2.1	1.9	S	3.4	2.1	1.9	1.8	1.8	2	2.9	2.4	2.5	2.3	2.1	2.1	3.4	2.35	24
18		2	4.3	2.8	2.1	2.8	2.6	3.2	3	3.2	2.5	S	2	1.9	1.9	1.9	2	2.3	2.2	3	2.7	2.9	3.7	3.2	3.4	4.3	2.68	24
19		3.9	2.5	3.1	2.2	2.2	2.2	2	2.1	2.1	S	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.9	2.10	24
20		1.9	2	2	2	2.1	2.2	2.3	2.3	S	2.3	2.3	2.3	2.5	2.5	2.4	2.4	2.7	2.8	2.8	3.3	3.5	3.7	3.6	3.7	2.53	24	
21		3.1	3.1	4.4	3.9	2.1	2.1	2.1	S	2	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	3.1	2.5	2.9	4.4	5.2	4.7	5.2	2.70	24	
22		3.7	3.8	3.3	3.1	3	3.1	S	3.4	3	3.2	3.3	3.9	3.1	2.1	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.1	2.5	3.9	2.66	24	
23		2	1.9	1.9	1.9	1.9	S	3.4	3.4	2.4	2.4	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.1	2.5	2.6	3.5	4.7	6.8	6.5	6.8	2.72	24
24		6	5	5.1	4.6	S	3.9	4	3.7	3.7	2.6	2.1	2	2	2	1.9	1.8	2.1	2.8	2.5	3.4	2.5	2.2	2.4	2.2	6.0	3.07	24
25		2.4	2.1	1.9	S	1.9	1.8	2	2.1	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.3	3.1	3.7	5	7.3	7.1	6	7.3	2.83	24
26		5.9	4.7	S	3	3.7	3.9	3.6	3	4.2	2.4	2.1	2	1.8	1.8	1.8	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	5.9	2.60	24
27		1.7	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.1	2.3	3.1	2.5	3.4	3.4	2.07	24	
28		S	4.5	4.4	4.9	6.1	8.3	7	5.8	5.6	5.5	5.1	3.8	2.2	1.9	2	1.9	2.4	3.6	3.3	2.1	1.8	1.8	2	S	8.3	3.91	24
29		2.3	2.5	2.3	2.2	2.3	4	2.7	2.5	2.3	2	1.9	1.9	1.9	1.9	1.9	2	2.3	2	2.9	2.8	2.5	S	2.7	4.0	2.33	24	
30		2.7	2.9	3.2	2.7	2	2.3	2.3	2.1	2.1	2.1	2.2	1.9	1.8	1.8	1.8	1.9	2.6	2.9	2.9	2.4	2.5	S	4.1	3.4	4.1	2.46	24
31		3.5	5.4	5	5.5	5.6	4.7	4.8	2.9	2.3	2.4	2.1	1.9	1.8	1.7	1.8	1.7	1.7	1.7	1.7	1.7	S	1.9	2.3	2.2	5.6	2.88	24
HOURLY MAX		8.1	8.0	6.2	6.9	7.1	8.3	7.0	6.1	7.7	7.1	7.2	3.9	3.4	2.5	2.5	2.4	2.6	3.6	3.5	3.7	5.0	7.3	7.1	7.6			
HOURLY AVG		3.4	3.2	3.1	3.2	3.1	3.2	3.3	3.1	2.9	2.6	2.4	2.2	2.0	1.9	1.9	1.9	2.0	2.2	2.5	2.5	2.8	3.2	3.2	3.3			

**STATUS FLAG CODES**

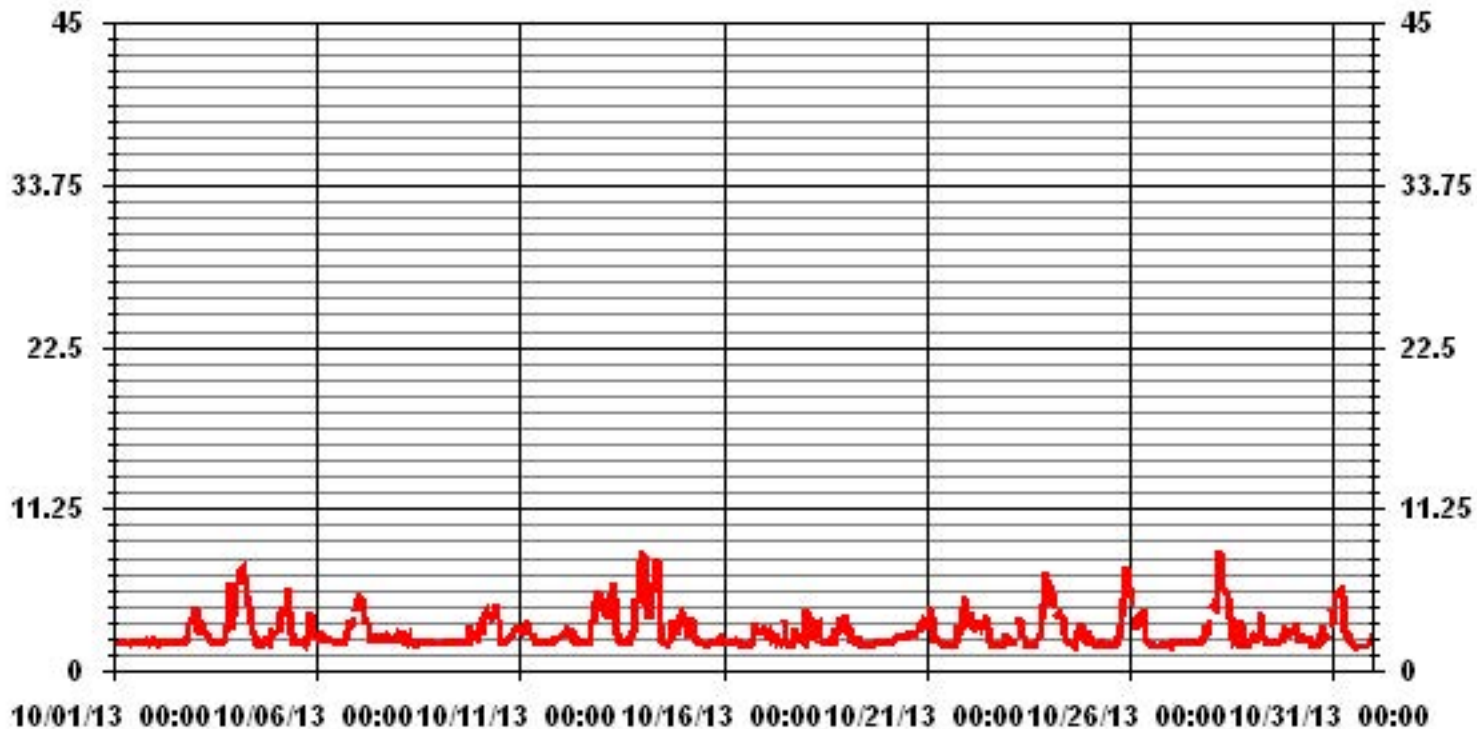
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	707					
MAXIMUM 1-HR AVERAGE:	8.3	PPM	@ HOUR(S)	5	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	4.41	PPM			ON DAY(S)	14
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	3	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	1.20		MONTHLY AVERAGE:	2.71	PPM	

# 01 Hour Averages



— LICA35 THC55 PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

OCTOBER 2013

TOTAL HYDROCARBONS (THC) MAX instantaneous maximum in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	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		2.3	2.2	2.1	2.4	S	2.1	2.1	2.1	2.1	2.1	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.4	2.1	2.3	2.6	2.6	2.6	2.20	24
2		2.4	2.1	2.0	S	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.1	1.9	2.0	2.1	1.9	2.2	2.9	3.9	5.0	4.6	5.0	5.0	2.50	24	
3		5.6	3.4	S	3.1	4.2	3.5	3.0	3.0	2.9	2.4	2.4	2.0	2.1	2.0	1.9	1.9	2.2	2.2	4.4	4.8	6.0	11.2	3.4	4.7	11.2	3.57	24
4		8.1	S	8.3	8.5	8.3	7.8	7.9	6.4	5.5	4.3	3.4	3.3	2.7	2.1	2.0	2.4	2.4	2.1	2.5	2.6	2.3	5.3	3.4	4.1	8.5	4.59	24
5		S	7.0	8.7	8.1	6.3	6.4	6.8	7.3	4.9	3.2	2.2	2.2	2.1	2.0	2.1	2.0	2.3	2.1	3.4	3.1	5.8	4.8	3.0	S	8.7	4.35	24
6		3.4	2.5	3.0	4.3	2.8	2.6	2.6	2.7	2.7	2.3	2.2	2.1	2.0	2.0	1.9	1.9	2.0	3.1	3.8	4.2	4.3	6.5	S	7.2	7.2	3.14	24
7		8.8	7.5	5.8	7.2	6.0	4.5	5.1	2.9	2.6	2.4	2.5	2.5	2.7	2.6	2.5	2.3	2.9	2.9	3.0	3.0	2.5	S	2.6	3.8	8.8	3.86	24
8		3.2	3.0	2.6	4.4	3.0	2.4	2.9	2.5	2.4	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	S	2.0	2.0	2.2	4.4	2.38	24
9		2.3	2.1	2.2	2.2	2.4	2.3	2.2	2.4	2.2	2.1	2.1	2.0	1.9	2.1	2.4	2.4	2.8	2.4	5.5	S	2.5	3.2	2.9	2.8	5.5	2.50	24
10		5.2	3.9	5.7	5.0	6.9	4.9	4.4	4.8	4.5	5.1	5.7	4.9	2.5	2.0	2.1	2.1	2.3	2.7	S	3.2	3.4	3.2	3.2	3.3	6.9	3.94	24
11		3.3	3.0	3.1	3.5	4.0	3.5	S	S	2.3	2.5	S	S	2.0	2.0	1.9	2.0	2.0	S	2.3	2.3	2.5	2.5	2.6	2.6	4.0	2.62	24
12		2.6	2.8	3.0	3.4	3.4	3.2	2.6	3.2	3.2	2.8	2.1	2.0	1.9	1.9	1.9	S	2.3	7.0	4.8	7.8	5.6	6.9	5.9	7.8	3.58	24	
13		6.2	5.9	4.9	4.1	5.7	6.9	7.2	11.8	7.6	3.3	2.3	2.1	2.0	2.0	2.0	S	2.2	3.8	3.9	3.3	8.3	7.0	6.6	9.3	11.8	5.14	24
14		12.7	11.9	5.8	6.7	5.0	6.4	8.9	8.1	10.8	8.1	8.3	6.8	2.4	2.2	S	2.0	2.2	4.0	12.4	8.1	3.7	3.7	4.1	5.8	12.7	6.53	24
15		4.8	11.7	2.9	2.6	3.1	4.6	5.3	3.2	2.4	2.2	2.2	C	C	C	C	2.0	2.1	2.0	2.1	2.1	2.0	2.8	2.6	2.2	11.7	3.23	24
16		2.0	2.1	2.0	2.1	2.1	2.1	2.0	2.3	2.0	1.9	1.9	1.9	S	1.9	1.9	1.9	2.1	4.2	5.9	3.5	3.9	3.0	2.7	3.0	5.9	2.55	24
17		3.9	3.0	3.8	2.8	3.1	3.1	2.6	3.0	2.2	2.6	2.0	S	4.9	3.8	1.9	1.9	1.9	2.4	5.6	2.5	2.7	2.7	2.6	2.8	5.6	2.94	24
18		2.5	7.0	4.2	2.4	4.2	3.5	3.6	3.9	4.2	2.9	S	2.2	2.2	2.0	2.0	2.5	3.1	3.0	3.9	4.2	3.6	5.9	3.9	5.2	7.0	3.56	24
19		6.5	3.0	6.5	2.7	2.6	3.0	2.3	2.4	3.8	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.0	2.0	2.0	2.0	2.0	6.5	2.61	24
20		2.1	2.6	2.6	2.6	2.9	2.6	3.2	2.9	S	3.5	2.5	2.6	2.5	2.9	2.8	2.7	2.7	3.5	3.7	3.3	4.3	4.6	4.8	5.7	5.7	3.20	24
21		3.8	3.7	6.4	4.5	3.2	2.5	2.4	S	2.6	2.1	1.9	1.9	1.9	1.9	3.6	2.1	2.0	2.1	6.3	3.1	3.5	9.1	7.2	6.2	9.1	3.65	24
22		4.8	5.9	5.8	4.8	4.4	4.1	S	4.7	4.5	3.9	3.8	4.8	3.8	2.9	2.0	1.8	1.9	1.9	1.8	1.9	1.9	2.3	2.4	3.4	5.9	3.46	24
23		2.2	2.0	2.1	2.1	2.5	S	4.0	4.2	3.2	3.2	2.1	1.9	2.0	1.9	2.0	2.0	2.1	2.6	3.6	3.2	4.0	7.9	11.3	9.7	11.3	3.56	24
24		7.7	5.9	6.2	6.7	S	4.7	4.9	4.2	4.4	3.2	2.5	2.3	2.4	2.3	2.4	1.9	2.8	4.1	3.2	4.5	3.5	2.4	2.8	2.5	7.7	3.80	24
25		2.7	2.4	2.0	S	2.0	2.0	2.8	2.6	2.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	4.9	7.3	5.7	8.7	14.6	8.9	8.7	14.6	4.06	24
26		11.5	8.0	S	3.9	7.1	7.1	7.2	4.6	6.0	3.0	2.4	2.4	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.9	11.5	3.72	24
27		1.8	S	2.0	2.0	1.9	1.9	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.0	2.2	2.1	2.2	2.3	2.4	4.1	5.4	3.0	4.5	5.4	2.45	24
28		S	5.1	5.7	6.4	7.2	10.6	8.7	6.5	6.8	6.1	5.8	4.8	2.6	2.2	2.4	2.4	3.5	5.6	4.9	2.6	1.9	2.0	2.3	S	10.6	4.82	24
29		2.5	3.1	2.5	2.4	3.1	10.4	3.1	3.0	3.1	2.2	2.0	2.1	2.1	2.1	2.1	2.0	2.2	3.5	2.8	3.9	3.6	3.1	S	4.1	10.4	3.10	24
30		3.5	4.5	3.8	3.4	2.3	3.6	3.0	2.3	2.4	2.5	2.7	1.9	1.9	1.9	2.0	2.4	3.7	3.4	3.5	3.3	3.6	S	5.4	4.0	5.4	3.09	24
31		6.1	6.8	6.9	6.3	6.9	5.8	5.8	5.0	2.8	3.0	2.5	2.1	2.0	2.0	2.6	1.9	1.8	1.8	1.8	1.8	S	2.1	2.9	2.7	6.9	3.62	24
HOURLY MAX		12.7	11.9	8.7	8.5	8.3	10.6	8.9	11.8	10.8	8.1	8.3	6.8	4.9	3.8	3.6	2.7	3.7	5.6	12.4	8.1	8.7	14.6	11.3	9.7			
HOURLY AVG		4.6	4.6	4.2	4.2	4.1	4.3	4.2	4.0	3.7	3.0	2.7	2.6	2.3	2.2	2.2	2.1	2.3	2.8	3.9	3.3	3.8	4.6	3.9	4.4			

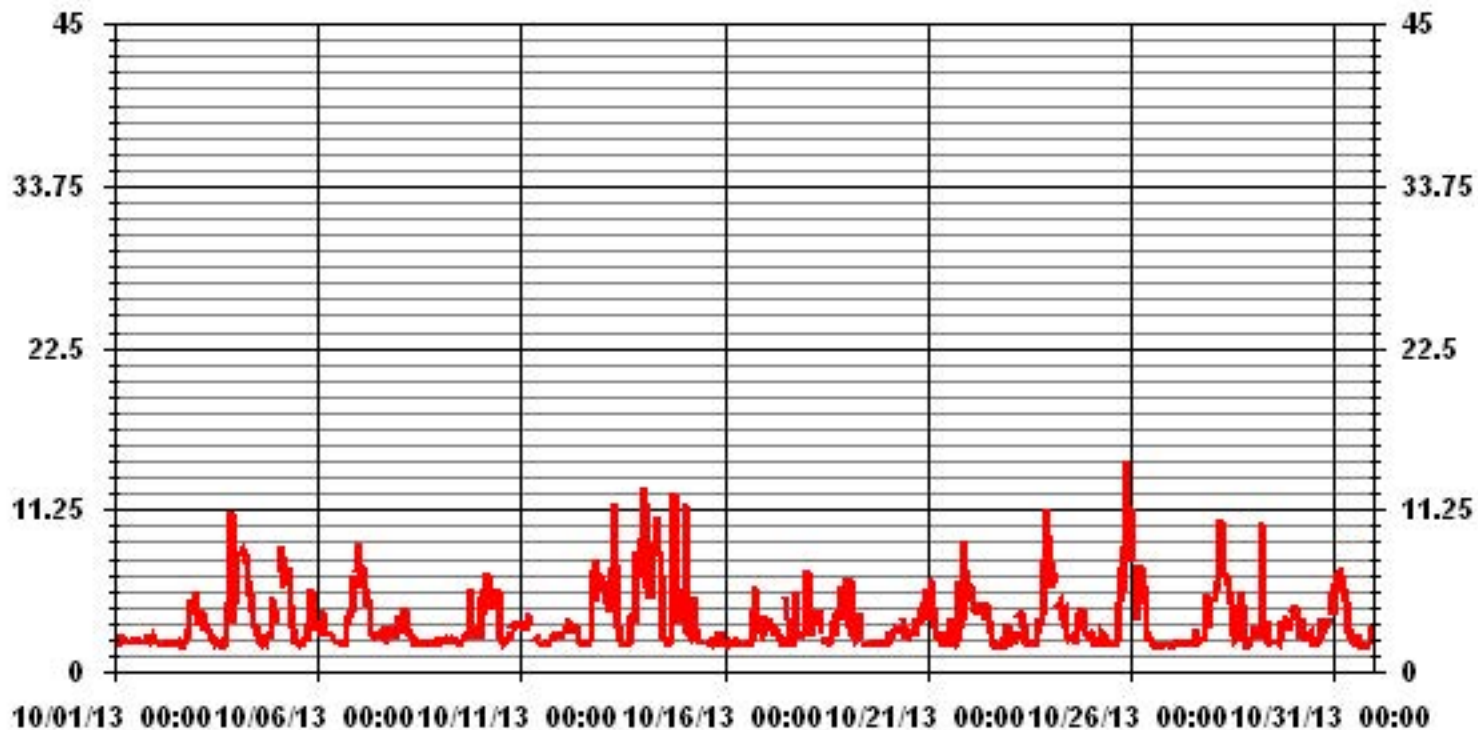
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	704					
MAXIMUM INSTANTANEOUS VALUE:	14.6	PPM	@ HOUR(S)	21	ON DAY(S)	25
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	2.03					

### 01 Hour Averages



— LICA35 THC55MAX PPM

LICA35  
 THC55 / WDR Joint Frequency Distribution (Percent)

October 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	
< 3.0	.84	1.83	1.27	.42	.42	2.68	2.26	1.27	2.68	3.39	1.41	7.77	14.56	17.39	11.03	4.10	73.40
< 10.0	.42	.28	.28	.56	3.53	4.24	1.69	.28	.28	.42	.70	3.67	4.38	4.38	1.41	.00	26.59
< 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	1.27	2.12	1.55	.99	3.96	6.93	3.96	1.55	2.97	3.81	2.12	11.45	18.95	21.78	12.44	4.10	

Calm : .00 %

Total # Operational Hours : 707

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	6	13	9	3	3	19	16	9	19	24	10	55	103	123	78	29	519
< 10.0	3	2	2	4	25	30	12	2	2	3	5	26	31	31	10		188
< 50.0																	
>= 50.0																	
Totals	9	15	11	7	28	49	28	11	21	27	15	81	134	154	88	29	

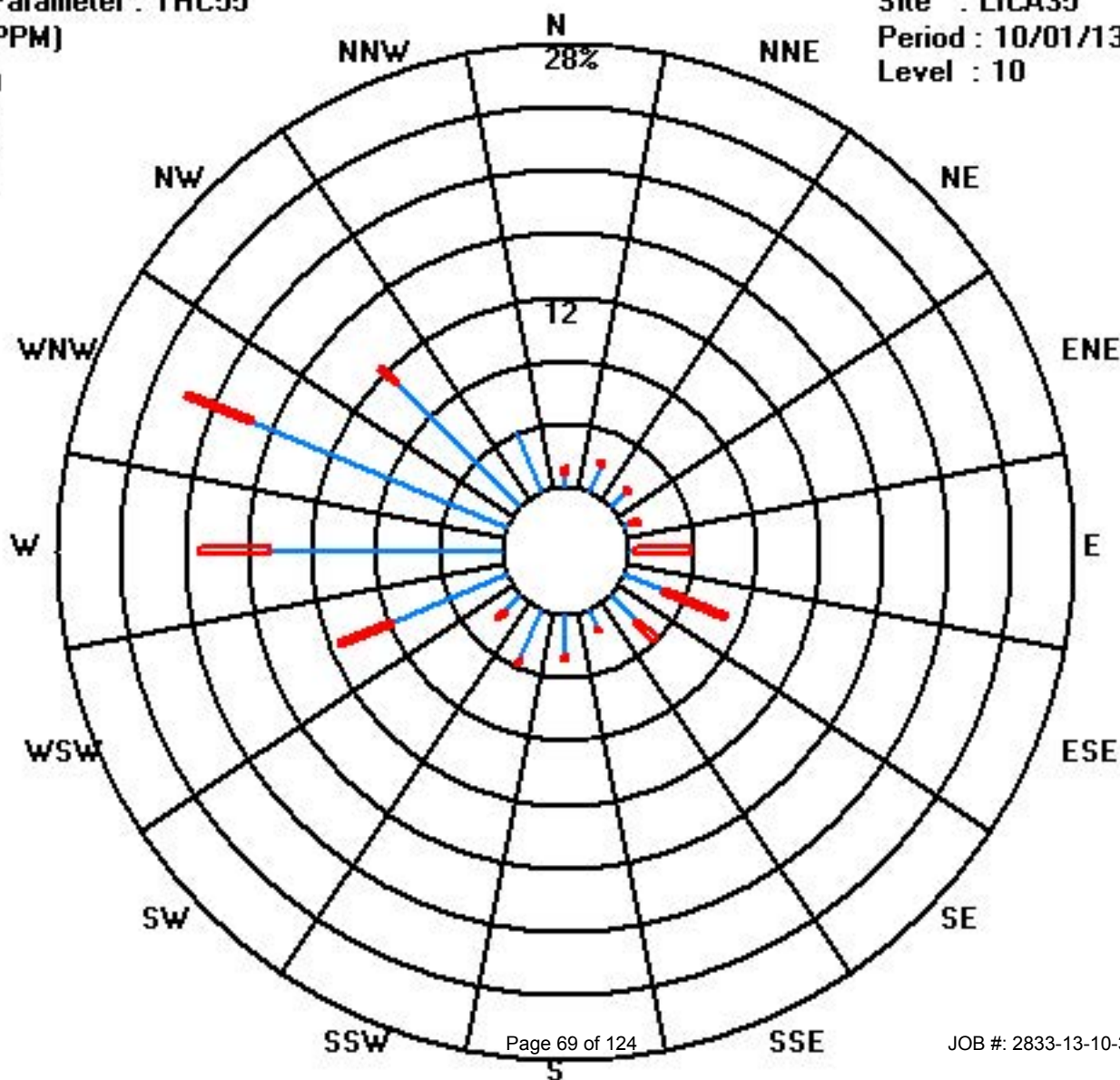
Calm : .00 %

Total # Operational Hours : 707

Class Limits (PPM)

Period : 10/01/13-10/31/13

Level : 10



# Methane

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

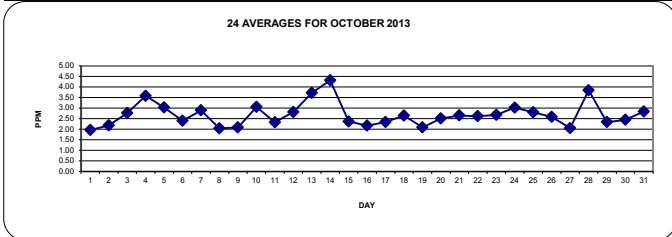
OCTOBER 2013

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	DAILY	24-HOUR	
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	1.9	1.9	1.9	1.9	S	2.0	1.9	1.9	1.9	2.0	1.9	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.2	2.0	1.9	2.0	2.1	2.2	2.2	1.97	24	
2	2.1	2.0	1.9	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.4	3.3	3.4	3.3	3.2	3.4	2.18	24	
3	4.3	2.9	S	2.7	3.2	3.0	2.8	2.7	2.5	2.2	2.0	2.0	2.0	1.9	1.9	1.9	2.0	2.6	3.0	3.4	6.1	2.9	3.7	6.1	2.77	24		
4	5.9	S	5.9	6.7	6.9	6.6	6.0	5.3	4.6	3.4	2.8	2.6	2.0	1.9	1.8	1.8	1.9	1.9	2.1	2.1	2.0	3.0	2.5	2.6	6.9	3.58	24	
5	S	2.9	4.1	3.9	4.4	3.9	5.4	5.5	4.0	2.6	2.0	2.0	1.9	1.9	1.9	1.9	2.1	1.9	2.2	2.4	3.8	3.5	2.5	S	5.5	3.03	24	
6	2.5	2.2	2.3	2.7	2.2	2.1	2.1	2.3	2.2	2.1	2.0	1.9	1.9	1.9	1.9	1.9	2.1	2.8	3.5	2.9	3.5	S	4.3	4.3	2.40	24		
7	4.8	5.2	4.5	4.6	3.8	3.5	3.3	2.5	2.3	2.2	2.3	2.3	2.3	2.2	2.1	2.2	2.4	2.4	2.3	2.2	S	2.3	2.6	5.2	2.90	24		
8	2.4	2.3	2.2	2.6	2.4	2.1	2.3	2.1	2.0	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	S	1.9	1.9	1.9	2.6	2.04	24		
9	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.1	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.2	2.1	2.9	S	2.3	2.4	2.5	2.4	2.9	2.09	24		
10	3.0	2.9	3.5	3.8	4.1	3.5	4.0	3.7	3.8	3.8	4.5	3.6	2.0	1.9	1.9	1.9	2.0	2.2	S	2.6	2.8	2.8	2.9	3.0	4.5	3.05	24	
11	2.9	2.6	2.7	3.2	3.5	2.7	S	2.5	2.1	2.2	S	1.9	1.9	1.9	1.9	1.9	S	2.1	2.0	2.2	2.2	2.3	2.4	3.5	2.33	24		
12	2.4	2.4	2.7	2.9	2.9	2.6	2.4	2.9	2.5	2.0	1.9	1.9	1.9	1.9	1.9	S	1.9	3.2	3.3	4.7	4.4	5.4	4.6	5.4	2.81	24		
13	5.0	4.2	3.9	3.6	4.0	4.9	5.1	5.9	4.9	2.7	2.1	1.9	1.9	1.9	S	1.9	2.3	2.7	2.8	4.7	4.5	5.5	7.4	7.4	3.73	24		
14	7.8	7.6	4.4	5.4	3.6	4.4	6.0	5.4	7.4	7.0	7.1	3.4	2.2	2.0	S	1.9	2.0	2.1	3.3	2.6	2.5	3.3	3.7	4.1	7.8	4.31	24	
15	3.9	3.2	2.4	2.4	2.5	3.4	3.5	2.6	2.2	2.0	2.0	C	C	C	1.8	1.8	1.9	1.9	1.9	1.9	2.2	2.3	2.0	3.9	2.37	24		
16	1.9	1.9	1.9	2.0	2.0	1.9	1.9	2.1	1.9	1.9	1.9	1.8	S	1.8	1.8	1.8	1.9	2.3	3.2	3.0	3.0	2.6	2.6	2.7	3.2	2.17	24	
17	3.2	2.6	2.7	2.4	2.7	2.5	2.3	2.4	2.0	2.1	1.9	S	3.2	2.1	1.9	1.8	1.8	2.0	2.9	2.4	2.5	2.3	2.1	2.1	3.2	2.34	24	
18	2.0	4.2	2.8	2.1	2.8	2.6	3.1	2.9	3.1	2.5	S	2.0	1.9	1.9	2.0	2.3	2.2	3.0	2.7	2.9	3.6	3.1	3.3	4.2	2.65	24		
19	3.8	2.5	3.1	2.2	2.1	2.2	2.0	2.1	2.1	S	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.8	2.09	24	
20	1.9	2.0	2.0	2.0	2.1	2.2	2.3	2.3	S	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.7	2.8	2.8	3.2	3.5	3.6	3.5	3.6	3.5	2.51	24	
21	3.1	3.1	4.3	3.7	2.1	2.1	2.1	S	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.9	2.5	2.8	4.3	5.0	4.6	5.0	2.65	24		
22	3.6	3.8	3.2	3.0	3.0	3.1	S	3.4	2.9	3.1	3.3	3.7	3.0	2.1	1.8	1.7	1.8	1.8	1.8	1.8	1.9	2.1	2.5	3.8	2.62	24		
23	2.0	1.9	1.9	1.8	1.9	S	3.3	3.3	2.4	2.4	1.8	1.8	1.8	1.8	1.8	1.9	2.1	2.4	2.6	3.4	4.5	6.6	6.3	6.6	2.67	24		
24	5.9	4.9	5.0	4.5	S	3.8	4.0	3.7	3.6	2.5	2.1	2.0	2.0	1.9	1.8	2.0	2.7	2.4	3.3	2.5	2.2	2.4	2.2	5.9	3.02	24		
25	2.3	2.1	1.9	S	1.9	1.8	2.0	2.1	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.3	3.0	3.6	4.8	7.1	7.0	6.0	7.1	2.80	24	
26	5.8	4.7	S	3.0	3.7	3.9	3.6	3.0	4.1	2.3	2.1	2.0	1.8	1.8	1.8	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	5.8	2.59	24	
27	1.7	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.1	2.2	2.9	2.5	3.3	3.3	3.3	2.05	24		
28	S	4.3	4.2	4.8	5.7	8.1	6.9	5.7	5.6	5.4	5.0	3.8	2.2	1.9	2.0	1.9	2.4	3.6	3.3	2.1	1.8	1.8	2.0	S	8.1	3.84	24	
29	2.3	2.5	2.3	2.2	2.3	4.0	2.7	2.5	2.3	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.3	2.0	2.9	2.8	2.5	S	2.7	4.0	2.33	24		
30	2.7	2.9	3.1	2.7	2.0	2.3	2.3	2.1	2.1	2.1	2.2	1.9	1.8	1.8	1.8	1.9	2.6	2.9	2.9	2.4	2.5	S	3.9	3.4	2.45	24		
31	3.4	5.3	4.8	5.4	5.5	4.6	4.7	2.8	2.3	2.4	2.0	1.9	1.8	1.7	1.8	1.7	1.7	1.7	1.7	1.7	S	1.9	2.3	2.2	5.5	2.84	24	
HOURLY MAX	7.8	7.6	5.9	6.7	6.9	8.1	6.9	5.9	7.4	7.0	7.1	3.8	3.2	2.4	2.4	2.4	2.6	3.6	3.3	3.6	4.8	7.1	7.0	7.4				
HOURLY AVG	3.3	3.2	3.1	3.2	3.1	3.2	3.2	3.1	2.9	2.6	2.4	2.2	2.0	1.9	1.9	1.9	2.0	2.2	2.5	2.5	2.8	3.1	3.1	3.3				

**STATUS FLAG CODES**

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

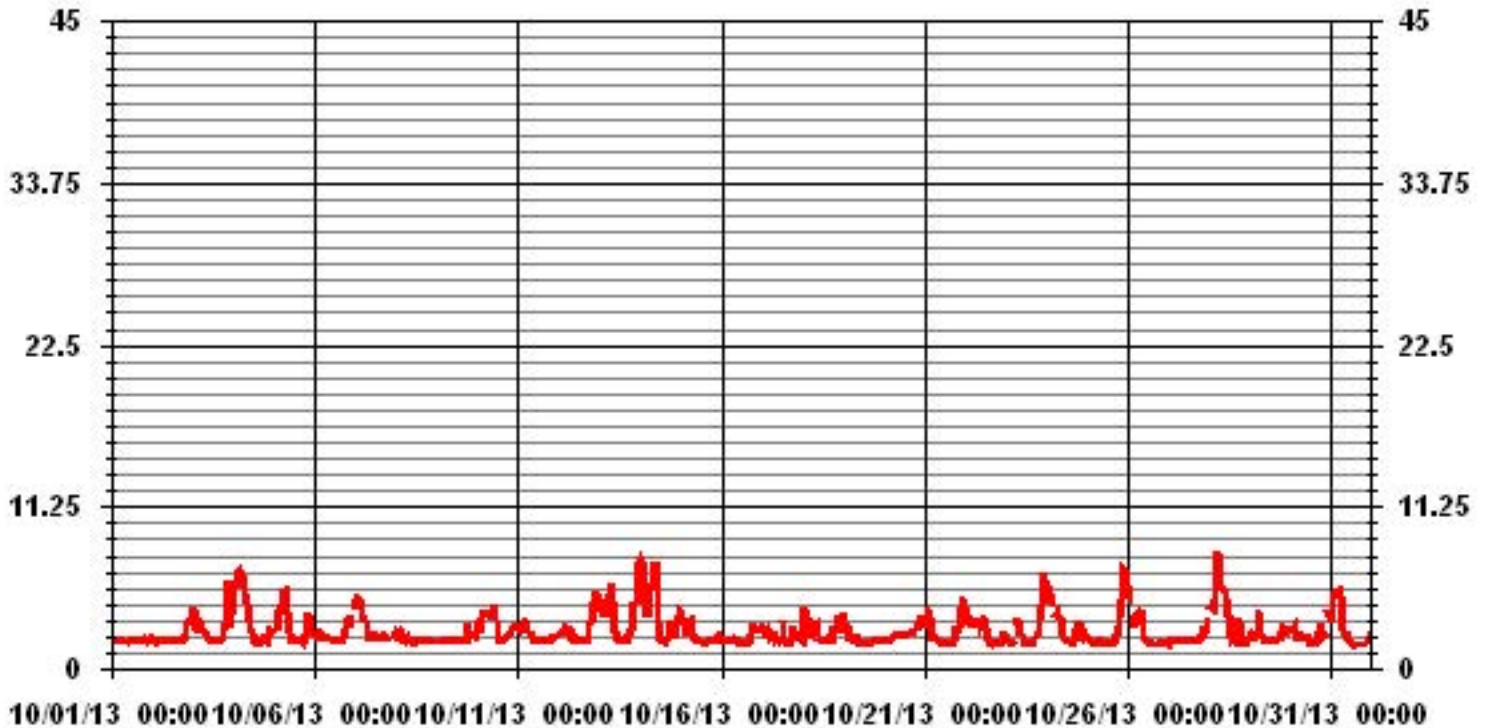


**MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:	707					
MAXIMUM 1-HR AVERAGE:	8.1	PPM	@ HOUR(S)	5	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	4.31	PPM			ON DAY(S)	14
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	3	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	1.15		MONTHLY AVERAGE:	2.68	PPM	



# 01 Hour Averages



— LICA35 METHANE PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

OCTOBER 2013

METHANE MAX instantaneous maximum in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	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		2.3	2.2	2.1	2.1	S	2.1	2.2	2.1	2.1	2.1	2.1	2.3	2.2	2.1	2.1	2.1	2.0	2.0	2.1	2.4	2.4	2.0	2.2	2.6	2.6	2.17	24
2		2.4	2.1	2.0	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	2.9	3.8	4.9	4.4	5.0	5.0	2.46	24
3		5.4	3.3	S	3.1	4.2	3.4	3.0	2.9	3.0	2.5	2.5	2.1	2.0	2.1	2.0	2.0	2.2	2.3	4.0	4.5	5.8	10.8	3.4	4.7	10.8	3.52	24
4		8.1	S	8.1	8.2	8.2	7.6	7.7	6.3	5.4	4.3	3.4	3.1	2.7	2.1	2.0	2.4	2.4	2.0	2.5	2.4	2.3	5.1	3.4	4.1	8.2	4.51	24
5		S	7.1	8.5	8.0	6.3	6.2	6.7	7.2	4.7	3.1	2.2	2.2	2.1	2.0	2.0	2.0	2.3	2.0	3.4	3.1	5.6	4.5	3.0	S	8.5	4.28	24
6		3.4	2.4	3.0	4.2	2.8	2.6	2.5	2.6	2.6	2.3	2.1	2.1	2.0	1.9	1.9	1.9	2.0	3.1	3.8	4.2	4.3	6.4	S	7.1	7.1	3.09	24
7		8.7	7.2	5.7	7.2	5.9	4.4	4.9	2.7	2.6	2.4	2.5	2.4	2.6	2.5	2.3	2.3	2.8	2.9	3.0	3.0	2.4	S	2.5	3.7	8.7	3.76	24
8		3.2	2.8	2.6	4.2	2.9	2.3	2.8	2.5	2.3	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	S	2.0	2.0	2.2	4.2	2.33	24
9		2.3	2.1	2.2	2.2	2.4	2.3	2.2	2.4	2.2	2.1	2.0	2.0	1.9	2.2	2.4	2.4	2.7	2.4	5.5	S	2.4	3.1	2.9	2.8	5.5	2.49	24
10		5.2	3.8	5.5	4.8	6.9	4.7	4.4	4.8	4.3	4.9	5.5	4.7	2.4	2.0	2.1	2.1	2.3	2.7	S	3.1	3.2	3.2	3.2	3.2	6.9	3.86	24
11		3.2	3.0	3.1	3.5	4.0	3.5	S	S	2.4	2.4	S	S	2.0	2.0	1.9	2.0	2.0	S	2.3	2.3	2.5	2.5	2.6	2.6	4.0	2.61	24
12		2.6	2.8	3.0	3.2	3.3	3.1	2.6	3.2	3.1	2.8	2.0	2.0	1.9	1.9	1.9	1.9	S	2.3	6.1	4.2	7.3	5.5	6.4	5.7	7.3	3.43	24
13		5.8	5.8	4.7	4.1	5.6	6.4	6.7	11.1	7.2	3.3	2.3	2.1	2.0	2.0	2.0	S	2.2	3.5	3.6	3.2	7.6	6.5	6.4	9.2	11.1	4.92	24
14		12.3	11.0	5.7	6.4	5.0	6.2	8.7	8.1	10.2	7.8	8.0	6.7	2.4	2.2	S	2.0	2.2	3.5	11.7	7.7	3.5	3.7	4.0	5.8	12.3	6.29	24
15		4.8	11.2	2.7	2.6	3.0	4.6	5.1	3.2	2.4	2.2	2.1	C	C	C	C	2.0	2.2	2.0	2.0	2.1	2.0	2.8	2.6	2.1	11.2	3.18	24
16		2.0	2.1	2.0	2.1	2.1	2.1	2.0	2.3	2.0	1.9	1.9	1.9	S	1.9	1.9	1.9	2.1	4.0	5.3	3.5	3.8	3.0	2.7	3.0	5.3	2.51	24
17		3.7	3.0	3.7	2.8	3.1	3.0	2.6	3.0	2.2	2.6	2.0	S	4.5	3.5	1.9	1.9	1.9	2.4	5.7	2.5	2.7	2.7	2.6	2.8	5.7	2.89	24
18		2.5	6.9	4.1	2.4	4.0	3.5	3.4	3.7	4.0	2.7	S	2.1	2.2	2.0	2.1	2.5	3.1	2.9	3.8	4.1	3.5	5.4	3.7	5.0	6.9	3.46	24
19		6.3	2.9	6.3	2.7	2.4	2.8	2.2	2.2	3.8	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	6.3	2.55	24
20		2.1	2.6	2.6	2.6	2.9	2.6	3.2	2.9	S	3.5	2.6	2.6	2.4	2.8	2.7	2.7	2.5	3.5	3.5	3.3	4.1	4.5	4.7	5.7	5.7	3.15	24
21		3.8	3.6	6.4	4.4	3.1	2.5	2.4	S	2.5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	5.4	2.9	3.4	8.7	7.0	6.0	8.7	3.43	24
22		4.8	5.7	5.7	4.7	4.4	4.0	S	4.6	4.3	3.6	3.7	4.5	3.5	2.8	1.9	1.8	1.8	1.8	1.8	1.8	1.9	2.3	2.3	3.4	5.7	3.36	24
23		2.2	2.0	2.0	2.0	2.4	S	3.9	4.0	3.2	3.2	2.0	2.0	1.9	1.9	1.9	2.1	2.4	3.1	3.0	3.8	7.6	10.8	9.6	10.8	3.44	24	
24		7.6	5.9	6.0	6.6	S	4.7	4.7	4.1	4.1	3.1	2.4	2.3	2.4	2.3	1.9	1.9	2.7	3.8	3.2	4.3	3.3	2.4	2.6	2.3	7.6	3.70	24
25		2.5	2.4	2.0	S	2.0	2.0	2.8	2.6	2.6	1.9	1.9	1.9	1.9	1.9	1.9	2.2	4.5	6.3	5.6	8.3	14.5	8.8	8.5	14.5	3.95	24	
26		11.4	7.9	S	3.9	7.1	7.1	6.9	4.6	5.9	2.9	2.3	2.3	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.8	11.4	3.67	24
27		1.8	S	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.0	1.9	2.2	2.3	2.2	3.8	4.9	3.0	4.0	4.9	2.32	24
28		S	4.7	5.6	6.1	6.6	10.1	8.4	6.3	6.7	6.0	5.7	4.8	2.6	2.2	2.4	2.4	3.4	5.7	4.9	2.6	1.9	2.0	2.3	S	10.1	4.69	24
29		2.5	3.1	2.5	2.3	3.2	10.3	3.1	3.0	3.0	2.2	2.0	2.1	2.1	2.1	2.1	2.0	2.2	3.3	2.8	3.7	3.4	3.1	S	4.1	10.3	3.06	24
30		3.5	4.5	3.7	3.3	2.3	3.6	3.0	2.3	2.3	2.4	2.6	1.9	1.9	1.9	2.0	2.4	3.7	3.3	3.5	3.3	3.5	S	5.1	3.9	5.1	3.03	24
31		5.9	6.6	6.8	6.2	6.7	5.6	5.6	4.9	2.6	3.0	2.4	2.1	2.0	2.0	2.6	1.9	1.8	1.8	1.8	1.8	S	2.1	2.8	2.7	6.8	3.55	24
HOURLY MAX		12.28	11.24	8.51	8.17	8.15	10.33	8.65	11.13	10.19	7.77	7.97	6.65	4.46	3.52	2.74	2.69	3.67	5.65	11.66	7.67	8.30	14.50	10.83	9.58			
HOURLY AVG		4.56	4.51	4.14	4.05	4.02	4.24	4.06	3.91	3.58	2.96	2.68	2.55	2.25	2.13	2.07	2.06	2.27	2.73	3.71	3.19	3.66	4.48	3.82	4.33			

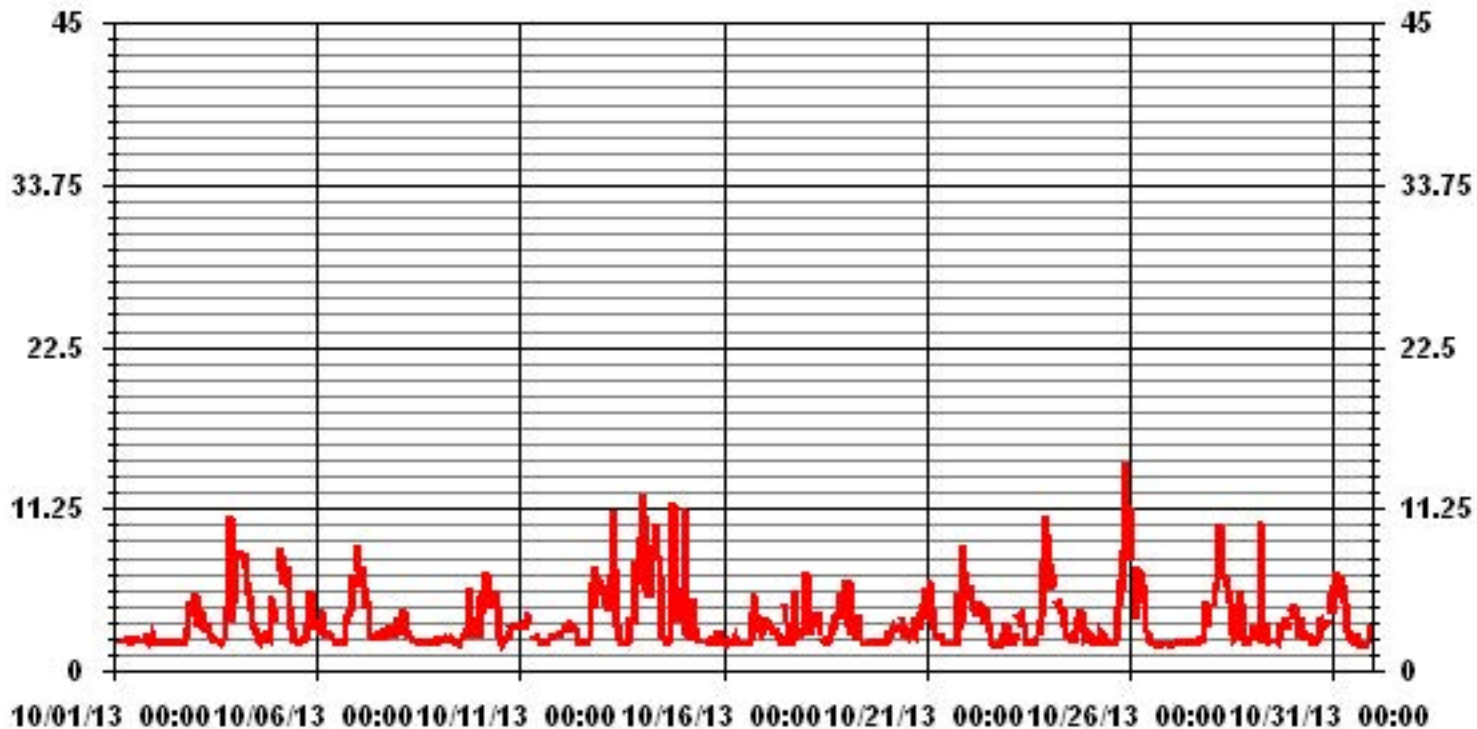
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	704					
MAXIMUM INSTANTANEOUS VALUE:	14.5	PPM	@ HOUR(S)	21	ON DAY(S)	25
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	1.95					

### 01 Hour Averages



LICA35  
 METHANE / WDR Joint Frequency Distribution (Percent)

October 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	
< 3.0	.84	1.83	1.41	.42	.42	2.68	2.40	1.27	2.68	3.39	1.41	7.92	14.71	17.53	11.03	4.10	74.11
< 10.0	.42	.28	.14	.56	3.53	4.24	1.55	.28	.28	.42	.70	3.53	4.24	4.24	1.41	.00	25.88
< 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	1.27	2.12	1.55	.99	3.96	6.93	3.96	1.55	2.97	3.81	2.12	11.45	18.95	21.78	12.44	4.10	

Calm : .00 %

Total # Operational Hours : 707

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 3.0	6	13	10	3	3	19	17	9	19	24	10	56	104	124	78	29	524
< 10.0	3	2	1	4	25	30	11	2	2	3	5	25	30	30	10		183
< 50.0																	
>= 50.0																	
Totals	9	15	11	7	28	49	28	11	21	27	15	81	134	154	88	29	

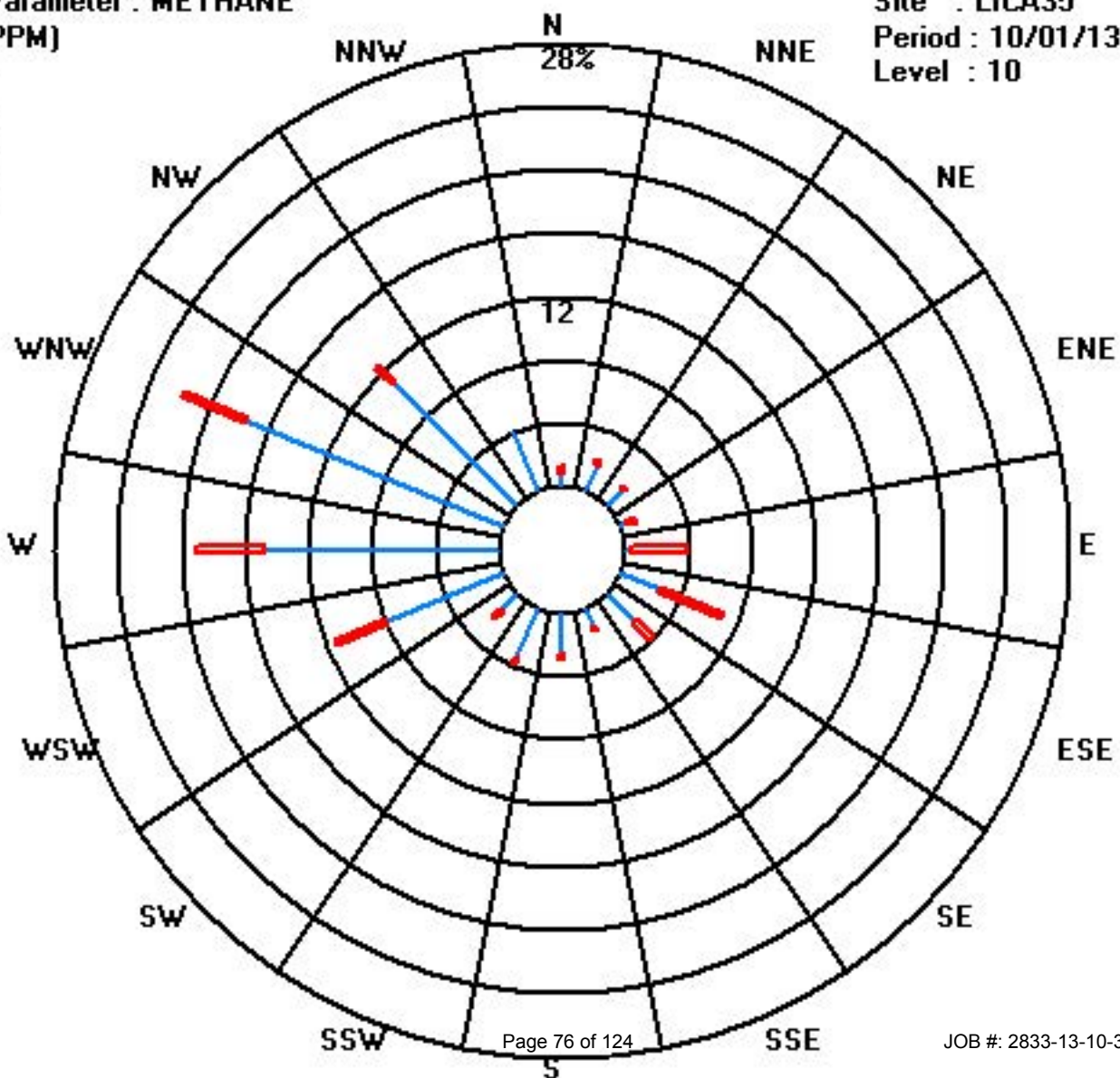
Calm : .00 %

Total # Operational Hours : 707

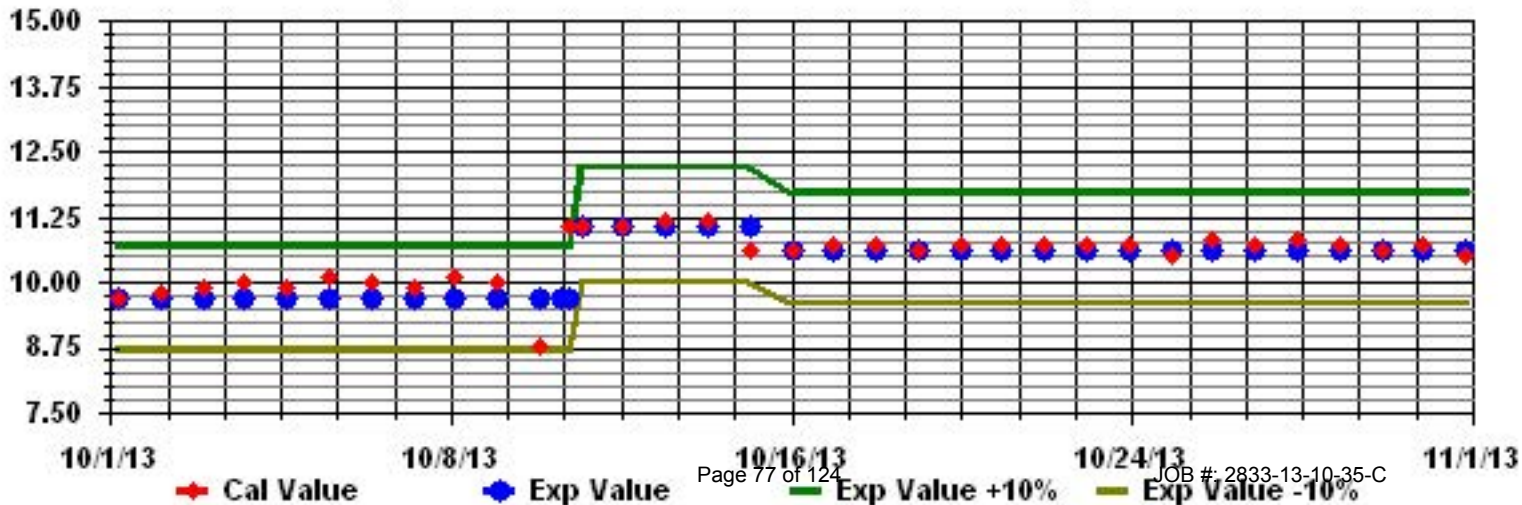
Class Limits (PPM)

Period : 10/01/13-10/31/13

Level : 10



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



# Non-Methane Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

OCTOBER 2013

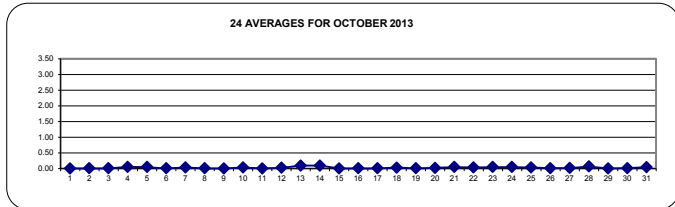
NON-METHANE HYDROCARBONS hourly averages in ppm

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	24:00	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		0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	
2		0.0	0.0	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1	24	
3		0.1	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.01	24	
4		0.0	S	0.3	0.2	0.2	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.05	24		
5		S	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.0	S	0.2	0.05	24		
6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	S	0.1	0.1	0.1	0.01	24		
7		0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	S	0.0	0.0	0.2	0.03	0.2	0.03	24		
8		0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	0.1	0.01	0.01	24		
9		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.0	0.1	0.0	0.0	0.1	0.00	0.00	24		
10		0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.2	0.1	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	0.2	0.03	0.03	24	
11		0.0	0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	24	
12		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.0	0.1	0.2	0.2	0.0	0.1	0.0	0.1	0.0	0.2	0.03	0.03	24	
13		0.2	0.1	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.1	0.2	0.3	0.1	0.2	0.3	0.10	24
14		0.3	0.4	0.1	0.0	0.0	0.1	0.2	0.1	0.3	0.1	0.1	0.0	0.0	S	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.4	0.10	0.04	24	
15		0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.00	0.00	24	
16		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.01	0.01	24		
17		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.01	0.01	24		
18		0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.03	0.03	24
19		0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.01	0.01	24	
20		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	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.02	0.02	24
21		0.0	0.0	0.1	0.2	0.0	0.0	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.05	0.05	24
22		0.1	0.0	0.1	0.1	0.0	0.0	S	0.0	0.1	0.1	0.0	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.04	0.04	24	
23		0.0	0.0	0.0	0.1	0.0	S	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.05	0.05	24	
24		0.1	0.1	0.1	0.1	S	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.05	0.05	24		
25		0.1	0.0	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.1	0.0	0.2	0.03	0.03	24		
26		0.1	0.0	S	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.01	0.01	24		
27		0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.1	0.2	0.02	0.02	24		
28		S	0.2	0.2	0.1	0.4	0.2	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.4	0.07	0.07	24	
29		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.0	0.0	0.00	0.00	24		
30		0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.2	0.0	0.2	0.01	0.01	24		
31		0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	0.2	0.04	0.04	24		
HOURLY MAX		0.3	0.4	0.3	0.2	0.4	0.2	0.3	0.2	0.3	0.1	0.2	0.2	0.2	0.1	0.1	0	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.2						
HOURLY AVG		0.04	0.04	0.05	0.04	0.03	0.04	0.05	0.03	0.04	0.02	0.02	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.03	0.02	0.05	0.05	0.04	0.03						

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 OCTOBER 2013

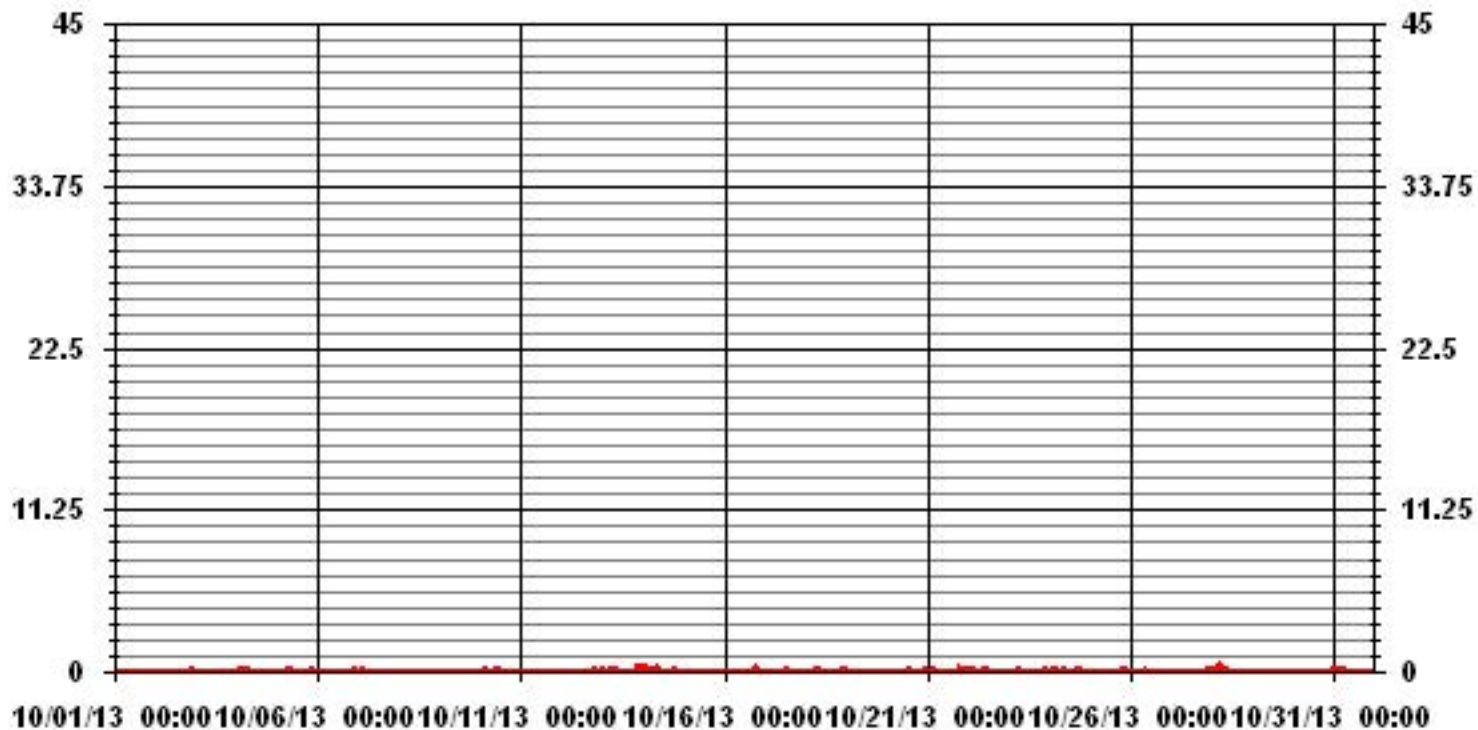


MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	150					
MAXIMUM 1-HR AVERAGE:	0.4	PPM	@ HOUR(S)	1, 4	ON DAY(S)	14, 28
MAXIMUM 24-HR AVERAGE:	0.10	PPM			ON DAY(S)	13, 14
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	3	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.06		MONTHLY AVERAGE:	0.03	PPM	



### 01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

OCTOBER 2013

NON-METHANE HYDROCARBONS MAX instantaneous maximum in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
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				
1	1	0.0	0.1	0.1	0.3	S	0.2	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.2	0.2	0.2	0.2	0.3	0.11	24
2	2	0.0	0.1	0.0	S	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.2	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.08	24
3	3	0.3	0.2	S	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.4	0.2	0.5	0.5	0.5	0.5	0.2	0.3	0.5	0.21	24	
4	4	0.3	S	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.1	0.1	0.0	0.1	0.1	0.2	0.1	0.3	0.1	0.2	0.2	0.1	0.4	0.21	24	
5	5	S	0.1	0.2	0.2	0.1	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.0	0.0	0.1	0.1	0.1	0.2	0.5	0.3	0.2	0.2	S	0.5	0.18	24		
6	6	0.2	0.1	0.2	0.2	0.0	0.2	0.1	0.1	0.1	0.0	0.2	0.1	0.1	0.0	0.0	0.0	0.2	0.1	0.2	0.2	0.2	S	0.2	0.2	0.11	24		
7	7	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.1	S	0.2	0.2	0.3	0.21	24			
8	8	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	S	0.0	0.1	0.0	0.3	0.09	24		
9	9	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.2	0.0	0.0	0.0	0.1	0.1	0.0	0.1	S	0.2	0.1	0.2	0.2	0.2	0.07	24		
10	10	0.2	0.2	0.2	0.5	0.5	0.2	0.2	0.2	0.3	0.3	0.2	0.0	0.1	0.0	0.0	0.0	0.1	S	0.2	0.3	0.1	0.2	0.2	0.2	0.5	0.19	24	
11	11	0.2	0.1	0.2	0.2	0.2	0.0	S	S	0.0	0.1	S	S	0.0	0.0	0.0	0.0	0.0	S	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.06	24	
12	12	0.0	0.0	0.0	0.2	0.1	0.1	0.0	0.1	0.1	0.0	0.2	0.0	0.0	0.0	0.0	S	0.0	0.9	0.6	0.5	0.2	0.6	0.2	0.9	0.16	24		
13	13	0.4	0.3	0.3	0.2	0.2	0.7	0.5	0.6	0.4	0.0	0.0	0.0	0.0	0.0	S	0.0	0.3	0.3	0.2	0.7	0.9	0.3	0.4	0.9	0.29	24		
14	14	0.7	0.9	0.2	0.3	0.2	0.2	0.3	0.5	0.6	0.5	0.4	0.3	0.0	0.0	S	0.0	0.1	0.5	0.8	0.6	0.2	0.2	0.2	0.2	0.9	0.34	24	
15	15	0.3	0.4	0.2	0.1	0.2	0.2	0.3	0.2	0.0	0.0	0.1	C	C	C	C	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.4	0.11	24	
16	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	S	0.1	0.0	0.0	0.0	0.3	0.6	0.2	0.1	0.2	0.0	0.1	0.6	0.06	24	
17	17	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	S	0.5	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.5	0.10	24		
18	18	0.0	0.2	0.1	0.1	0.2	0.1	0.2	0.4	0.2	0.2	S	0.1	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.2	0.2	0.5	0.3	0.3	0.5	0.17	24	
19	19	0.3	0.1	0.3	0.1	0.1	0.2	0.2	0.3	0.2	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.3	0.09	24	
20	20	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	S	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.13	24	
21	21	0.2	0.2	0.3	0.3	0.2	0.2	0.1	S	0.3	0.2	0.0	0.0	0.0	0.0	1.7	0.3	0.0	0.2	0.9	0.2	0.2	0.4	0.4	0.3	1.7	0.28	24	
22	22	0.2	0.2	0.2	0.1	0.2	0.2	S	0.2	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.0	0.1	0.1	0.0	0.1	0.0	0.2	0.2	0.3	0.16	24		
23	23	0.0	0.0	0.2	0.2	0.1	S	0.3	0.2	0.1	0.2	0.1	0.1	0.0	0.0	0.1	0.2	0.2	0.5	0.2	0.2	0.4	0.6	0.4	0.6	0.20	24		
24	24	0.3	0.2	0.3	0.2	S	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.0	0.2	0.4	0.2	0.2	0.2	0.1	0.2	0.2	0.4	0.18	24	
25	25	0.2	0.1	0.0	S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.0	0.5	0.4	0.4	0.4	0.2	1.0	0.15	24		
26	26	0.2	0.2	S	0.1	0.1	0.2	0.3	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.10	24		
27	27	0.0	S	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.3	0.2	0.0	0.1	0.3	0.3	0.5	0.1	0.5	1.0	0.15	24	
28	28	S	0.4	0.3	0.4	0.5	0.5	0.3	0.3	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.0	S	0.5	0.19	24		
29	29	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.2	0.2	0.2	S	0.1	0.2	0.07	24	
30	30	0.1	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.1	0.0	0.1	0.2	0.2	0.1	S	0.5	0.2	0.5	0.14	24			
31	31	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	S	0.0	0.0	0.0	0.3	0.12	24		
HOURLY MAX		0.7	0.9	0.4	0.5	0.5	0.7	0.5	0.6	0.6	0.5	0.4	0.3	0.5	0.3	1.7	0.3	0.4	0.5	1.0	0.6	0.7	0.9	0.6	0.5				
HOURLY AVG		0.1714	0.1959	0.1655	0.1986	0.1597	0.1757	0.1634	0.1783	0.1647	0.1157	0.1117	0.0925	0.0628	0.0597	0.1331	0.0577	0.0793	0.136	0.2623	0.1883	0.2076	0.2059	0.1952	0.1859				

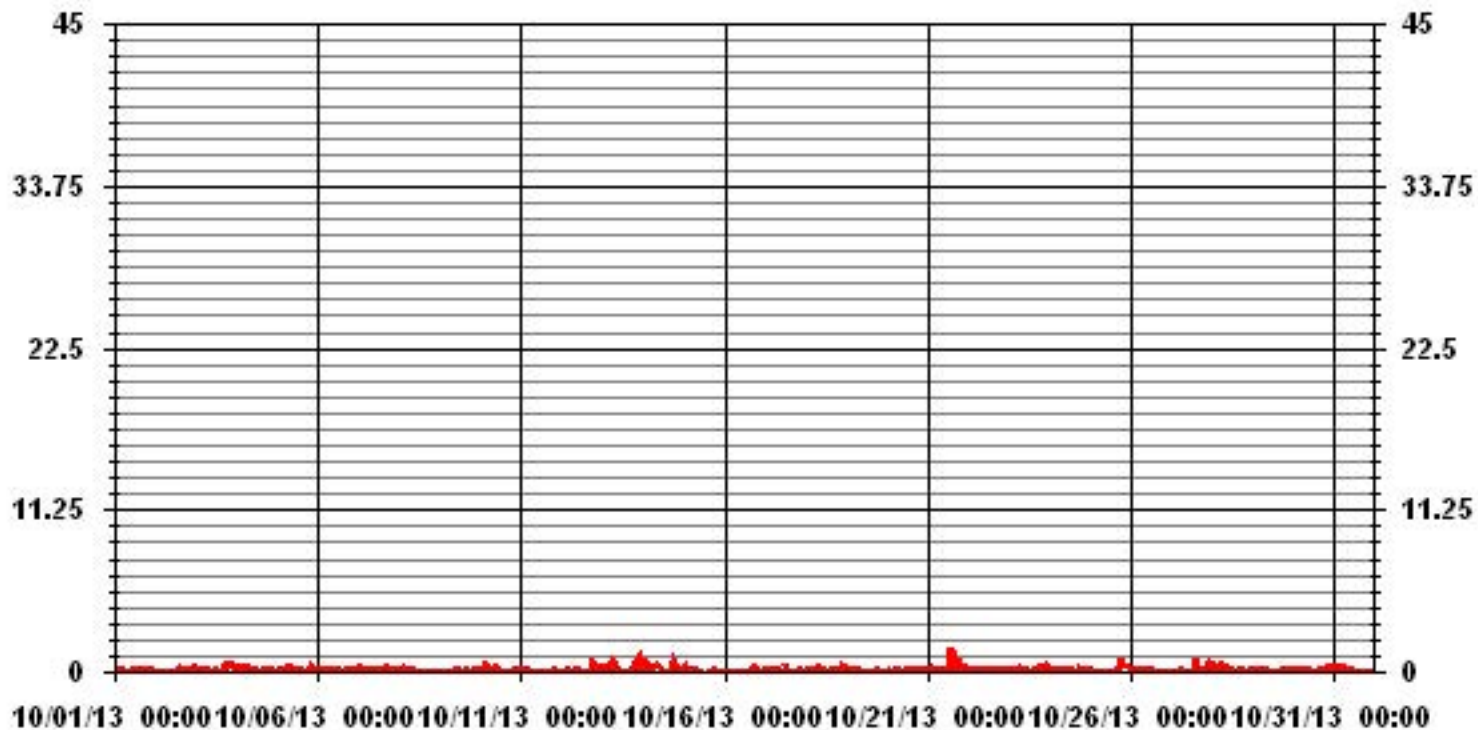
STATUS FLAG CODES

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:	494					
MAXIMUM INSTANTANEOUS VALUE:	1.7	PPM	@ HOUR(S)	14	ON DAY(S)	21
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	0.17					

### 01 Hour Averages



— LICA35 11MHC MAX PPM

LICA35  
 NMHC / WDR Joint Frequency Distribution (Percent)

October 2013

Distribution By % Of Samples

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

Wind Parameter : WDR  
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< .2	1.27	2.12	1.55	.99	3.96	6.93	3.81	1.41	2.97	3.81	2.12	11.45	18.67	21.49	12.16	4.10	98.86
< .5	.00	.00	.00	.00	.00	.00	.14	.14	.00	.00	.00	.00	.28	.28	.28	.00	1.13
< 1.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 2.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 4.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 4.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.27	2.12	1.55	.99	3.96	6.93	3.96	1.55	2.97	3.81	2.12	11.45	18.95	21.78	12.44	4.10	

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
< .2	9	15	11	7	28	49	27	10	21	27	15	81	132	152	86	29	699
< .5							1	1					2	2	2		8
< 1.0																	
< 2.0																	
< 4.0																	
>= 4.0																	
Totals	9	15	11	7	28	49	28	11	21	27	15	81	134	154	88	29	

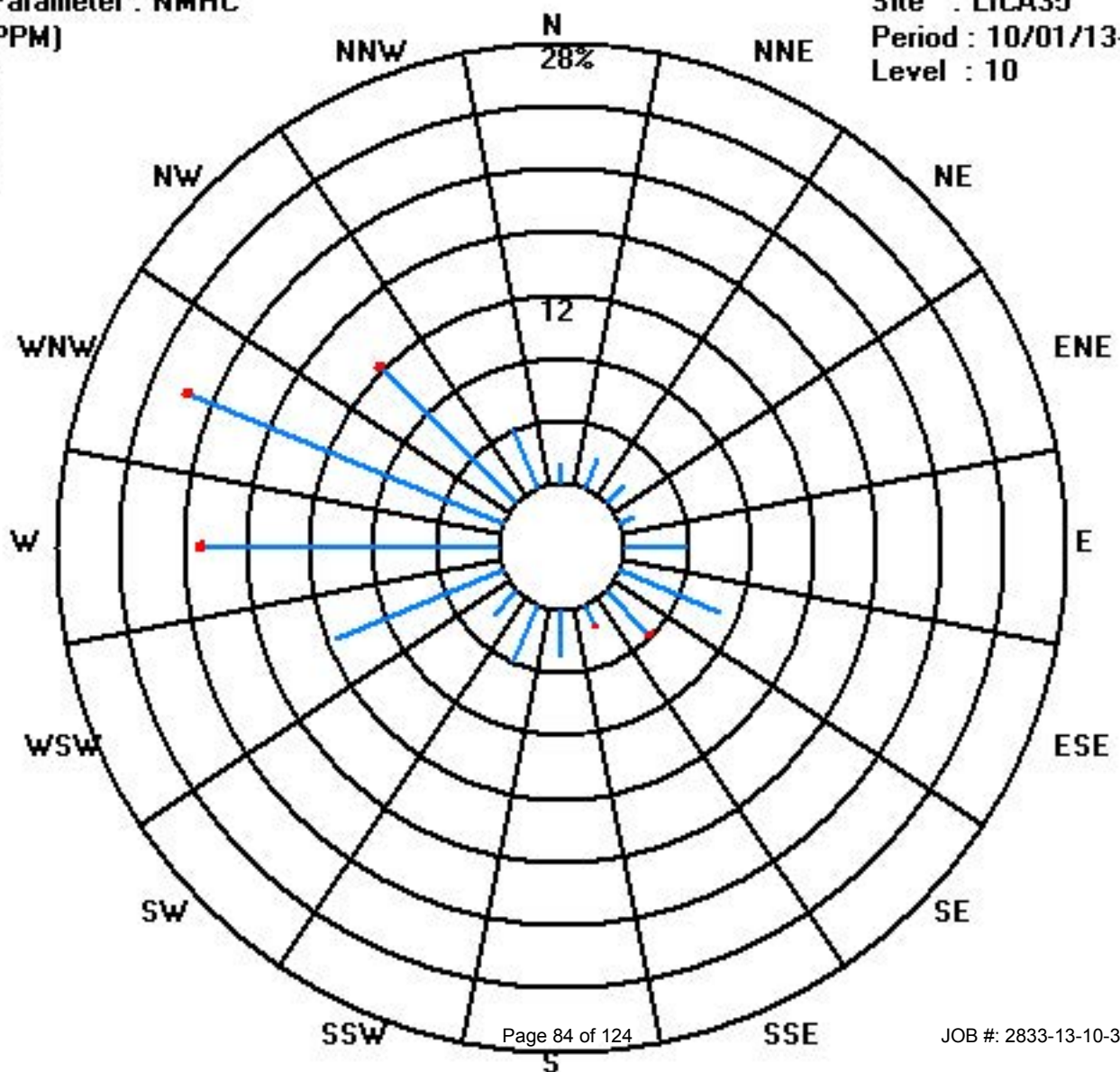
Calm : .00 %

Total # Operational Hours : 707

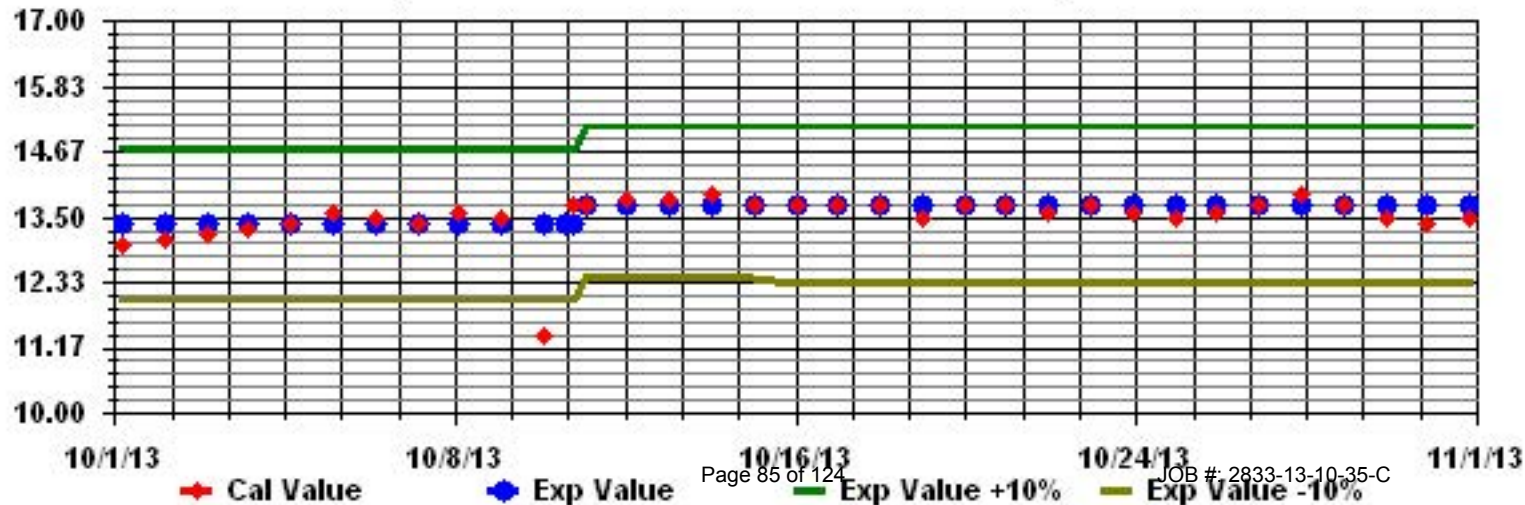
Class Limits (PPM)

Period : 10/01/13-10/31/13

Level : 10



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

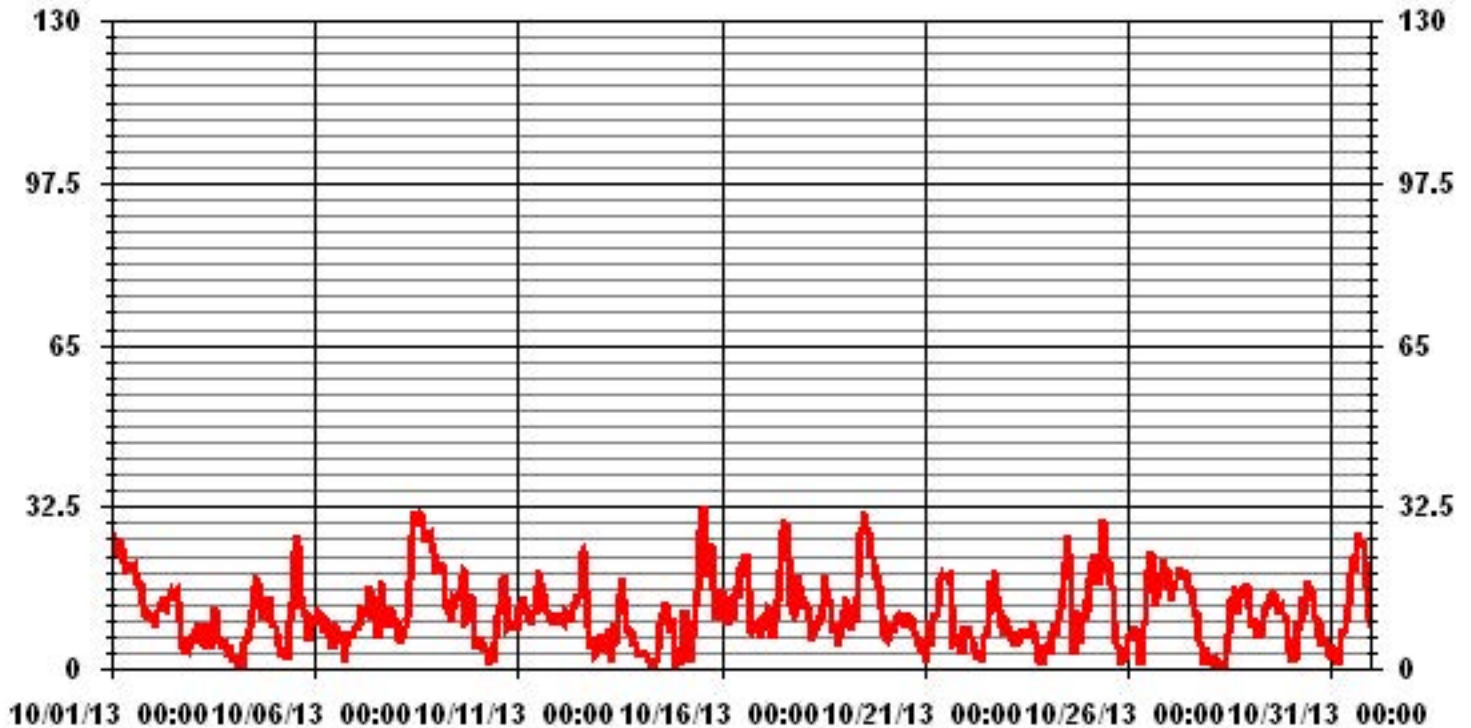


# Vector Wind Speed





# 01 Hour Averages



— LICA35 WSP KPH

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

OCTOBER 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	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	43.4	39.6	34	38.2	36.7	38	38.6	31.4	29.3	33.5	30.9	30.9	31.8	32.4	29.7	27.3	27.5	28.4	21.4	15.7	20.1	16.1	16.2	14.8	43.4	
2	15.3	15.2	15.9	17.3	19.8	20	20.6	19.5	19.7	22.9	25.8	26.8	27.2	27.8	28.8	23.9	20.8	13.5	7.1	5.4	7	6.2	8.9	8.7	28.8	
3	10.9	8.4	11.5	12.7	10.7	9	9.3	9.6	15.3	10.9	11.6	12.2	18.4	19.6	18.7	14.4	9.6	7.4	6.8	7	7.2	7.8	8.5	6.5	19.6	
4	3.4	5.1	4.7	3.8	4.5	3.2	8.7	8.5	9.6	14	13.6	25.8	33.3	32.3	31.3	28.9	27.7	16.9	19.4	23.4	22.2	22.8	17.7	17.5	33.3	
5	15	11.5	10	8.4	7.7	8.4	8.4	5.2	9.4	18.3	24.1	26.5	40.7	41.9	42.2	35.6	27.7	28.3	18.4	12.4	10.5	21	22.1	20.6	42.2	
6	19.1	21.7	16.9	19.3	19.3	13.3	19.3	12.1	13.3	12.4	11.9	17.3	18.7	18.7	14.9	14.6	10.8	5.9	7.2	10.7	10.2	8.7	9.4	11.2	21.7	
7	10.4	11.5	11.7	16.4	18.2	17.8	17.8	17.2	28.5	25.2	25.6	22.2	22	24.3	22.3	28.4	20.4	22.9	23.6	24.3	18.7	21.6	20.7	17.7	28.5	
8	18.4	13.3	7.8	10	12.1	12.2	17.4	18.5	33.3	41.5	47	49.2	43.7	46.8	45.9	45.1	42	38.7	42.2	42.4	40.8	36.8	36.6	32.6	49.2	
9	31.7	32.3	31.6	36.7	32.2	21.6	24.7	25.8	19.4	27.2	32.3	25.8	30.4	30.9	33	33.9	35.1	18.9	17	18	20.2	18	13.8	11.2	36.7	
10	9.4	9.9	10.4	6.3	7.3	6	4.9	15.8	16.3	6.3	10.9	14	22.1	24.3	26.5	30.6	32	24.1	15	17.1	16.6	14.4	13.8	13	32	
11	17.4	19.6	20.4	19	18	17.8	15.8	17.6	17.5	17.6	23.4	34.4	36.6	31.5	27.7	27.6	22.7	22.1	16.6	15	15.5	14.4	14.4	18	36.6	
12	14.9	13.5	15.7	16.5	20.1	17.2	16.8	14	19.1	19.1	22.7	24.9	36.7	39.2	41.4	36.2	28.8	15.6	6.7	10	10.7	8.6	7.1	10.9	41.4	
13	9.9	14.3	14.4	8.9	8.4	11.8	7.3	5.7	13.9	16.9	14.8	27.8	26.6	30.5	30.7	28.6	19	11.4	13.2	13.6	7.9	8.9	6.5	6.1	30.7	
14	5.8	7.3	6.7	10.3	5.1	4.9	4	3.5	3.1	7.3	9.4	17.4	22.8	23.7	27.1	26.9	19.9	12.1	11.2	14.9	15.5	5.4	5.3	6.3	27.1	
15	8.4	23.4	21.8	12.9	14	6.2	9.9	16	21.9	24.2	28.9	45.9	47.4	53.5	52.2	40.1	34.6	40	43.2	27.3	24	18.1	17.9	20.1	53.5	
16	21.4	21	20.2	18	25.5	19.5	22.5	15.3	30.3	29	26.6	33.1	44.1	40.8	36.3	31.1	27.6	15.5	12.4	12.5	12.9	16.4	16.4	10.6	44.1	
17	14.3	14.6	19.4	21	16.6	12.9	15.9	11.5	19.8	25.1	33.2	37.3	44	47.3	46.4	41.4	38.7	29.3	15.3	17.8	18.7	31.5	27.3	25.4	47.3	
18	20.6	15.5	19.1	20.4	14.3	11.9	11	13.9	18.7	18.8	18	20.1	23.3	32.3	27.9	21.4	23.6	17.9	13.6	14	13.5	9	14.8	18.1	32.3	
19	18.6	20.3	21	19	14.7	19.8	18.7	24.6	24.3	42.8	48.2	55.3	58.9	51.8	53	50.5	39.5	45.1	34.5	35.5	32.9	30.7	23.1	20.5	58.9	
20	16.4	11.4	10.3	12.2	12.7	13.7	13.9	14.6	16.1	15.2	14.8	15.8	16.8	18.6	18	14.4	17.2	12.5	12.1	10.8	9.9	13.1	7.6	6.8	18.6	
21	8.8	15	14.3	9.8	17.2	19.6	18.7	20.1	23.1	33.4	32.5	32	29.5	31.3	34.5	30.6	23.9	13.1	9.5	9.4	8.2	8.2	10.9	12.5	34.5	
22	11.4	10.3	13.7	12.4	9	8.4	5.9	6.2	6.8	6.1	7.6	15.6	12.8	17.6	23.3	37.3	34.4	39.8	21.6	26.6	20.6	14.5	10.7	13.9	39.8	
23	14.1	12.8	12	11.8	11.8	7.5	10.4	7.9	9.5	13.6	13.5	18.3	14.9	14.7	15.7	16.8	12.6	11.6	11.6	5.6	7.5	3.1	4.1	8.5	18.3	
24	8.4	12.1	6.1	11.9	12.4	11.3	11.1	15	23.1	25.4	38	38.8	45.8	38.5	41.7	30.2	8.4	12.9	17.4	17.3	16.9	17.3	19.1	19.8	45.8	
25	22	33.6	35.6	31.3	38.6	37.4	35.6	30.3	48	47.8	43.6	33.3	34.1	34.4	32.2	27	19	11.3	6.8	6.5	6.4	6.2	7.5	7.4	48	
26	10.7	9	10.8	12.8	11.5	11.7	8.2	8.5	13.1	15.6	16.7	22.8	32.7	35.3	35.7	33	25.9	24.4	33	32.5	42	40.5	41.8	40.9	42	
27	34.7	29.6	32.7	33	32.3	38.8	38.4	38.2	38.3	35.3	38.4	32.1	28.5	29.4	25	21.3	20.6	10.6	10	11.2	13.1	3.9	5.9	5.5	38.8	
28	4	4.8	5	3.9	3.6	3.9	3.1	2.7	2.1	4.1	8.3	22.6	26.6	23.7	26.7	26.5	21.5	15.4	24.2	28.6	25.8	29.9	31.8	24.9	31.8	
29	19	17.5	17.5	21.5	15.4	9.6	12.2	15.4	21.2	26.8	24.5	21.7	24.7	26.2	25.7	24.2	18.6	20.9	25	20.6	21.4	19.3	14.8	10.8	26.8	
30	9.5	5.7	5.6	7.3	17.7	15.4	15.3	21.6	17.7	22.7	29.5	26.7	25.6	22.2	18.9	17.8	12.7	13.9	10.6	14.3	12	9	8.9	6.9	29.5	
31	7.7	9.2	8.1	6.5	5	7.6	12.8	17.2	18.7	16.1	26.4	33.2	36	35.7	37.3	42.2	48.6	37.6	37.6	39.5	35.8	29.3	14.6	18.7	48.6	
PEAK	43.4	39.6	35.6	38.2	38.6	38.8	38.6	38.2	48.0	47.8	48.2	55.3	58.9	53.5	53.0	50.5	48.6	45.1	43.2	42.4	42.0	40.5	41.8	40.9		

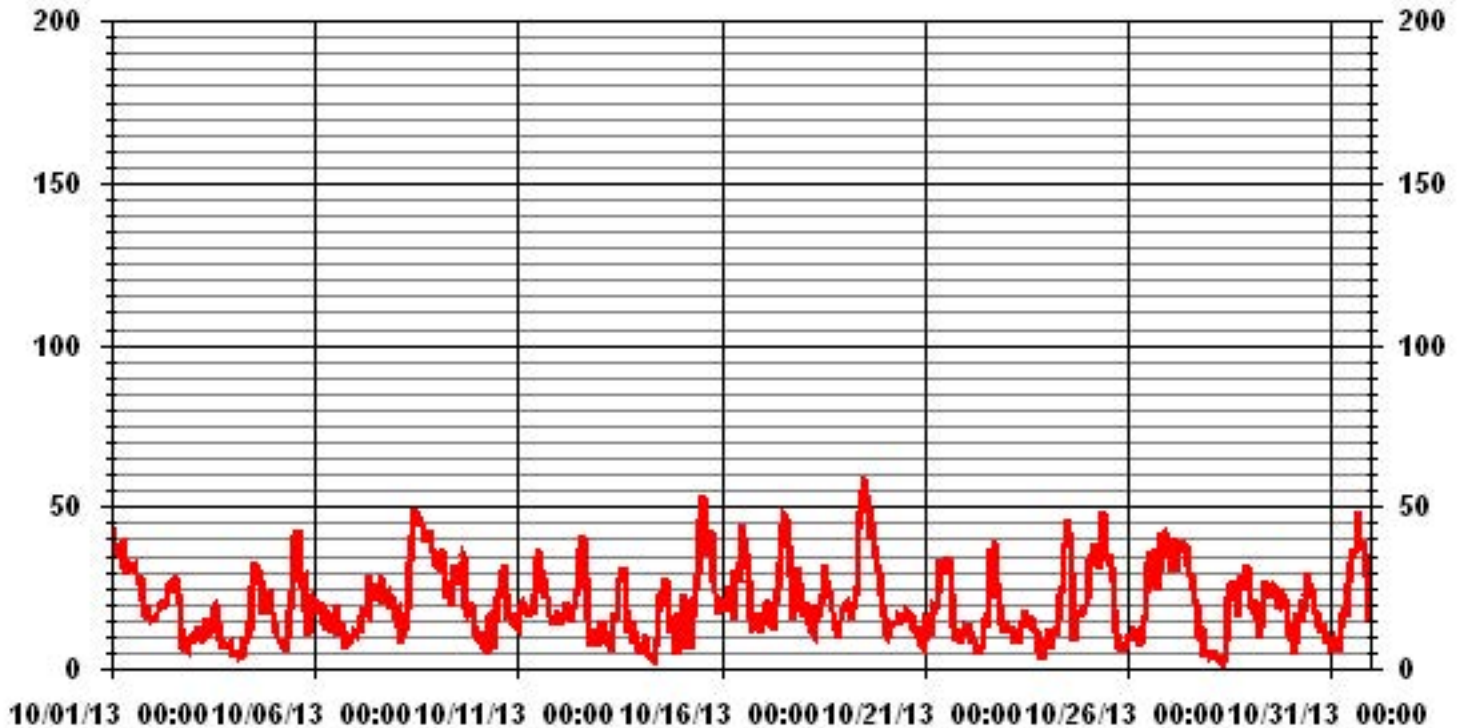
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	58.9	KPH	@ HOUR(S)	12
			ON DAY(S)	19

# 01 Hour Averages



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

October 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	.40	.53	.13	.67	2.28	2.41	.94	.53	.26	.26	1.20	2.15	4.56	4.30	1.88	.00	22.58
< 12.0	.40	.13	.13	.26	1.61	3.89	1.88	.94	1.20	.80	.53	7.12	10.08	6.04	1.74	.94	37.76
< 20.0	.40	1.20	1.07	.00	.26	.53	1.07	.13	.94	2.55	.53	2.01	3.76	5.37	5.24	2.28	27.41
< 29.0	.00	.13	.13	.00	.00	.00	.00	.00	.53	.13	.00	.00	.53	4.70	3.36	.80	10.34
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.20	.53	.00	1.74
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.20	2.01	1.47	.94	4.16	6.85	3.89	1.61	2.95	3.76	2.28	11.29	18.95	21.63	12.76	4.03	

Calm : .13 %

Total # Operational Hours : 744

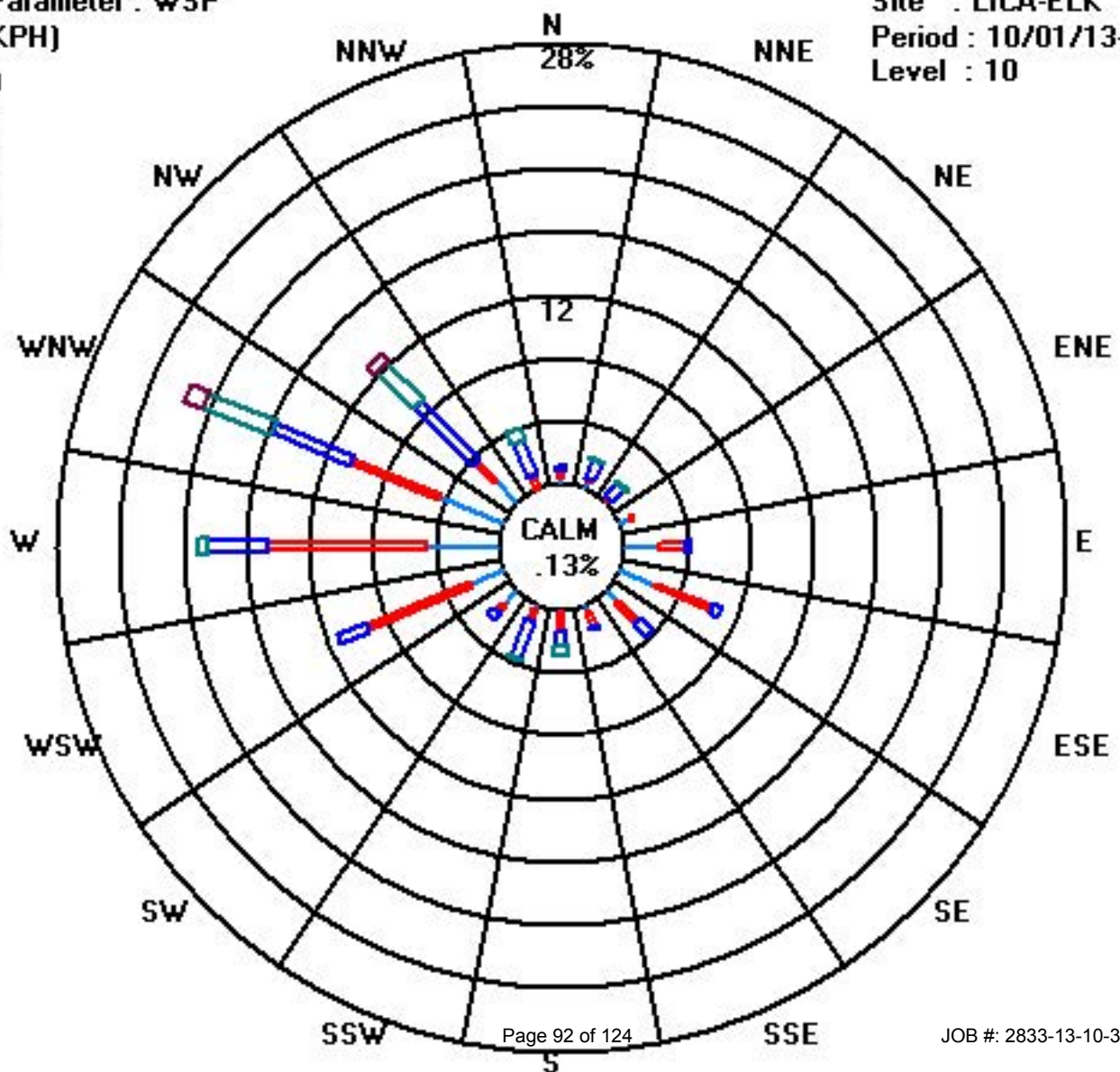
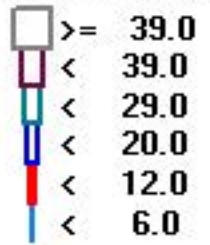
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	3	4	1	5	17	18	7	4	2	2	9	16	34	32	14		168
< 12.0	3	1	1	2	12	29	14	7	9	6	4	53	75	45	13	7	281
< 20.0	3	9	8		2	4	8	1	7	19	4	15	28	40	39	17	204
< 29.0		1	1						4	1			4	35	25	6	77
< 39.0														9	4		13
>= 39.0																	
Totals	9	15	11	7	31	51	29	12	22	28	17	84	141	161	95	30	

Calm : .13 %

Total # Operational Hours : 744

Class Limits (KPH)



# Vector Wind Direction

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

OCTOBER 2013

## VECTOR WIND DIRECTION (WD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG		
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	AVG.	QUADRANT	RDGS.	
DAY																													
1		293	293	288	290	289	289	293	290	291	295	293	286	279	282	283	275	270	273	274	291	301	302	300	296	288	WNW	24	
2		301	315	328	328	330	332	333	334	334	344	348	356	352	346	346	346	350	339	306	289	288	278	282	283	333	NNW	24	
3		288	268	273	284	283	267	262	281	300	292	300	317	325	338	348	333	298	275	250	247	284	303	301	278	296	WNW	24	
4		293	226	312	159	126	47	114	103	112	118	90	112	178	183	182	177	174	150	147	145	144	139	136	128	151	SSE	24	
5		90	112	119	109	122	283	293	305	252	247	255	246	286	286	287	279	280	273	312	260	246	247	256	269	272	W	24	
6		259	274	289	277	270	268	286	270	274	303	246	259	238	265	242	257	265	225	126	126	135	121	95	91	258	WSW	24	
7		101	104	107	99	95	108	104	112	114	122	132	140	169	241	280	285	291	273	278	277	261	253	253	293	164	SSE	24	
8		274	254	266	254	257	269	261	264	284	294	294	298	296	298	293	293	306	303	298	295	291	293	299	292	292	WNW	24	
9		289	288	289	284	279	266	273	279	253	242	237	242	222	206	204	190	181	150	136	131	123	124	80	82	233	SW	24	
10		99	119	125	107	102	98	92	110	280	276	281	243	290	292	293	289	284	280	269	280	266	271	274	269	278	W	24	
11		260	257	257	253	256	257	254	263	269	277	301	301	290	279	309	306	315	313	297	301	288	291	280	275	282	W	24	
12		274	278	266	265	261	259	251	268	295	302	303	313	310	306	316	316	315	303	279	255	243	281	277	254	291	WNW	24	
13		245	252	257	318	305	249	265	275	282	253	258	298	296	290	309	294	305	257	271	277	282	270	276	298	282	W	24	
14		283	306	292	300	279	302	239	278	151	69	27	203	219	221	232	226	232	210	200	202	224	254	358	271	230	SW	24	
15		271	233	240	232	242	258	280	260	252	258	249	281	294	297	301	291	278	294	305	293	300	268	272	294	283	W	24	
16		297	303	323	291	309	306	305	289	317	314	317	318	323	310	295	309	303	277	256	251	264	257	261	275	301	WNW	24	
17		261	255	255	256	253	268	254	266	266	294	322	318	319	314	316	316	312	307	287	274	279	279	277	279	294	WNW	24	
18		283	289	278	272	289	258	245	239	256	253	262	259	276	287	292	278	280	266	260	290	286	269	258	290	274	W	24	
19		276	255	251	256	258	257	271	263	289	309	314	319	323	327	331	332	340	340	336	330	329	326	350	29	316	NW	24	
20		70	66	102	107	108	126	137	125	121	130	119	116	115	106	112	102	109	117	119	127	111	100	99	89	112	ESE	24	
21		7	265	261	249	290	269	252	256	294	312	314	319	324	321	318	319	326	316	276	289	279	278	91	114	303	WNW	24	
22		94	98	99	106	87	132	152	97	46	112	214	263	268	307	300	308	314	308	327	341	339	316	309	300	323	NW	24	
23		314	311	344	293	303	279	282	299	302	303	322	291	271	274	270	270	269	262	251	280	284	285	207	118	289	WNW	24	
24		92	125	92	97	113	104	119	121	137	138	160	169	179	187	192	213	214	247	272	290	283	284	263	259	180	S	24	
25		257	286	304	310	303	301	299	318	314	314	318	314	309	317	313	301	308	286	230	352	143	102	67	307	NW	24		
26		99	85	89	88	113	104	67	93	246	246	249	284	280	291	294	303	319	324	331	347	16	27	25	33	334	NNW	24	
27		41	37	37	32	36	34	38	34	32	27	25	29	27	38	41	35	2	11	21	33	58	295	306	296	30	NNE	24	
28		288	232	263	291	127	140	121	89	106	82	114	144	193	200	197	193	185	181	190	203	199	199	194	193	191	S	24	
29		186	173	160	158	152	118	143	165	193	207	210	217	198	209	201	203	196	196	200	188	186	182	179	182	189	S	24	
30		167	182	226	282	275	271	253	272	256	275	299	310	312	317	306	304	273	254	267	258	288	278	304	297	284	WNW	24	
31		290	313	311	29	64	308	296	255	262	246	281	284	283	292	291	305	308	306	306	304	304	298	282	258	294	W	24	
HOURLY AVG		314	315	344	328	330	332	333	334	334	344	348	356	352	346	348	346	350	340	336	347	352	326	358	300				

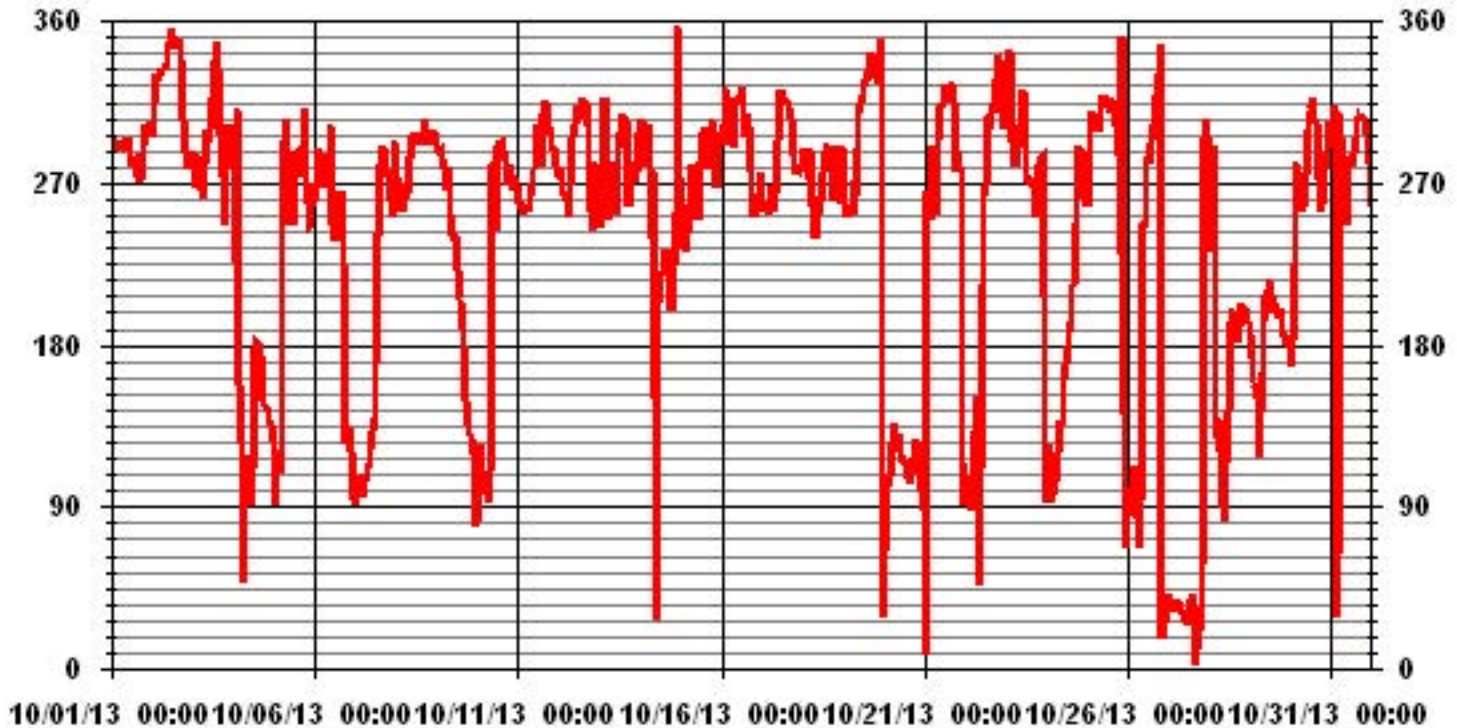
**STATUS FLAG CODES**

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:	82.51	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	287 DEG

### 01 Hour Averages





# Standard Deviation Wind Direction

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

OCTOBER 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	7	6	6	6	6	6	7	7	7	8	8	7	7	7	7	10	7	6	7	6	5	6	4
2	5	7	7	7	7	8	7	7	8	10	13	14	13	11	12	12	11	9	6	8	5	4	5	5
3	5	7	7	5	5	8	8	7	7	10	34	21	10	11	18	16	11	9	5	4	20	18	8	13
4	11	12	16	27	29	23	16	12	16	16	15	16	16	14	14	14	12	10	9	9	9	8	8	8
5	15	19	12	22	17	11	16	20	18	12	15	15	14	11	8	11	7	9	7	13	8	7	19	15
6	11	8	8	7	10	10	6	9	9	22	24	23	23	19	19	16	9	26	5	5	7	5	7	8
7	5	5	4	4	5	6	6	8	8	9	10	14	23	31	29	9	8	8	10	16	16	9	10	16
8	8	8	7	7	8	7	9	11	9	7	8	8	8	7	7	7	8	7	7	7	6	7	7	7
9	6	7	7	6	6	10	10	7	14	14	19	15	20	18	13	12	10	9	4	4	5	6	23	41
10	12	16	8	20	9	10	55	48	46	28	13	16	17	14	15	11	7	6	13	8	9	8	8	8
11	8	7	8	5	6	8	8	11	9	9	15	12	13	11	10	9	8	7	3	4	6	5	9	7
12	8	6	7	9	9	8	7	9	7	8	11	14	19	13	10	9	8	5	5	9	7	20	16	13
13	7	20	29	19	8	10	13	24	25	13	22	19	12	10	16	17	12	7	7	7	6	7	8	10
14	8	14	12	11	8	9	8	8	34	57	42	55	24	23	17	16	10	5	4	5	16	30	34	26
15	19	9	10	16	11	25	26	20	13	14	13	10	8	10	7	7	8	6	6	6	5	9	8	5
16	4	4	8	11	7	6	5	9	9	10	12	12	12	12	10	10	6	7	5	6	8	9	10	7
17	7	6	10	8	6	15	11	8	13	9	10	11	10	11	10	10	8	5	4	9	6	6	7	6
18	7	3	6	8	8	10	8	6	11	11	15	15	13	13	12	7	5	9	10	9	13	14	12	21
19	7	7	9	12	11	11	10	15	7	11	10	10	9	10	10	9	9	9	8	8	9	8	13	11
20	16	14	9	10	9	9	13	9	8	11	11	13	13	13	14	14	8	7	12	11	28	36	16	18
21	53	16	8	11	7	9	9	11	13	9	8	9	10	9	9	9	9	8	8	6	8	13	40	9
22	8	9	7	11	31	14	26	38	32	44	27	15	13	13	12	8	7	7	13	10	6	6	6	5
23	5	7	13	11	10	7	6	6	7	12	18	25	21	19	17	12	8	6	8	5	9	34	26	23
24	11	12	25	6	5	7	7	6	9	9	13	13	11	10	10	11	39	8	8	32	9	7	8	10
25	9	9	6	6	7	7	8	8	8	7	8	11	10	9	12	9	7	13	9	41	34	38	24	49
26	6	11	12	12	6	35	45	51	6	10	11	11	8	7	7	7	10	9	8	12	15	12	12	12
27	12	13	11	12	11	12	13	12	14	13	14	19	19	15	17	16	14	10	12	15	39	14	8	7
28	6	19	18	10	25	13	12	15	17	33	28	26	17	16	14	12	8	6	7	9	8	9	9	9
29	8	11	11	11	11	9	11	12	11	15	14	15	13	14	12	10	7	8	9	7	7	10	15	21
30	16	19	10	15	9	12	9	8	11	7	8	11	9	8	10	6	6	9	8	12	13	9	10	10
31	24	10	15	28	52	15	14	11	19	8	9	7	7	8	7	7	7	6	6	6	6	6	7	11

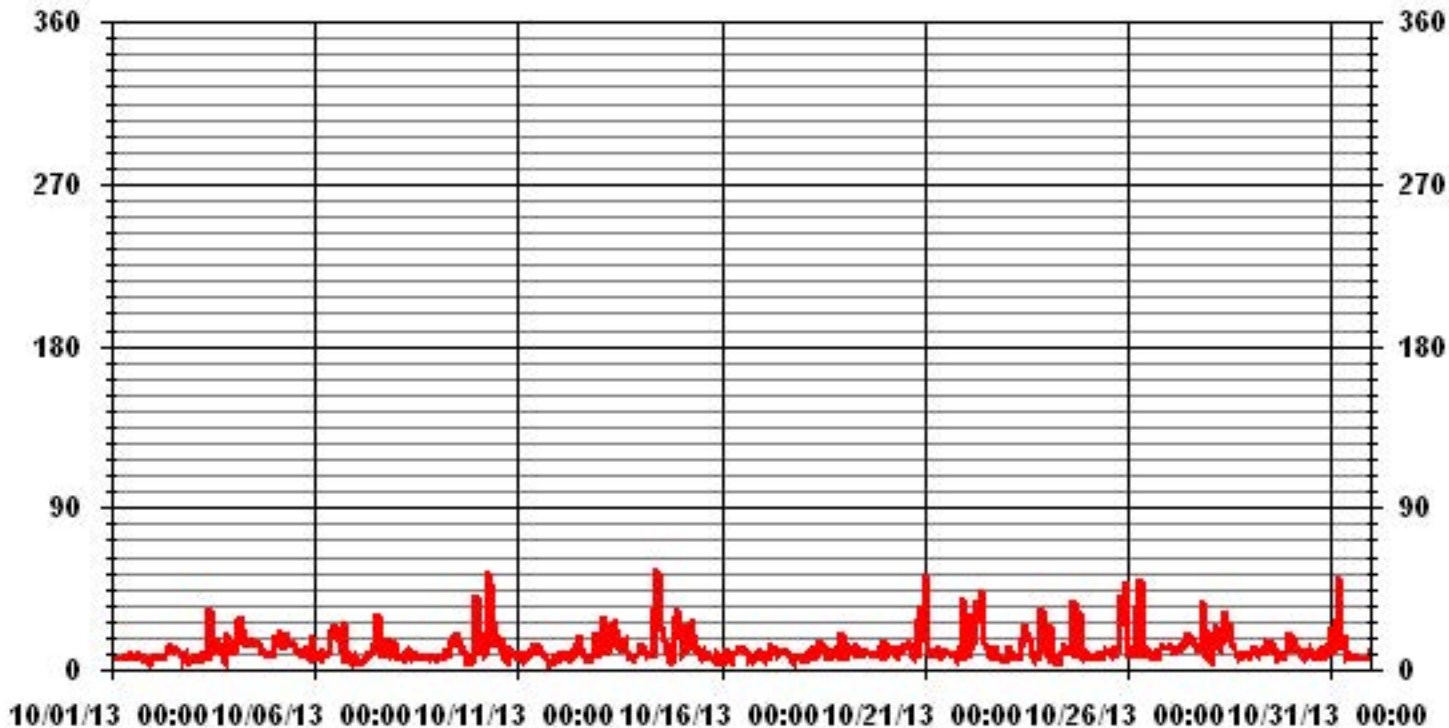
**STATUS FLAG CODES**

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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	October 15, 2013	Previous Calibration	September 5, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Portable / ELK Point Airport		
Start Time (MST)	10:22	End Time (MST)	12:43
Reason:	Monthly calibration		
Barometric Pressure	27.92 in HG	Station Temperature	22 Deg C
Cal Gas	49.7 ppm	Gas Cyl. #	BAL3165
DAS Output Voltage	0-1 Volts	Cal Gas Expiry date	December 29, 2016
		Chart Rec. Output	N/A Volts

**Equipment Information**

Analyzer Make / Model:	API 100E	S/N :	467	Method:	Fluorescent
Converter Make / Model:	N/A	S/N :	N/A		
Calibrator Make / Model:	EnviroNics 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	N/A	S/N :	N/A		
Flow Meter:	EnviroNics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration			After Calibration		
Concentration Range	0-1000 ppb				
Sample Flow / Box Temp	627 ccm	33 Deg C	628 ccm	32.4 Deg C	
HVPS / Lamp Setting	628	1374	628	3174	
PMT / RxCell Temp	8.1 Deg C	50 Deg C	8.2 Deg C	50 Deg C	
Converter / IZS Temp	N/A Deg C	45 Deg C	N/A Deg C	45.0 Deg C	
Offset / Slope	129.8	1.177	134.5	1.148	

**Calibration Data**

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	N/A
	No zero adj			
4920	80.5	800	800	1.0000
	No span adj.			
4960	40.0	397	395	1.0056
4980	20.0	199	199	1.0000
5000	0	0	1	N/A
			Sum of Least Squares	1.0007
			New Correction Factor	1.0000

**IZS Calibration Data**

Before Calibration		After Calibration	
Auto Zero	0.0	Auto Zero	0.0
Auto Span	349.0	Auto Span	335.8
Sample Lines Connected		Sample Lines Connected	Yes

**Percent Change**

Previous Month's Calibration Correction Factor:	NA
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	#VALUE!

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

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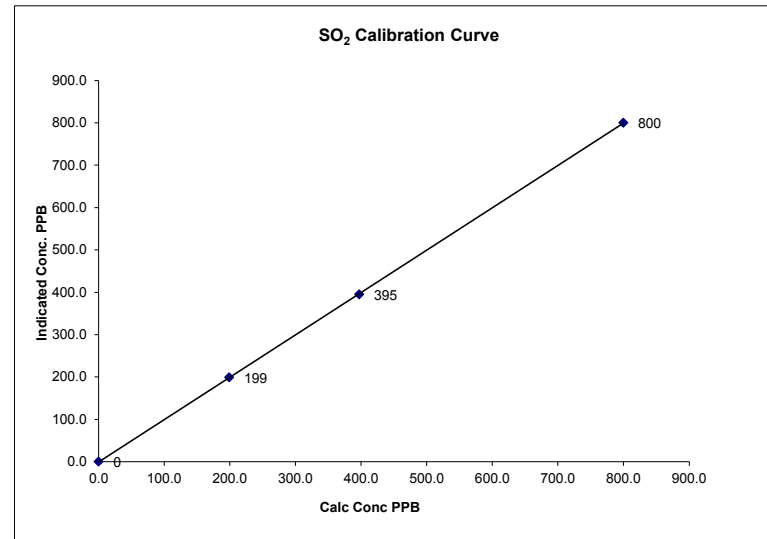


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**SO<sub>2</sub> Calibration Curve**

Calibration Date	October 15, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	Portable / ELK Point Airport
Start Time (MST)	10:22
End Time (MST)	12:43

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		0.999988
199	199	1.0000		1.000252
397	395	1.0056		-0.563686
800	800	1.0000		



Notes:

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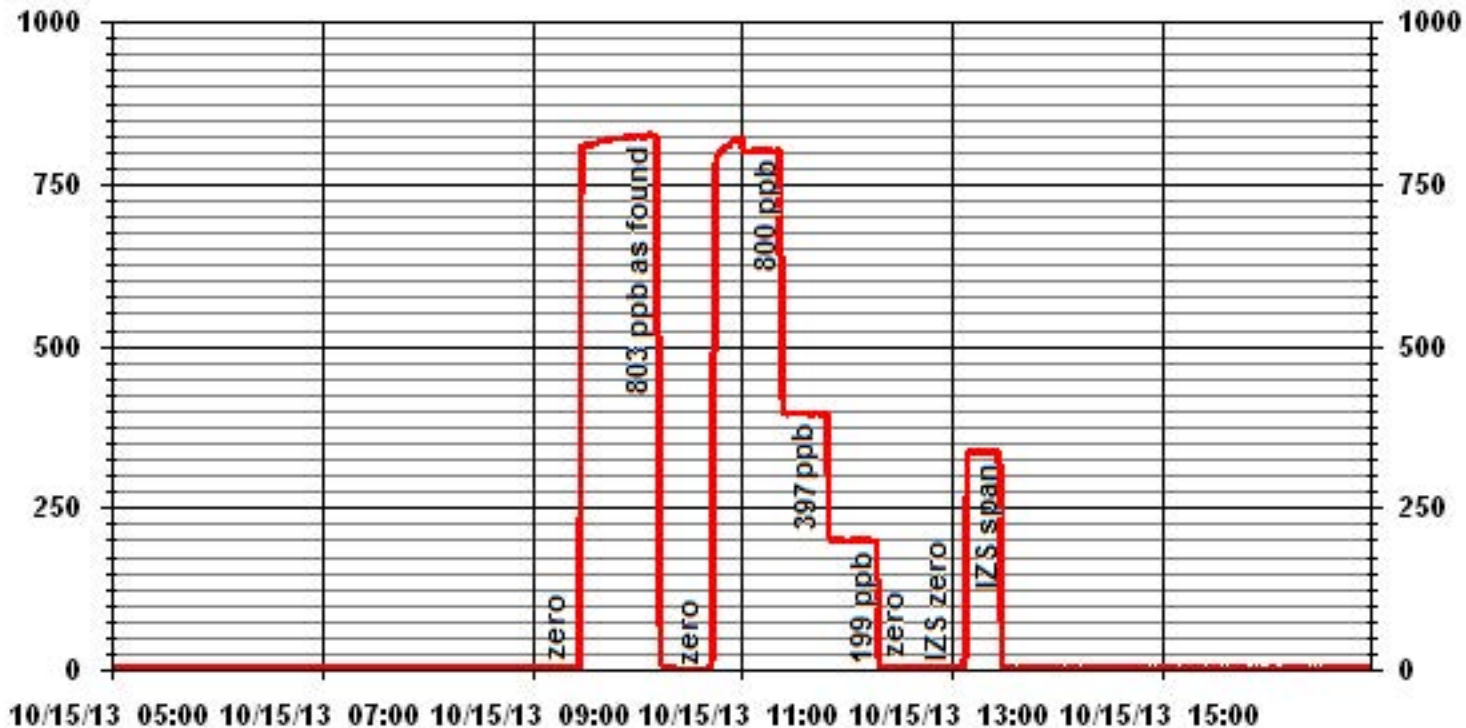
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Calibration Performed by: Waseem Ahmed

### 01 Minute Averages





# Hydrogen Sulphide

## H2S Calibration Report

### Station Information

Calibration Date	October 15, 2013	Previous Calibration	September 23, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Portable / ELK Point Airport		
Start Time (MST)	9:00	End Time (MST)	11:42
Reason:	Monthly calibration		
Barometric Pressure	27.92 in Hg	Station Temperature	22 Deg C
Cal Gas	10.1 ppm	Gas Cyl. #	BLM0059
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 :	N/A		
Calibrator Make / Model:	API 700	S/N :	690	Method:	Dilution
DAS Make / Model:	ESC8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	S/N:	NA	
Flow Meter:	API 700	S/N :	690		

### Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0-100 ppb	0-100 ppb	
Sample Flow / Box Temp	506 ccm 31.4 Deg C	506 ccm 31 Deg C	
HVPS / Lamp Setting	540 1620	540 1620	
PMT / RxCell Temp	7.9 Deg C 50 Deg C	7.9 Deg C 50 Deg C	
Converter / IZS Temp	314.1 Deg C 45 Deg C	314 Deg C 45.0 Deg C	
Offset / Slope	106 1.158	106 1.17	

### Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	NA
	No zero adj.			
4958	40.0	81	80	1.0104
4958	40.0	81	82	0.9858
4978	20.0	40	41	0.9858
4988	12.0	24	24	1.0000
4995	0	0	0	NA
Sum of Least Squares				0.9874
New Correction Factor				0.9858

### IZS Calibration Data

Before Calibration		After Calibration	
Auto Zero	0.0	0.8	
Auto Span	57.97	56.5	
Sample Lines Connected		Yes	

### Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0104
Percent Change:	-1.0%

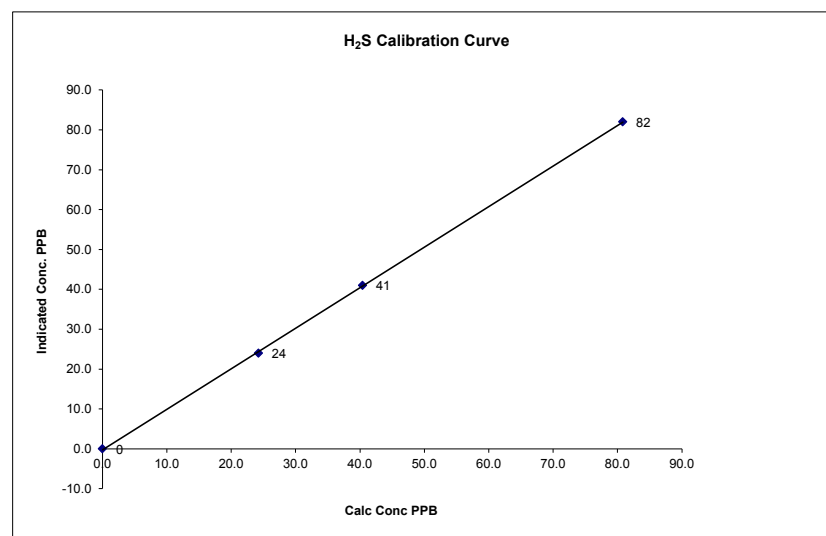
Notes:	<b>NA : Not Applicable</b>
	Change sample filter.

Calibration Performed by: Waseem Ahmed

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

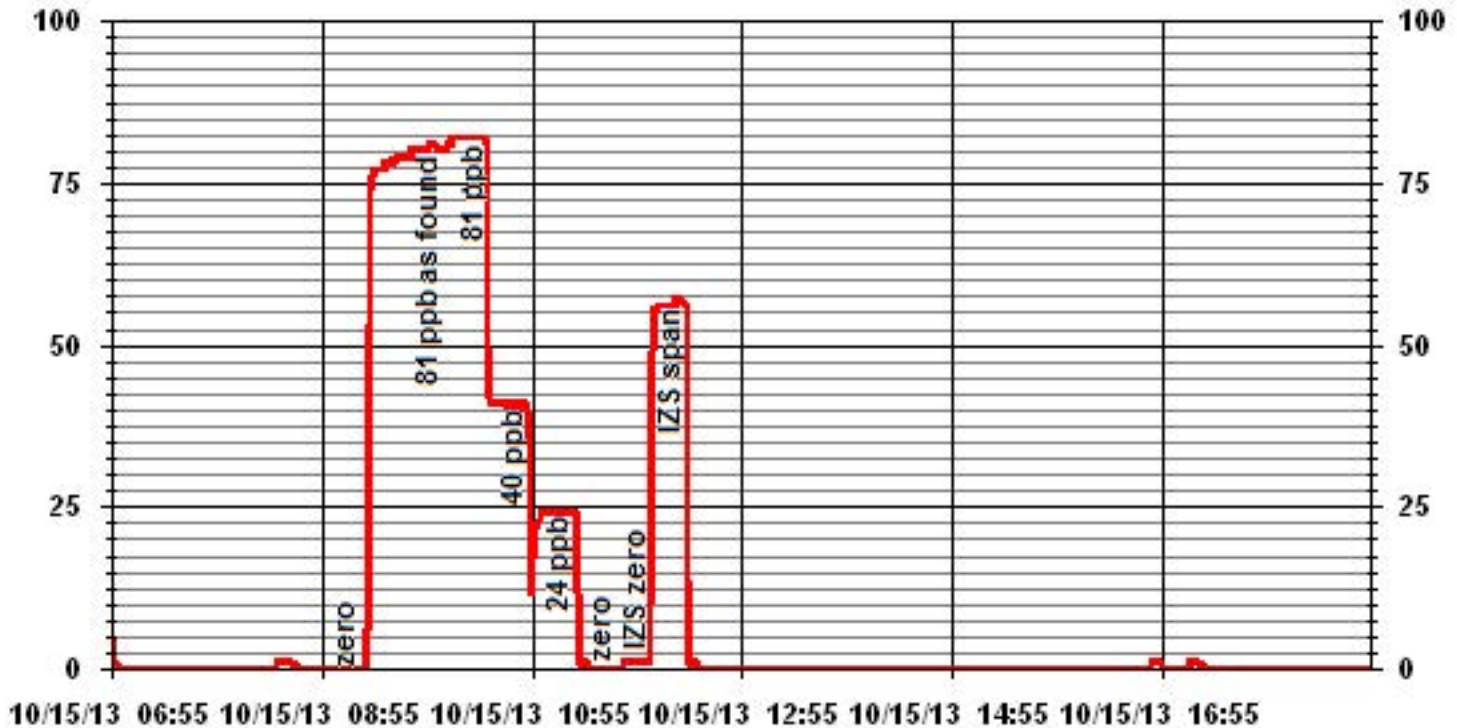
Calibration Date	October 15, 2013
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	Portable / ELK Point Airport
Start Time (MST)	9:00
End Time (MST)	11:42

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999931
0	0	NA	Intercept	(± 3% F.S.)	-0.222737
24	24	1.0100			
40	41	0.9858			
81	82	0.9858			



**Notes:**

### 01 Minute Averages



# Total Hydrocarbons (55i)

**Methane - Non Methane Hydrocarbon Calibration Report**

Station Information

Calibration Date:	October 15, 2013	Previous Calibration	September 5, 2013
Company:	Lakeland Industry and Community Association		
Plant / Location:	ELK Point Airport		
Start Time (MST)	11:50	End Time (MST)	13:15
Reason:	Monthly calibration		
Barometric Pressure:	27.88 inHg	Station Temperature:	22.0 Deg C
Calibrator:	API700	S/N:	690
Cal Gas Concentration:	CH4 593 PPM	C3H8 205 PPM	563.75 CH4
	Cyl. # LL84567	Cal Gas Expiry Date:	June 7, 2014
DAS make & Model:	ESC8832	S/N :	AO717
Chart Recorder:	N/A	S/N:	N/A
Output Voltage Range:	0-10	Chart Speed:	N/A cm/hr

Analyzer Information

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

Concentration Range (PPM)	CH4= 0-20		NMHC= 0-20		THC = 0-40	
	Before Calibration		After Calibration			
Hydrogen Pressure	40.3	psi	40.3	psi		
Air Pressure	32.4	psi	32.4	psi		
Carrier Pressure	31.1	psi	31.1	psi		
Detector Oven	175	Deg C	175	Deg C		
Filter Temp	175	Deg C	175	Deg C		
Column Oven Temp	75	Deg C	75	Deg C		
Flame Temp	378	Deg C	378	Deg C		
Box Temp	36.4	Deg C	36.6	Deg C		

Calibration Data

Gas Flows (sccm)		Calculated Concentration		Actual Concentration		Correction factors	
Dilution Flow	Cal Gas Flow	CH4	NMHC	CH4	NMHC	CH4	NMHC
3000	0.00	0.00	0.00	0.00	0.00	0.000	0.000
	No zero adj.						
2982	18.00	3.56	3.38	3.60	3.31	0.9883	1.0219
2982	18.00	3.56	3.38	3.56	3.37	0.9994	1.0037
2964	36.00	7.12	6.77	7.14	6.71	0.9966	1.0082
2991	9.00	1.78	1.69	1.77	1.74	1.0051	0.9720
3000	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
Correction Factors:						0.9994	1.0037

Percent Change from Previous Calibration

Previous Calibration Correction Factor:	CH4 0.9917	NMHC 1.0048
Current Correction Factor Before Span Adjust:	0.9863	0.9757
Percent Change:	0.5%	3.0%

IZS Calibration Data

		Before Calibration		After Calibration	
Auto Zero (ppm)	CH4	0.00	NMHC 0.00	CH4 0.00	NMHC 0.00
Auto Span (ppm)	CH4	11.13	NMHC 13.78	CH4 10.67	NMHC 13.74
Sample Lines Connected		YES			

Notes: Cylinder Pressures  
 Span 2000 psi  
 Hydrogen 650 psi  
 Zero Air 45 psi  
 Nitrogen 1500 psi

Notes:

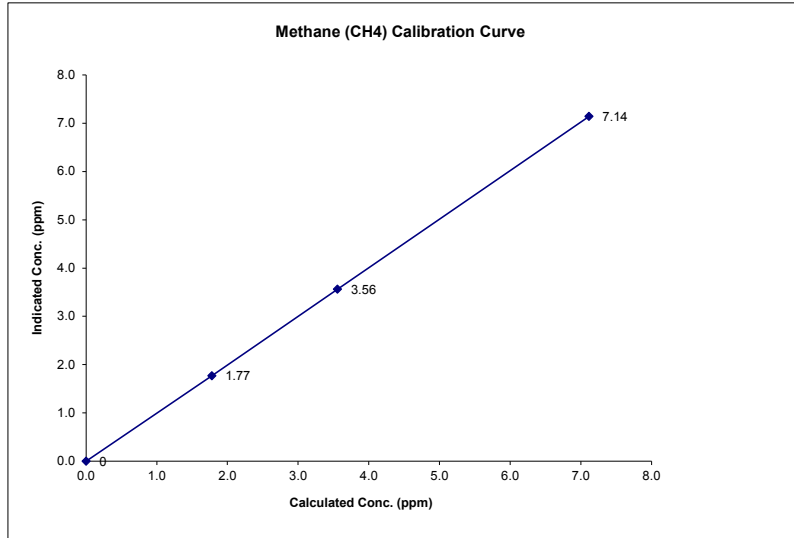
Spare cylinders: N2=0, H2=2 & Span =2

Calibration Performed by: Waseem ahmed

**Methane (CH4) Calibration Curve**

Calibration Date	October 15, 2013		
Company	Lakeland Industry and Community Association		
Plant / Location	ELK Point Airport		
Start Time (MST)	11:50	End Time (MST)	13:15

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient	(≥ 0.995)	
0	0	0.0000	Slope	(0.85 to 1.15)	1.003935
1.78	1.77	1.0051	Intercept	(± 3% F.S.)	-0.008000
3.56	3.56	0.9883			
7.12	7.14	0.9966			

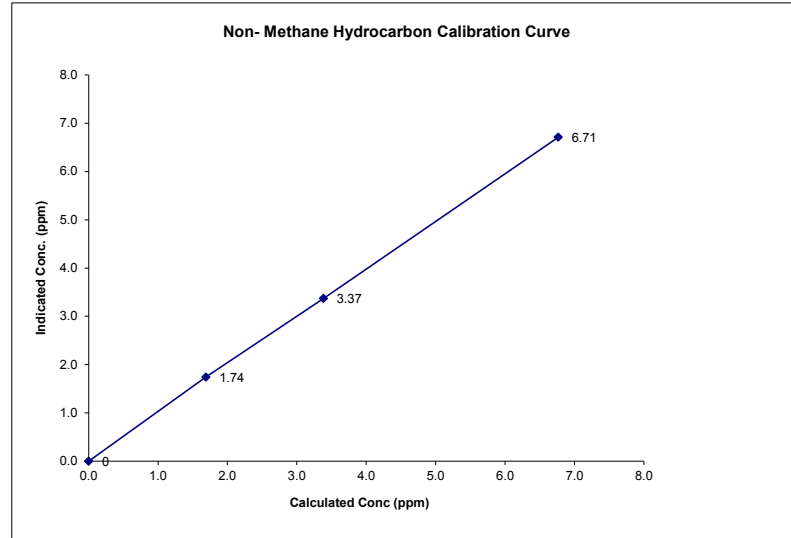


Notes:

**Non-Methane Hydrocarbon Calibration Curve**

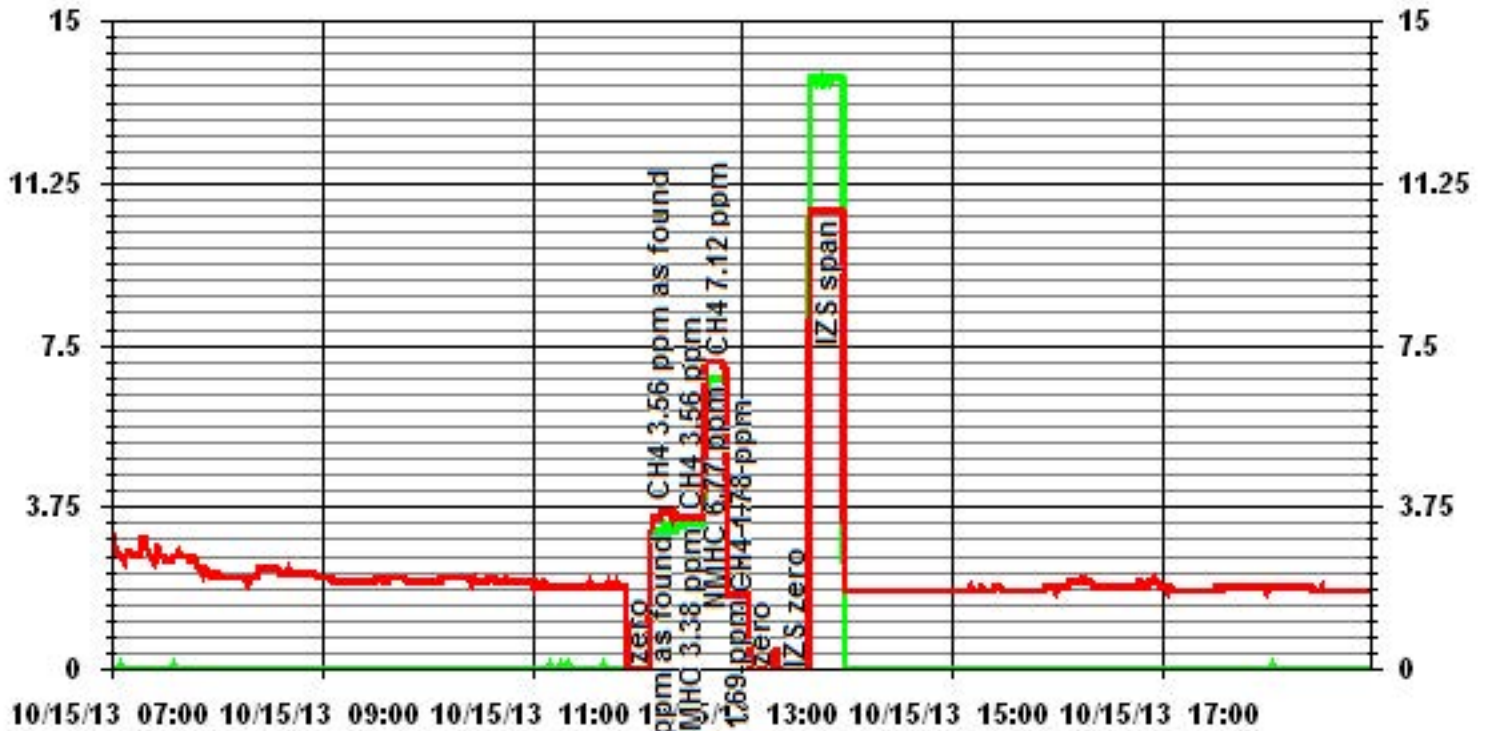
Calibration Date	October 15, 2013		
Company	Lakeland Industry and Community Association		
Plant / Location	ELK Point Airport		
Start Time (MST)	11:50	End Time (MST)	13:15

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient	(≥ 0.995)	
0	0	0.0000	Slope	(0.85 to 1.15)	0.999901
1.69	1.74	0.9720	Intercept	(± 3% F.S.)	0.988956
3.38	3.37	1.0219			
6.77	6.71	1.0082			



Notes:

### 01 Minute Averages



— LICA35

METHANE PPM

— LICA35

# Particulate Matter 2.5



**TEOM 1405F Audit**

<b><u>Station</u></b>		<b><u>Audit Transfer Standard</u></b>	
Date:	<u>October 11, 2013</u>	Make/Model:	<u>Fisher Brand</u>
Station Name:	<u>LICA Portable (CASA # 35)</u>	Serial Number:	<u>15-021B</u>
Location:	<u>ELK Point Air Port</u>	Cell s/n:	<u>N/A</u>
Operator:	<u>LICA</u>	Thermometer s/n:	<u>N/A</u>
<b><u>Sampler</u></b>		<b><u>Set-up and current Sampler readings</u></b>	
Make/Model	<u>Thermo Scientific Series 1405F</u>	F-Main Set Pt (l/min)	<u>3.00</u>
Unit #	<u>N/A</u>	F-Aux Set Pt (l/min)	<u>13.67</u>
Unit s/n	<u>1405A208301003</u>	Filter Load (%)	<u>28.8%</u>
Firmware Ver.	<u>1.52</u>	K <sub>o</sub> Factor	<u>13125.0</u>
Parameter	<u>PM 2.5 (with FDMS)</u>	Temp (°C)	<u>11.0</u>
		Press (ATM)	<u>0.930</u>

**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	<u>0.004</u>	Warnings	<u>None</u>
Pump Vacuum <0.40atm	<u>0.34</u>	Pump Gauge (inHg)	<u>-19</u>
<b>Temperature/Pressure</b>			
Measured Temp (± 2 °C)	<u>11.14</u>	D °C	<u>-0.1</u>
Measured Press (± 0.01atm)	<u>0.935</u>	DATM	<u>-0.005</u>
<b>Flow Audit</b>			
Indicated Main Flow (l/min)	<u>3.00</u>	Main Flow Drift (±10.0%)	<u>0.10%</u>
Measured Main Flow (l/min)	<u>3.02</u>	Flow Adjusted to Measured?	<u>Yes</u>
Indicated Bypass Flow (l/min)	<u>13.67</u>	Bypass Flow Drift (±10.0%)	<u>1.78%</u>
Measured Bypass Flow (l/min)	<u>13.81</u>	Flow Adjusted to Measured?	<u>Yes</u>
<b>Leak Check</b>		<b>Instrument Setup</b>	
Main (< 0.15 l/min)	<u>Base=-0.05, Ref.=-0.04</u>	Flow Control = Active	
Aux (< 0.6 l/min)	<u>Base=00.00, Ref.=00.00</u>	Report Condition = Actual	
<b>K<sub>o</sub> Factor</b>			
Measured	<u>N/A</u>		
K <sub>o</sub> Difference (± 2.5%)	<u>N/A</u>		

**Start Time:** 12:30      **Finish Time:** 13:50:00 PM

**Sample Inlet Cleaned:** Yes      **New Filters Installed:** Yes  
**New Filter Loading %:** 19.6%

**Comments:**

**Auditor/s:** Waseem Ahmed

**TEOM 1405F Audit**

<b><u>Station</u></b>		<b><u>Audit Transfer Standard</u></b>	
Date:	<u>October 23, 2013</u>	Make/Model:	<u>Fisher Brand</u>
Station Name:	<u>LICA Portable (CASA # 35)</u>	Serial Number:	<u>15-021B</u>
Location:	<u>ELK Point Air Port</u>	Cell s/n:	<u>N/A</u>
Operator:	<u>LICA</u>	Thermometer s/n:	<u>N/A</u>
<b><u>Sampler</u></b>		<b><u>Set-up and current Sampler readings</u></b>	
Make/Model	<u>Thermo Scientific Series 1405F</u>	F-Main Set Pt (l/min)	<u>3.00</u>
Unit #	<u>N/A</u>	F-Aux Set Pt (l/min)	<u>13.67</u>
Unit s/n	<u>1405A208301003</u>	Filter Load (%)	<u>22.9%</u>
Firmware Ver.	<u>1.52</u>	K <sub>o</sub> Factor	<u>13125.0</u>
Parameter	<u>PM 2.5 (with FDMS)</u>	Temp (°C)	<u>1.0</u>
		Press (ATM)	<u>0.942</u>

**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	<u>0.007</u>	Warnings	<u>None</u>
Pump Vacuum <0.40atm	<u>0.34</u>	Pump Gauge (inHg)	<u>-19</u>
<b>Temperature/Pressure</b>			
Measured Temp (± 2 °C)	<u>0.94</u>	D °C	<u>0.1</u>
Measured Press (± 0.01atm)	<u>0.946</u>	DATM	<u>-0.004</u>
<b>Flow Audit</b>			
Indicated Main Flow (l/min)	<u>3.00</u>	Main Flow Drift (±10.0%)	<u>0.43%</u>
Measured Main Flow (l/min)	<u>2.99</u>	Flow Adjusted to Measured?	<u>Yes</u>
Indicated Bypass Flow (l/min)	<u>13.67</u>	Bypass Flow Drift (±10.0%)	<u>1.45%</u>
Measured Bypass Flow (l/min)	<u>13.72</u>	Flow Adjusted to Measured?	<u>Yes</u>
<b>Leak Check</b>		<b>Instrument Setup</b>	
Main (< 0.15 l/min)	<u>Base=NA, Ref.=NA</u>	Flow Control = Active	
Aux (< 0.6 l/min)	<u>Base=NA, Ref.=NA</u>	Report Condition = Actual	
<b>K<sub>o</sub> Factor</b>			
Measured	<u>N/A</u>		
K <sub>o</sub> Difference (± 2.5%)	<u>N/A</u>		

**Start Time:** 8:45      **Finish Time:** 9:50

**Sample Inlet Cleaned:** NO      **New Filters Installed:** NO

**New Filter Loading %:** NA

**Comments:**

**Auditor/s:** Waseem Ahmed

# Nitrogen Dioxide

**NOx - NO- NO2 Calibration Report**

**Station Information**

Calibration Date	October 15, 2013	Previous Calibration	September 5, 2013
Company	LICA	Plant/Location	ELK Point Airport
Start Time (MST)	9:06	End Time (MST)	10:10
Reason:	As Found		
Barometric Pressure	27.92 in HG	Station Temperature	22 Deg C
Cal Gas Concentration	NOx 49.0 ppm	NO	48.9 ppm
Cal Gas Cylinder #	BAL3165	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 :	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	465 ccm	315.5 Deg C		465 ccm	314.5 Deg C		
Ozone Flow / Vacuum	78 ccm	4.8 *Hg-A		78 ccm	4.8 *Hg-A		
HVPS / A ZERO	674 Volts	9.3 MV		674 Volts	9.3 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.7 Deg C		50.0 Deg C	6.7 Deg C		
Box Temp / IZS Temp	30.8 Deg C	45.0 Deg C		31.0 Deg C	45.0 Deg C		
Offset	0.4 NOx	0.5 NO		0.4 NOx	0.5 NO		
Slope	1.064 NOx	1.051 NO		1.064 NOx	1.051 NO		
NO2 COEF / Conv Efficiency	NA NO2	0.997		NA NO2	0.997		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
5000	0.0	NA	0	0	NA	0	0	0	NA	NA
	No zero adj.									
4920	80.8	NA	791	790	NA	825	822	4	0.9593	0.9608

**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= 0.9593	NO= 0.9608	NO2=
				Average Converter Efficiency=		

**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	814 NOx	790 NO2		814 NOx	790 NO2		
Sample Lines Connected:				YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	0.997	0.998	
Current Correction Factor Before Span Adjust	0.959	0.961	
Percent Change	4.0%	3.8%	

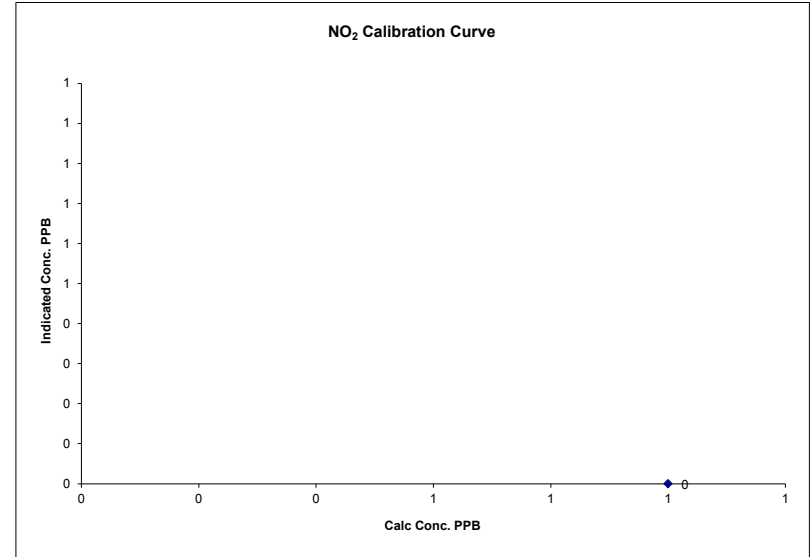
Notes: **NA : Not Applicable**

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

Calibration Date	October 15, 2013
Company	LICA
Plant / Location	ELK Point Airport
Start Time (MST)	9:06
End Time (MST)	10:10

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



Notes:

**NOx - NO- NO2 Calibration Report**  
Station Information

Calibration Date	October 15, 2013	Previous Calibration	September 5, 2013
Company	LICA	Plant/Location	ELK Point Airport
Start Time (MST)	10:22	End Time (MST)	14:50
Reason:	Monthly calibration		
Barometric Pressure	27.89 in Hg	Station Temperature	22 Deg C
Cal Gas Concentration	NOx 49.0 ppm	NO	48.9 ppm
Cal Gas Cylinder #	BAL3165	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:	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	465 ccm	314.5 Deg C		465 ccm	314.1 Deg C		
Ozone Flow / Vacuum	78 ccm	4.8 °Hg-A		78 ccm	4.8 °Hg-A		
HVPS / A ZERO	674 Volts	9.1 MV		674 Volts	8.8 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.7 Deg C		50.0 Deg C	6.7 Deg C		
Box Temp / IZS Temp	30.2 Deg C	45.0 Deg C		29.9 Deg C	45.0 Deg C		
Offset	0.4 NOx	0.5 NO		0.4 NOx	0.5 NO		
Slope	1.064 NOx	1.051 NO		1.019 NOx	1.013 NO		
NO2 COEF / Conv Efficiency	NA NO2	0.997		NA NO2	0.997		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
5000	0.0	NA	0	0	NA	0	0	0	NA	NA
	No zero adj.									
4920	80.5	NA	788	787	NA	788	788	0	1.0000	0.9984
	No span adj.									
4960	40.0	NA	392	391	NA	389	389	0	1.0067	1.0047
4980	20.0	NA	196	196	NA	197	196	1	0.9964	1.0000
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		
4920	80.8	NA	791	790	NA	791	790	1	NA	
4920	80.8	600	791	NA	504	790	287	503	1.0020	
	No adj.									
4920	80.8	300	791	NA	255	791	536	255	1.0000	
4920	80.8	120	791	NA	101	792	690	102	0.9902	

Linearity	Sum of Least Squares	NOx= 1.001	NO= 1.000	NO2= 1.001
OK?	Correction Factors:	NOx= 1.0000	NO= 0.9984	NO2= 1.0020
	Average Converter Efficiency=	100.27%		

**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	814 NOx	790 NO2		740 NOx	717 NO2		
	Sample Lines Connected:			YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	NA	NA	1.000
Current Correction Factor Before Span Adjust	1.000	0.998	1.002
Percent Change	#VALUE!	#VALUE!	-0.2%

**Notes**      **NA : Not Applicable**

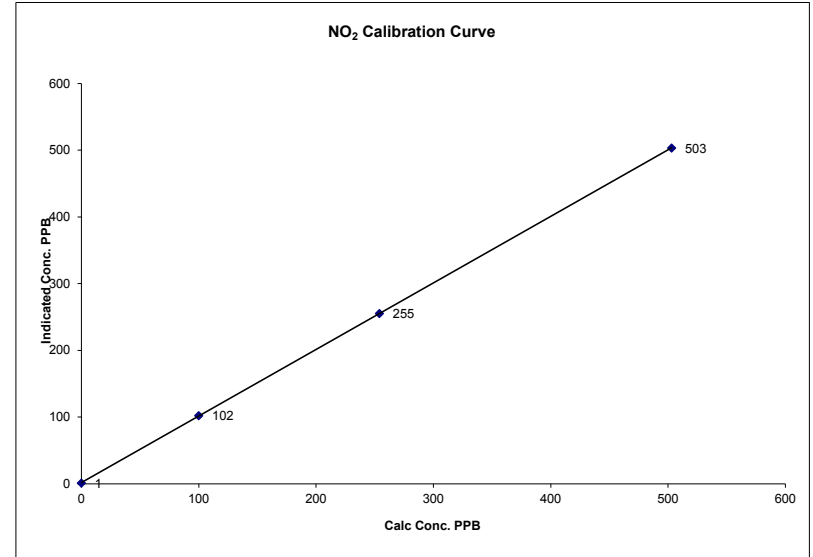
O3=450	Dilution 4920	Source flow 80.75
	Nox 794	NO 406    NO2 388

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

Calibration Date	October 15, 2013
Company	LICA
Plant / Location	ELK Point Airport
Start Time (MST)	10:22
End Time (MST)	14:50

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999994
0	1	NA	Intercept	(± 3% F.S.)	1.59997
100	102	0.9804			
254	255	0.9961			
503	503	1.0000			

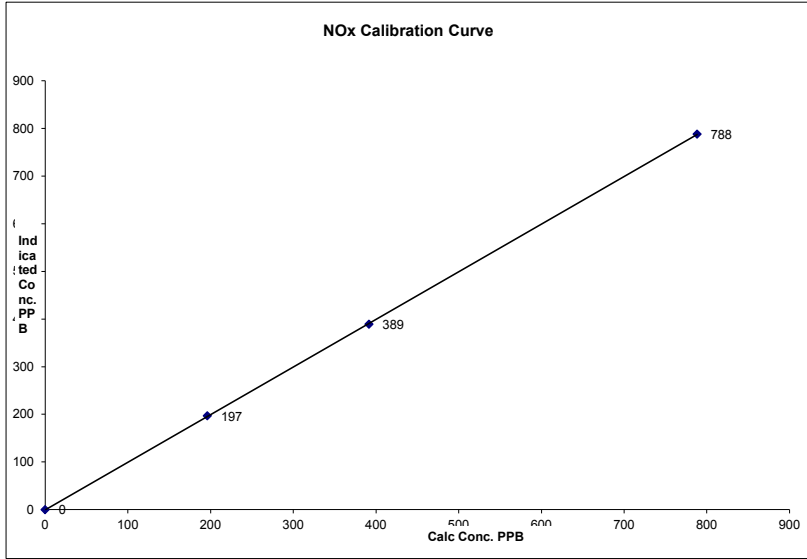


Notes:

**NOx Calibration Curve**

Calibration Date	October 15, 2013	
Company	LICA	
Plant / Location	ELK Point Airport	
Start Time (MST)	10:22	End Time (MST) 14:50

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999983
0	0	NA	Slope (0.85 to 1.15)	0.998884
196	197	0.9964	Intercept (± 3% F.S.)	-0.17677
392	389	1.0067		
788	788	1.0000		

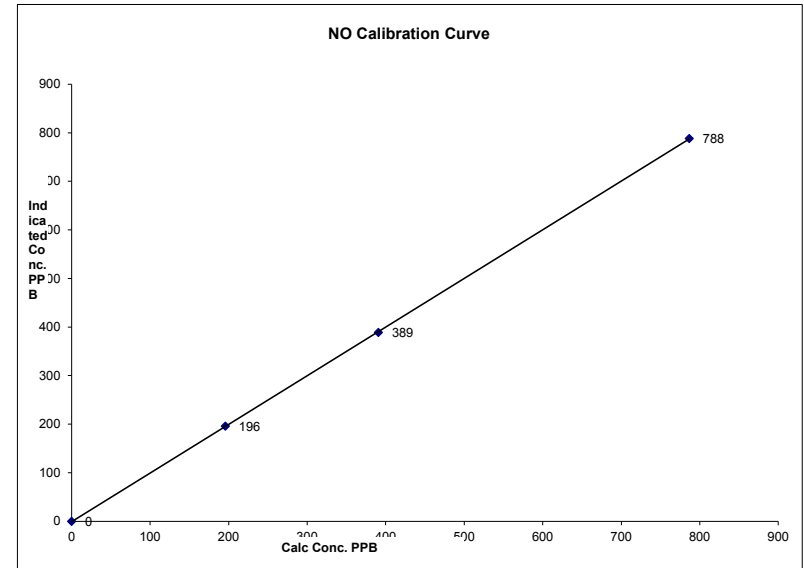


Notes:

**NO Calibration Curve**

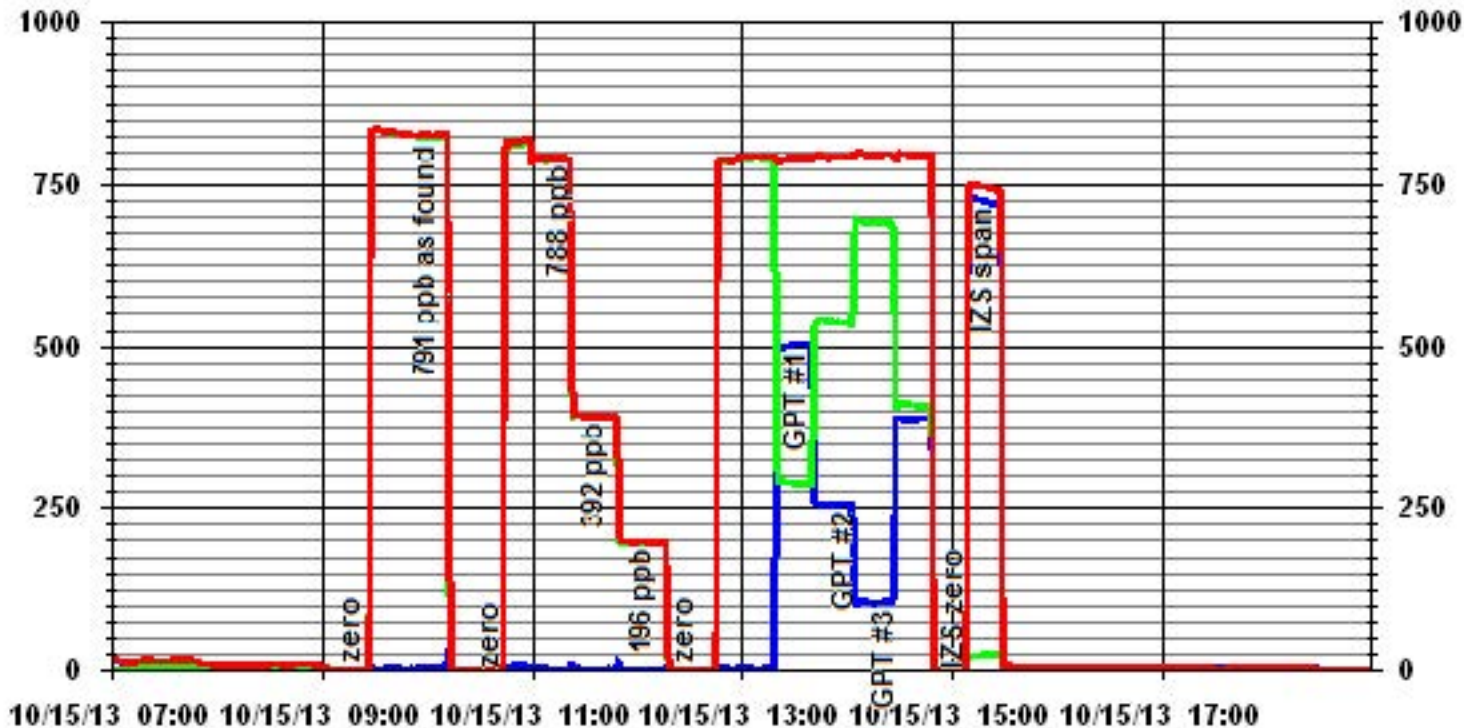
Calibration Date	October 15, 2013	
Company	LICA	
Plant / Location	ELK Point Airport	
Start Time (MST)	10:22	End Time (MST) 14:50

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999988
0	0	NA	Slope (0.85 to 1.15)	1.001362
196	196	1.0000	Intercept (± 3% F.S.)	-0.57636
391	389	1.0047		
787	788	0.9984		



Notes:

### 01 Minute Averages



— LICA35 NOX\_ PPB

— LICA35 NO\_ PPB

— LICA35 NO2\_ PPB

**NOx - NO- NO2 Calibration Report**  
Station Information

Calibration Date	October 24, 2013	Previous Calibration	October 15, 2013
Company	LICA	Plant/Location	ELK Point Airport
Start Time (MST)	9:05	End Time (MST)	9:55
Reason:	As found		
Barometric Pressure	27.98 in HG	Station Temperature	24 Deg C
Cal Gas Concentration	NOx 49.0 ppm	NO	48.9 ppm
Cal Gas Cylinder #	BAL3165	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:	Enviro-nics 6100	S/N :	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N :	NA		
Flow Meter:	Enviro-nics 6100	S/N :	4760		

**Analyzer Settings**

Before Calibration				After Calibration			
Concentration Range	0-1000			ppb			
Sample Flow/Conv. Temp	464 ccm	315.3 Deg C		464 ccm	314.5 Deg C		
Ozone Flow / Vacuum	78 ccm	4.7 "Hg-A		78 ccm	4.7 "Hg-A		
HVPS / A ZERO	674 Volts	8.7 MV		674 Volts	8.8 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.7 Deg C		50.0 Deg C	6.7 Deg C		
Box Temp / IZS Temp	33.3 Deg C	45.3 Deg C		33.5 Deg C	45.3 Deg C		
Offset	0.4 NOx	0.5 NO		0.4 NOx	0.5 NO		
Slope	1.019 NOx	1.013 NO		1.019 NOx	1.013 NO		
NO2 COEF / Conv Efficiency	NA NO2	0.997		NA NO2	0.997		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	0	0	0	NA	NA
	No zero adj.									
4920	80.5	NA	788	787	NA	773	776	-3	1.0198	1.0138

**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= 1.0198	NO= 1.0138	NO2=
				Average Converter Efficiency=		

**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	740 NOx	717 NO2		740 NOx	717 NO2		
Sample Lines Connected:				YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	1.000	0.998	
Current Correction Factor Before Span Adjust	1.020	1.014	
Percent Change	-1.9%	-1.5%	

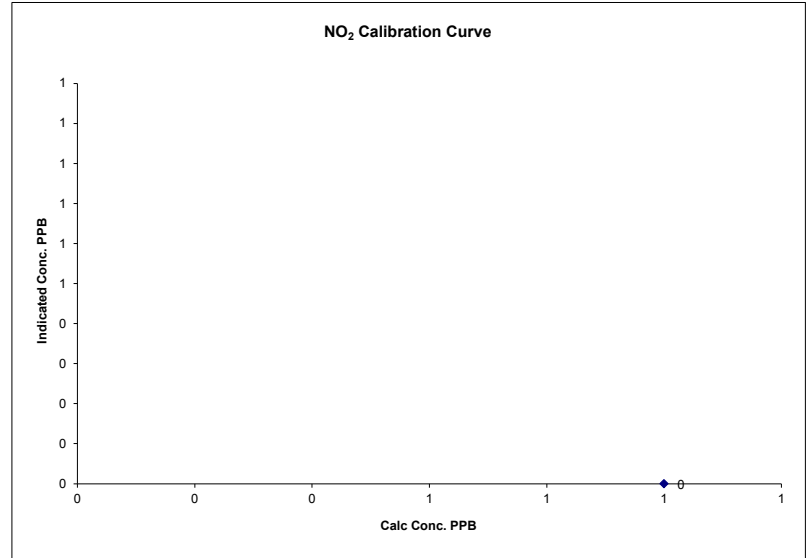
Notes: **NA : Not Applicable**

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

Calibration Date	October 24, 2013
Company	LICA
Plant / Location	ELK Point Airport
Start Time (MST)	9:05
End Time (MST)	9:55

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



Notes:



**NOx - NO- NO2 Calibration Report**  
**Station Information**

Calibration Date	October 24, 2013	Previous Calibration	October 15, 2013
Company	LICA	Plant/Location	ELK Point Airport
Start Time (MST)	11:30	End Time (MST)	12:40
Reason:	2nd As found		
Barometric Pressure	27.98 in Hg	Station Temperature	21 Deg C
Cal Gas Concentration	NOx 49.0 ppm	NO	48.9 ppm
Cal Gas Cylinder #	BAL3165	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:	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	462 ccm	314.5 Deg C		464 ccm	314.5 Deg C		
Ozone Flow / Vacuum	78 ccm	4.8 °Hg-A		78 ccm	4.7 °Hg-A		
HVPS / A ZERO	674 Volts	8.8 MV		674 Volts	8.8 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.7 Deg C		50.0 Deg C	6.7 Deg C		
Box Temp / IZS Temp	29.3 Deg C	45.0 Deg C		33.5 Deg C	45.3 Deg C		
Offset	0.4 NOx	0.5 NO		0.4 NOx	0.5 NO		
Slope	1.019 NOx	1.013 NO		1.019 NOx	1.013 NO		
NO2 COEF / Conv Efficiency	NA NO2	0.997		NA NO2	0.997		

**Dilution Calibration Data**

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	1	0	1	NA	NA
	No zero adj.									
4920	80.5	NA	789	787	NA	790	790	1	0.9995	0.9962

**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= 0.9995	NO= 0.9962	NO2=
Average Converter Efficiency=						

**IZS Calibration Data**

Before Calibration				After Calibration			
Auto Zero	0.0 NOx	0.0 NO2		0.0 NOx	0.0 NO2		
Auto Span	740 NOx	717 NO2		740 NOx	717 NO2		
Sample Lines Connected:				YES			

**Percent Change**

	NOx	NO	NO2
Previous Month's Calibration Correction Factor	1.000	0.998	
Current Correction Factor Before Span Adjust	1.000	0.996	
Percent Change	0.0%	0.2%	

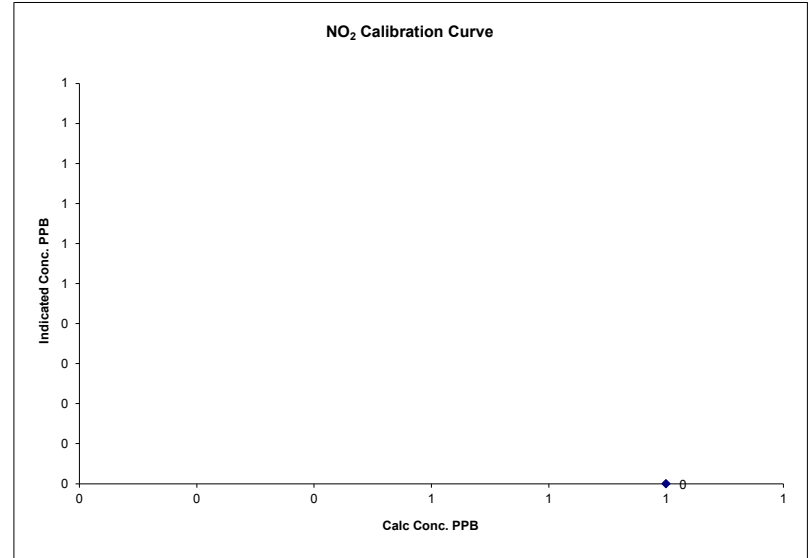
Notes: **NA : Not Applicable**

Calibration Performed by: Waseem Ahmed

**NO2 Calibration Curve**

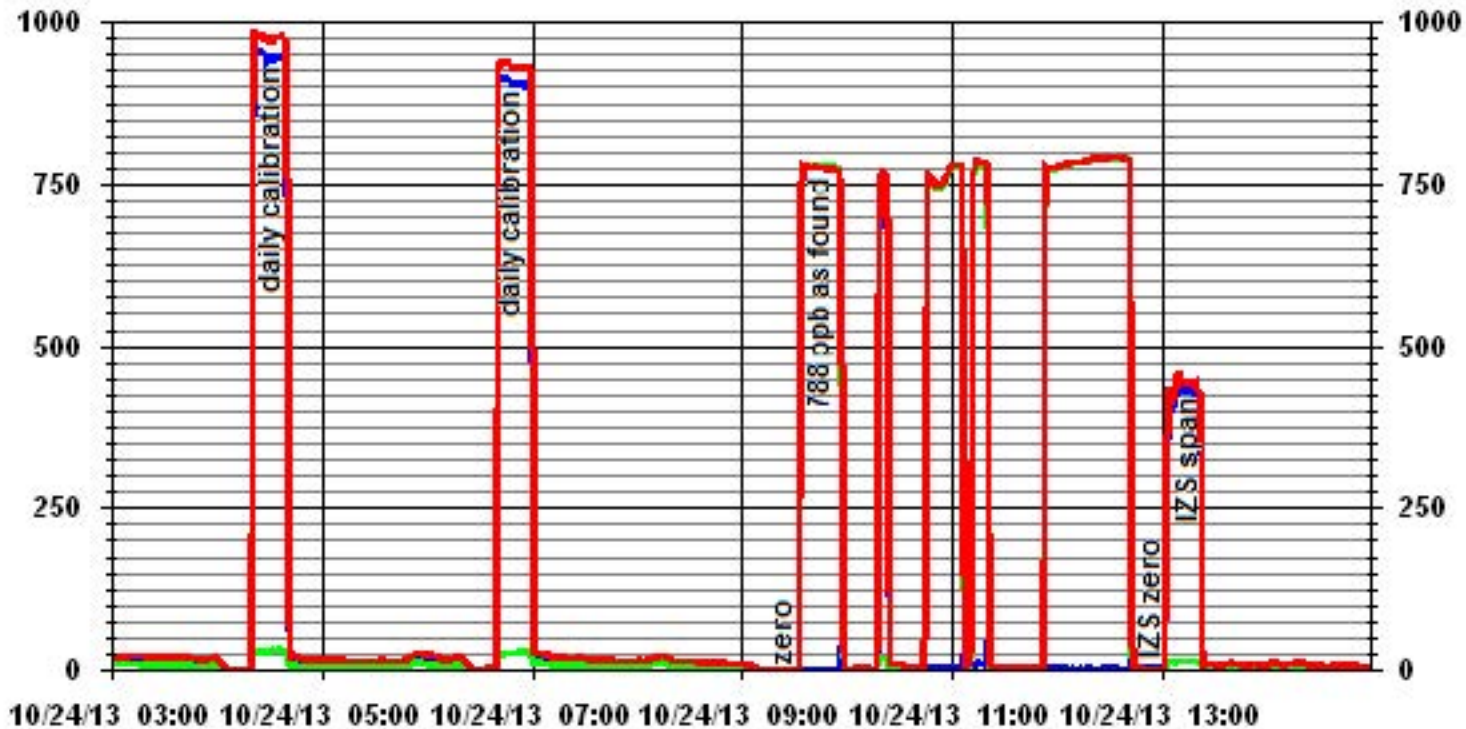
Calibration Date	October 24, 2013
Company	LICA
Plant / Location	ELK Point Airport
Start Time (MST)	11:30
End Time (MST)	12:40

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



Notes:

# 01 Minute Averages



— LICA35 IIOX\_ PPB

— LICA35 IIO\_ PPB

— LICA35 IIO2\_ PPB

# Ozone

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

#### Station Information

Calibration Date	October 23, 2013	Previous Calibration	September 5, 2013
Company	Lakeland Industry & Community Association		
Plant / Location	EIK Point Airport		
Start Time (MST)	8:30	End Time (MST)	11:30
Reason:	Monthly calibration		
Barometric Pressure	28.19 in HG	Station Temperature	19 Deg C
DAS Output Voltage	0-10 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 :	AO717		

#### Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range	0-500 ppb							
Cell A Flow / Cell B Flow	760 LPM	766 LPM	758 LPM	766 LPM				
O <sub>3</sub> Set Level	705 mmHg		705 mmHg					
Bench Lamp	54.1 Deg C		54.1 Deg C					
O <sub>3</sub> Lamp / Box Temp	68.2 Deg	32.4 Deg C	68.2 Deg C	32.9 Deg C				
Offset / Slope	-0.2	1.014	-0.2	1.047				

#### 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	384	376	1.0213
4994	450	384	380	1.0105
4994	300	254	254	1.0000
4994	120	100	100	1.0000
4994	0	0	0	N/A
Sum of Least Squares				1.0070
New Correction Factor				1.0105

#### IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	329	347.7
Sample Lines Connected		Yes
Previous Calibration Correction Factor:		0.9973
Current Correctio Factor Before Span Adjust:		1.0213
Percent Change:		-2.3%

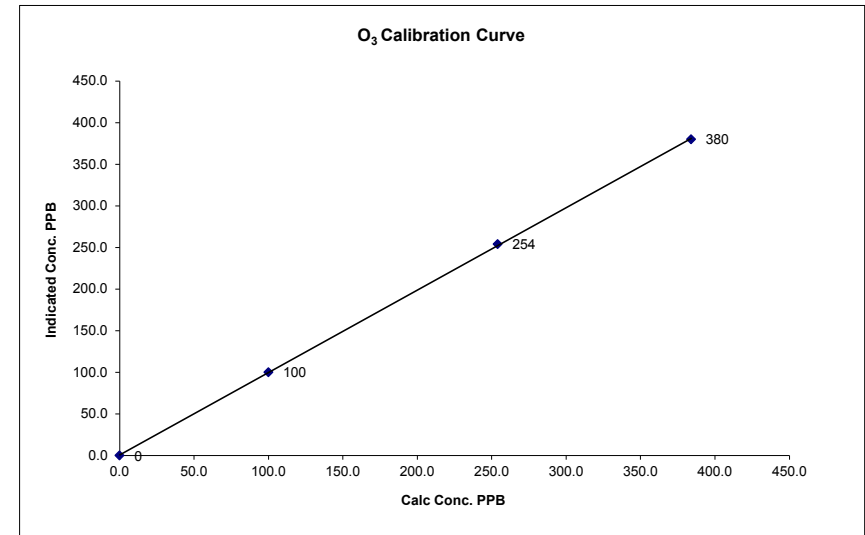
Note: N/A : Not Applicable  
Change sample filter.

Calibration Performed by: Waseem Ahmed

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

Calibration Date	October 23, 2013
Company	Lakeland Industry & Community Association
Plant / Location	EIK Point Airport
Start Time (MST)	8:30
End Time (MST)	11:30

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
0	0	N/A	Slope (0.85 to 1.15)	0.999946
100	100	1.0000	Intercept (± 3% F.S.)	0.990700
254	254	1.0000		0.715759
384	380	1.0105		



Notes:

# 01 Minute Averages

