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July 13, 2014

RE: May 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,

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
May 2014

Prepared By:

June 29, 2014

JOB #: 2833-14-05-01-C

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

Table of Contents

	Page
Introduction	3
Calibration Procedure	4
Monthly Continuous Summary	5
Monthly Non-Continuous Summary	6
General Monthly Summary	7
Continuous Monitoring	10
• Monthly Summaries, Graphs & Wind Roses	11
o Sulphur Dioxide	13
o Total Reduced Sulphur	21
o Total Hydrocarbons	29
o Particulate Matter 2.5	76
o Nitrogen Dioxide	42
o Nitric Oxide	50
o Oxides of Nitrogen	57
o Ozone	65
o Ambient Temperature	73
o Relative Humidity	76
o Vector Wind Speed	79
o Vector Wind Direction	86
o Standard Deviation Wind Direction	89
Non-Continuous Monitoring	92

	Page
Calibration Reports	97
• Sulphur Dioxide	98
• Total Reduced Sulphur	101
• Total Hydrocarbons	104
• Particulate Matter 2.5	113
• Nitrogen Dioxide	116
• Ozone	125
Passive Bubble Maps	128
Passive Field Data	133
• Field Notes	134
Passive Monitoring Laboratory Analysis	136

Introduction

The following Ambient Air Monitoring report was prepared for:

Mr. Mike Bisaga
Lakeland Industry & Community Association
Box 8237
5107W – 50 Street
Bonnyville, Alberta
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Monitoring Location: Cold Lake
Data Period: May 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 – May 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	0.01	2	21	12	6.7	226(SW)	0.1	21	99.9
TRS (PPB)	-	-	-	-	0.05	1	VAR	VAR	VAR	VAR	0.3	26	99.9
NO_2 (PPB)	159	-	0	-	2.12	13.9	12	5	0.7	81(E)	5.0	12	93.8
NO (PPB)	-	-	-	-	0.24	6.6	12	5	0.7	81(E)	1.0	12	93.8
NOx (PPB)	-	-	-	-	2.36	20.5	12	5	0.7	81(E)	6.0	12	93.8
O_3 (PPB)	82	-	0	-	32.38	59	23	11	5.7	257(WSW)	43.3	14	99.9
THC (PPM)	-	-	-	-	2.03	2.8	8	5	0.5	163(SSE)	2.3	8	78.8
PM 2.5 (UG/M^3)	-	30	-	0	4.62	46	17	8	3.6	98(E)	8.9	17	95.3
TEMPERATURE (DEG C)	-	-	-	-	9.14	28.3	23	15	5.3	196(SSW)	20.4	23	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	61.80	100	VAR	VAR	VAR	VAR	94.2	29	100.0
VECTOR WS (KPH)	-	-	-	-	6.46	21.0	30	16	-	273(W)	13.1	2	100.0
VECTOR WD (DEGREES)	-	-	-	-	354(N)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS NA: NOT AVAILABLE

Monthly Non-Continuous Data Summary
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

Passive Ambient Monitoring Network – May 2014

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO_2	#14	0.8	0.2
H_2S	#17	0.14	0.08
NO_2	#6	3.2	0.8
O_3	#8	36.61	30.55

General Monthly Summary

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

AQM STATION – LICA – COLD LAKE SOUTH

Sulphur Dioxide (PPB)
- Analyzer make / model – Thermo 43i, S/N: 806528242

The analyzer was working well throughout the month. The monthly calibration was performed on May 12th. The inlet filter was changed before the monthly calibration. The SO2 channel was put into the Maintenance mode for an hour on May 22nd for a new sample filter holder installation. 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 was working well throughout the month. The monthly calibration was performed on May 12th. The inlet filter was changed before the monthly calibration. The TRS channel was put into the Maintenance mode for an hour on May 22nd for a new sample filter holder installation. 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 May 12th. The inlet filter was changed before the monthly calibration. The O3 channel was put into the Maintenance mode for an hour on May 22nd for a new sample filter holder installation. 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 and Thermo 51C, S/N: AMU1634

The hydrogen gas cylinder was changed on May 12th. The monthly calibration was performed on May 13th. The inlet filter was changed before the monthly calibration was started. The analyzer started reading low on May 22nd during hour 3. It was determined that the sample pump was due for maintenance. The analyzer was replaced to the Thermo 51C, S/N AU1634, on May 23rd. An installation calibration was performed following the analyzer installation. The analyzer failed the second zero/span check on May 24th. Troubleshooting attempted to be performed on May 26th, including the H2 gas pressure adjustment and a 3-point calibration. However, the analyzer still did not function properly. The Thermo 51C-LT analyzer was reinstalled back to the trailer following the sample pump replacement on May 29th. After the installation, the analyzer was allowed time to stabilize overnight. An installation calibration was performed on May 30th. Due to this event, a total of 144 hours of data was invalidated. The operational uptime for this month was 78.2%. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

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

The monthly calibration was performed on May 12th. The inlet filter was changed before the monthly calibration. The analyzer spanned low on May 14th due to the perm tube depleting. The perm tube was replaced following an as found points check on May 15th. The analyzer spanned zero on May 16th due to the loosen connection between the sample manifold and the analyzer. The tubing was tightened following a post repair calibration on May 17th. Data was invalidated back to the last good calibration result, which was May 15th. 44 hours of data were invalidated due to this issue. The analyzer spanned high after the calibration on May 17th due to high oven temperature. The oven temperature was adjusted on May 22nd. This issue did not affect data quality. The NOx, NO and NO2 channels were put into the Maintenance mode for two hours on May 22nd for new samples filter holder installation. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – COLD LAKE SOUTH

Particulate Matter 2.5 (UG/M3)

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

Two Teom audits were performed this month: one was completed on May 9th, and the other audit was performed on May 21st. Both the Teom filter and the FDMS filter were replaced on May 21st. 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. 35 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 May 13th. The sample filter holders for all gas analyzers were replaced on May 22nd.

Passive Network

The samplers installed at site #2 had been removed, so no sample filters were installed. All samples installed at site #11 are missing this month.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

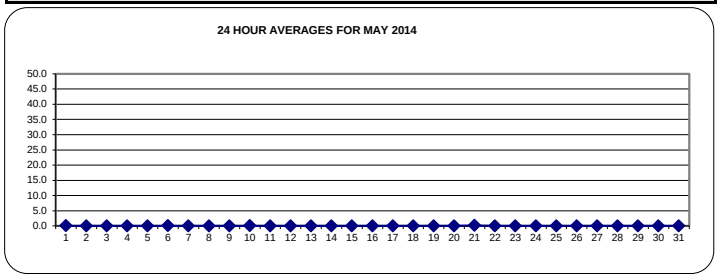
SULPHUR DIOXIDE (SO2) hourly averages in ppb

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	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	**S**	0	0	0	1	0.0	24
2	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
3	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
4	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
5	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
6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	**S**	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	**S**	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	**S**	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	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
10	0	0	0	0	0	0	0	0	1	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
11	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
12	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0.0	24
13	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
14	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
15	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
16	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
17	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
18	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
19	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
20	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
21	**S**	0	0	0	0	0	0	0	0	0	0	0	***2***	1	0	0	0	0	0	0	0	0	0	**S**	***2***	***0.1***	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**Y**	0	0	0	**S**	0	0	0.0	23
23	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
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0.0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0.0	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0.0	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0.0	24
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0.0	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0.0	24
31	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
HOURLY MAX	0	0	0	0	0	0	0	1	1	0	1	0	2	1	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	0.1	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

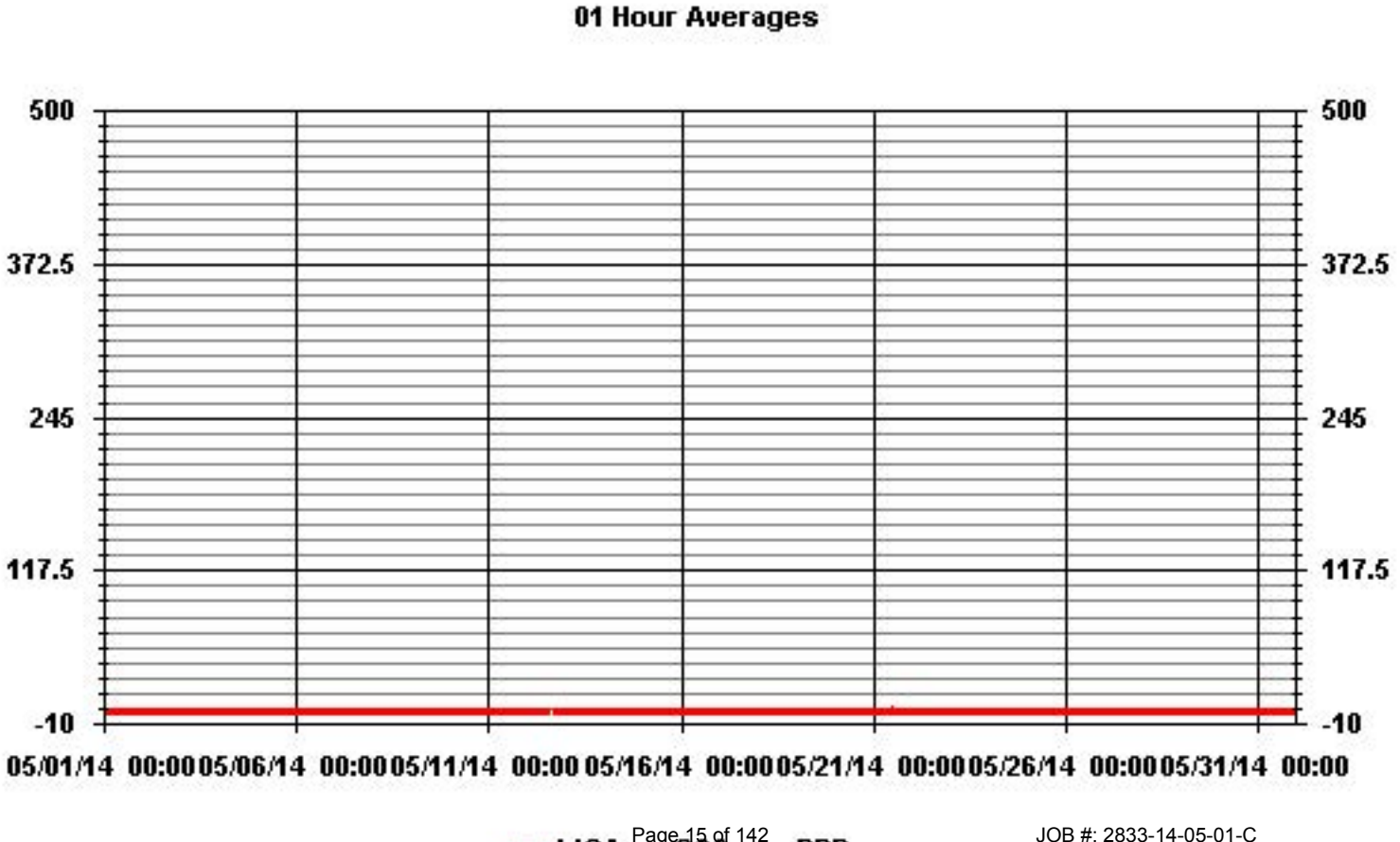


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB | 24-HR 48 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	5					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	12	ON DAY(S)	21
MAXIMUM 24-HR AVERAGE:	0.1	PPB			ON DAY(S)	21
					VAR-VARIOUS	

IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.9	%
STANDARD DEVIATION:	0.11		MONTHLY AVERAGE:	0.01	PPB



JOB #: 2833-14-05-01-C

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

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

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: 40

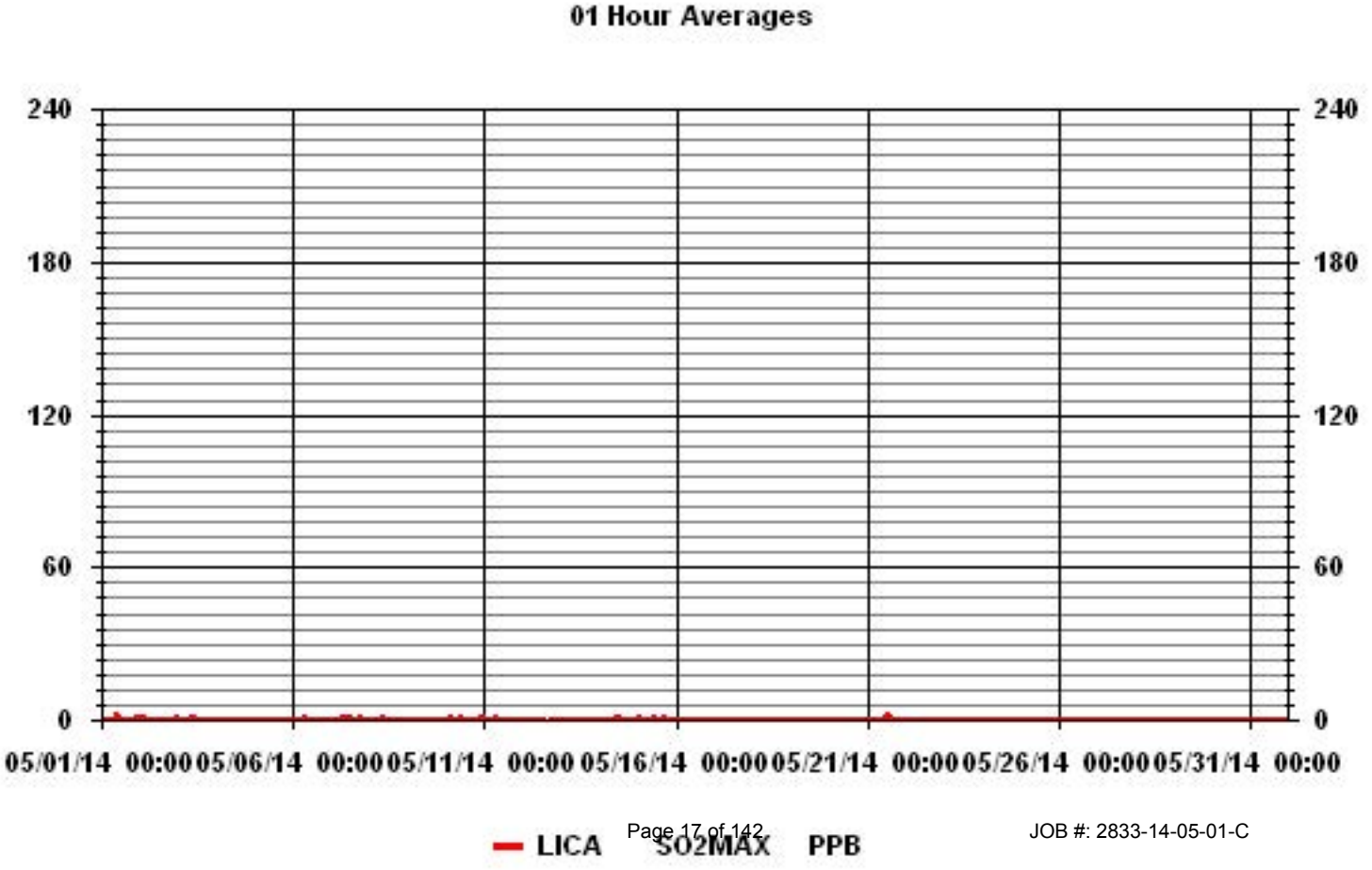
MAXIMUM INSTANTANEOUS VALUE: 2 PPB @ HOUR(S) 12, 13 ON DAY(S) 21

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 743 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 0.26



JOB #: 2833-14-05-01-C

LICA
SO2_ / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	6.50	8.06	13.01	6.78	7.77	6.08	6.08	3.96	1.13	1.41	3.53	7.63	7.77	5.09	7.49	7.63	100.00
<	60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	6.50	8.06	13.01	6.78	7.77	6.08	6.08	3.96	1.13	1.41	3.53	7.63	7.77	5.09	7.49	7.63	

Calm : .00 %

Total # Operational Hours : 707

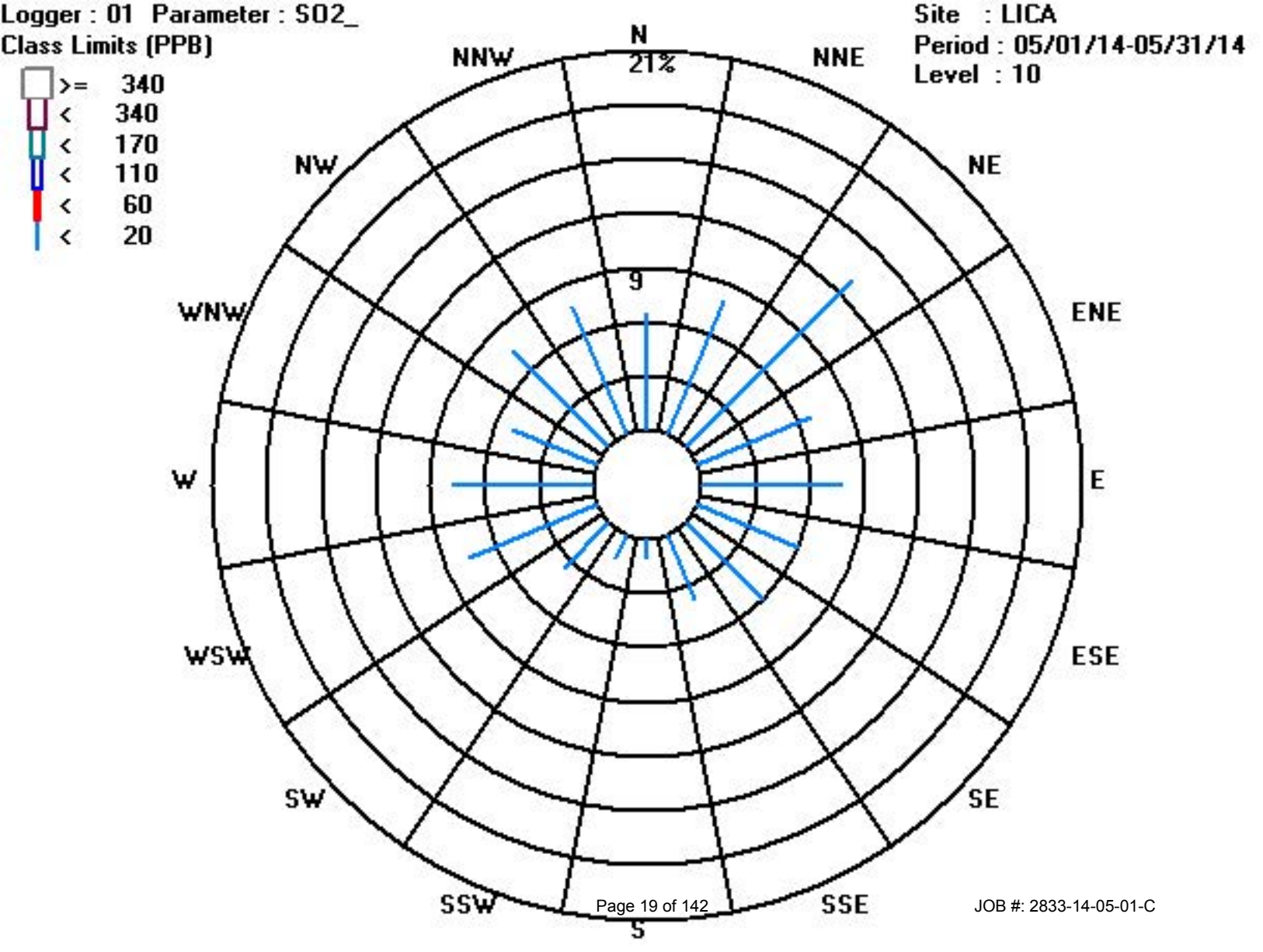
Distribution By Samples

Direction

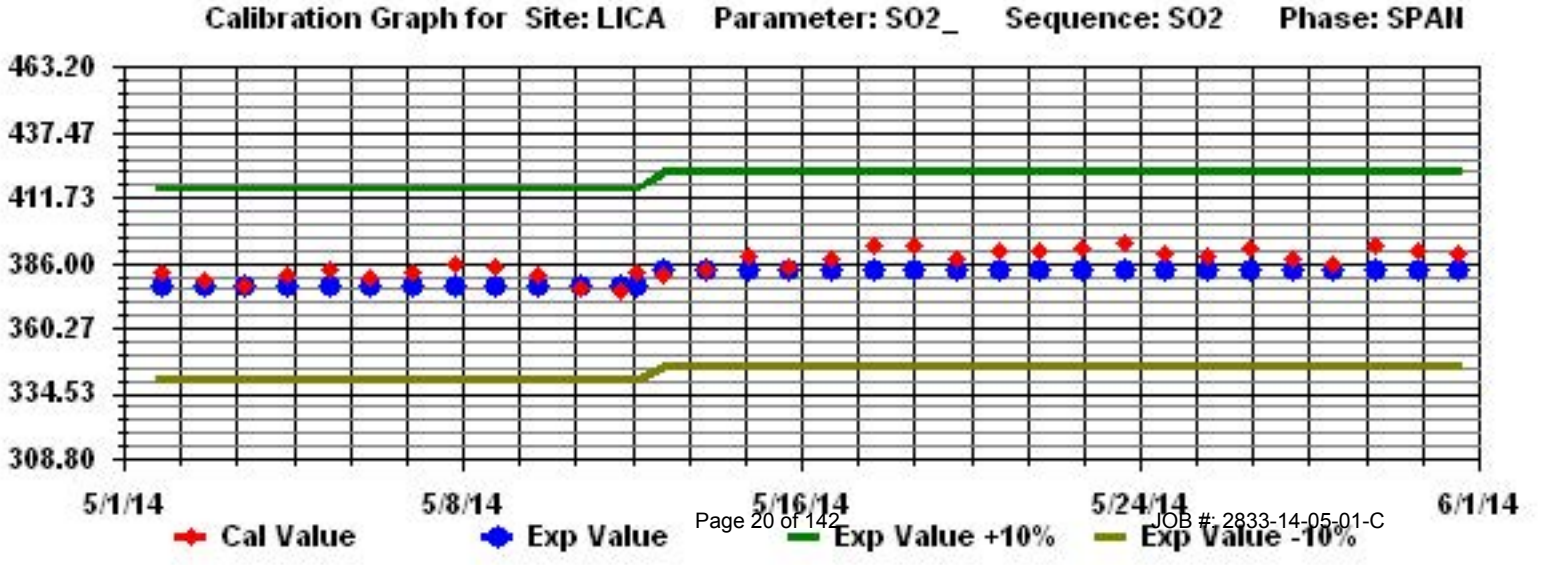
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	46	57	92	48	55	43	43	28	8	10	25	54	55	36	53	54	707
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	46	57	92	48	55	43	43	28	8	10	25	54	55	36	53	54	

Calm : .00 %

Total # Operational Hours : 707



JOB #: 2833-14-05-01-C


Calibration Graph for Site: LICA Parameter: SO2_ Sequence: SO2 Phase: SPAN
463.20
437.47
411.73
386.00
360.27
334.53
308.80
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Reduced Sulphur

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

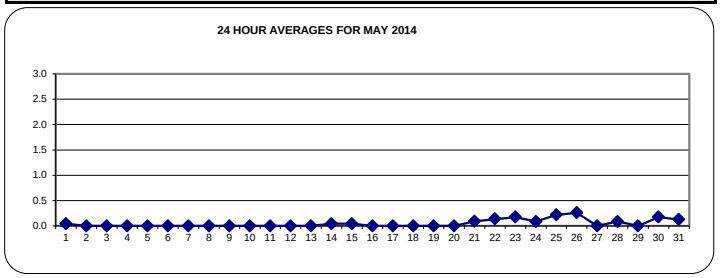
TOTAL REDUCED SULPHUR (TRS) hourly averages in ppb

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

STATUS FLAG CODES

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

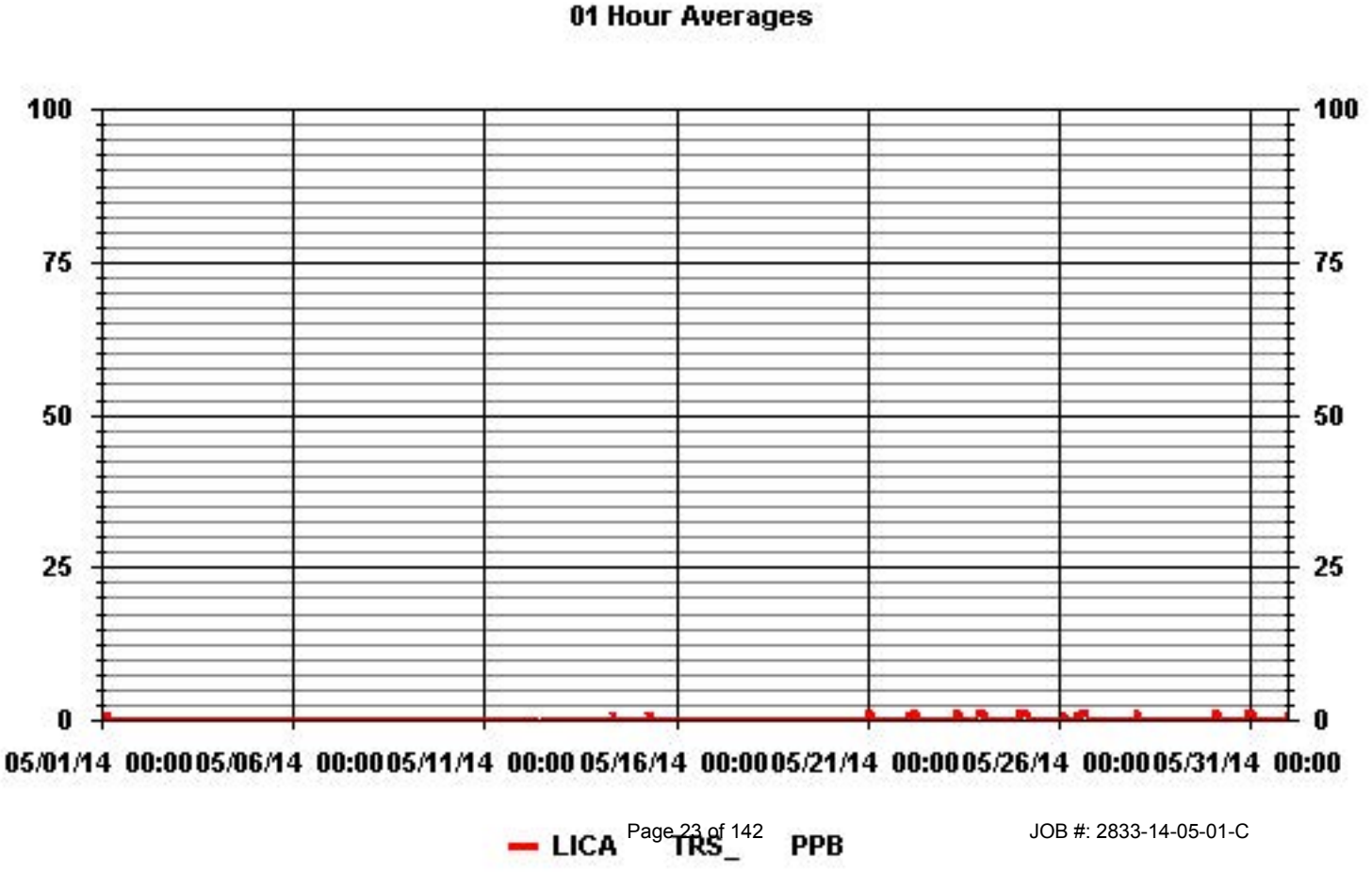


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:**

1-HR	NA	PPB	24-HR	NA	PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF 24-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	34					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.3	PPB			ON DAY(S)	26
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		743	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		99.9	%
STANDARD DEVIATION:	0.21		MONTHLY AVERAGE:		0.05	PPB



JOB #: 2833-14-05-01-C

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

TOTAL REDUCED SULPHUR 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	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1.0	24
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1.0	24
3	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
4	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	**S**	1	1	1	1	1	1	1	0.9	24
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1.0	24
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1.0	24
7	1	1	0	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1.0	24
8	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
9	0	1	1	1	1	1	1	1	0	0	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24
10	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
11	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
12	1	1	1	1	1	1	1	1	**C**	**C**	**C**	**C**	**C**	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
13	1	1	1	1	1	1	1	**S**	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
14	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
15	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
16	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
17	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
18	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
19	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
20	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
21	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1.0	24
22	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	**Y**	1	1	1	**S**	1	2	1.0	23
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	2	2	1.0	24
24	***4***	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	***4***	***1.1***	24
25	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	2	1.1	24
26	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
27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1.0	24
28	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	2	1.0	24
29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	**S**	1	1	1	1	1	1	1	1	1	1.0	24
30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	2	2	2	1.1	24
31	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1.0	24
HOURLY MAX	4	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2			
HOURLY AVG	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 699

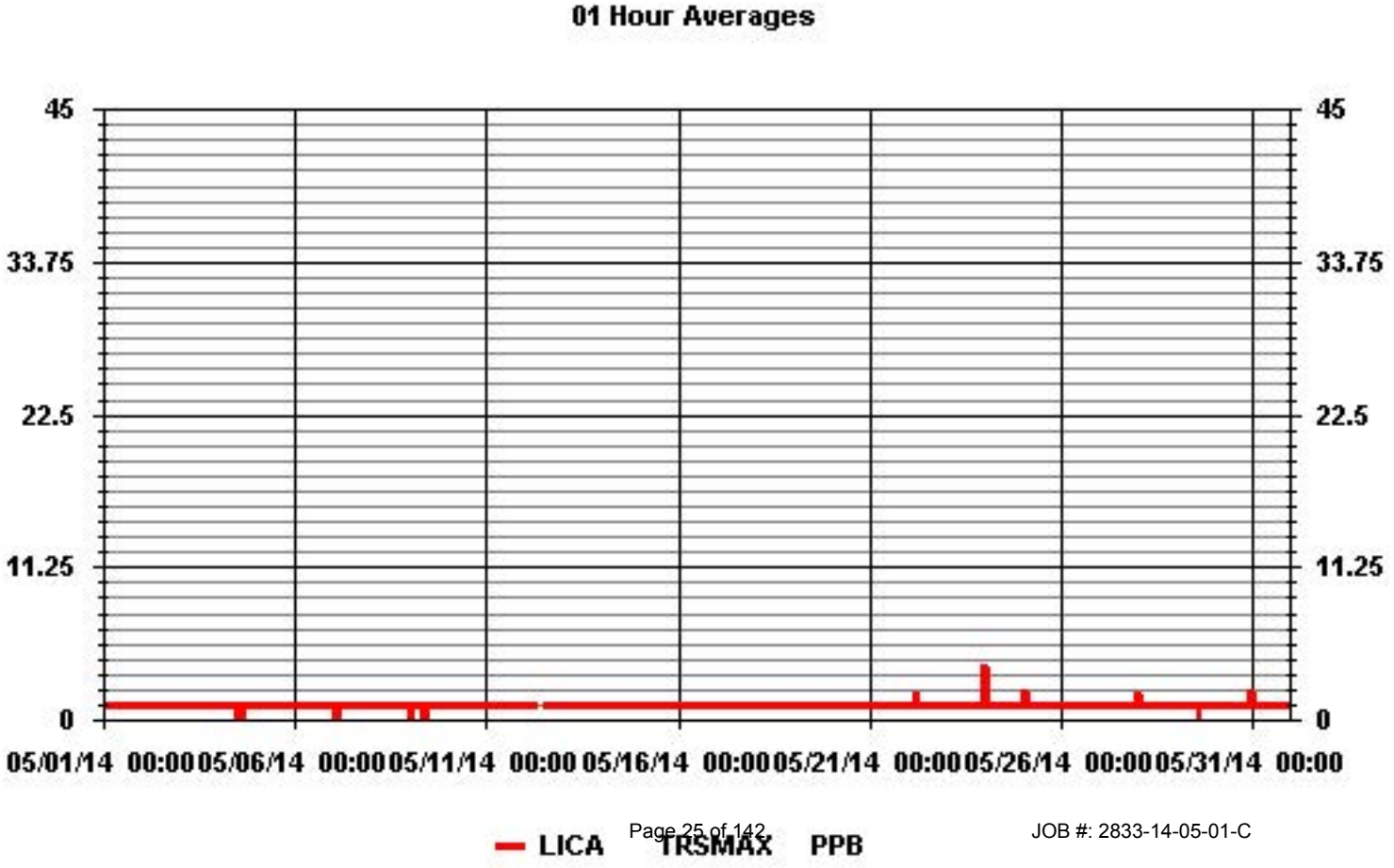
MAXIMUM INSTANTANEOUS VALUE: 4 PPB @ HOUR(S) 0 ON DAY(S) 24

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 743 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 0.18



JOB #: 2833-14-05-01-C

LICA
TRS_ / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	6.49	8.05	13.27	6.63	7.76	6.07	6.07	3.95	1.12	1.41	3.53	7.62	7.76	5.08	7.48	7.62	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	6.49	8.05	13.27	6.63	7.76	6.07	6.07	3.95	1.12	1.41	3.53	7.62	7.76	5.08	7.48	7.62	

Calm : .00 %

Total # Operational Hours : 708

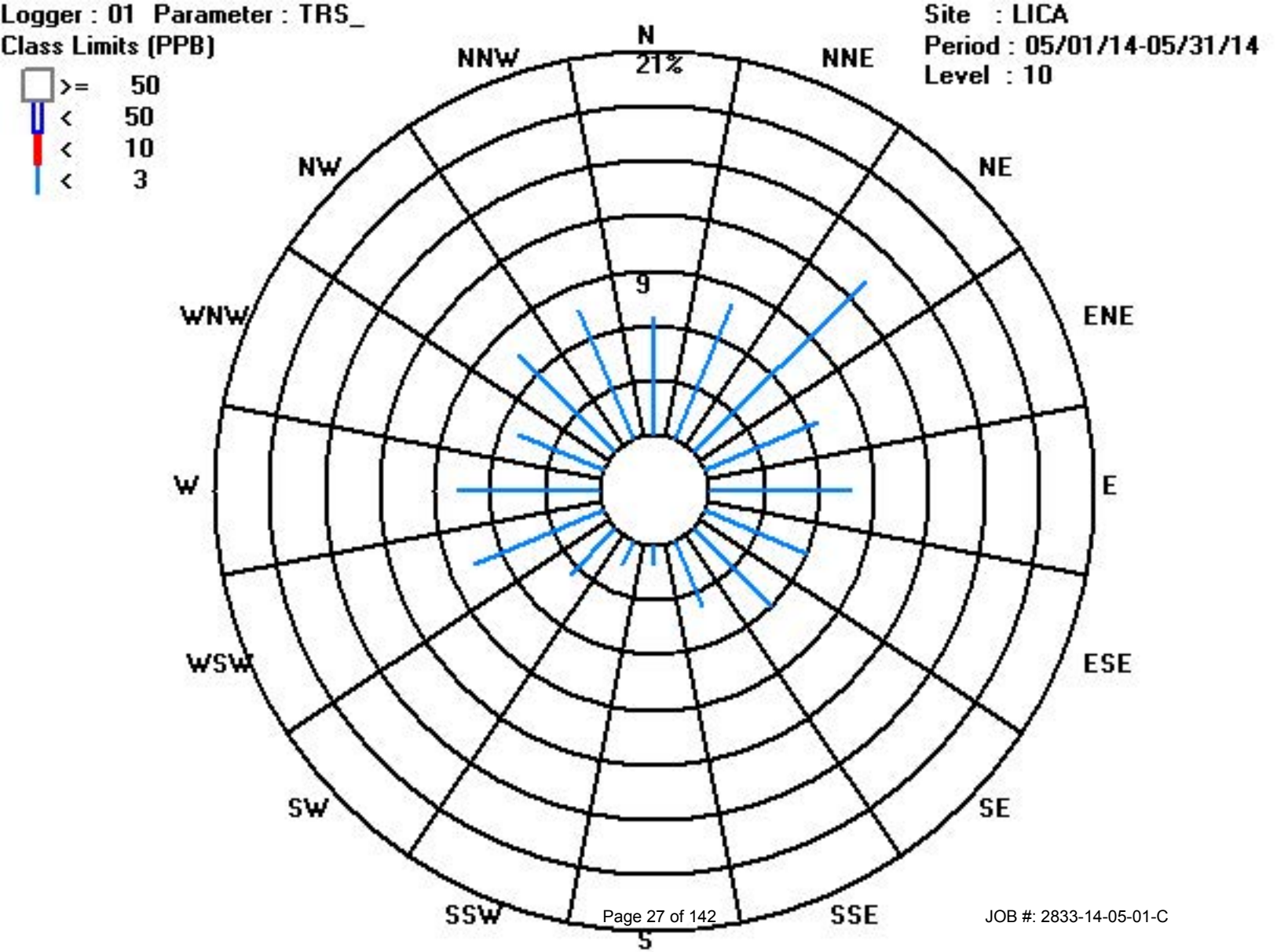
Distribution By Samples

Direction

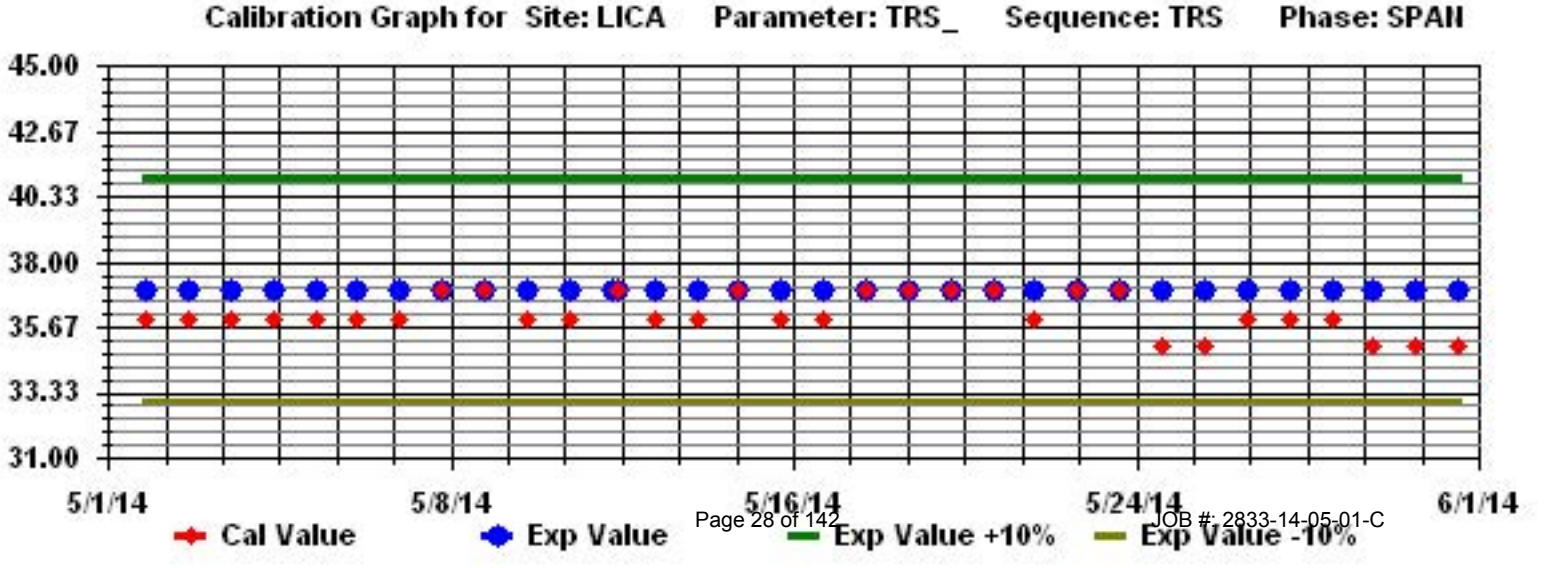
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	46	57	94	47	55	43	43	28	8	10	25	54	55	36	53	54	708
< 10																	
< 50																	
>= 50																	
Totals	46	57	94	47	55	43	43	28	8	10	25	54	55	36	53	54	

Calm : .00 %

Total # Operational Hours : 708



JOB #: 2833-14-05-01-C


Calibration Graph for Site: LICA Parameter: TRS_ Sequence: TRS Phase: SPAN
45.00
42.67
40.33
38.00
35.67
33.33
31.00
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

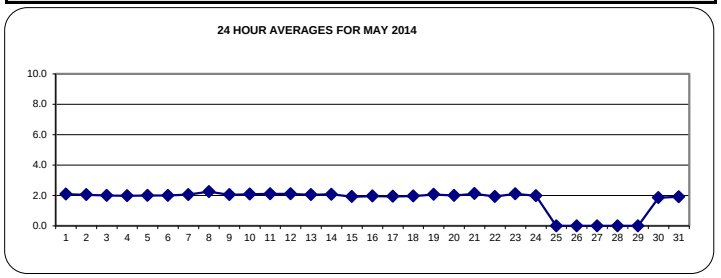
TOTAL HYDROCARBONS (THC) hourly averages in ppm

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	2.4	2.5	2.5	2.3	2.1	2.2	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	**S**	2.3	2.3	2.3	2.5	2.1	24
2	2.3	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.1	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	2.3	2.0	24
3	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	2.0	24
4	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	**S**	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	24
5	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	2.0	2.0	2.0	24
6	2.1	2.0	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	**S**	1.9	1.9	1.9	2.0	2.0	2.1	2.0	2.0	2.1	2.0	24
7	2.0	2.0	2.0	2.1	2.2	2.4	2.4	2.1	2.0	2.0	1.9	1.9	1.9	1.9	**S**	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.3	2.4	2.1	24
8	2.6	2.6	2.6	2.5	2.6	***2.8***	2.7	2.2	2.0	2.0	2.0	2.0	2.0	**S**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	***2.8***	***2.3***	24
9	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	**S**	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.2	2.3	2.3	2.0	24
10	2.2	2.2	2.3	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	**S**	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.1	24
11	2.2	2.2	2.3	2.2	2.3	2.3	2.2	2.2	2.1	2.1	**S**	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	2.3	2.1	24
12	2.1	2.2	2.2	2.3	2.3	2.3	2.1	2.0	2.1	**S**	2.0	**Y**	**Y**	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.3	2.1	22
13	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**C**	**C**	**C**	**C**	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.0	24
14	2.0	2.0	2.1	2.1	2.2	2.2	2.2	**S**	2.3	2.3	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.3	2.1	24
15	2.0	1.9	1.9	1.9	1.9	2.1	**S**	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	1.9	24
16	1.9	1.9	1.9	2.0	2.0	**S**	2.0	2.0	2.0	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	2.0	2.0	2.0	2.0	24
17	2.0	2.1	2.1	2.0	**S**	2.1	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	2.1	1.9	24
18	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	1.9	1.9	1.9	1.9	2.0	2.0	2.0	1.9	2.0	1.9	1.9	2.0	2.0	24
19	1.9	1.9	**S**	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.1	24
20	2.3	**S**	2.1	2.1	2.1	2.1	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.1	2.3	2.0	24
21	**S**	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	**S**	2.3	2.1	24
22	2.0	1.9	1.9	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	2.0	1.9	3
23	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2.0	2.0	2.0	2.0	2.1	**S**	2.3	2.3	2.3	2.1	17
24	2.4	2.0	1.9	1.9	1.9	1.9	**S**	1.9	1.9	**S**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	2.4	2.0	10
25	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**			0
26	**X**	**X**	**X**	**X**	**X**	**X**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**			9
27	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**			0
28	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**			0
29	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**			0
30	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**C**	**C**	**C**	**C**	**C**	2.0	2.0	2.0	**S**	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	1.9	17
31	1.8	1.8	1.8	1.9	2.0	1.9	2.0	2.1	2.1	2.1	2.0	2.0	1.9	**S**	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	2.1	1.9	24
HOURLY MAX	3	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	2.1	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	2.0	2.0	2.1			

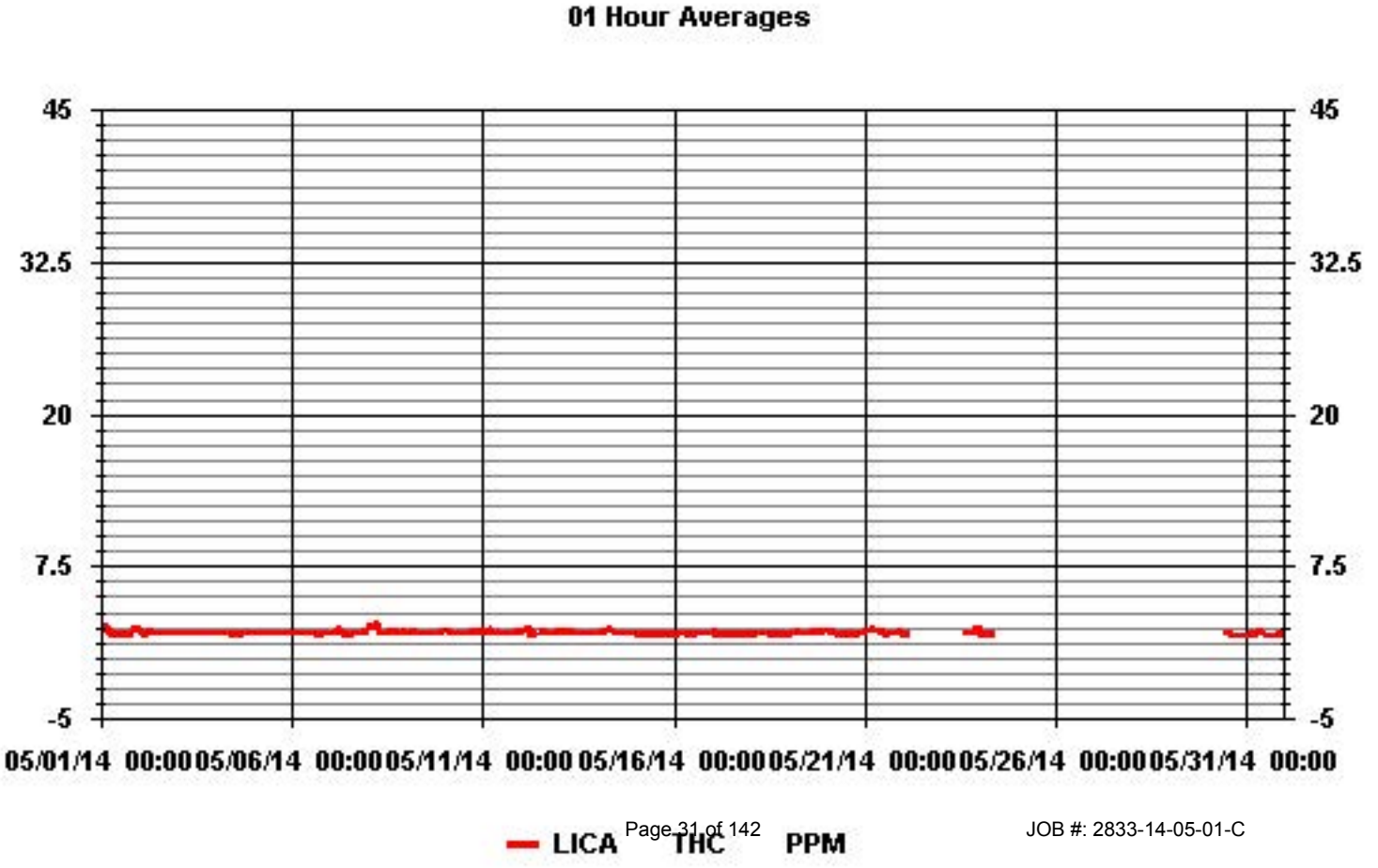
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	530					
MAXIMUM 1-HR AVERAGE:	2.8	PPM	@ HOUR(S)	5	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:	2.3	PPM			ON DAY(S)	8
					VAR-VARIOUS	
IZS CALIBRATION TIME:	26	HRS	OPERATIONAL TIME:		582	HRS
MONTHLY CALIBRATION TIME:	26	HRS	AMD OPERATION UPTIME:		78.2	%
STANDARD DEVIATION:	0.13		MONTHLY AVERAGE:		2.03	PPM



JOB #: 2833-14-05-01-C

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

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

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 528

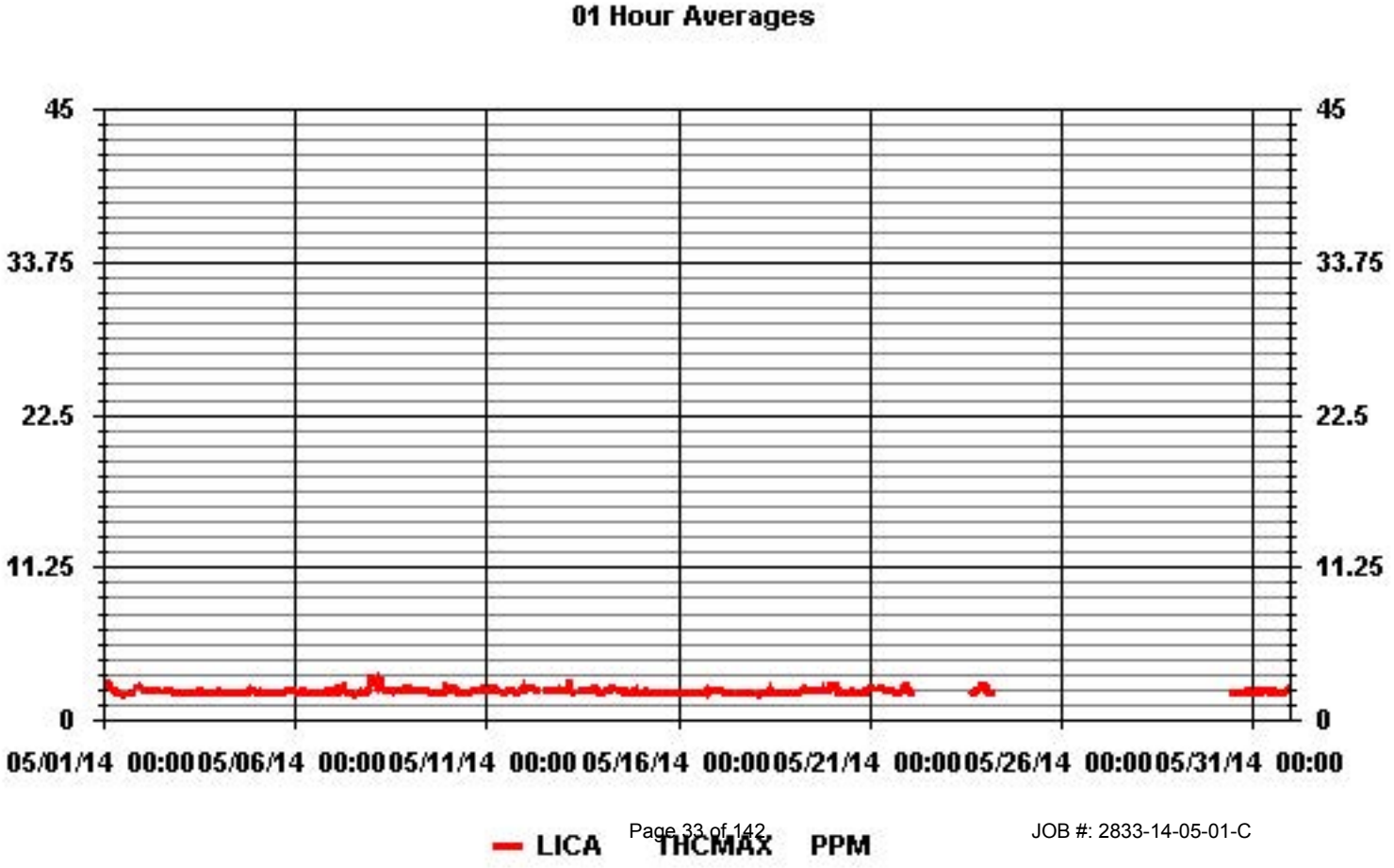
MAXIMUM INSTANTANEOUS VALUE: 3.4 PPM @ HOUR(S) 23 ON DAY(S) 7

VAR-VARIOUS

IZS CALIBRATION TIME: 27 HRS OPERATIONAL TIME: 582 HRS

MONTHLY CALIBRATION TIME: 27 HRS

STANDARD DEVIATION: 0.19



JOB #: 2833-14-05-01-C

LICA
THC / WD Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	7.90	9.03	10.92	5.27	6.77	4.70	7.34	5.08	1.50	1.69	3.57	7.53	7.15	5.08	6.77	9.60	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	7.90	9.03	10.92	5.27	6.77	4.70	7.34	5.08	1.50	1.69	3.57	7.53	7.15	5.08	6.77	9.60	

Calm : .00 %

Total # Operational Hours : 531

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	42	48	58	28	36	25	39	27	8	9	19	40	38	27	36	51	531
<	10.0																	
<	50.0																	
>=	50.0																	
	Totals	42	48	58	28	36	25	39	27	8	9	19	40	38	27	36	51	

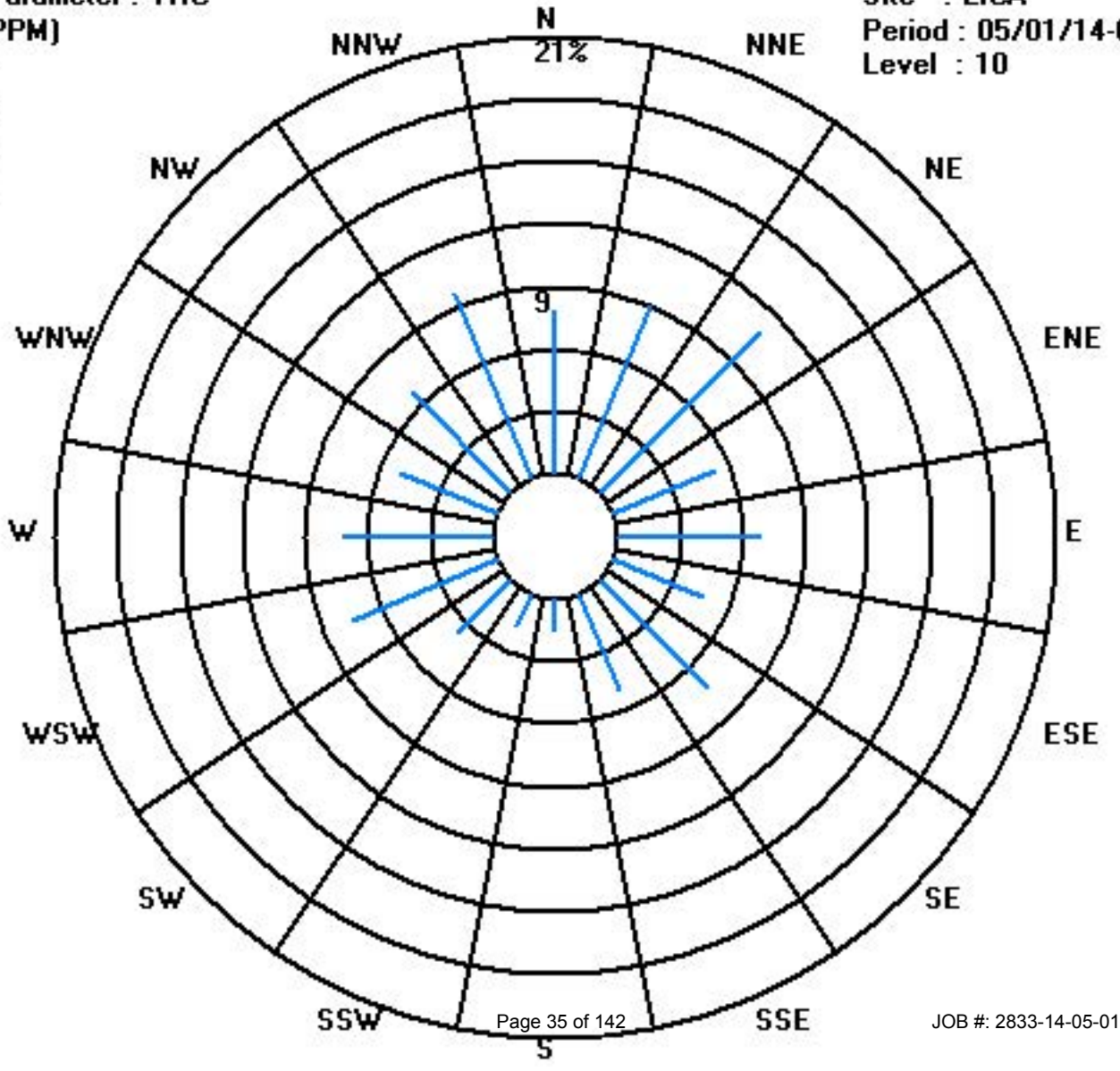
Calm : .00 %

Total # Operational Hours : 531

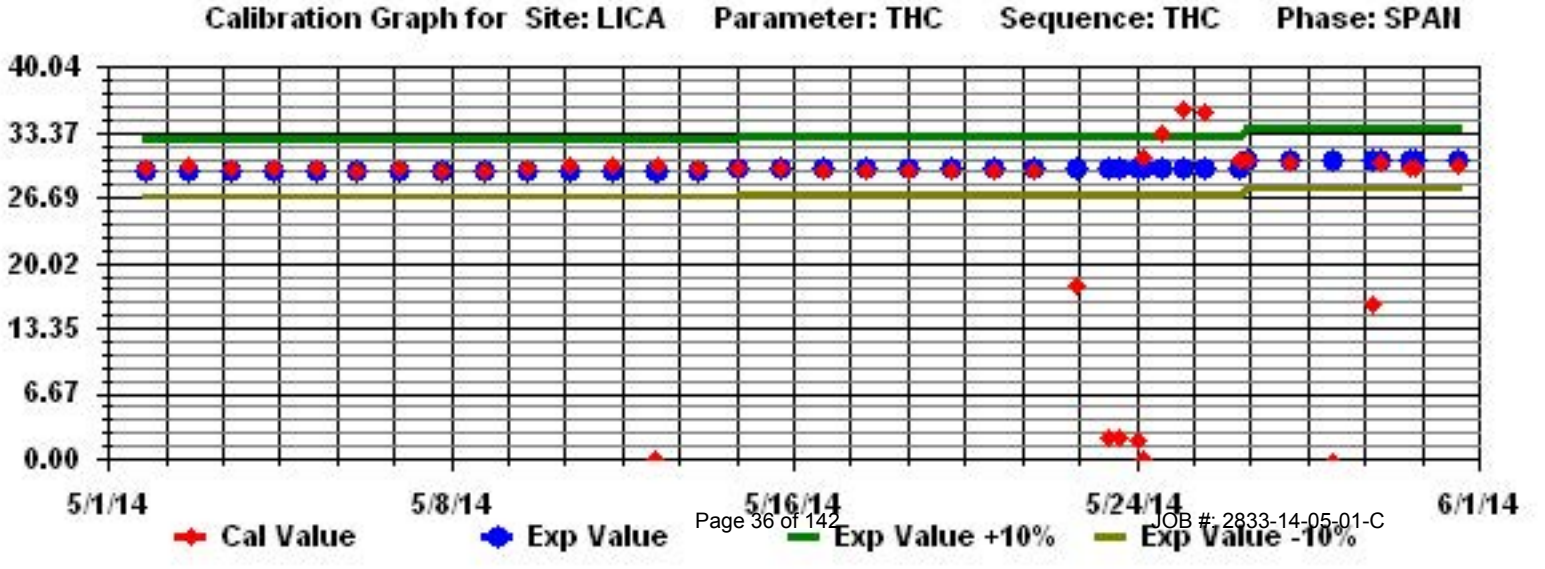
Logger : 01 Parameter : THC
Class Limits (PPM)

>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA
Period : 05/01/14-05/31/14
Level : 10



JOB #: 2833-14-05-01-C


Calibration Graph for Site: LICA Parameter: THC Sequence: THC Phase: SPAN
40.04
33.37
26.69
20.02
13.35
6.67
0.00
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

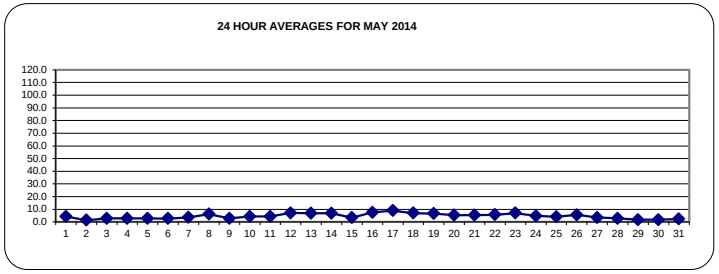
PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5) hourly averages in ug/m3

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	7	6	6	5	4	10	6	4	1	6	7	6	0	3	2	11	0	1	3	1	2	3	1	8	11	4.3	24
2	4	0	1	3	1	2	0	0	3	0	1	0	0	0	0	1	2	**X**	0	0	2	5	2	5	5	1.4	23
3	5	3	2	0	2	0	3	4	3	0	5	1	0	5	7	3	1	1	1	7	5	6	0	4	7	2.8	24
4	0	4	2	2	2	5	2	3	5	0	1	6	0	5	4	6	6	1	2	1	0	4	4	3	6	2.8	24
5	3	1	2	1	0	2	4	2	2	4	5	2	3	2	2	6	2	0	4	7	1	5	2	4	7	2.8	24
6	5	3	0	3	4	7	8	4	5	1	1	2	4	0	1	2	3	2	0	0	3	4	1	2	8	2.7	24
7	2	1	2	8	2	8	7	5	5	1	1	4	2	5	0	1	4	3	3	3	9	3	6	4	9	3.7	24
8	8	9	2	0	6	8	6	5	4	4	**X**	7	7	4	7	6	3	5	9	8	9	7	12	7	12	6.2	23
9	8	2	2	0	0	2	8	4	1	1	3	1	0	4	1	5	**C**	0	5	4	1	0	8	4	8	2.8	24
10	8	0	0	1	2	8	4	6	3	11	2	1	12	**X**	8	4	0	0	15	0	0	**X**	9	0	15	4.3	22
11	0	1	4	5	0	**X**	0	0	18	5	0	0	1	12	5	7	7	0	4	10	8	6	4	3	18	4.3	23
12	2	7	2	5	11	7	10	4	9	**X**	2	26	8	6	1	9	10	7	10	8	5	6	4	5	26	7.1	23
13	8	5	6	4	4	1	6	12	10	**X**	**X**	3	8	5	5	25	0	12	7	16	2	7	3	2	25	6.9	22
14	3	3	1	5	5	11	4	11	**X**	**X**	**X**	12	7	8	10	7	6	6	4	9	9	8	6	10	12	6.9	21
15	7	3	5	5	4	4	4	4	4	8	5	**X**	2	0	3	0	1	1	3	4	4	1	2	4	8	3.4	23
16	3	5	4	6	2	**X**	**X**	18	**X**	5	0	**X**	13	11	10	4	22	**X**	3	2	6	9	9	12	22	7.6	19
17	8	9	7	8	2	5	4	6	***46***	26	7	9	0	1	8	1	0	3	9	18	15	11	5	5	***46***	***8.9***	24
18	5	8	4	2	4	5	3	6	8	10	6	1	4	12	8	12	11	5	14	11	11	4	6	8	14	7.0	24
19	6	6	6	5	8	5	11	8	9	12	14	8	8	2	5	2	5	6	4	6	6	5	7	6	14	6.7	24
20	4	8	4	6	6	8	6	10	9	5	6	4	6	4	3	8	4	3	3	4	4	5	4	5	10	5.4	24
21	6	8	8	5	4	8	6	4	8	2	4	7	10	9	6	0	**C**	0	2	4	3	9	1	7	10	5.3	24
22	8	7	7	5	4	6	11	4	4	4	2	8	1	3	5	6	0	4	6	8	9	9	5	10	11	5.7	24
23	4	6	8	8	7	7	7	11	8	8	1	3	3	9	9	8	3	7	7	7	7	8	8	13	13	7.0	24
24	5	7	4	3	3	0	2	3	5	0	8	2	6	8	4	4	7	3	4	5	8	15	7	1	15	4.8	24
25	10	7	4	5	2	2	5	2	0	4	4	6	3	0	4	8	2	4	1	4	8	2	5	5	10	4.0	24
26	6	9	3	5	7	8	9	12	10	3	2	0	3	7	2	6	5	8	5	8	6	3	3	3	12	5.5	24
27	3	1	3	1	2	2	2	2	3	3	2	2	2	2	2	3	0	0	7	13	6	11	8	4	13	3.5	24
28	2	6	5	6	6	8	0	0	3	0	7	0	2	0	5	1	0	4	6	0	0	0	5	2	8	2.8	24
29	5	1	0	5	3	1	0	0	4	0	0	6	3	**X**	**X**	**X**	**X**	**X**	0	**X**	**X**	0	0	2	6	1.8	17
30	4	3	**X**	1	2	3	0	**X**	**X**	0	0	0	0	7	**X**	0	0	**X**	0	1	**X**	5	2	4	7	1.8	18
31	**X**	**X**	0	0	2	3	5	0	0	0	**X**	0	7	**X**	0	4	**X**	0	2	0	0	1	9	10	10	2.3	19
HOURLY MAX	10	9	8	8	11	11	11	18	46	26	14	26	13	12	10	25	22	12	15	18	15	15	12	13			
HOURLY AVG	5.0	4.6	3.5	3.8	3.6	5.0	4.8	5.1	6.8	4.4	3.6	4.4	4.0	4.8	4.4	5.3	3.9	3.2	4.6	5.6	5.1	5.4	4.8	5.2			

STATUS FLAG CODES

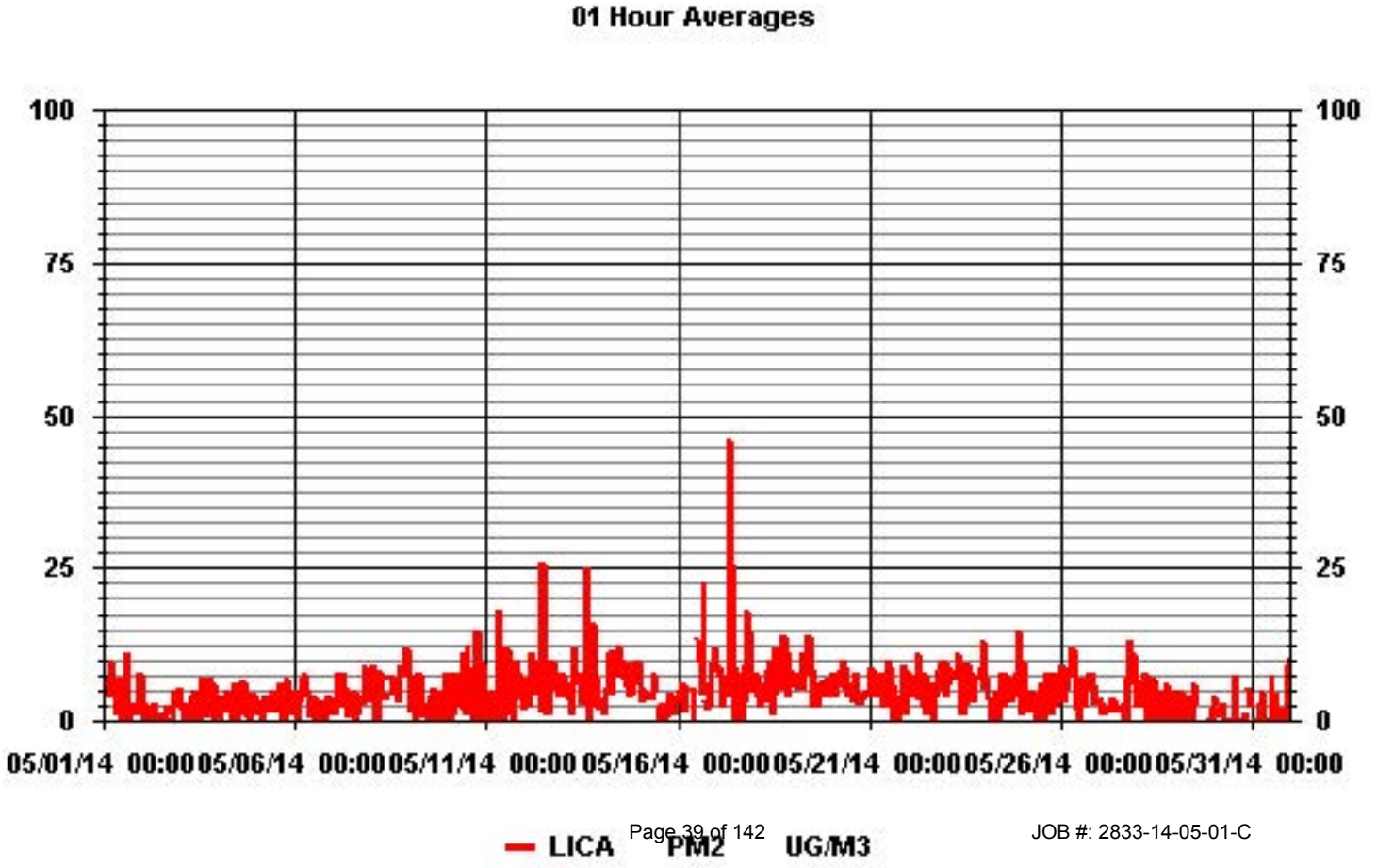
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	0						
NUMBER OF NON-ZERO READINGS:	608						
MAXIMUM 1-HR AVERAGE:	46	ug/m3	@ HOUR(S)	8	ON DAY(S)	17	
MAXIMUM 24-HR AVERAGE:	8.9	ug/m3			ON DAY(S) VAR-VARIOUS	17	
			OPERATIONAL TIME:			709	HRS
MONTHLY CALIBRATION TIME:	2	HRS	AMD OPERATION UPTIME:			95.3	%
STANDARD DEVIATION:	4.03		MONTHLY AVERAGE:			4.62	ug/m3



JOB #: 2833-14-05-01-C

LICA
PM2 / WD Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30	6.50	7.92	14.14	6.36	7.63	6.36	6.64	3.81	1.13	1.41	3.53	7.07	6.78	5.23	7.63	7.63	99.85
<	60	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.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	6.50	7.92	14.14	6.36	7.77	6.36	6.64	3.81	1.13	1.41	3.53	7.07	6.78	5.23	7.63	7.63	

Calm : .00 %

Total # Operational Hours : 707

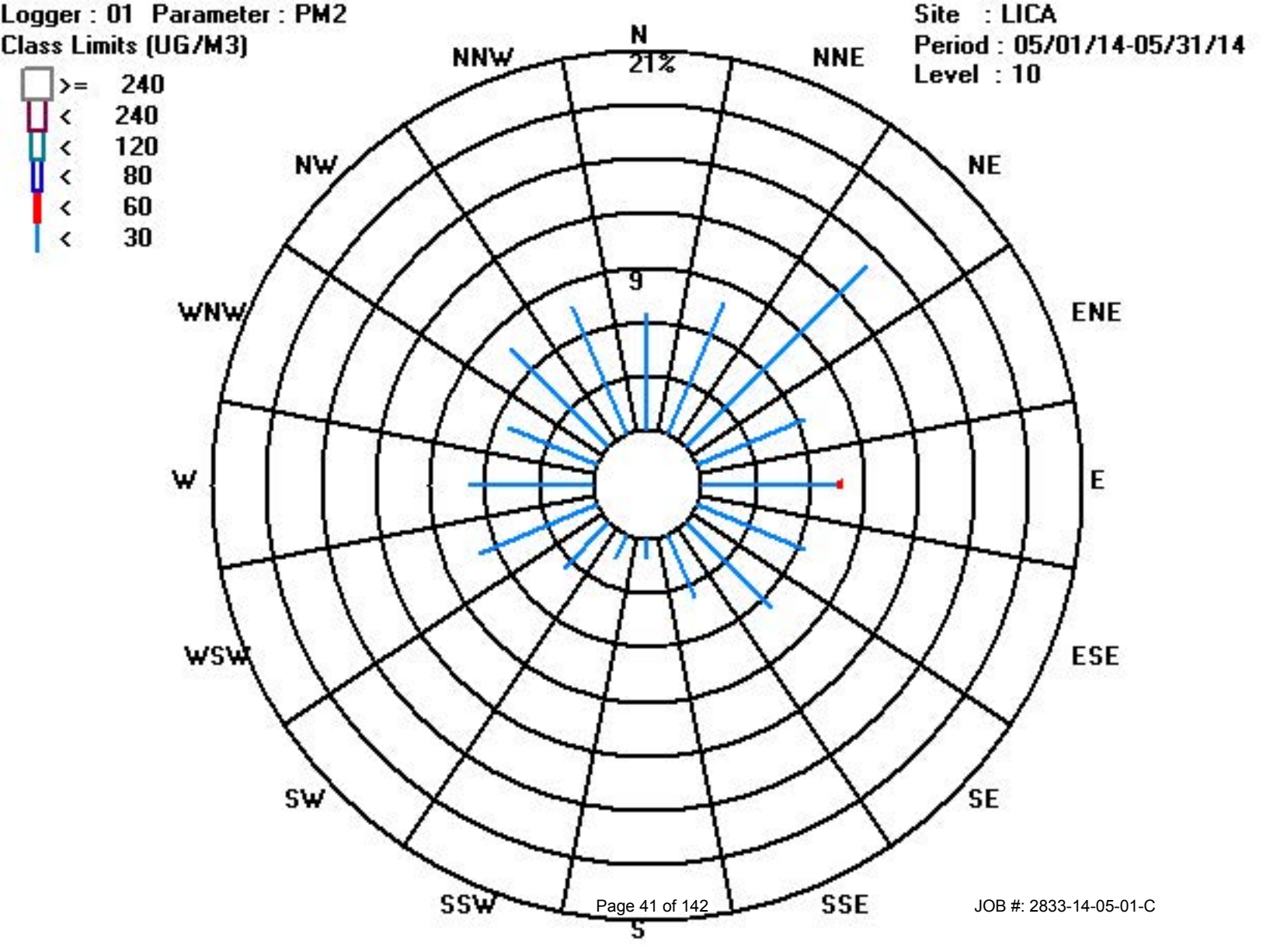
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30	46	56	100	45	54	45	47	27	8	10	25	50	48	37	54	54	706
<	60					1												1
<	80																	
<	120																	
<	240																	
>=	240																	
	Totals	46	56	100	45	55	45	47	27	8	10	25	50	48	37	54	54	

Calm : .00 %

Total # Operational Hours : 707



JOB #: 2833-14-05-01-C

Nitrogen Dioxide

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

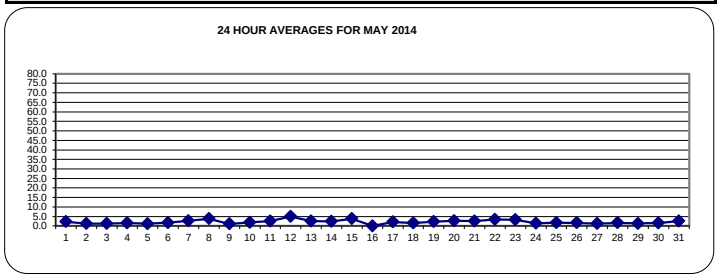
MST

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	2.4	2.7	2.9	3.1	3.1	3.8	5.1	1.8	1	1.2	1.4	1	1.1	0.9	0.6	0.9	1	1.3	0.8	0.4	**S**	4.4	5.6	4.5	5.6	2.2	24
2	4.4	0.9	1.4	3.7	2.4	2.4	1	1.1	1.1	1	1	0.8	0.9	0.9	0.8	0.8	0.8	0.6	0.7	**S**	0.7	0.6	0.7	1.1	4.4	1.3	24
3	0.9	0.4	0.4	0.4	0.6	0.6	0.8	1.1	1.1	1.7	1.3	1.3	1.2	1.1	1.2	0.9	1	1	**S**	1.2	1.8	2.3	3.7	3	3.7	1.3	24
4	4	3.9	0.4	1.1	4.1	3	2.1	1.2	1	1.4	1	0.8	0.6	0.8	0.8	0.9	1	**S**	1.1	1.6	2.1	1.4	1.1	1.3	4.1	1.6	24
5	1.2	0.8	0.7	1	1.1	0.6	0.4	0.4	0.5	0.5	0.7	0.7	0.8	0.7	0.9	0.9	**S**	1.2	2.7	4.1	3.2	1.1	1.1	1.5	4.1	1.2	24
6	1.5	1.3	0.7	0.9	2.6	3.4	4.5	3.8	2.4	0.7	0.6	0.4	0.5	0.6	0.5	**S**	0.3	0.1	0.3	0.6	2.3	4.5	1.9	3.7	4.5	1.7	24
7	2.7	1.5	1.9	6	5.8	5.8	4.8	3.5	2.3	1.2	0.8	1	0.7	0.7	**S**	0.9	0.8	0.7	1.5	1.6	6.1	3.6	3.7	4.9	6.1	2.7	24
8	10.1	6.7	3.8	3.4	5	8.3	4	2.1	2.1	1.9	1.4	1.2	1	**S**	1.4	1.5	1.4	1	1.1	2.2	6.1	6.6	10	5.6	10.1	3.8	24
9	0.7	0.6	0.7	0.9	1.5	1.5	0.6	0.7	0.8	0.9	0.4	0.3	**S**	1.1	1.3	1.4	1.2	1.3	1	0.9	0.9	0.9	2.1	4.2	4.2	1.1	24
10	4.6	5.9	4.6	3.7	3.2	0.9	0.9	1.3	1.6	1.1	0.8	**S**	0.7	0.6	0.6	0.8	0.6	0.6	0.6	0.9	1.1	0.8	2.9	4.4	5.9	1.9	24
11	3.6	2.5	5.5	3.9	5.6	3.7	3.6	**S**	1.1	0.5	**S**	0.8	0.9	0.7	0.9	0.7	0.7	0.9	1	1	4.2	5.3	4	4.3	5.6	2.5	24
12	3.8	4.6	5.4	9.3	11.1	***13.9***	7.9	5.1	1.9	**C**	**C**	**C**	**C**	**C**	**C**	1.4	1.4	1.5	1.5	2.1	1.9	6	6.1	5.1	***13.9***	***5.0***	24
13	3.7	4	3.5	2.5	3.5	4.5	**S**	3.9	**S**	1.9	2.2	1.3	1.2	2.4	1.7	1.7	1.6	1.9	1.4	1.4	4.9	5.3	0.7	0.4	5.3	2.5	24
14	0.4	0.7	1.4	3.5	6.5	8	3.7	**S**	3.2	3.2	2.7	1.8	1	1.4	1.5	2.7	2.2	1.2	2	2.2	1.6	2	1.8	1.9	8	2.5	24
15	2.7	3.9	4.5	2.5	3.2	6	**S**	4	**C**	**C**	**C**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	6	3.8	11
16	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**			0
17	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**C**	**C**	**C**	**C**	**C**	1.1	1.2	0.7	0.5	0.7	1.5	2.3	4.9	5.7	4.6	1	1.1	5.7	2.1	17
18	1.1	1.8	1.5	**S**	2.5	1.8	1.5	2.1	2.3	1.7	1.1	1	1	1.2	1.1	1	1.4	1.8	1.5	1.6	1.7	2.1	1.1	1.2	2.5	1.5	24
19	1.1	1.2	**S**	1.2	1.7	1.7	1.7	1.9	1.9	1.7	1.3	1.5	1.4	1.4	1.4	1.5	1.9	1.1	2.4	2.4	4.9	6.3	5	4.2	6.3	2.2	24
20	2.2	**S**	3.9	5.8	6.7	9.9	2.7	1.5	1	0.8	0.7	1.1	**S**	**S**	1.5	1.1	1	1	1.4	1.7	3.1	3.5	3.6	2.2	9.9	2.7	24
21	**S**	3	2.3	2.3	2.9	2.8	2.3	2.5	2.1	1.8	1.8	1.6	2	1.9	2.2	2.4	1.4	1.6	1.3	1.8	5.7	4.2	5	**S**	5.7	2.5	24
22	5.7	3.4	2.6	2	3	5.5	6.8	3.3	3.8	2.4	2.6	1.7	1.7	**S**	2.2	2.2	2.4	2.3	**Y**	**Y**	6.5	5.7	**S**	1.7	6.8	3.4	22
23	2	2.3	2.7	3.9	6.6	7.7	2.9	5.8	2.7	3.4	3.9	1.7	1.4	1.4	1.2	1.1	1.3	1.9	1.5	1.7	4.9	**S**	5.7	6.8	7.7	3.2	24
24	4.3	1.3	1	1.1	2.1	1.5	1.8	1.2	0.9	0.9	0.8	0.8	0.8	0.5	0.4	0.2	0.5	0.8	0.8	0.9	**S**	4.1	2.3	2.7	4.3	1.4	24
25	4.4	2.6	2.4	3.2	3.3	1.9	1.6	1.7	1	1	0.5	0.4	0.5	0.2	0.7	1	1.1	1.2	1.6	**S**	2.6	2.7	2.4	1.7	4.4	1.7	24
26	1.2	1.1	1.9	2.2	2.5	1.6	1.8	1.7	1.6	1.3	1.3	1.1	1.4	2.3	3.2	2.2	1.5	1.6	**S**	1.5	1.3	1.1	1.2	1	3.2	1.6	24
27	0.7	0.6	0.7	0.6	1.4	2.5	2	1.9	1.3	0.9	1.1	0.8	0.6	0.6	0.7	0.8	1.1	**S**	1	0.9	1.5	1.4	2.1	2.7	2.7	1.2	24
28	3.3	3.9	3.7	3.3	3.9	4	1.1	0.9	0.5	0.5	0.4	0.4	0.6	0.6	1.2	1.4	**S**	2.2	1.8	1.5	1	0.4	0.5	0.4	4	1.6	24
29	0.2	0.4	0.3	0.4	1.4	2.1	2.3	2.9	1.3	1.2	1.4	1	1.1	0.7	1.4	**S**	1.5	0.9	1.4	0.9	1.1	1.4	2.4	2.9	2.9	1.3	24
30	2.9	1.3	1.3	1.3	1.1	2.1	2.5	2.3	1.5	1.3	1.1	1	0.9	1.5	**S**	1	0.6	1	1.3	1.7	1.3	3.4	2.5	2	3.4	1.6	24
31	2	3.8	3.1	2.5	2.8	2.5	2.7	2.9	2.4	1.7	1.3	1	1.1	**S**	1.5	1.8	1.3	1.6	2.1	2.1	3.2	2.9	5.2	6.1	6.1	2.5	24
HOURLY MAX	10	7	6	9	11	14	8	6	4	3	4	2	2	2	3	3	2	2	3	5	7	7	10	7			
HOURLY AVG	2.8	2.4	2.3	2.7	3.5	3.9	2.7	2.3	1.6	1.4	1.3	1.0	1.0	1.1	1.2	1.2	1.2	1.3	1.4	1.7	3.0	3.2	3.1	3.0			

STATUS FLAG CODES

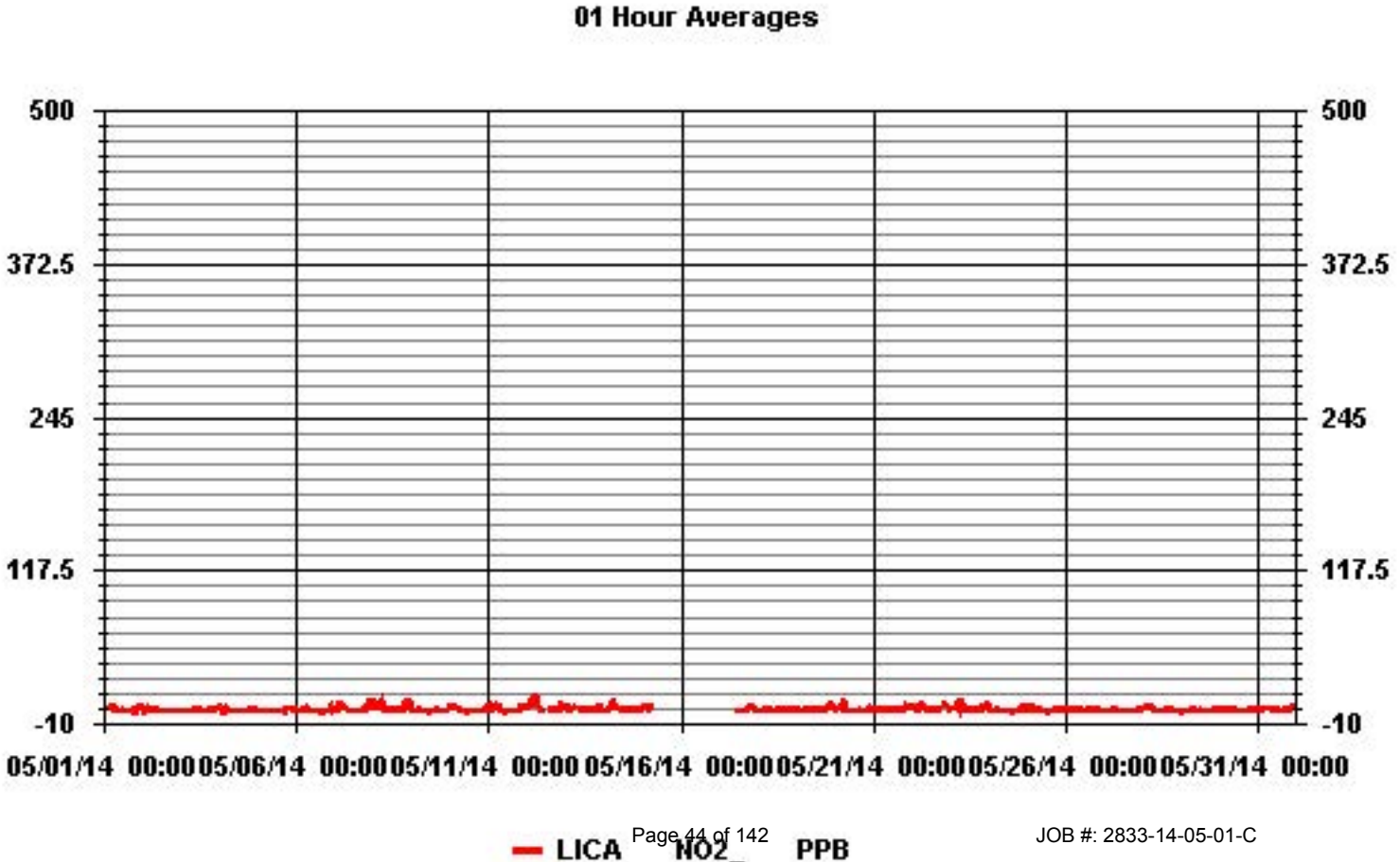
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 159 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	650					
MAXIMUM 1-HR AVERAGE:	13.9	PPB	@ HOUR(S)	5	ON DAY(S)	12
MAXIMUM 24-HR AVERAGE:	5.0	PPB			ON DAY(S) VAR-VARIOUS	12
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:		698	HRS
MONTHLY CALIBRATION TIME:	14	HRS	AMD OPERATION UPTIME:		93.8	%
STANDARD DEVIATION:	1.74		MONTHLY AVERAGE:		2.12	PPB



JOB #: 2833-14-05-01-C

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	3.2	3.2	3.7	3.7	4.7	6.2	6.7	3.7	1.2	1.7	1.7	1.7	2.7	1.7	1.2	1.2	2.2	9.2	1.2	0.7	**S**	8.7	9.2	5.2	9.2	3.7	24
2	6.7	1.2	2.7	4.7	4.2	3.2	1.7	1.2	1.2	1.7	1.2	0.7	1.7	1.2	0.7	1.2	1.2	1.2	2.2	**S**	1.2	0.7	0.7	1.7	6.7	1.9	24
3	1.2	0.7	0.7	0.7	1.2	0.7	1.2	2.2	1.7	2.2	1.7	1.7	2.7	1.7	4.7	1.2	3.2	3.2	**S**	2.7	3.2	3.2	6.7	4.2	6.7	2.3	24
4	5.7	5.7	1.2	2.7	7.7	7.2	4.2	2.2	2.7	2.7	2.7	2.1	1.7	2.7	3.7	4.7	6.7	**S**	1.5	3.5	3.5	2.5	3	2.5	7.7	3.6	24
5	1.5	1.5	2	2	1.5	1.5	1.5	2	1	0.5	1.5	1.5	1.5	1	6.5	1.5	**S**	1.6	6.6	7.1	6.1	3.1	2.1	3.1	7.1	2.5	24
6	2.1	2.1	1.1	1.1	4.1	6.5	7	4.1	3.1	1.6	1.6	0.6	1.6	3.6	1.6	**S**	1.2	0.7	1.7	4.2	7.2	8.2	3.7	8.7	8.7	3.4	24
7	6.2	2.7	3.7	8.7	7.7	7.1	6.2	5.2	3.2	4.2	2.2	1.2	1.2	1.2	**S**	1.1	1.1	0.6	1.6	2.1	17.6	6.1	8.1	14	17.6	4.9	24
8	13.6	10.1	6.1	5.1	18.1	11.6	5.1	3.1	2.1	2.1	2.1	1.1	1.1	**S**	2	3	2.5	1	1	5	***29.5***	9.5	14.5	10.5	***29.5***	6.9	24
9	1.5	1	1	2	4.5	4	1	2.5	2	4.5	1	0.5	**S**	2.7	3.2	1.7	2.2	4.2	1.7	1.2	1.2	1.2	3.7	5.2	5.2	2.3	24
10	6.2	7.1	7.1	4.7	5.7	1.2	1.1	1.7	2.2	1.2	1.2	**S**	0.6	0.6	0.6	1.1	0.6	0.6	1.1	1.1	2.1	2.1	4.1	6.1	7.1	2.6	24
11	4.1	3.6	8.1	5.6	9.1	6.1	3.6	**S**	2.3	1.3	**S**	1	1.5	1	1	2.5	1.5	1	2	4.5	9	7.5	6.9	10.5	10.5	4.3	24
12	6	7	7	12.9	15.5	19.4	12.9	13.5	**C**	**C**	**C**	**C**	**C**	**C**	**C**	5.2	4.7	2.7	6.2	15.7	3.7	14.7	8.2	14.2	19.4	***10.0***	24
13	5.2	5.7	5.2	5.2	17.7	11.7	**S**	**S**	**S**	6.2	6.7	4.7	3.7	6.2	5.2	3.2	5.7	5.7	7.7	3.7	10.2	10.2	0.7	0.7	17.7	6.2	24
14	0.7	1.2	7.7	8.2	13.7	10.7	5.7	**S**	4.7	6.7	5.2	4.2	1.2	12.2	3.7	4.2	3.2	1.7	4.7	3.2	2.7	9.2	2.7	3.2	13.7	5.2	24
15	3.2	5.2	5.2	3.2	5.7	10.2	**S**	5.7	**C**	**C**	**C**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	10.2	5.5	11
16	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**			0
17	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**C**	**C**	**C**	**C**	**C**	**C**	6.6	1.6	1.6	2.6	2.6	7.1	13	8.1	13.1	1.6	1.6	13.1	5.4	17
18	1.6	2.6	3.1	**S**	3.5	3.5	2	3.5	5.5	2.5	1.5	1.5	2	3.5	2	1.5	1.5	9	2.5	2	2.5	4.5	2.5	2	9	2.9	24
19	2	1.5	**S**	2	3	2	4	3.5	2	2.5	1.5	2.5	1.5	2	2	3	3	2	6.5	4	6.5	8.5	9.5	8	9.5	3.6	24
20	4	**S**	5.5	7.5	9	14.5	6	2	1.5	1.5	1	**S**	**S**	**S**	2	2.5	2.5	1.5	2	2.5	6	6.5	6	6	14.5	4.5	24
21	**S**	8	2.5	3	3.5	3	2.5	4	3	2.5	2.5	2	2.5	3.5	3	3.5	2	3	2.5	3.5	10	14	8.5	**S**	14	4.2	24
22	8.2	4.2	4.2	3.7	7.7	10.7	12.6	4.2	5.2	4.2	10.6	4.7	**S**	**S**	3.7	4.7	4.2	4.2	**Y**	**Y**	14.2	10.2	**S**	2.7	14.2	6.5	22
23	4.2	7.2	7.7	6.2	14.2	12.2	5.7	9.2	4.1	7.6	6.6	2.7	2.2	2.7	2.7	1.7	2.2	3.2	2.2	3.2	10.7	**S**	7.5	7.5	14.2	5.8	24
24	6	2	1.5	2	3	3	3	1.5	1	2.5	1	1	1	0.5	0.5	0.5	0.5	1	1	1.5	**S**	6.5	3.5	6	6.5	2.2	24
25	7	5	4	5	6	3.5	2.5	3	2.5	3	1.5	0.5	0.5	0.5	1	1	4.5	4.5	4	**S**	4	3.5	4	2	7	3.2	24
26	2	1.5	3	3	5	2.5	3.5	4	2.5	2	2	3	2.9	3	5.5	5	3	3	**S**	2	2.5	1.5	1.5	1.5	5.5	2.8	24
27	1	1	1	1.5	2.5	3	2.5	2.5	2	1	1.5	1	1.5	1.5	1.5	2	1.5	**S**	1.5	1.5	2.5	2	2.5	3.5	3.5	1.8	24
28	7	5.5	6	4.5	5.5	5.5	3	3.4	2.4	1.5	1	1	1	1	2.5	3.5	**S**	3.5	4.5	2	1.5	1	1	1	7	3.0	24
29	0.5	0.5	0.5	1.5	2.5	3.5	4	4.5	3	2	4	1.5	2.5	2.5	4.5	**S**	2.1	1.1	2.1	2.6	2.1	2.1	3.1	7.6	7.6	2.6	24
30	8.1	2.6	2.1	2.1	1.6	3.1	7.6	3.1	2.6	3.1	3.6	1.6	2.1	8.6	**S**	3	1	1.5	3.5	4	2.5	13	3	2.5	13	3.7	24
31	2.5	7	4	3	4	3	3.5	4	4	3	2	1.4	2.4	**S**	3.1	4.6	3.1	4.1	3.1	3.1	5.1	19.6	13	9.1	19.6	4.9	24
HOURLY MAX	14	10	8	13	18	19	13	14	6	8	11	5	4	12	7	5	7	9	8	16	30	20	15	14			
HOURLY AVG	4.3	3.8	3.8	4.1	6.6	6.2	4.5	3.8	2.6	2.8	2.7	1.8	1.8	3.0	2.7	2.6	2.6	2.9	3.1	3.8	6.5	6.9	5.1	5.4			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 645

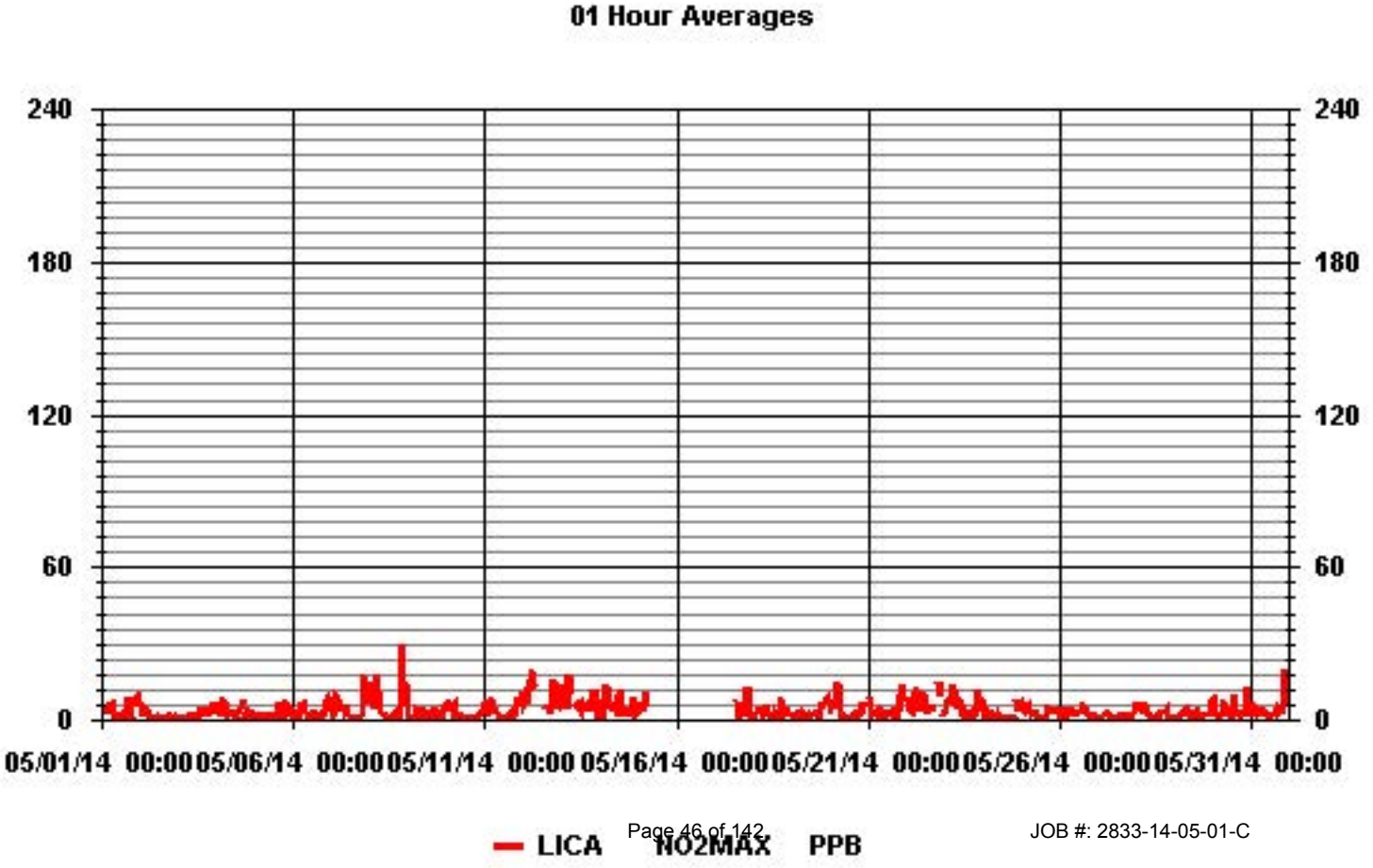
MAXIMUM INSTANTANEOUS VALUE: 29.5 PPB @ HOUR(S) 20 ON DAY(S) 8

VAR-VARIOUS

IZS CALIBRATION TIME: 37 HRS OPERATIONAL TIME: 698 HRS

MONTHLY CALIBRATION TIME: 16 HRS

STANDARD DEVIATION: 3.41



JOB #: 2833-14-05-01-C

LICA
NO2_ / WD Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	6.76	6.30	12.15	6.92	8.15	6.46	6.61	4.00	1.07	1.53	3.69	8.00	8.15	5.23	7.23	7.69	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	6.76	6.30	12.15	6.92	8.15	6.46	6.61	4.00	1.07	1.53	3.69	8.00	8.15	5.23	7.23	7.69	

Calm : .00 %

Total # Operational Hours : 650

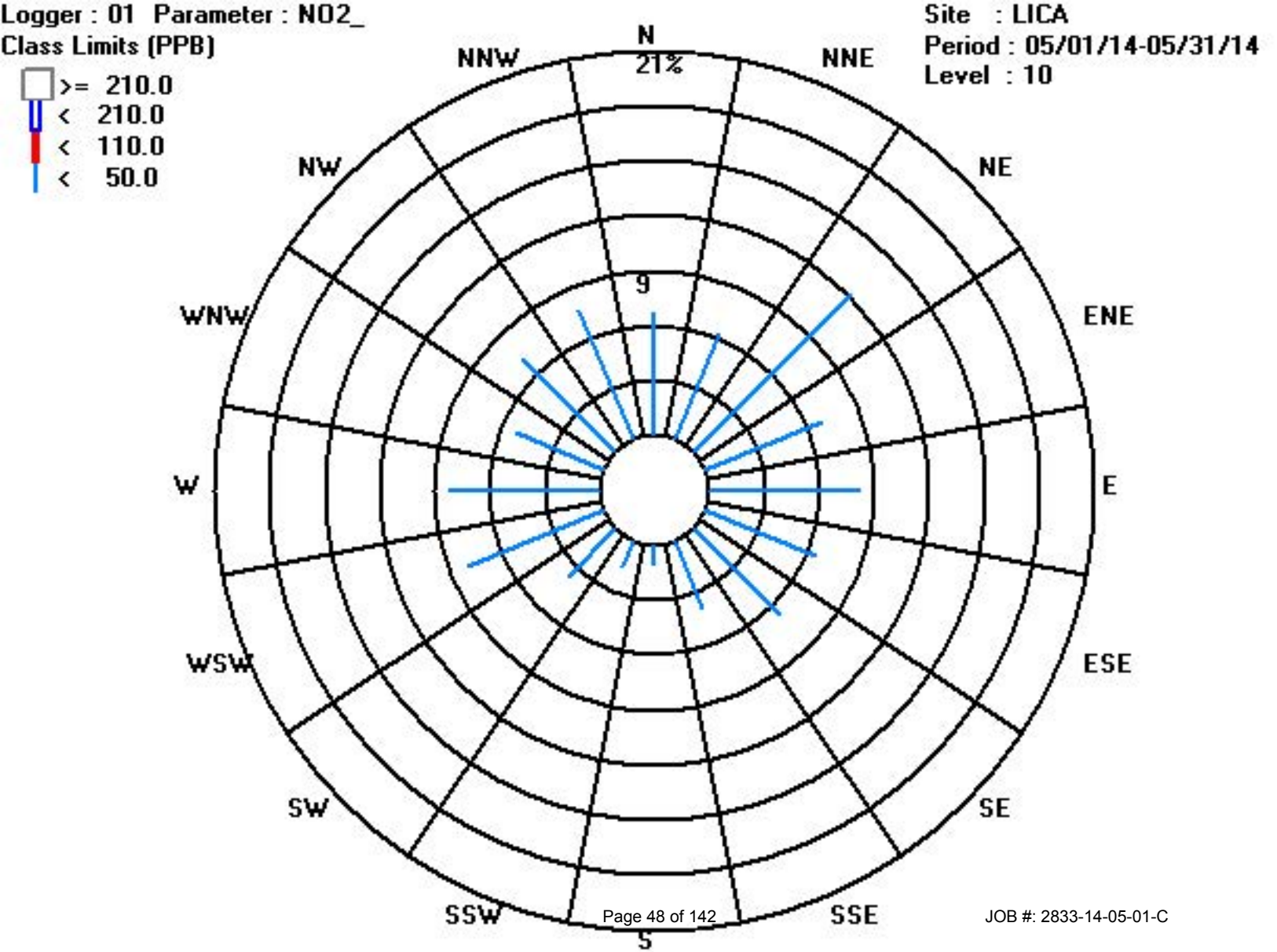
Distribution By Samples

Direction

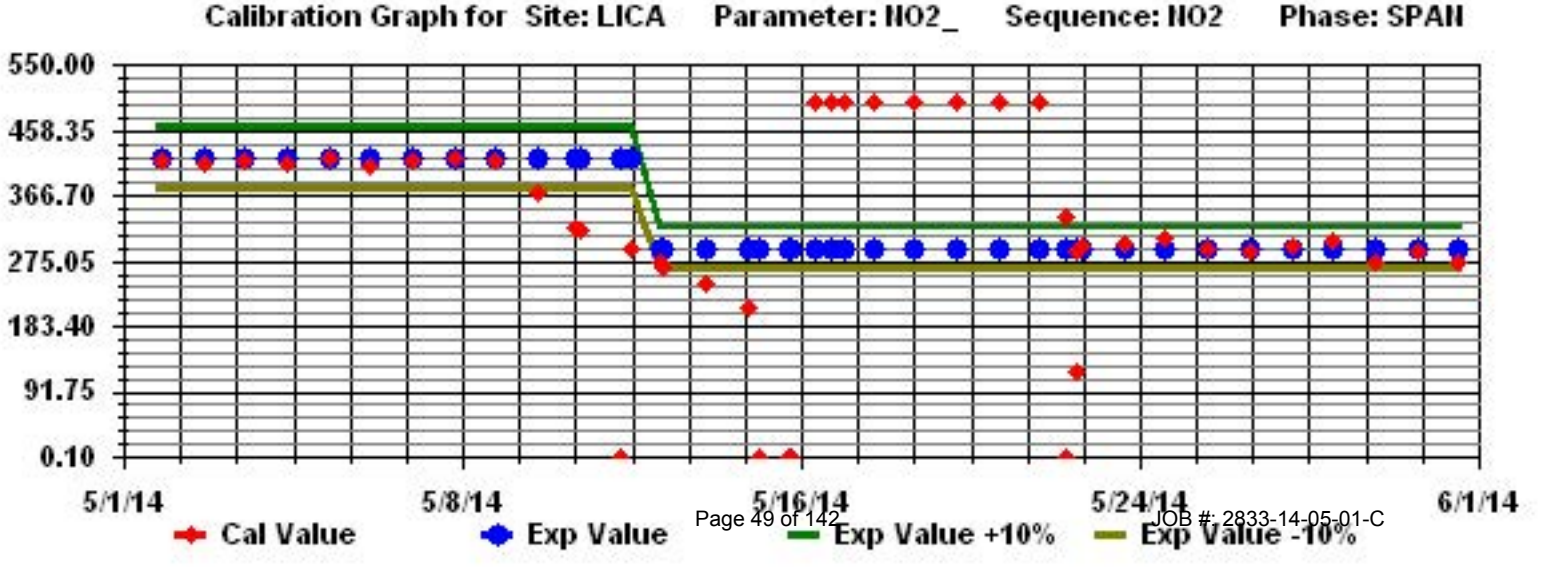
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	44	41	79	45	53	42	43	26	7	10	24	52	53	34	47	50	650
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	44	41	79	45	53	42	43	26	7	10	24	52	53	34	47	50	

Calm : .00 %

Total # Operational Hours : 650



JOB #: 2833-14-05-01-C


Calibration Graph for Site: LICA Parameter: NO2_ Sequence: NO2 Phase: SPAN
550.00
458.35
366.70
275.05
183.40
91.75
0.10
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

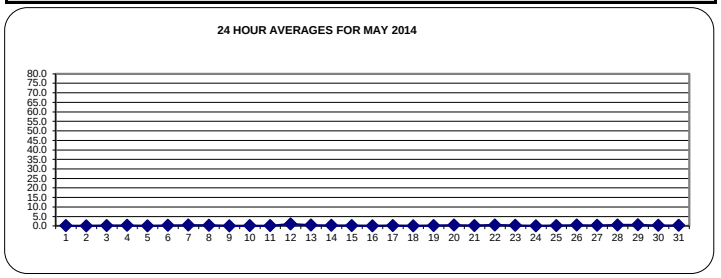
NITRIC OXIDE (NO) hourly averages in ppb

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	0.1	0.1	0.6	0.3	0	0	0.2	0	0	0	0	0	0.1	0.3	0	0	**S**	0	0	0	0.6	0.1	24
2	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0.1	0.0	24
3	0	0	0	0	0	0	0	0	0	0.2	0.3	0.2	0.3	0.5	0.5	0.2	0.3	0.3	**S**	0.2	0.3	0.1	0.2	0	0.5	0.2	24
4	0	0	0	0	0.5	0.3	0.7	0.3	0.4	0.5	0.4	0.2	0.2	0.1	0.2	0.2	0.4	**S**	0	0.3	0.2	0.1	0.1	0	0.7	0.2	24
5	0	0	0	0	0	0	0	0	0	0	0.2	0	0.1	0	0.1	0.1	**S**	0	0.3	0	0	0	0	0	0.3	0.0	24
6	0	0	0	0	0	0.3	0.8	1.5	0.9	0.1	0.1	0	0	0	0	**S**	0	0	0	0	0.3	0.4	0	0.1	1.5	0.2	24
7	0.2	0	0	0.4	0.5	1.3	2.4	2.1	1.2	0.4	0.1	0	0	0	**S**	0	0	0	0	0	0.5	0	0.1	0.1	2.4	0.4	24
8	0.5	0	0.2	0.3	1.3	1.7	0.9	0.5	0.5	0.4	0.1	0	0	**S**	0	0	0	0	0	0	1.1	0	0	0	1.7	0.3	24
9	0	0	0	0.1	0.1	0.1	0	0.1	0.2	0.2	0	0	**S**	0.1	0.2	0	0	0	0.1	0	0	0	0	0	0.2	0.1	24
10	0	0	0.2	0	0	0	0	0.3	0.5	0.4	0.2	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.1	24
11	0.2	0.1	0.2	0.3	0.3	0.3	0.6	**S**	0.4	0.1	**S**	0	0.1	0	0	0.1	0	0	0	0	0.1	0	0	0	0.6	0.1	24
12	0	0	0.1	1.2	2.3	***6.6***	3.4	2.4	0.8	**C**	**C**	**C**	**C**	**C**	**C**	0	0.1	0.2	0.1	0.2	0	0.3	0	0.2	***6.6***	***1.0***	24
13	0	0	0	0	1.3	0.9	**S**	1.4	**S**	0.6	1.1	0.3	0.1	0.7	0.3	0.2	0.3	0.5	1.3	0.1	0.1	0	0	0	1.4	0.4	24
14	0	0	0	0.1	0.6	0.9	0.5	**S**	0.7	1.8	0.4	0	0	0.1	0	0.1	0	0	0	0	0	0.1	0	0	1.8	0.2	24
15	0	0	0	0	0.1	0.3	**S**	0.8	**C**	**C**	**C**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	0.8	0.2	11
16	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**			0
17	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**C**	**C**	**C**	**C**	**C**	0	0.2	0	0	0.1	0	0.3	0.4	0.1	0.5	0	0	0.5	0.1	17
18	0	0	0	**S**	0	0	0	0.1	0.4	0.1	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0.4	0.0	24
19	0	0	**S**	0	0.1	0	0	0.2	0.1	0.1	0.2	0.3	0	0.1	0	0	0.1	0	0.2	0	0.2	0.7	0.7	0.2	0.7	0.1	24
20	0.1	**S**	1	1.1	1	4	0.4	0.1	0.1	0	0	0.2	**S**	**S**	0	0	0.2	0	0	0	0	0	0	0.2	4	0.4	24
21	**S**	0.1	0	0	0	0.2	0.5	0.5	0.5	0.4	0.1	0	0	0	0.1	0.3	0	0	0	0	0	0.2	0	**S**	0.5	0.1	24
22	0.1	0	0	0	0.5	2	2.3	0.7	1	0.6	0.6	0.2	0.1	**S**	0.2	0.1	0.1	0.1	**Y**	**Y**	0.6	0.1	**S**	0	2.3	0.5	22
23	0	0	0	0	1	1.1	0.5	1.6	0.5	0.6	0.6	0.1	0	0	0	0	0	0.1	0	0	0.1	**S**	0.1	0.1	1.6	0.3	24
24	0.1	0	0	0	0	0	0.3	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	**S**	0.1	0	0	0.3	0.0	24
25	0.1	0.1	0	0.1	0.3	0.3	0.5	0.7	0.6	0.4	0.1	0	0	0.3	0.1	0	0.1	0.2	0.2	**S**	0.1	0.1	0.1	0	0.7	0.2	24
26	0	0	0	0	0.2	0.1	0.3	0.6	0.5	0.4	0.5	0.8	0.5	0.6	1.4	0.8	0.3	0.4	**S**	0.3	0.2	0.1	0.1	0.2	1.4	0.4	24
27	0	0	0	0	0	0.4	0.8	1.1	0.4	0.4	0.4	0.1	0.3	0.2	0.1	0.1	0	**S**	0	0	0.1	0	0	0.1	1.1	0.2	24
28	0.4	0.3	0.3	0.1	0.8	1.5	0.8	0.9	0.2	0.5	0.4	0.4	0.4	0.4	0.8	0.8	**S**	0.6	0.5	0.3	0.2	0	0	0.1	1.5	0.5	24
29	0	0	0	0.2	0.5	0.7	0.8	1	0.9	0.7	1.4	0.7	1.1	1.3	1.6	**S**	0.6	0.4	0	0.3	0	0	0.1	0.2	1.6	0.5	24
30	0.2	0.1	0.1	0	0	0.5	0.9	0.9	0.6	0.5	0.4	0.1	0.1	0.3	**S**	0.1	0	0	0.1	0	0	0.7	0	0	0.9	0.2	24
31	0	0	0.1	0	0.3	0.5	0.8	1	0.6	0.5	0	0	0	**S**	0.1	0.3	0.1	0.3	0.2	0	0	0.3	0.4	0.1	1	0.2	24
HOURLY MAX	1	0	1	1	2	7	3	2	1	2	1	1	1	1	2	1	1	1	1	0	1	1	1	0			
HOURLY AVG	0.1	0.0	0.1	0.1	0.4	0.8	0.7	0.7	0.4	0.4	0.3	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1			

STATUS FLAG CODES

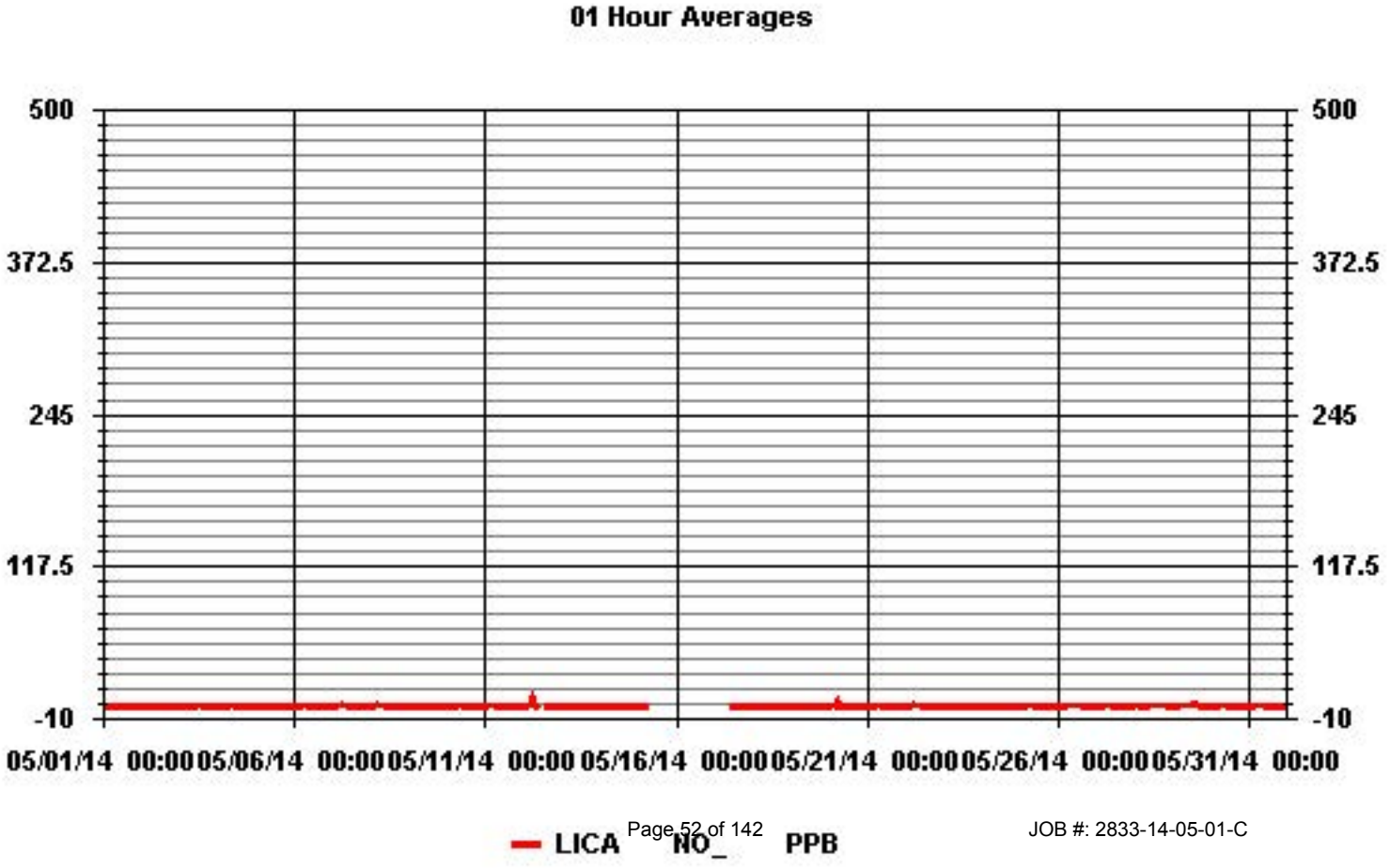
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	337					
MAXIMUM 1-HR AVERAGE:	6.6	PPB	@ HOUR(S)	5	ON DAY(S)	12
MAXIMUM 24-HR AVERAGE:	1.0	PPB			ON DAY(S)	12
					VAR-VARIOUS	
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:		698	HRS
MONTHLY CALIBRATION TIME:	14	HRS	AMD OPERATION UPTIME:		93.8	%
STANDARD DEVIATION:	0.49		MONTHLY AVERAGE:		0.24	PPB



JOB #: 2833-14-05-01-C

Lakeland Industry & Community Association - Cold Lake South Site

MAY 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	0.5	0.5	1.5	1	2	1.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	9	0.5	0	**S**	0.5	0.5	0	9	1.0	24
2	0	0	0	0	0	0.5	0.5	0.5	0.5	1	0.5	0	0.5	0	0.5	0	0	0.5	0.5	**S**	0	0	0.5	0.5	1	0.3	24
3	0	0	0	0	0.5	0.5	0	0.5	0.5	0.5	4	0.5	2.5	3	3	1	2	4	**S**	2	2	0.5	5	0	5	1.4	24
4	0	0	0.5	0.5	2.5	2.5	4	1.5	1.5	2	2	1	1	1	1	2	4	**S**	1	2.5	2	1	2.5	0.5	4	1.6	24
5	0.5	0.5	0.5	1	0.5	0.5	0.5	1	0.5	0.5	1.5	1	0.5	1	2.5	0.5	**S**	0.5	4.5	1	0.5	0	0	0.5	4.5	0.9	24
6	0	0	0.5	0.5	1	2.5	1	2	1.5	0.5	1.5	0	0.5	0.5	0.5	**S**	0	0.5	0.5	1.5	2.5	3	0	1.5	3	1.0	24
7	1.5	1	0.5	4	3	3.5	3.5	3.5	2	1.5	0.5	0.5	0.5	0.5	**S**	0.5	0.5	0	0.5	0	13.5	0.5	1	2	13.5	1.9	24
8	9	0.5	2.5	3	23.5	6	1.5	2	2	1	2	0.5	0	**S**	0.5	1	0.5	0	0	0.5	21.5	0	1	1	23.5	3.5	24
9	0.5	0.5	0	1.5	2	1.5	0	1.5	3.5	2	1	0	**S**	1	1.5	0.5	0.5	0	2	0	0	0	0.5	0.5	3.5	0.9	24
10	0	1	2.5	0.5	0	0	0.5	0.5	2	0.5	0.5	**S**	3	0.5	0.5	0.5	0.5	0.5	0	0	0	0	0	0.5	3	0.6	24
11	2	1.5	1	1.5	2	1.5	1.5	**S**	1.1	0.6	**S**	0.5	0.5	0.5	0.5	1.5	0.5	0	0	2	2	0.5	0	0.5	2	1.0	24
12	0.5	0.5	1	8	6	17	7.5	8	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	2.5	1	2.5	7.5	0	6.5	1	3.5	17	4.4	24
13	0.5	0.5	0.5	1.5	22.5	12	**S**	**S**	**S**	3	8.5	2	3	3.5	2	1	2	7.5	29	2	3.5	0.5	0	0	29	5.0	24
14	0	0	1.5	1.5	6	1.5	1	**S**	1.5	26	1.5	0.5	***116***	5.5	0.5	0.5	0.5	0	0.5	1	0.5	3.5	0	0	***116***	***7.4***	24
15	0	0	0	0.5	1	1	**S**	2	**C**	**C**	**C**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	2	0.6	11
16	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**			0
17	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**C**	**C**	**C**	**C**	**C**	**C**	4.5	0.5	0	2	0.5	2	4	1	10.5	0	0	10.5	2.3	17
18	0	1	0.5	**S**	1	0.5	0.5	0.5	1	1	0.5	0.5	0.5	1	1.5	1.5	0.5	1.5	1	1	0.5	1	0	0	1.5	0.7	24
19	0.5	0.5	**S**	0.5	1	0.5	1.5	1.5	0.5	0.5	0.5	2	0.5	1	0.5	1	0.5	0.5	2	0	0.5	6.5	3.5	1	6.5	1.2	24
20	1	**S**	2.5	7	2	10	1	0.5	1	1	0.4	**S**	**S**	**S**	0.5	0.5	6	0	0.5	0	1.5	0.5	1	5	10	2.1	24
21	**S**	2	0	0.5	0.5	0.5	0.5	1.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0	0.5	0.5	8.5	1	**S**	8.5	1.0	24
22	0.5	0	0.5	0.5	4	5.5	5.5	2.5	1.5	1.5	2.4	2	**S**	**S**	0.9	0.5	0.5	1	**Y**	**Y**	9	1.5	**S**	0	9	2.1	22
23	0.5	1	0.5	1	9.5	2.5	1	3.5	0.9	2	1.5	0.5	0.5	0.5	0.5	0	1	0.5	0	0	1	**S**	0.5	0.5	9.5	1.3	24
24	0.5	0	0	0	0	0.5	0.5	0.5	0.5	1	0.5	0	0	0	0	0	0	0.5	0	0	**S**	1	0	0.5	1	0.3	24
25	1	1	0.5	0.5	3	2.5	3	1.5	2	1	1	0.5	0.5	7.5	2	0.5	1	4	2	**S**	1	1.5	1.5	0	7.5	1.7	24
26	0.5	0	0.5	0.5	1	2	2	5	1	1.5	1	6	1.4	1	5	6.5	1.5	1.5	**S**	1	0.5	0.5	2.5	3	6.5	2.0	24
27	0	0.5	0	0	0.5	1.5	1	1.5	1	1	1	0.5	1	2	1	2	0.5	**S**	0	0	1	1	0.5	1	2	0.8	24
28	3.5	1	2	1	3	2	2.5	7.4	5	1.5	1	5	1	1	2	3	**S**	2.5	1.5	2	1.5	1	1	0.5	7.4	2.3	24
29	0	1	0.5	3.5	2.5	2.5	2	2	4.5	1.5	9.5	1.5	4	10.5	11.5	**S**	0.9	0.9	0.5	5.5	0.5	0.5	0.5	1.5	11.5	2.9	24
30	1.5	0.5	1	1	0.5	1	4	2	1.4	1.9	3	1.5	0.5	4.5	**S**	1	0	0	1	0	0	11.5	0	0	11.5	1.6	24
31	0	1	1	1	1	0.5	1	1.5	1	1	0.5	0.4	0.9	**S**	0.5	1.5	0.5	6	0.5	0.5	1	10.5	9	1.5	10.5	1.8	24
HOURLY MAX	9	2	3	8	24	17	8	8	5	26	10	6	116	11	12	7	6	9	29	8	22	12	9	5			
HOURLY AVG	0.9	0.6	0.8	1.5	3.5	2.9	1.8	2.2	1.5	2.1	1.8	1.1	5.8	2.1	1.6	1.1	1.1	1.6	2.0	1.3	2.5	2.6	1.2	0.9			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 536

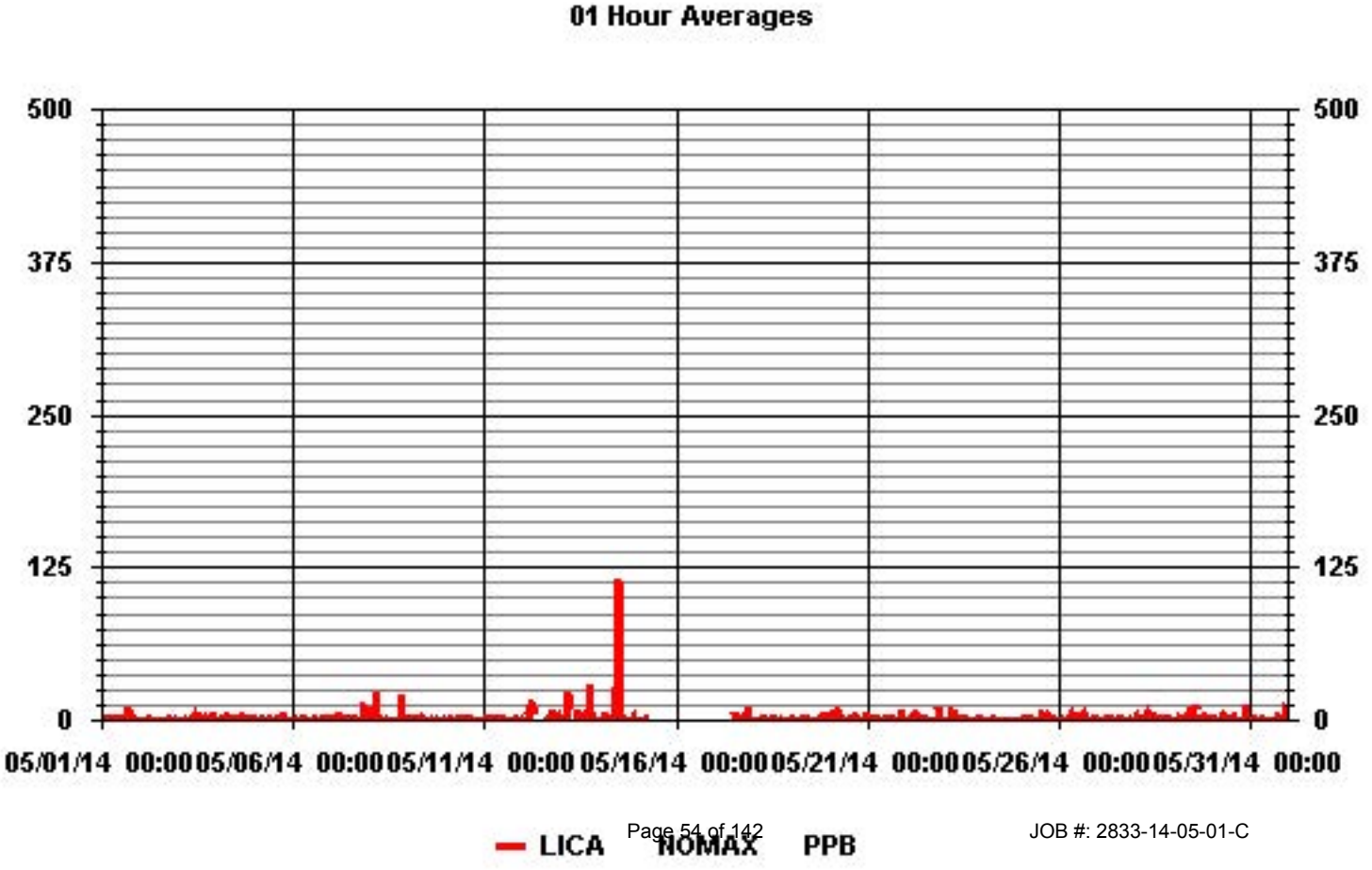
MAXIMUM INSTANTANEOUS VALUE: 116 PPB @ HOUR(S) 12 ON DAY(S) 14

VAR-VARIOUS

IZS CALIBRATION TIME: 37 HRS OPERATIONAL TIME: 698 HRS

MONTHLY CALIBRATION TIME: 16 HRS

STANDARD DEVIATION: 5.36



JOB #: 2833-14-05-01-C

LICA
NO_ / WD Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	6.76	6.30	12.15	6.92	8.15	6.46	6.61	4.00	1.07	1.53	3.69	8.00	8.15	5.23	7.23	7.69	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	6.76	6.30	12.15	6.92	8.15	6.46	6.61	4.00	1.07	1.53	3.69	8.00	8.15	5.23	7.23	7.69	

Calm : .00 %

Total # Operational Hours : 650

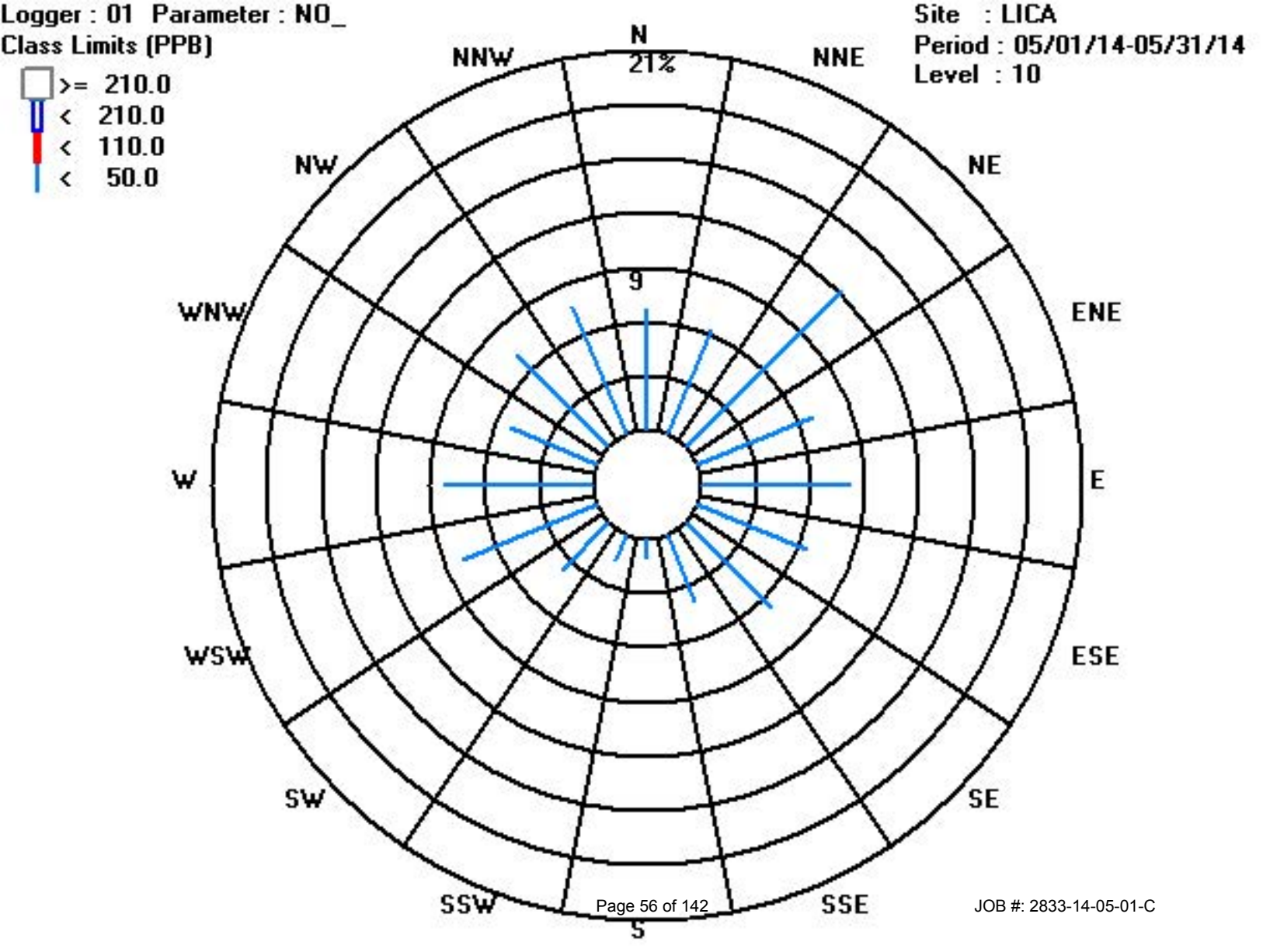
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	44	41	79	45	53	42	43	26	7	10	24	52	53	34	47	50	650
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	44	41	79	45	53	42	43	26	7	10	24	52	53	34	47	50	

Calm : .00 %

Total # Operational Hours : 650



JOB #: 2833-14-05-01-C

Oxides of Nitrogen

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

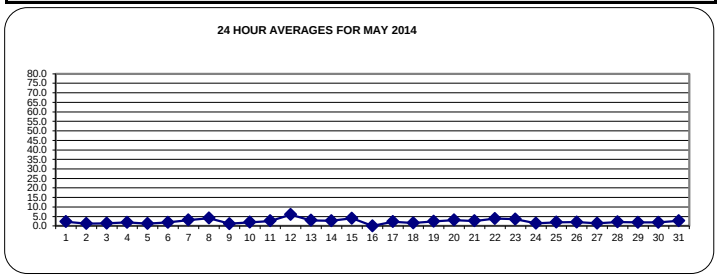
OXIDES OF NITROGEN (NOx) hourly averages in ppb

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	2.4	2.7	2.9	3.1	3.2	3.9	5.7	2.1	1	1.2	1.6	1	1.1	0.9	0.6	0.9	1.1	1.6	0.8	0.4	**S**	4.4	5.6	4.5	5.7	2.3	24
2	4.4	0.9	1.4	3.7	2.4	2.4	1	1.1	1.1	1.1	1	0.8	0.9	0.9	0.8	0.8	0.8	0.6	0.7	**S**	0.7	0.6	0.7	1.1	4.4	1.3	24
3	0.9	0.4	0.4	0.4	0.6	0.6	0.8	1.1	1.1	1.9	1.6	1.5	1.5	1.6	1.7	1.1	1.3	1.3	**S**	1.4	2.1	2.4	3.9	3	3.9	1.4	24
4	4	3.9	0.4	1.1	4.6	3.3	2.8	1.5	1.4	1.9	1.4	1	0.8	0.9	1	1.1	1.4	**S**	1.1	1.9	2.3	1.5	1.2	1.3	4.6	1.8	24
5	1.2	0.8	0.7	1	1.1	0.6	0.4	0.4	0.5	0.5	0.9	0.7	0.9	0.7	1	1	**S**	1.2	3	4.1	3.2	1.1	1.1	1.5	4.1	1.2	24
6	1.5	1.3	0.7	0.9	2.6	3.7	5.3	5.3	3.3	0.8	0.7	0.4	0.5	0.6	0.5	**S**	0.3	0.1	0.3	0.6	2.6	4.9	1.9	3.8	5.3	1.9	24
7	2.9	1.5	1.9	6.4	6.3	7.1	7.2	5.6	3.5	1.6	0.9	1	0.7	0.7	**S**	0.9	0.8	0.7	1.5	1.6	6.6	3.6	3.8	5	7.2	3.1	24
8	10.6	6.7	4	3.7	6.3	10	4.9	2.6	2.6	2.3	1.5	1.2	1	**S**	1.4	1.5	1.4	1	1.1	2.2	7.2	6.6	10	5.6	10.6	4.1	24
9	0.7	0.6	0.7	1	1.6	1.6	0.6	0.8	1	1.1	0.4	0.3	**S**	1.2	1.5	1.4	1.2	1.3	1.1	0.9	0.9	0.9	2.1	4.2	4.2	1.2	24
10	4.6	5.9	4.8	3.7	3.2	0.9	0.9	1.6	2.1	1.5	1	**S**	0.7	0.6	0.6	0.8	0.6	0.6	0.6	0.9	1.1	0.8	2.9	4.4	5.9	1.9	24
11	3.8	2.6	5.7	4.2	5.9	4	4.2	**S**	1.5	0.6	**S**	0.8	1	0.7	0.9	0.8	0.7	0.9	1	1	4.3	5.3	4	4.3	5.9	2.6	24
12	3.8	4.6	5.5	10.5	13.4	***20.5***	11.3	7.5	2.7	**C**	**C**	**C**	**C**	**C**	**C**	1.4	1.5	1.7	1.6	2.3	1.9	6.3	6.1	5.3	***20.5***	***6.0***	24
13	3.7	4	3.5	2.5	4.8	5.4	**S**	5.3	**S**	2.5	3.3	1.6	1.3	3.1	2	1.9	1.9	2.4	2.7	1.5	5	5.3	0.7	0.4	5.4	2.9	24
14	0.4	0.7	1.4	3.6	7.1	8.9	4.2	**S**	3.9	5	3.1	1.8	1	1.5	1.5	2.8	2.2	1.2	2	2.2	1.6	2.1	1.8	1.9	8.9	2.7	24
15	2.7	3.9	4.5	2.5	3.3	6.3	**S**	4.8	**C**	**C**	**C**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	6.3	4.0	11
16	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**			0
17	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**C**	**C**	**C**	**C**	**C**	1.1	1.4	0.7	0.5	0.8	1.5	2.6	5.3	5.8	5.1	1	1.1	5.8	2.2	17
18	1.1	1.8	1.5	**S**	2.5	1.8	1.5	2.2	2.7	1.8	1.1	1	1	1.2	1.2	1	1.4	1.8	1.5	1.6	1.7	2.1	1.1	1.2	2.7	1.6	24
19	1.1	1.2	**S**	1.2	1.8	1.7	1.7	2.1	2	1.8	1.5	1.8	1.4	1.5	1.4	1.5	2	1.1	2.6	2.4	5.1	7	5.7	4.4	7	2.3	24
20	2.3	**S**	4.9	6.9	7.7	13.9	3.1	1.6	1.1	0.8	0.7	1.3	**S**	**S**	1.5	1.1	1.2	1	1.4	1.7	3.1	3.5	3.6	2.4	13.9	3.1	24
21	**S**	3.1	2.3	2.3	2.9	3	2.8	3	2.6	2.2	1.9	1.6	2	1.9	2.3	2.7	1.4	1.6	1.3	1.8	5.7	4.4	5	**S**	5.7	2.6	24
22	5.8	3.4	2.6	2	3.5	7.5	9.1	4	4.8	3	3.2	1.9	1.8	**S**	2.4	2.3	2.5	2.4	**Y**	**Y**	7.1	5.8	**S**	1.7	9.1	3.8	22
23	2	2.3	2.7	3.9	7.6	8.8	3.4	7.4	3.2	4	4.5	1.8	1.4	1.4	1.2	1.1	1.3	2	1.5	1.7	5	**S**	5.8	6.9	8.8	3.5	24
24	4.4	1.3	1	1.1	2.1	1.5	2.1	1.3	0.9	1	0.8	0.8	0.8	0.5	0.4	0.2	0.5	0.8	0.8	0.9	**S**	4.2	2.3	2.7	4.4	1.4	24
25	4.5	2.7	2.4	3.3	3.6	2.2	2.1	2.4	1.6	1.4	0.6	0.4	0.5	0.5	0.8	1	1.2	1.4	1.8	**S**	2.7	2.8	2.5	1.7	4.5	1.9	24
26	1.2	1.1	1.9	2.2	2.7	1.7	2.1	2.3	2.1	1.7	1.8	1.9	1.9	2.9	4.6	3	1.8	2	**S**	1.8	1.5	1.2	1.3	1.2	4.6	2.0	24
27	0.7	0.6	0.7	0.6	1.4	2.9	2.8	3	1.7	1.3	1.5	0.9	0.9	0.8	0.8	0.9	1.1	**S**	1	0.9	1.6	1.4	2.1	2.8	3	1.4	24
28	3.7	4.2	4	3.4	4.7	5.5	1.9	1.8	0.7	1	0.8	0.8	1	1	2	2.2	**S**	2.8	2.3	1.8	1.2	0.4	0.5	0.5	5.5	2.1	24
29	0.2	0.4	0.3	0.6	1.9	2.8	3.1	3.9	2.2	1.9	2.8	1.7	2.2	2	3	**S**	2.1	1.3	1.4	1.2	1.1	1.4	2.5	3.1	3.9	1.9	24
30	3.1	1.4	1.4	1.3	1.1	2.6	3.4	3.2	2.1	1.8	1.5	1.1	1	1.8	**S**	1.1	0.6	1	1.4	1.7	1.3	4.1	2.5	2	4.1	1.8	24
31	2	3.8	3.2	2.5	3.1	3	3.5	3.9	3	2.2	1.3	1	1.1	**S**	1.6	2.1	1.4	1.9	2.3	2.1	3.2	3.2	5.6	6.2	6.2	2.7	24
HOURLY MAX	11	7	6	11	13	21	11	8	5	5	5	2	2	3	5	3	3	3	3	5	7	7	10	7			
HOURLY AVG	2.8	2.4	2.4	2.8	3.9	4.8	3.4	3.0	2.1	1.8	1.6	1.2	1.1	1.3	1.4	1.4	1.3	1.4	1.5	1.8	3.2	3.3	3.1	3.0			

STATUS FLAG CODES

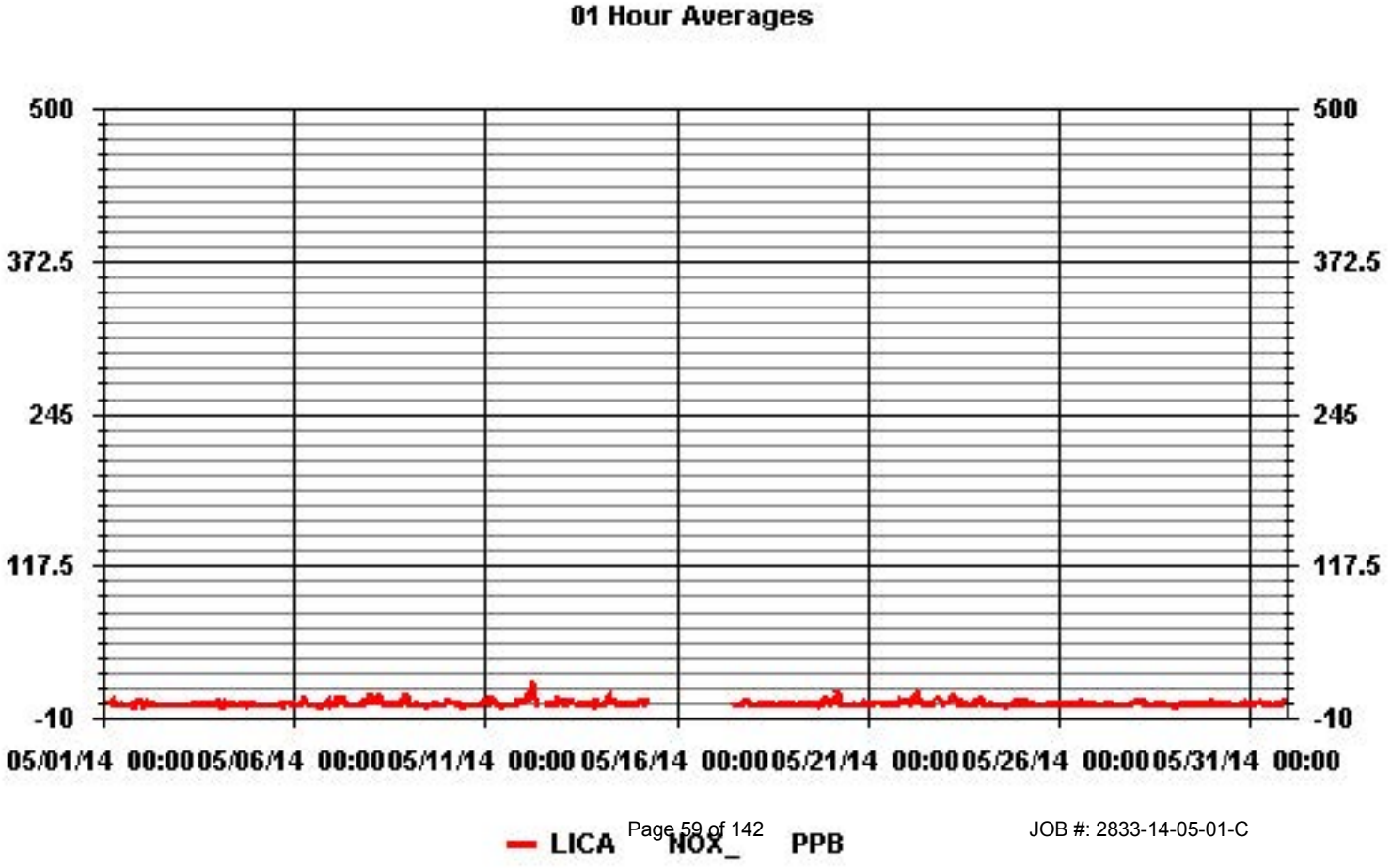
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	650					
MAXIMUM 1-HR AVERAGE:	20.5	PPB	@ HOUR(S)	5	ON DAY(S)	12
MAXIMUM 24-HR AVERAGE:	6.0	PPB			ON DAY(S) VAR-VARIOUS	12
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:		698	HRS
MONTHLY CALIBRATION TIME:	14	HRS	AMD OPERATION UPTIME:		93.8	%
STANDARD DEVIATION:	2.03		MONTHLY AVERAGE:		2.36	PPB



JOB #: 2833-14-05-01-C

Lakeland Industry & Community Association - Cold Lake South Site

MAY 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	2.7	3.2	3.7	4.2	5.2	6.7	8.2	5.2	1.2	1.7	2.2	1.7	3.2	1.7	1.7	1.7	3.2	17.7	1.2	0.7	**S**	8.8	9.8	5.3	17.7	4.4	24
2	6.8	1.3	2.8	4.8	4.3	3.3	1.8	1.8	1.3	2.8	1.3	0.8	1.8	1.3	1.3	1.3	1.3	1.3	2.3	**S**	1.3	1.3	1.3	1.8	6.8	2.1	24
3	1.3	0.8	1	0.8	1.3	1.3	1.3	2.3	1.8	2.8	3.8	2.3	4.3	3.8	7.3	1.8	5.3	5.3	**S**	3.6	4.6	3.6	9.1	4.1	9.1	3.2	24
4	5.6	5.6	1.1	3.1	8.6	8.6	8.1	3.6	3.6	4.6	3.6	3.1	2.1	3.6	3.6	6.1	10.1	**S**	3.1	5.1	4.1	3.6	4.6	2.6	10.1	4.7	24
5	2.1	1.6	2.6	2.1	2.1	1.6	2.1	3.1	1.6	0.6	2.6	2.1	1.6	1.6	9.1	1.6	**S**	1.8	9.8	8.3	6.8	3.3	1.8	3.8	9.8	3.2	24
6	1.8	2.3	1.3	1.3	4.8	8.3	8.3	5.8	4.8	2.3	2.8	0.8	2.8	4.3	1.8	**S**	1.1	0.6	1.6	5.1	8.6	9.6	4.1	9.6	9.6	4.1	24
7	6.6	3.1	3.6	11.1	9.1	9.1	9.1	7.6	4.6	5.6	2.6	1.6	1.6	1.1	**S**	1.9	1.4	0.9	2.4	2.4	26.9	6.4	8.4	16.4	26.9	6.2	24
8	18.9	10.9	8.4	7.9	40.9	16.9	6.4	4.4	3.9	3.4	2.9	1.4	1.4	**S**	2.2	3.2	2.7	1.2	1.2	5.2	***49.7***	9.7	15.2	10.2	***49.7***	9.9	24
9	1.7	1.2	1.2	3.7	6.2	5.2	1.2	3.7	4.7	5.7	1.7	0.7	**S**	3.9	4.9	2.4	2.9	1.4	1.4	0.9	4.4	3.9	1.4	5.4	6.2	3.2	24
10	6.4	7.4	8.9	4.9	5.9	1.4	1.4	2.4	4.4	2.4	1.9	**S**	2.3	1.3	1.3	1.3	0.8	0.8	1.3	1.3	2.3	2.3	4.3	6.8	8.9	3.2	24
11	5.8	4.8	9.3	6.8	10.8	7.8	4.8	**S**	3.1	1.1	**S**	1.6	2.1	1.6	1.6	3.6	1.6	1.1	2.1	6.6	10.6	7.6	7.1	11.1	11.1	5.1	24
12	6.6	7.6	8.1	20.6	21.1	36.6	20.6	21.6	**C**	**C**	**C**	**C**	**C**	**C**	**C**	6.2	5.2	3.2	8.7	23.2	3.7	21.2	8.2	17.7	36.6	***14.1***	24
13	5.2	5.7	5.7	5.2	36.7	22.7	**S**	**S**	**S**	9.3	11.8	6.8	5.3	9.8	6.3	4.3	7.8	7.3	10.8	5.8	13.3	10.8	0.8	0.8	36.7	9.2	24
14	0.8	1.3	9.3	8.3	18.8	11.8	6.3	**S**	5.8	13.3	6.3	4.8	1.3	17.3	4.3	4.8	3.3	1.8	4.8	3.8	2.8	12.8	2.8	3.3	18.8	6.5	24
15	3.3	5.3	5.3	3.3	6.8	11.3	**S**	6.6	**C**	**C**	**C**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	11.3	6.0	11
16	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**			0
17	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**C**	**C**	**C**	**C**	**C**	**C**	11	2	1.5	3	2.5	9	17	9	22.5	1.5	1.5	22.5	7.3	17
18	1.5	3	3	**S**	4	4	2.5	4	6	3	1.5	1.5	2	4.5	3	1.5	2	10.5	3	2.5	3	5.5	2.5	2	10.5	3.3	24
19	2.5	2	**S**	2.5	3.5	2.5	5	4.5	2.5	3	2.5	4	2	2	2.5	3.5	3	2.5	8	4	7	10.5	13	9	13	4.4	24
20	4.5	**S**	7	10.5	10.5	22.5	7	2.5	2.5	1.5	1	**S**	**S**	**S**	2	3	3.5	1.5	2.5	2.5	7	6.5	6	11.5	22.5	5.8	24
21	**S**	10	2.5	3.5	4	3.5	3	5	4	3	3.5	2	3	3.5	3.5	4	2	3.5	2.5	3.5	10	22	9.5	**S**	22	5.0	24
22	8.6	4.6	4.6	4.1	11.6	15.6	18.1	5.6	6.6	5.6	13	6.6	**S**	**S**	4.1	5.1	4.6	5.1	**Y**	**Y**	16.1	11.6	**S**	2.6	18.1	8.1	22
23	4.6	8.1	8.1	6.1	21.6	14.6	6.6	12.6	5.1	9.6	8.1	3.1	2.1	2.6	3.1	1.6	2.6	3.6	2.1	3.6	11.1	**S**	8.5	8	21.6	6.8	24
24	6.5	2	1.5	2	3.5	3	3.5	1.5	1.5	3	1.5	1	1	1	1	0.5	1	1	1.5	1.5	**S**	7	4	6.5	7	2.5	24
25	7.5	6	4.5	5.5	8	6	4	4.5	4.5	4	1.5	1	1	4	1.5	1.5	5.5	8	4.5	**S**	4.5	5	5.5	2	8	4.3	24
26	2	1.5	3.5	3.5	6	3	5	8.5	3	3	2.5	4.5	4.5	4.5	9.5	10.5	4	4.5	**S**	3.5	2.5	2	4	3.5	10.5	4.3	24
27	1	1	1	1.5	2.5	4.5	3	4	2.5	2	2	1.5	2.5	2	2	4	1.5	**S**	2	1.5	3	2.5	3	4	4.5	2.4	24
28	7.5	6	7	5	7	7.5	5	9.5	7.4	3	2	3	2	1.5	4	5.5	**S**	5.5	6	4	3	1.5	1.5	1	9.5	4.6	24
29	0.5	1.5	1	4	4	5.5	6	6.5	5	3.5	10	2.5	6	4.5	13.5	**S**	3.1	1.6	2.1	2.6	2.1	2.1	3.6	9.1	13.5	4.4	24
30	9.6	3.1	2.6	2.1	2.1	3.6	11.6	4.6	4	4.1	4.1	2.1	2.1	12.6	**S**	4	1	1.5	4.5	4	2.5	24	3	2.5	24	5.0	24
31	2.5	7.5	4	3.5	4.5	4	4.5	5.5	5	3.5	2.5	1.5	3	**S**	3.6	5.6	3.6	8.1	3.6	3.6	6.1	28.1	22.1	11.1	28.1	6.4	24
HOURLY MAX	19	11	9	21	41	37	21	22	7	13	13	7	6	17	14	11	10	18	11	23	50	28	22	18			
HOURLY AVG	4.8	4.2	4.4	5.1	9.5	8.7	6.1	5.7	3.9	4.0	3.8	2.5	2.5	4.4	3.9	3.4	3.2	4.0	4.0	4.9	8.3	9.0	6.1	6.2			

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: 645

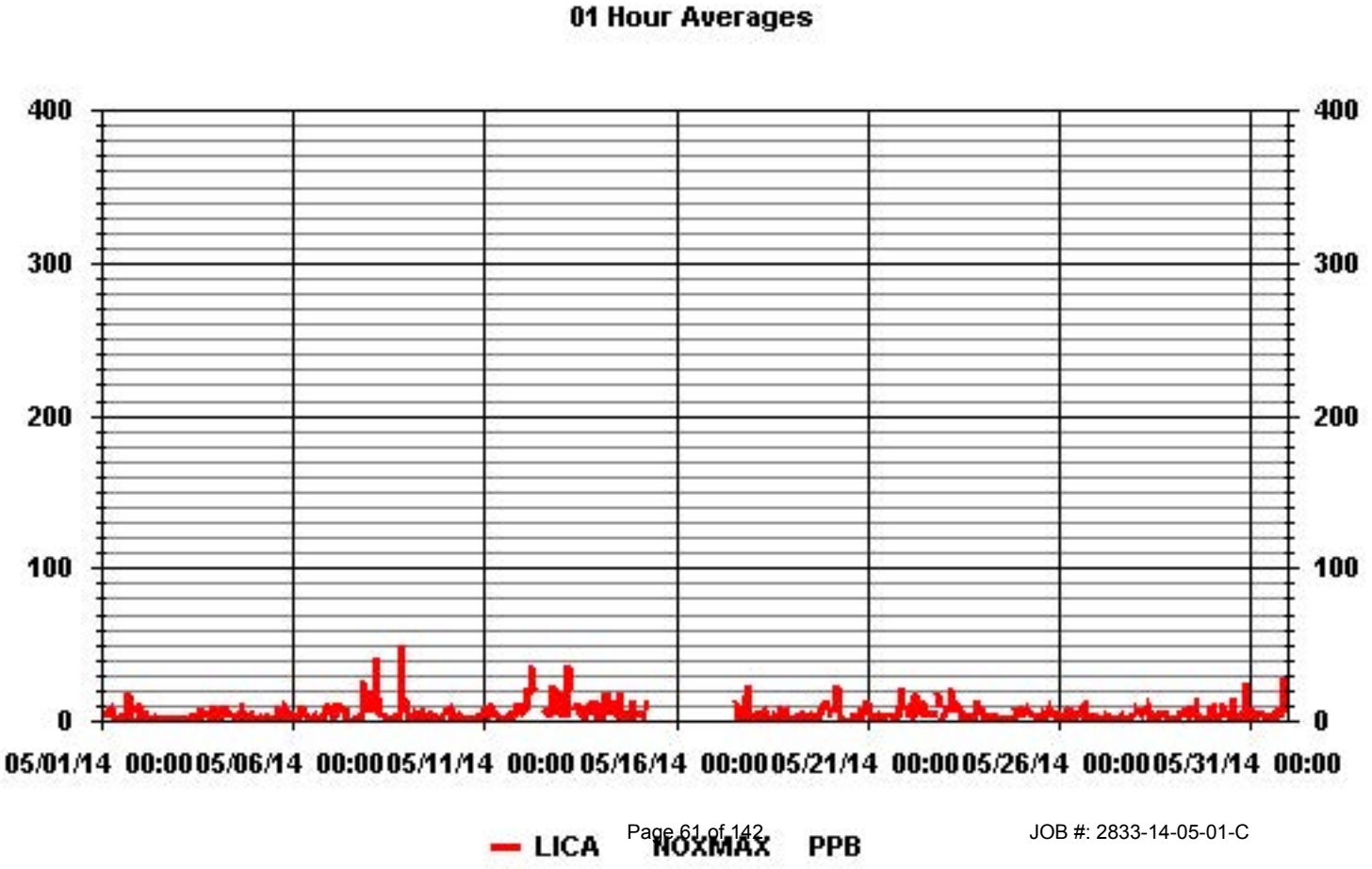
MAXIMUM INSTANTANEOUS VALUE: 49.7 PPB @ HOUR(S) 20 ON DAY(S) 8

VAR-VARIOUS

IZS CALIBRATION TIME: 37 HRS OPERATIONAL TIME: 698 HRS

MONTHLY CALIBRATION TIME: 16 HRS

STANDARD DEVIATION: 5.17



JOB #: 2833-14-05-01-C

LICA
NOX_ / WD Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	6.76	6.30	12.15	6.92	8.15	6.46	6.61	4.00	1.07	1.53	3.69	8.00	8.15	5.23	7.23	7.69	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	6.76	6.30	12.15	6.92	8.15	6.46	6.61	4.00	1.07	1.53	3.69	8.00	8.15	5.23	7.23	7.69	

Calm : .00 %

Total # Operational Hours : 650

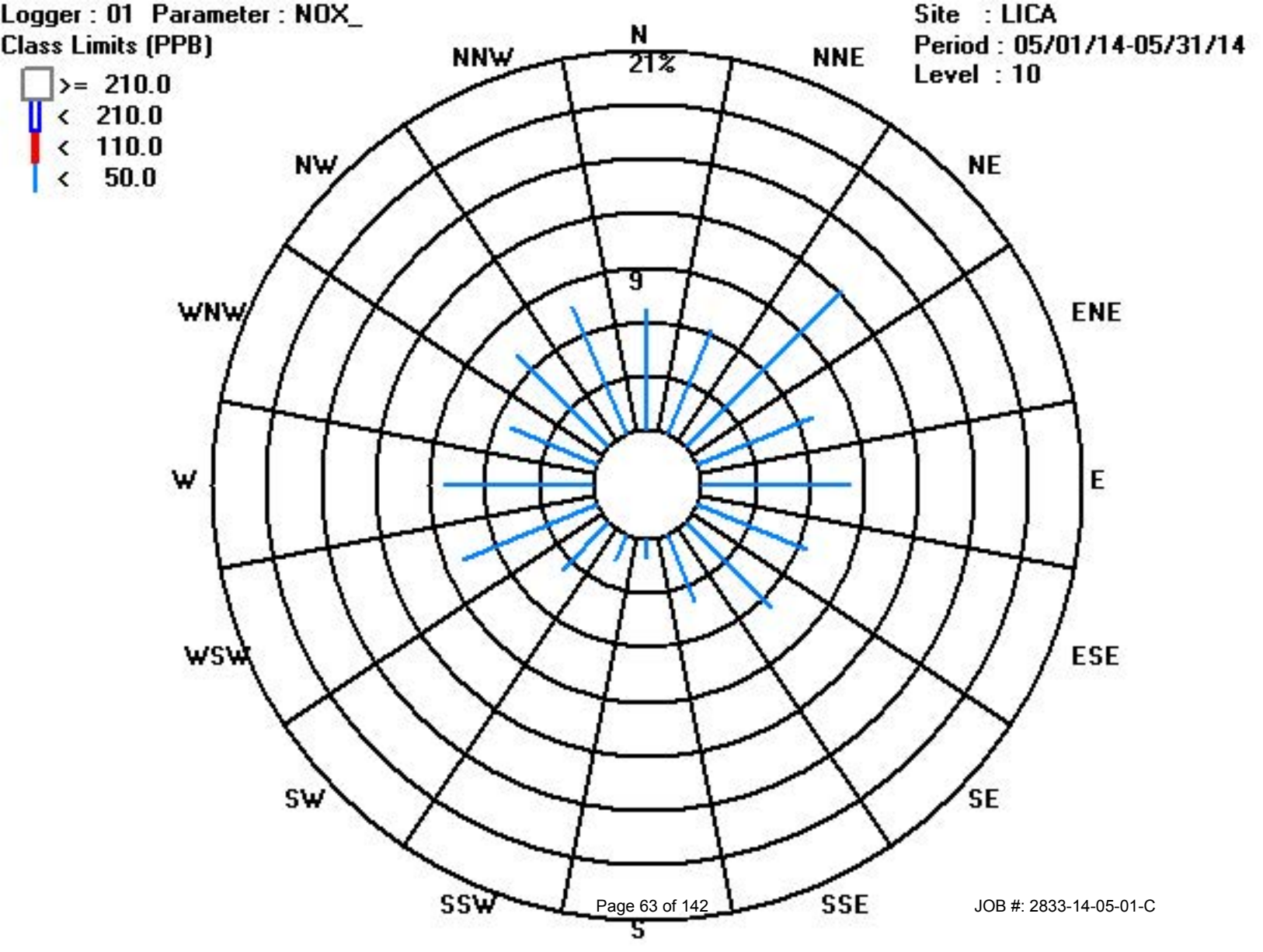
Distribution By Samples

Direction

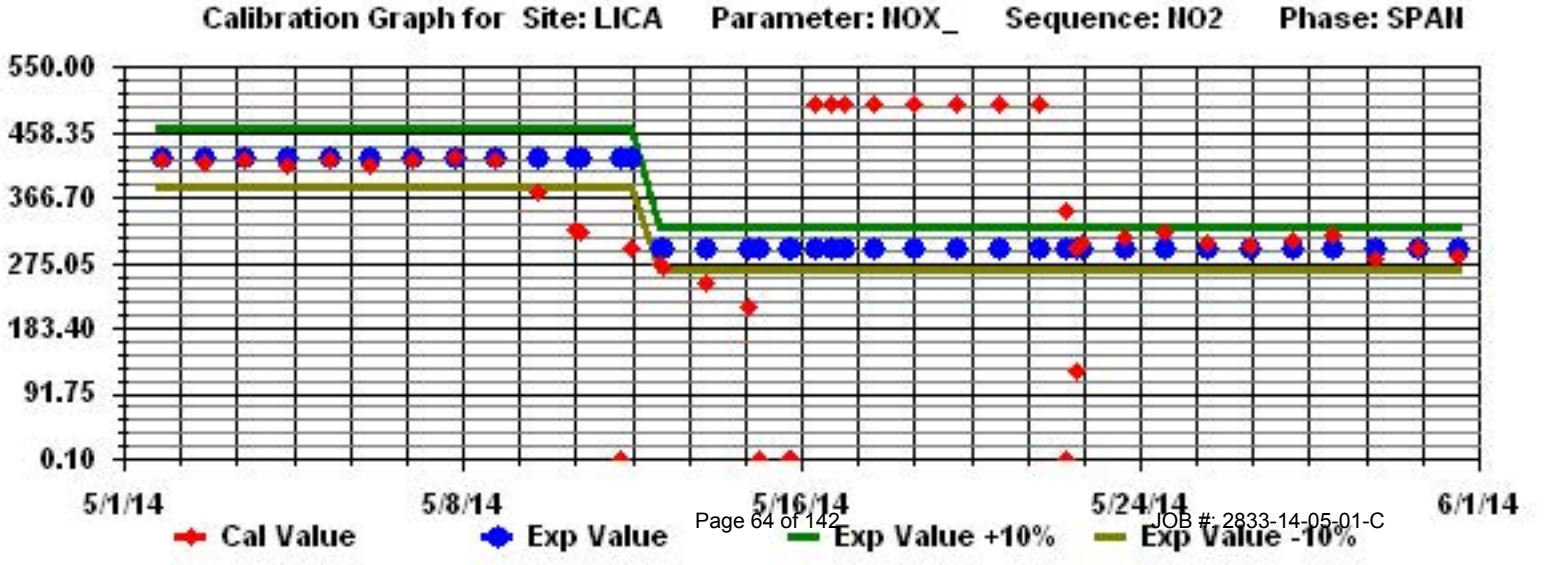
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	44	41	79	45	53	42	43	26	7	10	24	52	53	34	47	50	650
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	44	41	79	45	53	42	43	26	7	10	24	52	53	34	47	50	

Calm : .00 %

Total # Operational Hours : 650



JOB #: 2833-14-05-01-C


Calibration Graph for Site: LICA Parameter: NOX_ Sequence: NO2 Phase: SPAN
550.00
458.35
366.70
275.05
183.40
91.75
0.10
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

OZONE (O3) hourly averages in ppb

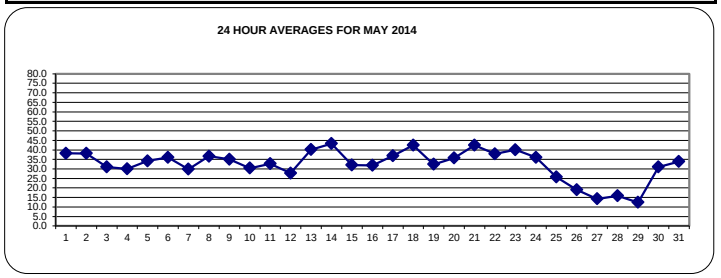
MST

HOUR START / HOUR END	0:00 1:00	1:00 2:00	2:00 3:00	3:00 4:00	4:00 5:00	5:00 6:00	6:00 7:00	7:00 8:00	8:00 9:00	9:00 10:00	10:00 11:00	11:00 12:00	12:00 13:00	13:00 14:00	14:00 15:00	15:00 16:00	16:00 17:00	17:00 18:00	18:00 19:00	19:00 20:00	20:00 21:00	21:00 22:00	22:00 23:00	23:00 0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY																											
1	47	44	40	40	39	39	33	33	35	34	36	39	42	40	43	45	45	43	44	44	**S**	35	22	16	47	38.2	24
2	30	40	40	37	36	36	39	40	40	40	41	44	44	44	43	42	40	37	35	**S**	34	33	32	30	44	38.1	24
3	30	30	31	32	33	32	29	29	33	32	31	33	32	31	32	33	34	34	**S**	31	31	31	27	22	34	31.0	24
4	18	18	32	32	29	29	30	32	33	33	33	33	33	33	33	33	34	**S**	34	32	30	29	25	23	34	30.0	24
5	24	24	24	27	22	25	28	30	31	32	33	34	37	41	42	44	**S**	47	44	39	38	40	40	41	47	34.2	24
6	37	40	47	47	42	35	35	36	32	29	30	33	34	35	36	**S**	40	40	40	39	35	29	31	28	47	36.1	24
7	27	25	18	15	17	18	20	26	30	36	39	39	40	40	**S**	41	42	42	41	40	28	23	23	17	42	29.9	24
8	10	10	14	18	20	18	33	40	46	48	49	51	52	**S**	54	55	57	58	57	52	32	25	18	26	58	36.7	24
9	36	35	35	35	33	30	31	32	33	33	35	37	**S**	39	39	39	39	38	37	37	36	37	34	26	39	35.0	24
10	20	17	24	26	26	30	30	30	31	32	33	**S**	33	35	35	34	35	35	37	36	33	32	29	26	37	30.4	24
11	24	24	20	23	23	25	25	29	35	37	**S**	40	41	41	41	42	43	43	43	42	34	27	26	25	43	32.7	24
12	19	14	10	8	6	7	22	30	35	**S**	39	41	43	45	**C**	**C**	**C**	**C**	49	45	36	31	25	22	49	27.7	24
13	20	28	32	33	32	31	33	35	**S**	44	47	48	48	47	48	48	48	49	49	48	35	34	43	43	49	40.1	24
14	43	43	36	26	21	22	37	**S**	41	45	52	54	48	47	49	48	49	50	47	45	45	45	50	52	54	***43.3***	24
15	46	38	33	26	25	18	**S**	27	29	32	37	41	46	41	38	34	30	26	28	29	29	28	27	27	46	32.0	24
16	27	27	28	29	28	**S**	28	29	31	31	31	33	34	37	41	42	45	44	43	37	28	21	19	20	45	31.9	24
17	15	10	10	10	**S**	6	27	41	44	44	46	47	50	54	53	50	48	47	46	42	36	36	44	43	54	36.9	24
18	42	39	40	**S**	37	39	38	37	37	40	48	49	51	51	49	46	46	42	40	40	41	38	42	44	51	42.4	24
19	41	43	**S**	43	40	38	35	34	36	34	35	41	45	43	41	38	36	32	27	19	13	8	9	14	45	32.4	24
20	9	**S**	3	6	6	8	28	33	37	38	40	40	46	51	53	53	53	53	51	50	45	40	39	41	53	35.8	24
21	**S**	32	37	36	34	32	33	35	39	42	46	50	53	55	53	52	54	53	53	52	39	31	23	**S**	55	42.5	24
22	24	32	29	22	14	12	25	35	37	41	43	48	48	49	53	54	51	51	**Y**	46	40	38	**S**	42	54	37.9	23
23	39	38	32	24	23	23	33	34	41	51	55	***59***	57	58	56	55	51	44	45	44	29	**S**	18	13	***59***	40.1	24
24	26	35	36	37	35	35	30	31	34	36	41	42	43	43	42	43	39	38	38	38	**S**	33	30	23	43	36.0	24
25	18	19	15	14	17	21	22	21	22	23	28	29	32	39	34	33	34	35	34	**S**	28	29	24	22	39	25.8	24
26	24	33	24	23	25	24	22	21	19	18	17	16	16	15	14	17	20	19	**S**	16	15	15	14	11	33	19.0	24
27	12	12	10	10	9	7	7	11	12	16	17	15	14	16	18	20	20	**S**	21	21	19	18	14	9	21	14.3	24
28	7	5	7	7	4	5	15	17	19	19	21	20	20	21	21	20	**S**	18	19	21	20	22	20	17	22	15.9	24
29	17	17	14	14	14	13	12	11	11	11	10	10	11	10	10	**S**	10	12	12	12	11	12	15	16	17	12.4	24
30	18	20	21	20	18	19	22	25	30	34	37	38	40	42	**S**	42	42	40	40	38	39	30	29	30	42	31.0	24
31	28	24	23	20	17	23	28	32	36	39	45	49	48	**S**	49	45	42	43	40	32	33	36	27	20	49	33.9	24
HOURLY MAX	47	44	47	47	42	39	39	41	46	51	55	59	57	58	56	55	57	58	57	52	45	45	50	52			
HOURLY AVG	25.9	27.2	25.5	24.7	24.2	23.3	27.7	29.9	32.3	34.1	36.5	38.4	39.4	39.4	40.0	41.0	40.3	39.8	39.1	36.8	31.4	29.5	27.3	26.3			

STATUS FLAG CODES

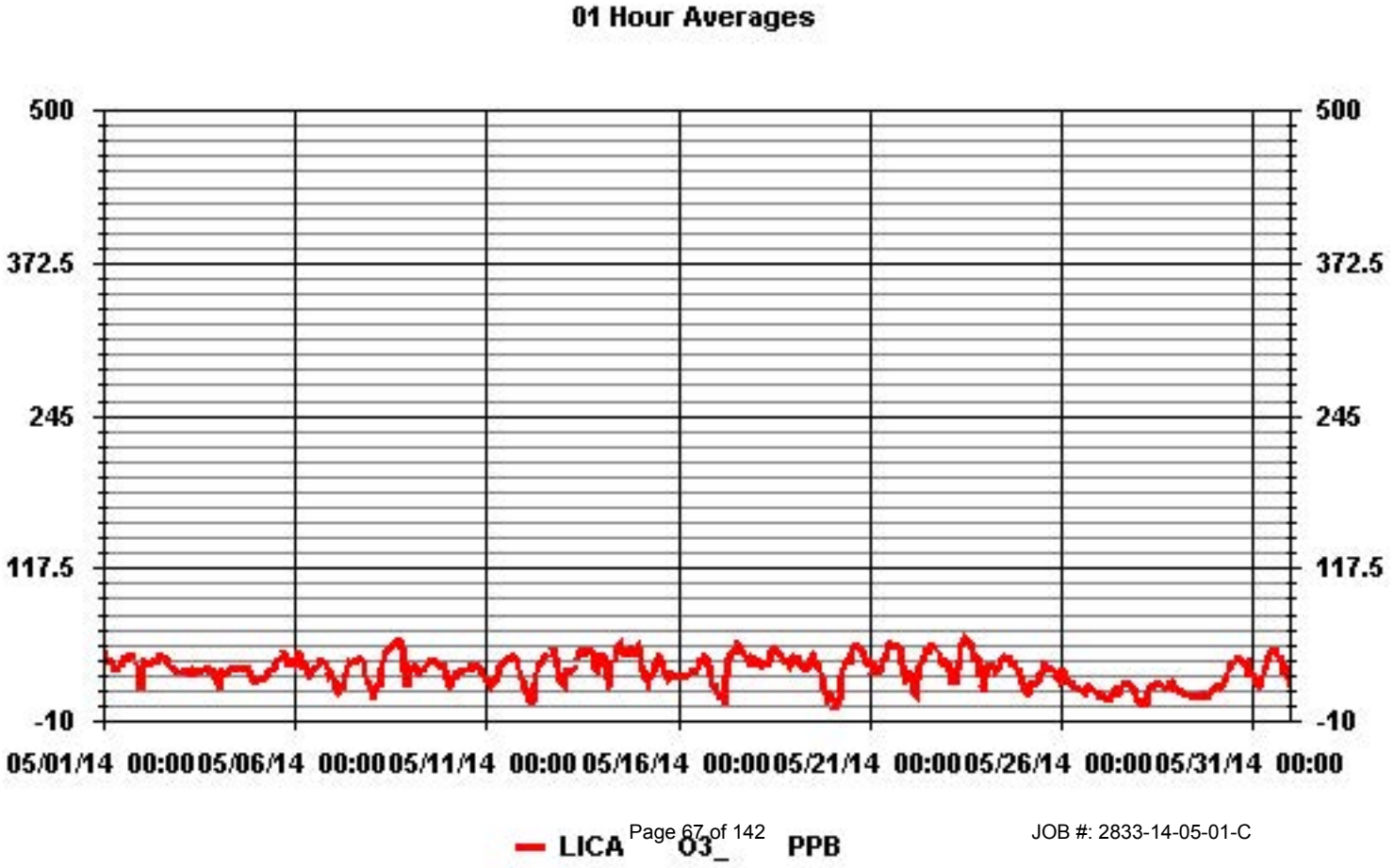
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	707					
MAXIMUM 1-HR AVERAGE:	59	PPB	@ HOUR(S)	11	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	43.3	PPB			ON DAY(S) VAR-VARIOUS	14
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		743	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		99.9	%
STANDARD DEVIATION:	11.92		MONTHLY AVERAGE:		32.38	PPB



JOB #: 2833-14-05-01-C

Lakeland Industry & Community Association - Cold Lake South Site

MAY 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	48	47	45	44	42	42	36	35	36	35	38	41	44	43	46	46	47	46	46	45	**S**	41	27	23	48	41.0	24
2	38	42	42	39	38	38	40	41	41	42	43	45	46	45	44	43	42	39	36	**S**	34	34	33	32	46	39.9	24
3	31	31	32	33	34	32	31	30	38	32	32	34	34	32	33	34	36	35	**S**	32	33	33	30	25	38	32.5	24
4	21	30	33	33	31	31	32	33	34	34	34	34	34	34	34	34	35	**S**	35	34	32	31	28	25	35	32.0	24
5	25	25	30	31	25	27	30	31	33	33	34	35	41	43	43	47	**S**	48	47	42	41	41	43	43	48	36.4	24
6	41	48	48	48	45	42	38	37	35	30	33	34	35	37	37	**S**	41	41	41	40	39	32	32	30	48	38.4	24
7	28	27	23	17	20	19	24	29	32	39	40	40	41	42	**S**	42	42	43	42	42	38	31	27	26	43	32.8	24
8	18	14	18	27	27	30	37	42	48	51	50	52	54	**S**	55	58	59	59	58	58	46	30	25	42	59	41.7	24
9	38	36	36	36	34	32	32	33	34	34	37	38	**S**	40	40	40	40	39	38	37	38	38	36	32	40	36.4	24
10	25	26	27	27	29	32	32	31	32	33	34	**S**	34	36	37	35	36	37	38	38	34	33	30	29	38	32.4	24
11	27	26	25	25	25	27	27	32	37	39	**S**	42	42	42	42	43	44	44	44	43	41	35	33	32	44	35.5	24
12	27	19	18	12	12	11	28	35	37	**S**	42	43	46	**C**	**C**	**C**	**C**	**C**	51	48	44	35	33	33	51	31.9	24
13	28	33	34	35	34	34	35	37	**S**	46	49	49	49	49	50	50	50	51	51	50	45	43	44	44	51	43.0	24
14	44	43	42	37	27	33	38	**S**	45	48	57	55	54	49	51	51	51	52	50	46	47	47	56	54	57	***46.8***	24
15	50	44	39	39	33	28	**S**	32	31	37	40	45	48	48	40	37	33	28	31	30	30	29	31	28	50	36.1	24
16	28	29	29	30	29	**S**	29	32	32	32	32	35	37	39	45	45	48	46	45	43	35	27	24	26	48	34.7	24
17	21	13	17	17	**S**	17	35	45	45	46	48	49	58	57	56	52	49	49	47	46	39	44	44	44	58	40.8	24
18	43	42	40	**S**	40	40	39	39	39	43	50	51	51	52	51	48	48	44	43	44	43	40	45	46	52	44.4	24
19	44	45	**S**	45	42	40	37	36	38	36	40	45	47	46	42	40	39	35	32	26	17	13	13	24	47	35.7	24
20	14	**S**	8	9	9	21	33	36	38	40	42	42	48	53	54	54	54	54	53	51	49	46	42	43	54	38.8	24
21	**S**	39	39	38	36	34	35	37	41	45	49	52	55	57	56	55	56	54	55	55	49	40	28	**S**	57	45.7	24
22	38	39	38	31	18	23	35	39	42	44	47	50	51	53	56	56	55	53	**Y**	49	45	43	**S**	44	56	43.1	23
23	42	42	40	28	32	33	35	40	48	55	59	***62***	59	60	58	58	54	46	47	47	37	**S**	23	16	***62***	44.4	24
24	33	36	37	39	38	39	33	34	36	39	42	43	44	44	44	45	44	39	39	39	**S**	37	33	29	45	38.5	24
25	25	25	19	18	21	23	23	22	24	25	31	31	35	42	39	35	35	36	36	**S**	30	31	26	23	42	28.5	24
26	33	34	29	26	27	25	24	22	20	20	18	18	17	15	16	19	21	21	**S**	18	16	16	15	14	34	21.0	24
27	13	13	12	11	10	8	10	12	14	18	18	17	15	18	20	22	21	**S**	23	22	21	19	17	12	23	15.9	24
28	11	10	10	9	6	8	18	18	22	21	22	21	22	22	22	22	**S**	20	21	23	22	22	21	19	23	17.9	24
29	17	18	16	14	15	15	14	11	13	13	11	11	12	12	11	**S**	12	15	14	13	12	13	18	18	18	13.8	24
30	21	21	22	22	21	20	24	27	33	37	39	39	43	44	**S**	44	43	42	42	40	40	37	32	31	44	33.2	24
31	30	26	24	23	22	25	31	35	38	42	49	50	50	**S**	51	50	45	45	44	38	39	39	33	32	51	37.4	24
HOURLY MAX	50	48	48	48	45	42	40	45	48	55	59	62	59	60	58	58	59	59	58	58	49	47	56	54			
HOURLY AVG	30.1	30.8	29.1	28.1	27.4	27.6	30.5	32.1	34.5	36.3	38.7	40.1	41.5	41.2	41.9	43.0	42.1	41.5	41.0	39.3	35.7	33.3	30.7	30.6			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 706

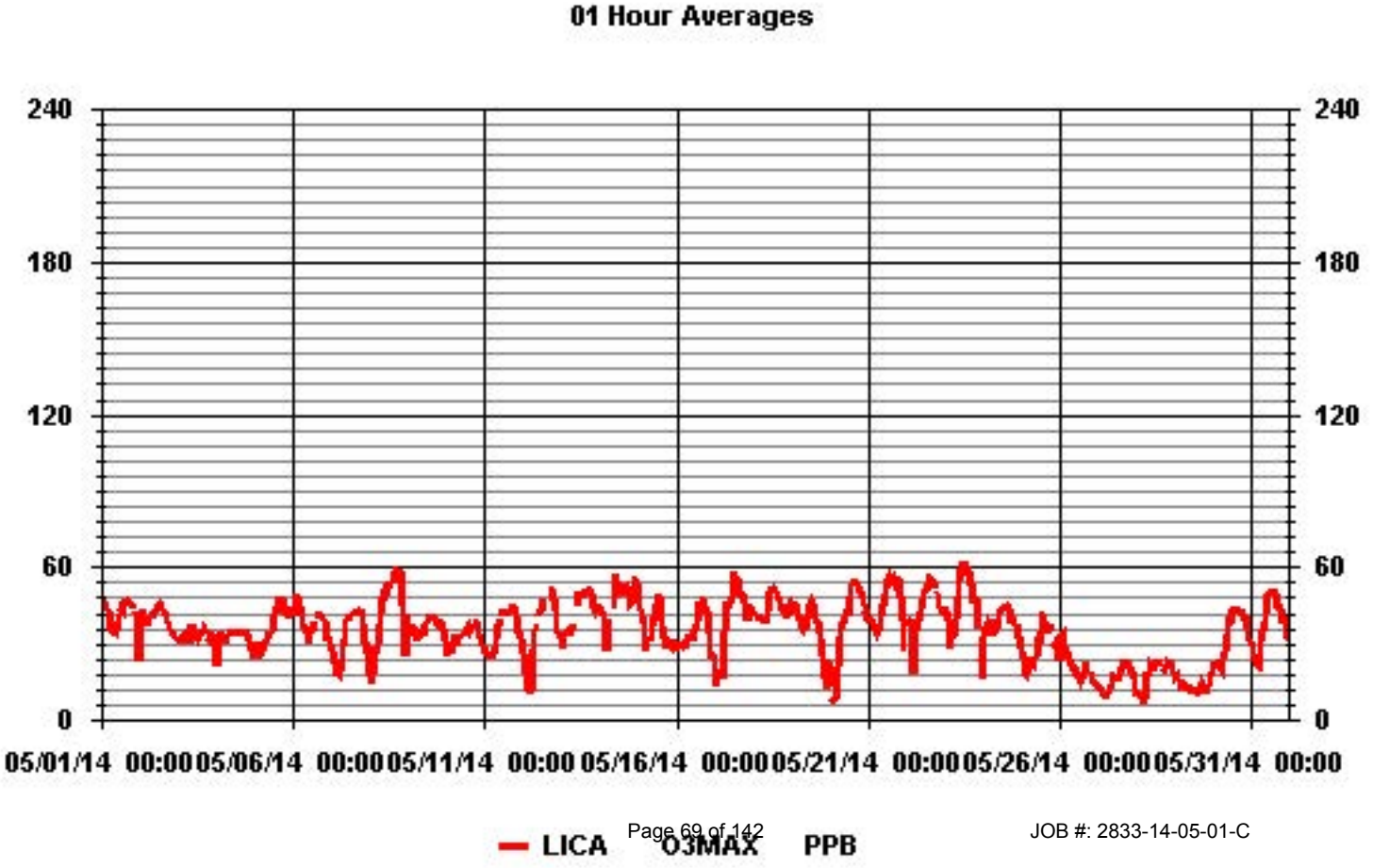
MAXIMUM INSTANTANEOUS VALUE: 62 PPB @ HOUR(S) 11 ON DAY(S) 23

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 743 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 11.63



JOB #: 2833-14-05-01-C

LICA
O3_ / WD Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	6.22	7.49	12.44	6.64	7.77	6.08	5.79	2.82	1.13	1.13	2.40	6.22	7.07	5.09	7.35	7.63	93.35
<	110	.28	.56	.56	.14	.00	.00	.28	1.13	.00	.28	1.13	1.41	.70	.00	.14	.00	6.64
<	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
>=	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	6.50	8.06	13.01	6.78	7.77	6.08	6.08	3.96	1.13	1.41	3.53	7.63	7.77	5.09	7.49	7.63	

Calm : .00 %

Total # Operational Hours : 707

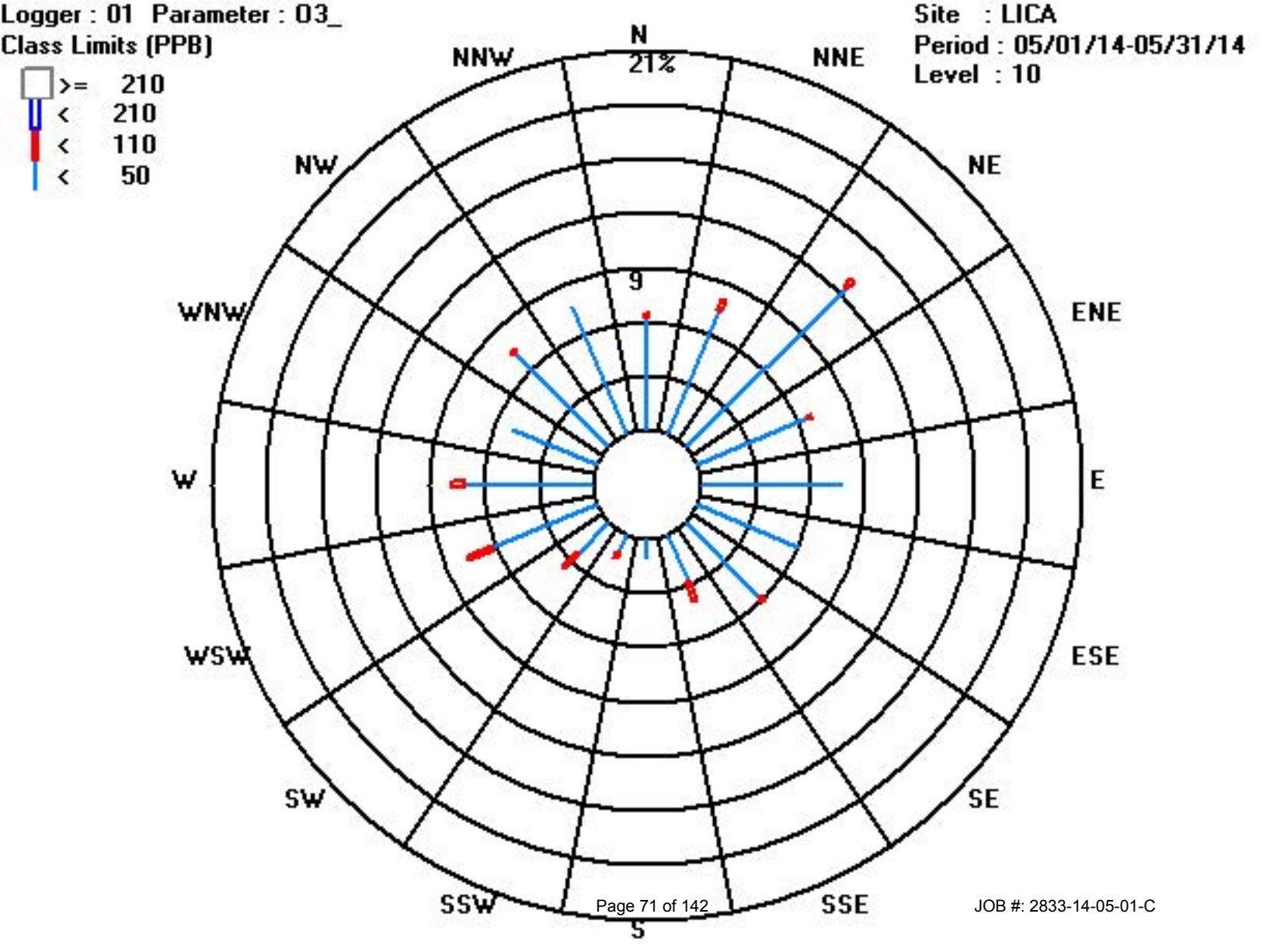
Distribution By Samples

Direction

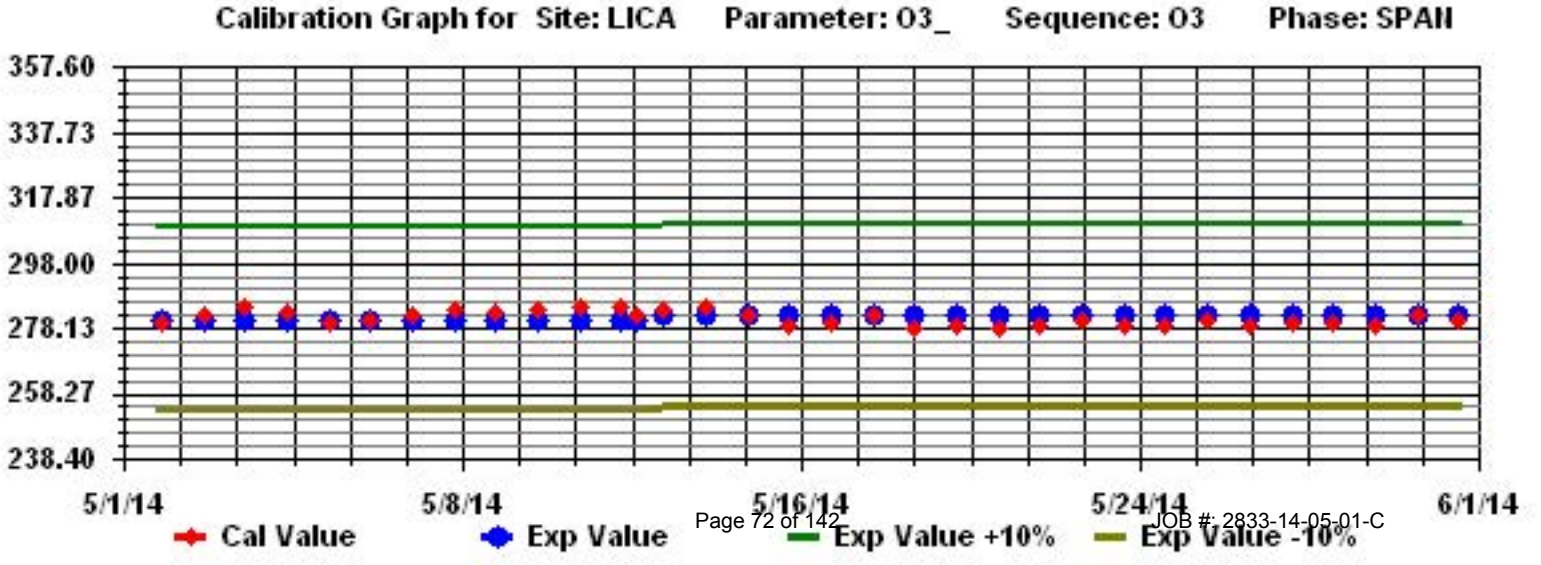
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	44	53	88	47	55	43	41	20	8	8	17	44	50	36	52	54	660
<	110	2	4	4	1			2	8		2	8	10	5		1		47
<	210																	
>=	210																	
	Totals	46	57	92	48	55	43	43	28	8	10	25	54	55	36	53	54	

Calm : .00 %

Total # Operational Hours : 707



JOB #: 2833-14-05-01-C


Calibration Graph for Site: LICA Parameter: O3_ Sequence: O3 Phase: SPAN
357.60
337.73
317.87
298.00
278.13
258.27
238.40
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ambient Temperature

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

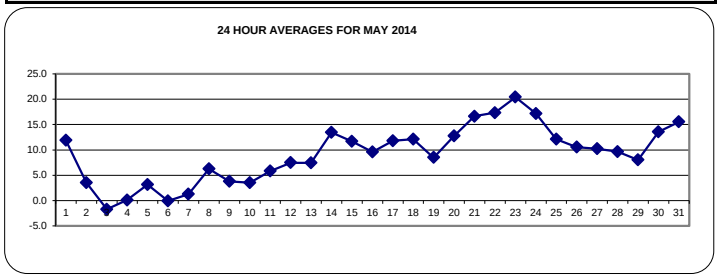
AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

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	12.5	12.6	11.6	11.5	11.1	12	13	14.9	15.3	14.1	13.7	12.8	13.7	13.2	13.3	12.8	14	12.6	14.1	13.1	10.5	7.8	3.5	1.5	15.3	11.9	24
2	4.1	5.6	5.3	4.4	3	2.9	3.3	3.6	4.3	4.7	5.2	5.5	5.6	5.3	5.1	4.3	3.9	3.2	2.4	1.5	1.1	0.8	0	-0.8	5.6	3.5	24
3	-1.8	-2.5	-3.1	-3.6	-3.7	-3.4	-2.8	-2.4	-2.2	-2.1	-1.9	-1.3	-0.8	-0.7	-0.1	0.2	0.1	0.1	-0.5	-0.9	-1.2	-1.7	-2.2	-2.8	0.2	-1.7	24
4	-2.4	-2.4	-2.5	-2.8	-2.8	-2.7	-2.3	-1.6	-1.1	-0.4	-0.2	0.9	1.9	2.7	3.3	3.8	3.4	3.4	1.9	0.8	0.4	0.5	0.4	0.3	3.8	0.1	24
5	0.4	0.3	0.2	0.1	-0.1	-0.4	-0.6	0.1	0.4	1.3	2.2	3.4	4.9	6.3	6.2	7.6	7.2	7.6	6.9	5.7	4.6	4.2	4.1	2.7	7.6	3.1	24
6	1.7	0.3	-0.9	-1.2	-1.3	-1.3	-0.5	0.2	0.7	0.1	0.3	0.4	0.8	0.5	1	0.3	1.2	1.5	1.3	0.5	-0.8	-1.6	-2.3	-2.7	1.7	-0.1	24
7	-3.4	-4.1	-5	***-5.2***	***-5.2***	-4.5	-2.7	-0.3	1.9	3.6	4.5	4.5	4.7	5.4	5.8	6.2	6.4	6.9	7	6.4	2.2	-0.5	-1.7	-2.6	7	1.3	24
8	-3.2	-4.1	-4.7	-4.4	-4	-1.9	2	5.3	8.1	9.5	10.7	11.8	12.9	13.1	13.3	13.3	13.9	13.9	14.2	12.4	7.6	3.9	2.9	3.5	14.2	6.3	24
9	2.2	1.1	-0.1	-0.6	-0.9	-0.9	-0.3	1.7	3.3	4.1	5.5	6.2	7.1	6.9	7.3	7.6	7.5	7.1	6.6	6	5.1	4.4	3	0.5	7.6	3.8	24
10	-1.5	-2	-0.4	0.5	0.9	0.7	1.2	2.4	2.9	4.1	5.3	6.4	7.9	8.1	7.9	8.2	7.7	6.3	5.5	4.4	3.5	2.8	1.7	0.6	8.2	3.5	24
11	-0.6	-1.2	-1.7	-1.7	-0.8	0.2	1.4	3.6	6	7.5	8.6	9.3	9.4	9.9	11	11.2	11.5	12	11.3	10.4	8.1	5.9	5	3.4	12	5.8	24
12	1.3	0.1	-0.8	-0.6	-0.4	0.6	4.9	6.7	7.4	9.1	11	12.1	13.4	14	14.3	14	13.5	13.4	12.8	11.7	8.5	6	3.6	2.6	14.3	7.5	24
13	0.5	0.5	0.3	0.4	0.3	1.3	2.6	3.8	5.8	7.7	8.8	10.1	11.4	12.5	13.7	14	14.2	14.2	14.1	13	9.2	6.9	7.4	6.2	14.2	7.5	24
14	5.5	4.7	2.6	0.5	-0.5	2	5.7	8	11.2	14.5	17.3	19.4	20.9	21	20.2	20.2	20.6	20.9	20	18.6	17.6	16.9	17.4	16.8	21	13.4	24
15	14.1	12.6	11.7	10.5	9.5	9.7	10.8	12.4	13.4	15.3	16.6	17.5	17.2	13.7	13.3	13.5	12.1	10.3	8.9	8.1	7.4	7.2	7.1	6.9	17.5	11.7	24
16	6.4	5.8	5.1	4.7	4.3	4.2	4.3	4.6	5.3	7	9.6	11.6	13.1	14.5	15.6	15.7	15.4	14.9	14.6	14.2	12.4	10.4	8.9	7.1	15.7	9.6	24
17	5.6	4.8	3.4	2.1	1.4	4.1	7.6	9.7	12.9	14.4	15.7	16.3	16.7	17.1	17.2	17.9	17.7	17	16.2	15.4	13.6	12.4	12.3	11.6	17.9	11.8	24
18	11.1	9.5	8.5	8.5	7.5	9.2	9.8	10.1	11	12.6	16.1	16.7	16.9	16.2	15.5	14.2	13.7	13.2	13.3	13.2	12.1	11.4	10.5	10.2	16.9	12.1	24
19	8.7	8	7.8	7.9	7.7	7.4	7.3	7.6	8.3	7.8	8.8	9.5	10.5	10.4	9.7	9.3	9	9	9	8.8	8.4	7.9	7.3	7.5	10.5	8.5	24
20	6.9	5.9	5.9	6.2	6.2	6.8	8.4	9.6	11.8	13.1	14.2	14.7	15.6	16.3	17.3	17.8	18.4	18.2	17.9	17.1	15.8	14.7	13.9	13.2	18.4	12.7	24
21	12	9.8	10.7	10.8	10.5	10.8	12.8	14.7	16.5	18.4	19.2	20.3	21.1	22.3	21.9	21.9	24	23.4	23.1	21.7	17.7	13.9	11.7	9.9	24	16.6	24
22	9.2	9.3	9	7.9	7.4	9.5	13.3	16.8	18.6	20	21	22.6	23.2	22.8	23.7	24.1	23.4	23.1	22.4	20.5	18.9	17.3	16.4	15.3	24.1	17.3	24
23	14.7	13.8	12.8	12.3	12.6	13.4	16.5	18	20.4	22.7	24.7	26.7	27.9	27.7	28.2	***28.3***	27.6	26.4	26.3	24.3	19.5	16.7	14.8	13.1	***28.3***	***20.4***	24
24	14.4	16.3	15.9	15.4	14.8	13.6	13.5	14.7	16.6	18.2	19.5	20.3	21.2	21.9	21.8	22.2	21.3	20.7	20.3	19.1	16.5	13.3	11.2	9.3	22.2	17.2	24
25	8.2	7.1	6.3	5.8	6.5	8	9.4	10.8	12.5	14.3	15.3	15.8	16.7	17.8	17.2	15.4	15.1	15	14.8	13.1	12.2	12.1	11.4	9.8	17.8	12.1	24
26	9.9	11.9	10.5	10.2	10.7	10.5	9.9	10.1	10.5	10.6	10.5	10.9	10.7	10.6	10.7	11.2	11.5	11.3	11.1	10.6	10.2	10	10	9.1	11.9	10.6	24
27	8.6	8.9	9.1	9	9.1	9.2	9.6	10	10.1	10.9	11.6	10.8	11.5	11.1	11	12	11.5	11.7	11	10.7	10.2	9.8	9.4	8.9	12	10.2	24
28	7.7	6.8	7	7.3	7.3	8	9	9.1	10	10.8	11.5	11.9	12.7	12.6	12.9	13.1	12.6	11.7	11.8	10.4	7.8	6.9	6.3	6.4	13.1	9.7	24
29	5.9	5.9	5.9	6.1	7	7.4	7.6	7.8	7.7	7.7	8.4	8.9	9.6	9.6	9.6	9.8	10.4	10	9.2	8.5	8.1	7.6	7.1	6.4	10.4	8.0	24
30	6.8	6.9	6.9	6.8	6.2	8	10	11.6	13.6	14.9	16.3	17	18.8	19.8	20.1	20	19.3	16.7	17.5	17	15.7	12.7	11.4	11.3	20.1	13.6	24
31	10.4	9.3	8.9	7.8	7.4	9.5	12.1	14.5	16.9	18.5	19.9	20.9	22	22.5	20.9	20.3	18.3	18.9	18.8	17.2	16.4	15.2	13.6	12.6	22.5	15.5	24
HOURLY MAX	14.7	16.3	15.9	15.4	14.8	13.6	16.5	18	20.4	22.7	24.7	26.7	27.9	27.7	28.2	28.3	27.6	26.4	26.3	24.3	19.5	17.3	17.4	16.8			
HOURLY AVG	5.7	5.2	4.7	4.4	4.2	5.0	6.3	7.7	9.0	10.2	11.3	12.1	12.9	13.1	13.2	13.2	13.1	12.7	12.4	11.4	9.7	8.3	7.3	6.4			

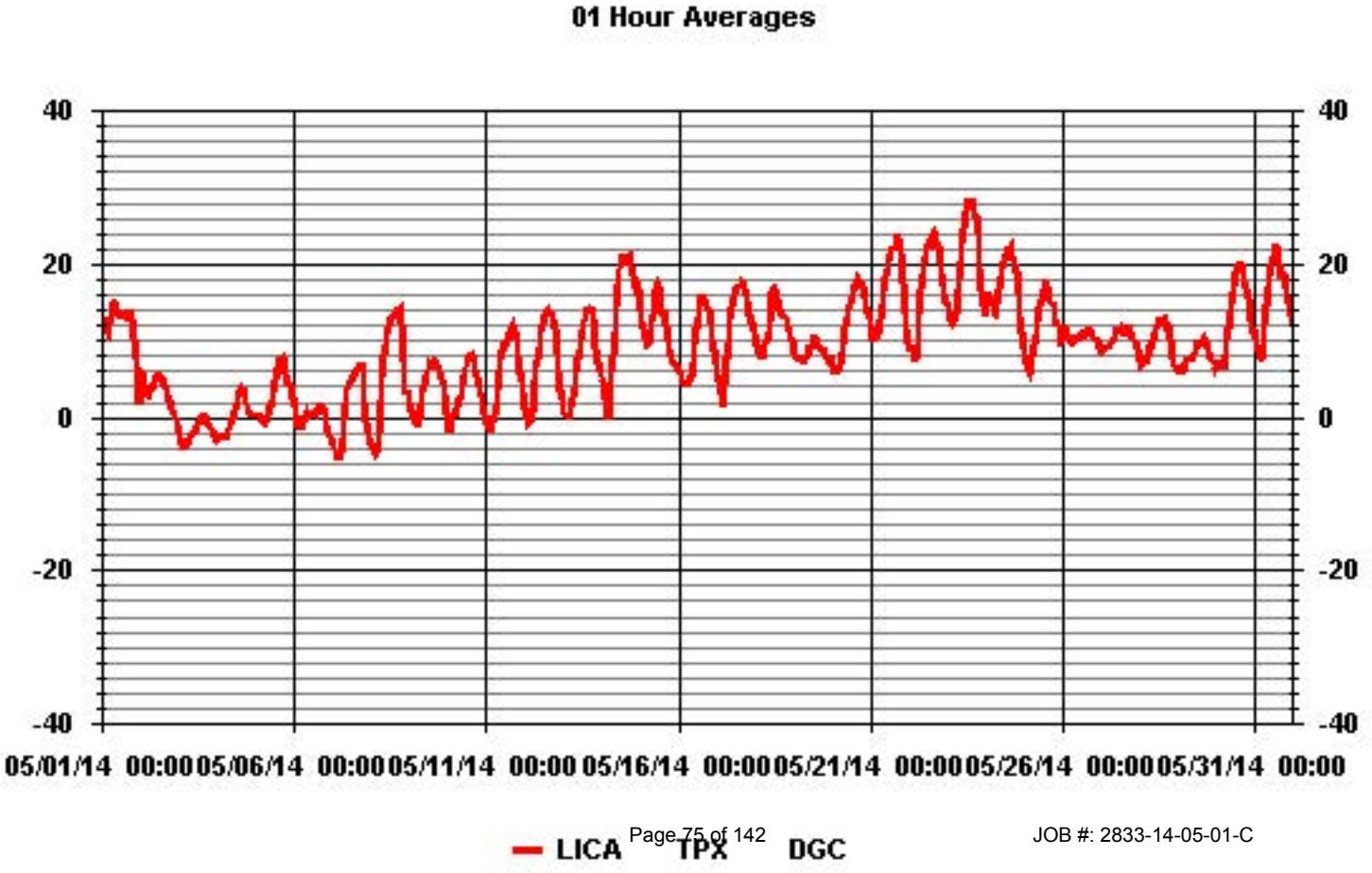
STATUS FLAG CODES

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



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-5.2	°C	@ HOUR(S)	3, 4	ON DAY(S)	7
MAXIMUM 1-HR AVERAGE:	28.3	°C	@ HOUR(S)	15	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	20.4	°C			ON DAY(S)	23
					VAR-VARIOUS	
OPERATIONAL TIME:					744	HRS
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	6.85		MONTHLY AVERAGE:		9.14	°C



JOB #: 2833-14-05-01-C

Relative Humidity

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

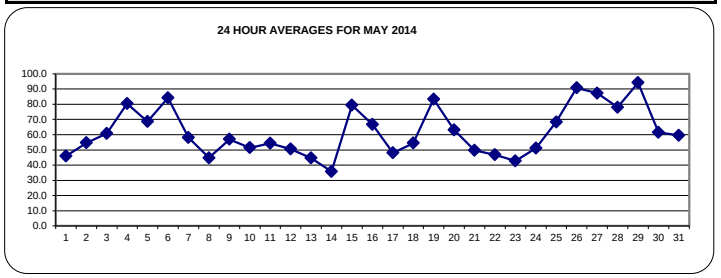
RELATIVE HUMIDITY (RH) hourly averages in %

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	27	29	35	38	39	40	45	46	49	57	54	55	48	55	49	48	41	52	37	31	35	45	68	79	79	45.9	24
2	58	64	68	71	76	65	48	45	45	45	44	42	42	44	44	46	47	52	56	58	56	59	65	71	76	54.6	24
3	64	64	65	66	66	66	64	62	59	58	58	55	55	55	53	53	54	54	58	61	61	64	69	74	74	60.8	24
4	75	75	78	85	85	85	83	82	83	81	85	81	76	69	66	64	66	65	77	89	93	95	96	97	97	80.5	24
5	97	97	97	98	98	98	97	94	88	81	74	70	62	49	45	38	32	30	32	39	45	48	54	85	98	68.7	24
6	93	96	97	97	97	96	94	87	82	87	83	85	82	86	80	85	75	68	66	66	74	79	81	84	97	84.2	24
7	88	90	92	92	91	88	83	72	60	45	39	38	36	35	34	33	32	30	32	34	49	63	67	72	92	58.1	24
8	76	83	85	81	75	69	59	46	29	23	***20***	***20***	***20***	22	22	22	23	22	22	27	46	57	61	64	85	44.8	24
9	71	77	79	81	84	84	82	71	62	58	47	41	39	39	38	36	37	38	40	43	47	49	55	68	84	56.9	24
10	76	80	73	69	73	73	67	58	50	41	36	32	27	25	25	27	32	38	42	44	52	57	65	73	80	51.5	24
11	81	85	88	89	87	83	79	69	55	45	39	35	35	34	31	31	30	29	30	34	43	51	57	62	89	54.3	24
12	75	76	80	79	80	78	64	60	59	50	42	38	33	28	26	25	25	24	26	31	43	51	59	61	80	50.5	24
13	69	71	73	72	71	67	62	56	48	37	32	29	28	27	25	25	25	25	25	28	41	47	42	45	73	44.6	24
14	46	49	60	65	70	62	50	43	36	28	24	21	***20***	***20***	22	23	22	21	23	26	28	29	32	39	70	35.8	24
15	61	75	81	91	94	93	90	80	73	63	56	50	46	69	76	73	89	94	94	91	91	91	93	89	94	79.3	24
16	87	86	86	84	84	82	81	78	74	70	63	58	54	50	45	45	44	45	46	51	62	72	74	79	87	66.7	24
17	83	85	87	91	92	82	65	45	39	36	36	33	26	21	21	23	27	30	29	33	41	46	40	41	92	48.0	24
18	44	48	51	54	58	55	57	54	53	49	43	42	41	44	48	58	59	62	59	57	60	62	72	76	76	54.4	24
19	86	91	92	90	91	92	93	93	89	88	85	78	70	69	66	68	71	76	77	83	85	88	89	89	93	83.3	24
20	92	94	95	93	93	91	83	76	64	56	52	51	47	47	45	42	40	41	43	45	49	56	60	59	95	63.1	24
21	63	73	66	67	68	66	59	55	51	47	44	41	38	34	40	41	25	26	26	29	43	56	64	72	73	49.8	24
22	73	76	83	87	88	79	61	45	40	36	32	26	26	27	26	25	27	28	29	33	38	43	45	51	88	46.8	24
23	54	57	64	66	66	64	53	49	44	35	31	24	22	21	***20***	***20***	22	24	25	30	46	55	65	69	69	42.8	24
24	62	60	63	64	68	80	84	75	63	54	45	39	35	30	29	27	34	34	33	35	41	49	57	66	84	51.1	24
25	71	78	80	82	82	81	81	76	69	63	59	57	52	43	49	58	55	58	63	71	76	75	79	82	82	68.3	24
26	80	70	83	84	81	86	93	91	90	90	90	88	91	95	96	95	95	94	94	96	98	99	***100***	***100***	***100***	90.8	24
27	***100***	***100***	***100***	***100***	***100***	***100***	***100***	91	88	81	78	87	87	89	85	76	74	72	74	76	79	82	85	90	***100***	87.3	24
28	93	96	97	96	96	94	85	80	73	69	65	64	60	58	57	58	60	65	63	71	88	93	95	96	97	78.0	24
29	98	96	97	97	96	96	99	99	99	***100***	99	***100***	96	95	98	99	91	85	86	89	89	86	85	85	***100***	***94.2***	24
30	88	87	87	89	92	88	79	73	63	53	47	46	38	31	34	35	36	52	47	50	52	66	71	72	92	61.5	24
31	77	83	84	88	89	80	71	62	55	50	44	39	37	34	35	39	49	44	46	57	58	62	71	76	89	59.6	24
HOURLY MAX	100	100	100	100	100	100	100	99	99	100	99	100	96	95	98	99	95	94	94	96	98	99	100	100			
HOURLY AVG	74.5	77.1	79.5	80.8	81.6	79.5	74.5	68.2	62.3	57.3	53.1	50.5	47.4	46.6	46.1	46.4	46.4	47.7	48.4	51.9	58.4	63.7	68.3	73.1			

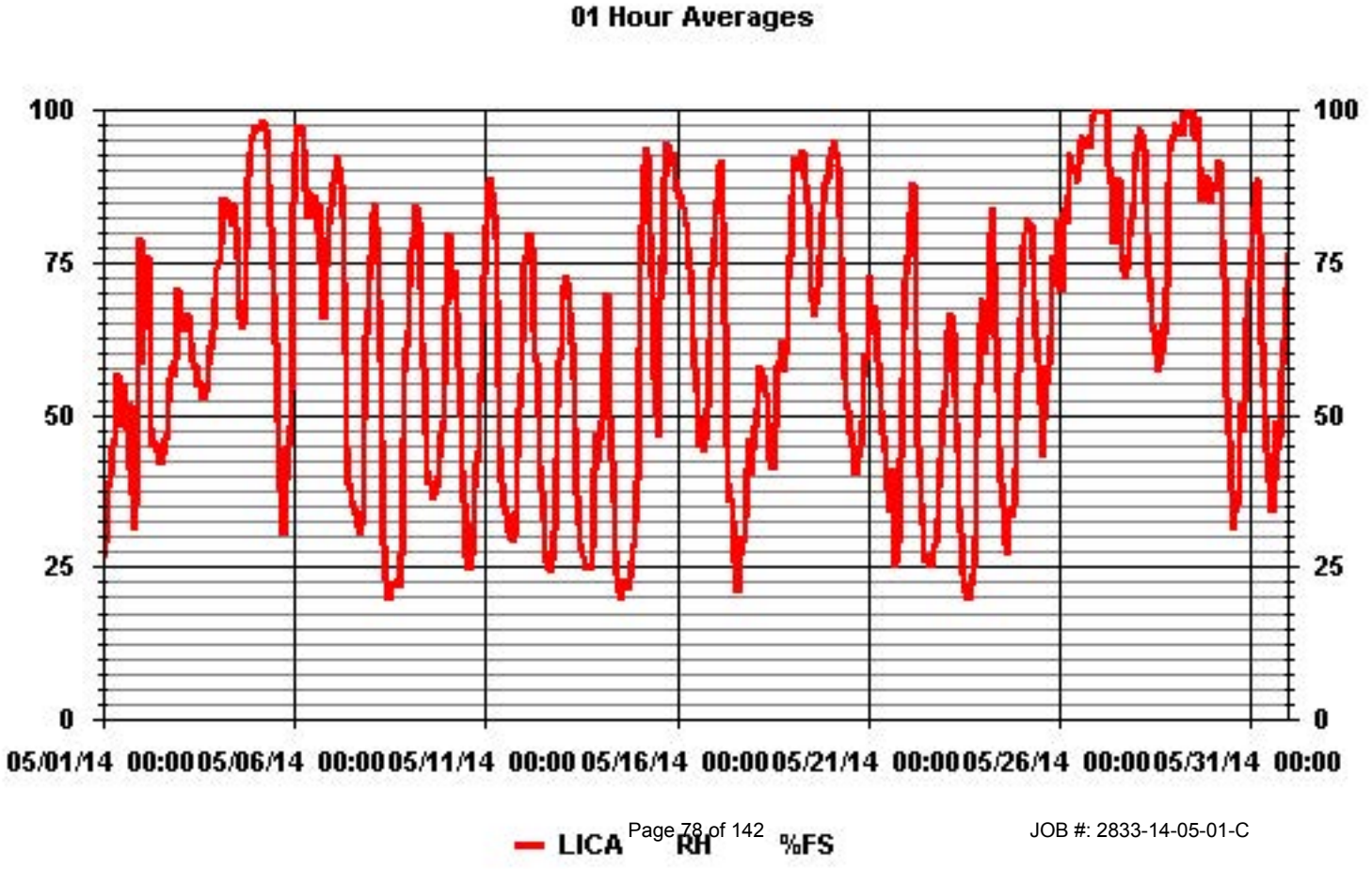
STATUS FLAG CODES

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



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	100	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	94.2	%			ON DAY(S)	29
					VAR-VARIOUS	
			OPERATIONAL TIME:		744	HRS
			AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	22.74		MONTHLY AVERAGE:		61.80	%



JOB #: 2833-14-05-01-C

Vector Wind Speed

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

WIND SPEED (WS) hourly averages in km/hr

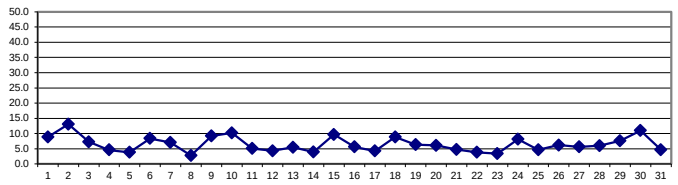
MST

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	3.8	2.9	3.5	3.2	4.9	7.4	8.9	13.4	19.7	15.9	15.9	16.2	15.2	13.9	16.2	14.6	9	1.5	5.1	8.2	5.9	3.2	2	1.6	19.7	8.8	24
2	7.5	10.6	5.4	8.4	7.3	10.4	16.3	17.1	14.7	15.9	16.5	17	17.7	17.8	18.5	16.2	14.5	11.4	11.5	13.4	12.4	11.7	11.5	10	18.5	***13.1***	24
3	14.6	12.3	11.9	10.8	7.4	5.8	6.5	7.4	8.1	7.8	7.9	7	6.8	7.9	6.6	7	7	7.5	8	6.5	4.4	3.3	0.9	0.3	14.6	7.2	24
4	0.1	1.1	6.4	3.4	2.4	3.5	4.2	4.1	5.3	5.8	6.3	5.9	5	5.2	5.5	5.4	6.1	6.1	6.7	5.7	4.5	4.3	4.1	3.3	6.7	4.6	24
5	3	3.4	4.8	3.9	4.1	5.5	6	5.1	5.6	4.4	3.4	0.8	1.4	3	2	2.3	2.4	3.5	4.3	2.5	5.9	7.4	3.2	3.6	7.4	3.8	24
6	2	7.1	7.7	4	3.8	1.8	6	7.6	10.2	11.3	11.2	12.5	13.5	12.2	12.2	11.5	15	15.2	11.9	5.7	3.3	3.8	6.2	5.2	15.2	8.4	24
7	3.4	3	2.6	3.9	4.2	4.9	6.4	7	9.4	12.5	13.5	13.1	13	12.2	13.6	11.9	10	11.2	6.3	2.4	1.4	1.6	1.1	0.5	13.6	7.0	24
8	0.4	0.8	1.1	1.2	0.6	0.5	2.6	4.2	6.6	7.2	6	4.4	3.8	5.8	1.6	2.9	3.9	2.1	5.7	0.5	0.6	0.6	0.6	2.7	7.2	2.8	24
9	8.6	9.8	8.6	8.6	6.3	5	10.9	8.5	8.9	9.6	10.8	12.2	12.5	12.9	13.1	13.1	12.6	10.5	8.4	7.8	8.7	6.5	4.4	2.5	13.1	9.2	24
10	1.3	2.7	4.3	7.3	8.9	8.5	10.8	9.4	10.6	13.5	11.6	12.5	14.1	13.6	15.6	15.9	18.2	15.4	15.6	12.6	8	5.2	5.4	3.4	18.2	10.2	24
11	3.9	3.5	3.5	3.5	4.1	4.7	5.5	5.3	6.9	10.3	10.6	7.1	6	6	9.9	5.5	4.8	5.3	7.8	4.1	1.7	0.9	0.8	1.2	10.6	5.1	24
12	1.1	0.5	0.2	1.4	0.9	0.7	1.7	6.9	7.9	7.9	4.7	5.4	4.4	8	9.8	8.8	9.2	9.3	6.1	2.1	2.1	1.1	0.6	2.1	9.8	4.3	24
13	1.3	1.8	2.2	4.4	4.1	3.2	7	7.6	8.8	8.6	9.1	4.5	5.5	7.5	4	8.3	5.7	6.7	4.9	3.2	0.9	3.6	8.9	9.3	9.3	5.5	24
14	8.9	5.3	1.9	0.8	0.9	1.2	4.1	3.9	3.3	2.6	1.7	3.5	7.2	4.6	2	4.3	0.7	4.2	4.8	7.1	6.1	4.6	3.7	6.3	8.9	3.9	24
15	7	0.2	1.8	1	2.1	2.9	4.8	7.3	8.6	8	11.2	12.8	14.2	11.6	11.5	10.3	11.3	15.1	15.2	15.3	15	13.7	15	16.3	16.3	9.7	24
16	13.6	11.7	10	9.4	9.8	8.1	8.5	7.4	9.7	6.3	4.6	5	5.3	4.5	0.7	6.6	4	4.1	2.6	0.3	0.2	0.8	0.9	0.7	13.6	5.6	24
17	1.2	0.9	0.1	0.4	0.2	0.7	5.4	6.1	3.6	5.6	5.6	7.4	8.2	7	4.7	4	3.1	6.5	6.2	3.6	2.7	5.6	6.9	6.3	8.2	4.3	24
18	5.6	4.1	4.5	6.2	2.8	6	5.5	6.4	6.6	6.9	10.6	11.9	15.3	17.5	16.5	16	13.5	9.1	10	9.3	6.8	6.2	7.4	7.1	17.5	8.8	24
19	6.4	8.3	8.7	9.1	8	8.3	5.4	6.5	10.4	10.9	10.4	8.7	9.8	10.9	10.9	6.6	5.4	1.9	0.7	0.2	1	0.9	0.5	1.8	10.9	6.3	24
20	0.4	0.2	0.9	1.1	0.8	2.4	5.9	7.5	11.5	12.4	11.7	8.7	8.2	10.1	8.1	10.5	10.4	10.4	6.3	6	2.9	1.4	4	4.8	12.4	6.1	24
21	5.5	2.4	3.1	2.2	3.5	3.6	4.9	4.1	4.2	4.5	7.4	6.3	6.7	8.6	6.5	6.3	9.9	9.2	7.4	4.2	1.1	0.5	0.6	0.6	9.9	4.7	24
22	1.4	0.8	1	0.4	0.3	0.6	3.3	2.8	4.4	6.5	6.8	5.4	6.2	8	5	6.6	6.4	5.9	6.5	4.1	1.6	1.8	2.7	2.9	8.0	3.8	24
23	2.4	1.4	0.1	1.4	1.4	1.1	1.9	2.8	5.4	4.4	3.6	5.7	4.3	5.4	6.9	5.3	7.8	8.3	6.9	3.6	1.1	0.6	0.1	0.2	8.3	3.4	24
24	5.4	5.6	7.1	7.9	3.7	6.6	7.6	8	8.9	8.6	11	11.7	10.6	10.9	12.5	13.1	13.4	14.5	11.8	7.7	3.3	2.1	1.5	0.9	14.5	8.1	24
25	1.1	0.5	1	1.6	1.8	3.2	6.9	6.9	6.8	2.4	7.3	5.3	4.6	6.2	9.1	11.1	9.2	5.9	4.7	3.4	3.4	4.4	3.2	2.2	11.1	4.7	24
26	2.5	4.1	0.8	3.8	7	6.9	7.4	8.1	7.8	9.2	10.4	9.1	8.1	6.5	5.4	6	6.7	7	7	7.6	6.1	5.1	3.4	2.8	10.4	6.2	24
27	2.6	2.6	3.8	3.8	3.3	2.7	7	9.2	7.1	7.3	6.2	5.6	5.3	7.8	9.8	9	8.1	8.8	7.8	6.5	3.5	3	1.8	1.9	9.8	5.6	24
28	2.5	1.1	2.4	0.6	0.4	1.4	6.3	6.1	3.7	7.2	8.3	9.3	9.1	9.2	8.6	8.5	8.9	4.7	8.9	8.4	7.1	8.7	7.1	4.9	9.3	6.0	24
29	7.6	8.1	7.1	6.6	4.8	5.1	6.2	7.4	7.5	7.7	2.9	4.2	6.6	4.5	3.8	4.9	10.8	11.3	8.1	10.3	11.5	12.5	11.5	10.4	12.5	7.6	24
30	8.1	6.7	4.9	4	3.5	7.3	10	10.2	14.7	15.7	14.7	14.3	17.8	16.6	19.1	20.8	***21***	13.1	12.9	8.6	7.8	2.9	4.2	5.1	***21.0***	11.0	24
31	4.6	4.1	4.8	3.4	3	5	5.8	3.8	4.2	4.7	6	6.9	4.9	5.2	6.5	10	9.1	5.8	3.9	1.5	3.6	1.8	1.2	1.8	10.0	4.7	24
HOURLY MAX	14.6	12.3	11.9	10.8	9.8	10.4	16.3	17.1	19.7	15.9	16.5	17.0	17.8	17.8	19.1	20.8	21.0	15.4	15.6	15.3	15.0	13.7	15.0	16.3			
HOURLY AVG	4.4	4.1	4.1	4.1	3.8	4.4	6.4	7.0	8.1	8.4	8.6	8.4	8.8	9.1	8.9	9.1	9.0	8.1	7.5	5.9	4.7	4.2	4.0	4.0			

STATUS FLAG CODES

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

24 HOUR AVERAGES FOR MAY 2014

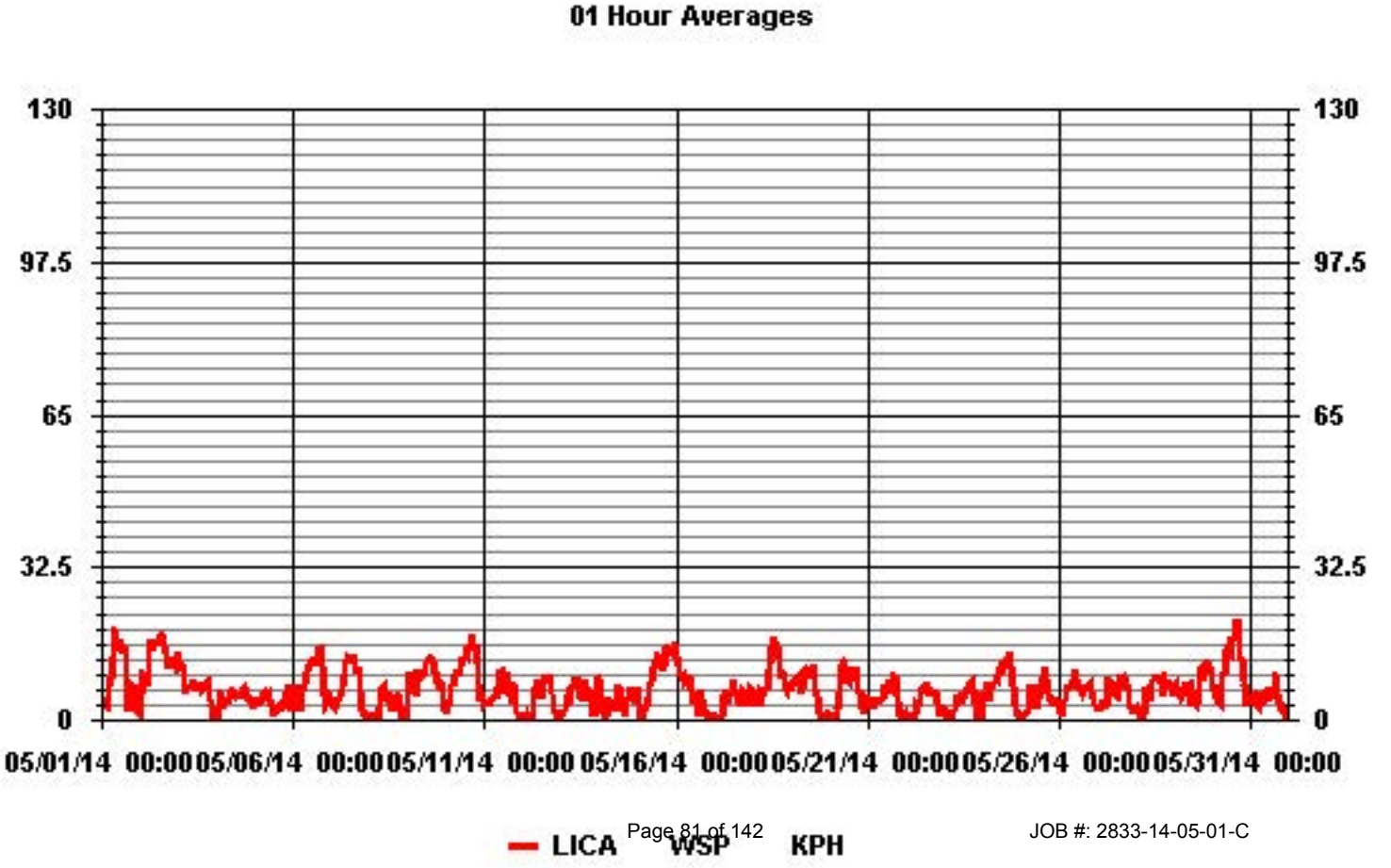


LAST CALIBRATION: November 28, 2012

DECLINATION : MAGNETIC DELINATION 19 DEGREE EAST

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	744						
MAXIMUM 1-HR AVERAGE:	21.0	KPH	@ HOUR(S)	16	ON DAY(S)	30	
MAXIMUM 24-HR AVERAGE:	13.1	KPH			ON DAY(S)	2	
					VAR-VARIOUS		
OPERATIONAL TIME:						744	HRS
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	4.21		MONTHLY AVERAGE:			6.46	KPH



JOB #: 2833-14-05-01-C

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

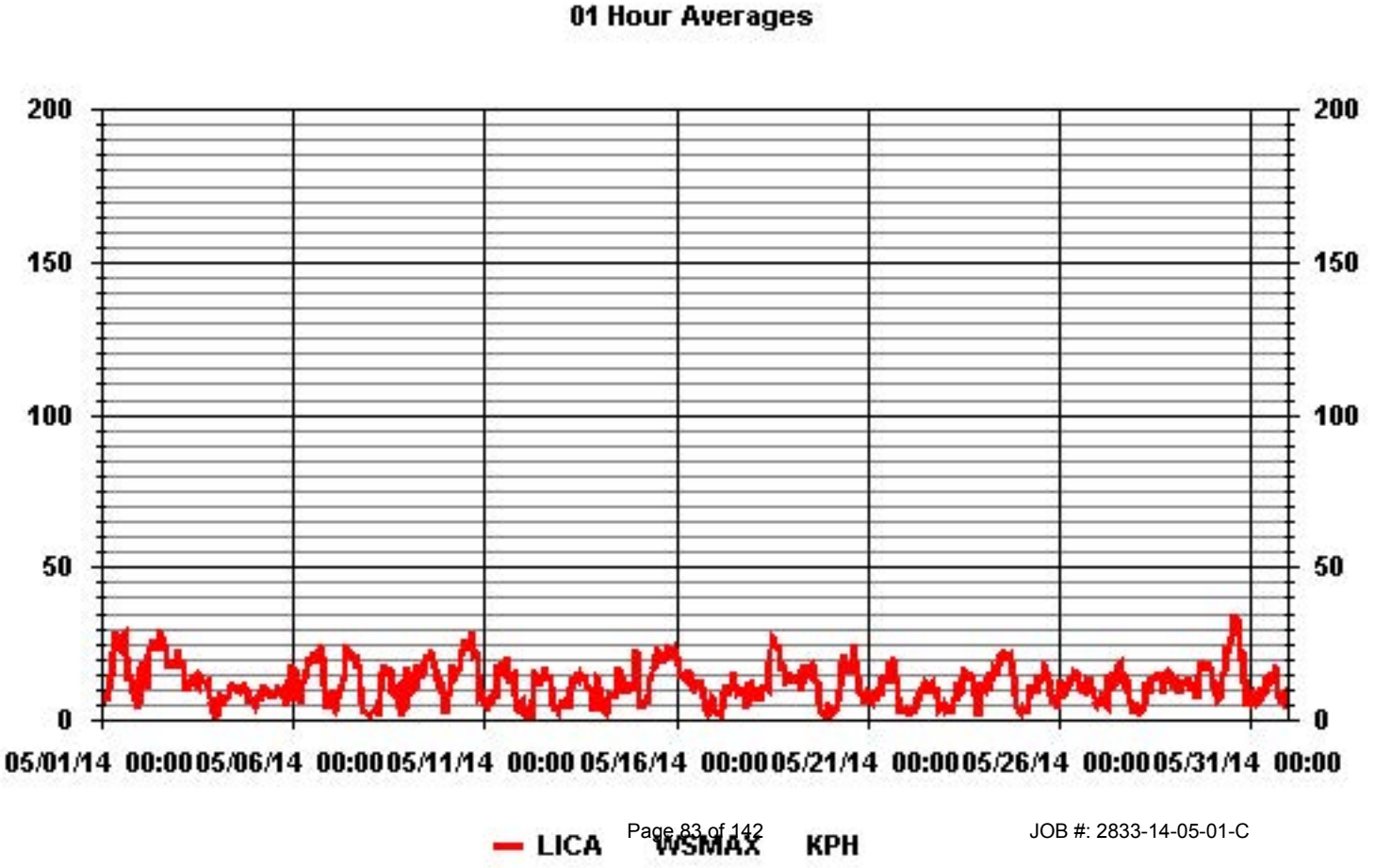
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	6.8	6.1	6.7	8.8	8.3	10.4	14.4	21.9	29.2	28.1	24	23.5	22.9	27.8	28.6	25.7	21.1	12.8	14.7	13.7	9.1	6.5	3.9	5	29	15.8	24
2	16.8	18.6	10.2	14.1	10.1	21.2	23.6	25.8	25.5	22.3	25.5	24	29.6	26.7	26.7	23	24.5	17	20	18.2	19.9	18.3	18.7	18.4	30	***20.8***	24
3	23.4	19.7	19.1	17.8	14	9	11.6	12	12.7	14.3	14.6	12.2	11.3	14.6	13.9	12.7	13	12.5	12.8	10.8	7.6	6.2	2.7	1.1	23	12.5	24
4	1.4	7	9.1	6.1	4.2	6.5	7.3	7.4	10.6	11.1	11.7	10.7	10.3	9.9	11.4	9.9	10.6	11.2	9.6	9.6	6.5	6.6	6.5	6.5	12	8.4	24
5	5	6.4	7.6	5.8	8.5	11	10.8	8.2	10.6	8.9	8.2	7.9	8.5	8.8	10.7	10.6	9.1	9.7	7.4	4	11.2	10.5	13.7	17.8	18	9.2	24
6	6.1	16.9	15	12.2	8	5.3	11.6	13.2	15.9	17.6	19.7	20	22.3	21.2	22.5	18.2	23.2	24.6	21.6	11.9	4.9	5.1	8.7	9.1	25	14.8	24
7	5.5	4.8	3.8	5.6	6.6	9.6	11.2	12.7	14.2	24.7	20	21.5	22.7	20.4	20.7	20.9	18.1	17.1	11.5	6.1	3.1	2.9	2.7	1.6	25	12.0	24
8	2	2.6	2.7	2.9	3	2.7	6.2	9.4	15.9	18.4	14.6	16.5	14.2	17.5	9.7	9.1	10.6	10.4	11.1	4.3	1.5	2.9	3.8	17.1	18	8.7	24
9	13.2	13.9	14.6	13.6	9.7	10.1	17.9	14.4	13.4	17.4	17	20.1	21.5	19.2	22.8	21.4	19.3	17.5	13.5	11.4	12.4	10.7	5.9	3.6	23	14.8	24
10	3.3	9.2	7.4	11.3	18.1	12.9	15	16.5	17.3	23.2	21.9	22.5	26.2	22.3	24.2	25.1	29.2	21.8	22.5	22	16	7.8	8.4	5.2	29	17.1	24
11	5.2	5	4.5	6.3	6.1	7.7	9.5	9.1	17.1	17.2	18.5	16.4	15.6	15.1	20.8	15.8	12.2	14.5	15	8.5	3.8	2.4	5.6	6.4	21	10.8	24
12	3.7	2.4	3.2	2.5	2.1	1.8	6.2	16.3	13.2	14.6	10.7	13.3	13.9	16.6	16.4	14.6	14.1	13.8	11.6	5.6	3.9	4	2.8	3.9	17	8.8	24
13	4.3	6.4	3.9	6.4	6.1	5.7	10.5	13.6	13.8	15.1	14.9	13.8	15.3	14.5	14	13.9	11.6	11.2	10	5.8	3	10.9	13.4	12.6	15	10.4	24
14	10.9	8.5	3.8	3.4	2.5	3.9	8.5	7.9	8.3	7.1	9.2	13.7	17	11.7	15	8.5	12.3	9.9	9.8	10.8	11.5	9.5	13	23.2	23	10.0	24
15	16.6	7	4.9	3.7	6.6	5	7.8	12.5	13.8	15.7	17.1	21.5	24.1	19.7	19.5	20	18.9	22.3	24.7	21.8	21.7	19.8	22.2	23.2	25	16.3	24
16	21.2	18.8	16.2	13.7	14.8	12.4	14.4	12	16.7	12.1	10.8	10.3	11.7	13.1	9.7	13.3	11.3	8	6.8	3.3	2	2.8	6.7	5.9	21	11.2	24
17	3	2.1	2	2.6	1.9	3.5	9.3	11.1	8	10.4	10.3	15	15.1	12	9.1	9.7	8.1	10.6	8.8	7.2	3.9	11.9	12.3	8.8	15	8.2	24
18	8	9.2	6.7	10.7	6	9.7	10.5	10.8	11.4	10.7	18.8	22.9	27.4	26.9	24.5	23.5	23.8	15.9	18.9	16.5	11.9	12.1	13	15.6	27	15.2	24
19	13.3	13.2	14.5	12	13.9	12.8	9.7	11.7	18.3	17.2	15.3	14.8	17.4	18.1	16.6	13.5	12.7	6.2	3.1	2.4	2.4	1.8	2.5	5.3	18	11.2	24
20	1.7	2.5	2.4	2.9	3.1	5.9	9.7	11	18.7	20.8	19.5	15.3	17	18.1	17.5	24.8	19.3	18.5	14.9	9.6	9	8.7	6.7	6.4	25	11.8	24
21	8.7	7.7	7.4	6.4	8.3	6.4	9.6	10	9.6	13.4	14.8	12.1	13.9	16.4	19.2	16.9	20.4	13.3	13.4	8.6	2.5	2.5	3.8	3.5	20	10.4	24
22	3.5	2.5	2.3	3	2.9	2.8	6.1	5.5	8.9	10.7	11.5	10.7	12.6	11.9	8.5	11.3	12.2	9.6	9.8	7.7	3.1	3.6	3.9	5.2	13	7.1	24
23	4.1	2.9	3.3	3.4	3.2	4.9	6.7	6.9	12.1	9	9.2	14.2	16.8	13.6	14	13.7	15.2	15.1	13.1	8	2.3	2.6	1.8	12.4	17	8.7	24
24	11.1	10.3	12.9	13.9	9.2	15.2	12.3	16.7	15.9	14.7	17.8	21	22	23.2	20.5	20.7	20.6	21.4	19.6	14.7	8	4.4	3.2	2.9	23	14.7	24
25	2.2	3.9	3.1	2.7	3.1	6.9	11.8	10.5	9.9	8.3	14.6	13.2	11.8	13.4	17.9	18	16.6	13.5	8.6	6.6	6.5	8.1	4.7	4.6	18	9.2	24
26	11.3	13.2	7	7.9	10.2	10.2	11	13.4	14.4	16.4	15.9	15.6	13.4	10.6	9.7	10.1	9.6	12.7	11.9	14.1	11	9.4	7.5	6.3	16	11.4	24
27	5	5.9	8.4	8.4	5.4	4.8	14.1	14.5	12	10.7	11	11.4	12	17.6	18.3	14.8	13.2	14.3	13.6	9.3	6.7	5.9	3.5	3.3	18	10.2	24
28	4.2	3.3	5.1	2.3	3.3	5.1	11.8	11.9	8.7	13.3	13.2	13.7	14.2	14.2	13.1	15.7	13.4	8.8	15	15.6	13.8	16.4	12.5	10.3	16	10.8	24
29	11.8	12.8	10.2	10.7	9	13.5	12.2	13	12.6	13	10.8	11	11.2	10.4	7.1	14.7	17.4	18.6	15.5	18.5	18.2	18.5	17.2	16.6	19	13.5	24
30	13.5	10.6	8.4	6.3	6.9	12.4	14.7	15.8	22.6	21.9	23.6	25.2	27.1	***33.7***	***33.7***	31.1	32.8	19.2	22.8	12.7	12.7	4.3	7.1	8.4	***34***	17.8	24
31	9	6.4	7.3	5.3	5.8	8.5	10.3	8.5	9.6	9.5	14	14.6	12.6	13.1	14.8	17.9	15.5	9.9	7.5	5	8.2	8.9	3.5	6.8	18	9.7	24
HOURLY MAX	23	20	19	18	18	21	24	26	29	28	26	25	30	34	34	31	33	25	25	22	22	20	22	23			
HOURLY AVG	8.3	8.4	7.5	7.5	7.1	8.3	11.2	12.4	14.2	15.1	15.4	16.1	17.1	17.2	17.1	16.7	16.4	14.3	13.5	10.5	8.3	7.9	7.8	8.9			

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:	34	KPH	@ HOUR(S)	13, 14	ON DAY(S)	30
				VAR-VARIOUS		
OPERATIONAL TIME:					744	HRS



JOB #: 2833-14-05-01-C

LICA
WSP / WD Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	1.47	3.62	6.45	4.97	4.43	2.82	3.22	2.28	.67	1.07	2.82	5.77	3.22	2.01	1.88	.67	47.44
<	12.0	3.62	3.49	7.25	1.47	3.22	3.09	2.01	1.34	.26	.13	.53	1.74	2.68	2.01	3.89	2.55	39.38
<	20.0	1.47	.40	.00	.00	.00	.00	.80	.00	.00	.00	.00	.13	1.20	1.07	1.88	4.03	11.02
<	29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.26	.00	.00	.00	.26
<	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	6.58	7.52	13.70	6.45	7.66	5.91	6.04	3.62	.94	1.20	3.36	7.66	7.39	5.10	7.66	7.25	

Calm : 1.88 %

Total # Operational Hours : 744

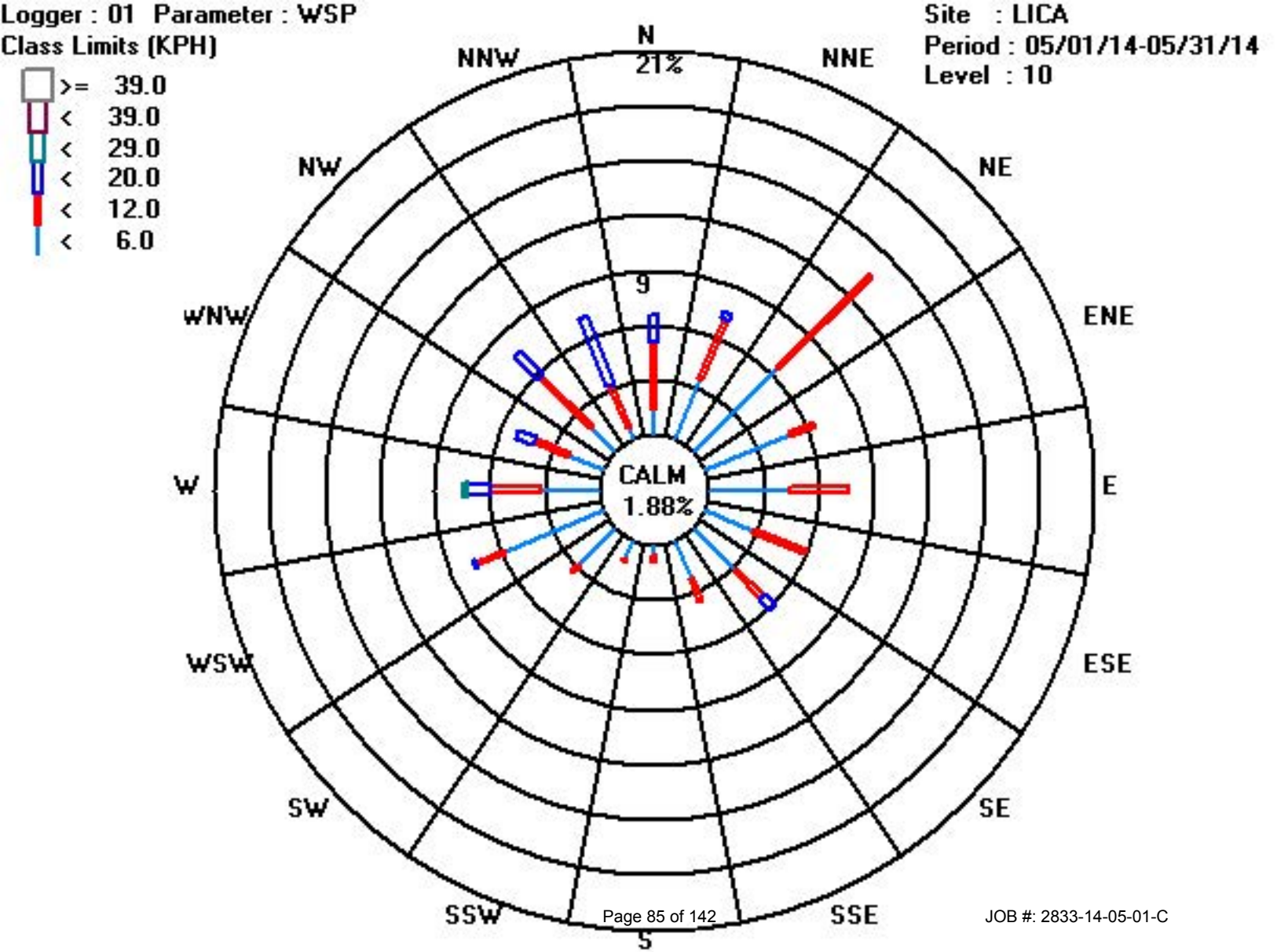
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	11	27	48	37	33	21	24	17	5	8	21	43	24	15	14	5	353
<	12.0	27	26	54	11	24	23	15	10	2	1	4	13	20	15	29	19	293
<	20.0	11	3					6					1	9	8	14	30	82
<	29.0													2				2
<	39.0																	
>=	39.0																	
	Totals	49	56	102	48	57	44	45	27	7	9	25	57	55	38	57	54	

Calm : 1.88 %

Total # Operational Hours : 744



JOB #: 2833-14-05-01-C

Vector Wind Direction

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

WIND DIRECTION (WD) hourly averages in degrees

MST

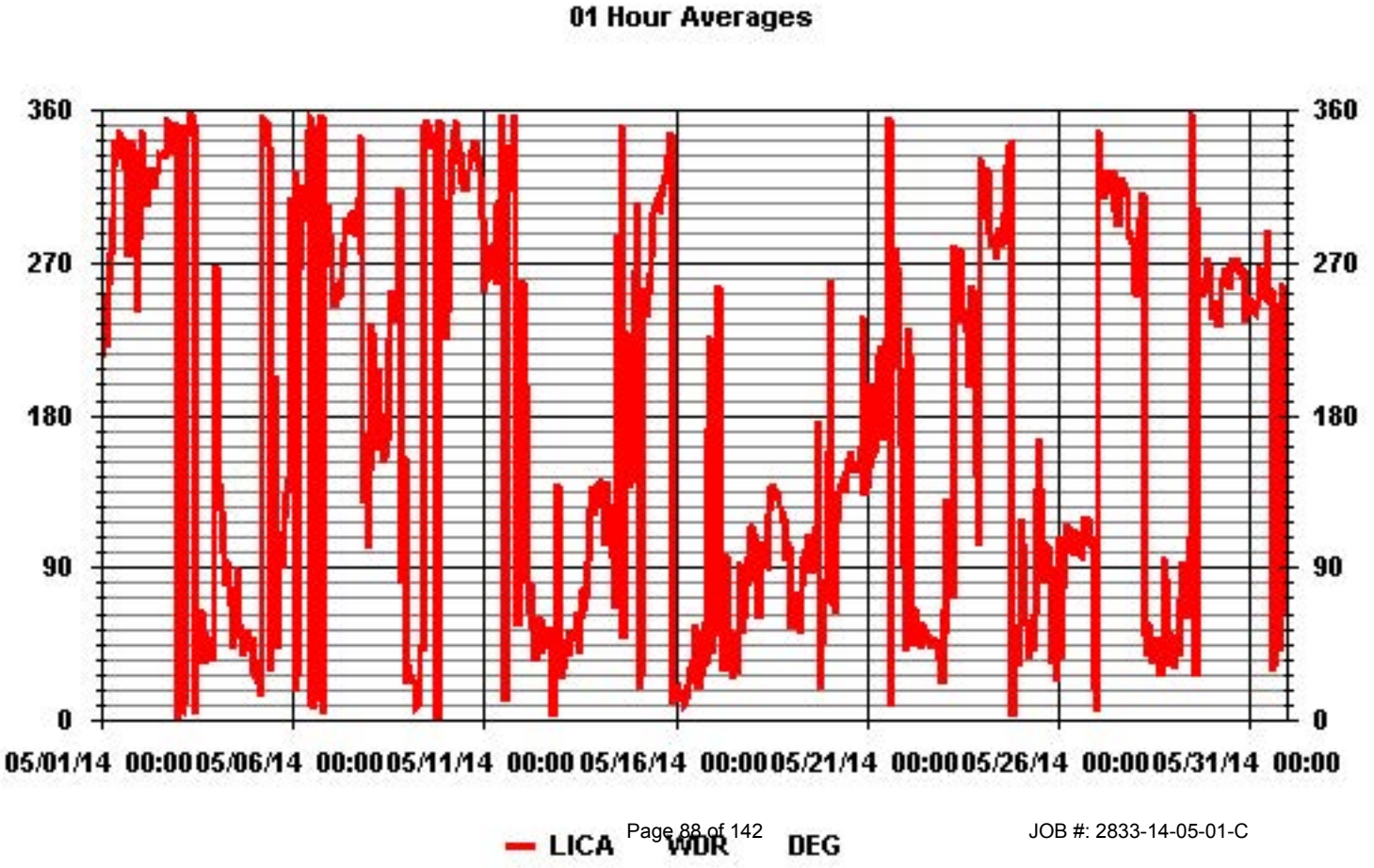
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	215	228	239	220	250	257	275	296	327	343	339	349	334	333	344	330	331	273	334	343	324	299	240	283	349	NNW	24
2	336	348	315	317	303	313	318	326	321	313	322	326	334	333	333	333	336	356	352	348	334	341	349	353	356	N	24
3	1	6	7	6	9	352	344	356	359	345	353	3	33	41	44	65	53	33	50	38	40	34	46	165	359	N	24
4	269	154	141	125	99	90	79	95	80	68	42	53	65	90	57	49	37	50	46	51	51	45	46	32	269	W	24
5	33	26	21	23	14	357	344	340	354	340	29	176	127	203	41	76	91	91	111	119	134	142	233	309	357	N	24
6	201	325	16	25	265	281	294	316	303	348	356	355	9	7	22	11	350	347	357	3	285	277	304	288	357	N	24
7	268	260	244	256	251	249	259	267	282	294	297	287	298	299	299	286	288	309	345	276	127	169	151	101	345	NNW	24
8	147	235	230	202	159	163	207	182	172	152	155	165	226	243	253	248	251	235	253	315	80	90	156	21	315	NW	24
9	33	31	28	25	22	8	9	22	45	40	352	349	354	352	345	337	347	342	3	2	355	320	308	268	355	N	24
10	224	241	262	310	337	348	354	343	328	336	318	317	312	323	325	334	334	340	340	330	334	325	322	297	354	N	24
11	253	263	259	280	271	279	280	257	304	306	309	357	20	10	328	312	339	330	335	358	73	55	62	121	358	N	24
12	260	105	198	82	63	81	55	45	35	40	42	61	40	42	53	52	50	55	45	1	21	70	140	121	260	WSW	24
13	24	30	40	47	48	37	53	47	49	46	64	39	59	77	78	64	71	93	125	138	133	120	137	139	139	SE	24
14	140	136	126	102	125	141	125	128	97	82	66	260	286	283	352	49	51	230	145	138	140	143	222	265	352	N	24
15	305	18	26	192	255	238	240	251	264	273	300	305	304	303	310	310	316	321	329	333	336	347	9	12	347	NNW	24
16	16	18	15	16	12	9	10	12	21	31	23	35	56	53	20	20	30	26	58	32	172	227	45	39	227	SW	24
17	122	81	49	256	133	72	28	52	98	36	51	54	24	33	28	31	93	61	50	60	79	96	110	113	256	WSW	24
18	116	82	109	98	59	94	105	96	93	92	121	124	137	139	134	136	131	127	120	121	119	93	106	103	139	SE	24
19	56	56	56	56	76	69	51	79	97	92	100	109	93	86	106	114	104	176	84	18	44	80	69	159	176	S	24
20	125	259	67	70	63	117	135	138	140	137	134	146	151	150	159	151	148	148	152	148	162	238	133	137	259	WSW	24
21	139	137	149	199	154	158	189	215	221	165	175	198	226	240	356	8	253	256	278	268	209	163	91	103	356	N	24
22	40	76	232	217	43	52	67	54	58	41	56	58	47	52	51	47	42	47	47	47	37	39	35	21	232	SW	24
23	65	51	130	81	86	71	280	247	241	234	278	257	243	239	230	196	234	257	254	226	157	146	103	332	332	NNW	24
24	298	296	314	326	302	288	279	285	280	271	290	279	286	281	300	311	328	338	339	1	42	57	31	37	339	NNW	24
25	85	118	105	60	57	36	54	60	40	63	136	126	166	138	81	88	105	103	92	33	82	90	56	23	166	SSE	24
26	59	108	35	78	99	115	113	113	99	102	97	112	106	99	98	105	120	111	120	104	101	107	106	19	120	ESE	24
27	5	349	320	319	307	324	313	310	316	323	323	300	312	291	309	318	318	311	313	310	291	285	282	271	349	NNW	24
28	253	249	270	296	257	312	50	38	58	38	46	33	36	42	49	39	26	33	96	84	43	32	49	37	312	NW	24
29	30	48	47	37	71	84	93	91	59	70	108	359	59	76	25	302	261	260	250	253	258	273	270	267	359	N	24
30	248	236	247	234	234	238	255	260	267	264	261	254	268	273	267	268	273	270	265	260	267	234	239	249	273	W	24
31	248	241	243	241	244	247	268	260	251	250	266	289	246	255	29	32	53	52	40	246	258	159	84	64	289	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:	November 28, 2012
DECLINATION :	MAGNETIC DELINATION 19 DEGREE EAST

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	114.86		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	354	DEG



JOB #: 2833-14-05-01-C

Standard Deviation Wind Direction

Lakeland Industry & Community Association - Cold Lake South Site

MAY 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST

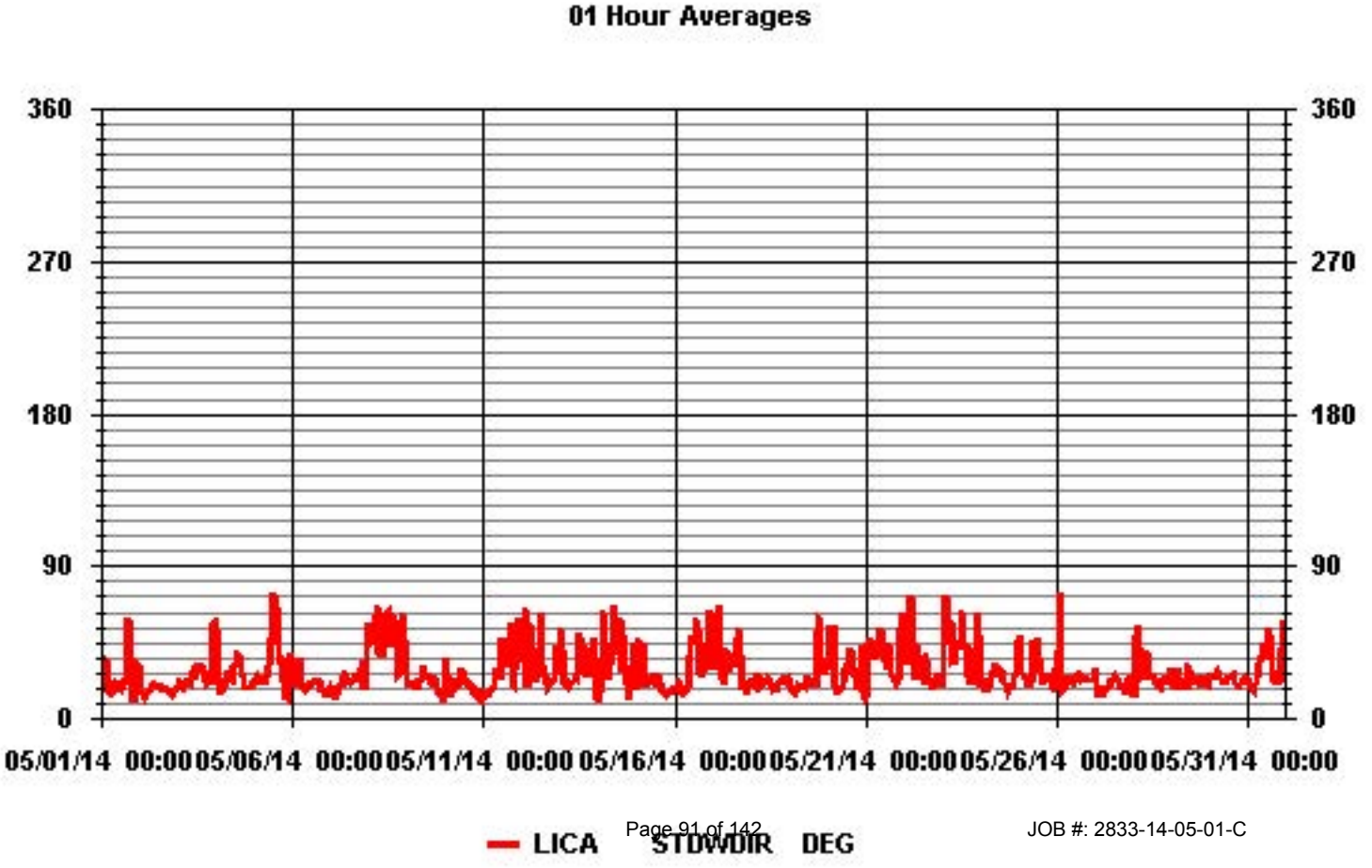
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	33	34	29	35	17	16	18	20	17	18	22	19	18	22	24	19	25	60	29	15	10	15	33	32
2	16	16	16	13	15	15	16	17	20	21	19	19	20	19	17	17	18	17	17	16	14	15	17	18
3	19	23	19	18	20	20	22	22	21	28	23	30	31	29	29	32	29	23	20	21	22	20	56	57
4	53	32	14	21	22	20	22	28	26	25	24	31	33	38	37	31	24	26	19	18	18	18	19	22
5	23	25	22	22	20	25	21	21	24	31	47	65	74	47	48	65	32	37	23	19	13	12	39	37
6	35	22	19	30	19	35	20	19	17	18	20	20	20	21	22	21	21	24	18	17	13	15	12	15
7	18	16	12	12	14	18	20	23	22	28	24	23	21	22	23	24	26	22	25	30	34	16	29	57
8	52	44	45	51	61	67	38	43	37	40	49	62	63	42	62	55	53	54	25	26	32	62	48	35
9	20	20	20	20	21	18	18	24	22	24	31	23	26	25	25	22	19	25	20	19	16	14	10	12
10	35	26	18	13	15	22	19	24	20	21	28	28	25	22	20	20	18	16	18	18	15	13	12	17
11	11	16	12	15	17	18	18	29	27	25	25	48	39	44	30	44	43	56	20	19	28	37	60	36
12	35	58	66	18	49	56	53	23	23	25	41	36	62	33	26	22	18	19	20	24	21	35	43	25
13	54	42	22	21	20	23	19	20	22	25	24	51	48	31	44	26	43	26	26	24	41	48	13	11
14	11	15	35	64	41	44	23	31	43	54	66	48	42	38	60	27	49	32	21	11	18	27	44	28
15	17	47	37	41	42	19	22	21	24	25	23	25	21	26	18	20	17	15	15	14	15	16	16	17
16	17	17	23	17	16	19	18	17	19	37	49	43	46	59	53	25	36	25	27	29	43	43	64	52
17	53	28	47	51	67	37	24	20	42	27	39	34	32	31	31	48	53	38	17	19	16	16	22	23
18	22	21	20	19	27	19	25	21	22	23	25	24	22	18	19	16	19	21	22	22	23	20	23	24
19	20	18	17	16	19	17	18	19	20	19	23	23	23	19	21	23	22	52	60	59	29	26	35	28
20	34	55	45	37	55	19	14	16	18	19	22	29	33	28	41	28	27	24	29	17	29	43	16	12
21	13	44	40	48	39	35	37	39	46	54	39	42	35	29	44	38	26	24	23	21	23	53	45	62
22	44	61	32	62	73	52	22	45	22	27	23	35	36	20	35	24	21	19	19	22	23	27	22	18
23	20	48	72	43	50	58	35	36	31	40	45	42	64	45	40	45	26	21	21	23	23	42	62	50
24	19	22	16	18	23	20	22	26	28	32	27	24	30	29	23	22	19	16	18	18	20	24	26	46
25	39	49	28	26	25	22	18	20	21	46	32	38	48	37	28	20	23	24	24	25	23	19	16	30
26	26	40	74	17	18	23	23	23	24	22	21	24	23	23	28	24	25	24	24	23	23	23	24	24
27	30	19	13	19	16	15	17	18	21	20	22	23	25	23	23	22	17	20	16	16	18	23	25	18
28	12	49	21	55	35	41	23	25	40	26	26	23	26	22	20	20	19	23	21	23	23	24	23	30
29	20	19	19	19	29	24	22	21	19	19	32	29	22	23	20	24	22	21	23	23	23	19	21	20
30	25	25	25	26	28	25	24	24	22	22	24	24	24	24	25	21	21	21	20	21	21	23	25	24
31	22	20	19	17	20	21	24	33	36	40	44	35	54	50	42	23	21	21	21	28	21	42	58	54

STATUS FLAG CODES

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

LAST CALIBRATION: November 28, 2012

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS



JOB #: 2833-14-05-01-C

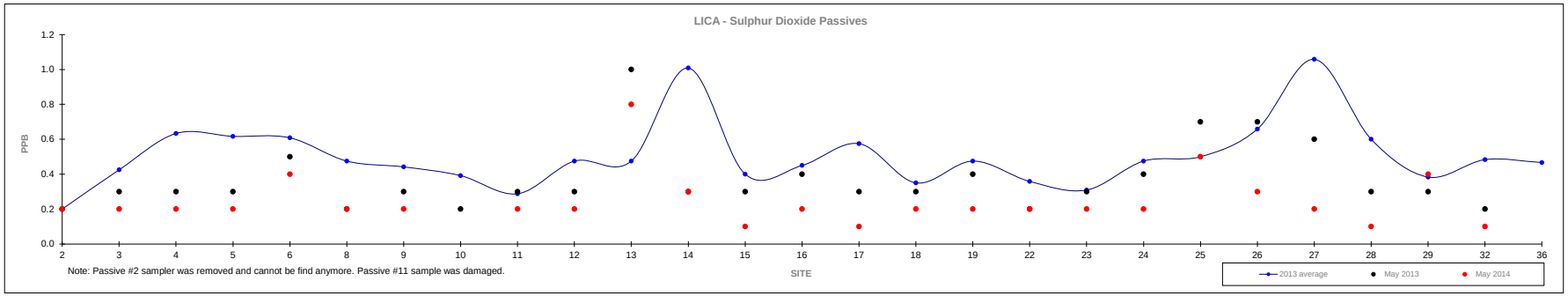
Non-Continuous Monitoring

Passive Summary Results for May 2014

Lakeland Industry & Community Association

Sulphur Dioxide
ppb

	2013																									May 2014	
	2	**3**	**4**	**5**	**6**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**32**	**36**	**Reading**	**Site**
Mean	0.2	0.4	0.6	0.6	0.6	0.5	0.4	0.4	0.3	0.5	0.5	1.0	0.4	0.5	0.6	0.4	0.5	0.4	0.3	0.5	0.5	0.7	1.1	0.6	0.4	0.5	0.5	0.2	-
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	<0.1	#29
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	0.8	#14



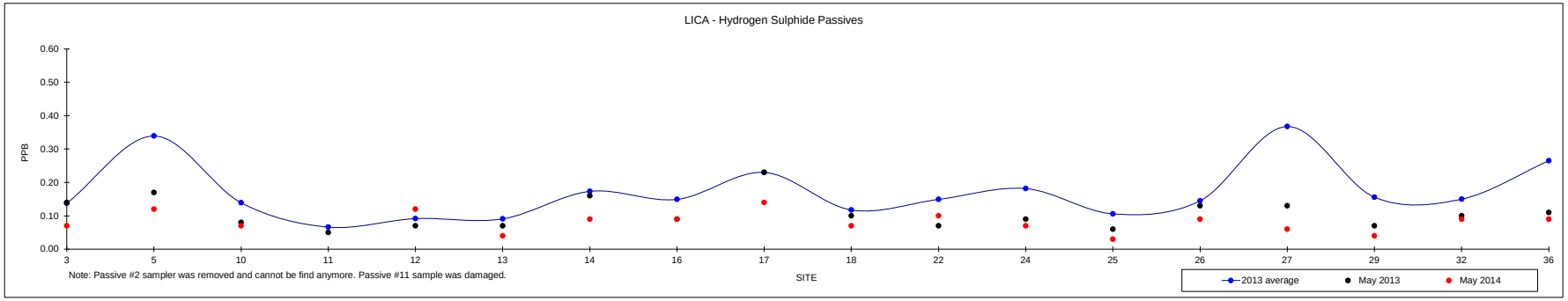
Note: Passive #2 sampler was removed and cannot be find anymore. Passive #11 sample was damaged.

Passive Summary Results for May 2014

Lakeland Industry & Community Association

Hydrogen Sulphide
ppb

	2013																		May 2014	
	3	5	10	11	12	13	14	16	17	18	22	24	25	26	27	29	32	36	Reading	Site
Mean	0.14	0.34	0.14	0.07	0.09	0.09	0.17	0.15	0.23	0.12	0.15	0.18	0.11	0.15	0.37	0.16	0.15	0.27	0.08	-
Minimum	0.05	0.07	0.06	0.04	0.02	0.02	0.05	0.07	0.11	0.04	0.04	0.06	0.03	0.06	0.04	0.05	0.05	0.07	0.03	#25
Maximum	0.24	0.97	0.31	0.11	0.20	0.16	0.30	0.29	0.44	0.17	0.32	0.32	0.16	0.21	1.23	0.33	0.26	1.36	0.14	#17



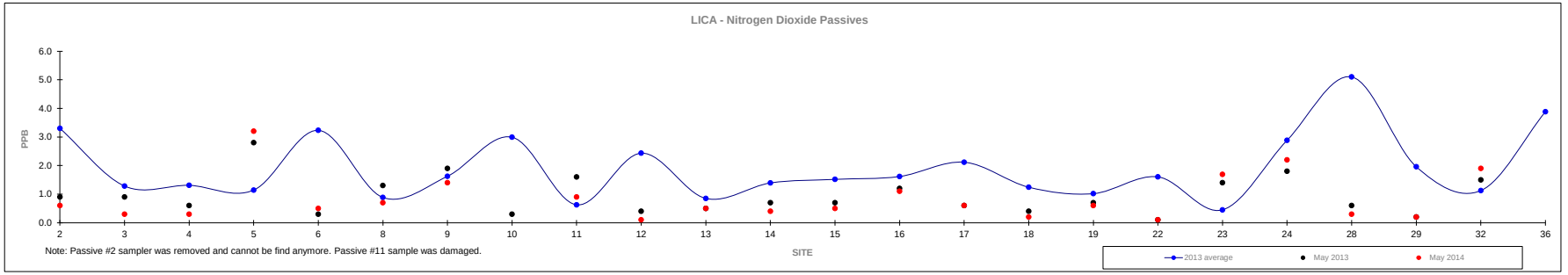
Note: Passive #2 sampler was removed and cannot be find anymore. Passive #11 sample was damaged.

Passive Summary Results for May 2014

Lakeland Industry & Community Association

Nitrogen Dioxide
ppb

	2013																							May 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	0.8	-
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	#13, #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	3.2	#6



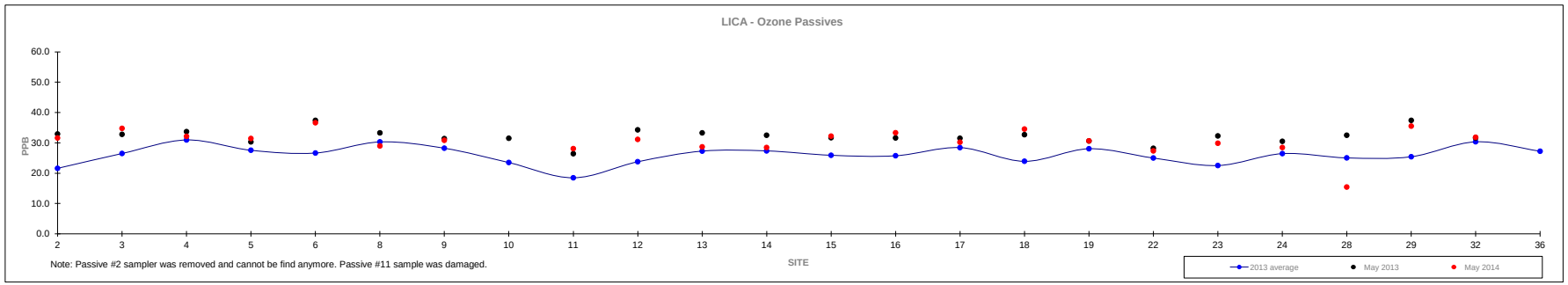
Note: Passive #2 sampler was removed and cannot be find anymore. Passive #11 sample was damaged.

Passive Summary Results for May 2014

Lakeland Industry & Community Association

Ozone
ppb

	2013																							May 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	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	30.55	-
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	15.41	#29
Maximum	21.6	37.0	48.1	47.1	43.3	45.1	43.3	36.3	31.5	34.0	38.6	37.5	39.3	40.2	44.1	36.2	41.8	36.1	35.1	38.7	36.3	38.9	40.5	39.4	36.61	#8



Note: Passive #2 sampler was removed and cannot be find anymore. Passive #11 sample was damaged.

Calibration Reports

Sulphur Dioxide

Thermo 43i SO2 Analyzer Calibration

Date:	12-May-14	**Start/End Time (mst):**	13:57/16:41
Company:	LICA	**Calibration Purpose:**	Monthly Calibration
Station Name/Location:	Cold Lake South	**Converter Make & Model:**	NA
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	SO2	**Cal Gas Expiry Date:**	4-Feb-18

Analyzer:

Serial Number:	AMU 1771	**Range ppb:**	500
Last Calibration Date:	16-Apr-14	**As Found C.F.**	1.025
Previous Cal High Point C.F.:	0.996	**New C.F.:**	1.009

		As found:		**As left:**
	BKG:	7.0	BKG:	7.2
	COEF:	1.082	COEF:	1.107
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:	-632.0	PMT:	-632.0
	FLASH:	721	FLASH:	721
	3.3	3.3	3.3	3.3
	5.0	5.0	5.0	5.0
	15.0	14.8	15.0	14.8
	-15.0	-15.1	-15.0	-15.1
	24.0	23.7	24.0	23.7
	INTERNAL:	27.3	INTERNAL:	27.3
	CHAMBER:	45.1	CHAMBER:	45.1
	PERM OVEN GAS:	45.00	PERM OVEN GAS:	45.00
	PERM OVEN HEATER:	44.19	PERM OVEN HEATER:	44.19
	PRESSURE:	687.7	PRESSURE:	687.7
	SAMPLE FLOW:	0.454	SAMPLE FLOW:	0.454
	LAMP INTENSITY:	76	LAMP INTENSITY:	76
	CONVERTER:	NA	CONVERTER:	NA
	CONVERTER SET:	NA	CONVERTER SET:	NA
	Internal Span:	377.4	Internal Span:	383.5

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	830
Cal Gas Cylinder I.D. # :	BLM000711
Cal Gas Conc. (ppm):	48.2

Calibrator Flow Targets:

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	10	5010

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	NA	0.0	######	0	-0.1	NA
as found high	5000	39.00	5039	373.1	364.0	1.025
adjusted high	5000	39.00	5039	373.1	374.3	0.996
mid	5000	19.00	5019	182.5	179.0	1.019
low	5000	10.00	5010	96.2	95.1	1.011
calibrator zero	5000	0.00	5000	0	-0.1	NA
					Average C.F.=	1.009

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**0.996**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.30%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-2.87%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

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

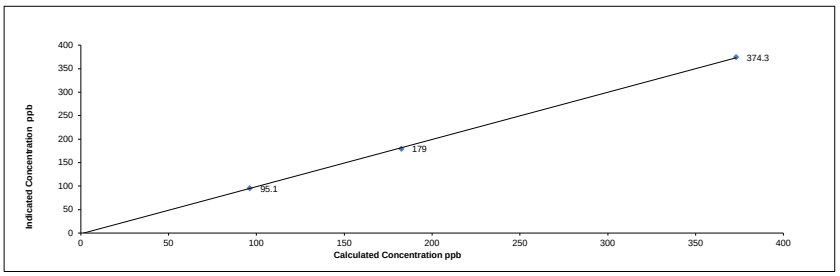
SO_2 High Point gas concentration: na Time gas run (mst): na

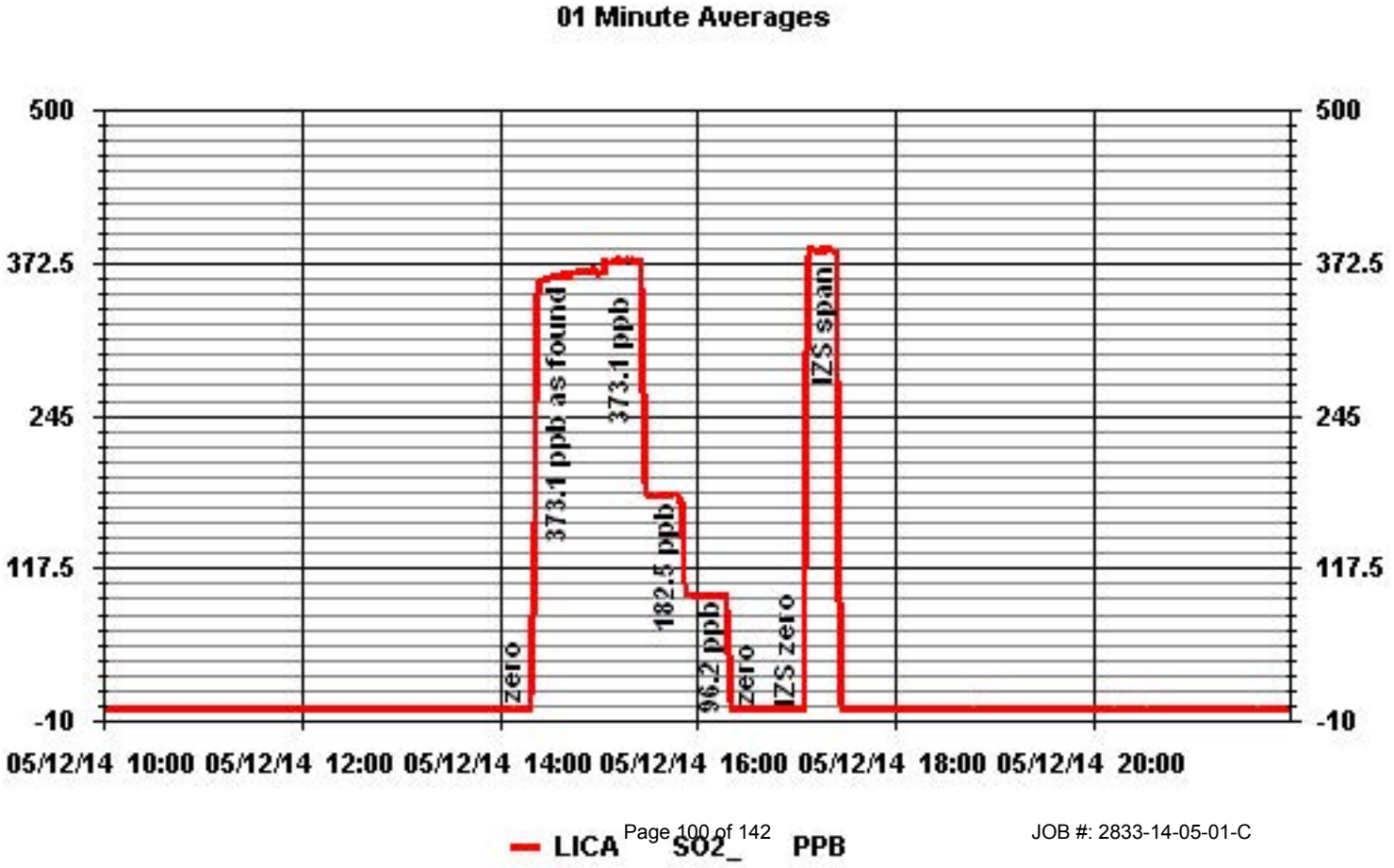
Zero corrrected analyzer response: na

Comments:

Sample filter changed. No zero adjustment necessary.

Thermo 43i SO2 Analyzer Calibration





JOB #: 2833-14-05-01-C

Total Reduced Sulphur

Thermo 450i TRS Analyzer Calibration

Date:	12-May-14	**Start/End Time (mst):**	9:25/11:49
Company:	LICA	**Calibration Purpose:**	Monthly Calibration
Station Name/Location:	Cold Lake South	**Converter Make & Model:**	Thermo CND-101
Performed by:	Kevin Hope	**Converter Serial #:**	501
Application H_2S/TRS/SO_2:	TRS	**Cal Gas Expiry Date:**	25-Dec-15

Analyzer:

Serial Number:	812728560	**Range ppb:**	100
Last Calibration Date:	15-Apr-14	**As Found C.F.**	1.018
Previous Cal High Point C.F.:	0.997	**New C.F.:**	1.007

		As found:	**As left:**
	BKG:	12.2	12.4
	COEF:	0.902	0.918
MOTHERBOARD:	3.3	3.3	3.3
	5.0	5.0	5.0
	15.0	15.0	15.0
	24.0	23.9	23.9
	-3.3	-3.2	-3.2
INTERFACE BOARD:	PMT:	-650.8	-650.8
	FLASH:	744	744
	3.3	3.2	3.2
	5.0	5.0	5.0
	15.0	14.7	14.7
	-15.0	-15.0	-15.0
	24.0	23.4	23.4
	INTERNAL:	31.4	31.4
	CHAMBER:	45.1	45.1
	CONVERTER TEMP:	327.5	327.5
	CONVERTER SET:	325.0	325.0
	PERM OVEN GAS:	45.00	45.00
	PERM OVEN HTR:	44.39	44.39
	PRESSURE:	666.6	666.6
	SAMPLE FLOW:	0.499	0.499
	LAMP INTENSITY:	91	91
	Internal Span:	36.87	36.85

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	4760
Cal Gas Cylinder I.D. # :	BLM005049
Cal Gas Conc. (ppm):	10.1

Calibrator Flow Targets:

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

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	NA	0.0	######	0	0.1	NA
as found high	5000	39.00	5039	78.2	76.9	1.018
adjusted high	5000	39.00	5039	78.2	78.3	1.000
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.=	1.007

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**0.999**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.08%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-2.09%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

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

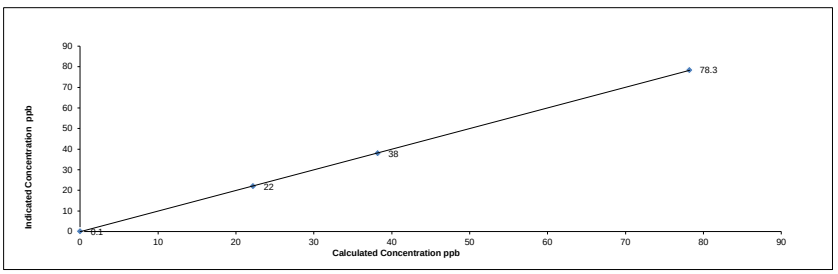
SO_2 High Point gas concentration: na Time gas run (mst): na

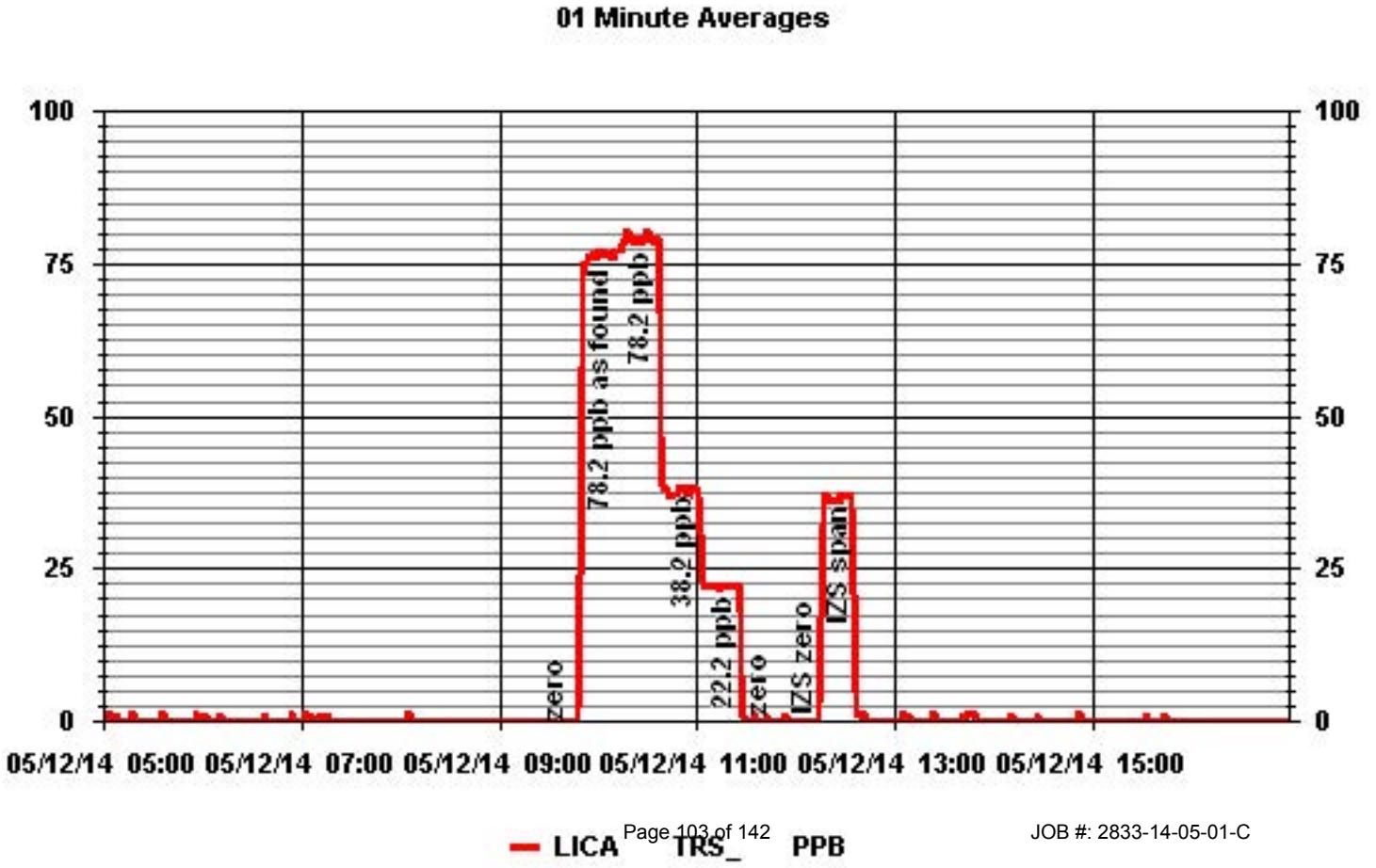
Zero corrrected analyzer response: na

Comments:

Sample filter changed.

Thermo 450i TRS Analyzer Calibration





JOB #: 2833-14-05-01-C

Total Hydrocarbons

Thermo 51C THC Analyzer Calibration

Date:	13-May-14	**Start Time (mst):**	8:26
Company:	LICA	**End Time (mst):**	10:39
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	26-Mar-17

Analyzer:

Serial Number:	51CLT-77021-384	**Range ppm:**	50
Last Calibration Date:	15-Apr-14	**As Found C.F.**	0.992
Previous Cal High Point C.F.:	0.996	**New C.F.:**	1.024

		As found:	As left:
	H_2 cylinder (psi):	460	460
	H_2 cylinder reg set (psi):	22	22
	Span Cylinder (psi):	1250	1250
	Span Cylinder Reg Set (psi):	28	28
	Zero Air Gen Pressure:	35	35
	measurement alarms:	none	none
	service alarms:	none	none
FID status:	cnt:	2845	2845
	rng:	1	1
	try:	3	3
	flm:	191.8	191.8
	det:	125.3	125.3
Oven Readings:	Flame:	191	191
	Filter:	125	125
	Base:	125	125
	Pump:	6.92	6.92
Voltages:	+5	4.9	4.9
	+15	14.8	14.8
	-15	-14.9	-14.9
	Internal Span:	32.78	29.83

Calibrator:

Flow Meter ID's:	NA	
Make & Model:	API 700	
Serial #:	830	
Cal Gas Cylinder I.D. # :	LL33674	
CH_4/C_3H_8 Cylinder Conc. (ppm):	601.4	202.0
CH_4 as propane/total CH_4 equivilants (ppm):	555.5	1156.9

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	2000	0	2000
high	2000	65	2065
mid	2000	30	2030
low	2000	15	2015

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppm)	(ppm)	
as found zero	2000	0.00	2000	0	0.07	NA
adjusted zero	NA	0.00	######	0	0.07	NA
as found high	2000	65.00	2065	36.42	36.77	0.992
adjusted high	2000	65.00	2065	36.42	36.40	1.002
mid	2000	30.00	2030	17.10	16.80	1.022
low	2000	15.00	2015	8.61	8.28	1.049
calibrator zero	2000	0.00	2000	0	0.08	NA
					Average C.F.=	1.024

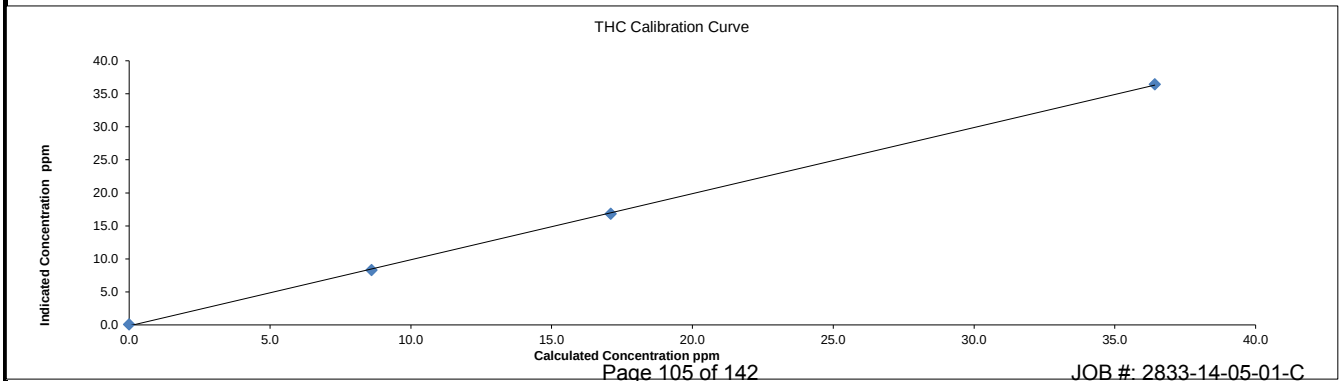
Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.000**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.303%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**0.37%**	**± 15%**	**PASS**

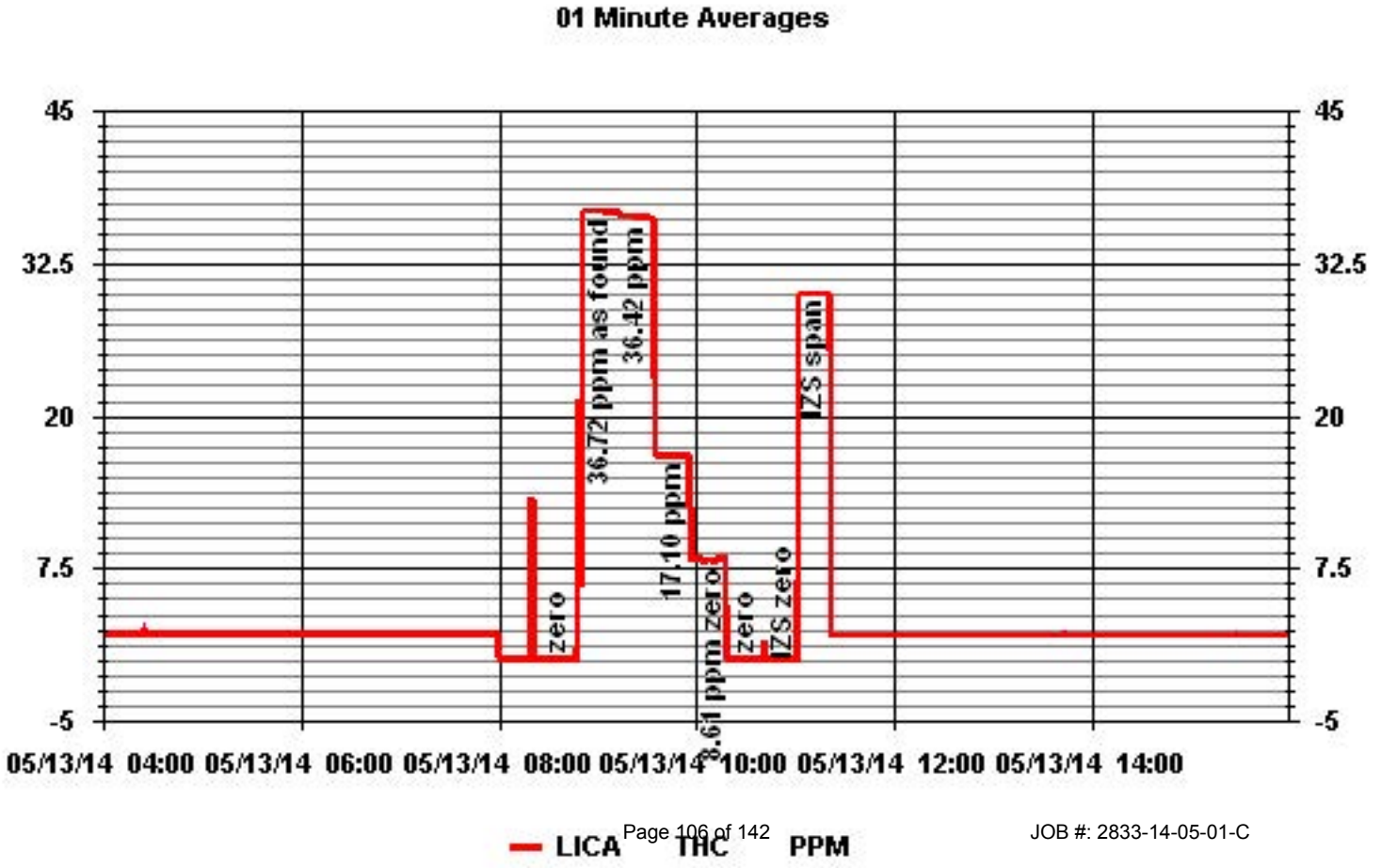
Comments:

Filter changed. No zero adjustment necessary.*To be added

Thermo 51C THC Analyzer Calibration



JOB #: 2833-14-05-01-C



JOB #: 2833-14-05-01-C

Thermo 51C THC Analyzer Calibration

Date:	23-May-14	**Start Time (mst):**	12:32
Company:	LICA	**End Time (mst):**	14:29
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	Installation Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	26-Mar-17

Analyzer:

Serial Number:	AMU 1634	**Range ppm:**	50
Last Calibration Date:	NA	**As Found C.F.**	#VALUE!
Previous Cal High Point C.F.:	NA	**New C.F.:**	1.032

		As found:		As left:
	H_2 cylinder (psi):	350	H_2 cylinder (psi):	300
	H_2 cylinder reg set (psi):	10	H_2 cylinder reg set (psi):	10
	Span Cylinder (psi):	950	Span Cylinder (psi):	950
	Span Cylinder Reg Set (psi):	28	Span Cylinder Reg Set (psi):	28
	Zero Air Gen Pressure:	35	Zero Air Gen Pressure:	35
	measurement alarms:	none	measurement alarms:	none
	service alarms:	none	service alarms:	none
FID status:	cnt:	1868	cnt:	1868
	rng:	1	rng:	1
	try:	1	try:	1
	flm:	180.5	flm:	180.5
	det:	125.4	det:	125.4
Oven Readings:	Flame:	180	Flame:	180
	Filter:	125	Filter:	125
	Base:	125	Base:	125
	Pump:	6.50	Pump:	6.50
Voltages:	+5	4.9	+5	4.9
	+15	14.8	+15	14.8
	-15	-14.9	-15	-14.9
	Internal Span:	29.83	Internal Span:	29.83

Calibrator:

Flow Meter ID's:	NA	
Make & Model:	API 700	
Serial #:	830	
Cal Gas Cylinder I.D. # :	LL33674	
CH_4/C_3H_8 Cylinder Conc. (ppm):	601.4	202.0
CH_4 as propane/total CH_4 equivilants (ppm):	555.5	1156.9

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	2000	0	2000
high	2000	65	2065
mid	2000	30	2030
low	2000	15	2015

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppm)	(ppm)	
as found zero	NA	0.00	######	0		NA
adjusted zero	2000	0.00	2000	0	0.01	NA
as found high	NA		######	#VALUE!		#VALUE!
adjusted high	2000	65.00	2065	36.42	36.39	1.001
mid	2000	30.00	2030	17.10	16.62	1.029
low	2000	15.00	2015	8.61	8.10	1.065
calibrator zero	2000	0.00	2000	0	-0.02	NA
					Average C.F.=	1.032

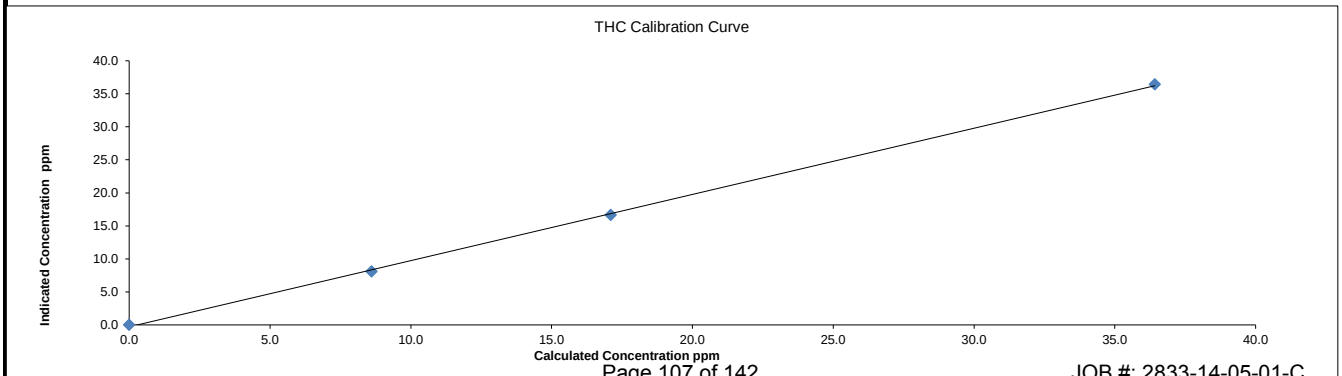
Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.003**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.590%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**#VALUE!**	**± 15%**	**######**

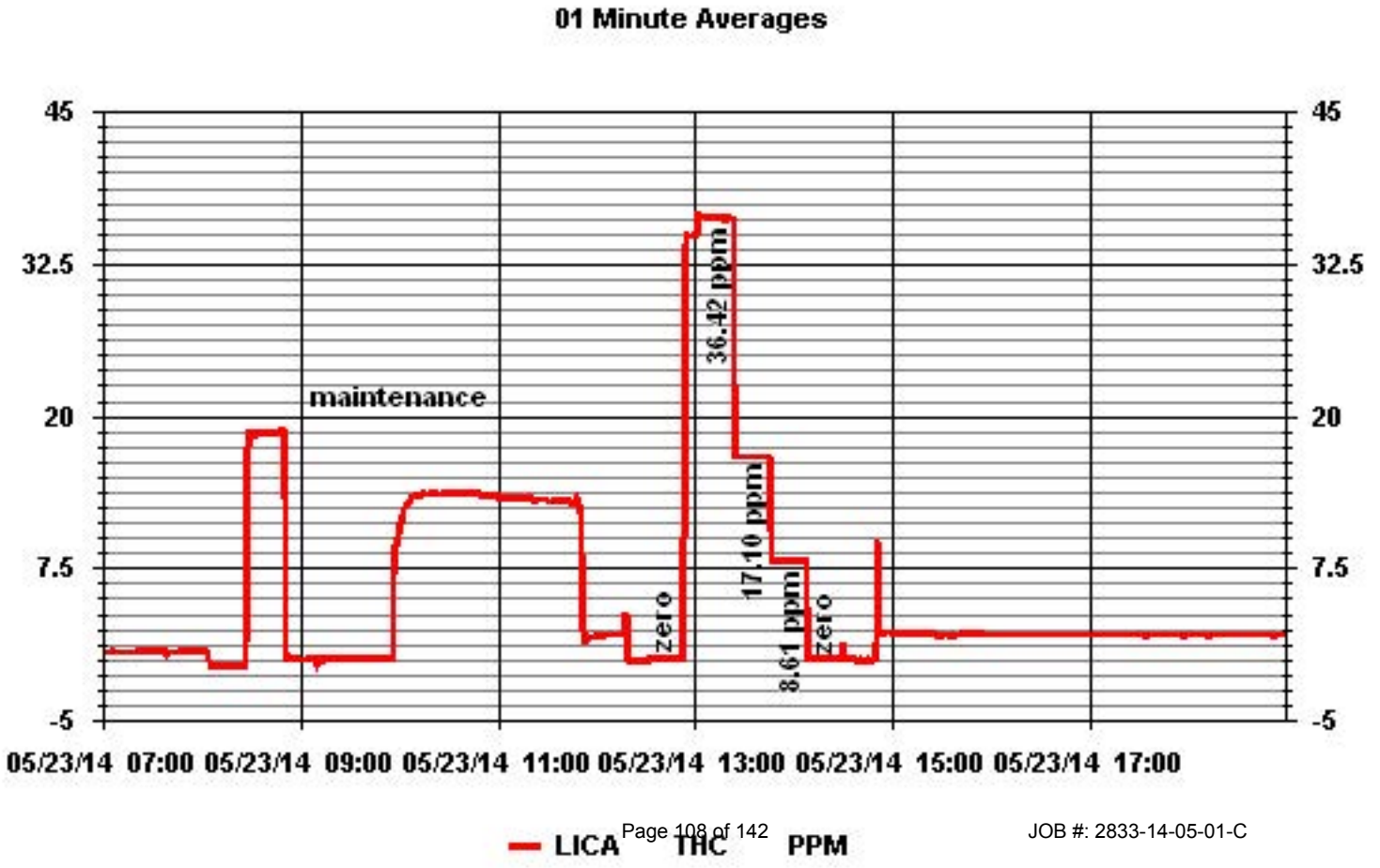
Comments:

Install calibration of AMU 1634 due to issues with Maxxam analyzer.

Thermo 51C THC Analyzer Calibration



JOB #: 2833-14-05-01-C



JOB #: 2833-14-05-01-C

Thermo 51C THC Analyzer Calibration

Date:	26-May-14	**Start Time (mst):**	10:10
Company:	LICA	**End Time (mst):**	13:45
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	3 point Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	26-Mar-17

Analyzer:

Serial Number:	AMU 1634	**Range ppm:**	50
Last Calibration Date:	23-May-14	**As Found C.F.**	0.853
Previous Cal High Point C.F.:	1.001	**New C.F.:**	1.039

		As found:	As left:
	H_2 cylinder (psi):	1950	1950
	H_2 cylinder reg set (psi):	10	10
	Span Cylinder (psi):	900	900
	Span Cylinder Reg Set (psi):	28	28
	Zero Air Gen Pressure:	35	35
	measurement alarms:	none	none
	service alarms:	none	none
FID status:	cnt:	4435	5854
	rng:	1	1
	try:	4	4
	flm:	182.4	189.1
	det:	125.4	125.6
Oven Readings:	Flame:	180	189
	Filter:	125	125
	Base:	125	125
	Pump:	6.50	6.53
Voltages:	+5	4.9	5.0
	+15	14.8	14.8
	-15	-14.9	-15.1
	Internal Span:	29.83	30.68

Calibrator:

Flow Meter ID's:	NA	
Make & Model:	API 700	
Serial #:	830	
Cal Gas Cylinder I.D. # :	LL33674	
CH_4/C_3H_8 Cylinder Conc. (ppm):	601.4	202.0
CH_4 as propane/total CH_4 equivilants (ppm):	555.5	1156.9

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	2000	0	2000
high	2000	65	2065
mid	2000	30	2030
low	2000	15	2015

Calibration:

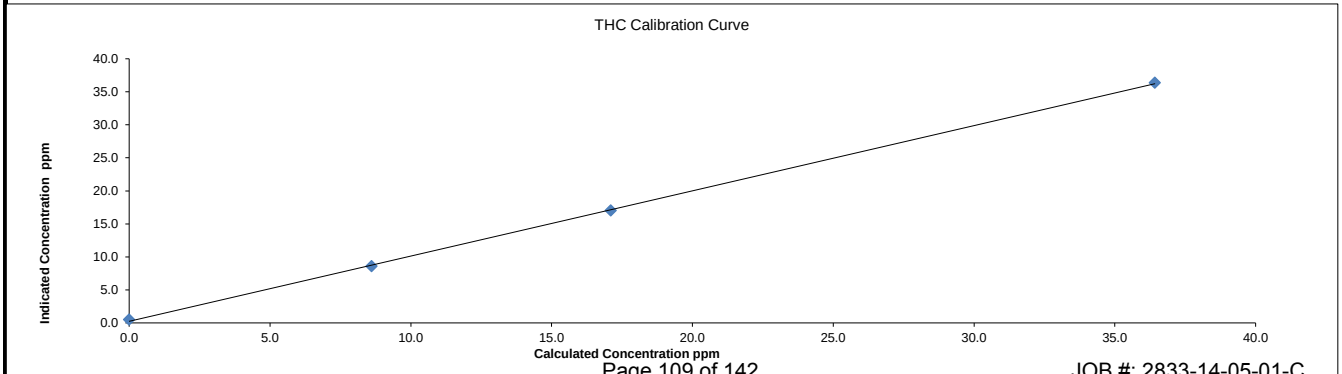
Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppm)	(ppm)	
as found zero	2000	0.00	2000	0	10.80	NA
adjusted zero	2000	0.00	2000	0	0.50	NA
as found high	2000	65.00	2065	36.42	43.20	0.853
adjusted high	2000	65.00	2065	36.42	36.34	1.016
mid	2000	30.00	2030	17.10	17.00	1.036
low	2000	15.00	2015	8.61	8.59	1.065
calibrator zero	2000	0.00	2000	0	0.50	NA
					Average C.F.=	1.039

Linear Regression/Calibration Results:

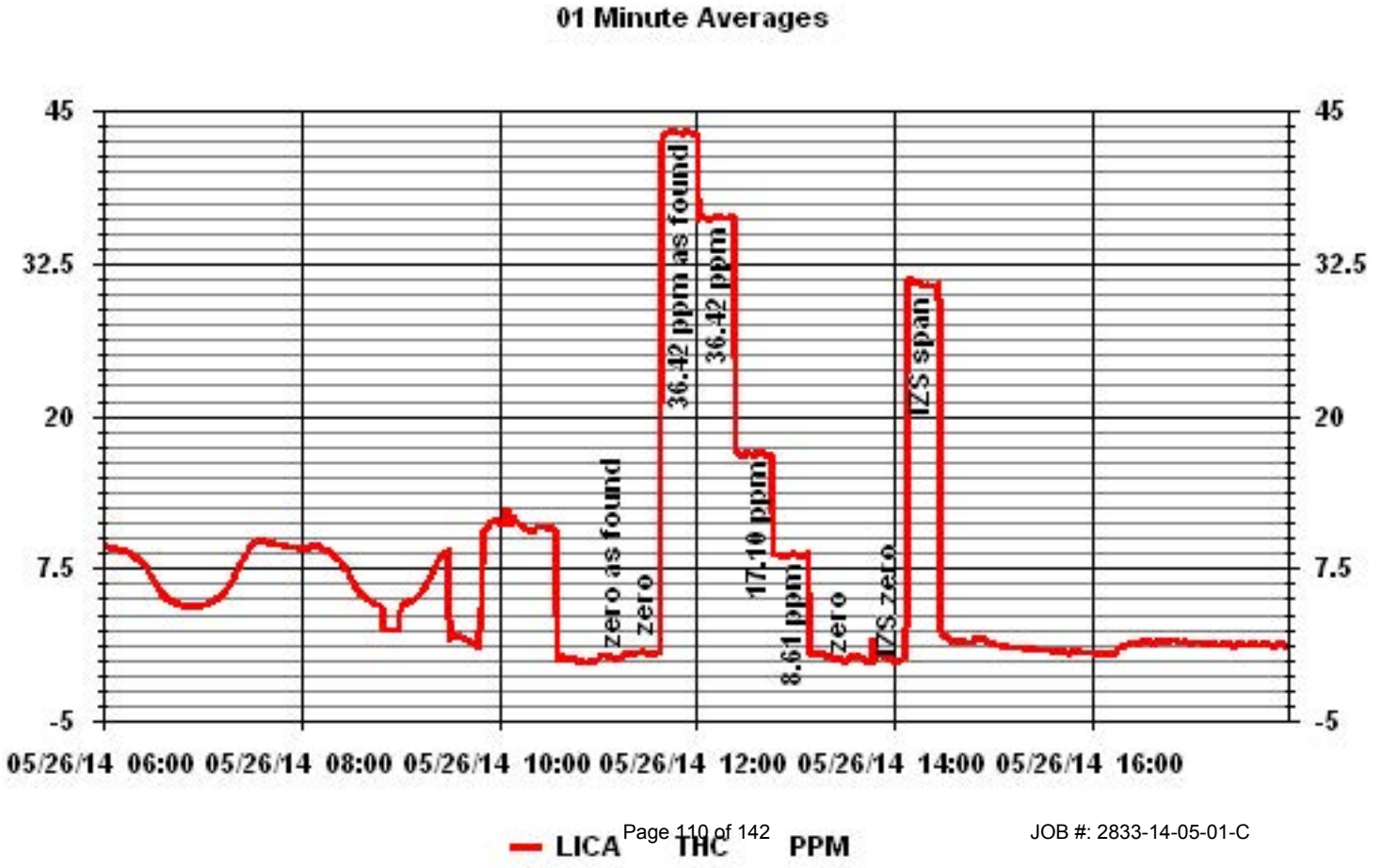
		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**0.987**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.554%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**14.81%**	**± 15%**	**PASS**

Comments:

Thermo 51C THC Analyzer Calibration



JOB #: 2833-14-05-01-C



JOB #: 2833-14-05-01-C

Thermo 51C THC Analyzer Calibration

Date:	30-May-14	**Start Time (mst):**	7:55
Company:	LICA	**End Time (mst):**	9:54
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	installation
Performed by:	TB	**Cal Gas Expiry Date:**	26-Mar-17

Analyzer:

Serial Number:	51CLT-77021-384	**Range ppm:**	50
Last Calibration Date:	29-May-14	**As Found C.F.**	#VALUE!
Previous Cal High Point C.F.:	0.995	**New C.F.:**	1.015

		As found:		As left:
	H_2 cylinder (psi):	1700	H_2 cylinder (psi):	1700
	H_2 cylinder reg set (psi):	36	H_2 cylinder reg set (psi):	36
	Span Cylinder (psi):	750	Span Cylinder (psi):	750
	Span Cylinder Reg Set (psi):	20	Span Cylinder Reg Set (psi):	20
	Zero Air Gen Pressure:	35	Zero Air Gen Pressure:	35
	measurement alarms:	none	measurement alarms:	none
	service alarms:	none	service alarms:	none
FID status:	cnt:	11087	cnt:	11087
	rng:	1	rng:	1
	try:	3	try:	3
	flm:	192.0	flm:	192.0
	det:	125.6	det:	125.6
Oven Readings:	Flame:	191	Flame:	191
	Filter:	125	Filter:	125
	Base:	125	Base:	125
	Pump:	6.90	Pump:	6.90
Voltages:	+5	4.9	+5	4.9
	+15	14.8	+15	14.8
	-15	-14.9	-15	-14.9
	Internal Span:	30.3	Internal Span:	30.3

Calibrator:

Flow Meter ID's:	NA	
Make & Model:	API 700	
Serial #:	830	
Cal Gas Cylinder I.D. # :	LL33674	
CH_4/C_3H_8 Cylinder Conc. (ppm):	601.4	202.0
CH_4 as propane/total CH_4 equivilants (ppm):	555.5	1156.9

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	3000	0	3000
high	3000	80	3080
mid	3000	40	3040
low	3000	20	3020

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppm)	(ppm)	
as found zero	NA	0.00	######	0		NA
adjusted zero	3000	0.00	3000	0	0.01	NA
as found high	NA		######	#VALUE!		#VALUE!
adjusted high	2999	80.00	3079	30.06	30.06	1.000
mid	2999	40.00	3039	15.23	15.00	1.016
low	2999	20.00	3019	7.66	7.45	1.030
calibrator zero	2999	0.00	2999	0	0.02	NA
					Average C.F.=	1.015

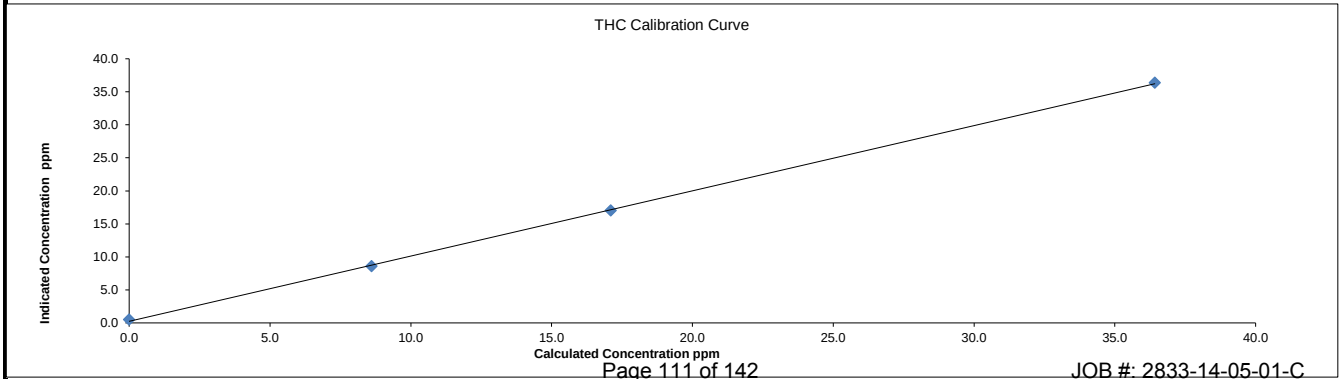
Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**0.987**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.554%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**#VALUE!**	**± 15%**	**######**

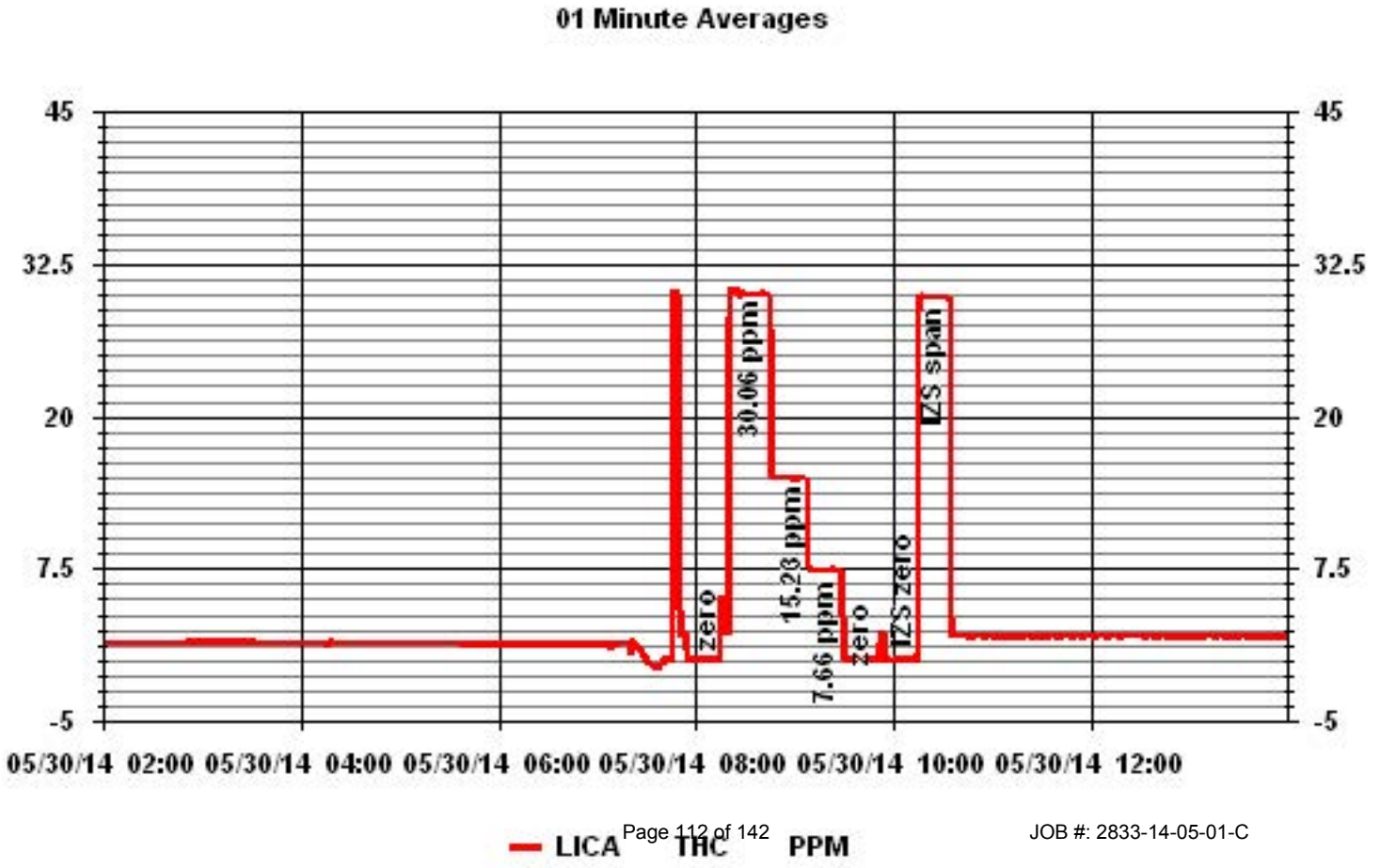
Comments:

3-point calibration after install.

Thermo 51C THC Analyzer Calibration



JOB #: 2833-14-05-01-C



JOB #: 2833-14-05-01-C

Particulate Matter 2.5

R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date:	9-May-14	**Parameter:**	PM 2.5
Company:	LICA	**Performed by:**	Kevin Hope
Station Name/Location:	Cold Lake South	**Start/End Time (mst):**	16:18/16:49
Previous Audit Date:	28-Apr-14	**Calibration Purpose:**	Monthly I

1400A Information and Status:

Serial Number:	1405A201620804	**As Found Filter Loading %:**	19.20
Ko Factor:	NA	**As Left Filter Loading %:**	17.00
Ambient Temperature °C:	8.0	**As Found Noise:**	0.050
Ambient Pressure atm:	0.932	**As Left Noise:**	0.000
Main Flow Reading lpm:	2.98	**Pump Vacuum:**	0.30
Aux Flow Reading lpm:	16.58	**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	0.10	0.05	0.05	0.06
	limit	0.15		0.15	
Bypass Flow	actual	0.36	-0.19	0.08	-0.19
	limit	0.60		0.60	

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

		Base	**Zero**	**Reference**	**Zero**
PM 2.5 Flow	actual	0.10	0.05	0.05	0.06
	limit	0.15		0.15	
Bypass Flow	actual	0.36	-0.19	0.08	-0.19
	limit	0.60		0.60	

As found temperature and pressure:

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	8.0	**1405F pressure atm:**	0.936
reference temperature °C:	8.0	**reference pressure:**	0.932
difference °C:	0.0	**difference :**	0.004

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

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	8.0	**1405F pressure atm:**	0.936
reference temperature °C:	8.0	**reference pressure:**	0.932
difference °C:	0.0	**difference :**	-0.004

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:**	16.68
reference main flow lpm:	2.98	**reference total/aux flow lpm:**	16.53
difference lpm:	-0.02	**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:**	16.68
reference main flow lpm:	2.98	**reference total/aux flow lpm:**	16.53
difference lpm:	-0.02	**difference lpm:**	-0.15

K_o Audit:

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

Comments:

JOB #: 2833-14-05-01-C

Leak check, flow audit, changed filters. All passed.

R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date:	21-May-14	**Parameter:**	PM 2.5
Company:	LICA	**Performed by:**	Kevin Hope
Station Name/Location:	Cold Lake South	**Start/End Time (mst):**	16:05
Previous Audit Date:	9-May-14	**Calibration Purpose:**	Monthly II

1400A Information and Status:

Serial Number:	1405A201620804	**As Found Filter Loading %:**	20.01
Ko Factor:	NA	**As Left Filter Loading %:**	
Ambient Temperature °C:	22.0	**As Found Noise:**	0.003
Ambient Pressure atm:	0.940	**As Left Noise:**	
Main Flow Reading lpm:	2.95	**Pump Vacuum:**	0.29
Aux Flow Reading lpm:	16.21	**Warnings:**	None

Reference Standards:

	Flow:	Pressure:	Temperature:
Make:	Dwyer	Fisher Scientific	Fisher Scientific
Model:	475 Mark III	FB61291	FB61291
Serial Number:	NA	130168457	130168457
Calibration Date:	NA	11-Apr-14	11-Apr-14

As found leak check:

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.07	0.07	0.04	0.07
	limit	0.15		0.15	
Bypass Flow	actual	0.31	-0.20	0.05	-0.20
	limit	0.60		0.60	

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

		Base	Zero	Reference	Zero
PM 2.5 Flow	actual	0.10	0.05	0.05	0.06
	limit	0.15		0.15	
Bypass Flow	actual	0.36	-0.19	0.08	-0.19
	limit	0.60		0.60	

As found temperature and pressure:

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	21.5	**1405F pressure atm:**	0.939
reference temperature °C:	22.0	**reference pressure:**	0.940
difference °C:	0.5	**difference :**	-0.001

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

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	21.5	**1405F pressure atm:**	0.939
reference temperature °C:	22.0	**reference pressure:**	0.940
difference °C:	0.5	**difference :**	0.001

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:	3.01	**1400A total/aux flow lpm:**	16.70
reference main flow lpm:	2.95	**reference total/aux flow lpm:**	16.21
difference lpm:	-0.06	**difference lpm:**	-0.49

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:	3.01	**1400A total/aux flow lpm:**	16.70
reference main flow lpm:	2.95	**reference total/aux flow lpm:**	16.21
difference lpm:	-0.06	**difference lpm:**	-0.49

K_o Audit:

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

Comments:

JOB #: 2833-14-05-01-C

Leak check, flow audit, changed filters. All passed.

Nitrogen Dioxide

Thermo 42C NOx Analyzer Calibration

Date:	12-May-14	**Start Time (mst):**	9:25
Company:	LICA	**End Time (mst):**	13:53
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-18

Analyzer Serial Number:	427408716
Last Calibration Date:	16-Apr-14
Range ppb:	500

Correction Factors:

	As found C.F.	Previous Cal High Point C.F.:
NO=	1.062	1.001
NOx=	1.067	1.002
NO_2=	0.997	1.020

	As found:	**As left:**
NO Bkg ppb:	5.6	6.0
NOx Bkg ppb:	5.9	6.3
NO Coef:	1.451	1.543
NOx Coef:	0.999	1.005
NO_2 Coef:	0.997	0.997
PMT:	-821	-821
+15:	15.1	15.1
+5:	5.0	5.0
+15:	15.1	15.1
-15:	-15.1	-15.1
Battery:	3.2	3.2
Internal:	28.0	28.0
Chamber:	49.9	49.9
Cooler:	-2.5	-2.5
Converter:	317	317
Converter Set:	319	319
Pressure:	195.7	195.7
Sample Flow:	0.670	0.670
Ozonator Flow:	ok	ok
Internal Span:	422/2.46/420	294.9/1.95/293

Calibrator Flow Targets:

Make & Model:	Environics 6100
Serial #:	4760
Cal Gas Cylinder I.D. # :	BLM000711
NO Cylinder Conc. (ppm):	50.1
NOx Cylinder Conc. (ppm):	50.2

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	19	140.00	5019
low	5000	9	75.00	5009

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	4995	0.0	4995	0	0	0.0	0.1	NA	NA
adjusted zero	NA	0.0	#VALUE!	0	0	0.0	0.1	NA	NA
as found high	4995	39.80	5035	396.0	396.8	373	372	1.062	1.067
adjusted high	4996	39.80	5036	396.0	396.8	396	397	1.000	1.000
mid	4996	18.90	5015	188.8	189.2	189	189	1.000	1.000
low	4997	8.90	5006	89.1	89.3	89	90	0.996	0.998
calibrator zero	4997	0.00	4997	0	0	0.0	0.1	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	39.90	5036	0.0	396.0	397.5	1.0	0.0	0.1	
as found NO_2	4996	39.90	5036	300.0	67.0	398.0	331.0	329.0	330.0	0.997
adjusted NO_2	NA	NA	#VALUE!	300.0	67.0	398.0	331.0	329.0	330.0	0.997
gpt mid	4996	39.90	5036	140.0	240.2	398.0	158.1	155.8	157.1	0.992
gpt low	4996	39.90	5036	75.0	316.0	398.0	82.0	80.0	81.0	0.988
									Average NO_2 C.F.=	0.992

Linear Regression/Calibration Results:

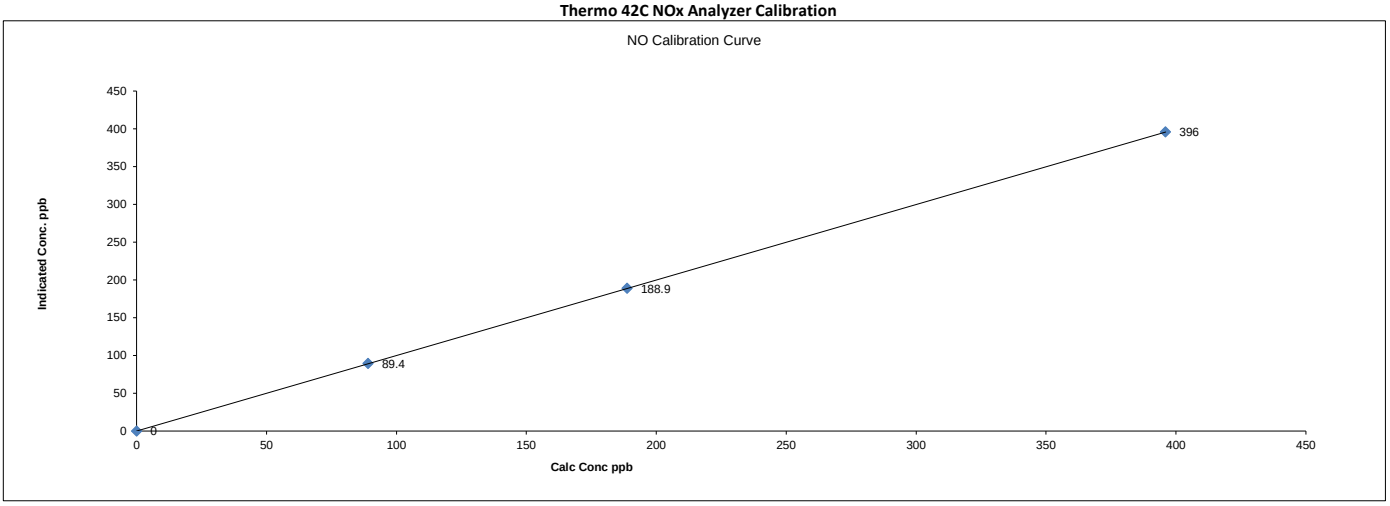
	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**1.000**	**0.999**	**1.002**	**0.85-1.15**
b (Intercept as % of full scale)=	**0.03%**	**0.03%**	**0.10%**	**± 3% F.S.**
% change in C.F. from last cal=	**-6.07%**	**-6.49%**	**2.26%**	**+/-15%**
NO2 converter effeciency			**100.8%**	**>85%**

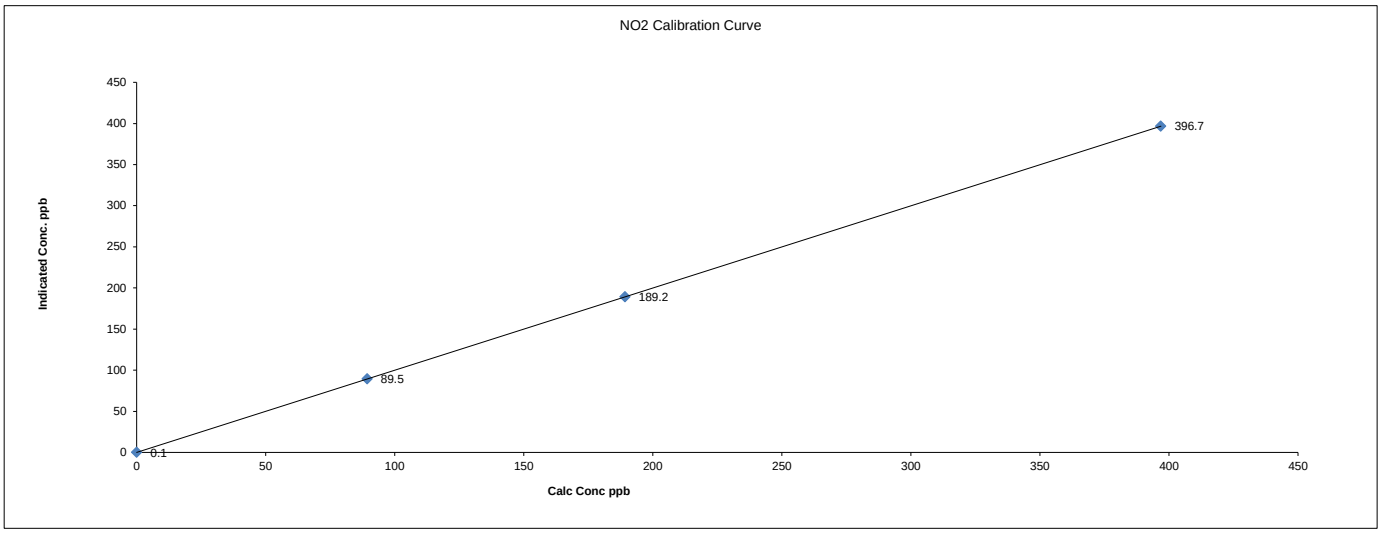
Comments:

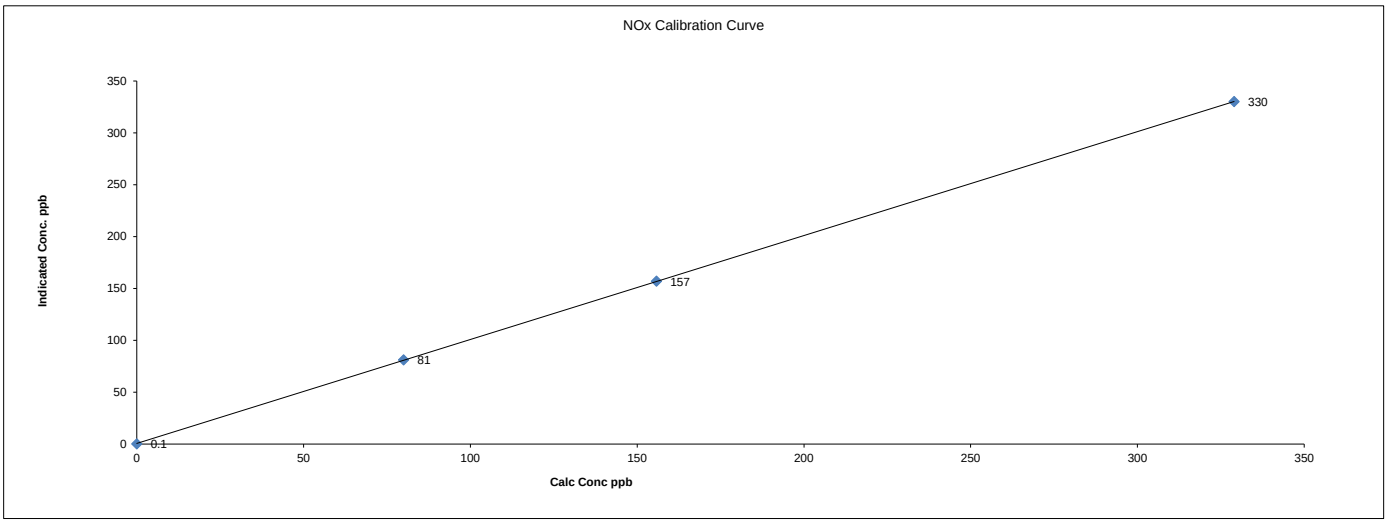
No zero adjustments necessary. Sample filter changed.

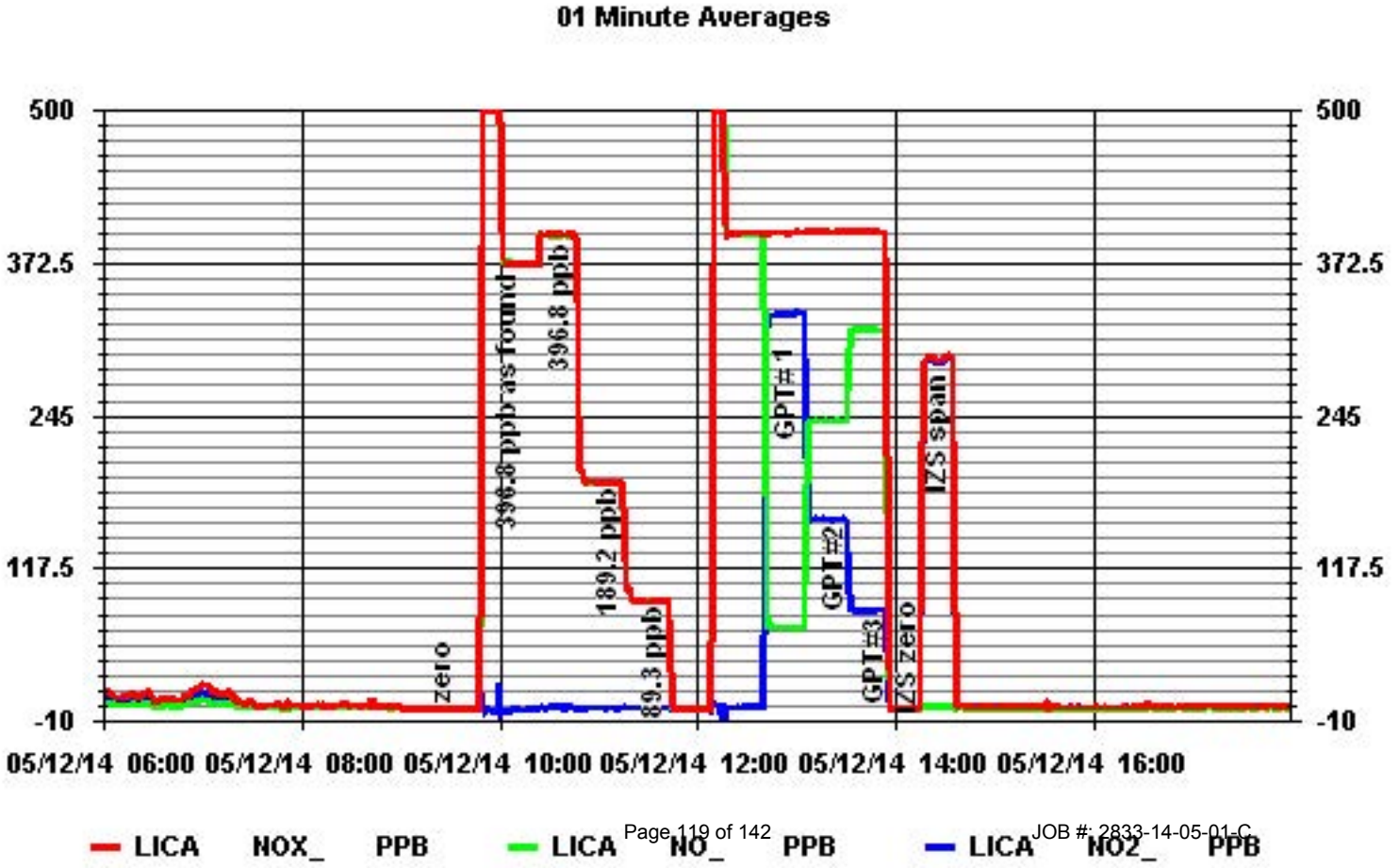
Date:	12-May-14	**Start Time (mst):**	9:25
Company:	LICA	**End Time (mst):**	13:53
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-18

Thermo 42C NOx Analyzer Calibration








01 Minute Averages
500
372.5
245
117.5
-10
zero
396.8 ppb as found
396.8 ppb
189.2 ppb
89.3 ppb
GPT#1
GPT#2
GPT#3
IZS zero
IZS span
05/12/14 06:00
05/12/14 08:00
05/12/14 10:00
05/12/14 12:00
05/12/14 14:00
05/12/14 16:00
LICA NOX_ PPB
LICA NO_ PPB
LICA NO2_ PPB

Thermo 42C NOx Analyzer Calibration

Date:	15-May-14	**Start Time (mst):**	8:25
Company:	LICA	**End Time (mst):**	9:11
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	As Founds
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-18

Analyzer Serial Number:	427408716
Last Calibration Date:	12-May-14
Range ppb:	500

Correction Factors:

	As found C.F.	Previous Cal High Point C.F.:
NO=	1.016	1.000
NOx=	1.014	1.000
NO_2=	NA	0.997

	As found:	**As left:**
NO Bkg ppb:	6.0	6.0
NOx Bkg ppb:	6.3	6.3
NO Coef:	1.543	1.543
NOx Coef:	1.005	1.005
NO_2 Coef:	0.997	0.997
PMT:	-821	-821
+15:	15.1	15.1
+5:	5.0	5.0
+15:	15.1	15.1
-15:	-15.1	-15.1
Battery:	3.2	3.2
Internal:	28.0	28.0
Chamber:	49.9	49.9
Cooler:	-2.5	-2.5
Converter:	317	318
Converter Set:	319	320
Pressure:	194.2	192.8
Sample Flow:	0.668	649
Ozonator Flow:	ok	ok
Internal Span:	294.9/1.95/293	294.9/1.95/293

Calibrator Flow Targets:

Make & Model:	Environics 6100
Serial #:	4760
Cal Gas Cylinder I.D. # :	BLM000711
NO Cylinder Conc. (ppm):	50.1
NOx Cylinder Conc. (ppm):	50.2

point	diluent (cc/min)	cal gas (cc/min)	O_3 setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	5000	39	300.00	5039
mid	5000	19	140.00	5019
low	5000	9	75.00	5009

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	0.0	0.1	NA	NA
adjusted zero	NA	0.0	#VALUE!	0	0			NA	NA
as found high	4995	38.87	5034	386.9	387.6	381	382	1.016	1.014
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										
as found NO_2										
adjusted NO_2										
gpt mid										
gpt low										
									Average NO_2 C.F.=	

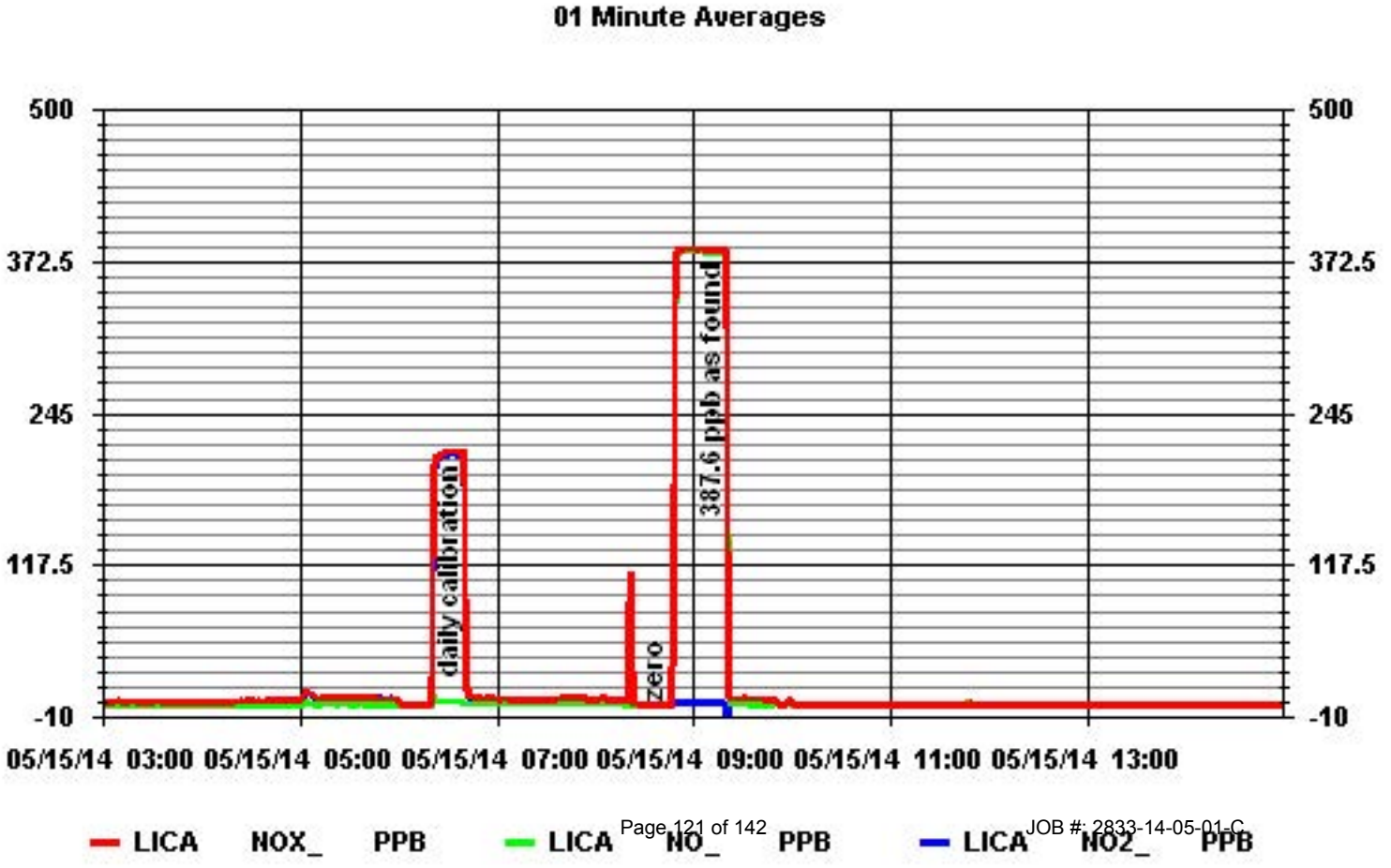
Linear Regression/Calibration Results:

	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =				**> or = 0.995**
Slope =				**0.85-1.15**
b (Intercept as % of full scale)=				**± 3% F.S.**
% change in C.F. from last cal=	**-1.62%**	**-1.37%**	**#VALUE!**	**+/-15%**
NO2 converter effeciency				**>85%**

Comments:

As found due to steadily decreasing span over last couple of days. Replaced perm tube.

JOB #: 2833-14-05-01-C


01 Minute Averages
500
372.5
245
117.5
-10
daily calibration
zero
387.6 ppb as found
05/15/14 03:00
05/15/14 05:00
05/15/14 07:00
05/15/14 09:00
05/15/14 11:00
05/15/14 13:00
LICA NOX_ PPB
LICA NO_ PPB
LICA NO2_ PPB

Thermo 42C NOx Analyzer Calibration

Date:	17-May-14	**Start Time (mst):**	7:09
Company:	LICA	**End Time (mst):**	11:26
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	3-point calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-18

Analyzer Serial Number:	427408716
Last Calibration Date:	12-May-14
Range ppb:	500

Correction Factors:

	As found C.F.	Previous Cal High Point C.F.:
NO=	0.802	1.000
NOx=	0.823	1.000
NO_2=	0.998	0.997

	As found:	**As left:**
NO Bkg ppb:	6.0	4.8
NOx Bkg ppb:	6.3	5.2
NO Coef:	1.543	1.234
NOx Coef:	1.005	1.034
NO_2 Coef:	0.997	0.997
PMT:	-821	-821
+15:	15.1	15.1
+5:	5.0	5.0
+15:	15.1	15.1
-15:	-15.1	-15.1
Battery:	3.2	3.2
Internal:	27.1	27.5
Chamber:	49.9	49.9
Cooler:	-2.5	-2.5
Converter:	318	317
Converter Set:	320	319
Pressure:	190.4	188.6
Sample Flow:	0.634	0.626
Ozonator Flow:	low	ok
Internal Span:	294.9/1.95/293	294.9/1.95/293

Calibrator Flow Targets:

Make & Model:	Environics 6100
Serial #:	4760
Cal Gas Cylinder I.D. # :	BLM000711
NO Cylinder Conc. (ppm):	50.1
NOx Cylinder Conc. (ppm):	50.2

point	diluent (cc/min)	cal gas (cc/min)	O_3 setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	5000	39	300.00	5039
mid	5000	19	140.00	5019
low	5000	9	75.00	5009

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	4996	0.0	4996	0	0	0.0	0.1	NA	NA
adjusted zero	NA	0.0	#VALUE!	0	0			NA	NA
as found high	4996	38.89	5035	387.0	387.7	483	471	0.802	0.823
adjusted high	4996	38.89	5035	387.0	387.7	386	388	1.001	1.000
mid	4996	18.90	5015	188.8	189.2	189	190	1.000	0.998
low	4996	8.89	5005	89.0	89.2	89	90	1.003	0.996
calibrator zero	4996	0.00	4996	0	0	0.0	0.1	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	38.90	5035	0.0	384.3	386.0	1.5	0.0	0.0	
as found NO_2	4996	38.90	5035	300.0	56.9	386.4	329.7	327.4	328.2	0.998
adjusted NO_2	4996	38.90	5035	300.0	56.9	386.4	329.7	327.4	328.2	0.998
gpt mid	4996	38.90	5035	140.0	227.5	386.0	158.8	156.8	157.3	0.997
gpt low	4996	38.90	5035	75.0	303.6	386.0	82.4	80.7	80.9	0.998
									Average NO_2 C.F.=	0.997

Linear Regression/Calibration Results:

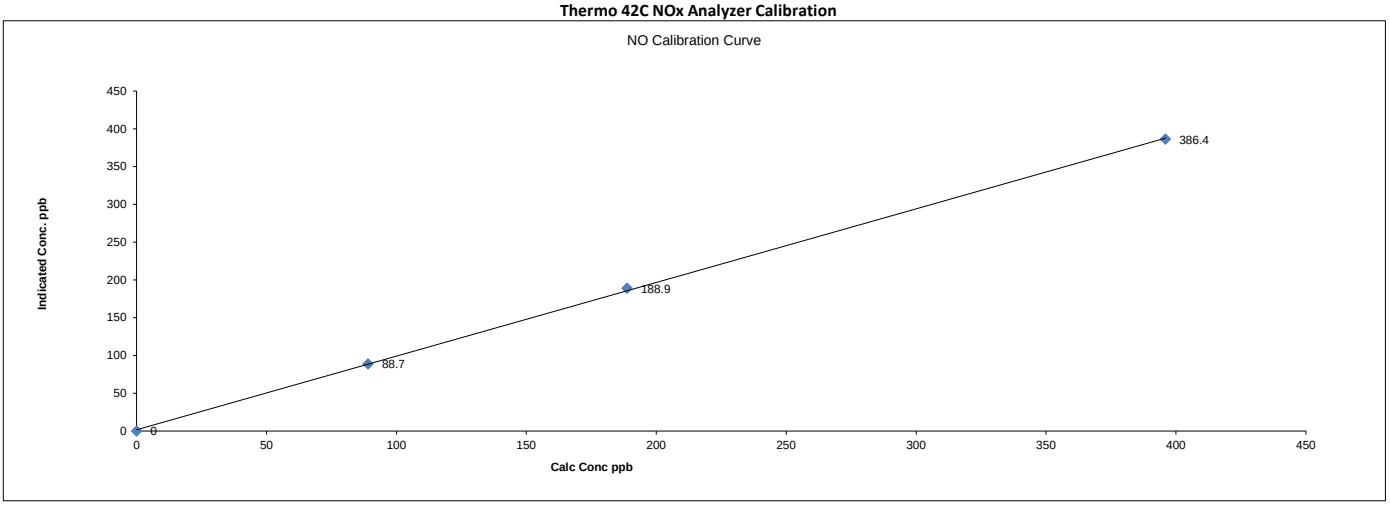
	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**0.975**	**0.976**	**1.002**	**0.85-1.15**
b (Intercept as % of full scale)=	**0.34%**	**0.39%**	**0.01%**	**± 3% F.S.**
% change in C.F. from last cal=	**19.85%**	**17.71%**	**-0.06%**	**+/-15%**
NO2 converter effeciency			**100.3%**	**>85%**

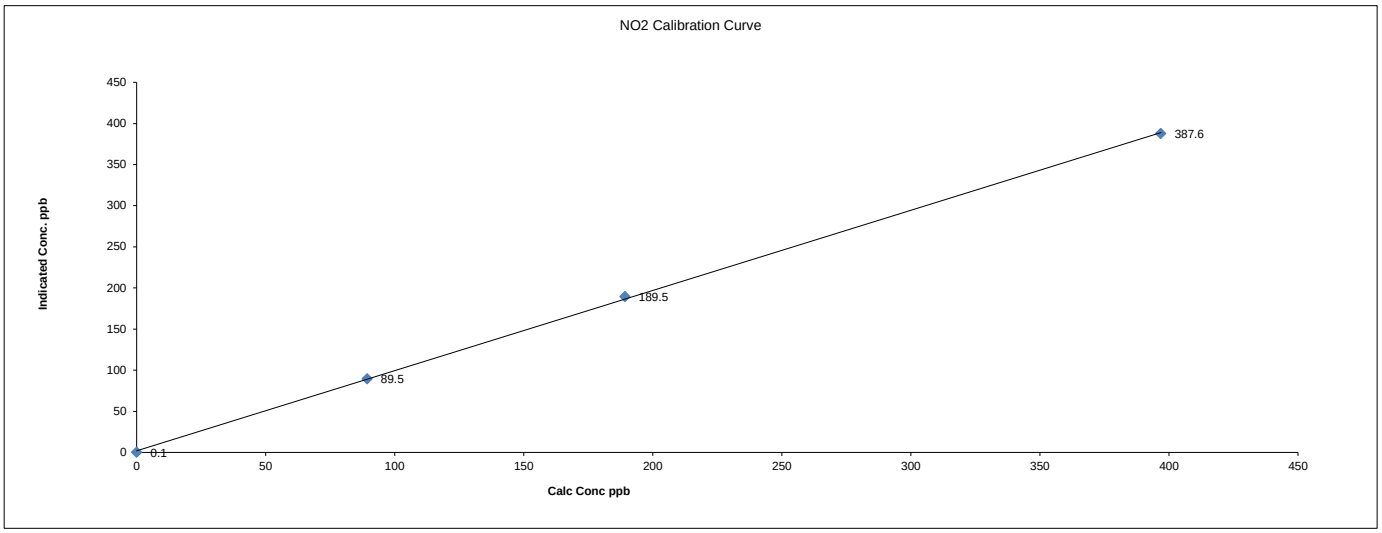
Comments:

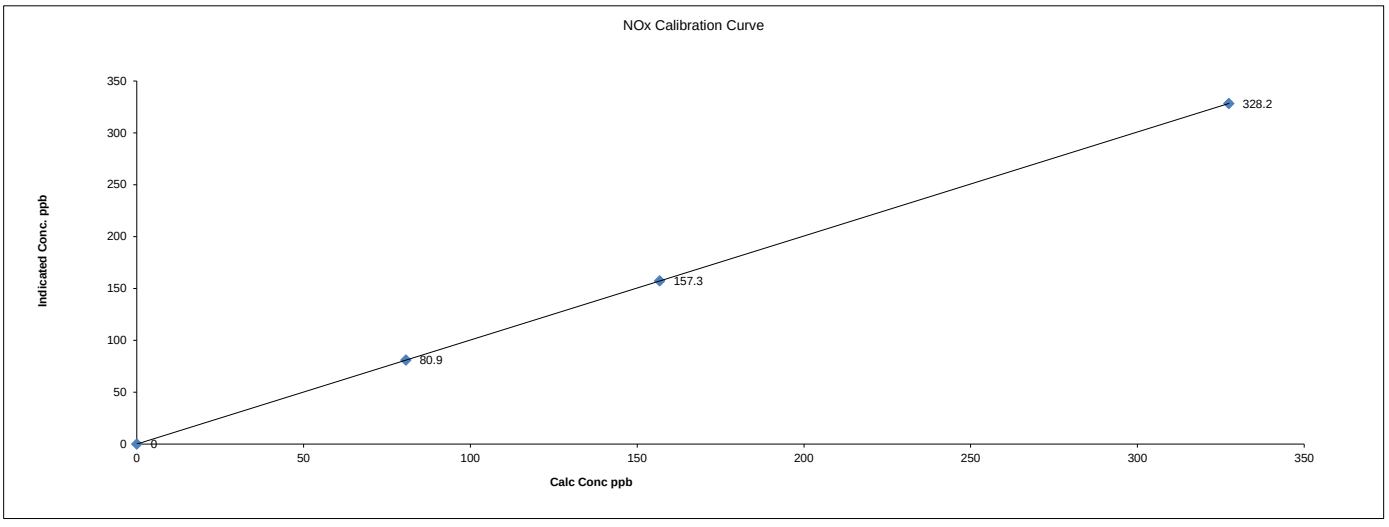
3-point calibration following maintenance yesterday

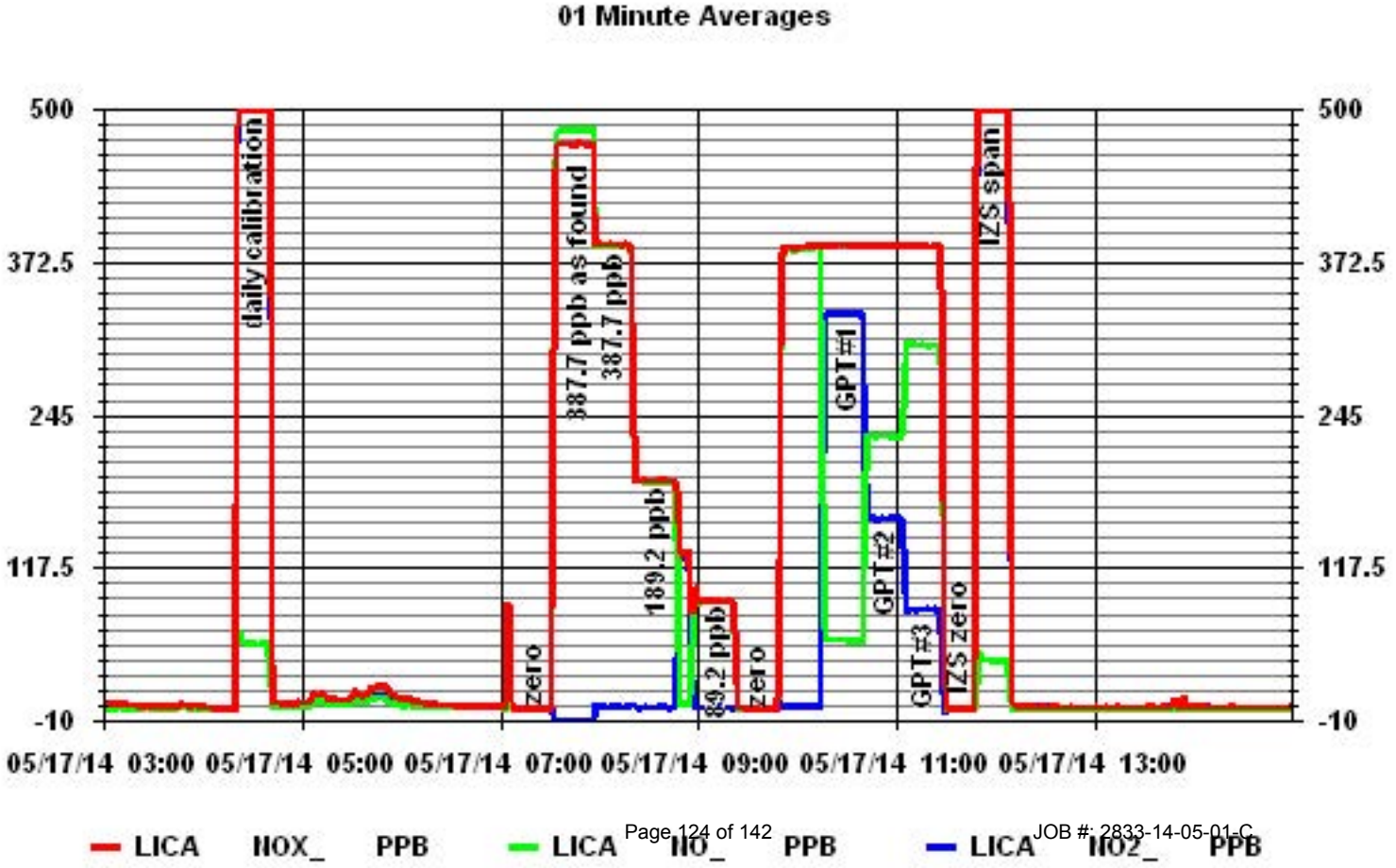
Date:	17-May-14	**Start Time (mst):**	7:09
Company:	LICA	**End Time (mst):**	11:26
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	3-point calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-18

Thermo 42C NOx Analyzer Calibration








01 Minute Averages
500
372.5
245
117.5
-10
daily calibration
387.7 ppb as found
387.7 ppb
189.2 ppb
89.2 ppb
zero
zero
GPT#1
GPT#2
GPT#3
IZS zero
IZS span
05/17/14 03:00
05/17/14 05:00
05/17/14 07:00
05/17/14 09:00
05/17/14 11:00
05/17/14 13:00
LICA NOX_ PPB
LICA NO_ PPB
LICA NO2_ PPB

Ozone

Maxxam Thermo 49i O_3 Analyzer Calibration

Date:	12-May-14	**Start Time (mst):**	14:03
Company:	LICA	**End Time (mst):**	16:24
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**G.P.T. Date:**	12-May-14

Analyzer:

Serial Number:	700419951	**Range ppm:**	500
Last Calibration Date:	17-Apr-14	**As Found C.F.**	1.013
Previous Cal High Point C.F.:	1.000	**New C.F.:**	1.001

		As found:		**As left:**
	O_3 Bkg:	0.2	O_3 Bkg:	0.2
	O_3 Coef:	1.054	O_3 Coef:	1.070
Motherboard:	3.3	3.3	3.3	3.3
	15.0	15.1	15.0	15.1
	24.0	23.9	24.0	23.9
	-3.3	-3.2	-3.3	-3.2
Interface Board:	3.3	3.2	3.3	3.2
	5.0	4.9	5.0	4.9
	15.0	14.8	15.0	14.8
	-15.0	-14.8	-15.0	-14.8
	Photo Lamp	8.7	Photo Lamp	8.7
	24.0	23.9	24.0	23.9
	O_3 Lamp	9.0	O_3 Lamp	9.0
	Bench:	27.4	Bench:	27.4
	Bench Lamp:	53.4	Bench Lamp:	53.4
	O_3 Lamp:	67.4	O_3 Lamp:	67.4
	Pressure:	714.7	Pressure:	714.7
	Cell A lpm:	0.717	Cell A lpm:	0.717
	Cell B lpm:	0.758	Cell B lpm:	0.758
	O_3 ppb:	40.1	O_3 ppb:	40.1
	Cell A ppb:	66.7	Cell A ppb:	66.7
	Cell B ppb:	20.2	Cell B ppb:	20.2
	Cell A int:	65327	Cell A int:	65327
	Cell B int:	61384	Cell B int:	61384
	Internal Span:	281.2	Internal Span:	282.2

Calibrator:

Make & Model:	Environics 6100
Serial #:	4760
NOx Gas Cylinder I.D. # :	BLM000711
NOx Cylinder Conc. (ppm):	50.2

Calibrator Flow Targets:

point	total flow (cc/min)	O_3 setting (v or ppb)
zero	5040	0
high	5040	300
mid	5040	140
low	5040	75

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5032	0.0	5032	0.0	-0.1	NA
adjusted zero	NA	0.0	######	0.0	-0.1	NA
as found high	5034	0.00	5034	329.0	324.7	1.013
adjusted high	5034	0.00	5034	329.0	329.0	1.000
mid	5034	0.00	5034	155.8	155.0	1.005
low	5035	0.00	5035	80.0	80.0	0.999
calibrator zero	5035	0.00	5035	0.0	-0.1	NA

copy and paste flows and NO decrease from NOx cal in to calculated concentration **Average C.F.=** 1.001

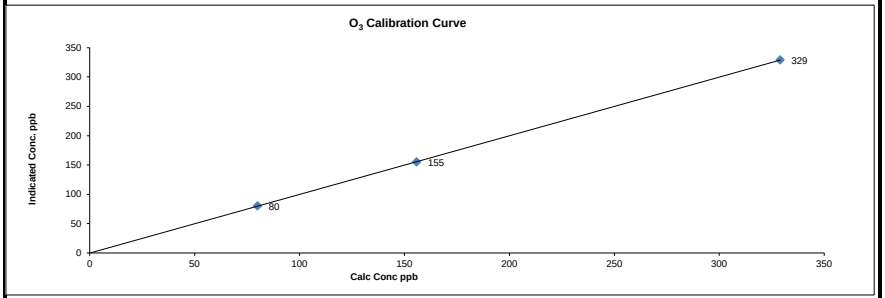
Linear Regression/Calibration Results:

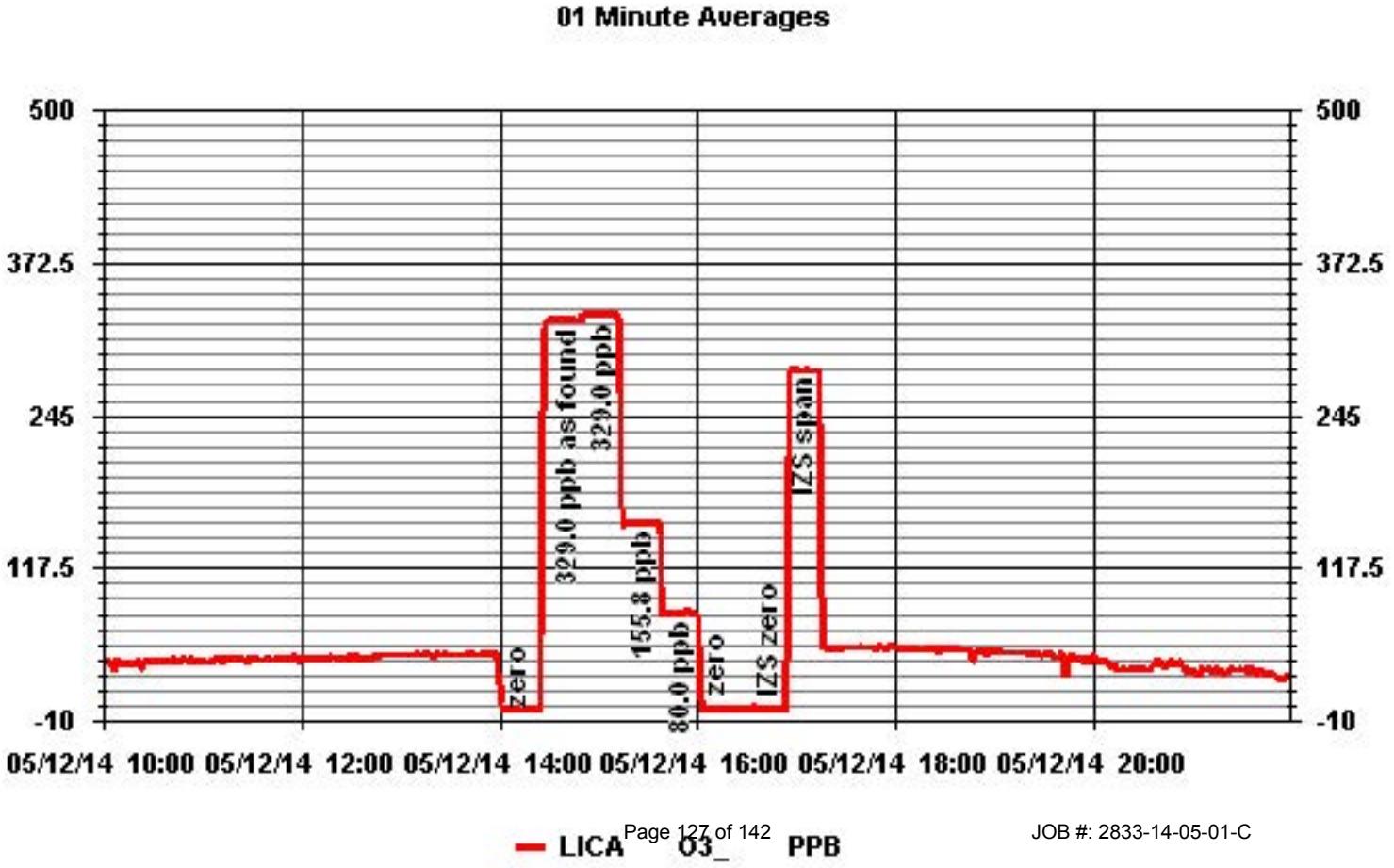
		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.000**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.046%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-1%**	**± 15%**	**PASS**

Comments:

Filter changed. No zero adjustment necessary. *To be added

Thermo 49i O3 Analyzer Calibration





JOB #: 2833-14-05-01-C

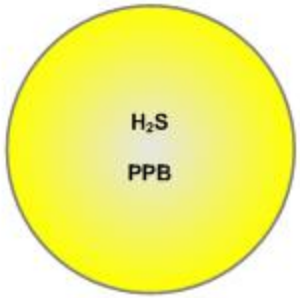
Passive Bubble Maps

Lakeland Industry & Community Association
H_2S Passive Bubble Map

MAY 2014

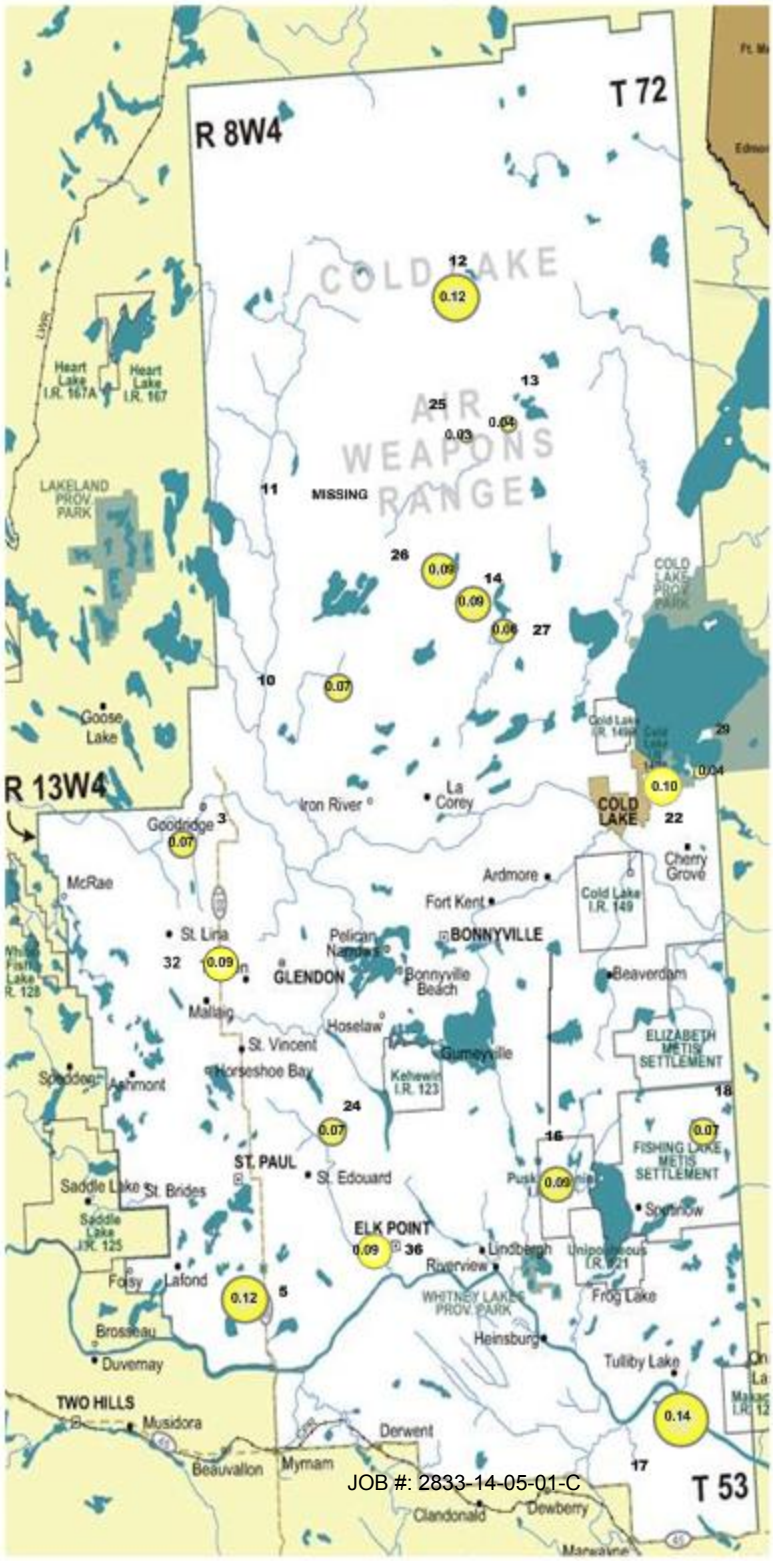
PASSIVE STATIONS

		DUPLICATE
3 – Therien	0.07 PPB	0.03 PPB
5 – Lake Eliza	0.12 PPB	NA
10 – La Corey	0.07 PPB	NA
11 – Wolf Lake	MISSING	NA
12 – Foster Creek	0.12 PPB	NA
13 – Primrose	0.04 PPB	NA
14 – Maskwa	0.09 PPB	NA
16 – Frog Lake	0.09 PPB	NA
17 – Clear Range	0.14 PPB	NA
18 – Fishing Lake	0.07 PPB	NA
22 – Cold Lake South	0.10 PPB	NA
24 – Fort George	0.07 PPB	NA
25 – Burnt Lake	0.03 PPB	NA
26 – Mahihkan	0.09 PPB	NA
27 – Mahkeses	0.06 PPB	NA
29 – Cold Lake South 2	0.04 PPB	NA
32 – St. Lina	0.09 PPB	NA
36 – Elk Point	0.09 PPB	NA



Summary

Minimum : 0.03 PPB – Burnt Lake
Maximum: 0.14 PPB – Clear Range
Average: 0.08 PPB (Includes Duplicates)



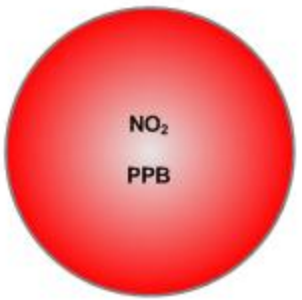
JOB #: 2833-14-05-01-C

Lakeland Industry & Community Association
NO_2 Passive Bubble Map

MAY 2014

PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	0.6 PPB	NA
4 – Flat Lake	0.3 PPB	NA
5 – Lake Eliza	0.3 PPB	NA
6 – Telegraph Creek	3.2 PPB	NA
8 – Muriel-Kehewin	0.5 PPB	NA
9 – Dupre	0.7 PPB	NA
10 – La Corey	1.4 PPB	NA
11 – Wolf Lake	MISSING	NA
12 – Foster Creek	0.9 PPB	0.8 PPB
13 – Primrose	< 0.1 PPB	< 0.1 PPB
14 – Maskwa	0.5 PPB	NA
15 – Ardmore	0.4 PPB	NA
16 – Frog Lake	0.5 PPB	NA
17 – Clear Range	1.1 PPB	NA
18 – Fishing Lake	0.6 PPB	NA
19 – Beaverdam	0.2 PPB	NA
22 – Cold Lake South	0.6 PPB	NA
23 – Medley-Martineau	< 0.1 PPB	NA
24 – Fort George	1.6 PPB	NA
28 – Town of Bonnyville	2.2 PPB	NA
29 – Cold Lake South 2	0.3 PPB	NA
32 – St. Lina	0.2 PPB	NA
36 – Elk Point	1.9 PPB	NA



Summary

Minimum : <0.1 PPB – Primrose and Medley-Martineau
Maximum: 3.2 PPB – Telegraph Creek

Average: 0.8 PPB *Includes Duplicates

JOB #: 2833-14-05-01-C

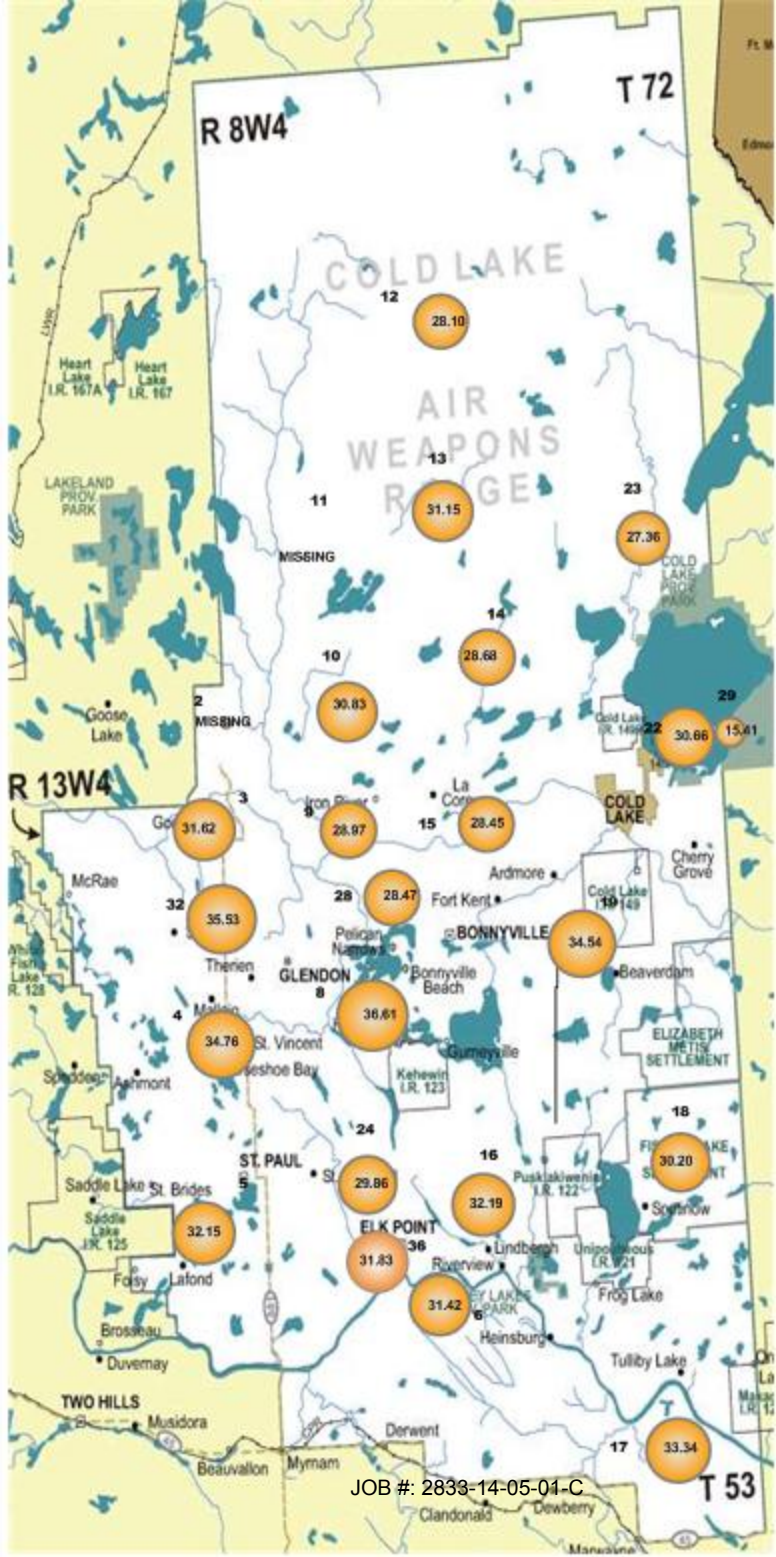
Lakeland Industry & Community Association
O_3 Passive Bubble Map

MAY 2014

PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	31.62 PPB	NA
4 – Flat Lake	34.76 PPB	NA
5 – Lake Eliza	32.15 PPB	NA
6 – Telegraph Creek	31.42 PPB	NA
8 – Muriel-Kehewin	36.61 PPB	NA
9 – Dupre	28.97 PPB	NA
10 – La Corey	30.83 PPB	NA
11 – Wolf Lake	MISSING	NA
12 – Foster Creek	28.73 PPB	27.46 PPB
13 – Primrose	31.93 PPB	30.36 PPB
14 – Maskwa	28.68 PPB	NA
15 – Ardmore	28.45 PPB	NA
16 – Frog Lake	32.19 PPB	NA
17 – Clear Range	33.34 PPB	NA
18 – Fishing Lake	30.20 PPB	NA
19 – Beaverdam	34.54 PPB	NA
22 – Cold Lake South	30.66 PPB	NA
23 – Medley-Martineau	27.36 PPB	NA
24 – Fort George	29.86 PPB	NA
28 – Town of Bonnyville	28.47 PPB	NA
29 – Cold Lake South 2	15.41 PPB	NA
32 – St. Lina	35.53 PPB	NA
36 – Elk Point	31.83 PPB	NA

O_3 PPB



Summary

Minimum : 15.41 PPB – Cold Lake South 2
Maximum: 36.61 PPB – Muriel-Kehewin
Average: 30.55 PPB *Includes Duplicates

JOB #: 2833-14-05-01-C

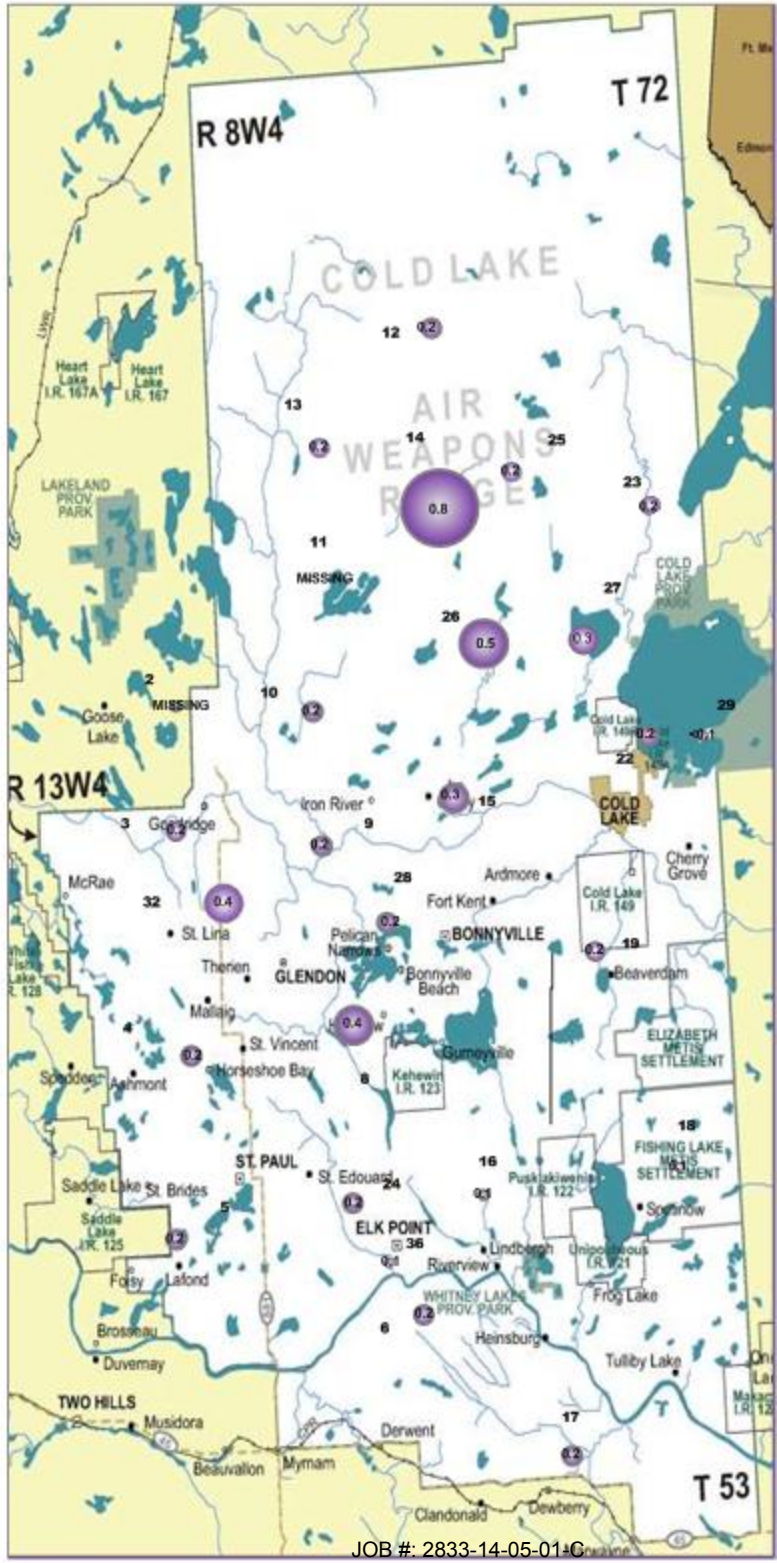
Lakeland Industry & Community Association
SO_2 Passive Bubble Map

MAY 2014

PASSIVE STATIONS		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	0.2 PPB	NA
4 – Flat Lake	0.2 PPB	NA
5 – Lake Eliza	0.2 PPB	NA
6 – Telegraph Creek	0.2 PPB	0.2 PPB
8 – Muriel-Kehewin	0.3 PPB	0.4 PPB
9 – Dupre	0.2 PPB	0.2 PPB
10 – La Corey	0.2 PPB	NA
11 – Wolf Lake	MISSING	NA
12 – Foster Creek	0.2 PPB	NA
13 – Primrose	0.2 PPB	NA
14 – Maskwa	0.8 PPB	NA
15 – Ardmore	0.3 PPB	NA
16 – Frog Lake	0.1 PPB	NA
17 – Clear Range	0.2 PPB	NA
18 – Fishing Lake	0.1 PPB	NA
19 – Beaverdam	0.2 PPB	NA
22 – Cold Lake South	0.2 PPB	NA
23 – Medley-Martineau	0.2 PPB	NA
24 – Fort George	0.2 PPB	NA
25 – Burnt Lake	0.2 PPB	NA
26 – Mahikan	0.5 PPB	NA
27 – Mahkeses	0.3 PPB	NA
28 – Town of Bonnyville	0.2 PPB	NA
29 – Cold Lake South 2	< 0.1 PPB	NA
32 – St. Lina	DAMAGE	NA
36 – Elk Point	0.4 PPB	NA

Summary

Minimum : <0.1 PPB – Cold Lake South 2
Maximum: 0.8 PPB – Maskwa
Average: 0.2 PPB *Includes Duplicates



JOB #: 2833-14-05-01C

Passive Field Data

Passive Sampler Data Sheet for LICA May 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 were installed.
3	$H_2S/SO_2/NO_2/O_3$	05/02/2014	11:48	06/02/2014	16:54	
4	$SO_2/NO_2/O_3$	05/02/2014	12:22	05/28/2014	17:02	
5	$H_2S/SO_2/NO_2/O_3$	05/02/2014	17:20	05/28/2014	16:00	
6	$SO_2/NO_2/O_3$	05/02/2014	14:41	05/28/2014	12.:57	
8	$SO_2/NO_2/O_3$	05/03/2014	18:38	05/28/2014	18.:05	
9	$SO_2/NO_2/O_3$	05/02/2014	10:15	06/02/2014	16:19	
10	$H_2S/SO_2/NO_2/O_3$	05/04/2014	14:41	05/29/2014	14:00	
11	$H_2S/SO_2/NO_2/O_3$	05/04/2014	11:47	NA	NA	Could not access due to deep mud
12	$H_2S/SO_2/NO_2/O_3$	05/04/2014	9:15	05/29/2014	10:35	
13	$H_2S/SO_2/NO_2/O_3$	05/04/2014	16:04	05/29/2014	15:17	
14	$H_2S/SO_2/NO_2/O_3$	05/04/2014	17:29	05/29/2014	16:59	
15	$SO_2/NO_2/O_3$	05/02/2014	9:23	06/02/2014	17:50	
16	$H_2S/SO_2/NO_2/O_3$	05/02/2014	16:27	05/28/2014	10:32	
17	$H_2S/SO_2/NO_2/O_3$	05/02/2014	15:41	05/28/2014	12:00	
18	$H_2S/SO_2/NO_2/O_3$	05/02/2014	17:04	05/28/2014	9:40	
19	$SO_2/NO_2/O_3$	05/03/2014	20:03	05/28/2014	8:15	
22	$H_2S/SO_2/NO_2/O_3$	05/02/2014	8:38	06/03/2014	18:19	
23	$SO_2/NO_2/O_3$	05/04/2014	19:11	06/02/2014	18:38	
24	$H_2S/SO_2/NO_2/O_3$	05/02/2014	14:12	05/28/2014	13:31	
25	H_2S/SO_2	05/04/2014	10:40	05/29/2014	12:03	
26	H_2S/SO_2	05/04/2014	17:04	05/29/2014	16:36	
27	H_2S/SO_2	05/04/2014	18:04	05/29/2014	18:00	
28	$SO_2/NO_2/O_3$	05/02/2014	9:50	06/02/2014	15:56	
29	$H_2S/SO_2/NO_2/O_3$	05/02/2014	8:30	06/03/2014	18:20	
32	$H_2S/SO_2/NO_2/O_3$	05/02/2014	11:12	06/03/2014	19:00	
36	$H_2S/SO_2/NO_2/O_3$	05/02/2014	13:35	05/28/2014	15:13	

Passive Sampler Data Sheet for LICA May 2014

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
Duplicate # 6	SO2	05/02/2014	14:41	05/28/2014	12:57	
Duplicate # 8	SO2	05/03/2014	18:38	05/28/2014	18:05	
Duplicate # 9	SO2	05/02/2014	10:15	06/02/2014	16:19	
Duplicate # 13	H2S	05/04/2014	16:04	05/29/2014	15:17	
Duplicate # 14	H2S	05/04/2014	17:29	05/29/2014	16:59	
Duplicate # 12	NO2	05/04/2014	9:15	05/29/2014	10:35	
Duplicate # 13	NO2	05/04/2014	16:04	05/29/2014	15:17	
Duplicate # 12	O3	05/04/2014	13:32	05/29/2014	10:35	
Duplicate # 13	O3	05/04/2014	16:04	05/29/2014	15:17	

Passive Network Laboratory Analysis

Maxxam

Success Through Science®

Your Project #: 2014/05/02 - 2014/05/28
Site Location: LICA

Attention:MICHAEL BISAGA

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

Report Date: 2014/06/17
Report #: R1587018
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B443855
Received: 2014/05/30, 11:37

Sample Matrix: Air
Samples Received: 31

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
H2S Passive Analysis (1)	19	2014/06/17	2014/06/17	PTC SOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (1)	25	2014/06/12	2014/06/17	PTC SOP-00148	Passive NO2 in ATM
O3 Passive Analysis (1)	25	2014/06/12	2014/06/17	PTC SOP-00197	EPA 300 R2.1
SO2 Passive Analysis (1)	29	2014/06/16	2014/06/17	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
==
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Maxxam Job #: B443855
Report Date: 2014/06/17

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/05/02 - 2014/05/28
Site Location: LICA
Sampler Initials: WA

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		JS4357	JS4358	JS4359	JS4361	JS4362	JS4363		
Sampling Date		2014/05/02 11:48	2014/05/02 12:22	2014/05/03 17:20	2014/05/02 14:41	2014/05/03 18:38	2014/05/02 10:15		
	Units	3	4	5	6	8	9	RDL	QC Batch
Passive Monitoring									
Calculated H2S	ppb	0.07		0.12				0.02	7529354
Calculated NO2	ppb	0.6	0.3	0.3	3.2	0.5	0.7	0.1	7522176
Calculated O3	ppb	31.62	34.76	32.15	31.42	36.61	28.97	0.1	7522753
Calculated SO2	ppb	0.2	0.2	0.2	0.2	0.3	0.2	0.1	7526740
RDL = Reportable Detection Limit									

Maxxam ID		JS4364	JS4365	JS4366	JS4367	JS4368	JS4369		
Sampling Date		2014/05/04 14:41	2014/05/04 11:47	2014/05/04 09:15	2014/05/04 16:04	2014/05/04 17:29	2014/05/02 09:23		
	Units	10	11	12	13	14	15	RDL	QC Batch
Passive Monitoring									
Calculated H2S	ppb	0.07	MISSING	0.12	0.04	0.09		0.02	7529354
Calculated NO2	ppb	1.4	MISSING	0.9	<0.1	0.5	0.4	0.1	7522176
Calculated O3	ppb	30.83	MISSING	28.73	31.93	28.68	28.45	0.1	7522753
Calculated SO2	ppb	0.2	MISSING	0.2	0.2	0.8	0.3	0.1	7526747
RDL = Reportable Detection Limit									

Maxxam ID		JS4370	JS4371	JS4372	JS4373	JS4374	JS4375	JS4376		
Sampling Date		2014/05/02 16:27	2014/05/02 15:41	2014/05/02 17:04	2014/05/03 20:03	2014/05/02 08:38	2014/05/04 19:12	2014/05/02 14:12		
	Units	16	17	18	19	22	23	24	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.09	0.14	0.07		0.10		0.07	0.02	7529354
Calculated NO2	ppb	0.5	1.1	0.6	0.2	0.6	<0.1	1.6	0.1	7522176
Calculated O3	ppb	32.19	33.34	30.20	34.54	30.66	27.36	29.86	0.1	7522763
Calculated SO2	ppb	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.1	7526747
RDL = Reportable Detection Limit										

Maxxam ID		JS4377	JS4378	JS4379		JS4380	JS4381	JS4382		
Sampling Date		2014/05/04 10:41	2014/05/04 17:04	2014/05/04 18:04		2014/05/02 09:50	2014/05/02 08:30	2014/05/02 11:12		
	Units	25	26	27	QC Batch	28	29	32	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.03	0.09	0.06	7529354		0.04	0.09	0.02	7529354
Calculated NO2	ppb				7522176	2.2	0.3	0.2	0.1	7522069
Calculated O3	ppb				7522763	28.47	15.41	35.53	0.1	7522763
Calculated SO2	ppb	0.2	0.5	0.3	7526747	0.2	<0.1	0.4	0.1	7526747
RDL = Reportable Detection Limit										

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

Maxxam Job #: B443855
Report Date: 2014/06/17

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/05/02 - 2014/05/28
Site Location: LICA
Sampler Initials: WA

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		JS4383		JS4386	JS4388	JS4389	JS4390	JS4391		
Sampling Date		2014/05/02 13:35		2014/05/02 11:48	2014/05/02 11:48	2014/05/02 11:48	2014/05/02 11:48	2014/05/02 11:48		
	Units	36	QC Batch	12 DUP	13 DUP	6 DUP	8 DUP	9 DUP	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.09	7529354		0.03				0.02	7529354
Calculated NO2	ppb	1.9	7522069	0.8	<0.1				0.1	7522176
Calculated O3	ppb	31.83	7522763	27.46	30.36				0.1	7522763
Calculated SO2	ppb	0.1	7526747			0.2	0.4	0.2	0.1	7526740
RDL = Reportable Detection Limit										

Maxxam Job #: B443855
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LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/05/02 - 2014/05/28
Site Location: LICA
Sampler Initials: WA

GENERAL COMMENTS

Sample: JS4365 (#11) for NO2 and O3 and H2S parameters was not returned to the lab. - DF/OZ/JP

Sample JS4365-01 : Site inacessible due to weather.

Results relate only to the items tested.

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Maxxam Job #: B443855
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LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/05/02 - 2014/05/28
Site Location: LICA
Sampler Initials: WA

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
7522069	DF4	Spiked Blank	Calculated NO2	2014/06/12		99	%	90 - 110
7522069	DF4	Method Blank	Calculated NO2	2014/06/12	<0.1		ppb	
7522176	DF4	Spiked Blank	Calculated NO2	2014/06/12		101	%	90 - 110
7522176	DF4	Method Blank	Calculated NO2	2014/06/12	<0.1		ppb	
7522753	OZ	Spiked Blank	Calculated O3	2014/06/12		100	%	90 - 110
7522753	OZ	Method Blank	Calculated O3	2014/06/12	<0.1		ppb	
7522763	OZ	Spiked Blank	Calculated O3	2014/06/12		99	%	90 - 110
7522763	OZ	Method Blank	Calculated O3	2014/06/12	<0.1		ppb	
7526740	DF4	Spiked Blank	Calculated SO2	2014/06/16		101	%	90 - 110
7526740	DF4	Method Blank	Calculated SO2	2014/06/16	<0.1		ppb	
7526747	DF4	Spiked Blank	Calculated SO2	2014/06/16		102	%	90 - 110
7526747	DF4	Method Blank	Calculated SO2	2014/06/16	<0.1		ppb	
7529354	JPF	Spiked Blank	Calculated H2S	2014/06/17		100	%	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.

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Maxxam Job #: B443855
Report Date: 2014/06/17

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/05/02 - 2014/05/28
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

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Lakeland Industry & Community Association

Maskwa Monitoring Site
Ambient Air Monitoring
Data Report
For
May 2014

Prepared By:

June 26, 2014

JOB #: 2833-14-05-30-C

Lakeland Industry & Community Association
Ambient Air Monitoring
Maskwa

Table of Contents

	Page
Introduction	3
Calibration Procedure	4
Monthly Continuous Summary	5
General Monthly Summary	6
Continuous Monitoring	9
• Monthly Summaries, Graphs & Wind Roses	10
• Sulphur Dioxide	11
• Hydrogen Sulphide	19
• Total Hydrocarbons	27
• Nitrogen Dioxide	35
• Nitric Oxide	43
• Oxides of Nitrogen	50
• Temperature	58
• Precipitation	61
• Relative Humidity	64
• Barometric Pressure	67
• Vector Wind Speed	70
• Vector Wind Direction	77
• Standard Deviation Wind Direction	80

	Page
Calibration Reports	83
• Sulphur Dioxide	84
• Hydrogen Sulphide	87
• Total Hydrocarbons	90
• Nitrogen Dioxide	93

Introduction

The following Ambient Air Monitoring report was prepared for:

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Monitoring Location: Maskwa
Data Period: May 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 – May 2014

LICA MASKWA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO2 (PPB)	172	48	0	0	0.45	8	10, 24	2, 2	4.6, 6	310(NW), 300(WNW)	1.7	7	100.0
H2S (PPB)	10	3	0	0	0.16	1	VAR	VAR	VAR	VAR	0.9	5	100.0
THC (PPM)	-	-	-	-	2.06	2.6	12, 13	VAR	VAR	VAR	2.2	21	100.0
NO2 (PPB)	159	-	0	-	1.81	14.5	14	23	6	288(WNW)	4.2	7	100.0
NO (PPB)	-	-	-	-	0.66	10.6	14	6	3.3	24(NNE)	1.9	27	100.0
NO_x (PPB)	-	-	-	-	2.48	20	14	6	3.3	24(NNE)	5.7	7	100.0
VECTOR WS (KPH)	-	-	-	-	5.15	12.4	15	22	-	3(N)	8.3	2	100.0
VECTOR WD (DEGREES)	-	-	-	-	356(N)	-	-	-	-	-	-	-	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	62.06	93	26, 27	VAR	VAR	VAR	91.1	26	100.0
TEMPERATURE (DEG C)	-	-	-	-	8.68	28.6	23	14	8.3	200(SSW)	21.0	23	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	942.3	959	13	VAR	VAR	VAR	956.0	13	100.0
PRECIPITATION (MM)	-	-	-	-	0.11	6.2	29	10	3	49(NE)	1.2	29	100.0

NA-NOT AVAILABLE VAR-VARIOUS

General Monthly Summary

Equipment Operation

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

AQM STATION – LICA – Maskwa

Sulphur Dioxide (PPB)

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

No operational issues were observed during the month. The monthly calibration was performed on May 14th. 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 May 14th. 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 May 15th. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

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

No operational issues were observed during the month. The monthly calibration was performed on May 14th. The inlet filter was changed before the calibration was started. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – Maskwa

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 May 14th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - Maskwa Site

MAY 2014

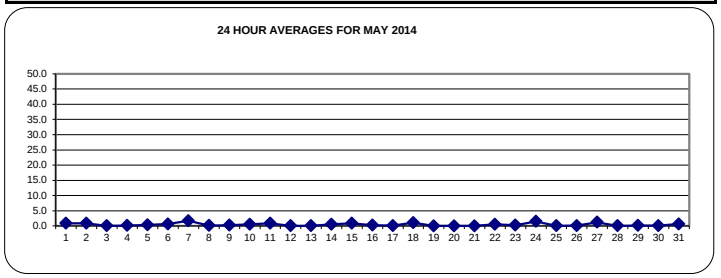
SULPHUR DIOXIDE (SO2) hourly averages in ppb

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	1	1	1	1	1	1	**S**	5	0	0	0	1	0	0	0	5	3	0	0	0	0	1	0	0	5	0.9	24
2	0	0	0	2	4	**S**	2	0	5	1	2	2	1	0	2	0	0	0	0	0	0	0	0	0	5	0.9	24
3	0	0	0	0	**S**	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
4	0	0	0	**S**	0	0	1	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	2	0.2	24
5	0	0	**S**	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	1	0	1	1	1	1	0.3	24
6	0	**S**	0	0	0	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	3	7	0.7	24
7	**S**	1	0	1	1	2	2	2	5	5	5	3	3	1	1	2	2	2	0	0	0	0	0	**S**	5	***1.7***	24
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	**S**	0	3	0.2	24
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	**S**	3	0	3	0.2	24
10	0	0	***8***	0	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	**S**	0	0	0	***8***	0.6	24
11	7	1	0	0	1	4	2	1	1	1	0	0	1	2	0	0	0	0	0	**S**	0	0	0	0	7	0.9	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	**S**	0	0	0	0	0	1	0.0	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	**S**	0	0	0	0	0	0	1	0.0	24
14	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	**C**	1	1	**S**	0	0	0	0	1	0	6	6	0.5	24
15	1	0	0	0	0	0	0	1	0	0	1	4	3	3	6	**S**	1	0	0	0	0	0	0	0	6	0.9	24
16	0	0	0	0	0	0	0	0	0	0	0	0	2	1	**S**	1	2	0	0	0	0	0	0	0	2	0.3	24
17	0	0	0	0	0	0	0	0	1	1	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	1	0.1	24
18	0	0	0	0	0	0	0	0	2	0	2	1	**S**	3	1	0	2	6	4	3	0	0	0	0	6	1.0	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**	5	6	1	0	0	0	0	0	0	0	0	0	0	0	0	6	0.5	24
23	0	0	0	0	0	0	0	**S**	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0.3	24
24	6	4	***8***	2	2	0	**S**	2	1	0	2	3	0	0	0	4	0	1	0	0	0	0	0	0	***8***	1.5	24
25	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0.0	24
26	0	0	0	0	**S**	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
27	0	0	0	**S**	0	0	0	1	1	1	2	1	1	0	1	2	3	1	4	3	3	4	0	0	4	1.2	24
28	1	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
29	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	1	0.1	24
30	**S**	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	1	0.1	24
31	0	0	0	0	0	0	1	4	3	0	1	2	1	0	0	0	0	0	0	0	0	0	**S**	2	4	0.6	24
HOURLY MAX	7	4	8	2	4	4	2	5	5	5	6	4	3	3	6	5	3	6	4	3	3	4	7	6			
HOURLY AVG	0.6	0.2	0.6	0.2	0.3	0.3	0.3	0.7	0.7	0.6	0.8	0.7	0.5	0.4	0.5	0.6	0.6	0.4	0.4	0.2	0.1	0.2	0.4	0.6			

STATUS FLAG CODES

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

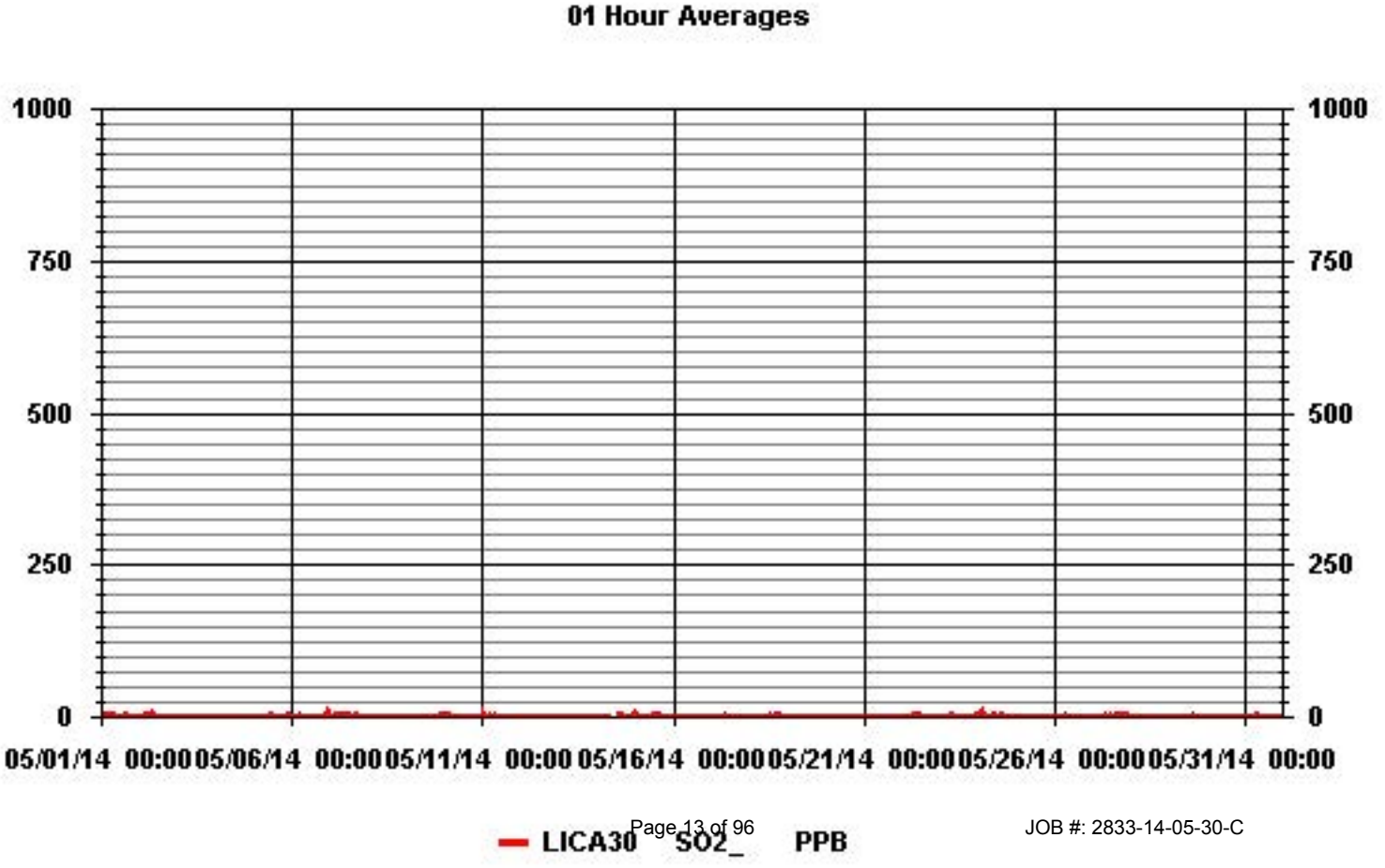


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB 24-HR 48 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	147					
MAXIMUM 1-HR AVERAGE:	8	PPB	@ HOUR(S)	2, 2	ON DAY(S)	10, 24
MAXIMUM 24-HR AVERAGE:	1.7	PPB			ON DAY(S)	7
					VAR-VARIOUS	
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	1.15		MONTHLY AVERAGE:		0.45	PPB

JOB #: 2833-14-05-30-C



JOB #: 2833-14-05-30-C

Lakeland Industry & Community Association - Maskwa Site

MAY 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	2	2	**S**	10	3	1	1	9	8	3	6	11	15	0	5	0	0	8	1	0	15	3.9	24
2	0	0	0	13	10	**S**	9	1	13	12	7	12	5	8	13	0	0	0	0	0	1	0	0	0	13	4.5	24
3	0	0	0	0	**S**	0	0	1	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0.3	24
4	0	1	0	**S**	0	1	2	2	0	0	1	0	4	1	2	2	3	0	0	0	0	0	0	0	4	0.8	24
5	0	0	**S**	0	0	0	0	0	0	0	2	2	3	1	1	1	1	1	2	4	4	5	2	9	9	1.7	24
6	1	**S**	1	2	0	4	5	7	1	1	1	1	1	0	0	0	0	0	0	0	0	3	13	8	13	2.1	24
7	**S**	3	2	4	4	5	7	3	14	12	15	11	15	7	4	12	8	7	1	1	1	1	1	**S**	15	6.3	24
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	7	2	0	0	**S**	0	7	0.5	24
9	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	3	9	0	0	0	0	**S**	10	3	10	1.3	24
10	0	7	20	3	0	0	0	6	7	9	8	5	10	7	5	1	2	6	0	0	**S**	0	0	1	20	4.2	24
11	16	13	0	5	4	10	7	3	6	4	3	0	8	11	1	2	2	8	0	**S**	0	0	0	0	16	4.5	24
12	0	0	0	0	0	0	0	0	0	0	0	3	0	3	7	4	4	0	**S**	0	0	0	0	0	7	0.9	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	0	0	**S**	0	0	0	0	1	0	5	0.4	24
14	0	0	0	0	0	0	1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	4	4	**S**	0	1	1	1	1	1	18	18	2.0	24
15	6	1	1	1	1	1	1	1	1	1	3	10	13	14	19	**S**	3	1	0	0	0	0	0	0	19	3.4	24
16	0	0	0	0	0	0	0	0	0	0	0	1	6	5	**S**	5	8	1	1	1	1	1	0	1	8	1.3	24
17	0	0	0	1	1	1	1	1	4	3	1	1	1	**S**	0	0	0	0	0	0	0	0	7	2	7	1.0	24
18	1	0	0	0	0	0	0	0	7	2	7	4	**S**	5	3	7	8	11	11	11	0	0	3	2	11	3.6	24
19	0	0	0	0	0	0	0	0	0	1	0	**S**	0	0	0	0	1	1	0	0	0	0	0	0	1	0.1	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	1	0	0	0	1	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
22	0	0	0	0	0	0	0	1	**S**	12	9	5	0	0	0	1	0	1	2	1	0	0	0	1	12	1.4	24
23	1	0	1	0	0	1	1	**S**	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	***25***	***25***	2.0	24
24	24	15	17	12	9	1	**S**	7	7	1	12	12	2	0	7	10	1	7	6	0	0	0	0	0	24	***6.5***	24
25	0	0	0	0	0	**S**	0	0	0	1	0	0	0	1	0	0	4	1	2	0	0	0	0	0	4	0.4	24
26	0	0	0	0	**S**	1	2	2	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	2	0.9	24
27	1	1	0	**S**	0	2	1	3	4	6	5	2	2	2	3	7	6	4	11	11	10	9	2	1	11	4.0	24
28	5	1	**S**	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0.4	24
29	0	**S**	0	0	0	0	1	1	1	1	1	1	1	1	2	2	1	1	1	1	2	1	1	0	2	0.9	24
30	**S**	1	2	1	1	2	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	1	1	**S**	2	1.0	24
31	0	1	1	1	1	1	5	14	9	1	3	4	3	1	1	1	0	0	1	0	1	1	**S**	3	14	2.3	24
HOURLY MAX	24	15	20	13	10	10	9	14	14	12	15	12	15	14	19	12	15	11	11	11	10	9	13	25			
HOURLY AVG	2.0	1.6	1.6	1.5	1.2	1.1	1.5	2.2	2.9	2.7	2.8	3.0	3.1	2.7	2.8	2.5	2.6	1.8	1.8	1.2	0.8	1.1	1.6	2.6			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 358

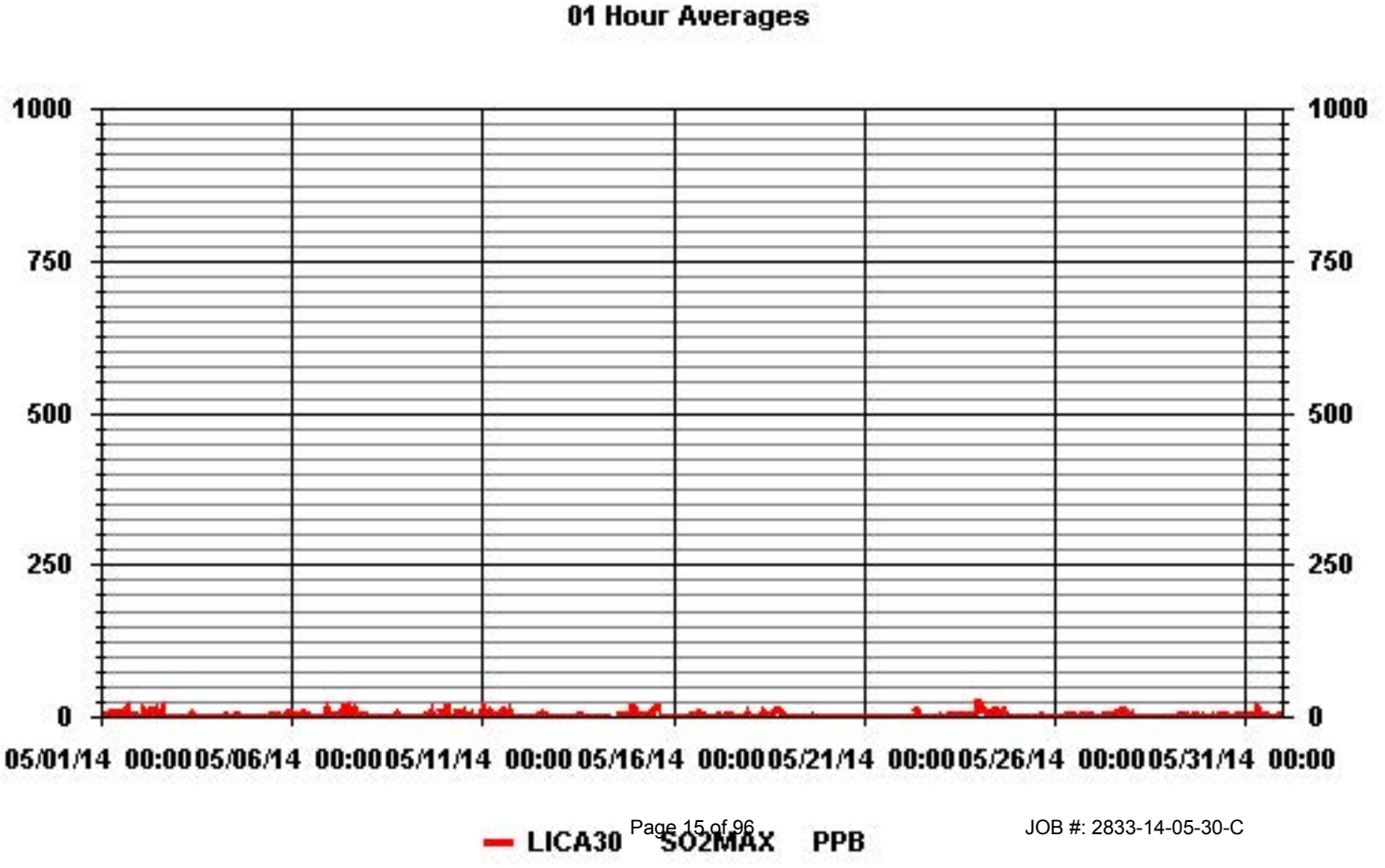
MAXIMUM INSTANTANEOUS VALUE: 25 PPB @ HOUR(S) 23 ON DAY(S) 23

VAR-VARIOUS

IZS CALIBRATION TIME: 33 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 7 HRS

STANDARD DEVIATION: 3.65



JOB #: 2833-14-05-30-C

LICA30
SO2_ / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	10.07	6.95	14.75	8.08	4.82	4.11	2.83	3.12	4.68	5.39	3.40	2.83	5.24	5.95	7.65	10.07	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	10.07	6.95	14.75	8.08	4.82	4.11	2.83	3.12	4.68	5.39	3.40	2.83	5.24	5.95	7.65	10.07	

Calm : .00 %

Total # Operational Hours : 705

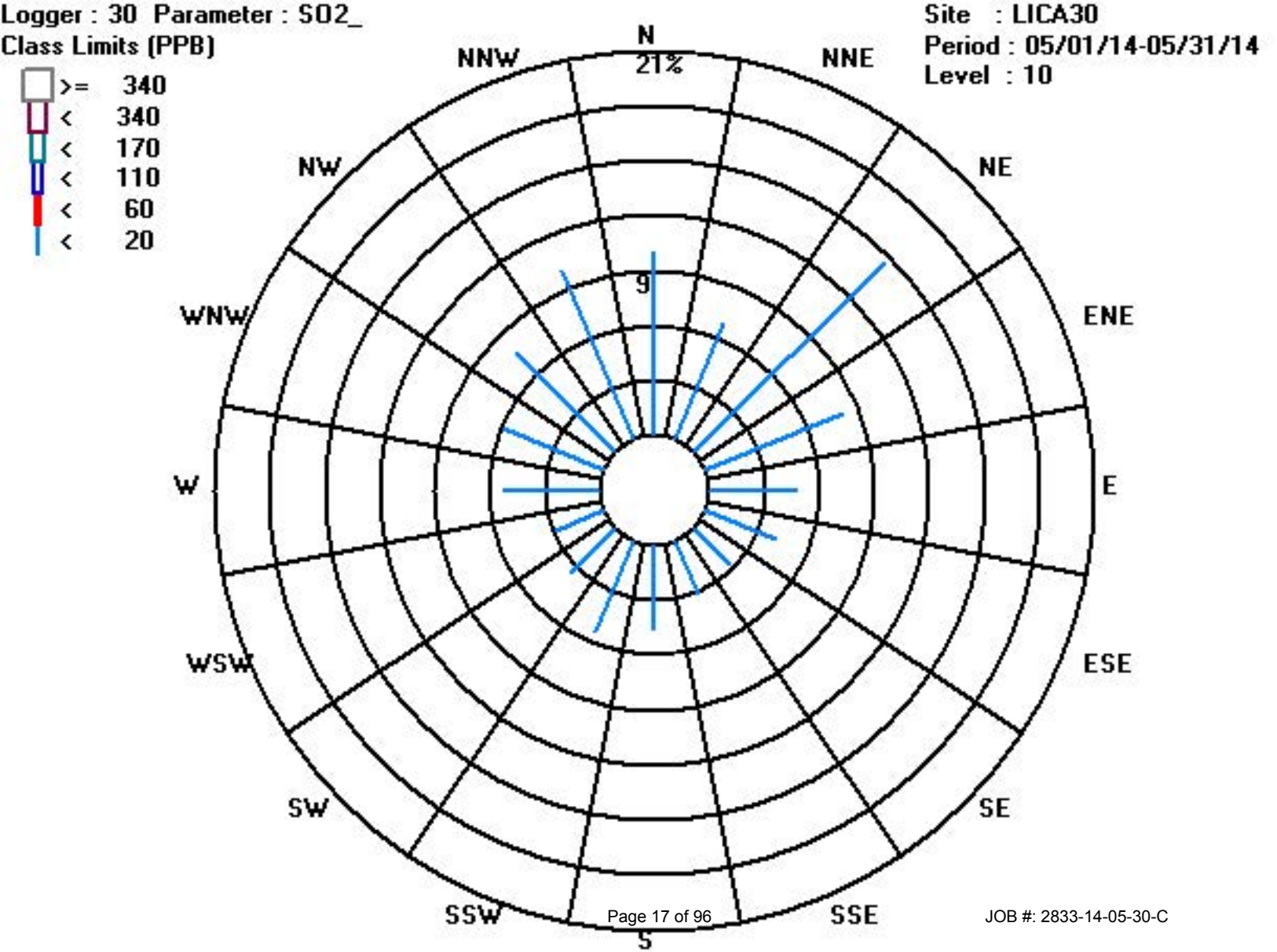
Distribution By Samples

Direction

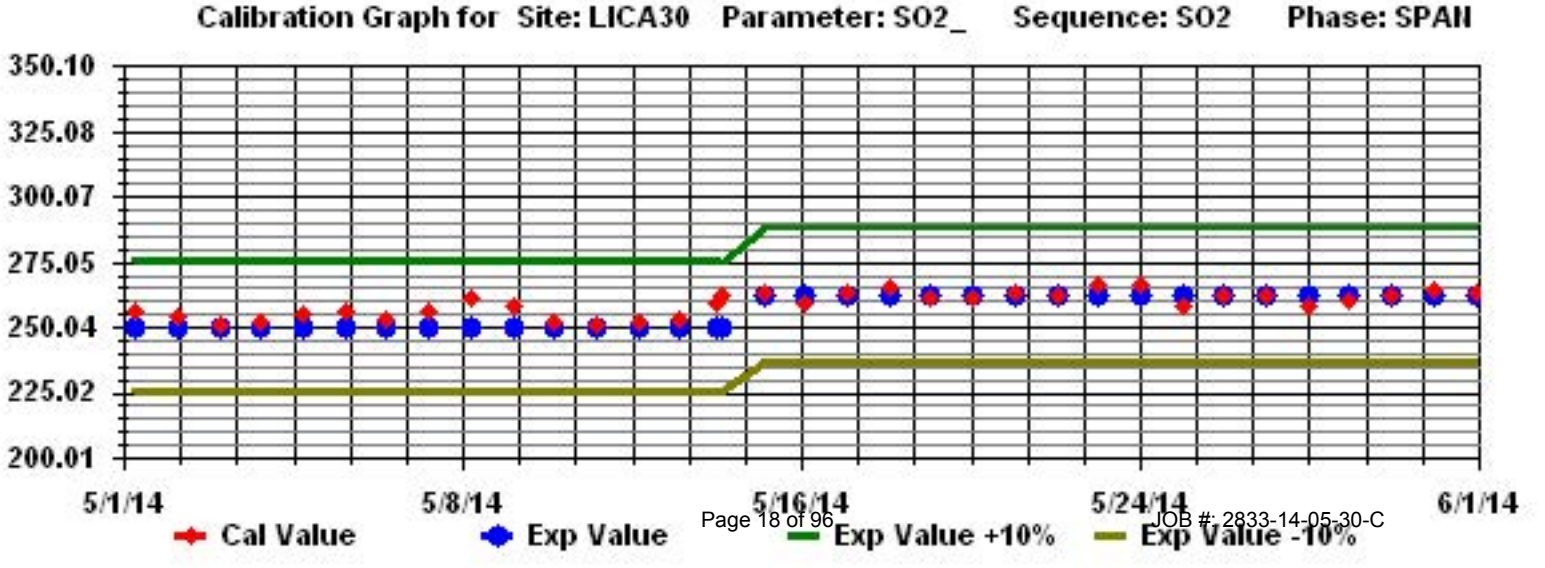
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	71	49	104	57	34	29	20	22	33	38	24	20	37	42	54	71	705
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	71	49	104	57	34	29	20	22	33	38	24	20	37	42	54	71	

Calm : .00 %

Total # Operational Hours : 705



JOB #: 2833-14-05-30-C


Calibration Graph for Site: LICA30 Parameter: SO2_ Sequence: SO2 Phase: SPAN
350.10
325.08
300.07
275.05
250.04
225.02
200.01
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Hydrogen Sulphide

Lakeland Industry & Community Association - Maskwa Site

MAY 2014

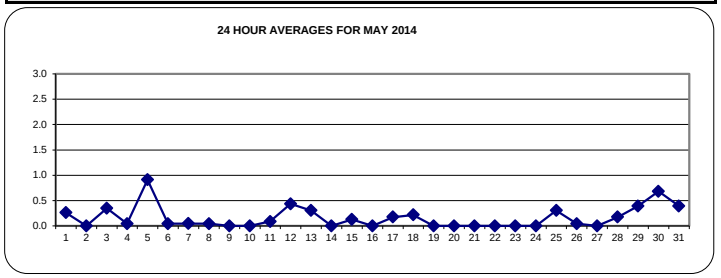
HYDROGEN SULPHIDE (H2S) hourly averages in ppb

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	1	1	1	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
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	0	1	1	0	1	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0.3	24
4	0	0	1	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
5	0	0	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	***0.9***	24
6	1	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
7	**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
8	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	1	0.0	24
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	0	0	0	0	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**	1	0	1	0	1	0.1	24
12	0	1	1	1	1	1	0	0	1	1	1	0	0	0	0	0	0	0	**S**	0	1	1	0	0	1	0.4	24
13	1	1	0	0	0	1	0	0	0	0	0	0	1	0	1	1	1	**S**	0	0	0	0	0	0	1	0.3	24
14	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
15	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	**S**	0	0	0	0	0	0	0	0	1	0.1	24
16	0	0	0	0	0	0	0	0	0	0	0	0	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	1	0	0	0	**S**	0	0	0	0	1	0	1	0	0	1	1	0.2	24
18	0	0	0	1	1	1	0	0	1	0	0	1	**S**	0	0	0	0	0	0	0	0	0	0	0	1	0.2	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	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
24	0	0	0	0	0	0	**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	1	0	0	0	0	0	1	0	0	1	1	0	0	1	1	0	1	1	0.3	24
26	1	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
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	1	1	1	0	0	0	1	0	0	0	0	0	1	0.2	24
29	0	**S**	0	0	0	1	1	0	1	0	0	1	0	1	0	0	0	1	0	0	1	1	1	0	1	0.4	24
30	**S**	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	0	1	0	1	0	**S**	1	0.7	24
31	0	0	0	1	0	0	0	0	1	0	1	1	0	0	0	0	1	1	1	1	0	0	**S**	1	1	0.4	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			
HOURLY AVG	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.2			

STATUS FLAG CODES

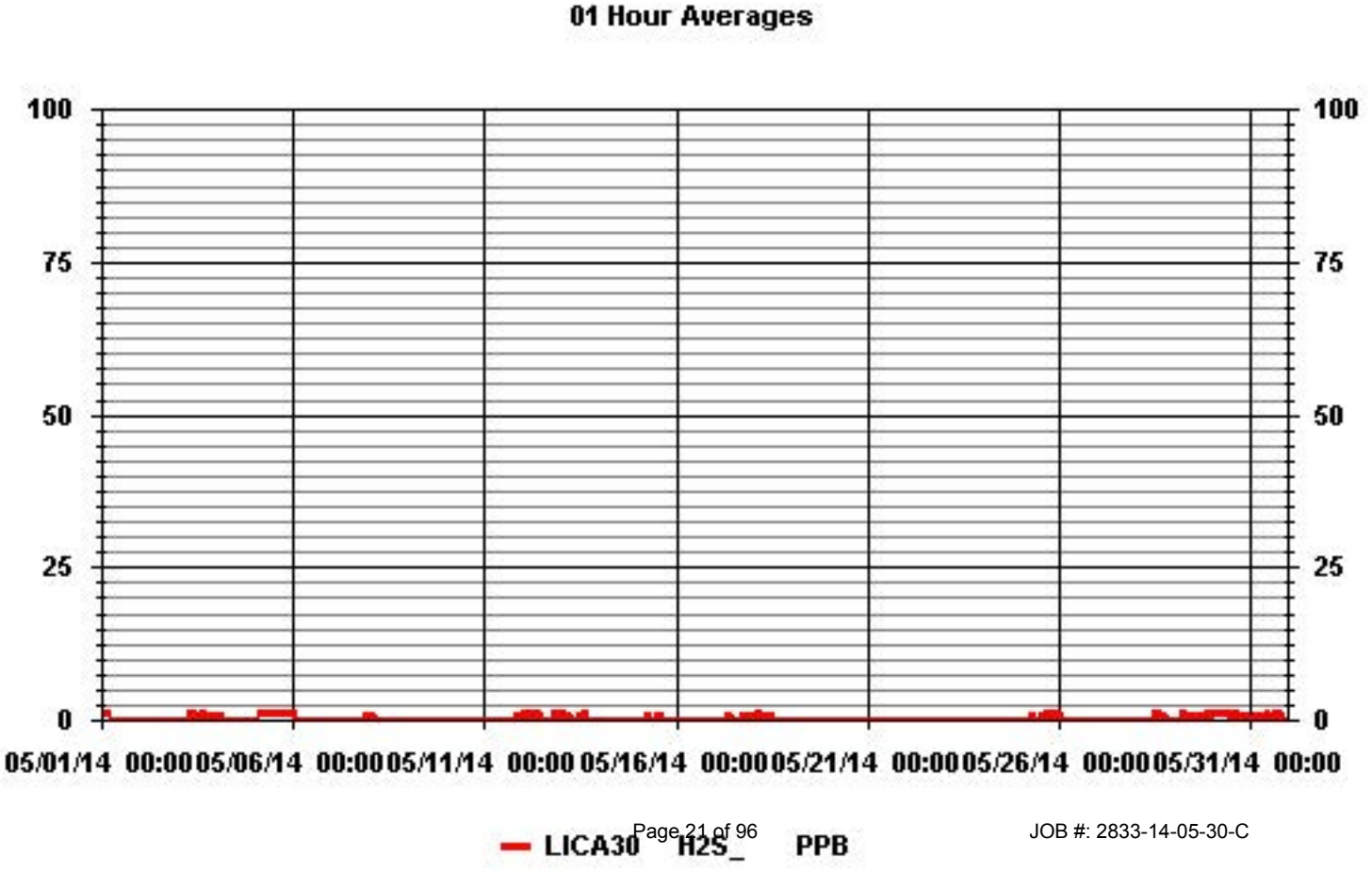
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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:	115						
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)		VAR
MAXIMUM 24-HR AVERAGE:	0.9	PPB			ON DAY(S)		5
					VAR-VARIOUS		
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:			744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	0.37		MONTHLY AVERAGE:			0.16	PPB



JOB #: 2833-14-05-30-C

Lakeland Industry & Community Association - Maskwa Site

MAY 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	1	1	1	1	1	1	**S**	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0.3	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**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	24
4	1	1	1	**S**	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
5	0	0	**S**	1	1	1	1	2	1	1	1	2	1	2	2	1	1	1	2	2	2	1	1	1	2	***1.2***	24
6	1	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0.2	24
7	**S**	1	1	1	0	0	1	1	1	1	0	0	1	1	1	0	0	0	0	0	0	0	2	**S**	2	0.5	24
8	2	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	1	2	0.3	24
9	0	0	1	1	0	0	0	0	0	0	1	1	1	0	1	0	0	1	0	0	0	**S**	0	0	1	0.3	24
10	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	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	1	1	1	1	0.2	24
12	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	2	1.1	24
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	**S**	0	0	0	0	0	0	2	0.8	24
14	0	0	0	0	0	1	1	**C**	**C**	**C**	**C**	**C**	0	0	0	0	**S**	1	1	2	1	1	1	1	2	0.6	24
15	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	**S**	0	0	0	0	0	0	0	0	1	0.6	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	1	1	1	1	1	1	1	1	1	1	0.4	24
17	1	1	0	1	1	1	2	1	1	1	1	1	1	**S**	1	0	0	1	1	1	1	1	1	2	2	1.0	24
18	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	0.5	24
19	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	1	1	0	0	1	0.1	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	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
22	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
23	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
24	0	0	0	0	0	0	**S**	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
25	0	0	0	0	0	**S**	1	1	1	1	1	0	1	1	1	1	1	***3***	1	1	1	1	1	1	***3***	0.8	24
26	1	1	1	1	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
27	0	0	0	**S**	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
28	0	0	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24
29	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
30	**S**	1	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	2	1.1	24
31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	**S**	1	2	1.1	24
HOURLY MAX	2	1	2	2	2	1	2	2	1	1	1	2	1	2	2	1	1	3	2	2	2	1	2	2			
HOURLY AVG	0.4	0.4	0.5	0.6	0.4	0.4	0.5	0.6	0.4	0.5	0.6	0.5	0.4	0.4	0.5	0.3	0.4	0.5	0.4	0.5	0.5	0.5	0.5	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: 306

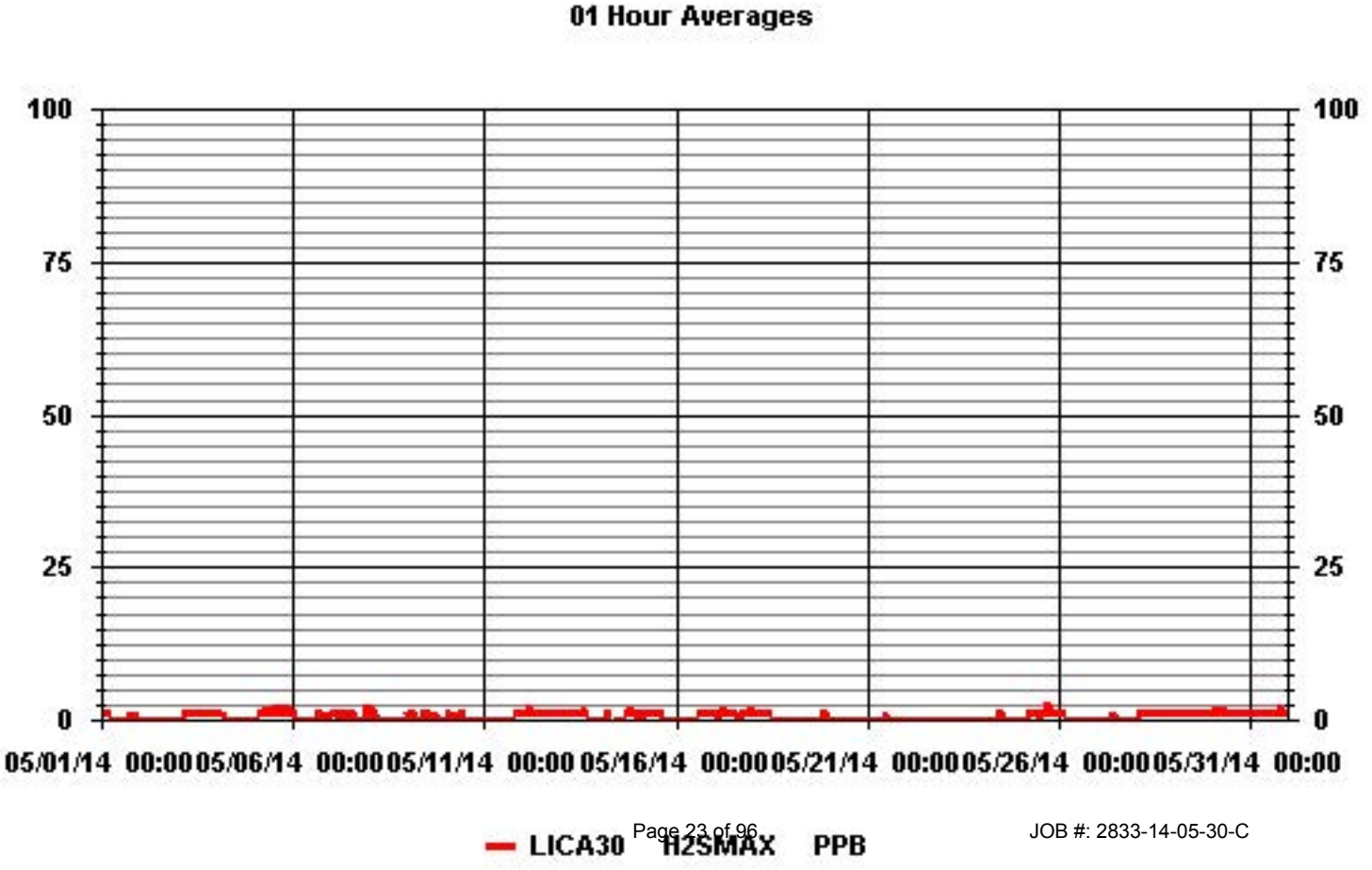
MAXIMUM INSTANTANEOUS VALUE: 3 PPB @ HOUR(S) 17 ON DAY(S) 25

VAR-VARIOUS

IZS CALIBRATION TIME: 33 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 0.56



JOB #: 2833-14-05-30-C

LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	10.04	6.93	14.71	8.06	4.80	4.10	2.82	3.11	4.66	5.51	3.39	2.82	5.23	6.08	7.63	10.04	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	10.04	6.93	14.71	8.06	4.80	4.10	2.82	3.11	4.66	5.51	3.39	2.82	5.23	6.08	7.63	10.04	

Calm : .00 %

Total # Operational Hours : 707

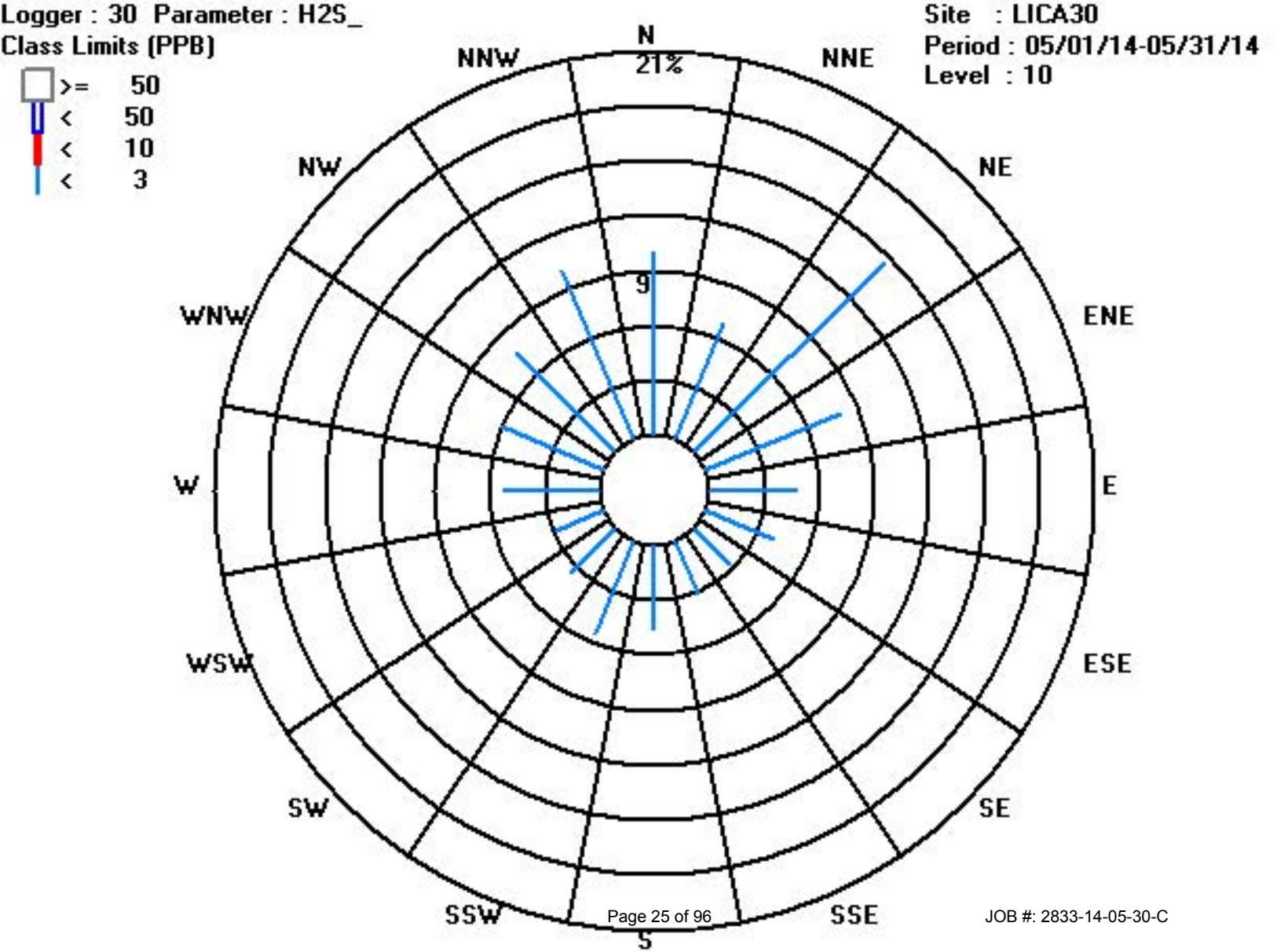
Distribution By Samples

Direction

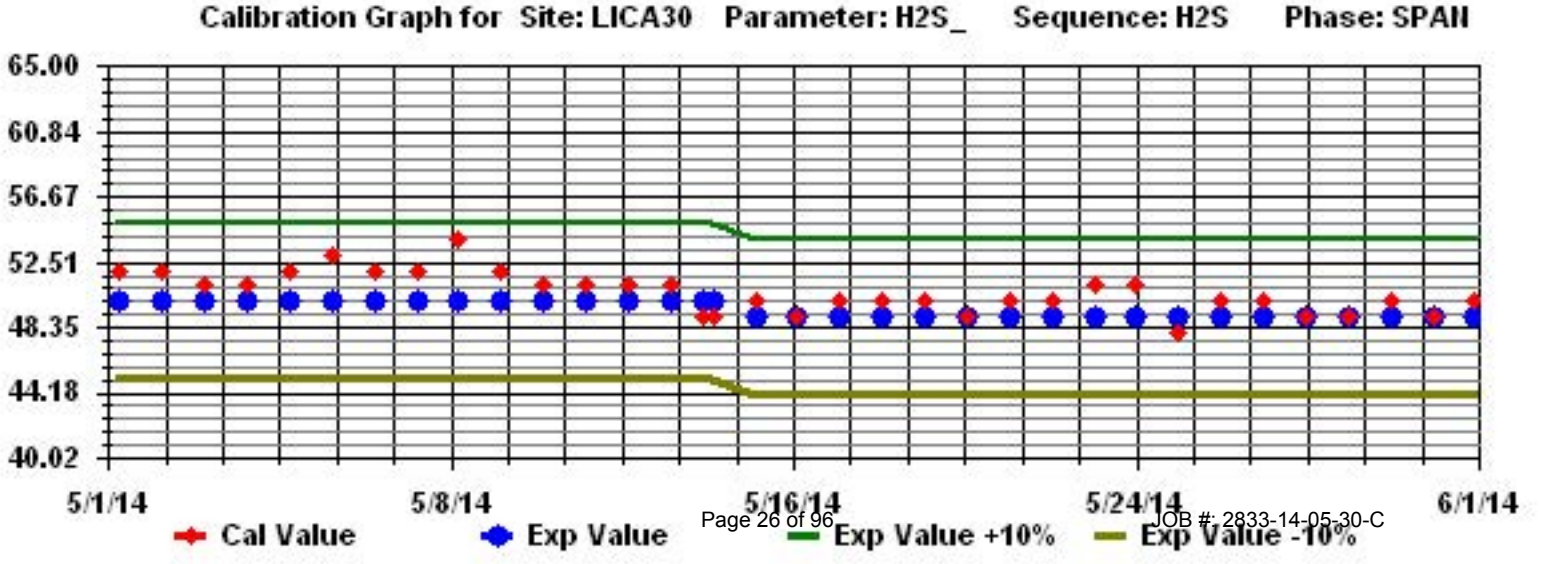
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	71	49	104	57	34	29	20	22	33	39	24	20	37	43	54	71	707
< 10																	
< 50																	
>= 50																	
Totals	71	49	104	57	34	29	20	22	33	39	24	20	37	43	54	71	

Calm : .00 %

Total # Operational Hours : 707



JOB #: 2833-14-05-30-C


Calibration Graph for Site: LICA30 Parameter: H2S_ Sequence: H2S Phase: SPAN
65.00
60.84
56.67
52.51
48.35
44.18
40.02
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

Lakeland Industry & Community Association - Maskwa Site

MAY 2014

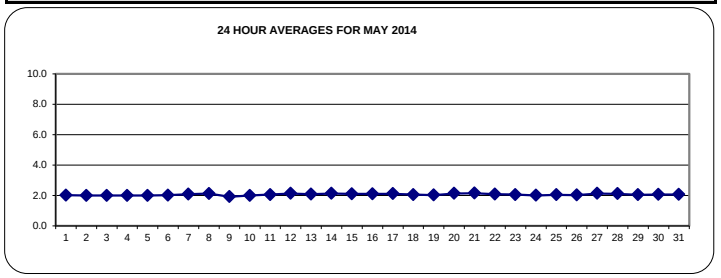
TOTAL HYDROCARBONS (THC) hourly averages in ppm

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

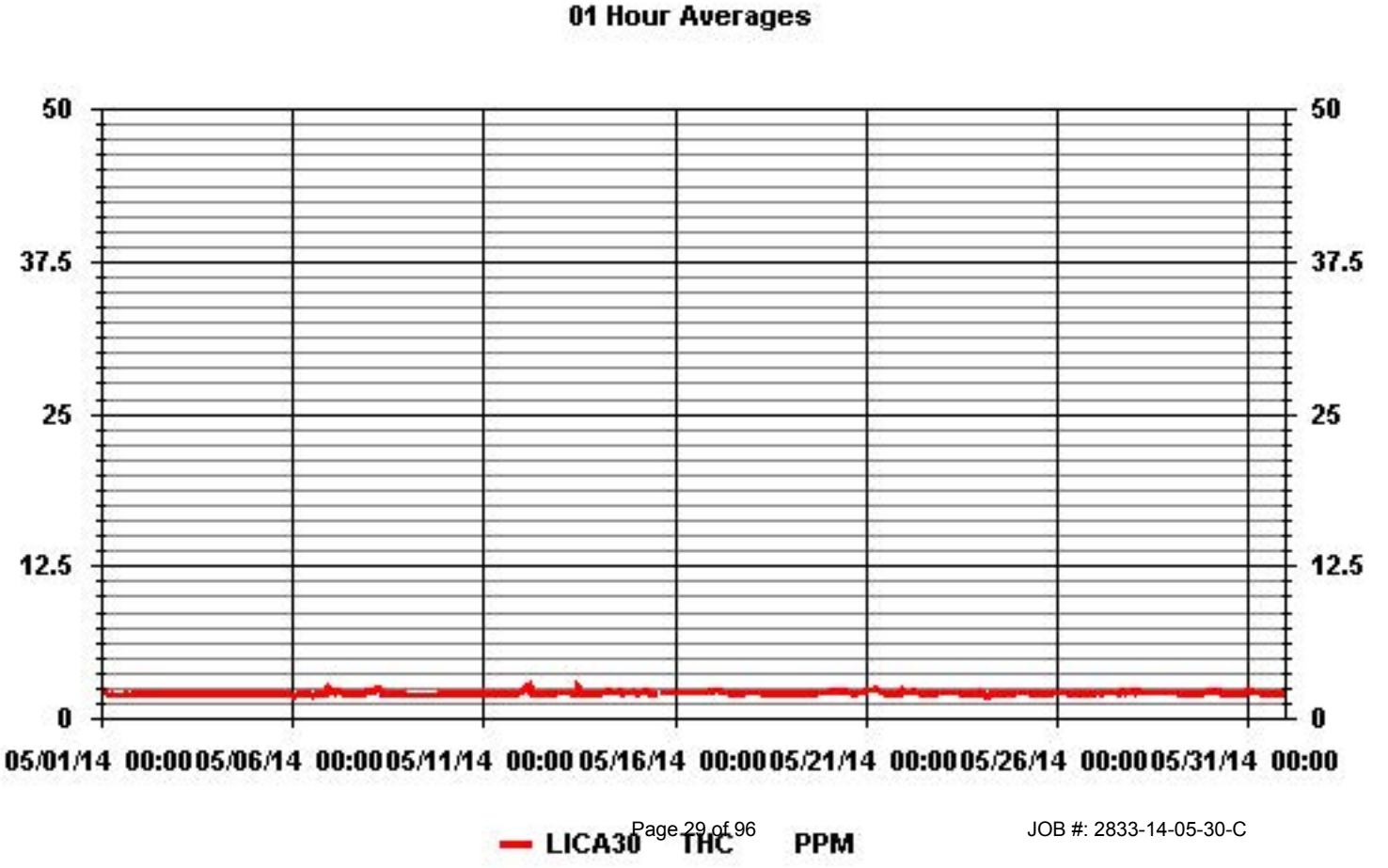
STATUS FLAG CODES

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:		708					
MAXIMUM 1-HR AVERAGE:		2.6	PPM	@ HOUR(S)	VAR	ON DAY(S)	12, 13
MAXIMUM 24-HR AVERAGE:		2.2	PPM			ON DAY(S)	21
						VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS		OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	4	HRS		AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.10			MONTHLY AVERAGE:		2.06	PPM



JOB #: 2833-14-05-30-C

Lakeland Industry & Community Association - Maskwa Site

MAY 2014

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2.5	2.5	2.5	2.2	2.2	2.2	**S**	2.1	1.9	2	1.9	2	1.9	1.9	1.9	2.1	2.2	1.9	1.9	2	2	2.2	2.1	2.4	2.5	2.1	24
2	2.1	2	2	2.5	2.5	**S**	2	2	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2.5	2.1	24
3	2	2	2	2	**S**	2	2	2.1	2.1	2.1	2	2	2	2.1	2.1	2	2	2	2	2	2	2	2.1	2.1	2.1	2.0	24
4	2	2.1	2.1	**S**	2.1	2	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.0	24
5	2	2.1	**S**	2	2	2	2	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.2	2.3	2.3	2.0	24
6	2	**S**	1.9	2	2	2.6	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.6	3	3	2.1	24
7	**S**	2.9	2.5	2.6	2.6	2.7	2.6	2.4	2.3	2.4	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2	2.1	2	2	2.2	**S**	2.9	2.3	24
8	2.3	2.2	2.2	2.4	2.5	2.5	2.4	2.4	2.3	2.3	2	2	2	2	2	2	2	2	2.1	2.1	2.2	2.1	**S**	2.1	2.5	2.2	24
9	1.9	1.9	2	2	2	2	2	2	2	1.9	1.9	1.9	2	2	1.9	2	2	2	2	2	2	**S**	2.2	2.2	2.2	2.0	24
10	2.1	2.7	2.4	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	**S**	2	2	2	2.7	2.1	24
11	2.6	2.4	2.1	2.2	2.2	2.3	2.4	2.1	2.2	2.2	2.1	2.1	2.1	2.3	2.2	2.1	2.1	2.1	2.1	**S**	2	2.1	2.1	2.3	2.6	2.2	24
12	2.4	2.8	2.7	2.5	2.8	2.8	2.5	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.1	2	**S**	2	2.1	2.1	2.1	2.1	2.8	2.3	24
13	2.1	2.1	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	***42.8***	37.6	2.1	2.1	2	2	**S**	2	2	2	2.1	2.3	2	***42.8***	***5.4***	24
14	2	2.1	2.4	2.1	2.1	2.2	4.1	2.5	2.5	2.7	2.1	2.1	2.1	2.3	2.2	2.2	**S**	2.1	2.2	2.2	2.2	2.2	2.2	2.4	4.1	2.3	24
15	2.2	2.1	2.1	2.6	2.3	2.1	2.2	2.3	2.3	2.2	2.1	2.1	2	**C**	**C**	**C**	**C**	**C**	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.2	24
16	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.1	2.2	**S**	2.3	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.1	24
17	2.4	2.5	2.6	2.4	2.4	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	**S**	2.1	2	2	2	2	2	2.1	2.1	2.2	2.2	2.6	2.2	24
18	2.2	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**S**	2.1	2	2	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.1	24
19	2.1	2.1	2.1	2	2	2	2	2	2.1	2.1	2.1	**S**	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.2	2.2	2.3	2.1	24
20	2.1	2.2	2.6	2.5	2.6	2.3	2.3	2.2	2.2	2.1	**S**	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.7	2.1	2.1	2.7	2.2	24
21	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	**S**	2.1	2.2	2.2	2.1	2.1	2	2	2	2	2	2	2	2.8	2.3	2.8	2.2	24
22	2.2	2.6	2.2	2.2	2.9	2.4	2.4	2.3	**S**	2.1	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2.1	2.1	2.2	2.9	2.2	24
23	2.1	2.1	2.1	2.2	2.3	2.1	2.1	**S**	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2.1	2.1	2.4	2.4	2.1	24
24	2.1	2	2.3	2	2	1.9	**S**	2.3	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.3	2	2	2	2	2.1	2.1	2.1	2.1	2.3	2.1	24
25	2.1	2.1	2.2	2.1	2.2	**S**	2.1	2.1	2.1	2.1	2	2	2	2.1	2	2	2.1	2.2	2.3	2	2.1	2.1	2.2	2.1	2.3	2.1	24
26	2.1	2.1	2.1	2.1	**S**	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2	2	2.1	2	2.1	2.1	2.1	2	2	2.1	2.1	2.2	2.1	24
27	2.1	2.1	2.1	**S**	2.3	2.5	2.1	2.1	2.1	2.3	2.2	2.4	2.5	2.3	2.4	2.4	2.5	2.5	2.5	2.2	2.4	2.3	2.2	2.4	2.5	2.3	24
28	2.5	2.2	**S**	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.1	24
29	2.1	**S**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2.1	2.1	2	2.1	2.1	2.1	2.1	2	2	2	2.4	2.1	2.1	2.1	2.4	2.1	24
30	**S**	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.1	2	2.1	2	2.1	2.2	2.1	2	2	2	2	2	2	2.1	2.3	**S**	2.3	2.1	24
31	2.3	2.2	2.2	2.2	2.3	2.2	2.5	2.3	2.3	2.1	2.2	2.1	2.1	2	2.1	2	2	2	2.1	2	2.1	2.1	**S**	2.2	2.5	2.2	24
HOURLY MAX	3	3	3	3	3	3	4	3	3	3	2	43	38	2	2	2	3	3	3	2	3	3	3	3			
HOURLY AVG	2.2	2.2	2.2	2.2	2.3	2.2	2.3	2.2	2.1	2.1	2.1	3.5	3.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 707

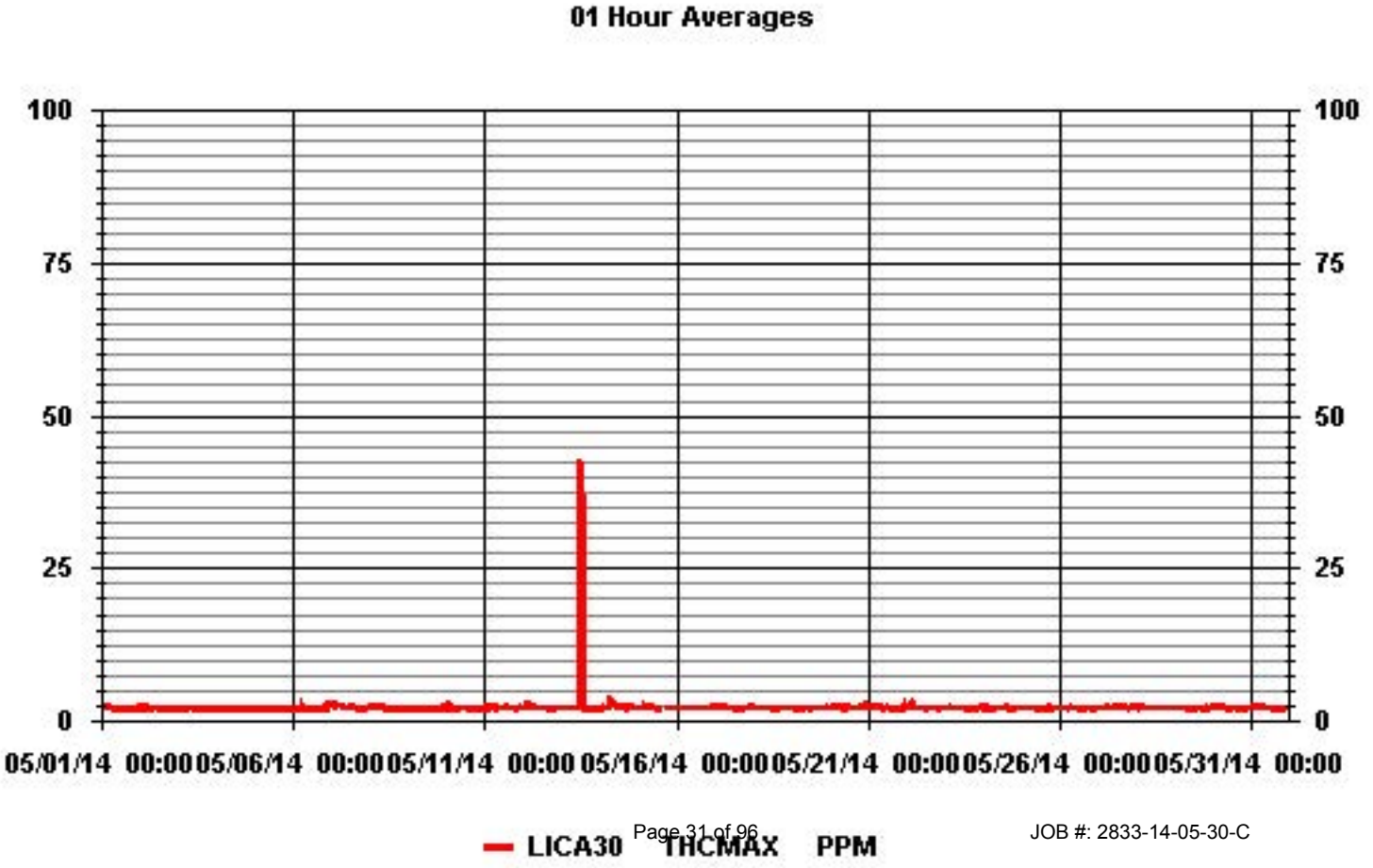
MAXIMUM INSTANTANEOUS VALUE: 42.8 PPM @ HOUR(S) 11 ON DAY(S) 13

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 2.03



JOB #: 2833-14-05-30-C

LICA30
THC / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	10.02	7.06	14.68	8.05	4.80	4.09	2.82	3.10	4.66	5.50	3.53	2.82	5.22	5.93	7.76	9.88	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	10.02	7.06	14.68	8.05	4.80	4.09	2.82	3.10	4.66	5.50	3.53	2.82	5.22	5.93	7.76	9.88	

Calm : .00 %

Total # Operational Hours : 708

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	71	50	104	57	34	29	20	22	33	39	25	20	37	42	55	70	708
<	10.0																	
<	50.0																	
>=	50.0																	
	Totals	71	50	104	57	34	29	20	22	33	39	25	20	37	42	55	70	

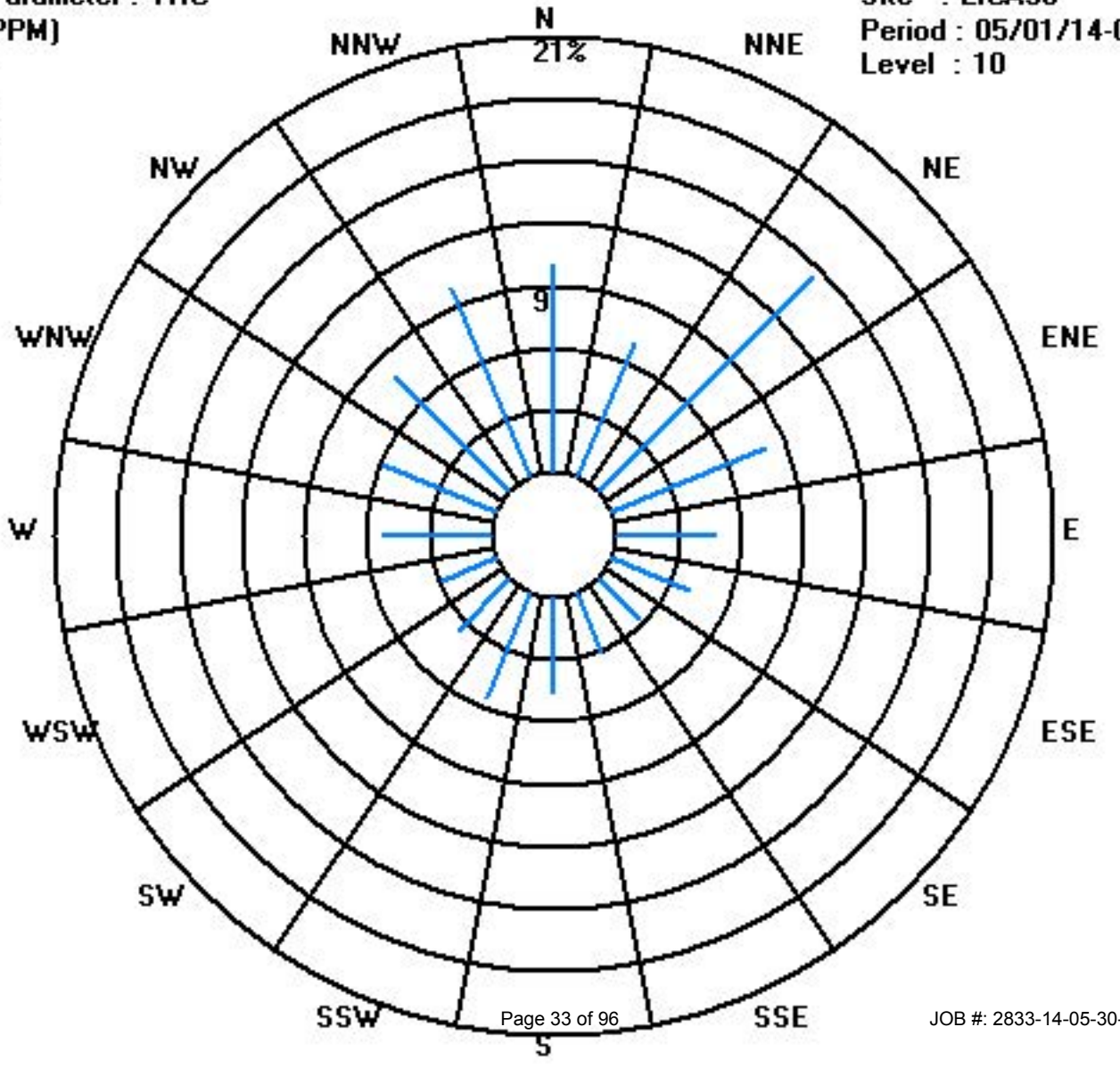
Calm : .00 %

Total # Operational Hours : 708

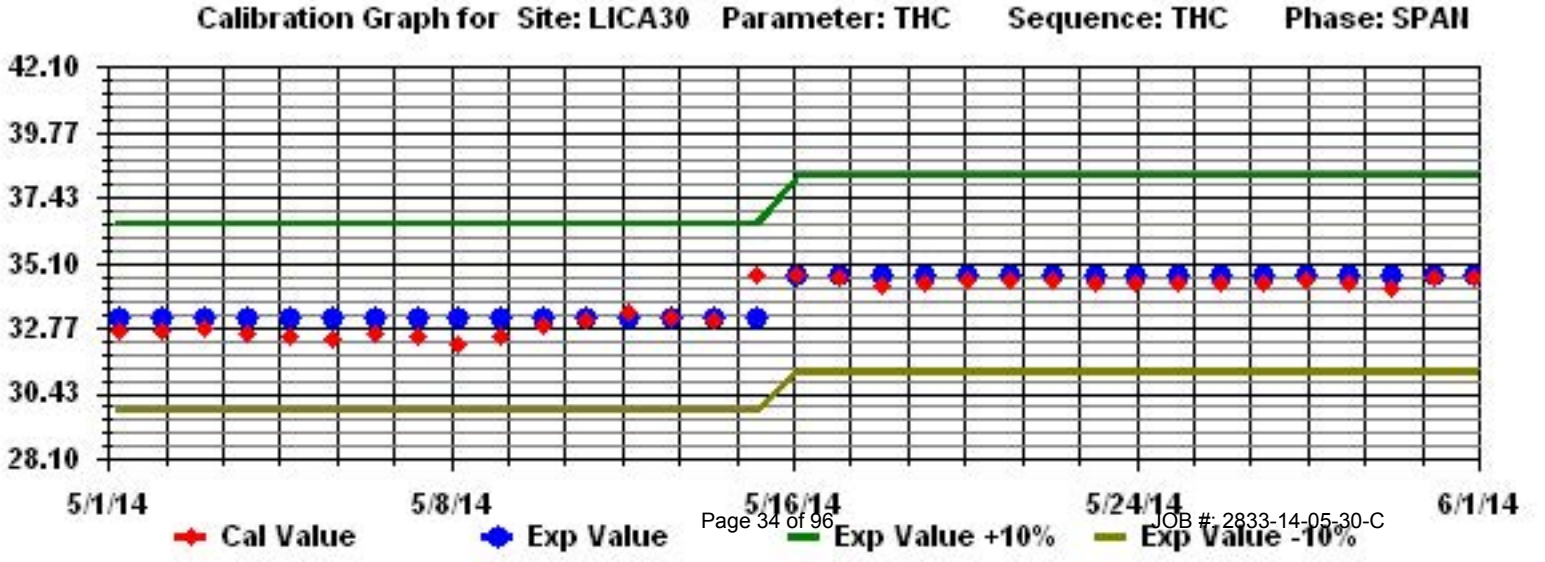
Logger : 30 Parameter : THC
Class Limits (PPM)

>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA30
Period : 05/01/14-05/31/14
Level : 10



JOB #: 2833-14-05-30-C


Calibration Graph for Site: LICA30 Parameter: THC Sequence: THC Phase: SPAN
42.10
39.77
37.43
35.10
32.77
30.43
28.10
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitrogen Dioxide

Lakeland Industry & Community Association - Maskwa Site

MAY 2014

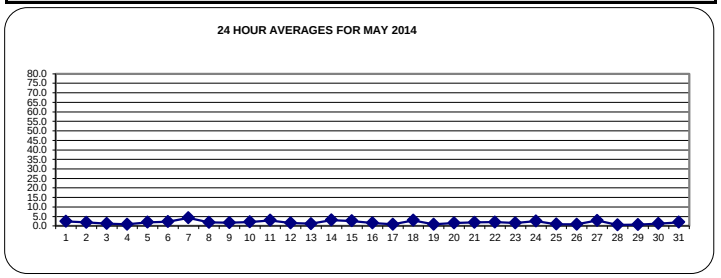
NITROGEN DIOXIDE (NO2) hourly averages in ppb

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	2.8	2.8	2	1.7	2.7	4.5	**S**	8	1	1.9	1.2	2.6	1.5	0.4	1	6.4	4.8	0	0.4	0	0.2	3.3	3.1	1.9	8	2.4	24
2	1.3	1.5	0.2	3.7	6.4	**S**	3.1	0.9	5.8	1.6	2.5	2.7	2	1.2	2.2	0.9	1.9	0.4	0.3	0.4	0.6	1	0.2	1.2	6.4	1.8	24
3	0.7	0.4	0.4	0.2	**S**	0.3	2.3	3.4	3.4	3.6	2.2	2.3	1.9	2.2	2.4	2	1.2	0.5	0.1	0	0	0	0	0	3.6	1.3	24
4	0	0.7	0.6	**S**	0.9	0.6	2.6	2.1	0.5	0.3	0.9	0.2	1.7	0.4	1.5	1.7	4.5	0	0	0	0	0	0.1	0	4.5	0.8	24
5	0	0	**S**	0	0.3	1.1	3.5	2.2	1.4	0.7	1.9	2.4	3.2	2.8	2.5	2	1.3	1.2	1	1.5	0.7	3.7	3.4	8	8	1.9	24
6	0.9	**S**	0	1.3	0.8	2.5	4.3	4.4	1.8	1.9	2.5	2.5	1.6	1.4	1.9	0	0	0	0	0	0.2	4	13.2	5.8	13.2	2.2	24
7	**S**	12.8	3.4	4.5	4.5	10.3	5.2	6.8	6.3	6.2	6	4.1	4.3	2.6	2.7	4.2	3.6	2.6	0.2	0.6	1	0.8	0.5	**S**	12.8	***4.2***	24
8	1.6	2.1	1.9	2.6	3.9	5.3	4.6	3.1	2.5	1.2	0.5	0.3	0.3	0.6	0.5	1.3	0.4	2.1	5	1.1	0.6	0.9	**S**	0.8	5.3	1.9	24
9	0.5	0.8	1	1.2	0.9	1.1	4.4	1.6	1.7	1.2	1.7	1.1	1.5	1.3	1.8	1.3	2.9	0.7	0.7	0.5	1.1	**S**	7.3	3.9	7.3	1.7	24
10	4.2	3.8	10	1.6	0.8	1.8	3.1	3.8	1.8	3.8	2.2	2	3.3	1.6	1.7	0.3	0.6	1.4	0.5	0.2	**S**	0.3	0	0.2	10	2.1	24
11	11.1	4.3	3.6	4.3	6	9.1	5.9	4	1.6	1.8	2.2	1.7	2	2.9	0.6	1.1	0.5	1.7	0	**S**	1.3	0.5	0.5	1	11.1	2.9	24
12	1.5	1.4	2.4	2.3	2.2	1.3	2.6	0.9	0.6	0.5	1.6	3	2.1	3.4	3.7	2.8	0	0	**S**	0.3	1	1.1	1.3	1.2	3.7	1.6	24
13	0.8	0.8	0.7	0.7	0.7	0.7	0.7	1.6	1.6	1.5	1.5	1.5	1.7	2.8	3.2	1.3	0.7	**S**	0	0	0.2	1.2	1.6	0.7	3.2	1.1	24
14	1.5	1.8	6.5	1.1	0.6	2.3	9.4	3	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0.7	0.6	0.5	0.9	1.7	1.4	***14.5***	***14.5***	3.1	24
15	2	0.9	3.3	5	4.1	4	5.7	4.2	2.1	1.1	1.5	4.6	4.4	4.6	7.8	**S**	1.8	1.6	1.1	0.5	0.3	0.2	0.1	0	7.8	2.6	24
16	0	0.1	0	0.2	0.3	0.4	7	3.8	2	2	0.7	1	3.6	2.6	**S**	2.7	3.8	0.5	1.3	1.2	1.2	1.1	0.8	0.8	7	1.6	24
17	0.5	0.5	0.3	0.3	0.4	0.4	0.3	2.1	2	1.7	1	1.7	0.3	**S**	1	0.1	0	0	0	0	0	0.2	3.2	3.4	3.4	0.8	24
18	0.9	0.2	0.2	0.4	0.3	0.6	0.2	0.5	5.2	1.1	5.2	2.4	**S**	6.5	2.5	1.9	5.6	11	9	7	1.1	1.4	2.6	2.4	11	3.0	24
19	1.1	0.8	0.6	0.5	0.5	0.5	0.7	0.6	0.6	1.3	0.5	**S**	0.3	0.5	0.3	0.2	0.6	1.4	0.8	0.9	1.6	2	1.8	1.3	2	0.8	24
20	1.4	1	1.4	2.1	2.1	3.7	3	2.3	1.8	1.2	**S**	1.3	1.5	1	1.1	0.7	0.1	0	0.3	0.8	1.2	1.9	3.4	3	3.7	1.6	24
21	3.1	3	2.3	2.3	2.9	3.2	3	2.9	2.9	**S**	1.6	1.9	2.4	2	1.5	0.7	0.9	0.8	0.4	0.5	0.5	0.3	1.9	1.8	3.2	1.9	24
22	1.3	0.7	0.7	0.9	1.1	0.6	6.7	5	**S**	6.8	8.6	2.6	0.2	0.6	1.1	1.3	0.9	0.8	1.3	**S**	0.5	0.5	0.7	0.8	8.6	2.0	24
23	0.3	0.3	0.3	0.8	0.6	0.5	3	**S**	4.6	2.3	1.4	1.1	1	0.9	1.4	1	1.7	0.7	0.9	0.8	0.9	0.9	1.3	8	8	1.5	24
24	6.8	4.8	12.7	2.9	3	0.9	**S**	3.8	2.4	0.7	3.8	4.7	0.9	0.4	1	4.9	0.4	1.2	0.7	0.7	0.5	0.4	0.5	1	12.7	2.6	24
25	1.2	0.5	0.4	0.3	0.4	**S**	0.2	0.4	0.4	0.4	0.9	0.5	0.5	0.7	0.4	0.4	2.7	4.1	5.2	0.3	0.3	0.4	0.2	0.3	5.2	0.9	24
26	0.4	0.1	0.4	0.2	**S**	1.8	6.3	2.4	0.4	0.4	0.6	0.6	0.4	0.5	0.3	0.4	0.3	1.8	1.2	0.5	0.2	0.2	0.5	0.6	6.3	0.9	24
27	0.6	0.3	0.2	**S**	1.3	2.7	1.8	1.7	2.1	2.5	3.6	1.7	1.6	2.2	3.1	3.2	5	4	6.8	4.9	4.7	6.5	2.5	2.6	6.8	2.9	24
28	3.9	1.6	**S**	0.6	0.7	0.3	0.9	1.3	0.7	1.5	0.3	0.1	0.8	0.4	0.1	0.1	0.2	0.1	0.1	0	0.1	0	0	0	3.9	0.6	24
29	0	**S**	0	0	0	0	0	0	1	1	0.8	1.3	0.1	0.4	1.6	1	0.6	0.3	0.4	0.5	2.6	0.8	1.1	1.3	2.6	0.6	24
30	**S**	3.1	4.4	2.8	1.6	4.4	2.1	1.6	0.4	0.3	0.3	0.5	0.3	0.3	0	0	0	0.1	0.1	0.2	0.4	0.4	4.8	**S**	4.8	1.3	24
31	2.5	1.7	2.3	4.5	4.6	2.5	2.5	5.5	5.1	1.3	1.1	2.6	1.1	0.3	0.6	0.1	0	0	0.1	0.9	0.7	1.5	**S**	2.9	5.5	1.9	24
HOURLY MAX	11	13	13	5	6	10	9	8	6	7	9	5	4	7	8	6	6	11	9	7	5	7	13	15			
HOURLY AVG	1.8	1.8	2.1	1.7	1.9	2.3	3.3	2.8	2.2	1.8	2.0	1.9	1.6	1.6	1.7	1.5	1.6	1.3	1.3	0.9	0.8	1.2	2.0	2.4			

STATUS FLAG CODES

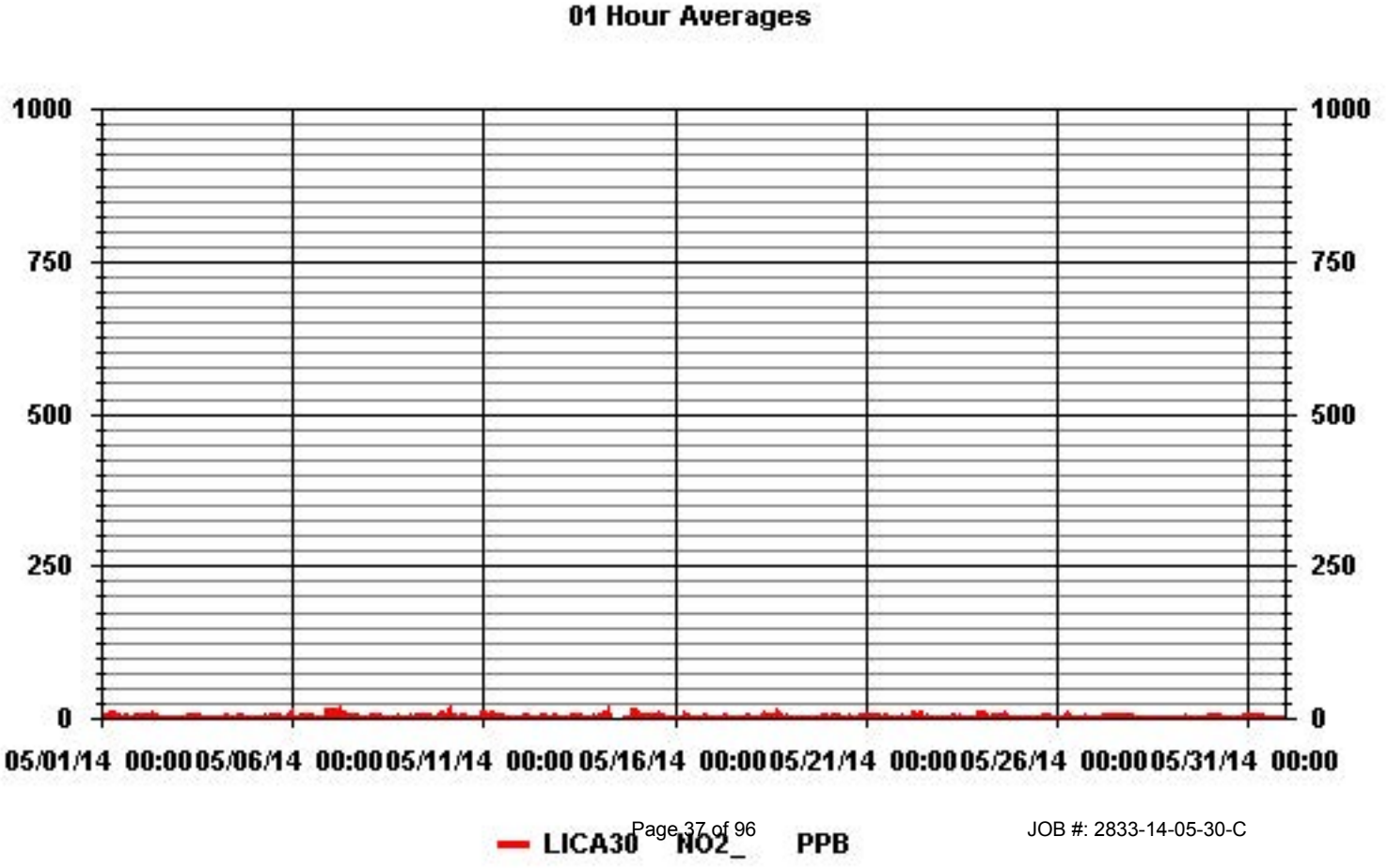
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	648					
MAXIMUM 1-HR AVERAGE:	14.5	PPB	@ HOUR(S)	23	ON DAY(S)	14
MAXIMUM 24-HR AVERAGE:	4.2	PPB			ON DAY(S) VAR-VARIOUS	7
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	2.03		MONTHLY AVERAGE:		1.81	PPB



JOB #: 2833-14-05-30-C

Lakeland Industry & Community Association - Maskwa Site

MAY 2014

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	3.7	4	3.7	2.8	4.3	9.8	**S**	13.9	2.3	2.1	2.4	8.5	8.2	1.8	4.8	10.5	15.3	0.5	3.7	0.5	1.2	14.3	4.3	2.6	15.3	5.4	24
2	2.1	2.6	0.7	20.7	18	**S**	9.2	2.8	22.5	10.6	8.1	12.2	9.7	10.1	13.3	3.9	5.3	1.6	1.1	1.9	2.6	2.2	1	2.1	22.5	7.1	24
3	1.8	1.2	1.2	1.2	**S**	1.2	5.2	6.5	5.1	5.8	4.7	4.8	4.1	3.9	4.8	4.5	3	1.6	1.3	0.9	1.1	0.9	0.9	0.9	6.5	2.9	24
4	1	3.2	2.4	**S**	2.4	2.8	4.2	5.2	2.7	3.2	3.3	1.7	6.8	3.4	3.7	3.4	7.5	1	1	0.8	0.7	1	1.6	1.1	7.5	2.8	24
5	0.8	0.6	**S**	0.9	1.1	9.4	8	5.8	3.1	2.2	3.9	3.5	19.8	4.8	3	2.9	1.9	1.7	3	4.6	7.5	11.1	6.9	24	24	5.7	24
6	7.2	**S**	0.7	5.7	2.3	11	8	9.1	3.4	3.4	4.6	4.6	3	3	4	0.8	0.5	0.6	0.5	1	1.7	9.6	18.3	13.6	18.3	5.1	24
7	**S**	16.3	8.2	6.7	8.3	12.7	11	9.3	13.2	12.4	11.8	10.9	19.2	9.2	7.6	14.6	9.6	7.3	2.3	1.8	1.6	1.6	1.2	**S**	19.2	***8.9***	24
8	3.2	3.4	3.1	4.3	5.4	6.9	6.6	4.8	3.8	3	1.8	1.4	1.3	2.1	1.3	22.2	1.3	6.1	12.6	3.3	2.2	1.8	**S**	1.6	22.2	4.5	24
9	0.8	1.4	2	2.3	2.1	4.4	8.5	4.5	4	3.2	3.5	2.4	3.6	3	3.9	3.1	10.2	1.4	1.2	1.1	1.7	**S**	12.5	8.2	12.5	3.9	24
10	5.2	11.7	18.9	4.5	1.5	5.3	5.5	6.6	6.2	8.3	8.6	4.6	9.4	6.3	5.4	1.5	2.5	8.4	1	0.5	**S**	1.6	0.8	2.8	18.9	5.5	24
11	25.1	20.7	6	10.8	9.8	15	12.2	7	4.6	11.5	6.2	5.8	8.3	13.1	2.4	3.6	3.6	11.3	1	**S**	2.4	0.9	1.3	1.9	25.1	8.0	24
12	2.4	2.3	3	3.1	4.9	3.6	6.9	2.3	1.8	1.4	3.3	6.6	4.3	6	7.4	5.7	6	0.7	**S**	0	2	3	3.5	1	7.4	3.5	24
13	0.5	0.5	0.7	0.7	0.6	1.2	0.8	5.5	2.9	3.5	9	2.2	2.8	5.5	5.8	1.9	0.4	**S**	0.4	0.2	0.4	1	4.1	0.6	9	2.2	24
14	1.8	2.6	16.2	2.2	0.7	8.4	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1.6	1.3	1.3	2.1	3	2.1	31.6	31.6	5.8	24
15	10	2.5	6.3	6.6	6.3	7.5	7.6	5.2	3.5	2.2	4	10.4	15.2	16.5	18.1	**S**	5.2	2.7	2.2	1.4	1.2	1.3	1.3	1.3	18.1	6.0	24
16	1.4	1.2	1.3	1.7	1.6	2.2	23.1	8.7	4.9	4.7	3	2.8	7.2	5.6	**S**	8.6	11.1	1.8	2	2.1	2.1	1.8	1.7	1.8	23.1	4.5	24
17	2	1.8	1.6	1.8	1.7	1.9	3.2	9	7.7	6.3	3.4	16.5	1.3	**S**	4.8	1.7	1.5	0.7	0.6	0.6	0.9	1	20.9	10.2	20.9	4.4	24
18	4	1.3	1.6	1.9	1.5	3.3	1.6	2.1	13.7	5	12.2	8.4	**S**	9.6	7.8	9.3	14.8	16.6	18.3	21.7	10.2	10.1	9	8.7	21.7	8.4	24
19	3.1	2.9	1.6	1.7	1.9	1.6	2	1.8	1.9	7.3	1.9	**S**	1.5	1.6	1.6	1.6	3.9	5.5	2.5	2.6	3.2	6.5	6.5	3.5	7.3	3.0	24
20	2.9	2.3	4.1	8.3	7.8	7.3	7.3	3.6	3.3	2.8	**S**	2.6	2.7	1.7	2.1	2.2	1.4	1.2	1.2	1.6	3.3	3.7	4.6	4.7	8.3	3.6	24
21	4.5	4.2	3.5	3.4	4.2	4.5	4.5	4.1	4.7	**S**	3	3.5	2.8	3	2.4	1.8	1.4	2	1.3	1.3	1.4	1.4	3.9	3.2	4.7	3.0	24
22	2.5	2.2	2	2.8	2.9	2.2	21.1	10.8	**S**	14.5	12.3	7.5	1	2	2	2.1	1.7	1.6	4.6	1.8	1.3	1.3	1.8	1.8	21.1	4.5	24
23	1.3	1.2	1.5	1.5	1.4	1.6	10.3	**S**	12.4	3.1	2.4	2.3	1.8	2.5	10	1.7	3.8	2.1	1.4	1.5	1.7	1.8	2.2	***33.7***	***33.7***	4.5	24
24	29.7	18.5	21.7	18.7	13.4	2.6	**S**	7.9	7.9	7.2	12.8	13.6	2.5	1.3	6.4	11.2	1.3	5.5	5	2	1.5	1.2	1.3	2.2	29.7	8.5	24
25	2.6	1.9	2	1.9	1.9	**S**	1.9	1.9	2	1.5	2.3	1.2	1.4	3.3	1.1	1.1	10.1	13	23.4	1.2	1.2	1.5	1.5	1.9	23.4	3.6	24
26	1.9	1.4	2.1	1.6	**S**	5.7	12.1	6.8	1.9	1.9	2.1	2.4	1.6	1.7	1.8	1.9	1.5	7.6	5.4	3.4	1.4	1.4	3	3.2	12.1	3.2	24
27	2.4	1.8	1.4	**S**	4.7	5.4	4.7	6.3	6.5	8.4	8.8	4.4	5.2	13.9	7.3	9.4	9.8	7.9	12.8	14.3	13	12.8	5.9	5.8	14.3	7.5	24
28	7.5	4.9	**S**	2	2.1	1.7	3.2	4	2.9	5.6	1.7	1.3	12.8	1.8	1	0.8	1	0.9	1	1	1.2	1.3	1.2	1.3	12.8	2.7	24
29	1.2	**S**	1.2	1.4	1.4	1.4	1.2	1.4	4.3	4.3	7.3	3.6	2	2.3	3.7	4.1	2.1	1.6	1.5	1.6	6	2.7	2.6	2.8	7.3	2.7	24
30	**S**	6.4	8.6	9.2	3.9	7.4	3.8	3.5	1.8	1.4	1.5	1.3	1.1	1.6	1	0.8	1	1.8	1.3	1.1	1.5	1.3	9.8	**S**	9.8	3.2	24
31	3.5	2.6	5.5	6	6.4	4.1	10.4	14.9	12.2	2.2	3.1	4.8	4.7	1.4	2.2	1.1	1	0.8	2	5.3	1.8	4.5	**S**	3.9	14.9	4.5	24
HOURLY MAX	30	21	22	21	18	15	23	15	23	15	13	17	20	17	18	22	15	17	23	22	13	14	21	34			
HOURLY AVG	4.7	4.4	4.6	4.7	4.3	5.2	7.3	6.0	5.8	5.1	5.3	5.4	5.7	4.9	4.9	4.8	4.7	3.9	3.9	2.7	2.7	3.6	4.7	6.3			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 700

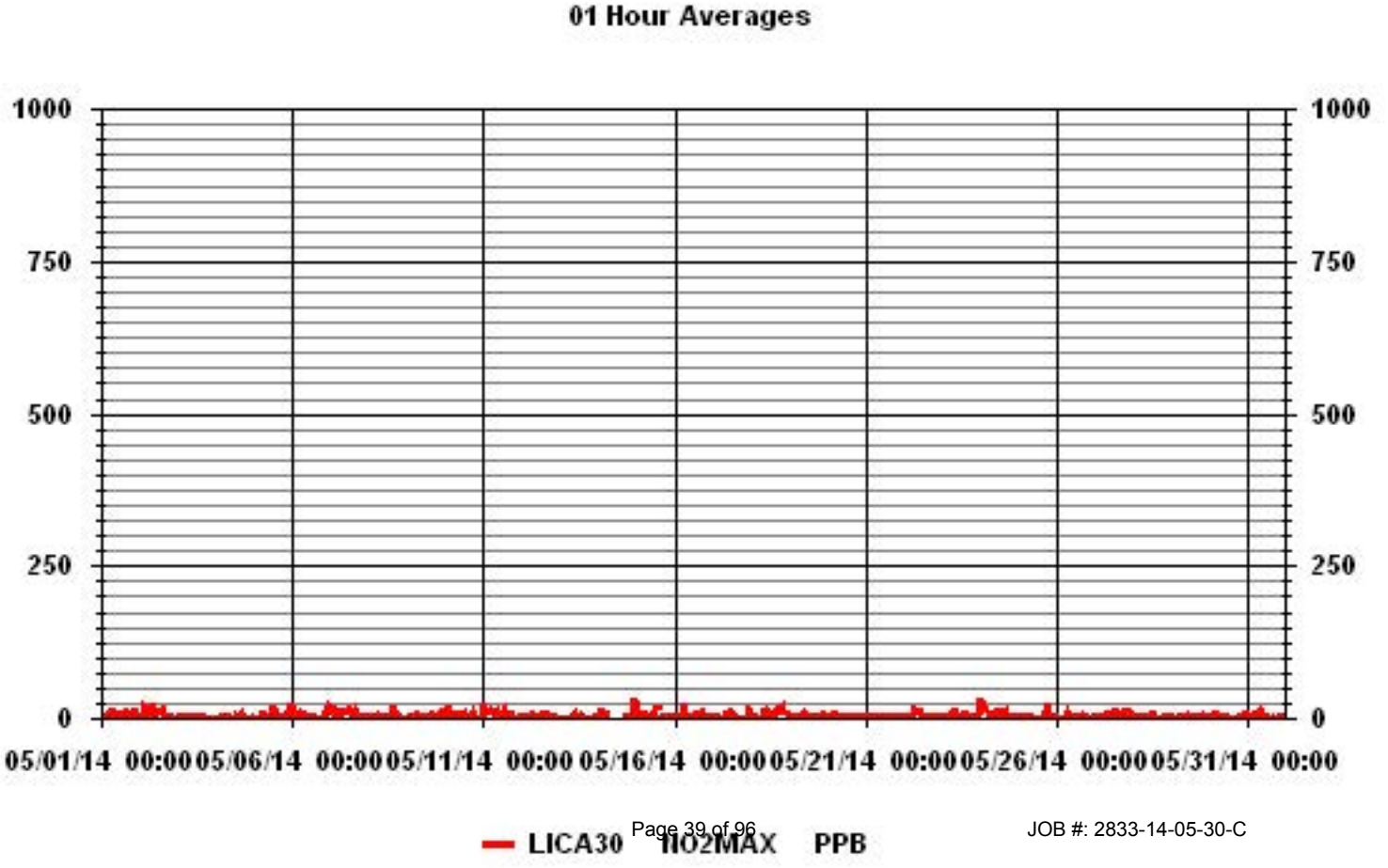
MAXIMUM INSTANTANEOUS VALUE: 33.7 PPB @ HOUR(S) 23 ON DAY(S) 23

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 11 HRS

STANDARD DEVIATION: 4.86



JOB #: 2833-14-05-30-C

LICA30
NO2_ / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	10.11	6.98	14.81	7.97	4.84	3.98	2.70	3.13	4.70	5.41	3.41	2.84	5.27	5.98	7.69	10.11	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	10.11	6.98	14.81	7.97	4.84	3.98	2.70	3.13	4.70	5.41	3.41	2.84	5.27	5.98	7.69	10.11	

Calm : .00 %

Total # Operational Hours : 702

Distribution By Samples

Direction

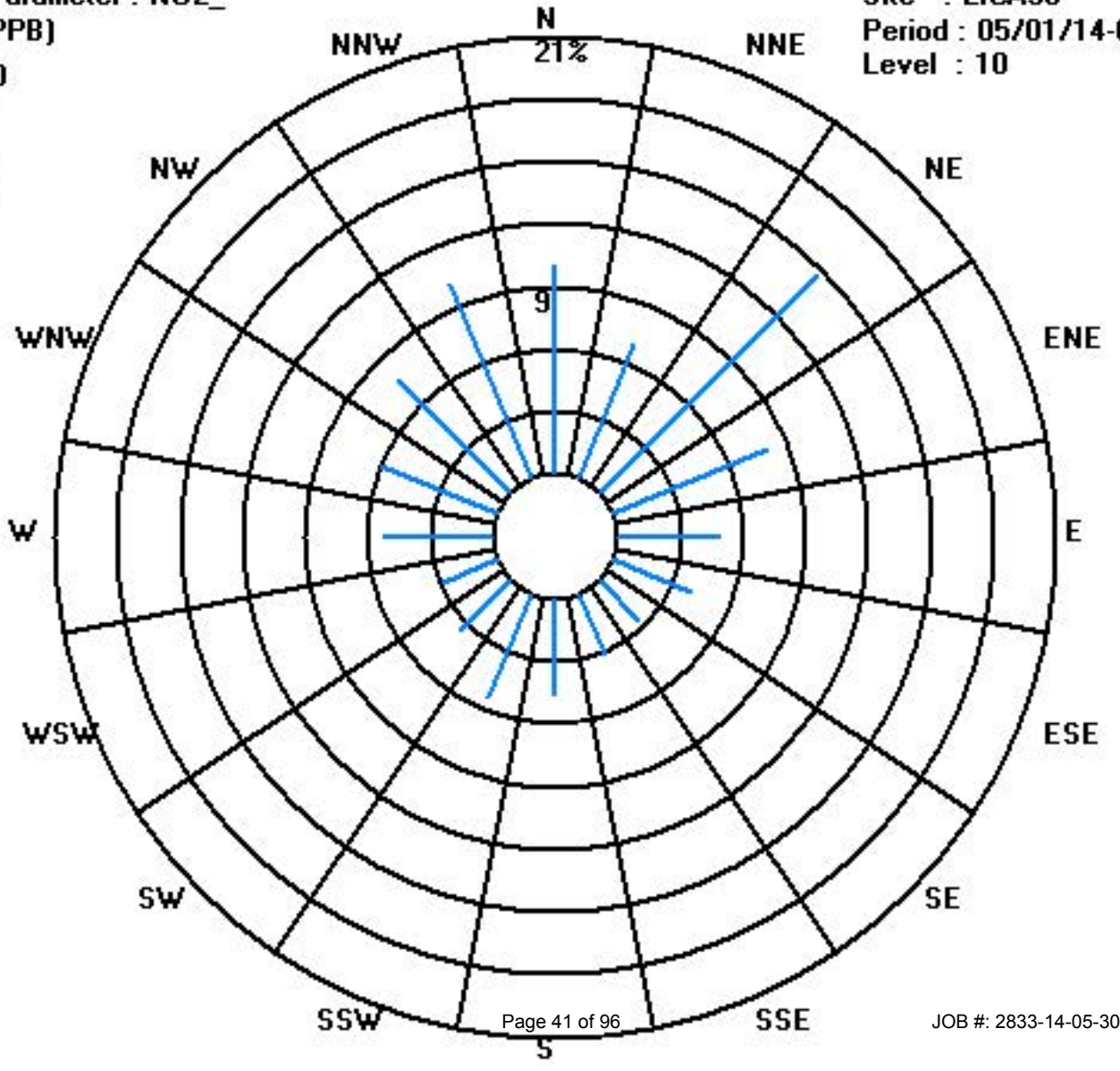
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	71	49	104	56	34	28	19	22	33	38	24	20	37	42	54	71	702
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	71	49	104	56	34	28	19	22	33	38	24	20	37	42	54	71	

Calm : .00 %

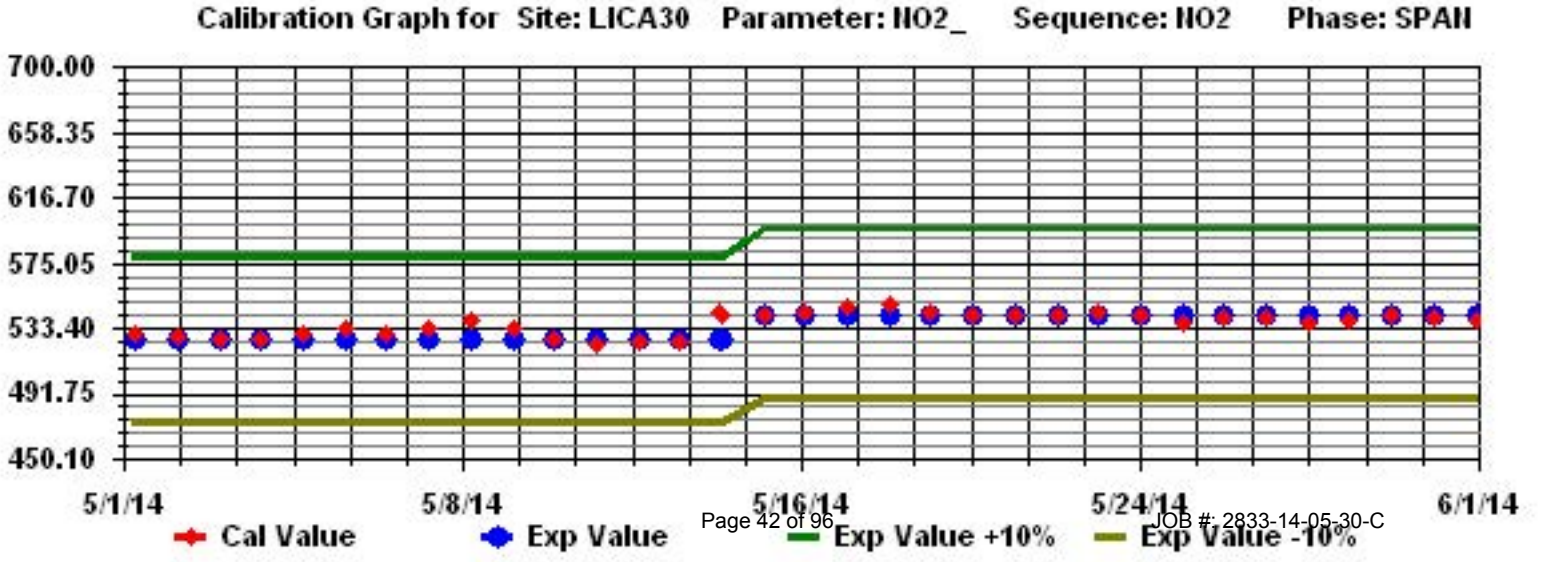
Total # Operational Hours : 702

Logger : 30 Parameter : NO2_
Class Limits (PPB)
>= 210.0
< 210.0
< 110.0
< 50.0

Site : LICA30
Period : 05/01/14-05/31/14
Level : 10



JOB #: 2833-14-05-30-C


Calibration Graph for Site: LICA30 Parameter: NO2_ Sequence: NO2 Phase: SPAN
700.00
658.35
616.70
575.05
533.40
491.75
450.10
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

Lakeland Industry & Community Association - Maskwa Site

MAY 2014

NITRIC OXIDE (NO) hourly averages in ppb

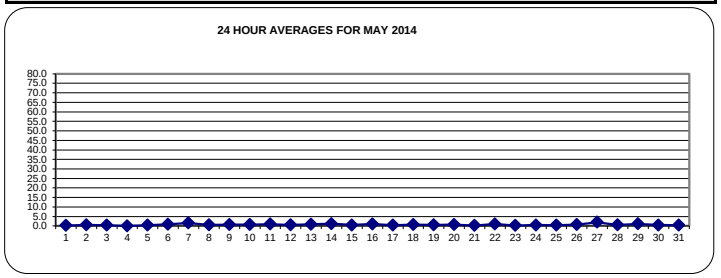
MST

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	**S**	3.7	0	0	0	0.4	0	0	0	1.6	0.3	0	0	0	0	0	0	0	3.7	0.3	24
2	0	0	0	0.7	1	**S**	1.2	0.3	3.6	0.9	1.2	1	1	0.5	0.7	0.3	1	0	0	0	0	0.1	0	0	3.6	0.6	24
3	0.1	0	0.1	0.1	**S**	0	0.3	0.8	0.9	1.3	0.5	1.1	0.9	0.9	0.9	0.4	0	0	0	0	0	0	0	0	1.3	0.4	24
4	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0.3	0.0	24
5	0	0	**S**	0	0	0.8	2.1	1.2	0.6	0.1	1	1.5	0.9	0.7	0.1	0.1	0	0	0	0	0	0	0	0.7	2.1	0.4	24
6	0	**S**	0	0	0	0.3	0.9	2.1	2.1	2.1	2.9	2.7	1.8	1.7	1.4	0	0	0	0	0	0	0	2	0.4	2.9	0.9	24
7	**S**	0.3	0	0.4	0.3	2.3	2.4	4.4	5.4	4.8	4	2.1	2.8	0.6	0.7	1.4	0.7	0.3	0	0	0	0	0	**S**	5.4	1.5	24
8	0.5	0.5	0.4	0.5	0.7	1.1	1.8	1.7	1.8	1.2	0.7	0.5	0.3	0.2	0.1	0.2	0	0	0	0	0	0	**S**	0.1	1.8	0.5	24
9	0	0	0	0.3	0.3	0.5	3	1.5	1.5	1.2	1.8	1	0.9	1	1.1	0.5	0.8	0	0	0	0	**S**	0	0	3	0.7	24
10	0	0	2.2	0.1	0	0.4	1.1	2.2	0.8	2.5	1.4	1.4	2.3	0.7	0.3	0	0	0	0	0	**S**	0	0.1	0.2	2.5	0.7	24
11	3.2	0.8	0.4	0.6	0.7	2.7	2.5	2.6	1.7	1.3	1.7	1	1.4	1.2	0.2	0	0	0.1	0	**S**	0	0	0	0	3.2	1.0	24
12	0.2	0.2	0.3	0.3	0.5	0.7	1.2	0.8	0.6	0.5	0.7	1.2	0.8	1.2	1.2	0.6	0	0	**S**	0	0	0.1	0.4	0.5	1.2	0.5	24
13	0.6	0.6	0.9	0.9	1	1.1	1.2	1.5	1.6	1.6	1.7	1.2	1.1	1.4	1.3	0.4	0	**S**	0	0	0	0	0.4	0.5	1.7	0.8	24
14	0.6	0.6	0.9	0.9	1	1.5	***10.6***	1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0.5	***10.6***	1.2	24
15	0	0	0	0	0	0	0.4	0.8	0.4	0	0.1	1.3	1	1.3	3.6	**S**	0	0	0	0	0.3	0.4	0.6	0.7	3.6	0.5	24
16	0.6	0.4	0.5	0.6	0.5	0.5	6.4	3.2	1.8	2	1.1	1	2	0.8	**S**	0.2	0.3	0	0	0	0	0	0.2	0.3	6.4	1.0	24
17	0.4	0.5	0.3	0.6	0.6	0.5	0.8	1.9	1.1	0.9	0.4	0.6	0	**S**	0	0	0	0	0	0	0	0	0	0.1	1.9	0.4	24
18	0.2	0.4	0.6	0.6	0.5	0.7	0.7	0.7	2	0.6	1.6	0.7	**S**	1	0.1	0	0.8	2.1	0.6	0.6	0	0	0	0.2	2.1	0.6	24
19	0.2	0.3	0.5	0.5	0.5	0.4	0.4	0.5	0.7	0.7	0.5	**S**	0.5	0.4	0.6	0.6	0.7	0.6	0.5	0.6	0.5	0.6	0.5	0.5	0.7	0.5	24
20	0.5	0.5	0.7	1.9	2.1	5.2	2.6	0.8	1.2	0.8	**S**	0.3	0.3	0	0	0	0	0	0	0	0	0	0	0.1	5.2	0.7	24
21	0.2	0.3	0.3	0.4	0.4	0.9	1.3	1.1	1.2	**S**	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	1.3	0.3	24
22	0.3	0.5	0.6	0.6	0.7	0.7	9.7	3.9	**S**	3	3	0.2	0	0	0	0	0	0	0	0	0	0	0	0	9.7	1.0	24
23	0	0	0	0	0	0.2	0.8	**S**	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.2	3.2	0.2	24
24	1.2	0.5	1.6	0	0	0	**S**	1.6	0.8	0	1.2	1.7	0	0	0.1	1.9	0	0	0	0	0	0	0	0.1	1.9	0.5	24
25	0.5	0.5	0.7	0.9	1	**S**	1.2	0.9	0.9	0.4	0.3	0	0	0	0	0	0.2	0	0.5	0	0.1	0.4	0.5	0.5	1.2	0.4	24
26	0.4	0.5	0.6	0.6	**S**	1.1	1.8	1.4	0.7	0.6	0.8	0.9	0.6	0.6	0.4	0.4	0.6	1	0.7	0.6	0.4	0.4	0.6	0.7	1.8	0.7	24
27	0.6	0.5	0.4	**S**	0.8	2.2	2	2.2	2.5	2.9	3.8	2.1	1.7	1.9	2.3	2.8	2.5	1.4	3.6	2.7	2.1	2.5	0.7	0.5	3.8	***1.9***	24
28	1.3	0.7	**S**	0.9	0.6	0.8	1.4	1.9	1.1	1.7	0.8	0.3	0.8	0.1	0	0	0	0	0	0.1	0.2	0.5	0.6	0.5	1.9	0.6	24
29	0.4	**S**	0.9	0.7	0.9	0.8	0.7	0.6	3.4	3.1	2.3	2	0.8	0.7	1.5	1	0.8	0.6	0.5	0.5	1.4	0.7	0.8	0.7	3.4	1.1	24
30	**S**	1	0.9	0.8	0.9	2.5	1.5	1.5	0.8	0.4	0.2	0	0	0	0	0	0	0	0	0	0	0	0	**S**	2.5	0.5	24
31	0.2	0.2	0.3	0.4	0.8	1	1.4	2.7	2.5	0.1	0	0.2	0	0	0	0	0	0	0	0	0	0	**S**	0	2.7	0.4	24
HOURLY MAX	3	1	2	2	2	5	11	4	5	5	4	3	3	2	4	3	3	2	4	3	2	3	2	3			
HOURLY AVG	0.4	0.3	0.5	0.5	0.5	1.0	2.1	1.7	1.5	1.2	1.2	0.9	0.8	0.6	0.6	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.4			

STATUS FLAG CODES

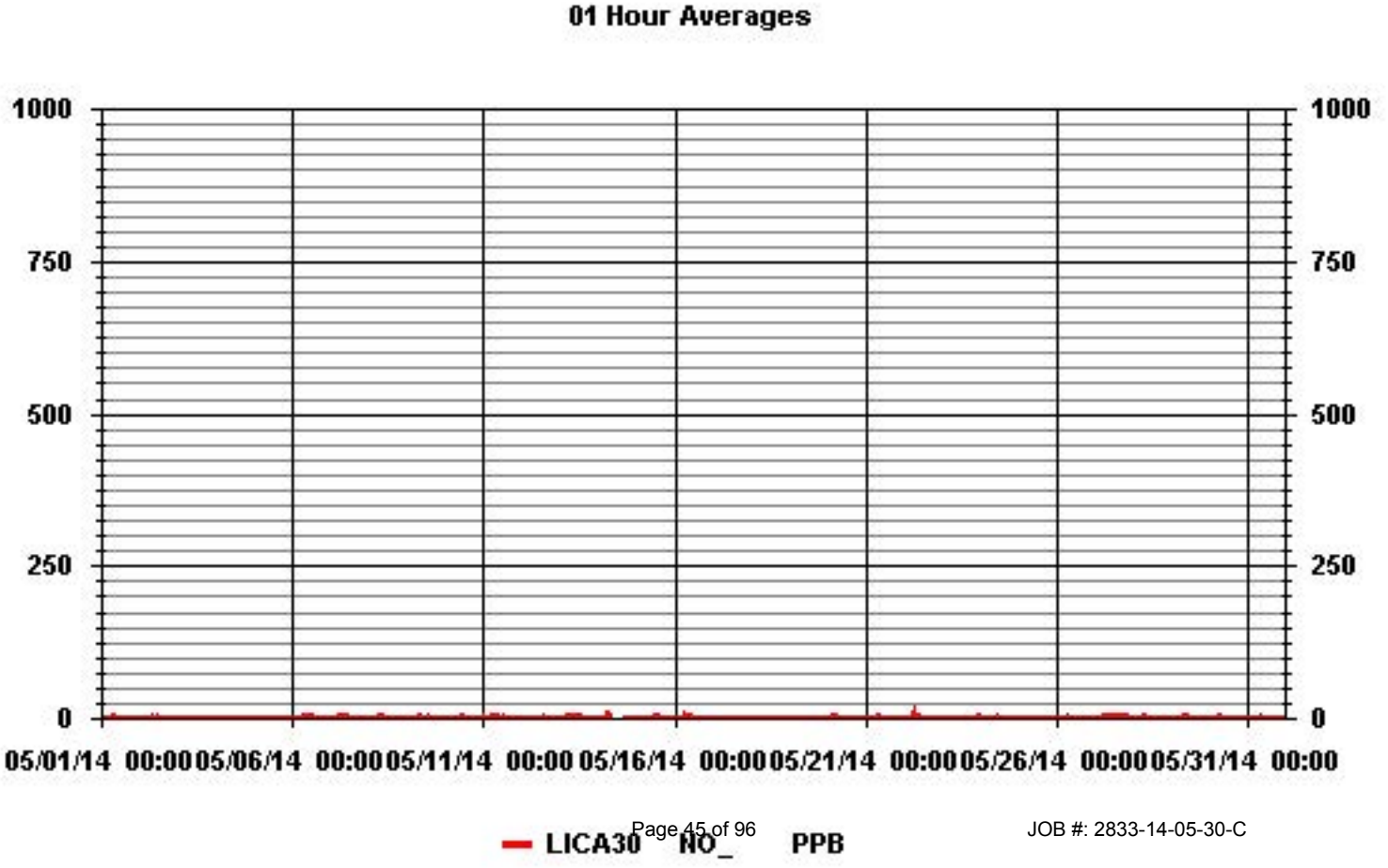
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	436					
MAXIMUM 1-HR AVERAGE:	10.6	PPB	@ HOUR(S)	6	ON DAY(S)	14
MAXIMUM 24-HR AVERAGE:	1.9	PPB			ON DAY(S) VAR-VARIOUS	27
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	1.01		MONTHLY AVERAGE:		0.66	PPB



JOB #: 2833-14-05-30-C

Lakeland Industry & Community Association - Maskwa Site

MAY 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	1.4	**S**	10.5	2	0.4	0.9	5	4.8	1.1	2.2	5.1	4.7	0	0.4	0	0	0	0	0.2	10.5	1.7	24
2	0.4	0.4	0.4	5.4	3.5	**S**	4.5	1.6	23.8	7.6	4.3	6.6	11.2	4.3	6.2	4.8	4.2	0.7	0.7	0.6	0.7	0.7	0.6	0.7	23.8	4.1	24
3	0.7	0.7	0.9	0.7	**S**	0.3	3	4.5	2.5	2.9	3	4	3.5	3	3.3	2.3	1.3	0.2	0.1	0.1	0.1	0.2	0.3	0.1	4.5	1.6	24
4	0.2	0.2	0.3	**S**	0.6	0.5	0.7	1.3	1.5	1.6	1.8	0.7	3.1	0.9	0.9	1	1.2	0.1	0.1	0	0	0.1	0	0.2	3.1	0.7	24
5	0.2	0.2	**S**	0.4	0.4	10.5	7.8	4.2	1.5	1.2	3.2	2.4	10.2	3.1	0.6	1.2	0.5	0.3	0.3	0.3	0.2	1.2	0.3	6.8	10.5	2.5	24
6	0.6	**S**	0.6	0.6	0.5	1.6	2.8	3.9	3.5	3.8	5.7	6.1	3.1	3.3	2.7	0.1	0.2	0	0.2	0.4	0.4	1.7	4.9	2.5	6.1	2.1	24
7	**S**	1.2	0.7	2.6	1.9	5.7	6.8	6.7	13.3	11.3	10.4	8.7	32	4.6	2.9	6.5	3.5	2.5	0.1	0.1	0.3	0.1	0.3	**S**	32	5.6	24
8	1	1.2	1	1.2	1.2	2	2.6	2.6	2.5	2.1	1.4	1.1	1	0.9	0.7	13.3	0.3	0.6	0.9	0.2	0.2	0.4	**S**	0.8	13.3	1.7	24
9	0.7	0.6	0.5	1.1	1	4.3	6.8	5.3	4.4	3.5	3.7	2.3	3.2	2.4	3.4	2	4.2	0.7	0.7	0.5	0.6	**S**	1.9	0.4	6.8	2.4	24
10	0.5	2.9	8.3	1.3	0.7	2.5	3.7	5	4.2	7.2	7.6	4.2	9.3	5.5	2.7	0.3	1.3	3.5	0.4	0.5	**S**	0.7	0.7	1	9.3	3.2	24
11	7.9	6.7	1.1	2.5	1.9	5.4	12.3	5.2	3.9	4.3	4.7	4	20.5	5	1	1.5	0.8	3.8	0.1	**S**	0.5	0.5	0.6	0.6	20.5	4.1	24
12	1	0.8	0.9	1.1	1.1	2.1	2.7	1.4	1.1	1.2	2.3	2.6	2.6	2.8	3.5	4	0.8	0	**S**	0.4	0.6	0.7	1	1.2	4	1.6	24
13	1.2	1.4	1.4	1.6	1.7	1.6	1.7	3.9	3.1	3.4	15.9	2.2	2.4	3.6	3.6	1.4	0.7	**S**	0.4	0.7	0.3	0.6	1	1.2	15.9	2.4	24
14	1.1	1.4	1.8	1.5	1.7	4.4	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	3.6	4.4	1.2	24
15	0	0.1	0	0.2	0.2	1.5	1.3	1.6	1.4	0.8	1.6	4.9	7.5	8.5	13.8	**S**	1.4	0.3	0.4	0.5	1	0.9	1.3	1.3	13.8	2.2	24
16	1.3	1	1.2	1.2	1.1	1.3	30.2	7.3	3.5	3.7	2.8	1.9	4.3	3	**S**	1.8	2.3	0.2	0.4	0.2	0.2	0.7	0.8	1	30.2	3.1	24
17	1.1	1.2	1	1.3	1.3	1.2	2.1	7.2	3.8	3.2	1.7	14.2	0.4	**S**	2.6	0.1	0	0	0	0	0	0.2	1.6	0.7	14.2	2.0	24
18	0.8	1	1.2	1.2	1	1.3	1.3	1.3	4.6	1.8	3.8	2.9	**S**	2.7	1.4	2.6	5.8	5.6	4.3	5.3	0.3	0.4	0.7	0.8	5.8	2.3	24
19	0.8	0.9	1.2	1.2	1	1	1.2	1.2	1.2	2	1.1	**S**	1.1	1	1.3	1.2	1.4	1.3	1.2	1.2	1.1	1.2	1.2	1.1	2	1.2	24
20	1.2	1	5	6.1	8	11.8	7.7	1.4	1.8	1.7	**S**	1.3	1.4	0.6	0.5	0.2	0	0	0	0.2	0.1	0.1	0.4	0.7	11.8	2.2	24
21	0.8	0.8	1.1	1.1	1	1.8	1.9	1.5	2.2	**S**	0.8	0.8	0.7	0.3	0.5	0.1	0.4	0.1	0	0.1	0.3	0.1	0.5	0.6	2.2	0.8	24
22	1	1.3	1.2	1.2	1.4	1.3	***33.2***	8.1	**S**	7.2	7.1	2.5	0.2	0	0.2	0.4	0.2	0.2	0.2	0	0.5	0.2	0.3	0.2	***33.2***	3.0	24
23	0.2	0.1	0.2	0.6	0.5	0.9	4.1	**S**	6.7	0.5	0.4	0.2	0.4	0.6	2	0.2	0.4	0.3	0.4	0.3	0.2	0	0.2	21.1	21.1	1.8	24
24	14.9	4.2	5.8	3.5	0.8	0.5	**S**	4.8	5.3	4.1	6.2	6.6	0.9	0.6	3.1	6	0.4	2	2	0.2	0.2	0.6	0.6	0.8	14.9	3.2	24
25	1.1	1.1	1.2	1.6	1.7	**S**	2	1.9	2.2	1.2	1	0.6	0.3	0.3	0.5	0.6	2	1	4.4	0.7	0.7	1.1	1.3	1.1	4.4	1.3	24
26	1	1.1	1.3	1.2	**S**	1.9	3.3	3.1	1.4	1.2	1.2	1.6	1.3	1.2	0.9	1.1	1.1	3.5	2.1	1.4	1.1	1.1	1.6	1.2	3.5	1.6	24
27	1.2	1	1	**S**	1.5	6.5	4.7	6.6	6.6	12.3	8.8	4.7	4.5	16.8	7	9.7	5.7	3.5	10.2	8.6	7.7	7.2	1.2	1.2	16.8	***6.0***	24
28	3.7	1.4	**S**	1.4	1.4	1.4	3.7	4.5	2.6	3.9	1.8	1	17.5	1	0.6	0.6	0.4	0.7	0.6	0.8	0.9	1.2	1.2	1.1	17.5	2.3	24
29	1	**S**	1.6	1.2	1.5	1.4	1.2	1.5	11.9	11	8.4	4.9	2.2	1.5	2.7	3.2	1.5	1.2	1.1	1.2	5	1.3	1.3	1.3	11.9	3.0	24
30	**S**	1.5	1.5	1.5	1.6	3.8	2.3	2.7	1.5	1.2	0.9	1	0.6	0.1	0	0	0	0.4	0	0	0.2	0.2	0.3	**S**	3.8	1.0	24
31	0.8	0.7	0.9	0.8	1.5	1.8	5	8.1	6.9	0.7	0.8	1.5	1.2	0.1	0	0	0	0	0	1	0	0.2	**S**	0.4	8.1	1.4	24
HOURLY MAX	15	7	8	6	8	12	33	11	24	12	16	14	32	17	14	13	6	6	10	9	8	7	5	21			
HOURLY AVG	1.6	1.2	1.5	1.6	1.4	2.8	5.7	4.1	4.5	3.7	3.9	3.5	5.2	2.7	2.4	2.5	1.6	1.1	1.1	0.9	0.8	0.8	0.9	1.9			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 655

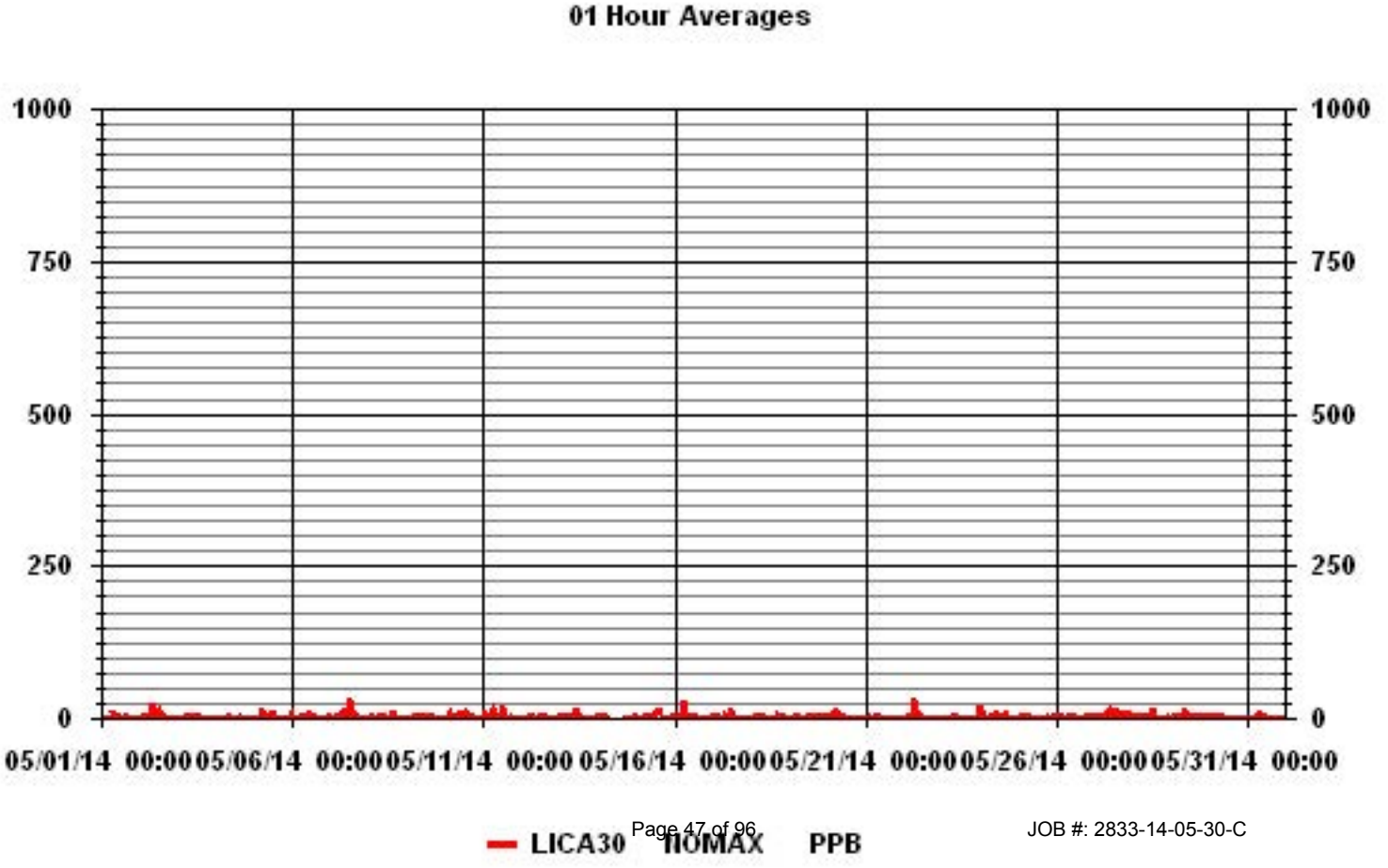
MAXIMUM INSTANTANEOUS VALUE: 33.2 PPB @ HOUR(S) 6 ON DAY(S) 22

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 11 HRS

STANDARD DEVIATION: 3.54



JOB #: 2833-14-05-30-C

LICA30
NO_ / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	10.09	6.97	14.79	8.10	4.83	3.98	2.70	3.12	4.69	5.40	3.41	2.84	5.26	5.97	7.68	10.09	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	10.09	6.97	14.79	8.10	4.83	3.98	2.70	3.12	4.69	5.40	3.41	2.84	5.26	5.97	7.68	10.09	

Calm : .00 %

Total # Operational Hours : 703

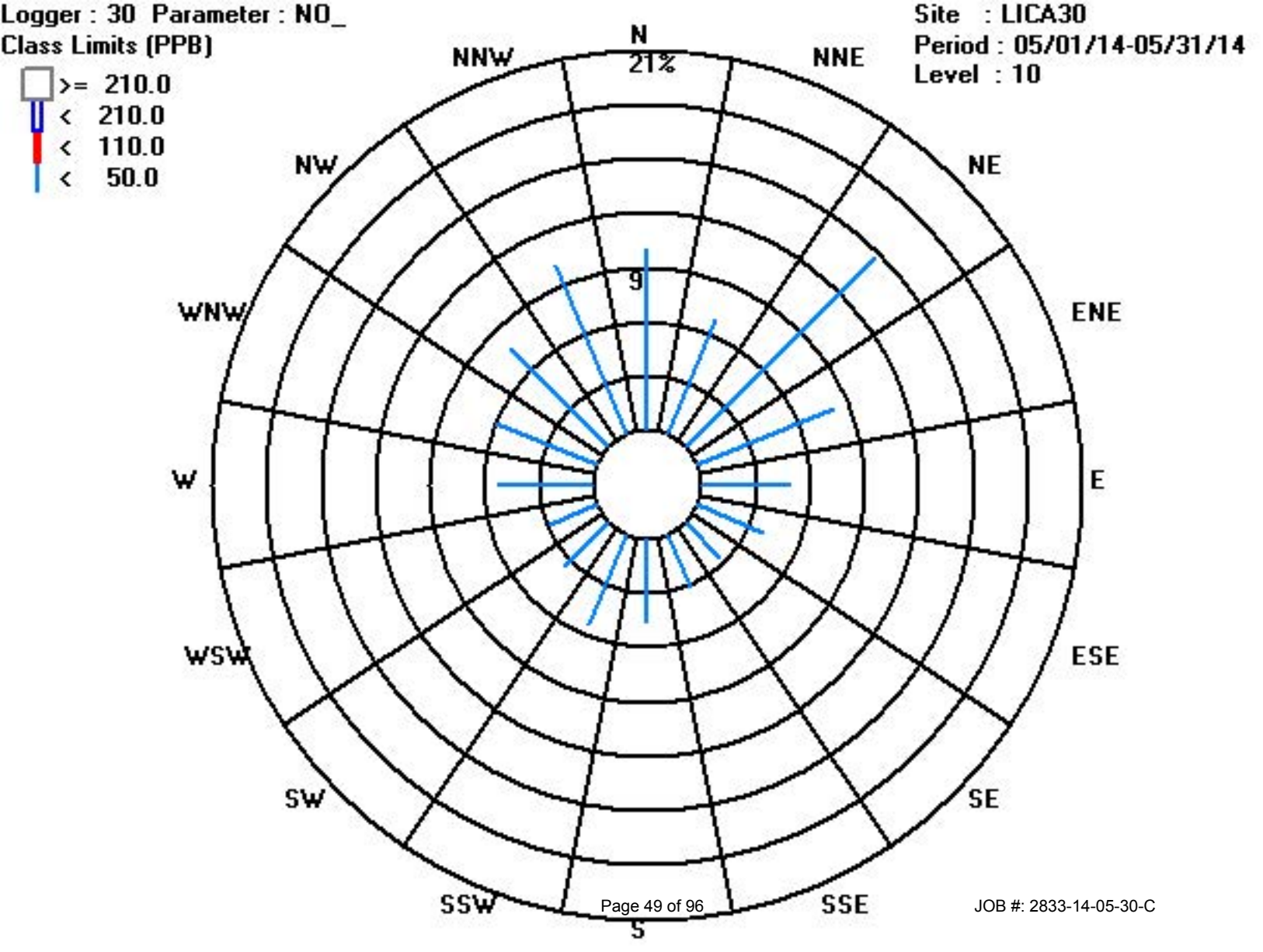
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	71	49	104	57	34	28	19	22	33	38	24	20	37	42	54	71	703
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	71	49	104	57	34	28	19	22	33	38	24	20	37	42	54	71	

Calm : .00 %

Total # Operational Hours : 703



JOB #: 2833-14-05-30-C

Oxides of Nitrogen

Lakeland Industry & Community Association - Maskwa Site

MAY 2014

OXIDES OF NITROGEN (NOx) hourly averages in ppb

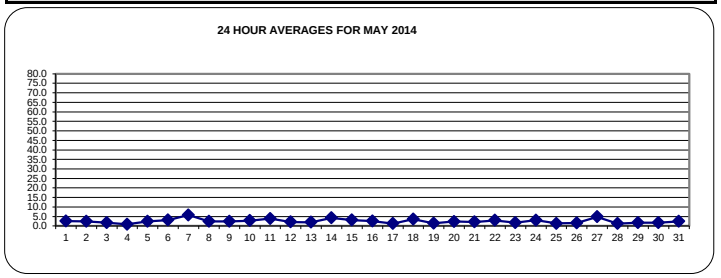
MST

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	2.8	2.8	2	1.7	2.7	4.5	**S**	11.7	1	1.9	1.2	3	1.5	0.4	1	8	5.1	0	0.4	0	0.2	3.3	3.1	1.9	11.7	2.6	24
2	1.3	1.5	0.2	4.4	7.4	**S**	4.3	1.2	9.4	2.5	3.7	3.7	3	1.7	2.9	1.2	2.9	0.4	0.3	0.4	0.6	1.1	0.2	1.2	9.4	2.4	24
3	0.8	0.4	0.5	0.3	**S**	0.3	2.6	4.2	4.3	4.9	2.7	3.4	2.8	3.1	3.3	2.4	1.2	0.5	0.1	0	0	0	0	0	4.9	1.6	24
4	0	0.7	0.6	**S**	0.9	0.6	2.6	2.1	0.5	0.3	0.9	0.2	1.7	0.4	1.5	1.7	4.8	0	0	0	0	0	0.1	0	4.8	0.9	24
5	0	0	**S**	0	0.3	1.9	5.6	3.4	2	0.8	2.9	3.9	4.1	3.5	2.6	2.1	1.3	1.2	1	1.5	0.7	3.7	3.4	8.7	8.7	2.4	24
6	0.9	**S**	0	1.3	0.8	2.8	5.2	6.5	3.9	4	5.4	5.2	3.4	3.1	3.3	0	0	0	0	0	0.2	4	15.2	6.2	15.2	3.1	24
7	**S**	13.1	3.4	4.9	4.8	12.6	7.6	11.2	11.7	11	10	6.2	7.1	3.2	3.4	5.6	4.3	2.9	0.2	0.6	1	0.8	0.5	**S**	13.1	***5.7***	24
8	2.1	2.6	2.3	3.1	4.6	6.4	6.4	4.8	4.3	2.4	1.2	0.8	0.6	0.8	0.6	1.5	0.4	2.1	5	1.1	0.6	0.9	**S**	0.9	6.4	2.4	24
9	0.5	0.8	1	1.5	1.2	1.6	7.4	3.1	3.2	2.4	3.5	2.1	2.4	2.3	2.9	1.8	3.7	0.7	0.7	0.5	1.1	**S**	7.3	3.9	7.4	2.4	24
10	4.2	3.8	12.2	1.7	0.8	2.2	4.2	6	2.6	6.3	3.6	3.4	5.6	2.3	2	0.3	0.6	1.4	0.5	0.2	**S**	0.3	0.1	0.4	12.2	2.8	24
11	14.3	5.1	4	4.9	6.7	11.8	8.4	6.6	3.3	3.1	3.9	2.7	3.4	4.1	0.8	1.1	0.5	1.8	0	**S**	1.3	0.5	0.5	1	14.3	3.9	24
12	1.7	1.6	2.7	2.6	2.7	2	3.8	1.7	1.2	1	2.3	4.2	2.9	4.6	4.9	3.4	0	0	**S**	0.3	1	1.2	1.7	1.7	4.9	2.1	24
13	1.4	1.4	1.6	1.6	1.7	1.8	1.9	3.1	3.2	3.1	3.2	2.7	2.8	4.2	4.5	1.7	0.7	**S**	0	0	0.2	1.2	2	1.2	4.5	2.0	24
14	2.1	2.4	7.4	2	1.6	3.8	***20***	4	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0.7	0.6	0.5	0.9	1.7	1.4	15	***20***	4.3	24
15	2	0.9	3.3	5	4.1	4	6.1	5	2.5	1.1	1.6	5.9	5.4	5.9	11.4	**S**	1.8	1.6	1.1	0.5	0.6	0.6	0.7	0.7	11.4	3.1	24
16	0.6	0.5	0.5	0.8	0.8	0.9	13.4	7	3.8	4	1.8	2	5.6	3.4	**S**	2.9	4.1	0.5	1.3	1.2	1.2	1.1	1	1.1	13.4	2.6	24
17	0.9	1	0.6	0.9	1	0.9	1.1	4	3.1	2.6	1.4	2.3	0.3	**S**	1	0.1	0	0	0	0	0	0.2	3.2	3.5	4	1.2	24
18	1.1	0.6	0.8	1	0.8	1.3	0.9	1.2	7.2	1.7	6.8	3.1	**S**	7.5	2.6	1.9	6.4	13.1	9.6	7.6	1.1	1.4	2.6	2.6	13.1	3.6	24
19	1.3	1.1	1.1	1	1	0.9	1.1	1.1	1.3	2	1	**S**	0.8	0.9	0.9	0.8	1.3	2	1.3	1.5	2.1	2.6	2.3	1.8	2.6	1.4	24
20	1.9	1.5	2.1	4	4.2	8.9	5.6	3.1	3	2	**S**	1.6	1.8	1	1.1	0.7	0.1	0	0.3	0.8	1.2	1.9	3.4	3.1	8.9	2.3	24
21	3.3	3.3	2.6	2.7	3.3	4.1	4.3	4	4.1	**S**	1.7	1.9	2.4	2	1.5	0.7	0.9	0.8	0.4	0.5	0.5	0.3	1.9	1.8	4.3	2.1	24
22	1.6	1.2	1.3	1.5	1.8	1.3	16.4	8.9	**S**	9.8	11.6	2.8	0.2	0.6	1.1	1.3	0.9	0.8	1.3	0.5	0.5	0.5	0.7	0.8	16.4	2.9	24
23	0.3	0.3	0.3	0.8	0.6	0.7	3.8	**S**	5.8	2.3	1.4	1.1	1	0.9	1.4	1	1.7	0.7	0.9	0.8	0.9	0.9	1.3	11.2	11.2	1.7	24
24	8	5.3	14.3	2.9	3	0.9	**S**	5.4	3.2	0.7	5	6.4	0.9	0.4	1.1	6.8	0.4	1.2	0.7	0.7	0.5	0.4	0.5	1.1	14.3	3.0	24
25	1.7	1	1.1	1.2	1.4	**S**	1.4	1.3	1.3	0.8	1.2	0.5	0.5	0.7	0.4	0.4	2.9	4.1	5.7	0.3	0.4	0.8	0.7	0.8	5.7	1.3	24
26	0.8	0.6	1	0.8	**S**	2.9	8.1	3.8	1.1	1	1.4	1.5	1	1.1	0.7	0.8	0.9	2.8	1.9	1.1	0.6	0.6	1.1	1.3	8.1	1.6	24
27	1.2	0.8	0.6	**S**	2.1	4.9	3.8	3.9	4.6	5.4	7.4	3.8	3.3	4.1	5.4	6	7.5	5.4	10.4	7.6	6.8	9	3.2	3.1	10.4	4.8	24
28	5.2	2.3	**S**	1.5	1.3	1.1	2.3	3.2	1.8	3.2	1.1	0.4	1.6	0.5	0.1	0.1	0.2	0.1	0.1	0.1	0.3	0.5	0.6	0.5	5.2	1.2	24
29	0.4	**S**	0.9	0.7	0.9	0.8	0.7	0.6	4.4	4.1	3.1	3.3	0.9	1.1	3.1	2	1.4	0.9	0.9	1	4	1.5	1.9	2	4.4	1.8	24
30	**S**	4.1	5.3	3.6	2.5	6.9	3.6	3.1	1.2	0.7	0.5	0.5	0.3	0.3	0	0	0	0.1	0.1	0.2	0.4	0.4	4.8	**S**	6.9	1.8	24
31	2.7	1.9	2.6	4.9	5.4	3.5	3.9	8.2	7.6	1.4	1.1	2.8	1.1	0.3	0.6	0.1	0	0	0.1	0.9	0.7	1.5	**S**	2.9	8.2	2.4	24
HOURLY MAX	14	13	14	5	7	13	20	12	12	11	12	6	7	8	11	8	8	13	10	8	7	9	15	15			
HOURLY AVG	2.2	2.2	2.6	2.2	2.4	3.3	5.4	4.4	3.7	3.0	3.2	2.8	2.4	2.2	2.3	1.9	1.9	1.5	1.5	1.0	1.0	1.4	2.3	2.8			

STATUS FLAG CODES

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

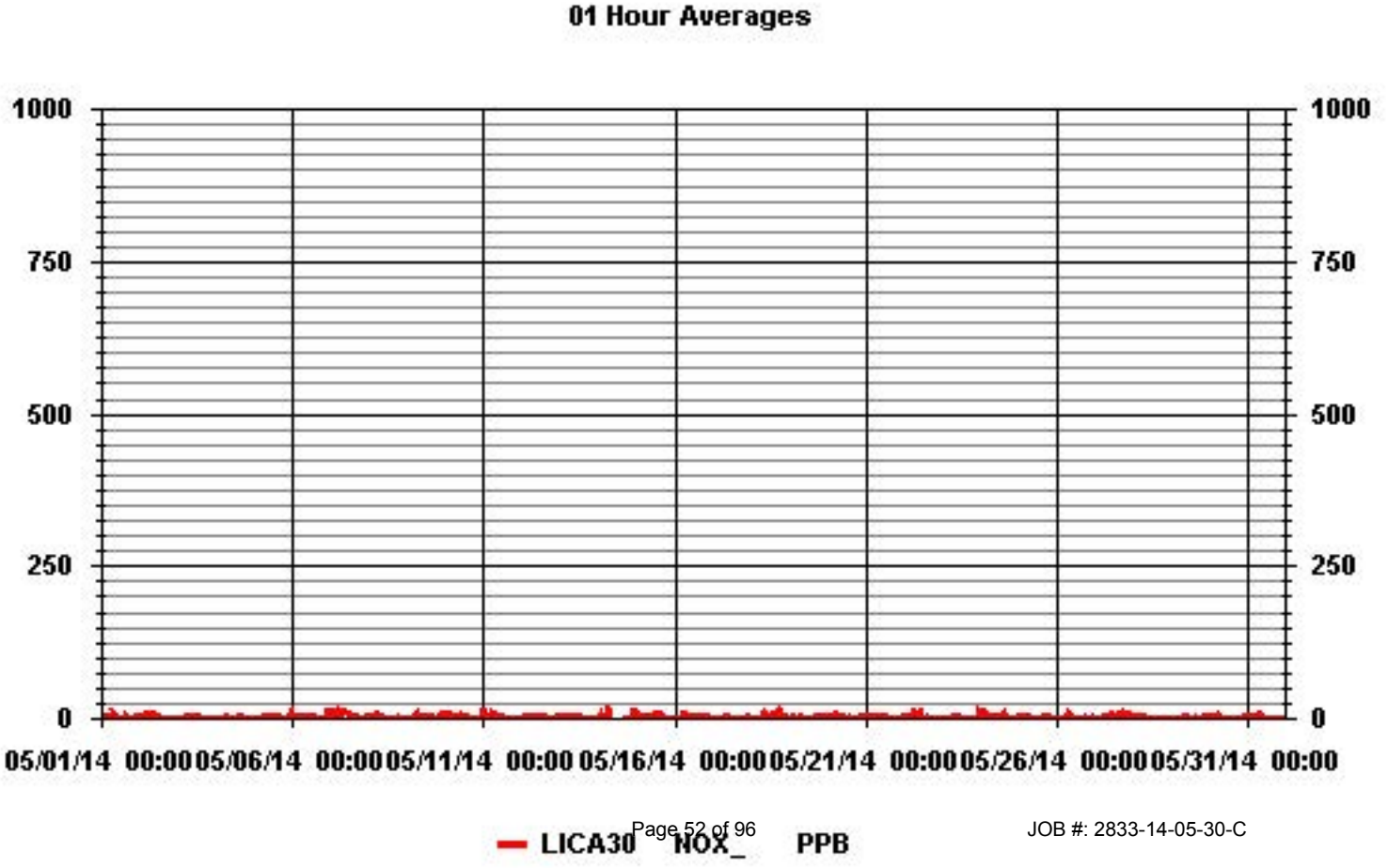
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR NA PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	664					
MAXIMUM 1-HR AVERAGE:	20	PPB	@ HOUR(S)	6	ON DAY(S)	14
MAXIMUM 24-HR AVERAGE:	5.7	PPB			ON DAY(S) VAR-VARIOUS	7

IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	2.71		MONTHLY AVERAGE:	2.48	PPB



JOB #: 2833-14-05-30-C

Lakeland Industry & Community Association - Maskwa Site

MAY 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	3.5	3.6	3.5	2.4	4.3	11.3	**S**	24.9	4.6	2.7	3.5	14.1	13.7	3.5	8	16.3	21	0.4	4.8	0.6	1.7	14.9	4.4	3.1	24.9	7.4	24
2	2.1	3.1	0.9	26	21.6	**S**	13.7	4.3	44.1	18	12.4	18.7	19.9	14.4	19.2	8.6	9.2	1.5	1.3	1.8	2.7	2.2	0.9	2.1	44.1	10.8	24
3	2	1.1	1.1	1.1	**S**	1.1	8.1	11	7.4	8.4	7.6	8.8	7.4	6.8	8	6.7	4.1	1.4	0.7	0.5	1	0.5	0.6	0.5	11	4.2	24
4	0.4	3	2.1	**S**	2.3	3	4.6	6.5	4.2	4.7	4.6	2.2	10	4.3	4.3	4.3	8.6	0.7	0.6	0.4	0.4	0.7	1	0.6	10	3.2	24
5	0.6	0.2	**S**	0.7	1.1	19.9	15.9	9.9	4.7	3.4	6.1	5.4	30.2	7.7	3.3	4.1	2.5	1.9	3	4.8	7.9	12.1	7.1	31.1	31.1	8.0	24
6	7.5	**S**	0.6	5.5	1.8	12.2	10.4	12.6	6.1	6.6	10.3	9.6	5.3	6	6.6	0.4	0	0	0	0.8	1.5	11.1	22.8	15.2	22.8	6.6	24
7	**S**	17.6	8.7	8.3	9.8	16.4	18	16	26.4	23.2	21.6	19.9	49.2	13.7	10.6	21.1	13	10.2	2.5	1.6	1.5	1.5	1.3	**S**	49.2	***14.2***	24
8	3.4	3.6	3.1	4.5	5.9	7.9	8	6.6	5.6	4.3	2	1.5	1.2	2.7	1.3	31.3	1.3	6.5	13.8	3.4	2.1	2.1	**S**	2.2	31.3	5.4	24
9	1.2	1.8	2.2	2.6	2.6	9	15.5	7.9	8.6	6.8	7.2	4.5	7	5.6	6.9	5.3	14.6	1.8	1.6	1.6	2.4	**S**	14.8	8.9	15.5	6.1	24
10	5.7	15	27.3	6	1.8	7.9	9.2	11.9	10.3	15.5	16.5	9	19.1	12	8.4	2	4	12.2	1.3	1	**S**	1.6	0.9	3.7	27.3	8.8	24
11	32.3	27	6.3	12.7	11.1	19.8	23.4	11.5	8.1	14.9	10.5	9.3	24.2	17.7	3.1	4.9	4.2	15.2	0.8	**S**	3.1	1.3	1.8	2.4	32.3	11.5	24
12	2.9	2.8	3.4	3.5	5.5	5.5	9.2	3.2	2.2	1.9	5	9.4	7.4	9	11.5	10	7.7	0.9	**S**	1.6	3.7	4.6	5.1	2.5	11.5	5.2	24
13	2.1	1.9	2.3	2.3	2.3	3	2.5	9.6	6.3	6.9	19.6	4.8	6.1	9.9	10.5	4.2	1.9	**S**	1.7	1.4	1.3	2.4	5.7	1.9	19.6	4.8	24
14	3.3	4.2	18.4	3.7	2.5	12.9	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1.8	1.4	1.2	2	3.1	2.1	35	35	7.0	24
15	10.2	2.2	6.1	6.5	6.3	8.6	8.4	5.9	4.4	2.4	5.6	14.6	22.9	25.3	32.2	**S**	6.6	3	2.2	1.1	1.3	1.3	1.4	1.4	32.2	7.8	24
16	1.2	1.1	1.3	1.4	1.4	2.6	49.7	15.6	7.6	7.3	4.6	3.7	11.2	8.2	**S**	10.3	13.4	1.7	2.1	1.9	1.9	2	1.5	1.6	49.7	6.7	24
17	1.6	1.7	1.5	1.7	1.6	1.7	4.8	15.5	11	9	4.6	29.5	1.1	**S**	6.6	1.8	1.6	0.1	0.3	0.6	0.6	1	22.2	10.3	29.5	5.7	24
18	3.8	1.3	1.5	1.7	1.4	3.7	1.7	2.2	17.4	5.8	15.6	10.8	**S**	11.6	9.1	12.5	21.1	22.9	23.4	27.2	10.5	10.4	9.1	8.8	27.2	10.2	24
19	3	2.8	1.6	1.7	1.7	1.6	2.2	2	2	8.4	1.7	**S**	1.6	1.7	1.6	1.5	3.9	5.9	2.6	2.7	3.2	6.8	6.7	3.5	8.4	3.1	24
20	3	2.5	8.6	13.8	13.8	17.4	13.6	4.1	4	3.3	**S**	3.2	3.8	1.6	2.2	2.3	1	1.1	1.3	1.5	2.8	3.5	4.4	4.7	17.4	5.1	24
21	4.5	4.4	3.5	3.4	4.2	5.1	5.2	4.8	6.2	**S**	3.5	3.9	3.4	3.3	2.5	1.6	1.7	1.8	0.9	1.2	1.2	1	3.8	3.3	6.2	3.2	24
22	2.2	2.2	2	3	3	2.2	52	17.6	**S**	21.8	19.9	10.4	1.2	1.6	2	2.1	1.5	1.7	4.7	1.6	1	1.2	1.7	1.6	52	6.9	24
23	1	1	1	1.5	1.2	1.6	14.4	**S**	18.9	3.4	2.4	2.3	2.1	3.1	11.6	1.9	4.1	2	1.6	1.6	1.7	1.5	1.9	***53.7***	***53.7***	5.9	24
24	44.3	23	27.6	22.3	14.2	2.8	**S**	12.4	13.3	11.7	19.5	20.2	2.9	1.6	9.4	17	1.5	7.6	7	1.7	1.1	1.1	1.3	2	44.3	11.5	24
25	2.5	1.7	1.8	2.2	2.1	**S**	2.8	2.9	3.1	1.8	2.8	1	1.2	3.5	1.1	1.1	11.8	13.7	27.9	1	1.2	1.5	1.6	1.7	27.9	4.0	24
26	1.7	1.4	2.2	1.6	**S**	6.4	14.3	8.9	2.3	1.9	2.5	2.8	1.7	2.2	1.6	2.1	1.5	10.6	6.4	3.7	1.2	1.3	3.5	3.3	14.3	3.7	24
27	2.5	1.9	1.4	**S**	5	11.4	8.4	12.2	12.3	19.8	16.6	8	8.9	29.4	14	18.5	14.9	10.5	21.7	22.2	19.9	19.1	6.1	6	29.4	12.6	24
28	10.1	5.2	**S**	2.2	2.2	1.9	5.7	7.8	4.6	8.5	2.7	1.5	29.9	2	0.7	0.9	1	0.7	0.7	1	0.8	1.2	1.1	1	29.9	4.1	24
29	1	**S**	1.4	1.2	1.3	1.5	1.1	1.4	14.8	14.2	13.6	6.6	3.5	2.9	5.4	6.4	2.4	1.6	1.6	1.6	9.5	2.6	2.6	2.6	14.8	4.4	24
30	**S**	6.9	8.8	8.9	4.5	10	4.3	5.1	2.4	1.2	1.4	1.2	1.5	1.4	0.7	0.4	0.6	2.3	0.9	0.9	1.4	1.1	9.8	**S**	10	3.4	24
31	4.1	2.6	5.6	5.9	6.8	4.8	14.6	22.2	18.7	2.4	3.9	6.4	6.4	1.4	2	0.9	0.7	0.5	1.7	6.4	1.8	4.1	**S**	3.9	22.2	5.6	24
HOURLY MAX	44	27	28	26	22	20	52	25	44	23	22	30	49	29	32	31	21	23	28	27	20	19	23	54			
HOURLY AVG	5.6	5.1	5.4	5.5	4.9	7.4	12.2	9.5	9.7	8.3	8.5	8.4	10.5	7.4	7.0	6.9	6.0	4.7	4.7	3.3	3.1	4.0	5.1	7.5			

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: 698

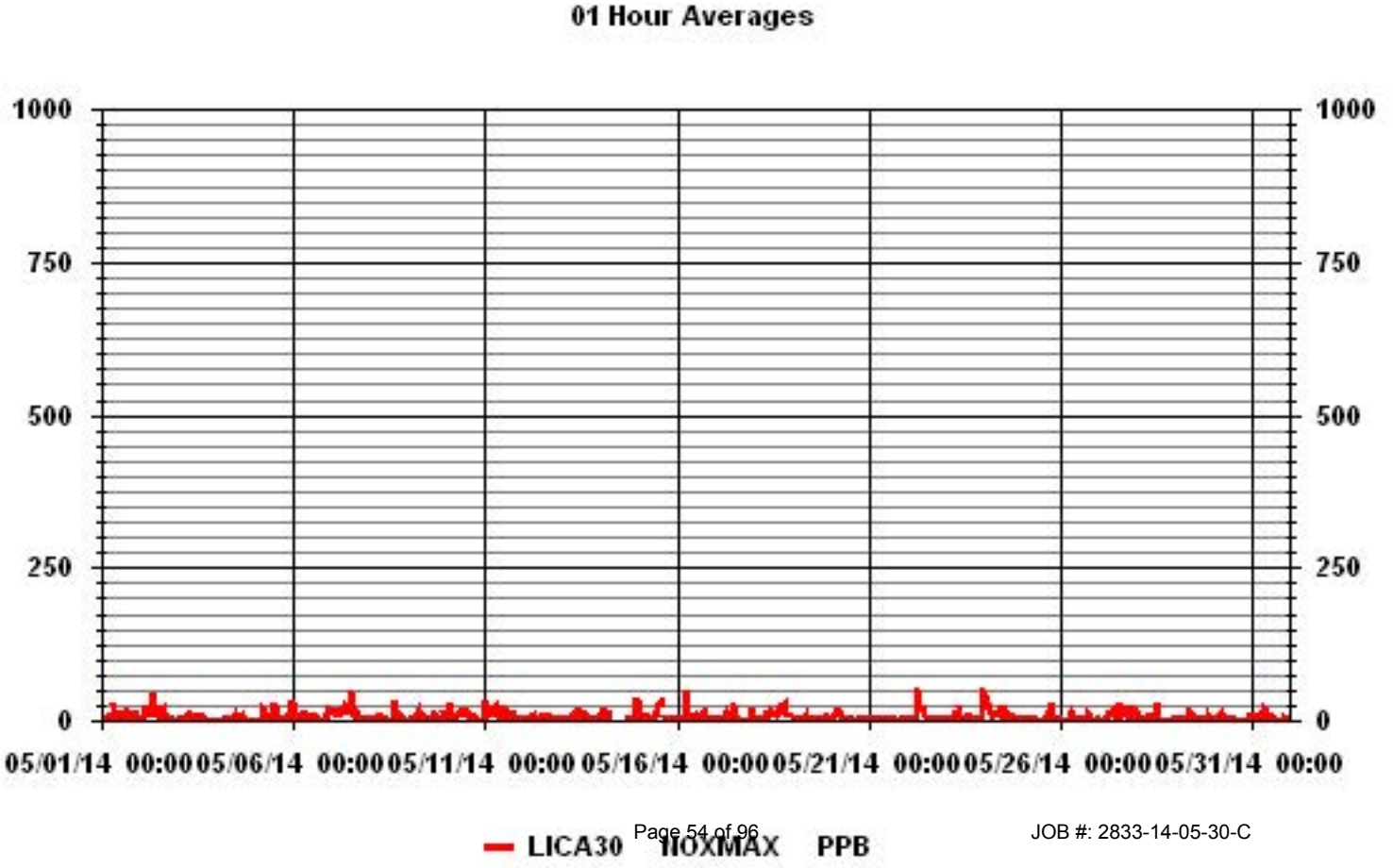
MAXIMUM INSTANTANEOUS VALUE: 53.7 PPB @ HOUR(S) 23 ON DAY(S) 23

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 11 HRS

STANDARD DEVIATION: 7.68



JOB #: 2833-14-05-30-C

LICA30
NOX_ / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	10.09	6.97	14.79	8.10	4.83	3.98	2.70	3.12	4.69	5.40	3.41	2.84	5.26	5.97	7.68	10.09	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	10.09	6.97	14.79	8.10	4.83	3.98	2.70	3.12	4.69	5.40	3.41	2.84	5.26	5.97	7.68	10.09	

Calm : .00 %

Total # Operational Hours : 703

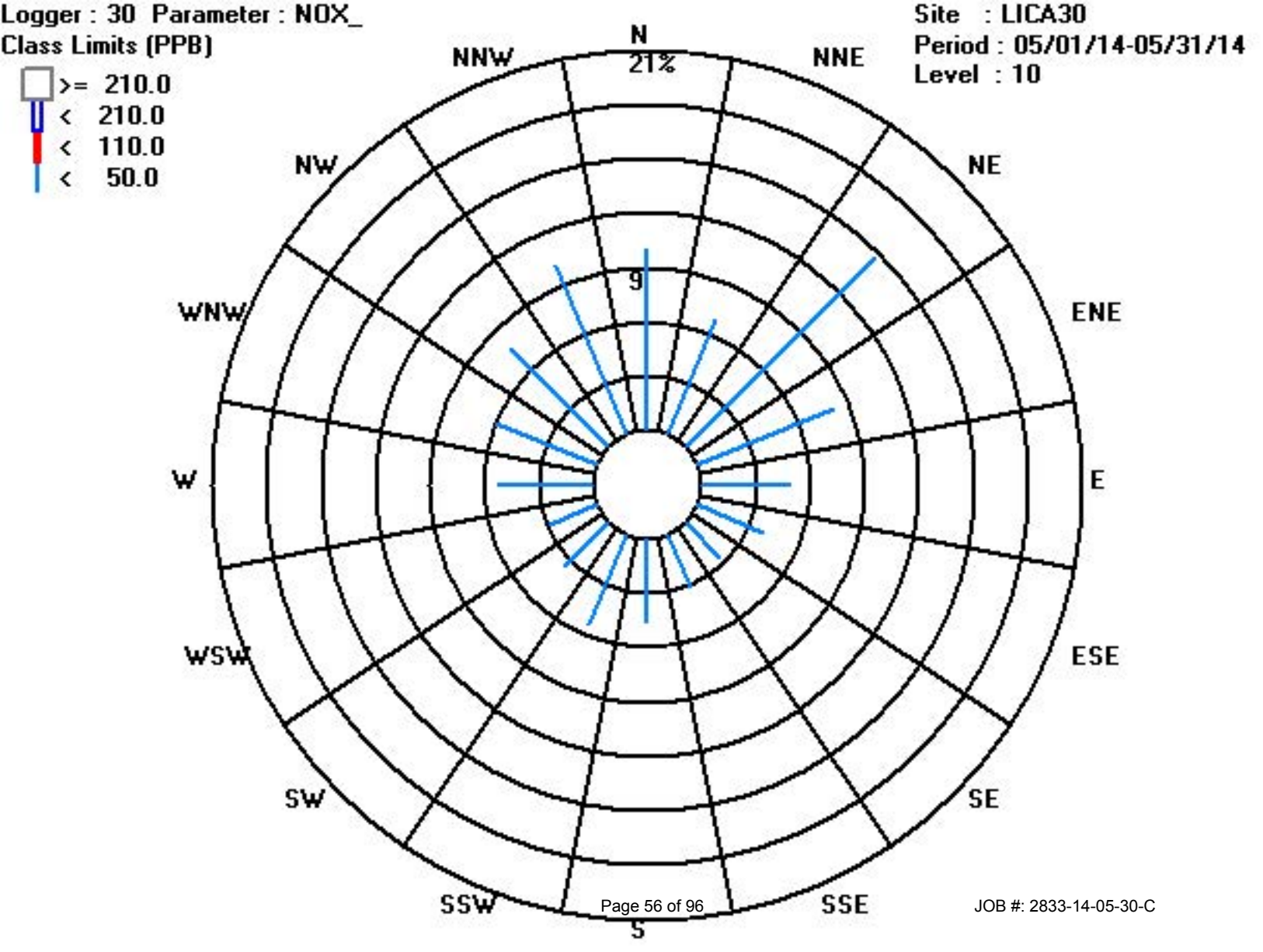
Distribution By Samples

Direction

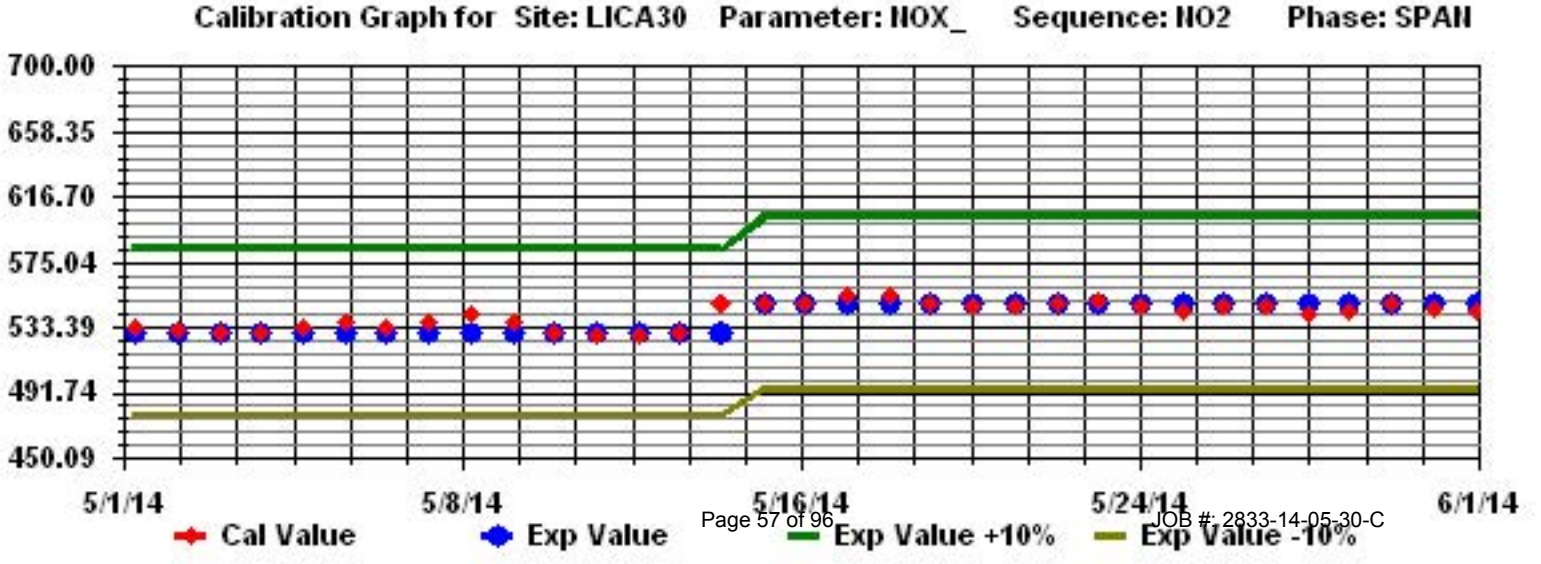
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	71	49	104	57	34	28	19	22	33	38	24	20	37	42	54	71	703
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	71	49	104	57	34	28	19	22	33	38	24	20	37	42	54	71	

Calm : .00 %

Total # Operational Hours : 703



JOB #: 2833-14-05-30-C


Calibration Graph for Site: LICA30 Parameter: NOX_ Sequence: NO2 Phase: SPAN
700.00
658.35
616.70
575.04
533.39
491.74
450.09
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Temperature

Lakeland Industry & Community Association - Maskwa Site

MAY 2014

AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

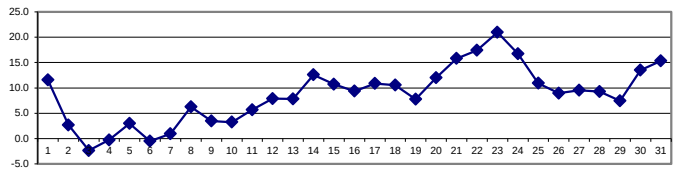
MST

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	12.1	12.2	11.5	10.6	9.6	11.2	13.5	14.7	13.5	12.7	12.5	12.9	14.2	13.4	12	14	14.5	14.3	14.4	11.7	8.6	6.2	4.1	3	14.7	11.6	24
2	4	4.4	3.8	2.6	1.9	1.7	2.5	3.7	3.8	4	5.1	5.4	5.2	4.3	4	3.7	3.1	2.4	1.5	0.5	0.2	-0.2	-1.2	-1.9	5.4	2.7	24
3	-2.7	-3.2	-3.7	-4.1	-4.1	-3.8	-3.2	-3.2	-3.2	-2.8	-2	-1.6	-0.7	-0.5	-0.5	0.1	-0.5	-0.9	-1.1	-1.5	-1.7	-2.6	-4.2	-4.8	0.1	-2.4	24
4	-3.7	-3.2	-3	-3.5	-3.7	-3.3	-2.3	-1.5	-1.1	-0.2	0.3	1.2	2.3	2.3	3.5	3.6	3	2.1	1.3	0.5	0	-0.2	-0.4	-0.5	3.6	-0.3	24
5	-0.6	-0.6	-0.7	-1.3	-1.6	-1.4	-1.1	-0.3	1.4	3.1	4.8	6.4	6.3	6	6.6	7.7	7.6	7.6	6	4.6	3.8	3.9	2.5	0.5	7.7	3.0	24
6	-0.4	-1.2	-1.7	-2.1	-1.9	-1.6	-1.1	0.5	0.1	0.9	0.6	0.6	1.3	2.1	1.6	1.2	0.7	1	0.3	-0.8	-2.1	-2.9	-3.2	-3.8	2.1	-0.5	24
7	-4.5	-5.7	-5.5	-5.5	***-5.8***	-4.3	-1.6	1.8	4.1	4.9	4.9	5.1	4.9	5.3	5.9	5.6	5.9	6.8	6.3	3.8	0	-2.2	-3.1	-4.2	6.8	1.0	24
8	-2.4	-0.9	-1.2	-1.7	-1.8	-0.5	1.8	4.6	7.4	10.1	11.5	12.6	13.4	13.5	14	13.6	13	13.2	11.9	9.7	6	1.9	0	0.7	14	6.3	24
9	1.2	0.2	-0.5	-1.1	-2.1	-1.2	0.2	3.2	4.1	4.9	6.1	7.6	7.7	8.1	7.7	7.7	6.9	6.3	5.9	4.6	3.8	2.6	0.7	-1.7	8.1	3.5	24
10	-1.5	-1.2	0.2	0.4	-0.4	-0.4	0.6	2.2	3.5	5.1	6.4	7.8	8.5	8.6	7.7	7	6.6	5.2	4.3	3.2	2.2	1.4	0.5	-0.3	8.6	3.2	24
11	-0.7	-1.9	-2.9	-2.7	-1	0.4	2.5	5.6	8.2	8.9	10.2	9.8	9.6	10.3	11.8	12	11.4	12.1	10.3	8.8	5.3	4.5	2.8	0.7	12.1	5.7	24
12	0.1	-1	-2.1	-1.9	-1.8	-0.3	4.6	7.5	10.1	12	12.3	13.6	14.9	15.5	16.7	15.9	14.5	14.1	14.4	11.6	8.8	5.8	2.8	0.6	16.7	7.9	24
13	-0.7	-1.2	-2.1	-1.2	-1.2	0.1	3.2	6	8.3	10.2	12.3	13.4	14.2	15.8	16.4	16.2	16	14.9	13.7	11.7	7.6	4.3	4.5	5.6	16.4	7.8	24
14	4.7	1.7	-1.3	-2.2	-2.6	0.2	3.8	8.3	13.9	18	20.3	20.6	21.2	19.7	20.1	20.4	19.7	19.8	18	16.5	16.1	16	15.2	13.8	21.2	12.6	24
15	11	10.1	9.6	9.5	9.3	9.5	10.4	11.4	14	14.9	17.3	17.5	15.3	13.2	13.6	12.8	10.3	8.4	7.6	6.8	6.3	6.3	6	5.6	17.5	10.7	24
16	5.2	4.7	4	3.4	3	3.2	3.6	4.6	6.4	8.1	11.3	13.8	16.2	17	16.7	15.7	15.6	15	13.9	12.6	10.8	8.4	6.5	4.6	17	9.3	24
17	3.1	2.1	1.2	0.9	0.6	2.1	5.6	10.7	13.1	15.6	16.4	18	17.9	17.4	18	18.9	17.6	16.6	15.5	13.8	11	8	6.9	9.5	18.9	10.9	24
18	6.1	4	3.2	3.3	3.3	4.6	7.2	9	12.3	13.2	14.2	17.1	17.2	17	16.8	17.6	17.1	13.9	12.5	10.8	9.2	7.6	7.7	7.9	17.6	10.5	24
19	7.8	7.9	8	7.7	7.1	6.9	6.6	7.6	7.9	7.5	8.5	8.4	8.5	8.8	8.9	8.8	8.1	8.7	8.5	7.8	7.2	6.7	6.4	6.1	8.9	7.8	24
20	5.9	4.7	3.4	3.8	4.6	5.7	8.1	9.7	12.8	14.2	13.5	14.9	15.7	16.9	17.8	18.3	18.6	18.6	17.3	15.9	14.7	12.2	10.5	9.9	18.6	12.0	24
21	11.3	11.3	10.8	10.2	9.8	10.4	12	13.3	15.6	17.6	19.8	17.1	20.7	19.7	19	22.7	23.4	22.9	22.3	20.2	16	12.9	10.7	9.3	23.4	15.8	24
22	7.9	6.9	6.3	7.1	6.8	8.1	10.7	16	20.3	22.6	24.1	24.7	23.8	24	24.1	24.7	24.1	23.7	22.9	21.6	18.6	16.6	16.3	15.5	24.7	17.4	24
23	15.1	12.6	11.9	11.9	12.2	13.2	16.8	22	24.1	24.6	26.4	27.7	27.7	27.7	***28.6***	28.1	27.2	26.9	26	22.6	19.7	18.1	16.6	15.6	***28.6***	***21.0***	24
24	16.4	15.3	14.5	14.1	13.1	11.9	13.2	14.9	17.5	19.3	21.1	21.6	22.5	23.2	23.7	21.1	20.6	20.7	19.6	17.3	13.8	10.3	8.4	7.4	23.7	16.7	24
25	6.7	5.4	4.3	3.9	3.6	6.8	9.7	12.2	14.8	17.2	17.2	18.8	18.8	17	12.6	14.5	15.4	11.1	10.3	10.1	8.4	8	7.6	7.9	18.8	10.9	24
26	7.8	8	8.1	7.9	8.1	8.8	8.7	8.8	9.5	9.3	9.1	9.1	9.2	9.3	9.7	9.9	9.9	9.8	9.6	9.2	8.8	8.7	8.6	8.6	9.9	8.9	24
27	8.7	8.5	8.4	8.2	8.3	8.4	8.4	9	10	10.9	10.8	10.8	11.4	10.8	10.4	11.4	10.6	10.2	10.1	9.7	9.2	8.7	8.4	7.8	11.4	9.5	24
28	7.2	6.6	6	6.5	6.6	7.5	8.7	9.2	9.7	10.5	11.5	13.5	13.6	13.8	13.7	12.2	11.9	10.6	9.5	8.8	7	6.3	6	5.9	13.8	9.3	24
29	5.8	5.6	5.6	5.8	6.1	6.4	6.6	6.9	7.2	7.8	7.8	8	9	10	10.1	9.8	10	9.1	8.7	8	7.1	6.1	5.5	5.2	10.1	7.4	24
30	5.5	5.9	6.1	6.1	6.1	7.3	8.5	11.4	13.9	15.7	17.4	18.3	19.5	19.6	20.5	20.7	19.9	17.9	17.7	16.8	14.6	12	11.4	10.7	20.7	13.5	24
31	10.5	8.8	8	7.4	7.2	9.7	12.9	16.3	19	20	21.5	22.6	21.7	18.8	18	18.2	20.9	20.5	19.2	16.9	15.1	11.6	12.1	11.2	22.6	15.3	24
HOURLY MAX	16.4	15.3	14.5	14.1	13.1	13.2	16.8	22	24.1	24.6	26.4	27.7	27.7	27.7	28.6	28.1	27.2	26.9	26	22.6	19.7	18.1	16.6	15.6			
HOURLY AVG	4.7	4.1	3.6	3.4	3.2	4.1	5.8	7.9	9.7	11.0	12.0	12.8	13.3	13.2	13.2	13.4	13.0	12.4	11.6	10.1	8.3	6.7	5.7	5.0			

STATUS FLAG CODES

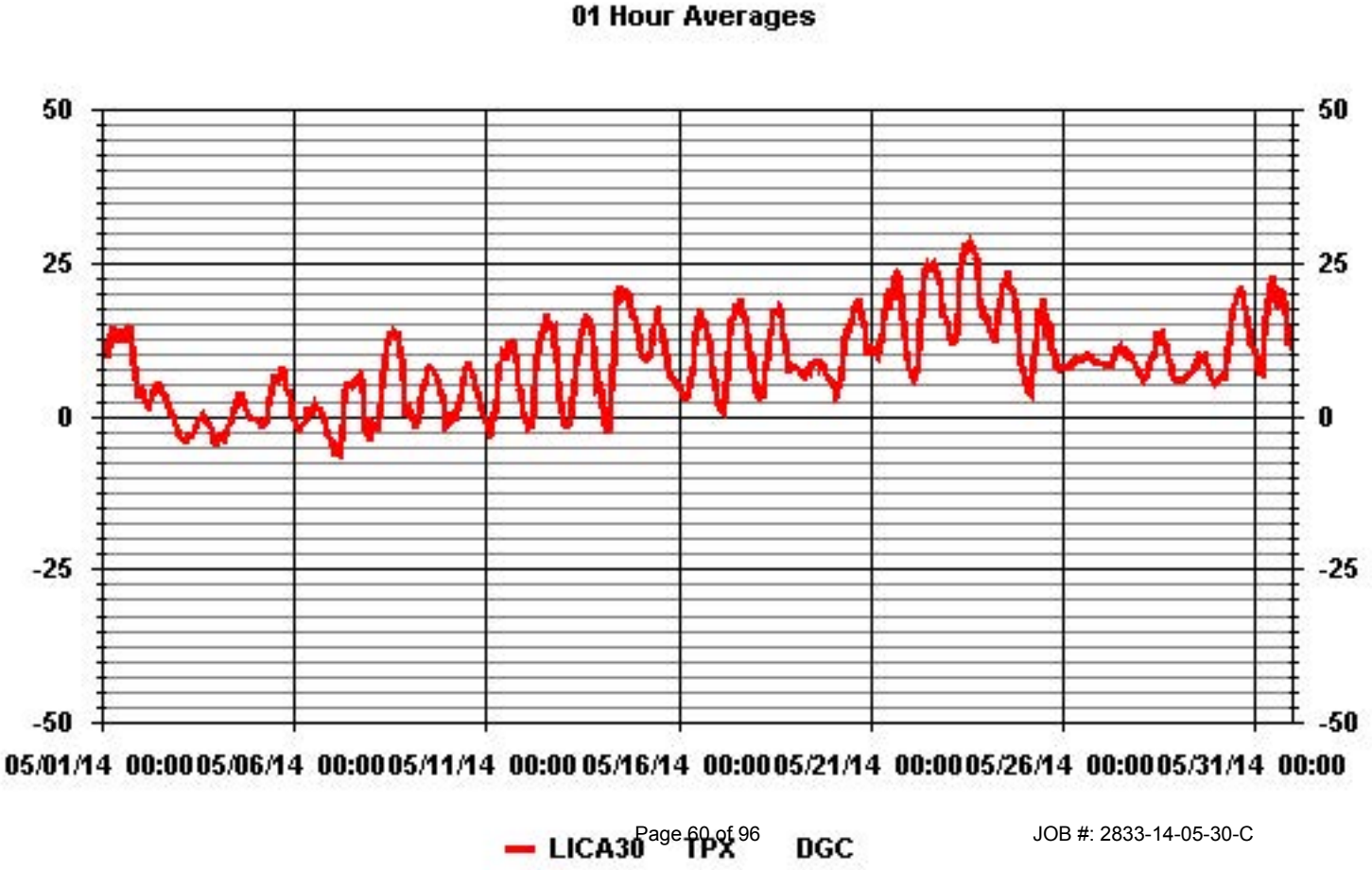
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

24 HOUR AVERAGES FOR MAY 2014



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-5.8	°C	@ HOUR(S)	4	ON DAY(S)	7
MAXIMUM 1-HR AVERAGE:	28.6	°C	@ HOUR(S)	14	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	21.0	°C			ON DAY(S)	23
					VAR-VARIOUS	
OPERATIONAL TIME:					744	HRS
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	7.17		MONTHLY AVERAGE:		8.68	°C



JOB #: 2833-14-05-30-C

Precipitation

Lakeland Industry & Community Association - Maskwa Site

MAY 2014

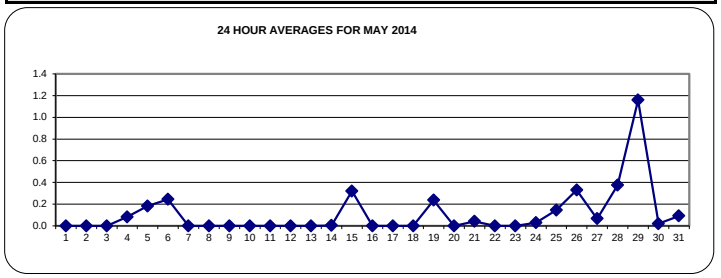
PRECIPITATION hourly averages in millimeter

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	0.0	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	0.1	0	0	0	0.1	0.2	0	0	0	0.1	0	0	0	0	0.1	0.2	0.2	0.1	0.4	0.5	0.5	0.1	24
5	0.7	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	2.9	2.9	0.2	24
6	2.2	1.2	0.1	0.1	0	0	0	0	0.1	0.3	0.5	0.8	0.3	0.2	0.1	0	0	0	0	0	0	0	0	0	2.2	0.2	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	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	0.1	0.1	0.0	24
15	0.4	0.3	0.2	0.4	0	0	0.1	0	0	0	0	0	0.4	0.6	0.1	1.2	3.2	0.7	0	0	0	0	0.1	0	3.2	0.3	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
19	0	0	0	0.8	1.9	1.4	0.5	0.6	0.1	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.9	0.2	24
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
21	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0.7	0	0	0	0	0	0	0	0	0	0	0.7	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	24
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
24	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	0.7	0.0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	2.6	0.8	0	0	0	0	0	2.6	0.1	24
26	0	0.1	0.1	0	0	0.2	3.1	1.9	0.3	0.1	0.3	0.4	0.3	0.2	0.2	0	0.3	0.1	0	0.1	0	0	0.1	0.1	3.1	0.3	24
27	0.1	0	0	0.1	0	0	0	0	0	0	0	0.6	0.4	0.2	0.2	0	0	0	0	0	0	0	0	0	0.6	0.1	24
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3.3	2.2	1.1	1.4	3.3	0.4	24
29	0.1	0	0	0	0.5	1.4	5.9	2.9	3.3	1.6	***6.2***	4.8	0.3	0	0	0.5	0	0	0	0	0.3	0	0	0	***6.2***	***1.2***	24
30	0	0	0.1	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.0	24
31	0	0	0	0	0	0	0	0	0	0	0	0	0	1.2	1	0	0	0	0	0	0	0	0	0	1.2	0.1	24
HOURLY MAX	2.2	1.2	0.2	0.8	1.9	1.4	5.9	2.9	3.3	1.6	6.2	4.8	0.4	1.2	1	1.2	3.2	2.6	0.8	1	3.3	2.2	1.1	2.9			
HOURLY AVG	0.1	0.1	0.0	0.1	0.1	0.1	0.3	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.2			

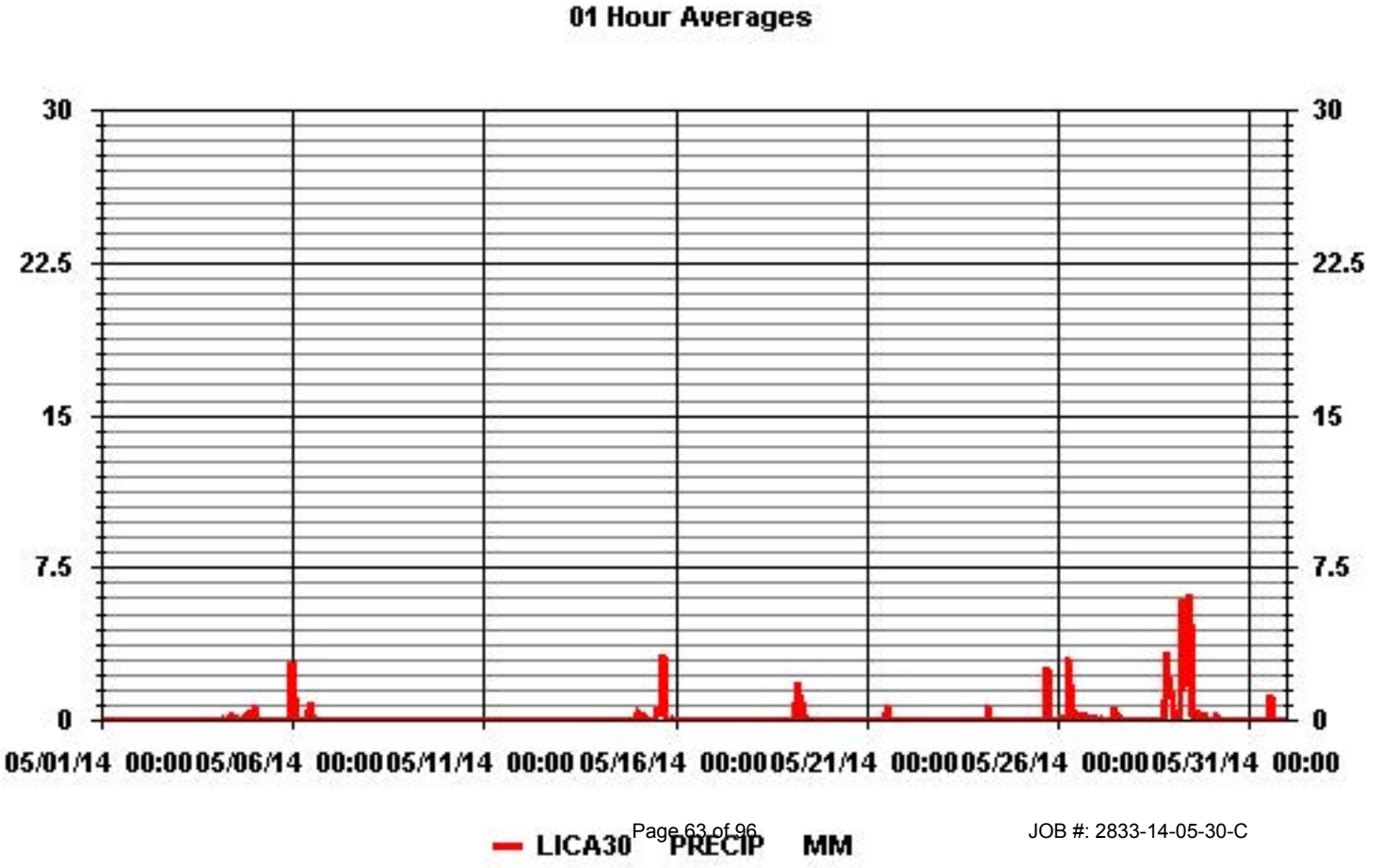
STATUS FLAG CODES

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



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:		6.2	MM	@ HOUR(S)	10	ON DAY(S)	29
MAXIMUM 24-HR AVERAGE:		1.2	MM			ON DAY(S)	29
MONTHLY TOTAL	77.8 MM					VAR-VARIOUS	
						VAR-VARIOUS	
				OPERATIONAL TIME:		744	HRS
				AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.51			MONTHLY AVERAGE:		0.11	MM



JOB #: 2833-14-05-30-C

Relative Humidity

Lakeland Industry & Community Association - Maskwa Site

MAY 2014

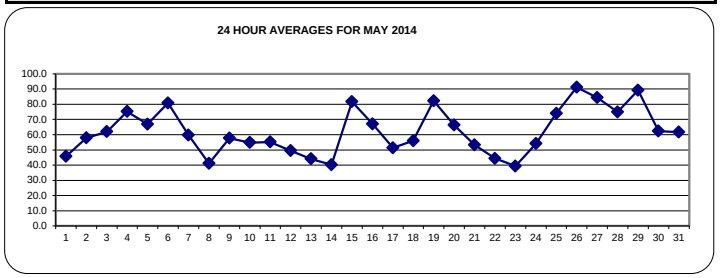
RELATIVE HUMIDITY (RH) hourly averages in %

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	31	30	35	42	47	49	49	49	58	61	59	55	47	50	56	46	39	29	26	32	41	48	56	61	61	45.7	24
2	63	69	73	77	73	62	51	48	49	50	47	45	46	48	50	50	51	53	58	60	61	64	71	69	77	57.8	24
3	66	65	66	65	66	66	64	62	61	61	58	57	56	55	56	55	57	58	60	62	62	65	71	73	73	62.0	24
4	69	68	70	80	83	82	78	76	76	75	70	66	63	66	61	63	68	72	78	86	88	89	89	89	89	75.2	24
5	90	90	90	90	90	90	89	85	77	71	67	59	54	53	44	41	40	39	41	42	43	52	79	88	90	66.8	24
6	90	89	88	88	89	88	86	82	81	79	80	81	81	77	77	74	72	69	70	72	75	81	84	85	90	80.8	24
7	86	87	87	86	86	83	74	62	49	46	44	43	45	41	41	41	39	37	38	45	56	68	73	77	87	59.8	24
8	65	57	59	60	59	55	52	46	38	29	24	22	21	22	22	23	24	23	27	32	40	57	64	65	65	41.1	24
9	73	75	78	79	82	80	76	64	58	51	45	41	40	39	39	39	41	43	45	50	54	57	64	73	82	57.8	24
10	75	75	69	72	76	74	68	58	49	43	38	32	28	28	30	35	38	44	47	54	61	68	74	79	79	54.8	24
11	83	86	88	89	86	81	74	61	47	42	36	36	36	35	31	30	33	31	36	40	51	55	63	73	89	55.1	24
12	75	79	84	84	84	79	64	59	51	44	39	30	27	25	22	23	26	27	27	33	40	47	56	64	84	49.5	24
13	69	71	76	72	71	67	58	48	37	31	28	26	26	24	23	23	24	26	27	31	43	56	53	47	76	44.0	24
14	48	59	72	74	76	68	58	46	33	24	***20***	21	21	24	24	23	24	24	28	32	32	33	39	61	76	40.2	24
15	83	88	91	91	91	90	88	84	74	69	58	55	63	77	75	81	88	89	89	88	88	87	87	87	91	81.7	24
16	86	85	85	85	85	84	82	79	73	69	59	52	46	42	42	45	44	44	51	58	66	76	83	88	88	67.0	24
17	90	91	91	91	91	90	74	51	40	35	35	29	27	28	27	24	24	27	32	35	43	54	57	45	91	51.3	24
18	56	62	64	63	62	61	56	55	48	46	45	40	41	42	43	42	49	57	61	65	68	71	72	75	75	56.0	24
19	79	81	80	86	88	90	90	90	88	88	84	80	75	72	72	75	78	75	78	81	82	86	87	89	90	82.3	24
20	88	91	91	92	91	91	84	73	63	55	56	52	51	48	46	44	43	43	46	49	58	75	81	80	92	66.3	24
21	67	65	67	69	70	68	65	64	59	52	45	60	46	52	55	38	27	27	28	32	43	52	62	66	70	53.3	24
22	73	77	78	75	76	75	69	49	31	24	22	22	24	24	24	24	26	26	28	32	41	46	48	51	78	44.4	24
23	51	59	63	63	62	61	51	40	36	34	27	23	22	21	***20***	21	22	23	25	33	40	44	48	54	63	39.3	24
24	58	65	70	70	78	89	83	72	61	52	42	36	33	28	30	38	36	34	35	39	49	61	69	73	89	54.2	24
25	76	81	87	90	91	83	76	70	60	52	51	46	45	48	71	62	57	82	89	89	92	92	92	92	92	73.9	24
26	92	91	92	91	91	89	90	91	90	90	90	90	91	90	90	90	91	91	92	92	***93***	***93***	***93***	***93***	***93***	***91.1***	24
27	***93***	***93***	***93***	***93***	***93***	***93***	91	88	83	79	78	84	82	81	84	75	76	78	78	77	80	82	84	87	***93***	84.4	24
28	88	88	91	90	90	86	77	71	70	68	65	57	56	55	54	60	62	67	71	75	87	90	90	90	91	74.9	24
29	91	91	91	91	91	91	92	92	92	91	91	92	90	87	87	89	86	85	85	87	89	87	87	87	92	89.3	24
30	88	88	87	89	90	88	85	76	64	55	48	43	35	37	35	34	38	47	48	51	58	67	71	74	90	62.3	24
31	75	81	84	86	88	79	68	57	49	47	39	34	36	63	67	58	43	41	46	55	59	75	72	77	88	61.6	24
HOURLY MAX	93	93	93	93	93	93	92	92	92	91	91	92	91	90	90	90	91	91	92	92	93	93	93	93			
HOURLY AVG	74.7	76.7	78.7	79.8	80.5	78.5	73.0	66.1	59.5	55.3	51.3	48.7	46.9	47.8	48.3	47.3	47.3	48.7	51.3	55.1	60.7	67.0	71.6	74.6			

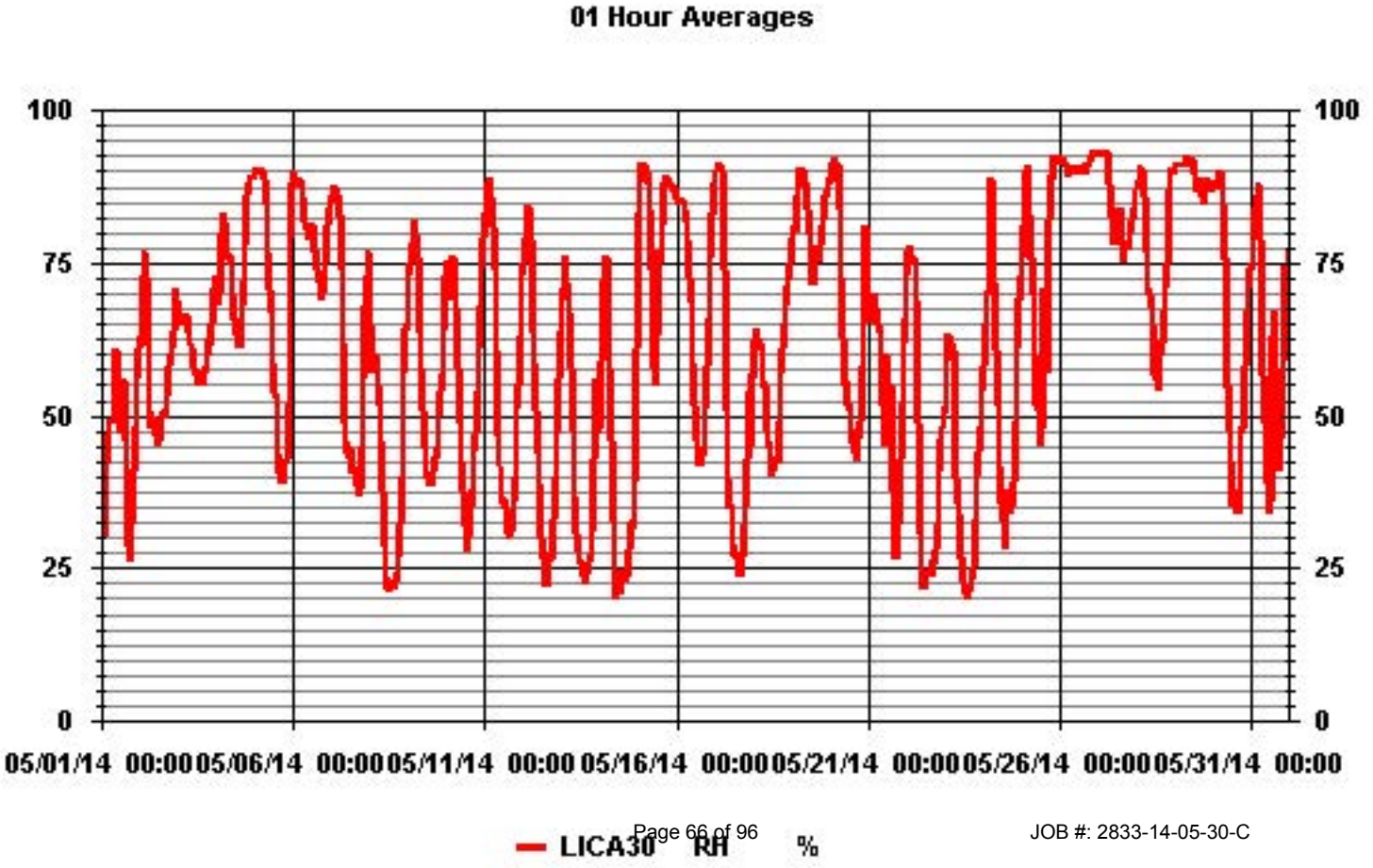
STATUS FLAG CODES

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



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	93	%	@ HOUR(S)	VAR	ON DAY(S)	26, 27
MAXIMUM 24-HR AVERAGE:	91.1	%			ON DAY(S)	26
					VAR-VARIOUS	
			OPERATIONAL TIME:		744	HRS
			AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	21.43		MONTHLY AVERAGE:		62.06	%



JOB #: 2833-14-05-30-C

Barometric Pressure

Lakeland Industry & Community Association - Maskwa Site

MAY 2014

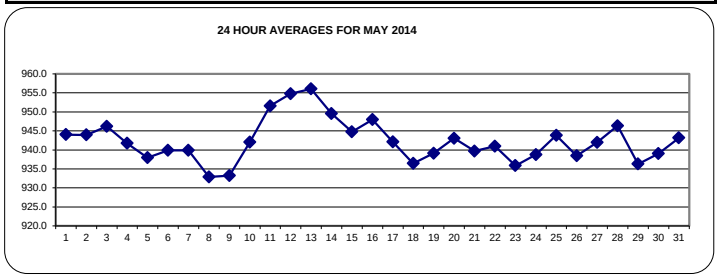
BAROMETRIC PRESSURE (BP) hourly averages in millibar

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	947	947	946	944	944	942	943	943	944	945	945	945	945	945	945	945	944	944	944	943	943	942	941	940	947	944.0	24
2	942	942	942	942	942	943	943	944	944	944	944	944	944	944	944	944	944	945	945	945	945	946	946	946	946	943.9	24
3	946	947	947	947	947	947	947	947	947	947	947	947	947	946	946	946	946	945	945	945	945	945	945	944	947	946.2	24
4	944	944	944	944	943	943	943	943	943	943	942	942	942	942	941	941	941	939	938	940	940	940	940	939	944	941.7	24
5	939	939	939	938	938	938	938	938	938	938	939	938	938	938	938	937	937	938	937	937	937	937	938	938	939	937.9	24
6	937	937	937	937	937	937	938	938	938	939	939	940	940	940	938	941	942	943	943	943	943	943	943	943	943	939.8	24
7	942	942	941	941	941	941	941	941	941	941	941	940	940	940	940	939	939	939	939	939	938	937	937	937	942	939.9	24
8	936	936	936	935	935	935	935	934	934	935	934	934	933	933	932	932	931	931	931	930	930	***929***	***929***	***929***	936	932.9	24
9	930	930	930	930	930	931	930	931	932	933	933	934	934	935	935	935	935	935	935	935	936	936	936	936	936	933.3	24
10	936	936	936	937	937	939	940	940	941	941	942	942	942	942	943	944	945	945	946	946	947	948	947	947	948	942.0	24
11	948	948	949	949	950	950	951	952	952	952	953	952	953	953	953	953	953	953	952	953	952	951	952	953	953	951.5	24
12	953	953	953	953	954	954	955	955	956	956	956	956	956	955	955	955	955	955	955	954	955	955	955	955	956	954.8	24
13	955	956	956	956	956	957	957	958	***959***	***959***	***959***	958	958	957	957	956	955	955	954	954	953	953	953	953	***959***	***956.0***	24
14	953	952	952	951	951	951	951	952	952	952	951	951	950	950	949	948	948	948	947	946	946	946	946	946	953	949.5	24
15	945	945	944	944	944	944	944	944	944	944	943	943	944	944	943	944	944	945	946	946	947	947	948	948	948	944.8	24
16	949	949	949	949	949	948	950	950	950	950	950	950	949	949	948	948	947	946	946	946	945	945	945	944	950	948.0	24
17	944	944	944	943	943	943	943	944	944	944	944	944	943	942	942	941	941	941	940	940	939	939	939	939	944	942.1	24
18	938	937	937	937	936	937	937	937	937	937	936	936	936	936	936	936	936	936	936	936	936	936	936	936	938	936.4	24
19	936	936	936	936	937	937	937	937	938	938	939	939	940	940	940	940	941	941	941	941	942	942	942	942	942	939.1	24
20	943	943	943	942	942	943	944	944	945	945	945	945	944	944	944	943	943	942	942	942	942	942	941	940	945	943.0	24
21	940	940	940	940	939	940	940	941	940	940	941	940	940	940	939	939	939	939	939	939	939	939	939	940	941	939.7	24
22	940	940	940	941	941	941	941	942	943	943	943	942	942	942	942	941	941	941	940	940	940	939	939	939	943	941.0	24
23	938	938	937	937	937	937	938	938	938	938	938	937	937	936	935	935	935	934	934	934	933	933	932	931	938	935.8	24
24	933	934	935	935	936	936	937	937	938	939	939	939	939	940	940	940	941	941	942	942	941	941	942	943	943	938.8	24
25	943	943	943	944	944	945	945	945	946	946	946	945	945	944	944	944	944	944	943	942	942	942	942	941	946	943.8	24
26	941	941	941	940	939	939	939	939	939	939	938	938	938	938	938	938	935	936	937	938	938	938	938	938	941	938.5	24
27	938	938	938	938	939	939	939	940	940	941	942	942	942	943	943	944	944	944	945	945	945	946	946	946	946	942.0	24
28	946	946	946	946	947	947	947	947	948	948	948	948	948	947	946	947	946	946	945	945	945	945	944	944	948	946.3	24
29	943	942	941	940	939	939	938	938	936	936	935	935	934	934	933	933	933	933	934	934	934	935	936	936	943	936.3	24
30	936	937	937	937	936	937	937	938	939	939	939	939	939	940	940	940	940	941	941	941	941	941	941	941	941	939.0	24
31	941	941	942	942	942	943	944	944	944	945	944	944	944	944	943	943	943	943	943	943	943	943	943	944	945	943.1	24
HOURLY MAX	955	956	956	956	956	957	957	958	959	959	959	958	958	957	957	956	955	955	955	954	955	955	955	955			
HOURLY AVG	942.0	942.0	942.0	941.8	941.8	942.0	942.3	942.6	942.9	943.1	943.1	942.9	942.8	942.7	942.3	942.3	942.2	942.2	942.1	942.1	942.0	942.0	942.0	941.9			

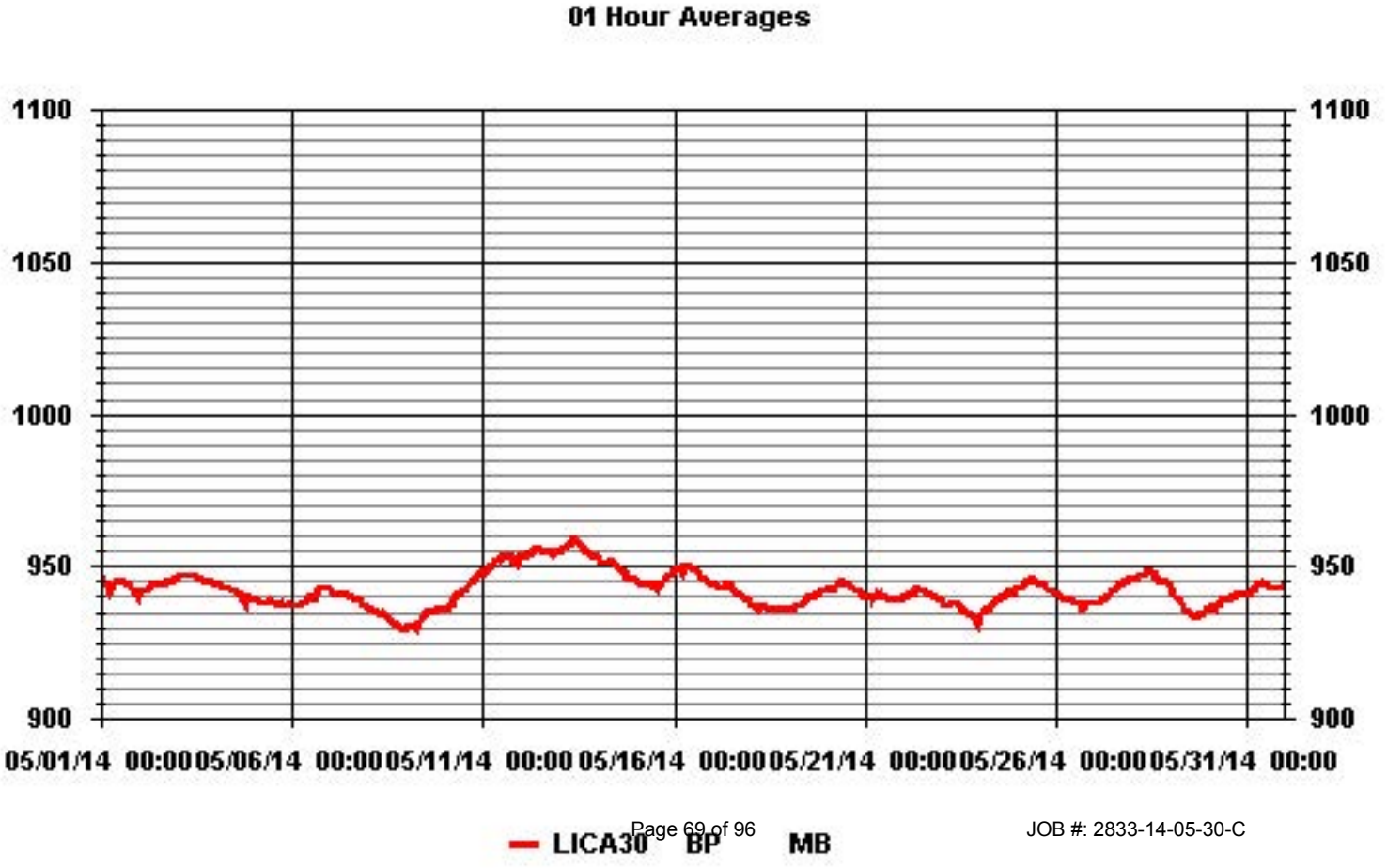
STATUS FLAG CODES

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 1-HR AVERAGE:	959	MB	@ HOUR(S)	VAR	ON DAY(S)	13
MAXIMUM 24-HR AVERAGE:	956.0	MB			ON DAY(S)	13
				VAR-VARIOUS		
OPERATIONAL TIME:					744	HRS
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	5.80		MONTHLY AVERAGE:		942.3	MB



JOB #: 2833-14-05-30-C

Vector Wind Speed

Lakeland Industry & Community Association - Maskwa Site

MAY 2014

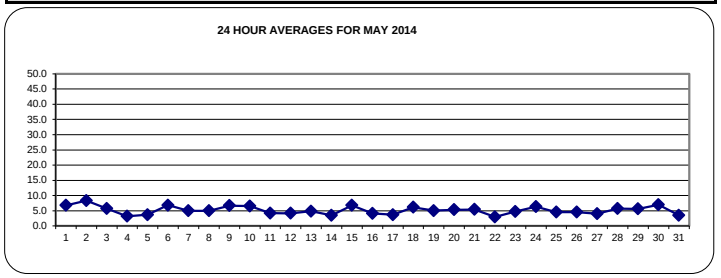
WIND SPEED (WS) hourly averages in km/hr

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	8	7.6	6.6	5.3	2.1	6.8	9.6	11.1	10.7	8.8	9.2	7.6	8.2	9.2	10	7.1	5.6	7.5	8	6.1	2.4	1.7	1.6	2.6	11.1	6.8	24
2	6.5	5.7	5.3	4.6	6.2	7.1	9.5	8.1	9.8	10	9.1	10.1	9.1	9.6	9	9.5	9.3	9.2	10.6	8.8	7.3	6.9	6.8	11.2	11.2	***8.3***	24
3	11.1	9.7	10.5	8.3	6.4	6.2	5.4	5.3	4.8	5.4	5.4	6	5	6.8	9	5.6	6.9	5.6	4.2	3.1	3.1	2.5	0.8	0.3	11.1	5.7	24
4	0.5	1.3	1.5	3.1	1.3	1.9	3	3.7	5.1	3.9	4.9	4.7	3.6	4.7	3.3	2.8	1.9	3.4	4.1	3.3	3.2	3.6	4	4.3	5.1	3.2	24
5	5	3.4	3.3	4.6	5.2	4	3.9	3.4	2.5	2.1	3.2	4.2	2.4	4.8	1.4	3.5	4.8	7.1	5.3	4.8	4.7	0.8	2.7	1.3	7.1	3.7	24
6	5.1	9	7.7	2.9	1.9	4.4	5.2	5.3	8.6	7.5	8	9.2	9.2	10.1	10.5	11.4	12.3	11.8	6.3	3.1	2.7	4	3.6	4	12.3	6.8	24
7	2.4	1.7	3.1	3.6	3.9	5.5	6.1	6	7.7	7.4	7.3	9.7	8.7	8.8	8.5	7.3	6	4.8	3.4	1.2	1.7	2	1.8	0.7	9.7	5.0	24
8	6	7.2	6.3	5.9	6.8	6.2	5.9	7.5	8	6.7	5.6	6.1	6.3	6.8	4.1	4	3	0.4	3.7	3.5	2.1	0.2	0.7	6.5	8.0	5.0	24
9	9.1	9.6	8.7	7.5	4.4	4.8	7.2	6.3	8.1	8.6	8.6	8	8.9	8.6	9.1	7.8	5.9	7.1	5.7	5.6	3.7	2.6	3.2	1.3	9.6	6.7	24
10	1.7	2.5	4.6	4.7	6.1	6.4	6.5	7.2	7.6	8.4	8.2	9.1	9.5	8.9	9.8	9.3	9.4	8.9	7.8	6.2	3.6	3	3.9	3.2	9.8	6.5	24
11	4	2.3	1.8	2.7	2.9	2.8	2.4	4.1	6.9	6.2	7.9	6.2	6.7	5.5	6.1	5.5	6.4	5.3	6.1	4.1	1	1.5	1.5	0.5	7.9	4.2	24
12	0.3	0.6	1	0.3	1.7	0.6	1.8	8.7	5.1	4	4.1	7	6.2	6.3	8.4	7.6	8.8	8	6	2.7	3.6	2.5	2.1	2.6	8.8	4.2	24
13	2.5	3.1	2.4	4.1	3.7	3.3	4.3	7.1	7.6	5.3	4.3	5.2	7.1	5.7	6.3	5.6	6.4	6.6	6.2	4.1	2.8	1.5	4.7	6.5	7.6	4.9	24
14	3.6	2.2	2.2	3	0.9	1.3	3.3	2.5	2.6	2.5	3.3	2.7	3.6	3.2	3.2	5.1	5.9	5.6	5.4	3.5	4.3	4.7	3	6	6.0	3.5	24
15	2.9	1.5	4.2	0.9	3.8	1.7	2.3	4.2	5.6	6.5	9.5	9.5	7.2	8.6	8.7	6.9	7.5	8.8	8.1	8.6	10.5	12.2	***12.4***	10.7	***12.4***	6.8	24
16	10.2	8.5	8.4	6.4	5.1	6.1	5.3	5	6	6.5	4.3	3.5	2.2	4.7	3.9	2.9	2.5	1.7	1.1	1.6	1.4	1.2	0.1	0.7	10.2	4.1	24
17	1.3	0.6	1.2	0.6	1.4	2.3	2.7	4.8	5.9	5.3	7.9	4.6	5.6	1.8	2.6	3.4	6	6.1	5.4	4.1	3.6	2.2	2.8	6.1	7.9	3.7	24
18	4.1	4.1	5.2	4.3	4.6	4.4	4.1	4.7	4.7	5.7	6.3	6.4	9.2	8.6	11.1	10.8	9.6	10.2	7.7	7	3.3	3.3	3.2	4.5	11.1	6.1	24
19	5.1	4.9	6.1	7.8	8	7.3	5.2	4.8	6.8	7.2	7.9	8.7	8.8	7.4	7.2	6	5.2	0.7	0.5	1.3	1.9	0.4	0.8	0.9	8.8	5.0	24
20	1	1.8	1	0.5	0.9	0.3	2.7	6.4	7.2	8.6	7.9	9.1	8.4	9.4	9	9.6	8.3	9	8.3	6.3	3.3	1.7	2.5	4.9	9.6	5.3	24
21	6.5	5.9	5.7	5.9	7	7	8.2	6.5	8.7	7.6	7.3	6.6	5.8	6.9	5	6	6.2	5.6	4.9	3.8	1.5	0.4	0.4	0.7	8.7	5.4	24
22	1.3	1.7	0.5	0.1	0.3	0.6	1.8	2.9	2.6	3.2	3.3	3.4	8.2	4.9	3.1	2.8	7.4	4.9	4.5	3.1	2	2.5	2.4	2.7	8.2	2.9	24
23	3.3	2.1	1.9	3	3.2	2.7	2.7	1	3.6	4.7	3	5	7.4	7.3	8.3	9.1	7.6	9.9	7.8	3.9	3.9	4.2	4.3	4.4	9.9	4.8	24
24	6.2	7	6	5.7	2.7	4.1	7.3	8	6.6	7.5	7.2	8.6	9.1	8.4	9.1	9.3	7.8	6.7	6.7	6.4	3.4	3.5	1.9	2	9.3	6.3	24
25	1.5	0.6	1.2	1.8	2.6	4.4	5.8	8.8	8.6	5.5	6.3	6.3	7.8	2.5	9.9	9.2	6.2	3.9	3	2.2	2.2	2	2.8	3.5	9.9	4.5	24
26	3.8	1.7	1.4	3.3	4	3.5	4.3	4.8	4.9	6.2	6.8	6.2	6	6.4	5.7	4.6	4.8	4.7	5.1	5.3	4.9	4.1	3.1	3.4	6.8	4.5	24
27	3.4	3	2.7	1.9	2.3	3	3.8	4.8	4.9	5.2	5.2	5	3.8	5	6.1	5.8	5.7	5.5	4.7	4.6	3.6	3.2	1.5	1.1	6.1	4.0	24
28	2.1	1.4	1.7	0.8	1.8	2.7	6	6.3	3.8	4	6.7	5.2	5.6	6.5	6.3	7.8	8.6	9.3	10.8	8.5	8.9	8	9.1	5.6	10.8	5.7	24
29	6.6	6.3	7.5	6.9	5.2	5.3	5.7	5.7	7.5	7.1	3	4.1	6.8	3.1	4.4	4.1	4.2	5	4.9	5.1	7.3	8.1	6.2	4.9	8.1	5.6	24
30	5.6	6.4	3.7	4	5.9	5.4	5.2	6.3	7.4	8	8.8	9.4	10.9	10.4	10.6	11.8	11.3	8.6	6.6	5.7	4.9	2.6	3.9	3.4	11.8	7.0	24
31	3.6	2.3	4.3	4.7	3.7	2.4	4.2	3.1	2	2.6	4.5	3.7	3.2	1.5	3.5	6.4	7.5	6.8	3.3	2.3	2.9	2.4	2.3	1.1	7.5	3.5	24
HOURLY MAX	11.1	9.7	10.5	8.3	8.0	7.3	9.6	11.1	10.7	10.0	9.5	10.1	10.9	10.4	11.1	11.8	12.3	11.8	10.8	8.8	10.5	12.2	12.4	11.2			
HOURLY AVG	4.3	4.1	4.1	3.8	3.7	4.0	4.9	5.6	6.2	6.1	6.3	6.5	6.8	6.5	6.9	6.7	6.7	6.4	5.7	4.5	3.7	3.2	3.2	3.6			

STATUS FLAG CODES

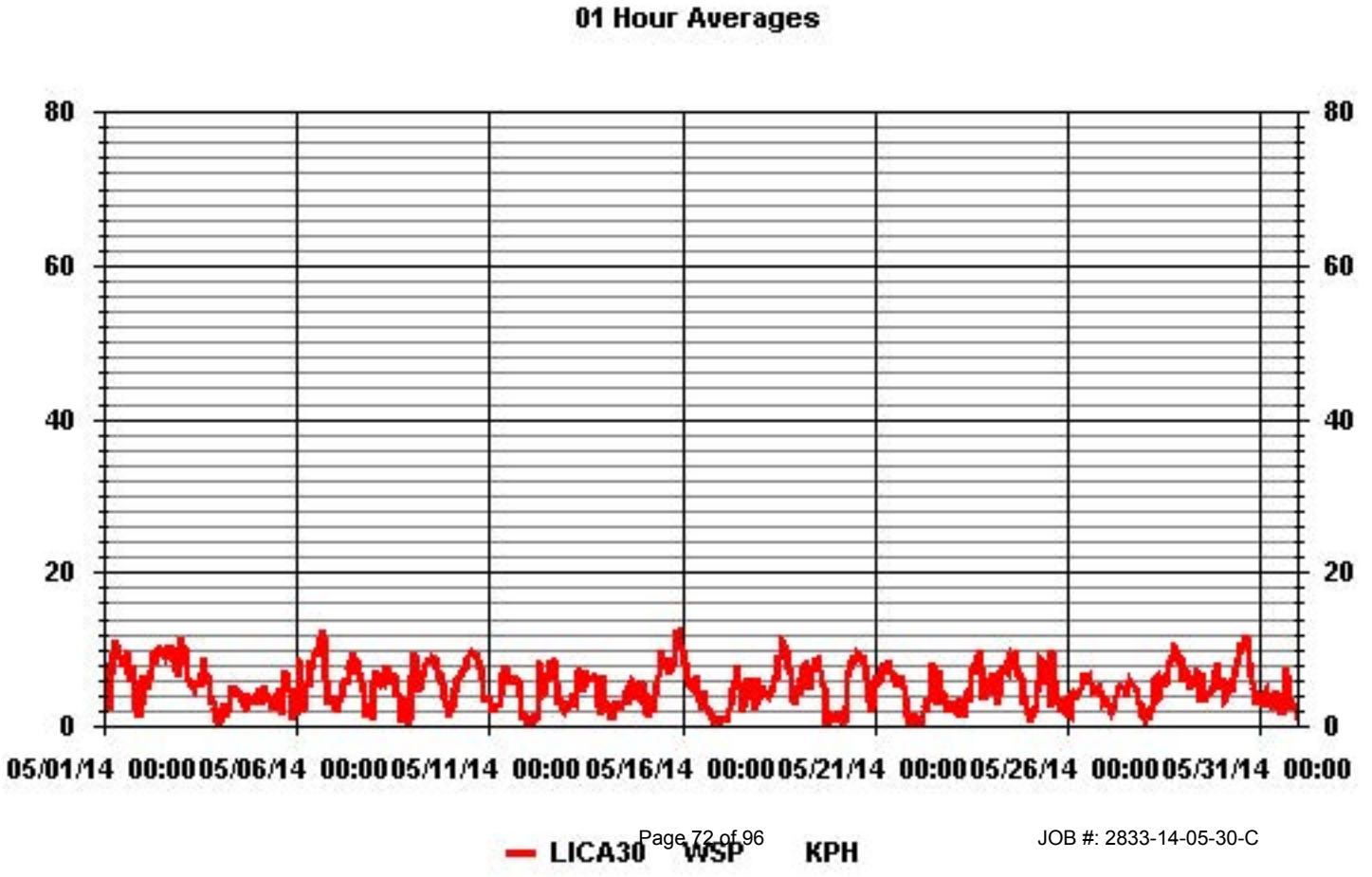
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	744						
MAXIMUM 1-HR AVERAGE:	12.4	KPH	@ HOUR(S)	22	ON DAY(S)	15	
MAXIMUM 24-HR AVERAGE:	8.3	KPH			ON DAY(S)	2	
					VAR-VARIOUS		
			OPERATIONAL TIME:			744	HRS
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	2.69		MONTHLY AVERAGE:			5.15	KPH



JOB #: 2833-14-05-30-C

Lakeland Industry & Community Association - Maskwa Site

MAY 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

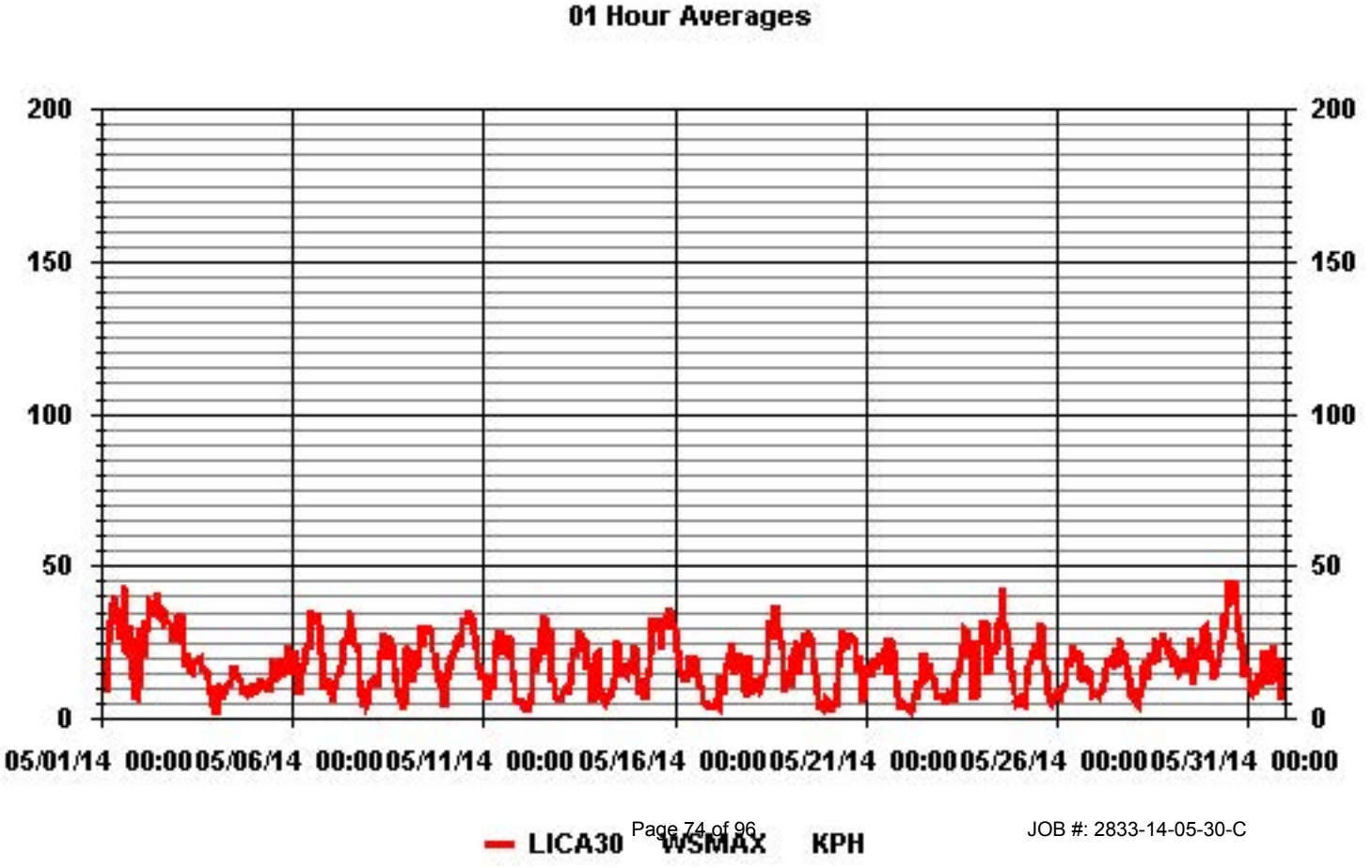
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	15.9	16.9	15.7	11.7	8.5	24.8	32	37.4	40	31.7	31.3	25.9	31.7	36.3	43.7	22.9	22.4	28.2	30.2	27.1	13.5	7.3	6.9	10.2	44	23.8	24
2	29.6	27.4	23	22.4	32.1	28.1	38.1	37.4	34.3	35.7	33.5	41.2	37.5	33.2	32.5	36.4	31.2	31.8	31.8	31.1	24.7	27.9	24.9	32.7	41	***31.6***	24
3	32.6	31.8	34.3	25.2	16.6	19.4	21.4	18.1	16.2	15.6	18.5	18.8	19.6	19.2	19.9	17.7	16.1	15.6	15.4	13	9.3	9.6	4.7	2.6	34	18.0	24
4	2.5	7.2	11.4	8.8	6	8.1	9.4	11.1	11.9	11.6	13.9	17.3	16.4	15.2	13.4	12.4	9.1	7.4	9.1	8.2	9	10.1	9.2	10.8	17	10.4	24
5	10.7	9	9.3	10.5	13.1	9.7	12.4	10.6	10	9.7	13	19.5	13.5	14.5	12.2	15.3	18.2	20	15	14.5	15.2	23.5	15.4	14.6	24	13.7	24
6	20.4	19.8	22.5	11.5	7.5	18	16.3	17.3	22.7	23.7	22.5	26.8	35.2	30.9	34	32.9	33.5	31.5	21.9	10.6	10.8	11.8	12.3	10.8	35	21.1	24
7	8.8	5.5	9.8	11.7	13.4	14.6	16.9	17.5	25	25.9	24.7	28.4	35.8	27.2	27.9	24	23.9	22.1	12.8	7.6	4.2	5.2	3.7	4.8	36	16.7	24
8	10	11.6	12.4	10.3	12.5	11.9	14.2	19	22.4	27.7	18.9	25.8	23.3	27.5	19.2	23.9	14	14.6	11	7.5	6.2	2.8	4.3	22.5	28	15.6	24
9	23.5	20.6	19.8	16.9	11.7	16.2	21.8	16.3	24.8	30.3	23.6	30.8	28.4	29	29.7	29.2	22.2	18.6	19.3	16.6	12.4	10.2	14.9	4.4	31	20.5	24
10	4.4	12.6	18.2	15.6	20.4	21.3	21.7	25	27.2	23.1	27.7	33.1	32.2	32.4	34.6	35.7	30.8	33.7	27.8	22.8	15.8	17.1	18.1	13	36	23.5	24
11	14.3	14	6.4	9.2	10.6	14.3	9.5	20	25.6	22.2	29.2	23.7	22.2	22.3	21.5	22	27	20.3	16.1	12.6	6.3	5.5	5.6	5.1	29	16.1	24
12	6.9	2.7	3.6	2.2	5.8	4.4	8.3	22.7	20.3	14.9	18.4	23	29.9	20.8	34	26.1	26.3	25.4	29.8	12.9	12.4	6.8	6.2	6.1	34	15.4	24
13	6.2	7	8.5	9.3	10.4	7.3	11.2	18.2	21	23.1	19.6	24.9	28.7	21.8	25.6	24.8	25	16.7	16.7	11	6.3	5.5	15.8	20.7	29	16.1	24
14	21.3	8.1	5.9	7.4	6	5	6.1	7	9.4	10	12.9	22.8	25.9	18.9	13.9	15.4	17.6	15.1	14.1	15	16.8	18.9	22.5	24.1	26	14.2	24
15	15.2	7.7	12.9	7.9	12.9	6.4	7.8	13.5	16.2	20.5	33.3	29.2	30	29	31.8	22.2	33	30.1	33.7	28.8	31.1	36.3	33.6	31.8	36	23.1	24
16	29.7	22.3	22.1	16.5	13.6	15.2	12.7	12.7	14.8	19.6	19.9	14	15.5	20.7	14.3	10.9	9	10.9	5.4	4.9	4.4	5	4.1	2.6	30	13.4	24
17	4.1	2.8	4.6	3.9	14.2	8.6	8.6	11.6	15.7	18.1	20.9	21.3	24.4	14.4	17.7	15.4	16.5	21.1	15.5	12.6	9.4	6.6	15.4	20.5	24	13.5	24
18	9.6	8.2	12.8	9	12	9.3	10.1	13.2	13.8	17.3	18.9	32.5	26.1	28.3	31.1	37.3	35.2	30.6	26.3	23	10.1	8.4	15.2	15	37	18.9	24
19	11.4	10.2	20.6	22.6	25.3	20	14.3	19.7	20.9	24.1	27.7	25.9	28.8	23.6	26.4	19.7	14.9	8.1	2.8	5.2	4	3.1	3.7	6.5	29	16.2	24
20	5.8	4.3	3.4	3.3	6	3.4	11.9	16.8	21.8	28.6	23.7	22.4	24.8	27.5	25.4	27.5	24.8	26.7	20.9	14.9	20.4	7.1	5.7	10.3	29	16.1	24
21	16.3	16	14.9	13.5	18.4	19.1	20	16.2	21.5	20.6	19.3	23	17.8	26.5	14	25	26	22.7	20.4	13.4	7.2	3.1	4.7	3.2	27	16.8	24
22	5.3	5.1	4.7	2.8	2.1	3.9	7.7	7.5	11.1	10.6	11.1	20.9	21	18.1	13.2	13.8	17.9	14	13.6	9.7	6.6	8	6.1	7.7	21	10.1	24
23	7.4	5.5	5.7	8	7.2	7.8	6.6	5.4	14.8	14	15.5	19.1	21.1	24	30	29.5	19.9	23.4	23.9	7.4	7.2	9	7.3	24.7	30	14.4	24
24	25.7	32	23.8	32.4	15.6	15.8	21.1	24.2	20.7	23.2	23.2	31.1	32.8	33.4	42.7	32.1	29.7	25.3	23.7	16.6	12.8	8.1	5.4	6.2	43	23.2	24
25	4.6	3.4	5.5	4.9	8	11	17.3	19.1	21.8	20.5	24.5	19.5	24.3	27.3	30.9	20.4	18.2	16.1	8.7	6.4	6.5	5.5	6.8	7.8	31	14.1	24
26	8.7	7.5	7	8.3	10.4	11.2	17.1	19.3	16.6	19.3	23.6	21.9	20.5	21.2	22	13.8	11.8	17.3	16.4	16.5	16.1	12.1	8.1	8.6	24	14.8	24
27	8.4	8.1	7	7.9	8.7	11.7	16.7	18.7	19	18.4	18	20.1	18.8	23.3	17	26	21.9	22.8	17.5	21.7	18.4	13.7	7.8	7	26	15.8	24
28	9.9	8.6	5	4.3	6.6	10.2	17.5	18.8	14	12.7	21.3	19.3	17.4	26.2	20.7	20.3	24.2	24.7	28.3	25.6	23.7	24.5	22.1	20	28	17.7	24
29	16.7	21.9	21.3	17.5	14.7	15.4	18.8	16.5	19.8	18	15.3	17.1	26.5	10.8	14.7	19.7	22.6	23.2	19.2	20.6	29.5	30.5	28.8	19.1	31	19.9	24
30	22.6	19.3	13	13.9	16.7	17.9	21.4	25.7	33	33.6	32.8	36.2	***45.4***	37.2	41.2	45.1	43.8	34.2	29	22.6	25.1	13.3	16.3	16.2	***45***	27.3	24
31	15.4	9.2	8.6	11.2	11.2	7.4	14.4	12.2	10.7	15.3	22.6	16.9	14.4	11	22.6	18.4	23.5	20.7	11.8	14.1	19.4	6.2	10.6	8.3	24	14.0	24
HOURLY MAX	33	32	34	32	32	28	38	37	40	36	34	41	45	37	44	45	44	34	34	31	31	36	34	33			
HOURLY AVG	13.7	12.5	12.7	11.6	12.2	12.8	15.6	17.7	19.9	20.6	21.9	24.3	25.5	24.2	25.1	23.7	22.9	21.7	19.0	15.3	13.4	11.7	11.8	12.8			

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:	45	KPH	@ HOUR(S)	12	ON DAY(S)	30
				VAR-VARIOUS		
OPERATIONAL TIME:					744	HRS



JOB #: 2833-14-05-30-C

LICA30
WSP / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	3.49	5.10	10.34	6.45	3.22	3.09	2.41	1.20	2.55	2.82	3.22	2.41	3.09	2.68	4.30	4.03	60.48
<	12.0	6.04	2.28	3.89	1.47	1.47	1.07	.40	2.15	2.01	2.41	.26	.40	2.15	3.36	3.49	6.18	39.11
<	20.0	.40	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.40
<	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	9.94	7.39	14.24	7.93	4.70	4.16	2.82	3.36	4.56	5.24	3.49	2.82	5.24	6.04	7.79	10.21	

Calm : .00 %

Total # Operational Hours : 744

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	26	38	77	48	24	23	18	9	19	21	24	18	23	20	32	30	450
<	12.0	45	17	29	11	11	8	3	16	15	18	2	3	16	25	26	46	291
<	20.0	3																3
<	29.0																	
<	39.0																	
>=	39.0																	
	Totals	74	55	106	59	35	31	21	25	34	39	26	21	39	45	58	76	

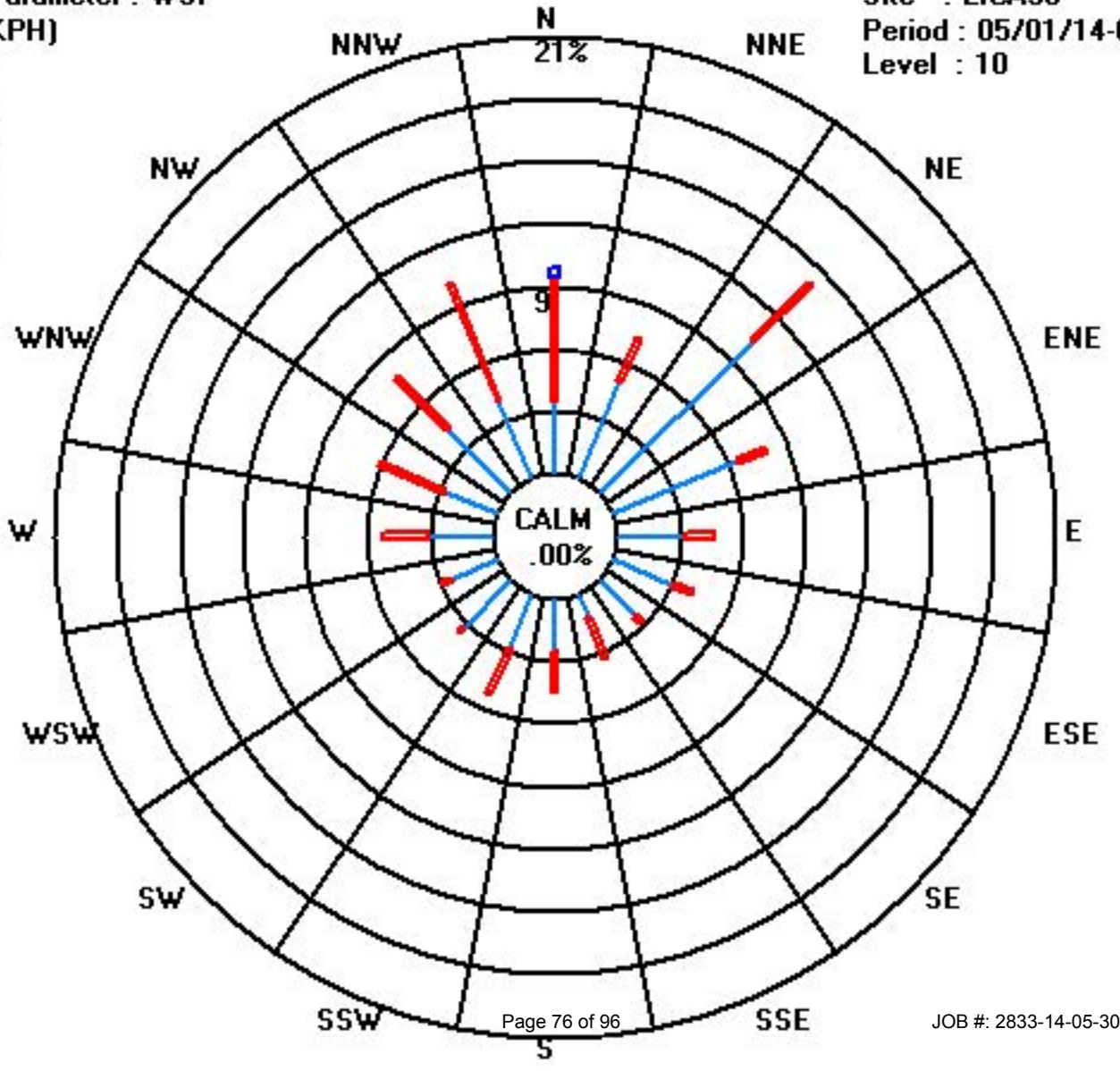
Calm : .00 %

Total # Operational Hours : 744

Logger : 30 Parameter : WSP
Class Limits (KPH)

>= 39.0
< 39.0
< 29.0
< 20.0
< 12.0
< 6.0

Site : LICA30
Period : 05/01/14-05/31/14
Level : 10



JOB #: 2833-14-05-30-C

Vector Wind Direction

Lakeland Industry & Community Association - Maskwa Site

MAY 2014

WIND DIRECTION (WD) hourly averages in degrees

MST

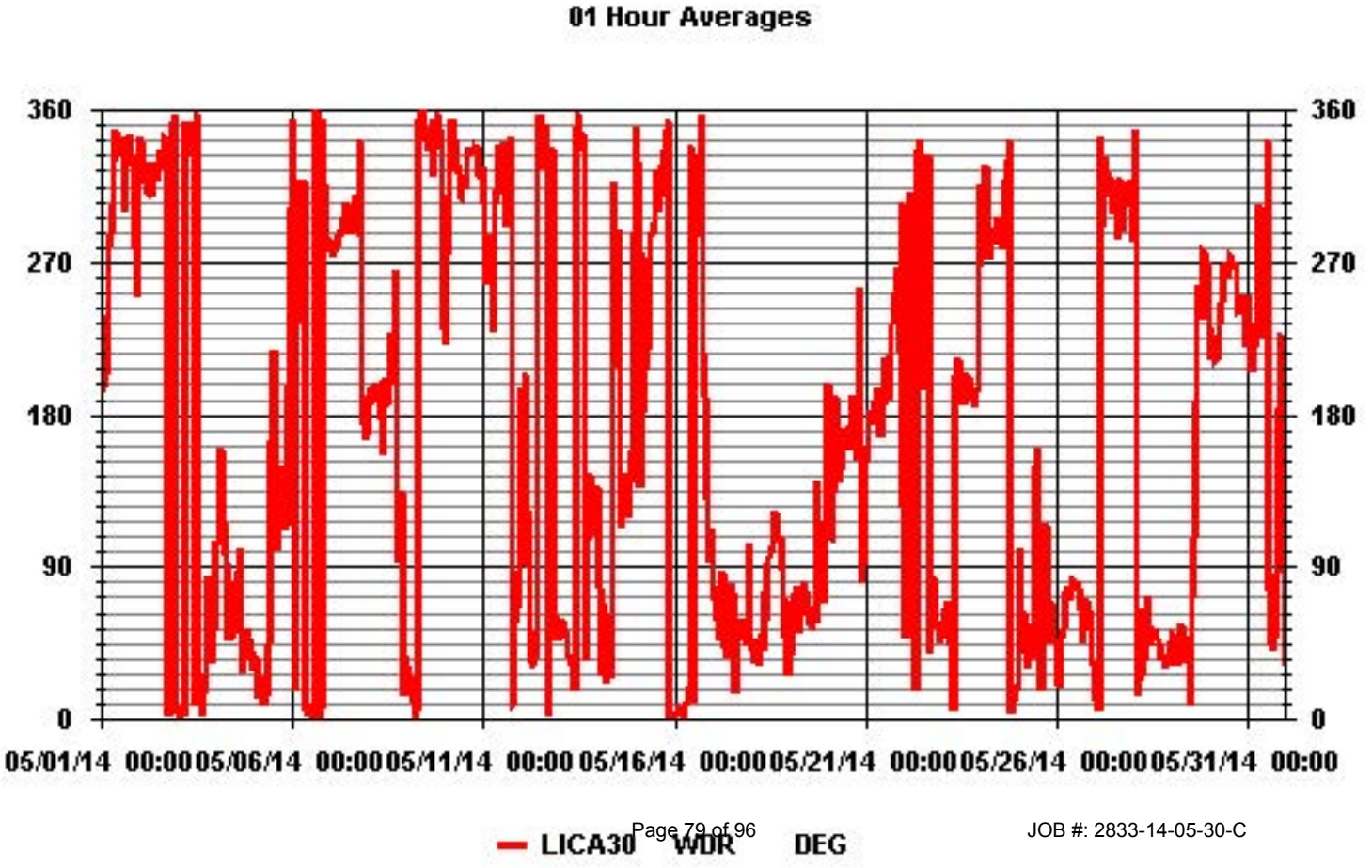
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	195	197	199	204	239	279	286	304	329	348	337	337	332	342	344	299	327	334	345	335	332	279	249	316	348	NNW	24
2	344	342	328	317	313	312	319	329	309	324	317	329	332	337	328	327	344	343	1	344	339	352	357	4	357	N	24
3	7	1	3	7	6	353	341	344	352	341	333	8	359	22	23	2	16	21	49	84	63	33	38	52	359	N	24
4	104	104	158	160	139	97	116	94	46	77	48	56	82	51	88	101	32	27	34	44	53	49	41	29	160	SSE	24
5	31	37	12	26	16	9	9	12	14	44	164	178	218	216	100	122	150	148	120	111	115	197	301	302	302	WNW	24
6	355	17	28	234	261	316	315	319	6	2	6	7	3	4	2	360	3	2	6	355	317	281	286	279	360	N	24
7	278	274	277	281	281	286	289	286	295	295	305	287	291	287	292	296	310	295	343	286	178	179	166	168	343	NNW	24
8	191	195	196	190	191	197	198	196	178	156	184	201	185	204	227	227	198	266	92	134	122	135	14	37	266	W	24
9	33	26	18	21	10	1	5	354	349	358	359	343	343	336	350	343	320	354	344	359	350	338	288	232	359	N	24
10	221	275	310	324	355	351	344	328	324	309	308	318	313	321	333	338	336	336	339	337	337	323	322	323	355	N	24
11	305	260	257	276	279	286	229	304	312	310	340	335	315	341	290	329	326	344	9	10	56	66	88	196	344	NNW	24
12	91	170	205	124	90	51	34	31	36	52	357	355	355	338	325	352	2	8	331	338	46	50	61	52	357	N	24
13	47	59	54	53	49	37	39	34	32	16	350	358	345	336	346	345	34	106	137	145	132	111	111	138	358	N	24
14	130	78	25	69	63	21	24	41	24	318	309	216	208	289	113	137	140	145	127	119	159	140	268	288	318	NW	24
15	350	331	137	276	181	209	206	218	273	285	287	293	325	314	300	309	328	336	339	348	354	2	3	2	354	N	24
16	3	4	9	6	4	2	4	8	10	19	339	9	328	287	285	306	334	357	218	192	130	92	97	112	357	N	24
17	74	75	58	75	46	73	88	44	38	38	36	42	80	76	17	17	51	50	59	53	51	43	78	104	104	ESE	24
18	42	35	35	47	40	31	51	40	75	58	92	96	100	100	120	123	119	104	108	89	55	48	71	26	123	ESE	24
19	34	37	62	74	79	63	51	61	78	81	77	75	67	58	57	66	57	141	109	117	95	68	112	182	182	S	24
20	199	109	108	133	169	191	162	140	147	159	172	164	166	159	174	191	161	159	166	153	255	80	91	127	255	WSW	24
21	152	162	183	177	178	174	188	196	193	166	170	185	213	191	191	215	233	249	248	267	240	217	305	126	305	WNW	24
22	81	48	60	183	312	103	25	16	337	331	343	202	194	251	251	333	38	68	85	77	54	57	44	58	343	NNW	24
23	56	48	65	69	57	44	28	5	203	198	214	189	187	187	200	204	202	196	196	190	184	196	193	267	267	W	24
24	314	314	300	328	303	271	279	290	287	280	294	296	291	277	284	318	329	329	342	3	12	12	20	17	342	NNW	24
25	65	101	38	64	52	30	41	36	37	56	150	152	160	95	17	33	107	115	44	62	70	52	48	46	160	SSE	24
26	42	21	18	48	53	75	78	70	73	84	82	79	77	82	79	66	44	67	71	59	65	54	34	33	84	E	24
27	12	8	5	344	290	309	332	324	320	311	320	298	311	313	283	320	296	288	303	317	302	311	319	307	344	NNW	24
28	282	349	13	28	27	66	26	35	63	73	43	55	47	52	52	48	45	36	36	36	30	37	31	46	349	NNW	24
29	39	51	50	38	32	43	56	54	36	34	49	8	35	72	107	189	254	254	244	236	277	276	271	258	277	W	24
30	233	212	226	212	213	226	233	246	269	266	270	259	274	273	270	268	270	242	243	242	245	251	220	251	274	W	24
31	247	227	206	208	220	235	281	304	263	225	273	298	342	77	43	55	40	47	86	184	228	108	122	33	342	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:	February 5, 2014
DECLINATION :	19 DEGREE FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	120.06		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	356	DEG



JOB #: 2833-14-05-30-C

Standard Deviation Wind Direction

Lakeland Industry & Community Association - Maskwa Site

MAY 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	14	16	21	19	29	27	26	33	37	33	34	37	37	35	34	33	41	35	34	35	33	24	24	33
2	32	34	35	34	32	34	37	39	38	38	42	38	39	37	38	37	33	33	25	33	34	27	25	23
3	23	25	24	23	24	27	33	32	32	34	37	32	38	27	23	36	29	29	30	44	21	17	13	14
4	8	18	25	21	28	22	25	32	28	37	38	35	52	29	52	56	34	24	19	20	22	22	21	17
5	16	24	14	20	19	22	28	25	40	47	50	52	65	29	49	45	36	30	25	21	24	41	40	41
6	31	19	24	27	43	37	34	33	22	23	25	23	26	24	26	26	23	23	20	26	34	20	32	22
7	28	31	32	25	26	26	25	28	30	34	38	31	28	32	34	37	39	38	38	38	9	11	10	13
8	7	9	11	11	12	16	18	20	28	36	53	45	52	44	51	44	60	68	23	15	16	27	28	20
9	20	16	16	13	18	21	23	29	29	34	30	39	34	36	35	35	36	31	32	28	28	36	29	24
10	17	25	31	32	25	27	34	35	35	33	40	40	37	41	37	35	35	33	37	34	33	40	41	37
11	30	22	28	27	27	33	42	41	36	39	35	39	38	40	38	40	38	36	20	18	17	27	12	31
12	39	13	14	18	11	50	20	26	39	51	61	33	49	39	35	39	28	27	35	37	19	14	17	17
13	15	17	17	16	18	15	20	23	29	55	53	52	45	43	40	45	40	32	22	21	18	23	25	26
14	41	26	26	16	44	28	9	27	38	50	41	56	44	46	46	34	24	24	18	52	31	35	43	35
15	40	28	21	62	22	36	28	27	38	32	30	31	37	33	33	33	35	34	33	29	26	24	22	24
16	23	23	19	20	22	20	22	24	24	24	48	53	70	48	57	51	42	55	32	28	31	40	51	14
17	25	30	22	18	48	53	27	23	29	39	32	54	45	56	60	49	35	29	23	21	17	19	23	25
18	23	13	16	18	15	15	24	22	35	33	31	39	32	33	28	32	31	27	27	26	20	20	27	21
19	19	17	27	27	27	24	24	28	28	28	30	29	28	26	27	28	26	54	46	13	9	25	39	12
20	27	3	40	38	47	32	27	24	31	32	27	28	33	31	30	26	31	27	24	20	29	45	10	12
21	18	22	19	18	18	21	21	30	23	30	31	28	43	40	23	37	39	38	37	29	45	25	22	19
22	10	19	21	36	12	26	44	23	44	50	50	51	27	40	50	43	25	28	26	22	15	17	17	18
23	15	14	14	14	17	18	20	57	45	36	44	51	38	32	34	28	26	23	22	13	12	12	12	25
24	42	36	34	37	43	29	28	29	36	37	40	37	35	39	39	35	39	39	37	21	17	13	19	18
25	20	38	18	18	15	14	25	25	29	50	41	40	38	49	19	22	31	29	24	18	16	18	16	16
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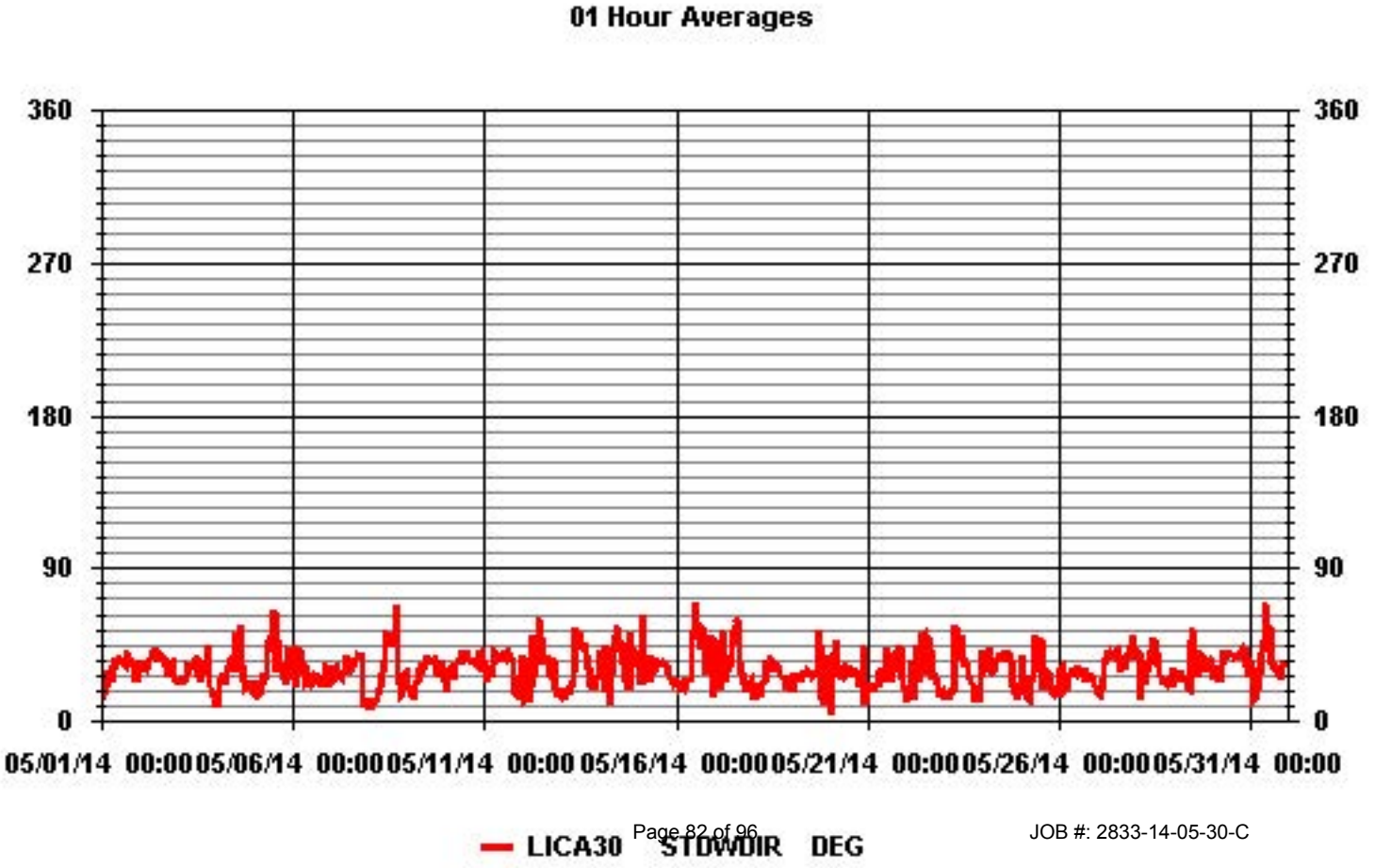
27	17	16	19	25	34	37	39	39	41	39	36	41	42	36	29	39	34	33	36	40	44	39	51	36
28	43	39	12	40	33	23	21	28	36	42	33	49	39	41	33	27	26	23	23	24	21	22	20	31
29	22	27	26	24	29	23	25	25	21	20	48	54	48	33	33	26	41	37	37	37	31	29	34	36
30	34	24	32	25	25	32	34	40	40	38	39	40	39	37	38	37	37	40	42	39	40	33	26	35
31	35	32	12	13	18	29	29	40	47	69	51	57	56	35	32	28	33	28	27	24	33	33	34	35

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- 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: 744 HRS



JOB #: 2833-14-05-30-C

Calibration Reports

Sulphur Dioxide

API 100E SO2 Analyzer Calibration

Date:	14-May-14	**Start/End Time (mst):**	8:05/13:06
Company:	LICA	**Calibration Purpose:**	Monthly Calibration
Station Name/Location:	Maskwa	**Converter Make & Model:**	NA
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application $H_2S/TRS/SO_2$:	SO2	**Cal Gas Expiry Date:**	4-Feb-18

Analyzer:

Serial Number:	508	**Range ppb:**	1000
Last Calibration Date:	29-Apr-14	**As Found C.F.**	1.020
Previous Cal High Point C.F.:	1.000	**New C.F.:**	1.011

	As found:	As left:
SLOPE:	1.248	1.276
OFFSET:	77.0	78.5
HVPS:	491	491
RCELL TEMP:	50.0	50.0
BOX TEMP:	28.1	28.1
PMT TEMP:	7.7	7.7
IZS TEMP:	45.0	45.0
TEST:	NA	NA
STABIL:	0.1	0.1
PRES:	24.9	24.9
SAMP FL:	591	591
PMT:	68	68
NORM PMT:	80.1	80.1
UV LAMP:	2626	2626
LAMP RATIO:	87.4	87.4
STR. LGT	48.1	48.1
DRK PMT:	11.5	11.5
DRK LMP:	-1.8	-1.8
Internal Span:	250	261.9

Calibrator:

Flow Meter ID's:	NA
Make & Model:	Environics 6100
Serial #:	4760
Cal Gas Cylinder I.D. # :	BLM000711
Cal Gas Conc. (ppm):	48.2

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

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4995	0.0	4995	0	1.2	NA
adjusted zero	4995	0.0	4995	0	0.2	NA
as found high	4996	78.72	5075	747.7	733.0	1.020
adjusted high	4996	78.72	5075	747.7	747.0	1.001
mid	4996	38.81	5035	371.5	368.0	1.010
low	4996	18.94	5015	182.0	178.5	1.021
calibrator zero	4996	0.00	4996	0	0.3	NA
					Average C.F.=	1.011

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.000**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.19%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-2.03%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

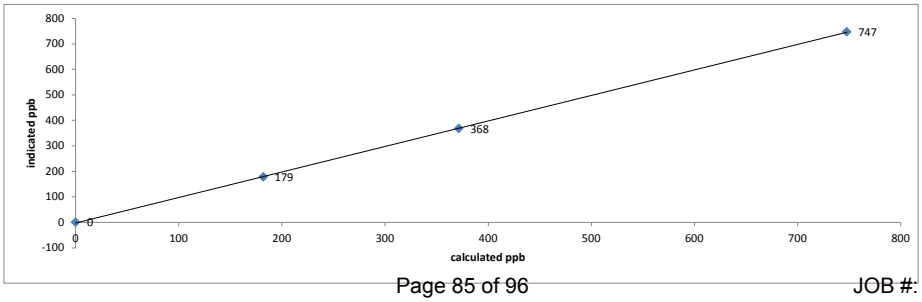
****run converter effeciency test immediately following zero adjust****

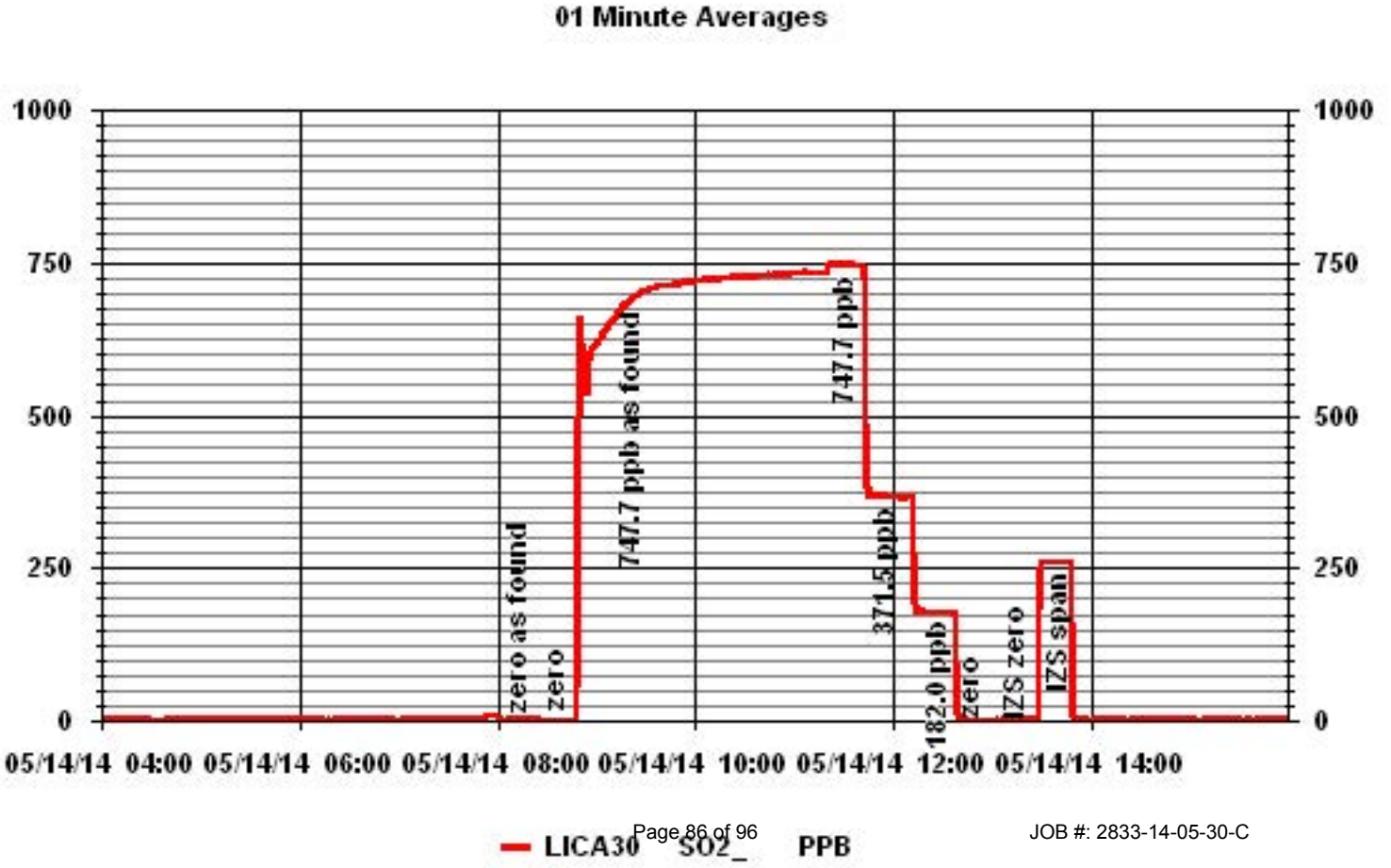
SO_2 High Point gas concentration:	na	Time gas run (mst):	na
Zero corrrected analyzer response:	na		

Comments:

Sample filter changed.

API 100E SO2 Analyzer Calibration





JOB #: 2833-14-05-30-C

Hydrogen Sulphide

API 101E H2S Analyzer Calibration

Date:	14-May-14	**Start/End Time (mst):**	8:02/10:47
Company:	LICA	**Calibration Purpose:**	Monthly Calibration
Station Name/Location:	Maskwa	**Converter Make & Model:**	NA
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	H2S	**Cal Gas Expiry Date:**	25-Dec-15

Analyzer:

Serial Number:	511	**Range ppb:**	100
Last Calibration Date:	28-Apr-14	**As Found C.F.**	0.955
Previous Cal High Point C.F.:	0.997	**New C.F.:**	1.016

	As found:	As left:
SLOPE:	1.246	1.189
OFFSET:	30.6	31.5
HVPS:	584	584
RCELL TEMP:	50.0	50.0
BOX TEMP:	30.0	30.0
PMT TEMP:	7.9	7.9
IZS TEMP:	45.0	45.0
TEST:	NA	NA
STABIL:	0.1	0.1
PRES:	29.7	29.7
SAMP FL:	672	672
PMT:	59.7	59.7
NORM PMT:	31.9	31.9
UV LAMP:	3284	3284
LAMP RATIO:	91.2	91.2
STR. LGT	19.1	19.1
DRK PMT:	29.1	29.1
DRK LMP:	6.0	6.0
Internal Span:	50.43	49.53

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	830
Cal Gas Cylinder I.D. # :	BLM005049
Cal Gas Conc. (ppm):	10.1

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	5000	38	5038
mid	5000	19	5019
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	0.5	NA
adjusted zero	5000	0.0	5000	0	0.1	NA
as found high	5000	38.00	5038	76.2	79.9	0.955
adjusted high	5000	38.00	5038	76.2	76.1	1.002
mid	5000	18.00	5018	36.2	36.0	1.009
low	5000	11.00	5011	22.2	21.5	1.036
calibrator zero	5000	0.00	5000	0	0.0	NA
					Average C.F.=	1.016

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.000**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.23%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**4.25%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

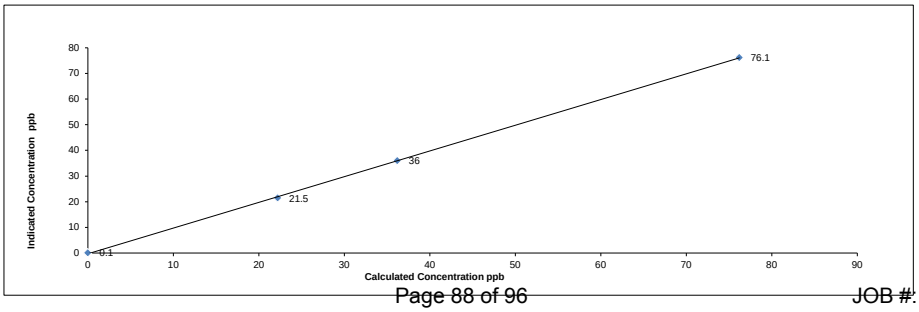
****run converter effeciency test immediately following zero adjust****

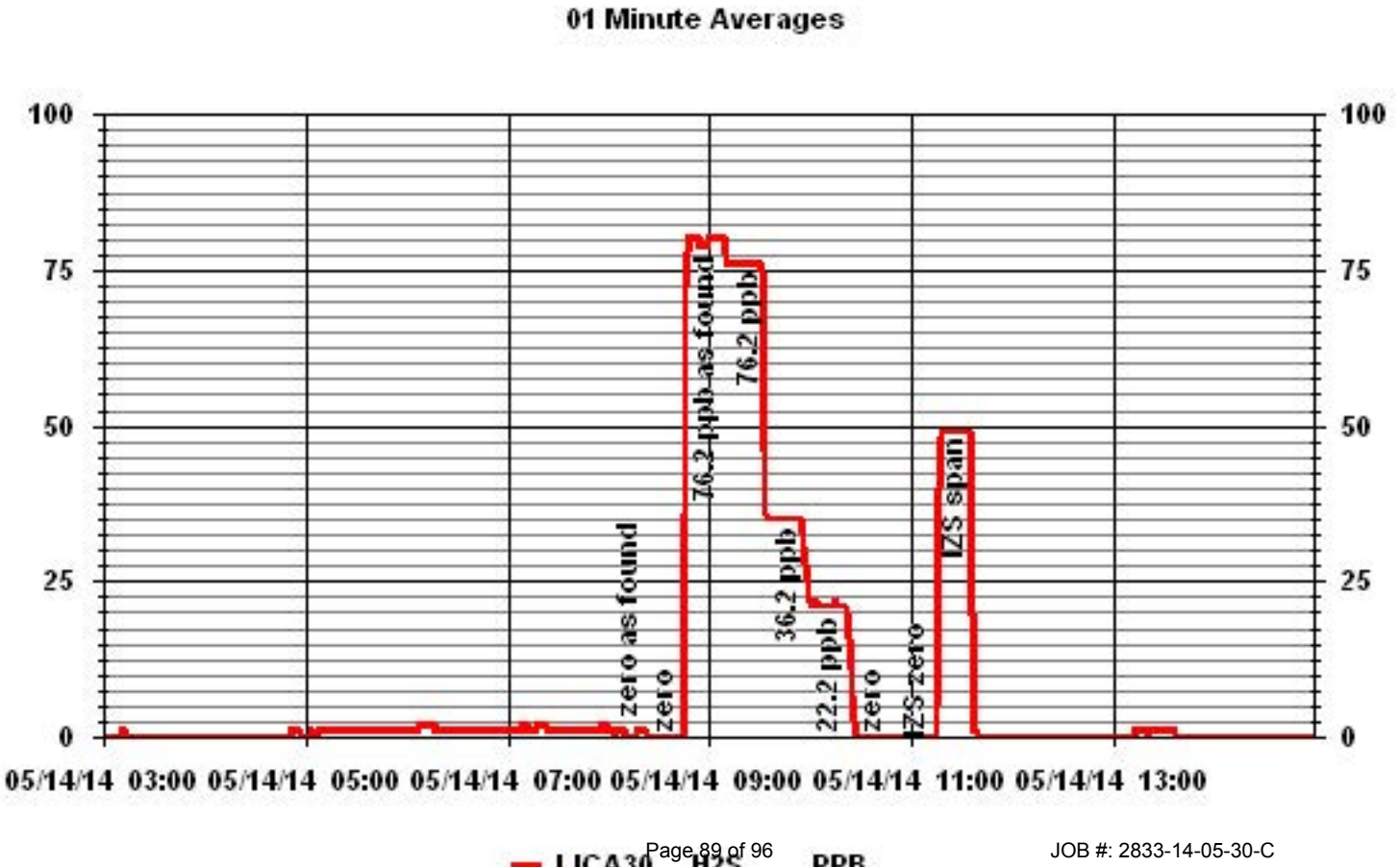
SO_2 High Point gas concentration:	na	Time gas run (mst):	na
Zero corrrected analyzer response:	na		

Comments:

Sample filter changed.

API 101E H2S Analyzer Calibration





JOB #: 2833-14-05-30-C

Total Hydrocarbons

Maxxam Thermo 51C THC Analyzer Calibration

Date:	15-May-14	**Start Time (mst):**	13:53
Company:	LICA	**End Time (mst):**	16:14
Station Name/Location:	Maskwa	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	26-Mar-17

Analyzer:

Serial Number:	436609738	**Range ppm:**	50
Last Calibration Date:	28-Apr-14	**As Found C.F.**	1.066
Previous Cal High Point C.F.:	1.004	**New C.F.:**	1.023

		As found:	As left:
	H_2 cylinder (psi):	950	950
	H_2 cylinder reg set (psi):	25	25
	Span Cylinder (psi):	1250	1250
	Span Cylinder Reg Set (psi):	28	28
	Zero Air Gen Pressure:	35	35
	measurement alarms:	none	none
	service alarms:	none	none
FID status:	cnt:	2430	2430
	rng:	1	1
	try:	3	3
	flm:	178.6	178.6
	det:	125.5	125.5
Oven Readings:	Flame:	178	178
	Filter:	125	125
	Base:	125	125
	Pump:	7.48	7.48
Voltages:	+5	4.9	4.9
	+15	14.8	14.8
	-15	-15.0	-15.0
	Internal Span:	33.11	34.72

Calibrator:

Flow Meter ID's:	NA	
Make & Model:	API 700	
Serial #:	830	
Cal Gas Cylinder I.D. # :	LL33674	
CH_4/C_3H_8 Cylinder Conc. (ppm):	601.4	202.0
CH_4 as propane/total CH_4 equivilants (ppm):	555.5	1156.9

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	2000	0	2000
high	2000	65	2065
mid	2000	33	2033
low	2000	15	2015

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppm)	(ppm)	
as found zero	2000	0.00	2000	0	0.03	NA
adjusted zero	2000	0.00	2000	0	0.03	NA
as found high	2000	65.00	2065	36.42	34.20	1.066
adjusted high	2000	65.00	2065	36.42	36.31	1.004
mid	2000	33.00	2033	18.78	18.40	1.022
low	2000	15.00	2015	8.61	8.30	1.041
calibrator zero	2000	0.00	2000	0	0.00	NA
					Average C.F.=	1.023

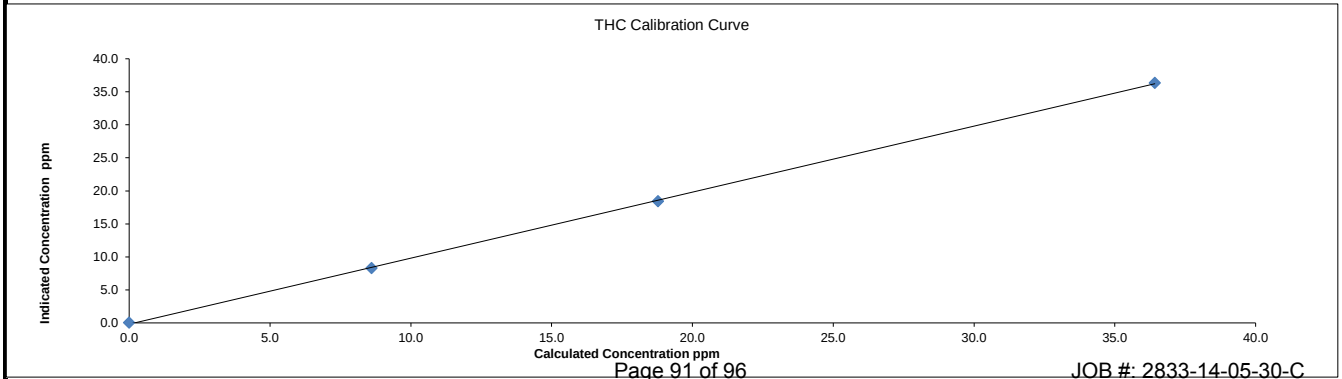
Linear Regression/Calibration Results:

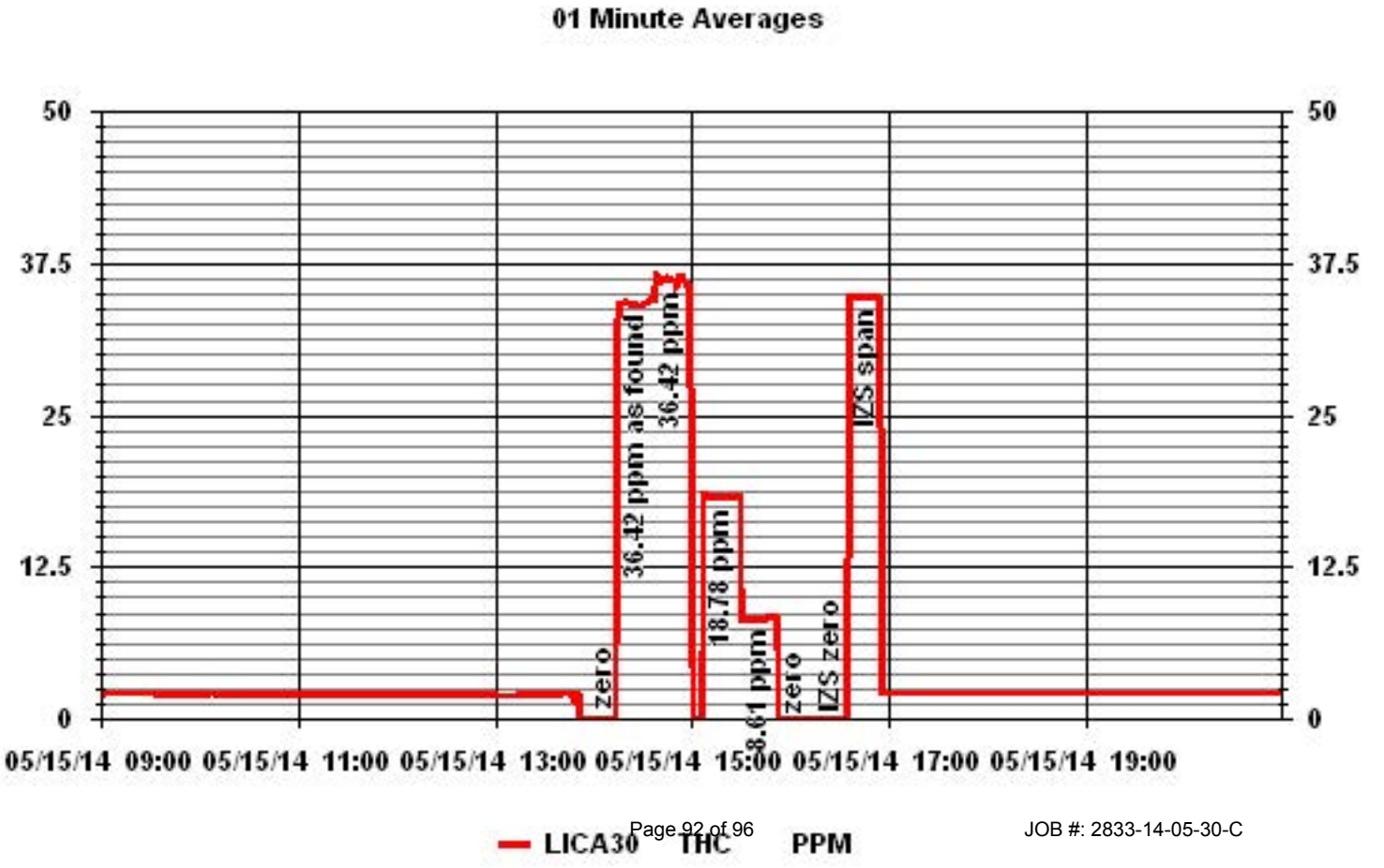
		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**0.998**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.319%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-6.15%**	**± 15%**	**PASS**

Comments:

Sample filter changed.

Thermo 51C THC Analyzer Calibration





JOB #: 2833-14-05-30-C

Nitrogen Dioxide

API 200E NOx Analyzer Calibration

Date:	14-May-14	**Start Time (mst):**	8:06
Company:	LICA	**End Time (mst):**	15:08
Station Name/Location:	Maskwa	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-18

Analyzer Serial Number:	594
Last Calibration Date:	29-Apr-14
Range ppb:	1000

Correction Factors:

	As found C.F.	Previous Cal High Point C.F.:
NO=	1.023	1.001
NOx=	1.024	1.001
NO_2=	0.993	0.996

	As found:	**As left:**
NOx SLOPE:	1.052	1.072
NOx OFFS:	3.4	-0.3
NO SLOPE:	1.049	1.069
NO OFFS:	2.3	-0.3
TEST:	NA	NA
SAMP FLW:	0.1	0.1
OZONE FL:	79	79
PMT:	15.7	15.7
NORM PMT:	1.9	1.9
AZERO:	14.9	14.9
HVPS:	750	750
RCELL TEMP:	50.4	50.4
BOX TEMP:	28.2	28.2
PMT TEMP:	6.6	6.6
IZS TEMP:	42.0	42.0
MOLY TEMP:	315.4	315.4
RCEL:	5.2	5.2
SAMP:	27.2	27.2
Internal Span:	530.5/4.47/526.1	548.8/5.63/542.2

Calibrator Flow Targets:

Make & Model:	NA
Serial #:	Environics 6100
Cal Gas Cylinder I.D. # :	BLM000711
NO Cylinder Conc. (ppm):	50.1
NOx Cylinder Conc. (ppm):	50.2

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	4995	0.0	4995	0	0	-0.5	-1.2	NA	NA
adjusted zero	4995	0.0	4995	0	0	0.5	0.3	NA	NA
as found high	4996	78.72	5075	777.2	778.7	760	761	1.023	1.024
adjusted high	4996	78.72	5075	777.2	778.7	777	778	1.000	1.001
mid	4996	38.81	5035	386.2	387.0	385	387	1.005	1.000
low	4996	18.94	5015	189.2	189.6	189	190	1.003	0.999
calibrator zero	4996	0.00	4996	0	0	-0.1	0.1	NA	NA
							Average C.F.=	1.003	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	4994	78.70	5073	0.0	779.0	781.0	1.0	0.5	-0.2	
as found NO_2	4996	78.70	5075	550.0	184.2	786.2	600.0	594.8	599.0	0.993
adjusted NO_2	4996	78.70	5075	550.0	184.2	786.2	600.0	594.8	599.0	0.993
gpt mid	4996	78.70	5075	275.0	481.5	786.2	303.2	297.5	302.2	0.984
gpt low	4996	78.70	5075	140.0	625.0	786.0	158.0	154.0	157.0	0.981
									Average NO_2 C.F.=	0.986

Linear Regression/Calibration Results:

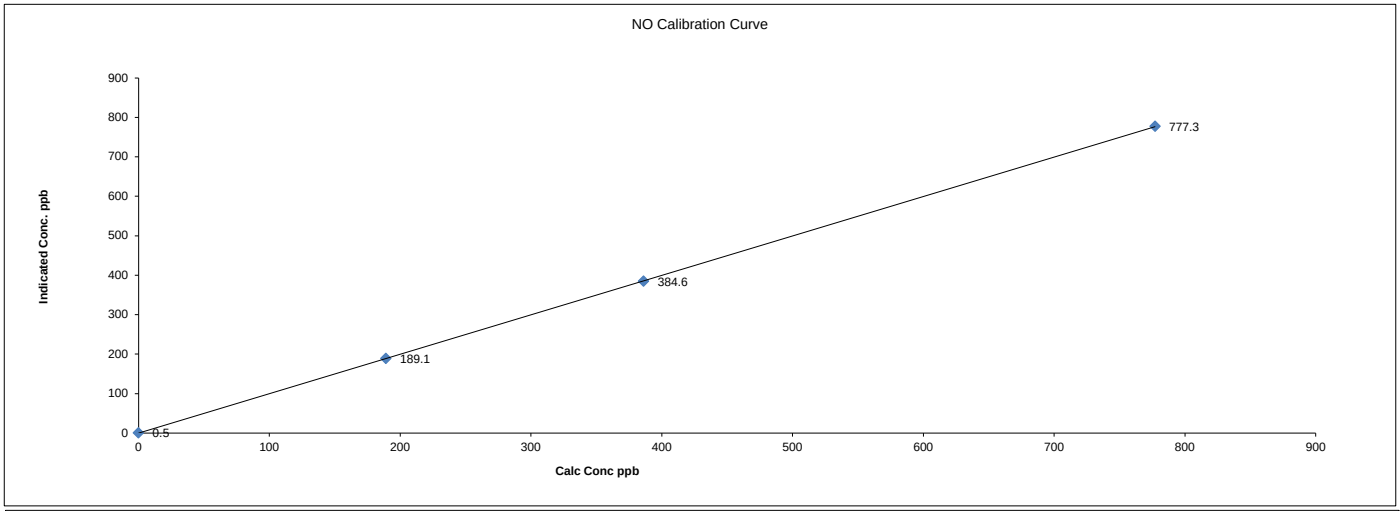
	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**0.999**	**0.999**	**1.007**	**0.85-1.15**
b (Intercept as % of full scale)=	**-0.01%**	**0.06%**	**0.09%**	**± 3% F.S.**
% change in C.F. from last cal=	**-2.22%**	**-2.27%**	**0.30%**	**+/-15%**
NO2 converter effeciency			**101.4%**	**>85%**

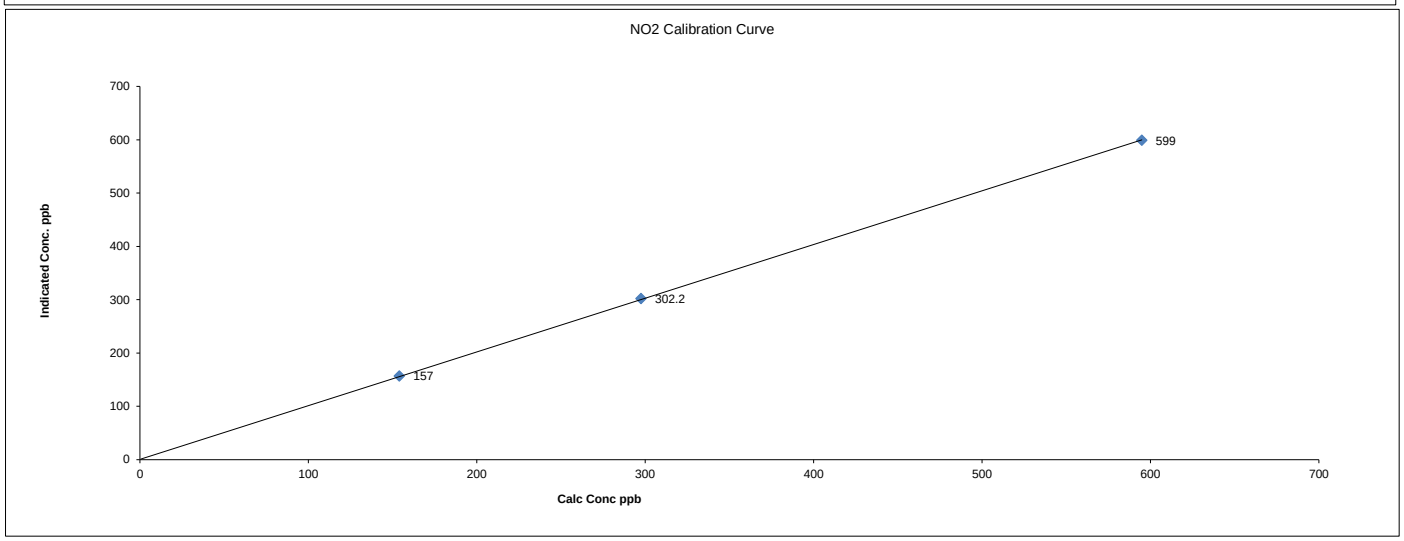
Comments:

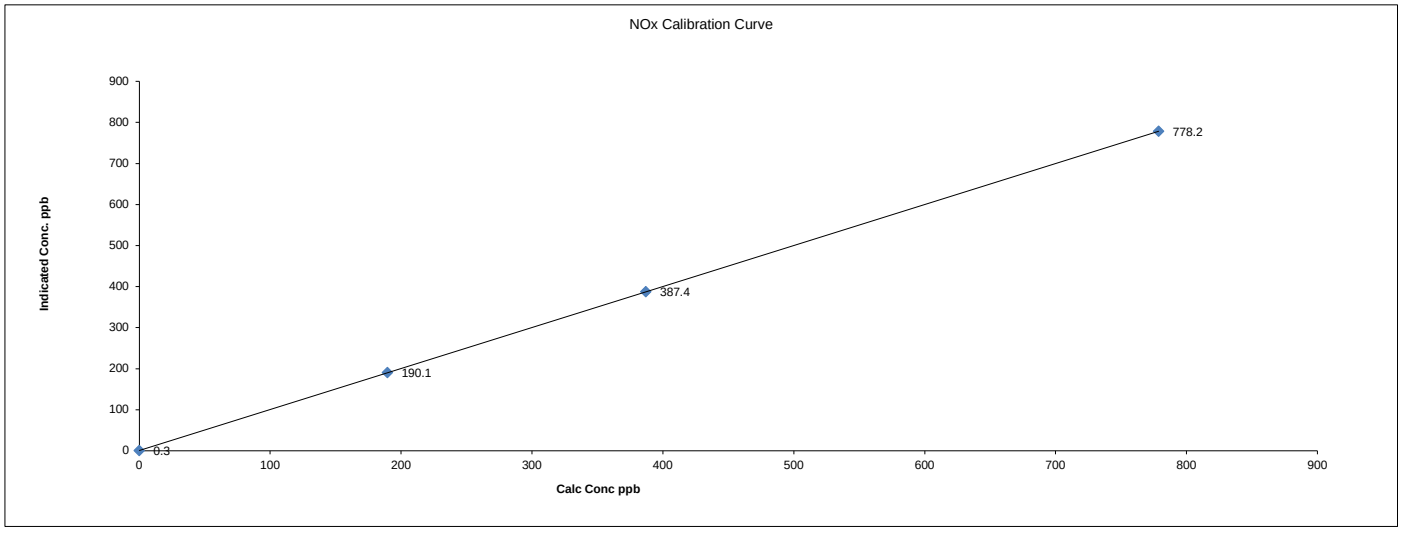
Sample filter changed.

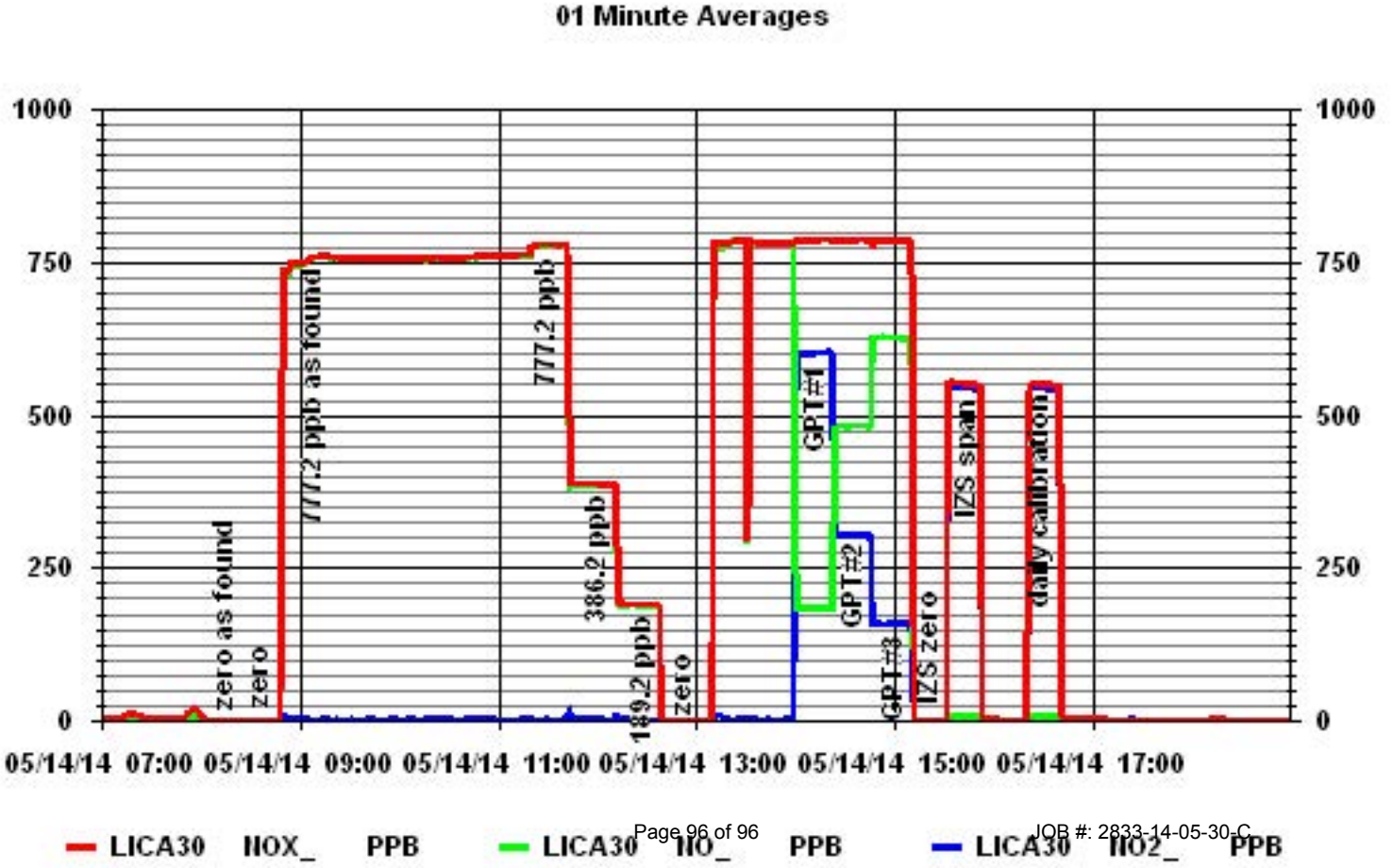
Date:	14-May-14	**Start Time (mst):**	8:06
Company:	LICA	**End Time (mst):**	15:08
Station Name/Location:	Maskwa	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-18

API 200E NOx Analyzer Calibration








01 Minute Averages
1000
750
500
250
0
zero as found
zero
777.2 ppb as found
777.2 ppb
386.2 ppb
189.2 ppb
zero
GPT #1
GPT #2
GPT #3
IZS zero
IZS span
daily calibration
05/14/14 07:00
05/14/14 09:00
05/14/14 11:00
05/14/14 13:00
05/14/14 15:00
05/14/14 17:00
LICA30 NOX_ PPB
LICA30 NO_ PPB
LICA30 NO2_ PPB

Lakeland Industry & Community Association

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

Prepared By:

June 27, 2014

Lakeland Industry & Community Association
St. Lina
Ambient Air Monitoring

Table of Contents

	Page
Introduction	3
Calibration Procedure	4
Monthly Continuous Summary	5
General Monthly Summary	6
Continuous Monitoring	10
• Monthly Summaries, Graphs & Wind Roses	11
• Sulphur Dioxide	12
• Hydrogen Sulphide	20
• Total Hydrocarbons	28
• Ozone	36
• Nitrogen Dioxide	44
• Nitric Oxide	52
• Oxides of Nitrogen	59
• Particulate Matter 2.5	67
• Temperature	72
• Barometric Pressure	75
• Relative Humidity	78
• Precipitation	81
• Vector Wind Speed	84
• Vector Wind Direction	91
• Standard Deviation Wind Direction	94

	Page
Calibration Reports	97
• Sulphur Dioxide	98
• Hydrogen Sulphide	101
• Total Hydrocarbons	106
• Nitrogen Dioxide	109
• Ozone	120
• Particulate Matter 2.5	123
AESRD Audit Results	127

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: May 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 – May 2014

LICA ST. LINA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO2 (PPB)	172	48	0	0	0.17	3	VAR	VAR	VAR	VAR	2.3	4	96.6
H2S (PPB)	10	3	0	0	1.80	4	VAR	VAR	VAR	VAR	3.0	18	99.1
THC (PPM)	-	-	-	-	1.98	2.9	13	3, 4	11.3, 12	53(NE), 58(ENE)	2.2	13	99.1
OZONE (PPB)	82	-	0	-	36.28	60	22	17	5.6	129(SE)	48.6	8	98.8
NO2 (PPB)	159	-	-	-	0.97	10.1	13	3	11.3	53(NE)	3.2	13	96.2
NO (PPB)	-	-	-	-	0.10	1.3	13	6	10.9	75(ENE)	0.5	5	96.2
NO_x (PPB)	-	-	-	-	1.07	10.2	13	3	11.3	53(NE)	3.6	13	96.2
PM2.5 (ug/m3)	-	30	-	0	2.65	11	9, 23	13, 22	15.7, 6.9	352(N), 304(WNW)	6.0	19	98.8
TEMPERATURE (DEGREE C)	-	-	-	-	9.43	27.5	23	16	12.8	236(SW)	21.5	23	99.2
BP (MILLIBAR)	-	-	-	-	927.3	943	13	9, 10	7, 8.2	71(ENE), 51(NE)	940.5	13	99.2
RH (%)	-	-	-	-	58.40	91	VAR	VAR	VAR	VAR	90.0	26	99.2
PRECIPITATION (MM)	-	-	-	-	0.01	0.4	5	21	8.1	336(NNW)	0.1	VAR	99.5
VECTOR WS (KPH)	-	-	-	-	10.66	32.6	30	15	-	256(WSW)	18.7	30	99.2
VECTOR WD (DEGREES)	-	-	-	-	345(NNW)	-	-	-	-	-	-	-	99.2

VAR-VARIOUS

General Monthly Summary

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

AQM STATION – LICA – St. Lina

Sulphur Dioxide (PPB)
Analyzer make / model - API 100E, S/N: 468
The monthly calibration was performed on May 1th. The inlet filter was changed before the calibration was started. Following a shut-down calibration on May 13th, the exhaust pump was rebuilt. The analyzer was allowed time to stabilize overnight. An installation calibration was performed on May 14th. Six hours of data are missing on May 15th due to a power failure. The hourly data collected on May 15th at hour 12 was invalidated as the analyzer was recovering from the power failure. The daily zero/span results for May 2nd and May 3rd are missing. Reason unknown. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)
Analyzer make / model - API 101E, S/N: 510
The monthly calibration was performed on May 1st. The inlet filter was changed before the calibration was started. The daily zero results were close to the acceptable range on May 9th. An as found points check was performed on May 10th, and the result was good. The analyzer was recalibrated on May 14th in order to correct the issue of daily zero drifting. Six hours of data are missing on May 15th due to a power failure. The hourly data collected on May 15th at hour 12 was invalidated as the analyzer was recovering from the power failure. Another as found points check was performed on May 20th to verify the analyzer's functionality. The result was good. 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 May 30th. The inlet filter was changed before the calibration was started. Six hours of data are missing on May 15th due to a power failure. The hourly data collected on May 15th at hour 12 was invalidated as the analyzer was recovering from the power failure. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)
Analyzer make / model - API 200E, S/N: 592 replaced with API 200A S/N: 1746
The analyzer failed after the zero/span check on April 30th. The analyzer was checked on May 1st. No issue could be identified. Eight hours of data were discarded due to this event. The analyzer was calibrated on May 1st. The inlet filter was changed before the calibration was started. The daily zero result went high after the calibration. An as found points check was performed on May 2nd, and the result was good. The scrubber material was replaced and the analog output was calibrated on May 3rd. Following these maintenance, an as found points check was performed. Following a shut-down calibration on May 13, the sample valve was changed. The analyzer was allowed time to stabilize overnight. An installation calibration was performed on May 14th. Six hours of data are missing on May 15th due to a power failure. The hourly data collected on May 15th at hour 12 was invalidated as the analyzer was recovering from the power failure. Data was corrected using daily zero information.

Ozone (PPB)
Analyzer make / model - Thermo 49i, S/N: 1002240371
The analyzer was working well throughout the month. The monthly calibration was performed on May 1st. The inlet filter was changed before the calibration was started. Six hours of data are missing on May 15th due to a power failure. The hourly data collected on May 15th at hour 12 was invalidated as the analyzer was recovering from the power failure. The daily zero/span results for May 2nd and May 3rd are missing. Reason unknown. 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 1400A S/N: 140AB228720001
The Teom unit was working well throughout the month. Two Teom audits were performed this month: one was completed on May 9th, and the other was performed on May 30th. The Teom filter was replaced before the audit. Six hours of data are missing on May 15th due to a power failure. The hourly data collected on May 15th at hour 12 was invalidated as the analyzer was recovering from the power failure. 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. Six hours of data are missing on May 15th due to a power failure.

Barometric Pressure (Millibar)
Analyzer make / model - Met One 092
The BP sensor was working well throughout the month. Six hours of data are missing on May 15th due to a power failure.

Relative Humidity (%)
Analyzer make / model - Met One 083
The RH sensor was working well throughout the month. Six hours of data are missing on May 15th due to a power failure.

Precipitation (MM)
Analyzer make / model - Met One 387
No issues were recorded this month. Four hours of data are missing on May 15th due to a power failure.

General Monthly Summary

AQM STATION – LICA – St. Lina

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. Six hours of data are missing on May 15th due to a power failure

Datalogger
System make / model - ESC 8832, S/N: AO717
Software make/version - ESC v 5.51a
The station is connected to a modem to allow for daily polling of the station.

Trailer
No issue was recorded this month.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

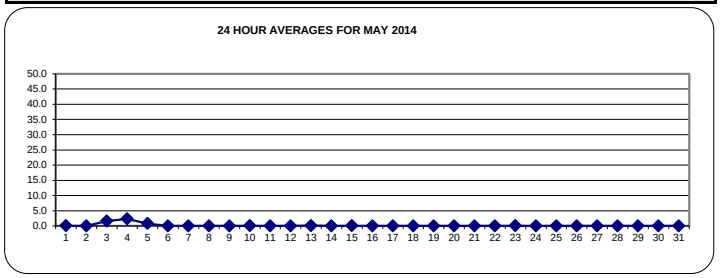
SULPHUR DIOXIDE (SO2) hourly averages in ppb

MST

HOUR START / HOUR END	0:00 1:00	1:00 2:00	2:00 3:00	3:00 4:00	4:00 5:00	5:00 6:00	6:00 7:00	7:00 8:00	8:00 9:00	9:00 10:00	10:00 11:00	11:00 12:00	12:00 13:00	13:00 14:00	14:00 15:00	15:00 16:00	16:00 17:00	17:00 18:00	18:00 19:00	19:00 20:00	20:00 21:00	21:00 22:00	22:00 23:00	23:00 0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY																											
1	0	0	0	1	0	0	0	0	C	C	C	C	C	0	0	0	0	Y	0	0	0	0	0	0	1	0.1	23
2	0	0	0	0	0	0	0	S	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
3	0	0	0	0	0	0	S	1	2	2	1	1	2	2	*3*	*3*	*3*	*3*	*3*	*3*	2	2	2	2	*3*	1.6	24
4	*3*	*3*	2	2	*3*	S	*3*	*3*	*3*	2	*3*	2	2	2	2	2	2	2	2	2	2	2	*3*	2	*3*	***2.3***	24
5	2	2	*3*	2	S	2	2	S	2	2	S	0	0	0	0	0	0	0	0	0	0	0	0	0	*3*	0.8	24
6	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
7	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
8	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
9	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
10	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.0	24
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0.0	24
13	0	0	0	0	0	1	S	S	0	0	0	0	C	C	C	C	Y	Y	Y	Y	Y	Y	Y	Y	1	0.1	16
14	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	C	0	0	0	0	S	0	0	0	0	0	0	0.0	15
15	0	0	0	0	0	0	P	P	P	P	P	P	R	0	0	0	0	S	0	0	0	1	0	0	1	0.1	17
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0.0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0.0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0	24
20	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
21	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
22	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
23	0	0	0	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
24	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
25	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
26	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
27	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
28	0	0	0	0	S	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	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
30	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
31	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
HOURLY MAX	3	3	3	2	3	2	3	3	3	2	3	2	2	2	3	3	3	3	3	3	2	2	3	2			
HOURLY AVG	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1			

STATUS FLAG CODES

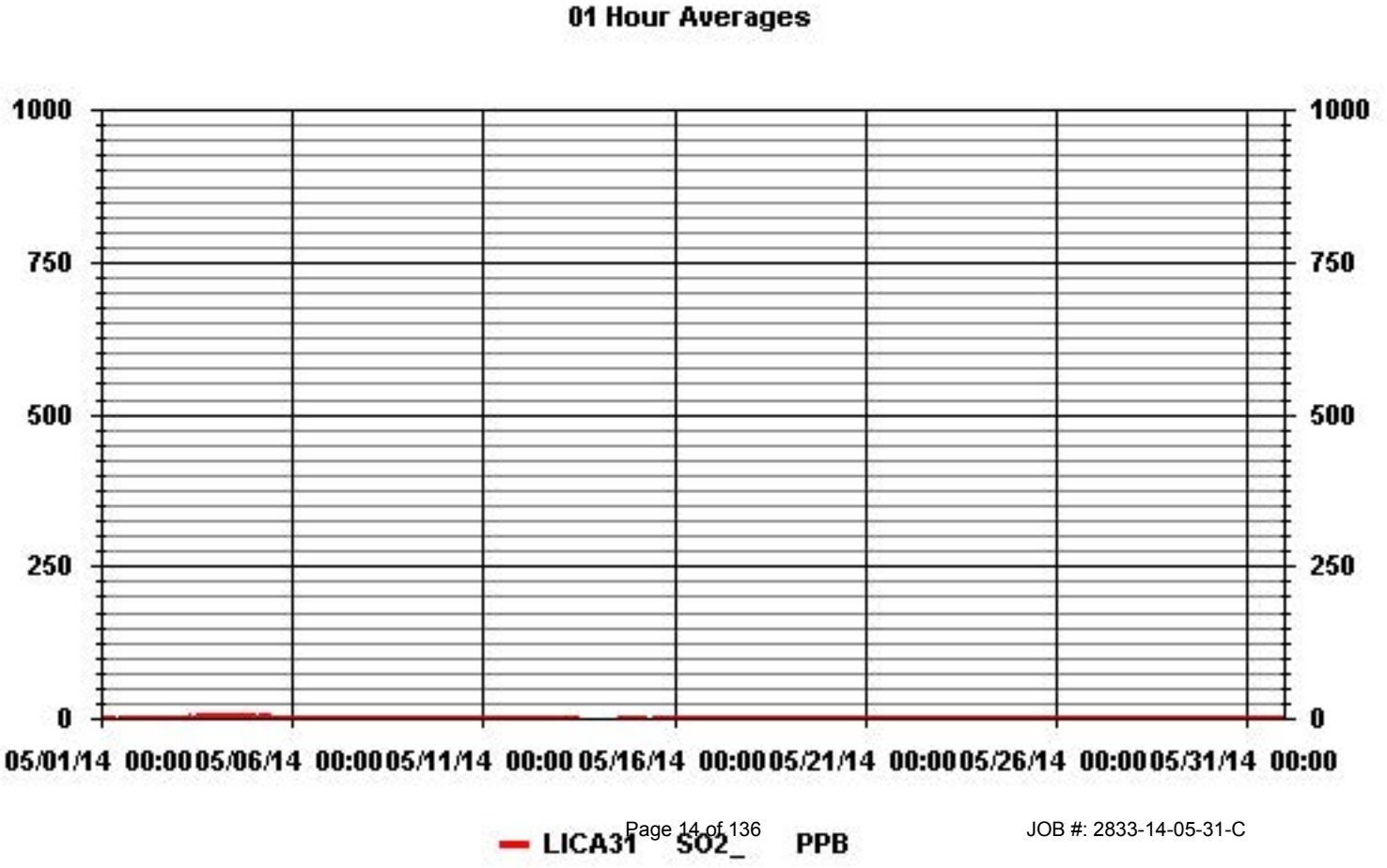
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	53					
MAXIMUM 1-HR AVERAGE:	3	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	2.3	PPB			ON DAY(S)	4
					VAR-VARIOUS	
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:		719	HRS
MONTHLY CALIBRATION TIME:	14	HRS	AMD OPERATION UPTIME:		96.6	%
STANDARD DEVIATION:	0.60		MONTHLY AVERAGE:		0.17	PPB



JOB #: 2833-14-05-31-C

Lakeland Industry & Community Association - St. Lina Site

MAY 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	2	1	1	1	1	**C**	**C**	**C**	**C**	**C**	0	0	0	0	**Y**	0	1	1	1	1	1	2	0.8	23
2	1	1	1	1	1	1	1	**S**	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
3	0	0	1	1	1	1	**S**	3	3	3	2	2	3	3	***6***	4	4	4	4	4	4	3	3	3	***6***	2.7	24
4	4	4	3	3	4	**S**	4	4	3	4	4	4	3	3	3	4	3	3	3	3	3	3	4	3	4	***3.4***	24
5	4	3	4	3	**S**	3	**S**	**S**	3	**S**	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1.1	24
6	0	0	0	**S**	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
7	0	0	**S**	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	0.3	24
8	1	**S**	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0.9	24
9	**S**	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	1	0.4	24
10	1	1	1	1	1	1	2	2	1	1	0	1	1	0	0	0	0	0	0	0	0	0	**S**	0	2	0.6	24
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0.0	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	1	1	1	1	0.1	24
13	1	1	1	1	1	3	**S**	**S**	0	0	0	0	**C**	**C**	**C**	**C**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	3	0.8	16
14	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**C**	**C**	**C**	**C**	**C**	0	1	1	1	**S**	2	2	1	0	0	2	0.9	15
15	1	1	1	1	0	0	**P**	**P**	**P**	**P**	**P**	**P**	**R**	1	1	1	1	**S**	1	1	2	2	1	1	2	1.0	17
16	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	1	0.0	24
17	0	0	0	1	1	0	0	1	0	1	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	1	0.2	24
18	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**S**	0	0	0	0	0	0	0	0	0	1	0.0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0.0	24
20	0	0	0	0	0	1	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	1	0	0	1	0.1	24
21	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	1	0	0	0	0	0	0	0	0	1	0.0	24
22	0	0	0	0	1	0	0	0	0	0	0	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	24
23	1	1	1	1	1	1	1	1	2	**S**	1	1	0	0	1	0	1	1	1	1	1	0	1	1	2	0.9	24
24	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
25	0	0	0	0	0	0	0	**S**	0	0	0	0	0	1	0	0	1	0	1	0	0	0	1	1	1	0.2	24
26	0	1	1	1	1	1	**S**	0	0	0	0	0	0	0	0	0	0	0	**P**	0	0	0	0	0	1	0.2	23
27	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
28	0	1	0	0	**S**	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.3	24
29	1	1	1	**S**	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	0.3	24
30	0	0	**S**	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
31	0	**S**	1	0	1	1	1	0	1	1	0	1	0	1	1	0	1	1	1	0	0	0	0	1	1	0.6	24
HOURLY MAX	4	4	4	3	4	3	4	4	3	4	4	4	3	3	6	4	4	4	4	4	4	3	4	3			
HOURLY AVG	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.5	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: 228

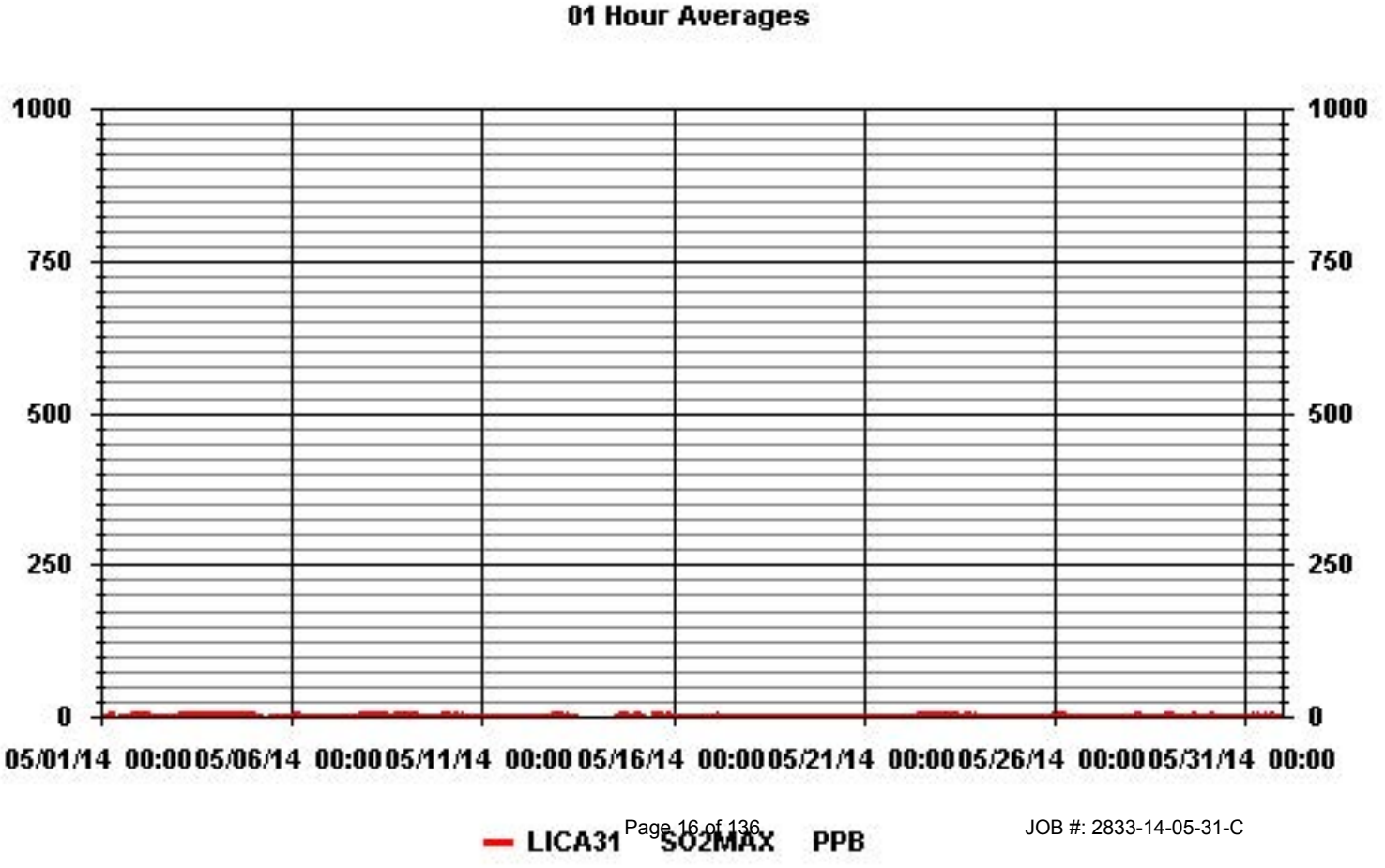
MAXIMUM INSTANTANEOUS VALUE: 6 PPB @ HOUR(S) 14 ON DAY(S) 3

VAR-VARIOUS

IZS CALIBRATION TIME: 37 HRS OPERATIONAL TIME: 718 HRS

MONTHLY CALIBRATION TIME: 14 HRS

STANDARD DEVIATION: 0.94



JOB #: 2833-14-05-31-C

LICA31
SO2_ / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	10.44	7.61	6.56	7.01	10.14	4.17	2.38	3.58	5.07	2.83	3.73	5.67	5.52	6.26	7.61	11.34	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	10.44	7.61	6.56	7.01	10.14	4.17	2.38	3.58	5.07	2.83	3.73	5.67	5.52	6.26	7.61	11.34	

Calm : .00 %

Total # Operational Hours : 670

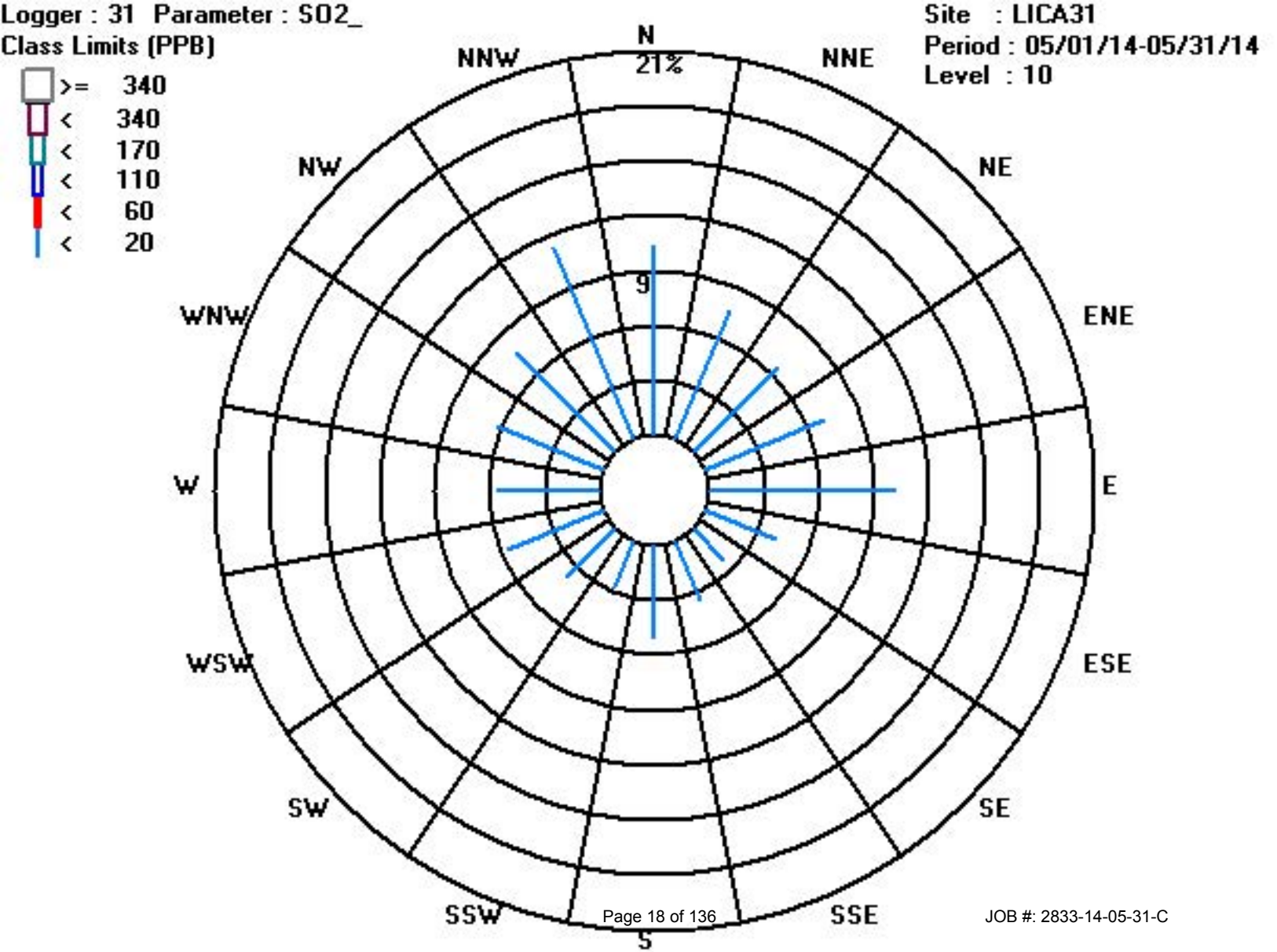
Distribution By Samples

Direction

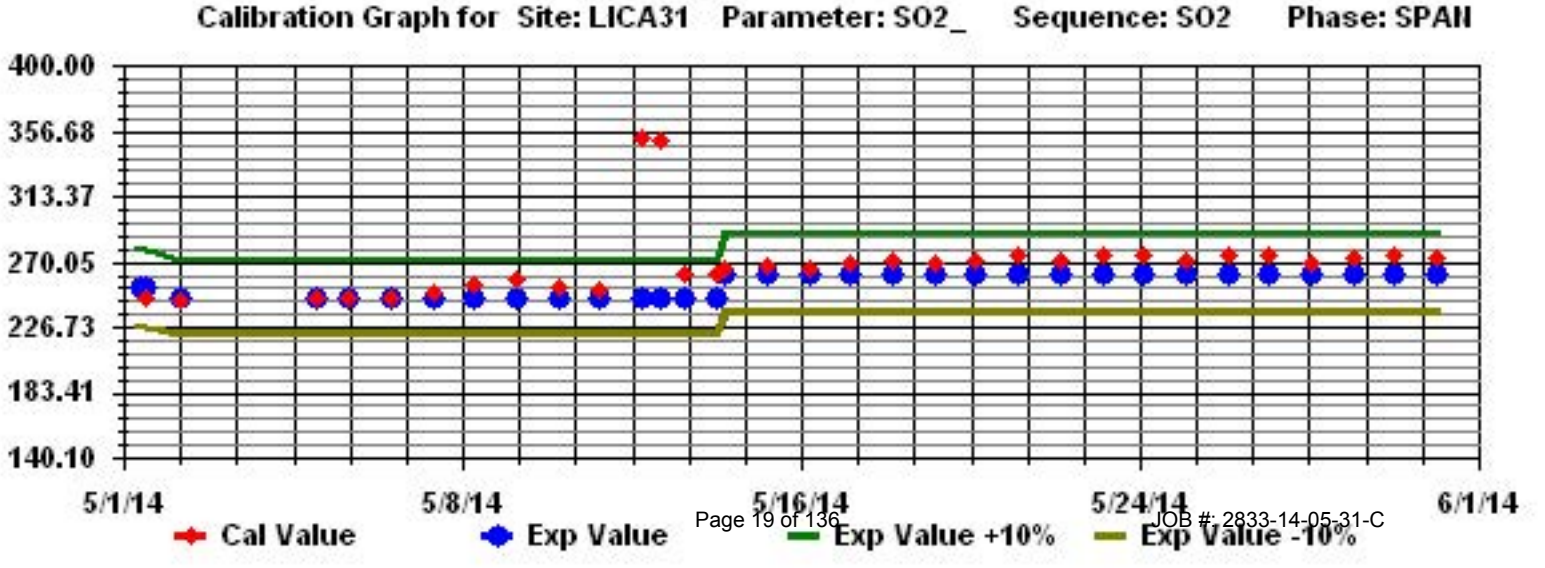
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	70	51	44	47	68	28	16	24	34	19	25	38	37	42	51	76	670
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	70	51	44	47	68	28	16	24	34	19	25	38	37	42	51	76	

Calm : .00 %

Total # Operational Hours : 670



JOB #: 2833-14-05-31-C


Calibration Graph for Site: LICA31 Parameter: SO2_ Sequence: SO2 Phase: SPAN
400.00
356.68
313.37
270.05
226.73
183.41
140.10
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Hydrogen Sulphide

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

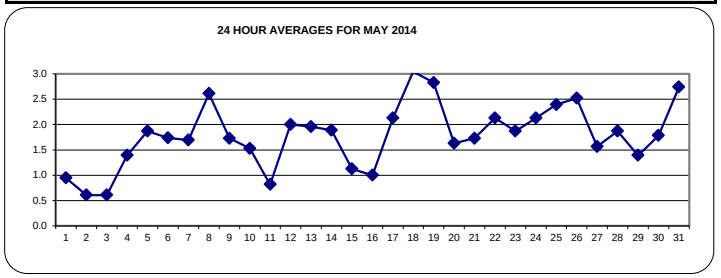
HYDROGEN SULPHIDE (H2S) hourly averages in ppb

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	1	1	0	0	1	S	C	C	C	C	2	2	2	2	1	1	1	1	1	1	1	2	0.9	24
2	2	1	2	2	1	1	2	S	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	2	0.6	24
3	0	0	0	0	0	1	S	1	0	1	0	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0.6	24
4	1	0	2	1	0	S	1	1	1	1	1	2	2	2	2	1	1	1	2	2	2	2	2	2	2	1.4	24
5	2	2	2	2	S	2	2	2	3	2	1	1	1	2	2	2	1	2	2	2	2	2	2	2	3	1.9	24
6	1	2	2	S	2	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2	2	1	1	1	2	1.7	24
7	1	1	S	1	1	2	2	2	2	1	2	2	2	2	2	2	2	2	2	1	2	2	1	2	2	1.7	24
8	2	S	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2.6	24
9	S	2	2	2	2	1	1	2	2	2	2	2	1	2	1	2	2	2	2	2	1	2	1	S	2	1.7	24
10	2	3	2	2	2	2	2	2	2	2	2	C	C	C	C	1	1	1	1	1	0	1	S	0	3	1.5	24
11	0	0	0	0	0	0	0	S	1	1	1	1	2	1	1	1	1	1	1	1	1	S	2	2	2	0.8	24
12	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	2	2.0	24
13	2	2	2	2	2	2	S	2	2	2	2	2	2	2	2	1	2	2	2	S	2	2	2	2	2	2.0	24
14	3	2	2	3	3	2	3	3	3	3	3	0	C	C	C	C	C	1	S	1	0	1	1	0	3	1.9	24
15	1	1	0	1	1	1	P	P	P	P	P	P	R	2	2	1	2	S	1	1	1	1	1	1	2	1.1	17
16	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1	S	1	1	1	1	1	1	1	1	1.0	24
17	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	S	2	2	2	3	2	3	3	3	3	2.1	24
18	3	3	3	3	3	3	3	3	3	***4***	3	3	3	3	S	3	3	***4***	3	3	3	2	3	3	***4***	***3.0***	24
19	3	3	3	2	3	3	3	3	3	3	3	3	3	S	3	3	3	3	3	2	3	3	2	2	3	2.8	24
20	2	2	2	2	2	2	2	2	2	2	3	2	S	3	3	C	C	C	C	0	0	0	0	0	3	1.6	24
21	0	0	0	0	1	0	S	1	3	3	3	S	2	2	3	2	2	3	2	3	2	2	2	2	3	1.7	24
22	2	2	2	2	3	2	2	2	2	2	S	2	2	2	2	2	2	2	2	2	2	3	2	3	3	2.1	24
23	3	3	3	3	3	3	***4***	3	3	S	1	1	1	1	1	1	1	1	1	1	1	2	1	1	***4***	1.9	24
24	1	1	1	2	1	1	1	1	S	3	3	3	3	3	3	3	3	2	2	3	2	3	2	2	3	2.1	24
25	2	2	2	2	2	2	3	S	2	3	2	2	2	3	3	3	2	2	2	2	3	3	3	3	3	2.4	24
26	3	3	3	3	***4***	***4***	S	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	***4***	2.5	24
27	2	2	3	3	2	S	2	1	2	2	2	1	1	1	1	1	2	1	1	1	1	1	2	1	3	1.6	24
28	1	1	1	1	S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	2	3	1.9	24
29	2	2	2	S	1	1	1	1	1	1	2	2	2	2	1	2	1	2	1	1	1	1	1	1	2	1.4	24
30	1	1	S	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	1	2	1	2	1.8	24
31	2	S	3	3	2	3	3	2	2	3	3	3	3	2	3	3	3	3	3	3	3	3	3	2	3	2.7	24
HOURLY MAX	3	3	3	3	4	4	4	3	3	4	3	3	3	3	3	3	3	4	3	3	3	3	3	3			
HOURLY AVG	1.6	1.6	1.8	1.8	1.8	1.8	2.0	1.9	2.0	2.0	2.0	1.8	1.8	1.9	2.0	1.9	1.9	1.8	1.8	1.7	1.5	1.8	1.7	1.6			

STATUS FLAG CODES

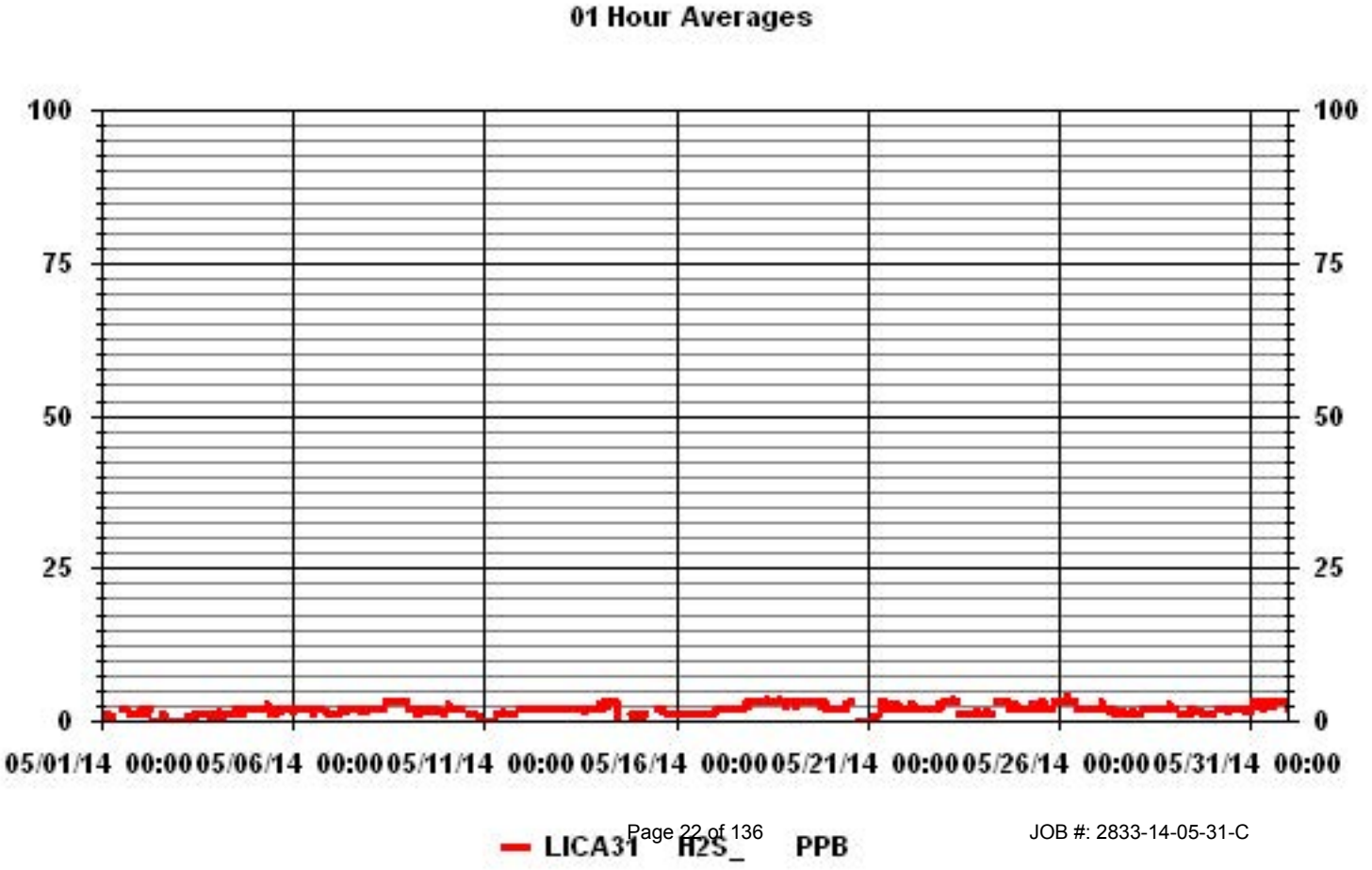
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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:	632					
MAXIMUM 1-HR AVERAGE:	4	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	3.0	PPB			ON DAY(S)	18
					VAR-VARIOUS	
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:		737	HRS
MONTHLY CALIBRATION TIME:	17	HRS	AMD OPERATION UPTIME:		99.1	%
STANDARD DEVIATION:	0.87		MONTHLY AVERAGE:		1.80	PPB



JOB #: 2833-14-05-31-C

Lakeland Industry & Community Association - St. Lina Site

MAY 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	1	1	1	1	1	1	1	1	**S**	**C**	**C**	**C**	**C**	2	4	5	3	3	3	2	2	2	2	3	5	2.1	24
2	3	2	3	3	3	1	3	**S**	1	1	0	1	1	1	1	2	2	1	0	1	0	1	1	1	3	1.4	24
3	0	0	2	1	1	1	**S**	2	1	2	1	1	1	2	2	2	2	2	2	2	2	2	1	2	2	1.5	24
4	2	2	3	2	1	**S**	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2.0	24
5	2	2	2	2	**S**	2	2	2	4	4	3	2	2	2	2	2	2	3	2	3	3	3	2	2	4	2.4	24
6	3	2	2	**S**	2	2	3	2	3	2	3	3	2	2	2	2	2	2	2	2	2	3	2	2	3	2.3	24
7	2	2	**S**	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	2	3	3	2.1	24
8	2	**S**	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	4	4	4	3.0	24
9	**S**	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1	**S**	2	1.9	24
10	3	3	3	3	3	2	2	3	2	2	**C**	**C**	**C**	**C**	**C**	2	2	2	2	2	1	1	**S**	1	3	2.2	24
11	1	0	1	1	1	0	1	1	2	1	1	2	2	2	2	2	2	2	2	2	2	**S**	3	3	3	1.6	24
12	3	3	3	2	2	2	2	3	2	2	2	2	3	3	2	2	2	3	3	3	**S**	3	2	3	3	2.5	24
13	2	3	3	3	2	2	**S**	**S**	3	2	3	3	3	3	3	3	3	3	2	**S**	3	3	3	3	3	2.8	24
14	3	3	3	3	3	3	3	3	3	3	3	**S**	**S**	**S**	**S**	**S**	**S**	1	**S**	2	1	1	2	1	3	2.4	24
15	1	1	1	1	1	1	**P**	**P**	**P**	**P**	**P**	**P**	**R**	3	2	2	2	**S**	2	2	2	1	2	2	3	1.6	17
16	1	1	1	1	1	1	**S**	**S**	1	1	1	2	2	1	2	2	**S**	2	2	2	2	2	2	2	2	1.5	24
17	2	2	2	2	2	2	2	2	2	3	3	3	2	2	2	**S**	3	3	3	3	3	3	3	3	3	2.5	24
18	4	3	3	3	3	3	3	3	3	***6***	5	4	4	4	**S**	3	4	4	4	4	4	3	3	3	***6***	***3.6***	24
19	4	4	4	3	4	3	4	4	4	3	4	3	4	**S**	4	3	3	4	3	3	3	3	3	3	4	3.5	24
20	3	3	3	3	3	3	3	3	3	3	3	3	**S**	3	3	**C**	**C**	**C**	**C**	1	1	1	0	1	3	2.4	24
21	1	1	1	1	3	1	**S**	**S**	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	3	1.1	24
22	1	1	1	1	2	2	1	1	1	0	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
23	1	1	1	1	2	2	2	2	1	**S**	1	1	1	1	2	2	2	2	2	2	2	2	3	2	3	1.7	24
24	2	2	2	4	3	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.3	24
25	1	1	1	0	0	1	1	**S**	1	1	1	1	1	1	1	2	1	1	1	1	1	3	1	1	3	1.0	24
26	1	2	1	3	2	2	**S**	2	2	2	2	2	2	2	2	2	2	2	**P**	2	2	2	2	2	3	2.0	23
27	2	1	5	4	1	**S**	2	2	2	2	2	1	3	1	0	1	1	1	1	1	1	1	1	1	5	1.6	24
28	1	1	1	0	**S**	0	0	0	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0.7	24
29	1	0	1	**S**	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	1.7	24
30	2	5	**S**	2	2	1	1	2	2	1	1	2	2	2	1	1	2	2	1	1	1	1	1	1	5	1.6	24
31	1	**S**	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	2	2	3	1	3	1.3	24
HOURLY MAX	4	5	5	4	4	3	4	4	4	6	5	4	4	4	4	5	4	4	4	4	4	3	4	4			
HOURLY AVG	1.9	1.9	2.1	2.0	2.0	1.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.1	1.9	1.9	1.9	1.9	1.9	1.9			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 658

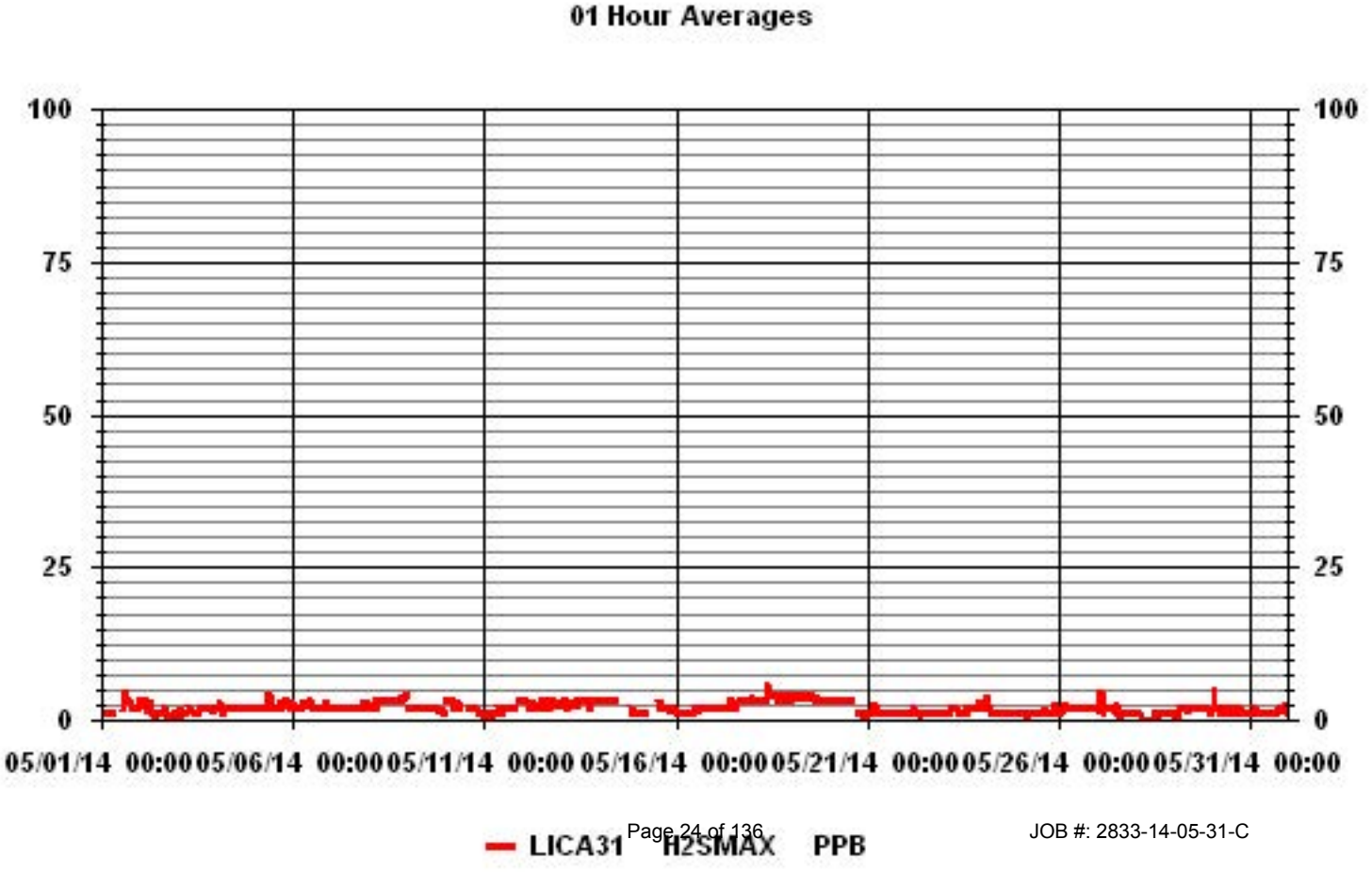
MAXIMUM INSTANTANEOUS VALUE: 6 PPB @ HOUR(S) 9 ON DAY(S) 18

VAR-VARIOUS

IZS CALIBRATION TIME: 44 HRS OPERATIONAL TIME: 736 HRS

MONTHLY CALIBRATION TIME: 13 HRS

STANDARD DEVIATION: 0.94



JOB #: 2833-14-05-31-C

LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	10.31	7.17	5.53	5.38	5.23	2.69	.74	1.94	4.03	2.54	3.13	4.93	3.73	5.08	6.27	10.46	79.22
< 10	.00	.44	.89	1.64	4.93	1.49	1.64	1.19	.89	.59	1.94	.74	1.79	.89	1.19	.44	20.77
< 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	10.31	7.62	6.42	7.02	10.16	4.18	2.39	3.13	4.93	3.13	5.08	5.68	5.53	5.97	7.47	10.91	

Calm : .00 %

Total # Operational Hours : 669

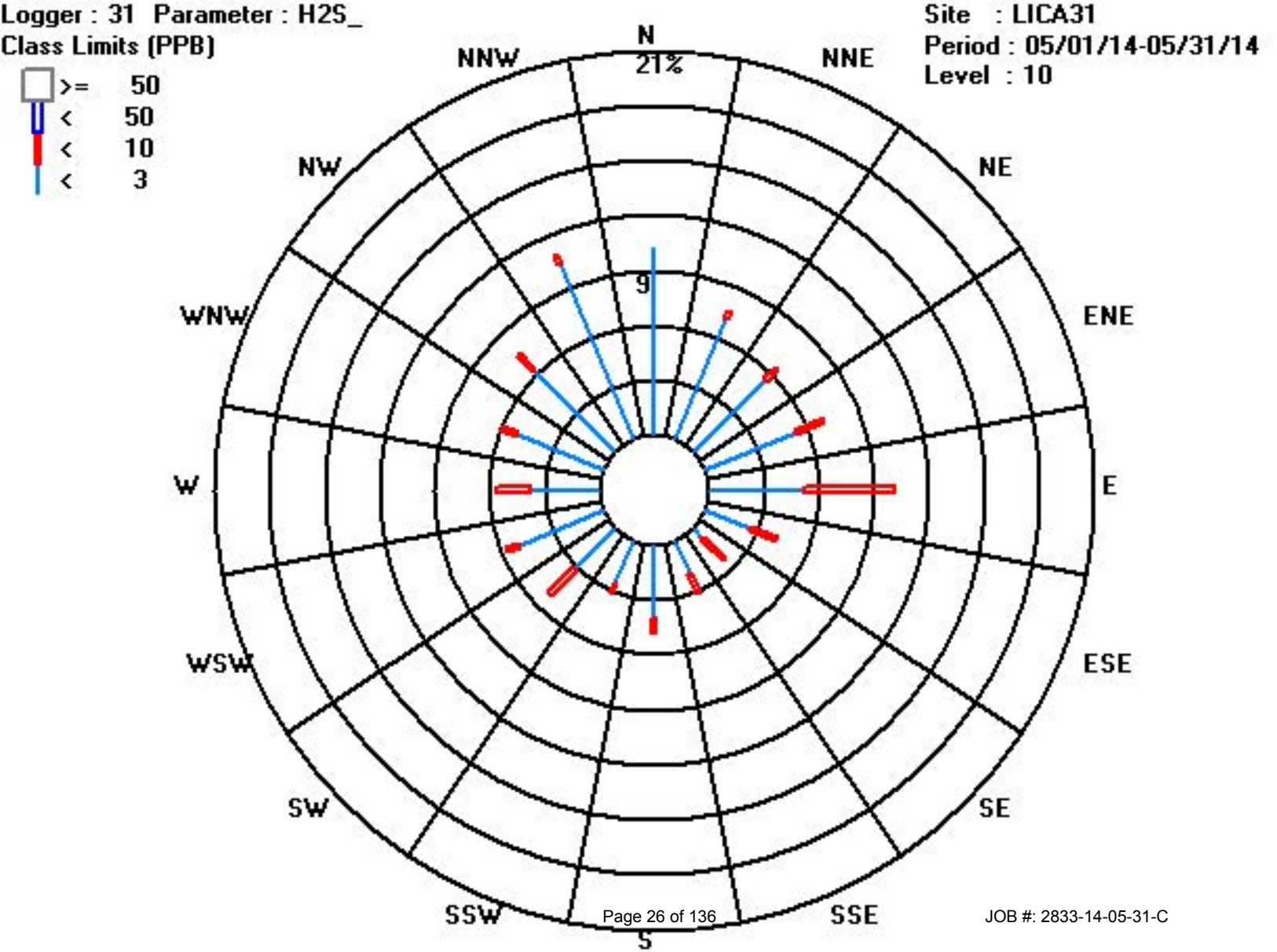
Distribution By Samples

Direction

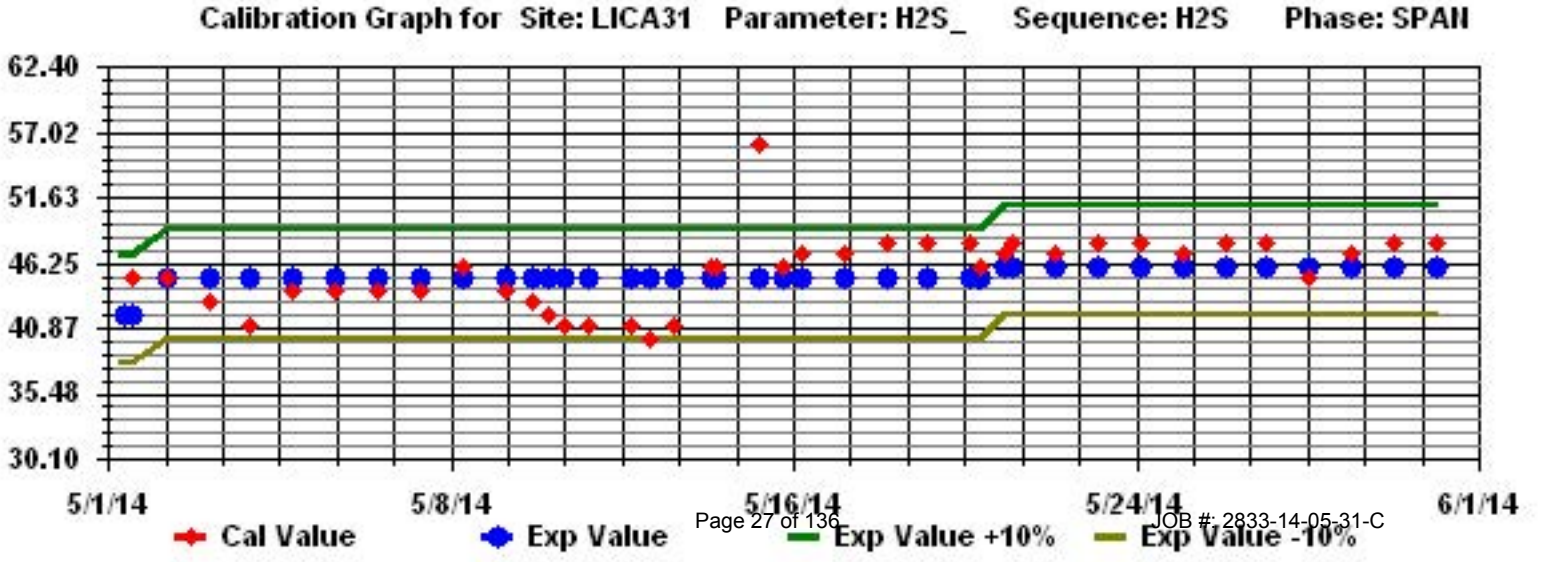
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	69	48	37	36	35	18	5	13	27	17	21	33	25	34	42	70	530
< 10		3	6	11	33	10	11	8	6	4	13	5	12	6	8	3	139
< 50																	
>= 50																	
Totals	69	51	43	47	68	28	16	21	33	21	34	38	37	40	50	73	

Calm : .00 %

Total # Operational Hours : 669



JOB #: 2833-14-05-31-C


Calibration Graph for Site: LICA31 Parameter: H2S_ Sequence: H2S Phase: SPAN
62.40
57.02
51.63
46.25
40.87
35.48
30.10
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

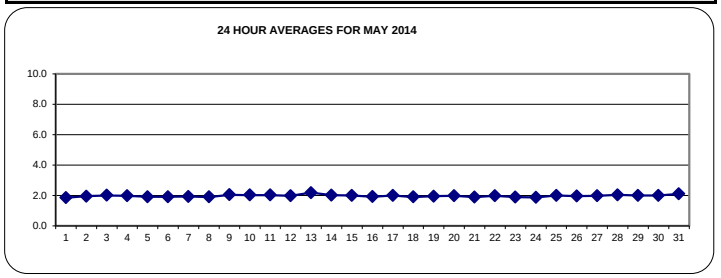
TOTAL HYDROCARBONS (THC) hourly averages in ppm

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	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	S	2.0	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.8	24
2	2.0	2.0	2.0	2.0	2.0	2.1	2.1	S	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.1	2.0	24
3	2.0	2.1	2.1	2.1	2.1	2.1	S	2.0	2.0	1.9	1.9	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	24
4	2.0	2.1	2.0	2.0	2.1	S	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.0	2.0	2.1	2.0	24
5	2.0	1.9	2.0	2.0	S	2.0	2.0	2.1	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	2.1	1.9	24
6	1.9	1.9	1.9	S	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	24
7	1.9	1.9	S	1.9	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	1.9	24
8	2.0	S	2.0	2.1	2.1	2.1	2.1	2.1	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	1.8	1.8	2.1	1.9	24
9	S	2.0	2.0	2.0	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	2.0	2.0	2.0	2.1	2.1	S	2.1	2.0	24
10	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	S	2.0	2.1	2.0	24
11	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	S	2.0	2.1	2.2	2.0	24
12	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	S	1.9	2.0	2.0	2.1	2.0	24
13	2.1	2.1	2.4	***2.9***	***2.9***	2.8	2.4	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	S	2.0	2.0	2.1	2.0	***2.9***	***2.2***	24
14	2.0	2.0	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	S	2.0	2.0	1.9	1.9	2.0	2.2	2.0	24
15	2.0	2.0	2.0	1.9	1.9	2.0	P	P	P	P	P	P	R	2.2	2.2	2.2	2.2	S	1.9	1.9	1.9	1.9	1.9	1.9	2.2	2.0	17
16	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.8	S	2.0	1.9	1.9	1.9	2.0	2.0	2.0	2.0	1.9	24
17	2.0	2.0	2.1	2.0	2.0	2.1	2.1	2.1	2.0	2.0	1.9	1.9	1.9	2.0	2.0	S	2.0	2.0	1.9	2.0	2.0	1.9	2.0	2.0	2.1	2.0	24
18	2.0	2.1	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	S	1.8	1.8	1.9	1.8	1.8	1.9	1.9	1.9	2.0	2.1	1.9	24
19	2.1	2.0	2.0	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	S	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	24
20	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.0	2.0	2.0	1.9	1.9	S	1.8	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	2.2	2.0	24
21	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.8	1.8	1.8	S	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	24
22	1.9	1.9	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	S	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	2.1	2.0	24
23	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	S	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.8	2.0	1.9	24
24	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	S	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	2.0	2.0	2.0	2.0	1.9	24
25	2.0	2.0	2.0	2.1	2.2	2.2	2.2	S	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.2	2.0	24
26	2.0	2.0	1.9	1.9	2.0	2.0	S	2.1	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	2.1	2.0	24
27	1.9	1.9	1.9	1.9	1.9	S	1.9	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	24
28	2.1	2.1	2.1	2.1	S	2.1	2.1	2.1	2.1	2.1	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	2.0	24
29	2.0	2.0	2.0	S	2.1	2.1	2.1	2.2	2.2	2.0	2.0	1.9	2.1	2.0	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
30	2.0	2.0	S	2.0	2.1	2.1	2.0	2.0	1.9	1.9	1.9	1.9	C	C	C	C	C	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.1	2.0	24
31	2.1	S	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24
HOURLY MAX	2	2	2	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2			
HOURLY AVG	2.0	2.0	2.0	2.0	2.0	2.1	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	1.9	2.0	2.0	2.0	2.0			

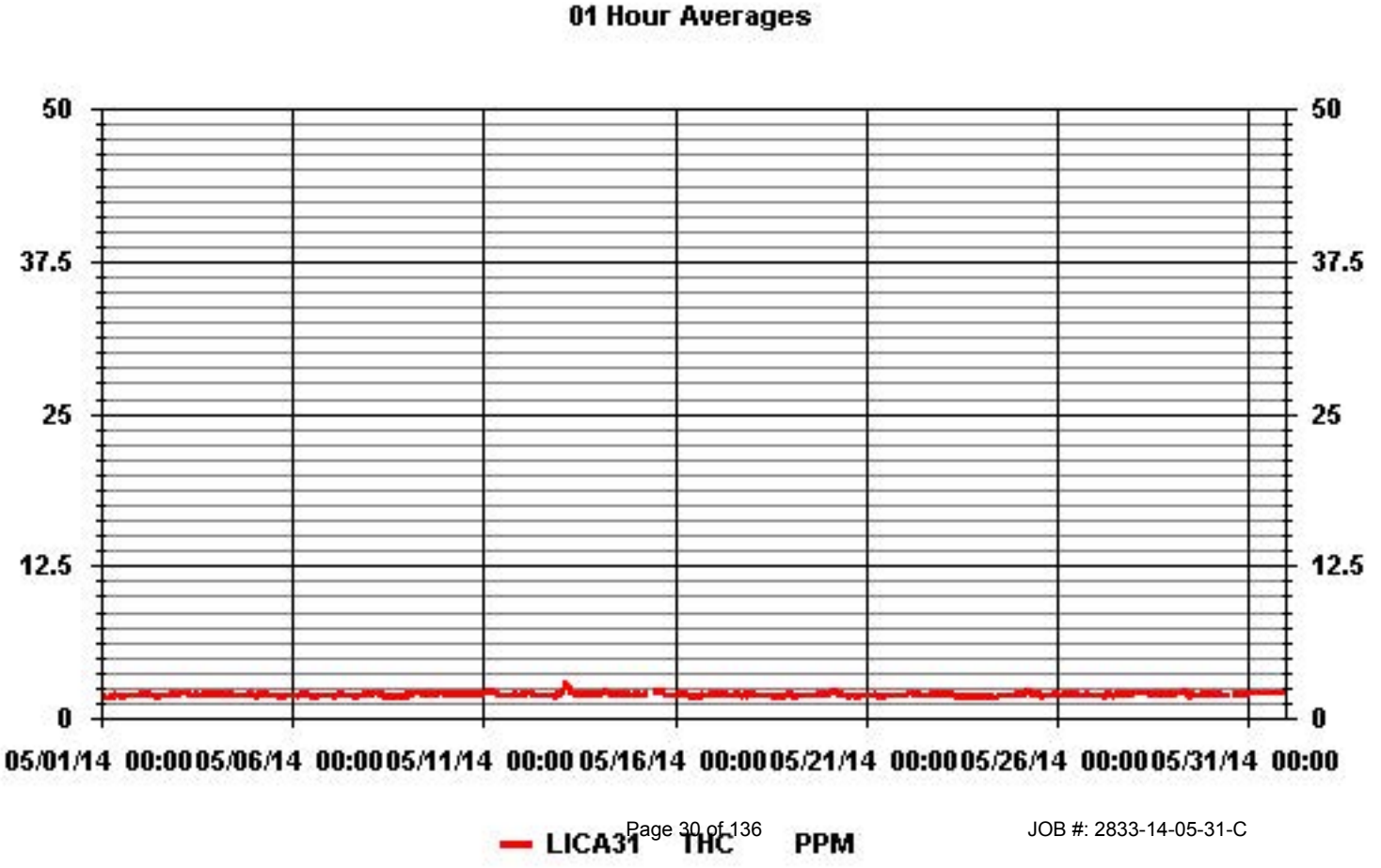
STATUS FLAG CODES

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:	701						
MAXIMUM 1-HR AVERAGE:	2.9	PPM	@ HOUR(S)	3, 4	ON DAY(S)		13
MAXIMUM 24-HR AVERAGE:	2.2	PPM			ON DAY(S)		13
					VAR-VARIOUS		
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:			737	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:			99.1	%
STANDARD DEVIATION:	0.12		MONTHLY AVERAGE:			1.98	PPM



JOB #: 2833-14-05-31-C

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1.9	1.9	1.9	1.9	1.8	1.7	1.7	1.7	**S**	2	2	2.1	1.9	1.9	1.9	1.9	2	2	1.9	1.9	2	2	2	2	2.1	1.9	24
2	2	2	2	2	2.1	2.1	2.1	**S**	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	2	2	2	2	2	2.1	2.0	24
3	2.1	2.1	2.2	2.1	2.1	2.1	**S**	2.1	2.1	2	1.9	2.1	2	2.2	2	2	2.2	2	2.2	2	2.1	2.2	2.6	2.2	2.6	2.1	24
4	2.3	2.4	2.2	2.1	2.1	**S**	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2	2	1.9	1.9	1.9	1.9	1.9	2.4	2.3	2	2.3	2.4	2.1	24
5	2.1	2	2	2	**S**	2.1	2.1	2.1	2.1	2	2	2	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	2	2.1	2.0	24
6	2	2	2.3	**S**	2	2.1	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.3	1.9	1.9	2.3	2.0	24
7	1.9	2	**S**	2	2	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2.1	2.1	2.0	24
8	2.1	**S**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	2.1	1.9	24
9	**S**	2	2	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2	2.1	2.2	2.1	2	2	2	2	2	2.1	2.1	2.1	2.2	**S**	2.2	2.1	24
10	2	2	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2	2	2	2	2.1	2.1	2.1	**S**	2.1	2.2	2.1	24
11	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	**S**	2	2.3	2.3	2.1	24
12	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	1.9	2	1.9	2	2	2	2	**S**	2	2	2	2.2	2.0	24
13	2.2	2.2	2.7	3	***3.1***	3	2.6	2.3	2.1	2.1	2.1	2.1	2	2.1	2.1	2.1	2	2	2.1	**S**	2	2	2.1	2.1	***3.1***	***2.3***	24
14	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	2.1	2.1	2.1	2	2	**S**	2	2	2	2	2.4	2.4	2.1	24
15	2.1	2	2	2	2	2	**P**	**P**	**P**	**P**	**P**	**P**	**R**	2.3	2.3	2.3	2.3	**S**	2	2	2	2	2	2	2.3	2.1	17
16	2	2	2	2	2	2	2	2	2	2	1.9	1.9	1.8	1.8	1.8	1.8	**S**	2	2	2	2	2	2	2	2	2.0	24
17	2.1	2.1	2.1	2.1	2	2.1	2.1	2.1	2.1	2	2	2	2	2	2	**S**	2.1	2.1	2	2	2.2	2	2.2	2.3	2.3	2.1	24
18	2.2	2.2	2.1	1.9	2	2	2	2	2	2	2	2	2	2	**S**	1.9	1.9	1.9	1.9	1.9	2.1	1.9	1.9	2	2.2	2.0	24
19	2.2	2.1	2.1	1.9	1.9	2	1.9	1.9	2	2	2	2	1.9	**S**	1.9	2	2	1.9	2	2	2	2.1	2.1	2.1	2.2	2.0	24
20	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.1	2	2	2	1.9	**S**	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	1.9	1.9	1.9	2.3	2.0	24
21	1.9	1.9	1.9	1.9	2	2	2	1.9	1.9	1.9	1.8	**S**	2	2	2	2	2	2	2	2	2	1.9	2	2	2	2.0	24
22	2	2	2.2	2.4	2.2	2.2	2.2	2	2	2	**S**	2	2	2	2	2	2	2.1	2.2	2.2	2.2	2	2	2	2.4	2.1	24
23	2.1	2.1	2.1	2	2.2	2.1	2.1	2	2	**S**	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.8	2.2	2.0	24
24	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	**S**	1.9	1.9	1.9	1.9	2	2	2	2	2	2	2	2	2	2	2	2	1.9	24
25	2	2	2	2.2	2.3	2.3	2.3	**S**	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2.2	2	2.3	2.1	24
26	2	2	2	2	2.1	2.1	**S**	2.2	2.1	2.1	2	2	2	2.1	2	2	2	2.1	**P**	2	1.9	1.9	1.9	1.9	2.2	2.0	23
27	1.9	1.9	1.9	2	2	**S**	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	2.0	24
28	2.1	2.1	2.2	2.2	**S**	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2.1	2.2	2.1	24
29	2	2.1	2.1	**S**	2.1	2.1	2.2	2.2	2.2	2.1	2	2	2.1	2.1	1.9	2	1.9	2	2	2	2	2	2	2	2.2	2.0	24
30	2.1	2	**S**	2.1	2.1	2.1	2.1	2	2	1.9	2	1.9	**C**	**C**	**C**	**C**	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	24
31	2.1	**S**	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.4	2.2	2.1	2.2	2.5	2.1	2.1	2.1	2.2	2.1	2.1	2.5	2.2	24
HOURLY MAX	2	2	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	3	2			
HOURLY AVG	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	2.0	2.0	2.0	2.0	2.0	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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 700

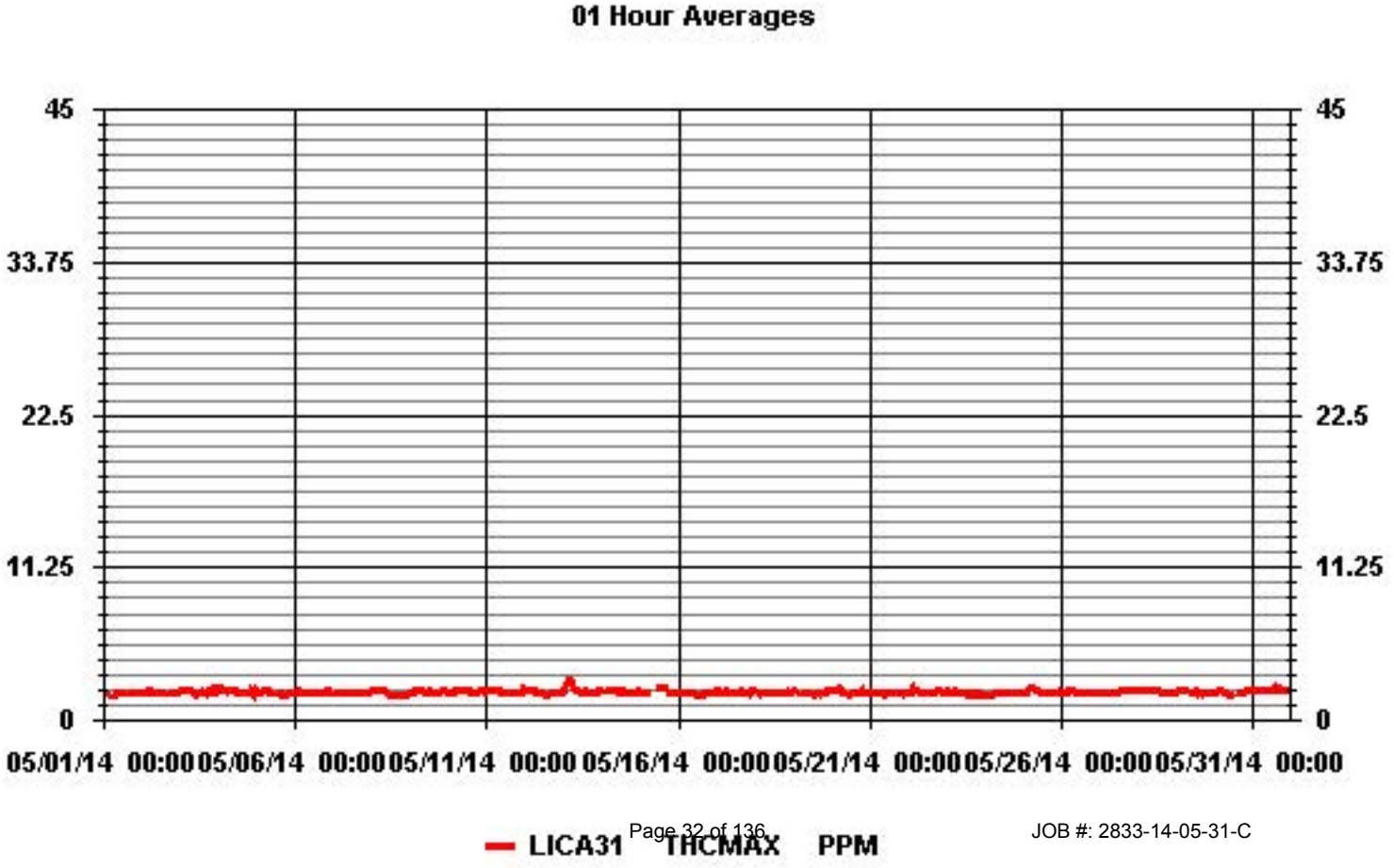
MAXIMUM INSTANTANEOUS VALUE: 3.1 PPM @ HOUR(S) 4 ON DAY(S) 13

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 736 HRS

MONTHLY CALIBRATION TIME: 4 HRS

STANDARD DEVIATION: 0.14



JOB #: 2833-14-05-31-C

LICA31
THC / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	10.41	7.27	6.27	6.99	9.70	3.99	2.28	3.42	4.85	3.13	5.13	5.84	5.13	5.84	7.56	12.12	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	10.41	7.27	6.27	6.99	9.70	3.99	2.28	3.42	4.85	3.13	5.13	5.84	5.13	5.84	7.56	12.12	

Calm : .00 %

Total # Operational Hours : 701

Distribution By Samples

Direction

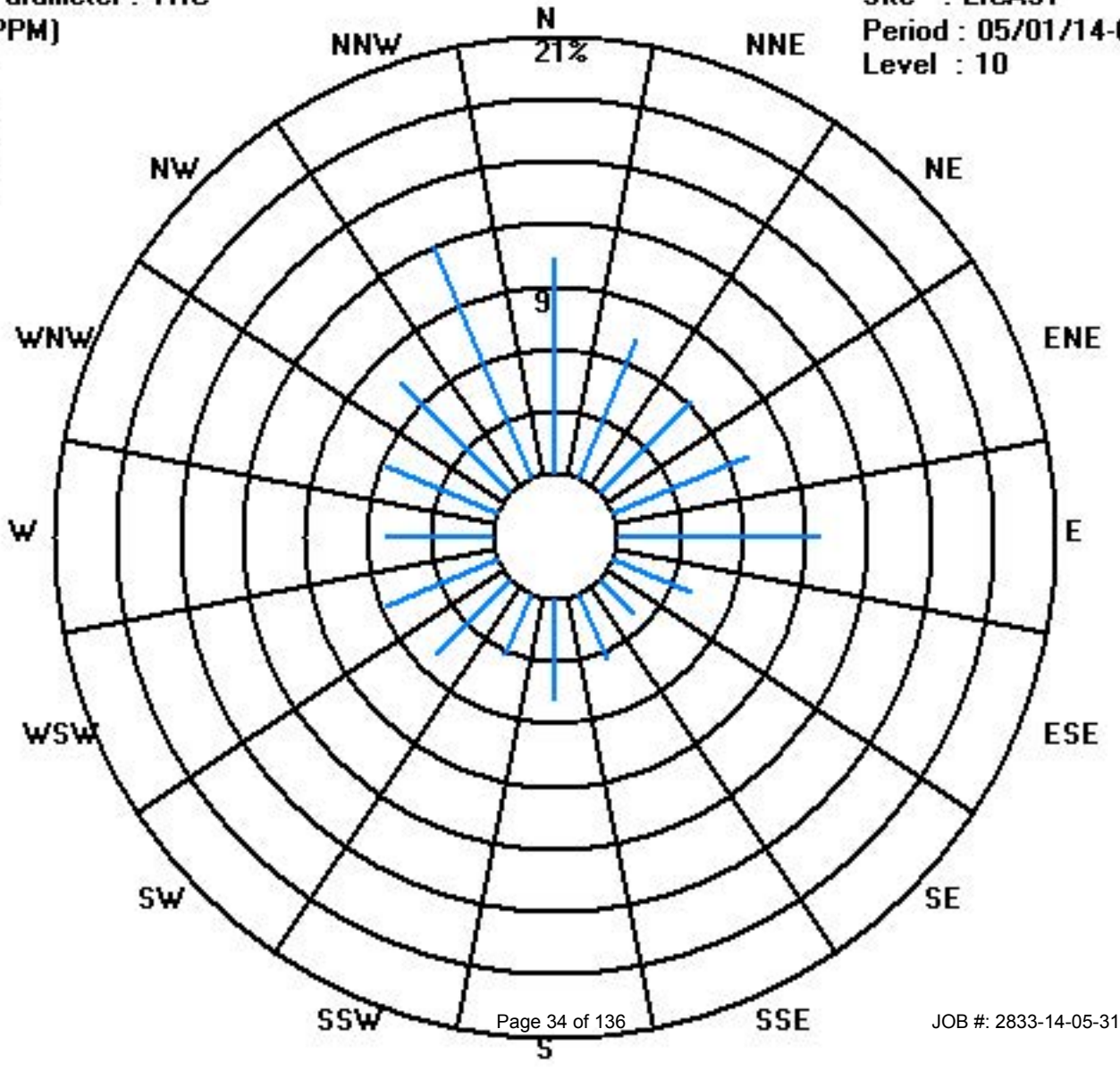
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	73	51	44	49	68	28	16	24	34	22	36	41	36	41	53	85	701
<	10.0																	
<	50.0																	
>=	50.0																	
	Totals	73	51	44	49	68	28	16	24	34	22	36	41	36	41	53	85	

Calm : .00 %

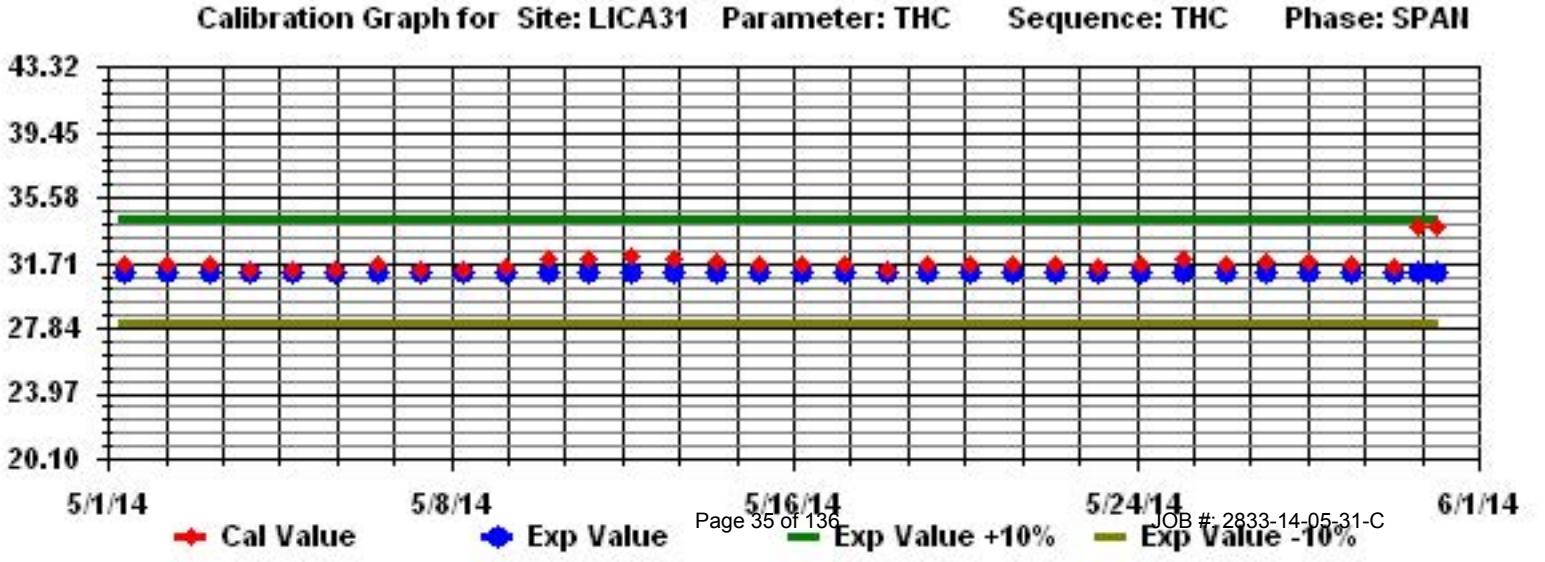
Total # Operational Hours : 701

Logger : 31 Parameter : THC
Class Limits (PPM)
>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA31
Period : 05/01/14-05/31/14
Level : 10



JOB #: 2833-14-05-31-C


Calibration Graph for Site: LICA31 Parameter: THC Sequence: THC Phase: SPAN
43.32
39.45
35.58
31.71
27.84
23.97
20.10
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

OZONE (O3) hourly averages in ppb

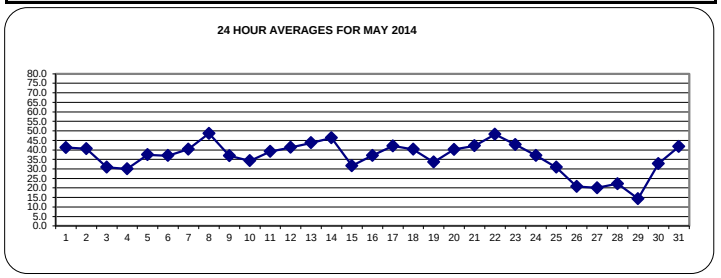
MST

HOUR START / HOUR END	0:00 1:00	1:00 2:00	2:00 3:00	3:00 4:00	4:00 5:00	5:00 6:00	6:00 7:00	7:00 8:00	8:00 9:00	9:00 10:00	10:00 11:00	11:00 12:00	12:00 13:00	13:00 14:00	14:00 15:00	15:00 16:00	16:00 17:00	17:00 18:00	18:00 19:00	19:00 20:00	20:00 21:00	21:00 22:00	22:00 23:00	23:00 0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY																											
1	47	44	42	39	36	35	34	33	S	35	36	38	S	41	42	C	C	C	49	48	47	46	46	45	49	41.2	24
2	42	40	41	40	39	39	39	S	S	41	41	42	42	42	44	43	44	43	43	42	38	36	36	36	44	40.6	24
3	34	33	33	32	33	35	S	29	29	30	30	28	29	31	31	32	32	32	31	30	29	29	29	30	35	30.9	24
4	30	29	29	27	27	S	28	30	30	30	31	31	31	32	33	34	35	34	31	31	29	27	27	25	35	30.0	24
5	25	24	28	28	S	29	30	S	31	34	S	41	42	41	42	44	47	47	47	43	40	42	43	38	47	37.4	24
6	35	34	38	S	37	41	44	40	36	38	35	33	35	36	36	39	39	38	37	37	37	36	35	34	44	37.0	24
7	34	34	S	35	35	35	33	34	38	42	42	42	43	44	45	46	45	45	44	43	43	43	42	41	46	40.3	24
8	40	S	40	40	39	38	37	39	42	45	50	53	53	54	54	55	55	56	56	55	55	55	53	54	56	***48.6***	24
9	S	41	34	32	33	34	34	34	35	36	37	39	41	41	40	40	40	40	38	37	36	35	35	S	41	36.9	24
10	36	32	32	33	33	30	31	31	32	34	35	34	35	35	36	35	36	37	38	37	36	36	S	34	38	34.3	24
11	32	31	31	32	32	33	32	35	37	38	41	45	44	45	44	44	43	43	44	44	44	S	44	42	45	39.1	24
12	42	42	42	40	42	43	40	40	41	41	42	43	44	42	41	40	40	40	40	40	S	41	42	42	44	41.3	24
13	39	41	33	24	25	26	Y	37	40	45	47	48	49	49	51	54	51	51	52	S	52	52	49	46	54	43.7	23
14	46	46	45	43	38	38	38	39	43	45	45	46	48	Y	53	54	55	54	S	52	52	50	46	44	55	46.4	23
15	43	34	32	34	34	30	P	P	P	P	P	P	R	38	32	30	31	S	28	28	28	28	28	28	43	31.6	17
16	29	29	28	28	28	27	29	29	29	29	31	34	40	41	41	44	S	47	47	48	49	48	48	48	49	37.0	24
17	42	42	39	41	42	36	35	35	37	39	45	46	46	47	48	S	49	48	48	46	42	40	38	36	49	42.0	24
18	36	34	40	40	39	37	40	37	35	36	39	45	49	47	S	47	45	45	44	42	41	38	36	34	49	40.3	24
19	31	33	35	41	40	39	37	34	35	34	32	32	30	S	31	31	32	30	30	30	28	32	37	37	41	33.5	24
20	37	34	32	30	30	29	30	33	34	37	40	44	S	50	51	52	52	51	48	42	42	44	43	39	52	40.2	24
21	34	32	29	30	28	28	28	30	33	39	44	S	49	50	50	52	54	55	56	54	52	51	49	42	56	42.1	24
22	42	42	42	39	38	40	44	45	44	45	S	49	51	54	56	57	59	***60***	57	53	51	47	46	46	***60***	48.1	24
23	46	46	45	46	39	41	30	36	44	S	50	49	47	43	43	44	45	45	44	43	42	40	38	37	50	42.7	24
24	35	38	35	33	30	28	29	34	S	37	36	37	40	43	43	42	42	42	41	40	39	39	36	33	43	37.0	24
25	33	33	34	31	27	25	22	S	28	29	27	31	36	36	36	36	37	38	37	32	27	24	23	27	38	30.8	24
26	32	33	32	30	26	24	S	22	22	23	24	24	24	24	21	17	17	13	11	12	12	12	11	10	33	20.7	24
27	15	20	17	15	16	S	13	16	17	19	19	19	20	21	23	24	24	25	24	23	23	23	23	22	25	20.0	24
28	19	19	19	18	S	19	20	23	24	26	28	29	31	33	31	29	21	19	17	18	16	17	17	18	33	22.2	24
29	19	19	18	S	14	12	11	10	10	11	11	10	10	10	10	11	13	16	17	18	18	20	20	22	22	14.3	24
30	23	21	S	18	17	20	23	26	30	34	37	39	39	39	40	42	44	43	41	39	37	34	34	34	44	32.8	24
31	34	S	31	32	37	34	31	37	40	43	46	48	48	48	47	47	46	46	48	46	47	43	40	41	48	41.7	24
HOURLY MAX	47	46	45	46	42	43	44	45	44	45	50	53	53	54	56	57	59	60	57	55	55	55	53	54			
HOURLY AVG	34.4	33.8	33.7	32.8	32.2	31.9	31.2	32.1	33.2	35.0	36.5	37.9	39.1	39.9	39.8	40.2	40.4	40.8	39.6	38.4	37.7	36.9	36.5	35.5			

STATUS FLAG CODES

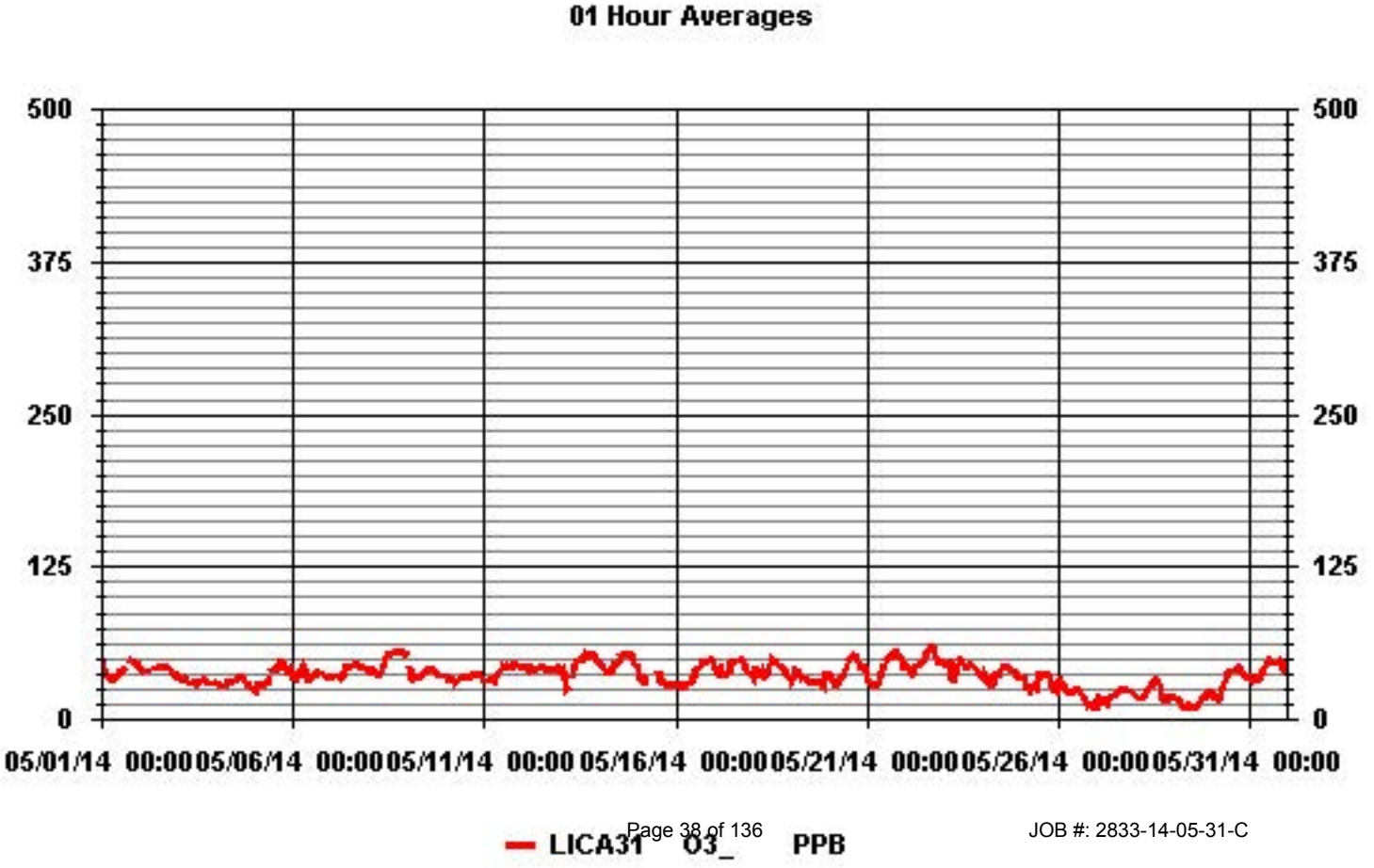
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	696					
MAXIMUM 1-HR AVERAGE:	60	PPB	@ HOUR(S)	17	ON DAY(S)	22
MAXIMUM 24-HR AVERAGE:	48.6	PPB			ON DAY(S)	8
					VAR-VARIOUS	
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:		735	HRS
MONTHLY CALIBRATION TIME:	3	HRS	AMD OPERATION UPTIME:		98.8	%
STANDARD DEVIATION:	9.89		MONTHLY AVERAGE:		36.28	PPB



JOB #: 2833-14-05-31-C

Lakeland Industry & Community Association - St. Lina Site

MAY 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	48	46	43	41	37	35	35	34	**S**	36	37	40	**S**	42	**C**	**C**	**C**	**C**	50	49	48	46	47	46	50	42.2	24
2	43	41	41	41	40	40	40	**S**	**S**	43	42	43	42	43	45	44	44	44	45	44	40	37	37	37	45	41.6	24
3	35	34	33	33	35	36	**S**	31	29	31	31	29	31	32	32	33	32	33	33	31	30	30	30	30	36	31.9	24
4	31	31	30	28	28	**S**	30	31	31	31	31	32	32	34	35	35	36	35	34	32	31	29	29	27	36	31.4	24
5	27	27	30	30	**S**	31	**S**	**S**	34	**S**	**S**	42	43	43	44	46	48	48	48	48	42	44	46	41	48	40.1	24
6	38	43	41	**S**	39	45	46	44	39	39	37	35	36	37	38	40	40	39	38	38	37	36	36	35	46	39.0	24
7	35	35	**S**	36	35	36	35	35	41	43	43	43	44	45	45	47	46	46	45	44	43	43	43	43	47	41.3	24
8	41	**S**	41	41	40	39	38	41	44	49	51	54	54	56	55	55	58	57	57	56	55	56	56	56	58	***50.0***	24
9	**S**	49	37	33	34	35	34	35	36	36	38	40	42	42	41	41	41	41	39	38	37	36	36	**S**	49	38.2	24
10	37	34	32	35	34	31	31	32	34	36	35	35	35	36	37	36	37	38	39	39	37	37	**S**	35	39	35.3	24
11	35	33	32	32	35	34	34	39	39	40	44	45	45	45	45	44	44	44	44	44	44	44	**S**	45	45	40.4	24
12	43	44	45	42	43	43	43	41	41	42	43	43	45	44	42	41	41	41	41	41	**S**	42	42	42	45	42.4	24
13	41	43	39	26	25	27	**Y**	57	43	47	48	49	50	51	53	55	53	53	53	**S**	52	53	52	48	57	46.3	23
14	47	47	46	45	40	39	40	41	46	46	46	48	50	**Y**	55	56	56	56	**S**	54	54	53	48	47	56	48.2	23
15	47	37	35	37	35	33	**P**	**P**	**P**	**P**	**P**	**P**	**R**	42	42	32	32	**S**	30	28	28	28	28	29	47	33.9	17
16	29	29	29	30	29	29	30	30	30	31	33	36	43	43	43	45	**S**	49	49	50	50	49	48	49	50	38.4	24
17	48	43	41	44	44	43	40	37	40	42	46	46	47	48	49	**S**	50	50	50	48	45	41	39	37	50	44.3	24
18	37	36	46	45	42	40	42	40	39	38	44	49	50	49	**S**	49	46	46	46	44	43	40	37	36	50	42.8	24
19	33	36	39	42	42	41	39	35	36	35	34	33	31	**S**	32	33	33	32	31	31	29	36	38	38	42	35.2	24
20	39	36	33	31	31	30	32	36	36	39	42	48	**S**	52	52	53	53	52	51	48	45	47	45	43	53	42.3	24
21	37	33	31	30	29	29	29	32	36	45	47	**S**	50	51	52	53	55	57	58	56	53	52	51	44	58	43.9	24
22	42	43	43	42	39	43	46	46	46	46	**S**	51	53	56	58	59	61	***62***	60	55	54	48	47	46	***62***	49.8	24
23	47	47	47	47	47	47	36	39	47	**S**	52	51	49	45	45	46	47	47	46	44	43	41	40	37	52	45.1	24
24	37	40	37	35	32	30	31	35	**S**	38	38	39	42	44	45	43	43	43	42	41	40	40	38	34	45	38.6	24
25	34	34	35	33	29	27	26	**S**	29	32	29	36	40	40	38	39	39	40	39	35	30	29	27	31	40	33.5	24
26	34	35	33	32	28	28	**S**	23	24	24	27	26	26	27	23	19	20	15	**P**	13	13	14	12	12	35	23.1	23
27	19	22	19	16	16	**S**	15	17	18	20	20	20	21	22	25	25	25	25	25	24	24	23	24	23	25	21.2	24
28	21	20	20	20	**S**	21	23	24	25	28	30	31	33	34	34	35	25	20	19	18	17	18	18	19	35	24.0	24
29	20	20	19	**S**	15	13	13	11	11	12	12	11	11	11	11	12	15	17	18	18	19	21	21	24	24	15.4	24
30	24	23	**S**	20	19	22	25	28	33	36	39	40	40	40	42	45	45	44	43	41	39	36	36	36	45	34.6	24
31	35	**S**	33	36	38	37	38	38	44	47	49	49	50	50	49	49	48	49	**X**	48	48	45	41	42	50	43.8	23
HOURLY MAX	48	49	47	47	47	47	46	57	47	49	52	54	54	56	58	59	61	62	60	56	55	56	56	56			
HOURLY AVG	36.1	35.9	35.5	34.6	33.8	33.9	33.5	34.5	35.2	36.9	38.1	39.4	40.5	41.5	41.6	41.7	41.8	42.2	41.9	40.0	39.0	38.3	37.9	37.0			

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: 691

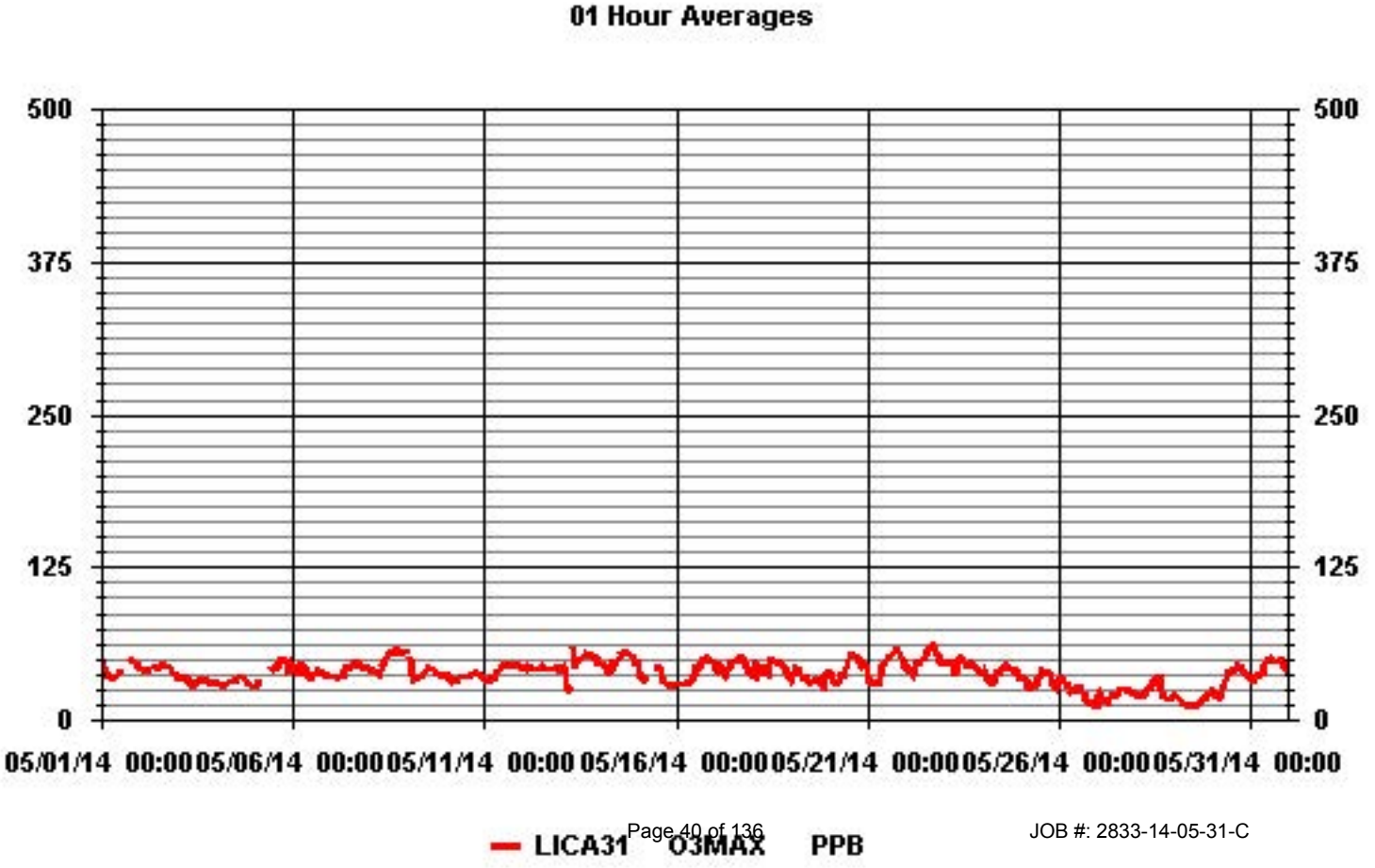
MAXIMUM INSTANTANEOUS VALUE: 62 PPB @ HOUR(S) 17 ON DAY(S) 22

VAR-VARIOUS

IZS CALIBRATION TIME: 38 HRS OPERATIONAL TIME: 733 HRS

MONTHLY CALIBRATION TIME: 4 HRS

STANDARD DEVIATION: 9.98



JOB #: 2833-14-05-31-C

LICA31
O3_ / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	10.20	7.32	5.89	6.75	9.33	4.02	2.15	2.72	4.31	2.58	4.88	4.02	4.45	5.74	7.04	11.06	92.52
<	110	.14	.00	.43	.14	.43	.00	.14	.71	.57	.57	.28	1.72	.86	.28	.43	.71	7.47
<	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	10.34	7.32	6.32	6.89	9.77	4.02	2.29	3.44	4.88	3.16	5.17	5.74	5.31	6.03	7.47	11.78	

Calm : .00 %

Total # Operational Hours : 696

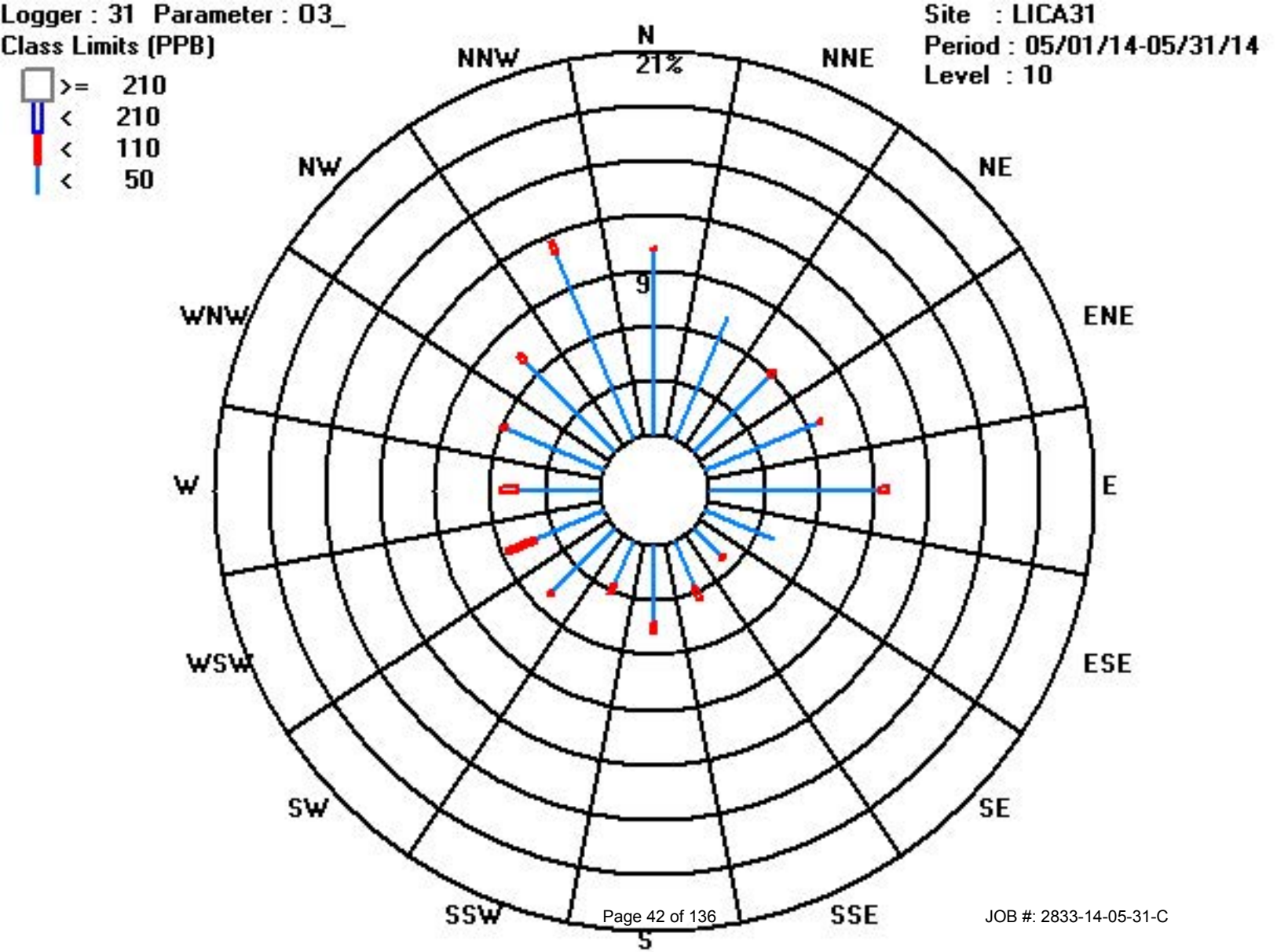
Distribution By Samples

Direction

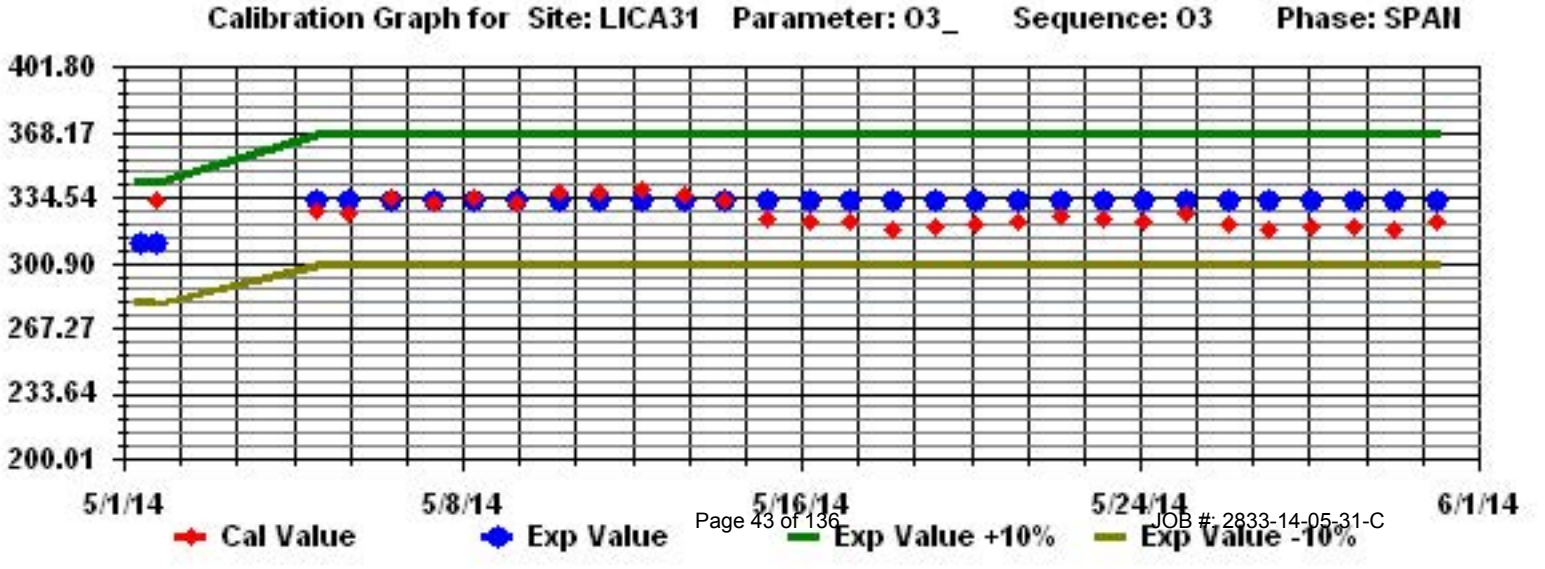
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	71	51	41	47	65	28	15	19	30	18	34	28	31	40	49	77	644
<	110	1		3	1	3		1	5	4	4	2	12	6	2	3	5	52
<	210																	
>=	210																	
	Totals	72	51	44	48	68	28	16	24	34	22	36	40	37	42	52	82	

Calm : .00 %

Total # Operational Hours : 696



JOB #: 2833-14-05-31-C


Calibration Graph for Site: LICA31 Parameter: O3_ Sequence: O3 Phase: SPAN
401.80
368.17
334.54
300.90
267.27
233.64
200.01
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitrogen Dioxide

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

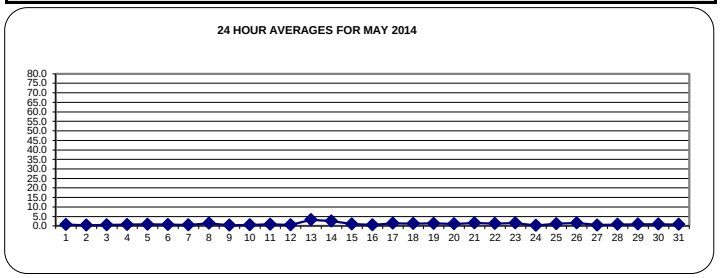
MST

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	X	X	X	X	X	X	X	X	S	C	C	C	C	C	C	C	4.1	1.3	0.4	0	0	0	0	0	4.1	0.7	16
2	0	0	0	0	0	0	0	S	S	3.3	1	0.4	0.1	0	0	0	S	C	C	3.6	0.4	0	0	0	3.6	0.5	24
3	0	0	0	0	0	0	S	1.3	0.1	C	C	C	1.7	0.6	0.3	0.6	0.6	0.4	0.4	0.5	1	1.5	1.1	0	1.7	0.5	24
4	0	0	0	0	0	S	2.3	1.7	1.2	1.1	0.7	0.6	0.6	0.7	0.6	0.6	0.6	0.6	1.1	0.5	0.3	1.5	1.1	1.4	2.3	0.7	24
5	1.2	1	0.5	0.5	S	2.1	1.8	1.2	1.1	1.1	0.7	0.4	0.7	0.6	0.5	0.6	0.3	0.6	0.6	1.9	2	0.8	0.3	0.4	2.1	0.9	24
6	0.3	0.3	0	S	2.5	1.6	1	1.1	0.9	1	0.5	0.8	0.8	0.6	0.6	0.6	0.3	0	0.3	0.4	0.2	0.3	0.4	0.6	2.5	0.7	24
7	0.7	0.8	S	3.7	1.9	1.3	1.3	1.4	1	0.5	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	3.7	0.6	24
8	0	S	4.5	2.7	2	2.3	2.3	2.2	1.9	1.8	1.4	1.2	1.2	0.9	1.2	0.6	1.1	0.5	0.8	0.5	0.5	0.4	0.5	0.5	4.5	1.3	24
9	S	5.4	2.7	1.2	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	5.4	0.4	24
10	4.1	2.1	1.6	0.6	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	4.8	4.8	0.6	24
11	2.9	3.5	2.1	1	0.7	0.7	0.7	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	S	4.9	2.5	4.9	0.9	24
12	1.4	1.1	0.5	0.5	0	0.1	0.6	0.2	0	0.4	0	0	0	0	0	0	0	0	0	0.2	S	5.7	2	1	5.7	0.6	24
13	1.7	0.9	4	***10.1***	8.5	7.7	3.9	0.9	0.3	0.3	0.3	0	C	C	C	C	C	C	C	S	Y	Y	Y	Y	***10.1***	***3.2***	20
14	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	C	C	C	1.7	2.3	S	3.9	4.1	3	1.8	1.5	4.1	2.6	15
15	1.6	2	1.4	0.5	0.6	1	P	P	P	P	P	P	R	0	0.5	0.6	0.1	S	1.3	1.1	1.3	1.4	1.3	0.9	2	1.0	17
16	0.7	0.4	0.5	0.3	0.4	0.6	0.5	0.5	0.5	0.4	0.4	0.3	0.4	0.3	0.4	0.6	S	1.1	1	0.9	0.8	0.6	0.7	0.9	1.1	0.6	24
17	1.4	1.6	2.2	1.7	1.6	2.4	2.6	2	2.2	1.5	1	0.6	0.6	0.6	0.6	S	0.9	0.9	1	1	1.2	2.1	2.1	1.9	2.6	1.5	24
18	1.9	1.6	1.1	0.9	0.9	1.1	0.8	1	1.3	1.6	1.3	1.2	1	1.2	S	0.8	1	1.2	1	1	1	1.3	1.7	2.5	2.5	1.2	24
19	3.6	2.7	2.1	1	1	0.7	0.8	1.1	1	0.9	1.1	0.9	0.9	S	1	0.8	1.1	1.1	1.3	1.4	1.6	1.8	1.6	1.3	3.6	1.3	24
20	1.2	1.4	1.3	1	1.2	1.3	1.3	1.1	1.1	1	1.1	1	S	0.9	1	0.9	0.7	0.6	1.3	0.9	0.9	1.3	1.3	1.7	1.7	1.1	24
21	1.8	1.8	2.7	2.4	2.6	2.4	2.4	2.4	2.2	1.9	1.7	S	1.4	0.7	1.3	0.9	0.9	1.2	1.3	1.1	0.9	0.8	0.6	0.3	2.7	1.6	24
22	0.1	0.1	0.8	1.8	3	2.3	1	1.1	1.3	0.8	S	0.7	0.9	0.6	0.7	1	1	0.9	1	1.5	2.1	1.9	2.1	2.2	3	1.3	24
23	2.1	2	1.8	1.8	1.8	2.5	2.5	2.8	2.3	S	1.1	1.3	0.8	0.5	0.4	0.5	0.7	1	1.3	1.9	1.6	1.8	1.6	0.3	2.8	1.5	24
24	0.5	0.4	0.2	0.3	0.3	0.3	0.3	0.5	S	0.3	0	0	0	0.1	0	0	0	0.1	0.2	0.2	0.2	0.5	0.3	0.1	0.5	0.2	24
25	0	0.1	0	1	3.7	3.8	3.3	S	1.4	1.3	1.5	0.9	0.6	0.5	0.7	1.2	0.5	0.7	0.7	0.7	0.7	1	1	1	3.8	1.1	24
26	0.9	0.8	0.9	0.9	1	1.1	S	2	2.1	1.9	1.8	1.7	2.2	2	1.9	1.8	1.6	1.9	2.5	1.9	1.5	1.4	1.2	1	2.5	1.6	24
27	0.9	0.4	0.6	0.7	0.6	S	0.5	0.3	0.2	0.4	0.4	0.3	0.1	0.4	0.5	0.5	0.6	0.5	0.6	0.6	0.6	0.4	0.4	0.5	0.9	0.5	24
28	0.8	0.6	0.8	1	S	0.5	0.6	0.8	0.8	0.7	0.7	1	0.9	0.7	0.4	0.4	0.6	0.7	1.1	0.6	1.3	0.7	1.4	1.1	1.4	0.8	24
29	0.6	0.6	0.9	S	2.3	2.2	2.1	2.3	2.6	1.5	0.5	0.7	1.5	1.4	0.4	0.4	0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.3	2.6	1.0	24
30	0.4	0.5	S	2.6	3.2	2.2	1.2	0.8	0.7	0.5	0.8	0.5	0.4	0.4	0.5	0.6	0.5	0.5	0.7	0.5	0.5	0.8	1	1.3	3.2	0.9	24
31	1.4	S	1.6	1.4	0.9	0.9	1.3	0.6	0.8	0.7	0.5	0.6	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.5	0.7	0.8	1	0.9	1.6	0.8	24
HOURLY MAX	4	5	5	10	9	8	4	3	3	3	2	2	2	2	2	2	4	2	3	4	4	6	5	5			
HOURLY AVG	1.2	1.2	1.3	1.5	1.5	1.5	1.4	1.2	1.0	1.0	0.7	0.6	0.7	0.5	0.5	0.5	0.7	0.7	0.7	0.9	0.9	1.1	1.1	1.1			

STATUS FLAG CODES

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

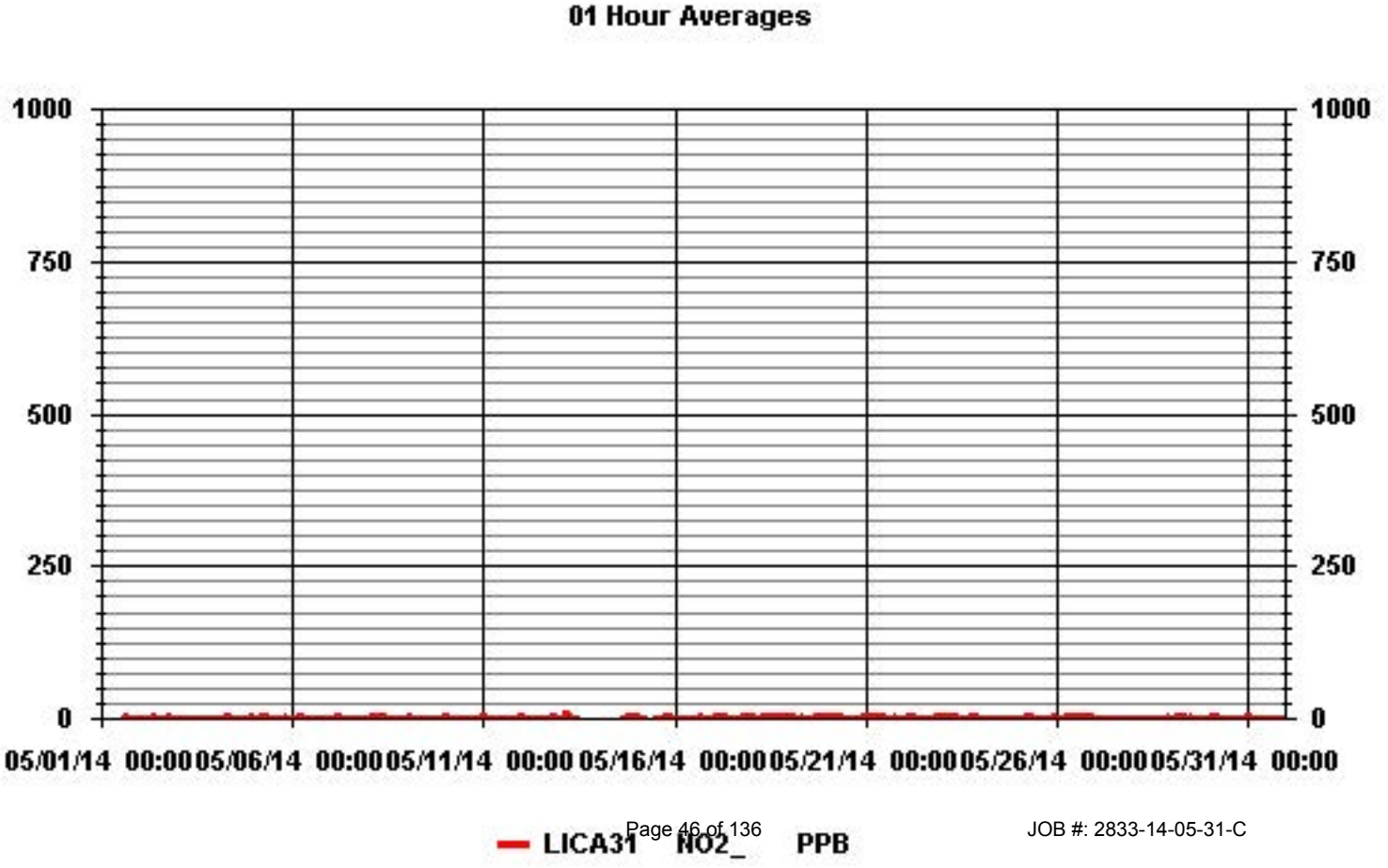
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 159 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	541					
MAXIMUM 1-HR AVERAGE:	10.1	PPB	@ HOUR(S)	3	ON DAY(S)	13
MAXIMUM 24-HR AVERAGE:	3.2	PPB			ON DAY(S) VAR-VARIOUS	13

IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	716	HRS
MONTHLY CALIBRATION TIME:	26	HRS	AMD OPERATION UPTIME:	96.2	%
STANDARD DEVIATION:	1.04		MONTHLY AVERAGE:	0.97	PPB



JOB #: 2833-14-05-31-C

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	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	X	X	X	X	X	X	X	X	S	C	C	C	C	C	C	C	6.7	0.8	0	0	0	0	0	0	6.7	0.9	16
2	0	0	0	0	0	0	0	S	S	3.7	0	0	0	0	0	0	S	C	C	C	1.6	0.4	0	0	3.7	0.3	24
3	0	0	0	0	0	0	S	1.8	C	C	C	C	1.2	0.1	0	0.7	0.1	0.1	0.1	0.1	0.7	1.2	0.7	0	1.8	0.4	24
4	0	0	0	0	0	S	3	2.4	1.8	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	2.5	1.2	1.9	2.5	1.9	1.9	3	1.3	24
5	1.3	1.3	1.3	1.3	S	2.5	11.8	1.9	1.9	1.8	1.3	1.3	1.9	3.6	0.6	0.6	0.6	1.3	1.3	2.5	2.5	1.9	0.6	1.2	11.8	2.0	24
6	0.6	0.6	0.1	S	2.5	1.8	1.3	0.6	0.6	6.6	0.6	0.6	0.6	0.6	0.6	0.6	0.1	0.1	0.6	0.6	0.6	0.1	0.6	0.6	6.6	0.9	24
7	0.6	1.3	S	6.5	1.9	1.3	1.3	1.9	1.3	0.7	0	0	0	0	0	0	0	0	0	18.8	5.3	0	0	0	18.8	1.8	24
8	0	S	6.5	6.5	2.3	2.4	2.4	1.7	1.8	1.8	1.2	1.2	1.7	0.5	13.5	0.6	1.8	0.5	1.7	0.5	0.6	0.5	0.5	0.6	13.5	2.2	24
9	S	9.4	3	1.3	0.7	0.1	0.1	0	0	0	0	0	5.9	0	0	0	0	0	0	0.1	0.6	0	0	S	9.4	1.0	24
10	8.7	2.9	2.4	1.7	0.5	0.5	1.1	1.2	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	S	9.4	9.4	1.3	24
11	4.2	4.2	2.4	1.2	0.7	0.7	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	9.5	3	9.5	1.2	24
12	1.9	1.3	0.7	0.7	0	0	0.7	0.7	0	1.3	0.7	0	0	0.7	3.6	0	0.7	0	1.3	2.4	S	13	3	1.9	13	1.5	24
13	3	1.9	10	10.6	9.5	9.4	7.7	1.9	0.7	0.7	0.7	0.7	C	C	C	C	C	C	C	S	Y	Y	Y	Y	10.6	4.7	20
14	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	C	C	C	2.9	5.7	S	25.6	5.4	4.4	2.7	2.7	25.6	***7.1***	15
15	3.3	3.7	2.6	1.6	1.3	1.6	P	P	P	P	P	P	R	1.1	2.9	2.9	0.9	S	1.9	2	2.2	2.2	2	1.9	3.7	2.1	17
16	1.5	1.1	1.2	1	1	2.2	1.1	1.2	1.3	0.9	0.9	0.9	1.2	1.1	1.4	2.1	S	2.9	2.7	2.3	2.1	1.6	1.4	1.5	2.9	1.5	24
17	3	2.5	3.4	2.5	2.7	3.3	3.9	2.7	10.3	2.1	1.7	1.2	1.2	1.2	1.2	S	1.6	1.6	1.5	1.5	1.9	2.9	2.9	2.9	10.3	2.6	24
18	2.5	2.5	1.9	1.7	1.7	1.7	1.6	1.7	2.2	2.2	1.8	2.2	1.9	1.8	S	1.2	1.3	1.7	1.5	1.7	1.5	1.8	2.6	3	3	1.9	24
19	4.5	3.5	3.7	1.5	1.6	1.3	1.4	1.6	1.5	1.5	1.6	1.6	1.4	S	1.5	1.5	2	2	2.1	2.1	2.1	2.5	2.3	1.9	4.5	2.0	24
20	1.9	1.8	1.8	1.7	1.7	1.8	1.8	1.5	1.7	1.5	1.5	1.4	S	1.5	1.6	1.4	1.4	1.5	14.6	1.7	1.5	1.9	2.4	2.4	14.6	2.3	24
21	2.6	2.8	3.5	3.1	4	3.4	3.7	3	2.8	2.5	2.8	S	2.7	1.5	***40.4***	1.9	2.2	2.1	2.4	2.2	1.8	1.7	1.7	1.4	***40.4***	4.2	24
22	0.9	0.9	1.6	2.7	3.9	4	1.7	2.1	1.9	1.7	S	1.3	1.7	1.1	1.2	1.9	1.9	1.4	1.4	1.9	2.8	2.4	2.7	2.8	4	2.0	24
23	2.9	2.3	2.4	2.4	2.5	3.4	3.8	3.8	3.1	S	1.5	3.5	1.1	1.2	1.1	1.2	1.7	13.8	3.3	3.7	2.2	2.5	2.7	1.2	13.8	2.9	24
24	1.3	1.1	1	1	1	1	0.9	0.9	S	1	0.7	0.5	0.3	0.7	0.4	0.7	0.7	0.6	0.7	0.7	1.2	2	0.8	0.9	2	0.9	24
25	0.7	0.7	0.6	2.7	4.5	4.4	4.2	S	2.3	2	2.1	1.5	1.3	1.1	1.5	2.6	1.1	1.3	1.3	1.1	1.6	1.7	1.7	1.7	4.5	1.9	24
26	1.7	1.5	1.6	1.6	1.6	1.8	S	2.3	2.6	2.4	2.2	2.3	2.6	2.5	2.6	2.2	2.4	3.4	P	2.7	2.3	1.8	2	2	3.4	2.2	23
27	1.7	1	1.3	1.3	1.2	S	1.1	1.4	9.5	1.6	1.2	0.8	0.7	1.3	1	1.2	1.5	1.2	1.8	1.8	1.6	0.9	1	0.9	9.5	1.6	24
28	1.4	1.2	1.4	1.7	S	1.1	1.3	1.6	1.4	1.1	1.3	1.6	1.4	1.5	1	1.1	1.1	1.4	1.9	1.4	2.1	1.5	2.2	1.7	2.2	1.5	24
29	1.4	1.5	1.7	S	3.2	2.9	2.6	3	3.8	2.4	1	1.9	2.5	2.5	1.3	1.1	1	0.8	0.8	0.8	0.9	1	0.8	0.9	3.8	1.7	24
30	1.1	1.2	S	3.8	3.8	3.1	1.8	1.3	1	1	1.2	0.9	1.1	0.7	1.4	7.8	1.3	0.8	1.1	1	1.2	1.4	1.4	1.7	7.8	1.8	24
31	1.8	S	2	2	1.5	1.4	3.2	1.2	1.1	1.6	1.2	1.4	1.1	0.8	1.1	1.3	0.9	1.8	1.4	1.1	1.6	1.4	1.5	1.3	3.2	1.5	24
HOURLY MAX	9	9	10	11	10	9	12	4	10	7	3	4	6	4	40	8	7	14	15	26	5	13	10	9			
HOURLY AVG	1.9	1.9	2.2	2.3	2.0	2.1	2.5	1.7	2.2	1.7	1.1	1.1	1.3	1.1	3.0	1.3	1.3	1.7	1.8	2.8	1.7	1.9	1.8	1.8			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 559

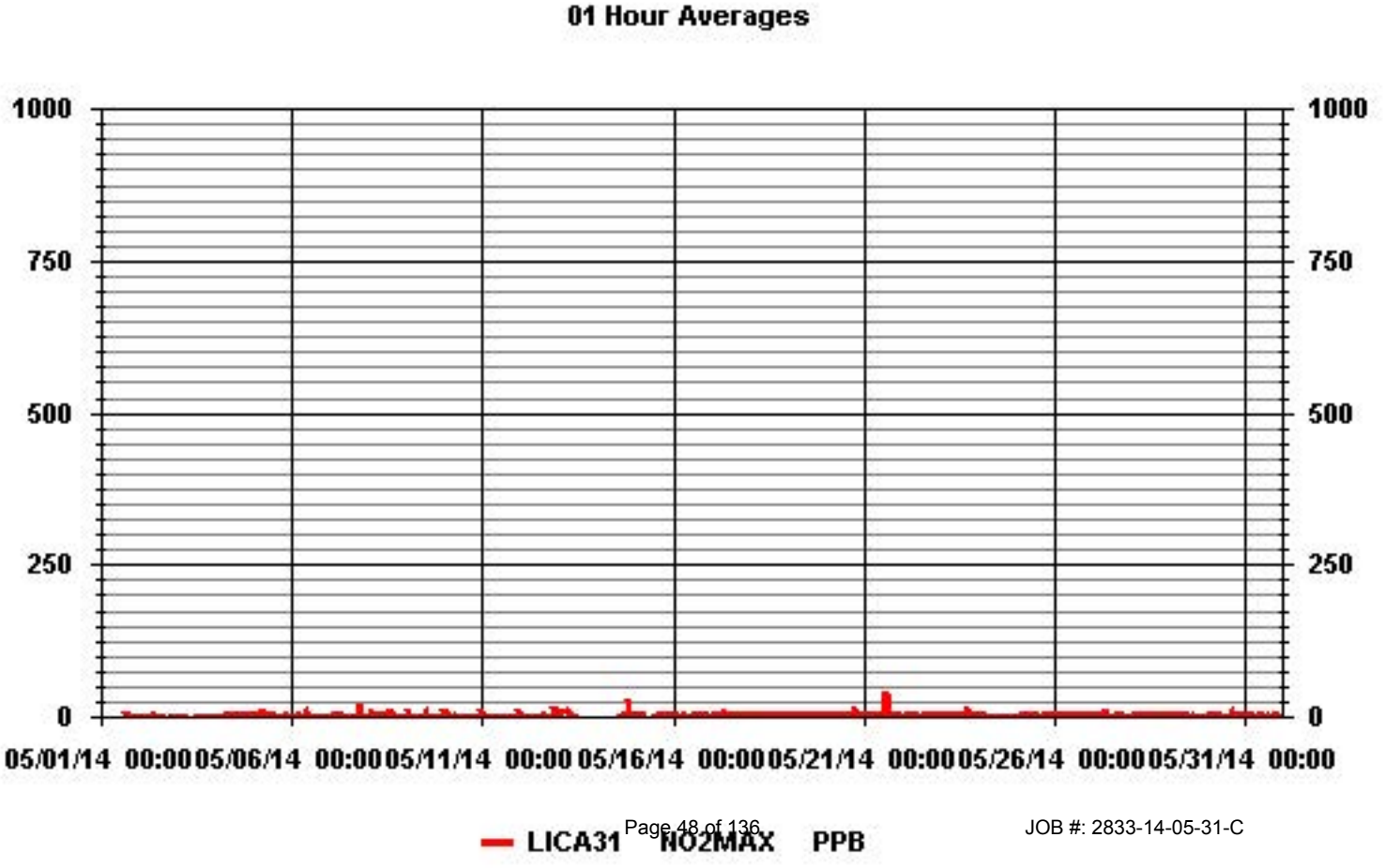
MAXIMUM INSTANTANEOUS VALUE: 40.4 PPB @ HOUR(S) 14 ON DAY(S) 21

VAR-VARIOUS

IZS CALIBRATION TIME: 34 HRS OPERATIONAL TIME: 715 HRS

MONTHLY CALIBRATION TIME: 28 HRS

STANDARD DEVIATION: 2.65



JOB #: 2833-14-05-31-C

LICA31
NO2_ / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	10.21	7.62	6.70	7.46	10.36	4.26	2.43	3.65	5.18	2.74	3.35	5.79	5.64	6.09	7.46	10.97	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	10.21	7.62	6.70	7.46	10.36	4.26	2.43	3.65	5.18	2.74	3.35	5.79	5.64	6.09	7.46	10.97	

Calm : .00 %

Total # Operational Hours : 656

Distribution By Samples

Direction

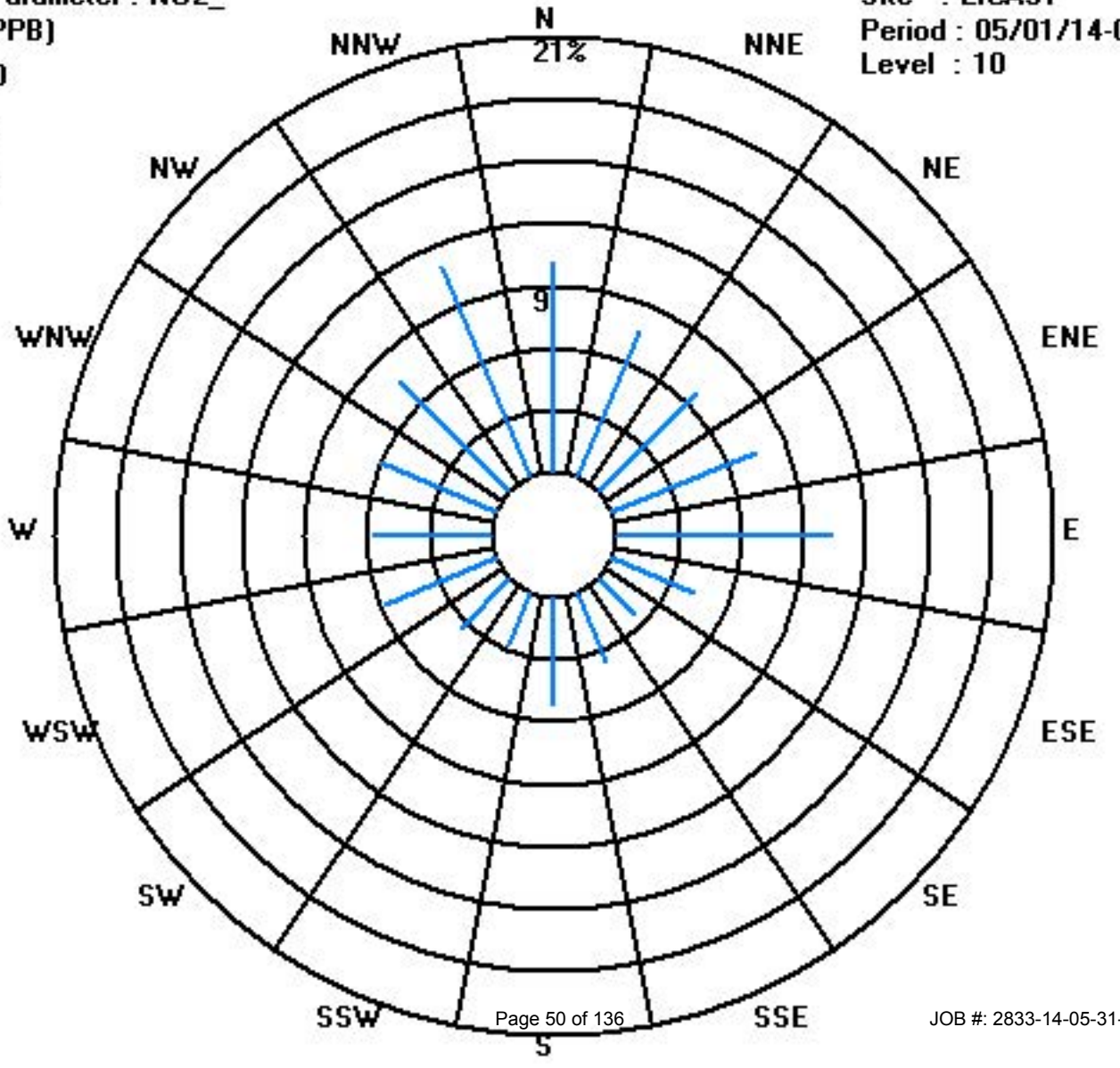
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	67	50	44	49	68	28	16	24	34	18	22	38	37	40	49	72	656
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	67	50	44	49	68	28	16	24	34	18	22	38	37	40	49	72	

Calm : .00 %

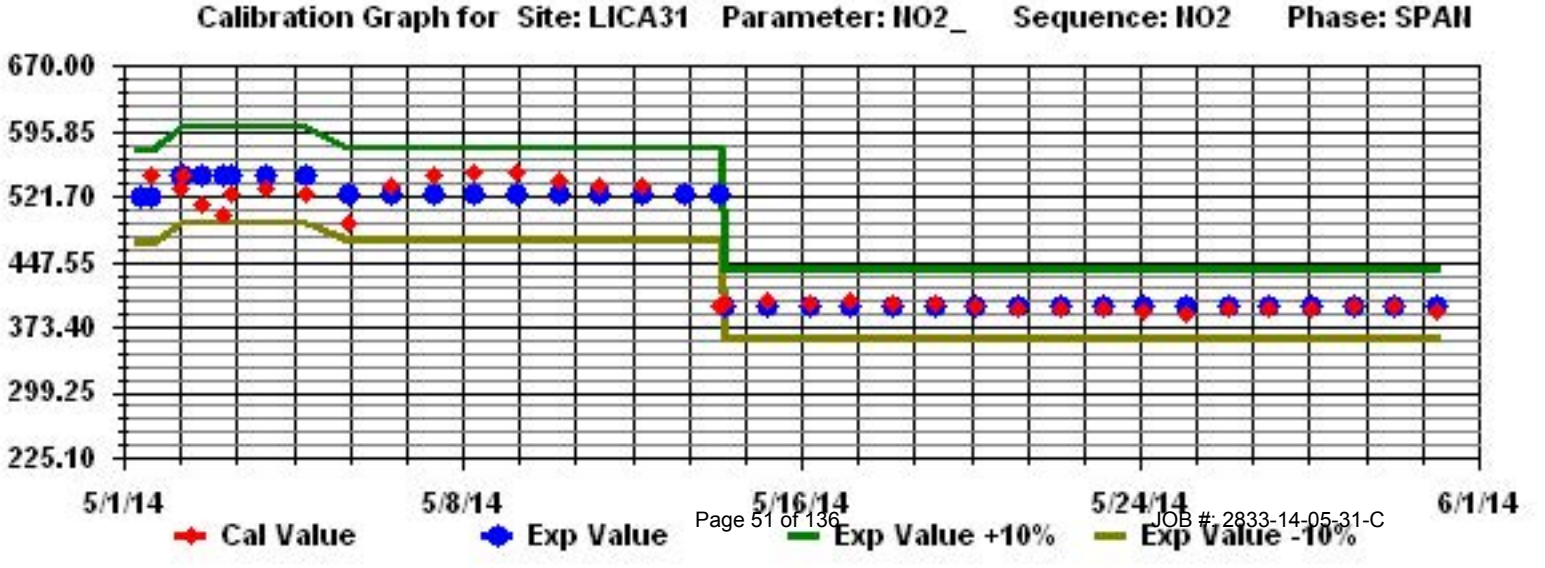
Total # Operational Hours : 656

Logger : 31 Parameter : NO2_
Class Limits (PPB)
>= 210.0
< 210.0
< 110.0
< 50.0

Site : LICA31
Period : 05/01/14-05/31/14
Level : 10



JOB #: 2833-14-05-31-C


Calibration Graph for Site: LICA31 Parameter: NO2_ Sequence: NO2 Phase: SPAN
670.00
595.85
521.70
447.55
373.40
299.25
225.10
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

NITRIC OXIDE (NO) hourly averages in ppb

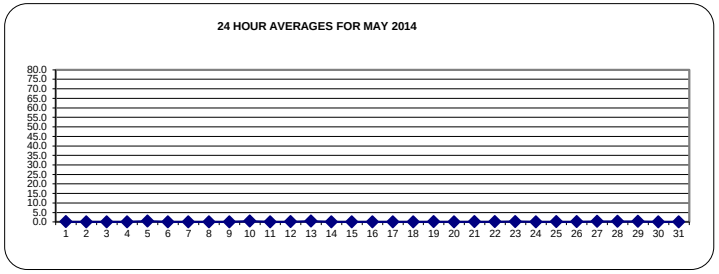
MST

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	X	X	X	X	X	X	X	X	S	C	C	C	C	C	C	C	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	16
2	0.1	0	0	0	0	0	0	S	S	0	0	0	0	0	0	0	S	C	C	0	0	0	0	0	0.1	0.0	24
3	0	0	0	0	0	0	S	0.4	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.0	24
4	0	0	0	0	0	S	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.0	24
5	0	0	0	0	S	0.7	0.8	0.6	0.6	0.5	0.6	0.5	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.4	0.4	0.3	0.2	0.8	***0.5***	24
6	0.3	0.3	0.3	S	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.0	24
7	0	0	S	0.2	0	0	0.1	0.2	0.2	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.0	24
8	0	S	0.2	0	0	0	0	0.1	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0.2	0.0	24
9	S	0.2	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	S	0.2	0.0	24
10	0.6	0.5	0.3	0.2	0.4	0.4	0.5	0.5	0.4	0.3	0.4	0.2	0.2	0.4	0.5	0.5	0.5	0.4	0.5	0.2	0.3	0.3	S	0.2	0.6	0.4	24
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.3	0.1	0.3	0.0	24
12	0.1	0.1	0.1	0.1	0	0	0	0	0.1	0.1	0.1	0.1	0	0.2	0.4	0	0	0	0	0	S	0.3	0.1	0	0.4	0.1	24
13	0.1	0.1	0.1	0.1	0.1	1.2	***1.3***	0.5	0.2	0.2	0.1	0.1	C	C	C	C	C	C	C	S	Y	Y	Y	Y	***1.3***	0.3	20
14	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	C	C	C	0	0	S	0.3	0	0	0	0	0.3	0.0	15
15	0	0	0	0	0	0	P	P	P	P	P	P	R	0	0.2	0	0.3	S	0	0	0	0	0	0	0.3	0.0	17
16	0	0	0	0	0	0	0	0	0.1	0	0.2	0.2	0	0	0	0	S	0	0	0	0	0	0	0	0.2	0.0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.1	0.1	0	0	0	0	0	0	0.1	0.0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.3	0	0.1	0	0.1	0	0	0	0.2	0.3	0.0	24
19	0.1	0.1	0.3	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	S	0.1	0	0	0	0	0	0	0	0	0	0.3	0.1	24
20	0	0	0	0	0	0	0.2	0.1	0.2	0.1	0.1	0	S	0.1	0	0	0	0	0.2	0	0	0	0	0	0.2	0.0	24
21	0	0	0	0	0	0.2	0.4	0.7	0.5	0.2	0.2	S	0	0	0.4	0	0	0	0	0	0	0	0	0	0.7	0.1	24
22	0	0	0	0	0	0	0	0.1	0	0	S	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.1	0.3	0.2	0.1	0.1	0	0.3	0.1	24
23	0.2	0	0	0.1	0.1	0.2	0.4	0.6	0.4	S	0	0.1	0	0.1	0	0.2	0.2	0.2	0.1	0.1	0	0	0	0	0.6	0.1	24
24	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
25	0	0	0	0	0	0.3	0.9	S	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0.9	0.1	24
26	0	0	0	0	0	0	S	0.1	0	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0	0	0	0	0.2	0.1	24
27	0	0	0	0	0.2	S	0.3	0.3	0.6	0.4	0.4	0.1	0.4	0.1	0.2	0.5	0.6	0.4	0.4	0.3	0.1	0.2	0.1	0	0.6	0.2	24
28	0.1	0.1	0.1	0	S	0.2	0.2	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.1	0.2	0.2	0.3	0.2	0	0	0.1	0	0.5	0.2	24
29	0	0.1	0.2	S	0.1	0	0.1	0.3	0.6	0.4	0.4	0.5	1.1	0.3	0.1	0.4	0.2	0.2	0	0.1	0.1	0.1	0.2	0.1	1.1	0.2	24
30	0.1	0.2	S	0	0	0.2	0.1	0	0.1	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0.2	0.0	24
31	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.2	0	0	0	0	0	0	0	0.2	0.0	24
HOURLY MAX	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0			
HOURLY AVG	0.1	0.1	0.1	0.0	0.0	0.1	0.2	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	0.0	0.1	0.0	0.0			

STATUS FLAG CODES

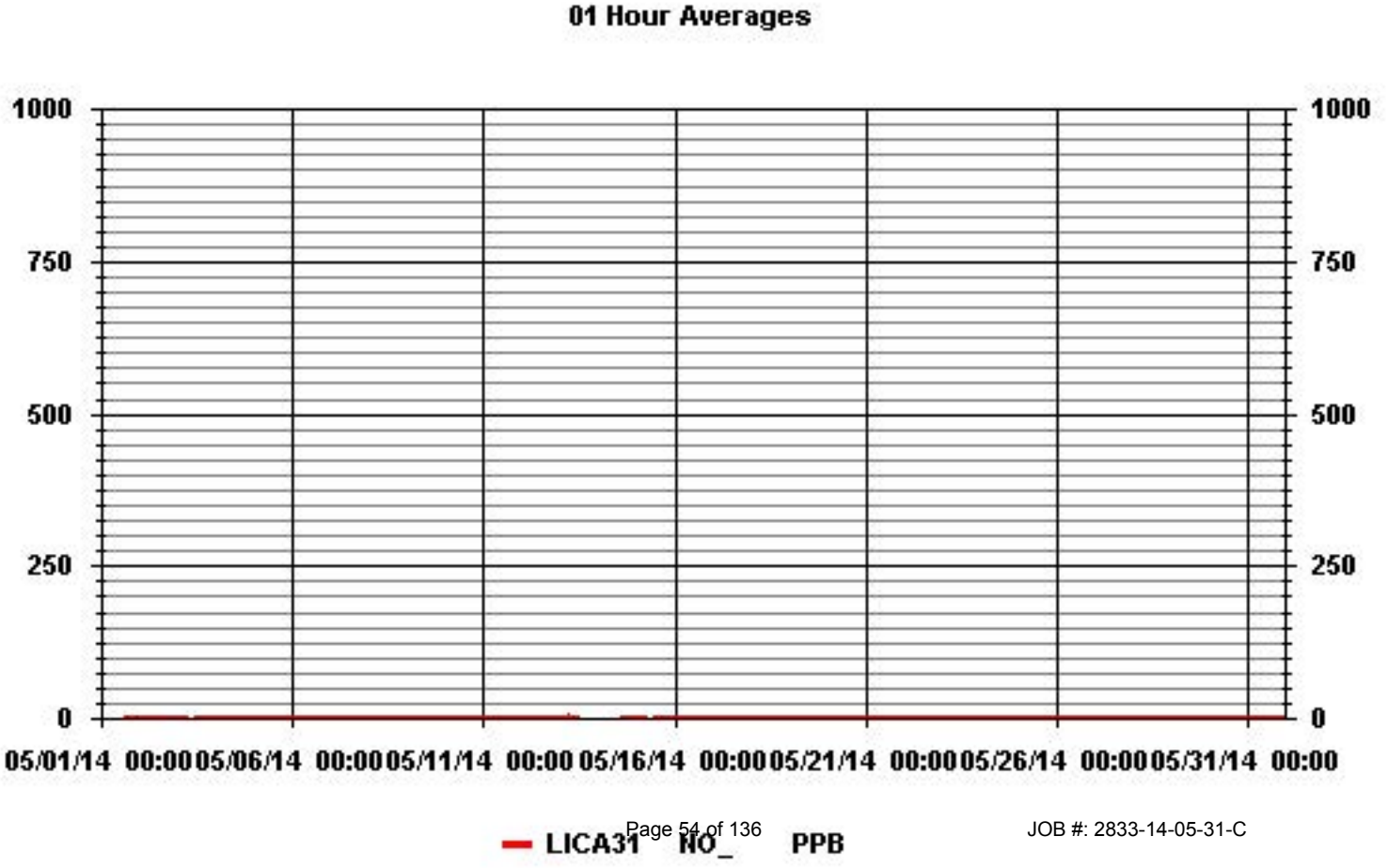
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	240					
MAXIMUM 1-HR AVERAGE:	1.3	PPB	@ HOUR(S)	6	ON DAY(S)	13
MAXIMUM 24-HR AVERAGE:	0.5	PPB			ON DAY(S) VAR-VARIOUS	5
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:		716	HRS
MONTHLY CALIBRATION TIME:	27	HRS	AMD OPERATION UPTIME:		96.2	%
STANDARD DEVIATION:	0.18		MONTHLY AVERAGE:		0.10	PPB



JOB #: 2833-14-05-31-C

Lakeland Industry & Community Association - St. Lina Site

MAY 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	X	X	X	X	X	X	X	X	S	C	C	C	C	C	C	C	0.8	0.8	0.7	0.1	0.1	0.1	0.1	0.1	0.8	0.4	16
2	0.1	0.1	0.1	0.1	0	0	0	S	S	0	0	0	0	0	0	0	S	C	C	C	0	0	0	0	0.1	0.0	24
3	0	0	0	0	0	0	S	0.7	C	C	C	C	0	0	0	0.8	0	0	0	0	0	0	0	0	0.8	0.1	24
4	0	0	0	0	0	S	0.6	0	0	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.1	24
5	0	0	0	0	S	1.2	10.1	0.6	0.6	1.2	0.6	0.6	1.3	4.8	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	10.1	1.2	24
6	0.6	0.6	0.6	S	0.6	0	0	0	0	4.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.2	0.3	24
7	0	0	S	0.7	0	0	0.7	0.7	0.7	0.7	0	0.6	0.7	0	0	0	0.6	0	0	1.3	0	0	0	0	1.3	0.3	24
8	0	S	0.7	0.6	0	0	0.6	0.7	0	0	0	0	0	0	10.1	0	0	0	0	0	0	0	0	0	10.1	0.6	24
9	S	0.7	0	0	0	0	0	0	0	0	0	0	3.6	8.3	0	0	0	0	0	0	0	0	0	S	8.3	0.6	24
10	1.2	0.5	0.5	0.5	0.5	0.5	1.1	1.1	0.5	0.5	0.5	0.5	0.5	0.5	1.2	1.2	1.1	0.5	0.5	0.5	0.5	0.5	S	0.7	1.2	0.7	24
11	0	0	0	0	0	0	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0.8	0.1	0.8	0.1	24
12	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8	0.1	0.1	0.1	1.4	17.8	0.1	0.1	0.1	0.8	0.1	S	0.8	0.1	0.1	17.8	1.0	24
13	0.1	0.1	0.1	0.1	0.7	2	2	0.8	0.8	0.8	0.8	0.1	C	C	C	C	C	C	C	S	Y	Y	Y	Y	2	0.7	20
14	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	C	C	C	0.6	0.6	S	22.5	0.4	0.7	0.2	0.1	22.5	***3.6***	15
15	0.5	0.7	0.4	0.1	0.5	0.7	P	P	P	P	P	P	R	0.7	1.1	0.6	1.2	S	0.7	0.2	0.8	0.3	0.5	0.3	1.2	0.6	17
16	0.6	0.5	0.6	0.3	0.8	0.8	0.6	0.6	0.6	0.6	0.8	0.8	1	0.3	0.8	1	S	1.1	0.3	0.3	0.2	0	0.3	0.4	1.1	0.6	24
17	0.1	0.2	0.2	0.1	0.2	0.5	0.7	0.4	13.1	0.4	0.4	0.3	0.2	0.5	0.2	S	0.6	0.7	0.6	0.7	0.6	0.6	0.5	0.5	13.1	1.0	24
18	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.4	0.4	0.6	0.5	0.7	0.5	0.7	S	1	0.7	0.9	0.7	0.8	0.9	0.7	0.7	0.8	1	0.6	24
19	0.9	0.8	1	0.7	0.9	0.9	0.9	0.9	0.9	0.8	0.9	0.9	0.9	S	0.8	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.5	1	0.7	24
20	0.5	0.6	0.5	0.4	0.5	0.7	0.8	1	0.9	1	0.6	0.7	S	0.8	0.7	0.6	0.5	0.7	14.1	0.6	0.5	0.5	0.4	0.7	14.1	1.2	24
21	0.6	0.5	0.5	0.6	0.3	0.8	1.2	1.4	1.2	0.9	1.4	S	1.2	0.5	***23***	1.1	0.9	0.8	0.5	0.3	0.4	0.3	0.3	0.3	***23***	1.7	24
22	0.5	0.5	0.6	0.4	0.2	0.4	0.4	0.8	0.5	0.9	S	0.9	0.9	0.7	0.8	1.1	0.9	0.8	0.8	1	0.8	0.6	0.7	0.6	1.1	0.7	24
23	0.8	0.8	0.5	0.7	0.7	2.1	1.2	2.2	1	S	0.7	1.1	0.6	0.8	0.7	1	1.2	6	1	0.7	0.6	0.6	1.8	0.4	6	1.2	24
24	0.4	0.6	0.6	0.5	0.5	0.5	1	0.7	S	0.7	0.3	0.5	0.5	0.8	0.5	0.8	0.7	0.7	0.6	0.5	0.6	0.5	0.5	0.4	1	0.6	24
25	0.4	0.5	0.4	0.5	0.9	1	1.8	S	0.5	0.4	0.5	0.6	0.5	0.6	0.6	1	0.5	0.5	0.5	0.6	0.3	0.5	0.5	0.5	1.8	0.6	24
26	0.2	0.2	0.2	0.2	0.4	0.1	S	0.8	0.7	0.7	0.8	0.6	0.8	0.6	0.8	0.6	0.9	0.8	P	0.6	1.2	0.7	0.6	0.3	1.2	0.6	23
27	0.7	0.3	0.7	0.6	0.6	S	1.3	1.4	8.7	1.7	1.3	0.7	1.4	1.1	1.1	1	1.9	1.1	1.9	1.1	0.8	0.9	0.7	0.7	8.7	1.4	24
28	0.7	0.8	0.7	0.5	S	0.7	1	1.1	1.3	1.2	1.1	1.4	1.1	1	1	0.7	0.9	0.8	0.9	0.9	0.5	0.6	0.9	0.7	1.4	0.9	24
29	0.7	0.7	0.7	S	0.8	0.7	0.8	0.9	1.7	1	1	1.2	2.3	1.2	0.9	1.4	1.2	0.8	0.8	0.7	0.8	0.9	1.1	0.7	2.3	1.0	24
30	0.8	1	S	0.4	0.8	0.9	1.3	0.7	0.8	0.5	0.7	0.7	1.2	0.9	1	0.8	1.2	0.4	0.6	0.9	0.4	0.4	0.4	0.4	1.3	0.7	24
31	0.4	S	0.7	0.5	0.3	0.5	1.8	0.7	0.5	0.7	0.5	1	0.4	0.8	0.7	0.5	0.8	0.6	0.5	0.6	0.5	0.6	0.5	0.7	1.8	0.6	24
HOURLY MAX	1	1	1	1	1	2	10	2	13	4	1	1	4	8	23	1	2	6	14	23	1	1	2	1			
HOURLY AVG	0.4	0.4	0.4	0.3	0.4	0.6	1.2	0.7	1.4	0.8	0.5	0.5	0.8	1.0	2.4	0.6	0.7	0.7	1.0	1.2	0.4	0.4	0.4	0.4			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 507

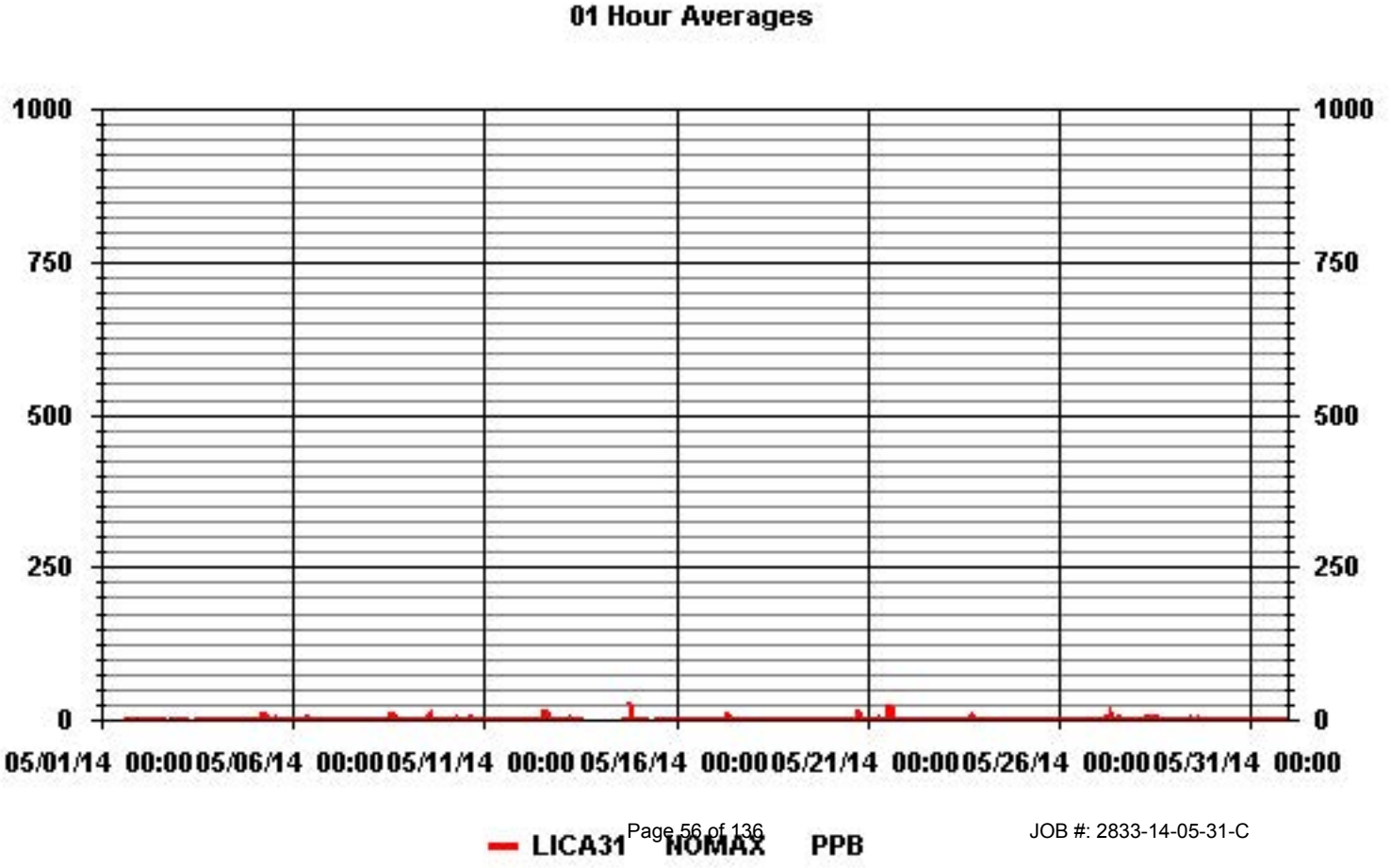
MAXIMUM INSTANTANEOUS VALUE: 23 PPB @ HOUR(S) 14 ON DAY(S) 21

VAR-VARIOUS

IZS CALIBRATION TIME: 34 HRS OPERATIONAL TIME: 715 HRS

MONTHLY CALIBRATION TIME: 28 HRS

STANDARD DEVIATION: 1.79



JOB #: 2833-14-05-31-C

LICA31
NO_ / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	10.22	7.48	6.71	7.48	10.38	4.27	2.44	3.66	5.19	2.74	3.35	5.80	5.64	6.10	7.48	10.99	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	10.22	7.48	6.71	7.48	10.38	4.27	2.44	3.66	5.19	2.74	3.35	5.80	5.64	6.10	7.48	10.99	

Calm : .00 %

Total # Operational Hours : 655

Distribution By Samples

Direction

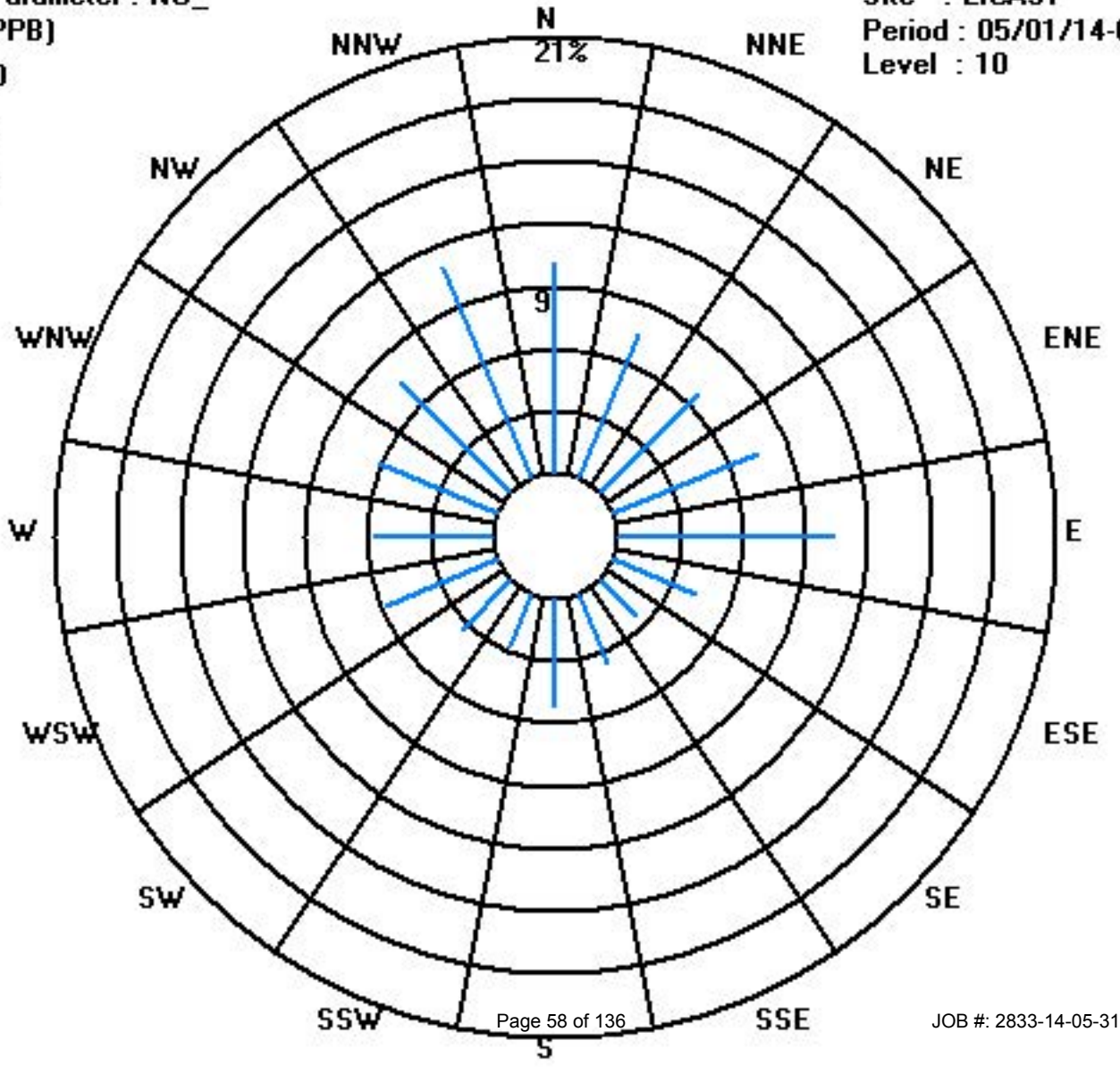
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	67	49	44	49	68	28	16	24	34	18	22	38	37	40	49	72	655
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	67	49	44	49	68	28	16	24	34	18	22	38	37	40	49	72	

Calm : .00 %

Total # Operational Hours : 655

Logger : 31 Parameter : NO_
Class Limits (PPB)
>= 210.0
< 210.0
< 110.0
< 50.0

Site : LICA31
Period : 05/01/14-05/31/14
Level : 10



JOB #: 2833-14-05-31-C

Oxides of Nitrogen

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

OXIDES OF NITROGEN (NOx) hourly averages in ppb

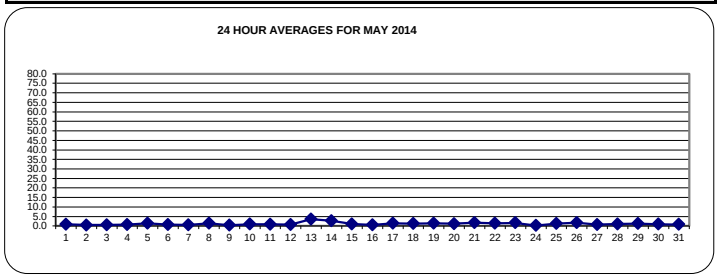
MST

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	X	X	X	X	X	X	X	X	S	C	C	C	C	C	C	C	4.2	1.5	0.5	0.1	0.1	0.1	0.1	0.1	4.2	0.8	16
2	0.1	0	0	0	0	0	0	S	S	3.3	1	0.4	0.1	0	0	0	S	C	C	3.6	0.4	0	0	0	3.6	0.5	24
3	0	0	0	0	0	0	S	1.7	0.1	C	C	C	1.7	0.6	0.3	0.6	0.6	0.4	0.4	0.5	1	1.5	1.1	0	1.7	0.5	24
4	0	0	0	0	0	S	2.6	1.7	1.2	1.1	0.7	0.6	0.6	0.7	0.6	0.6	0.6	0.6	1.1	0.5	0.3	1.5	1.1	1.4	2.6	0.8	24
5	1.2	1	0.5	0.5	S	2.8	2.6	1.8	1.7	1.6	1.3	0.9	1.4	1.3	1.1	1.2	0.9	1.2	1.2	2.5	2.4	1.2	0.6	0.6	2.8	1.4	24
6	0.6	0.6	0.3	S	2.6	1.6	1	1.1	0.9	1	0.5	0.8	0.8	0.6	0.6	0.6	0.3	0	0.3	0.4	0.2	0.3	0.4	0.6	2.6	0.7	24
7	0.7	0.8	S	3.9	1.9	1.3	1.4	1.6	1.2	0.5	0	0.1	0	0	0	0	0	0	0	0.2	0	0	0	0	3.9	0.6	24
8	0	S	4.7	2.7	2	2.3	2.3	2.3	1.9	1.8	1.4	1.2	1.2	0.9	1.3	0.6	1.1	0.5	0.8	0.5	0.5	0.4	0.5	0.5	4.7	1.4	24
9	S	5.6	2.7	1.2	0.4	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	S	5.6	0.5	24
10	4.7	2.6	1.9	0.8	0.4	0.4	0.5	0.7	0.4	0.3	0.4	0.2	0.2	0.4	0.5	0.5	0.5	0.4	0.5	0.2	0.3	0.3	S	5	5	1.0	24
11	2.9	3.5	2.1	1	0.7	0.7	0.7	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	S	5.2	2.6	5.2	0.9	24
12	1.5	1.2	0.6	0.6	0	0.1	0.6	0.2	0.1	0.5	0.1	0.1	0	0.2	0.4	0	0	0	0	0.2	S	6	2.1	1	6	0.7	24
13	1.8	1	4.1	***10.2***	8.6	8.9	5.2	1.4	0.5	0.5	0.4	0.1	C	C	C	C	C	C	C	S	Y	Y	Y	Y	***10.2***	***3.6***	20
14	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	C	C	C	1.7	2.3	S	4.2	4.1	3	1.8	1.5	4.2	2.7	15
15	1.6	2	1.4	0.5	0.6	1	P	P	P	P	P	P	R	0	0.7	0.6	0.4	S	1.3	1.1	1.3	1.4	1.3	0.9	2	1.0	17
16	0.7	0.4	0.5	0.3	0.4	0.6	0.5	0.5	0.6	0.4	0.6	0.5	0.4	0.3	0.4	0.6	S	1.1	1	0.9	0.8	0.6	0.7	0.9	1.1	0.6	24
17	1.4	1.6	2.2	1.7	1.6	2.4	2.6	2	2.2	1.5	1	0.6	0.6	0.6	0.6	S	1	1	1	1	1.2	2.1	2.1	1.9	2.6	1.5	24
18	1.9	1.6	1.1	0.9	0.9	1.1	0.8	1	1.3	1.6	1.3	1.2	1	1.2	S	1.1	1	1.3	1	1.1	1	1.3	1.7	2.7	2.7	1.3	24
19	3.7	2.8	2.4	1.1	1.2	0.9	1.1	1.3	1.2	1.1	1.3	1.1	1.1	S	1.1	0.8	1.1	1.1	1.3	1.4	1.6	1.8	1.6	1.3	3.7	1.5	24
20	1.2	1.4	1.3	1	1.2	1.3	1.5	1.2	1.3	1.1	1.2	1	S	1	1	0.9	0.7	0.6	1.5	0.9	0.9	1.3	1.3	1.7	1.7	1.2	24
21	1.8	1.8	2.7	2.4	2.6	2.6	2.8	3.1	2.7	2.1	1.9	S	1.4	0.7	1.7	0.9	0.9	1.2	1.3	1.1	0.9	0.8	0.6	0.3	3.1	1.7	24
22	0.1	0.1	0.8	1.8	3	2.3	1	1.2	1.3	0.8	S	1	1.2	0.8	1	1.3	1.3	1.2	1.1	1.8	2.3	2	2.2	2.2	3	1.4	24
23	2.3	2	1.8	1.9	1.9	2.7	2.9	3.4	2.7	S	1.1	1.4	0.8	0.6	0.4	0.7	0.9	1.2	1.4	2	1.6	1.8	1.6	0.3	3.4	1.6	24
24	0.5	0.4	0.2	0.3	0.3	0.3	0.3	0.5	S	0.3	0	0	0	0.1	0	0	0	0.1	0.2	0.2	0.2	0.5	0.3	0.1	0.5	0.2	24
25	0	0.1	0	1	3.7	4.1	4.2	S	1.4	1.3	1.5	0.9	0.6	0.5	0.8	1.2	0.5	0.7	0.7	0.7	0.7	1	1	1	4.2	1.2	24
26	0.9	0.8	0.9	0.9	1	1.1	S	2.1	2.1	2.1	1.9	1.9	2.4	2.2	2	1.9	1.8	2.1	2.7	2	1.5	1.4	1.2	1	2.7	1.6	24
27	0.9	0.4	0.6	0.7	0.8	S	0.8	0.6	0.8	0.8	0.8	0.4	0.5	0.5	0.7	1	1.2	0.9	1	0.9	0.7	0.6	0.5	0.5	1.2	0.7	24
28	0.9	0.7	0.9	1	S	0.7	0.8	1.3	1.3	1.2	1.2	1.5	1.3	1.1	0.7	0.5	0.8	0.9	1.4	0.8	1.3	0.7	1.5	1.1	1.5	1.0	24
29	0.6	0.7	1.1	S	2.4	2.2	2.2	2.6	3.2	1.9	0.9	1.2	2.6	1.7	0.5	0.8	0.5	0.4	0.3	0.3	0.4	0.4	0.5	0.4	3.2	1.2	24
30	0.5	0.7	S	2.6	3.2	2.4	1.3	0.8	0.8	0.5	0.8	0.5	0.4	0.4	0.5	0.6	0.7	0.5	0.7	0.5	0.5	0.8	1	1.3	3.2	1.0	24
31	1.4	S	1.6	1.4	0.9	0.9	1.3	0.6	0.8	0.7	0.5	0.6	0.3	0.4	0.5	0.5	0.7	0.6	0.6	0.5	0.7	0.8	1	0.9	1.6	0.8	24
HOURLY MAX	5	6	5	10	9	9	5	3	3	3	2	2	3	2	2	2	4	2	3	4	4	6	5	5			
HOURLY AVG	1.2	1.3	1.3	1.5	1.6	1.7	1.6	1.4	1.2	1.1	0.8	0.7	0.8	0.6	0.6	0.6	0.8	0.8	0.8	1.0	0.9	1.2	1.1	1.1			

STATUS FLAG CODES

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

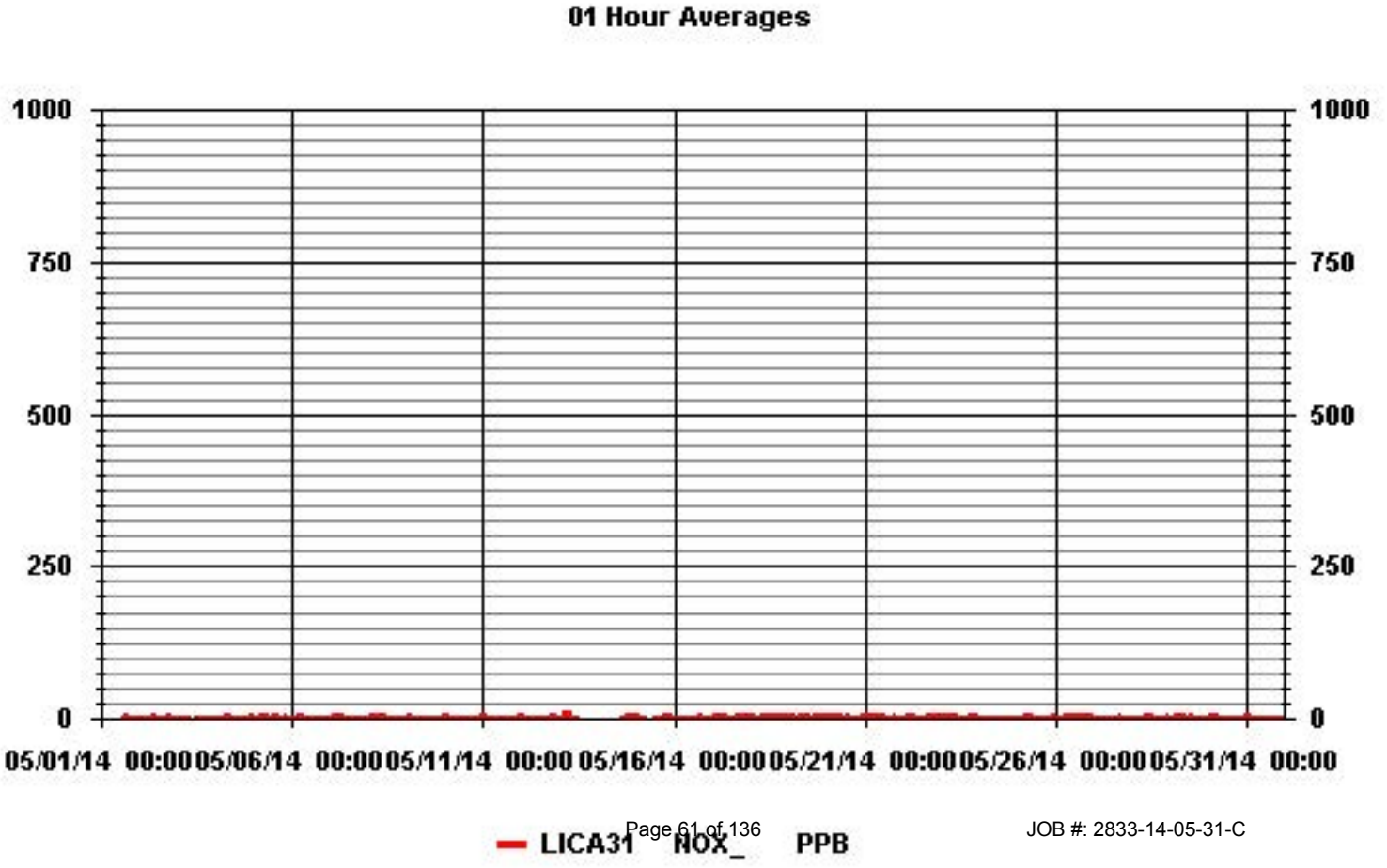
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR NA PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	573					
MAXIMUM 1-HR AVERAGE:	10.2	PPB	@ HOUR(S)	3	ON DAY(S)	13
MAXIMUM 24-HR AVERAGE:	3.6	PPB			ON DAY(S) VAR-VARIOUS	13

IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	716	HRS
MONTHLY CALIBRATION TIME:	26	HRS	AMD OPERATION UPTIME:	96.2	%
STANDARD DEVIATION:	1.08		MONTHLY AVERAGE:	1.07	PPB



JOB #: 2833-14-05-31-C

Lakeland Industry & Community Association - St. Lina Site

MAY 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	X	X	X	X	X	X	X	X	S	C	C	C	C	C	C	C	8.9	3.1	1.9	1.3	0.7	0.1	0.1	0.1	8.9	2.0	16
2	0.1	0	0	0	0	0	0	S	S	6.5	1.9	0.7	0.7	0.1	0	0	S	C	C	C	1.3	0.1	0	0	6.5	0.6	24
3	0	0	0	0	0	0	S	2.4	C	C	C	C	2.8	1	0	2.8	1	1	0.4	1	1.6	1.6	1.6	0.4	2.8	0.9	24
4	0	0	0	0	0	S	3.6	1.8	1.2	1.2	1.2	0.6	0.6	1.2	0.6	0.6	0.6	1.2	1.8	0.6	1.2	1.8	1.2	1.8	3.6	1.0	24
5	1.2	1.2	0.6	1.2	S	3	18.8	1.8	1.8	2.4	1.8	1.8	2.4	4.2	1.2	1.2	1.2	1.8	1.2	3	3	2.4	1.2	1.2	18.8	2.6	24
6	0.6	0.6	0.6	S	3	2.4	1.2	1.2	1.2	8.3	0.6	1.2	1.2	1.2	0.6	0.6	0.6	0.6	1.2	0.6	0.6	0.6	0.6	0.6	8.3	1.3	24
7	1.2	1.2	S	7.4	2.2	1.6	2.2	2.2	1.6	1.6	0.4	1	0.4	0.4	0	0	0.4	0	0	19.8	5.7	0	0	0	19.8	2.1	24
8	0	S	7	7	2.3	2.3	2.9	2.3	2.3	2.3	1.7	1.7	1.7	1.1	23.4	1.1	2.3	1.1	2.3	0.5	0.5	0.5	0.5	0.5	23.4	2.9	24
9	S	10	3.6	1.8	0.6	0.6	0.6	0	0	0	0	0	7.6	8.2	0	0	0	0	0	0	0.6	0	0	S	10	1.5	24
10	9.4	3	2.4	1.2	0.6	0.6	1.8	1.2	0.6	0	0	0	0	0	0	0	0.6	0	0	0	0	0	S	10.6	10.6	1.4	24
11	4.2	4.2	3	1.2	1.2	1.2	1.2	0.6	0.6	0	0.6	0	0	0	0	0	0.6	0	0	0	0	S	10	3.6	10	1.4	24
12	1.8	1.8	1.2	1.2	0.6	0.6	1.2	0.6	0.6	2.4	0.6	0	0.6	1.8	21.1	0.6	1.2	0.6	2.4	3	S	13.2	3.2	1.4	21.1	2.7	24
13	3.2	1.4	10.2	10.8	9.7	9.6	9.6	2.6	0.8	1.4	1.4	0.2	C	C	C	C	C	C	C	S	Y	Y	Y	Y	10.8	5.1	20
14	Y	Y	Y	Y	Y	Y	Y	Y	Y	C	C	C	C	C	C	C	3	6	S	43.1	5.2	4.6	2.4	2.3	43.1	***9.5***	15
15	3.3	3.8	2.5	1.2	1.4	1.9	P	P	P	P	P	P	R	1	3.1	2.6	1.5	S	2.1	1.7	2.3	2	2	1.6	3.8	2.1	17
16	1.7	1.1	1	0.9	1	2.6	1.2	1.2	1.5	0.9	1.2	1.2	1.8	0.8	1.5	2.8	S	3.8	3	2.5	2.2	1.5	1.4	1.5	3.8	1.7	24
17	2.8	2.5	2.9	2.3	2.3	3.5	4.7	2.8	21.3	2.5	2	1.2	1.3	1.3	1.1	S	1.7	1.6	1.7	1.6	2.1	2.8	3	2.9	21.3	3.1	24
18	2.4	2.2	1.9	1.5	1.5	1.7	1.5	1.8	2.3	2.3	2	2.1	1.7	2.1	S	1.7	1.5	2.1	1.7	1.7	1.7	2.1	2.8	3.4	3.4	2.0	24
19	4.6	3.6	4	1.9	1.8	1.7	1.9	1.9	1.7	1.8	1.9	1.7	1.7	S	1.8	1.5	2.1	2.1	2.1	2.1	2.1	2.5	2.3	1.8	4.6	2.2	24
20	2	2	1.8	1.6	1.9	2.1	2.4	2.4	2.6	2	1.8	1.9	S	1.7	1.8	1.5	1.3	1.4	23.1	1.5	1.6	1.8	2	2.4	23.1	2.8	24
21	2.4	2.7	3.4	3	3.8	3.5	4.3	3.9	3.6	2.7	3.5	S	3.4	1.6	***63.3***	2.4	2.5	2.3	2.5	2.1	1.6	1.6	1.4	1	***63.3***	5.3	24
22	0.7	0.7	1.5	2.7	3.7	3.7	1.6	2.3	2.1	1.5	S	1.9	2.3	1.4	1.6	2.6	2.6	1.7	2	2.5	2.9	2.6	3.1	3	3.7	2.2	24
23	3.1	2.7	2.6	2.5	2.7	5.2	4.8	5.7	3.9	S	1.7	4.2	1.4	1.6	1.1	1.6	2.4	19.1	4	4	2.3	2.6	2.8	1.2	19.1	3.6	24
24	1.2	1.1	1	1	1.2	0.9	1.7	1.4	S	0.9	0.8	0.7	0.7	1	0.7	0.9	0.9	0.8	0.9	0.7	1.2	2.2	1	0.9	2.2	1.0	24
25	0.4	0.6	0.8	2.4	5.1	4.8	5.5	S	2.5	2.1	2.1	1.6	1.3	1.1	1.8	3	1.1	1.3	1.3	1.5	1.3	1.6	1.8	2.1	5.5	2.0	24
26	1.7	1.3	1.6	1.3	1.6	1.5	S	3	2.9	2.8	2.5	2.4	3	2.9	2.7	2.4	2.4	3.7	P	2.7	3.2	2.1	2.1	1.6	3.7	2.3	23
27	1.7	1	1.4	1.3	1.5	S	1.9	2.2	15.9	2.4	2	1.1	1.5	1.8	1.4	1.9	2.3	1.7	3.4	1.9	1.9	1.4	1.1	1.1	15.9	2.3	24
28	1.7	1.5	1.5	1.7	S	1.3	1.6	1.8	2	1.9	1.9	2.2	1.9	1.7	1.4	1.4	1.3	1.6	2.2	1.6	2	1.4	2.3	2	2.3	1.7	24
29	1.6	1.7	1.9	S	3	3	2.8	3.4	5	3.1	1.5	2.5	3.8	3.1	1.7	1.7	1.5	1.1	0.9	1.1	1	1.1	1.2	1	5	2.1	24
30	1.1	1.5	S	4.1	4	3.6	2.8	1.7	1.4	1.2	1.7	1.3	2.4	1.2	1.8	8.1	2.1	1.1	1.5	1.9	1.3	1.4	1.6	1.9	8.1	2.2	24
31	2.1	S	2.3	2.2	1.5	1.4	4.9	1.6	1.3	2.2	1.3	2.2	0.9	1.3	1.4	1.2	1.4	2.1	1.2	1.2	1.7	1.4	1.6	1.6	4.9	1.7	24
HOURLY MAX	9	10	10	11	10	10	19	6	21	8	4	4	8	8	63	8	9	19	23	43	6	13	10	11			
HOURLY AVG	2.0	2.0	2.2	2.3	2.2	2.4	3.3	2.1	3.2	2.2	1.5	1.4	1.8	1.7	5.0	1.6	1.8	2.2	2.4	3.6	1.8	2.0	1.9	1.8			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 587

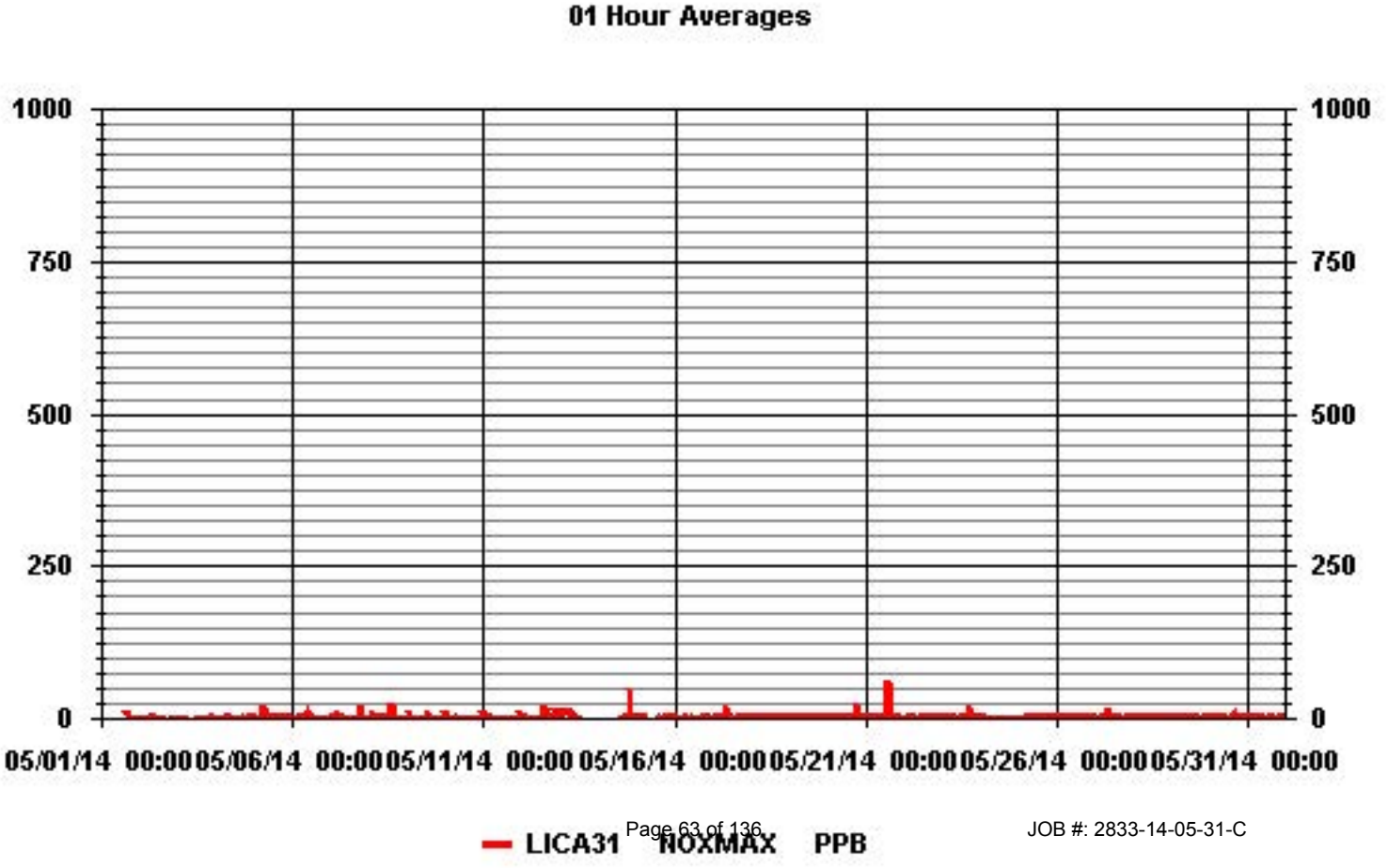
MAXIMUM INSTANTANEOUS VALUE: 63.3 PPB @ HOUR(S) 14 ON DAY(S) 21

VAR-VARIOUS

IZS CALIBRATION TIME: 34 HRS OPERATIONAL TIME: 715 HRS

MONTHLY CALIBRATION TIME: 28 HRS

STANDARD DEVIATION: 3.90



JOB #: 2833-14-05-31-C

LICA31
NOX_ / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	10.21	7.62	6.70	7.46	10.36	4.26	2.43	3.65	5.18	2.74	3.35	5.79	5.64	6.09	7.46	10.97	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	10.21	7.62	6.70	7.46	10.36	4.26	2.43	3.65	5.18	2.74	3.35	5.79	5.64	6.09	7.46	10.97	

Calm : .00 %

Total # Operational Hours : 656

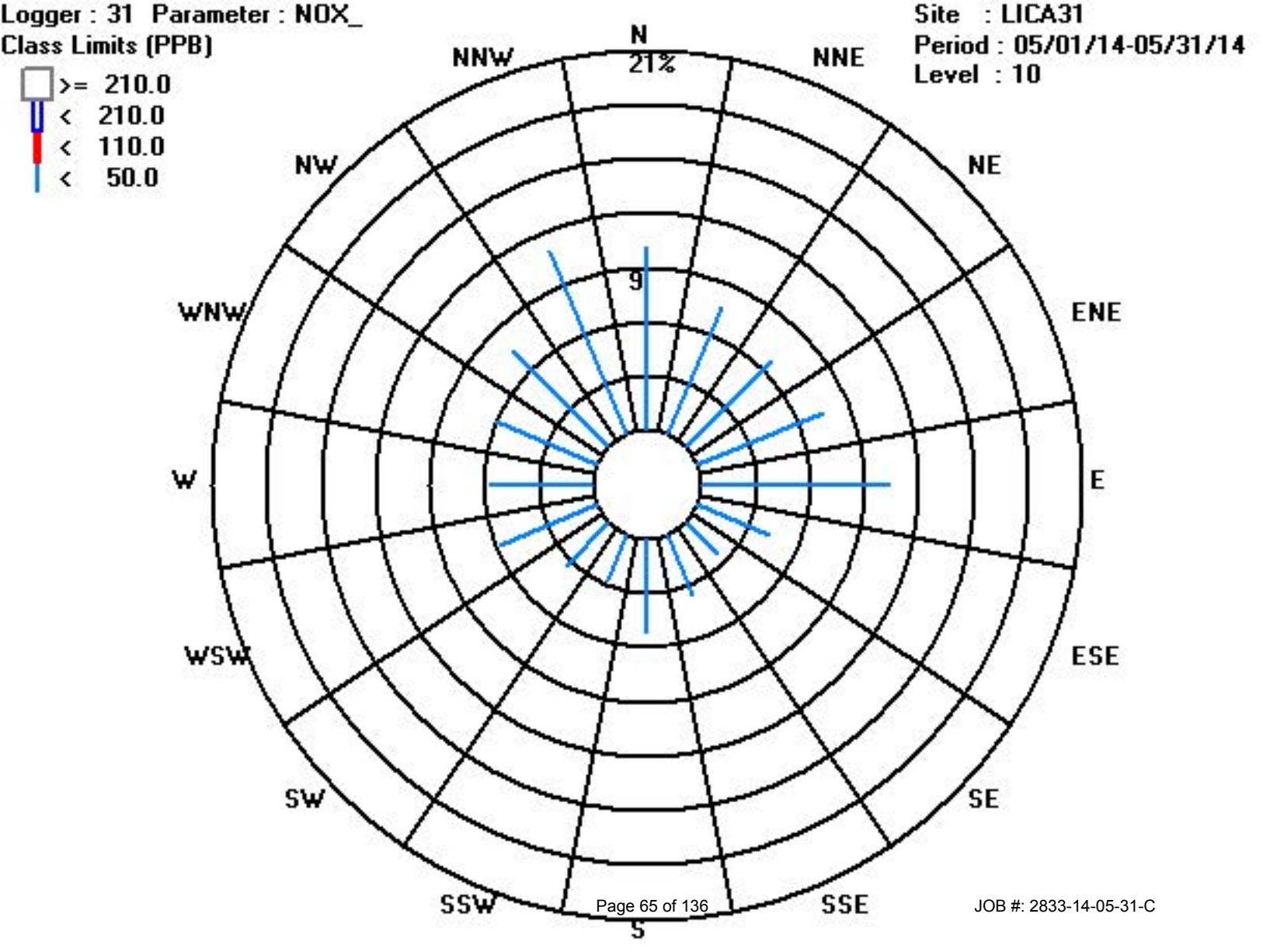
Distribution By Samples

Direction

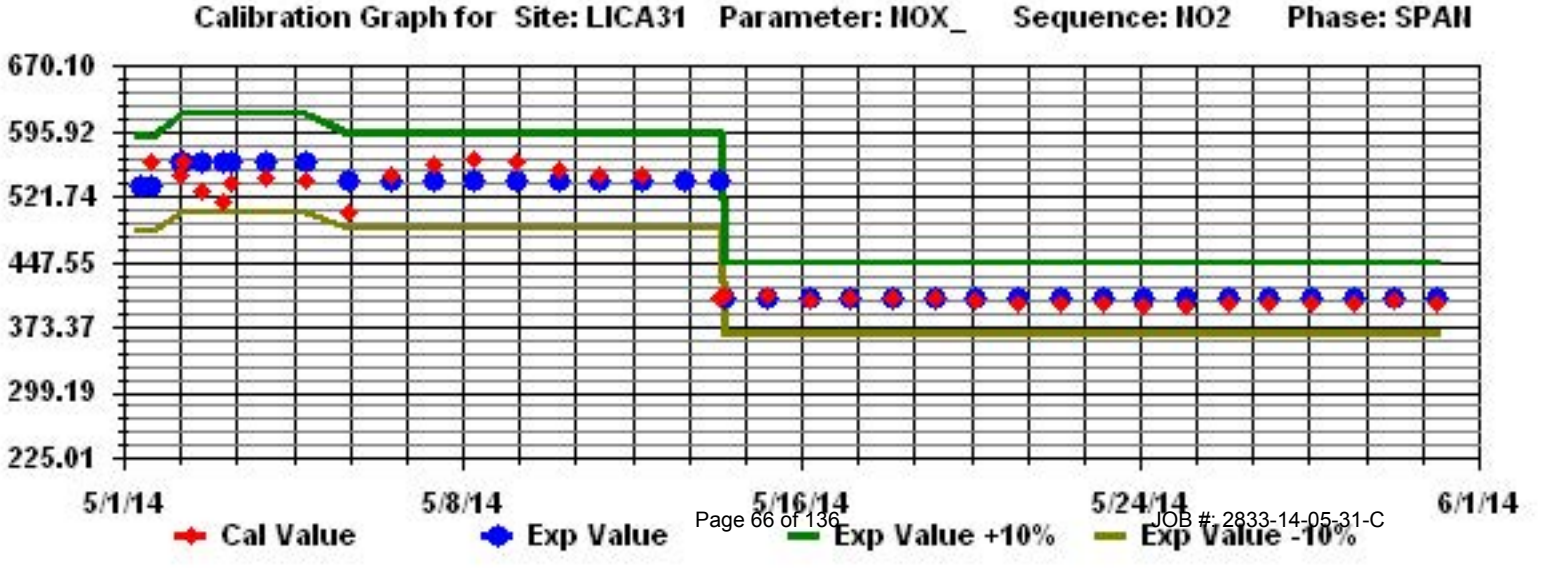
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	67	50	44	49	68	28	16	24	34	18	22	38	37	40	49	72	656
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	67	50	44	49	68	28	16	24	34	18	22	38	37	40	49	72	

Calm : .00 %

Total # Operational Hours : 656



JOB #: 2833-14-05-31-C


Calibration Graph for Site: LICA31 Parameter: NOX_ Sequence: NO2 Phase: SPAN
670.10
595.92
521.74
447.55
373.37
299.19
225.01
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

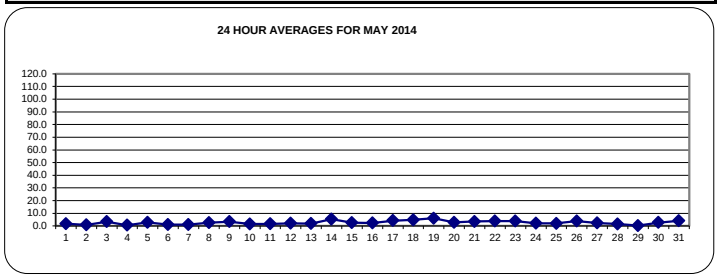
PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5) hourly averages in ug/m3

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	4	4	3	5	4	3	2	2	3	0	1	1	0	1	0	0	1	1	0	1	1	1	1	2	5	1.7	24
2	4	1	2	2	1	0	0	0	0	0	0	1	1	1	1	0	1	1	1	1	1	1	0	1	4	0.9	24
3	1	2	2	2	4	1	2	4	3	0	1	5	2	3	5	5	5	5	6	5	6	3	6	3	6	3.4	24
4	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	3	1	1	1	1	1	3	0.5	24
5	2	2	1	2	1	1	0	1	0	3	1	3	1	4	4	4	4	5	5	10	7	2	1	2	10	2.8	24
6	0	2	0	1	1	1	2	1	1	1	0	**X**	2	1	0	1	1	1	2	2	2	1	1	1	2	1.0	23
7	1	1	2	2	2	2	2	2	1	1	0	0	1	0	1	0	1	0	1	1	1	1	1	1	2	1.0	24
8	2	1	3	3	4	4	2	1	1	0	2	1	2	2	4	2	5	3	4	4	3	3	3	4	5	2.6	24
9	4	5	5	3	3	2	1	0	0	0	0	1	**C**	***11***	9	5	5	5	4	5	4	2	2	0	***11***	3.3	24
10	2	1	2	1	2	2	1	0	0	0	1	0	0	2	0	1	3	3	2	2	3	1	4	2	4	1.5	24
11	3	1	1	1	2	1	1	0	0	0	0	1	2	2	2	2	2	1	3	3	3	2	2	4	4	1.6	24
12	2	4	4	3	4	4	3	3	2	2	1	1	1	2	1	2	1	1	1	2	2	2	2	2	4	2.2	24
13	2	2	3	4	4	3	1	0	0	0	1	1	2	0	0	2	2	2	0	3	3	3	4	4	4	1.9	24
14	4	5	4	5	6	4	5	6	6	4	4	3	3	4	6	7	5	6	8	8	10	10	5	2	10	5.4	24
15	3	4	3	0	0	1	**P**	**P**	**P**	**P**	**P**	**P**	**R**	4	5	2	1	2	2	2	3	4	3	4	5	2.5	17
16	3	3	2	3	2	2	1	0	0	1	0	1	1	2	2	2	3	3	3	3	5	4	5	3	5	2.3	24
17	8	7	7	5	6	5	5	4	5	5	1	3	2	2	2	3	4	2	3	3	4	4	5	5	8	4.2	24
18	5	4	3	5	5	6	5	5	3	4	4	5	4	5	4	5	4	8	6	4	6	4	5	5	8	4.8	24
19	6	5	5	5	5	5	6	7	7	7	8	7	7	6	6	7	7	9	9	6	5	3	3	3	9	***6.0***	24
20	3	4	3	4	4	5	1	0	0	0	0	1	2	1	2	4	3	4	10	4	1	3	4	5	10	2.8	24
21	3	2	2	3	3	3	4	4	4	3	2	3	1	0	1	3	5	7	7	6	5	5	5	3	7	3.5	24
22	4	2	3	3	4	3	2	3	5	1	1	1	2	4	3	4	5	5	6	7	7	6	5	5	7	3.8	24
23	5	5	6	5	8	5	9	6	0	1	2	2	2	0	1	0	0	1	3	4	4	5	***11***	5	***11***	3.8	24
24	4	3	1	4	2	3	2	0	2	1	1	1	0	0	1	2	2	3	2	4	3	3	4	2	4	2.1	24
25	2	1	2	1	2	1	3	3	3	2	4	1	0	1	4	4	0	1	0	1	3	4	2	3	4	2.0	24
26	1	2	3	3	4	4	5	6	6	7	5	6	7	6	7	6	4	2	0	1	1	1	2	2	7	3.8	24
27	0	0	1	2	1	1	0	0	0	0	1	2	3	4	5	5	5	5	5	5	4	3	3	3	5	2.4	24
28	2	2	1	1	2	4	0	3	2	1	3	2	2	2	2	2	3	0	0	0	2	0	0	0	4	1.5	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0.3	24
30	0	1	2	4	6	5	5	4	3	3	3	3	5	4	**C**	0	**X**	1	2	0	2	1	2	3	6	2.7	23
31	4	5	5	5	4	4	5	4	2	4	4	4	6	5	5	4	4	5	5	3	1	2	3	4	6	4.0	24
HOURLY MAX	8	7	7	5	8	6	9	7	7	7	8	7	7	11	9	7	7	9	10	10	10	10	11	5			
HOURLY AVG	2.7	2.6	2.6	2.8	3.1	2.7	2.5	2.3	2.0	1.7	1.7	2.1	2.1	2.5	2.8	2.7	2.9	3.0	3.4	3.3	3.3	2.8	3.1	2.7			

STATUS FLAG CODES

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

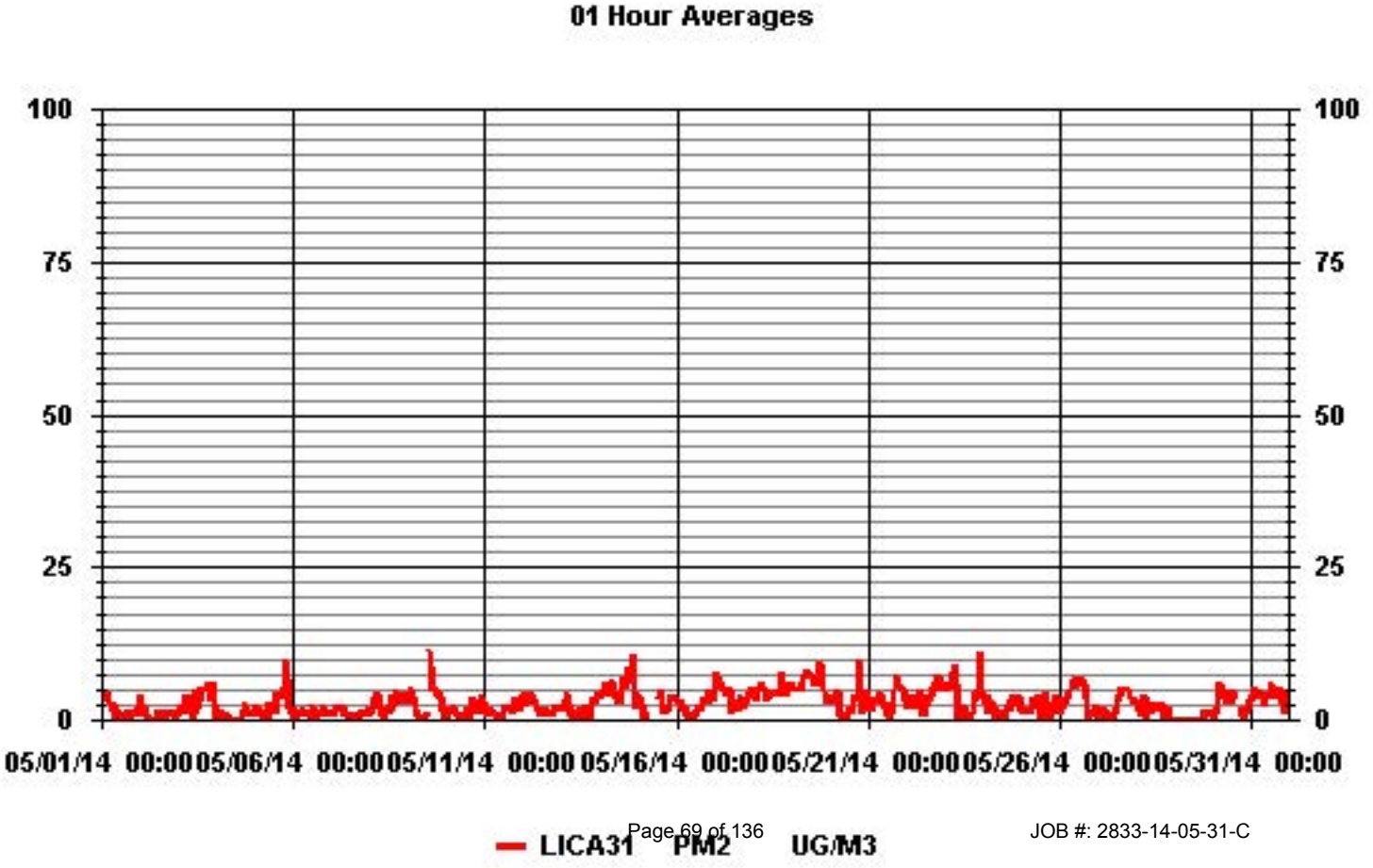


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 24-HR 30 ug/m3

MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	618					
MAXIMUM 1-HR AVERAGE:	11	ug/m3	@ HOUR(S)	13, 22	ON DAY(S)	9, 23
MAXIMUM 24-HR AVERAGE:	6.0	ug/m3			ON DAY(S)	19
					VAR-VARIOUS	
			OPERATIONAL TIME:		735	HRS
MONTHLY CALIBRATION TIME:	2	HRS	AMD OPERATION UPTIME:		98.8	%
STANDARD DEVIATION:	2.11		MONTHLY AVERAGE:		2.65	ug/m3

JOB #: 2833-14-05-31-C



JOB #: 2833-14-05-31-C

LICA31
PM2 / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30	10.09	7.36	6.13	6.95	9.95	3.95	2.31	3.27	4.91	3.00	5.32	5.86	5.04	6.00	7.63	12.14	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	10.09	7.36	6.13	6.95	9.95	3.95	2.31	3.27	4.91	3.00	5.32	5.86	5.04	6.00	7.63	12.14	

Calm : .00 %

Total # Operational Hours : 733

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30	74	54	45	51	73	29	17	24	36	22	39	43	37	44	56	89	733
<	60																	
<	80																	
<	120																	
<	240																	
>=	240																	
	Totals	74	54	45	51	73	29	17	24	36	22	39	43	37	44	56	89	

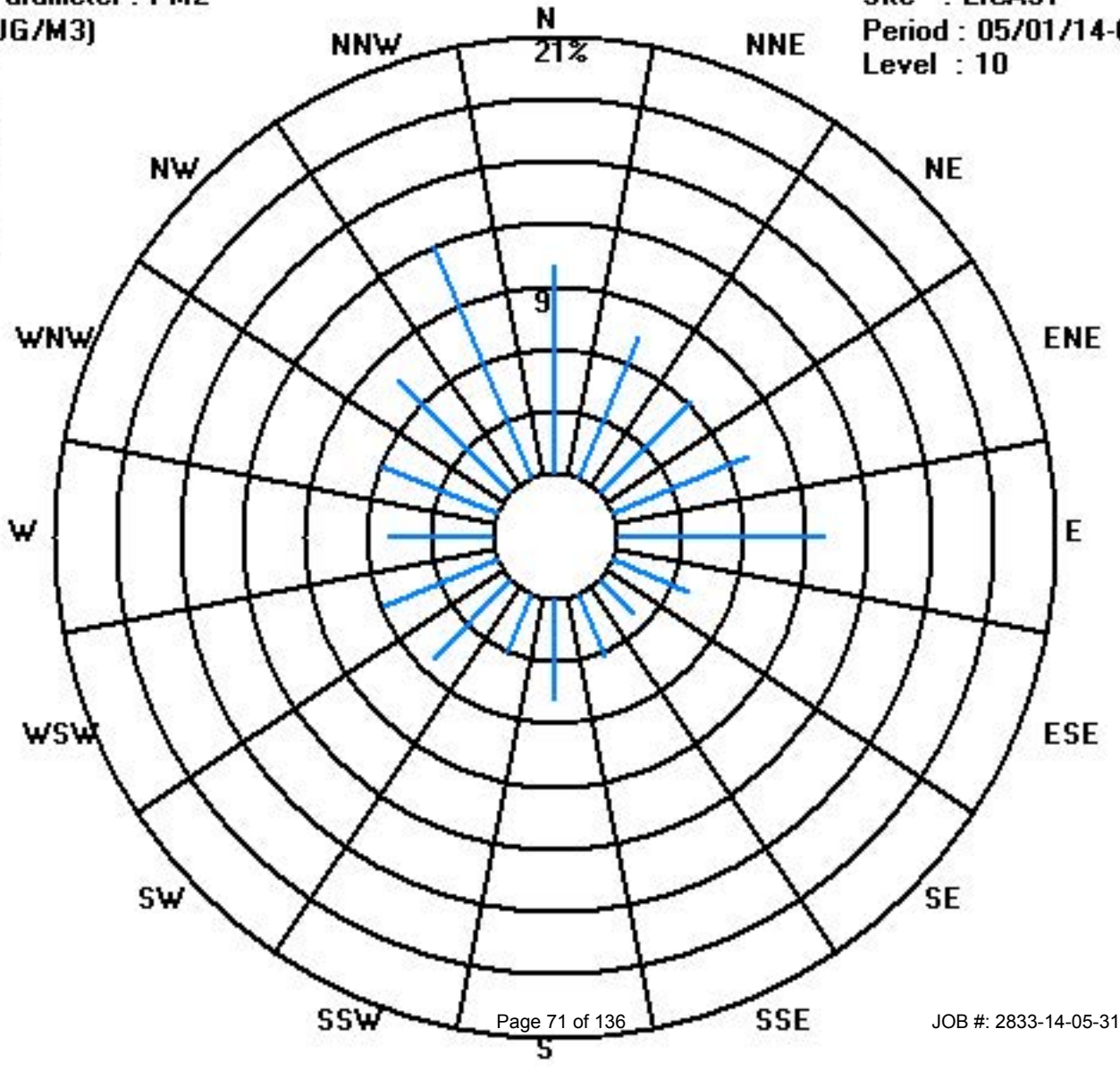
Calm : .00 %

Total # Operational Hours : 733

Logger : 31 Parameter : PM2
Class Limits (UG/M3)

>= 240
< 240
< 120
< 80
< 60
< 30

Site : LICA31
Period : 05/01/14-05/31/14
Level : 10



JOB #: 2833-14-05-31-C

Temperature

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

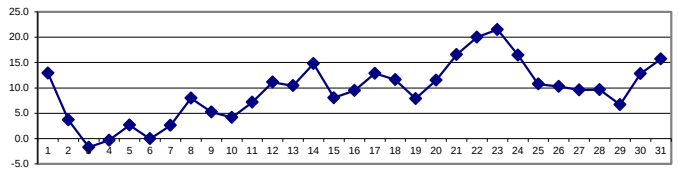
MST

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	12	11.9	11.7	12.5	12.7	12.6	13.6	14	14.5	14.5	14.8	14.5	15.4	15.5	15.6	15.5	14.6	14.7	13.5	11.6	10.2	8.7	7.8	7.7	15.6	12.9	24
2	5.6	3.9	3.4	2.6	2.1	2.4	3.4	3.9	4.7	5.5	6.3	6.4	7.2	6.6	4.9	4.6	4.1	3.5	2.7	1.9	1.2	0.5	0.3	0.2	7.2	3.7	24
3	-0.8	-2.6	-2.8	-3.1	-3.4	-3.4	-3.4	-3.3	-3	-2.4	-1.8	-1.7	-0.8	0.2	0.2	0.3	0.4	0.2	-0.3	-1	-1.5	-2	-2.3	-2.9	0.4	-1.7	24
4	-3.3	-3.7	-4.1	***-4.3***	-4.1	-3.8	-2.8	-1.3	-1.4	-0.2	0.7	1.5	2	2.3	2.6	3.3	3.4	2.9	1.7	0.7	0.2	0	0	0	3.4	-0.3	24
5	0	0	-0.2	-0.6	-1.1	-1.1	-1	-0.3	2.6	4.3	5	4.5	4.5	5.3	6.3	6.9	7.5	7	6.7	3.2	2.4	0.6	0.4	0.4	7.5	2.6	24
6	0.1	-0.3	-1.2	-1.6	-1.6	-1.8	-2.1	-1	-1	2.1	2.2	3.1	2.8	1.9	2.1	2	1.7	1.7	0.6	-0.9	-1.8	-2.4	-2.7	-2.8	3.1	0.0	24
7	-3	-3.5	-3.6	-3.9	-4.1	-2.7	-1.4	1.6	3.2	4.1	4.9	5.6	6	6.6	7.2	7.5	8	7.5	6.4	5.3	3.5	3	2.3	1.6	8	2.6	24
8	0.6	-0.1	-0.6	-1.2	-1.2	0.3	2.3	5.1	8.1	10.1	11.4	12.5	13.3	12.8	14.7	14.4	15.1	14.1	12.7	10.3	9.1	8.9	8.6	9.5	15.1	8.0	24
9	8.3	3.8	0.9	-0.5	-1	-0.1	2	4	5.1	6.3	7.4	8.4	9.2	9.4	9.9	10.3	9.9	8.5	7.3	5.9	4.3	3	2.1	1.6	10.3	5.3	24
10	2	1.3	0.7	1.1	0.8	0.1	1.3	3.3	4.6	5.6	6.3	7	7.8	8.9	8.6	8.4	8	6.4	5.7	4.6	2.8	2.1	1.6	0.3	8.9	4.1	24
11	0	0	-0.6	-0.6	-0.2	2.3	4.8	7.2	8.4	9.8	10.7	11.7	11	11.7	11.2	11.5	11.5	11.7	11	10	7.5	7.6	7.2	6.4	11.7	7.2	24
12	6.5	6.4	6.3	4.3	4.2	5.5	10	12.5	13.4	14.6	15.3	15.3	14.9	15.8	15.4	15.6	14.9	14.3	12.8	12	10.4	9.5	9	8.3	15.8	11.1	24
13	6.7	5.9	4.2	2.4	0.8	1.8	4.3	7.5	10	11.8	13.1	14.5	15.6	16.3	16.8	16.7	16.6	15.9	14.9	13.6	11.5	10.7	9.9	8.6	16.8	10.4	24
14	7.8	7.2	6.4	5.4	4.2	5.3	9	12.6	17	19.3	20.6	22.2	20.7	21.1	20.5	21.2	20.5	19.3	18.8	17.9	17.3	16.1	12.9	11.2	22.2	14.8	24
15	11.2	10.2	10.2	9.3	8.8	8.5	**P**	**P**	**P**	**P**	**P**	**P**	12.7	14.4	11.4	8.3	6.9	5.6	4.9	4.7	4.4	4.5	4.6	4.3	14.4	8.1	18
16	3.9	3.7	3.7	3.6	3.4	3.3	4	4.3	5.4	7.2	9.2	12.3	14.2	15.2	16.3	15.7	15	14.5	14.2	13.6	11.9	11.1	10.9	10.8	16.3	9.5	24
17	8.8	8.4	7.4	6.9	6.4	7.8	11.7	13.6	13.6	15.6	16.3	14.9	15.5	16.2	17	17.3	17.1	16.6	15.9	14.9	13.2	12.1	11.1	10.4	17.3	12.9	24
18	9.8	9.4	10.2	9.8	9.5	9.5	9.2	8.6	8.9	11.2	13.5	16.1	16.5	16.5	16.6	16	14.5	14	13.3	11.8	10.1	8.7	7.9	6.9	16.6	11.6	24
19	6.4	6.4	6.6	7.5	7.6	7.6	7.5	7.3	7.6	7.5	7.4	7.6	7.5	7.9	9.1	9.2	9.4	9.1	9	8.8	8.3	8.2	8	7.4	9.4	7.9	24
20	7.2	5.9	4.8	4.1	4.1	5.4	7.4	9.3	10.5	11.4	12.5	14.6	16.4	17.5	17.6	18.8	18.7	17.9	12.6	11.9	11.6	12.1	12.1	11.6	18.8	11.5	24
21	10.8	10.4	9.4	9	8.3	8.7	10.4	14.3	16.3	17.8	19	20.3	22	23.4	23.1	23.3	22.1	22	21.4	19.4	17.8	16.6	16.2	14.8	23.4	16.5	24
22	14.4	14	13.8	13.5	13.2	15.4	17.4	19.1	20.7	22.8	24	24	23.6	25.1	25	25.1	24.7	24.2	23.2	21.7	20.3	19.1	18.1	17.2	25.1	20.0	24
23	16.8	16.3	15.4	15.4	13.7	15.6	16.6	20.8	23.8	24.7	26.8	25.8	27.1	27.4	26.3	27.2	***27.5***	26.5	24.3	23	21.2	20	18.3	15.6	***27.5***	***21.5***	24
24	14.4	13.3	11.7	11.4	10.7	11.7	13.6	14.6	15.8	18	19.5	20.8	21.4	21.9	22.3	22.5	21.7	20.5	18.6	17.3	14.9	14	12.9	11.6	22.5	16.5	24
25	10.9	10.1	9.6	8.4	8.3	9.1	11	12.2	12.6	12.7	11.1	12.7	13	12.2	11.3	10.4	10.6	10.7	10.9	10.4	10.2	10	9.7	9.8	13	10.7	24
26	9.4	9.2	9.2	9	8.8	8.8	9.2	9.6	10	10.5	10.8	11	11.8	12	12.1	12.2	12.1	11.2	10.3	10.3	10.1	9.9	9.7	9.7	12.2	10.3	24
27	9.5	8.9	8.6	8.3	7.9	7.9	7.7	8	8.4	9.9	10.6	11.5	10.6	11.3	11.5	11.7	11.6	11.3	10.8	10.1	9.5	8.7	8	7.3	11.7	9.6	24
28	6.4	5.8	5.4	4.8	4.5	6.7	9.2	10.8	11.3	12.7	13.8	13.9	14.7	15.5	13.8	12.9	11.1	10.5	10.1	9.1	8	7.2	6.8	6.4	15.5	9.6	24
29	6.1	5.8	5.7	5.7	5.7	5.9	6	6.3	6.6	6.8	7.2	8.1	8.8	7.9	7.5	7.7	8.2	8	7.3	6.7	6.1	5.9	5.1	5.5	8.8	6.7	24
30	6.2	6.4	6.7	6.2	6.2	7.8	10.2	12.2	13.4	15.4	16.7	17.2	18.6	18.6	18.3	16	18.1	17.8	15.4	14.4	13.2	11.1	10.5	10.8	18.6	12.8	24
31	10.4	9.2	8.8	8.5	10	10.9	13.6	16.2	18.5	19.9	21.1	21.8	22.5	22.8	22.2	22.3	20.5	18.5	14.8	15.2	13.9	12.2	11.5	11.8	22.8	15.7	24
HOURLY MAX	16.8	16.3	15.4	15.4	13.7	15.6	17.4	20.8	23.8	24.7	26.8	25.8	27.1	27.4	26.3	27.2	27.5	26.5	24.3	23	21.2	20	18.3	17.2			
HOURLY AVG	6.6	5.9	5.4	5.0	4.7	5.4	6.8	8.4	9.7	11.0	11.9	12.6	13.1	13.6	13.5	13.4	13.1	12.5	11.3	10.3	9.1	8.3	7.7	7.2			

STATUS FLAG CODES

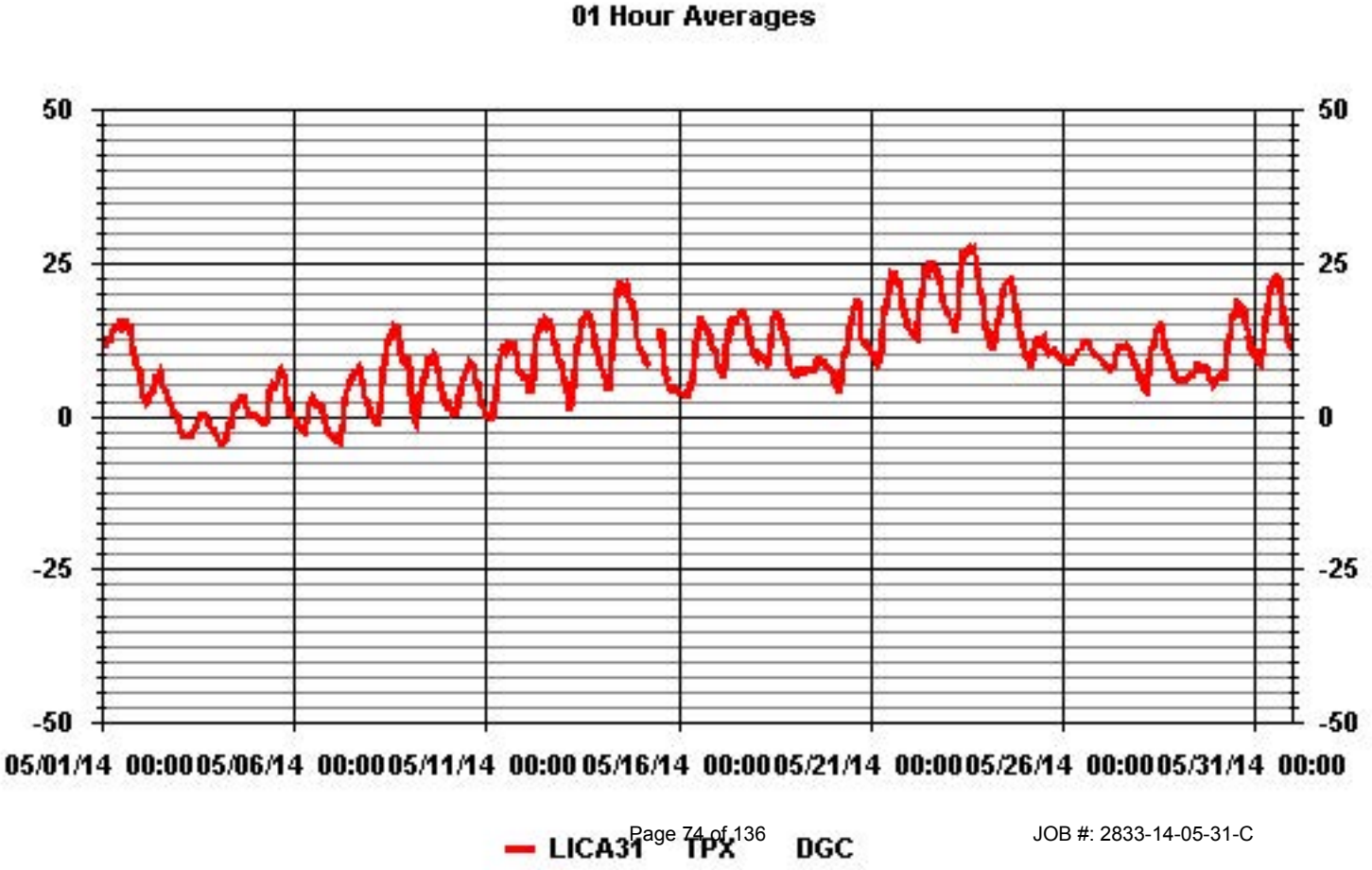
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

24 HOUR AVERAGES FOR MAY 2014



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-4.3	°C	@ HOUR(S)	3	ON DAY(S)		4
MAXIMUM 1-HR AVERAGE:	27.5	°C	@ HOUR(S)	16	ON DAY(S)		23
MAXIMUM 24-HR AVERAGE:	21.5	°C			ON DAY(S)		23
					VAR-VARIOUS		
			OPERATIONAL TIME:			738	HRS
			AMD OPERATION UPTIME:			99.2	%
STANDARD DEVIATION:	6.72		MONTHLY AVERAGE:			9.43	°C



JOB #: 2833-14-05-31-C

Barometric Pressure

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

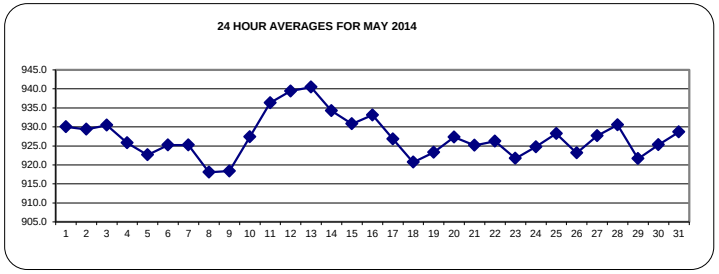
BAROMETRIC PRESSURE (BP) hourly averages in millibar

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	933	932	931	930	930	930	930	930	930	931	931	931	931	931	931	930	930	930	929	929	928	928	928	927	933	930.0	24
2	928	928	928	928	928	929	929	929	929	929	929	930	930	930	930	930	930	930	930	930	930	930	930	931	931	929.4	24
3	931	931	931	931	931	931	932	932	931	931	931	931	931	931	930	930	930	930	929	929	929	929	929	929	932	930.4	24
4	928	928	927	927	927	926	926	927	927	926	926	926	926	926	926	925	925	925	925	924	924	924	924	924	928	925.8	24
5	924	923	923	923	923	922	923	923	923	923	923	923	923	923	922	922	922	922	922	922	922	923	922	922	924	922.6	24
6	922	922	922	922	922	922	923	923	924	924	925	925	926	926	927	927	928	928	928	928	928	928	928	928	928	925.3	24
7	927	927	927	926	926	926	926	927	927	926	926	926	925	925	925	925	925	925	925	924	923	923	922	922	927	925.3	24
8	922	921	920	920	919	919	919	919	919	919	919	918	918	918	917	917	917	917	917	916	916	916	915	915	922	918.0	24
9	915	915	915	915	915	915	916	917	918	918	918	919	919	920	920	920	920	920	921	921	921	921	921	921	921	918.4	24
10	922	922	922	922	923	924	925	925	926	926	927	927	928	928	929	929	930	930	931	932	932	932	932	933	933	927.4	24
11	933	933	934	934	934	935	936	937	937	937	937	937	937	937	937	937	937	937	938	938	937	937	938	938	938	936.3	24
12	938	938	938	938	938	938	939	940	940	940	940	940	940	940	940	940	940	940	940	940	940	939	940	940	940	939.4	24
13	940	940	940	940	940	940	941	942	942	***943***	***943***	942	942	942	941	941	941	940	940	939	938	938	938	938	***943***	***940.5***	24
14	937	937	937	936	936	936	936	936	936	936	936	935	935	934	934	933	933	932	932	931	931	931	931	930	937	934.2	24
15	930	930	930	929	929	929	**P**	**P**	**P**	**P**	**P**	**P**	929	929	930	930	931	931	932	932	933	933	933	934	934	930.8	18
16	934	934	934	934	934	935	935	935	935	935	935	934	934	934	933	933	932	932	931	931	931	930	930	930	935	933.1	24
17	929	929	929	928	928	928	928	929	929	929	928	928	927	927	927	926	926	925	925	924	924	924	923	923	929	926.8	24
18	923	922	921	921	921	921	921	920	920	920	920	920	920	920	920	921	921	920	921	921	921	921	921	920	923	920.7	24
19	920	920	920	920	920	921	921	922	922	922	923	923	923	924	924	925	925	925	926	926	926	927	927	927	927	923.3	24
20	927	927	927	927	927	927	928	928	929	929	929	929	929	928	928	927	927	927	927	926	926	926	925	925	929	927.3	24
21	925	925	925	925	925	925	925	925	925	926	926	926	925	925	925	925	925	925	925	925	925	925	925	926	926	925.2	24
22	926	926	926	926	926	927	927	927	928	928	928	927	927	927	927	926	926	926	925	925	925	925	924	924	928	926.2	24
23	924	923	923	923	923	923	923	923	923	923	923	923	922	922	921	921	921	920	920	920	919	919	919	920	924	921.7	24
24	920	921	920	921	922	922	923	923	924	924	925	925	926	926	926	926	927	927	927	928	927	928	928	928	928	924.8	24
25	928	929	929	929	929	929	929	930	930	930	930	929	929	928	928	928	928	927	927	926	926	927	926	926	930	928.2	24
26	925	924	924	924	924	923	923	923	923	923	923	923	922	923	923	922	922	922	923	923	923	923	923	924	925	923.1	24
27	924	924	924	924	924	925	925	926	926	927	927	928	929	929	929	929	930	930	930	930	931	931	931	931	931	927.7	24
28	931	931	931	931	931	931	931	932	932	932	932	932	932	931	931	931	930	929	929	929	929	929	928	928	932	930.5	24
29	927	926	925	924	923	923	922	922	921	921	920	920	919	919	919	919	920	920	920	921	921	922	922	923	927	921.6	24
30	923	922	922	922	923	923	924	924	925	925	925	926	926	926	927	927	927	927	927	927	927	927	927	928	928	925.3	24
31	928	928	928	928	928	929	929	929	930	930	930	930	930	929	929	928	928	928	928	928	928	928	928	928	930	928.6	24
HOURLY MAX	940	940	940	940	940	940	941	942	942	943	943	942	942	942	941	941	941	940	940	940	940	939	940	940			
HOURLY AVG	927.2	927.0	926.9	926.7	926.7	926.9	927.2	927.5	927.7	927.8	927.8	927.7	927.8	927.7	927.6	927.4	927.5	927.4	927.4	927.3	927.1	927.2	927.0	927.2			

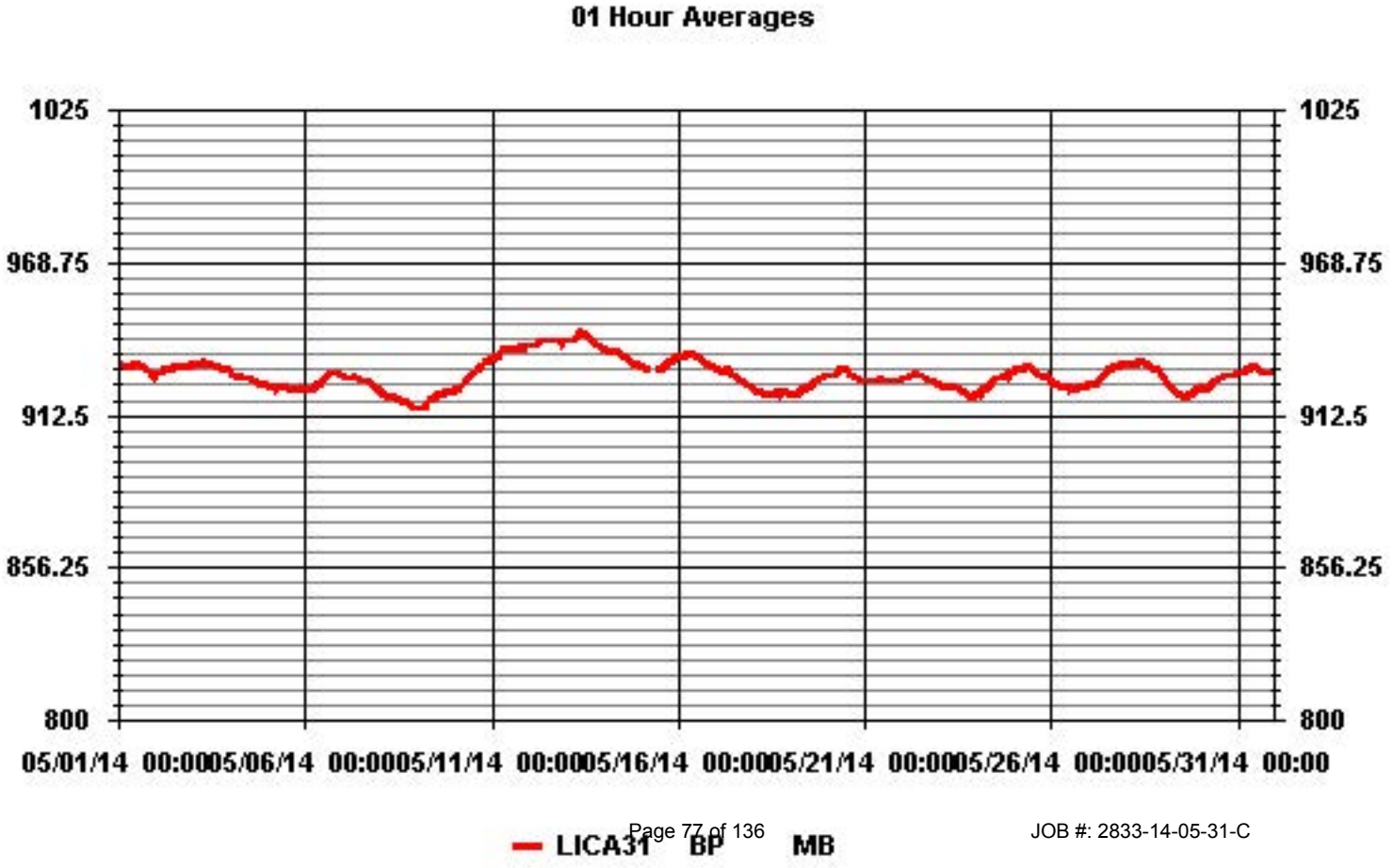
STATUS FLAG CODES

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



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	943	MB	@ HOUR(S)	9, 10	ON DAY(S)	13
MAXIMUM 24-HR AVERAGE:	940.5	MB			ON DAY(S)	13
					VAR-VARIOUS	
			OPERATIONAL TIME:		738	HRS
			AMD OPERATION UPTIME:		99.2	%
STANDARD DEVIATION:	5.63		MONTHLY AVERAGE:		927.3	MB



JOB #: 2833-14-05-31-C

Relative Humidity

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

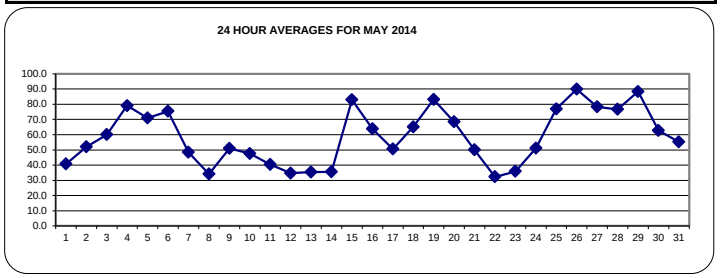
RELATIVE HUMIDITY (RH) hourly averages in %

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	33	36	39	42	48	51	49	49	50	50	48	48	42	41	40	37	34	29	28	31	34	38	40	40	51	40.7	24
2	55	64	68	73	67	56	50	45	43	42	41	42	41	41	44	46	46	48	51	52	54	60	59	59	73	52.0	24
3	64	65	65	65	65	63	63	66	64	60	58	59	56	52	52	51	51	52	54	57	60	62	65	73	73	60.1	24
4	77	79	83	85	85	85	82	77	77	76	73	71	72	71	71	69	67	72	82	87	88	89	89	90	90	79.0	24
5	90	89	87	88	88	88	88	86	75	66	58	57	56	52	48	44	39	39	41	77	83	88	88	88	90	71.0	24
6	88	85	86	88	88	87	86	81	79	67	67	65	63	65	67	64	61	61	65	74	78	81	83	81	88	75.4	24
7	77	77	77	77	77	72	70	64	55	46	40	38	36	33	29	28	27	27	29	31	36	37	39	42	77	48.5	24
8	46	49	49	51	58	62	56	49	41	33	30	27	25	25	21	19	16	***15***	19	24	26	25	28	27	62	34.2	24
9	34	52	70	78	78	76	68	58	49	46	42	39	36	35	34	33	35	39	43	47	53	57	59	60	78	50.9	24
10	60	65	68	62	64	72	66	57	48	38	35	32	28	25	25	26	30	36	42	44	50	52	56	61	72	47.6	24
11	62	65	66	68	68	57	51	48	42	36	30	24	25	24	26	26	26	26	27	29	35	34	35	39	68	40.4	24
12	38	38	39	48	45	41	35	33	31	28	26	26	25	25	27	28	30	31	34	36	40	41	43	45	48	34.7	24
13	48	47	56	60	66	63	57	48	40	32	28	25	22	20	19	17	19	20	20	23	26	28	31	36	66	35.5	24
14	38	39	41	45	53	51	42	37	29	23	20	19	20	20	23	22	24	26	28	31	35	43	67	78	78	35.6	24
15	76	82	82	88	87	86	**P**	**P**	**P**	**P**	**P**	**P**	72	62	80	84	83	84	87	87	88	88	87	88	88	82.8	18
16	88	88	87	86	86	85	82	80	77	72	65	56	50	48	44	44	44	45	45	46	50	53	54	54	88	63.7	24
17	65	65	70	72	75	70	60	56	55	51	41	40	39	38	35	34	35	36	37	39	44	48	52	56	75	50.5	24
18	62	65	66	68	70	71	73	82	82	75	67	56	49	48	46	48	53	57	60	64	68	74	77	80	82	65.0	24
19	82	83	85	85	85	84	83	84	85	87	89	89	90	87	81	79	78	79	79	78	79	81	81	82	90	83.1	24
20	81	86	89	90	***91***	88	81	73	70	66	62	56	50	46	45	41	40	42	75	82	80	71	69	70	***91***	68.5	24
21	71	72	75	77	80	79	76	65	61	54	48	45	39	28	25	25	29	30	31	35	36	38	38	42	80	50.0	24
22	42	42	41	43	44	39	32	29	29	25	23	23	23	22	22	22	24	25	29	34	37	41	42	43	44	32.3	24
23	44	45	48	48	57	51	56	42	30	25	22	24	22	21	22	21	20	21	27	31	36	38	47	62	62	35.8	24
24	68	75	86	87	88	82	70	58	52	46	40	36	32	27	24	25	25	29	35	39	45	47	52	58	88	51.1	24
25	62	64	65	69	71	71	69	69	69	71	81	80	73	77	78	85	86	83	83	84	87	88	90	90	90	76.9	24
26	89	90	90	90	***91***	***91***	***91***	90	90	90	89	89	88	88	89	89	89	90	***91***	***91***	***91***	***91***	***91***	***91***	***91***	***90.0***	24
27	***91***	90	90	89	89	90	90	87	84	77	75	71	72	68	67	65	65	66	68	72	75	77	79	83	***91***	78.3	24
28	87	89	90	***91***	***91***	87	78	71	68	64	59	58	55	53	56	62	79	81	79	82	88	90	90	90	***91***	76.6	24
29	90	90	90	***91***	***91***	***91***	***91***	***91***	***91***	***91***	90	88	86	88	88	87	85	82	84	86	88	86	88	86	***91***	88.3	24
30	85	86	86	88	88	83	75	69	63	54	48	44	39	39	39	47	41	42	53	57	64	72	73	72	88	62.8	24
31	73	78	80	79	71	69	63	54	49	44	38	34	31	31	33	30	33	42	63	59	58	67	73	71	80	55.1	24
HOURLY MAX	91	90	90	91	91	91	91	91	91	91	90	89	90	88	89	89	89	90	91	91	91	91	91	91			
HOURLY AVG	66.6	69.0	71.4	73.3	74.4	72.3	67.8	63.3	59.3	54.5	51.1	48.7	47.0	45.2	45.2	45.1	45.6	46.9	51.3	55.1	58.5	60.8	63.4	65.7			

STATUS FLAG CODES

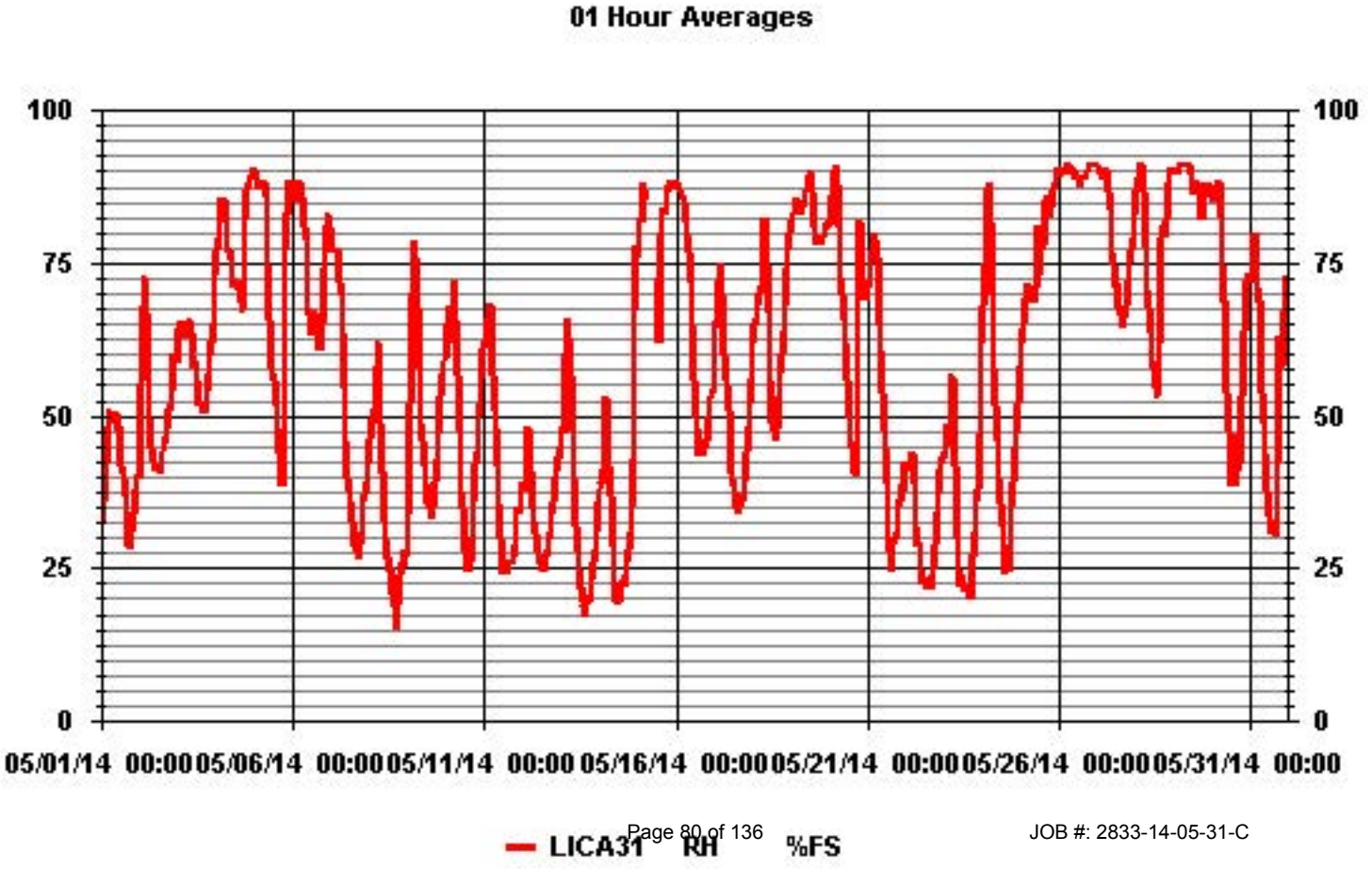
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	91	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	90.0	%			ON DAY(S)	26
					VAR-VARIOUS	

OPERATIONAL TIME:		738	HRS
AMD OPERATION UPTIME:		99.2	%
STANDARD DEVIATION:	22.08	MONTHLY AVERAGE:	58.40 %



JOB #: 2833-14-05-31-C

Precipitation

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

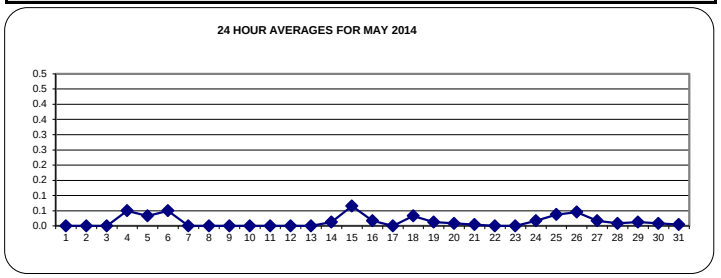
PRECIPITATION hourly averages in millimeter

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	0.0	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	0.1	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0.1	0	0	0	0	0.1	0.1	0	0	0	0	0.1	***0.1***	24
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	***0.4***	0.1	0.1	***0.4***	0.0	24
6	0	0	0.1	0.1	0.1	0.1	0.1	0.1	0	0.1	0.1	0	0.1	0.1	0	0	0.1	0	0	0	0	0.1	0	0	0.1	***0.1***	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	24
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.1	0.2	0.0	24
15	0.1	0	0.2	0.1	0.1	0	0.2	**P**	**P**	**P**	**P**	0.1	0	0.1	0.1	0	0.1	0	0	0.1	0	0	0	0.1	0.2	***0.1***	20
16	0	0.1	0	0.1	0	0	0.1	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
18	0	0.1	0	0.1	0.1	0.1	0	0.1	0.1	0	0	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0	0.1	0.0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0	0	0	0.1	0	0	0	0	0	0.1	0.0	24
20	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0.1	0.0	24
21	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
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	24
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
24	0	0	0.1	0.1	0	0.1	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
25	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0	0.1	0.1	0.1	0.1	0	0.1	0	0.1	0	0.1	0.1	0.0	24
26	0.1	0.1	0	0.1	0.1	0.1	0	0.1	0	0.1	0	0.1	0	0.1	0	0	0.1	0	0	0	0	0.1	0	0	0.1	0.0	24
27	0	0	0.1	0	0	0	0.1	0	0	0	0	0.1	0	0	0	0	0	0.1	0	0	0	0	0	0	0.1	0.0	24
28	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0.1	0.0	24
29	0	0	0	0.1	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0.1	0.0	24
30	0	0.1	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0.1	0.0	24
HOURLY MAX	0.1	0.1	0.2	0.1	0.1	0.1	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	0.4	0.2	0.1			
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

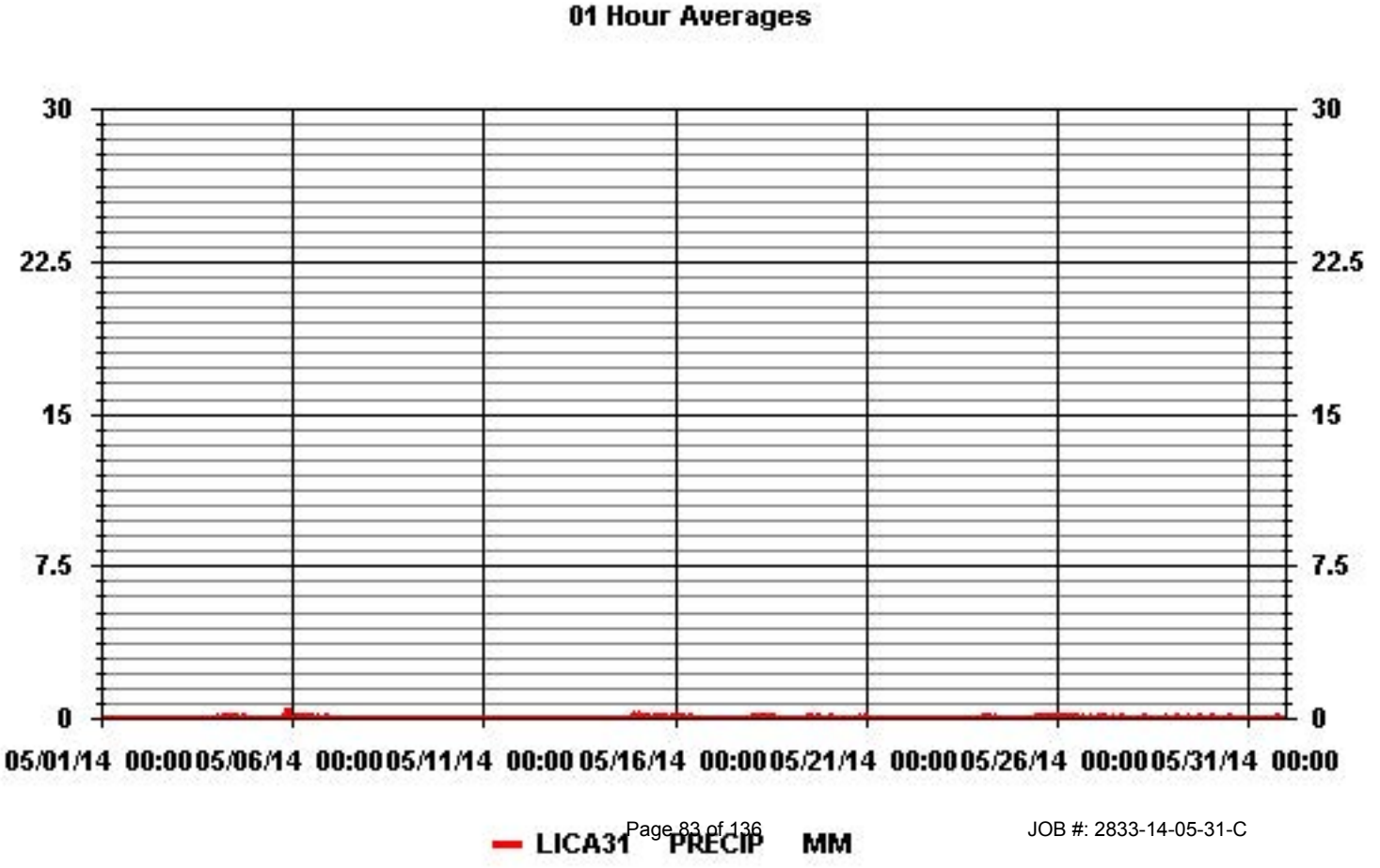
STATUS FLAG CODES

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



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	0.4	MM	@ HOUR(S)	21	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	0.1	MM			ON DAY(S)	VAR
					VAR-VARIOUS	
			OPERATIONAL TIME:		740	HRS
			AMD OPERATION UPTIME:		99.5	%
STANDARD DEVIATION:	0.04		MONTHLY AVERAGE:		0.01	MM



JOB #: 2833-14-05-31-C

Vector Wind Speed

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

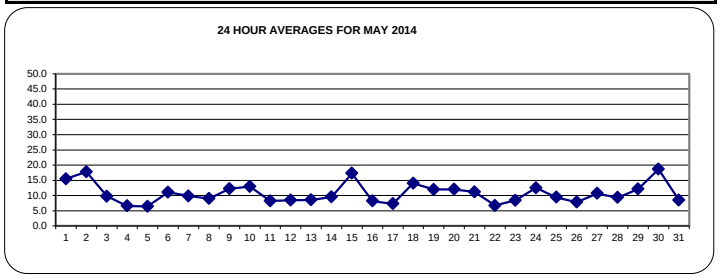
WIND SPEED (WS) hourly averages in km/hr

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	11.8	9	10.6	12	12	15.1	17.5	20.5	23.5	22.4	23.2	21.7	20	21.8	19.1	19.7	16.9	14.8	14.5	10.8	10	7.2	7.2	9.9	23.5	15.5	24
2	17.8	9.7	10.4	13.3	14.3	17.3	19.3	22.4	21.5	21.3	21.6	22	20.6	19.6	22.1	19.7	22.1	19.8	19.2	16.9	15.8	12.8	13.5	13.3	22.4	17.8	24
3	14.6	15.6	15.4	14.8	11.8	12	9.6	8	10.5	9.5	8.5	6.8	6.1	5.9	5.6	6.6	5.4	5.9	7.9	9.4	10.3	11	11.4	11.9	15.6	9.8	24
4	9.8	9.6	8.7	8	8.9	8.3	8.8	8.6	7.4	6.1	6.4	6.9	5.7	4.5	5.4	3.9	1.2	3.4	6.2	6.1	6	6.9	5.9	5.6	9.8	6.6	24
5	3.3	2.6	4.7	4	3	1.7	3.8	3.8	3.9	3.1	3.8	9.7	9.7	8.3	8.6	10	11.3	11.4	10.3	13.4	9.6	8.1	4.5	2.1	13.4	6.4	24
6	2.6	6.7	1.5	2.1	3.4	4.5	10.2	12.6	14.8	16.4	17	15.9	18.7	19.6	18.8	19.3	18.2	13.7	13.6	11.5	4.8	3.1	7.3	8.9	19.6	11.1	24
7	9.4	8.5	9.1	10.8	9.7	10	8.1	7	9.6	12.1	12.9	12.2	14.8	13	11.7	10.7	11.9	9.4	7.5	3.8	6.1	8.4	9.9	10.1	14.8	9.9	24
8	10.1	9.9	11	11.4	12.4	12.3	9.4	9.1	9.8	11.1	11.9	9.3	8	6.5	10.7	7.9	9.8	12.3	7.8	6	6.6	5.7	6.3	0.9	12.4	9.0	24
9	3	14.1	14.2	14.2	10.6	13.8	12.6	13.9	16.6	16.4	16.4	16.2	16.5	15.7	16.6	9.5	10.2	12.5	13.5	11.8	9.6	7.6	4.3	2.8	16.6	12.2	24
10	7.4	7.3	7.8	10.7	12.8	10.3	12.2	11.4	12.6	16.4	17.3	15.9	18.7	17.9	17.7	18.4	19.5	19.7	16.6	13.2	5.8	7.1	7.3	6.9	19.7	13.0	24
11	6.8	0.6	7.4	9.5	8.3	7.8	4.5	6.3	11.1	11.9	13.2	13.1	11.6	12	12	11.2	10.3	8.2	6	5.7	5.5	6.5	5.1	3.1	13.2	8.2	24
12	6.6	3	3.4	5.7	5.3	7	3.7	4.9	6.9	7.4	8.1	10.7	14.1	12.2	13.5	13.4	14.3	14.8	11	7.8	6.7	7.6	7.5	8.1	14.8	8.5	24
13	8.2	2.2	9.6	11.3	12	13.6	10.9	10.3	9.5	7	8.2	7.3	7.8	5.2	8.1	10.6	11.5	11	8.1	5.5	4.3	7.4	7.9	7.7	13.6	8.6	24
14	5.3	8.3	9.3	9.8	10.7	9.8	8.1	9	9.7	13.7	10.4	10.4	10.6	7.7	12.5	15.1	13.9	9.9	6.5	6.6	9.2	10.3	5.3	6.2	15.1	9.5	24
15	8.6	8.5	14.1	8.7	10	10.8	**P**	**P**	**P**	**P**	**P**	**P**	15	20.2	21.9	25.2	27.2	25.2	19.9	19.1	19.2	18.6	20	19.5	27.2	17.3	18
16	20.5	17.5	14.9	12.1	12.5	12.5	11.4	12.1	9.6	8	7.6	7.1	6.1	5.2	8.3	5.5	5	4.7	2.9	1	2.1	1.6	3.9	4.1	20.5	8.2	24
17	6.9	7.2	6.2	3.9	3.3	4.2	2.5	2.7	1.4	5.7	7	6.9	7.5	8.3	8.4	10.1	10.1	10.2	10.4	11.4	9.9	10	11.3	10.5	11.4	7.3	24
18	13.3	13.5	14.5	21.4	15	9.9	12.7	11.3	10.8	11.5	14.3	15.4	20.4	18.7	18.1	19.4	17.8	15.5	15.3	13.4	7	7.3	9.5	10.7	21.4	14.0	24
19	11.9	13.4	12.5	15.1	14.4	15.1	16.6	15.6	14.4	13	11.3	12.8	11.5	12.6	9.9	9.2	9.6	9.3	10.8	10.9	8.6	9.2	10.5	9.5	16.6	12.0	24
20	13.7	10.7	8.5	9.7	9.6	9	10.1	12.5	14.2	16.4	16	14.2	15.5	14	12.8	14.8	15.1	13.1	13.5	6.1	8.1	9.8	9.6	11.7	16.4	12.0	24
21	13.3	12.6	11.5	11.3	8.8	10.7	9	8	12.8	9	8.8	9.7	12.7	11.3	12.7	15.8	19.1	16	14.4	8.6	7.1	5	7.6	11.6	19.1	11.1	24
22	10.7	9.1	8.1	8.7	9.9	7.4	8.4	9.1	4.1	3.3	1.6	4.6	5.8	3.6	3.3	3.5	3.6	5.6	5.7	7.8	9.6	9.5	9.1	9.3	10.7	6.7	24
23	8.9	7.1	2.9	2.6	4.2	7	6.4	6.8	9.1	9.5	8.5	7.9	9	11.5	12.5	16.2	12.8	8.7	4.7	4.9	6.9	7.1	6.9	19.5	19.5	8.4	24
24	13.3	16.2	11.5	10.6	9	9.4	13.1	18.3	17.7	14.6	15.9	15.5	16.2	15.3	14.6	12.2	10.8	10.5	10.2	7.6	6.6	9.3	11.2	10.7	18.3	12.5	24
25	11.6	9.1	8.4	8.2	9	9.3	10.9	10.2	11.2	10.4	5.4	8.9	10.6	9.7	12.5	7.1	12.2	11.8	13.9	13.3	9.5	3.1	2	8	13.9	9.4	24
26	10.7	11.6	10.9	10.9	9.1	7.7	8.9	8.6	9.4	9.6	8.6	7.5	5.4	5.5	5.6	6.9	8	8.9	8.5	5.4	6.1	5	4	4.7	11.6	7.8	24
27	11.1	11.9	11.6	13	11	12.1	13	13.4	12.4	12.7	13.2	14	13.5	12.7	13.4	11.8	10.8	8.8	7.4	6.9	4.6	4.9	5.2	7.1	14.0	10.7	24
28	7.7	6.7	7.2	6.8	6.8	6.8	6.2	6.4	7.7	7.8	7.8	7.2	8.7	10.4	10.5	9.9	8.5	10	9	13.1	13.3	14.8	14.1	16.6	16.6	9.3	24
29	13.9	12.1	14.3	14.4	12.1	9.9	7.9	8.5	8.7	9.1	10.7	10.2	3.4	12.3	9.8	11.1	13.8	15.8	17.4	17.1	15.6	15.3	14.8	12.4	17.4	12.1	24
30	8.5	7.4	12.9	14.8	9.4	14.7	15.8	20.3	20.5	24.1	30.9	29	25.8	25.6	24	***32.6***	27.2	27.3	23.4	15.9	10.1	8.2	9.4	10.1	***32.6***	***18.7***	24
31	9.8	8.5	10	11.2	11.4	8.9	6.1	7.5	6.4	7.7	8.5	8	6.2	3.9	6.9	8.8	11.1	1.8	16.9	13.7	6.5	7.7	7.3	8.2	16.9	8.5	24
HOURLY MAX	20.5	17.5	15.4	21.4	15.0	17.3	19.3	22.4	23.5	24.1	30.9	29.0	25.8	25.6	24.0	32.6	27.2	27.3	23.4	19.1	19.2	18.6	20.0	19.5			
HOURLY AVG	10.0	9.4	9.8	10.4	9.7	10.0	9.9	10.6	11.3	11.6	11.8	11.9	12.1	12.0	12.5	12.8	12.9	11.9	11.4	9.8	8.4	8.3	8.4	9.1			

STATUS FLAG CODES

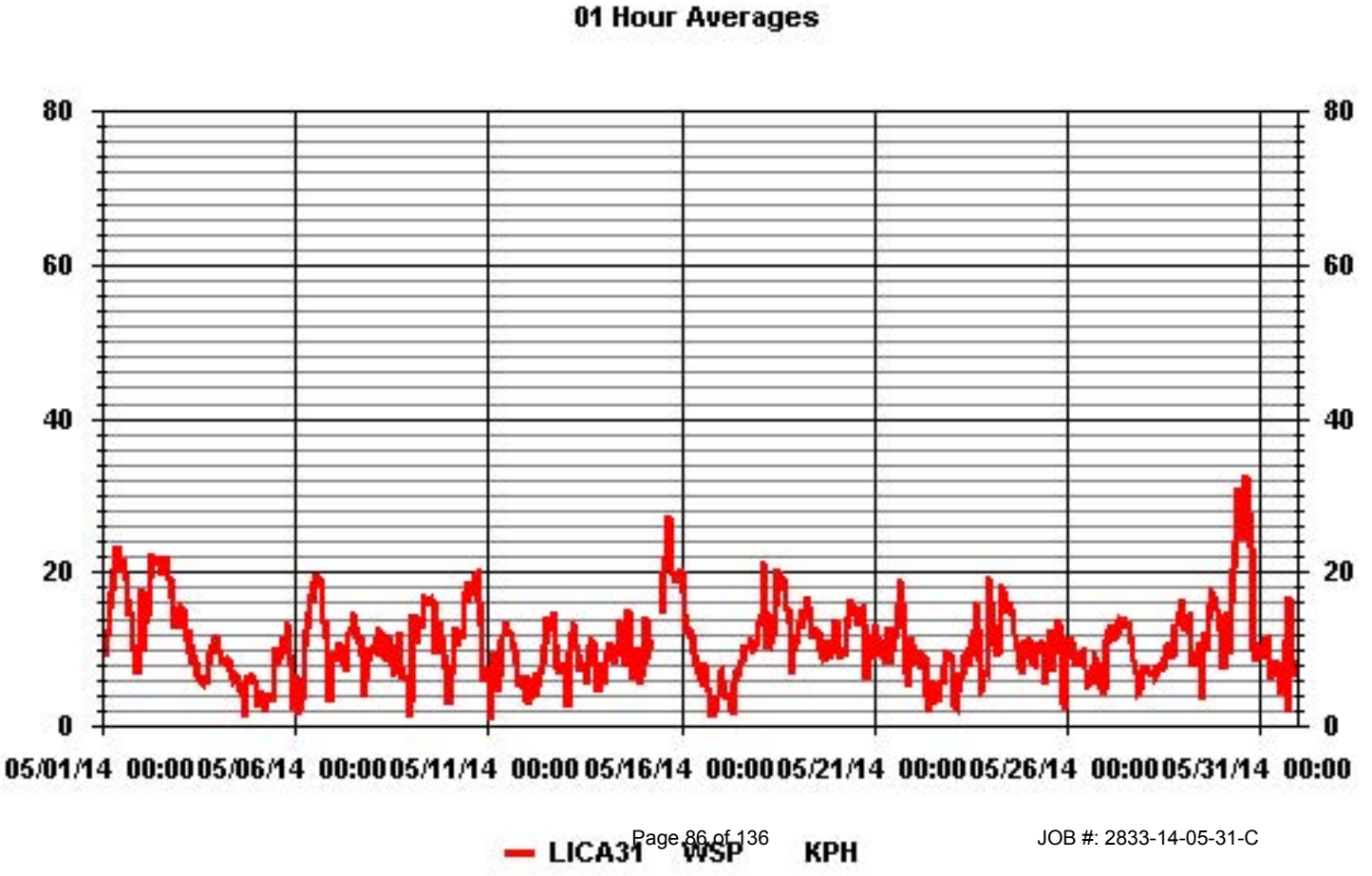
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	738						
MAXIMUM 1-HR AVERAGE:	32.6	KPH	@ HOUR(S)	15	ON DAY(S)	30	
MAXIMUM 24-HR AVERAGE:	18.7	KPH			ON DAY(S)	30	
					VAR-VARIOUS		
			OPERATIONAL TIME:		738	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:		99.2	%	
STANDARD DEVIATION:	4.92		MONTHLY AVERAGE:		10.66	KPH	



JOB #: 2833-14-05-31-C

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

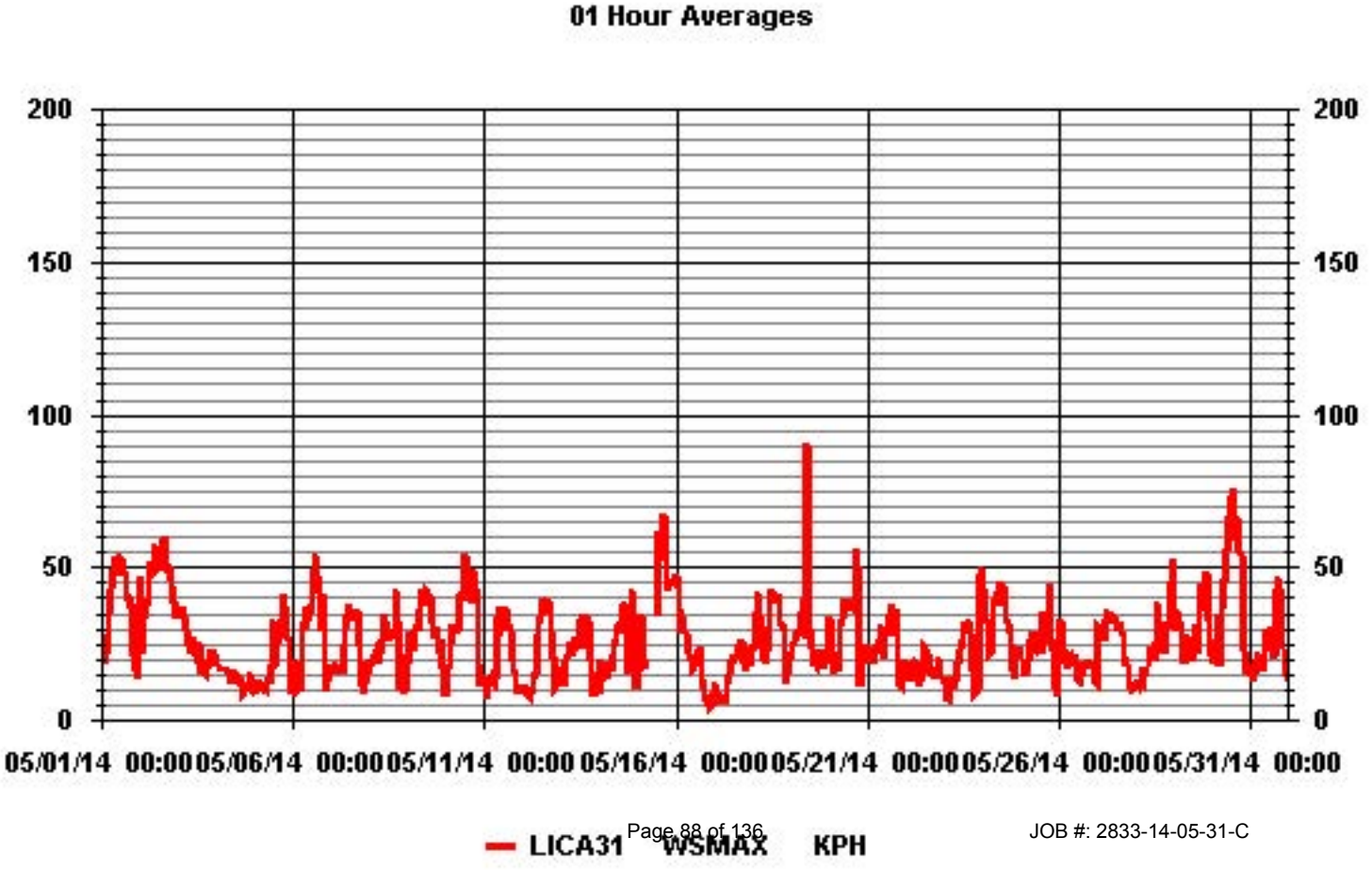
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	19.7	19.5	21.7	22.1	28.3	35	42.7	50.1	53.4	47.8	49	54.1	49	52.7	49.5	47.9	39.9	39.9	37.9	38.8	21.2	16.7	13	29.2	54	36.6	24
2	47.3	27.6	21.9	32.9	37.5	39.9	46	51.7	47.5	57.4	48.4	50.6	50.4	53.6	58.7	58.9	59.8	47.7	51.4	46.7	44.2	39.2	33.6	36	60	***45.4***	24
3	34.2	37	35.3	36.6	34.7	29.6	24.8	25.7	21.7	27.4	22.4	21.3	18.4	25.5	17.6	18.2	16.5	15.6	17.6	18	22.8	19.1	23.2	22.1	37	24.4	24
4	18.7	18.2	16.7	16.5	16.5	16.7	17.1	16.7	16	13.6	13.4	16.5	13.8	15.4	14.7	11.4	8.4	9	11.4	12.1	11.4	15.8	11.6	11.6	19	14.3	24
5	9.9	10.5	12.7	10.6	11.4	10.3	11	10.3	13.4	13.2	18.2	33.1	17.8	18.4	24.8	28	32.9	30.5	41.2	37.9	27.4	26.7	11.2	9.7	41	19.6	24
6	9.4	19.5	8.4	11.9	9.5	12.1	32.2	29.4	36.4	36.4	35.5	37.7	49.1	49.5	54.5	47.4	42.5	33.5	29.2	41.4	13	9.5	12.5	17.1	55	28.2	24
7	17.1	16.1	16.2	18.2	18.2	17.8	16.9	15.1	24.8	30.2	34.8	37.3	35.3	32.2	36.4	33.5	36.4	25.2	19.8	12.1	8.8	11.6	14.3	15.2	37	22.6	24
8	20	17.8	21.5	22.6	22.4	25.7	18	21.5	26.1	34.2	32.4	29.6	27.2	27.4	29.6	27.6	42.7	34.4	32.9	11.2	9.2	11.2	8.8	21.3	43	24.0	24
9	18.6	29.2	27.4	30	22.4	30.7	30.5	36.2	42.5	40.5	39.9	42.7	41.9	39.4	40.9	32.2	26.3	29.4	29.4	23.9	24.5	17.8	10.5	7.7	43	29.8	24
10	13.6	16.9	17.8	25.2	30.9	29	29.2	29.4	41	41.6	39.7	41.4	54.1	40.3	39.9	42.3	44.7	49	43.6	38.8	19.1	11	15.4	11	54	31.9	24
11	11.9	7	13.4	13.2	14.5	13	12.1	13.8	33.8	27.2	37	33.8	35.3	37.2	28.9	31.5	29.6	19.7	17.3	15.6	9.2	10.1	8.6	10.3	37	20.2	24
12	9.8	9.7	10.3	9	8.1	10.5	8.4	13.8	15.4	28	31.5	33.9	39.6	34.6	38.8	38.3	38.8	37.7	30	21	10.8	11.5	13.2	16.9	40	21.7	24
13	16	10.8	19.5	20.6	21.3	25.6	24.5	21	23.4	27.4	23.9	24.3	33.3	23.2	34.8	32	34.6	33.1	19.7	12.1	7.7	9.9	11.4	15.6	35	21.9	24
14	8	19.7	12.9	16.2	15.6	13.8	16.9	16	21.7	26.5	24.5	30.2	29.8	31.8	37.4	38.3	32.4	29.1	15.1	19.9	42.7	28.7	28.5	10.5	43	23.6	24
15	12.7	16.2	34.6	19.1	16.5	19.3	**P**	**P**	**P**	**P**	**P**	**P**	34.8	61.7	51.9	61.3	67.6	53.9	46	42.1	43.6	45.8	46.2	46	68	40.0	18
16	47.6	44	37.2	28.5	33.5	29.2	28.1	29.2	22.1	20.2	17.1	18	18.2	23.2	18.4	24.1	11.8	12.1	7	5.7	6.6	4.4	5.1	5.5	48	20.7	24
17	12.1	9.9	9.5	5.5	7.5	7	5.9	5.9	11.7	14.7	19.9	21.2	18	20.6	20.6	24.5	25.3	25.4	21.2	21.9	16.4	17.5	18.4	18.6	25	15.8	24
18	24.8	23	35.5	42.1	34.2	23	29.2	20.2	18.6	22.8	30.7	41.6	42.9	39.3	38.1	41.4	39.2	32.9	31.6	29.6	15.1	11.9	15.1	20.8	43	29.3	24
19	20.8	24.1	25.7	29	28	29.2	35.3	39.9	28.3	27.2	***90.6***	29.8	29.8	23.9	18.6	18.6	17.8	20	19.5	23.2	17.1	18.2	23.3	20.6	***91***	27.4	24
20	33.5	20.6	14.7	20	21.5	15.6	22.6	30.7	32.9	39	39.2	36.8	37	35.7	37.7	37	37.9	56.3	51	10.8	16.4	23.4	18.4	24.8	56	29.7	24
21	22.8	24.1	20.4	20.2	18.6	24.5	21.9	26.1	31.1	26.1	19.5	27.6	29.8	28.7	34.8	37.4	34.6	27.6	36.6	17.8	11.8	11.2	15.3	19.7	37	24.5	24
22	17.1	17.8	12.7	16.9	15.1	14.7	18.2	17.4	11.2	13.8	13.6	24.1	23.4	19.5	22.5	16.4	15.3	16.2	13.2	16.7	20.2	15.6	14.1	13	24	16.6	24
23	14	10.5	7.5	7	13.8	9.9	12.6	12.9	18.6	18.8	23	26.3	32.4	30.4	31.1	32.6	29.1	24.1	16.9	8.6	9.2	10.1	47.5	50.5	51	20.7	24
24	34.2	42.9	32.9	32.4	21.5	22.1	30	38.1	39.4	42.2	37	45.1	41	44.4	39.6	33.3	32	29.4	25.4	16.7	13.8	21.2	19.9	23.7	45	31.6	24
25	20.8	16.4	16.9	15.8	16.4	18.9	26.1	28	28.3	23.2	22.2	22.6	24.1	21.9	35.5	25.2	31.1	30.7	44.2	27.4	23.2	11.2	7.2	16.3	44	23.1	24
26	26.7	32.9	27.2	23.4	19.5	17.8	18	20.2	21.5	20.4	20.4	18.4	13.8	13	14	18.6	19.1	19.3	**P**	17.8	17.8	18.6	12.9	12.3	33	19.3	23
27	30.9	30.3	26.1	29.4	25.6	33.1	35.7	32.7	32.7	35	32.6	34	31.3	28.9	31.6	29.8	27.8	21.3	17.5	18.4	11.2	9.7	9.9	11.8	36	26.1	24
28	12.5	12.7	11.4	12.8	12.1	17.1	14.2	17.5	23.2	23	21	20.8	25.8	38.8	30.7	25.2	24.3	22.8	21.9	32	30.2	45.5	33.1	52.4	52	24.2	24
29	35.5	29.2	36.1	32.4	29.6	25.2	19.6	19.7	27.8	24.5	23.2	24.5	18.9	31.3	21.5	28.3	44.2	35.7	44.7	46.7	49	33.1	25	21.9	49	30.3	24
30	19.6	18.4	26.1	34.4	17.3	32.9	36	46.3	44.9	55.6	66.5	73.7	58.7	75.5	60.9	67	54.7	55.6	54.3	36.6	23.2	15.6	16.9	16	76	41.9	24
31	17.7	12.5	15.3	19.3	21.9	18.9	16.4	17.7	15.8	22.3	29.8	27.2	30.7	23.2	19.9	21	42.7	47.1	43.8	34.6	23.6	15.8	16.2	13.4	47	23.6	24
HOURLY MAX	48	44	37	42	38	40	46	52	53	57	91	74	59	76	61	67	68	56	54	47	49	46	48	52			
HOURLY AVG	21.2	20.8	20.8	21.7	20.8	21.6	23.3	25.1	27.5	29.3	31.9	32.6	32.4	33.6	33.4	33.2	33.5	31.1	29.7	24.4	20.0	18.3	18.1	20.0			

STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	91	KPH	@ HOUR(S)	10	ON DAY(S)	19
					VAR-VARIOUS	
OPERATIONAL TIME:					737	HRS



JOB #: 2833-14-05-31-C

LICA31
WSP / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	1.08	1.21	1.62	.67	1.21	.54	.27	.54	.13	.94	.67	1.21	.81	.67	.27	2.43	14.36
<	12.0	3.38	4.47	3.92	3.92	7.18	2.84	.81	1.89	3.25	1.76	3.92	2.57	2.16	3.38	3.38	3.11	52.03
<	20.0	5.42	1.62	.54	2.30	1.49	.40	1.08	.67	1.49	.27	.67	1.62	1.21	1.76	3.38	4.60	28.59
<	29.0	.27	.00	.00	.00	.00	.13	.13	.00	.00	.00	.00	.40	.67	.13	.67	2.03	4.47
<	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.27	.00	.00	.00	.40
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	10.16	7.31	6.09	6.91	9.89	3.92	2.30	3.11	4.87	2.98	5.28	5.96	5.14	5.96	7.72	12.19	

Calm : .13 %

Total # Operational Hours : 738

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	8	9	12	5	9	4	2	4	1	7	5	9	6	5	2	18	106
<	12.0	25	33	29	29	53	21	6	14	24	13	29	19	16	25	25	23	384
<	20.0	40	12	4	17	11	3	8	5	11	2	5	12	9	13	25	34	211
<	29.0	2					1	1					3	5	1	5	15	33
<	39.0												1	2				3
>=	39.0																	
	Totals	75	54	45	51	73	29	17	23	36	22	39	44	38	44	57	90	

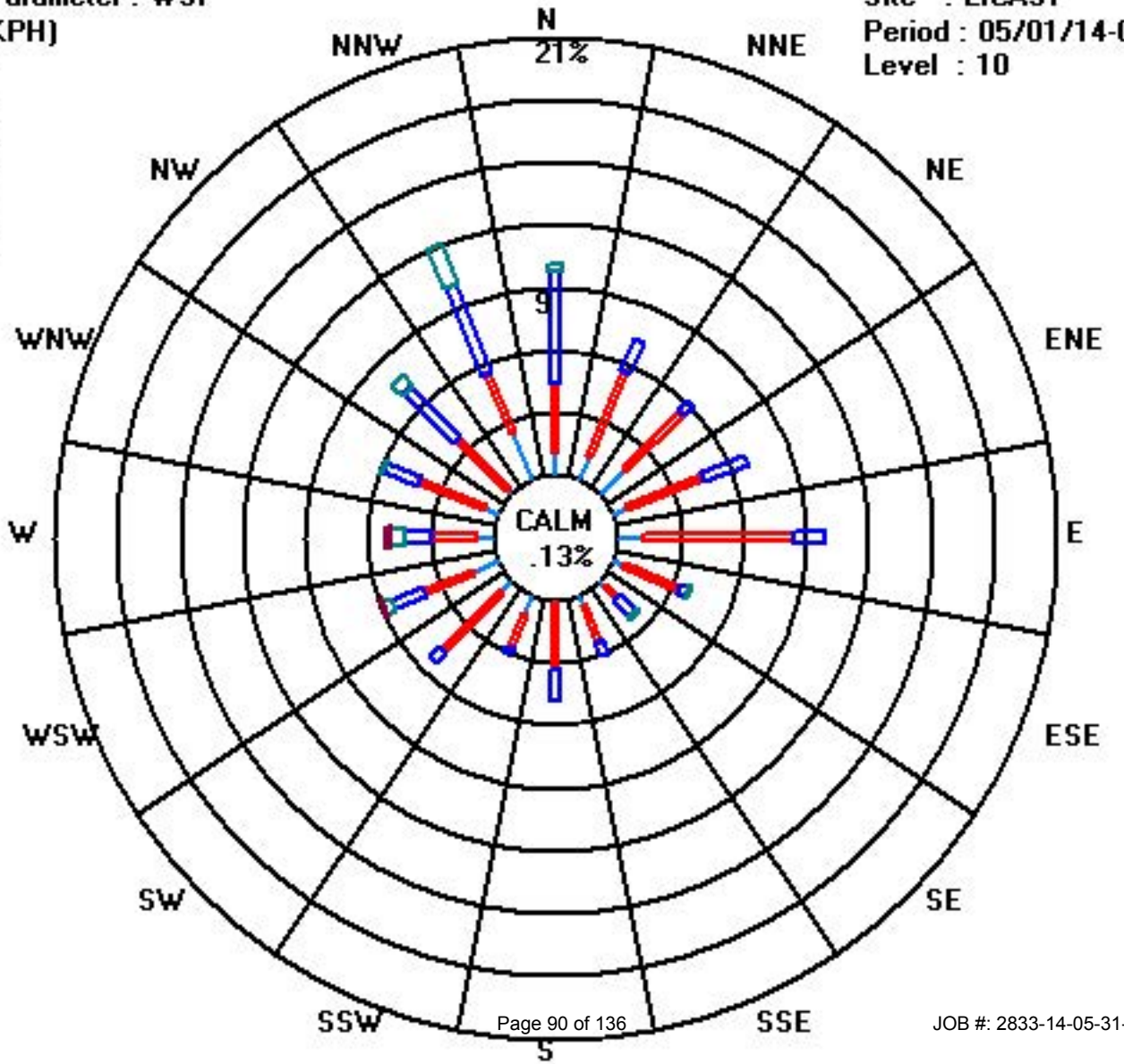
Calm : .13 %

Total # Operational Hours : 738

Logger : 31 Parameter : WSP
Class Limits (KPH)

>= 39.0
< 39.0
< 29.0
< 20.0
< 12.0
< 6.0

Site : LICA31
Period : 05/01/14-05/31/14
Level : 10



JOB #: 2833-14-05-31-C

Vector Wind Direction

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

WIND DIRECTION (WD) hourly averages in degrees

MST

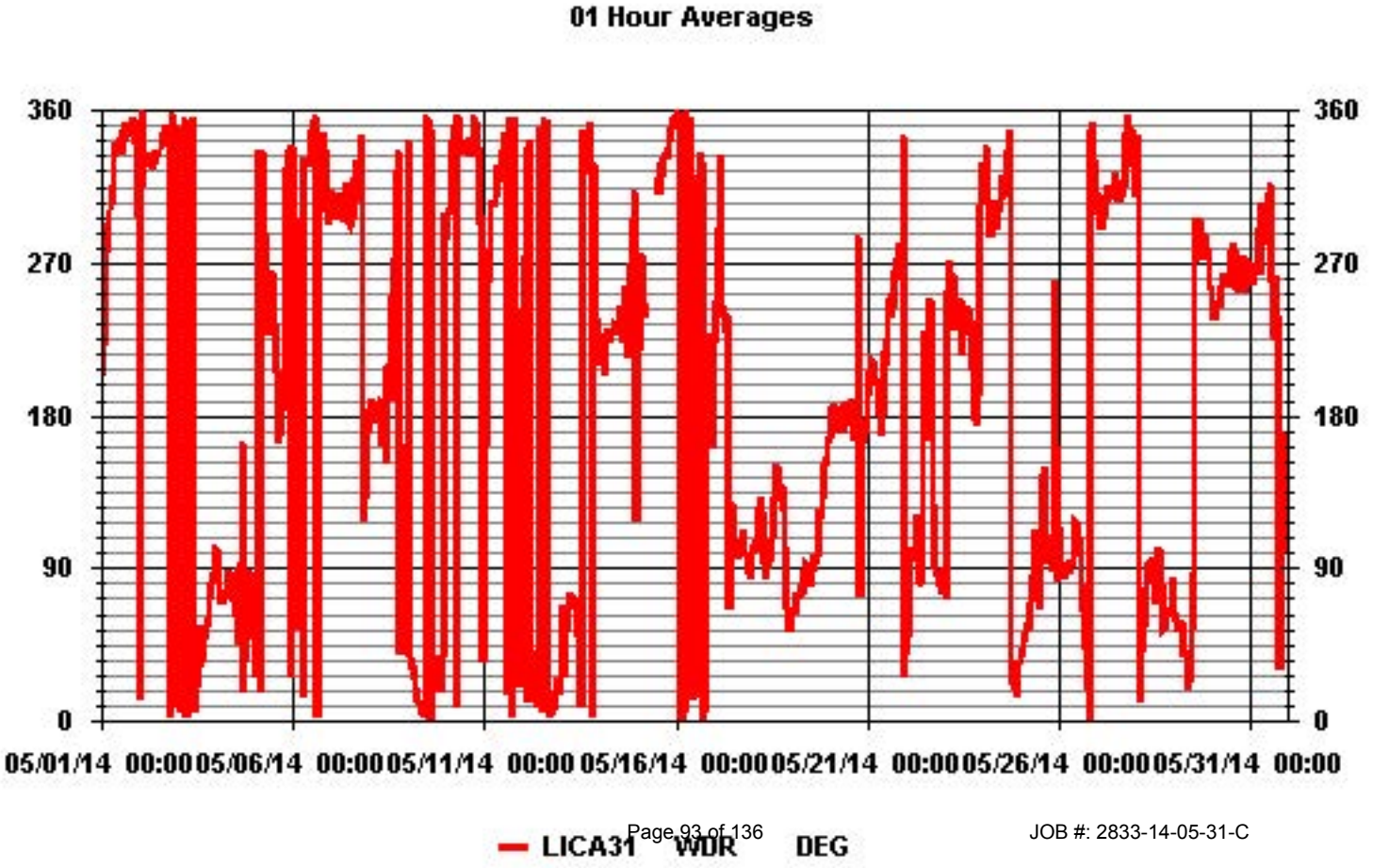
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	205	221	225	276	294	301	304	316	332	341	334	344	334	348	353	341	344	349	353	350	355	341	296	309	355	N	24
2	12	360	315	329	329	335	330	328	326	337	329	332	337	344	343	349	348	348	352	1	359	8	348	351	360	N	24
3	19	11	5	23	356	3	5	14	21	356	5	12	20	31	56	35	53	52	61	55	71	81	88	103	356	N	24
4	101	97	79	69	74	76	73	73	89	78	74	75	63	44	90	94	165	16	34	48	69	89	50	71	165	SSE	24
5	53	25	336	19	19	336	289	265	230	227	252	266	236	206	164	170	170	182	206	319	326	336	26	339	339	NNW	24
6	332	298	142	81	54	63	13	330	330	327	330	349	346	354	358	1	17	334	327	347	338	301	292	303	358	N	24
7	309	312	304	296	302	302	310	310	294	304	317	294	292	295	320	305	331	329	341	346	117	131	155	169	346	NNW	24
8	183	189	185	186	176	181	188	187	162	168	152	209	210	188	251	273	324	317	337	38	65	53	163	40	337	NNW	24
9	342	39	32	32	25	20	13	11	5	5	2	357	346	354	0	349	25	28	39	32	17	33	38	299	357	N	24
10	284	299	302	331	342	351	7	357	352	336	334	340	341	334	336	332	336	357	354	351	339	292	300	34	357	N	24
11	59	162	258	278	307	304	304	328	309	327	317	337	343	347	15	351	356	1	350	356	28	19	41	241	356	N	24
12	243	275	338	10	342	22	21	41	38	8	350	11	5	356	348	354	2	8	3	7	18	25	18	15	356	N	24
13	53	68	26	53	58	66	75	69	71	71	51	16	8	335	348	322	332	344	353	1	329	248	239	229	353	N	24
14	209	213	217	204	222	231	222	229	229	234	233	236	227	244	223	238	257	247	214	270	251	297	313	117	313	NW	24
15	182	218	276	240	247	239	**P**	**P**	**P**	**P**	**P**	**P**	319	310	326	325	331	333	333	337	341	349	355	357	357	N	18
16	359	358	2	2	357	358	4	16	14	356	15	13	29	31	322	335	331	1	5	211	228	168	160	199	359	N	24
17	222	248	237	290	334	246	240	228	240	66	118	129	125	102	96	98	102	107	113	98	98	86	94	83	334	NNW	24
18	104	99	106	126	115	132	125	94	83	90	99	94	107	132	135	151	145	129	139	125	104	67	56	52	151	SSE	24
19	57	65	65	76	73	76	74	75	89	94	93	91	79	88	98	95	97	124	120	122	131	151	155	164	164	SSE	24
20	167	183	183	187	179	170	182	184	185	169	177	175	180	190	188	166	166	182	286	73	115	163	170	178	286	WNW	24
21	192	206	213	212	207	197	201	181	168	180	215	214	226	249	238	249	248	265	273	276	282	260	345	26	345	NNW	24
22	39	49	86	103	95	95	115	122	82	80	105	197	230	164	203	249	192	129	90	85	89	81	75	85	249	WSW	24
23	91	72	253	272	245	264	230	232	233	233	249	215	229	232	227	245	236	236	207	178	174	192	304	329	329	NNW	24
24	314	309	340	305	294	285	300	305	307	289	300	307	321	312	309	334	336	348	21	31	20	14	36	33	348	NNW	24
25	38	42	47	52	58	53	70	86	98	112	106	65	94	108	145	150	92	109	94	88	94	259	81	161	259	WSW	24
26	116	90	91	84	90	89	86	94	92	96	119	118	110	106	81	65	43	18	27	0	348	353	332	299	353	N	24
27	303	312	291	291	297	304	306	316	313	307	316	323	309	306	318	308	315	338	347	357	344	350	328	309	357	N	24
28	329	345	11	38	41	55	78	92	93	85	80	97	69	91	101	101	81	54	55	62	65	66	67	84	345	NNW	24
29	65	60	56	57	57	57	38	42	19	23	33	53	87	270	296	289	296	289	272	288	280	274	258	255	296	WNW	24
30	240	236	241	247	243	256	262	262	262	255	262	275	277	282	278	256	253	262	258	257	274	253	263	270	282	W	24
31	269	257	263	269	290	273	263	305	302	280	292	311	318	259	227	224	262	240	30	53	98	165	171	162	318	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:	738	HRS
STANDARD DEVIATION:	117.63		AMD OPERATION UPTIME:	99.2	%
			MONTHLY AVERAGE:	345	DEG



JOB #: 2833-14-05-31-C

Standard Deviation Wind Direction

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST

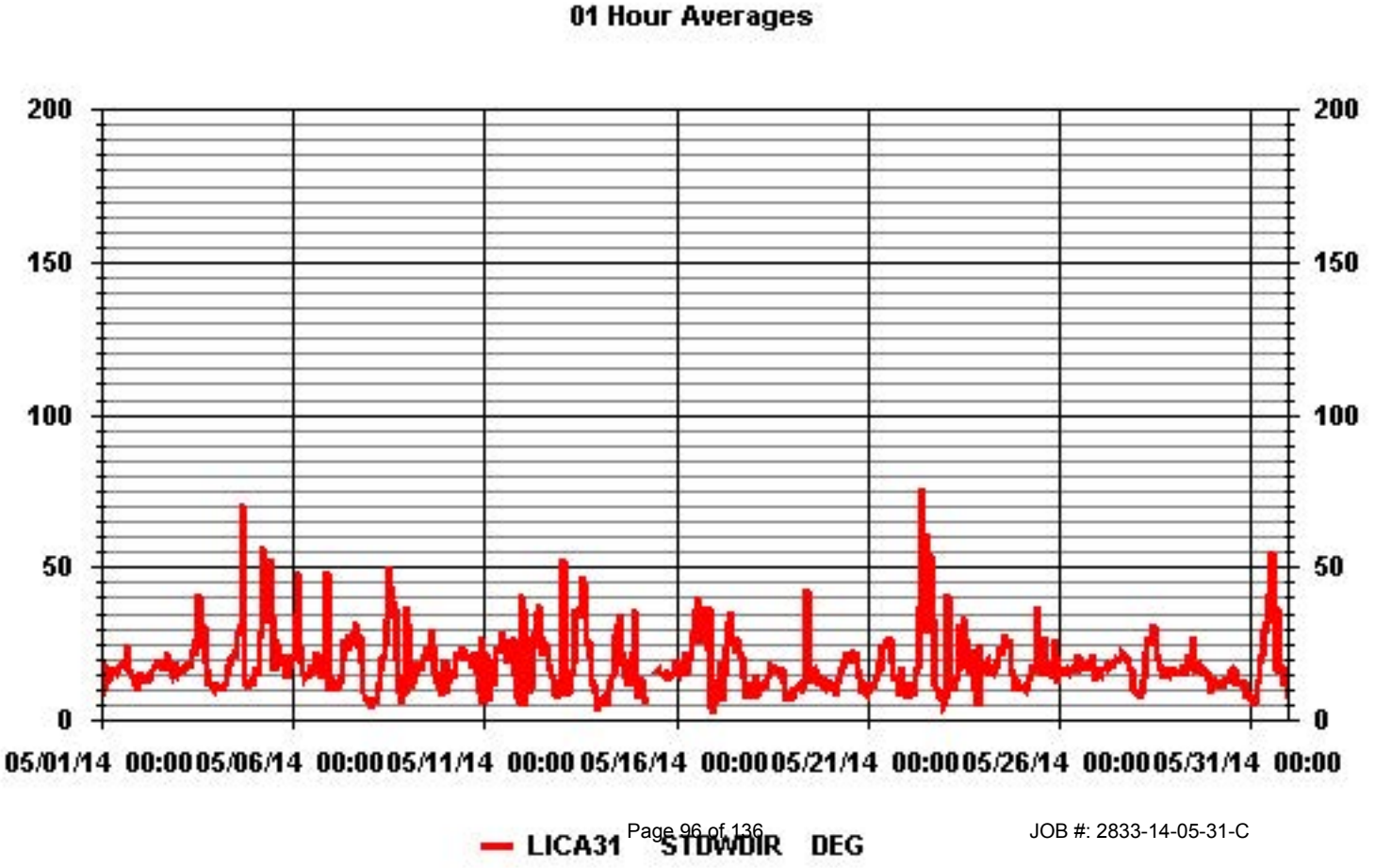
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	9	19	9	12	14	16	16	15	16	17	16	17	18	18	19	19	25	17	16	15	14	12	9	13
2	15	15	13	13	12	15	13	15	16	17	18	19	19	20	16	17	16	22	16	17	15	16	19	16
3	15	16	16	16	17	17	18	18	18	22	22	26	33	41	30	23	31	19	17	11	12	11	11	10
4	11	11	10	10	10	11	12	14	18	20	21	20	23	28	28	31	71	40	12	11	11	13	11	14
5	17	15	15	27	29	57	38	32	33	49	53	35	16	24	25	24	20	18	21	14	14	16	17	21
6	20	21	35	49	25	19	16	14	15	15	14	18	16	17	17	22	17	19	14	15	14	49	10	10
7	11	14	10	11	11	12	15	19	26	23	23	28	24	28	28	32	25	24	28	19	9	7	6	6
8	6	4	6	6	6	9	12	16	20	21	24	33	50	44	39	36	37	20	16	9	5	12	8	37
9	32	11	11	12	16	14	19	17	17	19	20	20	24	20	20	30	25	16	13	12	14	8	12	20
10	8	14	12	14	14	16	21	21	22	24	20	24	19	21	20	18	18	17	22	15	16	8	27	6
11	6	22	7	6	12	11	20	22	24	22	24	29	27	23	18	26	21	21	27	15	7	8	5	41
12	4	36	28	26	9	10	18	29	23	35	38	28	22	22	25	22	19	17	15	14	9	8	8	9
13	8	53	13	8	9	9	14	16	18	36	34	34	37	47	45	35	25	25	21	14	12	9	4	4
14	5	6	6	7	5	5	10	13	14	15	28	31	27	35	23	18	14	12	11	20	22	19	36	14
15	7	10	14	10	6	6	**P**	**P**	**P**	**P**	**P**	**P**	16	17	16	15	14	14	16	13	14	15	15	16
16	20	16	15	16	15	15	22	15	19	22	26	29	36	40	25	37	30	25	26	37	22	37	4	2
17	5	7	9	13	19	6	14	24	29	32	35	25	25	22	27	25	23	21	14	11	7	8	9	12
18	8	8	15	11	10	11	12	11	11	14	15	19	15	17	17	16	16	15	17	13	10	7	7	8
19	9	8	9	10	11	12	11	12	11	12	43	12	13	13	15	14	16	15	12	12	11	13	13	12
20	13	10	10	10	8	12	14	15	17	19	18	22	20	20	22	22	18	22	17	14	9	10	9	10
21	9	11	11	11	12	13	15	19	16	25	23	26	23	26	27	19	13	14	15	10	8	17	11	9
22	8	8	12	11	8	11	15	17	37	62	76	55	28	61	53	54	44	34	12	10	10	8	7	5
23	6	7	41	28	14	11	10	13	14	16	31	30	34	27	18	17	19	23	17	10	5	5	25	15
24	16	16	18	19	17	14	18	16	17	20	23	24	21	23	28	26	24	26	17	15	9	14	11	11
25	10	10	11	10	11	13	15	17	17	17	37	15	16	14	16	27	15	19	15	14	17	26	21	12
26	15	16	16	14	16	17	16	17	16	16	16	16	21	18	19	18	17	17	16	20	16	21	16	13
27	17	16	15	16	17	18	17	18	18	18	19	20	19	19	20	22	21	20	20	19	16	17	10	10
28	9	10	7	9	9	13	22	25	27	24	28	31	27	22	20	19	17	14	15	16	16	15	16	16
29	16	15	15	15	15	17	17	14	20	20	16	19	27	15	17	17	18	17	14	17	16	13	9	9
30	12	14	11	11	12	11	11	12	13	13	12	16	17	16	17	11	12	12	12	10	13	8	8	8
31	7	5	5	6	12	13	18	21	29	29	32	41	49	55	32	21	16	37	16	16	18	11	14	8

STATUS FLAG CODES

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

LAST CALIBRATION: June 12, 2012

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 738 HRS



JOB #: 2833-14-05-31-C

Calibration Reports

Sulphur Dioxide

API 100E SO2 Analyzer Calibration

Date:	1-May-14	**Start/End Time (mst):**	9:08/11:59
Company:	LICA	**Calibration Purpose:**	Monthly Calibration
Station Name/Location:	St.Lina	**Converter Make & Model:**	NA
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	SO2	**Cal Gas Expiry Date:**	29-Dec-16

Analyzer:

Serial Number:	468	**Range ppb:**	1000
Last Calibration Date:	8-Apr-14	**As Found C.F.**	1.004
Previous Cal High Point C.F.:	0.998	**New C.F.:**	1.005

	As found:	As left:
SLOPE:	1.008	1.008
OFFSET:	139.2	139.2
HVPS:	560	560
RCELL TEMP:	50.0	50.0
BOX TEMP:	30.8	30.8
PMT TEMP:	7.9	7.9
IZS TEMP:	40.0	40.0
TEST:	NA	NA
STABIL:	6.9	6.9
PRES:	24.2	24.2
SAMP FL:	572	572
PMT:	124.7	124.7
NORM PMT:	138.7	138.7
UV LAMP:	1774	1774
LAMP RATIO:	96.8	96.8
STR. LGT	70.2	70.2
DRK PMT:	14.7	14.7
DRK LMP:	3.6	3.6
Internal Span:	252.7	246.4

Calibrator:

Flow Meter ID's:	NA
Make & Model:	Environics 6100
Serial #:	4760
Cal Gas Cylinder I.D. # :	BAL3165
Cal Gas Conc. (ppm):	49.7

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

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	0.5	NA
adjusted zero	5000	0.0	5000	0	0.5	NA
as found high	4996	79.80	5076	781.4	778.6	1.004
adjusted high	4996	79.80	5076	781.4	778.7	1.004
mid	4996	39.90	5036	393.8	391.8	1.006
low	4996	19.90	5016	197.2	196.9	1.004
calibrator zero	4996	0.00	4996	0	0.3	NA
					Average C.F.=	1.005

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.004**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.03%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-0.62%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

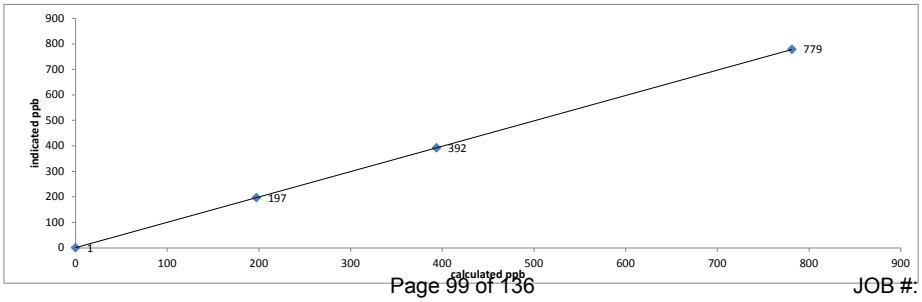
****run converter effeciency test immediately following zero adjust****

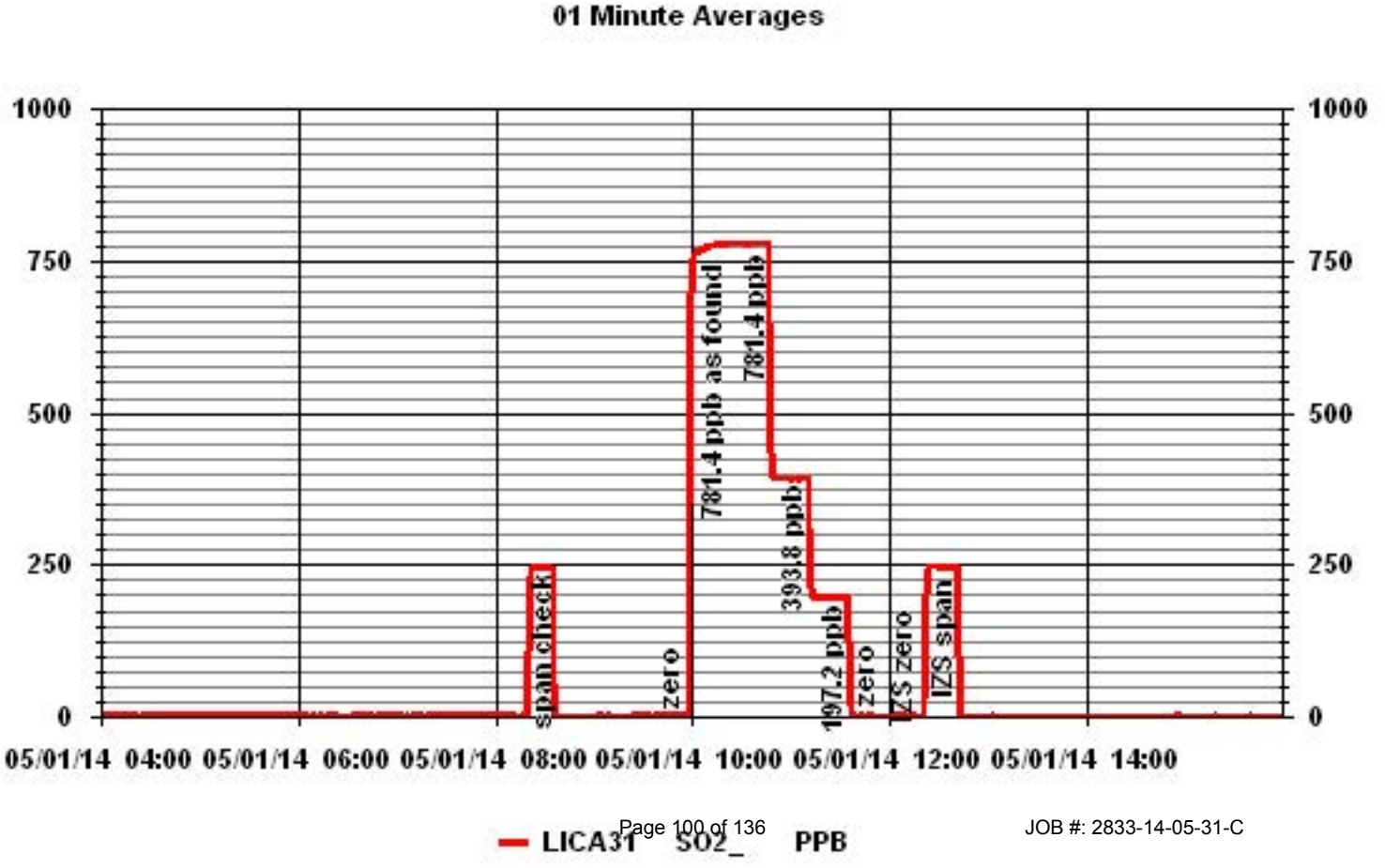
SO_2 High Point gas concentration:	na	Time gas run (mst):	na
Zero corrrected analyzer response:	na		

Comments:

No adjustments necessary. Filter changed

API 100E SO2 Analyzer Calibration





JOB #: 2833-14-05-31-C

API 100E SO2 Analyzer Calibration

Date:	13-May-14	**Start/End Time (mst):**	12:41 / 15:10
Company:	LICA	**Calibration Purpose:**	As-Found
Station Name/Location:	St Lina	**Converter Make & Model:**	NA
Performed by:	Chris Wesson	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	SO2	**Cal Gas Expiry Date:**	15-Oct-17

Analyzer:

Serial Number:	468	**Range ppb:**	1000
Last Calibration Date:	1-May-14	**As Found C.F.**	1.108
Previous Cal High Point C.F.:	1.004	**New C.F.:**	0.743

	As found:	**As left:**
SLOPE:	1.008	NA
OFFSET:	139.2	NA
HVPS:	560	NA
RCELL TEMP:	50.0	NA
BOX TEMP:	31.8	NA
PMT TEMP:	7.9	NA
IZS TEMP:	40.0	NA
TEST:	na	NA
STABIL:	0.1	NA
PRES:	26.0	NA
SAMP FL:	372	NA
PMT:	125.1	NA
NORM PMT:	130.9	NA
UV LAMP:	1775.5	NA
LAMP RATIO:	96.8	NA
STR. LGT	70.2	NA
DRK PMT:	14.9	NA
DRK LMP:	3.5	NA
Internal Span:	NA	NA

Calibrator:

Flow Meter ID's:	NA
Make & Model:	Environics 6100
Serial #:	5212
Cal Gas Cylinder I.D. # :	BAL1119
Cal Gas Conc. (ppm):	48.9

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	4920	80	5000
mid	4960	40	5000
low	4980	20	5000

Calibration:

Calibrator Flow Rates (cc/min)				**Calculated Concentration:**	**Indicated Concentration:**	**Correction Factors:**
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4996	0.0	4996	0	-4.0	NA
adjusted zero	NA	0.0	######	0		NA
as found high	4921	75.96	4997	743.3	671.0	1.108
adjusted high		NA				
mid	4960	36.99	4997	362.0	330.0	1.097
low	4978	18.50	4997	181.1	160.0	1.132
calibrator zero	NA	0.00	######	0	-3.0	NA
					Average C.F.=	0.743

Linear Regression/Calibration Results:

		LIMITS	**Pass/Fail ?**
Correlation Coeffecient =	**#DIV/0!**	**> or = 0.995**	**#DIV/0!**
Slope =	**#DIV/0!**	**0.85-1.15**	**#DIV/0!**
b (Intercept as % of full scale)=	**#DIV/0!**	**± 3% F.S.**	**#DIV/0!**
% change in C.F. from last cal	**-10.34%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

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

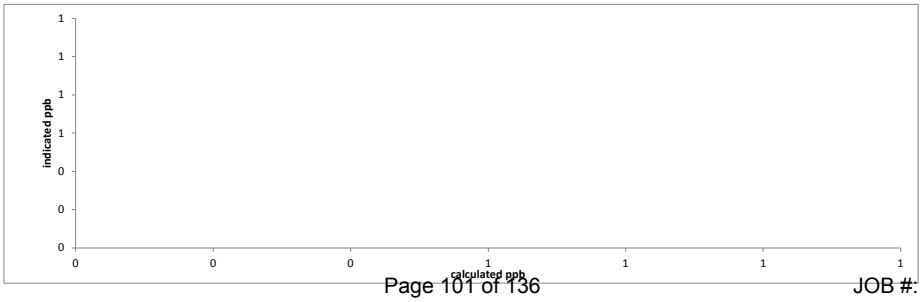
SO_2 High Point gas concentration: NA Time gas run (mst): NA

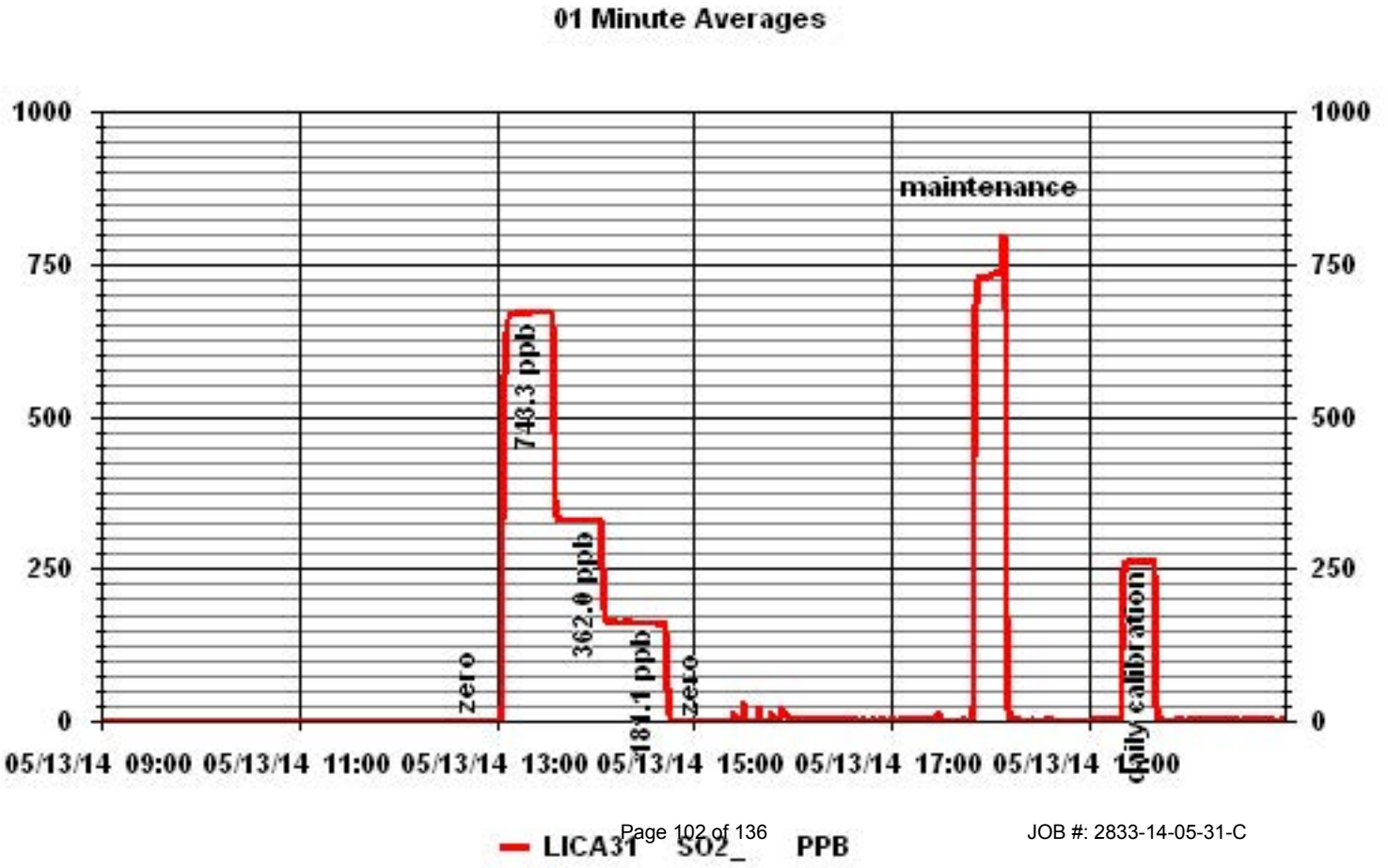
Zero corrrected analyzer response: NA

Comments:

As-found prior to maintenance.

API 100E SO2 Analyzer Calibration





JOB #: 2833-14-05-31-C

API 100E SO2 Analyzer Calibration

Date:	14-May-14	**Start/End Time (mst):**	10:00 - 13:47
Company:	LICA	**Calibration Purpose:**	Post-Repair
Station Name/Location:	St Lina	**Converter Make & Model:**	NA
Performed by:	Chris Wesson	**Converter Serial #:**	NA
Application $H_2S/TRS/SO_2$:	SO2	**Cal Gas Expiry Date:**	15-Oct-17

Analyzer:

Serial Number:	468	**Range ppb:**	1000
Last Calibration Date:	1-May-14	**As Found C.F.**	NA
Previous Cal High Point C.F.:	1.004	**New C.F.:**	0.997

	As found:	**As left:**
SLOPE:	1.008	1.102
OFFSET:	139.2	139.9
HVPS:	544	544
RCELL TEMP:	50.0	50.0
BOX TEMP:	28.5	28.7
PMT TEMP:	7.9	7.9
IZS TEMP:	40.0	40.0
TEST:	na	na
STABIL:	0.1	0.4
PRES:	24.3	23.9
SAMP FL:	582	573
PMT:	135.1	134.6
NORM PMT:	141.1	142.8
UV LAMP:	1772.6	1773.8
LAMP RATIO:	100.0	100.0
STR. LGT	77.4	77.1
DRK PMT:	18.3	17.6
DRK LMP:	3.7	3.6
Internal Span:	246.4	263

Calibrator:

Flow Meter ID's:	NA
Make & Model:	Environics 6100
Serial #:	5212
Cal Gas Cylinder I.D. # :	BAL1119
Cal Gas Conc. (ppm):	48.9

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	4920	80	5000
mid	4960	40	5000
low	4980	20	5000

Calibration:

Calibrator Flow Rates (cc/min)				**Calculated Concentration:**	**Indicated Concentration:**	**Correction Factors:**
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	NA	0.0	######	0		NA
adjusted zero	5001	0.0	5001	0	0.0	NA
as found high		NA				
adjusted high	4922	75.98	4998	743.4	743.0	1.001
mid	4961	36.99	4998	361.9	365.0	0.992
low	4978	18.50	4997	181.1	181.0	1.000
calibrator zero	5001	0.00	5001	0	1.0	NA
					Average C.F.=	0.997

Linear Regression/Calibration Results:

		LIMITS	**Pass/Fail ?**
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.001**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.13%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**#VALUE!**	**± 15%**	**######**

Converter Effeciency Check for H_2S/TRS application:

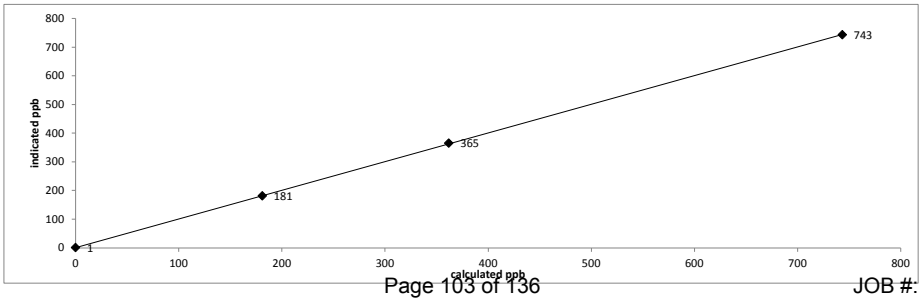
****run converter effeciency test immediately following zero adjust****

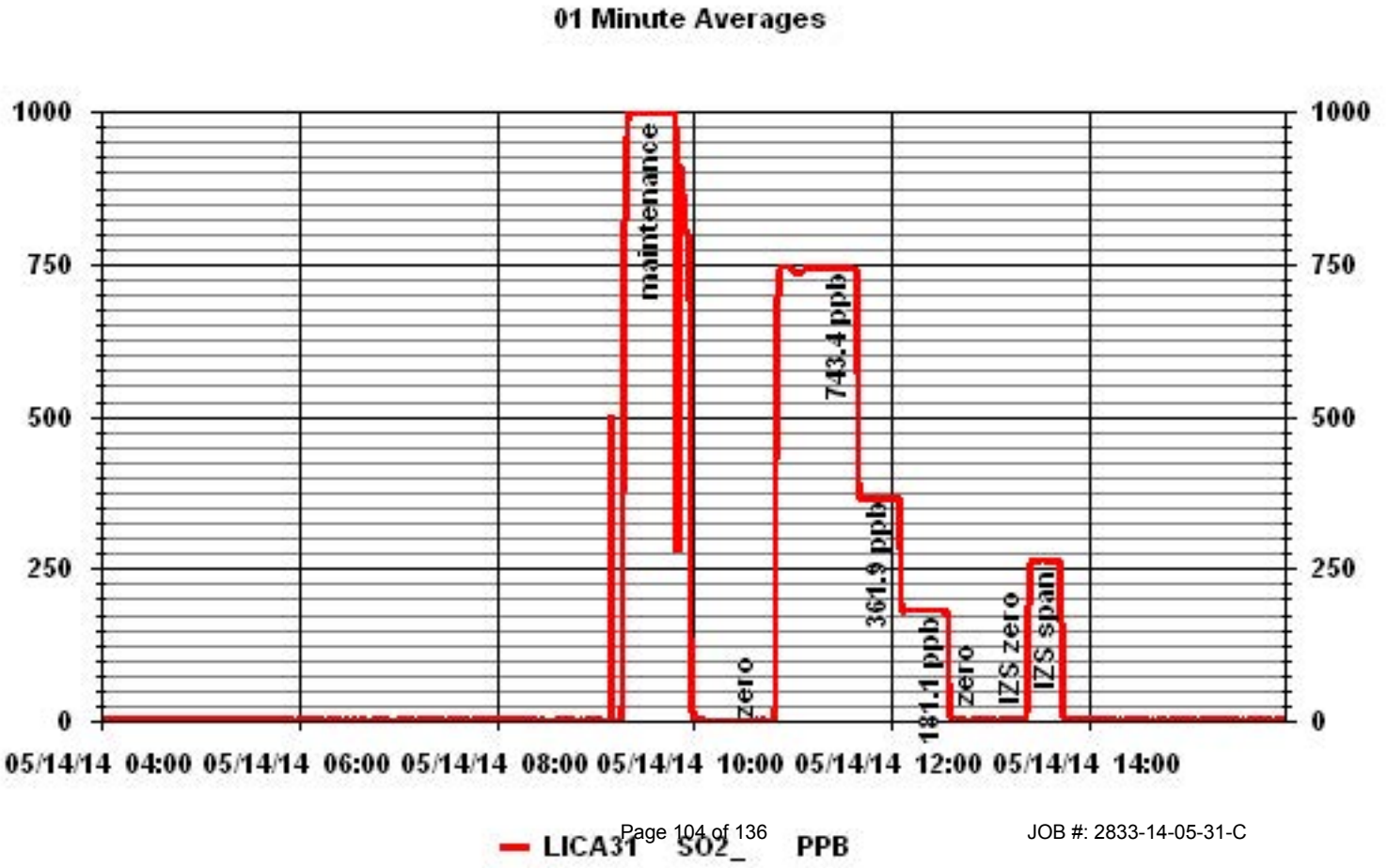
SO_2 High Point gas concentration:	NA	Time gas run (mst):	NA
Zero corrrected analyzer response:	NA		

Comments:

Post-repair following exhaust pump rebuild and factory calibration

API 100E SO2 Analyzer Calibration





JOB #: 2833-14-05-31-C

Hydrogen Sulphide

API 101E H2S Analyzer Calibration

Date:	1-May-14	**Start/End Time (mst):**	9:05/11:56
Company:	LICA	**Calibration Purpose:**	Monthly Calibration
Station Name/Location:	St.Lina	**Converter Make & Model:**	Internal
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	H2S	**Cal Gas Expiry Date:**	25-Dec-15

Analyzer:

Serial Number:	510	**Range ppb:**	100
Last Calibration Date:	30-Apr-14	**As Found C.F.**	0.963
Previous Cal High Point C.F.:	0.998	**New C.F.:**	1.019

	As found:	**As left:**
SLOPE:	1.167	1.093
OFFSET:	126.7	124.8
HVPS:	542	542
RCELL TEMP:	50.0	50.0
BOX TEMP:	34.0	34.0
PMT TEMP:	8.4	8.4
IZS TEMP:	45.0	45.0
TEST:	NA	NA
STABIL:	0.1	0.1
PRES:	20.9	20.9
SAMP FL:	548	548
PMT:	125.6	125.6
NORM PMT:	128.5	128.5
UV LAMP:	1461	1461
LAMP RATIO:	95.3	95.3
STR. LGT	73.9	73.9
DRK PMT:	38.3	38.3
DRK LMP:	-5.6	-5.6
Internal Span:	42.49	44.57

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	830
Cal Gas Cylinder I.D. # :	BLM005049
Cal Gas Conc. (ppm):	10.1

Calibrator Flow Targets:

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

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	-0.8	NA
adjusted zero	5000	0.0	5000	0	0.8	NA
as found high	5000	39.00	5039	78.2	82.0	0.963
adjusted high	5000	39.00	5039	78.2	78.4	1.007
mid	5000	19.00	5019	38.2	38.0	1.028
low	5000	11.00	5011	22.2	22.5	1.022
calibrator zero	5000	0.00	5000	0	1.3	NA
					Average C.F.=	1.019

Linear Regression/Calibration Results:

		LIMITS	**Pass/Fail ?**
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.007**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.52%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**3.54%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

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

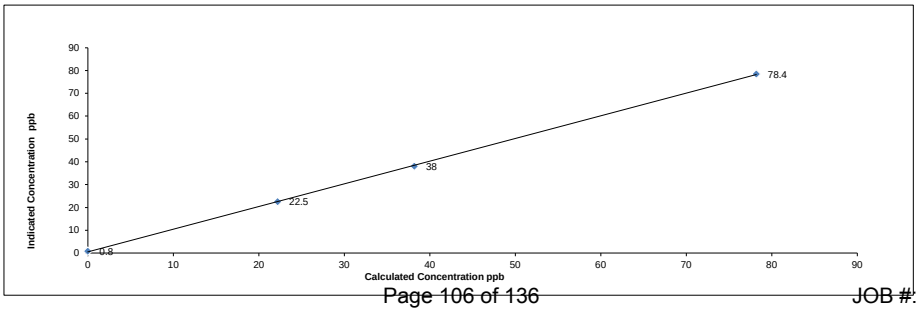
SO_2 High Point gas concentration: na Time gas run (mst): na

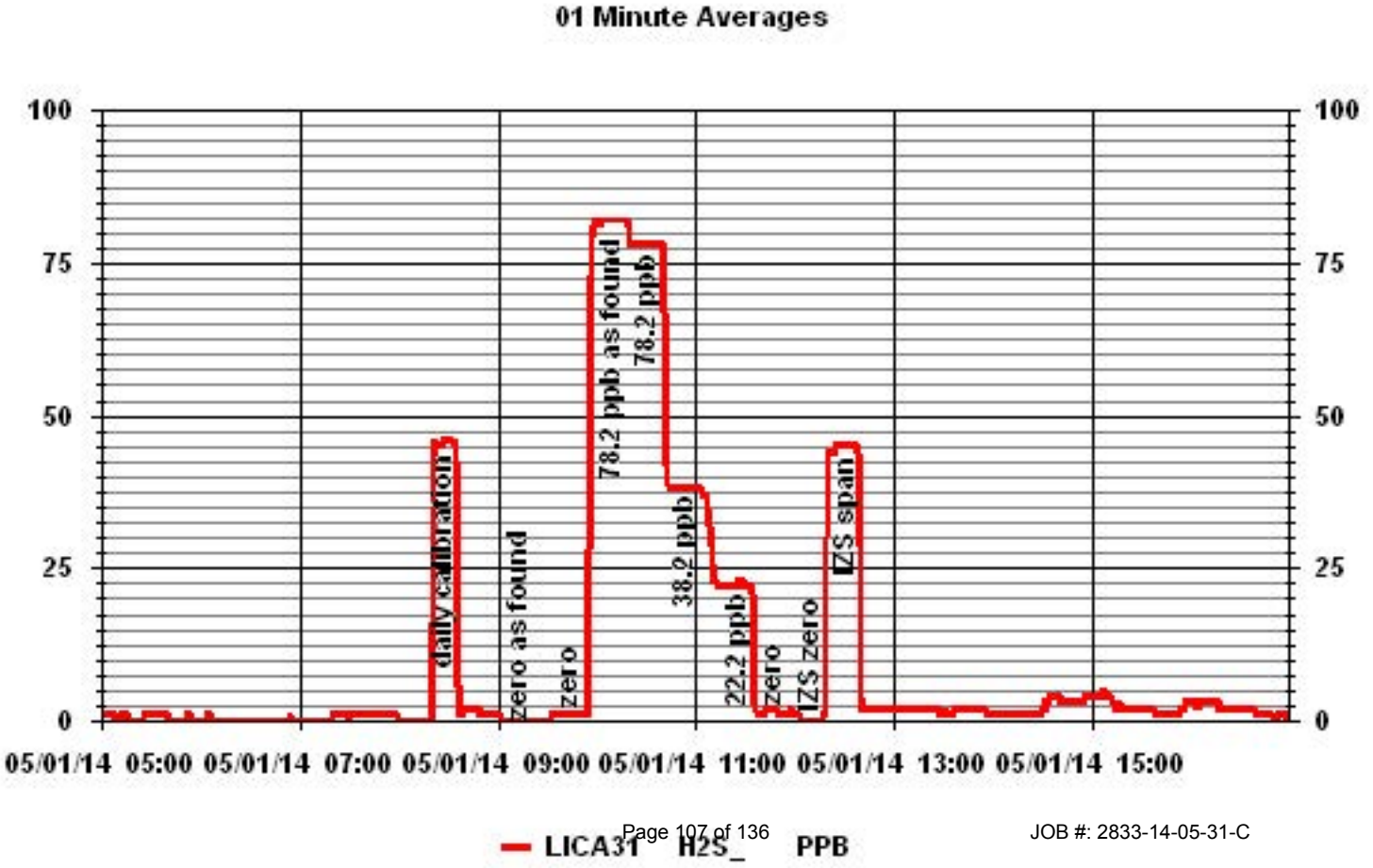
Zero corrrected analyzer response: na

Comments:

Filter changed.

API 101E H2S Analyzer Calibration





JOB #: 2833-14-05-31-C

API 101E H2S Analyzer Calibration

Date:	10-May-14	**Start/End Time (mst):**	11:17/13:32
Company:	LICA	**Calibration Purpose:**	1-point Calibration
Station Name/Location:	St.Lina	**Converter Make & Model:**	Internal
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application $H_2S/TRS/SO_2$:	H2S	**Cal Gas Expiry Date:**	25-Dec-15

Analyzer:

Serial Number:	510	**Range ppb:**	100
Last Calibration Date:	1-May-14	**As Found C.F.**	1.010
Previous Cal High Point C.F.:	1.007	**New C.F.:**	NA

	As found:	As left:
SLOPE:	1.093	1.096
OFFSET:	124.8	127.8
HVPS:	542	542
RCELL TEMP:	50.0	50.0
BOX TEMP:	32.8	32.8
PMT TEMP:	8.4	8.4
IZS TEMP:	45.0	45.0
TEST:	NA	NA
STABIL:	0.1	0.1
PRES:	20.8	20.8
SAMP FL:	546	546
PMT:	122.8	122.8
NORM PMT:	128.7	128.7
UV LAMP:	1459	1459
LAMP RATIO:	95.2	95.2
STR. LGT	68.2	68.2
DRK PMT:	36.9	36.9
DRK LMP:	-5.6	-5.6
Internal Span:	44.57	45.76

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	830
Cal Gas Cylinder I.D. # :	BLM005049
Cal Gas Conc. (ppm):	10.1

Calibrator Flow Targets:

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

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	1.4	NA
adjusted zero	5000	0.0	5000	0	0.2	NA
as found high	5000	39.00	5039	78.2	77.6	1.010
adjusted high	5000	39.00	5039	78.2	78.5	0.998
mid						
low						
calibrator zero						NA
					Average C.F.=	

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =		> or = 0.995	
Slope =		0.85-1.15	
b (Intercept as % of full scale)=		± 3% F.S.	
% change in C.F. from last cal	-0.30%	± 15%	PASS

Converter Effeciency Check for H_2S/TRS application:

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

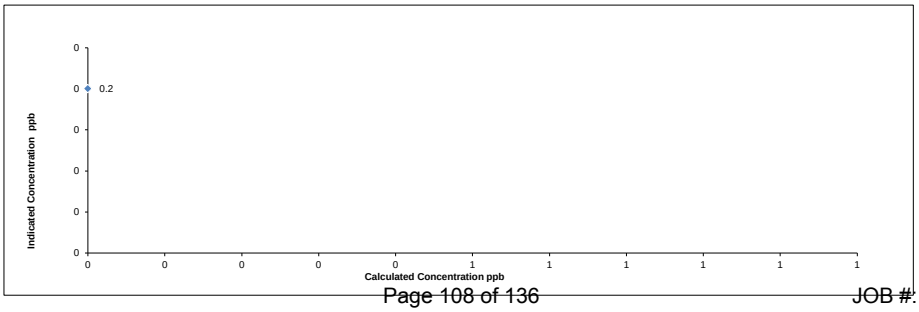
SO_2 High Point gas concentration: na Time gas run (mst): na

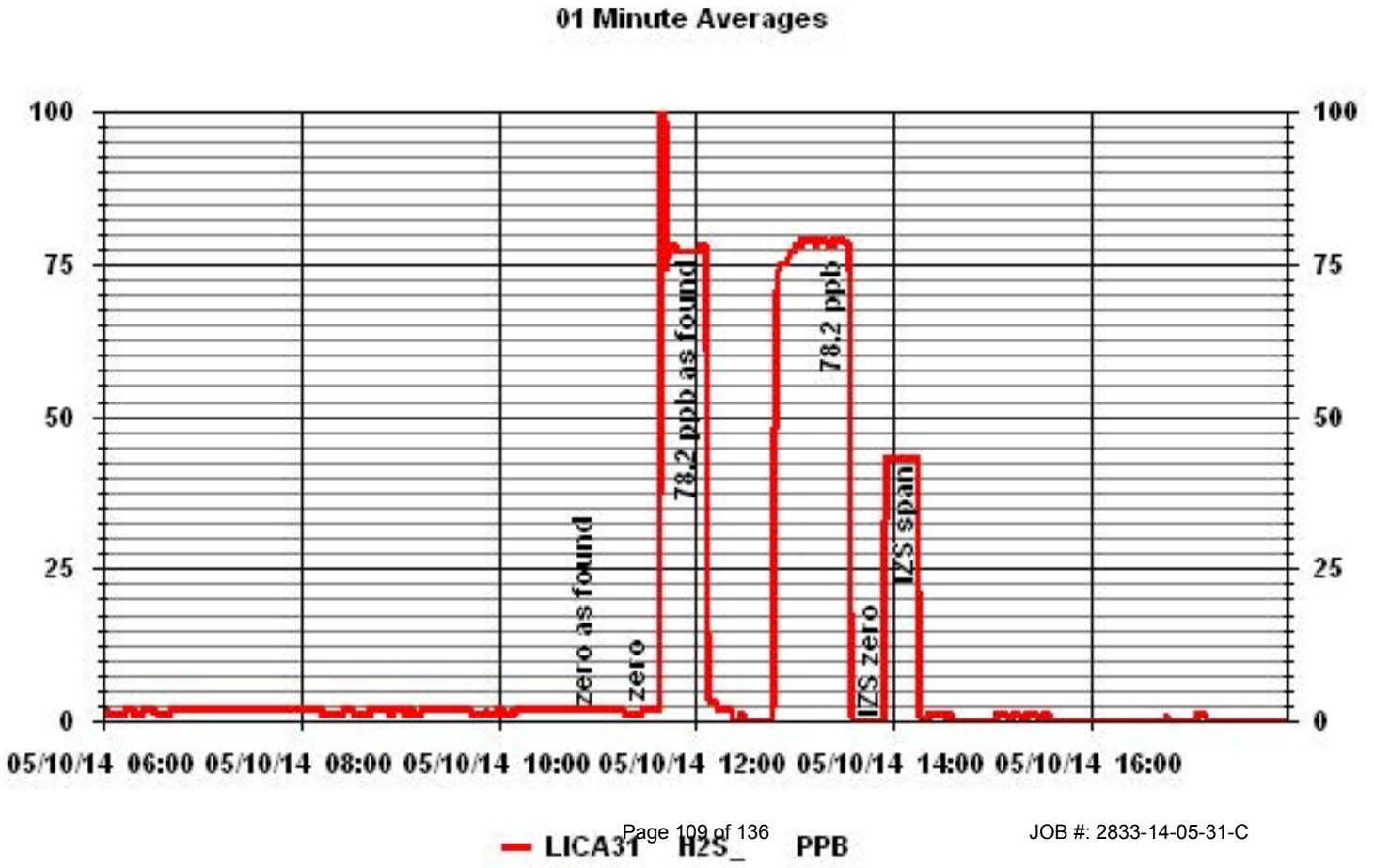
Zero corrrected analyzer response: na

Comments:

1-point calibration due to high zero and span during daily izs.

API 101E H2S Analyzer Calibration





JOB #: 2833-14-05-31-C

API 101E H2S Analyzer Calibration

Date:	14-May-14	**Start/End Time (mst):**	12:15 - 16:19
Company:	LICA	**Calibration Purpose:**	Recalibration
Station Name/Location:	St Lina	**Converter Make & Model:**	Internal
Performed by:	Chris Wesson	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	H2S	**Cal Gas Expiry Date:**	2-Apr-16

Analyzer:

Serial Number:	510	**Range ppb:**	100
Last Calibration Date:	10-May-14	**As Found C.F.**	1.101
Previous Cal High Point C.F.:	0.998	**New C.F.:**	1.008

	As found:	As left:
SLOPE:	1.096	1.181
OFFSET:	127.8	127.6
HVPS:	542	542
RCELL TEMP:	50.0	50.0
BOX TEMP:	33.0	33.0
PMT TEMP:	8.4	8.4
IZS TEMP:	45.0	45.0
TEST:	Conv= 315C	conv=314.9
STABIL:	0.2	0.1
PRES:	21.1	21.0
SAMP FL:	551	550
PMT:	128.8	124.2
NORM PMT:	128.7	127.3
UV LAMP:	1458.7	1458.6
LAMP RATIO:	95.1	95.2
STR. LGT	70.0	75.4
DRK PMT:	38.7	39.3
DRK LMP:	-5.6	-5.6
Internal Span:	44.57	44.57

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	829
Cal Gas Cylinder I.D. # :	LL47542
Cal Gas Conc. (ppm):	10.0

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	5000	0	5000
high	4960	40	5000
mid	4980	20	5000
low	4990	10	5000

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4998	0.0	4998	0	1.0	NA
adjusted zero	4998	0.0	4998	0	0.2	NA
as found high	4963	39.00	5002	78.0	71.0	1.101
adjusted high	4963	39.00	5002	78.0	78.0	1.002
mid	4983	19.00	5002	38.0	37.9	1.008
low	4989	11.00	5000	22.0	21.9	1.014
calibrator zero	4998	0.00	4998	0	-0.1	NA
					Average C.F.=	1.008

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.001**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.06%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-10.35%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

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

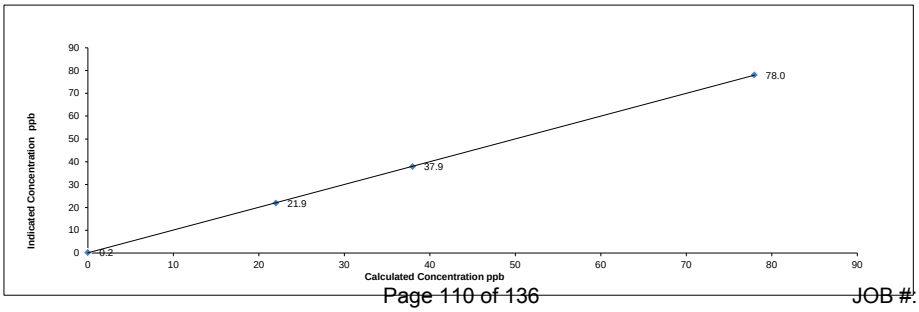
SO_2 High Point gas concentration: NA Time gas run (mst): NA

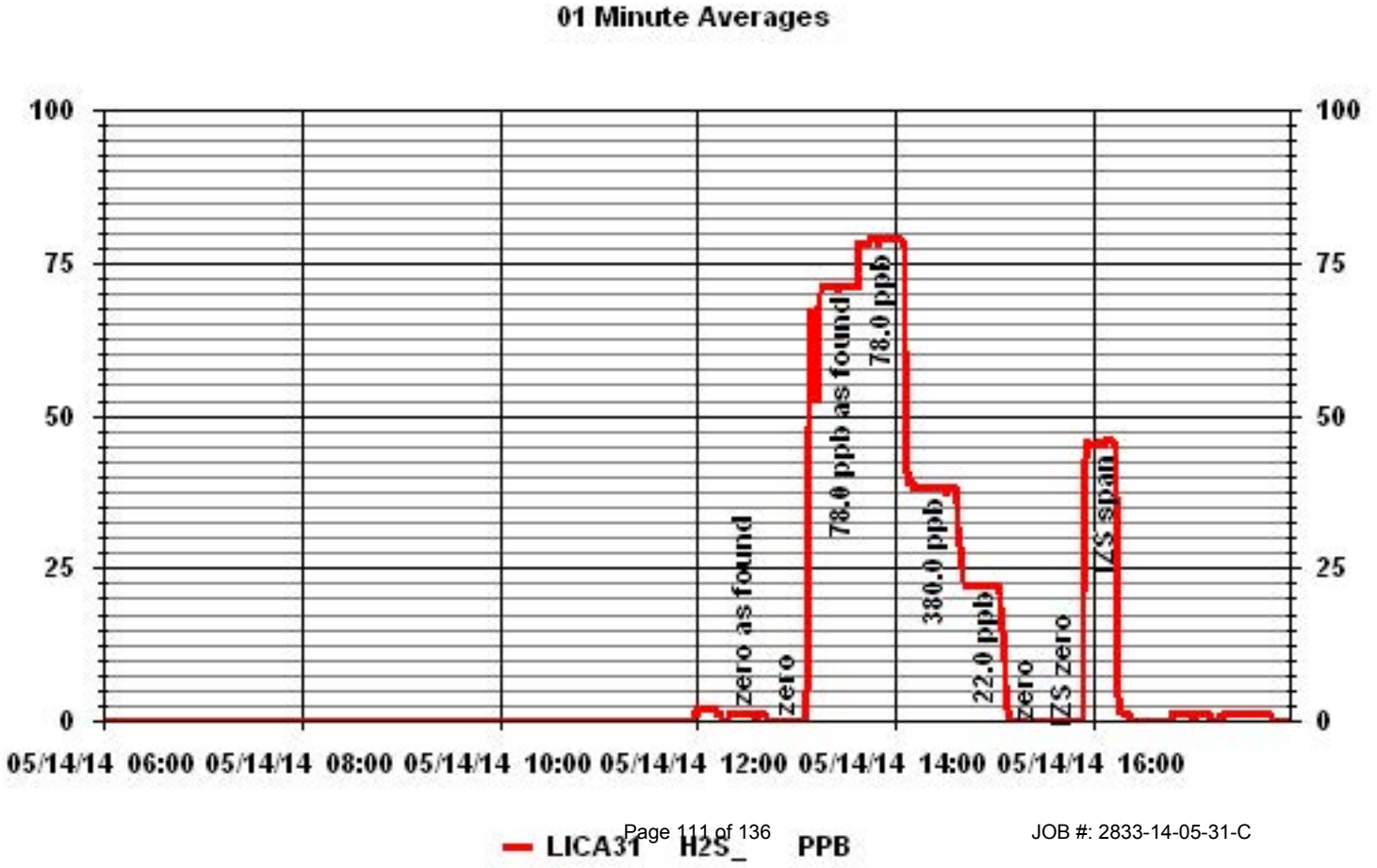
Zero corrrected analyzer response: NA

Comments:

13:12 (As-Found High) Calibrator reset hence varianc

API 101E H2S Analyzer Calibration





JOB #: 2833-14-05-31-C

API 101E H2S Analyzer Calibration

Date:	20-May-14	**Start/End Time (mst):**	9:05/12:30
Company:	LICA	**Calibration Purpose:**	As Found
Station Name/Location:	St.Lina	**Converter Make & Model:**	Internal
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	H2S	**Cal Gas Expiry Date:**	25-Dec-15

Analyzer:

Serial Number:	510	**Range ppb:**	100
Last Calibration Date:	10-May-14	**As Found C.F.**	NA
Previous Cal High Point C.F.:	0.998	**New C.F.:**	NA

	As found:	As left:
SLOPE:	1.181	1.217
OFFSET:	127.6	131.6
HVPS:	542	542
RCELL TEMP:	50.0	50.0
BOX TEMP:	35.7	35.7
PMT TEMP:	8.4	8.4
IZS TEMP:	45.0	45.0
TEST:	NA	NA
STABIL:	0.1	0.1
PRES:	20.7	20.7
SAMP FL:	543	543
PMT:	125.9	125.9
NORM PMT:	132.6	132.6
UV LAMP:	1430	1430
LAMP RATIO:	93.3	93.3
STR. LGT	75.4	75.4
DRK PMT:	38.0	38.0
DRK LMP:	-5.5	-5.5
Internal Span:	45.76	45.76

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	830
Cal Gas Cylinder I.D. # :	BLM005049
Cal Gas Conc. (ppm):	10.1

Calibrator Flow Targets:

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

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						NA
as found high	5000	38.00	5038	76.2	80.4	0.948
adjusted high						
mid						
low						
calibrator zero						NA
					Average C.F.=	

Linear Regression/Calibration Results:

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

Converter Effeciency Check for H_2S/TRS application:

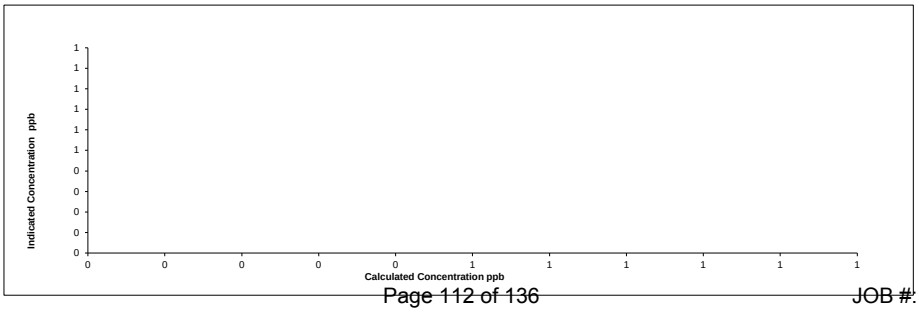
****run converter effeciency test immediately following zero adjust****

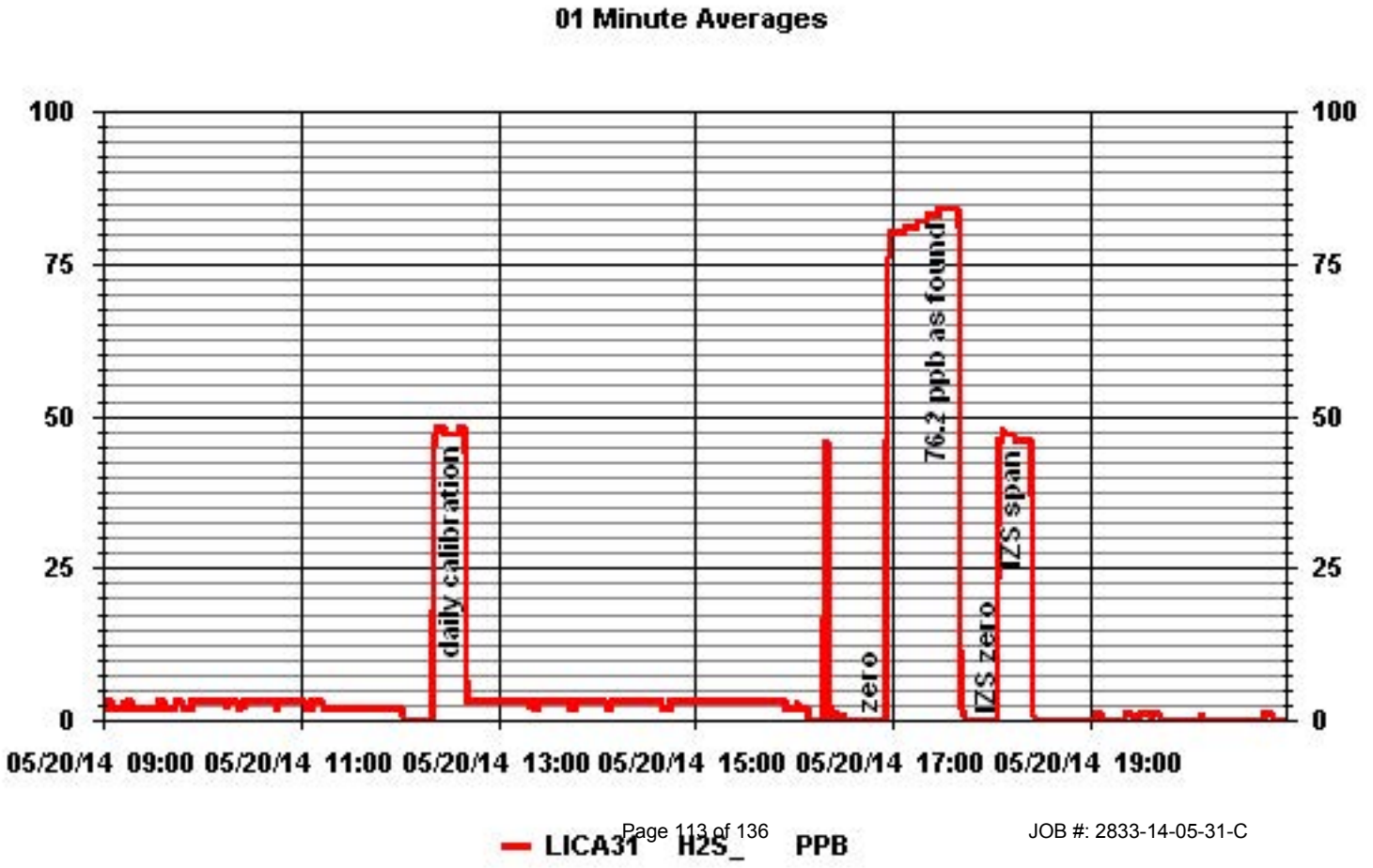
SO_2 High Point gas concentration:	na	Time gas run (mst):	na
Zero corrrected analyzer response:	na		

Comments:

As founds due to variable readings during morning izs check.

API 101E H2S Analyzer Calibration





JOB #: 2833-14-05-31-C

Total Hydrocarbons

Thermo 51C THC Analyzer Calibration

Date:	30-May-14	**Start Time (mst):**	12:29
Company:	LICA	**End Time (mst):**	14:45
Station Name/Location:	St.Lina	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	26-Mar-17

Analyzer:

Serial Number:	436609739	**Range ppm:**	50
Last Calibration Date:	9-Apr-14	**As Found C.F.**	1.065
Previous Cal High Point C.F.:	1.001	**New C.F.:**	1.017

		As found:		**As left:**
	H_2 cylinder (psi):	2000	H_2 cylinder (psi):	2000
	H_2 cylinder reg set (psi):	25	H_2 cylinder reg set (psi):	25
	Span Cylinder (psi):	375	Span Cylinder (psi):	375
	Span Cylinder Reg Set (psi):	25	Span Cylinder Reg Set (psi):	25
	Zero Air Gen Pressure:	35	Zero Air Gen Pressure:	35
	measurement alarms:	none	measurement alarms:	none
	service alarms:	none	service alarms:	none
FID status:	cnt:	3352	cnt:	3352
	rng:	1	rng:	1
	try:	0	try:	0
	flm:	204.5	flm:	204.5
	det:	125.6	det:	125.6
Oven Readings:	Flame:	204	Flame:	204
	Filter:	125	Filter:	125
	Base:	125	Base:	125
	Pump:	6.82	Pump:	6.82
Voltages:	+5	4.9	+5	4.9
	+15	14.9	+15	14.9
	-15	-15.0	-15	-15.0
	Internal Span:	31.18	Internal Span:	

Calibrator:

Flow Meter ID's:	NA	
Make & Model:	API 700	
Serial #:	830	
Cal Gas Cylinder I.D. # :	LL33674	
CH_4/C_3H_8 Cylinder Conc. (ppm):	601.4	202.0
CH_4 as propane/total CH_4 equivilants (ppm):	555.5	1156.9

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	total (cc/min)
zero	2000	0	2000
high	2000	65	2065
mid	2000	31	2031
low	2000	14	2014

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppm)	(ppm)	
as found zero	2000	0.00	2000	0	0.01	NA
adjusted zero						NA
as found high	2000	65.00	2065	36.42	34.20	1.065
adjusted high	2000	65.00	2065	36.42	36.45	0.999
mid	2000	31.00	2031	17.66	17.42	1.014
low	2000	14.00	2014	8.04	7.74	1.039
calibrator zero	2000	0.00	2000	0	0.00	NA
					Average C.F.=	1.017

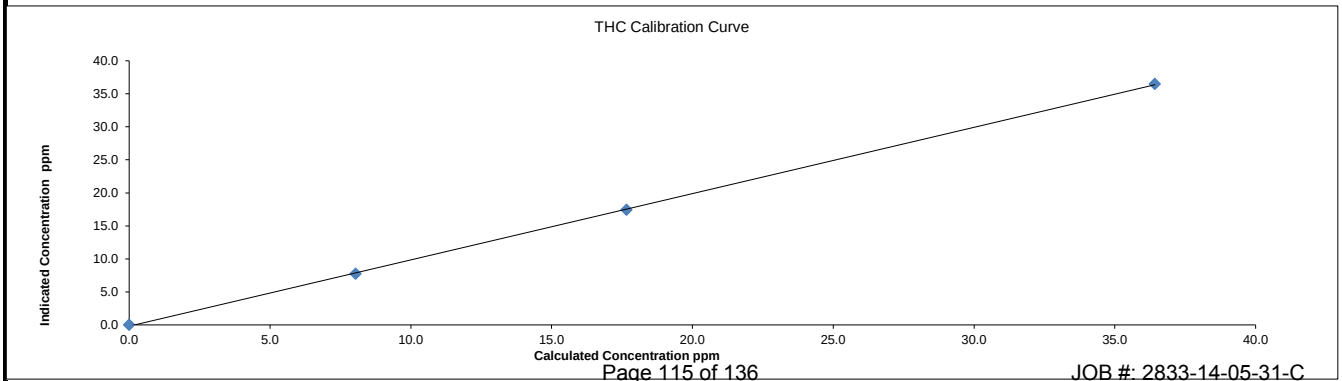
Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.003**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.354%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-6.37%**	**± 15%**	**PASS**

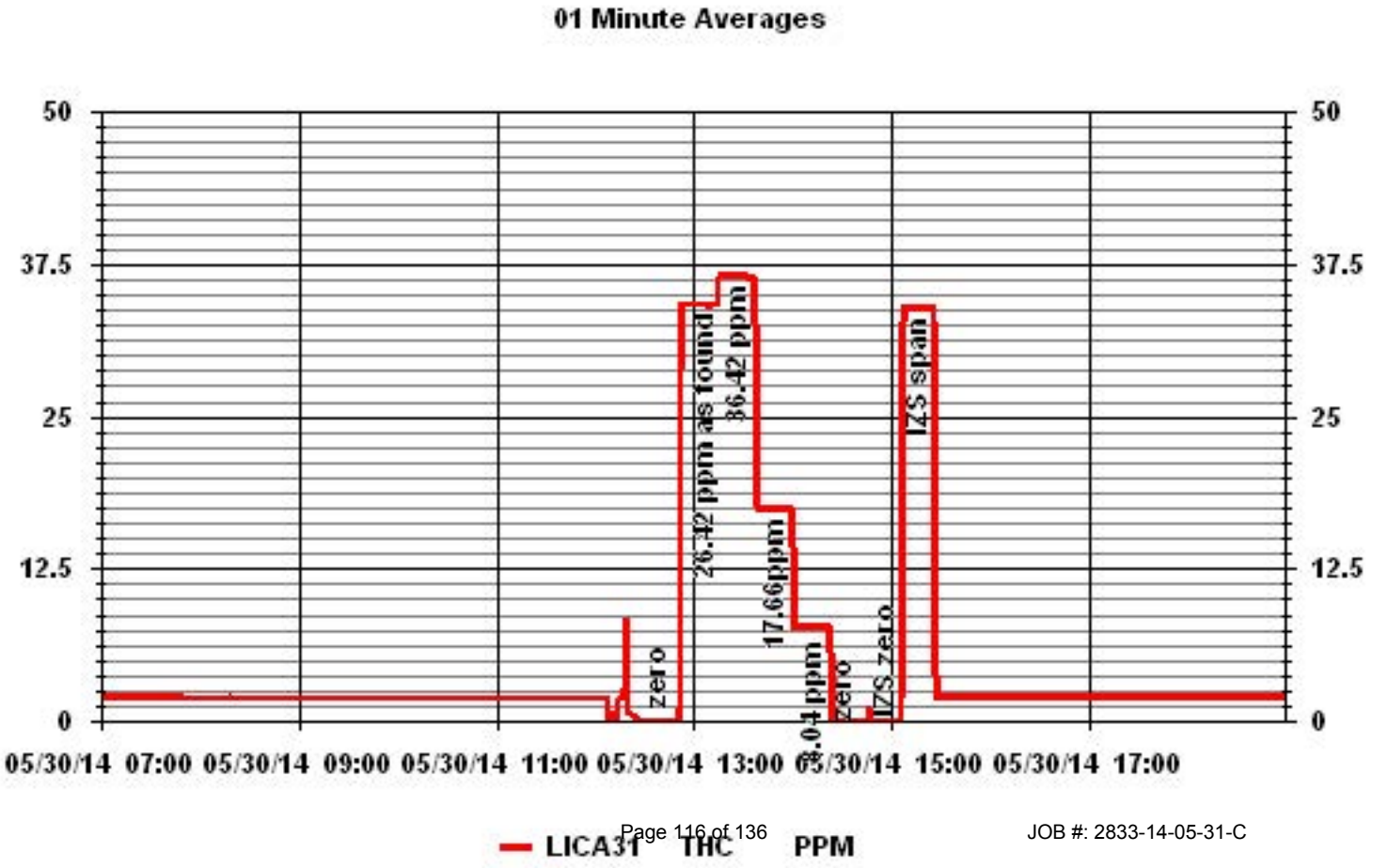
Comments:

Filter changed.

Thermo 51C THC Analyzer Calibration



JOB #: 2833-14-05-31-C



JOB #: 2833-14-05-31-C

Nitrogen Dioxide

API 200A NOx Analyzer Calibration

Date:	1-May-14	**Start Time (mst):**	9:08
Company:	LICA	**End Time (mst):**	13:36
Station Name/Location:	St.Lina	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	29-Dec-16

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=	1.007	0.999
NOx=	1.011	0.999
NO_2=	1.002	1.004

	As found:	**As left:**
NOx SLOPE:	1.024	1.024
NOx OFFS:	18.5	4.7
NO SLOPE:	1.020	1.026
NO OFFS:	0.2	0.0
NOx STB:	2.1	0.3
SAMP FLW:	455	451
OZONE FL:	78	78
NORM PMT:	12.0	12.0
AZERO:	14.5	14.5
HVPS:	740	740
DCPS:	2536	2536
RCELL:	49.9	49.9
BOX TEMP:	28.7	28.7
IZS TEMP:	45.1	45.1
MOLY TEMP:	314.9	314.9
RCEL:	5.6	5.6
SAMP:	26.7	26.7
Internal Span:	536/11/522	560.7/12.57/546.6

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	120.00	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	0.0	-7.0	NA	NA
adjusted zero	5000	0.0	5000	0	0	0.0	0.1	NA	NA
as found high	4996	79.80	5076	768.8	770.4	764	762	1.007	1.011
adjusted high	4996	79.80	5076	768.8	770.4	770	771	0.998	1.000
mid	4996	39.90	5036	387.4	388.2	382	383	1.014	1.014
low	4996	19.90	5016	194.0	194.4	190	192	1.023	1.016
calibrator zero	4996	0.00	4996	0	0	0.1	1.8	NA	NA
							Average C.F.=	1.012	1.010

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	769.0	771.8	0.8	0.0	0.1	
as found NO_2	4996	79.80	5076	520.0	229.8	771.0	539.0	539.2	538.2	1.002
adjusted NO_2	4996	79.80	5076	520.0	229.8	771.0	539.0	539.2	538.2	1.002
gpt mid	4996	79.80	5076	280.0	477.0	772.0	293.7	292.0	292.9	0.997
gpt low	4996	79.80	5076	120.0	646.3	773.0	124.1	122.7	123.3	0.995
									Average NO_2 C.F.=	0.998

Linear Regression/Calibration Results:

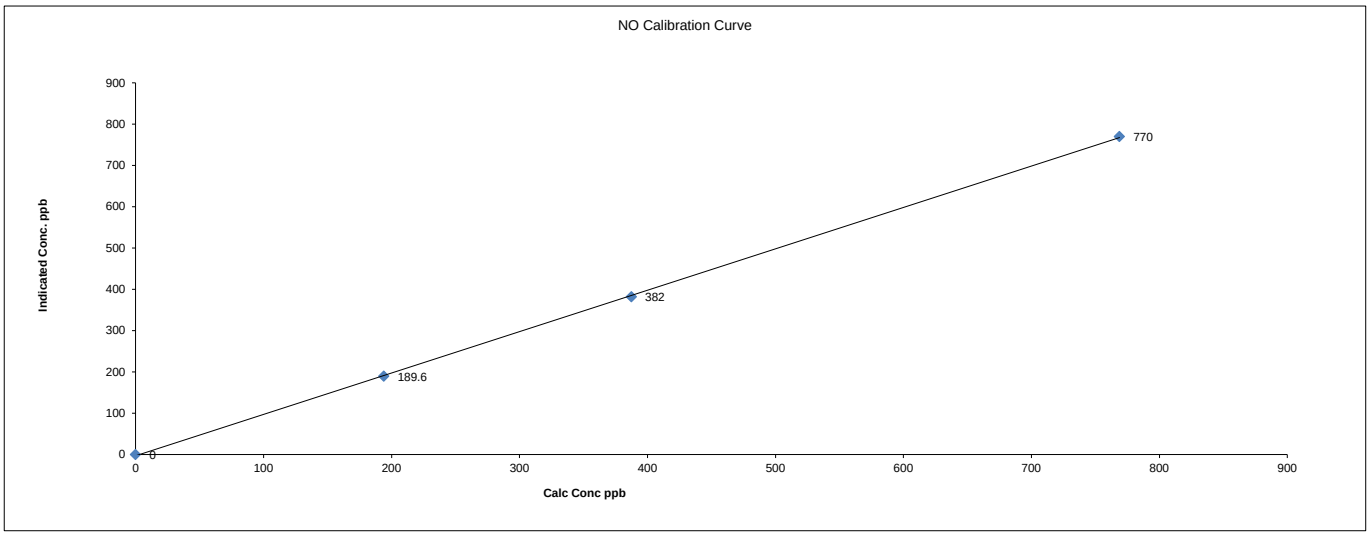
	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**1.003**	**1.001**	**0.998**	**0.85-1.15**
b (Intercept as % of full scale)=	**-0.31%**	**-0.22%**	**0.07%**	**± 3% F.S.**
% change in C.F. from last cal=	**-0.75%**	**-1.24%**	**0.21%**	**+/-15%**
NO2 converter effeciency			**100.2%**	**>85%**

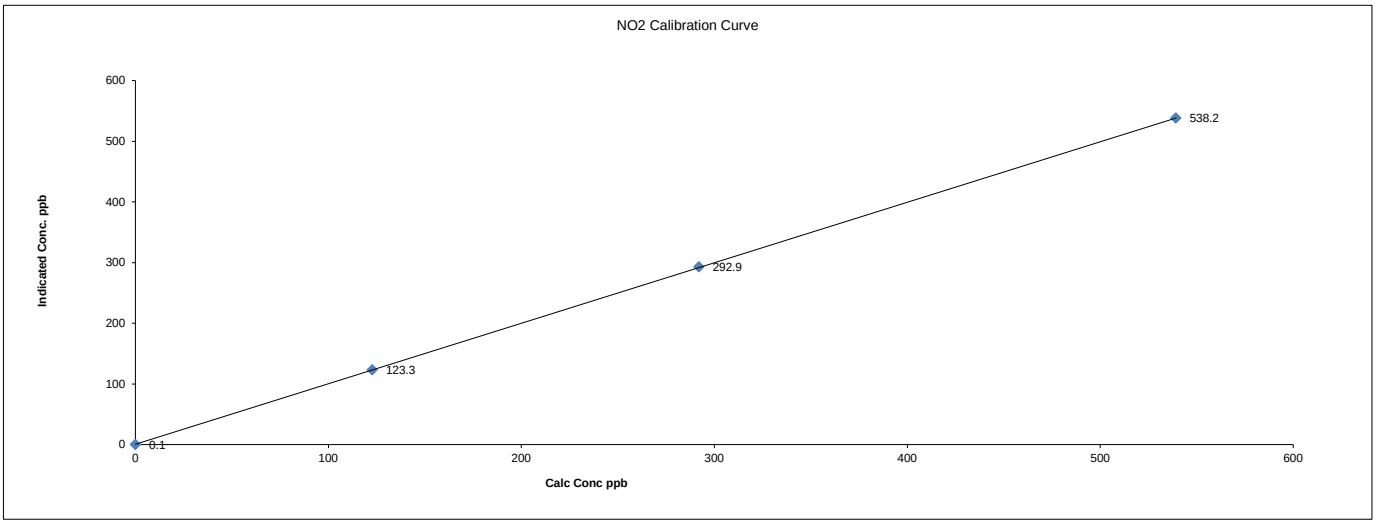
Comments:

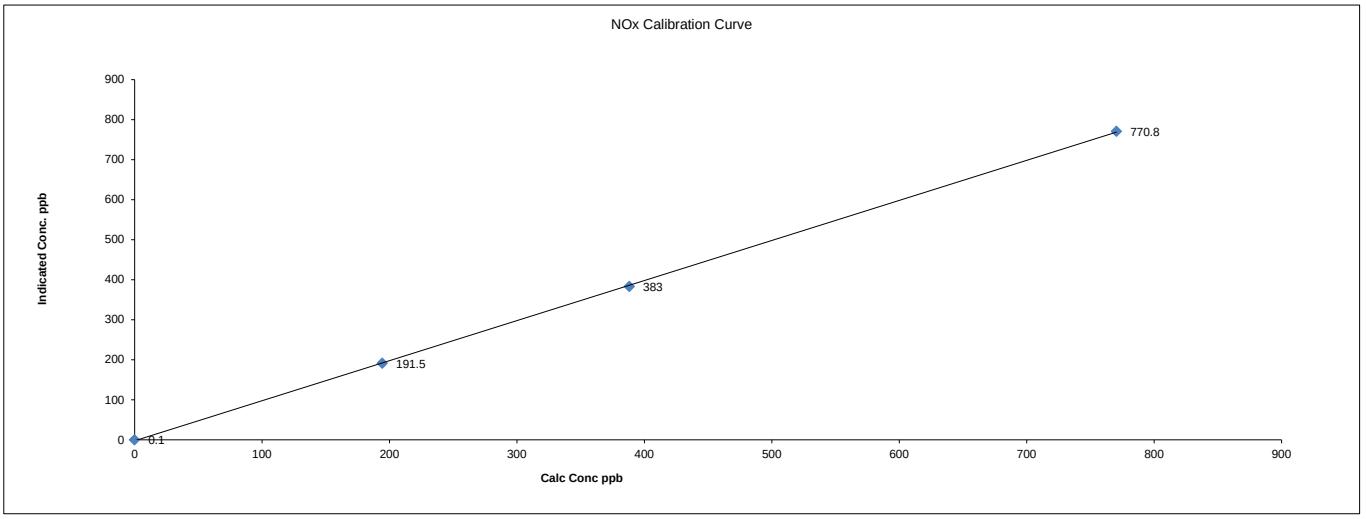
Filter changed.

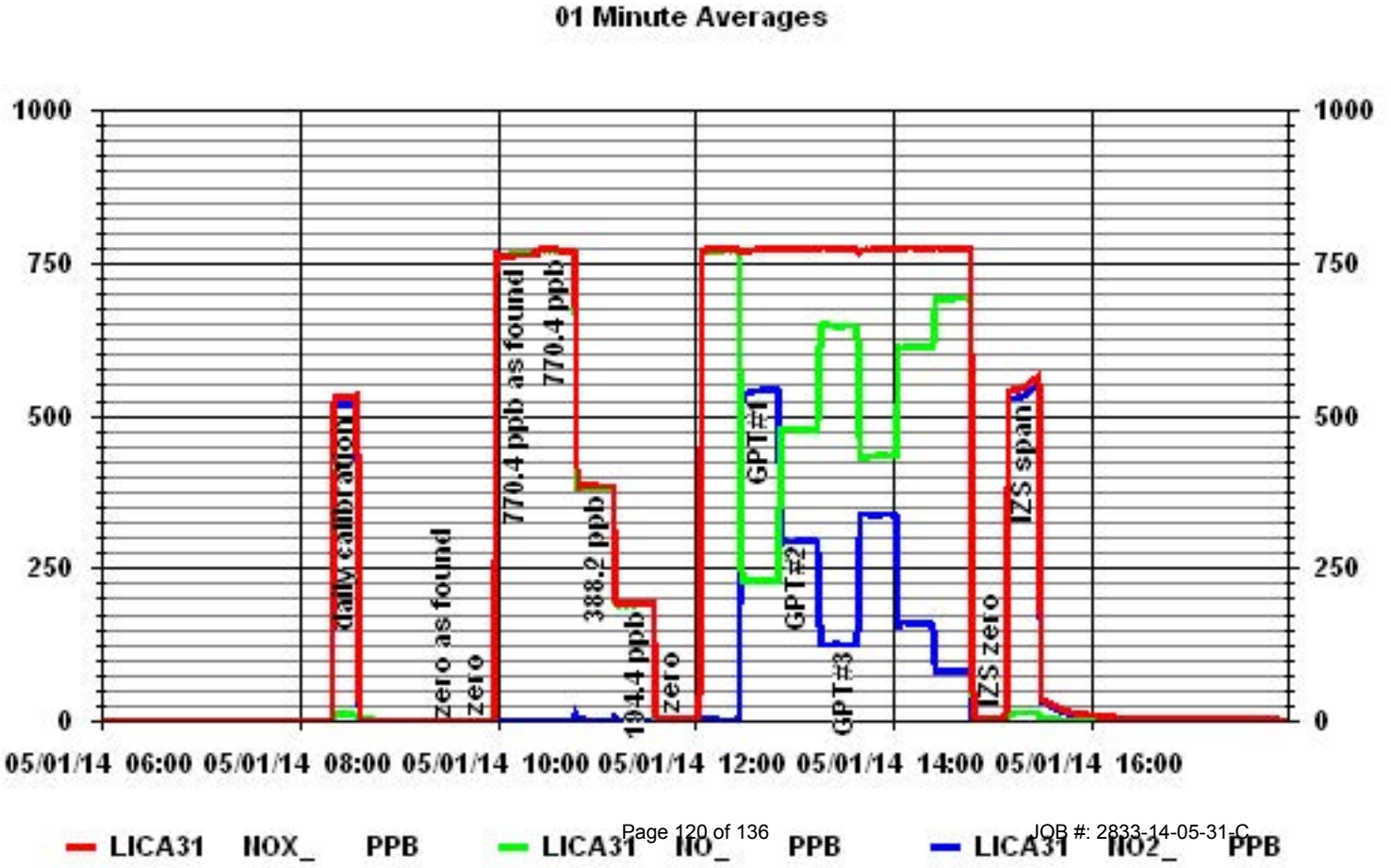
Date:	1-May-14	**Start Time (mst):**	9:08
Company:	LICA	**End Time (mst):**	13:36
Station Name/Location:	St.Lina	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	29-Dec-16

API 200A NOx Analyzer Calibration








01 Minute Averages
1000
750
500
250
0
daily calibration
zero as found
zero
770.4 ppb as found
770.4 ppb
388.2 ppb
194.4 ppb
zero
GPT#1
GPT#2
GPT#3
IZS zero
IZS span
05/01/14 06:00
05/01/14 08:00
05/01/14 10:00
05/01/14 12:00
05/01/14 14:00
05/01/14 16:00
LICA31 NOX_ PPB
LICA31 NO_ PPB
LICA31 NO2_ PPB

API 200A NOx Analyzer Calibration

Date:	2-May-14	**Start Time (mst):**	16:45
Company:	LICA	**End Time (mst):**	18:12
Station Name/Location:	St Lina	**Calibration Purpose:**	As-Found
Performed by:	Chris Wesson	**Cal Gas Expiry Date:**	15-Oct-17

Analyzer Serial Number:	1746
Last Calibration Date:	1-May-14
Range ppb:	1000

Correction Factors:

	As found C.F.	Previous Cal High Point C.F.:
NO=	1.048	0.998
NOx=	1.048	1.000
NO_2=	1.000	1.002

	As found:	**As left:**
NOx SLOPE:	1.024	1.024
NOx OFFS:	4.7	4.7
NO SLOPE:	1.026	1.026
NO OFFS:	-0.0	-0.0
NOx STB:	0.0	0.3
SAMP FLW:	457	456
OZONE FL:	78	78
NORM PMT:	0.6	213.1
AZERO:	14.5	14.9
HVPS:	740	740
DCPS:	2535	2543
RCELL:	49.8	50.5
BOX TEMP:	29.5	30.8
IZS TEMP:	45.1	45.2
MOLY TEMP:	314.6	314.5
RCEL:	5.5	5.5
SAMP:	26.5	26.7
Internal Span:	NA	NA

Calibrator Flow Targets:

Make & Model:	Environics 6100
Serial #:	5212
Cal Gas Cylinder I.D. # :	BAL1119
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	4920	80	580.00	5000
mid	4960	40	280.00	5000
low	4980	20	100.00	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	4995	0.0	4995	0	0	0.0	-1.0	NA	NA
adjusted zero	NA	0.0	#VALUE!	0	0			NA	NA
as found high	4921	75.97	4997	779.9	779.9	744	744	1.048	1.048
adjusted high		NA							
mid		NA							
low		NA							
calibrator zero	NA	0.00	#VALUE!	0	0			NA	NA
							Average C.F.=		

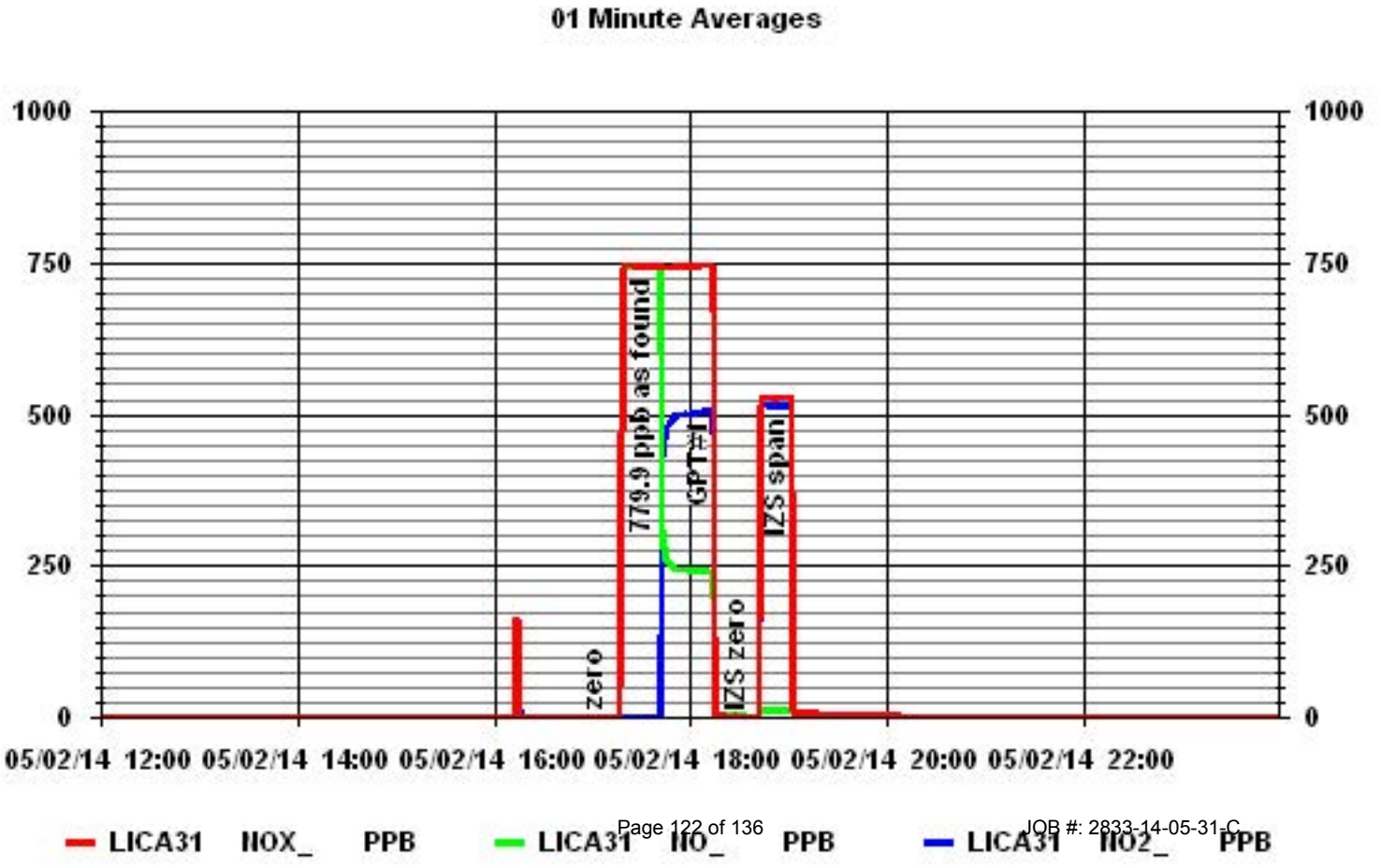
Calibrator Flow Rates (cc/min)				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO_2	NO drop	NO_2 increase	NO_2 C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4921	75.97	4997	0.0	744.0	744.0	-2.0	0.0	0.0	
as found NO_2	4921	75.97	4997	580.0	242.0	744.0	500.0	502.0	502.0	1.000
adjusted NO_2		NA								
gpt mid		NA								
gpt low		NA								
								Average NO_2 C.F.=		

Linear Regression/Calibration Results:

	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =				**> or = 0.995**
Slope =				**0.85-1.15**
b (Intercept as % of full scale)=				**± 3% F.S.**
% change in C.F. from last cal=	**-5.04%**	**-4.83%**	**0.20%**	**+/-15%**
NO2 converter effeciency				**>85%**

Comments:

PMT Temp = 6.7 / 6.7
As-found due to vaiable zero during IZS. Analyzer performance OK, suspect problem is zero-air scrubber. Will replace scrubbing media.
Also, analog outputs need recalibration (differ by ~2 ppb from instrument).


01 Minute Averages
1000
750
500
250
0
779.9 ppb as found
GPT#1
zero
IZS zero
IZS span
05/02/14 12:00
05/02/14 14:00
05/02/14 16:00
05/02/14 18:00
05/02/14 20:00
05/02/14 22:00
LICA31 NOX_ PPB
LICA31 NO_ PPB
LICA31 NO2_ PPB

API 200A NOx Analyzer Calibration

Date:	3-May-14	**Start Time (mst):**	9:13
Company:	LICA	**End Time (mst):**	10:46
Station Name/Location:	St Lina	**Calibration Purpose:**	Post-Repair (1-pt only)
Performed by:	Chris Wesson	**Cal Gas Expiry Date:**	15-Oct-17

Analyzer Serial Number:	1746
Last Calibration Date:	N.A.
Range ppb:	1000

Correction Factors:

As found C.F.		Previous Cal High Point C.F.:	
NO=	NA	NO=	N.A
NOx=	NA	NOx=	N.A.
NO_2=	0.999	NO_2=	N.A

	As found:	As left:
NOx SLOPE:	1.024	1.071
NOx OFFS:	4.7	3.7
NO SLOPE:	1.026	1.072
NO OFFS:	-0.0	-0.4
NOx STB:	0.1	288
SAMP FLW:	459	457
OZONE FL:	79	78
NORM PMT:	4.2	5.7
AZERO:	13.3	14.7
HVPS:	739	740
DCPS:	2537	2535
RCELL:	50.0	49.8
BOX TEMP:	26.7	29.7
IZS TEMP:	45.1	45.3
MOLY TEMP:	314.6	315.5
RCEL:	5.6	5.6
SAMP:	26.8	26.5
Internal Span:	561/12.6/547	*

Calibrator Flow Targets:

Make & Model:	Environics 6100
Serial #:	5212
Cal Gas Cylinder I.D. # :	BAL1119
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	4920	80	580.00	5000
mid	4960	40	280.00	5000
low	4980	20	100.00	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	NA	0.0	#VALUE!	0	0			NA	NA
adjusted zero	4999	0.0	4999	0	0	0.0	0.0	NA	NA
as found high		NA							
adjusted high	4923	75.97	4999	779.6	779.6	780	780	1.000	1.000
mid		NA							
low		NA							
calibrator zero	NA	0.00	#VALUE!	0	0			NA	NA
							Average C.F.=	1.000	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	4923	75.97	4999	0.0	780.0	780.0	-0.4	0.0	0.0	
as found NO_2	4921	75.97	4997	580.0	250.0	780.0	530.0	530.0	530.4	0.999
adjusted NO_2		NA								
gpt mid		NA								
gpt low		NA								
								Average NO_2 C.F.=		

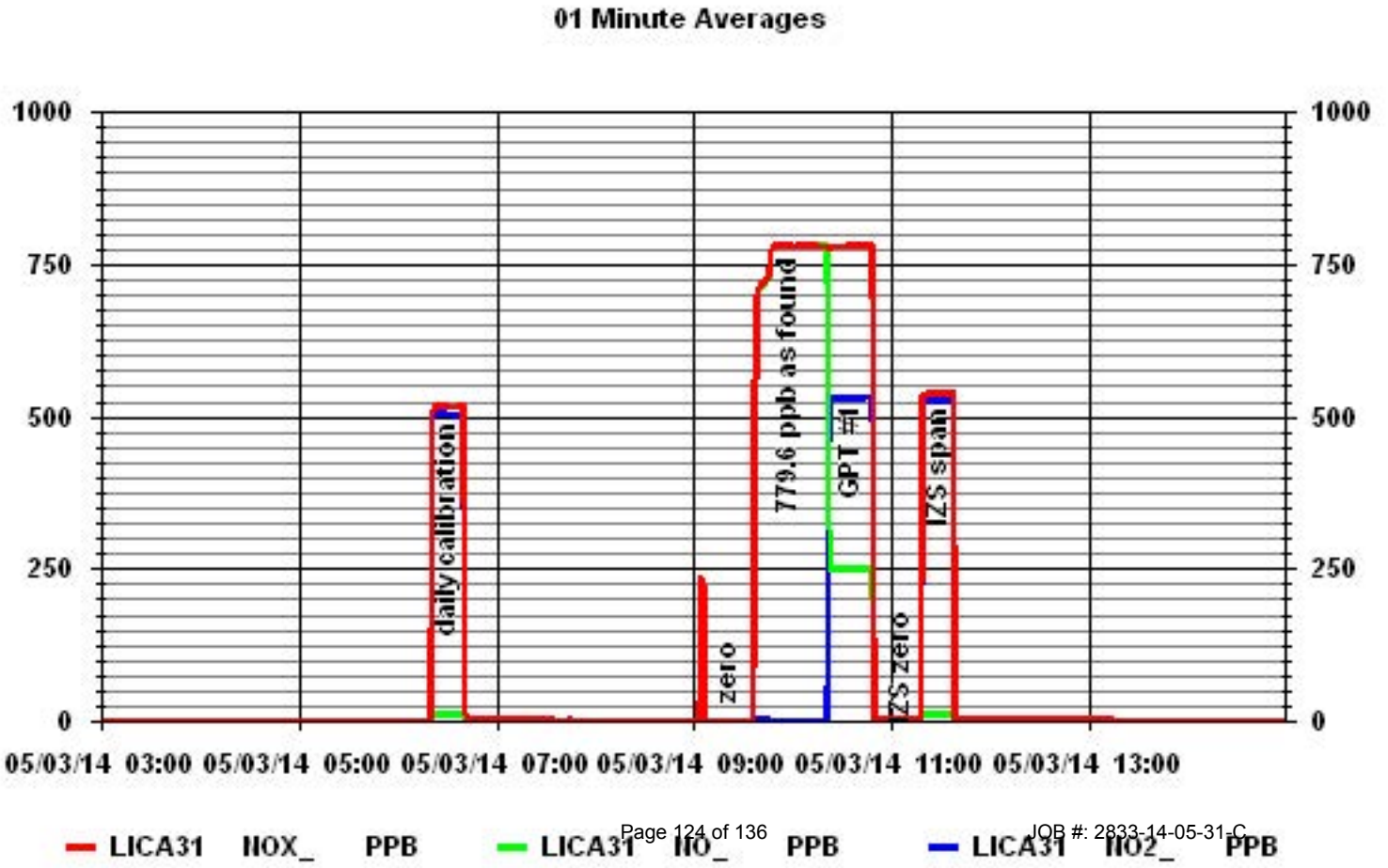
Linear Regression/Calibration Results:

	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =				**> or = 0.995**
Slope =				**0.85-1.15**
b (Intercept as % of full scale)=				**± 3% F.S.**
% change in C.F. from last cal=	**#VALUE!**	**#VALUE!**	**#VALUE!**	**+/-15%**
NO2 converter effeciency				**>85%**

Comments:

PMT Temp = 7.0/ 6.7
Post-repair (1-point only) following:
Replacement of zero-scrubber media
Change and recalibration of analog outputs (from 1V to 10V) to correct errors at zero.
* = expected values to be entered remotely

JOB #: 2833-14-05-31-C


01 Minute Averages
1000
750
500
250
0
daily calibration
zero
779.6 ppb as found
GPT #1
ZS zero
ZS span
05/03/14 03:00
05/03/14 05:00
05/03/14 07:00
05/03/14 09:00
05/03/14 11:00
05/03/14 13:00
LICA31 NOX_ PPB
LICA31 NO_ PPB
LICA31 NO2_ PPB

API 200A NOx Analyzer Calibration

Date:	13-May-14	**Start Time (mst):**	12:41
Company:	LICA	**End Time (mst):**	17:31
Station Name/Location:	St Lina	**Calibration Purpose:**	Removal Calibration
Performed by:	Chris Wesson	**Cal Gas Expiry Date:**	15-Oct-17

Analyzer Serial Number:	1746
Last Calibration Date:	N.A.
Range ppb:	1000

Correction Factors:

	As found C.F.	Previous Cal High Point C.F.:
NO=	1.001	1.000
NOx=	1.002	1.000
NO_2=	0.998	0.999

	As found:	**As left:**
NOx SLOPE:	1.071	NA
NOx OFFS:	3.7	NA
NO SLOPE:	1.072	NA
NO OFFS:	-0.4	NA
NOx STB:	0.00	NA
SAMP FLW:	460	NA
OZONE FL:	79	NA
NORM PMT:	0.4	NA
AZERO:	14.6	NA
HVPS:	740	NA
DCPS:	2543	NA
RCELL:	50.2	NA
BOX TEMP:	31.5	NA
IZS TEMP:	45.2	NA
MOLY TEMP:	315.5	NA
RCEL:	5.6	NA
SAMP:	26.8	NA
Internal Span:	NA	NA

Calibrator Flow Targets:

Make & Model:	Environics 6100
Serial #:	5212
Cal Gas Cylinder I.D. # :	BAL1119
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	4920	80	580.00	5000
mid	4960	40	290.00	5000
low	4980	20	100.00	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	4996	0.0	4996	0	0	0.0	-2.0	NA	NA
adjusted zero	NA	0.0	#VALUE!	0	0			NA	NA
as found high	4921	75.96	4997	779.8	779.8	779	778	1.001	1.002
adjusted high		NA							
mid	4960	36.99	4997	379.7	379.7	378	377	1.005	1.007
low	4978	18.50	4997	189.9	189.9	183	183	1.038	1.038
calibrator zero	4996	0.00	4996	0	0	0.0	-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	4922	75.98	4998	0.0	783.0	782.0	-2.0	0.0	0.0	
as found NO_2	4922	75.98	4998	580.0	292.0	782.0	490.0	491.0	492.0	0.998
adjusted NO_2		NA								
gpt mid	4922	75.98	4998	290.0	541.0	784.0	243.0	242.0	245.0	0.988
gpt low	4922	75.98	4998	100.0	686.0	783.0	96.0	97.0	98.0	0.990
									Average NO_2 C.F.=	0.989

Linear Regression/Calibration Results:

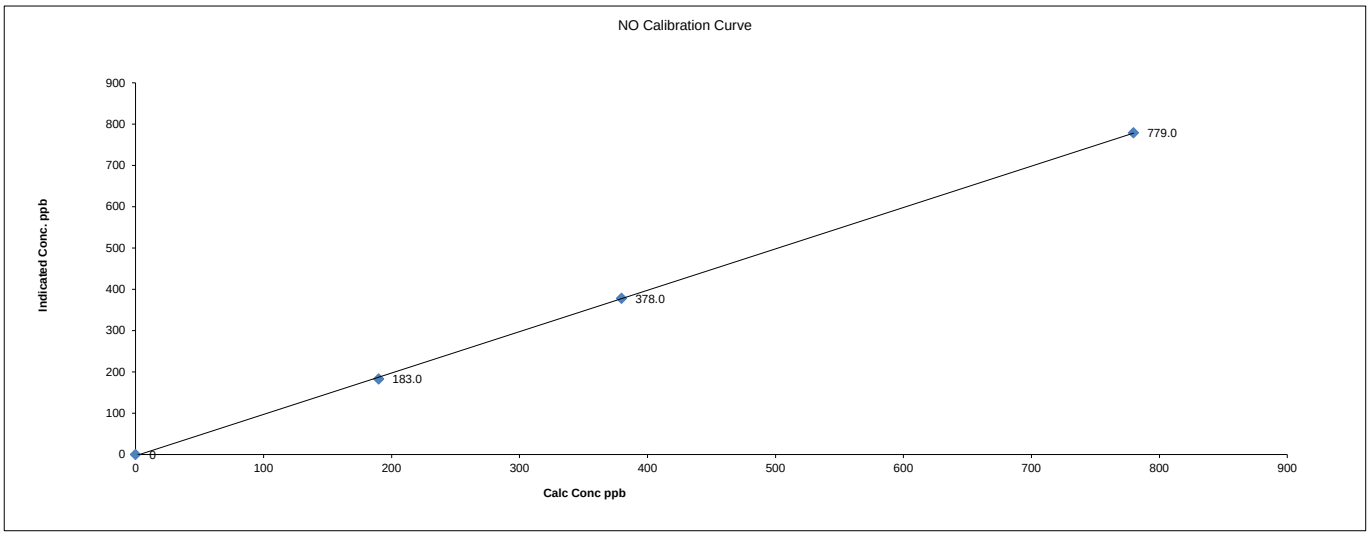
	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**1.002**	**1.002**	**1.002**	**0.85-1.15**
b (Intercept as % of full scale)=	**-0.30%**	**-0.42%**	**0.08%**	**± 3% F.S.**
% change in C.F. from last cal=	**-0.11%**	**-0.23%**	**0.10%**	**+/-15%**
NO2 converter effeciency			**101.1%**	**>85%**

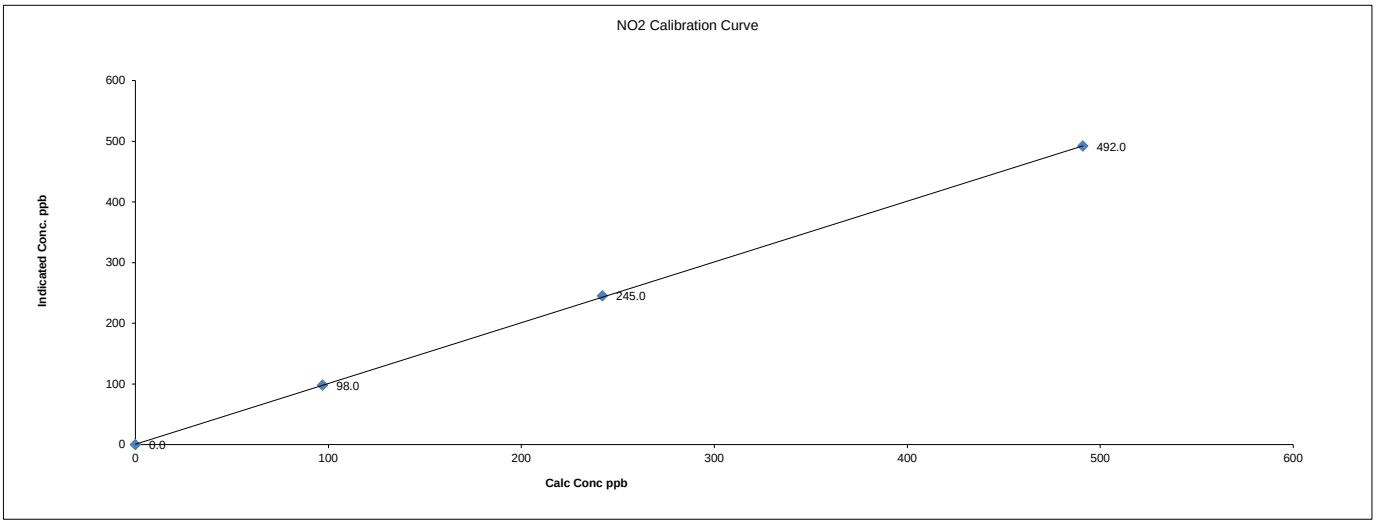
Comments:

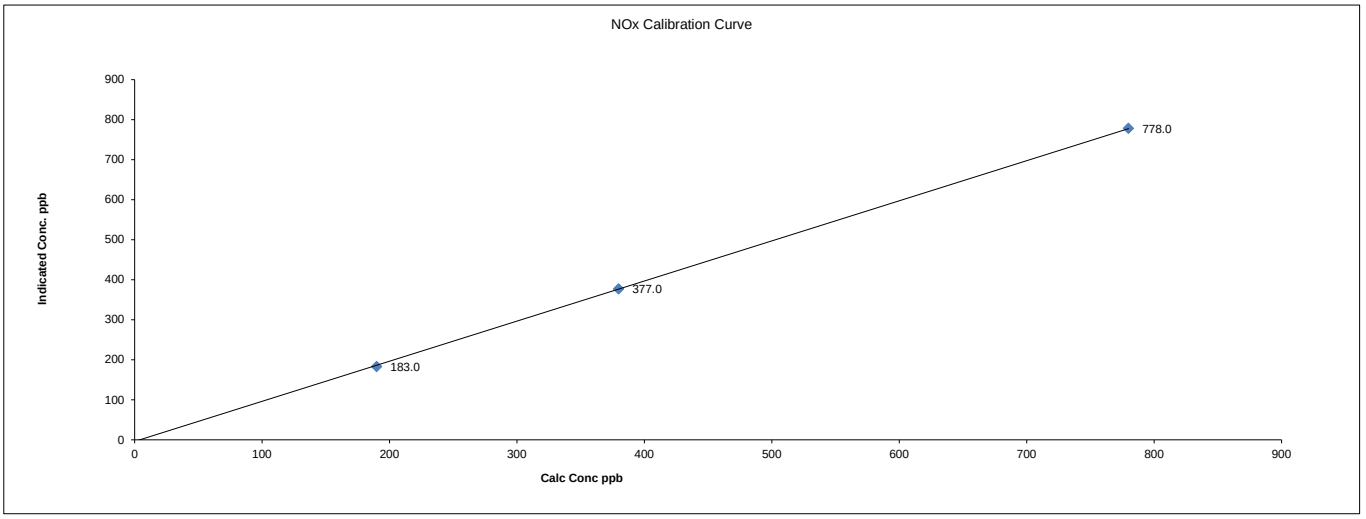
PMT Temp = 6.6 /

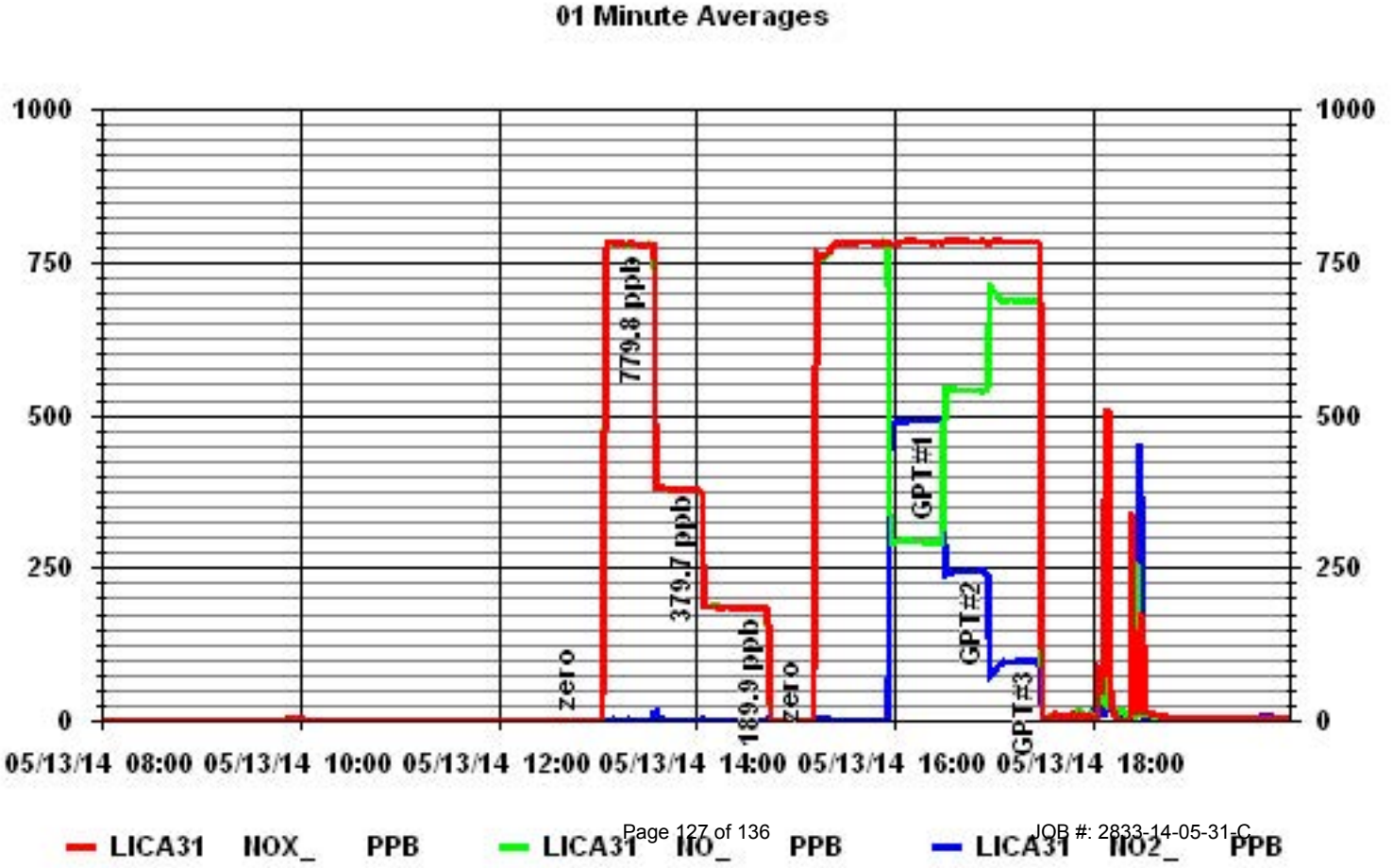
Date:	13-May-14	**Start Time (mst):**	12:41
Company:	LICA	**End Time (mst):**	17:31
Station Name/Location:	St Lina	**Calibration Purpose:**	Removal Calibration
Performed by:	Chris Wesson	**Cal Gas Expiry Date:**	15-Oct-17

API 200A NOx Analyzer Calibration








01 Minute Averages
1000
750
500
250
0
zero
779.8 ppb
379.7 ppb
189.9 ppb
zero
GPT#1
GPT#2
GPT#3
05/13/14 08:00
05/13/14 10:00
05/13/14 12:00
05/13/14 14:00
05/13/14 16:00
05/13/14 18:00
LICA31 NOX_ PPB
LICA31 NO_ PPB
LICA31 NO2_ PPB

API 200E NOx Analyzer Calibration

Date:	14-May-14	**Start Time (mst):**	9:59
Company:	LICA	**End Time (mst):**	15:53
Station Name/Location:	St Lina	**Calibration Purpose:**	Installation Calibration
Performed by:	Chris Wesson	**Cal Gas Expiry Date:**	15-Oct-17

Analyzer Serial Number:	592
Last Calibration Date:	NA
Range ppb:	1000

Correction Factors:

	As found C.F.	Previous Cal High Point C.F.:
NO=	NA	NA
NOx=	NA	NA
NO_2=	0.996	NA

	As found:	As left:
NOx SLOPE:	0.932	0.929
NOx OFFS:	1.2	0.4
NO SLOPE:	0.927	0.923
NO OFFS:	-1.4	-1.7
TEST:	130.7	130.7
SAMP FLW:	480	479
OZONE FL:	74	74
PMT:	23.1	24.3
NORM PMT:	-2.6	-0.1
AZERO:	29.4	27.2
HVPS:	654	653
RCELL TEMP:	50.0	50.0
BOX TEMP:	28.8	28.0
PMT TEMP:	6.9	6.9
IZS TEMP:	40.3	40.1
MOLY TEMP:	315.0	315.2
RCEL:	5.0	5.0
SAMP:	26.6	26.3
Internal Span:	Nox:539,NO:14.8,NO2:524.6	Nox:406,NO:7.8,NO2:399

Make & Model:	Environics 6100
Serial #:	5212
Cal Gas Cylinder I.D. # :	BAL1119
NO Cylinder Conc. (ppm):	51.3
NOx Cylinder Conc. (ppm):	51.3

Calibrator Flow Targets:

point	diluent (cc/min)	cal gas (cc/min)	O_3 setting (v or ppb)	total (cc/min)
zero	5000	0	0	5000
high	4920	80	590.00	5000
mid	4960	40	290.00	5000
low	4980	20	100.00	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	NA	0.0	#VALUE!	0	0			NA	NA
adjusted zero	5001	0.0	5001	0	0	0.0	0.0	NA	NA
as found high		NA							
adjusted high	4922	75.98	4998	779.9	779.9	780	780	1.000	1.000
mid	4961	36.99	4998	379.7	379.7	384	382	0.989	0.994
low	4978	18.50	4997	189.9	189.9	189	189	1.005	1.005
calibrator zero	5001	0.00	5001	0	0	0.0	0.0	NA	NA
							Average C.F.=	0.998	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	4922	75.98	4998	0.0	776.0	778.0	-1.0	0.0	0.0	
as found NO_2	4922	75.98	4998	590.0	232.0	778.0	545.0	544.0	546.0	0.996
adjusted NO_2		NA								
gpt mid	4922	75.98	4998	290.0	500.0	776.0	277.0	276.0	278.0	0.993
gpt low	4922	75.98	4998	100.0	681.0	776.0	95.0	95.0	96.0	0.990
								Average NO_2 C.F.=		0.991

Linear Regression/Calibration Results:

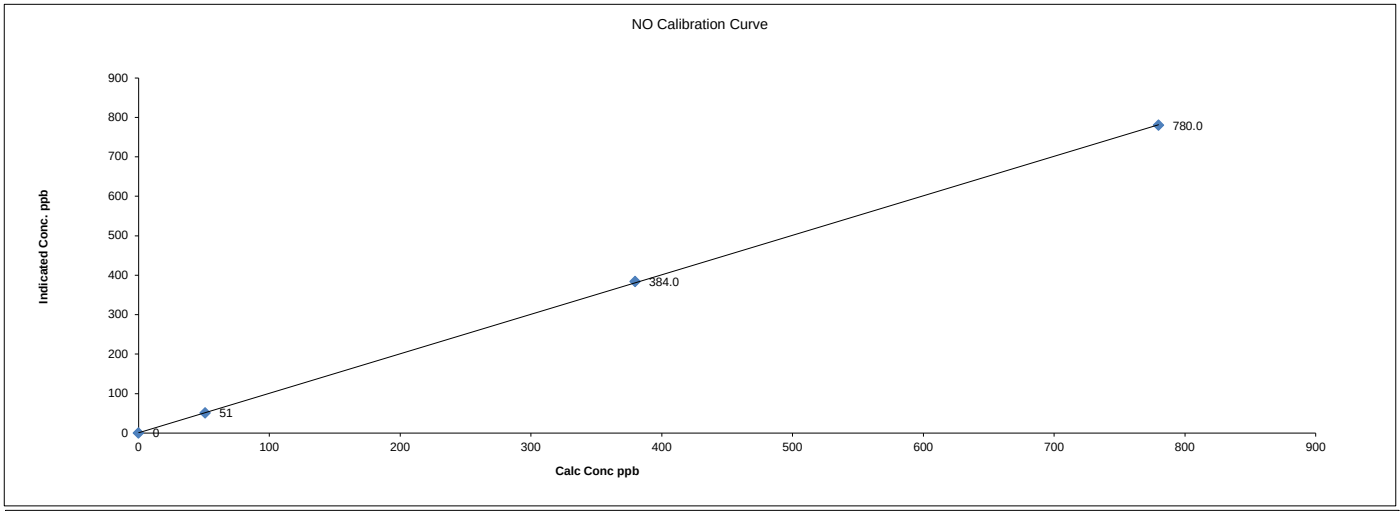
	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**1.001**	**1.001**	**1.003**	**0.85-1.15**
b (Intercept as % of full scale)=	**0.08%**	**0.04%**	**0.05%**	**± 3% F.S.**
% change in C.F. from last cal=	**#VALUE!**	**#VALUE!**	**#VALUE!**	**+/-15%**
NO2 converter effeciency			**100.9%**	**>85%**

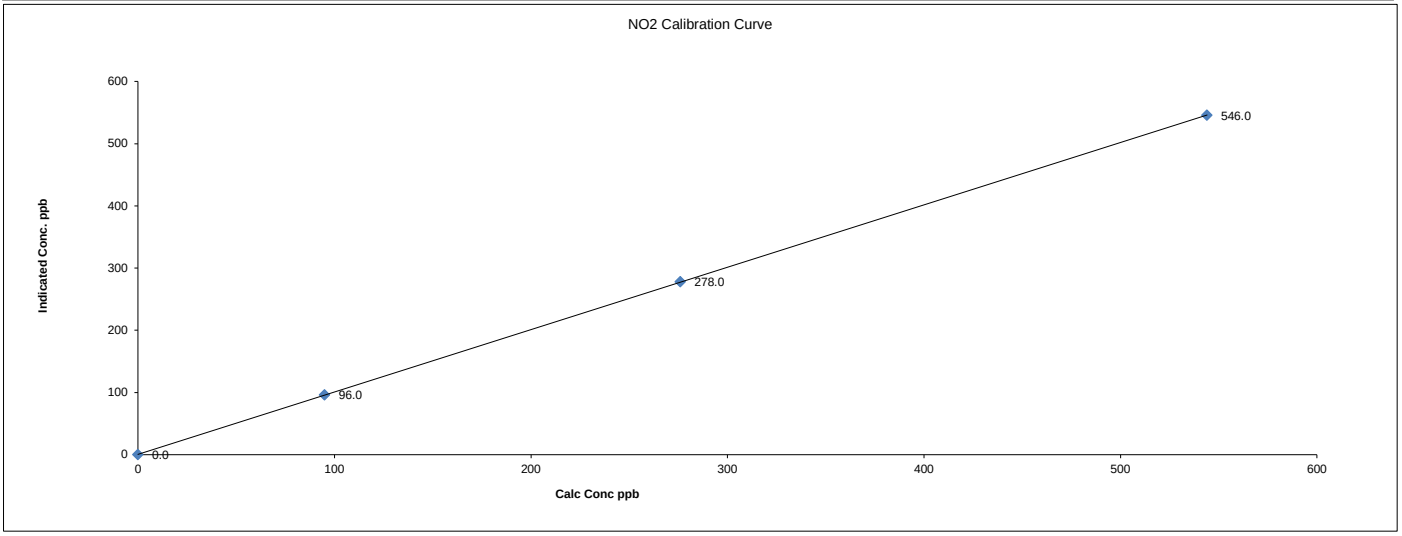
Comments:

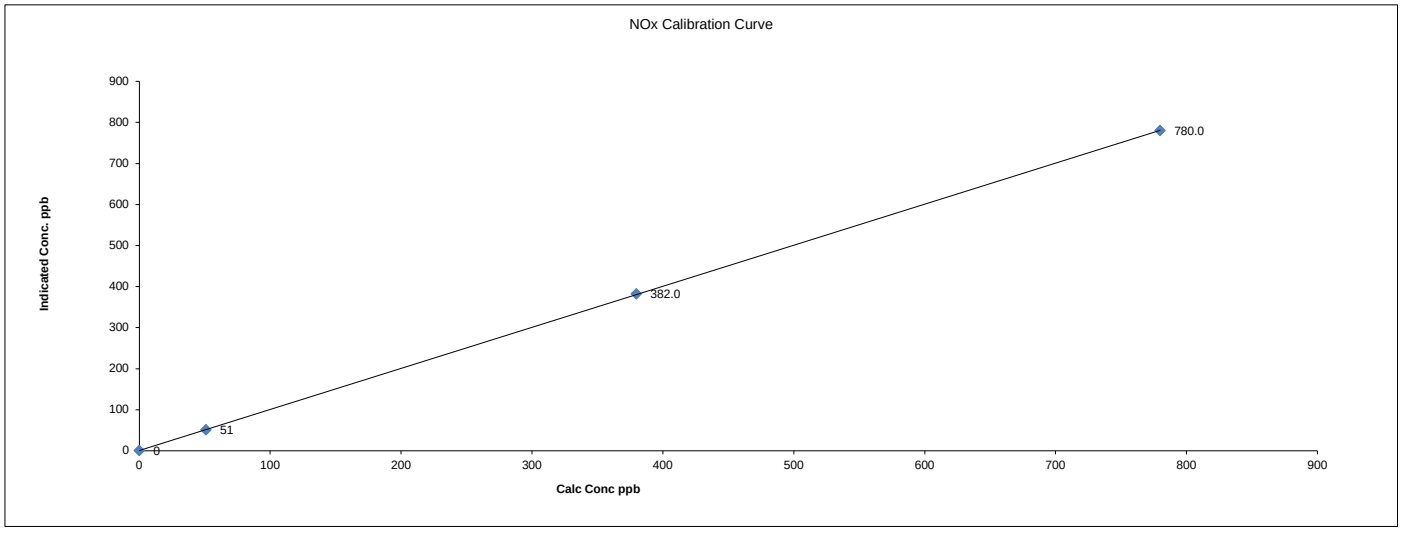
Installation calibration following replacement of AZERO and NO valves

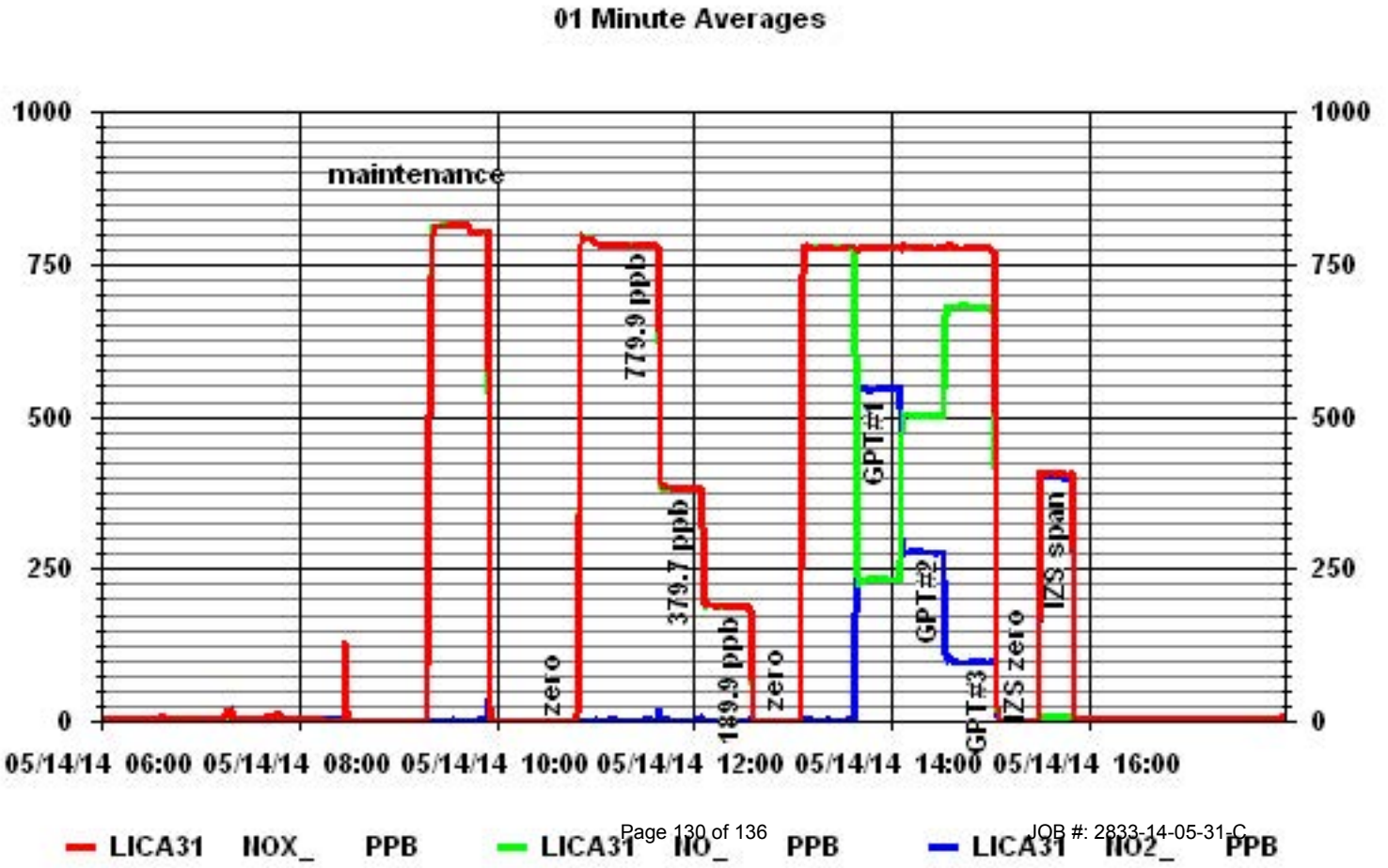
Date:	14-May-14	**Start Time (mst):**	9:59
Company:	LICA	**End Time (mst):**	15:53
Station Name/Location:	St Lina	**Calibration Purpose:**	Installation Calibration
Performed by:	Chris Wesson	**Cal Gas Expiry Date:**	15-Oct-17

API 200E NOx Analyzer Calibration








01 Minute Averages
1000
750
500
250
0
maintenance
zero
779.9 ppb
379.7 ppb
189.9 ppb
zero
GPT#1
GPT#2
GPT#3
IZS zero
IZS span
05/14/14 06:00
05/14/14 08:00
05/14/14 10:00
05/14/14 12:00
05/14/14 14:00
05/14/14 16:00
LICA31 NOX_ PPB
LICA31 NO_ PPB
LICA31 NO2_ PPB

Ozone

Maxxam Thermo 49i O_3 Analyzer Calibration

Date:	1-May-14	**Start Time (mst):**	14:53
Company:	LICA	**End Time (mst):**	17:12
Station Name/Location:	St.Lina	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**G.P.T. Date:**	1-May-14

Analyzer:

Serial Number:	1002240371	**Range ppm:**	500
Last Calibration Date:	8-Apr-14	**As Found C.F.**	1.019
Previous Cal High Point C.F.:	1.004	**New C.F.:**	0.996

		As found:		As left:
	O_3 Bkg:	-0.1	O_3 Bkg:	-0.1
	O_3 Coef:	0.981	O_3 Coef:	0.995
Motherboard:	3.3	3.3	3.3	3.3
	15.0	14.8	15.0	14.8
	24.0	23.7	24.0	23.7
	-3.3	-3.2	-3.3	-3.2
Interface Board:	3.3	3.2	3.3	3.2
	5.0	4.9	5.0	4.9
	15.0	14.7	15.0	14.7
	-15.0	-15.0	-15.0	-15.0
	Photo Lamp	9.4	Photo Lamp	9.4
	24.0	23.6	24.0	23.6
	O_3 Lamp	8.3	O_3 Lamp	8.3
	Bench:	30.2	Bench:	30.2
	Bench Lamp:	53.6	Bench Lamp:	53.6
	O_3 Lamp:	67.9	O_3 Lamp:	67.9
	Pressure:	682	Pressure:	682
	Cell A lpm:	0.736	Cell A lpm:	0.736
	Cell B lpm:	0.732	Cell B lpm:	0.732
	O_3 ppb:	42.0	O_3 ppb:	42.0
	Cell A ppb:	39.8	Cell A ppb:	39.8
	Cell B ppb:	41.5	Cell B ppb:	41.5
	Cell A int:	70911	Cell A int:	70911
	Cell B int:	80808	Cell B int:	80808
	Internal Span:	311	Internal Span:	311

Calibrator:

Make & Model:	Environics 6100
Serial #:	4760
NOx Gas Cylinder I.D. # :	BAL3165
NOx Cylinder Conc. (ppm):	49.0

Calibrator Flow Targets:

point	total flow (cc/min)	O_3 setting (v or ppb)
zero	5075	0
high	5075	320
mid	5075	150
low	5075	80

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5070	0.0	5070	0.0	0.1	NA
adjusted zero	5070	0.0	5070	0.0	0.1	NA
as found high	5070	0.00	5070	336.5	330.3	1.019
adjusted high	5070	0.00	5070	336.5	336.5	1.000
mid	5070	0.00	5070	159.1	159.6	0.997
low	5070	0.00	5070	79.3	80.3	0.989
calibrator zero	5070	0.00	5070	0.0	0.1	NA

copy and paste flows and NO decrease from NOx cal in to calculated concentration **Average C.F.=** 0.996

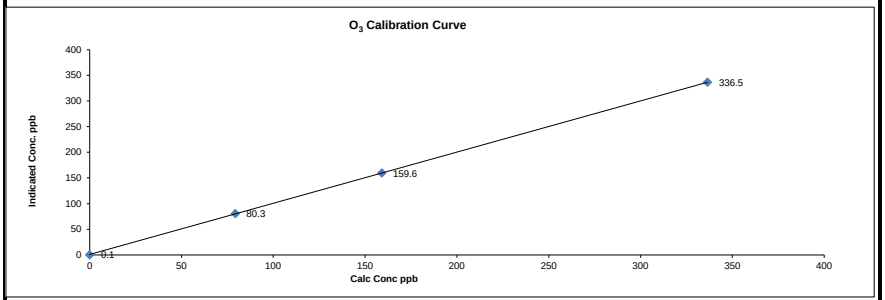
Linear Regression/Calibration Results:

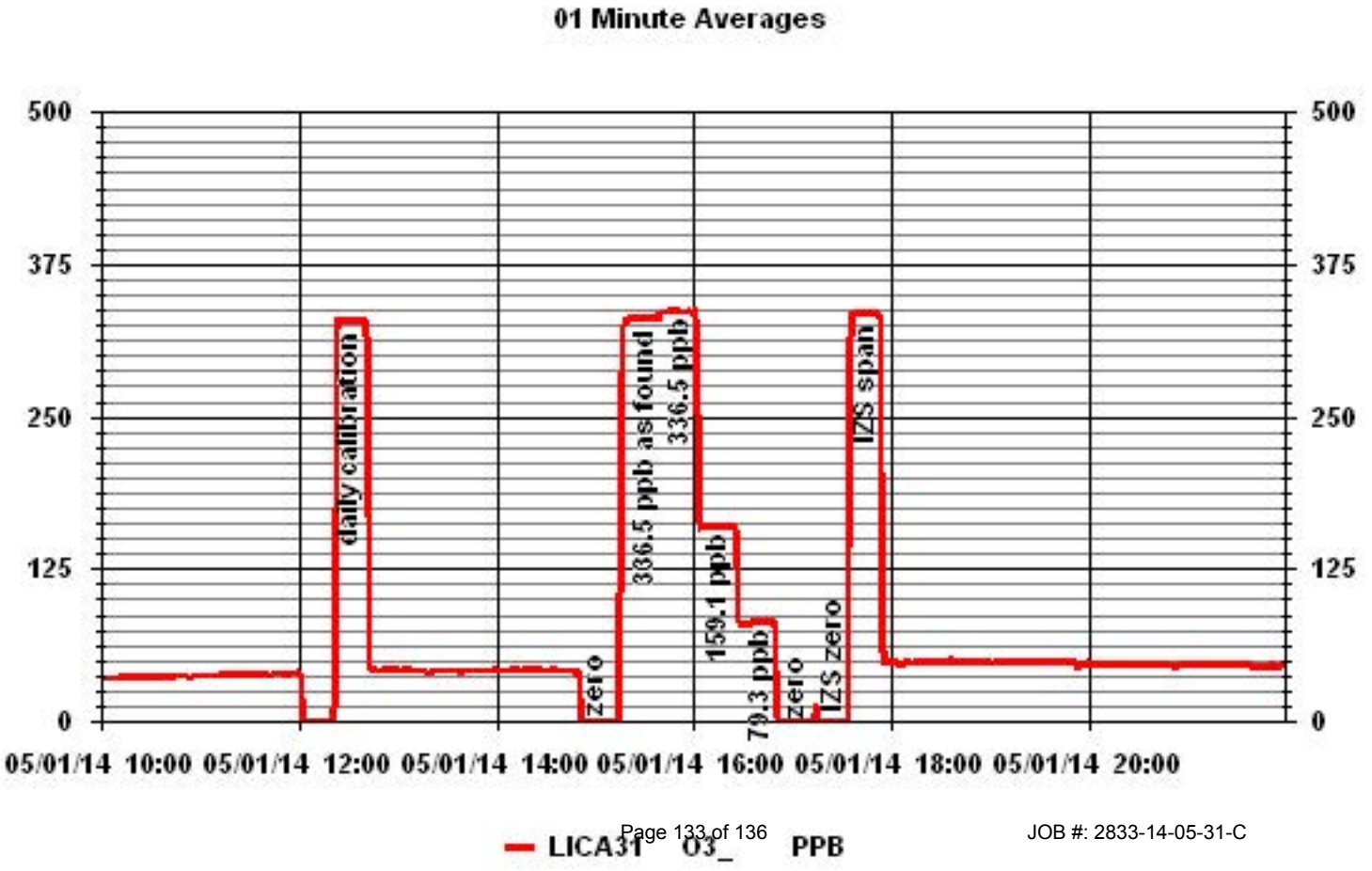
		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**0.999**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.113%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-2%**	**± 15%**	**PASS**

Comments:

Filter changed. No zero adjustment necessary.

Thermo 49i O3 Analyzer Calibration





JOB #: 2833-14-05-31-C

Particulate Matter 2.5

R & P 1400A TEOM PM2.5 Analyzer Calibration

Date:	9-May-14	**Parameter:**	PM2.5
Company:	LICA	**Performed by:**	Kevin Hope
Station Name/Location:	St.Lina	**Start/End Time (mst):**	13:04/13:56
Previous Audit Date:	9-Apr-14	**Calibration Purpose:**	Monthly Calibration I

1400A Information and Status:

Serial Number:	140AB228720001	**As Found Filter Loading %:**	31.00
K_o Factor:	15003	**As Left Filter Loading %:**	20.00
Ambient Temperature °C:	11.0	**As Found Noise:**	0.039
Ambient Pressure atm:	0.914	**As Left Noise:**	0.000
Main Flow Reading lpm:	3.18	**Pump Vacuum:**	Ok
Aux Flow Reading lpm:	13.92	**Warnings:**	None

Reference Standards:

	Flow:	**Pressure:**	**Temperature:**
Make:	Dwyer	Brunton	Fluke
Model:	475 Mark III	ADC Summit	1551A Sti 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)	0.06	0.12	
seconds to reach full flow (max. 60s)	22	39	**(maintenance required if either > 60 seconds)**
leak rate (lpm)	0.06	0.12	
0 corrected leak rate (lpm)	0.00	0.00	
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)	0.06	0.12	
seconds to reach full flow (max. 60s)	22	39	**(maintenance required if either > 60 seconds)**
leak rate (lpm)	0.06	0.12	
0 corrected leak rate (lpm)	0.00	0.00	
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:	9.7	**1400A pressure atm:**	0.918
reference temperature °C:	10.1	**reference pressure:**	0.914
difference °C:	0.4	**difference :**	-0.004

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

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1400A temperature oC:	9.7	**1400A pressure atm:**	0.918
reference temperature °C:	10.1	**reference pressure:**	0.914
difference °C:	0.4	**difference :**	-0.004

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:	2.98	**1400A total/aux flow lpm:**	13.61
reference main flow lpm:	3.18	**reference total/aux flow lpm:**	13.92
difference lpm:	0.20	**difference lpm:**	0.31

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:	2.98	**1400A total/aux flow lpm:**	13.61
reference main flow lpm:	3.18	**reference total/aux flow lpm:**	13.92
difference lpm:	0.20	**difference lpm:**	0.31

K_o Audit:

Last K_o audit date:	NA
1400A Ko factor:	15003
Measured K_o factor:	15031
% difference:	1.00%

Comments:

Flow audit, Ko audit, leak check all passed. Changed filters

R & P 1400A TEOM PM2.5 Analyzer Calibration

Date:	30-May-14	**Parameter:**	PM2.5
Company:	LICA	**Performed by:**	Kevin Hope
Station Name/Location:	St.Lina	**Start/End Time (mst):**	15:00/15:42
Previous Audit Date:	9-Apr-14	**Calibration Purpose:**	Monthly Calibration II

1400A Information and Status:

Serial Number:	140AB228720001	**As Found Filter Loading %:**	31.00
K_o Factor:	15003	**As Left Filter Loading %:**	23.00
Ambient Temperature °C:	19.0	**As Found Noise:**	0.032
Ambient Pressure atm:	0.914	**As Left Noise:**	0.000
Main Flow Reading lpm:	3.18	**Pump Vacuum:**	Ok
Aux Flow Reading lpm:	13.92	**Warnings:**	None

Reference Standards:

	Flow:	**Pressure:**	**Temperature:**
Make:	Dwyer	Brunton	Fluke
Model:	475 Mark III	ADC Summit	1551A Sti 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)	0.07	0.11	
seconds to reach full flow (max. 60s)	23	39	**(maintenance required if either > 60 seconds)**
leak rate (lpm)	0.07	0.11	
0 corrected leak rate (lpm)	0.00	0.00	
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)	0.07	0.11	
seconds to reach full flow (max. 60s)	23	39	**(maintenance required if either > 60 seconds)**
leak rate (lpm)	0.06	0.12	
0 corrected leak rate (lpm)	-0.01	0.01	
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:	19.2	**1400A pressure atm:**	0.929
reference temperature °C:	19.0	**reference pressure:**	0.927
difference °C:	-0.2	**difference :**	-0.002

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

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1400A temperature oC:	19.2	**1400A pressure atm:**	0.929
reference temperature °C:	19.0	**reference pressure:**	0.927
difference °C:	-0.2	**difference :**	-0.002

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:	2.99	**1400A total/aux flow lpm:**	16.59
reference main flow lpm:	3.10	**reference total/aux flow lpm:**	16.55
difference lpm:	0.11	**difference lpm:**	-0.04

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:	2.99	**1400A total/aux flow lpm:**	16.59
reference main flow lpm:	3.10	**reference total/aux flow lpm:**	16.55
difference lpm:	0.11	**difference lpm:**	-0.04

K_o Audit:

Last K_o audit date:	NA
1400A Ko factor:	15003
Measured K_o factor:	15032
% difference:	1.01%

Comments:

Flow audit, Ko audit, leak check all passed. Changed filters

Lakeland Industry & Community Association

Portable / Elk Point Airport Monitoring Site
Ambient Air Monitoring Data Report
For
May 2014

Prepared By:

June 29, 2014

JOB #: 2833-14-05-35-C

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

Table of Contents

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

	Page
Calibration Reports	99
• Sulphur Dioxide	100
• Hydrogen Sulphide	107
• Total Hydrocarbons (55i)	110
• Particulate Matter 2.5	117
• Nitrogen Dioxide	120
• Ozone	124

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: May 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.

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 – May 2014

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PORTABLE / ELK POINT AIRPORT 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	0.05	2	29, 31	VAR	VAR	VAR	0.5	29	88.3
H_2S (PPB)	10	3	0	0	0.06	2	17, 24	VAR	VAR	VAR	1.3	24	100.0
THC (55i) (PPM)	-	-	-	-	2.31	13.5	17	3	5.6	287(WNW)	4.1	17	98.8
Methane (PPM)	-	-	-	-	2.30	13.1	17	3	5.6	287(WNW)	4.0	17	98.8
NMHC (PPM)	-	-	-	-	0.01	0.4	17, 28	3, 1	5.6, 1.3	287(WNW) 254(WSW)	0.1	VAR	98.8
NO_2 (PPB)	159	-	0	-	4.71	36.7	11	22	7.3	275(W)	11.4	23	100.0
NO (PPB)	-	-	-	-	1.52	94.1	17	3	5.6	287(WNW)	13.7	17	100.0
NOx (PPB)	-	-	-	-	6.22	118.1	17	3	5.6	287(WNW)	22.9	17	100.0
O_3 (PPB)	82	-	0	-	32.05	63	22	VAR	VAR	VAR	42.6	18, 22	96.5
PM 2.5 (UG/M^3)	-	30	-	0	9.28	61	1	11	28.7	332(NNW)	15.7	1	95.7
VECTOR WS (KPH)	-	-	-	-	12.17	38.4	30	14	-	280(W)	23.8	2	100.0
VECTOR WD (DEGREES)	-	-	-	-	312(NW)	-	-	-	-	-	-	-	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

Sulphur Dioxide (PPB)
- Analyzer make / model – API 100E, S/N: 467 replaced to API 100A, S/N: 837

The analyzer failed due to PSU failure on May 3rd. The API 100E analyzer, LICA supplied, was removed from the trailer, and an API 100A analyzer, Maxxam Supplied, was installed on May 6th. The API 100E was brought back to Maxxam shop for repair. An as found points check was performed on May 6th to ensure the analyzer's functionality. A 3-points installation calibration was performed on May 7th. Since we cannot determine when the malfunction occurred, we have to invalidate the data back to the last good daily calibration which was May 2nd hour 22. A total of 87 hours of data was invalidated due to this event. The operational uptime was 88.3% this month. 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 May 6th. The inlet filter was changed before the calibration was started. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)
- Analyzer make / model – API 200E, S/N: 593

The analyzer was working well throughout the month. The monthly calibration was performed on May 6th. 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 attempted to be performed on May 7th. However, the analyzer failed the third span point check. The THC/CH4/NMHC channels were put into the Maintenance mode on May 8th for 7 hours for the investigation. No obvious issue could be determined. The reason causing the calibration to faid was likely due to error from the zero air. Another 3-points calibration was performed on May 9th. The analyzer passed the calibration requirements. No data was discarded due this this event. The THC/CH4/NMHC channels were put into the Maintenance mode on May 23rd for 2 hours for the zero/span box and the zero air supply rearrangement. The inlet filter was changed before the calibration was started on May 7th. Data was corrected using daily zero information.

Ozone (PPB)

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

The analyzer failed the span check on May 3rd. An as found points check was performed on May 6th, and the result was within the acceptable range. Maintenance was performed on May 7th, including changing the sample filter, rebuilding the zero/span pump and cleaning the optical bench. The post maintenance calibration was performed after the maintenance. The analyzer showed errors on the zero/span check after the maintenance. The pump for the zero/span system was rebuilt again on May 8th. Issue was fixed after the maintenance on May 8th. As this issue was from the zero/span system and did not affect data quality, no data was discarded. Hourly data between May 10th at hour 14 and May 11 at hour 6 were invalidated as the span valve got stuck after the daily zero/span check on May 10th. This issue was fixed remotely by activating and inactivating span valve few times on May 11th. 17 hours of data were invalidated due to this event. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Particulate Matter 2.5 (ug/m^3)

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

Two Teom audits were performed this month: one was done on May 7th and the other was completed on May 21st. The sample inlet was cleaned and the filter was replaced on May 21st. 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. 32 hours of data were invalidated as the data were below –3 ug/m^3.

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 May 7th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - Elk Point Site

MAY 2014

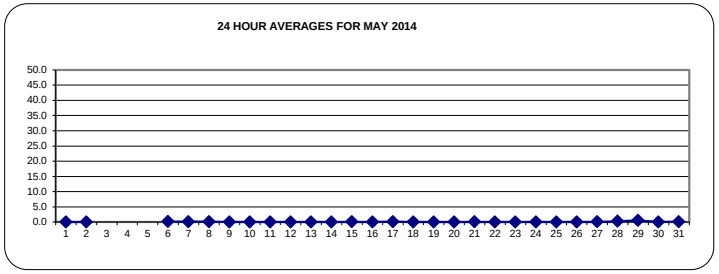
SULPHUR DIOXIDE (SO2) hourly averages in ppb

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

STATUS FLAG CODES

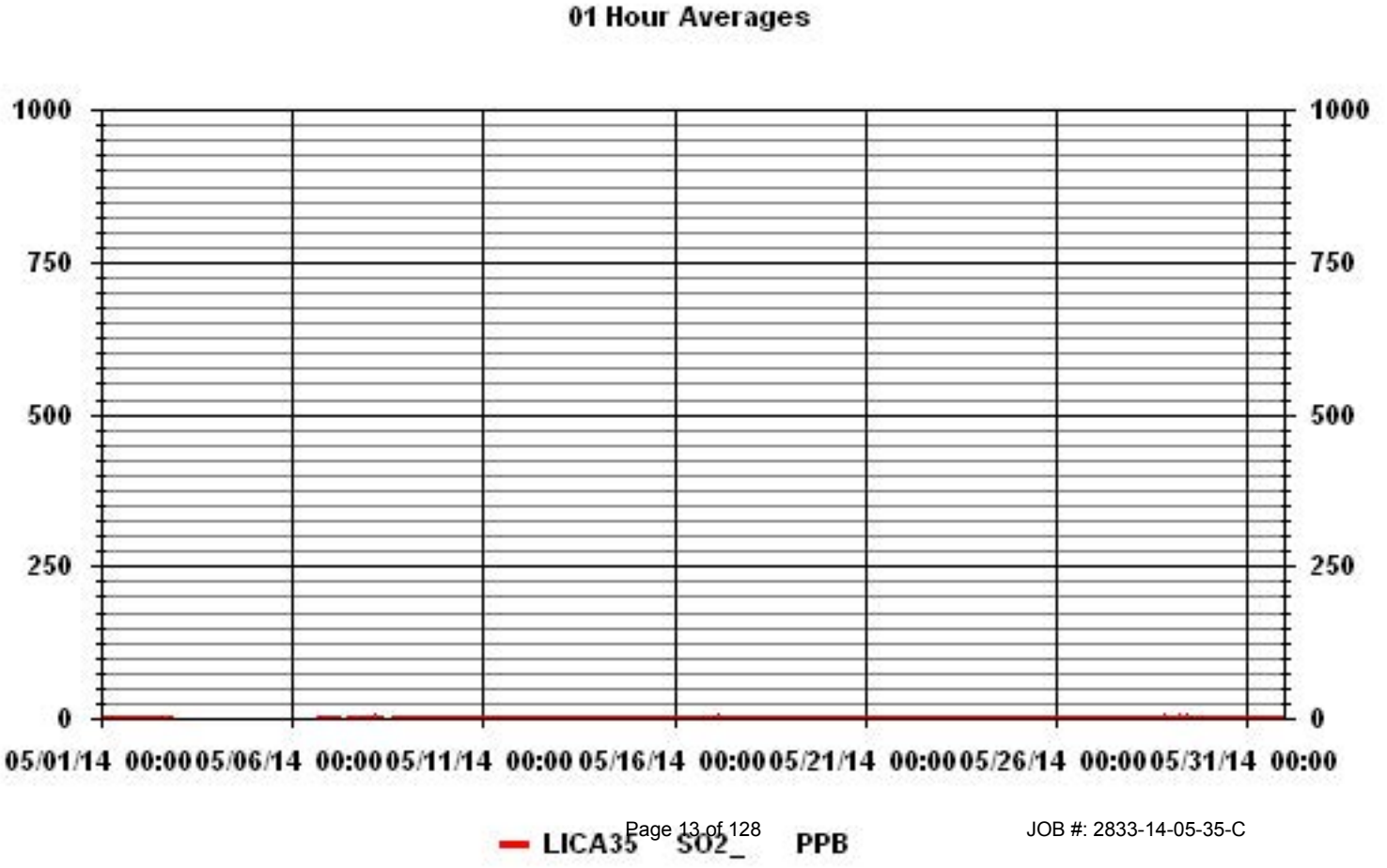
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	24					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	29, 31
MAXIMUM 24-HR AVERAGE:	0.5	PPB			ON DAY(S)	29
				VAR-VARIOUS		
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:		657	HRS
MONTHLY CALIBRATION TIME:	15	HRS	AMD OPERATION UPTIME:		88.3	%
STANDARD DEVIATION:	0.25		MONTHLY AVERAGE:		0.05	PPB



JOB #: 2833-14-05-35-C

Lakeland Industry & Community Association - Elk Point Site

MAY 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	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.4	24
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	X	X	0	0.0	22
3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0		
4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0		
5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0		
6	X	X	X	X	X	X	X	X	X	X	X	X	X	C	C	C	C	C	1	1	1	1	1	1	1	1.0	11
7	1	1	1	1	1	1	S	1	C	C	C	C	C	0	0	1	S	0	0	0	1	1	1	1	1	0.7	24
8	1	1	1	1	1	1	1	0	0	C	C	C	C	C	S	S	0	0	0	0	0	0	0	0	1	0.4	24
9	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
10	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
11	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
12	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0	1	0.0	24
13	1	0	1	1	1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.3	24
14	0	0	1	1	1	1	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
15	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0	1	2	1	1	0	0	2	0.3	24
16	0	0	0	0	0	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
17	0	0	1	1	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
18	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
19	0	0	0	0	S	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	S	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
21	0	0	S	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24
22	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0.2	24
23	S	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	S	1	0.2	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	S	0	1	0.0	24
25	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0.0	24
26	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
27	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	4	4	0.3	24
28	3	3	2	2	3	6	0	0	0	0	0	0	0	0	0	0	0	0	S	0	3	4	0	1	6	1.2	24
29	7	8	2	5	0	8	***9***	1	3	0	4	5	0	0	0	0	0	S	0	0	0	0	2	2	***9***	***2.4***	24
30	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
31	0	2	3	3	4	0	0	0	0	0	0	0	0	0	0	S	1	0	0	0	0	1	0	0	4	0.6	24
HOURLY MAX	7	8	3	5	4	8	9	1	3	0	4	5	0	0	0	1	1	1	1	2	3	4	2	4			
HOURLY AVG	0.5	0.6	0.5	0.7	0.5	0.8	0.4	0.1	0.2	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.3	0.4	0.3	0.4			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 96

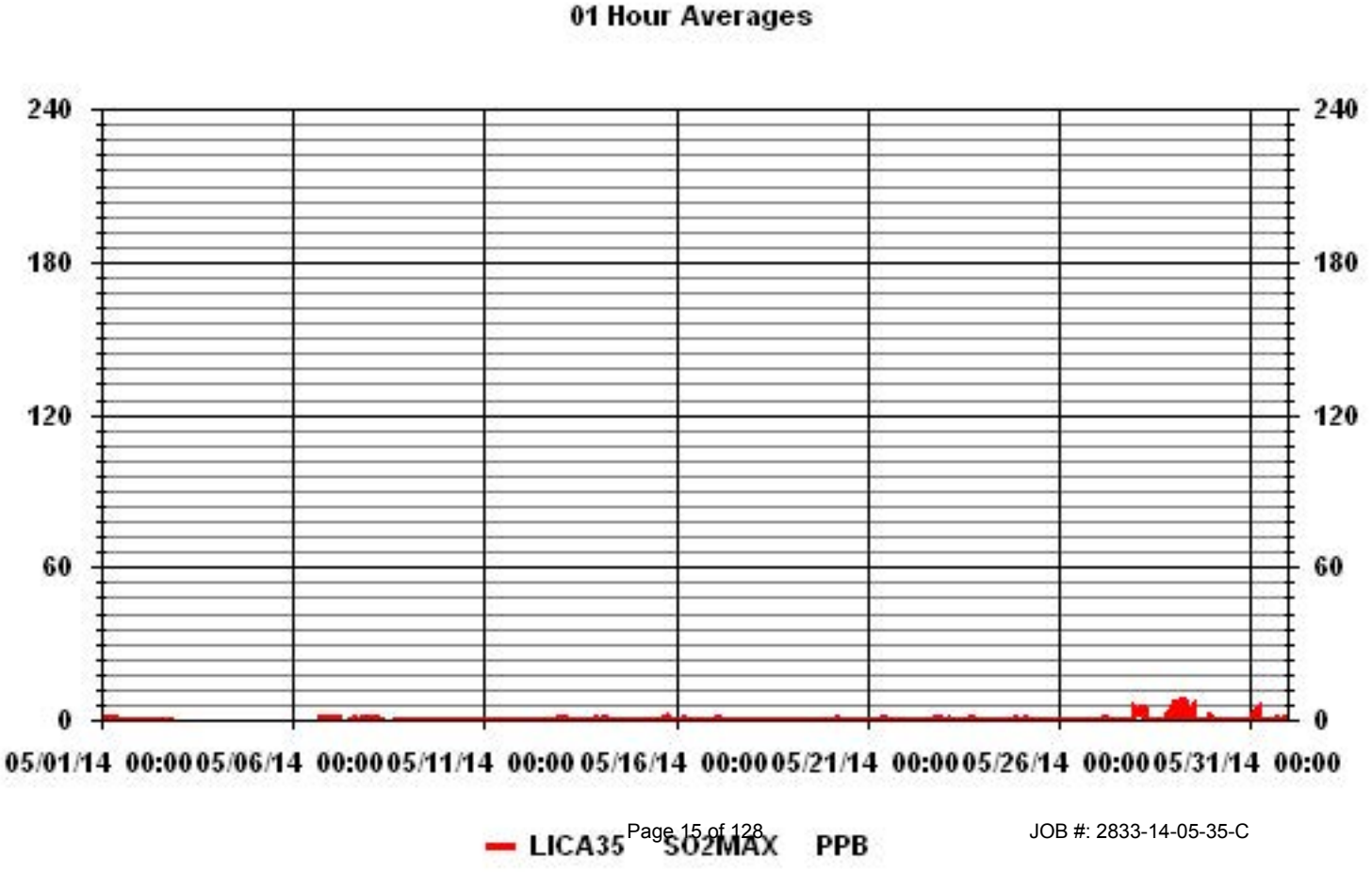
MAXIMUM INSTANTANEOUS VALUE: 9 PPB @ HOUR(S) 6 ON DAY(S) 29

VAR-VARIOUS

IZS CALIBRATION TIME: 30 HRS OPERATIONAL TIME: 657 HRS

MONTHLY CALIBRATION TIME: 15 HRS

STANDARD DEVIATION: 0.93



JOB #: 2833-14-05-35-C

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

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	2.45	1.63	4.08	6.37	9.80	5.88	2.28	2.77	1.79	2.77	2.61	7.02	11.92	15.03	16.33	7.18	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	2.45	1.63	4.08	6.37	9.80	5.88	2.28	2.77	1.79	2.77	2.61	7.02	11.92	15.03	16.33	7.18	

Calm : .00 %

Total # Operational Hours : 612

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	15	10	25	39	60	36	14	17	11	17	16	43	73	92	100	44	612
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	15	10	25	39	60	36	14	17	11	17	16	43	73	92	100	44	

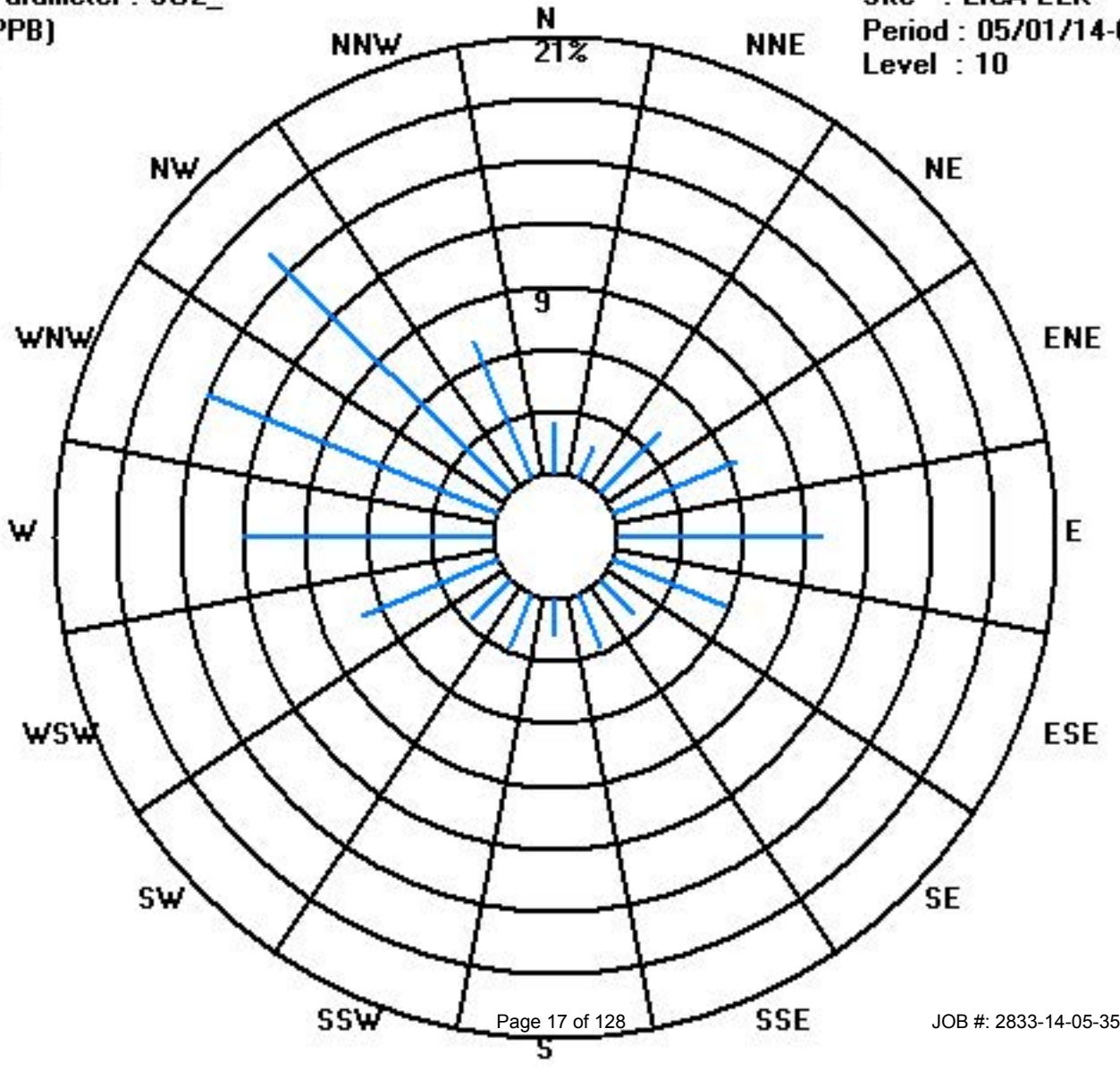
Calm : .00 %

Total # Operational Hours : 612

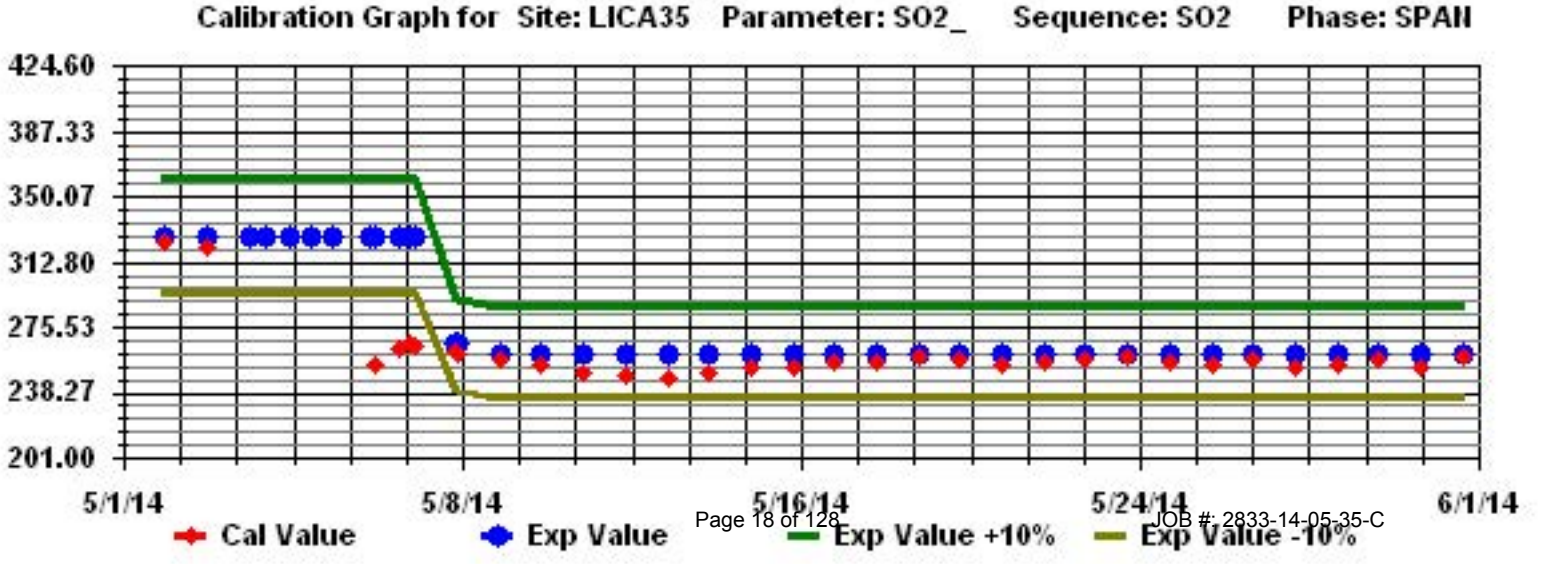
Logger : 35 Parameter : SO2_
Class Limits (PPB)

>= 340
< 340
< 170
< 110
< 60
< 20

Site : LICA-ELK
Period : 05/01/14-05/31/14
Level : 10



JOB #: 2833-14-05-35-C


Calibration Graph for Site: LICA35 Parameter: SO2_ Sequence: SO2 Phase: SPAN
424.60
387.33
350.07
312.80
275.53
238.27
201.00
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Hydrogen Sulphide

Lakeland Industry & Community Association - Elk Point Site

MAY 2014

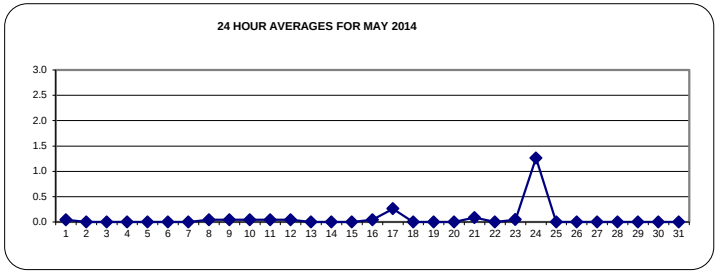
HYDROGEN SULPHIDE (H2S) hourly averages in ppb

MST

HOUR START / HOUR END	0:00 1:00	1:00 2:00	2:00 3:00	3:00 4:00	4:00 5:00	5:00 6:00	6:00 7:00	7:00 8:00	8:00 9:00	9:00 10:00	10:00 11:00	11:00 12:00	12:00 13:00	13:00 14:00	14:00 15:00	15:00 16:00	16:00 17:00	17:00 18:00	18:00 19:00	19:00 20:00	20:00 21:00	21:00 22:00	22:00 23:00	23:00 0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY																											
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	S	0	1	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	S	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	S	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	S	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	S	0	0	0	0	0	0	0.0	24
6	0	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	24
7	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
8	1	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
9	0	0	1	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	1	0.0	24
10	1	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.0	24
11	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	1	0.0	24
12	1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
13	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
14	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
15	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
16	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.0	24
17	1	0	1	*2*	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*2*	0.3	24
18	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
19	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
20	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
21	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0.1	24
22	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
23	S	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	1	0.0	24
24	*2*	*2*	*2*	*2*	*2*	*2*	*2*	1	1	1	1	1	1	1	1	1	1	1	1	1	1	S	0	*2*	***1.3***	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	24
26	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
27	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
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.0	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0.0	24
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1			
HOURLY AVG	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.1			

STATUS FLAG CODES

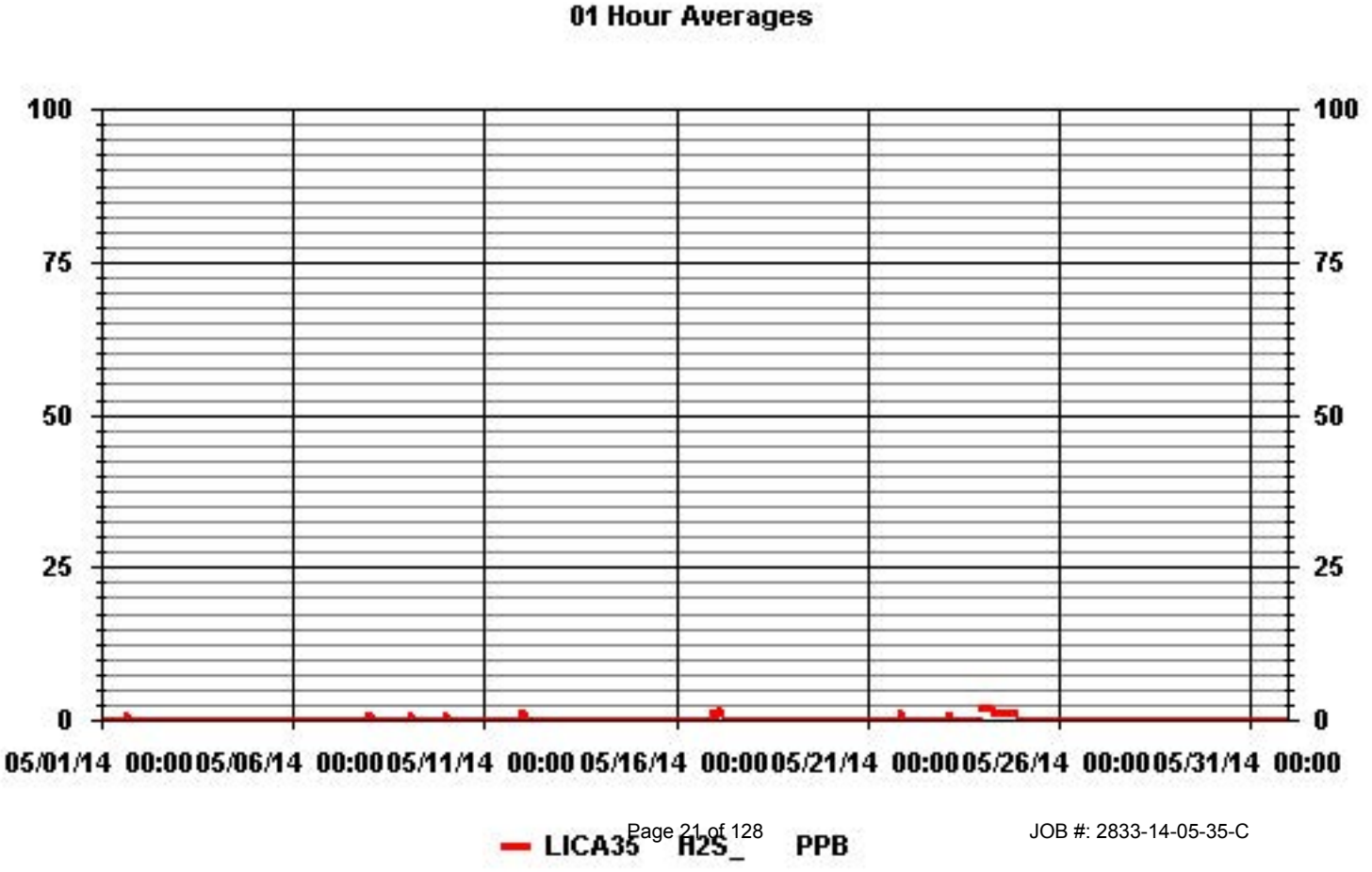
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 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:	37					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	17, 24
MAXIMUM 24-HR AVERAGE:	1.3	PPB			ON DAY(S)	24
				VAR-VARIOUS		
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.29		MONTHLY AVERAGE:		0.06	PPB



JOB #: 2833-14-05-35-C

Lakeland Industry & Community Association - Elk Point Site

MAY 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	0	1	1	1	1	1	1	0	1	1	0	0	1	0	0	0	1	1	0	0	0	1	**S**	0	1	0.5	24
2	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
3	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
4	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
5	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	1	0.0	24
6	0	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	0	0	0	**S**	0	0	0	0	0	0	0	0.0	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	1	1	1	1	0.1	24
8	1	0	0	1	1	1	1	1	0	0	0	1	1	1	1	**S**	0	0	0	0	0	0	1	1	1	0.5	24
9	1	1	1	2	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	2	0.2	24
10	1	0	0	1	0	0	0	0	0	0	0	0	0	**S**	1	1	1	0	1	0	0	0	1	1	1	0.3	24
11	1	1	1	1	0	1	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	1	1	1	1	1	0.4	24
12	2	1	1	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24
13	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
14	0	0	0	1	1	1	0	1	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
15	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
16	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0.1	24
17	2	1	2	***4***	3	1	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	***4***	0.6	24
18	0	0	0	1	1	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
19	0	0	0	0	**S**	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	**S**	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
21	1	1	**S**	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	1.0	24
22	1	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
23	**S**	1	1	3	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	**S**	0.5	24
24	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1	2	**S**	0	3	***1.9***	24
25	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
26	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
27	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
28	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	1	0.1	24
29	0	0	0	0	0	0	0	0	0	1	1	1	0	1	1	1	1	**S**	0	0	0	0	0	0	1	0.3	24
30	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	0.0	24
31	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	1	0.0	24
HOURLY MAX	3	2	2	4	3	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	1	2			
HOURLY AVG	0.4	0.3	0.3	0.7	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.3			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 131

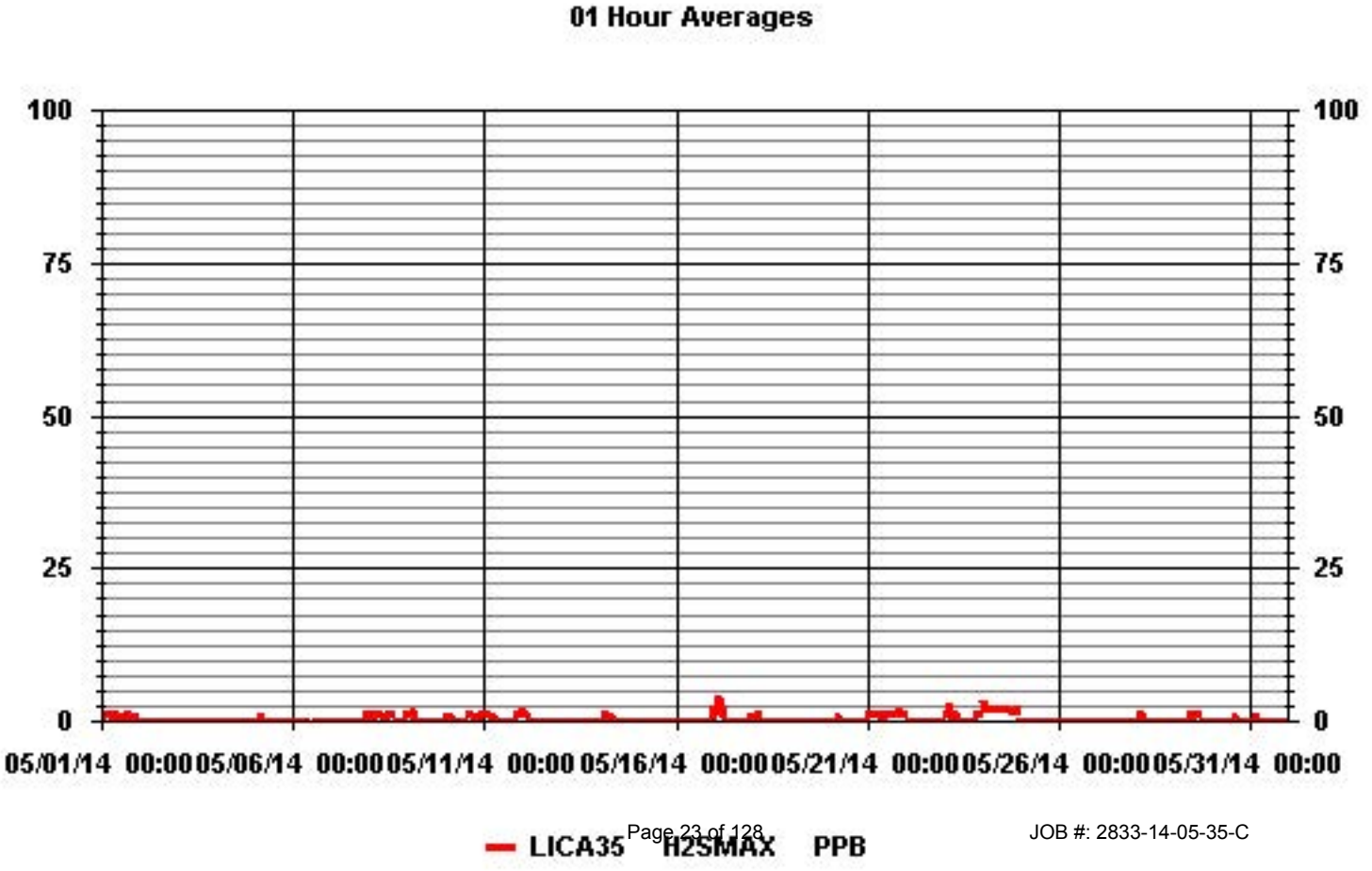
MAXIMUM INSTANTANEOUS VALUE: 4 PPB @ HOUR(S) 3 ON DAY(S) 17

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 0.54



JOB #: 2833-14-05-35-C

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

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

		Direction																
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3	3.38	1.83	4.51	6.63	9.18	5.79	2.96	2.54	1.69	2.54	2.25	6.35	11.72	13.84	16.52	8.19	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	3.38	1.83	4.51	6.63	9.18	5.79	2.96	2.54	1.69	2.54	2.25	6.35	11.72	13.84	16.52	8.19	

Calm : .00 %

Total # Operational Hours : 708

Distribution By Samples

		Direction																
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3	24	13	32	47	65	41	21	18	12	18	16	45	83	98	117	58	708
<	10																	
<	50																	
>=	50																	
	Totals	24	13	32	47	65	41	21	18	12	18	16	45	83	98	117	58	

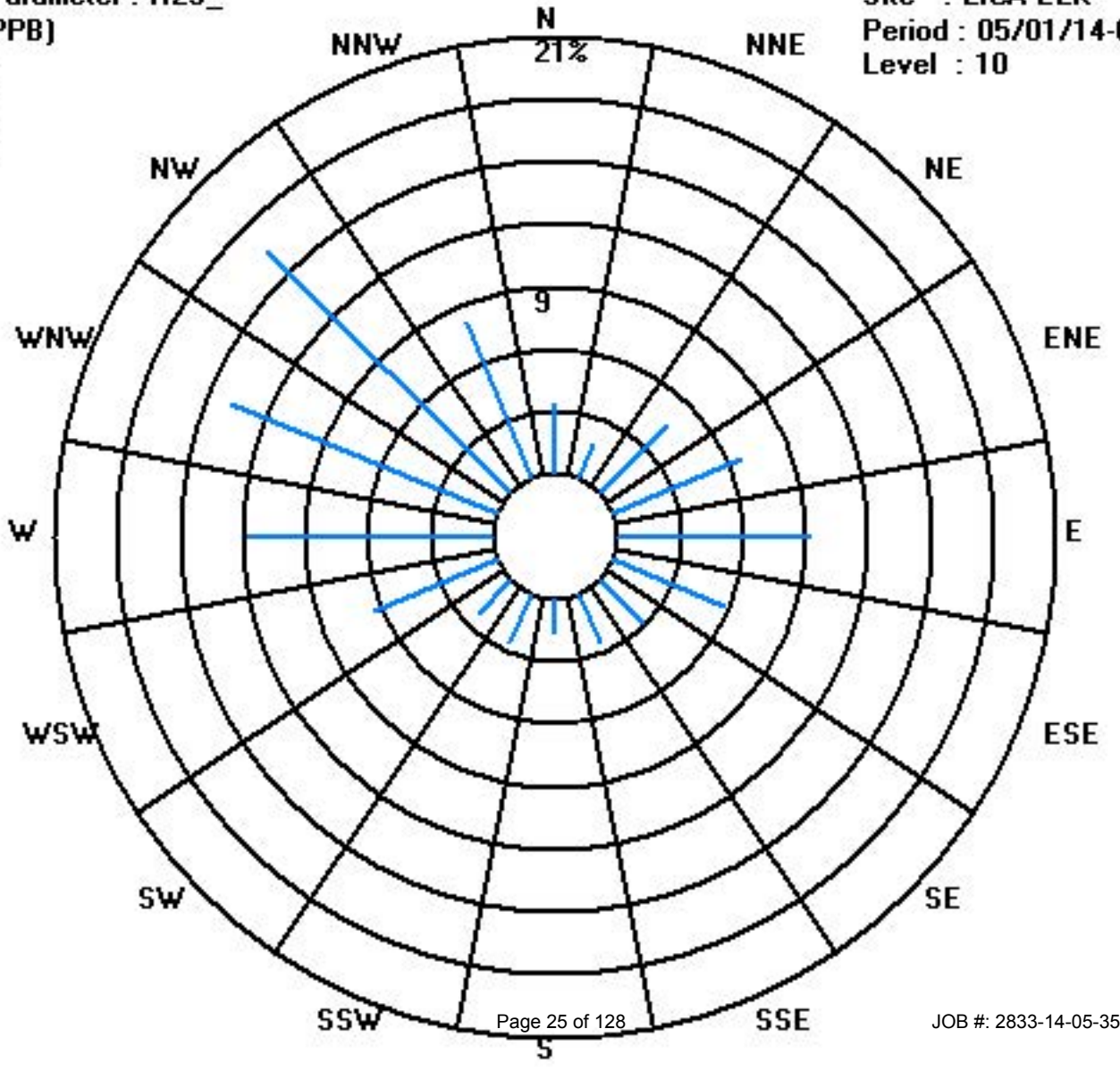
Calm : .00 %

Total # Operational Hours : 708

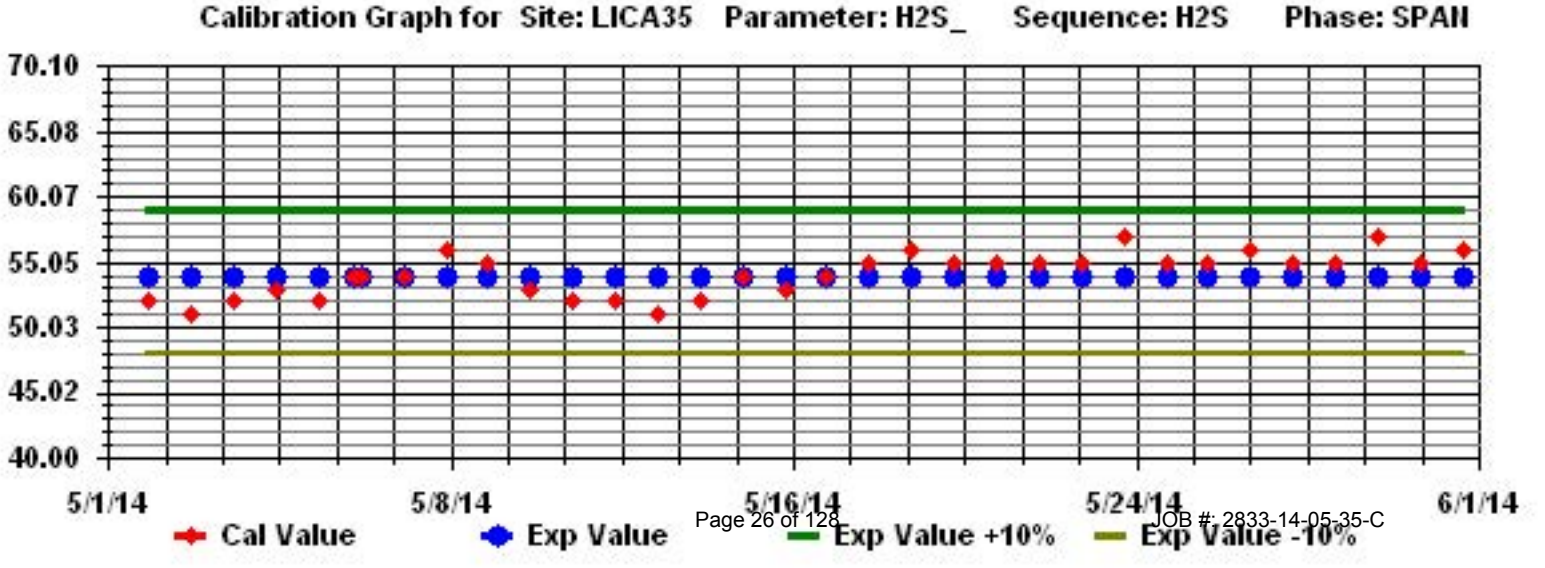
Logger : 35 Parameter : H2S_
Class Limits (PPB)

>= 50
< 50
< 10
< 3

Site : LICA-ELK
Period : 05/01/14-05/31/14
Level : 10



JOB #: 2833-14-05-35-C


Calibration Graph for Site: LICA35 Parameter: H2S_ Sequence: H2S Phase: SPAN
70.10
65.08
60.07
55.05
50.03
45.02
40.00
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

Lakeland Industry & Community Association - Elk Point Site

MAY 2014

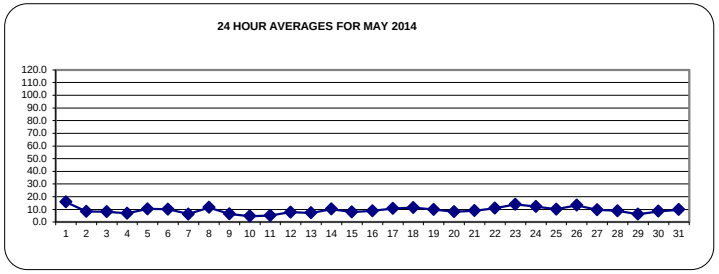
PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5) hourly averages in ug/m3

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	18	5	16	30	16	20	11	13	18	38	***61***	**X**	22	0	1	7	22	7	16	9	10	7	9	***61***	***15.7***	23
2	20	**X**	8	0	7	8	**X**	10	5	10	7	5	15	9	7	13	**X**	16	**X**	**X**	2	4	11	3	20	8.4	19
3	6	0	16	12	2	6	8	2	5	4	14	8	9	5	9	**X**	17	12	10	5	3	10	4	19	19	8.1	23
4	10	5	0	9	5	**X**	11	0	3	2	0	6	2	10	7	3	14	18	13	0	9	11	12	**X**	18	6.8	22
5	15	41	23	0	0	12	7	2	22	8	6	0	7	5	11	7	12	**X**	12	19	2	7	10	**X**	41	10.4	22
6	19	7	4	13	1	0	11	8	11	20	32	12	**X**	**X**	26	0	0	13	6	11	7	9	5	7	32	10.1	22
7	11	4	6	11	8	6	9	18	6	3	6	15	6	0	0	**C**	1	6	7	5	5	0	7	4	18	6.3	24
8	7	10	12	9	8	8	14	14	9	12	7	4	17	18	10	21	8	15	25	14	11	10	6	6	25	11.5	24
9	7	7	10	7	6	5	0	4	4	6	4	2	11	13	7	9	7	8	1	**X**	9	6	3	9	13	6.3	23
10	9	5	9	8	4	3	2	2	12	0	**X**	6	5	**X**	0	2	5	3	3	0	0	9	7	8	12	4.6	22
11	7	8	5	0	5	3	3	5	8	1	11	11	0	0	9	5	3	3	5	1	4	8	9	9	11	5.1	24
12	7	13	9	8	10	8	9	5	0	2	13	22	14	6	11	7	4	9	4	1	9	0	10	6	22	7.8	24
13	10	8	10	4	2	4	8	9	17	2	9	5	3	12	1	4	6	7	14	**X**	8	3	7	12	17	7.2	23
14	7	10	12	13	12	15	16	15	11	15	13	4	2	4	5	15	7	4	14	9	13	13	11	4	16	10.2	24
15	11	9	13	7	8	9	4	8	9	11	9	8	**X**	7	11	1	9	7	4	14	11	4	0	7	14	7.9	23
16	7	9	18	5	7	4	10	17	2	9	**X**	13	0	0	5	10	11	9	7	8	12	10	12	18	18	8.8	23
17	12	13	16	10	**X**	**X**	16	17	16	9	12	18	9	7	5	3	4	8	11	1	10	11	11	15	18	10.6	22
18	8	7	8	10	7	7	10	15	13	11	16	23	11	13	10	25	10	18	2	11	5	9	12	12	25	11.4	24
19	9	2	10	9	4	9	10	17	12	10	12	14	13	17	16	10	9	9	5	9	5	7	10	7	17	9.8	24
20	11	8	12	8	9	12	11	5	11	2	8	0	16	2	18	1	5	3	6	10	10	**X**	6	12	18	8.1	23
21	10	11	6	7	2	11	0	6	8	3	6	19	0	**C**	13	9	4	8	17	10	11	19	12	13	19	8.9	24
22	16	8	7	3	11	6	3	13	5	17	17	9	4	9	13	12	9	13	9	2	15	19	31	**X**	31	10.9	23
23	20	22	15	18	21	16	19	17	22	18	9	16	9	8	2	8	3	12	4	6	15	12	**X**	28	28	13.9	23
24	19	13	7	9	27	8	11	19	13	7	24	24	20	10	0	1	13	9	12	11	6	6	15	7	27	12.1	24
25	10	6	3	4	9	6	0	19	**X**	21	31	6	**X**	4	10	7	4	15	8	**X**	13	10	13	13	31	10.1	21
26	10	13	11	13	15	14	12	11	18	4	10	12	5	15	34	26	12	9	9	4	13	20	18	9	34	13.2	24
27	12	11	3	6	15	8	5	7	12	11	5	8	5	7	11	12	14	13	18	12	12	12	6	5	18	9.6	24
28	13	17	17	6	7	10	12	16	11	6	7	13	9	14	1	4	0	1	13	7	7	3	**X**	**X**	17	8.8	22
29	8	0	7	0	9	0	8	7	**X**	13	11	0	11	**X**	18	7	7	9	2	1	0	**X**	8	3	18	6.1	21
30	0	1	7	6	5	6	10	15	4	16	8	13	7	12	18	17	4	5	6	11	9	9	9	6	18	8.5	24
31	9	6	5	5	7	4	19	7	30	10	11	9	8	13	11	9	6	11	11	6	8	10	10	9	30	9.8	24
HOURLY MAX	20	41	23	18	30	16	20	19	30	21	38	61	20	22	34	26	17	22	25	19	15	20	31	28			
HOURLY AVG	10.5	9.7	9.5	7.6	8.8	7.7	9.3	10.4	10.8	9.1	12.3	11.8	8.1	9.0	9.6	8.6	7.2	9.8	8.8	7.6	8.2	9.0	9.7	9.6			

STATUS FLAG CODES

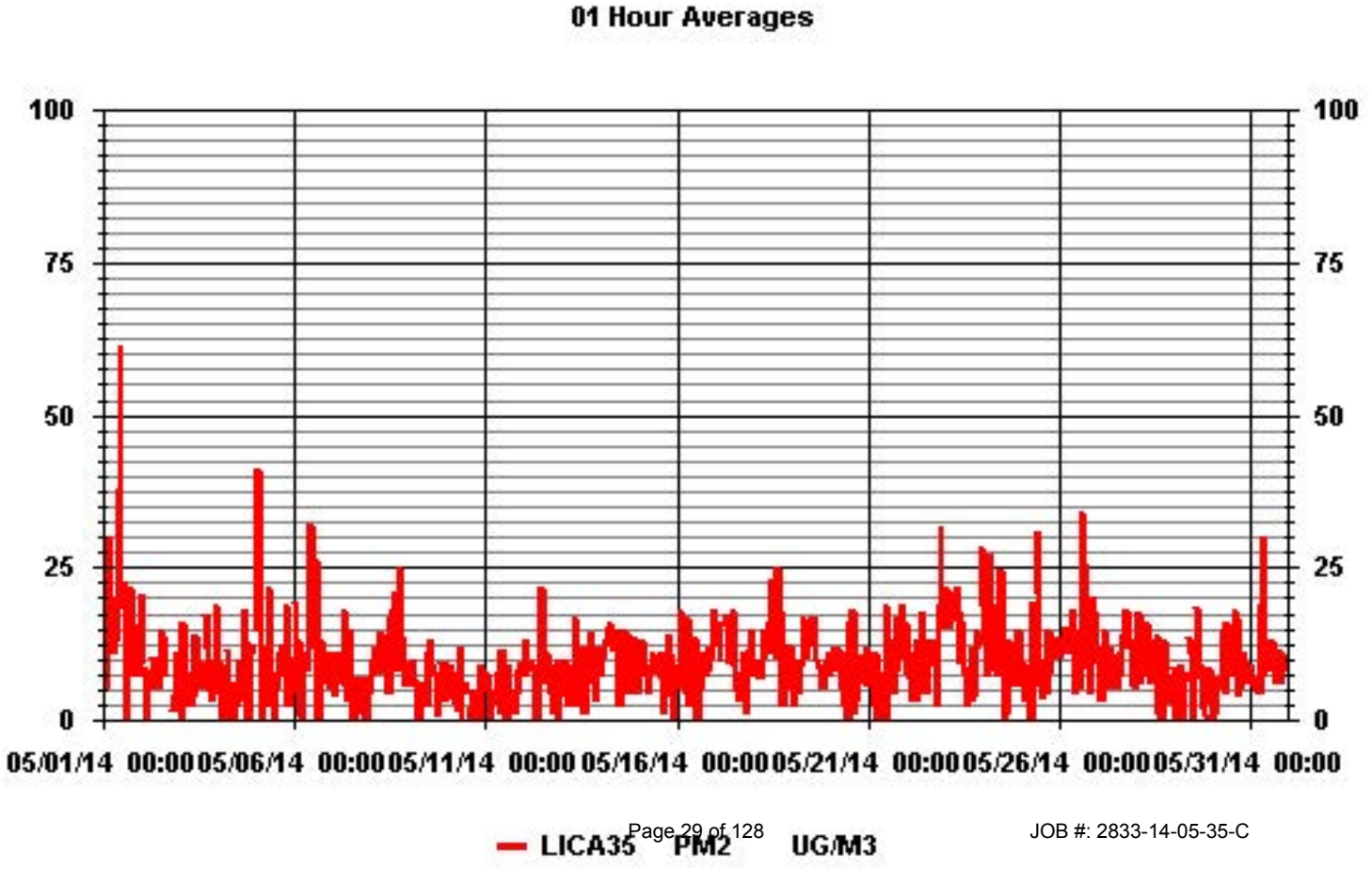
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	0						
NUMBER OF NON-ZERO READINGS:	669						
MAXIMUM 1-HR AVERAGE:	61	ug/m3	@ HOUR(S)	11	ON DAY(S)	1	
MAXIMUM 24-HR AVERAGE:	15.7	ug/m3			ON DAY(S)	1	
					VAR-VARIOUS		
			OPERATIONAL TIME:			712	HRS
MONTHLY CALIBRATION TIME:	2	HRS	AMD OPERATION UPTIME:			95.7	%
STANDARD DEVIATION:	6.23		MONTHLY AVERAGE:			9.28	ug/m3



JOB #: 2833-14-05-35-C

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

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30	3.08	1.96	4.21	6.88	8.56	5.61	2.94	2.52	1.82	2.66	2.24	6.03	11.79	14.04	16.43	7.86	98.73
<	60	.00	.00	.00	.00	.28	.00	.00	.00	.00	.00	.00	.14	.14	.14	.42	.00	1.12
<	80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.14
<	120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.08	1.96	4.21	6.88	8.84	5.61	2.94	2.52	1.82	2.66	2.24	6.17	11.93	14.18	16.85	8.00	

Calm : .00 %

Total # Operational Hours : 712

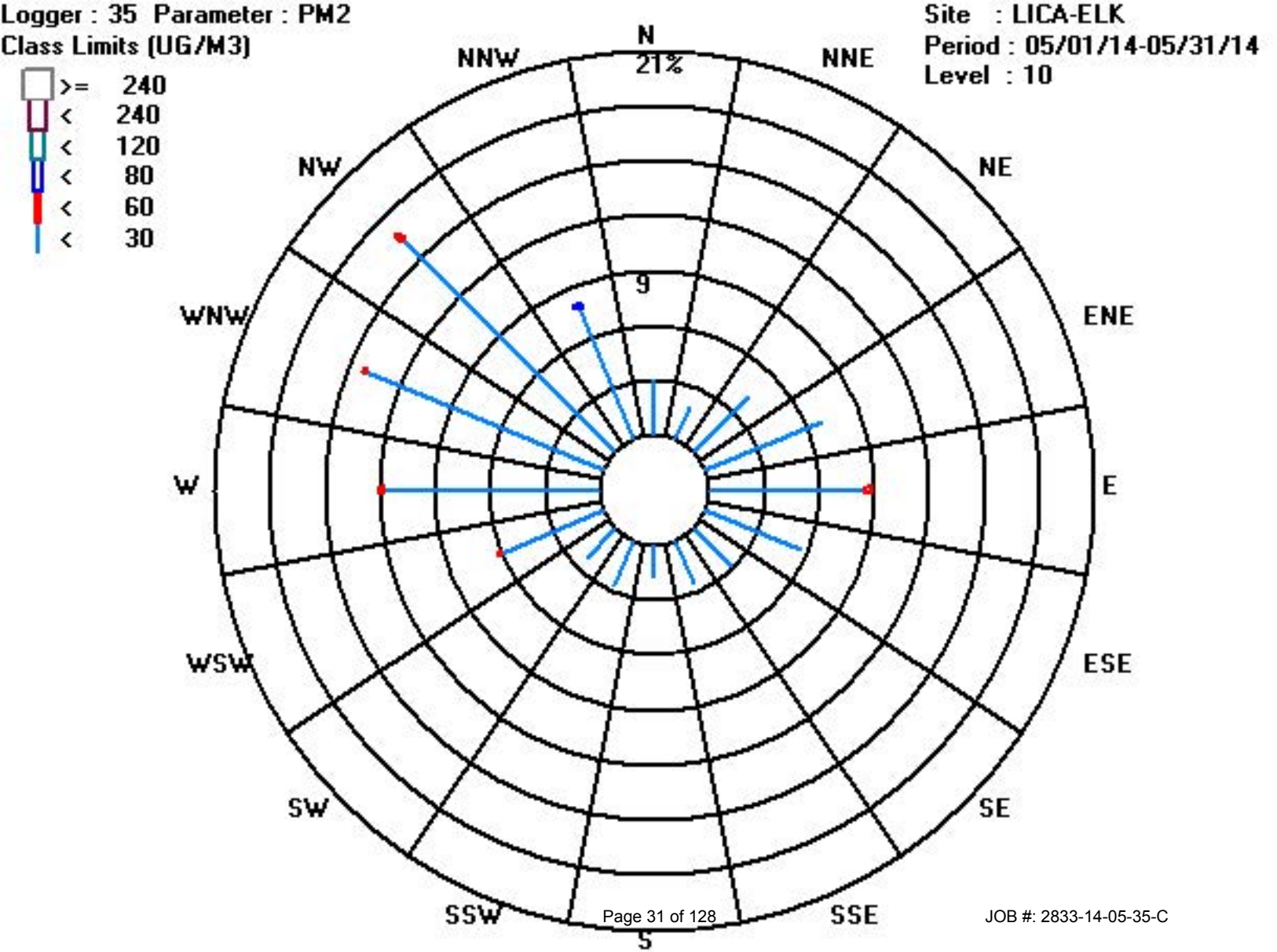
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30	22	14	30	49	61	40	21	18	13	19	16	43	84	100	117	56	703
<	60					2							1	1	1	3		8
<	80																1	1
<	120																	
<	240																	
>=	240																	
	Totals	22	14	30	49	63	40	21	18	13	19	16	44	85	101	120	57	

Calm : .00 %

Total # Operational Hours : 712



JOB #: 2833-14-05-35-C

Nitrogen Dioxide

Lakeland Industry & Community Association - Elk Point Site

MAY 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

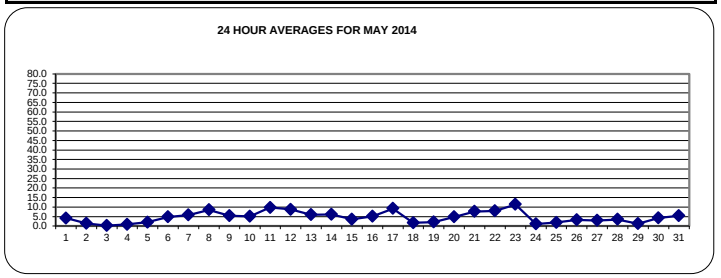
MST

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	7.8	9.6	16.2	11.2	9.4	6.7	3.1	1.4	1.1	0.6	0.6	0.5	0.5	0.5	0.3	0.4	0.4	0.4	0.5	0.6	3.3	7.1	**S**	14.2	16.2	4.2	24
2	21.2	3.1	0.4	3.8	2.5	1.6	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0.2	0	21.2	1.4	24
3	0	0	0.9	0.2	0	0	0	0	0	0	0	0	0	0.1	0.1	0.2	0.5	0.9	0.9	0.5	**S**	0.8	0	0	0.9	0.2	24
4	0.6	0.2	0.2	0.1	0.3	1.6	0.6	1.5	1.2	1.1	1	0.7	0.5	0.4	0.4	0.3	0.3	1	0.8	**S**	1.8	1.7	1.6	1.4	1.8	0.8	24
5	1	0.5	0.8	2.7	0.7	0.2	0.3	0.9	2.5	1.1	0.4	0.3	0	0.3	0.9	0.7	0.9	0.8	**S**	6.8	8.1	8.1	7	1.2	8.1	2.0	24
6	3.6	0.9	1.9	2.6	11.3	22.2	13.4	1.9	0.5	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0	1	4.2	0.7	7.8	22.2	4.8	24
7	5.6	9.3	7.2	5.3	6.8	7	5	3.3	0.6	0	0	0	0.4	0	0	0	**S**	0.1	0	0	11.8	17	27	27.5	27.5	5.8	24
8	15.8	14.1	14.1	15.4	12.9	8.7	6.7	4.3	2.3	1.4	0.8	1	1.4	0.8	0.8	**S**	1.4	1.4	2	6.8	13.2	19.5	23.6	27.2	27.2	8.5	24
9	31.8	32.1	31.5	14.2	0.4	0.3	0.2	1	1.1	0.2	0.1	0	0	0	**S**	0.9	0.3	0.3	0.5	0.8	1.1	1.9	1.2	4.9	32.1	5.4	24
10	26.9	14.6	18.4	13	3.5	1.3	0.5	0.4	0.3	0.3	0.3	0	0.1	**S**	0.1	0	0	0	0	0	0	0.3	9	28.6	28.6	5.1	24
11	25.2	23.9	26.6	15.5	10.7	9.7	9.2	1.2	0	0	0	0	**S**	0.7	0.2	0.2	0.1	0.1	0.1	0.4	9.5	20.5	***36.7***	33.6	***36.7***	9.7	24
12	31	25.7	26.1	25	21.7	19.9	13.6	6.2	1.2	0.6	0	**S**	1.2	0.5	0	0.2	0	0	0	0.2	4.4	9.5	8	5.9	31	8.7	24
13	15.8	12.5	13.9	11	9	4.2	2	0.2	0.1	0.1	**S**	0.5	0.3	0.4	0.4	0.3	0.2	0.2	0.1	0.6	16.4	14	17	17.4	17.4	5.9	24
14	9.6	10.5	9.6	13.1	19	13.3	10	10.2	4.6	**S**	1.1	1	0.5	0.7	1	1.9	1.6	2.3	7.1	6.4	4.5	7.6	2.8	2.8	19	6.1	24
15	2.5	13.1	11.7	5.5	8.4	9.5	6.3	2	**S**	1.6	1.1	1.6	1.8	2.8	**S**	0.9	2	1.8	1.8	1	0.9	0.7	0.9	0.8	13.1	3.6	24
16	0.6	0.6	0.6	0.6	0.7	0.7	1	**S**	2	1.8	1.7	1.3	1.5	1.3	1	1	0.7	1	3.6	13.9	13.2	15.3	19	35.1	35.1	5.1	24
17	32.3	35	30.5	24	19.6	19.8	**S**	14.3	7.7	4.8	1	0.9	0.7	0.8	1	0.9	1	1.4	2.2	1.3	2.4	5.6	2.6	2	35	9.2	24
18	1.9	1.1	1	1.3	1.4	**S**	2.3	2.1	2.6	2	2.2	1.7	1.8	2	2.1	2.1	2	2.1	1.8	1.5	1.9	1	0.9	0.9	2.6	1.7	24
19	0.9	1	1	1.1	**S**	1.9	1.6	1.6	0.9	0.9	0.9	1.8	2.7	1.8	1.1	1	1	3.4	4.3	3.9	4.2	2.9	4	4.9	4.9	2.1	24
20	4.6	7.1	7	**S**	15.7	15.4	9.9	3.7	3.5	2.6	2.9	1.7	1.9	2.3	2.1	2.1	1.6	3.3	3.4	3.6	5.6	6.5	2.4	2	15.7	4.8	24
21	4.9	10.2	**S**	8.6	9.9	10	7.9	6.5	3.9	3.5	3.9	3	2.7	2.5	1.6	1.2	1.1	1.4	1.8	3.7	33.6	24.3	15.9	13.7	33.6	7.6	24
22	17.9	**S**	18	13.9	19.7	9.7	4	1.7	1.4	1.1	1.4	1.9	1.8	1.7	2.2	2.1	2	1.5	1.8	8.2	19.1	14.2	13.2	24.2	24.2	7.9	24
23	**S**	34.4	33.7	30.6	11.6	15.4	10.1	10.5	5.4	4.3	1.8	2	2.1	1.8	1.4	1.4	1.2	4.8	1.3	3.1	21.7	22.8	29.2	**S**	34.4	***11.4***	24
24	3.2	1.1	1	0.9	1.2	3.7	1.5	0.8	0.4	0.5	0.5	0.6	0.6	0.4	0.3	0.3	0.2	0.4	0.2	0.4	0.5	2.7	**S**	2.9	3.7	1.1	24
25	2.6	2.4	3.1	3	4.5	3.5	2.6	0.9	0.7	0.6	0.5	0.6	0.5	0.5	0.6	1	1.3	2	1.1	1.8	3.4	**S**	2.7	2.2	4.5	1.8	24
26	2.2	1.9	2.6	2.7	5.3	6.9	3.8	4.9	3.9	2.6	3.1	3.4	3.5	3	2.5	2.2	2.4	3.3	1.9	1.6	**S**	4.1	2.8	3	6.9	3.2	24
27	1.9	7.4	3.1	3.8	1.9	3.2	1.1	0.8	1	0.5	0.6	0.7	0.6	0.4	0.6	1	0.9	1.1	1.4	**S**	1.6	5.6	16.7	11.4	16.7	2.9	24
28	12.7	12.7	12.9	10.2	8.2	5.2	4	2.5	2	1.2	0.8	0.4	0.6	0.5	0.8	1.6	0.6	0.5	**S**	1	0.5	0.5	0.6	0.3	12.9	3.5	24
29	0.5	0.2	0.3	0.3	0.3	2	**S**	**S**	2.6	2.3	0.7	0.7	1.7	1.9	1.2	1.2	0.9	**S**	1.9	1.3	1.2	0.8	1	3.3	3.3	1.3	24
30	1.1	6.8	5.5	7.4	6.6	7.8	2.8	2	1.4	1.2	0.7	0.7	0.4	0.3	0.1	0.1	**S**	1.8	1.9	2.5	4.6	7.1	18.8	15.1	18.8	4.2	24
31	7.1	8.6	17.8	17	17.4	14.6	6.2	5	1.9	1.3	0.4	0.2	0.3	0.2	0.2	**S**	2	4.8	1.9	3.9	2.6	2.5	4.2	3.8	17.8	5.4	24
HOURLY MAX	32	35	34	31	22	22	14	14	8	5	4	3	4	3	3	2	2	5	7	14	34	24	37	35			
HOURLY AVG	9.8	10.0	10.6	8.8	8.0	7.5	4.5	3.2	1.9	1.3	1.0	0.9	1.0	1.0	0.8	0.9	1.0	1.5	1.5	2.6	6.6	7.9	9.3	9.9			

STATUS FLAG CODES

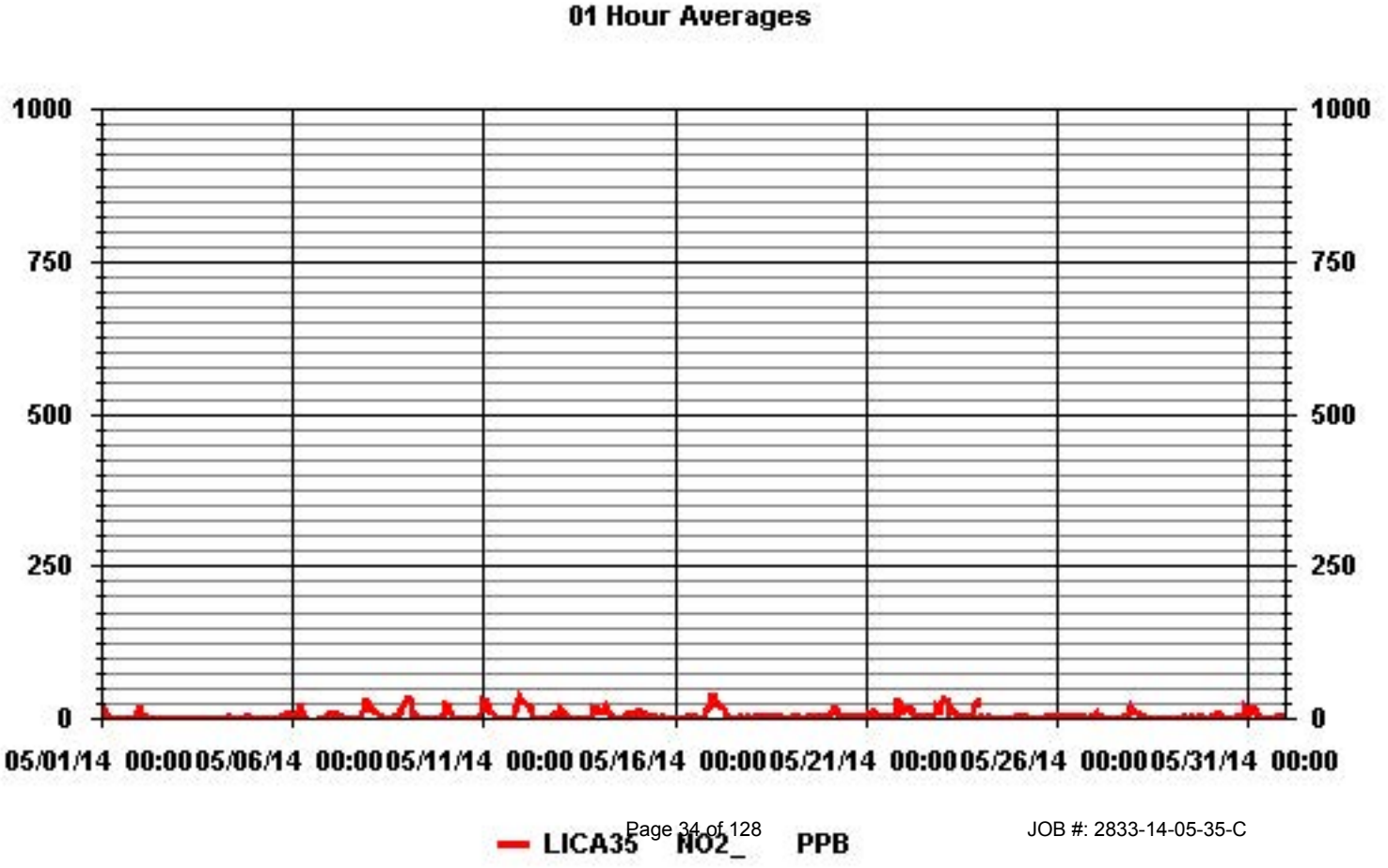
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 159 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	643					
MAXIMUM 1-HR AVERAGE:	36.7	PPB	@ HOUR(S)	22	ON DAY(S)	11
MAXIMUM 24-HR AVERAGE:	11.4	PPB			ON DAY(S)	23
					VAR-VARIOUS	
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	7.09		MONTHLY AVERAGE:		4.71	PPB



JOB #: 2833-14-05-35-C

Lakeland Industry & Community Association - Elk Point Site

MAY 2014

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	9.4	16	20.4	19.2	20.3	9.3	5.5	1.7	1.6	0.8	0.8	0.5	0.6	0.8	0.7	0.5	1.1	0.6	0.6	1.5	11.3	14.6	**S**	21.6	21.6	6.9	24
2	30.9	16.3	0.9	10.8	5.9	3.1	0.7	0.5	0.6	0.5	0.5	0.4	0.5	0.7	0.5	0.5	0.7	0.4	0.5	0.5	0.4	**S**	1.5	0.9	30.9	3.4	24
3	1.1	1.3	2.2	1.6	1.1	0.5	0.7	0.7	0.6	0.6	0.7	0.8	1.1	1	1	1.3	1.4	1.8	2.1	1.5	**S**	1.4	0.5	0.6	2.2	1.1	24
4	1.2	1.3	1.3	1.1	1.5	2.9	1.7	2.7	2.1	1.7	1.3	1.3	0.8	0.8	0.6	0.7	0.8	1.5	1.4	**S**	2.3	2.5	2.4	2.4	2.9	1.6	24
5	2	1.3	3.2	8.9	1.9	0.8	1	4	17.5	2.9	1.4	1.1	0.6	1.3	1.9	1.8	1.7	2.1	**S**	16.4	15.6	17.8	19.5	2	19.5	5.5	24
6	7.1	5.1	11.5	7.3	20.7	30.1	20.8	4.3	2.1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0.9	0.2	9.6	9.6	2.1	21.3	30.1	10.2	24
7	18.9	14.7	11.7	7.6	9.5	9.5	6	5.6	1.8	0.4	0.8	0.5	1.1	0.7	0.6	0.2	**S**	1.7	1	1.3	40.6	38.6	41.6	39.6	41.6	11.0	24
8	18.5	16.6	24.7	19.5	17.9	12.9	9.5	6.1	4	3.2	2.6	2.8	3.5	2.4	2.3	**S**	2.4	2.7	3.1	12.7	22	25.1	41.1	42.1	42.1	12.9	24
9	37.1	38.4	38.6	34.8	1.2	1.1	0.9	2.1	2.1	1	0.6	0.5	0.6	0.6	**S**	1.7	1	0.9	0.9	1.3	2	3.7	2.7	14.5	38.6	8.2	24
10	34.3	23.9	25.1	25.9	7	2.2	1.1	1.2	0.9	0.7	0.8	0.7	0.6	**S**	1.4	0.7	0.8	0.7	0.7	0.9	0.7	1.7	23.8	32.5	34.3	8.2	24
11	31.3	30.9	30	20	13.8	13.9	11.1	9.3	0.2	0.3	1.2	0.5	**S**	17.8	0.7	0.8	0.6	0.5	0.7	1.5	42.2	34.4	42.2	37.1	42.2	14.8	24
12	35.9	29.4	30.5	28.4	28.4	22.9	20.7	10.5	2.9	1.3	0.4	**S**	8.9	1.1	0.7	0.7	0.8	0.7	0.7	1.1	15.9	19.4	15.2	14.5	35.9	12.7	24
13	25.2	15.5	30.2	21.6	16.3	5.2	3.4	1	0.9	0.8	**S**	1.4	1	0.9	1	1.1	1	0.9	0.8	1.8	49.7	28.6	29.8	29.2	49.7	11.6	24
14	13.2	16.6	12.5	18	22.7	16.8	15.9	14.5	6.9	**S**	1.8	2.8	2.3	2.3	2.8	6.6	4.7	7.6	17.8	17.4	8.3	14.8	5.1	9.8	22.7	10.5	24
15	6.8	26.5	25	9.4	15.2	12.8	10.7	3.1	**S**	2.4	1.8	5.6	5.2	8.1	1.6	1.8	2.7	2.4	2.4	1.8	1.3	1.4	1.5	1.5	26.5	6.6	24
16	1.1	1.2	1.1	1.1	1.3	1.4	1.7	**S**	3	2.6	2.6	2	13.3	3.5	1.9	2.1	1.5	2.1	11.5	21.5	18.9	24.6	32.8	43.7	43.7	8.5	24
17	39	38.6	***54.7***	40.3	22.8	23.3	**S**	19.6	13.4	10.1	1.9	1.5	1.5	1.8	1.9	1.6	1.8	2.7	4	3	5	9.4	4.6	3.9	***54.7***	13.3	24
18	3.8	1.8	2.5	2.5	2.5	**S**	4.3	3.1	4.1	3.6	3.2	2.4	2.4	2.8	2.9	2.8	2.9	3.3	3.2	4.6	3.7	1.8	1.6	1.6	4.6	2.9	24
19	1.5	1.7	2	2	**S**	2.8	2.3	2.3	1.4	1.5	1.7	2.9	3.9	2.6	2.1	1.7	2.2	7.5	5.8	6.8	6.2	4.1	7.4	9.2	9.2	3.5	24
20	10.5	12.4	10.8	**S**	20.7	18.1	16	6.2	6.3	5	5.9	3.8	3	4.6	3.9	4.1	3	5.7	8.7	5.6	7.6	9.1	4.4	2.8	20.7	7.7	24
21	10.3	13.2	**S**	13.6	14.3	14.4	9.4	10	5.6	5.8	5.3	4.8	6	5.2	4	2.1	2	2.6	5.6	38.3	43.9	32.8	24.9	17.3	43.9	12.7	24
22	27.2	**S**	38.6	27.1	27.3	21.7	5.9	2.6	2.1	3.8	2.5	3.5	3.6	2.8	4.8	3.9	3.5	3	6.8	11.9	44.8	28.3	22.4	32.4	44.8	14.4	24
23	**S**	38.2	39.2	36.3	31.1	21.1	22.4	17.9	8	5.9	3.9	5.1	4.4	4.2	3.3	2.7	2.4	16.7	11.5	15.5	38.7	30.9	33.3	**S**	39.2	***17.9***	24
24	25.6	1.9	1.8	1.5	2.4	8.4	4.3	1.8	1.4	1.4	1.3	1.6	1.4	1.1	1.2	1.1	0.9	1.2	1.1	1.1	1.3	4.1	**S**	4.1	25.6	3.1	24
25	3.9	3.3	4.6	4.4	8.1	8.2	4.1	2.1	1.5	1.5	1.4	1.5	1.3	1.3	1.7	2.1	3.6	6.9	1.9	3.4	5.5	**S**	4.3	3.6	8.2	3.5	24
26	3.4	3.5	4.2	5.3	7.2	9.2	5.2	7.1	6.5	4.1	5.4	4.2	4.1	3.6	3.1	2.7	4.7	5.5	3.5	3.6	**S**	5.1	4.4	4.7	9.2	4.8	24
27	2.6	11	7.5	5.9	5.4	5.5	2	1.6	3.3	1.7	2	3.3	1.7	1.7	1.8	2.4	2.7	2.6	3.7	**S**	2.8	13.2	19.1	16.3	19.1	5.2	24
28	17.3	14.7	15.7	11.1	9.6	7.3	6.3	3.5	2.7	1.7	1.4	0.9	1.3	1.4	1.8	2.7	2.7	1.1	**S**	2.8	1.5	1.8	1.8	1.6	17.3	4.9	24
29	1.6	1.4	1.3	1.4	1.8	4	**S**	**S**	4.6	5.8	2	2.2	4.1	4.6	2.9	2.6	2.6	**S**	3.3	2.6	2.7	2.5	2.3	4.9	5.8	2.9	24
30	4.1	12.3	10	9.8	11.9	10	4.8	3.1	2.9	2.3	1.5	1.8	1.7	1.3	1.5	1.3	**S**	3.6	4.6	5.5	7.8	18.9	28.4	24.1	28.4	7.5	24
31	10.6	11	27.8	28	21	20.6	12.3	6.9	3.4	2.4	0.8	0.7	0.9	1.1	0.7	**S**	4	12.7	5.8	6.2	3.7	4.2	6.7	8.3	28	8.7	24
HOURLY MAX	39	39	55	40	31	30	22	20	18	10	6	6	13	18	5	7	5	17	18	38	50	39	42	44			
HOURLY AVG	14.5	14.0	16.3	14.1	12.4	10.7	7.3	5.3	3.8	2.6	2.0	2.1	2.8	2.8	1.9	1.9	2.2	3.5	4.0	6.6	14.3	13.9	14.7	14.9			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 702

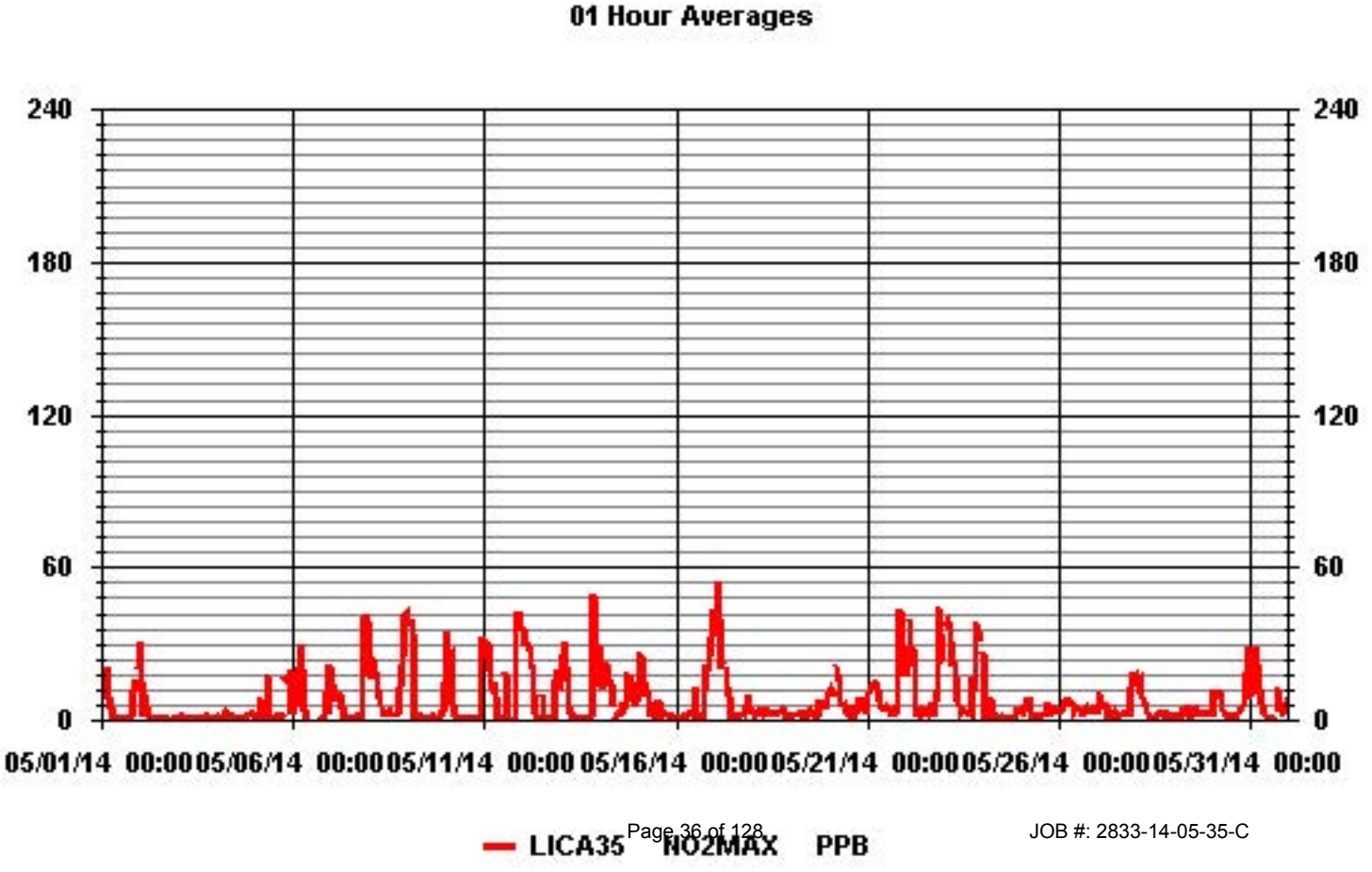
MAXIMUM INSTANTANEOUS VALUE: 54.7 PPB @ HOUR(S) 2 ON DAY(S) 17

VAR-VARIOUS

IZS CALIBRATION TIME: 33 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 10.20



JOB #: 2833-14-05-35-C

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

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

		Direction																
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	3.42	1.85	4.56	6.70	8.98	5.84	2.99	2.56	1.71	2.56	2.28	6.41	11.84	13.83	16.26	8.13	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	3.42	1.85	4.56	6.70	8.98	5.84	2.99	2.56	1.71	2.56	2.28	6.41	11.84	13.83	16.26	8.13	

Calm : .00 %

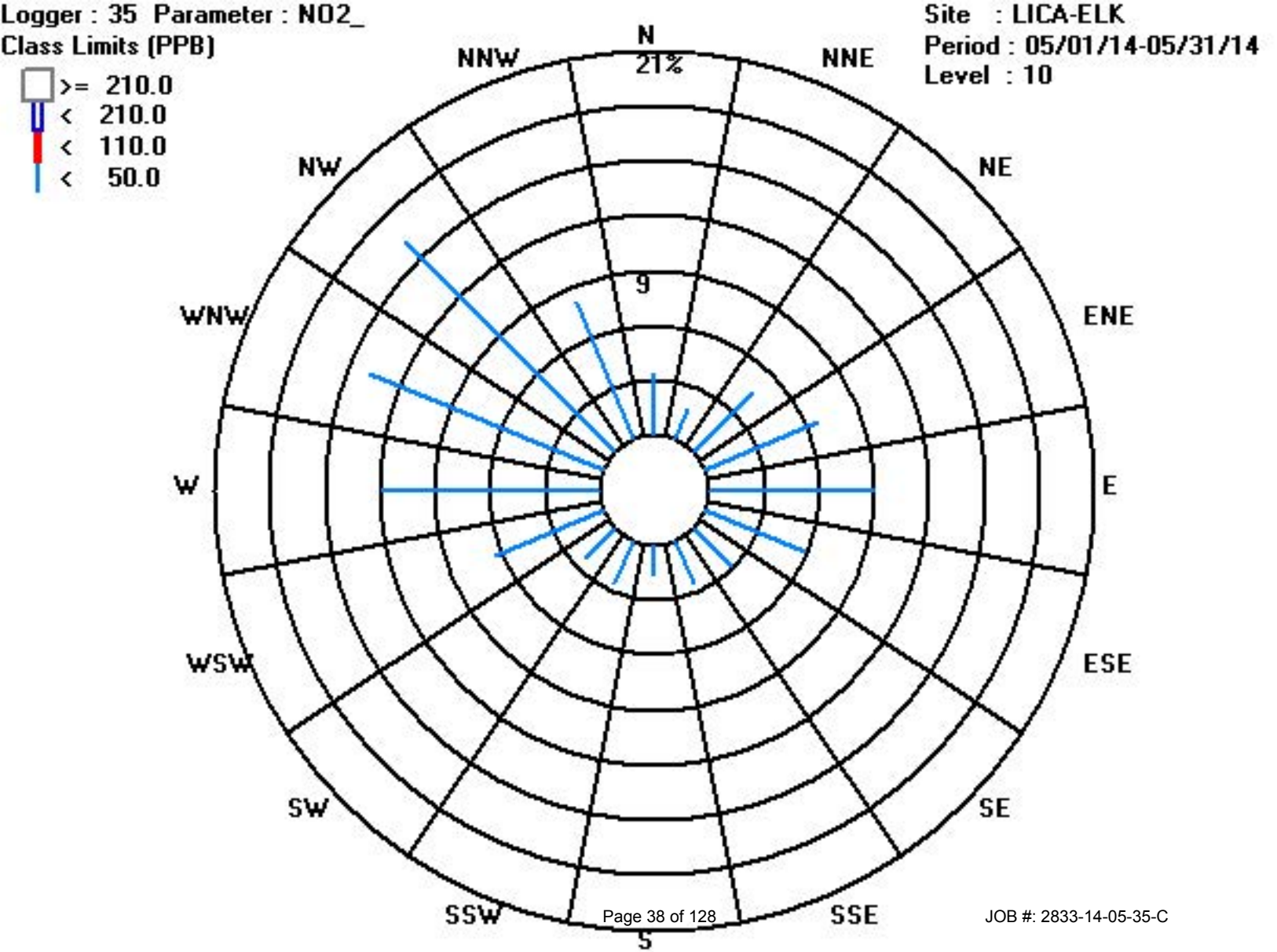
Total # Operational Hours : 701

Distribution By Samples

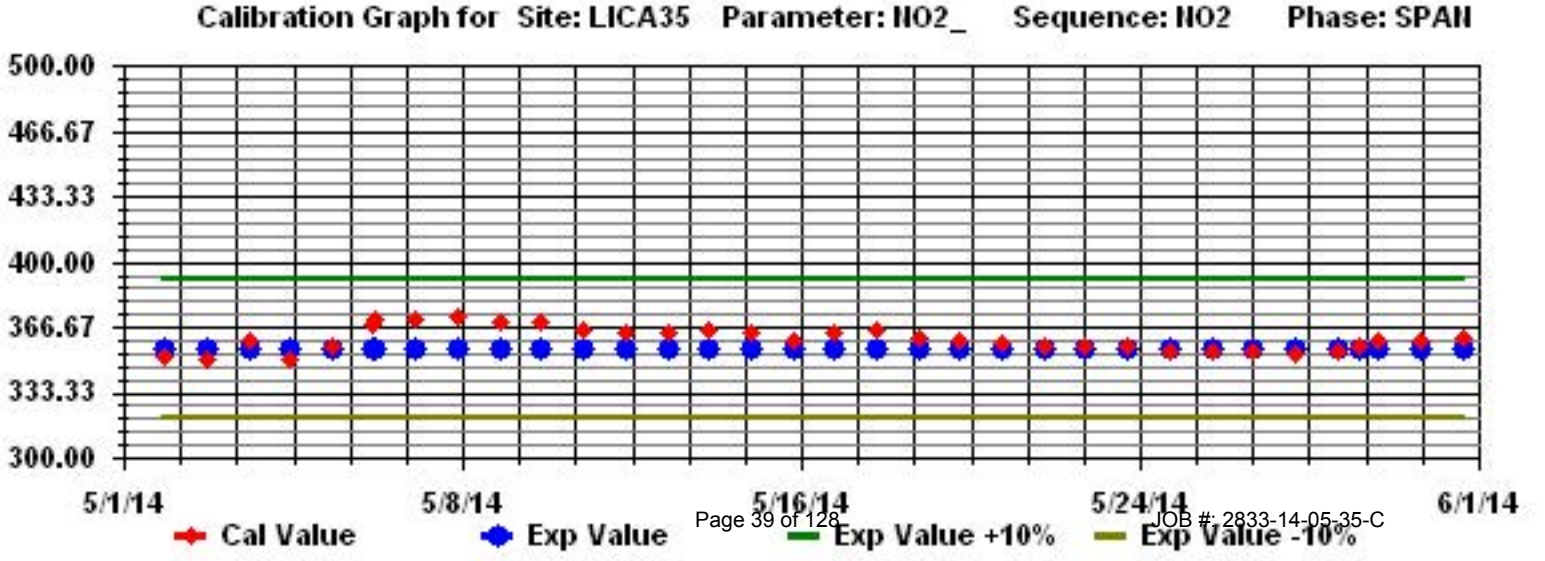
		Direction																
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	24	13	32	47	63	41	21	18	12	18	16	45	83	97	114	57	701
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	24	13	32	47	63	41	21	18	12	18	16	45	83	97	114	57	

Calm : .00 %

Total # Operational Hours : 701



JOB #: 2833-14-05-35-C


Calibration Graph for Site: LICA35 Parameter: NO2_ Sequence: NO2 Phase: SPAN
500.00
466.67
433.33
400.00
366.67
333.33
300.00
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

Lakeland Industry & Community Association - Elk Point Site

MAY 2014

NITRIC OXIDE (NO) hourly averages in ppb

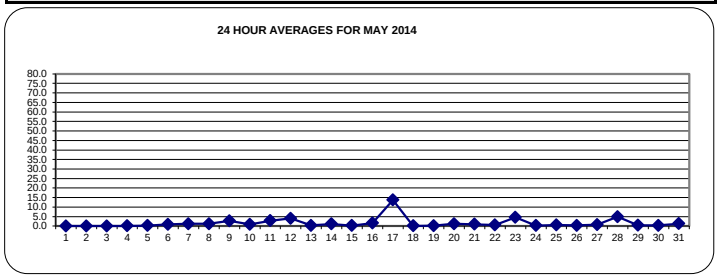
MST

HOUR START / HOUR END	0:00 1:00	1:00 2:00	2:00 3:00	3:00 4:00	4:00 5:00	5:00 6:00	6:00 7:00	7:00 8:00	8:00 9:00	9:00 10:00	10:00 11:00	11:00 12:00	12:00 13:00	13:00 14:00	14:00 15:00	15:00 16:00	16:00 17:00	17:00 18:00	18:00 19:00	19:00 20:00	20:00 21:00	21:00 22:00	22:00 23:00	23:00 0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY																											
1	0.1	0	0	0	0	0.2	0.2	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0.2	0.2	0.0	24
2	0.4	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0	0	**S**	0.1	0	0.4	0.0	24
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0	**S**	0	0	0	0.1	0.0	24
4	0	0	0	0	0	0	0	0.3	0.5	0.5	0.3	0.3	0.1	0.2	0	0	0	0	0	**S**	0	0	0	0	0.5	0.1	24
5	0	0	0	0	0	0	0	0.7	2.6	0.5	0.2	0.1	0	0	0.2	0	0.1	0.1	**S**	1	0.6	0.4	0.3	0	2.6	0.3	24
6	0	0	0	0.2	0.5	6.2	4.4	0.4	0.2	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0.4	6.2	0.8	24
7	0	0	0	0	0	1.3	1.8	1.6	0	0	0	0	0	0	0	0	**S**	0.2	0	0.1	2.4	2.8	5.4	11.6	11.6	1.2	24
8	0.8	0.3	2.1	0.8	1.2	2.1	3	2.3	1.2	0.5	0.3	0.5	0.8	0.2	0	**S**	0.1	0	0	0.2	0.4	0.8	4.1	5.3	5.3	1.2	24
9	12.7	15.8	21.9	10	0.1	0	0	0.5	0.6	0.2	0.1	0.1	0.1	0.1	**S**	0.2	0.3	0.3	0.2	0	0.1	0	0	0.2	21.9	2.8	24
10	6.9	0.5	1.5	0.9	0.1	0.1	0.1	0.3	0.3	0.2	0.1	0.2	0	**S**	0.2	0.1	0.1	0	0	0	0	0	0.3	7.8	7.8	0.9	24
11	7.1	2.4	7.7	0.4	0.5	3.1	5.5	0.8	0	0	0	0	**S**	0.7	0.2	0.3	0.2	0.1	0.2	0.3	2.6	4.9	6.8	20.4	20.4	2.8	24
12	32.5	11.7	18.4	8.2	4.5	6.5	5.9	3	0.8	0.4	0.2	**S**	0.1	0	0	0	0	0	0	0	0	0	0	0	32.5	4.0	24
13	0.1	0	2.1	0.2	0	0	0.1	0	0	0	**S**	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	2	0.5	1	0.3	2.1	0.3	24
14	0	0.2	0	0.3	4	4.7	6.3	6	1.8	**S**	0.3	0.2	0.1	0.1	0.1	0.5	0.1	0.2	0.6	0.3	0.1	0	0	0	6.3	1.1	24
15	0	1	0.7	0.1	0.4	1	1.7	0.9	**S**	0.2	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	1.7	0.3	24
16	0	0	0	0	0	0	0	**S**	0.3	0.4	0.7	0.6	0.7	0.2	0	0.1	0.1	0	0.2	0.8	0.3	1.2	1.4	28.5	28.5	1.5	24
17	37.5	21.8	56	***94.1***	56.8	35.7	**S**	8	2.5	1.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	***94.1***	***13.7***	24
18	0	0	0	0	0	**S**	0	0.2	0.3	0.3	0.2	0	0	0.2	0.1	0	0	0	0	0	0	0	0	0	0.3	0.1	24
19	0	0	0	0	**S**	0.2	0.2	0.1	0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.5	0.2	0.3	0.1	0.3	0.2	0.4	0.5	0.2	24
20	0.1	0.3	0.3	**S**	3	9.3	4.8	1.3	1.3	0.9	1.3	0.4	0.3	0.8	0.6	0.5	0.2	0.6	0.4	0	0	0	0	0	9.3	1.1	24
21	0.3	1.9	**S**	0.4	0.7	2.1	3.3	2.8	1.3	1	1.2	0.7	0.5	0.4	0	0.1	0	0	0.1	0.2	3	0.7	0.5	0.1	3.3	0.9	24
22	0.4	**S**	2.7	1.2	3.6	1.8	0.8	0.4	0.1	0	0.2	0.1	0.3	0	0	0	0.1	0.1	0	0.4	0.8	0	0	0.2	3.6	0.6	24
23	**S**	12.1	15.3	40.4	1	2.9	4.8	4.5	1.5	1.1	0.3	0.5	0.5	0.3	0	0	0	0.5	0	0	9.4	2.5	2.5	**S**	40.4	4.6	24
24	1.3	0	0.1	0	0	0.7	0.4	0.4	0.4	0.4	0.1	0.2	0.3	0.3	0.2	0.1	0.2	0.1	0.1	0	0	0.1	**S**	0.4	1.3	0.3	24
25	0.4	0.5	0.4	0.2	0.5	0.8	0.9	0.6	0.5	0.7	0.7	0.6	0.7	0.6	0.8	0.6	0.6	0.5	0.4	0.4	0.5	**S**	0	0	0.9	0.5	24
26	0	0	0	0	0	0.3	0.3	0.7	0.9	0.7	1	0.6	0.6	0.5	0.6	0.3	0	0.2	0	0	**S**	0.2	0.3	0.2	1	0.3	24
27	0.1	3.5	0.8	0.6	0.4	0.6	0.1	0.4	0.7	0.5	0.6	0.5	0.4	0.4	0.4	0.5	0.3	0.3	0.3	**S**	0	0.6	4	0.4	4	0.7	24
28	7.5	9.3	15.8	41.6	25	9.2	3	1.2	0.4	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	41.6	4.9	24
29	0	0	0	0	0	0	**S**	**S**	0.5	0.7	0.3	0.4	1.4	1.9	1.1	1	0.7	**S**	0.1	0	0	0	0	0	1.9	0.4	24
30	0	0	0	0	0.2	2.1	0.7	1	0.6	0.3	0.1	0.2	0.1	0	0	0	**S**	0.4	0.2	0.1	0	0.2	0.9	0.6	2.1	0.3	24
31	0.2	0	3.3	3.2	2.7	8.8	3	2.5	0.6	0.4	0	0.1	0.1	0	0	**S**	0.4	1	0.4	0.2	0.1	0	0.2	0.4	8.8	1.2	24
HOURLY MAX	38	22	56	94	57	36	6	8	3	2	1	1	1	2	1	1	1	1	1	1	9	5	7	29			
HOURLY AVG	3.6	2.7	5.0	6.8	3.5	3.3	1.8	1.4	0.7	0.4	0.3	0.2	0.3	0.3	0.2	0.2	0.1	0.2	0.1	0.2	0.8	0.5	1.0	2.6			

STATUS FLAG CODES

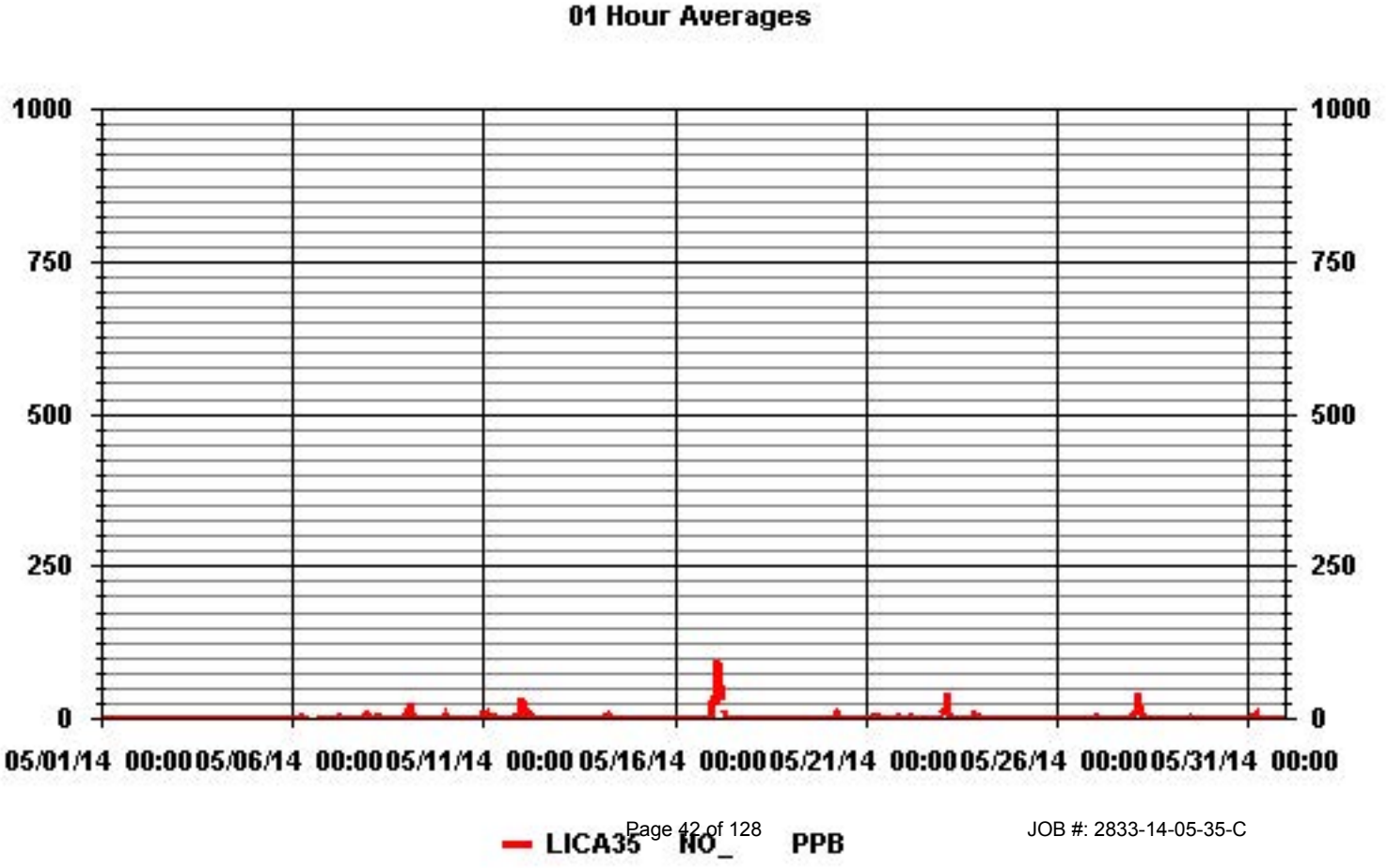
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 159 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	422					
MAXIMUM 1-HR AVERAGE:	94.1	PPB	@ HOUR(S)	3	ON DAY(S)	17
MAXIMUM 24-HR AVERAGE:	13.7	PPB			ON DAY(S) VAR-VARIOUS	17
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	6.20		MONTHLY AVERAGE:		1.52	PPB



JOB #: 2833-14-05-35-C

Lakeland Industry & Community Association - Elk Point Site

MAY 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	0.5	0.5	0.4	0.5	0.7	0.8	0.7	0.5	0.3	0.3	0.4	0.5	0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.1	0.3	S	1	1	0.4	24
2	2.1	1.2	0.4	0.6	0.3	0.5	0.6	0.6	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.5	0.4	0.5	0.4	S	0.6	0.5	2.1	0.6	24
3	0.3	0.3	0.2	0.5	0.5	0.2	0.2	0.3	0.4	0.2	0.3	0.5	0.6	0.4	0.5	0.6	0.6	0.5	0.4	0.3	S	0.7	0.2	0.5	0.7	0.4	24
4	0.2	0.1	0	0.2	0.2	0.6	0.4	1.2	1.5	1	0.9	0.9	0.8	0.8	0.6	0.6	0.6	0.6	0.3	S	0.8	0.4	0.4	0.2	1.5	0.6	24
5	0.3	0.4	0.3	0.6	0.2	0.4	0.5	2.1	28.6	2	0.8	0.7	0.6	0.5	0.8	0.6	0.6	0.8	S	2.6	2.6	2.5	3	0.5	28.6	2.3	24
6	0.5	0.4	0.7	2.1	2.9	14	7.3	1.1	0.9	C	C	C	C	C	C	C	C	C	0.3	0	0	0.5	0	4.8	14	2.4	24
7	0.6	0.2	0.2	1.3	0.4	2.8	3.1	3.4	0.7	0.1	0.5	0.2	0.7	0.4	0.1	0.1	S	0.9	0.5	0.7	24.4	32.3	42.1	45.2	45.2	7.0	24
8	4.1	1.4	26.8	3.2	4.9	5.8	4	3.6	2.3	1.4	0.9	1.3	3.2	0.8	0.5	S	0.5	0.5	0.5	0.9	2.2	2	36.4	17.9	36.4	5.4	24
9	50.4	34.1	45.1	45.4	0.6	0.6	0.6	1.3	1.3	0.7	0.7	0.6	0.6	0.5	S	1	0.9	0.9	0.8	0.5	0.6	0.5	0.6	0.9	50.4	8.2	24
10	24.3	3	7.2	5.1	0.7	0.5	0.8	1.1	0.8	0.8	0.7	0.7	0.6	S	0.7	0.6	0.6	0.6	0.4	0.4	0.5	0.4	2.6	17.6	24.3	3.1	24
11	19.8	8.3	15.7	1.2	2.2	7	8.8	6.1	0.2	0.4	0.4	0.3	S	17.6	0.8	0.7	0.7	0.6	0.6	0.9	57.8	25	19.5	40.1	57.8	10.2	24
12	51	39.6	44.9	14	13	8.4	12.2	6.1	1.5	0.8	0.8	S	0.9	0.5	0.3	0.5	0.3	0.2	0.2	0.3	0.8	1	0.4	0.3	51	8.6	24
13	1.7	0.4	21.3	2.9	1.2	0.4	0.6	0.3	0.4	0.2	S	0.8	0.8	0.6	0.8	0.8	0.6	0.5	0.5	0.6	23.9	9	4.4	1	23.9	3.2	24
14	0.5	2.4	0.5	5.1	8.3	11.1	11	9.5	3.2	S	0.8	1.1	0.9	0.8	0.7	2.2	0.9	1.1	1.7	1.2	1.1	0.8	0.3	0.4	11.1	2.9	24
15	0.5	8.9	3.7	0.6	1.5	1.8	3.7	1.6	S	0.9	0.4	0.9	1	1.6	0.4	0.7	0.7	0.3	0.4	0.3	0.2	0.1	0.3	0.2	8.9	1.3	24
16	0.2	0.3	0.1	0.1	0.3	0.1	0.1	S	0.9	0.9	1.4	1.3	13.2	1.4	0.6	0.6	0.6	0.7	1	2.3	1.1	5.5	5.8	80.5	80.5	5.2	24
17	98.6	48.2	116.8	***163.1***	91.5	51.2	S	13	8.2	4.4	0.6	0.4	0.6	0.6	0.3	0.3	0.4	0.5	0.7	0.5	0.4	0.4	0.3	0.4	***163.1***	***26.1***	24
18	0.4	0.5	0.6	0.4	0.4	S	0.7	0.8	1.1	1.1	0.8	0.6	0.5	0.9	0.6	0.4	0.5	0.4	0.3	0.2	0.3	0.3	0.3	0.2	1.1	0.5	24
19	0.3	0.2	0.3	0.2	S	0.8	0.7	0.7	0.5	0.5	0.6	0.9	0.9	0.8	0.9	0.5	0.5	1.8	0.8	0.9	0.8	1	0.9	1.3	1.8	0.7	24
20	0.9	1.1	0.8	S	6.4	15.5	10.4	3.5	2.9	2.2	4	1.4	1.1	1.7	1.4	1.6	0.9	1.6	1.9	0.3	0.5	0.6	0.4	0.4	15.5	2.7	24
21	2.4	3.4	S	1.6	3	3.8	4.3	5.7	2.2	2.3	2	1.6	1.7	2.1	1.3	0.7	0.3	0.5	0.6	7.7	8.5	3.8	2.3	0.5	8.5	2.7	24
22	1.6	S	27.8	12.2	27.7	6.7	1.8	1	0.6	0.9	0.7	0.7	1.3	0.5	0.9	0.7	0.7	0.6	0.6	1.7	14.3	0.9	1.6	0.9	27.8	4.6	24
23	S	24.8	19.5	112.4	11.6	6.2	23.8	14.2	2.8	2	1	2	1.9	1.5	1.1	0.9	0.7	3.4	2.1	3.2	115.9	14.5	5.3	S	115.9	16.9	24
24	21.2	0.7	0.6	0.5	0.5	2	1.3	0.9	0.9	0.9	0.7	0.6	0.9	0.9	0.6	0.6	0.7	0.7	0.7	0.6	0.6	0.5	S	0.9	21.2	1.7	24
25	1	1	1	0.8	2	1.6	1.7	1.1	0.9	1.2	1.4	1.2	1.5	1	1.5	1.2	1.6	1.2	0.9	0.8	1.1	S	0.4	0.5	2	1.2	24
26	0.2	0.4	0.4	0.5	0.3	0.9	0.8	1.9	1.9	1.7	3.1	1.9	1.3	1.1	1.2	1	0.6	1.5	0.6	0.3	S	0.8	0.8	0.8	3.1	1.0	24
27	0.8	7.4	3.5	1.3	1.8	2.2	0.8	0.9	2.5	1.3	1.2	1.7	1.1	1.1	1	1.2	0.9	0.9	0.9	S	0.4	8	12.9	2.1	12.9	2.4	24
28	44.4	20.2	52.4	61.4	48.6	33.5	7.4	2.2	1	0.6	0.4	0.4	0.1	0.4	0.4	0.9	0.4	0.1	S	0.4	0	0	0	0	61.4	12.0	24
29	0	0	0	0	0	0.6	S	S	1.7	1.9	0.8	1	3.1	3.1	1.9	2.1	1.3	S	0.7	0.3	0.2	0	0.1	0.2	3.1	0.9	24
30	0.1	0.6	0.3	0.4	1.2	4.3	2.1	2.1	1.5	0.9	0.7	0.9	0.6	0.6	0.5	0.5	S	1.2	0.9	0.9	0.6	2	4	2.4	4.3	1.3	24
31	0.7	0.6	14.5	20.6	8	23.4	7.9	4.7	1.6	1	0.5	0.6	0.6	0.4	0.3	S	1.1	2.8	1.4	0.7	0.5	0.4	0.6	1.1	23.4	4.1	24
HOURLY MAX	99	48	117	163	92	51	24	14	29	4	4	2	13	18	2	2	2	3	2	8	116	32	42	81			
HOURLY AVG	11.0	7.0	13.5	15.3	8.0	6.9	4.1	3.2	2.5	1.1	1.0	0.9	1.4	1.5	0.7	0.8	0.7	0.9	0.7	1.0	9.0	3.9	5.1	7.4			

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: 688

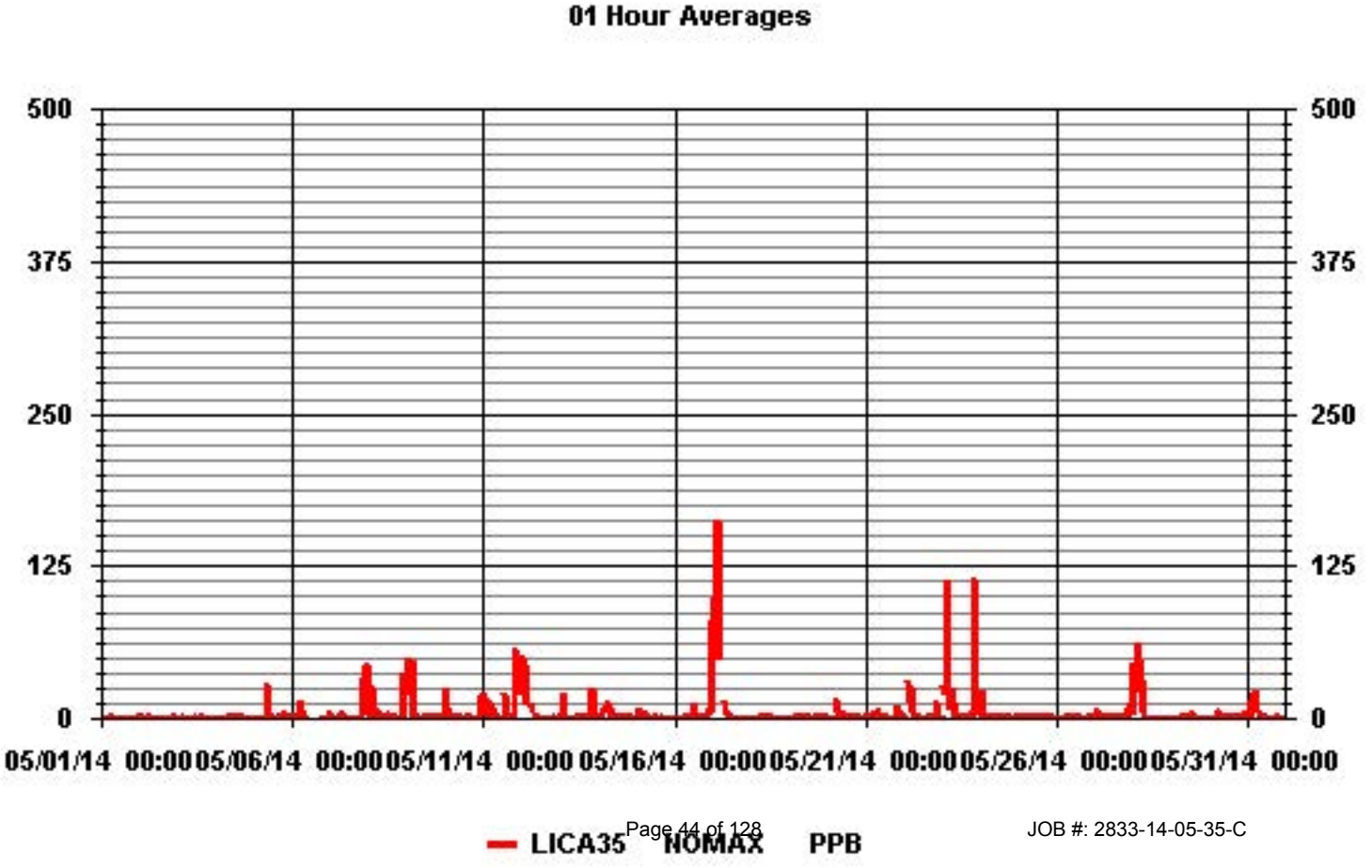
MAXIMUM INSTANTANEOUS VALUE: 163.1 PPB @ HOUR(S) 3 ON DAY(S) 17

VAR-VARIOUS

IZS CALIBRATION TIME: 33 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 13.88



JOB #: 2833-14-05-35-C

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

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

		Direction																
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	3.41	1.85	4.55	6.69	8.83	5.84	2.99	2.56	1.70	2.56	2.27	6.41	11.68	13.81	16.23	8.11	99.57
<	110.0	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.14	.14	.00	.00	.42
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.41	1.85	4.55	6.69	8.97	5.84	2.99	2.56	1.70	2.56	2.27	6.41	11.82	13.96	16.23	8.11	

Calm : .00 %

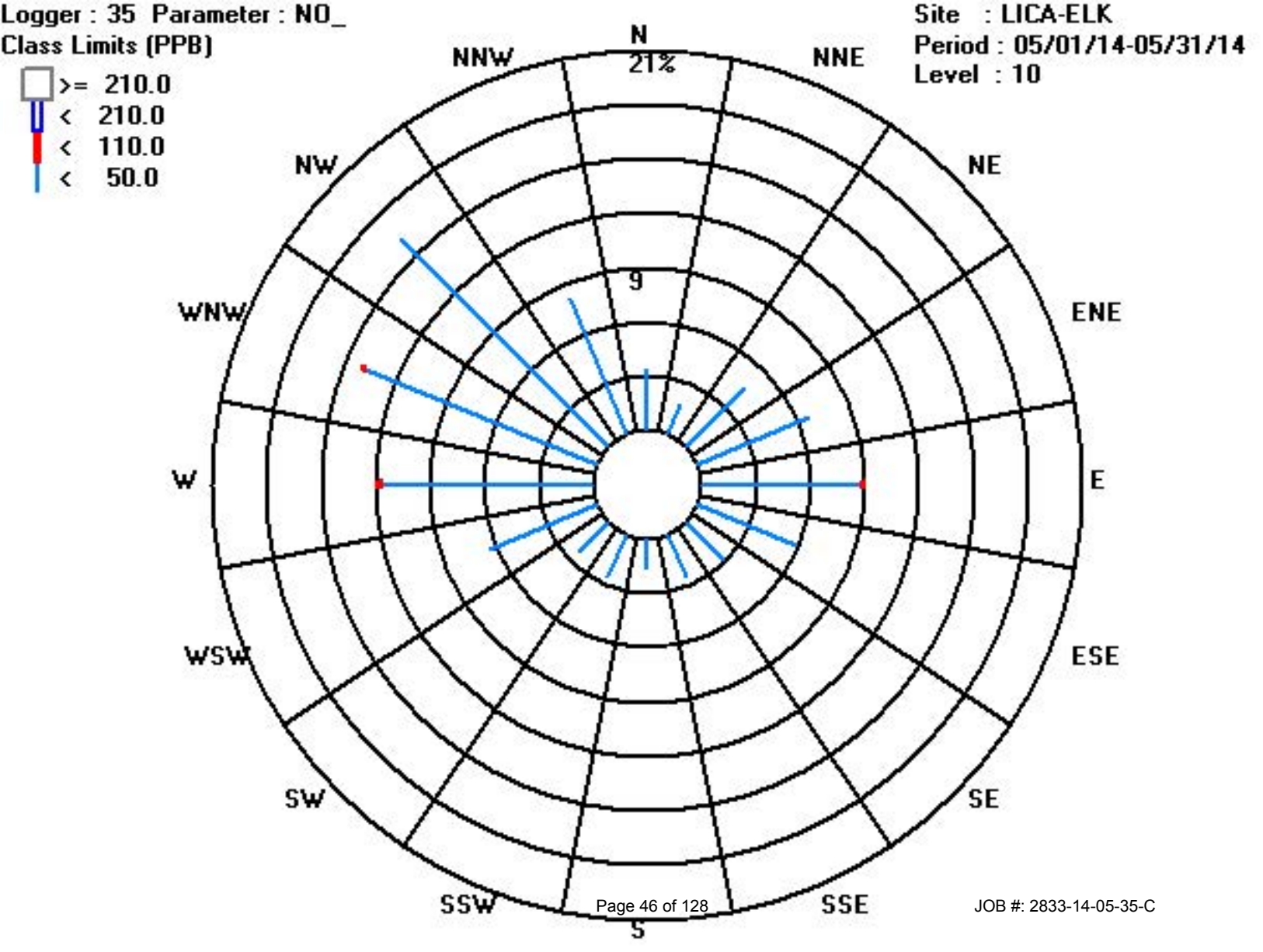
Total # Operational Hours : 702

Distribution By Samples

		Direction																
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	24	13	32	47	62	41	21	18	12	18	16	45	82	97	114	57	699
<	110.0					1								1	1			3
<	210.0																	
>=	210.0																	
	Totals	24	13	32	47	63	41	21	18	12	18	16	45	83	98	114	57	

Calm : .00 %

Total # Operational Hours : 702



JOB #: 2833-14-05-35-C

Oxides of Nitrogen

Lakeland Industry & Community Association - Elk Point Site

MAY 2014

OXIDES OF NITROGEN (NOx) hourly averages in ppb

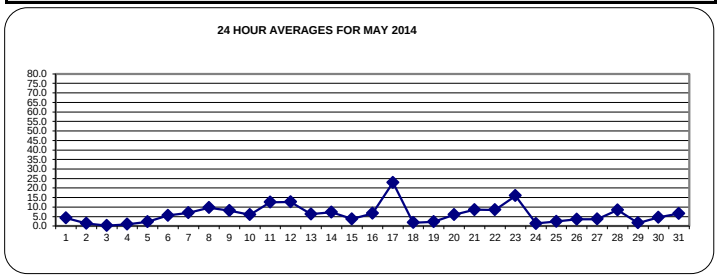
MST

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	7.9	9.6	16.2	11.2	9.4	6.9	3.3	1.5	1.1	0.6	0.6	0.5	0.5	0.5	0.3	0.4	0.4	0.4	0.5	0.6	3.3	7.1	S	14.4	16.2	4.2	24
2	21.6	3.1	0.4	3.8	2.5	1.6	0.2	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0	0	S	0.3	0	21.6	1.5	24
3	0	0	0.9	0.2	0	0	0	0	0	0	0	0	0	0.1	0.1	0.3	0.6	0.9	0.9	0.5	S	0.8	0	0	0.9	0.2	24
4	0.6	0.2	0.2	0.1	0.3	1.6	0.6	1.8	1.7	1.6	1.3	1	0.6	0.6	0.4	0.3	0.3	1	0.8	S	1.8	1.7	1.6	1.4	1.8	0.9	24
5	1	0.5	0.8	2.7	0.7	0.2	0.3	1.6	5.1	1.6	0.6	0.4	0	0.3	1.1	0.7	1	0.9	S	7.8	8.7	8.5	7.3	1.2	8.7	2.3	24
6	3.6	0.9	1.9	2.8	11.8	28.4	17.8	2.3	0.7	C	C	C	C	C	C	C	C	C	0	0	0	1	4.2	0.7	8.2	28.4	5.6	24
7	5.6	9.3	7.2	5.3	6.8	8.3	6.8	4.9	0.6	0	0	0	0.4	0	0	0	S	0.3	0	0.1	14.2	19.8	32.4	39.1	39.1	7.0	24
8	16.6	14.4	16.2	16.2	14.1	10.8	9.7	6.6	3.5	1.9	1.1	1.5	2.2	1	0.8	S	1.5	1.4	2	7	13.6	20.3	27.7	32.5	32.5	9.7	24
9	44.5	47.9	53.4	24.2	0.5	0.3	0.2	1.5	1.7	0.4	0.2	0.1	0.1	0.1	S	1.1	0.6	0.6	0.7	0.8	1.2	1.9	1.2	5.1	53.4	8.2	24
10	33.8	15.1	19.9	13.9	3.6	1.4	0.6	0.7	0.6	0.5	0.4	0.2	0.1	S	0.3	0.1	0.1	0	0	0	0	0.3	9.3	36.4	36.4	6.0	24
11	32.3	26.3	34.3	15.9	11.2	12.8	14.7	2	0	0	0	0	S	1.4	0.4	0.5	0.3	0.2	0.3	0.7	12.1	25.4	43.5	54	54	12.5	24
12	63.5	37.4	44.5	33.2	26.2	26.4	19.5	9.2	2	1	0.2	S	1.3	0.5	0	0.2	0	0	0	0.2	4.4	9.5	8	5.9	63.5	12.7	24
13	15.9	12.5	16	11.2	9	4.2	2.1	0.2	0.1	0.1	S	0.7	0.4	0.5	0.5	0.5	0.4	0.3	0.2	0.7	18.4	14.5	18	17.7	18.4	6.3	24
14	9.6	10.7	9.6	13.4	23	18	16.3	16.2	6.4	S	1.4	1.2	0.6	0.8	1.1	2.4	1.7	2.5	7.7	6.7	4.6	7.6	2.8	2.8	23	7.3	24
15	2.5	14.1	12.4	5.6	8.8	10.5	8	2.9	S	1.8	1.1	1.6	1.8	3	0.9	0.9	2	1.8	1.8	1	0.9	0.7	0.9	0.8	14.1	3.7	24
16	0.6	0.6	0.6	0.6	0.7	0.7	1	S	2.3	2.2	2.4	1.9	2.2	1.5	1	1.1	0.8	1	3.8	14.7	13.5	16.5	20.4	63.6	63.6	6.7	24
17	69.8	56.8	86.5	***118.1***	76.4	55.5	S	22.3	10.2	6.5	1	0.9	0.7	0.8	1	0.9	1	1.4	2.2	1.3	2.4	5.6	2.6	2	***118.1***	***22.9***	24
18	1.9	1.1	1	1.3	1.4	S	2.3	2.3	2.9	2.3	2.4	1.7	1.8	2.2	2.2	2.1	2	2.1	1.8	1.5	1.9	1	0.9	0.9	2.9	1.8	24
19	0.9	1	1	1.1	S	2.1	1.8	1.7	0.9	1	1	2	2.9	2	1.3	1.2	1.1	3.9	4.5	4.2	4.3	3.2	4.2	5.3	5.3	2.3	24
20	4.7	7.4	7.3	S	18.7	24.7	14.7	5	4.8	3.5	4.2	2.1	2.2	3.1	2.7	2.6	1.8	3.9	3.8	3.6	5.6	6.5	2.4	2	24.7	6.0	24
21	5.2	12.1	S	9	10.6	12.1	11.2	9.3	5.2	4.5	5.1	3.7	3.2	2.9	1.6	1.3	1.1	1.4	1.9	3.9	36.6	25	16.4	13.8	36.6	8.6	24
22	18.3	S	20.7	15.1	23.3	11.5	4.8	2.1	1.5	1.1	1.6	2	2.1	1.7	2.2	2.1	2.1	1.6	1.8	8.6	19.9	14.2	13.2	24.4	24.4	8.5	24
23	S	46.5	49	71	12.6	18.3	14.9	15	6.9	5.4	2.1	2.5	2.6	2.1	1.4	1.4	1.2	5.3	1.3	3.1	31.1	25.3	31.7	S	71	15.9	24
24	4.5	1.1	1.1	0.9	1.2	4.4	1.9	1.2	0.8	0.9	0.6	0.8	0.9	0.7	0.5	0.4	0.4	0.5	0.3	0.4	0.5	2.8	S	3.3	4.5	1.3	24
25	3	2.9	3.5	3.2	5	4.3	3.5	1.5	1.2	1.3	1.2	1.2	1.2	1.1	1.4	1.6	1.9	2.5	1.5	2.2	3.9	S	2.7	2.2	5	2.3	24
26	2.2	1.9	2.6	2.7	5.3	7.2	4.1	5.6	4.8	3.3	4.1	4	4.1	3.5	3.1	2.5	2.4	3.5	1.9	1.6	S	4.3	3.1	3.2	7.2	3.5	24
27	2	10.9	3.9	4.4	2.3	3.8	1.2	1.2	1.7	1	1.2	1.2	1	0.8	1	1.5	1.2	1.4	1.7	S	1.6	6.2	20.7	11.8	20.7	3.6	24
28	20.2	22	28.7	51.8	33.2	14.4	7	3.7	2.4	1.2	0.8	0.4	0.6	0.5	0.8	1.6	0.6	0.5	S	1	0.5	0.5	0.6	0.3	51.8	8.4	24
29	0.5	0.2	0.3	0.3	0.3	2	S	S	3.1	3	1	1.1	3.1	3.8	2.3	2.2	1.6	S	2	1.3	1.2	0.8	1	3.3	3.8	1.6	24
30	1.1	6.8	5.5	7.4	6.8	9.9	3.5	3	2	1.5	0.8	0.9	0.5	0.3	0.1	0.1	S	2.2	2.1	2.6	4.6	7.3	19.7	15.7	19.7	4.5	24
31	7.3	8.6	21.1	20.2	20.1	23.4	9.2	7.5	2.5	1.7	0.4	0.3	0.4	0.2	0.2	S	2.4	5.8	2.3	4.1	2.7	2.5	4.4	4.2	23.4	6.6	24
HOURLY MAX	70	57	87	118	76	56	20	22	10	7	5	4	4	4	3	3	2	6	8	15	37	25	44	64			
HOURLY AVG	13.4	12.7	15.6	15.6	11.5	10.9	6.2	4.6	2.6	1.7	1.3	1.2	1.3	1.2	1.0	1.1	1.1	1.6	1.6	2.8	7.4	8.4	10.3	12.5			

STATUS FLAG CODES

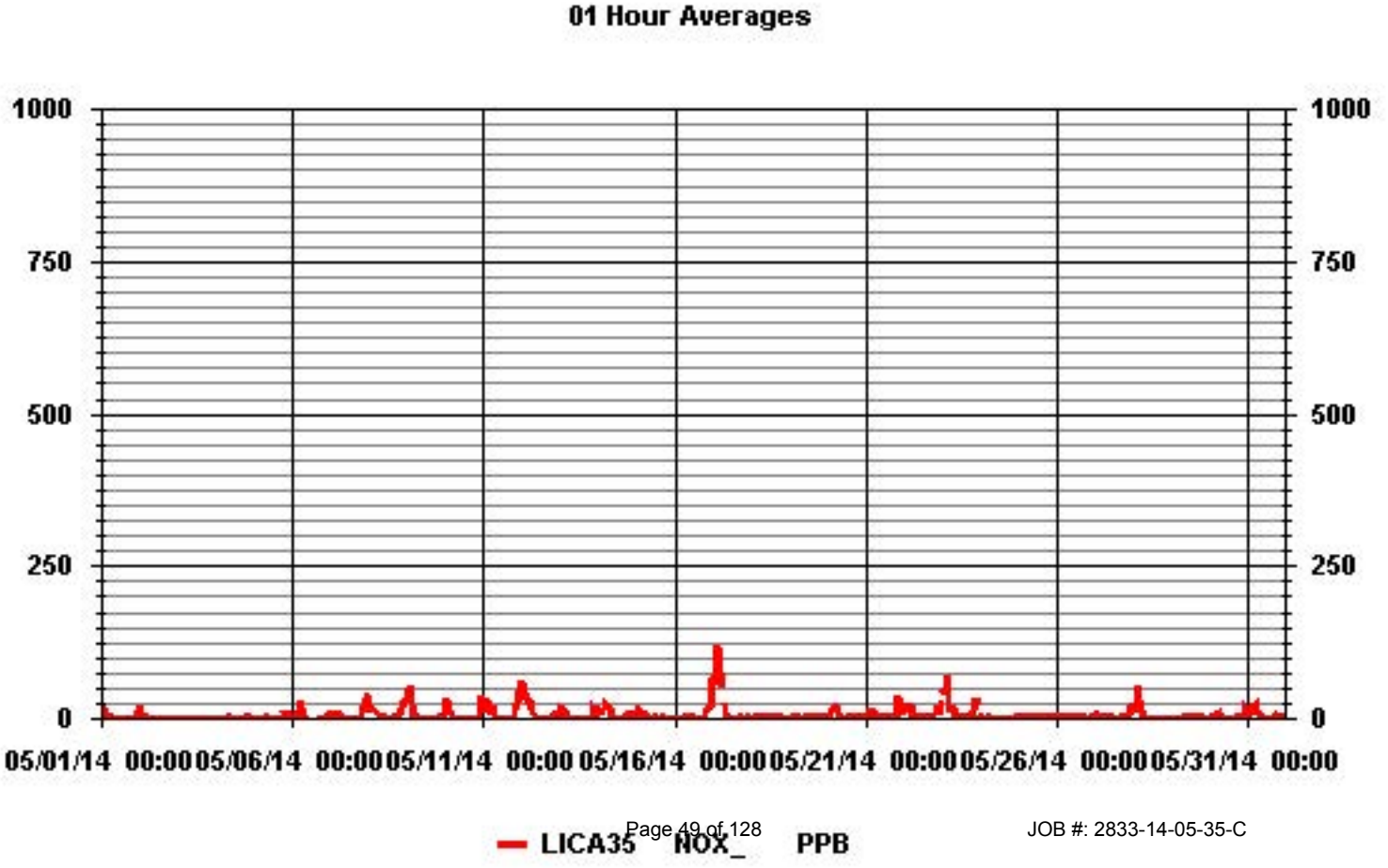
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	654					
MAXIMUM 1-HR AVERAGE:	118.1	PPB	@ HOUR(S)	3	ON DAY(S)	17
MAXIMUM 24-HR AVERAGE:	22.9	PPB			ON DAY(S) VAR-VARIOUS	17
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	11.68		MONTHLY AVERAGE:		6.22	PPB



JOB #: 2833-14-05-35-C

Lakeland Industry & Community Association - Elk Point Site

MAY 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	10	16.8	21.1	19.8	21.1	10	6.4	2.3	2	1.2	1.2	0.9	1	1.1	0.8	0.8	1.4	0.8	1.1	1.7	11.7	14.9	**S**	22.1	22.1	7.4	24
2	32.8	17.5	1	10.6	5.7	3.1	0.7	0.3	0.5	0.5	0.7	0.3	0.5	0.9	0.3	0.4	0.4	0.5	0.4	0.3	0.3	**S**	1.3	0.4	32.8	3.5	24
3	0.7	0.8	1.6	1.1	0.4	0	0.1	0.1	0.1	0.1	0.2	0.5	0.6	0.6	0.6	0.9	1.2	1.6	1.6	0.9	**S**	2	0.5	0.6	2	0.7	24
4	1.2	1.4	1.3	0.9	1.1	3.1	1.6	3.6	3.5	2.6	1.9	1.8	1.1	1.2	1.1	0.9	0.9	2	1.5	**S**	2.8	2.4	2.2	2.3	3.6	1.8	24
5	1.8	1.2	3	8.9	1.6	0.7	1	5.9	32.9	4.4	1.9	1.4	0.6	1.5	2.5	1.7	1.8	2.6	**S**	18.5	17.7	20.3	22.5	2.1	32.9	6.8	24
6	7.3	4.9	11.7	9.2	23.1	44	28.1	5	2.5	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1.3	0	9.6	10.2	1.8	26.4	44	12.3	24
7	19.6	15.4	12	9.1	9.8	12.6	8.9	8.8	2.3	0.2	1	0.4	2	0.8	0.8	0.5	**S**	1.8	0.5	0.9	62.7	69.5	79	83.1	83.1	17.5	24
8	21.9	17.4	45.3	21.8	21.6	18.3	12.3	9	5.4	4	2.8	3	5.7	2.6	2.3	**S**	2.6	2.7	2.9	12.9	23.7	26	76.2	58.9	76.2	17.4	24
9	81.3	67.8	78.4	78.5	1.1	0.7	0.8	2.5	2.4	1	0.9	0.4	0.4	0.5	**S**	2.1	1.3	1.2	1	1.3	1.9	3.9	3.1	15.6	81.3	15.1	24
10	58.3	26.8	32.5	31	7.2	2.3	1.2	1.6	1.2	1.2	1.1	0.8	0.6	**S**	1.2	0.6	0.4	0.4	0.3	0.4	0.4	1.4	25.7	44.8	58.3	10.5	24
11	49.8	38.8	45.3	20.7	15.9	21	19.8	15.3	0	0	1	0	**S**	35.3	1	1.1	0.8	0.5	0.9	1.8	96.9	58.8	57.4	74.3	96.9	24.2	24
12	85.5	65.2	73.2	41.7	41.5	30.4	33.2	16.5	3.9	1.8	0.8	**S**	9.1	1	0.6	0.8	0.5	0.5	0.4	1.1	16.3	19.8	15.8	14.5	85.5	20.6	24
13	26.8	15.5	50.2	25.1	16.8	5.3	3.5	0.9	0.7	0.6	**S**	1.7	1	1	1	1	0.9	0.8	0.7	1.7	71	33.8	34.1	30.1	71	14.1	24
14	13	18.4	12.7	23.1	30	27.1	27.2	23.8	9.7	**S**	2.2	3.7	2.7	2.9	2.9	8.1	5.2	8.3	19.3	18.1	8.9	15	5	9.7	30	12.9	24
15	6.6	35.1	28.1	9.3	15.3	14.1	12.8	4	**S**	3.1	2.1	6.7	6.2	9.7	1.6	2.4	3.1	2.5	2.4	1.6	1.5	1.4	1.4	1.3	35.1	7.5	24
16	1.1	1.2	1.1	1.1	1.2	1.4	1.6	**S**	3.4	2.8	3.1	2.5	23.4	4.2	1.8	1.8	1.4	1.9	12.2	23.2	19.1	25.8	38	116.1	116.1	12.6	24
17	136.9	84.4	157.2	***190.5***	114.4	72.4	**S**	32.7	21.6	13.3	2	1.4	1.2	1.8	1.6	1.6	1.5	2.9	4.3	3.1	4.7	9.4	4.3	3.6	***190.5***	***37.7***	24
18	3.7	1.6	2.5	2.2	2.3	**S**	4.4	3.4	5.1	4.3	3.5	2.6	2.4	3.3	3.2	2.8	2.8	3.4	3	4.4	3.4	1.8	1.6	1.5	5.1	3.0	24
19	1.3	1.5	1.8	1.7	**S**	3.2	2.5	2.4	1.4	1.6	1.6	3.5	4.5	2.8	2.4	1.9	2.5	8.7	6.3	7.2	6.9	4.5	7.9	10.3	10.3	3.8	24
20	11	13	11.2	**S**	27.1	32.5	26.4	9.3	9.1	6.9	9.8	5	3.6	5.8	5	5	3.5	7.2	10.2	5.5	7.8	9.5	4.5	2.6	32.5	10.1	24
21	12.5	16.3	**S**	14.7	17	17.2	13.3	15.3	7.5	7.3	6.8	6.2	7.5	7.2	5	2.2	2.3	2.5	5.8	44.1	52.3	36	26.3	17.6	52.3	14.9	24
22	28.1	**S**	65.2	39.2	54	28.6	6.7	2.9	2.1	4.5	2.9	3.9	4	2.9	5.3	4.4	3.9	3.3	6.9	13.2	56.7	28.6	22.7	32.9	65.2	18.4	24
23	**S**	60.9	58.5	139.8	42.8	26.2	46	32.2	10.2	7.3	4.4	6.3	5.1	4.9	4.1	3	2.7	19.8	13.6	18.5	151.5	45.4	37.3	**S**	151.5	33.7	24
24	47	1.8	1.9	1.7	2.2	9.8	5.1	2.1	1.7	1.6	1.5	1.6	1.7	1.4	1.1	0.9	1	1.2	1	0.8	1.2	4.1	**S**	4.3	47	4.2	24
25	4	3.4	4.6	4.6	9.8	9.4	5	2.7	1.7	2	1.7	2.1	2.3	1.7	2.5	2.7	4.1	7.6	2.2	3.7	6	**S**	4.6	3.5	9.8	4.0	24
26	3.3	3.3	4	5.4	7.3	9.9	5.8	8.8	8.2	5.8	8	5.9	5.1	4.4	3.7	3.1	4.9	7.2	3.9	3.6	**S**	5.6	4.9	4.5	9.9	5.5	24
27	2.8	17.8	10.6	6.6	6.7	7.2	2.1	2	5.6	2.7	2.3	4.4	2.5	1.9	2.2	2.5	2.9	2.7	4.2	**S**	3.1	21.6	30.8	18.6	30.8	7.1	24
28	59.6	34.8	68.3	72.1	58.6	41.2	14.2	5.6	3.5	2.3	1.5	1.2	1.3	1.7	1.8	3.1	3	1.3	**S**	2.6	0.9	1.4	1.5	0.9	72.1	16.6	24
29	1.1	0.9	0.8	0.8	1.4	4.1	**S**	**S**	5.3	6.7	1.5	2.1	5.9	6.5	3.6	3.5	2.7	**S**	3.3	2.4	2.6	2.1	1.8	4.3	6.7	3.0	24
30	3.6	12.6	9.8	9.9	12.2	13.6	7.1	4.7	4	2.4	1.5	1.9	1.6	1.2	1.3	1.3	**S**	4.5	5.1	5.9	7.7	20.7	32.3	26	32.3	8.3	24
31	10.5	11	42.3	48.9	29.3	42.6	20.2	11.4	4.5	3	1.1	0.9	0.8	1.2	0.8	**S**	4.5	15.4	7.2	6.4	3.8	4.4	6.9	8.7	48.9	12.4	24
HOURLY MAX	137	84	157	191	114	72	46	33	33	13	10	7	23	35	5	8	5	20	19	44	152	70	79	116			
HOURLY AVG	24.8	20.3	28.6	28.3	20.0	17.1	11.0	8.1	5.4	3.3	2.4	2.5	3.6	3.9	2.1	2.2	2.3	4.0	4.3	7.1	22.5	17.3	19.0	21.4			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 697

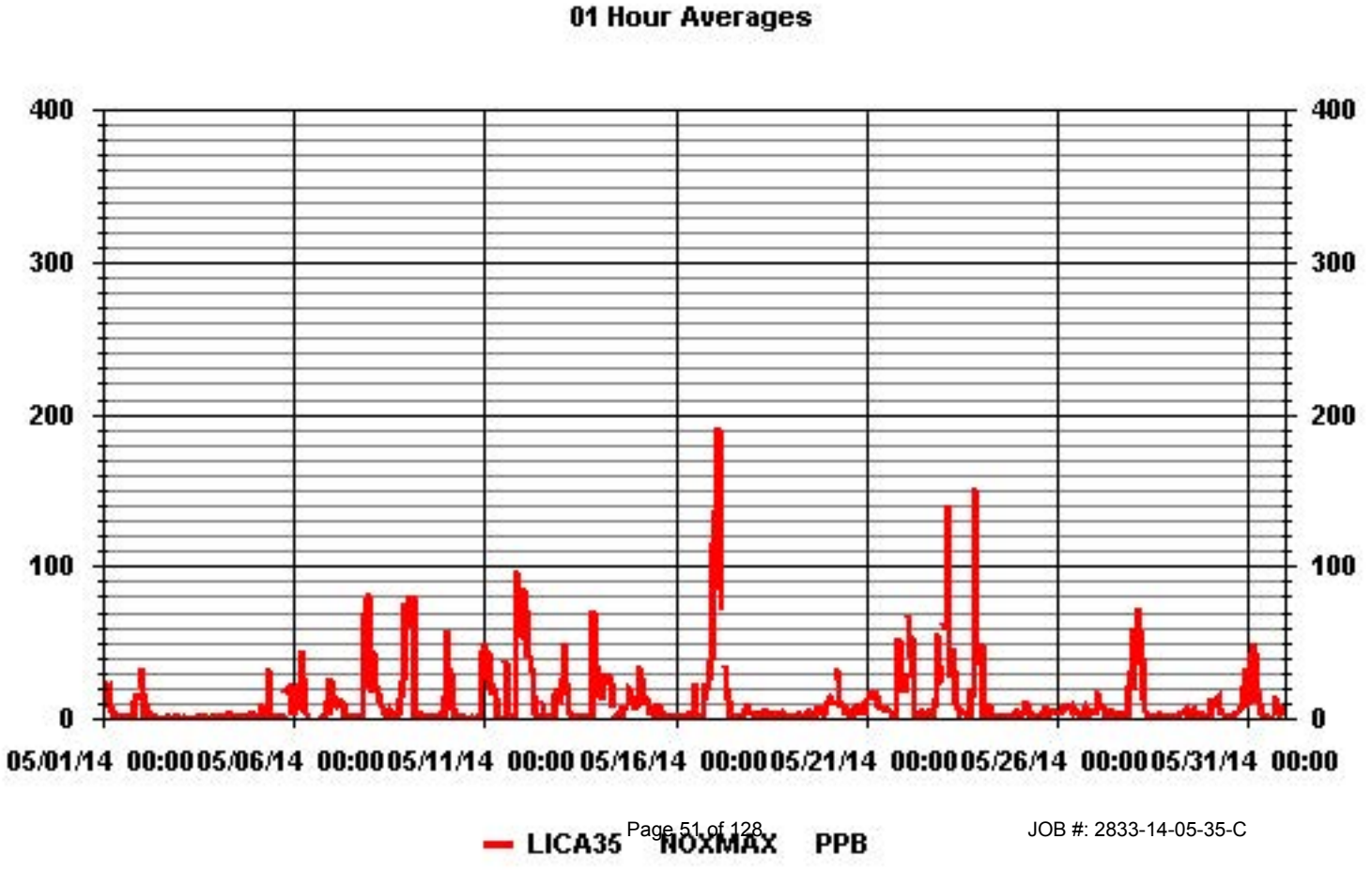
MAXIMUM INSTANTANEOUS VALUE: 190.5 PPB @ HOUR(S) 3 ON DAY(S) 17

VAR-VARIOUS

IZS CALIBRATION TIME: 33 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 21.08



JOB #: 2833-14-05-35-C

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

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	3.41	1.85	4.55	6.69	8.83	5.84	2.99	2.56	1.70	2.56	2.27	6.41	11.53	12.67	16.23	8.11	98.29
<	110.0	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.28	1.13	.00	.00	1.56
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.14
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.41	1.85	4.55	6.69	8.97	5.84	2.99	2.56	1.70	2.56	2.27	6.41	11.82	13.96	16.23	8.11	

Calm : .00 %

Total # Operational Hours : 702

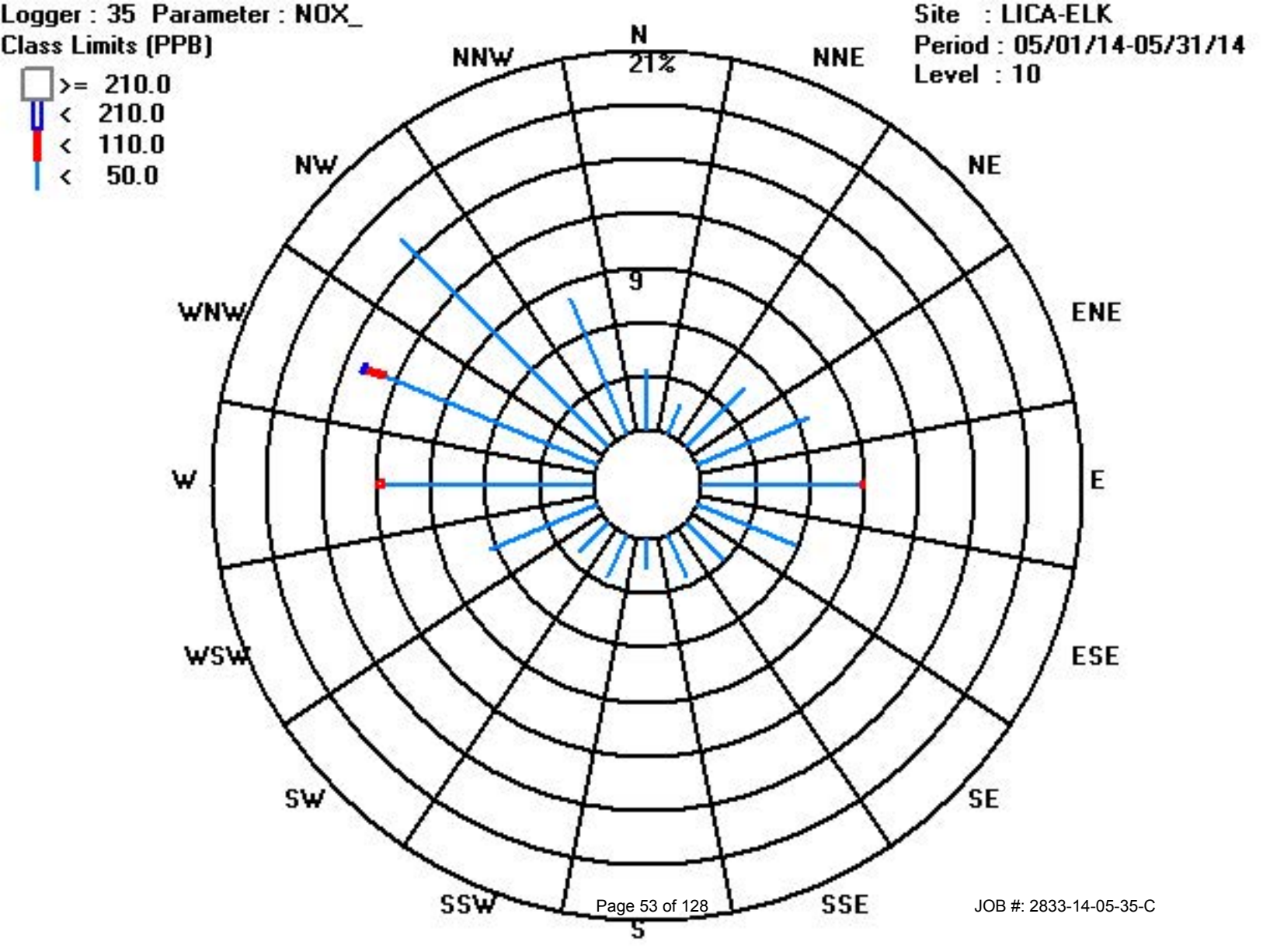
Distribution By Samples

Direction

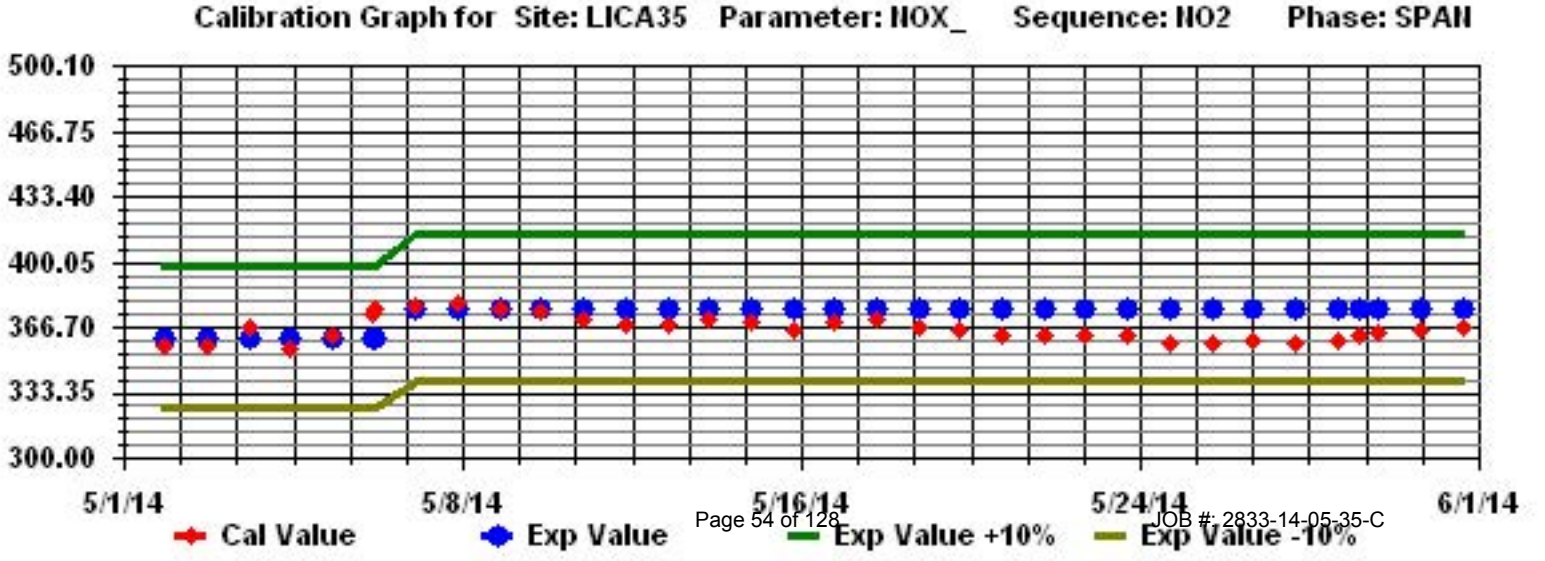
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	24	13	32	47	62	41	21	18	12	18	16	45	81	89	114	57	690
<	110.0					1								2	8			11
<	210.0														1			1
>=	210.0																	
	Totals	24	13	32	47	63	41	21	18	12	18	16	45	83	98	114	57	

Calm : .00 %

Total # Operational Hours : 702



JOB #: 2833-14-05-35-C


Calibration Graph for Site: LICA35 Parameter: NOX_ Sequence: NO2 Phase: SPAN
500.10
466.75
433.40
400.05
366.70
333.35
300.00
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

Lakeland Industry & Community Association - St. Lina Site

MAY 2014

OZONE (O3) hourly averages in ppb

MST

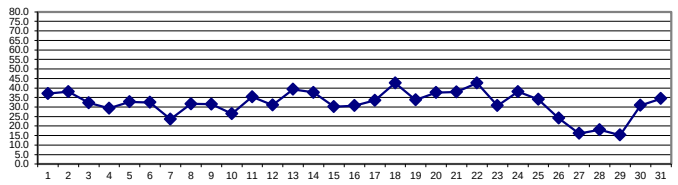
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	37	34	27	32	32	30	31	S	34	35	37	37	38	41	42	42	44	46	46	47	42	35	S	25	47	37.0	24
2	16	34	38	34	34	34	37	41	41	41	40	41	42	43	42	42	43	42	41	40	39	S	35	34	43	38.0	24
3	33	31	28	30	30	32	35	36	34	35	35	34	32	32	32	33	32	31	31	32	S	30	31	31	36	32.2	24
4	29	29	29	30	30	S	29	28	28	27	27	29	31	32	33	35	35	33	32	S	28	24	24	24	35	29.4	24
5	23	21	21	20	22	25	29	S	29	32	35	39	41	42	43	44	44	44	S	33	33	30	34	36	44	32.7	24
6	33	43	42	35	25	12	19	32	41	38	37	36	32	33	33	34	C	C	39	38	33	27	30	21	43	32.4	24
7	22	21	20	21	18	19	S	29	Y	Y	Y	Y	C	C	C	C	C	47	45	S	30	18	8	8	47	23.5	20
8	14	12	13	12	15	18	22	31	Y	Y	Y	Y	Y	53	54	S	56	59	61	50	40	25	21	13	61	31.6	19
9	2	1	1	21	35	35	36	S	35	37	38	38	39	40	S	42	42	42	40	38	37	34	33	26	42	31.5	24
10	5	16	9	18	29	32	31	31	33	34	35	35	35	S	X	X	X	X	X	X	X	X	X	X	35	26.4	14
11	X	X	X	X	X	X	X	35	38	40	41	43	S	46	46	45	45	46	45	43	30	17	5	1	46	35.4	17
12	1	4	4	2	7	7	20	31	41	44	46	S	50	50	49	46	45	44	43	44	42	33	31	29	50	31.0	24
13	20	23	20	18	26	34	38	42	49	51	S	51	53	55	54	55	55	54	53	49	33	29	23	19	55	39.3	24
14	27	24	22	17	8	12	16	27	41	S	48	49	48	49	49	51	54	53	47	48	49	43	44	40	54	37.7	24
15	36	25	24	26	22	20	29	35	S	40	40	38	35	35	39	35	28	27	26	27	27	27	25	26	40	30.1	24
16	27	27	27	27	27	27	27	S	25	25	26	30	33	40	44	47	50	51	47	31	30	24	14	1	51	30.7	24
17	1	1	1	0	1	4	S	22	35	41	48	47	49	51	53	54	54	53	49	47	43	37	40	39	54	33.5	24
18	37	38	38	37	37	S	41	45	45	48	46	45	44	44	42	45	43	41	43	45	42	44	45	45	48	***42.6***	24
19	44	42	40	39	S	36	33	32	34	32	29	32	34	32	31	32	31	28	29	31	35	35	32	32	44	33.7	24
20	27	21	19	S	9	8	23	33	34	39	41	47	48	50	50	51	52	50	50	47	41	39	43	42	52	37.6	24
21	39	31	S	28	21	19	22	28	41	45	47	51	52	52	54	53	52	52	52	47	18	18	28	22	54	37.9	24
22	13	S	21	23	15	25	32	42	47	54	58	60	61	***63***	***63***	62	62	***63***	59	44	33	35	29	16	***63***	***42.6***	24
23	S	1	1	1	25	16	24	30	43	47	51	50	48	49	48	46	49	43	42	37	10	11	4	S	51	30.7	24
24	34	35	36	37	36	28	31	32	35	37	40	41	42	42	44	46	45	44	43	42	41	35	S	30	46	38.1	24
25	27	28	25	24	20	23	29	33	33	33	38	42	44	45	46	44	42	34	32	37	34	S	35	35	46	34.0	24
26	27	26	24	21	20	18	21	21	23	24	22	20	21	24	30	36	39	37	36	31	S	12	12	9	39	24.1	24
27	11	5	10	14	15	14	15	12	12	16	20	22	21	22	21	22	23	24	24	S	23	14	3	7	24	16.1	24
28	2	0	0	0	1	3	10	18	25	29	30	32	32	31	30	28	25	23	S	19	18	19	19	20	32	18.0	24
29	18	16	15	18	17	13	13	13	12	10	11	11	11	12	11	14	17	S	17	20	19	20	22	21	22	15.3	24
30	24	18	18	14	17	16	21	25	32	37	40	43	43	42	42	42	S	45	43	41	36	32	18	21	45	30.9	24
31	25	20	11	12	9	10	20	26	38	44	47	48	49	50	51	S	51	44	48	45	43	39	35	27	51	34.4	24
HOURLY MAX	44	43	42	39	37	36	41	45	49	54	58	60	61	63	63	62	62	63	61	50	49	44	45	45			
HOURLY AVG	22.6	21.6	20.1	21.1	20.8	20.4	26.2	30.0	34.2	36.3	37.6	39.0	39.6	41.4	42.0	41.7	42.9	42.9	41.5	39.0	33.2	28.1	25.8	24.1			

STATUS FLAG CODES

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

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

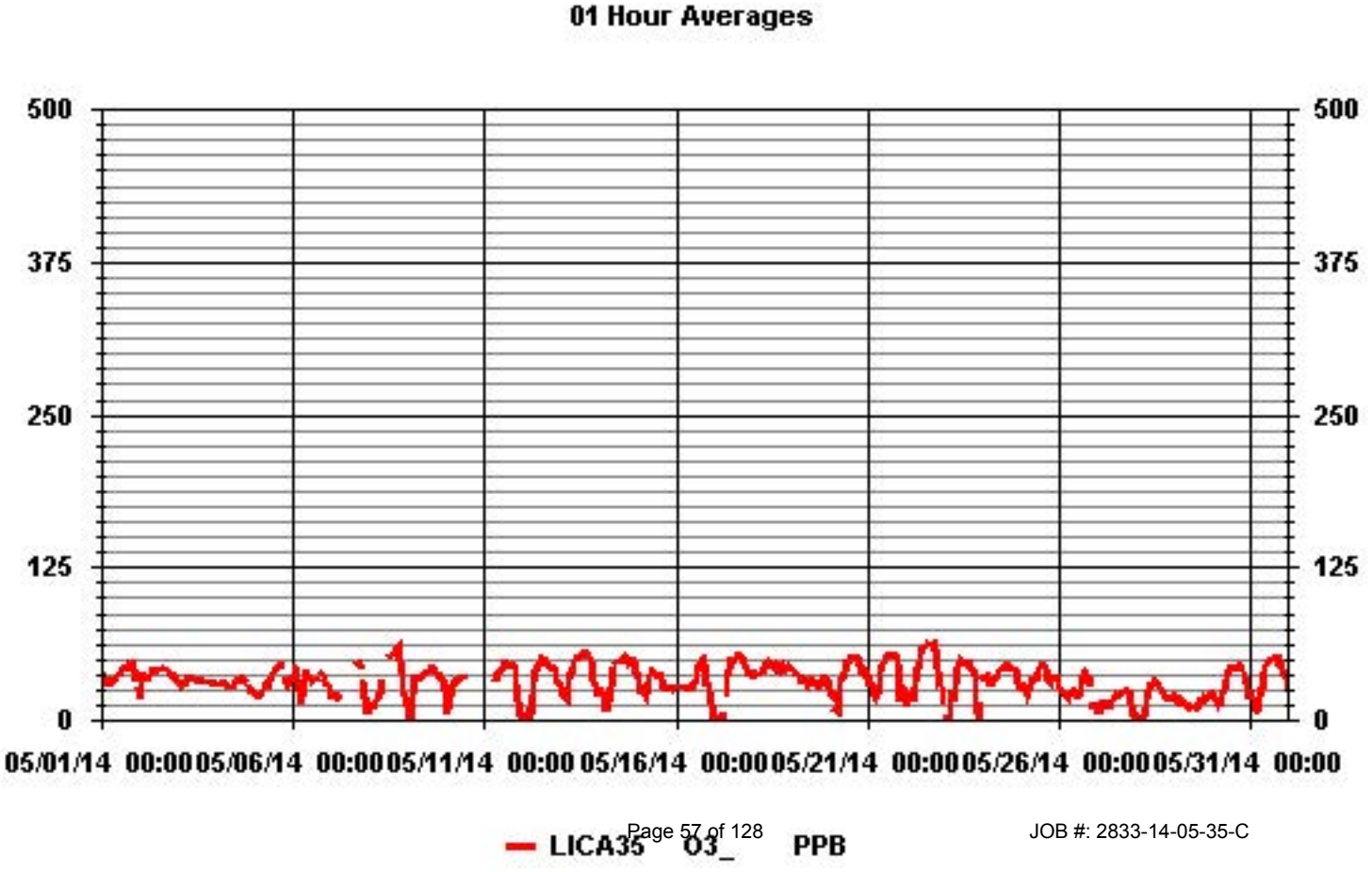
24 HOUR AVERAGES FOR MAY 2014



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	671					
MAXIMUM 1-HR AVERAGE:	63	PPB	@ HOUR(S)	VAR	ON DAY(S)	22
MAXIMUM 24-HR AVERAGE:	42.6	PPB			ON DAY(S)	18, 22
				VAR-VARIOUS		

IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:	718	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	96.5	%
STANDARD DEVIATION:	13.34		MONTHLY AVERAGE:	32.05	PPB



JOB #: 2833-14-05-35-C

Lakeland Industry & Community Association - Elk Point Site

MAY 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	45	38	38	38	38	35	**S**	**S**	35	37	37	38	39	43	42	46	47	50	48	50	47	41	**S**	35	50	41.3	24
2	25	40	40	40	38	37	41	44	43	43	42	43	43	44	44	45	45	44	43	42	41	**S**	36	36	45	40.8	24
3	35	34	29	31	31	33	37	39	37	36	35	35	35	33	33	34	33	32	33	33	**S**	31	31	31	39	33.5	24
4	30	30	31	31	31	**S**	30	29	29	29	29	31	33	33	34	36	36	35	34	**S**	30	26	25	25	36	30.8	24
5	25	23	23	24	24	29	**S**	**S**	31	34	37	40	43	43	45	45	45	46	**S**	40	38	35	43	40	46	35.9	24
6	36	45	48	40	31	23	34	36	44	**S**	39	39	34	35	34	**C**	**C**	**C**	40	39	38	31	31	29	48	36.3	24
7	28	24	23	24	21	22	**S**	33	**Y**	**Y**	**Y**	**Y**	**C**	**C**	**C**	**C**	**S**	50	**S**	**S**	43	33	17	18	50	28.0	20
8	19	19	20	20	23	21	24	37	**Y**	**Y**	**Y**	**Y**	**Y**	55	55	**S**	57	63	***65***	59	45	39	33	31	***65***	38.1	19
9	4	9	9	34	36	36	**S**	**S**	39	38	38	39	41	43	**S**	43	42	43	42	39	38	36	36	33	43	34.2	24
10	11	22	14	29	33	33	33	33	34	35	36	36	36	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	36	29.6	13
11	**X**	**X**	**X**	**X**	**X**	**X**	**X**	38	40	41	43	46	**S**	47	47	46	46	47	46	46	43	32	13	6	47	39.2	17
12	5	15	13	6	13	10	26	40	43	46	48	**S**	51	51	50	48	47	45	45	48	48	47	37	39	51	35.7	24
13	28	28	27	28	31	37	40	44	51	51	**S**	52	55	55	55	55	55	55	55	53	48	39	35	29	55	43.7	24
14	31	29	28	22	14	17	19	39	45	**S**	50	50	50	50	51	53	56	56	54	52	53	50	46	43	56	41.7	24
15	42	34	30	29	27	26	35	36	**S**	42	42	41	39	38	44	41	29	29	28	28	27	27	26	28	44	33.4	24
16	28	27	27	27	27	28	28	**S**	26	26	28	33	35	44	47	49	51	53	53	37	35	34	28	4	53	33.7	24
17	2	5	1	1	1	14	**S**	31	46	48	51	50	51	53	54	54	55	55	52	50	46	42	43	40	55	36.7	24
18	39	39	40	38	40	**S**	46	47	47	49	48	46	48	47	45	47	45	44	47	48	44	46	46	47	49	44.9	24
19	45	44	41	40	**S**	38	35	33	34	33	31	34	35	34	33	33	33	30	31	34	39	37	36	35	45	35.6	24
20	34	25	23	**S**	18	13	35	37	37	42	45	49	50	52	52	53	53	53	53	50	45	42	44	43	53	41.2	24
21	43	36	**S**	34	25	22	24	36	45	47	52	53	54	54	55	55	53	54	55	52	30	28	37	30	55	42.3	24
22	22	**S**	39	38	26	33	39	47	50	58	60	63	63	***65***	***65***	***65***	63	***65***	62	53	44	45	45	22	***65***	***49.2***	24
23	**S**	3	1	4	32	26	32	39	51	50	54	53	52	52	51	48	50	50	45	42	24	18	8	**S**	54	35.7	24
24	35	35	37	38	38	33	32	34	37	39	42	43	44	45	45	47	47	45	44	43	42	39	**S**	34	47	39.9	24
25	30	31	29	27	26	27	32	35	35	34	42	45	46	45	47	46	45	37	37	42	39	**S**	36	37	47	37.0	24
26	35	28	26	24	23	22	23	26	26	26	23	22	24	27	33	39	41	41	38	34	**S**	15	17	11	41	27.1	24
27	12	12	15	19	18	17	17	14	14	19	21	24	23	23	22	23	24	25	25	**S**	24	22	8	13	25	18.9	24
28	7	1	1	1	1	6	13	24	29	30	31	33	33	32	32	31	26	24	**S**	20	19	20	21	21	33	19.8	24
29	19	18	16	20	19	16	15	14	13	12	12	12	13	13	13	17	19	**S**	21	22	20	21	24	22	24	17.0	24
30	25	24	22	16	20	20	22	29	36	40	42	45	44	44	44	43	**S**	47	46	43	41	37	31	31	47	34.4	24
31	34	23	20	19	14	14	26	31	45	46	48	49	50	52	52	**S**	52	52	50	49	46	42	38	31	52	38.4	24
HOURLY MAX	45	45	48	40	40	38	46	47	51	58	60	63	63	65	65	65	63	65	65	59	53	50	46	47			
HOURLY AVG	26.7	25.6	24.5	25.6	24.8	24.6	29.5	34.3	37.2	38.2	39.5	40.9	41.6	43.2	43.7	43.9	44.3	45.4	44.1	42.5	38.5	34.1	31.1	29.1			

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: 669

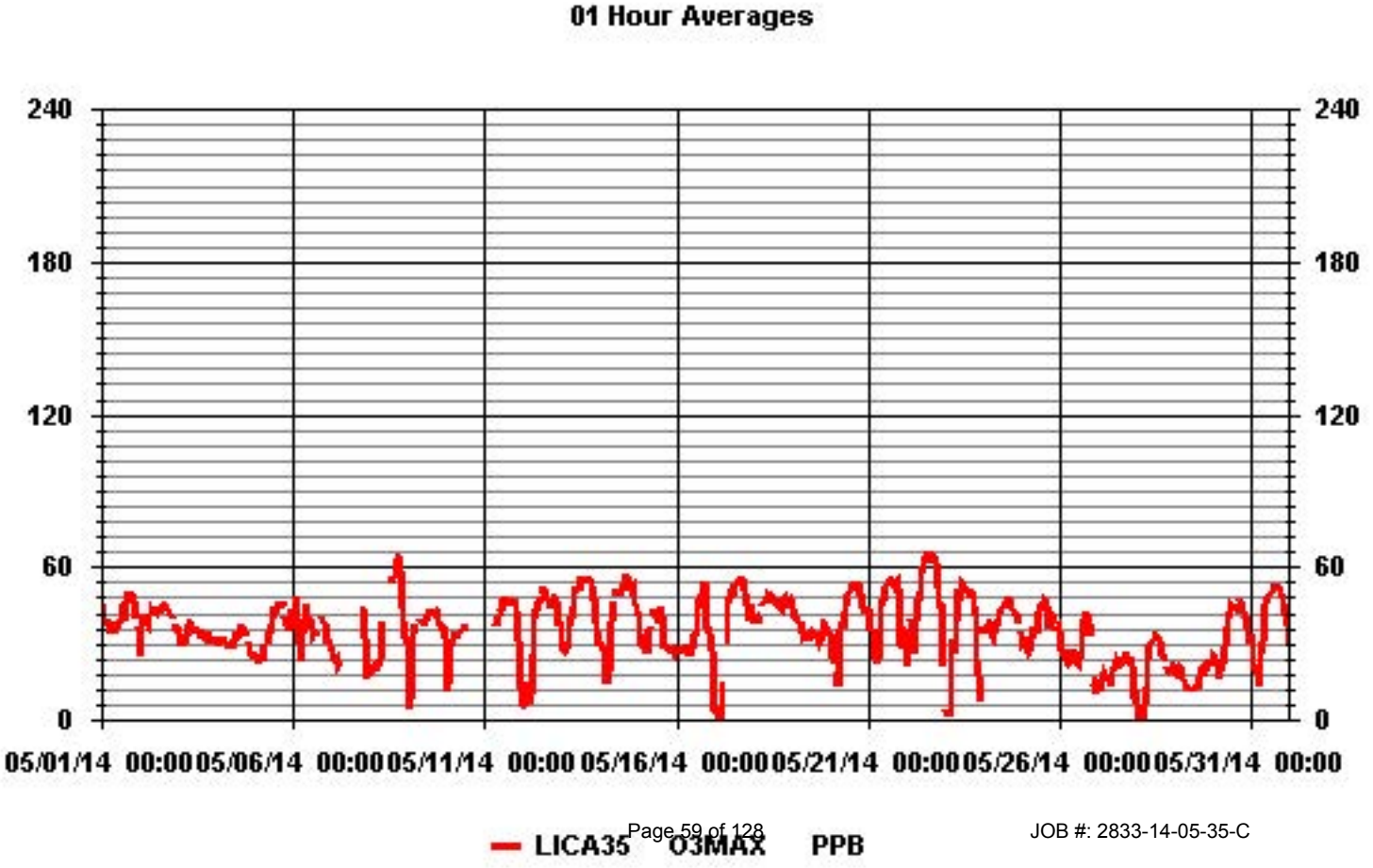
MAXIMUM INSTANTANEOUS VALUE: 65 PPB @ HOUR(S) VAR ON DAY(S) 8, 22

VAR-VARIOUS

IZS CALIBRATION TIME: 41 HRS OPERATIONAL TIME: 717 HRS

MONTHLY CALIBRATION TIME: 7 HRS

STANDARD DEVIATION: 12.78



JOB #: 2833-14-05-35-C

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

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	3.40	1.77	4.59	6.81	8.59	5.33	2.66	1.62	1.48	1.33	1.92	6.22	9.92	12.59	15.55	7.85	91.70
< 110	.14	.14	.14	.14	.88	.44	.00	1.03	.29	1.33	.44	.29	1.03	.59	1.18	.14	8.29
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.55	1.92	4.74	6.96	9.48	5.77	2.66	2.66	1.77	2.66	2.37	6.51	10.96	13.18	16.74	8.00	

Calm : .00 %

Total # Operational Hours : 675

Distribution By Samples

Direction

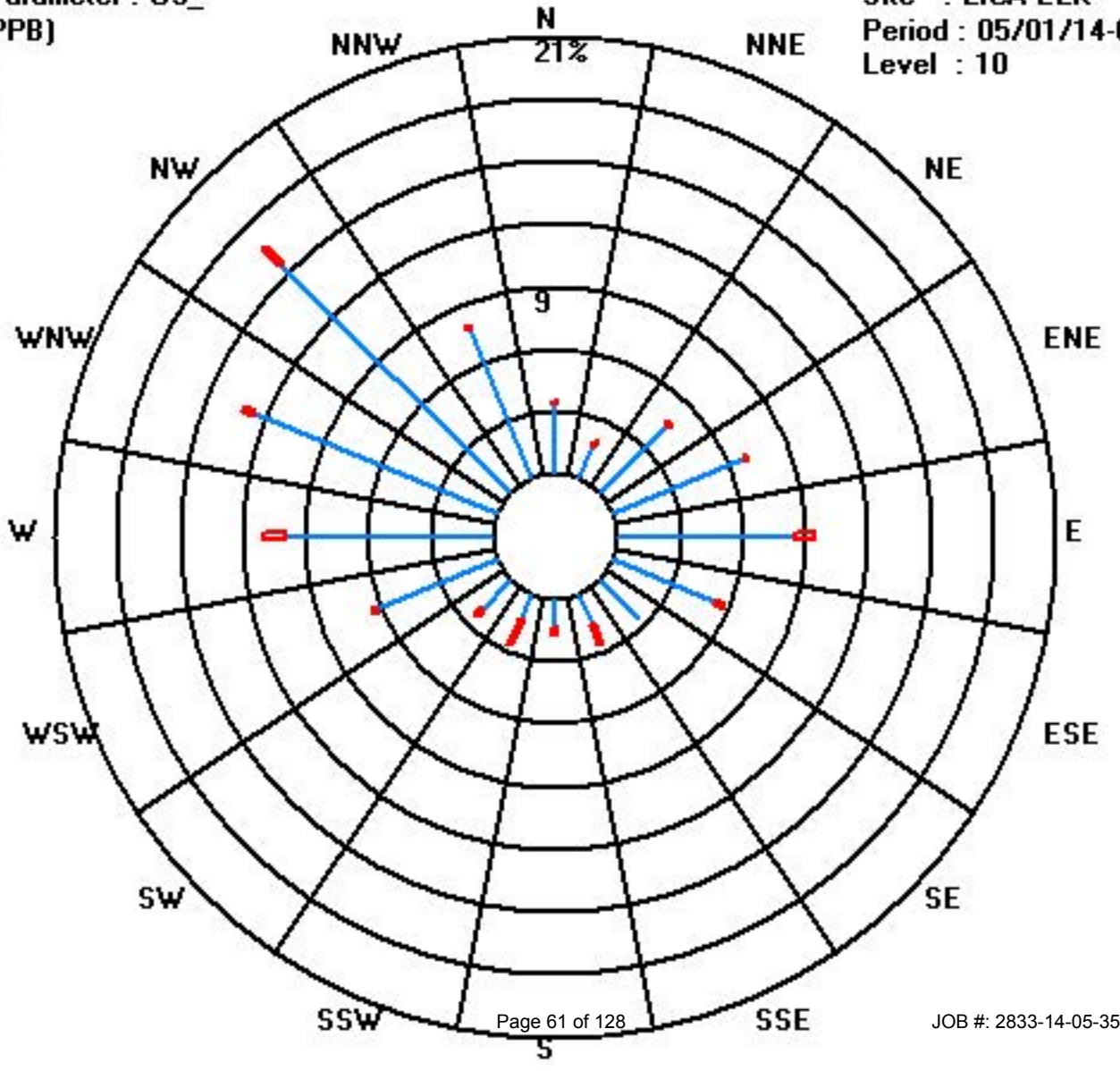
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	23	12	31	46	58	36	18	11	10	9	13	42	67	85	105	53	619
< 110	1	1	1	1	6	3		7	2	9	3	2	7	4	8	1	56
< 210																	
>= 210																	
Totals	24	13	32	47	64	39	18	18	12	18	16	44	74	89	113	54	

Calm : .00 %

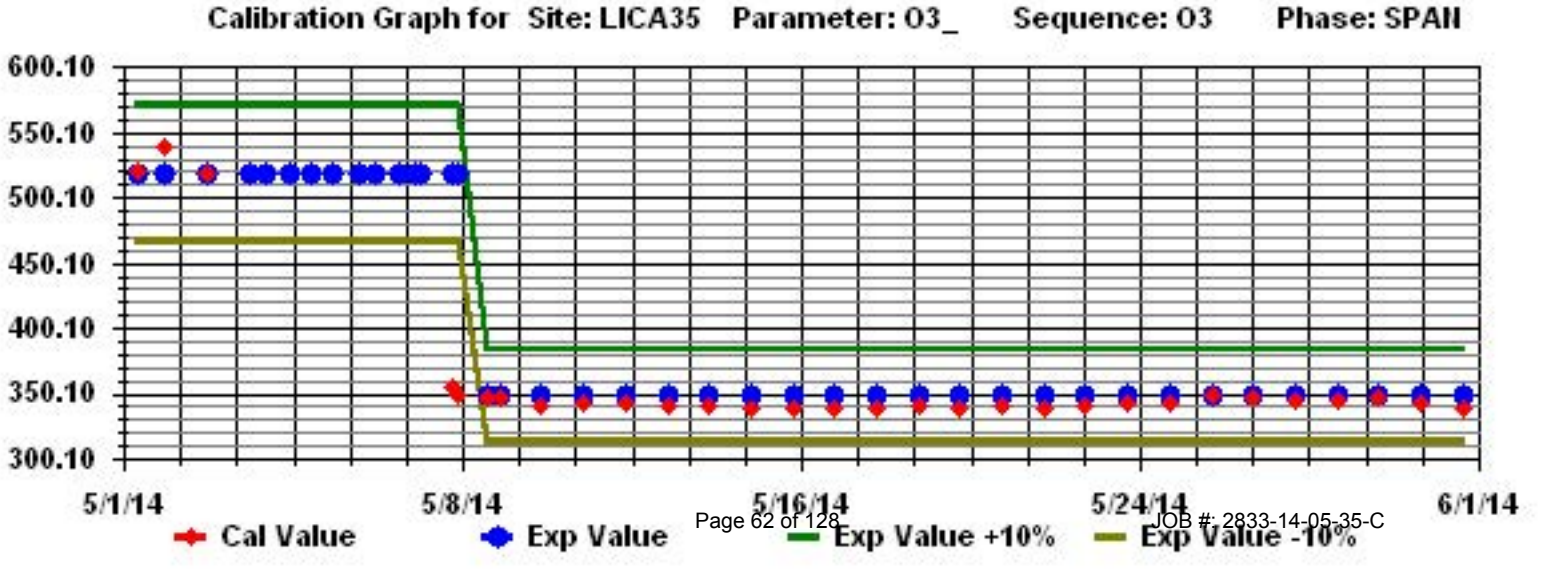
Total # Operational Hours : 675

Logger : 35 Parameter : 03_
Class Limits (PPB)
>= 210
< 210
< 110
< 50

Site : LICA-ELK
Period : 05/01/14-05/31/14
Level : 10



JOB #: 2833-14-05-35-C


Calibration Graph for Site: LICA35 Parameter: O3_ Sequence: O3 Phase: SPAN
600.10
550.10
500.10
450.10
400.10
350.10
300.10
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons (55i)

Lakeland Industry & Community Association - Elk Point Site

MAY 2014

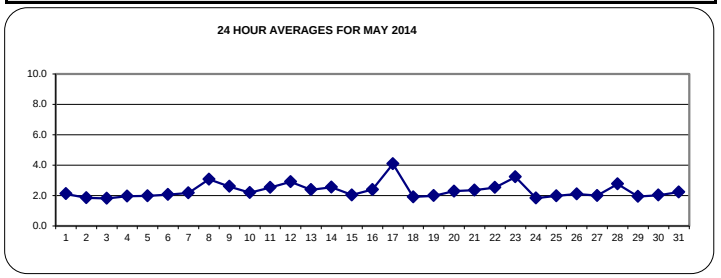
TOTAL HYDROCARBONS (THC) hourly averages in ppm

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	2.9	3.2	3.4	2.8	2.5	2.0	1.9	1.8	1.8	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.3	**S**	2.4	3.4	2.1	24
2	2.6	2.1	1.8	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	**S**	1.8	1.8	2.6	1.9	24
3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	**S**	1.9	1.9	1.8	1.9	1.8	24
4	1.9	1.9	1.9	1.9	2.0	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	**S**	2.0	2.0	2.0	2.0	2.1	2.0	24
5	2.0	1.9	2.0	2.0	1.9	1.8	1.8	1.9	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	**S**	2.3	2.6	2.7	2.3	1.9	2.7	2.0	24
6	2.2	1.8	2.0	2.2	2.6	3.8	2.9	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	2.1	2.0	2.3	3.8	2.1	24
7	2.2	2.3	2.2	2.0	2.0	2.0	2.0	2.0	1.8	1.8	**C**	**C**	**C**	**C**	1.8	1.8	**S**	1.8	1.8	1.8	2.0	2.8	3.6	3.6	3.6	2.2	24
8	3.7	3.5	3.3	3.6	3.7	3.4	2.9	2.5	2.1	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**S**	**S**	1.9	2.3	2.7	2.7	3.2	4.5	4.5	3.1	17
9	4.3	5.7	6.8	4.4	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	**C**	**C**	**C**	**C**	**C**	1.8	1.8	1.8	1.9	2.0	2.0	2.4	6.8	2.6	24
10	4.0	2.7	3.3	3.0	2.1	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	**S**	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.3	3.7	4.0	2.2	24
11	3.2	3.1	3.8	2.6	2.2	2.6	2.7	1.9	1.8	1.8	1.8	1.8	**S**	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.1	5.0	3.7	5.5	5.5	2.5	24
12	7.2	5.5	5.9	4.7	3.9	3.2	3.2	2.6	1.9	1.9	1.8	**S**	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	2.1	2.5	3.3	2.6	7.2	2.9	24
13	3.3	3.2	3.5	3.6	2.8	2.4	2.1	1.9	1.9	1.8	**S**	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.5	2.9	3.3	3.4	3.6	2.4	24
14	3.0	2.9	2.9	3.3	4.6	4.1	4.2	3.4	2.3	**S**	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.9	2.6	2.2	2.1	2.4	2.0	2.0	4.6	2.6	24
15	2.0	3.1	3.0	2.2	2.5	2.4	2.3	1.8	**S**	1.8	1.8	1.8	1.8	2.0	1.8	1.8	1.9	1.9	1.9	1.8	1.8	1.8	1.9	1.9	3.1	2.0	24
16	1.8	1.8	1.8	1.8	1.9	1.9	1.9	**S**	1.9	1.9	1.9	1.8	1.9	1.8	1.8	1.8	1.8	1.8	2.0	3.0	3.3	3.7	4.2	7.7	7.7	2.4	24
17	8.4	7.8	10.0	***13.5***	9.7	7.4	**S**	4.0	2.8	2.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.3	2.2	2.1	***13.5***	***4.1***	24
18	2.1	2.0	1.9	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	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	2.1	1.9	24
19	1.8	1.9	1.9	1.9	**S**	1.9	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.3	2.3	2.6	2.4	2.6	2.0	24
20	2.4	2.5	2.6	**S**	3.7	3.9	3.3	2.3	2.2	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	2.1	2.3	2.3	2.0	2.0	3.9	2.3	24
21	2.1	2.2	**S**	2.4	2.7	2.7	3.0	2.5	2.2	2.1	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	2.0	3.2	4.6	2.8	3.1	4.6	2.4	24
22	3.3	**S**	4.0	3.0	3.7	3.1	2.5	2.1	2.0	1.8	1.8	1.9	1.9	2.0	2.0	1.9	2.0	1.9	1.9	2.4	3.0	2.4	3.5	4.3	4.3	2.5	24
23	**S**	5.9	6.5	9.6	3.0	3.3	3.1	3.2	2.2	2.2	1.9	1.9	1.9	1.8	1.8	1.8	1.8	**Y**	**Y**	2.0	2.4	3.7	4.5	**S**	9.6	3.2	22
24	2.0	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	**S**	2.1	2.1	1.8	24
25	2.1	2.1	2.2	2.1	2.1	2.1	2.1	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	**S**	2.1	2.0	2.2	2.0	24
26	2.2	2.0	2.1	2.1	2.3	2.5	2.3	2.2	2.1	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	1.9	1.9	2.0	**S**	2.4	2.1	2.0	2.5	2.1	24
27	2.0	2.3	2.0	2.0	1.9	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.9	1.8	1.9	**S**	1.9	2.5	3.0	2.7	3.0	2.0	24
28	2.9	5.6	4.2	7.3	5.9	4.1	2.8	2.3	2.1	1.9	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	**S**	1.9	1.9	1.9	1.9	1.9	7.3	2.8	24
29	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.1	2.0	2.0	1.9	**S**	1.9	1.9	1.9	1.9	1.9	2.0	2.1	1.9	24
30	1.8	2.2	2.2	2.3	2.2	2.2	1.9	**S**	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	**S**	1.8	1.9	1.9	2.0	2.1	3.0	2.7	3.0	2.0	24
31	2.3	2.4	3.2	2.9	3.1	3.4	2.6	2.3	1.9	1.9	1.8	1.8	1.8	1.8	1.8	**S**	1.8	2.1	1.8	2.0	1.9	2.0	2.3	2.3	3.4	2.2	24
HOURLY MAX	8	8	10	14	10	7	4	4	3	3	2	2	2	2	2	2	2	2	3	3	3	5	5	8			
HOURLY AVG	2.8	3.0	3.2	3.3	2.9	2.7	2.3	2.2	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	2.0	2.2	2.5	2.6	2.8			

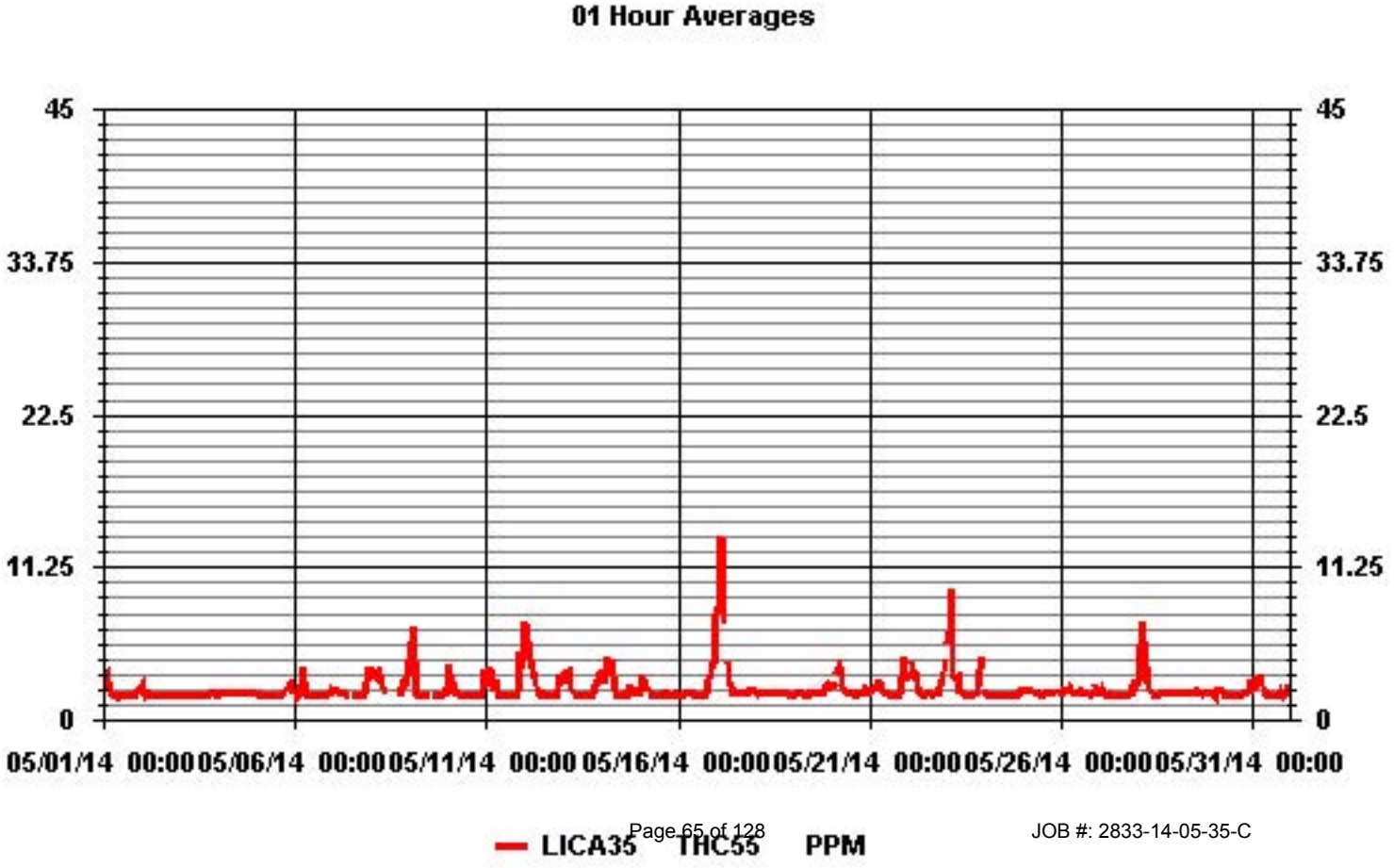
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	693					
MAXIMUM 1-HR AVERAGE:	13.5	PPM	@ HOUR(S)	3	ON DAY(S)	17
MAXIMUM 24-HR AVERAGE:	4.1	PPM			ON DAY(S)	17
					VAR-VARIOUS	
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		735	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		98.8	%
STANDARD DEVIATION:	1.09		MONTHLY AVERAGE:		2.31	PPM



JOB #: 2833-14-05-35-C

Lakeland Industry & Community Association - Elk Point Site

MAY 2014

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	3.6	3.51	3.95	3.73	4.09	2.17	2.13	1.88	1.94	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.85	1.83	1.86	1.96	2.3	2.83	**S**	2.94	4.09	2.4	24
2	3.06	3.87	1.92	2.22	2.13	2.03	1.87	1.85	1.89	1.85	1.85	1.84	1.85	1.85	1.85	1.86	1.88	1.88	1.86	1.86	1.9	**S**	1.89	1.9	3.87	2.0	24
3	1.91	1.89	1.91	1.89	1.87	1.87	1.86	1.86	1.87	1.87	1.87	1.87	1.97	1.9	1.9	1.9	1.9	1.9	1.89	1.93	**S**	1.94	1.91	1.91	1.97	1.9	24
4	2.01	2.01	2.05	2.02	2.14	2.17	2.16	2.11	2.1	2.08	2.04	2.02	1.99	2.02	1.97	1.95	2.09	2	2	**S**	2.09	2.13	2.14	2.39	2.39	2.1	24
5	2.15	2.03	2.12	2.4	2.02	1.92	1.91	2.17	2.25	2.18	1.9	1.89	1.88	1.89	1.9	2.01	2.02	1.97	**S**	2.94	3.33	3.33	3.26	1.96	3.33	2.2	24
6	2.48	2.05	3.04	2.5	4.73	5.29	3.9	2.13	2.02	1.87	1.98	2.02	2.01	1.87	1.9	1.87	1.86	**S**	1.86	1.85	2.26	2.61	2.14	3.34	5.29	2.5	24
7	2.93	2.66	2.44	2.15	2.23	2.15	2.11	2.13	1.96	1.86	**C**	**C**	**C**	**C**	1.91	1.93	**S**	1.85	1.93	1.95	2.61	4.68	4.85	3.89	4.85	2.5	24
8	4.04	3.8	3.52	3.83	4.26	3.78	3.2	2.82	2.33	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**S**	**S**	**S**	3.1	2.99	3.06	4.83	9.72	9.72	3.9	17
9	5.3	6.92	10.72	10.16	1.92	1.89	1.91	1.91	1.91	1.87	1.87	1.86	**C**	**C**	**C**	**C**	**C**	1.88	1.9	1.94	2.1	2.1	2.57	3.22	10.72	3.4	24
10	5.78	3.35	4.35	4.42	2.44	2.05	1.92	1.94	1.89	1.9	1.9	1.88	1.88	**S**	1.89	1.89	1.91	1.9	1.89	1.9	1.89	2.48	3.1	5.69	5.78	2.6	24
11	6.18	3.92	4.33	2.98	2.51	3.11	3.24	2.55	1.89	1.89	1.89	1.9	**S**	1.98	1.9	1.9	1.9	1.91	1.92	2.74	2.58	15.68	4.85	8	15.68	3.6	24
12	11.36	10.53	9.64	6.17	5.5	3.64	3.6	3.48	2.03	2.02	1.89	**S**	1.98	1.98	1.9	1.89	1.89	1.9	1.89	1.96	4.73	4.91	7.93	3.37	11.36	4.2	24
13	3.62	3.67	5.06	5.92	3.08	2.74	2.4	2	1.95	1.91	**S**	2	1.89	1.9	1.9	1.92	1.9	1.89	1.9	2.23	3.91	7.53	6.39	4.66	7.53	3.1	24
14	3.66	3.31	3.18	4.03	6.53	4.78	4.6	4.16	2.66	**S**	1.89	1.94	1.88	1.91	3.37	3.37	2.04	2.02	6.31	3.34	2.35	3.67	2.28	2.69	6.53	3.3	24
15	3.11	4.78	6.02	3.44	3.47	3.12	3.4	1.98	**S**	2.01	2	2.33	2.1	2.34	1.99	1.92	2.08	2.06	1.94	1.9	1.9	2.03	2.02	1.92	6.02	2.6	24
16	1.92	1.91	1.89	1.9	1.94	1.91	1.96	**S**	1.91	1.94	1.91	2.01	1.91	1.9	2.03	1.97	1.89	1.91	2.34	4.25	4.23	8.2	6.31	12.8	12.8	3.1	24
17	12.8	13.87	14.06	18.59	13.9	11.85	**S**	5.15	4.36	3.77	2.02	2.05	1.98	1.98	1.98	2.01	2.01	2.05	2.1	2.12	2.33	2.63	2.42	2.29	18.59	***5.6***	24
18	2.19	2.05	2.07	2.1	2.07	**S**	2.03	1.98	2.02	2	2	1.97	1.97	1.96	2.02	2.01	2.41	2.07	1.97	2	2.06	1.92	1.9	1.92	2.41	2.0	24
19	1.91	1.98	1.97	2.04	**S**	1.95	1.97	2	1.95	1.92	2.01	1.99	2.07	2.05	2.14	2.05	2.01	2.19	2.17	2.21	3.06	3.2	3.22	2.83	3.22	2.2	24
20	3.56	3.05	2.92	**S**	5.52	4.25	4.24	2.66	2.39	2.14	2.27	2.03	2	2.01	2.07	2.11	2	2.11	2.12	2.36	2.53	2.59	2.26	2.09	5.52	2.7	24
21	2.53	2.45	**S**	2.78	3.13	3.09	3.36	2.79	2.37	2.3	2.23	2.09	2.08	1.92	1.89	1.87	2.01	1.97	2.18	3.21	3.81	9.23	3.76	3.74	9.23	2.9	24
22	4.29	**S**	6.79	4.85	4.71	4.64	3.11	2.33	2.35	2	1.95	2.03	2.02	2.09	2.18	2.07	2.03	2	2.04	3.17	5.33	2.78	5.66	5.29	6.79	3.3	24
23	**S**	6.5	7.88	12.62	5.96	4.1	8.25	5.82	2.79	2.87	2.25	2.61	2.55	2.1	2.07	1.89	1.87	**Y**	**Y**	2.45	4.39	13.37	7.05	**S**	13.37	5.0	22
24	9.91	1.94	2	1.98	2.05	2.27	2.02	1.86	1.87	1.92	1.95	1.91	1.85	1.84	1.85	1.84	1.84	1.86	1.84	1.87	2.07	2.2	**S**	2.43	9.91	2.3	24
25	2.33	2.18	2.79	2.53	2.33	2.43	2.29	2.01	2.26	2.02	2.14	1.94	1.95	2.05	1.98	2.03	2.01	2	2.22	2.02	2.19	**S**	2.18	2.12	2.79	2.2	24
26	2.4	2.29	2.26	2.33	2.52	2.85	2.48	2.39	2.2	2.23	2.08	2.11	2.4	2.27	2.27	2.04	2.31	2.19	2.17	2.48	**S**	2.97	2.33	2.26	2.97	2.3	24
27	2.18	2.68	2.66	2.22	2.17	2.28	1.98	1.97	2.01	2	1.9	2.02	1.97	2	1.99	1.93	2.13	2.03	1.95	**S**	1.98	3.45	3.38	3.83	3.83	2.3	24
28	3.76	***27.27***	10.7	10.83	8.96	6.99	3.48	2.58	2.27	2.09	1.93	2.01	1.91	1.91	1.94	1.96	1.95	1.93	**S**	1.93	1.91	2.02	2.03	1.99	***27.27***	4.5	24
29	2.08	1.93	1.93	2.08	1.94	2.03	2.02	2	2.06	2.34	2.1	2.26	2.29	2.3	2.12	2.07	2.12	**S**	2.07	1.96	1.98	2.01	1.99	2.19	2.34	2.1	24
30	2.01	2.66	2.51	2.76	2.65	2.45	2.11	**S**	1.91	1.9	1.87	1.88	1.87	1.9	1.9	1.93	**S**	2.03	2.25	2.23	2.17	2.66	3.6	3.27	3.6	2.3	24
31	2.75	2.84	4.91	4.94	3.73	4.18	3.17	2.86	2.08	1.97	1.92	1.94	1.93	1.87	1.94	**S**	1.99	3.94	2.01	2.46	2.09	2.34	2.63	2.42	4.94	2.7	24
HOURLY MAX	13	27	14	19	14	12	8	6	4	4	2	3	3	2	3	3	2	4	6	4	5	16	8	13			
HOURLY AVG	3.9	4.5	4.4	4.4	3.8	3.3	2.8	2.5	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.4	2.7	4.2	3.5	3.6			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 692

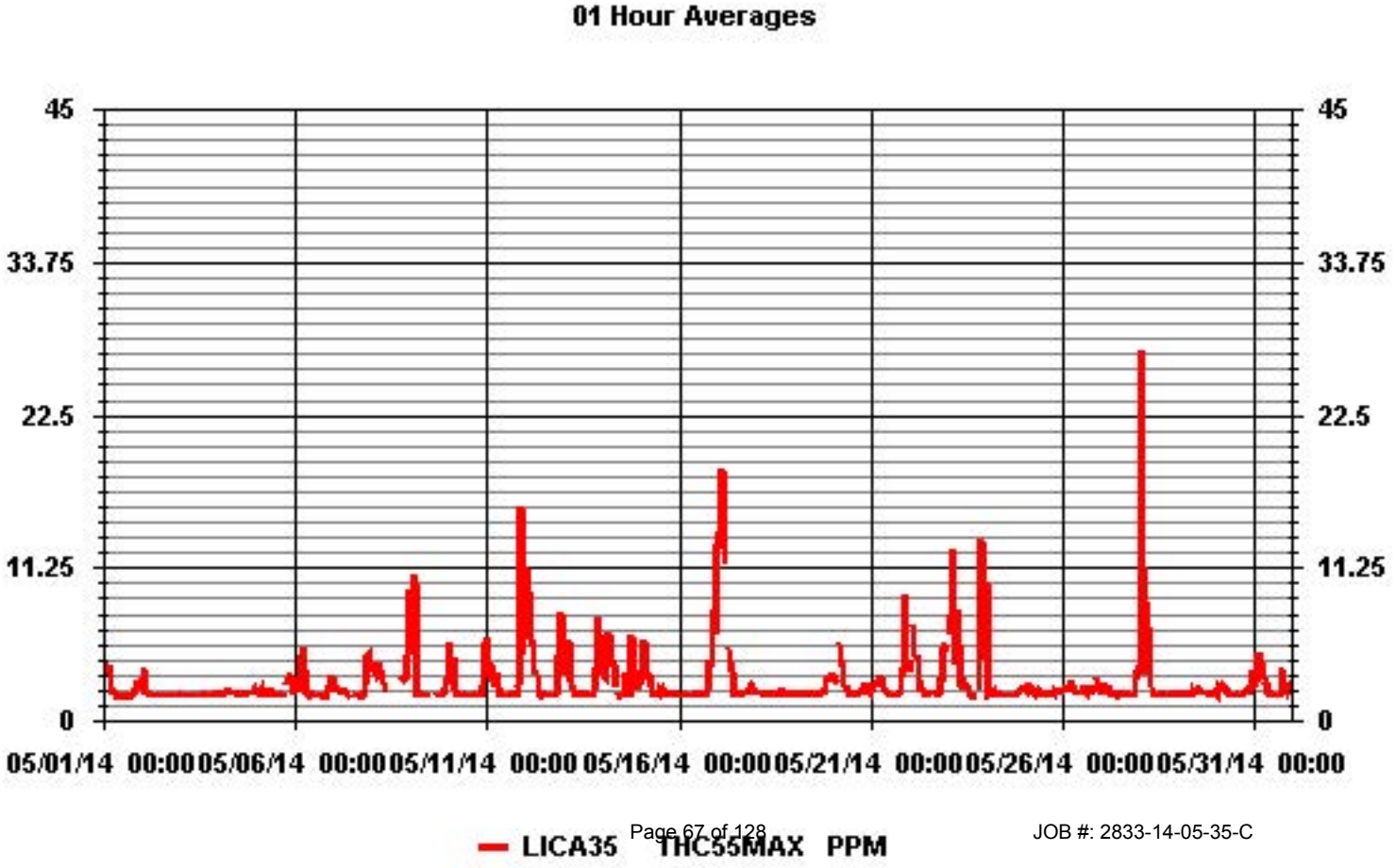
MAXIMUM INSTANTANEOUS VALUE: 27.27 PPM @ HOUR(S) 1 ON DAY(S) 28

VAR-VARIOUS

IZS CALIBRATION TIME: 34 HRS OPERATIONAL TIME: 735 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 2.20



JOB #: 2833-14-05-35-C

LICA35
THC55 / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

		Direction																
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	3.31	1.73	4.32	5.91	7.21	5.48	2.30	2.30	1.58	2.45	1.87	4.90	8.08	10.53	16.16	8.08	86.29
<	10.0	.14	.14	.28	.86	2.16	.28	.28	.14	.14	.14	.43	1.44	3.03	3.03	.72	.14	13.41
<	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.14	.00	.00	.28
>=	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.46	1.87	4.61	6.78	9.37	5.77	2.59	2.45	1.73	2.59	2.30	6.34	11.25	13.70	16.88	8.22	

Calm : .00 %

Total # Operational Hours : 693

Distribution By Samples

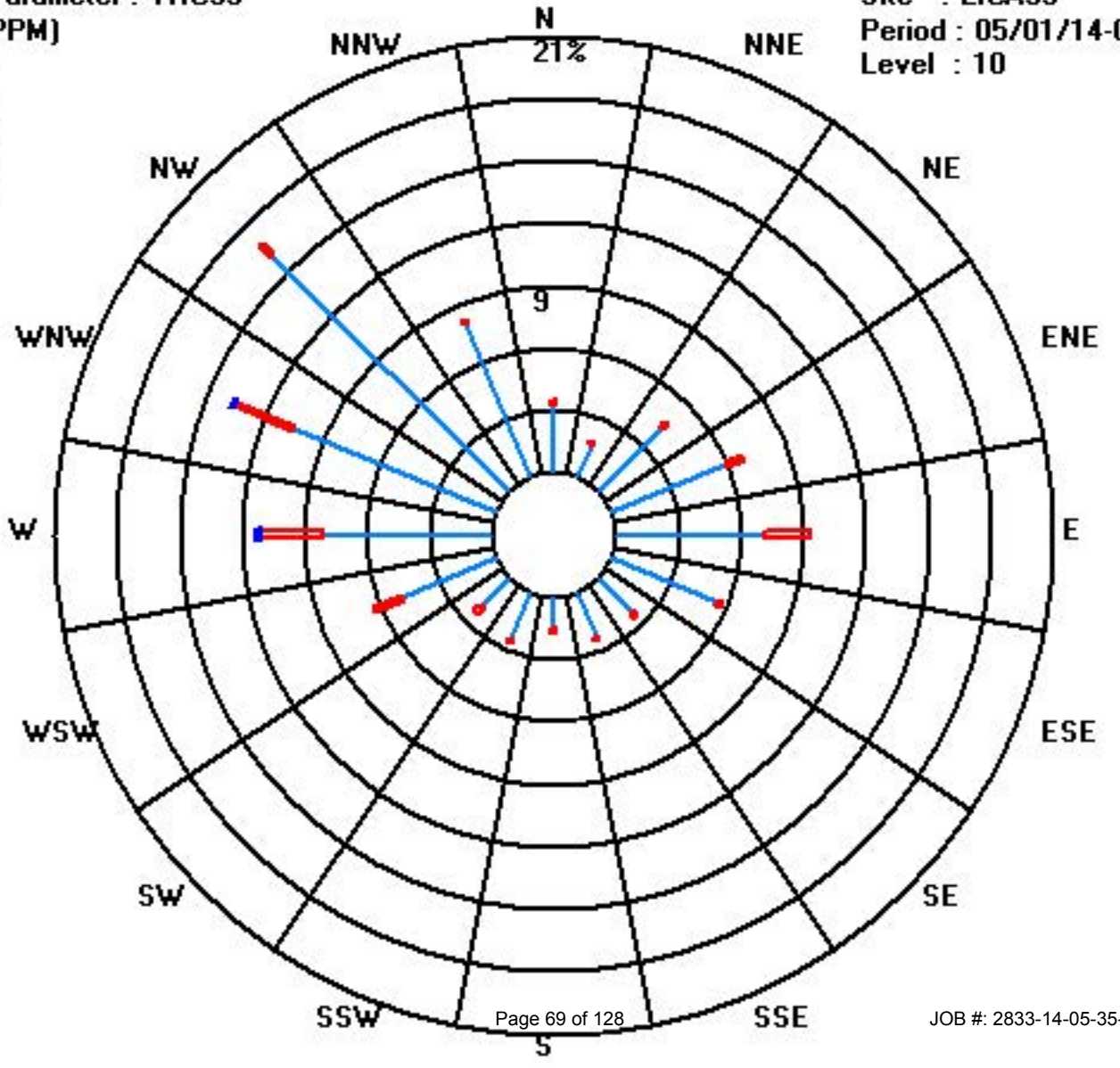
		Direction																
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	23	12	30	41	50	38	16	16	11	17	13	34	56	73	112	56	598
<	10.0	1	1	2	6	15	2	2	1	1	1	3	10	21	21	5	1	93
<	50.0													1	1			2
>=	50.0																	
	Totals	24	13	32	47	65	40	18	17	12	18	16	44	78	95	117	57	

Calm : .00 %

Total # Operational Hours : 693

Logger : 35 Parameter : THC55
Class Limits (PPM)
>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA35
Period : 05/01/14-05/31/14
Level : 10



JOB #: 2833-14-05-35-C

Methane

Lakeland Industry & Community Association - Elk Point Site

MAY 2014

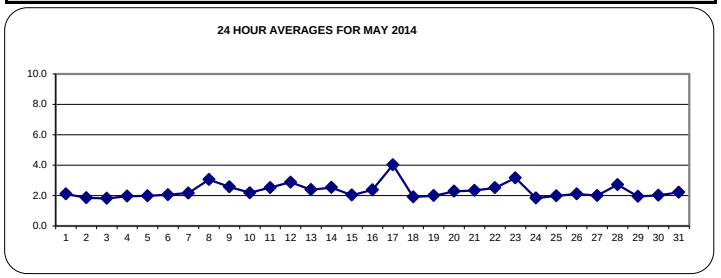
METHANE (CH4) hourly averages in ppm

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	2.9	3.2	3.4	2.8	2.5	2.0	1.9	1.8	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.3	**S**	2.4	3.4	2.1	24
2	2.6	2.1	1.8	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	**S**	1.8	1.8	2.6	1.9	24
3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	**S**	1.9	1.9	1.8	1.9	1.8	24
4	1.9	1.9	1.9	1.9	2.0	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	**S**	2.0	2.0	2.0	2.0	2.1	2.0	24
5	2.0	1.9	2.0	2.0	1.9	1.8	1.8	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	**S**	2.3	2.6	2.7	2.3	1.9	2.7	2.0	24
6	2.2	1.8	2.0	2.2	2.6	3.7	2.9	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	2.1	2.0	2.3	3.7	2.1	24
7	2.2	2.3	2.2	2.0	2.0	2.0	2.0	2.0	1.8	1.8	**C**	**C**	**C**	**C**	1.8	1.8	**S**	1.8	1.8	1.8	2.0	2.8	3.5	3.6	3.6	2.2	24
8	3.7	3.5	3.3	3.6	3.7	3.4	2.9	2.5	2.1	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**S**	**S**	1.9	2.3	2.7	2.7	3.1	4.5	4.5	3.1	17
9	4.2	5.5	6.6	4.4	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	**C**	**C**	**C**	**C**	**C**	1.8	1.8	1.8	1.9	2.0	2.0	2.4	6.6	2.6	24
10	3.9	2.7	3.3	3.0	2.1	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	**S**	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.3	3.6	3.9	2.2	24
11	3.2	3.1	3.8	2.6	2.2	2.6	2.7	1.9	1.8	1.8	1.8	1.8	**S**	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.1	4.8	3.7	5.4	5.4	2.5	24
12	7.0	5.5	5.8	4.7	3.9	3.1	3.2	2.6	1.9	1.9	1.8	**S**	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	2.1	2.4	3.2	2.6	7.0	2.9	24
13	3.3	3.2	3.4	3.6	2.8	2.4	2.1	1.9	1.9	1.8	**S**	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.5	2.9	3.3	3.4	3.6	2.4	24
14	3.0	2.9	2.9	3.2	4.5	4.1	4.1	3.3	2.3	**S**	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.9	2.6	2.2	2.1	2.4	2.0	2.0	4.5	2.5	24
15	2.0	3.0	3.0	2.2	2.4	2.4	2.3	1.8	**S**	1.8	1.8	1.8	1.8	2.0	1.8	1.8	1.9	1.9	1.9	1.8	1.8	1.8	1.9	1.9	3.0	2.0	24
16	1.8	1.8	1.8	1.8	1.9	1.9	1.9	**S**	1.9	1.9	1.9	1.8	1.9	1.8	1.8	1.8	1.8	1.8	2.0	3.0	3.2	3.5	4.1	7.5	7.5	2.4	24
17	8.2	7.5	9.8	***13.1***	9.5	7.2	**S**	3.9	2.8	2.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.3	2.2	2.1	***13.1***	***4.0***	24
18	2.1	2.0	1.9	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	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	2.1	1.9	24
19	1.8	1.9	1.9	1.9	**S**	1.9	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.3	2.3	2.6	2.4	2.6	2.0	24
20	2.4	2.5	2.6	**S**	3.7	3.8	3.2	2.3	2.2	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	2.1	2.3	2.3	2.0	2.0	3.8	2.3	24
21	2.1	2.2	**S**	2.4	2.7	2.7	2.9	2.5	2.2	2.1	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	2.0	3.2	4.4	2.7	3.0	4.4	2.3	24
22	3.2	**S**	4.0	3.0	3.7	3.0	2.5	2.1	2.0	1.8	1.8	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	2.4	3.0	2.4	3.4	4.1	4.1	2.5	24
23	**S**	5.6	6.2	9.4	3.0	3.3	3.1	3.2	2.2	2.2	1.9	1.9	1.9	1.8	1.8	1.8	1.8	**Y**	**Y**	2.0	2.3	3.6	4.3	**S**	9.4	3.2	22
24	2.0	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	**S**	2.1	2.1	1.8	24
25	2.1	2.1	2.2	2.1	2.1	2.1	2.1	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	**S**	2.1	2.0	2.2	2.0	24
26	2.2	2.0	2.1	2.1	2.3	2.5	2.3	2.2	2.1	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	1.9	2.0	**S**	2.4	2.1	2.0	2.5	2.1	24
27	2.0	2.3	2.0	2.0	1.9	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.9	1.8	1.9	**S**	1.9	2.5	3.0	2.7	3.0	2.0	24
28	2.9	5.2	4.0	7.1	5.7	4.1	2.7	2.3	2.1	1.9	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	**S**	1.9	1.9	1.8	1.9	1.9	7.1	2.7	24
29	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.1	2.0	1.9	1.9	**S**	1.9	1.9	1.9	1.9	1.9	2.0	2.1	1.9	24
30	1.8	2.2	2.2	2.3	2.2	2.2	1.9	**S**	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	**S**	1.8	1.9	1.9	2.0	2.1	2.9	2.7	2.9	2.0	24
31	2.3	2.4	3.2	2.9	3.1	3.3	2.5	2.3	1.9	1.9	1.8	1.8	1.8	1.8	1.8	**S**	1.8	2.1	1.8	2.0	1.9	2.0	2.3	2.3	3.3	2.2	24
HOURLY MAX	8	8	10	13	10	7	4	4	3	3	2	2	2	2	2	2	2	2	3	3	3	5	4	8			
HOURLY AVG	2.8	2.9	3.2	3.3	2.9	2.7	2.3	2.2	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.9	1.9	2.0	2.2	2.5	2.6	2.7			

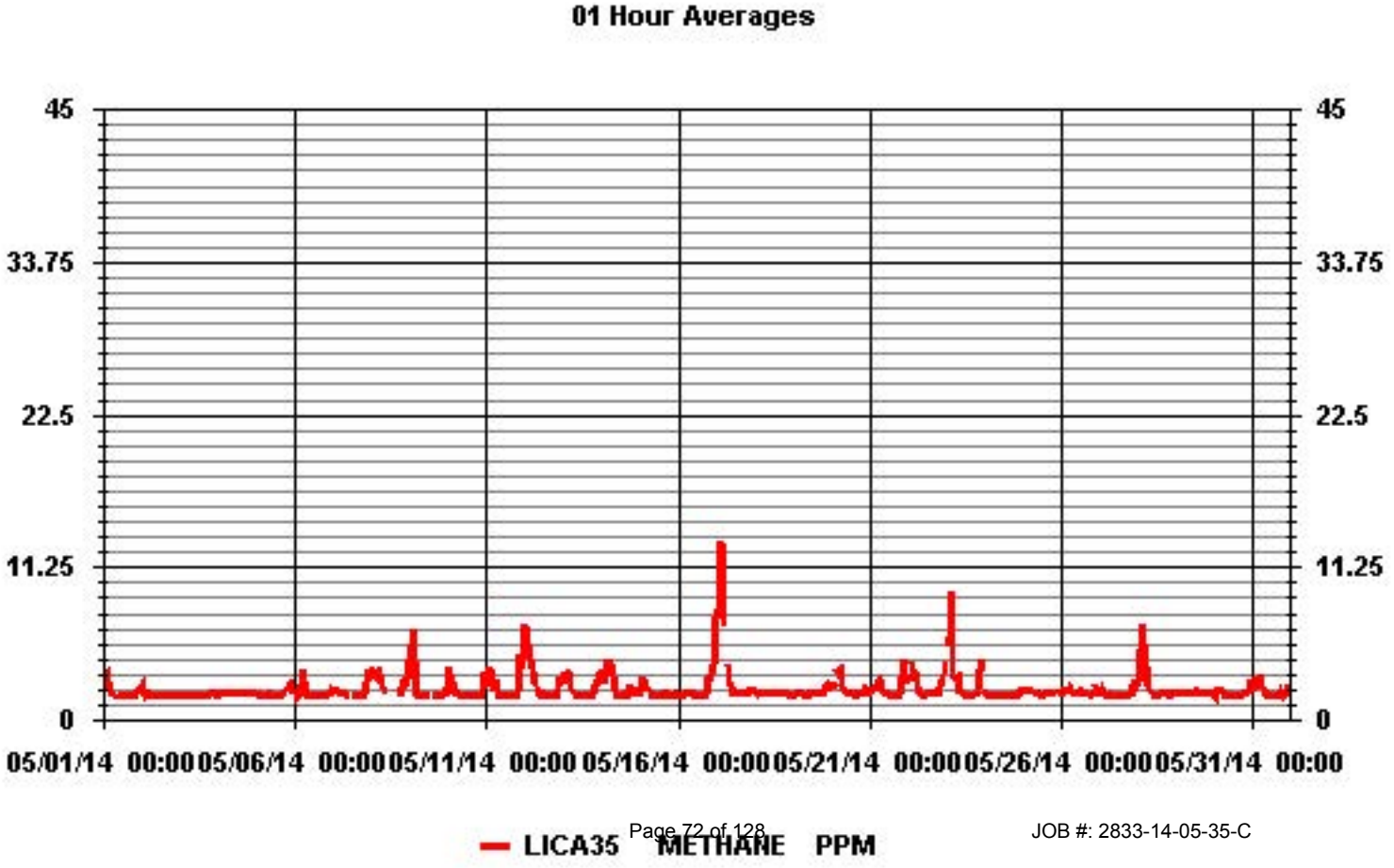
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	693					
MAXIMUM 1-HR AVERAGE:	13.1	PPM	@ HOUR(S)	3	ON DAY(S)	17
MAXIMUM 24-HR AVERAGE:	4.0	PPM			ON DAY(S)	17
					VAR-VARIOUS	
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		735	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		98.8	%
STANDARD DEVIATION:	1.05		MONTHLY AVERAGE:		2.30	PPM



JOB #: 2833-14-05-35-C

Lakeland Industry & Community Association - Elk Point Site

MAY 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	0:00	MAX.	AVG.	RDGS.
DAY																											
1	3.33	3.51	3.95	3.72	3.96	2.15	2.14	1.87	1.81	1.82	1.82	1.82	1.83	1.83	1.83	1.83	1.85	1.83	1.86	1.96	2.31	2.83	**S**	2.94	3.96	2.4	24
2	2.95	3.86	1.92	2.22	2.13	2.04	1.87	1.85	1.9	1.84	1.84	1.84	1.85	1.84	1.85	1.85	1.88	1.89	1.85	1.86	1.9	**S**	1.89	1.9	3.86	2.0	24
3	1.91	1.89	1.91	1.89	1.88	1.87	1.86	1.85	1.87	1.86	1.87	1.87	1.89	1.9	1.9	1.9	1.9	1.9	1.89	1.93	**S**	1.94	1.91	1.91	1.94	1.9	24
4	2.01	2.01	2.05	2.03	2.15	2.17	2.16	2.12	2.11	2.1	2.05	2.02	1.99	2.01	1.97	1.95	1.95	2	2	**S**	2.1	2.14	2.15	2.28	2.28	2.1	24
5	2.16	2.03	2.13	2.4	1.94	1.92	1.91	2.06	2.09	1.99	1.9	1.89	1.88	1.89	1.9	1.92	2.03	1.98	**S**	2.94	3.19	3.32	3.27	1.96	3.32	2.2	24
6	2.48	2.05	3.05	2.45	4.49	5.23	3.9	2.14	1.89	1.86	1.85	1.87	1.88	1.87	1.89	1.87	1.86	**S**	1.84	1.85	2.27	2.62	2.15	3.35	5.23	2.5	24
7	2.94	2.67	2.43	2.15	2.24	2.15	2.09	2.14	1.96	1.86	**C**	**C**	**C**	**C**	1.91	1.93	**S**	1.85	1.93	1.95	2.61	4.54	4.68	3.87	4.68	2.5	24
8	3.88	3.71	3.46	3.83	4.26	3.73	3.19	2.83	2.34	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**S**	**S**	**S**	3.11	2.99	3.06	4.25	9.47	9.47	3.9	17
9	5.31	6.63	10.53	10	1.92	1.89	1.91	1.91	1.91	1.86	1.86	1.86	**C**	**C**	**C**	**C**	**C**	1.88	1.9	1.94	2.12	2.11	2.57	3.23	10.53	3.3	24
10	5.69	3.27	4.26	4.42	2.44	2.06	1.92	1.94	1.9	1.9	1.9	1.88	1.88	**S**	1.89	1.89	1.91	1.9	1.89	1.9	1.89	2.47	3.1	5.61	5.69	2.6	24
11	6.12	3.92	4.33	2.99	2.5	3.12	3.24	2.56	1.89	1.89	1.89	1.9	**S**	1.9	1.9	1.9	1.9	1.91	1.92	2.74	2.58	14.58	4.76	7.93	14.58	3.5	24
12	11.11	10.42	9.54	5.81	5.31	3.48	3.56	3.48	2.04	1.99	1.89	**S**	1.98	1.98	1.9	1.89	1.89	1.9	1.89	1.96	4.45	4.53	7.38	3.38	11.11	4.1	24
13	3.48	3.67	4.81	5.89	3.08	2.58	2.37	2	1.95	1.91	**S**	1.89	1.89	1.9	1.9	1.92	1.9	1.9	1.9	2.24	3.9	7.28	6.13	4.54	7.28	3.1	24
14	3.65	3.31	3.17	3.9	6.54	4.62	4.42	4.01	2.67	**S**	1.89	1.94	1.88	1.91	3.21	3.21	2.05	2.02	6.32	3.34	2.36	3.66	2.29	2.51	6.54	3.3	24
15	3.11	4.54	5.79	3.44	3.3	3.02	3.28	1.93	**S**	1.88	1.93	2.34	2.11	2.35	1.99	1.92	1.93	1.95	1.94	1.9	1.9	1.91	1.92	1.92	5.79	2.5	24
16	1.92	1.91	1.9	1.9	1.94	1.91	1.93	**S**	1.91	1.94	1.91	1.91	1.91	1.91	1.9	1.9	1.89	1.91	2.35	4.19	4.08	7.62	6.05	12.29	12.29	3.0	24
17	12.29	13.32	13.68	17.91	13.72	11.54	**S**	4.84	4.23	3.68	2.03	1.97	1.98	1.98	1.98	1.99	2.01	2.06	2.11	2.12	2.33	2.58	2.42	2.3	17.91	***5.4***	24
18	2.19	2.05	2.08	2.11	2.08	**S**	2.03	1.98	2.03	2.01	2	1.97	1.97	1.97	2.03	2.02	2.4	2	1.97	2.01	2.06	1.93	1.9	1.92	2.4	2.0	24
19	1.91	1.93	1.98	1.96	**S**	1.95	1.97	2.01	1.91	1.92	1.95	1.99	2.07	2.06	2.15	1.98	2.01	2.19	2.18	2.21	3.04	3.08	3.15	2.83	3.15	2.2	24
20	3.56	3.05	2.93	**S**	5.44	4.16	4.19	2.54	2.39	2.15	2.28	2.04	2	2.01	2.04	1.98	2	2.13	2.13	2.37	2.53	2.59	2.14	2.1	5.44	2.6	24
21	2.53	2.45	**S**	2.72	3.13	3.04	3.27	2.73	2.37	2.3	2.16	2.1	2.05	1.93	1.89	1.87	2.02	1.97	2.18	3.21	3.79	8.61	3.26	3.74	8.61	2.8	24
22	4.15	**S**	6.54	4.73	4.54	4.53	2.97	2.27	2.16	1.93	1.95	2.04	2.03	2.1	2.18	2.07	2.03	2.01	2.05	3.17	5.34	2.78	5.32	5.03	6.54	3.2	24
23	**S**	6.08	7.54	12.41	5.9	3.95	8.16	5.68	2.8	2.87	2.25	2.62	2.55	2.11	2.08	1.89	1.87	**Y**	**Y**	2.45	3.93	12.56	6.58	**S**	12.56	4.8	22
24	9.52	1.94	1.88	1.88	2.06	2.28	2.03	1.85	1.86	1.91	1.87	1.91	1.85	1.84	1.85	1.84	1.83	1.85	1.84	1.87	2.08	2.2	**S**	2.43	9.52	2.3	24
25	2.33	2.15	2.79	2.53	2.22	2.2	2.3	2.02	1.98	2.02	2.02	1.94	1.95	1.95	1.98	2.03	2.02	2	2.01	2.03	2.2	**S**	2.19	2.13	2.79	2.1	24
26	2.4	2.3	2.22	2.33	2.52	2.71	2.39	2.39	2.21	2.14	2.1	2.13	2.21	2.16	2.1	2.04	2.32	2.19	2.14	2.42	**S**	2.94	2.33	2.2	2.94	2.3	24
27	2.18	2.62	2.67	2.22	2.17	2.21	1.98	1.97	1.95	1.99	1.91	2.02	1.98	1.97	2	1.93	2.14	2.03	1.95	**S**	1.98	3.33	3.32	3.67	3.67	2.3	24
28	3.63	***20.28***	10.25	10.43	8.77	6.92	3.41	2.58	2.27	2.07	1.93	1.91	1.91	1.91	1.94	1.96	1.95	1.93	**S**	1.93	1.91	1.95	1.95	1.99	***20.28***	4.2	24
29	1.95	1.93	1.93	1.93	1.94	2.04	2.03	2	2.06	2.35	2.11	2.08	2.3	2.28	2.09	2.08	2.01	**S**	2.06	1.96	1.98	2.01	1.99	2.1	2.35	2.1	24
30	1.99	2.52	2.51	2.59	2.59	2.43	2.1	**S**	1.91	1.9	1.87	1.88	1.87	1.9	1.9	1.93	**S**	2.04	2.26	2.24	2.17	2.67	3.45	3.22	3.45	2.3	24
31	2.76	2.83	4.79	4.73	3.58	4.05	3.16	2.86	2.09	1.97	1.86	1.85	1.85	1.87	1.88	**S**	1.99	3.84	2.02	2.35	2.04	2.34	2.63	2.42	4.79	2.7	24
HOURLY MAX	12	20	14	18	14	12	8	6	4	4	2	3	3	2	3	3	2	4	6	4	5	15	7	12			
HOURLY AVG	3.8	4.2	4.3	4.3	3.7	3.3	2.8	2.5	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.4	2.7	4.0	3.3	3.6			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 692

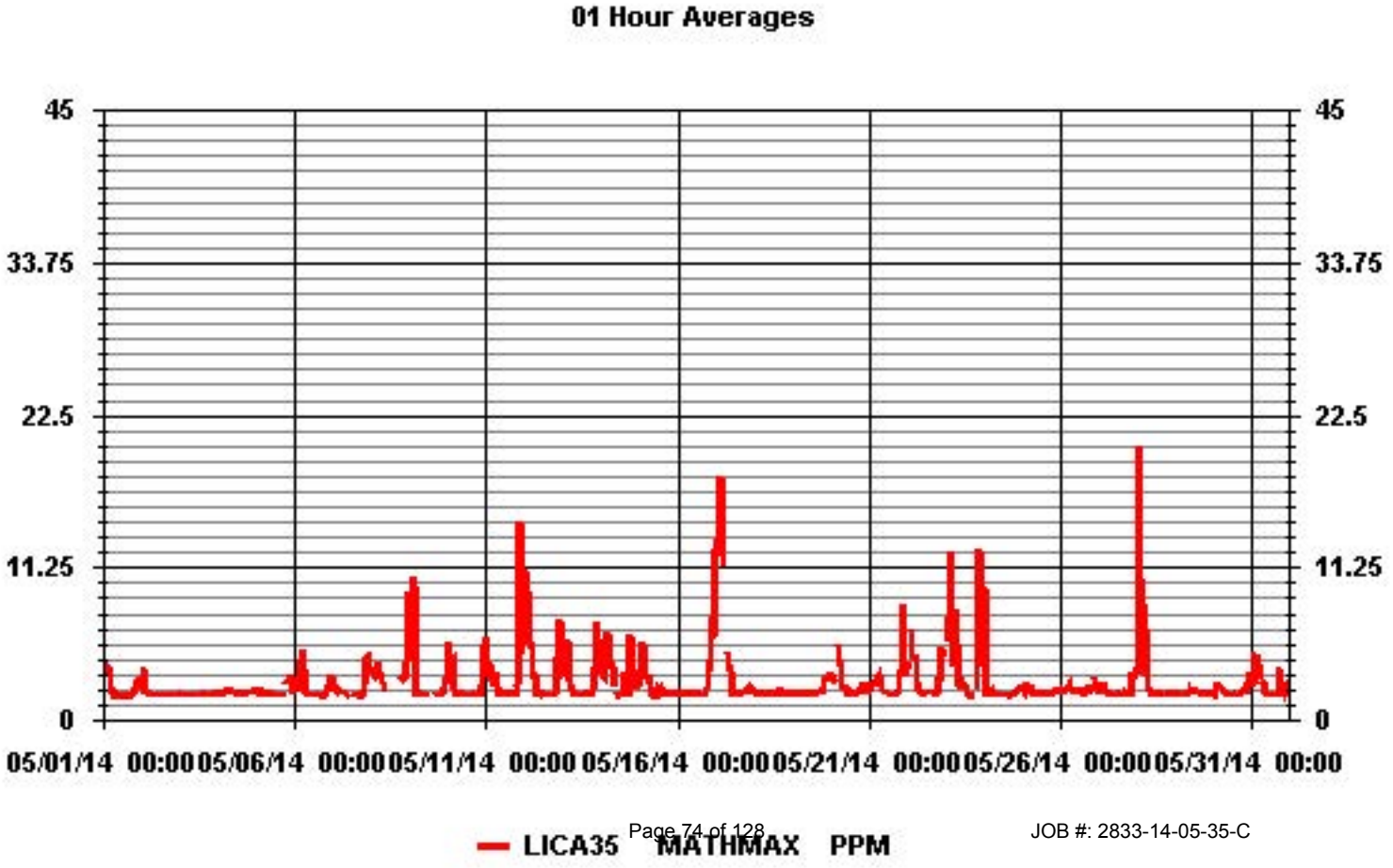
MAXIMUM INSTANTANEOUS VALUE: 20.28 PPM @ HOUR(S) 1 ON DAY(S) 28

VAR-VARIOUS

IZS CALIBRATION TIME: 34 HRS OPERATIONAL TIME: 735 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 2.02



JOB #: 2833-14-05-35-C

LICA35
METHANE / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	3.31	1.73	4.32	5.91	7.21	5.62	2.30	2.30	1.58	2.45	2.02	4.90	8.08	10.53	16.16	8.08	86.58
< 10.0	.14	.14	.28	.86	2.16	.14	.28	.14	.14	.14	.28	1.44	3.17	3.03	.72	.14	13.27
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.14
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.46	1.87	4.61	6.78	9.37	5.77	2.59	2.45	1.73	2.59	2.30	6.34	11.25	13.70	16.88	8.22	

Calm : .00 %

Total # Operational Hours : 693

Distribution By Samples

Direction

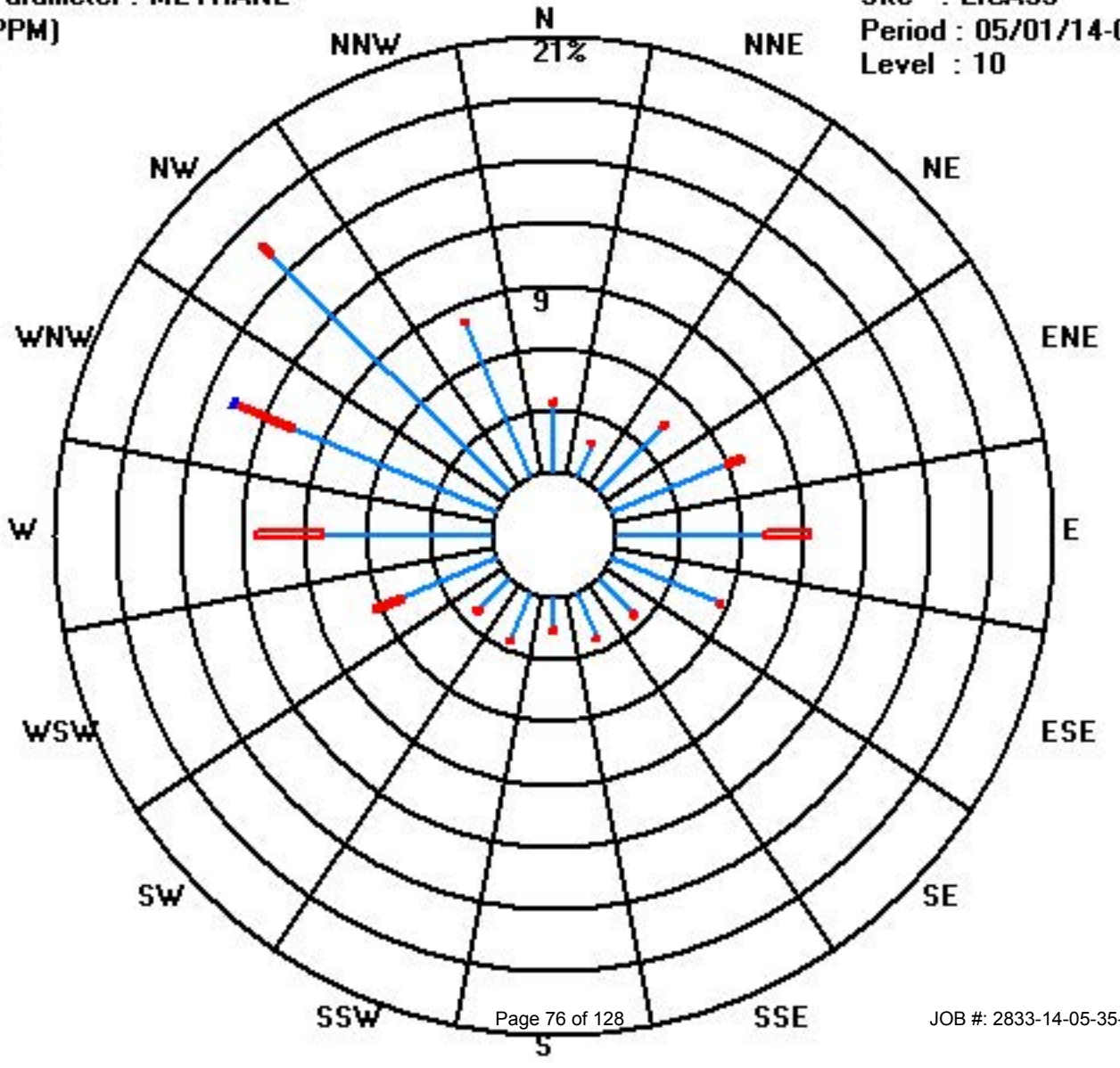
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	23	12	30	41	50	39	16	16	11	17	14	34	56	73	112	56	600
< 10.0	1	1	2	6	15	1	2	1	1	1	2	10	22	21	5	1	92
< 50.0														1			1
>= 50.0																	
Totals	24	13	32	47	65	40	18	17	12	18	16	44	78	95	117	57	

Calm : .00 %

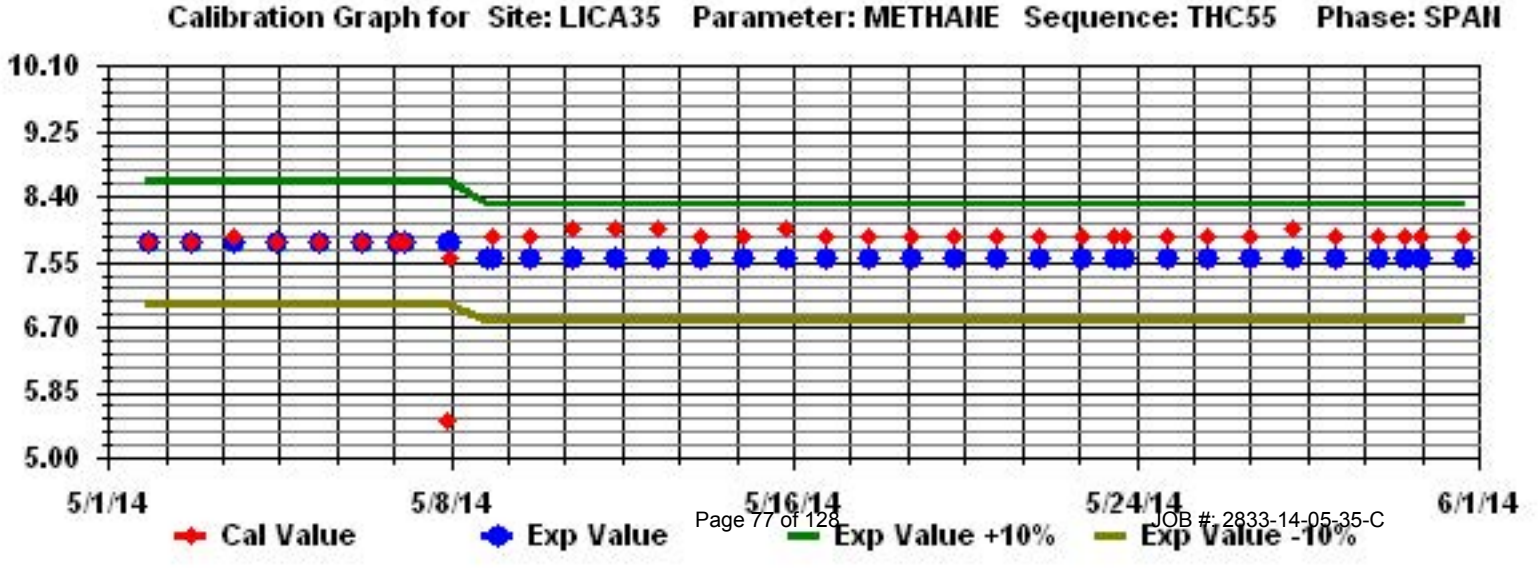
Total # Operational Hours : 693

Logger : 35 Parameter : METHANE
Class Limits (PPM)
>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA35
Period : 05/01/14-05/31/14
Level : 10



JOB #: 2833-14-05-35-C


Calibration Graph for Site: LICA35 Parameter: METHANE Sequence: THC55 Phase: SPAN
10.10
9.25
8.40
7.55
6.70
5.85
5.00
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Non-Methane Hydrocarbons

Lakeland Industry & Community Association - Elk Point Site

MAY 2014

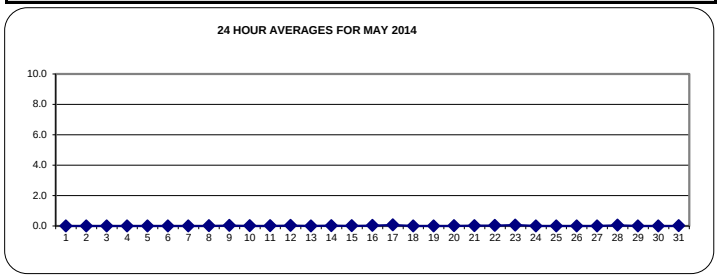
NON-METHANE HYDROCARBONS (NMHC) hourly averages in ppm

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	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0.1	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	**S**	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	**S**	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	**S**	0	0	0	0	0	0.0	24
5	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0.1	0.0	24
6	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	0.1	0.0	24
7	0	0	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	0	0	**S**	0	0	0	0	0	0.1	0	0.1	0.0	24
8	0	0	0	0	0	0	0	0	0	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**S**	**S**	0	0	0	0	0.1	0	0.1	0.0	17
9	0.1	0.2	0.2	0	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0.2	0.0	24
10	0.1	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0.1	0.1	0.0	24
11	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0.2	0	0.1	0.2	0.0	24
12	0.2	0	0.1	0	0	0.1	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0.2	0.0	24
13	0	0	0.1	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
14	0	0	0	0.1	0.1	0	0.1	0.1	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
15	0	0.1	0	0	0.1	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
16	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	0.1	0.2	0.2	0.0	24
17	0.2	0.3	0.2	***0.4***	0.2	0.2	**S**	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	***0.4***	***0.1***	24
18	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
19	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
20	0	0	0	**S**	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
21	0	0	**S**	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.1	0.1	0.2	0.0	24
22	0.1	**S**	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0.1	0.2	0.2	0.0	24
23	**S**	0.3	0.3	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	**Y**	**Y**	0	0.1	0.1	0.2	**S**	0.3	0.1	22
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0.0	24
25	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
26	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
27	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
28	0	***0.4***	0.2	0.2	0.2	0	0.1	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0.1	0	0	***0.4***	0.1	24
29	0	0	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	0.0	24
30	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0.1	0	0.1	0.0	24
31	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	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			
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

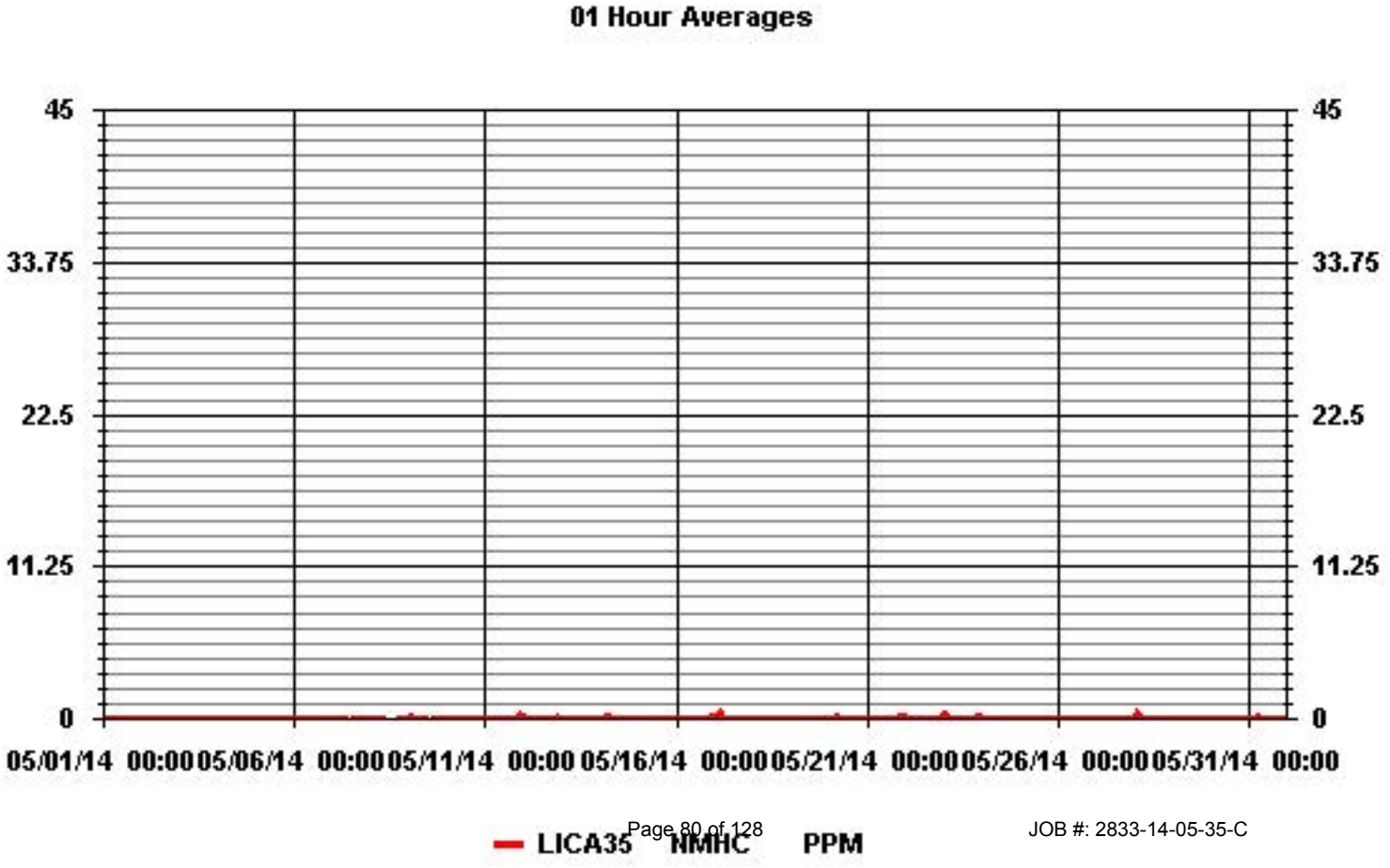
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	62					
MAXIMUM 1-HR AVERAGE:	0.4	PPM	@ HOUR(S)	3, 1	ON DAY(S)	17, 28
MAXIMUM 24-HR AVERAGE:	0.1	PPM			ON DAY(S)	VAR
					VAR-VARIOUS	
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		735	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		98.8	%
STANDARD DEVIATION:	0.05		MONTHLY AVERAGE:		0.01	PPM



JOB #: 2833-14-05-35-C

Lakeland Industry & Community Association - Elk Point Site

MAY 2014

NON-METHANE HYDROCARBONS MAX instantaneous maximum in ppm

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0.55	0.22	0.13	0.18	0.16	0.07	0.06	0.07	0.15	0	0	0	0	0	0	0	0	0	0	0	0.16	0	**S**	0.03	0.55	0.1	24
2	0.11	0	0	0.01	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0.11	0.0	24
3	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	**S**	0.01	0	0	0.1	0.0	24
4	0	0	0	0	0	0	0	0	0	0	0.03	0	0.01	0	0	0	0.15	0	0	**S**	0	0	0	0.13	0.15	0.0	24
5	0	0	0	0	0.12	0	0	0.15	0.29	0.2	0	0	0	0	0	0.09	0	0	**S**	0	0.15	0.11	0	0	0.29	0.0	24
6	0.08	0	0	0.1	0.22	0.19	0.17	0.06	0.14	0	0.14	0.17	0.16	0	0.02	0	0	**S**	0.01	0	0	0	0	0.12	0.22	0.1	24
7	0.09	0	0	0	0	0	0.09	0	0	0	**C**	**C**	**C**	**C**	0	0	**S**	0	0	0	0.14	0.48	0.16	0.12	0.48	0.1	24
8	0.15	0.15	0.19	0.12	0.13	0.15	0.08	0.14	0.07	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**S**	**S**	**S**	0	0.08	0.14	0.57	0.4	0.57	0.2	17
9	0.4	0.5	0.5	0.23	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0.5	0.1	24
10	0.34	0.11	0.14	0.1	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0.16	0.34	0.0	24
11	0.12	0.1	0.17	0	0	0.12	0.14	0	0	0	0	0	**S**	0.09	0	0	0	0	0	0	0.21	***1.24***	0.2	0.32	***1.24***	0.1	24
12	0.33	0.28	0.27	0.37	0.31	0.16	0.23	0.17	0	0.08	0	**S**	0	0	0	0	0	0	0	0	0.26	0.37	0.57	0.11	0.57	0.2	24
13	0.21	0.19	0.25	0.26	0.36	0.2	0.13	0	0	0	**S**	0.14	0	0	0	0	0	0	0	0.01	0	0.27	0.27	0.32	0.36	0.1	24
14	0.12	0.13	0.12	0.22	0.23	0.16	0.27	0.22	0	**S**	0	0	0	0	0.15	0.15	0	0	0.06	0.1	0.03	0.13	0.16	0.17	0.27	0.1	24
15	0.16	0.23	0.25	0.25	0.16	0.23	0.18	0.11	**S**	0.18	0.15	0	0	0.19	0	0	0.17	0.13	0	0	0.01	0.13	0.1	0	0.25	0.1	24
16	0	0	0	0	0	0	0.06	**S**	0	0	0	0.11	0	0	0.14	0.09	0	0	0	0.13	0.15	0.63	0.3	0.52	0.63	0.1	24
17	0.52	0.54	0.56	0.67	0.4	0.33	**S**	0.41	0.13	0.17	0	0.08	0	0	0	0.05	0	0	0	0.05	0	0.05	0	0	0.67	0.2	24
18	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0.07	0	0	0	0	0	0	0.07	0.0	24
19	0	0.07	0	0.12	**S**	0	0	0	0.07	0	0.11	0	0	0	0	0	0.13	0	0	0	0	0.12	0.12	0.13	0.13	0.0	24
20	0.14	0.04	0.14	**S**	0.19	0.22	0.17	0.13	0.11	0	0	0	0.03	0	0.14	0.13	0	0	0	0	0.11	0	0.14	0	0.22	0.1	24
21	0.08	0.18	**S**	0.14	0.14	0.19	0.19	0.14	0	0	0.16	0	0.21	0	0	0	0	0	0.06	0	0.13	0.62	0.5	0.27	0.62	0.1	24
22	0.3	**S**	0.26	0.18	0.19	0.36	0.16	0.12	0.19	0.15	0	0	0.07	0	0	0	0	0	0	0.13	0.16	0.11	0.36	0.34	0.36	0.1	24
23	**S**	0.54	0.38	0.4	0.21	0.22	0.18	0.17	0.07	0.16	0	0.12	0.04	0.19	0	0	0	**Y**	**Y**	0.2	0.46	0.81	0.58	**S**	0.81	***0.2***	22
24	0.39	0	0.17	0.16	0	0.01	0	0	0	0.08	0.12	0	0	0	0	0	0	0	0	0	0.18	0	**S**	0	0.39	0.0	24
25	0.1	0.09	0.09	0.13	0.14	0.24	0.03	0	0.31	0.05	0.2	0	0	0.13	0	0	0	0.1	0.24	0	0	**S**	0	0	0.31	0.1	24
26	0	0.16	0.07	0	0.02	0.16	0.19	0.1	0	0.2	0	0	0.19	0.15	0.2	0	0	0	0.12	0.14	**S**	0.16	0.09	0.11	0.2	0.1	24
27	0.13	0.15	0	0	0	0.11	0	0	0.17	0	0	0	0	0.13	0	0	0	0.08	0	**S**	0	0.14	0.18	0.19	0.19	0.1	24
28	0.25	1.13	0.47	0.4	0.31	0.24	0.34	0.24	0.11	0.09	0	0.13	0	0	0	0	0	0	**S**	0	0	0.14	0.14	0	1.13	0.2	24
29	0.16	0	0	0.15	0	0	0	0	0	0	0.04	0.24	0.17	0.19	0.13	0.05	0.17	**S**	0	0	0.04	0	0	0.14	0.24	0.1	24
30	0.13	0.2	0.13	0.19	0.22	0.14	0.19	**S**	0	0	0	0	0	0	0	0	**S**	0.13	0	0.15	0.17	0	0.19	0.14	0.22	0.1	24
31	0.05	0.09	0.17	0.35	0.22	0.18	0.2	0	0	0	0.07	0.11	0.09	0	0.11	**S**	0.07	0.16	0	0.11	0.13	0.16	0.1	0.09	0.35	0.1	24
HOURLY MAX	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1			
HOURLY AVG	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	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: 323

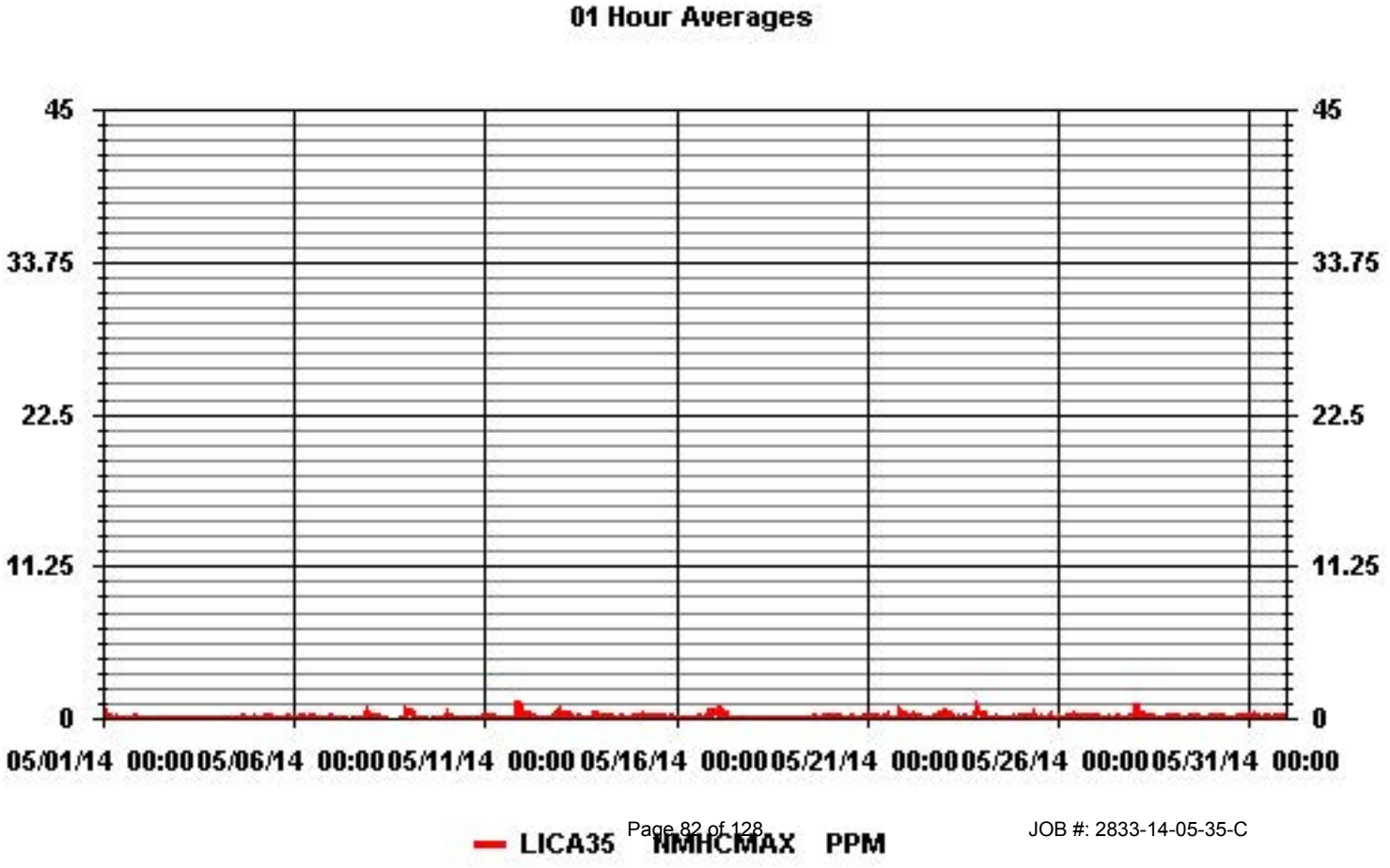
MAXIMUM INSTANTANEOUS VALUE: 1.24 PPM @ HOUR(S) 21 ON DAY(S) 11

VAR-VARIOUS

IZS CALIBRATION TIME: 34 HRS OPERATIONAL TIME: 735 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 0.14



JOB #: 2833-14-05-35-C

LICA35
NMHC / WDR Joint Frequency Distribution (Percent)

May 2014

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< .2	3.46	1.87	4.61	6.78	9.37	5.77	2.59	2.45	1.73	2.59	2.30	6.20	10.96	13.41	16.88	8.22	99.27
< .5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.28	.28	.00	.00	.72
< 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	3.46	1.87	4.61	6.78	9.37	5.77	2.59	2.45	1.73	2.59	2.30	6.34	11.25	13.70	16.88	8.22	

Calm : .00 %

Total # Operational Hours : 693

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< .2	24	13	32	47	65	40	18	17	12	18	16	43	76	93	117	57	688
< .5												1	2	2			5
< 1.0																	
< 2.0																	
< 4.0																	
>= 4.0																	
Totals	24	13	32	47	65	40	18	17	12	18	16	44	78	95	117	57	

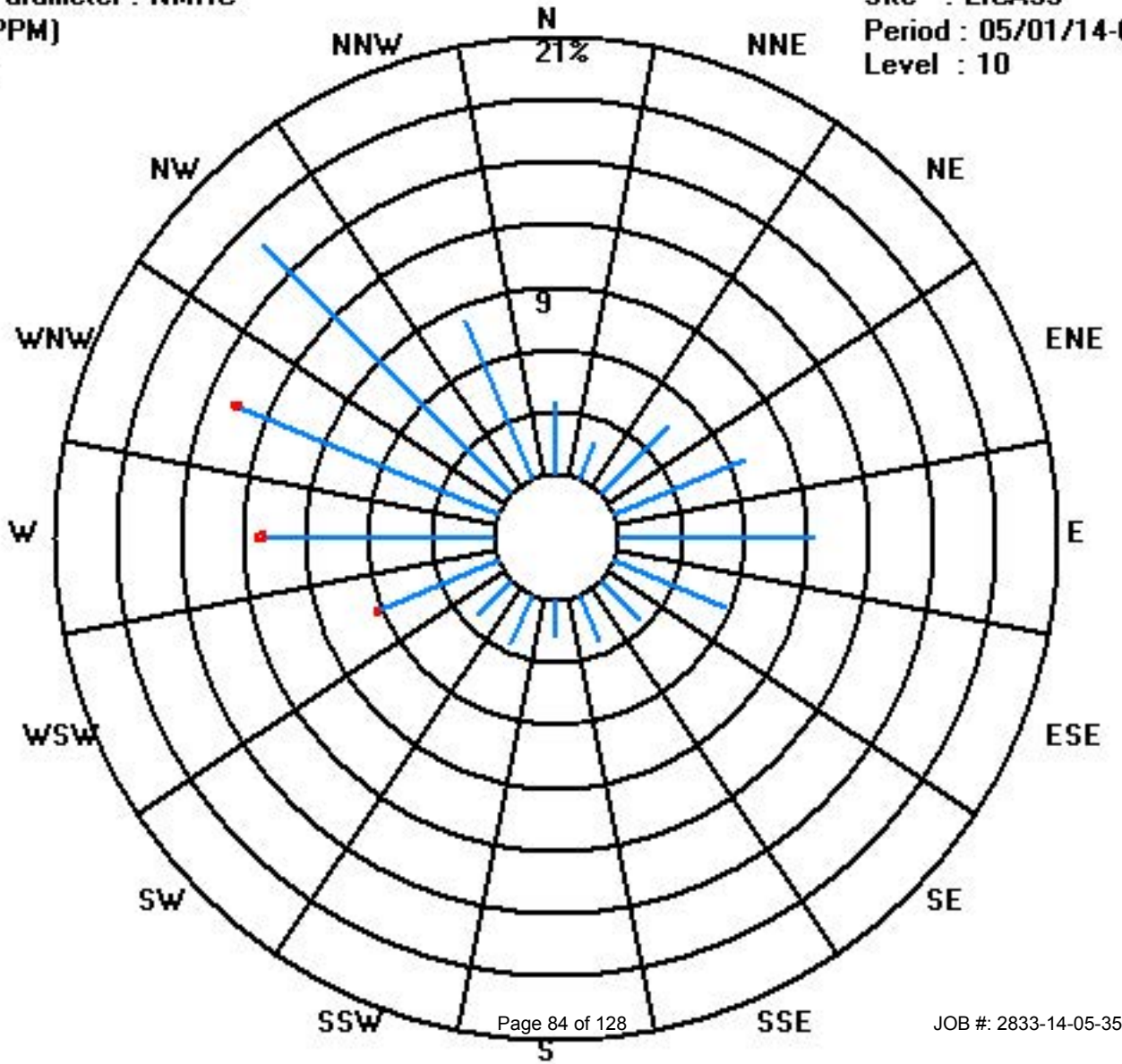
Calm : .00 %

Total # Operational Hours : 693

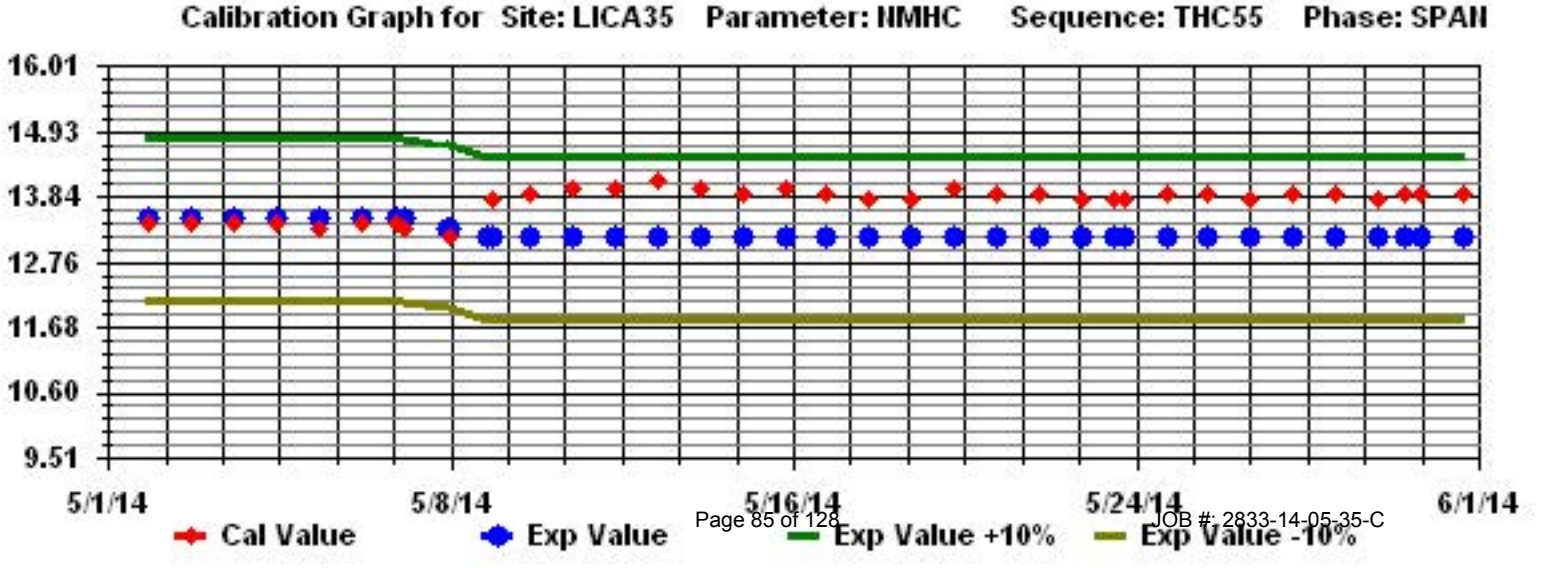
Logger : 35 Parameter : NMHC
Class Limits (PPM)

>= 4.0
< 4.0
< 2.0
< 1.0
< .5
< .2

Site : LICA35
Period : 05/01/14-05/31/14
Level : 10



JOB #: 2833-14-05-35-C


Calibration Graph for Site: LICA35 Parameter: NMHC Sequence: THC55 Phase: SPAN
16.01
14.93
13.84
12.76
11.68
10.60
9.51
5/1/14
5/8/14
5/16/14
5/24/14
6/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Vector Wind Speed

Lakeland Industry & Community Association - Elk Point Site

MAY 2014

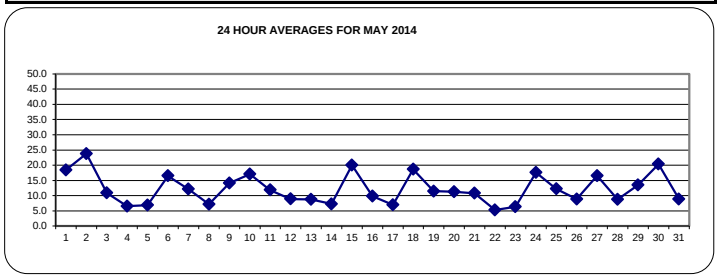
WIND SPEED (WS) hourly averages in km/hr

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	2.8	3.1	4.8	6	9.6	12.5	27.3	31.3	35.3	34.7	29	28.7	26.6	29.2	30.1	28	20.3	21.1	15	11.4	8.2	10	9.6	7.9	35.3	18.4	24
2	9.6	21.7	13	9.5	16.5	18	24.4	30.9	32.1	32.2	30.4	30.9	31.7	33.5	31.4	29.3	27.1	26.5	25	20.9	23.8	16.5	20.5	14.9	33.5	***23.8***	24
3	18.5	18.3	16.7	16.2	14.5	16.1	13.5	14.3	13.7	11.3	9.6	10.5	10.9	8.7	7.2	4.4	5.9	2.7	7.3	9.3	7.9	9.2	6.5	8.1	18.5	10.9	24
4	8	8.3	8.3	8.7	7.6	9.1	10.5	10.9	10.5	8.6	6.7	6.7	4	4.7	3.8	1.6	3.2	7.4	6.2	4.2	5.1	3.1	5	5	10.9	6.6	24
5	6	6.2	6.8	7.6	7	8.3	10.3	9.2	10.4	6.8	4.6	2.3	5.9	1.8	3.2	4.5	3.1	6.9	11.6	11	9	7.4	9.8	5.8	11.6	6.9	24
6	4.6	12.7	8.9	4.4	3.8	6.2	8.1	16.1	19.7	27.9	26.1	26.3	26	25.2	22.8	18.9	21.8	26.9	27.4	16.6	10.7	11.6	12.9	10	27.9	16.5	24
7	10	9.4	11.4	12	9.5	9.9	8.2	10.7	17.2	20.3	19.6	20	17.9	19	18.7	18.7	16.3	14.4	12.1	6.9	1.2	2.3	3.5	2	20.3	12.1	24
8	1.6	1	2.5	3.9	5.5	7.2	8.4	10.1	11.4	14	14.4	14.5	13.4	5.1	4.7	2.9	4.9	13.5	11.3	7.8	5.7	2	1.4	4.8	14.5	7.2	24
9	0.7	1.4	3	14.1	20.7	14.1	14.2	17.2	15.2	18.1	20.2	21.2	19.5	23.5	23.3	26.1	21.4	15.3	16.7	11.6	5.2	6	4.7	4.6	26.1	14.1	24
10	11.4	9.1	8	9.4	12.6	15.6	19.7	17.8	16.6	17.1	19.6	21.6	22.1	23.6	24.9	27.2	30.5	25.1	24.4	17.3	14.2	6.1	6.6	8.3	30.5	17.0	24
11	7.4	8.1	8.9	8.1	8.1	7	7.5	13.2	16.3	17.5	15.5	18.3	17.4	17.5	16.2	17.2	15.1	18.7	17.4	8	3	5.2	7.3	5.6	18.7	11.9	24
12	6.2	6.2	4.1	1.5	3.5	2	2.1	5.9	6.3	1.5	14.7	13.2	13.2	16.6	20.4	20.2	19	18.2	16.1	10.3	1.7	2.2	6.2	2.1	20.4	8.9	24
13	5	1.3	1.6	3.5	3.5	8.3	9.1	12.3	14.7	12.9	11	15.9	10.5	11.8	14.2	12.1	11	11.8	10.8	11.2	6.2	1.4	2	8.3	15.9	8.8	24
14	7.8	7.3	4.5	1.4	3.4	3.1	1.4	2.7	6.7	8	5.5	4.8	7	6.5	3.7	10.4	11	13.2	8.1	6.9	9.3	10.4	16.7	13.9	16.7	7.2	24
15	1.8	6.4	7.6	11.1	6.9	6.5	14	13.9	20	21.7	22.1	19.3	21.7	20.2	26.4	23.7	35.6	34.1	32.1	30.1	26.9	28.8	25.1	24.9	35.6	20.0	24
16	24.9	22.3	20.9	16.9	14.4	13.1	12.8	12.9	9.5	11.7	10.7	8.2	2.8	3.5	1.3	1.6	9.5	6.7	7.4	6.1	3.3	5.4	3.6	5.5	24.9	9.8	24
17	5.6	5	8	5.6	0.6	2.9	3.7	0.7	2.4	3.6	8.1	10.5	10.2	8.5	6.1	7.5	7.9	12.8	11.6	7.5	8.7	8	8.9	11.6	12.8	6.9	24
18	11.6	13.9	13.8	13	12.1	15.3	18.5	24.2	27.3	30.4	25.9	18.2	17.2	22.4	20.5	23.8	23.9	22.6	19	15.9	11.4	13.4	15.9	17.7	30.4	18.7	24
19	15.9	15	13.7	13.1	14.3	12.5	11.7	12	14.5	15	11.6	11.6	6.4	4.2	8.1	9.5	7.5	9.9	10.6	9.9	11.3	12.2	11.3	13	15.9	11.5	24
20	7.2	7.4	6.5	4.4	1.9	1.1	9.1	11.9	12.3	13.9	14.2	14.3	15.4	15.5	15.5	16.5	15.5	15.5	14.6	11.2	9.1	10.4	12.8	14.6	16.5	11.3	24
21	16.5	15.4	6.6	6.2	7.2	8.5	6.4	2.9	10.9	11.4	14.2	16.2	17.5	14.1	14.6	17.3	20.7	18.4	11.5	7.3	5.4	3.9	2.7	2.5	20.7	10.8	24
22	1.2	4.5	6.4	3.4	3	4.4	4.8	6.4	3.5	1.7	2.9	5.2	7.9	7.2	8	2.9	11.5	8.8	11.3	9.1	3.3	1.5	5.4	1.4	11.5	5.2	24
23	2.3	2	4	7.1	7.5	4.3	3.4	3.7	5.1	4.2	7.8	9.9	13.7	13.1	14	11.5	12.2	9.1	7.8	2.8	0.7	0.2	1.6	4.8	14.0	6.4	24
24	21.6	21.8	18.5	14.4	18.4	16.6	21.2	23.8	24.4	23.7	21.1	22.9	21	21.3	20.6	20.8	18.3	18.4	14.1	14.4	8.8	5.3	5.5	6	24.4	17.6	24
25	5.8	3.4	7.9	4.3	1.8	3.4	9.7	13.1	9.5	11.7	14.1	18.8	20.6	23.2	25.5	26.8	13.2	10	6.9	13.9	15.3	13.5	13	8	26.8	12.2	24
26	12.2	7.6	7.7	7.5	8.8	6.9	7.1	12.2	14.5	13.9	12.9	9.7	5.6	2.6	3.9	3.4	3	7	8.9	9.8	7.3	9.8	14.8	14.4	14.8	8.8	24
27	14.9	13	15.3	18.6	18.4	16.6	20.4	20.5	22.3	22.3	20.2	21.6	22	24.2	22.1	20.7	17.7	16.2	13.8	12.8	7.5	4.3	5.4	5.3	24.2	16.5	24
28	3	1.3	3.2	5.1	3.2	2.1	0.7	5.7	6	5.2	6.9	9.4	11.3	13.9	12.4	16.7	16.2	15.7	14.8	12	11.1	9.5	14.1	9.7	16.7	8.7	24
29	11.8	13.4	14.8	10.6	11	13.9	18.6	13.5	4	8.7	5.3	5.6	0.9	10.3	17.2	16.5	19.5	17.3	22.7	18.5	19.9	21.9	18.4	8.7	22.7	13.5	24
30	7.1	8.6	10.3	12.6	15.8	16.4	18.2	20.7	23	21.6	23.2	29.2	31.8	36	***38.4***	36	24	27.5	30.8	16.5	9.9	10.3	11.5	8.4	***38.4***	20.3	24
31	6.8	4.3	5.3	8.7	13.2	9.3	7.3	5.6	4.1	7.3	15.2	14.8	9.6	11.8	10.1	8.5	5.5	12	19.4	9.5	11.2	8.3	1.2	3.7	19.4	8.9	24
HOURLY MAX	24.9	22.3	20.9	18.6	20.7	18.0	27.3	31.3	35.3	34.7	30.4	30.9	31.8	36.0	38.4	36.0	35.6	34.1	32.1	30.1	26.9	28.8	25.1	24.9			
HOURLY AVG	8.7	9.0	8.8	8.7	9.2	9.4	11.4	13.1	14.2	14.8	14.9	15.5	14.9	15.4	15.8	15.7	15.2	15.6	15.1	11.6	9.1	8.4	9.2	8.4			

STATUS FLAG CODES

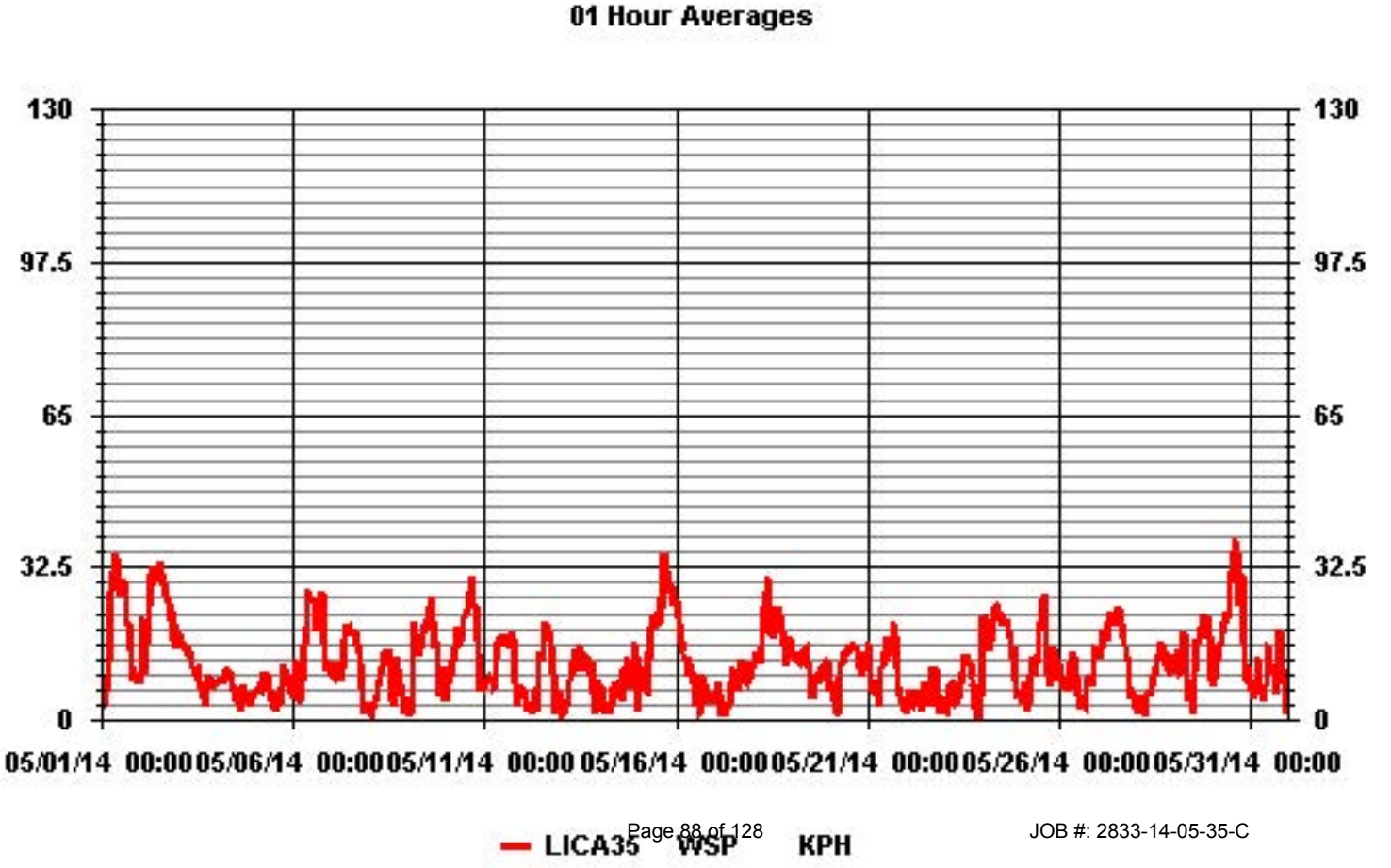
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	744						
MAXIMUM 1-HR AVERAGE:	38.4	KPH	@ HOUR(S)	14	ON DAY(S)	30	
MAXIMUM 24-HR AVERAGE:	23.8	KPH			ON DAY(S)	2	
					VAR-VARIOUS		
			OPERATIONAL TIME:		744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	7.63		MONTHLY AVERAGE:		12.17	KPH	



JOB #: 2833-14-05-35-C

Lakeland Industry & Community Association - Elk Point Site

MAY 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

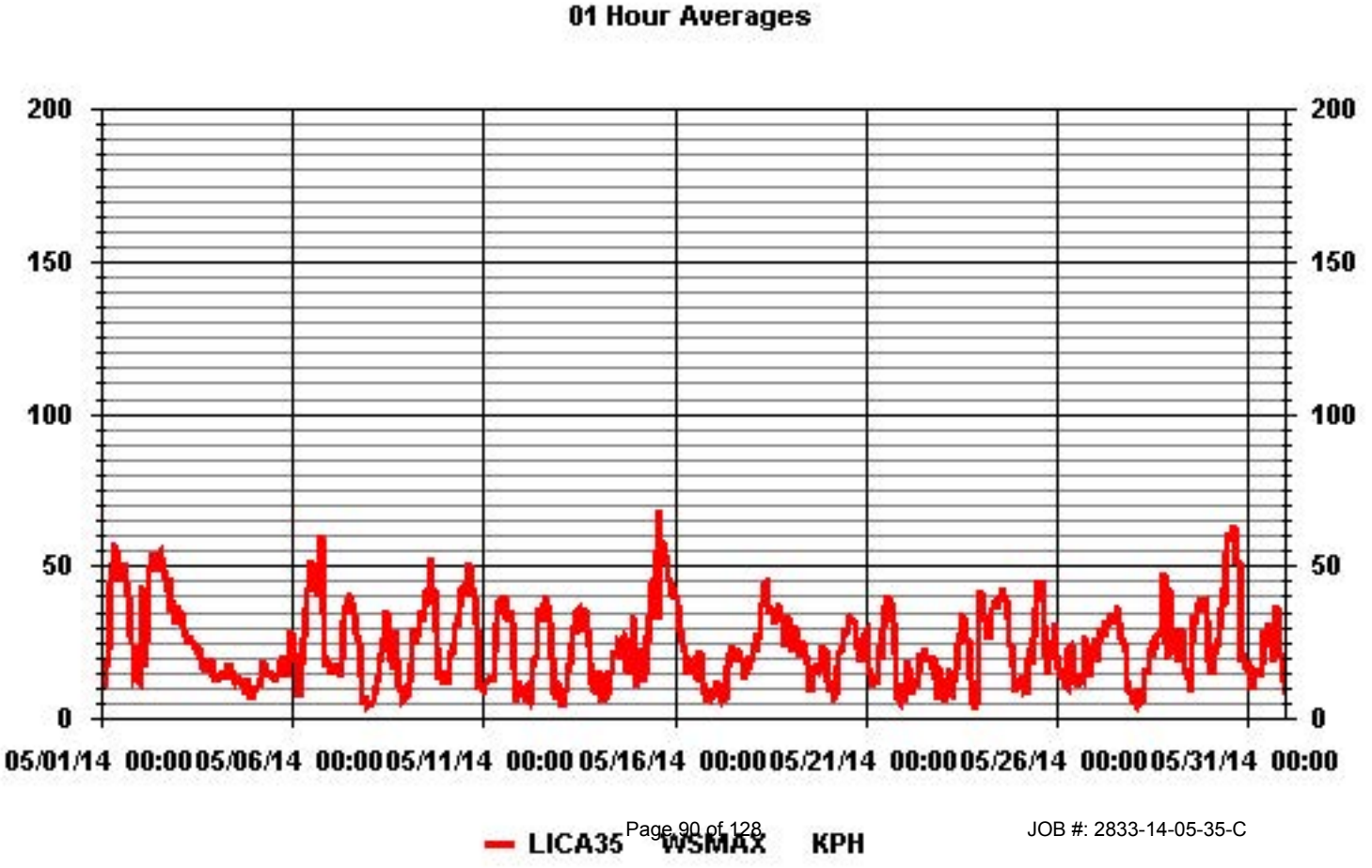
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	19.2	10.2	14.9	17	19.8	22.4	44.8	51	57.4	56	50	45.6	45.5	50.1	48.5	51.2	45.5	40.2	27.5	24.4	13	13.7	12.8	12.2	57	33.0	24
2	23.7	43.9	29.2	16.5	27.9	27.3	47.7	50.3	53.9	50.3	49.6	49.3	53.3	54.5	53	49.4	46.5	43.9	44.5	35.1	39.3	34.6	36.9	30.3	55	***41.3***	24
3	36.8	34.1	34.1	30.8	29.1	27.7	25.6	25.3	26.7	24.8	24.7	23.2	22.1	23.6	21.2	18.3	17.1	15.5	19.1	19.3	17.5	19.4	13.3	14.4	37	23.5	24
4	12.3	14	14.3	14.8	14.1	13.8	15.2	18.3	16.4	17	16.2	13.5	12.1	13.6	13.4	11.9	11.4	12.6	10.5	8.1	12.9	7.2	7.3	7.3	18	12.8	24
5	9.5	9.5	10.1	12.5	12.1	15	18.9	15.1	14.5	14.4	15.2	15.1	13.5	11.9	13.6	14.2	15	18.5	20.4	15.4	13.8	15.6	27.4	28.8	29	15.4	24
6	19.2	22.4	19	15.6	6.8	11.3	17.3	26.3	36.4	42.6	41.8	47.2	51.6	42.1	43.2	43.3	40.1	43.1	59.9	35	18.2	16.8	18.4	17.5	60	30.6	24
7	14.3	15.3	16.3	17.9	15.4	15.7	13.9	19.4	31.7	37.2	33.8	39.3	41.4	34.3	38.1	34.5	28	26	25.1	14.2	4.5	6.5	6.8	3.8	41	22.2	24
8	4.1	4.1	5.6	9.5	9.2	11.7	14.3	18.2	21.7	26.2	32.1	34.9	33.9	22.5	19	16	21.9	28.6	19.8	10.9	9	5.8	6.3	8.1	35	16.4	24
9	6.8	11.4	18.2	26.2	29.5	24	27	28.9	31.5	35.2	34.2	36.7	41.2	41.8	42	52.7	37.4	43.2	29	24	12.5	15.3	12.2	12.4	53	28.1	24
10	14.7	15	10.7	22	20.6	24.7	31.5	29.6	33.6	36.2	42.5	43.1	39.7	43.1	43.3	50.7	45.6	43.3	40.4	31.7	29.6	9.2	10.3	9.8	51	30.0	24
11	9.4	10.9	12.1	12.3	14	11.8	13.6	21.8	30.9	38.9	33.7	39.3	34.4	40.2	33.3	31.9	33.9	35.6	32.4	16.7	5.5	10	10.7	8.7	40	22.6	24
12	9.4	9.6	10.3	5.3	7	5.3	6.3	16.7	19.3	20.2	36.1	33.2	32.8	34.6	37.4	39.8	37.9	32.2	31.5	20.2	8.7	5.7	12	8.6	40	20.0	24
13	8.6	4.7	3.8	8.6	10	15.2	17.9	24.9	28.4	27.6	35.2	35.9	28.5	35.1	30.7	32.4	36.4	29.8	24.2	18.5	11.7	9.4	8.1	14.6	36	20.8	24
14	11.8	15.3	6.5	6.1	6.3	7.6	8	15.8	14.8	22.2	21.3	22	25.2	24.5	18.8	24.8	27.4	26.9	16	14.5	16.1	25.3	33.6	23.5	34	18.1	24
15	10.5	13	18.1	23.4	11.9	14.3	27.4	24.6	33.5	36.8	44	45.8	55	32.5	***68.2***	50.1	58.6	55.7	54.4	52.3	46.5	45.4	39.5	43.6	***68***	37.7	24
16	40.4	39.6	37.9	29.3	25.8	21.9	23.5	21.4	14.6	18.7	18.8	18.7	16.4	20.3	13.5	11.7	22	16.7	12.5	8.4	5.3	8.7	7.3	8.8	40	19.3	24
17	8.8	6.9	11.6	11.6	7.4	5.9	6.8	6.5	6.8	17.1	20.2	19.9	24	21.5	18.5	20.2	22.7	20.6	18.9	12.5	14.1	14.8	16.1	19.4	24	14.7	24
18	19.4	23.9	24.3	21.9	28.2	26	37.5	36.7	44.4	44.9	40.4	34.4	36.7	35.2	30.7	36.5	34.2	38	33.2	32.1	22.8	32.5	29.5	33.6	45	32.4	24
19	29.2	24.2	21.3	23.6	30.1	22.9	20.6	21.9	24	25.2	21.4	18.6	11.5	8.5	17.1	17.5	15.6	16.4	15.8	17.7	18.5	24	17.2	23.1	30	20.2	24
20	12.9	9.5	9.3	6.7	6.9	7.9	17.5	21.5	21.9	23.8	28.6	28.3	29.5	33.3	31.3	33.4	32.8	31.3	27.3	23.6	19.3	19.3	26.4	27.6	33	22.1	24
21	29.5	30.1	17.5	14.6	10.1	12.5	10.9	13.6	22.1	21.6	29.1	29.9	37.2	33.6	40	34.5	35.4	32.3	21.9	12.5	7.3	6.3	5.4	7.9	40	21.5	24
22	5	11.5	18.9	17.5	7.9	9.1	11.9	12.4	10.1	14.7	20.4	20.7	21.8	23	21	18.6	20.2	15.5	20.2	13.2	8.2	5.9	17.3	7.9	23	14.7	24
23	13.3	5.2	7.9	11.6	16.5	7.8	7.5	11.9	14	15.8	24.3	28.2	34.5	33.5	30.8	26.6	25.9	16.8	13	5.1	3	5.5	4.5	38.9	39	16.8	24
24	42.2	38.3	31.3	33.2	33.1	25.6	33.6	36.4	38.1	38.8	36.1	37.6	38.5	40.3	42.8	40.6	39.6	33.1	23.8	24.7	17.8	8.8	9.6	11.5	43	31.5	24
25	12.1	9.6	13.9	9.3	9.8	9.5	20	23	17.7	26.4	36.5	44.9	37.7	41.4	42.9	45.3	31.3	20.4	14.5	24.6	25.4	19.9	20.7	31.3	45	24.5	24
26	21	17	14	14	13.2	11.1	10.4	22.7	23.2	24	22.9	15	11.7	10.7	14.5	13.5	12.9	26.9	13.8	15.6	13.6	15	24.2	21.9	27	16.8	24
27	26	18.2	24.8	29.8	28.7	26.7	30.8	30.2	32.2	34.1	31.2	32.5	34.4	36.1	35.7	31.8	26.8	26.2	25.2	22.3	13.4	9.2	8.1	8.4	36	26.0	24
28	6.3	5.2	7.1	9.3	7.8	6	6.8	14.8	16.3	14.8	21.9	21.5	24.8	24.4	26.5	27.2	27.7	26.7	41.3	48.1	24.6	19.5	42.6	24.8	48	20.7	24
29	21.8	27.2	29.5	21.2	18.3	21.6	29.3	27.8	14.3	16.1	12.5	15.9	8.2	24.6	33.6	30.7	36.8	36.5	39	37.6	38.3	38.9	32.6	19.1	39	26.3	24
30	15.5	14.4	18.1	20.5	23.7	26.4	29.4	36.4	41.2	40.5	54.2	60	60	59.5	62.4	63.2	50.5	52.1	51.5	35.9	18.5	19.4	16.7	15.7	63	36.9	24
31	18.8	10.4	9.3	14.1	16	15.3	15.3	14.2	14.2	17.8	27.9	28.2	29.9	31.3	23.7	21.4	18.6	31	37.4	28.4	21.1	20.8	12.3	9.1	37	20.3	24
HOURLY MAX	42	44	38	33	33	28	48	51	57	56	54	60	60	60	68	63	59	56	60	52	47	45	43	44			
HOURLY AVG	17.2	16.9	16.8	17.0	16.7	16.3	20.7	23.8	26.0	28.4	30.9	31.6	31.8	31.7	32.5	32.1	30.8	30.2	27.9	22.7	17.1	16.4	17.6	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:	68	KPH	@ HOUR(S)	14	ON DAY(S) 15
					VAR-VARIOUS
OPERATIONAL TIME:					744 HRS



JOB #: 2833-14-05-35-C

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

May 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	1.07	.67	1.47	1.88	2.28	.53	.53	.26	.40	.94	.67	1.20	3.62	4.30	1.74	1.07	22.71
<	12.0	.80	1.34	1.74	2.55	4.43	2.15	1.61	.67	.53	1.07	.53	3.09	3.49	3.76	3.76	1.34	32.93
<	20.0	1.34	.00	1.20	2.15	2.01	1.47	.80	1.47	.80	.53	.94	1.07	2.68	2.55	5.10	3.36	27.55
<	29.0	.00	.00	.00	.00	.13	1.34	.13	.00	.00	.00	.00	.53	1.47	2.82	4.30	2.41	13.17
<	39.0	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00	.00	.13	.53	.40	2.41	.00	3.62
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.22	2.01	4.43	6.58	8.87	5.64	3.09	2.41	1.74	2.55	2.15	6.04	11.82	13.84	17.33	8.19	

Calm : .00 %

Total # Operational Hours : 744

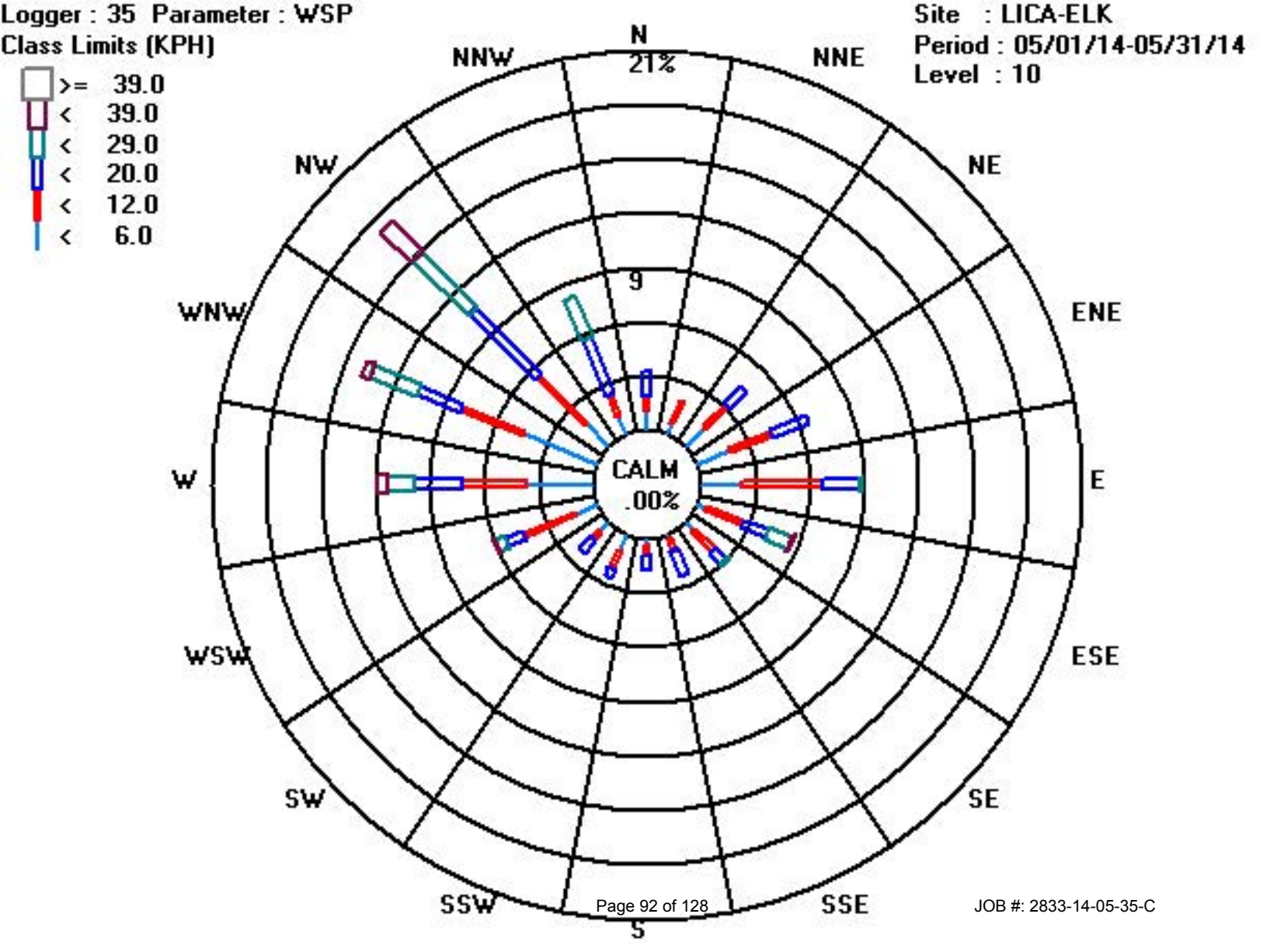
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	8	5	11	14	17	4	4	2	3	7	5	9	27	32	13	8	169
<	12.0	6	10	13	19	33	16	12	5	4	8	4	23	26	28	28	10	245
<	20.0	10		9	16	15	11	6	11	6	4	7	8	20	19	38	25	205
<	29.0					1	10	1					4	11	21	32	18	98
<	39.0						1						1	4	3	18		27
>=	39.0																	
	Totals	24	15	33	49	66	42	23	18	13	19	16	45	88	103	129	61	

Calm : .00 %

Total # Operational Hours : 744



JOB #: 2833-14-05-35-C

Vector Wind Direction

Lakeland Industry & Community Association - Elk Point Site

MAY 2014

WIND DIRECTION (WD) hourly averages in degrees

MST

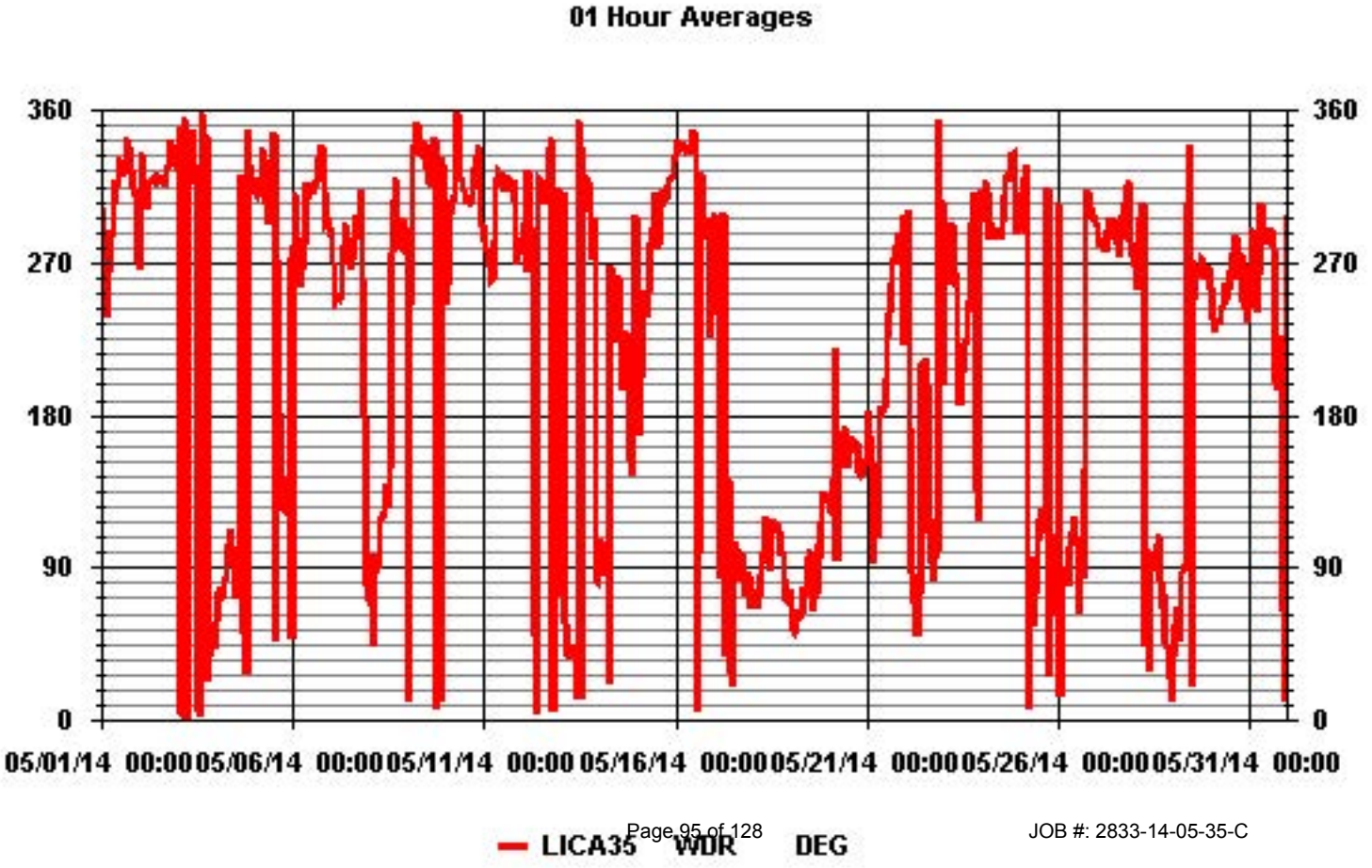
HOUR START / HOUR END / DAY	0:00 1:00	1:00 2:00	2:00 3:00	3:00 4:00	4:00 5:00	5:00 6:00	6:00 7:00	7:00 8:00	8:00 9:00	9:00 10:00	10:00 11:00	11:00 12:00	12:00 13:00	13:00 14:00	14:00 15:00	15:00 16:00	16:00 17:00	17:00 18:00	18:00 19:00	19:00 20:00	20:00 21:00	21:00 22:00	22:00 23:00	23:00 0:00	24-HOUR AVG.	24-HOUR AVG QUANDRANT	RDGS.
1	302	290	248	238	261	264	286	289	304	317	317	332	323	321	326	322	344	328	338	326	314	310	306	272	344	NNW	24
2	265	335	326	304	307	301	318	319	319	318	321	322	321	317	321	316	316	326	327	343	330	340	328	323	343	NNW	24
3	333	350	5	4	356	0	340	336	341	349	329	317	4	16	1	359	32	42	345	23	37	43	43	43	359	N	24
4	58	75	70	78	72	85	83	104	101	112	90	102	71	76	72	322	51	113	89	27	348	329	316	317	348	NNW	24
5	318	312	310	312	309	338	332	305	293	297	301	335	347	46	212	272	182	146	125	124	139	138	273	48	347	NNW	24
6	280	311	305	286	255	275	265	280	317	315	308	312	317	311	315	318	332	338	340	328	313	293	294	291	340	NNW	24
7	286	271	247	248	250	249	252	269	280	293	283	280	265	285	271	284	298	295	299	313	261	179	80	71	313	NW	24
8	73	68	43	98	87	90	92	119	120	123	127	140	124	148	276	307	320	281	293	277	284	296	278	276	320	NW	24
9	10	244	291	334	339	349	353	345	343	335	334	341	327	318	318	315	323	344	6	17	11	332	329	282	353	N	24
10	245	256	279	299	306	310	325	359	338	320	319	314	311	307	306	310	304	316	326	333	339	314	291	294	359	N	24
11	283	279	277	268	259	260	283	320	325	324	319	316	312	320	319	322	312	316	305	319	268	277	275	285	325	NW	24
12	283	294	264	325	281	287	290	49	58	3	320	319	319	311	305	314	333	338	344	5	56	280	315	73	344	NNW	24
13	90	75	311	58	39	36	43	45	38	41	12	355	12	338	313	300	321	309	317	296	272	296	83	82	355	N	24
14	98	107	94	90	85	99	21	268	257	261	223	255	262	237	195	198	224	230	198	155	144	198	261	298	298	WNW	24
15	205	167	201	253	247	237	242	252	282	290	281	311	277	281	289	313	303	306	308	316	319	320	321	329	329	NNW	24
16	334	341	341	337	338	339	336	337	338	334	343	349	335	4	98	286	323	288	284	291	297	226	239	292	349	NNW	24
17	299	292	281	287	83	277	300	37	128	143	29	19	50	106	102	84	82	99	94	73	79	87	66	84	300	WNW	24
18	66	69	77	66	73	86	92	100	120	116	113	87	110	118	113	117	113	112	99	99	84	72	71	75	120	ESE	24
19	75	55	53	56	58	65	62	63	76	76	73	96	100	88	64	72	74	100	99	117	130	135	131	130	135	SE	24
20	129	123	121	142	219	94	137	167	170	161	173	149	163	162	168	160	158	165	164	147	144	145	152	154	219	SW	24
21	169	182	169	152	92	109	109	122	185	181	182	185	202	225	240	258	271	271	280	288	279	284	221	298	298	WNW	24
22	281	274	301	173	87	70	52	49	68	75	210	194	211	213	198	112	93	82	95	119	99	355	240	307	355	N	24
23	198	267	279	289	257	293	267	260	261	224	186	196	205	221	225	241	247	265	294	311	256	136	118	294	311	NW	24
24	313	309	318	312	296	283	294	287	286	288	290	284	289	294	310	320	320	323	325	334	335	287	309	312	335	NNW	24
25	291	290	303	320	327	6	58	97	55	74	95	106	119	110	125	123	133	315	25	100	110	103	91	61	327	NW	24
26	306	14	71	83	91	83	79	102	111	117	120	110	104	63	85	85	149	299	312	307	302	296	298	295	312	NW	24
27	292	280	283	279	284	276	289	290	296	293	297	285	280	284	273	298	284	305	313	315	319	283	274	267	319	NW	24
28	280	254	257	296	272	305	43	68	99	29	98	97	93	88	103	110	83	70	71	46	43	24	43	10	305	WNW	24
29	37	56	67	46	54	87	90	90	303	305	339	20	271	248	262	265	263	273	272	262	262	267	267	255	339	NNW	24
30	257	237	229	233	235	235	242	245	258	253	248	254	265	276	280	286	260	270	276	261	248	244	235	246	286	WNW	24
31	269	291	273	245	241	244	263	306	287	292	288	281	287	290	281	279	201	194	210	227	64	88	10	296	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:	February 21, 2014
DECLINATION :	MAEGNETIC DECLINATION 19 DEGREES EAST

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	104.93		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	312	DEG



JOB #: 2833-14-05-35-C

Standard Deviation Wind Direction

Lakeland Industry & Community Association - Elk Point Site

MAY 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	22	31	25	16	22	9	7	8	8	10	11	11	12	11	12	11	16	12	12	9	8	5	5	7
2	13	10	13	7	6	6	10	11	10	10	12	11	10	10	12	10	10	9	10	11	9	12	8	9
3	10	11	13	14	13	13	12	13	17	20	22	19	27	26	34	57	32	39	40	14	15	13	16	13
4	10	11	12	10	11	9	11	10	13	17	27	34	35	49	53	61	48	15	13	15	16	14	7	6
5	7	7	7	7	8	11	9	7	7	21	32	49	31	54	54	37	49	38	9	4	8	21	24	23
6	23	9	12	28	13	7	10	8	10	9	11	12	10	10	10	11	9	10	10	8	6	5	5	5
7	3	8	7	7	8	8	11	12	12	12	14	12	23	17	18	14	10	14	11	6	13	42	18	18
8	30	50	33	27	13	10	11	14	21	17	21	22	25	39	46	48	41	22	9	7	7	15	31	9
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14	8	10	15	44	45	30	40	41	21	25	47	52	44	39	52	25	20	15	12	21	12	12	10	10
15	41	10	11	11	9	10	10	13	12	11	15	9	14	8	14	10	8	8	8	9	9	8	8	8
16	8	9	8	10	9	11	10	7	9	10	16	31	65	59	58	46	25	34	7	5	10	15	8	11
17	8	7	5	12	29	15	10	54	45	59	39	17	22	34	30	40	24	12	8	9	8	5	10	9
18	11	10	9	9	10	11	13	9	8	9	10	11	15	13	9	10	9	9	8	7	11	12	12	12
19	12	10	9	10	13	12	11	12	11	11	11	12	13	18	11	12	11	9	6	7	6	9	7	7
20	6	4	7	9	14	21	13	15	15	16	19	21	19	21	23	19	18	16	13	11	11	11	12	13
21	11	10	17	22	8	10	16	41	20	16	18	18	18	26	23	19	15	12	8	7	8	5	10	13
22	18	9	46	49	50	19	16	21	44	44	57	43	31	35	32	59	16	13	10	5	30	43	9	20
23	32	15	15	8	13	13	16	25	23	32	36	27	20	28	22	20	20	15	6	5	27	45	32	9
24	9	9	10	10	6	7	7	8	10	11	14	12	16	16	17	14	15	12	10	9	8	7	11	14
25	10	16	6	16	31	23	15	12	13	18	23	14	16	15	13	10	42	13	23	16	6	6	8	18
26	14	17	10	8	7	8	10	7	8	8	9	11	16	38	39	38	46	19	8	9	10	7	5	7
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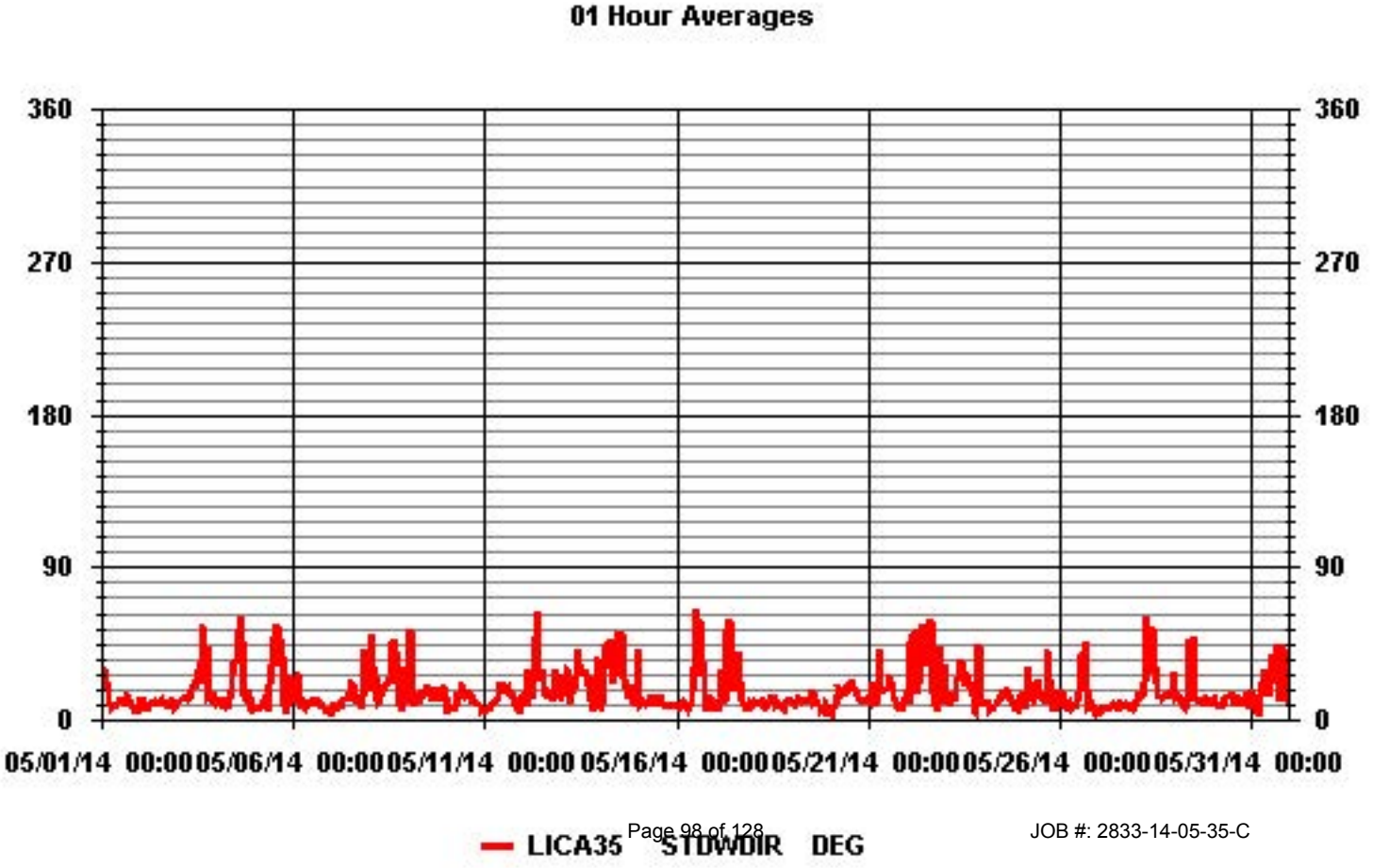
28	11	14	14	16	16	22	61	27	39	44	55	32	22	13	15	14	12	13	14	14	16	17	16	28
29	14	15	13	13	11	8	7	11	48	11	20	37	49	15	11	11	12	10	10	13	12	10	10	12
30	13	10	9	9	8	8	9	12	13	14	15	14	14	10	10	8	12	11	8	11	10	16	6	13
31	17	13	9	5	2	14	15	22	29	22	15	17	38	26	24	25	44	17	10	45	12	14	42	9

STATUS FLAG CODES

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

LAST CALIBRATION: February 21, 2014

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS



JOB #: 2833-14-05-35-C

Calibration Reports

Sulphur Dioxide

API 100A SO2 Analyzer Calibration

Date:	6-May-14	**Start/End Time (mst):**	15:30/16:40
Company:	LICA	**Calibration Purpose:**	Installation
Station Name/Location:	Elk Point	**Converter Make & Model:**	Internal
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application H_2S/TRS/SO_2:	SO2	**Cal Gas Expiry Date:**	4-Feb-18

Analyzer:

Serial Number:	837	**Range ppb:**	1000
Last Calibration Date:	NA	**As Found C.F.**	#VALUE!
Previous Cal High Point C.F.:	NA	**New C.F.:**	NA

	As found:		**As left:**
SLOPE:	0.998	SLOPE:	0.989
OFFSET:	25.1	OFFSET:	25.1
HVPS:	756	HVPS:	756
DCPS:	2592	DCPS:	2592
RCELL TEMP:	51.1	RCELL TEMP:	51.1
BOX TEMP:	26.1	BOX TEMP:	26.1
PMT TEMP:	7.3	PMT TEMP:	7.3
IZS TEMP:	40.1	IZS TEMP:	40.1
STABIL:	0.0	STABIL:	0.0
PRES:	26.9	PRES:	26.9
SAMP FL:	664	SAMP FL:	664
PMT:	93.3	PMT:	93.3
UV LAMP:	3190	UV LAMP:	3190
STR. LGT	12.4	STR. LGT	12.4
DRK PMT:	67.5	DRK PMT:	67.5
DRK LMP:	-6.2	DRK LMP:	-6.2
Internal Span:	NA	Internal Span:	

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	830
Cal Gas Cylinder I.D. # :	BLM000711
Cal Gas Conc. (ppm):	48.2

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

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	NA	0.0	######	0		NA
adjusted zero	2000	0.0	2000	0	-0.1	NA
as found high	NA		######	#VALUE!		#VALUE!
adjusted high	4921	79.80	5001	769.1	790.0	0.974
mid						
low						
calibrator zero						NA
					Average C.F.=	

Linear Regression/Calibration Results:

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

Converter Effeciency Check for H_2S/TRS application:

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

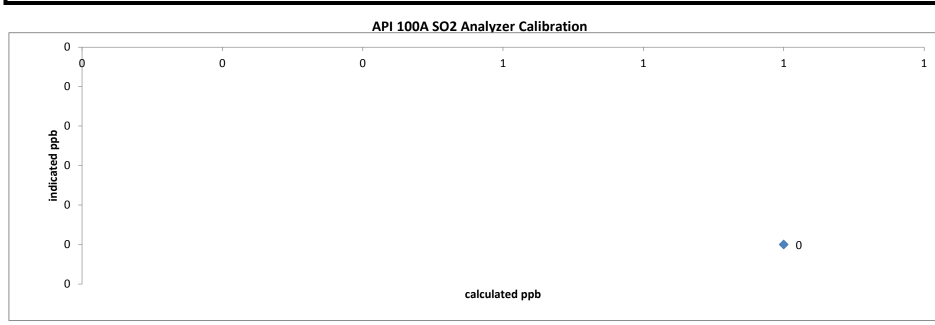
SO_2 High Point gas concentration: na

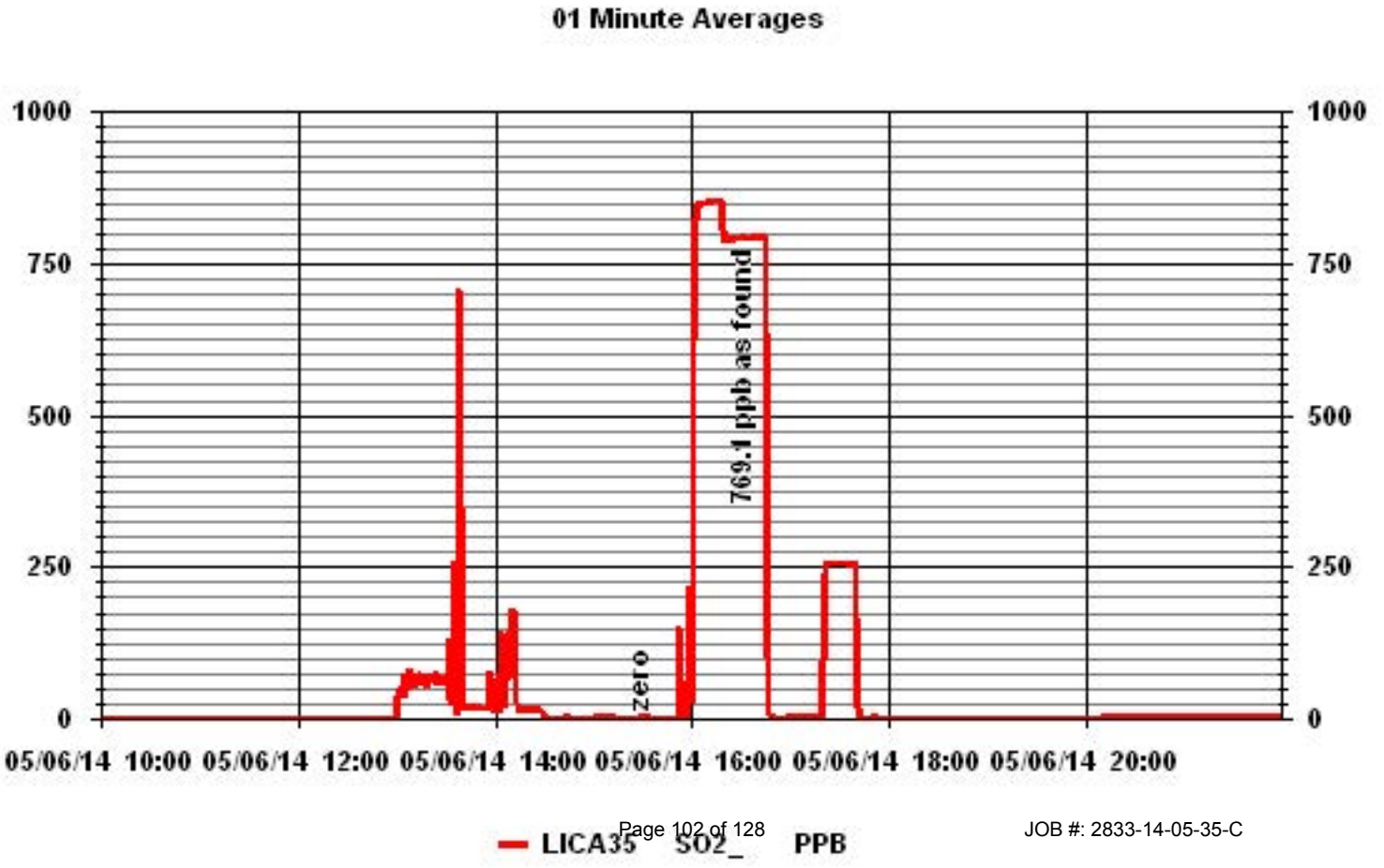
Time gas run (mst): na

Zero corrrected analyzer response: na

Comments:

Installation cal (adjustments only)





JOB #: 2833-14-05-35-C

API 100A SO2 Analyzer Calibration

Date:	7-May-14	**Start/End Time (mst):**	8:39/11:43
Company:	LICA	**Calibration Purpose:**	Monthly Calibration
Station Name/Location:	Elk Point	**Converter Make & Model:**	Internal
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application $H_2S/TRS/SO_2$:	SO2	**Cal Gas Expiry Date:**	4-Feb-18

Analyzer:

Serial Number:	837	**Range ppb:**	1000
Last Calibration Date:	NA	**As Found C.F.**	1.005
Previous Cal High Point C.F.:	0.974	**New C.F.:**	0.979

	As found:	**As left:**
SLOPE:	0.989	1.006
OFFSET:	25.1	25.1
HVPS:	756	756
DCPS:	2592	2592
RCELL TEMP:	51.1	51.1
BOX TEMP:	26.1	26.1
PMT TEMP:	7.3	7.3
IZS TEMP:	40.1	40.1
STABIL:	0.0	0.0
PRES:	26.9	26.9
SAMP FL:	664	664
PMT:	93.3	93.3
UV LAMP:	3190	3190
STR. LGT	12.4	12.4
DRK PMT:	67.5	67.5
DRK LMP:	-6.2	-6.2
Internal Span:		

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	830
Cal Gas Cylinder I.D. # :	BLM000711
Cal Gas Conc. (ppm):	48.2

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

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	4921	78.70	5000	758.7	755.0	1.005
adjusted high	4921	78.70	5000	758.7	782.0	0.970
mid	4958	38.30	4996	369.5	380.5	0.971
low	4980	19.20	4999	185.1	185.7	0.996
calibrator zero	4995	0.00	4995	0	-0.1	NA
					Average C.F.=	0.979

Linear Regression/Calibration Results:

		LIMITS	**Pass/Fail ?**
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**0.968**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.21%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-3.16%**	**± 15%**	**PASS**

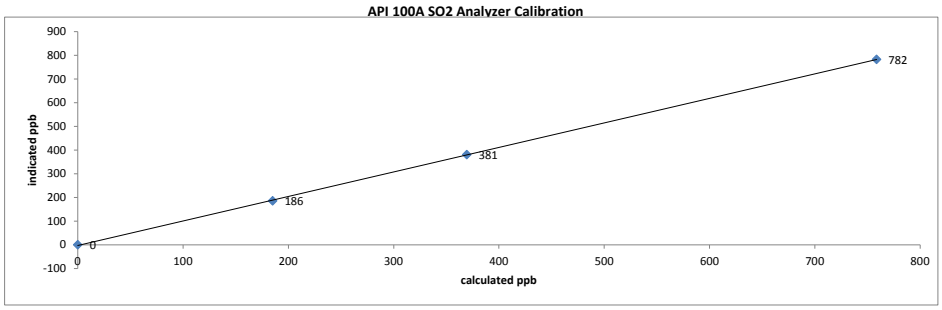
Converter Effeciency Check for H_2S/TRS application:

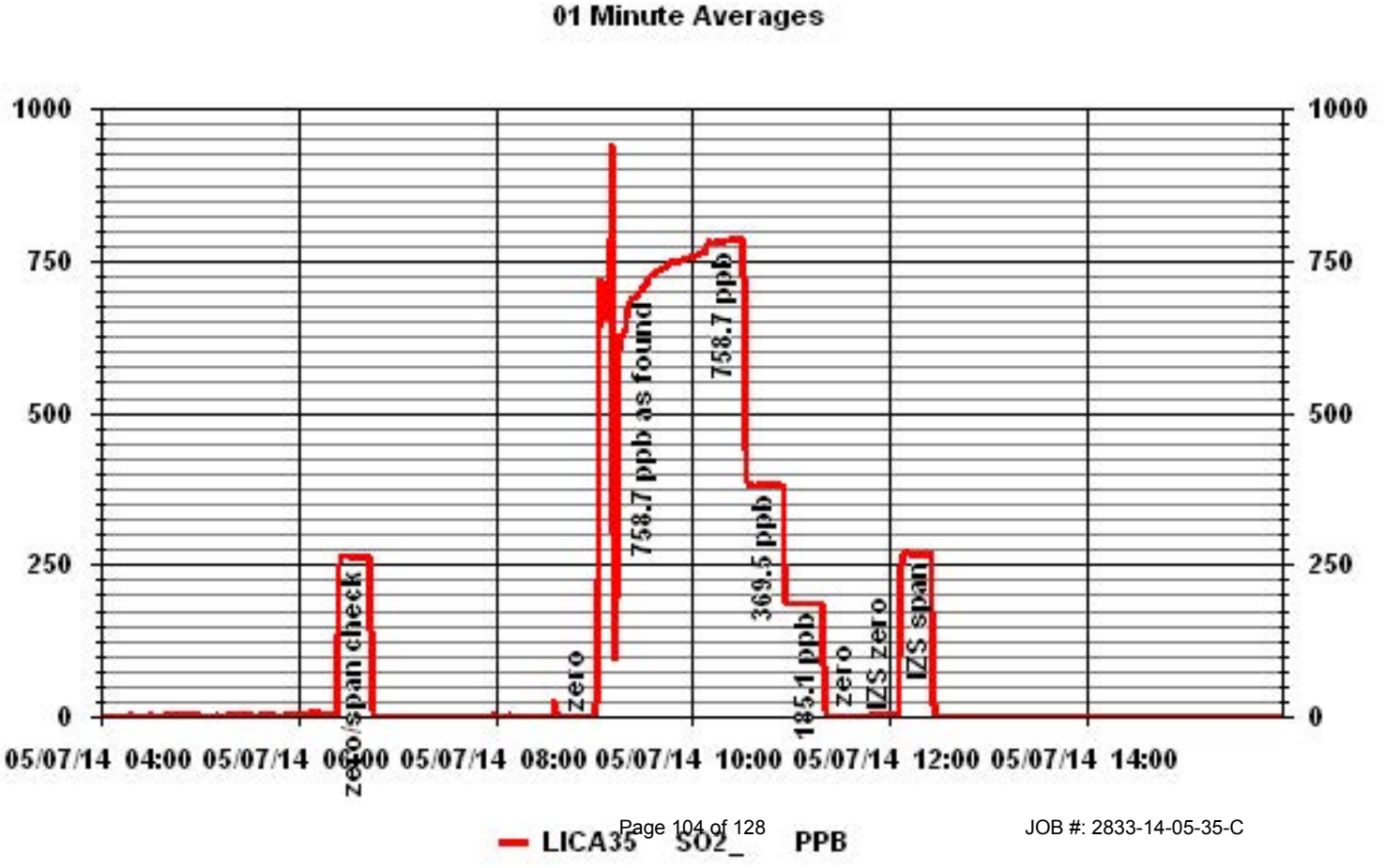
****run converter effeciency test immediately following zero adjust****

SO_2 High Point gas concentration: na Time gas run (mst): na

Zero corrrected analyzer response: na

Comments:





JOB #: 2833-14-05-35-C

API 100A SO2 Analyzer Calibration

Date:	8-May-14	**Start/End Time (mst):**	9:49/13:51
Company:	LICA	**Calibration Purpose:**	1-point calibration
Station Name/Location:	Elk Point	**Converter Make & Model:**	RIDERPRIDE
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application $H_2S/TRS/SO_2$:	SO2	**Cal Gas Expiry Date:**	4-Feb-18

Analyzer:

Serial Number:	837	**Range ppb:**	1000
Last Calibration Date:	NA	**As Found C.F.**	0.972
Previous Cal High Point C.F.:	0.970	**New C.F.:**	NA

	As found:	**As left:**
SLOPE:	1.006	1.002
OFFSET:	25.1	25.1
HVPS:	756	756
DCPS:	2592	2592
RCELL TEMP:	50.2	50.2
BOX TEMP:	25.4	25.4
PMT TEMP:	7.3	7.3
IZS TEMP:	40.3	40.3
STABIL:	0.0	0.0
PRES:	26.7	26.7
SAMP FL:	658	658
PMT:	86.9	86.9
UV LAMP:	3150	3150
STR. LGT	12.6	12.6
DRK PMT:	61.9	61.9
DRK LMP:	-6.1	-6.1
Internal Span:	265.5	261.3

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	830
Cal Gas Cylinder I.D. # :	BLM000711
Cal Gas Conc. (ppm):	48.2

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

Calibration:

Calibrator Flow Rates (cc/min)				**Calculated Concentration:**	**Indicated Concentration:**	**Correction Factors:**
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	4999	0.0	4999	0	-0.2	NA
adjusted zero						NA
as found high	4998	79.00	5077	750.0	772.0	0.972
adjusted high	4999	79.00	5078	749.9	750.0	1.000
mid						
low						
calibrator zero	4999	0.00	4999	0	0.4	NA
					Average C.F.=	

Linear Regression/Calibration Results:

		LIMITS	**Pass/Fail ?**
Correlation Coeffecient =		**> or = 0.995**	
Slope =		**0.85-1.15**	
b (Intercept as % of full scale)=		**± 3% F.S.**	
% change in C.F. from last cal	**-0.15%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

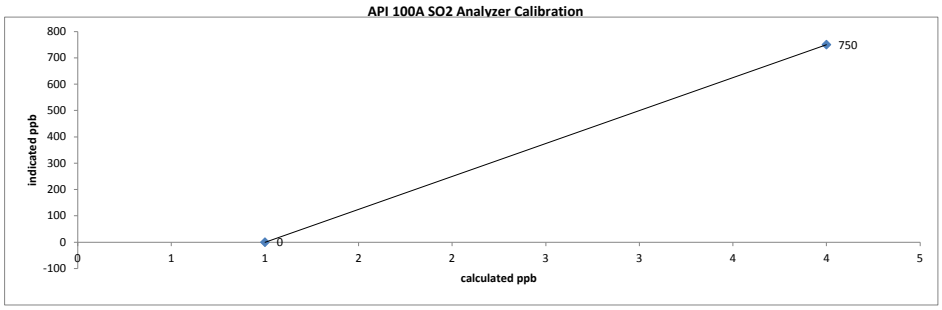
****run converter effeciency test immediately following zero adjust****

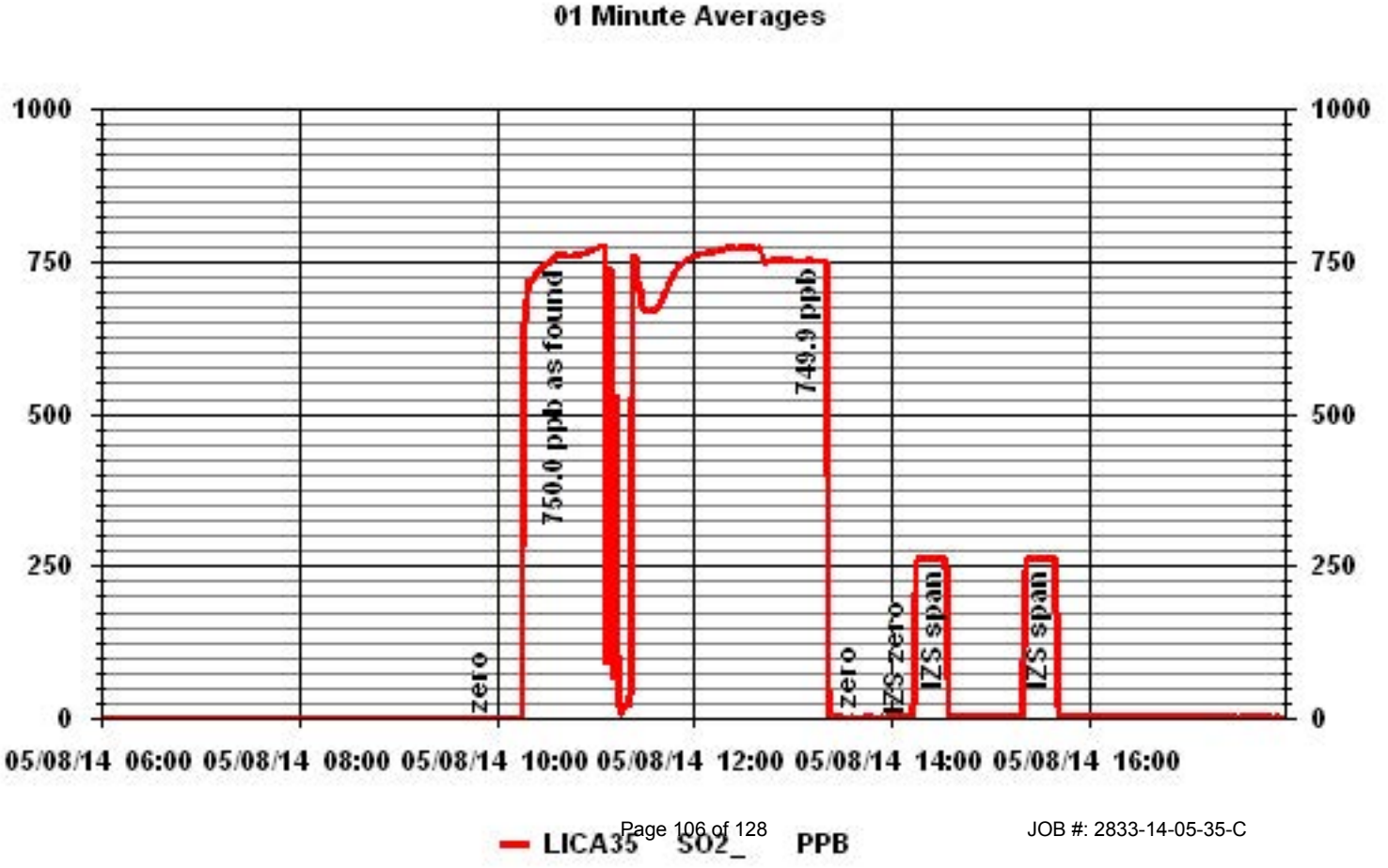
SO_2 High Point gas concentration: na Time gas run (mst): na

Zero corrrected analyzer response: na

Comments:

1-point calibration due to lack of stability





JOB #: 2833-14-05-35-C

Hydrogen Sulphide

API 101E H2S Analyzer Calibration

Date:	6-May-14	**Start/End Time (mst):**	9:32/12:21
Company:	LICA	**Calibration Purpose:**	Monthly Calibration
Station Name/Location:	Elk Point	**Converter Make & Model:**	Internal
Performed by:	Kevin Hope	**Converter Serial #:**	NA
Application $H_2S/TRS/SO_2$:	H2S	**Cal Gas Expiry Date:**	25-Dec-15

Analyzer:

Serial Number:	509	**Range ppb:**	100
Last Calibration Date:	11-Apr-14	**As Found C.F.**	1.044
Previous Cal High Point C.F.:	1.005	**New C.F.:**	1.014

	As found:	As left:
SLOPE:	1.112	1.149
OFFSET:	91.2	90.7
HVPS:	536	536
RCELL TEMP:	50.0	50.0
BOX TEMP:	31.0	31.0
PMT TEMP:	7.9	7.9
IZS TEMP:	45.0	45.0
TEST:	NA	NA
STABIL:	0.1	0.1
PRES:	27.5	27.5
SAMP FL:	569	569
PMT:	94.5	94.5
NORM PMT:	93.0	93.0
UV LAMP:	3482	3482
LAMP RATIO:	98.3	98.3
STR. LGT	56.7	56.7
DRK PMT:	9.6	9.6
DRK LMP:	0.7	0.7
Internal Span:	53.5	

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	830
Cal Gas Cylinder I.D. # :	BLM005049
Cal Gas Conc. (ppm):	10.1

Calibrator Flow Targets:

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

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	-0.2	NA
adjusted zero	5000	0.0	5000	0	0.1	NA
as found high	5000	39.00	5039	78.2	75.0	1.044
adjusted high	5000	39.00	5039	78.2	78.3	1.000
mid	5000	19.00	5019	38.2	37.7	1.018
low	5000	11.00	5011	22.2	21.8	1.024
calibrator zero	5000	0.00	5000	0	0.1	NA
					Average C.F.=	1.014

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**0.996**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.40%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-3.90%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

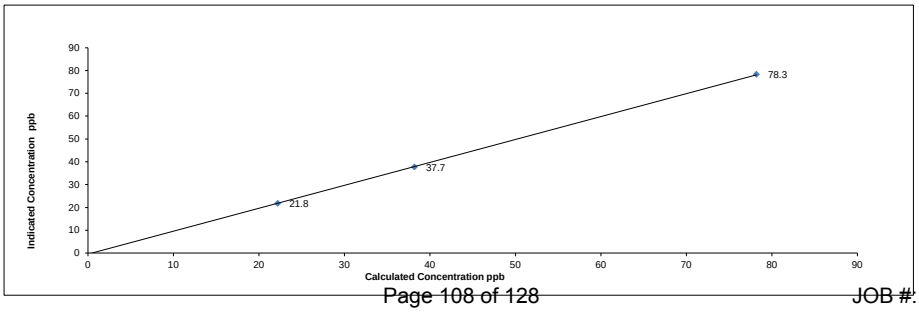
****run converter effeciency test immediately following zero adjust****

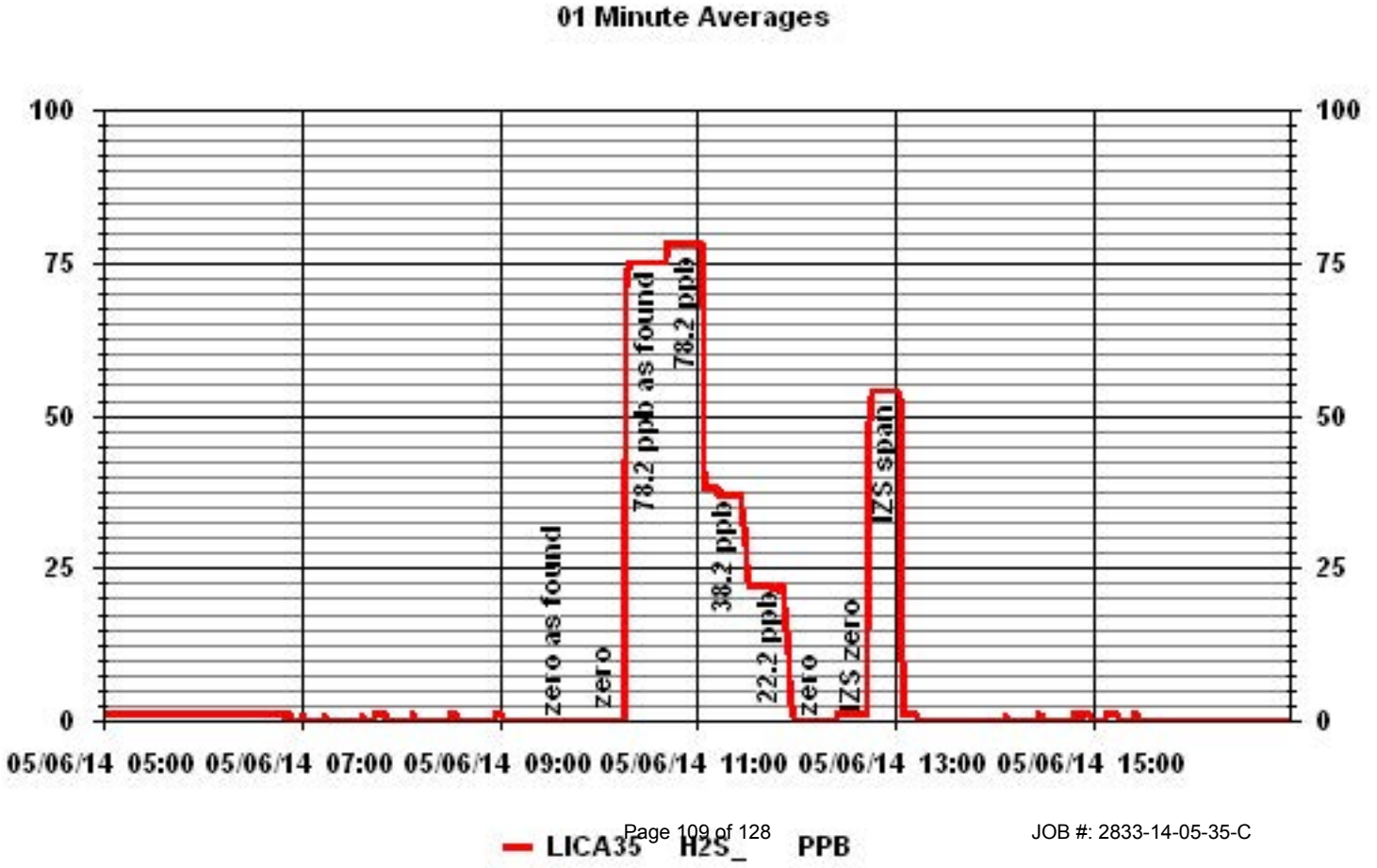
SO_2 High Point gas concentration:	na	Time gas run (mst):	na
Zero corrrected analyzer response:	na		

Comments:

Filter changed.

API 101E H2S Analyzer Calibration





JOB #: 2833-14-05-35-C

Total Hydrocarbons (55i)

Thermo 55C Methane/Non-Methane Analyzer Calibration

Date:	7-May-14	**Start Time (mst):**	10:20
Company:	LICA	**End Time (mst):**	12:33
Station Name:	Elk Point	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	26-Mar-17

Analyzer & Diagnostics:

		As found C.F.		Previous Cal High Point C.F.		Analyzer Range	
Serial Number:	1236656107	CH_4=	1.022	CH_4=	0.990	CH_4=	20
Last Calibration Date:	11-Apr-14	NMHC=	1.036	NMHC=	1.022	NMHC=	20
		THC=	1.034	THC=	1.003	THC=	40

Mother Board Voltages:	3.3:	3.3	Calibration History cnt'd>1:	CH_4 SP Ratio:	NA
	5.0:	4.9		CH_4 RT:	NA
	15.0:	14.9		CH_4 PK IDX:	NA
	24.0:	24.0		CH_4 PK HT:	NA
	-3.3:	-3.2		NM Span Conc:	NA
Interface Board Voltages:	3.3:	3.3		NM SP Ratio:	NA
	5.0:	5.0		NM Peak Area:	NA
	15.0:	15.0	Run History>1:	Date:	07May2014
	24.0:	23.6		Time:	13:01
	-15.0:	-15.1		CH_4 PK HT:	0
	Bias Supply:	-293.1		CH_4 RT:	12.2
Temperatures:	Detector Oven:	175.0		CH_4 Baseline:	2174
	Filter:	175.0		CH_4 LOD:	55
	Column Oven:	74.9		CH_4 SD:	25
	Flame:	381.2		CH_4 CONC:	0.00
	Internal:	36.7		NM PK HT:	0
Pressures cylinder/reg.:	Carrier:	2000 / 30		NM Peak Area:	0.00
	Fuel:	1100 / 50		NM CONC:	0
	Air:	1500 / 30		NM Base Start:	2231
FID Status:	Status:	LIT		NM Base End:	2245
	Counts:	30092		NM LOD:	14
	Flame:	371.2		NM Start IDX:	9
	Det Base:	175.0		NM End IDX:	82
Flame and Power Stats:	Last Power On:	30APR2014 17:19		NM Max Slope:	0.89
	Flameouts:	17		NM Min Slope:	-5.0e-1
	Det Oven at Start:	169.0		NM PT Count:	0
	Col Oven at Start:	74.6	Daily Zero/Span Values:	Previous CH4:	7.86
Calibration History>1:	Time:	11APR2014 13:20		Previous NMHC	13.5
	Type:	Span		Previous THC:	21.4
	Status:	Good		New CH4:	21.23
	Check/Adjust:	Adjust		New NMHC	7.83
	CH_4 Span Conc:	3.95		New THC:	13.38

Calibrator and Gas Information:

Make & Model:	Environics 6100		
Serial #:	4760		
Cal Gas Cylinder I.D. # :	LL33674		
CH_4 Cylinder Conc.=	601.4	202.0	=C_3H_8 Cylinder Conc.
CH_4 as C_3H_8=	555.5	1156.9	=total CH_4 equivilant

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							CH4	NMHC	THC
20 min as found zero	3000	0.00	3000	0.00	0.00	0.00	0.11	0.00	0.12	NA	NA	NA
20 min adjusted zero	3000	0.00	3000	0.00	0.00	0.00	0.11	0.00	0.12	NA	NA	NA
20 min as found high point	2997	35.80	3033	7.10	6.56	13.66	7.06	6.33	13.33	1.022	1.036	1.034
20 min adjusted high	2997	35.80	3033	7.10	6.56	13.66	7.08	6.33	13.38	1.019	1.036	1.030
20 min mid	2997	17.90	3015	3.57	3.30	6.87	3.63	3.23	6.82	1.014	1.021	1.025
20 min low	2997	9.80	3007	1.96	1.81	3.77	1.96	1.87	3.81	1.060	0.968	1.022
20 min calibrator zero	2997	0.00	2997	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA
									Average C.F.=	1.031	1.008	1.026

Linear Regression/Calibration Results:

	CH_4	NMHC	THC	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**0.985**	**0.960**	**0.970**	**0.85-1.15**
b (Intercept as % of full scale)=	**0.42%**	**0.29%**	**0.35%**	**± 3% F.S.**
% change in C.F. from last cal=	**-3.08%**	**1.34%**	**2.98%**	**+/-15%**

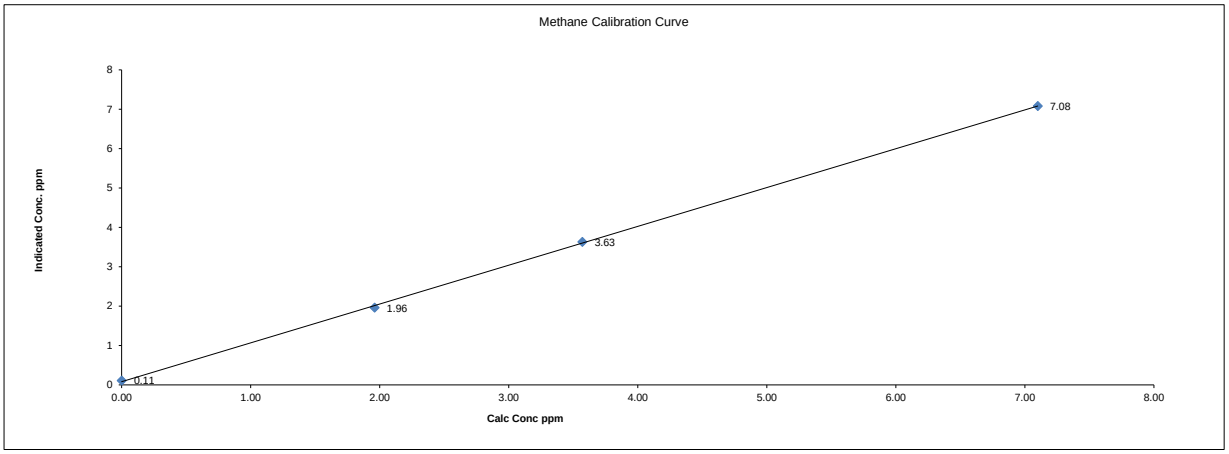
Comments:

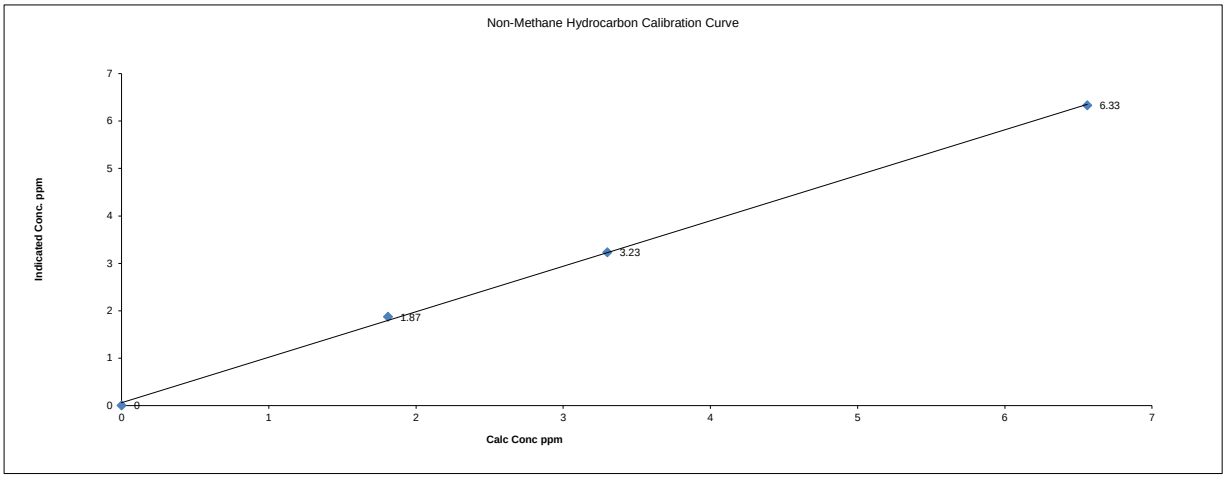
Filter changed.

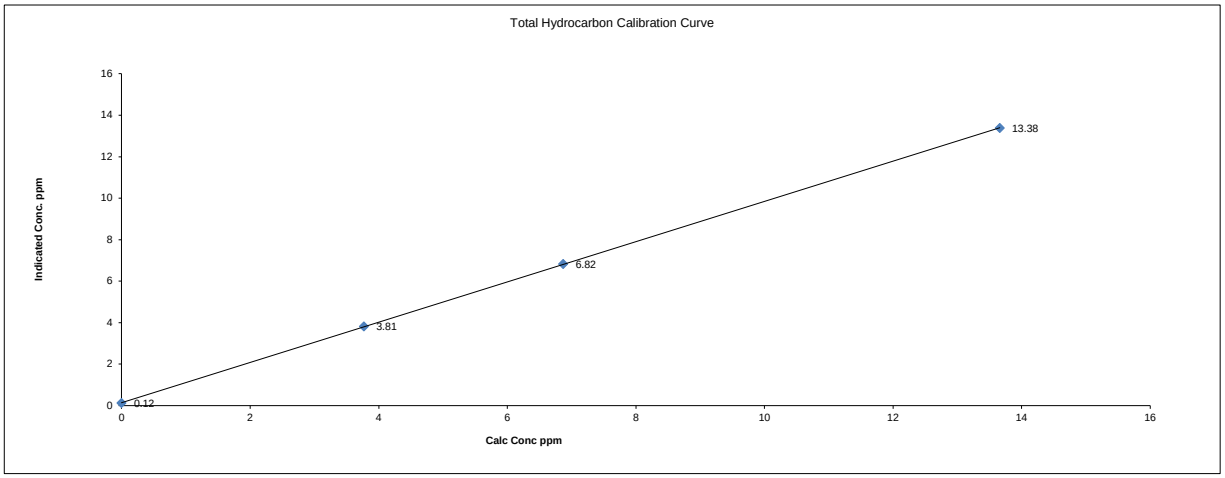
JOB #: 2833-14-05-35-C

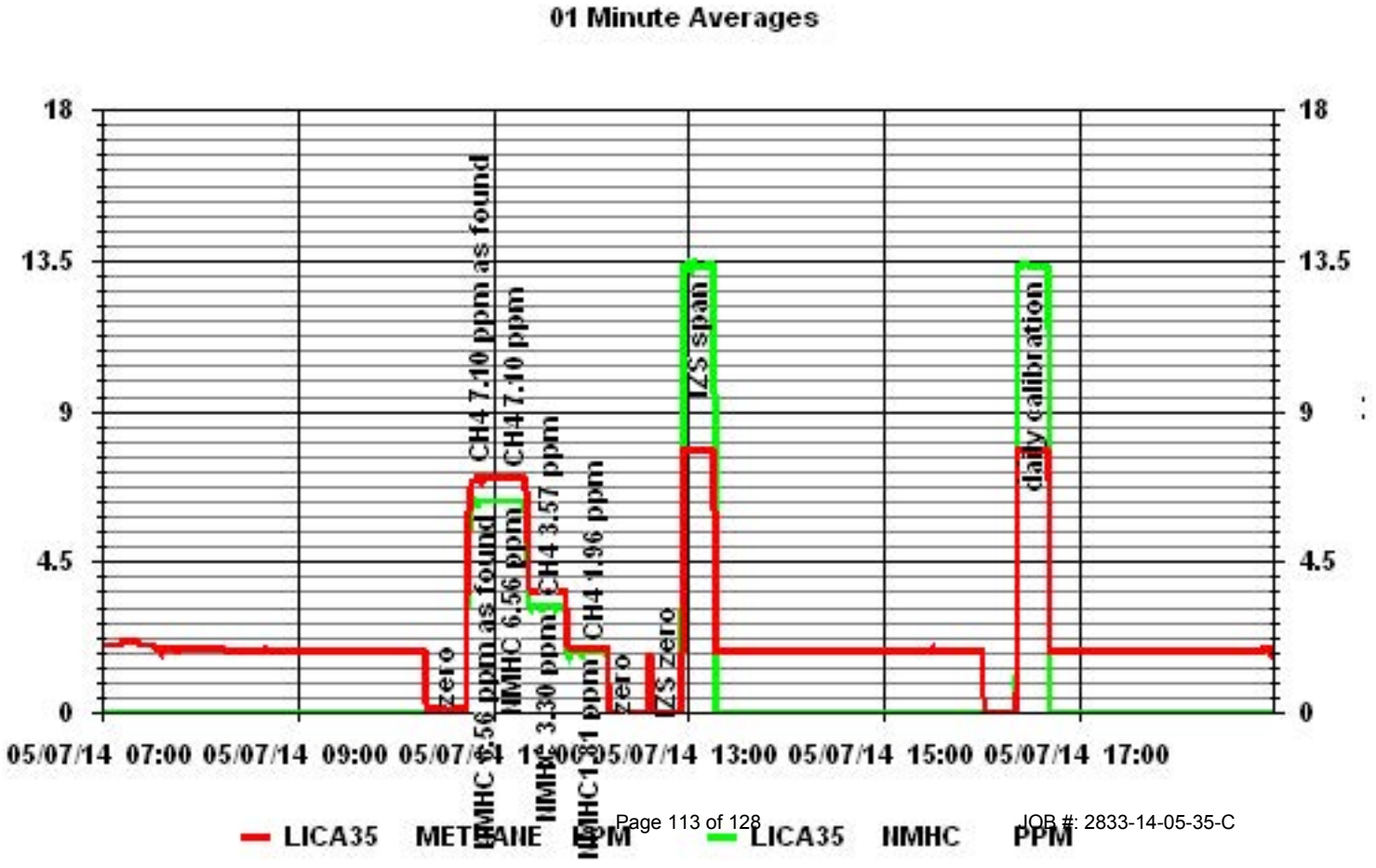
Date:	7-May-14	**Start Time (mst):**	10:20
Company:	LICA	**End Time (mst):**	12:33
Station Name:	Elk Point	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	26-Mar-17

Thermo 55C Methane/Non-Methane Analyzer Calibration








01 Minute Averages
18
13.5
9
4.5
0
zero
CH4 7.10 ppm as found
NMHC 6.56 ppm as found
CH4 7.10 ppm
NMHC 6.56 ppm
CH4 3.57 ppm
NMHC 3.30 ppm
CH4 1.96 ppm
NMHC 1.81 ppm
zero
IZS zero
IZS span
daily calibration
05/07/14 07:00
05/07/14 09:00
05/07/14 13:00
05/07/14 15:00
05/07/14 17:00
LICA35 METHANE PPM
LICA35 NMHC PPM

Thermo 55C Methane/Non-Methane Analyzer Calibration

Date:	9-May-14	**Start Time (mst):**	12:30
Company:	LICA	**End Time (mst):**	16:43
Station Name:	Elk Point	**Calibration Purpose:**	Monthly Calibration (Repeat)
Performed by:	Chris Wesson	**Cal Gas Expiry Date:**	26-Mar-17

Analyzer & Diagnostics:

		As found C.F.		Previous Cal High Point C.F.		Analyzer Range	
Serial Number:	1236656107	CH_4=	1.005	CH_4=	1.034	CH_4=	20
Last Calibration Date:	11-Apr-14	NMHC=	1.006	NMHC=	1.026	NMHC=	20
		THC=	1.005	THC=	1.033	THC=	40

Mother Board Voltages:	3.3:	3.3	Calibration History cnt'd>1:	CH_4 SP Ratio:	0.000689
	5.0:	4.9		CH_4 RT:	12.2
	15.0:	14.9		CH_4 PK IDX:	21
	24.0:	24.0		CH_4 PK HT:	10309
	-3.3:	-3.2		NM Span Conc:	6.51
Interface Board Voltages:	3.3:	3.3		NM SP Ratio:	0.000153
	5.0:	5.0		NM Peak Area:	42412
	15.0:	15.0	Run History>1:	Date:	NA
	24.0:	23.6		Time:	NA
	-15.0:	-15.1		CH_4 PK HT:	NA
	Bias Supply:	-292.6		CH_4 RT:	NA
Temperatures:	Detector Oven:	175.1		CH_4 Baseline:	NA
	Filter:	175.0		CH_4 LOD:	NA
	Column Oven:	74.9		CH_4 SD:	NA
	Flame:	379.4		CH_4 CONC:	NA
	Internal:	32.7		NM PK HT:	NA
Pressures cylinder/reg.:	Carrier:	2100 / 54		NM Peak Area:	NA
	Fuel:	1000 / 50		NM CONC:	NA
	Air:	1300 / 34		NM Base Start:	NA
FID Status:	Status:	LIT		NM Base End:	NA
	Counts:	26147		NM LOD:	NA
	Flame:	376.6		NM Start IDX:	NA
	Det Base:	175.0		NM End IDX:	NA
Flame and Power Stats:	Last Power On:	30APR2014 17:19		NM Max Slope:	NA
	Flameouts:	17		NM Min Slope:	NA
	Det Oven at Start:	169.0		NM PT Count:	NA
	Col Oven at Start:	74.6	Daily Zero/Span Values:	Previous CH4:	7.62
Calibration History>1:	Time:	08May2014 15:37		Previous NMHC	13.2
	Type:	Span		Previous THC:	20.84
	Status:	Good		New CH4:	7.62
	Check/Adjust:	Adjust		New NMHC	13.2
	CH_4 Span Conc:	7.10		New THC:	20.84

Calibrator and Gas Information:

Make & Model:	Environics 2000		
Serial #:	1991		
Cal Gas Cylinder I.D. # :	LL109092		
CH_4 Cylinder Conc.=	607.0	202.0	=C_3H_8 Cylinder Conc.
CH_4 as C_3H_8=	555.5	1162.5	=total CH_4 equivilant

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							CH4	NMHC	THC
20 min as found zero	2004	0.00	2004	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA
20 min adjusted zero	NA	0.00	#VALUE!	0.00	0.00	0.00				NA	NA	NA
20 min as found high point	2004	26.02	2030	7.78	7.12	14.90	7.74	7.08	14.82	1.005	1.006	1.005
20 min adjusted high	2005	26.05	2031	7.79	7.12	14.91	7.81	7.12	14.93	0.997	1.001	0.999
20 min mid	2003	12.98	2016	3.91	3.58	7.48	3.91	3.60	7.51	1.000	0.994	0.997
20 min low	2004	7.49	2011	2.26	2.07	4.33	2.27	2.11	4.38	0.996	0.980	0.988
20 min calibrator zero	2003	0.00	2003	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA
									Average C.F.=	0.997	0.992	0.995

Linear Regression/Calibration Results:

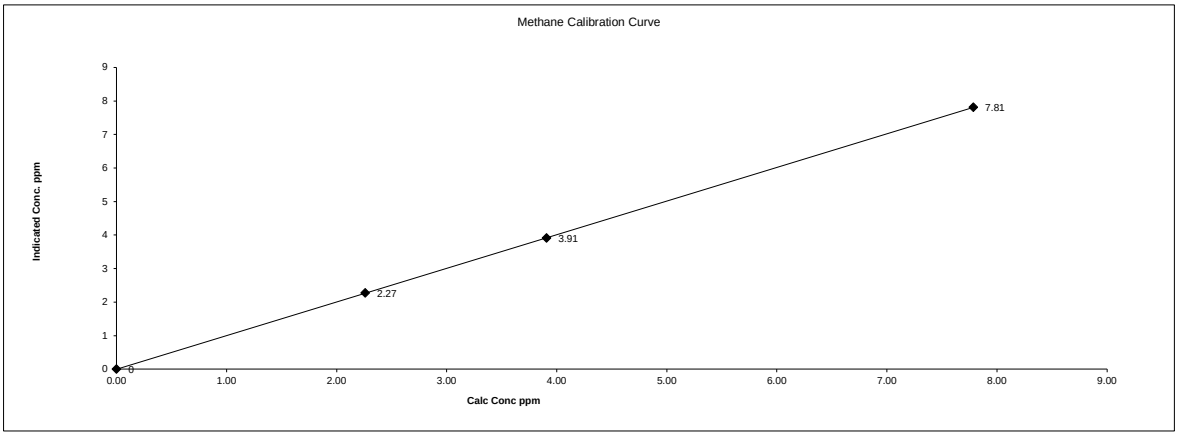
	CH_4	NMHC	THC	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**1.003**	**0.998**	**1.001**	**0.85-1.15**
b (Intercept as % of full scale)=	**-0.01%**	**0.11%**	**0.05%**	**± 3% F.S.**
% change in C.F. from last cal=	**2.87%**	**-2.02%**	**-2.75%**	**+/-15%**

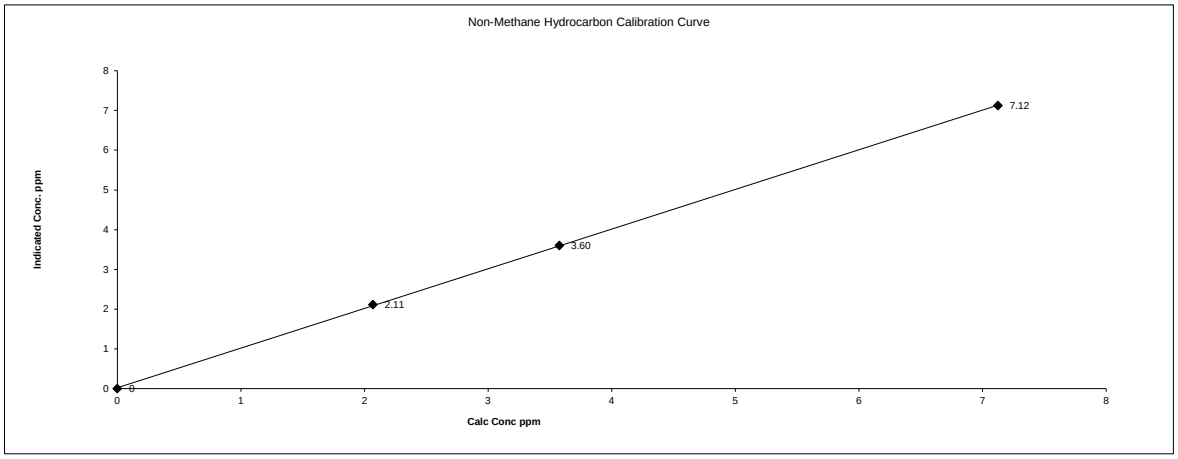
Comments:

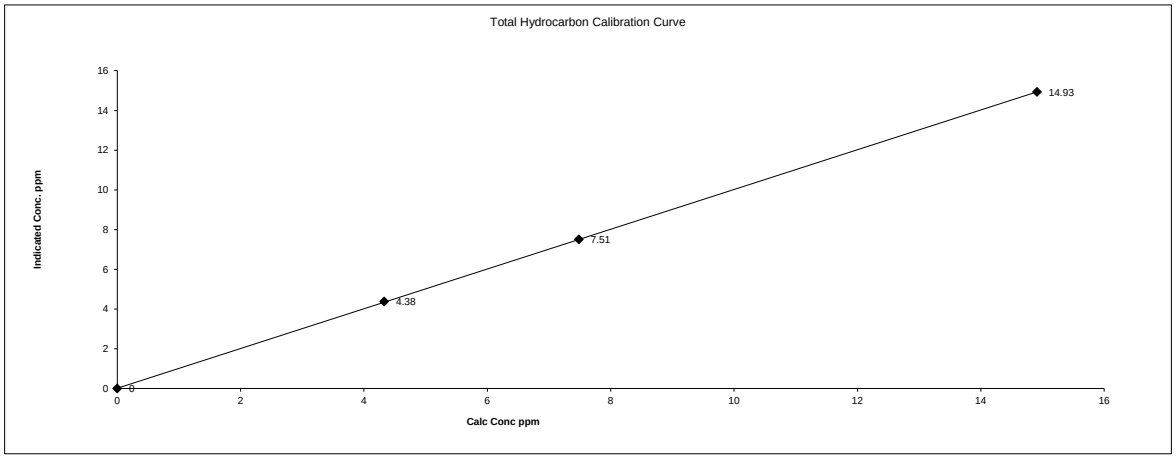
Sample filter changed.
Expectedvalues to be set remotely

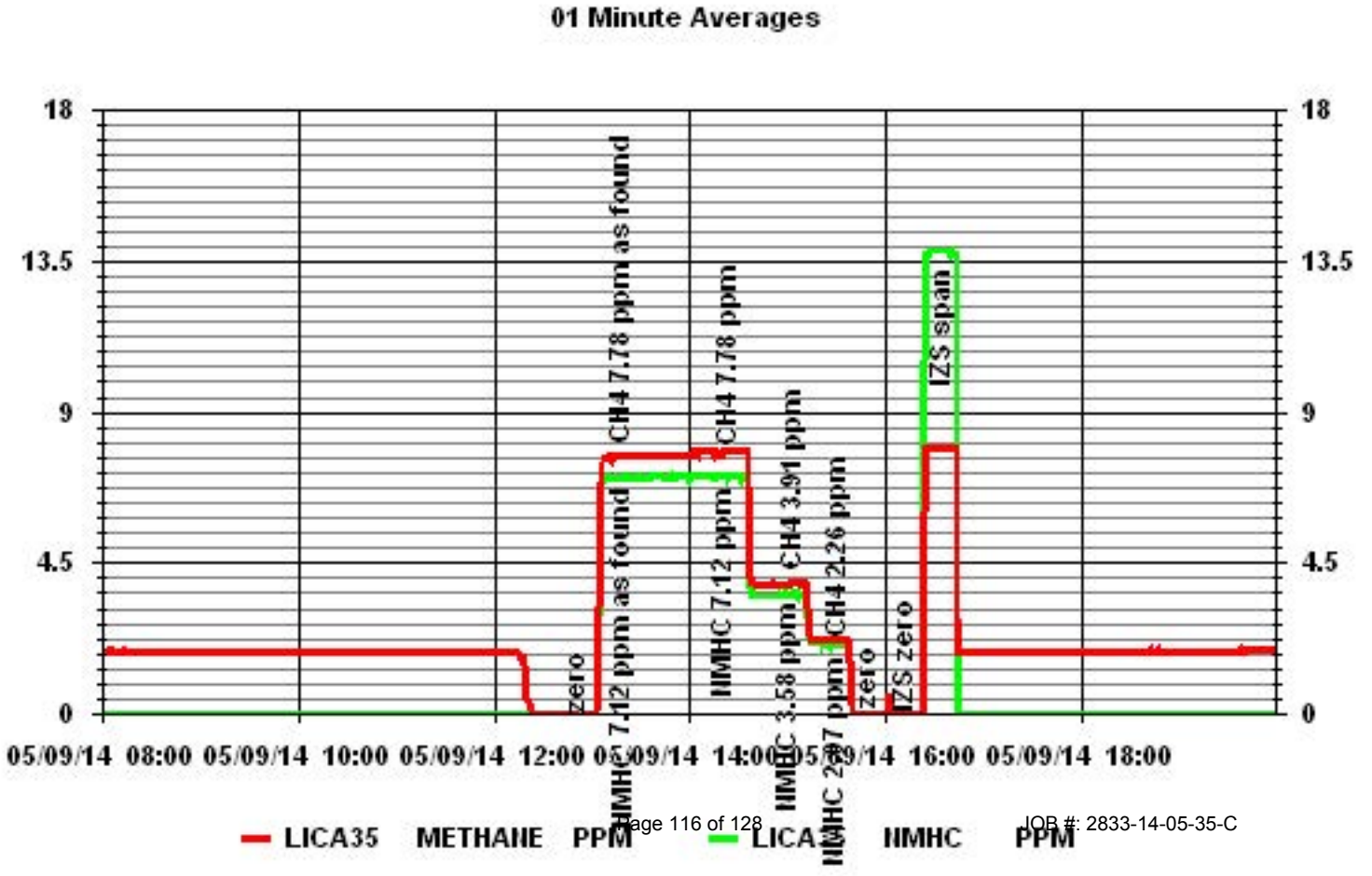
Date:	9-May-14	**Start Time (mst):**	12:30
Company:	LICA	**End Time (mst):**	16:43
Station Name:	Elk Point	**Calibration Purpose:**	Monthly Calibration (Repeat)
Performed by:	Chris Wesson	**Cal Gas Expiry Date:**	26-Mar-17

Thermo 55C Methane/Non-Methane Analyzer Calibration








01 Minute Averages
18
13.5
9
4.5
0
05/09/14 08:00
05/09/14 10:00
05/09/14 12:00
05/09/14 14:00
05/09/14 16:00
05/09/14 18:00
zero
CH4 7.78 ppm as found
7.12 ppm as found
NMHC
NMHC 7.12 ppm
CH4 7.78 ppm
NMHC 3.58 ppm
CH4 3.91 ppm
NMHC 2.97 ppm
CH4 2.26 ppm
zero
IZS zero
IZS span
LICA35 METHANE PPM
LICA NMHC PPM

Particulate Matter 2.5

R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date:	7-May-14	**Parameter:**	PM 2.5
Company:	LICA	**Performed by:**	Kevin Hope
Station Name/Location:	Elk Point	**Start/End Time (mst):**	15:00/15:22
Previous Audit Date:	10-Apr-14	**Calibration Purpose:**	Monthly Audit I

1400A Information and Status:

Serial Number:	1405A208301003	**As Found Filter Loading %:**	18.50
Ko Factor:	NA	**As Left Filter Loading %:**	19.81
Ambient Temperature °C:	5.8	**As Found Noise:**	0.007
Ambient Pressure atm:	0.933	**As Left Noise:**	0.007
Main Flow Reading lpm:	3.03	**Pump Vacuum:**	0.38
Aux Flow Reading lpm:	16.27	**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	-0.01	0.17	0.00	0.15
	limit	0.15		0.15	
Bypass Flow	actual	0.03	0.00	0.00	0.00
	limit	0.60		0.60	

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

		Base	**Zero**	**Reference**	**Zero**
PM 2.5 Flow	actual	-0.01	0.17	0.00	0.15
	limit	0.15		0.15	
Bypass Flow	actual	0.03	0.00	0.00	0.00
	limit	0.60		0.60	

As found temperature and pressure:

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	5.8	**1405F pressure atm:**	0.933
reference temperature °C:	6.0	**reference pressure:**	0.930
difference °C:	0.2	**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:	5.8	**1405F pressure atm:**	0.933
reference temperature °C:	6.0	**reference pressure:**	0.930
difference °C:	0.2	**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:	3.00	**1400A total/aux flow lpm:**	16.65
reference main flow lpm:	3.03	**reference total/aux flow lpm:**	16.27
difference lpm:	0.03	**difference lpm:**	-0.38

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:**	16.65
reference main flow lpm:	3.03	**reference total/aux flow lpm:**	16.27
difference lpm:	0.03	**difference lpm:**	-0.38

K_o Audit:

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

Comments:

JOB #: 2833-14-05-35-C

Leak check, flow audit passed. Changed filters.

R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date:	21-May-14	**Parameter:**	PM 2.5
Company:	LICA	**Performed by:**	Kevin Hope
Station Name/Location:	Elk Point	**Start/End Time (mst):**	13:24/14:01
Previous Audit Date:	7-May-14	**Calibration Purpose:**	Monthly Audit II

1400A Information and Status:

Serial Number:	1405A208301003	**As Found Filter Loading %:**	20.83
Ko Factor:	NA	**As Left Filter Loading %:**	18.17
Ambient Temperature °C:	21.0	**As Found Noise:**	0.005
Ambient Pressure atm:	0.935	**As Left Noise:**	0.000
Main Flow Reading lpm:	3.00	**Pump Vacuum:**	0.36
Aux Flow Reading lpm:	16.39	**Warnings:**	None

Reference Standards:

	Flow:	**Pressure:**	**Temperature:**
Make:	Dwyer	Fisher Scientific	Fisher Scientific
Model:	475 Mark III	FB61291	FB61291
Serial Number:	NA	130168457	130168457
Calibration Date:	unknown	11-Apr-14	11-Apr-14

As found leak check:

		Base	**Zero**	**Reference**	**Zero**
PM 2.5 Flow	actual	-0.04	0.18	-0.04	0.18
	limit	0.15		0.15	
Bypass Flow	actual	0.00	0.01	0.00	0.01
	limit	0.60		0.60	

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

		Base	**Zero**	**Reference**	**Zero**
PM 2.5 Flow	actual	-0.04	0.18	-0.04	0.18
	limit	0.15		0.15	
Bypass Flow	actual	0.00	0.01	0.00	0.01
	limit	0.60		0.60	

As found temperature and pressure:

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	21.3	**1405F pressure atm:**	0.934
reference temperature °C:	21.0	**reference pressure:**	0.935
difference °C:	-0.3	**difference :**	-0.001

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

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	21.3	**1405F pressure atm:**	0.934
reference temperature °C:	21.0	**reference pressure:**	0.931
difference °C:	-0.3	**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:	3.01	**1400A total/aux flow lpm:**	16.71
reference main flow lpm:	3.00	**reference total/aux flow lpm:**	16.39
difference lpm:	-0.01	**difference lpm:**	-0.32

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:	3.01	**1400A total/aux flow lpm:**	16.71
reference main flow lpm:	3.00	**reference total/aux flow lpm:**	16.39
difference lpm:	-0.01	**difference lpm:**	-0.32

K_o Audit:

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

Comments:

JOB #: 2833-14-05-35-C

Leak check, flow audit passed. Changed filters.

Nitrogen Dioxide

API 200E NOx Analyzer Calibration

Date:	6-May-14	**Start Time (mst):**	10:10
Company:	LICA	**End Time (mst):**	14:36
Station Name/Location:	Elk Point	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-18

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=	1.041	1.000
NOx=	1.044	0.999
NO_2=	1.002	1.000

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:	1.167
NOx OFFS:	0.7
NO SLOPE:	1.157
NO OFFS:	0.2
TEST:	125.9
SAMP FLW:	472
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:	376.7/6.2/370.4

Calibrator Flow Targets:

Make & Model:	Environics 6100
Serial #:	4760
Cal Gas Cylinder I.D. # :	BLM000711
NO Cylinder Conc. (ppm):	50.1
NOx Cylinder Conc. (ppm):	50.2

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	0.0	-1.0	NA	NA
adjusted zero	5000	0.0	5000	0	0	-0.3	-0.5	NA	NA
as found high	4996	79.80	5076	787.7	789.2	756	756	1.041	1.044
adjusted high	4996	79.80	5076	787.7	789.2	788	790	1.000	0.999
mid	4996	39.90	5036	396.9	397.7	397	399	1.000	0.997
low	4996	19.90	5016	198.8	199.2	199	201	0.996	0.988
calibrator zero	4996	0.00	4996	0	0	0.5	0.7	NA	NA
							Average C.F.=	0.999	0.995

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	791.0	796.0	4.0	-0.3	-0.2	
as found NO_2	4996	79.80	5076	580.0	160.0	794.0	634.0	631.0	630.0	1.002
adjusted NO_2	4996	79.80	5076	580.0	160.0	794.0	634.0	631.0	630.0	1.002
gpt mid	4996	79.80	5076	290.0	474.0	795.0	321.0	317.0	317.0	1.000
gpt low	4996	79.80	5076	100.0	683.0	796.0	113.0	108.0	109.0	0.991
									Average NO_2 C.F.=	0.997

Linear Regression/Calibration Results:

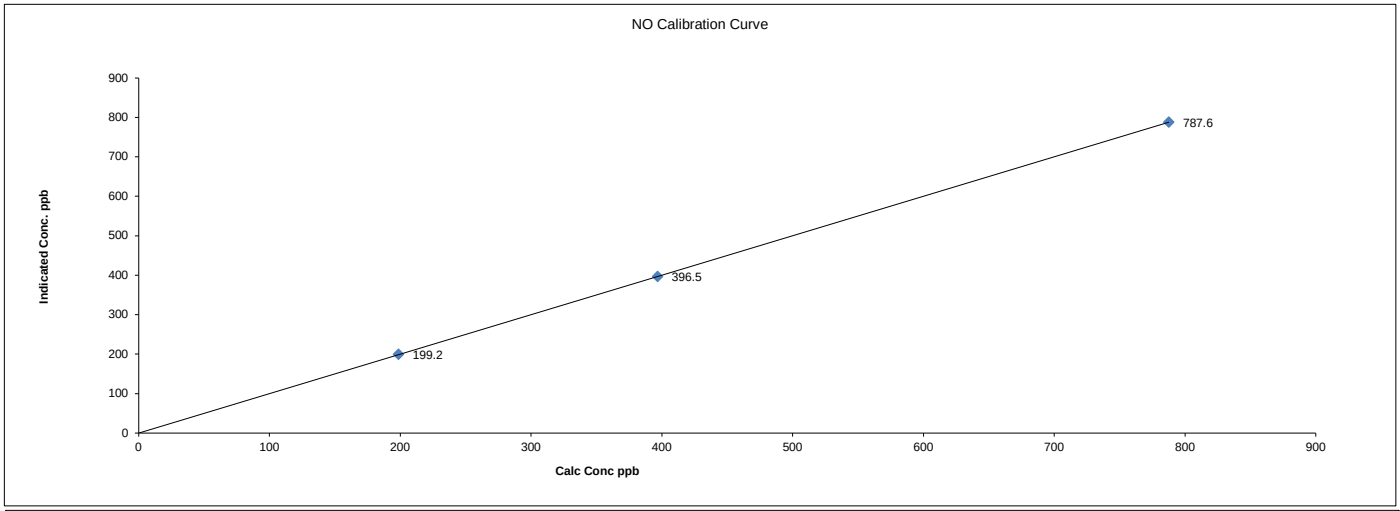
	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**1.000**	**1.000**	**0.998**	**0.85-1.15**
b (Intercept as % of full scale)=	**-0.01%**	**0.05%**	**0.07%**	**± 3% F.S.**
% change in C.F. from last cal=	**-4.15%**	**-4.46%**	**-0.16%**	**+/-15%**
NO2 converter effeciency			**100.3%**	**>85%**

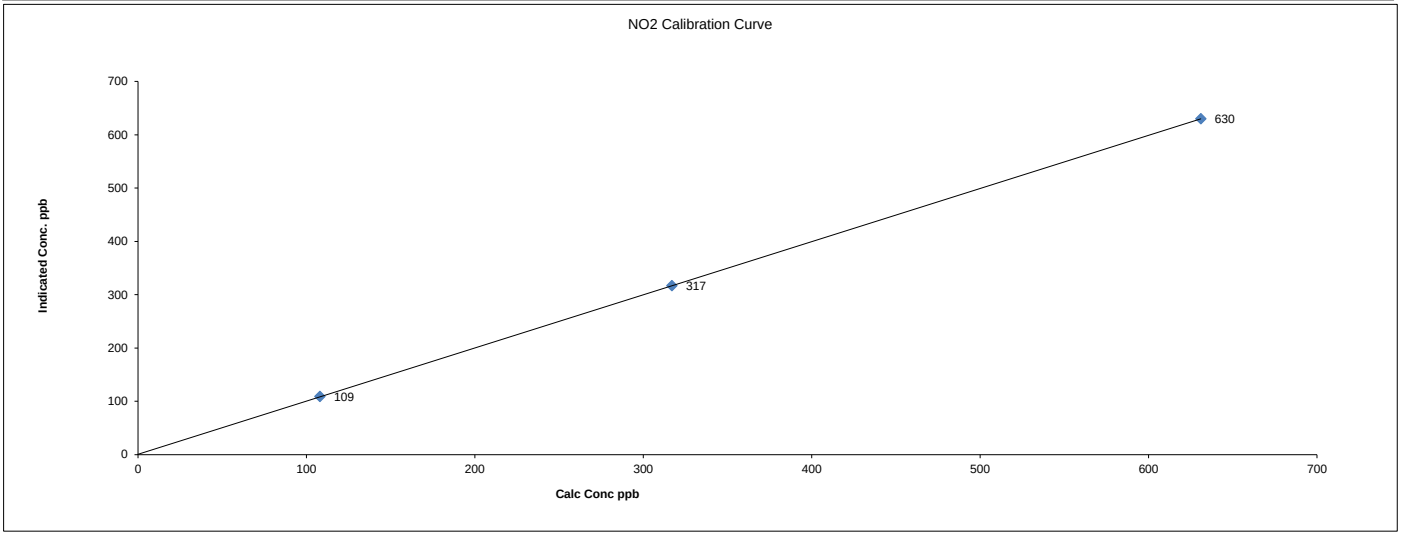
Comments:

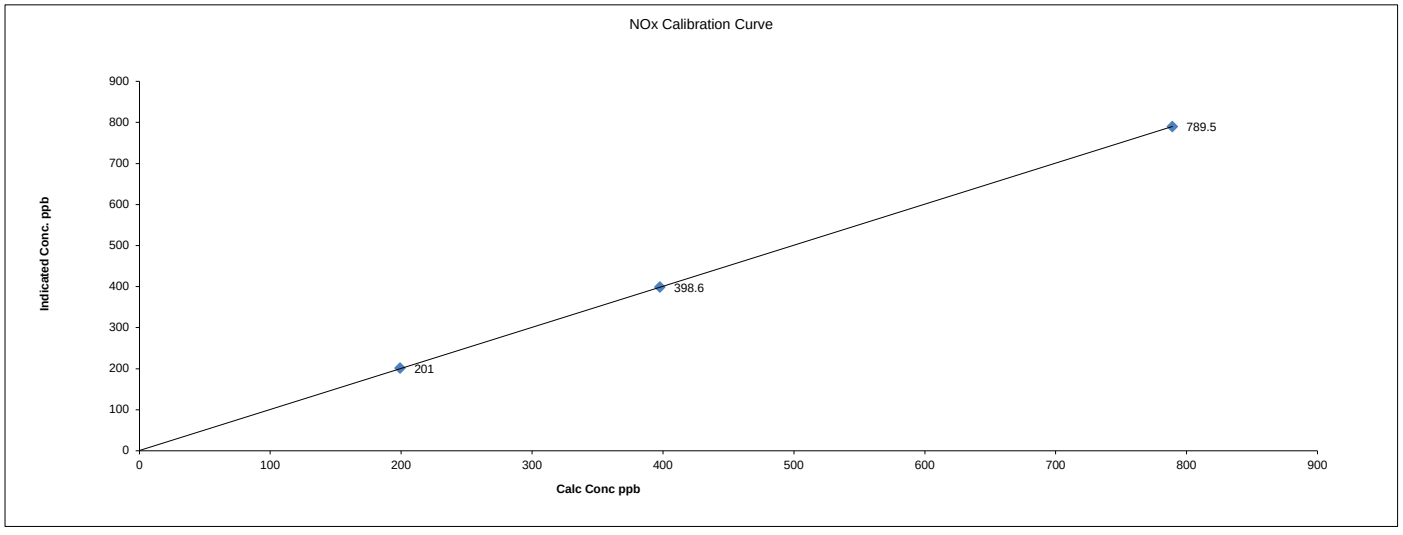
Filter changed.

Date:	6-May-14	**Start Time (mst):**	10:10
Company:	LICA	**End Time (mst):**	14:36
Station Name/Location:	Elk Point	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-18

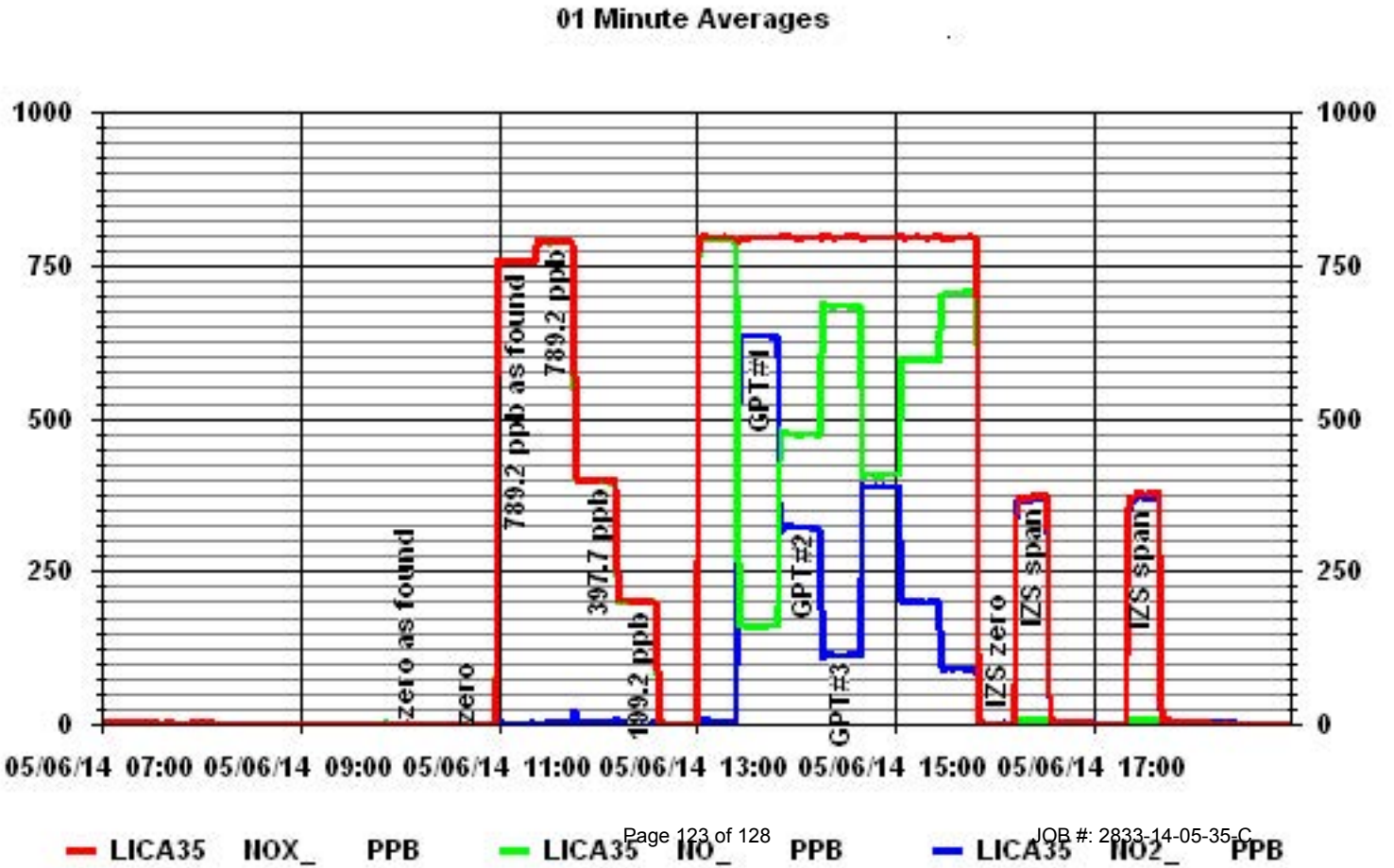
API 200E NOx Analyzer Calibration







JOB #: 2833-14-05-35-C


01 Minute Averages
1000
750
500
250
0
zero as found
zero
789.2 ppb as found
789.2 ppb
397.7 ppb
109.2 ppb
GPT#1
GPT#2
GPT#3
IZS zero
IZS span
IZS span
05/06/14 07:00
05/06/14 09:00
05/06/14 11:00
05/06/14 13:00
05/06/14 15:00
05/06/14 17:00
LICA35 NOX_ PPB
LICA35 NO_ PPB
LICA35 NO2_ PPB

Ozone

Maxxam Thermo 49i O_3 Analyzer Calibration

Date:	6-May-14	**Start Time (mst):**	15:59
Company:	LICA	**End Time (mst):**	16:44
Station Name/Location:	Elk Point	**Calibration Purpose:**	As Found
Performed by:	Kevin Hope	**G.P.T. Date:**	6-May-14

Analyzer:

Serial Number:	1002240372	**Range ppm:**	500
Last Calibration Date:	11-Apr-14	**As Found C.F.**	1.033
Previous Cal High Point C.F.:	0.998	**New C.F.:**	

		As found:		As left:
	O_3 Bkg:	0.0	O_3 Bkg:	0.0
	O_3 Coef:	1.004	O_3 Coef:	1.004
Motherboard:	3.3	3.3	3.3	3.3
	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:	3.3	3.3	3.3	3.3
	5.0	5.0	5.0	5.0
	15.0	14.9	15.0	14.9
	-15.0	-15.1	-15.0	-15.1
	Photo Lamp	9.8	Photo Lamp	9.8
	24.0	23.5	24.0	23.5
	O_3 Lamp	9.3	O_3 Lamp	9.3
	Bench:	27.8	Bench:	27.8
	Bench Lamp:	54.0	Bench Lamp:	54.0
	O_3 Lamp:	68.2	O_3 Lamp:	68.2
	Pressure:	697.4	Pressure:	697.4
	Cell A lpm:	0.754	Cell A lpm:	0.754
	Cell B lpm:	0.762	Cell B lpm:	0.762
	O_3 ppb:	33.0	O_3 ppb:	33.0
	Cell A ppb:	37.5	Cell A ppb:	37.5
	Cell B ppb:	35.8	Cell B ppb:	35.8
	Cell A int:	52419	Cell A int:	52419
	Cell B int:	52222	Cell B int:	52222
	Internal Span:	519.4	Internal Span:	519.4

Calibrator:

Make & Model:	Environics 6100
Serial #:	4760
NOx Gas Cylinder I.D. # :	BLM000711
NOx Cylinder Conc. (ppm):	49.7

Calibrator Flow Targets:

point	total flow (cc/min)	O_3 setting (v or ppb)
zero	5075	0
high	5075	350
mid	5075	175
low	5075	80

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	0.4	NA
adjusted zero	NA	0.0	######	0.0		NA
as found high	4996	0.00	4996	383.3	371.0	1.033
adjusted high						
mid						
low						
calibrator zero						NA

copy and paste flows and NO decrease from NOx cal in to calculated concentration **Average C.F.=**

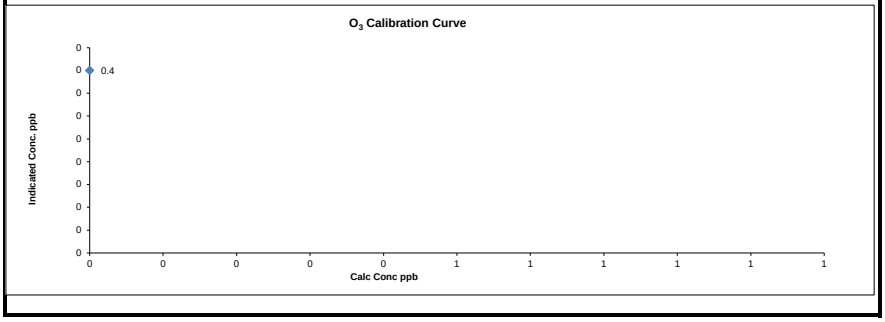
Linear Regression/Calibration Results:

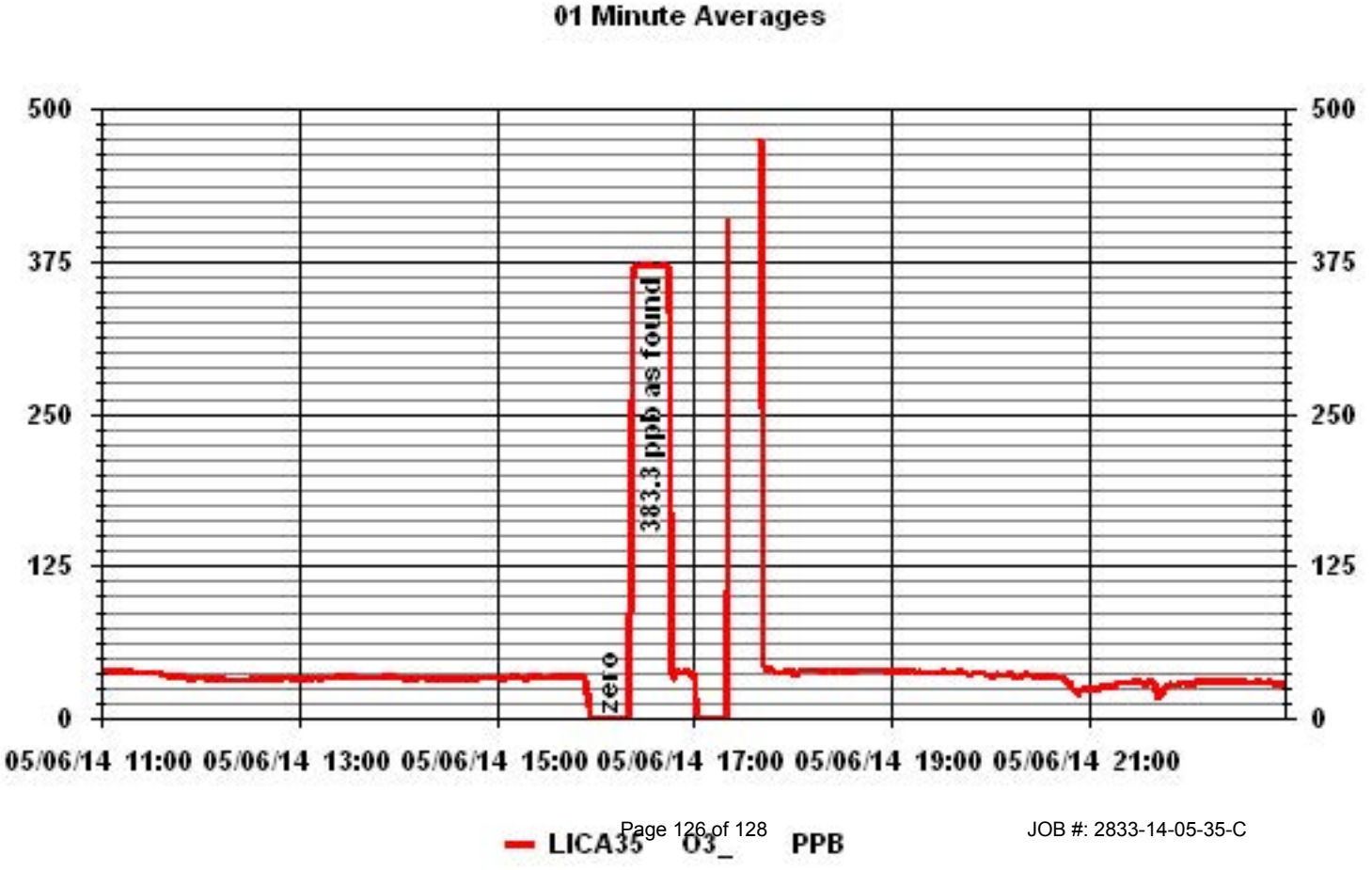
		LIMITS	Pass/Fail ?
Correlation Coeffecient =	NA	> or = 0.995	
Slope =	NA	0.85-1.15	
b (Intercept as % of full scale)=	NA	± 3% F.S.	
% change in C.F. from last cal	-4%	± 15%	PASS

Comments:

As founds only before maintenance.

Thermo 49i O3 Analyzer Calibration





JOB #: 2833-14-05-35-C

Maxxam — Thermo 49i O_3 Analyzer Calibration

Date:	7-May-14	**Start Time (mst):**	12:41
Company:	LICA	**End Time (mst):**	15:05
Station Name/Location:	Elk Point	**Calibration Purpose:**	3-point calibration
Performed by:	Kevin Hope	**G.P.T. Date:**	6-May-14

Analyzer:

Serial Number:	1002240372	**Range ppm:**	500
Last Calibration Date:	11-Apr-14	**As Found C.F.**	1.050
Previous Cal High Point C.F.:	1.003	**New C.F.:**	1.002

		As found:		As left:
	O_3 Bkg:	0.0	O_3 Bkg:	0.0
	O_3 Coef:	1.004	O_3 Coef:	1.046
Motherboard:	3.3	3.3	3.3	3.3
	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:	3.3	3.3	3.3	3.3
	5.0	5.0	5.0	5.0
	15.0	14.9	15.0	14.9
	-15.0	-15.1	-15.0	-15.1
	Photo Lamp	9.8	Photo Lamp	9.8
	24.0	23.5	24.0	23.5
	O_3 Lamp	9.3	O_3 Lamp	9.3
	Bench:	27.8	Bench:	27.8
	Bench Lamp:	54.0	Bench Lamp:	54.0
	O_3 Lamp:	68.2	O_3 Lamp:	68.2
	Pressure:	697.4	Pressure:	697.4
	Cell A lpm:	0.754	Cell A lpm:	0.754
	Cell B lpm:	0.762	Cell B lpm:	0.762
	O_3 ppb:	33.0	O_3 ppb:	33.0
	Cell A ppb:	37.5	Cell A ppb:	37.5
	Cell B ppb:	35.8	Cell B ppb:	35.8
	Cell A int:	52419	Cell A int:	52419
	Cell B int:	52222	Cell B int:	52222
	Internal Span:	519.4	Internal Span:	349.2

Calibrator:

Make & Model:	Environics 6100
Serial #:	4760
NOx Gas Cylinder I.D. # :	BLM000711
NOx Cylinder Conc. (ppm):	49.7

Calibrator Flow Targets:

point	total flow (cc/min)	O_3 setting (v or ppb)
zero	5075	0
high	5075	350
mid	5075	175
low	5075	80

Calibration:

Calibrator Flow Rates (cc/min)				Calculated Concentration:	Indicated Concentration:	Correction Factors:
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero	5070	0.0	5070	0.0	-0.1	NA
adjusted zero	5070	0.0	5070	0.0	-0.1	NA
as found high	5070	0.00	5070	383.3	365.0	1.050
adjusted high	5070	0.00	5070	383.3	383.4	1.000
mid	5070	0.00	5070	196.2	195.2	1.005
low	5070	0.00	5070	85.6	85.5	1.000
calibrator zero	5070	0.00	5070	0.0	0.1	NA

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

Average C.F.= 1.002

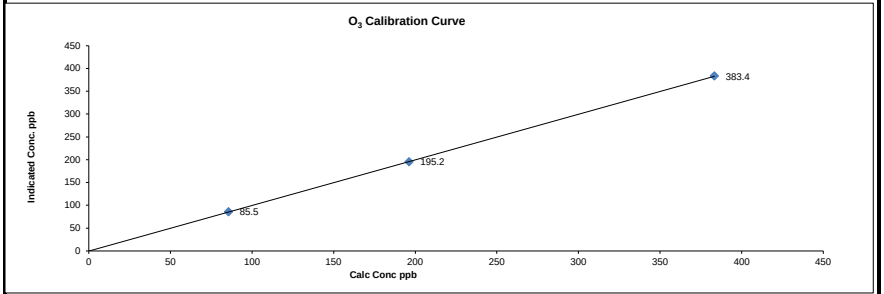
Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.000**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.062%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-5%**	**± 15%**	**PASS**

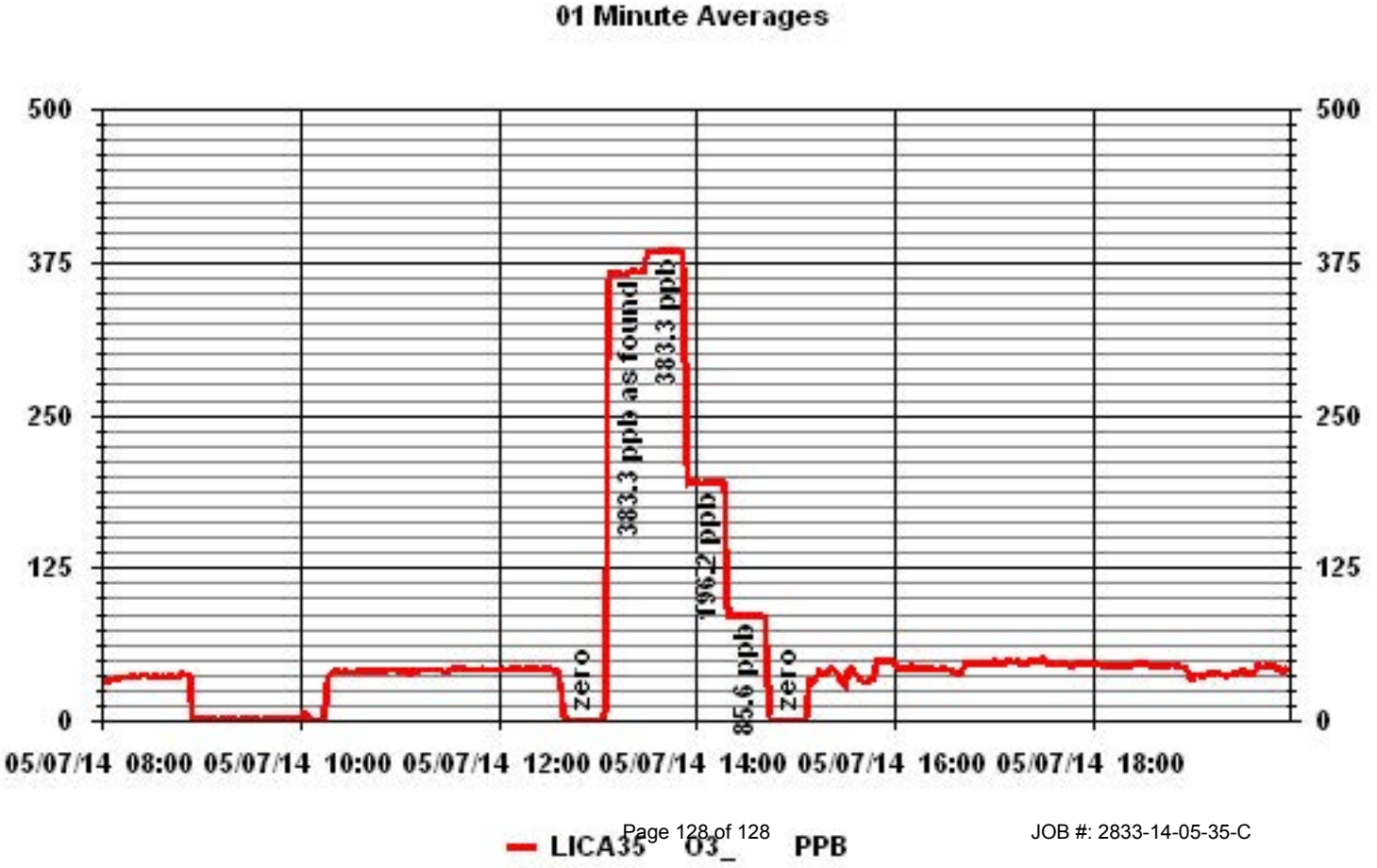
Comments:

As founds only before maintenance.

Thermo 49i O3 Analyzer Calibration



JOB #: 2833-14-05-35-C



JOB #: 2833-14-05-35-C