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June 10, 2014

RE: April 2014 Ambient Air Monitoring Monthly Reports

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

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

Respectfully,

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

Michael Bisaga

Airshed Program Manager
Lakeland Industry and Community Association

cc (email): LICA Office

Lakeland Industry & Community Association

Cold Lake Monitoring Site

Ambient Air Monitoring

Data Report

For

April 2014

Prepared By:



May 30, 2014

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: April 2014

The monthly ambient data report:

- Prepared by Lili Zhou
- Reviewed by Lily Lin

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 – April 2014

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 ₂ (PPB)	172	48	0	0	0.02	1	VAR	VAR	VAR	VAR	0.3	13	99.9
TRS (PPB)	-	-	-	-	0.00	1	1	6	3.4	137(SE)	0.0	ALL	99.9
NO ₂ (PPB)	159	-	0	-	2.11	11.1	30	7	2.2	240(WSW)	3.6	30	49.0
NO (PPB)	-	-	-	-	0.36	10.5	21	6	0.5	56(NE)	1.1	21	49.0
NO _x (PPB)	-	-	-	-	2.47	18.6	30	7	2.2	240(WSW)	4.7	30	49.0
O ₃ (PPB)	82	-	0	-	36.1	56	30	17, 18	7.9, 3.4	251(WSW) 227(SW)	46.4	9	99.9
THC (PPM)	-	-	-	-	2.06	3.3	30	7	2.2	240(WSW)	2.3	1, 30	99.9
PM 2.5 (UG/M ³)	-	30	-	0	4.27	30	29	10	7.3	278(W)	7.6	4	98.6
TEMPERATURE (DEG C)	-	-	-	-	1.97	20.2	30	14, 16	4.6, 6.7	235(SW) 248(WSW)	11.6	30	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	68.07	99	28	VAR	VAR	VAR	93.5	27	100.0
VECTOR WS (KPH)	-	-	-	-	7.07	25.4	9	13	-	290(WNW)	16.2	23	100.0
VECTOR WD (DEGREES)	-	-	-	-	107(ESE)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS NA: NOT AVAILABLE

Monthly Non-Continuous Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

Passive Ambient Monitoring Network – April 2014

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO ₂	#14	1.0	0.4
H ₂ S	#32	0.17	0.09
NO ₂	#6, #28	3.1	1.1
O ₃	#4	45.62	36.44

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

A trailer audit was performed on April 24th by Alberta Environment.

Sulphur Dioxide (PPB)

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

The analyzer was working well throughout the month. The monthly calibration was performed on April 16th. The inlet filter was changed before the monthly calibration. 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: 501

The analyzer spanned high on April 1st. The as found points check was done on April 2nd, and the result was good. The 3-points calibration was performed following the as found points check. Another 3-points check calibration was performed on April 15th to ensure the analyzer's functionality. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – COLD LAKE SOUTH

Total Hydrocarbon (PPM)

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

The monthly calibration was performed on April 15th. The inlet filter was changed before the monthly calibration was started. The daily span results went above 10% of the limited range on April 18th because the expected value was not adjusted after the calibration was completed on April 15th. The expected value was adjusted on April 21st. This event did not affect the data quality. Data was corrected using daily zero information.

Ozone (PPB)

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

The analyzer was working well throughout the month. The monthly calibration was performed on April 17th. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

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

The 3-point calibration was performed on April 16th at hour 8 and the GPT calibration was done on April 17th. The inlet filter was changed before the monthly calibration was started on April 16th. During the site visit on April 16th, it is found that there was a mis-connected sample line between the sample manifold and the analyzer's sample inlet. Due to this error, the analyzer would had been drawing sample air from the interior of the trailer rather than the exterior since last month calibration which was completed on March 13th. Therefore, data between April 1st hour 0 to April 16th hour 5 were considered invalid and were discarded. A total of 366 hours of data was invalidated.

General Monthly Summary

AQM STATION – LICA – COLD LAKE SOUTH

Particulate Matter 2.5 (UG/M3)

- Analyzer make / model –TEOM1405F, S/N: 1405A201620804
- One Teom audit was performed this month on April 28th. The Teom filter was replaced and a leak check was performed on April 28th. 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/m3.

Relative Humidity (PERCENT)

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

Ambient Temperature (DEGC)

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

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

- System make / model –MetOne, S/N: F1644
- The wind system is reported as vector wind speed and vector wind direction. The last wind system calibration was performed on November 18th, 2012.
- No operational issues were observed during the month.

Trailer Temperature (DEGC)

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

General Monthly Summary

AQM STATION – LICA – COLD LAKE SOUTH

Datalogger

- System make / model - ESC 8832, S/N: 263
- Software make / version - ESC v 5.51a

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

Trailer

The glass manifold was cleaned on April 17th. The sample tubing connected between the analyzer and the manifold was replaced on April 17th.

Passive Network

The samplers installed at site #2 had been removed, so no sample filters were installed. Both the O3 sample and the SO2 sample installed at site #32 were damaged.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

SULPHUR DIOXIDE (SO2) hourly averages in ppb

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

STATUS FLAG CODES

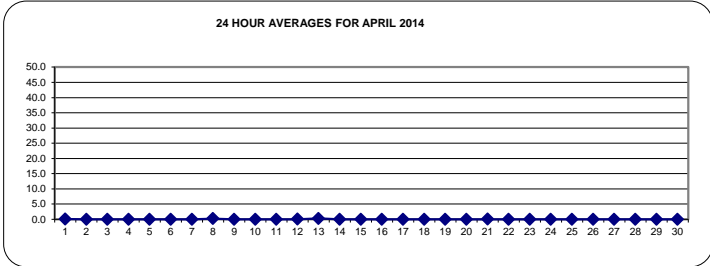
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

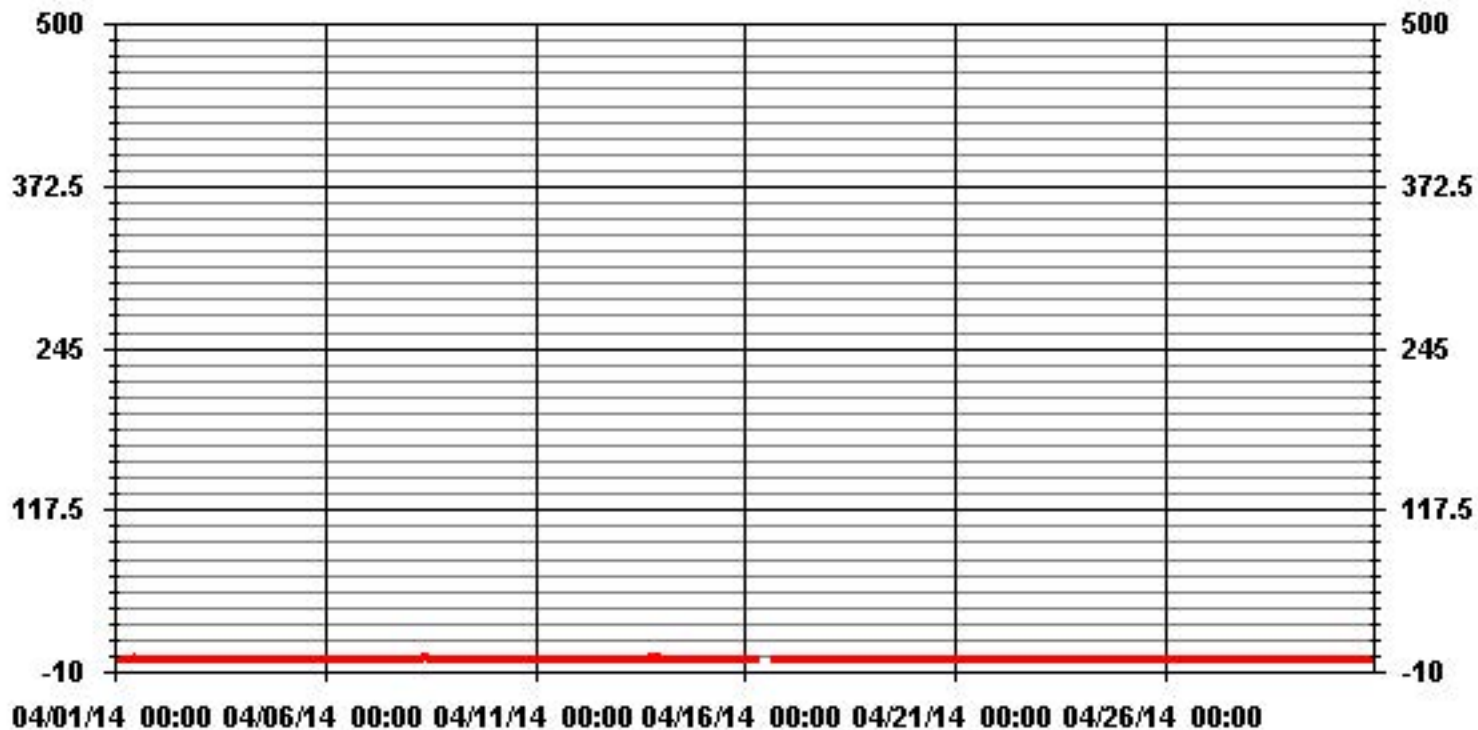
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	15					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.3	PPB			ON DAY(S)	13
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	12	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.15		MONTHLY AVERAGE:	0.02	PPB	



01 Hour Averages



— LICA SO2_ PPB

Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

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

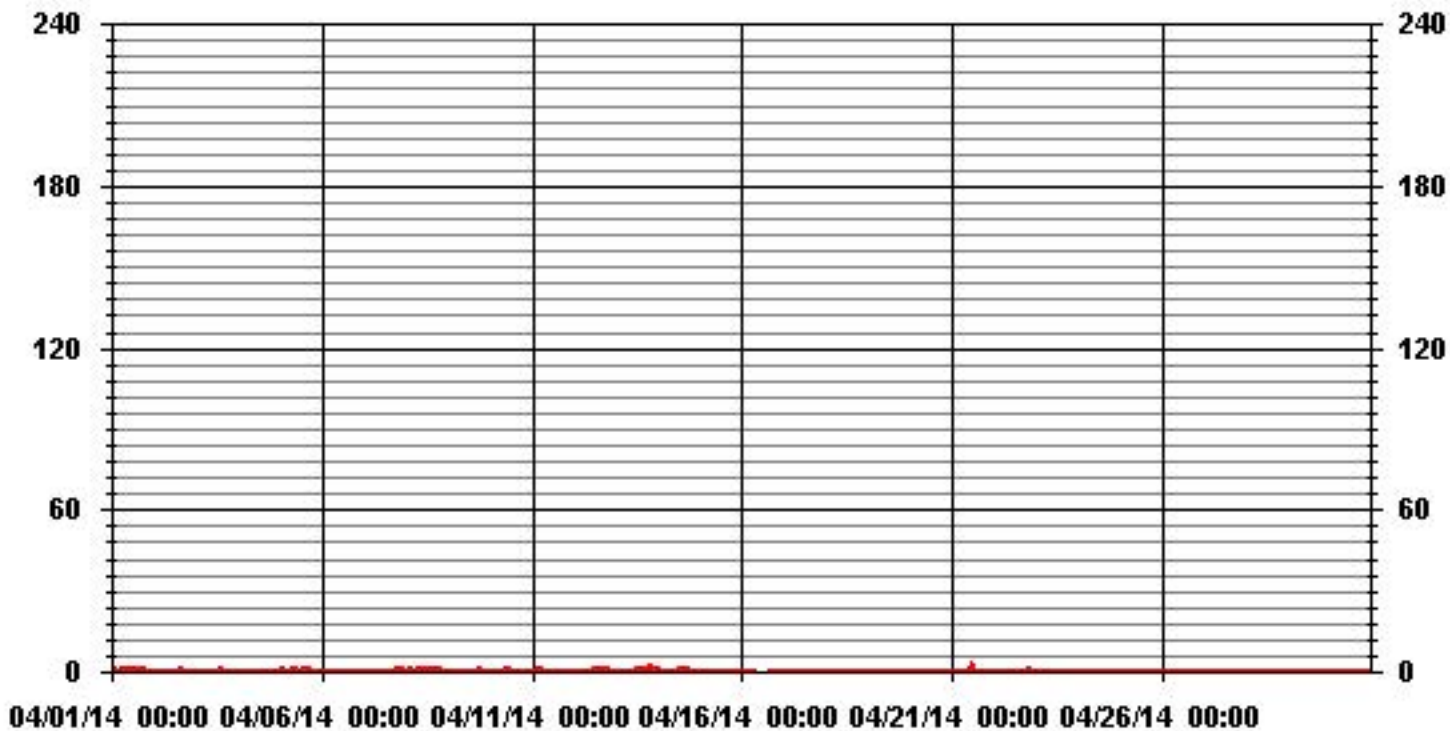
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	71					
MAXIMUM INSTANTANEOUS VALUE:	2	PPB	@ HOUR(S)	19, 11	ON DAY(S)	13, 21
	VAR-VARIOUS					
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	718	HRS	
MONTHLY CALIBRATION TIME:	13	HRS				
STANDARD DEVIATION:	0.32					

01 Hour Averages



LICA
 SO2_ / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

Logger Id : 01
 Site Name : LICA
 Parameter : SO2_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	2.95	2.95	5.76	4.88	18.78	11.39	16.12	2.81	1.47	2.07	3.69	9.91	6.06	6.21	2.21	2.66	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.95	2.95	5.76	4.88	18.78	11.39	16.12	2.81	1.47	2.07	3.69	9.91	6.06	6.21	2.21	2.66	

Calm : .00 %

Total # Operational Hours : 676

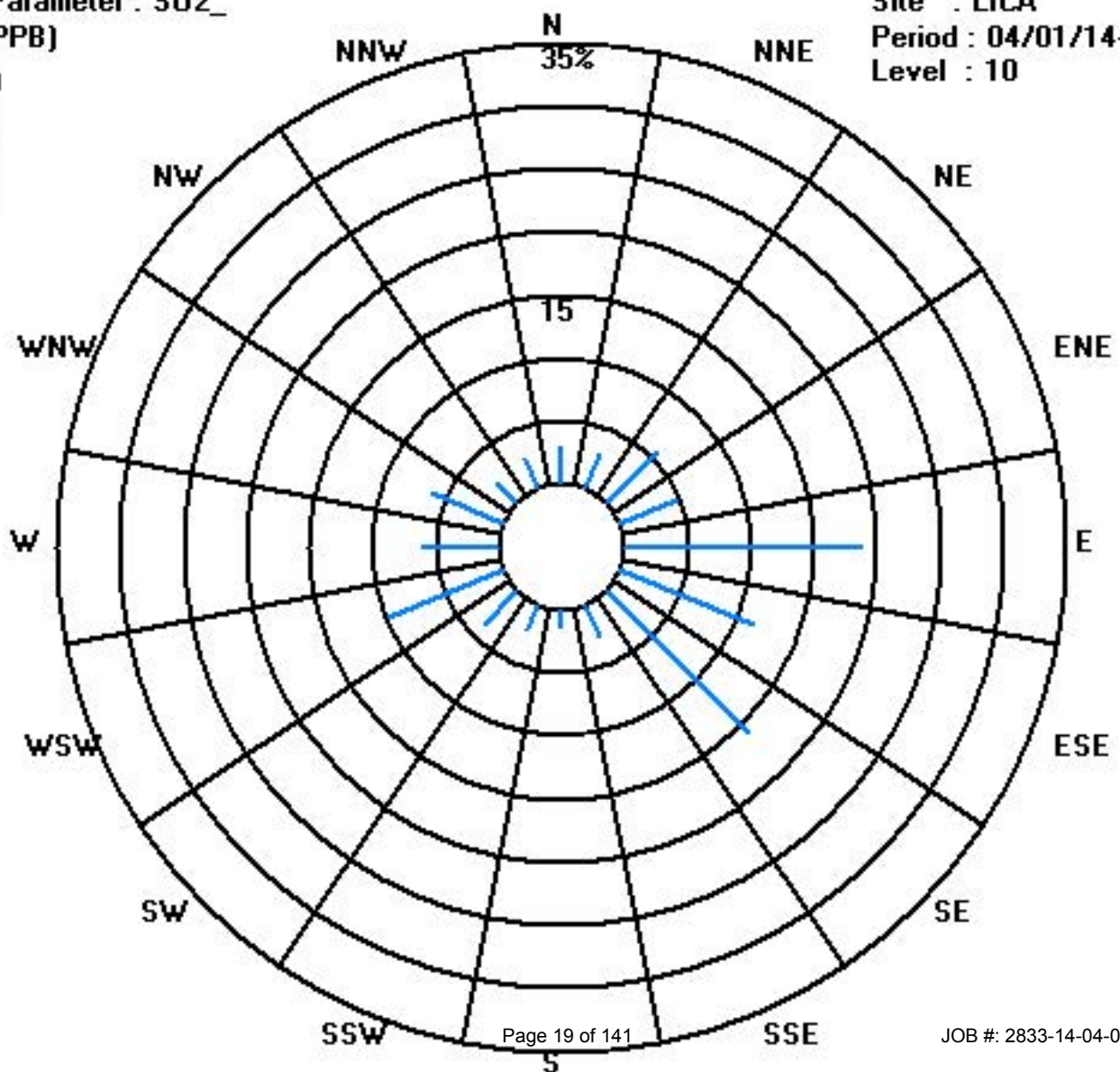
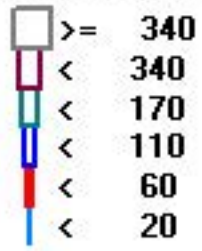
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	20	20	39	33	127	77	109	19	10	14	25	67	41	42	15	18	676
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	20	20	39	33	127	77	109	19	10	14	25	67	41	42	15	18	

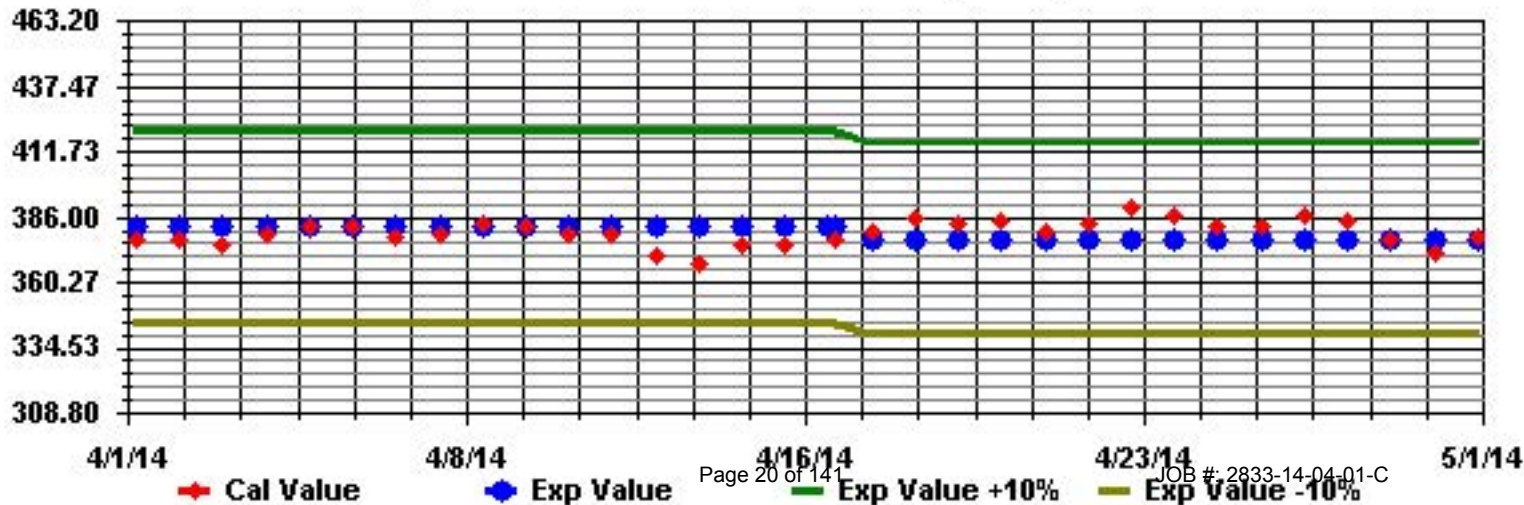
Calm : .00 %

Total # Operational Hours : 676

Class Limits (PPB)



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



Total Reduced Sulphur

Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

TOTAL REDUCED SULPHUR (TRS) hourly averages in ppb

MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	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	0	0	0	S	0	I	0	S	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	I	0.0	24	
	2	0	0	0	S	0	0	0	C	C	C	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	0	0	0	0	0	0	0	0	0	0.0	24	
	5	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0.0	24	
	6	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	24	
	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	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	
	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	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	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	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	0	0	S	C	C	C	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	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	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	23	
	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	C	C	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	0.0	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	0	0	0	0	0	0	0	S	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	S	0	0	0.0	24	
	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	24	
	HOURLY MAX	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

STATUS FLAG CODES

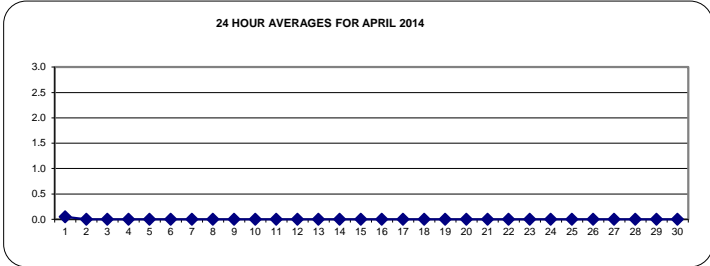
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

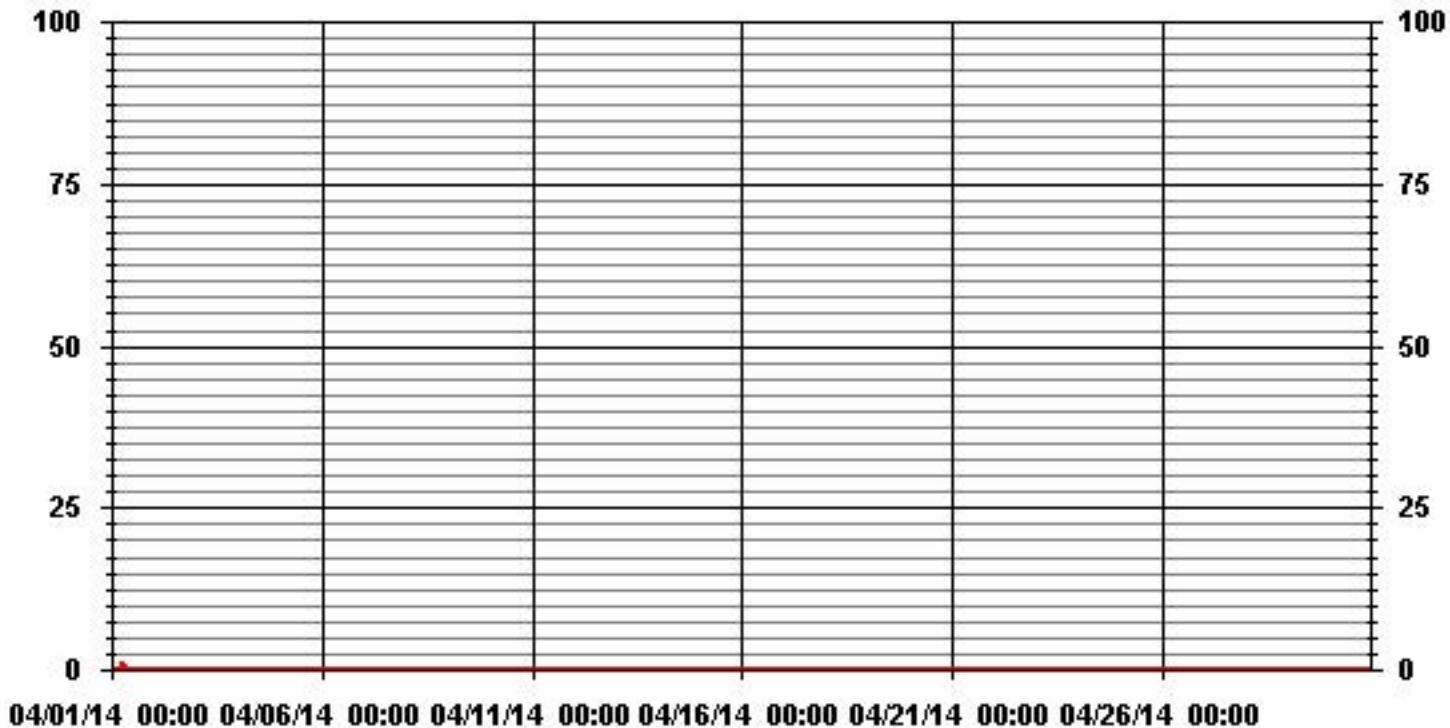
ALBERTA ENVIRONMENT:	1-HR	NA	PPB	24-HR	NA	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF 24-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	1					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	6	ON DAY(S)	1
MAXIMUM 24-HR AVERAGE:	0.0	PPB			ON DAY(S)	ALL
					VAR-VARIOUS	
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	719 HRS		
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	99.9 %		
STANDARD DEVIATION:	0.04		MONTHLY AVERAGE:	0.00 PPB		



01 Hour Averages



Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

TOTAL REDUCED SULPHUR MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
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		I	I	I	I	S	I	I	I	S	S	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	1.0	24
2		I	I	I	S	I	I	I	C	C	C	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	1.0	24
3		I	I	S	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	1.0	24
4		I	S	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	1.0	24
5		S	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	S	I	I	1.0	24
6		I	I	I	0	I	I	I	I	I	I	0	I	I	I	I	I	I	I	I	I	I	I	I	S	I	I	0.9	24
7		I	I	I	I	I	I	I	I	I	I	I	I	I	S	I	I	I	I	I	I	I	S	I	I	I	I	1.0	24
8		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	S	I	I	I	I	I	1.0	24
9		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	S	I	I	I	I	I	I	1.0	24
10		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	S	I	I	I	I	I	I	I	I	1.0	24
11		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	S	I	I	I	I	I	I	I	I	I	I	1.0	24
12		I	I	I	I	I	I	I	I	I	0	I	I	I	I	I	S	I	I	I	I	I	I	I	I	I	I	1.0	24
13		I	I	I	I	I	I	I	I	I	I	I	I	I	I	S	I	I	I	I	I	I	I	I	I	I	I	1.0	24
14		I	I	I	I	I	I	I	I	I	I	I	I	I	S	I	I	I	I	I	I	I	I	I	I	I	I	1.0	24
15		I	I	I	I	I	I	I	I	I	I	I	I	C	C	C	C	C	I	I	I	I	I	I	I	I	I	1.0	24
16		0	I	0	I	I	I	I	I	I	I	I	I	S	I	I	0	I	I	I	I	I	I	I	I	I	I	0.9	24
17		0	I	I	I	I	I	I	I	I	I	S	Y	Y	I	I	I	I	I	I	I	I	I	I	I	I	I	1.0	22
18		I	I	I	I	I	I	I	I	I	I	S	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	1.0	24
19		I	I	I	I	I	I	I	I	I	S	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	1.0	24
20		I	I	I	I	I	I	I	I	S	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	1.0	24
21		I	I	I	I	I	I	I	S	I	I	I	I	I	I	I	0	0	I	I	I	I	I	I	I	I	I	0.9	24
22		I	I	I	I	I	S	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	1.0	24
23		I	I	I	I	I	S	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	1.0	24
24		I	I	I	I	S	I	I	C	C	C	I	I	0	I	I	I	I	I	I	I	I	I	I	I	I	I	1.0	24
25		I	I	I	S	I	I	I	I	I	I	I	I	0	I	0	I	0	I	I	0	I	I	I	I	I	I	0.9	24
26		I	I	S	I	I	0	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	1.0	24
27		I	S	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	1.0	24
28		S	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	S	I	1.0	24
29		I	I	I	I	I	0	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	S	I	I	1.0	24
30		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	S	I	I	I	I	1.0	24
HOURLY MAX		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
HOURLY AVG		0.9	1.0	1.0	1.0	1.0	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	1.0	1.0	1.0	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	

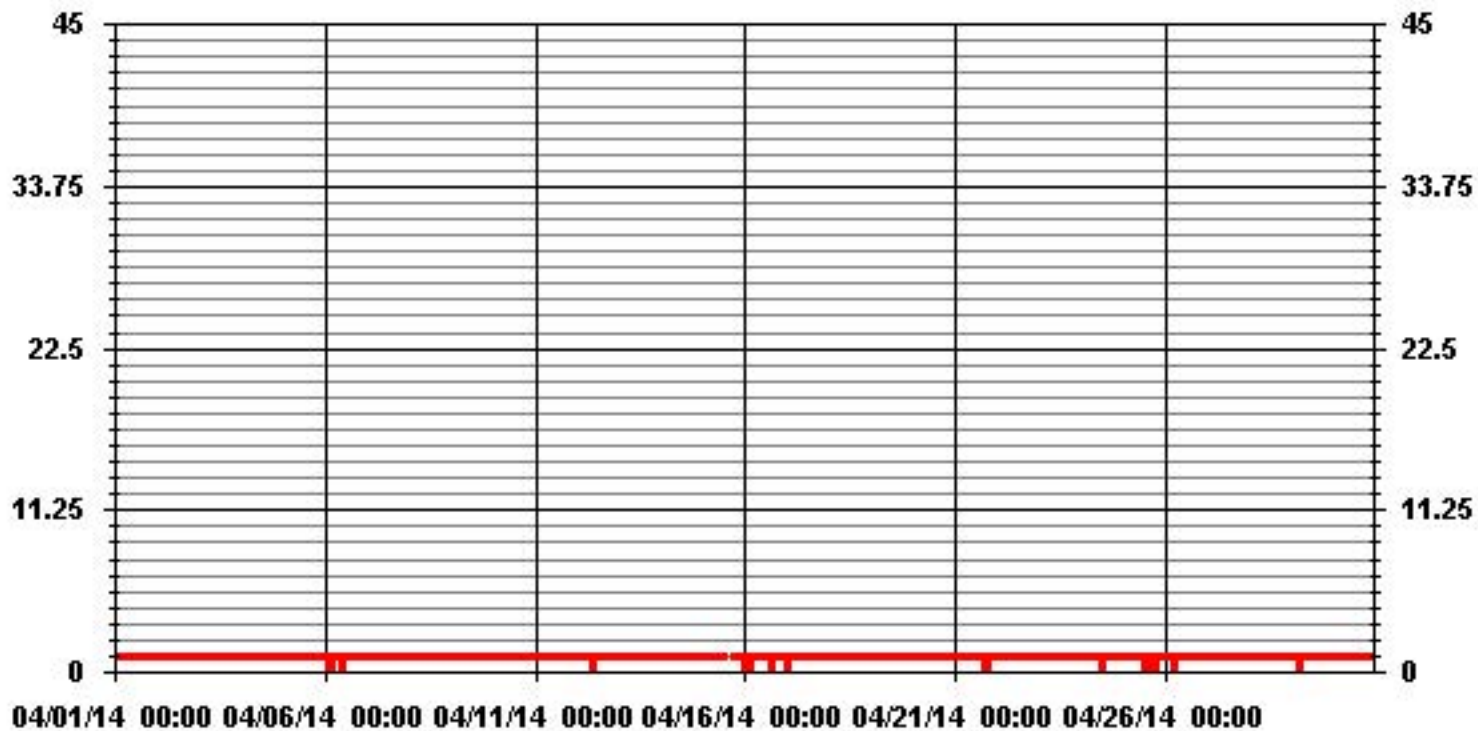
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	658					
MAXIMUM INSTANTANEOUS VALUE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	ALL
				VAR-VARIOUS		
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	718	HRS	
MONTHLY CALIBRATION TIME:	11	HRS				
STANDARD DEVIATION:	0.15					

01 Hour Averages



LICA
 TRS_ / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	2.95	2.95	5.61	4.28	18.61	11.37	17.13	2.95	1.47	2.06	3.69	9.89	6.05	6.20	2.21	2.51	100.00
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.95	2.95	5.61	4.28	18.61	11.37	17.13	2.95	1.47	2.06	3.69	9.89	6.05	6.20	2.21	2.51	

Calm : .00 %

Total # Operational Hours : 677

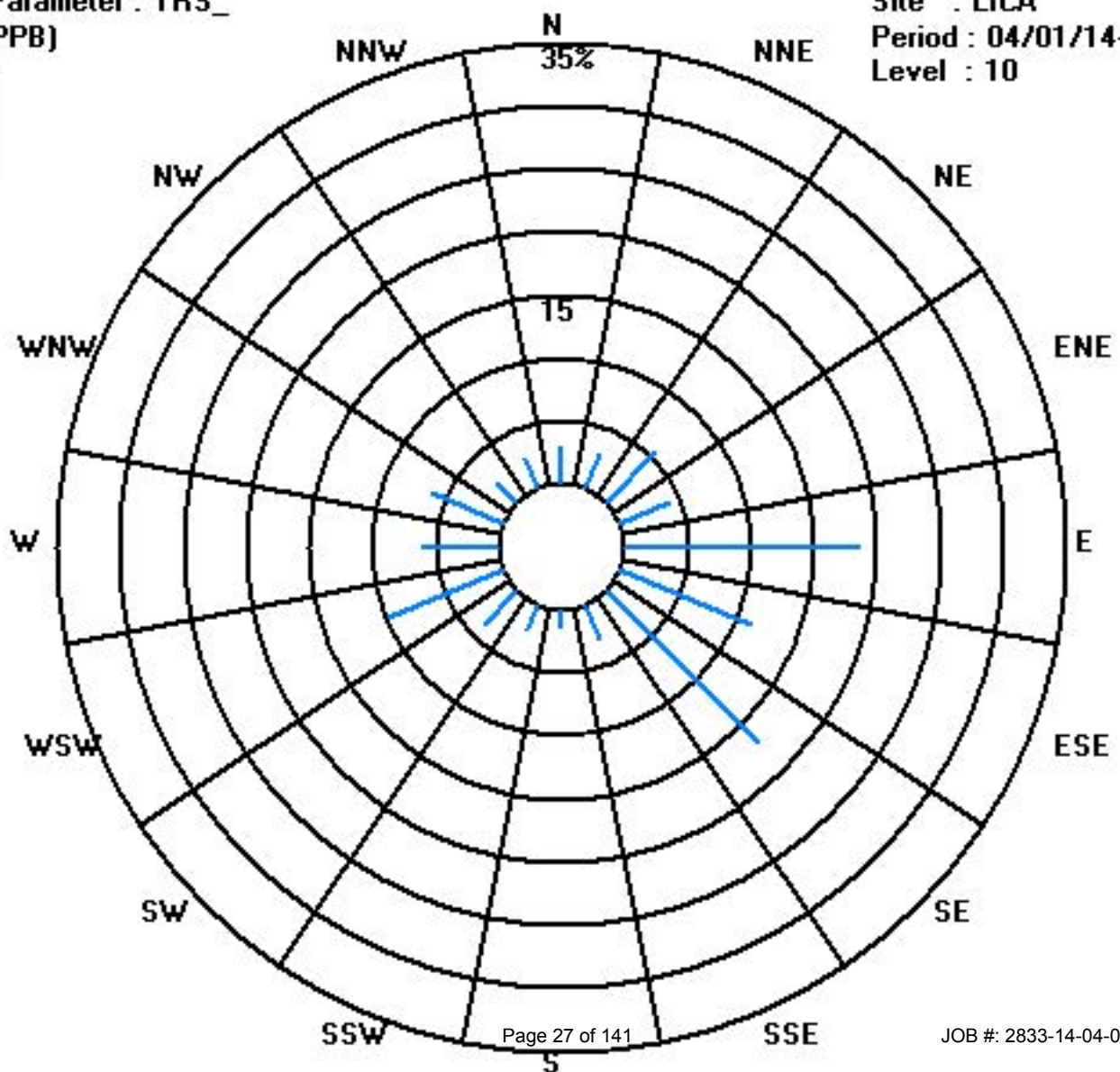
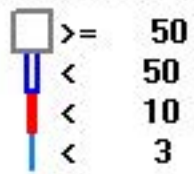
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	20	20	38	29	126	77	116	20	10	14	25	67	41	42	15	17	677
< 10																	
< 50																	
>= 50																	
Totals	20	20	38	29	126	77	116	20	10	14	25	67	41	42	15	17	

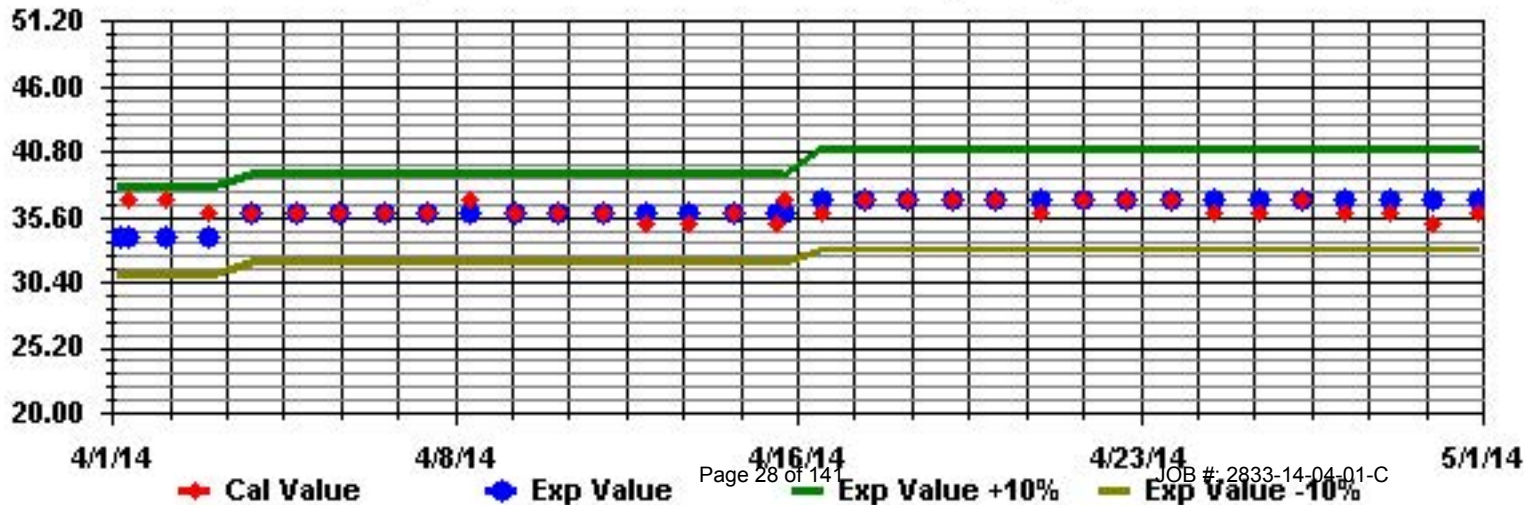
Calm : .00 %

Total # Operational Hours : 677

Class Limits (PPB)



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



Total Hydrocarbons

Lakeland Industry & Community Association - Cold Lake South Site

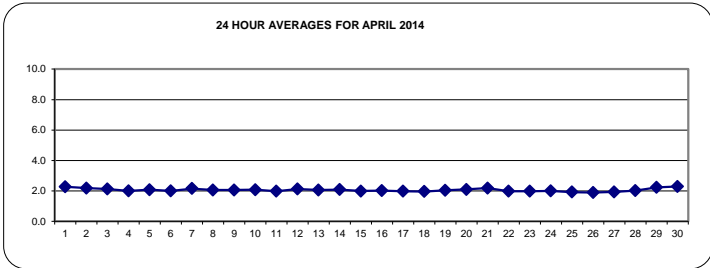
APRIL 2014

TOTAL HYDROCARBONS (THC) hourly averages in ppm

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

STATUS FLAG CODES

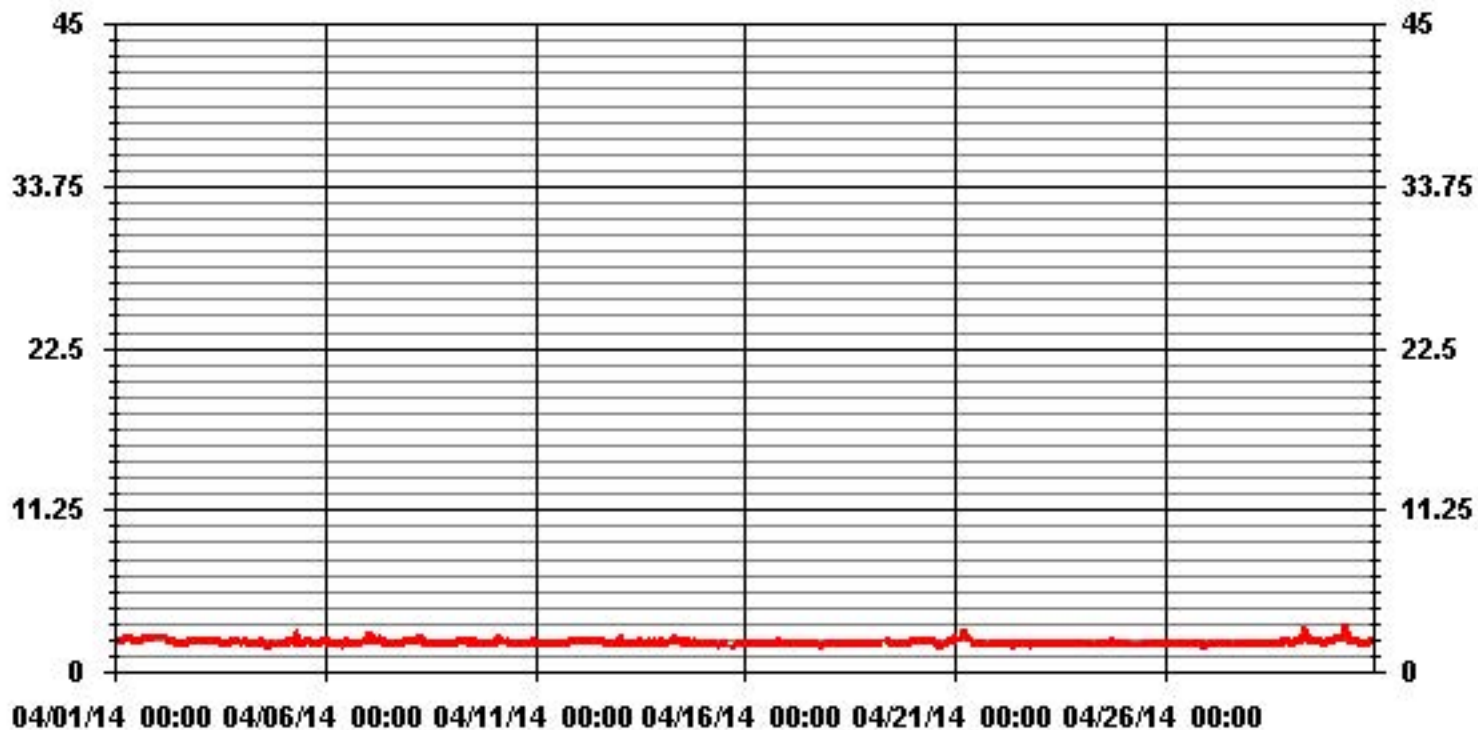
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	679					
MAXIMUM 1-HR AVERAGE:	3.3	PPM	@ HOUR(S)	7	ON DAY(S)	30
MAXIMUM 24-HR AVERAGE:	2.3	PPM			ON DAY(S)	1, 30
					VAR-VARIOUS	
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.15		MONTHLY AVERAGE:	2.06	PPM	

01 Hour Averages



Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

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

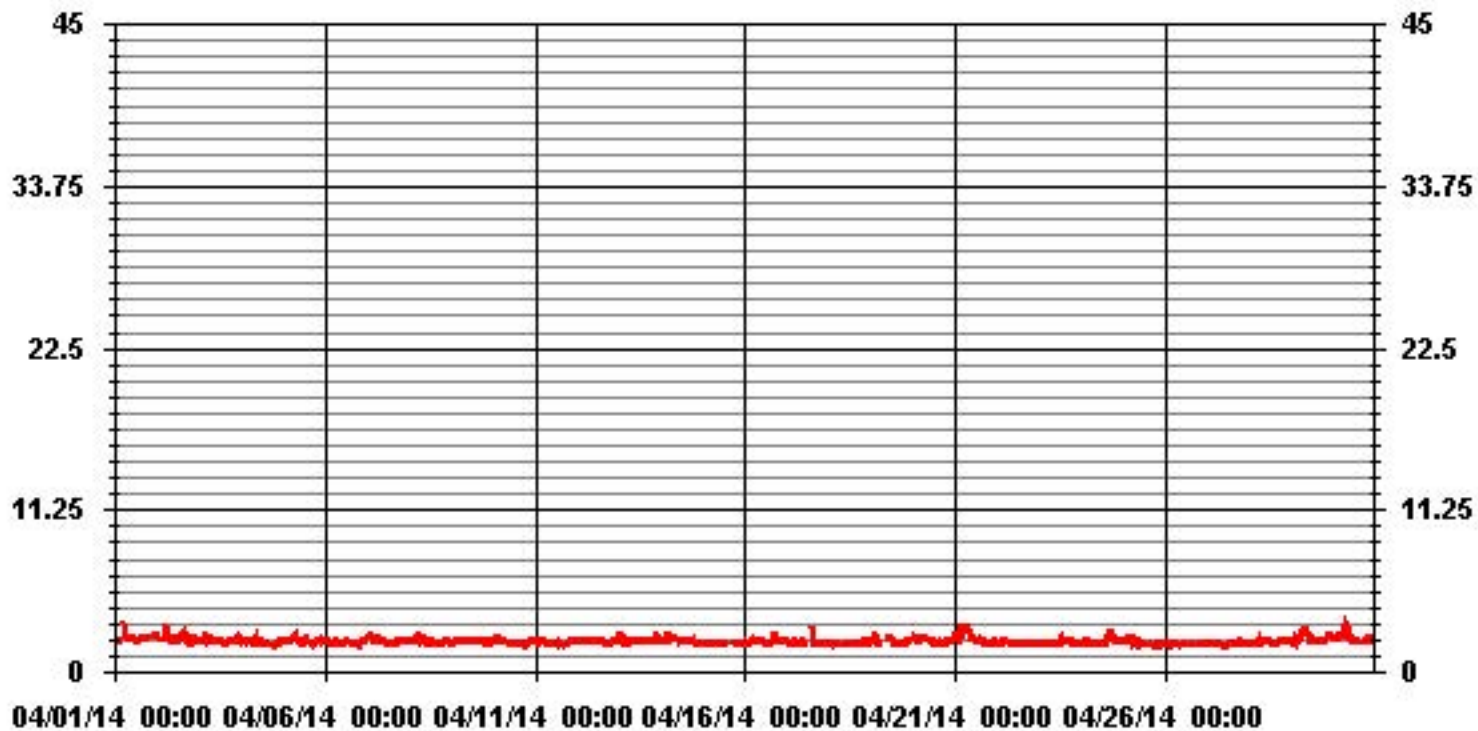
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	675
MAXIMUM INSTANTANEOUS VALUE:	3.5 PPM @ HOUR(S) 7 ON DAY(S) 30
VAR-VARIOUS	
IZS CALIBRATION TIME:	37 HRS
MONTHLY CALIBRATION TIME:	6 HRS
STANDARD DEVIATION:	0.23
OPERATIONAL TIME:	718 HRS

01 Hour Averages



— LICA THCMAX PPM

LICA
 THC / WD Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	2.94	2.94	5.74	4.56	18.40	11.34	17.23	2.94	1.47	2.06	3.68	9.72	5.74	6.18	2.20	2.65	99.85
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.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	2.94	2.94	5.74	4.56	18.40	11.34	17.23	2.94	1.47	2.06	3.68	9.86	5.74	6.18	2.20	2.65	

Calm : .00 %

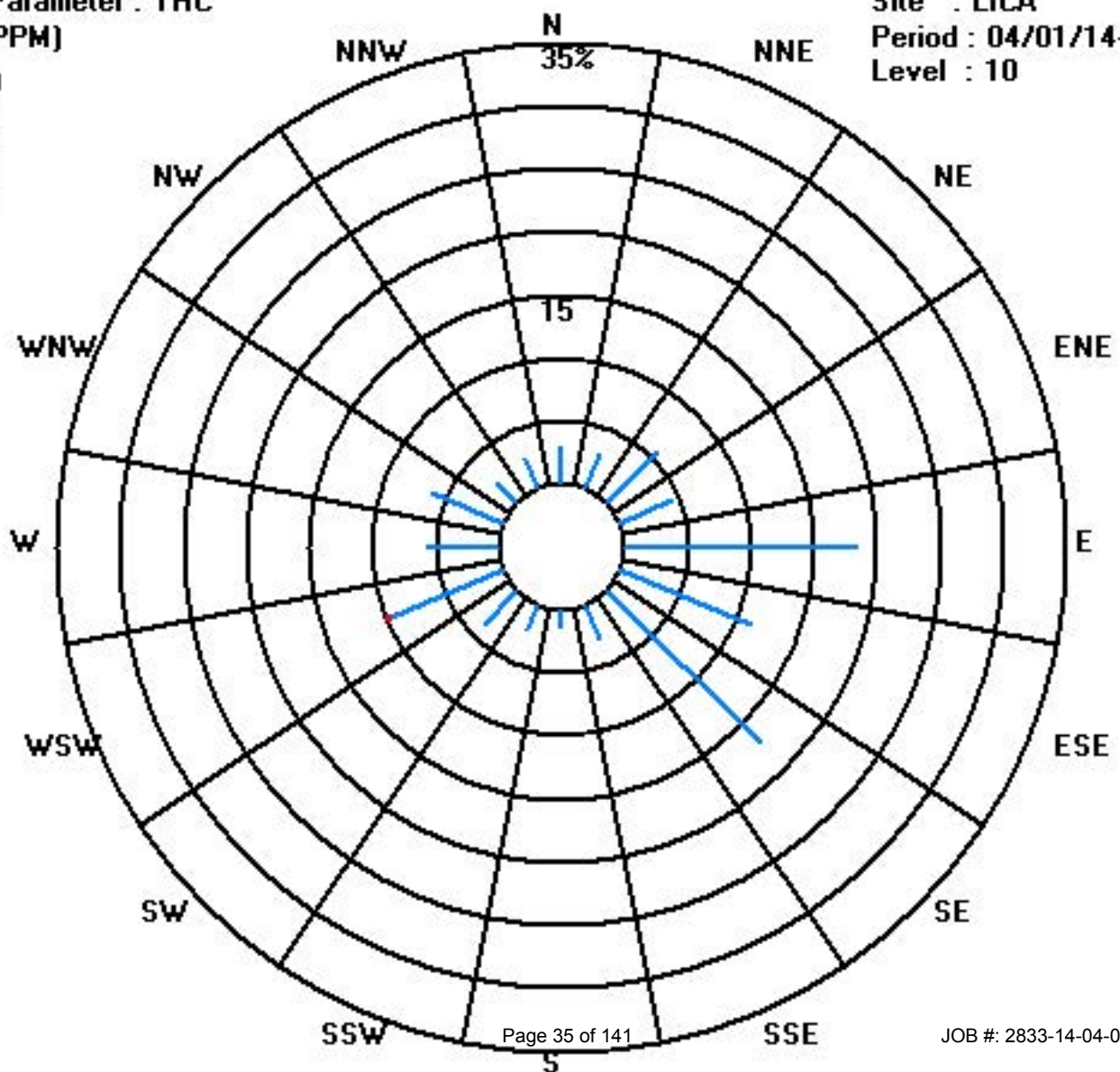
Total # Operational Hours : 679

Distribution By Samples

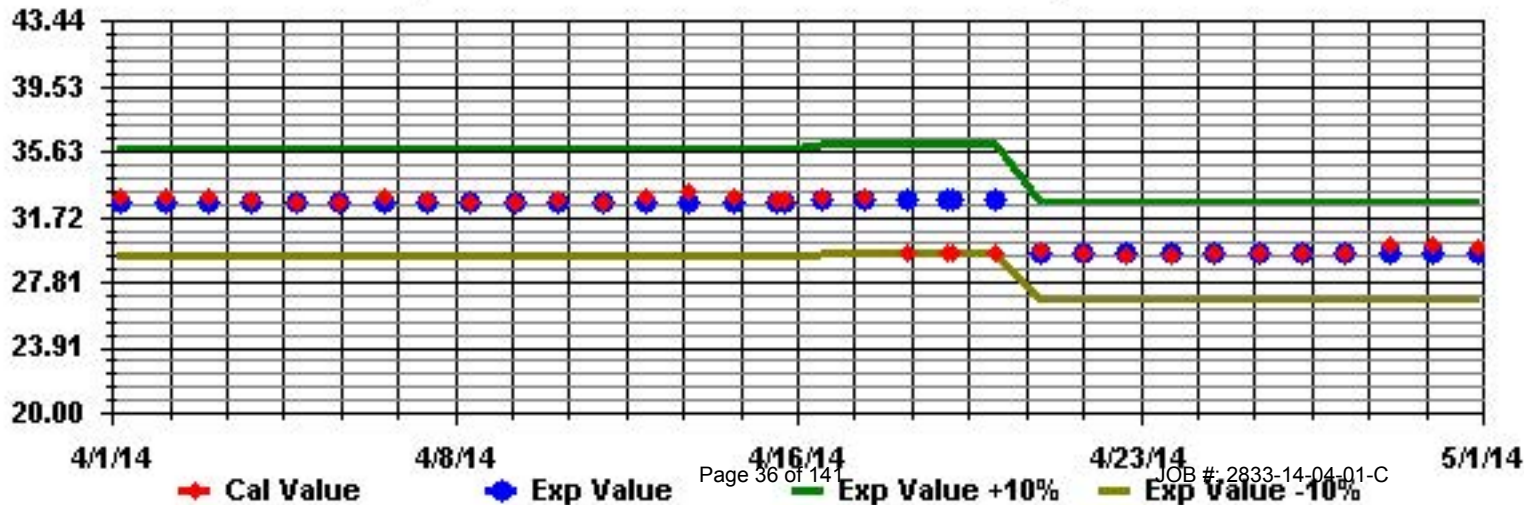
Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	20	20	39	31	125	77	117	20	10	14	25	66	39	42	15	18	678
< 10.0												1					1
< 50.0																	
>= 50.0																	
Totals	20	20	39	31	125	77	117	20	10	14	25	67	39	42	15	18	

Calm : .00 %

Total # Operational Hours : 679



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



Particulate Matter 2.5

Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

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

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	3	6	3	10	3	5	2	6	10	0	6	6	5	8	5	10	5	6	6	9	9	11	11	11	6.0	24
2		9	8	11	4	0	6	6	9	0	5	8	4	2	0	5	5	5	6	12	10	10	6	11	6	12	6.2	24	
3		8	6	5	1	4	4	6	10	5	6	4	4	7	8	5	7	5	4	4	5	4	5	7	6	10	5.4	24	
4		10	9	7	8	8	9	6	11	9	10	9	10	6	12	10	9	6	3	5	4	6	6	2	8	12	7.6	24	
5		5	5	7	5	3	4	6	11	2	7	5	5	1	5	5	3	3	2	3	9	7	8	3	6	11	5.0	24	
6		4	4	4	6	6	8	4	6	4	0	5	2	6	9	9	5	1	3	2	X	3	2	0	2	9	4.1	23	
7		0	0	2	1	2	3	3	2	2	1	0	0	6	1	0	2	2	2	3	4	6	6	4	4	6	2.3	24	
8		6	5	8	9	5	3	2	2	6	5	6	5	4	0	7	2	14	3	5	9	5	4	3	2	14	5.0	24	
9		2	3	4	6	4	1	2	1	5	0	7	X	0	7	3	1	2	1	0	3	5	4	1	0	7	2.7	23	
10		1	2	3	2	0	1	2	2	4	0	0	0	X	0	1	3	2	1	3	4	4	2	7	4	7	2.1	23	
11		9	6	5	2	5	2	5	2	5	2	2	2	4	1	0	1	4	2	5	5	3	4	1	3	9	3.3	24	
12		0	2	2	5	0	1	0	4	2	4	5	3	7	3	5	1	3	1	3	3	4	3	4	2	7	2.8	24	
13		2	5	3	0	1	1	1	1	2	3	4	0	0	6	2	5	0	3	3	2	8	12	6	4	12	3.1	24	
14		4	0	4	3	2	2	3	1	1	5	5	4	7	5	7	4	3	5	5	6	8	5	7	3	8	4.1	24	
15		4	3	3	5	6	4	5	8	3	1	5	5	2	9	3	5	4	4	3	5	7	5	8	5	9	4.7	24	
16		3	2	4	3	7	5	4	5	6	6	4	7	4	5	0	5	5	7	4	3	4	4	8	8	4.5	24		
17		8	4	7	6	10	5	7	5	8	10	8	8	7	9	6	12	5	12	3	1	2	10	8	3	12	6.8	24	
18		5	1	6	5	4	4	6	5	8	15	9	4	5	5	3	0	0	4	12	11	0	5	4	6	15	5.3	24	
19		5	4	4	5	6	6	6	9	6	4	1	8	10	0	3	8	7	6	3	5	6	5	2	0	10	5.0	24	
20		4	5	2	3	4	8	2	6	8	2	0	4	9	3	5	7	8	2	5	6	4	3	8	0	9	4.5	24	
21		2	4	5	5	6	4	8	4	5	3	5	6	4	0	6	0	8	6	5	2	7	5	4	5	8	4.5	24	
22		4	3	4	2	4	1	5	0	7	3	3	7	2	0	1	1	7	4	6	1	2	7	6	5	7	3.5	24	
23		8	6	0	7	5	2	X	7	7	8	6	5	5	12	0	7	6	3	6	5	3	7	2	2	12	5.2	23	
24		3	4	1	2	0	0	6	4	0	0	1	7	6	4	7	11	0	2	10	16	7	5	4	2	16	4.3	24	
25		3	2	5	1	2	3	0	3	0	2	3	2	4	1	3	3	0	1	2	2	2	0	2	4	5	2.1	24	
26		3	3	2	3	3	2	2	3	4	1	5	2	5	X	X	4	3	4	4	5	3	1	1	3	5	3.0	22	
27		1	1	2	2	0	2	1	3	0	4	0	2	2	1	2	3	1	4	2	0	0	3	2	4	4	1.8	24	
28		0	0	1	3	2	0	3	4	0	1	2	C	3	2	3	1	2	2	2	0	2	1	8	X	8	1.9	23	
29		5	0	0	3	1	0	3	6	X	6	30	0	21	X	6	8	4	3	3	4	4	3	6	9	30	5.7	22	
30		6	6	4	8	15	4	4	7	10	X	2	2	5	3	2	3	4	4	6	8	8	4	4	8	15	5.5	23	
HOURLY MAX		10	9	11	9	15	10	8	11	10	15	30	10	21	12	10	12	14	12	12	16	10	12	11	11				
HOURLY AVG		4.4	3.5	3.9	4.0	3.8	3.6	3.9	4.8	4.1	4.1	5.2	3.8	5.3	4.1	4.1	4.3	4.0	3.7	4.6	5.0	4.6	4.8	4.6	4.3				

STATUS FLAG CODES

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

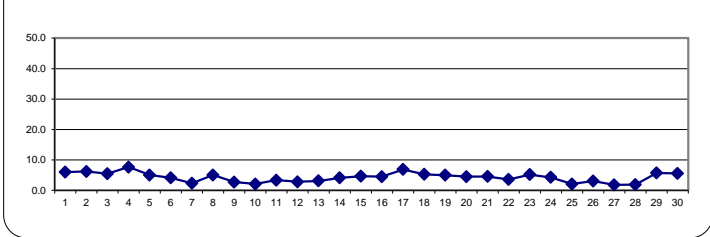
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 24-HR 30 ug/m3

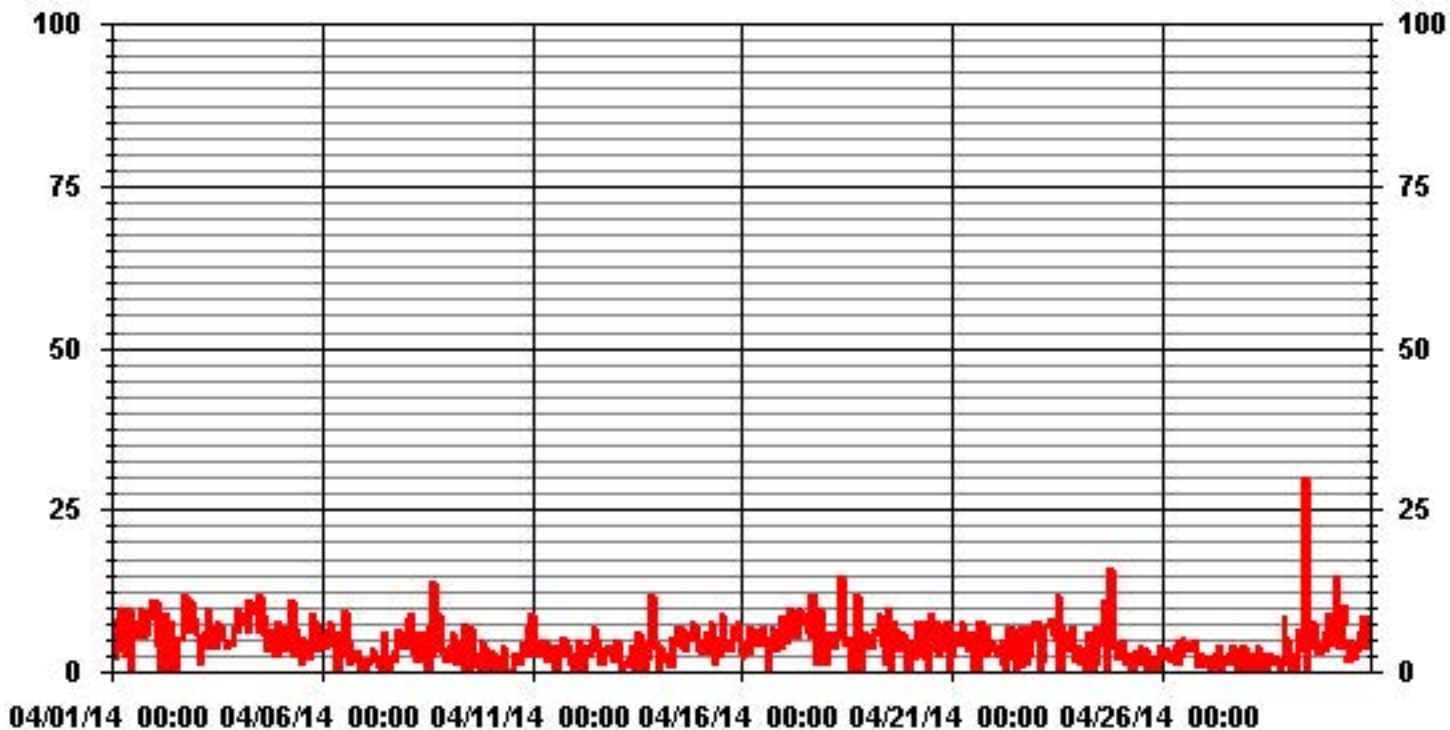
MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	642					
MAXIMUM 1-HR AVERAGE:	30	ug/m3	@ HOUR(S)	10	ON DAY(S)	29
MAXIMUM 24-HR AVERAGE:	7.6	ug/m3			ON DAY(S)	4
				VAR-VARIOUS		
MONTHLY CALIBRATION TIME:	1	HRS	OPERATIONAL TIME:	710 HRS		
STANDARD DEVIATION:	3.07		AMD OPERATION UPTIME:	98.6 %		
			MONTHLY AVERAGE:	4.28 ug/m3		

24 HOUR AVERAGES FOR APRIL 2014



01 Hour Averages



LICA
 PM2 / WD Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	2.95	2.81	5.77	4.92	18.59	11.40	17.60	2.95	1.54	1.97	3.52	9.71	5.49	5.63	2.25	2.67	99.85
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.14
< 80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.95	2.81	5.77	4.92	18.59	11.40	17.60	2.95	1.54	1.97	3.52	9.71	5.63	5.63	2.25	2.67	

Calm : .00 %

Total # Operational Hours : 710

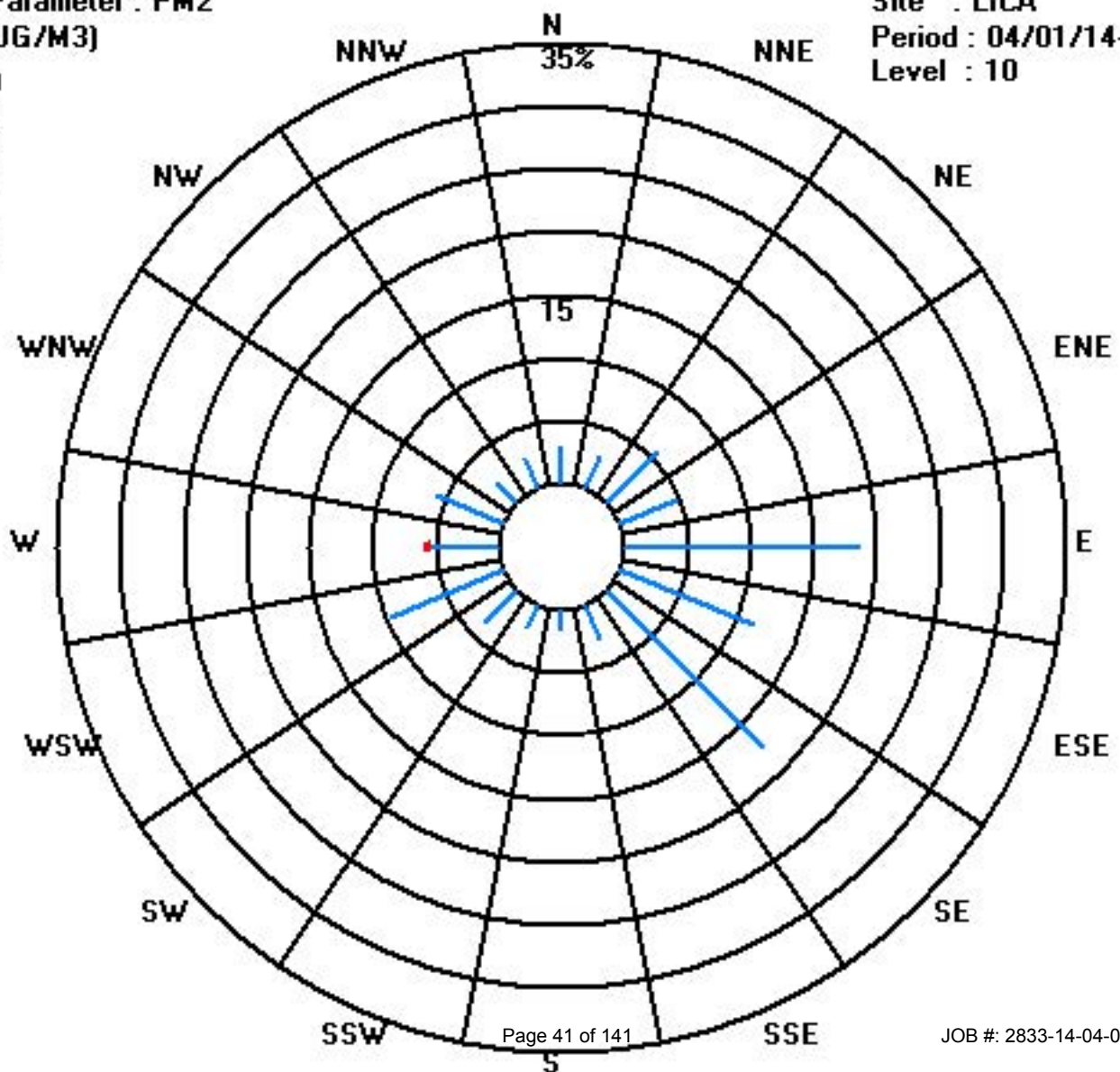
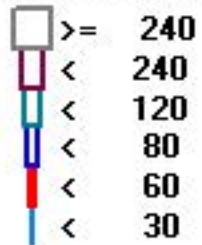
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	21	20	41	35	132	81	125	21	11	14	25	69	39	40	16	19	709
< 60													1				1
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	21	20	41	35	132	81	125	21	11	14	25	69	40	40	16	19	

Calm : .00 %

Total # Operational Hours : 710

Class Limits (UG/M3)



Nitrogen Dioxide

Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
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	MAX.	AVG.	RDGS.	
DAY																												
1		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
2		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
3		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
4		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
5		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
6		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
7		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
8		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
9		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
10		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
11		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
12		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
13		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
14		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
15		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
16		O	O	O	O	O	O	C	C	C	C	C	C	C	C	C	C	C	1.4	1	1.3	0.8	1	0.8	0.8	1.4	1.0	18
17		0.8	0.8	1.2	1.5	2.3	1.9	2	C	C	C	1.9	S	Y	3.3	2.4	2.3	2.2	2.6	2.4	1.9	2	2	1.7	3.3	2.0	23	
18		1.6	1.6	1.9	2	2.3	2.3	2.6	2.6	2.5	2.2	S	2.3	2	2.8	2.6	2.7	3	3.1	4.4	4.2	3.6	3.5	3.7	3	4.4	2.7	24
19		3.6	3	3.5	3.3	3.9	2.8	2.6	3.3	2.3	S	2.6	2	1.5	1.4	1.8	1.3	1.4	1.2	1.3	1.7	1.4	1.3	1.4	1.4	3.9	2.2	24
20		1.6	2.3	1.7	1.4	1.7	2.2	3.2	1.9	S	1.9	3.5	2.7	2.1	1.8	1.5	1.5	1.4	1.4	2.4	3.4	2.9	2.9	2.4	1.9	3.5	2.2	24
21		3.7	3.4	2.4	4.4	5.7	3.9	5	S	3.7	3	2.7	1.9	1.6	1.5	1.6	1.8	2.2	2.1	2.3	2.9	3.8	3.1	3.2	2.2	5.7	3.0	24
22		2.5	2.8	3	3.6	5.6	8.8	S	3.8	1.9	1.1	1	1	0.9	1	1.5	1.1	1.9	1.2	1.6	1.5	1.7	1.8	1.2	1.2	8.8	2.2	24
23		1.1	0.9	0.8	1.2	1.5	S	2.2	2.1	1.4	2.2	1.9	2.2	2.1	2.5	2.3	1.9	1.9	2.3	2	1.5	1.2	0.9	0.9	0.8	2.5	1.6	24
24		0.8	0.8	0.9	1.3	S	2.5	3.1	C	C	C	C	C	2.2	1.8	1.5	2.1	2.1	2.2	2.4	2.3	2.1	1.8	1.4	1.3	3.1	1.8	24
25		1.4	1.5	1.9	S	2.4	2.6	3.4	2.9	1.6	1.7	1	1.2	1.4	1.2	1.1	1	1.2	1.4	2.3	3.9	4.5	3.6	3	4.5	2.1	2.1	24
26		3	2	S	2.4	3.4	1.8	2.8	1.8	1.5	0.8	0.9	1.1	0.8	0.8	0.9	0.9	1	1.6	1.6	1.5	1.5	1.2	1.4	3.4	1.6	24	
27		0.9	S	1	1	1.9	1.3	1.6	1.1	1.2	0.8	0.9	0.8	0.9	0.9	0.9	0.9	1.2	1.6	1.9	2.2	1.8	1.7	1.5	1.2	2.2	1.3	24
28		S	2.1	2.1	2	1.7	1.3	0.7	1.2	1.1	0.9	0.9	0.8	0.9	1.2	1.2	1.5	1.3	0.9	1.1	3	3.3	1.3	0.6	S	3.3	1.4	24
29		1.1	0.6	1.1	1	1.2	1.8	3.9	5.5	6.7	5.6	3.5	0.7	0.7	0.2	0.3	0.2	0.4	0.5	0.3	2.1	4.5	4.2	S	4.5	6.7	2.2	24
30		4.1	4.4	5	5.1	6.9	5.1	5.2	ILI	8.8	5.1	1.1	0.7	0.6	0.6	0.7	0.8	0.6	1.4	1.5	4.4	4.2	S	2.5	1.8	ILI	3.6	24
HOURLY MAX		4	4	5	5	7	9	5	11	9	6	4	3	2	3	3	3	3	3	4	4	5	5	4	5			
HOURLY AVG		2.0	2.0	2.0	2.3	3.1	2.9	2.9	3.4	3.0	2.3	1.8	1.5	1.4	1.5	1.5	1.4	1.5	1.6	1.8	2.4	2.6	2.3	1.9	1.9			

STATUS FLAG CODES

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

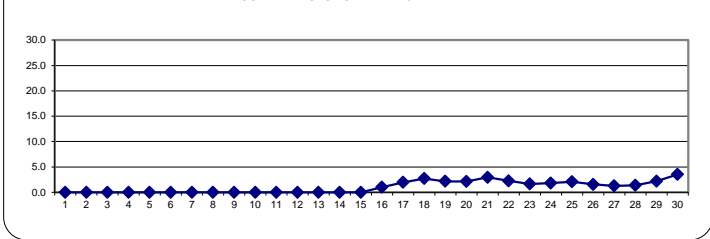
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

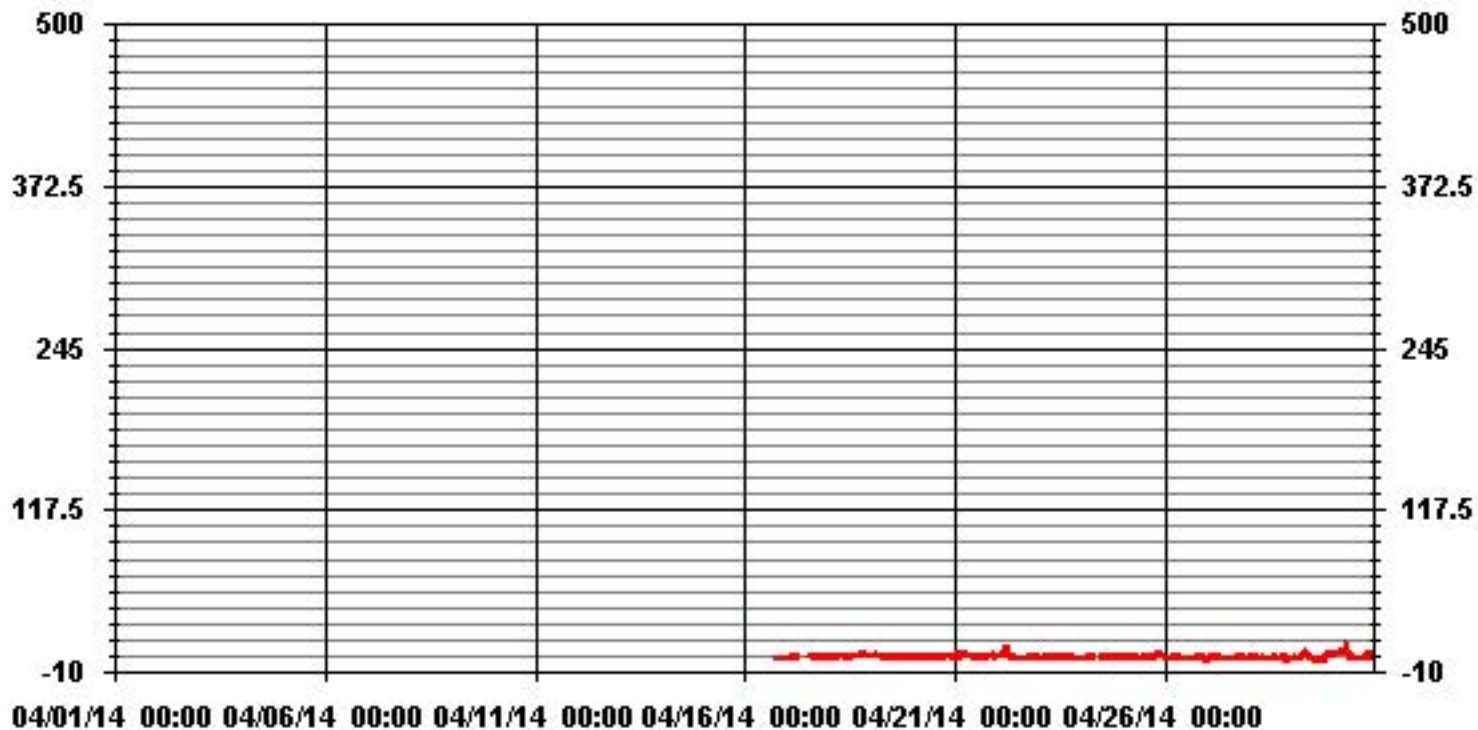
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	319					
MAXIMUM 1-HR AVERAGE:	11.1	PPB	@ HOUR(S)	7	ON DAY(S)	30
MAXIMUM 24-HR AVERAGE:	3.6	PPB			ON DAY(S)	30
					VAR-VARIOUS	
IZS CALIBRATION TIME:	15	HRS	OPERATIONAL TIME:	353	HRS	
MONTHLY CALIBRATION TIME:	19	HRS	AMD OPERATION UPTIME:	49.0	%	
STANDARD DEVIATION:	1.38		MONTHLY AVERAGE:	2.11	PPB	

24 HOUR AVERAGES FOR APRIL 2014



01 Hour Averages



Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0
2		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0
3		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0
4		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0
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
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
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
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
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
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
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
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
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
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
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
16		0	0	0	0	0	0	C	C	C	C	C	C	C	C	C	C	C	C	9.1	2.1	3.5	1.5	2.1	2.1	1.6	9.1	3.1	18
17		1.5	1.6	2.1	3.1	4.1	3.5	3.5	C	C	C	3.6	S	Y	Y	3.6	4.6	3.1	3.6	3.6	2.6	2.6	2.6	2.6	2.6	4.6	3.0	22	
18		2.1	2.1	3.6	3.6	3.6	3.1	4.1	3.6	3.1	3.6	S	3.2	2.2	3.7	3.7	3.7	6.7	4.2	7.7	5.7	5.2	7.1	5.2	4.2	7.7	4.1	24	
19		6.2	4.7	5.2	5.2	7.2	5.7	3.2	5.2	3.2	S	3.1	2.6	1.6	1.6	11.6	2.1	2.1	1.1	2.1	2.6	1.6	1.6	1.6	2.6	11.6	3.6	24	
20		2.6	3.6	2.1	1.6	2.1	3.1	4.6	3.6	S	2.1	13	5.6	2.6	2.1	1.6	2.1	1.6	1.6	9.1	4.6	7	5.1	3.6	3.6	13	3.9	24	
21		7.6	6.6	5.1	7	8.1	5.6	12.1	S	7.1	3.7	3.7	2.7	1.7	1.7	1.7	2.7	3.2	2.7	3.7	6.7	5.2	5.7	4.2	5.7	12.1	5.0	24	
22		5.2	5.2	4.7	6.2	9.2	17.2	S	7	3.5	1.5	2	1.5	1.5	1.5	2.5	1.5	4.5	3.5	6	3	2	3	2	1.5	17.2	4.2	24	
23		1.5	1	1	2	2	S	2.5	3	4	10	2.5	3	7	5.5	3	2	2.5	3	3.5	2	1.5	1.5	1.5	1.5	10	2.9	24	
24		1	1.5	1.5	2	S	3	5.5	C	C	C	C	C	3.5	4	4	4.5	3.5	3	5	4.5	3.5	3	2	2	5.5	3.2	24	
25		2	2.5	3	S	5.1	3.6	5.1	7.1	2.6	3.6	1.6	1.6	2.1	2.1	6.1	1.6	1.6	2.6	2.6	3.6	7	6.1	5.6	6.6	7.1	3.7	24	
26		6.1	3.1	S	4	7	3	10	2.5	2.5	3.5	2	2	3	1.5	1.5	1.5	2	3.5	2.5	2.5	2	2.5	1.5	2	10	3.1	24	
27		1.5	S	1.7	2.2	3.7	1.7	13.7	1.7	1.2	1.2	1.2	1.2	1.2	1.7	1.2	1.7	1.2	1.7	4.7	4.7	3.2	5.7	4.7	2.2	2.2	13.7	2.9	24
28		S	4.1	3.1	3.6	3.6	2.6	1.1	2.1	2.6	2.1	3.6	5.6	2.1	2.1	2.6	4.6	4.6	2.1	2.1	8.1	6.1	2.6	1.1	S	8.1	3.3	24	
29		3.5	1	2	2	5	4.5	4.5	6	10.5	7	5.5	1	2	0.4	1	1	0.5	3.5	0.5	8	6.5	5.4	S	5.5	10.5	3.8	24	
30		5.5	6.5	7.5	8.4	9.5	7.5	9.5	12.4	11.5	10.5	1.9	1	1	1	1.5	3	1	2.5	3.5	15.5	9	S	3.2	2.2	15.5	5.9	24	
HOURLY MAX		8	7	8	8	10	17	14	12	12	11	13	6	7	6	12	5	7	9	9	16	9	7	6	7				
HOURLY AVG		3.6	3.3	3.3	3.9	5.4	4.9	6.1	4.9	4.7	4.4	3.6	2.6	2.5	2.2	3.3	2.6	2.8	3.4	3.9	5.1	4.4	3.8	2.7	3.1				

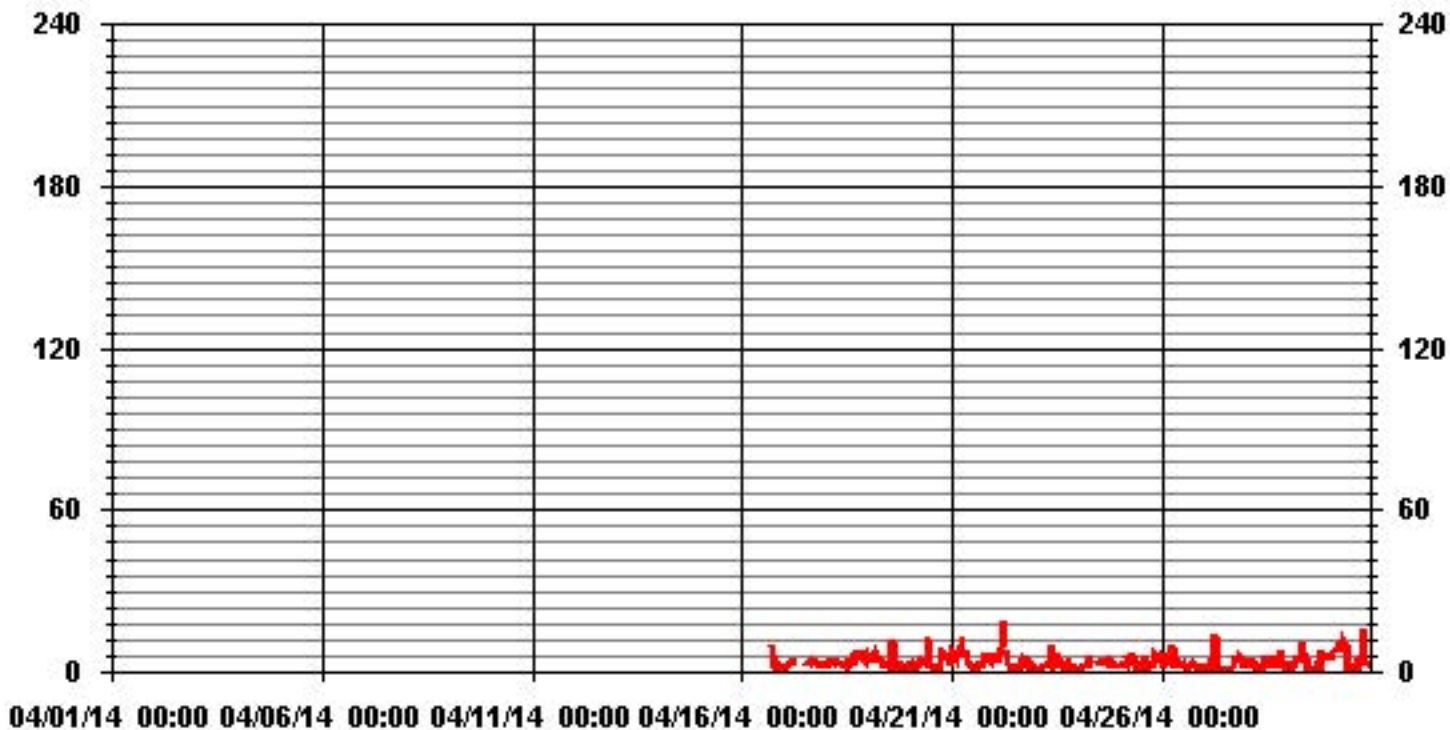
STATUS FLAG CODES

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:	318
MAXIMUM INSTANTANEOUS VALUE:	17.2 PPB @ HOUR(S) 5 ON DAY(S) 22
	VAR-VARIOUS
IZS CALIBRATION TIME:	15 HRS
MONTHLY CALIBRATION TIME:	19 HRS
STANDARD DEVIATION:	2.59
OPERATIONAL TIME:	352 HRS

01 Hour Averages



LICA
 NO2_ / WD Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	1.88	1.88	6.58	7.21	30.09	13.47	15.04	1.56	1.25	2.19	2.50	6.89	4.07	2.82	1.25	1.25	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	1.88	1.88	6.58	7.21	30.09	13.47	15.04	1.56	1.25	2.19	2.50	6.89	4.07	2.82	1.25	1.25	

Calm : .00 %

Total # Operational Hours : 319

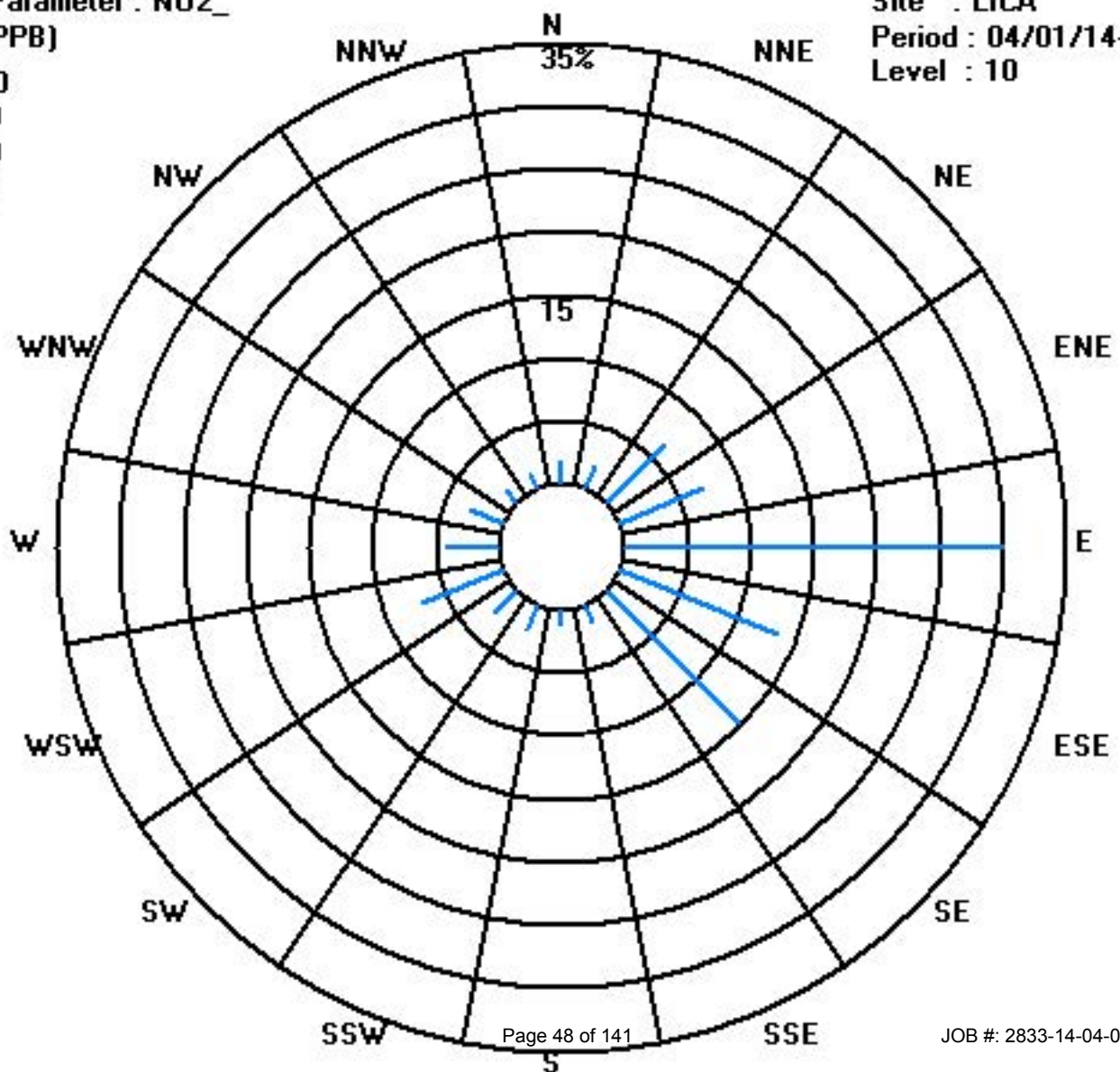
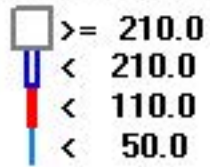
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	6	6	21	23	96	43	48	5	4	7	8	22	13	9	4	4	319
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	6	6	21	23	96	43	48	5	4	7	8	22	13	9	4	4	

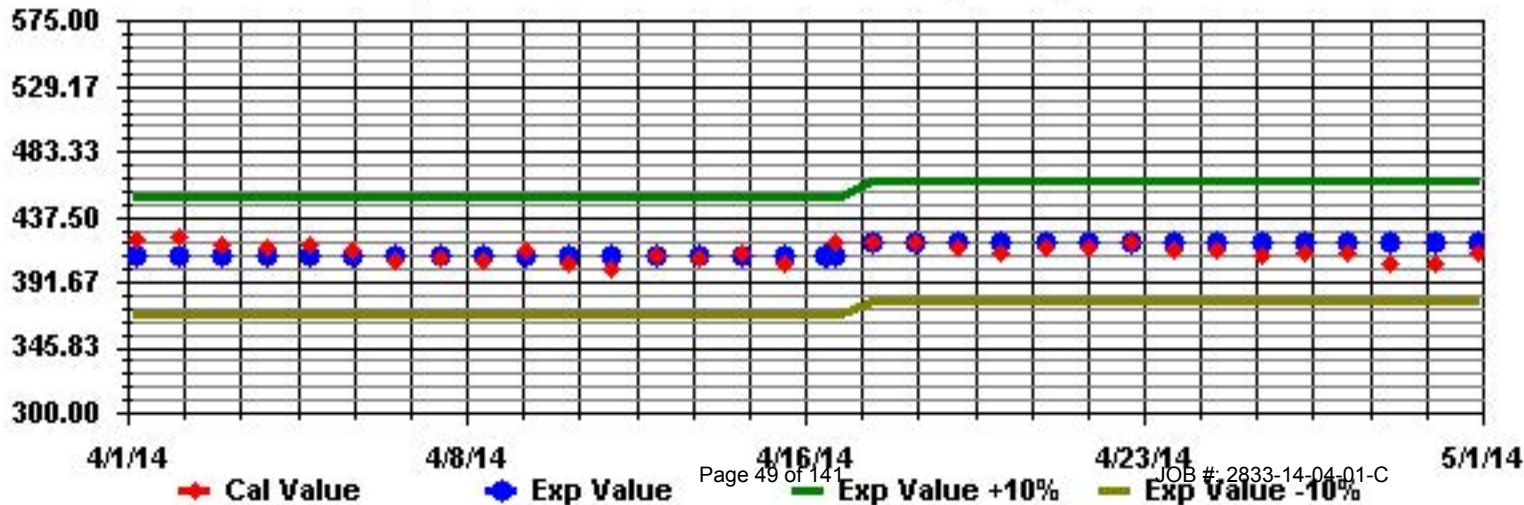
Calm : .00 %

Total # Operational Hours : 319

Class Limits (PPB)



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



Nitric Oxide

Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

NITRIC OXIDE (NO) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR			
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
DAY																														
1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
16		0	0	0	0	0	0	0	C	C	C	C	C	C	C	C	C	C	C	0.1	0.1	0.1	0	0	0	0	0	0.1	0.0	18
17		0	0	0.1	0.1	0.3	0.1	0.2	C	C	C	0.6	S	Y	0.6	0.5	0.5	0.4	0.2	0.1	0.1	0	0	0.2	0.1	0.6	0.2	23		
18		0.1	0.1	0.1	0.1	0.3	0.1	0.3	0.5	0.5	0.6	S	0.6	0.5	0.7	0.5	0.5	0.3	0.1	0.9	0.2	0.1	0.2	0.1	0.1	0.9	0.3	24		
19		0.1	0	0	0	0	0	0.3	0.4	S	0.9	0.5	0	0	0.2	0	0	0	0	0	0.2	0	0	0	0.1	0.9	0.1	24		
20		0	0	0	0	0	0.1	0.1	0	S	0	0.8	0.8	0.4	0.1	0	0	0	0	0.2	0	0.4	0	0	0	0.8	0.1	24		
21		0.7	0.3	0.1	3.2	4.3	3.6	10.5	S	1.5	1.1	0.7	0.4	0	0	0	0	0	0	0	0	0	0	0	0	10.5	1.1	24		
22		0	0	0.1	0.2	0.4	1.4	S	1	0.5	0.1	0.1	0.1	0.2	0	0.2	0	0.2	0	0.1	0	0	0	0	0	1.4	0.2	24		
23		0	0	0	0	0	S	0.1	0.1	0.5	0.4	0.3	0	0.4	0.1	0.1	0	0.1	0	0	0	0	0	0	0.1	0.5	0.1	24		
24		0	0	0.1	0.1	S	0.1	0.6	C	C	C	C	C	0.4	0.3	0.5	0.4	0.4	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.6	0.2	24		
25		0.2	0.1	0.1	S	0.3	0	0.8	0.9	0.4	0.5	0.2	0.2	0.2	0.4	0.2	0.1	0.1	0.2	0.1	0	0.2	0.3	0.2	0.5	0.9	0.3	24		
26		0.2	0.1	S	0.6	0.6	0.1	0.3	0.3	0.6	0.6	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.3	0.3	0.1	0.1	0.1	0	0.1	0.6	0.3	24		
27		0	S	0	0.1	0.3	0	0.1	0	0	0	0	0	0.1	0	0	0	0.1	0	0.3	0.1	0.1	0.1	0	0.1	0.3	0.1	24		
28		S	0.2	0.1	0.2	0	0	0	0.3	0.6	0.1	1	0.1	0.3	0.2	0.5	0.4	0.1	0	0.6	0.1	0.2	0	S	1	0.2	24			
29		0	0	0	0	0.5	1	2.5	3.9	4.3	3.1	1.6	0	0	0	0	0	0	0	0	0	0	S	0	4.3	0.7	24			
30		0	0.1	0.3	0.3	1.1	3.9	5.4	7.5	5	2.1	0.1	0	0	0	0	0	0	0	0.2	0	0	S	0	0	7.5	1.1	24		
HOURLY MAX		1	0	0	3	4	4	11	8	5	3	2	1	1	1	1	1	0	0	1	1	0	0	0	1					
HOURLY AVG		0.1	0.1	0.1	0.4	0.6	0.8	1.6	1.3	1.3	0.8	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.0	0.1					

STATUS FLAG CODES

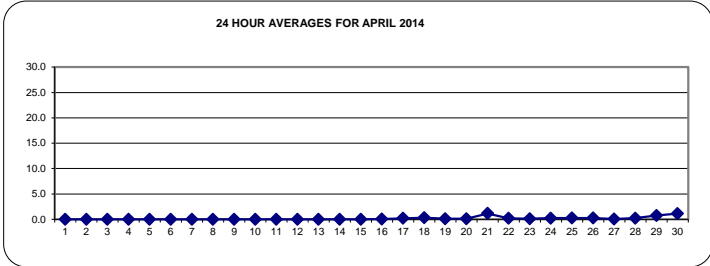
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

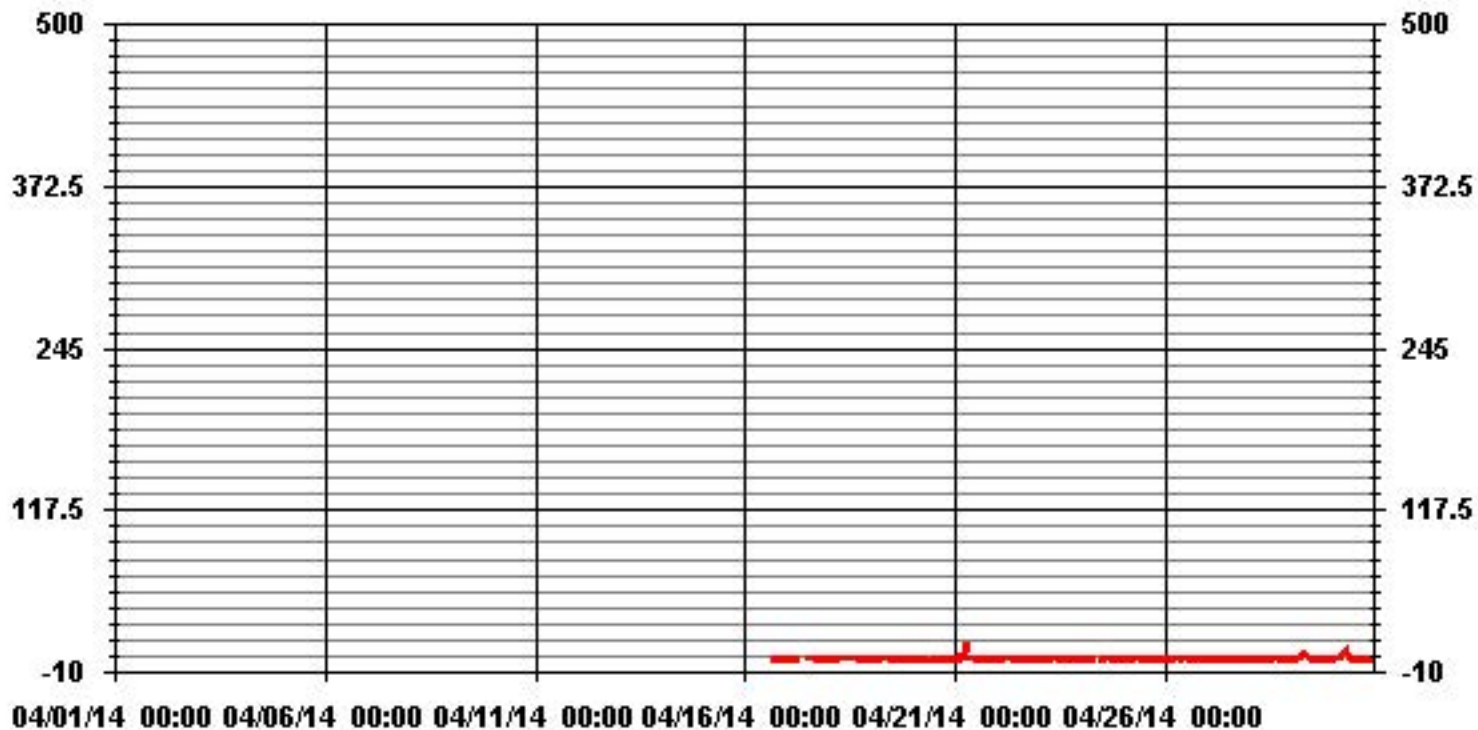
ALBERTA ENVIRONMENT: 1-HR NA PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA				
NUMBER OF NON-ZERO READINGS:	194				
MAXIMUM 1-HR AVERAGE:	10.5	PPB	@ HOUR(S)	6	ON DAY(S) 21
MAXIMUM 24-HR AVERAGE:	1.1	PPB			ON DAY(S) 21
					VAR-VARIOUS
IZS CALIBRATION TIME:	15	HRS	OPERATIONAL TIME:	353	HRS
MONTHLY CALIBRATION TIME:	19	HRS	AMD OPERATION UPTIME:	49.0	%
STANDARD DEVIATION:	1.00		MONTHLY AVERAGE:	0.36	PPB



01 Hour Averages



Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

NITRIC OXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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
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
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
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
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
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
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
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
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
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
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
16		0	0	0	0	0	0	C	C	C	C	C	C	C	C	C	C	C	C	2.5	1.5	1.5	0.5	0.4	0.5	0	2.5	1.0	18
17		0.5	0	0.5	0.5	2	1.4	0.9	C	C	C	2	S	Y	Y	2	2	1	0.5	0.5	1.5	1	0.5	1	0.5	2	1.0	22	
18		1	0.5	2	2	3.5	1	1	1.5	1	2	S	2.5	0.5	2.5	1.5	2	4	1	16.5	2	1	3.5	1	1	16.5	2.4	24	
19		1.5	0.5	0	0.5	0.5	0.5	1	1.5	S	1.5	2	0.5	0.5	7	0.5	1	0.5	0.5	1	0	0	0	0	5.5	7	1.2	24	
20		0	1	0	0.5	1	1	0.5	1	S	0.5	5.5	6	0.5	1	0.5	0.5	2	0	5	0.5	9.5	0.5	1	0	9.5	1.7	24	
21		4	2.5	1.5	12.9	18	5	28	S	4	1.5	1.5	0.5	0.5	0	0.5	1.5	0.5	1	1	1	0.5	0.5	0	0.5	28	3.8	24	
22		0.5	1	1	1.5	3	10	S	1.5	1	0.5	1	0.5	4.5	0.5	0.5	2	1	0.5	0.5	2	0.5	0	0.5	0	10	1.4	24	
23		0.5	0	0.5	0.5	0.5	S	0.5	0.5	10	4	4	0.5	4.5	1.5	2	0.5	1.5	0.5	0.5	2	0.5	0.5	0.5	0.5	10	1.6	24	
24		0.5	0.5	0.5	0.5	S	0.5	2	C	C	C	C	C	3	1.5	7.5	2	1	1.5	1.5	2	1	2.5	0.5	1.5	7.5	1.7	24	
25		1	1	1	S	1.5	0.5	2.5	9.5	1.5	3.5	1.5	1	1	2.5	1.5	0.5	2.5	2	1.5	2	1.5	3	6	9.5	2.1	24		
26		2	1	S	3	2.5	1	1.5	3.5	4	10.5	1	1	2.5	1	1	2	1	3.5	3	1	1	0.5	0.5	1.5	10.5	2.2	24	
27		0.5	S	0.5	1.5	2.5	0.5	2	0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	1	1	6	0.5	2.5	2.5	0.5	1	6	1.2	24	
28		S	1	1	1	0.5	0.5	0.5	0.5	1	7.5	1	27.5	1	1.5	0.5	3	2.5	2	0.5	6	3	7.5	0	S	27.5	3.2	24	
29		1	0.5	0.5	0.5	16.5	12	6	5	6.5	4.5	3	0.5	0.5	0	0.5	0	0	1	0	0	0	0	0	S	0.5	16.5	2.6	24
30		0.5	0.5	1.5	3.5	3	7.5	8.5	9	9	5.5	0.5	0	0	0.5	0.5	1	0.5	0.5	5.5	1	1	S	0	0	9	2.6	24	
HOURLY MAX		4	3	2	13	18	12	28	10	10	11	6	28	5	3	8	3	4	4	17	6	10	8	3	6				
HOURLY AVG		1.0	0.8	0.8	2.2	4.2	3.2	4.2	3.0	3.6	3.7	1.9	3.5	1.5	1.0	1.9	1.2	1.3	1.3	3.0	1.5	1.6	1.5	0.6	1.3				

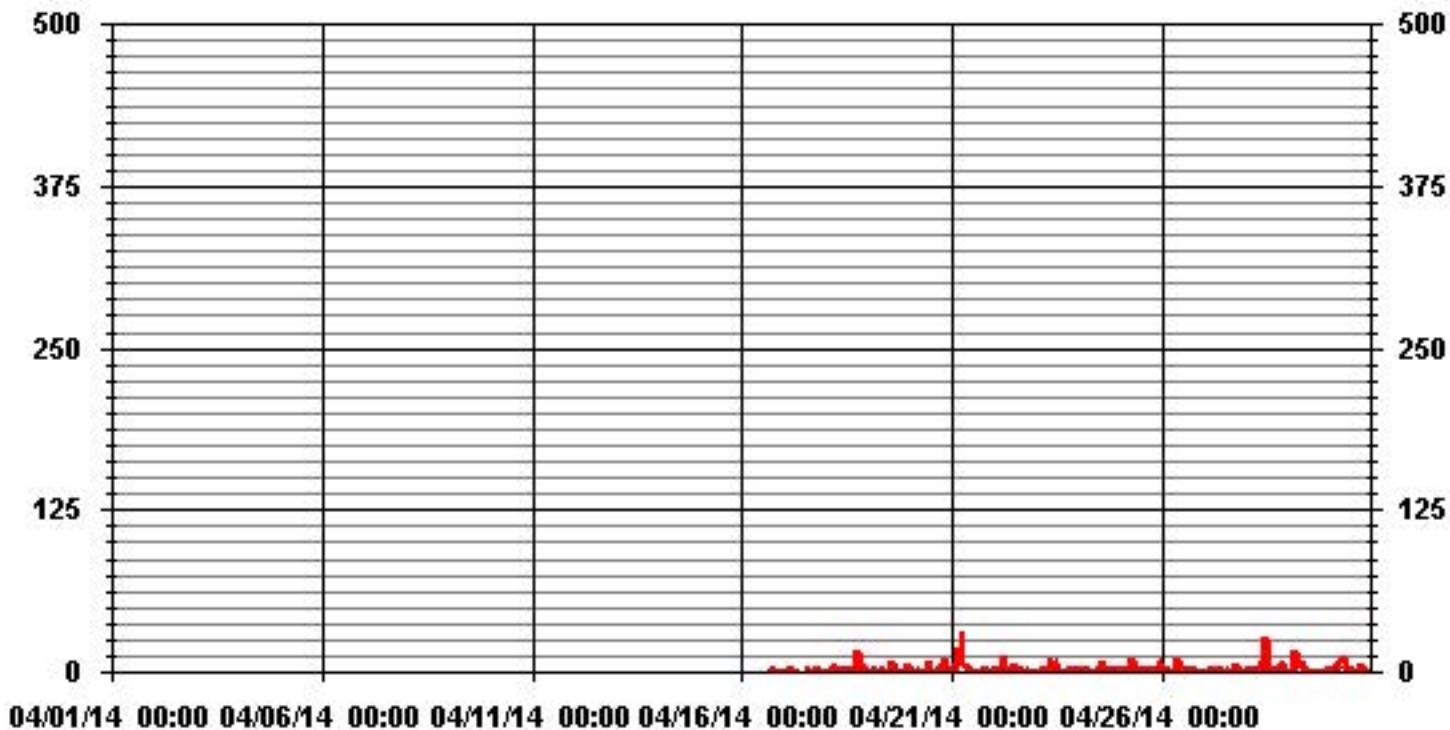
STATUS FLAG CODES

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

NUMBER OF NON-ZERO READINGS:	290
MAXIMUM INSTANTANEOUS VALUE:	28 PPB @ HOUR(S) 6 ON DAY(S) 21
	VAR-VARIOUS
IZS CALIBRATION TIME:	15 HRS
MONTHLY CALIBRATION TIME:	19 HRS
OPERATIONAL TIME:	352 HRS
STANDARD DEVIATION:	3.31

01 Hour Averages



— LICA NOMAX PPB

LICA
 NO_ / WD Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	1.88	1.88	6.58	7.21	30.09	13.47	15.04	1.56	1.25	2.19	2.50	6.89	4.07	2.82	1.25	1.25	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	1.88	1.88	6.58	7.21	30.09	13.47	15.04	1.56	1.25	2.19	2.50	6.89	4.07	2.82	1.25	1.25	

Calm : .00 %

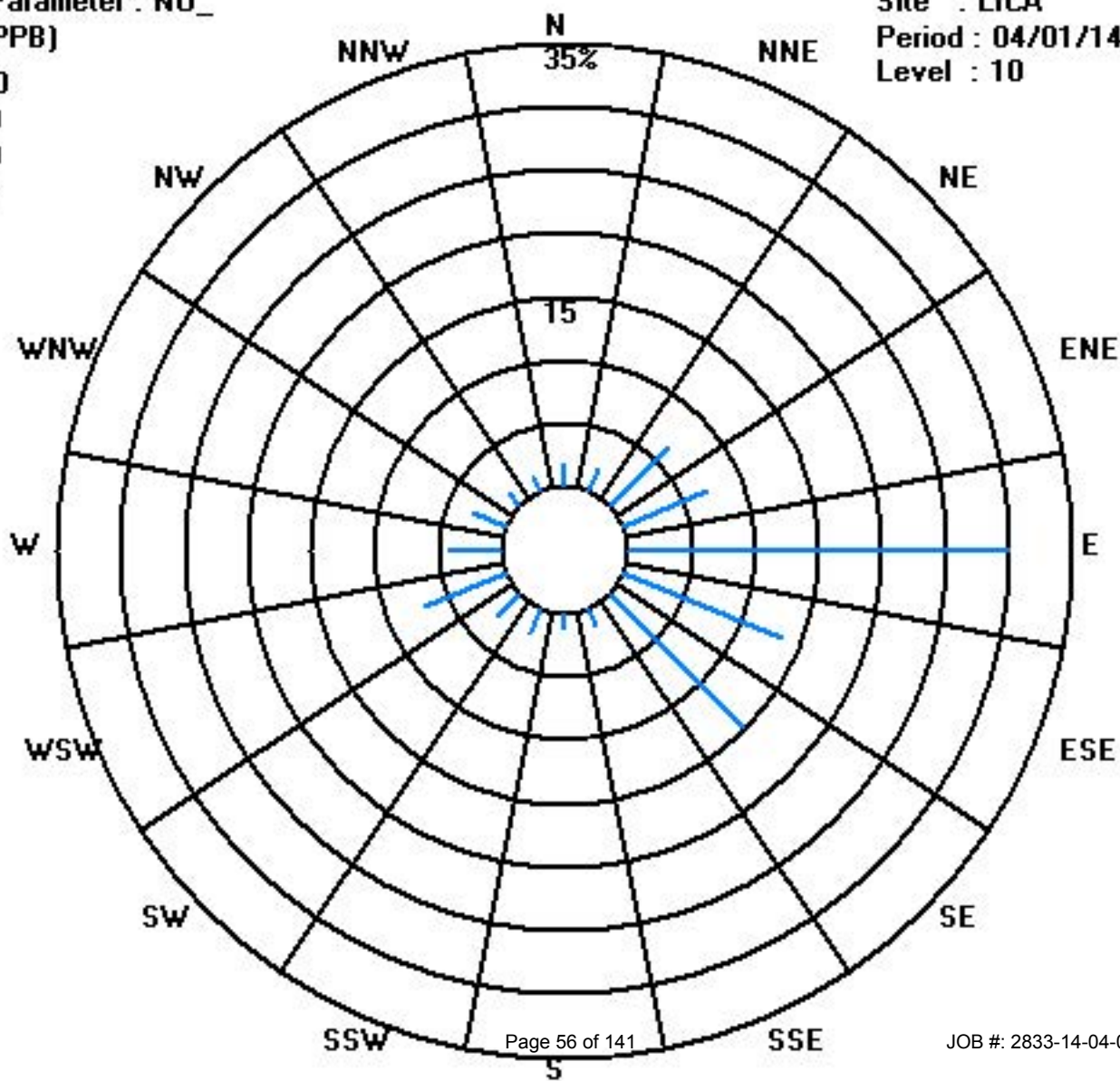
Total # Operational Hours : 319

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	6	6	21	23	96	43	48	5	4	7	8	22	13	9	4	4	319
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	6	6	21	23	96	43	48	5	4	7	8	22	13	9	4	4	

Calm : .00 %

Total # Operational Hours : 319



Oxides of Nitrogen

Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

OXIDES OF NITROGEN (NOx) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
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		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
2		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
3		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
4		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
5		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
6		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
7		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
8		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
9		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
10		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
11		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
12		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
13		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
14		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
15		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O			0
16		O	O	O	O	O	O	C	C	C	C	C	C	C	C	C	C	C	1.5	1.1	1.4	0.8	1	0.8	0.8		1.5	1.1	18
17		0.8	0.8	1.3	1.6	2.6	2	2.2	C	C	C	2.5	S	Y	3.9	2.9	2.8	2.6	2.8	2.5	2	2.1	2	2.2	1.8		3.9	2.2	23
18		1.7	1.7	2	2.1	2.6	2.4	2.9	3.1	3	2.8	S	2.9	2.5	3.5	3.1	3.2	3.3	3.2	5.3	4.4	3.7	3.7	3.8	3.1		5.3	3.0	24
19		3.7	3	3.5	3.3	3.9	2.8	2.6	3.6	2.7	S	3.5	2.5	1.5	1.4	2	1.3	1.4	1.2	1.3	1.9	1.4	1.3	1.5	1.5		3.9	2.3	24
20		1.6	2.3	1.7	1.4	1.7	2.3	3.3	1.9	S	1.9	4.3	3.5	2.5	1.9	1.5	1.5	1.4	1.4	2.6	3.4	3.3	2.9	2.4	1.9		4.3	2.3	24
21		4.4	3.7	2.5	7.6	10	7.5	15.5	S	5.2	4.1	3.4	2.3	1.6	1.5	1.6	1.8	2.2	2.1	2.3	2.9	3.8	3.1	3.2	2.2		15.5	4.1	24
22		2.5	2.8	3.1	3.8	6	10.2	S	4.8	2.4	1.2	1.1	1.1	1.1	1	1.7	1.1	1.2	1.7	1.5	1.7	1.8	1.2	1.2	1.2		10.2	2.4	24
23		1.1	0.9	0.8	1.2	1.5	S	2.3	2.2	1.9	2.6	2.2	2.2	2.5	2.6	2.4	1.9	2	2.3	2	1.5	1.2	0.9	0.9	0.9		2.6	1.7	24
24		0.8	0.8	1	1.4	S	2.6	3.7	C	C	C	C	C	2.6	2.1	2	2.5	2.5	2.4	2.7	2.5	2.3	1.9	1.5	1.4		3.7	2.0	24
25		1.6	1.6	2	S	2.7	2.6	4.2	3.8	2	2.2	1.2	1.4	1.6	1.6	1.4	1.2	1.1	1.4	1.5	2.3	4.1	4.8	3.8	3.5		4.8	2.3	24
26		3.2	2.1	S	3	4	1.9	3.1	2.1	2.1	1.4	1.1	1.4	1.1	1	1.1	1.1	1.1	1.9	1.9	1.6	1.6	1.2	1.5		4	1.8	24	
27		0.9	S	1	1.1	2.2	1.3	1.7	1.1	1.2	0.8	0.9	0.8	1	0.9	0.9	0.9	1.3	1.6	2.2	2.3	1.9	1.8	1.5	1.3		2.3	1.3	24
28		S	2.3	2.2	2.2	1.7	1.3	0.7	1.2	1.4	1.5	1	1.8	1	1.5	1.4	2	1.7	1	1.1	3.6	3.4	1.5	0.6	S		3.6	1.6	24
29		1.1	0.6	1.1	1	1.7	2.8	6.4	9.4	11	8.7	5.1	0.7	0.7	0.2	0.3	0.2	0.4	0.5	0.3	2.1	4.5	4.2	S	4.5		11	2.9	24
30		4.1	4.5	5.3	5.4	8	9	10.6	18.6	13.8	7.2	1.2	0.7	0.6	0.6	0.7	0.8	0.6	1.4	1.7	4.4	4.2	S	2.5	1.8		18.6	4.7	24
HOURLY MAX		4	5	5	8	10	10	16	19	14	9	5	4	3	4	3	3	3	3	5	4	5	5	4	5				
HOURLY AVG		2.1	2.1	2.1	2.7	3.7	3.7	4.6	4.7	4.2	3.1	2.3	1.8	1.6	1.7	1.6	1.6	1.7	1.7	2.0	2.5	2.7	2.3	1.7	2.0				

STATUS FLAG CODES

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

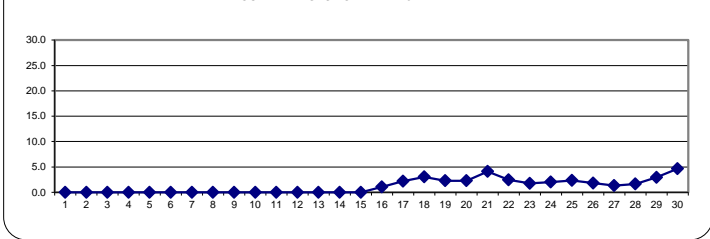
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

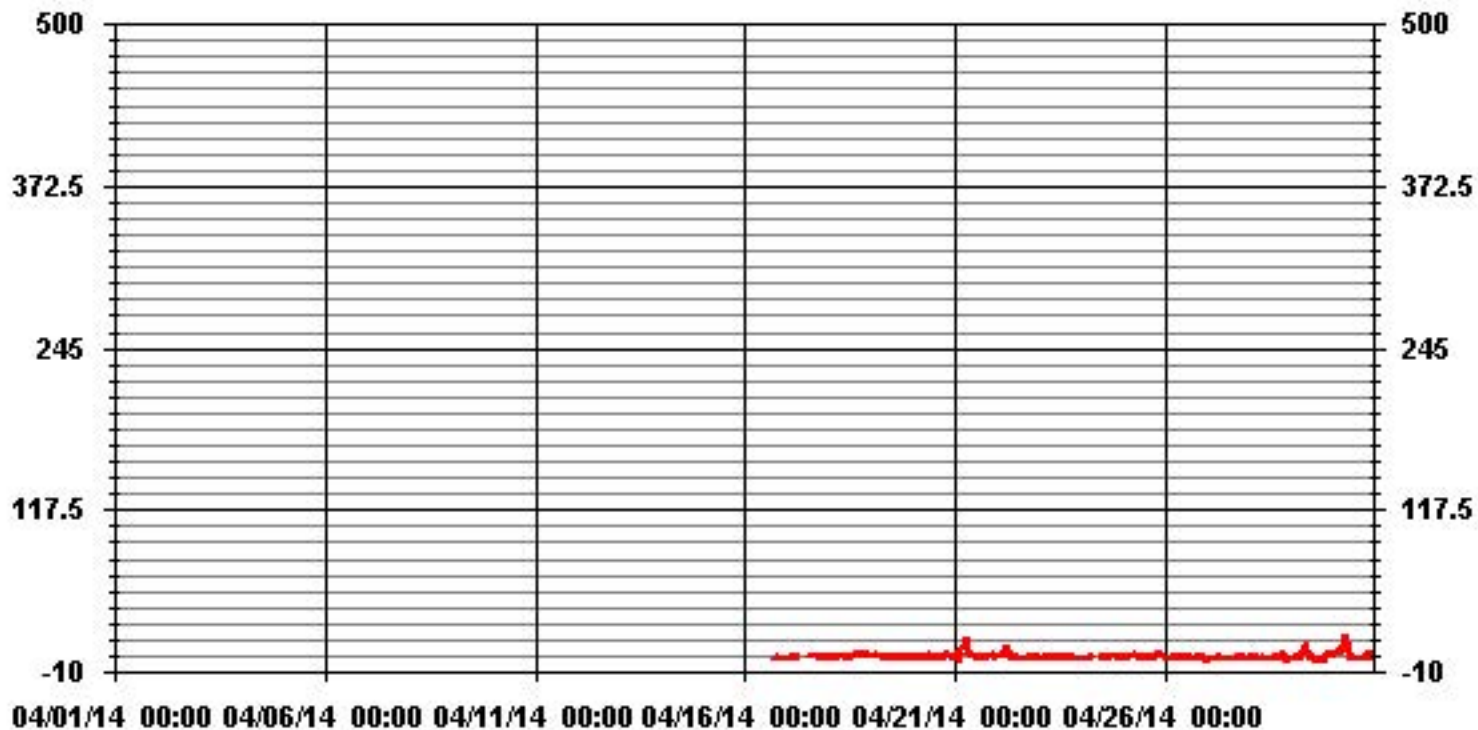
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA				
NUMBER OF NON-ZERO READINGS:	319				
MAXIMUM 1-HR AVERAGE:	18.6	PPB	@ HOUR(S)	7	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	4.7	PPB			ON DAY(S)
					30
					30
					VAR-VARIOUS
IZS CALIBRATION TIME:	15	HRS	OPERATIONAL TIME:	353	HRS
MONTHLY CALIBRATION TIME:	19	HRS	AMD OPERATION UPTIME:	49.0	%
STANDARD DEVIATION:	2.15		MONTHLY AVERAGE:	2.47	PPB

24 HOUR AVERAGES FOR APRIL 2014



01 Hour Averages



— LICA NOX_ PPB

Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

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		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0		
2		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	
3		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	
4		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
16		0	0	0	0	0	0	C	C	C	C	C	C	C	C	C	C	C	C	C	C	11.6	3.1	4.6	1.6	2.1	2.6	1.6	11.6	3.9	18
17		1.6	1.6	3.1	3.6	5.6	5.1	4.6	C	C	C	4.6	S	Y	Y	4.7	5.7	4.2	3.7	4.2	2.7	3.2	2.7	3.7	3.2	5.7	5.7	3.8	22		
18		2.7	2.7	5.7	5.7	5.2	3.7	5.2	4.7	4.2	4.7	S	5.5	3	5	5.5	5.5	9.5	5	23	8	6	11	6	5	23	6.2	24			
19		7	5	6	6	7.5	6	4	6.5	5	S	4.9	3.9	2.4	1.9	17.9	2.9	2.9	1.9	2.9	4.4	1.9	1.4	1.4	4.9	17.9	4.7	24			
20		2.9	4.9	2.4	2.4	2.9	3.9	5.4	4.4	S	2.3	18.8	9.3	3.3	3.3	1.8	2.3	2.3	1.8	13.8	4.8	8.8	5.3	4.3	3.8	18.8	5.0	24			
21		10.8	9.3	6.3	16.8	23.3	9.8	38.8	S	11.4	5.4	5.4	3.4	2.9	1.9	1.9	3.9	3.4	4.4	7.9	5.4	6.4	4.4	6.4	38.8	8.4	24				
22		5.9	6.4	5.9	7.4	12.4	27.4	S	8.6	4.6	2.1	3.1	2.1	2.6	2.1	3.1	2.1	6.1	4.1	6.1	3.6	2.1	3.1	2.1	2.1	27.4	5.4	24			
23		1.6	1.1	1.1	2.6	2.6	S	2.7	3.7	5.2	12.2	3.2	3.7	8.7	7.2	3.7	2.2	4.2	3.7	4.2	3.7	1.7	1.7	2.2	1.7	12.2	3.7	24			
24		1.7	1.7	2.2	2.7	S	3.4	6.9	C	C	C	C	C	6.4	5.4	5.9	5.9	4.9	4.4	6.9	6.4	3.9	5.9	2.9	2.9	6.9	4.5	24			
25		2.9	3.4	3.9	S	6.8	4.3	7.3	16.3	4.3	7.3	2.8	2.8	3.8	7.8	1.8	1.8	5.3	4.8	5.3	8.3	7.8	8.3	12.3	16.3	5.7	24				
26		8.3	3.3	S	6.6	9.1	4.1	11.1	3.1	4.1	10.6	2.6	2.6	4.6	3.1	1.6	2.6	2.6	5.1	3.6	3.1	3.1	3.6	2.1	2.1	11.1	4.5	24			
27		2.1	S	2.3	2.3	4.8	2.3	15.3	2.3	1.8	1.3	1.3	1.3	2.3	1.3	2.3	1.3	2.3	6.3	10.8	3.8	7.8	7.3	2.8	3.3	15.3	3.9	24			
28		S	5.1	4.1	4.6	3.6	3.1	1.1	2.6	3.6	5.6	4.6	23.1	3.1	3.1	3.1	7.6	7.1	4.1	2.6	14.1	8.1	8.1	1.6	S	23.1	5.6	24			
29		4.6	1.1	2.1	2.6	21.1	16.6	10.6	11.1	17.1	11.6	8.6	1.1	2.6	1.1	1.6	1.1	0.6	4.6	0.6	8.6	7.1	5.6	S	5.6	21.1	6.4	24			
30		5.6	7.1	9.6	11.6	12.6	14.6	18.1	21.6	19.6	15.6	2.6	1.1	1.1	1.6	1.6	4.6	1.6	2.6	5.6	16.6	9.1	S	3.2	2.2	21.6	8.2	24			
HOURLY MAX		11	9	10	17	23	27	39	22	20	16	19	23	9	7	18	8	10	12	23	17	9	11	8	12						
HOURLY AVG		4.4	4.1	4.2	5.8	9.0	8.0	10.1	7.7	7.4	7.2	5.2	5.0	3.5	3.1	4.5	3.5	3.8	4.5	6.4	6.5	5.2	5.1	3.4	4.1						

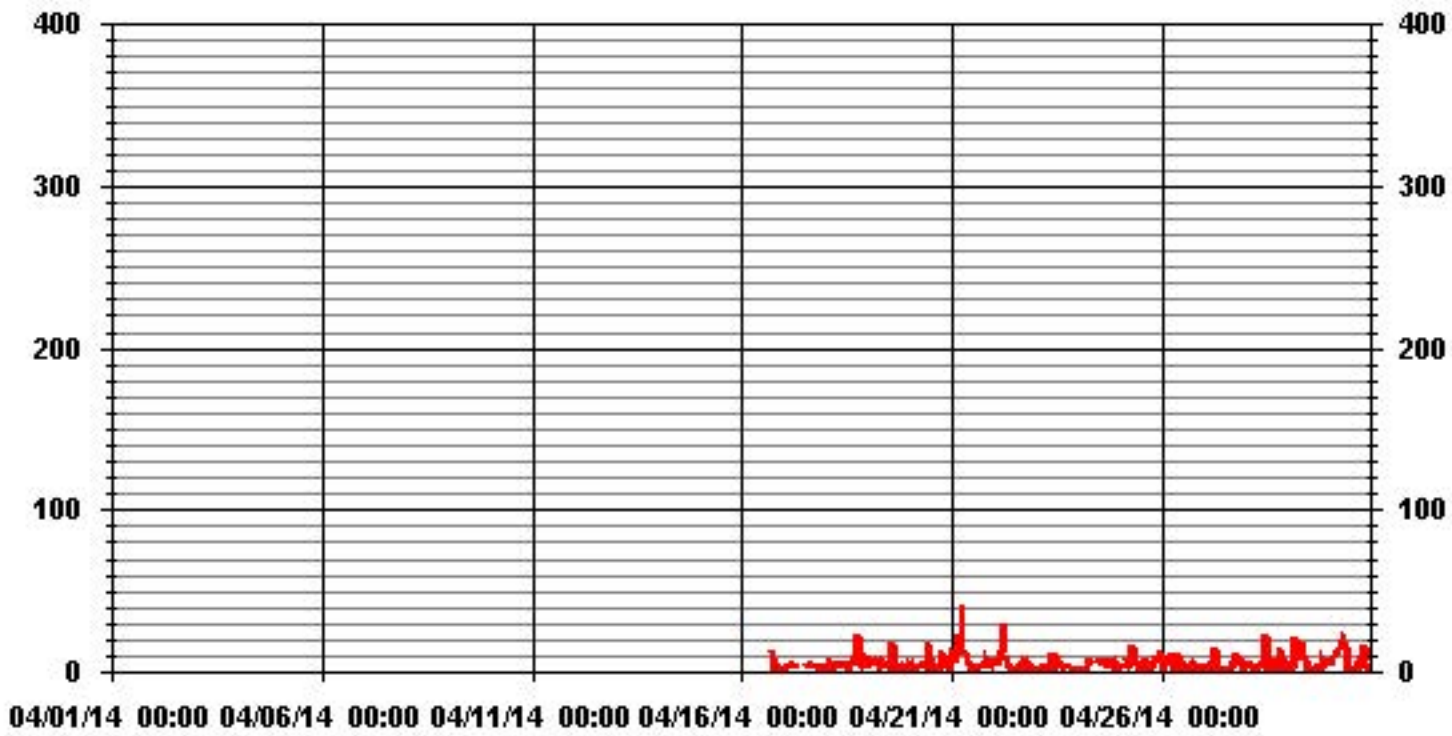
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	318
MAXIMUM INSTANTANEOUS VALUE:	38.8 PPB @ HOUR(S) 6 ON DAY(S) 21
	VAR-VARIOUS
IZS CALIBRATION TIME:	15 HRS
MONTHLY CALIBRATION TIME:	19 HRS
OPERATIONAL TIME:	352 HRS
STANDARD DEVIATION:	4.73

01 Hour Averages



LICA
NOX_ / WD Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	1.88	1.88	6.58	7.21	30.09	13.47	15.04	1.56	1.25	2.19	2.50	6.89	4.07	2.82	1.25	1.25	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	1.88	1.88	6.58	7.21	30.09	13.47	15.04	1.56	1.25	2.19	2.50	6.89	4.07	2.82	1.25	1.25	

Calm : .00 %

Total # Operational Hours : 319

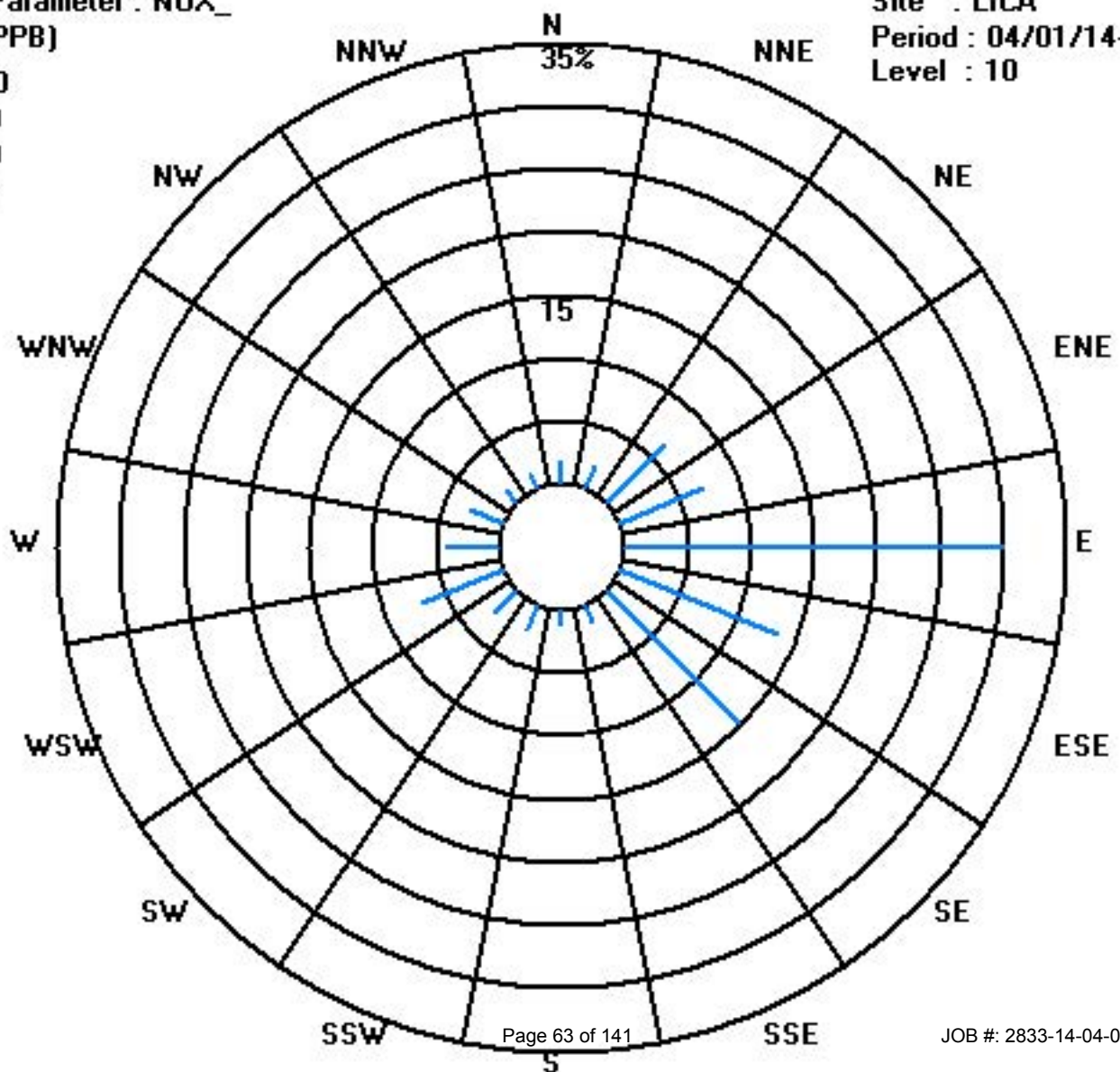
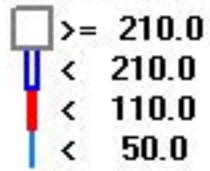
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	6	6	21	23	96	43	48	5	4	7	8	22	13	9	4	4	319
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	6	6	21	23	96	43	48	5	4	7	8	22	13	9	4	4	

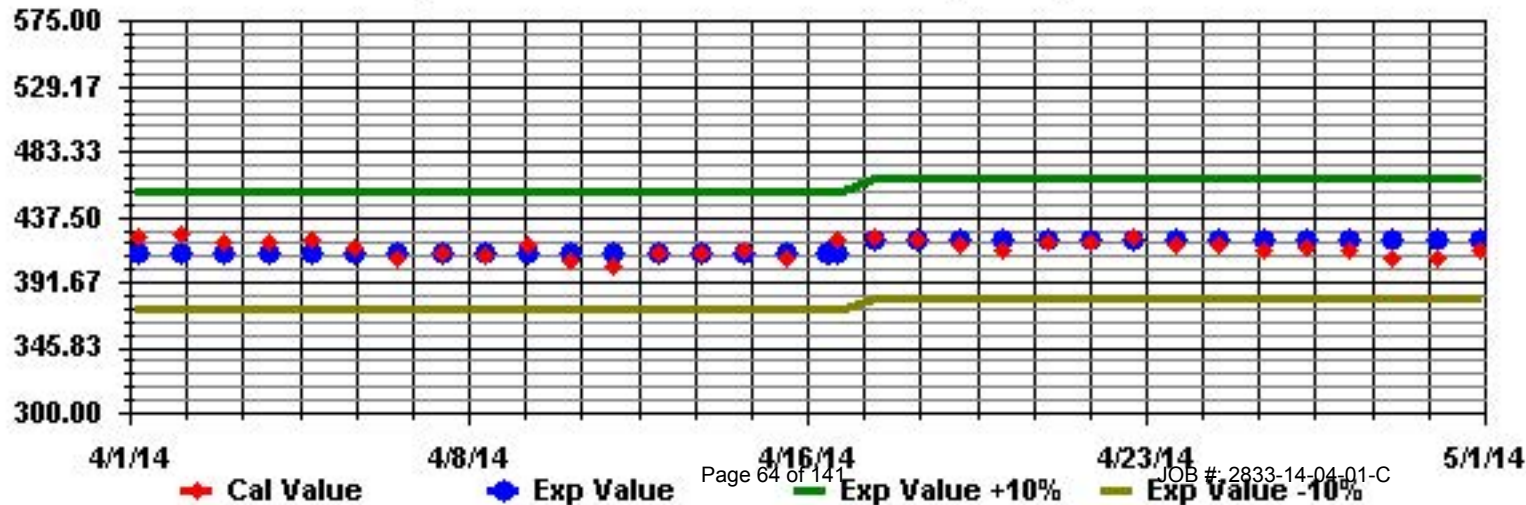
Calm : .00 %

Total # Operational Hours : 319

Class Limits (PPB)



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



Ozone

Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

OZONE (O3) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	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		30	30	30	30	S	27	27	28	28	30	33	36	37	39	43	43	44	43	42	36	29	23	18	14	44	32.2	24	
2		8	8	9	S	6	6	7	30	36	39	43	44	45	44	44	44	44	44	42	33	24	14	13	15	45	27.9	24	
3		13	17	S	18	18	14	13	28	36	38	41	43	44	48	49	49	49	48	47	46	48	48	47	47	49	36.9	24	
4		48	S	44	42	43	44	44	42	40	39	38	36	35	37	40	44	47	46	46	47	42	39	39	40	48	41.8	24	
5		S	36	30	24	17	17	9	13	39	41	44	46	46	46	49	48	49	48	44	39	40	36	30	S	49	36.0	24	
6		15	13	30	28	28	23	25	29	37	39	40	43	46	48	50	47	44	42	41	44	39	33	S	30	50	35.4	24	
7		31	26	22	24	28	28	27	29	35	37	40	42	44	45	46	46	47	47	47	42	36	S	39	40	47	36.9	24	
8		36	33	37	31	22	16	15	26	32	34	37	40	42	44	47	50	50	48	46	41	S	41	45	52	52	37.6	24	
9		53	50	48	48	47	46	45	44	S	45	45	46	47	47	47	47	46	46	46	S	43	44	46	44	53	46.4	24	
10		43	39	34	32	32	32	33	37	41	43	45	45	46	45	45	45	42	S	39	30	20	17	11	46	36.6	24		
11		11	28	36	37	38	38	38	37	36	35	33	33	33	32	31	31	31	S	29	34	36	37	38	38	33.5	24		
12		38	39	39	40	42	41	40	S	40	43	43	43	42	43	43	42	S	41	40	38	34	31	25	19	43	38.5	24	
13		19	19	35	37	36	34	35	35	35	37	40	42	43	45	47	S	48	48	48	43	33	30	40	41	48	37.8	24	
14		40	38	37	26	27	34	35	36	38	44	46	46	45	47	S	49	50	49	48	45	45	44	43	42	50	41.5	24	
15		41	40	39	39	38	36	36	37	37	38	40	41	42	S	42	44	44	43	43	41	40	36	37	42	44	39.8	24	
16		38	31	36	36	31	36	40	42	43	43	44	44	S	45	45	47	48	47	45	43	43	42	42	41	48	41.4	24	
17		41	41	41	40	38	39	39	40	41	C	C	C	Y	38	40	39	40	39	40	41	41	41	41	42	42	40.1	23	
18		42	42	41	40	40	39	S	S	37	38	S	38	38	37	38	38	38	37	35	35	35	36	36	36	42	37.9	24	
19		35	34	27	29	28	28	S	S	31	S	32	36	38	41	42	44	43	43	41	40	40	40	40	40	44	36.8	24	
20		39	38	39	36	33	31	30	29	S	26	26	26	28	37	43	46	46	47	39	29	27	30	28	11	47	33.2	24	
21		3	4	4	2	2	2	3	S	30	33	38	47	52	54	54	54	54	53	51	49	46	44	34	26	54	32.1	24	
22		34	35	33	35	31	25	S	S	31	36	40	44	46	48	49	46	48	51	50	50	49	46	45	44	51	42.0	24	
23		43	43	44	44	44	S	45	45	45	45	46	48	50	50	49	49	48	46	45	45	45	44	45	50	45.8	24		
24		46	45	45	44	S	39	37	36	39	C	C	C	C	37	37	37	37	37	39	38	38	35	34	35	46	38.5	24	
25		34	33	32	S	33	33	31	31	34	34	35	35	35	35	34	34	33	33	32	30	26	21	21	22	35	31.3	24	
26		24	26	S	24	23	24	23	24	26	28	29	31	31	31	31	32	34	32	31	30	28	27	29	28	34	28.1	24	
27		29	S	28	27	26	27	29	31	32	33	32	31	31	30	29	28	27	25	24	22	23	26	27	27	33	28.0	24	
28		S	26	25	25	24	24	27	28	26	24	25	25	27	28	29	30	31	31	29	25	24	27	28	S	31	26.7	24	
29		26	26	23	21	11	4	9	11	18	26	35	45	46	46	46	48	46	46	45	41	28	21	S	15	48	29.7	24	
30		12	11	8	5	3	4	8	18	26	37	46	48	50	51	52	53	54	S	56	56	48	41	S	45	47	56	33.9	24
HOURLY MAX		53	50	48	48	47	46	45	45	45	46	48	52	54	54	54	54	56	56	50	49	48	47	52					
HOURLY AVG		31.1	30.4	32.0	30.9	28.2	27.3	27.8	31.4	34.8	36.6	38.5	40.2	41.0	42.0	42.7	43.3	43.7	43.4	41.7	39.1	36.2	34.1	34.7	33.3				

STATUS FLAG CODES

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

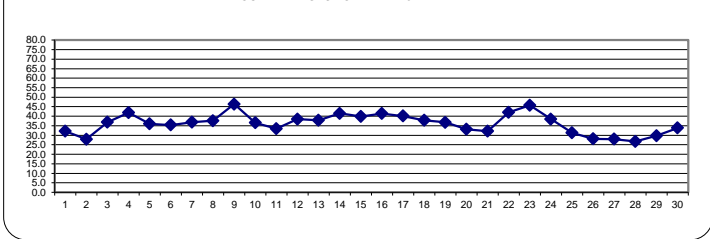
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 82 PPB

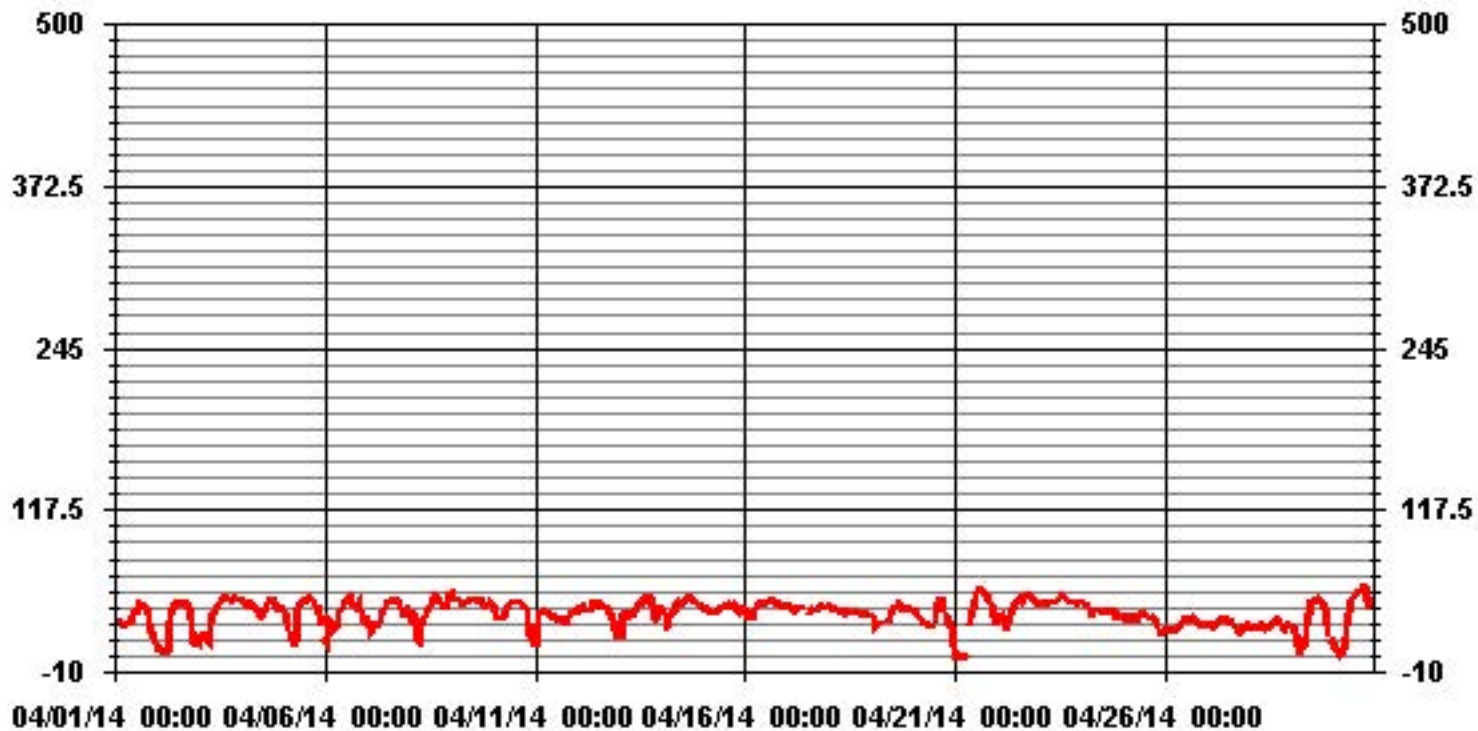
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	676					
MAXIMUM 1-HR AVERAGE:	56	PPB	@ HOUR(S)	17, 18	ON DAY(S)	30
MAXIMUM 24-HR AVERAGE:	46.4	PPB			ON DAY(S)	9
				VAR-VARIOUS		
IZS CALIBRATION TIME:	37	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	10.46		MONTHLY AVERAGE:	36.10	PPB	

24 HOUR AVERAGES FOR APRIL 2014



01 Hour Averages



Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

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		31	31	31	31	S	29	28	29	S	32	37	37	38	42	44	44	44	44	43	49	33	34	23	25	49	35.4	24	
2		12	13	15	S	10	11	13	37	38	S	44	45	45	45	46	46	45	45	46	39	31	25	16	21	46	31.3	24	
3		22	21	S	22	22	17	16	36	38	39	43	43	46	50	50	50	50	50	49	50	49	48	48	48	50	39.4	24	
4		49	S	46	43	44	45	45	44	42	40	39	37	36	39	42	48	48	48	48	48	44	41	42	42	49	43.5	24	
5		S	38	36	31	23	22	18	31	41	43	46	48	48	50	49	50	49	48	43	44	40	35	S	50	40.0	24		
6		18	20	34	31	31	27	27	36	39	40	42	44	48	50	52	50	47	43	42	47	43	39	S	34	52	38.4	24	
7		32	31	28	28	31	31	28	32	37	38	42	43	45	46	S	47	49	48	48	46	40	S	42	41	49	38.8	24	
8		39	37	41	40	29	22	18	31	34	35	39	42	43	46	49	53	52	49	47	44	S	43	49	54	54	40.7	24	
9		55	52	50	49	48	47	46	45	S	46	46	47	47	47	47	47	48	47	47	S	44	48	47	47	55	47.6	24	
10		44	40	36	35	34	34	35	41	42	45	46	46	47	47	46	46	46	44	S	41	38	27	26	19	47	39.3	24	
11		29	36	38	39	39	39	39	38	37	37	35	34	34	33	32	33	33	S	32	37	38	38	39	39	39	36.0	24	
12		39	39	40	42	42	43	40	S	43	44	44	44	43	45	45	43	S	42	41	39	37	33	32	28	45	40.4	24	
13		22	30	37	38	38	35	36	36	36	39	43	44	45	47	48	S	49	49	49	49	40	40	43	43	49	40.7	24	
14		46	42	39	37	35	35	36	38	40	46	46	46	46	49	S	50	51	50	49	46	47	45	44	43	51	43.7	24	
15		42	41	41	40	39	37	38	38	38	40	42	43	43	S	44	46	45	44	44	44	44	43	38	41	44	46	41.5	24
16		42	35	40	39	37	40	41	43	44	45	45	45	S	46	47	48	49	48	46	45	43	43	43	42	49	43.3	24	
17		42	42	42	41	40	40	41	41	42	C	C	C	C	C	41	40	41	40	41	42	42	42	42	43	43	41.3	24	
18		43	42	42	41	41	40	S	S	38	39	S	38	38	38	39	39	39	39	37	36	37	37	37	37	43	38.9	24	
19		38	36	34	32	33	S	S	32	S	35	35	37	40	43	44	46	45	44	42	41	41	40	41	41	46	38.9	24	
20		40	40	40	38	35	33	32	31	S	28	28	28	35	40	47	47	48	51	49	38	36	36	35	19	51	37.1	24	
21		6	10	7	10	4	8	5	S	33	36	41	54	55	55	55	55	56	53	53	47	45	43	32	56	35.6	24		
22		38	38	36	38	35	30	S	35	40	45	45	48	49	51	48	52	52	51	51	51	51	48	46	44	52	44.4	24	
23		44	44	44	44	45	S	46	46	46	46	47	50	52	52	51	50	50	48	46	46	46	46	45	47	52	47.0	24	
24		47	46	46	45	S	41	39	39	40	C	C	C	38	38	39	40	39	46	41	44	36	36	36	35	47	40.6	24	
25		35	35	33	S	34	34	33	34	35	36	36	36	37	36	35	35	34	34	33	31	29	23	23	24	37	32.8	24	
26		27	28	S	26	25	26	24	25	28	29	30	33	32	32	33	34	35	34	33	31	30	28	30	30	35	29.7	24	
27		30	S	29	28	28	29	31	32	33	34	34	32	32	31	30	29	28	27	25	24	25	28	28	28	34	29.3	24	
28		S	27	27	27	26	26	29	30	28	26	27	27	28	30	31	32	32	33	33	27	26	29	29	S	33	28.6	24	
29		27	27	25	24	17	8	14	15	24	30	43	47	47	47	48	50	48	47	47	44	33	26	S	18	50	32.9	24	
30		17	18	13	10	4	7	13	20	33	45	48	50	52	52	54	55	55	58	59	55	48	S	48	49	59	37.5	24	
HOURLY MAX		55	52	50	49	48	47	46	46	46	46	48	54	55	56	55	55	55	58	59	55	51	48	49	54				
HOURLY AVG		34.1	33.5	34.6	33.9	31.0	30.0	30.0	34.7	37.1	38.6	40.5	41.7	42.5	43.8	44.2	45.0	45.1	45.1	43.8	42.4	39.3	37.4	37.6	36.3				

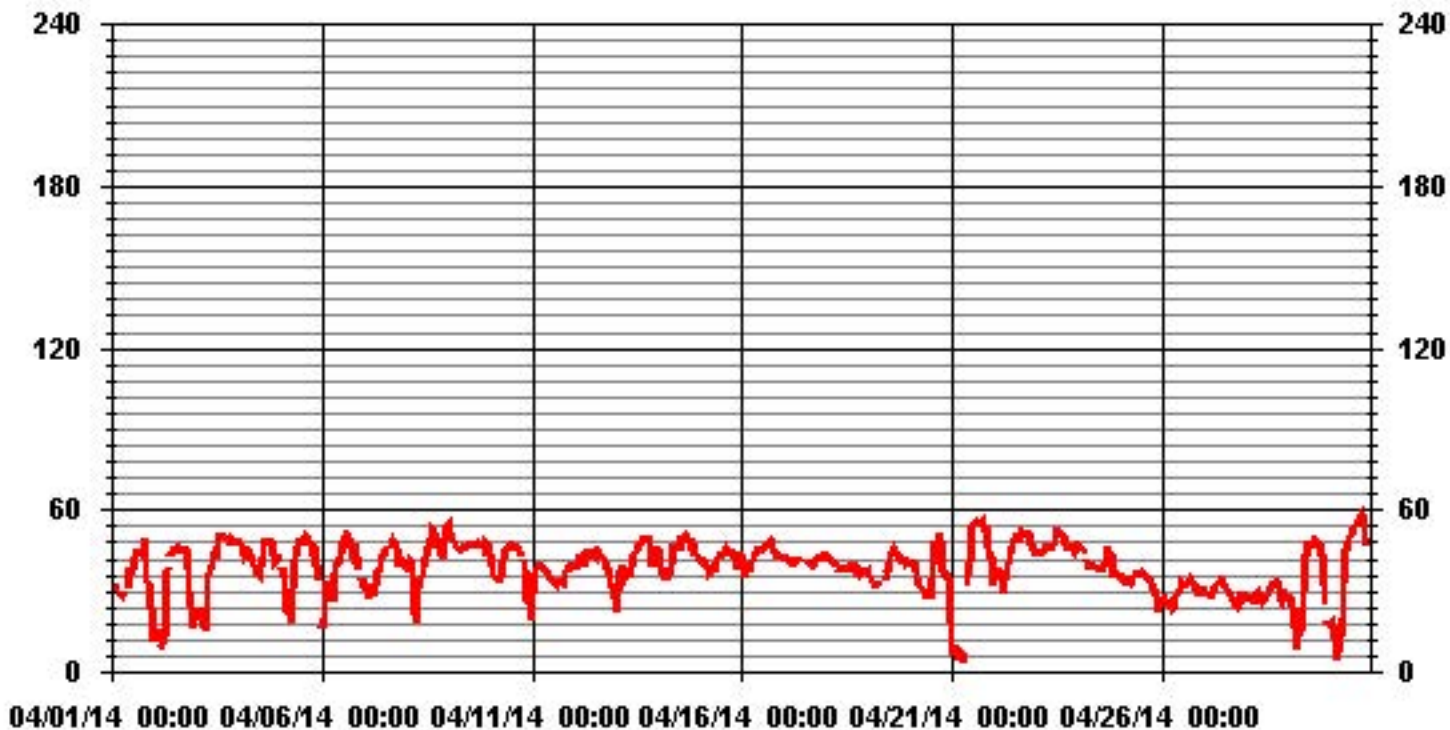
STATUS FLAG CODES

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:	672
MAXIMUM INSTANTANEOUS VALUE:	59 PPB @ HOUR(S) 18 ON DAY(S) 30
	VAR-VARIOUS
IZS CALIBRATION TIME:	40 HRS
MONTHLY CALIBRATION TIME:	8 HRS
STANDARD DEVIATION:	9.62
OPERATIONAL TIME:	720 HRS

01 Hour Averages



— LICA O3MAX PPB

LICA
O3_ / WD Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50	2.95	2.95	5.62	4.58	17.75	10.79	17.30	2.81	1.47	2.07	3.25	8.72	5.17	5.91	2.21	2.36	96.00
< 110	.00	.00	.14	.29	.59	.29	.00	.14	.00	.00	.44	1.18	.44	.29	.00	.14	3.99
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.95	2.95	5.76	4.88	18.34	11.09	17.30	2.95	1.47	2.07	3.69	9.91	5.62	6.21	2.21	2.51	

Calm : .00 %

Total # Operational Hours : 676

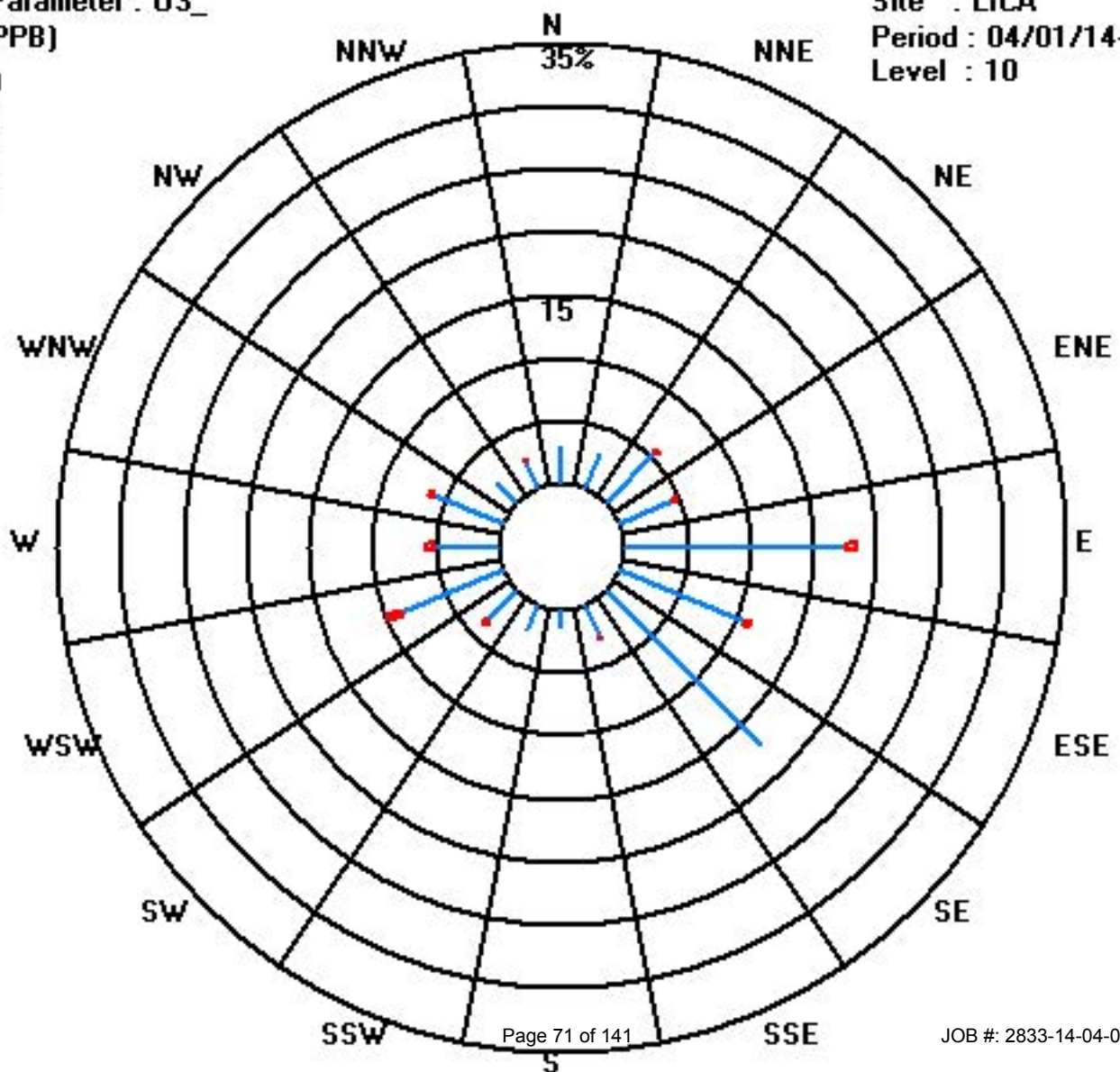
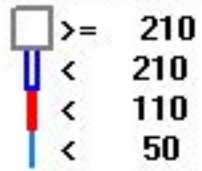
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50	20	20	38	31	120	73	117	19	10	14	22	59	35	40	15	16	649
< 110			1	2	4	2		1			3	8	3	2		1	27
< 210																	
>= 210																	
Totals	20	20	39	33	124	75	117	20	10	14	25	67	38	42	15	17	

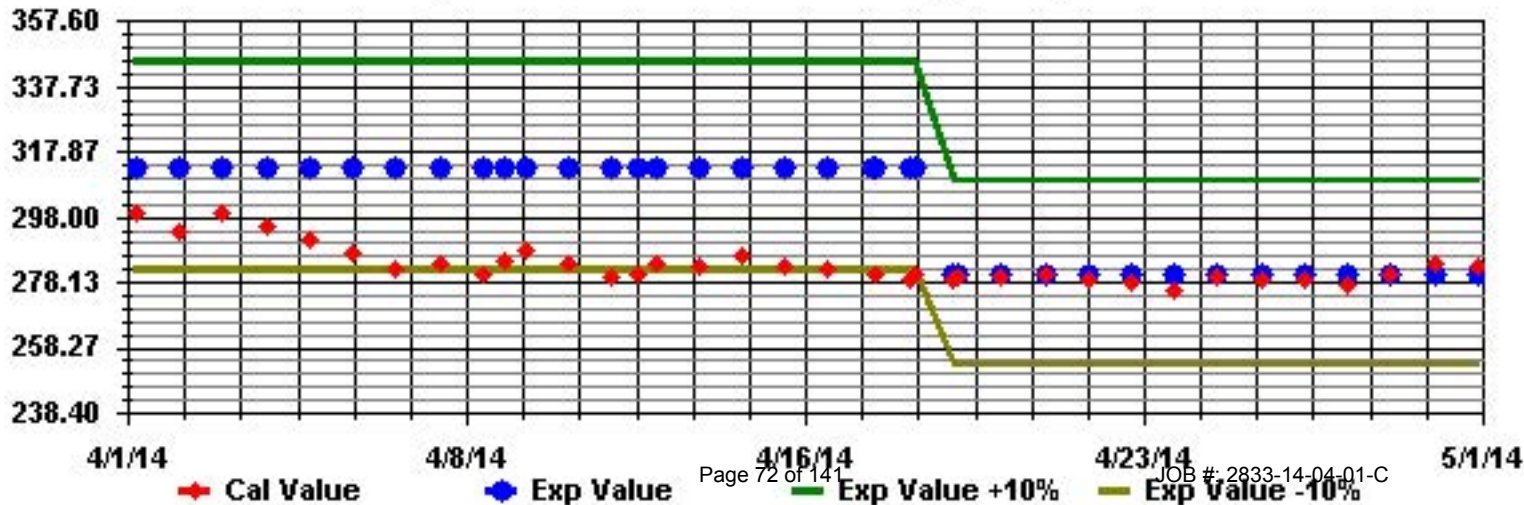
Calm : .00 %

Total # Operational Hours : 676

Class Limits (PPB)



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



Ambient Temperature

Lakeland Industry & Community Association - Cold Lake South Site

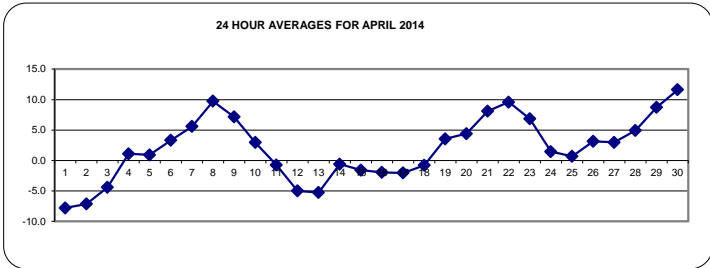
APRIL 2014

AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 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		-11	-11.6	-11.3	-11.2	-11.2	-11.3	-11.2	-10.7	-9.5	-8	-6.1	-4.3	-3.5	-3.6	-3.2	-3	-2.9	-2.9	-3.6	-5.7	-8.1	-9.9	-11.2	-12.6	-2.9	-7.8	24
2		-13.2	-14.3	-15.2	-15.8	-16.8	-16.8	-15.6	-11.6	-8.6	-5.4	-3.4	-2.6	-1.7	-1	-0.6	-0.3	-0.4	-0.4	-1.1	-2.3	-3.8	-5.2	-6.7	-8.5	-0.3	-7.1	24
3		-9.7	-10.6	-11.6	-12.5	-13.3	-14	-13.2	-9.1	-7.7	-6.1	-3.9	-1.3	0.4	1.6	2.5	3.1	3.3	3	1.8	-0.3	-1.3	-2	-2.5	-2.9	3.3	-4.4	24
4		-2.7	-2.2	-2.2	-1.8	-1.8	-2.5	-2.8	-2.6	-1.5	-0.7	0.6	1.3	2.8	3.7	5	6.9	7.8	6.9	5.6	4.3	2.1	0.6	-0.2	-0.7	7.8	1.1	24
5		-0.6	-1.4	-3.2	-4.6	-5.7	-6.6	-5.8	-2.3	-0.4	1.3	3	4.3	4.6	5.4	6.7	7.2	6.8	5.2	3.7	2.8	2.2	0.9	-0.5	-1.2	7.2	0.9	24
6		-1.1	-1.2	-0.9	-0.3	-0.1	-0.2	0.1	0.5	1	2.5	4.5	7.2	8.6	8.7	9.1	8	8.1	7.2	7.2	3.7	2.9	1.7	1.4	1.1	9.1	3.3	24
7		0.5	-0.5	-1.4	-1.4	-1.3	-1.1	-0.5	1.9	4.6	6.5	8.1	9	10.2	11.1	11.8	11.6	11	10.5	10	8.2	5.8	6.4	6.5	6.4	11.8	5.6	24
8		4.8	3.6	4.8	3.1	0.8	-0.6	0.5	4.9	7.4	9.3	11.8	13.6	15.2	16.9	17.9	18.4	18.3	17.8	15.6	12	9.4	9.7	9.4	9.1	18.4	9.7	24
9		8.7	8.1	7.6	6.8	6	5.1	4.9	5.6	6.3	7.2	8.2	9	9.8	10.2	10.4	10	9.7	9.3	8.3	5.5	4.1	4.1	3.7	2.7	10.4	7.1	24
10		1.6	0.2	-0.4	-0.8	-1.3	-1.6	-0.3	2.3	4.5	6	7.3	7.9	8	7.1	7.3	6.7	7.3	3.9	2.6	1.7	0.9	0.5	-0.1	-0.8	8	2.9	24
11		-0.1	0.6	0.2	-1	-1.4	-1.6	-1.5	-1	-0.7	-1.2	-0.6	0.2	0.6	0.9	0.8	0.9	1	1.4	1	-0.2	-2.7	-4.1	-4.8	-4.9	1.4	-0.8	24
12		-5.4	-5.9	-6.9	-7.9	-8.8	-9.4	-9.2	-8.3	-7.4	-6.6	-5.5	-4.3	-3.2	-2.2	-1.6	-1.5	-1.3	-1.5	-1.8	-2.6	-2.9	-4.1	-5.5	-5.8	-1.3	-5.0	24
13		-5.2	-5.7	-6.4	-6.9	-7.5	-8.5	-8.8	-8.6	-7.7	-6.2	-4.9	-4.4	-3.8	-2.5	-2.5	-1.8	-1.9	-2	-2.7	-3.9	-5.6	-6.4	-6	-6.5	-1.8	-5.3	24
14		-7.4	-8.3	-8.6	-9.6	-9.8	-9.2	-8.2	-6.2	0.4	1.9	2.5	3.3	4.5	6	6.1	6.5	6.2	5.5	3.9	3.3	2.4	1.9	1.4	6.5	-0.6	24	
15		0.9	0.3	-0.2	-1.9	-2.6	-3	-2.9	-3	-2.8	-1.9	-1.4	-1.2	-0.6	-0.4	-1.2	-1	-0.9	-0.7	-1.4	-1.9	-2.5	-2.7	-2.4	-2.7	0.9	-1.6	24
16		-3	-3.7	-4.1	-5.1	-5.5	-4.6	-4	-3.5	-2.6	-1.5	-0.6	-0.2	0.4	0.6	0.5	1.1	0.9	-0.2	-0.7	-1.5	-2	-2.4	-2.5	-2.4	1.1	-1.9	24
17		-2.6	-2.7	-3.2	-4.2	-4.6	-4.6	-4	-3	-2.3	-1.2	-0.6	-0.7	-0.3	-0.5	-0.4	-0.9	-0.8	-1.2	-1.6	-1.7	-1.8	-2	-2.1	-2.2	-0.3	-2.1	24
18		-2.2	-2.2	-2.2	-2.3	-2.3	-2.3	-2.1	-1.6	-1	-0.6	-0.3	-0.5	-0.4	-0.5	-0.5	0	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.3	-0.8	24
19		0.1	0.1	0.1	0	-0.1	0	0.2	0.5	1.1	1.7	3.1	4	5.4	7.2	8.5	9.2	8.9	8.8	7.8	5.9	4.2	3.2	2.6	2.4	9.2	3.5	24
20		2.3	2.4	2.7	2	1.5	1.4	2	2.1	2.2	3.1	4.1	4.3	5.3	7.3	9	9.9	9.4	8.6	6.4	5.6	4.8	4.2	3.4	1.2	9.9	4.4	24
21		-0.2	-0.9	-1.4	-1.9	-2.4	-2.5	0.4	5.7	7.6	9.5	12	14.3	15.9	16.6	17	16.3	15.8	15.5	14.3	12.4	10.5	9.5	6.7	3.3	17	8.1	24
22		2.6	2.9	2.1	1.8	1	0.6	2.1	5.2	8.1	9.9	12.3	14.8	16.2	16.2	15.7	16.4	15.7	15	14.4	13.1	12.7	11.6	10.5	9.1	16.4	9.6	24
23		8.4	7.9	7.6	7.3	7.2	7.1	7.3	7.7	8	8.5	9	9.1	9.7	8.8	7.6	6.8	6.1	5.8	5.7	4.8	4.1	3.4	3.2	3.1	9.7	6.8	24
24		2.8	2.4	1.8	1.7	1.4	0.7	0.8	1.2	1.7	1.9	1.8	1.8	2	1.9	2.1	2.2	2	2	1.6	0.7	0	0	0	0	2.8	1.4	24
25		-0.1	-0.1	-0.3	-0.2	-0.2	-0.4	-0.6	-0.3	0.1	0.5	0.9	1.3	1.4	1.3	1.8	1.9	2	2	1.6	1	0.8	0.7	0.8	0.8	2	0.7	24
26		1.1	1.1	1	0.9	0.9	0.8	0.7	1	1.5	2.1	2.8	3.8	4.8	5.6	5.7	5.8	6	5.8	5.4	4.7	4	3.8	3.3	2.8	6	3.1	24
27		2.1	1.4	1.3	1.3	1.3	1.9	2.8	3.2	3.6	3.7	3.3	3	2.5	2.6	3.4	4.1	4.6	4.5	4.3	4.3	4	3.1	2.6	2.2	4.6	3.0	24
28		2	1.4	1.1	1.1	1.2	1.2	1.4	2.1	3.2	4.9	6.3	6.9	7.7	8.2	8.5	9.1	9.1	9.4	8.7	6.9	5.8	4.8	3.8	2.9	9.4	4.9	24
29		2.7	2.7	2.5	2.2	0.5	-0.1	1.9	3.6	6.7	9.7	13.1	14.5	15.3	15.7	16.5	16.7	16.8	17.1	16.5	14.3	9	5.7	3.8	2.1	17.1	8.7	24
30		0.6	-0.3	-0.9	-1.5	-2	-1.1	3.7	8.1	12.9	16	17.7	18.3	19	19.6	20.2	20.1	20.2	20.1	19.4	16.6	13.4	13	13.3	12.4	20.2	11.6	24
HOURLY MAX		8.7	8.1	7.6	7.3	7.2	7.1	7.3	8.1	12.9	16	17.7	18.3	19	19.6	20.2	20.1	20.2	20.1	19.4	16.6	13.4	13	13.3	12.4			
HOURLY AVG		-0.8	-1.2	-1.6	-2.1	-2.6	-2.8	-2.1	-0.5	0.8	2.2	3.5	4.4	5.2	5.7	6.1	6.3	6.3	5.9	5.2	3.8	2.5	1.7	1.1	0.4			

STATUS FLAG CODES

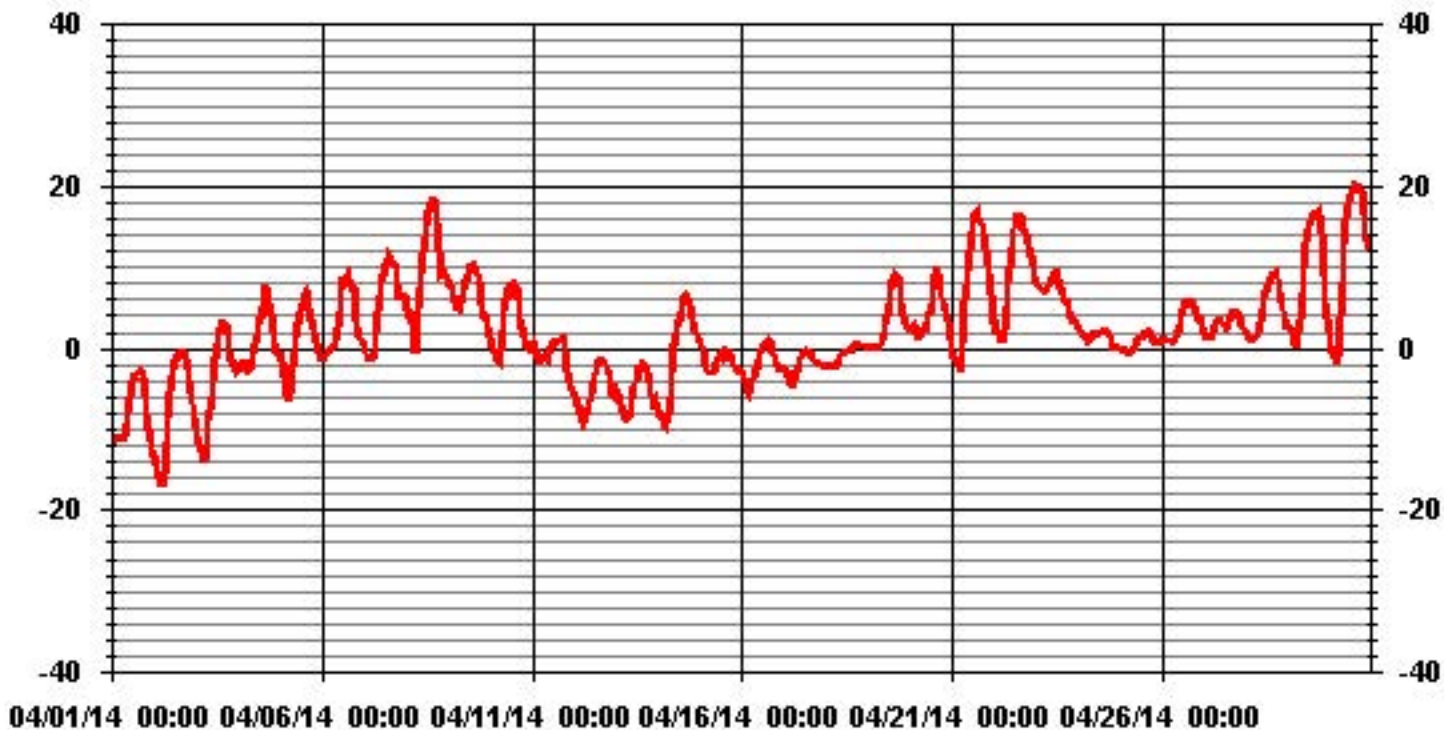
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-16.8 °C	@ HOUR(S)	4, 5	ON DAY(S)	2
MAXIMUM 1-HR AVERAGE:	20.2 °C	@ HOUR(S)	14, 16	ON DAY(S)	30
MAXIMUM 24-HR AVERAGE:	11.6 °C			ON DAY(S)	30
				VAR-VARIOUS	
OPERATIONAL TIME:				720	HRS
AMD OPERATION UPTIME:				100.0	%
STANDARD DEVIATION:	6.46			MONTHLY AVERAGE:	1.97 °C

01 Hour Averages



Relative Humidity

Lakeland Industry & Community Association - Cold Lake South Site

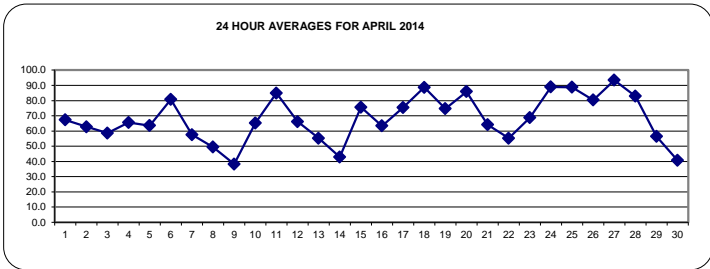
APRIL 2014

RELATIVE HUMIDITY (RH) hourly averages in %

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		66	68	68	72	76	79	80	80	77	73	69	62	58	58	53	52	50	50	52	62	71	77	80	82	82	67.3	24	
2		81	81	81	80	80	79	77	76	70	61	53	49	46	44	44	44	44	46	51	59	67	73	77	81	81	62.8	24	
3		80	81	83	83	83	82	80	72	63	56	50	45	41	35	33	32	31	34	40	46	50	59	72	77	83	58.7	24	
4		76	76	76	75	76	79	82	84	78	72	67	67	63	63	61	52	45	47	48	44	56	61	64	64	84	65.7	24	
5		58	62	72	80	83	85	83	70	55	47	40	34	38	41	36	37	47	66	68	74	79	87	90	93	93	63.5	24	
6		93	93	95	97	97	98	98	98	95	86	76	63	55	54	53	64	59	64	61	85	87	91	89	87	98	80.8	24	
7		87	89	92	90	83	79	74	67	57	50	46	44	40	37	33	35	38	38	40	47	54	52	54	57	92	57.6	24	
8		65	68	60	68	77	81	78	63	55	49	43	39	36	32	29	28	29	30	34	43	50	50	45	36	81	49.5	24	
9		37	36	38	38	40	44	44	43	40	37	35	32	27	25	26	28	28	30	29	45	47	50	56	61	61	38.2	24	
10		66	72	67	64	67	69	64	56	48	44	40	39	38	46	46	53	49	80	87	92	93	94	95	95	95	65.2	24	
11		96	96	91	64	61	59	59	61	72	86	90	93	94	95	96	96	95	96	97	93	86	83	82	97	84.9	24		
12		81	79	80	77	76	72	71	65	56	48	49	50	50	50	52	54	54	58	63	75	77	80	84	87	87	66.2	24	
13		86	88	85	85	75	74	68	68	59	54	44	41	40	38	36	34	35	34	35	39	52	56	50	50	88	55.3	24	
14		55	60	62	71	70	64	60	55	46	34	29	29	29	27	25	27	27	28	32	36	38	41	42	43	71	42.9	24	
15		45	50	56	77	83	85	83	79	78	73	70	76	76	77	85	80	76	73	82	81	84	86	83	77	86	75.6	24	
16		78	79	77	84	79	82	80	70	63	55	47	42	43	43	45	41	44	56	59	62	68	72	75	77	84	63.4	24	
17		74	74	73	76	77	74	71	67	65	62	62	64	66	77	75	82	78	80	82	82	84	87	89	90	90	75.5	24	
18		90	90	90	91	91	93	92	88	85	83	81	84	83	85	85	83	84	88	93	95	95	94	93	93	95	88.7	24	
19		93	93	93	94	96	97	97	97	89	85	75	70	64	58	53	48	50	50	53	60	65	70	72	72	97	74.8	24	
20		73	72	70	78	88	91	91	93	95	97	94	94	92	82	72	66	69	71	90	96	97	97	97	96	97	85.9	24	
21		96	97	97	97	96	96	92	83	76	68	58	42	32	31	30	32	33	35	42	47	52	59	69	79	97	64.1	24	
22		82	83	85	85	87	89	84	72	58	50	41	35	31	30	32	30	32	30	32	34	36	43	54	60	64	89	55.3	24
23		67	67	65	62	62	60	58	56	56	55	53	51	48	58	69	78	83	83	80	84	87	90	90	89	90	68.8	24	
24		90	91	92	92	93	95	96	94	92	91	91	87	82	84	88	87	87	80	81	86	92	91	88	86	96	89.0	24	
25		87	87	88	86	85	87	91	90	87	84	85	87	87	88	88	89	89	88	90	93	94	94	93	93	94	88.8	24	
26		92	93	94	94	94	94	94	93	88	83	78	72	68	65	63	62	59	62	67	73	82	82	86	91	94	80.4	24	
27		93	94	94	94	95	95	94	94	94	91	92	92	93	94	91	91	90	89	91	93	95	98	98	98	98	93.5	24	
28		97	97	98	98	99	99	99	98	92	84	78	75	72	69	66	64	63	61	66	76	81	83	86	90	99	83.0	24	
29		90	90	91	91	94	95	93	88	71	51	36	25	24	23	22	22	22	21	23	29	49	63	67	75	95	56.5	24	
30		80	82	84	88	88	84	68	53	39	28	22	19	17	16	15	15	15	14	15	21	29	29	27	28	88	40.7	24	
HOURLY MAX		97	97	98	98	99	99	99	98	95	97	94	94	94	95	96	96	96	95	96	97	97	98	98	98	98			
HOURLY AVG		78.5	79.6	79.9	81.0	81.7	82.0	80.0	75.8	70.0	64.6	59.8	56.7	54.4	54.2	53.4	53.5	53.5	56.0	59.3	65.0	70.1	73.3	75.0	76.3				

STATUS FLAG CODES

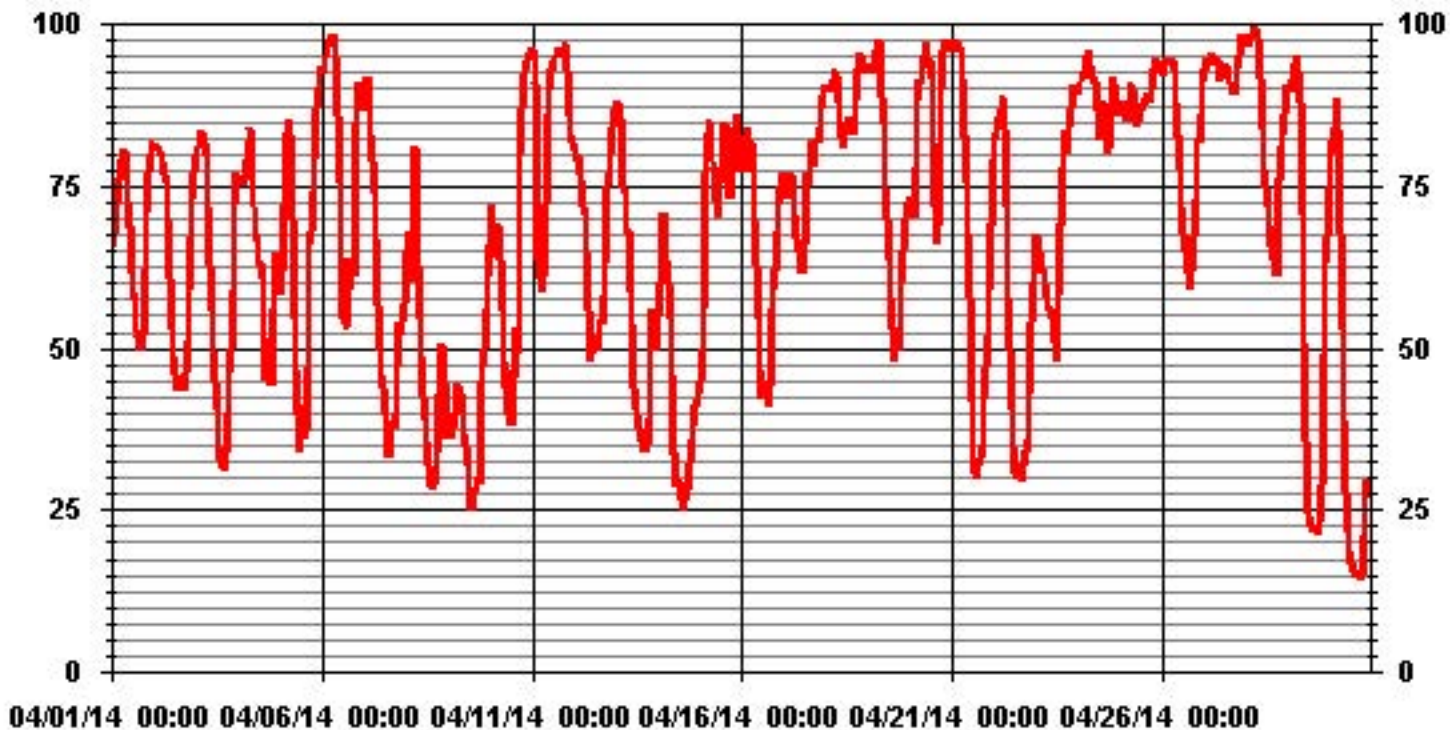
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	99	%	@ HOUR(S)	VAR	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	93.5	%			ON DAY(S)	27
					VAR-VARIOUS	
				OPERATIONAL TIME:	720	HRS
				AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	21.83			MONTHLY AVERAGE:	68.07	%

01 Hour Averages



Vector Wind Speed

Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

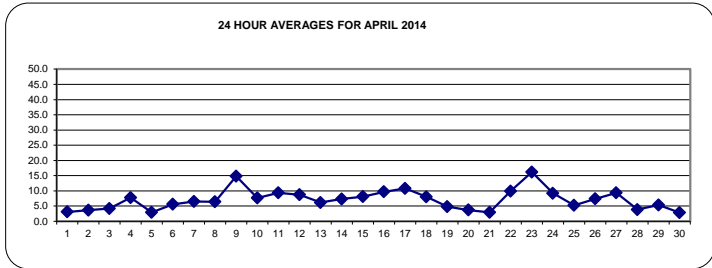
WIND SPEED (WS) hourly averages in km/hr

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	24-HOUR	
	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY	1	4.8	4.3	5.2	4.2	3.5	4	3.4	3.4	2.3	1.9	3.6	0.2	1.3	3.5	5.6	4.7	5.6	5.2	3.9	1.5	0.5	0.6	0.1	5.6	3.1	24	
	2	0.9	0.4	0.8	0.6	0.3	0.8	0.8	3.7	3.5	4.1	7.7	9.3	9	9	8.5	6.5	8	5.3	3.2	2.3	1.2	0.8	0.1	0.2	9.3	3.6	24
	3	0.4	0.7	0.4	0.2	0.3	0.5	0.9	4.7	5.4	5.2	4.9	4	4.2	4.9	6.9	7.6	6.5	7.2	3.4	5.7	5.8	8.7	6.6	6.3	8.7	4.2	24
	4	5.6	5.9	7.7	9.8	9.9	10.3	10	7.4	7.2	8.4	6.8	8.2	7.7	10.9	11.3	10.6	11.1	9.7	7	6.2	3	3.7	4.3	3.6	11.3	7.8	24
	5	4.5	2.8	2	1.1	0.6	0.8	1.2	1.9	4.6	3.7	4.3	4.3	5.7	4.6	2.3	2.5	7.3	5.5	3.1	2.3	2.6	0.9	0.8	1.3	7.3	2.9	24
	6	1.5	1.3	3.4	1.9	3.2	1.9	2	2.6	6.8	5.7	3.9	2.4	7.3	8.1	8.6	9.2	14.8	11	6.8	11.1	4	5.5	6.4	5.4	14.8	5.6	24
	7	5.4	3.6	3.4	3	4.2	5	5.1	6.5	8.4	7.3	8.5	9.9	10.1	11	11.1	10.6	8	6.9	5.2	3.8	3.4	4.3	6.5	4.3	11.1	6.5	24
	8	2.1	1.4	2.4	1.3	0.9	1.1	1.1	3.9	7.5	10.4	9.3	9.7	10.5	11	12.6	13.5	10.9	9.3	6.4	4.1	4	5.2	7.9	8.6	13.5	6.5	24
	9	9	7.8	11.4	12.8	12.1	11.5	11.3	15.2	18.7	19.5	19.8	22	23.9	25.4	21.5	19.8	18.5	15.8	15.6	7.7	5.7	10.7	12	8.9	25.4	14.9	24
	10	5.8	4.9	6.5	5.3	4.5	4.7	5.8	9.5	13.2	13	13.8	15.3	14.4	13.5	12	11	10	6.9	6.2	4.3	1.1	1	0.2	1.1	15.3	7.7	24
	11	1.4	4.6	7.6	7.3	9.5	8.7	8.2	9	10.1	7.9	6.3	6.3	7.7	6.2	5.9	8	9.5	4.9	7.9	14.7	21.6	18.4	16.8	15.4	21.6	9.3	24
	12	15.8	16	11.4	11.8	11.4	8.3	9.1	8.6	8.1	11.1	9.2	7.7	8.3	10.8	11.8	11.6	9.6	8.6	9.3	4.8	1.8	2.2	2.8	0.3	16.0	8.8	24
	13	0.8	2	7.3	7.3	6.9	5.4	6.4	7.5	8.5	5.4	12.1	11	9.1	9.2	8.3	6.7	6.8	6.3	5.2	3.4	0.9	2.3	4.4	5.4	12.1	6.2	24
	14	3.4	3.8	3.7	1.3	3.2	6.1	8.3	8.1	7.6	8.3	7.8	11.4	13	9.3	7.2	7.5	9	9.9	8.6	6.1	7.6	8.4	8.5	8.4	13.0	7.4	24
	15	8.8	8.1	8.7	10	9.2	8.9	10	10.7	12.4	11.7	11.6	11.5	10.4	8.8	8.5	9	8.3	5.7	6.7	4.6	3.3	1.6	2.2	4	12.4	8.1	24
	16	1.4	1.8	4.4	3.6	3.7	7.7	10.1	11.6	12.6	12.3	15.4	15.2	12.1	12.6	11.9	11	13	10.8	9.5	10.4	10.1	9.6	11.3	10.4	15.4	9.7	24
	17	10.3	11.5	8.7	5.7	6.6	7.8	8.4	10.3	10.3	11	12	11.9	13.7	12.1	13	11.4	11.8	13.6	12.6	12.6	10.9	11.8	10.4	10.2	13.7	10.8	24
	18	11.1	10.2	9.1	9	8.9	8.9	7.9	9.1	9.7	11.8	12	11.1	9.9	8.8	8.7	7.8	6.9	5.5	4.5	5.7	5.3	4.5	3.8	3.1	12.0	8.1	24
	19	2.1	1.5	0.8	0.8	1	1.1	1.2	1.8	3.8	5	5.5	5.9	3.8	2	2.6	1.5	5.9	10.5	10.1	8.5	9.8	11	10.7	9	11.0	4.8	24
	20	6.1	5.2	9.6	7.2	3.7	2.9	3.2	4	5.5	1.9	1.7	3.5	1	3.7	3.4	5	9.1	6.1	1.2	2.3	1.2	1.2	0.3	0.2	9.6	3.7	24
	21	0.6	0.3	0.6	0.6	0.5	0.1	0.5	0.7	3.4	3.3	3.4	2.5	3.7	6.4	5.3	1.4	7.8	7.5	5.3	4.6	4.7	4	2.1	0.9	7.8	2.9	24
	22	2	2.8	2.6	3.5	2.7	2.7	3.7	4.5	7.7	11	12	10.3	11.3	14.4	14.2	15.9	13.7	16.3	12.6	12.6	15.4	17	16.1	13.4	17.0	9.9	24
	23	13.9	15.7	13.9	15.1	17.1	16.5	18.3	21.2	22.2	18.4	18.4	20.5	20.3	15.6	15.3	13.3	14.6	14.6	14.5	15.8	15.5	12.8	11.2	13.3	22.2	16.2	24
	24	14.7	12.4	10.7	9.6	9	7.9	7.8	7.6	9.7	10.4	10.9	11.9	9.6	8.5	8.9	7.8	8.9	10.3	8.6	7.6	6.8	6.9	7.6	7.5	14.7	9.2	24
	25	7.2	6.6	5.7	6	7	6.6	4.6	5.6	6.1	6.2	5.2	5.8	4.6	6.1	5.9	6.2	6.4	6.5	5.7	4.2	2.3	1.9	2.3	2.5	7.2	5.3	24
	26	3	3.8	3.9	3.9	4.3	5.4	5.7	5.6	6.3	7.4	7.4	7.1	9.2	9.3	10	9.8	9	8.1	8.3	9.5	8.7	10	11	10.2	11.0	7.4	24
	27	10.5	10.2	11.8	10.8	10.5	8.8	8.8	9.3	10	14.5	13.5	14.5	12.6	11	12.7	9.2	6.8	6.5	6.8	4.7	5.8	6.3	5.5	4.5	14.5	9.4	24
	28	3.4	4.4	4.2	3.8	1.8	2.7	4.8	3	3.9	3.5	5.9	3.7	2.4	4.2	3.9	3.9	5.1	5.1	4.1	4.1	4.3	5.6	2.8	1.2	5.9	3.9	24
	29	5.9	6.6	5.2	1.9	0.5	1.5	3	4.4	5.4	5.4	7.3	11.4	9.8	10.1	11	9.6	7.3	8.9	7.4	3.8	1.1	0.7	0.5	0.4	11.4	5.4	24
	30	0.9	0.6	0.5	0.5	1	0.4	0.8	2.2	2.2	2.9	3	4.9	4.1	4	4.6	5	6.7	7.9	3.4	2.5	3.1	3.6	2.3	2.1	7.9	2.9	24
HOURLY MAX		15.8	16.0	13.9	15.1	17.1	16.5	18.3	21.2	22.2	19.5	19.8	22.0	23.9	25.4	21.5	19.8	18.5	16.3	15.6	15.8	21.6	18.4	16.8	15.4			
HOURLY AVG		5.4	5.4	5.8	5.3	5.3	5.3	5.7	6.8	8.1	8.3	8.8	9.1	9.0	9.2	9.1	8.6	9.2	8.5	7.1	6.4	5.7	6.0	5.9	5.4			

STATUS FLAG CODES

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

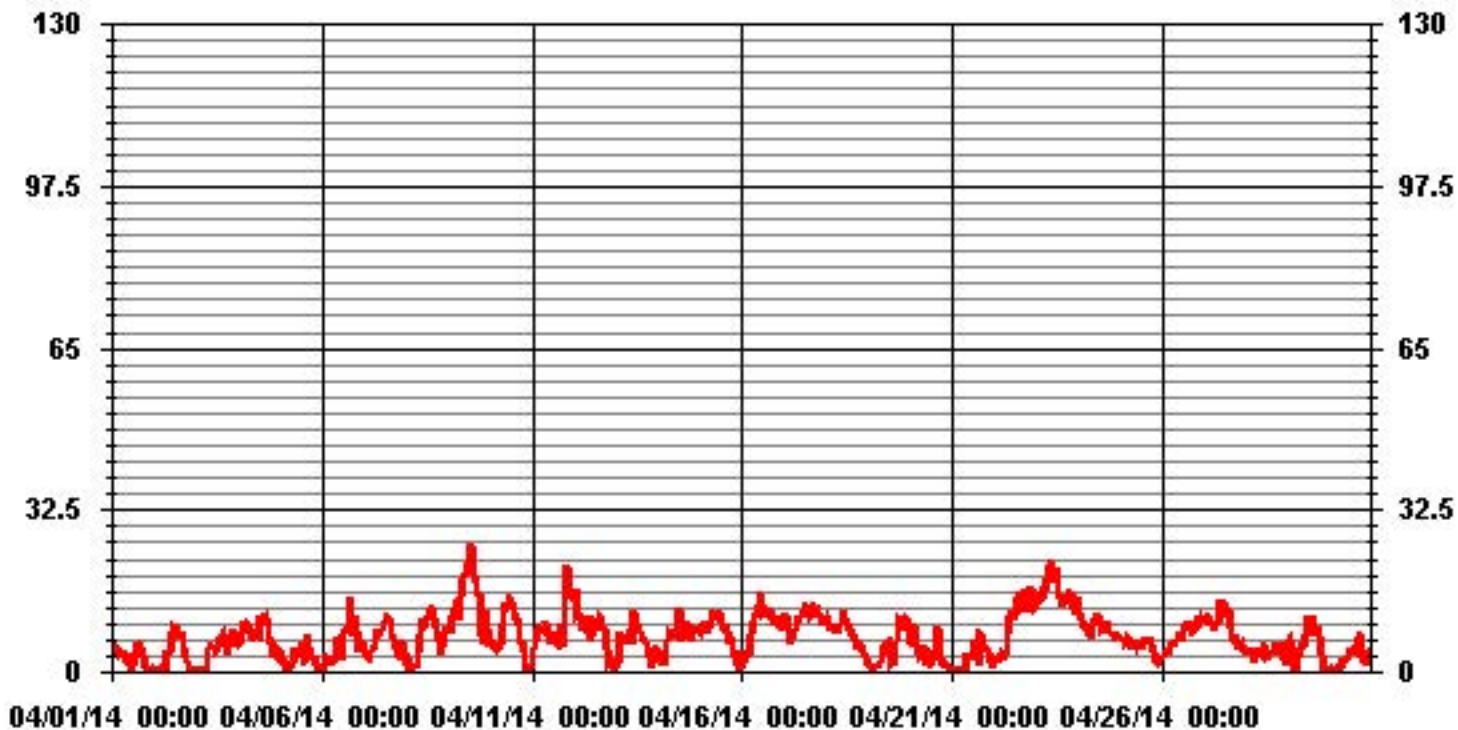
LAST CALIBRATION:	November 28, 2012
DECLINATION :	MAGNETIC DELINATION 19 DEGREE EAST



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	720
MAXIMUM 1-HR AVERAGE:	25.4 KPH @ HOUR(S) 13 ON DAY(S) 9
MAXIMUM 24-HR AVERAGE:	16.2 KPH ON DAY(S) 23
	VAR-VARIOUS
MONTHLY CALIBRATION TIME:	0 HRS
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	4.54
MONTHLY AVERAGE:	7.07 KPH

01 Hour Averages



— LICA WSP KPH

Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

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	24-HOUR	
	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																												
1		6.7	6.6	8.9	8.2	5.9	5.4	6	6.1	5.4	8	8.2	7	7.5	8.4	11.4	10.7	12.9	8.4	6.3	2.3	2	1.6	1.3	3.2	12.9	6.6	24
2		2.1	2.6	2.3	1.9	3.1	2.3	2	6.1	6.1		13.2	14.3	17.8	15.7	15.4	14.3	13	8.7	6.4	3.3	2.1	1.4	2	1.8	17.8	6.9	23
3		2.1	2.5	1.5	1.3	2.2	2.4	2.9	8.4	9.5	8.2	7.6	8.6	9	11.9	13	13.4	11.8	13.2	9.7	9.3	9.1	12.6	11.4	12.8	13.4	8.1	24
4		9.1	9.9	11.1	13.8	17.6	18.2	16.5	14.8	12.2	14.2	12.8	15.1	13.5	16.5	15.9	21.7	17.1	17	12	11.3	5	5.8	8.6	7.1	21.7	13.2	24
5		8.3	4.8	4.5	2.5	2.1	2.3	2.9	5.4	7.4	10.2	12.6	11.2	12.9	9.4	7.9	6.2	16.3	12.4	7.5	5.1	12.5	5.1	6.7	3.4	16.3	7.5	24
6		3.3	3.1	5.7	5	8	4.4	4.2	9.7	11.3	10.8	9.3	9.8	15.9	18.7	13.6	19.7	22.9	20.6	11.1	26.8	10.3	8.2	8.9	7.7	26.8	11.2	24
7		7.3	6.5	7.1	5.8	6.3	6.3	7.3	12.6	13.9	13.2	14	14.3	14.5	17.4		18.2	14.9	12.2	9.4	8.5	6.7	7.6	11	6.6	18.2	10.5	23
8		4.4	4	7.4	3.4	3.3	2.8	2.7	8.1	13.4	15.8	14	17.7	17	17.8	18	20.9	16.2	15.8	10.2	8.7	7.2	10.1	12.8	13.4	20.9	11.0	24
9		20.8	12.6	17.8	18.7	20.3	17.2	17.1	21.7	28.2	31.6	30.1	31.2	34.9	34.1	30.3	28.8	29.1	28.8	26.3	16.6	16.6	28.1	23.1	15.6	34.9	24.2	24
10		13	8.8	10.8	7.1	6.6	7.4	8.6	14.7	21.3	20.9	21.9	21.5	22.8	24.1	21.5	17.5	17.3	15.5	10.6	7.9	3.2	3.5	6	3.6	24.1	13.2	24
11		4.8	11.4	12.6	11.1	14.9	15.3	14.2	16	16.4	13.1	9.6	10.2	13.1	10.5	12.6	11.5	15.3	13.9	13	25.1	31.6	25.9	25.7	24.1	31.6	15.5	24
12		25.3	25.6	19.7	20.8	17	13.4	13.8	14.6	14	16.5	18.3	14.4	17.2	20.1	25.1	17.7	14.1	13.4	16.2	13.7	3.9	3.5	4.3	3.1	25.6	15.2	24
13		2.1	8.4	12.8	12.6	12.1	9.2	9.8	14.5	14.7	11.5	20.6	21.4	18.9	16.7	17.9	14	12.3	10.7	8.7	6.9	1.9	4.5	8	7.1	21.4	11.6	24
14		5.7	5.6	6.2	3.9	5.5	9.4	11.9	12.3	13	16.1	20.7	24.5	19	16.8	14.7	15.6	17.1	15.2	14	11.2	10.7	13.2	14.9	14.5	24.5	13.0	24
15		13.1	12.6	16.6	17.1	13.2	15.7	15.7	15.5	18.2	16.8	18.4	19.7	15.4	16.7	13.7	15.1	14.6	10.9	11.7	11.1	8.2	3.5	4.3	9	19.7	13.6	24
16		4.9	3.9	8	5.9	7.2	11	14	15.5	17.9	22.7	22.7	26.4	21.2	20.2	19.7	20.9	20.5	20.7	17.4	15.9	13.9	18	17.5	17.1	26.4	16.0	24
17		15.2	18	17.2	9.6	12.1	11.4	12.7	18.3	16.1	18.7	18	20.3	20.9	19.4	19.6	19.3	20	19.3	22.8	20.1	18.5	18.3	18.7	15.4	22.8	17.5	24
18		17.6	15.5	14.6	13.4	14.2	14.4	11.9	15.3	17.3	19.7	19.3	17.3	17.7	14.2	16.4	11.5	10.7	10	7.3	10	8.6	7.9	6.6	5.1	19.7	13.2	24
19		4.1	3.6	2.1	2.9	2.4	2.4	3.7	4	7.2	9.2	11.1	9.4	9.3	9.9	8.7	10.3	12.4	15.1	14.6	13.1	14.2	14.7	13.7	12.5	15.1	8.8	24
20		11.2	9	14.2	15.4	9.1	7.3	4.8	6.9	9.7	4.7	3.5	5.8	5.4	6.8	6.9	10.6	14.4	11.4	9	4.6	4	3.3	3.2	1.8	15.4	7.6	24
21		2	2.5	1.8	2.1	1.9	1.9	2.5	3.5	6.9	8.2	7.9	9.8	10.8	15.1	12.6	10.8	13.2	15.8	11	7.6	6.4	6.5	5.1	3.3	15.8	7.1	24
22		3.5	4.9	6	5.7	5.2	4.9	6.8	8	11.4	18.9	16.3	17.4	18	21.3	20.1	25.9	21.4	23.7	19.7	18.3	22.4	24.9	24.4	19.3	25.9	15.4	24
23		19.7	24.2	20.3	24	25.4	29.7	28	34.6	32.4	29.2	28.1	33.1	31.9	27.5	24.9	25.5	24	22.5	20	23.3	25.3	19.7	19.6	26.3	34.6	25.8	24
24		22.8	23.2	17.7	13.7	14.6	12.7	13.1	14.1	15.8	14.8	19.3	18.1	13.6	16.9	14.6	15.3	17.4	15.7	12.3	13	10.9	13.2	12.3	11.5	23.2	15.3	24
25		14.1	11	9	9	11.2	12	9.1	10.1	10	12	8.4	9.6	8.2	9.2	10.4	9.5	9.7	9.3	8.8	6.7	3.7	3	4.9	3.9	14.1	8.9	24
26		6.7	7.4	6.8	6.1	8.7	9.4	8.9	10	11.1	10.6	12.9	12.3	15.6	16.6	16	15.4	15.5	15	13.3	16.6	13.3	16.6	18.7	15	18.7	12.4	24
27		16.7	15.3	17.2	19.2	18.6	13.8	12.8	16.1	15.8	19.1	19.3	20.3	20.2	17.7	18.1	17.3	11	11	10.3	9.4	8.4	9.5	9.2	8.2	20.3	14.8	24
28		6.4	7	8.1	6.7	3.4	4.9	7.7	6.5	6.6	9.2	12.2	9.8	6.6	8.5	8	10.2	8.2	9.7	9.2	8.9	7.1	8.4	7.2	3.7	12.2	7.7	24
29		8.3	9.3	8.1	7.2	2.7	2.6	6.8	7.1	9.1	10	20	17.9	21	18.5	20.4	19.5	15.5	16.2	14	8.9	3.1	3.2	1.6	3.6	21.0	10.6	24
30		3.4	4.5	2.7	2.7	4.2	3.2	4	3.7	6.3	8.9	11	14.8	12.9	11.8	14.5	14.1	13.5	15.6	8.8	4.4	5.2	5.8	5.5	4.3	15.6	7.7	24
HOURLY MAX		25	26	20	24	25	30	28	35	32	32	30	33	35	34	30	29	29	29	26	27	32	28	26	26			
HOURLY AVG		9.5	9.5	10.0	9.2	9.3	9.1	9.4	11.8	13.3	14.6	15.4	16.1	16.1	16.3	15.9	16.0	15.7	14.9	12.4	11.6	9.9	10.3	10.6	9.5			

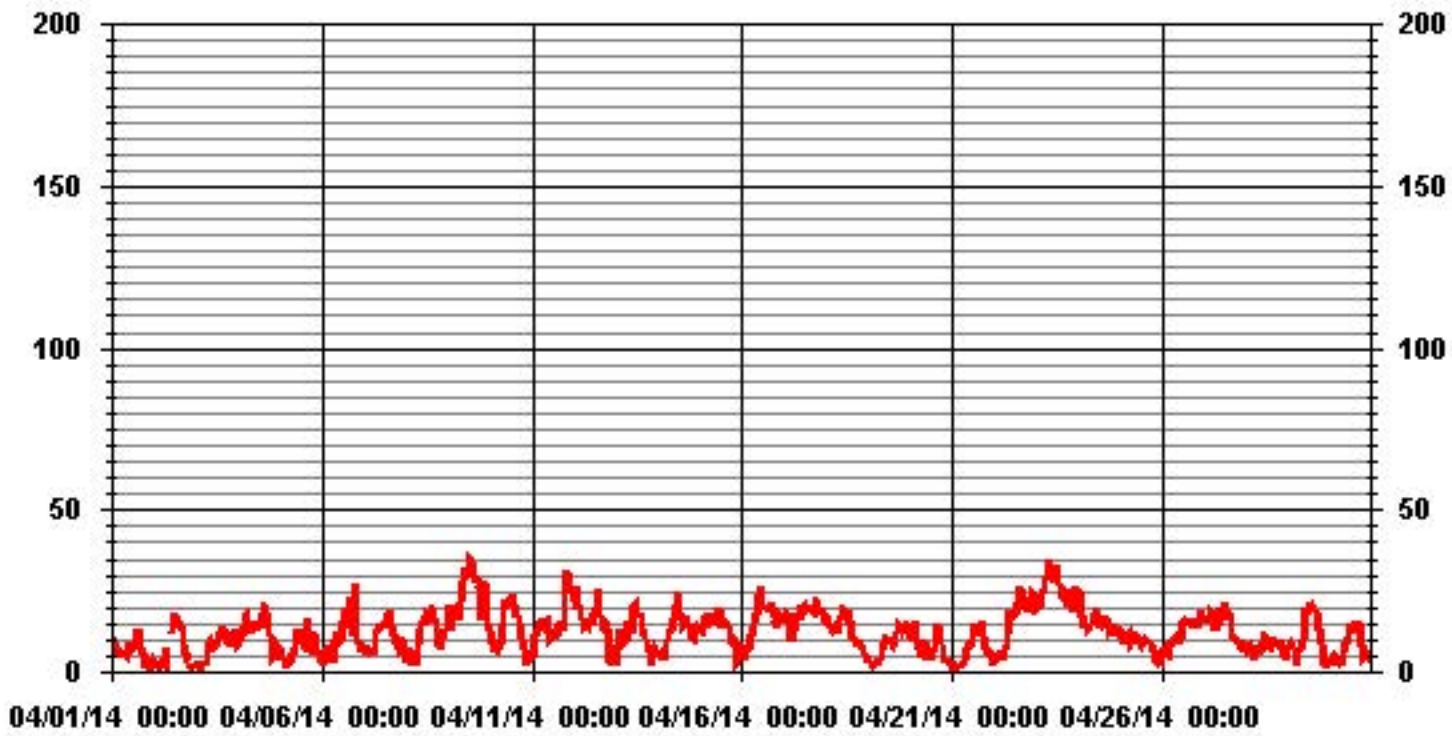
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	34.9	KPH	@ HOUR(S)	12	ON DAY(S)	9
					VAR-VARIOUS	
OPERATIONAL TIME:						718 HRS

01 Hour Averages



— LICA WSMAX KPH

LICA
WSP / WD Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	1.11	1.66	4.02	2.63	4.16	4.86	6.66	1.52	1.25	1.80	2.36	5.27	2.91	1.66	.83	1.11	43.88
< 12.0	1.11	.55	1.66	1.66	10.27	4.72	8.75	1.25	.27	.00	.69	4.16	1.66	1.94	1.25	1.52	41.52
< 20.0	.55	.41	.00	.27	3.75	1.80	1.66	.13	.00	.00	.13	.13	1.11	1.38	.13	.00	11.52
< 29.0	.00	.13	.00	.00	.55	.00	.00	.00	.00	.00	.00	.00	.00	.55	.00	.00	1.25
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.77	2.77	5.69	4.58	18.75	11.38	17.08	2.91	1.52	1.80	3.19	9.58	5.69	5.55	2.22	2.63	

Calm : 1.80 %

Total # Operational Hours : 720

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	8	12	29	19	30	35	48	11	9	13	17	38	21	12	6	8	316
< 12.0	8	4	12	12	74	34	63	9	2		5	30	12	14	9	11	299
< 20.0	4	3		2	27	13	12	1			1	1	8	10	1		83
< 29.0		1			4									4			9
< 39.0																	
>= 39.0																	
Totals	20	20	41	33	135	82	123	21	11	13	23	69	41	40	16	19	

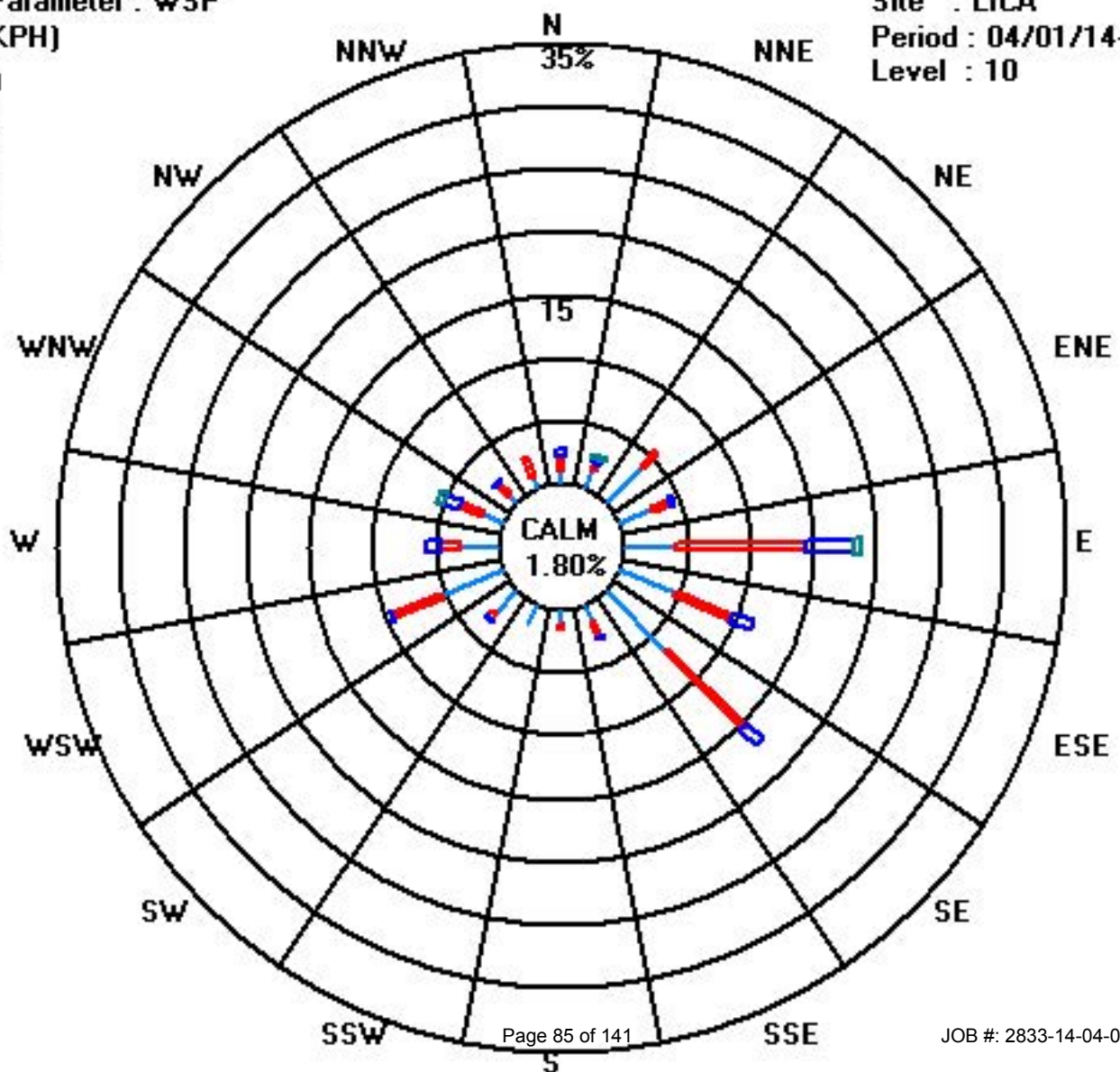
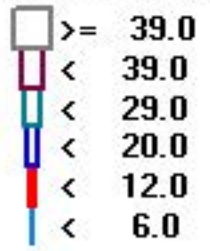
Calm : 1.80 %

Total # Operational Hours : 720

Class Limits (KPH)

Period : 04/01/14-04/30/14

Level : 10



Vector Wind Direction

Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

WIND DIRECTION (WD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR 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	AVG.	QUADRANT	
DAY																												
1		144	138	141	143	142	139	137	135	126	332	291	296	330	309	238	174	142	149	146	160	203	104	104	287	332	NNW	24
2		80	197	122	107	244	127	85	55	62	78	121	105	101	113	131	126	138	127	107	53	68	89	351	133	351	N	24
3		13	220	165	134	261	236	295	52	53	44	47	36	50	113	107	119	124	130	147	143	138	141	146	151	295	WNW	24
4		147	141	136	132	130	129	135	131	144	148	164	228	231	249	266	283	280	266	272	284	277	284	346	313	346	NNW	24
5		311	287	261	226	171	221	73	102	138	198	163	177	221	234	207	235	241	282	29	88	21	40	344	129	344	NNW	24
6		277	29	58	88	122	102	92	109	132	118	103	279	252	262	248	258	280	276	270	316	305	255	253	254	316	NW	24
7		248	240	240	241	235	243	238	252	248	254	238	237	247	239	242	236	243	225	213	216	246	231	238	255	255	WSW	24
8		223	171	211	253	227	158	273	245	240	240	240	238	239	242	246	235	239	239	261	272	275	294	287	294	294	WNW	24
9		289	280	277	290	287	285	283	273	278	280	275	283	286	290	290	290	295	307	303	321	294	307	290	273	321	NW	24
10		286	237	242	251	239	241	249	268	282	284	277	278	277	287	288	291	289	13	40	42	118	205	326	84	326	NW	24
11		80	119	131	120	128	128	131	129	133	120	115	111	123	119	132	133	137	135	20	18	15	15	11	11	137	SE	24
12		11	8	1	1	5	351	338	347	345	354	350	333	320	319	328	335	332	343	320	325	268	287	258	75	354	N	24
13		181	4	23	36	50	28	43	27	36	48	358	2	346	341	334	7	64	52	86	92	102	122	137	138	358	N	24
14		140	141	129	97	126	135	138	141	141	152	166	150	145	156	170	178	150	144	132	108	105	102	102	101	178	S	24
15		106	126	110	101	97	88	92	93	90	98	98	98	90	100	87	75	76	96	45	73	20	39	89	91	126	SE	24
16		8	82	134	139	134	138	142	140	137	129	138	133	138	138	133	136	149	142	148	140	138	135	135	135	149	SSE	24
17		137	137	125	116	111	120	119	124	119	121	114	110	98	107	110	104	103	99	95	91	93	95	96	92	137	SE	24
18		93	92	92	88	88	85	88	93	94	96	100	101	102	94	91	90	87	75	75	90	102	105	117	122	122	ESE	24
19		104	106	29	10	15	320	278	263	257	253	244	269	284	281	190	192	133	143	141	137	137	138	137	142	320	NW	24
20		138	132	140	137	142	110	109	134	143	204	23	25	300	258	242	241	236	253	359	138	172	177	210	66	359	N	24
21		112	225	224	117	142	231	56	53	249	242	239	247	240	242	249	346	38	71	117	122	126	121	63	14	346	NNW	24
22		42	64	49	50	52	58	57	55	58	56	60	86	107	103	93	90	98	91	79	72	93	95	97	92	107	ESE	24
23		96	99	105	103	102	102	100	99	99	103	100	97	101	113	111	112	103	98	97	94	94	88	81	85	113	ESE	24
24		91	91	87	85	80	70	67	80	86	86	91	88	85	78	67	68	70	93	102	98	86	82	90	87	102	E	24
25		90	90	81	86	92	92	76	81	83	83	83	104	94	57	50	45	36	37	45	45	49	40	52	45	104	ESE	24
26		92	93	69	71	93	99	97	101	102	113	105	95	87	88	86	96	91	98	99	91	93	93	96	97	113	ESE	24
27		92	92	95	99	101	111	121	124	132	137	137	136	136	132	135	136	138	132	134	127	125	102	114	118	138	SE	24
28		109	83	71	62	9	346	338	356	6	13	1	40	44	88	101	49	65	78	126	127	129	134	140	121	356	N	24
29		139	139	138	147	267	234	249	237	257	264	278	282	291	294	294	314	309	305	301	285	227	209	129	191	314	NW	24
30		242	193	86	212	241	347	266	240	279	260	286	281	272	260	235	256	248	251	227	148	147	143	158	203	347	NNW	24

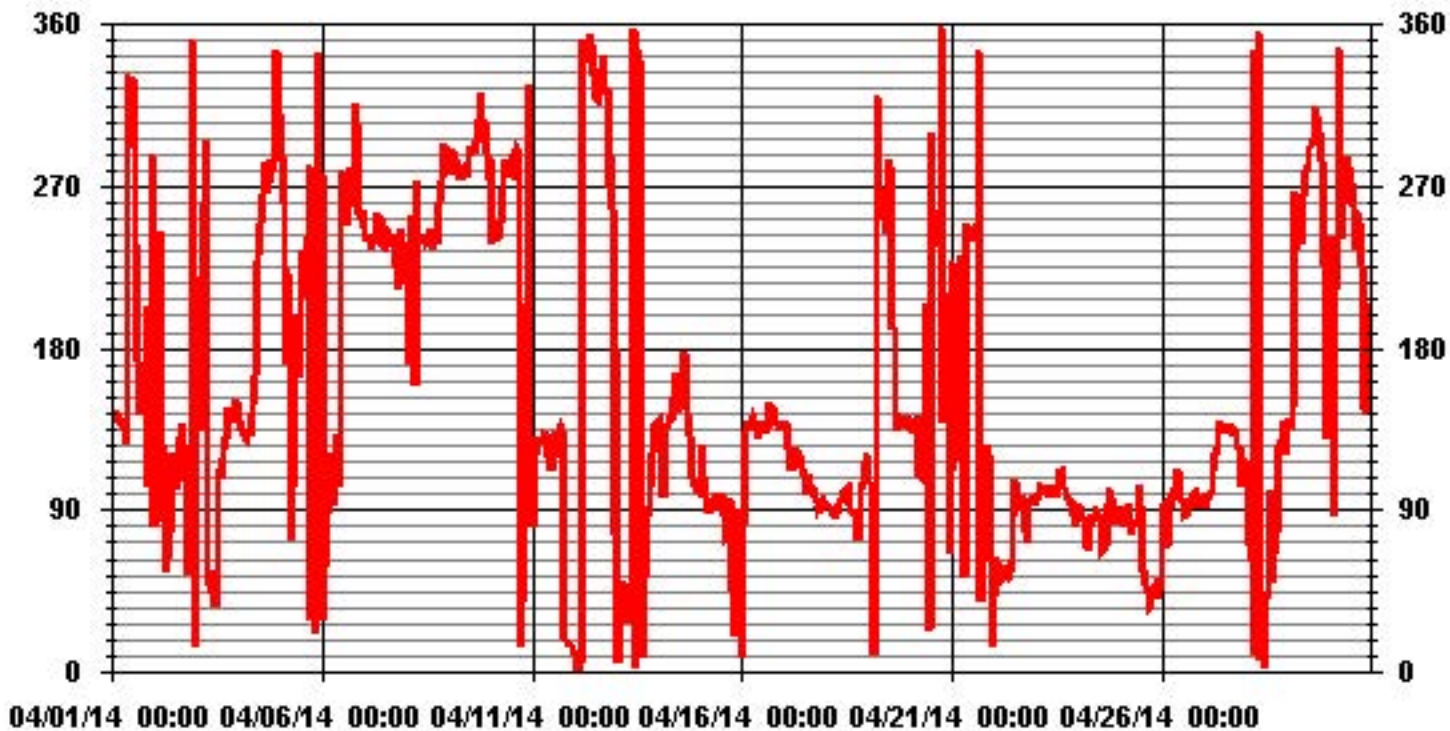
STATUS FLAG CODES

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

LAST CALIBRATION:	November 28, 2012
DECLINATION :	MAGNETIC DELINATION 19 DEGREE EAST

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS
STANDARD DEVIATION:	88.45		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	107	DEG

01 Hour Averages



Standard Deviation Wind Direction

Lakeland Industry & Community Association - Cold Lake South Site

APRIL 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																									
1		13	13	16	15	17	14	20	21	35	53	40	58	60	45	32	33	31	26	13	16	63	50	42	53
2		41	61	25	39	77	38	33	21	25	35	25	27	29	26	25	29	19	23	23	12	15	25	27	33
3		61	45	44	66	63	51	40	18	20	23	25	31	43	41	30	25	27	19	30	14	14	13	20	28
4		23	19	13	16	20	19	17	19	21	23	37	30	30	22	23	24	23	20	21	20	16	20	24	22
5		12	16	19	24	50	26	21	31	29	32	47	51	39	37	53	42	21	21	21	26	31	34	38	42
6		25	47	21	31	29	28	29	26	18	25	42	55	29	24	22	20	20	19	19	16	18	12	14	13
7		13	13	22	22	15	14	15	20	20	24	25	22	22	23	23	23	20	18	20	21	20	17	17	17
8		35	54	56	34	44	43	38	19	19	19	22	22	23	23	21	22	20	20	17	19	21	18	18	20
9		21	22	20	20	19	19	19	19	20	20	20	20	21	20	22	21	19	19	19	14	18	18	19	20
10		19	17	17	14	15	14	17	18	19	21	22	22	22	20	19	21	28	20	20	57	46	34	46	46
11		46	19	17	22	19	20	18	20	18	22	24	24	22	23	21	16	13	39	18	17	20	16	18	17
12		16	16	16	18	22	19	16	23	23	21	26	34	37	22	20	21	20	17	17	16	22	16	14	41
13		30	29	20	21	17	19	21	23	23	46	25	28	35	36	34	44	27	26	20	36	24	13	11	11
14		16	14	15	39	20	14	13	14	20	33	38	27	21	33	40	37	29	17	17	21	21	21	21	22
15		22	21	22	20	20	18	21	19	22	23	21	21	23	20	21	25	19	20	22	36	26	26	28	28
16		41	28	16	11	14	14	15	16	17	23	19	20	24	21	20	25	24	17	23	13	14	16	15	16
17		16	15	21	24	21	23	22	23	22	24	23	23	21	23	23	23	21	18	19	19	19	19	19	19
18		19	19	20	18	18	19	20	19	20	18	20	21	22	20	20	21	21	20	18	19	21	21	22	23
19		22	29	44	41	35	26	31	42	23	25	28	27	40	60	69	70	31	13	13	13	12	13	11	12
20		28	17	12	28	37	29	25	20	16	47	44	17	39	34	40	42	21	24	50	23	51	54	69	72
21		55	53	42	50	55	67	51	69	36	51	49	69	56	40	50	41	18	20	22	19	16	20	32	44
22		27	24	37	19	26	21	24	20	22	17	19	26	24	22	19	20	22	19	19	18	18	18	18	19
23		18	20	21	20	20	21	19	18	19	20	21	19	20	22	23	23	21	19	18	19	19	20	21	20
24		18	19	19	20	20	19	18	20	19	20	19	19	21	22	21	22	19	18	21	20	19	20	19	21
25		22	20	19	19	18	19	18	20	23	24	28	24	29	20	21	20	20	20	18	21	17	18	28	20
26		24	19	18	20	19	22	19	22	23	23	25	28	25	25	24	24	24	22	22	20	17	18	18	18
27		18	18	18	20	20	23	23	22	18	14	14	15	17	19	17	17	21	19	16	20	21	20	24	24
28		23	19	18	18	25	17	16	29	26	35	36	50	45	37	40	42	28	29	28	18	16	14	34	51
29		12	13	15	57	66	31	33	23	26	31	35	26	30	28	28	33	32	24	22	15	50	34	56	69
30		48	71	61	42	38	80	70	29	53	51	67	50	60	51	44	53	36	25	23	16	17	18	33	48

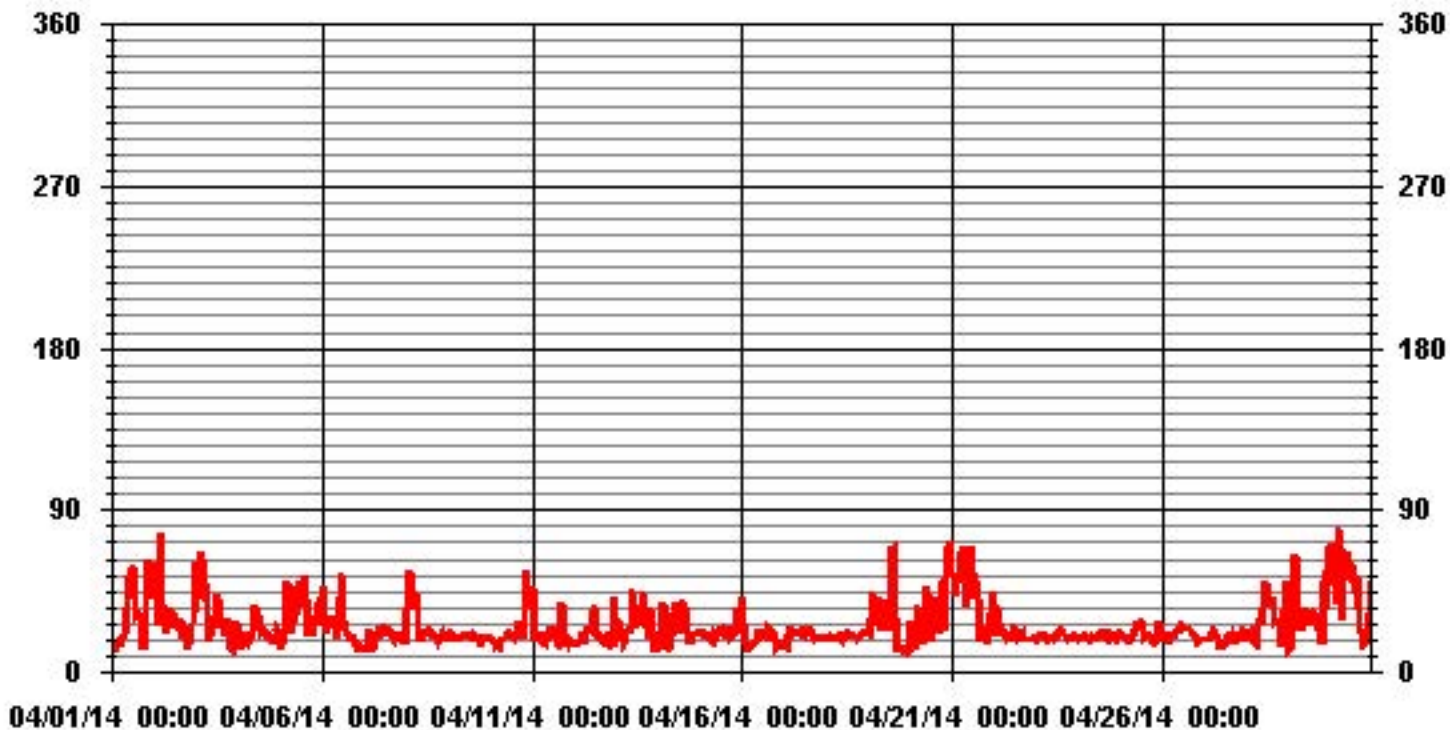
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- 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: 720 HRS

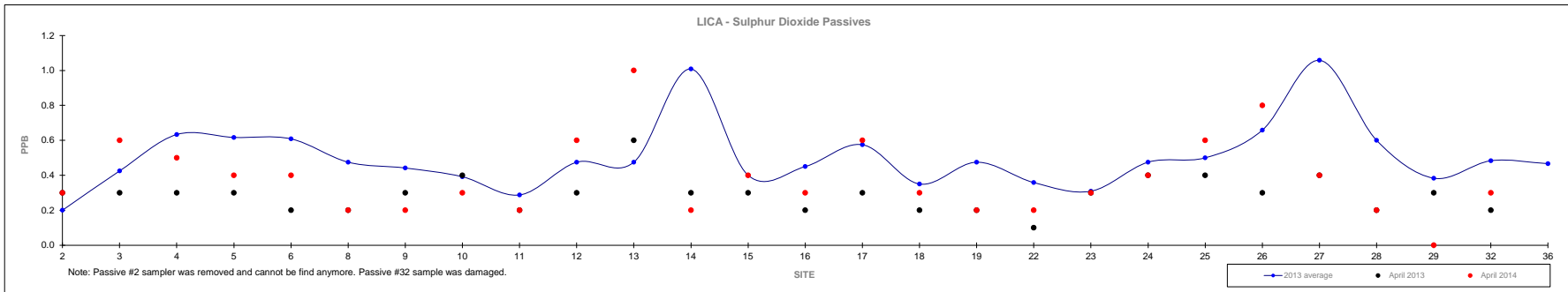
01 Hour Averages



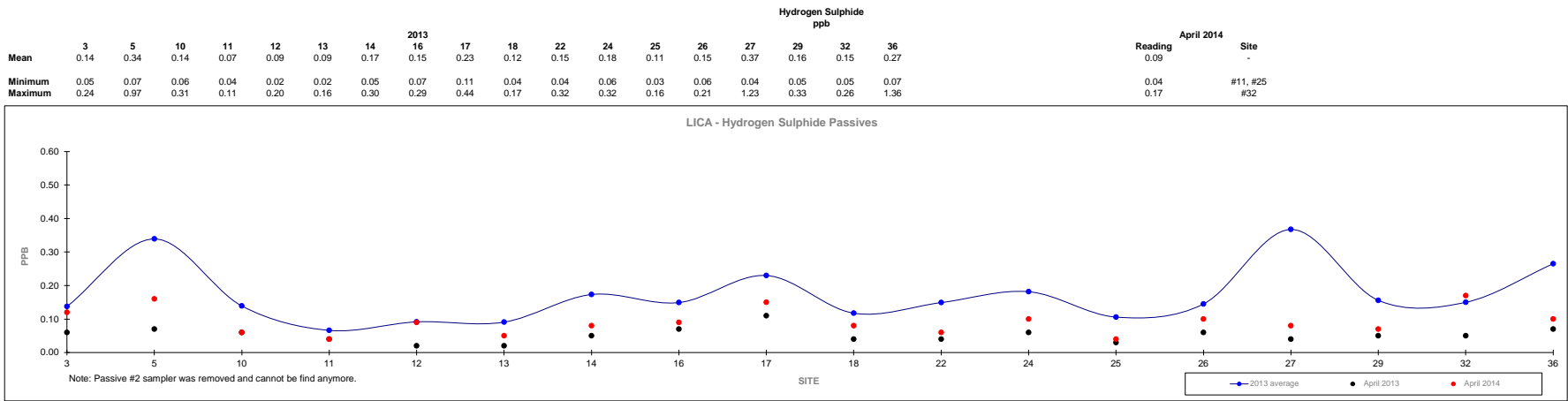
Non-Continuous Monitoring

Passive Summary Results for April 2014 Lakeland Industry & Community Association

	Sulphur Dioxide ppb																														Reading	April 2014	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						
Mean	0.2	0.4	0.6	0.6	0.6	0.5	0.4	0.4	0.3	0.5	0.5	1.0	0.4	0.5	0.6	0.4	0.5	0.4	0.3	0.5	0.5	0.7	1.1	0.6	0.4	0.5	0.5	0.4	-				
Minimum	0.2	0.2	0.3	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.5	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.4	0.3	0.4	0.2	0.2	0.2	0.2	VAR				
Maximum	0.2	0.8	1.0	0.9	1.0	0.8	0.8	0.6	0.4	1.0	0.9	1.7	0.6	0.8	1.0	0.6	1.3	0.6	0.5	0.8	1.0	1.3	1.8	0.9	0.7	0.9	0.8	1.0	#14				

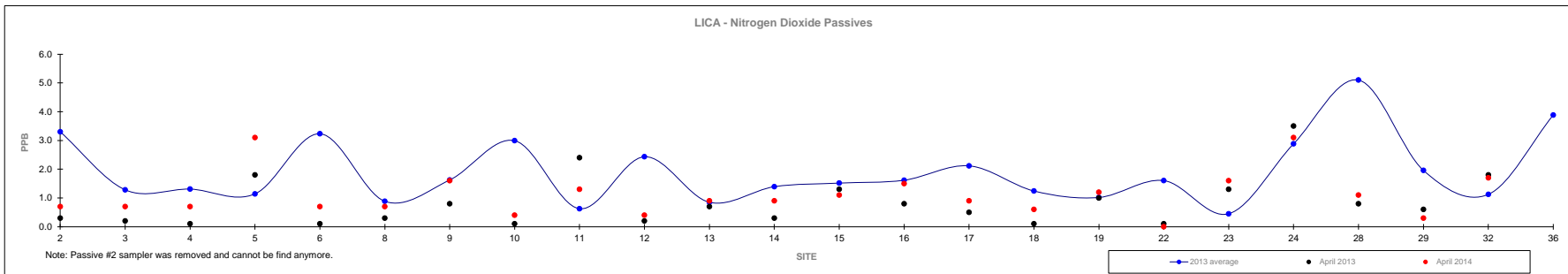


Passive Summary Results for April 2014 Lakeland Industry & Community Association



Passive Summary Results for April 2014 Lakeland Industry & Community Association

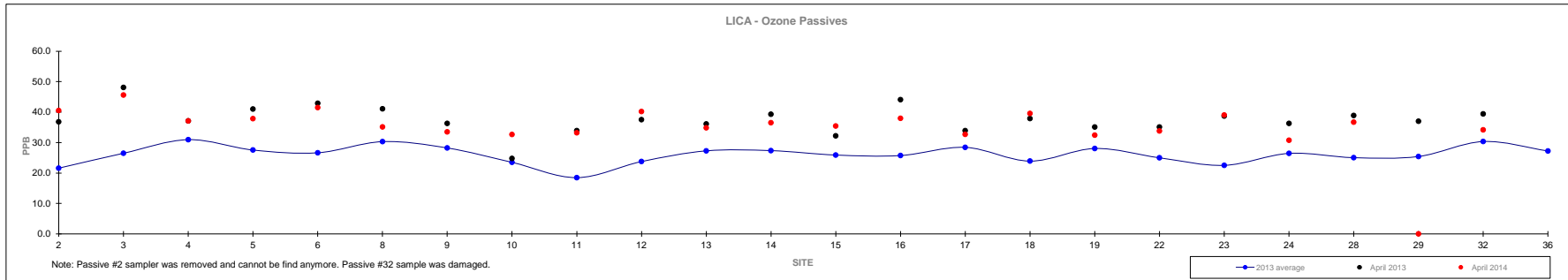
	Nitrogen Dioxide ppb																														April 2014	
	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	28	29	32	36	Reading	Site						
Mean	3.3	1.3	1.3	1.1	3.2	0.9	1.6	3.0	0.6	2.4	0.9	1.4	1.5	1.6	2.1	1.2	1.0	1.6	0.5	2.9	5.1	2.0	1.1	3.9	1.1	-						
Minimum	3.3	0.2	0.2	0.1	1.5	0.1	0.3	0.8	0.1	0.6	0.1	0.3	0.2	0.4	0.8	0.2	0.1	0.4	0.1	0.9	1.2	0.5	0.2	1.4	<0.1	#23						
Maximum	3.3	3.7	2.8	3.4	7.1	2.0	4.0	6.7	1.5	4.7	1.9	3.4	4.9	3.9	4.9	2.8	3.1	4.3	1.0	5.7	11.6	4.7	2.6	8.1	3.1	#6, #28						



Passive Summary Results for April 2014

Lakeland Industry & Community Association

	Ozone ppb																												April 2014	
	2	3	4	5	6	8	9	10	11	12	2013 13	14	15	16	17	18	19	22	23	24	28	29	32	36	Reading	Site				
Mean	21.6	26.5	31.0	27.6	26.7	30.3	28.2	23.5	18.5	23.8	27.3	27.4	25.9	25.7	28.4	23.9	28.1	25.0	22.5	26.5	25.0	25.4	30.3	27.2	36.44	-				
Minimum	21.6	15.9	16.7	16.3	13.2	18.9	17.6	12.1	11.1	14.8	18.1	16.8	14.7	14.1	14.4	12.0	17.6	13.5	12.5	15.5	14.8	15.4	20.7	15.5	30.80	#28				
Maximum	21.6	37.0	48.1	47.1	43.3	45.1	43.3	36.3	31.5	34.0	38.6	37.5	39.3	40.2	44.1	36.2	41.8	36.1	35.1	38.7	36.3	38.9	40.5	39.4	45.62	#4				



Calibration Reports

Sulphur Dioxide

Maxxam Thermo 43i SO2 Analyzer Calibration

Date: 16-Apr-14
Company: LICA
Start/End Time (mst): 12:29/16:05
Station Name/Location: Cold Lake South
Performed by: Kevin Hope
Calibration Purpose: Monthly Calibration
Converter Make & Model: NA
Converter Serial #: NA
Application H₂S/TRS/SO₂: SO₂
Cal Gas Expiry Date: 29-Dec-16

Analyzer:		Range ppb:		
Serial Number:	AMU 1771	As Found C.F.:	1.019	
Last Calibration Date:	14-Mar-14	New C.F.:	0.998	
Previous Cal High Point C.F.:	0.996			
As found:				
BKG:	6.7	As left:		
COEF:	1.065	BKG:	7.0	
MOTHERBOARD:	3.3 3.3	COEF:	1.082	
	5.0 5.0		3.3 3.3	
	15.0 15.0		5.0 5.0	
	24.0 23.9		15.0 15.0	
	-3.3 -3.2		24.0 23.9	
INTERFACE BOARD:	PMT: -631.6		-3.3 -3.2	
	FLASH: 726		PMT: -631.6	
	3.3 3.3		FLASH: 726	
	5.0 5.0		3.3 3.3	
	15.0 14.8		5.0 5.0	
	-15.0 -15.1		15.0 14.8	
	24.0 23.7		-15.0 -15.1	
	INTERNAL: 28.1		24.0 23.7	
	CHAMBER: 45.0		INTERNAL: 28.1	
PERM OVEN GAS:	45.00		CHAMBER: 45.0	
PERM OVEN HEATER:	44.20		PERM OVEN GAS:	45.00
PRESSURE:	684.6		PERM OVEN HEATER:	44.20
SAMPLE FLOW:	0.453		PRESSURE:	684.6
LAMP INTENSITY:	77		SAMPLE FLOW:	0.453
CONVERTER:	NA		LAMP INTENSITY:	77
CONVERTER SET:	NA		CONVERTER:	NA
Internal Span:	382		CONVERTER SET:	NA
			Internal Span:	377.4

Calibrator:		Calibrator Flow Targets:			
Flow Meter ID's:	NA	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
Make & Model:	Enviroconics 6100	zero	5000	0	5000
Serial #:	4760	high	5000	40	5040
Cal Gas Cylinder I.D. #:	BAL3165	mid	5000	20	5020
Cal Gas Conc. (ppm):	49.7	low	5000	10	5010

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	0.4	NA
adjusted zero	5000	0.0	5000	0	0.0	NA
as found high	4996	39.80	5036	392.8	385.6	1.019
adjusted high	4996	39.80	5036	392.8	394.3	0.996
mid	4996	19.80	5016	196.2	196.8	0.997
low	4996	9.90	5006	98.3	98.3	1.000
calibrator zero	4996	0.00	4996	0	1.1	NA
Average C.F. =						0.998

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	> or = 0.995	PASS
Slope =	0.996	0.85-1.15	PASS
b (Intercept as % of full scale) =	0.04%	± 3% F.S.	PASS
% change in C.F. from last cal	-2.28%	± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

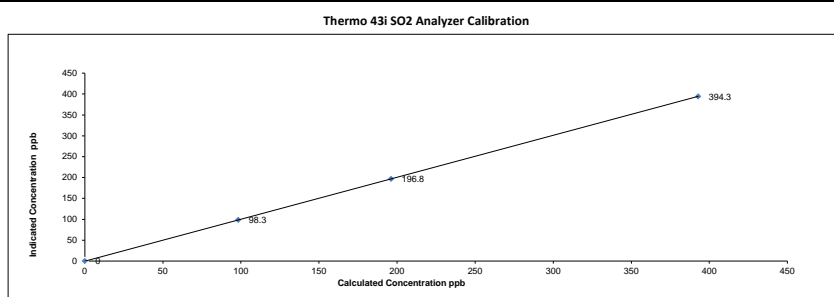
run converter efficiency test immediately following zero adjust

SO₂ High Point gas concentration: na Time gas run (mst): na

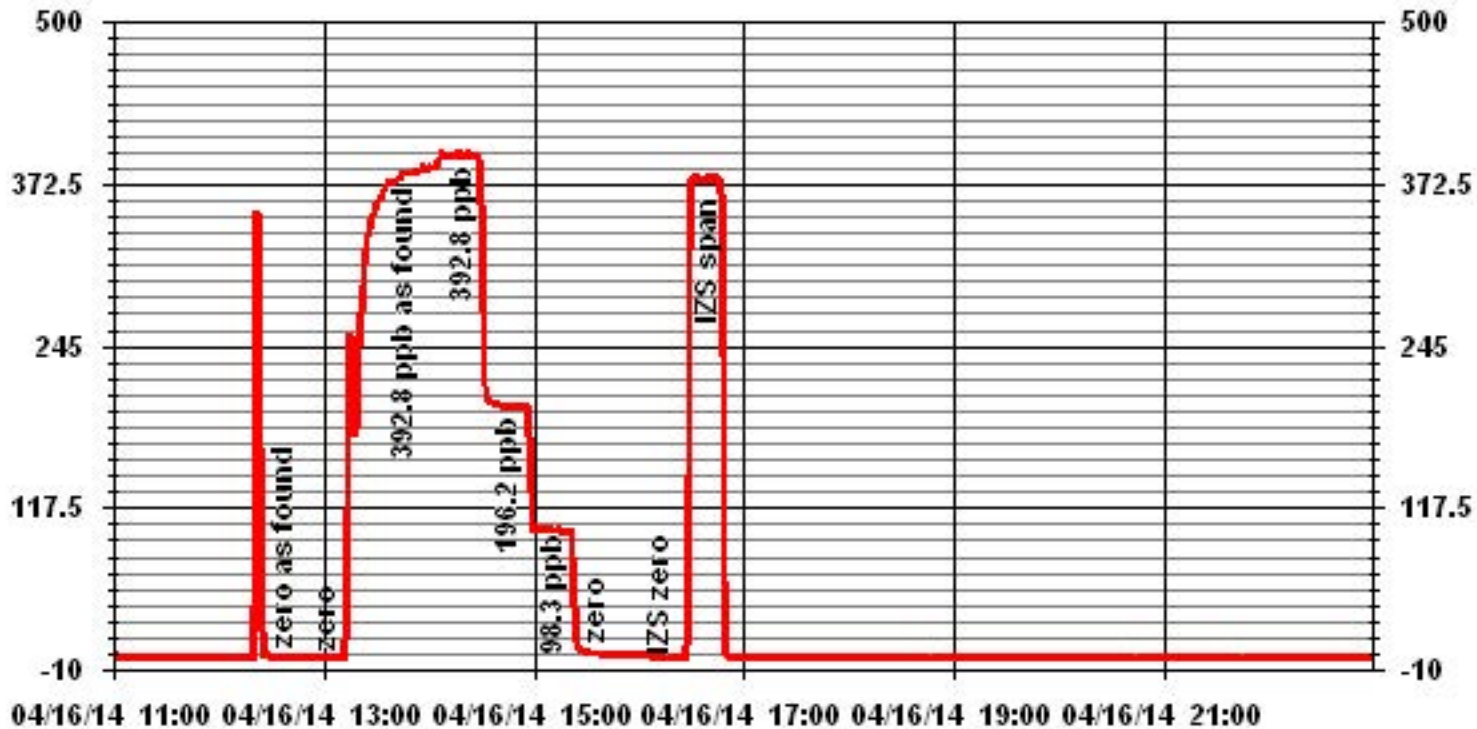
Zero corrected analyzer response: na

Comments:

Filter changed. Calibration started at 8:02 then aborted due to no response from Nox analyzer (ran simultaneously) to cal gas.



01 Minute Averages



Total Reduced Sulphur

Maxxam Thermo 450i TRS Analyzer Calibration

Date: 2-Apr-14
Company: LICA
Station Name/Location: Cold Lake South
Performed by: Kevin Hope
Application H₂S/TRS/SO₂: TRS
Start/End Time (mst): 7:28/9:51
Calibration Purpose: As Found
Converter Make & Model: Thermo CND-101
Converter Serial #: 501
Cal Gas Expiry Date: 5-Dec-15

Analyzer:
Serial Number: 812728560
Last Calibration Date: 14-Mar-14
Previous Cal High Point C.F.: 1.001
Range ppb: 100
As Found C.F.: 0.980
New C.F.: 0.998

	As found:		As left:	
BKG:	11.8		11.8	
COEF:	0.873		0.873	
MOTHERBOARD:	3.3	3.3	3.3	3.3
	5.0	5.0	5.0	5.0
	15.0	15.0	15.0	15.0
	24.0	23.9	24.0	23.9
	-3.3	-3.2	-3.3	-3.2
INTERFACE BOARD:	PMT:	-650.5	PMT:	-650.5
	FLASH:	748	FLASH:	748
	3.3	3.2	3.3	3.2
	5.0	5.0	5.0	5.0
	15.0	14.7	15.0	14.7
	-15.0	-15.0	-15.0	-15.0
	24.0	23.2	24.0	23.2
	INTERNAL:	31.4	INTERNAL:	31.4
	CHAMBER:	45.0	CHAMBER:	45.0
CONVERTER TEMP:	326.0		CONVERTER TEMP:	326.0
CONVERTER SET:	325.0		CONVERTER SET:	325.0
PERM OVEN GAS:	45.00		PERM OVEN GAS:	45.00
PERM OVEN HTR:	44.38		PERM OVEN HTR:	44.38
PRESSURE:	657.8		PRESSURE:	657.8
SAMPLE FLOW:	0.488		SAMPLE FLOW:	0.488
LAMP INTENSITY:	91		LAMP INTENSITY:	91
Internal Span:	35.23		Internal Span:	35.55

Calibrator:	Flow Meter ID's:	Make & Model:	Serial #:	Cal Gas Cylinder I.D. #:	Cal Gas Conc. (ppm):	Calibrator Flow Targets:			
						point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
	NA	API 700	830	BLM005049	10.1	zero	5000	0	5000
						high	5000	39	5039
						mid	5000	19	5019
						low	5000	11	5011

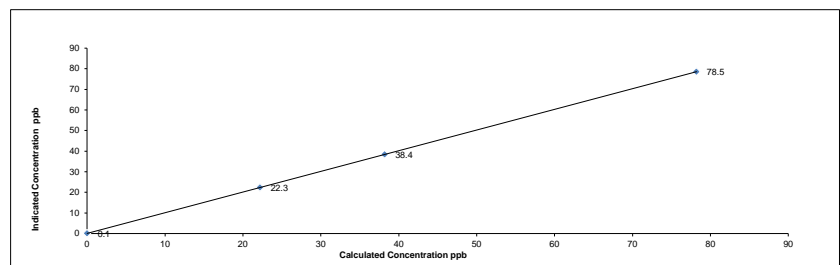
Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	0.1	NA
adjusted zero	5000	0.0	5000	0	0.1	NA
as found high	5000	39.00	5039	78.2	79.9	0.980
adjusted high	5000	39.00	5039	78.2	78.5	0.997
mid	5000	19.00	5019	38.2	38.4	0.998
low	5000	11.00	5011	22.2	22.3	0.999
calibrator zero	5000	0.00	5000	0	0.1	NA
Average C.F. =						0.998

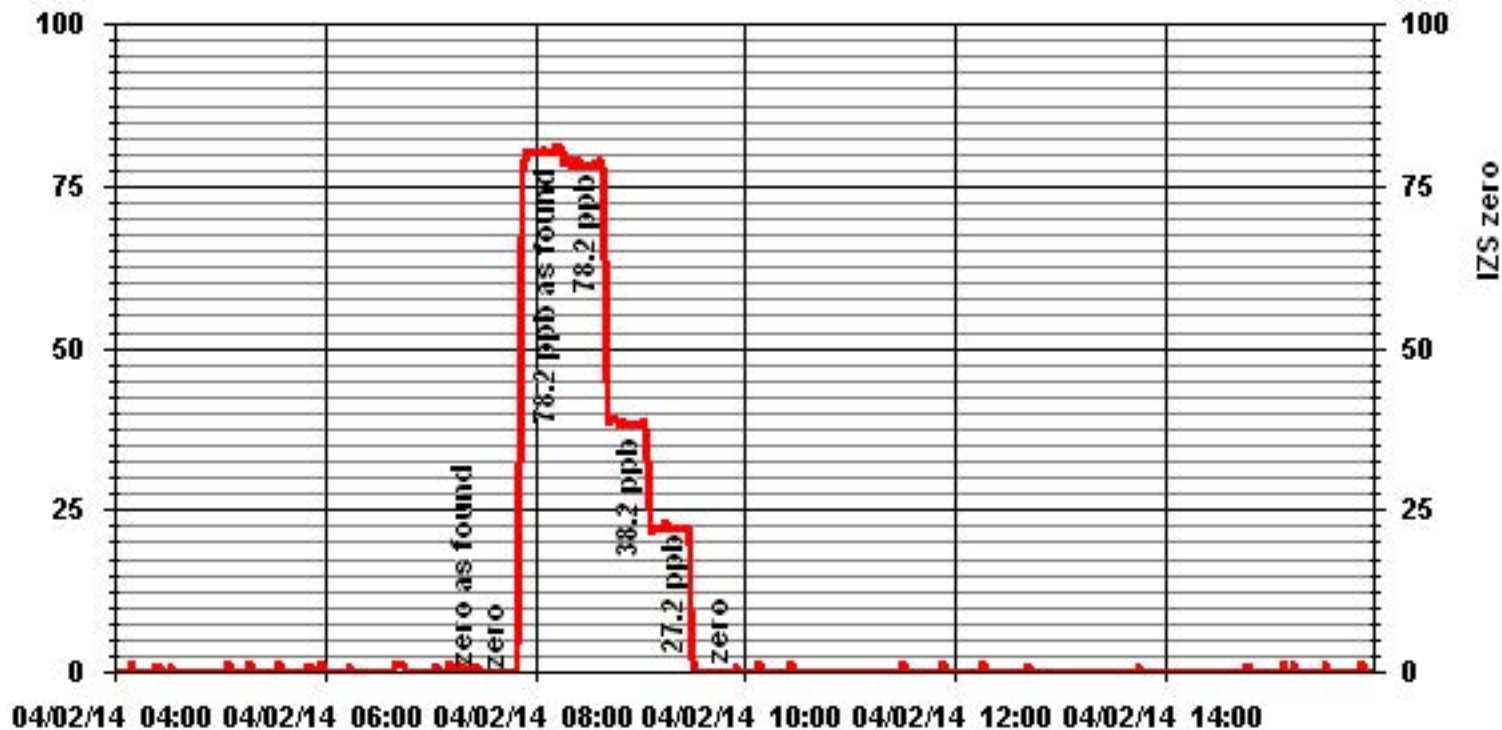
Linear Regression/Calibration Results:
 Correlation Coefficient = 1.000 > or = 0.995 **PASS**
 Slope = 0.997 **0.85-1.15 PASS**
 b (Intercept as % of full scale) = -0.08% ± 3% F.S. **PASS**
 % change in C.F. from last cal = 2.14% ± 15% **PASS**

Converter Efficiency Check for H₂S/TRS application:
****run converter efficiency test immediately following zero adjust****
 SO₂ High Point gas concentration: na Time gas run (mst): na
 Zero corrected analyzer response: na

Comments:
 Was asked to do as found due to morning izs readings being off. Responded fine so I proceeded to 3-point calibration.

Thermo 450i TRS Analyzer Calibration





Maxxam Thermo 450i TRS Analyzer Calibration

Date: 15-Apr-14
 Company: LICA
 Station Name/Location: Cold Lake South
 Performed by: Kevin Hope
 Application H₂S/TRS/SO₂: TRS

Start/End Time (mst): 13:43/16:27
 Calibration Purpose: Monthly Calibration
 Converter Make & Model: Thermo CND-101
 Converter Serial #: 501
 Cal Gas Expiry Date: 5-Dec-15

Analyzer:		Range ppb: 100	
Serial Number:	812728560	As Found C.F.:	1.041
Last Calibration Date:	14-Mar-14	New C.F.:	1.006
Previous Cal High Point C.F.:	1.001		
As found:			
BKG:	11.8	As left:	
COEF:	0.873	BKG:	12.3
MOTHERBOARD:	3.3 3.3	COEF:	0.902
	5.0 5.0		3.3 3.3
	15.0 15.0		5.0 5.0
	24.0 23.9		15.0 15.0
	-3.3 -3.2		24.0 23.9
INTERFACE BOARD:	PMT: -650.5		-3.3 -3.2
	FLASH: 748		PMT: -650.5
	3.3 3.2		FLASH: 748
	5.0 5.0		3.3 3.2
	15.0 14.7		5.0 5.0
	-15.0 -15.0		15.0 14.7
	24.0 23.2		-15.0 -15.0
	INTERNAL: 31.4		24.0 23.2
	CHAMBER: 45.0		INTERNAL: 31.4
CONVERTER TEMP:	326.0		CHAMBER: 45.0
CONVERTER SET:	325.0		CONVERTER TEMP:
PERM OVEN GAS:	45.00		CONVERTER SET:
PERM OVEN HTR:	44.38		PERM OVEN GAS:
PRESSURE:	657.8		PERM OVEN HTR:
SAMPLE FLOW:	0.488		PRESSURE:
LAMP INTENSITY:	91		SAMPLE FLOW:
Internal Span:	35.55		LAMP INTENSITY:
			Internal Span:

Calibrator:		Calibrator Flow Targets:			
Flow Meter ID's:	NA	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
Make & Model:	API 700	zero	5000	0	5000
Serial #:	830	high	5000	39	5039
Cal Gas Cylinder I.D. #:	BLM005049	mid	5000	19	5019
Cal Gas Conc. (ppm):	10.1	low	5000	11	5011

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	0.3	NA
adjusted zero	5000	0.0	5000	0	0.1	NA
as found high	5000	39.00	5039	78.2	75.2	1.041
adjusted high	5000	39.00	5039	78.2	78.5	0.997
mid	5000	19.00	5019	38.2	38.0	1.009
low	5000	11.00	5011	22.2	22.0	1.012
calibrator zero	5000	0.00	5000	0	0.2	NA
Average C.F. =						1.006

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	> or = 0.995	PASS
Slope =	0.996	0.85-1.15	PASS
b (Intercept as % of full scale) =	0.12%	± 3% F.S.	PASS
% change in C.F. from last cal	-3.99%	± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

****run converter efficiency test immediately following zero adjust****

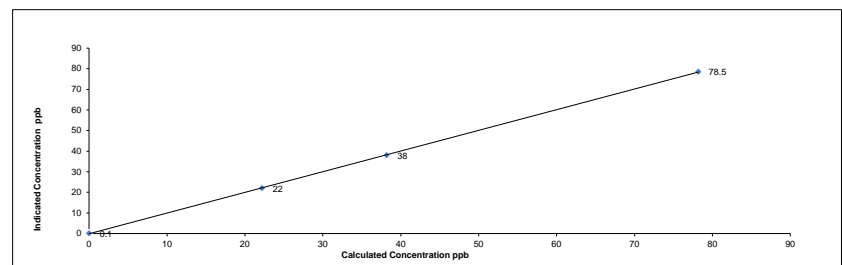
SO₂ High Point gas concentration: na Time gas run (mst): na

Zero corrected analyzer response: na

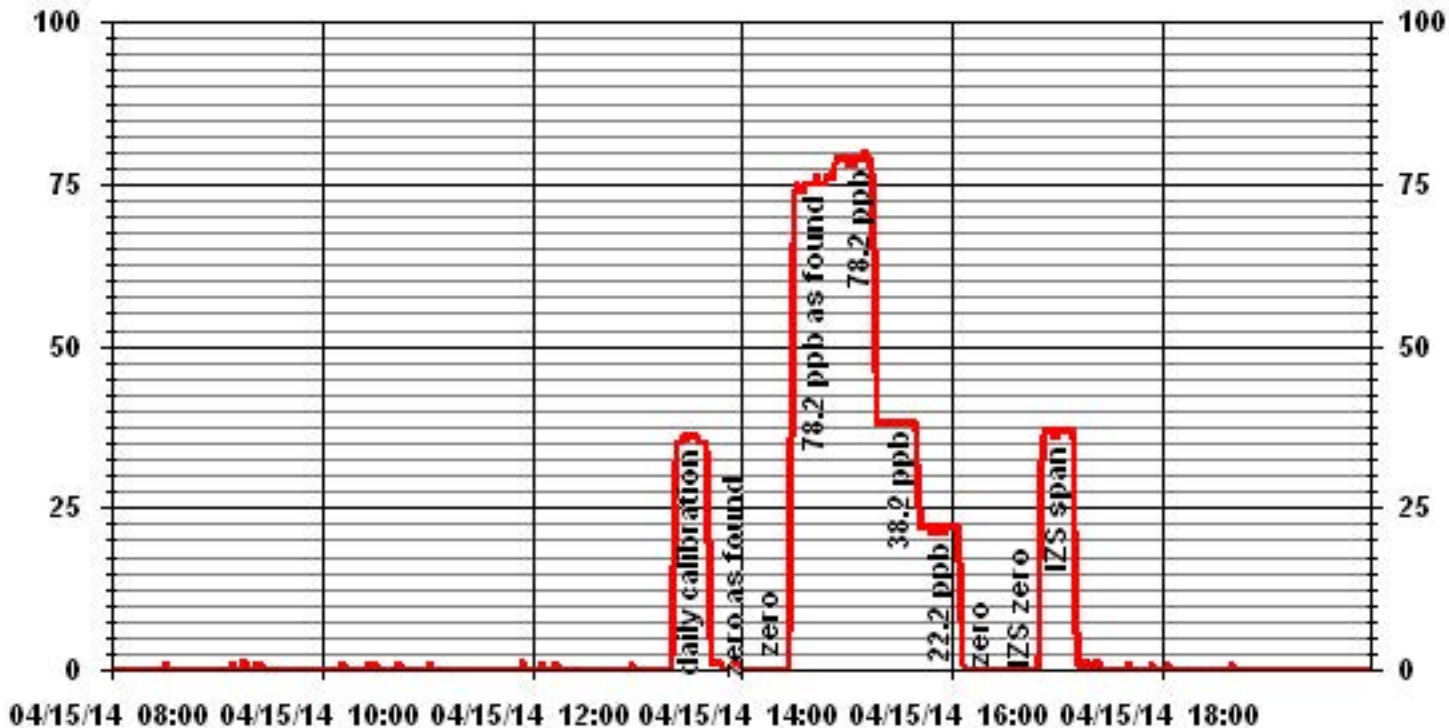
Comments:

Filter changed

Thermo 450i TRS Analyzer Calibration



01 Minute Averages



Total Hydrocarbons

Maxxam Thermo 51C THC Analyzer Calibration

Date: 15-Apr-14 Start Time (mst): 13:46
 Company: LICA End Time (mst): 16:32
 Station Name/Location: Cold Lake South Calibration Purpose: Monthly Calibration
 Performed by: Kevin Hope Cal Gas Expiry Date: 7-Nov-21

Analyzer: 51CLT-77021-384 Range ppm: 50
 Serial Number: 14-Mar-14 As Found C.F.: 0.991
 Last Calibration Date: 0.998 New C.F.: 1.005
 Previous Cal High Point C.F.:

	As found:	As left:
H ₂ cylinder (psi):	<u>1000</u>	<u>1000</u>
H ₂ cylinder reg set (psi):	<u>22</u>	<u>22</u>
Span Cylinder (psi):	<u>400</u>	<u>400</u>
Span Cylinder Reg Set (psi):	<u>25</u>	<u>25</u>
Zero Air Gen Pressure:	<u>35</u>	<u>35</u>
measurement alarms:	<u>none</u>	<u>none</u>
service alarms:	<u>none</u>	<u>none</u>
FID status:	cnt: <u>23340</u>	cnt: <u>23340</u>
	rng: <u>1</u>	rng: <u>1</u>
	try: <u>0</u>	try: <u>0</u>
	flm: <u>190.6</u>	flm: <u>190.6</u>
	det: <u>125.6</u>	det: <u>125.6</u>
Oven Readings:	Flame: <u>190</u>	Flame: <u>190</u>
	Filter: <u>125</u>	Filter: <u>125</u>
	Base: <u>125</u>	Base: <u>125</u>
	Pump: <u>6.92</u>	Pump: <u>6.92</u>
Voltages:	+5 <u>4.9</u>	+5 <u>4.9</u>
	+15 <u>14.8</u>	+15 <u>14.8</u>
	-15 <u>-14.9</u>	-15 <u>-14.9</u>
	Internal Span: <u>32.57</u>	Internal Span: <u>32.78</u>

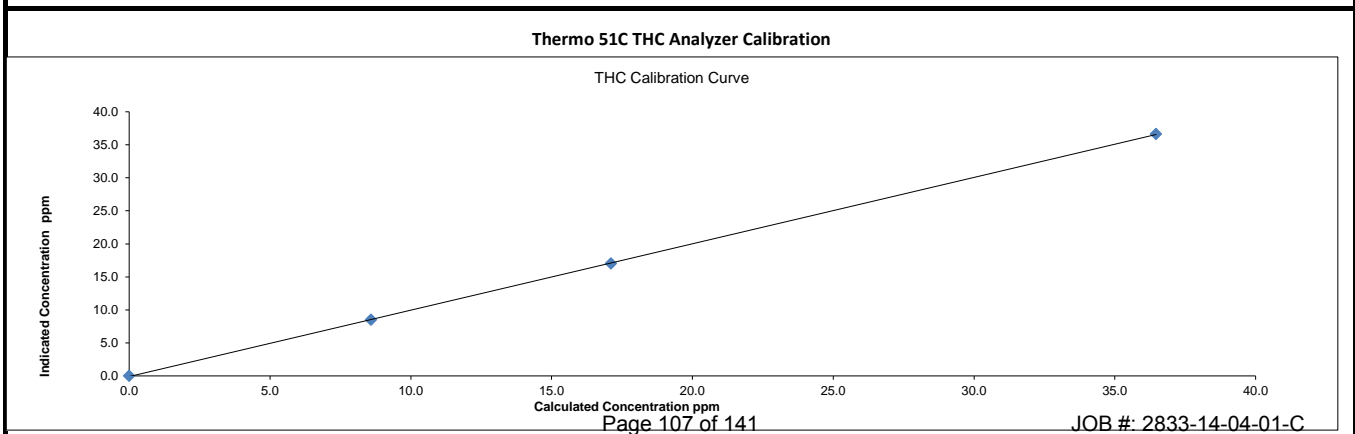
Calibrator:	Flow Meter ID's:	<u>NA</u>	Calibrator Flow Targets:			
	Make & Model:	<u>Envionics 6100</u>	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
	Serial #:	<u>4760</u>	zero	<u>2000</u>	<u>0</u>	<u>2000</u>
	Cal Gas Cylinder I.D. #:	<u>LL36542</u>	high	<u>2000</u>	<u>65</u>	<u>2065</u>
	CH ₄ /C ₃ H ₈ Cylinder Conc. (ppm):	<u>609.0</u> <u>201.0</u>	mid	<u>2000</u>	<u>30</u>	<u>2030</u>
	CH ₄ as propane/total CH ₄ equivalents (ppm):	<u>552.8</u> <u>1161.8</u>	low	<u>2000</u>	<u>15</u>	<u>2015</u>

Point	Calibrator Flow Rates (cc/min)			Calculated Concentration:		Indicated Concentration:		Correction Factors:
	Diluent	Cal Gas	Total	(ppm)	(ppm)	(ppm)	(ppm)	
as found zero	2000	0.00	2000	0	0.07	0	0.07	NA
adjusted zero	2000	0.00	2000	0	0.01	0	0.01	NA
as found high	2000	64.80	2065	36.46	36.80	36.80	36.80	0.991
adjusted high	2000	64.80	2065	36.46	36.60	36.60	36.60	0.996
mid	2000	29.90	2030	17.11	17.00	17.00	17.00	1.007
low	2000	14.90	2015	8.59	8.50	8.50	8.50	1.012
calibrator zero	2000	0.00	2000	0	0.02	0	0.02	NA
Average C.F.=								1.005

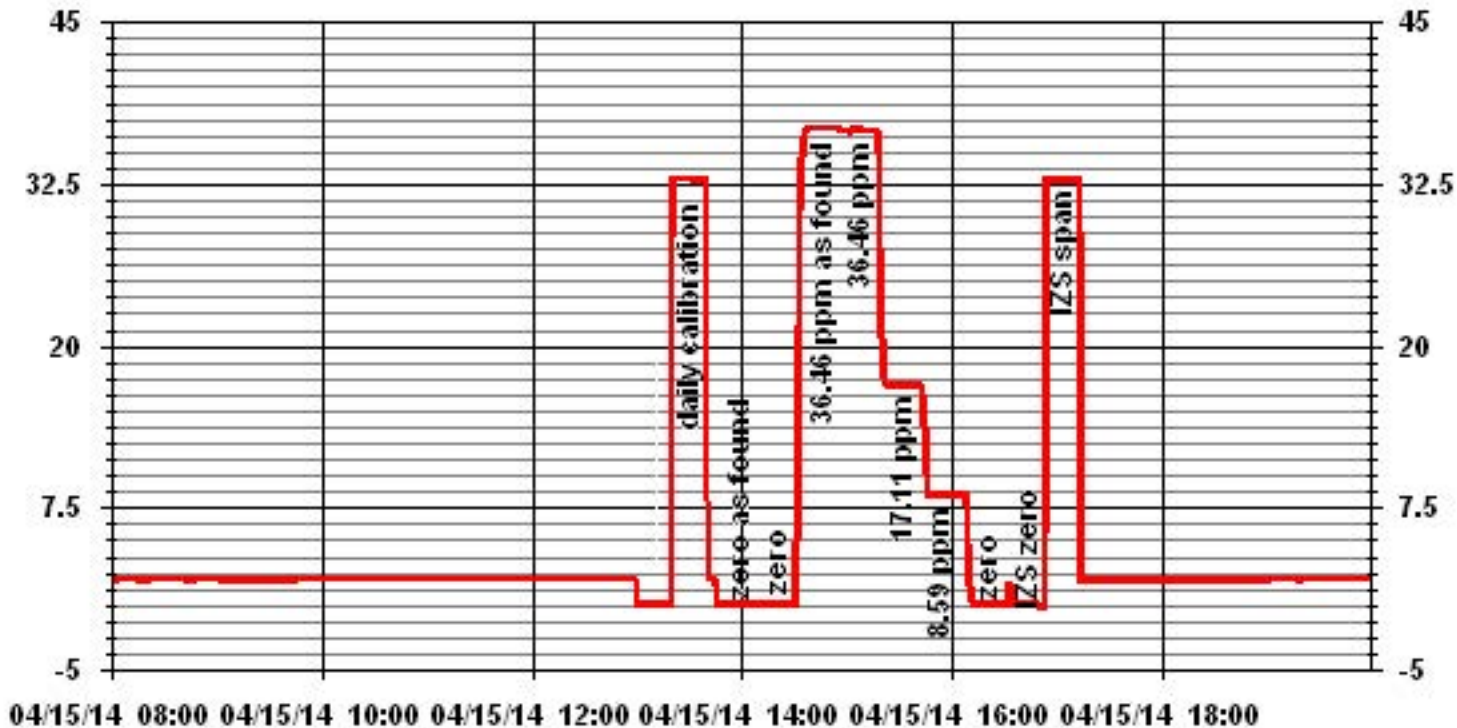
Linear Regression/Calibration Results:

Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>1.005</u>	> or = 0.995	PASS
b (Intercept as % of full scale) =	<u>-0.174%</u>	0.85-1.15	PASS
% change in C.F. from last cal	<u>0.70%</u>	± 3% F.S.	PASS
		± 15%	PASS

Comments:
Filter changed



01 Minute Averages



Particulate Matter 2.5



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: 28-Apr-14
 Company: LICA
 Station Name/Location: Cold Lake South
 Previous Audit Date: 27-Mar-14

Parameter: PM 2.5
 Performed by: Kevin Hope
 Start/End Time (mst): 11:50/12:25
 Calibration Purpose: Monthly Calibration

1400A Information and Status:

Serial Number: 1405A201620804 As Found Filter Loading %: 21.85
 Ko Factor: _____ As Left Filter Loading %: 18.17
 Ambient Temperature °C: 6.78 As Found Noise: 0.007
 Ambient Pressure atm: 0.942 As Left Noise: 0.000
 Main Flow Reading lpm: 2.85 Pump Vacuum: 0.30
 Aux Flow Reading lpm: 15.79 Warnings: None

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	Dwyer	Brunton	Fluke
Model:	475 Mark III	ADC Summit	1551A Stik Thermometer
Serial Number:	NA	NA	4295
Calibration Date:	NA	2-Dec-13	Unknown

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.06	0.07	0.03	0.07
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.31	-0.19	0.09	-0.19
	limit	0.60	0.60	0.60	0.60

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

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.06	0.07	0.03	0.07
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.31	-0.19	0.09	-0.19
	limit	0.60	0.60	0.60	0.60

As found temperature and pressure:

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>6.8</u>	1405F pressure atm:	<u>0.942</u>
reference temperature °C:	<u>6.5</u>	reference pressure:	<u>0.947</u>
difference °C:	<u>-0.3</u>	difference :	<u>-0.005</u>

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

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	<u>6.8</u>	1405F pressure atm:	<u>0.942</u>
reference temperature °C:	<u>6.5</u>	reference pressure:	<u>0.947</u>
difference °C:	<u>-0.3</u>	difference :	<u>0.005</u>

As found flows:

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>16.67</u>
reference main flow lpm: <u>2.85</u>	reference total/aux flow lpm: <u>15.79</u>
difference lpm: <u>-0.15</u>	difference lpm: <u>-0.88</u>

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

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: <u>3.00</u>	1400A total/aux flow lpm: <u>16.67</u>
reference main flow lpm: <u>2.85</u>	reference total/aux flow lpm: <u>15.79</u>
difference lpm: <u>-0.15</u>	difference lpm: <u>-0.88</u>

K_o Audit:

Last K_o audit date: _____
 1405F K_o factor: 0.0000
 Measured K_o factor: _____
 % difference: _____

Comments:

Nitrogen Dioxide



Thermo 42C NOx Analyzer Calibration

Date: 16-Apr-14
Company: LICA
Station Name/Location: Cold Lake South
Performed by: Kevin Hope

Start Time (mst): 12:29
End Time (mst): 16:05
Calibration Purpose: Monthly Calibration
Cal Gas Expiry Date: 29-Dec-16

Correction Factors:

Analyzer Serial Number: 427408716
Last Calibration Date: 13-Mar-14
Range ppb: 500

As found C.F.	Previous Cal High Point C.F.:
NO= 1.031	NO= 0.997
NOx= 1.030	NOx= 1.001
NO ₂ = NA	NO ₂ = 0.996

As found:

NO Bkg ppb: 5.3
 NOx Bkg ppb: 5.8
 NO Coef: 1.402
 NOx Coef: 1.003
 NO₂ Coef: 0.997
 PMT: -821
 +15: 15.1
 +5: 5.0
 -15: -15.1
 Battery: 3.2
 Internal: 27.2
 Chamber: 49.5
 Cooler: -2.4
 Converter: 318
 Converter Set: 319
 Pressure: 190.3
 Sample Flow: 0.676
 Ozonator Flow: ok
 Internal Span: 413/2.971/411.8

As left:

NO Bkg ppb: 5.6
 NOx Bkg ppb: 5.9
 NO Coef: 1.451
 NOx Coef: 0.999
 NO₂ Coef: 0.997
 PMT: -821
 +15: 15.1
 +5: 5.0
 -15: -15.1
 Battery: 3.2
 Internal: 27.2
 Chamber: 49.5
 Cooler: -2.4
 Converter: 318
 Converter Set: 319
 Pressure: 190.3
 Sample Flow: 0.676
 Ozonator Flow: ok
 Internal Span: 422/2.46/420

Calibrator Flow Targets:

Make & Model: EnviroNics 6100
Serial #: 4760
Cal Gas Cylinder I.D. #: BAL3165
NO Cylinder Conc. (ppm): 48.9
NOx Cylinder Conc. (ppm): 49.0

point	diluent (cc/min)	cal gas (cc/min)	O ₃ setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	5000	40	300.00	5040
mid	5000	20	140.00	5020
low	5000	10	75.00	5010

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	5000	0.0	5000	0	0	-0.1	-0.9	NA	NA
adjusted zero	5000	0.0	5000	0	0	0.0	0.1	NA	NA
as found high	4996	39.80	5036	386.5	387.3	375	376	1.031	1.030
adjusted high	4996	39.80	5036	386.5	387.3	387	387	0.998	1.001
mid	4996	19.80	5016	193.0	193.4	194	195	0.994	0.995
low	4996	9.90	5006	96.7	96.9	97	97	0.995	1.000
calibrator zero	4996	0.00	4996	0	0	0.0	0.1	NA	NA
Average C.F.=								0.996	0.998

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ increase	NO ₂ C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference										
as found NO ₂										
adjusted NO ₂										
gpt mid										
gpt low										

Average NO₂ C.F.=

Linear Regression/Calibration Results:

	NO	NOx	NO ₂
Correlation Coefficient =	1.000	1.000	
Slope =	1.001	0.999	
b (Intercept as % of full scale)=	0.04%	0.10%	
% change in C.F. from last cal=	-3.39%	-2.94%	#VALUE!
NO ₂ converter efficiency			

LIMITS
 > or = 0.995
 0.85-1.15
 ± 3% F.S.
 +/- -15%
 >85%

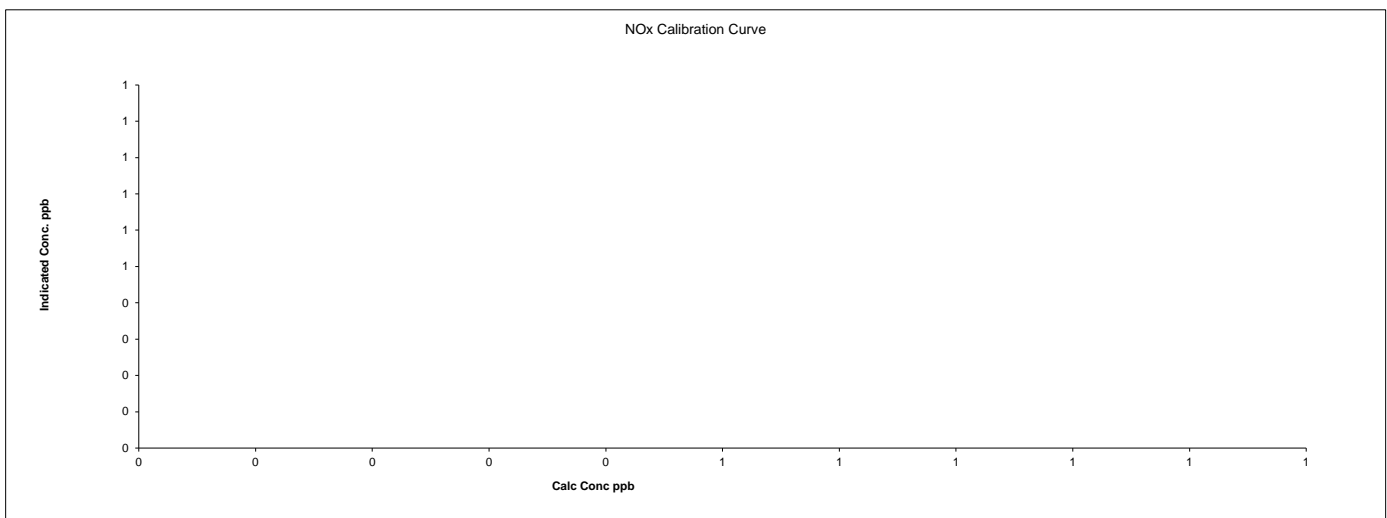
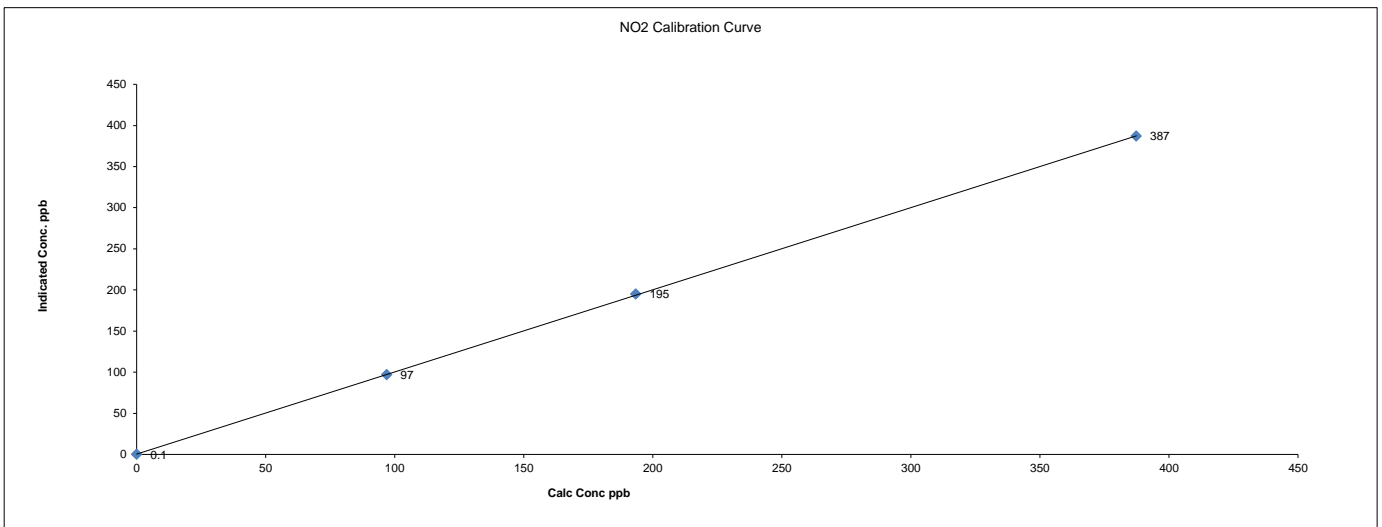
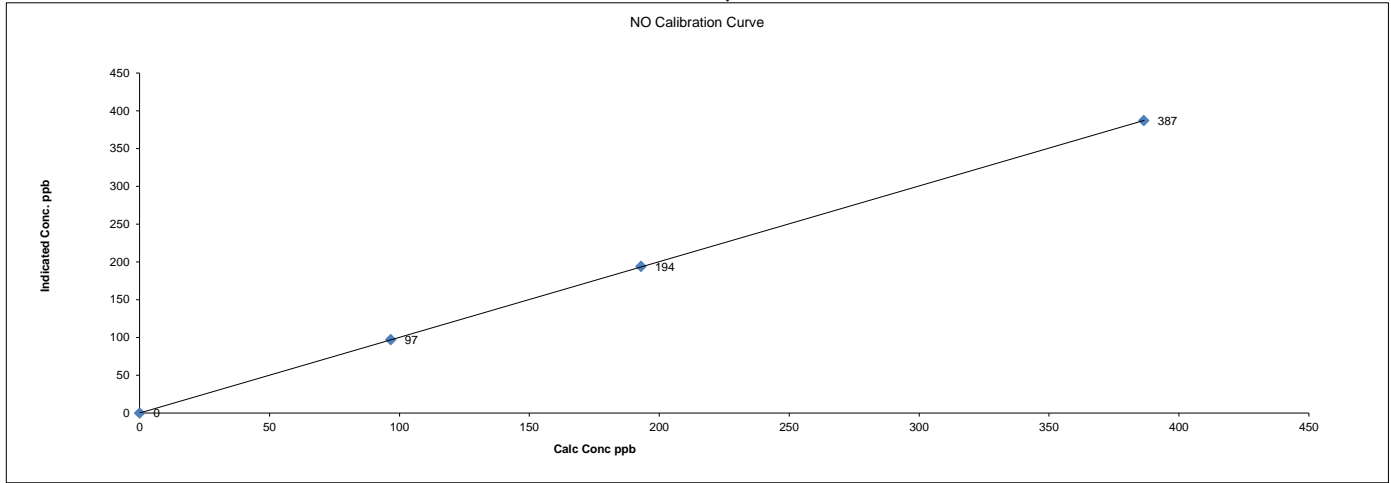
Comments:

Filter changed. Calibration started at 8:02 then aborted due to no response. Only time to complete NOX today. Will complete GPT tomorrow.

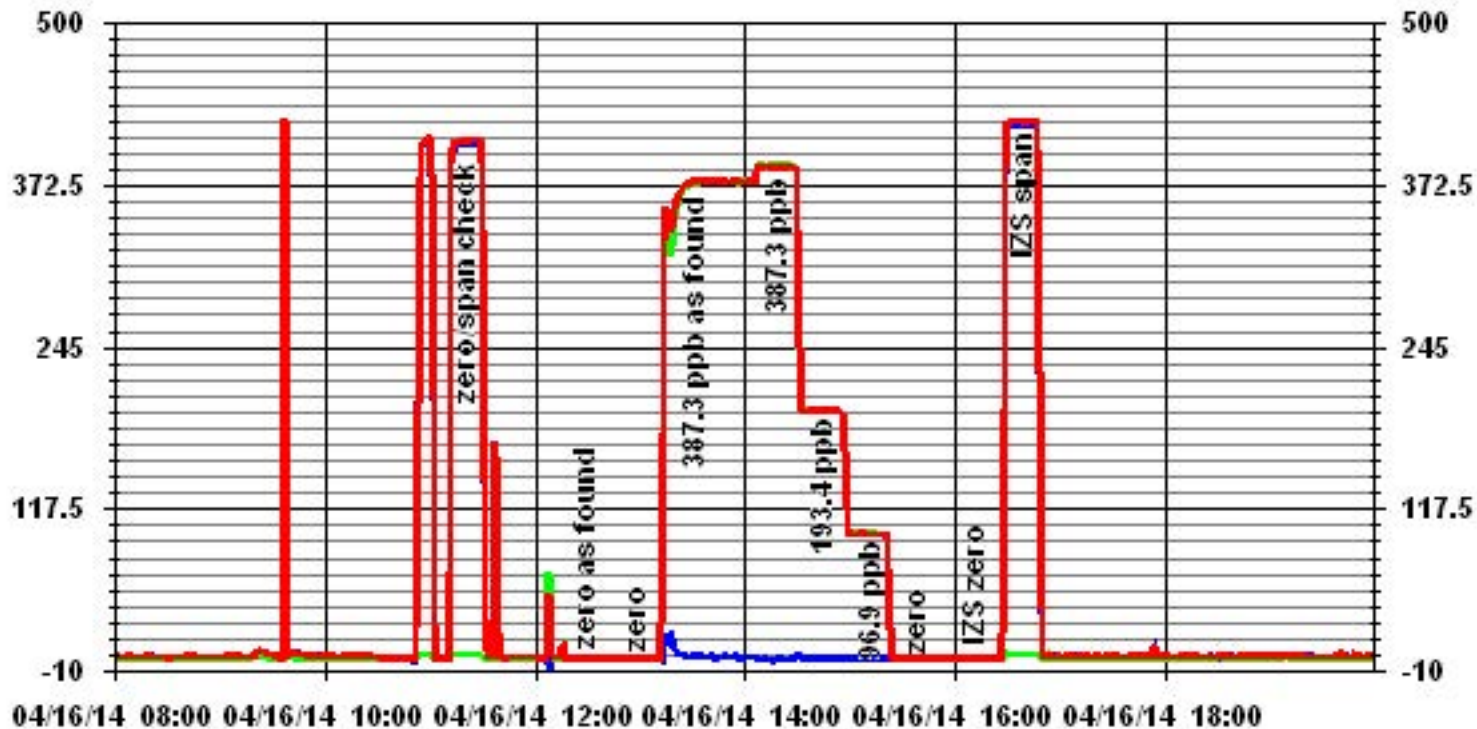
Date: 16-Apr-14
 Company: LICA
 Station Name/Location: Cold Lake South
 Performed by: Kevin Hope

Start Time (mst): 12:29
 End Time (mst): 16:05
 Calibration Purpose: Monthly Calibration
 Cal Gas Expiry Date: 29-Dec-16

Thermo 42C NOx Analyzer Calibration



01 Minute Averages



— LICA

— NOX_

— PPB

— LICA

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— NO_

— PPB

— LICA

JOB #: 2833-14-04-01-C

— NO2_

— PPB



Thermo 42C NOx Analyzer Calibration

Date: 17-Apr-14
Company: LICA
Station Name/Location: Cold Lake South
Performed by: Kevin Hope

Start Time (mst): 7:49
End Time (mst): 9:25
Calibration Purpose: GPT
Cal Gas Expiry Date: 29-Dec-16

Correction Factors:

Analyzer Serial Number: 427408716
Last Calibration Date: 13-Mar-14
Range ppb: 500

As found C.F.	Previous Cal High Point C.F.:
NO= 0.000	NO= 0.997
NOx= 0.000	NOx= 1.001
NO ₂ = 1.001	NO ₂ = 0.996

As found:

NO Bkg ppb: 5.6
 NOx Bkg ppb: 5.9
 NO Coef: 1.451
 NOx Coef: 0.999
 NO₂ Coef: 0.997
 PMT: -821
 +15: 15.1
 +5: 5.0
 -15: 15.1
 -15: -15.1
 Battery: 3.2
 Internal: 27.2
 Chamber: 49.5
 Cooler: -2.4
 Converter: 318
 Converter Set: 319
 Pressure: 190.3
 Sample Flow: 0.676
 Ozonator Flow: ok
 Internal Span: 422/2.46/420

As left:

NO Bkg ppb: 5.6
 NOx Bkg ppb: 5.9
 NO Coef: 1.451
 NOx Coef: 0.999
 NO₂ Coef: 0.997
 PMT: -821
 +15: 15.1
 +5: 5.0
 -15: 15.1
 -15: -15.1
 Battery: 3.2
 Internal: 27.2
 Chamber: 49.5
 Cooler: -2.4
 Converter: 318
 Converter Set: 319
 Pressure: 190.3
 Sample Flow: 0.676
 Ozonator Flow: ok
 Internal Span: 422/2.46/420

Calibrator Flow Targets:

Make & Model: EnviroNics 6100
Serial #: 4760
Cal Gas Cylinder I.D. #: BAL3165
NO Cylinder Conc. (ppm): 48.9
NOx Cylinder Conc. (ppm): 49.0

point	diluent (cc/min)	cal gas (cc/min)	O ₃ setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	5000	40	300.00	5040
mid	5000	20	140.00	5020
low	5000	10	75.00	5010

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	5000								
adjusted zero	5000								
as found high	4996								
adjusted high	4996								
mid	4996								
low	4996								
calibrator zero	4996								
Average C.F.=								#DIV/0!	

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ increase	NO ₂ C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4993	39.80	5033	0.0	388.2	387.5	-0.4	0.0	0.0	
as found NO ₂	4995	39.80	5035	300.0	61.5	387.3	326.0	326.7	326.4	1.001
adjusted NO ₂	4995	39.80	5035	300.0	61.5	387.3	326.0	326.7	326.4	1.001
gpt mid	4995	39.80	5035	140.0	230.5	386.8	156.3	157.7	156.7	1.006
gpt low	4996	39.80	5036	75.0	306.8	386.7	79.9	81.4	80.3	1.014
Average NO ₂ C.F.=										1.007

Linear Regression/Calibration Results:

	NO	NOx	NO ₂	LIMITS
Correlation Coefficient =	#DIV/0!	#DIV/0!	1.000	> or = 0.995
Slope =	#DIV/0!	#DIV/0!	1.000	0.85-1.15
b (Intercept as % of full scale)=	#DIV/0!	#DIV/0!	-0.11%	± 3% F.S.
% change in C.F. from last cal=	NA	NA	-0.50%	+/- 15%
NO ₂ converter efficiency			99.3%	>85%

Comments:

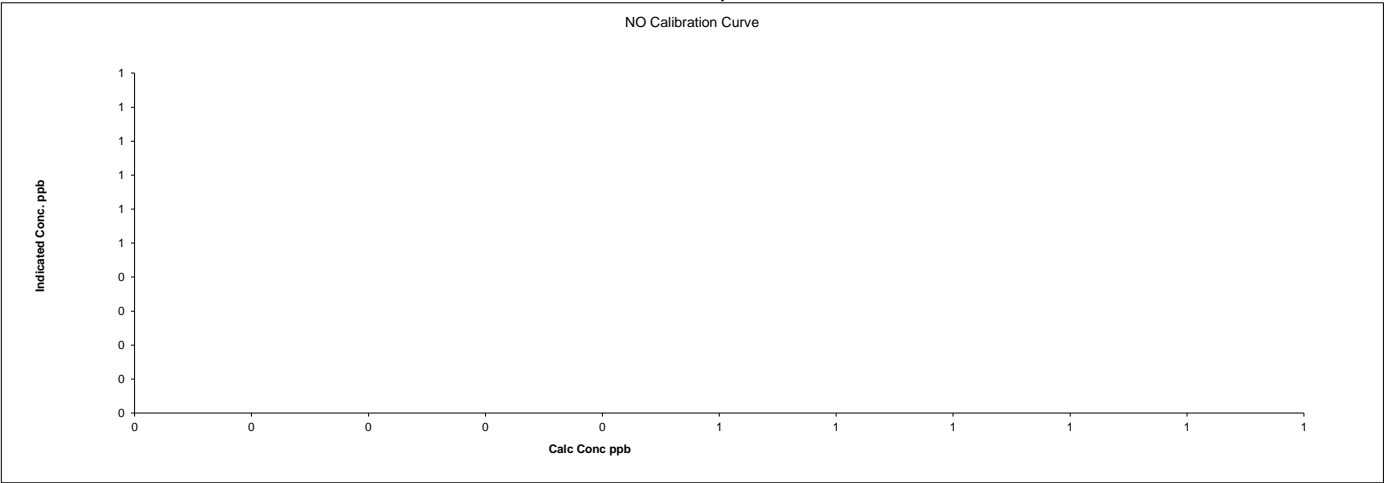
GPT only. No adjustment made.

Date: 17-Apr-14
 Company: LICA
 Station Name/Location: Cold Lake South
 Performed by: Kevin Hope

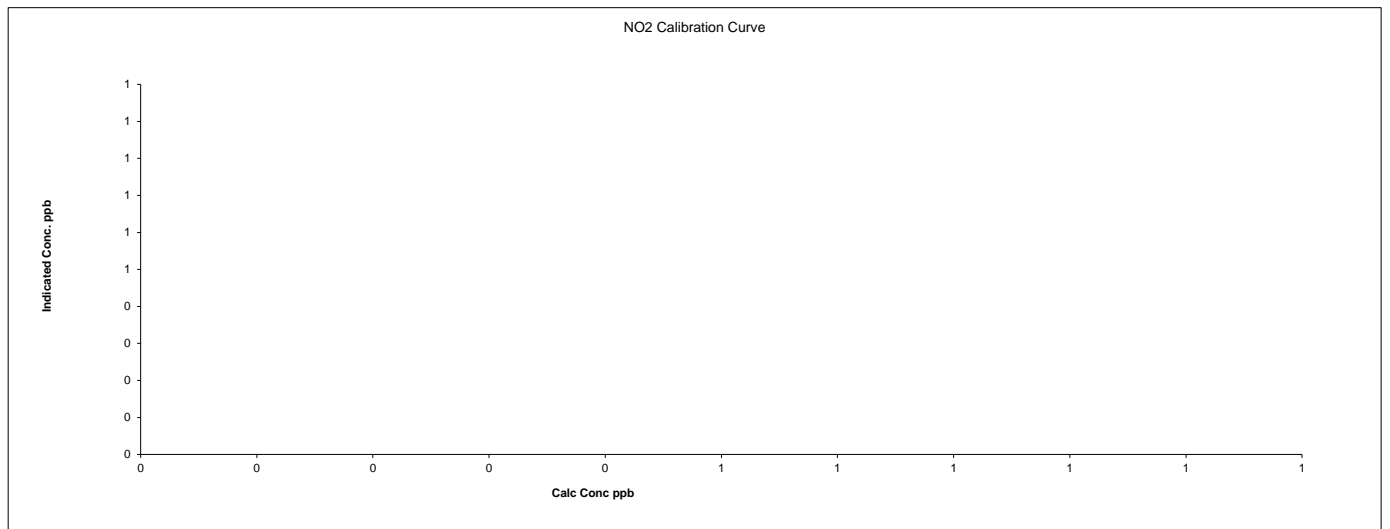
Start Time (mst): 7:49
 End Time (mst): 9:25
 Calibration Purpose: GPT
 Cal Gas Expiry Date: 29-Dec-16

Thermo 42C NOx Analyzer Calibration

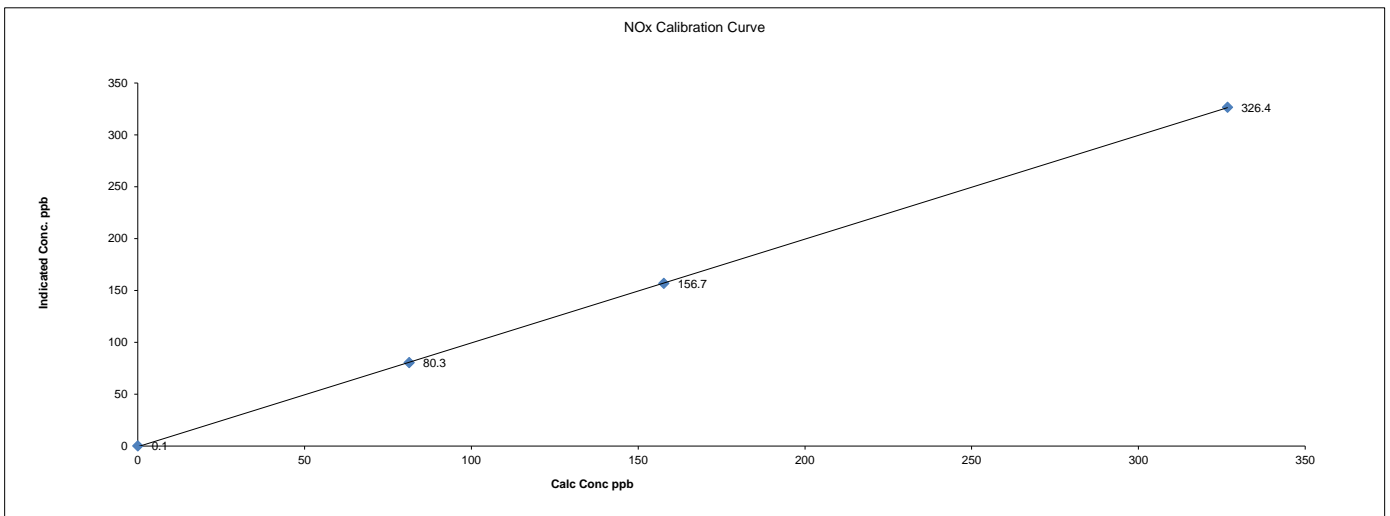
NO Calibration Curve



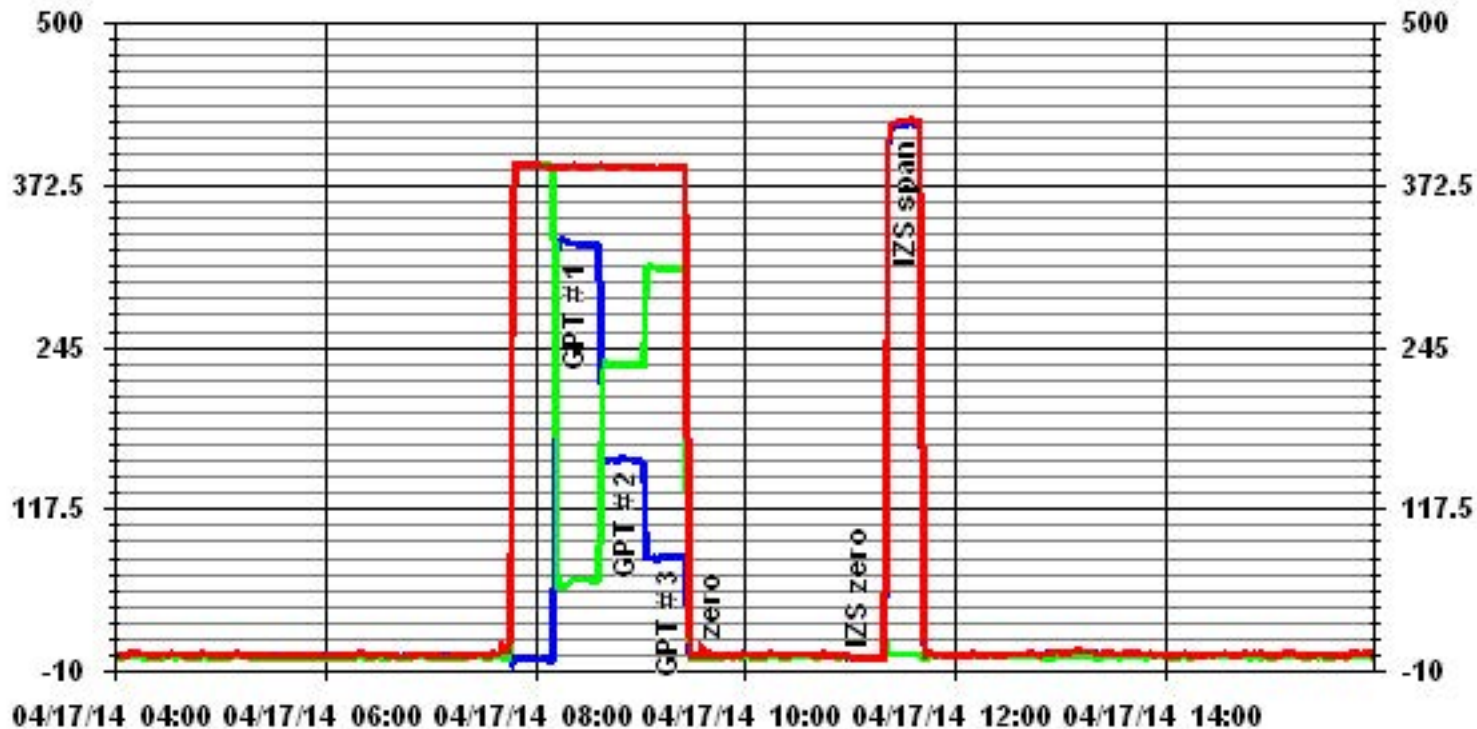
NO2 Calibration Curve



NOx Calibration Curve



01 Minute Averages



— LICA

NOX_

PPB

— LICA

Page 117 of 141

NO_

PPB

— LICA

JOB #: 2833-14-04-01-C

NO2_

PPB

Ozone

Maxxam Thermo 49i O₃ Analyzer Calibration

Date: 17-Apr-14 Start Time (mst): 9:40
 Company: LICA End Time (mst): 12:24
 Station Name/Location: Cold Lake South Calibration Purpose: Monthly Calibration
 Performed by: Kevin Hope G.P.T. Date: 17-Apr-14

Analyzer:		Range ppm: <u>500</u>	
Serial Number:	<u>700419951</u>	As Found C.F.:	<u>0.992</u>
Last Calibration Date:	<u>13-Mar-14</u>	New C.F.:	<u>1.006</u>
Previous Cal High Point C.F.:	<u>1.000</u>		
As found:		As left:	
O ₃ Bkg:	<u>0.2</u>	O ₃ Bkg:	<u>0.2</u>
O ₃ Coef:	<u>1.068</u>	O ₃ Coef:	<u>1.054</u>
Motherboard:	<u>3.3</u>		<u>3.3</u>
	<u>15.0</u>		<u>15.0</u>
	<u>24.0</u>		<u>24.0</u>
	<u>-3.3</u>		<u>-14.8</u>
Interface Board:	<u>3.3</u>		<u>8.7</u>
	<u>5.0</u>		<u>23.6</u>
	<u>15.0</u>		<u>9.0</u>
	<u>-15.0</u>		<u>28.9</u>
Photo Lamp:	<u>8.7</u>	Photo Lamp:	<u>8.7</u>
	<u>24.0</u>		<u>23.6</u>
O ₃ Lamp:	<u>9.0</u>	O ₃ Lamp:	<u>9.0</u>
Bench:	<u>28.9</u>	Bench:	<u>28.9</u>
Bench Lamp:	<u>53.5</u>	Bench Lamp:	<u>53.5</u>
O ₃ Lamp:	<u>67.5</u>	O ₃ Lamp:	<u>67.5</u>
Pressure:	<u>695.0</u>	Pressure:	<u>695.0</u>
Cell A lpm:	<u>0.706</u>	Cell A lpm:	<u>0.706</u>
Cell B lpm:	<u>0.745</u>	Cell B lpm:	<u>0.745</u>
O ₃ ppb:	<u>42.5</u>	O ₃ ppb:	<u>42.5</u>
Cell A ppb:	<u>66.7</u>	Cell A ppb:	<u>66.7</u>
Cell B ppb:	<u>20.2</u>	Cell B ppb:	<u>20.2</u>
Cell A int:	<u>66226</u>	Cell A int:	<u>66226</u>
Cell B int:	<u>61888</u>	Cell B int:	<u>61888</u>
Internal Span:	<u>313.2</u>	Internal Span:	<u>281.2</u>

Calibrator:		Calibrator Flow Targets:		
Make & Model:	<u>Enviroics 6100</u>	point	total flow (cc/min)	O ₃ setting (v or ppb)
Serial #:	<u>4760</u>	zero	<u>5035</u>	<u>0</u>
NOx Gas Cylinder I.D. #:	<u>BAL3165</u>	high	<u>5035</u>	<u>300</u>
NOx Cylinder Conc. (ppm):	<u>49.0</u>	mid	<u>5035</u>	<u>140</u>
		low	<u>5035</u>	<u>75</u>

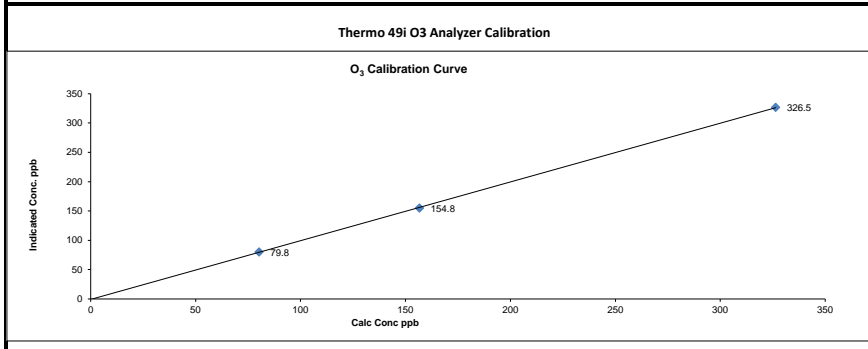
Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5035	0.0	5035	0.0	0.0	NA
adjusted zero	5035	0.0	5035	0.0	0.0	NA
as found high	5029	0.00	5029	326.4	329.0	0.992
adjusted high	5030	0.00	5030	326.4	326.5	1.000
mid	5030	0.00	5030	156.7	154.8	1.012
low	5030	0.00	5030	80.3	79.8	1.006
calibrator zero	5030	0.00	5030	0.0	-0.1	NA
** copy and paste flows and NO decrease from NOx cal in to calculated concentration **						Average C.F. = <u>1.006</u>

Linear Regression/Calibration Results:

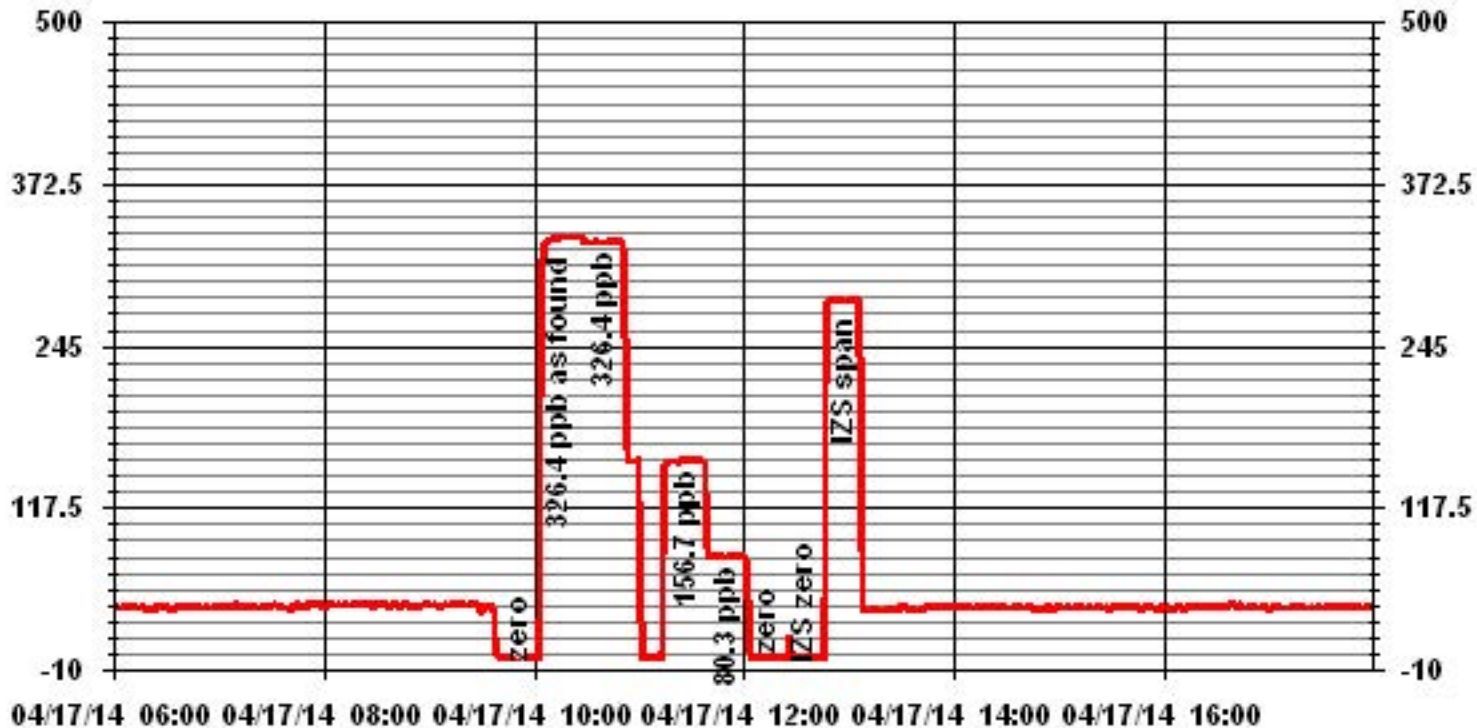
Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>1.001</u>	> or = 0.995	PASS
b (Intercept as % of full scale) =	<u>-0.136%</u>	0.85-1.15	PASS
% change in C.F. from last cal	<u>1%</u>	± 3% F.S.	PASS
		± 15%	PASS

Comments:

No zero adjustment made. Filter changed.



01 Minute Averages



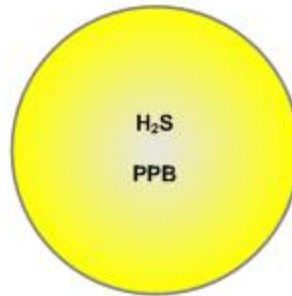
Passive Bubble Maps

Lakeland Industry & Community Association H₂S Passive Bubble Map

APRIL 2014

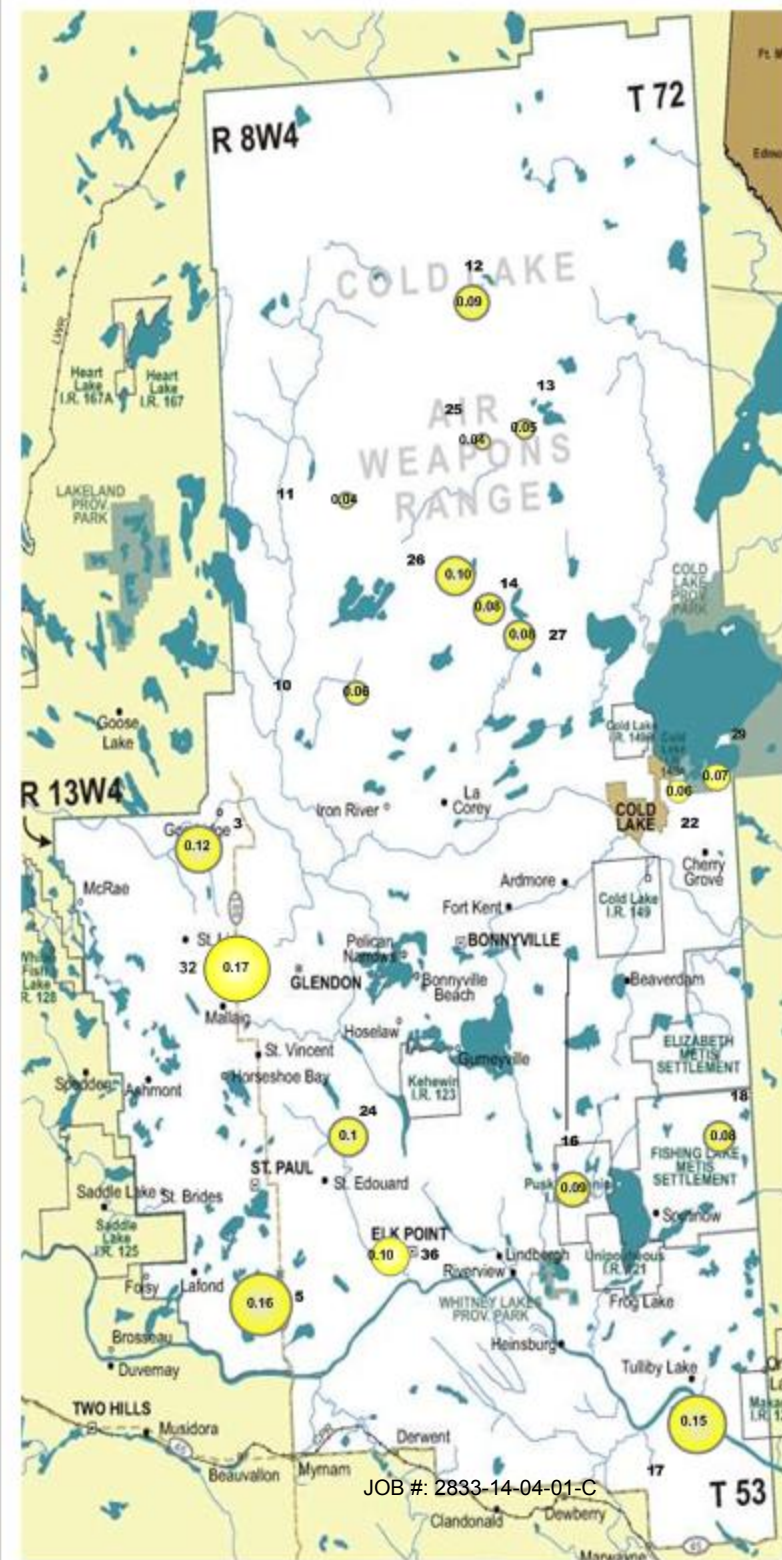
PASSIVE STATIONS

Station	Reading	Duplicate
3 – Therien	0.12 PPB	NA
5 – Lake Eliza	0.16 PPB	NA
10 – La Corey	0.06 PPB	NA
11 – Wolf Lake	0.04 PPB	NA
12 – Foster Creek	0.10 PPB	0.08 PPB
13 – Primrose	0.05 PPB	0.04 PPB
14 – Maskwa	0.08 PPB	NA
16 – Frog Lake	0.09 PPB	NA
17 – Clear Range	0.15 PPB	NA
18 – Fishing Lake	0.08 PPB	NA
22 – Cold Lake South	0.06 PPB	NA
24 – Fort George	0.10 PPB	NA
25 – Burnt Lake	0.04 PPB	NA
26 – Mahihkan	0.10 PPB	NA
27 – Mahkeses	0.08 PPB	NA
29 – Cold Lake South 2	0.07 PPB	NA
32 – St. Lina	0.17 PPB	NA
36 – Elk Point	0.10 PPB	NA



Summary

Minimum : 0.04 PPB – Wolf Lake and Burnt Lake
 Maximum: 0.17 PPB – St. Lina
 Average: 0.09 PPB (Includes Duplicates)



Lakeland Industry & Community Association NO₂ Passive Bubble Map

APRIL 2014

PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	0.7 PPB	NA
4 – Flat Lake	0.7 PPB	NA
5 – Lake Eliza	0.7 PPB	NA
6 – Telegraph Creek	3.1 PPB	NA
8 – Muriel-Kehewin	0.7 PPB	NA
9 – Dupre	0.7 PPB	NA
10 – La Corey	1.6 PPB	NA
11 – Wolf Lake	0.4 PPB	0.4 PPB
12 – Foster Creek	1.3 PPB	1.2 PPB
13 – Primrose	0.4 PPB	NA
14 – Maskwa	0.9 PPB	NA
15 – Ardmore	0.9 PPB	NA
16 – Frog Lake	1.1 PPB	NA
17 – Clear Range	1.5 PPB	NA
18 – Fishing Lake	0.9 PPB	NA
19 – Beaverdam	0.6 PPB	NA
22 – Cold Lake South	1.2 PPB	NA
23 – Medley-Martineau	< 0.1 PPB	NA
24 – Fort George	1.6 PPB	NA
28 – Town of Bonnyville	3.1 PPB	NA
29 – Cold Lake South 2	1.1 PPB	NA
32 – St. Lina	0.3 PPB	NA
36 – Elk Point	1.7 PPB	NA



Summary

Minimum : < 0.1 PPB – Medley-Martineau

Maximum: 3.1 PPB – Telegraph Creek and Town of Bonnyville

Average: 1.1 PPB *Includes Duplicates

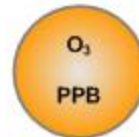


Lakeland Industry & Community Association O₃ Passive Bubble Map

APRIL 2014

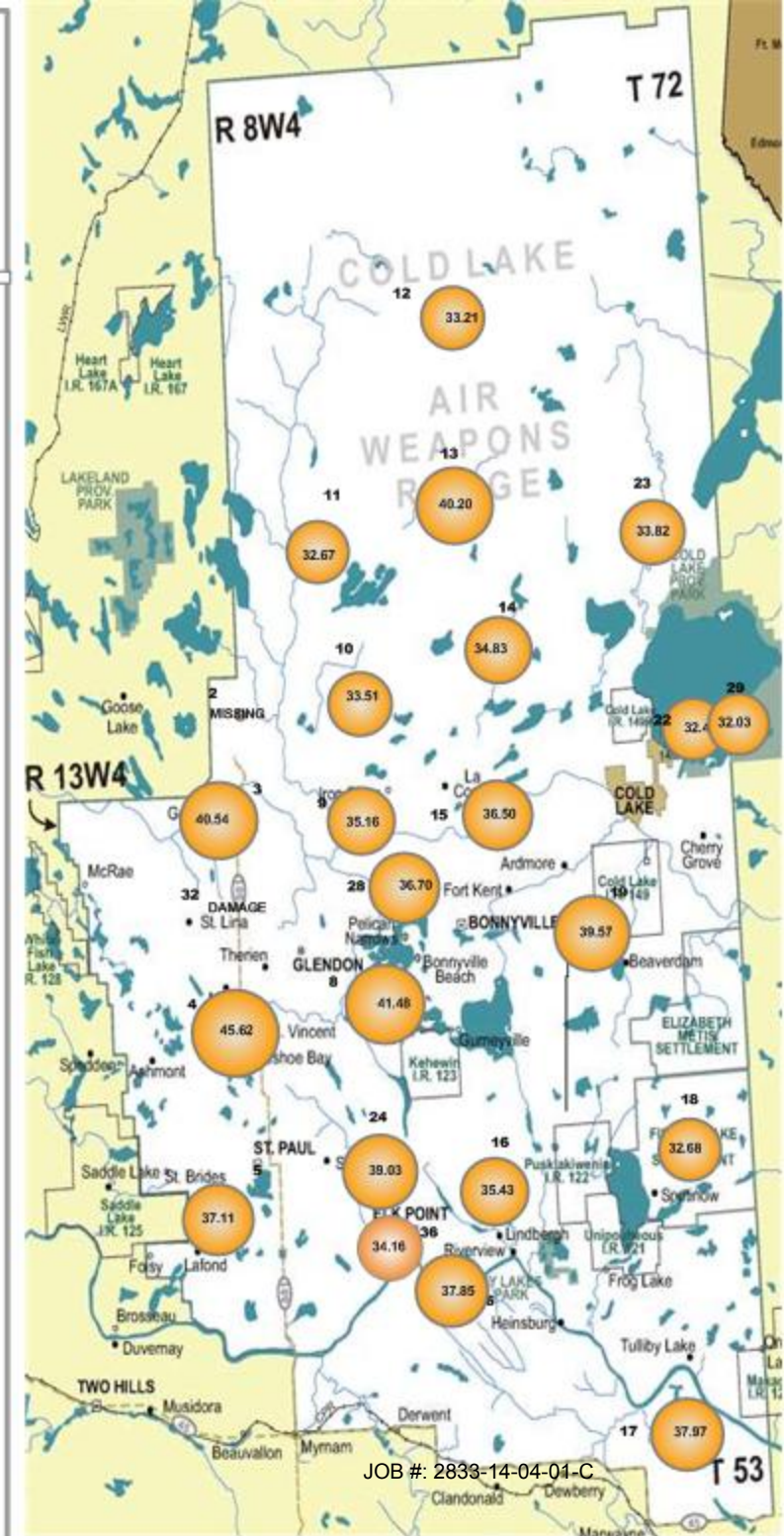
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	40.54 PPB	NA
4 – Flat Lake	45.62 PPB	NA
5 – Lake Eliza	37.11 PPB	NA
6 – Telegraph Creek	37.85 PPB	NA
8 – Muriel-Kehewin	41.48 PPB	NA
9 – Dupre	35.16 PPB	NA
10 – La Corey	33.51 PPB	NA
11 – Wolf Lake	21.75 PPB	33.58 PPB
12 – Foster Creek	34.50 PPB	31.91 PPB
13 – Primrose	40.20 PPB	NA
14 – Maskwa	34.83 PPB	NA
15 – Ardmore	36.50 PPB	NA
16 – Frog Lake	35.43 PPB	NA
17 – Clear Range	37.97 PPB	NA
18 – Fishing Lake	32.68 PPB	NA
19 – Beaverdam	39.57 PPB	NA
22 – Cold Lake South	32.43 PPB	NA
23 – Medley-Martineau	33.82 PPB	NA
24 – Fort George	39.03 PPB	NA
28 – Town of Bonnyville	30.75 PPB	NA
29 – Cold Lake South 2	36.70 PPB	NA
32 – St. Lina	DAMAGE	NA
36 – Elk Point	34.16 PPB	NA



Summary

Minimum : 30.75 PPB – Town of Bonnyville
 Maximum: 45.62 PPB – Flat Lake
 Average: 36.44 PPB *Includes Duplicates



Lakeland Industry & Community Association SO₂ Passive Bubble Map

APRIL 2014

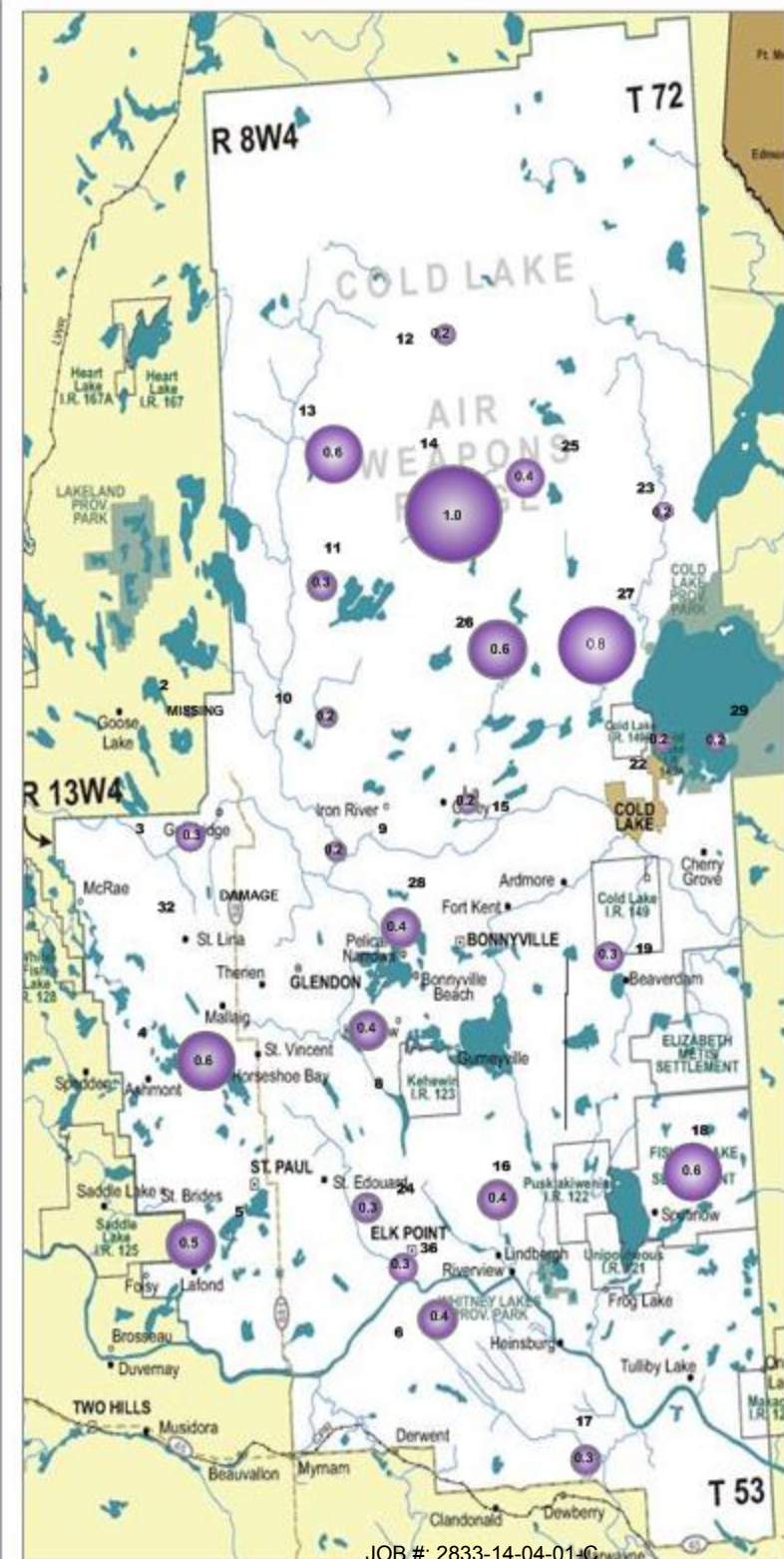
PASSIVE STATIONS

STATION	READING	DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	0.3 PPB	NA
4 – Flat Lake	0.6 PPB	NA
5 – Lake Eliza	0.5 PPB	0.5 PPB
6 – Telegraph Creek	0.3 PPB	0.5 PPB
8 – Muriel-Kehewin	0.4 PPB	0.4 PPB
9 – Dupre	0.2 PPB	NA
10 – La Corey	0.2 PPB	NA
11 – Wolf Lake	0.3 PPB	NA
12 – Foster Creek	0.2 PPB	NA
13 – Primrose	0.6 PPB	NA
14 – Maskwa	1.0 PPB	NA
15 – Ardmore	0.2 PPB	NA
16 – Frog Lake	0.4 PPB	NA
17 – Clear Range	0.3 PPB	NA
18 – Fishing Lake	0.6 PPB	NA
19 – Beaverdam	0.3 PPB	NA
22 – Cold Lake South	0.2 PPB	NA
23 – Medley-Martineau	0.2 PPB	NA
24 – Fort George	0.3 PPB	NA
25 – Burnt Lake	0.4 PPB	NA
26 – Mahikan	0.6 PPB	NA
27 – Mahkeses	0.8 PPB	NA
28 – Town of Bonnyville	0.4 PPB	NA
29 – Cold Lake South 2	0.2 PPB	NA
32 – St. Lina	DAMAGE	NA
36 – Elk Point	0.3 PPB	NA



Summary

Minimum : 0.2 PPB –various stations
Maximum: 1.0 PPB – Maskwa
Average: 0.4 PPB *Includes Duplicates



Passive Field Data

Passive Sampler Data Sheet for LICA April 2014

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
2	SO ₂ /NO ₂ /O ₃	NA	NA	NA	NA	All samplers had been removed. No samplers was installed.
3	H ₂ S/SO ₂ /NO ₂ /O ₃	04/03/2014	14:15	05/02/2014	11:48	
4	SO ₂ /NO ₂ /O ₃	04/03/2014	14:52	05/02/2014	12:22	
5	H ₂ S/SO ₂ /NO ₂ /O ₃	04/04/2014	13:46	05/02/2014	17:20	
6	SO ₂ /NO ₂ /O ₃	04/04/2014	12:28	05/02/2014	14:41	
8	SO ₂ /NO ₂ /O ₃	04/03/2014	15:45	05/03/2014	18:38	
9	SO ₂ /NO ₂ /O ₃	03/31/2014	14:33	05/02/2014	10:15	
10	H ₂ S/SO ₂ /NO ₂ /O ₃	04/02/2014	12:39	05/04/2014	14:41	
11	H ₂ S/SO ₂ /NO ₂ /O ₃	04/02/2014	13:16	05/04/2014	11:47	
12	H ₂ S/SO ₂ /NO ₂ /O ₃	04/02/2014	14:27	05/04/2014	9:15	
13	H ₂ S/SO ₂ /NO ₂ /O ₃	04/03/2014	09:16	05/04/2014	16:04	
14	H ₂ S/SO ₂ /NO ₂ /O ₃	04/03/2014	08:59	05/04/2014	17:29	
15	SO ₂ /NO ₂ /O ₃	04/02/2014	11:48	05/02/2014	9:23	
16	H ₂ S/SO ₂ /NO ₂ /O ₃	04/04/2014	10:55	05/02/2014	16:27	
17	H ₂ S/SO ₂ /NO ₂ /O ₃	04/04/2014	11:38	05/02/2014	15:41	
18	H ₂ S/SO ₂ /NO ₂ /O ₃	04/04/2014	10:18	05/02/2014	17:04	
19	SO ₂ /NO ₂ /O ₃	04/04/2014	09:20	05/03/2014	20:03	
22	H ₂ S/SO ₂ /NO ₂ /O ₃	03/31/2014	11:02	05/02/2014	8:38	
23	SO ₂ /NO ₂ /O ₃	04/03/2014	12:09	05/04/2014	19:11	
24	H ₂ S/SO ₂ /NO ₂ /O ₃	04/04/2014	13:01	05/02/2014	14:12	
25	H ₂ S/SO ₂	04/02/2014	15:30	05/04/2014	10:40	
26	H ₂ S/SO ₂	04/03/2014	09:40	05/04/2014	17:04	
27	H ₂ S/SO ₂	04/03/2014	11:00	05/04/2014	18:04	
28	SO ₂ /NO ₂ /O ₃	03/31/2014	14:05	05/02/2014	9:50	
29	H ₂ S/SO ₂ /NO ₂ /O ₃	03/31/2014	10:57	05/02/2014	8:30	
32	H ₂ S/SO ₂ /NO ₂ /O ₃	04/01/2014	15:30	05/02/2014	11:12	SO2/O3 samples were damaged.
36	H ₂ S/SO ₂ /NO ₂ /O ₃	03/31/2014	13:13	05/02/2014	13:35	

Passive Sampler Data Sheet for LICA April 2014

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
Duplicate #5	SO ₂	04/04/2014	13:46	05/03/2014	17:20	
Duplicate #6	SO ₂	04/04/2014	12:28	05/02/2014	14:41	
Duplicate #8	SO ₂	04/03/2014	15:45	05/03/2014	18:38	
Duplicate #12	H ₂ S	04/02/2014	14:27	05/04/2014	09:15	
Duplicate #13	H ₂ S	04/03/2014	09:16	05/04/2014	16:04	
Duplicate #11	NO ₂	04/02/2014	13:16	05/04/2014	11:47	
Duplicate #12	NO ₂	04/02/2014	14:27	05/04/2014	09:15	
Duplicate #11	O ₃	04/02/2014	13:16	05/04/2014	11:47	
Duplicate #12	O ₃	04/02/2014	14:27	NA	NA	O3 is missing.

Passive Network Laboratory Analysis

Your Project #: 2014/04/03 - 2014/05/02
 Site Location: LICA

Attention:MICHAEL BISAGA

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

Report Date: 2014/05/16
 Report #: R1568933
 Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B435610

Received: 2014/05/06, 09:16

Sample Matrix: Air
 # Samples Received: 32

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
H2S Passive Analysis (1)	20	2014/05/15	2014/05/16	PTC SOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (1)	25	2014/05/14	2014/05/16	PTC SOP-00148	Passive NO2 in ATM
O3 Passive Analysis (1)	25	2014/05/08	2014/05/16	PTC SOP-00197	EPA 300 R2.1
SO2 Passive Analysis (1)	11	2014/05/13	2014/05/16	PTC SOP-00149	Tang Passive SO2 in
SO2 Passive Analysis (1)	18	2014/05/14	2014/05/16	PTC SOP-00149	Tang Passive SO2 in

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

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

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
 Levi Manchak, Customer Service
 Email: LManchak@maxxam.ca
 Phone# (780) 378-8500

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

Maxxam Job #: B435610
 Report Date: 2014/05/16

 LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2014/04/03 - 2014/05/02
 Site Location: LICA
 Sampler Initials: WA

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		JN8658	JN8659	JN8660	JN8661	JN8662		JN8663		
Sampling Date		2014/04/03 14:15	2014/04/03 14:52	2014/04/04 13:46	2014/04/04 12:28	2014/04/03 15:45		2014/03/31 14:33		
	Units	3	4	5	6	8	QC Batch	9	RDL	QC Batch

Passive Monitoring										
Calculated H2S	ppb	0.12		0.16			7488126		0.02	7488126
Calculated NO2	ppb	0.7	0.7	0.7	3.1	0.7	7485567	0.7	0.1	7485567
Calculated O3	ppb	40.54	45.62	37.11	37.85	41.48	7479045	35.16	0	7479053
Calculated SO2	ppb	0.3	0.6	0.5	0.3	0.4	7485548	0.2	0.1	7485548
RDL = Reportable Detection Limit										

Maxxam ID		JN8664	JN8665	JN8666	JN8667	JN8668	JN8669	JN8670		
Sampling Date		2014/04/02 12:39	2014/04/02 13:16	2014/04/02 14:27	2014/04/03 09:16	2014/04/03 08:59	2014/04/02 11:48	2014/04/04 10:55		
	Units	10	11	12	13	14	15	16	RDL	QC Batch

Passive Monitoring										
Calculated H2S	ppb	0.06	0.04	0.10	0.05	0.08		0.09	0.02	7488126
Calculated NO2	ppb	1.6	0.4	1.3	0.4	0.9	0.9	1.1	0.1	7485570
Calculated O3	ppb	33.51	31.75	34.50	40.20	34.83	36.50	35.43	0	7479053
Calculated SO2	ppb	0.2	0.3	0.2	0.6	1.0	0.2	0.4	0.1	7485548
RDL = Reportable Detection Limit										

Maxxam ID		JN8671	JN8672		JN8673	JN8674	JN8675	JN8676		
Sampling Date		2014/04/04 11:38	2014/04/04 10:18		2014/04/04 09:20	2014/03/31 11:02	2014/04/03 12:09	2014/04/04 13:01		
	Units	17	18	QC Batch	19	22	23	24	RDL	QC Batch

Passive Monitoring										
Calculated H2S	ppb	0.15	0.08	7488126		0.06		0.10	0.02	7488126
Calculated NO2	ppb	1.5	0.9	7485570	0.6	1.2	<0.1	1.6	0.1	7485570
Calculated O3	ppb	37.97	32.68	7479053	39.57	32.43	33.82	39.03	0	7479053
Calculated SO2	ppb	0.3	0.6	7485548	0.3	0.2	0.2	0.3	0.1	7484584
RDL = Reportable Detection Limit										

Maxxam ID		JN8677	JN8678	JN8679	JN8680	JN8681	JN8682	JN8683		
Sampling Date		2014/04/02 15:30	2014/04/03 09:40	2014/04/03 11:00	2014/03/31 14:05	2014/03/31 10:57	2014/04/01 15:30	2014/03/31 13:13		
	Units	25	26	27	28	29	32	36	RDL	QC Batch

Passive Monitoring										
Calculated H2S	ppb	0.04	0.10	0.08		0.07	0.17	0.10	0.02	7488126
Calculated NO2	ppb				3.1	1.1	0.3	1.7	0.1	7485570
Calculated O3	ppb				30.75	36.70	DAMAGED	34.16	0	7479053
Calculated SO2	ppb	0.4	0.6	0.8	0.4	0.2	DAMAGED	0.3	0.1	7484584
RDL = Reportable Detection Limit										

Maxxam Job #: B435610
 Report Date: 2014/05/16

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2014/04/03 - 2014/05/02
 Site Location: LICA
 Sampler Initials: WA

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		JN8686	JN8687		JN8689	JN8690	JN8691	JN8692		
Sampling Date		2014/04/02 13:16	2014/04/02 14:27		2014/04/04 13:46	2014/04/04 12:28	2014/04/03 15:45	2014/04/03 09:16		
	Units	11 DUP	12 DUP	QC Batch	5 DUP	6 DUP	8 DUP	13 DUP	RDL	QC Batch

Passive Monitoring										
Calculated H2S	ppb		0.08	7488126				0.04	0.02	7488126
Calculated NO2	ppb	0.4	1.2	7485570					0.1	7485570
Calculated O3	ppb	33.58	31.91	7479053					0	7479053
Calculated SO2	ppb			7484584	0.5	0.5	0.4		0.1	7485548

RDL = Reportable Detection Limit

Maxxam Job #: B435610
Report Date: 2014/05/16

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/04/03 - 2014/05/02
Site Location: LICA
Sampler Initials: WA

GENERAL COMMENTS

Sample: JN8682 (#32) was returned to the lab damaged. - DF

Results relate only to the items tested.

Maxxam Job #: B435610
 Report Date: 2014/05/16

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2014/04/03 - 2014/05/02
 Site Location: LICA
 Sampler Initials: WA

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
7479045	OZ	Spiked Blank	Calculated O3	2014/05/08		100	%	90 - 110
7479045	OZ	Method Blank	Calculated O3	2014/05/08	0.01 , RDL=0		ppb	
7479053	OZ	Spiked Blank	Calculated O3	2014/05/08		100	%	90 - 110
7479053	OZ	Method Blank	Calculated O3	2014/05/08	0.01 , RDL=0		ppb	
7484584	DF4	Spiked Blank	Calculated SO2	2014/05/13		101	%	90 - 110
7484584	DF4	Method Blank	Calculated SO2	2014/05/13	<0.1		ppb	
7485548	DF4	Spiked Blank	Calculated SO2	2014/05/14		100	%	90 - 110
7485548	DF4	Method Blank	Calculated SO2	2014/05/14	<0.1		ppb	
7485567	DF4	Spiked Blank	Calculated NO2	2014/05/14		103	%	90 - 110
7485567	DF4	Method Blank	Calculated NO2	2014/05/14	<0.1		ppb	
7485570	DF4	Spiked Blank	Calculated NO2	2014/05/14		95	%	90 - 110
7485570	DF4	Method Blank	Calculated NO2	2014/05/14	<0.1		ppb	
7488126	SS6	Spiked Blank	Calculated H2S	2014/05/16		97	%	90 - 110

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


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

Maxxam Job #: B435610
Report Date: 2014/05/16

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/04/03 - 2014/05/02
Site Location: LICA
Sampler Initials: WA

VALIDATION SIGNATURE PAGE

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

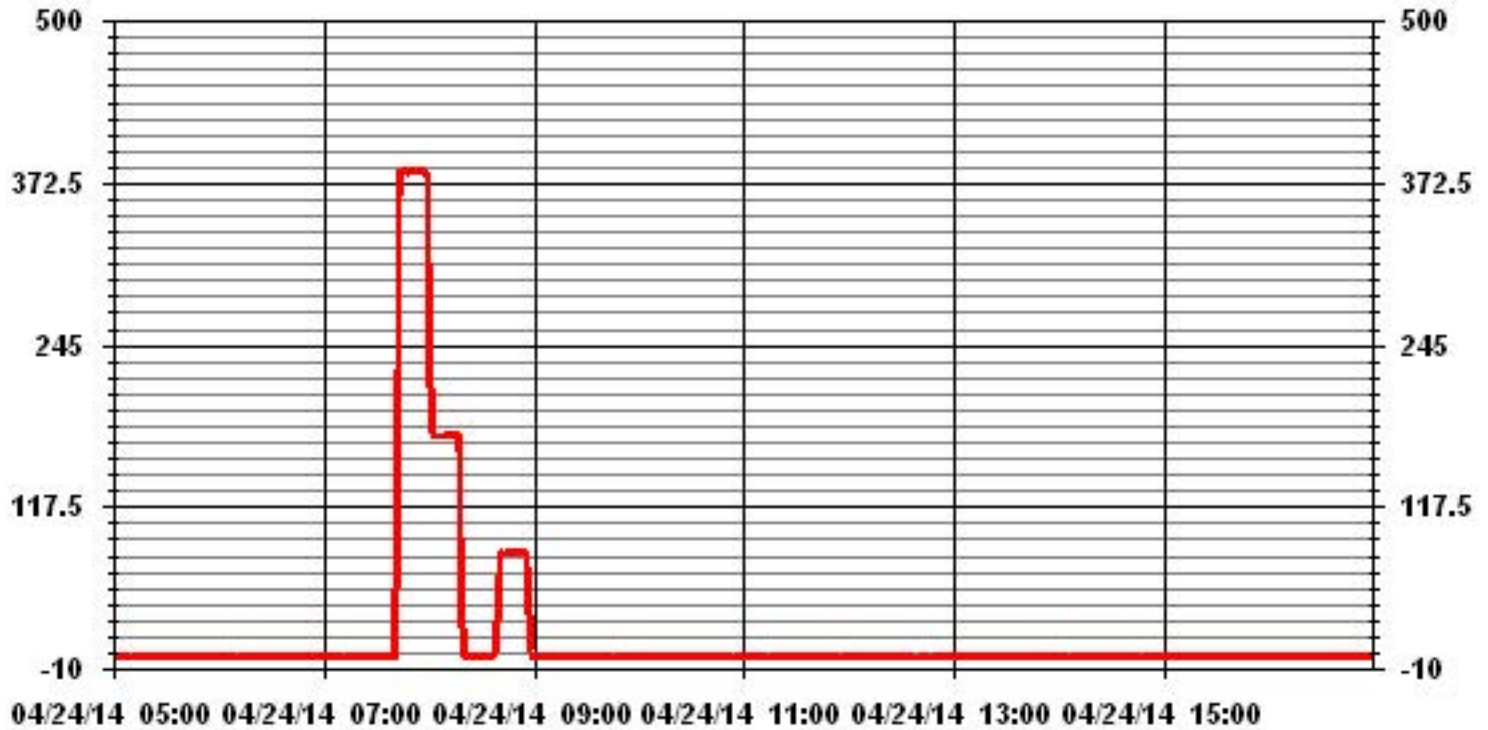


Linda Lin, Supervisor, Centre for Passive Sampling Technology

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

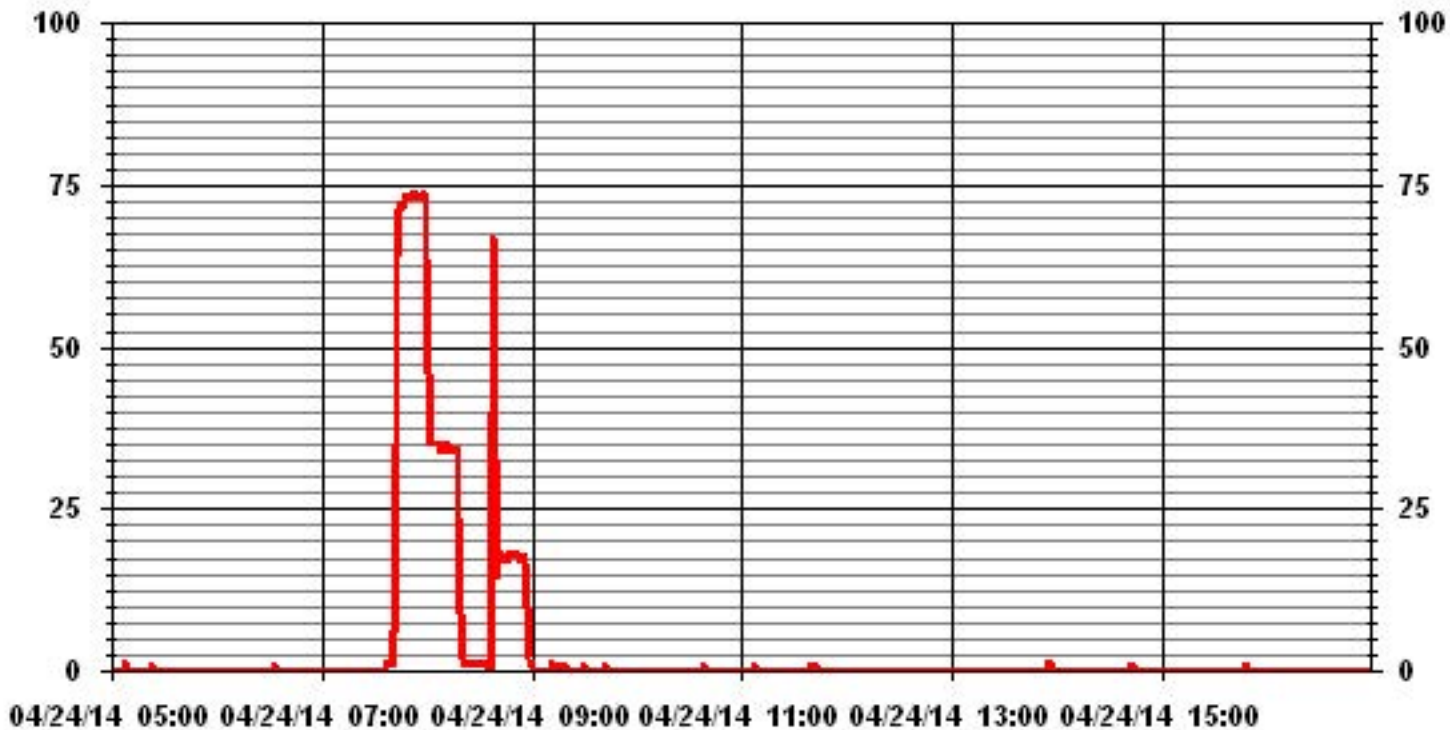
AESRD Audit Report

01 Minute Averages

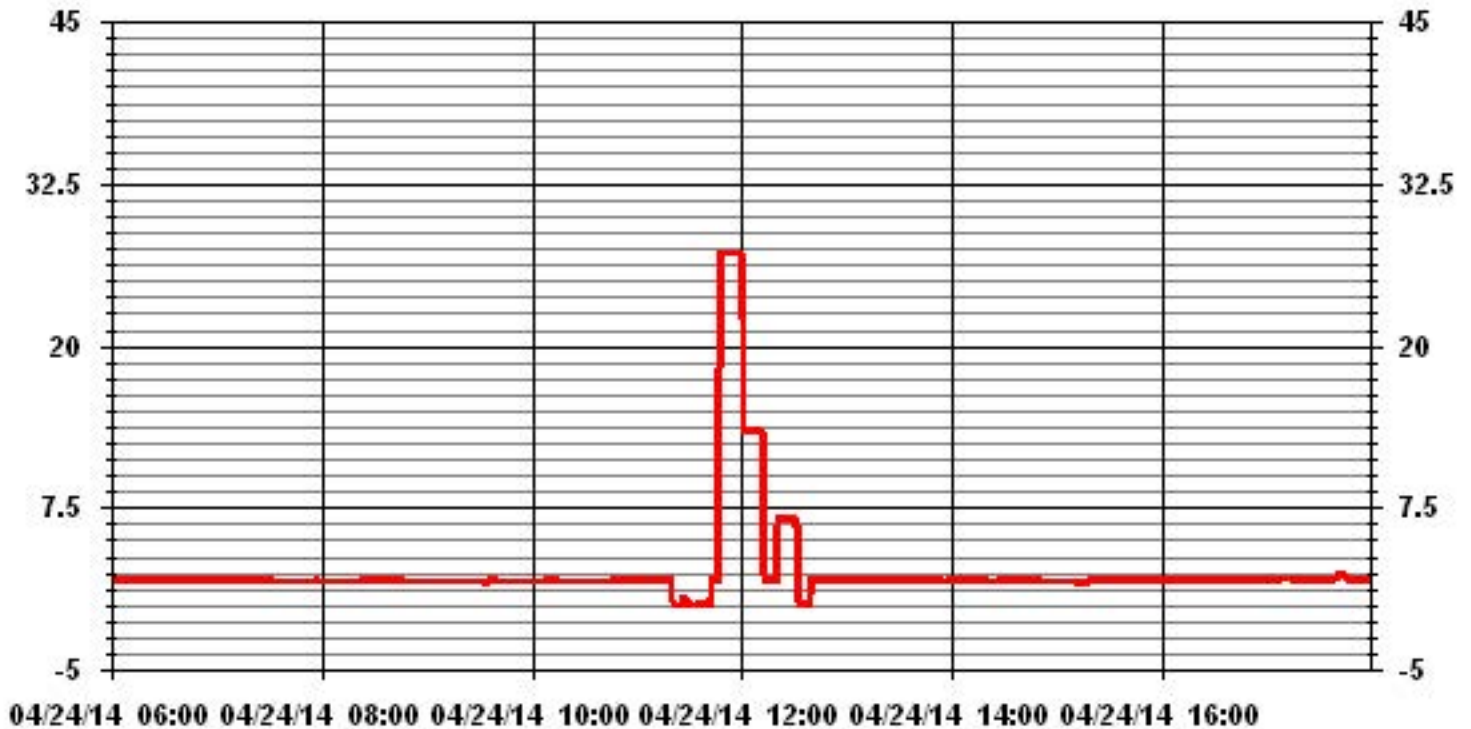


— LICA SO2_ PPB

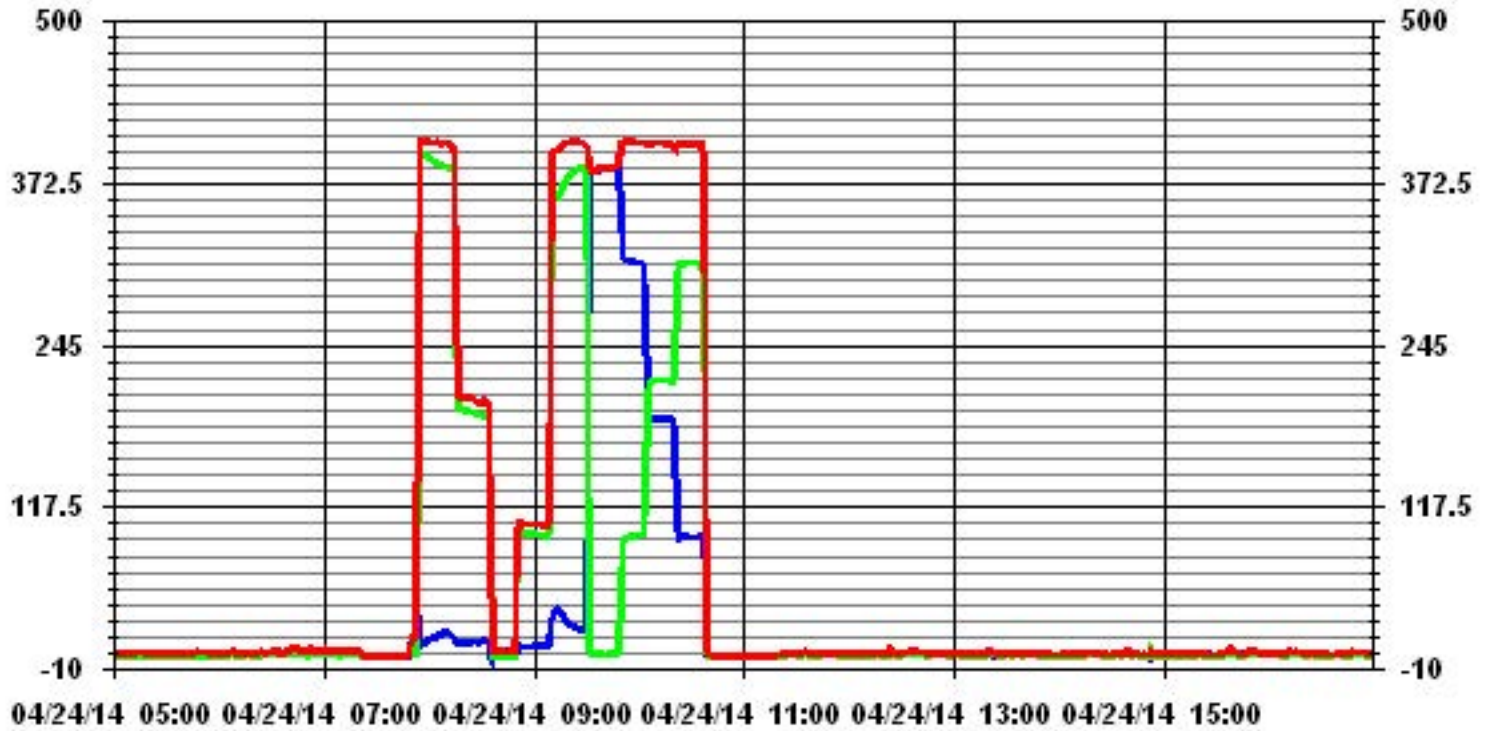
01 Minute Averages



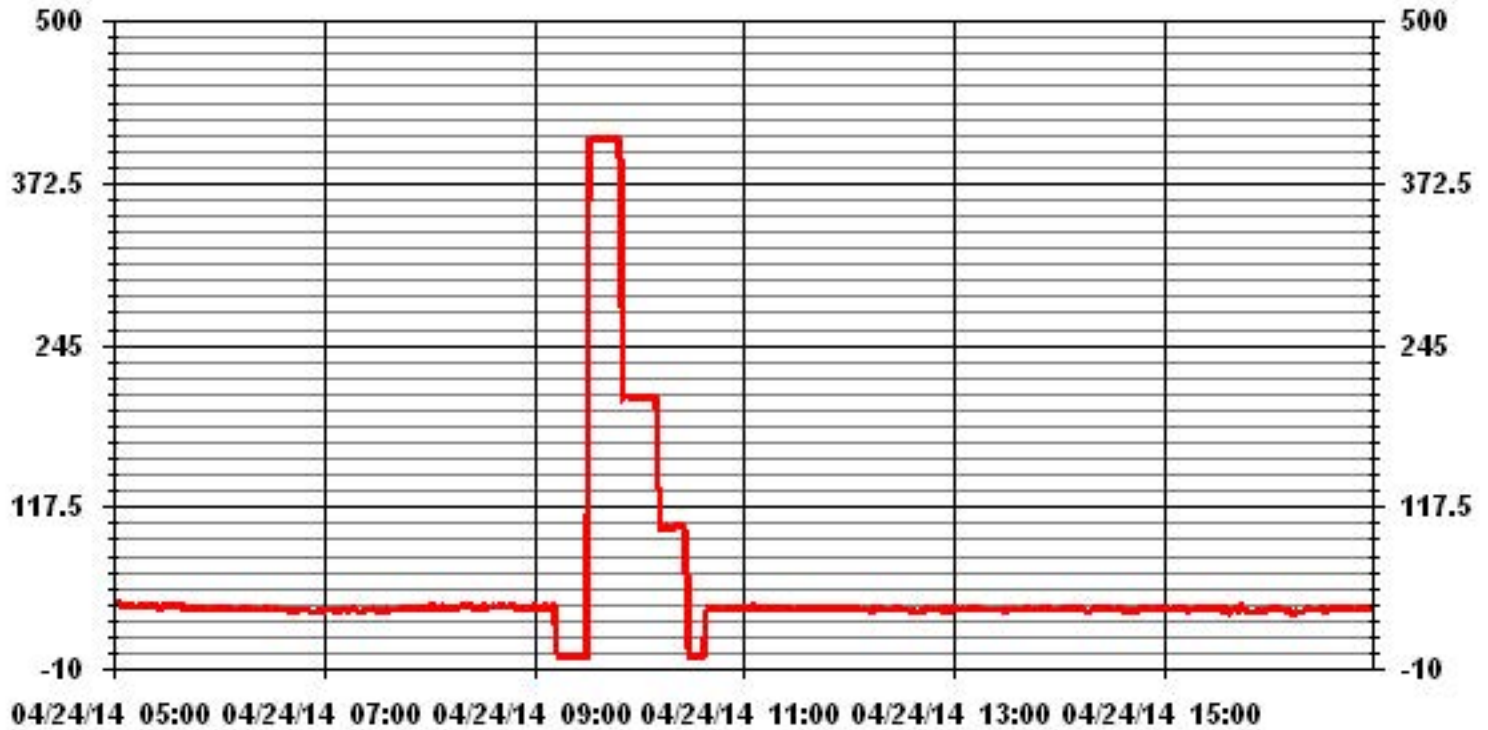
01 Minute Averages



01 Minute Averages



01 Minute Averages



Lakeland Industry & Community Association

Maskwa Monitoring Site
Ambient Air Monitoring
Data Report
For
April 2014

Prepared By:



May 30, 2014

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: April 2014

The monthly ambient data report:

- Prepared by Lili Zhou
- Reviewed by Lily Lin

Calibration Procedure

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

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

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

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

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

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

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

MONTHLY CONTINUOUS DATA SUMMARY

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – MASKWA

Continuous Ambient Monitoring – April 2014

LICA MASKWA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)		
						OBJECTIVES					EXCEEDENCES				
PARAMETER	1-HR	24-HR	1-HR	24-HR	MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY			
SO2 (PPB)	172	48	0	0	0.33	11	8	21	7.6	292(WNW)	1.7	17	100.0		
H2S (PPB)	10	3	0	0	0.12	2	3	5	0.7	139(SE)	0.7	30	100.0		
THC (PPM)	-	-	-	-	2.07	3.5	3	5	0.7	139(SE)	2.3	3	100.0		
NO2 (PPB)	159	-	0	-	0.30	10.3	29	6	1.8	222(SW)	1.4	29	100.0		
NO (PPB)	-	-	-	-	1.94	16.6	8	21	7.6	292(WNW)	4.4	17	100.0		
NO _x (PPB)	-	-	-	-	2.24	20.5	21	10	2.0	309(NW)	5.2	17	100.0		
VECTOR WS (KPH)	-	-	-	-	5.71	16.9	23	15	-	100(E)	12.1	23	100.0		
VECTOR WD (DEGREES)	-	-	-	-	87(E)	-	-	-	-	-	-	-	100.0		
RELATIVE HUMIDITY (%)	-	-	-	-	66.26	91	VAR	VAR	VAR	VAR	89.1	VAR	100.0		
TEMPERATURE (DEG C)	-	-	-	-	1.63	20.8	30	13	3.1	227(SW)	12.0	30	100.0		
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	939.2	960	30	9	3.5	216(SW)	956.6	29	100.0		
PRECIPITATION (MM)	-	-	-	-	0.08	1.9	11, 27	13, 4	4.7, 7.6	90(E) 84(E)	0.5	27	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

A trailer audit was performed on April 25th by Alberta Environment.

Sulphur Dioxide (PPB)

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

No operational issues were observed during the month. The monthly calibration was performed on April 29th. 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: 511

No operational issues were observed during the month. The monthly calibration was performed on April 29th. 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 April 29th. 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 April 29th. The inlet filter was changed before the calibration was started. Data was corrected using daily zero information.

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

- System make / model - MetOne 50.5H Sonic, S/N: H10703 replaced to RM Young 5103VK, S/N: 129612

The wind system is reported as vector wind speed and vector wind direction. The last wind system calibration was performed by manufacturer on February 5th, 2014.

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.

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.

General Monthly Summary

AQM STATION – LICA – Maskwa

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.

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 April 29th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - Maskwa Site

APRIL 2014

SULPHUR DIOXIDE (SO2) 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	1	1	1	1	0	1	1	1	1	1	S	1	2	0	0	0	0	0	0	0	0	2	0.6	24	
2		0	0	0	0	0	0	0	0	0	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
3		0	0	0	0	0	0	0	0	0	0	3	S	1	0	0	0	0	0	0	0	0	0	0	0	3	0.2	24	
4		0	0	0	0	0	3	1	0	0	1	S	0	0	0	0	0	0	1	2	4	1	0	0	1	4	0.6	24	
5		1	1	1	2	2	0	0	0	1	S	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0.4	24	
6		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	
7		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	
8		0	0	0	0	0	0	S	0	0	1	1	0	0	0	0	0	0	0	1	5	2	II	2	2	II	1.1	24	
9		0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	2	2	3	3	2	1	0	3	3	0.7	24	
10		1	0	0	0	S	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24	
11		0	0	0	S	0	0	0	1	3	1	3	1	1	1	2	2	1	0	0	0	0	0	0	0	3	0.7	24	
12		0	0	S	0	0	0	0	0	0	0	0	1	0	0	0	4	1	0	0	1	0	0	0	0	4	0.3	24	
13		0	S	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	0	0	1	1	1	1	0.4	24	
14		S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	S	5	0.3	24	
15		2	3	4	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	S	0	4	0.6	24
16		0	0	0	0	0	1	1	0	0	1	1	1	0	0	0	0	1	0	0	0	S	0	0	0	1	0.3	24	
17		0	0	1	3	5	2	4	5	3	3	2	2	1	1	2	1	2	1	0	0	S	0	0	0	5	1.7	24	
18		0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	S	0	1	0	0	1	0.2	24	
19		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	
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	24	
21		0	0	0	0	0	0	0	0	0	2	8	0	0	0	0	S	0	0	0	0	0	0	0	0	8	0.4	24	
22		0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0	24	
23		0	0	0	0	0	0	0	0	0	1	1	0	1	S	1	1	0	0	0	0	0	0	0	0	1	0.2	24	
24		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	
25		0	0	0	0	0	0	0	C	C	C	0	0	S	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	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
27		0	0	0	0	0	1	4	3	1	0	S	0	0	1	0	1	1	0	0	0	0	1	2	2	4	0.7	24	
28		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	
29		0	0	0	0	0	0	0	0	C	C	C	C	C	0	1	1	2	1	0	0	0	0	0	0	2	0.3	24	
30		0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.1	24	
HOURLY MAX		2	3	4	3	5	3	4	5	3	3	8	2	1	1	2	4	2	2	3	5	2	11	2	3				
HOURLY AVG		0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.3	0.5	0.9	0.4	0.3	0.1	0.3	0.4	0.4	0.3	0.2	0.6	0.2	0.5	0.2	0.3				

STATUS FLAG CODES

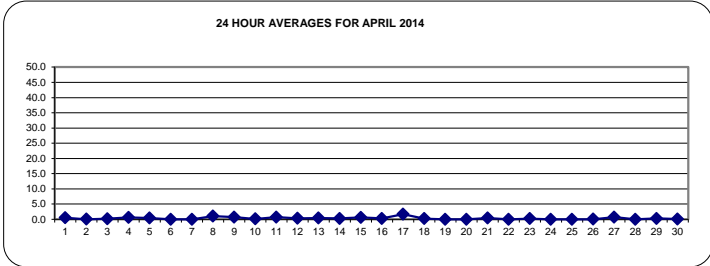
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

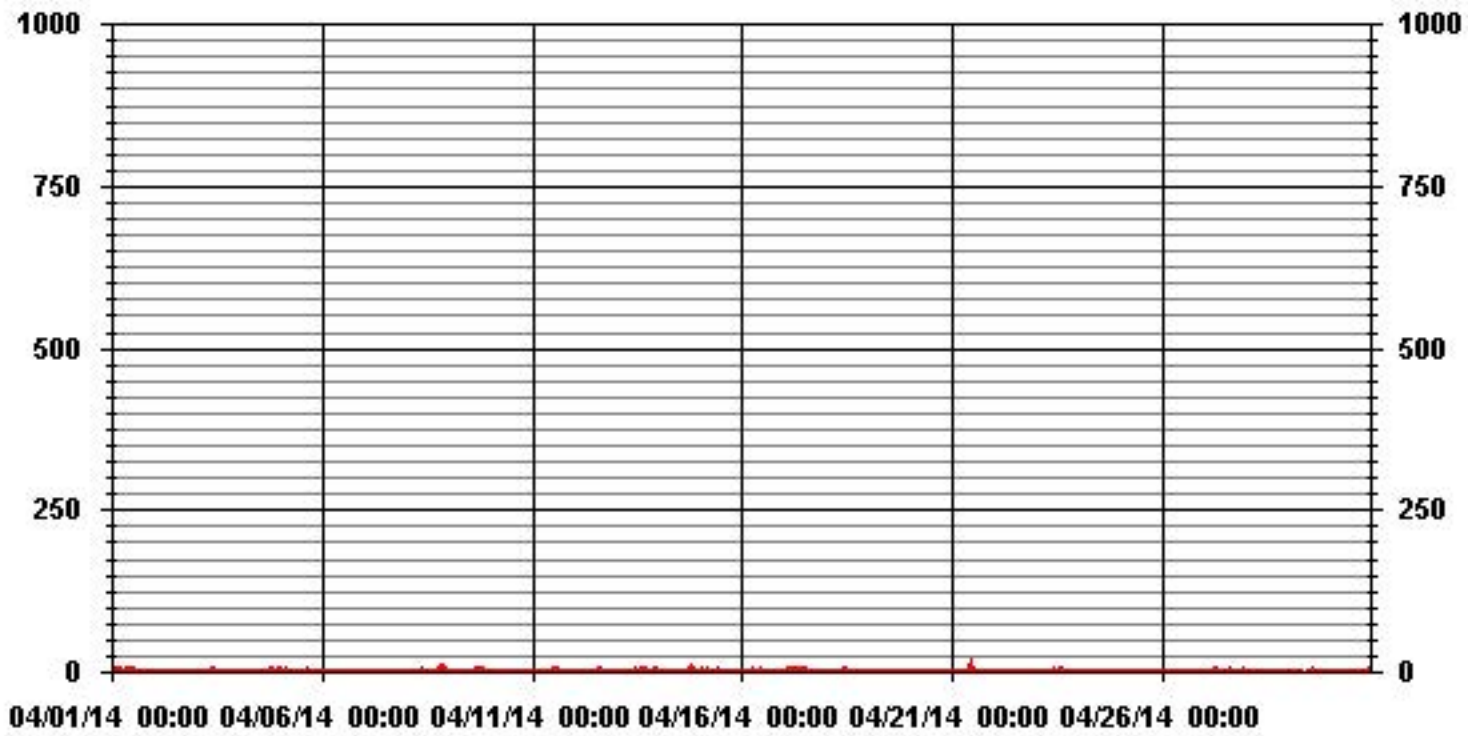
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	133					
MAXIMUM 1-HR AVERAGE:	11	PPB	@ HOUR(S)	21	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:	1.7	PPB			ON DAY(S)	17
					VAR-VARIOUS	
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.92		MONTHLY AVERAGE:	0.33	PPB	



01 Hour Averages



— LICA30 SO2_ PPB

Lakeland Industry & Community Association - Maskwa Site

APRIL 2014

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	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		1	1	1	2	1	1	1	1	1	1	3	2	2	S	3	4	2	1	1	0	0	0	0	0	0	4	1.3	24
2		0	0	0	0	0	0	0	0	1	2	2	1	S	1	1	0	0	0	0	0	0	0	0	0	0	2	0.3	24
3		0	0	0	0	0	0	0	0	0	0	6	S	6	0	0	0	1	2	2	2	1	0	1	0	6	0.9	24	
4		0	1	1	1	1	6	4	1	1	2	S	0	0	1	0	3	4	9	8	11	3	1	0	5	11	2.7	24	
5		2	3	2	9	4	1	0	1	2	S	1	1	1	1	1	1	2	2	1	1	1	1	1	1	9	1.7	24	
6		1	1	1	1	1	1	1	1	S	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	1	0.5	24	
7		0	0	0	0	0	0	0	S	1	1	1	1	1	1	0	1	0	0	0	1	1	1	1	1	1	0.5	24	
8		1	1	1	1	1	1	S	1	1	2	1	1	1	1	0	0	1	5	14	5	29	3	3	29	3.2	24		
9		2	1	1	1	0	S	0	0	0	0	0	0	0	0	0	10	9	15	14	13	5	0	17	17	3.8	24		
10		7	0	0	0	S	0	0	0	1	8	1	0	0	0	5	2	0	0	0	0	0	0	0	0	8	1.0	24	
11		0	0	0	S	0	0	0	6	6	5	6	4	2	4	3	4	2	0	0	0	0	0	0	0	6	1.8	24	
12		0	0	S	0	0	0	0	0	0	4	3	3	4	4	13	4	3	1	4	2	1	0	0	13	2.0	24		
13		0	S	1	1	1	1	1	1	1	1	2	3	3	2	3	3	1	2	2	1	1	2	2	2	3	1.6	24	
14		S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10	8	0	0	S	10	0.9	24		
15		7	7	9	3	2	1	1	1	1	1	4	2	1	1	0	1	0	0	1	0	0	0	S	0	9	1.9	24	
16		0	0	0	0	0	0	4	4	0	1	4	3	5	2	0	0	4	5	0	0	0	S	0	0	5	1.4	24	
17		0	0	4	8	9	4	9	7	5	5	5	6	4	4	5	3	5	3	2	1	S	0	0	0	9	3.9	24	
18		1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	S	1	2	1	0	2	1.0	24	
19		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	
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	24	
21		0	0	0	0	0	0	0	0	0	7	19	1	0	0	0	0	S	1	0	0	0	0	0	0	19	1.2	24	
22		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	
23		0	1	1	1	1	1	1	1	1	1	3	2	1	3	S	4	2	0	0	0	0	0	0	0	4	1.0	24	
24		0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	0	0	0	0	1	0.0	24	
25		0	0	0	0	0	0	0	C	C	C	0	0	S	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	24
26		1	1	1	1	1	1	1	1	1	1	1	S	1	2	2	2	3	1	0	0	0	0	1	1	3	1.0	24	
27		0	1	1	1	1	4	5	4	2	1	S	0	1	3	1	2	3	2	0	0	1	2	4	3	5	1.8	24	
28		1	0	0	0	0	0	0	0	0	S	4	5	0	0	0	0	1	2	1	0	0	0	0	0	5	0.6	24	
29		0	0	0	0	0	0	0	0	C	C	C	C	C	6	5	6	6	5	3	0	0	0	0	0	6	1.6	24	
30		0	0	1	0	0	0	0	S	1	1	0	0	4	2	2	1	1	1	1	1	1	1	1	1	4	0.9	24	
HOURLY MAX		7	7	9	9	9	6	9	7	6	8	19	6	6	6	5	13	10	9	15	14	13	29	4	17				
HOURLY AVG		0.8	0.7	0.9	1.1	0.8	0.8	1.0	1.1	1.0	1.6	2.5	1.4	1.4	1.5	1.3	1.8	1.8	1.7	1.6	2.2	1.4	1.6	0.6	1.2				

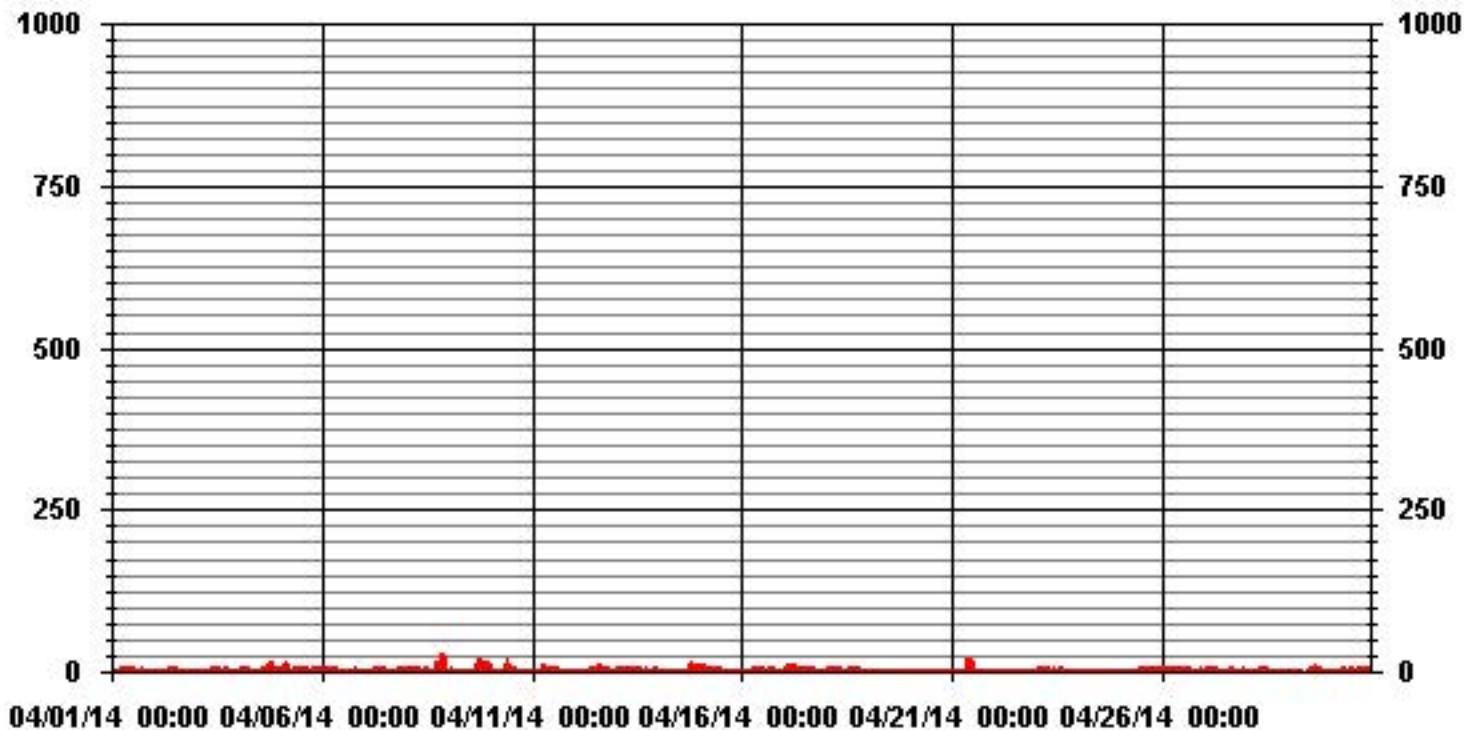
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	340
MAXIMUM INSTANTANEOUS VALUE:	29 PPB @ HOUR(S) 21 ON DAY(S) 8
	VAR-VARIOUS
IZS CALIBRATION TIME:	30 HRS
MONTHLY CALIBRATION TIME:	8 HRS
STANDARD DEVIATION:	2.54
OPERATIONAL TIME:	720 HRS

01 Hour Averages



LICA30
 SO2_ / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

Logger Id : 30
 Site Name : LICA30
 Parameter : SO2_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	3.22	3.66	12.60	11.73	14.66	6.74	7.03	4.54	4.69	8.50	3.22	2.05	6.59	5.27	2.93	2.49	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	3.22	3.66	12.60	11.73	14.66	6.74	7.03	4.54	4.69	8.50	3.22	2.05	6.59	5.27	2.93	2.49	

Calm : .00 %

Total # Operational Hours : 682

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	22	25	86	80	100	46	48	31	32	58	22	14	45	36	20	17	682
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	22	25	86	80	100	46	48	31	32	58	22	14	45	36	20	17	

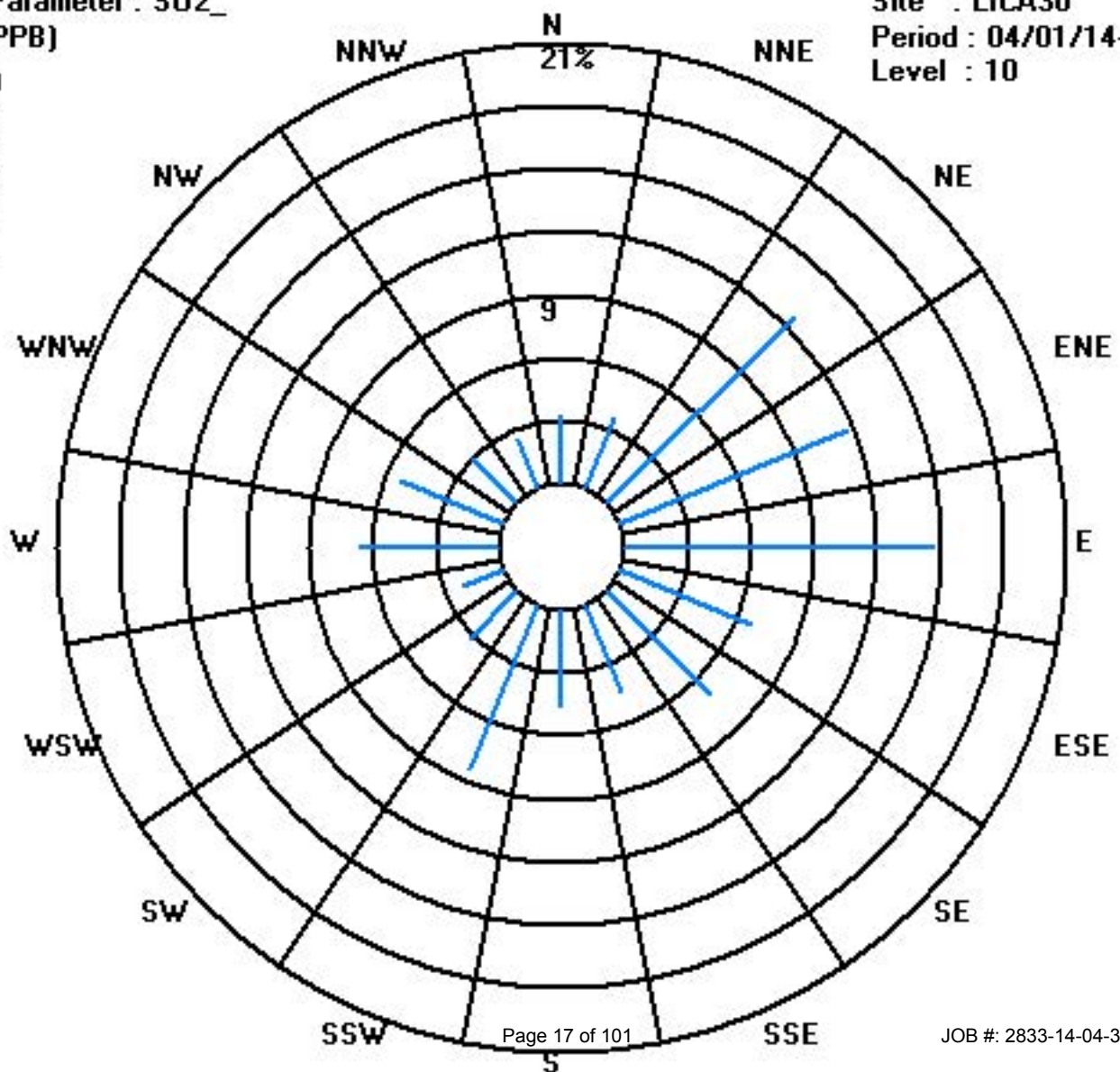
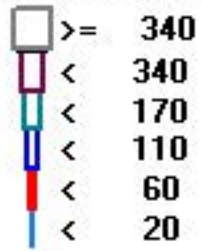
Calm : .00 %

Total # Operational Hours : 682

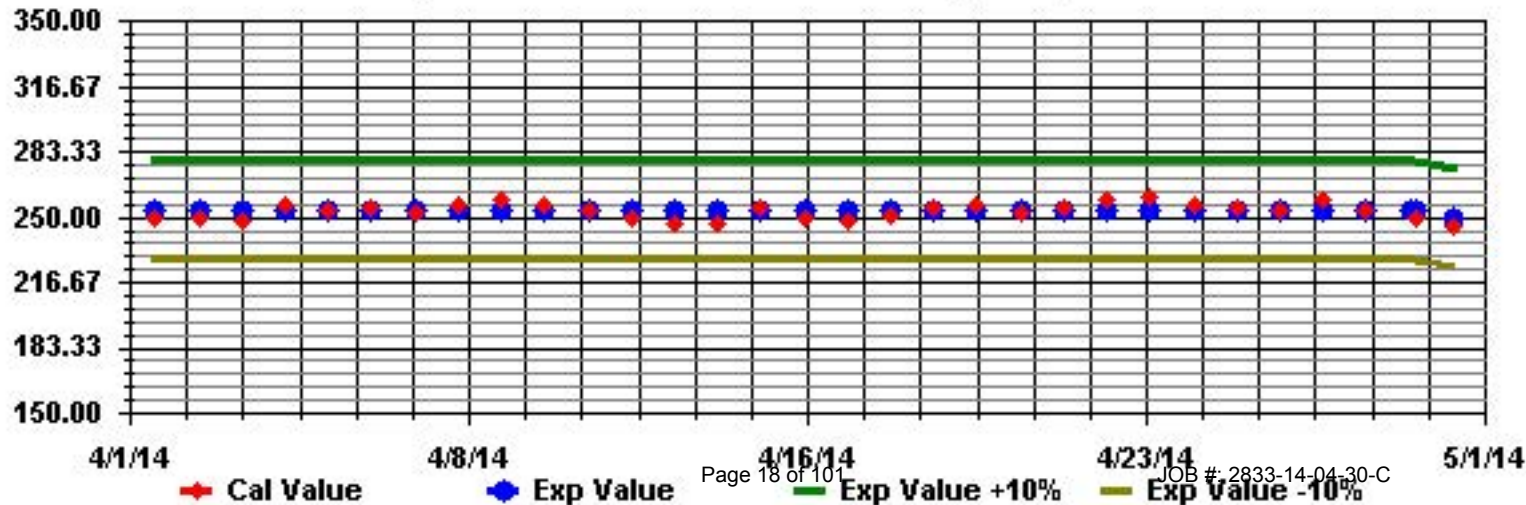
Class Limits (PPB)

Period : 04/01/14-04/30/14

Level : 10



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



Hydrogen Sulphide

Lakeland Industry & Community Association - Maskwa Site

APRIL 2014

HYDROGEN SULPHIDE (H2S) hourly averages in ppb

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

STATUS FLAG CODES

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

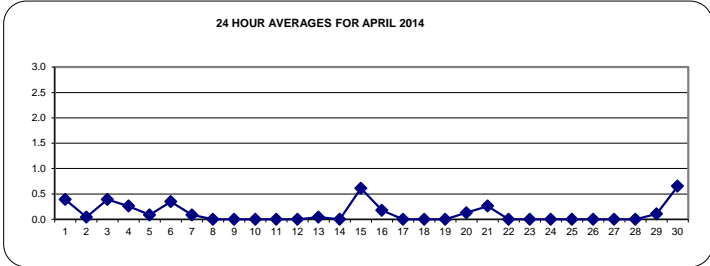
OBJECTIVE LIMIT:

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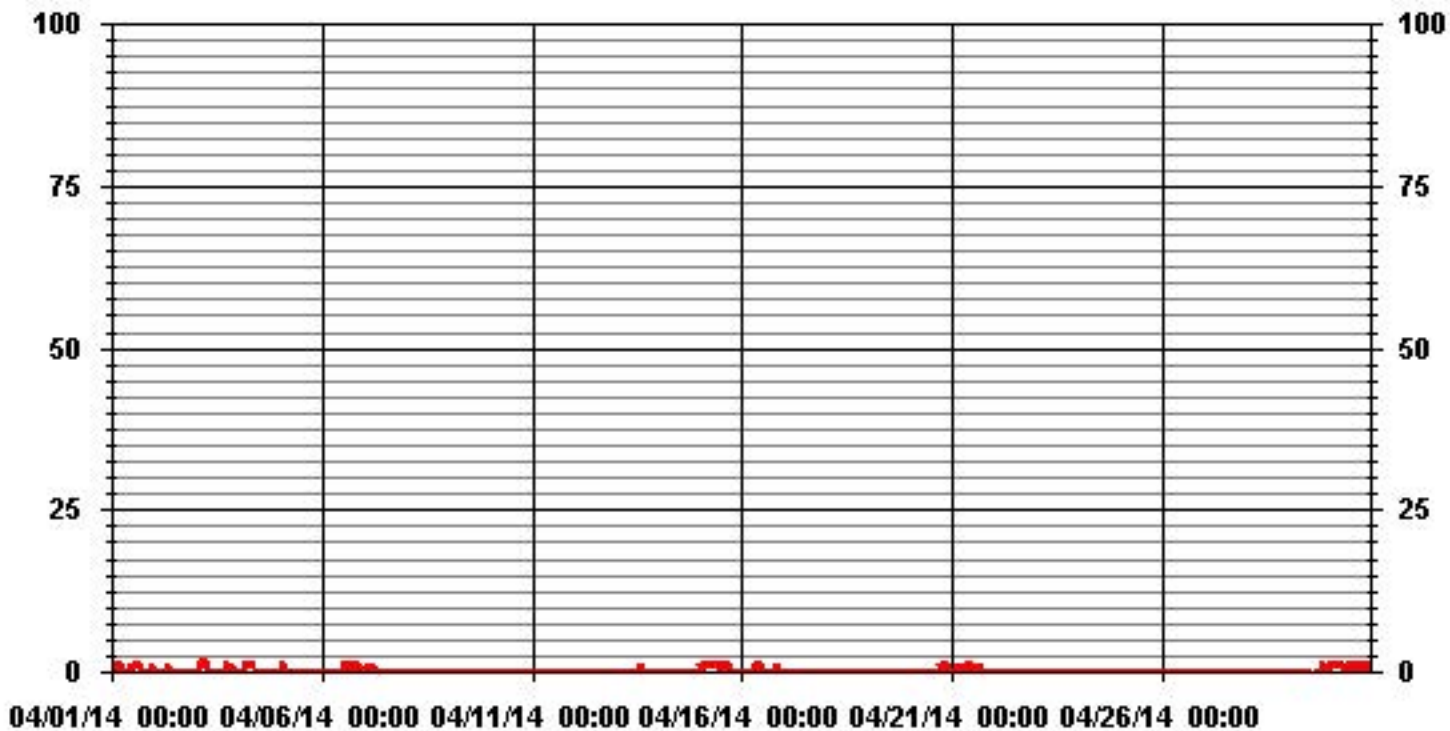
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	81					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	5	ON DAY(S)	3
MAXIMUM 24-HR AVERAGE:	0.7	PPB			ON DAY(S)	30
					VAR-VARIOUS	
I/S CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.33		MONTHLY AVERAGE:	0.12	PPB	

24 HOUR AVERAGES FOR APRIL 2014



01 Hour Averages



Lakeland Industry & Community Association - Maskwa Site

APRIL 2014

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

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

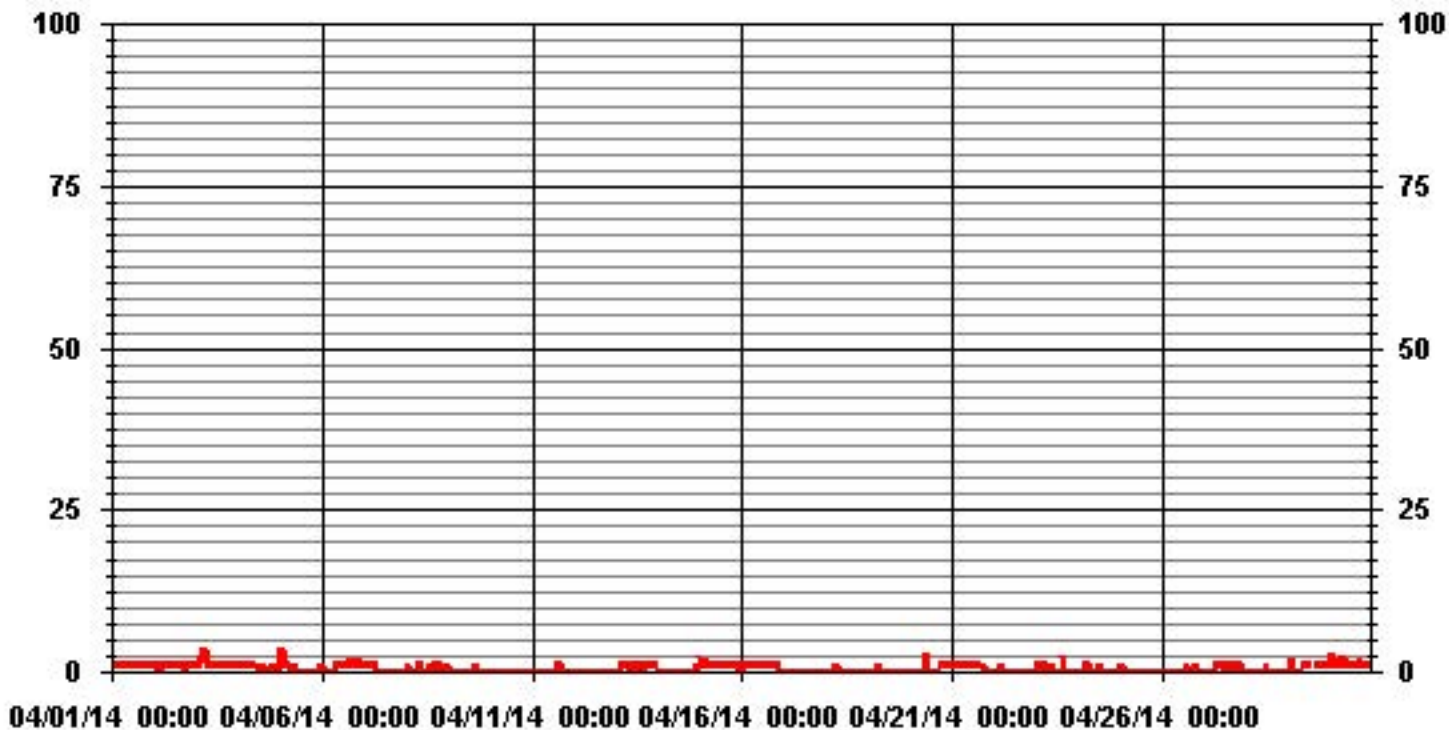
STATUS FLAG CODES

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:	271
MAXIMUM INSTANTANEOUS VALUE:	3 PPB @ HOUR(S) VAR ON DAY(S) VAR
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	0.59
OPERATIONAL TIME:	718 HRS

01 Hour Averages



LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

Logger Id : 30
Site Name : LICA30
Parameter : H2S_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	3.22	3.66	12.60	11.73	14.66	6.74	7.03	4.54	4.69	8.50	3.22	2.05	6.89	5.13	2.78	2.49	100.00
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.22	3.66	12.60	11.73	14.66	6.74	7.03	4.54	4.69	8.50	3.22	2.05	6.89	5.13	2.78	2.49	

Calm : .00 %

Total # Operational Hours : 682

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	22	25	86	80	100	46	48	31	32	58	22	14	47	35	19	17	682
< 10																	
< 50																	
>= 50																	
Totals	22	25	86	80	100	46	48	31	32	58	22	14	47	35	19	17	

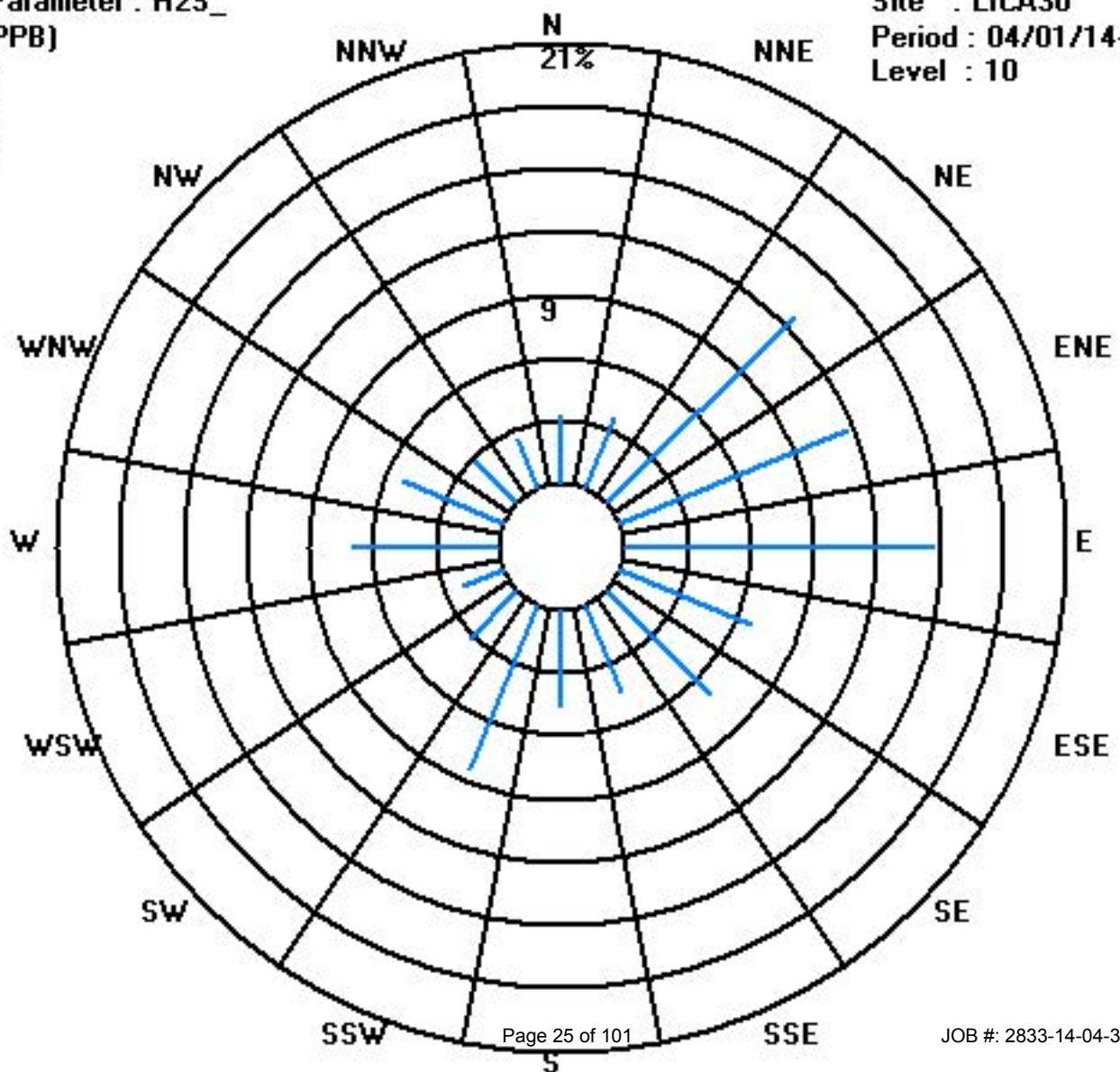
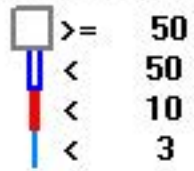
Calm : .00 %

Total # Operational Hours : 682

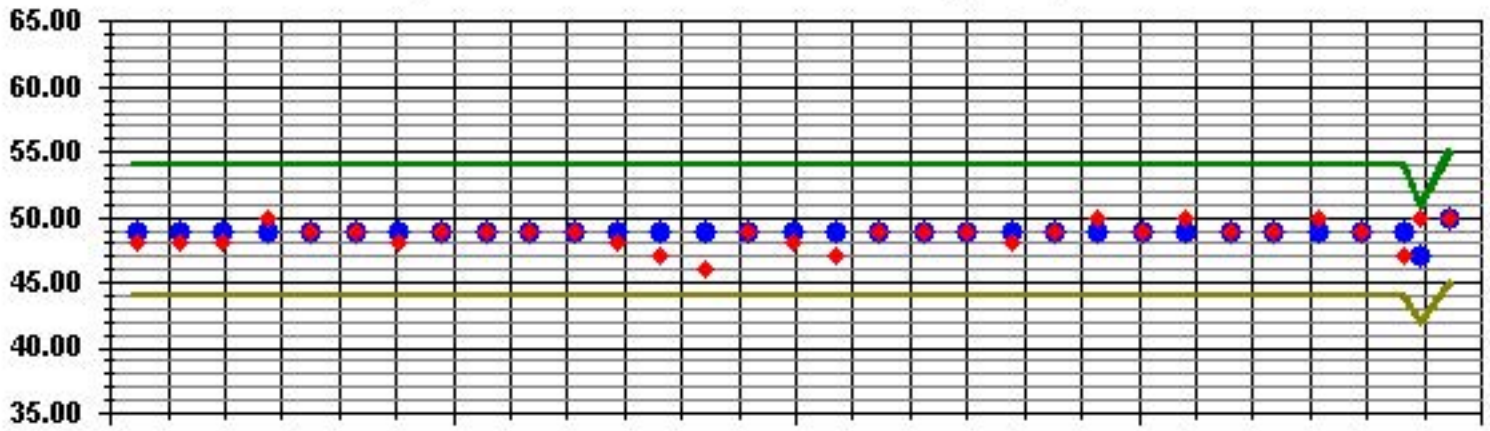
Class Limits (PPB)

Period : 04/01/14-04/30/14

Level : 10



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



4/1/14

4/8/14

4/16/14

4/23/14

5/1/14

◆ Cal Value

◆ Exp Value

— Exp Value +10%

— Exp Value -10%

Total Hydrocarbons

Lakeland Industry & Community Association - Maskwa Site

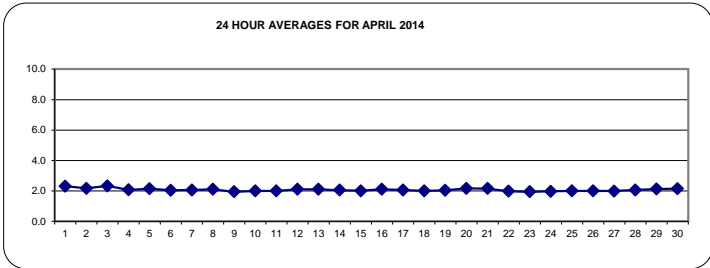
APRIL 2014

TOTAL HYDROCARBONS (THC) hourly averages in ppm

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

STATUS FLAG CODES

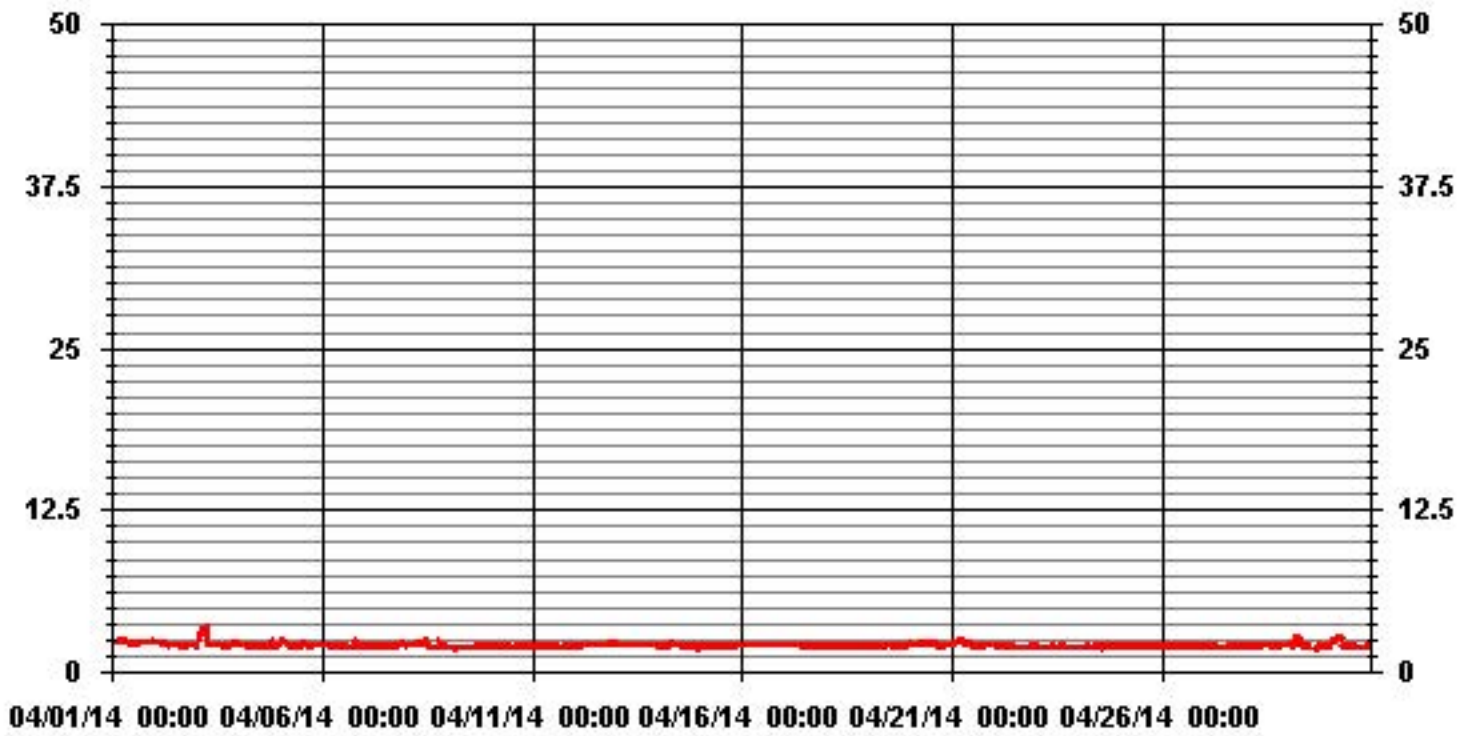
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	683					
MAXIMUM 1-HR AVERAGE:	3.5	PPM	@ HOUR(S)	5	ON DAY(S)	3
MAXIMUM 24-HR AVERAGE:	2.3	PPM			ON DAY(S)	3
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.15		MONTHLY AVERAGE:	2.07	PPM	

01 Hour Averages



— LICA30 THC PPM

Lakeland Industry & Community Association - Maskwa Site

APRIL 2014

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 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		2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.2	S	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.5	2.5	2.5	2.3	24	
2		2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.2	2.2	2.2	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.9	2.9	2.2	24	
3		2.4	2.4	4.2	3.8	4.3	4.7	3.8	2.3	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	2.2	2.3	2.3	4.7	2.6	24	
4		2.3	2.1	2.2	2.2	2.1	2.2	2.1	2	2	2.1	S	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.4	2.6	2.1	2.3	2.1	2.7	2.7	2.2	24	
5		2.4	2.7	2.7	2.7	2.5	2.3	2.1	2.1	2	S	2	2.1	2.1	2.2	2.2	2.2	2.5	2.4	2.1	2.1	2.1	2.4	2.3	2.2	2.7	2.3	24	
6		2.2	2.2	2.2	2.3	2.3	2	2	2	S	2.1	2.1	2	2.2	2.2	2.1	2	2	2.3	2.6	2.5	2	2	2	2.6	2.1	24		
7		2	2	2.1	2.1	2.1	2	2.1	S	2.7	2.5	2.4	2	2	2	2	2.2	2.3	2.2	2	2	2.2	2.2	2.3	2.3	2.7	2.2	24	
8		2.2	2.2	2.2	2.1	2.2	2.2	S	2.2	2.2	2.3	2.4	2.5	2.1	2	2	1.9	1.9	1.9	2.5	2.8	2.5	2.4	2.3	2.3	2.8	2.2	24	
9		2.1	2	2	2.1	2	S	1.9	1.9	2	2	2	2	2	1.9	2	2.1	2.1	2.2	2.2	2.4	2.2	2.2	2	2.3	2.4	2.1	24	
10		2.4	2	2	2	S	2	2	2	2.2	2.2	2.1	2.1	2.1	2	2.2	2.1	2.1	2	2	2	2.1	2	2.1	2	2.1	2.4	2.1	24
11		2	2	2	S	2	2	2	2.1	2.1	2	2.1	2	2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2.1	2.0	24
12		2.1	2	S	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.2	2.3	2.3	2.1	2.3	2.8	2.8	2.1	2.7	2.8	2.2	24	
13		2.7	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	2.6	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.7	2.2	24	
14		S	2.2	2.1	2	2	2.1	2.1	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2	2	2	2.1	2.2	2.1	2	2	S	2.3	2.1	24		
15		2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2.1	2.1	2	2	2	2	2	2	2	2	2	2.1	2.2	S	2.1	2.2	2.0	24
16		2.2	2.2	2.1	2.1	2.3	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	S	2.1	2.1	2.3	2.1	24	
17		2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	S	2	2	2.2	2.1	24	
18		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2.1	2	2	2.1	2.0	24	
19		2	2.1	2.2	2.1	2	2.2	2	2	2	2	2.1	2.3	2.3	2.1	2.1	2.1	2	2	S	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.1	24
20		2.2	2.6	2.2	2.1	2.2	2.3	2.3	2.2	2.2	2.4	2.3	2.3	2.2	2.2	2.3	2.3	2.2	S	2.1	2.1	2.1	2.2	2.1	2.2	2.6	2.2	24	
21		2.2	2.2	2.8	2.3	2.4	3.3	2.6	2.5	2.1	2.2	2.5	2.1	2.1	2.1	2	2	S	2.1	2.1	2.1	2.3	2.7	2.4	2.1	3.3	2.3	24	
22		2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	1.9	S	1.9	1.9	1.9	1.9	2	2	2	2	2	2	2.1	2.0	24
23		2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	S	2.6	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.6	2.0	24
24		1.9	1.9	1.9	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2	2	2.1	2	2	2	2	2.1	2.0	24
25		2	2	2	2	2	2	2	2	2	2	C	C	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	24
26		2	2	2	2	2	2	2	2	2	2.1	2	S	2	2	2.1	2	2	2.1	2	2	2	2	2	2	2	2.1	2.0	24
27		2	2	2	2	2	2.1	2.1	2	1.9	1.9	S	2	2	2	2	2	2.1	2	2	2	2.1	2	2.1	2	2.1	2.0	24	
28		2	2	2	2	2	2	2.4	2.1	2.1	S	2.1	2.2	Y	Y	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.5	2.1	2.5	2.1	22	
29		2.1	2.4	2.6	2.3	2.4	3.6	3.2	2.4	S	2.1	2.2	2.2	2.1	C	C	C	C	2.1	2.2	2.2	2	2	2.2	2.2	3.6	2.3	24	
30		3.1	2.6	2.6	2.5	2.7	2.8	2.9	S	2.2	2	2	2.1	2	2.1	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.1	2.4	3.1	2.2	24
HOURLY MAX		3	3	4	4	4	5	4	3	3	3	3	3	2	2	3	3	3	2	3	3	3	3	3	3	3	3	3	
HOURLY AVG		2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	

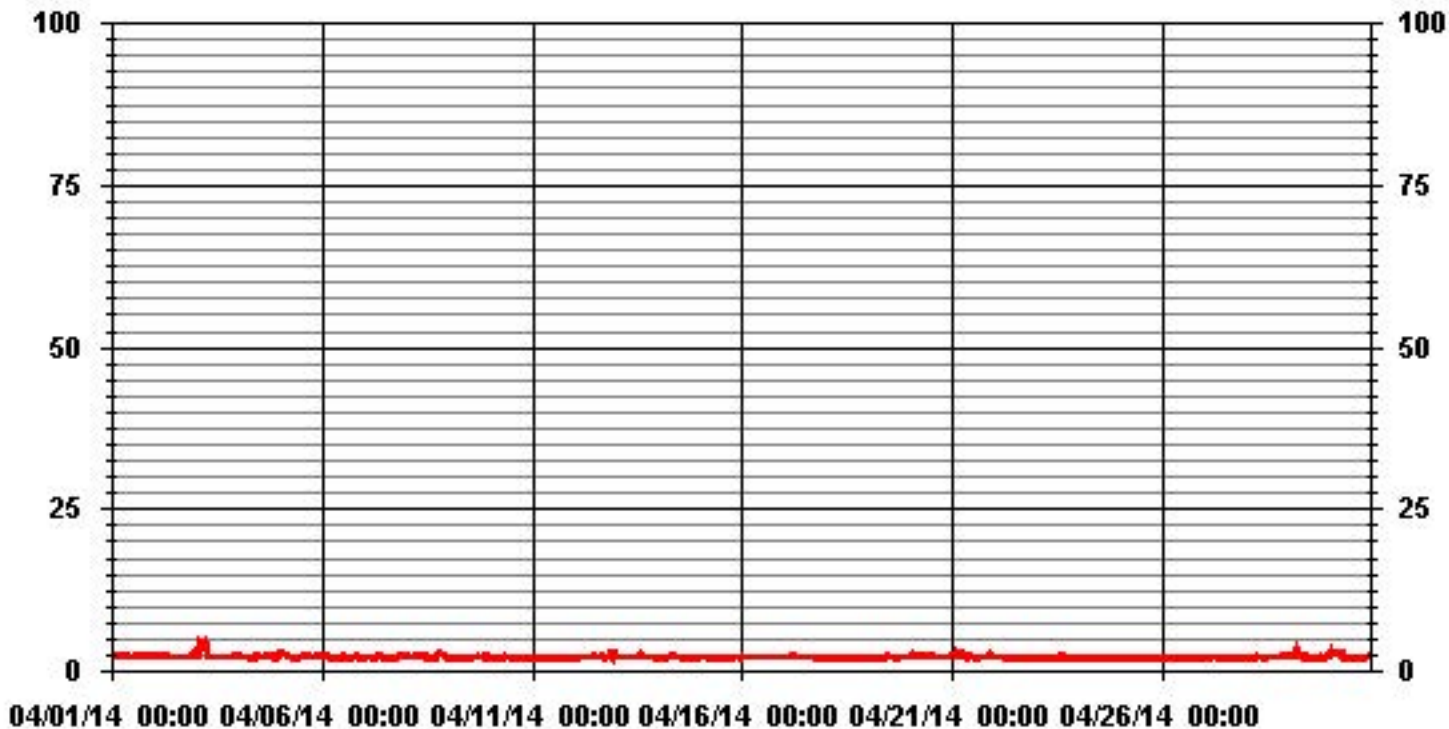
STATUS FLAG CODES

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:	681
MAXIMUM INSTANTANEOUS VALUE:	4.7 PPM @ HOUR(S) 5 ON DAY(S) 3
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	6 HRS
OPERATIONAL TIME:	718 HRS
STANDARD DEVIATION:	0.26

01 Hour Averages



LICA30
 THC / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	3.22	3.51	12.73	11.85	14.64	6.73	6.88	4.39	4.53	8.49	3.22	2.04	6.88	5.12	2.78	2.48	99.56
< 10.0	.00	.00	.00	.00	.00	.00	.14	.14	.14	.00	.00	.00	.00	.00	.00	.00	.43
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.22	3.51	12.73	11.85	14.64	6.73	7.02	4.53	4.68	8.49	3.22	2.04	6.88	5.12	2.78	2.48	

Calm : .00 %

Total # Operational Hours : 683

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	22	24	87	81	100	46	47	30	31	58	22	14	47	35	19	17	680
< 10.0							1	1	1								3
< 50.0																	
>= 50.0																	
Totals	22	24	87	81	100	46	48	31	32	58	22	14	47	35	19	17	

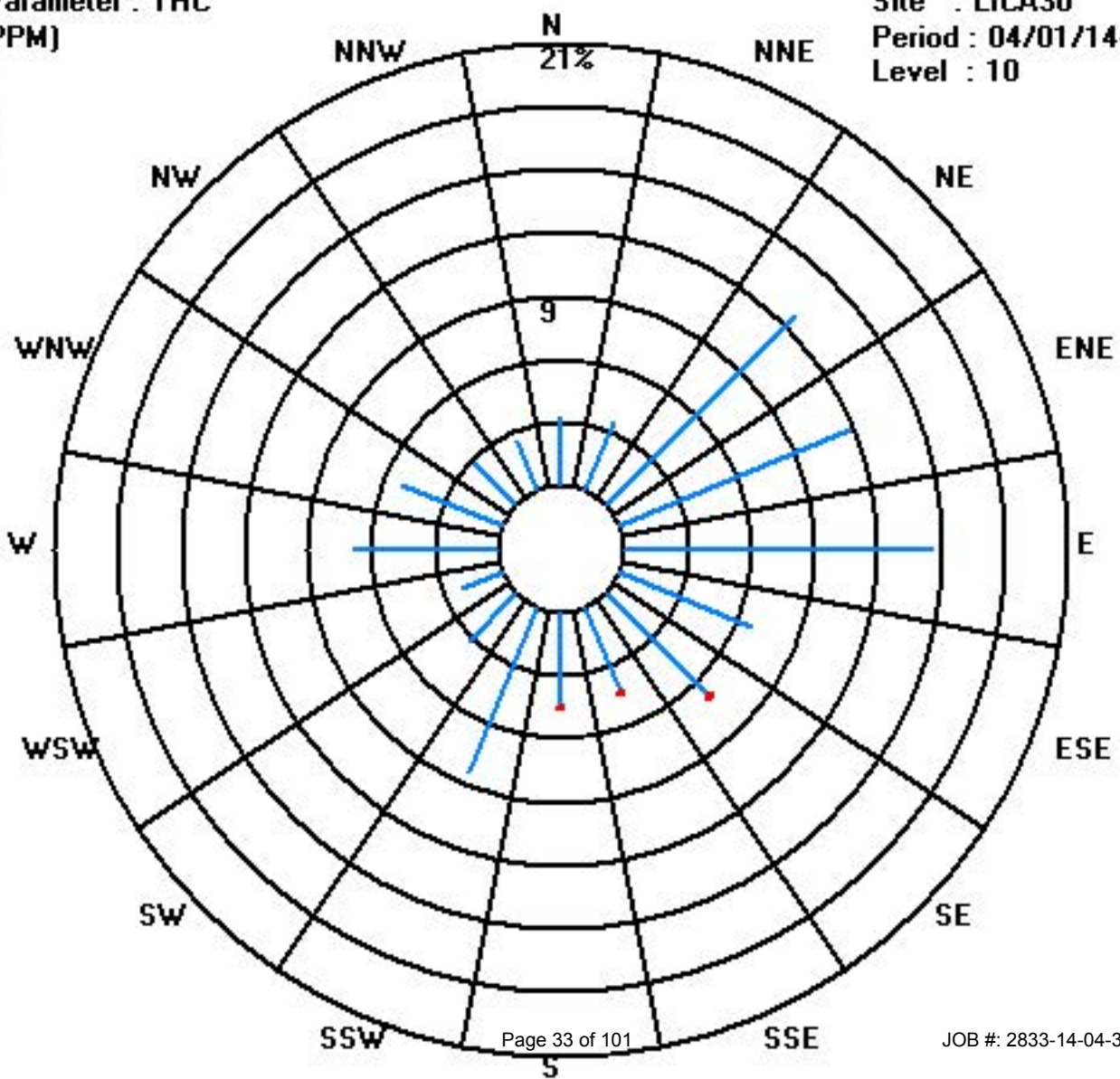
Calm : .00 %

Total # Operational Hours : 683

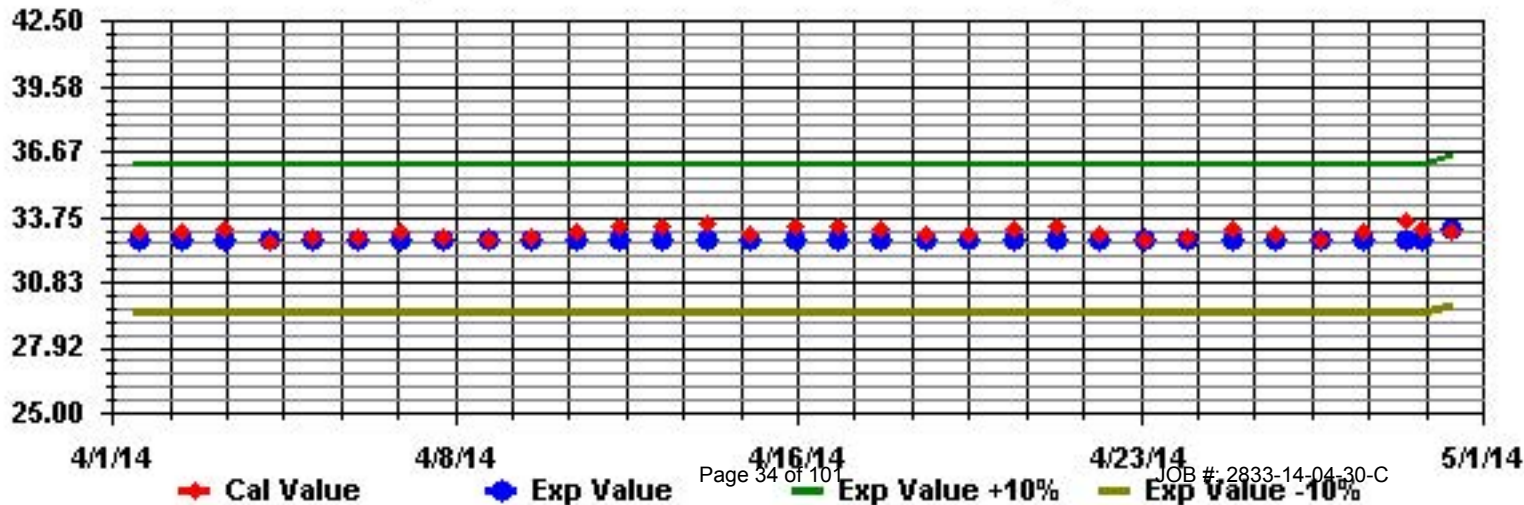
Class Limits (PPM)

Period : 04/01/14-04/30/14

Level : 10



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



Nitrogen Dioxide

Lakeland Industry & Community Association - Maskwa Site

APRIL 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	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	1.3	1.8	3.2	2.8	2.8	3.2	3.7	4.6	3.4	4.1	2.1	1.7	S	3.2	5.1	2.8	3	3.2	2.5	3.7	2.3	3.4	3.1	5.1	3.0	24			
2		1.9	2.5	2.4	3.4	3.9	4.8	4.5	4.2	1.5	2.1	1.1	0.6	S	0.5	0.4	0	0	0	0.4	0.2	0.2	0.7	0.8	4.8	1.6	24				
3		0.9	1.5	1.4	1.5	2.3	2.9	2.6	3	1.2	0.8	4.8	S	2	0.9	0.8	0.9	0.7	0.7	0.6	0.2	0.8	1.5	2.1	1.8	4.8	1.6	24			
4		1.8	1.7	1.6	1.3	1.1	8.6	3.2	1.7	1.7	3.1	S	2.3	2.5	2.8	1.5	2.6	2.3	2.7	5.8	10	9.3	1.8	1.5	3.3	10	3.2	24			
5		5.9	9.3	9.7	7.3	6.6	2	1.4	1.8	4.5	S	1.3	1	1.3	1.9	2	1.6	2.1	5.6	2.5	1.7	1.7	2	1.8	1.7	9.7	3.3	24			
6		1.5	1.5	1.6	2.9	2	2	1.2	2.3	S	1.9	2.1	1.5	2.4	2.8	1.2	0.5	0.5	0.2	0.9	8.9	12.7	1.4	0.2	0.3	12.7	2.3	24			
7		0.7	0.4	1.7	2.5	2.6	2.1	2.8	S	1	1	0.6	0.6	1	0.7	0.3	0	0.3	0.4	0	0.5	1.6	2.7	2.4	2.3	2.8	1.2	24			
8		1.8	2.7	2.3	2.1	2.3	4.1	S	5.1	5.1	5.6	4.6	4.6	2.4	1.8	0.6	0	0.6	0	1.8	6.6	7.8	16.6	8.1	10.9	16.6	4.2	24			
9		3.5	0.2	0	0.9	0	S	0.8	0.6	0.9	0.5	0.4	0.4	0.5	0.2	0.3	0.8	3.9	3	6.5	6.2	5.8	9.4	0.5	7.8	9.4	2.3	24			
10		5.2	0.2	0.6	0.7	S	1.3	2.9	1.5	1.3	4.4	1	0.8	0.8	1.1	2.6	1.5	0.5	0.3	0.4	0.5	0.8	0.5	0.6	0.6	5.2	1.3	24			
11		0.5	0.1	0.1	S	0.9	0.9	0.7	6.2	8.5	6.2	10.1	5	3.4	4.8	8.5	7	4.2	0.5	0.2	0.3	0.2	0.2	0.3	0.4	10.1	3.0	24			
12		0.5	0.4	S	0	0.2	0.3	2.9	2.5	1.3	1.2	2.1	2.3	1.5	1.5	1.8	6.3	3.1	3	0.5	3.4	3.3	2.8	1.3	1.2	6.3	1.9	24			
13		2.2	S	1.1	0.5	0.2	0.1	0.4	0.2	0.4	0.3	0.8	1.2	1.3	0.8	1.1	1	0.8	1	0.8	0.6	0.8	1.3	1.3	0.6	2.2	0.8	24			
14		S	1.1	0.7	0.7	0.4	0.6	1	1.9	2.2	2	1.2	1	1.3	1.3	1	1.1	1	1	1.4	13.6	4.8	0.6	0.2	S	13.6	1.8	24			
15		5.7	6.8	6.6	5.3	2.6	0.7	0.5	0.6	0.3	0.2	4.4	2.1	0.2	0.1	0	0.2	0.2	0.1	0	0	0	0.1	S	0.1	6.8	1.6	24			
16		0.4	0.3	0	0.5	0.8	1.1	8.4	4.2	0.7	1.3	2.5	2.4	2.6	0.9	0.4	0.3	1.5	3.4	0.6	0.9	0.5	S	0.5	0.6	8.4	1.5	24			
17		0.7	0.9	5.8	10.2	13.7	7.1	8.8	11.7	6.4	5.4	3.1	4.3	3	2.6	5.5	3.5	4.1	2	1.8	0.8	S	0.2	0.3	0.3	13.7	4.4	24			
18		0.4	0.2	0.3	0.3	0.2	0.3	0.2	0.4	0.5	0.6	0.9	1.5	0.7	0.6	0.7	0.7	0.4	0.1	0.2	S	4.5	6.5	1.8	1.9	6.5	1.0	24			
19		1.2	0.7	0.6	0.7	0.9	0.8	2.3	2.5	1.7	1.5	1.9	2.7	2.5	1.9	1.3	1.1	0.8	0.4	S	1.2	1.2	1.2	1.4	1.5	2.7	1.4	24			
20		2.2	2	1.5	1.2	0.9	1.1	1.9	1.9	2.6	3	3.1	3.1	2.5	2.2	2.1	2.3	2	S	2.8	2.4	1.6	1.2	0.8	1.5	3.1	2.0	24			
21		2.7	1.6	1.8	2.2	2.8	3	5	4.1	2.8	6	13.1	1.5	0.8	0.1	0	0	S	0.7	0.6	0.2	0.8	1.3	0.7	1.1	13.1	2.3	24			
22		1	0.6	0.5	0.5	0.8	0.6	0.5	0.6	0.5	0.5	0.6	0.4	0.5	0.2	0	S	0	0	0	0	0	0.1	0.3	0.5	1	0.4	24			
23		0.4	0.7	0.4	0.4	0.6	0.6	0.6	0.4	0.6	1.4	4.6	3.1	1.5	4.3	S	9.3	6.2	0.9	0.6	0.8	0.4	0.3	0.4	0.4	9.3	1.7	24			
24		0.5	0.4	0.4	0.5	0.5	0.3	0.4	0.4	0.5	0.3	0.5	0.3	0.5	S	0.9	0.8	0.8	0.8	0.9	3.3	1.2	0.8	0.5	0.9	3.3	0.7	24			
25		0.9	1	0.9	0.8	0.9	0.8	1	C	C	C	C	0	S	0.1	0	0.1	0.3	0.4	0.2	0.3	0.3	0.2	0.5	0.4	1	0.5	24			
26		0.4	0.9	0.2	0.3	0.3	0.2	0.5	0.7	0.3	0.8	1.1	S	1	1.5	1.6	0.7	1.1	0.9	0	0	0	0	1.6	0.2	1.6	0.6	24			
27		0	0	0	0.1	0	8.1	15.5	11.2	3.6	0.5	S	0.4	0.5	1.8	1.2	2.4	3.6	0.9	0.6	1	2.6	3.5	11.4	7.9	15.5	3.3	24			
28		0	0	0	0	0	0.2	1.9	2	1.4	S	1.7	2.5	1.9	1.2	1.1	0.8	0.6	2	2	2.9	0.6	0.4	0.5	0.3	2.9	1.0	24			
29		0.4	0.6	0.4	0.3	0.4	2.3	5.5	8.2	C	C	C	C	C	C	1.4	2.2	3.8	0.8	0.1	0	0	0	0.8	1.9	8.2	1.6	24			
30		1.3	4.2	7.3	5.3	4.9	4.7	7.5	S	4.1	1.2	0.4	1.6	1.5	2.4	0.5	0	0	0	0	0	0.2	0.7	1.8	7.5	2.2	24				
HOURLY MAX		6	9	10	14	14	9	16	12	9	6	13	5	3	5	9	9	6	6	7	14	13	17	11	11						
HOURLY AVG		1.6	1.5	1.8	1.9	1.9	2.2	3.0	3.1	2.2	2.1	2.8	1.8	1.5	1.5	1.4	1.8	1.7	1.2	1.2	2.4	2.3	2.0	1.6	1.9						

STATUS FLAG CODES

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

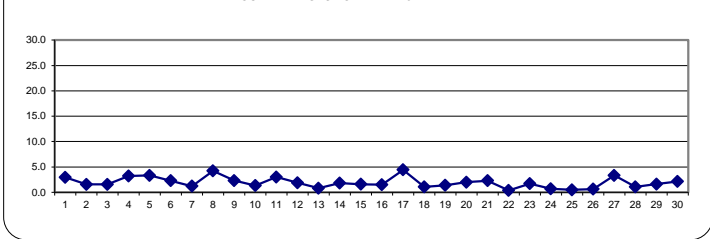
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

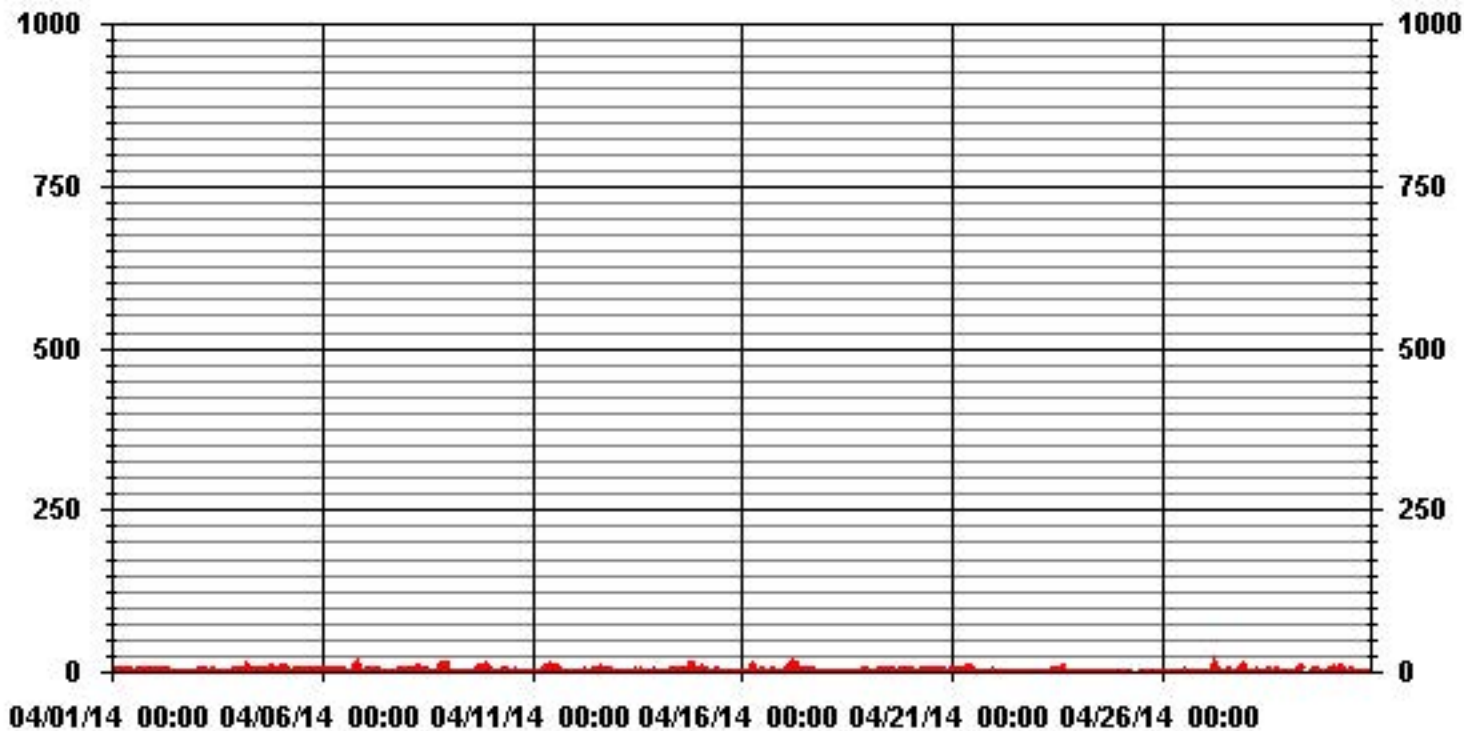
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	632					
MAXIMUM 1-HR AVERAGE:	16.6	PPB	@ HOUR(S)	21	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:	4.4	PPB			ON DAY(S)	17
					VAR-VARIOUS	
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	2.40		MONTHLY AVERAGE:	1.94	PPB	

24 HOUR AVERAGES FOR APRIL 2014



01 Hour Averages



— LICA30 NO2_ PPB

Lakeland Industry & Community Association - Maskwa Site

APRIL 2014

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	2.3	2.5	3.8	4.6	3.9	4.5	4.3	5.2	5.2	4	5.6	3.1	2.9	S	5	6.6	3.8	3.3	3.5	3.1	7.6	3	8.7	8.4	8.7	4.6	24	
2	2.3	3.3	3.4	4.3	5.7	5.8	5.8	6.6	3.8	3.3	2.6	1.4	S	1.5	1.3	0.7	0.5	0.6	0.9	1.5	1.2	1.1	1.7	1.7	6.6	2.7	24	
3	2.2	2.6	2.4	3.7	3.8	6.7	4.1	4.3	2.4	1.3	8.8	S	5.7	1.9	1.4	1.6	2.1	2.6	2.3	1.9	2.2	2.3	3.8	2.5	8.8	3.2	24	
4	2.7	3	3	2.3	2.1	17.5	9	2.7	3	3.7	S	3.3	3.2	3.6	2.7	10.4	10.6	14.5	15.2	20.3	21.5	4.5	3.5	9.4	21.5	7.5	24	
5	12.5	15.2	14.7	14.9	10.5	6.8	3.4	4.7	6	S	2	2.2	2.3	2.3	2.7	2.1	4.3	8.8	5.2	2.2	2.3	2.9	2.4	2.3	15.2	5.8	24	
6	2.2	2	2.6	3.5	3.5	4.2	3.1	4.7	S	2.3	3.3	1.8	3.3	5.2	1.8	0.8	2	1.8	3.7	20.3	21.2	5.9	0.6	0.5	21.2	4.4	24	
7	2.7	1.1	2.7	4.4	7	7.1	9	S	3	3.5	1.9	1.7	1.9	2.2	1.9	1.7	2.1	2.6	0.8	1.6	3.2	3.7	3.8	3.2	9	3.2	24	
8	3.2	3.9	3.3	2.9	3.1	5.8	S	6.3	6.6	7.6	5.5	5.6	3.3	2.4	2.4	1	17.4	1.7	7.4	17.3	18.3	35.5	14.7	16.2	35.5	8.3	24	
9	15.9	4.2	1.3	4.1	0.5	S	1.6	4.2	8.4	0.7	0.8	0.7	1.1	0.7	0.9	16	18.9	13.5	23.4	22.5	20.1	16.1	2.5	28.3	28.3	9.0	24	
10	13.7	1	1.2	1.1	S	6	14.4	2.3	3	14.9	3.1	10.2	1.3	14.5	13.4	7.7	1	0.7	0.8	0.8	0.9	1	1.2	1	14.9	5.0	24	
11	1.2	0.5	0.6	S	1.1	1	2.2	14.3	14.8	13.5	15.5	7.4	4.5	8.9	9.6	8.6	7.2	0.7	0.5	0.4	0.4	0.5	0.3	0.5	0.3	15.5	5.0	24
12	0.4	0.4	S	0.7	0.7	1	5.7	3.4	2	1.6	5.3	5.2	4.7	4.1	6.2	16.5	6.3	5.6	2.4	9.1	4.5	6.4	2.4	3.6	16.5	4.3	24	
13	4.1	S	1.5	1.4	0.9	0.7	1.1	1	1.1	1.1	1.7	2.7	4.3	1.4	2.9	1.9	1.3	1.4	1.3	1.3	1.3	1.8	2.2	1.2	4.3	1.7	24	
14	S	2.2	1.3	1.1	1.1	1	2.1	2.5	3.1	2.7	2	1.8	1.8	1.9	1.5	1.7	1.6	1.8	4.5	23.6	18.9	1.3	1	S	23.6	3.7	24	
15	16.6	16.6	18.1	10.7	7.3	2.6	1.6	1.7	1.3	1.2	14.8	5.3	1.5	1	0.8	1	0.9	0.7	1.1	0.8	1.1	1	S	0.7	18.1	4.7	24	
16	1.1	0.7	0.6	1	1.2	2.7	11.8	10.9	1.2	3.1	4.7	5.5	6.7	2.4	1.2	0.9	11.7	14.9	1.3	1.6	1.2	S	1	1.3	14.9	3.9	24	
17	1.3	1.5	14.6	18.4	18.4	13.9	15.6	14.2	9.2	9.7	6.9	10.1	11.3	9.8	9.9	9.4	10.4	5.3	5.1	1.7	S	1.2	1.1	1.2	18.4	8.7	24	
18	1.2	1.2	1.2	1	1.2	1.2	1.3	1.5	1.5	2	2.2	3.7	2.2	1.9	2	2.1	1.3	1.3	1.4	S	9	8.7	4.4	3.1	9	2.5	24	
19	2.4	1.4	1.2	1.5	1.8	1.7	4	4.1	2.5	2.1	3	3.4	3.3	14	1.9	1.8	2	1.2	S	1.6	1.8	1.4	1.7	1.7	14	2.7	24	
20	2.4	2.6	1.8	1.8	1.6	1.5	4.1	2.7	3.2	3.7	3.6	4.6	3.6	3.4	2.5	2.8	3.1	S	3.6	5.8	3.4	2.2	1.5	2.3	5.8	2.9	24	
21	3.9	2.6	2.9	3	3.7	4.9	7.9	6.1	4.4	13.5	21.3	3.6	1.2	1.7	0.8	1.4	S	2.9	1.7	1	2.2	2.5	1.2	1.8	21.3	4.2	24	
22	1.6	1.2	0.9	1.2	1.3	1.1	1.1	1.3	1.3	1.2	1.2	0.8	0.6	0.7	0.5	S	0.4	0.4	0.2	0.6	0.5	0.8	0.9	0.8	1.6	0.9	24	
23	1	1.4	1.1	1	1	1.1	1	1	1.2	3.5	7.2	5.9	2.6	9.7	S	14.9	10.6	1.2	1	0.9	0.6	0.7	0.8	0.7	14.9	3.0	24	
24	0.7	0.7	0.7	0.7	0.8	0.9	0.8	0.8	0.6	0.5	0.7	0.6	0.7	S	0.8	0.6	0.5	0.5	0.6	0.6	9.9	1.2	0.5	0.5	0.6	9.9	1.1	24
25	0.6	0.5	0.5	0.4	0.5	0.7	0.7	C	C	C	C	C	0.1	S	0.8	0.6	0.8	0.7	0.8	0.9	1	0.9	1	1.4	1	1.4	0.7	24
26	1.1	3.4	0.9	1.2	1.2	0.9	1.6	3.3	1.3	3.4	3.5	S	3	4.1	4.9	3.1	6.9	2.6	0.5	0.6	0.5	0.7	4.9	3.7	6.9	2.5	24	
27	0.7	0.7	0.7	1.8	1.3	15.8	17.8	14.7	6.3	1.7	S	1.1	1.5	5.1	2.4	4	9.1	5.2	1.4	3	6.7	8.4	14	13.9	17.8	6.0	24	
28	1.5	0.6	0.7	0.5	0.7	1.7	14.4	3	2.8	S	5.3	5.9	2.3	1.6	1.3	1	0.8	3.9	5.3	4.8	1.4	0.9	1.1	0.6	14.4	2.7	24	
29	0.9	1	0.8	0.7	0.8	6.7	8.9	13	C	C	C	C	C	C	C	8.7	9.7	6	4.3	0.4	0.9	1.5	2.9	4.4	13	4.2	24	
30	3	8	11.2	8.5	8.1	13.8	14	S	15.9	2.5	1.2	3.4	4.6	13.2	2.5	0.6	1.2	0.4	0.4	0.3	0.8	1.4	1.8	3	15.9	5.2	24	
HOURLY MAX	17	17	18	18	18	18	18	15	16	15	21	10	11	15	13	17	19	15	23	24	22	36	15	28				
HOURLY AVG	3.6	3.0	3.4	3.5	3.3	4.8	5.9	5.2	4.3	4.2	5.1	3.7	3.2	4.4	3.1	4.5	5.1	3.7	3.5	5.5	5.4	4.1	3.0	4.1				

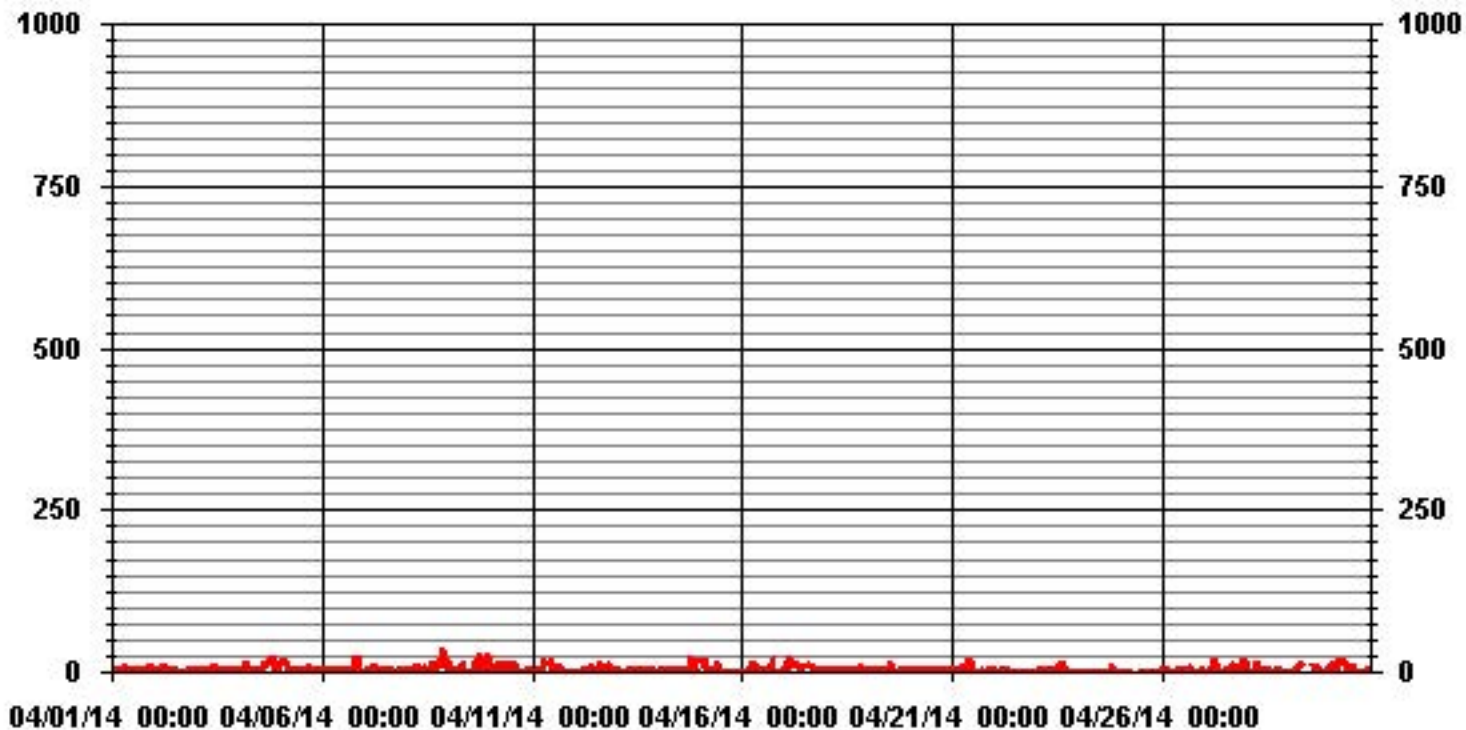
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	679
MAXIMUM INSTANTANEOUS VALUE:	35.5 PPB @ HOUR(S) 21 ON DAY(S) 8
	VAR-VARIOUS
IZS CALIBRATION TIME:	30 HRS
MONTHLY CALIBRATION TIME:	11 HRS
OPERATIONAL TIME:	720 HRS
STANDARD DEVIATION:	4.84

01 Hour Averages



LICA30
 NO2_ / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

Logger Id : 30
 Site Name : LICA30
 Parameter : NO2_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	3.23	3.67	12.50	11.76	14.70	6.76	7.05	4.55	4.70	8.52	3.23	2.05	6.61	5.14	2.94	2.50	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	3.23	3.67	12.50	11.76	14.70	6.76	7.05	4.55	4.70	8.52	3.23	2.05	6.61	5.14	2.94	2.50	

Calm : .00 %

Total # Operational Hours : 680

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	22	25	85	80	100	46	48	31	32	58	22	14	45	35	20	17	680
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	22	25	85	80	100	46	48	31	32	58	22	14	45	35	20	17	

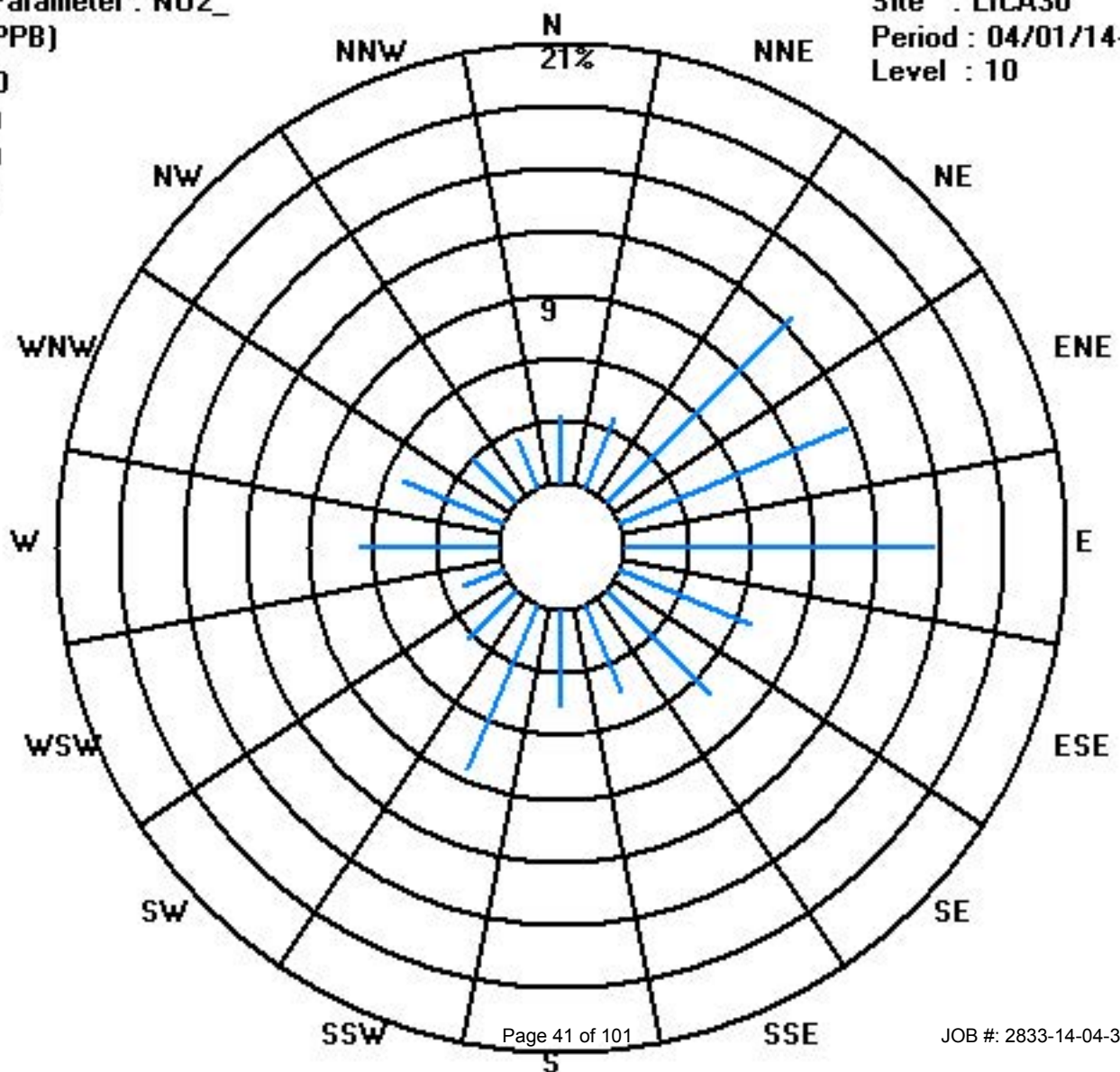
Calm : .00 %

Total # Operational Hours : 680

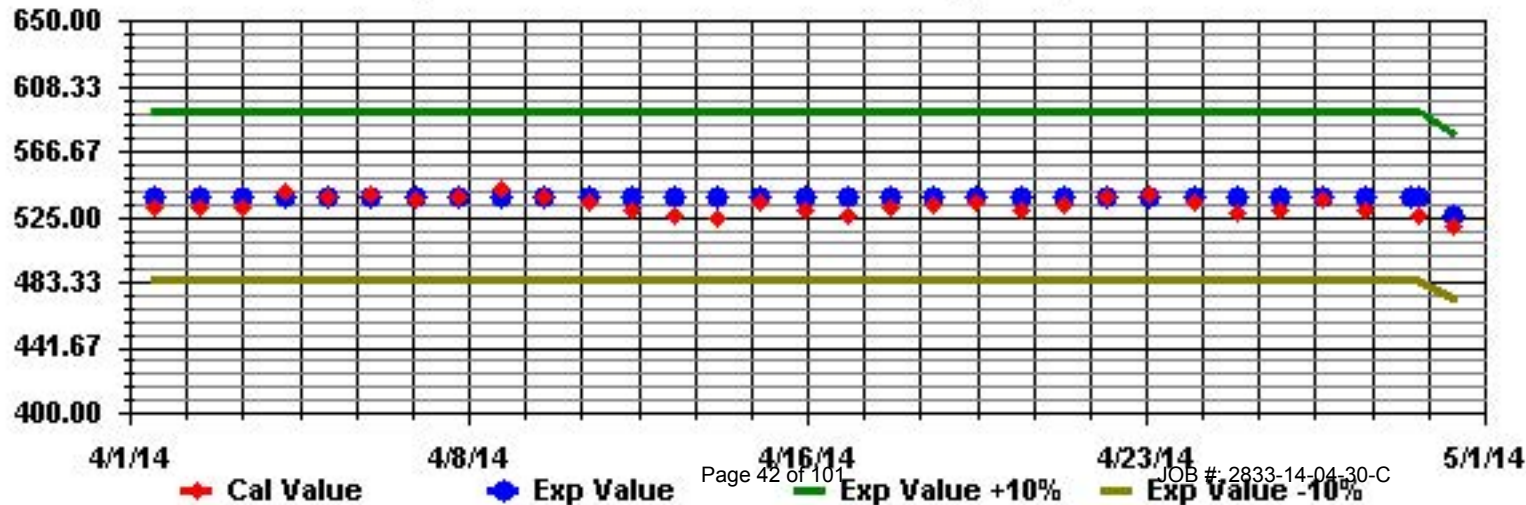
Class Limits (PPB)

Period : 04/01/14-04/30/14

Level : 10



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



Nitric Oxide

Lakeland Industry & Community Association - Maskwa Site

APRIL 2014

NITRIC OXIDE (NO) hourly averages in ppb

MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.		
	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00					
	DAY																													
	1	0	0	0	0	0	0	0	0	0.6	0.4	1	0	0	S	1.4	2	0.5	0.2	0	0	0	0	0	0	2	0.3	24		
	2	0	0	0.1	0	0	0.1	0.5	1.2	0.6	1	0.4	0.2	S	0	0	0	0	0	0	0	0	0	0	0	1.2	0.2	24		
	3	0	0	0	0	0	0	0	0.8	0.2	0.1	2.7	S	0.4	0	0	0	0	0	0	0	0	0	0	0	2.7	0.2	24		
	4	0	0	0	0	0	0	0	0	0	0	S	0	0.2	0.1	0	0	0	0	0	0	0.1	0	0	0	0.2	0.0	24		
	5	0	0	0	0	0	0	0	0	0.4	S	0.4	0.2	0	0.2	0.1	0	0	0	0	0	0	0	0	0	0.4	0.1	24		
	6	0	0	0	0	0	0	0	0	S	0.6	0.7	0.5	0.8	0.7	0.1	0	0	0	0	0.5	0.2	0	0	0	0.8	0.2	24		
	7	0	0	0	0.2	0.1	0.7	0.5	S	0.4	0.2	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.7	0.1	24		
	8	0	0	0	0	0	0	S	1.2	2.3	3	2.9	2.3	0.7	0.1	0	0	0	0	0	0	0	0	2.7	0	3	0.7	24		
	9	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.3	0	0.5	0	0.4	0	0	1.1	1.1	0.1	24		
	10	0	0	0	0	S	0.1	0.8	0.7	0.6	2.7	0.3	0.4	0.3	0.3	1	0.2	0	0	0	0	0	0	0	0	2.7	0.3	24		
	11	0	0	0	S	0	0	0	0.9	1.5	1.3	3.4	1.3	0.7	1.2	2.4	1.2	0.4	0	0	0	0	0	0	0	3.4	0.6	24		
	12	0	0	S	0	0	0	0.7	0.9	0.5	0.4	1.6	1.6	0.7	0.3	0.4	3.3	0.5	0.1	0	0	0	0	0	0	3.3	0.5	24		
	13	0	S	0.2	0.1	0.2	0.3	0.3	0.5	0.4	0.4	0.7	1	1.1	0.5	0.5	0.4	0	0	0	0	0	0	0	0	1.1	0.3	24		
	14	S	0	0	0	0	0	0.1	0.6	1	0.8	0.1	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	S	1	0.1	24	
	15	0	0.2	0.3	0.3	0	0	0	0	0	0	1.2	0.2	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1.2	0.1	24
	16	0	0	0	0	0	0	1	0.8	0.1	0.3	1.3	1.4	1.1	0.2	0	0	0.1	0.5	0	0	0	0	S	0	1.4	0.3	24		
	17	0	0	0.1	0.5	1	0.6	2.2	3.8	1.7	1.5	1.2	1.8	0.8	0.5	1.5	0.5	0.6	0	0	0	S	0	0	0	3.8	0.8	24		
	18	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		
	19	0	0	0	0	0	0	0	0.1	0	0.1	0.4	0.7	0.6	0	0	0	0	0	0	S	0	0	0	0.1	0.1	0.7	0.1	24	
	20	0	0.1	0.1	0.1	0.2	0.3	0.2	0.1	0.3	0.7	1	1.1	0.9	0.7	0.6	0.1	0.2	S	0	0	0	0	0	0	1.1	0.3	24		
	21	0	0	0	0	0	0.6	3	1.4	0.7	2.9	7.4	0	0	0	0	0	S	0	0	0	0	0	0	0	7.4	0.7	24		
	22	0.2	0.3	0.5	0.5	0.4	0.5	0.5	0.7	0.8	0.7	0.6	0.4	0	0	0	S	0	0	0	0	0	0	0	0	0.8	0.3	24		
	23	0	0.1	0.2	0.1	0.2	0.2	0.1	0.3	0.1	0.6	1	0.6	0.3	0.6	S	0.8	0.2	0	0	0	0	0	0	0	1	0.2	24		
	24	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		
	25	0	0	0	0	0	0	0	0	C	C	C	C	0	S	0	0	0	0	0	0.1	0.1	0.3	0.2	0.2	0.3	0.0	24		
	26	0.3	0.2	0.3	0.3	0.4	0.4	0.5	0.4	0.4	0.7	0.6	S	0	0.4	0.1	0	0	0	0	0	0	0	0	0	0.7	0.2	24		
	27	0	0	0	0	0	1.7	4.1	2.3	0.3	0	S	0.1	0.1	0.5	0.1	0.1	0.6	0.1	0	0	0	0	1	0.4	4.1	0.5	24		
	28	0	0	0	0	0	0	0.8	0.6	0.2	S	0.8	1.2	0.6	0.2	0	0	0	0.1	0	0	0	0	0	0	1.2	0.2	24		
	29	0.1	0	0	0	0.1	6	10.3	5.5	C	C	C	C	C	C	0.5	1	1.7	0	0	0	0	0	0	0	10.3	1.4	24		
	30	0.2	0.4	0.6	0.7	0.9	2.2	6.5	S	1.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.5	0.6	24		
	HOURLY MAX	0	0	1	1	1	6	10	6	2	3	7	2	1	1	2	3	2	1	1	1	0	3	1	1					
	HOURLY AVG	0.0	0.0	0.1	0.1	0.1	0.5	1.1	0.8	0.6	0.7	1.1	0.6	0.3	0.2	0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.1					

STATUS FLAG CODES

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

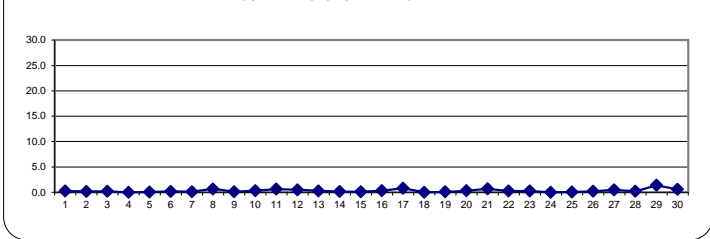
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

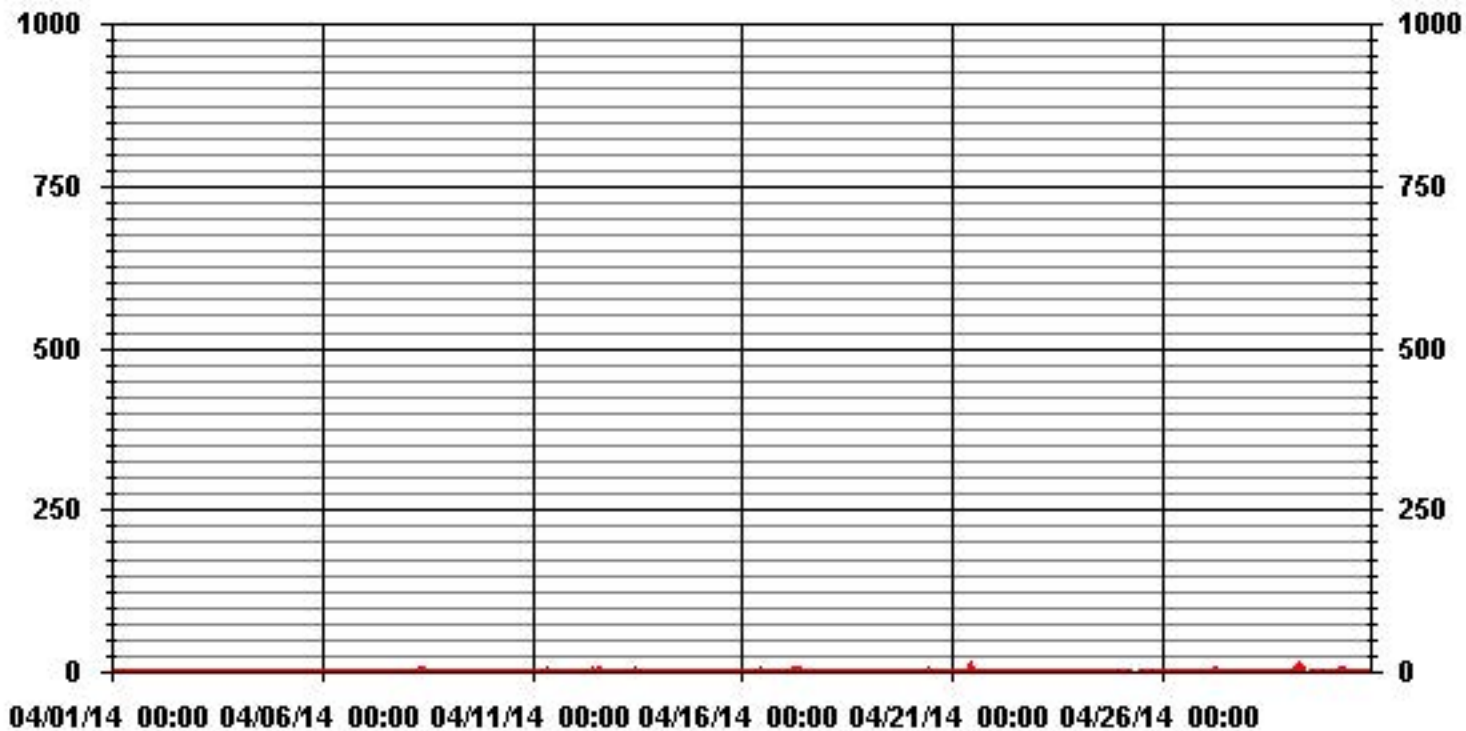
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA				
NUMBER OF NON-ZERO READINGS:	251				
MAXIMUM 1-HR AVERAGE:	10.3	PPB	@ HOUR(S)	6	ON DAY(S) 29
MAXIMUM 24-HR AVERAGE:	1.4	PPB			ON DAY(S) 29
					VAR-VARIOUS
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.82		MONTHLY AVERAGE:	0.30	PPB

24 HOUR AVERAGES FOR APRIL 2014



01 Hour Averages



Lakeland Industry & Community Association - Maskwa Site

APRIL 2014

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	0	0	0	0	0	0	0	0.5	2.7	1.2	2.8	0.3	0	S	2.6	3.2	1.5	0.9	0.8	0.3	0.5	0.3	3.7	2.8	3.7	1.0	24	
2	0.5	0.8	0.9	0.4	0.7	0.7	1.2	2.3	1.9	1.9	1.6	1	S	0.8	0.6	0.1	0	0	0	0	0	0.1	0	0	0	2.3	0.7	24	
3	0	0.5	0.2	0.3	0.3	0.2	0.7	1.5	1.2	0.7	5.7	S	2.8	0.4	0.3	0.5	0.2	0	0	0	0.1	0	0	0.1	5.7	0.7	24		
4	0	0.1	0	0.1	0.1	0.7	0.5	0.1	0.2	0.7	S	0.6	0.9	0.8	0.6	3.4	3.8	3.5	1.6	2.1	0	0.1	0	0.7	3.8	0.9	24		
5	0.2	0	0	0.5	0.3	0.1	0.4	1.1	1.3	S	1	0.9	0.7	0.9	0.8	0.6	0.7	0.6	0.3	0.4	0.4	0.1	0.1	0.4	1.3	0.5	24		
6	0.2	0.3	0.2	0.4	0.2	0.4	0.2	0.5	S	1.2	1.7	1.2	1.5	2	0.8	0.6	1.4	1.5	1.3	3.1	1.4	0.6	0.6	0.6	3.1	1.0	24		
7	0.6	0.7	0.6	1.2	1.1	4.4	2.4	S	1.9	1.7	0.8	1	1.1	0.8	0.7	0.4	0.1	0	0	0.1	0.1	0.1	0	4.4	0.9	24			
8	0.1	0.1	0.3	0.2	0.3	0.6	S	2.4	3.5	5.9	4.1	3.2	1.8	0.9	0.9	0.1	11.3	0	0	0.1	0.2	12.5	0.3	0.3	12.5	2.1	24		
9	0.1	0.1	0.2	0.2	0.3	S	0.6	2.7	4.4	0.4	0.4	0.4	1	0.2	0.4	14.5	6	2.6	3.1	3.4	4	1.4	0.1	7.2	14.5	2.3	24		
10	0.9	0.2	0.1	0.3	S	1.6	14.6	21.2	1.9	21.8	1.3	24.7	1.1	6.8	5.5	2.1	0.3	0.2	0.6	0.3	0.4	0.2	0.3	0.4	24.7	4.6	24		
11	0.5	0.4	0.4	S	0.4	0.4	0.2	3.9	4	4.6	7	3.3	1.8	3.3	3.5	3	1.7	0.3	0.3	0.3	0.4	0.3	0.4	0.5	7	1.8	24		
12	0.4	0.5	S	0.3	0.4	0.3	3.5	2.6	1.2	0.9	5.3	4.4	3.7	2.6	3.7	12	2.3	1	0.4	0.7	0.2	0.2	0.3	0.4	12	2.1	24		
13	0.4	S	0.7	0.7	0.7	0.8	0.9	1.1	1	1.1	2.6	2.3	3.8	1.1	2.5	1.3	0.4	0.6	0.4	0.2	0.5	0.5	0.6	0.3	3.8	1.1	24		
14	S	0.3	0.3	0.4	0.3	0.7	0.9	1.2	1.9	1.6	0.8	0.7	0.6	0.7	0.4	0.5	0.2	0	0.2	1.1	0.9	0.1	0	S	1.9	0.6	24		
15	1.2	1.7	1.6	1.6	0.7	0.5	0.3	0.5	0.3	0.5	5.8	2.1	0.2	0.2	0.2	0.5	0.3	0.3	0.1	0.2	0.3	0.4	S	0.4	5.8	0.9	24		
16	0.3	0.6	0.3	0.5	0.5	0.5	3.1	2.7	0.7	1.3	3.3	3.1	3.4	1.3	0.5	0.6	2.5	3.5	0.5	0.3	0.4	S	0.4	0.5	3.5	1.3	24		
17	0.5	0.6	1.2	1.8	2.4	1.4	5.8	5.6	3.1	3.3	3.3	5.2	4.5	3.4	3.9	2.4	2.9	0.9	0.7	0.4	S	0	0.3	0.1	5.8	2.3	24		
18	0.2	0.4	0.3	0.1	0.3	0	0.1	0.1	0	0.4	0.8	1.5	0.1	0.2	0.3	0.3	0.1	0	0	S	0.6	0.5	0.4	0.2	1.5	0.3	24		
19	0.2	0.3	0.3	0.4	0.2	0.2	0.6	1.5	0.4	0.9	1.4	1.8	1.6	2.2	0.3	0.2	0.5	0	S	0.2	0.4	0.4	0.6	0.6	2.2	0.7	24		
20	0.7	0.6	0.8	0.8	1	1	1.2	0.9	1	1.5	1.8	3.2	1.8	2	1.5	0.7	1	S	0.3	0.1	0.2	0.1	0.3	0.4	3.2	1.0	24		
21	0.4	0.4	0.2	0.3	0.6	2	5.1	2.9	2	8.5	13.8	1.4	0.1	0	0	0	S	0.3	0.1	0.2	0.4	0.6	0.6	0.7	13.8	1.8	24		
22	0.9	1	1.1	1.3	1	1.2	1.3	1.3	1.4	1.3	1.3	1	0.7	0.5	0.6	S	0.2	0.1	0.1	0.4	0.6	0.5	0.6	0.6	1.4	0.8	24		
23	0.6	0.8	0.8	0.8	0.8	0.8	0.7	0.8	0.8	1.7	2	1.4	1	1.9	S	2	1.2	0.2	0.2	0.4	0.2	0.1	0.2	0.2	2	0.9	24		
24	0.3	0.3	0.3	0.3	0.3	0.1	0.5	0.4	0.3	0.3	0.3	0.3	0.4	S	0.1	0.1	0	0.3	0.2	0.9	0.2	0.1	0.1	0.2	0.9	0.3	24		
25	0.3	0.3	0.3	0.3	0.3	0.3	0.4	C	C	C	C	0	S	0.6	0.3	0.4	0.4	0.5	0.5	0.7	0.9	1	0.8	0.9	1	0.5	24		
26	0.9	0.8	1	1	1.1	1	1	1.4	1	2	2	S	1.3	2.5	2	1	3.3	0.4	0	0	0	0	0.8	0.5	3.3	1.1	24		
27	0	0.1	0	0.2	0.2	4.3	5.4	4.2	1.8	0.2	S	0.6	0.6	2.7	0.9	1.3	2.4	0.6	0.3	0.4	0.6	0.8	2.3	1.7	5.4	1.4	24		
28	0.4	0.4	0.5	0.2	0.4	0.6	20.3	1.4	1	S	4.2	4.6	1.3	1.1	0.6	0.5	0.2	1	0.7	0.8	0.3	0.3	0.9	0.7	20.3	1.8	24		
29	0.7	0.8	0.6	0.5	0.6	37.2	22.5	10.5	C	C	C	C	C	C	C	C	3.5	4.4	2	0.4	0	0.2	0.4	0.3	0.5	37.2	5.0	24	
30	0.7	1.1	1.3	1.3	1.9	15.3	15.9	S	21.1	1.1	0.3	1.4	0.7	23.2	0	0	0	0	0	0	0	0	0	0	23.2	3.7	24		
HOURLY MAX	1	2	2	2	2	37	23	21	21	22	14	25	5	23	6	15	11	4	3	3	4	13	4	7					
HOURLY AVG	0.4	0.5	0.5	0.6	0.6	2.7	3.8	2.8	2.3	2.6	2.9	2.7	1.4	2.3	1.2	1.9	1.7	0.7	0.5	0.6	0.5	0.7	0.5	0.8					

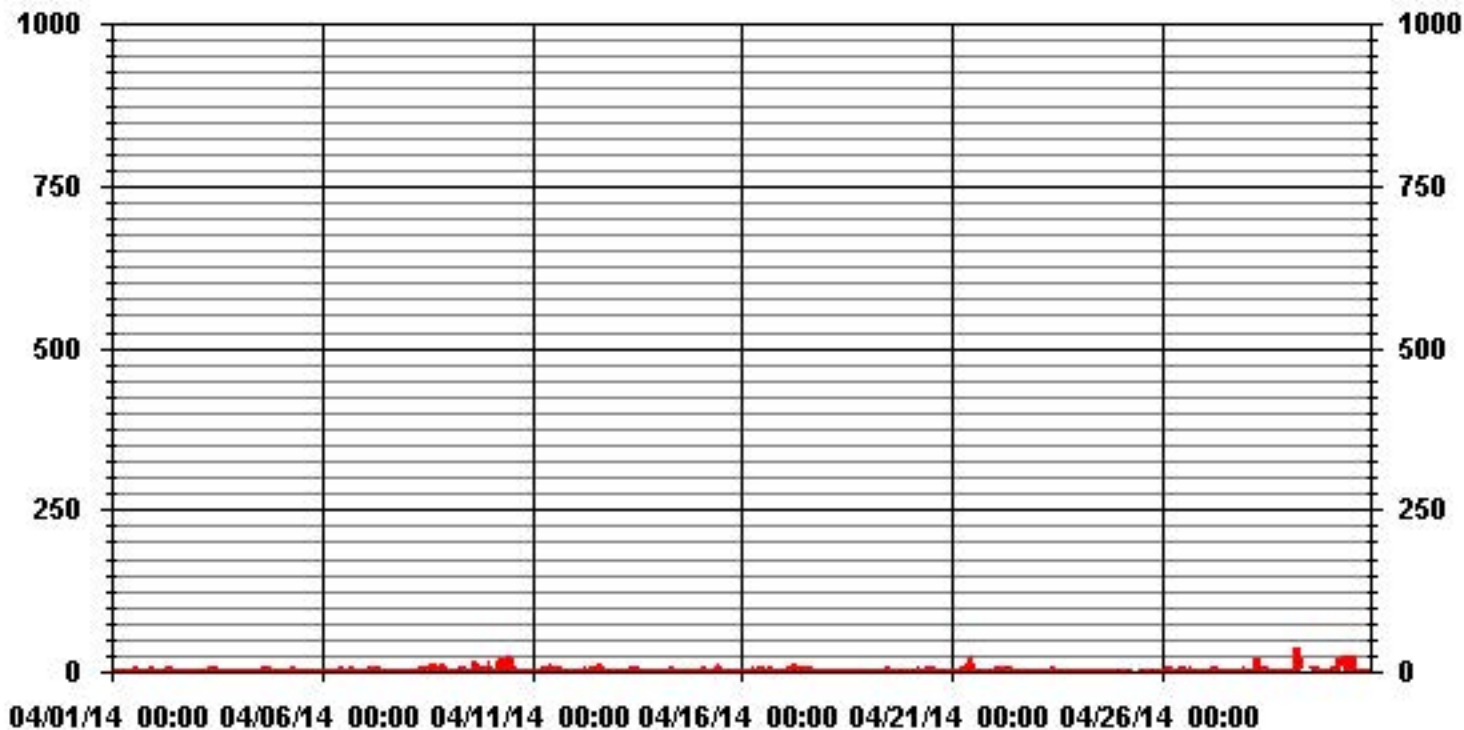
STATUS FLAG CODES

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:	616					
MAXIMUM INSTANTANEOUS VALUE:	37.2	PPB	@ HOUR(S)	5	ON DAY(S)	29
	VAR-VARIOUS					
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	11	HRS				
STANDARD DEVIATION:	3.15					

01 Hour Averages



LICA30
 NO_ / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	3.23	3.67	12.50	11.76	14.70	6.76	7.05	4.55	4.70	8.52	3.23	2.05	6.61	5.14	2.94	2.50	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	3.23	3.67	12.50	11.76	14.70	6.76	7.05	4.55	4.70	8.52	3.23	2.05	6.61	5.14	2.94	2.50	

Calm : .00 %

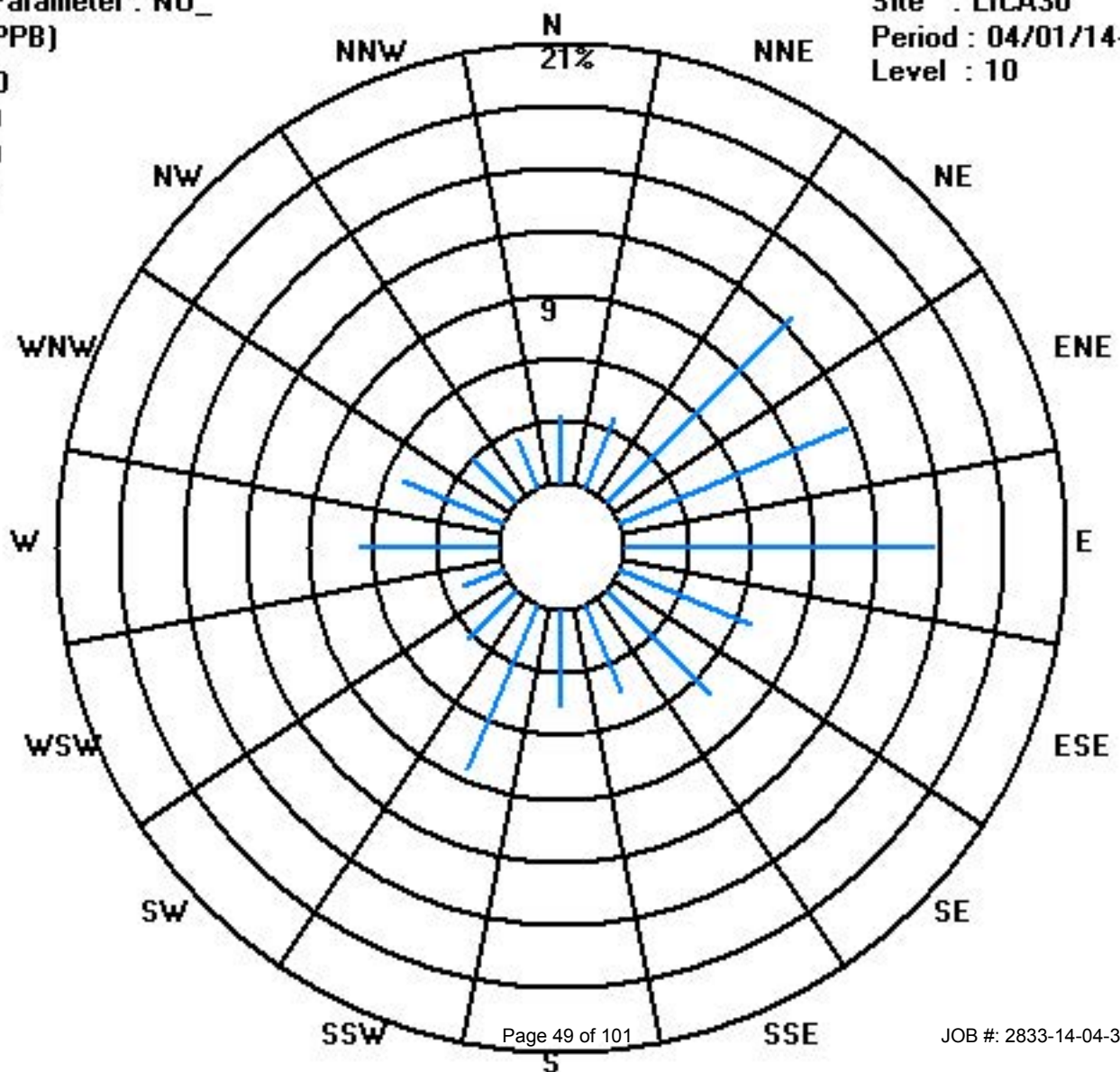
Total # Operational Hours : 680

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	22	25	85	80	100	46	48	31	32	58	22	14	45	35	20	17	680
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	22	25	85	80	100	46	48	31	32	58	22	14	45	35	20	17	

Calm : .00 %

Total # Operational Hours : 680



Oxides of Nitrogen

Lakeland Industry & Community Association - Maskwa Site

APRIL 2014

OXIDES OF NITROGEN (NOx) 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	MAX.	AVG.	RDGS.	
DAY	1	1.1	1.3	1.8	3.2	2.8	2.8	3.2	3.7	5.2	3.8	5.1	2.1	1.7	S	4.6	7.1	3.3	3.2	3.2	2.5	3.7	2.3	3.4	3.1	7.1	3.2	24
	2	1.9	2.5	2.5	3.4	3.9	4.9	5	5.4	2.1	3.1	1.5	0.8	S	0.5	0.4	0	0	0	0.4	0.2	0.2	0.7	0.8	5.4	1.7	24	
	3	0.9	1.5	1.4	1.5	2.3	2.9	2.6	3.8	1.4	0.9	7.5	S	2.4	0.9	0.8	0.9	0.7	0.7	0.6	0.2	0.8	1.5	2.1	1.8	7.5	1.7	24
	4	1.8	1.7	1.6	1.3	1.1	8.6	3.2	1.7	1.7	3.1	S	2.3	2.7	2.9	1.5	2.6	2.3	2.7	5.8	10.1	9.3	1.8	1.5	3.3	10.1	3.2	24
	5	5.9	9.3	9.7	7.3	6.6	2	1.4	1.8	4.9	S	1.7	1.2	1.3	2.1	2.1	1.6	2.1	5.6	2.5	1.7	1.7	2	1.8	1.7	9.7	3.4	24
	6	1.5	1.5	1.6	2.9	2	2	1.2	2.3	S	2.5	2.8	2	3.2	3.5	1.3	0.5	0.5	0.2	0.9	9.4	12.9	1.4	0.2	0.3	12.9	2.5	24
	7	0.7	0.4	1.7	2.7	2.7	2.8	3.3	S	1.4	1.2	0.7	0.6	1.1	0.7	0.3	0	0.3	0.4	0	0.5	1.6	2.7	2.4	2.3	3.3	1.3	24
	8	1.8	2.7	2.3	2.1	2.3	4.1	S	6.3	7.4	8.6	7.5	6.9	3.1	1.9	0.6	0	0.6	0	1.8	6.6	7.8	19.3	8.1	10.9	19.3	4.9	24
	9	3.5	0.2	0	0.9	0	S	0.8	0.6	0.9	0.5	0.4	0.4	0.5	0.2	0.3	0.8	4.2	3	7	6.2	6.2	9.4	0.5	8.9	9.4	2.4	24
	10	5.2	0.2	0.6	0.7	S	1.4	3.7	2.2	1.9	7.1	1.3	1.2	1.1	1.4	3.6	1.7	0.5	0.3	0.4	0.5	0.8	0.5	0.6	0.6	7.1	1.6	24
	11	0.5	0.1	0.1	S	0.9	0.9	0.7	7.1	10	7.5	13.5	6.3	4.1	6	10.9	8.2	4.6	0.5	0.2	0.3	0.2	0.3	0.4	0.4	13.5	3.6	24
	12	0.5	0.4	S	0	0.2	0.3	3.6	3.4	1.8	1.6	3.7	3.9	2.2	1.8	2.2	9.6	3.6	3.1	0.5	3.4	3.3	2.8	1.3	1.2	9.6	2.4	24
	13	2.2	S	1.3	0.6	0.4	0.4	0.7	0.7	0.8	0.7	1.5	2.2	2.4	1.3	1.6	1.4	0.8	1	0.8	0.6	0.8	1.3	1.3	0.6	2.4	1.1	24
	14	S	1.1	0.7	0.7	0.4	0.6	1.1	2.5	3.2	2.8	1.3	1.1	1.3	1.4	1	1.1	1	1	1.4	13.6	4.8	0.6	0.2	S	13.6	2.0	24
	15	5.7	7	6.9	5.6	2.6	0.7	0.5	0.6	0.3	0.2	5.6	2.3	0.2	0.1	0	0.2	0.2	0.1	0	0	0	0.1	S	0.1	7	1.7	24
	16	0.4	0.3	0	0.5	0.8	1.1	9.4	5	0.8	1.6	3.8	3.7	1.1	0.4	0.3	1.6	3.9	0.6	0.9	0.5	S	0.5	0.6	9.4	1.8	24	
	17	0.7	0.9	5.9	10.7	14.7	7.7	11	15.5	8.1	6.9	4.3	6.1	3.8	3.1	7	4	4.7	2	1.8	0.8	S	0.2	0.3	0.3	15.5	5.2	24
	18	0.4	0.2	0.3	0.3	0.2	0.3	0.2	0.4	0.5	0.6	0.9	1.5	0.7	0.6	0.7	0.7	0.4	0.1	0.2	S	4.5	6.5	1.8	1.9	6.5	1.0	24
	19	1.2	0.7	0.6	0.7	0.9	0.8	2.3	2.6	1.7	1.6	2.3	3.4	3.1	1.9	1.3	1.1	0.8	0.4	S	1.2	1.2	1.2	1.5	1.6	3.4	1.5	24
	20	2.2	2.1	1.6	1.3	1.1	1.4	2.1	2	2.9	3.7	4.1	4.2	3.4	2.9	2.7	2.4	2.2	S	2.8	2.4	1.6	1.2	0.8	1.5	4.2	2.3	24
	21	2.7	1.6	1.8	2.2	2.8	3.6	8	5.5	3.5	8.9	20.5	1.5	0.8	0.1	0	0	S	0.7	0.6	0.2	0.8	1.3	0.7	1.1	20.5	3.0	24
	22	1.2	0.9	1	1	1.2	1.1	1	1.3	1.3	1.2	1.2	0.8	0.5	0.2	0	S	0	0	0	0	0	0.1	0.3	0.5	1.3	0.6	24
	23	0.4	0.8	0.6	0.5	0.8	0.8	0.7	0.7	0.7	2	5.6	3.7	1.8	4.9	S	10.1	6.4	0.9	0.6	0.8	0.4	0.3	0.4	0.4	10.1	1.9	24
	24	0.5	0.4	0.4	0.5	0.5	0.3	0.4	0.4	0.5	0.3	0.5	0.3	0.5	S	0.9	0.8	0.8	0.8	0.9	3.3	1.2	0.8	0.5	0.9	3.3	0.7	24
	25	0.9	1	0.9	0.8	0.9	0.8	1	C	C	C	C	0	S	0.1	0	0.1	0.3	0.4	0.2	0.4	0.4	0.5	0.7	0.6	1	0.5	24
	26	0.7	1.1	0.5	0.6	0.7	0.6	1	1.1	0.7	1.5	1.7	S	1	1.9	1.7	0.7	1.1	0.9	0	0	0	0	1.6	0.2	1.9	0.8	24
	27	0	0	0	0.1	0	9.8	19.6	13.5	3.9	0.5	S	0.5	0.6	2.3	1.3	2.5	4.2	1	0.6	1	2.6	3.5	12.4	8.3	19.6	3.8	24
	28	0	0	0	0	0	0.2	2.7	2.6	1.6	S	2.5	3.7	2.5	1.4	1.1	0.8	0.6	2.1	2	2.9	0.6	0.4	0.5	0.3	3.7	1.2	24
	29	0.5	0.6	0.4	0.3	0.5	8.3	15.8	13.7	C	C	C	C	C	C	1.9	3.2	5.5	0.8	0.1	0	0	0	0.8	1.9	15.8	3.0	24
	30	1.5	4.6	7.9	6	5.8	6.9	14	S	5.9	1.2	0.4	1.6	1.5	2.4	0.5	0	0	0	0	0	0.2	0.7	1.8	14	2.7	24	
HOURLY MAX		6	9	10	11	15	10	20	16	10	9	21	7	4	6	11	10	6	6	7	14	13	19	12	11			
HOURLY AVG		1.6	1.6	1.9	2.0	2.0	2.7	4.1	3.9	2.8	2.8	3.9	2.4	1.9	1.8	1.7	2.2	1.8	1.2	1.2	2.4	2.3	2.1	1.7	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

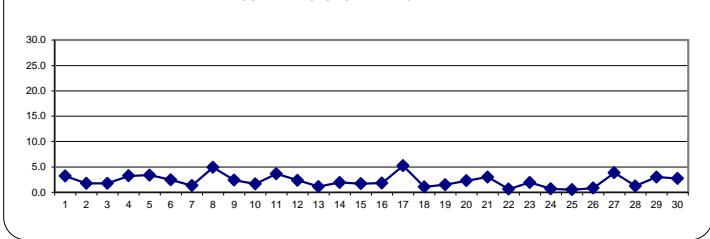
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

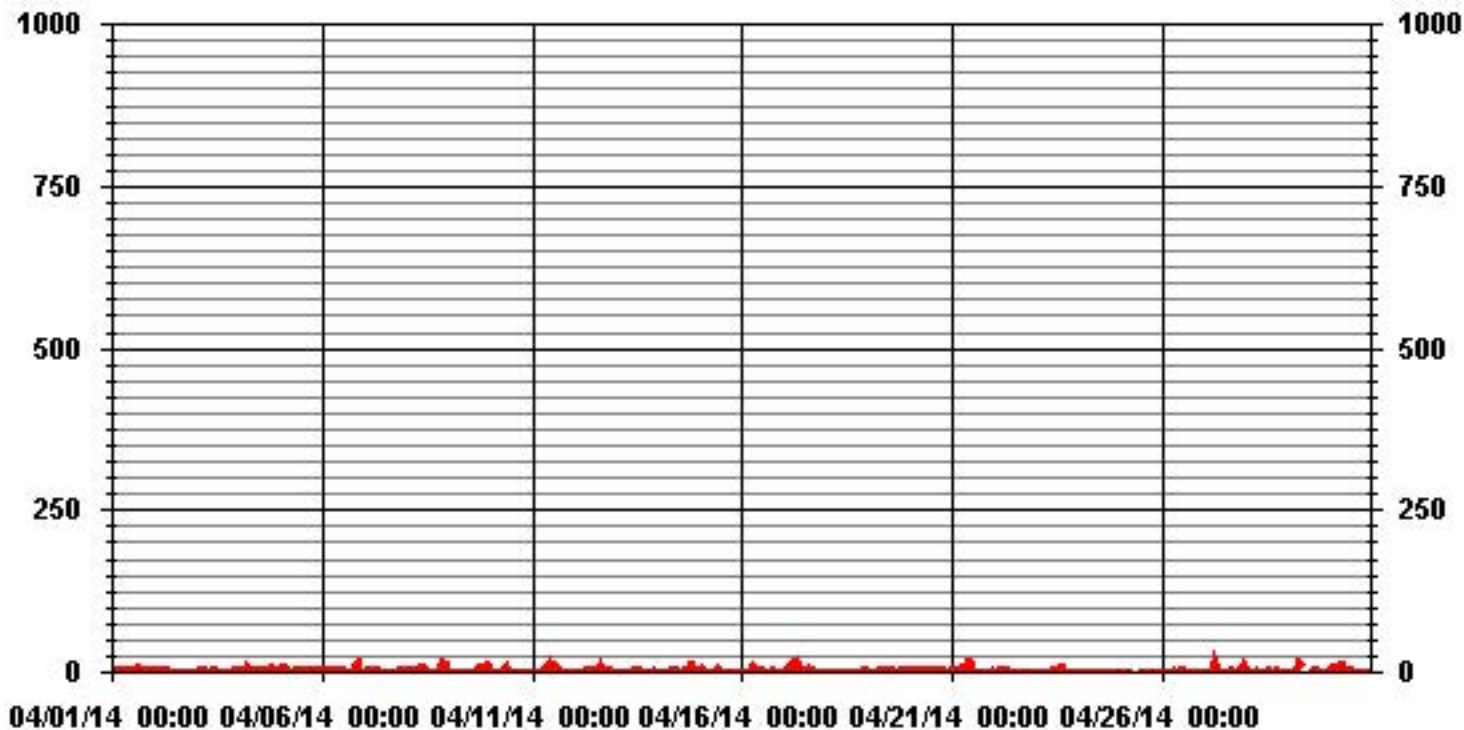
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	632					
MAXIMUM 1-HR AVERAGE:	20.5	PPB	@ HOUR(S)	10	ON DAY(S)	21
MAXIMUM 24-HR AVERAGE:	5.2	PPB			ON DAY(S)	17
					VAR-VARIOUS	
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	2.89		MONTHLY AVERAGE:	2.24	PPB	

24 HOUR AVERAGES FOR APRIL 2014



01 Hour Averages



— LICA30 NOX_ PPB

Lakeland Industry & Community Association - Maskwa Site

APRIL 2014

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 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	1.8	2	3.3	4.2	3.6	4	4.2	5.4	8.3	5.4	8.6	3.6	3	S	7.6	9.8	5.6	3.8	4.4	3.2	8.2	3.3	12.8	11.9	12.8	5.6	24	
2	2.6	3.4	3.6	4.3	6	6	6.6	8.6	5.4	4.8	4.1	2.2	S	2.5	2	0.8	0.6	0.4	0.6	1.3	1.2	1.1	1.6	1.5	8.6	3.1	24	
3	2.1	2.5	2.6	3.7	3.7	6.8	3.7	5.4	3.4	1.6	14.7	S	9	1.8	1.6	2.1	2.2	2.6	2.2	1.4	2	2.4	3.4	2.5	14.7	3.6	24	
4	2.7	2.8	2.8	2.4	1.9	18.3	9.5	2.7	2.9	4.1	S	3.6	3.5	4.1	2.9	12.9	14.4	18.2	17	22.5	21.4	4.6	3.3	9.6	22.5	8.2	24	
5	12.4	15.1	14.5	15.3	10.7	6.7	3.7	5.8	7.1	S	2.9	2.9	2.2	3	3.5	2.4	4.9	9.3	5.5	2.6	2.9	3	2.7	2.5	15.3	6.2	24	
6	2.3	2.3	2.8	3.8	3.8	4.6	3.5	5.2	S	3.4	4.6	2.8	4.6	7.3	2.4	1.2	3.7	3.7	4.8	23.4	22.8	6.5	1	1	23.4	5.3	24	
7	3.4	1.2	3.1	5.6	8.3	11.7	11.4	S	4.8	5.1	2.6	2.5	2.9	2.9	2.6	2.1	2.3	2.5	0.8	1.4	3.3	3.8	3.5	3.3	11.7	4.0	24	
8	3.1	3.8	3.1	2.9	3.1	5.9	S	8.6	9.1	13.4	8.6	8.7	5.1	3.6	3.7	1.8	27.3	2	8.2	18.3	19	48.8	15.1	16.5	48.8	10.4	24	
9	16.5	4.3	1.3	4.5	0.6	S	2.5	6.4	11.1	1.3	1.1	1.4	2.4	1	1.7	31.5	25.8	16.9	27.1	26.6	24.8	16.5	2.9	36.3	36.3	11.5	24	
10	14.9	1.2	1.4	1.5	S	7.9	23.7	23.1	5	35.8	4.7	35.3	2.5	21.6	19.1	10.2	1.8	1	1.1	1.3	1.5	1.2	1.4	1.4	35.8	9.5	24	
11	1.2	0.8	0.7	S	1.7	1.7	2.9	18.6	19.4	18.7	23.3	11.3	7.3	13.1	13.2	12.1	9.4	1.3	0.9	1.1	0.8	0.9	1	1	23.3	7.1	24	
12	1.1	1.1	S	0.7	0.8	1.4	8.9	5.8	3	2.2	10.6	9.8	8.6	6.8	10.3	28.7	8.9	6.8	2.8	10.1	4.7	6.6	2.6	3.5	28.7	6.3	24	
13	4.3	S	2	1.8	1.2	1.2	1.6	1.4	1.9	2.1	4.2	5	8	2.6	5.6	3	1.9	1.8	1.6	1.3	1.6	2.2	2.8	1.2	8	2.6	24	
14	S	2.4	1.6	1.3	1	1.3	2.7	3.2	4.7	4	2.5	2.1	2.1	1.8	1.8	1.6	1.9	4.5	24.9	19.7	1.3	0.9	S	24.9	4.1	24		
15	17.7	18.2	19.5	11.6	8.3	2.7	1.4	1.9	1.2	1.1	20.6	7.3	1.1	0.8	0.6	0.9	0.9	0.8	0.8	0.8	0.9	0.9	S	0.9	20.6	5.3	24	
16	1.5	1.1	0.7	1.4	1.5	2.9	14.9	13.7	1.7	4.3	7.9	8.5	10.6	4	1.4	1.4	14.5	18.9	1.7	1.7	1.4	S	1.1	1.4	18.9	5.1	24	
17	1.7	1.8	16.1	20.2	20.5	15.1	21.7	19.7	12.4	13.1	10.3	15.5	16	13.1	14.2	11.9	13.7	6.2	5.9	1.9	S	1	1	1	21.7	11.0	24	
18	1.1	1	1	1	1	1	1	1.2	1.3	2.5	2.8	4.9	2	2	2	2.4	1.2	0.9	0.9	S	9.3	9.2	4.5	3	9.3	2.5	24	
19	2.5	1.6	1.4	1.8	1.9	1.6	4.9	5.8	3.1	2.8	4.1	5.3	5.1	16.5	2.2	2	2.8	1.2	S	2.2	2.2	1.8	2.5	2.4	16.5	3.4	24	
20	3.2	3.2	2.2	2.2	2.3	2.1	5.4	3.8	3.9	4.9	5.6	6.8	5.1	5.5	3.6	3.2	3.9	S	3.9	5.8	3.4	2.5	1.7	2.8	6.8	3.8	24	
21	4	2.9	2.9	2.9	4.7	7.1	11.7	8.7	6.5	22.4	35.2	5.1	1.7	2.1	1.1	1.6	S	4	2.5	1.6	2.9	2.9	1.7	2.4	35.2	6.0	24	
22	2.3	1.6	1.7	1.8	1.9	1.9	1.8	2	2	1.9	1.8	1.4	1.2	1.2	S	0.9	0.7	0.8	1.2	1.1	1.2	1.2	1.5	1.2	2.3	1.5	24	
23	1.3	1.8	1.4	1.2	1.5	1.6	1.6	1.6	1.4	5	9.3	7.2	3.5	11.6	S	17.5	12.4	1.6	1.4	1.6	1.2	1.2	1.2	1	17.5	3.9	24	
24	1.1	1.2	1.1	1.4	1.1	1.2	1.2	1.3	1.2	1.2	1.2	1.1	1.2	S	1.6	1.4	1.4	1.5	1.8	11.8	2.4	1.6	1.5	1.6	11.8	1.8	24	
25	1.6	1.8	1.7	1.5	1.6	1.7	1.7	C	C	C	C	C	0.9	S	0.9	0.7	0.9	1.2	1.2	0.9	1.4	1.1	1.2	1.5	1.5	1.8	1.3	24
26	1.5	3.5	1.3	1.3	1.3	1.3	2.1	4.4	1.3	5.1	5.1	S	4.3	6.6	7.1	4.1	10.7	3.2	0.5	0.3	0.3	0.3	5.7	4.2	10.7	3.3	24	
27	0.4	0.5	0.4	1.5	1.3	19.7	22.7	18.7	7.9	1.6	S	1.3	2.2	7.8	3.1	5	11.7	5.9	1.4	3.1	7.2	9.1	16	15.7	22.7	7.1	24	
28	1.7	0.6	0.7	0.7	0.5	2	32.6	4.1	3.9	S	9.8	11	3.7	2.8	1.8	1.6	1.5	5	6.6	5.8	1.9	1.4	2	1.3	32.6	4.5	24	
29	1.4	1.5	1.1	1	1.3	42.7	30.8	22.3	C	C	C	C	C	C	C	C	11.8	13.9	8.1	4.9	0.3	0.8	1	3	5	42.7	8.9	24
30	3.2	8.3	11.5	8.8	8.8	28.4	S	33	3.5	1.3	4.8	6.1	36.3	2.6	0.5	0.7	0.3	0	0	0.5	0.7	1.4	2.9	36.3	8.4	24		
HOURLY MAX	18	18	20	20	21	43	33	23	33	36	35	35	16	36	19	32	27	19	27	27	25	49	16	36				
HOURLY AVG	4.0	3.2	3.7	3.9	3.7	7.3	9.3	7.8	6.2	6.6	8.0	6.4	4.6	6.8	4.3	6.4	7.0	4.5	4.0	6.2	5.9	4.8	3.5	4.9				

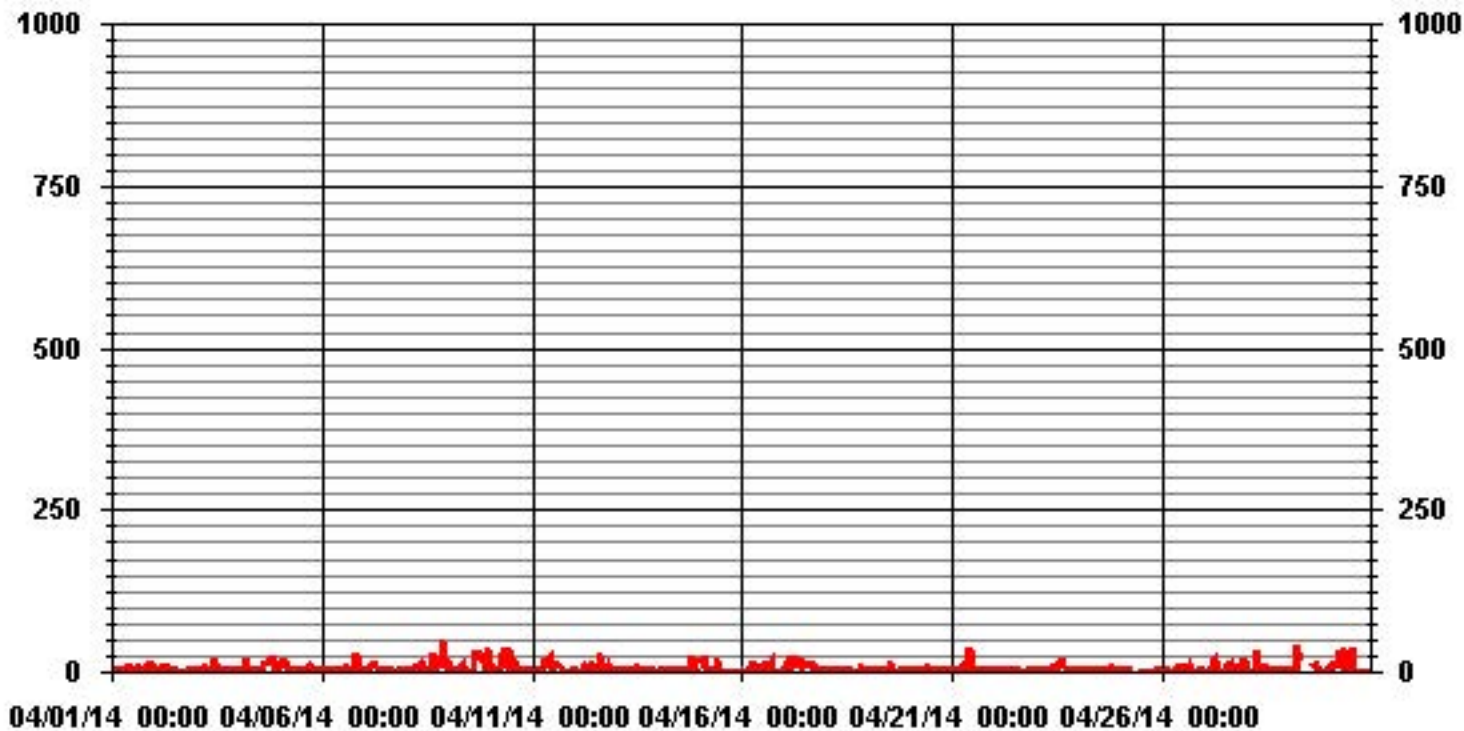
STATUS FLAG CODES

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:	677
MAXIMUM INSTANTANEOUS VALUE:	48.8 PPB @ HOUR(S) 21 ON DAY(S) 8
	VAR-VARIOUS
IZS CALIBRATION TIME:	30 HRS
MONTHLY CALIBRATION TIME:	11 HRS
STANDARD DEVIATION:	6.89
OPERATIONAL TIME:	720 HRS

01 Hour Averages



— LICA30 NOXMAX PPB

LICA30
NOX_ / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	3.23	3.67	12.50	11.76	14.70	6.76	7.05	4.55	4.70	8.52	3.23	2.05	6.61	5.14	2.94	2.50	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	3.23	3.67	12.50	11.76	14.70	6.76	7.05	4.55	4.70	8.52	3.23	2.05	6.61	5.14	2.94	2.50	

Calm : .00 %

Total # Operational Hours : 680

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	22	25	85	80	100	46	48	31	32	58	22	14	45	35	20	17	680
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	22	25	85	80	100	46	48	31	32	58	22	14	45	35	20	17	

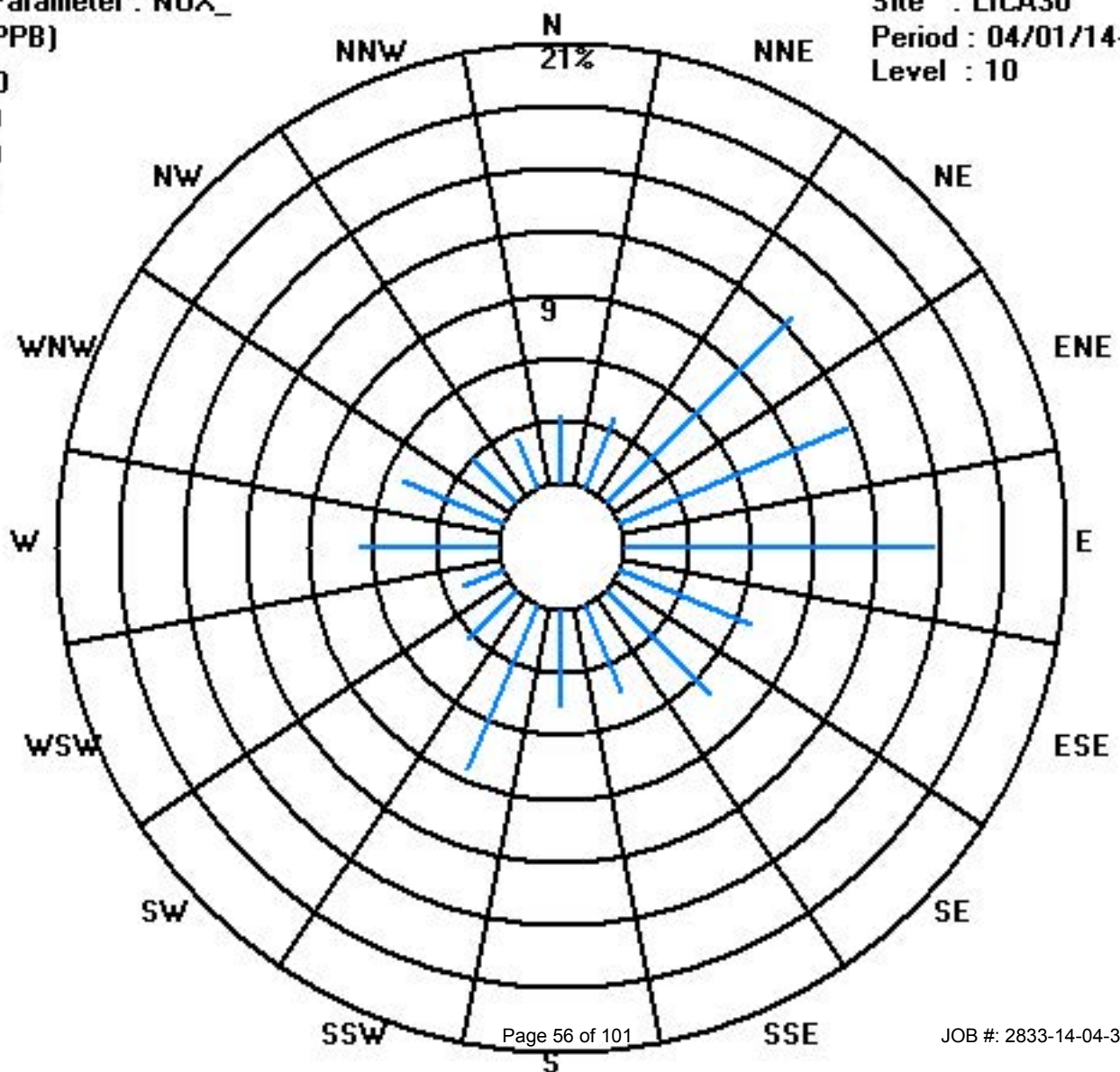
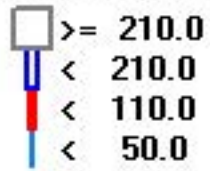
Calm : .00 %

Total # Operational Hours : 680

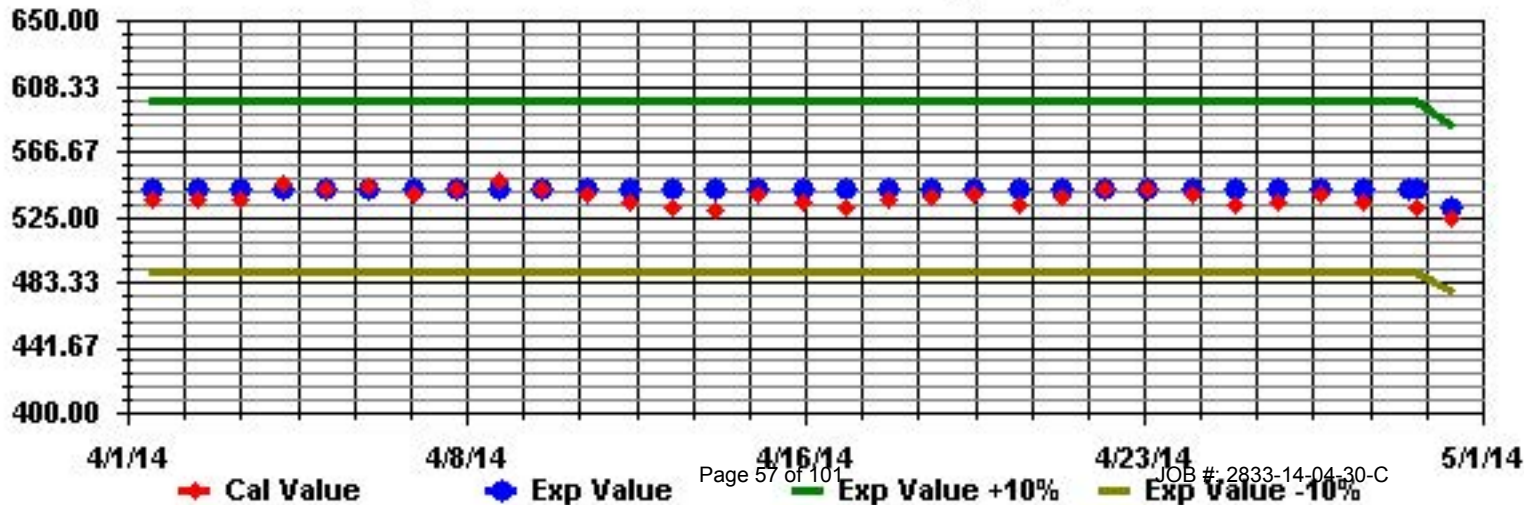
Class Limits (PPB)

Period : 04/01/14-04/30/14

Level : 10



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



Temperature

Lakeland Industry & Community Association - Maskwa Site

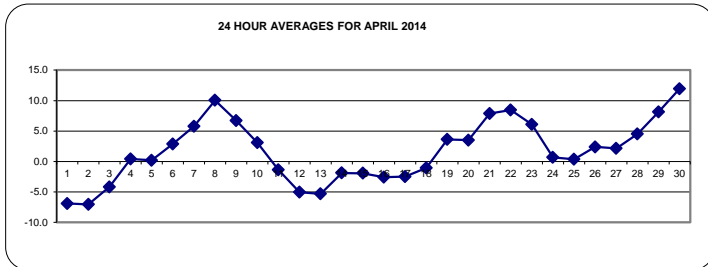
APRIL 2014

AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
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		-10.6	-10.7	-11	-11.3	-11.5	-11.4	-11.2	-10.3	-8.6	-6	-3.7	-2.8	-2	0.1	0	1	-0.5	-1.9	-3.9	-5.7	-8.1	-10.3	-12.1	-13.4	1	-6.9	24
2		-14.6	-15.1	-16.3	-16.5	-17.7	-17.4	-15.6	-11.9	-7.3	-2.4	-1.8	-0.3	1	1	1.6	1.2	0.7	0.3	-1.8	-4.2	-5.7	-7.5	-8.6	-10.3	1.6	-7.1	24
3		-11.2	-12.3	-12.6	-13.6	-14.5	-15.1	-14.3	-10.3	-6.2	-2.3	1.4	3.5	3.6	3.5	3.7	3.6	3.8	2.4	0.1	-2	-2.7	-2.6	-3.1	-3.4	3.8	-4.2	24
4		-3.7	-3.3	-3	-2.6	-2.4	-3.1	-3.6	-3.1	-2.3	-0.8	0.7	0.6	2.5	3.8	5.8	6.6	7.4	6.4	4.5	2.8	0.3	-1.2	-1.2	-1.8	7.4	0.4	24
5		-2.8	-3.4	-4.3	-4.6	-5.7	-7.6	-6.7	-2.3	-0.1	1.6	3.5	4.9	3.8	5.1	5.8	6.5	5.7	3.9	2.1	0.7	0.2	0.1	-0.8	-1.2	6.5	0.2	24
6		-1	-1	-0.8	-0.5	-0.6	-0.5	-0.3	0.5	1.1	1.9	3	5.5	8.6	9.1	9	8.4	8.7	7.3	5.1	2.3	1.5	0.8	0.5	-0.1	9.1	2.9	24
7		-0.1	-1.5	-1.6	-1.8	-2.1	-1.8	0	3.4	6.3	8.4	10.8	11.1	12.2	12.4	11.8	11.2	10.5	10.1	9.2	7.2	6.3	5.6	5.9	5.5	12.4	5.8	24
8		4.4	4.2	4.4	3.9	3.4	2.7	3.3	5	7.3	10.2	12.3	14.1	16.1	17	17.8	18.3	18.1	17.6	14.3	10.8	9.1	9.4	9	8.4	18.3	10.0	24
9		8	7.3	6.7	5.6	4.8	4	3.9	5.7	6.7	7.8	9	10.1	10.6	9.9	10.2	10.8	8.3	8.5	5.9	5	4.2	3.2	2.7	1.9	10.8	6.7	24
10		1	0	-0.5	0.1	-0.5	-1.1	0.1	2.8	5.6	7.3	8.7	8.3	8.9	9.3	8.3	8.4	4.4	2.4	1.3	0.8	0.5	0.1	-0.4	-1.6	9.3	3.1	24
11		-2.1	-1.9	-2.1	-1.7	-1.7	-1.8	-1.6	-1	-1.4	-1.1	-0.4	0	0.1	0.7	1.4	1.4	1	0.5	-0.3	-1.6	-3.6	-5	-5.4	-5.8	1.4	-1.4	24
12		-6.7	-7.7	-8.5	-9.2	-9.9	-11.1	-10.5	-8.3	-6.5	-4.2	-2.3	-0.1	0.2	0.2	-0.8	-0.8	-1.6	-1.7	-2.6	-3.6	-5.1	-6.6	-7	-6.9	0.2	-5.1	24
13		-7.5	-7.6	-8.2	-8.1	-9.3	-9.9	-9.2	-7.9	-6.4	-4.5	-2.9	-1.5	-1.4	-0.5	0.2	0	-0.2	-1.5	-3.2	-6.1	-8	-8.1	-8.3	-7.9	0.2	-5.3	24
14		-8.2	-10.4	-13.6	-14.7	-15.6	-15.2	-12.4	-5.6	-2.6	0.5	3.2	3.7	4.5	5.4	6.1	6.6	6	5.6	4.4	2.7	2	1.3	0.8	0.3	6.6	-1.9	24
15		0	-0.5	-0.9	-1.9	-2.8	-3.2	-3	-2.6	-2.2	-1.7	-1	0	0.1	-0.6	-1.6	-0.9	-0.9	-1.4	-1.8	-2.3	-3	-4.4	-4.4	-5.4	0.1	-1.9	24
16		-6	-5.8	-6.7	-7.4	-8.6	-7.2	-5.7	-3.9	-0.9	-0.6	0.2	1	0.7	1.9	1.2	1.4	0.2	0	-1.4	-2	-2.4	-3.2	-3.7	-3.1	1.9	-2.6	24
17		-3.2	-3.5	-4.1	-4.5	-5.3	-6.2	-5.3	-3.7	-2.6	-1.9	-0.1	0.2	-0.3	-0.4	-0.6	-1.1	-1.2	-1.5	-2	-2.3	-2.2	-2.3	-2.7	-2.7	0.2	-2.5	24
18		-2.7	-2.7	-2.8	-2.8	-2.8	-2.8	-2.5	-1.9	-1.4	-0.4	0.1	0.2	-0.3	-0.5	0	0	-0.2	-0.4	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	0.2	-1.1	24
19		-0.5	-0.5	-0.6	-0.6	-0.6	-0.4	-0.1	0.5	1.8	3.6	4.7	5.3	7.3	7.2	8.2	9.6	9.4	9.4	7.9	5.3	4	2.9	2.1	1.2	9.6	3.6	24
20		0.8	-0.6	-1.3	-1.4	-1.4	-0.7	0.6	2.3	2.7	3.3	5	5.8	7.2	8.7	9.2	9.1	8	5.8	5.6	5.2	4.7	3.9	1.8	0	9.2	3.5	24
21		-1.3	-1.8	-2	-2.1	-2.4	-2.8	0.8	5.2	8	12.2	15.4	16.1	16.3	17	17	16.4	16.6	16.7	13.8	10.7	8.3	5.2	3.4	2.6	17	7.9	24
22		2.5	1.2	0.8	0.4	0	-0.1	2.1	5.3	8	10.2	12.3	14.2	16	16.5	15.9	15.5	15.2	13.4	12	10.1	9.1	8.6	7.6	6	16.5	8.5	24
23		5.1	4.8	7	7.6	7.3	7	7.1	7.3	7.8	8.3	8.8	8.9	9	9.3	8.8	7	5.4	4.4	3.8	3.4	2.6	2.2	1.9	1.7	9.3	6.1	24
24		1.1	0.8	0.5	0.3	0.2	0.2	0.4	0.6	0.9	1.3	1.4	1.3	1.2	1.4	1.9	1.7	1.7	0.9	0.5	0.1	-0.3	-0.5	-0.6	-0.7	1.9	0.7	24
25		-0.8	-0.9	-1	-1.2	-1.3	-1.2	-1	-0.3	0.4	1.7	1.7	1.5	1.9	1.8	1.6	1.6	1.6	1.2	0.8	0.3	0.1	0.1	0.1	0.1	1.9	0.4	24
26		0.1	0.2	0	0	0	0.1	0.1	0.3	0.8	1.3	1.8	3.5	4.3	5.3	6	5.9	5.9	5.1	4.3	3.5	2.8	2.2	2.2	1.7	6	2.4	24
27		1.3	0.5	0.3	0.5	0.4	0.6	1	1.8	2.5	3.3	3.3	3	3	3.1	2.9	2.9	3.1	3.4	3.3	3.1	2.8	2.2	1.9	1.5	3.4	2.2	24
28		1.1	0.6	0.4	0.4	0.5	0.8	1.7	2.2	3.3	5.1	6.8	8.1	8.8	9	8.8	9.8	10.5	9.2	7	5.2	3.3	2.3	1.9	1.3	10.5	4.5	24
29		0.7	-0.1	-1	-1.2	-1.6	-1.3	0.4	4.5	7.8	13.1	15.2	15.6	16.3	16.7	17	16.9	17	16.9	15.4	11.7	7.3	4.4	2.6	1.4	17	8.2	24
30		0.5	-0.3	-1.1	-2.2	-2.5	-1.3	4.2	11.2	16.1	17.9	18.7	19.3	20.2	20.8	20.6	20.1	20	19.5	18.1	15.1	12.9	13.9	13.2	12	20.8	12.0	24
HOURLY MAX		8	7.3	7	7.6	7.3	7	7.1	11.2	16.1	17.9	18.7	19.3	20.2	20.8	20.6	20.1	20	19.5	18.1	15.1	12.9	13.9	13.2	12			
HOURLY AVG		-1.9	-2.4	-2.8	-3.0	-3.5	-3.6	-2.6	-0.5	1.3	3.1	4.5	5.4	6.0	6.5	6.6	6.6	6.2	5.4	4.1	2.5	1.4	0.5	0.0	-0.6			

STATUS FLAG CODES

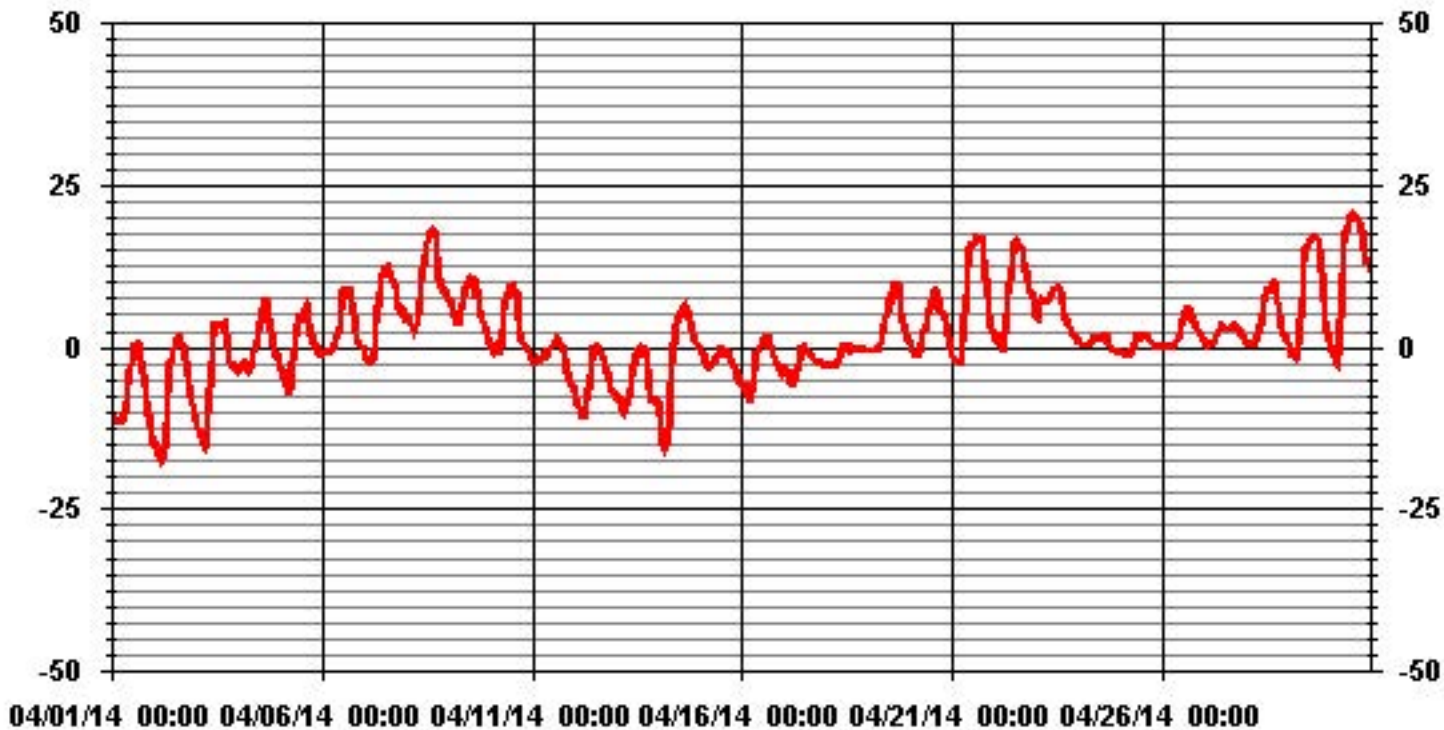
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-17.7 °C	@ HOUR(S)	4	ON DAY(S)	2
MAXIMUM 1-HR AVERAGE:	20.8 °C	@ HOUR(S)	13	ON DAY(S)	30
MAXIMUM 24-HR AVERAGE:	12.0 °C			ON DAY(S)	30
				VAR-VARIOUS	
OPERATIONAL TIME:				720	HRS
AMD OPERATION UPTIME:				100.0	%
STANDARD DEVIATION:	6.71	MONTHLY AVERAGE:		1.63	°C

01 Hour Averages



Precipitation

Lakeland Industry & Community Association - Maskwa Site

APRIL 2014

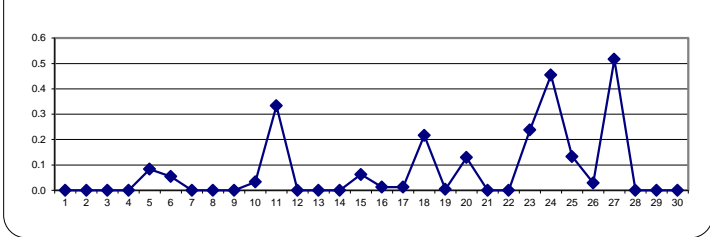
PRECIPITATION hourly averages in millimeter

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0.4	0.9	0	0	0	0.9	0.1	24
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.2	0.1	0	0	0	0	1.2	0.1	24	
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
8	0	0	0	0	0	0	0	0	0	0	0	0	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	0.5	0.3	0	0	0	0	0	0	0.5	0.0	24
11	0	0	0	0	0	0	0	0	0	0.2	0.9	0.8	0.7	1.1	1.9	1	0.5	0.2	0.2	0.3	0.1	0.1	0	0	0	1.9	0.3	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	0.1	0.1	0.5	0.6	0.1	0.1	0	0	0	0	0	0	0	0	0.6	0.1	24
16	0	0	0	0	0	0.1	0	0.1	0.1	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.1	0.2	0.0	24	
18	0.3	0.3	0.3	0.7	0.6	1.1	0.8	0.5	0	0.2	0.1	0	0	0	0	0	0	0	0	0	0.1	0.1	0.1	0	0	1.1	0.2	24	
19	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	0.1	0.0	24	
20	0	0	0	0	0	0	0	0.1	0.5	0.8	0.2	0.1	0	0	0	1	0.4	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.9	1	1.3	0.6	0.7	0.3	0.1	0.3	1.3	0.2	24		
24	1.1	1.3	0.9	0.9	1.5	1.5	0.9	0.2	0.6	0.5	0.3	0.3	0	0.2	0	0.2	0	0.1	0	0.1	0.2	0	0.1	0	1.5	0.5	24		
25	0.1	0	0.1	0.1	0.3	0.4	0.7	0.3	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0	0	0	0.1	0	0	0	0	0	0.7	0.1	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	0.3	0.4	0.4	0.0	24	
27	0.4	0.8	1.4	1.2	1.9	0.7	0.6	0.5	0.8	0.5	1	1.2	0.6	0.3	0	0	0.2	0	0	0.1	0.1	0	0.1	0	1.9	0.5	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	
HOURLY MAX	1.1	1.3	1.4	1.2	1.9	1.5	0.9	0.5	0.8	0.9	1	1.2	1.1	1.9	1	0.5	1	1	1.3	0.6	0.9	0.3	0.3	0.4					
HOURLY AVG	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	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

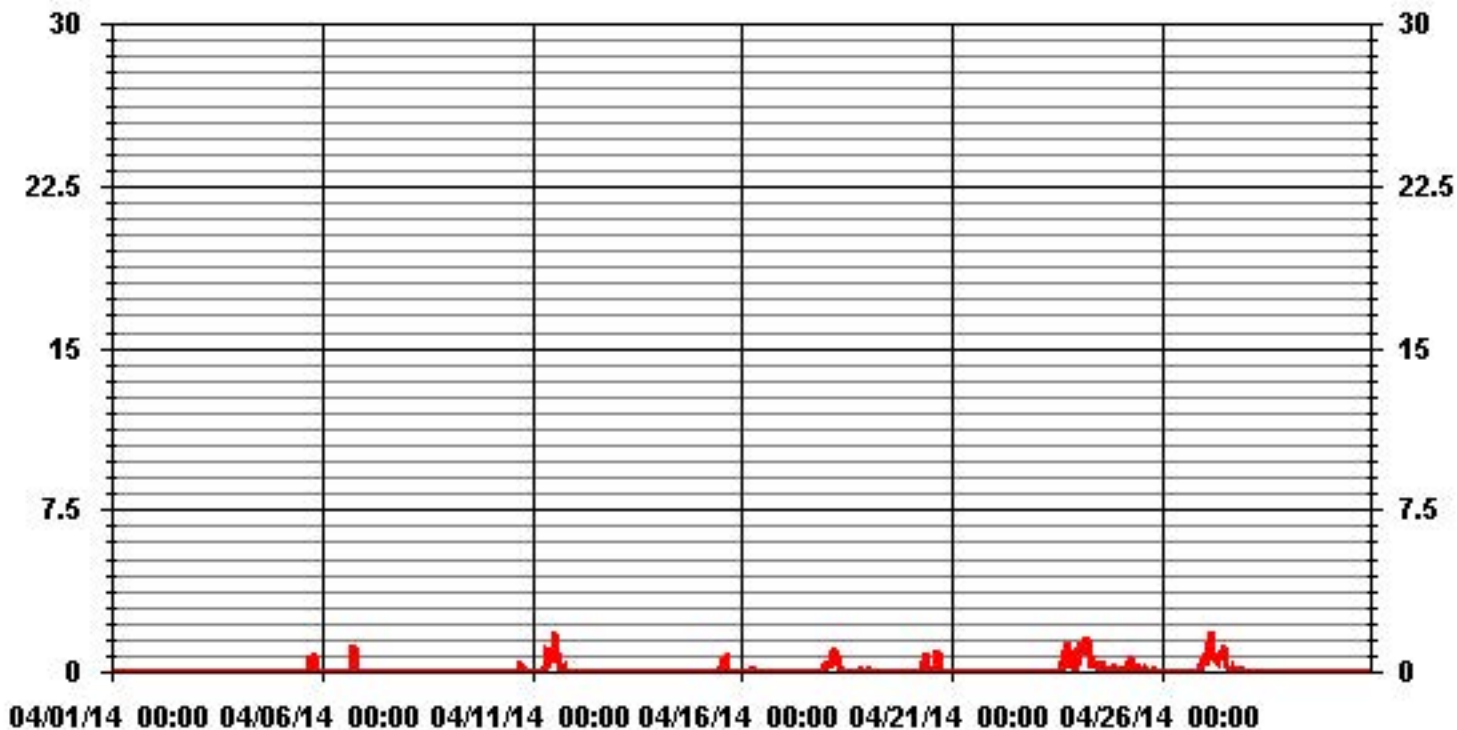
24 HOUR AVERAGES FOR APRIL 2014



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	1.9	MM	@ HOUR(S)	13, 4	ON DAY(S)	11, 27
MAXIMUM 24-HR AVERAGE:	0.5	MM			ON DAY(S)	27
MONTHLY TOTAL	55.5	MM			VAR-VARIOUS	
OPERATIONAL TIME:						720 HRS
AMD OPERATION UPTIME:						100.0 %
STANDARD DEVIATION:	0.24					MONTHLY AVERAGE: 0.08 MM

01 Hour Averages



— LICA30 PRECIP MM

Relative Humidity

Lakeland Industry & Community Association - Maskwa Site

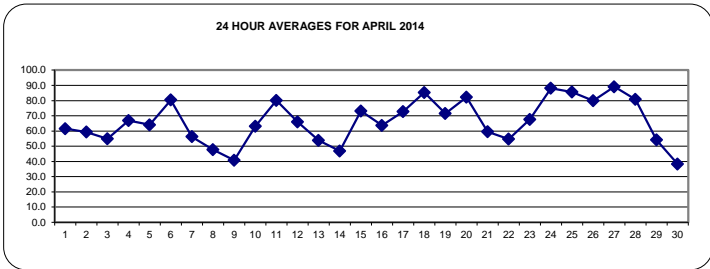
APRIL 2014

RELATIVE HUMIDITY (RH) hourly averages in %

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	62	63	65	69	73	75	75	73	70	64	57	52	47	43	42	39	44	48	54	61	69	75	78	79	79	61.5	24
	2	80	80	78	78	76	77	78	73	62	51	47	43	39	38	37	38	38	38	45	55	60	66	71	76	80	59.3	24
	3	79	81	81	81	80	80	76	66	53	43	37	33	32	31	30	33	32	35	40	47	51	56	64	75	81	54.8	24
	4	75	75	76	75	76	81	80	80	78	73	68	70	67	64	57	51	46	42	51	57	65	69	65	64	81	66.9	24
	5	65	67	68	68	70	76	74	57	49	46	39	35	43	45	42	41	52	70	83	88	89	90	90	90	90	64.0	24
	6	90	90	90	91	91	91	91	91	90	89	86	76	62	57	56	57	57	61	71	87	89	89	89	89	91	80.4	24
	7	88	89	90	89	87	83	76	66	58	49	40	38	34	31	30	31	35	37	40	45	49	53	54	57	90	56.2	24
	8	65	66	62	63	65	68	67	62	56	48	44	39	34	33	29	27	28	35	48	54	49	38	37	68	68	47.7	24
	9	36	38	39	42	44	47	48	43	40	37	33	31	28	29	29	28	35	34	45	46	50	56	59	61	61	40.8	24
	10	68	70	65	59	61	63	61	54	47	43	39	37	36	38	41	45	70	83	88	89	89	90	90	90	90	63.2	24
	11	88	83	82	80	65	68	64	62	73	81	81	80	83	84	85	85	87	89	89	88	84	81	81	80	89	80.1	24
	12	79	79	78	77	77	77	74	63	51	46	45	43	44	48	52	54	61	64	69	73	77	83	85	85	85	66.0	24
	13	86	85	84	83	79	75	73	68	57	46	39	37	37	34	31	30	30	32	35	45	52	52	52	48	86	53.8	24
	14	49	61	72	74	76	76	69	50	45	40	32	30	29	30	29	30	31	33	36	42	44	45	50	51	76	46.8	24
	15	52	54	56	67	78	80	80	77	75	72	69	70	72	77	81	79	76	73	74	73	75	82	82	80	82	73.1	24
	16	83	83	82	80	82	78	80	76	60	54	47	43	41	40	43	45	49	51	64	64	65	70	74	74	83	63.7	24
	17	75	74	74	74	76	77	72	67	64	63	59	62	63	66	72	74	74	75	77	79	80	85	86	86	86	72.8	24
	18	87	87	87	87	87	87	87	86	85	83	80	78	80	82	79	82	84	87	88	89	89	89	89	89	89	85.3	24
	19	89	89	89	90	90	90	90	88	82	73	68	67	59	57	54	48	48	48	53	62	66	69	72	76	90	71.5	24
	20	76	81	83	84	84	83	81	82	86	86	84	83	78	72	69	69	76	86	88	85	88	89	90	90	90	82.2	24
	21	90	91	91	91	91	91	91	83	72	59	37	34	31	27	28	27	25	23	33	45	57	65	71	74	91	59.5	24
	22	72	75	77	78	80	82	77	66	57	50	46	42	35	31	31	31	32	37	43	48	50	53	58	62	82	54.7	24
	23	67	71	65	60	59	59	58	57	56	55	54	51	50	49	53	67	78	85	87	87	88	89	89	89	89	67.6	24
	24	89	90	90	90	91	91	91	90	88	87	88	88	87	87	85	86	85	87	87	87	87	88	87	87	91	88.1	24
	25	88	89	89	89	89	88	88	85	82	77	77	80	80	82	83	84	84	86	87	89	90	90	90	90	91	85.7	24
	26	90	90	90	90	91	90	90	89	87	84	82	75	72	67	64	63	62	64	67	72	81	85	85	88	91	79.9	24
	27	89	90	90	90	90	90	90	90	89	88	87	87	87	86	87	88	89	89	90	91	90	90	91	91	89.1	89.1	24
	28	91	91	91	91	91	91	91	91	88	81	76	71	67	65	66	64	61	66	73	79	86	88	89	90	91	80.8	24
	29	90	90	91	91	91	91	91	80	57	39	27	22	24	25	24	23	23	24	27	35	47	56	63	68	91	54.1	24
	30	72	76	79	83	86	82	67	48	30	23	20	19	16	14	15	15	15	16	17	22	26	24	25	29	86	38.3	24
HOURLY MAX		91	91	91	91	91	91	91	91	90	89	88	88	87	87	87	88	89	89	90	91	90	90	90	91			
HOURLY AVG		77.0	78.3	78.5	78.8	79.2	79.6	77.7	72.1	66.2	61.0	56.3	53.9	51.9	51.1	50.8	51.1	53.5	56.4	61.2	65.9	69.6	72.0	73.5	74.8			

STATUS FLAG CODES

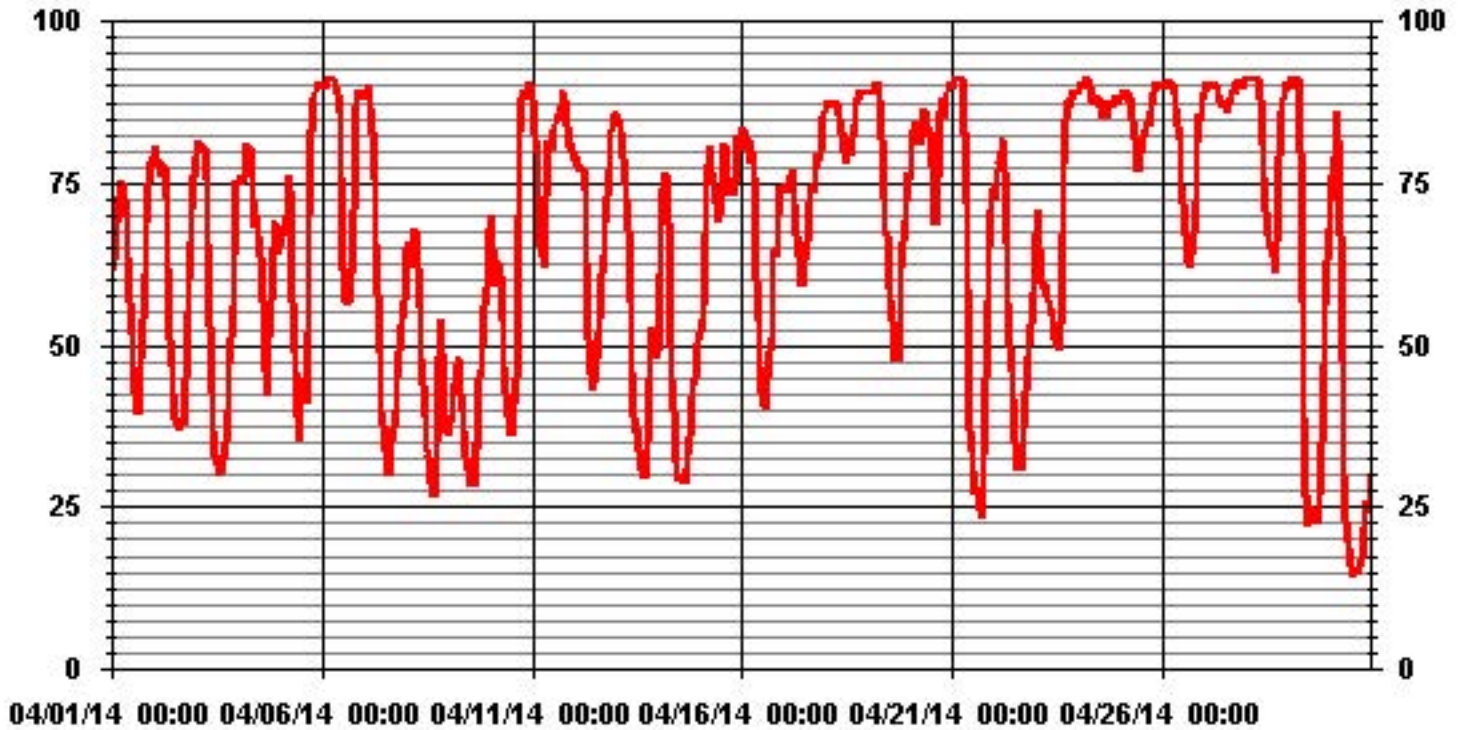
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	91	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	89.1	%			ON DAY(S)	VAR
					VAR-VARIOUS	
OPERATIONAL TIME:					720	HRS
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	20.74				MONTHLY AVERAGE:	66.26 %

01 Hour Averages



— LICA30 RH %

JOB #: 2833-14-04-30-C

Barometric Pressure

Lakeland Industry & Community Association - Maskwa Site

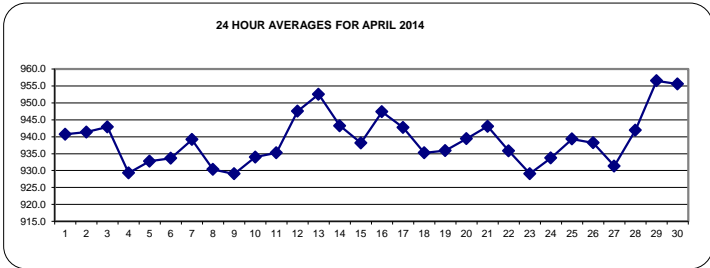
APRIL 2014

BAROMETRIC PRESSURE (BP) hourly averages in millibar

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	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		942	942	941	941	941	941	940	940	940	941	941	941	941	941	941	941	941	941	940	940	940	940	940	940	942	940.7	24	
2		940	940	940	940	940	940	941	941	940	940	942	942	942	942	942	942	942	942	942	942	943	943	943	943	943	943	941.4	24
3		943	943	943	943	943	943	944	944	944	944	945	946	946	945	945	944	944	943	942	941	941	940	940	939	938	946	942.9	24
4		937	936	935	933	932	931	929	929	928	927	927	926	926	926	926	926	926	927	927	928	928	929	929	930	931	937	929.3	24
5		932	930	932	933	933	933	934	934	935	935	935	935	934	934	933	933	933	932	932	932	931	931	931	929	935	932.8	24	
6		931	931	931	931	931	931	932	932	932	933	933	934	934	934	934	934	934	935	936	936	936	937	938	938	938	938	933.7	24
7		938	938	938	938	938	939	939	940	940	941	941	941	941	941	940	939	940	939	938	938	938	938	937	937	941	939.2	24	
8		936	935	934	934	933	932	932	932	932	932	931	931	930	929	928	928	928	927	927	926	927	927	926	926	936	930.4	24	
9		927	926	927	926	926	927	927	927	927	928	928	928	928	929	929	930	931	931	932	932	932	933	933	933	933	933	929.0	24
10		933	933	933	933	933	932	932	933	933	933	934	933	934	934	934	934	934	935	935	936	936	937	937	937	937	937	934.0	24
11		937	937	936	935	936	936	936	935	935	935	934	934	933	933	932	932	932	933	934	935	937	939	940	941	941	935.3	24	
12		942	943	944	945	945	946	947	948	949	949	950	950	949	949	949	949	948	948	949	949	949	948	948	949	950	947.6	24	
13		949	949	950	951	951	952	953	953	954	954	955	955	955	955	954	954	953	953	952	951	951	952	951	955	952.6	24		
14		951	951	950	950	949	948	948	947	947	946	946	945	944	943	942	940	939	938	937	936	936	935	935	935	951	943.3	24	
15		934	934	934	934	934	934	934	935	935	936	937	938	938	939	940	940	941	941	942	942	943	943	944	944	944	938.2	24	
16		944	944	945	945	945	946	947	948	948	949	949	948	949	949	949	949	949	948	948	948	948	947	947	947	949	947.4	24	
17		946	946	945	945	944	944	943	944	943	943	943	943	943	943	942	942	942	941	941	941	940	939	939	939	946	942.7	24	
18		938	937	936	936	935	935	935	935	934	934	934	934	935	935	935	935	935	935	935	935	936	936	936	936	938	935.3	24	
19		936	936	935	935	936	936	936	936	936	937	937	937	937	937	936	936	936	936	935	935	935	935	935	935	937	935.9	24	
20		935	934	935	935	936	936	936	937	938	938	939	940	941	941	941	942	942	942	943	943	943	943	944	943	944	939.5	24	
21		943	944	944	944	944	943	944	945	945	946	945	944	944	944	943	943	942	941	941	941	940	940	939	946	943.1	24		
22		939	939	939	938	938	938	938	938	938	937	937	936	935	935	934	934	933	933	933	933	932	932	931	939	935.8	24		
23		931	930	930	930	929	929	929	928	928	928	929	928	928	928	929	929	929	929	929	929	930	930	930	930	931	929.1	24	
24		930	930	930	931	931	931	932	932	930	933	934	934	935	935	935	936	936	936	936	937	937	937	937	937	937	933.7	24	
25		938	938	938	935	938	938	939	939	940	940	940	940	940	940	940	940	940	940	937	937	936	936	935	934	941	939.3	24	
26		940	940	939	939	939	939	939	940	939	939	939	939	939	939	939	938	938	938	937	937	936	936	935	934	940	938.2	24	
27		934	933	931	931	930	930	929	929	929	930	930	930	931	931	931	932	933	933	933	932	932	934	934	934	934	931.3	24	
28		935	935	935	936	937	937	938	939	939	940	941	942	942	943	944	944	945	946	946	947	948	949	949	950	950	942.0	24	
29		950	951	952	952	953	954	955	956	957	958	958	959	959	959	959	959	959	959	958	958	958	958	958	958	959	956.6	24	
30		958	958	958	958	958	958	958	959	959	960	959	959	959	959	959	959	959	959	958	958	958	958	958	958	960	955.6	24	
HOURLY MAX		958	958	958	958	958	958	958	959	959	960	959	959	959	959	959	959	959	959	959	958	958	958	958	958	958	958	958	958
HOURLY AVG		939.0	938.8	938.7	938.6	938.6	938.6	938.9	939.2	939.1	939.5	939.9	939.8	939.6	939.7	939.5	939.3	939.3	939.2	939.1	939.1	939.2	939.3	939.1	939.1	939.1	939.1	939.1	

STATUS FLAG CODES

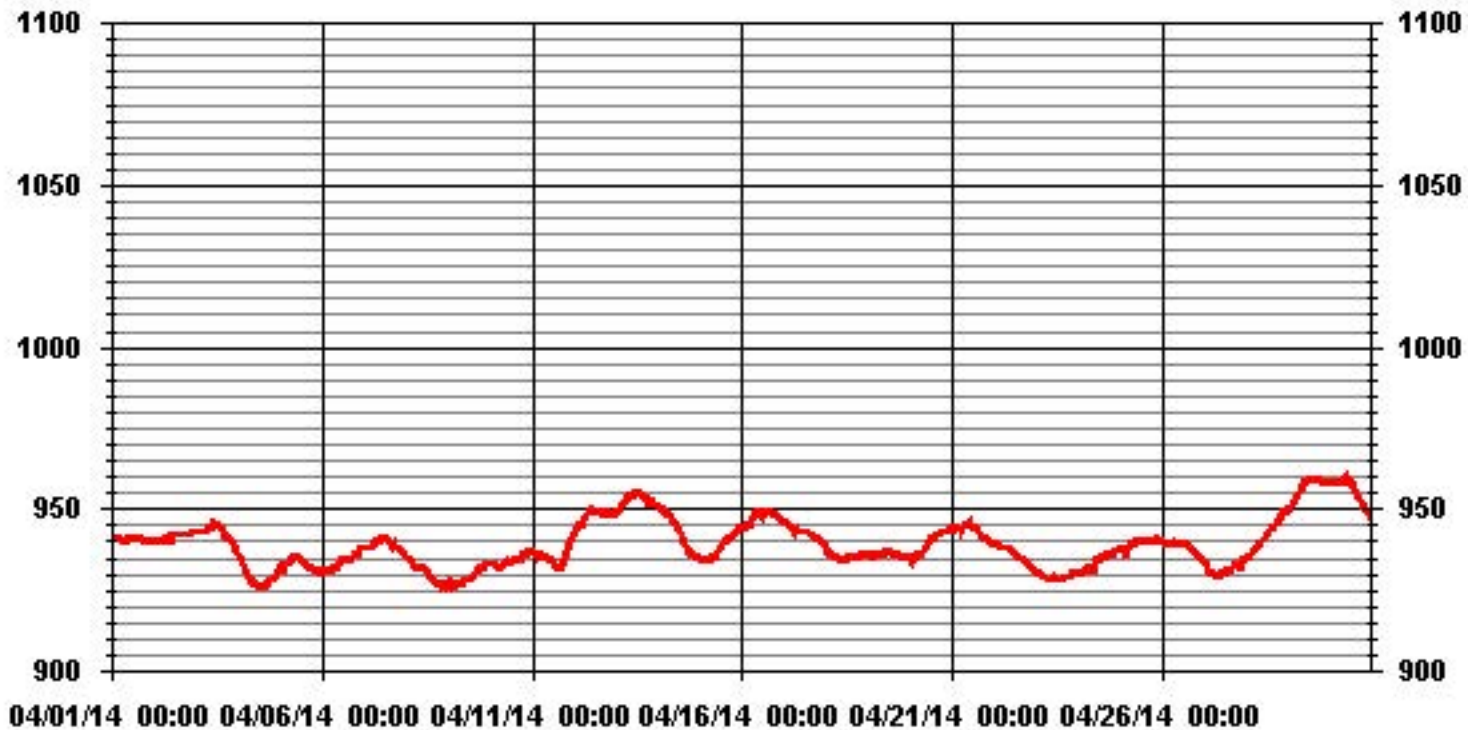
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	960	MB	@ HOUR(S)	9	ON DAY(S)	30
MAXIMUM 24-HR AVERAGE:	956.6	MB			ON DAY(S)	29
					VAR-VARIOUS	
OPERATIONAL TIME:					720	HRS
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	7.69				939.2	MB

01 Hour Averages



Vector Wind Speed

Lakeland Industry & Community Association - Maskwa Site

APRIL 2014

WIND SPEED (WS) hourly averages in km/hr

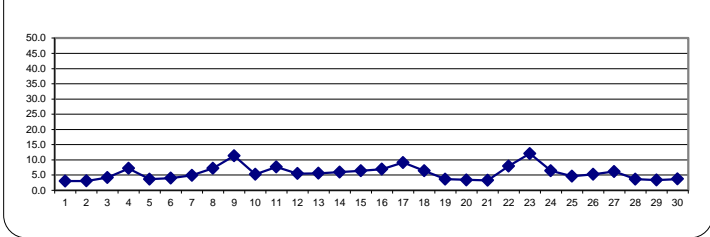
MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																													
1		5.1	3.5	3.4	2.5	2	1.5	1.3	2.2	2.5	2.3	0.8	2.8	2.2	4.3	3.2	4.4	7	6.4	6	3.9	2.4	0.7	1.2	0.5	7.0	3.0	24	
2		0.2	0.9	1.1	1.9	2.2	3.1	3	4.7	4.7	3.9	5.8	6.1	6.2	5.8	4.7	5.6	5.3	4.4	1.5	0.7	0.6	0.3	1	0.2	6.2	3.1	24	
3		1	0.3	0.2	0.4	0.4	0.7	2.5	5.3	3.8	3.1	2.3	1.9	5.3	7.1	7.6	6.3	7.2	7.1	6.1	4.6	5.3	6.7	7.3	8.9	8.9	4.2	24	
4		8	5.8	6.8	7.7	8.4	7.8	8	7.2	3.7	7	9.2	11.3	10.2	6.6	8	10.8	11.1	11.2	7.5	5.9	2.1	2.7	2.7	2.9	11.3	7.2	24	
5		3.5	3.9	2.5	2.5	1.2	0.3	1.2	2.8	3.5	7	8.1	7.4	8.6	8	7.6	5.4	4.7	2.2	2.2	3.3	0.8	0.6	0.2	1.1	8.6	3.7	24	
6		0.3	0.6	2	2.2	3.5	1.8	2.8	2.5	3	1.9	3.3	3.1	4.6	5.8	7.1	7.1	8.1	7.5	7.6	5.5	4.3	4.2	4	4.2	8.1	4.0	24	
7		3.9	1.7	3.5	3	2.8	5.1	6.4	6	6	6.9	4.4	6.7	6.6	6.1	6.1	7.5	6.2	3.1	2.6	3.9	5	2.7	4.9	6.4	7.5	4.9	24	
8		4.4	6.4	7.9	6.3	6.9	5.5	6.2	5.4	5.4	6.2	8.2	9	10.4	11.7	11.4	8	6.8	5.5	5.8	4.5	5.1	7.6	10.3	8	11.7	7.2	24	
9		8.4	8.9	10.6	10.2	10.6	11.1	9.3	11.5	13.8	13.6	14.9	15.3	16.6	15.7	16.5	14.8	12	9.2	9.1	6.5	7.8	8.8	9.8	7.8	16.6	11.4	24	
10		5.2	4	3.8	5	3.8	3.2	4	5.6	9.3	8.3	8.5	10.6	9.2	6.5	8	6.7	9.1	4.9	3.4	1.4	0.6	0.5	1.4	2.3	10.6	5.2	24	
11		4.1	4.5	4.3	4.7	6.8	5.3	5.8	6.7	5.9	6.7	6.1	5.6	5.6	4.7	5	5.1	3.7	7.6	16.4	16.3	15.8	14	10.3	12.2	16.4	7.6	24	
12		9.4	8.3	8.7	8.7	7.7	5.3	4.2	5.3	6.3	6.3	6.2	5.7	5.3	6.4	7.4	6.4	4.9	4.3	4.6	3.3	3.3	1.8	1.7	0.5	9.4	5.5	24	
13		1.5	4.7	3.8	6.2	6.1	7.4	6	7.7	8.5	8.3	7.3	6.6	7.3	6.8	6.6	6.8	4.8	6.9	4.6	1.4	3.1	3.3	2.9	5.3	8.5	5.6	24	
14		5.4	1.5	1.1	1.5	1.7	2.9	3.9	3.5	6.9	7.8	10.3	11.5	9.4	11.1	10	8.9	9	6.9	5.1	5.5	5.7	5.6	4.4	4.4	11.5	6.0	24	
15		5.5	6.2	6.8	7	6	6.4	6.5	8	9.4	9.9	9.6	8.8	8.6	7.3	10	8	7.4	8.6	4.7	3.3	2.4	0.7	1.1	1.1	10.0	6.4	24	
16		1.6	0.7	2.4	3.3	2.1	4.8	5	6.7	8.8	9.8	10.2	11	10.6	9.2	9.2	9.5	9.4	8	6.9	7.1	7.4	7.6	7.2	9.1	11.0	7.0	24	
17		9.5	8.1	6.5	6.9	7.8	6.6	8	9.9	8.1	9.1	11	10.1	10.7	10.1	10.6	10.6	10.1	10.2	10.8	9.4	8.3	9.2	8.8	8.3	11.0	9.1	24	
18		8.3	8.5	7.7	6.5	5.7	6.5	7.1	8	7.3	8.2	9.8	8.3	7.6	8	7.8	6.4	5.7	5	4	5	3.9	3.6	4	1.2	9.8	6.4	24	
19		1.4	0.2	1.1	0.5	0.2	0.1	1.4	1.7	2.2	3.4	4.4	4.2	4.3	3.8	5.6	5.2	6.3	7.9	4.4	7.1	8.8	6.6	4.2	3.2	8.8	3.7	24	
20		3.1	2.5	3.2	2.9	1.9	1.6	1.1	3.4	2.7	2.9	2.7	3.2	4.3	5.8	7.8	9.3	4.9	2.1	3.8	5	4.8	2.3	0.7	0.3	9.3	3.4	24	
21		0.2	0.7	1.2	1	2.8	1.1	2	4.2	4.3	0.9	2	5.1	6.4	7.3	7.1	6	4.4	3.3	3.5	4	3	2.7	1.9	3.9	7.3	3.3	24	
22		4.2	3.3	3.9	4.4	4.3	4.9	6.1	5.7	9.1	10	9.9	10.8	9.6	11.7	11.4	11.5	11	10.2	8.1	9	9.1	9	7.3	6.9	11.7	8.0	24	
23		6.6	8	9.7	12.1	13.7	13.2	12.9	13.6	13.8	14.4	13.7	15.3	15.2	15	14.6	16.9	13.4	9.9	9.8	9.9	10.6	9.2	9.3	8.6	16.9	12.1	24	
24		6.9	6.8	6.2	5.5	6.3	6.2	7	6.2	6.2	6.4	6.8	6.8	7.1	7.2	6.2	6.9	7.5	6.5	6.3	7.5	6.9	5	5.8	4.5	7.5	6.4	24	
25		4.6	3.7	4.4	4.1	4.1	4.2	4.8	5	5.8	5	5.1	5.7	6.5	6.8	6.2	6.5	5.4	4.9	3.9	3.1	2.9	2.8	2.9	3.1	6.8	4.6	24	
26		2.2	2.5	3.3	3.6	3.7	4	5.1	4.9	4.8	6.2	4.8	5.4	5.4	7.4	7.9	7.5	7.7	6	5.4	4.8	5.5	4.5	6.8	6.4	7.9	5.2	24	
27		6.9	6.3	6.5	7.3	7.6	7.9	8	7.8	7.4	7.6	9	8.5	6	7.7	6.3	4.3	4.3	3.3	4.6	4.3	3.6	4.2	5.2	3.8	9.0	6.2	24	
28		2.8	4	3.5	3.6	2.7	1	1.8	4.3	4.5	4.3	4	4.4	6.5	7.6	8.2	4	2.2	5	4.6	2.7	1.8	1.5	2.2	0.6	8.2	3.7	24	
29		2	1.1	0.8	0.3	0.3	0.6	1.8	2.7	2.8	4.4	9	8.9	7	6.7	6.4	6.3	5.7	5.1	3	1.1	1.6	0.7	1	0.9	9.0	3.3	24	
30		1	0.8	0.2	0.7	0.7	0.8	1.1	0.9	2.1	3.5	4.3	6	3.2	3.1	6.2	7.6	8.5	6.2	6.3	4.1	4.4	5.4	5.6	6.4	8.5	3.7	24	
HOURLY MAX		9.5	8.9	10.6	12.1	13.7	13.2	12.9	13.6	13.8	14.4	14.9	15.3	16.6	15.7	16.5	16.9	13.4	11.2	16.4	16.3	15.8	14.0	10.3	12.2				
HOURLY AVG		4.2	3.9	4.2	4.4	4.5	4.4	4.8	5.6	6.1	6.5	7.1	7.5	7.6	7.7	8.0	7.7	7.1	6.3	5.8	5.1	4.9	4.5	4.5	4.4				

STATUS FLAG CODES

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

LAST CALIBRATION:	February 5, 2014
DECLINATION :	19 DEGREE FROM MAGNETIC NORTH

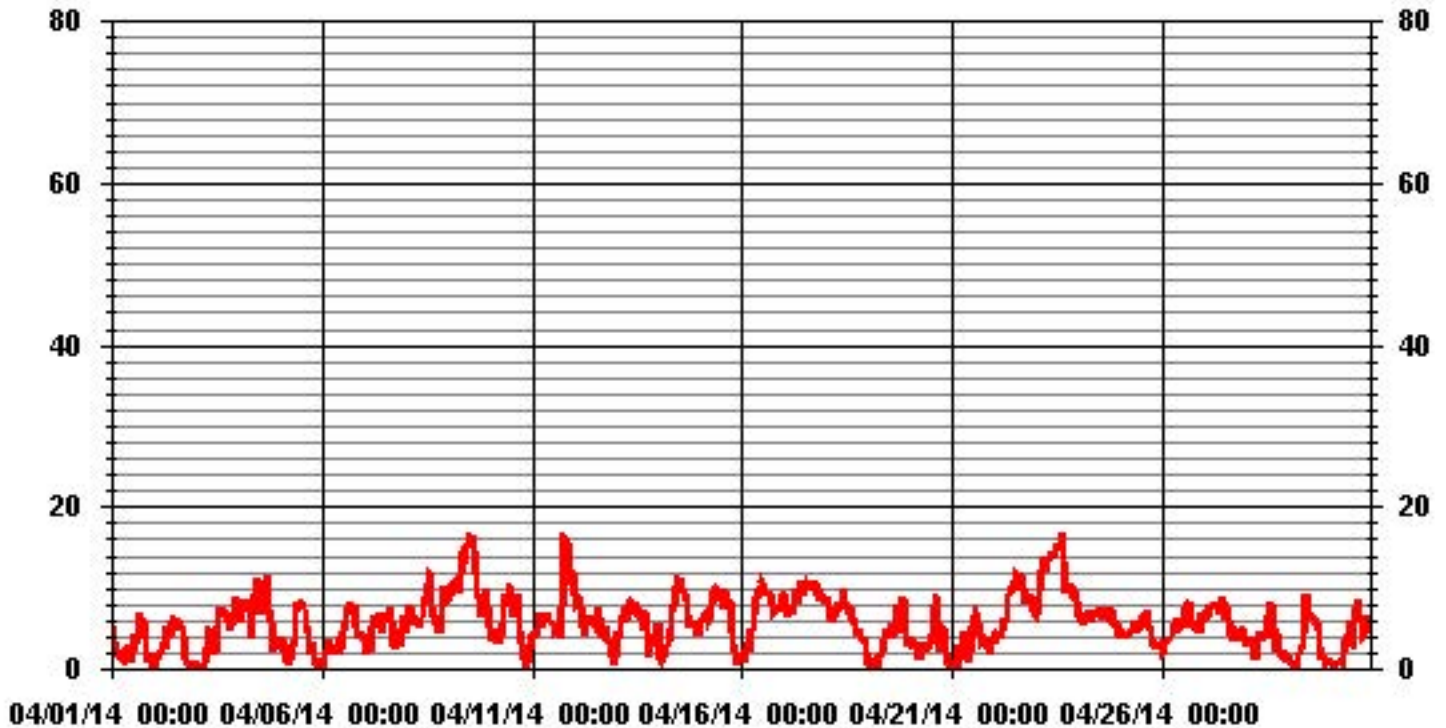
24 HOUR AVERAGES FOR APRIL 2014



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	720
MAXIMUM 1-HR AVERAGE:	16.9 KPH @ HOUR(S) 15 ON DAY(S) 23
MAXIMUM 24-HR AVERAGE:	12.1 KPH ON DAY(S) 23
	VAR-VARIOUS
MONTHLY CALIBRATION TIME:	0 HRS
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	3.29
MONTHLY AVERAGE:	5.71 KPH

01 Hour Averages



— LICA30 WSP KPH

Lakeland Industry & Community Association - Maskwa Site

APRIL 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	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	14.2	11.3	11.5	6.6	7.3	4.8	5.1	5.7	7.7	7.5	14.6	13.7	15	18.4	11.6	16.4	16.4	15.9	15.3	13.5	4.9	3.4	3.5	3.1	18	10.3	24
2	2.6	3.2	4.6	5.9	7.2	6.5	6.7	11.8	10.5	18.9	17.5	20.8	24	18.8	17.8	16.1	14.4	15.1	6.6	4.8	4.2	2.3	4	1.5	24	10.2	24
3	2.8	2	0.2	3	1.8	3.8	10.4	10.7	10	9.1	9.2	12	17.4	20.4	26.1	23.7	19.2	20.5	17.2	11.3	15.3	20	19	24.6	26	12.9	24
4	30.4	17.7	21.7	23.9	25.8	21.4	23.4	17.9	11.3	19.3	26.7	27.8	27.8	23.1	27.8	35.3	44	39.6	27.7	16.2	14.1	12.7	10.8	12.2	44	23.3	24
5	9.8	10.6	9.9	9.6	9.9	2.8	4.5	7.9	10.1	19.1	17.2	20.6	22.4	23.4	19.7	14.6	16.7	15.1	7.3	8	7.2	5.9	3.2	4.4	23	11.7	24
6	4.3	3.6	5.9	6	9.5	7.4	8.9	7.3	8.2	7.3	11.7	12.2	15.2	22.7	23.9	28.5	27.7	28.4	47.1	21.4	12.2	12.7	14.2	13.3	47	15.0	24
7	12.9	4.5	9.1	6.4	8.2	17.2	18	17.1	19.1	19.5	16.3	21	22.1	26.5	22.8	30.3	21.4	13.8	9.7	9.4	9.6	7.6	11.5	12	30	15.3	24
8	11.1	15.1	17.7	13.6	16.4	15.2	14.2	14.1	13	15.9	21	20.7	24.8	27.6	30.9	28.8	26.2	27.9	36.5	14.5	21	27.2	32.8	25.8	37	21.3	24
9	31.7	34.1	44.8	38	33.5	31.7	25	37.1	43.6	38.4	47.3	52.2	54.2	53.3	49.6	50	54.6	38.2	44.8	35	33.5	32.3	37.9	31.5	55	40.5	24
10	20.1	14.5	17	20.2	16	14.1	14.5	20.8	28.6	24.7	36.7	29.5	29.7	31.4	31	28	27.8	15.7	9.3	6	4.6	3.1	4.3	9.6	37	19.1	24
11	9.8	12.4	12	29.8	19.2	15.8	17.8	21.1	18.1	18.8	19.9	15.7	17.9	15.1	15.5	16.6	17.6	19	41.5	42.4	43	41	27.6	35.1	43	22.6	24
12	25.5	26.3	25.3	25.6	23.5	17.1	14	19.9	21.1	20.5	18.5	18.3	18.5	27.7	29	20.4	17.2	15.3	19.7	12.1	8.8	6.3	5.2	4.5	29	18.3	24
13	7.9	16.4	10.1	13.9	12.7	15.6	17.2	16	22.5	23.5	24.9	23.2	25.2	26.6	25.2	27.7	17.9	20.3	11.6	7	7.3	10.1	8.2	14.1	27	16.7	24
14	12.6	9.2	6.1	6.2	5.5	5.6	6.7	14	17.3	21.3	29	28.2	26.4	30.9	29.4	25	25.3	19.2	16.1	14.8	17.8	16.7	15.4	12.8	31	17.1	24
15	25.9	19.9	23.3	25.1	18.5	20.9	20.2	24.2	28.5	30.2	28.4	27.1	24.7	22.2	24.3	20.8	23.9	22.8	21.9	11	8	3.6	4.2	3.5	30	20.1	24
16	7	3.4	6.8	8.4	9	13.9	16	21.1	24.1	33.2	28.4	33	28.5	32.9	25.6	26.5	33.5	26.3	27.4	20.4	24.6	24.6	20.7	23.5	34	21.6	24
17	28.4	23.6	17.5	23.5	27.1	16.9	24.5	27.8	27	30.8	30	30	33.5	29.7	30.9	29.9	29.9	28.5	33.6	28.2	28.8	31.6	25.4	29.1	34	27.8	24
18	26.4	24.1	23.5	16.9	18.8	19.5	20.8	22.8	24.2	24	25.9	26.8	21.6	24.9	24.7	19.8	19.8	14.1	12	15.4	12	10.5	12.7	8	27	19.6	24
19	7.7	1.6	3.9	3.1	1.8	1.6	4.4	5.7	7.9	10.2	14.8	14	13	13.7	18.9	19.7	17.6	17.8	14	20.8	22.3	24.9	17.1	11	25	12.0	24
20	10.1	6.1	7.7	6.9	5.3	4.5	9.8	10.7	8.1	7.9	9.3	9.1	12.9	15.5	16.2	20.9	20.7	10	8.8	8.7	9	7.4	4.2	2	21	9.7	24
21	5.3	6.5	6.7	4.7	6.7	9.3	11.4	14.6	12.2	8.8	14.7	22.1	21.9	25.2	22	17	14.8	15.2	11.7	10.1	10.7	10.5	5.7	10	25	12.4	24
22	11.3	8.4	10.9	10.4	8.3	11.5	17	20.2	24.8	28.6	27.6	30.3	27.1	32	31.6	33.2	39.4	30.7	19.7	24.1	27.1	25.8	24	22.2	39	22.8	24
23	18.8	21.5	28.1	32.9	50.2	40	35.4	40	41.6	46.1	40.1	61.7	45.1	50.7	53.9	50.3	50.8	37.5	31.4	34.4	37.3	26.4	28.8	25.6	62	38.7	24
24	19.2	18.3	17.2	15.2	18.3	16.7	25.7	17.3	17.8	20.5	22.5	21.5	24.2	19.6	18.7	18.2	24.7	20.6	18.7	22.9	22.6	14.7	19.5	14.7	26	19.6	24
25	12.9	10.5	12.1	11.3	12.4	12.9	13	15.1	15.5	14.8	13.9	12.3	15.3	15.8	14.7	14.4	13.7	12.5	11.2	9.5	8.3	6.9	7	8.6	16	12.3	24
26	7.6	7.9	8.2	9.3	10.7	11.6	15.1	17.5	12.9	16.9	14.4	16	18.8	22.4	22.2	19.9	21.8	18.4	18	17.5	20.7	15.6	22.9	21.1	23	16.1	24
27	23.1	18	21	21.2	20.9	26.7	25.1	23.3	20.4	26.9	33	24.9	19.4	22.9	21.4	15.7	14.9	11.6	12.3	12.7	10	17.3	20.3	12.3	33	19.8	24
28	6.1	8.8	11.7	8.9	7.1	4.4	10.2	13.8	11.2	13.5	13.2	16.1	18.8	21	20.6	13.2	11.5	18.9	14	9.6	4.3	6.8	5.5	3.9	21	11.4	24
29	10.7	5.2	5.3	2.9	2.9	3.1	6.6	9.8	9.6	15.3	23.7	30.7	27.6	23.1	24.4	31.7	19.8	24.5	13.8	5.7	4.4	3.3	3.6	3.5	32	13.0	24
30	7.1	3.8	1.6	3.7	3.3	5.9	3.3	3.7	10.6	17.4	17.8	21.1	23.6	19	28.5	22.8	24.9	19.7	15.5	9.9	9.8	12.6	12.8	13.2	29	13.0	24
HOURLY MAX	32	34	45	38	50	40	35	40	44	46	47	62	54	53	54	50	55	40	47	42	43	41	38	35			
HOURLY AVG	14.1	12.3	13.4	13.8	13.9	13.3	14.8	17.0	17.9	20.3	22.3	23.8	23.9	25.2	25.3	24.3	24.3	21.1	19.8	15.9	15.4	14.8	14.4	13.9			

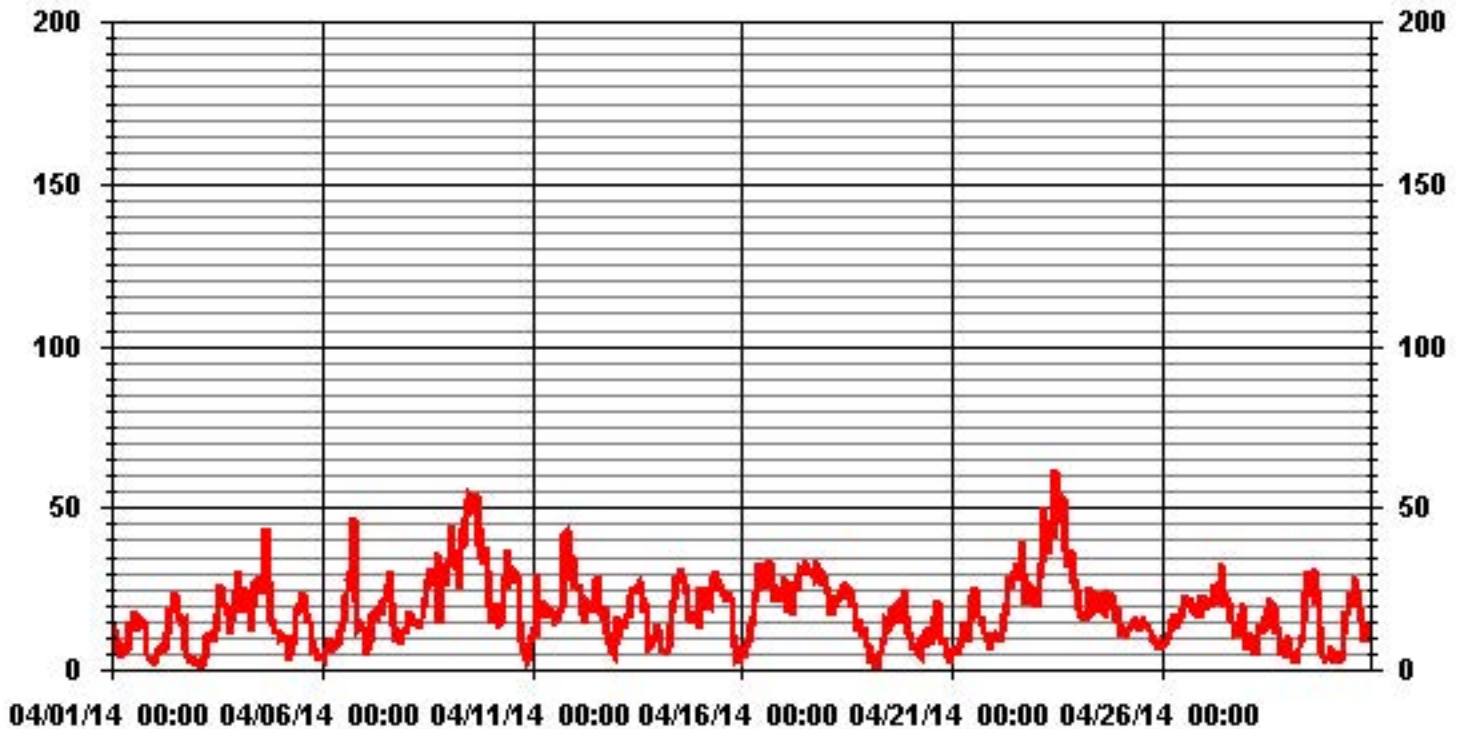
STATUS FLAG CODES

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 VALUE:	62	KPH	@ HOUR(S)	11	ON DAY(S)	23
					VAR-VARIOUS	
			OPERATIONAL TIME:			720 HRS

01 Hour Averages



LICA30
WSP / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

Logger Id : 30
Site Name : LICA30
Parameter : WSP
Units : KPH

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	1.52	1.94	8.47	6.11	5.83	3.75	3.05	2.50	3.33	4.44	2.91	1.38	3.33	1.52	1.80	1.38	53.33
< 12.0	1.80	1.25	3.75	5.83	6.52	2.91	4.16	2.08	1.38	3.88	.41	.55	3.05	3.19	.97	.97	42.77
< 20.0	.13	.55	.00	.00	1.80	.13	.00	.00	.00	.00	.00	.00	.55	.69	.00	.00	3.88
< 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	3.47	3.75	12.22	11.94	14.16	6.80	7.22	4.58	4.72	8.33	3.33	1.94	6.94	5.41	2.77	2.36	

Calm : .00 %

Total # Operational Hours : 720

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	11	14	61	44	42	27	22	18	24	32	21	10	24	11	13	10	384
< 12.0	13	9	27	42	47	21	30	15	10	28	3	4	22	23	7	7	308
< 20.0	1	4			13	1							4	5			28
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	25	27	88	86	102	49	52	33	34	60	24	14	50	39	20	17	

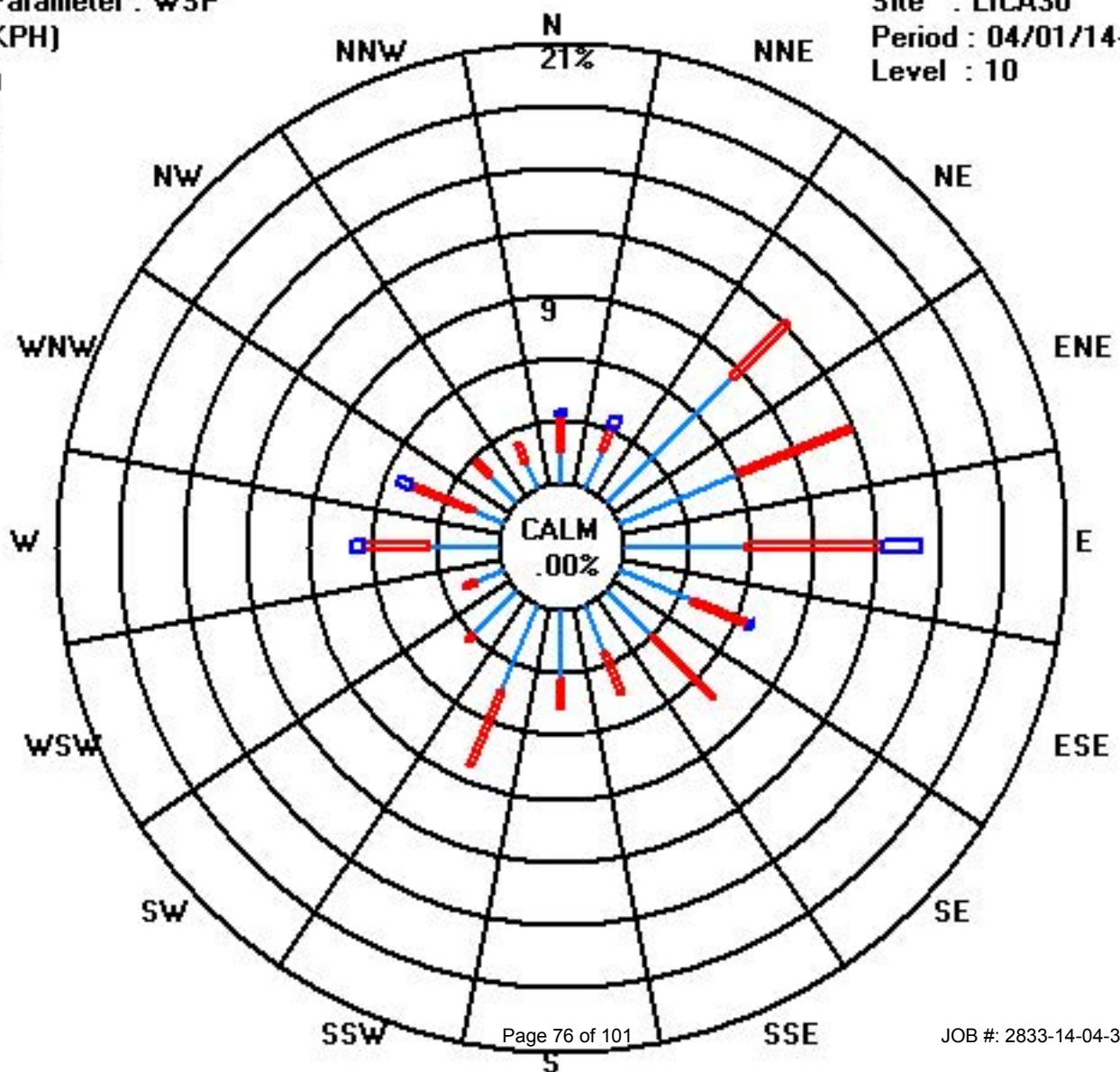
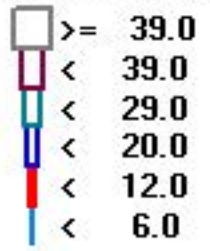
Calm : .00 %

Total # Operational Hours : 720

Class Limits (KPH)

Period : 04/01/14-04/30/14

Level : 10



Vector Wind Direction

Lakeland Industry & Community Association - Maskwa Site

APRIL 2014

WIND DIRECTION (WD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	RDGS.
DAY	24-HOUR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	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	
1	174	161	147	145	152	148	159	193	192	206	274	217	246	226	211	128	160	145	157	163	182	129	107	109	274	W	24	
2	97	86	75	67	70	48	65	39	38	88	72	74	86	45	58	27	43	51	91	75	67	191	196	182	196	SSW	24	
3	124	115	116	172	152	139	51	34	43	48	148	144	149	154	138	164	125	116	126	122	135	146	158	174	174	S	24	
4	166	146	132	128	121	107	123	133	133	139	182	194	199	232	275	287	281	281	299	292	259	326	335	301	335	NNW	24	
5	297	280	281	281	306	152	139	88	176	192	191	189	196	189	196	207	260	314	23	13	81	159	4	44	314	NW	24	
6	13	43	55	75	64	92	66	118	142	132	179	209	224	239	250	273	269	278	298	294	274	269	271	270	298	WNW	24	
7	271	211	211	218	238	274	279	278	279	290	269	244	246	249	267	279	286	270	227	194	197	218	203	198	290	WNW	24	
8	191	195	196	203	207	209	208	213	211	198	203	202	202	204	206	212	229	240	286	289	288	292	286	283	292	292	WNW	24
9	277	282	280	284	284	283	281	279	282	281	282	281	282	279	279	282	292	307	304	300	302	282	281	293	307	NW	24	
10	277	255	257	264	265	255	265	273	283	293	280	285	279	262	273	261	6	9	13	3	3	39	89	52	293	WNW	24	
11	58	58	54	106	131	118	114	109	106	110	96	89	79	90	98	99	87	30	25	15	15	13	6	9	131	SE	24	
12	4	359	358	5	360	355	329	340	356	345	341	310	331	322	324	309	295	291	323	308	291	261	270	276	360	N	24	
13	347	12	28	27	15	20	16	13	11	3	336	330	336	340	318	342	324	3	7	44	114	109	120	141	347	NNW	24	
14	152	83	55	65	58	43	29	141	166	151	149	154	164	171	165	160	160	138	116	93	82	72	54	58	171	S	24	
15	84	90	85	89	83	78	80	86	77	70	90	93	84	75	39	52	47	33	57	66	84	18	72	133	133	SE	24	
16	130	48	80	115	95	111	95	120	132	115	101	102	104	132	133	145	126	134	153	140	136	131	128	128	153	SSE	24	
17	130	121	110	105	105	92	100	105	103	96	93	92	88	90	94	92	93	90	89	87	87	83	81	77	130	SE	24	
18	73	69	70	62	62	61	64	70	75	80	89	82	80	85	89	77	77	69	67	76	91	104	111	91	111	ESE	24	
19	96	46	38	70	98	126	213	229	226	224	207	219	212	197	188	219	194	183	148	140	142	135	136	125	229	SW	24	
20	119	56	46	68	52	39	83	142	160	170	170	173	190	183	190	192	221	190	195	194	180	193	90	13	221	SW	24	
21	333	235	201	168	191	205	215	207	203	203	309	183	195	189	204	210	221	321	100	133	120	52	36	61	333	NNW	24	
22	58	47	53	54	55	53	62	63	57	56	54	49	68	53	69	61	63	58	46	47	58	57	48	45	69	ENE	24	
23	54	62	78	82	81	83	84	80	84	93	94	92	87	96	105	100	95	74	64	67	63	60	57	53	105	ESE	24	
24	49	53	53	46	51	45	46	50	50	51	58	52	59	63	64	56	63	70	74	92	89	69	69	55	92	E	24	
25	59	53	52	51	46	48	46	53	53	75	56	31	33	39	49	42	49	48	55	61	48	49	45	44	75	ENE	24	
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27	76	65	69	86	84	92	103	106	111	124	130	132	124	109	110	108	94	115	115	114	83	80	97	87	132	SE	24	
28	40	29	52	54	28	358	328	358	14	4	344	338	358	10	27	46	50	119	107	92	68	76	43	325	358	N	24	
29	82	46	10	326	134	209	222	258	262	277	287	283	279	292	293	304	300	308	307	332	193	187	200	171	332	NNW	24	
30	165	180	226	148	213	201	258	352	252	216	219	212	231	227	215	193	200	203	183	173	168	179	186	193	352	N	24	

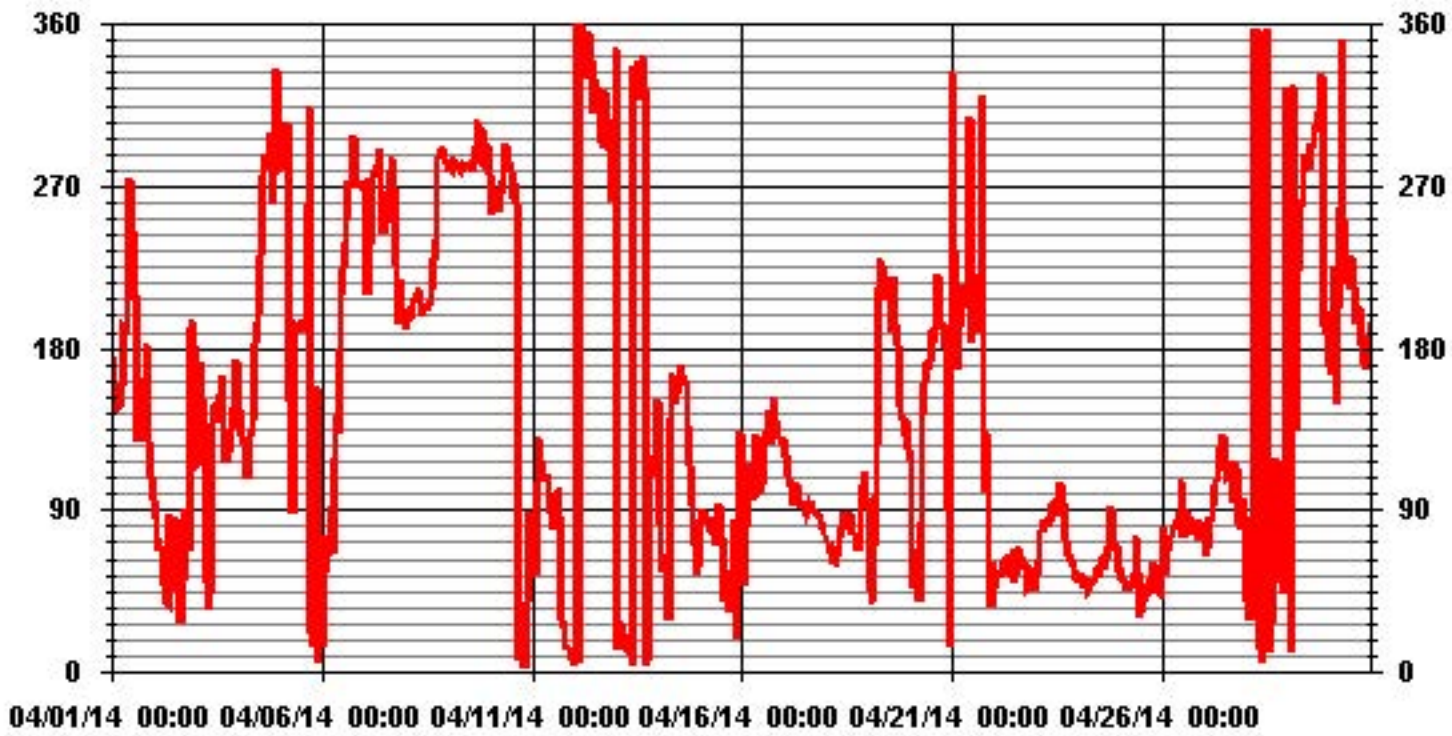
STATUS FLAG CODES

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

LAST CALIBRATION:	February 5, 2014
DECLINATION :	19 DEGREE FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	720 HRS
STANDARD DEVIATION:	93.33	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	87 DEG

01 Hour Averages



— LICA30 WDR DEG

Standard Deviation Wind Direction

Lakeland Industry & Community Association - Maskwa Site

APRIL 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																									
1		23	25	22	22	25	22	21	20	28	42	80	52	67	42	67	49	26	23	19	15	9	7	8	13
2		48	18	15	21	16	16	15	17	24	39	37	44	42	39	44	35	36	32	26	18	28	9	10	12
3		4	0	0	38	12	20	36	19	28	37	57	69	42	33	32	33	30	26	21	15	18	21	20	23
4		26	25	25	25	27	25	26	24	31	24	27	21	22	35	35	29	30	32	34	28	42	31	34	31
5		24	20	34	26	26	27	19	24	32	25	25	30	22	28	24	31	32	40	19	16	44	25	49	24
6		32	22	24	19	24	32	27	29	28	39	31	39	36	32	33	34	32	30	33	27	24	25	24	21
7		23	19	15	16	20	21	24	28	29	26	37	35	39	42	36	32	26	30	26	11	13	18	15	15
8		16	18	17	14	17	18	19	22	23	19	20	20	21	20	25	28	33	38	35	26	28	28	26	28
9		28	28	30	26	25	23	25	29	28	29	29	31	31	30	30	33	34	33	34	33	34	25	27	28
10		29	29	33	31	31	32	31	29	30	34	35	30	34	41	37	36	29	20	20	52	41	43	23	17
11		21	22	20	28	26	25	28	30	26	28	30	29	26	30	27	26	29	20	16	18	19	19	21	21
12		22	23	23	23	21	22	31	30	30	33	36	36	43	36	34	32	34	36	36	37	20	24	20	56
13		24	18	15	16	13	12	18	19	23	31	38	39	37	40	38	32	43	31	23	12	15	17	18	21
14		17	24	28	24	19	14	10	35	30	28	29	26	31	27	30	30	26	25	25	24	25	26	26	23
15		27	30	27	28	33	32	30	29	29	30	28	31	31	29	22	27	28	23	25	28	25	7	34	11
16		25	23	16	15	20	21	25	27	31	28	33	32	33	33	33	29	26	28	26	24	26	23	23	25
17		23	25	25	26	26	23	24	25	31	31	30	31	29	31	27	28	27	30	29	26	29	29	26	28
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19		27	5	14	14	6	19	21	28	30	31	32	31	45	47	29	36	31	23	23	20	21	28	36	27
20		26	21	14	15	14	22	23	26	22	23	34	27	29	30	22	20	41	29	23	9	11	46	15	20
21		34	35	53	21	10	70	40	29	29	58	63	48	46	42	31	31	39	38	24	15	21	19	18	14
22		19	18	19	17	16	18	23	32	28	29	30	30	32	28	30	27	28	25	24	25	25	25	24	23
23		23	23	28	28	27	29	28	28	30	28	29	29	30	29	27	27	26	26	30	26	28	25	26	26
24		25	25	24	23	23	22	25	23	25	26	27	27	27	28	27	27	27	27	27	27	27	30	26	25
25		24	24	24	23	23	24	22	27	25	33	27	21	22	23	22	24	25	25	24	22	19	17	15	21
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27		27	24	26	28	26	27	26	26	27	28	27	27	34	25	31	30	26	26	24	25	25	30	28	29
28		18	15	21	22	18	16	42	26	29	28	33	36	33	24	21	39	68	32	25	20	19	32	24	33
29		37	35	53	12	12	30	13	30	34	37	30	35	41	42	42	38	37	42	30	25	36	14	3	52
30		47	31	20	30	40	39	27	27	43	42	58	42	58	63	43	27	30	23	17	12	14	13	14	12

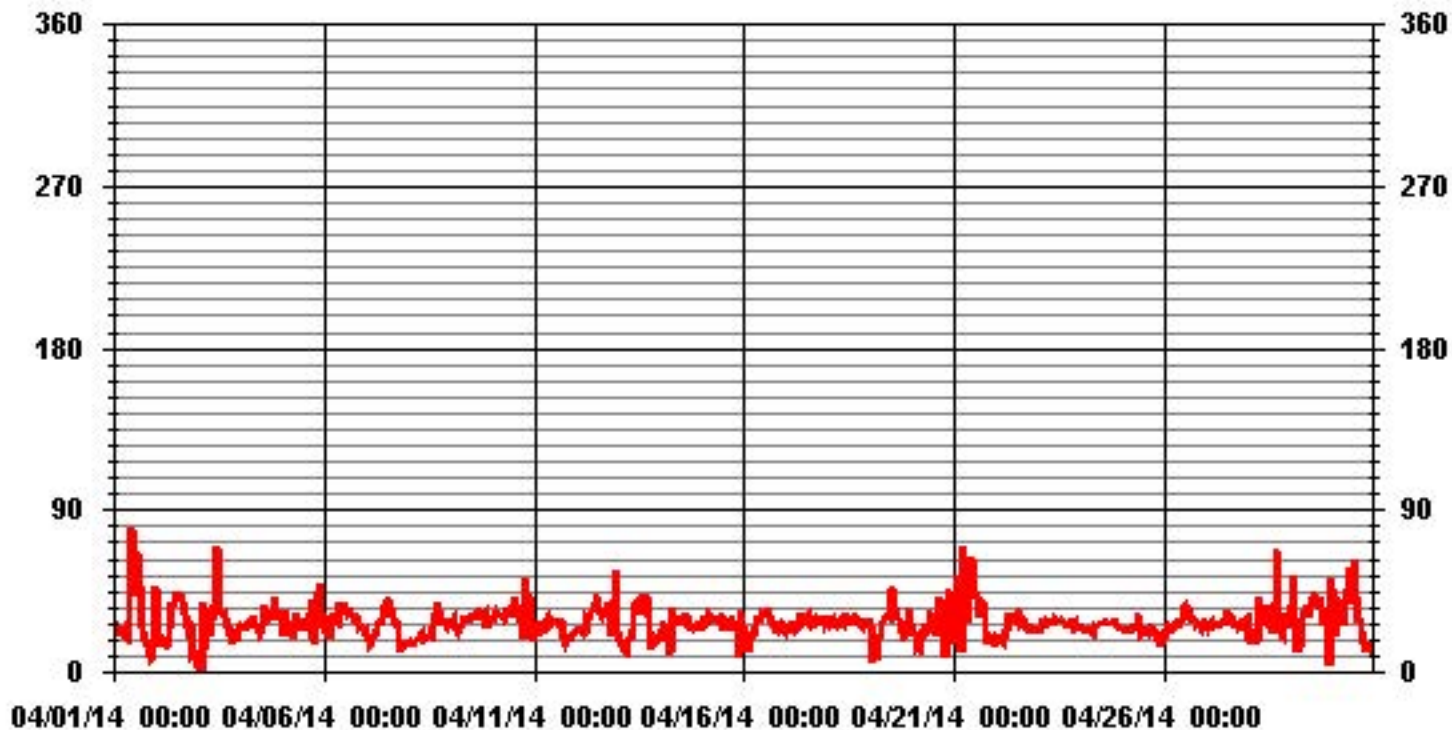
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- 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: February 5, 2014

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 720 HRS

01 Hour Averages



Calibration Reports

Sulphur Dioxide

Maxxam API 100E SO2 Analyzer Calibration

Date: 29-Apr-14
 Company: LICA
 Station Name/Location: Maskwa
 Performed by: Kevin Hope
 Application H₂S/TRS/SO₂: SO2

Start/End Time (mst): 8:51/11:40
 Calibration Purpose: Monthly Calibration
 Converter Make & Model: NA
 Converter Serial #: NA
 Cal Gas Expiry Date: 29-Dec-16

Analyzer:
 Serial Number: 508
 Last Calibration Date: 26-Mar-14
 Previous Cal High Point C.F.: 1.001

Range ppb: 1000
 As Found C.F.: 1.006
 New C.F.: 1.003

As found:		As left:	
SLOPE:	1.247	SLOPE:	1.248
OFFSET:	77.0	OFFSET:	77.0
HVPS:	491	HVPS:	491
RCELL TEMP:	50.0	RCELL TEMP:	50.0
BOX TEMP:	29.0	BOX TEMP:	29.0
PMT TEMP:	7.7	PMT TEMP:	7.7
IZS TEMP:	45.0	IZS TEMP:	45.0
TEST:	NA	TEST:	NA
STABIL:	0.4	STABIL:	0.4
PRES:	25.0	PRES:	25.0
SAMP FL:	595	SAMP FL:	595
PMT:	69.7	PMT:	69.7
NORM PMT:	78.6	NORM PMT:	78.6
UV LAMP:	2648	UV LAMP:	2648
LAMP RATIO:	88.3	LAMP RATIO:	88.3
STR. LGT	48.0	STR. LGT	48.0
DRK PMT:	11.3	DRK PMT:	11.3
DRK LMP:	-1.9	DRK LMP:	-1.9
Internal Span:	253.8	Internal Span:	250

<p>Calibrator: Flow Meter ID's: NA Make & Model: Environics 6100 Serial #: 4760 Cal Gas Cylinder I.D. #: BAL3165 Cal Gas Conc. (ppm): 49.7</p>	<p>Calibrator Flow Targets:</p> <table border="1"> <thead> <tr> <th>point</th> <th>diluent (cc/min)</th> <th>cal gas (cc/min)</th> <th>total (cc/min)</th> </tr> </thead> <tbody> <tr><td>zero</td><td>5000</td><td>0</td><td>5000</td></tr> <tr><td>high</td><td>5000</td><td>80</td><td>5080</td></tr> <tr><td>mid</td><td>5000</td><td>40</td><td>5040</td></tr> <tr><td>low</td><td>5000</td><td>20</td><td>5020</td></tr> </tbody> </table>	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)	zero	5000	0	5000	high	5000	80	5080	mid	5000	40	5040	low	5000	20	5020
point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)																		
zero	5000	0	5000																		
high	5000	80	5080																		
mid	5000	40	5040																		
low	5000	20	5020																		

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	0.5	NA
adjusted zero	5000	0.0	5000	0	0.5	NA
as found high	4996	79.80	5076	781.4	777.0	1.006
adjusted high	4996	79.80	5076	781.4	781.8	1.000
mid	4996	39.80	5036	392.8	392.0	1.003
low	4996	19.90	5016	197.2	196.7	1.005
calibrator zero	4996	0.00	4996	0	0.5	NA
Average C.F. =						1.003

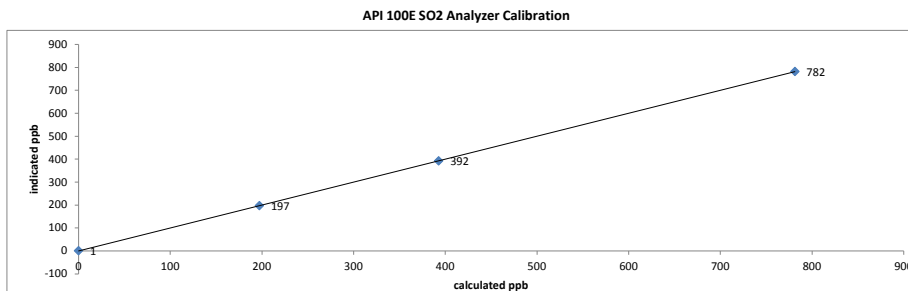
Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	Pass/Fail ?
Slope =	1.000	> or = 0.995	PASS
b (Intercept as % of full scale) =	0.01%	0.85-1.15	PASS
% change in C.F. from last cal	-0.53%	± 3% F.S.	PASS
		± 15%	PASS

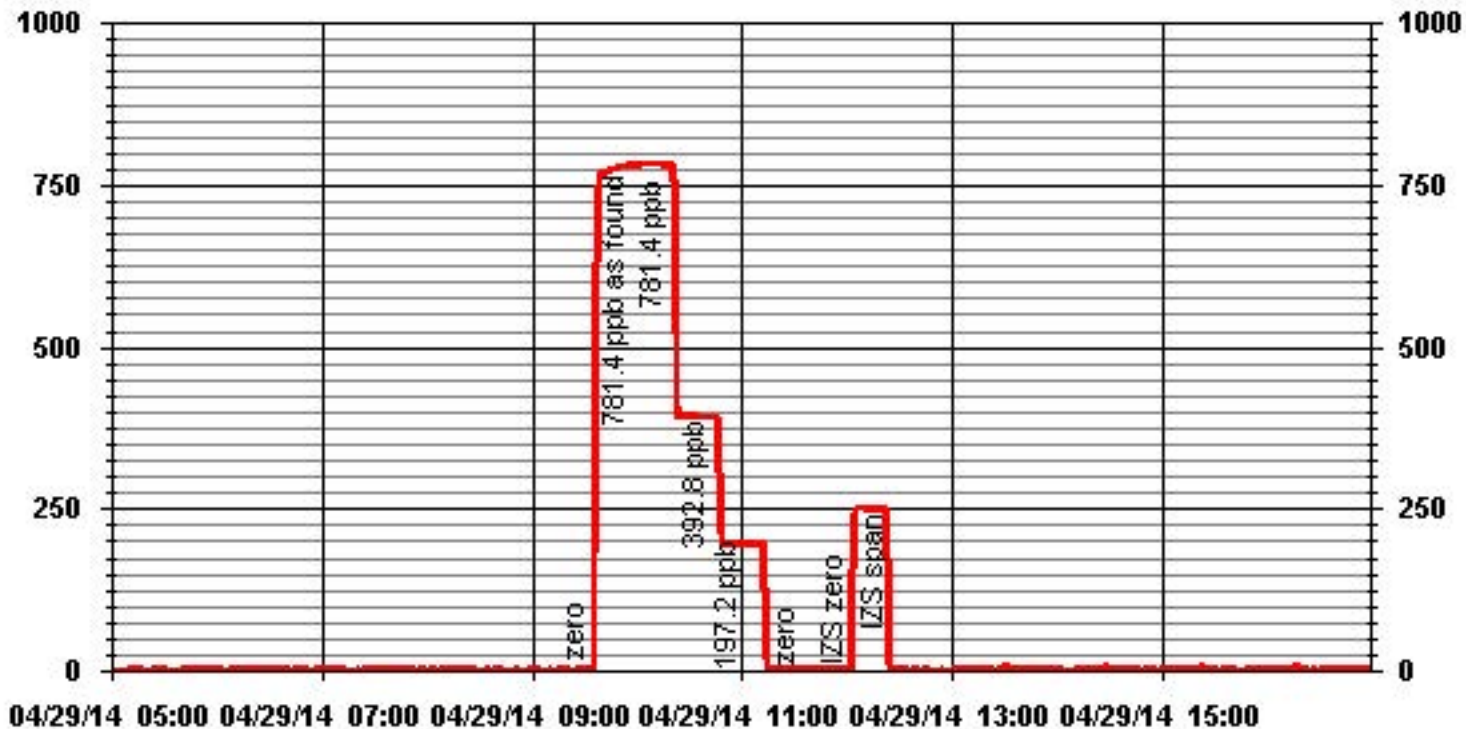
Converter Efficiency Check for H₂S/TRS application:
****run converter efficiency test immediately following zero adjust****

SO₂ High Point gas concentration: na Time gas run (mst): na
 Zero corrected analyzer response: na

Comments:
 Filter changed. No zero adjustment necessary.



01 Minute Averages



Hydrogen Sulphide



API 101E H2S Analyzer Calibration

Date: 29-Apr-14 **Start/End Time (mst):** 13:21/15:51
Company: LICA **Calibration Purpose:** Monthly Calibration
Station Name/Location: Maskwa **Converter Make & Model:** NA
Performed by: Kevin Hope **Converter Serial #:** NA
Application H₂S/TRS/SO₂: H2S **Cal Gas Expiry Date:** 29-Dec-15

Analyzer:
Serial Number: 511 **Range ppb:** 100
Last Calibration Date: 26-Mar-14 **As Found C.F.:** 1.094
Previous Cal High Point C.F.: 1.000 **New C.F.:** 0.987

As found:		As left:	
SLOPE:	1.158	SLOPE:	1.246
OFFSET:	30.6	OFFSET:	30.6
HVPS:	584	HVPS:	584
RCELL TEMP:	50.0	RCELL TEMP:	50.0
BOX TEMP:	30.8	BOX TEMP:	30.8
PMT TEMP:	7.9	PMT TEMP:	7.9
IZS TEMP:	45.0	IZS TEMP:	45.0
TEST:	NA	TEST:	NA
STABIL:	0.2	STABIL:	0.2
PRES:	29.3	PRES:	29.3
SAMP FL:	660	SAMP FL:	660
PMT:	59.3	PMT:	59.3
NORM PMT:	31.9	NORM PMT:	31.9
UV LAMP:	3304.3	UV LAMP:	3304.3
LAMP RATIO:	91.7	LAMP RATIO:	91.7
STR. LGT	17.7	STR. LGT	17.7
DRK PMT:	28.7	DRK PMT:	28.7
DRK LMP:	5.8	DRK LMP:	5.8
Internal Span:	48.64	Internal Span:	

Calibrator:	Flow Meter ID's: NA	Calibrator Flow Targets:			
	Make & Model: API 700	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
	Serial #: 830	zero	5000	0	5000
	Cal Gas Cylinder I.D. #: BLM005049	high	5000	40	5040
	Cal Gas Conc. (ppm): 10.1	mid	5000	20	5020
		low	5000	11	5011

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	0.1	NA
adjusted zero	5000	0.0	5000	0	0.1	NA
as found high	5000	39.80	5040	79.8	73.0	1.094
adjusted high	5000	39.80	5040	79.8	80.1	0.997
mid	5000	19.80	5020	39.8	40.0	0.998
low	5000	11.00	5011	22.2	23.0	0.967
calibrator zero	5000	0.00	5000	0	0.1	NA
Average C.F. =						0.987

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	Pass/Fail ?
Slope =	1.000	> or = 0.995	PASS
b (Intercept as % of full scale) =	-0.35%	0.85-1.15	PASS
% change in C.F. from last cal	-9.38%	± 3% F.S.	PASS
		± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

****run converter efficiency test immediately following zero adjust****

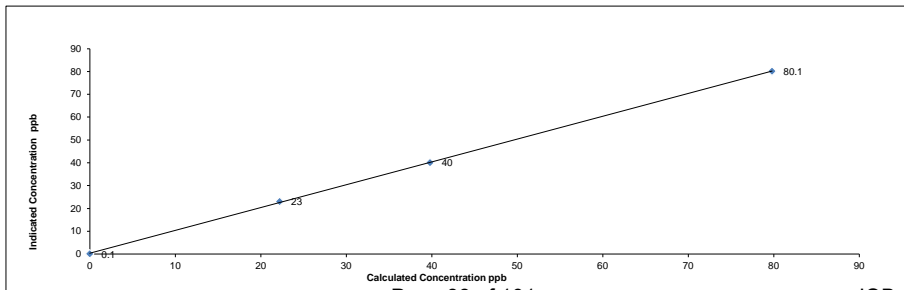
SO₂ High Point gas concentration: na Time gas run (mst): na

Zero corrected analyzer response: na

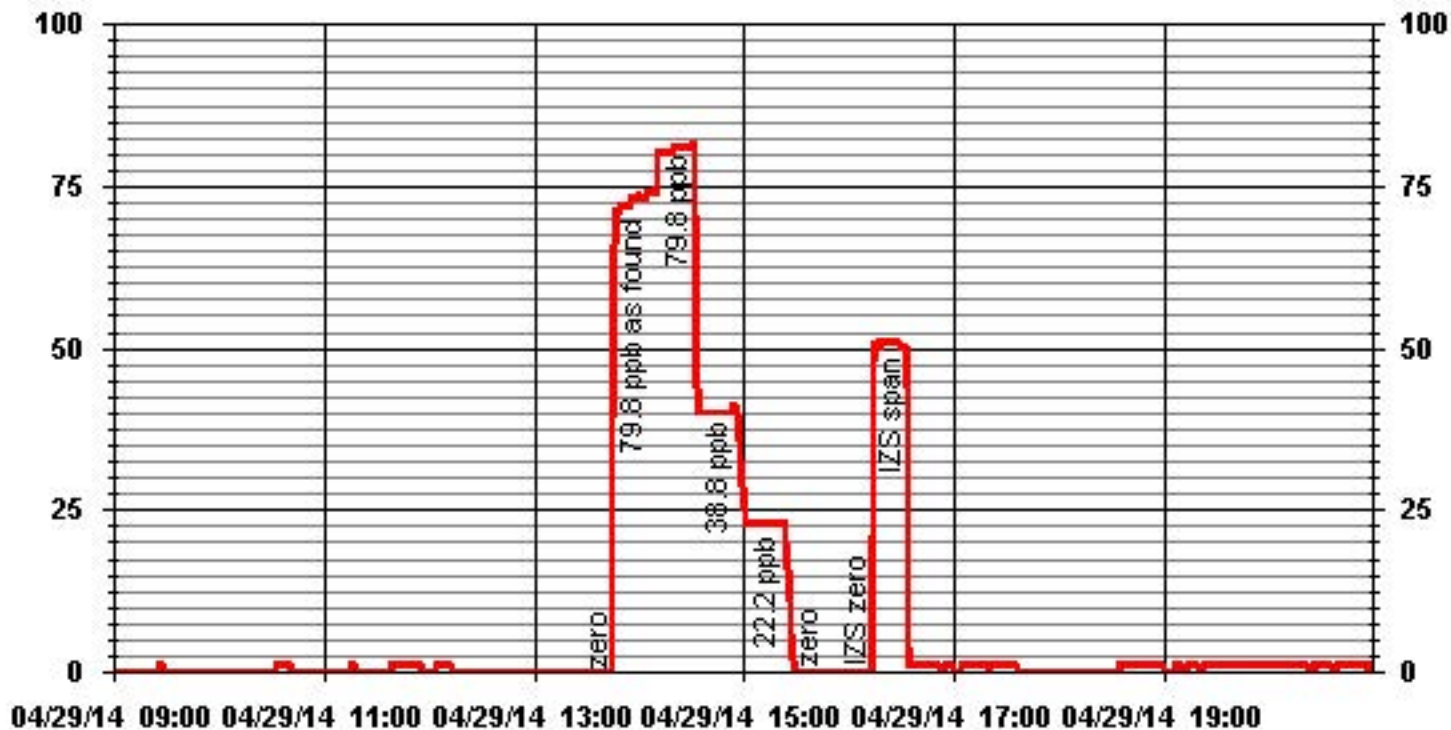
Comments:

Filter changed. No zero adjustment necessary

API 101E H2S Analyzer Calibration



01 Minute Averages



Total Hydrocarbons

Maxxam Thermo 51C THC Analyzer Calibration

Date: 29-Apr-14
 Company: LICA
 Station Name/Location: Maskwa
 Performed by: Kevin Hope

Start Time (mst): 13:21
 End Time (mst): 15:47
 Calibration Purpose: Monthly Calibration
 Cal Gas Expiry Date: 7-Nov-21

Analyzer:
 Serial Number: 436609738 Range ppm: 50
 Last Calibration Date: 26-Mar-14 As Found C.F.: 0.990
 Previous Cal High Point C.F.: 0.999 New C.F.: 1.010

	As found:	As left:
H ₂ cylinder (psi):	<u>1300</u>	<u>1300</u>
H ₂ cylinder reg set (psi):	<u>25</u>	<u>25</u>
Span Cylinder (psi):	<u>1350</u>	<u>1350</u>
Span Cylinder Reg Set (psi):	<u>25</u>	<u>25</u>
Zero Air Gen Pressure:	<u>35</u>	<u>35</u>
measurement alarms:	<u>None</u>	<u>None</u>
service alarms:	<u>None</u>	<u>None</u>
FID status:	cnt: <u>2509</u>	cnt: <u>2509</u>
	rng: <u>1</u>	rng: <u>1</u>
	try: <u>3</u>	try: <u>3</u>
	flm: <u>179.6</u>	flm: <u>179.6</u>
	det: <u>125.1</u>	det: <u>125.1</u>
Oven Readings:	Flame: <u>179</u>	Flame: <u>179</u>
	Filter: <u>125</u>	Filter: <u>125</u>
	Base: <u>125</u>	Base: <u>125</u>
	Pump: <u>7.46</u>	Pump: <u>7.46</u>
Voltages:	+5 <u>4.9</u>	+5 <u>4.9</u>
	+15 <u>14.8</u>	+15 <u>14.8</u>
	-15 <u>-15.0</u>	-15 <u>-15.0</u>
	Internal Span: <u>32.8</u>	Internal Span: <u>32.8</u>

Calibrator:	Flow Meter ID's:	<u>NA</u>	Calibrator Flow Targets:			
	Make & Model:	<u>EnviroNics 6100</u>	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
	Serial #:	<u>4760</u>	zero	<u>2000</u>	<u>0</u>	<u>2000</u>
	Cal Gas Cylinder I.D. #:	<u>LL36542</u>	high	<u>2000</u>	<u>65</u>	<u>2065</u>
	CH ₄ /C ₃ H ₈ Cylinder Conc. (ppm):	<u>609.0</u> <u>201.0</u>	mid	<u>2000</u>	<u>33</u>	<u>2033</u>
	CH ₄ as propane/total CH ₄ equivalents (ppm):	<u>552.8</u> <u>1161.8</u>	low	<u>2000</u>	<u>15</u>	<u>2015</u>

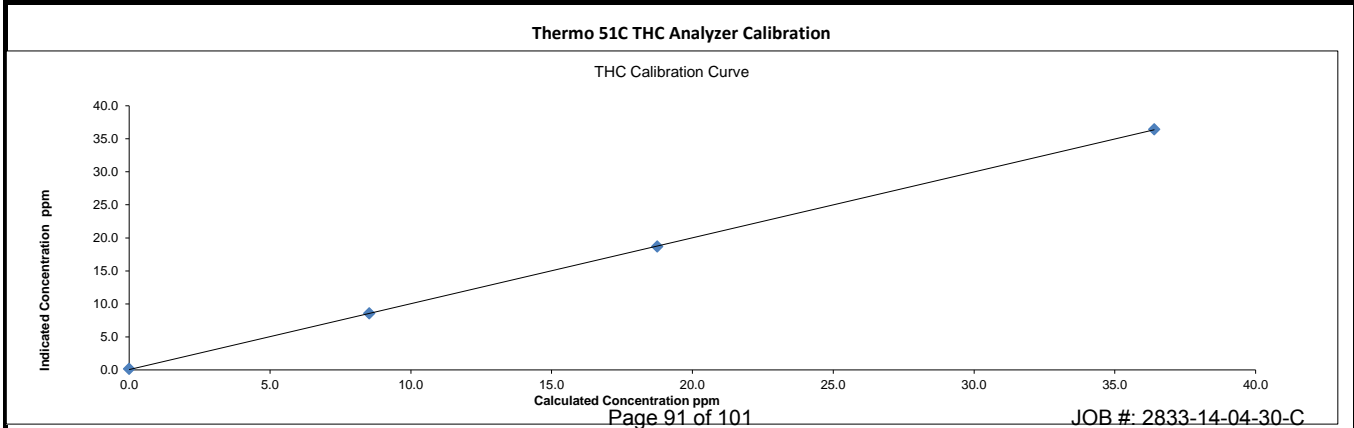
Point	Calibrator Flow Rates (cc/min)			Calculated Concentration:		Indicated Concentration:		Correction Factors:	
	Diluent	Cal Gas	Total	(ppm)	(ppm)	(ppm)	(ppm)		
as found zero	2000	0.00	2000	0	0.14	0	0.14	NA	NA
adjusted zero	2000	0.00	2000	0	0.14	0	0.14	NA	NA
as found high	2000	64.70	2065	36.40	36.90	36.40	36.90	1.004	0.990
adjusted high	2000	64.70	2065	36.40	36.40	36.40	36.40	1.012	1.012
mid	2000	32.80	2033	18.75	18.67	18.75	18.67	1.014	1.014
low	2000	14.80	2015	8.53	8.56	8.53	8.56	NA	NA
calibrator zero	2000	0.00	2000	0	0.15	0	0.15	NA	NA
Average C.F. =									1.010

Linear Regression/Calibration Results:

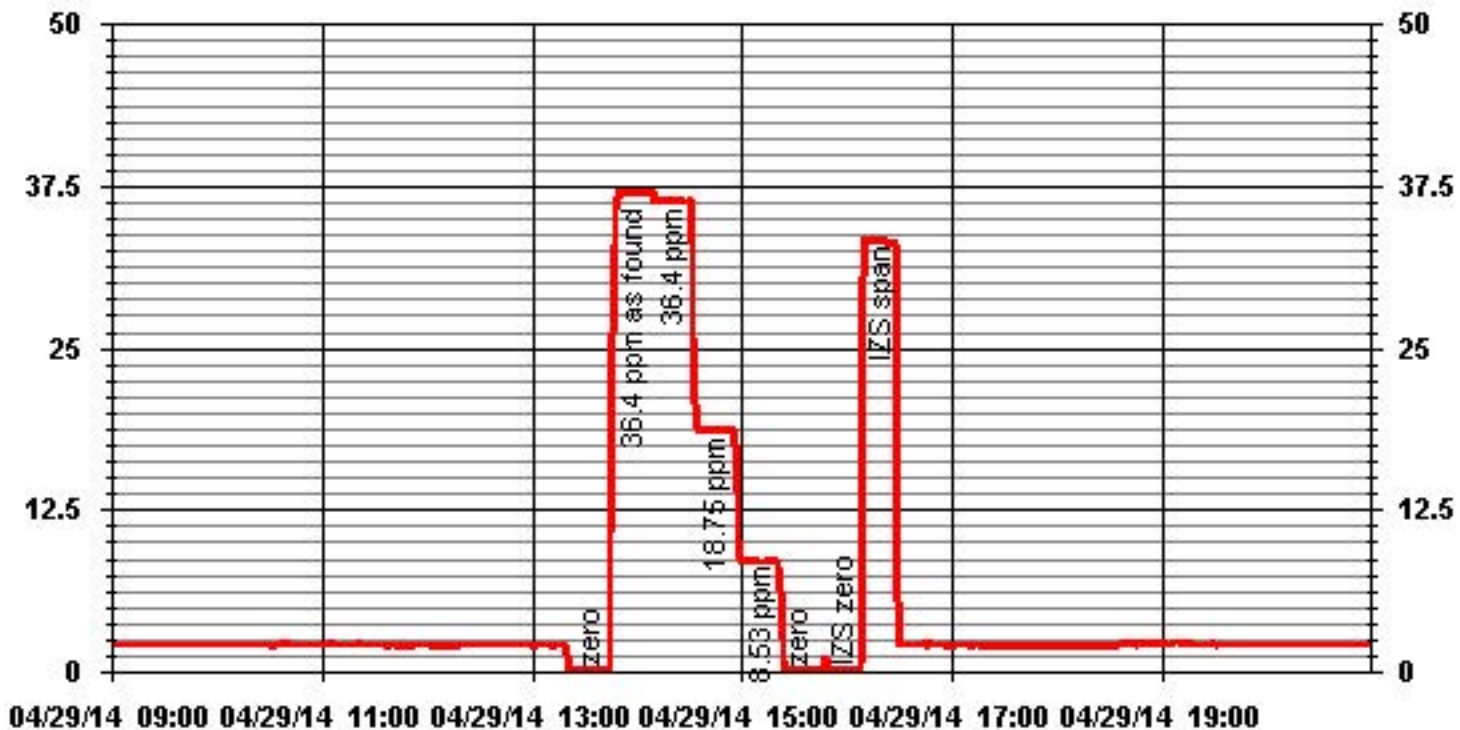
Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>0.996</u>	> or = 0.995	PASS
b (Intercept as % of full scale) =	<u>0.161%</u>	± 3% F.S.	PASS
% change in C.F. from last cal	<u>0.87%</u>	± 15%	PASS

Comments:

Filter changed.



01 Minute Averages



Nitrogen Dioxide



API 200E NOx Analyzer Calibration

Date: 29-Apr-14
 Company: LICA
 Station Name/Location: Maskwa
 Performed by: Kevin Hope

Start Time (mst): 8:51
 End Time (mst): 13:15
 Calibration Purpose: Monthly Calibration
 Cal Gas Expiry Date: 29-Dec-16

Analyzer Serial Number: 594
 Last Calibration Date: 25-Mar-14
 Range ppb: 1000

Correction Factors:
 As found C.F. Previous Cal High Point C.F.:
 NO= 1.001 NO= 1.004
 NOx= 1.003 NOx= 1.004
 NO₂= 0.996 NO₂= 0.991

As found:
 NOx SLOPE: 1.053
 NOx OFFS: 0.8
 NO SLOPE: 1.049
 NO OFFS: 0.5
 TEST: NA
 SAMP FLW: 463
 OZONE FL: 80
 PMT: 20.8
 NORM PMT: 9.5
 AZERO: 14.4
 HVPS: 750
 RCELL TEMP: 49.7
 BOX TEMP: 29.3
 PMT TEMP: 6.6
 IZS TEMP: 42.0
 MOLY TEMP: 313.9
 RCEL: 5.2
 SAMP: 27.3
 Internal Span: 543.8/6.3/538.3

As left:
 NOx SLOPE: 1.052
 NOx OFFS: 3.4
 NO SLOPE: 1.049
 NO OFFS: 2.3
 TEST: NA
 SAMP FLW: 463
 OZONE FL: 80
 PMT: 20.8
 NORM PMT: 9.5
 AZERO: 14.4
 HVPS: 750
 RCELL TEMP: 49.7
 BOX TEMP: 29.3
 PMT TEMP: 6.6
 IZS TEMP: 42.0
 MOLY TEMP: 313.9
 RCEL: 5.2
 SAMP: 27.3
 Internal Span: 530.5/4.47/526.1

Calibrator Flow Targets:

Make & Model: EnviroNics 6100
 Serial #: 4760
 Cal Gas Cylinder I.D. #: BAL3165
 NO Cylinder Conc. (ppm): 48.9
 NOx Cylinder Conc. (ppm): 49.0

point	diluent (cc/min)	cal gas (cc/min)	O ₃ setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	5000	80	550.00	5080
mid	5000	40	275.00	5040
low	5000	20	140.00	5020

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	5000	0.0	5000	0	0	1.2	1.6	NA	NA
adjusted zero	5000	0.0	5000	0	0	0.6	0.4	NA	NA
as found high	4996	79.80	5076	768.8	770.4	769	769	1.001	1.003
adjusted high	4996	79.80	5076	768.8	770.4	769	770	1.001	1.001
mid	4996	39.80	5036	386.5	387.3	387	388	1.001	0.998
low	4996	19.90	5016	194.0	194.4	194	196	1.001	0.994
calibrator zero	4996	0.00	4996	0	0	0.1	1.4	NA	NA
Average C.F.=								1.001	0.998

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ increase	NO ₂ C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4996	79.80	5076	0.0	771.2	774.5	2.5	0.6	-0.2	
as found NO ₂	4995	79.70	5075	550.0	186.9	778.8	589.0	584.3	586.5	0.996
adjusted NO ₂	4995	79.70	5075	550.0	186.9	778.8	589.0	584.3	586.5	0.996
gpt mid	4996	79.70	5076	275.0	473.0	777.0	302.9	298.2	300.4	0.993
gpt low	4996	79.70	5076	140.0	618.8	778.0	158.0	152.4	155.5	0.980
Average NO₂ C.F.=										0.990

Linear Regression/Calibration Results:			LIMITS
NO	NOx	NO ₂	
Correlation Coefficient =	<u>1.000</u>	<u>1.000</u>	> or = 0.995
Slope =	<u>0.999</u>	<u>0.999</u>	0.85-1.15
b (Intercept as % of full scale)=	<u>0.06%</u>	<u>0.12%</u>	± 3% F.S.
% change in C.F. from last cal=	<u>0.28%</u>	<u>0.14%</u>	+/-15%
NO ₂ converter efficiency	<u>101.0%</u>	<u>101.0%</u>	>85%

Comments:

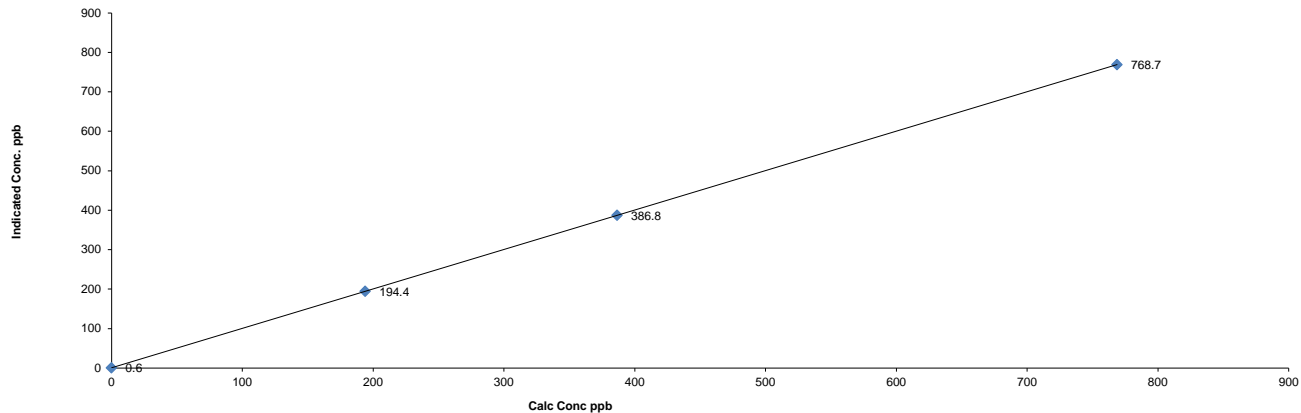
Filter changed.

Date: 29-Apr-14
Company: LICA
Station Name/Location: Maskwa
Performed by: Kevin Hope

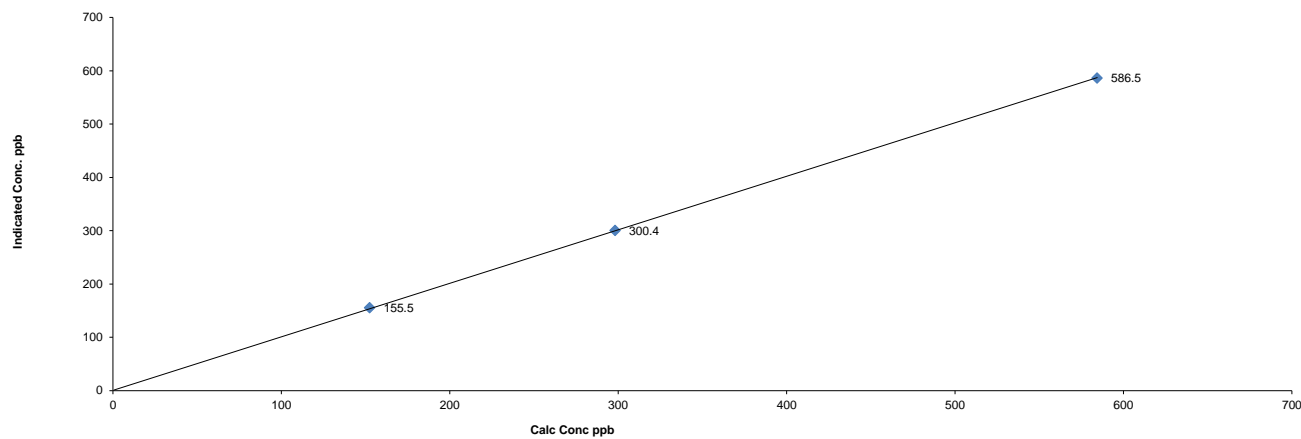
Start Time (mst): 8:51
End Time (mst): 13:15
Calibration Purpose: Monthly Calibration
Cal Gas Expiry Date: 29-Dec-16

API 200E NOx Analyzer Calibration

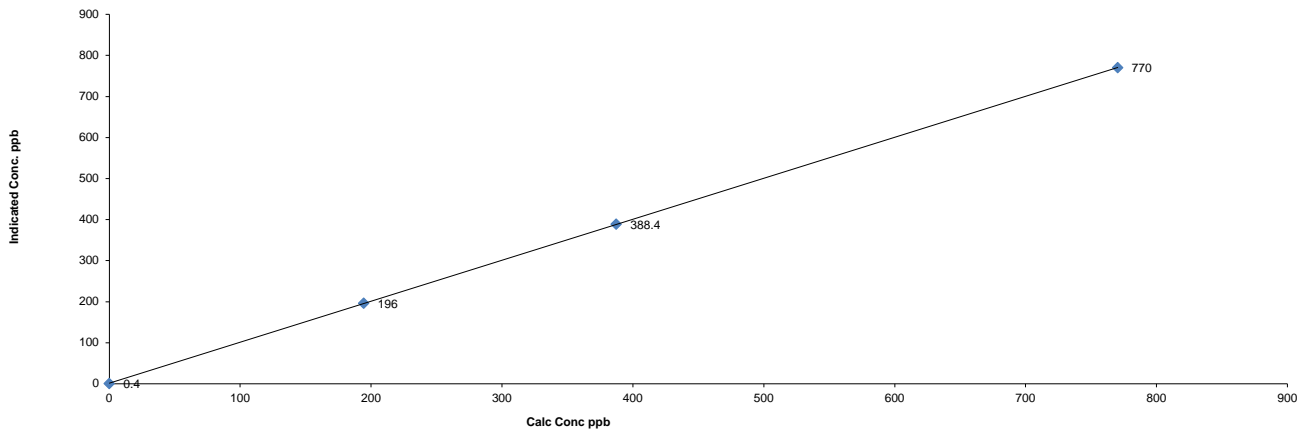
NO Calibration Curve



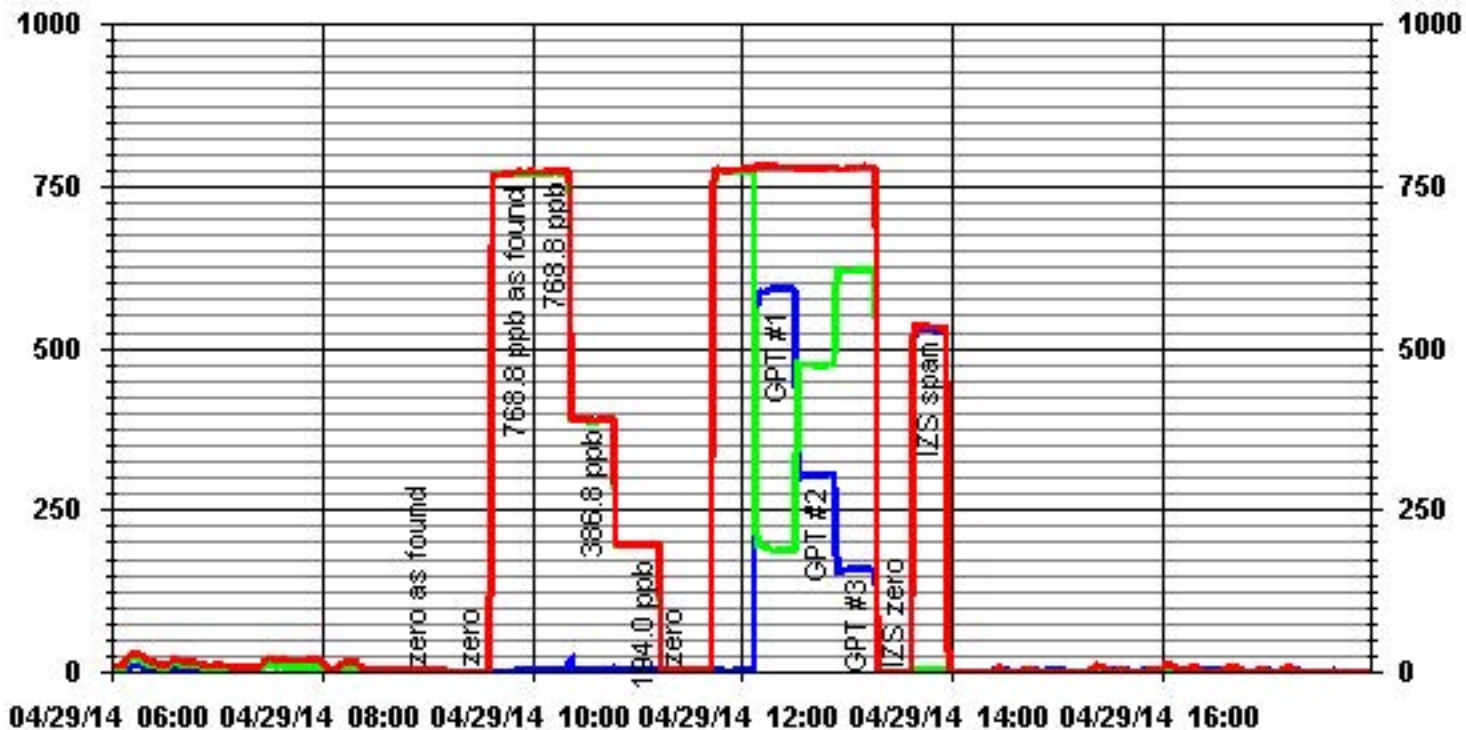
NO2 Calibration Curve



NOx Calibration Curve

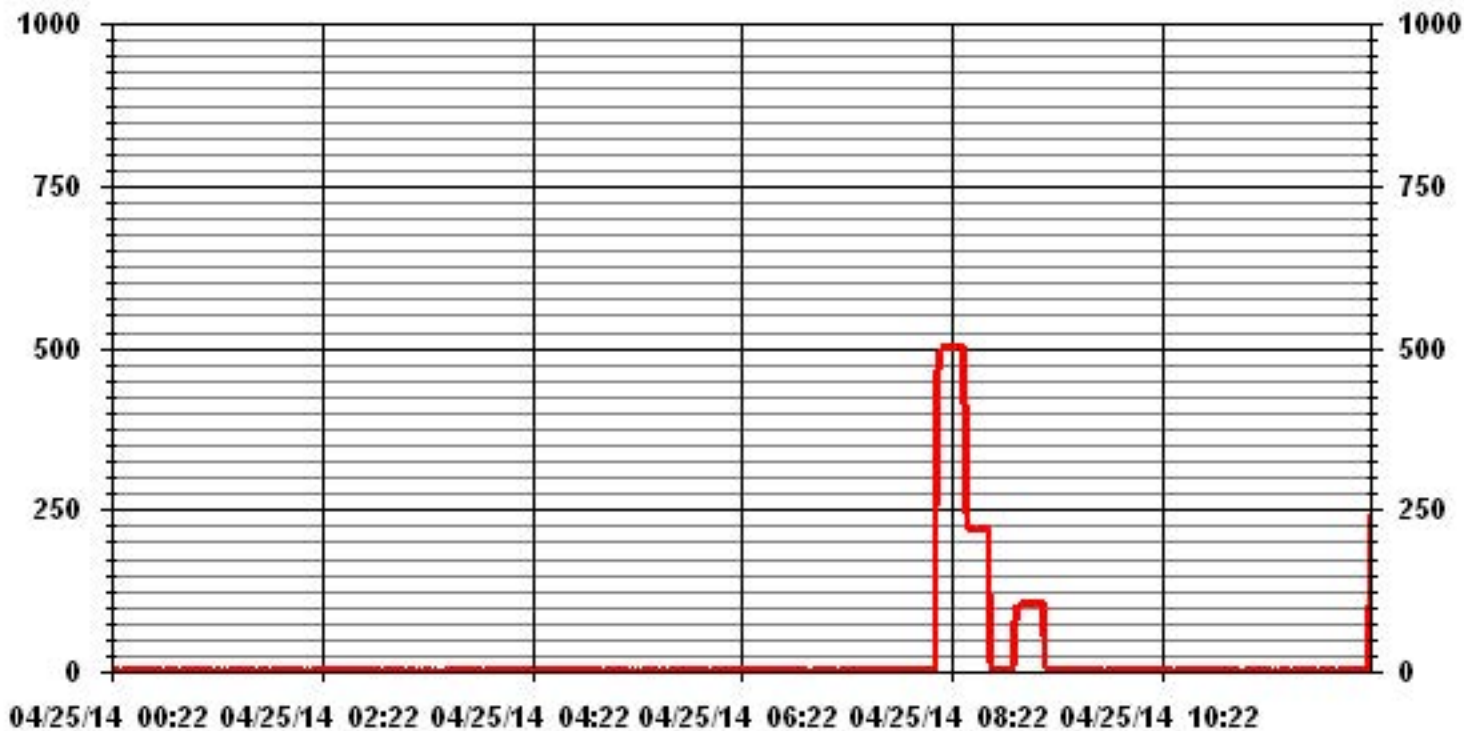


01 Minute Averages



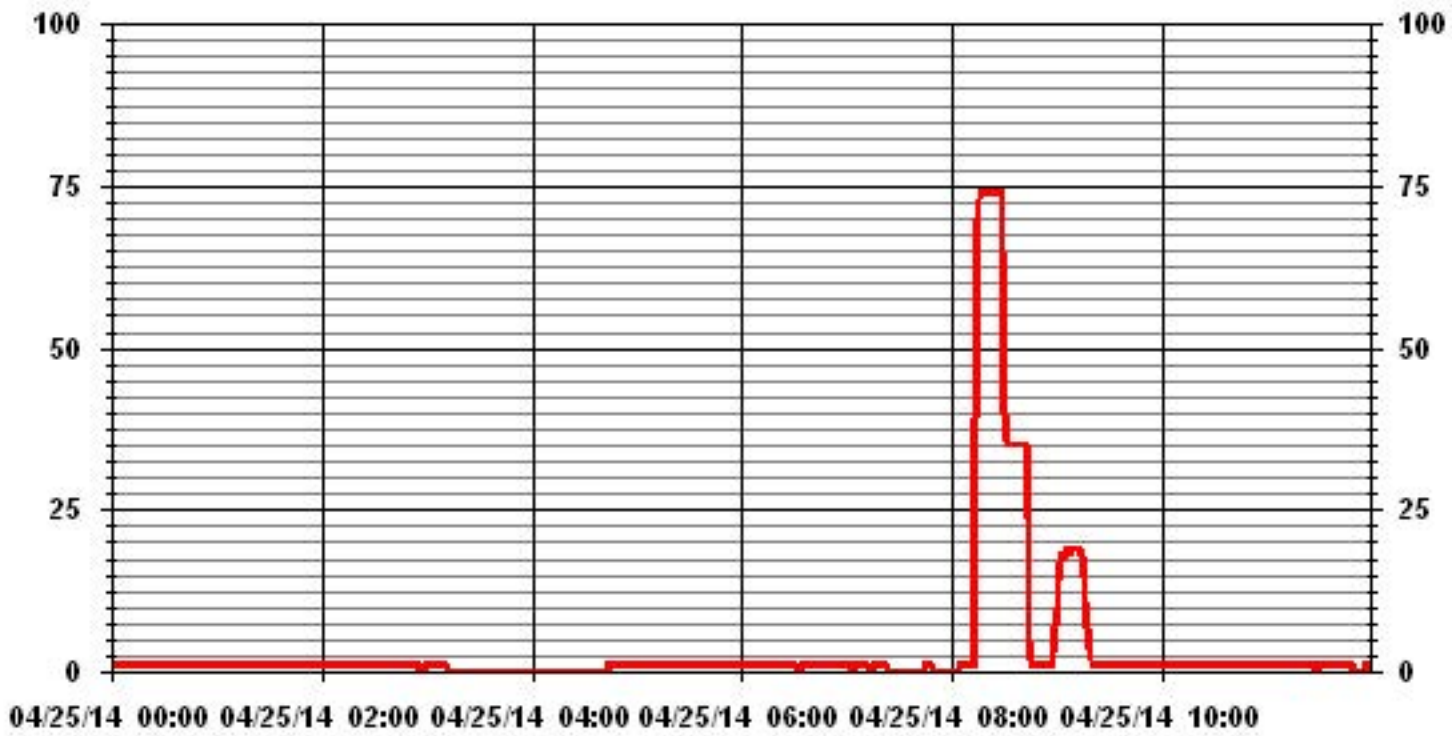
AESRD Audit Report

01 Minute Averages

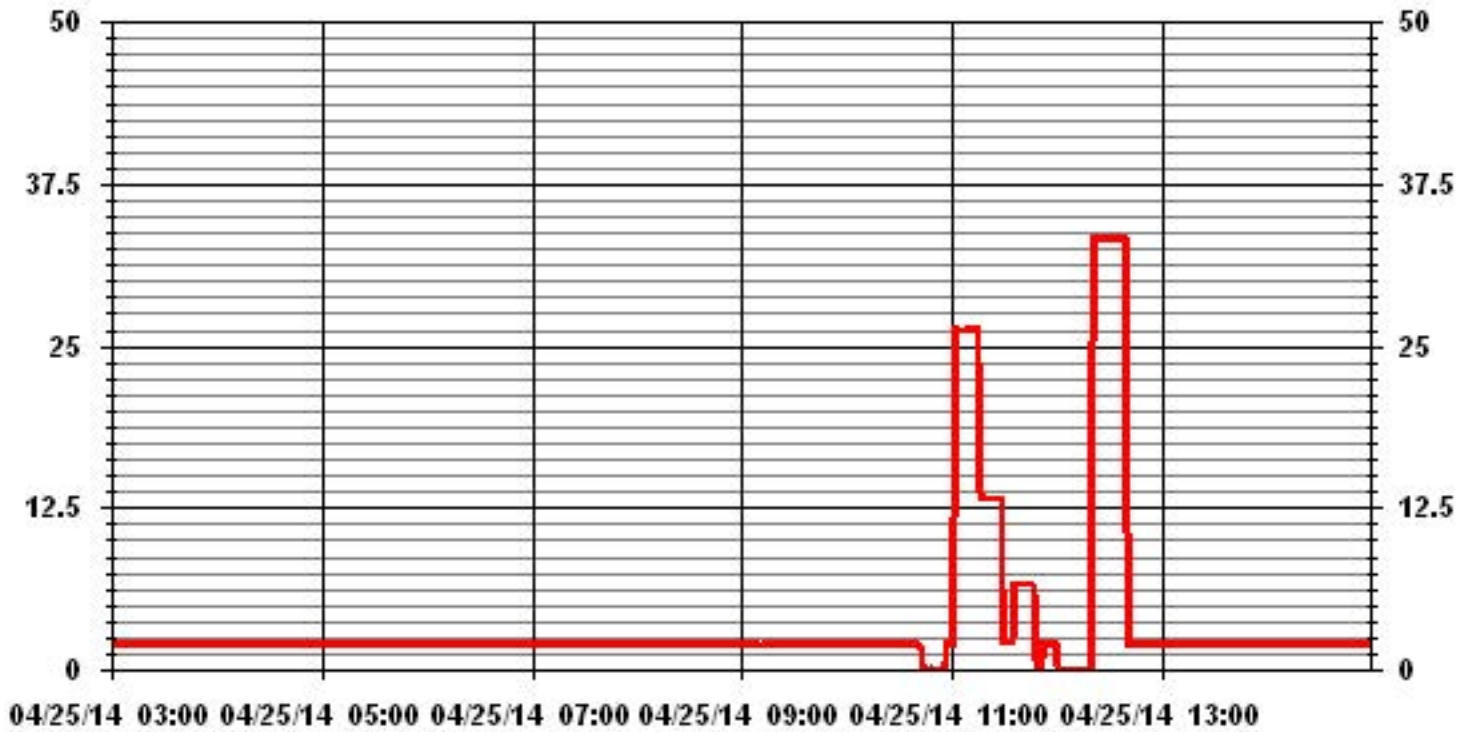


— LICA30 SO2_ PPB

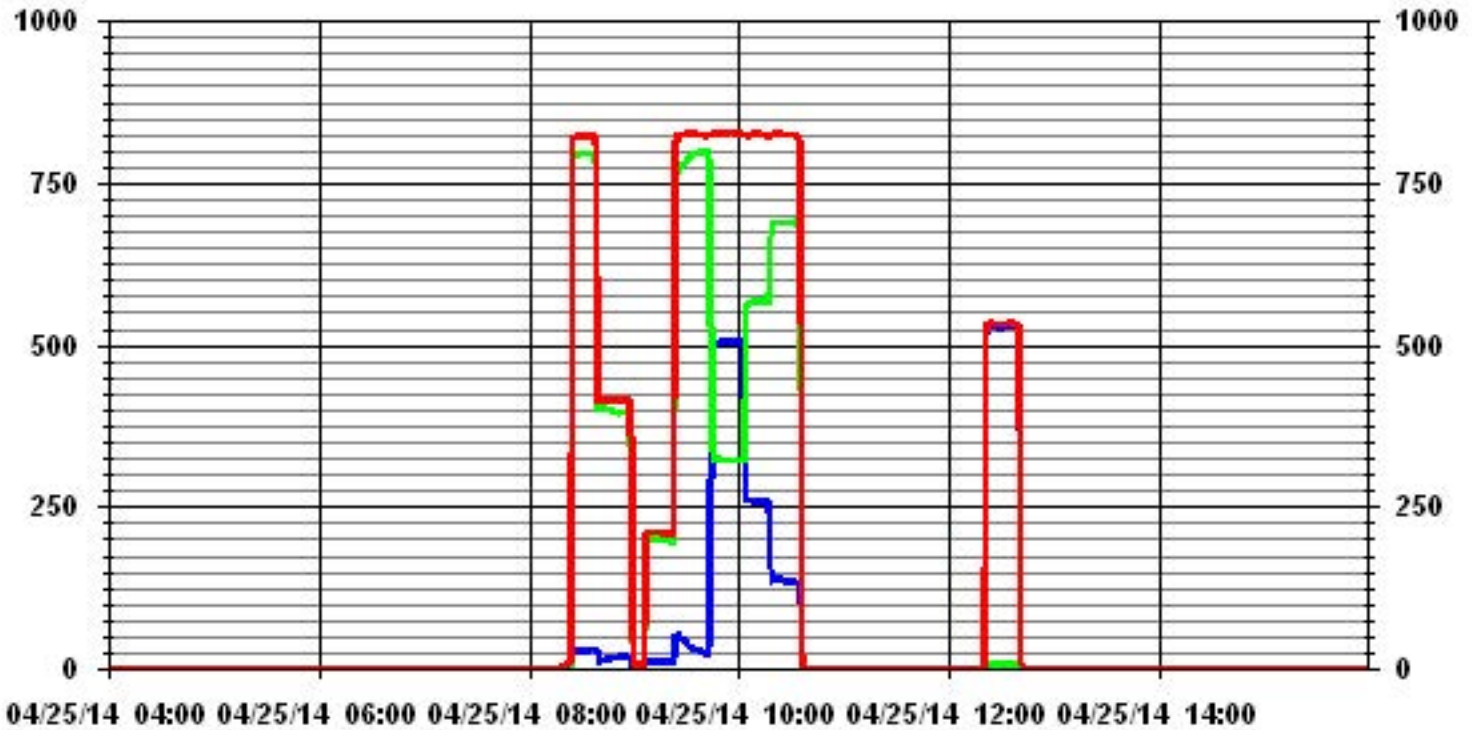
01 Minute Averages



01 Minute Averages



01 Minute Averages



— LICA30 NOX_ PPB

— LICA30 NO_ PPB

— LICA30 NO2_ PPB

Lakeland Industry & Community Association

Portable / Elk Point Airport Monitoring Site

Ambient Air Monitoring Data Report

For

April 2014

Prepared By:



May 30, 2014

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: April 2014

The monthly ambient data report:

- Prepared by Ernestine Tangang
- 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.

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 – April 2014

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PORTABLE / ELK POINT AIRPORT SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						OBJECTIVES				MONTHLY AVERAGE	1-HOUR		
PARAMETER	1-HR	24-HR	1-HR	24-HR	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)		READING	DAY	
SO ₂ (PPB)	172	48	0	0	0.08	2	21, 30	VAR	VAR	VAR	0.7	1	100.0
H ₂ S (PPB)	10	3	0	0	0.02	1	VAR	VAR	VAR	VAR	0.3	23	100.0
THC (55i) (PPM)	-	-	-	-	2.31	7.3	2	1	1.7	93(E)	3.4	2	99.4
Methane (PPM)	-	-	-	-	2.30	7.1	30	1	2.9	266(W)	3.3	2	99.4
NMHC (PPM)	-	-	-	-	0.01	0.3	2, 12	VAR	VAR	VAR	0.1	2	99.4
NO ₂ (PPB)	159	-	0	-	4.60	32.6	21	2	0.2	350(N)	11.2	30	100.0
NO (PPB)	-	-	-	-	1.41	62.9	3	6	2.5	271(W)	6.8	3	100.0
NO _x (PPB)	-	-	-	-	6.02	95.3	3	6	2.5	271(W)	17.2	30	100.0
O ₃ (PPB)	82	-	0	-	33.06	53	21	VAR	VAR	VAR	42.5	9	100.0
PM 2.5 (UG/M ³)	-	30	-	0	7.30	42	28	18	8.1	347(NNW)	11.6	30	96.7
VECTOR WS (KPH)	-	-	-	-	12.95	45.1	9	14	-	290(WNW)	29.9	9	100.0
VECTOR WD (DEGREES)	-	-	-	-	90(E)	-	-	-	-	-	-	-	100.0

NA: NOT APPLICABLE 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

A trailer audit was performed on April 23rd by Alberta Environment.

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 April 10th. 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 April 10th. The inlet filter was changed before the calibration was started. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

THC 55i (PPM)

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

The monthly calibration was performed on April 11th. The inlet filter was changed before the calibration was started. The analyzer was put into maintenance mode on April 11th between hours 10 and 13 for fuel gas change out. Data was corrected using daily zero information.

Ozone (PPB)

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

The monthly calibration was performed on April 11th. The inlet filter was changed before the calibration was started. The analyzer spanned high on April 29th. An as found points check was performed on April 30th to verify the analyzer's functionality and the result was within the acceptable range. After the as found check, the pump was rebuilt. The expected span value went above the full scale after the as found points check. A trip was made on May 7th to solve this issue. The issue was from the zero span system and did not affect data quality. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

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

The monthly calibration was performed on April 11th. The inlet filter was changed before the calibration was started. The hourly readings were below the historical readings on April 14th. An as found points check was performed on April 15th to verify the analyzer's functionality and the result was good. A quick GPT points check was performed on April 30th for the O3 calibration use. No data was invalidated due to this event. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Particulate Matter 2.5 (ug/m³)

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

Two Teom audits were performed this month: one was done on April 10th and the other was completed on April 28th. The sample inlet was cleaned and the filter was replaced on April 10th. 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. 24 hours of data were invalidated as the data were below –3 ug/m³.

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

- System make / model –RM Young 5103VK, S/N 56589

The wind system is reported as vector wind speed and vector wind direction. The most recent wind system calibration was done on February 21st, 2014.

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 April 10th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

SULPHUR DIOXIDE (SO2) 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	1	1	1	0	0	S	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	0.7	24	
	2	1	1	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
	3	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
	4	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
	5	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
	6	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
	7	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	S	1	1	0.1	24	
	8	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	0	S	0	1	0.2	24	
	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	24	
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	S	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	S	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	S	0	0	0	0	0	0.0	24	
	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0	24	
	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0	24	
	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0	24	
	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0	24	
	17	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
	18	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
	19	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
	20	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
	21	0	0	0	0	0	0	0	0	0	S	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24	
	22	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	
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	24	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
	25	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
	26	0	0	0	0	S	0	1	1	0	0	0	1	1	1	1	1	1	1	1	1	0	1	1	0	1	0.6	24	
	27	1	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
	28	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	
	29	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
	30	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	1	1	S	2	0.4	24	
	HOURLY MAX	1	1	1	1	0	0	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	2	1	1	0			
	HOURLY AVG	0.1	0.1	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	0.1	0.1	0.1	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

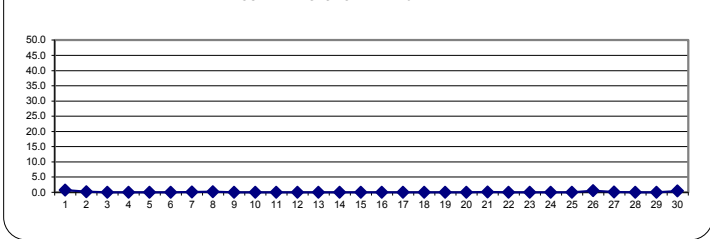
OBJECTIVE LIMIT:

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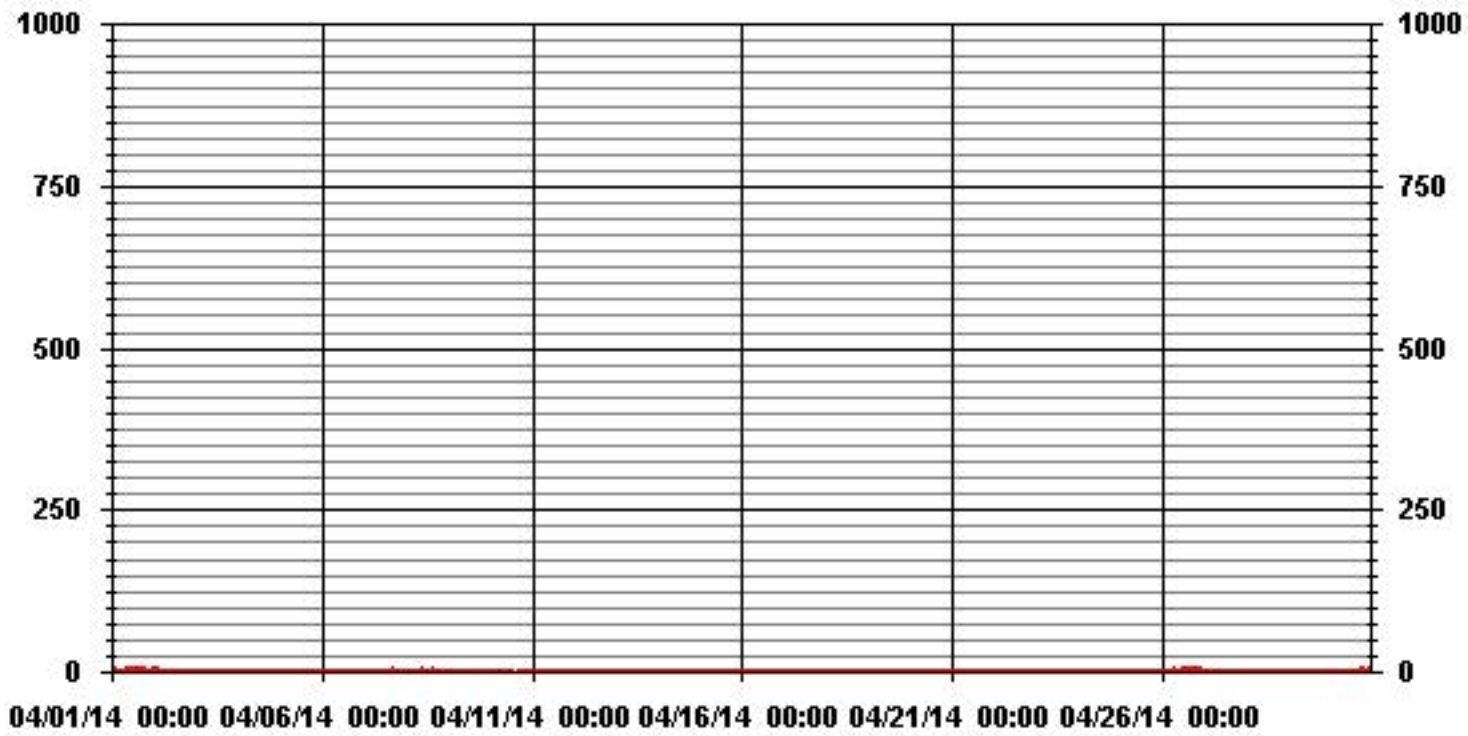
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	49
MAXIMUM 1-HR AVERAGE:	2 PPB @ HOUR(S) VAR ON DAY(S) 21, 30
MAXIMUM 24-HR AVERAGE:	0.7 PPB ON DAY(S) 1
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.28
MONTHLY AVERAGE:	0.08 PPB

24 HOUR AVERAGES FOR APRIL 2014



01 Hour Averages



— LICA35 SO2_ PPB

Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
	DAY																												
1	1	1	1	1	1	1	1	S	1	1	2	1	2	2	2	1	2	2	2	1	1	1	1	1	1	2	1.3	24	
2	2	1	1	2	1	S	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	2	0.7	24	
3	0	0	0	0	S	1	2	1	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	2	0.3	24	
4	1	1	1	S	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
5	0	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
6	1	S	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
7	S	0	0	1	1	0	0	0	0	0	1	1	0	1	1	2	2	2	2	1	1	1	1	1	S	2	0.8	24	
8	0	1	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	S	1	2	1.1	24
9	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
10	1	0	1	0	1	1	1	1	1	1	1	1	1	C	C	C	C	C	0	1	1	S	1	1	1	1	0.8	24	
11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1.0	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	S	0	0	0	0	0	1	0.1	24	
13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	S	0	0	0	0	0	0	0	1	0.1	24	
14	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	0.7	24	
15	1	1	1	1	1	1	0	1	1	0	0	1	1	1	0	S	0	1	1	0	0	0	0	0	0	1	0.6	24	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	S	0	0	0	1	0	0	0	0	0	1	0.1	24	
17	0	0	0	0	0	0	0	0	0	1	0	0	1	S	0	0	0	0	0	0	0	1	0	0	0	1	0.1	24	
18	0	1	1	0	1	1	1	0	1	0	0	1	S	0	1	1	1	0	1	1	0	0	0	0	0	1	0.5	24	
19	0	0	1	0	0	1	0	1	0	1	1	S	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	24	
20	1	1	1	1	0	1	1	1	0	1	S	1	1	0	1	1	1	1	1	1	1	1	1	0	0	1	0.8	24	
21	0	1	1	1	0	1	1	0	1	S	3	1	2	1	1	1	1	1	1	1	0	1	1	1	1	3	1.0	24	
22	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
23	1	1	1	1	1	1	1	S	C	C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
24	1	1	1	1	0	1	S	1	1	0	1	1	1	1	0	0	1	0	1	0	0	1	1	1	1	1	0.7	24	
25	1	1	0	0	0	S	1	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0	1	0.3	24	
26	1	0	1	0	S	1	2	2	1	1	1	1	2	2	1	2	2	1	2	2	1	2	2	2	2	2	1.4	24	
27	2	1	2	S	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	2	1.0	24	
28	0	1	S	0	0	0	0	1	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0.3	24	
29	1	S	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
30	S	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	3	2	2	S	3	1.5	24	
HOURLY MAX		2	2	2	2	2	1	2	2	2	2	3	2	2	2	2	2	2	2	2	2	3	3	2	2	2			
HOURLY AVG		0.7	0.7	0.8	0.6	0.5	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.7	0.8	0.8	0.8	0.9	0.8	0.7	0.7	0.6	0.6				

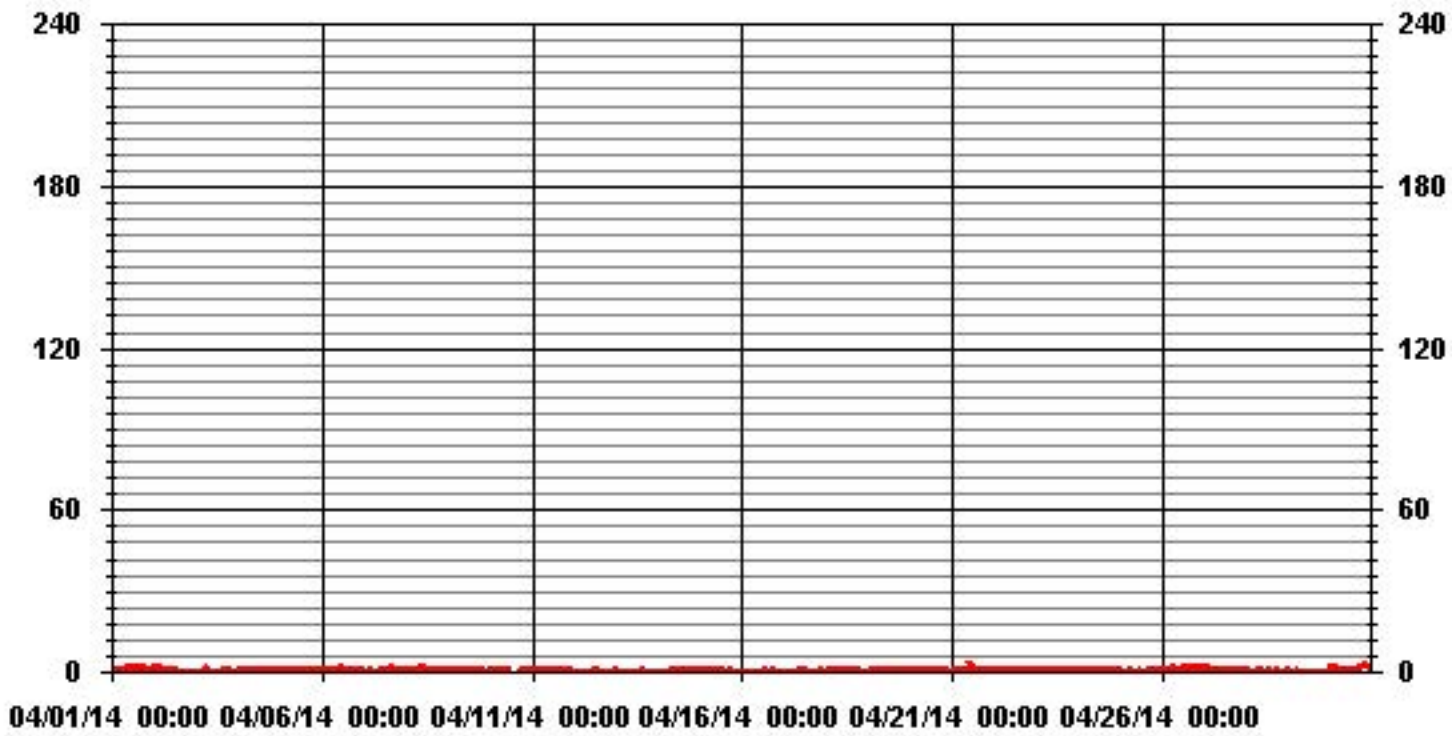
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	446				
MAXIMUM INSTANTANEOUS VALUE:	3	PPB	@ HOUR(S)	VAR	ON DAY(S) 21, 30
	VAR-VARIOUS				
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	7	HRS			
STANDARD DEVIATION:	0.58				

01 Hour Averages



— LICA35 SO2MAX PPB

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

April 2014

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA-ELK
 Parameter : SO2_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 20	1.02	2.34	2.49	14.80	13.63	13.04	7.91	3.22	1.46	1.31	4.54	4.98	11.14	7.33	7.18	3.51	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	1.02	2.34	2.49	14.80	13.63	13.04	7.91	3.22	1.46	1.31	4.54	4.98	11.14	7.33	7.18	3.51	

Calm : .00 %

Total # Operational Hours : 682

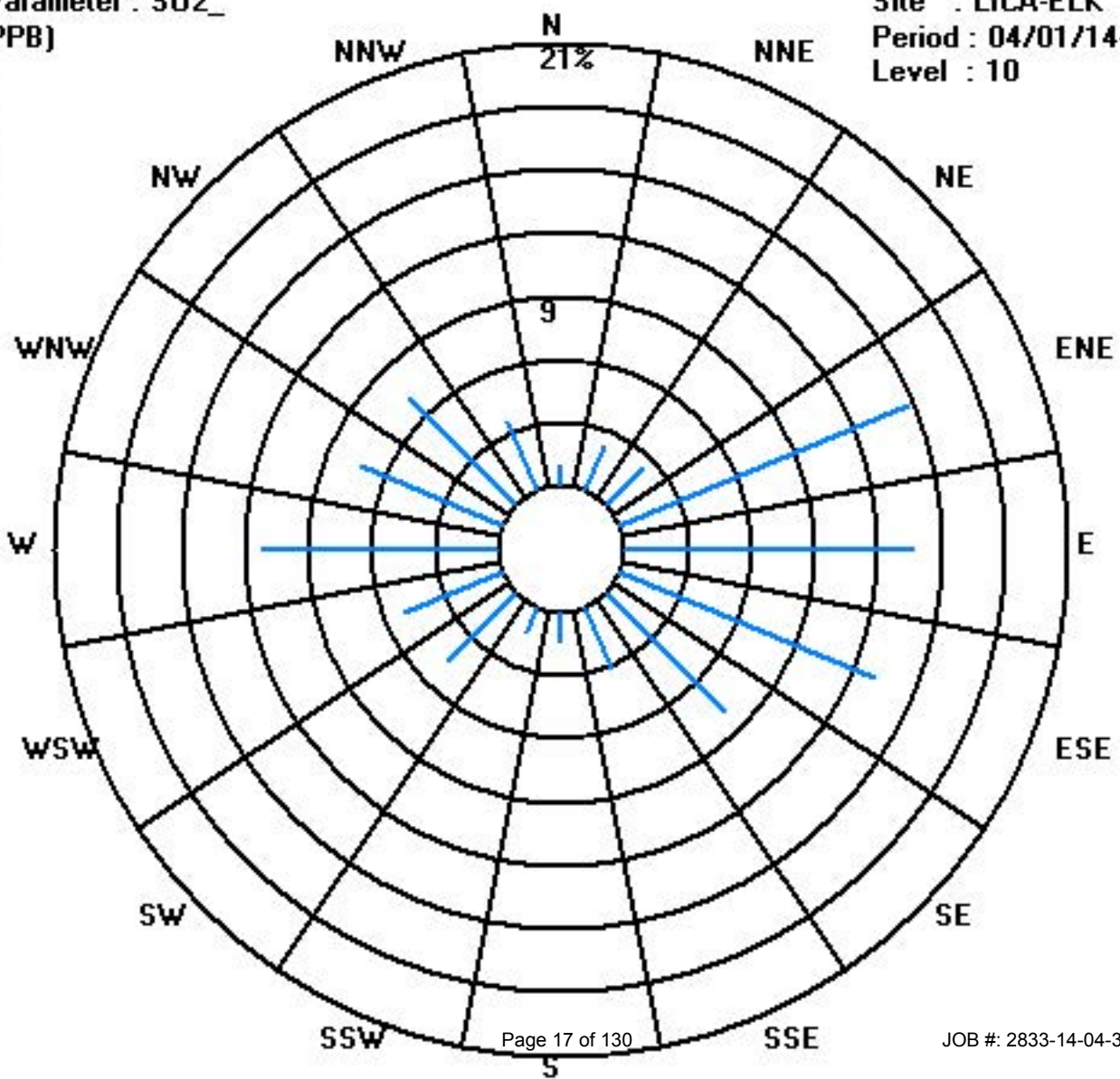
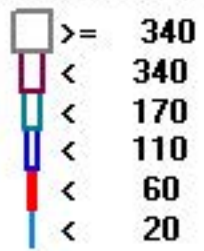
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 20	7	16	17	101	93	89	54	22	10	9	31	34	76	50	49	24	682
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	7	16	17	101	93	89	54	22	10	9	31	34	76	50	49	24	

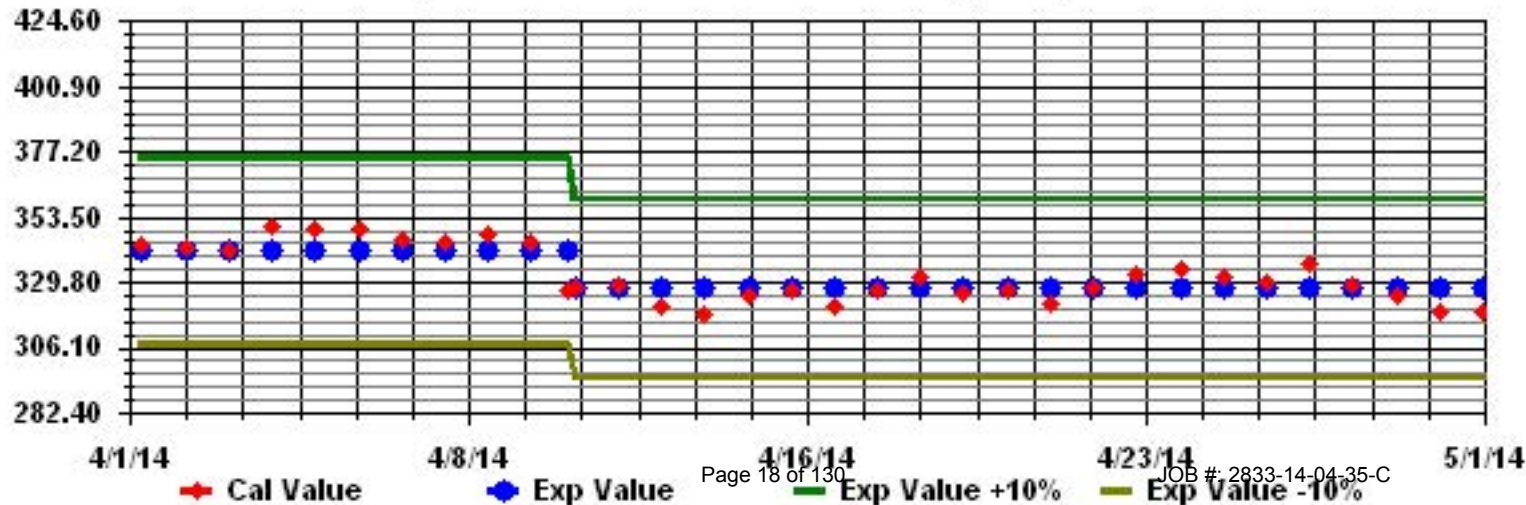
Calm : .00 %

Total # Operational Hours : 682

Class Limits (PPB)



Calibration Graph for Site: LICA35 Parameter: S02_ Sequence: S02 Phase: SPAN



Hydrogen Sulphide

Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

HYDROGEN SULPHIDE (H2S) hourly averages in ppb

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

STATUS FLAG CODES

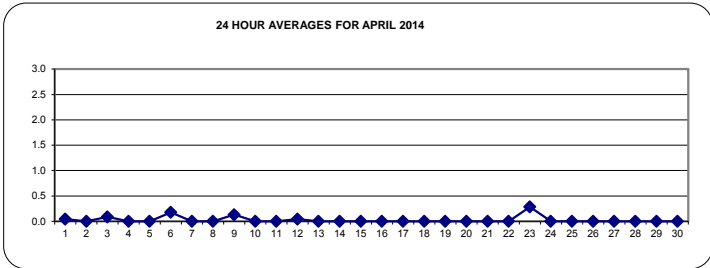
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

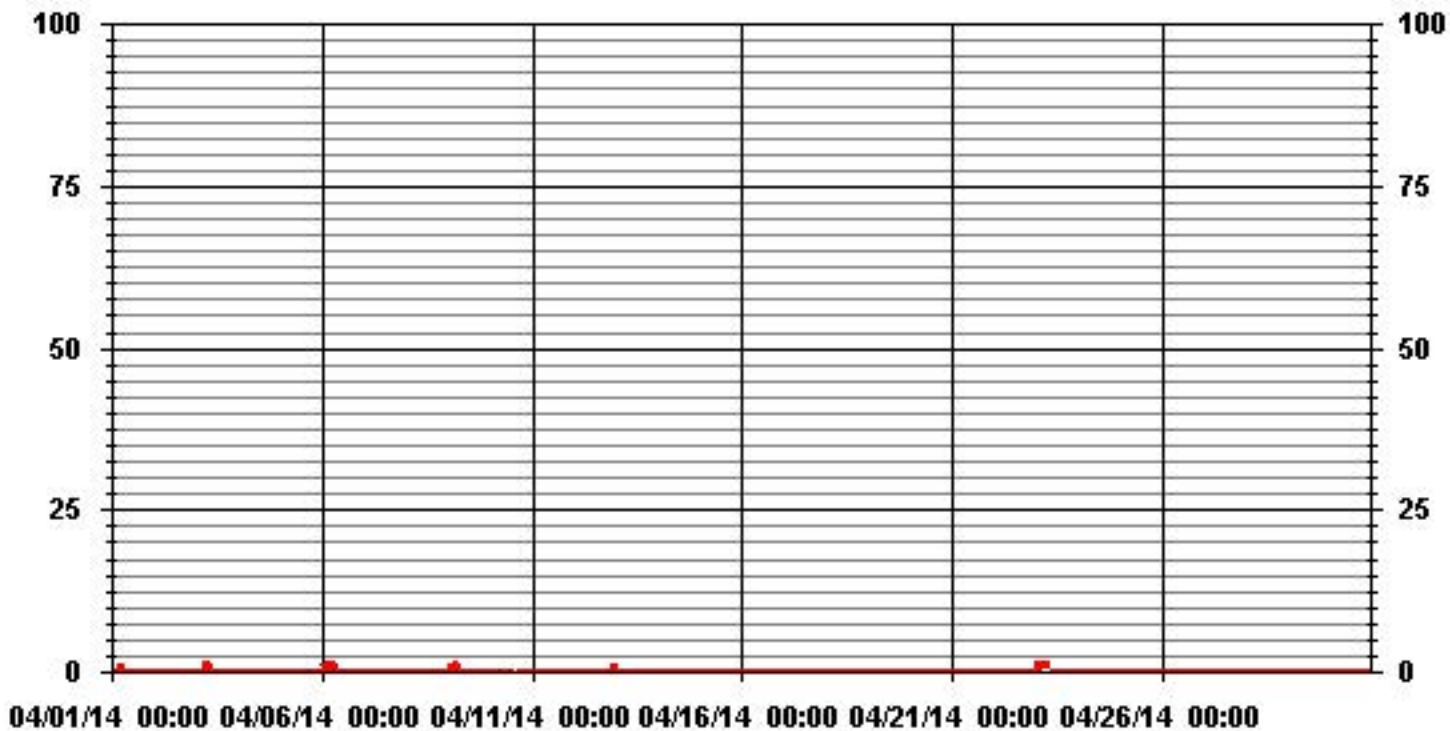
ALBERTA ENVIRONMENT:	1-HR	10	PPB	24-HR	3	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	17					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.3	PPB			ON DAY(S)	23
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.16		MONTHLY AVERAGE:	0.02	PPB	



01 Hour Averages



Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

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

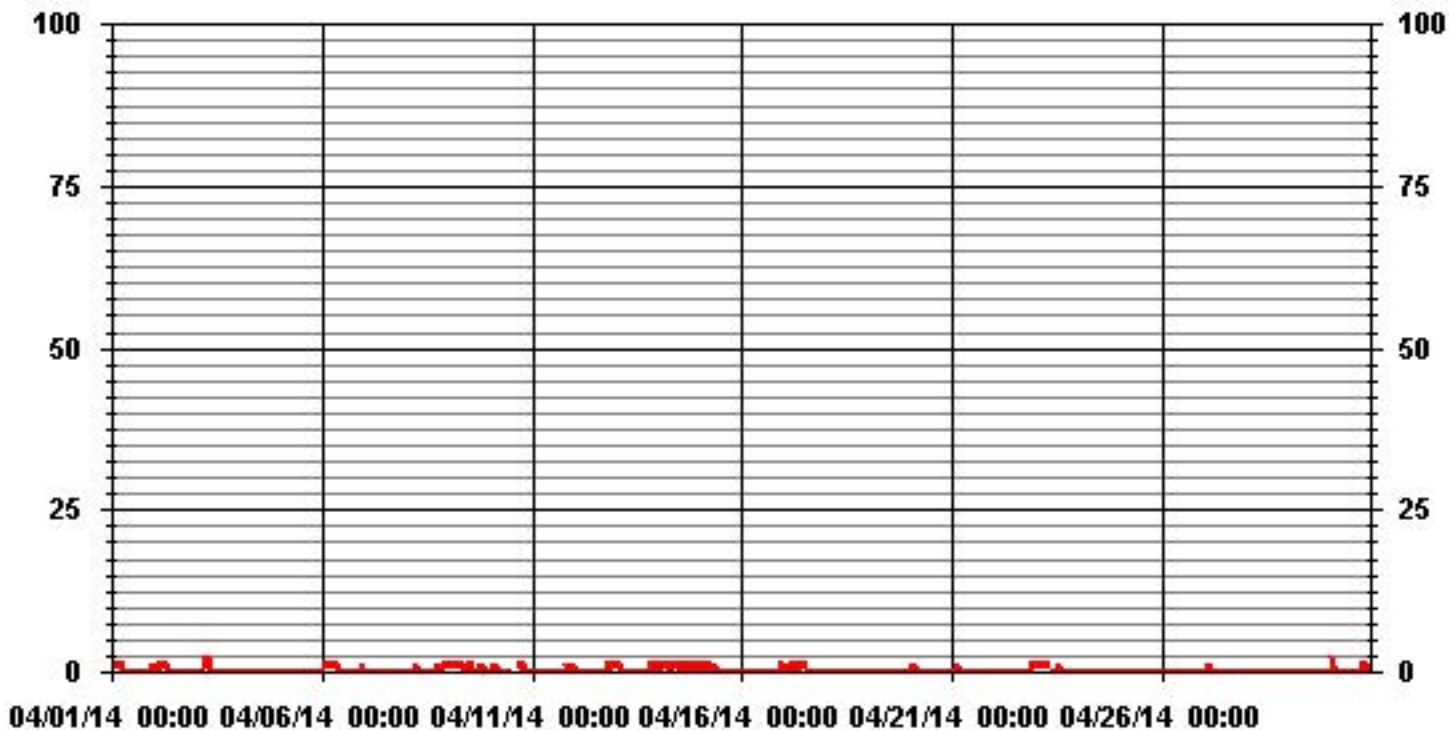
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	103
MAXIMUM INSTANTANEOUS VALUE:	2 PPB @ HOUR(S) 6, 7 ON DAY(S) 3
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	0.37
OPERATIONAL TIME:	720 HRS

01 Hour Averages



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

April 2014

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
Parameter : H2S_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	1.02	2.34	2.49	14.80	13.63	13.04	7.91	3.22	1.46	1.31	4.54	4.98	11.14	7.33	7.18	3.51	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	1.02	2.34	2.49	14.80	13.63	13.04	7.91	3.22	1.46	1.31	4.54	4.98	11.14	7.33	7.18	3.51	

Calm : .00 %

Total # Operational Hours : 682

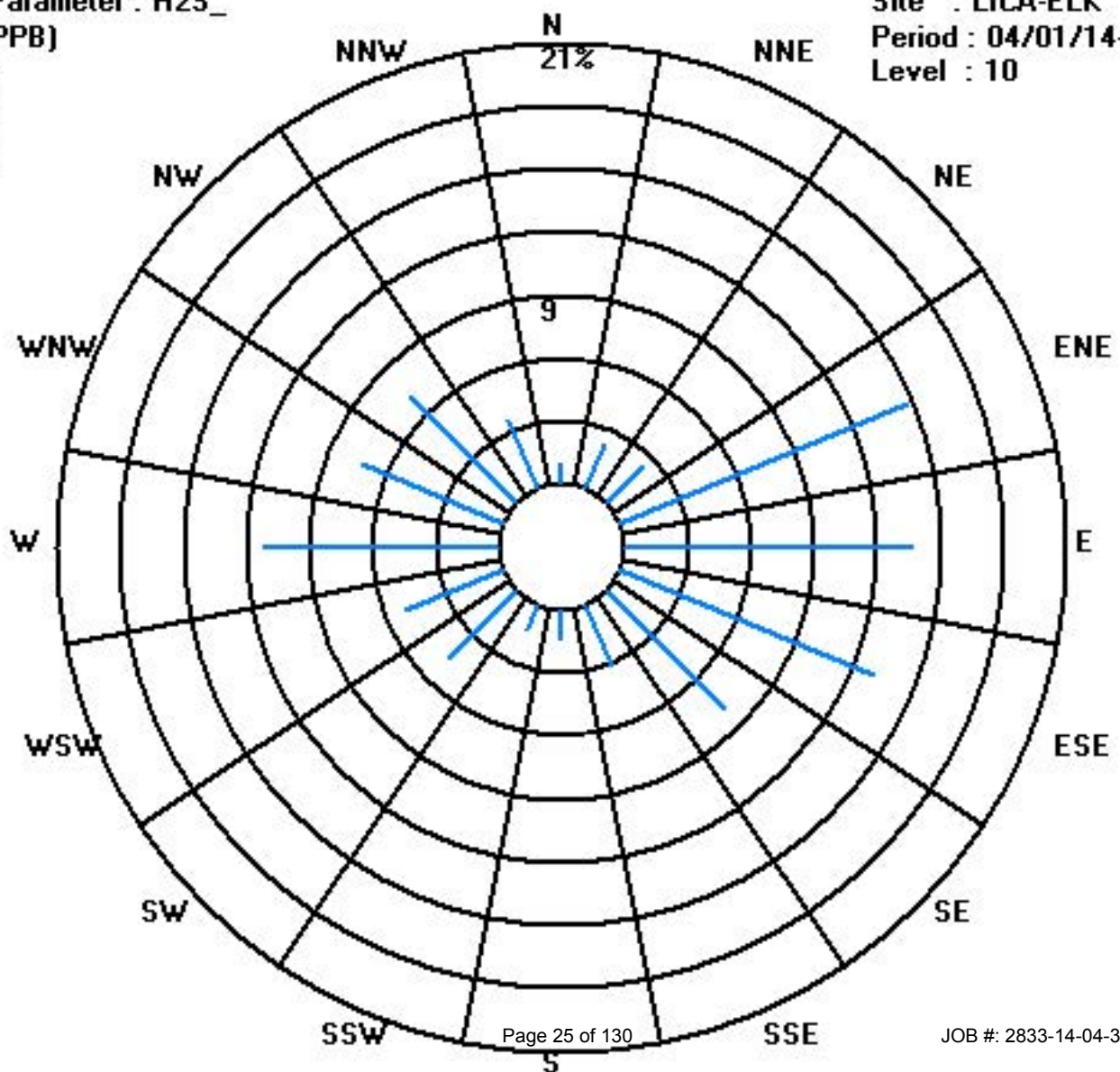
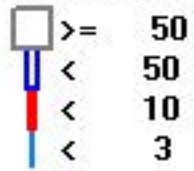
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	7	16	17	101	93	89	54	22	10	9	31	34	76	50	49	24	682
< 10																	
< 50																	
>= 50																	
Totals	7	16	17	101	93	89	54	22	10	9	31	34	76	50	49	24	

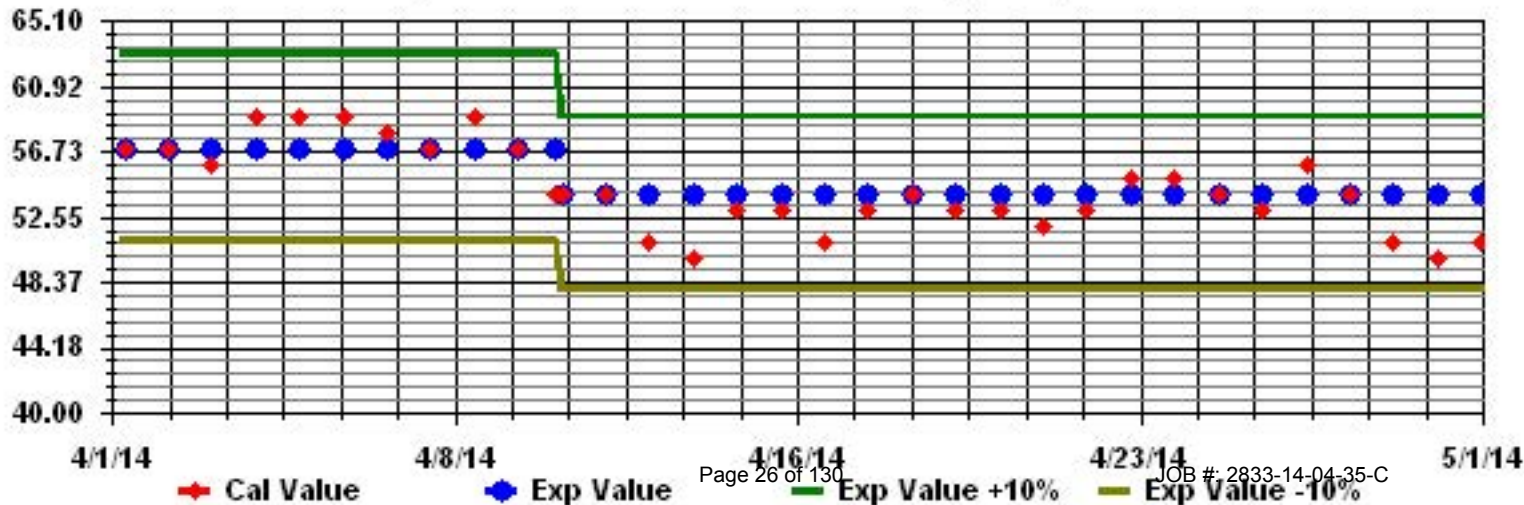
Calm : .00 %

Total # Operational Hours : 682

Class Limits (PPB)



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



Particulate Matter 2.5

Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

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

MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
	DAY																												
	1	6	7	4	6	5	8	1	5	5	15	3	11	18	4	11	0	7	4	10	6	0	4	8	18	6.4	24		
	2	15	10	7	9	5	18	9	16	12	8	4	9	10	18	11	7	0	8	2	0	9	4	9	1	18	8.4	24	
	3	0	X	5	4	7	9	6	8	7	7	5	8	5	8	4	8	6	12	3	16	17	6	11	10	17	7.5	23	
	4	11	2	14	8	7	1	3	5	9	6	12	14	8	8	4	1	8	3	12	8	4	3	4	9	14	6.8	24	
	5	1	8	0	7	3	11	0	X	8	5	10	12	6	7	0	4	8	7	8	2	14	19	10	5	19	6.7	23	
	6	4	16	17	13	15	21	19	16	20	13	19	15	9	0	4	9	8	2	3	4	7	3	3	8	21	10.3	24	
	7	0	0	8	6	0	7	2	4	10	2	6	3	5	3	6	11	5	4	3	7	4	6	11	11	11	5.2	24	
	8	12	5	17	15	13	13	11	2	8	4	10	7	3	3	7	4	5	2	21	5	9	5	3	0	21	7.7	24	
	9	4	4	3	X	2	6	2	0	0	0	4	0	2	0	1	2	X	7	0	0	7	7	4	3	7	2.6	22	
	10	4	2	2	1	9	4	2	7	X	0	2	1	X	X	X	6	C	7	15	9	9	15	5	4	15	5.5	20	
	11	9	0	5	9	10	8	3	X	8	13	0	8	1	9	12	12	8	4	2	1	3	8	4	5	13	6.2	23	
	12	5	3	10	2	5	4	6	9	5	9	5	0	1	3	15	0	5	X	7	6	14	3	8	3	15	5.6	23	
	13	7	7	1	6	1	5	5	8	8	5	9	0	0	X	X	5	3	0	6	5	2	9	8	8	9	4.9	22	
	14	5	6	10	5	3	2	1	4	26	8	7	12	11	10	6	4	8	0	8	11	12	9	9	2	26	7.5	24	
	15	2	8	8	9	4	4	11	9	5	0	0	3	7	9	8	6	9	6	12	6	9	6	7	7	12	6.5	24	
	16	6	8	8	7	5	7	13	11	8	11	4	14	5	9	10	11	10	11	11	13	10	14	10	13	14	9.5	24	
	17	8	15	13	5	7	10	9	9	14	16	8	8	9	6	6	3	12	9	14	9	9	7	7	13	16	9.4	24	
	18	15	5	13	6	10	15	14	7	10	8	13	9	12	11	9	4	4	8	8	9	9	16	16	14	16	10.2	24	
	19	4	10	10	14	11	13	10	16	15	11	5	5	6	3	0	2	3	6	8	8	8	9	7	5	10	16	8.0	24
	20	8	5	9	13	7	5	6	13	4	4	4	3	5	8	11	5	11	5	3	3	8	11	7	9	13	7.0	24	
	21	6	2	6	10	4	4	10	8	6	0	5	1	6	6	8	2	3	9	8	0	1	5	5	4	10	5.0	24	
	22	13	4	7	5	7	5	10	7	0	4	0	2	5	3	4	5	1	0	6	0	5	8	9	3	13	4.7	24	
	23	2	3	6	3	5	8	10	5	3	0	10	23	0	3	27	13	7	8	6	16	5	8	5	4	27	7.5	24	
	24	17	16	4	3	6	0	12	0	1	3	4	3	X	15	X	9	3	11	12	14	8	15	9	10	17	8.0	22	
	25	6	2	6	5	0	13	1	4	15	5	1	6	6	4	7	10	1	6	6	11	5	0	10	5	15	5.6	24	
	26	1	7	5	9	12	12	11	8	10	5	3	X	9	2	0	5	6	X	6	8	13	8	1	8	13	6.8	22	
	27	4	0	X	4	10	3	0	12	8	5	X	8	3	5	5	8	13	12	15	14	6	16	4	9	16	7.5	22	
	28	0	5	16	6	8	3	11	X	17	1	12	10	12	19	0	C	C	30	42	8	2	2	10	0	42	10.2	23	
	29	10	31	18	2	X	X	22	5	10	8	7	12	23	1	4	2	13	8	5	7	5	X	3	25	31	10.5	21	
	30	12	6	15	7	17	11	7	16	1	0	12	X	X	0	11	6	0	20	11	26	27	36	15	0	36	11.6	22	
	HOURLY MAX	17	31	18	15	17	21	22	16	26	16	19	23	23	19	27	13	13	30	42	26	27	36	16	25				
	HOURLY AVG	6.6	6.8	8.5	6.9	6.8	7.9	7.6	7.9	8.7	5.5	6.8	7.1	6.7	6.8	6.8	6.0	5.9	7.6	8.9	7.9	8.3	8.8	7.2	7.0				

STATUS FLAG CODES

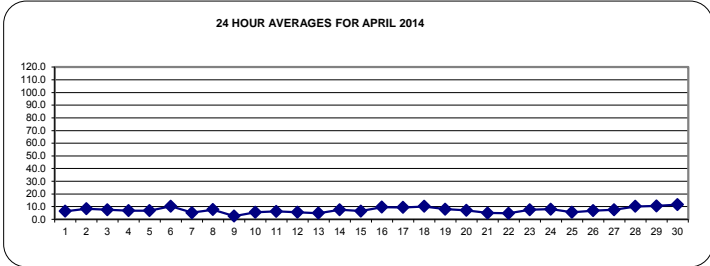
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT:

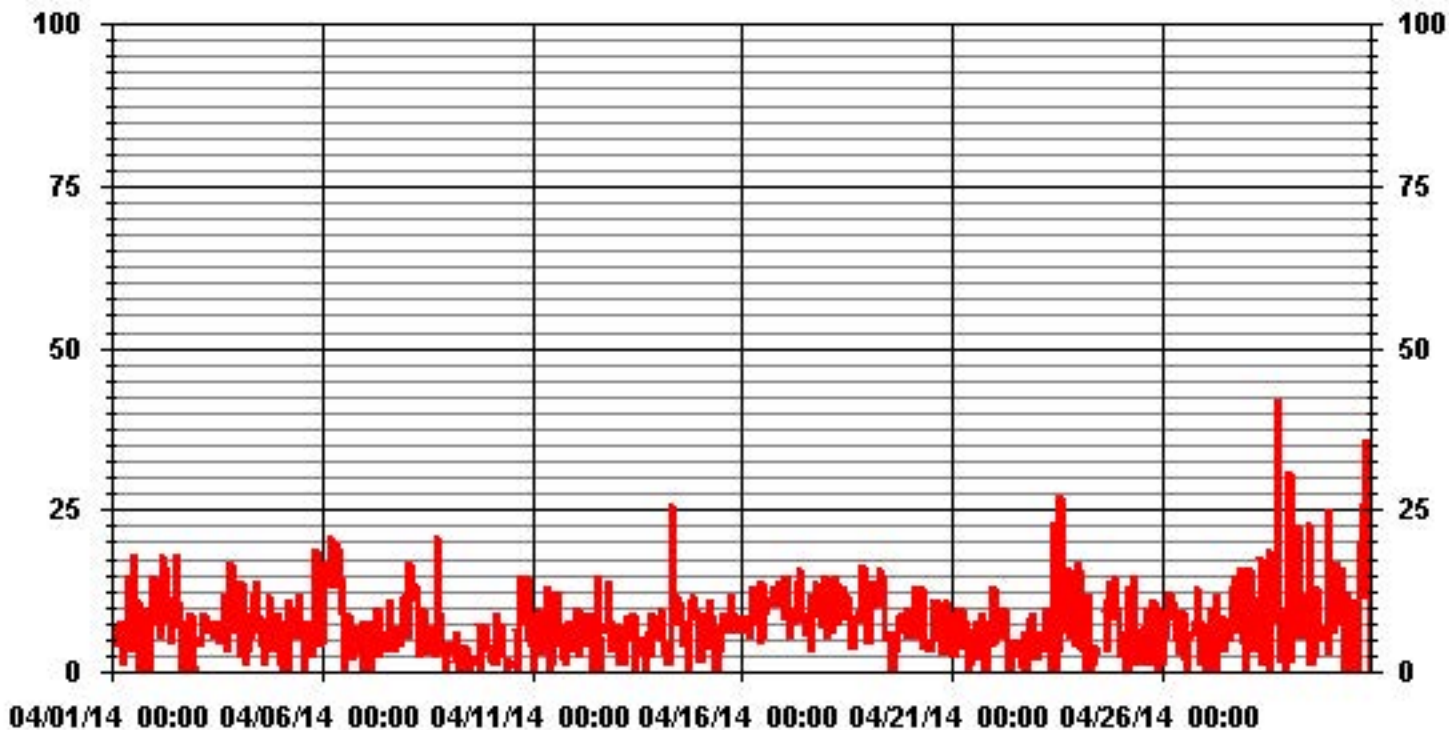
ALBERTA ENVIRONMENT: 24-HR 30 ug/m3

MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	639				
MAXIMUM 1-HR AVERAGE:	42 ug/m3	@ HOUR(S)	18	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	11.6 ug/m3			ON DAY(S)	30
				VAR-VARIOUS	
MONTHLY CALIBRATION TIME:	3 HRS	OPERATIONAL TIME:	696 HRS		
STANDARD DEVIATION:	5.29	AMD OPERATION UPTIME:	96.7 %		
		MONTHLY AVERAGE:	7.30 ug/m3		



01 Hour Averages



— LICA35 PM2 UG/M3

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

April 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	1.15	2.30	2.44	14.69	13.54	13.68	7.92	3.17	1.58	1.44	4.46	4.61	11.23	7.20	6.77	3.17	99.42
< 60	.00	.00	.00	.00	.00	.14	.00	.14	.00	.00	.00	.00	.00	.00	.14	.14	.57
< 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	1.15	2.30	2.44	14.69	13.54	13.83	7.92	3.31	1.58	1.44	4.46	4.61	11.23	7.20	6.91	3.31	

Calm : .00 %

Total # Operational Hours : 694

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	8	16	17	102	94	95	55	22	11	10	31	32	78	50	47	22	690
< 60						1		1							1	1	4
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	8	16	17	102	94	96	55	23	11	10	31	32	78	50	48	23	

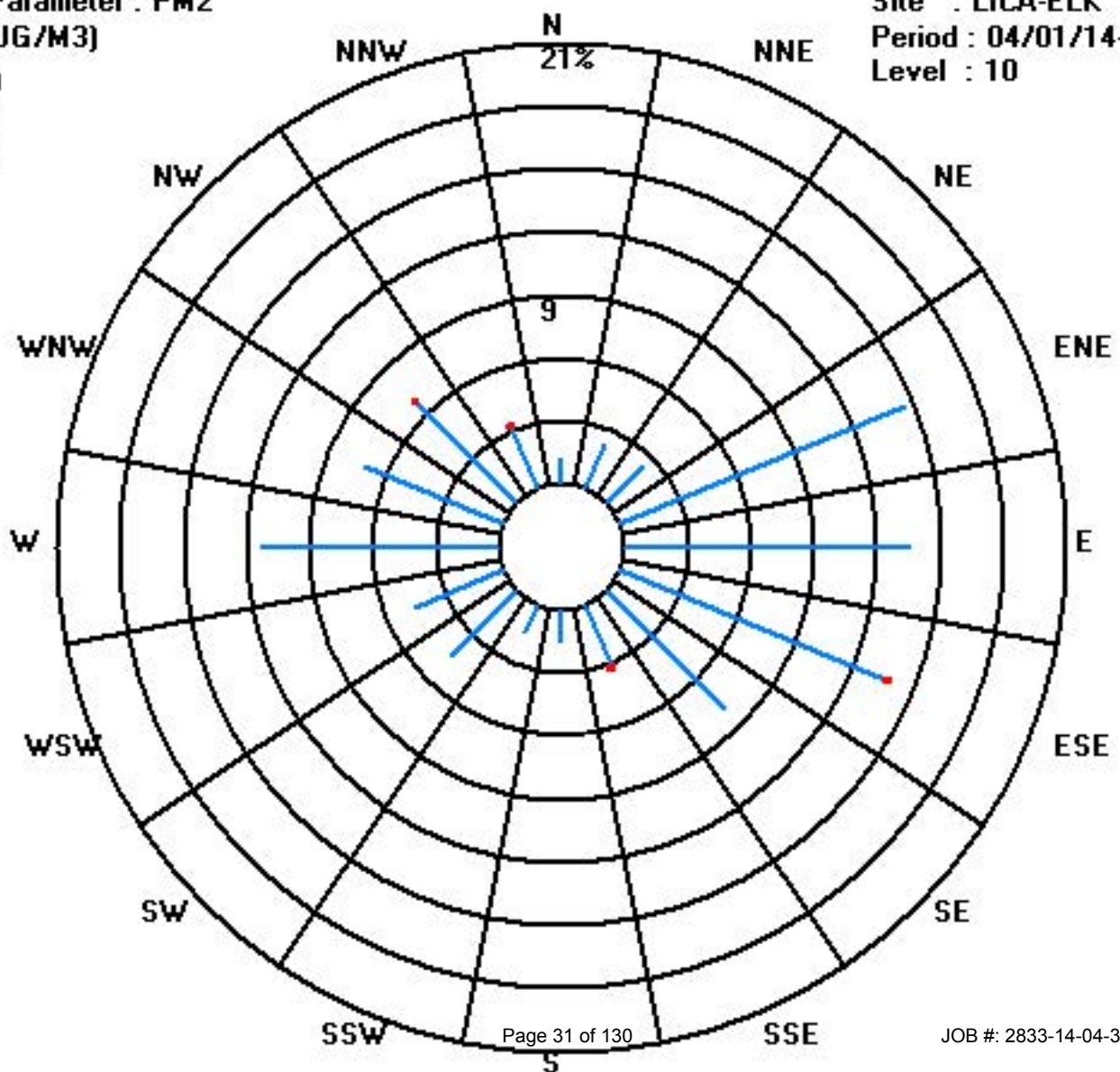
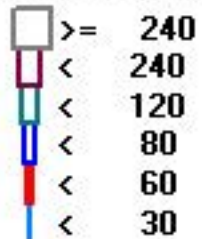
Calm : .00 %

Total # Operational Hours : 694

Class Limits (UG/M3)

Period : 04/01/14-04/30/14

Level : 10



Nitrogen Dioxide

Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	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		4.6	4.8	4.6	4.8	6.5	8.3	S	8.1	6.5	5.8	6.2	4.7	3.6	4.2	3.9	4.2	3.1	3.6	7.3	12.1	15.5	23	25.6	20.4	25.6	8.3	24	
2		25.9	22.8	23.7	25.2	26.4	S	24.9	19.7	10.9	4.7	2	2.3	1.3	0.7	0.5	0.5	0.3	0.2	0.1	0.8	3.7	5.9	4.5	7.7	26.4	9.3	24	
3		7.8	9.6	13.7	13.1	S	28.1	32.4	27.2	14.9	9	2.5	1.4	1.9	2.1	2	1.6	1.7	3.6	3.8	4.1	3.3	1.8	1.9	2.4	32.4	8.3	24	
4		3.9	3.9	3.5	S	2.9	3.5	3.4	3.3	3.4	2.7	1.7	1.6	1.7	0.6	0.8	1	1	0.4	4	13.3	14.6	11.1	7	6.6	14.6	4.2	24	
5		3.7	6.3	S	13.2	21.5	31.1	29.7	16.8	10.4	3.1	1.2	2.5	2.5	1	1	0.5	1.2	4.4	11.7	16	11.5	13.6	17	9.7	31.1	10.0	24	
6		12.1	S	28.4	13.3	25.6	28.6	21.9	15.2	13	8.2	4.5	3.7	1.7	1.2	1	1.3	0.4	1	1	2.3	0.4	7.6	15	23	28.6	10.0	24	
7		S	4.7	4.4	5.5	6.6	6.8	4.8	3	1.8	0.8	0.5	0.3	0.2	0.5	0.7	1.2	2.7	2.5	8.7	14.2	8.1	8.8	13.8	S	14.2	4.6	24	
8		14.5	13.8	20.5	22	24.1	30.9	29.3	14.6	7.3	3.3	2.5	1.2	0.7	0.2	0.6	1.3	1.7	2.5	3.9	7.8	9.9	0.8	S	3.4	30.9	9.4	24	
9		4.6	2.7	4.5	3.2	10.7	3.2	2.1	2.1	1.2	0.6	0.7	0.7	0.4	0.5	0.3	0.4	0.7	1	0.9	5.5	2.9	S	4.6	5.3	10.7	2.6	24	
10		5.6	3	1.5	1.6	4	5	6.4	3.5	0.8	0.6	0.7	0.5	0.3	0.5	0.3	0.1	0.5	0.7	2.1	2.7	S	2.5	7	9	9	2.6	24	
11		8.4	9.2	9.7	11	10.8	5.5	3.3	2.7	2.6	C	C	C	C	C	C	C	1.6	0	S	0	0	0	0	0	0	11	4.3	24
12		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.8	5.9	6.5	13	25.8	25.8	2.3	24
13		19.1	2.2	5	1.4	0.8	1	0.1	0	0	0	0	0	0	0	0	0	0	0	S	0.6	1.9	10.1	11.4	12.5	7.8	19.1	3.2	24
14		7.9	9.1	7.7	7.9	6	7.6	6.7	3.4	2.3	1.1	1	0.8	1.2	1.8	1.2	2	S	2.1	3.2	3.1	5.5	2.6	2.7	2.9	9.1	3.9	24	
15		2.5	3	1	0.8	0.4	0.3	0.3	0	C	C	C	C	0.6	0.2	0.1	S	0.7	0.5	0.4	0.3	0.7	0.9	0.6	1	3	0.8	24	
16		0.3	1.5	5	5.5	4.3	7.1	5.3	3.7	1.4	1	0.8	1	1.2	1.2	S	1.3	0.7	1.1	1.3	2.2	2.7	2.1	2.2	2.2	7.1	2.4	24	
17		1.9	2	1.6	2.5	3.6	3.3	3.4	2.9	1.9	1.6	1.5	1.8	1.8	S	1.6	0.8	0.8	0.7	0.6	0.6	0.1	0	0	0	3.6	1.5	24	
18		0	0	1	1	1.1	1.6	2.1	2	1.6	1	0.8	0.5	S	1.4	0.6	0.4	0.4	0.3	1.1	0.9	0.5	0.1	4.1	3.8	4.1	1.1	24	
19		0.9	3.3	1.6	1.7	2.3	8.2	8.2	4.3	3.5	2	1	S	1.3	0.6	0.7	0.5	1.3	0.9	4	12	2.7	3.9	3	3.1	12	3.1	24	
20		2.9	3.4	3.7	3.7	4.5	3.4	2.2	5	4.7	3.9	S	4.9	4.4	4.1	1.8	2.1	2	2.4	4.3	9.2	4.5	5.7	14.7	19.1	19.1	5.1	24	
21		24	29.7	32.6	29.1	21.9	15.5	13.9	8.3	7.3	S	4.2	1.8	1.4	0.8	0.9	1	0.9	1.5	5.9	13.9	12.7	3.2	2.6	13.2	32.6	10.7	24	
22		15.4	9.9	8.2	7.2	8.8	S	10.3	6	S	1.7	0.8	0.5	0.5	1.3	0.4	0.2	0.5	0.3	0.3	0.5	0.8	1	1.1	0.9	15.4	3.5	24	
23		0.9	1.1	1.2	0.9	1.3	1.1	1	C	C	C	C	1.7	2	3	2.6	3.1	1.5	1.2	1.2	1.1	0.9	0.8	0.2	0.4	3.1	1.4	24	
24		0.4	0.4	0.4	0.6	0.7	0.9	S	1.4	0.6	0.1	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	0.5	1.4	0.3	24	
25		0.5	0.7	0.5	0	0	S	2	0.3	0.4	0	0	0	0	0	0	0	0	0	0	0	0.4	1	0.7	1.8	2	0.4	24	
26		2.3	0.9	1.2	1.7	S	3.5	2.8	2.1	1.5	0.9	0.5	0	0	0	0	0	0	0	0.5	0.7	0.4	0.9	0.8	0.2	3.5	0.9	24	
27		0	0.2	0.9	S	1.9	1.5	1.7	1.7	1.5	1.3	0.9	1.3	0.9	1.1	1	1.4	1.9	1.5	1.8	2.8	2.8	4.6	2	1.6	4.6	1.6	24	
28		2.1	1.9	S	4.8	5.9	5.5	0.9	0.7	1	0.7	0.7	0.6	0.5	0.6	0.6	0.5	0.2	0.2	0.4	0.7	6.8	19.9	15.7	14.1	19.9	3.7	24	
29		17.8	S	10.5	8.7	11.7	16.5	13	8.5	4	2.3	0	0	0	0	0	0	0	0	0	2.2	15.2	11.6	23.7	28.4	28.4	7.6	24	
30		S	29.1	26	15.1	21.2	16.8	10.4	9.7	3	1.2	0.3	0	0.2	0.3	C	C	C	1.2	2.4	29	19.3	11.5	16.4	S	29.1	11.2	24	
HOURLY MAX		26	30	33	29	26	31	32	27	15	9	6	5	4	4	4	4	3	4	12	29	19	23	26	28				
HOURLY AVG		6.8	6.4	8.0	7.3	8.4	9.1	8.7	6.1	4.0	2.2	1.3	1.3	1.1	1.0	0.8	0.9	0.9	1.2	2.5	5.5	5.6	5.6	7.3	7.7				

STATUS FLAG CODES

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

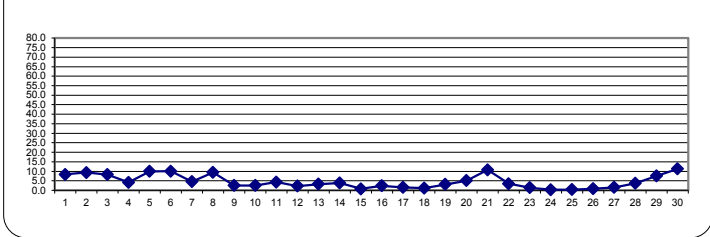
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

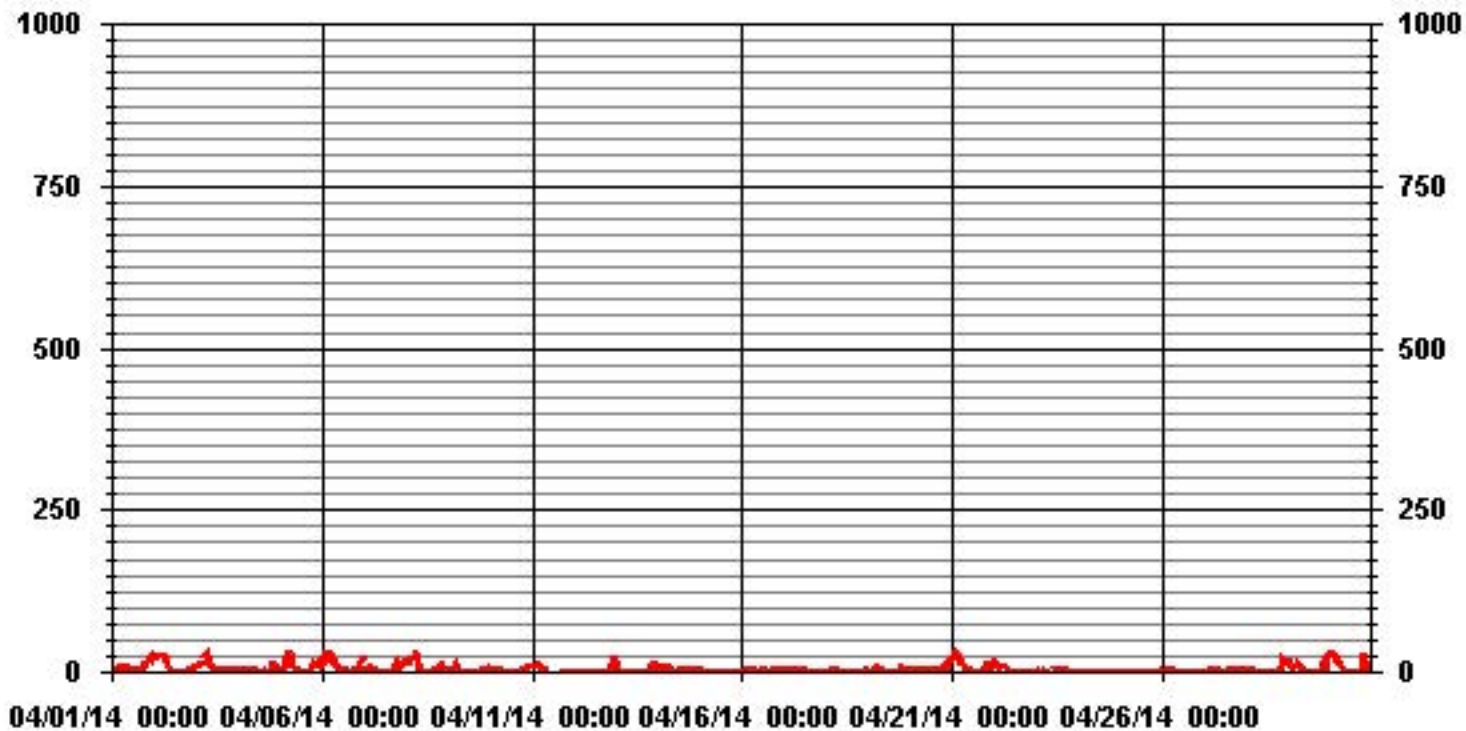
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	588					
MAXIMUM 1-HR AVERAGE:	32.6	PPB	@ HOUR(S)	2	ON DAY(S)	21
MAXIMUM 24-HR AVERAGE:	11.2	PPB			ON DAY(S)	30
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	19	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	6.66		MONTHLY AVERAGE:	4.60	PPB	

24 HOUR AVERAGES FOR APRIL 2014



01 Hour Averages



— LICA35 NO2_ PPB

Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	25:00	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		5.9	5.9	6.7	6.4	8.5	10	S	9.3	7.3	6.4	7.9	6.1	4.2	4.8	4.2	7.4	3.6	4.5	27.4	16	25.8	27.6	30.8	25.5	30.8	30.8	11.4	24			
2		29.2	26.9	32.3	28.2	27.4	S	34.3	23.6	15.5	7.2	2.7	2.9	2.1	1	1.1	0.8	0.8	1.1	0.4	2.4	4.5	15	8.7	19.9	34.3	12.5	24				
3		15.4	24.9	22.5	21	S	43.8	40.4	32.3	20.2	14	5.4	2.1	3.2	3.7	3.8	4.6	3.7	11.1	4.7	5.2	4.3	2.8	2.5	3.7	43.8	12.8	24				
4		5.5	5.1	4.7	S	3.9	5.8	5.2	5.6	4.4	4.2	4.1	2.8	3.1	1.8	1.9	2.6	3.9	1.8	9.6	22.2	22.3	26.2	11	12.6	26.2	7.4	24				
5		15.6	21.5	S	32.4	29.8	40.2	35.5	19.5	13.8	5.7	5.6	4.7	5.8	2.3	2.3	2.3	3.2	7.2	23.7	46.7	16.1	20.9	25.5	13.7	46.7	17.1	24				
6		15.7	S	35.4	19.1	36	33.3	32.9	16.9	16.1	13.2	6.2	5.6	3.3	2.3	2.3	3.3	1.2	4.4	2	4.8	4.8	22.7	19	36.4	36.4	14.6	24				
7		S	6.7	7.8	9.4	8.8	8.8	7.2	4.5	3	1.2	1.1	1	1.1	1.3	1.5	3.2	4.4	3.7	18.3	19	20.5	12.3	21.5	S	21.5	7.6	24				
8		17.2	16	26.6	27.3	29.3	33.5	41.4	17.9	12.1	4.2	3.3	1.9	1.1	0.5	1.4	1.9	2.9	4	6.7	13.4	19	3.5	S	12.3	41.4	12.9	24				
9		10.1	5.3	10.1	8.4	19.1	7	3.1	2.9	2.5	1.3	1.3	1.4	1.2	1.4	0.8	1	2.2	3.2	1.8	34.8	5.2	S	15.8	13.8	34.8	6.7	24				
10		10.6	6.3	2.9	3.5	8.7	8.3	8.6	5.6	2.4	1.6	1.6	1.9	1	1.2	1.5	0.8	1.6	2	7.3	8.7	S	3.5	9.4	26.3	26.3	5.4	24				
11		12.6	14.5	12.2	17.2	14.5	8.8	5.9	4.4	C	C	C	C	C	C	C	C	C	5.8	1.4	S	2.7	1	1	1	17.2	7.4	24				
12		0.8	0.8	0.8	0.6	0.6	0.6	0.7	0.9	0.6	0.8	0.9	1.1	1	0.5	0.4	0.5	0.7	0.4	S	2	28.4	12.9	21	33.8	33.8	4.8	24				
13		31	6.5	8.5	5.6	2.1	2.1	0.9	0.5	0.5	0.3	0.5	0.7	0.6	0.4	0.7	0.8	0.5	S	1.8	11.9	16.7	15.4	20.5	10.6	31	6.0	24				
14		10.9	12.2	11.5	10.7	8.5	10.4	12.6	5.6	3.3	1.9	2.2	1.4	3.1	3.4	2.7	5.1	S	4.1	4.8	7.5	7.1	3.8	3.7	4.5	12.6	6.1	24				
15		4.8	4.7	1.7	2	1.5	1.4	1.1	0.5	C	C	C	C	C	1.1	0.9	0.9	S	1.9	1.1	0.9	1.1	2	3	2.5	1.8	4.8	1.8	24			
16		1.2	2.6	9.3	9.7	7.6	9.6	8.5	13.9	2.7	2.3	1.9	2	2.6	2.8	S	2.4	2.1	2.7	2.4	3.1	3.9	3.8	3.5	3.2	13.9	4.5	24				
17		3.4	3.2	2.8	6	5	4.5	4.4	4.2	2.8	2.6	3	3.2	3.3	S	3.7	2.2	2.4	2.4	1.6	1.7	1.1	0.8	0.8	0.7	6	2.9	24				
18		0.4	0.8	2.6	2.6	2.2	2.6	3.2	3.6	4.6	2.8	2.2	2.1	S	2.4	1.4	1.2	1.2	1.4	1.9	2	1.5	1.1	9.8	7	9.8	2.6	24				
19		3.4	6.4	4.9	3.8	4.3	13.5	10.8	5.9	5.2	3.9	2.1	S	2.3	1.3	1.3	1.4	2.6	2.4	9.9	32.3	4.4	7.1	6.9	5.1	32.3	6.1	24				
20		4.8	7	5.4	5.5	7	7.8	4.3	7.2	6.8	5.1	S	7.4	6.2	5.3	2.6	5.5	3.6	4.6	6.2	24.1	9.2	8.4	22.1	24.6	24.6	8.3	24				
21		34	34	34.6	32.5	25.8	18.3	16.4	9.7	9.4	S	5.9	3.1	3.4	1.6	2.6	2.9	3.1	6.2	11.6	43.9	23.3	5.4	4.4	22.7	43.9	15.4	24				
22		37.2	15.9	10.7	9.8	13.3	12.3	15.8	8	S	2.8	1.2	2.9	1	0.8	1	0.9	0.8	1	0.9	0.8	1.4	1.5	1.8	1.8	2	37.2	6.3	24			
23		1.6	1.8	2	1.5	2	1.9	1.8	C	C	C	C	2.6	3.4	4.1	3.9	4.9	2.5	2.1	2	2.1	1.8	2.1	1.1	1.1	4.9	2.3	24				
24		1.2	1.2	1.1	1.6	1.4	1.7	S	2.5	1.4	0.9	0.8	0.5	0.5	0.5	0.5	0.5	0.8	1	0.4	0.7	0.8	0.7	1	1	2.5	1.0	24				
25		1.2	1.3	1	1	0.6	S	3.4	1.6	1.5	0.8	1	0.4	0.4	0.7	0.8	0.5	0.7	0.4	0.3	1.3	1.6	3.3	1.9	3.3	3.4	1.3	24				
26		3.9	2.1	2.1	3	S	5.5	5.7	3.2	3.5	2	1.5	0.6	0.8	0.6	0.8	0.5	0.6	0.8	1.4	2.1	1.8	2.2	1.8	2	5.7	2.1	24				
27		0.6	1.4	1.9	S	4	4.3	2.8	2.8	2.4	2.2	3.1	2.9	2	2.4	2.3	3.1	3.3	3.2	3.1	5.2	4.6	7.5	4.5	3.8	7.5	3.2	24				
28		4.1	3.9	S	8	9	14.4	1.3	1.3	1.8	1.5	1.3	1.2	1	0.9	1.3	1.3	1.1	0.9	0.9	4.1	10.9	25.6	24.2	17.9	25.6	6.0	24				
29		23.4	S	15.9	11.3	16.3	19.6	18.3	12.4	8.1	6.2	0.6	0.6	0.4	0.3	0.2	0.4	1.1	0.3	1.2	26.9	32.7	32.7	34.1	34.9	34.9	13.0	24				
30		S	35.2	29.8	22.6	26.1	23.7	13.1	14.1	4.7	1.9	0.9	0.6	1.1	1.4	C	C	C	2.6	5.6	52.8	40	16.7	26	S	52.8	16.8	24				
HOURLY MAX		37	35	35	33	36	44	41	32	20	14	8	7	6	5	4	7	4	11	27	53	40	33	34	36							
HOURLY AVG		10.9	9.8	11.0	11.1	11.5	12.6	12.1	8.3	6.0	3.7	2.6	2.3	2.2	1.9	1.8	2.3	2.1	3.0	5.5	13.8	11.0	10.0	11.6	12.3							

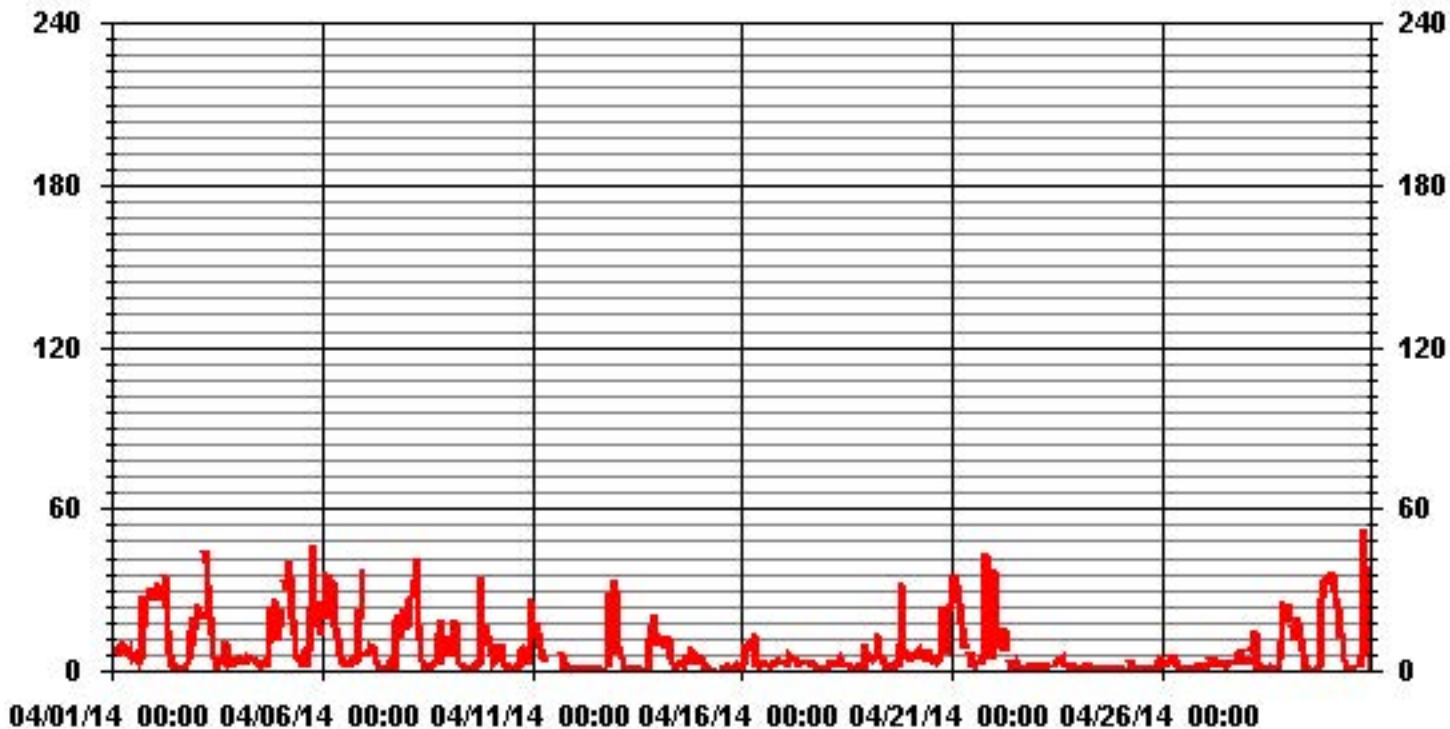
STATUS FLAG CODES

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:	669
MAXIMUM INSTANTANEOUS VALUE:	52.8 PPB @ HOUR(S) 19 ON DAY(S) 30
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	20 HRS
OPERATIONAL TIME:	720 HRS
STANDARD DEVIATION:	9.44

01 Hour Averages



— LICA35 NO2MAX PPB

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

April 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	1.04	2.39	2.54	14.49	13.45	12.40	7.92	3.28	1.49	1.34	4.18	5.08	11.95	7.47	7.32	3.58	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	1.04	2.39	2.54	14.49	13.45	12.40	7.92	3.28	1.49	1.34	4.18	5.08	11.95	7.47	7.32	3.58	

Calm : .00 %

Total # Operational Hours : 669

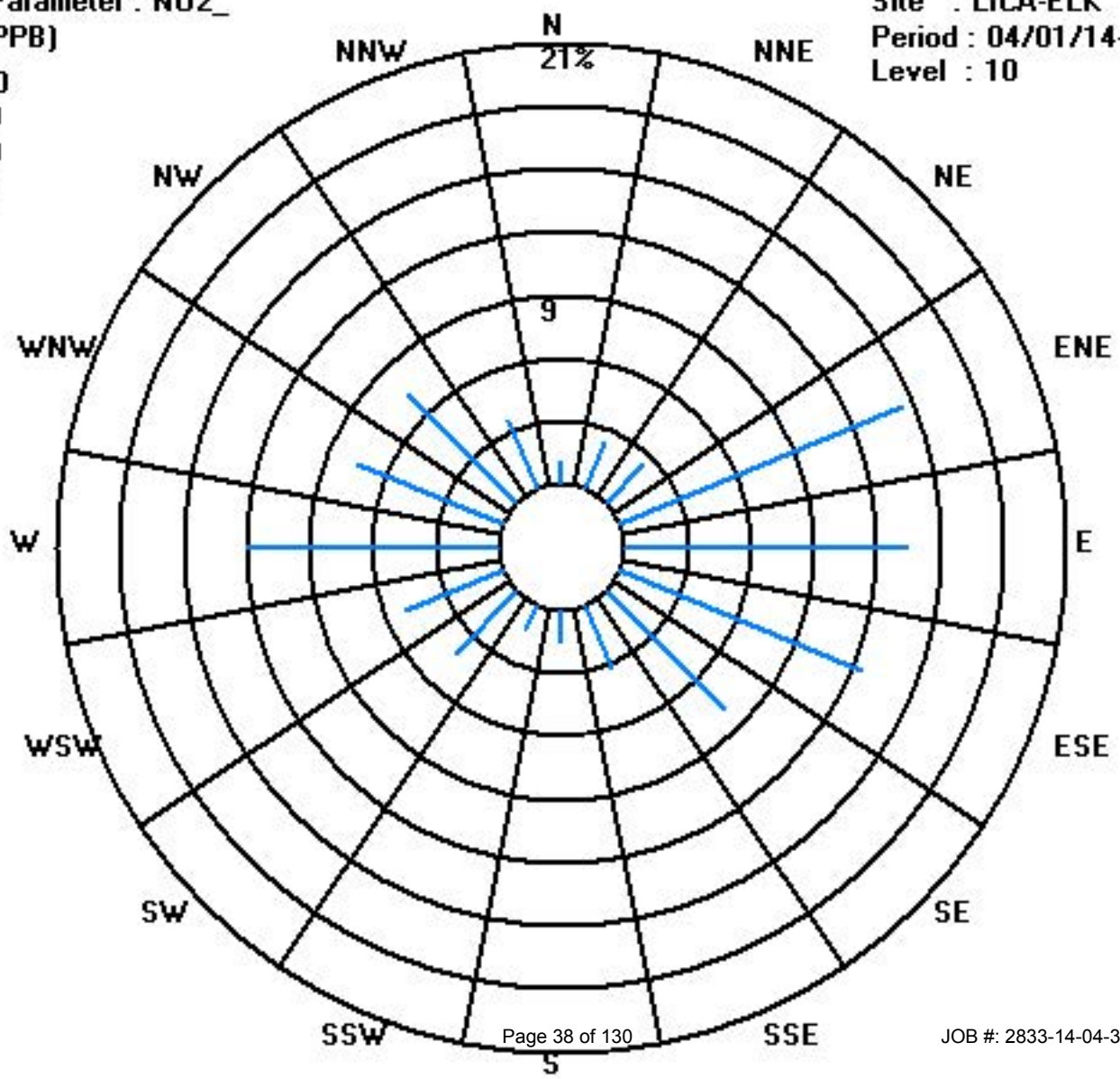
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	7	16	17	97	90	83	53	22	10	9	28	34	80	50	49	24	669
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	7	16	17	97	90	83	53	22	10	9	28	34	80	50	49	24	

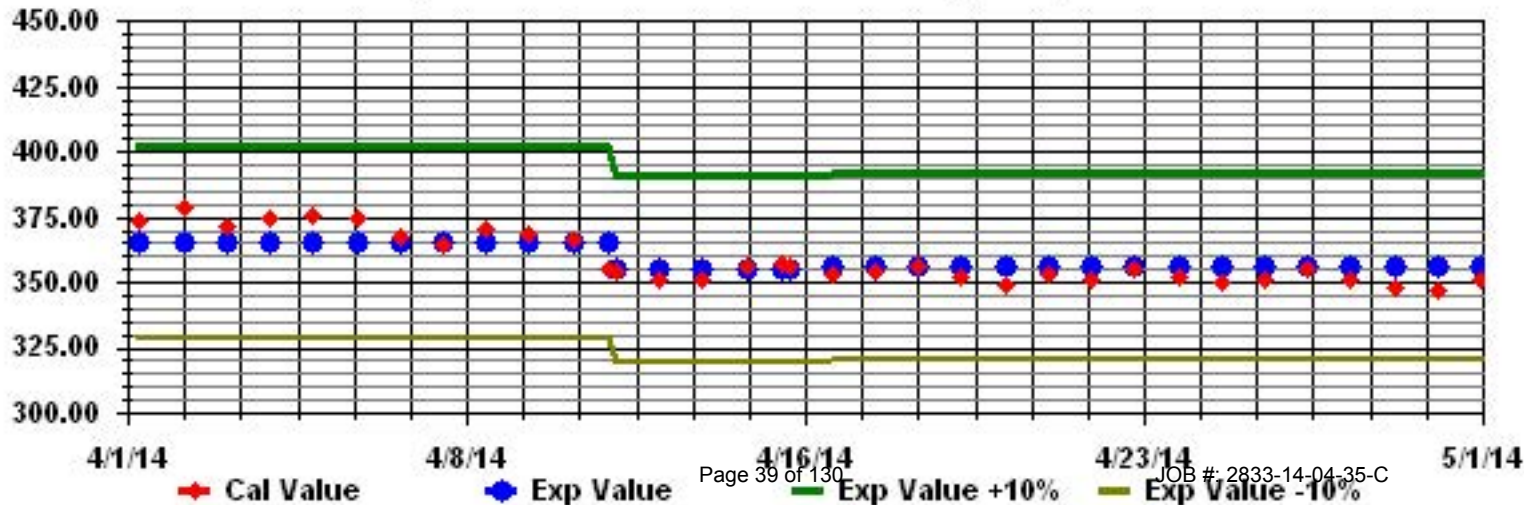
Calm : .00 %

Total # Operational Hours : 669

Class Limits (PPB)



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



Nitric Oxide

Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

NITRIC OXIDE (NO) hourly averages in ppb

MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00			
	DAY																											
	1	0	0	0	0	0	0	S	1.6	2.6	3.2	4.3	2.8	1.1	1.1	1	1.7	0.9	0.7	1.3	0.4	0.5	2.1	3.1	0.7	4.3	1.3	24
	2	8.6	5.8	4.5	7.2	5.5	S	21.1	14.2	6.8	2.9	0.6	0.7	0.1	0	0	0	0	0	0	0	0	0	0	0	21.1	3.4	24
	3	0	0	0	0	S	19.8	62.9	51.2	10.7	6	1.3	0.6	0.9	1.2	1.2	0.5	0.4	0.6	0.1	0	0	0	0	0	62.9	6.8	24
	4	0	0	0	S	0.4	0.7	0.8	0.9	0.8	1.2	1.3	1.6	1.5	0.7	0.7	0.8	0.8	0.4	0.6	1.1	0.5	0.8	0.2	0.3	1.6	0.7	24
	5	0.3	1.4	S	3	2.5	9.2	20.3	10.8	6	1.4	0.6	1.3	1.4	0.5	0.4	0.2	0.3	0.5	1.9	3	0.1	0.2	0	0.3	20.3	2.9	24
	6	0	S	5.2	0.4	6	6.2	10.5	6.3	6.7	3.6	1.4	0.9	0.5	0.5	0.5	0.5	0.2	0.3	0.2	0	0	0.4	0.1	2.7	10.5	2.3	24
	7	S	0	0	0	0.1	0	0.6	0.8	0.7	0.3	0.3	0.2	0.2	0.1	0.1	0.2	0.6	0.3	0.6	0.4	0.2	0.2	0.2	S	0.8	0.3	24
	8	0.2	0.2	0.9	0.7	2	14.1	29.1	8	4.3	1.6	1.1	0.4	0.4	0.1	0	0.3	0.3	0.3	0.2	0.3	0.1	0	S	0.5	29.1	2.8	24
	9	0.4	0.3	0.3	0.2	0.8	0.2	0.3	0.6	0.6	0.3	0.5	0.5	0.4	0.4	0.3	0.4	0.3	0.4	0.2	0.5	0.1	S	0.3	0.3	0.8	0.4	24
	10	0.2	0	0	0	0	0.2	1	1.1	0.3	0.2	0.2	0.2	0.1	0.2	0.3	0.1	0	0.1	0	S	0.1	0.1	0.1	0.6	1.1	0.2	24
	11	0	0.4	0	0.1	0.1	0.1	0.2	0.1	0	C	C	C	C	C	C	C	C	1.3	1	S	1.7	1.5	1.7	1.6	1.7	0.7	24
	12	1.4	1.5	1.5	1.6	1.5	1.5	1.7	1.8	1.7	1.7	1.9	2	1.9	1.7	1.7	1.7	1.6	1.6	S	0.3	2.7	0.4	0.6	9.3	9.3	1.9	24
	13	7.5	0	0.1	0.1	0	0	0.2	0.1	0.1	0.2	0.3	0.3	0.3	0.1	0.2	0.3	0.2	S	0.2	0.1	0.3	0.3	0.6	0.1	7.5	0.5	24
	14	0	0.4	0	0	0	0.5	1.7	1.5	1.1	0.6	0.6	0.2	0.5	0.9	0.6	1	S	0.4	0.3	0	0.1	0	0	0	1.7	0.5	24
	15	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	S	0.3	0.2	0.1	0.1	0	0	0	0	0.3	0.0	24
	16	0	0	0	0.1	0.1	0.4	1.3	2.7	1.1	1.2	0.8	0.8	0.8	0.6	S	0.5	0.3	0.2	0.1	0.1	0.1	0	0	0	2.7	0.5	24
	17	0	0	0	0	0	0	0.5	0.5	0.3	0.5	0.5	0.5	0.8	S	1	0.5	0.2	0.1	0	0	0	0	0.1	0.1	1	0.2	24
	18	0.1	0.1	0.1	0	0	0.1	0.3	0.6	0.8	0.7	0.9	0.6	S	0.3	0	0	0	0	0	0	0	0	0	0	0.9	0.2	24
	19	0	0	0	0	0	0.3	2	1.9	1.7	1.1	0.4	S	0.5	0.2	0.2	0.2	0.5	0.5	0.5	1.5	0.2	0.3	0	0	2	0.5	24
	20	0	0.1	0	0	0	0	0	0.4	0.5	1.1	S	1.1	1	0.9	0.1	0.3	0.1	0.3	0.2	0.2	0.2	0	0.2	0.1	1.1	0.3	24
	21	2.7	12.2	17.1	20.4	7.4	10.1	13.7	6.4	5.3	S	1.8	0.7	0.6	0.3	0.3	0.3	0.3	0.3	0.5	1.5	0.5	0.2	0.1	0.4	20.4	4.5	24
	22	1.6	0.1	0	0.1	0.4	0.9	2.6	1.7	S	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.6	0.3	24
	23	0	0	0	0	0	0	0	C	C	C	C	0.8	0.5	0.4	0.1	0.1	0	0	0	0	0	0	0	0	0.8	0.1	24
	24	0	0	0	0	0	0	S	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0	0.4	0.1	24	
	25	0.2	0.1	0	0	0.1	S	0.6	0.3	0.4	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.1	24
	26	0	0	0	0	S	0.3	0.6	0.6	0.5	0.3	0.3	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0.6	0.2	24
	27	0	0	0	S	0.3	0.3	0.6	0.7	0.8	0.9	0.8	0.7	0.6	0.9	0.8	0.9	0.9	0.7	0.5	0.4	0.2	0.3	0.2	0.2	0.9	0.5	24
	28	0.2	0.1	S	0.2	0	0.7	0	0.1	0.2	0.2	0.2	0.3	0.1	0	0.1	0	0	0	0	0	0.4	2.4	1.5	0.2	2.4	0.3	24
	29	12.6	S	0.7	1.2	8.8	33.8	8.3	3.9	2.4	1.7	0.2	0.3	0.3	0	0.1	0.2	0.1	0.2	0.1	0.9	3.3	2.3	4.8	6.1	33.8	4.0	24
	30	S	43.1	16.7	1.3	14	15.8	8.1	6.3	1.1	0.3	0	0	0	C	C	C	0.2	0	4.8	0.9	0.2	0.5	S	43.1	6.0	24	
	HOURLY MAX	13	43	17	20	14	34	63	51	11	6	4	3	2	2	2	2	2	2	2	5	3	2	5	9			
	HOURLY AVG	1.3	2.4	1.7	1.3	1.8	4.1	6.8	4.3	2.1	1.2	0.8	0.7	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.5	0.4	0.4	0.5	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

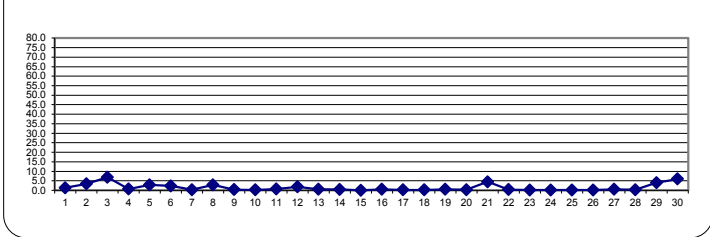
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

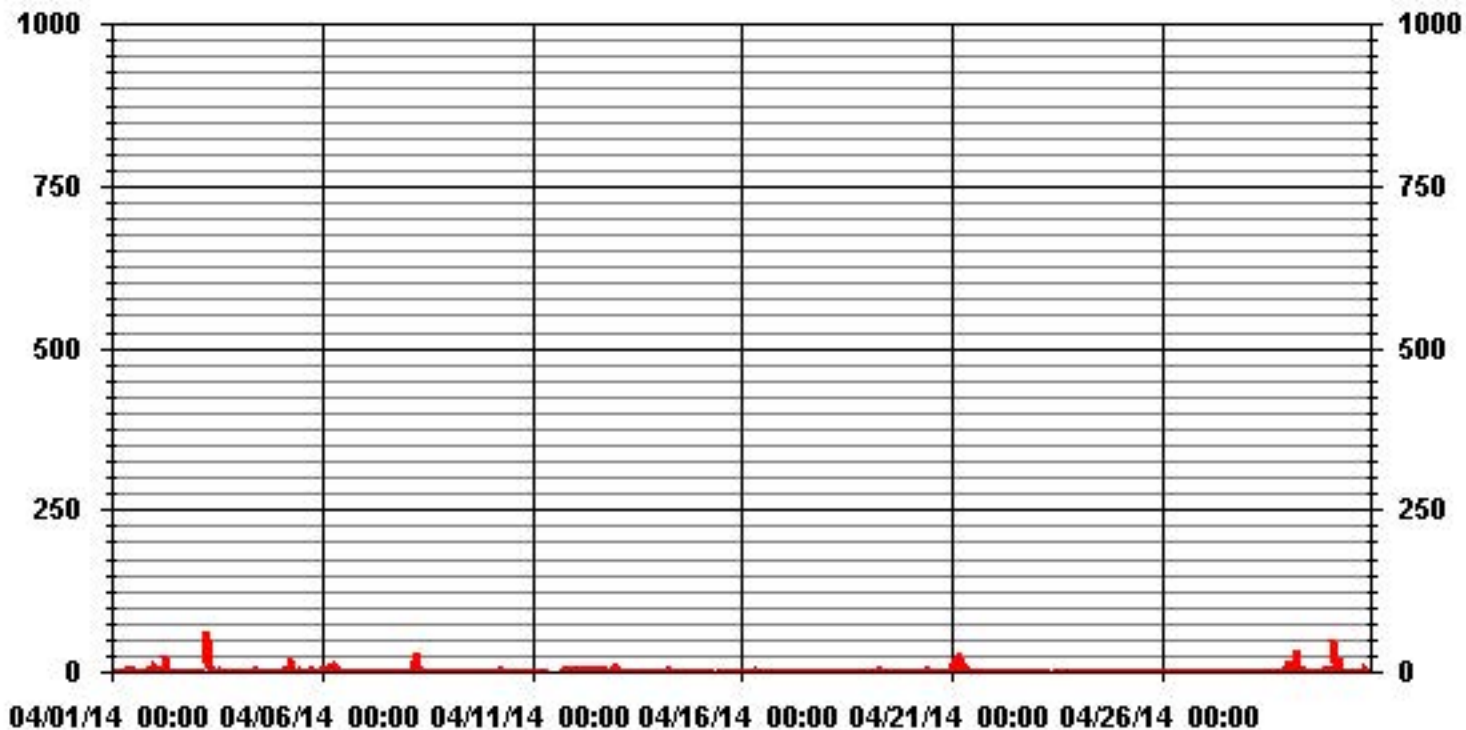
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	472				
MAXIMUM 1-HR AVERAGE:	62.9	PPB	@ HOUR(S)	6	ON DAY(S) 3
MAXIMUM 24-HR AVERAGE:	6.8	PPB			ON DAY(S) 3
					VAR-VARIOUS
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	19	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	4.70		MONTHLY AVERAGE:	1.41	PPB

24 HOUR AVERAGES FOR APRIL 2014



01 Hour Averages



Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

NITRIC OXIDE MAX instantaneous maximum in ppb

MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
	DAY																											
1	0.6	1.1	0.8	1.8	0.7	1.1	S	2.2	4.2	4.3	6.5	4.7	1.9	1.6	1.6	5.6	1.8	1.4	29	2.7	8.6	8.7	8.4	3.4	29	4.5	24	
2	19.7	14.1	31.7	15.2	10.4	S	48.1	22.4	9.2	5.7	1.3	1.6	0.9	0.5	0.3	0.2	0.2	0.1	0.1	0.1	0.2	1.5	0	2.2	48.1	8.1	24	
3	1	1.3	1.2	0.6	S	57.7	123.6	80.9	18.3	10.4	3.5	1.1	1.7	2.4	2.8	2.8	1	7.3	0.7	0.5	0.3	0.5	0.3	0.3	123.6	13.9	24	
4	0.2	0.2	0.6	S	1.2	1.9	1.6	2	1.4	2.1	2.6	2.2	2.4	1.3	1.4	1.4	1.7	0.9	1.7	2.5	1.4	3.7	0.8	0.8	3.7	1.6	24	
5	0.8	8.2	S	55.5	17.7	43.9	28.2	16.1	8.8	3.1	3.1	2.8	3.9	1.9	1.1	0.8	1.1	1.2	6.2	27.5	0.6	0.6	0.6	1.8	55.5	10.2	24	
6	0.6	S	13.7	1.8	38.7	11.2	42.2	9.9	9.6	6.2	2.1	1.8	1.1	0.9	0.9	1.1	0.7	1.3	0.7	0.5	0.5	3.5	0.6	10.2	42.2	6.9	24	
7	S	0.6	0.4	1	0.8	0.6	2.1	1.3	1.5	1.1	0.8	0.7	0.7	0.6	0.7	1.1	1.3	1	2	1.5	0.9	0.6	0.9	S	2.1	1.0	24	
8	0.9	1.2	2.9	1.8	5.8	32	64.5	11.2	9.3	2.1	2	1	1	0.5	0.5	0.9	1.1	1.1	0.8	2.2	0.4	0.5	S	1.2	64.5	6.3	24	
9	1	0.8	0.6	0.6	2.1	0.9	0.8	1.4	1.4	1	1.3	1.2	1	1	0.8	0.8	1	0.9	0.7	6.4	0.6	S	1.3	1	6.4	1.2	24	
10	0.7	0.3	0.3	0.4	0.4	0.7	2.1	2.1	1.2	0.8	0.7	0.8	0.8	0.9	0.9	0.7	0.6	0.5	1.1	0.6	S	0.9	1	17.7	17.7	1.6	24	
11	0.6	3.6	0.6	0.6	0.9	1.2	1.2	1.2	C	C	C	C	C	C	C	C	2.1	1.4	S	2.2	2.1	2.1	2.1	3.6	1.6	24		
12	2	2	2.1	2.1	2.1	2	2.2	2.4	2.3	2.3	2.5	2.5	2.5	2.1	2.1	2.1	2.1	2	S	0.7	29.1	2.1	3.3	19.6	29.1	4.1	24	
13	28	0.3	0.7	0.6	0.4	0.5	0.6	0.6	0.7	0.6	0.9	0.9	0.8	0.6	0.7	0.7	0.7	S	0.7	0.6	2.4	1.6	3.7	0.5	28	2.1	24	
14	0.5	2	0.8	0.8	0.5	1.8	3.1	2.8	2	1.5	1.7	0.7	2.3	2.2	1.6	2.7	S	1.2	1.2	0.7	0.7	0.4	0.4	0.3	3.1	1.4	24	
15	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.2	C	C	C	C	0	0	0	S	0.8	0.7	0.4	0.6	0.6	0.6	0.4	0.7	0.8	0.3	24	
16	0.5	0.4	0.5	1.2	0.7	1.4	3.1	19.8	1.7	2.2	1.5	1.7	1.7	1.8	S	1.1	1.1	0.8	0.8	0.6	0.7	0.6	1.2	0.4	19.8	2.0	24	
17	0.6	0.4	0.4	1.1	0.6	0.8	1.3	1.6	0.9	1.2	1.6	1.5	2	S	2.3	1.4	0.9	0.8	0.7	0.6	0.5	0.5	0.5	0.5	2.3	1.0	24	
18	0.4	0.5	0.5	0.5	0.4	0.6	0.8	1.3	3.3	2.6	1.9	1.4	S	0.9	0.7	0.4	0.4	0.3	0.5	0.4	0.3	0.2	0.3	0.3	3.3	0.8	24	
19	0.3	0.5	0.3	0.4	0.3	0.9	3.6	3.6	2.6	2	1.1	S	1.2	0.7	0.8	0.7	1.4	1.4	1.2	16.7	1.2	1.1	1.1	0.2	16.7	1.9	24	
20	0.6	0.8	0.4	0.3	0.4	0.4	0.6	1.3	1.3	1.5	S	2.6	2.1	1.7	0.8	1	0.6	0.9	0.8	0.8	1.7	0.4	1.7	1.2	2.6	1.0	24	
21	11.5	40.4	24.2	38.8	14.7	22.8	27.8	8.4	7.4	S	2.8	1.4	1.1	0.8	1.2	1.2	1	1.1	1.5	23.2	1.3	0.6	0.7	2.1	40.4	10.3	24	
22	48.8	0.7	0.3	0.6	3	1.9	5.4	3	S	1	0.5	0.5	0.4	0.8	0.2	0.2	0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.2	48.8	3.0	24	
23	0.3	0.3	0.4	0.3	0.3	0.2	0.2	C	C	C	C	2.1	1.4	1.1	0.7	0.9	0.4	0.3	0.5	0.2	0.4	0.3	0.5	0.2	2.1	0.6	24	
24	0.2	0.2	0.4	0.1	0.3	0.2	S	0.9	0.8	0.8	0.6	0.6	0.6	0.9	0.8	0.6	0.7	0.7	0.6	0.7	0.6	0.8	0.7	0.5	0.9	0.6	24	
25	0.7	0.5	0.6	0.6	0.5	S	1.1	1	1	0.5	0.7	0.5	0.4	0.7	0.6	0.4	0.4	0.3	0.4	0.3	0.3	0.1	0.1	0.3	1.1	0.5	24	
26	0.3	0.2	0.2	0.2	S	1	1.7	1.2	1.2	1.1	0.8	0.7	0.7	1	0.8	0.6	0.6	0.7	0.4	0.4	0.4	0.4	0.3	0.4	1.7	0.7	24	
27	0.4	0.5	0.5	S	0.9	1.1	1.8	1.5	1.7	1.6	2	2	1.2	1.8	1.6	2.1	1.9	1.3	1.4	1	0.8	1.1	0.6	0.8	2.1	1.3	24	
28	0.8	0.6	S	0.8	0.6	3.9	0.5	0.6	0.8	0.8	0.6	0.7	0.7	0.6	0.6	0.5	0.4	0.4	0.4	0.4	1.3	8.5	5.7	1.5	8.5	1.4	24	
29	38	S	2	2.7	24.8	48.3	24.7	5.5	3.9	4.3	0.8	0.9	0.8	0.5	0.5	0.6	0.6	0.6	0.6	33.1	9.6	16.7	18	15	48.3	11.0	24	
30	S	96.9	26.9	10.4	38	32.7	26.3	20.8	1.8	0.8	0.5	0.5	0.8	0.5	C	C	C	1	0.9	34.5	7.2	1.1	3.7	S	96.9	16.1	24	
HOURLY MAX	49	97	32	56	39	58	124	81	18	10	7	5	4	2	3	6	2	7	29	35	29	17	18	20				
HOURLY AVG	5.7	6.4	4.1	5.0	6.0	9.7	15.0	7.8	3.8	2.4	1.7	1.4	1.3	1.1	1.0	1.2	0.9	1.1	2.0	5.5	2.6	2.1	2.0	3.1				

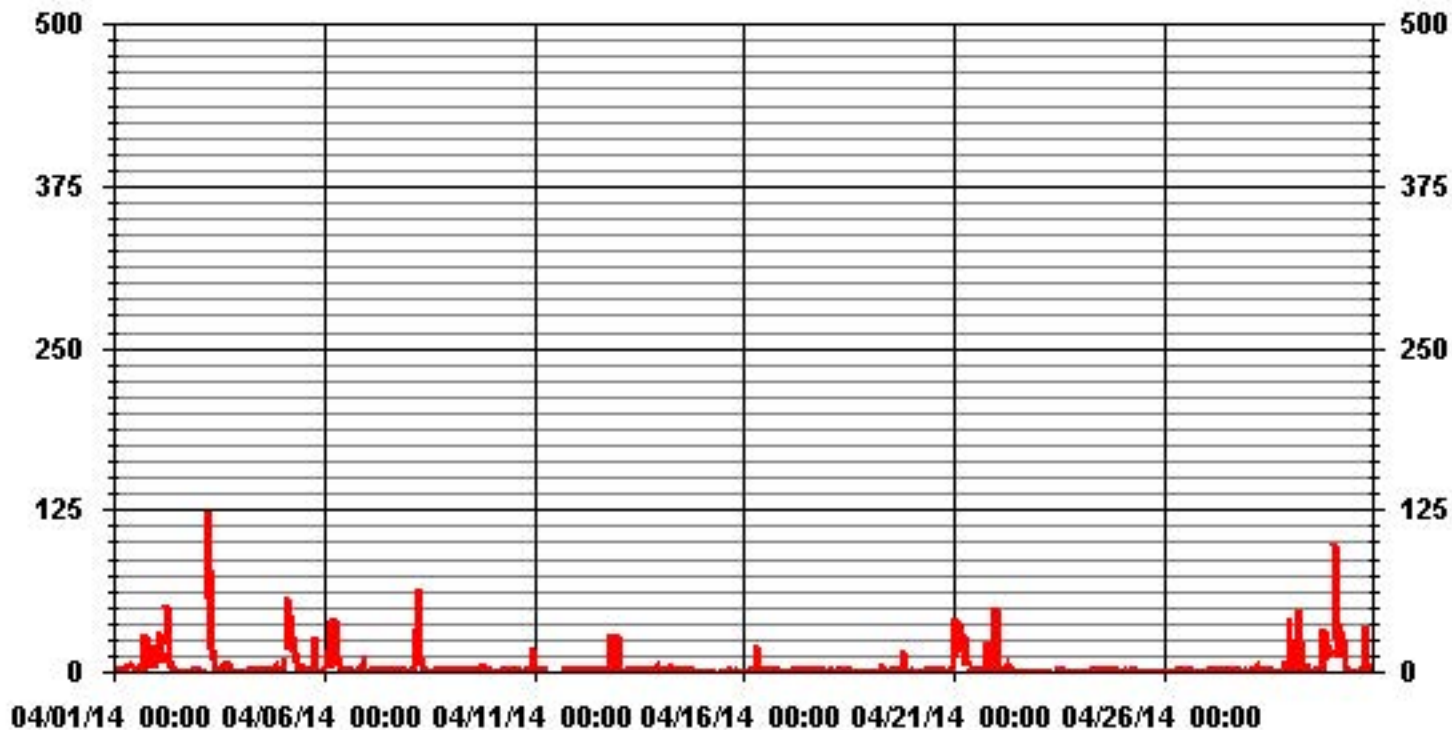
STATUS FLAG CODES

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:	665
MAXIMUM INSTANTANEOUS VALUE:	123.6 PPB @ HOUR(S) 6 ON DAY(S) 3
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	20 HRS
STANDARD DEVIATION:	10.45
OPERATIONAL TIME:	720 HRS

01 Hour Averages



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

April 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	1.04	2.38	2.53	14.62	13.43	12.38	7.91	3.28	1.49	1.34	4.17	5.07	11.79	7.46	7.16	3.58	99.70
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.14	.00	.29
< 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	1.04	2.38	2.53	14.62	13.43	12.38	7.91	3.28	1.49	1.34	4.17	5.07	11.94	7.46	7.31	3.58	

Calm : .00 %

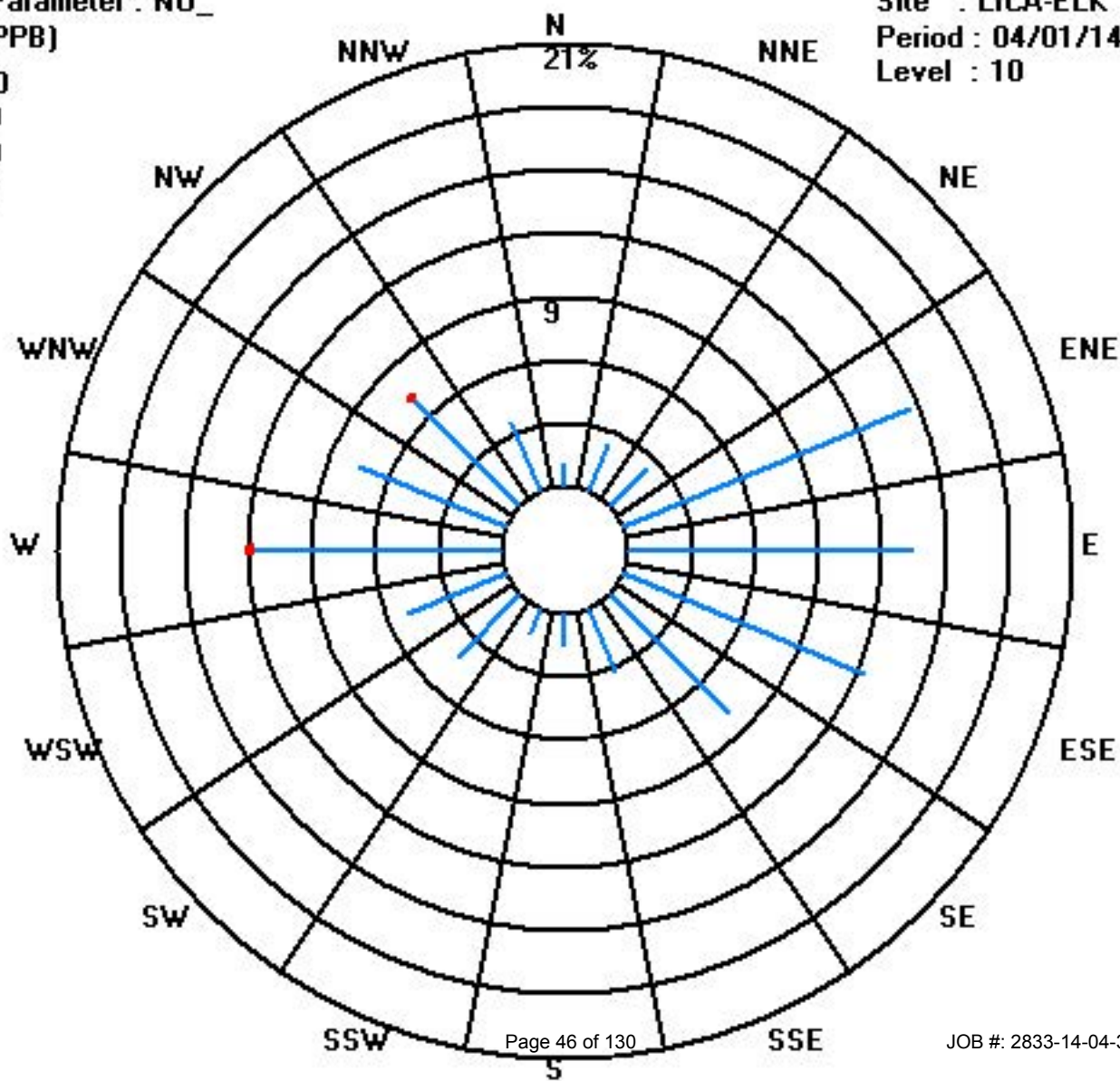
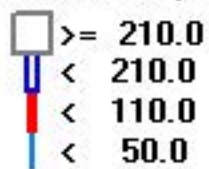
Total # Operational Hours : 670

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	7	16	17	98	90	83	53	22	10	9	28	34	79	50	48	24	668
< 110.0													1		1		2
< 210.0																	
>= 210.0																	
Totals	7	16	17	98	90	83	53	22	10	9	28	34	80	50	49	24	

Calm : .00 %

Total # Operational Hours : 670



Oxides of Nitrogen

Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

OXIDES OF NITROGEN (NOx) 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	4.6	4.8	4.6	4.8	6.5	8.3	S	9.7	9.1	9	10.5	7.5	4.7	5.3	4.9	5.9	4	4.3	8.6	12.5	16	25.1	28.7	21.1	28.7	9.6	24	
	2	34.5	28.6	28.2	32.4	31.9	S	46	33.9	17.7	7.6	2.6	3	1.4	0.7	0.5	0.5	0.3	0.2	0.1	0.8	3.7	5.9	4.5	7.7	46	12.7	24	
	3	7.8	9.6	13.7	13.1	S	47.9	95.3	78.4	25.6	15	3.8	2	2.8	3.3	3.2	2.1	2.1	4.2	3.9	4.1	3.3	1.8	1.9	2.4	95.3	15.1	24	
	4	3.9	3.9	3.5	S	3.3	4.2	4.2	4.2	3.9	3	3.2	3.2	1.3	1.5	1.8	1.8	0.8	4.6	14.4	15.1	11.9	7.2	6.9	15.1	4.9	24		
	5	4	7.7	S	16.2	24	40.3	50	27.6	16.4	4.5	1.8	3.8	3.9	1.5	1.4	0.7	1.5	4.9	13.6	19	11.6	13.8	17	10	50	12.8	24	
	6	12.1	S	33.6	13.7	31.6	34.8	32.4	21.5	19.7	11.8	5.9	4.6	2.2	1.7	1.5	1.8	0.6	1.3	1.2	2.3	0.4	8	15.1	25.7	34.8	12.3	24	
	7	S	4.7	4.4	5.5	6.7	6.8	5.4	3.8	2.5	1.1	0.8	0.5	0.4	0.6	0.8	1.4	3.3	2.8	9.3	14.6	8.3	9	14	S	14.6	4.9	24	
	8	14.7	14	21.4	22.7	26.1	45	58.4	22.6	11.6	4.9	3.6	1.6	1.1	0.3	0.6	1.6	2	2.8	4.1	8.1	10	0.8	S	3.9	58.4	12.3	24	
	9	5	3	4.8	3.4	11.5	3.4	2.4	2.7	1.8	0.9	1.2	1.2	0.8	0.9	0.6	0.8	1	1.4	1.1	6	3	S	4.9	5.6	11.5	2.9	24	
	10	5.8	3	1.5	1.6	4	5.2	7.4	4.6	1.1	0.8	0.9	0.7	0.4	0.7	0.6	0.2	0.5	0.7	2.2	2.7	S	2.6	7.1	9.6	9.6	2.8	24	
	11	8.4	9.6	9.7	11.1	10.9	5.6	3.5	2.8	2.6	C	C	C	C	C	C	C	2.9	1	S	1.7	1.5	1.7	1.6	11.1	5.0	24		
	12	1.4	1.5	1.5	1.6	1.5	1.5	1.7	1.8	1.7	1.7	1.9	2	1.9	1.7	1.7	1.7	1.6	1.6	S	1.1	8.6	6.9	13.6	35.1	35.1	4.1	24	
	13	26.6	2.2	5.1	1.5	0.8	1	0.3	0.1	0.1	0.2	0.3	0.3	0.3	0.1	0.2	0.3	0.2	S	0.8	2	10.4	11.7	13.1	7.9	26.6	3.7	24	
	14	7.9	9.5	7.7	7.9	6	8.1	8.4	4.9	3.4	1.7	1.6	1	1.7	2.7	1.8	3	S	2.5	3.5	3.1	5.6	2.6	2.7	2.9	9.5	4.4	24	
	15	2.5	3	1	0.8	0.4	0.3	0.3	0	C	C	C	C	0.6	0.2	0.1	S	1	0.7	0.5	0.4	0.7	0.9	0.6	1	3	0.8	24	
	16	0.3	1.5	5	5.6	4.4	7.5	6.6	6.4	2.5	2.2	1.6	1.8	2	1.8	S	1.8	1	1.3	1.4	2.3	2.8	2.1	2.2	2.2	7.5	2.9	24	
	17	1.9	2	1.6	2.5	3.6	3.3	3.9	3.4	2.2	2.1	2	2.3	2.6	S	2.6	1.3	1	0.8	0.6	0.6	0.1	0	0.1	0.1	3.9	1.8	24	
	18	0.1	0.1	1.1	1	1.1	1.7	2.4	2.6	2.4	1.7	1.7	1.1	S	1.7	0.6	0.4	0.4	0.3	1.1	0.9	0.5	0.1	4.1	3.8	4.1	1.3	24	
	19	0.9	3.3	1.6	1.7	2.3	8.5	10.2	6.2	5.2	3.1	1.4	S	1.8	0.8	0.9	0.7	1.8	1.4	4.5	13.5	2.9	4.2	3	3.1	13.5	3.6	24	
	20	2.9	3.5	3.7	3.7	4.5	3.4	2.2	5.4	5.2	5	S	6	5.4	5	1.9	2.4	2.1	2.7	4.5	9.4	4.7	5.7	14.9	19.2	19.2	5.4	24	
	21	26.7	41.9	49.7	49.5	29.3	25.6	27.6	14.7	12.6	S	6	2.5	2	1.1	1.2	1.3	1.2	1.8	6.4	15.4	13.2	3.4	2.7	13.6	49.7	15.2	24	
	22	17	10	8.2	7.3	9.2	10.5	12.9	7.7	S	2.1	0.8	0.5	0.5	1.3	0.4	0.2	0.5	0.3	0.3	0.5	0.8	1	1.1	0.9	17	4.1	24	
	23	0.9	1.1	1.2	0.9	1.3	1.1	1	C	C	C	C	2.5	2.5	3.4	2.7	3.2	1.5	1.2	1.2	1.1	0.9	0.8	0.2	0.4	3.4	1.5	24	
	24	0.4	0.4	0.4	0.6	0.7	0.9	S	1.8	0.9	0.4	0.2	0.2	0.2	0.3	0.2	0.1	0.2	0.2	0.2	0	0.2	0.3	0.4	0.5	1.8	0.4	24	
	25	0.7	0.8	0.5	0	0.1	S	2.6	0.6	0.8	0	0.1	0	0	0	0	0	0	0	0	0	0.4	1	0.7	1.8	2.6	0.4	24	
	26	2.3	0.9	1.2	1.7	S	3.8	3.4	2.7	2	1.2	0.8	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.5	0.7	0.4	0.9	0.8	0.2	3.8	1.1	24
	27	0	0.2	0.9	S	2.2	1.8	2.3	2.4	2.3	2.2	1.7	2	1.5	2	1.8	2.3	2.8	2.2	2.3	3.2	3	4.9	2.2	1.8	4.9	2.1	24	
	28	2.3	2	S	5	5.9	6.2	0.9	0.8	1.2	0.9	0.9	0.9	0.6	0.6	0.7	0.5	0.2	0.2	0.4	0.7	7.2	22.3	17.2	14.3	22.3	4.0	24	
	29	30.4	S	11.2	9.9	20.5	50.3	21.3	12.4	6.4	4	0.2	0.3	0.3	0	0.1	0.2	0.1	0.2	0.1	3.1	18.5	13.9	28.5	34.5	50.3	11.6	24	
	30	S	72.2	42.7	16.4	35.2	32.6	18.5	16	4.1	1.5	0.3	0	0.2	0.3	C	C	C	1.4	2.4	33.8	20.2	11.7	16.9	S	72.2	17.2	24	
	HOURLY MAX	35	72	50	50	35	50	95	78	26	15	11	8	5	5	5	6	4	5	14	34	20	25	29	35				
	HOURLY AVG	8.1	8.8	9.6	8.6	10.2	13.2	15.4	10.4	6.1	3.4	2.1	1.9	1.6	1.4	1.2	1.3	1.2	1.6	2.8	6.1	6.0	6.0	7.8	8.5				

STATUS FLAG CODES

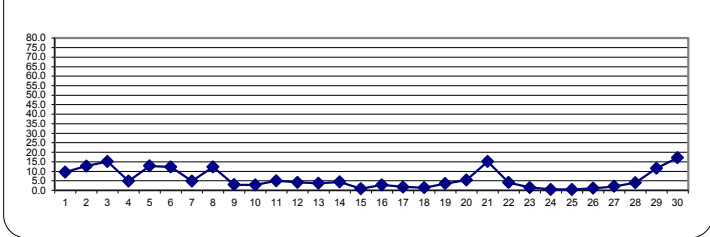
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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

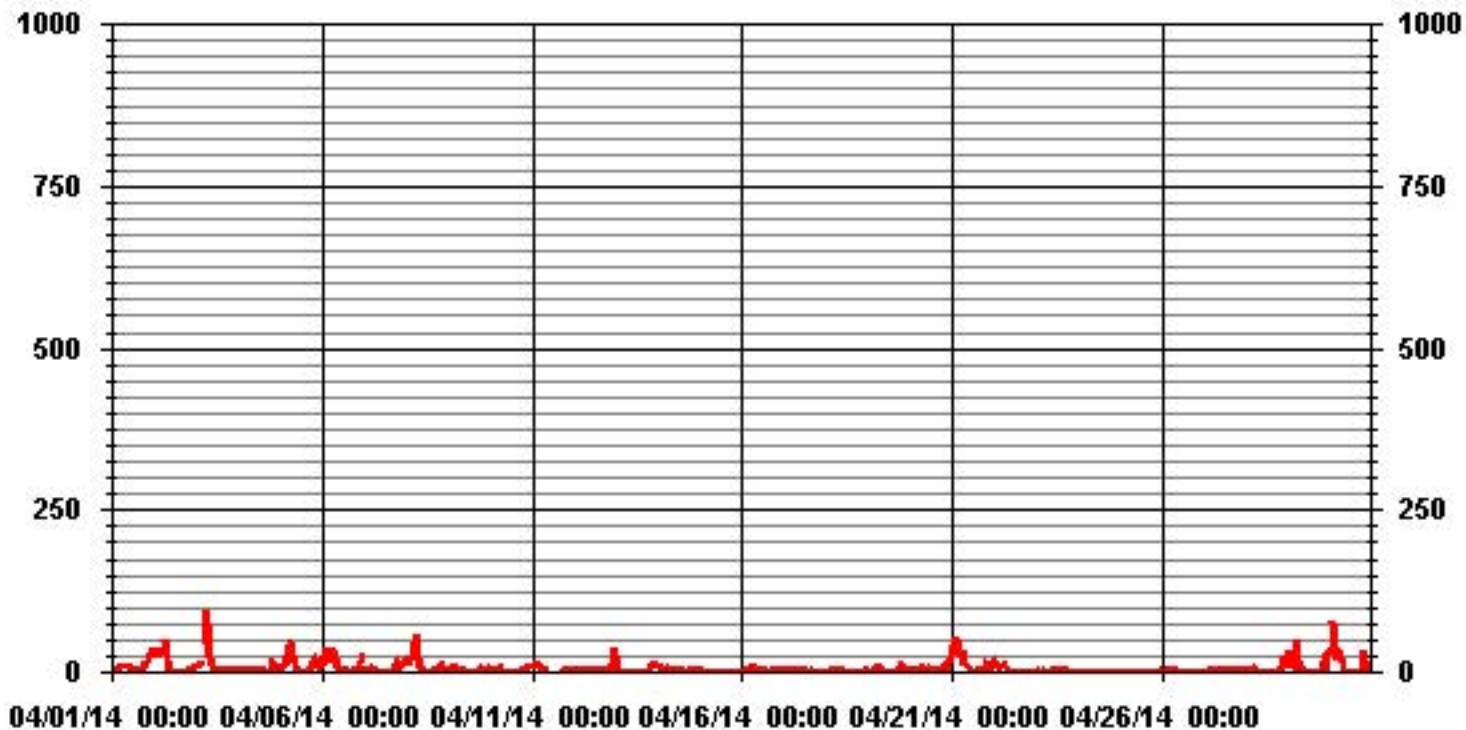
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	653					
MAXIMUM 1-HR AVERAGE:	95.3	PPB	@ HOUR(S)	6	ON DAY(S)	3
MAXIMUM 24-HR AVERAGE:	17.2	PPB			ON DAY(S)	30
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	19	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	10.23		MONTHLY AVERAGE:	6.02	PPB	

24 HOUR AVERAGES FOR APRIL 2014



01 Hour Averages



— LICA35 NOX_ PPB

Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 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	4.9	5.7	5.9	7.1	8	9.7	S	11.3	11.3	10.7	14.6	10.7	5.8	6.2	5.5	13.2	5.2	5.3	54	18.5	34.8	35.7	36.8	29.2	54	15.2	24
2	48.7	39.9	62.4	43	37.8	S	80	45.4	24.8	13.2	3.5	4.4	3	1.2	1	1.2	1	1.1	0.7	2.4	4.8	16.4	8.9	22.1	80	20.3	24
3	16	26.4	23.7	21.8	S	98	156	111.9	38.5	24.1	8.7	3.1	4.4	5.7	6.3	6.8	4.3	18.4	5.3	5.3	4.3	2.9	2.5	3.8	156	26.0	24
4	5.5	5.1	5.2	S	4.6	7	6.1	7.2	5.1	5.8	5.8	4.2	4.5	2.1	2.4	3.3	4.6	1.8	10.4	23.5	23.3	29.3	11.1	12.5	29.3	8.3	24
5	15.6	29.4	S	81.4	46.2	80.3	63.7	34.7	20.9	8.6	8.3	6.8	9.3	3.8	2.9	2.9	3.6	7.8	29.4	71.6	16.2	21.2	25.8	15.1	81.4	26.3	24
6	16.1	S	47.7	19.9	74.6	44.4	71.2	26.5	22.4	19	8	7.2	4.1	2.7	2.6	3.7	1.4	5.1	2	5.1	4.9	26.2	19.4	46.6	74.6	20.9	24
7	S	7	7.9	10.1	9.3	9.3	9.3	5.7	4.3	2.1	1.6	1.3	1.6	1.6	3.6	5.4	4.3	20.2	20	21.2	12.5	22.4	S	22.4	8.3	24	
8	17.8	16.6	29.6	28.3	33.4	65.3	100.7	29.4	21.5	6	5.1	2.7	1.9	0.8	1.4	2.8	4	4.4	7.4	15.4	19.3	3.6	S	13	100.7	18.7	24
9	10.6	5.8	10.7	9	21.1	7.6	3.6	3.9	3.6	1.9	2.4	2.1	2.1	2.2	1.4	1.4	2.8	4	2	41.6	5.6	S	16.9	14.6	41.6	7.7	24
10	10.7	6.5	2.8	3.7	8.9	8.6	10.3	7.2	3.1	1.9	1.8	2.2	1	1.7	1.8	1	1.7	2.3	7.5	8.9	S	3.3	9.8	44.4	44.4	6.6	24
11	12.7	18.1	12.5	17.7	15.5	9.8	6.7	5.6	C	C	C	C	C	C	C	C	C	6.1	1.5	S	3	0.9	0.9	0.8	18.1	8.0	24
12	0.7	0.8	0.6	0.5	0.5	0.5	0.8	1.1	0.8	0.9	1.1	1.4	1.2	0.5	0.5	0.5	0.3	0.5	S	2.2	56.2	14.8	22.7	47.5	56.2	6.8	24
13	54.6	6.4	8.8	5.8	2	1.8	0.8	0.4	0.7	0.5	0.8	0.9	0.8	0.6	0.8	0.9	0.6	S	1.9	12	18.9	16.7	24.1	11	54.6	7.5	24
14	11	13.8	11.5	10.8	8.5	12.1	15.4	7.9	4.6	3.2	3.1	1.7	4.9	4.9	3.6	7.1	S	5	5.3	8.2	7.9	4.3	3.8	4.3	15.4	7.1	24
15	5	4.7	1.7	1.8	1.4	1.4	1.3	0.7	C	C	C	C	1.4	0.7	0.7	S	2.2	1.2	1	1.1	2.1	2.8	2.1	1.9	5	1.9	24
16	1.1	2.4	9	9.9	7.8	9.8	11.3	29.6	4.1	3.8	2.9	3.3	3.5	3.8	S	2.7	2.5	3	2.7	3.3	4.2	4.1	4.3	3.2	29.6	5.8	24
17	3.9	3.5	2.7	7.1	5.3	5.2	5.2	5.5	3.5	3.8	4.4	4	4.9	S	5.6	3.1	2.8	2.7	1.5	1.7	0.7	0.4	0.5	0.4	7.1	3.4	24
18	0.2	0.6	2.3	2.4	1.9	2.3	3.5	4.4	7.4	5.1	3.5	2.8	S	3	1.2	0.9	0.9	1.1	1.9	1.6	1.1	0.8	9.2	6.9	9.2	2.8	24
19	2.9	6.1	4.4	3.5	3.9	13.8	12.4	9.2	7.1	5.3	2.6	S	2.9	1.5	1.5	1.8	3.6	2.7	10.7	45.6	4.5	7.9	7.7	5.1	45.6	7.2	24
20	5	7.5	5.7	5.6	7.1	8	4.3	8.2	7.4	6.1	S	9.7	7.6	6.5	2.9	6.3	3.9	5.1	6.4	24.6	10.6	8.3	23.8	25.5	25.5	9.0	24
21	45.2	73	57.8	70.6	38.8	39.8	43.1	17.4	16.2	S	8.6	4.1	4.1	2.2	3.7	3.7	3.5	6.8	13	63.3	24.6	5.7	4.5	23.5	73	24.9	24
22	81.4	16.3	11.1	10	15.3	13.6	21.2	10.2	S	3.7	1.4	1.1	1.3	3.2	0.9	0.7	0.9	0.7	0.7	1.4	1.3	1.8	1.7	1.7	81.4	8.8	24
23	1.4	1.8	2	1.5	2	1.8	1.8	C	C	C	C	3.5	4.4	4.6	4.4	5.5	2.3	1.9	1.9	2.1	1.7	2	0.8	1	5.5	2.4	24
24	0.9	1.1	1	1.3	1.3	1.5	S	3.4	1.7	1.1	0.5	0.5	0.5	0.7	0.6	0.4	0.8	1.2	0.5	0.7	0.7	0.9	1.1	1.1	3.4	1.0	24
25	1.1	1.3	1	0.9	0.7	S	4	1.8	1.8	0.5	1.4	0.3	0.3	0.7	0.6	0.3	0.5	0.2	0	1	1	2.7	1.6	2.8	4	1.2	24
26	3.8	1.8	1.8	2.6	S	6	7.2	4	4.1	2.5	1.7	0.6	0.8	1	1	0.7	0.6	0.8	1.6	2.1	1.8	1.8	1.5	2	7.2	2.3	24
27	0.4	1.5	1.9	S	4.7	5.1	3.9	3.9	3.8	3.4	4.5	4.5	2.8	3.9	3.4	4.8	4.8	4	3.5	5.4	4.9	8.1	4.4	3.5	8.1	4.0	24
28	4.3	4	S	8.1	8.8	17.9	1.4	1.5	1.9	1.6	1.5	1.5	1.2	1	1.2	1.1	0.9	0.7	1	4.1	11.5	34	29.7	19.1	34	6.9	24
29	61.1	S	17.4	12.9	36	67.1	40.5	17.4	11.4	9.6	0.6	0.4	0.2	0.2	0.1	0	0.8	0	0.9	56.3	41.7	48	51.8	48.1	67.1	22.7	24
30	S	126.4	56.3	33.6	63	54.2	39.6	34.1	5.9	2.4	1.3	0.6	1.4	1.5	C	C	C	2.7	6	84.3	42.9	17.8	29.1	S	126.4	31.7	24
HOURLY MAX	81	126	62	81	75	98	156	112	39	24	15	11	9	7	6	13	5	18	54	84	56	48	52	48			
HOURLY AVG	15.8	15.5	14.5	15.4	16.7	21.5	25.9	15.5	9.2	5.6	3.8	3.2	2.9	2.4	2.2	3.0	2.4	3.5	6.9	18.4	13.0	11.5	13.1	14.7			

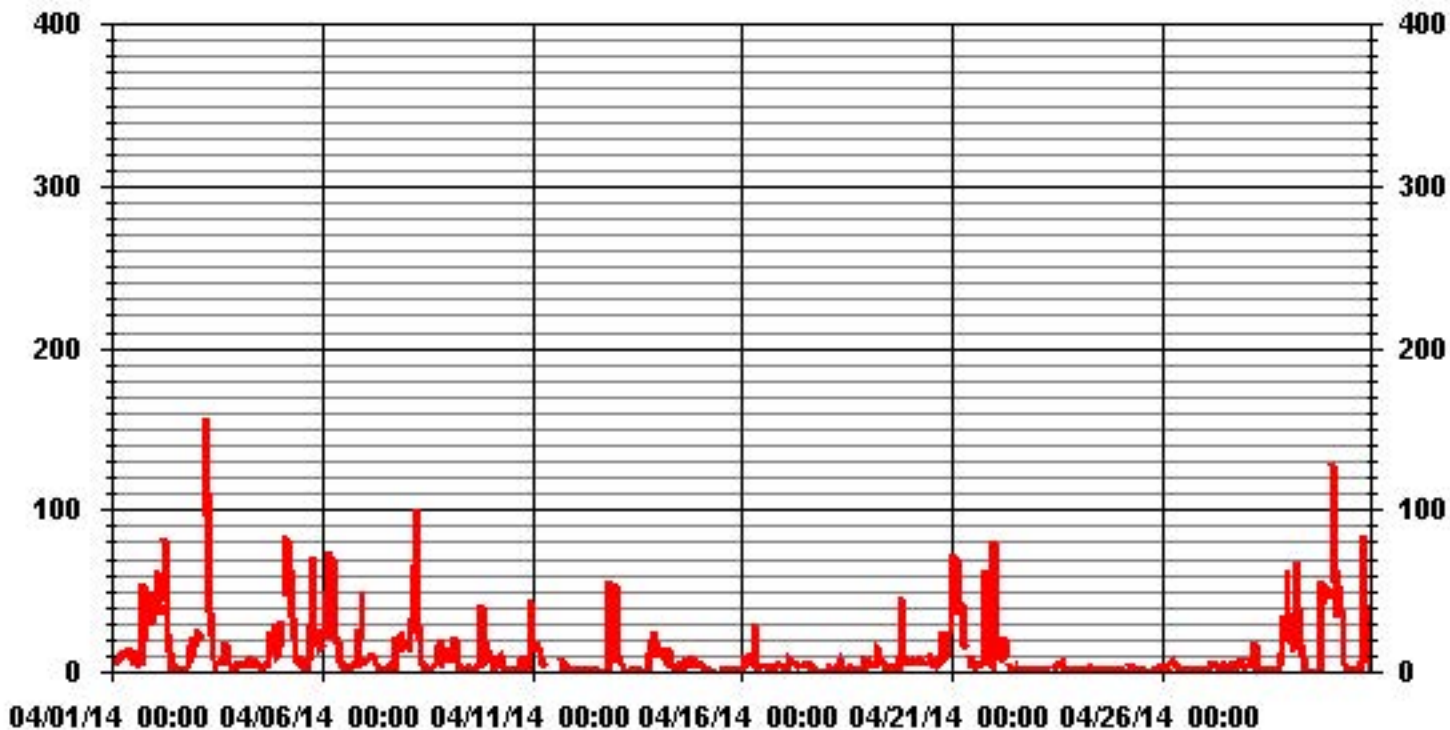
STATUS FLAG CODES

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:	666				
MAXIMUM INSTANTANEOUS VALUE:	156	PPB	@ HOUR(S)	6	ON DAY(S) 30
					VAR-VARIOUS
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	20	HRS			
STANDARD DEVIATION:	17.75				

01 Hour Averages



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

April 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	1.04	2.23	2.38	14.62	13.43	12.38	7.91	3.28	1.49	1.34	4.17	4.92	11.64	7.46	7.16	3.58	99.10
< 110.0	.00	.14	.14	.00	.00	.00	.00	.00	.00	.00	.00	.14	.29	.00	.14	.00	.89
< 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	1.04	2.38	2.53	14.62	13.43	12.38	7.91	3.28	1.49	1.34	4.17	5.07	11.94	7.46	7.31	3.58	

Calm : .00 %

Total # Operational Hours : 670

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	7	15	16	98	90	83	53	22	10	9	28	33	78	50	48	24	664
< 110.0		1	1									1	2		1		6
< 210.0																	
>= 210.0																	
Totals	7	16	17	98	90	83	53	22	10	9	28	34	80	50	49	24	

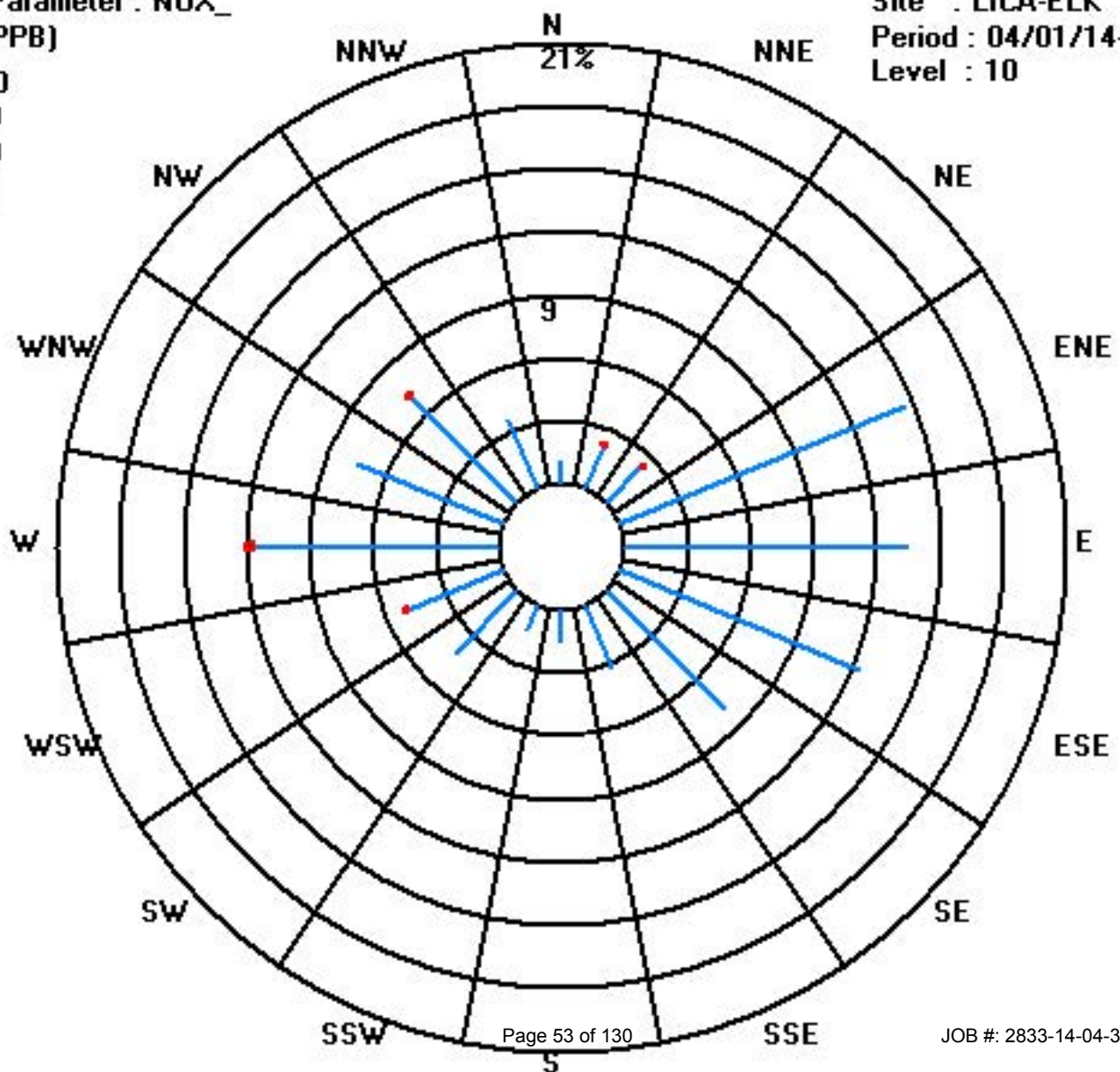
Calm : .00 %

Total # Operational Hours : 670

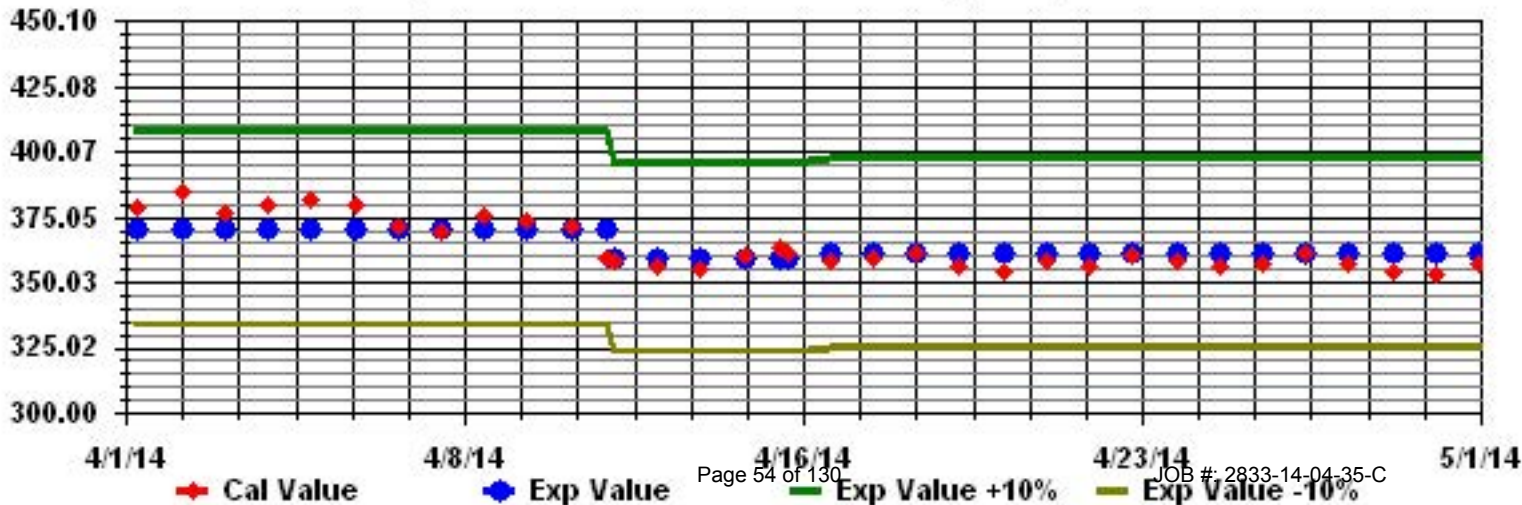
Class Limits (PPB)

Period : 04/01/14-04/30/14

Level : 10



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



Ozone

Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

OZONE (O3) 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		26	24	24	23	20	18	S	18	19	20	22	28	34	34	35	36	38	36	31	25	19	11	7	12	38	24.3	24
2		2	3	4	1	3	S	4	12	22	34	42	43	47	48	47	46	46	46	44	38	35	34	32	48	29.5	24	
3		31	24	20	20	S	8	2	8	26	35	44	47	47	48	48	48	46	46	44	42	46	47	45	48	35.7	24	
4		41	38	37	S	38	37	36	35	33	32	32	37	46	47	48	49	47	41	29	27	32	36	34	49	37.6	24	
5		36	33	S	27	8	3	5	15	27	40	44	43	45	48	49	49	50	47	36	34	36	33	27	33	50	33.4	24
6		24	S	5	19	6	3	9	17	25	40	48	48	49	51	45	44	44	42	40	37	41	32	22	14	51	30.7	24
7		S	31	29	27	28	28	29	31	36	40	42	44	45	48	51	50	48	49	41	32	36	35	31	S	51	37.8	24
8		25	23	14	10	8	2	5	17	27	33	37	44	45	48	51	52	52	50	46	40	45	S	46	52	33.6	24	
9		44	47	41	41	31	38	40	41	43	44	45	45	46	45	46	46	46	47	44	40	40	S	40	37	47	42.5	24
10		34	38	39	39	36	33	31	35	41	43	43	44	45	45	45	45	46	45	41	39	S	37	27	22	46	38.8	24
11		22	16	18	19	18	28	33	35	34	31	28	28	30	29	27	C	C	C	C	C	30	33	34	35	35	27.8	24
12		35	36	36	38	39	38	38	39	40	40	39	39	39	43	44	43	42	41	S	37	30	27	14	2	44	35.6	24
13		9	23	26	32	33	34	36	36	36	37	40	40	42	45	46	47	S	45	41	28	28	23	26	47	34.3	24	
14		28	25	23	22	23	21	24	29	33	39	43	44	45	45	47	46	S	46	42	40	37	38	37	36	47	35.3	24
15		35	33	35	36	37	36	36	37	37	37	37	37	40	41	41	S	41	41	42	43	41	40	41	40	43	38.4	24
16		40	38	38	37	37	33	32	36	39	41	42	42	42	43	S	43	42	39	39	37	35	37	37	36	43	38.5	24
17		38	36	34	32	31	31	32	32	33	32	33	33	33	S	35	36	36	37	37	38	37	37	37	37	38	34.6	24
18		37	37	35	35	34	33	33	34	35	35	34	34	S	34	35	35	35	34	33	33	32	30	24	23	37	33.2	24
19		28	27	29	31	29	21	19	24	23	28	35	S	41	44	46	46	45	46	41	30	37	34	34	33	46	33.5	24
20		34	30	28	24	22	22	24	21	21	23	S	31	34	37	43	42	45	44	43	34	39	31	21	10	45	30.6	24
21		7	1	0	1	1	2	9	15	21	S	39	46	51	53	53	53	53	52	46	35	35	41	40	27	53	29.6	24
22		22	20	24	22	19	17	20	25	S	37	43	47	48	50	49	48	48	47	47	46	47	47	46	45	50	37.6	24
23		47	45	43	43	42	42	43	S	42	42	C	37	43	41	42	42	43	43	42	42	41	41	42	42	47	42.3	24
24		41	41	39	38	38	38	S	S	36	36	36	37	37	37	36	35	35	35	34	33	33	32	30	29	41	35.7	24
25		29	29	29	29	31	S	28	31	32	33	33	33	32	32	33	33	33	33	30	28	26	25	24	21	33	29.9	24
26		19	22	22	20	S	18	19	22	25	29	31	32	33	32	33	32	32	33	31	29	26	24	26	27	33	26.8	24
27		28	27	26	S	25	30	30	30	28	26	26	26	25	24	23	23	22	22	20	17	16	14	17	19	30	23.7	24
28		21	20	S	16	12	12	20	25	25	29	30	31	33	34	35	36	38	37	33	31	20	5	6	9	38	24.3	24
29		2	S	6	5	1	1	13	20	27	35	43	44	44	45	45	45	45	45	44	39	24	22	7	4	45	26.3	24
30		S	1	2	12	4	6	14	25	39	45	46	49	51	51	C	C	C	C	52	23	34	37	30	S	52	28.9	24
HOURLY MAX		47	47	43	43	42	42	43	41	43	45	48	49	51	53	53	53	53	52	46	47	47	47	47	46			
HOURLY AVG		28.0	27.4	25.2	25.0	23.4	22.6	23.7	26.6	31.2	35.0	37.6	38.9	40.7	42.0	42.0	42.5	42.6	41.9	39.9	35.3	33.4	32.0	29.0	27.7			

STATUS FLAG CODES

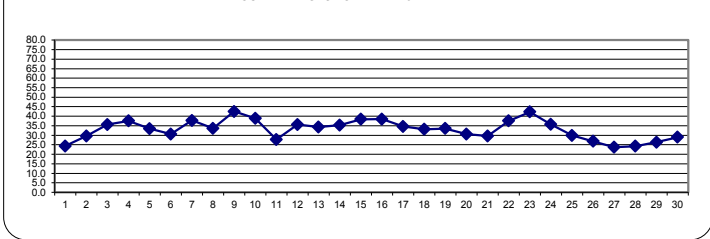
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT: ALBERTA ENVIRONMENT: 1-HR 82 PPB

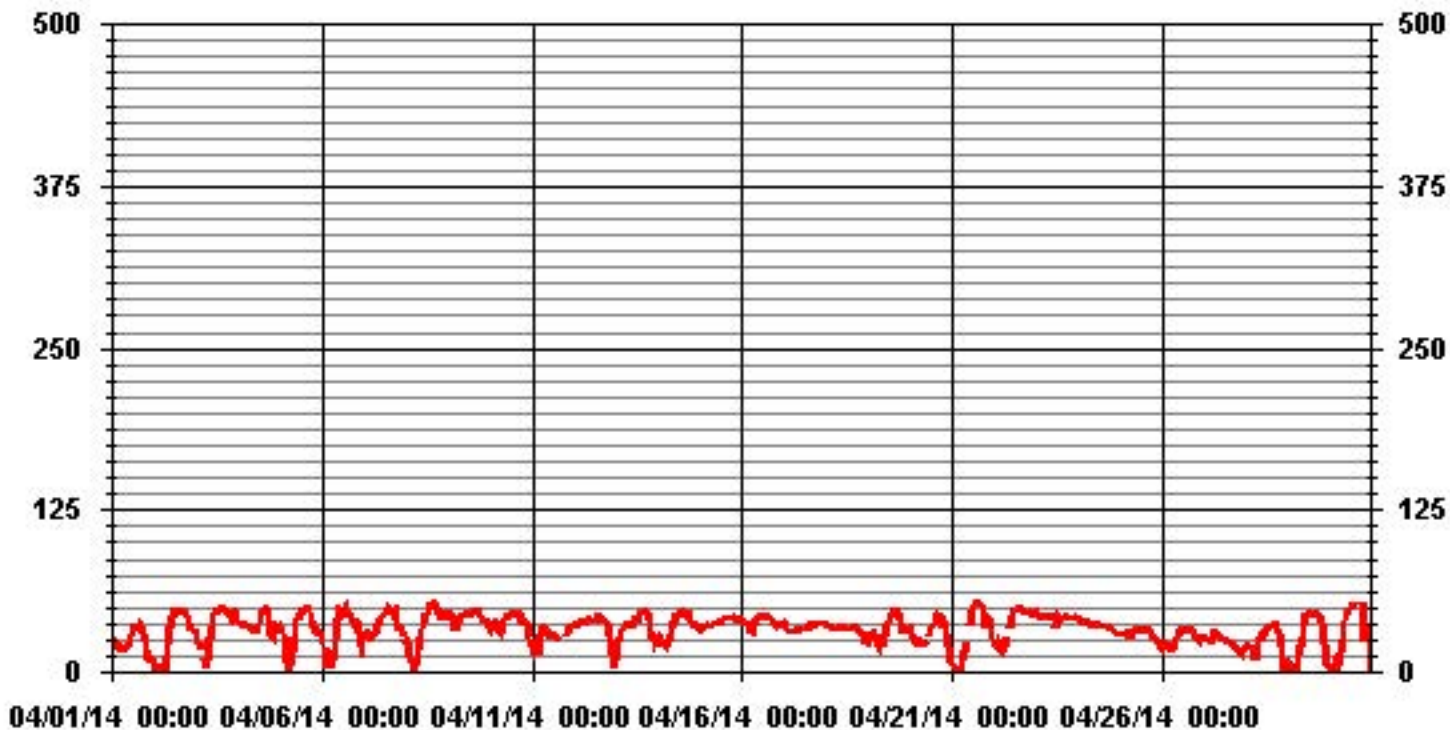
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	677				
MAXIMUM 1-HR AVERAGE:	53	PPB	@ HOUR(S)	VAR	ON DAY(S) 21
MAXIMUM 24-HR AVERAGE:	42.5	PPB			ON DAY(S) 9
					VAR-VARIOUS
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	11.64		MONTHLY AVERAGE:	33.06	PPB

24 HOUR AVERAGES FOR APRIL 2014



01 Hour Averages



— LICA35 O3_ PPB

Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

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	27	25	25	24	21	19	S	19	20	21	24	32	36	35	36	37	38	38	36	30	27	18	15	15	38	26.9	24	
2	9	10	7	2	4	S	6	17	27	43	43	45	48	48	48	47	46	46	47	46	42	39	36	35	48	32.2	24	
3	35	31	29	27	S	25	4	26	30	42	47	48	49	49	50	50	49	47	47	46	44	48	47	47	50	39.9	24	
4	43	41	37	S	39	39	38	36	35	33	33	34	45	47	48	49	50	50	45	40	34	39	40	39	50	40.6	24	
5	43	42	S	34	19	5	13	20	38	42	45	45	48	49	50	50	51	50	47	42	41	41	40	39	51	38.9	24	
6	33	S	15	21	20	7	29	27	36	49	50	51	52	52	48	46	45	43	41	39	43	40	29	22	52	36.4	24	
7	S	34	34	29	30	30	31	34	39	41	44	45	46	49	51	52	50	50	50	38	40	37	39	S	52	40.6	24	
8	30	27	19	14	15	6	11	20	32	35	44	45	46	49	53	53	54	53	52	51	47	47	S	49	54	37.0	24	
9	47	51	45	42	41	39	42	42	44	45	45	46	46	46	46	47	47	48	46	43	42	S	44	41	51	44.6	24	
10	40	40	40	40	40	39	33	40	42	44	44	45	46	46	46	46	47	47	44	42	S	39	35	28	47	41.4	24	
11	26	21	22	23	24	31	35	36	36	32	29	29	32	30	28	C	C	C	C	C	C	34	34	34	35	36	30.1	24
12	36	36	37	39	39	38	39	40	41	41	40	39	41	44	44	44	44	43	42	S	38	38	34	28	7	44	37.7	24
13	23	27	28	34	35	37	37	36	36	37	38	41	41	43	45	47	48	S	46	45	34	33	30	29	48	37.0	24	
14	33	30	30	25	24	24	27	32	36	43	44	44	46	46	47	48	S	48	43	43	39	39	40	38	48	37.8	24	
15	37	35	36	38	38	37	37	38	38	38	37	38	41	42	42	S	42	41	44	44	43	43	43	41	44	39.7	24	
16	40	39	42	40	39	34	34	38	41	42	44	43	43	44	S	44	43	41	40	38	36	39	38	39	44	40.0	24	
17	39	38	36	33	33	32	33	33	33	34	34	34	34	35	S	35	36	36	37	38	38	38	37	38	39	35.6	24	
18	38	37	36	36	35	34	33	35	36	36	35	35	S	35	36	36	35	35	34	34	33	31	29	26	38	34.3	24	
19	29	30	30	33	34	28	22	26	26	33	38	S	43	47	47	47	47	48	48	39	39	37	35	35	48	36.6	24	
20	35	34	29	27	24	24	25	24	22	25	S	37	36	40	46	44	47	48	45	41	42	38	31	15	48	33.9	24	
21	13	1	1	1	3	4	15	17	33	S	45	48	53	54	55	55	54	55	50	43	48	45	42	40	55	33.7	24	
22	27	24	28	26	26	22	26	29	S	42	47	48	50	53	51	49	48	48	48	48	48	51	47	53	40.6	24		
23	48	47	45	43	44	42	43	S	43	C	C	45	46	43	43	44	45	45	44	43	42	43	44	42	48	44.0	24	
24	42	42	41	40	39	38	S	S	37	38	38	39	38	39	38	37	37	36	36	35	34	34	31	30	42	37.2	24	
25	30	30	30	30	32	S	30	34	33	35	35	35	35	35	34	35	35	35	32	31	29	27	26	23	35	31.8	24	
26	22	24	23	21	S	19	21	23	29	32	32	34	34	34	34	34	33	34	33	31	28	26	27	29	34	28.6	24	
27	29	29	27	S	28	31	32	32	32	29	29	27	26	25	24	24	23	23	21	18	18	17	18	23	32	25.4	24	
28	23	23	S	19	16	16	24	26	27	31	31	32	34	36	36	37	38	39	36	33	29	15	14	16	39	27.4	24	
29	8	S	9	10	4	3	21	23	30	41	46	46	45	46	46	46	46	46	45	44	37	32	22	12	46	30.8	24	
30	S	2	11	20	13	12	19	38	43	46	48	51	52	52	C	C	C	C	C	51	43	42	37	S	52	34.1	24	
HOURLY MAX	48	51	45	43	44	42	43	42	44	49	50	51	53	54	55	55	54	55	52	51	48	48	51	49				
HOURLY AVG	31.6	30.4	28.3	27.5	27.1	25.5	27.1	30.0	34.3	37.5	39.6	40.7	42.5	43.3	43.1	43.9	43.6	43.4	42.1	39.8	37.7	36.0	33.9	31.4				

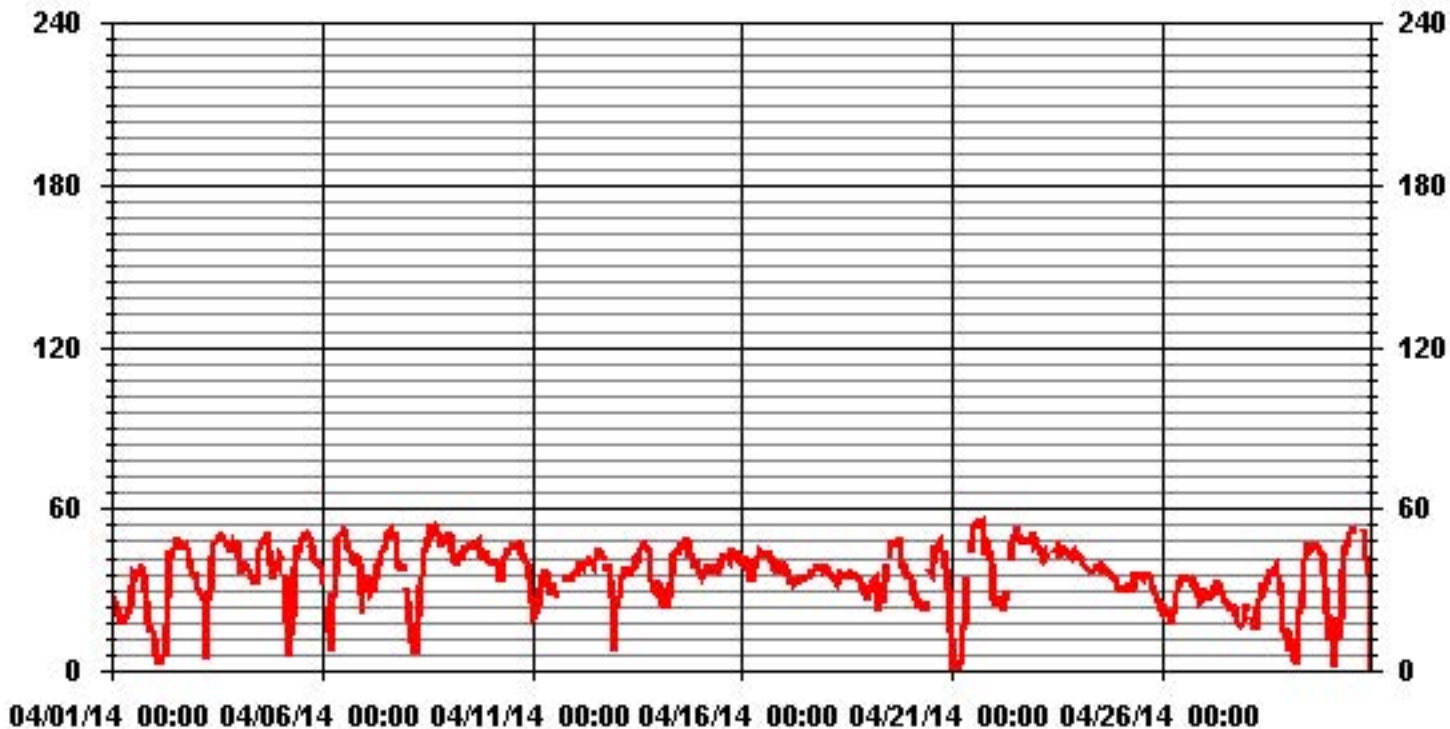
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	676
MAXIMUM INSTANTANEOUS VALUE:	55 PPB @ HOUR(S) VAR ON DAY(S) 9
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	12 HRS
STANDARD DEVIATION:	10.69
OPERATIONAL TIME:	720 HRS

01 Hour Averages



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

April 2014

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
Parameter : O3_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50	1.03	2.35	2.50	14.60	13.56	13.12	7.96	3.24	1.47	.88	2.80	4.71	11.20	7.22	6.93	3.53	97.19
< 110	.00	.00	.00	.14	.00	.00	.00	.00	.00	.44	1.17	.29	.58	.14	.00	.00	2.80
< 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	1.03	2.35	2.50	14.74	13.56	13.12	7.96	3.24	1.47	1.32	3.98	5.01	11.79	7.37	6.93	3.53	

Calm : .00 %

Total # Operational Hours : 678

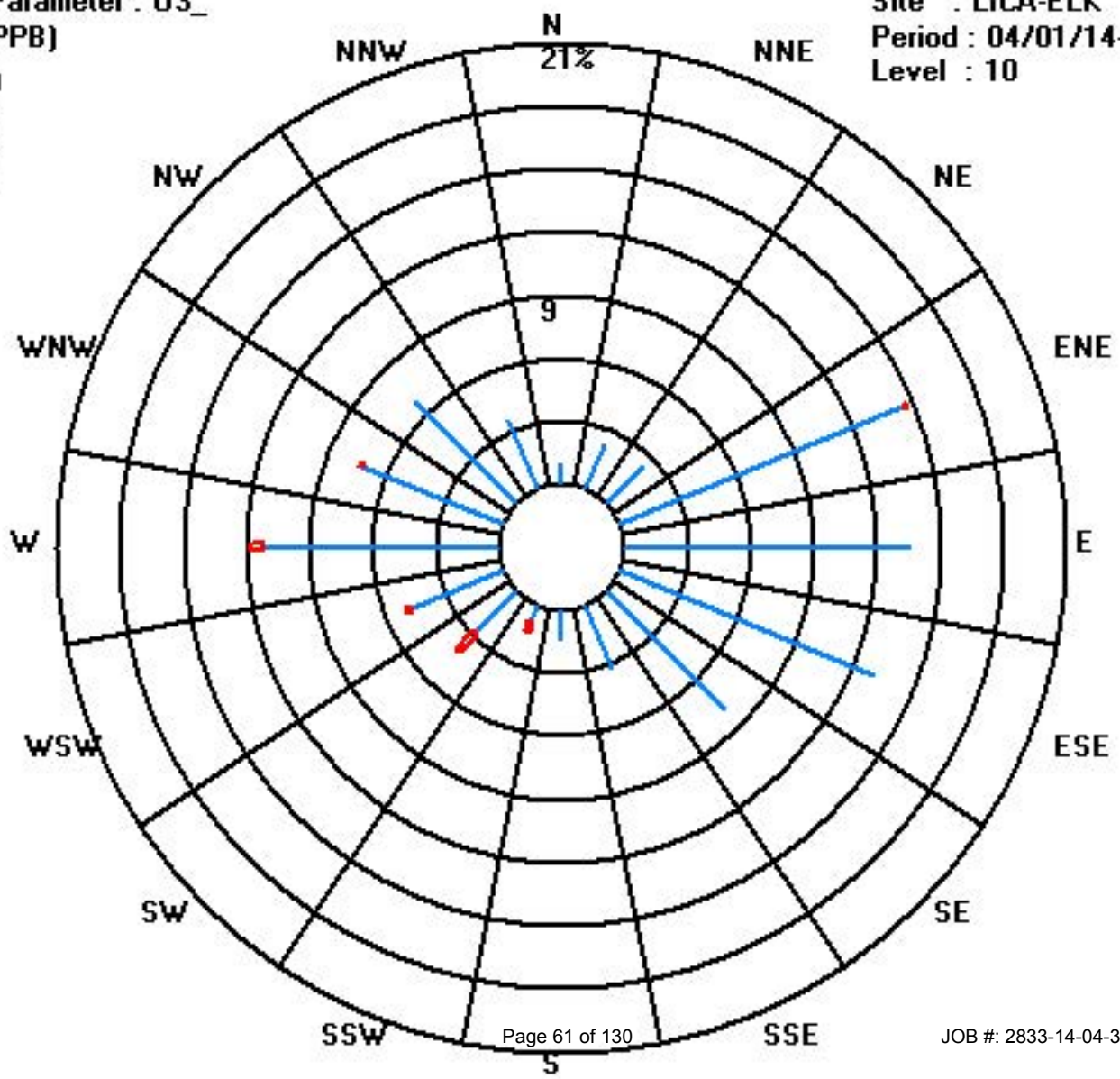
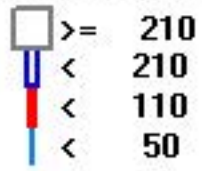
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50	7	16	17	99	92	89	54	22	10	6	19	32	76	49	47	24	659
< 110				1						3	8	2	4	1			19
< 210																	
>= 210																	
Totals	7	16	17	100	92	89	54	22	10	9	27	34	80	50	47	24	

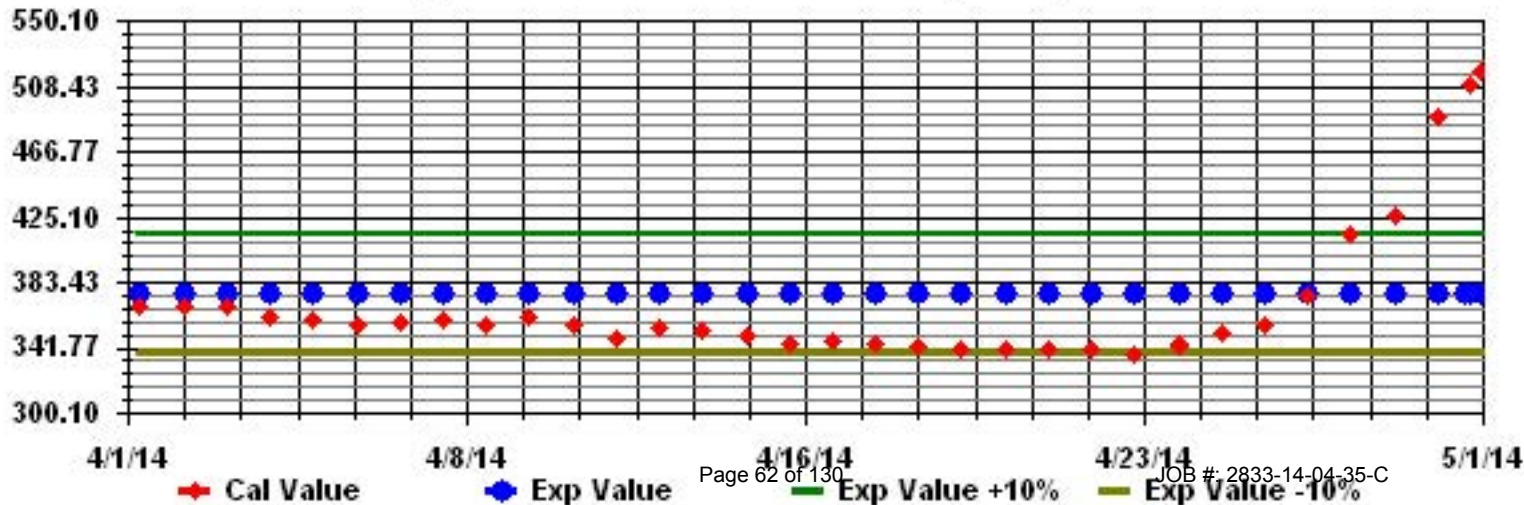
Calm : .00 %

Total # Operational Hours : 678

Class Limits (PPB)



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



Total Hydrocarbons (55i)

Lakeland Industry & Community Association - Elk Point Site

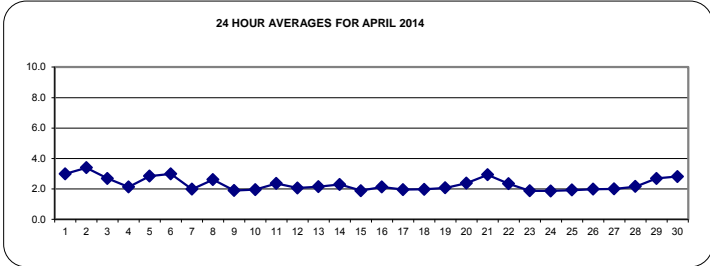
APRIL 2014

TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		2.4	2.4	2.4	2.5	2.8	2.7	S	3.0	2.9	2.9	2.8	2.3	2.2	2.2	2.2	2.2	2.2	2.3	3.5	4.1	4.2	5.3	4.4	4.8	5.3	3.0	24	
2		5.4	7.3	6.0	6.2	5.7	S	6.0	6.0	4.2	2.7	2.1	2.1	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.3	2.4	2.3	7.3	3.4	24	
3		2.5	2.6	2.9	3.1	S	4.1	5.5	6.1	3.5	2.8	2.0	2.1	2.1	2.0	2.0	1.9	2.0	2.2	2.1	2.2	2.1	2.0	2.0	2.0	6.1	2.7	24	
4		2.3	2.4	2.3	S	2.1	2.1	2.1	2.2	2.2	2.1	2.0	2.1	1.9	1.8	1.9	1.9	1.8	2.1	2.3	2.5	2.4	2.2	2.2	2.2	2.5	2.1	24	
5		2.2	2.3	S	3.0	4.5	5.4	6.5	4.9	3.3	2.2	1.9	2.1	2.0	1.9	1.8	1.8	1.8	2.0	2.4	2.5	2.5	2.7	3.2	2.6	6.5	2.8	24	
6		3.2	S	4.4	3.8	4.9	5.9	5.6	4.6	4.1	2.8	2.4	2.1	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.0	1.8	2.2	2.6	3.5	5.9	3.0	24	
7		S	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.2	2.5	2.3	2.2	2.5	S	2.5	2.0	24	
8		2.8	3.9	3.6	4.1	3.9	4.6	4.0	3.3	2.5	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.1	2.4	2.5	1.8	S	1.9	4.6	2.6	24	
9		2.0	1.9	2.0	1.9	2.2	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.1	S	2.0	2.1	2.2	1.9	24	
10		2.1	2.0	2.0	2.0	2.0	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	S	1.9	2.4	2.8	2.8	2.0	24	
11		3.2	2.9	2.8	3.1	3.4	2.3	2.1	2.1	2.2	Y	Y	Y	Y	2.0	C	C	C	C	C	1.8	1.8	1.8	1.8	1.8	3.4	2.4	20	
12		1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.8	1.8	S	1.9	1.9	2.3	2.8	6.0	6.0	2.1	24	
13		4.2	2.4	2.3	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	S	1.8	1.8	1.9	2.5	2.8	3.1	2.9	4.2	2.1	24		
14		3.0	3.1	2.8	2.8	2.8	2.8	2.7	2.4	2.2	2.0	1.9	1.9	1.9	1.9	1.9	S	1.9	2.1	2.0	2.3	2.1	2.1	2.2	3.1	2.2	3.1	2.3	24
15		2.2	2.1	2.1	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	S	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	2.2	1.9	24	
16		1.9	2.0	2.5	2.6	2.4	2.7	2.7	2.3	2.1	2.1	2.0	2.0	1.9	S	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.0	2.1	2.1	2.7	2.1	24	
17		2.1	2.1	2.0	2.0	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	1.9	24	
18		1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	S	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	2.6	2.3	2.6	2.0	24	
19		2.0	2.0	2.0	2.0	2.0	2.5	2.3	2.1	2.0	1.9	1.9	S	1.9	1.8	1.8	1.8	1.8	1.9	2.1	2.6	2.2	2.3	2.3	2.6	2.1	24		
20		2.3	2.4	2.4	2.3	2.4	2.3	2.3	2.5	2.5	2.5	S	2.3	2.3	2.2	2.0	1.9	1.9	1.9	2.0	2.3	2.2	2.3	2.9	4.6	4.6	2.4	24	
21		3.7	4.6	5.5	5.5	4.6	4.4	4.2	3.8	3.2	S	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.2	2.1	2.2	2.2	2.8	5.5	2.9	24	
22		3.0	3.4	3.3	3.1	3.4	3.5	3.4	3.1	S	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	3.5	2.3	24	
23		1.8	1.8	1.9	1.9	1.9	1.9	1.8	S	1.9	1.9	1.8	C	C	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	24	
24		1.9	1.9	1.9	1.9	1.9	1.9	S	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	24	
25		1.9	1.9	1.9	1.9	1.9	S	2.0	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	2.0	2.1	2.1	2.2	2.2	2.2	1.9	24	
26		2.2	2.1	2.1	2.2	S	2.3	2.2	2.2	2.1	1.9	1.9	1.8	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.9	2.0	1.9	1.9	2.3	2.0	24	
27		1.9	1.9	1.9	S	2.0	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	2.2	2.2	2.3	2.2	2.1	2.3	2.0	24		
28		2.1	2.2	S	2.3	2.4	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	2.5	3.0	3.1	2.9	3.1	2.2	24		
29		4.7	S	3.6	3.7	4.0	5.5	3.2	2.5	2.1	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.1	3.0	3.4	3.9	5.5	2.7	24		
30		S	7.2	5.2	3.0	4.0	3.5	3.2	2.9	2.0	1.9	1.8	1.8	1.8	1.8	1.2	1.8	1.8	1.8	1.9	3.5	3.1	3.4	3.2	S	7.2	2.8	24	
HOURLY MAX		5	7	6	6	6	7	6	4	3	3	2	2	2	2	2	2	2	2	4	4	4	5	4	6				
HOURLY AVG		2.6	2.7	2.8	2.7	2.8	2.9	2.9	2.7	2.3	2.1	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	2.0	2.2	2.2	2.3	2.4	2.6				

STATUS FLAG CODES

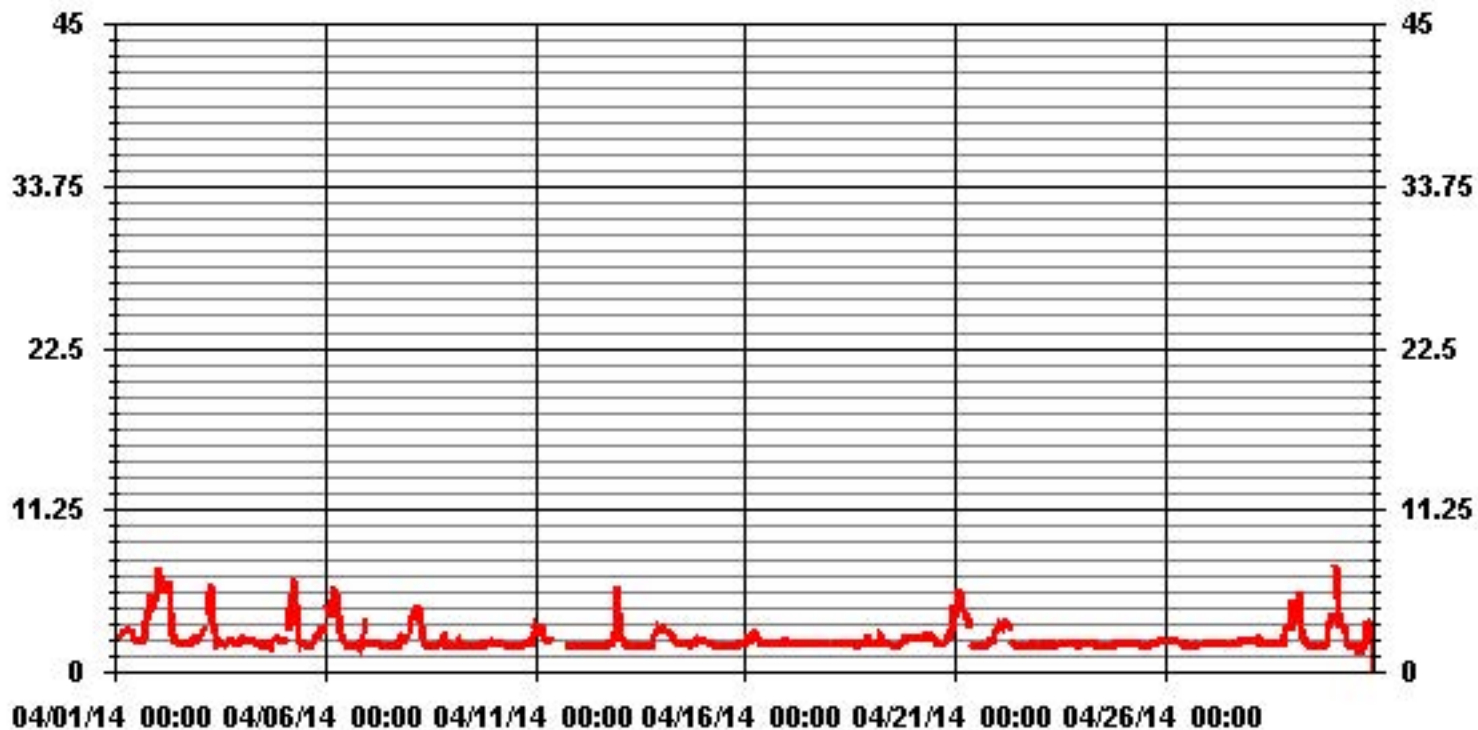
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	678					
MAXIMUM 1-HR AVERAGE:	7.3	PPM	@ HOUR(S)	1	ON DAY(S)	2
MAXIMUM 24-HR AVERAGE:	3.4	PPM			ON DAY(S)	2
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	716	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.4	%	
STANDARD DEVIATION:	0.87		MONTHLY AVERAGE:	2.31	PPM	

01 Hour Averages



— LICA35 THC55 PPM

Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		2.51	2.52	2.69	2.97	3.12	3.16	S	3.56	3.24	3.05	2.95	2.54	2.39	2.32	2.32	2.47	2.46	3.96	17.68	14.53	7	7.8	5.41	6.7	17.68	4.7	24	
2		8.68	19.83	7.28	13.92	7.07	S	10.04	8.43	5.02	3.6	2.3	2.29	2.14	2.1	2.04	2	2.48	2.08	1.95	2.09	2.17	2.58	2.85	2.42	19.83	5.0	24	
3		5.14	3.21	3.21	4.08	S	6.5	7.83	8	4.81	3.56	2.37	2.26	2.35	2.16	2.26	2.2	2.37	2.62	2.73	2.37	2.34	2.09	2.09	2.15	8	3.4	24	
4		3.2	3.05	2.83	S	2.51	2.51	2.42	2.6	2.39	2.62	2.27	2.27	2	1.95	2	2.02	2.06	2.03	2.42	2.8	3.21	3.28	2.41	2.97	3.28	2.5	24	
5		2.99	3.95	S	11.07	7.37	8.37	7.94	9.62	3.89	2.61	2.06	2.21	2.3	2.05	1.96	1.88	1.95	2.46	3.18	3.46	3.02	3.46	4.56	3.59	11.07	4.2	24	
6		5.47	S	5.45	5.94	7	6.25	6.83	6.07	4.67	3.67	3.07	3.03	1.96	2	2.06	2.07	1.89	2.04	2.02	2.57	2.09	3.69	3.02	5.31	7	3.8	24	
7		S	2.19	2.3	2.3	2.17	2.14	2.05	2.03	2.04	2.01	1.92	1.91	1.88	1.93	1.88	1.91	1.97	1.91	3.21	3	3.22	2.3	3.18	S	3.22	2.2	24	
8		4.96	4.57	4.62	5.1	5.16	7.13	4.41	3.71	3.57	2.1	1.94	1.9	1.85	1.81	1.83	1.87	1.98	2.17	2.66	3.29	3.36	2.29	S	2.33	7.13	3.2	24	
9		2.84	2.33	2.4	2.22	2.65	2.03	2.04	2.04	2	1.93	2	1.9	1.9	1.95	1.89	1.91	1.95	2.04	1.88	2.99	2.41	S	2.65	2.9	2.99	2.2	24	
10		2.44	2.18	2.18	2.19	2.44	2.26	2.14	2.02	2.01	1.92	1.95	1.94	1.86	1.9	2.01	1.94	1.94	2	2.24	2.04	S	2.12	3.54	5.5	5.5	2.3	24	
11		4.99	3.56	3.37	3.59	3.82	2.98	2.27	2.25	2.29	2.23	Y	Y	Y	Y	2.2	C	C	C	C	1.89	1.87	1.87	1.86	4.99	2.7	20		
12		1.87	1.86	1.86	1.85	1.85	1.85	1.86	1.85	1.86	1.9	1.91	1.92	1.92	1.87	1.86	1.86	1.86	1.87	S	1.96	2.17	6.76	5.22	17.08	17.08	2.9	24	
13		7	2.9	2.61	2.21	2	1.98	1.9	1.9	2.02	1.9	1.88	1.88	1.91	1.89	1.88	1.89	1.89	S	1.92	2.16	3.19	3.43	4	3.49	7	2.5	24	
14		3.68	3.65	4.05	3.05	3.1	3.01	2.93	2.64	2.4	2.16	2.25	2	2.27	2.26	2.08	2.21	S	2.35	2.5	2.53	2.66	2.26	2.24	2.3	4.05	2.6	24	
15		2.27	2.29	2.2	2.13	2.04	2.05	1.99	1.92	1.89	1.89	1.89	1.87	1.89	1.88	1.9	S	1.89	1.91	1.91	1.91	2.06	2.09	2	1.96	2.29	2.0	24	
16		1.98	2.16	3.51	3.04	2.65	2.97	3.05	2.63	2.32	2.2	2.11	2.13	2.08	2.06	S	2.06	2.03	2.07	2.06	2.29	2.27	2.24	2.28	2.31	3.51	2.4	24	
17		2.33	2.54	2.18	2.11	2.31	2.16	2.06	2.08	2.05	2.04	1.99	2	1.99	S	2.05	1.95	2	1.96	2	2.06	1.98	2.07	1.95	1.95	2.54	2.1	24	
18		1.97	2	2.07	2.08	2.07	2.06	2.06	2.08	2.03	2.04	2.09	1.97	S	2.06	2.08	2.04	1.93	1.92	2.02	2.04	1.97	1.94	3.37	2.55	3.37	2.1	24	
19		2.13	2.07	2.2	2.34	2.36	3.19	2.47	2.25	2.21	2.07	2	S	1.96	1.96	1.92	1.91	1.95	1.97	2.98	3.46	2.45	2.7	2.72	2.45	3.46	2.3	24	
20		2.63	3.02	2.8	2.53	2.61	2.58	2.52	2.77	2.66	2.7	S	2.49	2.48	2.46	2.09	2.38	1.98	2.07	2.18	3.37	2.42	2.6	3.46	12.81	12.81	3.0	24	
21		4.98	7.68	7.27	12.64	5.37	5.03	4.99	4.19	3.77	S	2.14	1.93	1.98	1.96	2.03	1.97	2.01	2.07	2.07	5.16	2.28	2.36	2.23	3.96	12.64	3.9	24	
22		3.79	4.46	4.78	3.99	4.39	3.94	4	3.7	S	2.14	1.93	1.87	1.9	1.88	1.88	1.87	1.89	1.91	1.87	1.92	1.96	1.93	1.95	1.96	4.78	2.7	24	
23		1.96	2	1.92	2	1.94	1.93	1.91	S	1.94	2.16	1.92	C	C	1.93	1.93	1.95	1.99	1.97	2	1.95	2.01	1.96	1.91	1.92	2.16	2.0	24	
24		1.94	1.93	1.95	1.98	1.97	2.03	S	1.97	1.95	1.93	1.92	1.89	1.88	1.95	1.89	1.88	1.92	1.96	1.89	1.93	2.01	2	2	1.99	2.03	1.9	24	
25		2.09	2.09	2.03	2.02	1.97	S	2.2	2.08	2.06	1.97	2.02	1.92	1.91	1.93	1.92	1.91	1.97	1.93	1.97	1.97	2.11	2.33	2.36	2.5	2.5	2.1	24	
26		2.33	2.33	2.22	2.26	S	2.5	2.4	2.29	2.23	2.07	2	1.93	1.94	1.92	1.91	1.93	1.92	1.92	1.92	1.97	2.02	2.17	2.05	2.03	2	2.5	2.1	24
27		1.99	1.97	1.99	S	2.16	2.06	2.02	2.1	2.11	2	2	2.02	2	2.16	2.08	2.06	2.09	2.11	2.23	2.33	2.37	2.45	2.34	2.31	2.45	2.1	24	
28		2.53	2.44	S	2.69	3.24	3	2.02	1.95	1.95	1.95	2.01	1.94	2	1.98	2.03	1.97	1.94	2	1.99	2.2	4.39	4.25	4.28	3.66	4.39	2.5	24	
29		6.97	S	4.71	4.27	5.78	6.96	4.84	2.8	2.42	2.42	1.89	1.92	1.86	1.86	1.86	1.86	1.88	1.88	1.88	3.66	3.66	9.78	4.37	5.05	9.78	3.7	24	
30		S	10.44	6.99	4.02	6.36	6.18	6.39	5	2.18	2.01	1.96	1.88	1.88	1.89	2	2.68	2.05	1.91	2.1	5.55	5.39	4.5	3.56	S	10.44	4.0	24	
HOURLY MAX		9	20	7	14	7	8	10	10	5	4	3	3	2	2	2	3	2	4	18	15	7	10	5	17				
HOURLY AVG		3.5	3.8	3.3	3.9	3.5	3.5	3.6	3.3	2.6	2.3	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.8	3.1	2.8	3.1	3.0	3.9				

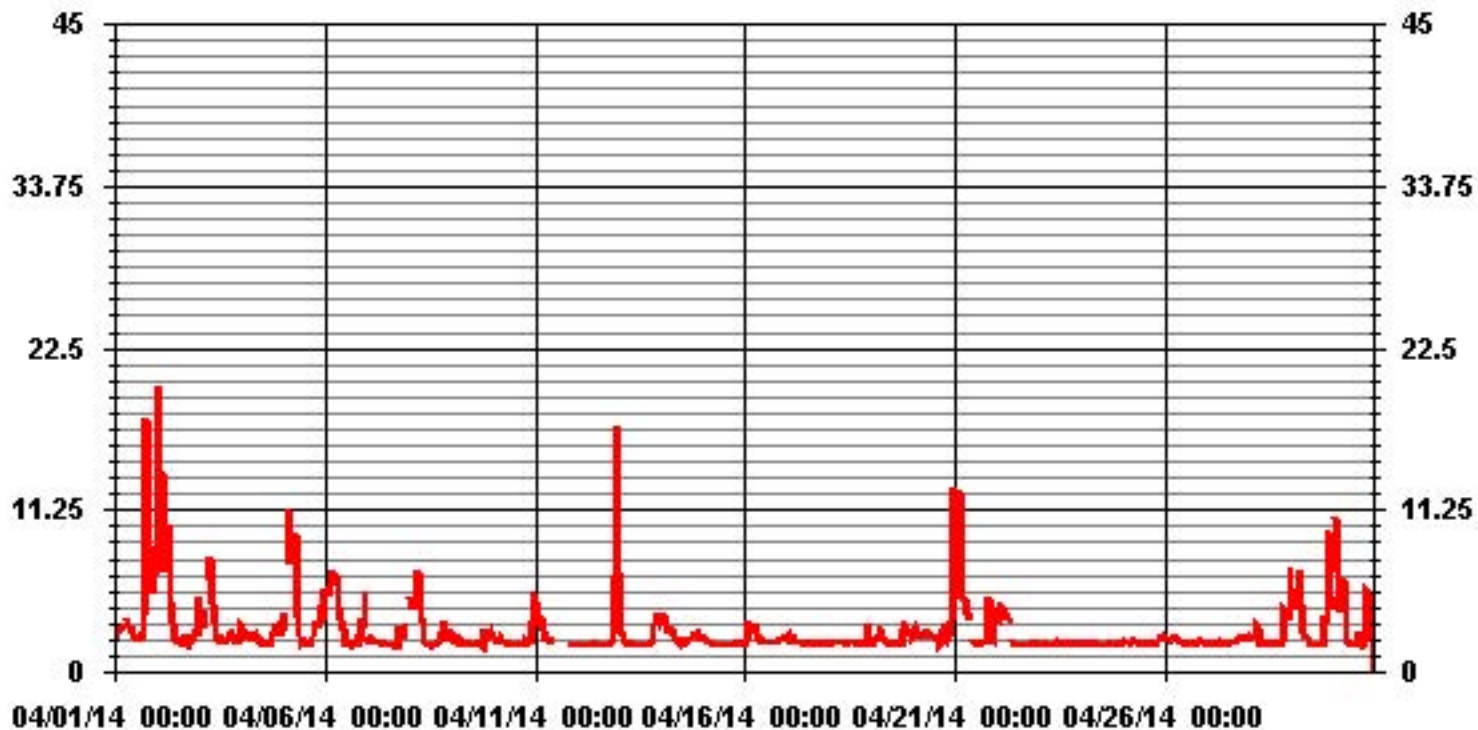
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	678
MAXIMUM INSTANTANEOUS VALUE:	19.83 PPM @ HOUR(S) 1 ON DAY(S) 2
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	1.92
OPERATIONAL TIME:	716 HRS

01 Hour Averages



— LICA35 THC55MAX PPM

LICA35
 THC55 / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

Logger Id : 35
 Site Name : LICA35
 Parameter : THC55
 Units : PPM

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	.88	2.06	2.21	13.56	10.76	11.35	6.34	2.50	1.03	1.32	4.42	4.42	10.32	6.19	6.19	3.09	86.72
< 10.0	.14	.29	.29	1.32	2.65	1.32	1.47	.73	.44	.00	.14	.58	1.47	1.17	.73	.44	13.27
< 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	1.03	2.35	2.50	14.89	13.42	12.68	7.81	3.24	1.47	1.32	4.57	5.01	11.79	7.37	6.93	3.53	

Calm : .00 %

Total # Operational Hours : 678

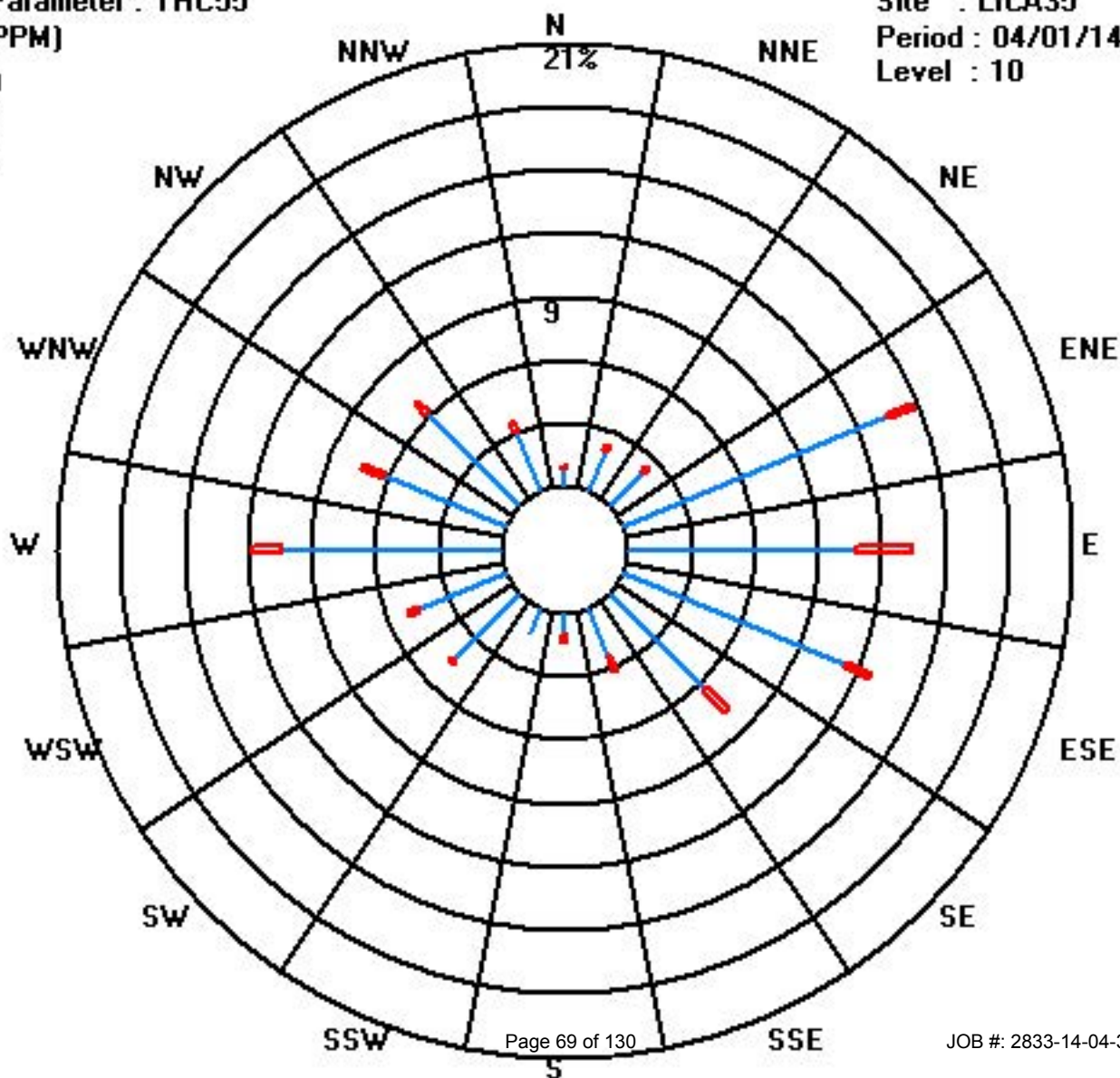
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	6	14	15	92	73	77	43	17	7	9	30	30	70	42	42	21	588
< 10.0	1	2	2	9	18	9	10	5	3		1	4	10	8	5	3	90
< 50.0																	
>= 50.0																	
Totals	7	16	17	101	91	86	53	22	10	9	31	34	80	50	47	24	

Calm : .00 %

Total # Operational Hours : 678

Class Limits (PPM)



Methane

Lakeland Industry & Community Association - Elk Point Site

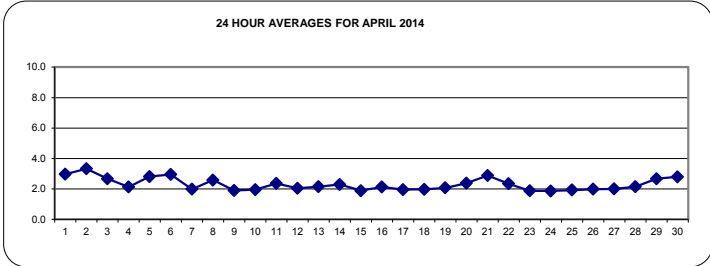
APRIL 2014

METHANE (CH4) hourly averages in ppm

MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY	1	2.4	2.4	2.4	2.5	2.8	2.7	S	3.0	2.9	2.9	2.8	2.3	2.2	2.2	2.2	2.2	2.2	2.3	3.4	4.1	4.1	5.1	4.3	4.7	5.1	3.0	24
	2	5.1	7.0	5.8	6.1	5.6	S	5.8	5.8	4.1	2.7	2.1	2.1	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.3	2.4	2.3	7.0	3.3	24
	3	2.5	2.6	2.9	3.1	S	4.1	5.3	5.9	3.5	2.8	2.0	2.1	2.1	2.0	2.0	1.9	2.0	2.2	2.1	2.2	2.1	2.0	2.0	2.0	5.9	2.7	24
	4	2.3	2.4	2.3	S	2.1	2.1	2.1	2.2	2.2	2.1	2.0	2.1	1.9	1.8	1.9	1.9	1.9	1.8	2.1	2.3	2.5	2.4	2.2	2.2	2.5	2.1	24
	5	2.2	2.3	S	2.9	4.3	5.2	6.3	4.8	3.3	2.2	1.9	2.1	2.0	1.9	1.8	1.8	1.8	2.0	2.4	2.5	2.5	2.7	3.2	2.6	6.3	2.8	24
	6	3.2	S	4.3	3.7	4.8	5.7	5.5	4.5	4.0	2.7	2.4	2.1	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.0	1.8	2.2	2.6	3.4	5.7	2.9	24
	7	S	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.2	2.5	2.3	2.2	2.5	S	2.5	2.0	24
	8	2.8	3.9	3.5	4.0	3.8	4.5	3.8	3.3	2.5	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.1	2.4	2.5	1.8	S	1.9	4.5	2.6	24
	9	2.0	1.9	2.0	1.9	2.2	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.1	S	2.0	2.1	2.2	1.9	24
	10	2.1	2.0	2.0	2.0	2.0	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	S	1.9	2.4	2.8	2.8	2.0	24
	11	3.2	2.9	2.8	3.1	3.4	2.3	2.1	2.1	2.1	2.2	Y	Y	Y	Y	2.0	C	C	C	C	C	1.8	1.8	1.8	1.8	3.4	2.4	20
	12	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.8	1.8	S	1.9	1.9	2.3	2.7	5.7	5.7	2.0	24
	13	4.1	2.4	2.3	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	S	1.8	1.8	1.9	2.5	2.8	3.1	2.9	4.1	4.1	2.1	24
	14	3.0	3.1	2.8	2.8	2.8	2.8	2.7	2.4	2.2	2.0	1.9	1.9	1.9	1.9	1.9	S	1.9	2.1	2.0	2.3	2.1	2.1	2.2	3.1	2.2	3.1	24
	15	2.2	2.1	2.1	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	S	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	2.2	1.9	24
	16	1.9	2.0	2.5	2.6	2.4	2.7	2.7	2.3	2.1	2.1	2.0	2.0	1.9	S	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.0	2.1	2.1	2.7	2.1	24
	17	2.1	2.1	2.0	2.0	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	1.9	24
	18	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	S	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	2.6	2.3	2.6	2.0	24
	19	2.0	2.0	2.0	2.0	2.0	2.5	2.3	2.1	2.0	1.9	1.9	S	1.9	1.8	1.8	1.8	1.9	1.9	2.1	2.6	2.2	2.3	2.3	2.6	2.6	2.1	24
	20	2.3	2.4	2.4	2.3	2.4	2.3	2.3	2.5	2.5	2.5	S	2.3	2.3	2.2	2.0	1.9	1.9	1.9	2.0	2.3	2.2	2.3	2.9	4.4	4.4	2.4	24
	21	3.6	4.4	5.3	5.3	4.5	4.3	4.1	3.8	3.1	S	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.2	2.1	2.2	2.2	2.8	5.3	2.9	24
	22	3.0	3.4	3.3	3.1	3.4	3.5	3.3	3.1	S	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	3.5	2.3	2.4	24
	23	1.8	1.8	1.9	1.9	1.9	1.9	1.8	S	1.9	1.9	1.8	C	C	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	24
	24	1.9	1.9	1.9	1.9	1.9	1.9	S	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	24
	25	1.9	1.9	1.9	1.9	1.9	S	2.0	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	2.0	2.1	2.1	2.2	2.2	2.2	1.9	24
	26	2.2	2.1	2.1	2.2	S	2.3	2.2	2.2	2.1	1.9	1.9	1.8	1.9	1.9	1.8	1.8	1.8	1.8	1.9	1.9	2.0	1.9	1.9	1.9	2.3	2.0	24
	27	1.9	1.9	1.9	S	2.0	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	2.2	2.2	2.3	2.2	2.1	2.3	2.0	2.4	24
	28	2.1	2.2	S	2.3	2.4	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	2.5	3.0	3.0	2.9	3.0	2.9	2.1	24
	29	4.6	S	3.6	3.7	4.0	5.4	3.2	2.5	2.1	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.1	2.9	3.3	3.8	5.4	2.7	24	
	30	S	7.1	5.1	3.0	4.0	3.5	3.1	2.9	2.0	1.9	1.8	1.8	1.8	1.8	1.2	1.8	1.8	1.8	1.9	3.4	3.1	3.4	3.2	S	7.1	2.8	24
HOURLY MAX		5	7	6	6	6	6	6	4	3	3	2	2	2	2	2	2	2	2	3	4	4	5	4	6			
HOURLY AVG		2.6	2.7	2.7	2.7	2.8	2.8	2.8	2.7	2.3	2.1	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	2.0	2.2	2.2	2.3	2.4	2.6			

STATUS FLAG CODES

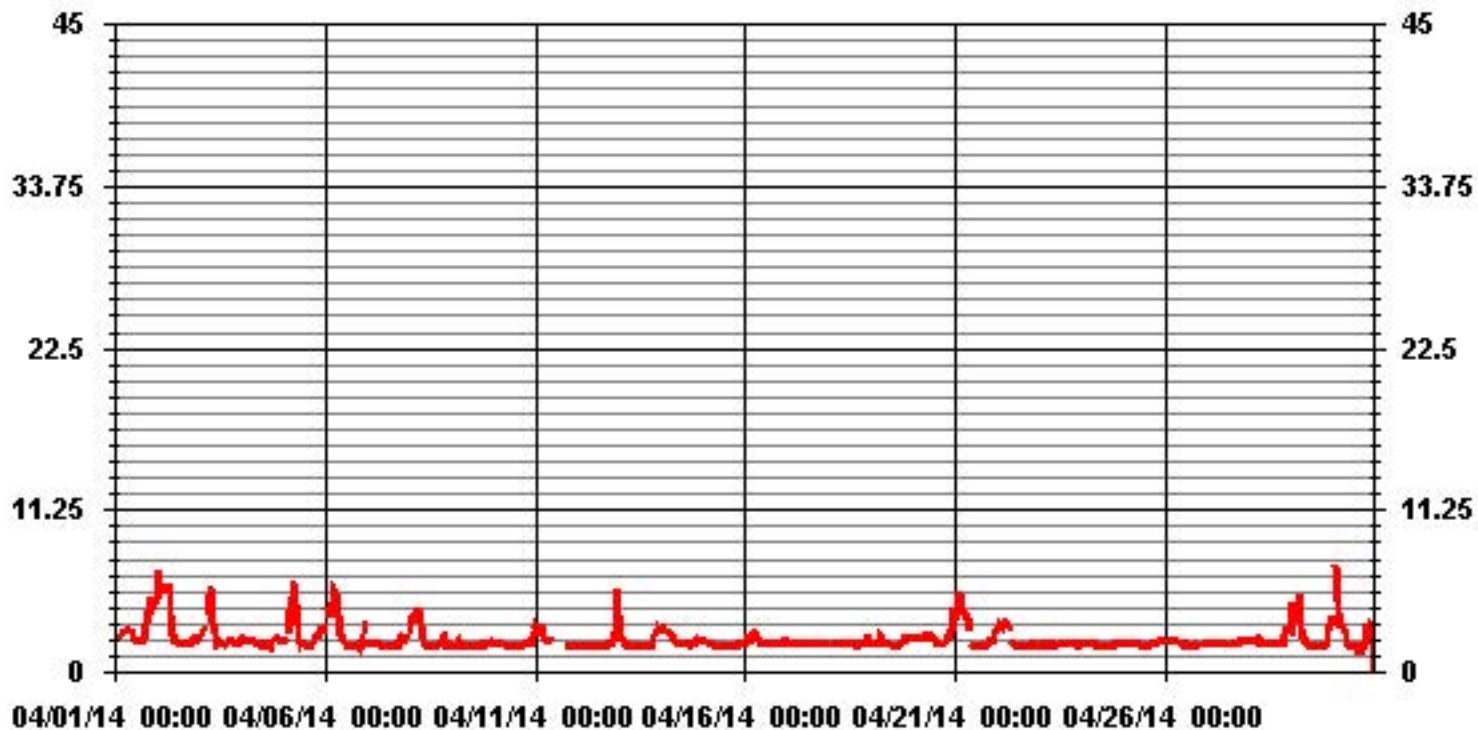
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	678					
MAXIMUM 1-HR AVERAGE:	7.1	PPM	@ HOUR(S)	1	ON DAY(S)	30
MAXIMUM 24-HR AVERAGE:	3.3	PPM			ON DAY(S)	2
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	716	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.4	%	
STANDARD DEVIATION:	0.83		MONTHLY AVERAGE:	2.30	PPM	

01 Hour Averages



— LICA35 METHANE PPM

Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

METHANE MAX instantaneous maximum in ppm

MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.	RDGS.		
	DAY																												
	1	2.51	2.52	2.69	2.97	3.12	3.16	S	3.56	3.24	3.05	2.95	2.54	2.39	2.32	2.32	2.47	2.46	3.96	17.68	14.53	7	7.8	5.41	6.7	17.68	4.7	24	
	2	8.68	19.83	7.28	13.92	7.07	S	10.04	8.43	5.02	3.6	2.3	2.29	2.14	2.1	2.04	2	2.48	2.08	1.95	2.09	2.17	2.58	2.85	2.42	19.83	5.0	24	
	3	5.14	3.21	3.21	4.08	S	6.5	7.83	8	4.81	3.56	2.37	2.26	2.35	2.16	2.26	2.2	2.37	2.62	2.73	2.37	2.34	2.09	2.09	2.15	8	3.4	24	
	4	3.2	3.05	2.83	S	2.51	2.51	2.42	2.6	2.39	2.62	2.27	2.27	2	1.95	2	2.02	2.06	2.03	2.42	2.8	3.21	3.28	2.41	2.97	3.28	2.5	24	
	5	2.99	3.95	S	11.07	7.37	8.37	7.94	9.62	3.89	2.61	2.06	2.21	2.3	2.05	1.96	1.88	1.95	2.46	3.18	3.46	3.02	3.46	4.56	3.59	11.07	4.2	24	
	6	5.47	S	5.45	5.94	7	6.25	6.83	6.07	4.67	3.67	3.07	3.03	1.96	2	2.06	2.07	1.89	2.04	2.02	2.57	2.09	3.69	3.02	5.31	7	3.8	24	
	7	S	2.19	2.3	2.3	2.17	2.14	2.05	2.03	2.04	2.01	1.92	1.91	1.88	1.93	1.88	1.91	1.97	1.91	3.21	3	3.22	2.3	3.18	S	3.22	2.2	24	
	8	4.96	4.57	4.62	5.1	5.16	7.13	4.41	3.71	3.57	2.1	1.94	1.9	1.85	1.81	1.83	1.87	1.98	2.17	2.66	3.29	3.36	2.29	S	2.33	7.13	3.2	24	
	9	2.84	2.33	2.4	2.22	2.65	2.03	2.04	2.04	2	1.93	2	1.9	1.9	1.95	1.89	1.91	1.95	2.04	1.88	2.99	2.41	S	2.65	2.9	2.99	2.2	24	
	10	2.44	2.18	2.18	2.19	2.44	2.26	2.14	2.02	2.01	1.92	1.95	1.94	1.86	1.9	2.01	1.94	1.94	2	2.24	2.04	S	2.12	3.54	5.5	5.5	2.3	24	
	11	4.99	3.56	3.37	3.59	3.82	2.98	2.27	2.25	2.29	2.23	Y	Y	Y	Y	2.2	C	C	C	C	1.89	1.87	1.87	1.86	4.99	2.7	20		
	12	1.87	1.86	1.86	1.85	1.85	1.85	1.86	1.85	1.86	1.9	1.91	1.92	1.92	1.87	1.86	1.86	1.86	1.87	S	1.96	2.17	6.76	5.22	17.08	17.08	2.9	24	
	13	7	2.9	2.61	2.21	2	1.98	1.9	1.9	2.02	1.9	1.88	1.88	1.91	1.89	1.88	1.89	1.89	S	1.92	2.16	3.19	3.43	4	3.49	7	2.5	24	
	14	3.68	3.65	4.05	3.05	3.1	3.01	2.93	2.64	2.4	2.16	2.25	2	2.27	2.26	2.08	2.21	S	2.35	2.5	2.53	2.66	2.26	2.24	2.3	4.05	2.6	24	
	15	2.27	2.29	2.2	2.13	2.04	2.05	1.99	1.92	1.89	1.89	1.89	1.87	1.89	1.88	1.9	S	1.89	1.91	1.91	1.91	2.06	2.09	2	1.96	2.29	2.0	24	
	16	1.98	2.16	3.51	3.04	2.65	2.97	3.05	2.63	2.32	2.2	2.11	2.13	2.08	2.06	S	2.06	2.03	2.07	2.06	2.29	2.27	2.24	2.28	2.31	3.51	2.4	24	
	17	2.33	2.54	2.18	2.11	2.31	2.16	2.06	2.08	2.05	2.04	1.99	2	1.99	S	2.05	1.95	2	1.96	2	2.06	1.98	2.07	1.95	1.95	2.54	2.1	24	
	18	1.97	2	2.07	2.08	2.07	2.06	2.06	2.08	2.03	2.04	2.09	1.97	S	2.06	2.08	2.04	1.93	1.92	2.02	2.04	1.97	1.94	3.37	2.55	3.37	2.1	24	
	19	2.13	2.07	2.2	2.34	2.36	3.19	2.47	2.25	2.21	2.07	2	S	1.96	1.96	1.92	1.91	1.95	1.97	2.98	3.46	2.45	2.7	2.72	2.45	3.46	2.3	24	
	20	2.63	3.02	2.8	2.53	2.61	2.58	2.52	2.77	2.66	2.7	S	2.49	2.48	2.46	2.09	2.38	1.98	2.07	2.18	3.37	2.42	2.6	3.46	12.81	12.81	3.0	24	
	21	4.98	7.68	7.27	12.64	5.37	5.03	4.99	4.19	3.77	S	2.14	1.93	1.98	1.96	2.03	1.97	2.01	2.07	2.07	5.16	2.28	2.36	2.23	3.96	12.64	3.9	24	
	22	3.79	4.46	4.78	3.99	4.39	3.94	4	3.7	S	2.14	1.93	1.87	1.9	1.88	1.88	1.87	1.89	1.91	1.87	1.92	1.96	1.93	1.95	1.96	4.78	2.7	24	
	23	1.96	2	1.92	2	1.94	1.93	1.91	S	1.94	2.16	1.92	C	C	1.93	1.93	1.95	1.99	1.97	2	1.95	2.01	1.96	1.91	1.92	2.16	2.0	24	
	24	1.94	1.93	1.95	1.98	1.97	2.03	S	1.97	1.95	1.93	1.92	1.89	1.88	1.95	1.89	1.88	1.92	1.96	1.89	1.93	2.01	2	2	1.99	2.03	1.9	24	
	25	2.09	2.09	2.03	2.02	1.97	S	2.2	2.08	2.06	1.97	2.02	1.92	1.91	1.93	1.92	1.91	1.97	1.93	1.97	1.97	2.11	2.33	2.36	2.5	2.5	2.1	24	
	26	2.33	2.33	2.22	2.26	S	2.5	2.4	2.29	2.23	2.07	2	1.93	1.94	1.92	1.91	1.93	1.92	1.92	1.92	1.97	2.02	2.17	2.05	2.03	2	2.5	2.1	24
	27	1.99	1.97	1.99	S	2.16	2.06	2.02	2.1	2.11	2	2	2.02	2	2.16	2.08	2.06	2.09	2.11	2.23	2.33	2.37	2.45	2.34	2.31	2.45	2.1	24	
	28	2.53	2.44	S	2.69	3.24	3	2.02	1.95	1.95	1.95	2.01	1.94	2	1.98	2.03	1.97	1.94	2	1.99	2.2	4.39	4.25	4.28	3.66	4.39	2.5	24	
	29	6.97	S	4.71	4.27	5.78	6.96	4.84	2.8	2.42	2.42	1.89	1.92	1.86	1.86	1.86	1.86	1.88	1.86	1.88	3.66	3.66	9.78	4.37	5.05	9.78	3.7	24	
	30	S	10.44	6.99	4.02	6.36	6.18	6.39	5	2.18	2.01	1.96	1.88	1.88	1.89	2	2.68	2.05	1.91	2.1	5.55	5.39	4.5	3.56	S	10.44	4.0	24	
	HOURLY MAX	9	20	7	14	7	8	10	10	5	4	3	3	2	2	2	3	2	4	18	15	7	10	5	17				
	HOURLY AVG	3.5	3.8	3.3	3.9	3.5	3.5	3.6	3.3	2.6	2.3	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.8	3.1	2.8	3.1	3.0	3.9				

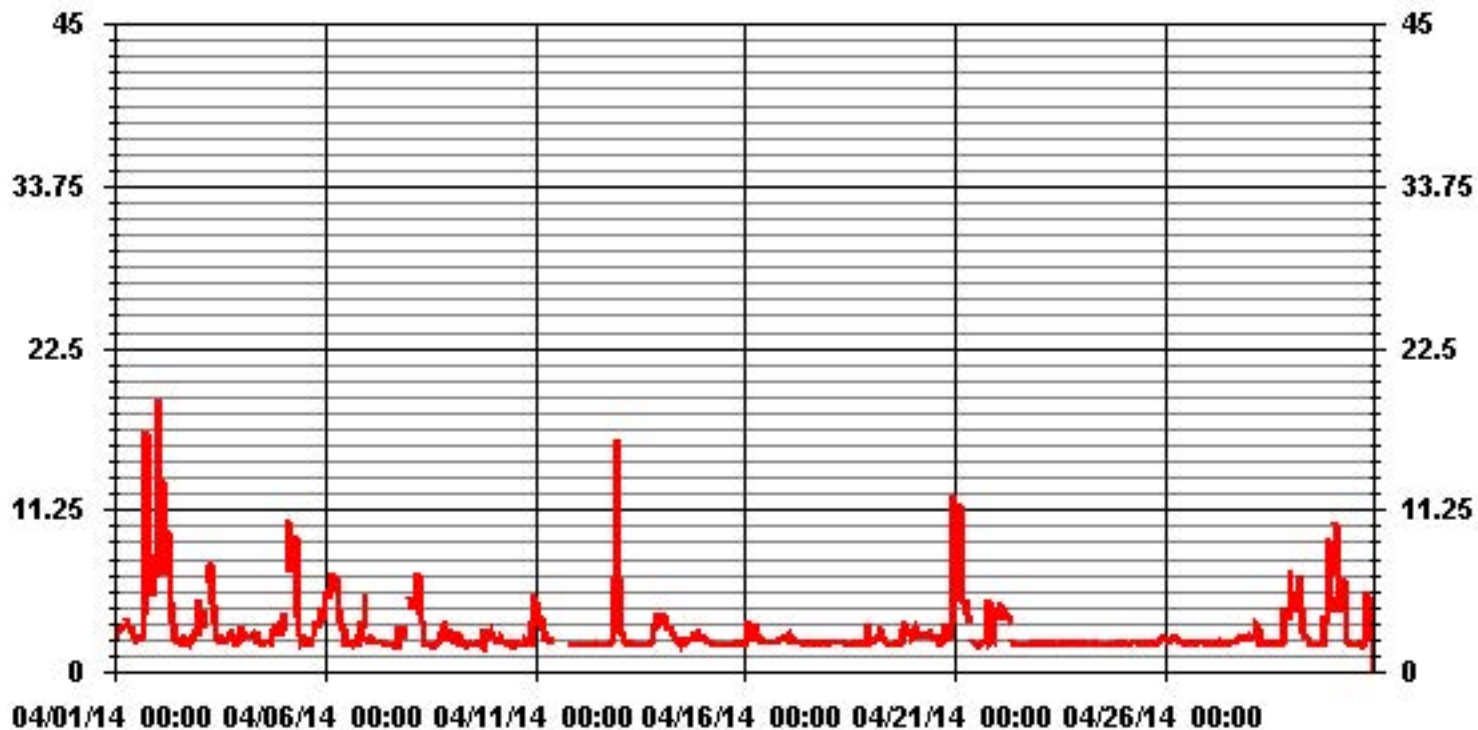
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	678
MAXIMUM INSTANTANEOUS VALUE:	19.83 PPM @ HOUR(S) 1 ON DAY(S) 2
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	1.92
OPERATIONAL TIME:	716 HRS

01 Hour Averages



— LICA35 MATHMAX PPM

LICA35
 METHANE / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	.88	2.06	2.21	13.56	10.76	11.35	6.34	2.50	1.03	1.32	4.42	4.71	10.32	6.19	6.19	3.09	87.02
< 10.0	.14	.29	.29	1.32	2.65	1.32	1.47	.73	.44	.00	.14	.29	1.47	1.17	.73	.44	12.97
< 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	1.03	2.35	2.50	14.89	13.42	12.68	7.81	3.24	1.47	1.32	4.57	5.01	11.79	7.37	6.93	3.53	

Calm : .00 %

Total # Operational Hours : 678

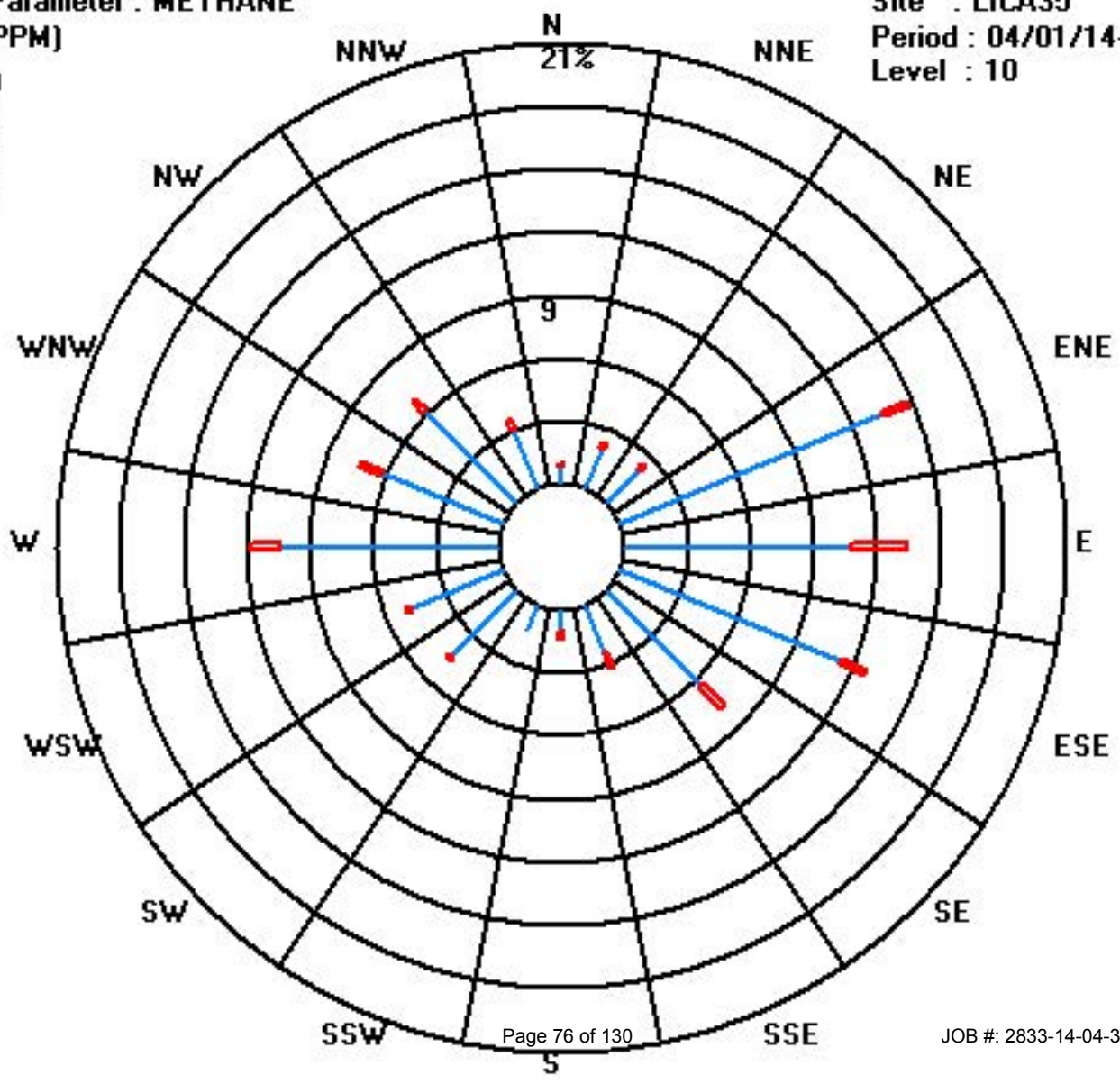
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	6	14	15	92	73	77	43	17	7	9	30	32	70	42	42	21	590
< 10.0	1	2	2	9	18	9	10	5	3		1	2	10	8	5	3	88
< 50.0																	
>= 50.0																	
Totals	7	16	17	101	91	86	53	22	10	9	31	34	80	50	47	24	

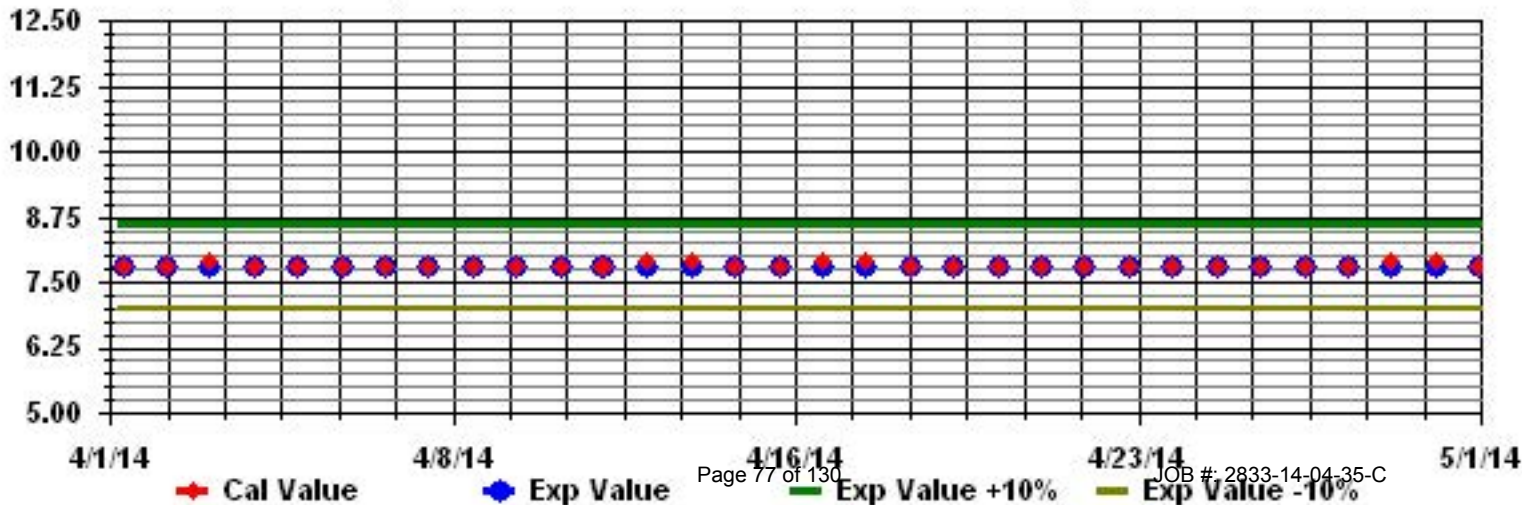
Calm : .00 %

Total # Operational Hours : 678

Class Limits (PPM)



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



Non-Methane Hydrocarbons

Lakeland Industry & Community Association - Elk Point Site

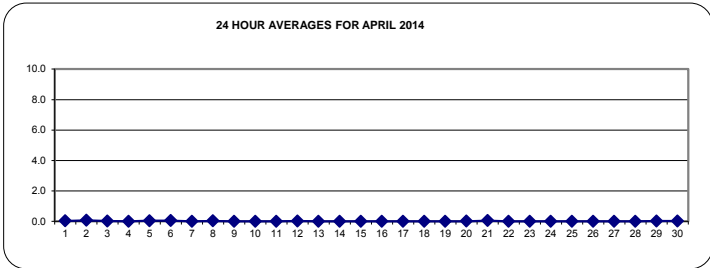
APRIL 2014

NON-METHANE HYDROCARBONS (NMHC) hourly averages in ppm

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

STATUS FLAG CODES

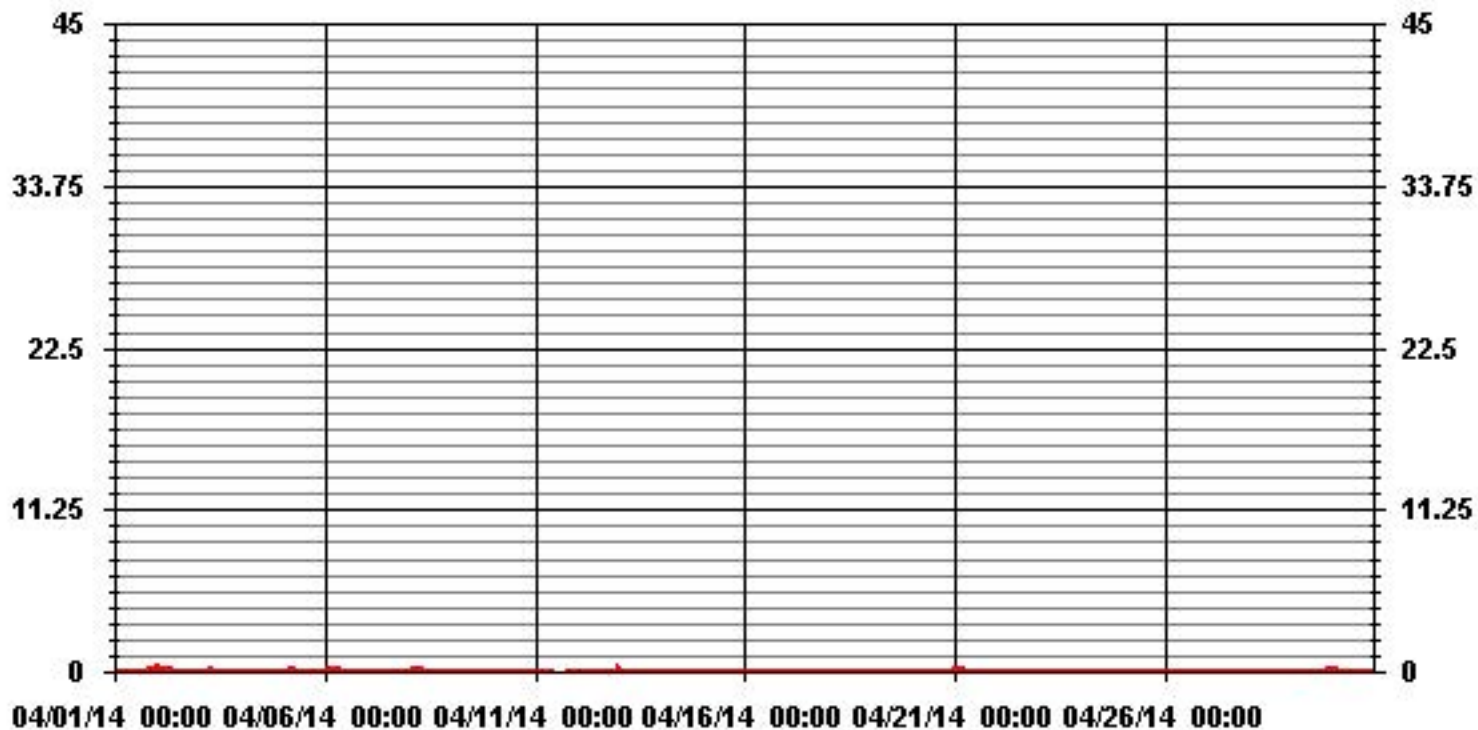
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	57					
MAXIMUM 1-HR AVERAGE:	0.3	PPM	@ HOUR(S)	VAR	ON DAY(S)	2, 12
MAXIMUM 24-HR AVERAGE:	0.1	PPM			ON DAY(S)	2
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	716	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.4	%	
STANDARD DEVIATION:	0.04		MONTHLY AVERAGE:	0.01	PPM	

01 Hour Averages



Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

NON-METHANE HYDROCARBONS MAX instantaneous maximum in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.		
DAY		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	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	0.07	0	0.06	0.1	S	0	0.1	0	0.11	0.09	0.18	0	0	0	0	0.12	0.93	0.77	0.36	0.4	0.22	0.25	0.93	0.2	24		
2		0.51	0.93	0.33	0.62	0.3	S	0.44	0.34	0.21	0.12	0	0	0	0	0	0	0	0	0	0	0	0	0	0.08	0	0.93	0.2	24	
3		0.21	0	0.1	0	S	0.23	0.43	0.38	0.14	0.14	0	0	0	0	0	0	0	0	0	0	0	0	0.12	0	0.43	0.1	24		
4		0.15	0.16	0.16	S	0.1	0.17	0.06	0.12	0.1	0.13	0.14	0.06	0.01	0	0	0	0	0	0	0	0.12	0.21	0	0	0.21	0.1	24		
5		0.11	0.13	S	0.66	0.44	0.53	0.39	0.22	0.15	0	0	0	0	0	0	0	0	0	0.11	0.12	0.14	0.13	0.19	0.15	0.66	0.2	24		
6		0.19	S	0.24	0.18	0.3	0.29	0.3	0.26	0.24	0.16	0.12	0.03	0	0	0	0	0	0	0.01	0	0.15	0.11	0.11	0.18	0.3	0.1	24		
7		S	0	0	0	0.09	0	0	0	0	0	0	0	0	0	0.02	0	0	0	0	0.14	0.04	0.11	0	0.15	S	0.15	0.0	24	
8		0.16	0.24	0.22	0.19	0.22	0.31	0.26	0.16	0.13	0.18	0.08	0	0	0	0	0	0	0	0.11	0.15	0.13	0	S	0	0.31	0.1	24		
9		0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.1	0.0	24		
10		0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.22	0.0	24		
11		0.17	0.09	0.17	0.14	0.14	0.07	0	0	0	0	0	Y	Y	Y	Y	0.04	C	C	C	C	C	C	0	0	0	0.17	0.1	20	
12		0	0	0	0	0	0	0	0	0	0	0	0	0	0.04	0	0	0	0	0	0	S	0	0	0.49	0.3	1	1	0.1	24
13		0.32	0	0	0	0	0	0	0	0.11	0	0	0	0	0	0	0	0	S	0	0	0	0	0.07	0.08	0.17	0.32	0.0	24	
14		0.1	0.09	0	0	0.09	0.07	0.14	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.14	0.0	24	
15		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0	0.0	24
16		0	0	0.08	0.17	0.23	0.12	0.15	0.1	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.11	0	0	0.23	0.0	24	
17		0	0	0	0	0.16	0	0	0	0	0	0	0	0	S	0.11	0	0.09	0	0	0.14	0	0.1	0	0	0	0.16	0.0	24	
18		0	0	0	0	0.07	0	0	0	0	0	0.11	0	S	0.13	0	0.13	0	0	0.05	0.16	0	0	0.06	0	0.16	0.0	24		
19		0.15	0.02	0	0	0	0.12	0	0	0.07	0	0	S	0	0.1	0.04	0	0	0	0	0.13	0.1	0.13	0.05	0.05	0.15	0.0	24		
20		0	0.14	0.13	0	0	0.14	0.12	0.16	0.12	0.13	S	0.17	0.11	0	0.04	0.19	0	0	0.05	0.14	0	0.26	0.18	0.67	0.67	0.1	24		
21		0.21	0.36	0.34	0.92	0.25	0.23	0.23	0.16	0.18	S	0.1	0	0	0.08	0	0	0	0	0	0.2	0.1	0.07	0	0.13	0.92	0.2	24		
22		0.16	0.13	0.13	0.16	0.21	0.17	0.19	0.16	S	0	0	0	0	0	0	0	0.05	0	0	0	0	0	0	0.01	0.21	0.1	24		
23		0.08	0.1	0	0.08	0	0	0.03	S	0	0.23	0	C	C	0	0	0	0	0.02	0.09	0	0	0.12	0	0	0.23	0.0	24		
24		0	0	0.03	0	0	0.09	S	0	0	0	0	0	0	0	0	0	0	0.09	0	0	0.09	0	0	0	0.09	0.0	24		
25		0.1	0.1	0	0	0	S	0.09	0	0.05	0	0	0	0	0	0	0	0	0	0.06	0	0	0.1	0.13	0.18	0.18	0.0	24		
26		0.14	0.15	0.12	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0.15	0.0	24		
27		0	0	0	S	0	0	0	0	0	0	0	0.03	0	0.16	0	0	0	0	0	0.13	0.11	0	0	0.11	0.2	0.2	0.0	24	
28		0.2	0	S	0	0.14	0.12	0.02	0	0	0	0.1	0.01	0.09	0.03	0.06	0	0	0.08	0.07	0.22	0.21	0.18	0.15	0.17	0.22	0.1	24		
29		0.29	S	0.16	0.17	0.23	0.31	0.21	0.12	0.12	0	0	0.07	0	0	0	0	0	0	0	0	0.1	0.44	0.2	0.26	0.44	0.1	24		
30		S	0.23	0.29	0.23	0.19	0.16	0.19	0.12	0	0	0	0	0	0	0.11	1.22	0	0	0	0.17	0.19	0.14	0.12	S	1.22	0.2	24		
HOURLY MAX		1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1					
HOURLY AVG		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1					

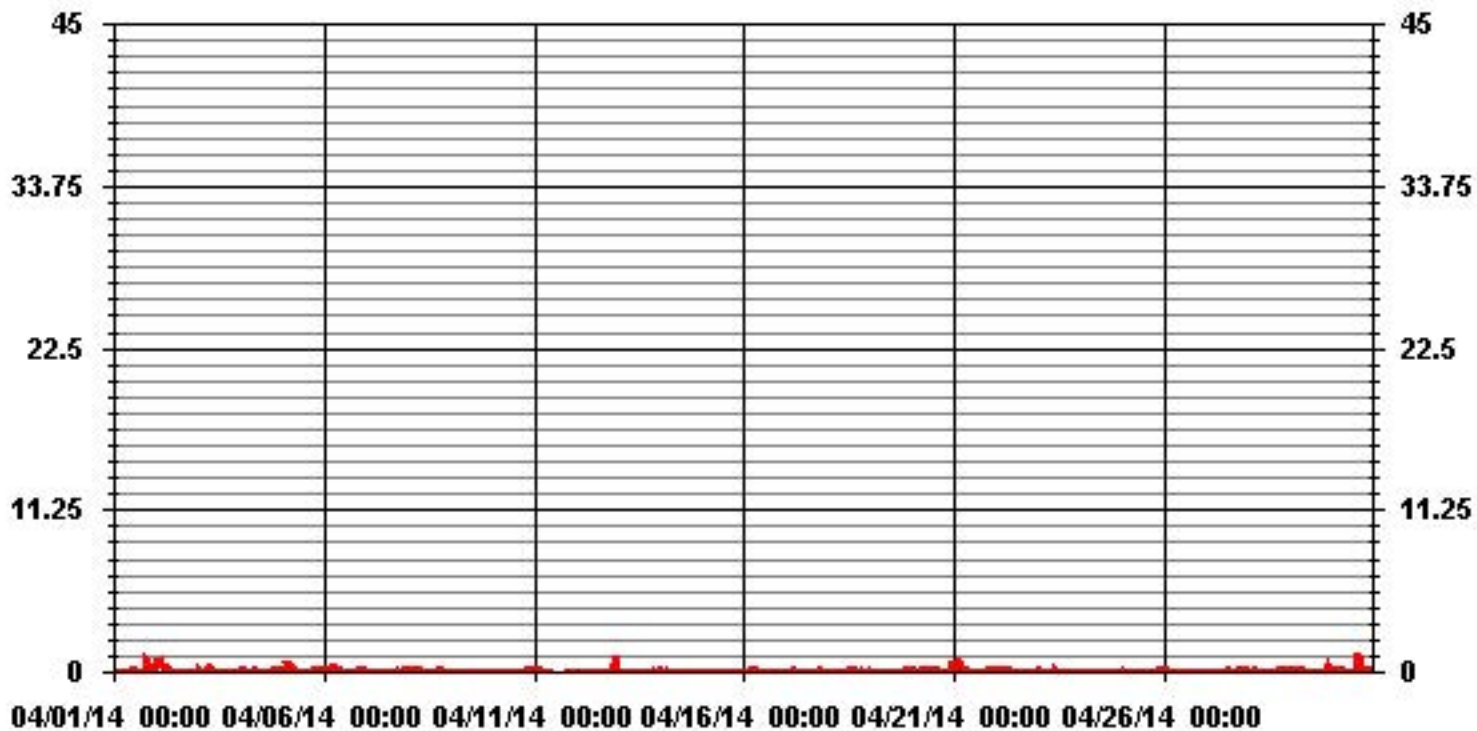
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	265
MAXIMUM INSTANTANEOUS VALUE:	1.22 PPM @ HOUR(S) 15 ON DAY(S) 30
VAR-VARIOUS	
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	716 HRS
STANDARD DEVIATION:	0.13

01 Hour Averages



— LICA35 NMHC MAX PPM

LICA35
 NMHC / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< .2	1.03	2.35	2.50	14.89	13.27	12.68	7.81	3.24	1.47	1.32	4.57	5.01	11.65	7.22	6.93	3.53	99.55
< .5	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.14	.14	.00	.00	.44
< 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	1.03	2.35	2.50	14.89	13.42	12.68	7.81	3.24	1.47	1.32	4.57	5.01	11.79	7.37	6.93	3.53	

Calm : .00 %

Total # Operational Hours : 678

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< .2	7	16	17	101	90	86	53	22	10	9	31	34	79	49	47	24	675
< .5					1								1	1			3
< 1.0																	
< 2.0																	
< 4.0																	
>= 4.0																	
Totals	7	16	17	101	91	86	53	22	10	9	31	34	80	50	47	24	

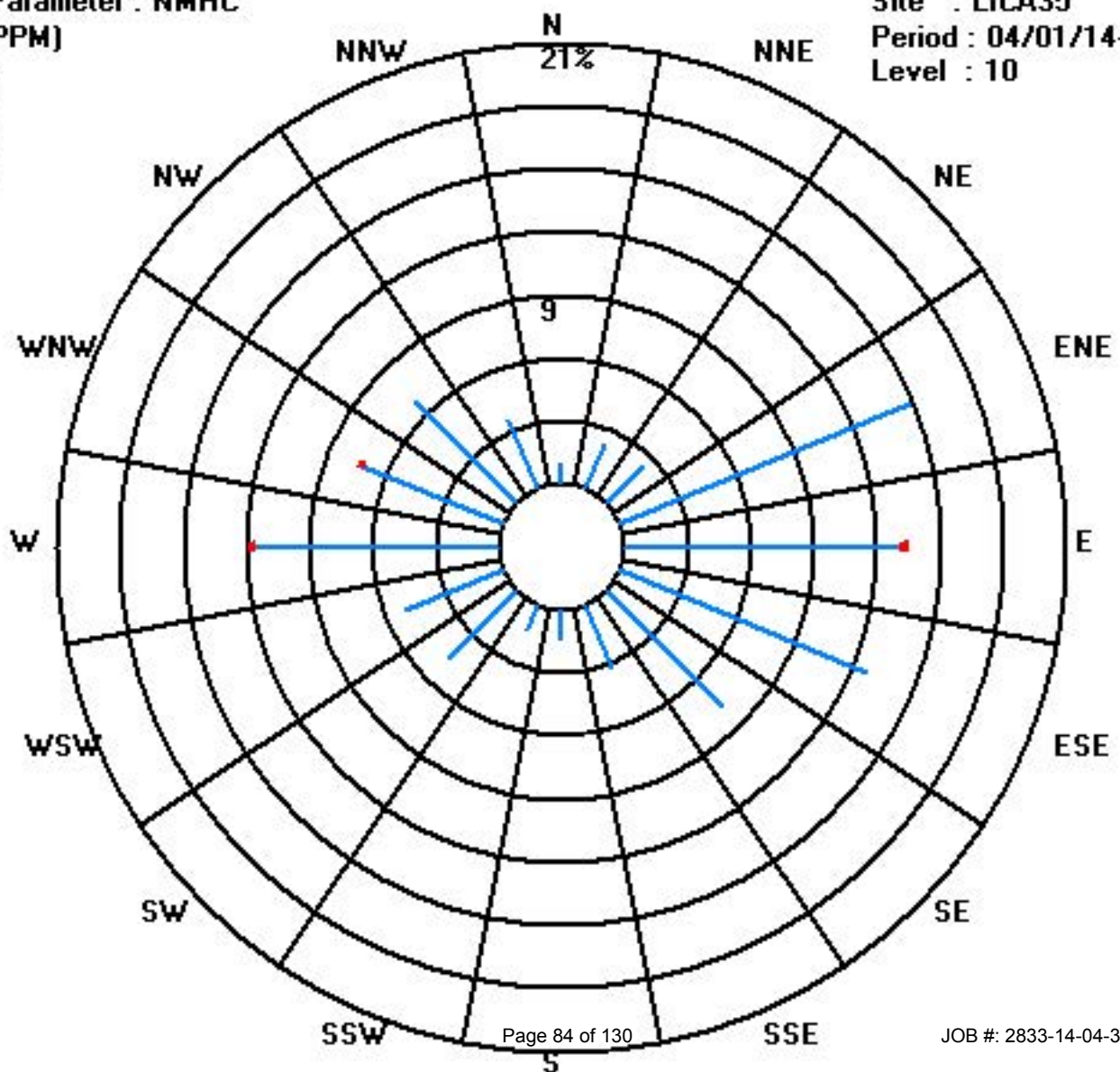
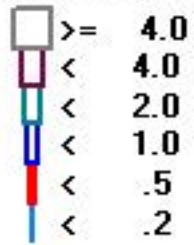
Calm : .00 %

Total # Operational Hours : 678

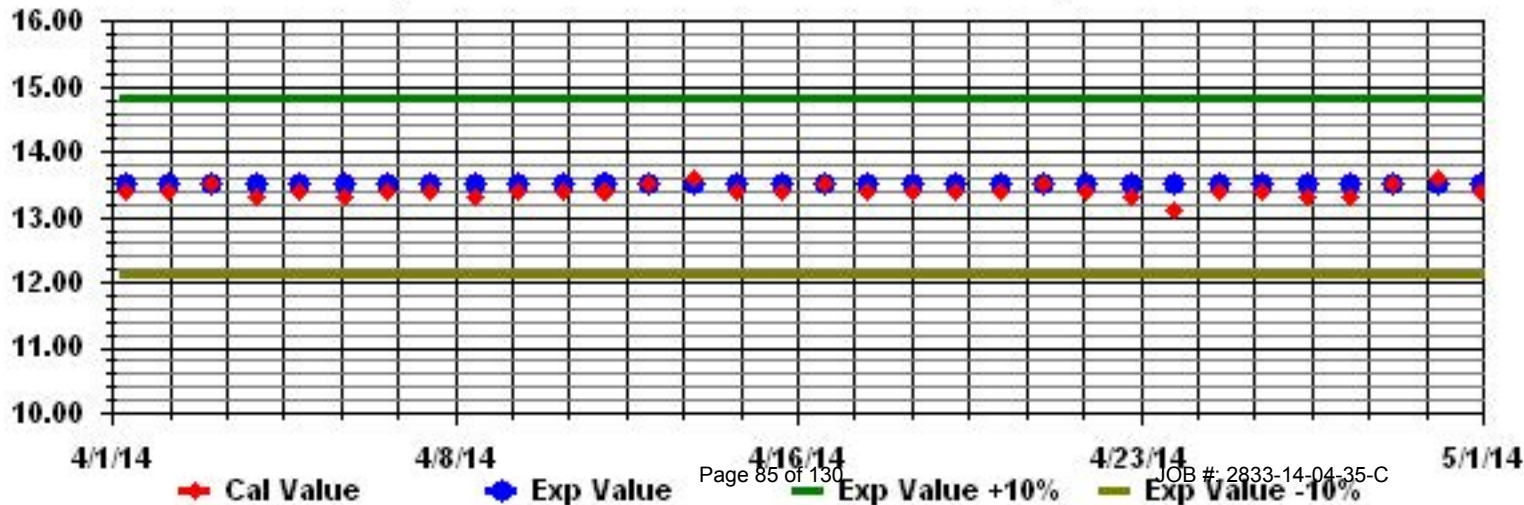
Class Limits (PPM)

Period : 04/01/14-04/30/14

Level : 10



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



Vector Wind Speed

Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

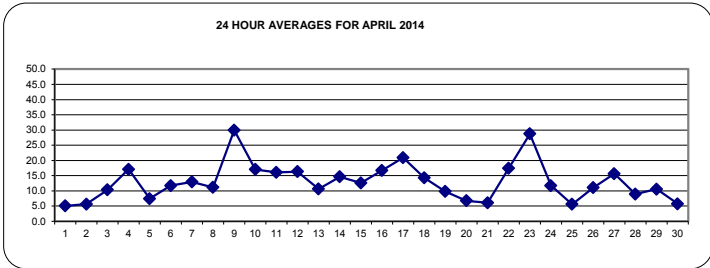
WIND SPEED (WS) hourly averages in km/hr

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
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		9.2	9.9	10.7	7.3	5.8	6.8	7	6.5	4.7	2.9	2.3	1.8	1.5	1.6	3	1	4.6	9.3	8.7	6.5	4.2	2.6	2.1	1.3	10.7	5.1	24
2		0.8	1.7	2.9	3.9	0.9	1.1	1.9	2	3.6	9.6	11.7	11	9.2	9.8	9.8	10	9.7	9.8	7.7	4.9	4.3	2.4	3.5	3.7	11.7	5.7	24
3		2.9	9.4	8.8	6.8	7.6	5.4	2.5	2.1	1.8	5.1	9.7	10.3	10.4	12.1	12.4	11.4	14	17.5	16.4	14.7	15.8	18.2	16.5	15.8	18.2	10.3	24
4		15.7	18.8	23.5	23.7	23.2	23.3	21.5	16	13.6	14.9	9.5	8.9	10.6	26.6	27.5	26.1	28.4	12.3	8.7	6.8	13.4	13.4	13.1	11	28.4	17.1	24
5		11	5	2.2	2.3	1.9	0.5	0.2	1.6	5.7	9.9	13.3	13.3	15.6	17.5	16.9	12	13	6.1	6.9	5	2.6	6.9	4.9	4.5	17.5	7.5	24
6		2.9	3.5	2.2	2.3	3.4	1	2.6	2.9	2.4	10.5	7.8	16.1	22.7	24.6	30.9	27.7	31.6	22.9	15.9	16.2	10.4	9.9	6.7	4.3	31.6	11.7	24
7		6.3	11.7	10.6	11.8	12	9.1	10	11	16.9	16.6	17.7	17.9	18.5	22.2	21.7	17.7	14.5	10.5	9.3	8.8	11.7	11.7	8.6	2.9	22.2	12.9	24
8		0.7	0.9	2	3.9	1.5	0.4	0.9	0.4	8.1	9.7	10.4	13	12.7	20.2	22.7	21.6	20.2	16.6	14.3	9.9	13.9	21.2	26.4	17	26.4	11.2	24
9		15.8	19.5	25.4	22	23	20.2	27.1	32.6	40.2	43	39	41.6	43.5	43.9	45.1	43.2	35.2	32.6	28.7	16.7	17.3	24.4	22.4	16.2	45.1	29.9	24
10		6.7	16.1	18.9	16.2	16.6	7.7	11.7	15.7	25.3	25.9	29	29.9	24.1	24.6	23.4	26.3	23.5	24.5	14	10.7	7	5.9	3.4	1.6	29.9	17.0	24
11		3.9	4.7	6.1	9.8	10.1	14.1	17.8	21.4	19.9	17.5	17.7	18.3	18.9	15.5	10.3	6.8	4.9	10.3	16.5	27.9	26.6	31.3	29.7	25.3	31.3	16.1	24
12		23.6	25.1	25.7	24.9	23.4	17.2	17.5	18.9	18.6	17	17.4	17.8	19.1	20.8	20.2	21.2	18.6	15.4	12.6	6.2	2.1	2.3	3	3.2	25.7	16.3	24
13		5.3	5.3	5.5	6.8	11.4	12.7	10.3	11.5	11.2	12.7	15	15.4	14.2	14.2	14.4	16.6	15.8	14.8	9.7	3.7	5.5	7.1	6.9	8.9	16.6	10.6	24
14		7.2	9.5	7.7	7.9	10	7.6	9.7	13.6	16.2	17.4	21.2	21.8	22.6	22	19.9	18.1	15.9	15.4	16.6	13.2	15.7	15.1	13.1	14	22.6	14.6	24
15		16.5	13.8	13.6	14.1	12.6	10.9	11.1	15.3	16.1	14.4	14.3	14.6	13.3	14.3	14.4	15.3	15.5	13.5	14.2	10.9	7.7	5.3	5.2	5.8	16.5	12.6	24
16		4.4	6.2	7.2	5.3	9.7	8.4	10.6	17.1	17.2	19.5	21.5	23.4	22.2	22.8	20.7	21.4	21.7	19.8	18.4	18.1	19	23	21.6	21.8	23.4	16.7	24
17		23.3	22.1	18.7	16.8	17.3	19.2	22.6	24.6	26.1	25.4	25.5	24.9	26.6	27.2	25.2	25.5	22.2	22.2	18.7	14.8	13.2	13.8	12.9	12.9	27.2	20.9	24
18		12.1	13.3	16.3	19.2	19.8	21.5	21.3	20.8	21.5	22	20.2	19.2	19.1	15.4	12.1	12.1	10.3	10	6.1	6	6	6.5	5.6	5.9	22.0	14.3	24
19		9.4	10.7	9.1	11.1	10.3	8.3	8.7	7.9	7.1	7.7	6.8	6.4	8.6	6.3	6	4.4	4.9	10	9.9	12.8	18.6	20.8	15.1	13.8	20.8	9.8	24
20		13.8	15.8	9.8	5.6	6.1	5.8	3.9	8.3	4.2	6	2.8	2.2	5	5.9	10.6	13.8	7.6	6	6.6	7.7	8.3	1.4	2.3	2.3	15.8	6.7	24
21		4.2	1.8	0.2	3.2	3.8	6.2	7.1	4.5	4	7.8	9.4	13.5	12.4	9.4	9.2	10	9.8	6.1	2.3	1.7	6.1	4.5	4.6	4	13.5	6.1	24
22		4.8	7.3	6.1	5.8	5.6	6.4	2.6	10.1	14	17.6	18.9	22.9	22.8	25.5	26.1	27.5	28.1	29	25.9	23.6	20.2	19.9	22.4	25.9	29.0	17.5	24
23		30.6	32.3	29.8	29.4	27.7	28	33.4	34.1	38.4	36.9	37.6	37.9	39.2	31.1	33.4	28.2	25.5	23.2	21.1	24.6	20	17	15.8	14.3	39.2	28.7	24
24		12.6	13	11.2	10.1	7.3	7.2	7.9	9.3	10.6	13.5	13	13.6	12.8	13.8	14.6	14.9	15.1	16	14.1	12.6	12.1	8.7	8.6	8.8	16.0	11.7	24
25		9.6	8.4	7.3	6.7	7.8	5.5	5.9	5.9	6.1	5.6	3.2	4	4.8	3.6	6.1	5.4	5.2	4.4	3.8	4.5	4.4	5.2	4.6	9.6	5.6	24	
26		2	7.4	6.7	4.1	5.6	6.7	8.3	12.2	10.6	12.3	12.6	13.7	12.8	12	13.4	14	14	17	17.7	14.5	8.8	10.4	15.1	13.6	17.7	11.1	24
27		14.5	15.3	16.9	16.5	14.2	22.4	22.8	22.1	21.1	20.3	22.1	21.3	19.1	18.8	19	17.9	14.9	12	8.7	9.4	8.1	6.3	3.7	8	22.8	15.6	24
28		7.2	7.1	3.4	2	7.2	9.2	13	13.3	9.7	9.8	10.8	12.1	11.1	13.9	10	9.2	14.3	23.3	8.1	5.8	4.2	3.9	4.8	0.7	23.3	8.9	24
29		2.9	5.6	3.6	3.5	3.1	4.5	9.3	10.8	10.1	11.2	21.9	19.3	24.4	18	20.6	20.4	19.7	15.5	12.2	3.5	0.3	4.3	4	5.2	24.4	10.6	24
30		5.1	2.9	4.8	6.6	3.9	4.1	2.3	4.2	6.5	6.4	8.3	6.6	6.6	4.5	4.2	7.5	10	7.4	6.6	6.8	7.4	6.1	4.2	4.6	10.0	5.7	24
HOURLY MAX		30.6	32.3	29.8	29.4	27.7	28.0	33.4	34.1	40.2	43.0	39.0	41.6	43.5	43.9	45.1	43.2	35.2	32.6	28.7	27.9	26.6	31.3	29.7	25.9			
HOURLY AVG		9.5	10.8	10.6	10.3	10.4	10.0	11.1	12.6	13.7	15.0	15.8	16.4	16.8	17.3	17.4	16.9	16.3	15.1	12.7	10.9	10.5	11.0	10.4	9.4			

STATUS FLAG CODES

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

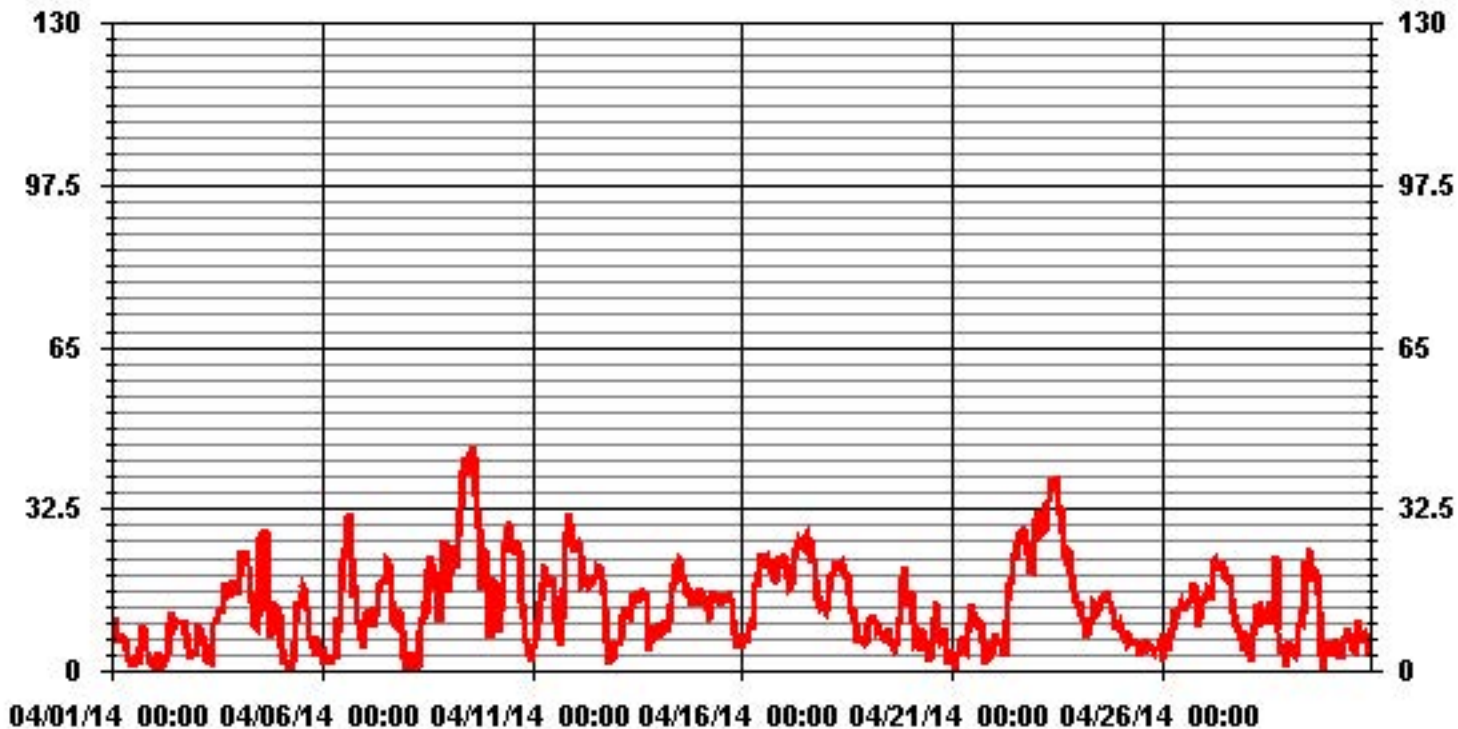
LAST CALIBRATION:	February 21, 2014
DECLINATION :	MAEGNETIC DECLINATION 19 DEGREES EAST



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	720
MAXIMUM 1-HR AVERAGE:	45.1 KPH @ HOUR(S) 14 ON DAY(S) 9
MAXIMUM 24-HR AVERAGE:	29.9 KPH ON DAY(S) 9
	VAR-VARIOUS
MONTHLY CALIBRATION TIME:	0 HRS
OPERATIONAL TIME:	720 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	8.46
MONTHLY AVERAGE:	12.95 KPH

01 Hour Averages



Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

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	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		13.8	13.6	15.6	10.4	9.2	9.8	10.2	9.7	8.8	7.5	11.6	8.8	8	8.7	11.2	13.4	12.4	18.6	12.9	10.9	6.4	6.2	4.4	5.1	19	10.3	24
2		3.1	3.9	5.3	5.6	3.7	3.9	4.4	4.3	8.1	25.7	25.4	22.4	21.7	20.8	19.8	20	16.6	18.5	16.6	9.2	7.8	8.5	8.7	8.4	26	12.2	24
3		9.3	12.7	10.9	9.4	10	7.8	6.3	4.2	5.8	11.6	20.4	22.7	24.6	27.2	24.8	23.6	29.4	29.8	28.4	30.1	30.8	35	34.6	35.5	36	20.2	24
4		23.7	29.2	34.9	37.8	33.5	36.4	33.4	29	25.5	27	21.1	22.2	37.5	40.3	41.9	40.2	43.9	32.2	14.7	15.4	19.2	22.5	22.4	21.5	44	29.4	24
5		17.2	9.7	4.6	6	5.4	4.3	3.2	6.2	17.2	18.9	25.6	27.7	31.8	34.1	33.9	28.8	24.1	12.8	11.6	9.9	5.6	11.5	11.8	8.8	34	15.4	24
6		6.2	7	5.2	8.4	9.4	7.7	24.5	12	13.3	21	22.8	30.7	40.8	41.5	49.9	46.5	48	39.8	24	52.8	32.6	16.5	15.6	9.7	53	24.4	24
7		14.6	27.3	22.6	20.4	19.9	16.8	20.8	22.5	26.3	26.5	30.8	33.5	36.1	40.1	40.2	31.4	27.2	23.6	17.7	14.7	24.2	20.4	14.2	8.9	40	24.2	24
8		4.3	5.1	6.1	7.7	7.2	3.5	4.4	5.7	16.6	18.5	22.4	28.3	30.4	35.9	44.4	40.2	36.1	27.8	25.4	23.9	36	34.8	46.6	25.1	47	22.4	24
9		28.5	33.3	41.8	33.9	32.9	30.9	44.2	55.4	61.8	60.8	60.7	62.7	67.2	68	79.8	67.9	57.4	46.8	48.1	27.4	23.5	40.7	38.5	26.6	80	47.5	24
10		21.6	30.8	33.7	32.5	34.5	25.7	26	31.6	43.8	39.1	47.8	48.1	39.6	42.8	40.7	47	40.5	37	31.1	16.6	15.6	11.6	7.9	8.5	48	31.4	24
11		9.3	8.1	12.3	15.7	17.8	21.9	28.4	30.1	30.6	26.6	25.9	28.7	27.6	26.7	19.1	15.1	10.8	34.7	45.3	47.9	47.8	51.7	53.2	47.5	53	28.5	24
12		40.4	47.1	43.7	47.4	42.8	32.5	30.5	31.8	29.8	28.9	30.9	32.5	33	34.3	38.1	37.2	34	26	26.6	16.2	3.9	4.8	5.2	7.5	47	29.4	24
13		13.1	8.4	8.3	11.4	25.2	30.7	24.5	24	27	27.6	28.9	31.9	29.4	32.3	35.2	33.6	29.9	27	19	8.8	9.2	11.4	10.6	13.7	35	21.7	24
14		15.1	16.9	14	12.4	13.3	13.6	16.3	23	25.9	35	36.8	39.9	43.5	43.5	40	34	29.4	27.8	27.2	19.9	28	24.3	21.5	22.1	44	26.0	24
15		26.6	21	25	25.2	22.7	18.4	19.3	27.2	27.9	24.5	26	26	25.1	27	25.9	28.3	27.9	30.2	26.8	26.1	17.8	14.6	10.7	13.4	30	23.5	24
16		6.9	11.9	11	8.9	18.3	15.2	17.5	28.3	28.9	32.6	34.9	35.1	34.7	36.4	34.6	36.2	36.8	32.5	34.8	28.9	31.8	38.1	34.1	38.4	38	27.8	24
17		39.3	33	29.4	24.9	26.4	31.1	35.6	36.6	41.4	37.9	40.2	38.1	40.6	46.5	38.9	43.4	36.4	39	31	25.3	24.2	21.7	20.1	20.9	47	33.4	24
18		21	20.9	24.8	30.4	31.6	33.7	33.1	33.5	33.2	36.8	34.7	31.7	31.4	24.2	21.7	21	17.6	18.8	13.1	11.1	8.8	9.4	8.8	9	37	23.3	24
19		12.6	16.1	14.7	17.8	17.3	18.9	14.2	13.2	12	15.7	16.4	17.9	20.2	24.4	22.1	20.7	17	18.7	16.7	28.2	33	32.2	25.8	22	33	19.5	24
20		24.2	25	19.1	11.2	9.8	9.7	7	13	9.9	10.7	10.3	7.2	10.4	12.8	23.8	22.2	16.1	10.8	12.6	16.4	13.4	5.7	4	5.2	25	12.9	24
21		5.5	4.6	4.3	6	6.1	8.4	10.9	7.8	14.7	16.2	26.5	28.6	35.9	24.8	27.1	26.7	27.9	13.8	5.3	7.9	17.3	14.8	7.5	6.9	36	14.8	24
22		7.3	11.6	9.5	9.5	9.7	12.4	16.9	19.1	23.8	30	35.8	38.5	40.3	45.7	50.4	50.5	54.2	54.1	42.9	43.5	33.3	39.3	39.2	48.9	54	31.9	24
23		51.9	53.8	46.7	56.7	47.9	46.3	51.5	57.5	65.7	63.7	59.5	65.2	62.3	59.3	56.3	49.8	50.6	50.1	38.3	40.1	32.5	33.6	33.6	25.6	66	49.9	24
24		22.5	24.2	19.1	18.3	15.6	14.2	15	16.7	21	23.9	23.8	23.5	25.9	24.9	25.7	25.5	25.9	25.4	26.3	22	22.9	18.3	14.9	13.9	26	21.2	24
25		15.9	15	13.7	11.9	12.9	9.5	11.3	11.7	11.4	11.2	10.6	7.2	10.2	12.7	14	12.9	12.1	11.7	8.6	6.5	6.8	6.8	8.7	9.5	16	11.0	24
26		8	11.3	10.2	7.8	8.9	11.2	15.5	18.5	17.8	20.9	23.2	22.8	23.6	22.7	22.7	24.6	25.9	28.9	28.1	28.6	13.3	17.5	23	23.8	29	19.1	24
27		25.5	24.4	24.7	26.6	24.5	34.7	38.2	39.5	37.1	37.6	35.6	32.8	28.2	27.7	28.1	25.2	20.9	18.3	13.6	12.8	12.5	10.1	7.2	14.4	40	25.0	24
28		10.6	10.8	9	6.3	10.4	15.4	23.6	23.9	19.5	22.6	23.2	22.5	21.6	26.4	25.9	26.9	33.8	54.7	33.8	13	8.6	10.9	8.7	5.9	55	19.5	24
29		5.9	9.2	8.1	7.5	5.6	8.2	19	18.1	17.2	25.3	38.5	53.7	45.5	40.6	39.8	38.9	37.4	31	23.7	12.7	3.8	8.4	10.1	8.5	54	21.5	24
30		10	9.1	14.7	15.6	8	7.1	4.8	11.9	13.3	15.5	21.7	23.2	22.3	29.2	19.2	25.4	28.9	17.4	12.9	10	11	15.9	17.9	18.5	29	16.0	24
HOURLY MAX		52	54	47	57	48	46	52	58	66	64	61	65	67	68	80	68	57	55	48	53	48	52	53	49			
HOURLY AVG		17.1	18.5	18.1	18.1	18.0	18.0	20.4	22.2	24.5	26.7	29.1	30.5	31.6	32.7	33.2	31.9	30.3	28.6	23.9	21.2	19.4	19.9	19.0	17.8			

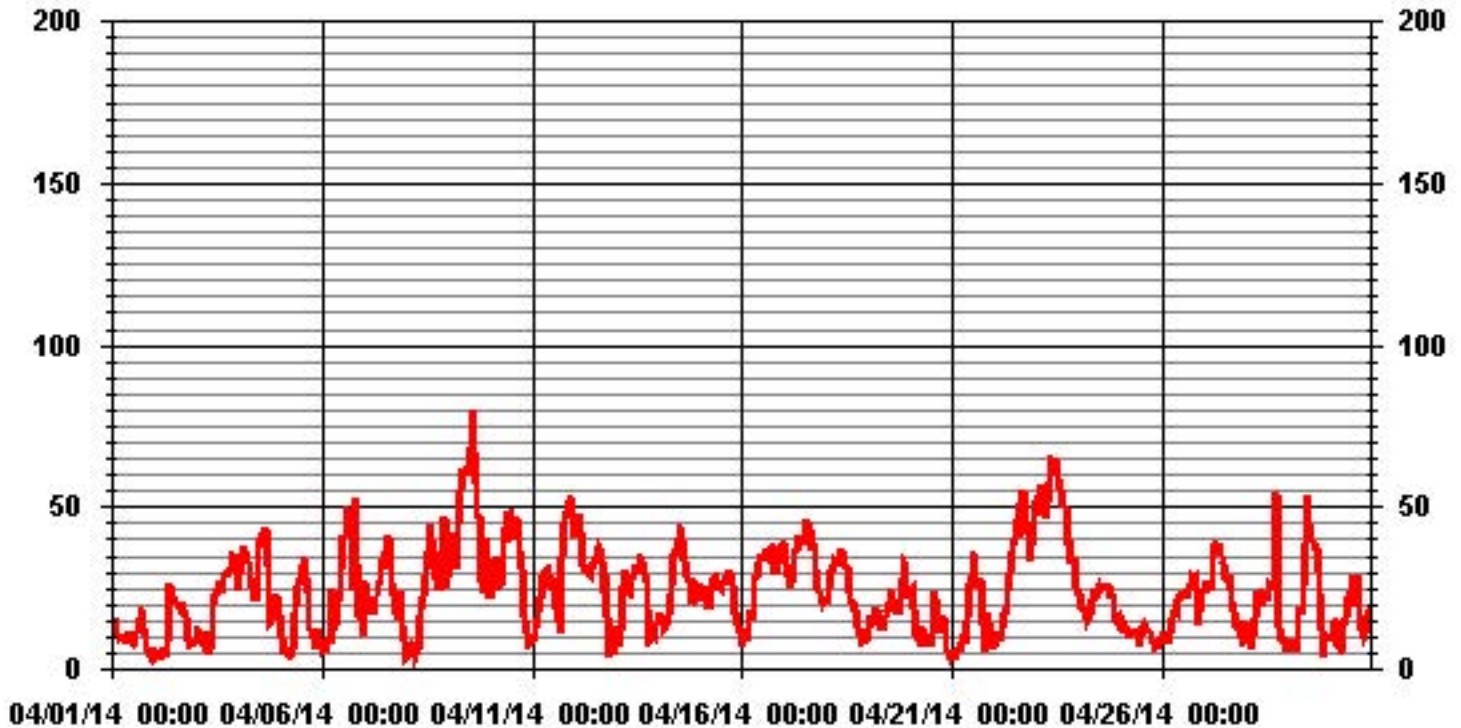
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	80	KPH	@ HOUR(S)	14	ON DAY(S)	9
					VAR-VARIOUS	
OPERATIONAL TIME:					720	HRS

01 Hour Averages



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

April 2014

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
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	.27	1.52	1.80	3.61	2.36	1.94	1.52	.83	.41	.55	.83	1.11	2.36	2.36	1.11	.41	23.05	
< 12.0	.55	.69	.55	4.16	3.61	3.19	1.11	.69	.69	.41	2.91	2.77	2.63	1.25	1.94	.83	28.05	
< 20.0	.27	.00	.00	5.83	4.58	3.47	3.19	1.25	.27	.41	.55	.69	3.19	.69	3.19	.97	28.61	
< 29.0	.00	.00	.00	.83	2.36	3.75	1.80	.41	.13	.00	.13	.27	2.36	1.80	1.11	.97	15.97	
< 39.0	.00	.00	.00	.13	.55	1.11	.00	.00	.00	.00	.00	.00	.41	.55	.00	.27	3.05	
>= 39.0	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00	.41	.69	.00	.00	1.25	
Totals	1.11	2.22	2.36	14.58	13.47	13.61	7.63	3.19	1.52	1.38	4.44	4.86	11.38	7.36	7.36	3.47		

Calm : .00 %

Total # Operational Hours : 720

Distribution By Samples

		Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 6.0	2	11	13	26	17	14	11	6	3	4	6	8	17	17	8	3	166	
< 12.0	4	5	4	30	26	23	8	5	5	3	21	20	19	9	14	6	202	
< 20.0	2			42	33	25	23	9	2	3	4	5	23	5	23	7	206	
< 29.0				6	17	27	13	3	1		1	2	17	13	8	7	115	
< 39.0				1	4	8							3	4		2	22	
>= 39.0						1							3	5			9	
Totals	8	16	17	105	97	98	55	23	11	10	32	35	82	53	53	25		

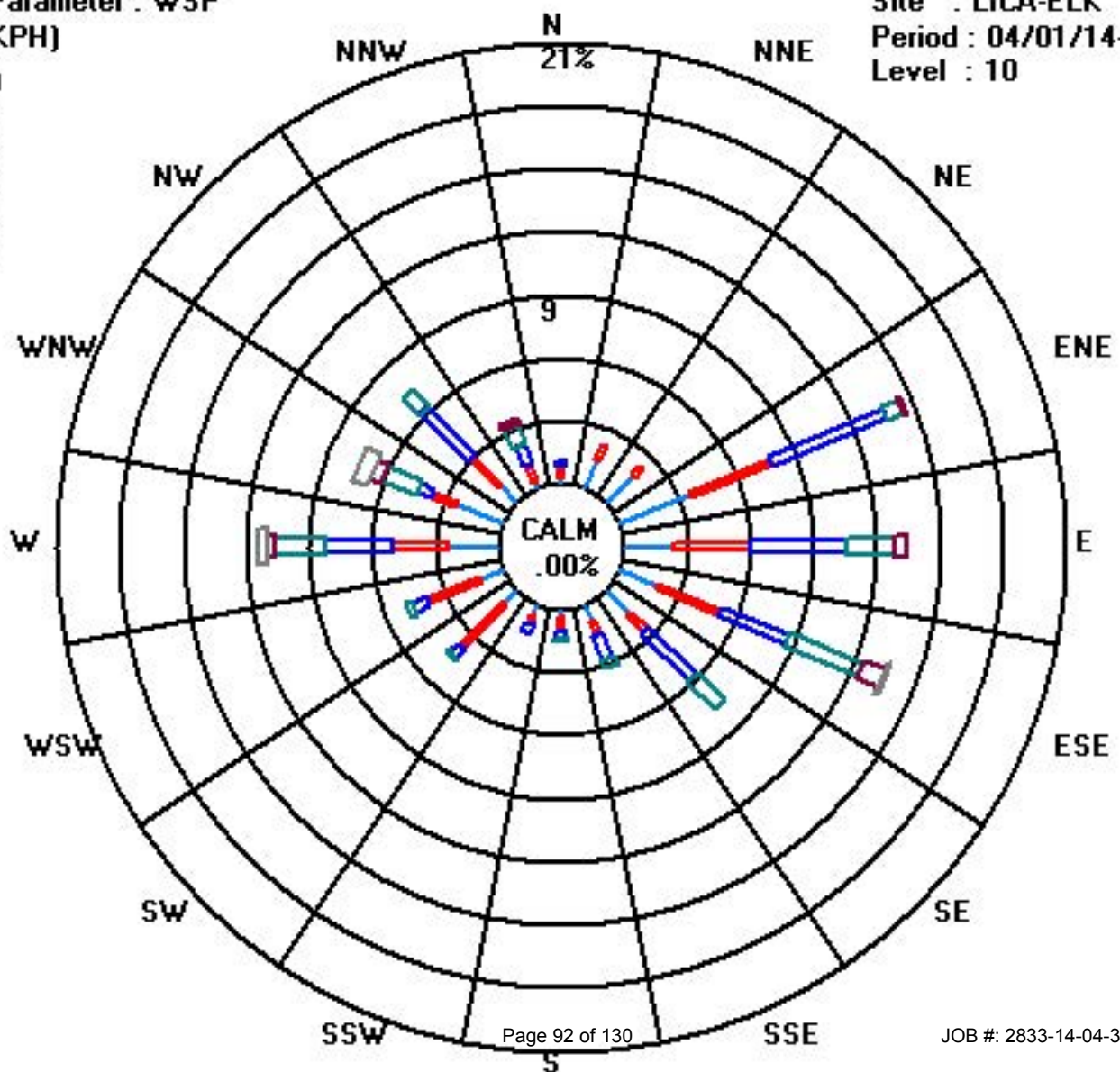
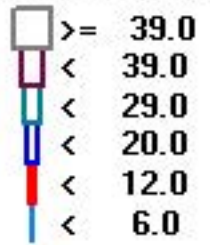
Calm : .00 %

Total # Operational Hours : 720

Class Limits (KPH)

Period : 04/01/14-04/30/14

Level : 10



Vector Wind Direction

Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

WIND DIRECTION (WD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	24-HOUR	24-HOUR	
DAY	AVG.	AVG.	QUADRANT	RDGS.																									
1	114	119	121	116	108	96	94	86	108	121	150	154	128	221	299	242	130	110	122	138	128	118	54	100	299	WNW	24		
2	282	93	118	98	135	118	125	127	96	93	115	88	82	77	77	86	86	68	46	40	15	4	18	49	282	W	24		
3	300	306	309	315	294	294	271	317	70	128	112	110	123	162	169	152	145	136	134	145	154	155	149	139	317	NW	24		
4	130	129	124	121	120	125	118	126	136	138	187	227	249	283	280	281	284	314	265	262	275	264	258	275	314	NW	24		
5	308	277	263	256	271	181	25	76	148	152	157	170	194	219	258	292	218	219	179	230	260	292	310	215	310	NW	24		
6	233	321	28	83	136	140	142	66	118	175	218	277	290	282	279	278	288	282	267	269	329	268	258	280	329	NNW	24		
7	267	247	261	265	250	256	252	263	269	278	280	275	261	276	271	259	246	251	235	224	223	232	233	239	280	W	24		
8	42	59	85	89	123	154	50	292	245	240	257	259	252	254	264	239	235	229	223	240	297	315	304	288	315	NW	24		
9	270	276	281	272	279	273	273	279	284	285	281	277	277	287	290	290	286	289	292	277	269	291	285	279	292	WNW	24		
10	269	262	266	262	263	268	247	260	285	284	280	283	266	271	272	276	281	276	303	322	358	18	120	163	358	N	24		
11	90	76	80	113	114	113	114	116	118	118	120	119	124	123	90	90	111	310	309	315	336	337	333	344	344	NNW	24		
12	337	340	339	341	342	341	337	341	341	324	317	314	317	325	323	321	324	319	335	346	267	283	275	266	346	NNW	24		
13	329	313	299	312	345	8	22	13	14	1	341	326	316	321	324	307	311	313	306	53	102	136	121	123	345	NNW	24		
14	138	127	96	85	93	103	108	123	129	152	159	152	156	171	162	166	154	143	125	115	121	112	87	99	171	S	24		
15	98	87	71	78	68	75	67	70	67	83	71	59	66	64	63	62	60	63	67	71	72	81	70	46	98	E	24		
16	43	78	123	133	144	142	125	124	124	129	131	119	116	125	133	129	137	133	134	124	124	124	126	126	144	SE	24		
17	125	122	117	109	102	101	107	108	109	107	108	107	104	106	104	98	99	96	94	83	79	73	70	69	125	SE	24		
18	71	76	82	91	96	97	102	103	108	111	100	101	98	85	67	72	67	31	24	340	324	315	302	288	340	NNW	24		
19	297	304	306	297	290	273	264	280	247	256	259	226	268	278	253	212	196	149	126	127	135	127	111	103	306	NW	24		
20	119	119	104	96	80	73	68	107	90	87	115	207	326	289	300	274	250	248	234	222	217	279	274	330	330	NNW	24		
21	318	331	350	90	86	93	113	90	164	194	191	213	204	208	217	233	266	230	242	13	50	47	21	70	350	N	24		
22	69	98	89	70	76	77	100	62	81	72	68	78	79	68	69	74	76	78	81	82	78	79	84	95	100	E	24		
23	100	104	102	99	98	97	95	103	106	106	104	100	103	104	107	102	92	88	85	89	85	79	72	66	107	ESE	24		
24	67	70	67	66	72	64	57	61	67	77	76	65	68	72	63	60	62	77	76	68	67	67	67	66	77	ENE	24		
25	69	71	72	72	76	71	61	67	60	72	74	62	77	72	72	66	78	45	33	24	45	43	53	60	78	ENE	24		
26	31	56	50	63	73	83	91	93	90	97	108	86	90	82	86	80	72	79	88	100	71	77	90	78	108	ESE	24		
27	78	83	87	90	89	119	121	123	126	122	116	115	119	110	110	108	106	112	104	93	83	88	76	100	126	SE	24		
28	109	110	121	301	290	302	318	340	1	357	324	312	316	318	350	343	325	313	347	27	245	265	88	210	357	N	24		
29	280	111	96	310	287	256	252	246	263	292	284	284	291	307	298	311	318	318	314	325	255	247	262	285	325	NW	24		
30	290	266	278	260	294	284	293	263	247	232	230	224	244	224	236	216	216	225	208	181	168	168	172	191	294	WNW	24		

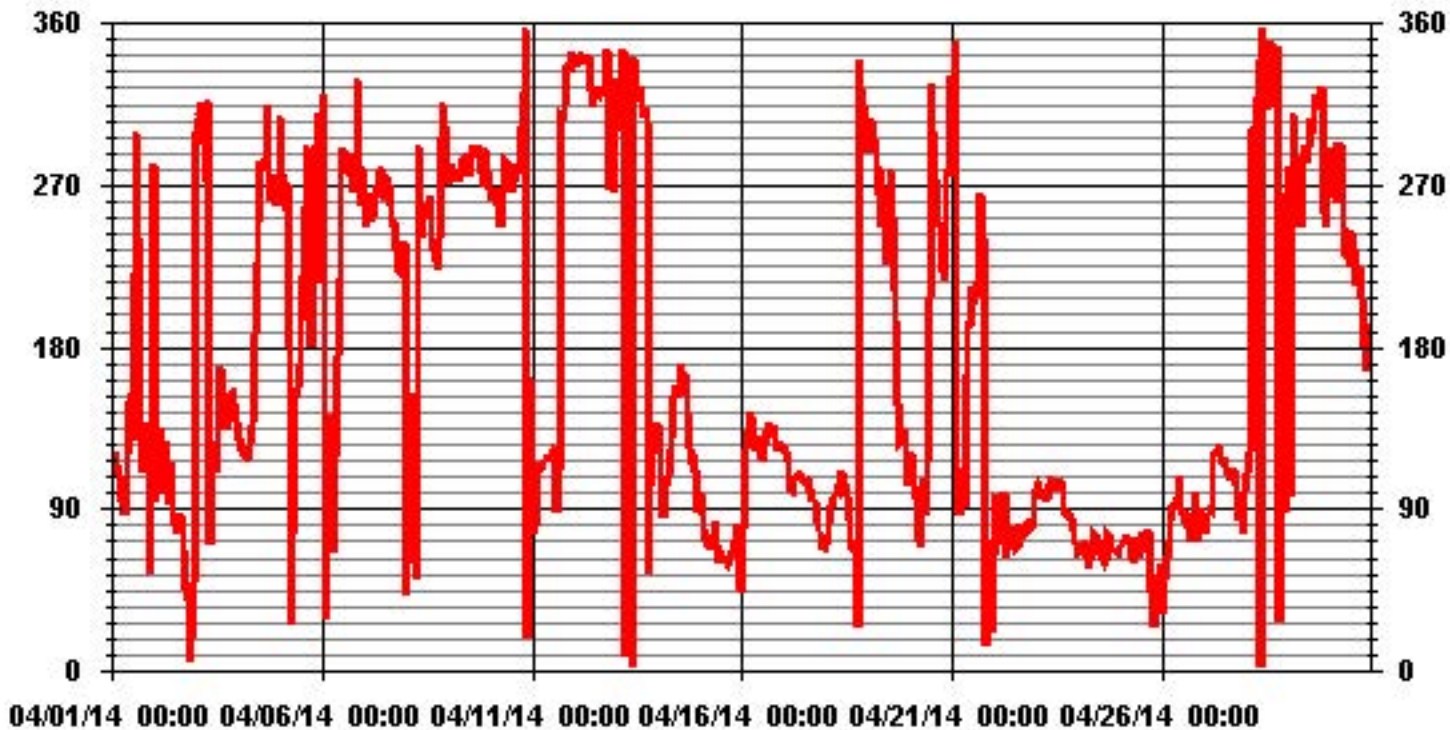
STATUS FLAG CODES

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

LAST CALIBRATION:	February 21, 2014
DECLINATION :	MAEGNETIC DECLINATION 19 DEGREES EAST

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	720 HRS
STANDARD DEVIATION:	96.67	AMD OPERATION UPTIME:	100.0 %
		MONTHLY AVERAGE:	90 DEG

01 Hour Averages



Standard Deviation Wind Direction

Lakeland Industry & Community Association - Elk Point Site

APRIL 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	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	8	6	8	8	9	10	7	10	15	26	38	67	43	43	45	44	29	14	5	6	7	22	23	9
2	29	23	13	12	23	10	23	16	17	15	16	17	25	26	21	19	13	13	10	11	8	25	20	11
3	11	5	5	6	4	8	16	13	29	29	21	18	23	21	23	20	15	14	9	12	13	12	13	12
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5	4	19	13	11	28	31	38	42	35	19	15	16	14	16	15	15	12	12	9	12	13	13	22	20
6	13	11	28	28	46	55	77	49	32	15	24	16	9	9	7	8	8	7	8	12	9	8	11	16
7	13	9	10	7	10	12	10	13	9	10	11	14	16	12	14	13	14	13	7	7	8	7	4	15
8	34	61	46	38	53	54	53	33	28	17	23	19	22	16	16	14	12	9	8	17	15	7	7	6
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19	5	6	7	5	5	5	10	10	13	17	30	33	24	40	47	62	39	16	9	6	10	7	8	7
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22	11	9	12	11	17	15	43	18	14	13	14	12	11	12	13	12	12	11	11	9	10	10	10	9
23	9	9	8	8	8	8	8	8	9	9	9	9	9	9	9	8	9	8	8	8	9	10	12	12
24	11	11	11	12	14	12	11	12	12	13	13	13	13	14	14	13	12	11	11	11	11	12	10	9
25	10	11	10	10	10	10	10	12	15	15	15	17	20	24	27	15	16	15	13	9	4	5	6	13
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27	10	8	7	6	8	7	7	8	9	8	8	8	9	8	7	8	7	8	9	6	6	7	13	10
28	8	6	28	29	4	8	8	11	16	19	18	13	16	15	19	24	15	10	23	39	12	22	12	24
29	13	13	33	8	7	7	10	9	13	19	13	18	13	21	15	13	14	13	9	13	13	8	19	22
30	17	21	26	12	11	12	14	19	19	26	41	44	45	58	46	46	34	15	8	6	6	11	48	39

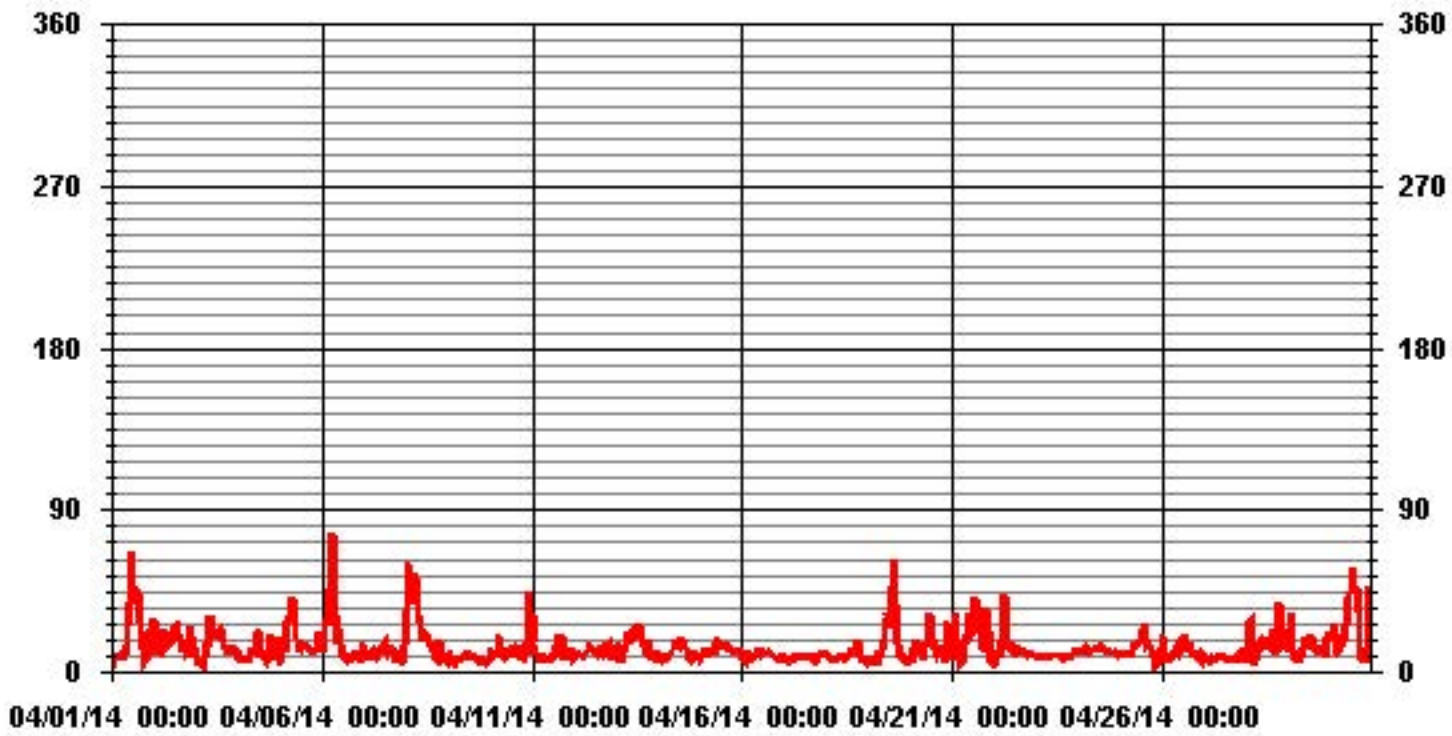
STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- 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: February 21, 2014


CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 720 HRS

01 Hour Averages



Calibration Reports

Sulphur Dioxide



API 100E SO2 Analyzer Calibration

Date:	10-Apr-14	Start/End Time (mst):	13:15/16:14
Company:	LICA	Calibration Purpose:	Monthly Calibration
Station Name/Location:	Elk Point	Converter Make & Model:	NA
Performed by:	Kevin Hope	Converter Serial #:	NA
Application H ₂ S/TRS/SO ₂ :	SO2	Cal Gas Expiry Date:	29-Dec-16

Analyzer: Serial Number: 467 Last Calibration Date: 20-Mar-14 Previous Cal High Point C.F.: 1.000	Range ppb: 1000 As Found C.F.: 0.961 New C.F.: 1.003
--	--

As found:		As left:	
SLOPE:	1.050	SLOPE:	1.003
OFFSET:	32.1	OFFSET:	31.9
HVPS:	513	HVPS:	513
RCELL TEMP:	50.0	RCELL TEMP:	50.0
BOX TEMP:	30.1	BOX TEMP:	30.1
PMT TEMP:	8.1	PMT TEMP:	8.1
IZS TEMP:	45.0	IZS TEMP:	45.0
TEST:	NA	TEST:	NA
STABIL:	0.0	STABIL:	0.0
PRES:	24.4	PRES:	24.4
SAMP FL:	620	SAMP FL:	620
PMT:	33.4	PMT:	33.4
NORM PMT:	32.1	NORM PMT:	32.1
UV LAMP:	2552	UV LAMP:	2552
LAMP RATIO:	77.9	LAMP RATIO:	77.9
STR. LGT:	16.8	STR. LGT:	16.8
DRK PMT:	13.2	DRK PMT:	13.2
DRK LMP:	2.7	DRK LMP:	2.7
Internal Span:	341	Internal Span:	327.5

Calibrator: Flow Meter ID's: NA Make & Model: Environics 6100 Serial #: 4760 Cal Gas Cylinder I.D. #: BAL3165 Cal Gas Conc. (ppm): 49.7	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">Calibrator Flow Targets:</th> </tr> <tr> <th>point</th> <th>diluent (cc/min)</th> <th>cal gas (cc/min)</th> <th>total (cc/min)</th> </tr> </thead> <tbody> <tr><td>zero</td><td>5000</td><td>0</td><td>5000</td></tr> <tr><td>high</td><td>5000</td><td>80</td><td>5080</td></tr> <tr><td>mid</td><td>5000</td><td>40</td><td>5040</td></tr> <tr><td>low</td><td>5000</td><td>20</td><td>5020</td></tr> </tbody> </table>	Calibrator Flow Targets:				point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)	zero	5000	0	5000	high	5000	80	5080	mid	5000	40	5040	low	5000	20	5020
Calibrator Flow Targets:																									
point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)																						
zero	5000	0	5000																						
high	5000	80	5080																						
mid	5000	40	5040																						
low	5000	20	5020																						

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	0.6	NA
adjusted zero	5000	0.0	5000	0	0.5	NA
as found high	4995	79.80	5075	781.5	814.0	0.961
adjusted high	4995	79.80	5075	781.5	781.7	1.000
mid	4995	39.90	5035	393.9	392.3	1.005
low	4995	19.80	5015	196.2	196.1	1.003
calibrator zero	4996	0.00	4996	0	0.5	NA
Average C.F. =						1.003

Linear Regression/Calibration Results:

Correlation Coefficient =	#DIV/0!	LIMITS	Pass/Fail ?
Slope =	#DIV/0!	> or = 0.995	#DIV/0!
b (Intercept as % of full scale) =	#DIV/0!	0.85-1.15	#DIV/0!
% change in C.F. from last cal	3.93%	± 3% F.S.	#DIV/0!
		± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

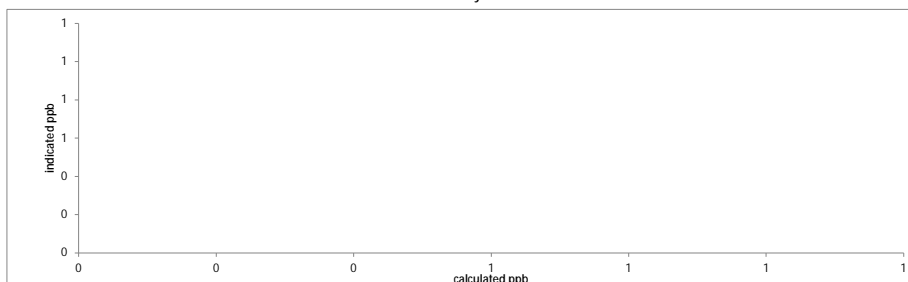
run converter efficiency test immediately following zero adjust

SO ₂ High Point gas concentration:	781.7	Time gas run (mst):	na
Zero corrected analyzer response:	0.5		

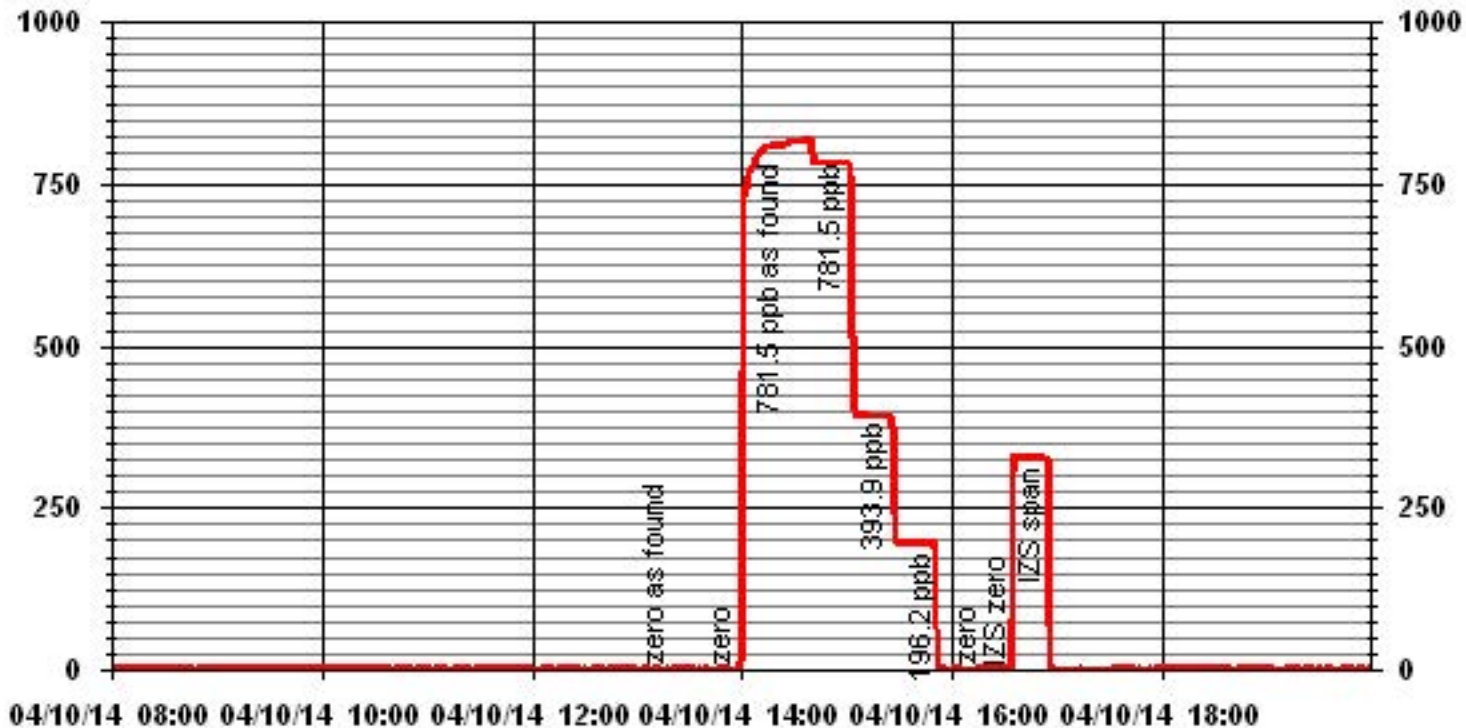
Comments:

Monthly calibration & filter change. No issues.

API 100E SO2 Analyzer Calibration



01 Minute Averages



Hydrogen Sulphide



API 101E H2S Analyzer Calibration

Date:	10-Apr-14	Start/End Time (mst):	13:13/16:03
Company:	LICA	Calibration Purpose:	Monthly Calibration
Station Name/Location:	Elk Point	Converter Make & Model:	Internal
Performed by:	Kevin Hope	Converter Serial #:	NA
Application H ₂ S/TRS/SO ₂ :	H2S	Cal Gas Expiry Date:	25-Dec-15

Analyzer:		Range ppb:	100
Serial Number:	509	As Found C.F.:	0.935
Last Calibration Date:	13-Mar-14	New C.F.:	1.010
Previous Cal High Point C.F.:	1.003		
As found:		As left:	
SLOPE:	1.217	SLOPE:	1.112
OFFSET:	93.1	OFFSET:	91.2
HVPS:	536	HVPS:	536
RCELL TEMP:	50.0	RCELL TEMP:	50.0
BOX TEMP:	29.7	BOX TEMP:	29.7
PMT TEMP:	7.9	PMT TEMP:	7.9
IZS TEMP:	45.0	IZS TEMP:	45.0
TEST:	NA	TEST:	NA
STABIL:	0.1	STABIL:	0.1
PRES:	27.5	PRES:	27.5
SAMP FL:	569	SAMP FL:	569
PMT:	94.5	PMT:	94.5
NORM PMT:	93.0	NORM PMT:	93.0
UV LAMP:	3482	UV LAMP:	3482
LAMP RATIO:	98.3	LAMP RATIO:	98.3
STR. LGT	56.7	STR. LGT	56.7
DRK PMT:	9.6	DRK PMT:	9.6
DRK LMP:	0.7	DRK LMP:	0.7
Internal Span:	57	Internal Span:	53.5

Calibrator:		Calibrator Flow Targets:			
Flow Meter ID's:	NA	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
Make & Model:	API 700	zero	5000	0	5000
Serial #:	831	high	5000	39	5039
Cal Gas Cylinder I.D. #:	BLM005049	mid	5000	19	5019
Cal Gas Conc. (ppm):	10.1	low	5000	11	5011

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	-0.8	NA
adjusted zero	5000	0.0	5000	0	0.3	NA
as found high	4994	39.00	5033	78.3	84.0	0.935
adjusted high	4994	39.00	5033	78.3	78.2	1.005
mid	4995	19.00	5014	38.3	38.3	1.007
low	4995	11.00	5006	22.2	22.1	1.018
calibrator zero	4995	0.00	4995	0	0.4	NA
Average C.F. =						1.010

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	Pass/Fail ?
Slope =	1.005	> or = 0.995	PASS
b (Intercept as % of full scale) =	-0.23%	0.85-1.15	PASS
% change in C.F. from last cal	6.78%	± 3% F.S.	PASS
		± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

****run converter efficiency test immediately following zero adjust****

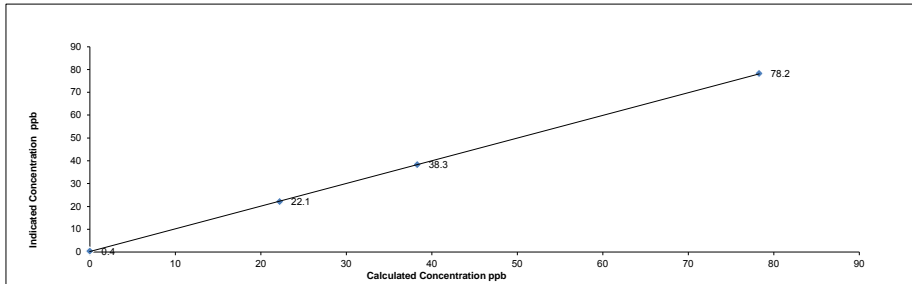
SO₂ High Point gas concentration: 78.2 Time gas run (mst): na

Zero corrected analyzer response: 0.3

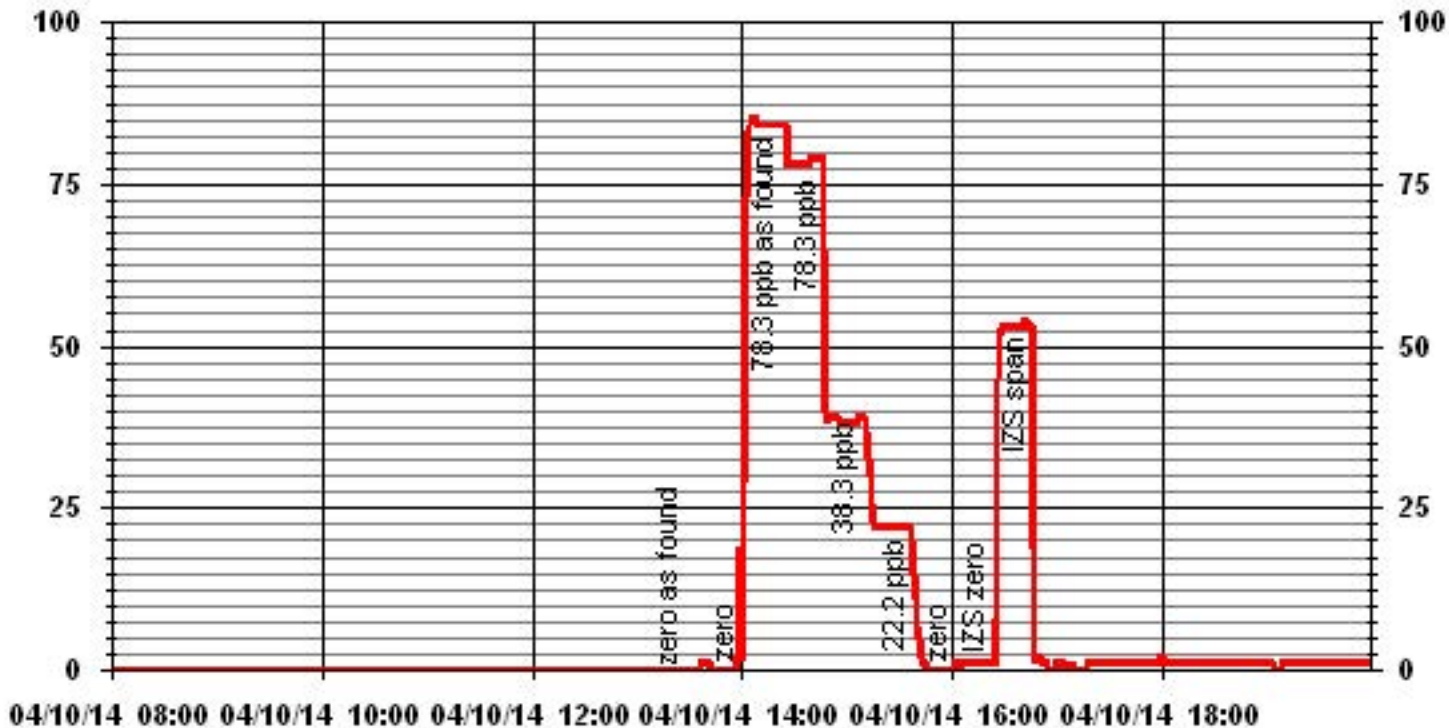
Comments:

Monthly calibration & filter change. No issues.

API 101E H2S Analyzer Calibration



01 Minute Averages



Total Hydrocarbons (55i)



Thermo 55C Methane/Non-Methane Analyzer Calibration

Date: 11-Apr-14
Company: LICA
Station Name: Elk Point
Performed by: Kevin Hope

Start Time (mst): 15:36
End Time (mst): 18:11
Calibration Purpose: Monthly Calibration
Cal Gas Expiry Date: 7-Nov-21

Analyzer & Diagnostics:

		As found C.F.	Previous Cal High Point C.F.	Analyzer Range
Serial Number:	1236656107	CH ₄ = 0.989	CH ₄ = 1.011	CH ₄ = 20
Last Calibration Date:	20-Mar-14	NMHC= 1.025	NMHC= 1.019	NMHC= 20
		THC= 1.006	THC= 0.994	THC= 40
Mother Board Voltages:	3.3: 3.3 5.0: 4.9 15.0: 14.9 24.0: 24.0 -3.3: -3.2	Calibration History cnt'd>1:	CH ₄ SP Ratio: NA CH ₄ RT: NA CH ₄ PK IDX: NA CH ₄ PK HT: NA	
Interface Board Voltages:	3.3: 3.3 5.0: 5.0 15.0: 15.0 24.0: 23.6 -15.0: -15.1		Run History>1:	NM Span Conc: NA NM SP Ratio: NA NM Peak Area: NA
Temperatures:	Bias Supply: -293.1 Detector Oven: 175.0 Filter: 175.0 Column Oven: 74.9 Flame: 381.2 Internal: 36.7		Date: 11Apr2014 Time: 19:56 CH ₄ PK HT: 0 CH ₄ RT: 12.2 CH ₄ Baseline: 2174 CH ₄ LOD: 55 CH ₄ SD: 25 CH ₄ CONC: 0.00	
Pressures cylinder/reg.:	Carrier: 600 31.1 Fuel: 2000 40.3 Air: 2000 32.4		NM PK HT: 0 NM Peak Area: 0.00 NM CONC: 0 NM Base Start: 2231 NM Base End: 2245	
FID Status:	Status: LIT Counts: 30092 Flame: 371.2 Det Base: 175.0		NM LOD: 14 NM Start IDX: 9 NM End IDX: 82	
Flame and Power Stats:	Last Power On: February 2, 2014 Flameouts: 2 Det Oven at Start: 169.7 Col Oven at Start: 74.4		NM Max Slope: 8.9e-1 NM Min Slope: -5.0e-1 NM PT Count: 0	
Calibration History>1:	Time: 20Mar14 13:15 Type: Span Status: Good Check/Adjust: Adjust CH ₄ Span Conc: 3.95	Daily Zero/Span Values:	Previous CH ₄ : 7.86 Previous NMHC: 13.5 Previous THC: 21.4 New CH ₄ : New NMHC: New THC:	

Calibrator and Gas Information:

Make & Model: API 700
Serial #: 831
Cal Gas Cylinder I.D. #: LL36542
CH₄ Cylinder Conc.: 609.0 | 201.0 =C₃H₈ Cylinder Conc.
CH₄ as C₃H₈: 552.8 | 1161.8 =total CH₄ equivalent

Calibrator Flow Targets: (cc/min):

point	diluent	cal gas	total flow
zero	3000	0	3000
high	3000	36	3036
mid	3000	18	3018
low	3000	10	3010

Calibration Data:

Calibrator Flow Rates (cc/min)				Calculated CH ₄ (ppm)	Calculated NMHC (ppm)	Calculated THC (ppm)	Indicated CH ₄ (ppm)	Indicated NMHC (ppm)	Indicated THC (ppm)	Correction Factors:		
Point	Diluent	Cal Gas	Total Flow							CH ₄	NMHC	THC
20 min as found zero	3000	0.00	3000	0.00	0.00	0.00	0.09	0.00	0.10	NA	NA	NA
20 min adjusted zero	3000	0.00	3000	0.00	0.00	0.00	0.09	0.00	0.10	NA	NA	NA
20 min as found high point	2998	36.00	3034	7.23	6.56	13.78	7.40	6.40	13.80	0.989	1.025	1.006
20 min adjusted high	2998	36.00	3034	7.23	6.56	13.78	7.39	6.42	13.85	0.990	1.022	1.003
20 min mid	2998	18.00	3016	3.63	3.30	6.93	3.70	3.30	7.00	1.007	1.000	1.005
20 min low	2998	10.00	3008	2.02	1.84	3.86	2.16	1.81	4.00	0.978	1.015	0.990
20 min calibrator zero	2998	0.00	2998	0.00	0.00	0.00	0.11	0.00	0.11	NA	NA	NA
Average C.F. =										0.992	1.012	0.999

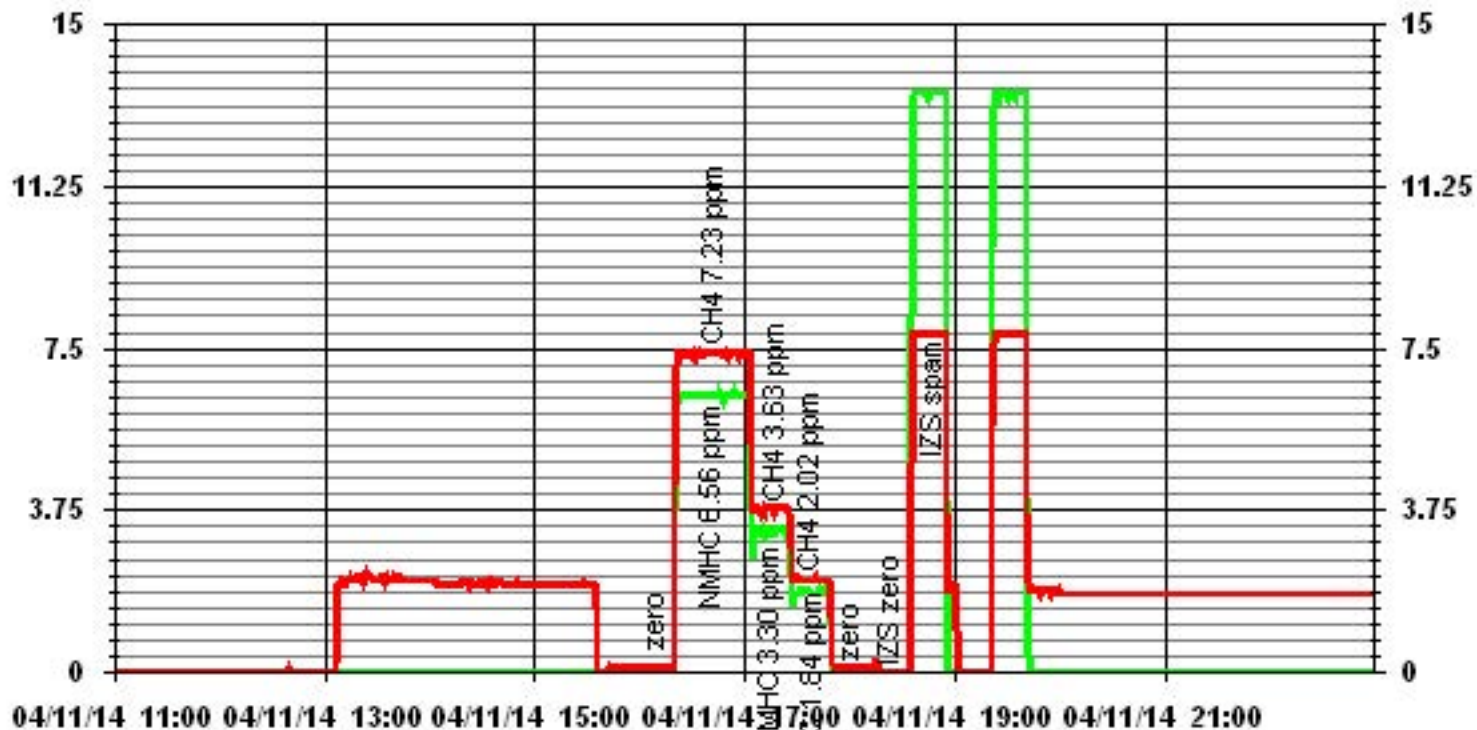
Linear Regression/Calibration Results:

	CH ₄	NMHC	THC	LIMITS
Correlation Coefficient =	1.000	1.000	1.000	> or = 0.995
Slope =	1.005	0.979	0.996	0.85-1.15
b (Intercept as % of full scale) =	0.52%	0.09%	0.30%	± 3% F.S.
% change in C.F. from last cal =	2.28%	0.57%	1.21%	+/-15%

Comments:

No zero adjustment made

01 Minute Averages



— LICA35

METHANE PPM

— LICA35

NMHC PPM

Particulate Matter 2.5



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: 10-Apr-14
 Company: LICA
 Station Name/Location: Elk Point
 Previous Audit Date: 28-Mar-14

Parameter: PM 2.5
 Performed by: Kevin Hope
 Start/End Time (mst): 16:38
 Calibration Purpose: Monthly Calibration

1400A Information and Status:

Serial Number:	1405A208301003	As Found Filter Loading %:	23.28
Ko Factor:		As Left Filter Loading %:	19.90
Ambient Temperature °C:	8.6	As Found Noise:	0.000
Ambient Pressure atm:	0.927	As Left Noise:	0.000
Main Flow Reading lpm:	2.99	Pump Vacuum:	0.39
Aux Flow Reading lpm:	16.67	Warnings:	None

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	Dwyer	Brunton	Fluke
Model:	475 Mark III	ADC Summit	1551A Stik Thermometer
Serial Number:	NA	NA	4295
Calibration Date:	Unknown	2-Dec-13	Unknown

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	-0.03	0.16	-0.02	0.16
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.00	0.00	0.00	0.00
	limit	0.60	0.60	0.60	0.60

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

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	-0.03	0.16	-0.02	0.16
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.00	0.00	0.00	0.00
	limit	0.60	0.60	0.60	0.60

As found temperature and pressure:

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	8.6	1405F pressure atm:	0.927
reference temperature °C:	7.9	reference pressure:	0.924
difference °C:	-0.7	difference :	0.003

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

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	8.6	1405F pressure atm:	0.927
reference temperature °C:	7.9	reference pressure:	0.924
difference °C:	-0.7	difference :	-0.003

As found flows:

main flow tolerance 3.00 lpm +/- 0.20 lpm		total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%	
1405F main flow lpm:	2.99	1400A total/aux flow lpm:	16.67
reference main flow lpm:	2.96	reference total/aux flow lpm:	16.32
difference lpm:	-0.03	difference lpm:	-0.35

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

main flow tolerance 3.00 lpm +/- 0.20 lpm		total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%	
1405F main flow lpm:	2.99	1400A total/aux flow lpm:	16.67
reference main flow lpm:	2.96	reference total/aux flow lpm:	16.32
difference lpm:	-0.03	difference lpm:	-0.35

K_o Audit:

Last K_o audit date:
 1405F K_o factor: 0.0000
 Measured K_o factor:
 % difference:

Comments:

Monthly TEOM audit. Leak check and flow audit all good. Changed filters. Inlet cleaned.



R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date: 28-Apr-14
 Company: LICA
 Station Name/Location: Elk Point
 Previous Audit Date: 10-Apr-14

Parameter: PM 2.5
 Performed by: Kevin Hope
 Start/End Time (mst): 9:43/10:42
 Calibration Purpose: Monthly Calibration

1400A Information and Status:

Serial Number:	1405A208301003	As Found Filter Loading %:	22.87
Ko Factor:		As Left Filter Loading %:	28.00
Ambient Temperature °C:	3.80	As Found Noise:	0.000
Ambient Pressure atm:	0.940	As Left Noise:	0.000
Main Flow Reading lpm:	2.97	Pump Vacuum:	0.37
Aux Flow Reading lpm:	16.49	Warnings:	None

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	Dwyer	Brunton	Fluke
Model:	475 Mark III	ADC Summit	1551A Stik Thermometer
Serial Number:	NA	NA	4295
Calibration Date:	Unknown	2-Dec-13	Unknown

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	-0.03	0.16	-0.02	0.16
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.15	0.00	0.15	0.00
	limit	0.60	0.60	0.60	0.60

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

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	-0.03	0.16	-0.02	0.16
	limit	0.15	0.15	0.15	0.15
Bypass Flow	actual	0.15	0.00	0.15	0.00
	limit	0.60	0.60	0.60	0.60

As found temperature and pressure:

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	3.9	1405F pressure atm:	0.931
reference temperature °C:	3.8	reference pressure:	0.940
difference °C:	-0.1	difference :	-0.009

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

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1405F temperature °C:	3.9	1405F pressure atm:	0.931
reference temperature °C:	3.8	reference pressure:	0.940
difference °C:	-0.1	difference :	0.009

As found flows:

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: 3.00	1400A total/aux flow lpm: 16.64
reference main flow lpm: 2.97	reference total/aux flow lpm: 16.49
difference lpm: -0.03	difference lpm: -0.15

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

main flow tolerance 3.00 lpm +/- 0.20 lpm	total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm +/- 7%
1405F main flow lpm: 3.00	1400A total/aux flow lpm: 16.64
reference main flow lpm: 2.97	reference total/aux flow lpm: 16.49
difference lpm: -0.03	difference lpm: -0.15

K_o Audit:

Last K_o audit date:
 1405F K_o factor: 0.0000
 Measured K_o factor:
 % difference:

Comments:

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Second monthly calibration. Filters changed, leak check and flow audits passed.

Nitrogen Dioxide



API 200E NOx Analyzer Calibration

Date: 11-Apr-14
 Company: LICA
 Station Name/Location: Elk Point
 Performed by: Kevin Hope

Start Time (mst): 9:24
 End Time (mst): 13:50
 Calibration Purpose: Monthly Calibration
 Cal Gas Expiry Date: 29-Dec-16

Analyzer Serial Number: 593
 Last Calibration Date: 20-Mar-14
 Range ppb: 1000

Correction Factors:
 As found C.F. Previous Cal High Point C.F.:
 NO= 0.986 NO= 1.000
 NOx= 0.982 NOx= 1.000
 NO₂= 1.000 NO₂= 1.001

As found:

NOx SLOPE: 1.153
 NOx OFFS: 0.8
 NO SLOPE: 1.149
 NO OFFS: 0.0
 TEST: 125.9
 SAMP FLW: 474
 OZONE FL: 77
 PMT: 7.7
 NORM PMT: 2.3
 AZERO: 7.8
 HVPS: 629
 RCELL TEMP: 50.0
 BOX TEMP: 40.0
 PMT TEMP: 6.7
 IZS TEMP: 45.2
 MOLY TEMP: 315.6
 RCEL: 5.6
 SAMP: 26.9
 Internal Span: 371/6.2/365

As left:

NOx SLOPE: 1.118
 NOx OFFS: 6.0
 NO SLOPE: 1.111
 NO OFFS: 2.3
 TEST: 125.9
 SAMP FLW: 474
 OZONE FL: 77
 PMT: 7.7
 NORM PMT: 2.3
 AZERO: 7.8
 HVPS: 629
 RCELL TEMP: 50.0
 BOX TEMP: 40.0
 PMT TEMP: 6.7
 IZS TEMP: 45.2
 MOLY TEMP: 315.6
 RCEL: 5.6
 SAMP: 26.9
 Internal Span: 359.6/4.84/354.9

Calibrator Flow Targets:

Make & Model: Environics 6100
 Serial #: 4760
 Cal Gas Cylinder I.D. #: BAL3165
 NO Cylinder Conc. (ppm): 48.9
 NOx Cylinder Conc. (ppm): 48.9

point	diluent (cc/min)	cal gas (cc/min)	O ₃ setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	5000	80	580.00	5080
mid	5000	40	290.00	5040
low	5000	20	100.00	5020

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	5000	0.0	5000	0	0	1.1	1.8	NA	NA
adjusted zero	5000	0.0	5000	0	0	-0.1	0.0	NA	NA
as found high	4995	79.80	5075	768.9	768.9	780	783	0.986	0.982
adjusted high	4995	79.80	5075	768.9	768.9	769	770	1.000	0.999
mid	4995	39.80	5035	386.6	386.6	388	388	0.995	0.996
low	4995	19.80	5015	193.1	193.1	196	196	0.985	0.985
calibrator zero	4995	0.00	4995	0	0	0.6	1.3	NA	NA
Average C.F.=								0.993	0.993

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ increase	NO ₂ C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4995	79.80	5075	0.0	770.7	770.6	0.4	-0.1	0.1	
as found NO ₂	4995	79.80	5075	580.0	150.1	770.1	620.7	620.6	620.3	1.000
adjusted NO ₂	4995	79.80	5075	580.0	150.1	770.1	620.7	620.6	620.3	1.000
gpt mid	4995	79.80	5075	290.0	462.0	773.0	310.0	308.7	309.6	0.997
gpt low	4995	79.80	5075	100.0	666.0	772.0	107.0	104.7	106.6	0.982
Average NO₂ C.F.=										0.993

Linear Regression/Calibration Results:			LIMITS
NO	NOx	NO ₂	
Correlation Coefficient =	1.000	1.000	> or = 0.995
Slope =	0.999	1.000	0.85-1.15
b (Intercept as % of full scale)=	0.14%	0.12%	± 3% F.S.
% change in C.F. from last cal=	1.43%	1.80%	+/-15%
NO ₂ converter efficiency		100.7%	>85%

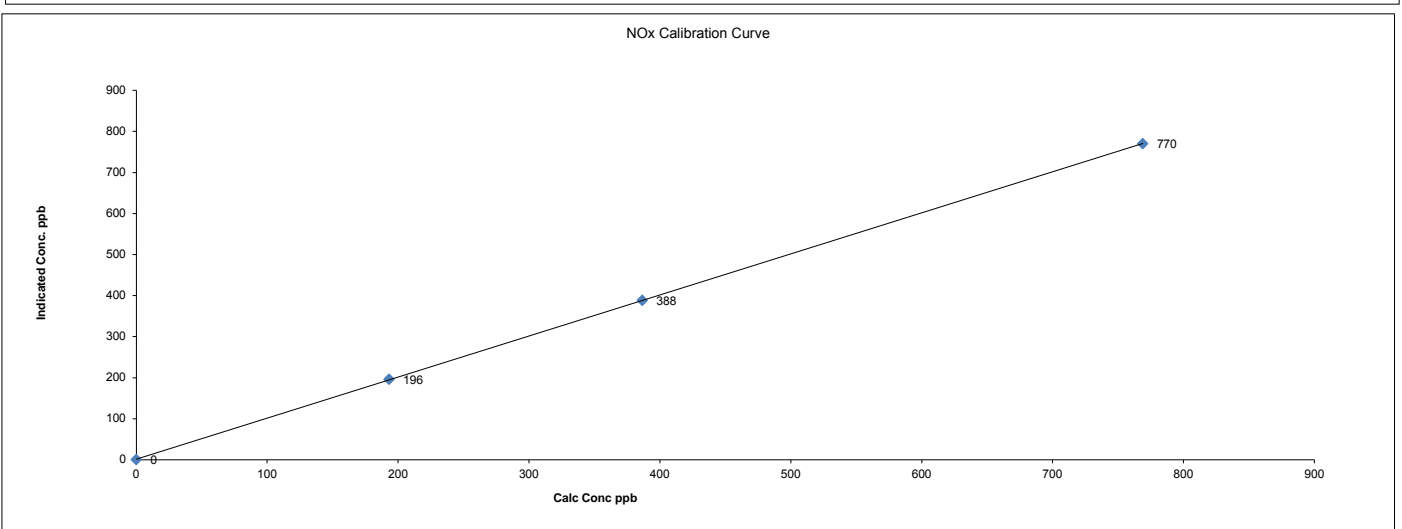
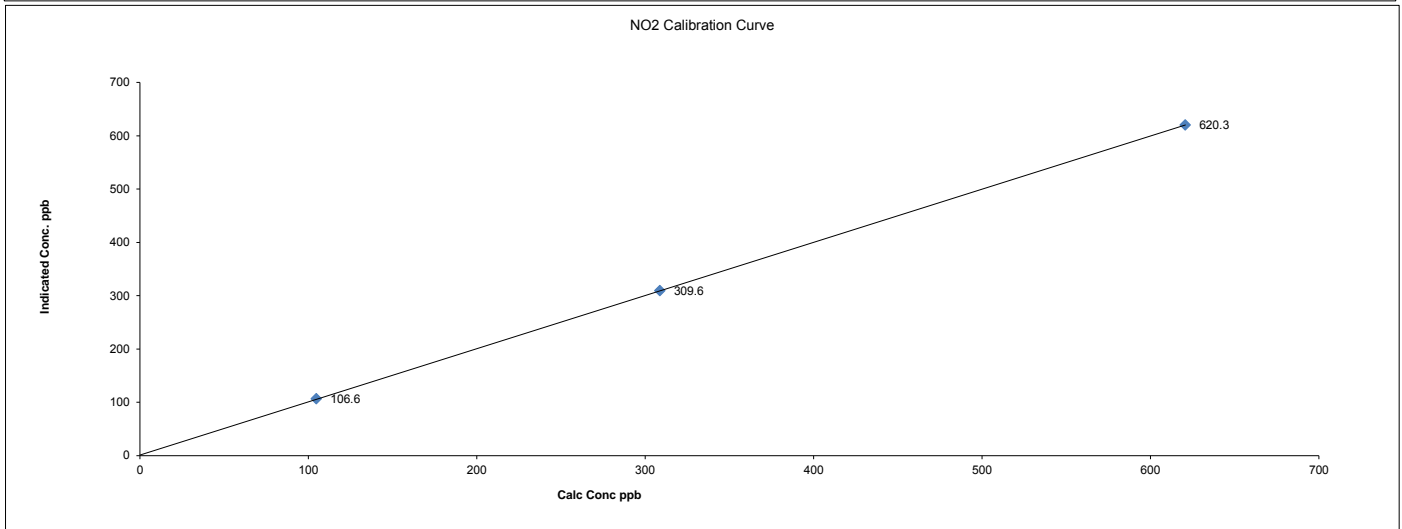
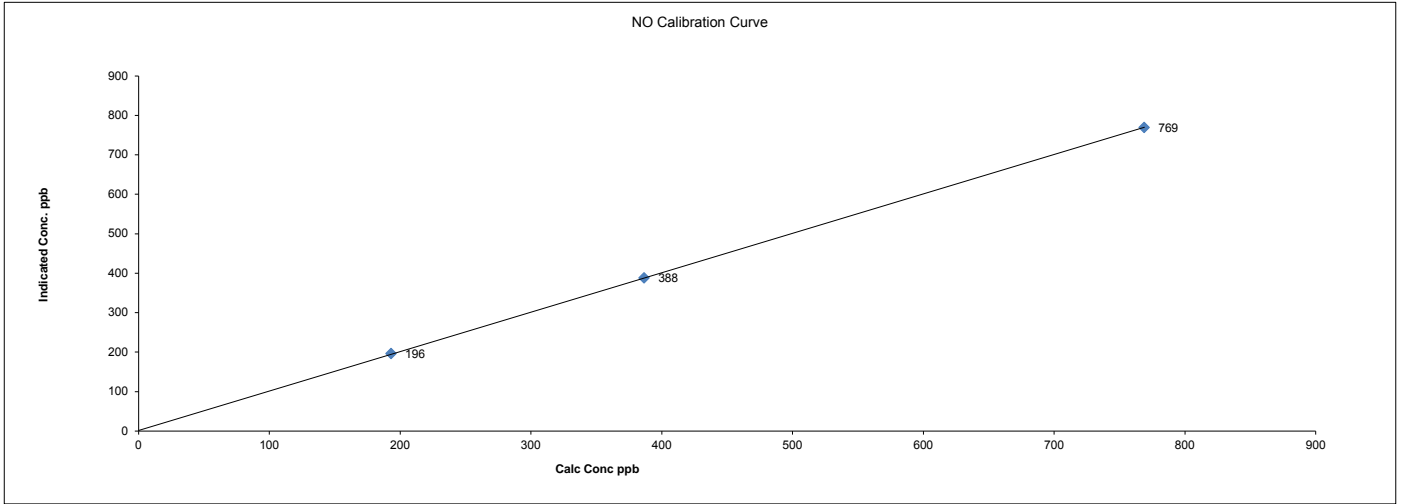
Comments:

Monthly calibration & filter change. No issues.

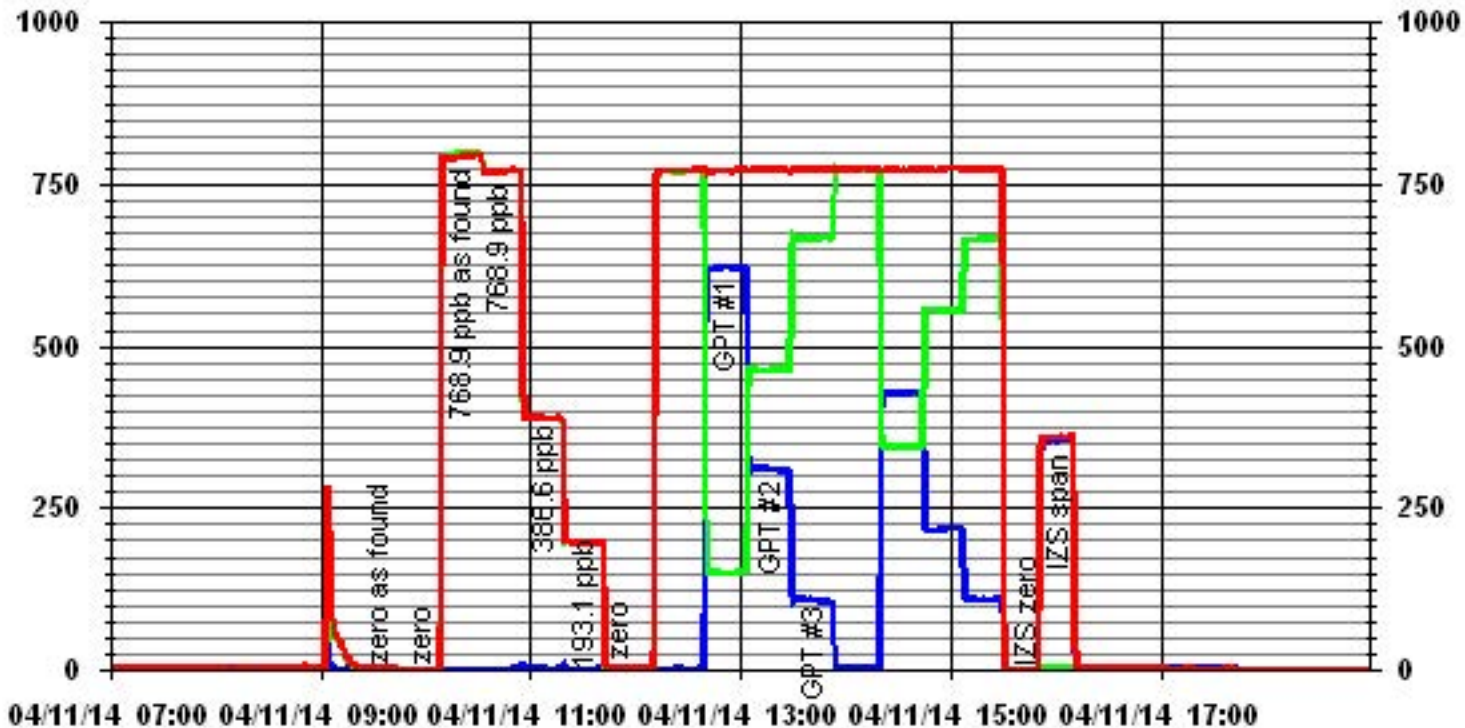
Date: 11-Apr-14
Company: LICA
Station Name/Location: Elk Point
Performed by: Kevin Hope

Start Time (mst): 9:24
End Time (mst): 13:50
Calibration Purpose: Monthly Calibration
Cal Gas Expiry Date: 29-Dec-16

API 200E NOx Analyzer Calibration



01 Minute Averages



— LICA35 IIOX_ PPB

— LICA35 IIO_ PPB

— LICA35 IIO2_ PPB



API 200E NOx Analyzer Calibration

Date: 15-Apr-14
 Company: LICA
 Station Name/Location: Elk Point
 Performed by: Kevin Hope

Start Time (mst): 8:51
 End Time (mst): 11:50
 Calibration Purpose: As Found
 Cal Gas Expiry Date: 29-Dec-16

Analyzer Serial Number: 593
 Last Calibration Date: 11-Apr-14
 Range ppb: 1000

Correction Factors:
 As found C.F. Previous Cal High Point C.F.:
 NO= 1.001 NO= 1.000
 NOx= 1.003 NOx= 1.000
 NO₂= 1.003 NO₂= 1.001

As found:
 NOx SLOPE: 1.118
 NOx OFFS: 6.0
 NO SLOPE: 1.111
 NO OFFS: 2.3
 TEST: 125.9
 SAMP FLW: 474
 OZONE FL: 77
 PMT: 7.7
 NORM PMT: 2.3
 AZERO: 7.8
 HVPS: 629
 RCELL TEMP: 50.0
 BOX TEMP: 40.0
 PMT TEMP: 6.7
 IZS TEMP: 45.2
 MOLY TEMP: 315.6
 RCEL: 5.6
 SAMP: 26.9
 Internal Span: 359.6/4.84/354.9

As left:
 NOx SLOPE: 1.120
 NOx OFFS: 1.2
 NO SLOPE: 1.109
 NO OFFS: -0.3
 TEST: 125.9
 SAMP FLW: 474
 OZONE FL: 77
 PMT: 7.7
 NORM PMT: 2.3
 AZERO: 7.8
 HVPS: 629
 RCELL TEMP: 50.0
 BOX TEMP: 40.0
 PMT TEMP: 6.7
 IZS TEMP: 45.2
 MOLY TEMP: 315.6
 RCEL: 5.6
 SAMP: 26.9
 Internal Span: 361.4/5.29/355.9

Calibrator Flow Targets:

Make & Model: EnviroNics 6100
 Serial #: 4760
 Cal Gas Cylinder I.D. #: BAL3165
 NO Cylinder Conc. (ppm): 48.9
 NOx Cylinder Conc. (ppm): 48.9

point	diluent (cc/min)	cal gas (cc/min)	O ₃ setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	5000	80	580.00	5080
mid	5000	40	290.00	5040
low	5000	20	100.00	5020

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	5000	0.0	5000	0	0	-1.8	-1.5	NA	NA
adjusted zero	5000	0.0	5000	0	0	-0.2	-0.8	NA	NA
as found high	4996	79.80	5076	768.8	768.8	768	766	1.001	1.003
adjusted high	4996	79.80	5076	768.8	768.8	770	768	0.999	1.000
mid									
low									
calibrator zero								NA	NA
Average C.F. =								0.999	1.000

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ increase	NO ₂ C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4996	79.80	5076	0.0	769.7	768.0	-0.7	-0.2	-0.6	
as found NO ₂	4996	79.80	5076	580.0	147.0	767.0	620.0	622.7	620.7	1.003
adjusted NO ₂	4996	79.80	5076	580.0	147.0	767.0	620.0	622.7	620.7	1.003
gpt mid										
gpt low										

Average NO₂ C.F. =

Linear Regression/Calibration Results:

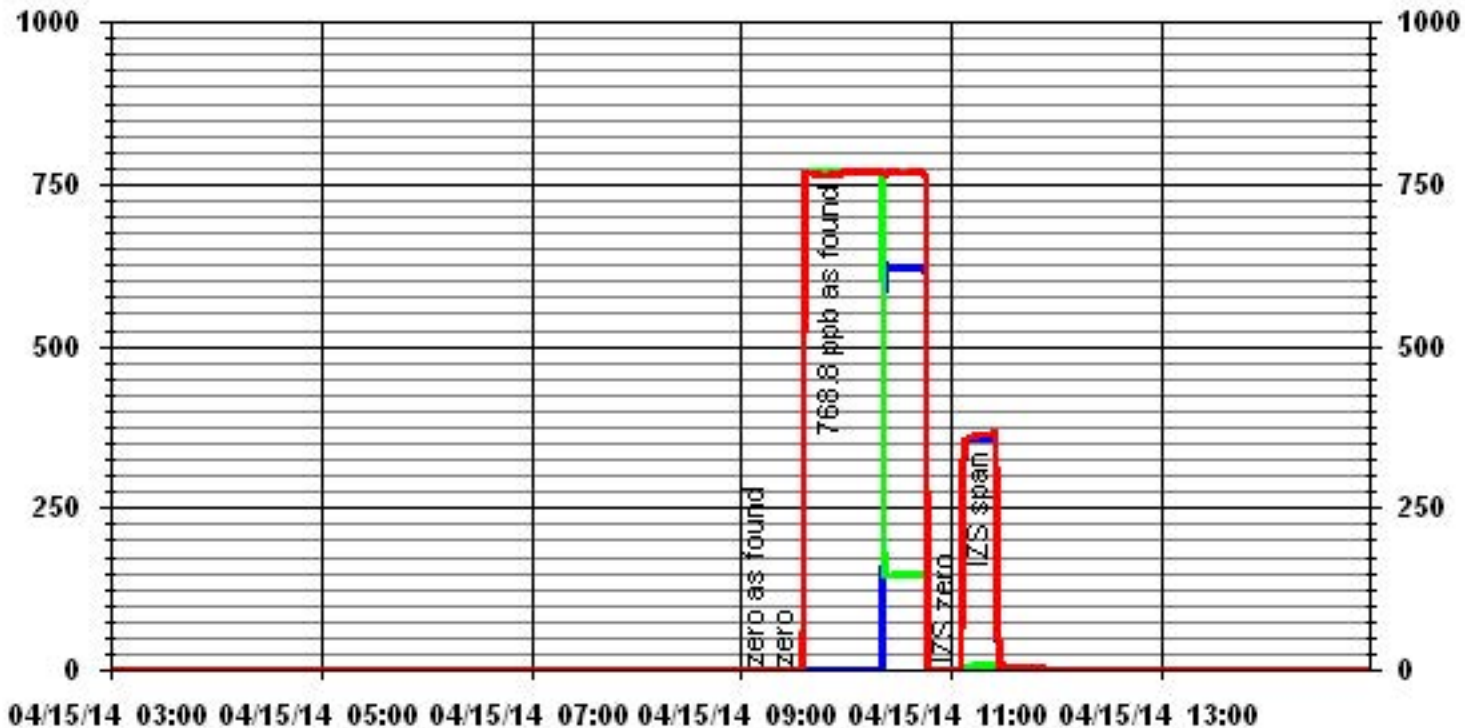
	NO	NOx	NO ₂
Correlation Coefficient =			
Slope =			
b (Intercept as % of full scale) =			
% change in C.F. from last cal =	-0.08%	-0.27%	-0.22%
NO ₂ converter efficiency			

LIMITS
 > or = 0.995
 0.85-1.15
 ± 3% F.S.
 +/-15%
 >85%

Comments:

As found NOx and GPT due to variable readings. No issues.

01 Minute Averages



— LICA35 IIOX_ PPB

— LICA35 IIO_ PPB

— LICA35 IIO2_ PPB



API 200E NOx Analyzer Calibration

Date: 30-Apr-14
 Company: LICA
 Station Name/Location: Elk Point
 Performed by: Kevin Hope

Start Time (mst): 16:30
 End Time (mst): 17:14
 Calibration Purpose: As Found
 Cal Gas Expiry Date: 29-Dec-16

Analyzer Serial Number: 593
 Last Calibration Date: 11-Apr-14
 Range ppb: 1000

Correction Factors:
 As found C.F. Previous Cal High Point C.F.:
 NO= 1.008 NO= 1.000
 NOx= 1.005 NOx= 1.000
 NO₂= -0.885 NO₂= 1.001

As found:
 NOx SLOPE: 1.120
 NOx OFFS: 1.2
 NO SLOPE: 1.109
 NO OFFS: -0.3
 TEST: 125.9
 SAMP FLW: 474
 OZONE FL: 77
 PMT: 7.7
 NORM PMT: 2.3
 AZERO: 7.8
 HVPS: 629
 RCELL TEMP: 50.0
 BOX TEMP: 40.0
 PMT TEMP: 6.7
 IZS TEMP: 45.2
 MOLY TEMP: 315.6
 RCEL: 5.6
 SAMP: 26.9
 Internal Span: 361.4/5.29/355.9

As left:
 NOx SLOPE: 1.118
 NOx OFFS: 6.0
 NO SLOPE: 1.111
 NO OFFS: 2.3
 TEST: 125.9
 SAMP FLW: 474
 OZONE FL: 77
 PMT: 7.7
 NORM PMT: 2.3
 AZERO: 7.8
 HVPS: 629
 RCELL TEMP: 50.0
 BOX TEMP: 40.0
 PMT TEMP: 6.7
 IZS TEMP: 45.2
 MOLY TEMP: 315.6
 RCEL: 5.6
 SAMP: 26.9
 Internal Span: 359.6/4.84/354.9

Calibrator Flow Targets:

Make & Model: EnviroNics 6100
 Serial #: 4760
 Cal Gas Cylinder I.D. #: BAL3165
 NO Cylinder Conc. (ppm): 48.9
 NOx Cylinder Conc. (ppm): 48.9

point	diluent (cc/min)	cal gas (cc/min)	O ₃ setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	5000	80	580.00	5080
mid	5000	40	290.00	5040
low	5000	20	100.00	5020

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	5000	0.0	5000	0	0	0.1	1.0	NA	NA
adjusted zero								NA	NA
as found high	4996	79.80	5076	768.8	768.8	763	765	1.008	1.005
adjusted high									
mid									
low									
calibrator zero								NA	NA
Average C.F. =									

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ increase	NO ₂ C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4996	79.80	5076	0.0	-0.2	-1.0	-1.0	0.0	0.0	
as found NO ₂	4996	79.80	5076	580.0	360.0	767.0	406.0	-360.2	407.0	-0.885
adjusted NO ₂										
gpt mid										
gpt low										
Average NO ₂ C.F. =										

Linear Regression/Calibration Results:

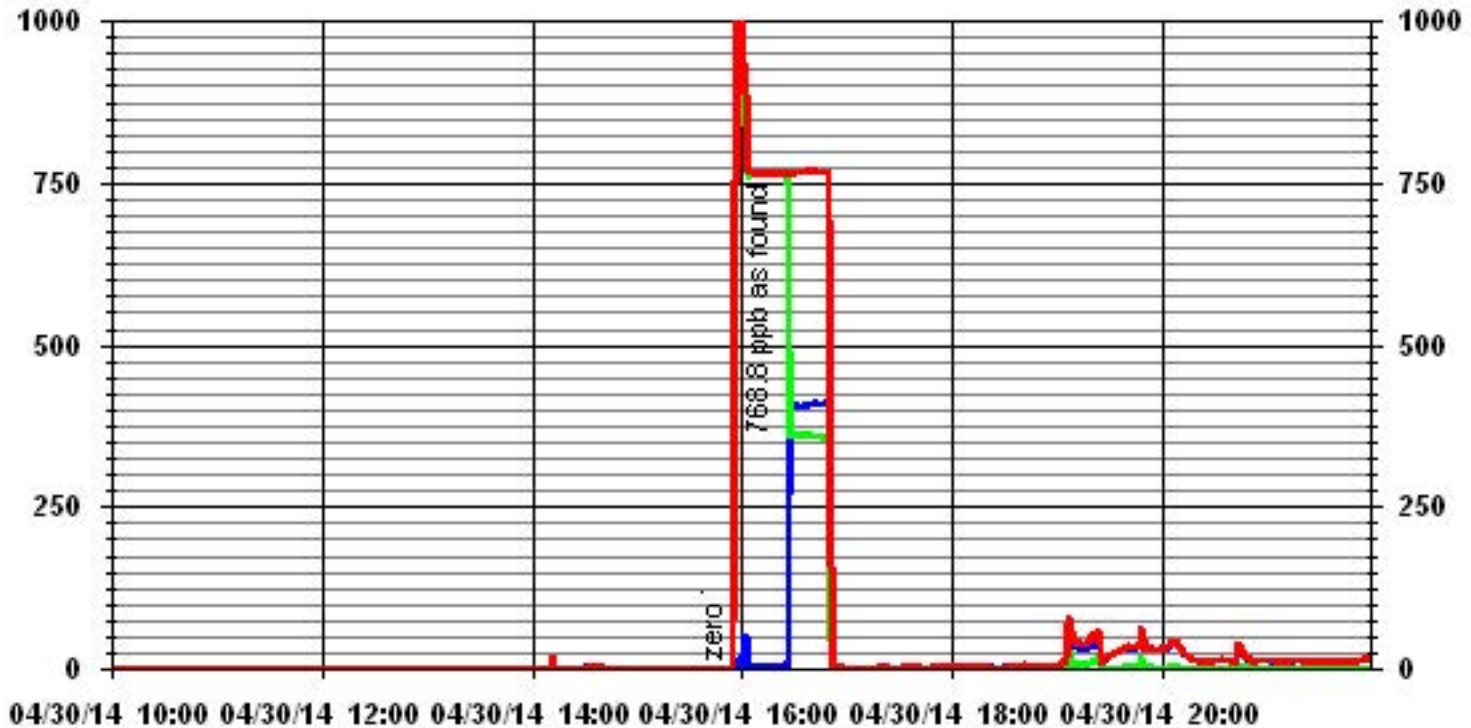
	NO	NOx	NO ₂
Correlation Coefficient =			
Slope =			
b (Intercept as % of full scale) =			
% change in C.F. from last cal =	-0.76%	-0.50%	188.41%
NO ₂ converter efficiency			

LIMITS
 > or = 0.995
 0.85-1.15
 ± 3% F.S.
 +/-15%
 >85%

Comments:

As found NOX and GPT due to variable readings. No issues.

01 Minute Averages



— LICA35 IIOX_ PPB

— LICA35 IIO_ PPB

— LICA35 IIO2_ PPB

Ozone

Thermo 49i O₃ Analyzer Calibration

Date: **11-Apr-14**

Company: **LICA**

Station Name/Location: **Elk Point**

Performed by: **Kevin Hope**

Start Time (mst): **15:39**

End Time (mst): **18:35**

Calibration Purpose: **Monthly Calibration**

G.P.T. Date: **11-Apr-14**

Analyzer: **1002240372**

Serial Number: **1002240372**

Last Calibration Date: **21-Mar-14**

Previous Cal High Point C.F.: **0.998**

Range ppm: **500**

As Found C.F.: **0.966**

New C.F.: **0.999**

As found:

O₃ Bkg: **0.0**

O₃ Coef: **1.038**

Motherboard: **3.3**

15.0: **5.0**

24.0: **15.0**

-3.3: **-3.2**

Interface Board: **3.3**

5.0: **5.0**

15.0: **14.9**

-15.0: **-15.1**

Photo Lamp: **23.5**

24.0: **9.8**

O₃ Lamp: **9.3**

Bench: **27.9**

Bench Lamp: **54.0**

O₃ Lamp: **68.2**

Pressure: **692.3**

Cell A lpm: **0.751**

Cell B lpm: **0.759**

O₃ ppb: **-0.7**

Cell A ppb: **2.0**

Cell B ppb: **-3.4**

Cell A int: **52618**

Cell B int: **52413**

Internal Span: **341.2**

As left:

O₃ Bkg: **0.0**

O₃ Coef: **1.004**

3.3: **3.3**

15.0: **5.0**

24.0: **15.0**

-3.3: **-3.2**

3.3: **3.3**

5.0: **5.0**

15.0: **14.9**

-15.0: **-15.1**

Photo Lamp: **23.5**

24.0: **9.8**

O₃ Lamp: **9.3**

Bench: **27.9**

Bench Lamp: **54.0**

O₃ Lamp: **68.2**

Pressure: **692.3**

Cell A lpm: **0.751**

Cell B lpm: **0.759**

O₃ ppb: **-0.7**

Cell A ppb: **2.0**

Cell B ppb: **-3.4**

Cell A int: **52618**

Cell B int: **52413**

Internal Span: **341.2**

Calibrator: **EnviroNics 6100**

Make & Model: **EnviroNics 6100**

Serial #: **4760**

NOx Gas Cylinder I.D. #: **BAL3165**

NOx Cylinder Conc. (ppm): **48.9**

Calibrator Flow Targets:

point	total flow (cc/min)	O ₃ setting (v or ppb)
zero	5075	0
high	5075	400
mid	5075	200
low	5075	100

Calibration:

Point	Diluent	Cal Gas	Total	Calculated Concentration (ppb)	Indicated Concentration (ppb)	Correction Factors
as found zero	5070	0.0	5070	0.0	0.0	NA
adjusted zero	5070	0.0	5070	0.0	0.0	NA
as found high	5070	0.00	5070	425.0	440.0	0.966
adjusted high	5070	0.00	5070	425.0	426.0	0.998
mid	5070	0.00	5070	214.5	215.6	0.995
low	5070	0.00	5070	106.0	105.5	1.005
calibrator zero	5070	0.00	5070	0.0	0.0	NA

** copy and paste flows and NO decrease from NOx cal in to calculated concentration**

Average C.F. = **0.999**

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS > or = 0.995	PASS
Slope =	1.003	0.85-1.15	PASS
b (Intercept as % of full scale) =	-0.037%	± 3% F.S.	PASS
% change in C.F. from last cal =	3%	± 15%	PASS

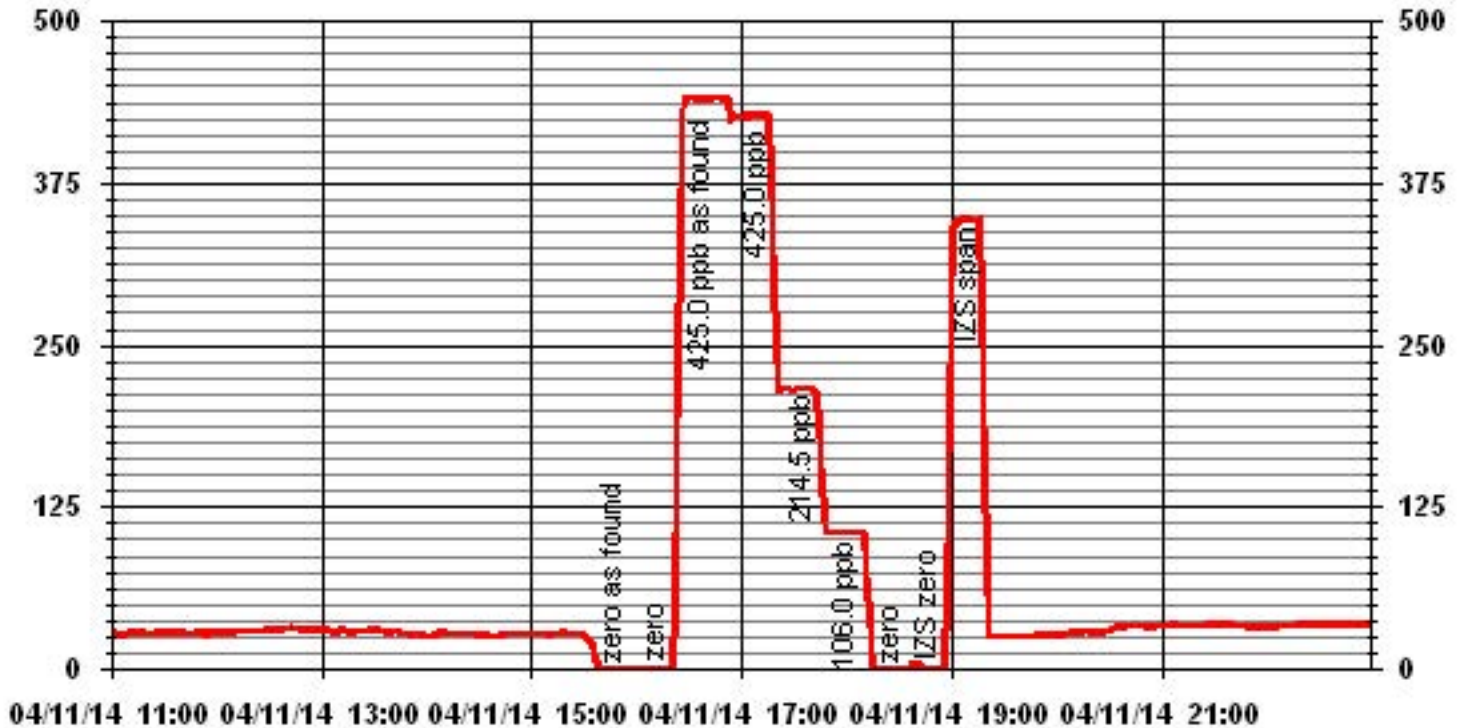
Comments:

No zero adjustment made

Thermo 49i O₃ Analyzer Calibration

O₃ Calibration Curve

01 Minute Averages



Thermo 49i O₃ Analyzer Calibration

Date: **30-Apr-14**

Company: **LICA**

Station Name/Location: **Elk Point**

Performed by: **Kevin Hope**

Start Time (mst): **15:23**

End Time (mst): **16:06**

Calibration Purpose: **As Found**

G.P.T. Date: **11-Apr-14**

Analyzer:

Serial Number: **1002240372**

Last Calibration Date: **21-Mar-14**

Previous Cal High Point C.F.: **0.998**

Range ppm: **500**

As Found C.F.: **1.034**

New C.F.: _____

As found:

O₃ Bkg: **0.0**

O₃ Coef: **1.004**

Motherboard:

3.3 **3.3**

15.0 **5.0**

24.0 **15.0**

-3.3 **-3.2**

Interface Board:

3.3 **3.3**

5.0 **5.0**

15.0 **14.9**

-15.0 **-15.1**

Photo Lamp

23.5 **23.5**

24.0 **9.8**

O₃ Lamp

9.3 **9.3**

Bench: **27.9**

Bench Lamp: **54.0**

O₃ Lamp: **68.2**

Pressure: **692.3**

Cell A lpm: **0.751**

Cell B lpm: **0.759**

O₃ ppb: **-0.7**

Cell A ppb: **2.0**

Cell B ppb: **-3.4**

Cell A int: **52618**

Cell B int: **52413**

Internal Span: **519.4**

As left:

O₃ Bkg: **0.0**

O₃ Coef: **1.004**

3.3 **3.3**

15.0 **15.0**

24.0 **23.9**

-3.3 **-3.2**

3.3 **3.3**

5.0 **5.0**

15.0 **14.9**

-15.0 **-15.1**

Photo Lamp

9.8 **9.8**

24.0 **23.5**

O₃ Lamp

9.3 **9.3**

Bench: **27.8**

Bench Lamp: **54.0**

O₃ Lamp: **68.2**

Pressure: **697.4**

Cell A lpm: **0.754**

Cell B lpm: **0.762**

O₃ ppb: **33.0**

Cell A ppb: **37.5**

Cell B ppb: **35.8**

Cell A int: **52419**

Cell B int: **52222**

Internal Span: **519.4**

Calibrator:

Make & Model: **EnviroNics 6100**

Serial #: **4760**

NOx Gas Cylinder I.D. #: **BAL3165**

NOx Cylinder Conc. (ppm): **48.9**

Calibrator Flow Targets:

point	total flow (cc/min)	O ₃ setting (v or ppb)
zero	5075	0
high	5075	400
mid	5075	200
low	5075	100

Calibration:

Point	Calibrator Flow Rates (cc/min)			Calculated Concentration:	Indicated Concentration:	Correction Factors:
	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5070	0.0	5070	0.0	0.3	NA
adjusted zero						NA
as found high	5000	79.80	5080	425.0	411.0	1.034
adjusted high						
mid						
low						
calibrator zero						NA

** copy and paste flows and NO decrease from NOx cal in to calculated concentration**

Average C.F. = _____

Linear Regression/Calibration Results:

Correlation Coefficient = _____	LIMITS	Pass/Fail ?
Slope = _____	> or = 0.995	
b (Intercept as % of full scale) = _____	0.85-1.15	
% change in C.F. from last cal = -4%	± 3% F.S.	± 15% PASS

Comments:

As found due to high span value

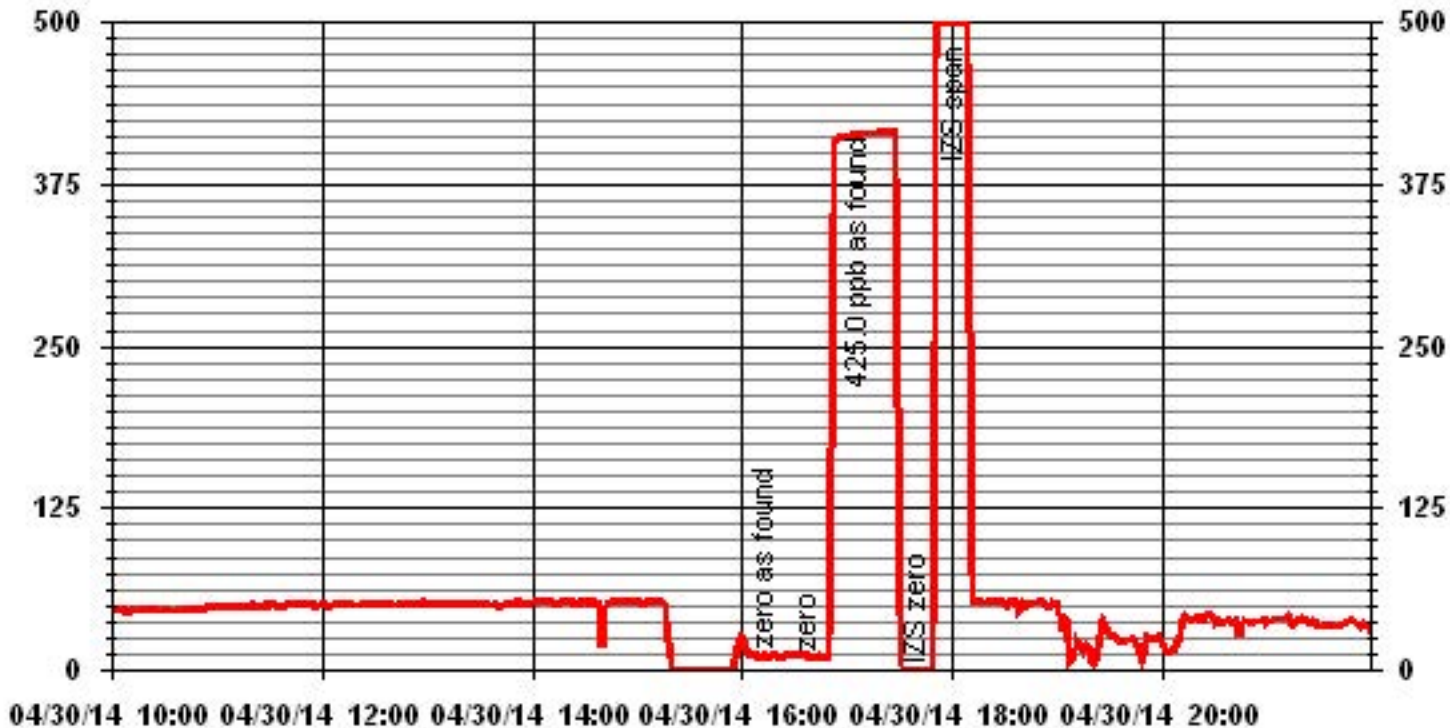
Thermo 49i O₃ Analyzer Calibration

O₃ Calibration Curve

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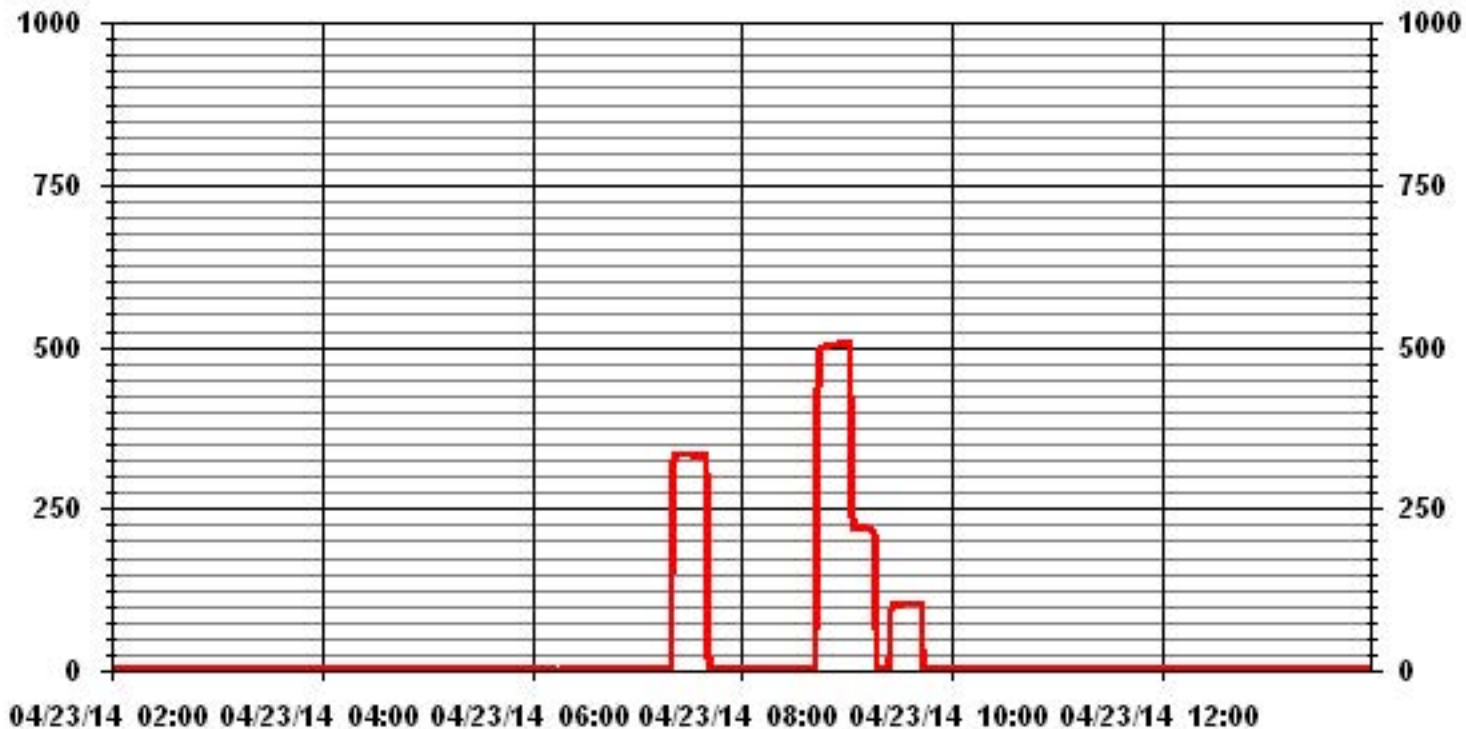
JOB #: 2833-14-04-35-C

01 Minute Averages

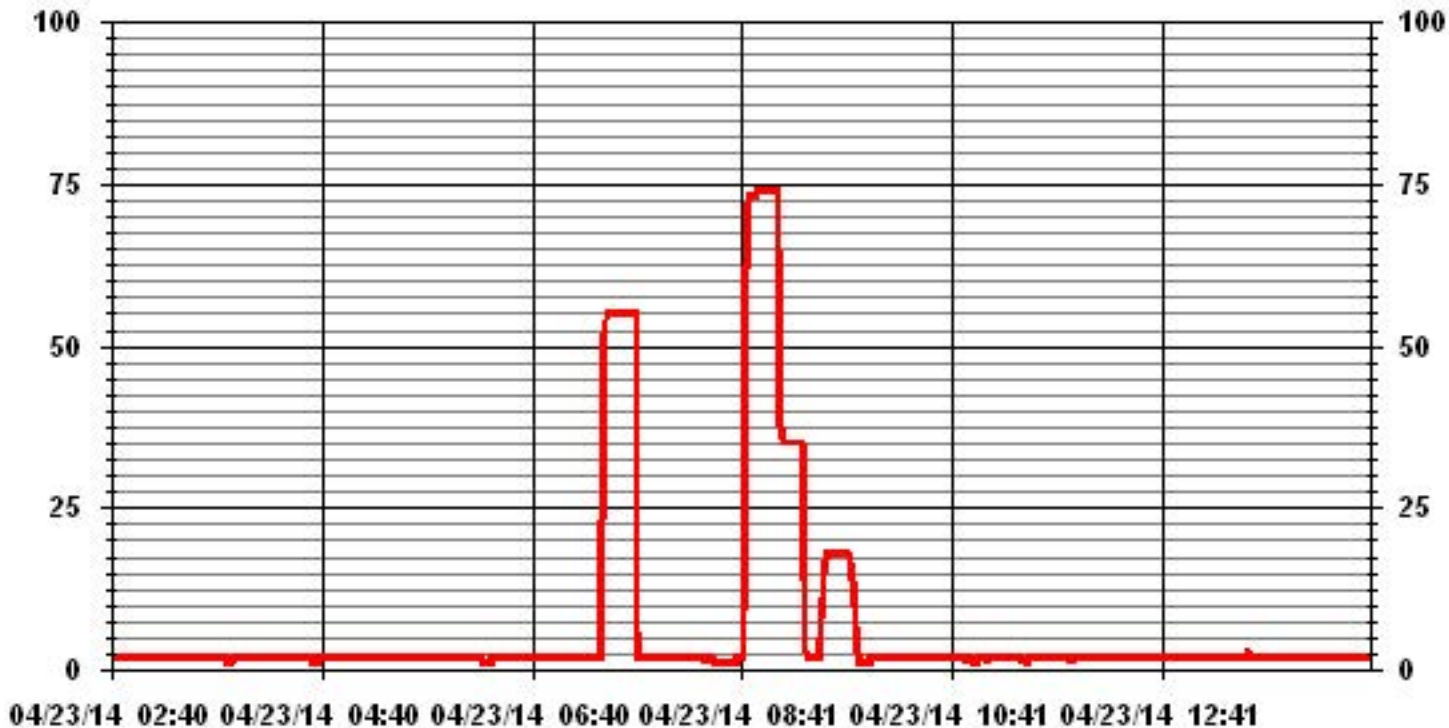


AESRD Audit Results

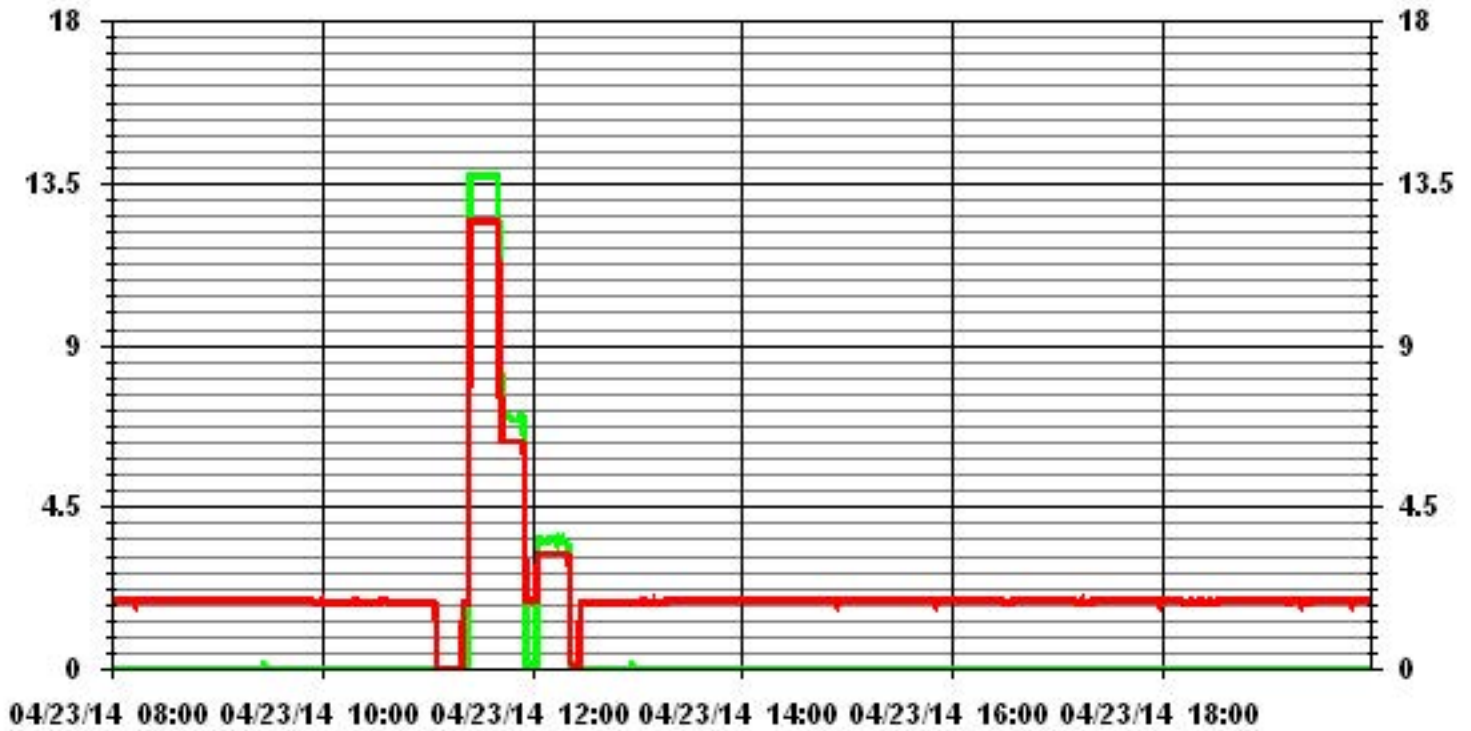
01 Minute Averages



01 Minute Averages



01 Minute Averages



— LICA35

METHANE PPM

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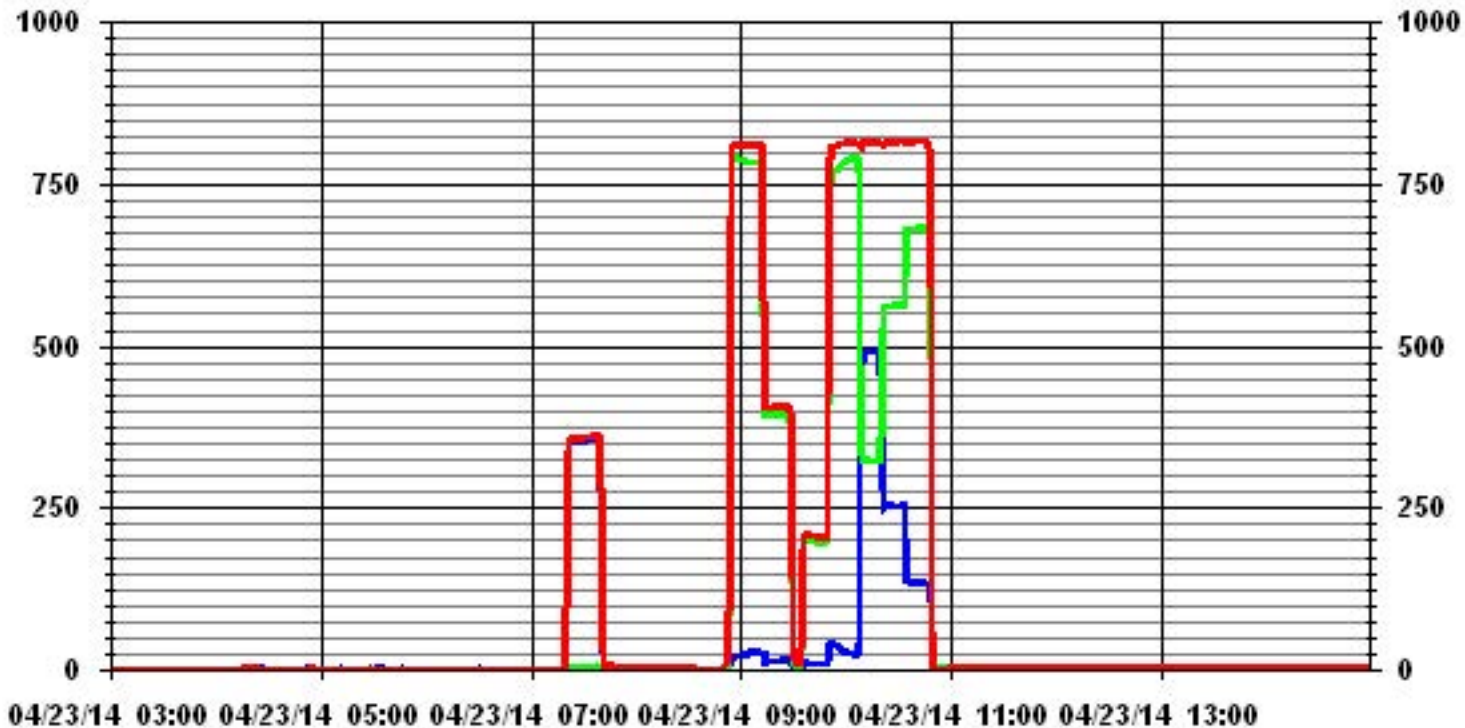
— LICA35

HMHC

JOB #: 2833-14-04-35-C

PPM

01 Minute Averages

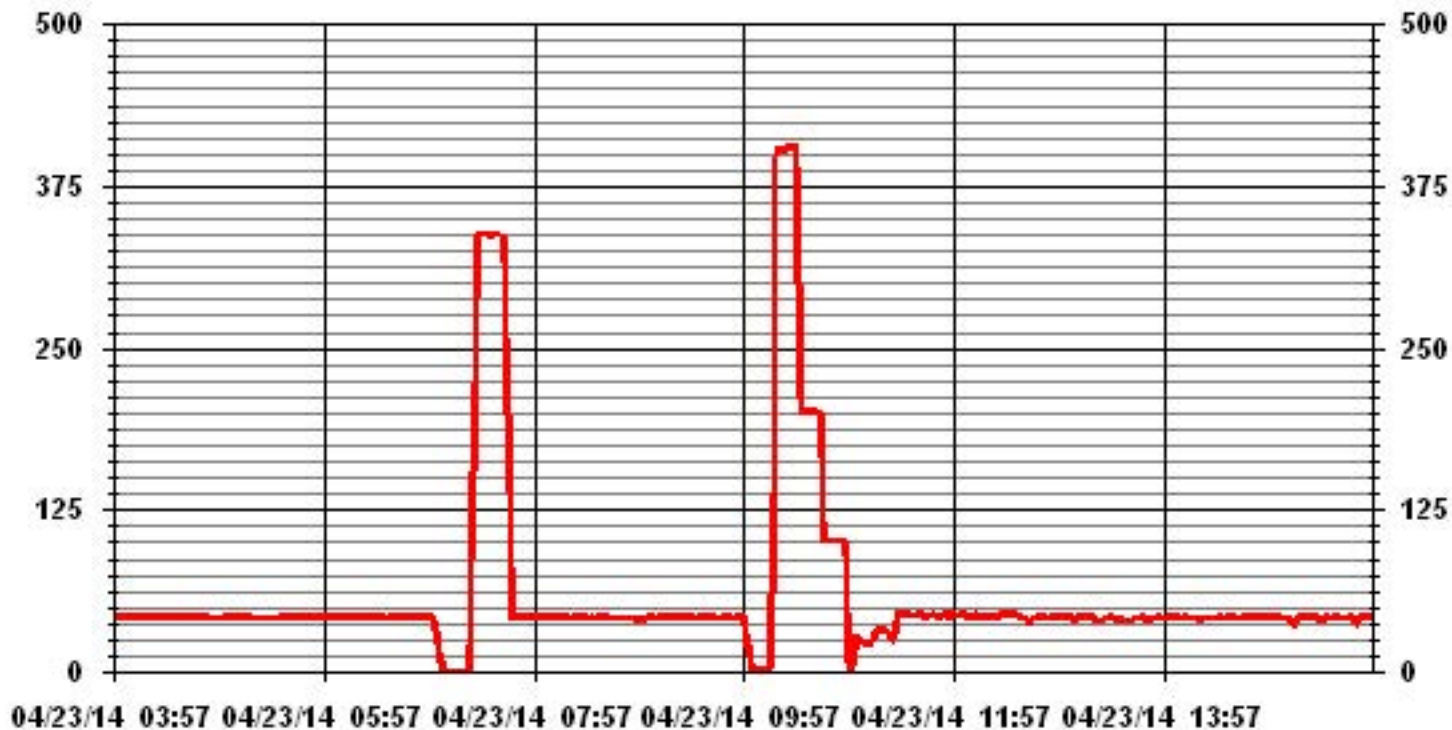


— LICA35 IIOX_ PPB

— LICA35 IIO_ PPB

— LICA35 IIO2_ PPB

01 Minute Averages



Lakeland Industry & Community Association

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

Prepared By:



May 30, 2014

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: April 2014

The monthly ambient data report:

- Prepared by Lili Zhou
- Reviewed by Lily Lin

Calibration Procedure

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

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

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

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

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

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

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

MONTHLY CONTINUOUS DATA SUMMARY

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – ST. LINA

Continuous Ambient Monitoring – April 2014

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				
	SO2 (PPB)	172	48	0									0	0.04	1	VAR
H2S (PPB)	10	3	0	0	1.78	6	23	17	26.9	100(E)	3.3	23	97.9			
THC (PPM)	-	-	-	-	2.02	2.7	2	5, 6	11.2, 10	93(E)	2.2	2	99.9			
OZONE (PPB)	82	-	0	-	35.66	57	30	VAR	VAR	VAR	50.1	30	96.8			
NO2 (PPB)	159	-	-	-	1.13	6.5	5, 16	22, 15	5.8, 21.1	125(SE) 137(SE)	3.6	6	91.4			
NO (PPB)	-	-	-	-	0.17	1.2	21, 27	9, 13	3.2, 6.6	232(SW) 213(SSW)	0.5	27	91.4			
NO _x (PPB)	-	-	-	-	1.30	6.8	5	22	5.8	125(SE)	3.8	6	91.4			
PM2.5 (ug/m3)	-	30	-	0	1.99	11	22	10	28.1	79(ENE)	4.3	1	94.9			
TEMPERATURE (DEGREE C)	-	-	-	-	2.62	20.8	30	14, 15	12, 13.8	214(SSW) 239(WSW)	14.6	30	99.4			
BP (MILLIBAR)	-	-	-	-	923.5	944	29, 30	VAR	VAR	VAR	941.5	29	99.4			
RH (%)	-	-	-	-	64.09	91	VAR	VAR	VAR	VAR	87.7	24	99.4			
PRECIPITATION (MM)	-	-	-	-	0.08	4.3	23	13	29	108(ESE)	0.8	23	100.0			
VECTOR WS (KPH)	-	-	-	-	12.54	32.8	22	16	32.8	85(E)	24.6	23	99.9			
VECTOR WD (DEGREES)	-	-	-	-	110(ESE)	-	-	-	-	-	-	-	99.9			

VAR-VARIOUS

General Monthly Summary

Equipment Operation

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

AQM STATION – LICA – St. Lina

A trailer audit was performed on April 22nd by Alberta Environment.

Sulphur Dioxide (PPB)

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

The monthly calibration was performed on April 8th. The inlet filter was changed before the calibration was started. The analyzer was put into the maintenance mode for 7 hours this month while maintenance was performed on other analyzers to avoid any interference. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

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

The monthly calibration was performed on April 9th. The inlet filter was changed before the calibration was started. The daily zero result went below the acceptable range on April 30th. The analyzer was checked and calibrated on May 1st. No issue was noticed. Data was invalidated back to the last good daily calibration, which was April 30th at hour 8. Sixteen hours of data were discarded. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – St. Lina

Total Hydrocarbon (PPM)

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

The analyzer was working well throughout the month. The monthly calibration was performed on April 9th. The inlet filter was changed before the calibration was started. The analyzer was put into the maintenance mode on April 23rd hour 8 during the time when maintenance was performed on O3 analyzer. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

Analyzer make / model - API 200E, S/N: 592 replaced with API 200A S/N: 1746

The analyzer spanned high on April 6th. An as found points check was performed on April 7th and the result was good. The 3-points and GPT calibration was performed after the as found points check. After the calibration, the channel was left in the maintenance mode to monitor the analyzer's functionality. The channel was put back to service on April 8th at hour 9. During the calibration on April 7th, it was found that the valve for the zero/span system was due for service. As we do not have proper spare valve available, the analyzer decided to be replaced on April 15th. The replacement API 200A analyzer was installed on April 15th following the API200E removal calibration. An installation calibration was done on April 16th. The expected span value was adjusted on April 18th. The analyzer spanned low on April 29th. A trip was made to the site and an as found point check was performed on April 30th. The result was good. However, after the zero/span on April 30th hour 12 the analyzer showed malfunction. The issue was fixed on May 1st. Eleven hours of data were invalidated due to this issue. Data was corrected using daily zero information.

Ozone (PPB)

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

The monthly calibration was performed on April 8th. The channel was put into Maintenance mode while retrieving the O3 calibration standard points from the NOx calibration between hour 9 and 12 on April 8th. The inlet filter was changed before the calibration was started. The analyzer read were incorrectly after the AESRD audit on April 22nd due to a loose connection between the analyzer and the data logger. The issue was fixed on April 23rd. Nineteen hours of data between April 22nd hour 14 and April 23rd hour 8 was invalidated due to this 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 – Thermo Teom 1405F, S/N: 1405A207691003 replaced with 1400A S/N: 140AB228720001
The Teom unit was replaced to Teom 1400A on April 1st as the Teom 1405F kept showing its instability readings. An installation audit was performed on April 1st. Another Teom audit was performed on April 9th. The unit read incorrectly after the audit on April 9th. All connections were checked and retighten on April 10th. The hourly readings went back to normal after the connection check. Twenty four hours of data were invalidated due to this issue. The unit started reading low on April 15th. It was found that the sample pump was no longer work. The pump was rebuilt on April 15th to bring the flow back to normal. Seven hours of data were discarded due to this event. The flow was adjusted on April 23rd. 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. Two hourly data were invalidated as the data were below -3 ug/m3.

Temperature (Degree C)

Analyzer make / model – Met One 060

The temperature sensor was working well throughout the month. The TPX sensor was checked on April 1st. No issue was found.

Barometric Pressure (Millibar)

Analyzer make / model - Met One 092

The BP sensor was working well throughout the month. The BP sensor was checked on April 1st. No issue was found.

General Monthly Summary

AQM STATION – LICA – St. Lina

Relative Humidity (%)

Analyzer make / model - Met One 083

The RH sensor was working well throughout the month. The RH sensor was checked on April 1st. No issue was found.

Precipitation (MM)

Analyzer make / model - Met One 387

No issues were recorded this month.

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

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

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

The wind system was working well throughout the month.

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 April 9th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

SULPHUR DIOXIDE (SO2) hourly averages in ppb

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

STATUS FLAG CODES

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

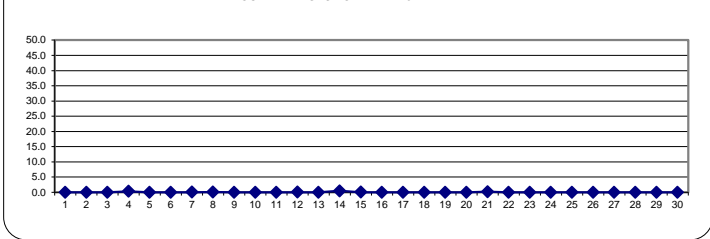
OBJECTIVE LIMIT:

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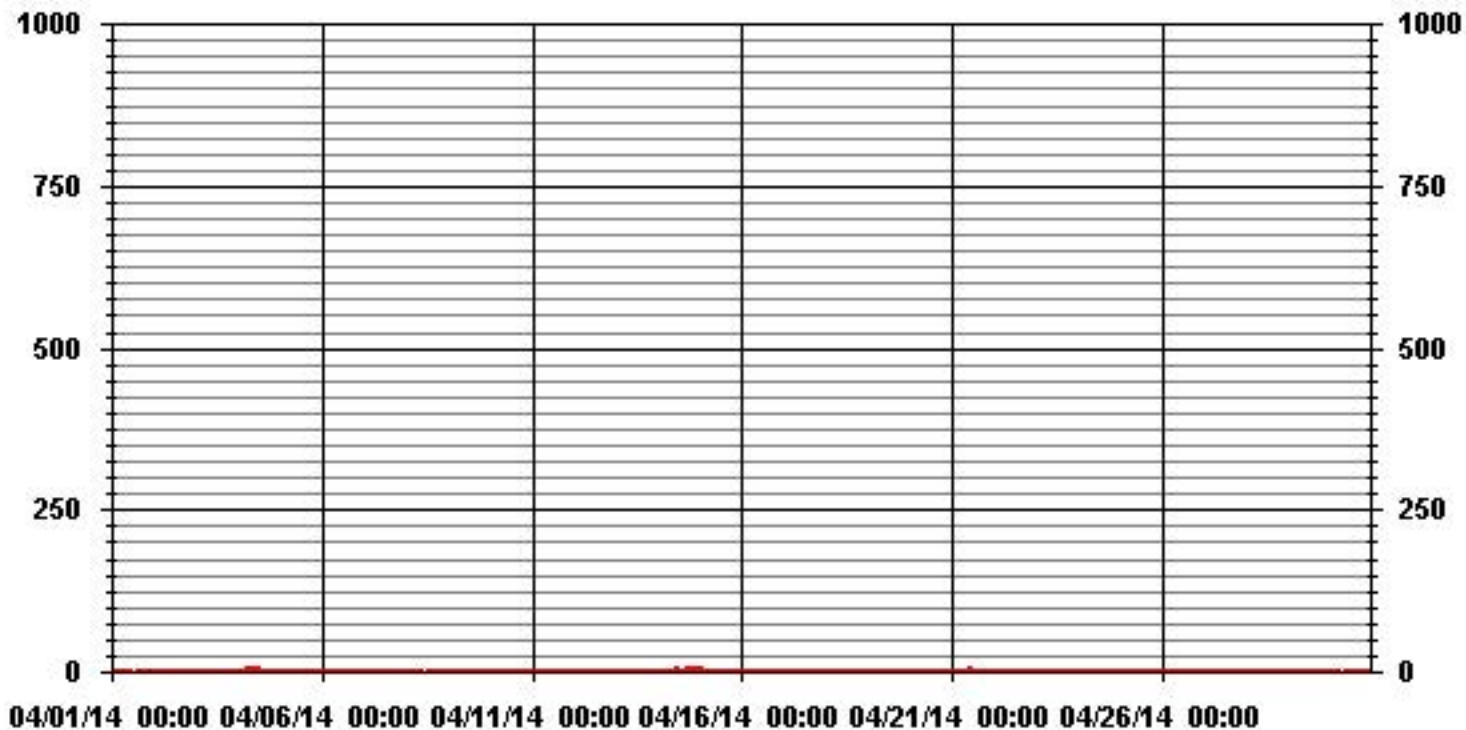
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	27					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.5	PPB			ON DAY(S)	14
					VAR-VARIOUS	
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:		713	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		99.0	%
STANDARD DEVIATION:	0.20		MONTHLY AVERAGE:		0.04	PPB

24 HOUR AVERAGES FOR APRIL 2014



01 Hour Averages



Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY																													
1		0	0	0	0	0	0	0	0	1	1	1	Y	Y	Y	Y	S	0	0	0	0	0	0	0	0	0	1	0.2	20
2		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
3		0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	1	1	1	1	1	1	1	1	1	1	0.4	24
4		1	1	1	1	2	2	2	2	2	2	3	2	S	0	0	0	0	0	0	0	0	0	0	0	0	3	0.9	24
5		0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	1	0	1	1	1	1	1	1	0	0	1	0.3	24
6		1	1	1	1	0	0	0	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
7		0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	1	2	2	1	1	1	0	0	1	2	0.4	24	
8		1	1	1	1	1	1	1	2	C	C	C	C	C	C	2	1	S	1	1	1	1	1	1	1	1	2	1.1	24
9		1	1	1	1	1	1	1	S	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
10		0	0	0	0	0	0	S	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
11		0	0	0	0	0	S	0	1	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0.2	24
12		0	0	0	0	S	2	2	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
13		0	0	0	S	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
14		0	0	S	0	1	1	1	1	1	1	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	1.4	24
15		2	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24
16		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
17		0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	S	0	1	0.1	24	
18		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1.0	24
19		1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	S	1	1	1	1	0.9	24
20		1	1	1	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	S	1	1	1	1	1	1	0.4	24
21		1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	S	0	0	0	0	0	2	1.0	24
22		0	0	0	1	0	0	1	1	0	C	C	C	1	1	1	1	1	S	0	0	0	0	0	0	0	1	0.4	24
23		0	0	0	0	1	1	Y	Y	1	0	Y	0	1	1	1	1	S	0	0	0	0	0	0	0	0	1	0.4	21
24		0	0	0	0	0	0	S	S	0	0	0	0	0	0	0	S	1	1	1	1	1	1	1	1	1	1	0.4	24
25		1	1	1	1	1	0	1	0	1	1	1	1	1	1	S	0	0	0	0	0	0	1	0	1	1	1	0.7	24
26		1	1	1	1	1	1	1	1	1	1	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	1	0.6	24
27		0	0	0	0	0	1	1	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
28		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
29		0	0	0	0	0	0	0	0	0	0	S	1	0	0	1	0	0	1	0	0	1	0	1	0	1	0.2	24	
30		0	0	0	0	0	0	S	S	0	S	0	0	0	0	1	1	1	0	0	0	0	1	1	1	1	1	0.3	24
HOURLY MAX		2	1	1	1	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2			
HOURLY AVG		0.4	0.3	0.3	0.4	0.4	0.5	0.6	0.5	0.5	0.4	0.5	0.5	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.3	0.4	0.4			

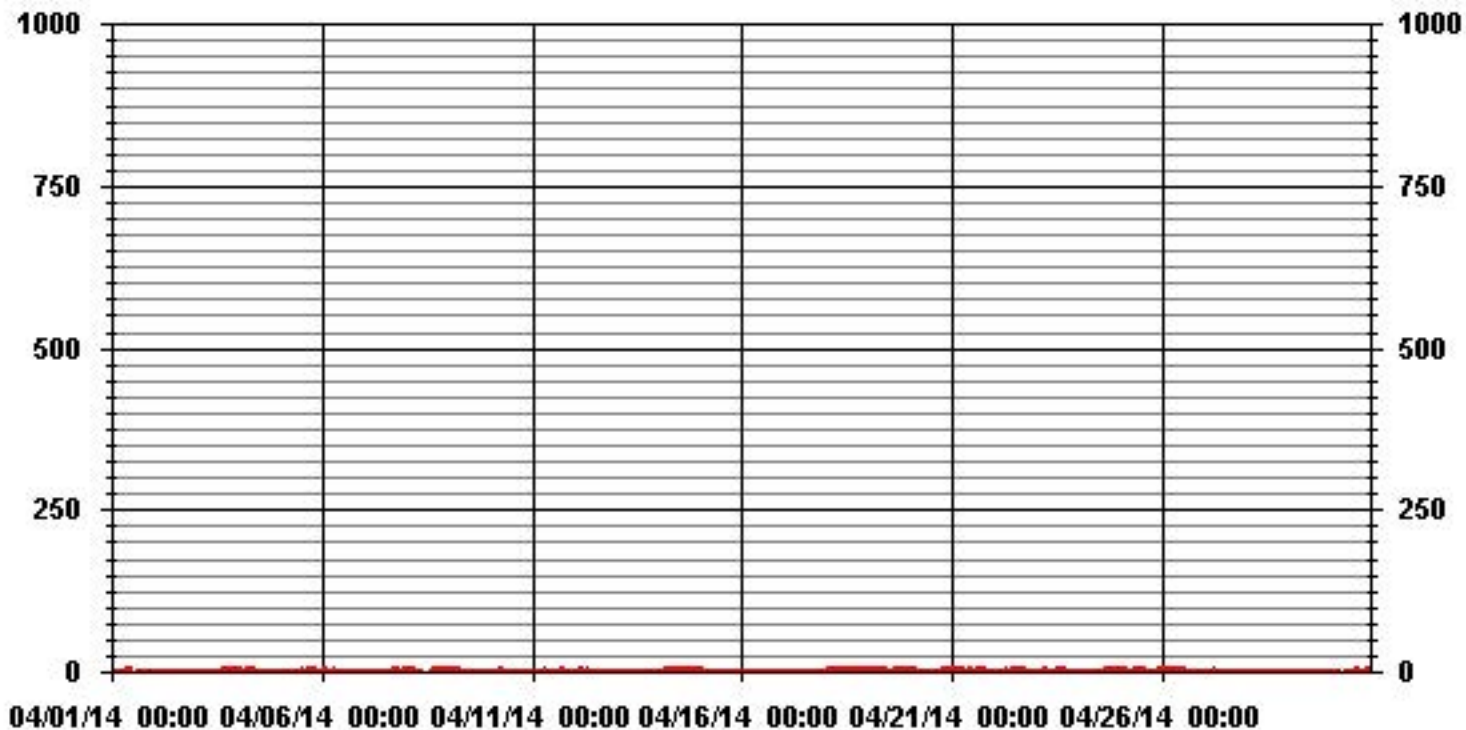
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	243
MAXIMUM INSTANTANEOUS VALUE:	3 PPB @ HOUR(S) 10 ON DAY(S) 4
	VAR-VARIOUS
IZS CALIBRATION TIME:	36 HRS
MONTHLY CALIBRATION TIME:	9 HRS
STANDARD DEVIATION:	0.59
OPERATIONAL TIME:	713 HRS

01 Hour Averages



LICA31
 SO2_ / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : SO2_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	4.17	2.23	3.43	8.80	19.55	6.86	5.07	5.22	7.31	5.52	6.86	4.47	5.67	6.71	4.32	3.73	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	4.17	2.23	3.43	8.80	19.55	6.86	5.07	5.22	7.31	5.52	6.86	4.47	5.67	6.71	4.32	3.73	

Calm : .00 %

Total # Operational Hours : 670

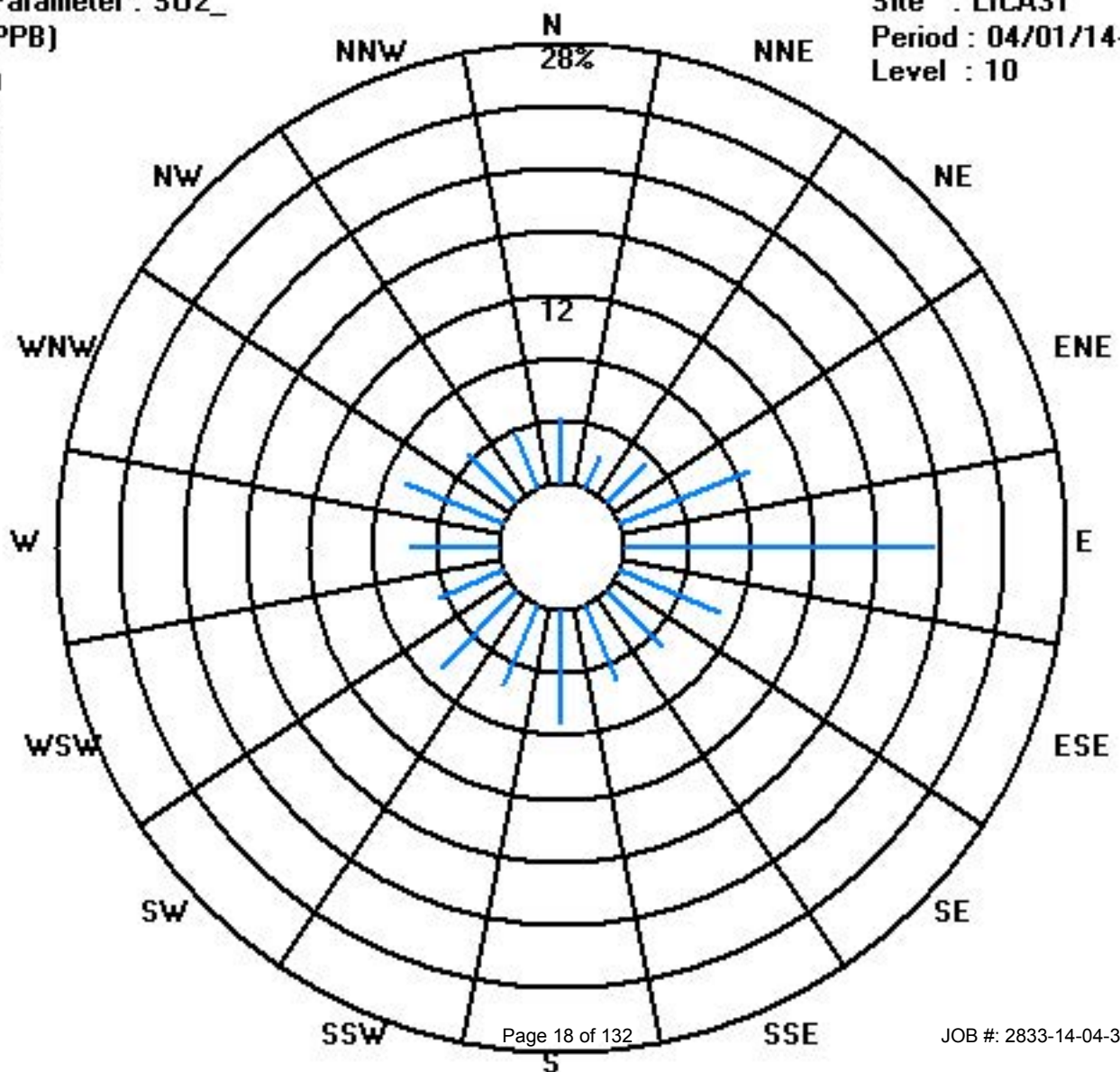
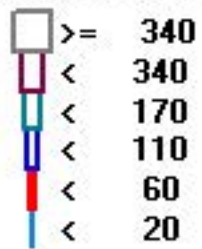
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	28	15	23	59	131	46	34	35	49	37	46	30	38	45	29	25	670
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	28	15	23	59	131	46	34	35	49	37	46	30	38	45	29	25	

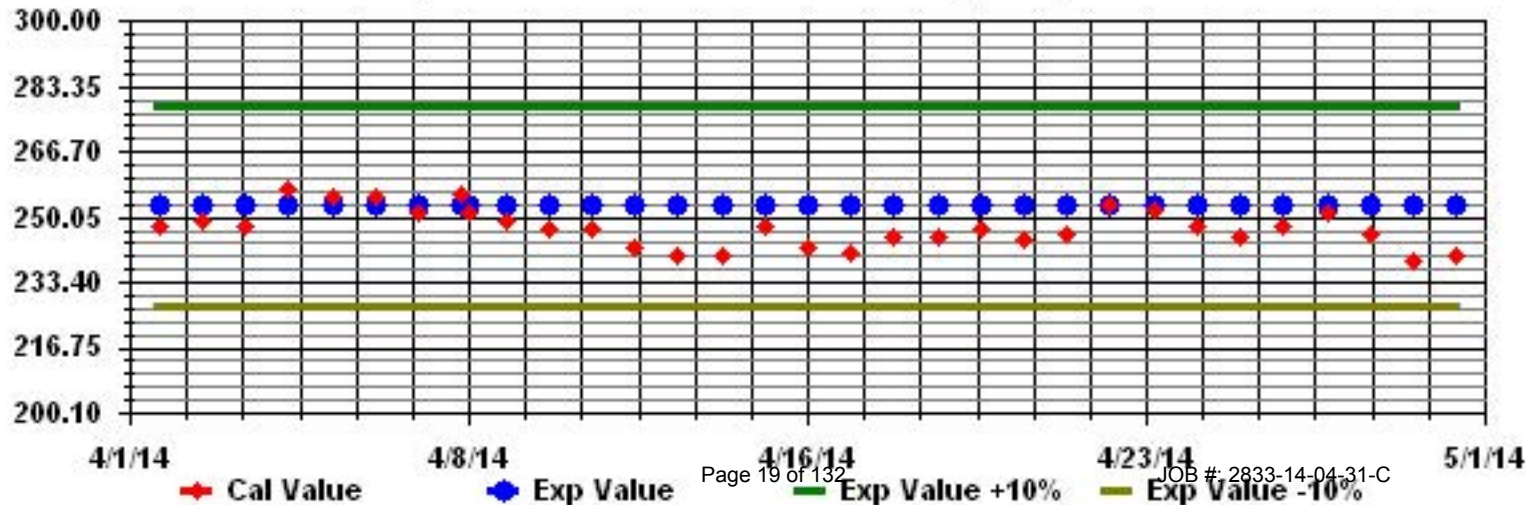
Calm : .00 %

Total # Operational Hours : 670

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: S02_ Sequence: S02 Phase: SPAN



Hydrogen Sulphide

Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

HYDROGEN SULPHIDE (H2S) hourly averages in ppb

MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	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	1	2	2	1	2	2	2	2	2	1	2	1	1	S	1	1	1	1	1	1	1	1	2	1.3	24	
	2	1	1	1	1	1	1	2	2	2	1	2	2	2	1	S	1	1	1	1	1	1	1	1	1	2	1.3	24	
	3	1	1	1	1	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	2	1	2	2	2	2	1.2	24	
	4	2	2	2	2	3	3	3	3	3	3	3	S	2	2	2	2	2	2	1	2	2	2	2	2	3	2.3	24	
	5	1	2	2	0	1	2	S	2	2	3	2	S	3	2	3	3	3	3	3	3	3	3	3	3	3	2.4	24	
	6	3	5	4	2	3	4	3	3	3	2	S	2	3	3	3	4	4	3	2	2	2	2	2	2	5	2.9	24	
	7	2	2	2	3	2	2	2	3	2	S	1	0	0	1	1	2	1	1	1	0	2	2	3	2	3	1.6	24	
	8	2	2	2	2	2	2	2	2	S	3	3	3	C	C	C	C	C	1	0	1	1	0	1	1	3	1.7	24	
	9	0	1	0	0	0	0	0	S	1	2	1	2	2	1	1	1	1	2	1	1	1	1	1	1	2	0.9	24	
	10	1	1	1	1	1	1	S	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	1	3	1.7	24	
	11	2	2	2	2	2	S	1	1	1	2	1	1	1	2	2	1	1	1	2	1	1	1	1	1	2	1.4	24	
	12	0	0	0	1	S	1	1	1	1	1	1	2	1	1	0	0	1	2	2	0	2	0	1	1	2	0.9	24	
	13	1	0	1	S	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
	14	0	0	S	1	2	1	0	1	1	1	1	1	2	1	1	2	2	2	2	3	3	3	2	3	3	1.5	24	
	15	2	S	1	1	2	2	1	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	0	2	1.2	24	
	16	S	2	2	2	2	1	2	1	2	1	1	1	1	1	1	1	1	1	2	2	2	1	2	S	2	1.5	24	
	17	2	2	2	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	1	2	1.9	24
	18	1	1	2	2	2	1	2	2	1	2	2	2	2	2	1	2	2	1	2	1	1	S	1	1	2	1.6	24	
	19	0	0	1	0	1	0	1	0	1	0	0	0	0	1	0	0	0	0	1	1	S	2	2	2	2	0.6	24	
	20	2	1	2	1	1	2	2	2	2	2	1	0	1	1	1	1	2	0	1	S	3	3	2	3	3	1.6	24	
	21	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	S	2	2	2	2	2	2	3	2.7	24	
	22	2	2	2	2	3	3	2	2	3	C	C	C	3	3	3	3	3	S	2	1	2	2	2	2	3	2.4	24	
	23	2	3	3	3	2	2	2	3	4	Y	3	4	4	4	2	2	S	6	4	5	4	3	3	4	6	3.3	23	
	24	3	3	4	4	4	4	S	2	3	3	4	3	2	4	3	S	2	2	2	2	2	2	2	1	4	2.8	24	
	25	2	2	2	2	1	2	2	2	1	2	1	2	1	1	S	2	3	2	2	2	1	2	2	2	3	1.8	24	
	26	2	2	3	3	2	2	2	2	3	2	2	2	2	S	3	3	2	3	2	3	3	3	3	3	3	2.5	24	
	27	3	4	2	3	3	4	4	3	4	3	3	3	S	2	2	2	2	2	2	2	2	2	2	2	4	2.7	24	
	28	2	2	2	2	2	2	2	2	2	2	1	S	2	2	3	2	2	2	2	1	2	1	1	1	3	1.8	24	
	29	1	1	2	1	1	2	1	1	1	0	S	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2.2	24	
	30	3	3	3	3	3	3	S	S	X	X	X	S	S	X	X	X	X	X	X	X	X	X	X	X	3	3.0	10	
HOURLY MAX		3	5	4	4	4	4	4	4	3	4	3	4	4	4	4	3	4	4	6	4	5	4	3	3	4			
HOURLY AVG		1.6	1.8	1.9	1.8	1.8	1.9	1.7	1.9	1.9	1.8	1.7	1.8	1.8	1.8	1.7	1.8	1.8	1.8	1.7	1.6	1.9	1.8	1.8	1.7				

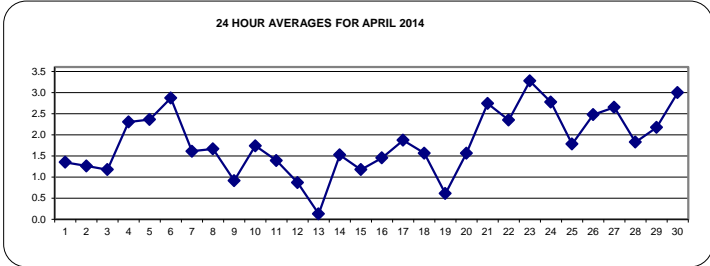
STATUS FLAG CODES

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

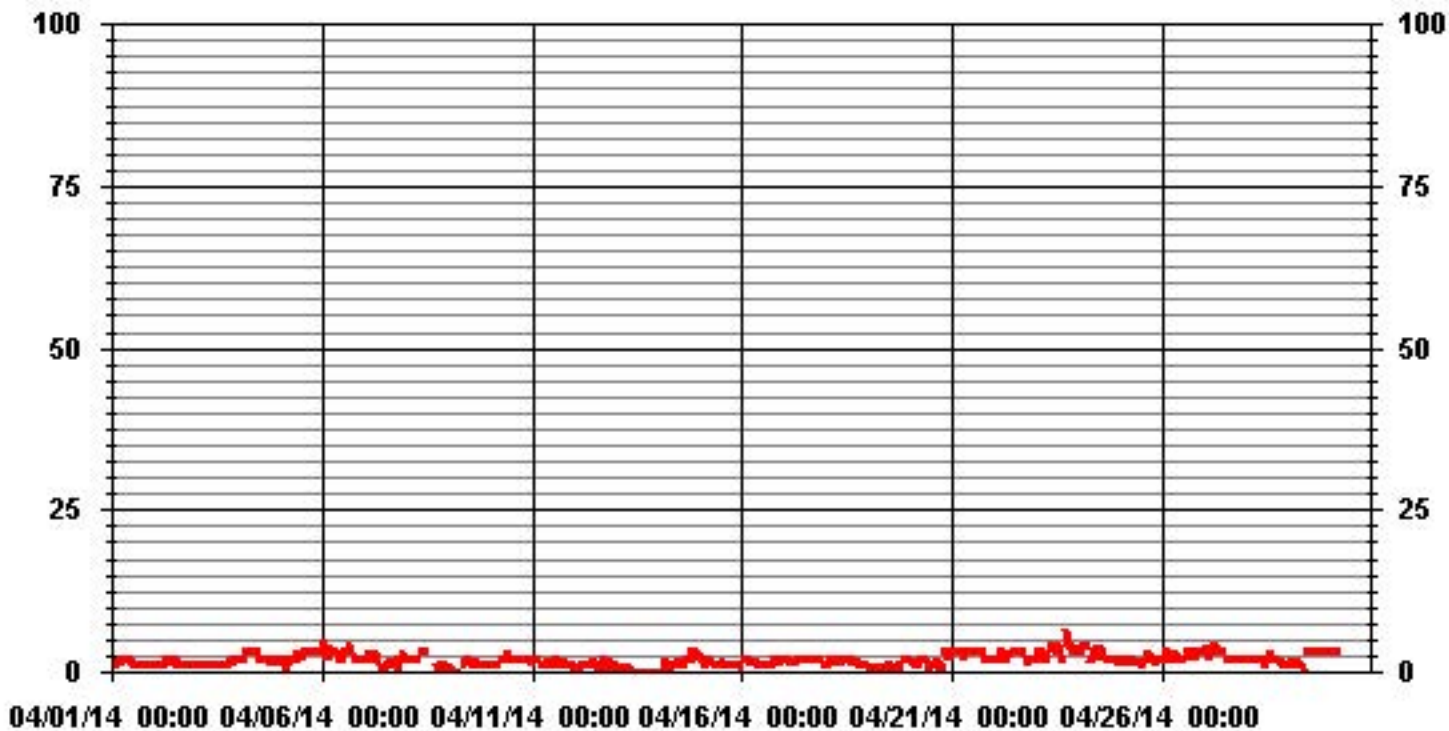
OBJECTIVE LIMIT: ALBERTA ENVIRONMENT: 1-HR 10 PPB 24-HR 3 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	603					
MAXIMUM 1-HR AVERAGE:	6	PPB	@ HOUR(S)	17	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	3.3	PPB			ON DAY(S)	23
					VAR-VARIOUS	
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:	705 HRS		
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	97.9 %		
STANDARD DEVIATION:	0.98		MONTHLY AVERAGE:	1.78 PPB		



01 Hour Averages



— LICA31 H2S_ PPB

Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		2	2	2	2	2	2	2	2	2	3	S	2	1	1	S	2	2	2	2	2	2	1	1	3	1.9	24		
2		2	2	2	2	2	2	2	2	3	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	3	2.0	24	
3		2	2	2	2	2	2	1	2	1	1	2	1	2	S	2	2	2	3	2	3	2	2	2	2	3	1.9	24	
4		3	2	3	3	3	3	3	3	3	3	4	4	S	3	3	3	3	3	2	2	2	2	2	2	4	2.8	24	
5		2	3	3	3	2	2	S	3	3	3	3	S	3	3	3	3	3	3	3	3	4	3	6	4	6	3.1	24	
6		5	7	5	4	5	5	4	4	4	3	S	4	4	4	3	5	6	4	3	3	3	3	3	3	7	4.1	24	
7		3	3	3	5	3	3	3	4	3	S	2	1	1	3	2	2	3	2	2	1	3	3	4	4	5	2.7	24	
8		3	2	3	3	3	3	3	2	S	4	4	4	C	C	C	C	3	1	1	1	1	1	2	2	4	2.4	24	
9		1	1	1	0	1	1	1	S	2	2	2	3	3	2	2	1	2	2	2	2	1	1	1	2	3	1.6	24	
10		1	1	1	2	2	1	S	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	2	3	2.4	24	
11		3	3	3	3	3	S	2	2	2	2	2	2	2	2	2	2	2	3	1	2	2	2	1	3	2.2	24		
12		1	1	1	1	S	2	2	1	2	1	2	3	2	3	2	1	2	3	3	3	3	2	2	2	3	2.0	24	
13		1	2	2	S	1	1	1	2	2	1	1	0	1	1	0	0	1	0	0	0	0	0	0	0	2	0.7	24	
14		0	1	S	2	3	3	2	2	2	2	2	2	2	2	2	3	3	3	3	4	4	4	4	3	4	2.5	24	
15		3	S	2	1	3	3	2	2	2	2	2	2	3	3	1	1	2	2	1	1	1	1	1	1	3	1.8	24	
16		S	2	2	2	2	2	3	2	2	2	1	2	2	2	2	2	1	2	2	2	2	2	2	S	3	2.0	24	
17		2	3	3	2	2	2	2	2	2	2	3	2	3	2	2	2	2	2	3	2	3	2	3	S	2	3	2.3	24
18		2	2	2	2	3	2	2	2	2	2	2	2	3	2	1	2	2	2	2	2	2	2	S	1	1	3	2.0	24
19		1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	2	3	2	3	1.1	24
20		2	2	3	2	2	2	3	3	2	2	1	1	2	2	2	3	3	1	1	S	4	3	3	4	4	2.3	24	
21		4	3	3	3	3	4	3	3	3	3	4	4	3	4	4	4	4	4	S	3	3	2	3	3	4	3.3	24	
22		3	3	3	3	3	4	3	3	3	C	C	C	3	3	3	4	4	S	2	2	2	3	3	2	4	3.0	24	
23		3	3	3	4	3	3	3	4	5	Y	Y	5	7	5	4	3	S	7	5	5	5	4	4	4	7	4.2	22	
24		3	4	4	4	4	S	S	3	5	5	4	3	5	4	S	3	3	3	3	3	2	3	3	3	5	3.6	24	
25		4	3	3	3	2	3	2	1	2	2	3	1	1	S	3	4	4	4	4	3	3	3	3	3	4	2.7	24	
26		3	3	3	4	3	3	3	3	3	2	3	3	3	S	3	3	3	3	3	3	3	3	3	4	4	3.1	24	
27		4	5	5	5	5	4	4	4	4	4	4	4	S	3	3	3	3	3	3	3	2	3	2	2	5	3.6	24	
28		3	3	3	2	2	2	2	2	2	3	2	S	3	3	4	3	2	2	3	2	3	2	2	2	4	2.5	24	
29		2	2	2	2	2	2	1	1	1	1	S	3	3	3	3	3	4	4	4	3	3	4	4	3	4	2.6	24	
30		3	3	4	3	3	4	S	S	X	X	X	S	S	X	X	X	X	X	X	X	X	X	X	X	4	3.3	10	
HOURLY MAX		5	7	5	5	5	5	4	4	5	5	5	5	7	5	4	5	6	7	5	5	5	4	6	4				
HOURLY AVG		2.4	2.5	2.7	2.6	2.6	2.6	2.3	2.4	2.4	2.3	2.5	2.6	2.6	2.6	2.4	2.5	2.6	2.6	2.4	2.4	2.5	2.4	2.6	2.4				

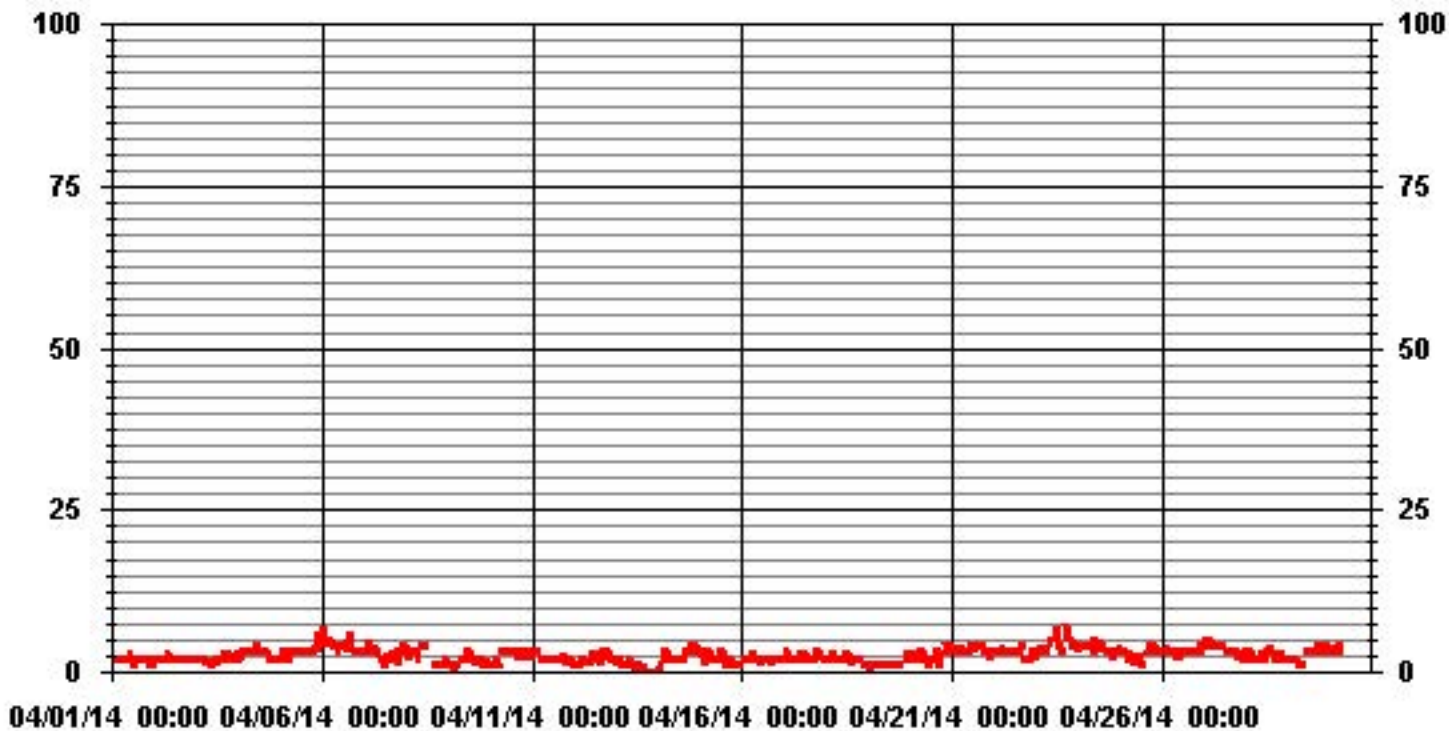
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	645					
MAXIMUM INSTANTANEOUS VALUE:	7	PPB	@ HOUR(S)	1, 12	ON DAY(S)	6, 23
	VAR-VARIOUS					
IZS CALIBRATION TIME:	38	HRS	OPERATIONAL TIME:	704	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	1.08					

01 Hour Averages



LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
Parameter : H2S_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	4.07	2.11	3.17	6.64	14.04	5.74	4.68	4.07	5.74	3.47	4.38	2.56	4.83	5.43	3.92	3.32	78.24
< 10	.15	.30	.45	2.26	6.04	1.35	.45	1.05	1.20	1.66	1.96	1.81	.60	1.35	.45	.60	21.75
< 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	4.22	2.41	3.62	8.91	20.09	7.09	5.13	5.13	6.94	5.13	6.34	4.38	5.43	6.79	4.38	3.92	

Calm : .00 %

Total # Operational Hours : 662

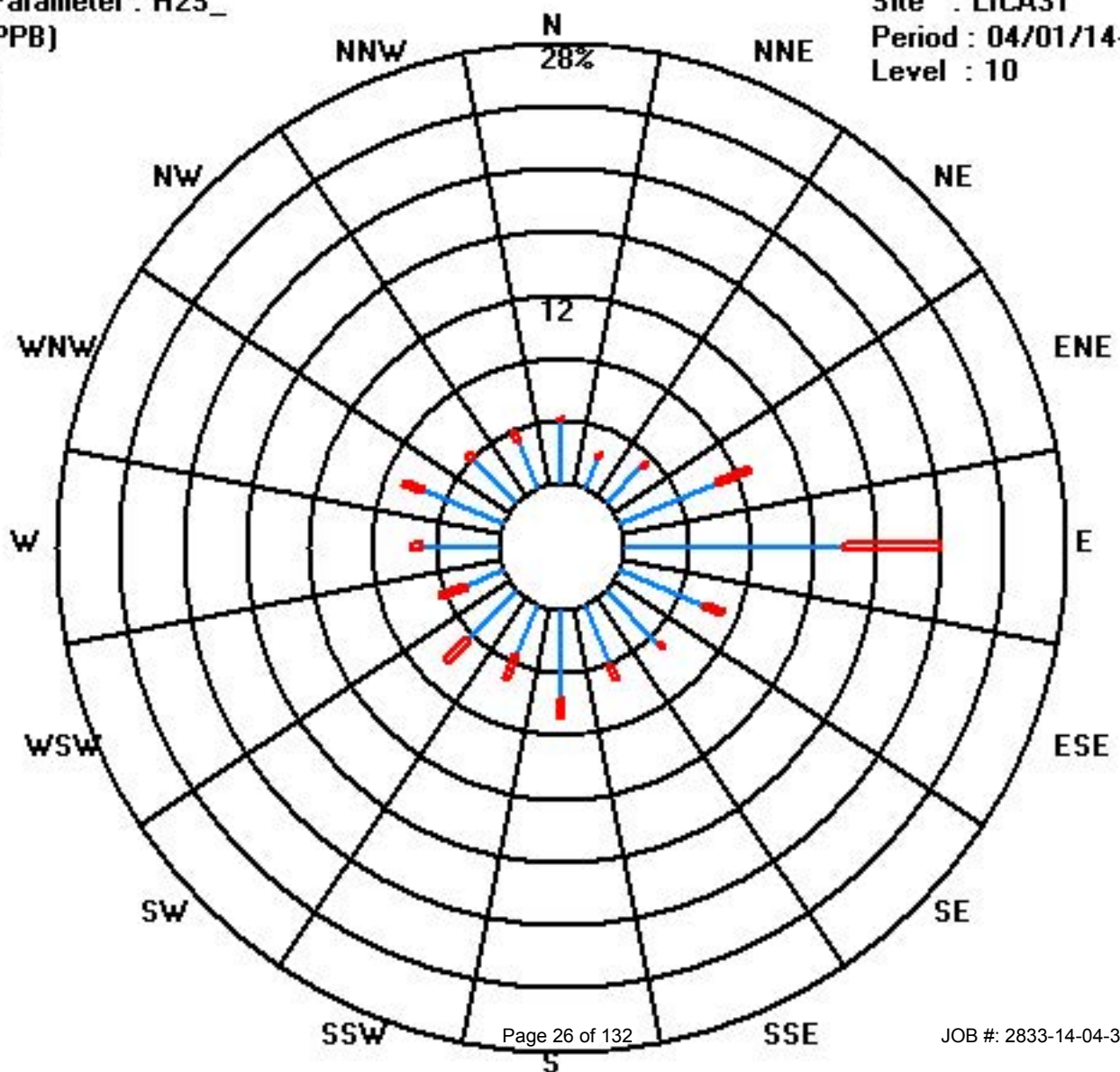
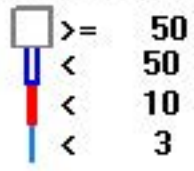
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3	27	14	21	44	93	38	31	27	38	23	29	17	32	36	26	22	518
< 10	1	2	3	15	40	9	3	7	8	11	13	12	4	9	3	4	144
< 50																	
>= 50																	
Totals	28	16	24	59	133	47	34	34	46	34	42	29	36	45	29	26	

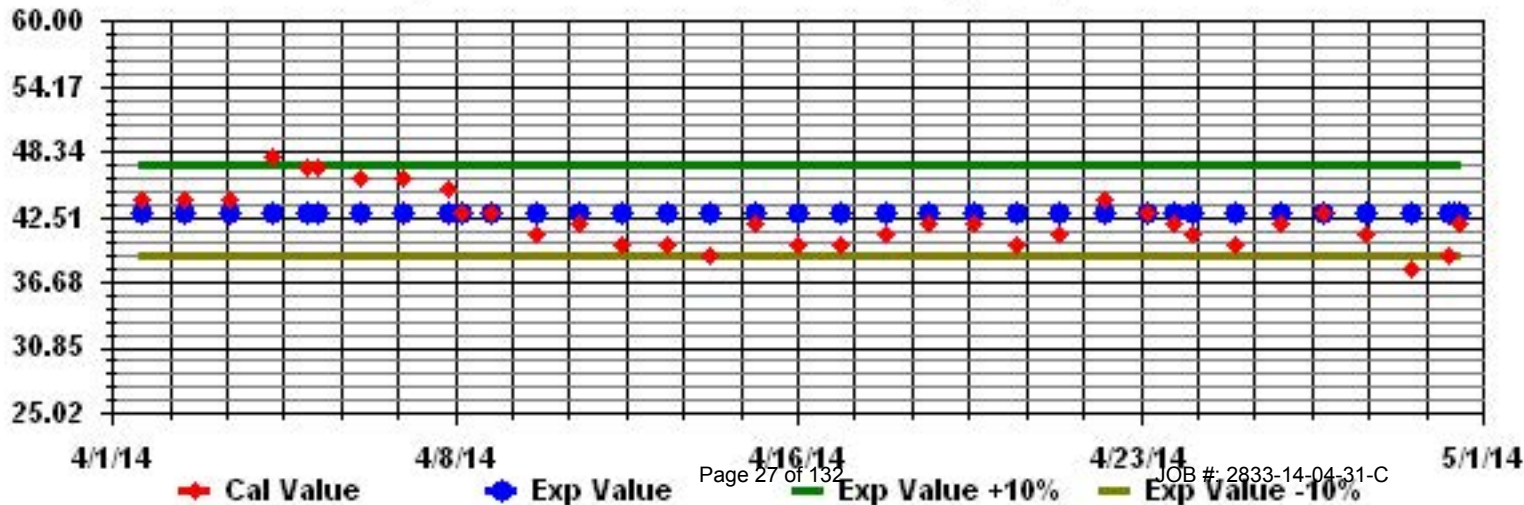
Calm : .00 %

Total # Operational Hours : 662

Class Limits (PPB)



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



Total Hydrocarbons

Lakeland Industry & Community Association - St. Lina Site

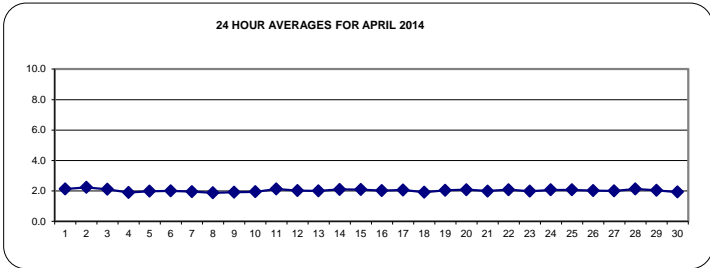
APRIL 2014

TOTAL HYDROCARBONS (THC) hourly averages in ppm

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

STATUS FLAG CODES

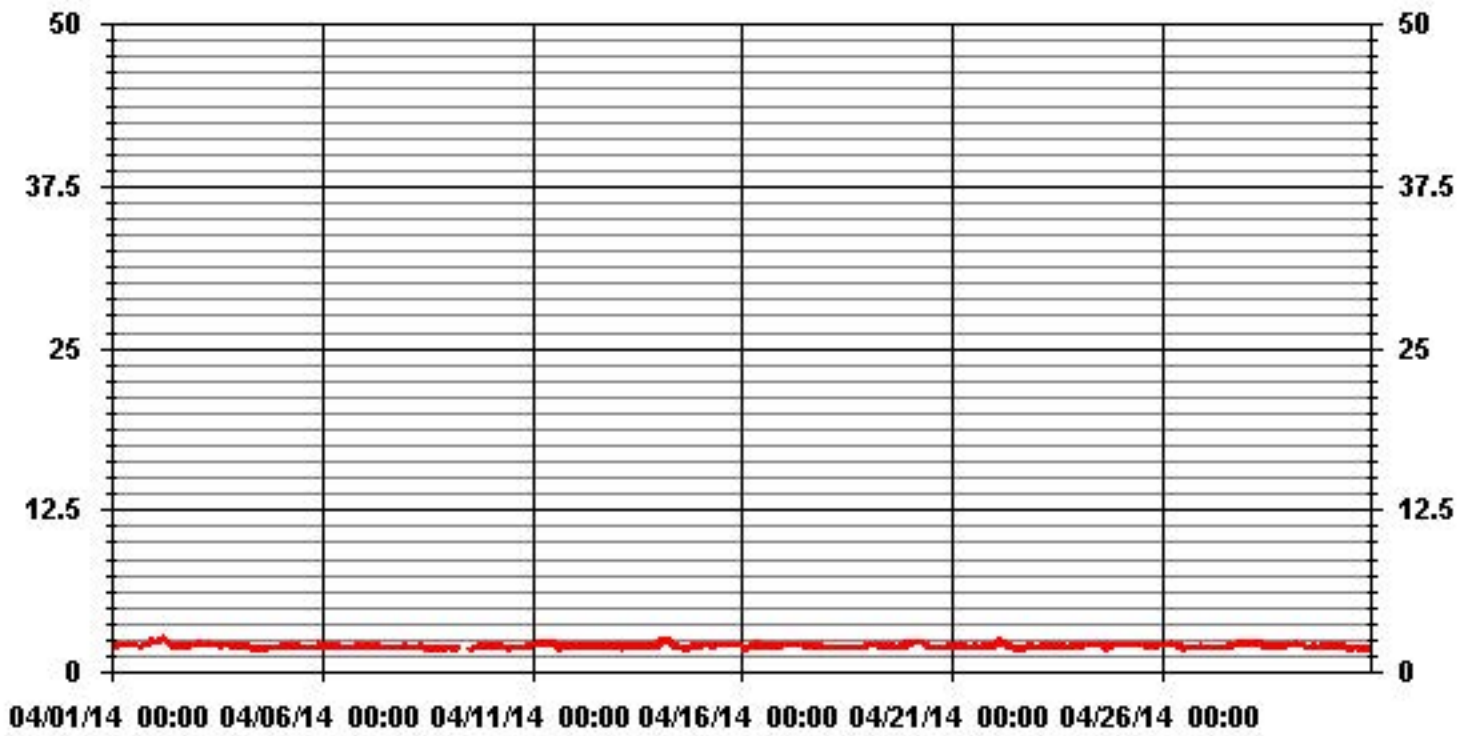
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	681					
MAXIMUM 1-HR AVERAGE:	2.7	PPM	@ HOUR(S)	5, 6	ON DAY(S)	2
MAXIMUM 24-HR AVERAGE:	2.2	PPM			ON DAY(S)	2
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.13		MONTHLY AVERAGE:	2.02	PPM	

01 Hour Averages



— LICA31 THC PPM

Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

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

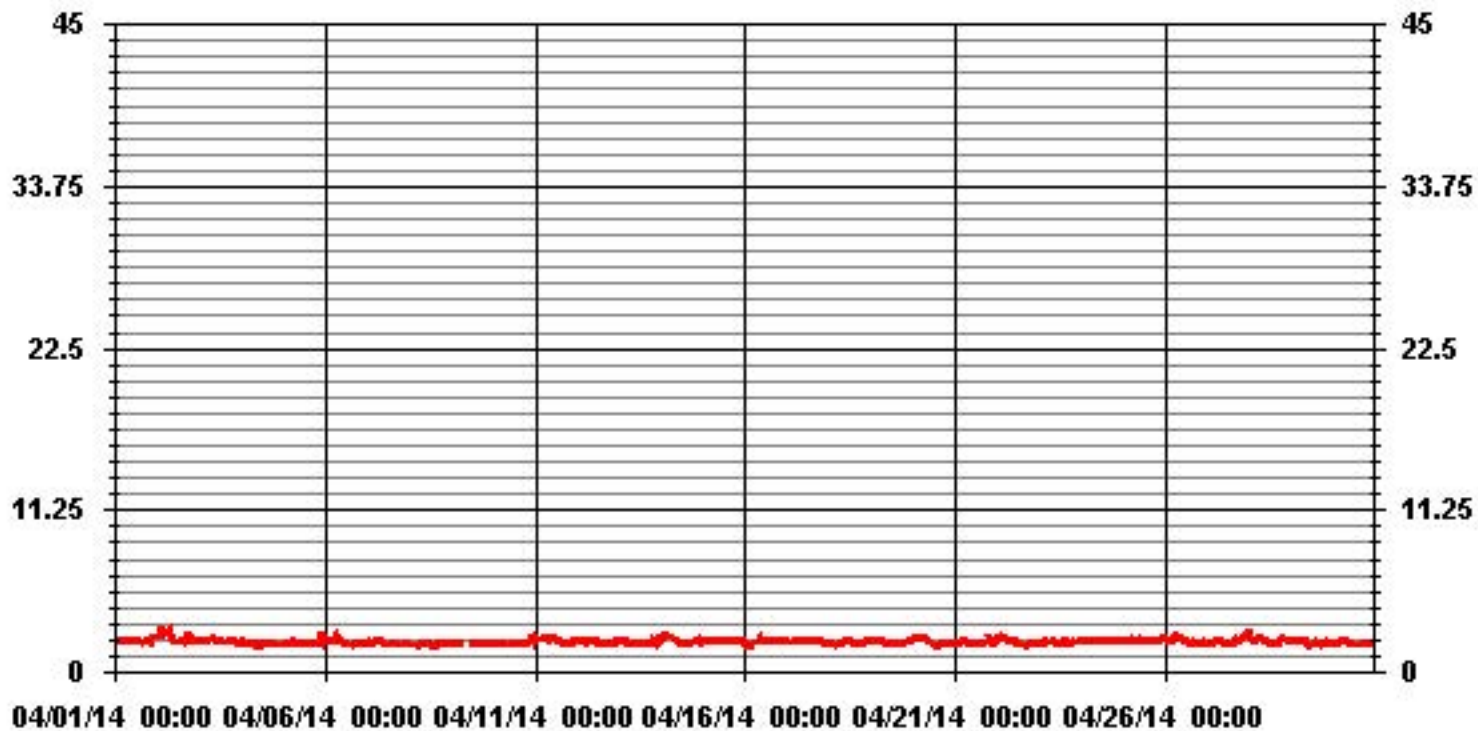
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	680
MAXIMUM INSTANTANEOUS VALUE:	3.1 PPM @ HOUR(S) 3 ON DAY(S) 2
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	0.17
OPERATIONAL TIME:	718 HRS

01 Hour Averages



LICA31
 THC / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	4.10	2.34	3.51	9.09	19.35	6.89	4.98	5.13	7.18	5.42	6.89	5.13	5.86	6.01	4.25	3.81	100.00
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.10	2.34	3.51	9.09	19.35	6.89	4.98	5.13	7.18	5.42	6.89	5.13	5.86	6.01	4.25	3.81	

Calm : .00 %

Total # Operational Hours : 682

Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 3.0	28	16	24	62	132	47	34	35	49	37	47	35	40	41	29	26	682
< 10.0																	
< 50.0																	
>= 50.0																	
Totals	28	16	24	62	132	47	34	35	49	37	47	35	40	41	29	26	

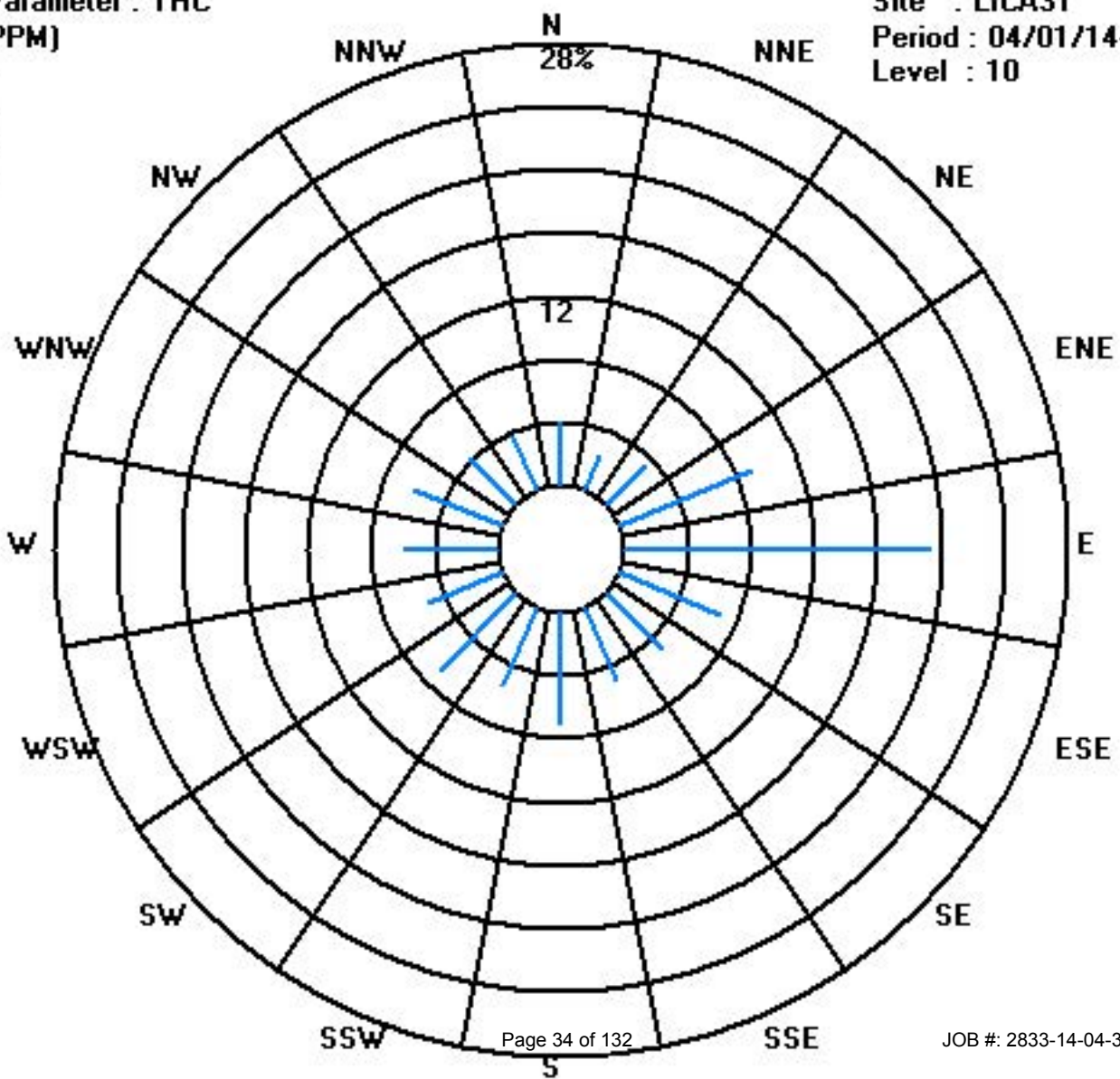
Calm : .00 %

Total # Operational Hours : 682

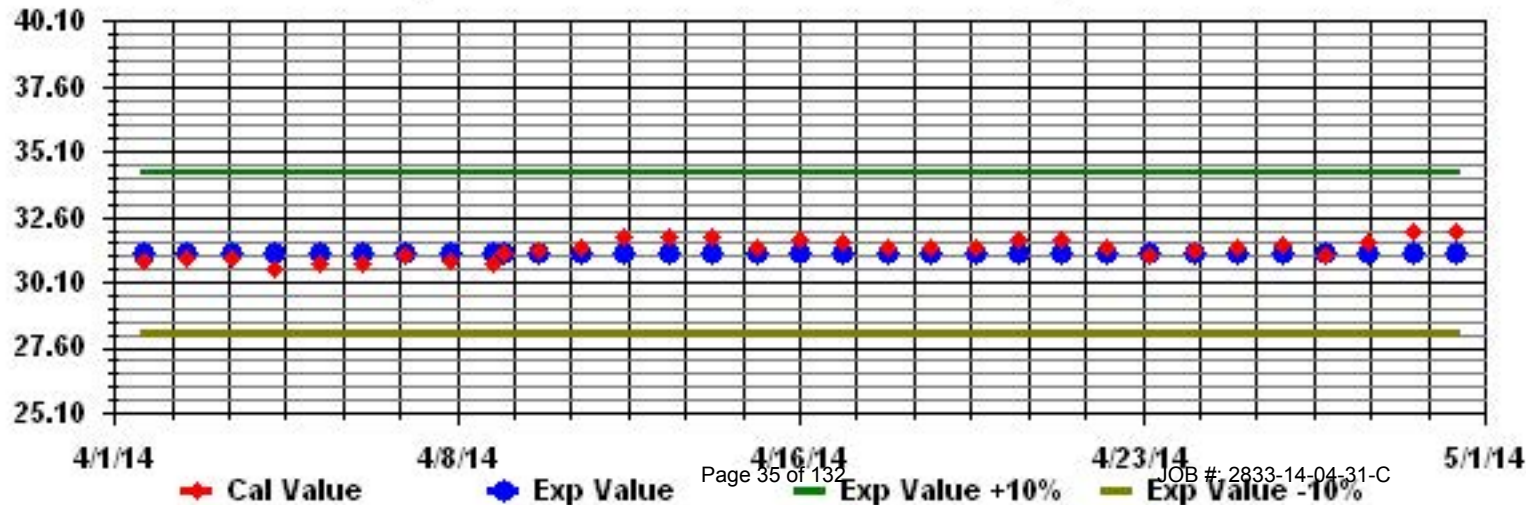
Class Limits (PPM)

Period : 04/01/14-04/30/14

Level : 10



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



Ozone

Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

OZONE (O3) 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		34	33	32	32	31	30	30	30	31	35	42	29	43	39	46	S	46	45	44	43	45	40	33	31	46	36.7	24	
2		32	33	33	32	26	27	27	30	33	38	41	41	44	45	S	45	45	45	45	44	43	43	43	44	45	38.2	24	
3		43	43	38	40	42	43	43	41	40	42	44	46	47	S	49	49	48	47	45	44	44	42	44	44	49	43.8	24	
4		42	42	39	37	37	36	35	35	34	33	32	33	S	44	45	45	45	45	46	47	46	46	45	44	47	40.6	24	
5		42	42	42	42	42	41	40	37	39	42	42	S	45	46	47	48	50	50	45	41	37	33	37	50	42.6	24		
6		34	35	39	34	26	28	31	39	40	41	S	46	45	43	42	41	42	42	43	43	43	42	41	40	46	39.1	24	
7		39	36	35	37	37	37	36	35	37	S	41	42	43	46	47	48	47	47	46	44	42	41	39	36	48	40.8	24	
8		35	34	34	34	33	30	28	27	S	Y	Y	Y	C	C	C	C	40	41	39	38	41	44	45	45	36.2	20		
9		44	41	38	38	40	38	36	S	34	35	36	37	39	39	40	41	41	41	41	41	40	41	39	39	44	39.1	24	
10		39	39	37	37	36	36	S	37	38	36	36	37	40	40	39	38	37	38	37	38	35	33	30	29	30	40	36.3	24
11		28	25	25	24	25	S	26	26	26	25	25	26	26	26	27	33	34	29	24	28	29	31	32	32	34	27.5	24	
12		33	32	32	33	S	29	28	29	31	33	35	36	38	38	37	36	37	36	36	33	32	33	35	30	38	33.6	24	
13		30	30	31	S	29	29	30	28	29	31	34	36	38	39	41	42	41	42	41	40	40	39	38	37	42	35.4	24	
14		35	34	S	32	33	32	32	32	34	36	38	40	42	43	44	45	46	45	44	40	38	37	35	34	46	37.9	24	
15		35	S	34	33	32	31	31	32	31	32	31	31	29	24	24	28	28	29	30	32	32	31	32	31	35	30.6	24	
16		S	32	32	34	34	36	35	35	32	33	33	32	33	36	37	40	40	38	36	35	33	32	33	S	40	34.6	24	
17		34	36	35	33	31	32	32	31	31	31	31	32	32	32	34	33	33	33	33	33	33	S	34	36	32.7	24		
18		34	34	35	35	35	34	34	33	32	32	31	31	31	30	30	30	30	30	30	29	29	S	28	27	35	31.5	24	
19		27	27	28	26	20	19	17	22	30	35	36	36	37	38	40	40	42	41	42	43	S	38	34	33	43	32.7	24	
20		31	29	28	26	24	25	23	22	24	27	32	38	38	38	39	40	40	40	39	S	41	40	38	37	41	33.0	24	
21		36	36	35	34	30	29	28	27	26	27	36	39	40	43	45	45	45	47	S	45	44	41	39	38	47	37.2	24	
22		37	34	30	30	30	28	29	28	28	27	22	21	C	C	X	X	X	X	X	X	X	X	X	X	37	28.7	14	
23		X	X	X	X	X	X	X	X	X	S	S	S	42	44	44	43	S	45	45	44	44	44	43	42	45	43.6	15	
24		41	42	41	41	40	40	S	38	37	36	37	37	37	36	35	S	34	34	34	33	33	33	32	42	36.5	24		
25		31	30	30	30	29	30	30	31	31	32	32	33	35	36	S	35	34	34	33	32	30	28	27	26	36	31.3	24	
26		25	23	23	21	19	18	18	20	23	23	25	27	29	S	32	33	33	33	32	31	29	28	27	26	33	26.0	24	
27		25	26	26	26	25	25	24	24	25	27	27	26	S	28	29	30	26	21	21	20	18	18	17	30	24.0	24		
28		18	19	19	20	21	20	20	20	21	24	27	S	36	40	41	40	42	45	39	35	35	38	34	34	45	29.9	24	
29		33	33	38	40	41	40	40	38	38	42	S	43	44	45	45	45	46	46	45	45	45	45	44	46	42.0	24		
30		44	46	46	45	43	40	S	S	43	S	47	50	54	55	57	57	57	57	56	55	51	50	50	49	57	50.1	24	
HOURLY MAX		44	46	46	45	43	43	43	41	43	42	47	50	54	55	57	57	57	57	56	55	51	50	50	49				
HOURLY AVG		34.3	33.8	33.4	33.1	31.8	31.5	30.1	30.6	32.1	32.9	34.3	35.6	38.7	39.0	39.8	40.4	40.4	40.1	39.3	38.5	37.5	37.2	36.1	35.5				

STATUS FLAG CODES

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

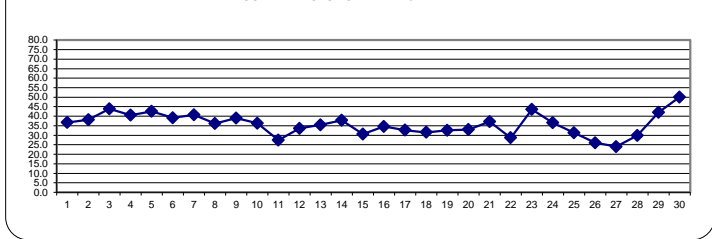
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 82 PPB

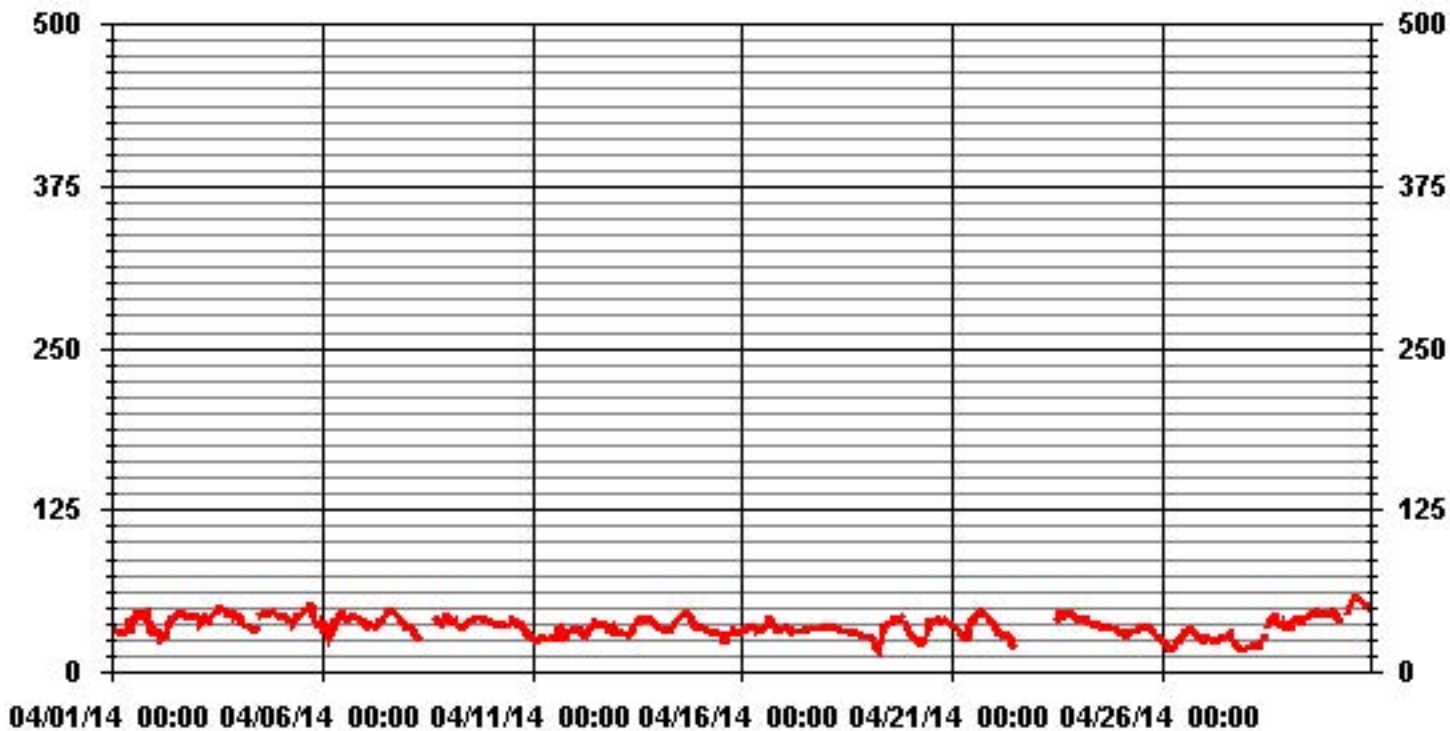
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	655				
MAXIMUM 1-HR AVERAGE:	57	PPB	@ HOUR(S)	VAR	ON DAY(S) 30
MAXIMUM 24-HR AVERAGE:	50.1	PPB			ON DAY(S) 30
				VAR-VARIOUS	
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:	697	HRS
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	96.8	%
STANDARD DEVIATION:	7.38		MONTHLY AVERAGE:	35.66	PPB

24 HOUR AVERAGES FOR APRIL 2014



01 Hour Averages



Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

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		35	34	33	32	31	31	31	31	33	43	44	Y	44	63	47	S	47	46	45	44	46	47	34	32	63	39.7	23
2		32	34	35	35	29	28	28	31	35	40	43	42	45	46	S	45	46	46	45	52	44	44	44	44	52	39.7	24
3		44	44	42	41	43	44	43	42	41	44	45	47	48	S	50	50	49	48	47	45	44	43	45	45	50	45.0	24
4		44	43	41	38	38	36	36	36	35	34	33	37	S	45	46	46	46	46	47	47	46	46	45	45	47	41.6	24
5		43	42	43	43	42	42	41	38	42	43	43	S	46	47	48	48	52	52	52	46	43	39	37	42	52	44.1	24
6		39	37	44	44	30	31	37	42	43	44	S	48	47	44	43	42	42	42	43	44	44	42	42	40	48	41.5	24
7		40	38	37	38	38	37	37	36	38	S	42	43	45	47	48	49	48	47	47	46	42	42	41	39	49	42.0	24
8		36	35	35	35	34	32	30	28	S	Y	Y	Y	C	C	C	C	C	43	44	41	39	44	46	47	47	37.9	20
9		45	43	41	40	41	40	39	S	38	37	42	S	40	41	41	42	43	42	42	42	42	42	41	40	45	41.1	24
10		40	40	39	37	37	36	S	39	39	39	39	40	40	40	40	40	39	39	39	39	37	34	32	32	40	37.8	24
11		30	30	27	25	28	S	27	27	27	26	26	27	28	27	29	35	36	32	26	30	31	32	32	33	36	29.2	24
12		34	33	33	34	S	30	29	31	32	35	36	38	39	39	38	37	38	37	37	36	34	35	36	34	39	35.0	24
13		31	32	32	S	31	31	32	30	31	33	36	38	40	41	42	43	42	43	43	42	41	40	39	38	43	37.0	24
14		37	35	S	33	34	33	32	32	35	37	40	42	43	45	46	46	47	47	45	43	39	39	35	35	47	39.1	24
15		37	S	35	34	33	32	32	33	32	33	32	32	32	27	32	35	31	32	33	34	34	32	33	33	37	32.7	24
16		S	34	35	36	37	37	36	37	35	36	36	35	37	39	40	43	41	40	37	36	34	33	35	S	43	36.8	24
17		36	37	36	34	32	33	33	32	32	32	32	33	33	33	34	34	34	34	34	34	34	34	S	34	37	33.7	24
18		35	35	36	35	35	35	35	34	35	33	32	32	32	32	31	31	31	31	31	30	30	S	29	28	36	32.5	24
19		27	29	29	27	25	22	19	25	34	36	38	38	39	40	41	42	44	42	43	44	S	42	35	34	44	34.6	24
20		32	31	29	27	25	27	25	24	25	29	38	40	40	40	40	42	41	42	41	S	42	41	39	38	42	34.7	24
21		37	38	36	36	31	31	29	27	28	31	40	43	44	44	48	47	48	50	S	46	46	44	41	40	50	39.3	24
22		39	36	32	31	30	29	30	29	31	34	28	C	C	X	X	X	X	X	X	X	X	X	X	X	39	31.7	14
23		X	X	X	X	X	X	X	X	X	S	S	S	44	46	46	45	S	46	46	45	45	44	43	46	45.0	15	
24		42	42	42	41	41	40	S	S	38	38	38	38	38	37	37	S	35	35	35	34	34	35	34	33	42	37.5	24
25		32	31	31	31	30	31	31	32	32	33	34	34	37	38	S	38	35	35	35	33	32	29	29	28	38	32.7	24
26		27	25	25	24	21	20	19	22	24	24	27	30	31	S	33	34	34	34	33	32	30	29	28	27	34	27.5	24
27		26	27	27	26	26	25	25	25	26	28	28	28	S	29	30	32	32	22	22	21	19	19	19	19	32	25.3	24
28		20	20	20	21	22	21	21	21	24	26	29	S	41	42	41	42	44	48	44	37	40	37	35	48	31.9	24	
29		34	35	39	41	41	41	40	40	40	43	S	44	45	46	46	46	46	47	47	46	45	46	46	46	47	43.0	24
30		46	46	46	46	46	42	S	S	48	S	49	52	56	56	58	58	58	58	57	56	52	51	50	50	58	51.5	24
HOURLY MAX		46	46	46	46	46	44	43	42	48	44	49	52	56	63	58	58	58	58	57	56	52	51	50	50			
HOURLY AVG		35.7	35.2	35.0	34.5	33.3	32.8	31.4	31.7	34.0	35.0	36.5	38.3	40.5	41.3	41.3	42.0	41.9	41.6	40.7	40.1	38.7	38.8	37.4	36.9			

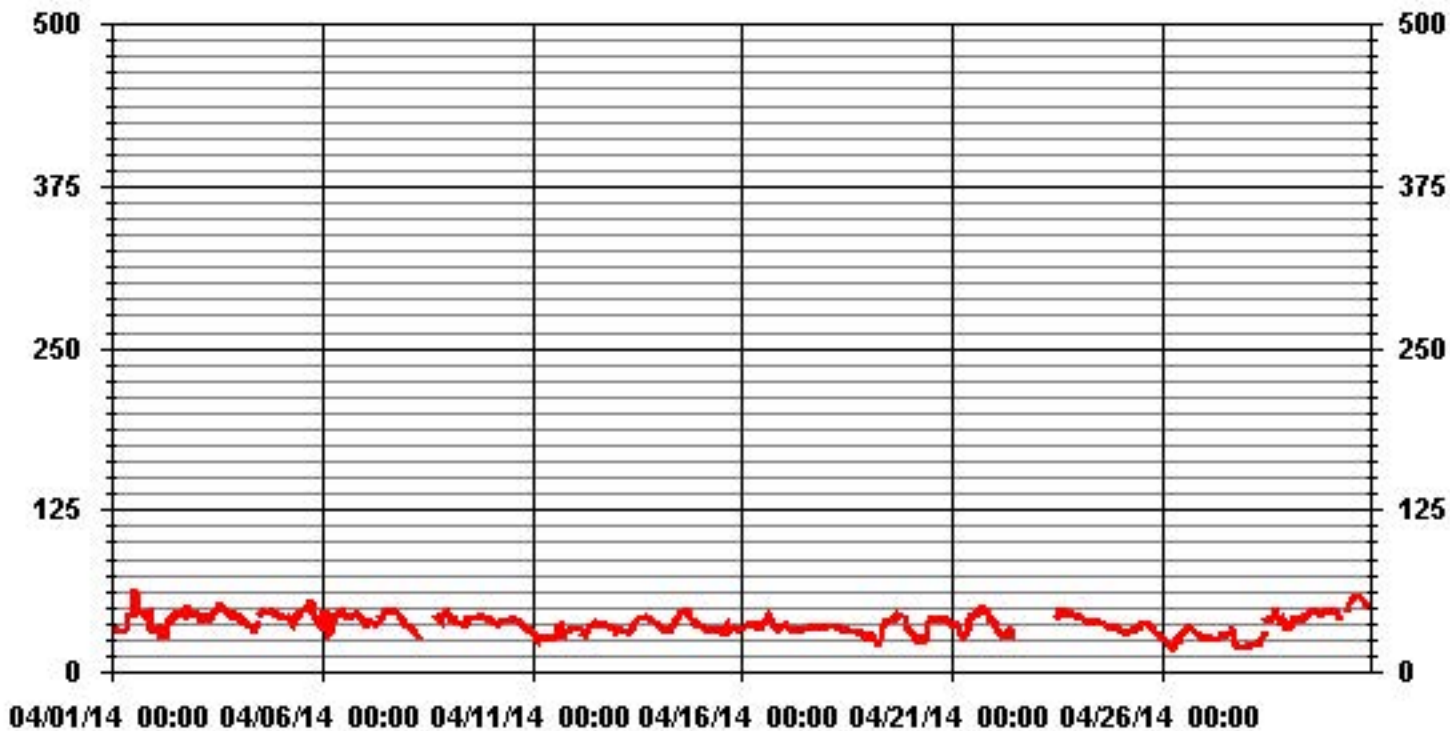
STATUS FLAG CODES

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:	651					
MAXIMUM INSTANTANEOUS VALUE:	63	PPB	@ HOUR(S)	13	ON DAY(S)	1
	VAR-VARIOUS					
IZS CALIBRATION TIME:	38	HRS	OPERATIONAL TIME:	696	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	7.36					

01 Hour Averages



LICA31
O3_ / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
Parameter : O3_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50	4.26	2.43	3.65	9.28	17.65	6.84	5.17	5.32	7.00	5.17	6.39	3.95	5.32	6.84	4.41	3.95	97.71
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.45	.45	.60	.60	.15	.00	.00	.00	2.28
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.26	2.43	3.65	9.28	17.65	6.84	5.17	5.32	7.45	5.63	7.00	4.56	5.47	6.84	4.41	3.95	

Calm : .00 %

Total # Operational Hours : 657

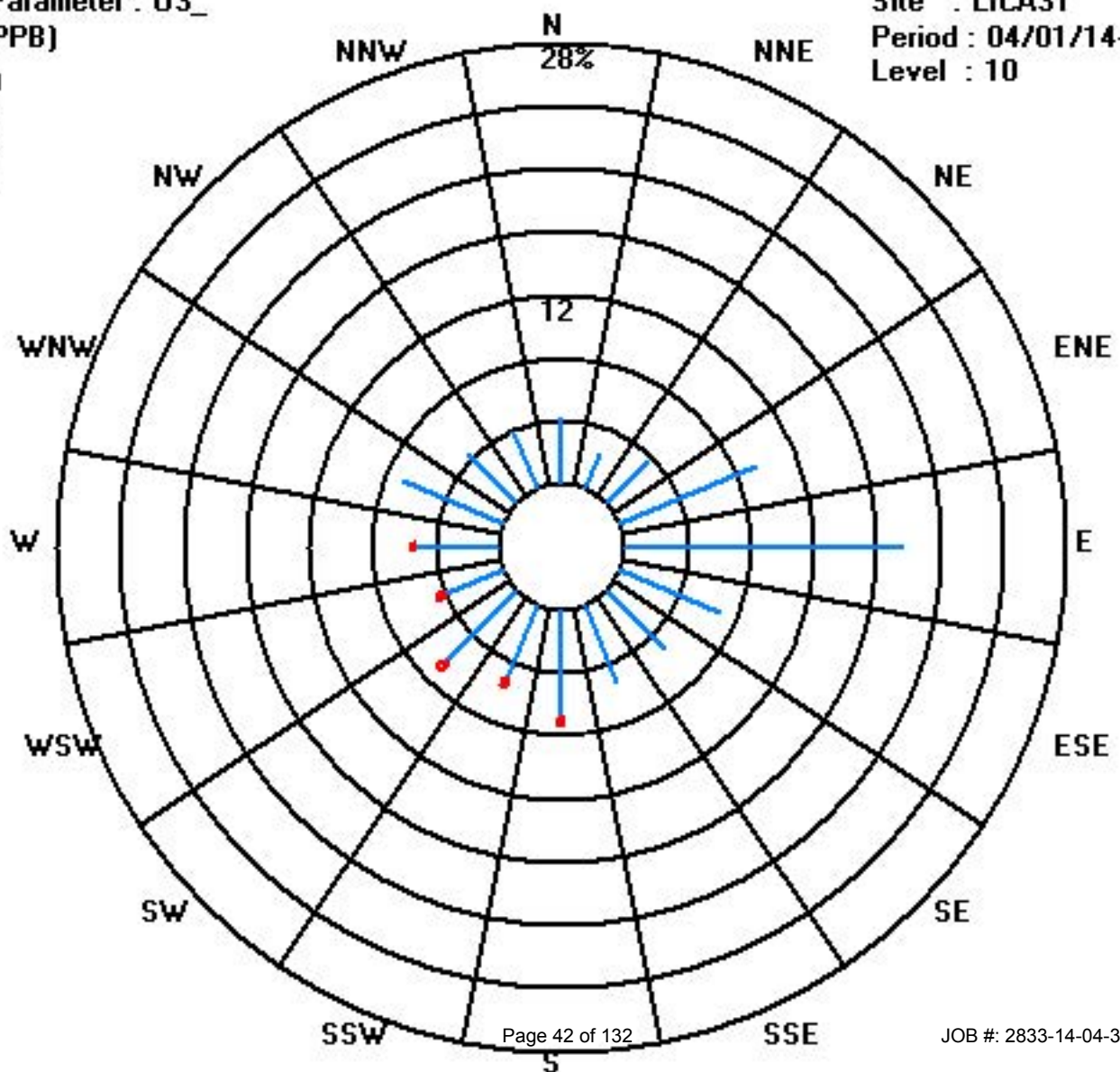
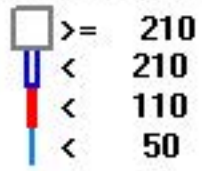
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50	28	16	24	61	116	45	34	35	46	34	42	26	35	45	29	26	642
< 110									3	3	4	4	1				15
< 210																	
>= 210																	
Totals	28	16	24	61	116	45	34	35	49	37	46	30	36	45	29	26	

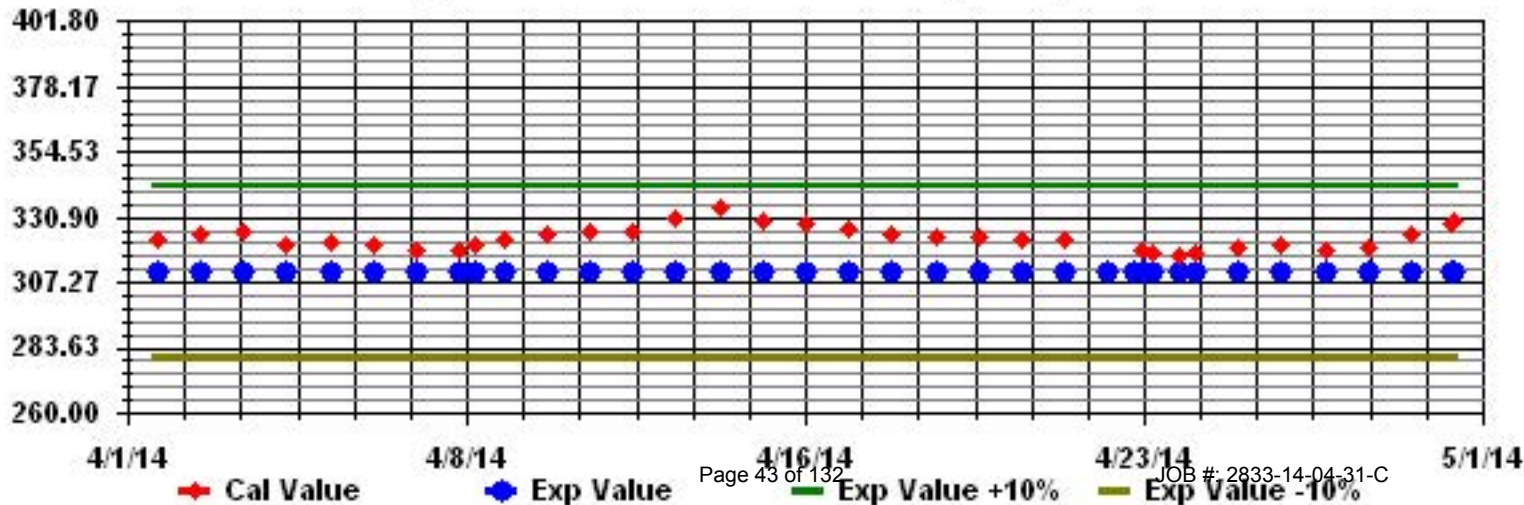
Calm : .00 %

Total # Operational Hours : 657

Class Limits (PPB)



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



Nitrogen Dioxide

Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	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	1	1	1.1	1.2	1.4	2	1.5	1.8	1.6	1.2	S	1.1	1.1	1.3	S	1	1.2	1.2	1.4	1.4	2.2	3.9	4	4	4	1.6	24
2	3.5	2.9	2.6	2.9	4.2	4.6	4.8	4	3.8	2.7	1.8	2.3	1.7	1.3	S	0.7	0.9	0.9	0.7	1.3	1	1.3	1.3	0.8	4.8	2.3	24	
3	1.2	1	4.8	3.5	1.6	0.7	0.8	1.1	1.7	0.8	0.4	0.5	0.7	S	1	1.1	1.4	1.6	1.8	1.8	1.7	1.8	1.6	1.5	4.8	1.5	24	
4	1.9	2	2.3	2.1	2	2.3	2.3	2.2	2.1	1.9	2.1	2.5	S	1	0.9	0.7	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.3	2.5	1.3	24	
5	0.4	0.5	0.4	0.5	0.5	0.6	0.8	1	0.7	0.2	0.4	S	0.6	1.1	1.2	0.3	1.4	2	2.3	2.2	2.7	3.5	6.5	3.8	6.5	1.5	24	
6	3.9	3.7	3.2	3.2	3.5	3.5	3.4	3.3	3.8	4.7	S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	4.7	3.6	11
7	X	X	X	X	X	X	X	X	X	X	C	C	C	C	C	C	C	Y	Y	Y	Y	Y	Y	Y	Y	Y	7	
8	Y	Y	Y	Y	Y	Y	Y	S	S	3.5	3.3	2.8	C	C	2.4	2.1	1.5	1.5	1.4	0.8	0.6	0.5	0.4	0.3	3.5	1.6	17	
9	0.4	0.3	0.5	0.4	0.3	0.4	0.3	S	0.1	0.1	0.2	0	0	0.2	0.1	0	0.2	0	0.1	0.1	0.2	0.2	0.2	0.4	0.5	0.2	24	
10	0.4	0.3	0.6	0.6	0.7	0.7	S	0.2	0.5	0.3	0.2	0.2	0.1	0.1	0.1	0	0.3	0.1	0.2	0.3	0.5	1.2	1	1.2	0.4	24		
11	1.3	1.1	1.4	1.6	2.1	S	1.6	1.9	1.9	2.1	1.8	2	2.1	1.9	2.1	1.4	0.9	1.1	0.8	0	0	0	0	0	2.1	1.3	24	
12	0	0	0.1	0	S	0.6	1.2	0.9	0.8	0.6	0	0.5	0.5	0	0.7	0.9	0.3	0.6	0.3	0.7	0.5	0.4	0.3	0.5	1.2	0.5	24	
13	0.5	0.3	0.2	S	0.4	1.2	1.7	S	0.2	0.4	0.2	S	0.1	0.4	0.4	0.4	0.5	0.6	0.4	0.4	0.4	0.6	0.8	1	1.7	0.5	24	
14	1.6	1.8	S	1.8	1.4	1.4	1.6	1.7	1.3	1.1	1.3	1.2	1	1.1	1	1	1.1	1.4	1.4	1.2	2.1	2.3	2	2.5	2.5	1.5	24	
15	1.9	S	1.2	1.2	1.3	1.1	1	1.3	1	1.1	1.1	0.8	0.9	C	C	C	C	C	Y	Y	Y	Y	Y	Y	Y	1.9	1.2	18
16	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	C	C	C	6.5	2.1	1.8	1.2	1.2	1.7	1.8	1.3	S	6.5	2.2	16	
17	3.2	1.6	1.5	1.4	1.2	0.6	0.5	S	4.3	1.6	1.1	0.7	0.8	0.4	0.3	0.5	0.4	0.5	0.4	0.3	0	0.3	S	3.4	4.3	1.1	24	
18	1.7	1.4	1	0.8	0.9	0.8	0.9	0.6	0.8	0.4	0.5	0.6	0.4	0.6	0.6	0.3	0.2	0.2	0.5	0.7	0.9	S	3.7	2.1	3.7	0.9	24	
19	1.7	1.3	1.3	1.1	1.1	1.8	2.2	1.4	0.9	1.1	0.9	1	1	0.9	1	1.3	1	0.9	1.1	1.2	S	4.5	3	2.2	4.5	1.5	24	
20	2.3	1.8	1.6	1.5	1.7	1.4	1.2	1	1.1	1.1	0.7	0.5	0.5	0.5	0.4	0.6	0.4	0.4	0.3	S	1.9	1.4	1.3	1.1	2.3	1.1	24	
21	1	0.9	0.9	1.3	2.7	2.2	1.7	1.5	1.5	1.7	1.5	1.4	0.9	0.4	0.4	0.3	0.4	0.6	S	3	2	2	2	1.5	3	1.4	24	
22	1.2	2	2.7	2.4	1.9	2.1	1.7	2	1.4	C	C	C	C	C	0	0	0	S	4.2	1.9	1.5	1.8	1.7	1.2	4.2	1.7	24	
23	1.2	1.2	1.1	1.1	0.5	0.6	0.6	0.5	0.5	Y	0.7	0.9	1.1	1	1	0.8	S	2.4	1.5	1.1	0.6	0.6	0.5	0.6	2.4	0.9	23	
24	0.3	0.2	0.1	0.4	0.4	0.3	0.5	0.6	0.6	0.6	0.5	0.1	0.3	0.1	0.4	S	1.7	0.9	0.9	0.5	0.2	0.4	0.1	0.2	1.7	0.4	24	
25	0	0.3	0.1	0	0.2	0.1	0	0	0	0	0	0	0	0	0	S	3.2	2	1.3	1.1	0.7	0.6	0.6	0.7	1.1	3.2	0.5	24
26	1	1.2	1.1	1.6	1.3	1.3	1.5	1.1	0.9	1.2	0.9	0.6	0.4	S	3	1.5	0.6	0.7	0.4	0.2	0.3	0.1	0.4	0.4	3	0.9	24	
27	0.4	0.4	0.3	0.5	0.2	0.2	0.1	0.3	1	1	0.6	0.8	S	2.7	1.8	1	1.3	1.8	1.7	1.4	1.5	1.2	1.2	1.2	2.7	1.0	24	
28	1	0.8	0.5	0.5	0.6	0.3	0.6	0.6	0.5	0.6	0.5	S	3.5	2.5	1.7	1.6	1.1	0.9	1.1	1.1	1.4	0.9	1.1	1.3	3.5	1.1	24	
29	1.1	1.1	0.8	0.6	0.5	0.3	0.6	0.5	0.3	0	S	3	1.5	0.5	0.3	0.2	0.2	0	0	0.1	0	0	0	0.1	3	0.5	24	
30	0.3	0	0	0	0.3	2.4	S	S	4.4	C	C	C	S	X	X	X	X	X	X	X	X	X	X	X	4.4	1.1	13	
HOURLY MAX	4	4	5	4	4	5	5	4	4	5	3	3	4	3	3	7	2	2	4	3	3	5	7	4				
HOURLY AVG	1.3	1.1	1.2	1.2	1.3	1.3	1.3	1.3	1.4	1.2	0.9	1.1	0.9	0.8	1.0	1.1	0.8	1.0	1.0	0.9	0.9	1.2	1.4	1.3				

STATUS FLAG CODES

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

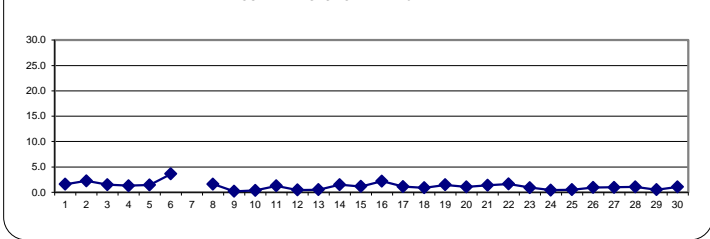
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

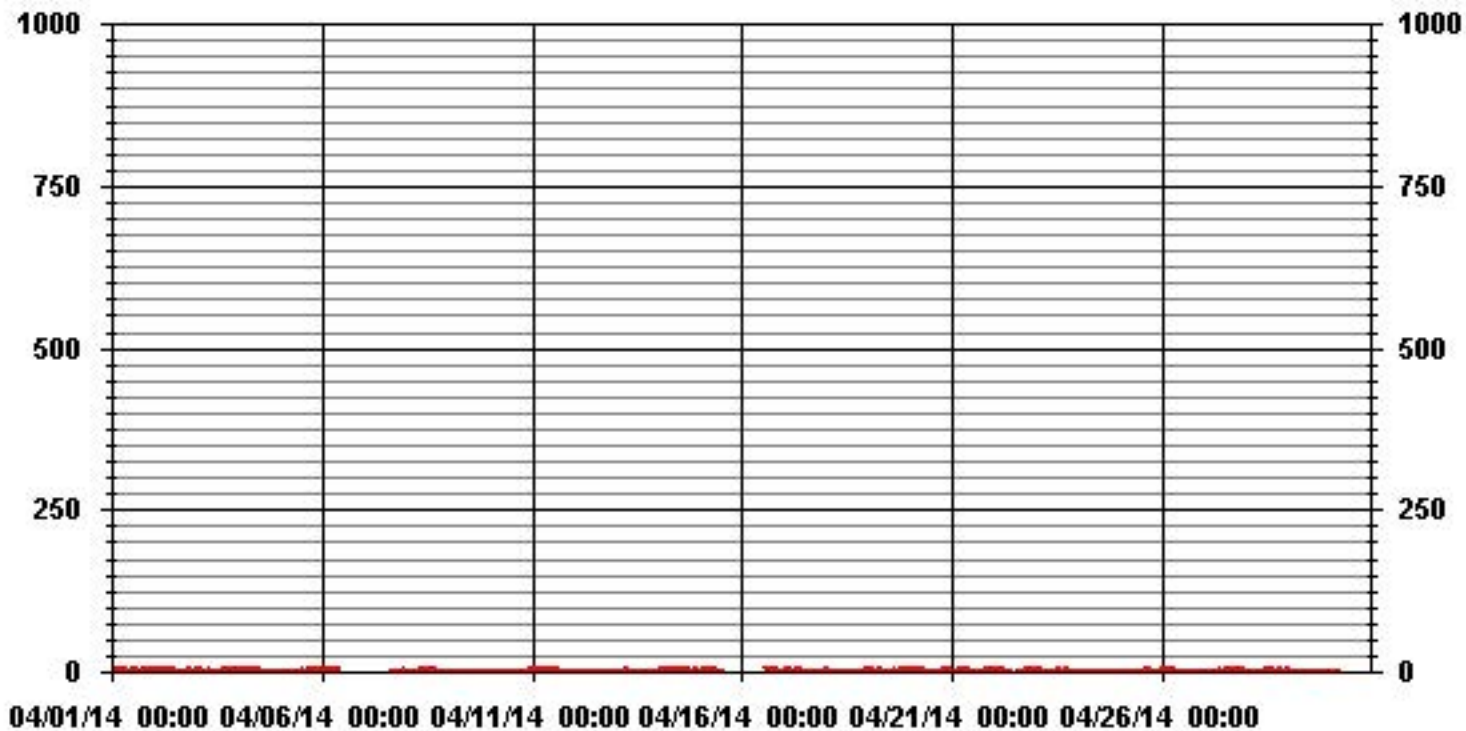
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	553					
MAXIMUM 1-HR AVERAGE:	6.5	PPB	@ HOUR(S)	22, 15	ON DAY(S)	5, 16
MAXIMUM 24-HR AVERAGE:	3.6	PPB			ON DAY(S)	6
					VAR-VARIOUS	
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:	657	HRS	
MONTHLY CALIBRATION TIME:	29	HRS	AMD OPERATION UPTIME:	91.3	%	
STANDARD DEVIATION:	1.00		MONTHLY AVERAGE:	1.13	PPB	

24 HOUR AVERAGES FOR APRIL 2014



01 Hour Averages



— LICA31 NO2_ PPB

Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	1.6	1.6	1.6	1.6	1.6	2.1	4.5	2.5	2.4	2.2	2	Y	1.5	1.7	2.4	S	1.9	2	2	2.1	2	3.8	4.7	4.8	4.8	2.4	23	
2	3.8	3.6	3.3	3.6	5.8	5.5	5.7	5.2	4.8	3.8	2.8	3.4	2.3	2.1	S	1.3	1.5	1.7	1.2	2.5	2.6	2.7	2.1	1.5	5.8	3.2	24	
3	2	2	10.8	7.4	3.1	1.5	2.4	2.1	4.3	1.8	1	1	1.9	S	1.7	1.7	2.3	2.2	2.5	2.5	2.3	2.5	2.5	2.2	10.8	2.8	24	
4	2.7	2.7	2.8	2.8	2.7	2.9	3.1	3	2.7	2.6	2.8	3.1	S	1.7	1.7	1.2	0.9	0.9	0.9	0.8	0.7	0.7	0.6	1.1	3.1	2.0	24	
5	0.9	1.2	0.8	1.9	0.9	1.5	1.8	1.4	1.4	1.1	0.8	S	2.2	1.7	8.5	1.8	2.2	3.2	3.4	3	3.4	5.1	8.7	5	8.7	2.7	24	
6	4.4	4.4	3.9	3.9	4.1	4.2	3.9	3.9	5	5.7	S	X	X	X	X	X	X	X	X	X	X	X	X	X	5.7	4.3	11	
7	X	X	X	X	X	X	X	X	X	X	C	C	C	C	C	C	C	Y	Y	Y	Y	Y	Y	Y	Y	7	7	
8	Y	Y	Y	Y	Y	Y	Y	S	S	4.7	4.5	C	C	C	C	3.3	2.9	2.2	2.7	2.7	1.3	1.3	1.1	0.8	0.9	4.7	2.4	17
9	1	0.9	1.2	1.1	0.9	1.1	1.1	S	10.9	1.1	0.8	S	0.7	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	10.9	1.4	24	
10	1.1	0.8	1.1	1.1	9.4	1.4	S	0.9	1.2	1.2	0.7	0.8	0.8	0.7	0.7	0.7	0.8	2.2	0.8	1	1.1	1.5	1.8	1.6	9.4	1.5	24	
11	1.9	1.6	2.1	2.6	3.1	S	2.7	3.3	2.8	2.9	3	2.8	3	3.3	3	2.7	1.8	2.2	2.1	0.9	0.9	1	0.7	1	3.3	2.2	24	
12	0.9	1	1	0.8	S	1.7	2	1.8	1.9	2.2	1.5	1.3	1.5	1.8	2	3.1	1.5	2.6	1.7	2	1.4	1.4	1.4	1.5	3.1	1.7	24	
13	1.4	1.3	1.2	S	1.4	2.2	S	S	1.1	1.2	0.9	S	1.1	1.1	1.1	1.1	1.4	1.4	1.4	1.1	1.2	1.3	1.5	1.9	2.2	1.3	24	
14	2.5	2.9	S	2.8	2	2.1	2.2	2.3	2	1.8	2.1	2.1	1.8	1.8	1.8	2	1.8	2.1	2.3	2	2.9	3	3	3.6	3.6	2.3	24	
15	2.5	S	2.1	1.8	1.8	1.7	1.6	1.8	1.6	1.6	1.6	1.5	1.7	C	C	C	C	C	Y	Y	Y	Y	Y	Y	Y	2.5	1.8	18
16	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	C	C	3.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	S	3.3	2.3	16	
17	6.5	1.8	1.8	1.8	1.2	1.2	1.2	S	9.8	2.7	1.6	1.6	1	1	1	0.4	1	0.4	0.4	0.4	0.4	S	5.9	9.8	2.0	24		
18	2.4	1.8	1.2	1.2	0.6	0.6	0.6	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6	0.6	1.2	1.2	1.2	S	6.5	3	6.5	1.3	24		
19	2.4	1.8	1.8	1.8	1.8	1.3	3	1.8	1.2	1.8	1.2	1.8	1.2	1.2	1.8	2.4	1.2	1.8	1.2	1.2	S	7	4.1	2.9	1.3	24		
20	2.9	2.3	2.3	2.3	2.3	2.3	2.3	1.7	1.7	2.3	1.7	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	S	3	3	2.4	1.8	3	1.9	24	
21	1.2	1.2	1.2	2.4	3.6	3	2.4	2.4	2.4	2.4	2.4	1.9	1.8	1.2	0.6	0.6	0.7	1.2	S	4.8	2.4	2.5	2.4	1.9	4.8	2.0	24	
22	1.2	3	3	2.4	1.8	1.8	1.8	2.4	1.8	C	C	C	C	0.1	0.1	0.1	S	6.4	2.4	1.2	1.8	1.2	1.2	6.4	1.9	24		
23	1.2	1.2	0.5	1.1	0.5	0.5	0.5	0.5	0.5	Y	Y	0.5	0.5	0.5	0.5	S	2.4	1.8	1.8	1.2	1.2	1.2	0.6	2.4	0.9	22		
24	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	S	2.9	1.8	1.8	1.2	1.2	0.6	0.6	1.1	2.9	0.9	24	
25	0.6	0.6	0.6	0.6	1.1	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	S	4.1	2.2	1.7	1.1	1.1	1.1	1.1	1.1	1.1	4.1	1.0	24	
26	1.1	1.1	1.1	1.7	1.7	1.7	1.7	1.1	1.1	1.1	1.1	1.1	0.5	S	4.3	2	1.4	0.8	0.8	0.8	0.8	0.8	0.2	0.7	4.3	1.2	24	
27	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.4	0.8	0.8	1.9	S	4.2	3	1.8	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.8	4.2	1.5	24	
28	1.8	1.8	1.8	1.8	1.2	1.2	1.8	1.8	1.2	1.2	1.2	S	4.2	3	2.4	1.8	1.8	1.8	2.3	2.4	2.3	1.2	1.8	1.8	4.2	1.9	24	
29	1.8	1.2	1.2	1.2	0.6	0.6	1.2	1.2	0.6	0	S	4.8	1.8	0.6	0	0	0	0	0.6	1.2	0	0	0	0.6	4.8	0.8	24	
30	0.6	0	0	0	1.8	3.6	S	S	C	C	C	C	S	X	X	X	X	X	X	X	X	X	X	X	3.6	1.0	13	
HOURLY MAX	7	4	11	7	9	13	6	5	11	6	5	5	4	4	9	4	3	3	6	5	3	7	9	6				
HOURLY AVG	1.9	1.6	1.9	1.9	2.1	2.3	2.0	1.9	2.5	1.9	1.6	1.7	1.5	1.5	1.9	1.5	1.5	1.7	1.8	1.7	1.6	2.0	2.2	2.0				

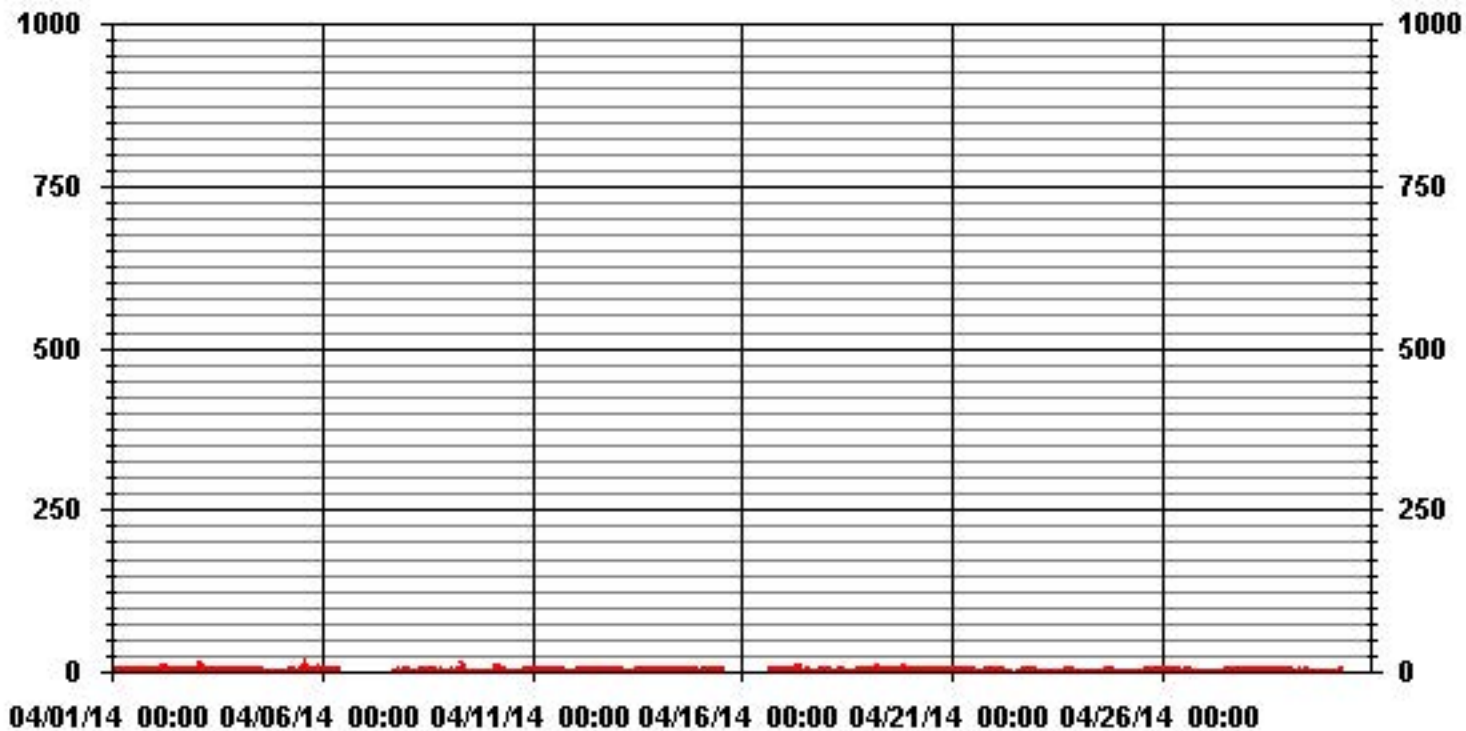
STATUS FLAG CODES

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:	575					
MAXIMUM INSTANTANEOUS VALUE:	13	PPB	@ HOUR(S)	5	ON DAY(S)	19
	VAR-VARIOUS					
IZS CALIBRATION TIME:	37	HRS	OPERATIONAL TIME:	655	HRS	
MONTHLY CALIBRATION TIME:	32	HRS				
STANDARD DEVIATION:	1.49					

01 Hour Averages



— LICA31 NO2MAX PPB

LICA31
 NO2_ / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : NO2_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	4.46	2.64	3.80	8.59	20.82	7.60	4.62	5.45	6.94	5.61	6.61	3.80	4.62	5.95	4.46	3.96	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	4.46	2.64	3.80	8.59	20.82	7.60	4.62	5.45	6.94	5.61	6.61	3.80	4.62	5.95	4.46	3.96	

Calm : .00 %

Total # Operational Hours : 605

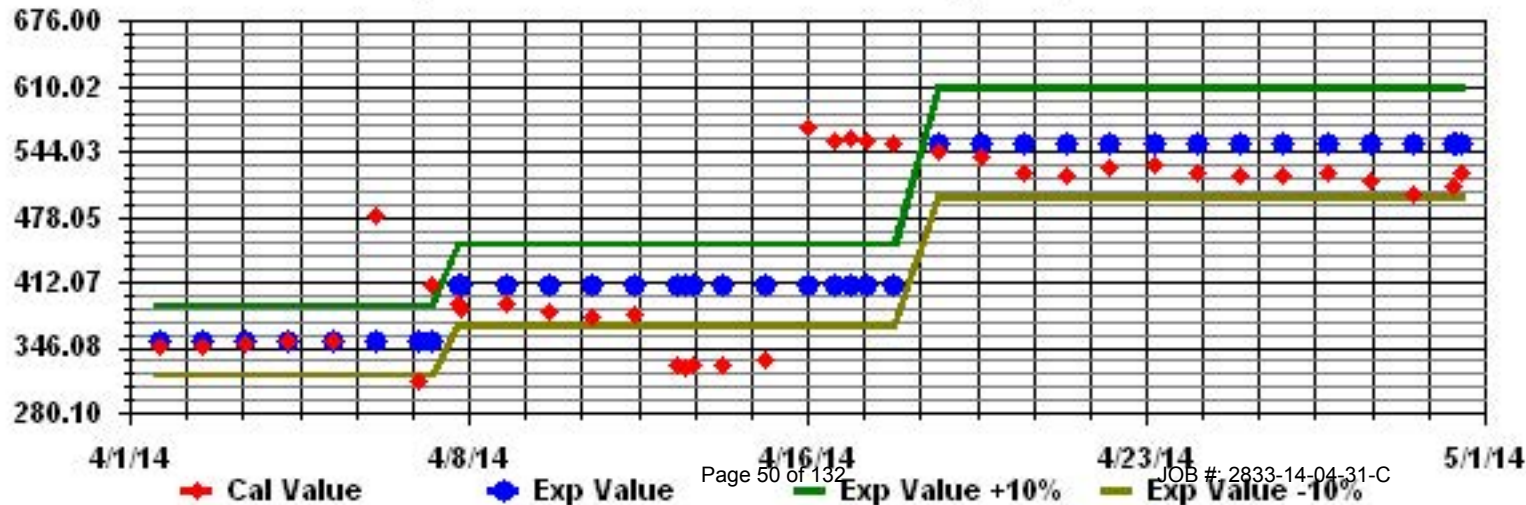
Distribution By Samples

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	27	16	23	52	126	46	28	33	42	34	40	23	28	36	27	24	605
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	27	16	23	52	126	46	28	33	42	34	40	23	28	36	27	24	

Calm : .00 %

Total # Operational Hours : 605

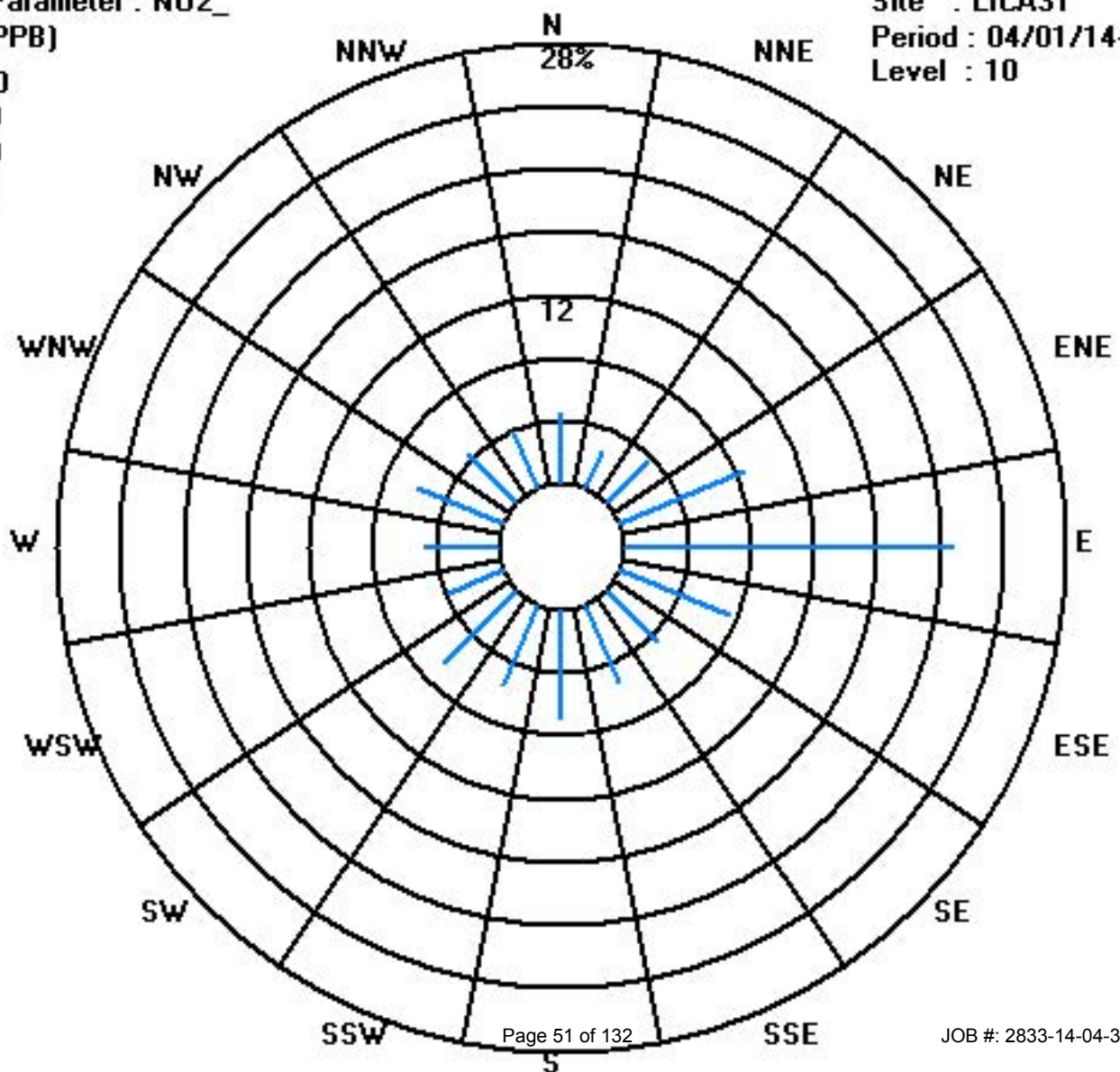
Calibration Graph for Site: LICA31 Parameter: NO2_ Sequence: NO2 Phase: SPAN



Class Limits (PPB)

Period : 04/01/14-04/30/14

Level : 10



Nitric Oxide

Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

NITRIC OXIDE (NO) 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	0	0	0	0	0	0	0	0	0	0	S	0	0.2	0.2	S	0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	24
2	0	0.2	0.1	0.1	0.1	0.2	0.4	0.3	0.2	0.1	0	0	0	0	S	0	0	0.1	0.1	0.1	0	0.1	0.2	0.1	0.4	0.1	0.4	0.1	24
3	0	0	0	0.1	0.1	0.1	0.1	0	0.1	0.2	0.2	0	0.2	S	0	0.1	0.1	0	0.1	0.1	0	0.1	0	0.1	0	0.1	0.2	0.1	24
4	0	0.1	0.1	0.1	0.3	0	0.2	0.2	0.1	0.1	0.1	0.1	S	0	0	0	0	0	0.1	0	0	0	0	0	0	0.3	0.1	24	
5	0	0	0.2	0	0.1	0	0	0	0	0	0	0	S	0	0.2	0.1	0	0.1	0.1	0.2	0.2	0.2	0.3	0.1	0.3	0.1	0.3	0.1	24
6	0.1	0.2	0.3	0.1	0.2	0.2	0.1	0.2	0	0.2	S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.3	0.2	11
7	X	X	X	X	X	X	X	X	X	X	C	C	C	C	C	C	C	Y	Y	Y	Y	Y	Y	Y	Y	0	0	7	
8	Y	Y	Y	Y	Y	Y	Y	S	S	0	0	0.4	C	C	C	0.1	0	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.4	0.2	17	
9	0.3	0.4	0.3	0.2	0.2	0.2	0.3	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0.4	0.1	24	
10	0	0	0	0	0.2	0.1	S	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.0	24	
11	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
12	0	0	0	0	S	0	0.1	0.1	0	0	0	0	0	0	0	0.3	0	0	0.1	0	0	0	0	0	0	0.3	0.0	24	
13	0	0	0	S	0	0	0.6	S	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.0	24	
14	0	0	S	0	0	0.1	0.1	0.1	0.1	0.2	0.1	0	0	0	0.1	0	0	0	0	0.1	0	0.1	0	0	0	0	0.2	0.0	24
15	0	S	0.1	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.4	0.4	0.3	C	C	C	C	C	C	Y	Y	Y	Y	Y	Y	Y	0.4	0.3	18
16	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	C	C	C	0.2	0	0	0	0	0	0	0	0	S	0.2	0.0	16
17	0.6	0.1	0	0.1	0	0.3	0.4	S	0.5	0.4	0.3	0.4	0.2	0.2	0.2	0	0	0	0	0	0	0	0	0	S	0.4	0.6	0.2	24
18	0.2	0.1	0	0.2	0.1	0.2	0.1	0.4	0.5	0.6	0.6	0.4	0.6	0.2	0.2	0.4	0.2	0.3	0.3	0.5	0.1	S	0.4	0	0.6	0.3	0.6	0.3	24
19	0	0	0	0.1	0.1	0	0.5	0.4	0.4	0.2	0.3	0.3	0	0	0.3	0.2	0.1	0.3	0	0	S	0.7	0.5	0.3	0.7	0.2	0.4	0.2	24
20	0.2	0.2	0.2	0.4	0	0.3	0.5	0.6	0.6	0.5	0.5	0.1	0.1	0.1	0.4	0	0.2	0.4	0.3	S	0.6	0.4	0	0	0.6	0.3	0.6	0.3	24
21	0.1	0.2	0	0.2	0.1	0.2	0.6	0.7	1.1	L2	0.6	0.6	0.5	0.4	0	0.3	0.2	0	S	0.7	0.5	0.6	0.3	0.6	L2	0.4	0.4	0.4	24
22	0.5	0	0.5	0.4	0.1	0.2	0.6	0.6	0.6	S	S	S	S	S	S	0.7	0.4	0.5	S	0.5	0.3	0.3	0	0.1	0.3	0.7	0.4	0.4	24
23	0	0	0	0	0	0	0	0	0.1	Y	0.2	0.2	0	0	0	0	S	0.2	0	0	0	0	0	0	0	0.2	0.0	0.2	23
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0.6	0.2	0.4	0.4	0.2	0.5	0.4	1	0.2	0.4	0.2	24
25	0.6	0.3	0.5	0.6	0.4	0.5	0.6	0.7	0.7	0.7	0.6	0.7	0.6	0.4	S	0.2	0	0	0	0	0	0	0	0	0	0.7	0.4	0.4	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.9	0.6	0.6	0.5	0.4	0.4	0.4	0.5	0.2	0.2	0.9	0.2	0.2	24
27	0.2	0.2	0	0.1	0.4	0.4	0.5	0.4	0.5	0.6	0.6	0.9	S	L2	0.8	0.7	0.7	0.8	0.7	0.7	0.3	0.6	0.6	0.6	L2	0.5	0.4	0.4	24
28	0.6	0.6	0.7	0.7	0.6	0.5	0.7	0.8	0.7	0.7	0.7	S	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.8	0.3	0.2	24
29	0	0	0	0	0	0	0	0.2	0	0	S	0.5	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0	0.5	0.1	0.1	0.1	24
30	0	0	0	0	0	0.2	S	S	0.5	C	C	C	S	X	X	X	X	X	X	X	X	X	X	X	X	0.5	0.1	0.1	13
HOURLY MAX		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
HOURLY AVG		0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1

STATUS FLAG CODES

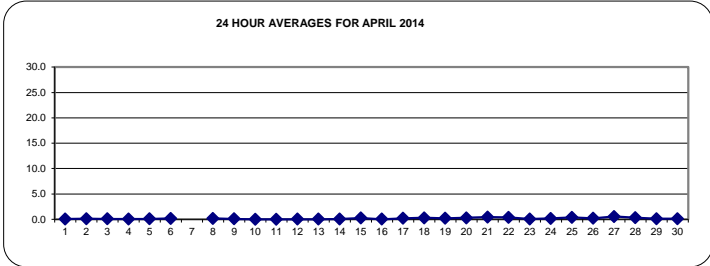
C - CALIBRATION	Q - QUALITY ASSURANCE
Y - MAINTENANCE	R - RECOVERY
S - DAILY ZERO/SPAN CHECK	X - MACHINE MALFUNCTION
P - POWER FAILURE	O - OPERATOR ERROR
G - OUT FOR REPAIR	K - COLLECTION ERROR

OBJECTIVE LIMIT:

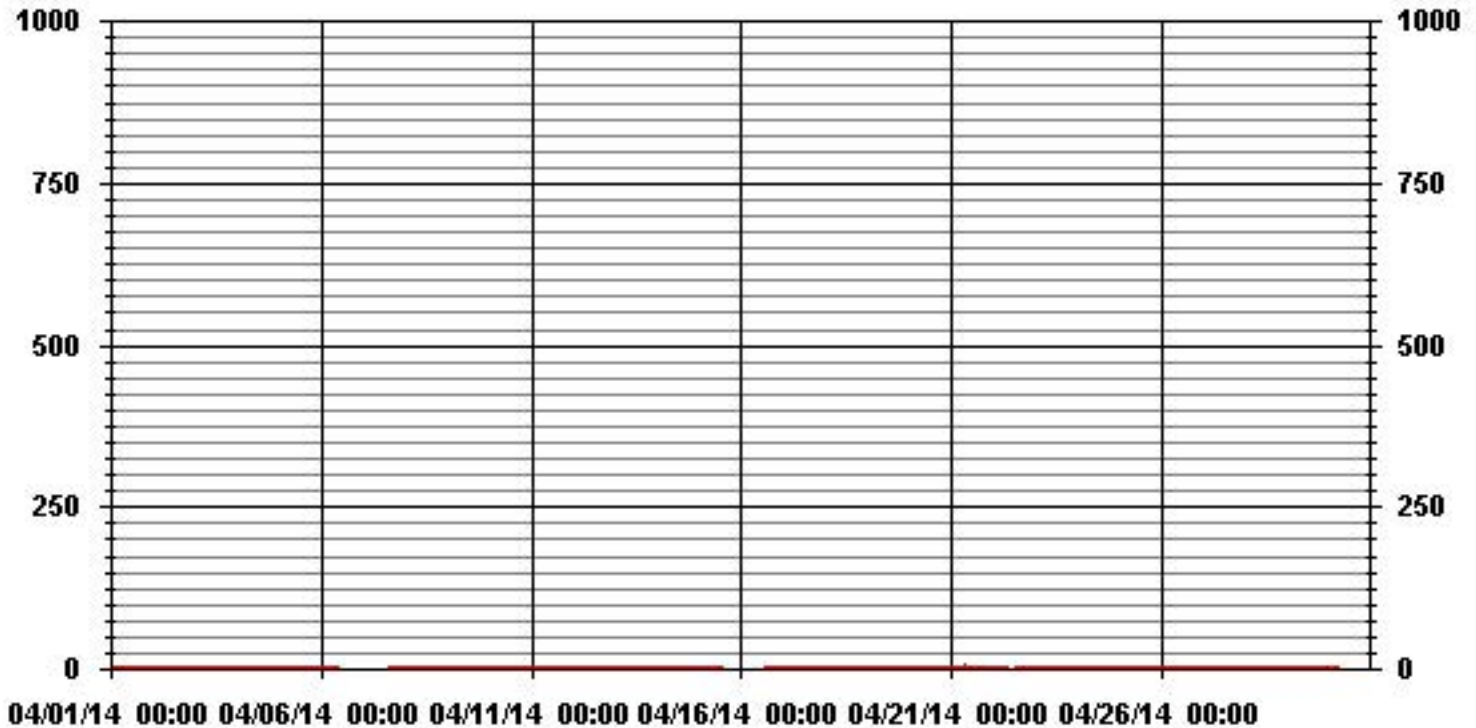
ALBERTA ENVIRONMENT: 1-HR NA PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA				
NUMBER OF NON-ZERO READINGS:	307				
MAXIMUM 1-HR AVERAGE:	1.2	PPB	@ HOUR(S)	9, 13	ON DAY(S) 21, 27
MAXIMUM 24-HR AVERAGE:	0.5	PPB			ON DAY(S) 27
					VAR-VARIOUS
IZS CALIBRATION TIME:	41	HRS	OPERATIONAL TIME:	657	HRS
MONTHLY CALIBRATION TIME:	24	HRS	AMD OPERATION UPTIME:	91.3	%
STANDARD DEVIATION:	0.23		MONTHLY AVERAGE:	0.17	PPB



01 Hour Averages



Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

NITRIC OXIDE MAX instantaneous maximum in ppb

MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
	DAY																											
1	0.6	0.4	0.4	0.4	0.4	0.7	1.5	0.7	0.8	0.4	0.8	Y	0.5	0.8	0.9	S	0.6	0.7	0.7	0.8	0.7	0.6	0.8	0.6	0.6	1.5	0.7	23
2	0.6	0.6	0.6	0.8	0.6	0.8	1	0.9	0.9	0.6	0.6	0.7	0.6	0.5	S	0.5	0.8	0.5	0.6	0.8	0.6	0.6	0.9	0.6	1	0.7	24	
3	0.5	0.5	0.5	0.6	0.7	0.7	0.6	0.8	2.4	0.9	0.8	0.6	0.8	S	0.6	0.8	0.8	0.5	0.6	0.6	0.6	0.8	0.9	0.6	2.4	0.7	24	
4	0.5	0.6	0.8	0.6	0.8	0.6	0.6	0.6	0.6	1	0.8	0.6	S	0.4	0.7	0.7	0.3	0.4	0.8	0.5	0.6	0.6	0.5	0.6	1	0.6	24	
5	0.6	0.7	0.8	0.7	0.7	0.6	0.5	0.7	0.5	0.7	0.5	S	0.6	1.1	2.5	20	0.7	1	0.7	1	0.7	0.9	1	0.8	20	1.7	24	
6	0.7	0.7	0.9	0.7	0.9	0.7	0.7	0.7	0.6	0.9	S	X	X	X	X	X	X	X	X	X	X	X	X	X	0.9	0.8	11	
7	X	X	X	X	X	X	X	X	X	X	C	C	C	C	C	C	C	Y	Y	Y	Y	Y	Y	Y	Y	Y	7	
8	Y	Y	Y	Y	Y	Y	Y	S	S	0.6	1.3	C	C	C	C	1.1	0.7	1.1	1	1.4	0.9	1	0.7	0.9	0.8	1.4	1.0	17
9	0.8	1.1	0.9	0.8	0.7	0.8	1	S	2.1	0.6	0.6	S	0.4	0.4	0.4	0.4	0.7	0.7	0.5	0.5	0.6	1	0.5	0.5	2.1	0.7	24	
10	0.4	0.4	0.5	0.7	12.3	1	S	0.7	1.3	0.4	0.6	0.4	0.5	0.4	0.3	0.4	0.3	0.9	0.4	0.2	0.3	0.3	0.4	0.3	12.3	1.0	24	
11	0.2	0.6	0.3	0.3	0.4	S	0.6	0.6	0.4	0.6	0.3	0.6	0.5	0.7	0.7	0.6	0.6	0.5	0.3	0.5	0.6	0.3	0.6	0.5	0.7	0.5	24	
12	0.6	0.6	0.6	0.6	S	0.5	0.9	1.3	0.9	3.8	0.7	0.7	1	0.5	1.5	1.6	1	1.2	0.6	0.6	0.6	0.5	0.4	0.7	3.8	0.9	24	
13	0.7	0.5	0.4	S	0.6	0.6	S	S	0.3	0.6	0.5	S	0.1	0.3	0.1	0.3	0.3	0.3	0.1	0.3	0.3	0.2	0.1	0.1	0.7	0.3	24	
14	0.2	0.2	S	0.6	0.5	0.6	0.8	0.8	0.7	0.8	0.7	0.6	0.5	0.5	0.8	0.5	0.5	0.6	0.5	0.5	0.8	0.7	0.5	0.5	0.8	0.6	24	
15	0.4	S	0.9	0.8	0.9	0.7	0.9	1	0.8	0.8	1.1	1	0.8	C	C	C	C	C	Y	Y	Y	Y	Y	Y	Y	1.1	0.8	18
16	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	S	0	0.0	16
17	0.7	0.7	0.1	0.7	0.1	0.7	0.7	S	1.7	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	S	1.3	1.7	0.5	24	
18	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.7	0.6	0.6	0.6	S	1.1	0.4	1.1	0.6	24	
19	0.4	0.4	0.4	0.4	0.4	9.8	1	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.7	0.5	0.5	0.5	0.5	S	1.3	0.7	0.7	9.8	1.0	24
20	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0	0.7	0.7	0.7	S	1.2	0.6	0.6	0.6	1.2	0.7	24	
21	0.6	0.6	0.6	0.6	0.6	0.6	1.2	1.2	1.2	1.3	1.3	0.7	0.6	0.6	0.6	0.6	S	1.2	0.6	0.6	0.6	0.7	1.3	0.8	24			
22	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.3	C	C	C	C	C	1.2	0.6	0.7	S	1	0.4	0.4	0.4	0.4	0.4	1.3	0.6	24	
23	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	Y	Y	0.3	0.3	0.2	0.2	0.2	S	0.6	0	0	0	0	0	0.6	0.2	22		
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1.9	0.7	0.7	0.7	0.7	0.7	0.7	1.9	0.3	24		
25	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	S	0.7	0	0	0	0	0	0	0	0	0.7	0.5	24	
26	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1.3	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.3	0.3	24		
27	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	2.5	S	2	1.4	0.8	1.4	1.4	0.8	0.7	0.7	0.7	0.7	2.5	0.9	24		
28	0.7	0.7	0.7	0.7	0.7	0.7	1.3	1.9	0.7	0.7	S	0.7	0.1	0.1	0	0	0	0	0	0	0	0.1	0.1	0.1	1.9	0.5	24	
29	0	0.1	0.1	0.1	0.1	0.1	0.7	1.3	0.7	0.1	S	0.9	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.3	0.3	24		
30	0.2	0.2	0.2	0.2	0.2	0.2	S	S	C	C	C	C	C	X	X	X	X	X	X	X	X	X	X	X	0.2	0.2	13	
HOURLY MAX	1	1	1	1	12	10	2	2	2	4	1	3	1	2	3	20	2	1	1	1	1	1	1	1	1	1	1	
HOURLY AVG	0.5	0.5	0.5	0.5	1.0	0.9	0.7	0.7	0.8	0.7	0.6	0.7	0.5	0.6	0.7	1.4	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		

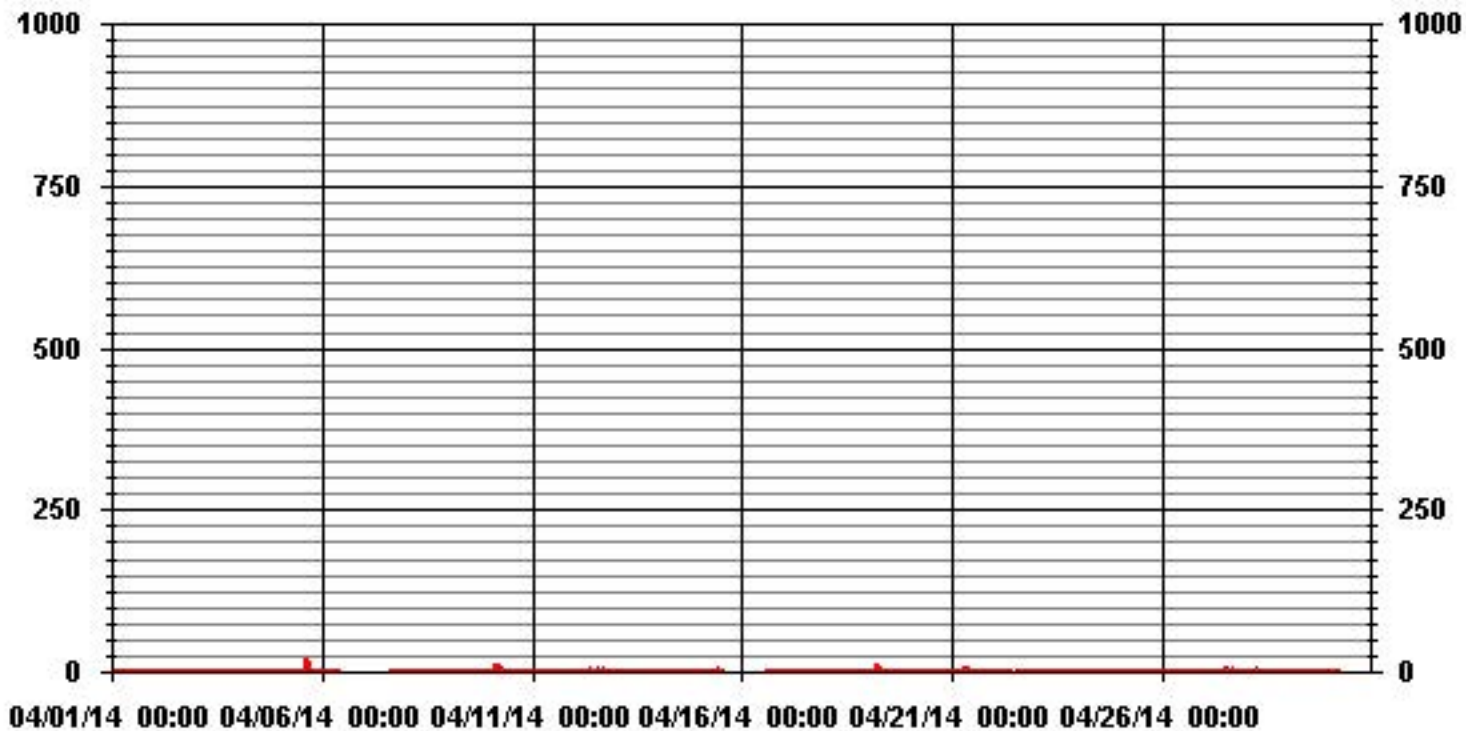
STATUS FLAG CODES

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:	529					
MAXIMUM INSTANTANEOUS VALUE:	20	PPB	@ HOUR(S)	15	ON DAY(S)	5
	VAR-VARIOUS					
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:	655	HRS	
MONTHLY CALIBRATION TIME:	33	HRS				
STANDARD DEVIATION:	1.08					

01 Hour Averages



LICA31
 NO_ / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50.0	4.46	2.64	3.80	8.59	20.82	7.60	4.62	5.45	6.94	5.61	6.61	3.80	4.62	5.95	4.46	3.96	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	4.46	2.64	3.80	8.59	20.82	7.60	4.62	5.45	6.94	5.61	6.61	3.80	4.62	5.95	4.46	3.96	

Calm : .00 %

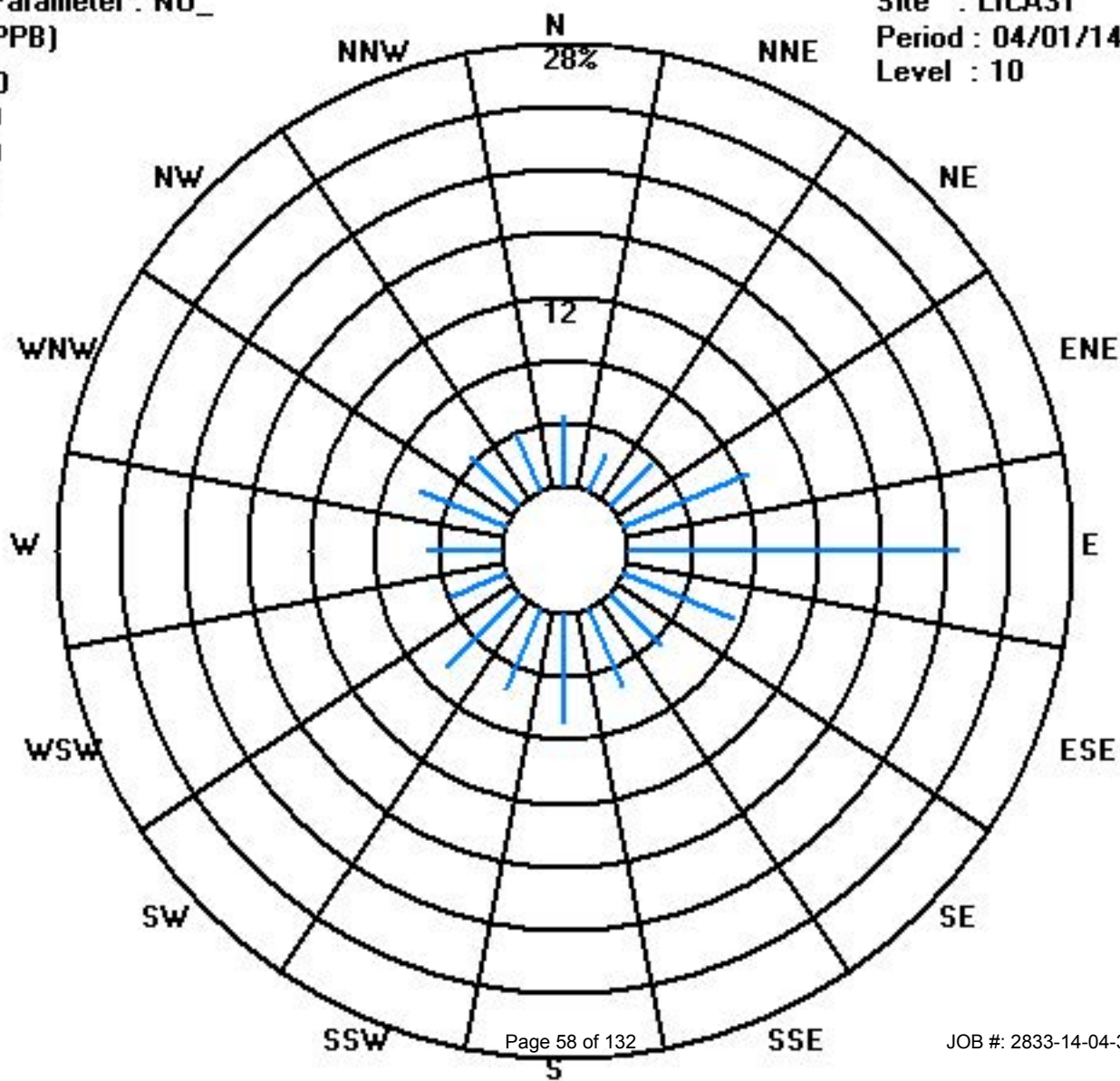
Total # Operational Hours : 605

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	16	23	52	126	46	28	33	42	34	40	23	28	36	27	24	605
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	27	16	23	52	126	46	28	33	42	34	40	23	28	36	27	24	

Calm : .00 %

Total # Operational Hours : 605



Oxides of Nitrogen

Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

OXIDES OF NITROGEN (NOx) hourly averages in ppb

MST	HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
	DAY																											
1	1.1	1	1	1.1	1.2	1.4	2	1.5	1.8	1.6	1.2	S	1.1	1.3	1.5	S	1	1.3	1.3	1.6	1.5	2.3	4	4.1	4.1	4.1	1.6	24
2	3.5	3.1	2.7	3	4.3	4.8	5.2	4.3	4	2.8	1.8	2.3	1.7	1.3	S	0.7	0.9	1	0.8	1.4	1	1.4	1.5	0.9	5.2	2.4	24	
3	1.2	1	4.8	3.6	1.7	0.8	0.9	1.1	1.8	1	0.6	0.5	0.9	S	1	1.2	1.5	1.6	1.9	1.9	1.7	1.9	1.6	1.6	4.8	1.6	24	
4	1.9	2.1	2.4	2.2	2.3	2.3	2.5	2.4	2.2	2	2.2	2.6	S	1	0.9	0.7	0.3	0.3	0.4	0.2	0.1	0.1	0.1	0.3	2.6	1.4	24	
5	0.4	0.5	0.6	0.5	0.6	0.6	0.8	1	0.7	0.2	0.4	S	0.6	1.3	1.3	0.3	1.5	2.1	2.4	2.4	2.9	3.7	6.8	3.9	6.8	1.5	24	
6	4	3.9	3.5	3.3	3.7	3.7	3.5	3.5	3.8	4.9	S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	4.9	3.8	11
7	X	X	X	X	X	X	X	X	X	X	C	C	C	C	C	C	C	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	7
8	Y	Y	Y	Y	Y	Y	Y	S	S	3.5	3.3	3.2	C	C	C	2.5	2.1	1.7	1.7	1.7	1.1	0.8	0.7	0.6	0.5	3.5	1.8	17
9	0.7	0.7	0.8	0.6	0.5	0.6	0.6	S	0.1	0.1	0.2	S	0	0.2	0.1	0	0.2	0	0.1	0.1	0.3	0.2	0.2	0.4	0.8	0.3	24	
10	0.4	0.3	0.6	0.6	0.9	0.8	S	0.2	0.6	0.3	0.2	0.2	0.1	0.1	0.1	0	0	0.3	0.1	0.2	0.3	0.5	1.2	1	1.2	0.4	24	
11	1.3	1.1	1.4	1.6	2.1	S	1.6	1.9	1.9	2.1	1.8	2	2.1	1.9	2.1	1.4	0.9	1.1	0.8	0	0	0	0	0	2.1	1.3	24	
12	0	0	0.1	0	S	0.6	1.3	1	0.8	0.6	0	0.5	0.5	0	1	0.9	0.3	0.7	0.3	0.7	0.5	0.4	0.3	0.5	1.3	0.5	24	
13	0.5	0.3	0.2	S	0.4	1.2	2.3	S	0.2	0.4	0.2	S	0.1	0.4	0.4	0.4	0.5	0.6	0.4	0.4	0.4	0.6	0.8	1	2.3	0.6	24	
14	1.6	1.8	S	1.8	1.4	1.5	1.7	1.8	1.4	1.3	1.4	1.2	1	1.1	1.1	1	1.1	1.4	1.5	1.2	2.2	2.3	2	2.5	2.5	1.5	24	
15	1.9	S	1.3	1.4	1.5	1.4	1.3	1.5	1.3	1.4	1.5	1.2	1.2	C	C	C	C	C	C	Y	Y	Y	Y	Y	Y	1.9	1.4	18
16	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	C	C	C	6.7	2.1	1.8	1.2	1.2	1.7	1.8	1.3	S	6.7	2.2	16
17	3.8	1.7	1.5	1.5	1.2	0.9	0.9	S	4.8	2	1.4	1.1	1	0.6	0.5	0.5	0.4	0.5	0.4	0.3	0	0.3	S	3.8	4.8	1.3	24	
18	1.9	1.5	1	1	1	1	1	1	1.3	1	1.1	1	1	0.8	0.8	0.7	0.4	0.5	0.8	1.2	1	S	4.1	2.1	4.1	1.2	24	
19	1.7	1.3	1.3	1.2	1.2	1.8	2.7	1.8	1.3	1.3	1.2	1.3	1	0.9	1.3	1.5	1.1	1.2	1.1	1.2	S	5.2	3.5	2.5	5.2	1.7	24	
20	2.5	2	1.8	1.9	1.7	1.7	1.7	1.6	1.7	1.6	1.2	0.6	0.6	0.6	0.8	0.6	0.6	0.6	0.8	0.6	S	2.5	1.8	1.3	1.1	2.5	1.4	24
21	1.1	1.1	0.9	1.5	2.8	2.4	2.3	2.2	2.6	2.9	2.1	2	1.4	0.8	0.4	0.6	0.6	0.6	S	3.7	2.5	2.6	2.3	2.1	3.7	1.8	24	
22	1.7	2	3.2	2.8	2	2.3	2.3	2.6	2	C	C	C	C	C	0.7	0.4	0.5	S	4.7	2.2	1.8	1.8	1.8	1.5	4.7	2.0	24	
23	1.2	1.2	1.1	1.1	0.5	0.6	0.6	0.5	0.6	Y	0.9	1.1	1.1	1	1	0.8	S	2.6	1.5	1.1	0.6	0.6	0.5	0.6	2.6	0.9	23	
24	0.3	0.2	0.1	0.4	0.4	0.3	0.5	0.6	0.6	0.6	0.5	0.1	0.3	0.1	0.4	S	2.7	1.5	1.1	0.9	0.6	0.6	0.6	0.6	2.7	0.6	24	
25	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.6	0.7	0.6	0.4	S	3.4	2	1.3	1.1	0.7	0.6	0.6	0.7	1.1	3.4	0.9	24	
26	1	1.2	1.1	1.6	1.3	1.3	1.5	1.1	0.9	1.2	0.9	0.6	0.4	S	3.9	2.1	1.2	1.2	0.8	0.6	0.7	0.6	0.6	0.6	3.9	1.1	24	
27	0.6	0.6	0.3	0.6	0.6	0.6	0.6	0.7	1.5	1.6	1.2	1.7	S	3.9	2.6	1.7	2	2.6	2.4	2.1	1.8	1.8	1.8	1.8	3.9	1.5	24	
28	1.6	1.4	1.2	1.2	0.8	1.3	1.4	1.2	1.3	1.2	S	3.7	2.5	1.7	1.6	1.1	0.9	1.1	1.1	1.4	0.9	1.1	1.3	3.7	1.4	24		
29	1.1	1.1	0.8	0.6	0.5	0.3	0.6	0.7	0.3	0	S	3.5	1.7	0.7	0.4	0.3	0.4	0.1	0.2	0.2	0.1	0.2	0.1	0.1	3.5	0.6	24	
30	0.3	0	0	0	0.3	2.6	S	S	4.9	C	C	C	C	S	X	X	X	X	X	X	X	X	X	X	4.9	1.2	13	
HOURLY MAX		4	4	5	4	4	5	5	4	5	5	3	4	4	4	4	7	3	3	5	4	3	5	7	4			
HOURLY AVG		1.4	1.2	1.3	1.4	1.4	1.6	1.5	1.7	1.5	1.1	1.4	1.0	1.0	1.2	1.2	1.0	1.1	1.1	1.1	1.1	1.3	1.6	1.4				

STATUS FLAG CODES

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

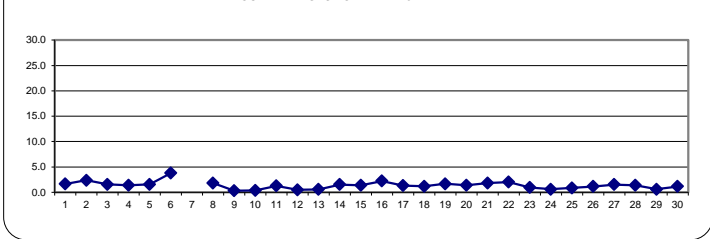
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

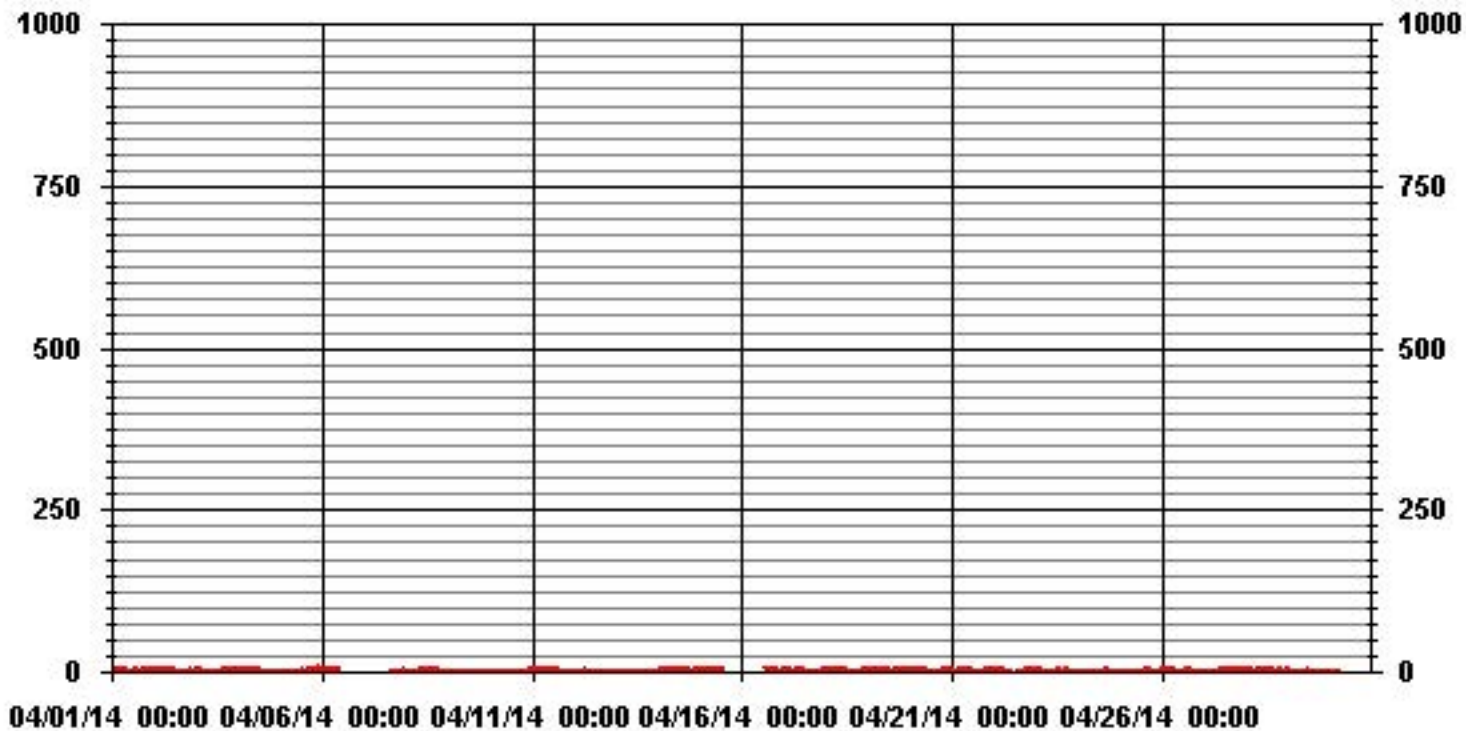
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	571					
MAXIMUM 1-HR AVERAGE:	6.8	PPB	@ HOUR(S)	22	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	3.8	PPB			ON DAY(S)	6
					VAR-VARIOUS	
IZS CALIBRATION TIME:	37	HRS	OPERATIONAL TIME:	657	HRS	
MONTHLY CALIBRATION TIME:	29	HRS	AMD OPERATION UPTIME:	91.3	%	
STANDARD DEVIATION:	1.05		MONTHLY AVERAGE:	1.30	PPB	

24 HOUR AVERAGES FOR APRIL 2014



01 Hour Averages



— LICA31 NOX_ PPB

Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

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	MAX.	AVG.	RDGS.	
	DAY																											
1	1.8	1.5	1.6	1.8	1.8	2.2	5.7	2.9	3.1	2.3	2.9	Y	1.9	2.2	2.7	S	1.6	2	2	2.2	2.4	3.7	4.8	5.2	5.7	2.7	23	
2	4.1	3.8	3.2	3.8	5.7	5.7	6	5.4	5.1	3.8	2.9	3.6	2.2	2	S	1.4	1.5	1.6	1.4	2.7	2.5	2.9	2.2	1.7	6	3.3	24	
3	2	1.9	10.9	7.4	3.3	1.5	2.5	2.2	6	2.2	1.3	0.9	1.9	S	1.6	1.9	2.4	2.2	2.7	2.5	2.3	2.5	2.2	2.2	10.9	2.9	24	
4	2.6	2.7	2.9	3	2.9	2.7	2.9	2.9	2.7	2.7	2.9	3.2	S	1.8	1.8	1.3	0.8	1	1.2	0.8	0.7	0.9	0.6	1.4	3.2	2.0	24	
5	1.2	1.3	1.3	2.4	1.3	1.5	1.8	1.6	1.5	1	1	S	1.9	2	9.7	21.2	2.4	3.9	3.4	3.1	3.6	5	9.3	5	21.2	3.8	24	
6	4.8	4.6	4.2	4	4.2	4.5	4.2	4	5	6.1	S	X	X	X	X	X	X	X	X	X	X	X	X	X	6.1	4.6	11	
7	X	X	X	X	X	X	X	X	X	X	C	C	C	C	C	C	C	Y	Y	Y	Y	Y	Y	Y	Y	Y	7	
8	Y	Y	Y	Y	Y	Y	Y	S	S	4.4	5	C	C	C	C	4	2.8	2.5	3.3	3.5	1.7	1.4	1.2	1.1	1.3	5	2.7	17
9	1.3	1.5	1.3	1.1	1.1	1.3	1.3	S	12.5	0.9	0.9	S	0.6	1	0.7	0.6	0.9	0.9	0.7	0.7	1	1.2	0.7	1	12.5	1.5	24	
10	0.9	0.8	1.3	1.3	1.8	1.8	S	1.1	1.8	1	0.7	0.8	0.8	0.6	0.7	0.7	2.5	0.8	0.8	0.9	1.5	1.7	1.6	1.8	1.9	24		
11	1.9	1.8	2.2	2.5	3.1	S	2.5	2.5	2.5	2.5	2.2	2.7	2.7	3.6	3	2.8	1.8	1.9	1.8	0.3	0.5	0.5	0.6	3.6	2.0	24		
12	0.7	0.6	0.8	0.5	S	1.8	2	2.3	2.1	5.2	1.4	1	1.7	1.7	3	4	2	3	1.3	1.9	1.3	1	1.1	1.3	5.2	1.8	24	
13	1.4	1	1.1	S	1.3	2.2	S	S	0.9	1.1	0.8	S	1	0.9	1.1	1	1.1	1.3	1.1	0.9	1	1.4	1.3	1.7	2.2	1.2	24	
14	2.1	2.7	S	2.4	2.1	2.1	2.1	2.5	2.1	1.9	2	1.8	1.5	1.6	1.8	2	1.8	2.1	2.1	2	2.9	2.9	2.9	3.6	3.6	2.2	24	
15	2.4	S	2.2	2	2.2	2	2	2.2	1.9	2.1	2	1.8	1.8	C	C	C	C	C	Y	Y	Y	Y	Y	Y	Y	2.4	2.1	18
16	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	C	C	C	2.5	1.9	1.3	1.3	1.9	1.9	1.9	S	2.5	1.8	16	
17	7.4	2.2	1.6	1.6	1.6	1	1	S	11.8	2.9	1.8	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.5	0.6	S	6.9	11.8	2.2	24		
18	2.3	1.7	1.1	1.1	1.1	1.1	1.1	1.7	1.7	1.7	1.7	1.1	1.1	1.1	1.1	1.1	0.5	1.1	1.7	1.7	1.1	S	7.1	3	7.1	1.7	24	
19	1.9	1.9	1.9	1.9	1.3	22.5	3.6	2.4	1.9	1.9	1.3	1.9	1.3	1.3	1.9	3.7	1.3	1.9	1.3	1.3	S	7.6	4.2	3	22.5	3.2	24	
20	3	2.4	2.4	2.4	1.8	1.8	1.8	1.8	1.8	2.4	1.8	1.2	1.2	1.2	1.2	0.6	1.2	1.2	1.2	S	3.6	3.5	1.8	1.2	3.6	1.8	24	
21	1.2	1.2	1.2	2.4	3.6	3	3	3	3	3	3	2.4	1.8	1.2	0.6	0.6	0.6	0.6	S	6.5	3	3	2.4	2.4	6.5	2.3	24	
22	1.8	3	3.6	3	2.4	2.4	2.4	3	2.4	C	C	C	C	C	0.6	0.6	0.6	S	8.3	3	1.8	1.8	1.8	1.8	8.3	2.5	24	
23	1.8	1.2	1.2	1.2	0.6	1.2	1.2	1.1	1.2	Y	Y	1.2	1.2	1.2	1.2	1.2	S	3.1	1.9	1.3	1.3	0.7	0.7	0.7	3.1	1.3	22	
24	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	S	4.2	1.9	1.3	1.2	1.2	0.7	0.7	4.2	1.0	24	
25	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	S	5.3	2.5	1.9	1.3	1.3	0.7	0.7	1.2	1.9	5.3	1.2	24
26	1.2	1.3	1.2	1.9	1.9	1.8	1.9	1.2	1.2	1.2	1.2	1.2	0.7	S	5.9	2.5	1.8	1.3	1.3	0.7	1.2	0.7	0.7	0.7	5.9	1.5	24	
27	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.3	1.9	1.3	4.3	S	4.8	3.6	1.9	3	3.1	2.5	2.5	2.4	1.9	1.9	1.9	4.8	2.0	24		
28	1.9	1.9	1.9	1.9	1.3	1.3	2.4	3.6	1.3	1.9	1.3	S	4.7	3.5	2.4	1.8	1.8	1.8	1.8	2.4	1.2	1.8	1.8	4.7	2.1	24		
29	1.2	1.2	1.2	0.6	0.6	0.6	1.8	1.8	1.2	0	S	6.3	2.2	1.6	0.4	0.4	0.4	0.4	1	1	0.4	0.4	0	1	6.3	1.1	24	
30	1	0	0.4	0.4	2.2	4	S	S	S	C	C	C	S	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	4	1.3	13
HOURLY MAX	7	5	11	7	18	23	6	5	13	6	5	6	5	5	10	21	4	4	8	7	4	8	9	7				
HOURLY AVG	2.0	1.7	2.0	2.0	2.6	2.8	2.3	2.3	3.0	2.2	1.8	2.0	1.6	1.7	2.2	2.6	1.6	1.9	1.9	1.8	1.7	2.0	2.2	2.1				

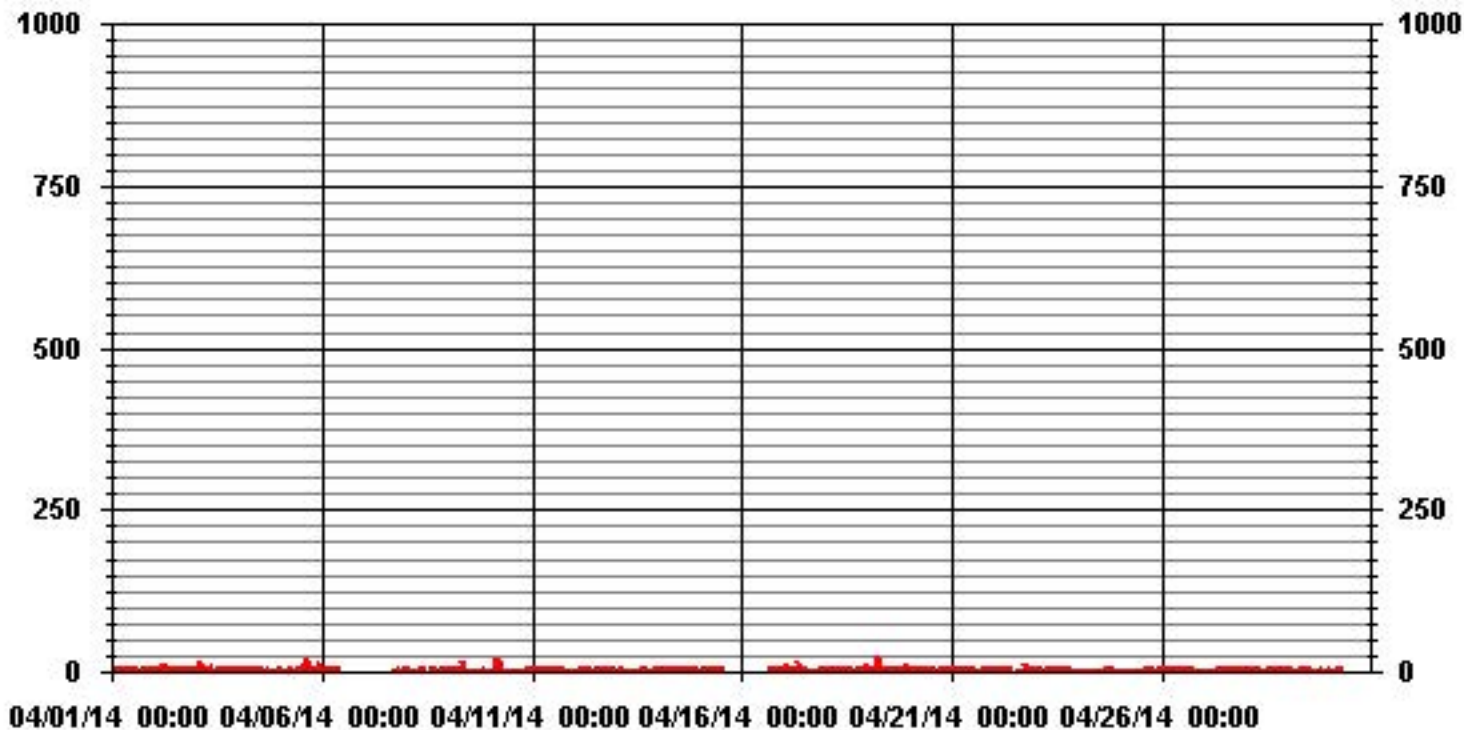
STATUS FLAG CODES

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:	583
MAXIMUM INSTANTANEOUS VALUE:	22.5 PPB @ HOUR(S) 5 ON DAY(S) 19
	VAR-VARIOUS
IZS CALIBRATION TIME:	38 HRS
MONTHLY CALIBRATION TIME:	31 HRS
OPERATIONAL TIME:	655 HRS
STANDARD DEVIATION:	2.02

01 Hour Averages



LICA31
NOX_ / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction															Freq	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW
< 50.0	4.47	2.64	3.80	8.60	20.86	7.61	4.63	5.46	6.95	5.62	6.62	3.80	4.63	5.79	4.47	3.97	100.00
< 110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.47	2.64	3.80	8.60	20.86	7.61	4.63	5.46	6.95	5.62	6.62	3.80	4.63	5.79	4.47	3.97	

Calm : .00 %

Total # Operational Hours : 604

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	16	23	52	126	46	28	33	42	34	40	23	28	35	27	24	604
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	27	16	23	52	126	46	28	33	42	34	40	23	28	35	27	24	

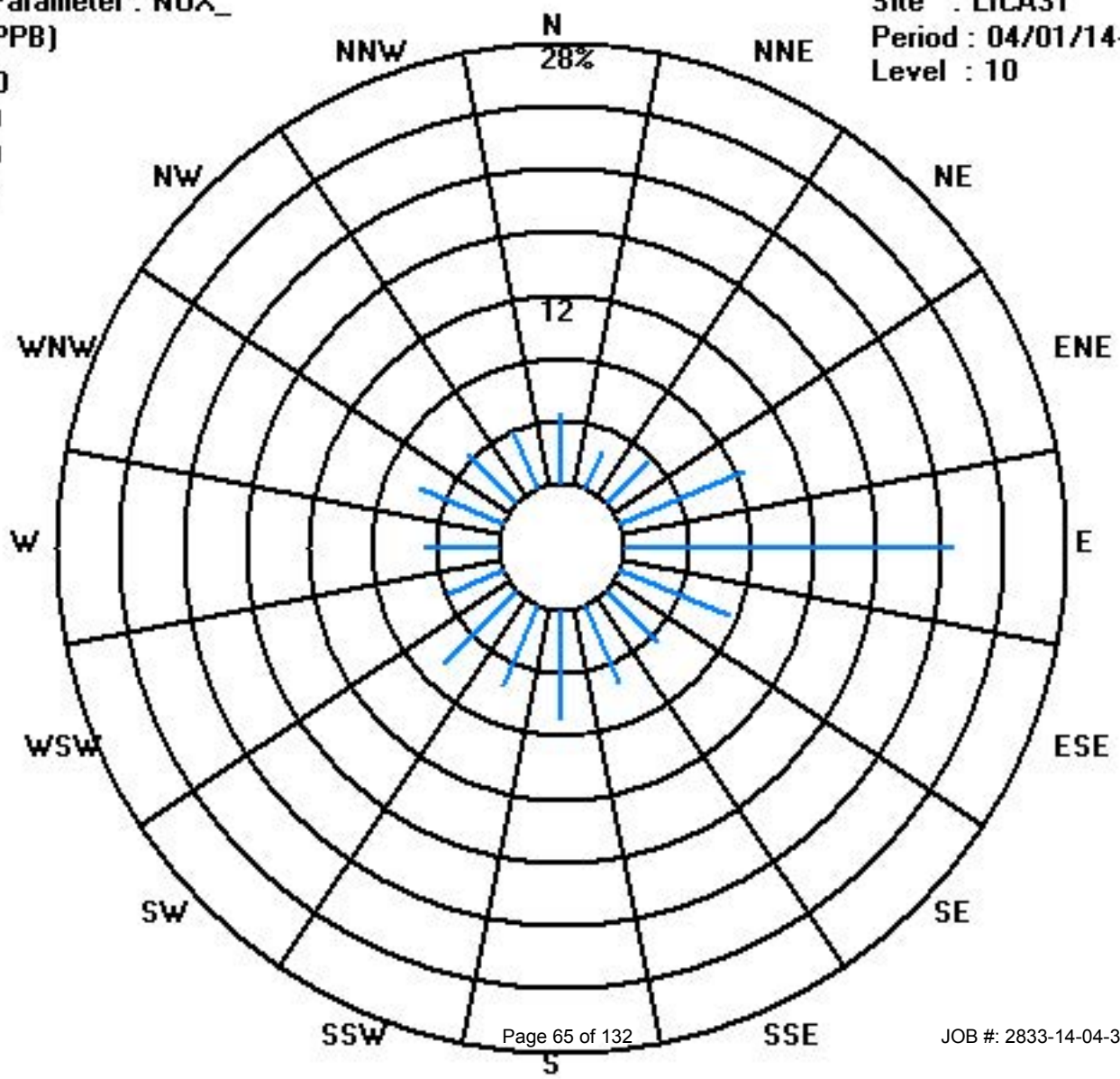
Calm : .00 %

Total # Operational Hours : 604

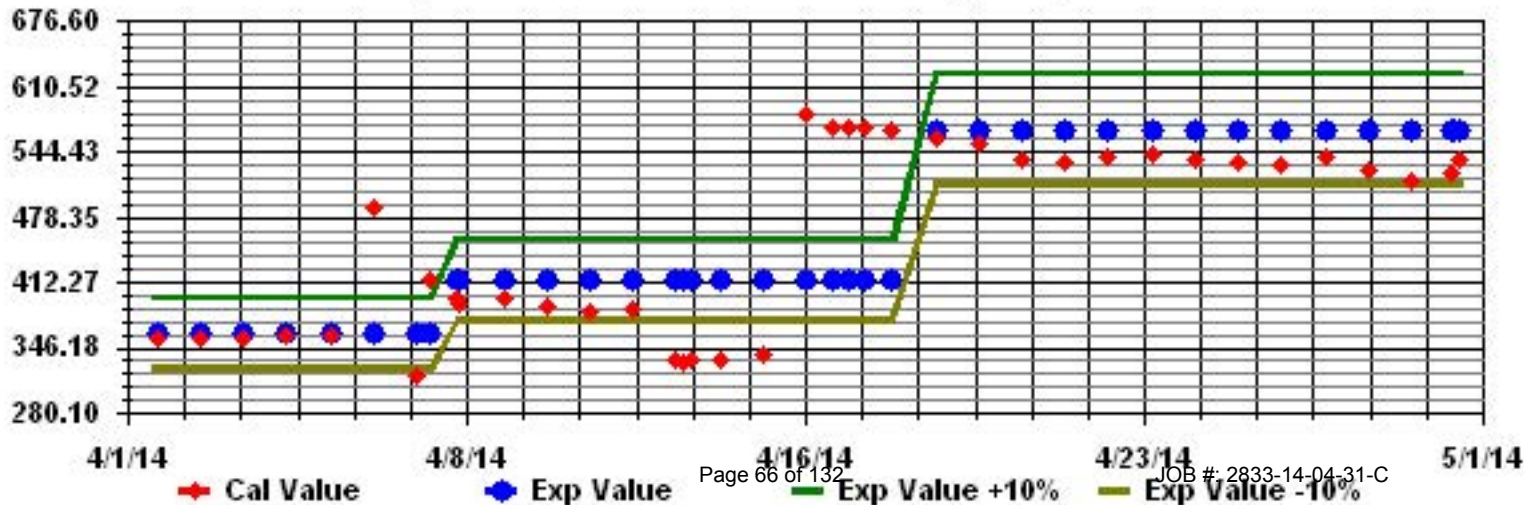
Class Limits (PPB)

Period : 04/01/14-04/30/14

Level : 10



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



Particulate Matter 2.5

Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

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

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	MAX.	AVG.	RDGS.	
	DAY																											
1	0	X	0	X	0	7	3	7	6	2	2	C	Y	Y	C	5	10	7	5	4	5	6	4	4	10	4.3	20	
2	5	3	3	3	5	4	5	4	10	6	2	4	3	4	3	3	3	2	6	4	3	3	3	3	10	3.9	24	
3	3	3	2	3	3	3	2	3	2	2	2	1	2	2	2	3	3	4	3	4	3	3	6	4	6	2.8	24	
4	2	3	1	0	1	0	3	2	2	4	3	5	5	1	2	4	1	2	2	4	1	1	2	3	5	2.3	24	
5	3	3	2	1	1	2	2	2	1	1	1	1	1	1	2	0	2	4	4	3	3	3	2	2	4	2.0	24	
6	3	2	2	3	2	4	4	7	6	6	6	5	1	0	2	0	0	0	1	5	2	1	0	0	7	2.6	24	
7	0	0	0	0	0	0	1	0	1	2	0	1	0	0	0	2	2	1	1	4	2	2	2	4	0.9	24		
8	3	1	0	0	1	1	1	1	0	2	3	0	0	1	1	2	5	2	3	4	0	1	0	2	5	1.4	24	
9	0	3	0	1	1	1	1	0	0	0	1	C	X	X	X	X	X	X	X	X	X	X	X	X	3	0.7	12	
10	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	1	0	1	2	3	2	2	0	0	3	0.9	12	
11	0	0	0	0	0	0	1	2	1	1	1	1	0	2	3	1	2	2	2	3	3	4	3	3	4	1.5	24	
12	3	2	2	2	3	3	2	2	2	1	1	0	0	1	2	2	1	2	3	3	2	2	1	4	4	1.9	24	
13	3	2	2	2	3	3	2	2	2	2	1	1	0	1	1	1	1	1	1	2	2	2	1	1	3	1.6	24	
14	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	3	3	3	3	4	4	4	4	1.8	24	
15	4	2	3	4	4	4	3	7	X	X	X	X	X	X	X	1	1	2	1	2	2	2	3	2	7	2.8	17	
16	1	2	2	2	2	3	5	3	4	4	3	4	4	3	2	3	3	3	3	3	3	2	2	1	5	2.8	24	
17	1	1	2	2	3	3	4	4	4	5	5	5	5	5	4	3	3	2	3	3	3	2	2	2	5	3.2	24	
18	2	2	2	2	2	2	3	2	3	4	3	2	3	2	2	2	2	3	2	2	3	3	3	3	4	2.5	24	
19	2	2	2	2	2	3	2	1	0	1	1	2	1	2	2	3	2	3	3	4	4	4	2	2	4	2.2	24	
20	2	2	3	3	3	2	3	3	3	4	3	3	4	1	3	3	3	4	3	2	1	0	1	2	4	2.5	24	
21	2	2	2	2	2	2	2	1	2	1	0	1	0	0	0	0	0	0	1	1	1	2	2	4	4	1.3	24	
22	3	2	2	1	2	2	2	1	0	1	II	0	2	C	C	C	1	1	1	3	4	3	3	3	II	2.3	24	
23	2	2	2	3	3	2	2	1	2	Y	Y	4	6	5	3	1	3	1	2	3	2	2	1	0	6	2.4	22	
24	1	0	1	1	1	1	1	0	1	1	0	0	0	0	1	1	2	1	1	2	2	2	2	3	3	1.0	24	
25	3	3	3	2	2	1	1	1	1	2	2	1	1	0	0	1	1	0	0	1	1	0	0	0	3	1.1	24	
26	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
27	0	0	0	0	0	0	0	0	3	2	1	0	1	0	1	2	2	1	1	1	0	1	0	3	0.7	24		
28	1	0	1	1	1	1	1	1	3	3	3	2	3	4	4	4	7	0	4	4	3	2	3	3	7	2.5	24	
29	3	2	0	0	1	2	1	2	2	0	1	0	0	0	1	0	0	1	1	2	2	1	1	2	3	1.0	24	
30	1	1	2	2	4	3	4	2	2	1	2	2	0	1	2	2	2	2	3	4	4	4	3	4	4	2.4	24	
HOURLY MAX		5	3	3	4	5	7	5	7	10	6	11	5	6	5	4	5	10	7	5	6	5	6	6	4			
HOURLY AVG		1.9	1.6	1.4	1.5	1.8	2.1	2.1	2.1	2.3	2.2	2.2	1.8	1.6	1.4	1.7	1.7	2.2	2.0	2.1	2.9	2.4	2.2	2.0	2.1			

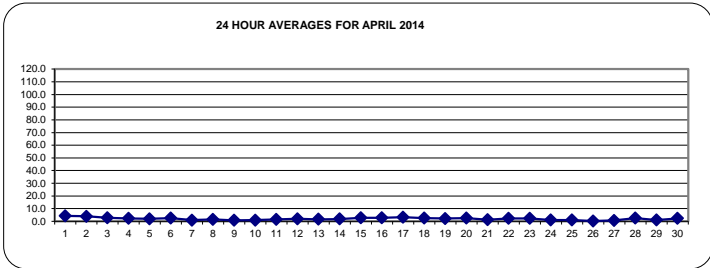
STATUS FLAG CODES

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

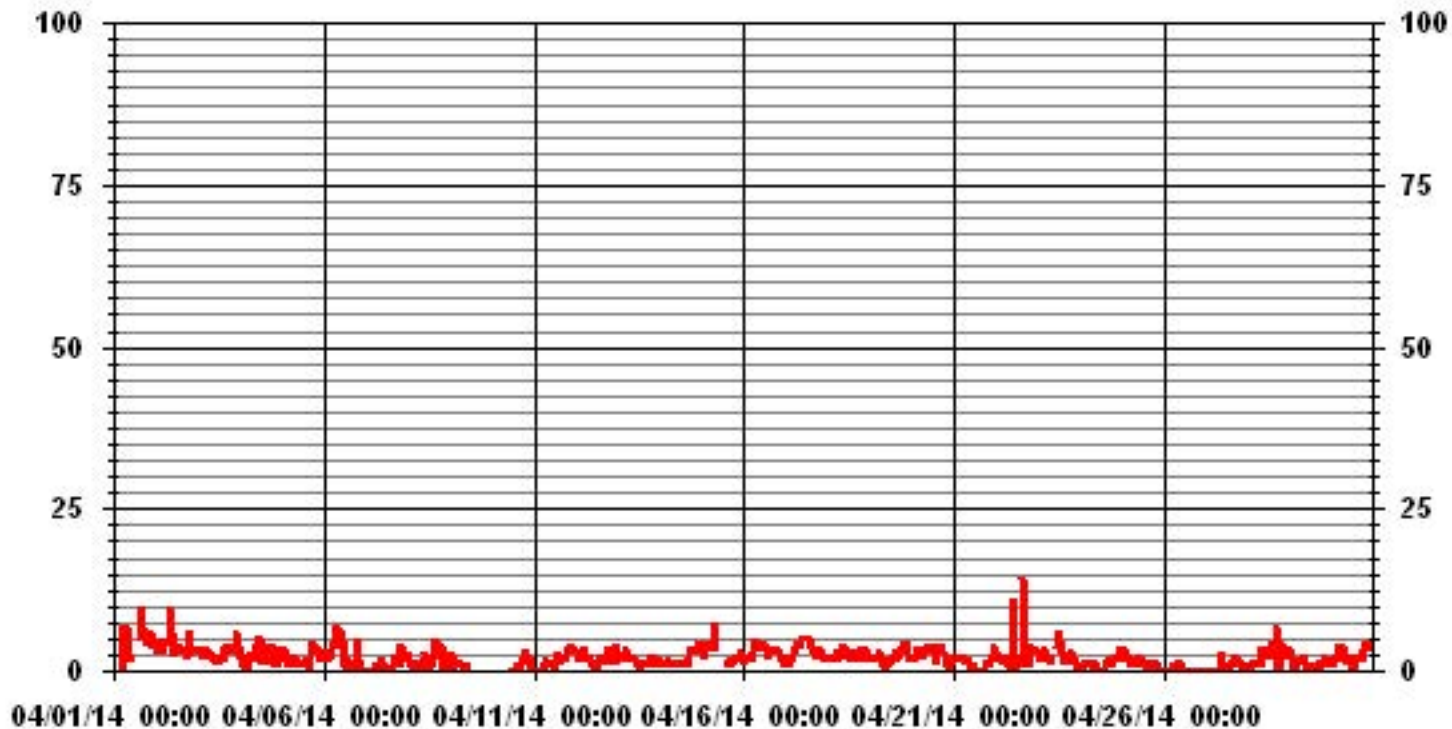
OBJECTIVE LIMIT: ALBERTA ENVIRONMENT: 24-HR 30 ug/m3

MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	556				
MAXIMUM 1-HR AVERAGE:	11 ug/m3	@ HOUR(S)	15	ON DAY(S)	22
MAXIMUM 24-HR AVERAGE:	4.3 ug/m3			ON DAY(S)	1
				VAR-VARIOUS	
MONTHLY CALIBRATION TIME:	6 HRS	OPERATIONAL TIME:	683 HRS		
STANDARD DEVIATION:	1.57	AMD OPERATION UPTIME:	94.9 %		
		MONTHLY AVERAGE:	1.99 ug/m3		



01 Hour Averages



— LICA31 PM2 UG/M3

LICA31
PM2 / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
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	4.27	2.35	3.39	8.84	20.05	7.22	5.30	5.30	7.37	5.30	7.52	5.16	4.71	6.04	3.24	3.83	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.27	2.35	3.39	8.84	20.05	7.22	5.30	5.30	7.37	5.30	7.52	5.16	4.71	6.04	3.24	3.83	

Calm : .00 %

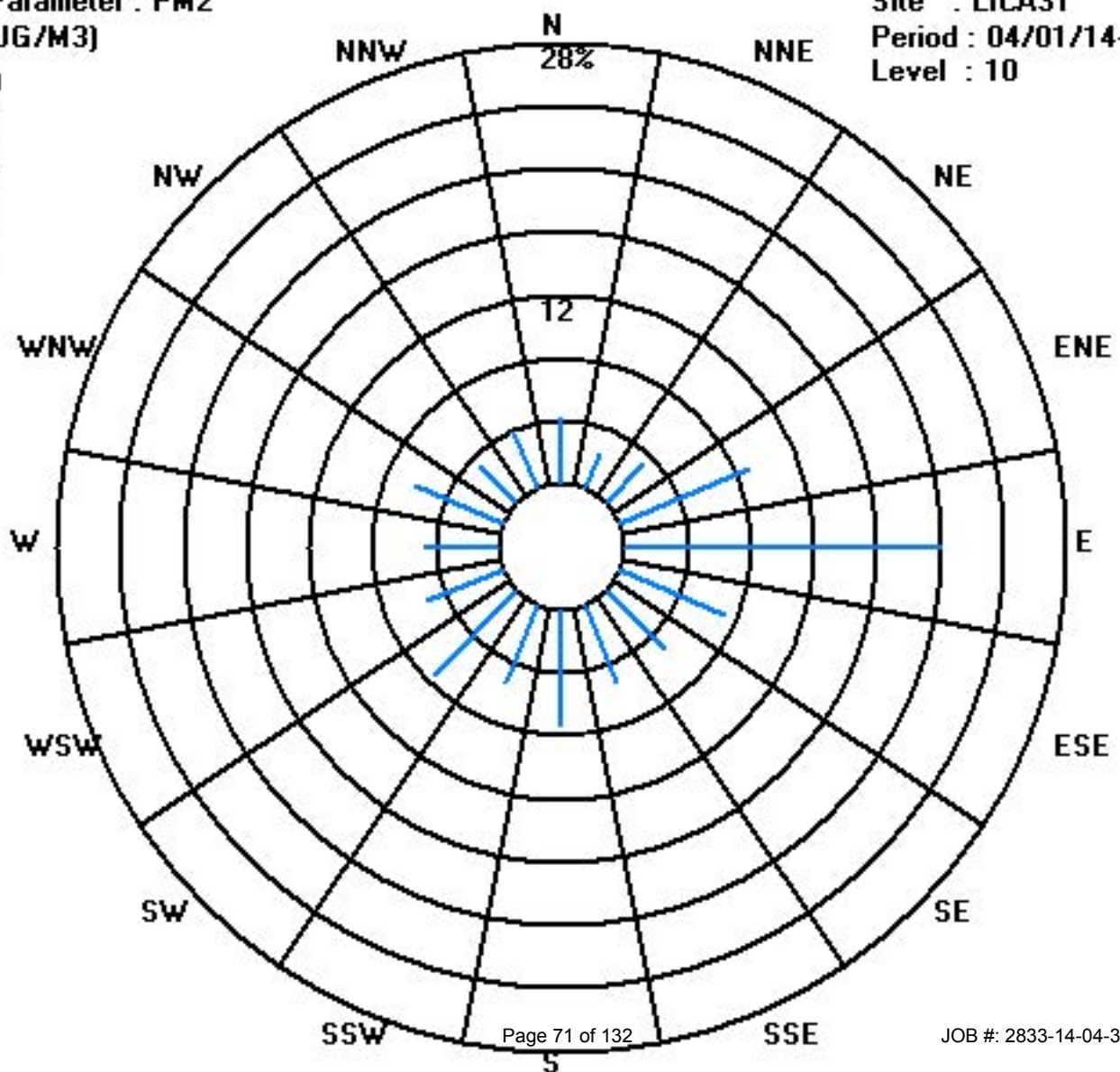
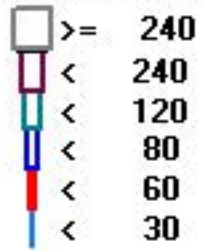
Total # Operational Hours : 678

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30	29	16	23	60	136	49	36	36	50	36	51	35	32	41	22	26	678
< 60																	
< 80																	
< 120																	
< 240																	
>= 240																	
Totals	29	16	23	60	136	49	36	36	50	36	51	35	32	41	22	26	

Calm : .00 %

Total # Operational Hours : 678



Temperature

Lakeland Industry & Community Association - St. Lina Site

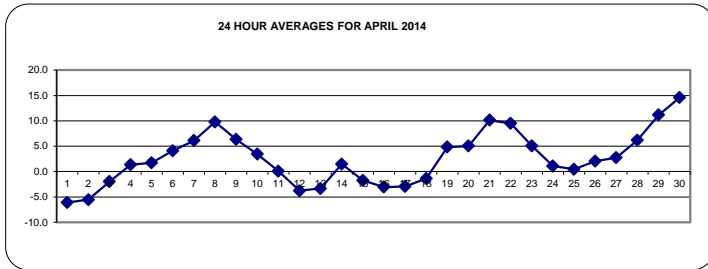
APRIL 2014

AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY	1	-9.2	-9.2	-9.1	-9.1	-9.2	-9.3	-9.2	-8.4	-7.1	-5	-3.9	Y	Y	Y	1.4	0.8	-1.3	-2.5	-4.1	-5.3	-5.6	-6.5	-7.7	-8.4	1.4	-6.1	21
	2	-8.5	-8.5	-9	-10	-12.1	-11.9	-10.7	-8	-5.9	-4.4	-3.6	-2.5	-1.6	-1.5	-1.8	-1.6	-0.8	-1.6	-2.8	-4.3	-4.7	-5.3	-5.8	-6	-0.8	-5.5	24
	3	-6	-6.3	-6.2	-6.4	-6.4	-6.2	-4.6	-2	-0.7	0	0.7	1.2	1.7	2.2	2.3	2.6	2.1	1.3	-0.3	-1.8	-2.7	-3.8	-4.3	-3.8	2.6	-2.0	24
	4	-3.2	-2.9	-2.6	-2.1	-2.2	-2.7	-3	-2.6	-1.6	-0.1	1.3	1.5	5.3	6.8	7.7	6.2	7.3	6.6	5.1	3.5	2.4	1.6	0.6	-0.5	7.7	1.4	24
	5	-1.5	-2	-2.5	-2.6	-2.3	-2.9	-2.4	-1.3	1.9	2.2	3.3	5.3	6.6	7.6	6.4	5.9	5.8	5.4	4.8	1.9	1.1	0.5	0.3	0.4	7.6	1.7	24
	6	0.1	0.1	0.5	0.2	-0.7	-0.3	0.1	2.3	4.3	5.7	8.1	9.1	8.5	8.5	6.2	6.7	7.7	8.2	7.7	5	3.3	2.5	2.7	2.1	9.1	4.1	24
	7	1.7	0.6	0.4	1.1	0.9	0.8	1.5	2.9	5.9	8	9.8	10.3	10.6	10.3	11.2	11.3	11.3	10.3	9.1	7.6	6.4	5.7	5	4.1	11.3	6.1	24
	8	3.3	3.2	3.5	3.5	2.8	1.7	2	4.3	6.8	10.2	13.1	16	17.3	17.6	18.3	17.8	17.1	16.1	14.6	11.8	9.9	9	7.8	7.5	18.3	9.8	24
	9	7.4	6.5	5.8	5	4.3	3.3	3.9	5.5	6.7	7.6	8.5	9.5	9.3	9.6	8.5	8.9	9	8.1	7.1	5.5	4.4	3.5	2.6	1.9	9.6	6.4	24
	10	1.5	1.2	0.3	0	-0.2	-0.1	1.4	4.6	5.8	5.7	5.1	4.9	5.1	6.9	7.5	6.7	7.3	7.2	5.7	2.9	1.3	0.9	0.9	0.3	7.5	3.5	24
	11	-0.3	-1.2	-0.8	-1.2	-1.1	-0.7	-0.6	-0.4	-0.1	0.1	0.5	1.4	1.3	2.7	4.8	6.4	4.2	3.4	0.9	-1	-2.4	-4	-4.8	-5.2	6.4	0.1	24
	12	-5.9	-6.2	-6.3	-7.6	-8.2	-9.5	-8.7	-6.3	-5.4	-4.6	-3.6	-2.5	-1.4	0.2	0.4	0.9	1.7	0.6	-1	-2.8	-3.4	-3.8	-3.6	-3.6	1.7	-3.8	24
	13	-4.2	-4.2	-5	-5.6	-6.3	-6.9	-6.3	-5.6	-2.6	-3.1	-2.4	-1.7	-0.8	-0.3	-0.1	0.2	0.3	-0.5	-2.2	-3.7	-4.3	-4.4	-5	-5.5	0.3	-3.3	24
	14	-6	-6.6	-7.3	-6.9	-6.4	-6.2	-4.6	-3.1	-1.1	1.4	3	4.3	5.7	6.9	8.4	8.6	9.7	9	8	5.9	4.7	4	2.6	1.1	9.7	1.5	24
	15	0.6	0.2	0.1	-1.1	-2.1	-2.5	-2.4	-2.1	-1.5	-1.3	-1.2	-0.9	-1	-1.1	-1.4	-1.3	-1.4	-1.9	-2.3	-2.8	-3	-3.3	-3.8	-4.6	0.6	-1.8	24
	16	-5.2	-5.4	-5.3	-5.2	-4.9	-5.1	-4.3	-3.1	-1.7	-2.2	-1.2	-1	-1.8	-1.6	-1	-1	-1.6	-2.1	-2.4	-3	-3.4	-3.4	-3.4	-3.7	-1	-3.0	24
	17	-4.3	-4.7	-5.2	-5.7	-5.5	-5	-4.5	-3.9	-3.3	-2.6	-2.1	-1.6	-1.3	-1.2	-0.6	-1.1	-1.1	-1.3	-1.6	-2.3	-2.6	-2.8	-3	-3	-0.6	-2.9	24
	18	-3	-3.1	-3.2	-3.1	-3.1	-3	-2.7	-2.3	-1.4	-0.6	0	0.5	0.7	0.5	0.1	-0.2	-0.5	-0.8	-0.9	-1.2	-1.3	-1.2	-1.3	-1.5	0.7	-1.4	24
	19	-1.5	-1.5	-1.3	-1.2	-1.5	-1.3	-0.8	1	5.8	6.4	6.7	6.7	7.7	8.9	10	10.5	10.9	10.8	9.8	8.1	7	6	4.8	3.9	10.9	4.8	24
	20	3	2.6	2.1	1.9	1.6	1.8	2.2	3.1	4.5	5.8	6.6	7.9	6.5	5.7	6.8	7.8	8.6	9.3	8.4	6.3	5.2	5.1	4.4	3.7	9.3	5.0	24
	21	3.4	3.6	3.4	3.2	2.6	2.4	3.7	5.9	8.7	13.2	15.5	15.3	16.2	17	17	17.4	17	16.4	14	11.8	10.5	9.6	8.4	7.4	17.4	10.2	24
	22	6.8	5.1	3.7	2.9	2.1	1.8	3	4.1	7.7	9.5	12.4	14.3	15.1	14.8	15.8	15	14.4	13.3	12.6	11.9	11.3	10.7	10.2	9.4	15.8	9.5	24
	23	8.4	7.5	6.8	6.3	6.2	5.6	5.2	6	7.6	Y	9.4	7.5	5.9	4.5	3.4	3.4	3.9	3.8	3.4	3.3	2.9	2.5	2	1.4	9.4	5.1	23
	24	1.2	1.1	0.7	0.5	0.2	0.1	0.1	0.2	0.5	1.1	1.7	2.4	3.2	3.4	2.8	2.5	2.4	1.9	1.3	0.7	0.4	-0.2	-0.6	-0.8	3.4	1.1	24
	25	-0.9	-1	-1.1	-1.3	-1.4	-1.4	-0.8	-0.2	0.3	0.8	1.2	1.5	2	2.4	3.3	2.5	2.1	2	1.6	0.8	0	-0.4	-0.3	-0.4	3.3	0.5	24
	26	-0.8	-0.8	-0.9	-0.8	-0.5	-0.4	-0.1	0.3	0.7	1	2.3	3.5	4	4.3	4.9	5.3	5.1	5.1	4.3	3.6	3.2	2.7	1.9	1.2	5.3	2.0	24
	27	0.9	0.4	0.2	0	0	0	0.2	0.6	1.4	2.8	3.2	3.3	3.8	4.9	6.1	6.9	7	5	4.3	3.7	3.1	2.7	2.7	2.7	7	2.7	24
	28	2.5	2	1.8	1.7	1.5	1.3	1.3	2.4	3.5	6	9.1	10.3	11.1	12.5	12.8	12.7	8.3	8.9	8.9	7.1	6.3	6.4	5.5	5.2	12.8	6.2	24
	29	4.4	4	4.4	4.7	5	4.2	5.6	8.4	11.5	13.5	14.1	14.8	15.7	16.7	16.9	17.5	17.3	16.5	15.4	13.1	11.3	11	11.7	10.2	17.5	11.2	24
	30	9	9.9	9.7	9.4	7.5	6.7	8.9	11.5	14.5	16.8	17.7	19.1	19.8	20.5	20.8	20.8	20	19.4	18.3	16.9	15.3	14	12.7	11.9	20.8	14.6	24
HOURLY MAX		9	9.9	9.7	9.4	7.5	6.7	8.9	11.5	14.5	16.8	17.7	19.1	19.8	20.5	20.8	20.8	20	19.4	18.3	16.9	15.3	14	12.7	11.9			
HOURLY AVG		-0.2	-0.5	-0.7	-1.0	-1.3	-1.5	-0.9	0.5	2.2	3.2	4.5	5.5	6.0	6.5	6.6	6.7	6.5	5.9	4.9	3.4	2.6	2.0	1.4	0.9			

STATUS FLAG CODES

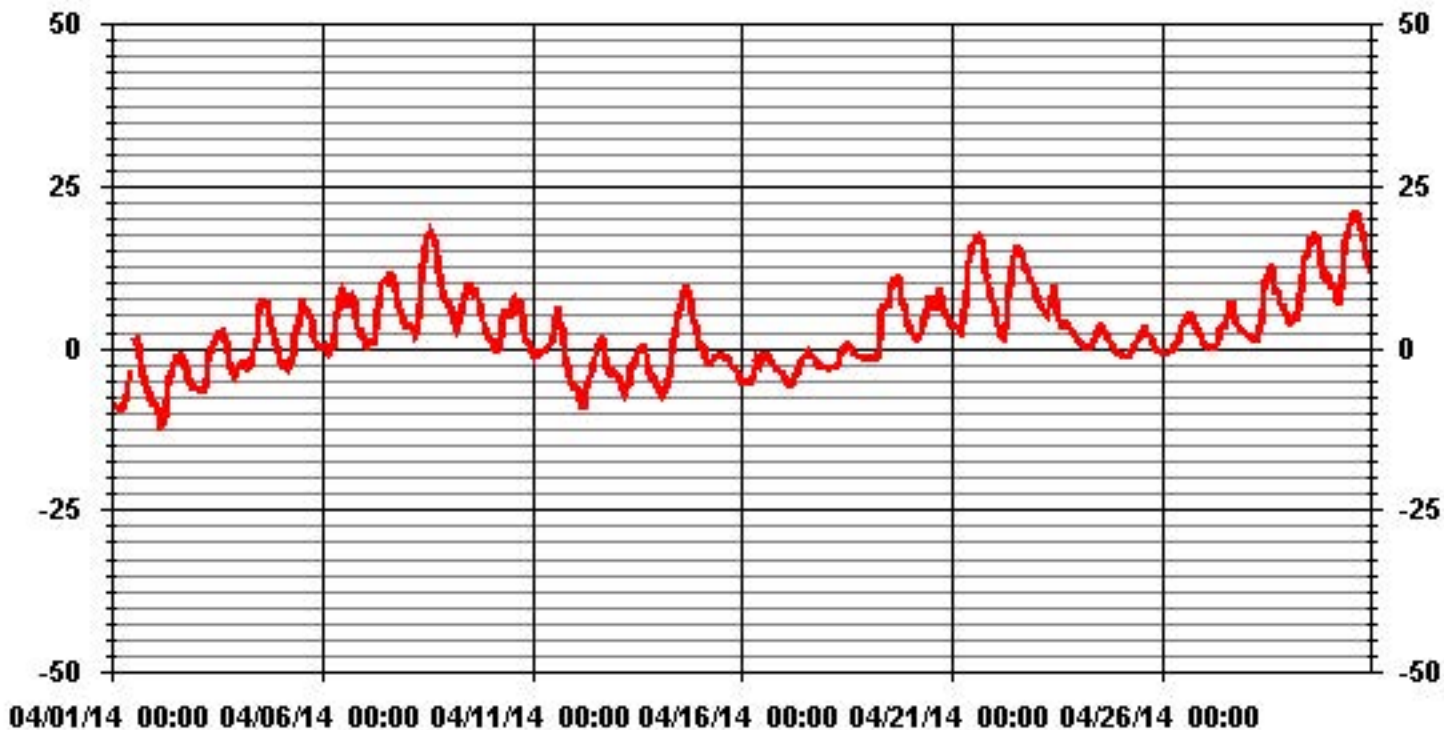
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-12.1 °C	@ HOUR(S)	4	ON DAY(S)	2
MAXIMUM 1-HR AVERAGE:	20.8 °C	@ HOUR(S)	14, 15	ON DAY(S)	30
MAXIMUM 24-HR AVERAGE:	14.6 °C			ON DAY(S)	30
				VAR-VARIOUS	
OPERATIONAL TIME:				716	HRS
AMD OPERATION UPTIME:				99.4	%
STANDARD DEVIATION:	6.15			MONTHLY AVERAGE:	2.62 °C

01 Hour Averages



— LICA31 TPX DGC

Barometric Pressure

Lakeland Industry & Community Association - St. Lina Site

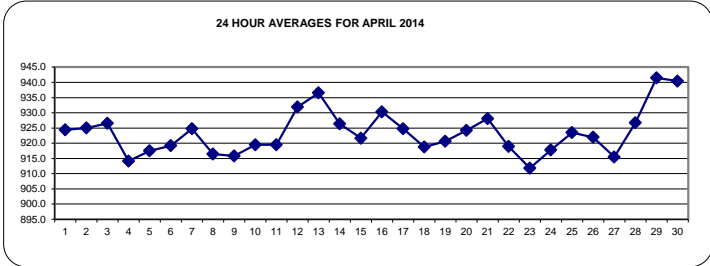
APRIL 2014

BAROMETRIC PRESSURE (BP) hourly averages in millibar

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	925	925	925	924	924	924	924	924	924	924	925	Y	Y	Y	925	925	925	925	925	924	924	924	924	924	925	924.4	21	
	2	924	924	923	923	923	923	923	924	924	925	925	925	925	925	926	926	926	927	926	926	926	927	927	927	927	927	925.0	24
	3	927	927	927	927	927	927	928	928	929	929	929	929	928	928	928	927	927	926	925	924	924	923	922	921	929	926.5	24	
	4	920	919	917	916	915	914	913	912	912	912	911	912	912	912	912	913	914	914	915	915	915	916	916	916	920	914.1	24	
	5	917	917	917	918	918	918	918	918	919	919	919	919	919	918	918	917	917	917	917	916	916	916	916	916	919	917.5	24	
	6	916	916	916	916	916	916	916	916	917	918	919	919	919	920	920	920	921	921	922	922	923	923	924	924	924	924	919.2	24
	7	924	924	924	924	924	925	925	925	926	926	926	926	926	926	926	926	926	925	925	924	924	923	922	921	926	924.7	24	
	8	921	920	919	919	918	918	918	918	918	918	918	917	917	917	916	916	915	914	914	913	913	913	913	913	921	916.4	24	
	9	913	913	913	913	914	914	914	914	914	915	915	915	916	916	916	917	917	918	918	918	919	919	919	919	919	919	915.8	24
	10	919	919	919	919	919	918	918	919	919	919	919	919	919	919	920	919	920	920	920	921	921	921	921	921	921	921	919.5	24
	11	921	921	921	920	920	919	919	919	918	918	917	917	917	917	917	917	917	918	919	921	922	923	925	925	925	925	919.5	24
	12	927	928	928	929	930	931	932	932	933	933	933	933	933	933	933	933	933	933	933	933	933	933	933	933	933	933	931.9	24
	13	933	934	934	934	935	935	936	937	938	938	939	939	939	939	938	938	938	937	936	936	935	935	935	935	939	936.5	24	
	14	934	934	933	932	932	931	930	930	929	928	928	927	926	925	924	923	922	921	920	919	919	918	918	918	934	926.3	24	
	15	917	917	917	917	917	917	918	918	919	920	921	921	922	922	923	923	924	925	926	926	927	927	928	928	928	921.7	24	
	16	928	928	928	929	929	929	930	930	931	931	932	932	932	932	932	932	932	931	931	930	930	929	929	932	930.3	24		
	17	928	928	927	926	926	926	926	926	925	925	925	925	925	925	924	924	924	924	923	923	922	922	921	928	924.8	24		
	18	920	920	919	919	918	918	918	918	917	917	918	918	918	918	919	919	919	920	920	920	920	920	920	920	920	918.8	24	
	19	920	920	920	920	920	921	921	921	921	922	921	921	921	921	921	921	921	921	921	920	920	920	920	920	922	920.6	24	
	20	919	919	919	920	920	920	921	922	922	923	924	925	925	926	926	927	927	928	928	928	928	928	928	929	929	924.3	24	
	21	929	929	929	929	929	929	929	929	929	930	930	929	929	929	928	928	928	927	926	926	925	925	924	930	928.1	24		
	22	924	923	923	922	922	921	921	920	921	920	920	920	919	919	918	917	917	916	916	915	916	915	914	924	918.9	24		
	23	913	912	912	912	912	911	911	911	910	Y	911	911	911	911	911	912	912	912	912	912	913	913	913	913	913	911.8	23	
	24	914	914	914	914	915	915	916	916	917	917	918	918	919	919	919	920	920	920	920	921	921	921	921	921	921	917.8	24	
	25	921	921	922	922	922	923	923	923	923	924	924	924	924	925	925	925	924	924	924	924	925	924	924	924	925	923.5	24	
	26	924	924	923	923	923	923	923	923	923	923	923	923	923	923	922	922	922	922	921	921	920	920	919	919	918	924	922.0	24
	27	917	916	915	914	913	913	913	913	913	913	914	914	915	915	915	916	917	917	918	918	918	918	919	919	919	915.5	24	
	28	919	920	920	921	921	922	923	924	924	925	926	927	927	928	929	929	930	931	932	932	933	934	935	935	935	926.8	24	
	29	935	936	937	938	938	939	940	941	942	943	943	943	943	943	943	943	944	944	944	944	943	943	943	943	943	944	941.5	24
	30	943	943	943	944	944	943	943	944	944	943	943	942	942	941	940	939	939	938	937	936	936	935	934	933	944	940.4	24	
	HOURLY MAX	943	943	943	944	944	943	943	944	944	943	943	943	943	943	943	944	944	944	944	943	943	943	943	943	943	943	943	
	HOURLY AVG	923.1	923.0	922.8	922.8	922.8	922.7	923.0	923.2	923.3	924.1	923.9	923.8	923.8	923.8	923.9	923.8	923.9	923.9	923.8	923.6	923.8	923.6	923.6	923.5				

STATUS FLAG CODES

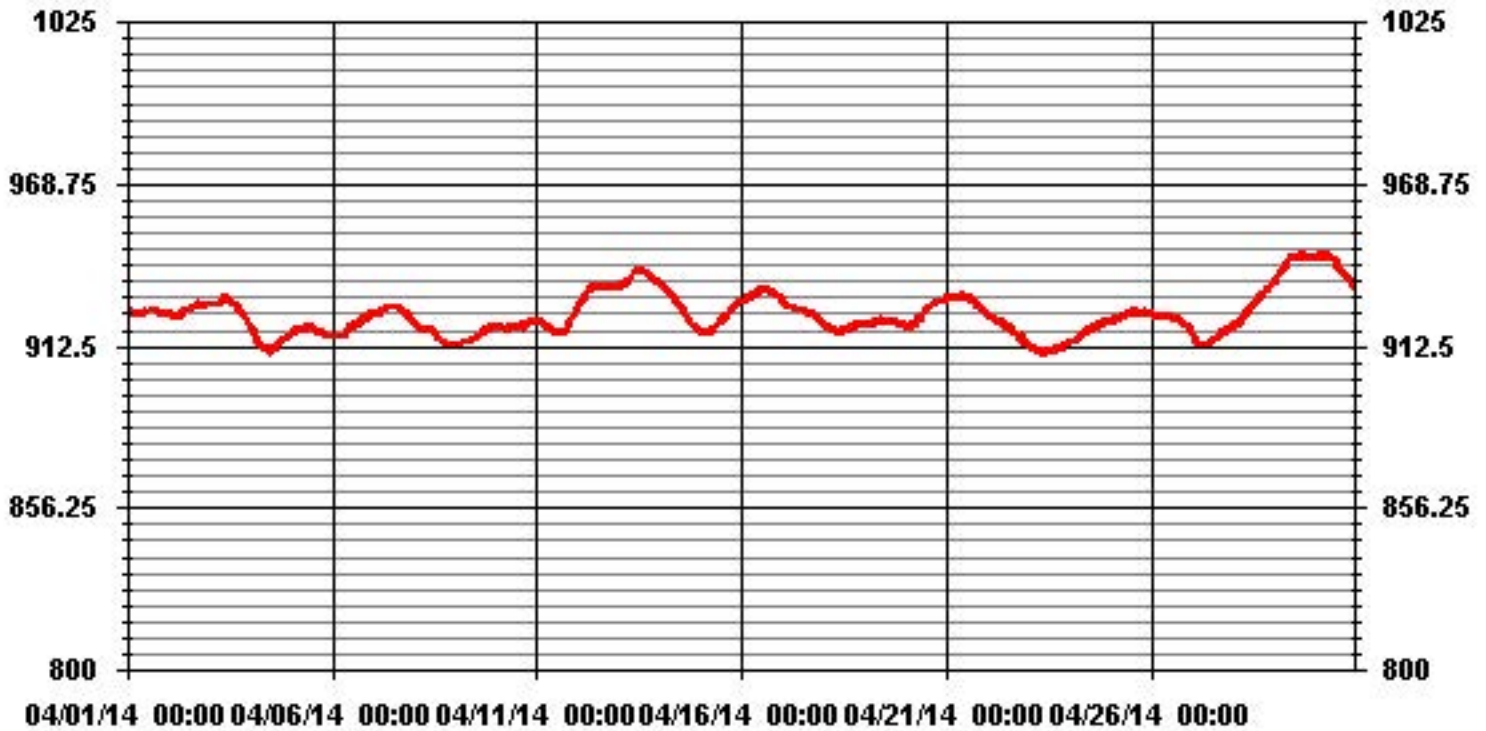
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	944	MB	@ HOUR(S)	VAR	ON DAY(S)	29, 30
MAXIMUM 24-HR AVERAGE:	941.5	MB			ON DAY(S)	29
				VAR-VARIOUS		
				OPERATIONAL TIME:	716	HRS
				AMD OPERATION UPTIME:	99.4	%
STANDARD DEVIATION:	7.54			MONTHLY AVERAGE:	923.5	MB

01 Hour Averages



Relative Humidity

Lakeland Industry & Community Association - St. Lina Site

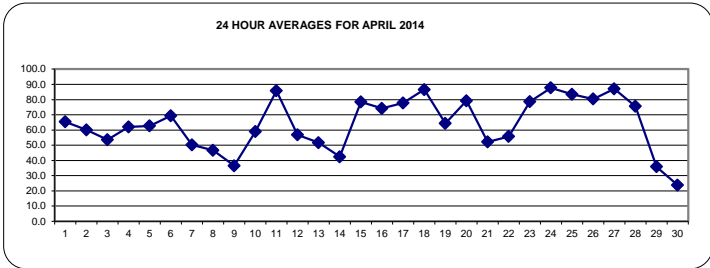
APRIL 2014

RELATIVE HUMIDITY (RH) hourly averages in %

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	72	74	76	77	78	79	79	78	74	66	56	Y	Y	Y	38	41	51	54	58	61	60	63	69	71	79	65.5	21	
2	72	71	73	75	80	80	78	71	65	59	55	53	51	50	51	49	46	45	46	51	53	55	56	58	80	60.1	24	
3	58	59	59	60	61	60	56	49	46	43	40	38	36	34	35	39	45	50	57	64	69	74	78	77	78	53.6	24	
4	77	77	78	78	78	79	79	78	76	71	68	78	63	51	44	52	47	44	43	43	43	44	47	52	79	62.1	24	
5	60	63	63	63	62	64	63	60	50	48	47	44	44	46	54	58	57	61	64	81	87	88	89	89	89	62.7	24	
6	89	88	88	86	88	88	86	78	70	63	54	52	54	53	67	64	55	47	45	63	72	76	72	68	89	69.4	24	
7	66	68	64	59	59	59	58	56	49	44	38	38	37	37	34	34	33	38	41	48	56	61	64	66	68	50.3	24	
8	67	66	64	64	67	72	71	64	56	47	39	31	28	28	26	26	27	28	32	45	45	40	43	43	72	46.6	24	
9	41	43	45	44	43	45	44	40	37	35	33	29	29	28	30	29	26	26	27	32	38	41	44	47	47	36.5	24	
10	48	51	56	58	58	58	54	45	41	42	50	56	59	52	49	54	51	53	58	76	84	86	87	88	88	58.9	24	
11	89	89	90	89	89	90	90	90	90	90	90	90	90	91	87	75	83	82	85	82	79	78	76	76	91	85.8	24	
12	74	74	76	73	75	76	69	59	55	50	46	43	40	39	42	43	39	45	50	57	58	59	58	63	76	56.8	24	
13	81	82	83	84	81	81	78	69	57	55	47	41	35	32	28	26	27	27	30	34	36	39	42	46	84	51.7	24	
14	49	51	55	54	54	56	53	49	44	39	36	34	32	31	29	29	28	31	34	40	43	44	50	52	56	42.4	24	
15	52	54	54	70	83	86	84	81	78	75	77	77	78	82	85	85	85	85	85	85	86	86	85	86	86	86	78.5	24
16	87	87	86	86	86	86	82	71	66	66	63	62	62	62	64	62	64	71	71	77	81	81	80	79	87	74.3	24	
17	78	74	75	78	81	81	80	78	76	75	73	70	73	80	76	72	73	73	76	81	84	85	86	87	87	87	77.7	24
18	87	87	87	87	87	87	87	87	86	86	87	86	85	85	85	86	86	87	87	87	87	87	87	87	87	87	86.5	24
19	87	87	85	85	87	88	88	82	59	56	55	58	53	51	48	46	44	44	46	50	53	58	66	70	88	64.4	24	
20	74	76	78	80	84	86	88	88	87	84	81	76	82	84	82	77	72	69	73	75	76	72	76	81	88	79.2	24	
21	83	82	82	82	84	83	76	69	63	51	41	39	36	26	24	25	25	25	29	33	36	43	54	62	84	52.2	24	
22	66	72	77	80	83	83	80	76	64	55	47	41	37	34	33	35	36	39	41	42	45	51	58	63	83	55.8	24	
23	68	71	73	74	73	76	77	70	63	Y	58	68	80	85	87	87	87	86	86	87	88	88	88	89	89	89	78.7	23
24	89	89	89	90	90	90	90	90	89	89	88	86	85	85	86	85	85	85	87	87	87	87	88	88	90	87.7	24	
25	88	88	88	88	88	88	87	84	80	80	79	79	78	76	74	78	81	81	81	83	87	89	89	90	90	90	83.5	24
26	90	90	90	90	90	90	90	90	90	90	86	77	73	71	67	64	63	64	66	69	74	80	86	88	90	80.3	24	
27	89	90	90	90	90	90	90	90	90	90	90	91	90	82	75	70	73	84	86	88	89	90	90	90	91	87.0	24	
28	90	90	90	90	90	90	91	91	90	84	67	63	57	49	48	47	69	61	66	77	80	76	79	79	91	75.6	24	
29	82	80	63	52	46	48	43	40	38	30	29	27	24	21	20	20	19	19	21	25	29	29	26	29	82	35.8	24	
30	32	28	29	29	37	40	38	32	26	20	18	14	I2	I2	I2	I2	13	15	17	20	26	27	30	31	40	23.8	24	
HOURLY MAX	90	90	90	90	90	90	91	91	90	90	90	91	90	91	87	87	87	87	87	87	88	89	90	90	90			
HOURLY AVG	72.8	73.4	73.5	73.8	75.1	76.0	74.3	70.2	65.2	61.5	57.9	56.6	55.3	53.7	52.7	52.3	53.0	54.0	56.3	61.4	64.4	65.9	68.1	69.8				

STATUS FLAG CODES

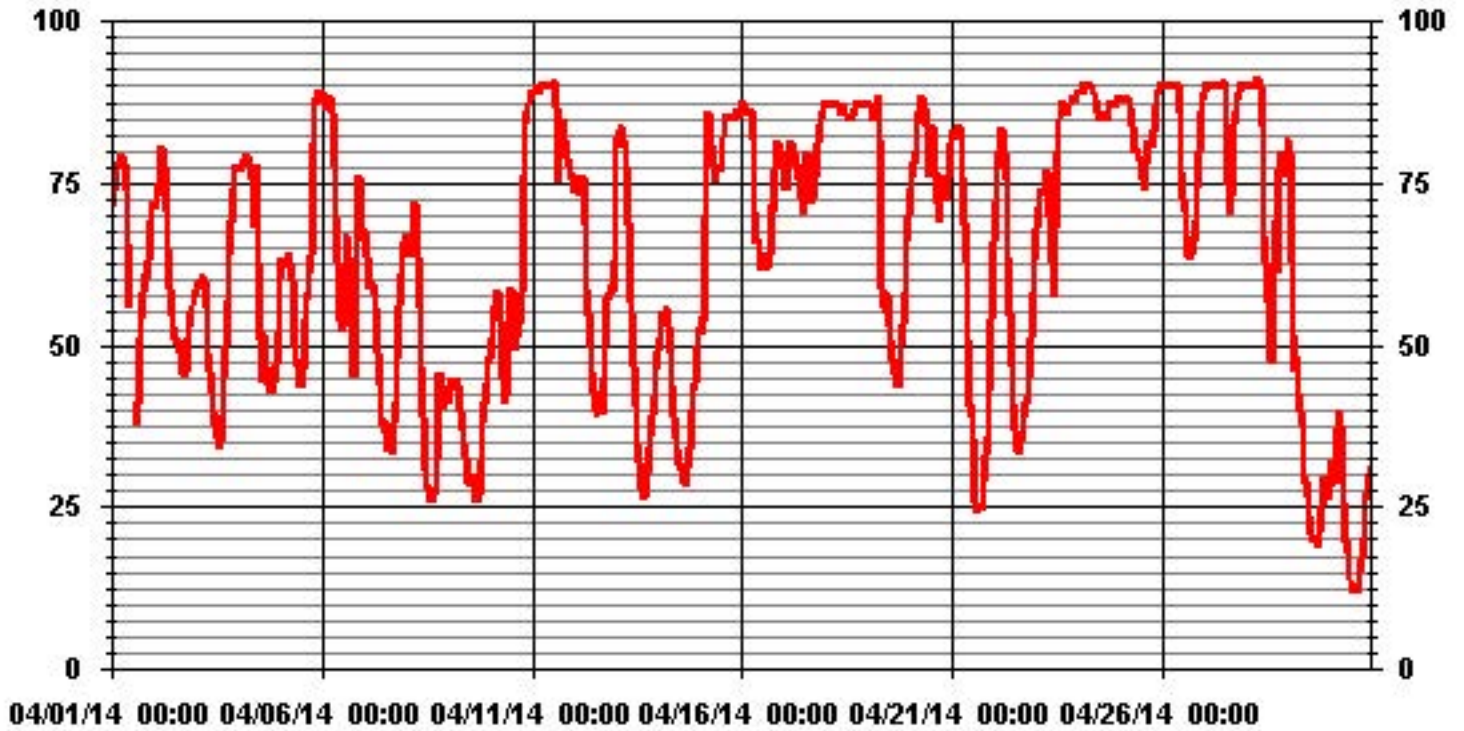
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	91	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	87.7	%			ON DAY(S)	24
					VAR-VARIOUS	
OPERATIONAL TIME:					716	HRS
AMD OPERATION UPTIME:					99.4	%
STANDARD DEVIATION:	21.01				MONTHLY AVERAGE:	64.09 %

01 Hour Averages



Precipitation

Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

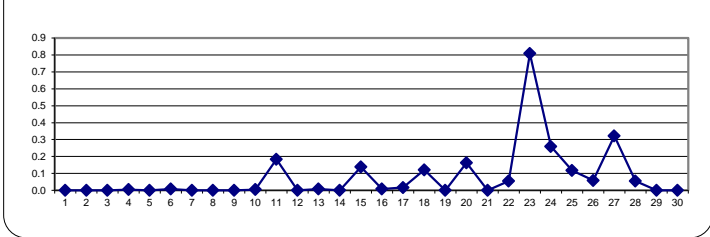
PRECIPITATION hourly averages in millimeter

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
2		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
3		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
4		0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
5		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
6		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	0.1	0.0	24
7		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
8		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	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	24	
11		0	0	0	0	0	0	0	0	0.4	0.7	0.5	0.5	0.4	0	0	0	1.9	0	0	0	0	0	0	0	0	1.9	0.2	24
12		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
13		0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
14		0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0.1	0.4	0.5	0.6	0.6	0.4	0.2	0.1	0	0.3	0.1	0	0	0	0.6	0.1	24
16		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	0.1	0.0	24
17		0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0.1	0.1	0.1	0.1	0.0	24
18		0.1	0.2	0.4	0.3	0.5	0	0.5	0.3	0.5	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0.5	0.1	24
19		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
20		0	0	0	0	0.3	0.1	0	0.1	0.1	0.3	0.6	0.2	1.8	0.4	0	0	0	0	0	0	0	0	0	0	0	1.8	0.2	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	24	
22		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.3	0	0	0	0	0	0	0	0	0	1.3	0.1	24
23		0	0	0	0	0	0.2	0.2	0	0	0	0	0.1	1.9	4.3	2.8	2	1	0.6	0.7	1.1	1.1	1.1	1.3	1	4.3	0.8	24	
24		0.9	0.7	0.6	0.6	0.4	0.2	0.2	0	0.2	0.3	0.3	0.4	0.3	0.4	0.2	0	0.1	0.1	0.1	0	0	0	0.1	0.1	0.9	0.3	24	
25		0.2	0.2	0.4	0.4	0.4	0.1	0.1	0.1	0	0.1	0.2	0.2	0.1	0.1	0	0.1	0.1	0	0	0	0	0	0	0	0	0.4	0.1	24
26		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.2	0.9	0.9	0.1	24
27		0.8	0.9	1.3	1.2	0.7	0.7	1.6	0.2	0.1	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	0.3	24
28		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.1	0.2	0	0	0	0	0	0	0	1.1	0.1	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	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	24	
HOURLY MAX		0.9	0.9	1.3	1.2	0.7	0.7	1.6	0.3	0.5	0.7	0.6	0.5	1.9	4.3	2.8	2	1.9	0.6	0.7	1.1	1.1	1.1	1.3	1				
HOURLY AVG		0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1				

STATUS FLAG CODES

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

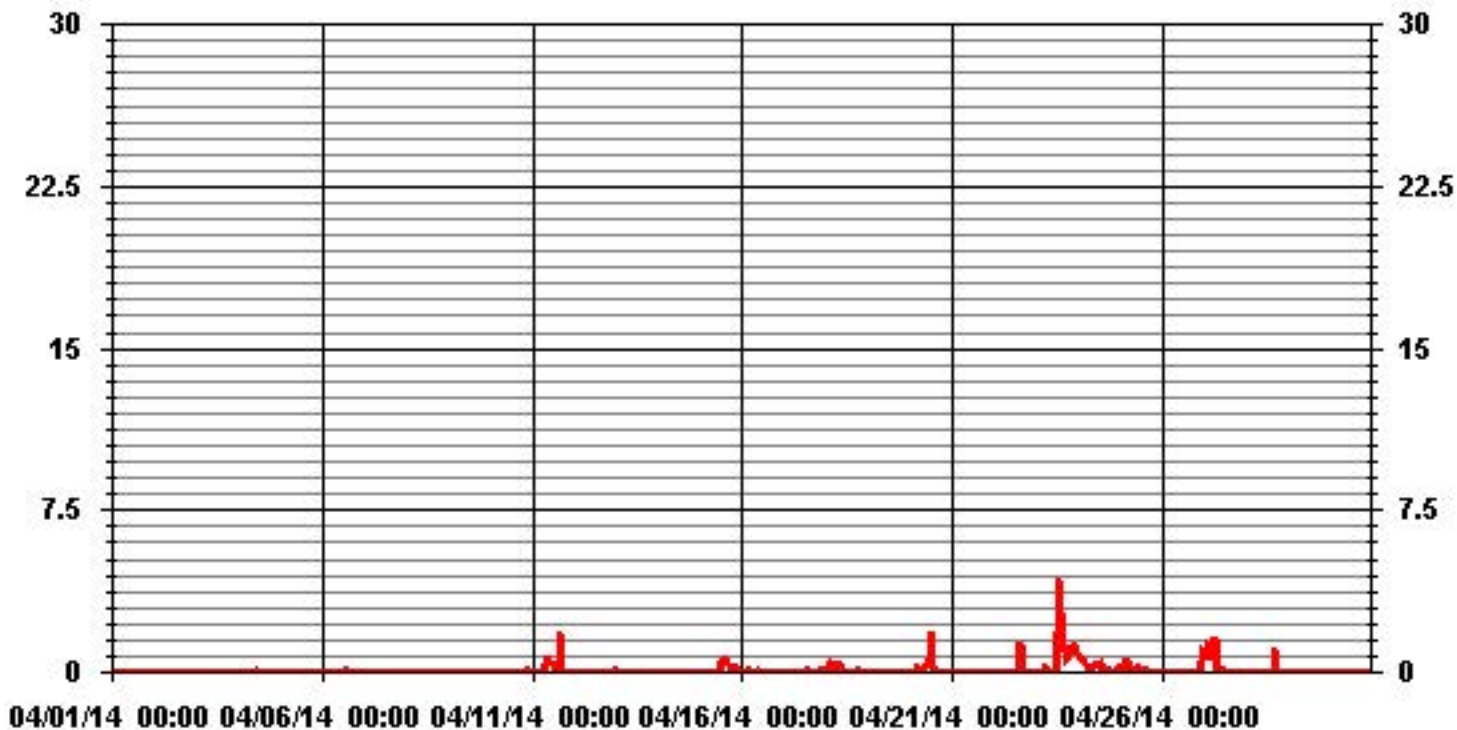
24 HOUR AVERAGES FOR APRIL 2014



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	4.3	MM	@ HOUR(S)	13	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	0.8	MM			ON DAY(S)	23
					VAR-VARIOUS	
OPERATIONAL TIME:					720	HRS
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	0.30				MONTHLY AVERAGE:	0.08 MM

01 Hour Averages



Vector Wind Speed

Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

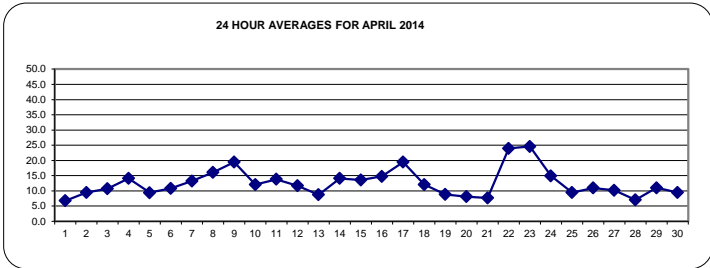
WIND SPEED (WS) hourly averages in km/hr

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	10.1	9.5	8.1	6.2	5.8	5.2	5	4.6	4.5	4.2	4.8	2.4	2.1	5.1	3.8	5.7	11.1	10.7	8.5	7.5	8.9	9.5	9.6	9.5	11.1	6.8	24	
2	8	7.3	7.2	7.7	9.9	11.2	10	10.3	11.8	14.9	17	12.1	12.6	11.4	11.4	10.1	10.4	9.4	4.6	4.4	5.9	5.3	7.6	7.4	17.0	9.5	24	
3	7.5	7.1	7.2	7.2	5.6	3.9	4.2	3.6	4.4	6	9.5	12.2	14.3	13.2	14.2	12.7	13.7	14.3	14.6	13.3	16.2	16	21.5	15.7	21.5	10.8	24	
4	16.9	15.5	14.4	16.3	14.2	15.5	11.1	12.5	11.8	14.5	16.8	14.4	16.4	14.2	16.5	12	15.6	15.8	16.1	13.6	12.9	12.8	10.5	8.5	16.9	14.1	24	
5	7.3	4.9	3.7	3.7	2.8	6.3	8.1	7.7	7.9	10.2	12.5	15.2	18.3	19	22.7	18.2	11.7	7.1	4	7.1	7.5	7.5	5.8	6.8	22.7	9.4	24	
6	6.6	7.4	6.2	4.9	4.3	5.7	6.1	9.3	11.5	11.6	13.2	13.2	11.8	16.1	18.5	16.7	16.5	14.6	19.1	12.4	7.2	9.6	8.5	7.9	19.1	10.8	24	
7	8.5	10	10.4	10.4	10.7	12.9	11.3	12.1	12.8	15.3	14.6	17.3	22	21.9	19.2	17.6	18.8	16	7.8	7	8.7	9.1	11.5	12.3	22.0	13.3	24	
8	13.3	11.7	12.1	10.6	11.6	12.6	12	12.3	14.1	15	13.9	14.9	22	25.2	24.9	25.1	21.9	13.6	12.6	13.9	16.9	23	16.9	15.2	25.2	16.1	24	
9	15.6	14.8	15.9	15.6	13.9	13.4	17	21.1	23.8	24.5	26.2	27.2	26	27.4	24.5	23.3	22.6	23.1	19.2	15.5	14.8	13.5	14.5	13	27.4	19.4	24	
10	13.4	13.5	12	13.6	11.4	10.7	14.9	14.6	16.4	17.6	17.1	17.6	18.3	16.6	12.5	10.2	8.5	8.8	10.6	6.7	7.3	7.1	4.6	5.9	18.3	12.1	24	
11	5.6	7.3	8.6	11.2	13.8	12.9	15.5	13.9	11.1	11.2	10.9	12.3	10.5	9.2	8	8.7	12.7	19.2	20.7	23.8	23.1	22.3	19.3	19.9	23.8	13.8	24	
12	20.2	17.5	18	20.1	15.1	13.2	12.4	9.9	12.2	12.7	12.7	12.6	12.6	10.7	12.1	10.9	15.3	12.4	11.8	4.9	3.9	2.6	0.2	6.9	20.2	11.7	24	
13	5.8	4.6	4.1	8.4	11.4	9.4	6.8	11.7	7.9	8.9	10.8	11.8	10.6	11.4	11.1	9.9	9.3	8.1	4.9	6.1	7.8	8.7	10	10.7	11.8	8.8	24	
14	11.7	11.8	11.9	14.4	14.7	14.5	14.3	13.3	16.1	17.3	20.4	20.3	19.9	18.6	16	15	15.2	8.9	6.6	10.7	12	8.9	13	13.7	20.4	14.1	24	
15	13.7	15.7	16.2	13.1	15.5	13.3	11.6	14.9	15	13.8	12.8	13.1	13.6	15.8	17.6	17.6	16.5	14.4	15.2	11.9	9.1	10.3	8.9	6.6	17.6	13.6	24	
16	4.2	5.7	5.8	6	6.6	10.2	14	14.9	15.9	15.7	17.2	19.4	20.4	19.1	19.4	21.1	20.6	18.2	16.8	15.6	15.3	16.8	17.7	18	21.1	14.8	24	
17	16	17.3	17.4	17.9	20.1	21.7	18.8	19.3	19.6	20.8	21.1	21.7	21.6	18.7	22.1	21.7	18.8	19.4	19.1	18.4	18.5	19	19	18.7	22.1	19.4	24	
18	18.6	17.9	18.6	17.8	17.3	16	15.6	14.5	13.3	13	12.9	13	13.6	13.1	11.6	10.4	10.5	11.5	8.6	6.2	4.3	3.3	3.7	4.3	18.6	12.1	24	
19	5.9	5.1	5.3	2.7	4.7	5	6.2	7	7.6	10.3	11.3	14.4	13.4	10.5	10	11.8	12	11.7	6.5	5.3	9.8	12.9	12	10.1	14.4	8.8	24	
20	10.5	9.4	7.3	8.4	7.5	11.2	6.2	3.9	6.6	4	4	4.9	6.4	13.2	12.8	10.7	9	7.9	6.1	6.1	9	8.8	9.6	10.5	13.2	8.1	24	
21	9.9	9	9.5	9.4	10.9	9.9	9.9	7.8	6.9	3.2	1.2	6.4	6.2	7.1	5.7	2.5	4.5	5.7	6.6	6.7	9.3	12	11.6	12.2	12.2	7.7	24	
22	11.3	12.6	14	15.7	15.3	14.7	16.7	18	23.1	25.2	25.6	24.4	25.4	28.9	29.7	31.8	32.8	31	31.3	30.5	29.9	27.8	30.3	28.9	32.8	24.0	24	
23	30.4	27.8	23.3	23.2	22.6	21.6	21.5	23.5	26.1	Y	28.1	23.7	24.7	29	22.2	23.2	24	26.9	26.6	23.9	25.6	24.9	22.6	20.1	30.4	24.6	23	
24	18.1	19.1	15.6	16	15.4	15	15.4	15.8	15	15.2	14.6	13.4	12.9	12.7	16.2	15.6	15.7	12.9	13.9	13.1	13.4	15	14.2	12.9	19.1	14.9	24	
25	12.8	12.2	11.6	11.4	11.2	11.6	10.9	10.2	9.2	8.7	7.6	7.6	8.4	8.7	7.2	9.9	8.5	9	9.8	8.4	7.3	7.5	9.8	8.3	12.8	9.5	24	
26	6.3	6.2	7.5	6.2	4.3	3.6	5.7	7	9.9	10.9	10.5	12.8	12.4	12.1	12.3	12.2	12.5	16.7	17.9	16.1	15.4	16.2	13.4	15	17.9	11.0	24	
27	15.6	17.4	17.1	17.8	16.4	14.9	13.2	11.9	10.6	8.7	7.5	6	5.8	6.6	6.1	5.6	4.5	12.3	10.6	8.5	7.4	8	7.5	4.5	17.8	10.2	24	
28	2.4	1.2	5.9	7.4	6.2	5.3	4.2	4.7	5.7	4.3	4.2	5.9	10.9	12	13.1	10.3	17.5	12.4	5.2	3.5	5.9	5.7	7.1	7.8	17.5	7.0	24	
29	8.7	9.9	9.7	10.3	13.3	12.4	13	11.1	10.2	13	17	14.6	15.6	14.7	14.6	14.3	14.3	11.5	9.3	6.1	6.7	4.4	4.1	5.4	17.0	11.0	24	
30	6.1	5.6	4.5	6	6.8	8.8	6.2	8.4	9.2	9.8	11.7	9.9	8.6	9.7	12	13.8	16.2	10.7	9.4	8.6	10.1	11.5	12.1	11.5	16.2	9.5	24	
HOURLY MAX	30.4	27.8	23.3	23.2	22.6	21.7	21.5	23.5	26.1	25.2	28.1	27.2	26.0	29.0	29.7	31.8	32.8	31.0	31.3	30.5	29.9	27.8	30.3	28.9				
HOURLY AVG	11.4	11.2	11.0	11.3	11.3	11.4	11.3	11.7	12.3	12.4	13.6	13.8	14.6	15.1	14.9	14.3	14.7	13.8	12.5	11.2	11.7	12.0	11.9	11.6				

STATUS FLAG CODES

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

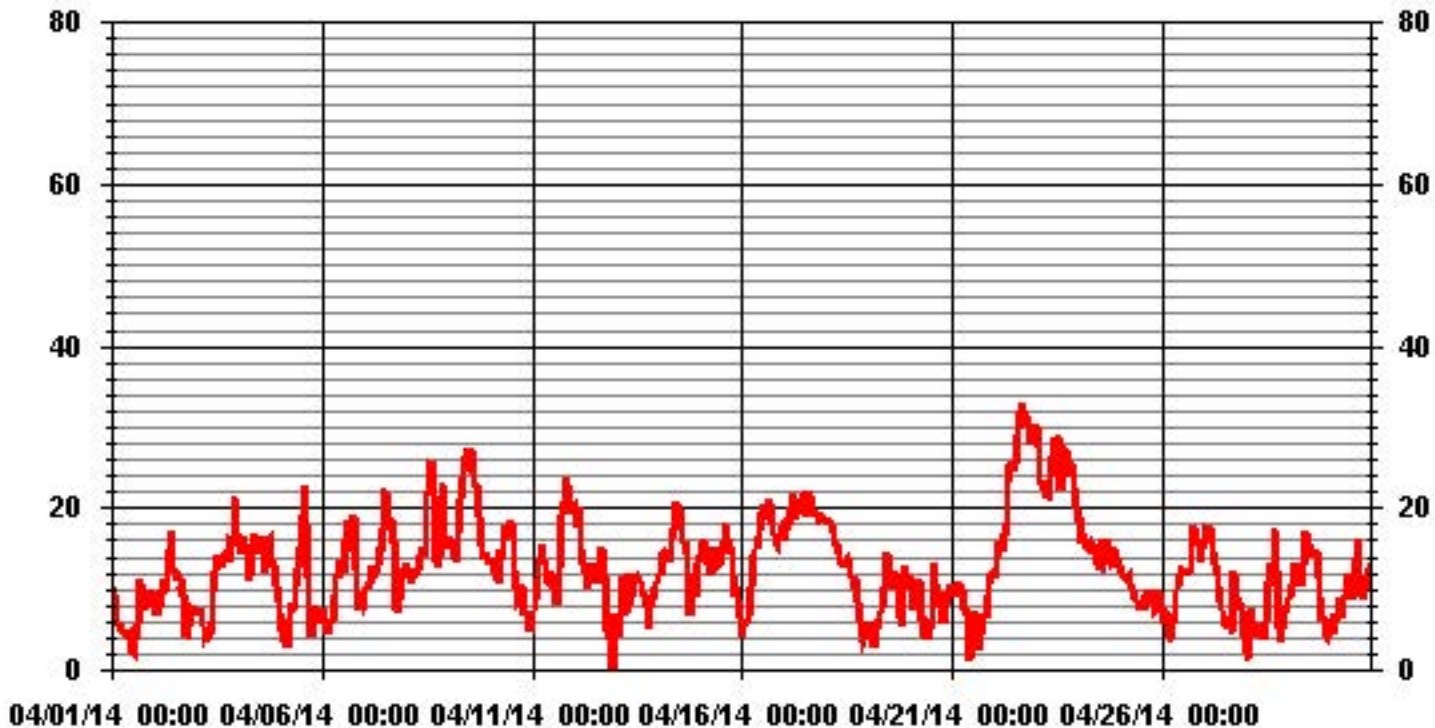
LAST CALIBRATION:	June 12, 2012
DECLINATION :	MAGNETIC DECLINATION 19 DEGREE EAST



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	719
MAXIMUM 1-HR AVERAGE:	32.8 KPH @ HOUR(S) 16 ON DAY(S) 22
MAXIMUM 24-HR AVERAGE:	24.6 KPH ON DAY(S) 23
	VAR-VARIOUS
MONTHLY CALIBRATION TIME:	0 HRS
OPERATIONAL TIME:	719 HRS
AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	5.91
MONTHLY AVERAGE:	12.54 KPH

01 Hour Averages



— LICA31 WSP KPH

Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	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	22.4	20.2	17.4	13.8	15.6	14.5	13	10.6	9.9	9.9	13.2	27.1	12.7	15.4	22.4	16.9	22.1	19.3	20.4	15.4	14.7	22.8	21.1	18.7	27	17.1	24	
2	16.9	15.1	16	16.5	18.5	19.5	19.1	18	20.4	30.9	38.3	33.8	39.9	31.4	25.9	21.9	22.6	18.7	12.7	11.6	18.9	7.7	9	9.7	40	20.5	24	
3	8.8	13.9	14.1	14.7	7.7	5.1	10.6	12.3	16.5	16.7	24.3	32	26.9	34	31.3	33.1	33.8	33.1	32.7	28.1	34.9	38.8	45.8	39.9	46	24.5	24	
4	36.2	35.5	31.6	40.8	29.8	32.9	26.7	27	30.3	29.2	28.9	32.7	40.5	31.8	52.3	36.1	45.1	37.5	35.5	30.3	28.3	25.7	25	19.3	52	32.9	24	
5	15.8	13.4	13.4	6.6	11.2	14.3	16.2	20.2	20.2	24.8	31.1	35	34.2	33.3	43.1	32.4	25.4	18.3	17.1	11.9	11.4	11.4	13.9	9	43	20.2	24	
6	12.5	13	13.8	11.9	12.7	12.7	11.4	20.8	21	23.1	25.6	30	45.8	45.1	56.3	36	45.1	34	54.7	39.9	16.2	16.2	16.7	13	56	26.1	24	
7	14.5	17.3	20.4	19.6	19.3	22.8	21.3	19.5	22.6	38.3	34.8	34.8	46.2	35.9	47.5	38.8	43	36.1	15.4	12.5	15.1	18.4	19.4	26.7	48	26.7	24	
8	26.7	21.7	19.7	20.6	17.4	18	16.2	18.4	20.2	23.9	24.4	34.6	41.4	50.1	52.7	55.4	50.8	25	37.1	31.3	35.9	60.9	40.7	38.8	61	32.6	24	
9	45.8	31.6	36.6	34.2	34.2	37.7	48.7	52.5	59.6	59.3	60.2	76.6	65.4	60	58.5	63.7	53.9	60	51	35.1	39.4	36.1	33.8	25.6	77	48.3	24	
10	26.1	23.9	21.9	26.9	20.6	19.1	30.7	33.5	44.7	44.5	39.2	37.2	44.1	43.2	28	31.1	19.1	19.5	33.1	13.4	12.3	12.5	9.9	9.5	45	26.8	24	
11	10.1	12.5	14.5	21.9	28.9	29.2	29.6	30.5	23.5	21.5	20	26.7	29.2	20.8	17.3	21.7	39.3	49	47.7	55.8	52.8	57	48.2	54.7	57	31.8	24	
12	51.2	45.2	39	52.3	36.4	32.2	29.2	27	29.4	28.9	27.4	25.4	30.3	28.7	34.8	30.1	39.2	32	31.6	17.3	13	11.2	11.9	16.9	52	30.0	24	
13	14.8	13.9	14	23.2	26.7	19.3	19.3	27	20	26.6	28.3	34.2	32.2	33.3	33.3	27.9	28.3	26.3	13.8	13.6	15.4	14.9	23.5	23.5	34	23.1	24	
14	25.9	26.7	27.6	31.1	30.3	29.2	30.7	29.4	35.5	40.8	46.7	45.6	44.2	41	39.4	37.1	36	21	13.6	17.8	22.8	19.5	24.5	31.3	47	31.2	24	
15	28.3	30.2	40.3	27.4	37.5	38.6	22.8	32.4	30.5	30.9	26.7	31.8	26.3	35.3	37.7	44.5	44.3	42.7	32.4	25.2	19.3	20.2	18	14.1	45	30.7	24	
16	12.5	18.4	14	14.8	20.6	23.9	35.1	37.3	33.8	35	37.7	37.9	42.5	37	39.4	43.6	39.9	34.2	33.8	31.3	30.5	35.7	35.5	34.7	44	31.6	24	
17	34.2	39.7	37.5	32.5	39	39	38.6	37	36	44	40.3	48.6	45.3	50.6	44.9	48.2	46.2	44	48	42.5	43.6	43.8	46.7	40.1	51	42.1	24	
18	42.1	43.6	38.6	37.9	44.1	36.2	41	29.2	24.6	26.1	29.4	27.6	36.6	39.7	23	22.4	22.4	20.2	17.8	12.1	12.7	13.4	11	8.4	44	27.5	24	
19	13.9	10.8	10.1	8.1	6.8	8	10.3	11.9	16.5	19.3	25.7	25.9	26.7	22.1	24.8	27.8	24.1	23.1	15.6	10.5	18.9	27.2	27.6	25	28	18.4	24	
20	26.5	25.9	15.6	16.9	16.5	26.6	22.4	11.9	11.2	8.6	10.1	12.6	18.2	21.9	22.6	19.3	16.7	17.4	14.7	11.6	12.5	13.6	15.1	16.2	27	16.9	24	
21	15.4	13.8	14.9	15.1	21.9	18.4	16	13.4	11.4	10.1	14.5	29.2	22.8	28.5	17.8	16.7	21.5	16.4	12.9	12.1	14.3	18.2	20.2	19.1	29	17.3	24	
22	20.4	20.8	26.9	37.5	26.5	25.9	35.5	38	46.9	58.5	57.6	55.4	54.1	71.8	71	75.5	74.6	81.2	85.6	77.7	67.8	64.1	65.9	62.6	86	54.2	24	
23	64.1	63.9	51.9	52.8	48.7	49.5	51.7	55.6	57.4	Y	Y	54.1	67	67	53	46.4	60.9	66.3	58.9	56.3	65.2	53.2	52.2	53.4	67	56.8	22	
24	38.1	41.9	33.8	32.9	36.8	29.2	35.3	44.3	32.5	41	34	30.2	27.8	28.7	33.4	31.6	42.3	27.6	29.6	32.1	34.2	43.4	30.5	29.8	44	34.2	24	
25	26.1	26.3	23.9	21	21	24.1	21.5	20	17.1	16.9	14.3	16.7	18.9	18	16	21.5	16.7	17.1	20	16.5	13.6	16.7	17.4	18.7	26	19.2	24	
26	14.5	12.7	14.5	12.1	9	8.6	13	13.8	18.7	19.7	23.2	28.3	26.3	26.9	31.2	25.9	24.8	42.5	42.7	38.3	34.2	34.2	33.8	31.8	43	24.2	24	
27	36.8	38.6	36.8	43.4	37	29.4	29.8	26.1	18.9	20.6	20.4	17.1	17.1	14	13.6	12.5	23	21.7	22.4	19.4	14.3	15.8	14.5	9.9	43	23.0	24	
28	6.3	8.8	13.6	14.7	13	11.9	11.9	11.6	14.9	10.8	13.6	18.9	31.6	36.4	31.3	26.7	60.4	45.3	12.5	8.2	10.1	9.2	15.8	9.9	60	18.6	24	
29	11.6	15.4	16	20.8	25.2	23.4	25.4	22.6	23.2	44.7	45.8	43.8	44.9	42.9	41.4	38.1	35	30.7	21.3	12.1	9.4	8.4	5.3	6.6	46	25.6	24	
30	8.1	9	6.6	7	10.4	11.2	9.9	15.8	19.9	21.7	32.4	25.7	25.2	28.9	32	30.2	32.4	25.4	22.3	14.3	17.8	18.6	23.2	19.9	32	19.5	24	
HOURLY MAX	64	64	52	53	49	50	52	56	60	59	60	77	67	72	71	76	75	81	86	78	68	64	66	63				
HOURLY AVG	24.2	24.1	23.2	24.3	24.1	23.7	24.8	25.6	26.2	28.5	29.9	33.7	35.5	35.8	35.9	33.8	36.3	32.9	30.2	25.1	25.0	26.3	25.9	24.6				

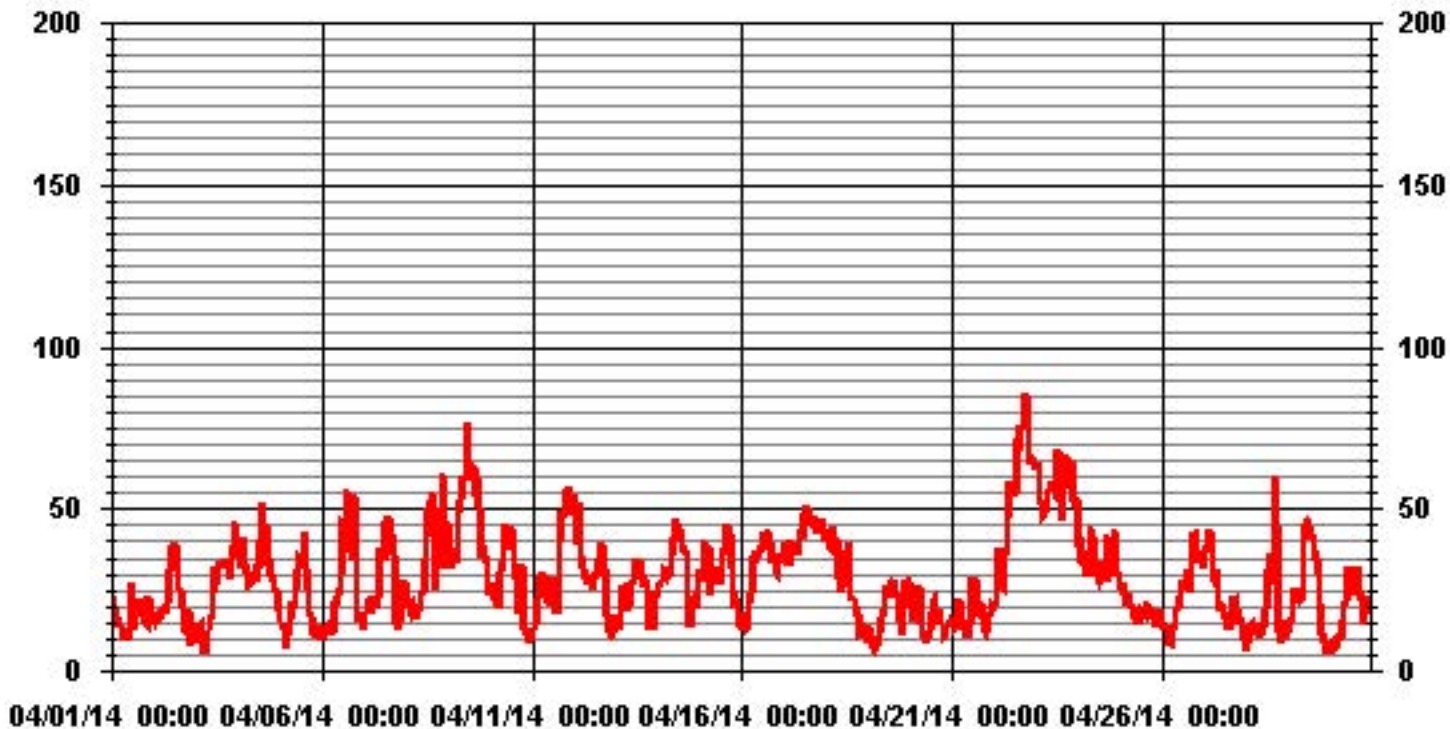
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	86	KPH	@ HOUR(S)	18	ON DAY(S)	22
					VAR-VARIOUS	
			OPERATIONAL TIME:			718 HRS

01 Hour Averages



— LICA31 WSMAX KPH

LICA31
WSP / WDR Joint Frequency Distribution (Percent)

April 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	.69	.97	1.11	.69	1.39	.69	.41	.27	.55	.83	1.94	.55	.41	.41	.83	.69	12.51
< 12.0	1.66	.97	1.94	3.05	5.70	1.94	2.08	1.80	3.47	3.75	4.03	2.08	1.52	1.11	.55	1.11	36.85
< 20.0	1.11	.41	.13	4.86	8.34	2.22	2.08	2.92	2.50	.69	1.11	1.66	3.61	4.03	1.94	1.80	39.49
< 29.0	.69	.00	.00	.55	2.64	1.94	.41	.00	.41	.00	.00	.55	.55	.97	.69	.13	9.59
< 39.0	.00	.00	.00	.00	1.25	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.39
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.17	2.36	3.19	9.17	19.33	6.95	5.00	5.00	6.95	5.28	7.09	4.86	6.11	6.53	4.03	3.75	

Calm : .13 %

Total # Operational Hours : 719

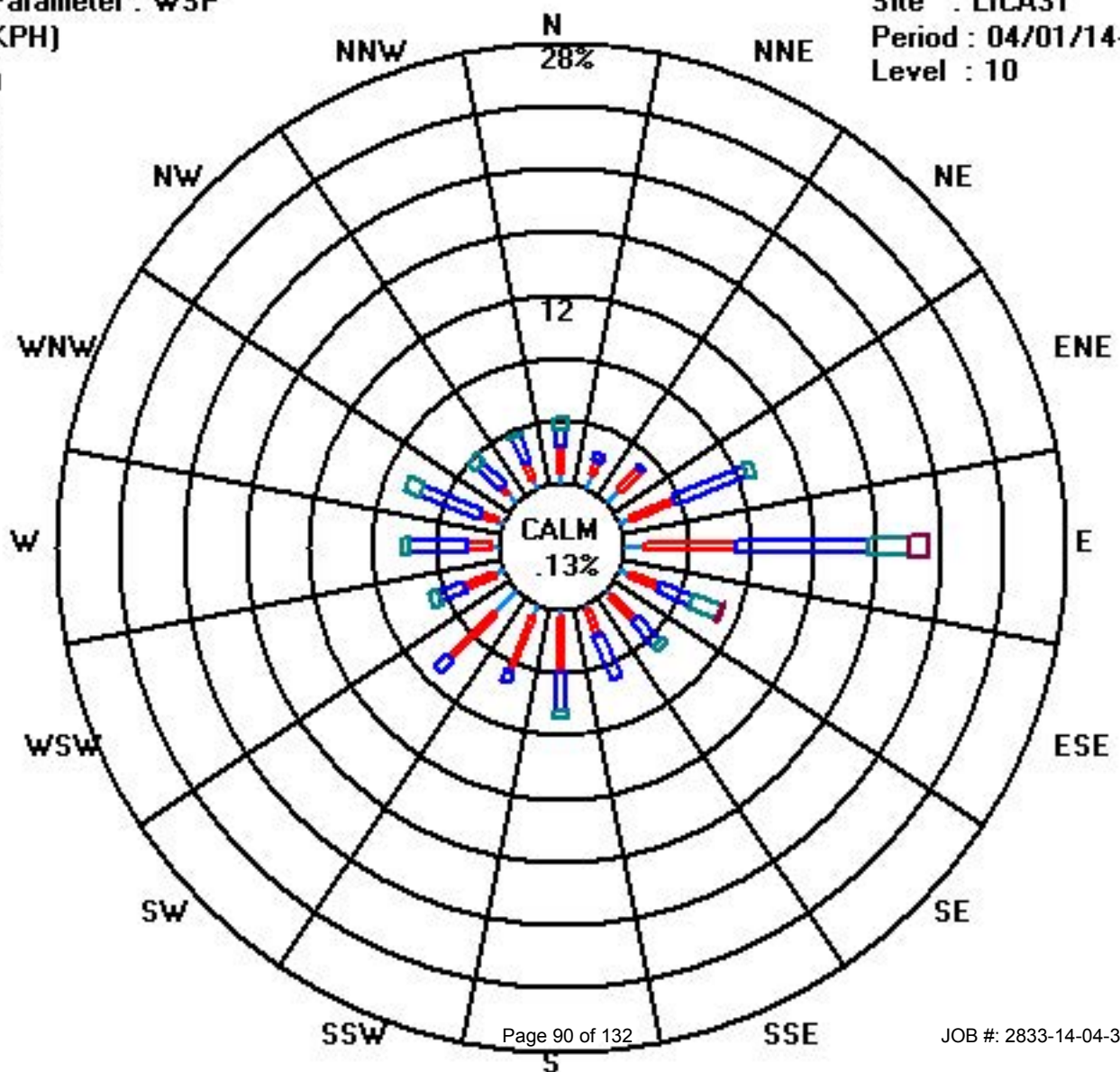
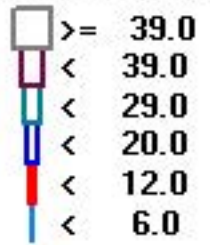
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	5	7	8	5	10	5	3	2	4	6	14	4	3	3	6	5	90
< 12.0	12	7	14	22	41	14	15	13	25	27	29	15	11	8	4	8	265
< 20.0	8	3	1	35	60	16	15	21	18	5	8	12	26	29	14	13	284
< 29.0	5			4	19	14	3		3			4	4	7	5	1	69
< 39.0					9	1											10
>= 39.0																	
Totals	30	17	23	66	139	50	36	36	50	38	51	35	44	47	29	27	

Calm : .13 %

Total # Operational Hours : 719

Class Limits (KPH)



Vector Wind Direction

Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

WIND DIRECTION (WD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	24-HOUR	24-HOUR	
DAY	AVG.	QUADRANT	RDGS.																										
1	188	201	203	206	205	198	213	228	229	232	233	341	37	12	355	83	116	119	159	155	145	163	184	190	355	N	24		
2	183	192	162	116	87	93	89	98	107	108	96	91	87	83	70	75	68	78	92	52	82	45	34	41	192	S	24		
3	56	70	86	96	121	130	200	180	192	172	139	147	131	155	160	159	175	166	163	162	168	171	175	167	200	SSW	24		
4	150	152	155	158	152	153	163	168	168	213	235	239	274	313	295	320	294	314	308	307	296	299	302	337	337	NNW	24		
5	17	10	304	305	214	182	167	185	188	192	190	197	230	241	244	243	207	212	280	43	53	67	125	175	305	WNW	24		
6	189	196	164	78	113	181	140	190	231	232	260	285	284	294	274	300	308	301	290	346	308	275	268	278	346	NNW	24		
7	251	250	273	282	286	282	271	269	268	271	277	243	251	252	264	258	259	262	264	288	329	331	316	310	298	331	NNW	24	
8	196	206	204	206	214	223	222	233	236	240	237	258	255	260	261	265	262	264	288	329	331	316	310	298	331	NNW	24		
9	295	288	299	294	296	291	278	289	294	299	297	291	302	306	302	304	311	308	307	304	306	296	290	281	311	NW	24		
10	281	275	267	271	265	269	275	279	279	276	296	274	265	284	299	322	337	328	322	34	48	56	83	117	337	NNW	24		
11	141	97	110	105	110	114	112	122	137	141	142	148	182	189	206	249	306	333	335	358	1	10	13	8	358	N	24		
12	9	13	359	3	351	350	351	349	340	341	329	327	329	338	349	335	315	359	358	21	25	66	51	34	359	N	24		
13	32	341	334	19	33	43	55	39	36	9	1	2	0	352	353	6	356	0	29	76	103	128	140	159	356	N	24		
14	170	177	171	178	181	183	174	174	175	179	180	183	191	188	191	189	199	197	143	109	120	93	56	69	199	SSW	24		
15	78	78	86	88	82	90	85	80	74	84	74	74	73	75	76	80	88	87	71	74	64	63	71	78	90	E	24		
16	81	95	90	144	174	179	176	173	167	165	135	136	140	139	141	137	139	137	147	142	134	133	136	137	179	S	24		
17	138	132	126	118	118	120	114	111	114	107	103	111	108	109	122	112	102	111	98	87	84	84	84	83	138	SE	24		
18	80	78	78	75	74	73	77	77	84	86	90	88	88	90	79	74	67	73	63	56	39	8	315	303	315	NW	24		
19	297	301	308	281	232	222	240	260	257	231	232	233	240	241	236	227	245	244	201	151	127	139	159	148	308	NW	24		
20	162	162	140	139	135	179	200	225	232	231	253	277	288	264	268	244	239	225	191	218	230	209	219	217	288	WNW	24		
21	217	210	203	189	200	213	218	221	234	232	180	175	157	222	240	55	93	63	77	65	69	86	90	91	240	WSW	24		
22	82	64	70	78	68	72	78	72	71	77	79	77	79	85	82	88	85	81	83	88	88	86	87	85	88	E	24		
23	84	86	84	83	89	85	86	92	97	Y	104	109	108	108	120	112	102	100	95	87	86	86	82	75	120	ESE	23		
24	73	74	72	68	72	75	76	83	82	84	91	90	88	80	79	73	78	79	85	88	87	90	86	84	91	E	24		
25	78	78	80	83	82	85	92	98	102	89	99	83	79	81	83	93	82	81	86	100	90	81	89	92	102	E	24		
26	97	74	78	71	70	70	84	88	101	107	94	90	91	102	101	91	84	86	90	91	97	108	97	88	108	ESE	24		
27	84	82	83	84	88	91	92	97	113	141	186	231	226	213	204	236	118	119	116	121	101	96	110	121	236	SW	24		
28	96	56	38	15	26	15	358	345	318	16	351	348	330	348	17	21	333	352	56	160	192	184	216	210	358	N	24		
29	224	263	297	305	307	290	293	289	288	277	282	294	293	299	311	327	329	328	334	10	31	226	215	238	334	NNW	24		
30	275	306	257	258	240	248	250	234	231	229	198	227	238	240	214	239	242	225	229	189	190	197	188	197	306	NW	24		

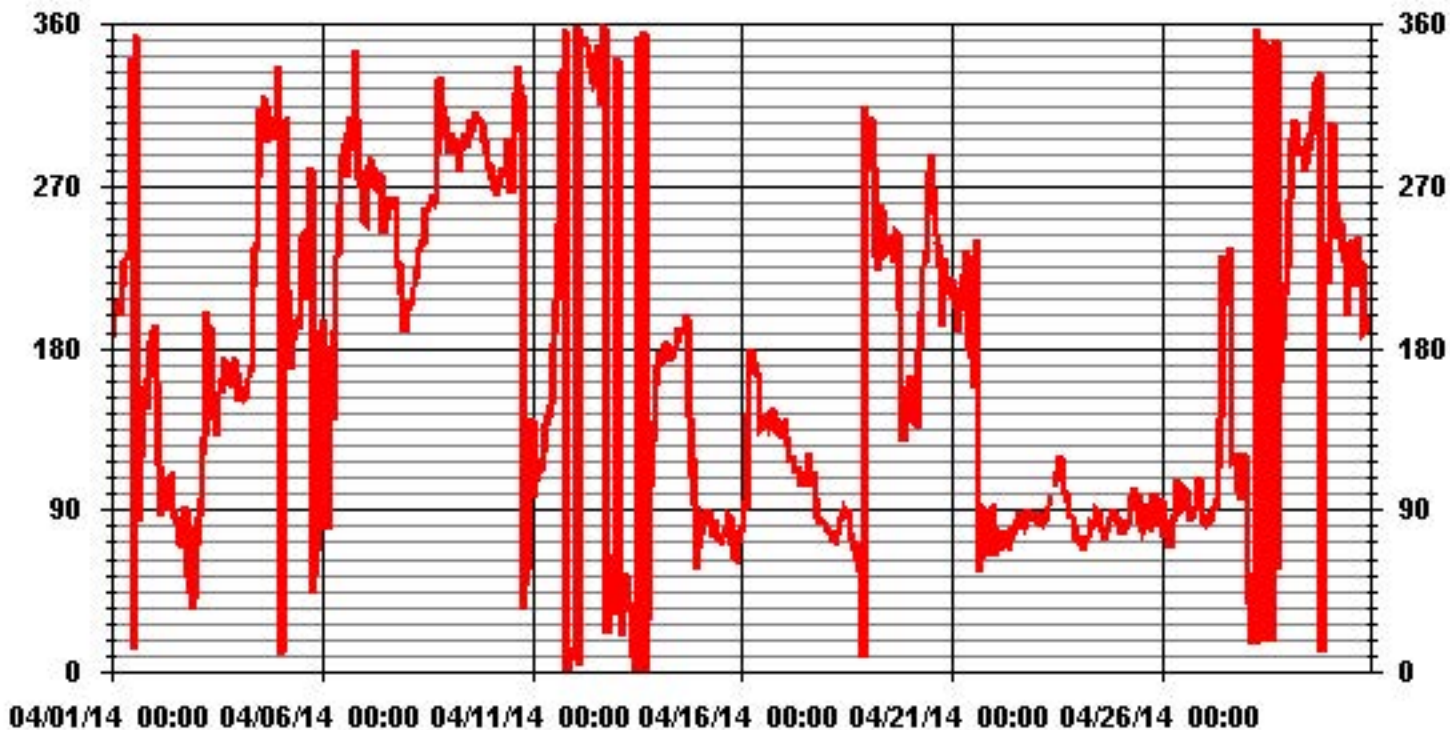
STATUS FLAG CODES

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

LAST CALIBRATION:	June 12, 2012
DECLINATION :	MAGNETIC DECLINATION 19 DEGREE EAST

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	719 HRS
STANDARD DEVIATION:	93.95	AMD OPERATION UPTIME:	99.9 %
		MONTHLY AVERAGE:	110 DEG

01 Hour Averages



Standard Deviation Wind Direction

Lakeland Industry & Community Association - St. Lina Site

APRIL 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																									
1		10	11	11	11	12	12	10	10	14	24	30	61	54	39	47	35	15	12	15	9	9	10	10	8
2		5	6	7	10	4	5	7	8	11	13	14	20	21	21	16	17	14	14	11	8	7	5	3	4
3		3	2	2	3	4	6	8	13	23	23	21	19	18	19	20	19	16	14	13	12	12	13	13	13
4		13	14	13	14	14	13	13	13	17	14	10	12	17	19	20	19	17	15	14	14	15	13	15	13
5		10	11	12	16	8	5	8	12	17	15	16	15	12	15	11	10	14	15	34	8	8	10	20	8
6		27	10	9	25	15	51	16	11	13	12	16	17	27	17	12	18	15	16	15	19	13	7	7	8
7		10	9	8	9	10	9	6	7	10	14	18	14	13	10	15	12	10	10	11	9	6	7	8	10
8		9	10	8	8	6	5	5	5	6	9	11	12	12	10	12	10	10	9	13	12	12	14	14	15
9		15	14	15	15	15	14	12	16	17	16	16	17	17	16	16	18	17	16	15	14	15	14	14	11
10		12	10	8	8	8	9	10	16	16	15	18	16	14	17	22	19	17	17	18	11	8	9	14	11
11		13	11	11	10	10	13	11	12	14	13	13	13	13	15	16	17	24	15	14	15	15	20	16	16
12		16	19	15	15	15	18	16	20	19	22	19	19	21	25	22	27	19	18	18	17	10	21	26	9
13		18	15	14	13	11	11	16	14	22	26	23	25	27	29	27	23	24	21	19	15	6	9	11	12
14		11	9	10	10	9	10	12	14	14	17	16	17	17	18	20	18	17	17	12	8	11	27	11	9
15		11	11	11	12	12	12	13	12	13	14	15	15	15	12	12	13	13	13	11	11	11	11	10	10
16		10	7	7	10	11	12	12	14	14	16	14	16	14	15	15	14	13	13	13	13	12	13	14	13
17		13	13	12	10	10	11	12	10	11	12	11	13	11	13	13	13	12	11	12	11	11	11	11	11
18		11	10	10	10	10	11	11	11	12	12	12	12	14	15	13	13	13	11	11	11	15	15	12	14
19		14	13	12	16	6	8	9	9	18	15	18	15	16	20	28	19	21	17	14	7	7	11	13	15
20		12	15	11	11	12	12	21	16	11	18	30	23	19	9	10	10	11	17	17	13	7	7	6	6
21		6	7	8	7	9	9	8	10	12	36	55	39	45	45	38	67	56	28	10	8	4	6	7	7
22		7	7	9	9	8	16	10	10	10	11	12	12	13	12	12	12	12	11	11	11	11	11	11	11
23		10	10	11	10	11	10	11	11	11		12	11	11	11	13	12	11	12	11	12	11	11	12	11
24		11	11	10	10	10	11	11	11	12	11	13	14	14	15	12	13	13	13	13	12	11	11	11	12
25		11	11	12	11	11	12	12	14	15	14	17	16	16	17	23	16	15	14	12	11	9	9	11	12
26		12	12	12	11	13	17	13	12	12	13	15	14	15	16	16	15	13	12	12	11	11	10	11	11
27		11	10	11	14	11	11	11	10	10	14	14	19	19	22	26	25	36	13	14	13	10	12	12	17
28		24	37	14	14	17	21	27	27	27	31	48	41	25	21	18	22	22	17	13	18	22	9	19	5
29		5	6	9	11	11	9	12	14	18	23	21	23	25	24	26	21	19	21	16	12	4	48	7	5
30		5	8	5	2	8	4	6	8	14	25	24	27	31	38	26	21	14	18	8	9	7	8	7	8

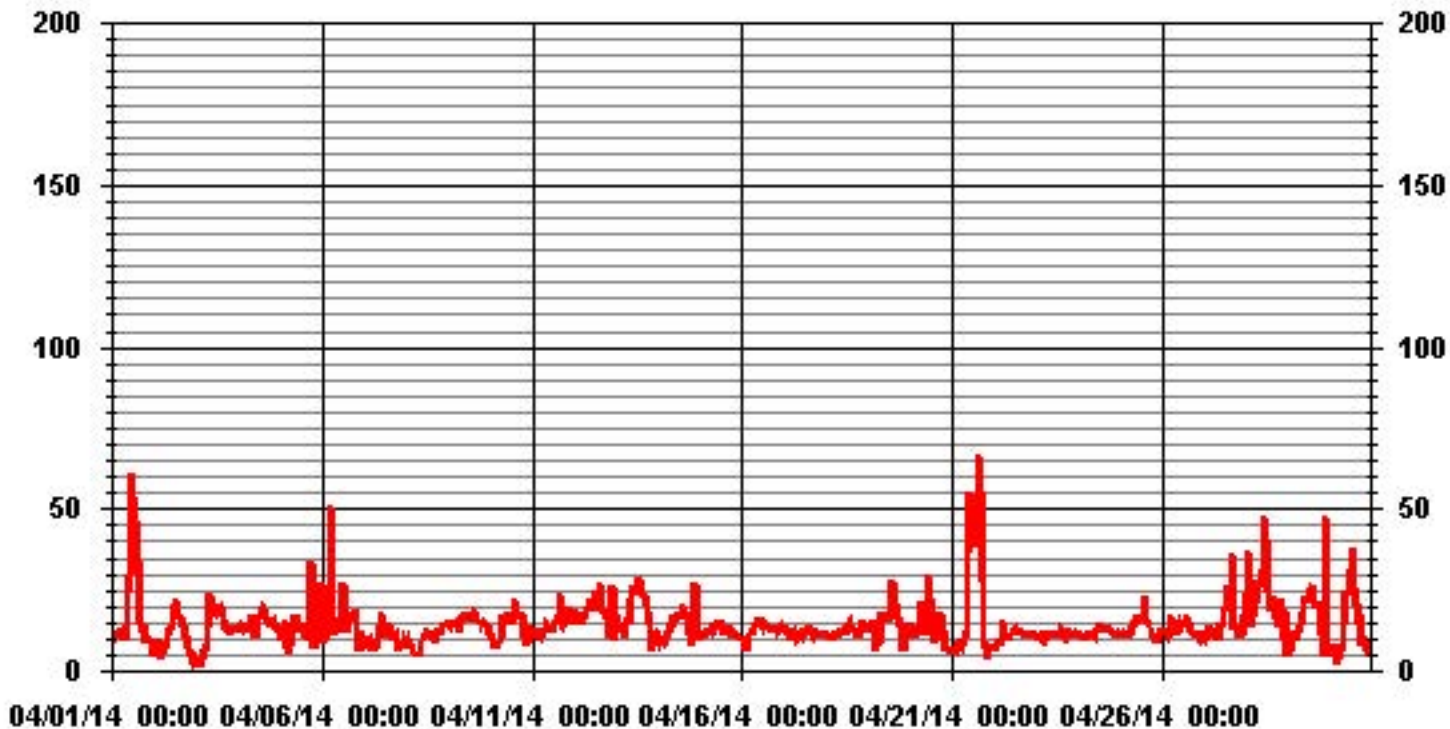
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G	- OUT FOR REPAIR	K	- COLLECTION ERROR

LAST CALIBRATION: June 12, 2012

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 719 HRS

01 Hour Averages



Calibration Reports

Sulphur Dioxide



API 100E SO2 Analyzer Calibration

Date: 8-Apr-14
Company: LICA
Station Name/Location: St.Lina
Performed by: Kevin Hope
Application H₂S/TRS/SO₂: SO2

Start/End Time (mst): 9:13/13:39
Calibration Purpose: Monthly Calibration
Converter Make & Model: NA
Converter Serial #: NA
Cal Gas Expiry Date: 29-Dec-16

Analyzer:
Serial Number: 468
Last Calibration Date: 10-Mar-14
Previous Cal High Point C.F.: 1.001

Range ppb: 1000
As Found C.F.: 0.988
New C.F.: 1.000

As found:		As left:	
SLOPE:	1.020	SLOPE:	1.008
OFFSET:	137.0	OFFSET:	139.2
HVPS:	560	HVPS:	560
RCELL TEMP:	50.0	RCELL TEMP:	50.0
BOX TEMP:	32.1	BOX TEMP:	31.8
PMT TEMP:	7.9	PMT TEMP:	7.9
IZS TEMP:	40.0	IZS TEMP:	40.0
TEST:	NA	TEST:	NA
STABIL:	69.6	STABIL:	69.6
PRES:	23.6	PRES:	23.6
SAMP FL:	562	SAMP FL:	562
PMT:	124.6	PMT:	124.6
NORM PMT:	145.1	NORM PMT:	145.1
UV LAMP:	1785.3	UV LAMP:	1785.3
LAMP RATIO:	97.4	LAMP RATIO:	97.4
STR. LGT	69.9	STR. LGT	69.9
DRK PMT:	14.4	DRK PMT:	14.4
DRK LMP:	3.4	DRK LMP:	3.4
Internal Span:	252.7	Internal Span:	252.7

Calibrator:		Calibrator Flow Targets:			
Flow Meter ID's:	NA	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
Make & Model:	API 700	zero	5000	0	5000
Serial #:	831	high	5000	80	5080
Cal Gas Cylinder I.D. #:	BAL3165	mid	5000	40	5040
Cal Gas Conc. (ppm):	49.7	low	5000	20	5020

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	0.2	NA
adjusted zero	5000	0.0	5000	0	0.2	NA
as found high	4996	80.00	5076	783.3	793.0	0.988
adjusted high	4996	80.00	5076	783.3	785.0	0.998
mid	4996	40.00	5036	394.8	395.0	1.000
low	4996	20.00	5016	198.2	198.0	1.002
calibrator zero	4996	0.00	4996	0	0.5	NA
Average C.F. =						1.000

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	Pass/Fail ?
Slope =	0.998	> or = 0.995	PASS
b (Intercept as % of full scale) =	0.03%	0.85-1.15	PASS
% change in C.F. from last cal	1.30%	± 3% F.S.	PASS
		± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

****run converter efficiency test immediately following zero adjust****

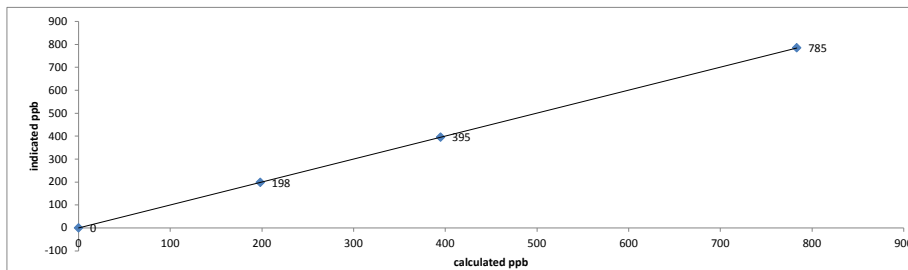
SO₂ High Point gas concentration: 785.0 Time gas run (mst): na

Zero corrected analyzer response: 0.2

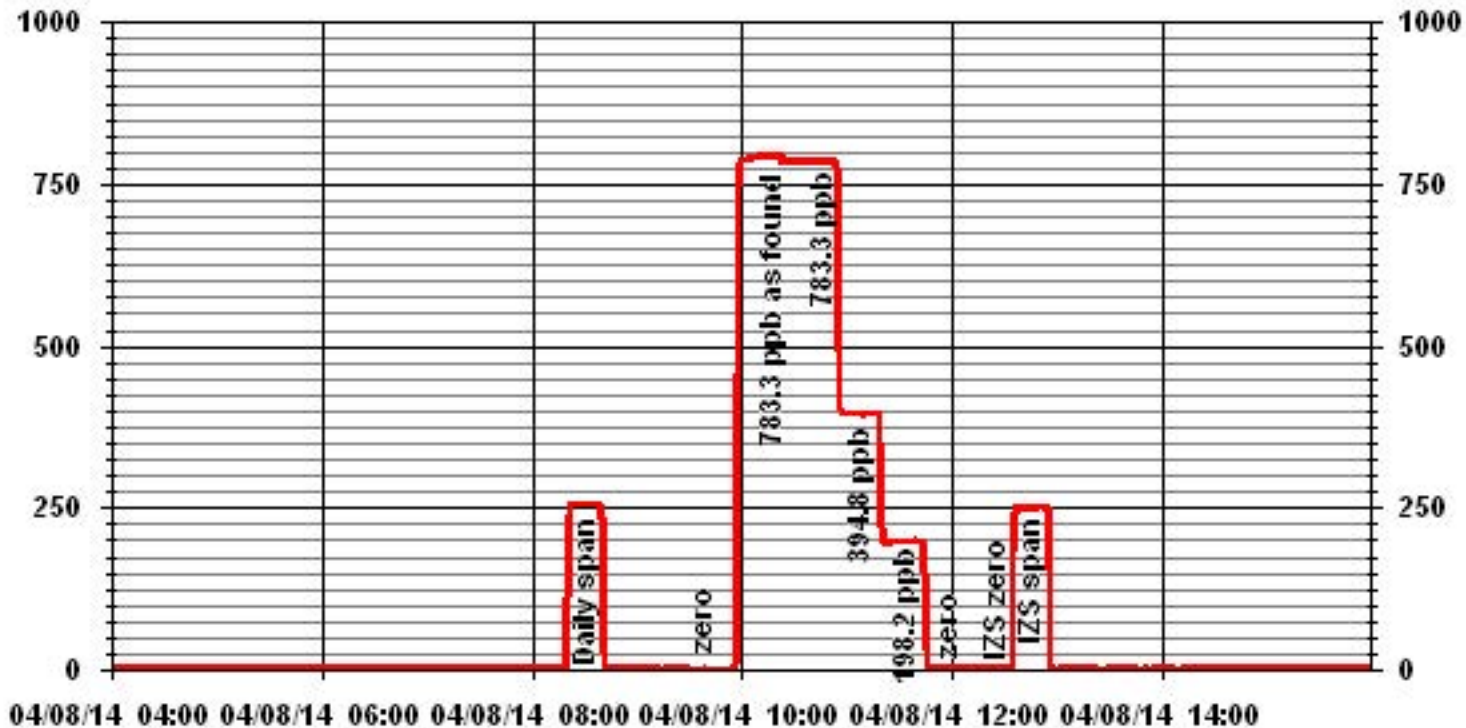
Comments:

Calibration all good. Changed filter

API 100E SO2 Analyzer Calibration



01 Minute Averages



Hydrogen Sulphide



API 101E H2S Analyzer Calibration

Date: 8-Apr-14 **Start/End Time (mst):** 12:45/15:42
Company: LICA **Calibration Purpose:** Monthly Calibration
Station Name/Location: St.Lina **Converter Make & Model:** Internal
Performed by: Kevin Hope **Converter Serial #:** NA
Application H₂S/TRS/SO₂: H2S **Cal Gas Expiry Date:** 25-Dec-15

Analyzer:
Serial Number: 510 **Range ppb:** 100
Last Calibration Date: 22-Mar-14 **As Found C.F.:** 0.899
Previous Cal High Point C.F.: 1.001 **New C.F.:** 0.974

As found:	As left:
SLOPE: 1.150	SLOPE: 1.041
OFFSET: 122.3	OFFSET: 124.6
HVPS: 542	HVPS: 542
RCELL TEMP: 50.0	RCELL TEMP: 50.0
BOX TEMP: 34.9	BOX TEMP: 36.1
PMT TEMP: 8.4	PMT TEMP: 8.4
IZS TEMP: 45.0	IZS TEMP: 45.0
TEST: NA	TEST: NA
STABIL: 0.1	STABIL: 0.1
PRES: 20.5	PRES: 20.5
SAMP FL: 540	SAMP FL: 540
PMT: 125.5	PMT: 125.5
NORM PMT: 127.2	NORM PMT: 127.2
UV LAMP: 1477.7	UV LAMP: 1477.7
LAMP RATIO: 96.4	LAMP RATIO: 96.4
STR. LGT: 70.3	STR. LGT: 70.3
DRK PMT: 40.4	DRK PMT: 40.4
DRK LMP: -5.6	DRK LMP: -5.6
Internal Span: 43	Internal Span: 43

Calibrator:	Calibrator Flow Targets:																				
Flow Meter ID's: NA	<table border="1"> <thead> <tr> <th>point</th> <th>diluent (cc/min)</th> <th>cal gas (cc/min)</th> <th>total (cc/min)</th> </tr> </thead> <tbody> <tr><td>zero</td><td>5000</td><td>0</td><td>5000</td></tr> <tr><td>high</td><td>5000</td><td>39</td><td>5039</td></tr> <tr><td>mid</td><td>5000</td><td>19</td><td>5019</td></tr> <tr><td>low</td><td>5000</td><td>11</td><td>5011</td></tr> </tbody> </table>	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)	zero	5000	0	5000	high	5000	39	5039	mid	5000	19	5019	low	5000	11	5011
point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)																		
zero	5000	0	5000																		
high	5000	39	5039																		
mid	5000	19	5019																		
low	5000	11	5011																		
Make & Model: API 700																					
Serial #: 831																					
Cal Gas Cylinder I.D. #: BLM05049																					
Cal Gas Conc. (ppm): 10.1																					

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	0.7	NA
adjusted zero	5000	0.0	5000	0	0.3	NA
as found high	4996	39.00	5035	78.2	87.3	0.899
adjusted high	4996	39.00	5035	78.2	78.9	0.995
mid	4996	19.00	5015	38.3	39.5	0.976
low	4996	11.00	5007	22.2	23.7	0.950
calibrator zero	4996	0.00	4996	0	2.0	NA
Average C.F. =						0.974

Linear Regression/Calibration Results:

Correlation Coefficient =	1.000	LIMITS	Pass/Fail ?
Slope =	0.998	> or = 0.995	PASS
b (Intercept as % of full scale) =	-0.85%	0.85-1.15	PASS
% change in C.F. from last cal	10.17%	± 3% F.S.	PASS
		± 15%	PASS

Converter Efficiency Check for H₂S/TRS application:

****run converter efficiency test immediately following zero adjust****

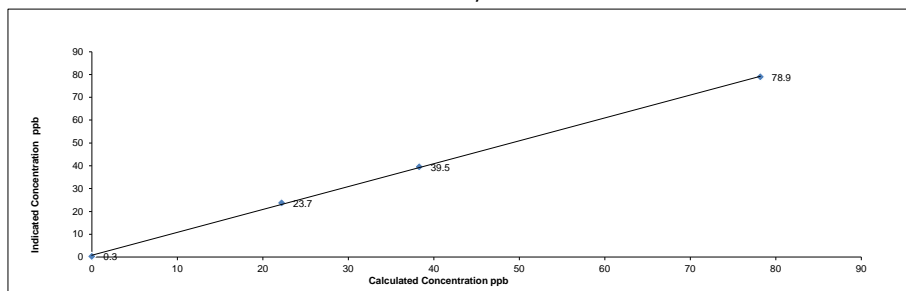
SO₂ High Point gas concentration: 78.9 Time gas run (mst): na

Zero corrected analyzer response: 0.3

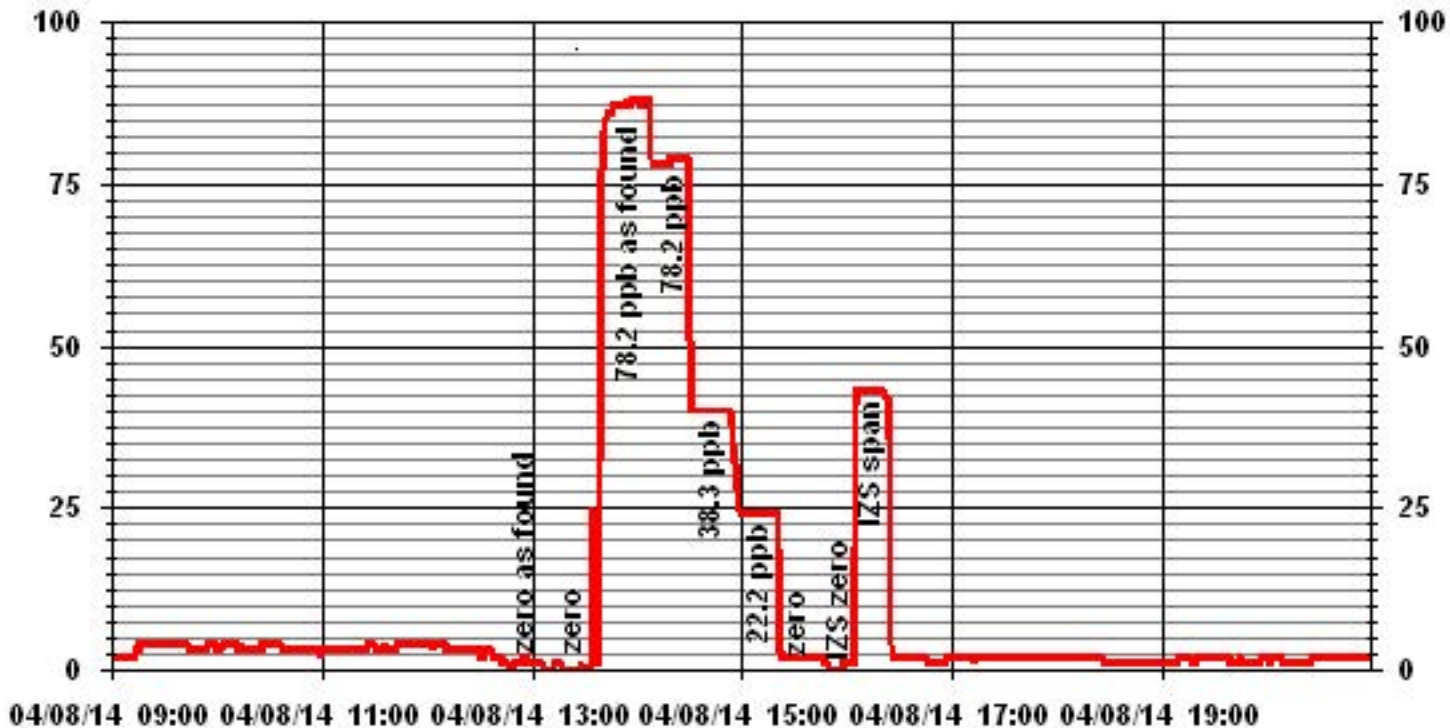
Comments:

Monthly calibration & filter change. No issues.

API 101E H2S Analyzer Calibration



01 Minute Averages





API 101E H2S Analyzer Calibration

Date: 30-Apr-14
 Company: LICA
 Station Name/Location: St.Lina
 Performed by: Kevin Hope
 Application H₂S/TRS/SO₂: H2S
 Start/End Time (mst): 9:28/11:22
 Calibration Purpose: 1-point Calibration
 Converter Make & Model: Internal
 Converter Serial #: NA
 Cal Gas Expiry Date:

Analyzer:
 Serial Number: 510
 Last Calibration Date: 8-Apr-14
 Previous Cal High Point C.F.: 0.995
 Range ppb: 100
 As Found C.F.: 1.130
 New C.F.: NA
As found:
 SLOPE: 1.041
 OFFSET: 124.6
 HVPS: 542
 RCELL TEMP: 50.0
 BOX TEMP: 36.1
 PMT TEMP: 8.4
 IZS TEMP: 45.0
 TEST: NA
 STABIL: 0.1
 PRES: 20.5
 SAMP FL: 540
 PMT: 125.5
 NORM PMT: 127.2
 UV LAMP: 1477.7
 LAMP RATIO: 96.4
 STR. LGT: 70.3
 DRK PMT: 40.4
 DRK LMP: -5.6
 Internal Span: 43
As left:
 SLOPE: 1.167
 OFFSET: 126.7
 HVPS: 542
 RCELL TEMP: 50.0
 BOX TEMP: 34.0
 PMT TEMP: 8.4
 IZS TEMP: 45.0
 TEST: NA
 STABIL: 0.1
 PRES: 20.9
 SAMP FL: 548
 PMT: 125.6
 NORM PMT: 128.5
 UV LAMP: 1461
 LAMP RATIO: 95.3
 STR. LGT: 73.9
 DRK PMT: 38.3
 DRK LMP: -5.6
 Internal Span: 42.49

Calibrator:		Calibrator Flow Targets:			
Flow Meter ID's:	NA	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
Make & Model:	API 700	zero	5000	0	5000
Serial #:	831	high	5000	39	5039
Cal Gas Cylinder I.D. #:	BLM05049	mid	5000	19	5019
Cal Gas Conc. (ppm):	10.1	low	5000	11	5011

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5000	0.0	5000	0	1.7	NA
adjusted zero	5000	0.0	5000	0	0.6	NA
as found high	5000	39.00	5039	78.2	69.8	1.130
adjusted high	5000	39.00	5039	78.2	78.9	0.998
mid						
low						
calibrator zero						NA

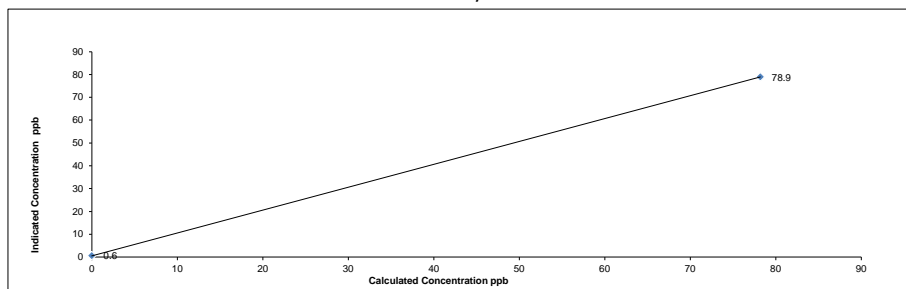
Average C.F. =

Linear Regression/Calibration Results:
 Correlation Coefficient = _____ LIMITS Pass/Fail ?
 Slope = _____ > or = 0.995
 b (Intercept as % of full scale) = _____ 0.85-1.15
 % change in C.F. from last cal = -13.53% ± 3% F.S.
 ± 15% PASS

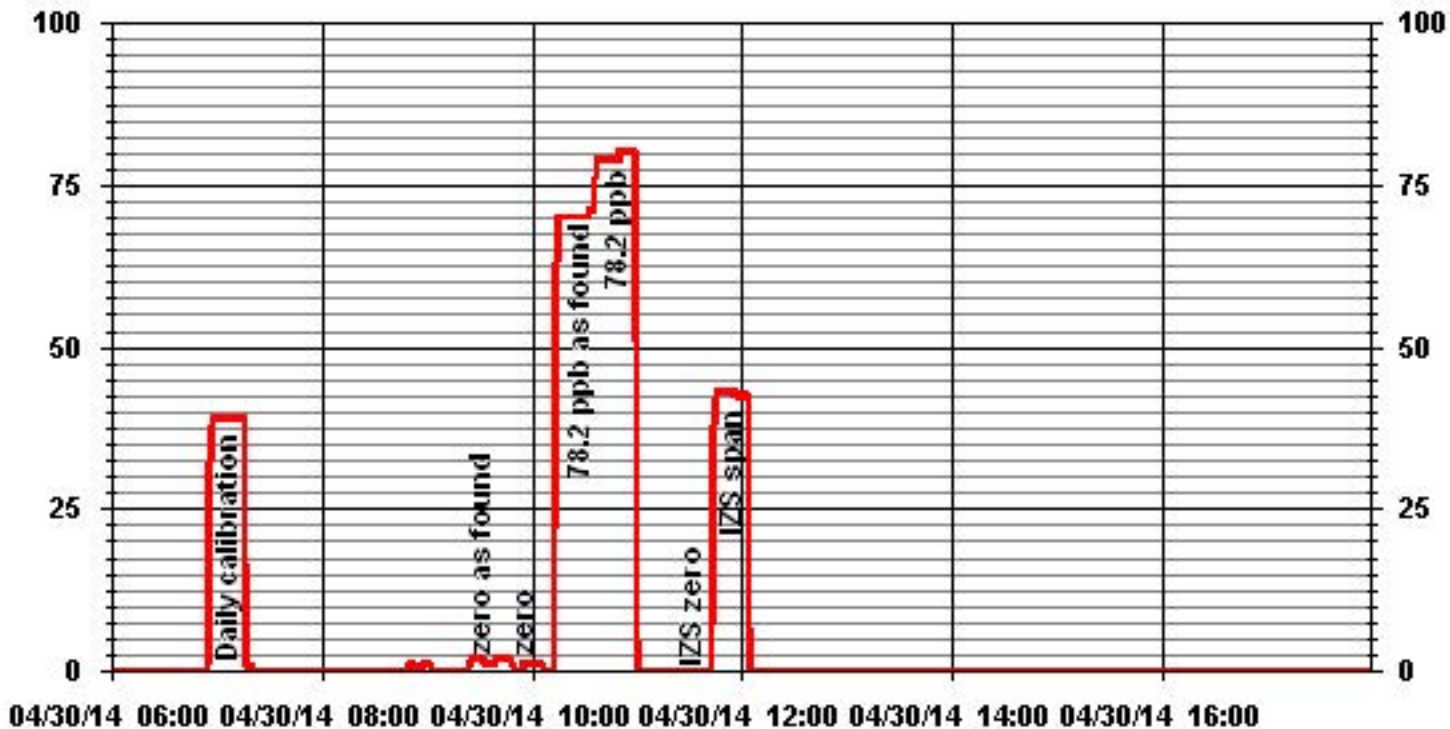
Converter Efficiency Check for H₂S/TRS application:
****run converter efficiency test immediately following zero adjust****
 SO₂ High Point gas concentration: 78.9 Time gas run (mst): na
 Zero corrected analyzer response: 0.3

Comments:
 1-point calibration

API 101E H2S Analyzer Calibration



01 Minute Averages



Total Hydrocarbons

Maxxam Thermo 51C THC Analyzer Calibration

Date: 9-Apr-14
 Company: LICA
 Station Name/Location: St.Lina
 Performed by: Kevin Hope

Start Time (mst): 8:58
 End Time (mst): 11:33
 Calibration Purpose: Monthly Calibration
 Cal Gas Expiry Date: 7-Nov-21

Analyzer:
 Serial Number: 436609739 Range ppm: 50
 Last Calibration Date: 11-Mar-14 As Found C.F.: 1.012
 Previous Cal High Point C.F.: 1.003 New C.F.: 1.012

	As found:	As left:
H ₂ cylinder (psi):	<u>1600</u>	<u>1600</u>
H ₂ cylinder reg set (psi):	<u>25</u>	<u>25</u>
Span Cylinder (psi):	<u>1100</u>	<u>1100</u>
Span Cylinder Reg Set (psi):	<u>25</u>	<u>25</u>
Zero Air Gen Pressure:	<u>35</u>	<u>35</u>
measurement alarms:	<u>none</u>	<u>none</u>
service alarms:	<u>none</u>	<u>none</u>
FID status:	cnt: <u>3395</u>	cnt: <u>3395</u>
	rng: <u>1</u>	rng: <u>1</u>
	try: <u>3</u>	try: <u>3</u>
	flm: <u>204.8</u>	flm: <u>204.8</u>
	det: <u>125.5</u>	det: <u>125.5</u>
Oven Readings:	Flame: <u>204</u>	Flame: <u>204</u>
	Filter: <u>125</u>	Filter: <u>125</u>
	Base: <u>125</u>	Base: <u>125</u>
	Pump: <u>6.80</u>	Pump: <u>6.80</u>
Voltages:	+5 <u>4.9</u>	+5 <u>4.9</u>
	+15 <u>14.9</u>	+15 <u>14.9</u>
	-15 <u>-15.0</u>	-15 <u>-15.0</u>
	Internal Span: <u>31.18</u>	Internal Span: <u>31.18</u>

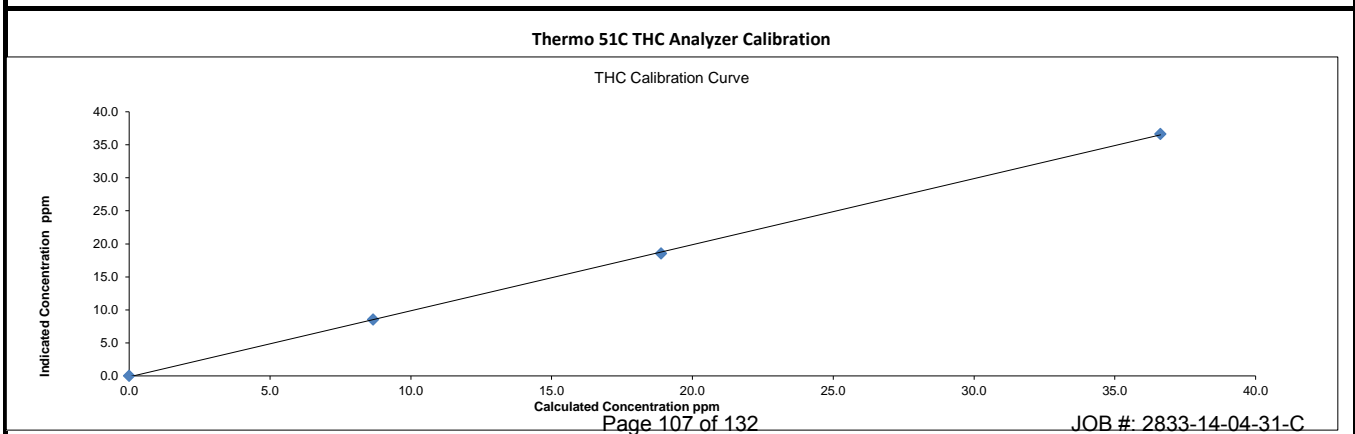
Calibrator:	Flow Meter ID's: <u>NA</u>	Calibrator Flow Targets:			
	Make & Model: <u>API 700</u>	point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
	Serial #: <u>831</u>	zero	<u>2000</u>	<u>0</u>	<u>2000</u>
	Cal Gas Cylinder I.D. #: <u>LL36542</u>	high	<u>2000</u>	<u>65</u>	<u>2065</u>
	CH ₄ /C ₃ H ₈ Cylinder Conc. (ppm): <u>609.0</u> <u>201.0</u>	mid	<u>2000</u>	<u>33</u>	<u>2033</u>
	CH ₄ as propane/total CH ₄ equivalents (ppm): <u>552.8</u> <u>1161.8</u>	low	<u>2000</u>	<u>15</u>	<u>2015</u>

Point	Calibrator Flow Rates (cc/min)			Calculated Concentration:		Indicated Concentration:		Correction Factors:	
	Diluent	Cal Gas	Total	(ppm)	(ppm)	(ppm)	(ppm)		
as found zero	2000	0.00	2000	0	-0.15			NA	
adjusted zero	2000	0.00	2000	0	0.00			NA	
as found high	1997	65.00	2062	36.62	36.19			1.012	
adjusted high	1997	65.00	2062	36.62	36.60			1.001	
mid	1997	33.00	2030	18.89	18.53			1.019	
low	1997	15.00	2012	8.66	8.53			1.015	
calibrator zero	1997	0.00	1997	0	0.03			NA	
Average C.F. =									1.012

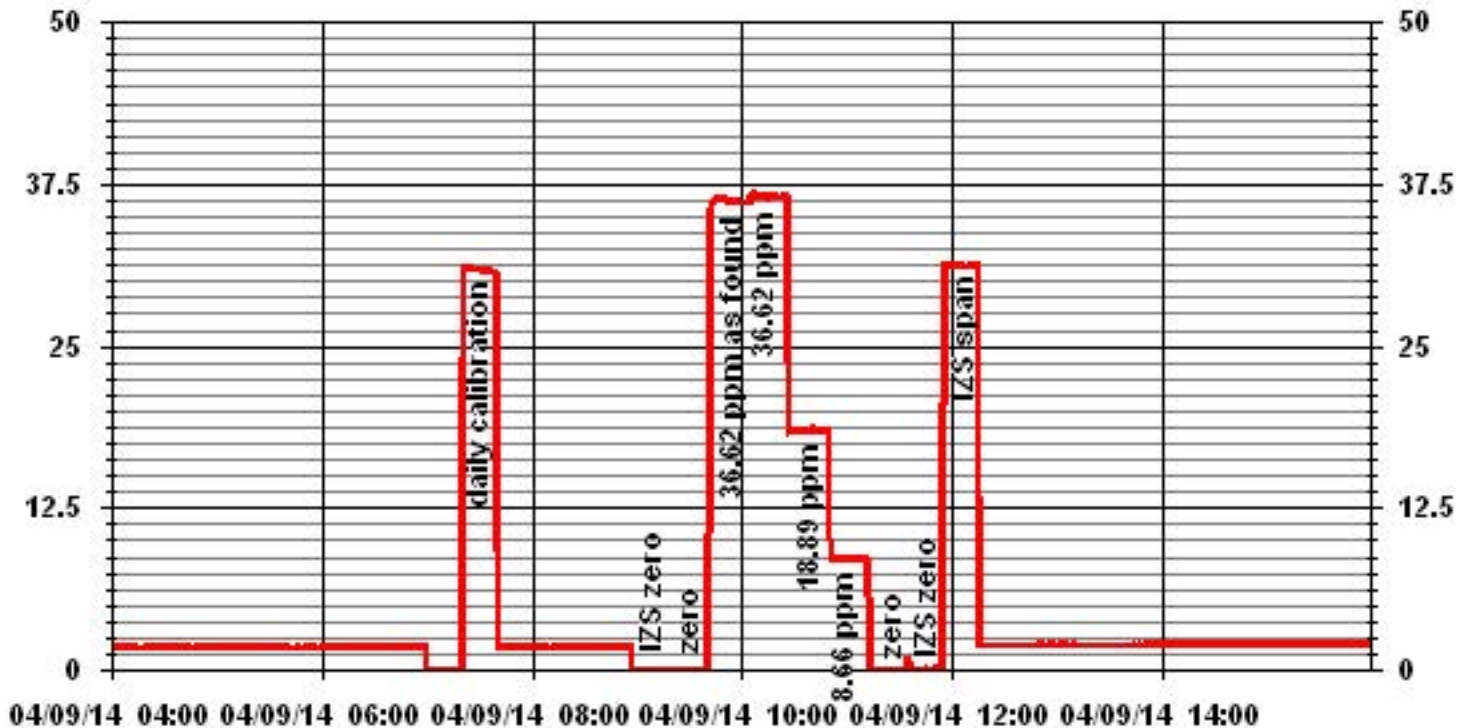
Linear Regression/Calibration Results:

Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>0.999</u>	> or = 0.995	PASS
b (Intercept as % of full scale) =	<u>-0.234%</u>	± 3% F.S.	PASS
% change in C.F. from last cal	<u>-0.89%</u>	± 15%	PASS

Comments:
 Monthly calibration & filter change. No issues.



01 Minute Averages



Nitrogen Dioxide



API 200E NOx Analyzer Calibration

Date: 7-Apr-14
 Company: LICA
 Station Name/Location: St.Lina
 Performed by: Kevin Hope

Start Time (mst): 10:06
 End Time (mst): 16:06
 Calibration Purpose: As Found/Monthly Calibration
 Cal Gas Expiry Date: 29-Dec-16

Analyzer Serial Number: 592
 Last Calibration Date: 18-Mar-14
 Range ppb: 1000

Correction Factors:
 As found C.F. Previous Cal High Point C.F.:
 NO= 0.950 NO= 1.000
 NOx= 0.955 NOx= 1.000
 NO₂= 1.000 NO₂= 0.994

As found:
 NOx SLOPE: 0.987
 NOx OFFS: -2.8
 NO SLOPE: 0.988
 NO OFFS: -3.5
 TEST: 130.8
 SAMP FLW: 476
 OZONE FL: 74
 PMT: 22.4
 NORM PMT: -1.5
 AZERO: 24.0
 HVPS: 654
 RCELL TEMP: 50.0
 BOX TEMP: 26.2
 PMT TEMP: 6.9
 IZS TEMP: 40.0
 MOLY TEMP: 313.8
 RCEL: 4.4
 SAMP: 26.4
 Internal Span: 360/8.3/353

As left:
 NOx SLOPE: 0.946
 NOx OFFS: -0.4
 NO SLOPE: 0.942
 NO OFFS: -0.3
 TEST: 130.7
 SAMP FLW: 471
 OZONE FL: 73
 PMT: 34.0
 NORM PMT: -1.1
 AZERO: 23.4
 HVPS: 654
 RCELL TEMP: 50.0
 BOX TEMP: 31.2
 PMT TEMP: 6.9
 IZS TEMP: 40.1
 MOLY TEMP: 315.3
 RCEL: 4.6
 SAMP: 26.5
 Internal Span: 414/5.0/409.4

Calibrator Flow Targets:

Make & Model: EnviroNics 6100
 Serial #: 4760
 Cal Gas Cylinder I.D. #: BAL3165
 NO Cylinder Conc. (ppm): 48.9
 NOx Cylinder Conc. (ppm): 49.0

point	diluent (cc/min)	cal gas (cc/min)	O ₃ setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	5000	80	500.00	5080
mid	5000	40	230.00	5040
low	5000	20	100.00	5020

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	5000	0.0	5000	0	0	2.0	1.1	NA	NA
adjusted zero	5000	0.0	5000	0	0	0.5	0.2	NA	NA
as found high	4995	79.80	5075	768.9	770.5	810	807	0.950	0.955
adjusted high	4995	79.80	5075	768.9	770.5	776	777	0.992	0.991
mid	4995	39.80	5035	386.6	387.3	390	392	0.992	0.989
low	4995	19.80	5015	193.1	193.5	196	197	0.988	0.982
calibrator zero	4995	0.00	4995	0	0	0.7	0.8	NA	NA
Average C.F.=								0.990	0.988

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ increase	NO ₂ C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4995	79.80	5075	0.0	775.8	776.9	1.5	0.5	-0.3	
as found NO ₂	4995	79.80	5075	500.0	230.9	777.1	546.2	544.9	544.7	1.000
adjusted NO ₂	4995	79.80	5075	500.0	230.9	777.1	546.2	544.9	544.7	1.000
gpt mid	4995	79.80	5075	230.0	523.8	776.8	253.4	252.0	251.9	1.000
gpt low	4995	79.80	5075	100.0	668.9	777.3	109.0	106.9	107.5	0.994
Average NO₂ C.F.=										0.998

Linear Regression/Calibration Results:			LIMITS
NO	NOx	NO ₂	
Correlation Coefficient =	<u>1.000</u>	<u>1.000</u>	<u>> or = 0.995</u>
Slope =	<u>1.008</u>	<u>1.007</u>	<u>0.85-1.15</u>
b (Intercept as % of full scale)=	<u>0.08%</u>	<u>0.12%</u>	<u>± 3% F.S.</u>
% change in C.F. from last cal=	<u>5.01%</u>	<u>4.49%</u>	<u>+/-15%</u>
NO ₂ converter efficiency	<u></u>	<u>100.2%</u>	<u>>85%</u>

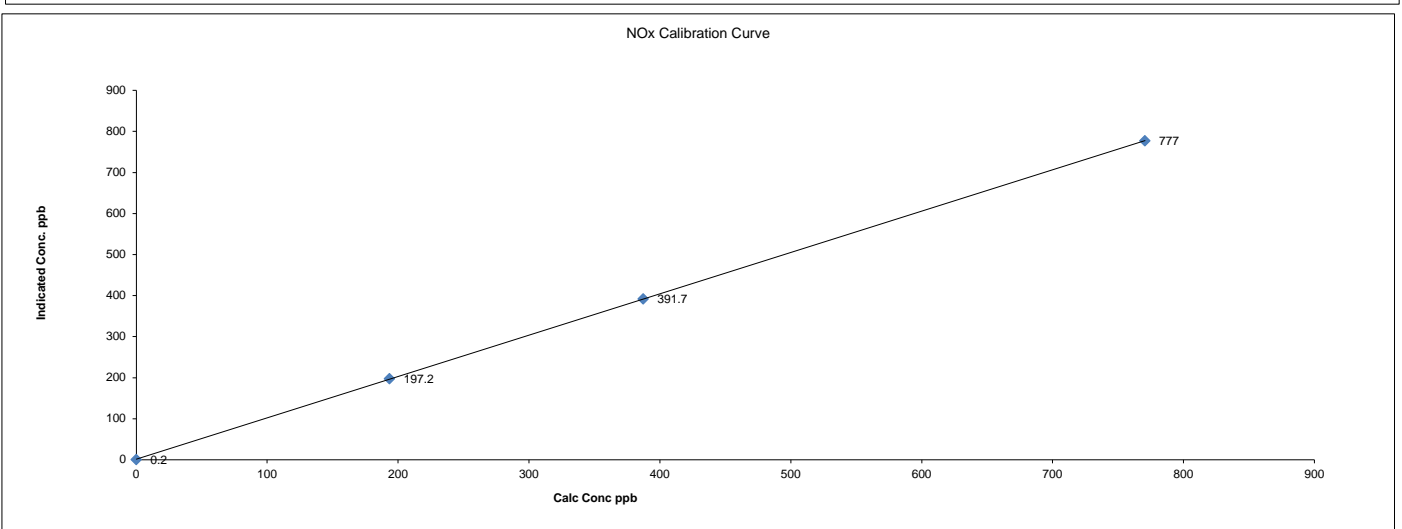
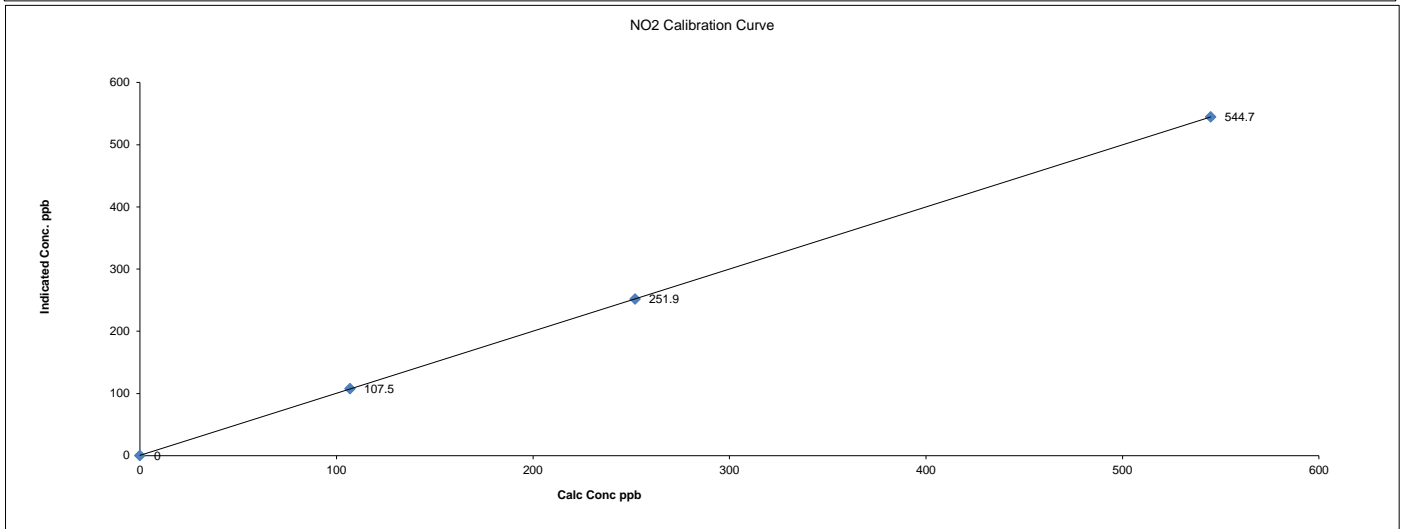
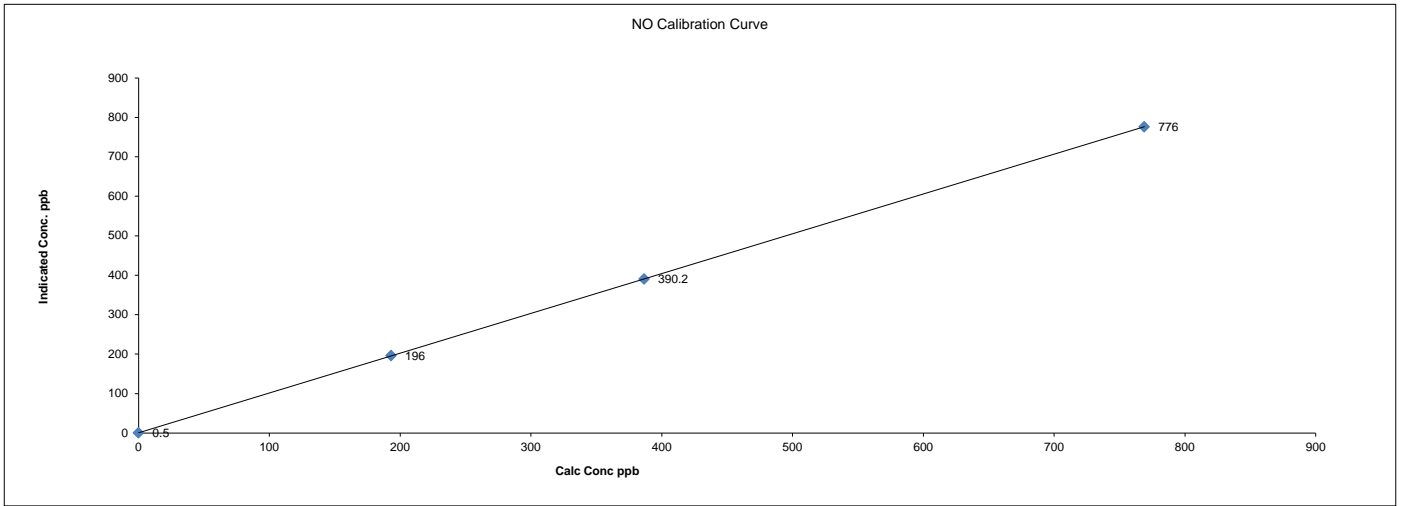
Comments:

As found 0 was ok. Noticed AZERO warning when I went to do as found high. The AZERO valve seemed to be opening and closing as it should and this issue wasn't affecting the readings so I continued with the calibration. No other problems. Changed sample filter.

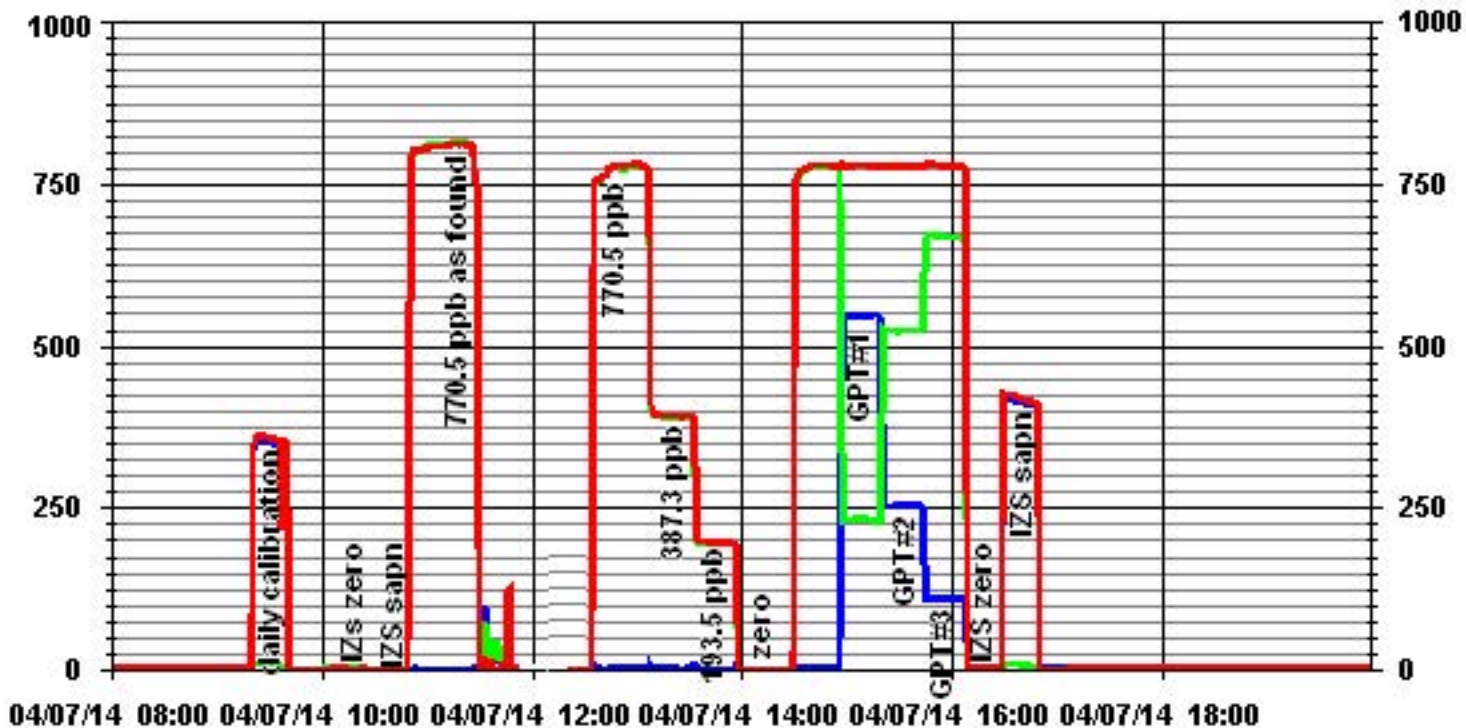
Date: 7-Apr-14
 Company: LICA
 Station Name/Location: St.Lina
 Performed by: Kevin Hope

Start Time (mst): 10:06
 End Time (mst): 16:06
 Calibration Purpose: As Found/Monthly Calibration
 Cal Gas Expiry Date: 29-Dec-16

API 200E NOx Analyzer Calibration



.1 Minute Averages



— LICA31

NOX_ PPB

— LICA31

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NO_ PPB

— LICA31

JOB #: 2833-14-04-31-C

NO2_ PPB



API 200E NOx Analyzer Calibration

Date: 15-Apr-14
 Company: LICA
 Station Name/Location: St Lina
 Performed by: Chris Wesson

Start Time (mst): 13:29
 End Time (mst): 16:45
 Calibration Purpose: Removal
 Cal Gas Expiry Date: 15-Oct-17

Analyzer Serial Number: 592
 Last Calibration Date: 7-Apr-14
 Range ppb: 1000

Correction Factors:
 As found C.F. Previous Cal High Point C.F.:
 NO= 1.005 NO= 0.992
 NOx= 1.000 NOx= 0.991
 NO₂= 1.006 NO₂= 1.000

As found:
 NOx SLOPE: 0.946
 NOx OFFS: -0.4
 NO SLOPE: 0.942
 NO OFFS: -0.3
 TEST: 130.5
 SAMP FLW: 474
 OZONE FL: 73
 PMT: 23.1
 NORM PMT: -0.6
 AZERO: 18.9
 HVPS: 654
 RCELL TEMP: 50.0
 BOX TEMP: 30.6
 PMT TEMP: 6.9
 IZS TEMP: 40.0
 MOLY TEMP: 315.0
 RCEL: 4.8
 SAMP: 26.3
 Internal Span: NA

As left:
 NOx SLOPE: NA
 NOx OFFS: NA
 NO SLOPE: NA
 NO OFFS: NA
 TEST: NA
 SAMP FLW: NA
 OZONE FL: NA
 PMT: NA
 NORM PMT: NA
 AZERO: NA
 HVPS: NA
 RCELL TEMP: NA
 BOX TEMP: NA
 PMT TEMP: NA
 IZS TEMP: NA
 MOLY TEMP: NA
 RCEL: NA
 SAMP: NA
 Internal Span: NA

Calibrator Flow Targets:

Make & Model: EnviroNics 2000
 Serial #: 1991
 Cal Gas Cylinder I.D. #: BAL1263
 NO Cylinder Conc. (ppm): 51.3
 NOx Cylinder Conc. (ppm): 51.3

point	diluent (cc/min)	cal gas (cc/min)	O ₃ setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	4925	75	550.00	5000
mid	4960	40		5000
low	4980	20		5000

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	5000	0.0	5000	0	0	1.0	2.0	NA	NA
adjusted zero	NA	0.0	#VALUE!	0	0			NA	NA
as found high	4930	76.10	5006	779.8	779.8	776	780	1.005	1.000
adjusted high		NA							
mid	4977	37.05	5014	379.1	379.1	380	383	0.998	0.990
low	4995	18.49	5013	189.2	189.2	188	189	1.006	1.001
calibrator zero	5000	0.00	5000	0	0	-1.0	-2.0	NA	NA
Average C.F.=									

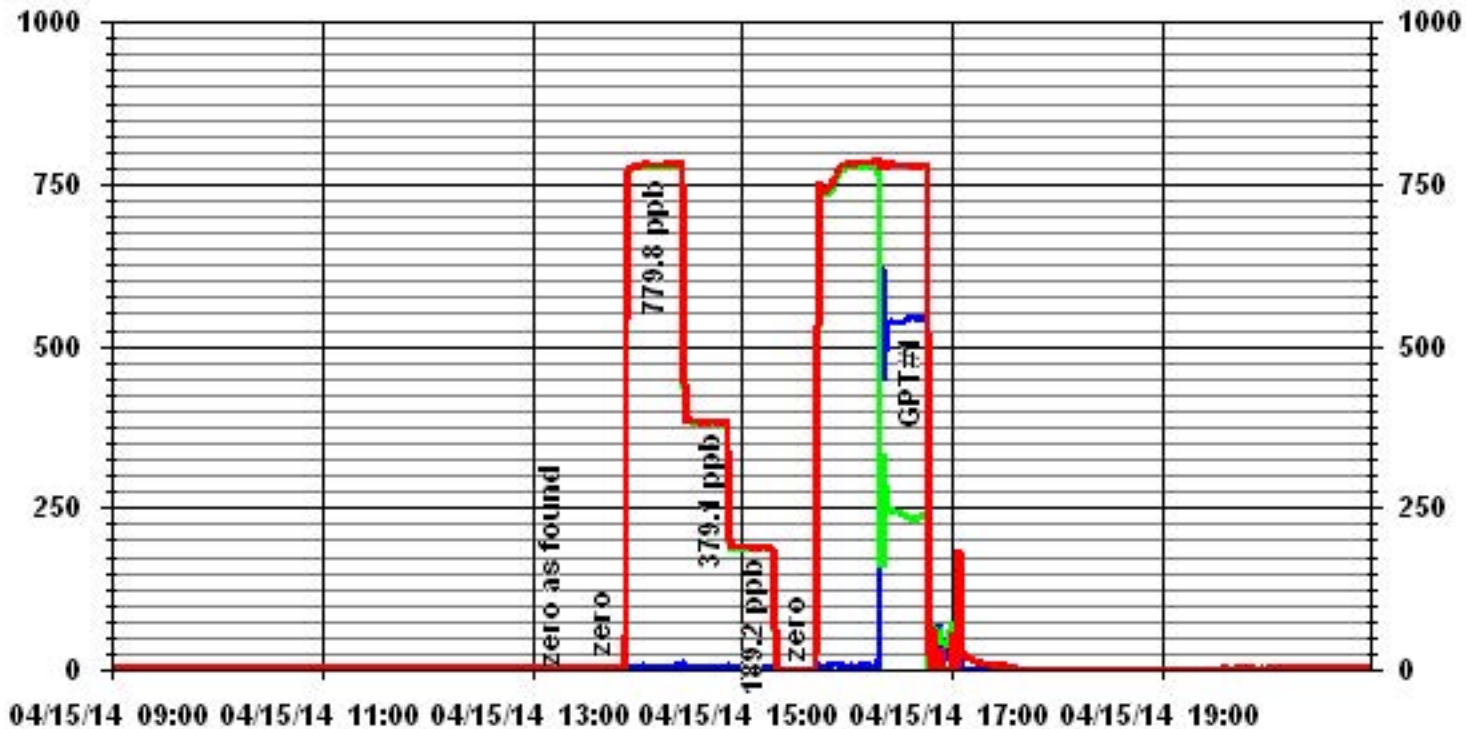
Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ increase	NO ₂ C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4930	76.10	5006	0.0	778.0	782.0	5.0	0.0	0.0	
as found NO ₂	4930	76.10	5006	550.0	238.0	779.0	542.0	540.0	537.0	1.006
adjusted NO ₂		NA								
gpt mid		NA								
gpt low		NA								
Average NO ₂ C.F.=										

Linear Regression/Calibration Results:			LIMITS
NO	NOx	NO ₂	
Correlation Coefficient =	<u>1.000</u>	<u>1.000</u>	> or = 0.995
Slope =	<u>0.995</u>	<u>0.999</u>	0.85-1.15
b (Intercept as % of full scale)=	<u>0.11%</u>	<u>0.19%</u>	± 3% F.S.
% change in C.F. from last cal=	<u>-1.30%</u>	<u>-0.89%</u>	+/-15%
NO ₂ converter efficiency	<u></u>	<u></u>	>85%

Comments:

Removal calibration due to AZERO valve error.

01 Minute Averages



— LICA31 NOX_ PPB

— LICA31 NO_ PPB

— LICA31 NO2_ PPB



API 200A NOx Analyzer Calibration

Date: 16-Apr-14
Company: LICA
Station Name/Location: St Lina
Performed by: Chris Wesson

Start Time (mst): 9:46
End Time (mst): 14:59
Calibration Purpose: Installation
Cal Gas Expiry Date: 15-Oct-17

Analyzer Serial Number: 1746		Correction Factors:	
Last Calibration Date: NA		As found C.F.	Previous Cal High Point C.F.:
Range ppb: 1000		NO= NA	NO= NA
		NOx= NA	NOx= NA
		NO ₂ = 1.004	NO ₂ = NA
As found:		As left:	
NOx SLOPE:	0.988	NOx SLOPE:	1.003
NOx OFFS:	-3.8	NOx OFFS:	0.2
NO SLOPE:	0.994	NO SLOPE:	1.006
NO OFFS:	-3.8	NO OFFS:	0.1
NOx STB:	253.4	NOx STB:	0.3
SAMP FLW:	459	SAMP FLW:	459
OZONE FL:	79	OZONE FL:	78
NORM PMT:	-0.7	NORM PMT:	1.4
AZERO:	18.8	AZERO:	18.4
HVPS:	739	HVPS:	739
DCPS:	2537	DCPS:	2535
RCELL:	50.5	RCELL:	50.3
BOX TEMP:	27.6	BOX TEMP:	27.0
IZS TEMP:	45.4	IZS TEMP:	45.0
MOLY TEMP:	315.8	MOLY TEMP:	314.5
RCEL:	5.4	RCEL:	5.4
SAMP:	26.6	SAMP:	26.8
Internal Span:	NA	Internal Span:	*

Calibrator Flow Targets:						
Make & Model:	EnviroNics 2000	point	diluent (cc/min)	cal gas (cc/min)	O ₂ setting (v or ppb)	total (cc/min)
Serial #:	1991	zero	5000	0	0	5000
Cal Gas Cylinder I.D. #:	BAL1263	high	4920	80	520.00	5000
NO Cylinder Conc. (ppm):	51.3	mid	4960	40	280.00	5000
NOx Cylinder Conc. (ppm):	51.3	low	4980	20	100.00	5000

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	NA	0.0	#VALUE!	0	0			NA	NA
adjusted zero	5000	0.0	5000	0	0	0.0	0.0	NA	NA
as found high	NA								
adjusted high	4925	75.99	5001	779.5	779.5	780	780	0.999	0.999
mid	4965	37.00	5002	379.5	379.5	380	379	0.999	1.001
low	4976	18.48	4994	189.8	189.8	185	186	1.026	1.021
calibrator zero	5000	0.00	5000	0	0	0.0	0.0	NA	NA
Average C.F.=								1.008	1.007

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ increase	NO ₂ C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4932	75.99	5008	0.0	781.0	781.0	-2.0	0.0	0.0	
as found NO ₂	4932	75.99	5008	520.0	251.0	779.0	526.0	530.0	528.0	1.004
adjusted NO ₂	4932	75.99	5008	520.0	251.0	779.0	526.0	530.0	528.0	1.004
gpt mid	4932	75.99	5008	280.0	495.0	780.0	283.0	286.0	285.0	1.004
gpt low	4932	75.99	5008	100.0	678.0	781.0	101.0	103.0	103.0	1.000
Average NO ₂ C.F.=										1.002

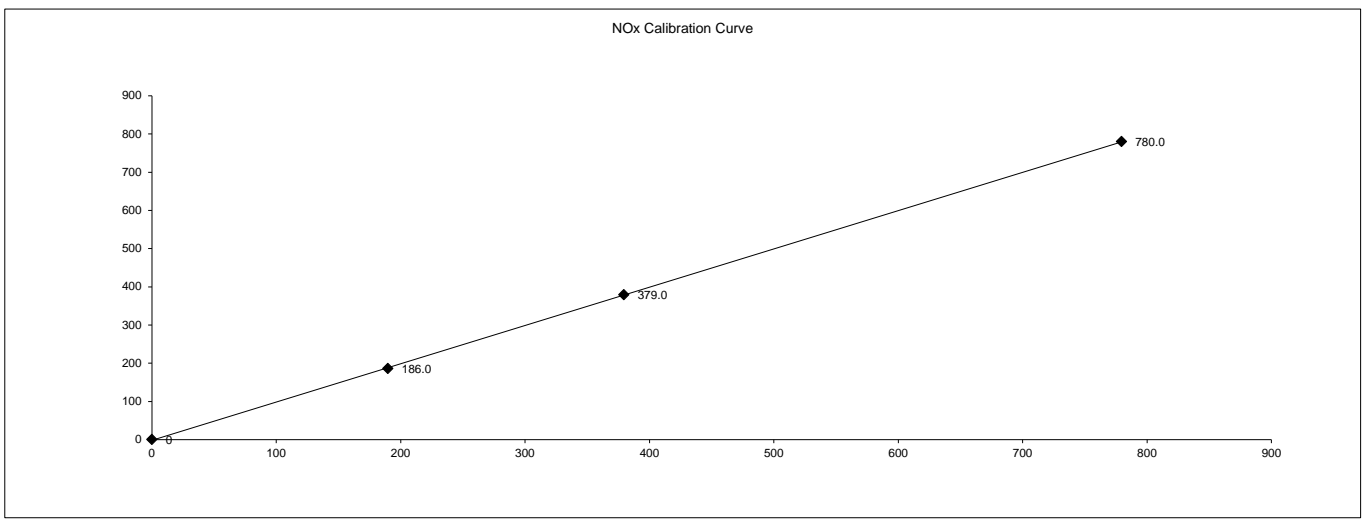
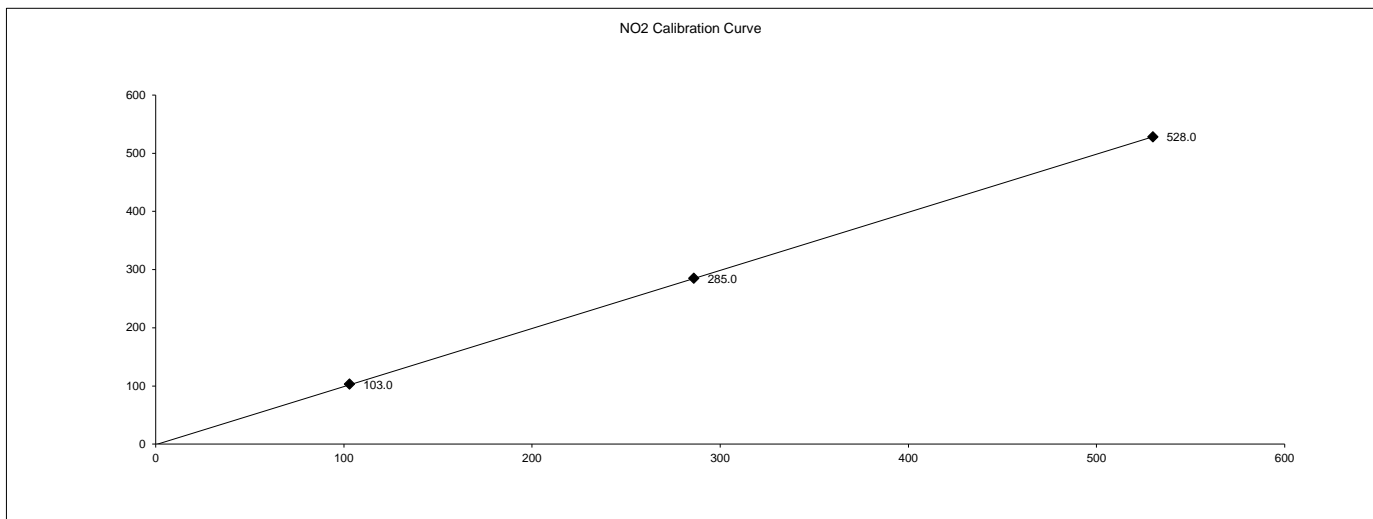
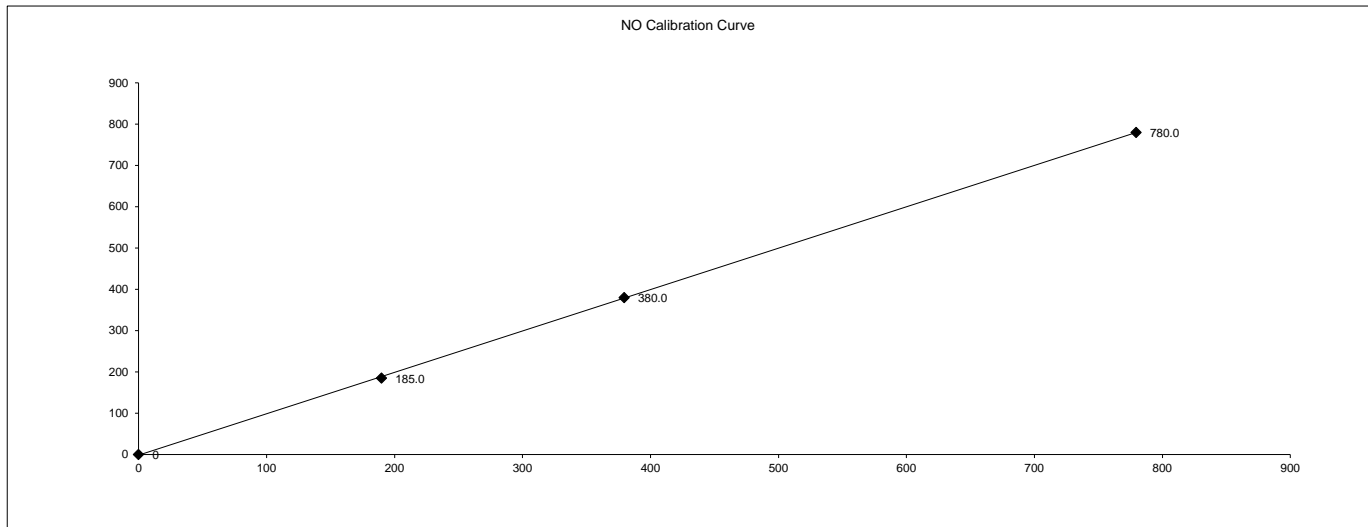
Linear Regression/Calibration Results:			LIMITS		
	NO	NOx	NO ₂		
Correlation Coefficient =	1.000	1.000	1.000	> or = 0.995	
Slope =	1.003	1.002	0.999	0.85-1.15	
b (Intercept as % of full scale)=	-0.19%	-0.17%	-0.10%	± 3% F.S.	
% change in C.F. from last cal=	#VALUE!	#VALUE!	#VALUE!	+/- 15%	
NO ₂ converter efficiency			99.8%	>85%	

Comments:
 PMT Temp = 7.0 / 6.9
 11:20-11:22 (NOx/NO Low-point): Loose connection for NO₂ analog output (hence -ve values). No effect on calibration.
 No NO₂ adjustment made. Values copied from as-found NO₂ for calculation purposes only.
 * = Expected value to be set remotely

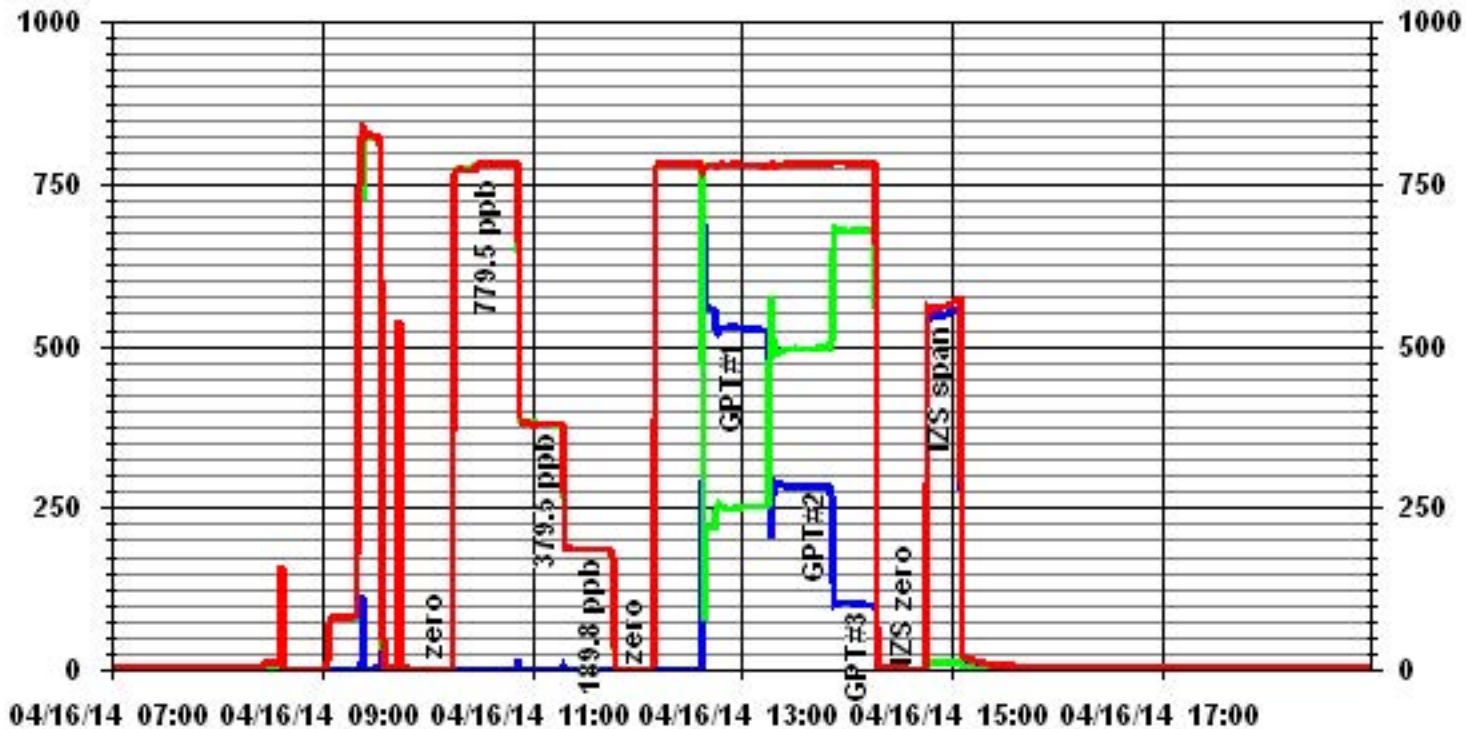
Date: 16-Apr-14
Company: LICA
Station Name/Location: St Lina
Performed by: Chris Wesson

Start Time (mst): 9:46
End Time (mst): 14:59
Calibration Purpose: Installation
Cal Gas Expiry Date: 15-Oct-17

API 200A NOx Analyzer Calibration



01 Minute Averages



— LICA31 NOX_ PPB

— LICA31 NO_ PPB

— LICA31 NO2_ PPB



API 200A NOx Analyzer Calibration

Date: 30-Apr-14
 Company: LICA
 Station Name/Location: St.Lina
 Performed by: Kevin Hope

Start Time (mst): 9:10
 End Time (mst): 10:39
 Calibration Purpose: 1-point Calibration
 Cal Gas Expiry Date: N

Analyzer Serial Number: 1746
 Last Calibration Date: 16-Apr-14
 Range ppb: 1000

Correction Factors:
 As found C.F. Previous Cal High Point C.F.:
 NO= 1.017 NO= 0.999
 NOx= 1.011 NOx= 0.999
 NO₂= NA NO₂= 1.004

As found:
 NOx SLOPE: 1.003
 NOx OFFS: 0.2
 NO SLOPE: 1.006
 NO OFFS: 0.1
 NOx STB: 0.3
 SAMP FLW: 459
 OZONE FL: 78
 NORM PMT: 1.4
 AZERO: 18.4
 HVPS: 739
 DCPS: 2535
 RCELL: 50.3
 BOX TEMP: 27.0
 IZS TEMP: 45.0
 MOLY TEMP: 314.5
 RCEL: 5.4
 SAMP: 26.8
 Internal Span: 530/12.2/525

As left:
 NOx SLOPE: 1.024
 NOx OFFS: 18.5
 NO SLOPE: 1.020
 NO OFFS: 0.2
 NOx STB: 2.1
 SAMP FLW: 455
 OZONE FL: 78
 NORM PMT: 12.0
 AZERO: 14.5
 HVPS: 740
 DCPS: 2536
 RCELL: 49.9
 BOX TEMP: 28.7
 IZS TEMP: 45.1
 MOLY TEMP: 314.9
 RCEL: 5.6
 SAMP: 26.7
 Internal Span: 536/11/522

Calibrator Flow Targets:

Make & Model: EnviroNics 6100
 Serial #: 4760
 Cal Gas Cylinder I.D. #: BAL3165
 NO Cylinder Conc. (ppm): 48.9
 NOx Cylinder Conc. (ppm): 49.0

point	diluent (cc/min)	cal gas (cc/min)	O ₃ setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	5000	80	520.00	5080
mid	5000	40	280.00	5040
low	5000	20	100.00	5020

Calibration:

Calibrator Flow Rates (cc/min)				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)		
as found zero	5000	0.0	5000	0	0	0.1	1.8	NA	NA
adjusted zero	5000	0.0	5000	0	0	0.1	0.7	NA	NA
as found high	4996	79.70	5076	767.8	769.4	755	762	1.017	1.011
adjusted high	4996	79.70	5076	767.8	769.4	767	770	1.001	1.001
mid									
low									
calibrator zero								NA	NA
Average C.F.=								1.001	1.001

Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ increase	NO ₂ C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference										
as found NO ₂										
adjusted NO ₂										
gpt mid										
gpt low										

Average NO₂ C.F.=

Linear Regression/Calibration Results:

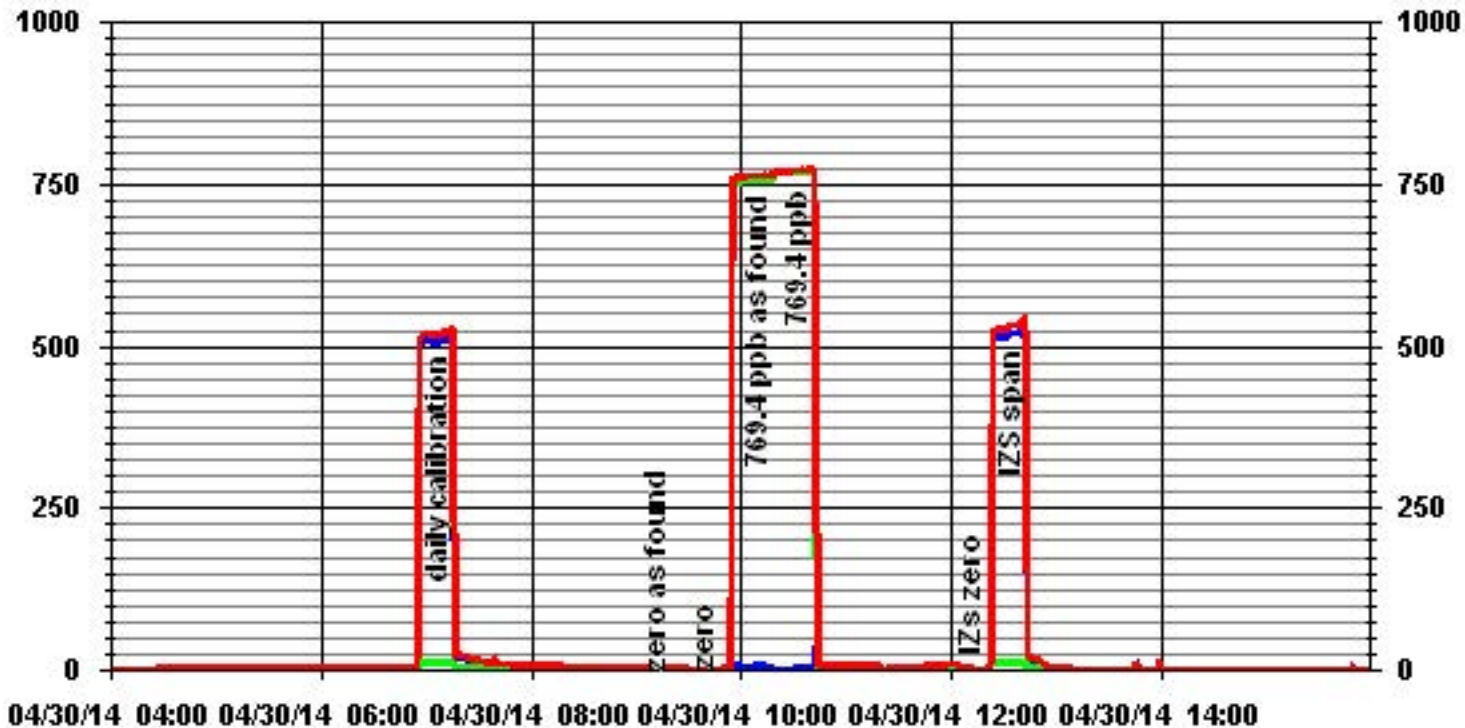
	NO	NOx	NO ₂
Correlation Coefficient =			
Slope =			
b (Intercept as % of full scale)=			
% change in C.F. from last cal=	-1.81%	-1.17%	#VALUE!
NO ₂ converter efficiency			

LIMITS
 > or = 0.995
 0.85-1.15
 ± 3% F.S.
 +/- 15%
 >85%

Comments:

1-point calibration

01 Minute Averages



Ozone

Maxxam Thermo 49i O₃ Analyzer Calibration

Date: 8-Apr-14 Start Time (mst): 13:43
 Company: LICA End Time (mst): 16:04
 Station Name/Location: St.Lina Calibration Purpose: Monthly Calibration
 Performed by: Kevin Hope G.P.T. Date: 7-Apr-14

Analyzer:		Range ppm: <u>500</u>	
Serial Number:	<u>1002240371</u>	As Found C.F.:	<u>0.988</u>
Last Calibration Date:	<u>12-Mar-14</u>	New C.F.:	<u>1.020</u>
Previous Cal High Point C.F.:	<u>1.001</u>		
As found:		As left:	
O ₃ Bkg:	<u>-0.1</u>	O ₃ Bkg:	<u>-0.1</u>
O ₃ Coef:	<u>0.964</u>	O ₃ Coef:	<u>0.981</u>
Motherboard:	<u>3.3</u>		<u>3.3</u>
	<u>15.0</u>		<u>15.0</u>
	<u>24.0</u>		<u>14.8</u>
	<u>-3.3</u>		<u>-3.2</u>
Interface Board:	<u>3.3</u>		<u>3.2</u>
	<u>5.0</u>		<u>4.9</u>
	<u>15.0</u>		<u>14.7</u>
	<u>-15.0</u>		<u>-15.0</u>
Photo Lamp	<u>9.4</u>	Photo Lamp	<u>9.4</u>
	<u>24.0</u>		<u>23.5</u>
O ₃ Lamp	<u>8.3</u>	O ₃ Lamp	<u>8.3</u>
Bench:	<u>29.0</u>	Bench:	<u>29.0</u>
Bench Lamp:	<u>53.7</u>	Bench Lamp:	<u>53.7</u>
O ₃ Lamp:	<u>67.8</u>	O ₃ Lamp:	<u>67.8</u>
Pressure:	<u>677.0</u>	Pressure:	<u>677.0</u>
Cell A lpm:	<u>0.735</u>	Cell A lpm:	<u>0.735</u>
Cell B lpm:	<u>0.731</u>	Cell B lpm:	<u>0.731</u>
O ₃ ppb:	<u>319</u>	O ₃ ppb:	<u>319</u>
Cell A ppb:	<u>317</u>	Cell A ppb:	<u>317</u>
Cell B ppb:	<u>320</u>	Cell B ppb:	<u>320</u>
Cell A int:	<u>72049</u>	Cell A int:	<u>72049</u>
Cell B int:	<u>81713</u>	Cell B int:	<u>81713</u>
Internal Span:	<u>311</u>	Internal Span:	<u>311</u>

Calibrator:	Calibrator Flow Targets:
Make & Model: <u>Enviroics 6100</u>	point total flow (cc/min) O ₃ setting (v or ppb)
Serial #: <u>4760</u>	zero 5075 0
NOx Gas Cylinder I.D. #: <u>BAL3165</u>	high 5075 325
NOx Cylinder Conc. (ppm): <u>49.0</u>	mid 5075 150
	low 5075 80

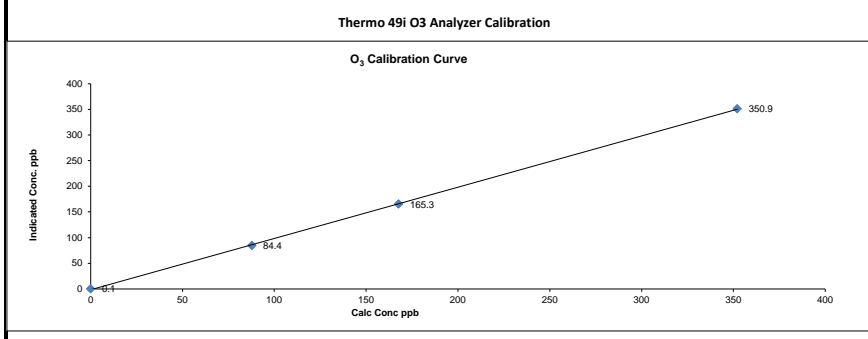
Calibrator Flow Rates (cc/min)				Calculated Concentration:		Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5075	0.0	5075	0.0	0.1	NA
adjusted zero	5075	0.0	5075	0.0	0.1	NA
as found high	5070	0.00	5070	352.1	356.6	0.988
adjusted high	5070	0.00	5070	352.1	350.9	1.004
mid	5070	0.00	5070	167.7	165.3	1.015
low	5070	0.00	5070	87.8	84.4	1.042
calibrator zero	5070	0.00	5070	0.0	0.2	NA
** copy and paste flows and NO decrease from NOx cal in to calculated concentration**						Average C.F.= <u>1.020</u>

Linear Regression/Calibration Results:

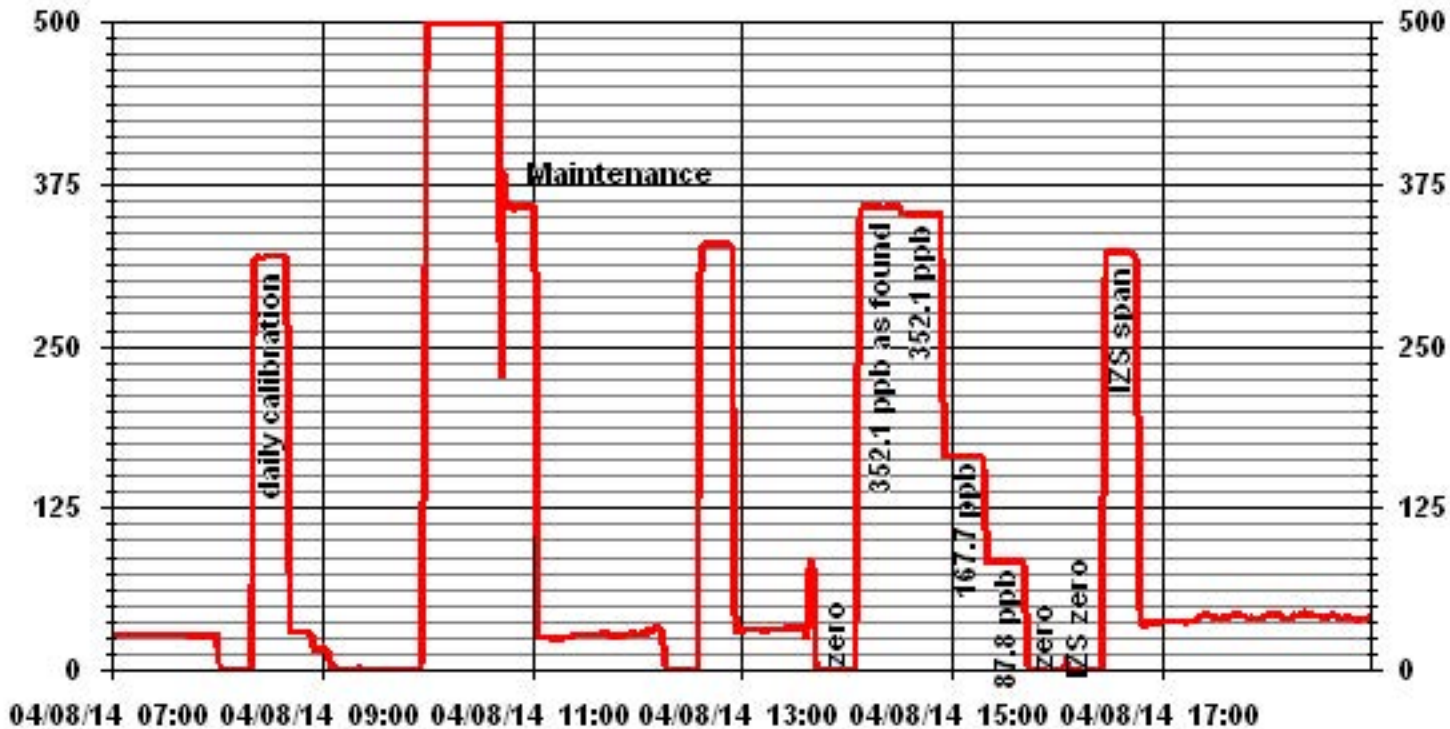
Correlation Coefficient =	<u>1.000</u>	LIMITS	Pass/Fail ?
Slope =	<u>0.999</u>	> or = 0.995	PASS
b (Intercept as % of full scale)=	<u>-0.311%</u>	0.85-1.15	PASS
% change in C.F. from last cal	<u>1%</u>	± 3% F.S.	PASS
		± 15%	PASS

Comments:

Monthly calibration & filter change. No issues.



01 Minute Averages



Particulate Matter 2.5



R & P 1400A TEOM PM 2.5 Analyzer Calibration

Date: 1-Apr-14 Performed by: Kevin Hope/Tom Bourque
 Company: LICA Start/End Time (mst): 1441/
 Station Name/Location: St.Lina Calibration Purpose: Installation
 Serial Number: 140AB228720001 Noise: 798
 Parameter: PM 2.5 Filter Loading %:

1400A Information and Status:

Serial Number: 140AB228720001 Main Flow Reading lpm: 3.00
 K_o Factor: 15003.0000 Aux Flow Reading lpm: 13.67
 Ambient Temperature °C: 1.9 Filter Loading %: 28
 Ambient Pressure atm: 0.927 Noise: 0.000

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	Dwyer	Brunton	Fluke
Model:	475 Mark III	ADC Summit	1551A Stik Thermometer
Serial Number:	na	na	4295
Calibration Date:	unknown	2-Dec-13	unknown

As Found Pump Off Test and Leak Check :

	main flow	auxillary flow	
pump unplugged zero (lpm)	0.04	0.16	(maintenance required if either > 60 seconds)
seconds to reach full flow (max. 60s)	43	43	
leak rate (lpm)	0.09	0.19	
0 corrected leak rate (lpm)	0.05	0.03	
limit (lpm)	0.15	.15 or (.60 with FDMS unit)	

As Left Pump Off Test and Leak Check (same as above if as found adequate):

	main flow	auxillary flow	
pump unplugged zero (lpm)	0.04	0.16	(maintenance required if either > 60 seconds)
seconds to reach full flow (max. 60s)	43	43	
leak rate (lpm)	0.09	0.19	
0 corrected leak rate (lpm)	0.05	0.03	
limit (lpm)	0.15	.15 or (.60 with FDMS unit)	

As found temperature and pressure:

	tolerance +/- 2.0°C	tolerance +/- 0.01 atm
1400A temperature °C:	<u>1.9</u>	1400A pressure atm: <u>0.927</u>
reference temperature °C:	<u>0.2</u>	reference pressure: <u>0.921</u>
difference °C:	<u>-1.7</u>	difference : <u>-0.006</u>

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

	tolerance +/- 2.0°C	tolerance +/- 0.01 atm
1400A temperature °C:	<u>1.9</u>	1400A pressure atm: <u>0.927</u>
reference temperature °C:	<u>0.2</u>	reference pressure: <u>0.921</u>
difference °C:	<u>-1.7</u>	difference : <u>-0.006</u>

As found flows:

main flow tolerance 3.00 lpm +/- 0.20 lpm	total flow tolerance 16.67 lpm +/- 1.00 lpm
1400A main flow lpm: <u>3.00</u>	1400A total flow lpm: <u>16.67</u>
reference main flow lpm: <u>3.03</u>	reference total flow lpm: <u>16.91</u>
difference °C: <u>-0.03</u>	difference °C: <u>-0.24</u>

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

main flow tolerance 3.00 lpm +/- 0.20 lpm	total flow tolerance 16.67 lpm +/- 1.00 lpm
1400A main flow lpm: <u>3.00</u>	1400A total flow lpm: <u>16.67</u>
reference main flow lpm: <u>3.03</u>	reference total flow lpm: <u>16.91</u>
difference °C: <u>-0.03</u>	difference °C: <u>-0.24</u>

K_o Audit:

Last K_o audit date: na
 1400A K_o factor: 15003
 Measured K_o factor: na
 % difference: na

Comments:



R & P 1400A TEOM PM 2.5 Analyzer Calibration

Date: 9-Apr-14
 Company: LICA
 Station Name/Location: St.Lina
 Previous Audit Date: 1-Apr-14

Parameter: PM 2.5
 Performed by: Kevin Hope
 Start/End Time (mst): 12:00
 Calibration Purpose: Monthly Calibration

1400A Information and Status:

Serial Number:	<u>140AB228720001</u>	As Found Filter Loading %:	<u>24.00</u>
K _o Factor:	<u>15003</u>	As Left Filter Loading %:	<u>20.00</u>
Ambient Temperature °C:	<u>4.4</u>	As Found Noise:	<u>0.043</u>
Ambient Pressure atm:	<u>0.917</u>	As Left Noise:	<u>0.307</u>
Main Flow Reading lpm:	<u>2.98</u>	Pump Vacuum:	<u>ok</u>
Aux Flow Reading lpm:	<u>13.61</u>	Warnings:	<u>none</u>

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	<u>Dwyer</u>	<u>Brunton</u>	<u>Fluke</u>
Model:	<u>475 Mark III</u>	<u>ADC Summit</u>	<u>1551A Sti Thermometer</u>
Serial Number:	<u>na</u>	<u>na</u>	<u>4295</u>
Calibration Date:	<u>Unknown</u>	<u>2-Dec-13</u>	<u>Unknown</u>

As Found Pump Off Test and Leak Check :

	main flow	auxillary flow	
pump unplugged zero (lpm)	<u>0.05</u>	<u>0.13</u>	
seconds to reach full flow (max. 60s)	<u>21</u>	<u>40</u>	(maintenance required if either > 60 seconds)
leak rate (lpm)	<u>0.05</u>	<u>0.13</u>	
0 corrected leak rate (lpm)	<u>0.00</u>	<u>0.00</u>	
limit (lpm)	<u>0.15</u>	<u>.15 or (.60 with FDMS unit)</u>	

As Left Pump Off Test and Leak Check (same as above if as found adequate):

	main flow	auxillary flow	
pump unplugged zero (lpm)	<u>0.05</u>	<u>0.13</u>	
seconds to reach full flow (max. 60s)	<u>21</u>	<u>40</u>	(maintenance required if either > 60 seconds)
leak rate (lpm)	<u>0.05</u>	<u>0.13</u>	
0 corrected leak rate (lpm)	<u>0.00</u>	<u>0.00</u>	
limit (lpm)	<u>0.15</u>	<u>.15 or (.60 with FDMS unit)</u>	

As found temperature and pressure:

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1400A temperature °C:	<u>4.4</u>	1400A pressure atm:	<u>0.917</u>
reference temperature °C:	<u>5.0</u>	reference pressure:	<u>0.910</u>
difference °C:	<u>0.6</u>	difference :	<u>-0.007</u>

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

tolerance +/- 2.0°C		tolerance +/- 0.01 atm	
1400A temperature °C:	<u>4.4</u>	1400A pressure atm:	<u>0.917</u>
reference temperature °C:	<u>5.0</u>	reference pressure:	<u>0.910</u>
difference °C:	<u>0.6</u>	difference :	<u>-0.007</u>

As found flows:

main flow tolerance 3.00 lpm +/- 0.20 lpm		total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm/+/- 7%	
1400A main flow lpm:	<u>2.98</u>	1400A total/aux flow lpm:	<u>16.59</u>
reference main flow lpm:	<u>3.05</u>	reference total/aux flow lpm:	<u>16.86</u>
difference lpm:	<u>0.07</u>	difference lpm:	<u>0.27</u>

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

main flow tolerance 3.00 lpm +/- 0.20 lpm		total/aux flow tolerance 16.67/13.67 lpm +/- 1.00 lpm/+/- 7%	
1400A main flow lpm:	<u>2.98</u>	1400A total/aux flow lpm:	<u>16.59</u>
reference main flow lpm:	<u>3.05</u>	reference total/aux flow lpm:	<u>16.86</u>
difference lpm:	<u>0.07</u>	difference lpm:	<u>0.27</u>

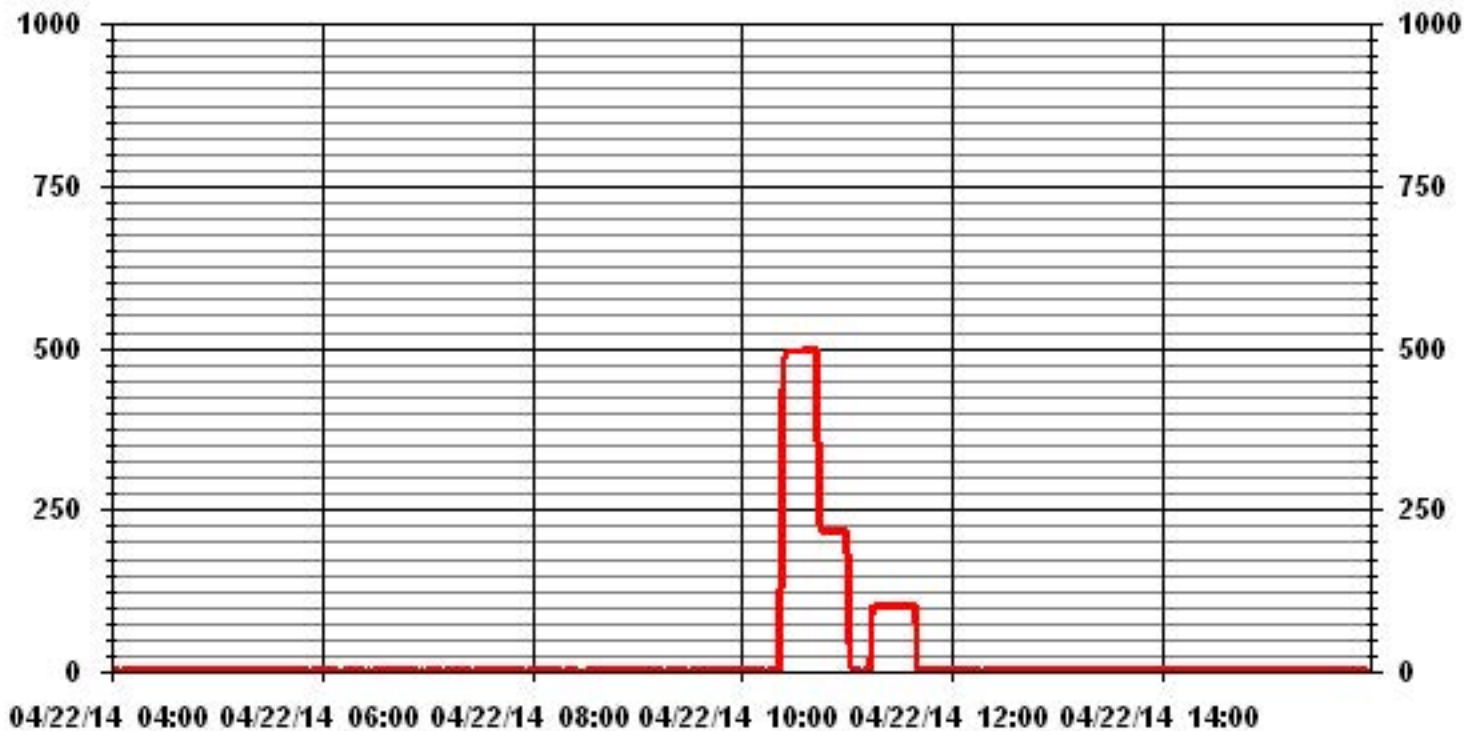
K_o Audit:

Last K_o audit date: Unknown
 1400A K_o factor: 15003
 Measured K_o factor: NA
 % difference: _____

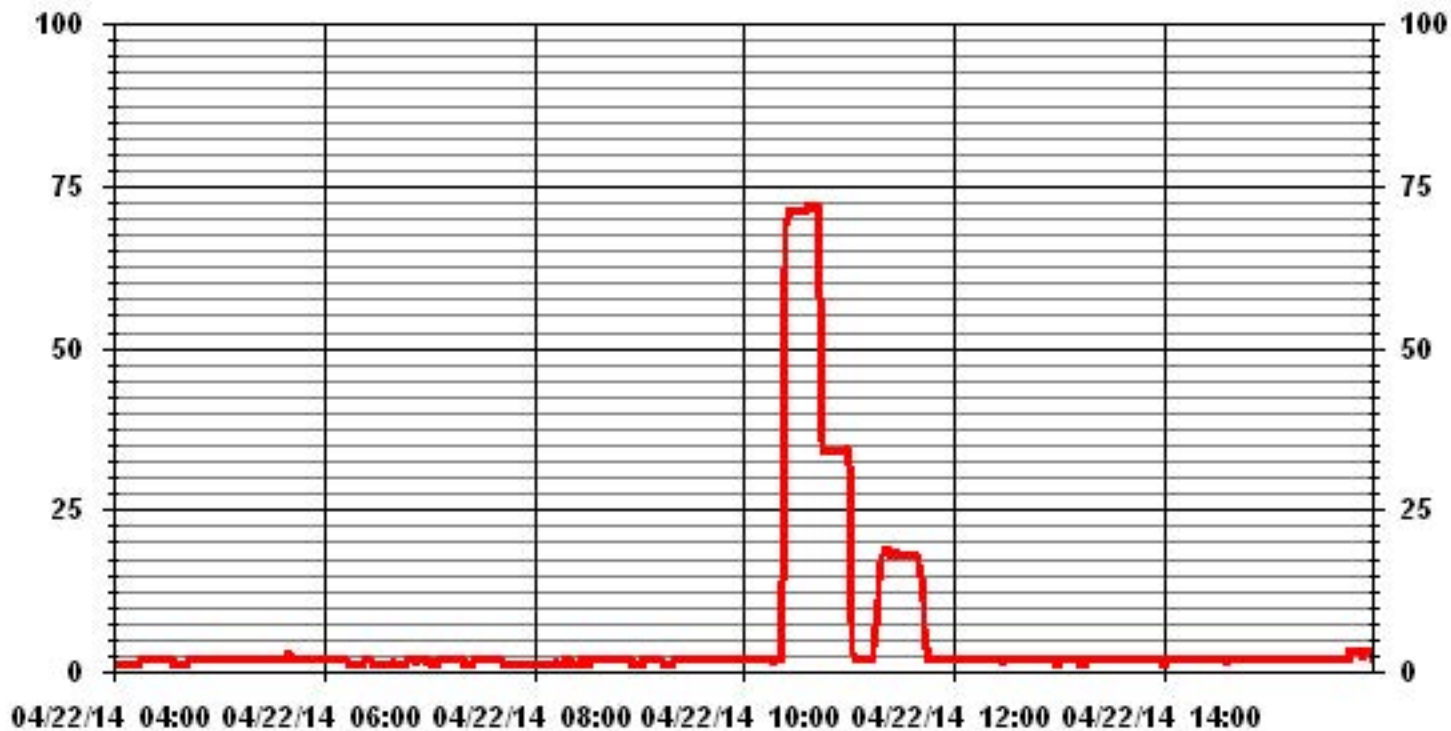
Comments:

AESRD Audit Results

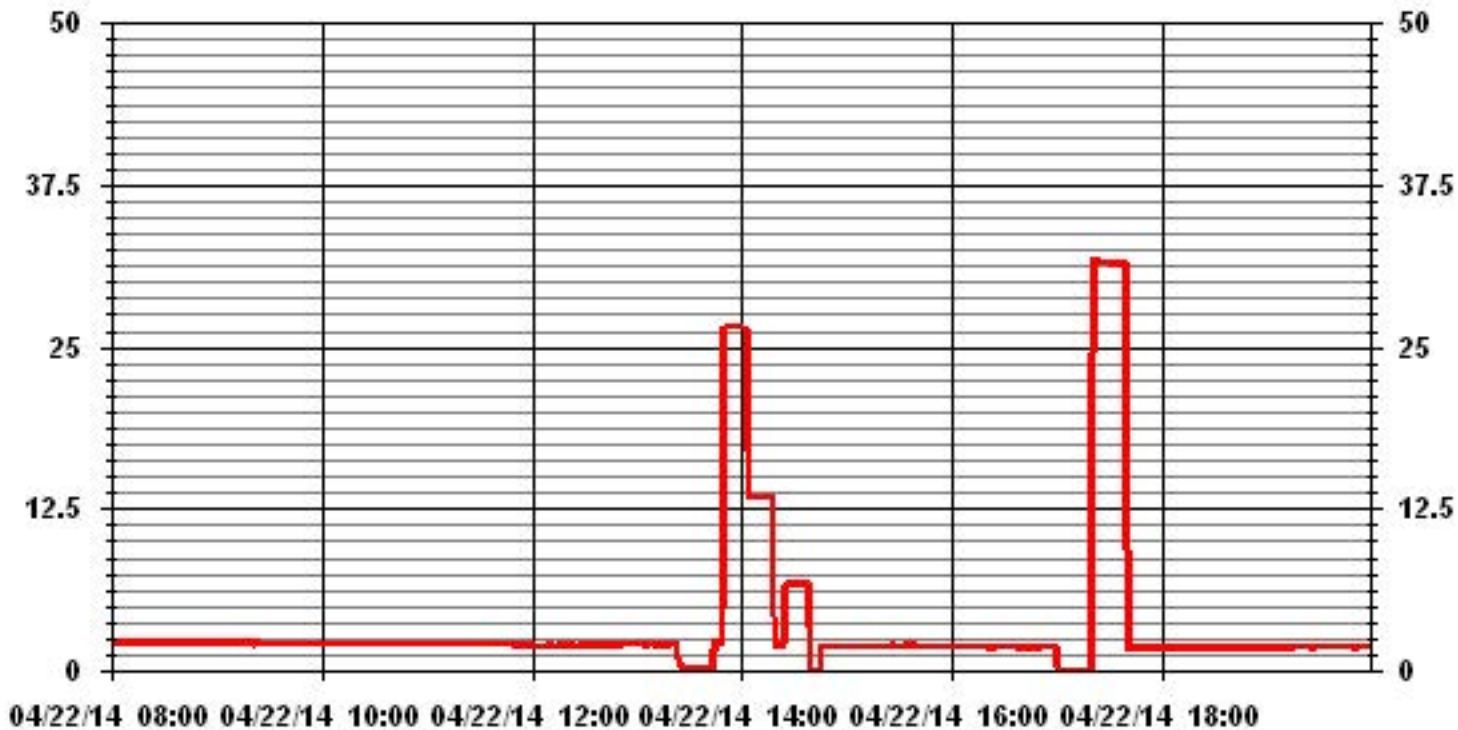
01 Minute Averages



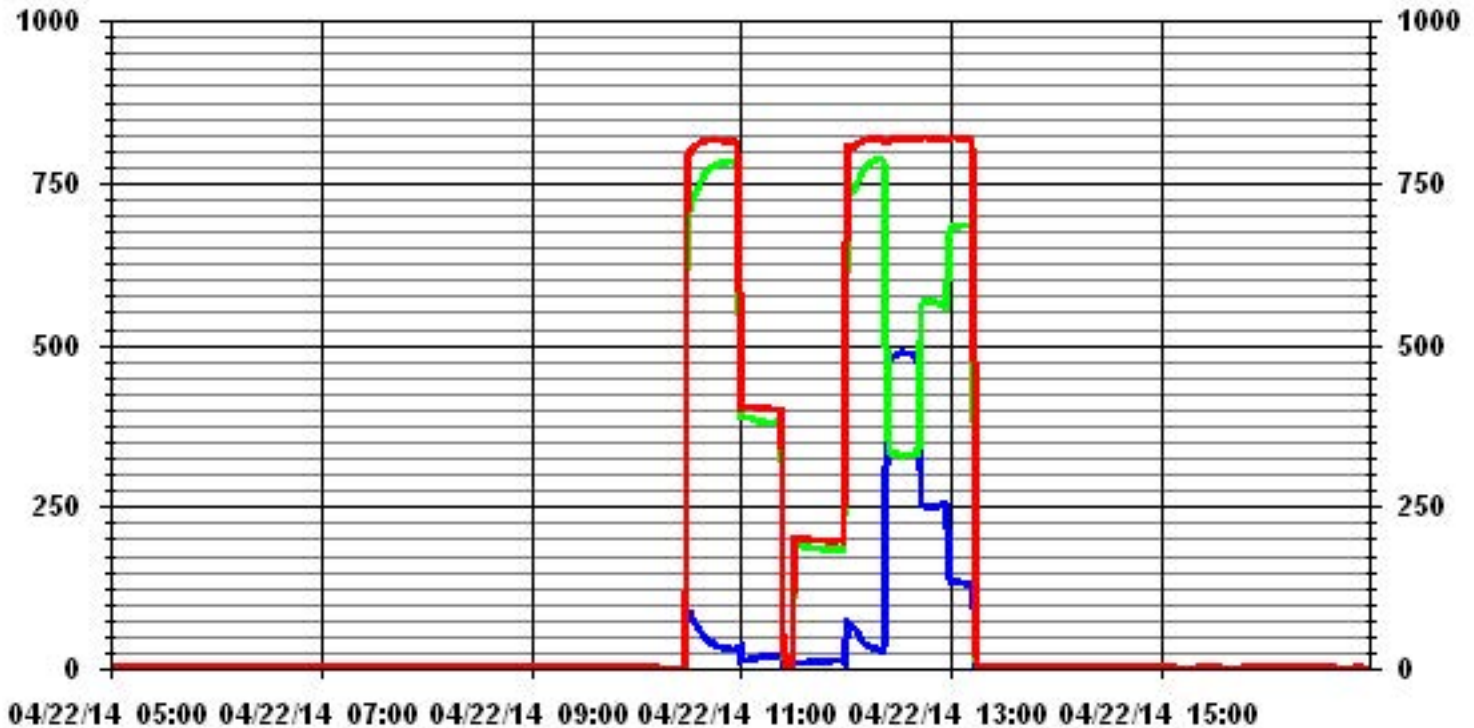
01 Minute Averages



01 Minute Averages



01 Minute Averages



— LICA31 NOX_ PPB — LICA31 NO_ PPB — LICA31 NO2_ PPB

01 Minute Averages

