Lakeland Industry & Community Association

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

October 12, 2014

RE: August 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
August 2014

Prepared By:

Maxxam
A Bureau Veritas Group Company

September 30, 2014

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

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Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: Cold Lake
Data Period: August 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 – August 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	0.04	2	26	11	5	214(SSW)	0.3	16	100.0
TRS (PPB)	-	-	-	-	0.17	3	12	6	0.6	316(NW)	0.6	12	100.0
NO_2 (PPB)	159	-	0	-	1.44	6.6	5	17	2	39(NE)	2.4	14	100.0
NO (PPB)	-	-	-	-	0.88	14.2	24	16	9.4	20(NNE)	7.7	25	100.0
NOx (PPB)	-	-	-	-	2.32	14.2	24	16	9.4	20(NNE)	8.0	25	100.0
O_3 (PPB)	82	-	0	-	19.46	50	6	16	7.8	260(WSW)	27.0	3	100.0
THC (PPM)	-	-	-	-	2.26	4.2	5	5	0.5	280(W)	2.7	29	100.0
PM 2.5 (UG/M^3)	-	30	-	2	12.18	60	1	6, 20	7.7, 2	6(N) 139(SE)	36.3	16	97.4
TEMPERATURE (DEG C)	-	-	-	-	17.21	28.5	4	12	1	147(SE)	21.7	3	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	74.28	100.0	VAR	VAR	VAR	VAR	85.5	5	100.0
VECTOR WS (KPH)	-	-	-	-	4.39	15.0	9	9	-	316(NW)	7.8	9	100.0
VECTOR WD (DEGREES)	-	-	-	-	250(WSW)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS NA: NOT AVAILABLE

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

Passive Ambient Monitoring Network – August 2014

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO_2	#8	3.2	0.5
H_2S	#27	1.87	0.44
NO_2	#6	2.6	1.1
O_3	#16	43.7	20.74

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 August 11th. The inlet filter was changed before the monthly calibration. One hour of instaneous maximum data collected on August 17th hour 7 is missing due to a power outage. 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 showing low daily span results since August 1st. Prior to an as found points check on August 8th, the inlet filter was changed. The result was within the acceptable range**.** No further action was taken. Following an as found points check on August 11th, the scrubber material was replaced. A post repair calibration was then performed. The analyzer spanned low on August 15th. An as found point check was performed on August 18th. The result was good. Another as found points check was performed on August 25th due to high span result recorded on August 24th. The result was fine. The reason causing the IZS system unstable was likely due to unstable station temperature. Maxxam field technician requested for HVAC maintenance on August 24th. One hour of instaneous maximum data collected on August 17th hour 7 is missing due to a power outage. Due to Maxxam operator's error, the monthly calibration for August 2014 was not completed. The full calibration was done on September 10th. The analyzer passed the calibration requirement. The calibration record for September 10th is included in this report. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – COLD LAKE SOUTH

Total Hydrocarbon (PPM)

- Analyzer make / model - Thermo 51C, S/N: AMU1634

The analyzer was working well throughout the month. The monthly calibration was performed on August 11th. The inlet filter was changed before the monthly calibration. One hour of instaneous maximum data collected on August 17th hour 7 is missing due to a power outage. Data was corrected using daily zero information.

Particulate Matter 2.5 (UG/M3)

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

Two Teom audits were performed this month: one was completed on August 8th, and the other audit was performed on August 28th. Data was corrected using Alberta air quality guideline. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. 17 hours of data were invalidated as the data were below –3 ug/m3. Hourly data collected on August 26th hour 6 is missing due to a power outage.
There were two 24-hour average exceedances recorded this month: concentration of 35.3 ug/m3 on August 1st, and concentration of 36.3 ug/m3 on August 16th. AESRD Ref# 287675 and 288381, respectively.

Nitrogen Dioxide (PPB)

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

The analyzer was working well throughout the month. The monthly calibration was performed on August 11th. The inlet filter was changed before the monthly calibration. Some daily span went above the +10% acceptable limits due to high station temperature. This issue did not affect data quality. One hour of instaneous maximum data collected on August 17th hour 7 is missing due to a power outage. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – COLD LAKE SOUTH

Ozone (PPB)

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

The analyzer was working well throughout the month. The monthly calibration was performed on August 11th. The inlet filter was changed before the monthly calibration. One hour of instaneous maximum data collected on August 17th hour 7 is missing due to a power outage. Data was corrected using daily zero information.

Relative Humidity (PERCENT)

- System make / model - Rotronic Hygroclip-S3

No operational issues were observed during the month. Hourly data collected on August 26th hour 6 is missing due to a power outage.

Ambient Temperature (DEGC)

- System make / model - Rotronic Hygroclip-S3

No operational issues were observed during the month. Hourly data collected on August 26th hour 6 is missing due to a power outage.

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 wind direction data included in this report represents where the wind was coming from. The last wind system calibration was performed on November 18th, 2012.

No operational issues were observed during the month. One hour of instaneous maximum data collected on August 17th hour 7 is missing due to a power outage.

General Monthly Summary

AQM STATION – LICA – COLD LAKE SOUTH

Trailer Temperature (DEGC)

- System make / model - R&R 61

No operational issues were observed during the month.

Datalogger

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

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

Trailer

The glass manifold was cleaned on August 11th.

Passive Network

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

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 2014

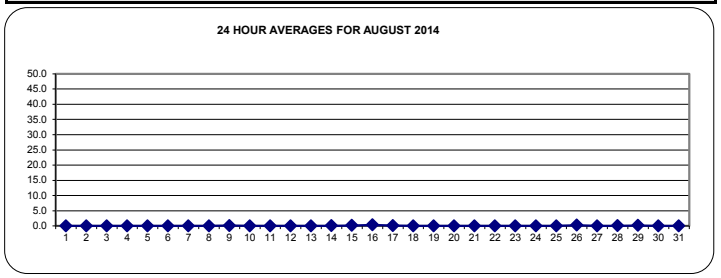
SULPHUR DIOXIDE (SO2) hourly averages in ppb

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	**S**	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	**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	1	1	0	0	0	0	0	0	0	0	1	0.1	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	**C**	**C**	**C**	**C**	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	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**	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.0	24
15	0	0	0	0	0	0	**S**	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	0.2	24
16	0	0	0	0	0	**S**	0	0	1	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	1	***0.3***	24
17	0	0	0	0	**S**	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	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	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0.0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	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	**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	1	***2***	1	1	0	0	0	0	**S**	0	0	0	0	0	***2***	0.2	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	1	0	0	0	**S**	0	0	0	0	0	0	0	1	0.0	24
29	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	**S**	0	0	0	0	0	0	0	0	1	0.2	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0.0	24
31	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
HOURLY MAX	0	0	0	0	0	0	0	0	1	1	1	2	1	1	1	1	0	0	1	0	0	0	0	0			
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

STATUS FLAG CODES

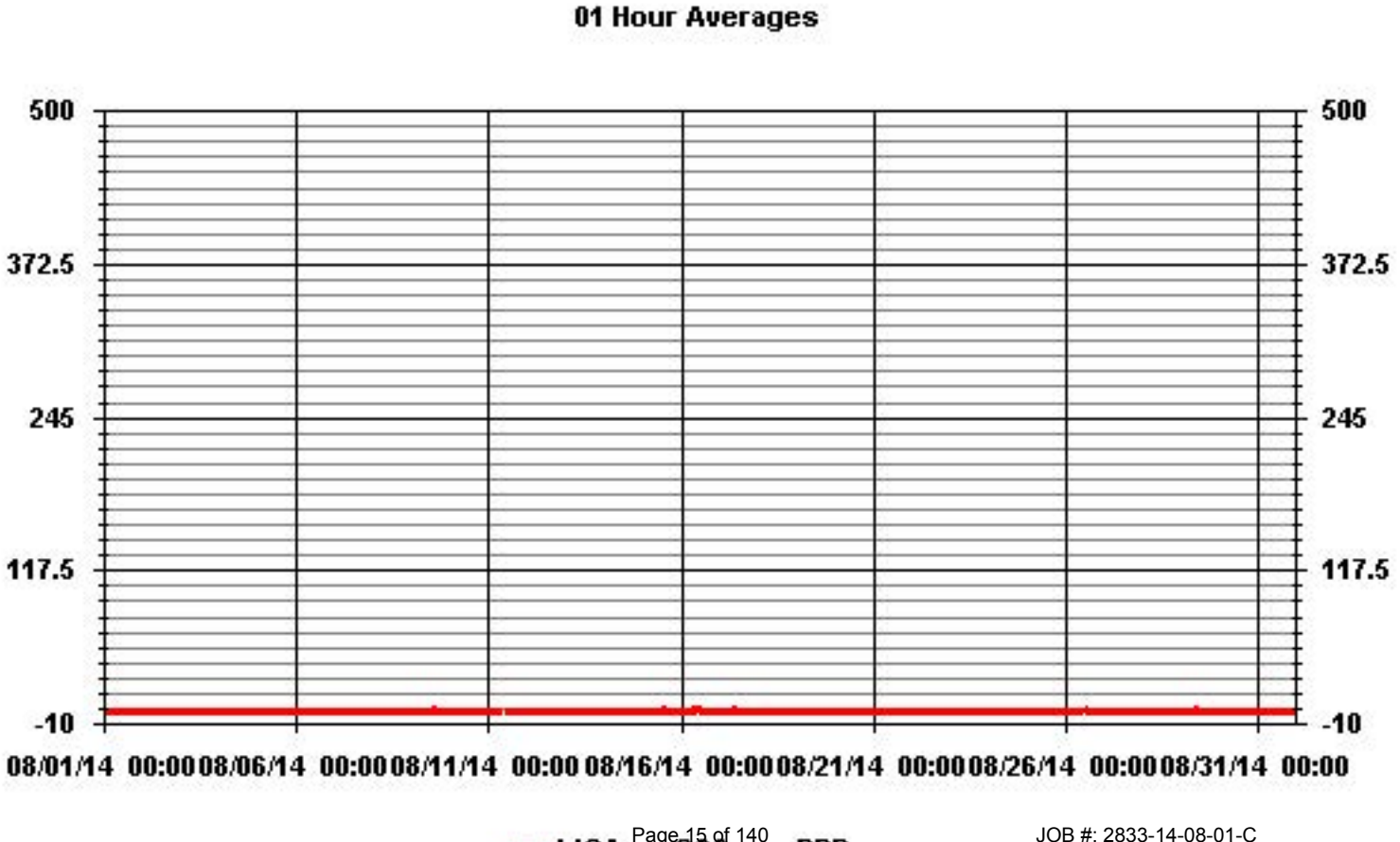
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	25					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	11	ON DAY(S)	26
MAXIMUM 24-HR AVERAGE:	0.3	PPB			ON DAY(S)	16
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.20		MONTHLY AVERAGE:		0.04	PPB



JOB #: 2833-14-08-01-C

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 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	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	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	0	0	1	1	0.8	24
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	0	0	1	0	1	1	0.9	24
5	1	1	1	0	1	1	1	0	0	1	1	1	1	1	1	0	**S**	1	0	0	1	1	0	0	1	0.7	24
6	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	**S**	1	1	1	1	0	0	0	1	1	0.7	24
7	1	1	1	0	0	0	1	0	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	0.8	24
8	1	0	1	0	1	1	1	1	1	1	1	1	1	**S**	1	1	0	1	0	1	1	1	0	0	1	0.7	24
9	1	0	0	0	1	0	1	1	1	1	1	1	**S**	1	2	1	1	1	1	1	1	1	1	1	2	0.9	24
10	1	1	0	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	0	1	0	1	1	0.9	24
11	0	0	1	0	1	0	1	**C**	**C**	**C**	**C**	**C**	**C**	1	1	1	1	1	1	1	1	1	1	1	1	0.8	24
12	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
13	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
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	**P**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1.0	23
18	1	0	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	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	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1.0	24
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	2	1	0	1	**S**	1	1	2	1.0	24
24	1	1	1	1	1	1	1	1	0	1	0	0	***41***	0	1	1	1	0	1	1	**S**	1	1	1	***41***	***2.5***	24
25	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
26	1	1	1	1	1	1	1	1	1	1	2	3	2	2	1	1	1	1	**S**	1	1	1	1	1	3	1.2	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	1	1	1	1	1	1	1	2	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	2	1	1	1	1	**S**	1	1	1	1	1	1	1	1	2	1.0	24
30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1.0	24
31	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1.0	24
HOURLY MAX	1	1	1	1	1	1	1	2	1	1	2	3	41	2	2	1	1	2	1	1	1	1	1	1			
HOURLY AVG	0.9	0.9	0.9	0.8	0.9	0.9	0.9	1.0	0.9	1.0	1.0	1.0	2.4	1.0	1.0	0.9	1.0	1.0	0.9	0.9	0.9	0.9	0.8	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: 653

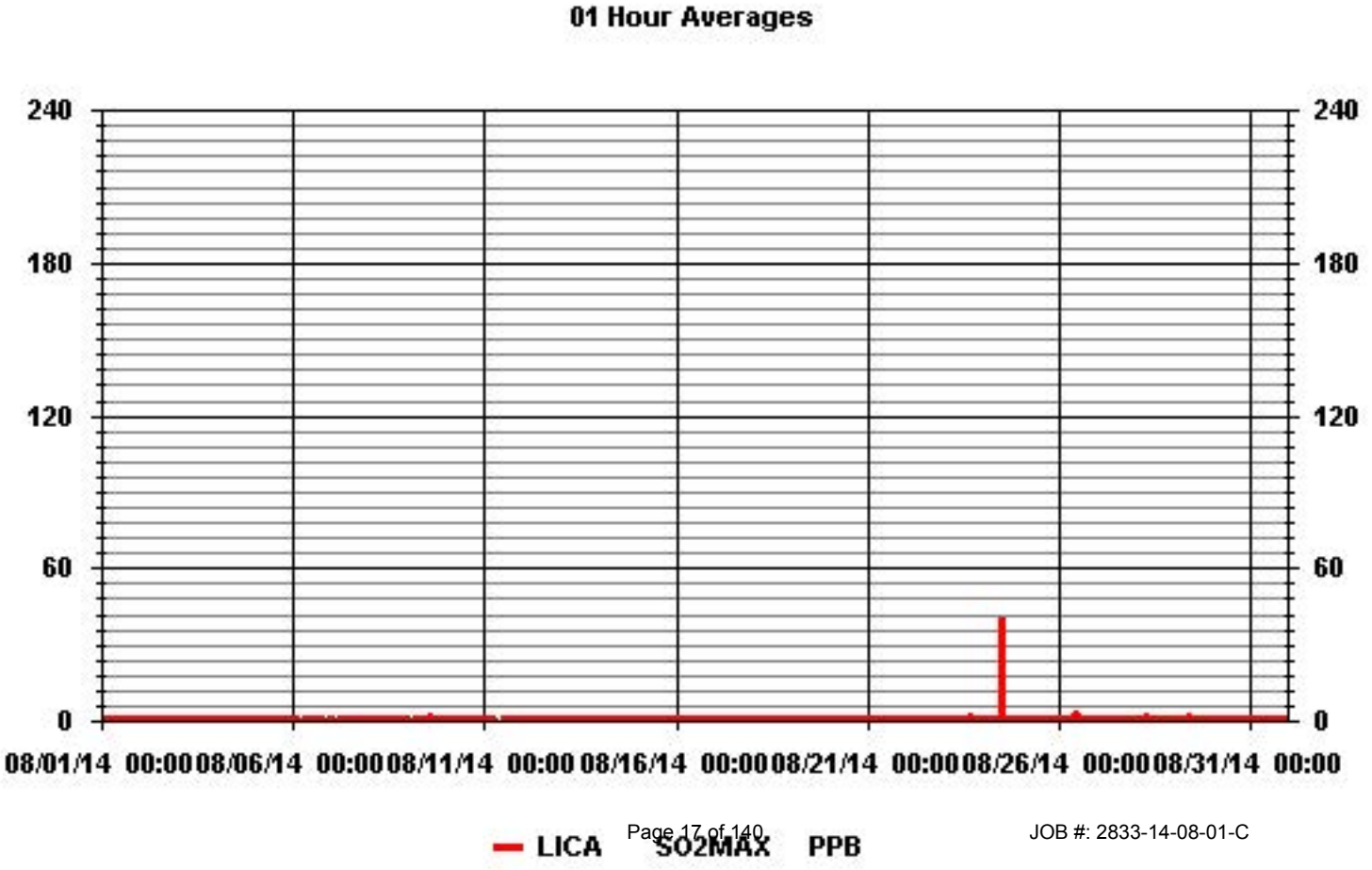
MAXIMUM INSTANTANEOUS VALUE: 41 PPB @ HOUR(S) 12 ON DAY(S) 24

VAR-VARIOUS

IZS CALIBRATION TIME: 31 HRS OPERATIONAL TIME: 743 HRS

MONTHLY CALIBRATION TIME: 6 HRS

STANDARD DEVIATION: 1.54



JOB #: 2833-14-08-01-C

LICA
SO2_ / WDR Joint Frequency Distribution (Percent)

August 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	3.24	3.66	3.94	2.53	3.38	2.82	17.34	6.91	5.21	4.37	9.02	13.25	11.28	5.50	3.52	3.94	100.00
<	60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.24	3.66	3.94	2.53	3.38	2.82	17.34	6.91	5.21	4.37	9.02	13.25	11.28	5.50	3.52	3.94	

Calm : .00 %

Total # Operational Hours : 709

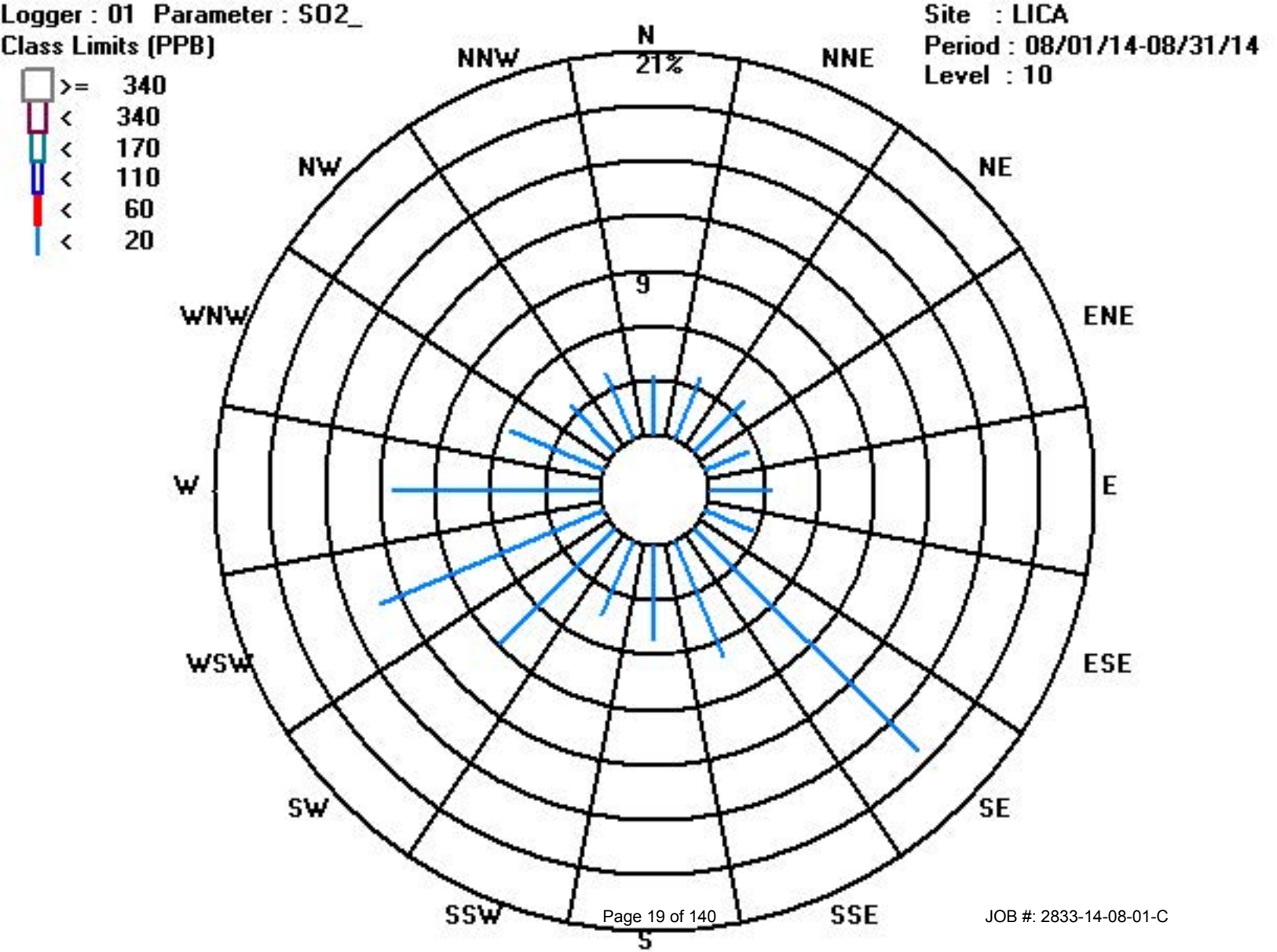
Distribution By Samples

Direction

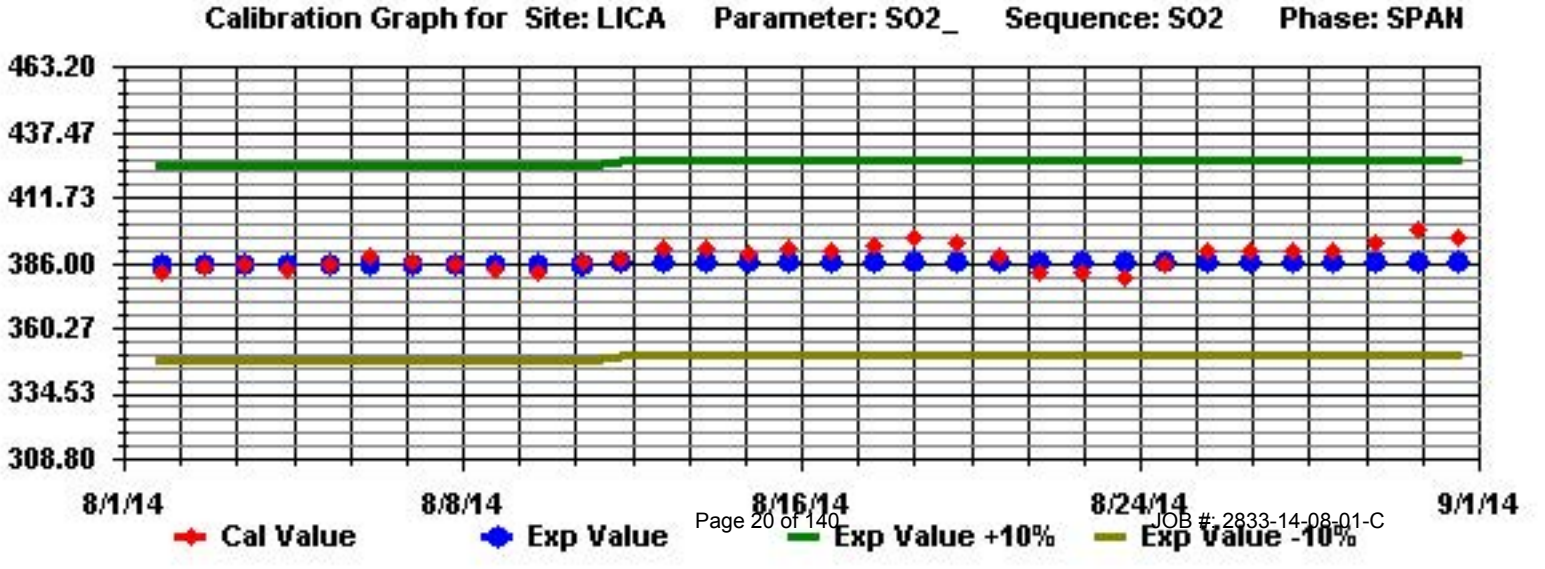
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	23	26	28	18	24	20	123	49	37	31	64	94	80	39	25	28	709
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	23	26	28	18	24	20	123	49	37	31	64	94	80	39	25	28	

Calm : .00 %

Total # Operational Hours : 709



JOB #: 2833-14-08-01-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
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Reduced Sulphur

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 2014

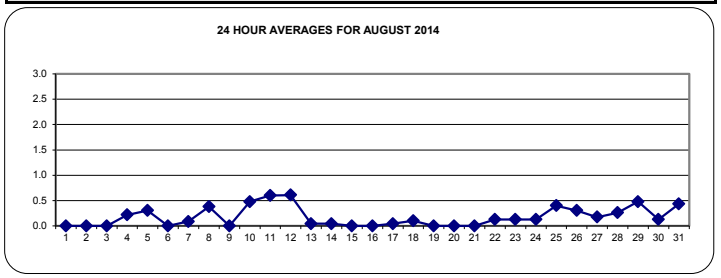
TOTAL REDUCED SULPHUR (TRS) hourly averages in ppb

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	0	0	S	S	0	0	0	0	0	0	0	0	0	0	0	0	S	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	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	1	1	0	1	1	0	0	0	0	0	0	0	S	0	0	0	0	0	1	1	0.2	24
5	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0.3	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	1	1	1	0.1	24
8	1	1	1	1	1	1	1	1	0	0	0	C	C	C	0	0	0	0	0	0	0	0	0	0	1	0.4	24
9	0	0	0	0	0	0	0	0	S	S	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
10	1	1	0	1	1	1	1	2	1	1	1	S	0	0	0	0	0	0	0	0	0	0	0	0	2	0.5	24
11	0	1	1	1	1	1	1	1	C	C	C	C	C	C	C	C	C	0	0	0	0	0	1	1	1	0.6	24
12	1	2	2	2	2	1	***3***	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	***3***	***0.6***	24
13	0	0	0	0	0	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
14	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
18	0	0	0	S	0	0	1	1	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0	0	1	0.1	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	0	0	0	0	0	0	0	0	0	0	0	S	0	0.0	24
22	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	0.1	24
23	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	1	0.1	24
24	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	1	1	1	0.1	24
25	1	1	1	1	1	1	1	S	1	0	0	0	0	C	C	0	0	0	0	S	0	0	0	0	1	0.4	24
26	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	S	0	0	0	1	1	1	0.3	24
27	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	1	1	1	0.2	24
28	1	0	1	1	0	1	S	S	S	S	0	0	0	0	0	0	S	0	0	0	0	0	1	0	1	0.3	24
29	1	1	1	1	1	2	2	1	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	2	0.5	24
30	0	0	0	0	1	0	0	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	1	0.1	24
31	0	1	1	1	2	2	2	1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	2	0.4	24
HOURLY MAX	1	2	2	2	2	2	3	2	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1			
HOURLY AVG	0.3	0.3	0.3	0.4	0.4	0.6	0.6	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2			

STATUS FLAG CODES

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

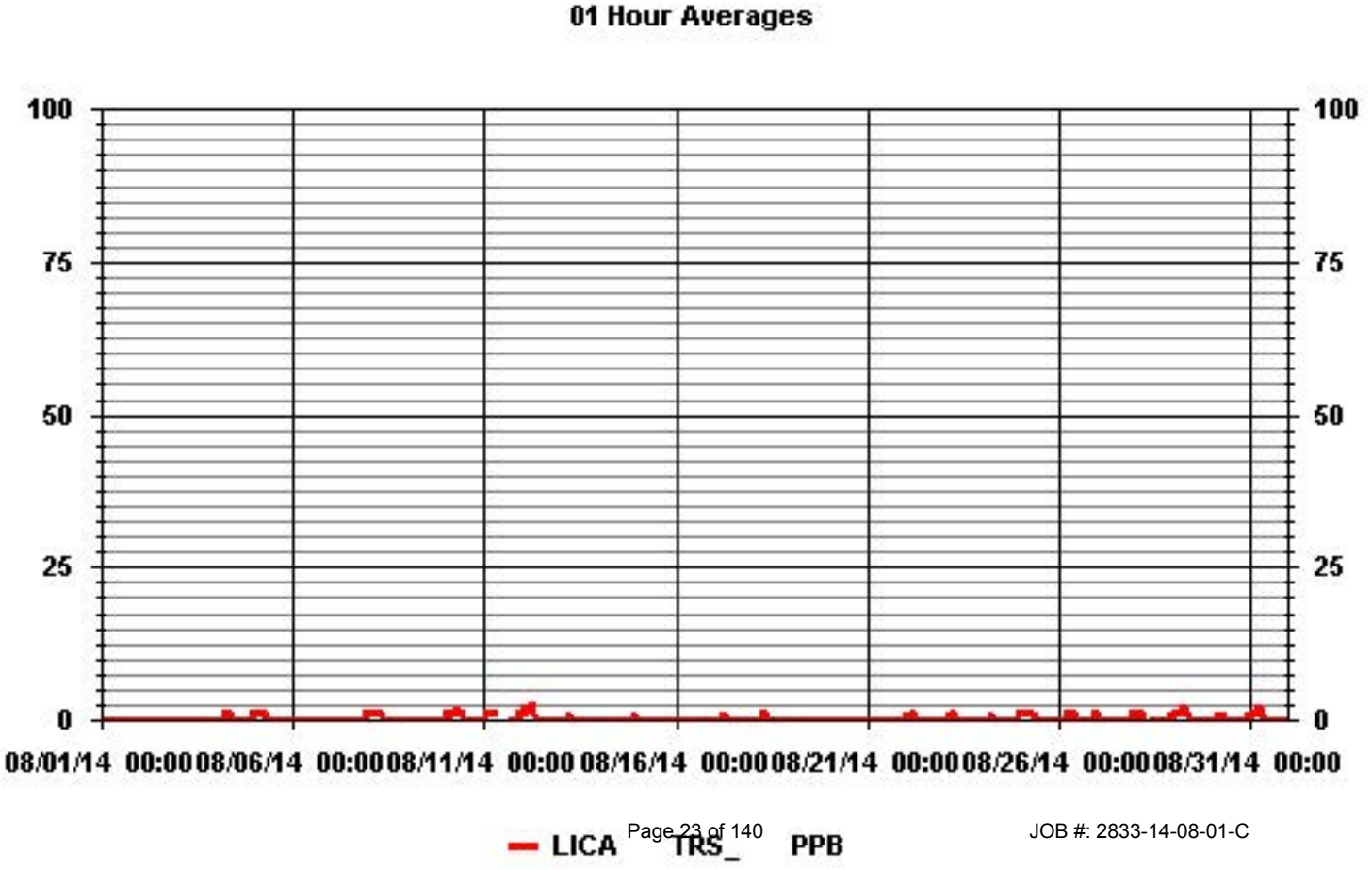


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:**

1-HR	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:	106						
MAXIMUM 1-HR AVERAGE:	3	PPB	@ HOUR(S)	6	ON DAY(S)		12
MAXIMUM 24-HR AVERAGE:	0.6	PPB			ON DAY(S)		12
					VAR-VARIOUS		
IZS CALIBRATION TIME:	39	HRS	OPERATIONAL TIME:			744	HRS
MONTHLY CALIBRATION TIME:	17	HRS	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	0.42		MONTHLY AVERAGE:			0.17	PPB



JOB #: 2833-14-08-01-C

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 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	0	0	1	1	1	0	**S**	**S**	0	0	0	0	0	0	0	0	0	0	0	1	**S**	0	1	1	1	0.3	24
2	1	0	1	1	1	1	1	1	1	1	0	0	0	0	0	1	0	0	0	**S**	0	0	0	0	1	0.4	24
3	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0	0	0	**S**	0	0	1	1	1	1	0.3	24
4	1	1	1	1	2	3	1	1	1	1	1	0	0	1	1	1	0	**S**	1	0	0	0	1	1	3	0.9	24
5	2	1	2	2	4	1	2	1	1	1	1	1	0	0	0	0	**S**	1	1	1	0	0	0	1	4	1.0	24
6	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	**S**	1	1	0	1	1	1	1	1	1	0.9	24
7	1	1	1	2	1	1	1	1	1	0	0	1	0	1	**S**	1	0	0	0	1	1	1	2	2	2	0.9	24
8	2	2	2	2	2	3	1	1	1	1	1	**C**	**C**	**C**	0	0	0	1	1	1	1	1	1	1	3	1.2	24
9	1	1	1	1	1	1	0	0	**S**	**S**	0	0	**S**	0	1	0	1	0	1	1	1	1	1	1	1	0.7	24
10	1	2	1	1	2	1	2	2	2	1	1	**S**	1	1	0	0	1	0	1	0	0	1	1	1	2	1.0	24
11	1	2	2	2	2	1	2	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	1	1	1	1	2	3	3	1.6	24
12	2	5	2	3	3	4	7	3	1	**S**	1	1	1	1	1	0	1	1	0	1	1	1	1	1	7	***1.8***	24
13	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	0.9	24
14	0	0	1	0	0	1	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	5	0.3	24
15	1	1	1	0	1	1	**S**	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0.3	24
16	0	1	1	0	1	**S**	0	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	1	1	1	0.5	24
17	1	1	1	1	**S**	1	1	**P**	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0.4	23
18	1	1	1	**S**	0	1	2	2	1	1	1	0	**C**	**C**	**C**	0	1	1	0	0	0	0	0	1	2	0.7	24
19	0	0	**S**	1	1	1	1	1	1	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0.4	24
20	1	**S**	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0.4	24
21	**S**	1	0	0	0	1	0	0	1	1	1	0	0	1	0	0	0	0	1	1	0	1	1	**S**	1	0.5	24
22	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1	0	0	1	0	1	1	2	**S**	1	2	0.7	24
23	1	1	1	1	1	2	2	0	0	0	0	1	0	1	1	0	1	1	1	1	1	**S**	1	1	2	0.8	24
24	1	1	1	1	1	3	1	1	1	0	1	1	***8***	1	1	0	1	0	1	1	**S**	1	2	2	***8***	1.3	24
25	2	1	2	2	1	2	**S**	**S**	1	1	1	1	**C**	**C**	**C**	**C**	1	1	1	**S**	1	1	1	1	2	1.2	24
26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	2	***8***	***8***	1.3	24
27	2	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	**S**	1	1	1	4	3	1	4	1.2	24
28	1	1	1	1	1	1	**S**	**S**	**S**	**S**	0	1	1	0	1	1	**S**	1	1	0	1	1	2	1	2	0.9	24
29	2	3	2	3	3	3	3	1	1	1	1	0	1	1	1	**S**	1	1	1	1	1	0	1	1	3	1.4	24
30	1	1	2	1	1	1	1	1	1	1	0	1	0	0	**S**	0	0	1	1	1	1	1	1	1	2	0.8	24
31	1	2	2	2	2	2	3	2	1	1	1	0	1	**S**	1	1	1	1	0	1	1	1	1	1	3	1.3	24
HOURLY MAX	2	5	2	3	4	4	7	3	2	1	1	1	8	1	1	1	1	1	1	1	1	4	5	8			
HOURLY AVG	1.0	1.2	1.2	1.2	1.2	1.4	1.4	1.0	0.9	0.7	0.6	0.5	0.6	0.5	0.4	0.4	0.5	0.6	0.5	0.7	0.6	0.7	1.2	1.2			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 461

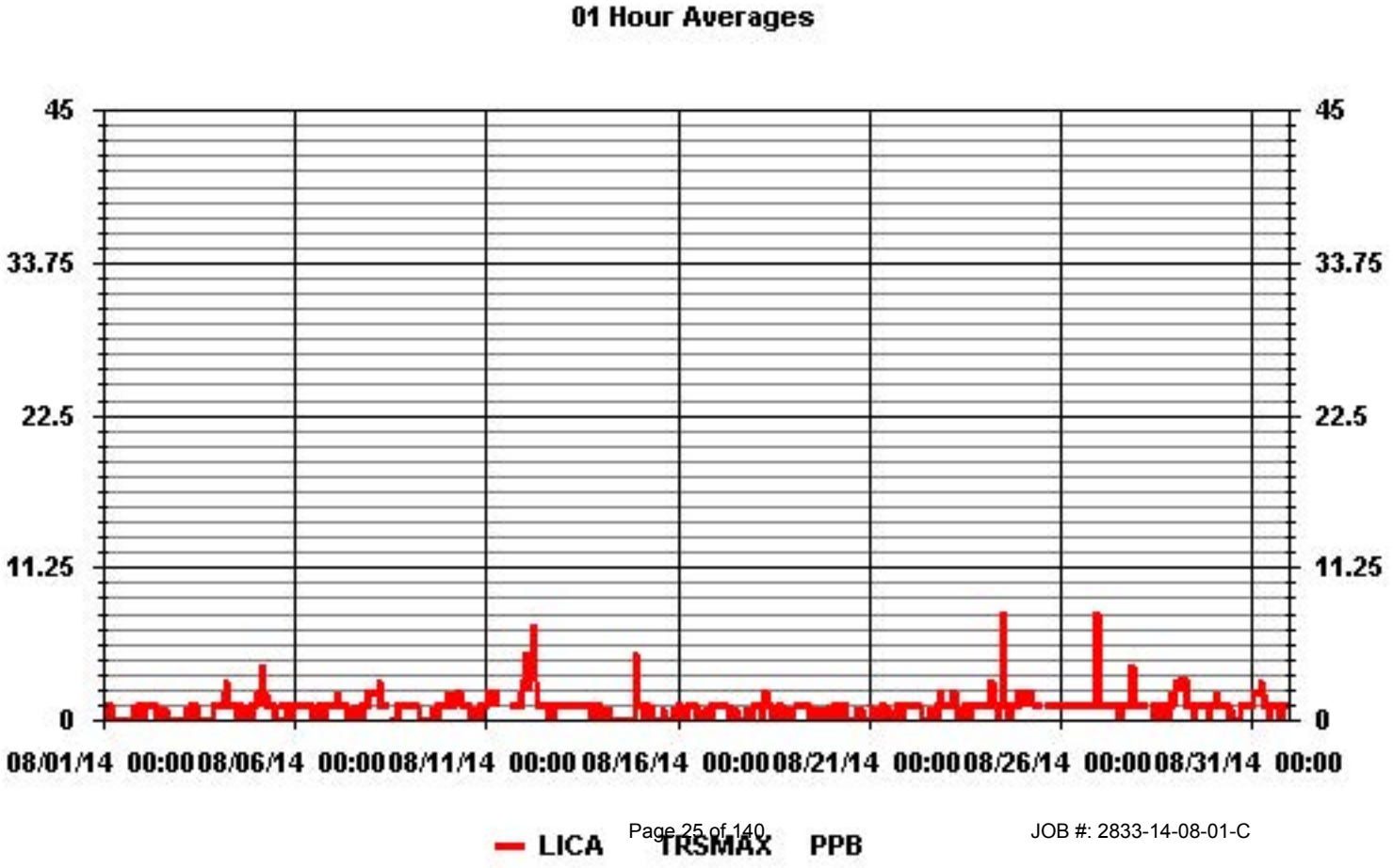
MAXIMUM INSTANTANEOUS VALUE: 8 PPB @ HOUR(S) 12, 23 ON DAY(S) 24, 26

VAR-VARIOUS

IZS CALIBRATION TIME: 40 HRS OPERATIONAL TIME: 743 HRS

MONTHLY CALIBRATION TIME: 20 HRS

STANDARD DEVIATION: 0.86



JOB #: 2833-14-08-01-C

LICA
TRS_ / WDR Joint Frequency Distribution (Percent)

August 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	3.05	3.63	4.06	2.61	3.48	2.90	17.73	6.83	5.08	4.50	9.30	13.22	11.19	5.37	2.90	3.92	99.85
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.14
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.05	3.63	4.06	2.61	3.48	2.90	17.73	6.83	5.08	4.50	9.30	13.22	11.19	5.37	3.05	3.92	

Calm : .00 %

Total # Operational Hours : 688

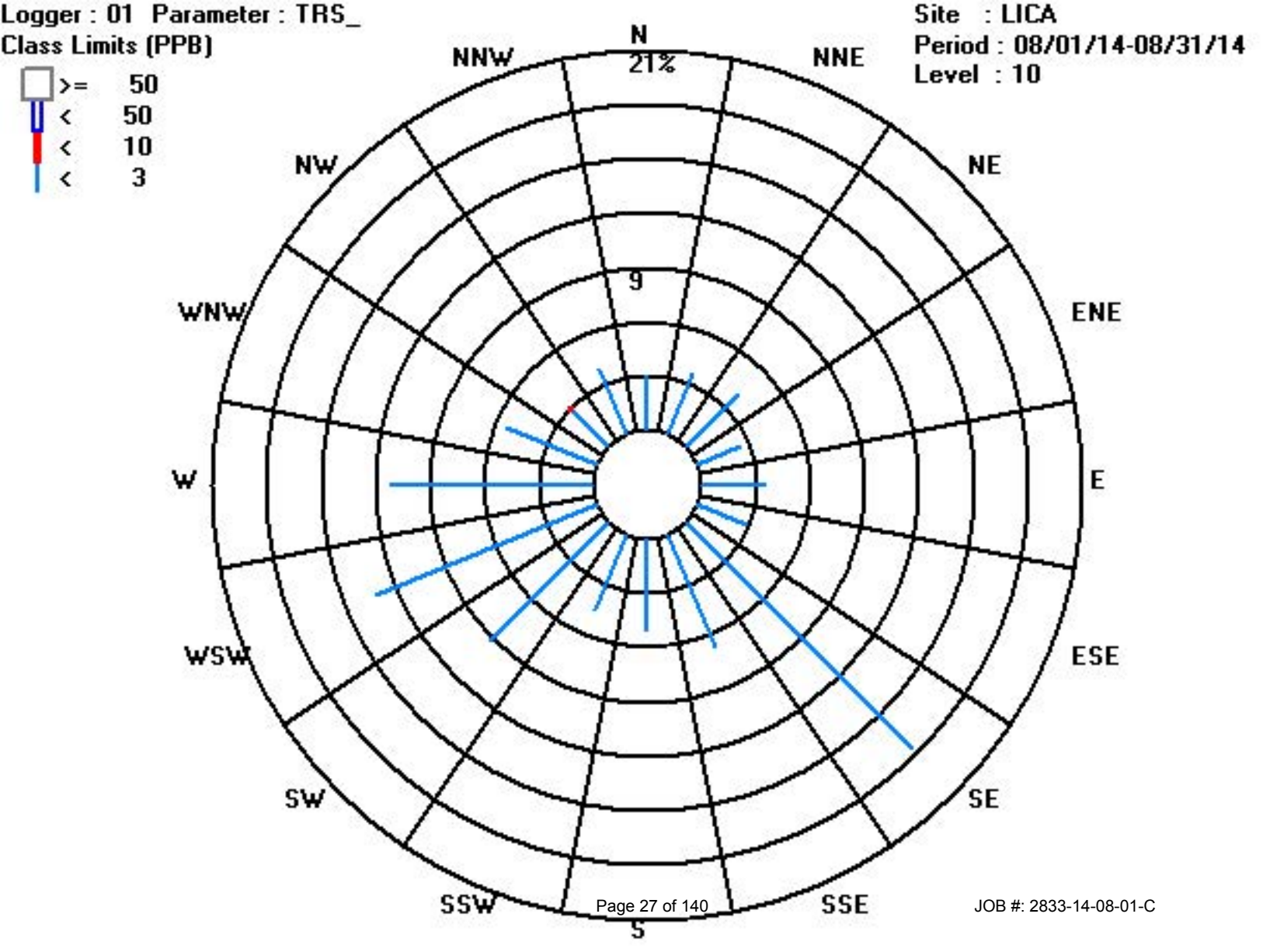
Distribution By Samples

Direction

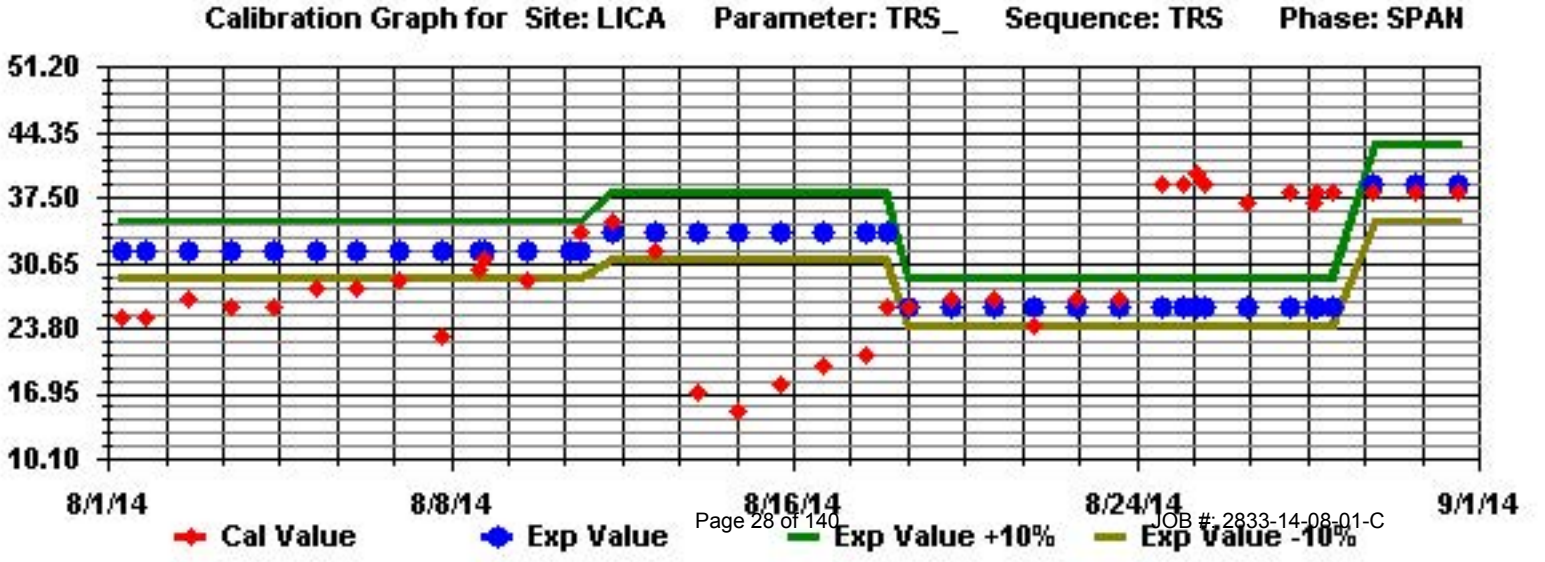
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	21	25	28	18	24	20	122	47	35	31	64	91	77	37	20	27	687
< 10															1		1
< 50																	
>= 50																	
Totals	21	25	28	18	24	20	122	47	35	31	64	91	77	37	21	27	

Calm : .00 %

Total # Operational Hours : 688



JOB #: 2833-14-08-01-C


Calibration Graph for Site: LICA Parameter: TRS_ Sequence: TRS Phase: SPAN
51.20
44.35
37.50
30.65
23.80
16.95
10.10
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 2014

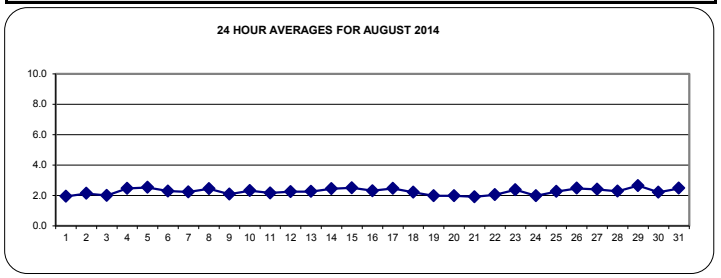
TOTAL HYDROCARBONS (THC) hourly averages in ppm

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	1.7	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	1.9	1.9	2.0	**S**	2.2	2.5	2.4	2.5	1.9	24
2	2.6	2.4	2.6	2.6	2.7	2.7	2.3	2.3	2.2	2.2	2.0	1.8	1.9	1.9	1.9	1.8	1.8	1.7	1.8	**S**	2.0	2.0	2.0	2.0	2.7	2.1	24
3	2.0	1.9	1.9	1.9	2.0	2.0	2.0	2.2	2.1	2.0	1.9	1.8	1.8	1.8	1.8	1.7	1.7	1.7	**S**	2.1	2.3	2.5	2.5	2.5	2.5	2.0	24
4	2.8	2.9	2.8	2.9	3.2	3.4	3.1	3.1	2.5	2.4	2.1	2.0	1.8	1.9	1.8	1.8	1.9	**S**	2.2	2.1	2.3	2.5	2.5	2.8	3.4	2.5	24
5	3.1	3.1	3.3	3.4	3.8	***4.2***	3.9	3.0	2.7	2.2	2.0	1.9	1.8	1.8	1.8	1.9	**S**	2.0	2.0	2.1	2.1	2.1	2.1	2.1	***4.2***	2.5	24
6	2.3	2.6	2.6	2.6	2.8	3.0	2.6	2.4	2.2	2.0	1.9	1.7	1.7	1.7	1.7	**S**	1.9	1.9	2.0	2.3	2.4	2.7	2.9	2.8	3.0	2.3	24
7	2.8	2.6	2.5	2.5	2.3	2.2	2.2	2.3	2.3	2.2	2.0	2.0	2.0	2.0	**S**	1.9	1.9	2.0	2.0	2.1	2.2	2.3	2.5	2.5	2.8	2.2	24
8	2.4	2.6	2.9	2.9	2.9	3.0	3.0	2.6	2.4	2.2	2.1	**C**	**C**	**C**	**C**	2.1	2.2	2.3	2.3	2.1	2.1	2.2	2.2	2.3	3.0	2.4	24
9	2.2	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	**S**	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.0	2.2	2.4	2.5	2.5	2.1	24
10	2.6	2.6	2.5	2.7	2.9	2.9	2.9	3.0	2.5	2.5	2.4	**S**	2.3	2.2	2.0	1.8	1.8	1.8	1.8	1.9	1.9	2.0	2.1	2.3	3.0	2.3	24
11	2.6	2.7	2.6	2.6	2.9	3.0	2.8	2.4	2.1	1.9	**S**	2.0	1.7	1.6	1.6	1.5	1.5	1.6	1.7	1.9	1.9	2.3	2.5	2.5	3.0	2.2	24
12	2.6	2.8	2.9	3.0	2.9	3.1	3.1	3.3	2.7	**S**	1.9	1.8	1.7	1.7	1.7	1.7	1.6	1.7	1.7	1.9	1.9	2.0	2.1	2.1	3.3	2.3	24
13	2.1	2.3	2.5	2.9	2.6	2.6	2.3	2.4	**S**	2.3	2.1	1.9	1.9	1.9	2.0	2.0	2.2	2.3	2.0	2.3	2.1	2.2	2.4	2.8	2.9	2.3	24
14	2.6	2.7	3.0	3.1	3.2	3.1	3.0	**S**	2.9	3.0	2.6	2.4	2.3	2.0	1.7	1.6	1.6	1.7	2.1	2.0	2.3	2.4	2.5	2.5	3.2	2.4	24
15	2.8	2.9	3.1	3.1	3.1	3.3	**S**	3.6	2.6	2.2	2.1	1.9	1.8	1.9	2.0	1.9	2.0	2.1	2.1	2.2	2.5	2.6	2.9	2.9	3.6	2.5	24
16	2.8	2.9	3.4	3.2	3.2	**S**	3.0	2.6	2.4	2.2	2.2	2.0	1.8	1.7	1.6	1.6	1.7	1.7	1.8	2.0	2.1	2.5	2.2	2.5	3.4	2.3	24
17	2.5	3.0	2.8	2.5	**S**	3.3	3.3	3.1	3.1	2.9	2.9	2.5	1.9	1.9	1.9	1.8	1.8	1.8	1.9	2.1	2.2	2.5	2.5	2.6	3.3	2.5	24
18	2.7	2.5	2.7	**S**	2.7	3.1	3.1	2.6	2.2	2.0	1.9	1.9	1.8	1.7	1.7	1.6	1.6	1.7	1.9	2.0	1.9	2.4	2.6	2.5	3.1	2.2	24
19	2.3	2.6	**S**	2.0	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.8	2.0	2.3	2.1	2.2	2.3	2.5	2.6	2.0	24
20	2.4	**S**	2.2	2.1	2.1	2.0	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	2.0	2.1	2.4	2.0	24
21	**S**	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.1	**S**	2.1	1.9	24
22	2.1	2.2	2.3	2.4	2.3	2.4	2.4	2.2	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	1.9	2.0	**S**	2.7	2.7	2.1	24
23	2.8	2.7	2.8	2.9	2.9	3.0	3.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.1	2.0	1.9	1.9	1.8	1.8	**S**	2.0	2.0	3.0	2.4	24
24	2.0	2.0	2.0	2.1	2.1	2.3	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.9	2.0	2.2	**S**	2.2	2.5	2.6	2.6	2.0	24
25	2.6	2.7	2.8	2.9	3.1	3.3	3.4	2.9	2.0	1.9	1.7	1.6	1.6	1.5	1.5	1.6	1.6	1.7	1.9	**S**	2.3	2.5	2.5	2.5	3.4	2.3	24
26	2.5	2.7	3.0	3.0	3.1	3.2	3.2	3.0	2.8	2.6	2.4	2.3	2.2	2.0	1.7	1.7	1.7	1.7	**S**	2.2	2.2	2.4	2.5	2.8	3.2	2.5	24
27	2.6	2.8	3.2	3.0	3.4	3.4	3.3	3.1	2.9	2.4	1.9	1.7	1.6	1.6	1.6	1.6	1.6	**S**	1.7	2.1	2.3	2.4	2.6	2.6	3.4	2.4	24
28	2.4	2.3	2.4	2.3	2.4	2.5	2.5	2.6	2.1	1.9	1.9	1.8	1.8	1.9	1.9	1.8	**S**	1.9	2.0	2.4	2.7	2.9	2.9	3.1	3.1	2.3	24
29	3.4	3.7	3.6	3.6	3.5	3.8	3.5	3.0	2.9	2.7	2.4	2.2	2.1	2.1	2.1	**S**	1.9	2.0	2.0	2.1	2.1	2.1	2.1	2.1	3.8	***2.7***	24
30	2.1	2.2	2.3	2.3	2.4	2.4	2.5	2.5	2.3	2.3	2.0	1.8	1.8	1.8	**S**	1.7	1.8	1.8	1.8	2.2	2.5	2.7	2.9	3.0	3.0	2.2	24
31	3.0	3.3	3.4	3.1	3.0	2.9	2.8	2.4	2.3	2.1	1.9	1.8	1.8	**S**	1.8	1.9	1.9	2.0	2.2	2.3	2.6	2.9	2.7	2.8	3.4	2.5	24
HOURLY MAX	3	4	4	4	4	4	4	4	3	3	3	3	2	2	2	2	2	2	2	2	3	3	3	3			
HOURLY AVG	2.5	2.6	2.7	2.7	2.7	2.8	2.7	2.6	2.3	2.2	2.1	2.0	1.9	1.9	1.8	1.8	1.8	1.9	1.9	2.1	2.2	2.3	2.4	2.5			

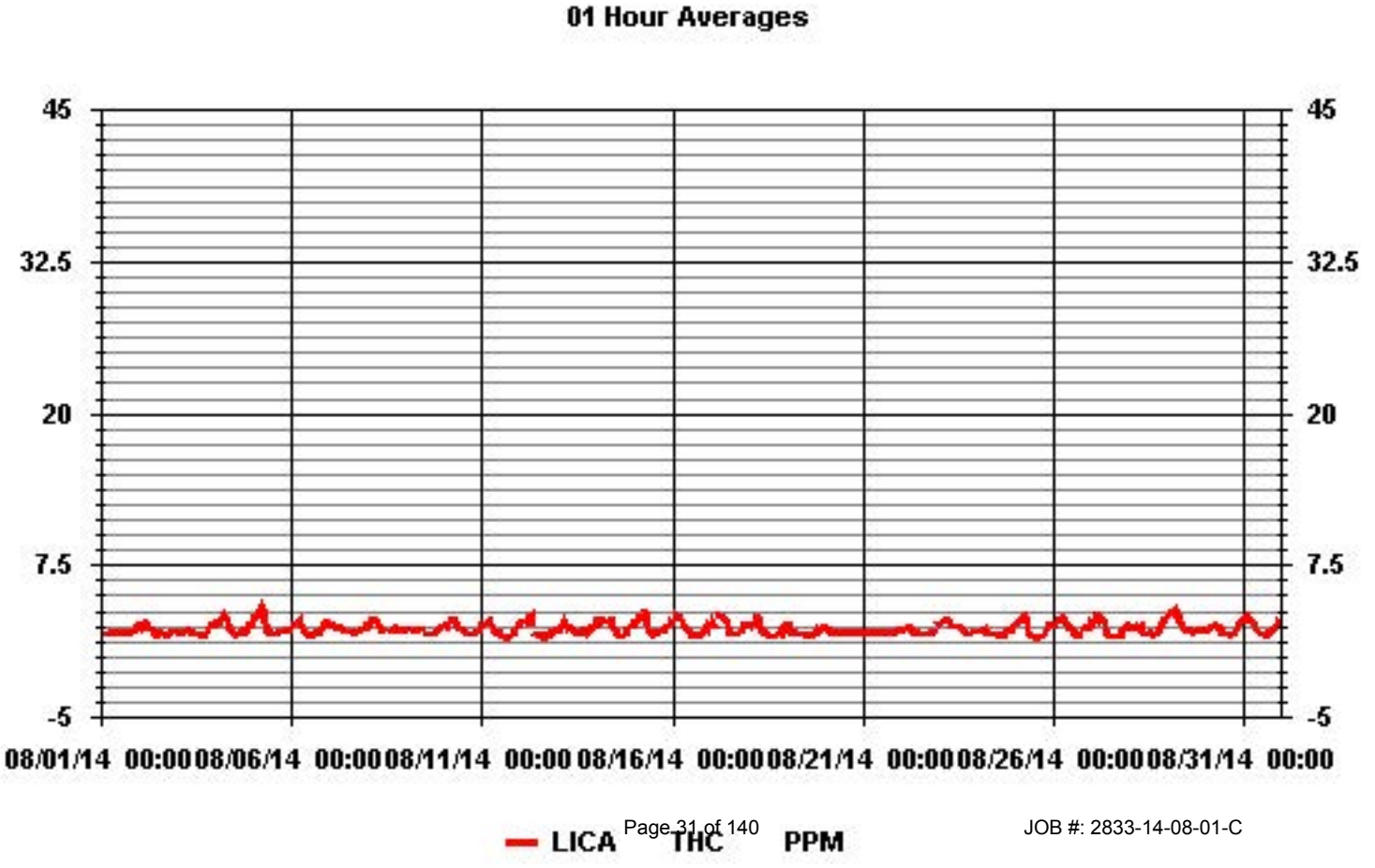
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	709						
MAXIMUM 1-HR AVERAGE:	4.2	PPM	@ HOUR(S)	5	ON DAY(S)	5	
MAXIMUM 24-HR AVERAGE:	2.7	PPM			ON DAY(S) VAR-VARIOUS	29	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		744	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	0.48		MONTHLY AVERAGE:		2.26	PPM	



JOB #: 2833-14-08-01-C

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 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	2.1	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2.1	2	2	2	2	2.4	2.4	**S**	2.6	3.3	2.6	3.3	2.1	24
2	3.1	2.6	2.8	3.1	2.9	3	2.4	2.4	2.3	3	2.1	1.9	1.9	2	1.9	1.9	1.8	1.8	1.9	**S**	2.1	2.1	2.1	2.1	3.1	2.3	24
3	2	2	2	2	2.1	2.2	2.1	2.2	2.2	2.1	2	1.9	2	1.9	1.8	1.8	1.8	1.8	**S**	2.7	2.7	3	3.3	3.5	3.5	2.2	24
4	3.2	3.6	3.9	3.4	3.6	3.7	3.6	3.4	2.8	2.5	2.3	2	1.9	1.9	1.9	1.9	2.1	**S**	2.5	2.3	2.7	3.1	3.5	3.2	3.9	2.8	24
5	3.7	3.6	3.8	3.8	4.9	***5***	4.5	3.7	2.9	2.4	2	1.9	1.9	1.9	2.1	2	**S**	2.1	2.1	2.3	2.5	2.2	2.2	2.4	***5***	***2.9***	24
6	2.8	3.3	3	3.3	3.7	3.6	3.2	2.6	2.3	2	2.2	1.8	1.8	1.8	1.7	**S**	2	1.9	2.2	4	2.7	3.4	4	3.9	4	2.7	24
7	3.9	3.9	2.7	3.5	3.2	2.4	2.3	2.4	2.3	2.3	2.1	2	2	2.1	**S**	1.9	2	2	2	2.3	2.4	2.6	2.8	2.9	3.9	2.5	24
8	2.8	3	3.2	3.3	3.2	3.3	3.2	2.8	2.6	2.3	2.2	**C**	**C**	**C**	**C**	**C**	2.3	2.4	2.4	2.2	2.2	2.4	2.5	2.4	3.3	2.7	24
9	2.3	2.4	2.3	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	**S**	1.8	1.9	1.9	1.9	1.9	1.8	2.4	2.4	2.6	2.7	2.8	2.8	2.2	24
10	2.9	3	2.8	3	3.1	3	3	3.2	2.8	2.6	2.5	**S**	2.4	2.4	2.2	1.9	1.8	1.8	1.8	2.4	2.2	2.4	2.6	2.7	3.2	2.5	24
11	3.1	3.2	2.9	3	3.2	3.3	3.3	2.6	2.3	2.1	**S**	2.1	1.8	1.6	1.6	1.6	1.5	1.6	2	2.2	2.2	2.9	3.1	3	3.3	2.4	24
12	3	3.2	3.3	3.4	3.3	3.5	3.3	3.5	3.4	**S**	2	1.9	1.8	1.7	1.8	1.7	1.7	1.7	1.9	2	2	2	2.1	2.2	3.5	2.5	24
13	2.2	3.1	3	3.6	3.1	3.2	2.4	2.5	**S**	2.4	2.2	2	1.9	2	2.3	2.2	2.7	3	2.1	3.2	2.2	2.7	3.2	3.3	3.6	2.6	24
14	3.1	3.5	3.7	3.8	3.7	3.3	3.1	**S**	3.1	3.1	2.8	2.5	2.5	2.3	1.8	1.7	1.7	2	2.7	2.3	2.9	3.3	3.1	3	3.8	2.8	24
15	3.5	3.4	3.7	3.6	3.5	3.6	**S**	4.4	2.7	2.3	2.1	2.1	1.9	2	2	2	2.1	2.2	2.3	2.4	2.8	2.7	3.3	3.8	4.4	2.8	24
16	3.4	3.4	4.1	3.6	3.7	**S**	3.2	3.1	2.6	2.3	2.2	2.2	1.9	1.8	1.7	1.7	1.7	2.4	2.1	2.3	2.5	3.2	2.6	3.3	4.1	2.7	24
17	3.7	3.8	3.4	3.2	**S**	3.7	3.5	**P**	3.3	3.1	3	3	2	2	1.9	1.9	1.9	1.9	2.1	2.3	2.4	3.2	3.1	2.9	3.8	2.8	23
18	3.2	3.1	3.2	**S**	2.9	3.5	3.7	2.8	2.3	2.1	2	1.9	1.8	1.8	1.7	1.9	1.7	1.9	2.1	2.2	2.1	3.3	3.2	3.1	3.7	2.5	24
19	2.9	3	**S**	2.5	2	2	1.9	2.2	1.9	1.9	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.9	2.4	2.9	2.5	2.5	2.5	3.1	3.1	2.2	24
20	2.9	**S**	2.4	2.2	2.2	2.2	2.3	2	2	1.9	1.9	1.9	1.9	2	2	1.9	2	2	2	2	2.1	2	2.1	2.2	2.9	2.1	24
21	**S**	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	2	2	1.9	2	1.9	2	2	2	2	2.2	2.2	**S**	2.2	2.0	24
22	2.2	2.3	2.6	2.5	2.5	2.5	2.5	2.6	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	2.2	2.4	**S**	3	3	2.2	24
23	3	3	3.2	3.2	3.2	3.3	3.4	2.8	2.4	2.5	2.5	2.4	2.5	2.5	2.4	2.3	2	1.9	1.9	1.9	1.9	**S**	2.1	2.1	3.4	2.5	24
24	2.1	2.1	2.1	2.1	2.3	3	2.1	2.1	1.9	1.8	1.9	1.8	2.1	1.8	1.8	1.8	1.8	2	2.1	2.7	**S**	2.4	3.1	2.8	3.1	2.2	24
25	2.8	2.9	3.1	3.1	3.3	3.7	4	3.2	2.3	1.9	1.9	1.6	1.7	1.6	1.6	1.6	1.7	1.9	2.4	**S**	2.4	2.5	2.6	2.5	4	2.4	24
26	2.6	3	3.4	3.1	3.4	3.6	3.5	3.1	2.9	2.7	2.5	2.4	2.6	2.2	1.8	1.8	1.7	1.7	**S**	3.7	2.8	2.7	2.9	3.6	3.7	2.8	24
27	2.8	3	3.9	3.3	4	3.8	3.9	3.4	3	2.7	2.1	1.9	1.7	1.7	1.8	1.6	1.6	**S**	1.9	2.5	2.9	2.9	3.4	3.3	4	2.7	24
28	2.5	2.5	2.5	2.5	2.5	2.6	2.6	2.7	2.4	2	2	1.9	1.9	1.9	1.9	1.9	**S**	2	2.1	2.6	2.9	3.1	3.3	3.3	3.3	2.4	24
29	3.6	3.9	3.9	4	4.3	4	3.8	3.3	3	2.9	2.6	2.3	2.2	2.2	2.2	**S**	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	4.3	2.8	24
30	2.3	2.2	2.7	2.7	2.8	2.6	2.6	2.5	2.4	2.4	2.2	1.9	1.8	1.8	**S**	1.8	1.8	1.8	1.9	2.7	2.8	3.3	3.3	3.2	3.3	2.4	24
31	3.3	3.6	3.6	3.7	3.2	3.1	3.1	2.7	2.4	2.2	2	1.8	1.8	**S**	1.9	1.9	1.9	2.2	2.2	2.5	2.8	3.3	2.9	3	3.7	2.7	24
HOURLY MAX	4	4	4	4	5	5	5	4	3	3	3	3	3	3	2	2	3	3	3	4	3	3	4	4			
HOURLY AVG	2.9	3.0	3.0	3.0	3.1	3.1	2.9	2.8	2.5	2.3	2.2	2.0	2.0	2.0	1.9	1.9	1.9	2.0	2.1	2.5	2.4	2.7	2.8	2.9			

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: 707

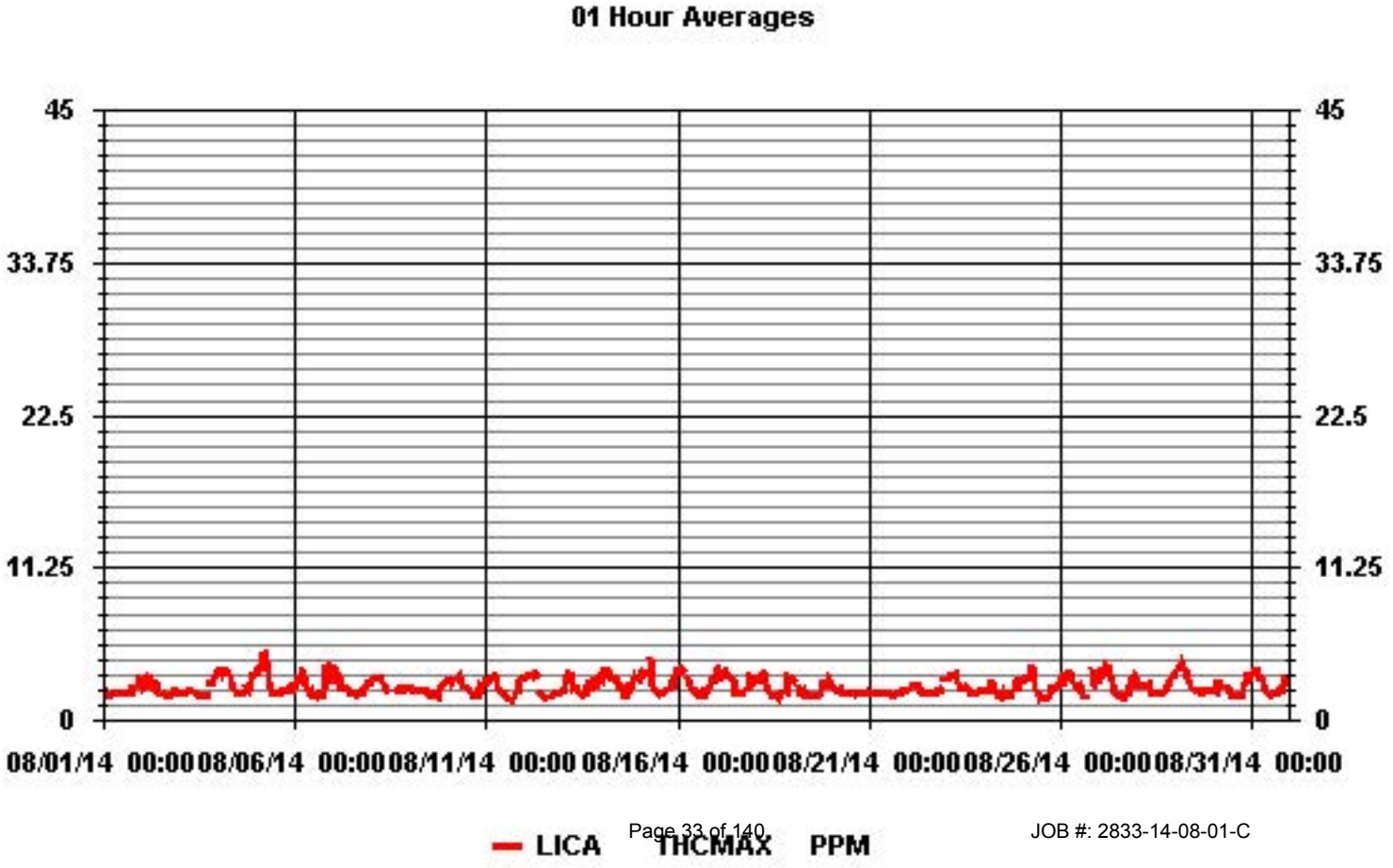
MAXIMUM INSTANTANEOUS VALUE: 5 PPM @ HOUR(S) 5 ON DAY(S) 5

VAR-VARIOUS

IZS CALIBRATION TIME: 31 HRS OPERATIONAL TIME: 743 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 0.64



JOB #: 2833-14-08-01-C

LICA
THC / WD Joint Frequency Distribution (Percent)

August 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	3.24	3.66	3.80	2.39	2.53	2.53	15.93	6.06	4.09	3.52	7.61	11.84	10.01	4.93	3.24	3.94	89.42
<	10.0	.00	.00	.14	.14	.84	.28	1.26	.56	1.12	.84	1.41	1.69	1.41	.56	.28	.00	10.57
<	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.24	3.66	3.94	2.53	3.38	2.82	17.20	6.62	5.21	4.37	9.02	13.54	11.42	5.50	3.52	3.94	

Calm : .00 %

Total # Operational Hours : 709

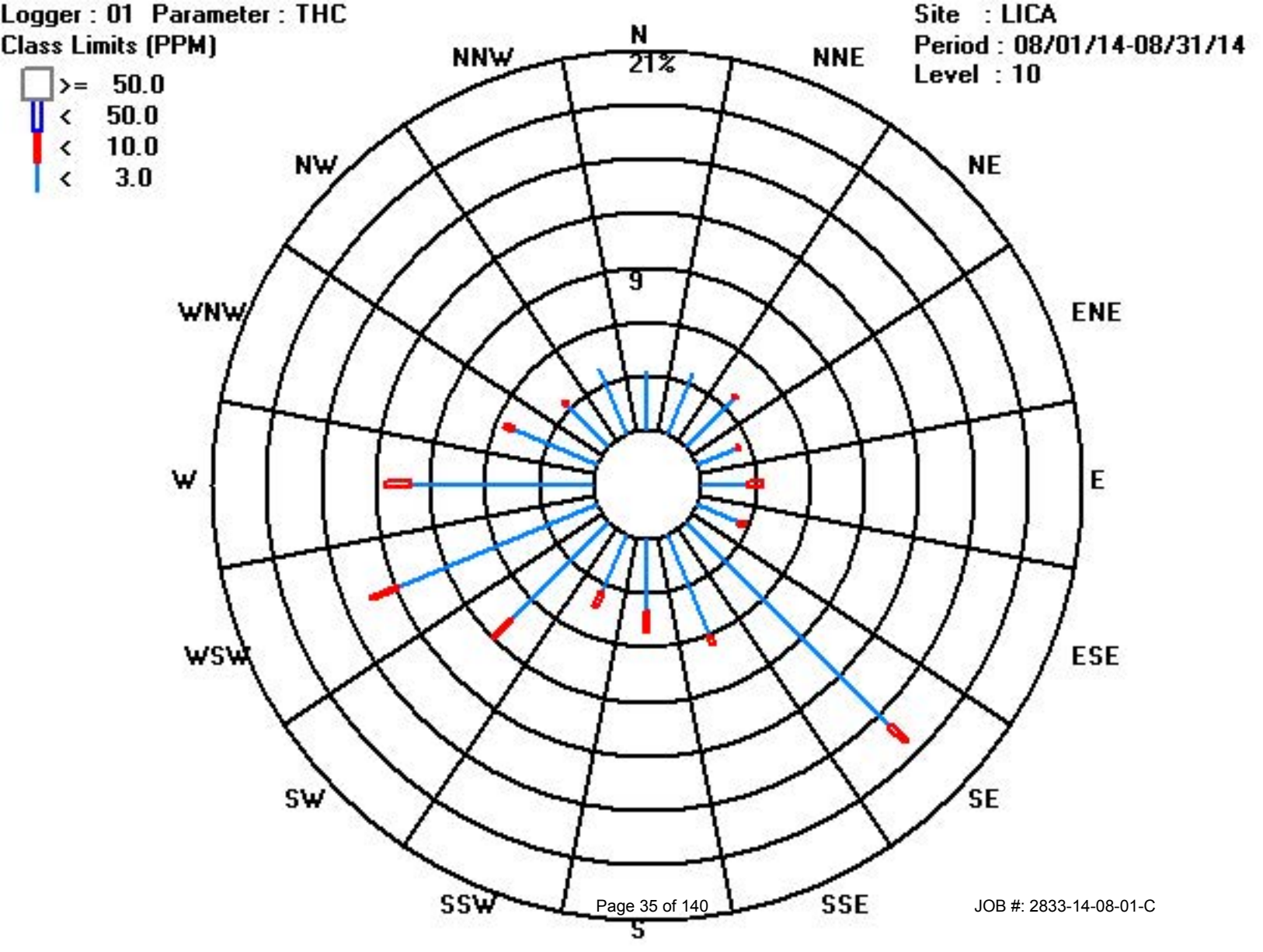
Distribution By Samples

Direction

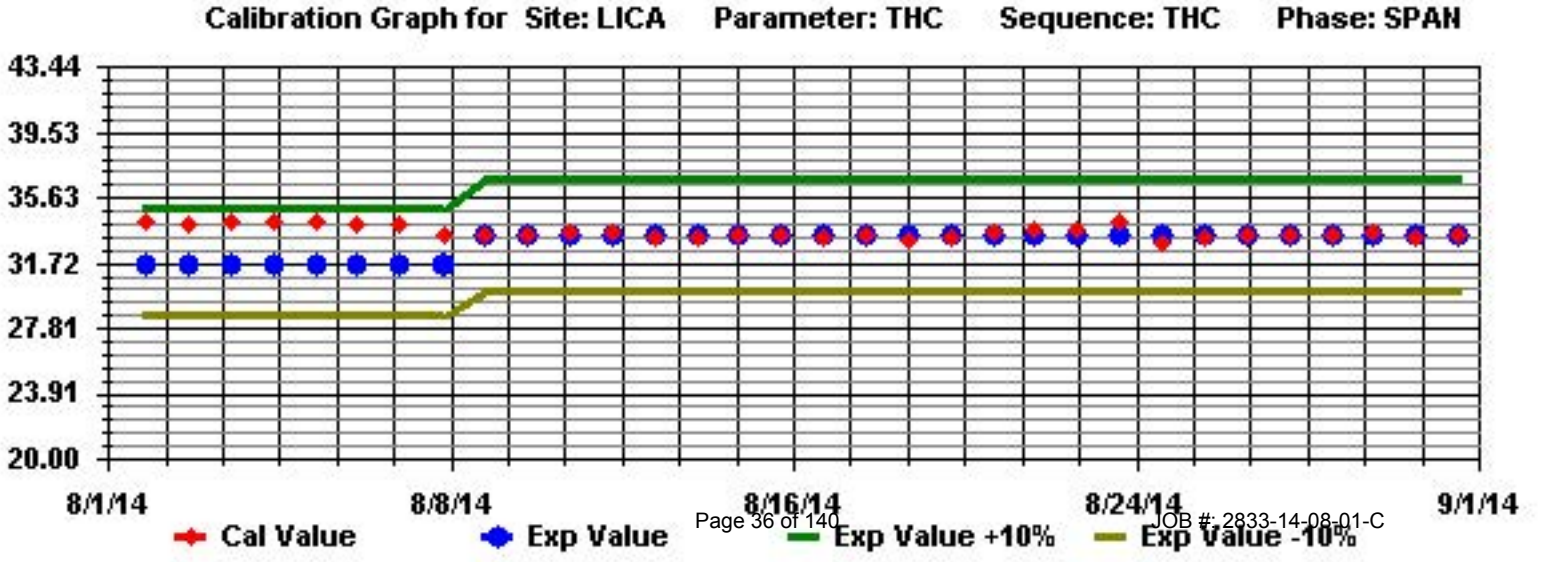
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	23	26	27	17	18	18	113	43	29	25	54	84	71	35	23	28	634
<	10.0			1	1	6	2	9	4	8	6	10	12	10	4	2		75
<	50.0																	
>=	50.0																	
	Totals	23	26	28	18	24	20	122	47	37	31	64	96	81	39	25	28	

Calm : .00 %

Total # Operational Hours : 709



JOB #: 2833-14-08-01-C


Calibration Graph for Site: LICA Parameter: THC Sequence: THC Phase: SPAN
43.44
39.53
35.63
31.72
27.81
23.91
20.00
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 2014

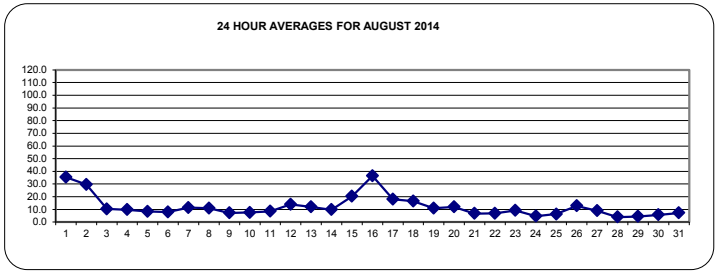
PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5) hourly averages in ug/m3

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	5	1	8	17	31	***60***	51	44	35	26	30	33	34	34	41	42	40	41	49	***60***	56	54	48	***60***	35.3	24
2	44	48	41	43	33	33	31	31	12	25	39	48	41	32	27	24	23	20	17	13	23	26	20	14	48	29.5	24
3	13	13	10	10	7	12	11	9	14	10	14	9	5	4	9	6	14	10	5	9	11	12	15	16	16	10.3	24
4	15	12	11	9	5	6	13	12	8	16	2	12	10	9	10	15	6	1	8	10	10	12	11	11	16	9.8	24
5	8	9	7	7	8	2	9	8	11	23		8	10	26	10	5	3	6	7	7	3	4	6	6	26	8.4	23
6	7	5	7	4	5	4	7	0	3	35	6	10	3	6	7	0	2	9	7	12	14	12	12	15	35	8.0	24
7	14	8	18	9	14	17	15	8	11	6	11	11	9	12	2	5	11	8	17	11	16	16	12	12	18	11.4	24
8	12	14	12	13	12	16	9	14	22	9	17		11	8		8	10	6	6	6	7	8	9	11	22	10.9	22
9	9	7	6	2	5	3	5	6	3	14	15	10	12	7	8	3	4	3	8	14	9	10	6	4	15	7.2	24
10	8	7	7	7	10	7	9	7	5	7	10	11	2	6	9	5	1	5	6	10	11	14	10	8	14	7.6	24
11	7	7	5	5	7	8	3	9	20	11	5	7	7	12	12	1	0		2	13	17	13	13	11	20	8.5	23
12	11	10	13	11	13	12	11	11	12	20	23	7	13	23	7	15	9	11	14	16	24	14	18	14	24	13.8	24
13	12	12	11	14	10	10	10	9	12	9	13	10	9	21	15	17	15	13	13	14	8	11	12	9	21	12.0	24
14	11	6	7	9	8	6	7	4	1	6	2	13	22	17	23	15	9	10	18	11	11	8	7	3	23	9.8	24
15	8	8	8	9	11	7	11	12	16	33	32	32	33	22	26	24	17	16	35	24	22	27	29	25	35	20.3	24
16	21	25	28	24	22	23	24	43	51	53	56	56	53	44	25	33	25	37	39	38	39	39	40	34	56	***36.3***	24
17	30	28	30	24	29	20	21	0	15	31	29	26	38	17	19	1	11	9	13	7	11	6	9	6	38	17.9	24
18	7	7	6	4	9	9	5	13	11	14	20	23	24	17	48	15	16	11	20	25	24	25	24	21	48	16.6	24
19	19	14	10	9	9	8	12	4	11	5	9	11	13	21	8	8	0	22	15	10	12	9	13	11	22	11.0	24
20	14	14	13	11	14	10	8	10	0	10	11	21	20	3	17	22	16	11	17	12	9	9	12	4	22	12.0	24
21	7	5	5	3	3	4	4	3	4	4	8	3	6	6	12	6	13	10	7	8	9	13	9	10	13	6.8	24
22	12	9	9	8	6	7	8	8	2	8	3	11	11	0	6	1	6	8	8	6	6	4	9	9	12	6.9	24
23	10	12	7	9	8	3	10	6	9	7	27	26	7	15	0	10	10	28	5	1	2	0	0		28	9.2	23
24				0		0	0	2	0	0	4	3	11	15	7	13	6	0	1		0	5	14	8	15	4.7	19
25	4	7	5	5	1	5	3	5	2	1	9	6	15	20	5	7	0	6	2	6	11	8	10	7	20	6.3	24
26	9	12	17	12	9	6	11	5	9	8	23	26	21	20	25	16	13	10	12	5	5		9	11	26	12.8	23
27	12	13	8	12	13	13	15	16	18	18	8	8	0	9	4	10	2	0	6	0	2	8	13	5	18	8.9	24
28	4	1	0	3	4	0	3	2	8	12	8	0	1		6		0			3	5	9	6	4	12	4.0	20
29	0	3	2	2	1	0	6	0	1	5	3	9	19	8	4	10	4	6	2	1	6	3	4	7	19	4.4	24
30	6	3	5	6	5	6	4	0	5	2	0	5	8	14	20	8	3			4	5	6	5	5	20	5.7	22
31	7	7	2	9	7	6	10	0		0	11	12		4	4	3	6	0	13	13	16	14	6	8	16	7.2	22
HOURLY MAX	44	48	41	43	33	33	60	51	51	53	56	56	53	44	48	41	42	40	41	49	60	56	54	48			
HOURLY AVG	11.6	11.0	10.4	9.7	10.2	9.5	11.5	9.9	11.3	14.1	14.8	15.5	15.6	15.1	13.6	11.6	9.6	11.3	12.6	11.9	13.2	13.4	13.5	11.9			

STATUS FLAG CODES

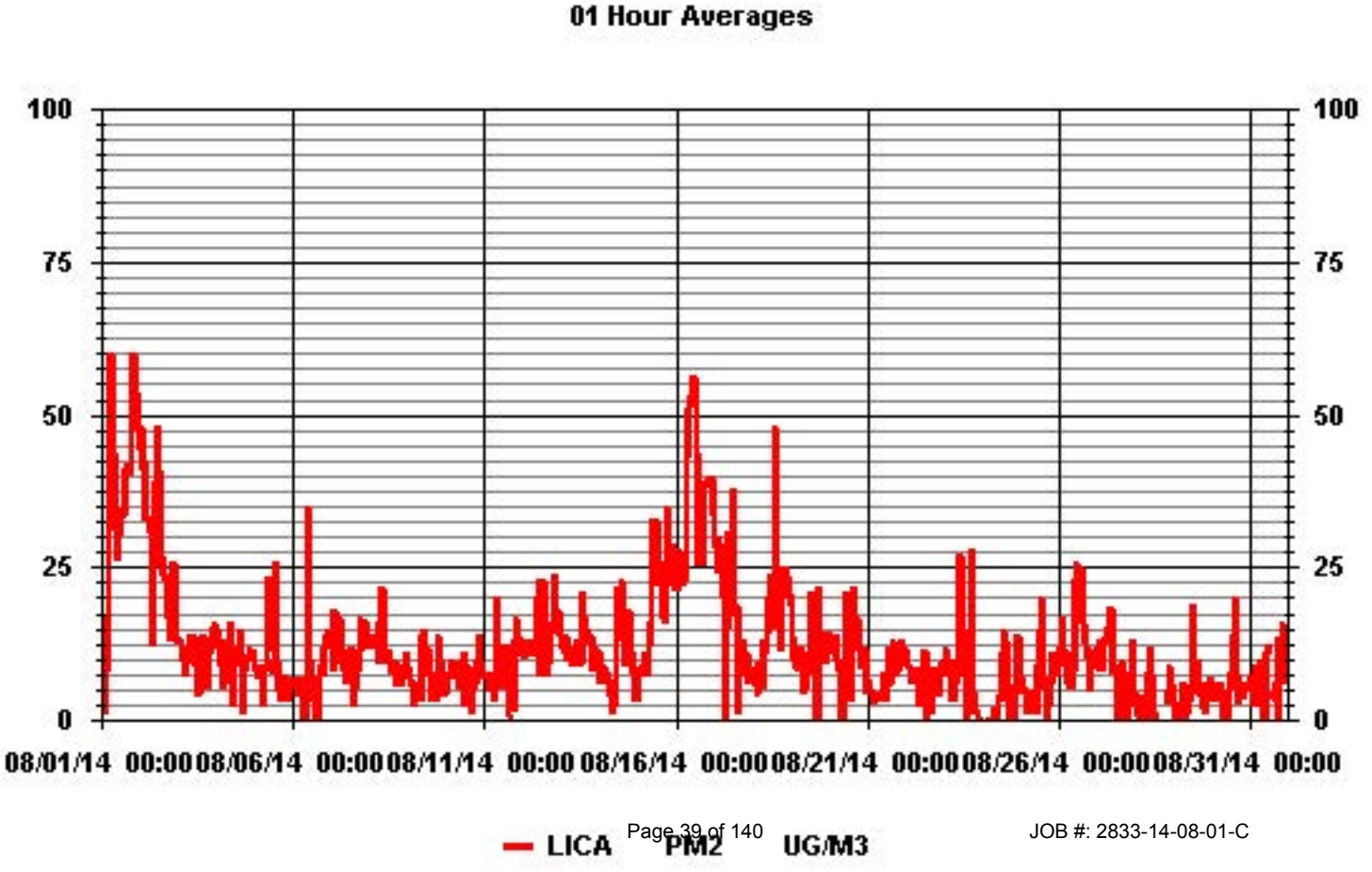
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	2						
NUMBER OF NON-ZERO READINGS:	692						
MAXIMUM 1-HR AVERAGE:	60	ug/m3	@ HOUR(S)	6, 20	ON DAY(S)	1	
MAXIMUM 24-HR AVERAGE:	36.3	ug/m3			ON DAY(S)	16	
					VAR-VARIOUS		
			OPERATIONAL TIME:			725	HRS
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:			97.4	%
STANDARD DEVIATION:	10.51		MONTHLY AVERAGE:			12.18	ug/m3



JOB #: 2833-14-08-01-C

LICA
PM2 / WD Joint Frequency Distribution (Percent)

August 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	2.62	2.89	3.58	1.93	2.75	2.62	14.75	6.34	4.82	3.72	9.10	13.65	11.31	5.37	3.17	3.58	92.27
<	60	.41	.55	.55	.41	.27	.13	2.75	.55	.27	.55	.13	.41	.00	.13	.13	.13	7.44
<	80	.13	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.27
<	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	3.17	3.44	4.13	2.34	3.03	2.75	17.65	6.89	5.10	4.27	9.24	14.06	11.31	5.51	3.31	3.72	

Calm : .00 %

Total # Operational Hours : 725

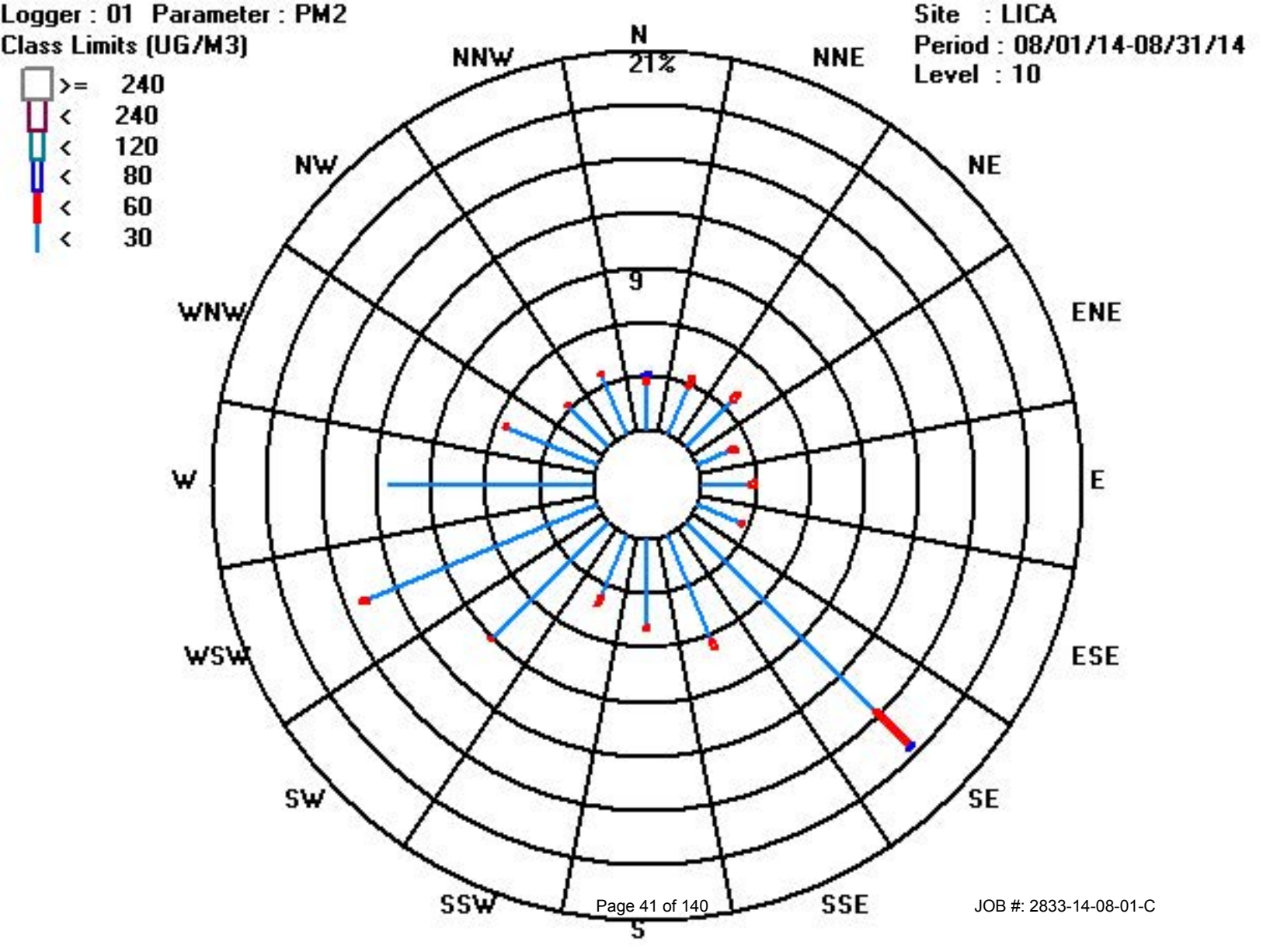
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30	19	21	26	14	20	19	107	46	35	27	66	99	82	39	23	26	669
<	60	3	4	4	3	2	1	20	4	2	4	1	3		1	1	1	54
<	80	1						1										2
<	120																	
<	240																	
>=	240																	
	Totals	23	25	30	17	22	20	128	50	37	31	67	102	82	40	24	27	

Calm : .00 %

Total # Operational Hours : 725


Logger : 01 Parameter : PM2
Class Limits (UG/M3)
>= 240
< 240
< 120
< 80
< 60
< 30
Site : LICA
Period : 08/01/14-08/31/14
Level : 10
N
21%
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
9

Nitrogen Dioxide

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

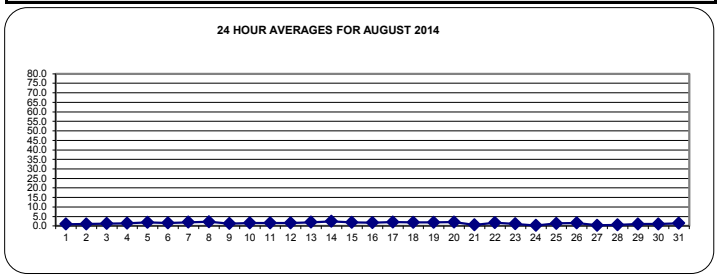
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1.1	1.2	1.3	1.1	0.5	0.6	0.7	0.8	0.5	0.2	0.5	0.4	0.5	0.5	0.5	0.8	0.8	0.9	1.5	1.6	**S**	2.6	1.9	1.5	2.6	1.0	24
2	1.5	1.5	1.9	1.6	1.1	1.2	0.8	0.5	0.5	0.5	0.6	0.6	0.6	0.8	0.6	0.7	0.7	1	2.4	**S**	2.1	0.8	0.8	0.8	2.4	1.0	24
3	0.7	1	0.6	0.6	1.4	1	1	0.8	0.9	1.2	1.1	0.9	0.9	0.9	0.9	0.7	1.2	1.1	**S**	1.8	2.5	2.6	2.7	2.2	2.7	1.2	24
4	2.7	1.7	0.9	0.9	1.4	1.1	1.6	3.1	1.4	1.3	1	0.7	0.5	0.8	1	0.6	0.8	**S**	1.6	1.4	2.2	1.9	2.1	1.1	3.1	1.4	24
5	0.9	1.3	1	1.5	2.2	1.7	3.4	3.4	1.3	0.7	0.3	0.3	1.2	0.8	1.1	1.2	**S**	***6.6***	3.6	3	2.6	1.9	1.1	0.8	***6.6***	1.8	24
6	1.2	1.3	1.6	2.2	2.4	2.2	3.8	1.6	1.6	0.8	1	0.8	1	1	1	**S**	1.3	0.8	0.8	1.7	2.4	2.5	1.8	2.5	3.8	1.6	24
7	3	2.6	2.7	2.3	1.6	2.2	2.8	2.5	1.9	1.3	0.7	0.6	0.5	0.9	**S**	1.2	1.6	1.4	1.7	2.4	3.5	2.8	2.5	1.8	3.5	1.9	24
8	1.8	1.8	1.6	1.4	1.5	1.4	2.5	5.1	4.6	4	2.5	1.8	1.1	**S**	0.8	1.8	1.9	5.1	2.9	1.2	1.3	1.2	1.5	1.4	5.1	2.2	24
9	1.6	2.4	1.6	1.6	1.4	0.8	0.5	0.3	0.8	0.6	0.2	0.5	**S**	2.6	1.7	2	0.9	0.6	0.5	1.3	2	2	1.8	2	2.6	1.3	24
10	1.9	1.3	1.2	1.7	1.8	1.7	2.1	2.1	2.3	1.9	2	**S**	1.9	1.3	1	0.8	0.8	0.6	0.6	1.3	2	1.7	1.6	1.5	2.3	1.5	24
11	1.3	1.4	1.1	0.8	0.7	0.7	2.5	2.7	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1.3	0.3	0.5	0.9	2.5	3.8	1.7	1.3	2	3.8	1.5	24
12	1.4	1.1	0.7	0.5	0.8	0.7	1.2	4.5	5.4	**S**	1.9	0.7	0.6	0.5	0.6	0.7	0.6	0.9	1.7	2.5	4.4	2.3	1.2	0.6	5.4	1.5	24
13	0.5	0.9	1.2	0.8	1.7	2.3	1.5	1.3	**S**	1.4	1	1.1	0.9	1.3	2.3	2.9	2.9	3.8	3.2	1.5	2.4	4.6	3.4	1.6	4.6	1.9	24
14	1	0.7	0.6	0.4	0.6	1.4	3.2	**S**	3.3	4.1	4.4	4.4	5.3	3.7	1.2	0.5	0.9	1.3	2.9	4.8	4.5	3.2	1.9	1.6	5.3	***2.4***	24
15	1.8	1.4	1.1	0.9	0.7	0.5	**S**	3.1	2.3	1.5	1.3	1.2	0.6	1.5	1.5	1.1	1.6	2	2.8	4.6	4.3	4.1	2.6	1.4	4.6	1.9	24
16	1.5	2	1.9	1.9	2.1	**S**	4.1	3.8	1.7	1.4	1.2	1.1	0.9	0.6	0.2	0.2	0.7	0.8	1.7	4	1.7	2.6	2.6	1.4	4.1	1.7	24
17	1.6	0.9	0.5	0.2	**S**	2	2.7	3.3	4.8	4.6	5.2	4.1	1.7	1	0.6	0.4	0.6	0.6	1.1	1.7	2.7	2.5	2.4	1.9	5.2	2.0	24
18	1.2	1.1	0.6	**S**	0.7	1	2	3.1	3.2	2.6	2	1.4	1.3	2.7	1.6	1.5	1	1.9	2.7	2.3	2.5	2.3	1.9	1.9	3.2	1.8	24
19	2.4	2.3	**S**	1.9	1.6	1.9	1.9	1.5	1.6	1.1	1	0.9	0.9	1.1	0.8	0.7	0.8	1.1	1.9	2.9	2.5	3.8	3.4	4.9	4.9	1.9	24
20	3.4	**S**	5.3	6.2	6	4	5.8	2.8	0.8	0.9	0.9	0.6	0.7	0.6	0.4	0.4	0.8	0.9	0.7	0.7	0.5	0.4	0.7	2.6	6.2	2.0	24
21	**S**	0.5	0	0.3	0.1	0.4	0.2	0	0	0.1	0.2	0.3	0.4	1.1	0.8	0.8	0.5	0.5	0.7	0.8	0.5	1.7	1.7	**S**	1.7	0.5	24
22	2	1.7	3.8	2.6	2.1	2.2	3.8	5.1	1.8	1.1	1.2	0.3	0.7	0.3	0.3	0.3	0.2	0.4	0.2	1.8	1.7	2.1	**S**	2.7	5.1	1.7	24
23	2.2	2.1	2	1.6	1.6	1.6	2.4	2	0.9	0.8	0.6	0.2	0.3	0.2	0.3	0.5	0.2	0.2	1.4	1.9	2.6	**S**	0	0	2.6	1.1	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	1.8	1.7	1.5	1.8	0.2	24
25	1.1	1	0.9	1.2	1.7	2.2	2.5	3.3	1.4	1	1.2	0.8	0.6	1.1	1.4	1	1.2	1.1	2.3	**S**	1	1.2	0.6	0.6	3.3	1.3	24
26	0.6	0.7	0.6	0.9	1.9	3.7	3.7	2.4	1.9	2.4	2.3	2.7	3	2.3	1.6	1	1.1	1.3	**S**	0.1	0.2	0	0	0	3.7	1.5	24
27	0	0.1	0	0	0	0.1	2	0.6	1	1.1	0	0	0	0	0	0	0	**S**	0	2.7	0	0	0	0	2.7	0.3	24
28	0	0	0	0	0	0	**S**	**S**	0	0	0	0	0	0	0	0	**S**	1	0.8	1.9	3	2.3	2.1	2	3	0.6	24
29	1.8	2.1	1.3	0.6	1.2	1.7	1.3	1.9	1.9	1.5	0.8	0.8	0.9	0.9	1.5	**S**	0.5	1.1	1	0.9	0.4	0	0	0	2.1	1.0	24
30	0	0	0.3	0.9	2.1	0.7	0.7	0.9	**S**	2.9	1.2	0.6	0.3	0.4	**S**	0.2	0	0	1.4	1.7	2	1.6	2.1	1.6	2.9	1.0	24
31	1.4	0.7	1.2	1.5	2.3	2.4	**S**	**S**	2	1.7	1.2	1	0.6	**S**	0.1	0.1	0.2	0	1.2	1.2	1.5	1.8	4.4	2.3	4.4	1.4	24
HOURLY MAX	3	3	5	6	6	4	6	5	5	5	5	4	5	4	2	3	3	7	4	5	5	5	4	5			
HOURLY AVG	1.4	1.2	1.3	1.3	1.4	1.4	2.2	2.2	1.8	1.5	1.3	1.0	1.0	1.0	0.9	0.8	0.8	1.3	1.5	1.9	2.2	2.0	1.7	1.5			

STATUS FLAG CODES

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

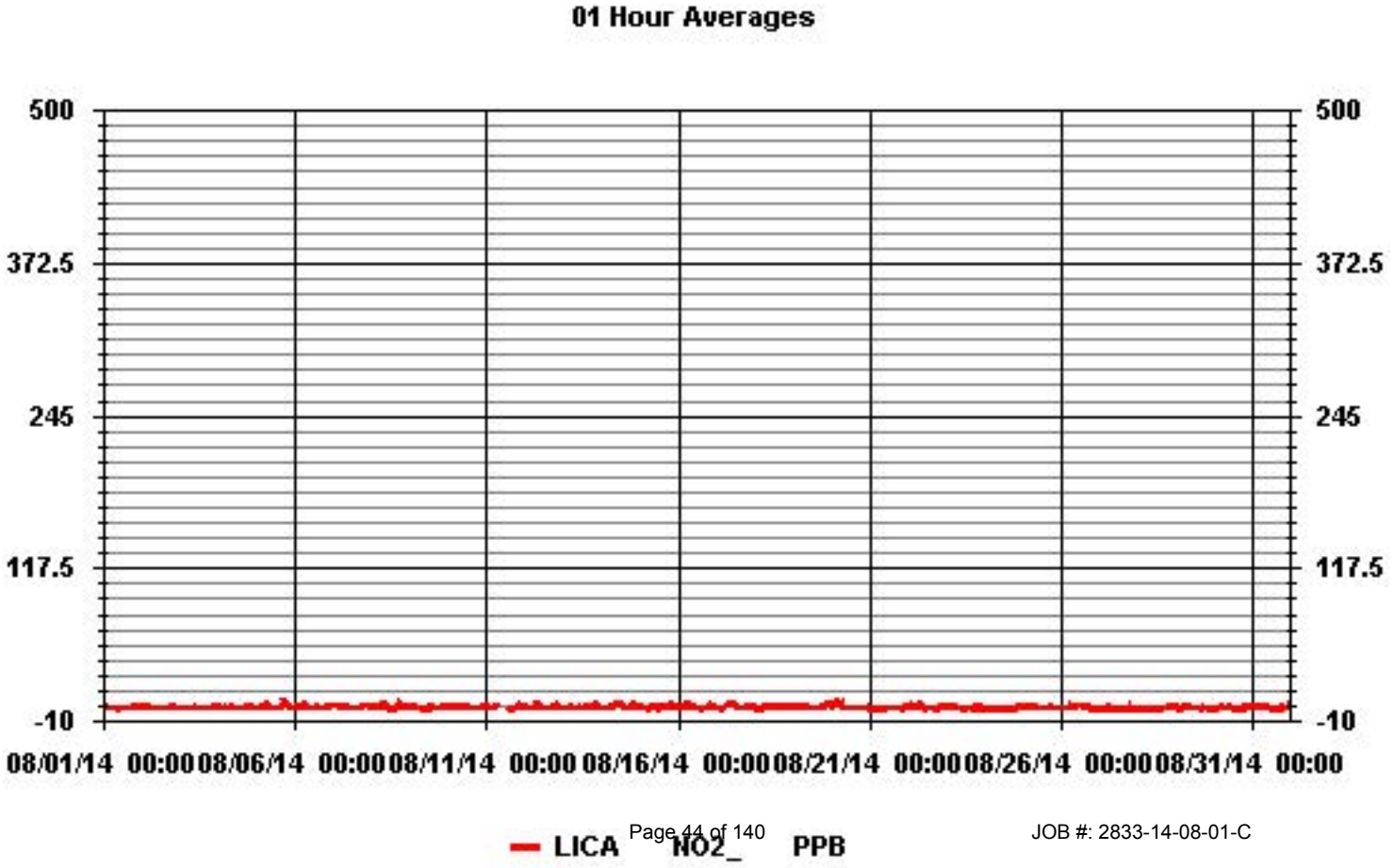
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 159 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	635					
MAXIMUM 1-HR AVERAGE:	6.6	PPB	@ HOUR(S)	17	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	2.4	PPB			ON DAY(S) VAR-VARIOUS	14

IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	1.15		MONTHLY AVERAGE:	1.44	PPB



JOB #: 2833-14-08-01-C

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 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	1.7	1.1	1.7	1.7	1.7	0.6	0.6	0.6	1.6	0.1	1.1	0.6	0.6	0.6	0.6	2.6	1.1	2.6	5.2	2.1	**S**	3.9	2.8	1.8	5.2	1.6	24
2	3.3	1.9	2.3	1.9	1.4	1.9	1.3	0.3	0.8	0.8	1.9	0.8	1.3	1.3	1.4	2.9	0.9	2.3	11.3	**S**	10.8	1.3	0.8	1.3	11.3	2.4	24
3	1.3	1.3	0.8	0.8	4.4	1.3	1.3	0.8	0.8	1.8	1.9	0.9	2.4	1.4	1.4	1.4	1.9	2.4	**S**	2.8	7.3	4.8	3.8	4.8	7.3	2.3	24
4	3.7	2.2	1.7	1.3	2.8	1.8	2.2	4.7	2.2	2.2	6.7	2.8	1.3	0.8	1.3	3.3	1.3	**S**	2.1	2.1	3.6	3.1	5.1	1.6	6.7	2.6	24
5	1	1.6	1.6	2	3.1	2.5	7	6.5	3.1	1	3.5	1.5	9.1	2.6	5.6	4	**S**	8.7	7.2	4.2	3.7	2.2	2.2	1.2	9.1	3.7	24
6	1.8	1.8	2.8	4.3	3.7	3.3	5.8	1.8	1.8	3.7	3.7	0.7	1.8	1.3	1.8	**S**	2.6	1.1	1.1	2.6	3.1	3.1	2.5	3.1	5.8	2.6	24
7	3.6	3.1	3.6	3.5	1.6	2.6	3.5	3.1	2.5	1.5	1.5	1.5	0.5	2.5	**S**	1.8	8.8	1.9	2.3	3.8	5.4	3.8	3.3	2.3	8.8	3.0	24
8	1.9	2.4	1.9	2.8	3.9	2.4	6.4	17.4	5.9	5.9	3.8	3.3	1.4	**S**	2	2.5	3	7.9	3.9	2.4	2	2	3	2	17.4	3.9	24
9	2	4	2	2	1.5	1	0.5	0.5	11	5	0.4	0.4	**S**	6	2.4	4.5	1.5	0.9	0.9	2.4	3.5	3	2.5	3	11	2.6	24
10	2.5	2	2	2	2.4	2	2.4	2.9	4.5	2.5	3	**S**	2.6	1.6	1.1	1	1.6	0.5	0.5	1.6	3.1	2.1	2.1	2.1	4.5	2.1	24
11	2.1	2.1	1.6	1.1	1.1	1.1	3.6	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0.5	0.5	2	4	6	2	3.5	3	6	2.3	24
12	1.9	1.5	1.5	1	1	1.9	3	5.5	7.4	**S**	3.1	1.1	1.6	1.6	1.6	2.6	1.1	1.6	3.1	7.6	7.6	4.6	2.6	1.1	7.6	2.9	24
13	0.5	2	2.1	1.6	3.1	4.1	2.6	2.5	**S**	3.6	2	2	2.6	2.1	6	10	5.1	9.1	6.5	2.6	7	6.5	5.6	3.1	10	4.0	24
14	1.6	1.1	1.6	1	1.6	3.1	6.1	**S**	4.1	5.1	5.1	5.6	6.1	5.6	5.1	1.1	1.6	2.1	5.1	6.1	6.5	4.6	2.6	2.6	6.5	3.7	24
15	3.1	2.6	2.1	1.6	1.6	1.1	**S**	9.2	5.7	2.1	2.1	1.7	1.7	7.2	6.2	2.2	2.7	4.7	4.7	6.7	5.7	5.2	4.2	2.7	9.2	3.8	24
16	2.7	3.2	4.2	2.2	2.7	**S**	6.4	6	3	1.5	1.5	3.4	4.5	2	0.5	1	4	3	13	24	2.5	3.5	4	2.5	24	4.4	24
17	2.5	2	1	0.5	**S**	3.2	3.7	**P**	5.7	5.7	6.6	6.6	3.2	1.7	0.6	0.7	1.2	1.2	1.2	2.7	3.7	3.6	3.2	2.7	6.6	2.9	23
18	2.1	2.2	1.2	**S**	1.5	2	3	4	4	4	2.5	3	2	6	4	3.5	1.5	3.5	4	2.5	4	3	2.4	3	6	3.0	24
19	3	4	**S**	2.7	2.1	2.7	2.7	2.1	3.2	2.1	1.7	1.7	2.7	2.2	1.2	1.2	1.7	4.7	3.7	4.7	3.7	4.7	4.2	6.2	6.2	3.0	24
20	5.2	**S**	6	7.6	9.1	6.5	8	5.1	1.1	1.6	1	0.5	1.6	1.1	1.1	1	1.6	1.5	1.6	3.1	1.1	0.6	1.1	3.6	9.1	3.1	24
21	**S**	2	0.5	0.6	0.5	1.1	1.6	0.5	0.5	3.6	0.6	0.6	2.6	3.1	4	1.1	1.1	2.6	2.1	2.6	1.6	2.6	3.1	**S**	4	1.8	24
22	2.5	3	5.5	4	3.5	3	6.9	12.4	18.9	16.5	6	1.5	3	1.4	1	0.9	1	3	1.9	3.5	3	4	**S**	3.1	18.9	***4.8***	24
23	2.6	4.1	2.6	2.1	2.1	2.1	5.1	5.6	2.6	6.1	3.1	1.6	2	3.1	1	2.1	0.6	1.1	3.2	3.6	4.1	**S**	1.5	1	6.1	2.7	24
24	1.5	1.9	1	3	7.5	3.4	1	1.4	0.5	0.5	0.5	0.5	8	1	7.4	0	0.5	0.5	1.4	4.9	**S**	2.4	2.5	2	8	2.3	24
25	1.4	1.4	1.4	1.6	2.4	2.9	5.4	3.9	6.5	3	3.5	4	4.5	6.5	10	1	4.5	1.5	7.5	**S**	3.7	17.7	0.7	1.1	17.7	4.2	24
26	1.1	1.2	1.2	2.2	3.6	10.6	7.1	3.6	2.1	4.7	2.7	6.7	4.2	4.2	2.7	2.7	1.7	2.2	**S**	5	4.5	3.5	3	3	10.6	3.6	24
27	3.5	3.5	3.5	3.5	3.5	5	8.4	5.5	4.5	6.5	2.5	2.6	1.1	2	1	1.5	0.5	**S**	1.5	6.9	***26.4***	2.5	3.9	3.9	***26.4***	4.5	24
28	2	1.4	1.4	1.5	2.4	4.4	**S**	**S**	9.3	8.8	6.3	1.8	3.3	0.8	1.8	0.8	**S**	1	0.5	3.5	4.4	2.9	2.4	1.9	9.3	3.0	24
29	1.9	2.4	1.9	0.9	8.4	1.9	1.9	9.4	4.4	4.9	1	2.5	1.5	1.5	13.5	**S**	5	3	2.5	2.5	1.5	1	1.5	0.4	13.5	3.3	24
30	0.9	1	1	2.4	25	2.4	1.9	**S**	**S**	3.7	2.1	0.7	0.7	1.2	**S**	1.1	0.6	1.1	2.6	3.5	3	2.5	3.5	2.5	25	3.0	24
31	2	2	2	2.5	3.1	3.5	**S**	**S**	3	2.5	1.6	1.1	1.1	**S**	2	1	1	1	2.4	2.4	2.9	4.9	8.5	3.4	8.5	2.6	24
HOURLY MAX	5	4	6	8	25	11	8	17	19	17	7	7	9	7	14	10	9	9	13	24	26	18	9	6			
HOURLY AVG	2.2	2.2	2.1	2.2	3.7	2.8	3.9	4.6	4.3	3.8	2.8	2.1	2.7	2.6	3.2	2.1	2.1	2.7	3.6	4.4	5.0	3.7	3.1	2.5			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 696

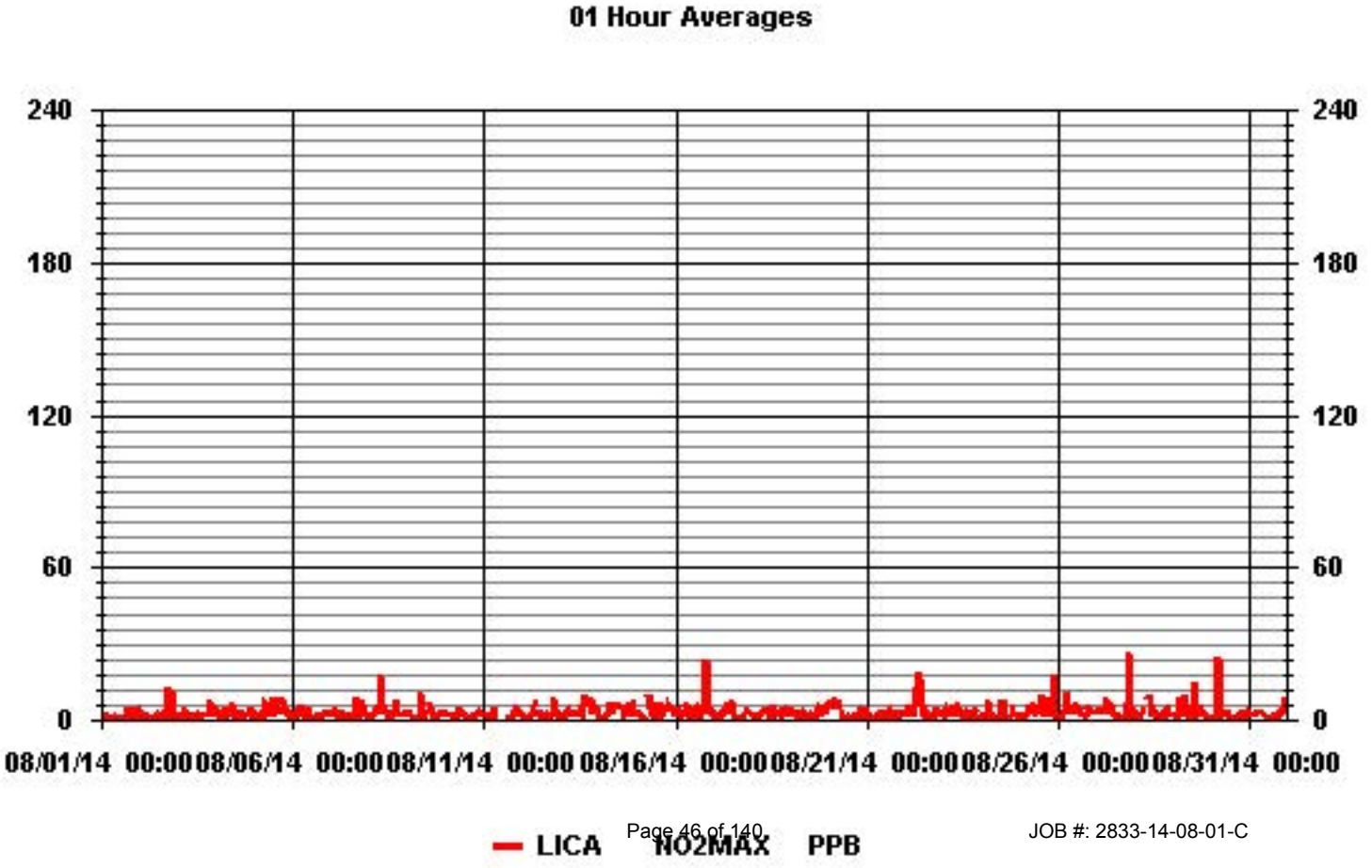
MAXIMUM INSTANTANEOUS VALUE: 26.4 PPB @ HOUR(S) 20 ON DAY(S) 27

VAR-VARIOUS

IZS CALIBRATION TIME: 37 HRS OPERATIONAL TIME: 743 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 2.77



JOB #: 2833-14-08-01-C

LICA
NO2_ / WD Joint Frequency Distribution (Percent)

August 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	3.28	3.70	3.99	2.56	3.42	2.85	17.54	6.99	5.27	4.42	9.12	13.12	10.84	5.42	3.42	3.99	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	3.28	3.70	3.99	2.56	3.42	2.85	17.54	6.99	5.27	4.42	9.12	13.12	10.84	5.42	3.42	3.99	

Calm : .00 %

Total # Operational Hours : 701

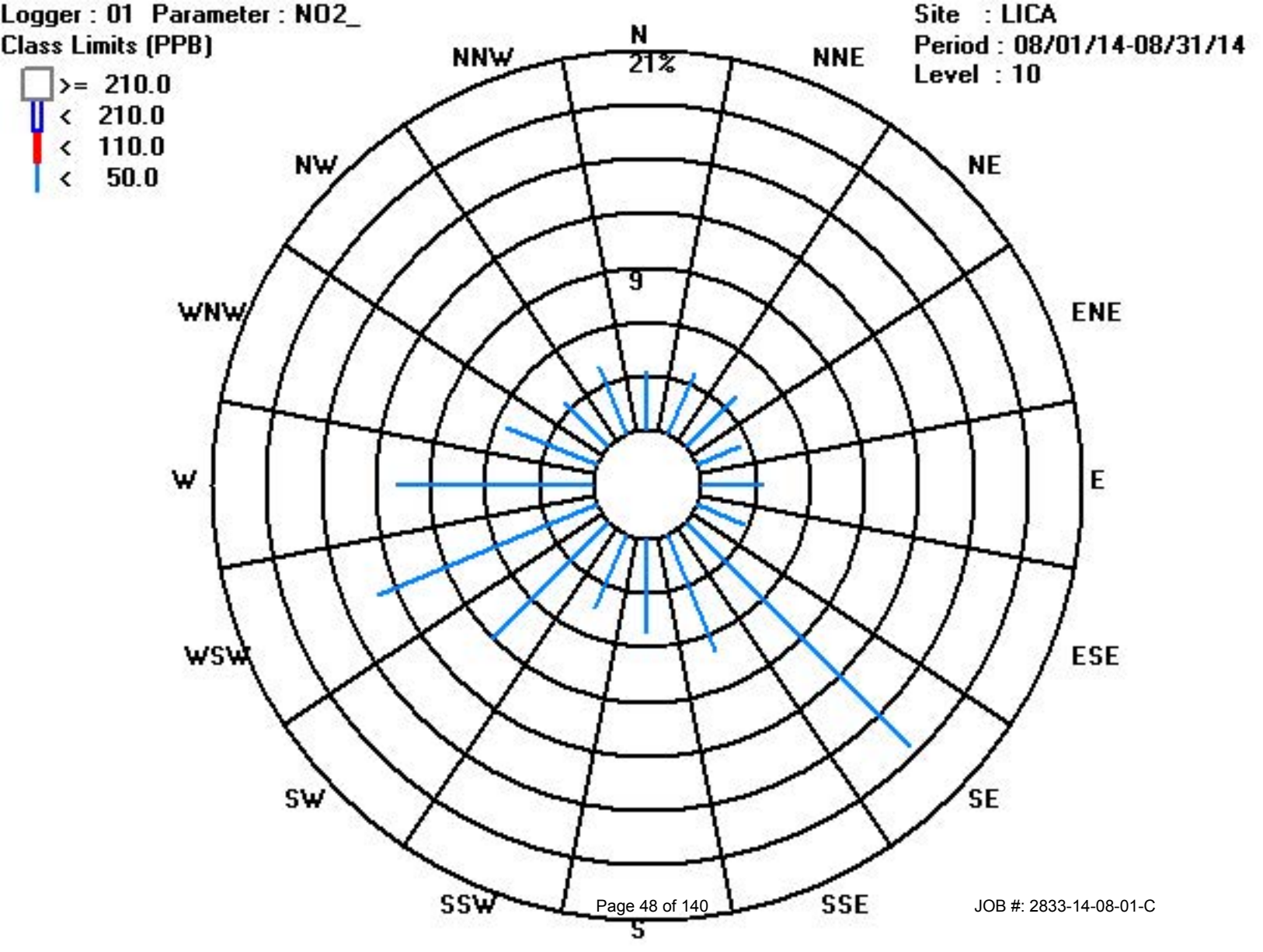
Distribution By Samples

Direction

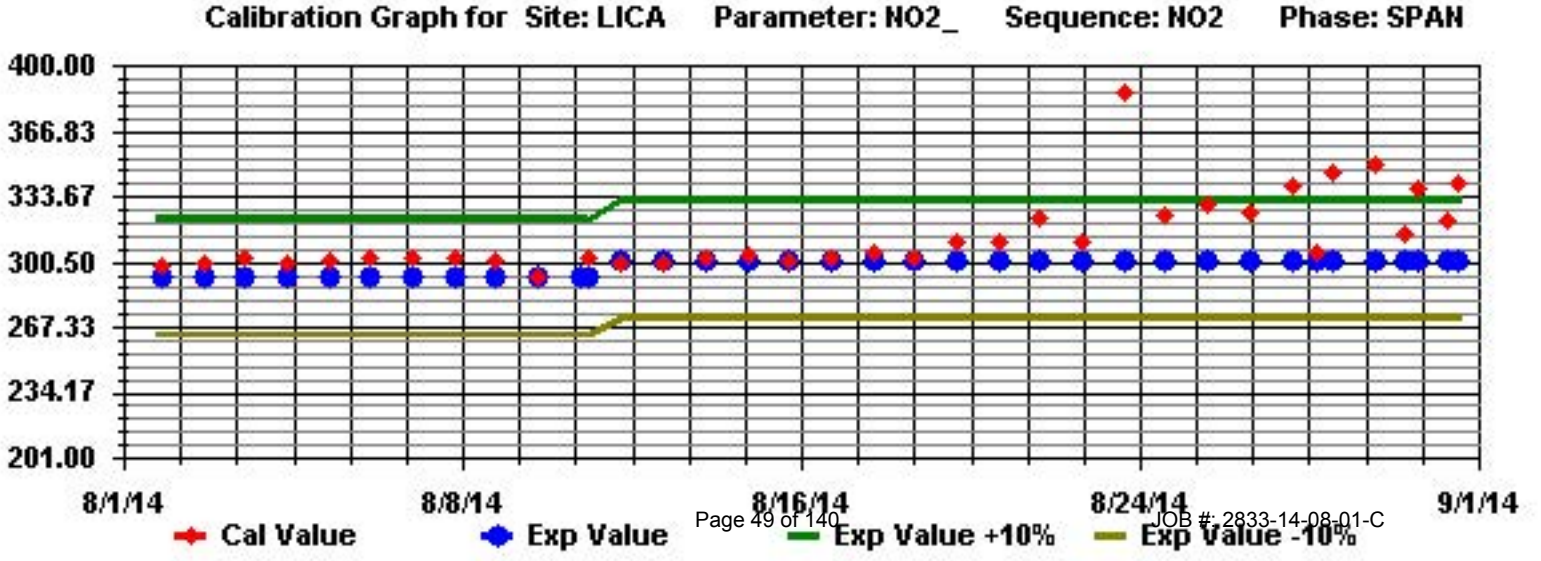
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	23	26	28	18	24	20	123	49	37	31	64	92	76	38	24	28	701
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	23	26	28	18	24	20	123	49	37	31	64	92	76	38	24	28	

Calm : .00 %

Total # Operational Hours : 701



JOB #: 2833-14-08-01-C


Calibration Graph for Site: LICA Parameter: NO2_ Sequence: NO2 Phase: SPAN
400.00
366.83
333.67
300.50
267.33
234.17
201.00
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 2014

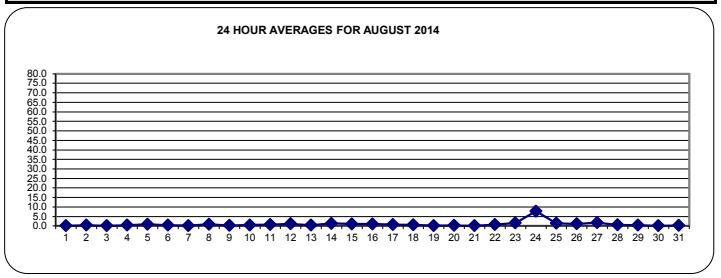
NITRIC OXIDE (NO) hourly averages in ppb

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	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0.3	0	0.1	0.5	0	**S**	0.3	0.6	0.6	0.6	0.1	24
2	1.5	1	1.8	1.4	1.1	1.5	0.2	0.2	0.2	0.2	0.1	0	0.2	0	0	0	0	0	0.4	**S**	0.3	0	0	0	1.8	0.4	24
3	0	0	0	0	0.6	0	0	0.1	0.1	0.3	0.1	0	0	0	0	0	0	0	**S**	0	0.1	0.1	0	0.3	0.6	0.1	24
4	0.2	0.2	0.4	0.3	0.4	1.5	2	1.2	0.4	0.2	0.2	0	0.1	0	0	0.3	0	**S**	0	0	0	0	0.3	0.4	2	0.4	24
5	0.3	0.5	0.6	0.7	2.6	2	6.2	3.1	0.4	0	0.1	0.1	0.7	0	0.2	0.1	**S**	0.4	0.5	0	0	0	0	0	6.2	0.8	24
6	0	0.3	0.3	0.9	1.4	1.7	3.1	0.8	0.6	0.9	0.1	0	0	0	0	**S**	0	0	0	0	0	0.1	0.2	0.2	3.1	0.5	24
7	0.2	0.1	0	0.1	0.1	0.1	0.7	1.2	0.6	0.2	0	0	0	0.1	**S**	0	0.1	0	0	0	0.1	0.2	0.2	0.4	1.2	0.2	24
8	0.3	0.5	0.4	0.6	1.7	3.1	4.1	4.1	2.1	1.2	0.5	0	0	**S**	0.1	0.1	0	0.3	0.1	0	0	0	0	0	4.1	0.8	24
9	0	0	0	0	0	0	0	0	0.6	0.3	0	0	**S**	1.7	0.5	0.5	0	0	0	0	0.2	0.4	0.5	0.7	1.7	0.2	24
10	1	0.5	0.6	0.5	0.5	0.6	1.6	1.7	1.1	0.6	0.7	**S**	0.5	0.2	0	0	0	0	0	0	0	0.2	0.2	0.5	1.7	0.5	24
11	0.7	0.8	1.2	1	1.3	1.6	3.7	1.1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0.2	0.2	0.2	0.2	0.4	3.7	0.7	24
12	0.7	0.7	0.9	1.2	1.3	3.2	6.4	6.5	3	**S**	0.3	0.1	0.1	0.1	0.1	0.1	0	0	0.2	0.3	0.4	0.1	0.1	0	6.5	1.1	24
13	0	0	0.1	0.2	0.3	0.5	0.4	0.5	**S**	0.3	0.1	0.1	0.3	0	0.4	0.4	0.4	0.6	0.3	0	0.2	1.2	2.2	1.9	2.2	0.5	24
14	1.6	3	2.3	1.9	1.6	1.9	4.8	**S**	2.4	3.1	1.4	0.6	0.5	0.4	0.3	0	0	0	0.3	0.6	0.7	0.9	0.9	1.3	4.8	1.3	24
15	1.3	1	1.8	1.7	3	3.6	**S**	6.9	1.3	0.4	0	0	0.5	0.3	0.2	0.1	0	0	0.2	0.3	0	0	0.1	0.2	6.9	1.0	24
16	0.1	0.4	1.9	2.5	3.7	**S**	7.5	1.4	0.5	0.3	0.2	0.1	0.3	0.1	0	0	0.3	0	0.3	1.9	0	0.4	0.8	0.5	7.5	1.0	24
17	0.4	0.8	0.5	0.6	**S**	1.4	2.2	2.6	1.9	1.2	1.1	0.7	0	0.1	0	0	0	0	0	0	0	0.2	0.4	0.5	2.6	0.6	24
18	0.5	0.5	0.7	**S**	0.8	2.5	2.5	1.8	1.3	0.6	0.3	0.2	0	0.2	0.2	0.1	0	0	0	0.1	0	0.1	0.4	0.4	2.5	0.6	24
19	0.1	0.3	**S**	0	0	0	0	0.6	0.6	0.5	0.2	0.1	0.2	0.2	0	0	0	0.2	0	0.1	0.2	0.1	0.2	0.4	0.6	0.2	24
20	0.1	**S**	0.2	0.3	0.8	0.5	2.2	1.6	0.4	0.2	0	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0	2.2	0.3	24
21	**S**	0	0	0	0	0	0.1	0	0	0	0	0	0.1	0.3	0.3	0	0	0.1	0	0	0	0.1	0.2	**S**	0.3	0.1	24
22	0.2	0.2	0.2	0.1	0.6	1.1	2.3	3.8	4	2.4	0.6	0.1	0.2	0.1	0.2	0	0.1	0.1	0	0.2	0.1	0.1	**S**	0.1	4	0.7	24
23	0.3	0.3	0.4	0.3	0.4	0.6	1.9	0.6	0.3	0.2	0.6	0.1	0.2	0.7	0.1	0.3	0.3	1.4	3	4.9	5.2	**S**	6.3	6.6	6.6	1.5	24
24	7	7.2	7.4	7.5	9.1	7.9	7.8	9	9.6	11.1	12.3	13.5	10.1	8.7	12	13.4	***14.2***	6.4	2.5	0.3	**S**	0.1	0.4	0.4	***14.2***	***7.7***	24
25	0.3	0.3	0.3	0.3	2	4.1	10.7	6.9	1.1	0.8	0.4	0.2	0.8	0.9	1.5	1.5	0.8	0.1	0.3	**S**	0	0.4	0	0	10.7	1.5	24
26	0	0	0	0	0.3	1.4	1.1	0.9	0.7	1.2	0.5	1	1.7	2.1	2.9	3.4	3.4	3.6	**S**	0.8	0	0	0	0	3.6	1.1	24
27	0	0	0	0	0.1	0.1	1.4	0.9	1	1.6	2.5	4.6	5.2	4.9	4.6	4.5	4.1	**S**	2.3	0.3	2.3	0	0	0	5.2	1.8	24
28	0	0	0	0	0	0.1	**S**	**S**	1.7	1.1	1	1.5	1.9	1.4	1.2	1.5	**S**	0.5	0	0.1	0.1	0.5	0.1	0.1	1.9	0.6	24
29	0.1	0.3	0.1	0	1.2	0.6	1.3	0.8	1.5	0.9	0.2	0.2	0.1	0.4	0.9	**S**	0.6	0.5	0.2	0.1	0	0	0	0	1.5	0.4	24
30	0	0	0	0	0.9	0	0.1	0.5	**S**	0.7	0.1	0	0	0	**S**	0	0	0	0	0	0	0.1	0.2	0.1	0.9	0.1	24
31	0.2	0.3	0.1	0	0	0.1	**S**	**S**	1	0.7	0.4	0.9	0.9	**S**	0.6	0.3	0	0	0	0	0.1	0.1	0	0	1	0.3	24
HOURLY MAX	7	7	7	8	9	8	11	9	10	11	12	14	10	9	12	13	14	6	3	5	5	1	6	7			
HOURLY AVG	0.6	0.6	0.7	0.7	1.2	1.4	2.7	2.1	1.4	1.1	0.8	0.8	0.9	0.8	0.9	0.9	0.8	0.5	0.4	0.4	0.4	0.2	0.5	0.5			

STATUS FLAG CODES

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



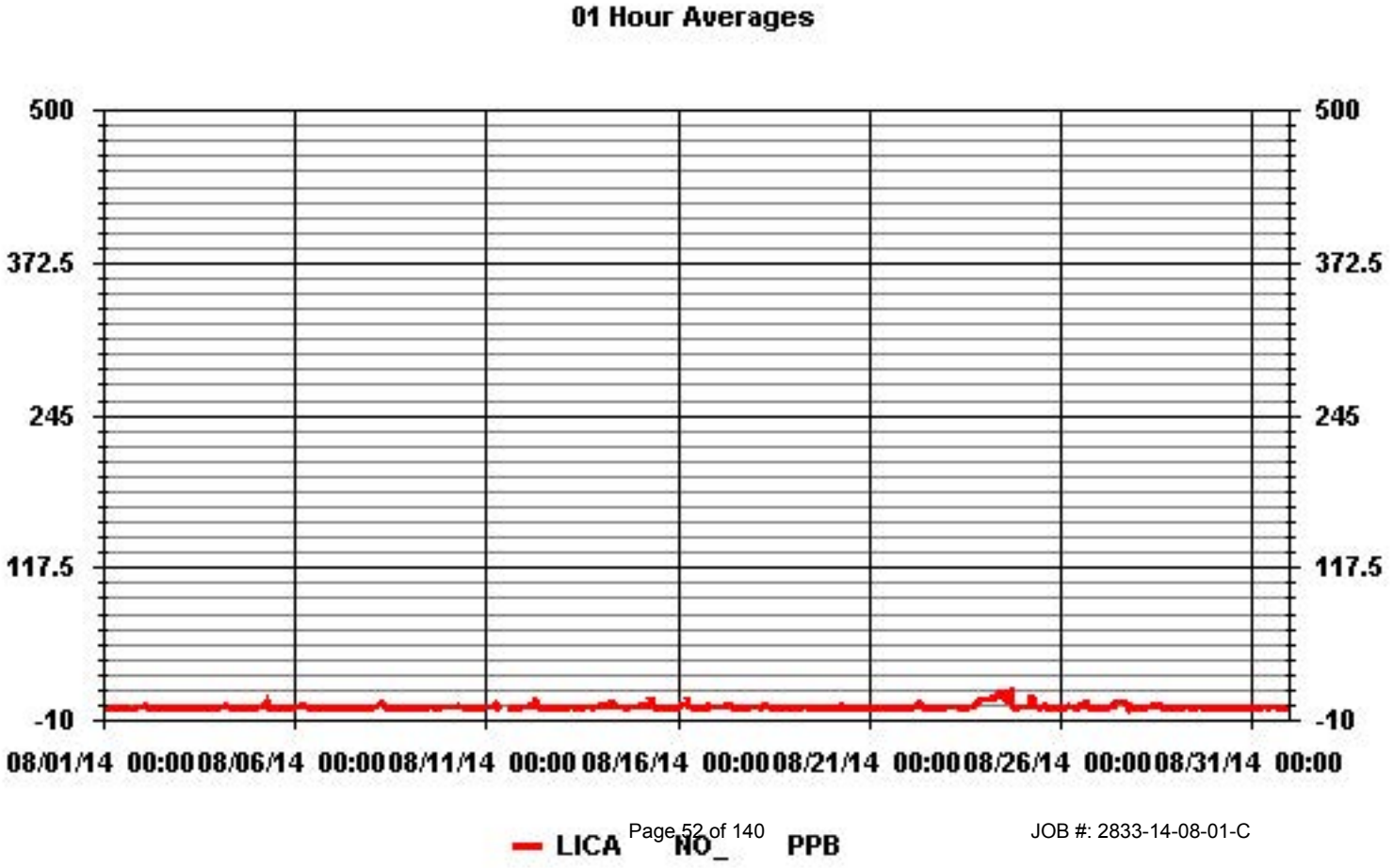
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	475					
MAXIMUM 1-HR AVERAGE:	14.2	PPB	@ HOUR(S)	16	ON DAY(S)	24
MAXIMUM 24-HR AVERAGE:	7.7	PPB			ON DAY(S) VAR-VARIOUS	25

IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	1.89		MONTHLY AVERAGE:	0.88	PPB



JOB #: 2833-14-08-01-C

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 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	0.9	0	0	0.5	0.5	0	0.9	0.5	0.9	0.9	0.9	3.5	1.9	0.9	3	0.5	**S**	0.9	5	2.4	5	1.0	24
2	8.9	2	3	2.4	2.5	3	0.4	0.5	1.4	4.4	3	0	6	0.4	0.9	0.9	0.5	0	7.4	**S**	5.5	0.5	0.5	1.5	8.9	2.4	24
3	0	0.5	0	0	18.5	0.4	0	0.5	0.5	2	0.5	0.5	1.5	0.5	0	0	1	1	**S**	0	2.5	0.5	0.5	3	18.5	1.5	24
4	0.5	0.9	1.4	0.5	0.9	2	4	2	0.9	0.5	5.5	0.5	2	0	0.5	8	1	**S**	0	0.5	0.5	0.5	2.4	0.9	8	1.6	24
5	0.9	0.9	1.9	1.4	7	3	14.4	8.9	2	0.5	1.4	2.5	9	1.5	2.5	1.4	**S**	1.9	7.4	0.5	0	0	0.9	0	14.4	3.0	24
6	0.5	1.5	0.9	5	2.5	3	5.5	0.9	0.9	13.4	2.4	0.9	0.5	0	0.5	**S**	0.5	0	0	0.5	0.5	0.5	0.9	0.5	13.4	1.8	24
7	0.9	0.5	0.5	0.5	0.5	0.5	1.5	2.5	0.9	0.5	1.4	0.9	0	0.9	**S**	0.9	2.4	0	0	0.5	0.5	0.5	0.5	0.9	2.5	0.8	24
8	0.9	1.5	1	3	6.5	8.5	8.5	19	2.5	4.5	1.4	0.9	0	**S**	1.5	1	0.5	4	0.5	0.5	0.5	0.5	1	0	19	3.0	24
9	0	0	0	0	0	0	0	0.5	13	9	0.5	0.5	**S**	7.9	0.5	3	0	0	0	0.5	0.5	1	1	1.5	13	1.7	24
10	2	1.5	1	1	1	1.5	3.5	3.5	7.9	1.5	1.5	**S**	0.9	0.5	0.5	0	0	0	0	0	0.5	0.9	0.9	1	7.9	1.4	24
11	2	2	2.5	1.5	2	2	8	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0.5	0	0.5	1	0.9	0.9	0.9	8	1.6	24
12	2	1.5	2	2	2.5	4.5	10	9.5	5.5	**S**	0.9	1.5	1	3.5	1	2	0.5	0.5	1	5.5	5.5	1	1.5	0.9	10	2.9	24
13	0	1.4	1	1.5	1	2	0.5	3.5	**S**	1.5	0.5	1.5	8	1	4.5	4	2	3	1.5	0.5	0.9	19.5	4	3.5	19.5	2.9	24
14	3.5	4.5	3.5	3.5	3.5	3	7.9	**S**	3	4.5	2.4	0.9	0.9	1.5	2.5	0	0	0	0.5	1.5	3	2.4	7.5	2	7.9	2.7	24
15	3.5	2	5.5	3.5	4.5	4.5	**S**	11.5	10	3.5	0.5	0.5	18	18	2.5	0.5	0.5	0.5	0.5	2	0.5	0.5	1	1	18	4.1	24
16	0.5	1	9.5	5.5	5.5	**S**	19.5	6	2	0.5	0.9	2	3.5	2	0.5	0.5	4.5	3	8.5	29.5	0.5	3.5	1.5	2.5	29.5	4.9	24
17	1	2	2	1.5	**S**	2	2.5	**P**	3	2	1.5	1.5	0.5	0.5	0.5	0	0.5	0.5	0	0.5	0	0.9	1	1	3	1.1	23
18	1	1.5	2	**S**	2	5	4	7.4	2	1.5	5	5	0	1	1.5	1.5	0.5	0.5	0.5	0.5	0.5	0.5	0.9	0.9	7.4	2.0	24
19	0.5	0.9	**S**	0	0	0.5	0.5	4.5	1.5	2.4	0.5	3.5	4.5	2	1	0.5	0.5	3	0.5	0.5	0.5	0.5	0.5	0.5	4.5	1.3	24
20	0.5	**S**	0.5	1	5.5	1.5	3	3	0.9	0.5	0.4	0.5	0.5	0.5	1	0.5	0.9	0.5	1.5	0.5	0.5	0	0.5	0	5.5	1.1	24
21	**S**	0	0	0	1.5	0	1.5	0.9	0.5	1	0.5	0.5	0.9	3	2.5	0.5	0.5	1.5	0.5	0	0	0.5	1	**S**	3	0.8	24
22	0.5	0.5	0.5	0.5	3	2	3.5	10.5	***56.5***	32	3.5	0.9	1.4	0.9	3	0.9	0.9	0.5	1	0.9	0.5	0.5	**S**	0.5	***56.5***	5.4	24
23	0.9	1	1	1	1	1.5	3.5	2.5	0.9	0.9	5.5	0.9	1.5	18.5	6.9	3	1	2.1	4.1	13.1	6.1	**S**	7.1	7.1	18.5	4.0	24
24	7.1	7.6	7.6	9.1	18.6	10.1	8.1	15.1	10.6	12.1	13.6	14.1	16.6	10.6	18.6	14.6	15.1	11.1	4.6	2	**S**	0.5	1.5	1	18.6	***10.0***	24
25	0.9	3.5	0.9	0.9	4.4	8.9	22.5	9.9	10.5	10.5	2.5	1.5	13	5	6	2	3.5	0.5	3	**S**	1.5	12	0.5	0	22.5	5.4	24
26	0	0	0.5	0.9	3.4	20.5	2.5	1.9	1.4	5	1	6.5	3.5	3.6	4.1	4.1	4.1	4.1	**S**	2	0.9	0.5	0.5	0.5	20.5	3.1	24
27	0.5	0.5	0.5	0	1	1	3	6	1.5	3	4.1	5	5.5	5.5	5	4.6	5	**S**	3.1	1	49.5	0.5	0.5	0	49.5	4.6	24
28	0	0	0	0	0	0.5	**S**	**S**	7.5	6.5	3.6	2.1	2.5	1.5	2	1.5	**S**	1	0.5	1	1	1.5	0.9	0.9	7.5	1.6	24
29	0.9	0.9	0.9	0.4	24.9	1.9	2.9	2.9	13.5	4	3	4.5	1	2	12	**S**	2.5	1	0.5	2.5	0	0.5	0	0	24.9	3.6	24
30	0	0	0	2.4	18	0	0.5	**S**	**S**	1.4	0.9	0.5	0	0.5	**S**	0	0.5	0	0	0.5	0.5	0.5	0.9	0.5	18	1.3	24
31	0.9	0.9	0.5	0.5	0.5	0.5	**S**	**S**	1.5	1	0.5	1	1	**S**	1.5	0.5	0.5	0	0.5	0.5	0.9	0.9	0.5	0.5	1.5	0.7	24
HOURLY MAX	9	8	10	9	25	21	23	19	57	32	14	14	18	19	19	15	15	11	9	30	50	20	8	7			
HOURLY AVG	1.4	1.4	1.7	1.7	4.8	3.1	5.1	5.4	5.8	4.5	2.3	2.1	3.6	3.3	3.0	2.1	1.8	1.4	1.7	2.4	2.9	1.8	1.5	1.2			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 611

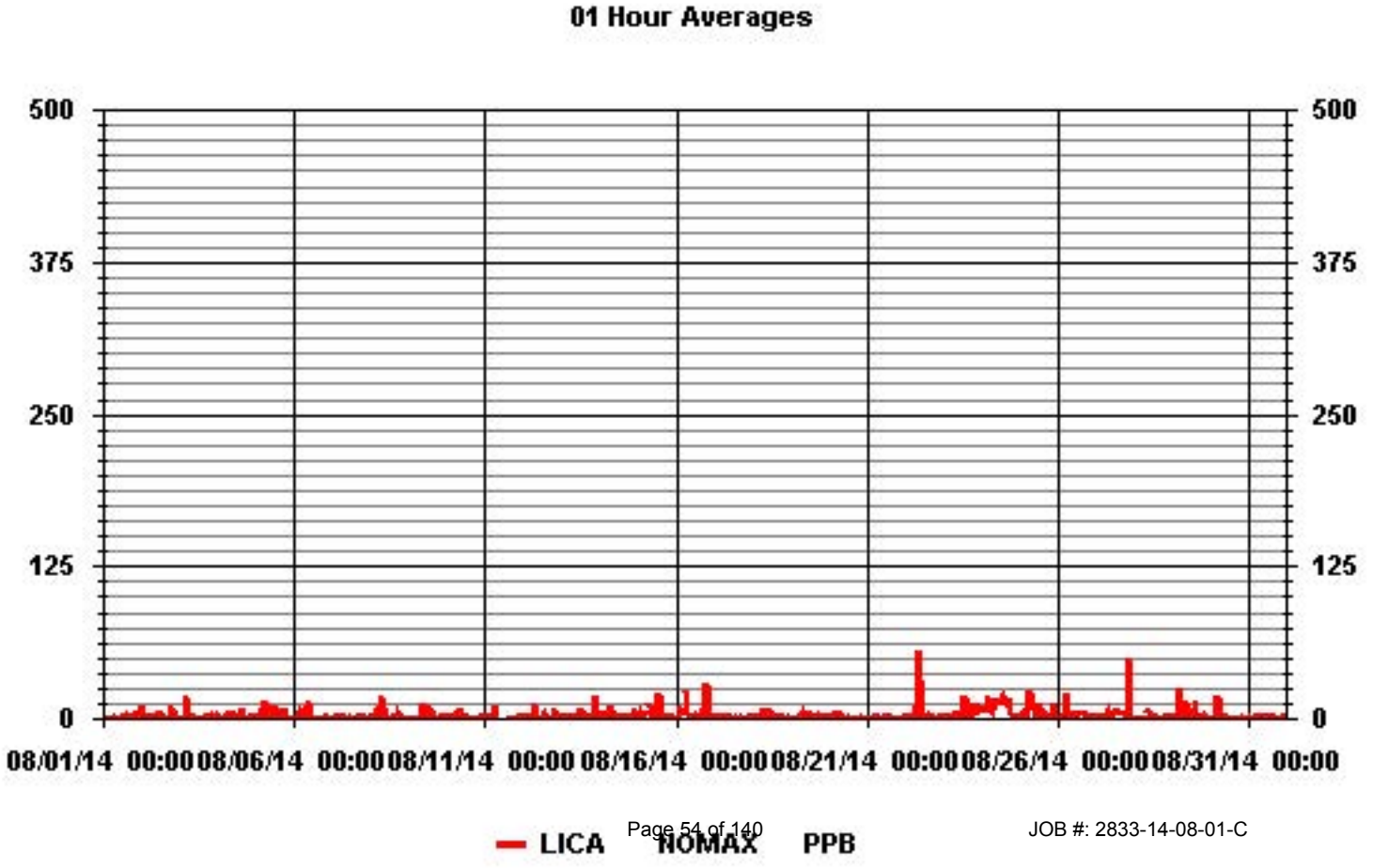
MAXIMUM INSTANTANEOUS VALUE: 56.5 PPB @ HOUR(S) 8 ON DAY(S) 22

VAR-VARIOUS

IZS CALIBRATION TIME: 37 HRS OPERATIONAL TIME: 743 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 4.80



JOB #: 2833-14-08-01-C

LICA
NO_ / WD Joint Frequency Distribution (Percent)

August 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	3.28	3.70	3.99	2.56	3.42	2.85	17.54	6.99	5.27	4.42	9.12	13.12	10.84	5.42	3.42	3.99	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	3.28	3.70	3.99	2.56	3.42	2.85	17.54	6.99	5.27	4.42	9.12	13.12	10.84	5.42	3.42	3.99	

Calm : .00 %

Total # Operational Hours : 701

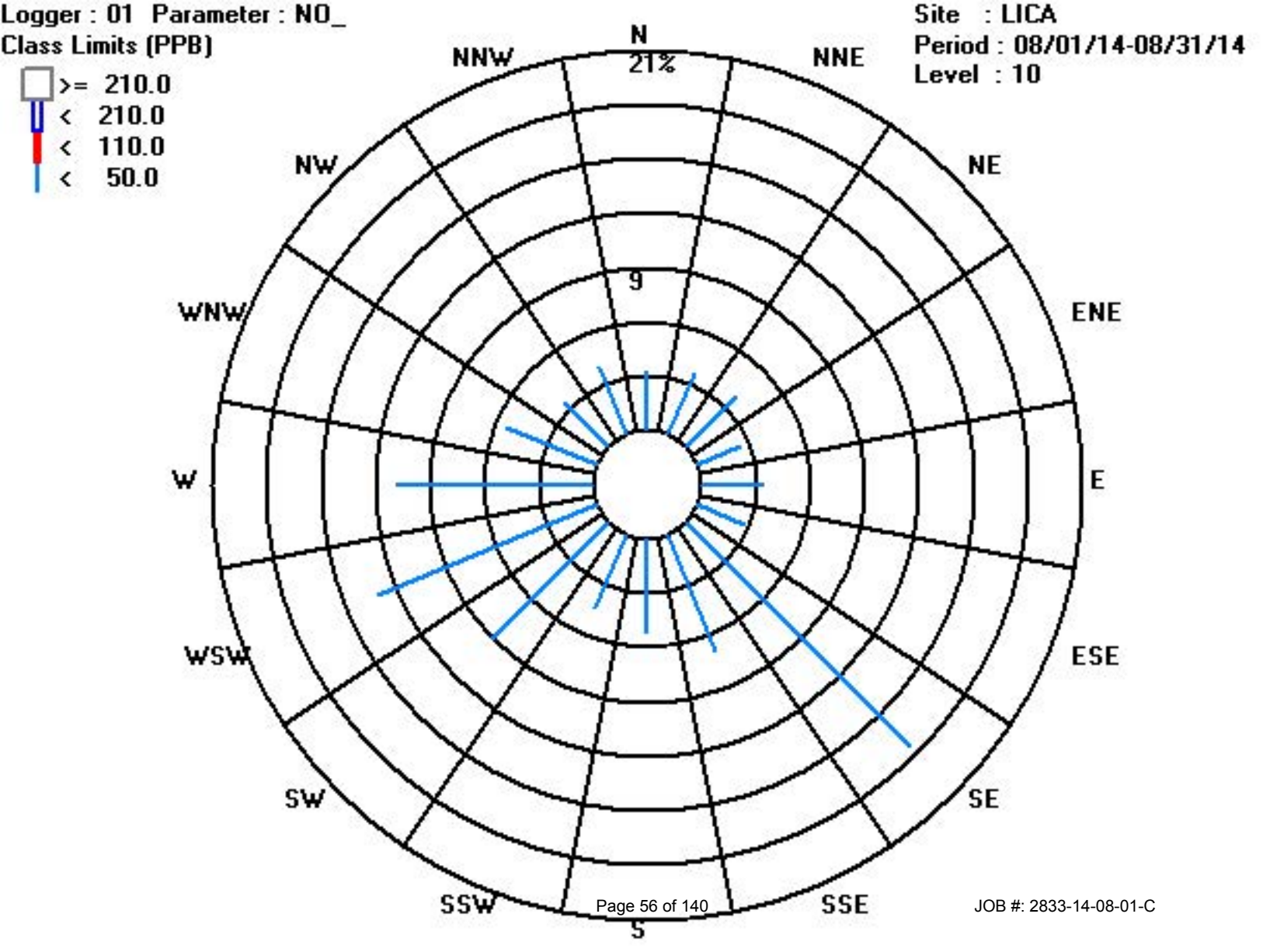
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	23	26	28	18	24	20	123	49	37	31	64	92	76	38	24	28	701
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	23	26	28	18	24	20	123	49	37	31	64	92	76	38	24	28	

Calm : .00 %

Total # Operational Hours : 701



JOB #: 2833-14-08-01-C

Oxides of Nitrogen

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 2014

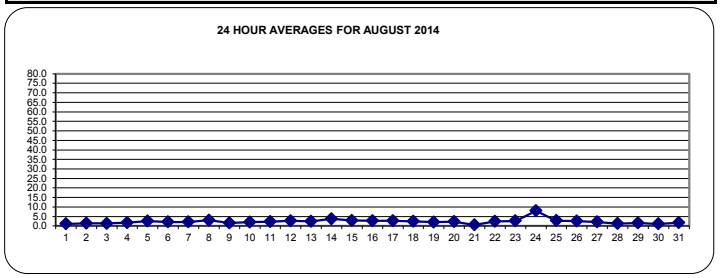
OXIDES OF NITROGEN (NOx) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1.1	1.2	1.3	1.1	0.5	0.6	0.7	0.8	0.5	0.2	0.5	0.4	0.6	0.6	0.5	1.1	0.8	1	2	1.6	**S**	2.9	2.5	2.1	2.9	1.1	24
2	3	2.5	3.7	3	2.2	2.7	1	0.7	0.7	0.7	0.7	0.6	0.8	0.8	0.6	0.7	0.7	1	2.8	**S**	2.4	0.8	0.8	0.8	3.7	1.5	24
3	0.7	1	0.6	0.6	2	1	1	0.9	1	1.5	1.2	0.9	0.9	0.9	0.9	0.7	1.2	1.1	**S**	1.8	2.6	2.7	2.7	2.5	2.7	1.3	24
4	2.9	1.9	1.3	1.2	1.8	2.6	3.6	4.3	1.8	1.5	1.2	0.7	0.6	0.8	1	0.9	0.8	**S**	1.6	1.4	2.2	1.9	2.4	1.5	4.3	1.7	24
5	1.2	1.8	1.6	2.2	4.8	3.7	9.6	6.5	1.7	0.7	0.4	0.4	1.9	0.8	1.3	1.3	**S**	7	4.1	3	2.6	1.9	1.1	0.8	9.6	2.6	24
6	1.2	1.6	1.9	3.1	3.8	3.9	6.9	2.4	2.2	1.7	1.1	0.8	1	1	1	**S**	1.3	0.8	0.8	1.7	2.4	2.6	2	2.7	6.9	2.1	24
7	3.2	2.7	2.7	2.4	1.7	2.3	3.5	3.7	2.5	1.5	0.7	0.6	0.5	1	**S**	1.2	1.7	1.4	1.7	2.4	3.6	3	2.7	2.2	3.7	2.1	24
8	2.1	2.3	2	2	3.2	4.5	6.6	9.2	6.7	5.2	3	1.8	1.1	**S**	0.9	1.9	1.9	5.4	3	1.2	1.3	1.2	1.5	1.4	9.2	3.0	24
9	1.6	2.4	1.6	1.6	1.4	0.8	0.5	0.3	1.4	0.9	0.2	0.5	**S**	4.3	2.2	2.5	0.9	0.6	0.5	1.3	2.2	2.4	2.3	2.7	4.3	1.5	24
10	2.9	1.8	1.8	2.2	2.3	2.3	3.7	3.8	3.4	2.5	2.7	**S**	2.4	1.5	1	0.8	0.8	0.6	0.6	1.3	2	1.9	1.8	2	3.8	2.0	24
11	2	2.2	2.3	1.8	2	2.3	6.2	3.8	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1.3	0.3	0.5	0.9	2.7	4	1.9	1.5	2.4	6.2	2.2	24
12	2.1	1.8	1.6	1.7	2.1	3.9	7.6	11	8.4	**S**	2.2	0.8	0.7	0.6	0.7	0.8	0.6	0.9	1.9	2.8	4.8	2.4	1.3	0.6	11	2.7	24
13	0.5	0.9	1.3	1	2	2.8	1.9	1.8	**S**	1.7	1.1	1.2	1.2	1.3	2.7	3.3	3.3	4.4	3.5	1.5	2.6	5.8	5.6	3.5	5.8	2.4	24
14	2.6	3.7	2.9	2.3	2.2	3.3	8	**S**	5.7	7.2	5.8	5	5.8	4.1	1.5	0.5	0.9	1.3	3.2	5.4	5.2	4.1	2.8	2.9	8	3.8	24
15	3.1	2.4	2.9	2.6	3.7	4.1	**S**	10	3.6	1.9	1.3	1.2	1.1	1.8	1.7	1.2	1.6	2	3	4.9	4.3	4.1	2.7	1.6	10	2.9	24
16	1.6	2.4	3.8	4.4	5.8	**S**	11.6	5.2	2.2	1.7	1.4	1.2	1.2	0.7	0.2	0.2	1	0.8	2	5.9	1.7	3	3.4	1.9	11.6	2.8	24
17	2	1.7	1	0.8	**S**	3.4	4.9	5.9	6.7	5.8	6.3	4.8	1.7	1.1	0.6	0.4	0.6	0.6	1.1	1.7	2.7	2.7	2.8	2.4	6.7	2.7	24
18	1.7	1.6	1.3	**S**	1.5	3.5	4.5	4.9	4.5	3.2	2.3	1.6	1.3	2.9	1.8	1.6	1	1.9	2.7	2.4	2.5	2.4	2.3	2.3	4.9	2.4	24
19	2.5	2.6	**S**	1.9	1.6	1.9	1.9	2.1	2.2	1.6	1.2	1	1.1	1.3	0.8	0.7	0.8	1.3	1.9	3	2.7	3.9	3.6	5.3	5.3	2.0	24
20	3.5	**S**	5.5	6.5	6.8	4.5	8	4.4	1.2	1.1	0.9	0.6	0.7	0.6	0.4	0.4	0.9	0.9	0.8	0.7	0.5	0.4	0.7	2.6	8	2.3	24
21	**S**	0.5	0	0.3	0.1	0.4	0.3	0	0	0.1	0.2	0.3	0.5	1.4	1.1	0.8	0.5	0.6	0.7	0.8	0.5	1.8	1.9	**S**	1.9	0.6	24
22	2.2	1.9	4	2.7	2.7	3.3	6.1	8.9	5.8	3.5	1.8	0.4	0.9	0.4	0.5	0.3	0.3	0.5	0.2	2	1.8	2.2	**S**	2.8	8.9	2.4	24
23	2.5	2.4	2.4	1.9	2	2.2	4.3	2.6	1.2	1	1.2	0.3	0.5	0.9	0.4	0.8	0.5	1.6	4.4	6.8	7.8	**S**	6.3	6.6	7.8	2.6	24
24	7	7.2	7.4	7.5	9.1	7.9	7.8	9	9.6	11.1	12.3	13.5	10.1	8.7	12	13.4	***14.2***	6.4	2.5	0.3	**S**	1.9	2.1	1.9	***14.2***	***8.0***	24
25	1.4	1.3	1.2	1.5	3.7	6.3	13.2	10.2	2.5	1.8	1.6	1	1.4	2	2.9	2.5	2	1.2	2.6	**S**	1	1.6	0.6	0.6	13.2	2.8	24
26	0.6	0.7	0.6	0.9	2.2	5.1	4.8	3.3	2.6	3.6	2.8	3.7	4.7	4.4	4.5	4.4	4.5	4.9	**S**	0.9	0.2	0	0	0	5.1	2.6	24
27	0	0.1	0	0	0.1	0.2	3.4	1.5	2	2.7	2.5	4.6	5.2	4.9	4.6	4.5	4.1	**S**	2.3	3	2.3	0	0	0	5.2	2.1	24
28	0	0	0	0	0	0.1	**S**	**S**	1.7	1.1	1	1.5	1.9	1.4	1.2	1.5	**S**	1.5	0.8	2	3.1	2.8	2.2	2.1	3.1	1.2	24
29	1.9	2.4	1.4	0.6	2.4	2.3	2.6	2.7	3.4	2.4	1	1	1	1.3	2.4	**S**	1.1	1.6	1.2	1	0.4	0	0	0	3.4	1.5	24
30	0	0	0.3	0.9	3	0.7	0.8	1.4	**S**	3.6	1.3	0.6	0.3	0.4	**S**	0.2	0	0	1.4	1.7	2	1.7	2.3	1.7	3.6	1.1	24
31	1.6	1	1.3	1.5	2.3	2.5	**S**	**S**	3	2.4	1.6	1.9	1.5	**S**	0.7	0.4	0.2	0	1.2	1.2	1.6	1.9	4.4	2.3	4.4	1.6	24
HOURLY MAX	7	7	7	8	9	8	13	11	10	11	12	14	10	9	12	13	14	7	4	7	8	6	6	7			
HOURLY AVG	2.0	1.9	2.0	2.0	2.6	2.8	4.8	4.3	3.2	2.5	2.1	1.8	1.8	1.9	1.8	1.7	1.7	1.8	1.9	2.3	2.5	2.2	2.2	2.1			

STATUS FLAG CODES

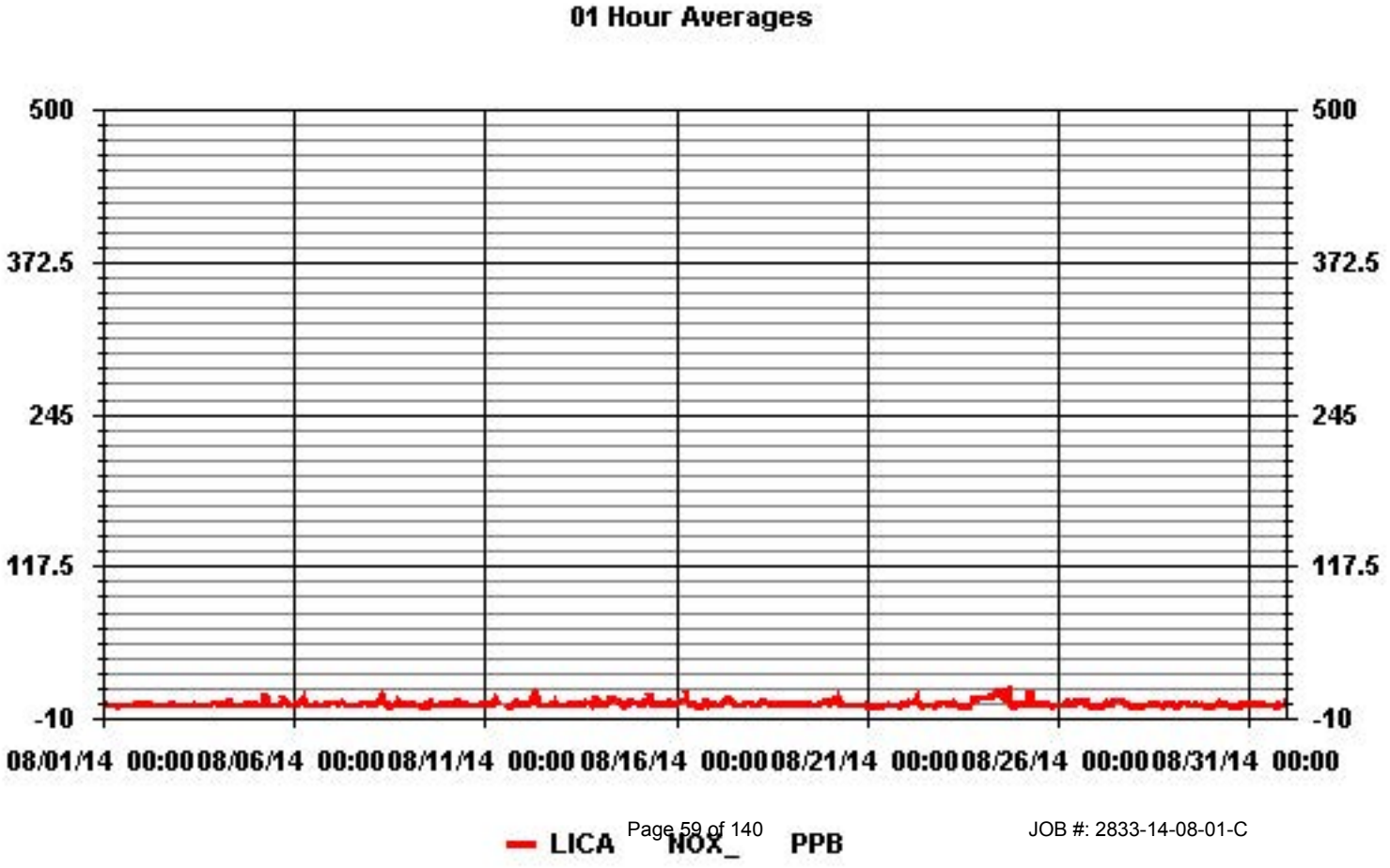
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA						
NUMBER OF NON-ZERO READINGS:	676						
MAXIMUM 1-HR AVERAGE:	14.2	PPB	@ HOUR(S)	16	ON DAY(S)	24	
MAXIMUM 24-HR AVERAGE:	8.0	PPB			ON DAY(S)	25	
					VAR-VARIOUS		
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:		744	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	2.18		MONTHLY AVERAGE:		2.32	PPB	



JOB #: 2833-14-08-01-C

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 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	1.8	1.3	1.8	1.8	2.8	0.7	0.7	1.3	1.8	0.7	2.3	1.8	1.3	1.3	1.3	6.7	3.3	3.8	8.3	2.8	**S**	4.5	6.9	4	8.3	2.7	24
2	12.5	4	5.5	4	4	5	1.9	0.9	2	3	5	1	1.5	1.5	2.5	4	1	2.5	18.5	**S**	16.5	1.5	1.5	3	18.5	4.5	24
3	1.5	1.5	1	1	22.9	1.5	1.5	1.5	1.5	3	2.5	1.5	4.5	1.5	1.5	1.5	3	3.5	**S**	2.8	9.8	4.8	4.3	7.3	22.9	3.7	24
4	4.8	2.8	2.3	1.8	3.8	3.3	5.3	6.8	3.3	2.8	12.3	3.3	2.3	1.3	1.8	8.8	1.3	**S**	2.2	2.2	3.7	3.2	7.7	2.7	12.3	3.9	24
5	1.7	2.7	2.7	3.2	9.7	4.7	21.2	14.6	5.2	1.7	4.7	4.2	14.7	4.2	7.7	4.7	**S**	10.9	14.8	4.9	3.9	2.4	3.4	1.4	21.2	6.5	24
6	1.9	2.9	3.9	8.9	6.4	5.9	10.9	2.9	2.9	12.4	4.9	1.4	1.9	1.9	2.4	**S**	3.2	1.2	1.2	3.2	3.2	3.7	3.2	3.7	12.4	4.1	24
7	3.7	3.2	3.7	3.7	2.2	3.2	5.2	5.2	3.7	2.2	3.2	2.7	1.2	3.7	**S**	2.5	11	2	2.5	4	6	4	3.5	3	11	3.7	24
8	2.5	3.5	2.5	5.5	10	10.5	14.4	35.5	7.9	9.5	5.5	4.5	1.5	**S**	3.2	3.2	3.1	12.1	4.6	3.1	2.1	2.1	3.6	2.1	35.5	6.6	24
9	2.1	4.1	2.1	2.1	1.6	1.1	1.1	0.6	24.1	14	0.6	0.6	**S**	13	3	7.4	1.5	1	1	3	4	3.5	3.5	4	24.1	4.3	24
10	4	2.5	2.5	2.5	3.5	3	5.5	5.5	12.5	3.5	4.5	**S**	3.3	2.3	1.8	1.3	1.8	0.8	1.3	1.8	3.8	2.3	2.8	2.8	12.5	3.3	24
11	3.8	3.3	3.3	2.3	3.3	3.3	10.8	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0.5	0.5	2	4.5	7	2.5	3.5	3.5	10.8	3.6	24
12	3.5	2.5	2.5	2.5	3	6	12.9	12.5	11.5	**S**	4	1.5	2.5	2.5	2	4.5	1	2	4	13	11.5	5.5	3.5	1.5	13	5.0	24
13	1	3.5	3	2.5	3.5	6	3	4	**S**	5	2	3.5	4	2.5	8.5	13.4	6	12	8	2.5	8	24.4	9.5	5	24.4	6.1	24
14	4.5	5	4.5	3.5	4	6	12	**S**	6.5	9	6.5	6	7	6	6.5	1	1.5	2	5.5	8	9.5	6.4	9	4	12	5.8	24
15	4.5	3.5	7.5	4	5.5	5.5	**S**	15.6	11.1	3.6	2.1	1.6	2.6	8.6	9.1	2.1	3.1	4.6	5.1	7.1	5.6	5.1	4.6	3.1	15.6	5.4	24
16	3.1	4.1	12.1	7.6	7.6	**S**	25	10.5	4.5	2	2.5	5	7.5	4.5	0.5	1.5	7.5	6	21	54	3	6	5	5	54	***8.9***	24
17	3	2.5	2	2	**S**	5.1	5.6	**P**	7.6	7	8.1	8.1	3.1	1.6	1.1	0.6	1.1	1.1	1.1	2.6	3.6	4.1	4.1	3.1	8.1	3.6	23
18	2.6	3.1	2.6	**S**	2.5	6	6	10.5	5.5	5.5	4	5.5	2.5	7	5.1	4	1.5	3.5	4	3	4	3.5	3	3	10.5	4.3	24
19	3.5	4	**S**	3.2	2.2	2.7	2.7	4.2	4.7	3.7	2.2	5.2	6.2	3.7	1.7	1.2	1.7	7.1	3.7	4.7	3.7	4.7	4.7	6.7	7.1	3.8	24
20	5.7	**S**	6.1	7.6	14.5	8.1	11.1	7.6	2.1	2.1	1.6	1.1	2.1	1.1	1.6	1.1	2.1	2	3.1	3.6	1.1	1.1	1.1	4.1	14.5	4.0	24
21	**S**	2	0.5	0.5	1.5	1	3.5	1.5	1	4.5	1	0.5	3.5	5.5	6	1.5	1	2.5	2.5	2.5	1.5	2.5	3.5	**S**	6	2.3	24
22	3	3	5.5	4.5	6.5	5	10.5	22	32.4	28.9	6.9	2.5	4.5	1.9	2	1.5	2	3.5	3	4.5	3	4	**S**	3.6	32.4	7.1	24
23	3.1	4.6	3.1	2.6	2.6	3.1	8.6	7.6	3.6	6.6	5.1	2.1	3.6	19.5	5.6	4.1	1.1	2.2	6.2	9.7	9.2	**S**	2.9	2	19.5	5.2	24
24	2.5	4	3	6.5	19	7.5	3	9.5	5	6	7.9	8.5	15.5	5	19	9.5	9	5.5	0	1.4	**S**	3	3.4	2.9	19	6.8	24
25	2	4.4	2	2	5.9	11.4	25.9	13.4	12.5	12.5	6	5.1	6	9	15.5	3.1	8	1.5	10.5	**S**	4.6	29.6	1.1	1.1	29.6	8.4	24
26	1	1.1	1.6	2.6	6.5	31	9.1	5.6	3.1	8.6	3.6	11.1	7.1	7.6	5.6	6.6	5.6	6.1	**S**	3.9	1.4	0.4	0.4	0	31	5.6	24
27	0.4	0.4	0.4	0.4	1.4	2.9	7.9	8.4	3.4	6.4	2.9	4	3.5	4	2.9	2.9	2.4	**S**	0.2	3.1	***69.5***	0	0.1	0.1	***69.5***	5.5	24
28	0	0	0	0	0	1.1	**S**	**S**	12.6	10.1	6.1	0	1.6	0	0	0	**S**	1.8	1.3	4.8	5.3	3.2	3.2	2.8	12.6	2.6	24
29	2.8	3.8	3.2	1.2	26.2	3.8	4.7	13.3	14.8	8.2	2.3	5.8	3.3	3.4	26.3	**S**	7	3.5	2.5	4	1	0.5	1	0	26.3	6.2	24
30	0.5	0.5	1	4.5	39	1.9	1.5	**S**	**S**	4.3	2.8	1.3	0.8	1.8	**S**	0.8	0.3	0.8	2.3	3.3	3.3	2.2	3.2	2.7	39	3.8	24
31	2.3	1.8	1.8	2.3	3.2	3.7	**S**	**S**	4.5	3.5	2	2	2	**S**	2.5	1	0.5	0.5	2	2	2.9	5	8	3.5	8	2.7	24
HOURLY MAX	13	5	12	9	39	31	26	36	32	29	12	11	16	20	26	13	11	12	21	54	70	30	10	7			
HOURLY AVG	3.0	2.9	3.1	3.2	7.5	5.3	8.3	8.8	7.5	6.6	4.2	3.5	4.2	4.5	5.2	3.6	3.2	3.7	4.9	5.9	7.3	4.9	3.8	3.1			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 684

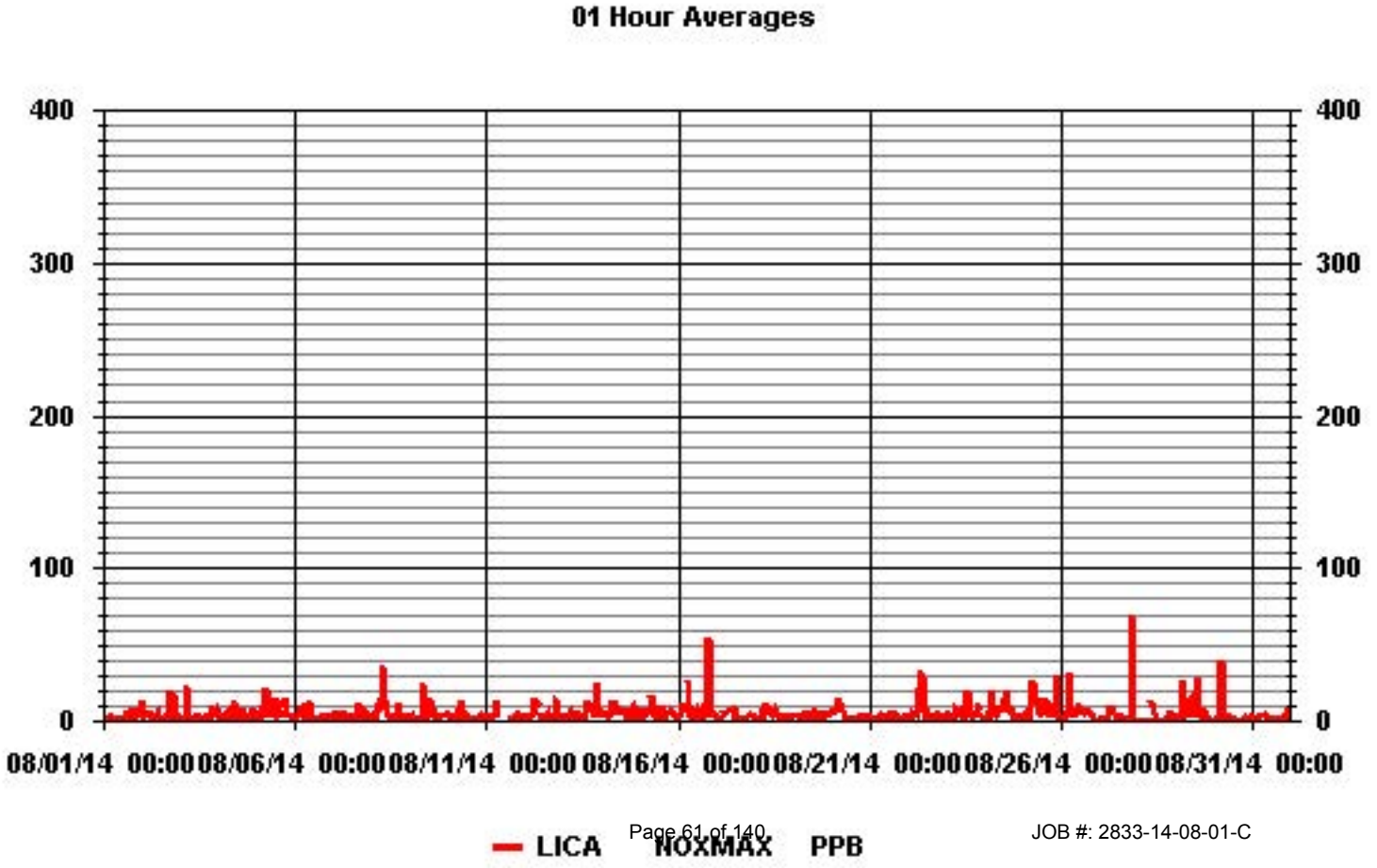
MAXIMUM INSTANTANEOUS VALUE: 69.5 PPB @ HOUR(S) 20 ON DAY(S) 27

VAR-VARIOUS

IZS CALIBRATION TIME: 37 HRS OPERATIONAL TIME: 743 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 5.72



JOB #: 2833-14-08-01-C

LICA
NOX_ / WD Joint Frequency Distribution (Percent)

August 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	3.28	3.70	3.99	2.56	3.42	2.85	17.54	6.99	5.27	4.42	9.12	13.12	10.84	5.42	3.42	3.99	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	3.28	3.70	3.99	2.56	3.42	2.85	17.54	6.99	5.27	4.42	9.12	13.12	10.84	5.42	3.42	3.99	

Calm : .00 %

Total # Operational Hours : 701

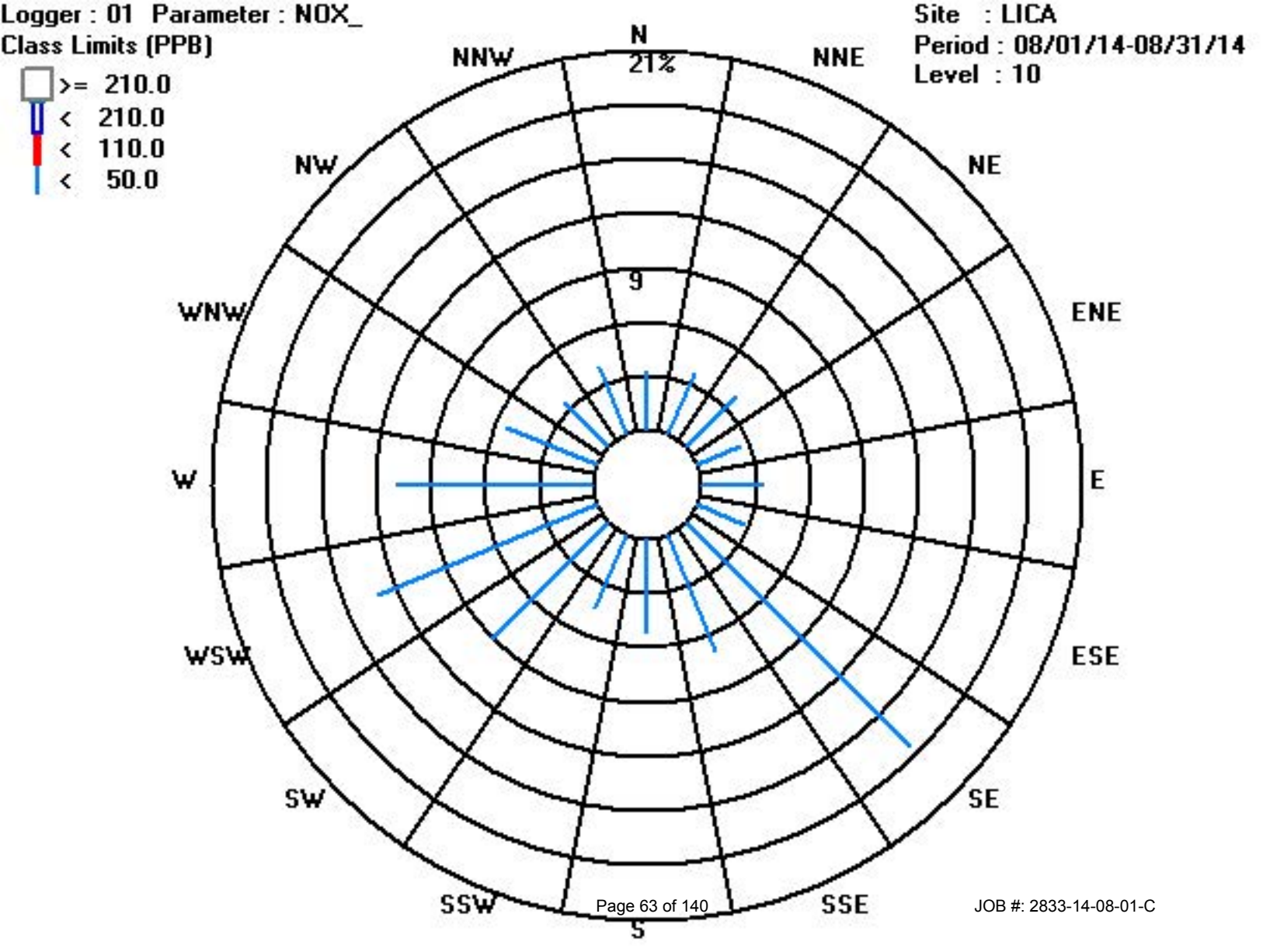
Distribution By Samples

Direction

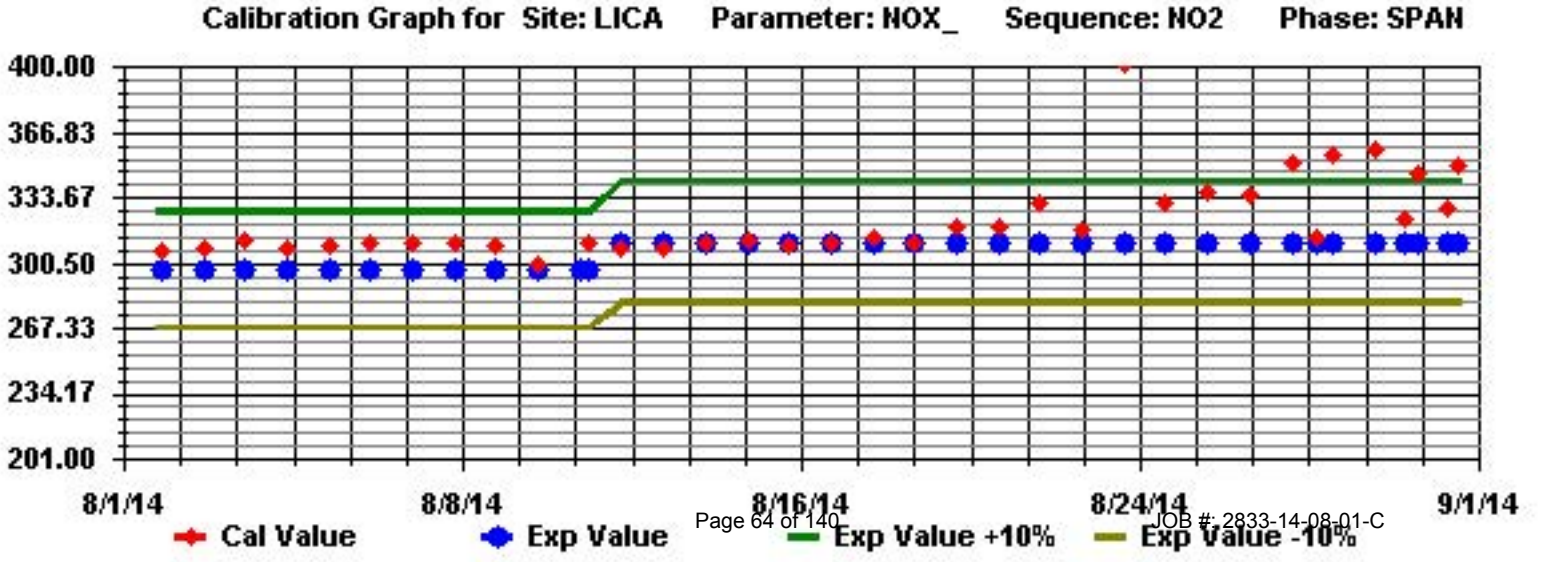
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	23	26	28	18	24	20	123	49	37	31	64	92	76	38	24	28	701
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	23	26	28	18	24	20	123	49	37	31	64	92	76	38	24	28	

Calm : .00 %

Total # Operational Hours : 701



JOB #: 2833-14-08-01-C


Calibration Graph for Site: LICA Parameter: NOX_ Sequence: NO2 Phase: SPAN
400.00
366.83
333.67
300.50
267.33
234.17
201.00
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 2014

OZONE (O3) hourly averages in ppb

MST

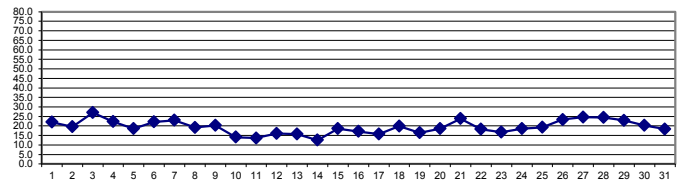
HOUR START / HOUR END	0:00 1:00	1:00 2:00	2:00 3:00	3:00 4:00	4:00 5:00	5:00 6:00	6:00 7:00	7:00 8:00	8:00 9:00	9:00 10:00	10:00 11:00	11:00 12:00	12:00 13:00	13:00 14:00	14:00 15:00	15:00 16:00	16:00 17:00	17:00 18:00	18:00 19:00	19:00 20:00	20:00 21:00	21:00 22:00	22:00 23:00	23:00 0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY																											
1	33	33	25	24	28	25	22	21	21	20	20	20	21	23	26	27	28	29	28	20	**S**	7	3	2	33	22.0	24
2	2	2	1	2	2	3	10	12	16	17	21	31	33	36	34	35	35	35	30	**S**	23	24	23	22	36	19.5	24
3	24	25	27	23	19	16	17	18	22	27	33	36	41	48	47	48	47	45	**S**	22	14	10	7	4	48	***27.0***	24
4	5	2	2	1	1	1	4	16	28	35	39	43	47	47	48	46	42	**S**	37	31	18	11	5	4	48	22.3	24
5	3	1	1	1	0	1	2	16	25	32	33	36	37	36	35	39	**S**	23	21	17	16	18	17	16	39	18.5	24
6	9	4	5	2	1	1	4	10	24	33	34	38	41	46	48	**S**	***50***	47	42	24	16	12	7	11	***50***	22.1	24
7	9	14	12	8	14	17	17	19	25	30	33	35	38	40	**S**	41	42	39	34	24	14	11	8	5	42	23.0	24
8	4	2	3	2	1	1	3	11	21	30	38	41	37	**S**	33	32	29	26	31	30	26	15	11	14	41	19.2	24
9	15	17	18	18	19	22	20	21	24	26	28	30	**S**	26	30	30	29	30	27	18	8	5	3	3	30	20.3	24
10	2	1	1	1	1	1	3	5	10	9	12	**S**	20	31	35	39	39	36	33	24	10	5	3	3	39	14.1	24
11	2	1	1	1	1	1	7	20	26	31	**S**	40	35	**C**	**C**	**C**	**C**	31	27	16	8	6	3	2	40	13.6	24
12	1	1	1	1	1	1	1	6	18	**S**	25	26	31	30	28	27	28	29	26	20	14	16	16	20	31	16.0	24
13	19	18	8	4	6	7	16	18	**S**	23	29	31	31	30	28	20	12	9	18	16	12	4	1	1	31	15.7	24
14	1	1	0	1	0	1	1	**S**	7	10	21	32	35	35	29	32	31	23	16	7	3	2	1	0	35	12.6	24
15	0	1	1	1	1	1	**S**	3	11	25	29	36	39	41	40	37	38	34	26	17	16	14	11	6	41	18.6	24
16	2	2	1	1	1	**S**	2	13	20	26	29	34	31	35	36	35	33	31	26	16	10	4	3	2	36	17.1	24
17	2	1	1	1	**S**	1	2	5	13	24	32	37	34	26	24	28	31	27	24	19	16	7	4	3	37	15.7	24
18	3	3	2	**S**	2	1	3	10	17	29	37	42	46	46	45	36	31	28	22	20	13	11	5	5	46	19.9	24
19	6	4	**S**	13	14	13	11	10	14	15	22	23	25	26	27	28	30	29	21	15	10	10	6	5	30	16.4	24
20	9	**S**	7	5	4	8	8	14	22	25	30	29	30	27	26	29	29	28	20	19	16	16	13	12	30	18.5	24
21	**S**	11	13	13	13	15	17	20	23	26	29	32	33	33	35	35	34	32	30	28	28	14	10	**S**	35	23.8	24
22	6	6	4	3	3	2	4	11	19	28	31	31	30	31	33	34	34	35	33	16	11	8	**S**	6	35	18.2	24
23	4	3	2	1	3	3	3	24	30	31	29	25	25	25	25	24	25	23	20	17	15	**S**	14	13	31	16.7	24
24	12	12	11	9	7	3	12	14	19	23	25	27	34	34	31	30	29	29	27	21	**S**	9	5	4	34	18.6	24
25	3	2	1	1	1	1	1	5	16	21	23	29	31	33	35	37	36	34	29	**S**	27	26	26	26	37	19.3	24
26	25	22	17	14	11	10	11	16	17	21	29	35	40	43	41	39	38	34	**S**	16	15	14	16	13	43	23.3	24
27	16	18	14	15	9	10	8	17	21	23	31	36	39	43	46	40	41	**S**	42	26	16	16	17	21	46	24.6	24
28	24	25	23	21	19	16	15	15	27	33	37	37	37	34	34	34	**S**	33	32	24	15	11	9	7	37	24.4	24
29	4	3	5	6	5	3	4	14	17	21	28	34	39	40	42	**S**	41	38	35	33	32	29	27	26	42	22.9	24
30	26	23	15	15	11	12	10	10	15	21	28	29	30	32	**S**	33	32	34	33	23	14	9	6	5	34	20.3	24
31	3	3	4	7	9	11	11	15	19	24	29	31	34	**S**	34	34	31	29	25	22	12	9	13	13	34	18.3	24
HOURLY MAX	33	33	27	24	28	25	22	24	30	35	39	43	47	48	48	48	50	47	42	33	32	29	27	26			
HOURLY AVG	9.1	8.7	7.5	7.2	6.9	6.9	8.3	13.6	19.6	24.6	28.8	32.9	34.1	34.9	34.8	33.9	33.8	31.0	28.1	20.7	15.4	11.8	9.8	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

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

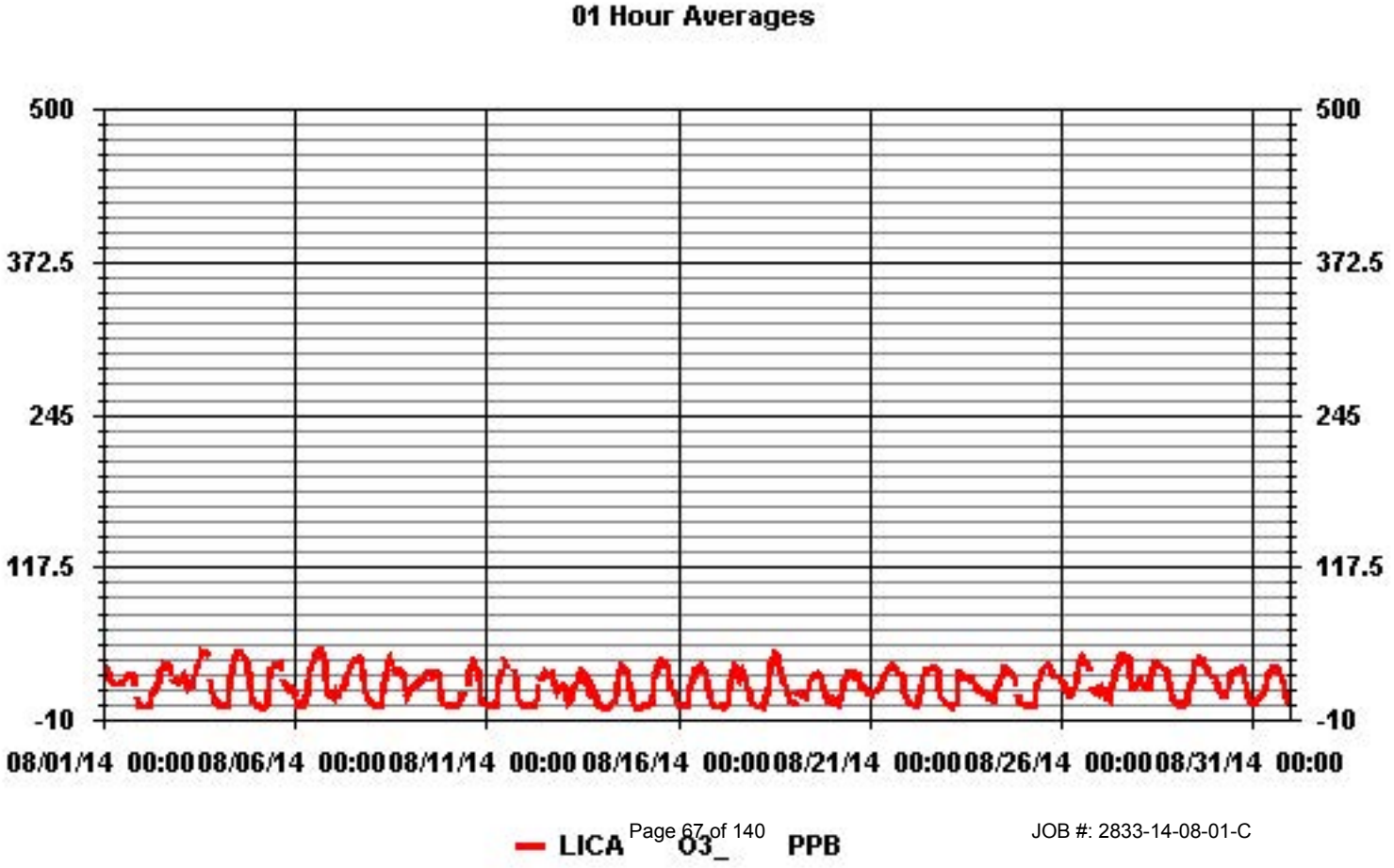
24 HOUR AVERAGES FOR AUGUST 2014



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	703					
MAXIMUM 1-HR AVERAGE:	50	PPB	@ HOUR(S)	16	ON DAY(S)	6
MAXIMUM 24-HR AVERAGE:	27.0	PPB			ON DAY(S) VAR-VARIOUS	3

IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	12.88		MONTHLY AVERAGE:	19.46	PPB



JOB #: 2833-14-08-01-C

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 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	**S**	36	31	27	29	27	26	23	23	21	21	22	22	24	30	29	30	31	30	26	**S**	11	7	5	36	24.1	24
2	4	4	3	4	4	8	12	14	17	20	28	34	35	38	36	36	37	37	34	**S**	29	25	34	24	38	22.5	24
3	26	27	27	26	21	18	19	21	24	32	36	39	49	50	51	52	51	49	**S**	30	25	14	11	8	52	***30.7***	24
4	12	4	4	4	4	3	14	22	34	39	43	53	52	51	51	49	48	**S**	50	35	26	17	8	8	53	27.4	24
5	6	2	4	4	3	4	6	24	31	36	35	40	41	39	46	45	**S**	29	28	21	19	20	19	20	46	22.7	24
6	18	8	11	4	3	3	8	16	29	38	39	43	46	50	52	**S**	***74***	50	46	39	24	21	16	20	***74***	28.6	24
7	15	16	16	14	17	19	18	24	29	33	35	38	40	42	**S**	44	44	62	37	33	20	15	10	8	62	27.3	24
8	6	4	5	5	3	3	7	16	27	35	41	43	40	**S**	36	52	32	30	33	34	29	24	18	18	52	23.5	24
9	19	19	19	19	22	23	22	23	27	29	30	32	**S**	39	32	32	31	32	29	27	12	7	7	5	39	23.3	24
10	3	2	3	3	3	2	7	10	14	12	14	**S**	25	38	39	44	44	38	37	30	17	8	6	5	44	17.6	24
11	4	3	3	2	2	3	17	24	30	34	**S**	66	38	**C**	**C**	**C**	**C**	**C**	31	24	13	9	8	4	66	17.5	24
12	2	2	2	3	3	2	2	10	27	**S**	29	30	33	33	30	29	31	30	28	24	16	19	21	21	33	18.6	24
13	21	20	16	8	10	16	18	19	**S**	27	32	34	33	33	32	25	18	14	22	23	17	9	3	4	34	19.7	24
14	3	3	2	3	2	2	3	**S**	9	15	27	36	39	39	31	34	34	28	22	14	5	4	3	2	39	15.7	24
15	2	2	2	2	2	2	**S**	8	20	28	33	42	43	43	44	41	42	39	29	21	20	20	14	13	44	22.3	24
16	4	3	3	2	2	**S**	6	19	25	29	32	36	34	38	38	37	36	34	33	26	14	7	5	5	38	20.3	24
17	4	4	3	3	**S**	3	4	**P**	19	30	35	44	43	30	28	30	32	29	26	23	18	15	7	5	44	19.8	23
18	5	7	4	**S**	3	3	9	13	23	35	42	44	48	48	48	43	34	30	25	22	18	15	8	9	48	23.3	24
19	9	10	**S**	23	15	15	13	11	17	19	25	26	28	29	29	30	32	31	29	21	14	14	8	9	32	19.9	24
20	13	**S**	10	13	11	11	10	20	25	29	32	31	33	29	27	32	34	32	25	21	20	18	17	16	34	22.1	24
21	**S**	22	15	14	15	17	19	23	25	29	33	34	36	36	37	37	36	35	33	32	30	26	14	**S**	37	27.2	24
22	15	11	7	5	5	4	7	16	25	34	37	34	33	33	34	36	37	36	37	26	14	12	**S**	12	37	22.2	24
23	6	4	4	4	5	6	11	29	33	33	32	27	26	26	27	26	26	25	24	18	16	**S**	15	14	33	19.0	24
24	13	13	13	11	10	7	15	16	25	27	28	31	36	37	33	31	31	30	29	27	**S**	12	12	6	37	21.4	24
25	5	4	3	3	2	3	2	13	21	22	25	33	34	36	37	38	37	36	33	**S**	28	27	27	27	38	21.6	24
26	33	24	22	18	17	16	15	19	19	27	36	37	44	45	42	42	40	36	**S**	22	19	18	20	19	45	27.4	24
27	21	23	23	22	15	15	17	20	22	28	34	39	41	53	53	42	42	**S**	44	39	25	22	21	25	53	29.8	24
28	27	28	25	22	20	18	17	21	32	36	38	38	39	36	35	35	**S**	34	34	31	21	14	12	11	39	27.1	24
29	6	4	7	10	7	5	12	16	19	25	33	39	42	41	44	**S**	43	41	38	34	33	31	28	27	44	25.4	24
30	31	27	22	18	18	14	11	14	18	26	32	31	32	34	**S**	34	34	36	34	32	20	15	10	8	36	24.0	24
31	6	6	6	10	13	12	14	17	21	26	31	34	35	**S**	35	36	32	33	27	25	19	13	18	17	36	21.1	24
HOURLY MAX	33	36	31	27	29	27	26	29	34	39	43	66	52	53	53	52	74	62	50	39	33	31	34	27			
HOURLY AVG	11.7	11.4	10.5	10.2	9.5	9.5	12.0	18.0	23.7	28.5	32.3	37.0	37.3	38.2	37.8	37.2	37.2	34.5	32.0	26.9	20.0	16.1	13.6	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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 705

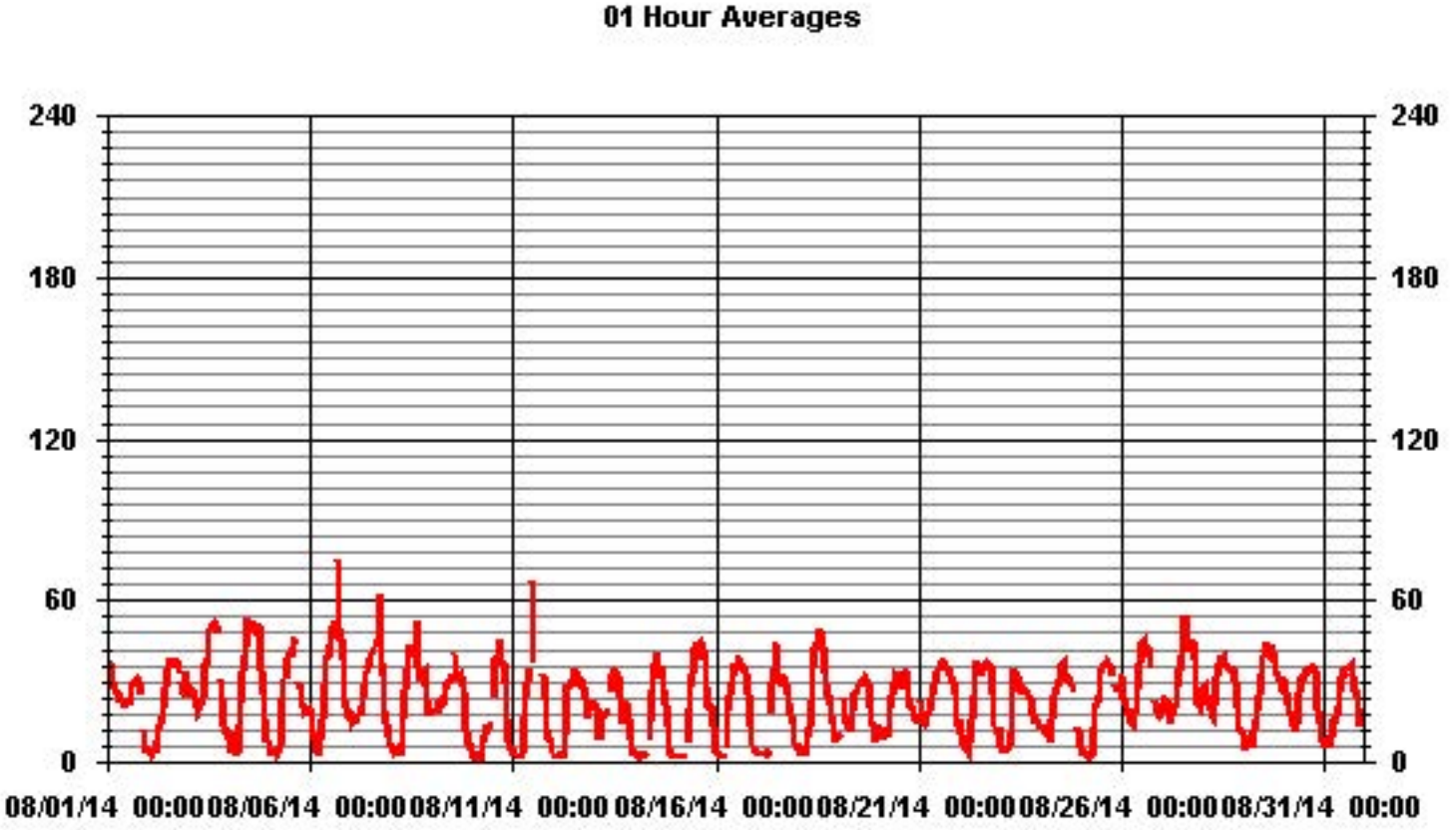
MAXIMUM INSTANTANEOUS VALUE: 74 PPB @ HOUR(S) 16 ON DAY(S) 6

VAR-VARIOUS

IZS CALIBRATION TIME: 33 HRS OPERATIONAL TIME: 743 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 13.32



JOB #: 2833-14-08-01-C

LICA
O3_ / WD Joint Frequency Distribution (Percent)

August 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	3.24	3.67	3.95	2.54	3.38	2.82	17.37	6.92	5.22	4.37	9.03	13.55	11.15	5.22	3.38	3.95	99.85
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.14
< 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	3.24	3.67	3.95	2.54	3.38	2.82	17.37	6.92	5.22	4.37	9.03	13.55	11.29	5.22	3.38	3.95	

Calm : .00 %

Total # Operational Hours : 708

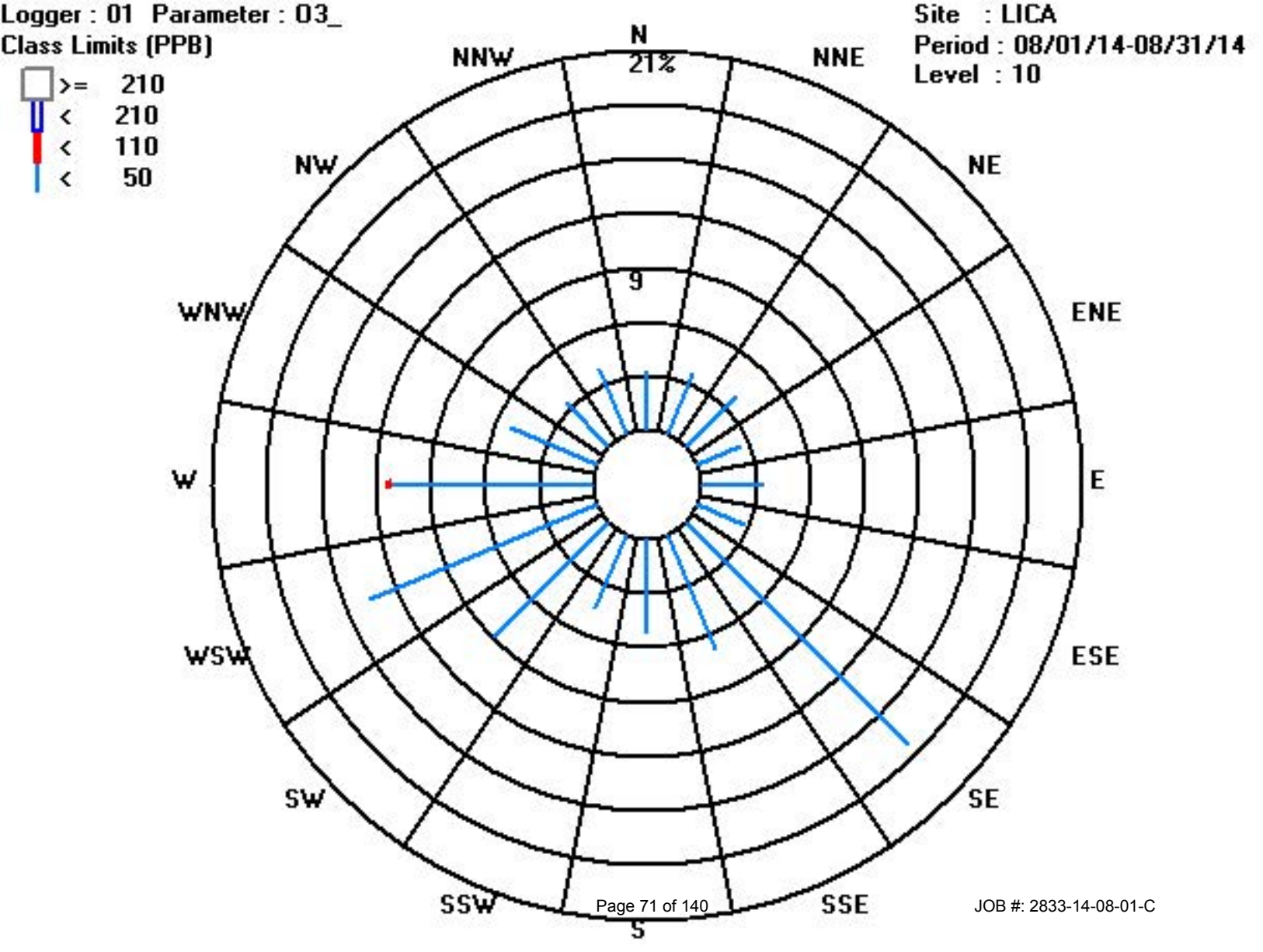
Distribution By Samples

Direction

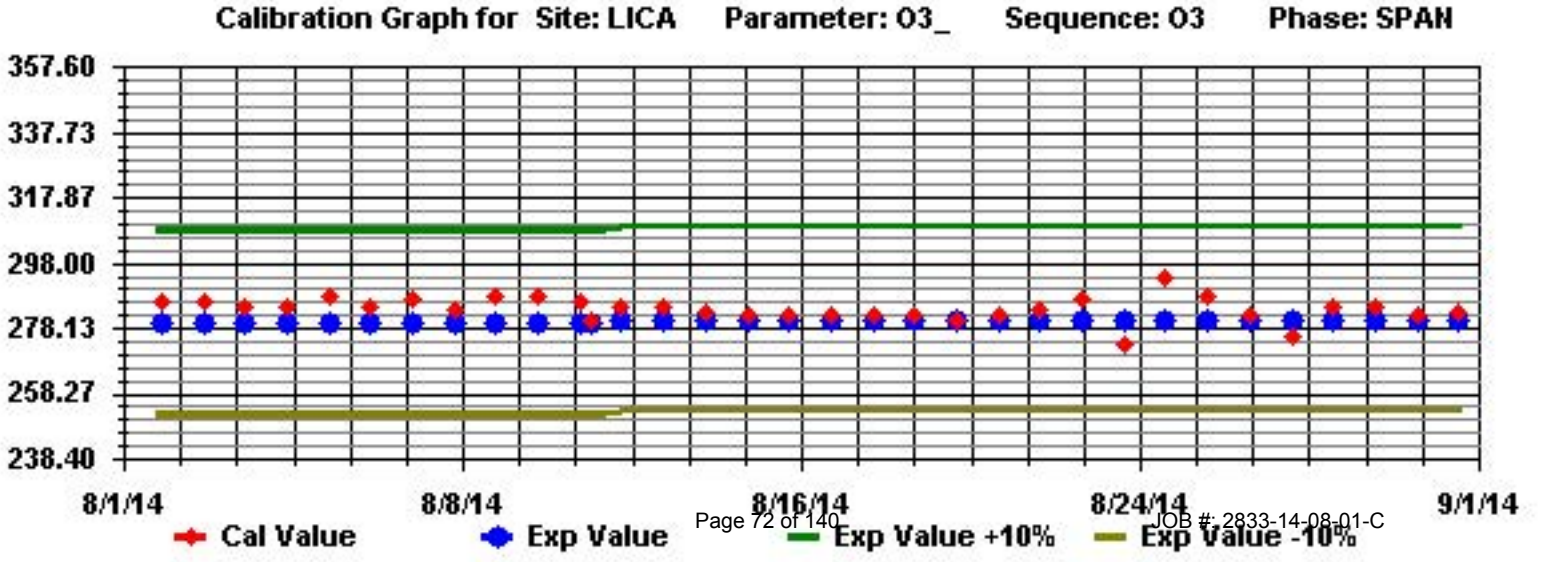
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	23	26	28	18	24	20	123	49	37	31	64	96	79	37	24	28	707
< 110													1				1
< 210																	
>= 210																	
Totals	23	26	28	18	24	20	123	49	37	31	64	96	80	37	24	28	

Calm : .00 %

Total # Operational Hours : 708



JOB #: 2833-14-08-01-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
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ambient Temperature

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 2014

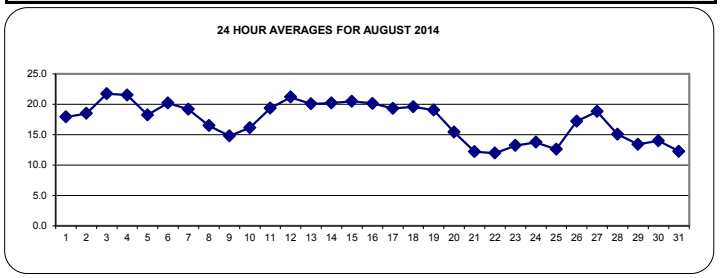
AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

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	17.9	16.2	16.1	15.8	15.4	15.2	15.7	16.6	17	17.1	17.8	18.8	20.1	20.9	21.7	22.1	22	22	21.8	20	17.2	15.4	14.1	13	22.1	17.9	24
2	12.2	11.7	11.4	10.5	10.1	11.3	14	15.4	17.2	19.3	20.8	22.6	23.2	24.1	24.2	24.3	24.3	23.9	22.7	21.6	20.4	19.6	19.6	19.4	24.3	18.5	24
3	19	18.5	18.4	17.5	16.8	16.7	17.5	19.1	21.8	22.3	23.4	24.3	25.7	26.7	27.5	27.5	27.3	26.9	26.5	24.2	20.3	18.5	17.9	16.8	27.5	***21.7***	24
4	16.4	15.3	14.6	13.9	13.4	13.9	18.5	21.7	23.4	25.4	26.6	27.7	***28.5***	28.2	27.8	27.8	27.2	26.4	25.1	23.1	20.2	18.3	17	15.8	***28.5***	21.5	24
5	14.9	14.3	13.5	13	12.8	13.6	16.1	19.9	21.7	23.9	25.4	26.4	26.8	25.5	20.9	17.5	16.7	17.1	17.4	17.3	16.3	15.8	15.4	15.5	26.8	18.2	24
6	15.3	15	14.9	14.4	14	14.9	16	17.6	20	21.4	22.6	24.2	24.3	25.5	26.1	25.9	25.9	26.3	25.9	22.7	19.9	18.3	16.8	16.6	26.3	20.2	24
7	16	16.3	16	15.6	15.2	15.2	16.7	18.5	20.7	22.3	23.5	23.9	24.1	24.5	24.5	24.5	23.6	22.4	21.9	19.7	15.9	14	12.8	11.7	24.5	19.1	24
8	10.8	10.8	11.4	11	10	10.2	13.8	16.9	19.9	21.7	22.7	23.9	24.3	24.1	23	19.8	16.3	15.7	15.3	15.3	15.1	14.6	14.7	14.6	24.3	16.5	24
9	14.6	14.1	13.3	12.9	12.7	12.8	13.1	13.4	14.1	15.3	16.5	17.2	16.1	15.5	16.9	18	18.3	19	19.1	16.8	12.9	11.5	10.8	10.2	19.1	14.8	24
10	9.7	9.3	9.7	10.2	10.7	11.1	12.1	13.9	15.5	16	17	18.3	19.5	22.4	22.4	23.9	23.9	23.7	23	20.4	15.8	14	12.8	12	23.9	16.1	24
11	11.4	10.9	10.4	9.8	9.3	9.6	14.4	17.6	20.4	22.9	24.5	25.3	26.3	26.8	27.1	27.1	27.1	27.2	26.9	22.8	18.6	16.8	15.7	14.9	27.2	19.3	24
12	14.2	13.5	12.8	12.2	11.6	11.5	15.7	20.3	22.6	23.8	24.9	26.2	27.1	27.7	27.9	27.6	27.7	27.3	26.3	24.1	21.9	21	19.9	20	27.9	21.2	24
13	19.3	18.8	16.8	16.2	15.9	16.2	18.3	19.7	20	21.3	23.2	24.3	23.8	23.3	22.9	22.3	21.1	21	21.7	21.4	20.5	19.3	17.8	16.5	24.3	20.1	24
14	15.7	14.9	14.1	13.7	13.6	13.9	14.9	16.3	18.2	21.1	23.4	25.8	26.4	27.5	28.2	28.2	27.9	27.6	24.9	21.2	18.6	17.2	16.2	15.4	28.2	20.2	24
15	14.5	13.8	13.2	12.7	12.3	12.1	13.8	17.3	20.1	23	24.8	26.4	27.1	27.9	27.9	27.6	27.2	26.4	24.4	21.8	20.4	19.7	18.7	17.5	27.9	20.4	24
16	16.6	16	15.4	14.9	14.4	14.2	16.1	18.7	20	21.9	23.3	24.7	25.4	25.7	25.4	25.1	24.6	24.5	23.4	21.5	19.4	18.1	17.3	16.4	25.7	20.1	24
17	15.7	15.1	14.5	14.2	14.1	14.7	15.8	17.6	20	22.9	24.3	25.1	18	20	23.7	25.3	25.3	25.5	24.3	21.6	19.4	16.8	15.4	14.4	25.5	19.3	24
18	13.7	13.3	12.4	11.9	11.8	11.7	14.1	17.2	19.8	22.9	24.4	25.2	26.7	26.6	26.9	26.3	25.9	24	22.6	21.2	19.4	17.9	17.1	16.5	26.9	19.6	24
19	16.5	16	17.1	17.1	16.5	15.9	16	16.6	18.3	19.2	21	21.6	22.3	23	24	23.5	24.1	24.1	21.1	18.9	17.1	16.7	15.4	14.8	24.1	19.0	24
20	14.6	13.8	13.4	12.5	11.8	11.6	12.2	14.2	16.8	18.5	19.7	19.8	19.8	18.9	18.7	19.3	17.2	17.9	16.1	14.5	13.1	13	11.3	10.8	19.8	15.4	24
21	10.9	11.3	11.3	10.9	10.6	10.1	10.4	11.7	12.6	13.2	14	14.4	14.8	14.5	15.2	15.4	15.6	14.7	14.3	12.7	11	7.8	7.3	8.3	15.6	12.2	24
22	8.8	9	8.8	8.8	8.6	8.8	10.5	12	13.1	14.3	14.4	14.2	14.5	15	15.2	15.4	15.9	15.7	15.7	11.9	9.3	9.5	8.7	9	15.9	12.0	24
23	8.5	7.4	7	7.6	7.7	6.7	8.1	12.6	14.2	15.1	15.6	16.3	16.3	16.8	17.6	18	17.8	18.1	17.3	15.4	14.4	13.5	12.8	12.1	18.1	13.2	24
24	11.9	11.4	11	10.9	10.7	10.3	12.3	13.2	14.9	15.5	16.1	16.6	17.3	17.6	18	18.3	18.2	17.7	17	14.6	11.7	9.7	8.1	6.9	18.3	13.7	24
25	5.8	5.1	4.1	3.5	2.8	***2.6***	5	9.8	12.9	15.3	17.1	18.3	18.5	18.5	19.8	19.7	19.3	18.5	16.7	14.9	14.4	13.6	13.1	13	19.8	12.6	24
26	12.5	11.4	10.2	9	8.5	9.4	10.7	14.1	15.3	18.3	20.9	22.1	22.6	23.5	24.6	24.7	24.2	24	21.9	19.3	18.4	16.7	15.5	14.6	24.7	17.2	24
27	15.3	15.5	14.8	14.8	14.6	14.3	14.8	17.1	18.8	21	23.4	23.9	23.8	24.7	24.3	24.4	24	23.4	21.9	17.6	15.7	13.9	14.4	14.7	24.7	18.8	24
28	14.2	13.9	13.5	13.3	13.2	13.2	13.2	15.1	17	17.7	18.6	19.3	19.4	19.7	20.1	20.1	19.6	18.7	17.2	13.7	9.9	8	6.8	5.7	20.1	15.0	24
29	5	4.3	4.2	4.4	4	3.9	6.4	10.3	12.8	15.5	18	19.3	20.3	20.7	20.6	20.4	19.5	18.8	17.5	16.5	15.9	15.1	14.3	14.3	20.7	13.4	24
30	12.6	12.3	11.8	11.7	11.4	11	11.3	11.9	13.3	13.8	15.8	16.6	18	18	18.7	19.1	19.3	19.6	18.2	14.3	11.2	9.7	8.6	7.5	19.6	14.0	24
31	6.6	5.8	5.9	6.6	7.2	7.3	8.5	11.3	13.6	15.9	17.3	18.3	18.8	18.1	18.6	18.2	16.8	14.3	13.4	12.5	10.3	9	10.1	9.4	18.8	12.2	24
HOURLY MAX	19.3	18.8	18.4	17.5	16.8	16.7	18.5	21.7	23.4	25.4	26.6	27.7	28.5	28.2	28.2	28.2	27.9	27.6	26.9	24.2	21.9	21	19.9	20			
HOURLY AVG	13.3	12.7	12.3	12.0	11.7	11.7	13.4	15.7	17.6	19.3	20.7	21.6	21.9	22.3	22.6	22.5	22.1	21.7	20.7	18.5	16.3	14.9	14.1	13.5			

STATUS FLAG CODES

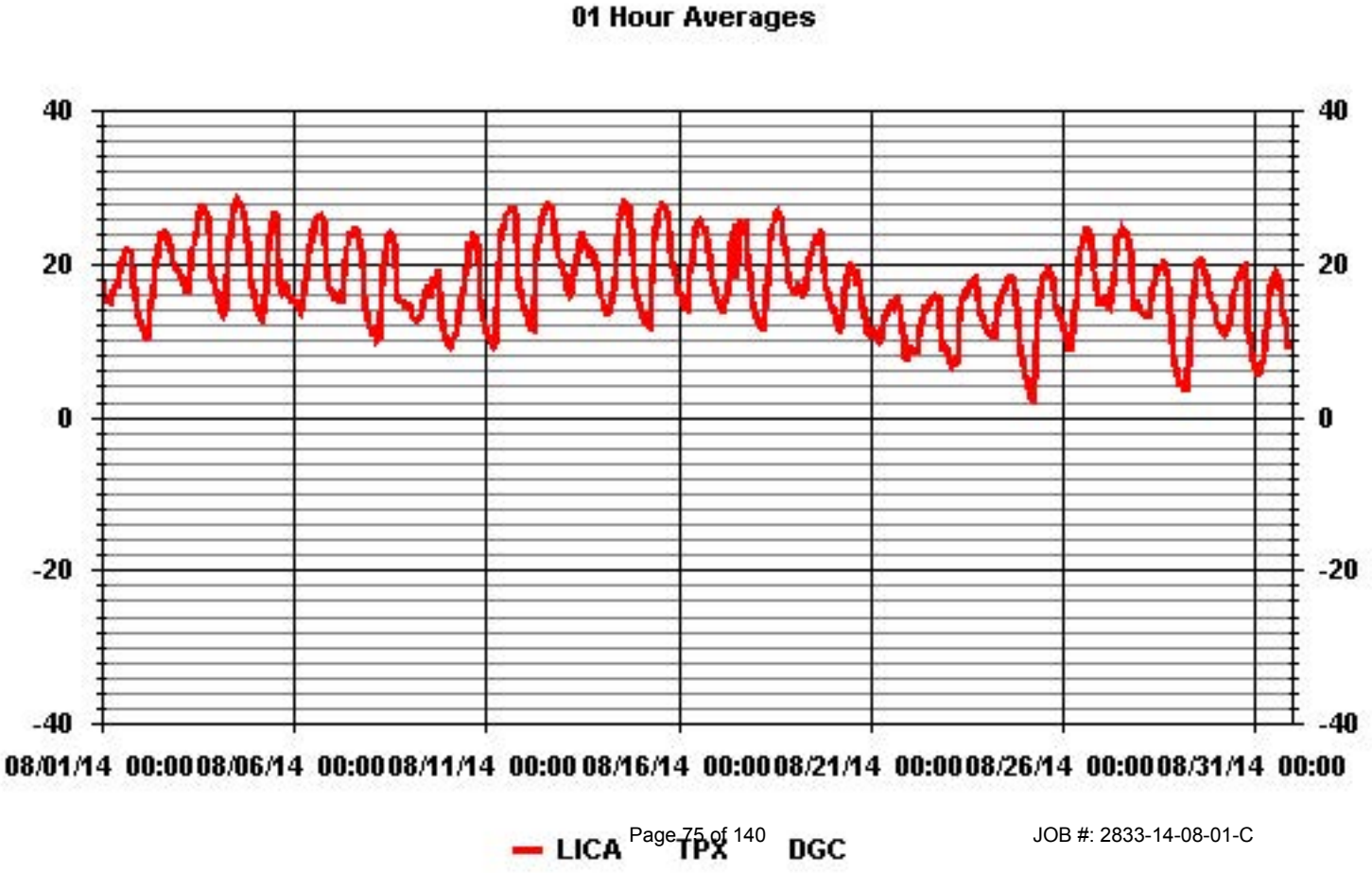
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	2.6	°C	@ HOUR(S)	5	ON DAY(S)	25
MAXIMUM 1-HR AVERAGE:	28.5	°C	@ HOUR(S)	12	ON DAY(S)	4
MAXIMUM 24-HR AVERAGE:	21.7	°C			ON DAY(S)	3
					VAR-VARIOUS	

OPERATIONAL TIME:		744	HRS
AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	5.45	MONTHLY AVERAGE:	17.21 °C



JOB #: 2833-14-08-01-C

Relative Humidity

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 2014

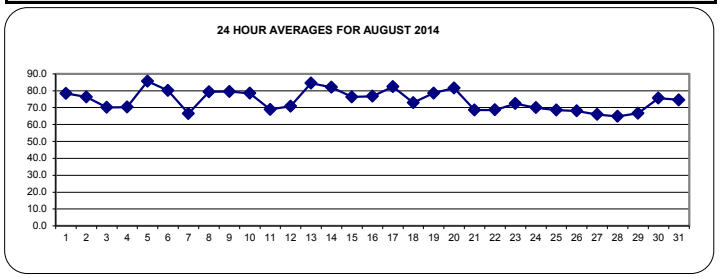
RELATIVE HUMIDITY (RH) hourly averages in %

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	79	92	95	95	90	94	93	86	84	82	77	72	68	62	56	55	54	53	54	69	86	93	96	96	96	78.4	24
2	97	97	96	96	97	98	93	85	77	72	69	61	58	54	54	55	56	59	65	72	79	80	80	81	98	76.3	24
3	81	82	81	87	91	91	88	81	70	69	65	60	52	44	41	41	42	44	47	69	82	91	91	94	94	70.2	24
4	93	97	97	97	98	97	85	72	63	58	53	47	38	37	34	34	43	53	65	69	82	89	92	94	98	70.3	24
5	96	95	95	96	96	95	88	79	72	60	57	53	52	58	81	93	96	97	97	98	99	***100***	***100***	***100***	***100***	***85.5***	24
6	***100***	***100***	***100***	***100***	***100***	***100***	***100***	98	84	75	72	65	63	57	54	52	52	52	56	75	86	91	96	95	***100***	80.1	24
7	96	96	95	94	93	89	82	75	63	55	43	40	38	37	34	34	36	40	45	61	80	87	90	92	96	66.5	24
8	93	94	95	95	95	96	86	76	64	56	49	45	43	45	47	63	88	94	96	95	95	97	99	99	99	79.4	24
9	***100***	99	96	95	94	92	89	85	78	72	65	63	68	70	62	61	59	55	58	72	90	94	95	96	***100***	79.5	24
10	96	97	97	97	98	98	98	93	84	86	80	75	69	56	55	46	44	43	47	62	85	90	93	94	98	78.5	24
11	95	95	96	96	96	96	84	74	66	58	51	48	43	39	38	38	37	39	42	66	82	88	92	94	96	68.9	24
12	95	95	96	96	96	96	84	73	66	62	59	53	44	43	46	47	47	50	57	67	77	80	85	84	96	70.8	24
13	85	85	93	95	94	93	83	78	79	75	69	66	66	69	72	80	91	94	85	88	92	96	98	99	99	84.4	24
14	99	99	99	99	99	***100***	***100***	***100***	***100***	86	77	70	69	60	43	41	43	55	69	83	91	93	96	96	***100***	82.0	24
15	97	97	97	97	97	97	95	90	82	66	61	54	47	47	46	48	52	57	68	79	84	87	91	94	97	76.3	24
16	95	95	96	96	96	95	89	84	78	70	65	60	60	55	45	45	53	57	66	77	87	91	93	95	96	76.8	24
17	96	97	98	99	99	***100***	***100***	96	81	69	67	67	94	85	68	54	54	57	63	74	79	90	95	96	***100***	82.4	24
18	97	97	97	97	98	98	96	89	79	65	56	50	42	42	41	41	45	52	61	67	77	83	89	90	98	72.9	24
19	88	91	83	83	88	96	98	98	90	85	73	70	63	63	57	55	50	51	67	77	86	86	93	94	98	78.5	24
20	93	95	96	97	97	97	96	86	75	68	61	62	62	66	66	62	73	72	75	82	94	91	95	96	97	81.5	24
21	96	93	90	88	87	87	80	72	66	58	53	51	50	50	45	46	44	49	54	59	63	85	90	90	96	68.6	24
22	91	90	90	92	92	93	85	76	68	55	49	50	48	45	42	41	39	40	42	75	86	84	87	87	93	68.6	24
23	91	93	94	94	93	94	94	65	54	50	50	52	54	55	54	55	56	57	64	75	81	85	87	90	94	72.4	24
24	90	92	94	95	93	94	85	79	68	61	57	53	44	43	43	41	43	45	48	62	80	87	90	92	95	70.0	24
25	93	94	94	94	95	95	92	83	73	62	56	47	44	44	41	42	44	47	58	68	68	70	71	69	95	68.5	24
26	70	76	82	86	88	86	81	71	69	62	56	53	52	49	44	44	46	47	58	75	78	84	86	89	89	68.0	24
27	87	84	87	87	89	91	91	79	72	64	52	45	41	37	***32***	39	39	39	43	65	76	84	81	79	91	66.0	24
28	82	82	84	85	86	88	87	77	60	54	46	41	40	42	39	36	36	39	43	61	80	87	90	92	92	64.9	24
29	93	93	93	93	93	94	91	80	73	64	54	47	41	40	40	39	43	49	55	59	61	65	70	69	94	66.6	24
30	86	85	89	90	92	94	95	94	89	86	75	69	58	52	48	46	46	44	49	68	84	90	92	93	95	75.6	24
31	94	95	95	96	95	94	91	81	70	61	55	51	45	48	48	46	50	66	74	77	88	92	87	90	96	74.5	24
HOURLY MAX	100	100	100	100	100	100	100	100	100	86	80	75	94	85	81	93	96	97	97	98	99	100	100	100			
HOURLY AVG	91.7	92.6	93.2	93.8	94.0	94.5	90.3	82.4	74.1	66.6	60.4	56.1	53.4	51.4	48.9	49.0	51.6	54.7	60.4	72.5	82.5	87.4	90.0	90.9			

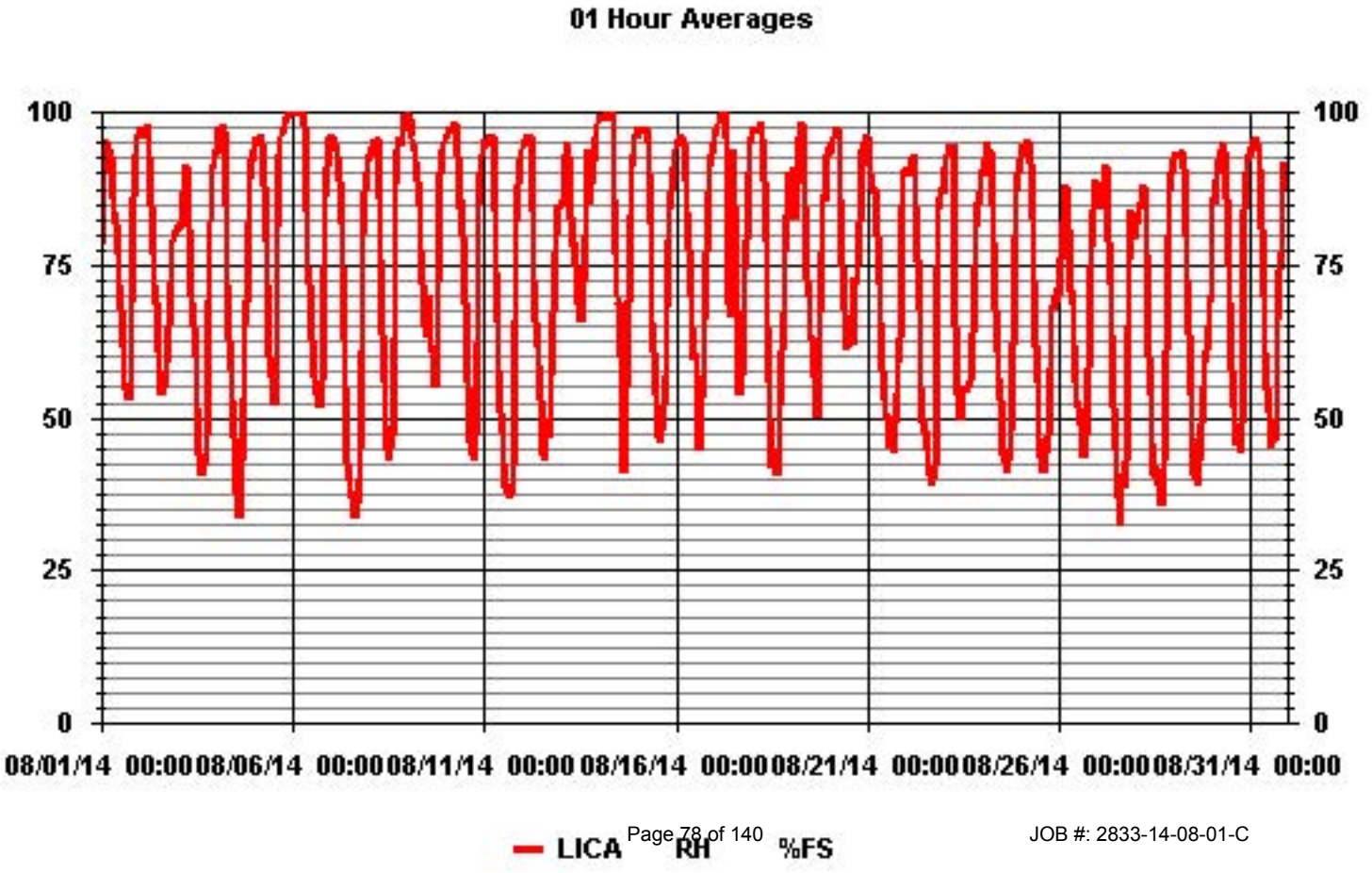
STATUS FLAG CODES

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:	100	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	85.5	%			ON DAY(S)	5
					VAR-VARIOUS	
			OPERATIONAL TIME:		744	HRS
			AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	19.75		MONTHLY AVERAGE:		74.28	%



JOB #: 2833-14-08-01-C

Vector Wind Speed

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 2014

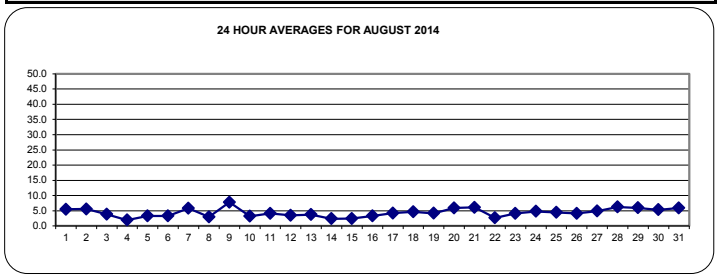
WIND SPEED (WS) hourly averages in km/hr

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	7.4	4.6	1.5	4.2	8.8	9.2	7.7	7.2	7	7.6	7.7	5.9	5.2	6.8	8.8	8.1	7.6	6.3	4.1	2.5	2	0.3	0.5	0.4	9.2	5.5	24
2	0.5	0.9	0.8	0.4	0.2	2.2	4.8	8	8.9	8.7	8.2	7.4	6.5	7.7	10.8	7.9	8.9	8.9	5.4	6	3.6	6.7	5.2	5	10.8	5.6	24
3	4.9	5.2	9	6.8	3.6	4.7	5.4	4	0.8	3.5	5.9	6.4	3.6	3.8	2.7	3.6	3.3	5.1	4	1.6	0.8	1.3	1.4	1.2	9.0	3.9	24
4	0.4	0.5	0.7	1.6	0.5	0.5	0.8	2.1	1.9	3.3	2.7	2	1	1.9	4.5	4.9	3.2	3.2	3.7	3.7	1.1	0.8	0.6	1.1	4.9	1.9	24
5	0.6	0.7	0.8	0.5	0.1	0.5	0.5	5.2	5.7	8.5	8.7	8.3	7.5	3.6	2.3	6.1	0.3	2	0.4	1.6	3.3	4.3	5.1	2.5	8.7	3.3	24
6	0.5	0.6	0.9	0.3	0.9	0.3	0.6	1.5	5.2	6.6	4.8	4.6	4.5	7.1	7.6	7.6	7.8	5.7	3.7	1.5	2.1	1.4	1.4	2.9	7.8	3.3	24
7	2.1	4	4.4	1.6	4	5.1	5.3	5.6	5.4	6.8	8.3	9.5	10.4	11	11.8	9.9	9.5	9.3	7.4	2.2	2.4	2	1.1	0.6	11.8	5.8	24
8	0.9	0.3	0.5	0.7	0.6	0.7	0.2	2.6	0.5	2.9	4.4	4.6	5.5	7.3	8.9	6	5.8	1.7	5.4	3.1	2.5	0.6	1.5	3.2	8.9	2.9	24
9	4	8.8	11.1	10.3	10.9	9.9	9.1	11.8	13.5	***15***	13.2	11.3	10.7	9	9.6	4.8	7	7	4.3	1.6	1.1	0.9	0.9	0.7	***15.0***	***7.8***	24
10	0.6	0.3	1	0.5	0.4	0.5	1.1	1.4	1.8	1.8	3	6.4	8	7.1	3.8	7.6	9.3	10.1	6.3	2.8	0.7	0.6	0.7	0.7	10.1	3.2	24
11	0.5	0.4	0.5	0.7	0.8	0.4	2.2	4.2	4.7	5.5	6.6	8.7	10.7	10.5	9.7	9.2	8.4	6	3.5	2.6	0.9	0.7	0.3	1.1	10.7	4.1	24
12	0.3	0.2	0.5	0.4	0.2	1.2	0.6	1	2.6	2.4	3.8	3.9	5.7	5.3	5.8	7.3	7.4	7.8	5.6	3.7	2.9	3	4.4	6.7	7.8	3.4	24
13	6	4.2	0.4	0.4	0.8	2	6	7.4	9.4	9.7	9.7	7.1	5.4	4	3.7	1.9	0.7	1.5	4.1	2.3	1.1	0.3	0.5	0.3	9.7	3.7	24
14	0.6	0.5	1.2	1	0.3	1.3	1.3	2.9	2.9	4.3	3.9	3.7	5.1	5.6	5.2	5.6	3.9	2.2	2.7	0.7	1.1	0.6	0.1	0.6	5.6	2.4	24
15	1.5	0.6	0.5	0.5	0.5	0.5	1.2	2.6	3.3	2.9	2.9	3.9	5.4	4.3	4.9	4.1	3.8	2.6	2.8	3.5	2.2	2.7	0.8	0.4	5.4	2.4	24
16	0.8	0.5	0.1	0.6	0.7	0.8	1.4	4.4	3.6	4.5	5.5	7	7.4	7.6	7.6	8.3	5.3	4.1	3.9	2.5	0.6	1.1	0.7	0.3	8.3	3.3	24
17	0.5	0.9	0.2	0.8	1.2	1.7	1.5	3	3.8	4	6.1	9.3	8.1	7	7.7	8.1	9.4	7.2	5.8	4.6	4.6	2.2	1.7	1.7	9.4	4.2	24
18	1.9	1.4	0.7	0.9	0.7	0.6	1.7	3.6	6.1	5.9	6.2	7.6	10.6	9.8	10.7	10.9	9.4	6.4	3.3	2.6	1.4	2.9	2.7	2.8	10.9	4.6	24
19	0.8	2	3	6.3	8.1	7	2.5	2.1	3.4	3.8	5.1	5.2	6.2	5.4	6.2	5.6	7	4.3	2.6	2.3	2.8	3	2.4	2.8	8.1	4.2	24
20	2.2	2.9	2.6	2.6	3.2	4.4	4.1	5.8	7.2	8.1	8.5	8.9	11.6	11.3	9.9	8.4	4.6	5.1	7.8	5.5	5.2	4	4.1	3.3	11.6	5.9	24
21	3.6	5.7	6.6	6.5	5.5	6.4	7.4	9.2	10.6	9.8	8.2	6.9	7.9	7.9	8.5	5.1	7.2	6.6	3.4	3.9	3.8	2.5	1.8	0.9	10.6	6.1	24
22	1.6	1.7	0.8	0.8	0.5	0.5	0.8	2.4	2.2	4.4	5.8	4.8	4.5	4.5	4.9	4.4	5.7	5.6	3.1	1.6	1	0.7	0.8	0.2	5.8	2.6	24
23	0.9	0.3	0.3	0.5	0.1	0.3	1.1	4.8	6.5	5	5.2	6.3	6.9	5.8	4.7	5.2	5.9	5.6	4.9	6.4	5.6	5.7	6.1	4.8	6.9	4.1	24
24	3.5	3.3	2.9	2.6	2	0.7	4.3	5.5	5.5	6.6	8.2	8	8.9	9.6	9.5	8.8	9.4	6.8	5.1	1.4	1	0.3	0.5	0.7	9.6	4.8	24
25	1.3	0.4	0.6	0.7	0.9	0.8	0.6	1.1	5.2	4.9	6.6	5.1	4.1	4.1	4.6	5.7	5.5	7.9	5.9	6.6	8.2	8.4	8	8.8	8.8	4.4	24
26	6.7	2.6	3.3	1.2	2.2	1.1	2.6	3	2.8	3.8	3.6	5	7.2	7.1	10.3	9.4	9	7.5	3	1.6	2.1	0.9	1.7	1.3	10.3	4.1	24
27	1.2	1.5	1.2	1.5	0.7	1.1	1.4	1.8	2.7	3.8	8.7	10.2	10.7	12.8	11.2	10.5	10.3	8.9	5.2	2.7	1.7	1.7	1.9	3.8	12.8	4.9	24
28	4	3.9	4.1	4.9	4.1	4.6	5.3	6	9	6.5	6.3	7.4	10.7	10.7	12.1	12.7	12.5	11.7	7.2	2	1.1	1	0.8	1.4	12.7	6.3	24
29	0.5	0.7	0.5	0.5	0.4	0.4	0.6	5.6	7.6	9.3	11	10.6	6	6.7	8	7.1	6.7	6	7.2	7.2	9.2	9.1	10.5	11	11.0	5.9	24
30	6.5	5.3	1.1	2.8	0.9	2.4	2.4	4.4	7.7	8.2	9.2	9.7	10.5	9.9	9.1	8.3	6.6	8	7	2.3	2.2	2.3	0.7	0.6	10.5	5.3	24
31	0.4	1.1	2.1	3	3.9	4.3	3.6	5.3	6	7.6	9.5	9.9	10.3	11.5	10.5	10.6	10	6.4	6.1	5	2.5	3.6	5.9	3.1	11.5	5.9	24
HOURLY MAX	7.4	8.8	11.1	10.3	10.9	9.9	9.1	11.8	13.5	15.0	13.2	11.3	11.6	12.8	12.1	12.7	12.5	11.7	7.8	7.2	9.2	9.1	10.5	11.0			
HOURLY AVG	2.2	2.1	2.1	2.1	2.2	2.5	2.8	4.4	5.3	6.0	6.7	7.0	7.3	7.3	7.6	7.2	6.8	6.0	4.7	3.1	2.6	2.4	2.4	2.4			

STATUS FLAG CODES

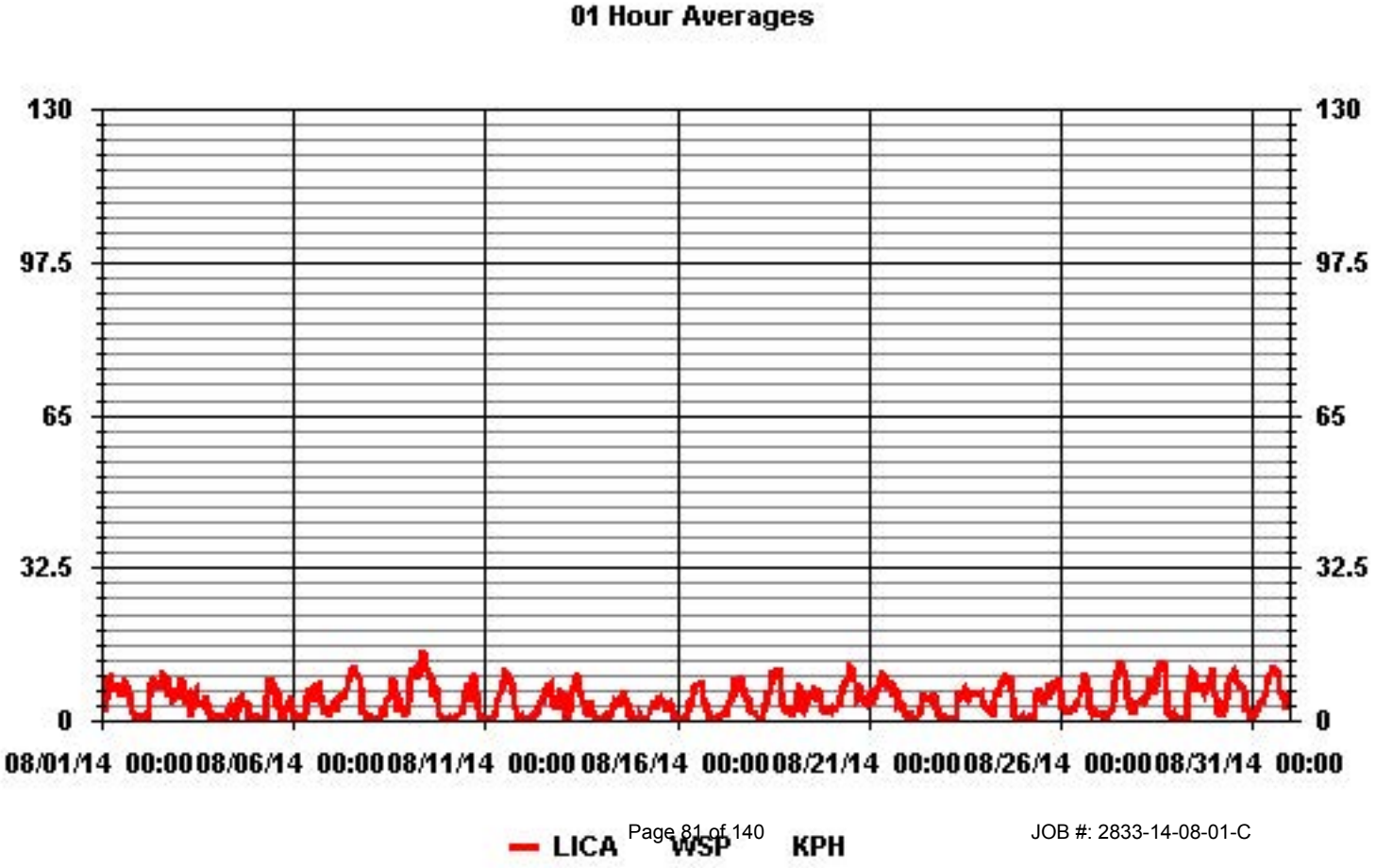
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	744						
MAXIMUM 1-HR AVERAGE:	15.0	KPH	@ HOUR(S)	9	ON DAY(S)	9	
MAXIMUM 24-HR AVERAGE:	7.8	KPH			ON DAY(S)	9	
					VAR-VARIOUS		
			OPERATIONAL TIME:		744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	3.25		MONTHLY AVERAGE:		4.39	KPH	



JOB #: 2833-14-08-01-C

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

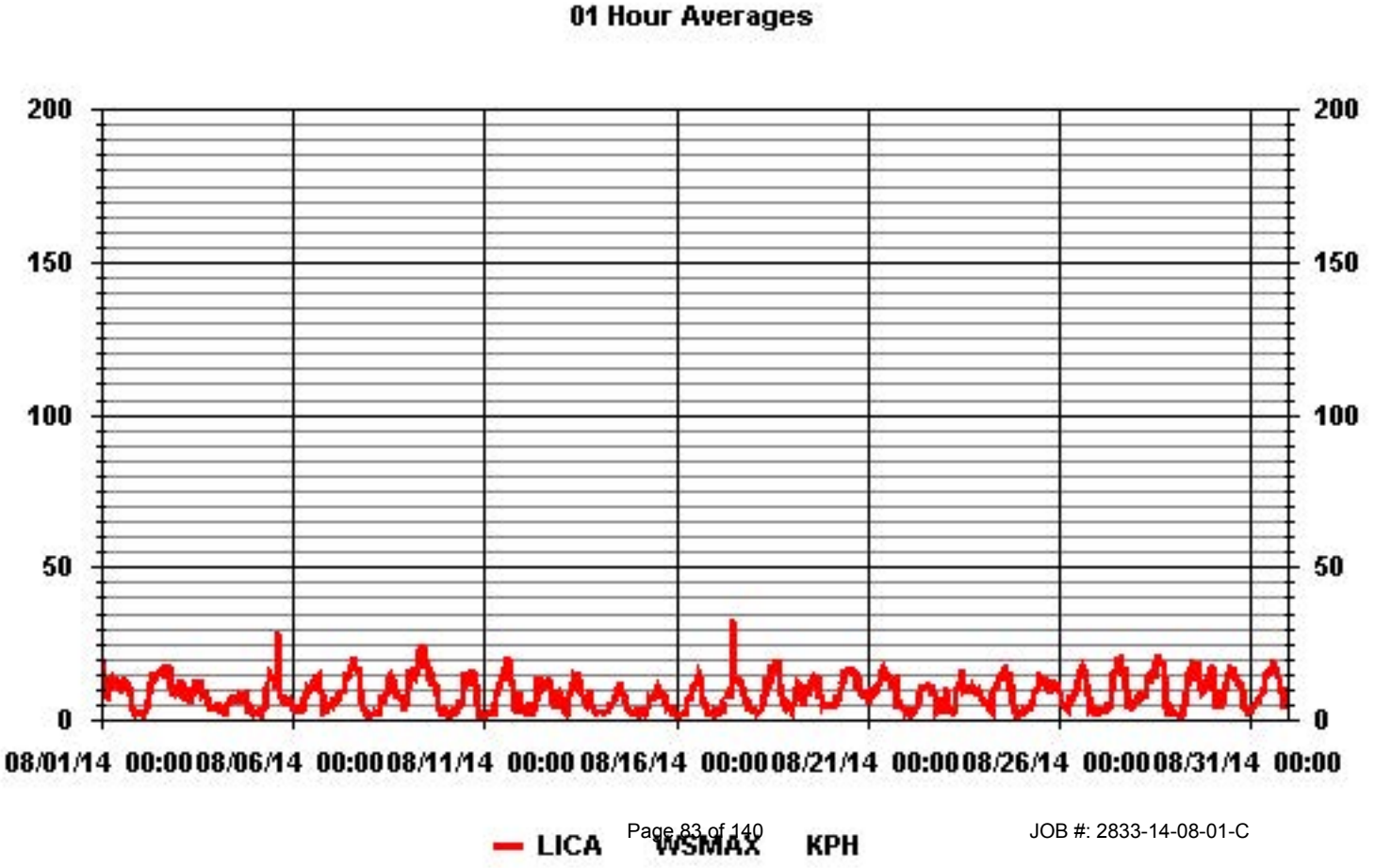
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	19.5	12.2	8	7.7	12.6	13.1	13.9	11.4	11.8	12.7	12.7	10.4	9.9	11	13.7	13.5	12.9	11.3	8.6	4.8	3.6	1.9	2.4	2.9	20	10.1	24
2	2.3	2.4	1.6	2.5	3.5	6.3	8.2	11.9	15.3	12.8	14.8	15.1	15.2	16.2	17	16.3	14.4	14.5	17.7	10.7	7.6	8.8	9.9	8.5	18	10.6	24
3	9	8.7	13.3	10.2	6.2	8.2	8.1	10.3	4.9	7.8	11	13	11	11.6	8.5	9.2	8.6	9.7	6.1	6.5	2.5	4.5	3.9	3.3	13	8.2	24
4	3.3	5.7	3.4	3.7	3.7	2.3	2.5	5	5.7	6.7	7.1	7.5	7.6	7.1	8.4	7.6	7.1	8.4	8.8	6.4	3.3	2.8	2	3.2	9	5.4	24
5	2	2.1	2.4	2	4.1	2.5	3.9	10.4	12.3	15.5	14.9	14.5	13.2	9.9	29	26.5	7.7	7.5	6.3	4.6	6.7	6.2	6.8	5.1	29	9.0	24
6	4	2.4	4.5	3.3	3	3.9	2.4	7.1	9	11	10.3	11.2	9.5	13	14	14.4	15	10.6	9.2	3.2	3.6	3.2	4.4	5.3	15	7.4	24
7	4.6	6.4	6.7	5.8	6.5	8.5	9.4	9.7	9.6	14.6	14.3	15.6	16.9	16.8	20.2	16.7	16.2	16.4	10.8	6.4	4.2	3.6	2.1	1.5	20	10.1	24
8	1.9	1.8	2	3	2.4	2.2	2.1	8.4	5.5	7.9	8.7	9	13.6	14.8	13.4	10.6	10.3	6.6	8.5	7.9	6.7	3.4	4.5	7.9	15	6.8	24
9	9.8	16.5	15.3	14.6	17.1	14.2	16.8	23.3	22.2	24.5	19.5	19.4	17.7	12.9	16.2	10.9	12.2	11.7	8.5	3.7	2.6	2.3	3.4	2.5	25	***13.2***	24
10	2	1.1	2.5	2	3	3.1	2.6	3.8	6.3	4.8	6.4	9.9	15.4	13.8	11	15.4	15.1	16.4	11.9	4.8	1.6	1.4	2.4	2.1	16	6.6	24
11	1.8	2.3	2	2.2	2.5	2.3	5.4	7.4	9.5	10.4	12.5	14.6	16.8	17.4	20.1	19.9	13.5	12.1	8.8	3.9	3.4	1.6	9.2	3.7	20	8.5	24
12	3	3.8	4.4	2.7	2.2	2.5	2.3	3.2	6.1	13.8	8.4	9.9	12.1	11.4	12.3	10.9	14.1	12.4	10.6	6	4.5	4.5	7.6	8.9	14	7.4	24
13	8.1	6.6	2.7	2	2.4	7.4	9.3	12	14.8	14.2	15.6	14	9.3	8.4	6.9	6.6	5.4	6.7	9.6	5.5	4.2	3	2.4	2.6	16	7.5	24
14	2.5	2.6	2.7	2.4	2.7	2.9	3.8	5	5.8	7.2	7.4	9.9	9.5	12	8.9	8.6	6.2	4.5	3.8	3	2.4	2.8	2.3	2.5	12	5.1	24
15	4	2.4	2.9	3.3	2.3	3.4	3.9	7.3	6.8	6.7	7.1	9.2	10.7	9.4	9.4	7.8	8.8	5.2	4	4.6	4.3	4.4	2.4	2.2	11	5.5	24
16	1.5	2	1.5	1.9	2	2.1	2.9	7.6	6.1	8.2	9.4	11.5	12.4	13.9	15.7	14.7	7.5	6.4	6.1	4.2	2.3	2.1	2.4	1.9	16	6.1	24
17	3.9	3.5	3.3	2.5	3.2	6.1	3.3	**P**	8	7.9	10.8	***32.9***	22.8	11.6	13.5	11.8	14.1	11.7	8.5	6.1	6.3	4.2	3.8	3.1	***33***	8.8	23
18	3.3	3.3	2	2.3	2.5	3	4.1	7.8	13.8	10.9	11.8	12.4	18.1	15.3	19	19.2	16.7	12	8.1	5.2	3.9	4.8	3.7	4	19	8.6	24
19	2.9	5	5.9	10.6	12.4	11.6	8.9	4.9	6.3	7.4	10.4	9.9	12.3	13.2	10.4	12.5	14.9	7.5	8.6	4.7	5.4	4.5	4.6	4.7	15	8.3	24
20	4.5	4.2	4.3	5.8	8.3	6.9	7.9	10.7	11.9	15.7	16	16.7	16.4	16.4	17.3	13.9	16.3	10	15.1	9.8	8.4	8.9	9.3	7.7	17	10.9	24
21	5.4	7.8	10.3	9.1	8.3	8.8	11.2	12.5	15.7	17	15.4	12.3	15.8	13.5	14.8	10.4	13	13.4	5.3	5.7	5.9	4.2	4.1	2.3	17	10.1	24
22	3	3.5	3.1	2	4	1.7	3.3	7.6	7	9.5	11.4	9.9	11.6	10.2	12.5	9.9	10.4	9.4	8	2.7	3.4	4.9	5.6	3.8	13	6.6	24
23	2.5	10.4	3.1	1.7	3.9	2.3	2.6	10.4	11.3	9.4	15.1	15.1	10.6	11.4	11	10.8	8.7	11.1	10.1	10.8	10.4	7.8	9.3	7.9	15	8.7	24
24	6.9	5.4	5.1	5.5	3.7	3.1	9.1	10.2	10.5	11.8	13.4	14.2	15.4	17	17.4	14.3	14.6	10.6	10.7	5.8	3.1	1.6	1.5	2.2	17	8.9	24
25	2.5	3.6	2.7	3.6	4.1	2.6	4.4	6.8	9	9.7	10.6	15.5	11.5	12.7	13.4	14.3	9.9	11.3	8.7	9.9	12.9	10.9	10.5	11	16	8.8	24
26	9.4	5.3	5.1	4.9	4.1	3.2	4.7	7.9	6.2	9.4	8.3	9.1	13.1	16.3	17.9	16.7	15.2	12.2	8.5	3	3.3	2.8	5	3	18	8.1	24
27	2.4	3.2	3	3.3	2	4.4	4	4.2	5.8	8.9	15.4	15.9	17.3	19.8	20.3	15.4	15.3	15.7	10.7	4.9	4.7	3.8	3.9	6.3	20	8.8	24
28	7.4	6.4	6.8	8.2	7.5	7.7	8	14.1	14.8	12	14	14.1	19.2	17.1	21.7	20.1	17.8	19.2	15	4.6	2.9	2.7	4.2	3.3	22	11.2	24
29	2.3	1.9	2.2	1.7	1.5	1.9	4.7	8.8	11	15.7	17.2	19.9	13	15.5	16.6	19.3	10.3	8.5	9	10.4	12.5	13.6	13.6	17.1	20	10.3	24
30	18.3	10.3	4.2	5.1	3.7	7.3	5.1	9.4	12.5	13.7	15.2	17.9	14.5	17.5	15.7	13.3	11.2	13.4	10.5	4.3	4.3	3.7	2.3	2.4	18	9.8	24
31	2.6	4	4.4	5.6	6.8	6.6	7.7	10.1	9.9	15.2	14.1	16.3	16.7	18.7	18.8	16.6	16.3	14.4	9.8	9.1	4	6	10.9	4.6	19	10.4	24
HOURLY MAX	20	17	15	15	17	14	17	23	22	25	20	33	23	20	29	27	18	19	18	11	13	14	14	17			
HOURLY AVG	5.1	5.1	4.6	4.6	4.9	5.2	6.0	9.0	9.9	11.4	12.2	13.8	13.8	13.7	15.0	13.8	12.2	11.0	9.2	5.9	5.0	4.5	5.2	4.8			

STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	33	KPH	@ HOUR(S)	11	ON DAY(S) 17
				VAR-VARIOUS	
OPERATIONAL TIME:					743 HRS



JOB #: 2833-14-08-01-C

LICA
WSP / WD Joint Frequency Distribution (Percent)

August 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	1.61	1.88	2.01	2.28	2.82	2.28	11.02	4.30	4.43	3.89	8.06	11.55	4.30	2.41	1.07	1.34	65.32
<	12.0	1.47	1.34	1.61	.26	.26	.40	6.31	2.15	.26	.13	.67	1.74	6.98	2.68	1.47	2.41	30.24
<	20.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.26	.67	.00	.94
<	29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.09	3.22	3.62	2.55	3.09	2.68	17.33	6.45	4.70	4.03	8.73	13.30	11.29	5.37	3.22	3.76	

Calm : 3.49 %

Total # Operational Hours : 744

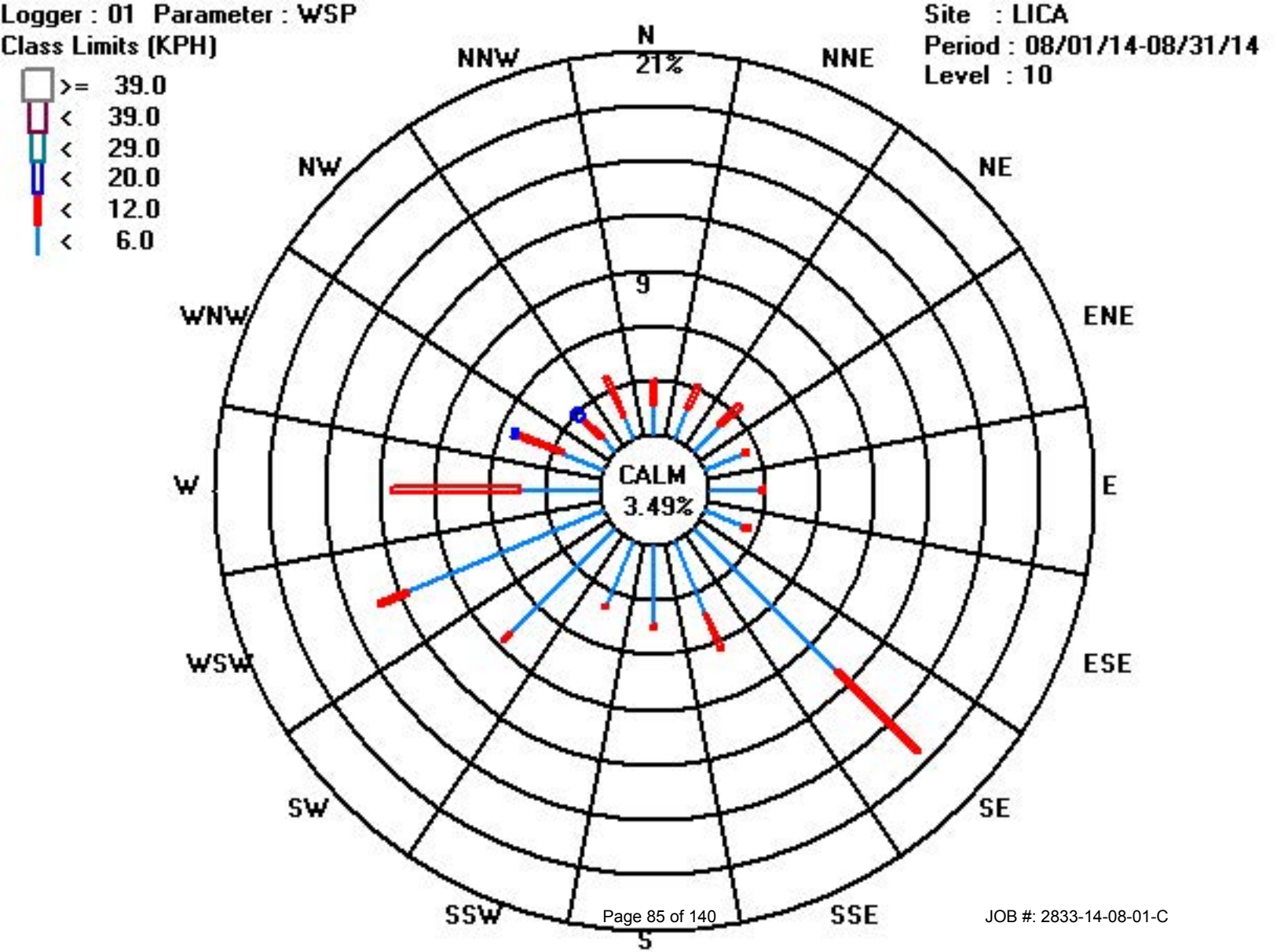
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	12	14	15	17	21	17	82	32	33	29	60	86	32	18	8	10	486
<	12.0	11	10	12	2	2	3	47	16	2	1	5	13	52	20	11	18	225
<	20.0														2	5		7
<	29.0																	
<	39.0																	
	Totals	23	24	27	19	23	20	129	48	35	30	65	99	84	40	24	28	

Calm : 3.49 %

Total # Operational Hours : 744



JOB #: 2833-14-08-01-C

Vector Wind Direction

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 2014

WIND DIRECTION (WD) hourly averages in degrees

MST

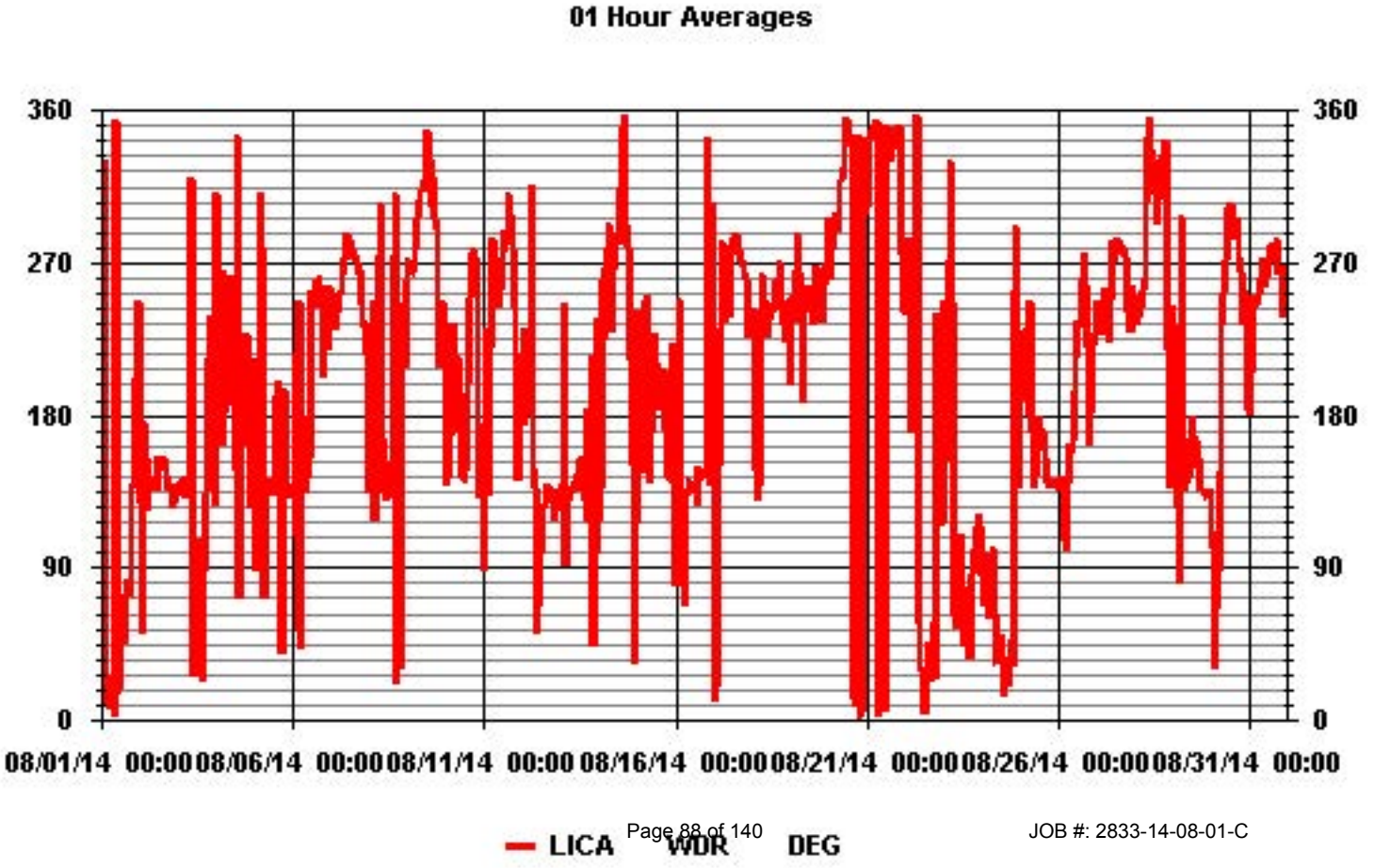
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	321	16	331	8	12	15	6	26	2	355	17	18	49	51	45	74	83	76	75	138	139	201	205	247	355	N	24
2	129	86	50	176	156	123	139	139	135	141	140	155	148	151	148	155	150	145	135	138	125	140	128	138	176	S	24
3	135	132	140	141	130	142	139	143	321	47	26	43	55	107	53	23	87	133	156	214	181	238	137	126	321	NW	24
4	312	209	194	161	265	194	181	186	262	237	220	262	147	345	72	139	162	225	224	229	184	189	124	214	345	NNW	24
5	204	87	179	138	311	280	72	133	141	141	139	137	133	192	144	200	41	39	125	196	141	137	133	133	311	NW	24
6	135	216	110	52	248	41	181	156	134	143	154	160	254	246	244	259	260	257	245	202	241	218	235	257	260	WSW	24
7	249	242	250	230	241	251	253	263	273	275	288	283	283	272	277	275	271	265	265	247	234	234	216	133	288	WNW	24
8	145	170	248	117	223	274	275	305	168	136	133	130	153	134	147	275	312	21	77	30	40	246	207	259	312	NW	24
9	272	268	268	266	268	277	297	307	312	316	315	321	348	339	332	303	322	297	290	247	208	218	248	225	348	NNW	24
10	138	143	158	168	235	228	169	215	192	192	144	143	147	156	199	249	275	279	274	250	177	131	150	159	279	W	24
11	88	231	132	152	220	284	251	247	246	244	253	273	276	289	281	311	299	284	278	245	177	142	147	216	311	NW	24
12	173	232	207	180	214	237	316	149	138	50	67	98	128	125	128	139	132	138	136	134	118	124	134	134	316	NW	24
13	135	139	246	91	104	130	134	137	135	142	141	147	154	156	137	129	184	119	116	215	43	95	98	237	246	WSW	24
14	118	137	260	224	267	279	293	252	229	274	265	287	281	315	346	350	357	293	280	214	150	214	33	115	357	N	24
15	242	218	210	145	176	247	250	144	140	169	206	229	212	191	182	200	208	172	145	144	155	145	222	198	250	WSW	24
16	79	83	249	96	85	67	100	137	133	141	140	138	140	126	149	141	144	146	145	143	344	138	146	306	344	NNW	24
17	11	211	19	150	232	283	234	243	261	237	278	278	285	279	287	275	279	272	269	265	261	226	242	234	287	WNW	24
18	233	243	149	129	138	218	264	246	248	238	226	236	246	243	245	259	261	271	244	234	222	245	246	247	271	W	24
19	198	237	237	266	288	266	237	187	234	240	245	257	255	249	233	238	268	256	259	237	235	256	270	282	288	WNW	24
20	296	260	278	295	299	289	291	318	319	326	338	355	348	342	345	13	8	16	50	345	4	5	307	298	355	N	24
21	302	344	347	345	351	342	355	2	9	20	36	5	352	341	342	330	344	350	343	337	351	276	241	250	355	N	24
22	245	239	284	169	256	185	303	357	58	32	30	16	4	11	46	22	44	58	24	240	210	182	189	115	357	N	24
23	248	153	172	271	330	247	112	63	53	67	88	110	44	50	76	76	36	46	86	100	105	114	122	116	330	NNW	24
24	86	67	99	89	60	67	94	103	64	36	37	34	50	26	14	22	20	37	47	31	253	292	136	218	292	WNW	24
25	230	208	208	189	232	179	248	171	137	144	147	159	180	161	172	166	156	142	139	139	141	141	141	140	248	WSW	24
26	142	136	144	106	130	99	139	163	158	165	194	214	236	231	252	261	275	258	221	162	181	188	222	228	275	W	24
27	247	233	227	243	228	255	228	223	235	248	283	270	279	284	275	278	280	279	274	241	246	228	256	242	284	WNW	24
28	238	233	238	250	243	254	261	305	344	355	338	332	312	306	292	307	317	333	336	343	220	212	136	244	355	N	24
29	234	189	124	153	80	298	167	135	140	142	143	148	180	169	164	163	156	138	137	134	132	133	135	135	298	WNW	24
30	113	102	30	66	87	147	233	252	256	272	303	294	305	287	298	283	296	274	265	234	236	254	182	193	305	WNW	24
31	179	205	251	249	247	248	251	261	273	256	261	271	278	280	282	274	271	284	263	270	238	254	270	254	284	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:	86.82		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	250	DEG



JOB #: 2833-14-08-01-C

Standard Deviation Wind Direction

Lakeland Industry & Community Association - Cold Lake South Site

AUGUST 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST

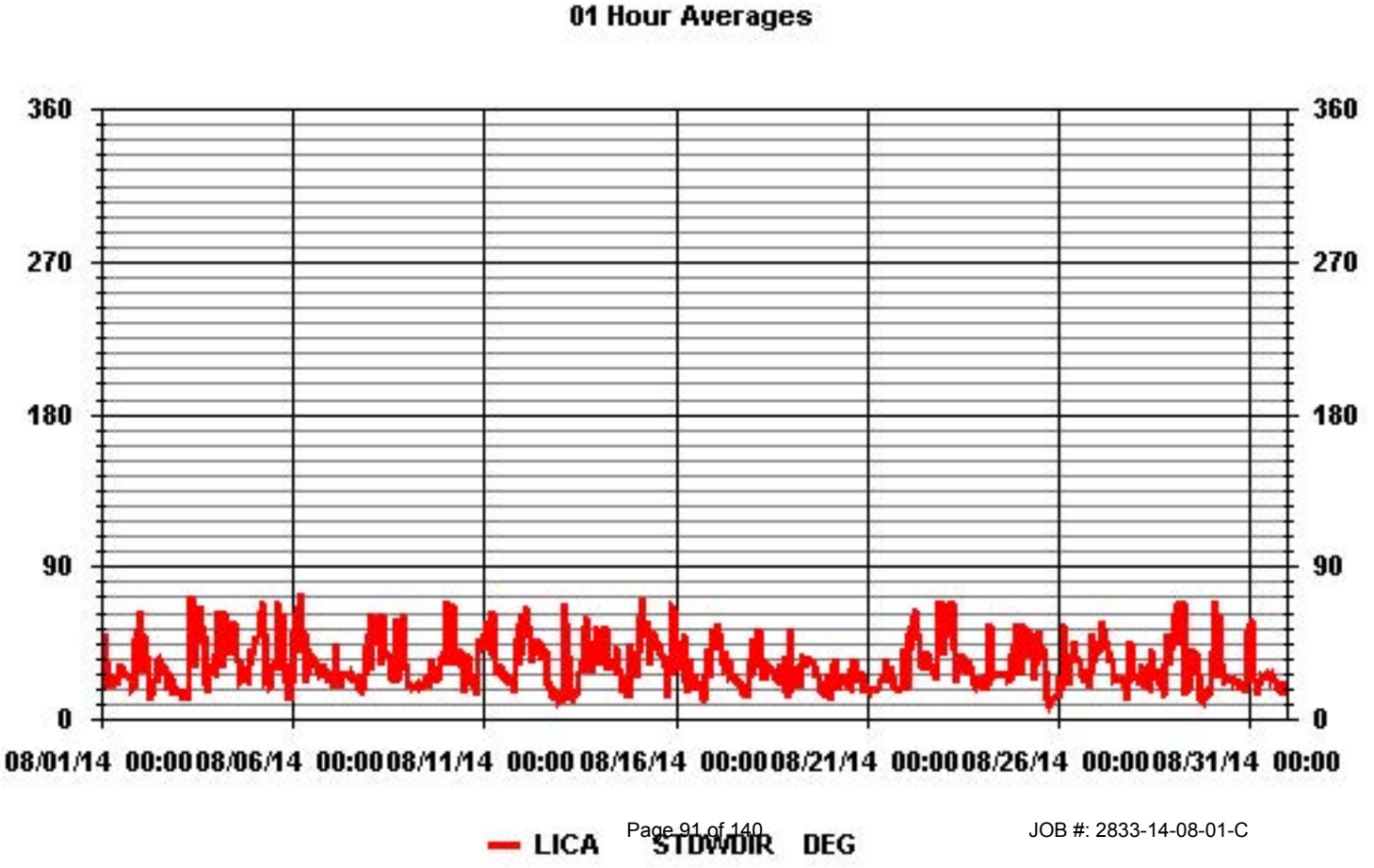
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	25	48	51	36	18	28	18	22	21	21	25	29	33	26	26	26	26	25	25	18	19	48	52	52
2	64	27	31	50	39	30	12	14	17	23	21	35	36	33	26	33	27	20	17	26	25	13	20	15
3	15	17	13	13	18	12	14	33	72	44	32	30	49	45	67	56	50	21	15	25	32	25	30	29
4	39	64	61	30	50	63	50	45	47	38	51	57	55	34	36	23	24	27	25	24	30	32	41	37
5	49	47	48	55	63	70	52	23	24	19	20	32	28	34	70	29	51	49	62	34	23	12	12	21
6	51	55	62	66	39	74	50	52	22	26	42	39	37	30	33	31	26	27	29	33	25	28	28	21
7	24	22	19	45	26	18	23	26	26	27	26	25	27	24	25	24	23	19	18	26	16	26	43	51
8	29	62	52	61	48	50	44	32	62	44	41	39	38	25	23	23	23	59	23	40	33	62	28	33
9	18	21	20	18	19	20	21	18	19	19	21	23	21	19	24	35	21	24	24	22	31	37	34	40
10	59	69	31	57	68	33	38	32	38	41	32	16	19	37	39	28	22	22	20	14	39	48	43	41
11	48	47	57	52	37	64	38	26	29	30	32	26	25	27	26	23	24	23	18	15	48	31	57	37
12	61	61	67	56	49	34	37	45	38	48	43	46	35	39	41	22	22	18	14	12	17	16	10	11
13	11	17	68	52	53	38	13	12	14	15	17	28	32	31	27	55	60	47	33	27	32	46	55	48
14	51	43	31	44	55	28	37	29	33	29	35	43	26	29	26	17	17	19	12	45	27	38	40	28
15	25	39	61	71	51	50	58	43	32	45	52	45	41	45	40	39	38	32	16	13	30	25	66	65
16	28	43	46	39	38	50	22	15	23	36	19	20	27	24	19	18	15	13	10	27	42	24	40	53
17	46	40	56	51	49	36	37	29	30	35	26	27	26	23	24	21	22	21	16	14	14	19	35	28
18	25	48	41	30	53	47	25	24	24	33	32	31	29	29	28	24	23	20	30	30	37	17	12	15
19	54	33	27	18	21	18	33	39	32	30	35	35	31	35	34	32	25	27	19	17	16	19	17	17
20	27	11	17	32	36	16	22	22	25	24	26	21	20	19	30	25	36	29	22	24	24	28	15	21
21	18	16	18	18	17	17	18	19	22	23	27	33	33	27	21	31	27	20	19	17	17	18	42	38
22	17	19	51	40	55	61	65	47	50	40	30	38	29	38	38	33	31	25	30	22	54	69	65	70
23	37	47	61	55	60	69	42	23	23	27	30	38	27	29	36	35	25	31	23	22	20	23	22	23
24	21	18	18	27	19	57	27	26	28	27	26	26	27	26	26	28	24	25	22	38	45	56	50	27
25	27	56	48	54	53	36	52	47	23	32	33	47	52	37	1/28/201	36	29	12	9	11	12	13	13	14
26	14	25	16	57	29	36	20	36	38	40	46	39	33	35	28	26	21	24	29	18	27	51	33	41
27	45	40	41	58	48	53	47	41	35	35	24	25	23	23	24	23	24	22	20	11	44	46	42	25
28	26	25	23	20	32	26	20	20	19	32	42	23	26	27	23	24	22	18	13	32	51	32	42	42
29	63	50	68	43	70	52	70	14	17	18	18	26	39	39	37	37	28	13	11	14	16	17	14	15
30	40	25	69	24	63	35	34	28	23	24	21	25	23	21	23	23	22	22	17	19	16	19	49	48
31	56	60	21	24	16	16	20	25	24	25	25	28	27	24	26	24	20	21	19	20	16	14	19	18

STATUS FLAG CODES

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

LAST CALIBRATION: November 28,2012

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS



JOB #: 2833-14-08-01-C

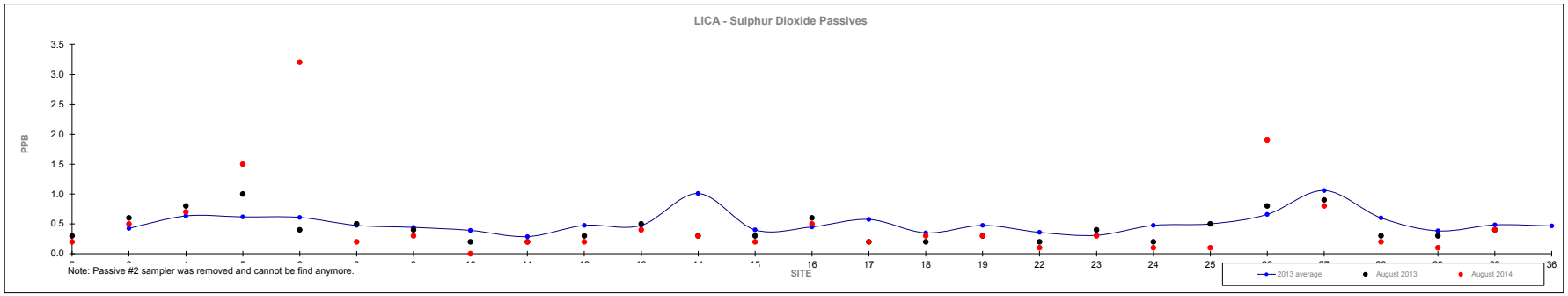
Non-Continuous Monitoring

Passive Summary Results for August 2014

Lakeland Industry & Community Association

Sulphur Dioxide
ppb

	2013																								August 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	NA	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	0.5	-
Minimum	NA	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	#11
Maximum	NA	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	3.2	#8



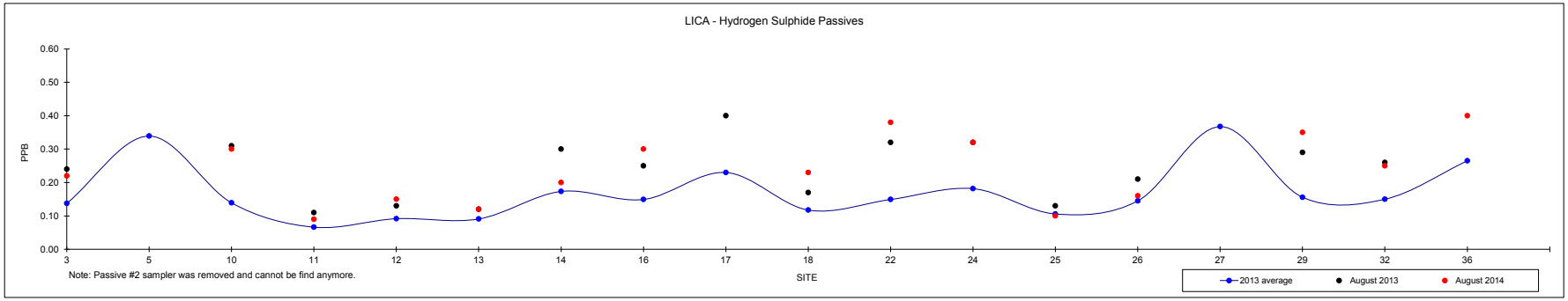
Note: Passive #2 sampler was removed and cannot be find anymore.

Passive Summary Results for August 2014

Lakeland Industry & Community Association

Hydrogen Sulphide
ppb

	2013																		August 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	0.44	-
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	0.09	#11
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	1.87	#27

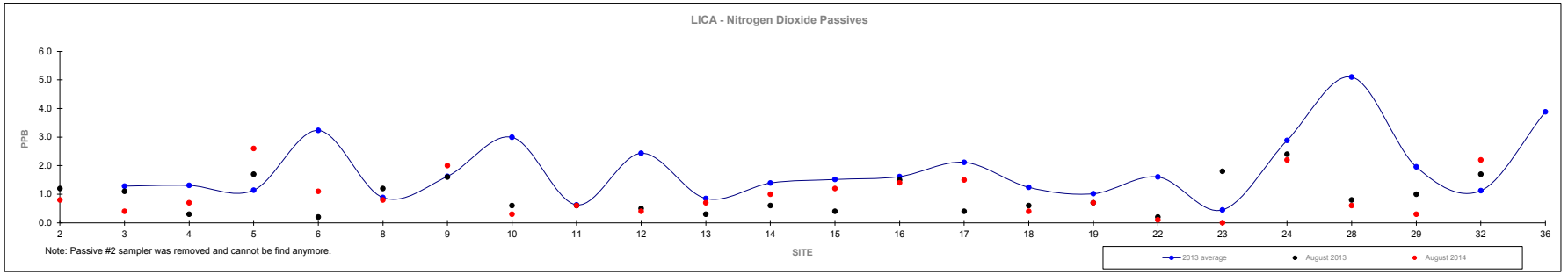


Passive Summary Results for August 2014

Lakeland Industry & Community Association

Nitrogen Dioxide
ppb

	2013																							August 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	NA	1.3	1.3	1.1	3.2	0.9	1.6	3.0	0.6	2.4	0.9	1.4	1.5	1.6	2.1	1.2	1.0	1.6	0.5	2.9	5.1	2.0	1.1	3.9	1.1	-
Minimum	NA	0.2	0.2	0.1	1.5	0.1	0.3	0.8	0.1	0.6	0.1	0.3	0.2	0.4	0.8	0.2	0.1	0.4	0.1	0.9	1.2	0.5	0.2	1.4	<0.1	#23
Maximum	NA	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	2.6	#6



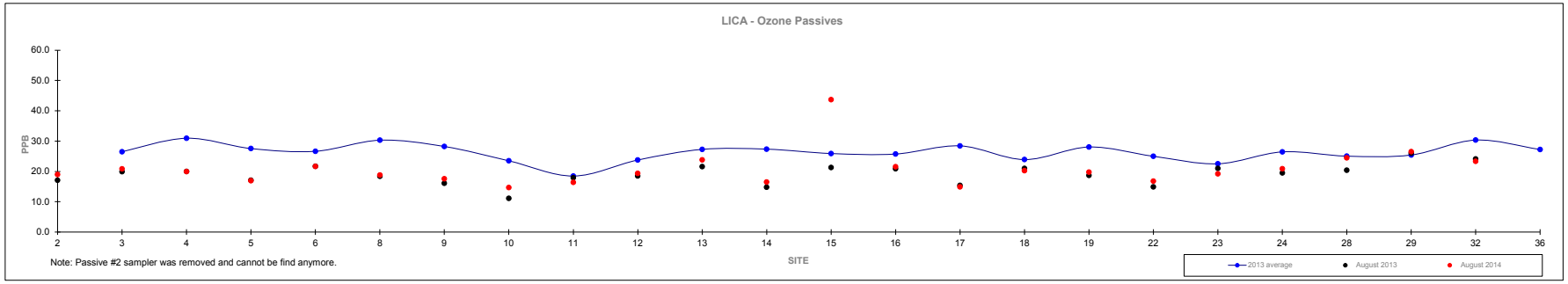
Note: Passive #2 sampler was removed and cannot be find anymore.

Passive Summary Results for August 2014

Lakeland Industry & Community Association

Ozone
ppb

	2013																						August 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	NA	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	20.74	-
Minimum	NA	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	14.68	#11
Maximum	NA	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	43.70	#16



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

Calibration Reports

Sulphur Dioxide

Thermo 43i SO2 Analyzer Calibration

Date:	11-Aug-14	**Start/End Time (mst):**	8:05/11:22
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:	23-Jul-14	**As Found C.F.**	1.025
Previous Cal High Point C.F.:	0.999	**New C.F.:**	1.003

		As found:		**As left:**
	BKG:	7.0	BKG:	6.9
	COEF:	1.110	COEF:	1.121
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	24.1
	-3.3	-3.2	-3.3	-3.2
INTERFACE BOARD:	PMT:	-632.3	PMT:	-632.3
	FLASH:	714	FLASH:	714
	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	23.6	24.0	23.7
	INTERNAL:	26.2	INTERNAL:	30.9
	CHAMBER:	44.9	CHAMBER:	45.2
	PERM OVEN GAS:	45.00	PERM OVEN GAS:	45.00
	PERM OVEN HEATER:	44.18	PERM OVEN HEATER:	44.21
	PRESSURE:	682.5	PRESSURE:	681.6
	SAMPLE FLOW:	0.452	SAMPLE FLOW:	0.453
	LAMP INTENSITY:	76	LAMP INTENSITY:	76
	CONVERTER:	NA	CONVERTER:	NA
	CONVERTER SET:	NA	CONVERTER SET:	NA
	Internal Span:	385.7	Internal Span:	387.4

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	4995	0	4995
high	4956	38	4994
mid	4975	19	4994
low	4986	9	4995

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	-0.1	NA
adjusted zero	4995	0.0	4995	0	0.0	NA
as found high	4956	37.80	4994	364.8	356.0	1.025
adjusted high	4956	37.80	4994	364.8	364.0	1.002
mid	4975	18.90	4994	182.4	182.0	1.002
low	4986	9.47	4995	91.4	91.0	1.004
calibrator zero	4995	0.00	4995	0	0.0	NA
					Average C.F.=	1.003

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.002**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.02%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-2.58%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

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

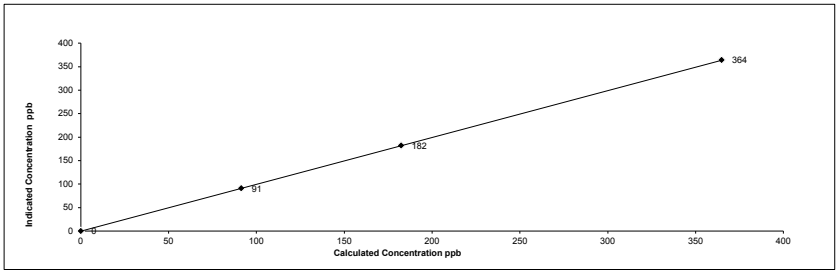
SO_2 High Point gas concentration: NA Time gas run (mst): NA

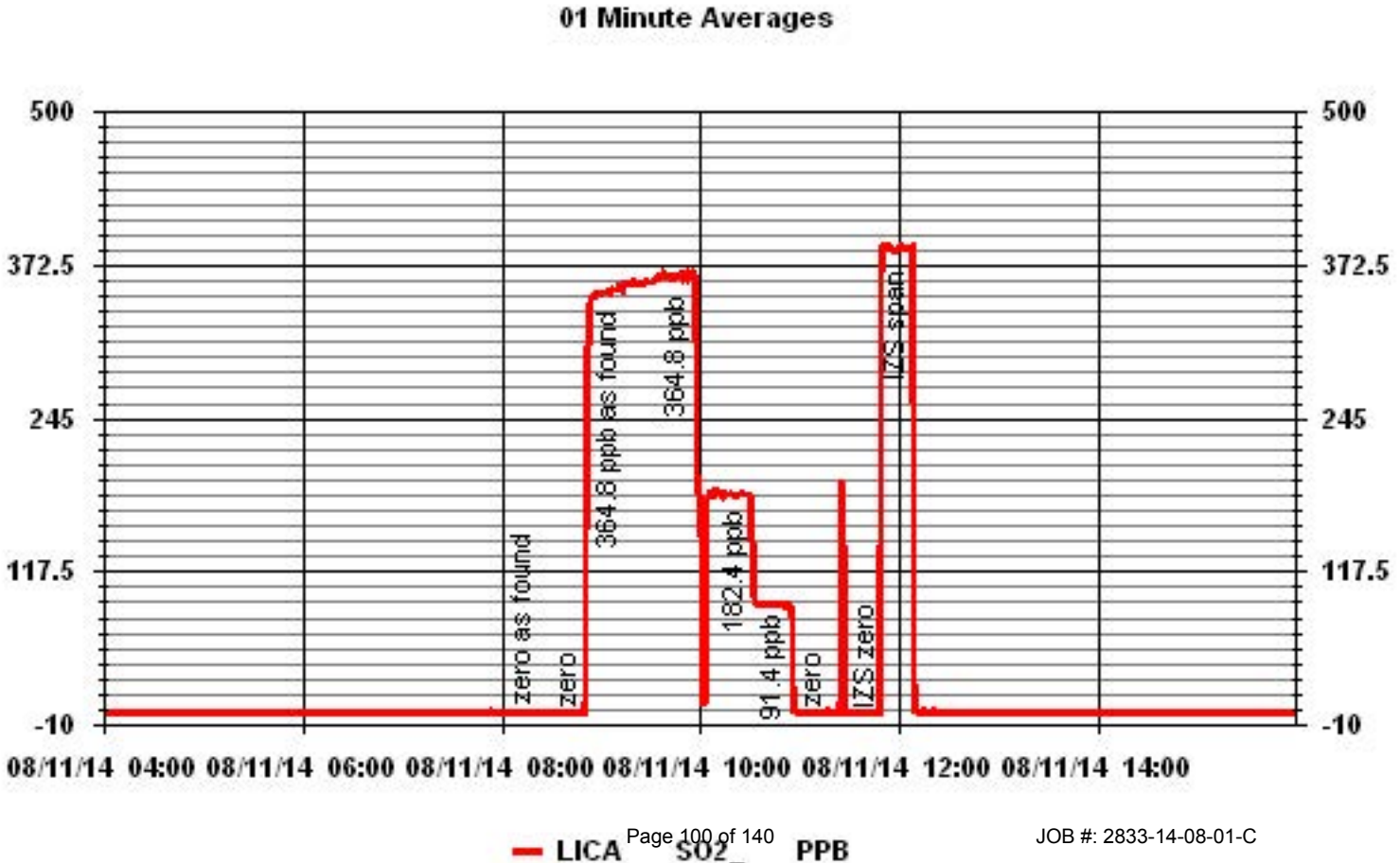
Zero corrrected analyzer response: NA

Comments:

Sample filter changed.

Thermo 43i SO2 Analyzer Calibration





JOB #: 2833-14-08-01-C

Total Reduced Sulphur

Thermo 450i TRS Analyzer Calibration

Date:	18-Aug-14	**Start/End Time (mst):**	12:42/13:26
Company:	LICA	**Calibration Purpose:**	As Founds
Station Name/Location:	St.Lina	**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:	11-Aug-14	**As Found C.F.**	1.131
Previous Cal High Point C.F.:	1.000	**New C.F.:**	NA

		As found:	**As left:**
	BKG:	14.3	14.3
	COEF:	1.028	1.028
MOTHERBOARD:	3.3	3.3	3.3
	5.0	5.0	5.0
	15.0	15.0	15.0
	24.0	24.0	24.0
	-3.3	-3.2	-3.2
INTERFACE BOARD:	PMT:	-650.8	-650.8
	FLASH:	738	738
	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	23.3	23.3
	INTERNAL:	32.5	32.5
	CHAMBER:	45.0	45.0
	CONVERTER TEMP:	326.8	326.8
	CONVERTER SET:	325.0	325.0
	PERM OVEN GAS:	45.01	45.01
	PERM OVEN HTR:	44.38	44.38
	PRESSURE:	651.1	651.1
	SAMPLE FLOW:	0.504	0.504
	LAMP INTENSITY:	91	91
	Internal Span:	34.12	34.12

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	4957	39	4996
mid	NA		#VALUE!
low	NA		#VALUE!

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	NA	0.0	######	0		NA
as found high	4957	38.60	4996	78.0	69.0	1.131
adjusted high	NA		######	#VALUE!		#VALUE!
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	**-13.10%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

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

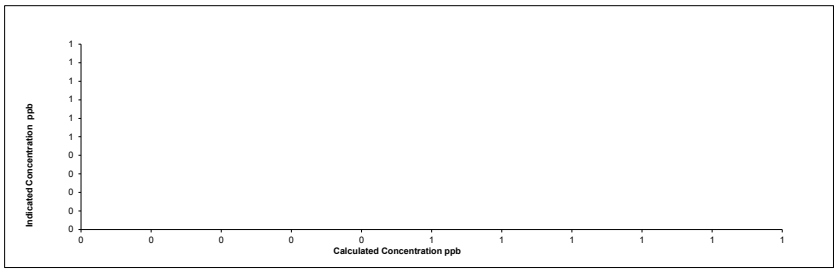
SO_2 High Point gas concentration: NA Time gas run (mst): NA

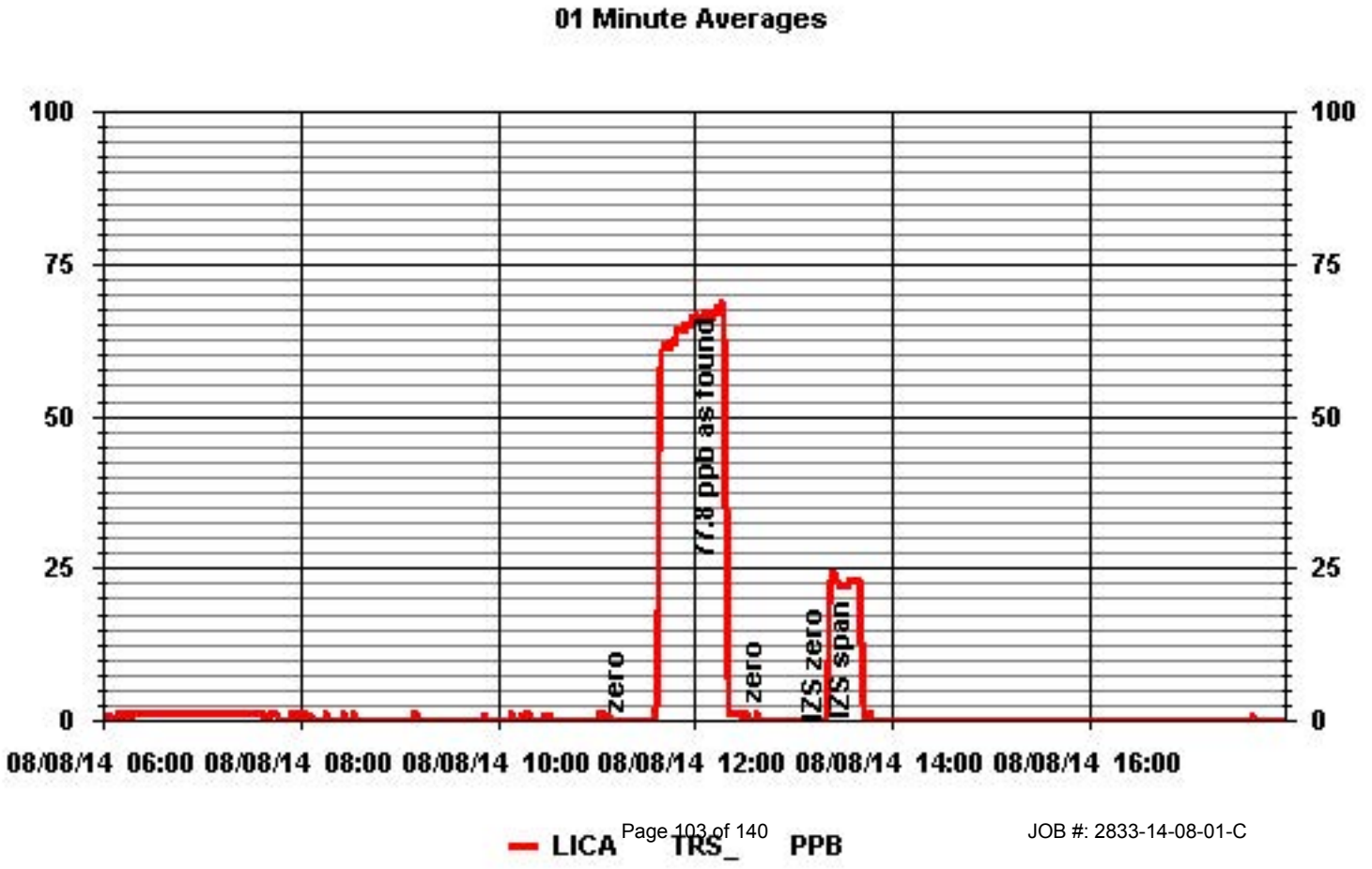
Zero corrrected analyzer response: NA

Comments:

As founds due to high span during morning izs check.

Thermo 450i TRS Analyzer Calibration





JOB #: 2833-14-08-01-C

Thermo 450i TRS Analyzer Calibration

Date:	11-Aug-14	**Start/End Time (mst):**	8:02/9:00
Company:	LICA	**Calibration Purpose:**	As Founds
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:	3-Aug-14	**As Found C.F.**	1.182
Previous Cal High Point C.F.:	1.149	**New C.F.:**	NA

		As found:	**As left:**
	BKG:	12.9	12.9
	COEF:	0.932	0.932
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:	-651.2	-651.2
	FLASH:	740	740
	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:	30.1	30.1
	CHAMBER:	45.0	45.0
	CONVERTER TEMP:	326.5	326.5
	CONVERTER SET:	325.0	325.0
	PERM OVEN GAS:	44.99	44.99
	PERM OVEN HTR:	44.38	44.38
	PRESSURE:	658.7	658.7
	SAMPLE FLOW:	0.509	0.509
	LAMP INTENSITY:	92	92
	Internal Span:	32.07	32.07

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	4960	39	4999
mid	NA		#VALUE!
low	NA		#VALUE!

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	NA
adjusted zero	NA	0.0	######	0		NA
as found high	4960	38.60	4999	78.0	66.0	1.182
adjusted high	NA		######	#VALUE!		#VALUE!
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	**-2.85%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

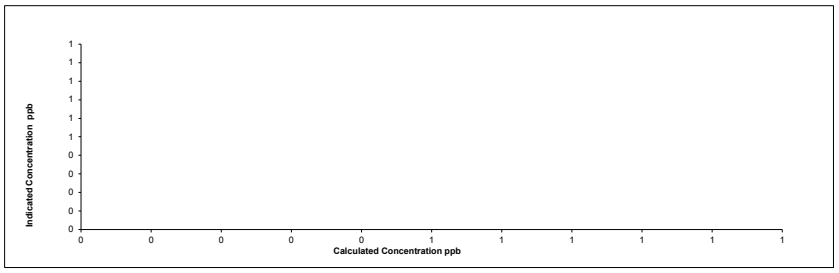
****run converter effeciency test immediately following zero adjust****

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

Comments:

As founds due to high span during morning izs check. High was too low. Replaced scrubber material.

Thermo 450i TRS Analyzer Calibration



Thermo 450i TRS Analyzer Calibration

Date:	11-Aug-14	**Start/End Time (mst):**	14:27/15:46
Company:	LICA	**Calibration Purpose:**	Post repair
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:	3-Aug-14	**As Found C.F.**	#VALUE!
Previous Cal High Point C.F.:	1.149	**New C.F.:**	NA

		As found:	**As left:**
	BKG:	12.9	14.1
	COEF:	0.932	1.028
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:	-651.2	-651.2
	FLASH:	740	740
	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:	30.1	30.1
	CHAMBER:	45.0	45.0
	CONVERTER TEMP:	326.5	326.5
	CONVERTER SET:	325.0	325.0
	PERM OVEN GAS:	44.99	44.99
	PERM OVEN HTR:	44.38	44.38
	PRESSURE:	658.7	658.7
	SAMPLE FLOW:	0.509	0.509
	LAMP INTENSITY:	92	92
	Internal Span:	32.07	34.12

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	4960	39	4999
mid			
low			

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	5000	0.0	5000	0	0.0	NA
as found high	NA	NA	######	#VALUE!		#VALUE!
adjusted high	4960	38.60	4999	78.0	78.0	1.000
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:

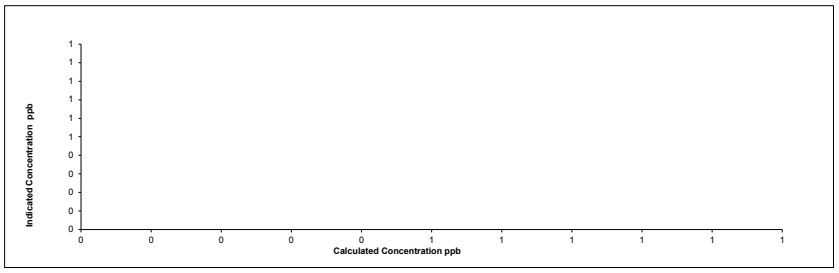
****run converter effeciency test immediately following zero adjust****

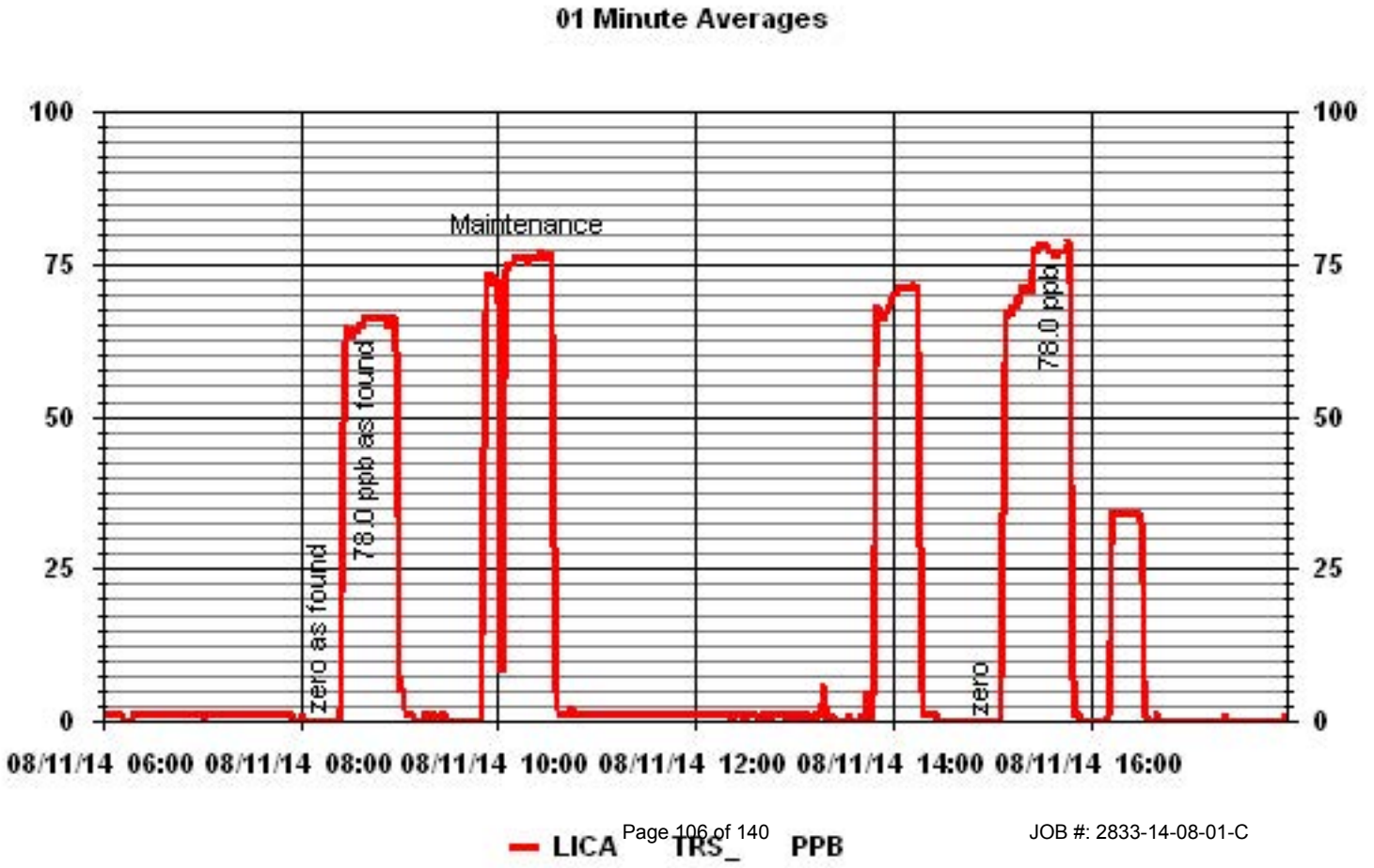
SO_2 High Point gas concentration:	NA	Time gas run (mst):	NA
Zero corrrected analyzer response:	NA		

Comments:

Post repair calibration following repalcement of scrubber material.

Thermo 450i TRS Analyzer Calibration





JOB #: 2833-14-08-01-C

Thermo 450i TRS Analyzer Calibration

Date:	18-Aug-14	**Start/End Time (mst):**	12:42/13:26
Company:	LICA	**Calibration Purpose:**	As Founds
Station Name/Location:	St.Lina	**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:	11-Aug-14	**As Found C.F.**	1.131
Previous Cal High Point C.F.:	1.000	**New C.F.:**	NA

		As found:	**As left:**
	BKG:	14.3	14.3
	COEF:	1.028	1.028
MOTHERBOARD:	3.3	3.3	3.3
	5.0	5.0	5.0
	15.0	15.0	15.0
	24.0	24.0	24.0
	-3.3	-3.2	-3.2
INTERFACE BOARD:	PMT:	-650.8	-650.8
	FLASH:	738	738
	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	23.3	23.3
	INTERNAL:	32.5	32.5
	CHAMBER:	45.0	45.0
	CONVERTER TEMP:	326.8	326.8
	CONVERTER SET:	325.0	325.0
	PERM OVEN GAS:	45.01	45.01
	PERM OVEN HTR:	44.38	44.38
	PRESSURE:	651.1	651.1
	SAMPLE FLOW:	0.504	0.504
	LAMP INTENSITY:	91	91
	Internal Span:	34.12	34.12

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	4957	39	4996
mid	NA		#VALUE!
low	NA		#VALUE!

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	NA	0.0	######	0		NA
as found high	4957	38.60	4996	78.0	69.0	1.131
adjusted high	NA		######	#VALUE!		#VALUE!
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	**-13.10%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

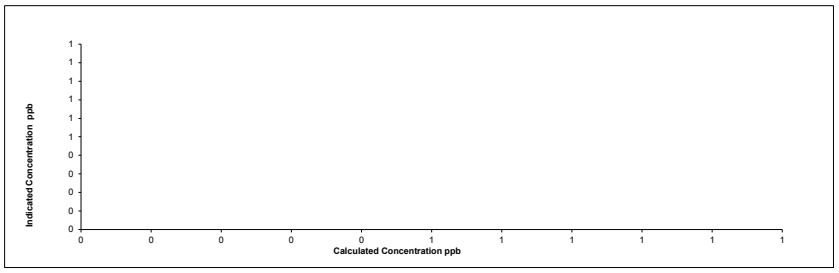
****run converter effeciency test immediately following zero adjust****

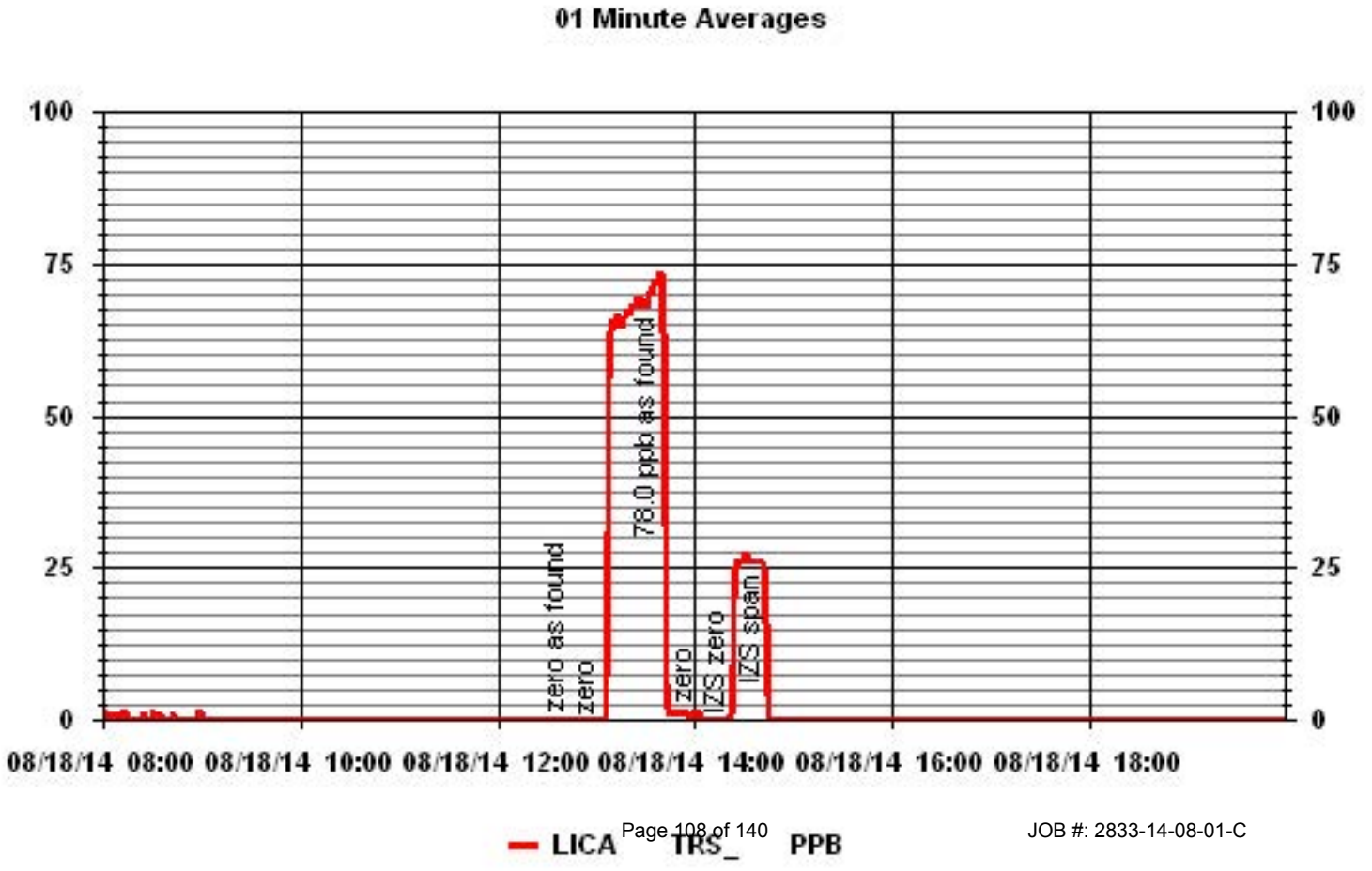
SO_2 High Point gas concentration:	NA	Time gas run (mst):	NA
Zero corrrected analyzer response:	NA		

Comments:

As founds due to high span during morning izs check.

Thermo 450i TRS Analyzer Calibration





JOB #: 2833-14-08-01-C

Thermo 450i TRS Analyzer Calibration

Date:	25-Aug-14	**Start/End Time (mst):**	13:01/13:48
Company:	LICA	**Calibration Purpose:**	As Founds
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:	18-Aug-14	**As Found C.F.**	0.953
Previous Cal High Point C.F.:	1.120	**New C.F.:**	#VALUE!

		As found:	**As left:**
	BKG:	14.1	14.1
	COEF:	1.028	1.028
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:	741	742
	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	23.7	23.4
	INTERNAL:	35.8	36.3
	CHAMBER:	45.0	45.0
	CONVERTER TEMP:	324.7	325.2
	CONVERTER SET:	325.0	325.0
	PERM OVEN GAS:	45.00	45.00
	PERM OVEN HTR:	44.37	44.37
	PRESSURE:	655.3	654.7
	SAMPLE FLOW:	0.508	0.510
	LAMP INTENSITY:	92	92
	Internal Span:	26.22	26.22

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	4959	39	4998
mid	NA	NA	#VALUE!
low	NA	NA	#VALUE!

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		NA
as found high	4959	38.60	4998	78.0	81.9	0.953
adjusted high	NA	NA	######	#VALUE!		#VALUE!
mid	NA	NA	######	#VALUE!		#VALUE!
low	NA	NA	######	#VALUE!		#VALUE!
calibrator zero	NA	0.00	######	0		NA
					Average C.F.=	#VALUE!

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	**14.96%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

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

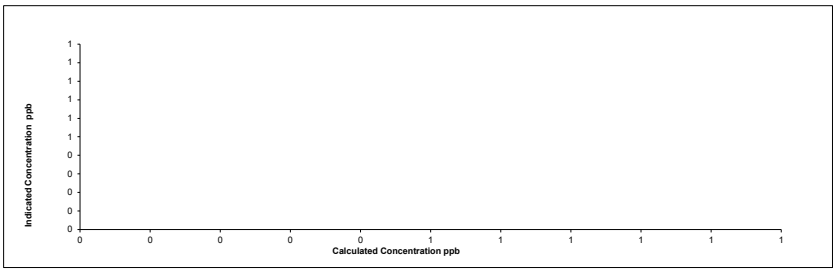
SO_2 High Point gas concentration: NA Time gas run (mst): NA

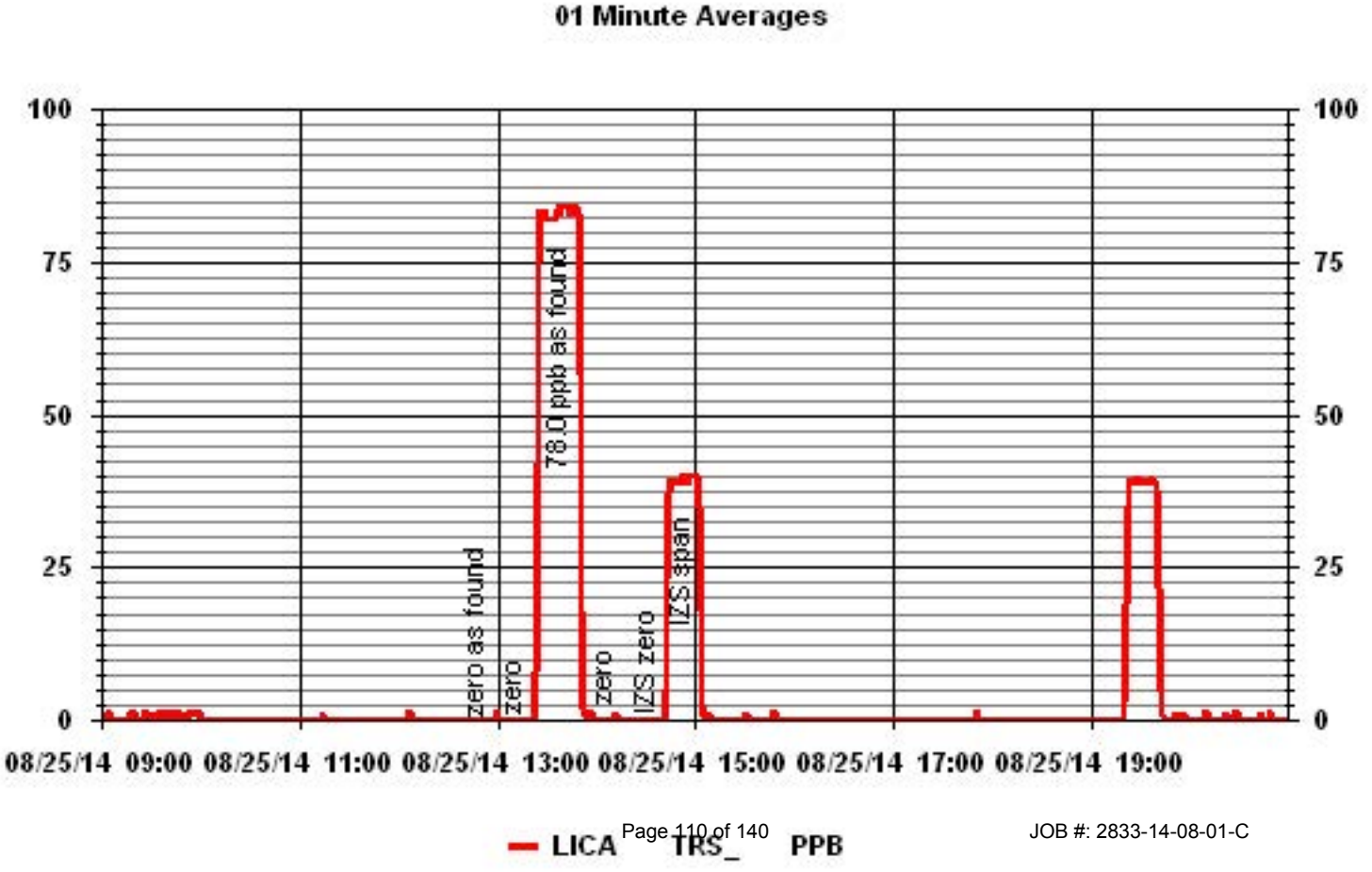
Zero corrrected analyzer response: NA

Comments:

As founds due to high span.

Thermo 450i TRS Analyzer Calibration





JOB #: 2833-14-08-01-C

Thermo 450i TRS Analyzer Calibration

Date:	10-Sep-14	**Start/End Time (mst):**	0820-1206
Company:	LICA	**Calibration Purpose:**	route monthly
Station Name/Location:	St.Lina	**Converter Make & Model:**	Thermo CND-101
Performed by:	Tom Bourque	**Converter Serial #:**	501
Application H_2S/TRS/SO_2:	TRS	**Cal Gas Expiry Date:**	5-Dec-15

Analyzer:

Serial Number:	812728560	**Range ppb:**	100
Last Calibration Date:	11-Aug-14	**As Found C.F.**	0.944
Previous Cal High Point C.F.:	1.000	**New C.F.:**	1.012

		As found:	**As left:**
	BKG:	14.1	13.8
	COEF:	1.028	1.014
MOTHERBOARD:	3.3	3.3	3.3
	5.0	5	5.0
	15.0	15	15.0
	24.0	23.9	23.9
	-3.3	-3.2	-3.2
INTERFACE BOARD:	PMT:	-650.5	-650.5
	FLASH:	741	741
	3.3	3.2	3.2
	5.0	5.0	5.0
	15.0	14.6	14.6
	-15.0	-15.0	-15.0
	24.0	23.5	23.5
	INTERNAL:	32.9	32.9
	CHAMBER:	45.2	45.2
	CONVERTER TEMP:	326	326
	CONVERTER SET:	325	325
	PERM OVEN GAS:	45	45
	PERM OVEN HTR:	44.38	44.38
	PRESSURE:	667.8	667.8
	SAMPLE FLOW:	0.517	0.517
	LAMP INTENSITY:	92	92
	Internal Span:	39	39.5

Calibrator:

Flow Meter ID's:	NA
Make & Model:	Environics 6100
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	5000	0.0	5000	0	0.1	NA
as found high	4995	38.86	5034	78.0	82.7	0.944
adjusted high	4995	38.86	5034	78.0	78.0	1.001
mid	4995	18.95	5014	38.2	37.4	1.023
low	4995	8.97	5004	18.1	18.0	1.012
calibrator zero	5000	0.00	5000	0	0.0	NA
					Average C.F.=	1.012

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)=	**0.27%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**5.61%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

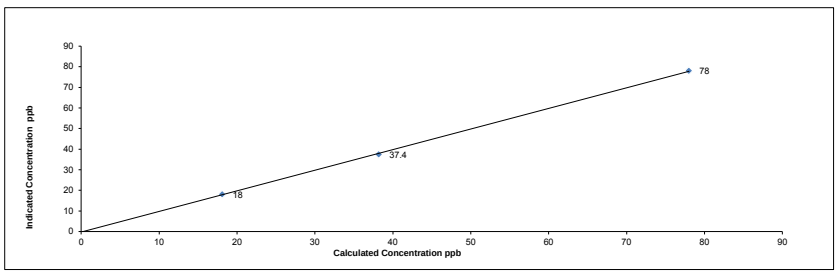
****run converter effeciency test immediately following zero adjust****

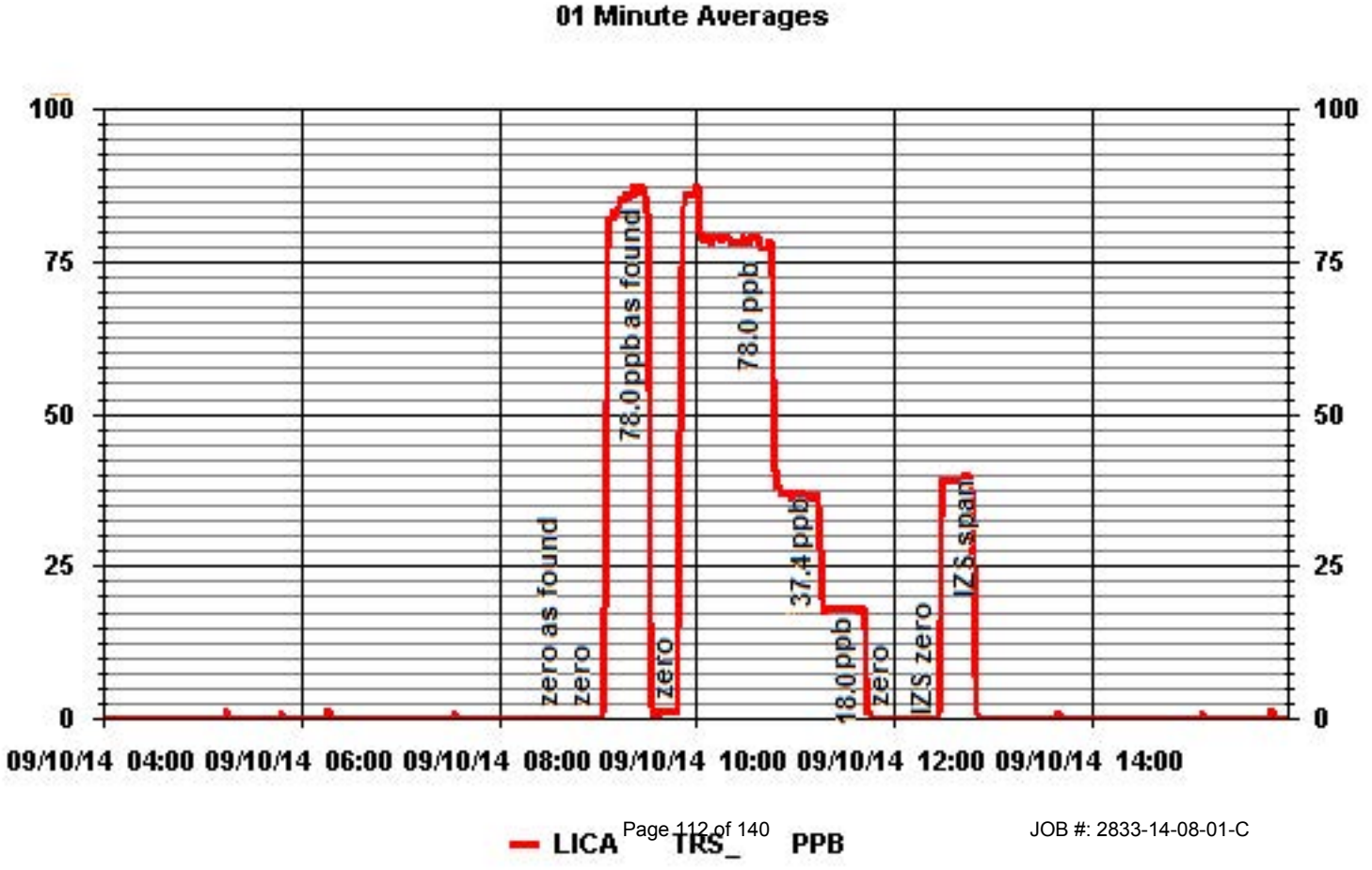
SO_2 High Point gas concentration:	374.1	Time gas run (mst):	0939-0945
Zero corrrected analyzer response:	1		

Comments:

Changed filter.

Thermo 450i TRS Analyzer Calibration





JOB #: 2833-14-08-01-C

Total Hydrocarbons

Maxxam Thermo 51C THC Analyzer Calibration

Date:	8-Aug-14	**Start Time (mst):**	11:15
Company:	LICA	**End Time (mst):**	14:21
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:	9-Jul-14	**As Found C.F.**	0.979
Previous Cal High Point C.F.:	1.002	**New C.F.:**	1.018

		As found:		As left:
	H_2 cylinder (psi):	1600	H_2 cylinder (psi):	1600
	H_2 cylinder reg set (psi):	22	H_2 cylinder reg set (psi):	22
	Span Cylinder (psi):	1600	Span Cylinder (psi):	1600
	Span Cylinder Reg Set (psi):	22	Span Cylinder Reg Set (psi):	22
	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:	3246	cnt:	3246
	rng:	1	rng:	1
	try:	0	try:	0
	flm:	194	flm:	194
	det:	125.9	det:	125.9
Oven Readings:	Flame:	194	Flame:	194
	Filter:	125	Filter:	125
	Base:	125	Base:	125
	Pump:	6.91	Pump:	6.91
Voltages:	+5	4.9	+5	4.9
	+15	14.8	+15	14.8
	-15	-14.9	-15	-14.9
	Internal Span:	31.71	Internal Span:	31.71

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	0.25	NA
adjusted zero	2000	0.00	2000	0	0.00	NA
as found high	2000	65.00	2065	36.42	37.20	0.979
adjusted high	2000	65.00	2065	36.42	36.50	0.998
mid	2000	30.00	2030	17.10	16.80	1.018
low	2000	15.00	2015	8.61	8.30	1.038
calibrator zero	2000	0.00	2000	0	-0.10	NA
					Average C.F.=	1.018

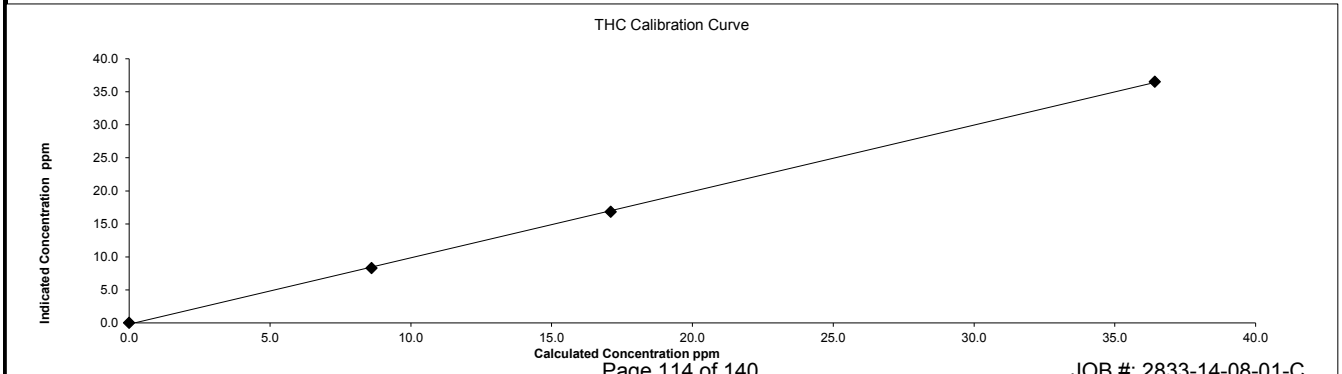
Linear Regression/Calibration Results:

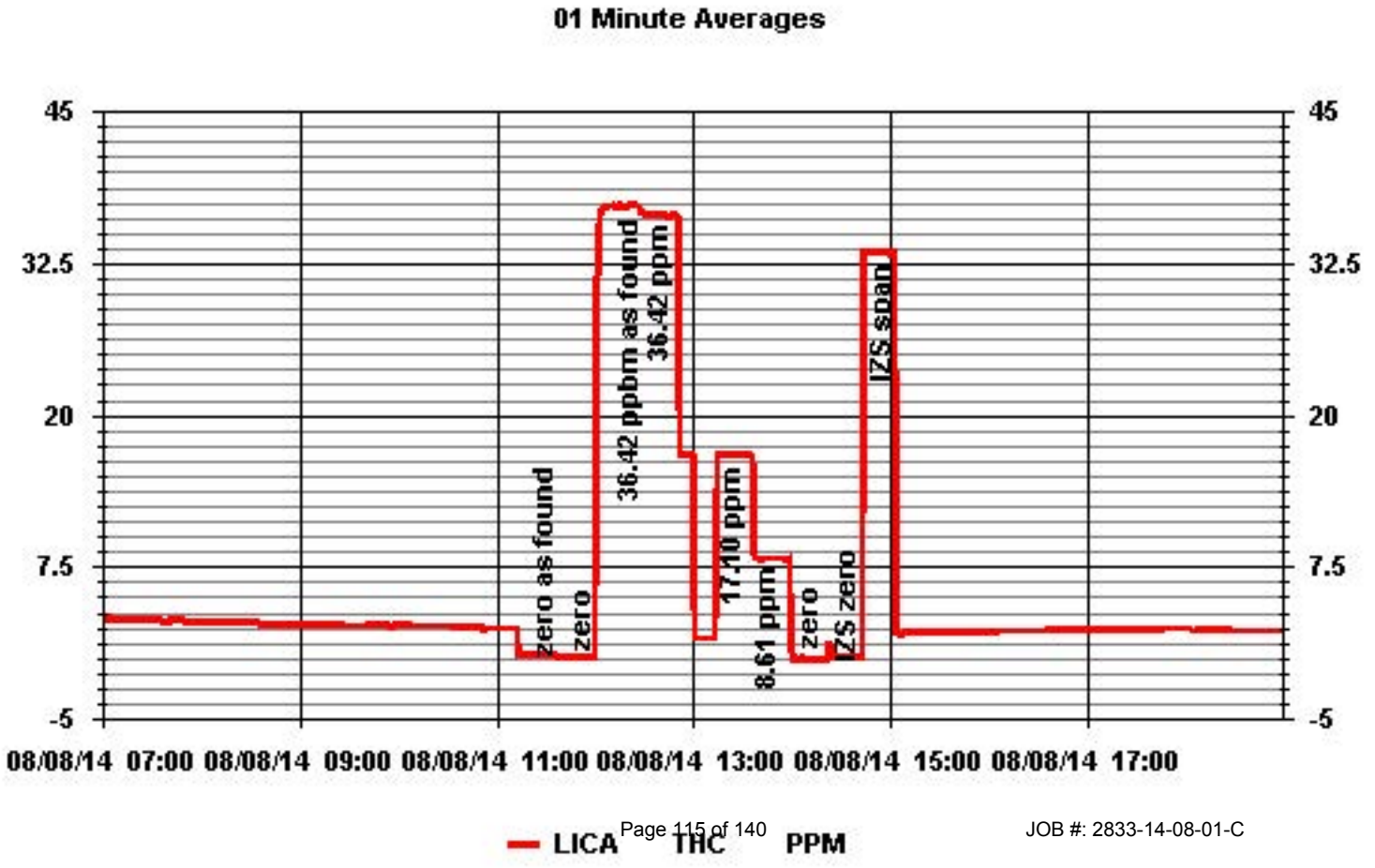
		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.005**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.408%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**2.31%**	**± 15%**	**PASS**

Comments:

Sample filter changed.

Thermo 51C THC Analyzer Calibration





JOB #: 2833-14-08-01-C

Particulate Matter 2.5

R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date:	8-Aug-14	**Parameter:**	PM 2.5
Company:	LICA	**Performed by:**	Kevin Hope
Station Name/Location:	Cold Lake South	**Start/End Time (mst):**	14:06/14:32
Previous Audit Date:	23-Jul-14	**Calibration Purpose:**	Monthly Audit

1400A Information and Status:

Serial Number:	1405A201620804	**As Found Filter Loading %:**	31.45
Ko Factor:	14578.0	**As Left Filter Loading %:**	15.93
Ambient Temperature °C:	24.3	**As Found Noise:**	0.014
Ambient Pressure atm:	0.936	**As Left Noise:**	0.000
Main Flow Reading lpm:	2.92	**Pump Vacuum:**	0.26
Aux Flow Reading lpm:	16.30	**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	0.02	0.25	0.04	0.24
	limit	0.15		0.15	
Bypass Flow	actual	0.14	0.30	0.14	0.30
	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	0.02	0.25	0.04	0.24
	limit	0.15		0.15	
Bypass Flow	actual	0.14	0.30	0.14	0.30
	limit	0.60		0.60	

As found temperature and pressure:

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	24.5	**1405F pressure atm:**	0.937
reference temperature °C:	24.3	**reference pressure:**	0.936
difference °C:	-0.2	**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:	24.5	**1405F pressure atm:**	0.937
reference temperature °C:	24.3	**reference pressure:**	0.936
difference °C:	-0.2	**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:	3.00	**1400A total/aux flow lpm:**	16.66
reference main flow lpm:	2.92	**reference total/aux flow lpm:**	16.30
difference lpm:	-0.08	**difference lpm:**	-0.36

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:**	16.66
reference main flow lpm:	2.92	**reference total/aux flow lpm:**	16.30
difference lpm:	-0.08	**difference lpm:**	-0.36

K_o Audit:

Last K_o audit date:	NA
1405F K_o factor:	14578.0
Measured K_o factor:	NA
% difference:	NA

Comments:

Leak check, flow audit, filters changed, inlet cleaned. All good.

R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date:	28-Aug-14	**Parameter:**	PM 2.5
Company:	LICA	**Performed by:**	Kevin Hope
Station Name/Location:	Cold Lake South	**Start/End Time (mst):**	15:55/16:20
Previous Audit Date:		**Calibration Purpose:**	Monthly Calibration

1400A Information and Status:

Serial Number:	1405A201620804	**As Found Filter Loading %:**	31.02
Ko Factor:	14578.0	**As Left Filter Loading %:**	17.15
Ambient Temperature °C:	20.3	**As Found Noise:**	0.007
Ambient Pressure atm:	0.937	**As Left Noise:**	0.000
Main Flow Reading lpm:	2.94	**Pump Vacuum:**	0.26
Aux Flow Reading lpm:	16.49	**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	0.04	0.24	0.05	0.24
	limit	0.15		0.15	
Bypass Flow	actual	0.10	0.30	0.10	0.30
	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	0.24	0.05	0.24
	limit	0.15		0.15	
Bypass Flow	actual	0.10	0.30	0.10	0.30
	limit	0.60		0.60	

As found temperature and pressure:

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	20.6	**1405F pressure atm:**	0.935
reference temperature °C:	20.3	**reference pressure:**	0.937
difference °C:	-0.3	**difference :**	-0.002

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

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	20.6	**1405F pressure atm:**	0.935
reference temperature °C:	20.3	**reference pressure:**	0.937
difference °C:	-0.3	**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%**
1405F main flow lpm:	3.00	**1400A total/aux flow lpm:**	16.66
reference main flow lpm:	2.94	**reference total/aux flow lpm:**	16.49
difference lpm:	-0.06	**difference lpm:**	-0.17

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:**	16.66
reference main flow lpm:	2.94	**reference total/aux flow lpm:**	16.49
difference lpm:	-0.06	**difference lpm:**	-0.17

K_o Audit:

Last K_o audit date:	NA
1405F K_o factor:	14578.0
Measured K_o factor:	NA
% difference:	NA

Comments:

Leak check, flow audit, cleaned inlet, replaced filters. All good.

JOB #: 2833-14-08-01-C

Nitrogen Dioxide

Maxxam

Thermo 42C NOx Analyzer Calibration

Date:	11-Aug-14	**Start Time (mst):**	8:05
Company:	LICA	**End Time (mst):**	13:10
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-14

Analyzer Serial Number:	427408716
Last Calibration Date:	23-Jul-14
Range ppb:	500

Correction Factors:

	As found C.F.	Previous Cal High Point C.F.:
NO=	0.995	1.000
NOx=	1.000	1.002
NO_2=	0.996	0.996

	As found:	**As left:**
NO Bkg ppb:	5.8	5.8
NOx Bkg ppb:	6.1	6.0
NO Coef:	1.506	1.499
NOx Coef:	1.016	1.020
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:	27.5	34.0
Chamber:	49.8	50.0
Cooler:	-2.4	-2.5
Converter:	317	317
Converter Set:	319	319
Pressure:	205.7	204.5
Sample Flow:	0.581	0.582
Ozonator Flow:	ok	ok
Internal Span:	297/8.5/292.7	311/8.5/302

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	4995	0	0	4995
high	4956	38	225.00	4994
mid	4975	19	115.00	4994
low	4986	9	40.00	4995

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	0.1	0.0	NA	NA
adjusted zero	4995	0.0	4995	0	0	0.0	0.0	NA	NA
as found high	4956	37.80	4994	379.2	380.0	381	380	0.995	1.000
adjusted high	4956	37.80	4994	379.2	380.0	379	380	1.001	1.000
mid	4975	18.90	4994	189.6	190.0	186	187	1.019	1.016
low	4986	9.47	4995	95.0	95.2	94	94	1.010	1.012
calibrator zero	4995	0.00	4995	0	0	0.0	0.0	NA	NA
							Average C.F.=	1.010	1.009

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	4956	37.80	4994	0.0	376.0	377.0	2.0	0.0	0.0	
as found NO_2	4956	37.80	4994	225.0	118.0	379.0	261.0	258.0	259.0	0.996
adjusted NO_2	4956	37.80	4994	225.0	118.0	379.0	261.0	258.0	259.0	0.996
gpt mid	4956	37.80	4994	115.0	245.0	378.0	133.0	131.0	131.0	1.000
gpt low	4956	37.80	4994	40.0	330.0	378.0	48.0	46.0	46.0	1.000
									Average NO_2 C.F.=	0.999

Linear Regression/Calibration Results:

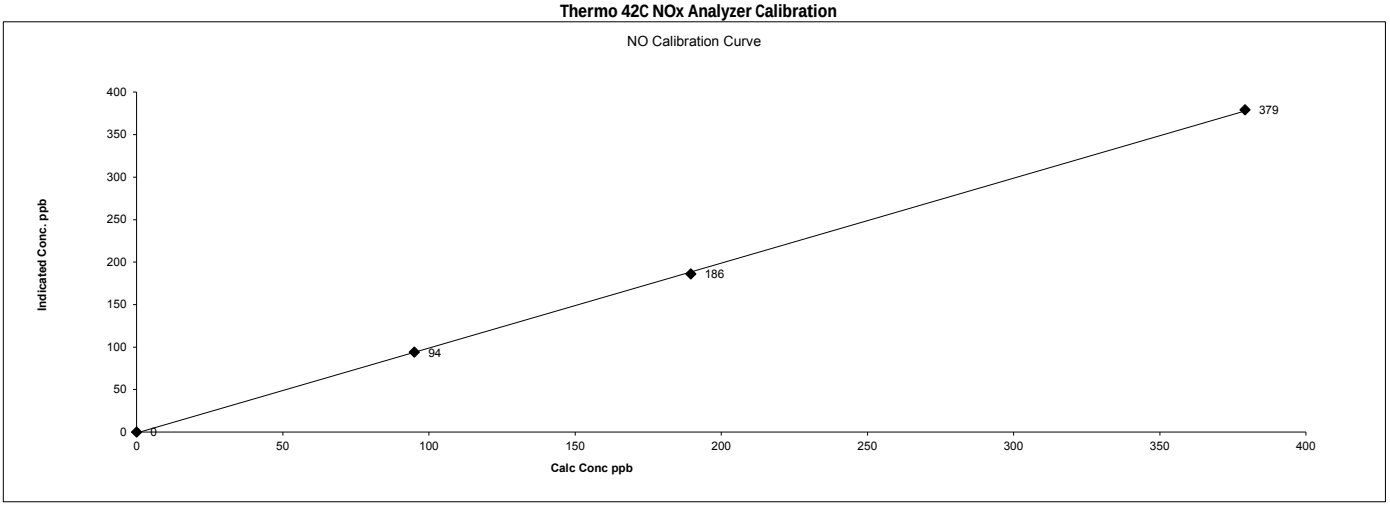
	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**0.999**	**1.000**	**1.004**	**0.85-1.15**
b (Intercept as % of full scale)=	**-0.22%**	**-0.22%**	**-0.03%**	**± 3% F.S.**
% change in C.F. from last cal=	**0.47%**	**0.20%**	**-0.01%**	**+/-15%**
NO2 converter effeciency			**100.1%**	**>85%**

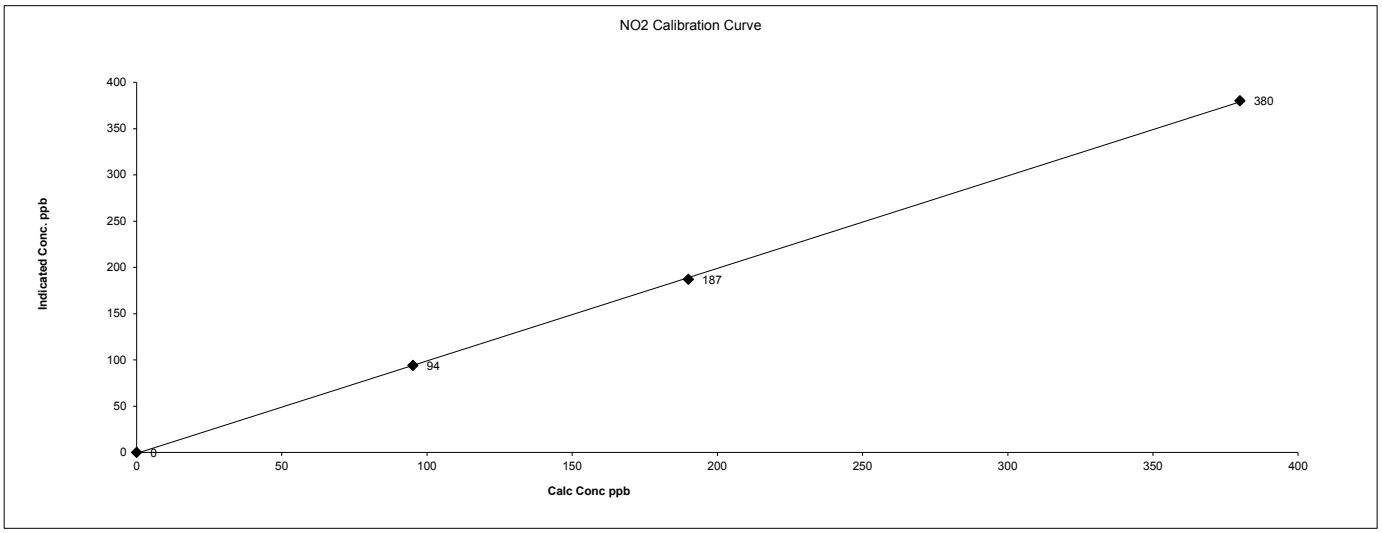
Comments:

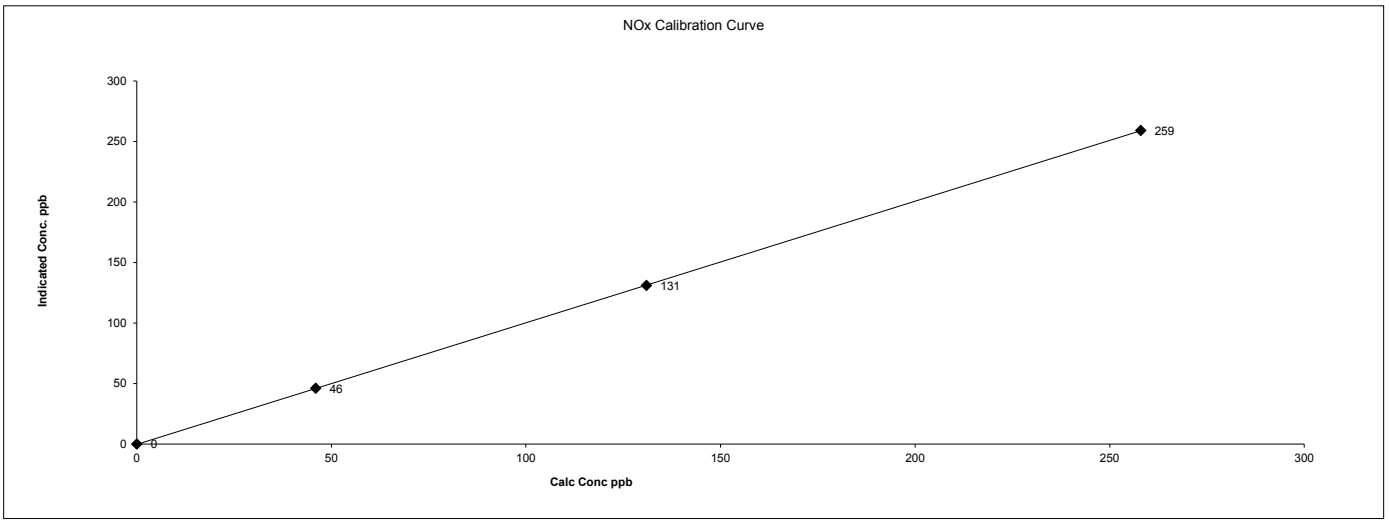
Sample filter changed.

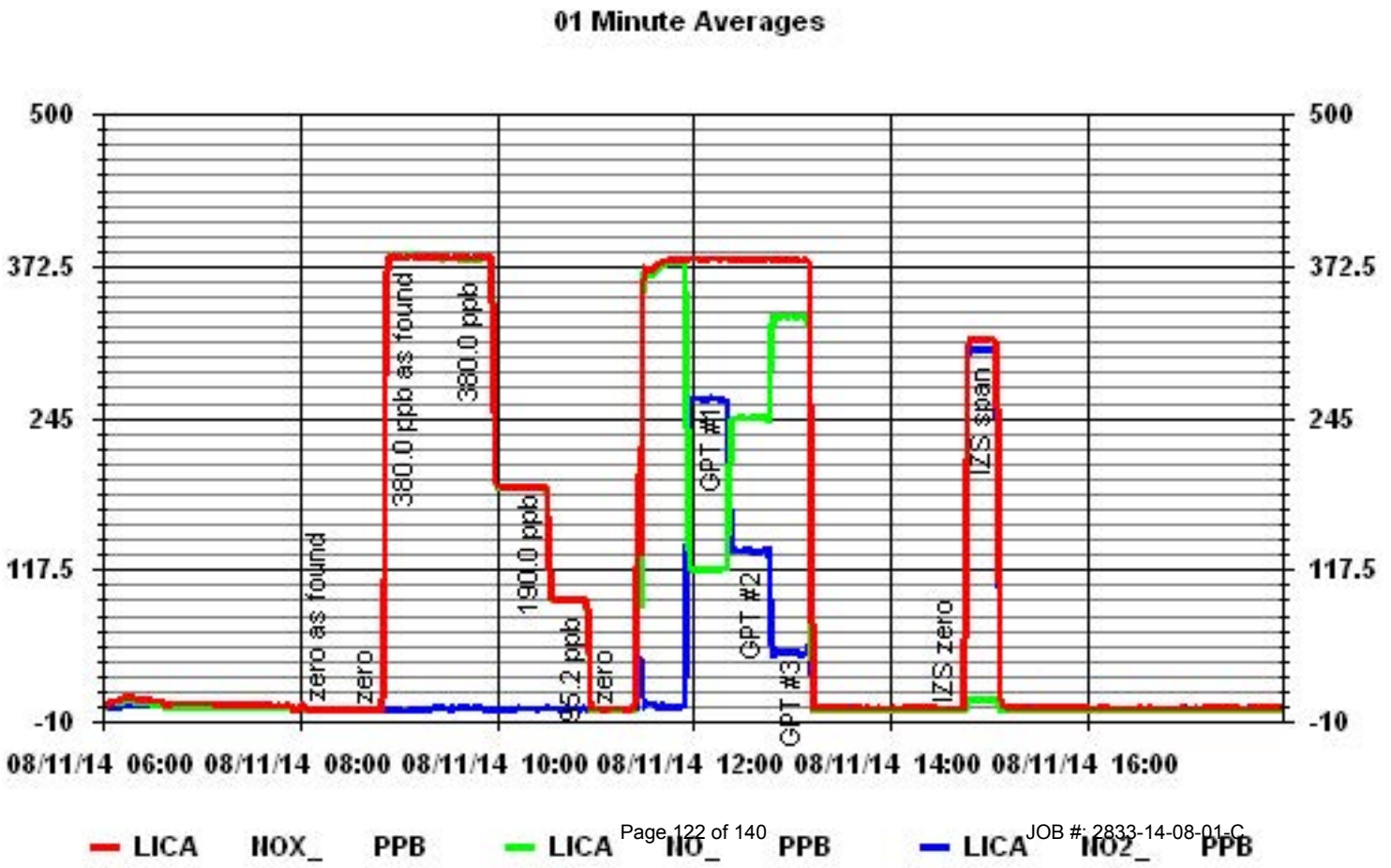
Date:	11-Aug-14	**Start Time (mst):**	8:05
Company:	LICA	**End Time (mst):**	13:10
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-14

Thermo 42C NOx Analyzer Calibration








01 Minute Averages
500
372.5
245
117.5
-10
zero as found
zero
380.0 ppb as found
380.0 ppb
190.0 ppb
95.2 ppb
zero
GPT #1
GPT #2
GPT #3
IZS zero
IZS span
08/11/14 06:00
08/11/14 08:00
08/11/14 10:00
08/11/14 12:00
08/11/14 14:00
08/11/14 16:00
LICA NOX_ PPB
LICA NO_ PPB
LICA NO2_ PPB

Ozone

Maxxam Thermo 49i O_3 Analyzer Calibration

Date:	11-Aug-14	**Start Time (mst):**	13:12
Company:	LICA	**End Time (mst):**	16:17
Station Name/Location:	Cold Lake South	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**G.P.T. Date:**	11-Aug-14

Analyzer:

Serial Number:	700419951	**Range ppm:**	500
Last Calibration Date:	9-Jul-14	**As Found C.F.**	0.989
Previous Cal High Point C.F.:	0.994	**New C.F.:**	1.009

		As found:		**As left:**
	O_3 Bkg:	0.2	O_3 Bkg:	0.0
	O_3 Coef:	1.091	O_3 Coef:	1.072
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	3.3	3.3	3.3
	5.0	4.9	5.0	4.9
	15.0	14.8	15.0	14.8
	-15.0	-14.9	-15.0	-14.9
	Photo Lamp	8.7	Photo Lamp	8.7
	24.0	23.5	24.0	23.5
	O_3 Lamp	9.0	O_3 Lamp	9.0
	Bench:	30.4	Bench:	31.7
	Bench Lamp:	53.5	Bench Lamp:	53.6
	O_3 Lamp:	67.5	O_3 Lamp:	67.5
	Pressure:	387.3	Pressure:	389.4
	Cell A lpm:	0.465	Cell A lpm:	0.467
	Cell B lpm:	0.495	Cell B lpm:	0.497
	O_3 ppb:	-1.3	O_3 ppb:	-1.2
	Cell A ppb:	-23.0	Cell A ppb:	-22.4
	Cell B ppb:	20.3	Cell B ppb:	20.0
	Cell A int:	64068	Cell A int:	64115
	Cell B int:	60704	Cell B int:	60812
	Internal Span:	279.9	Internal Span:	281.3

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	4995	0
high	4995	225
mid	4995	115
low	4955	50

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	0.0	-0.2	NA
adjusted zero	4995	0.0	4995	0.0	0.0	NA
as found high	4995	0.00	4995	258.0	261.0	0.989
adjusted high	4995	0.00	4995	258.0	258.0	1.000
mid	4995	0.00	4995	131.0	130.0	1.008
low	4995	0.00	4995	56.0	55.0	1.018
calibrator zero	4995	0.00	4995	0.0	-0.1	NA

copy and paste flows and NO decrease from NOx cal in to calculated concentration **Average C.F.=** 1.009

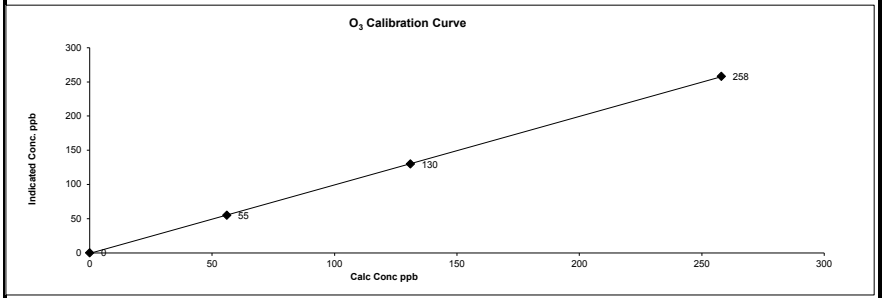
Linear Regression/Calibration Results:

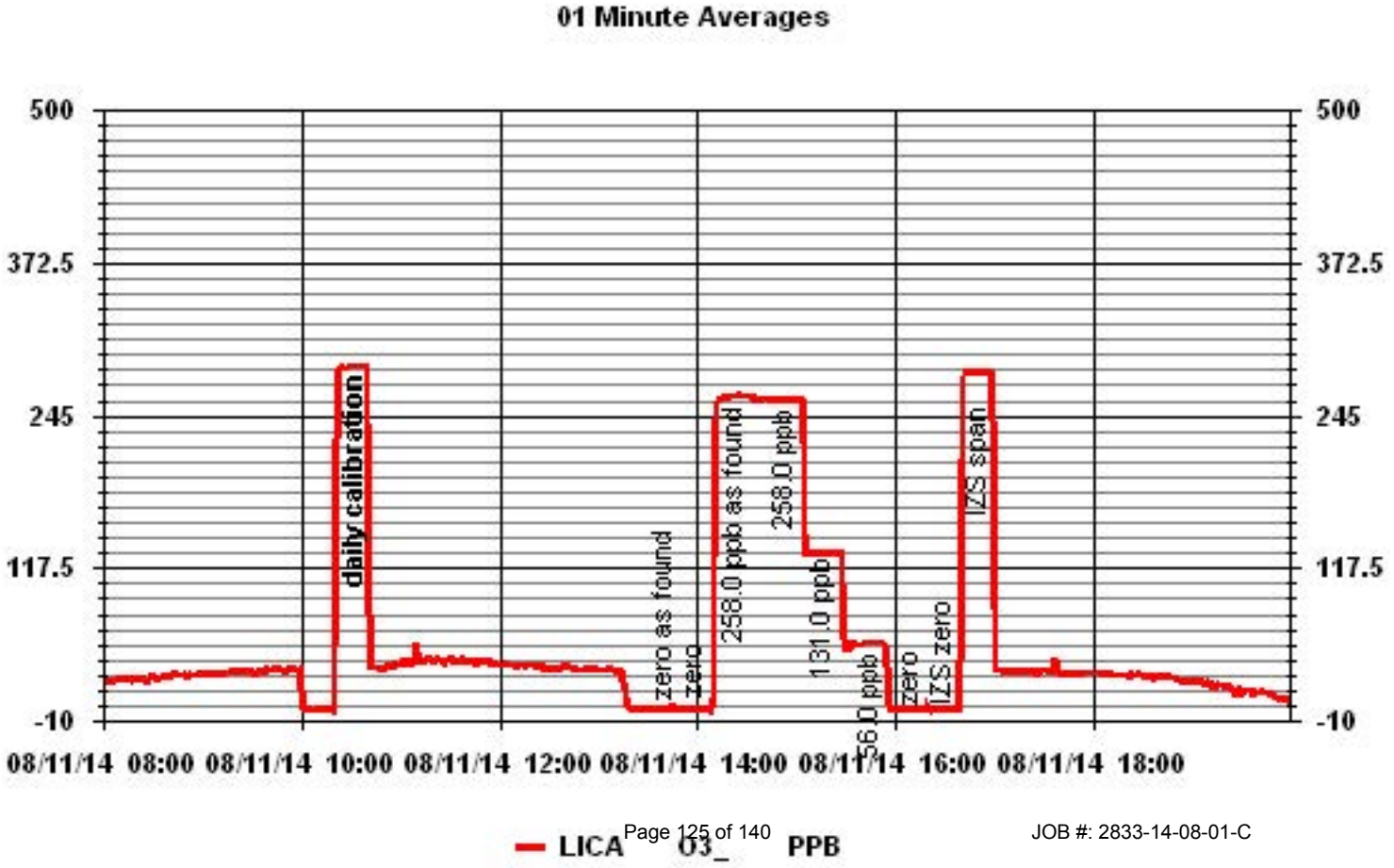
		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.001**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.121%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**1%**	**± 15%**	**PASS**

Comments:

Sample filter changed.

Thermo 49i O3 Analyzer Calibration





JOB #: 2833-14-08-01-C

Passive Bubble Maps

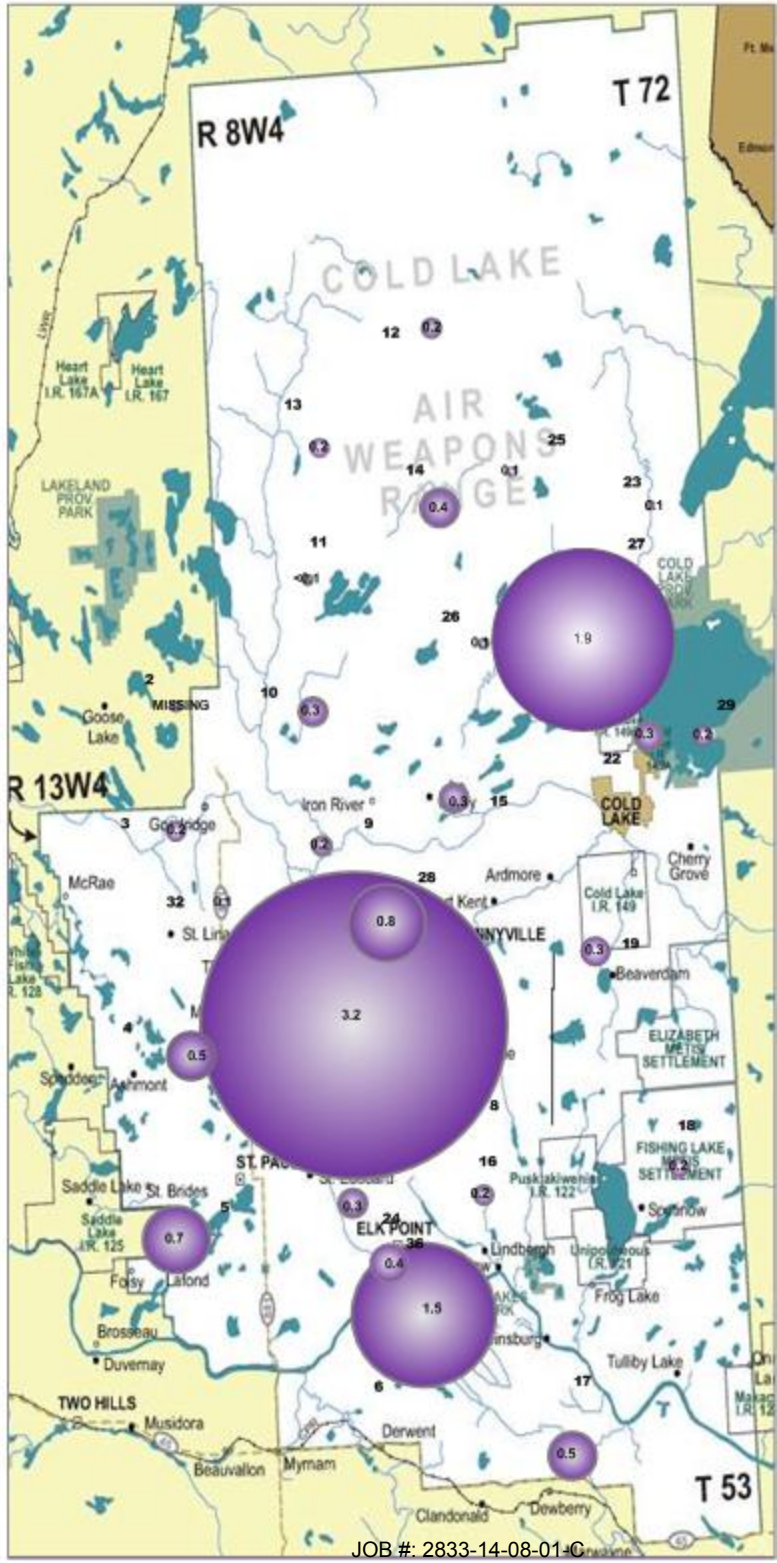
Lakeland Industry & Community Association
SO_2 Passive Bubble Map

AUGUST 2014

PASSIVE STATIONS		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	0.2 PPB	NA
4 – Flat Lake	0.5 PPB	NA
5 – Lake Eliza	0.7 PPB	NA
6 – Telegraph Creek	1.5 PPB	NA
8 – Muriel-Kehewin	3.2 PPB	NA
9 – Dupre	0.2 PPB	NA
10 – La Corey	0.3 PPB	0.3 PPB
11 – Wolf Lake	<0.1 PPB	<0.1 PPB
12 – Foster Creek	0.2 PPB	0.1 PPB
13 – Primrose	0.2 PPB	NA
14 – Maskwa	0.4 PPB	NA
15 – Ardmore	0.3 PPB	NA
16 – Frog Lake	0.2 PPB	NA
17 – Clear Range	0.5 PPB	NA
18 – Fishing Lake	0.2 PPB	NA
19 – Beaverdam	0.3 PPB	NA
22 – Cold Lake South	0.3 PPB	NA
23 – Medley-Martineau	0.1 PPB	NA
24 – Fort George	0.3 PPB	NA
25 – Burnt Lake	0.1 PPB	NA
26 – Mahikan	0.1 PPB	NA
27 – Mahkeses	1.9 PPB	NA
28 – Town of Bonnyville	0.8 PPB	NA
29 – Cold Lake South 2	0.2 PPB	NA
32 – St. Lina	0.1 PPB	NA
36 – Elk Point	0.4 PPB	NA

Summary

Minimum : < 0.1 PPB – Wolf Lake
Maximum: 3.2 PPB – Muriel-Kehewin
Average: 0.5 PPB *Includes Duplicates



JOB #: 2833-14-08-01-C

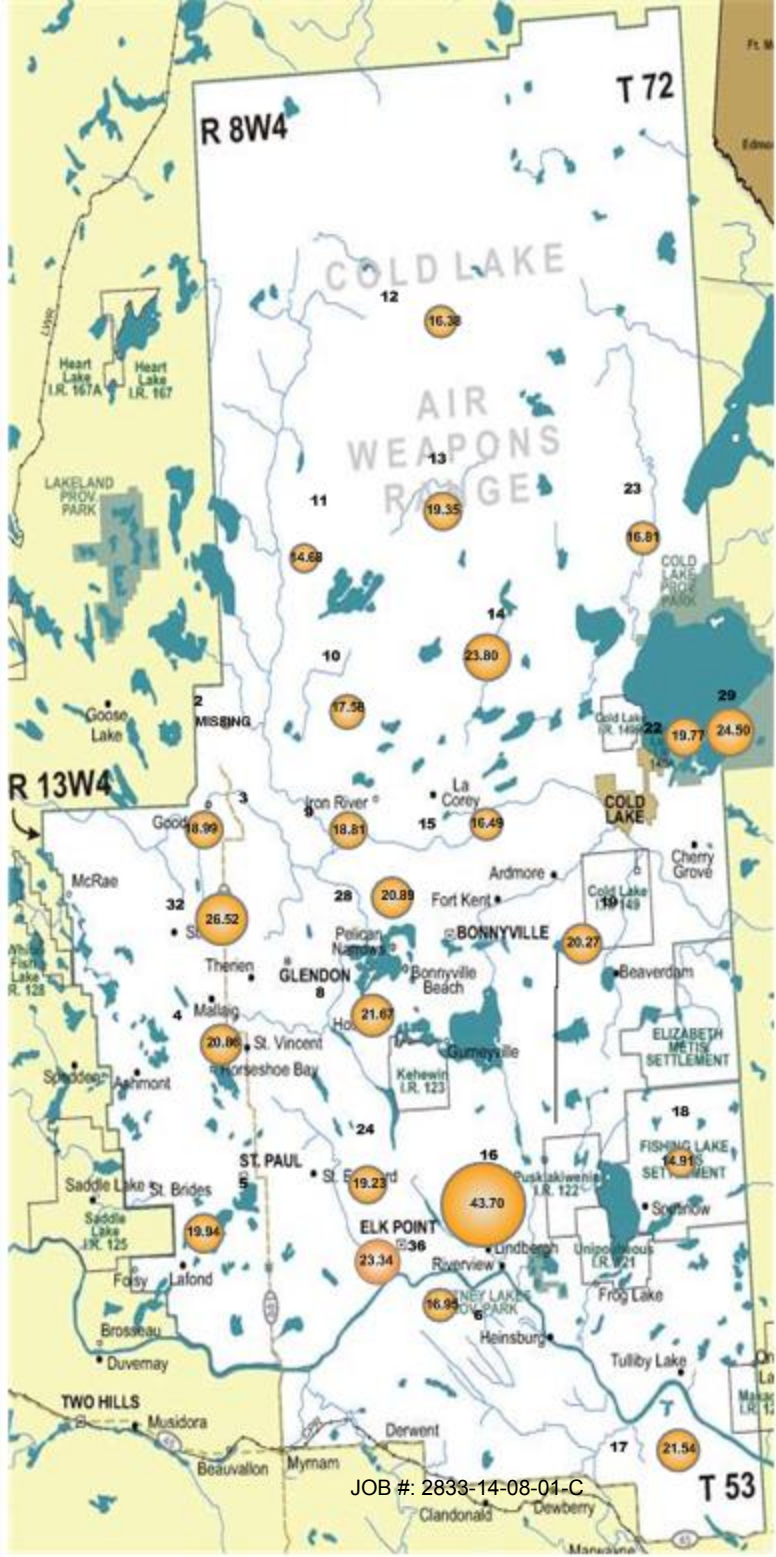
Lakeland Industry & Community Association
O_3 Passive Bubble Map

AUGUST 2014

PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	18.99 PPB	NA
4 – Flat Lake	20.86 PPB	NA
5 – Lake Eliza	19.94 PPB	NA
6 – Telegraph Creek	16.95 PPB	NA
8 – Muriel-Kehewin	21.67 PPB	NA
9 – Dupre	18.81 PPB	NA
10 – La Corey	17.58 PPB	NA
11 – Wolf Lake	14.68 PPB	NA
12 – Foster Creek	16.38 PPB	NA
13 – Primrose	19.35 PPB	NA
14 – Maskwa	23.80 PPB	NA
15 – Ardmore	17.34 PPB	15.64 PPB
16 – Frog Lake	43.70 PPB	NA
17 – Clear Range	21.54 PPB	NA
18 – Fishing Lake	14.91 PPB	NA
19 – Beaverdam	20.27 PPB	NA
22 – Cold Lake South	19.77 PPB	NA
23 – Medley-Martineau	16.81 PPB	NA
24 – Fort George	19.23 PPB	NA
28 – Town of Bonnyville	20.89 PPB	NA
29 – Cold Lake South 2	24.50PPB	NA
32 – St. Lina	26.52 PPB	NA
36 – Elk Point	23.34 PPB	NA

O_3 PPB



Summary

Minimum : 14.68 PPB – Wolf Lake
Maximum: 43.70 PPB – Frog Lake
Average: 20.74 PPB *Includes Duplicates

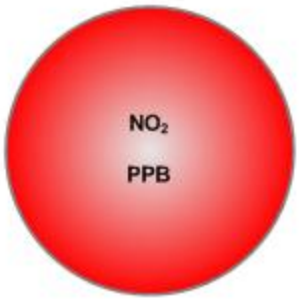
JOB #: 2833-14-08-01-C

Lakeland Industry & Community Association
NO_2 Passive Bubble Map

AUGUST 2014

PASSIVE STATIONS

		DUPLICATE
2 – Sand River	MISSING	NA
3 – Therien	0.8 PPB	NA
4 – Flat Lake	0.4 PPB	NA
5 – Lake Eliza	0.7 PPB	NA
6 – Telegraph Creek	2.6 PPB	NA
8 – Muriel-Kehewin	1.1 PPB	NA
9 – Dupre	0.8 PPB	NA
10 – La Corey	2.0 PPB	NA
11 – Wolf Lake	0.3 PPB	NA
12 – Foster Creek	0.6 PPB	NA
13 – Primrose	0.4 PPB	NA
14 – Maskwa	0.7 PPB	NA
15 – Ardmore	0.7 PPB	1.2 PPB
16 – Frog Lake	1.0 PPB	1.4 PPB
17 – Clear Range	1.4 PPB	NA
18 – Fishing Lake	1.5 PPB	NA
19 – Beaverdam	0.4 PPB	NA
22 – Cold Lake South	0.7 PPB	NA
23 – Medley-Martineau	<0.1 PPB	NA
24 – Fort George	2.0 PPB	NA
28 – Town of Bonnyville	2.2 PPB	NA
29 – Cold Lake South 2	0.6 PPB	NA
32 – St. Lina	0.3 PPB	NA
36 – Elk Point	2.2 PPB	NA



Summary

Minimum : <0.1 PPB – Medley-Martineau
Maximum: 2.6 PPB – Telegraph Creek

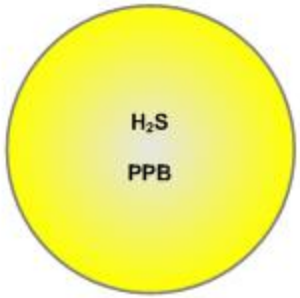
Average: 1.1 PPB *Includes Duplicates

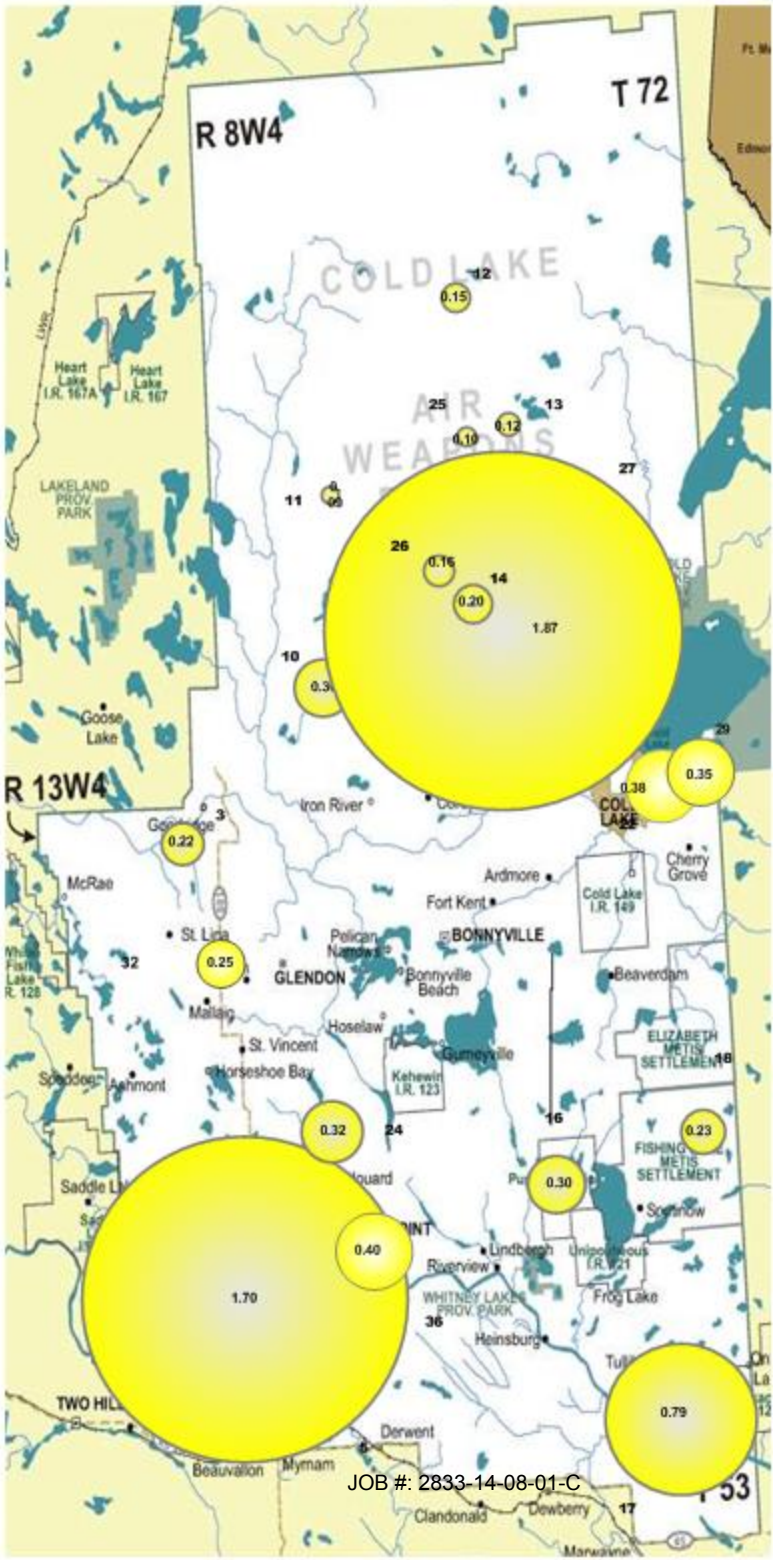
JOB #: 2833-14-08-01-C

Lakeland Industry & Community Association
H_2S Passive Bubble Map

AUGUST 2014

PASSIVE STATIONS		DUPLICATE
3 – Therien	0.22 PPB	NA
5 – Lake Eliza	1.70 PPB	NA
10 – La Corey	0.30 PPB	NA
11 – Wolf Lake	0.09 PPB	NA
12 – Foster Creek	0.15 PPB	NA
13 – Primrose	0.12 PPB	NA
14 – Maskwa	0.20 PPB	NA
16 – Frog Lake	0.30 PPB	NA
17 – Clear Range	0.79 PPB	0.68 PPB
18 – Fishing Lake	0.23 PPB	NA
22 – Cold Lake South	0.38 PPB	NA
24 – Fort George	0.32 PPB	NA
25 – Burnt Lake	0.10 PPB	NA
26 – Mahihkan	0.16 PPB	NA
27 – Mahkeses	1.87 PPB	NA
29 – Cold Lake South 2	0.35 PPB	NA
32 – St. Lina	0.25 PPB	NA
36 – Elk Point	0.40 PPB	NA





Summary

Minimum : 0.09 PPB – Wolf Lake
Maximum: 1.87 PPB – Mahkeses
Average: 0.44 PPB (Includes Duplicates)

JOB #: 2833-14-08-01-C

Passive Field Data

Passive Sampler Data Sheet for LICA August 2014

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
2	$SO_2/NO_2/O_3$	NA	NA	NA	NA	All samplers had been removed. No samples was installed.
3	$H_2S/SO_2/NO_2/O_3$	July 31, 2014	11:20	Aug.29, 2014	11:52	
4	$SO_2/NO_2/O_3$	Aug.1, 2014	15:49	Aug.27, 2014	17:01	
5	$H_2S/SO_2/NO_2/O_3$	Aug.1, 2014	15:15	Aug.27, 2014	17:50	
6	$SO_2/NO_2/O_3$	Aug.1, 2014	14:03	Aug.27, 2014	13:37	
8	$SO_2/NO_2/O_3$	Aug.1, 2014	16:36	Aug.27, 2014	19:32	
9	$SO_2/NO_2/O_3$	July 31, 2014	9:48	Aug.29, 2014	10:55	
10	$H_2S/SO_2/NO_2/O_3$	July 31, 2014	12:20	Aug.28, 2014	14:31	
11	$H_2S/SO_2/NO_2/O_3$	July 31, 2014	12:55	Aug.28, 2014	13:44	
12	$H_2S/SO_2/NO_2/O_3$	July 31, 2014	14:05	Aug.28, 2014	11:07	
13	$H_2S/SO_2/NO_2/O_3$	July 31, 2014	16:43	Aug.28, 2014	15:41	
14	$H_2S/SO_2/NO_2/O_3$	July 31, 2014	17:27	Aug.28, 2014	17:29	
15	$SO_2/NO_2/O_3$	July 31, 2014	9:08	Aug.29, 2014	9:58	
16	$H_2S/SO_2/NO_2/O_3$	Aug.1, 2014	12:38	Aug.27, 2014	11:07	
17	$H_2S/SO_2/NO_2/O_3$	Aug.1, 2014	13:20	Aug.27, 2014	12:20	
18	$H_2S/SO_2/NO_2/O_3$	Aug.1, 2014	11:55	Aug.27, 2014	10:12	
19	$SO_2/NO_2/O_3$	Aug.1, 2014	11:00	Aug.27, 2014	8:50	
22	$H_2S/SO_2/NO_2/O_3$	July 31, 2014	8:25	Aug.28, 2014	20:22	
23	$SO_2/NO_2/O_3$	Aug.1, 2014	9:48	Aug.28, 2014	19:07	
24	$H_2S/SO_2/NO_2/O_3$	Aug.1, 2014	14:36	Aug.27, 2014	14:18	
25	H_2S/SO_2	July 31, 2014	15:06	Aug.28, 2014	12:21	
26	H_2S/SO_2	July 31, 2014	17:07	Aug.28, 2014	16:22	
27	H_2S/SO_2	Aug.1, 2014	8:50	Aug.28, 2014	18:07	
28	$SO_2/NO_2/O_3$	July 31, 2014	10:01	Aug.29, 2014	11:14	
29	$H_2S/SO_2/NO_2/O_3$	July 31, 2014	8:25	Aug.28, 2014	20:22	
32	$H_2S/SO_2/NO_2/O_3$	July 31, 2014	10:49	Aug.27, 2014	15:56	
36	$H_2S/SO_2/NO_2/O_3$	Aug.1, 2014	14:40	Aug.27, 2014	18:30	

Passive Sampler Data Sheet for LICA July 2014

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
Duplicate # 10	SO_2	July 31, 2014	9:48	Aug.28, 2014	14:31	
Duplicate # 11	SO_2	July 31, 2014	12:20	Aug.28, 2014	13:44	
Duplicate # 12	SO_2	July 31, 2014	12:55	Aug.28, 2014	11:07	
Duplicate # 16	H_2S	July 31, 2014	9:08	Aug.27, 2014	11:07	
Duplicate # 17	H_2S	Aug.1, 2014	12:35	Aug.27, 2014	12:20	
Duplicate # 15	NO_2	July 31, 2014	17:27	Aug.28, 2014,	9:58	
Duplicate # 16	NO_2	July 31, 2014	9:08	Aug.27, 2014	11:02	
Duplicate # 15	O_3	July 31, 2014	17:27	Aug.29, 2014	9:58	
Duplicate # 16	O_3	July 31, 2014	9:08	Aug.27, 2014	11:07	

Passive Network Laboratory Analysis

Your Project #: 2014/07/31 - 2014/08/27
Site Location: LICA

Attention:MICHAEL BISAGA

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

Report Date: 2014/09/16
Report #: R1643326
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B477262
Received: 2014/09/03, 11:52

Sample Matrix: Air
Samples Received: 32

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
H2S Passive Analysis (1)	19	2014/09/11	2014/09/16	PTC SOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (1)	25	2014/09/05	2014/09/16	PTC SOP-00148	Passive NO2 in ATM
O3 Passive Analysis (1)	24	2014/09/10	2014/09/16	PTC SOP-00197	EPA 300 R2.1
SO2 Passive Analysis (1)	29	2014/09/05	2014/09/16	PTC SOP-00149	Tang Passive SO2 in

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) The detection limit is based on a 30 day sampling period.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Levi Manchak, Customer Service
Email: LManchak@maxxam.ca
Phone# (780) 378-8500
==========
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B477262
Report Date: 2014/09/16

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/07/31 - 2014/08/27
Site Location: LICA
Sampler Initials: WA

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		KM6690	KM6691	KM6692	KM6693	KM6694	KM6695	KM6696		
Sampling Date		2014/07/31 11:20	2014/08/01 15:49	2014/08/01 15:15	2014/08/01 14:03	2014/08/01 16:36	2014/07/31 09:48	2014/07/31 12:20		
	Units	3	4	5	6	8	9	10	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.22		1.70				0.30	0.02	7634424
Calculated NO2	ppb	0.8	0.4	0.7	2.6	1.1	0.8	2.0	0.1	7627002
Calculated O3	ppb	18.99	20.86	19.94	16.95	21.67	18.81	17.58	0.1	7632333
Calculated SO2	ppb	0.2	0.5	0.7	1.5	3.2	0.2	0.3	0.1	7627116
RDL = Reportable Detection Limit										

Maxxam ID		KM6697	KM6698	KM6699	KM6700	KM6701	KM6702	KM6703		
Sampling Date		2014/07/31 12:55	2014/07/31 14:05	2014/07/31 16:43	2014/07/31 17:27	2014/07/31 09:08	2014/08/01 12:38	2014/08/01 13:20		
	Units	11	12	13	14	15	16	17	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.09	0.15	0.12	0.20		0.30	0.79	0.02	7634424
Calculated NO2	ppb	0.3	0.6	0.4	0.7	0.7	1.0	1.4	0.1	7627002
Calculated O3	ppb	14.68	16.38	19.35	23.80	17.34	43.70	21.54	0.1	7632333
Calculated SO2	ppb	<0.1	0.2	0.2	0.4	0.3	0.2	0.5	0.1	7627116
RDL = Reportable Detection Limit										

Maxxam ID		KM6704	KM6705	KM6706		KM6707	KM6708	KM6709		
Sampling Date		2014/08/01 11:55	2014/08/01 11:00	2014/07/31 08:25		2014/08/01 09:48	2014/08/01 14:36	2014/07/31 15:06		
	Units	18	19	22	QC Batch	23	24	25	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.23		0.38	7634424		0.32	0.10	0.02	7634424
Calculated NO2	ppb	1.5	0.4	0.7	7627002	<0.1	2.0		0.1	7627007
Calculated O3	ppb	14.91	20.27	19.77	7632352	16.81	19.23		0.1	7632352
Calculated SO2	ppb	0.2	0.3	0.3	7627116	0.1	0.3	0.1	0.1	7627130
RDL = Reportable Detection Limit										

Maxxam ID		KM6710	KM6711	KM6712	KM6713	KM6714	KM6715	KM6718		
Sampling Date		2014/07/31 17:07	2014/08/01 08:50	2014/07/31 10:01	2014/07/31 08:25	2014/07/31 10:49	2014/08/01 14:40	2014/07/31 12:20		
	Units	26	27	28	29	32	36	10 DUP	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.16	1.87		0.35	0.25	0.40		0.02	7634424
Calculated NO2	ppb			2.2	0.6	0.3	2.2		0.1	7627007
Calculated O3	ppb			20.89	24.50	26.52	23.34		0.1	7632352
Calculated SO2	ppb	0.1	1.9	0.8	0.2	0.1	0.4	0.3	0.1	7627130
RDL = Reportable Detection Limit										

Maxxam Analytics International Corporation o/a Maxxam Analytics, Edmonton, 6744 50th Street T6B 3M9 Telephone(780) 378-8500 FAX(780) 378-8533

Maxxam Job #: B477262
Report Date: 2014/09/16

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/07/31 - 2014/08/27
Site Location: LICA
Sampler Initials: WA

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		KM6719	KM6720	KM6721	KM6722	KM6723		
Sampling Date		2014/07/31 12:55	2014/07/31 14:05	2014/07/31 09:08	2014/08/01 12:38	2014/08/01 13:20		
	Units	11 DUP	12 DUP	15 DUP	16 DUP	17 DUP	RDL	QC Batch
Passive Monitoring								
Calculated H2S	ppb					0.68	0.02	7634424
Calculated NO2	ppb			1.2	1.4		0.1	7627007
Calculated O3	ppb			15.64			0.1	7632352
Calculated SO2	ppb	<0.1	0.1				0.1	7627130
RDL = Reportable Detection Limit								

Maxxam Job #: B477262
Report Date: 2014/09/16

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/07/31 - 2014/08/27
Site Location: LICA
Sampler Initials: WA

GENERAL COMMENTS

Unable to ascertain location for second O3 Duplicate sample, due to staff departure.

Results relate only to the items tested.

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

Maxxam Job #: B477262
Report Date: 2014/09/16

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/07/31 - 2014/08/27
Site Location: LICA
Sampler Initials: WA

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
7627002	SS6	Spiked Blank	Calculated NO2	2014/09/05		96	%	90 - 110
7627002	SS6	Method Blank	Calculated NO2	2014/09/05	<0.1		ppb	
7627007	SS6	Spiked Blank	Calculated NO2	2014/09/05		95	%	90 - 110
7627007	SS6	Method Blank	Calculated NO2	2014/09/05	<0.1		ppb	
7627116	SS6	Spiked Blank	Calculated SO2	2014/09/05		98	%	90 - 110
7627116	SS6	Method Blank	Calculated SO2	2014/09/05	<0.1		ppb	
7627130	SS6	Spiked Blank	Calculated SO2	2014/09/05		102	%	90 - 110
7627130	SS6	Method Blank	Calculated SO2	2014/09/05	<0.1		ppb	
7632333	OZ	Spiked Blank	Calculated O3	2014/09/10		101	%	90 - 110
7632333	OZ	Method Blank	Calculated O3	2014/09/10	<0.1		ppb	
7632352	OZ	Spiked Blank	Calculated O3	2014/09/10		100	%	90 - 110
7632352	OZ	Method Blank	Calculated O3	2014/09/10	<0.1		ppb	
7634424	JPF	Spiked Blank	Calculated H2S	2014/09/11		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 #: B477262
Report Date: 2014/09/16

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2014/07/31 - 2014/08/27
Site Location: LICA
Sampler Initials: WA

VALIDATION SIGNATURE PAGE

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

Linda Lin, Supervisor, Centre for Passive Sampling Technology

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

Lakeland Industry & Community Association

Maskwa Monitoring Site
Ambient Air Monitoring
Data Report
For
August 2014

Prepared By:

September 24, 2014

JOB #: 2833-14-08-30-C

Lakeland Industry & Community Association
Ambient Air Monitoring
Maskwa

Table of Contents

Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: Maskwa
Data Period: August 2014

The monthly ambient data report:

- Prepared by Ernestine Tangang
- Reviewed by Lily Lin

Calibration Procedure

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

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

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

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

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 – August 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	0.18	4	9	8	5.7	313(NW)	0.8	9	100.0
H2S (PPB)	10	3	0	0	0.24	6	29	21	5.4	122(ESE)	0.8	26	100.0
THC (PPM)	-	-	-	-	2.31	3.6	VAR	VAR	VAR	VAR	2.7	15	100.0
NO2 (PPB)	159	-	0	-	1.89	13.1	31	0	2.9	204(SSW)	3.8	18	100.0
NO (PPB)	-	-	-	-	0.33	7.9	9	5	6	299(WNW)	1.5	9	100.0
NO_x (PPB)	-	-	-	-	2.22	19.8	9	5	6	299(WNW)	4.7	9	100.0
VECTOR WS (KPH)	-	-	-	-	3.58	10.0	1, 21	7, 9	10.0	17(NNE) 22(NNE)	4.6	21	100.0
VECTOR WD (DEGREES)	-	-	-	-	199(SSW)	-	-	-	-	-	-	-	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	73.02	94	VAR	VAR	VAR	VAR	81.8	13	100.0
TEMPERATURE (DEG C)	-	-	-	-	16.79	30.3	4	12, 13	3.6, 4.9	117(ESE) 135(SE)	21.7	4	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	943.5	956	22, 23	VAR	VAR	VAR	954.8	22	100.0
PRECIPITATION (MM)	-	-	-	-	0.07	8.4	8	14	2	172(S)	0.7	8	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 August 22nd. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

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

No operational issues were observed during the month. The monthly calibration was performed on August 22nd. 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 August 22nd. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – Maskwa

Nitrogen Dioxide (PPB)

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

The monthly calibration was performed on August 22nd. The inlet filter was changed before the monthly calibration was started. Some daily span results went above the +10% limited range this month because the expected span value was set too low after the monthly calibration was completed last month. No data was discarded due to this event. Data was corrected using daily zero information.

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

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

The wind system is reported as vector wind speed and vector wind direction. The wind direction data included in this report represents where the wind was coming from. 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.

General Monthly Summary

AQM STATION – LICA - Maskwa

Ambient Temperature (DEGC)
· System make / model - Met One 060
No operational issues were observed during the month.

Trailer Temperature (DEG C)
· System make / model – R&R 61
No operational issues were observed during the month.

Standard Deviation Wind Direction (DEG)
· System make / model –Met One 50.5H
No operational issues were observed during the month.

Datalogger
· System make / model - ESC 8832
· Software make/version - ESC v 5.51a
No operational issues were observed during the month.

Trailer
The manifold system was cleaned on August 22nd.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - Maskwa Site

AUGUST 2014

SULPHUR DIOXIDE (SO2) hourly averages in ppb

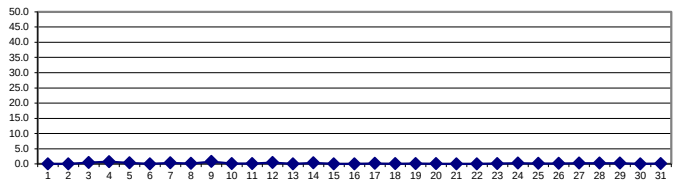
MST

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	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
2	0	0	0	0	0	**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	1	1	0	1	1	1	1	1	0	1	0	0	0	0	0	1	0.4	24
4	0	0	0	**S**	0	0	0	0	3	3	2	1	1	1	1	1	1	1	1	1	0	0	0	0	3	0.7	24
5	0	0	**S**	0	0	0	0	0	1	1	1	0	0	1	1	1	0	0	0	1	1	0	0	0	1	0.3	24
6	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
7	**S**	0	0	0	0	0	2	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	3	0.3	24
8	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	2	0.2	24
9	0	0	0	0	0	2	2	3	***4***	2	1	0	0	0	1	3	0	0	0	0	0	**S**	0	0	***4***	***0.8***	24
10	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	**S**	0	0	0	1	0.1	24
11	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	**S**	0	0	0	0	1	0.1	24
12	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	**S**	0	0	0	0	0	1	0.4	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0.0	24
14	0	0	0	0	0	0	0	1	2	1	2	2	0	0	0	0	**S**	0	0	0	0	0	0	0	2	0.3	24
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0.0	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0.0	24
17	0	0	0	0	0	0	0	0	1	1	2	0	0	**S**	0	0	0	0	0	0	0	0	0	0	2	0.2	24
18	0	0	0	0	0	0	0	0	0	1	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
19	0	0	1	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	1	0	0	0	1	0.1	24
20	0	1	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
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	**C**	**C**	**C**	**C**	**C**	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	1	1	1	0.1	24
24	0	0	0	0	0	0	**S**	0	0	0	0	0	0	1	0	0	1	1	1	1	0	0	0	1	1	0.3	24
25	1	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
26	0	0	0	0	**S**	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.1	24
27	1	1	1	**S**	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
28	0	0	**S**	0	0	0	0	0	0	0	0	0	1	2	0	2	1	0	0	0	0	0	0	0	2	0.3	24
29	0	**S**	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	**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
31	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	**S**	0	1	0.1	24
HOURLY MAX	1	1	1	1	1	2	2	3	4	3	2	2	1	2	1	3	1	1	1	1	1	1	1	1			
HOURLY AVG	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.3	0.6	0.5	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1			

STATUS FLAG CODES

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

24 HOUR AVERAGES FOR AUGUST 2014

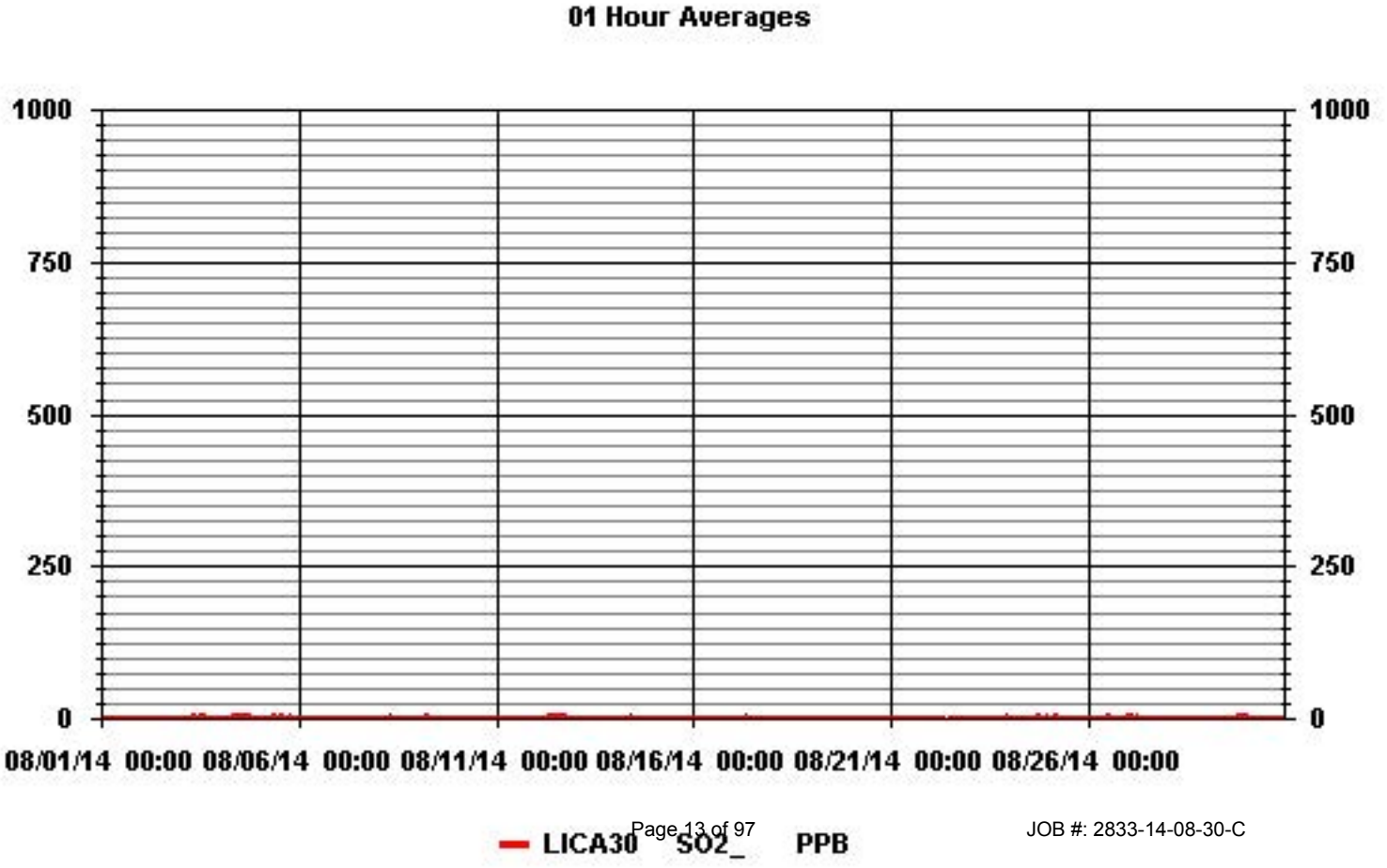


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB 24-HR 48 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	102					
MAXIMUM 1-HR AVERAGE:	4	PPB	@ HOUR(S)	8	ON DAY(S)	9
MAXIMUM 24-HR AVERAGE:	0.8	PPB			ON DAY(S) VAR-VARIOUS	9
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.49		MONTHLY AVERAGE:	0.18	PPB	

JOB #: 2833-14-08-30-C



JOB #: 2833-14-08-30-C

Lakeland Industry & Community Association - Maskwa Site

AUGUST 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	0	0	0	1	**S**	0	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	1	0.3	24
2	1	1	0	0	1	**S**	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24
3	1	1	1	1	**S**	1	1	1	1	1	1	1	2	1	1	2	1	1	1	1	1	1	1	1	2	1.1	24
4	1	1	1	**S**	1	1	1	1	7	5	4	2	3	3	1	1	1	1	1	1	1	1	1	1	7	1.8	24
5	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
6	1	**S**	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	1	0.3	24
7	**S**	0	0	0	0	1	7	3	***11***	8	2	1	0	5	0	0	0	0	1	1	0	0	0	**S**	***11***	1.8	24
8	0	0	0	0	0	0	0	4	3	3	1	1	0	2	2	0	2	0	0	0	0	0	**S**	0	4	0.8	24
9	1	0	0	0	0	5	6	6	7	5	4	2	0	1	3	10	1	0	0	0	0	**S**	1	1	10	***2.3***	24
10	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
11	1	0	1	1	1	1	1	2	1	1	1	1	1	3	2	3	1	1	1	**S**	1	1	1	1	3	1.2	24
12	1	1	1	1	1	1	1	1	2	3	3	2	2	2	1	2	2	3	**S**	1	0	0	0	0	3	1.3	24
13	0	0	0	0	0	0	1	0	1	0	0	0	0	1	1	1	1	**S**	1	0	0	0	0	0	1	0.3	24
14	0	0	0	0	0	0	0	3	4	4	4	3	1	2	1	1	**S**	1	1	0	0	0	0	0	4	1.1	24
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0.0	24
16	0	0	0	0	0	0	0	0	0	0	1	1	1	0	**S**	0	0	0	0	0	0	0	0	0	1	0.1	24
17	0	0	0	0	0	0	0	0	3	4	4	2	0	**S**	0	0	0	1	3	2	0	0	0	0	4	0.8	24
18	0	0	0	0	0	0	0	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	0.7	24
19	1	1	2	1	1	0	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	4	1	1	1	4	1.1	24
20	1	2	1	1	1	0	1	1	0	1	**S**	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0.4	24
21	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0.1	24
22	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	**C**	1	1	1	1	1	1	1	1	1	1	1	1	0.6	24
23	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1.1	24
24	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
25	1	1	1	1	1	**S**	0	0	1	1	0	0	0	0	0	1	0	1	1	0	0	1	1	1	1	0.6	24
26	1	1	1	1	**S**	0	0	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
27	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
28	1	1	**S**	0	0	0	2	0	0	0	1	2	5	10	4	8	7	4	0	0	0	0	0	0	10	2.0	24
29	0	**S**	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	24
30	**S**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	1	0	0	1	1	0	0	**S**	1	0.5	24
31	0	0	0	0	0	1	0	1	2	2	1	1	1	0	0	0	5	1	0	0	0	5	**S**	0	5	0.9	24
HOURLY MAX	1	2	2	1	1	5	7	6	11	8	4	3	5	10	4	10	7	4	3	2	4	5	2	2			
HOURLY AVG	0.6	0.6	0.4	0.4	0.4	0.6	0.9	1.1	1.8	1.7	1.3	1.0	0.9	1.4	1.0	1.4	1.1	0.9	0.7	0.7	0.6	0.7	0.6	0.6			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 439

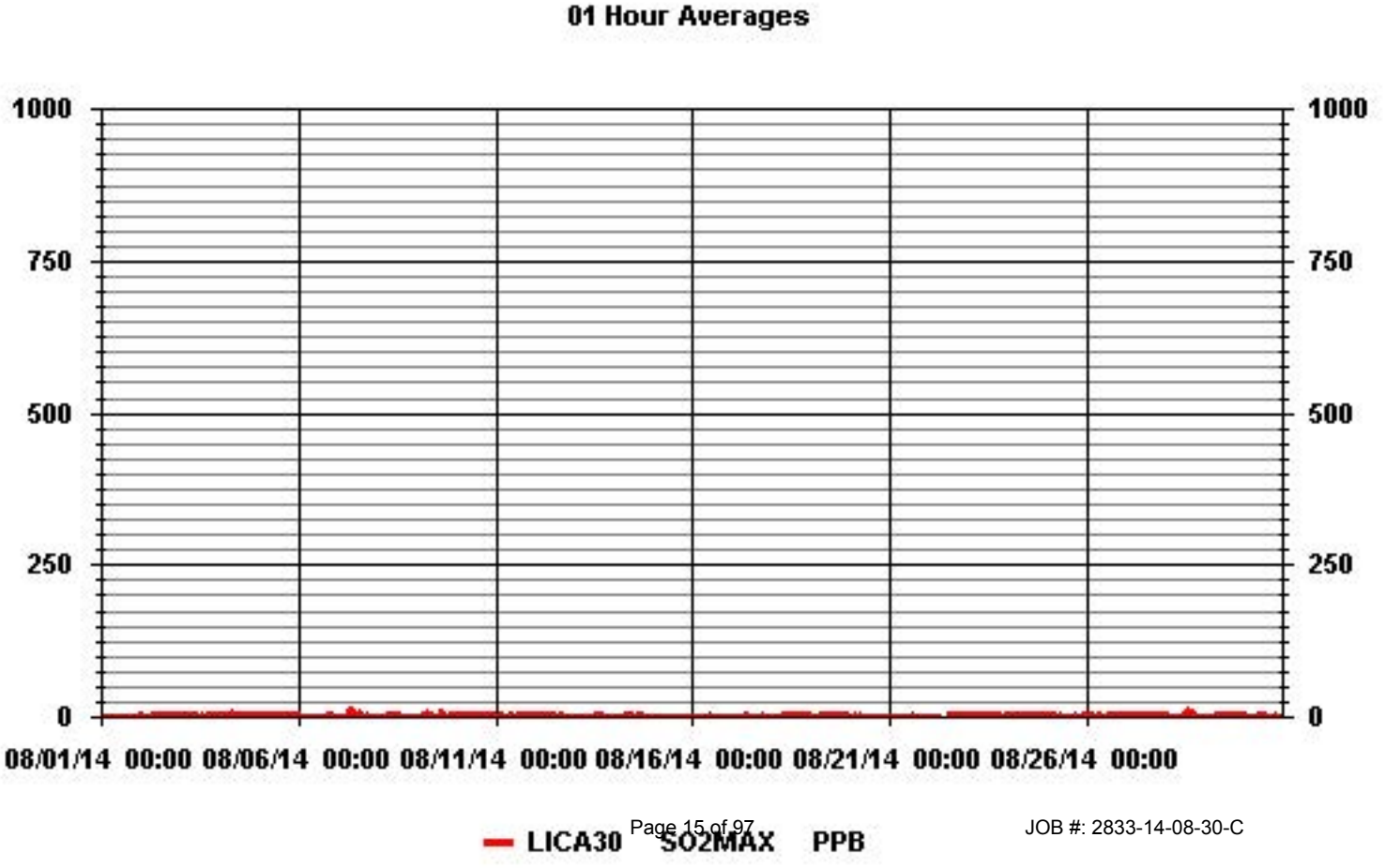
MAXIMUM INSTANTANEOUS VALUE: 11 PPB @ HOUR(S) 8 ON DAY(S) 7

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 6 HRS

STANDARD DEVIATION: 1.26



JOB #: 2833-14-08-30-C

LICA30
SO2_ / WDR Joint Frequency Distribution (Percent)

August 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	5.09	6.22	6.22	3.25	1.98	4.95	10.32	8.06	9.47	15.55	8.91	3.53	6.93	3.53	2.82	3.11	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.09	6.22	6.22	3.25	1.98	4.95	10.32	8.06	9.47	15.55	8.91	3.53	6.93	3.53	2.82	3.11	

Calm : .00 %

Total # Operational Hours : 707

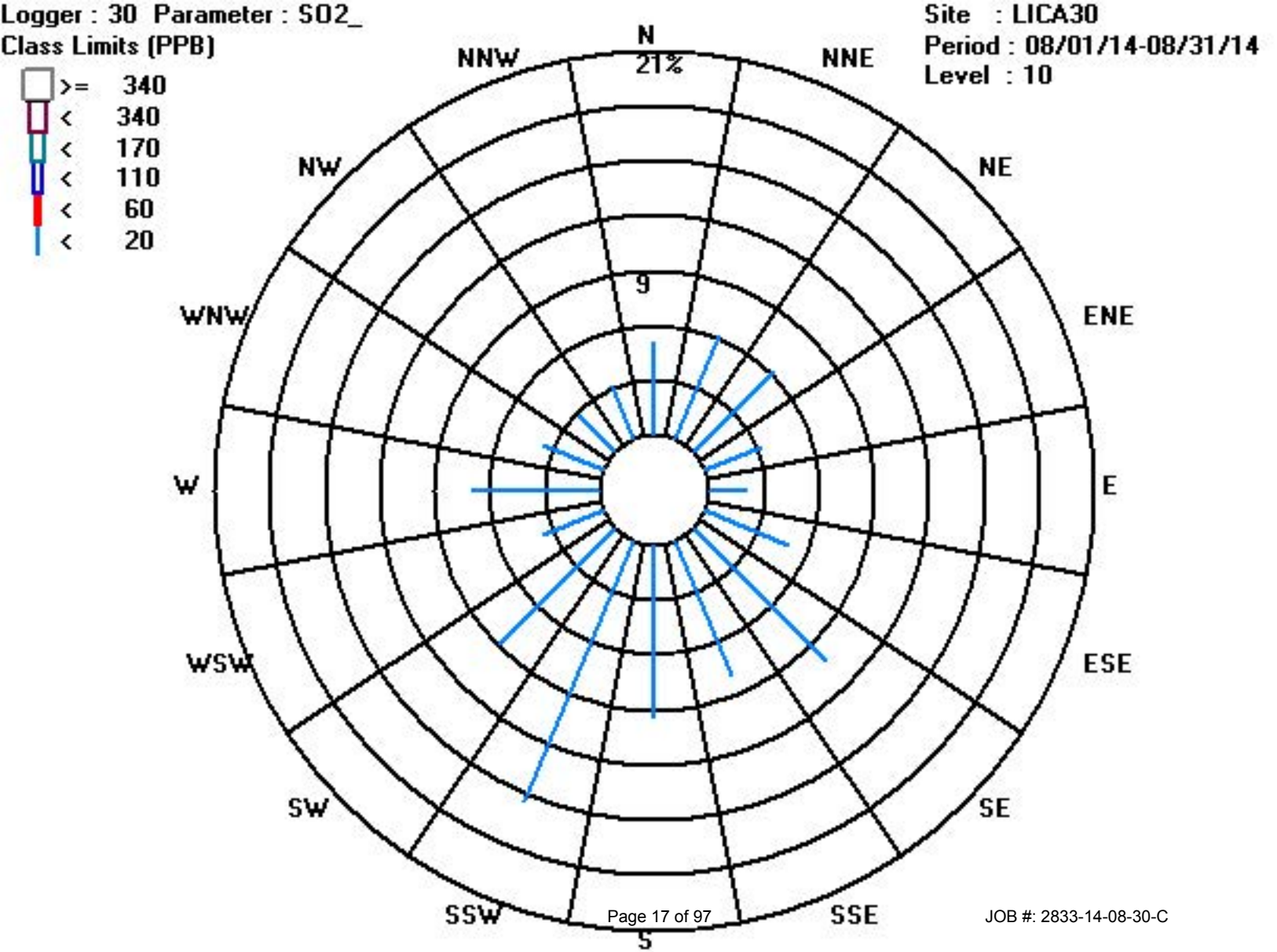
Distribution By Samples

Direction

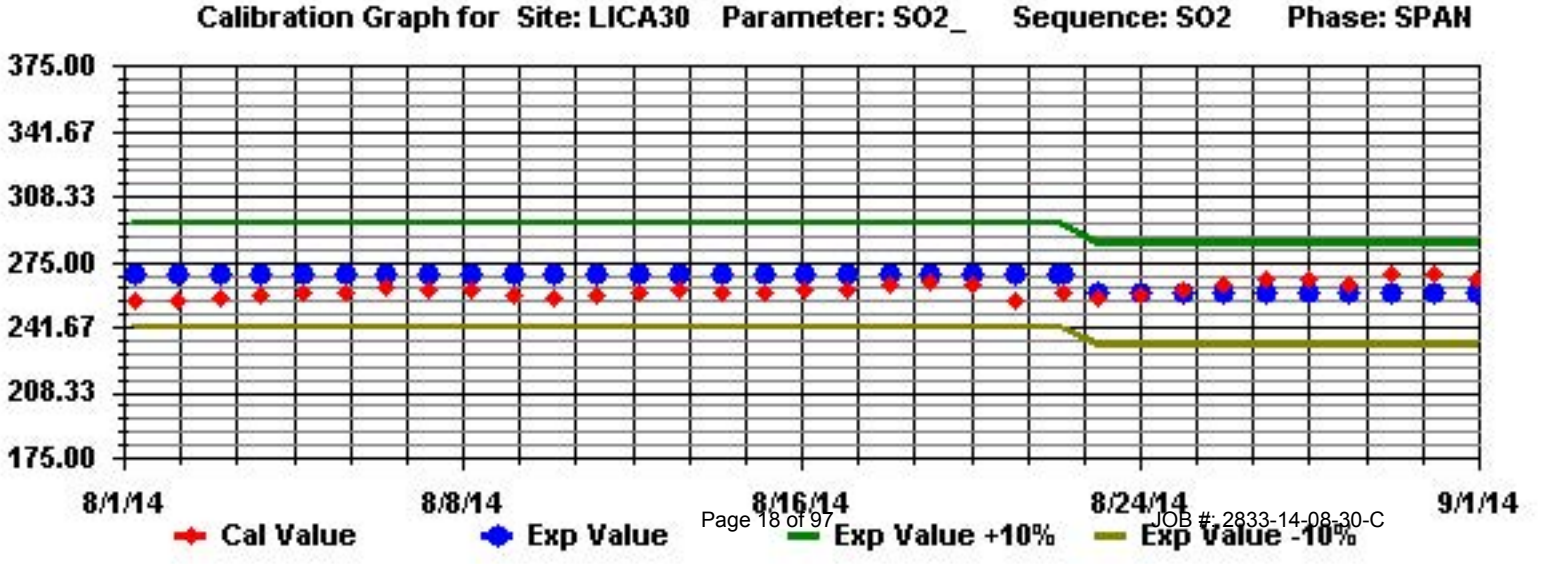
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	36	44	44	23	14	35	73	57	67	110	63	25	49	25	20	22	707
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	36	44	44	23	14	35	73	57	67	110	63	25	49	25	20	22	

Calm : .00 %

Total # Operational Hours : 707



JOB #: 2833-14-08-30-C


Calibration Graph for Site: LICA30 Parameter: SO2_ Sequence: SO2 Phase: SPAN
375.00
341.67
308.33
275.00
241.67
208.33
175.00
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Hydrogen Sulphide

Lakeland Industry & Community Association - Maskwa Site

AUGUST 2014

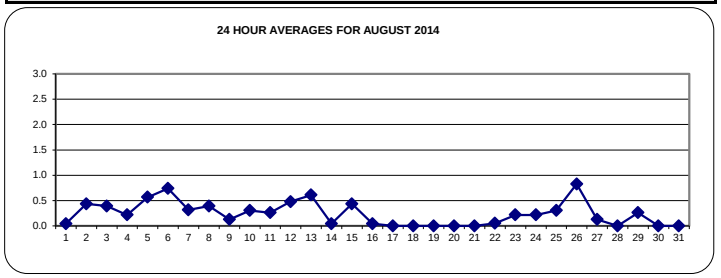
HYDROGEN SULPHIDE (H2S) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0.0	24
2	0	1	1	1	2	**S**	0	0	1	1	1	0	0	1	0	0	0	0	1	0	0	0	0	0	2	0.4	24
3	0	1	0	0	**S**	1	0	1	1	1	0	0	1	0	0	1	1	0	0	1	0	0	0	0	1	0.4	24
4	0	1	0	**S**	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.2	24
5	0	0	**S**	1	0	0	1	0	1	0	0	0	1	1	1	4	0	0	0	0	1	0	1	1	4	0.6	24
6	1	**S**	0	1	1	0	1	1	5	1	1	0	0	1	0	0	1	0	0	1	1	0	1	0	5	0.7	24
7	**S**	1	0	0	0	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	**S**	1	0.3	24
8	1	0	0	0	0	0	1	1	1	1	1	0	0	0	1	1	0	0	0	0	0	1	**S**	0	1	0.4	24
9	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	**S**	0	0	1	0.1	24
10	0	0	0	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	**S**	0	0	0	1	0.3	24
11	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	**S**	1	1	1	0	1	0.3	24
12	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1	0	**S**	3	1	1	1	0	3	0.5	24
13	0	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	**S**	0	0	0	0	0	0	1	0.6	24
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	1	0	0	1	0.0	24
15	0	0	1	1	1	1	1	1	1	0	0	0	1	1	1	**S**	0	0	0	0	0	0	0	0	1	0.4	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	1	1	0.0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0.0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
19	0	0	0	0	0	0	0	0	0	0	0	**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	**C**	**C**	**C**	**C**	0	0	0	0	0	0	1	0	1	0.1	24
23	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	0.2	24
24	3	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	3	0.2	24
25	0	0	0	0	0	**S**	1	1	0	1	1	0	1	0	0	0	0	0	0	0	1	1	0	0	1	0.3	24
26	0	1	1	0	**S**	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	0	1	1	1	***0.8***	24
27	1	1	1	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
28	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
29	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	***6***	0	0	***6***	0.3	24
30	**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
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0.0	24
HOURLY MAX	3	1	1	1	2	1	1	1	5	1	1	1	1	1	1	4	1	1	1	3	1	6	2	2			
HOURLY AVG	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.3	0.5	0.3	0.3	0.1	0.2	0.2	0.1	0.3	0.1	0.1	0.1	0.2	0.2	0.4	0.3	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

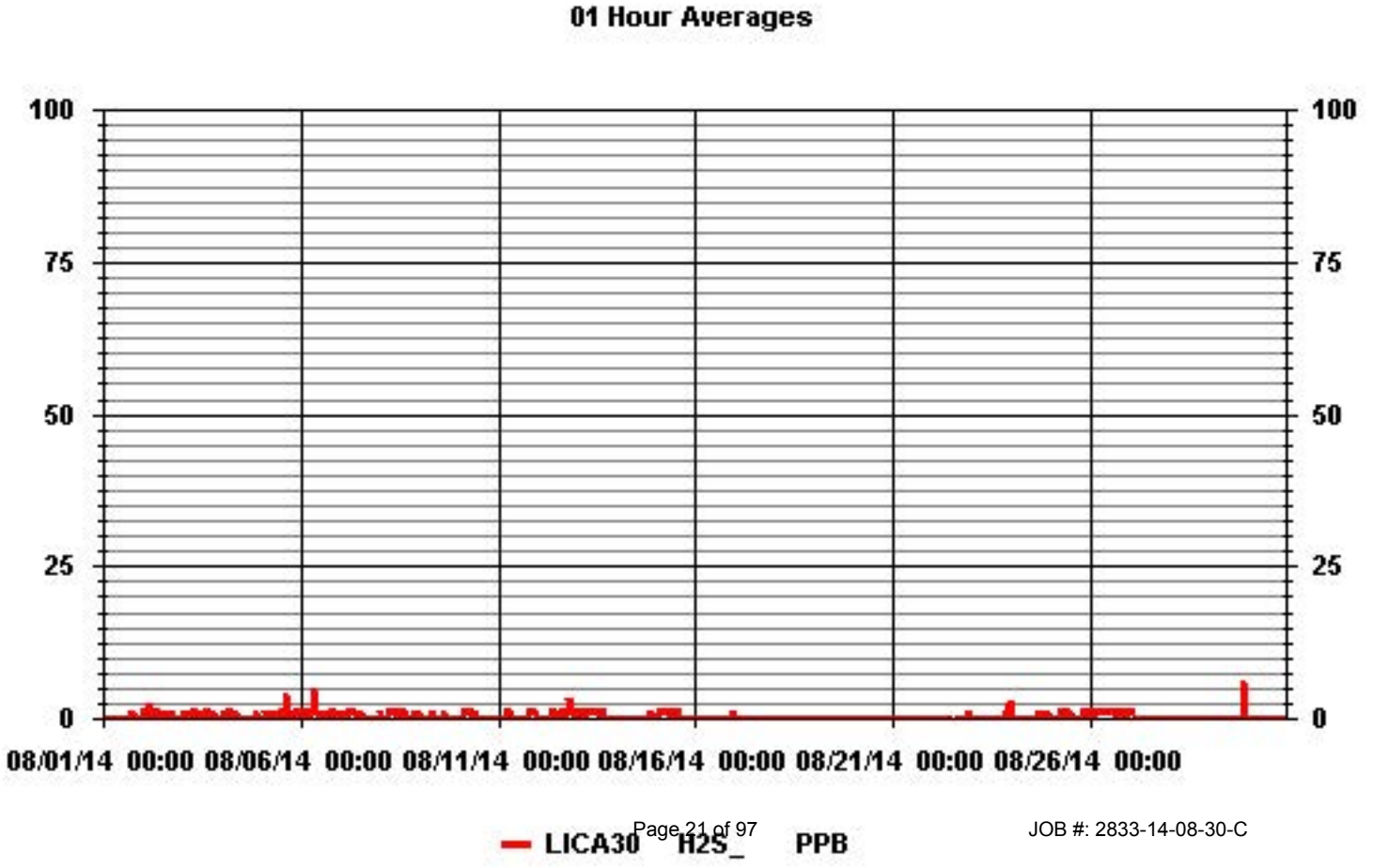


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 10 PPB 24-HR 3 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	151					
MAXIMUM 1-HR AVERAGE:	6	PPB	@ HOUR(S)	21	ON DAY(S)	29
MAXIMUM 24-HR AVERAGE:	0.8	PPB			ON DAY(S)	26
					VAR-VARIOUS	
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.54		MONTHLY AVERAGE:		0.24	PPB

JOB #: 2833-14-08-30-C



JOB #: 2833-14-08-30-C

Lakeland Industry & Community Association - Maskwa Site

AUGUST 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	0	1	1	**S**	1	1	1	1	1	1	0	0	1	1	1	2	1	1	1	1	1	2	0.9	24
2	1	1	2	2	3	**S**	1	1	4	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	4	1.2	24
3	0	3	1	1	**S**	1	1	1	1	1	1	1	1	1	1	4	1	1	1	1	1	1	1	1	4	1.2	24
4	1	1	1	**S**	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
5	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	3	***23***	1	1	1	1	1	1	1	1	***23***	***2.0***	24
6	2	**S**	1	1	1	1	1	2	8	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8	1.4	24
7	**S**	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1.0	24
8	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	2	1.0	24
9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	**S**	1	1	1	1.0	24
10	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	0	1	**S**	1	1	1	2	1.0	24
11	1	1	1	1	1	1	2	2	1	1	1	1	1	0	0	1	0	1	1	**S**	1	1	1	1	2	1.0	24
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	**S**	8	4	1	1	1	8	1.5	24
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	0	0	0	1	1	0	1	0.8	24
14	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	**S**	1	1	1	1	1	1	0	1	0.4	24
15	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	**S**	0	0	0	0	0	0	0	0	2	0.7	24
16	1	1	0	0	0	0	1	1	1	1	0	1	0	2	**S**	0	0	0	0	0	0	0	1	4	4	0.6	24
17	1	0	1	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	1	0.1	24
18	0	0	0	1	1	1	1	1	1	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
19	0	0	0	0	0	0	0	0	0	0	0	**S**	0	1	0	0	0	0	0	0	0	0	0	0	1	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	1	1	0.0	24
21	0	0	0	0	0	0	0	0	0	**S**	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	0.5	24
22	1	1	1	1	1	1	1	1	**S**	1	1	0	**C**	**C**	**C**	**C**	**C**	1	1	1	0	1	1	1	1	0.9	24
23	1	1	1	1	1	0	1	**S**	1	1	1	1	1	1	1	1	0	1	1	1	1	4	5	4	5	1.3	24
24	5	1	1	1	1	1	**S**	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	5	1.1	24
25	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	0	2	1.0	24
26	1	1	1	1	**S**	2	2	1	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1.2	24
27	1	2	2	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24
28	0	0	**S**	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
29	0	**S**	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	11	2	1	11	0.8	24
30	**S**	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	1	0.2	24
31	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	1	0	1	0	0	1	**S**	0	1	0.3	24
HOURLY MAX	5	3	2	2	3	2	2	2	8	2	1	1	2	2	3	23	1	1	2	8	4	11	5	4			
HOURLY AVG	0.9	0.8	0.8	0.7	0.7	0.7	1.0	0.9	1.0	0.8	0.6	0.7	0.7	0.7	0.7	1.5	0.6	0.6	0.6	0.8	0.7	1.1	0.9	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: 464

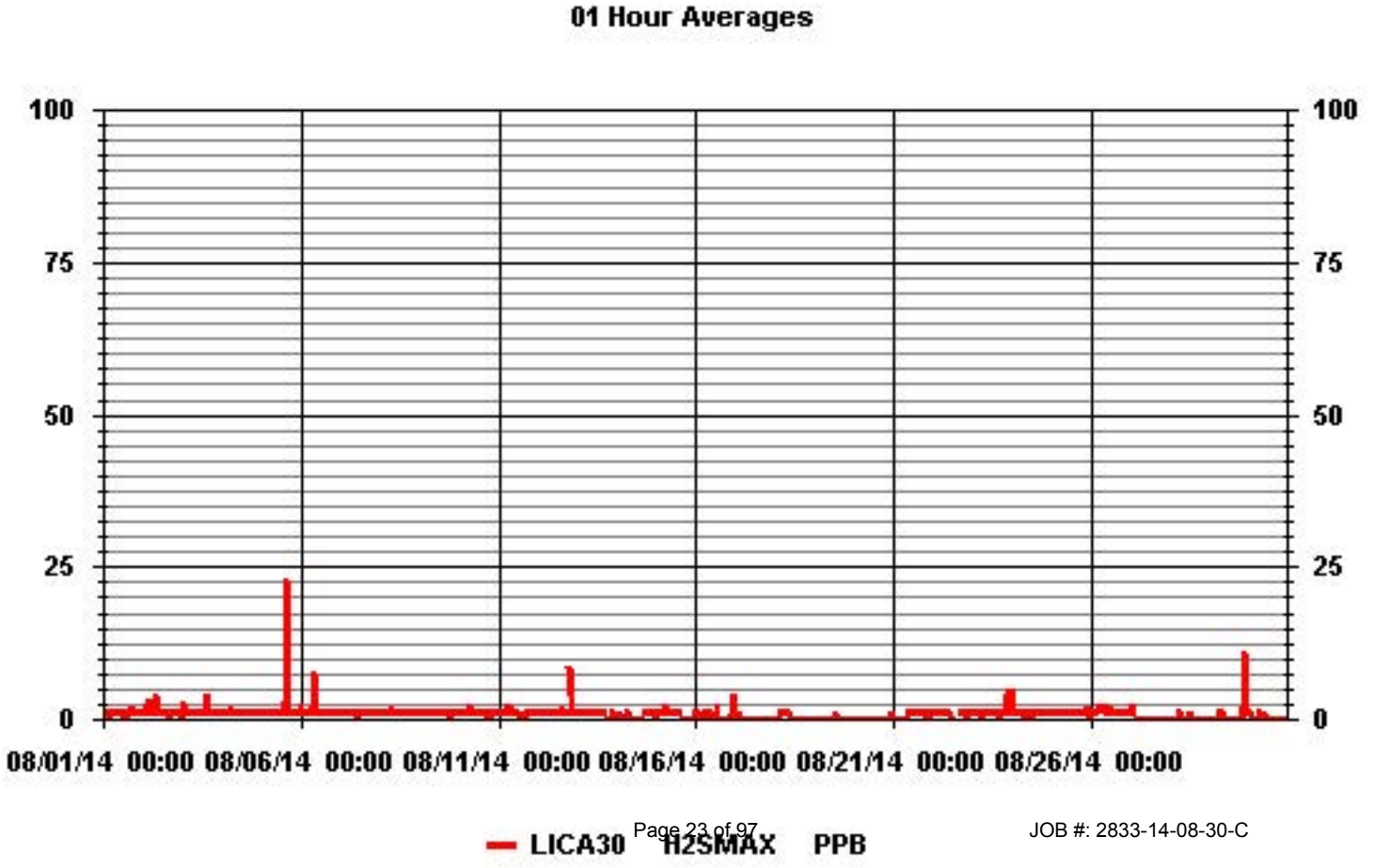
MAXIMUM INSTANTANEOUS VALUE: 23 PPB @ HOUR(S) 15 ON DAY(S) 5

VAR-VARIOUS

IZS CALIBRATION TIME: 33 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 1.20



JOB #: 2833-14-08-30-C

LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

August 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	5.23	6.36	5.94	3.25	1.98	4.38	10.18	8.06	9.47	15.55	8.91	3.53	6.93	3.53	2.82	3.11	99.29
<	10	.00	.00	.00	.00	.00	.56	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.70
<	50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	5.23	6.36	5.94	3.25	1.98	4.95	10.32	8.06	9.47	15.55	8.91	3.53	6.93	3.53	2.82	3.11	

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	37	45	42	23	14	31	72	57	67	110	63	25	49	25	20	22	702
<	10						4	1										5
<	50																	
>=	50																	
	Totals	37	45	42	23	14	35	73	57	67	110	63	25	49	25	20	22	

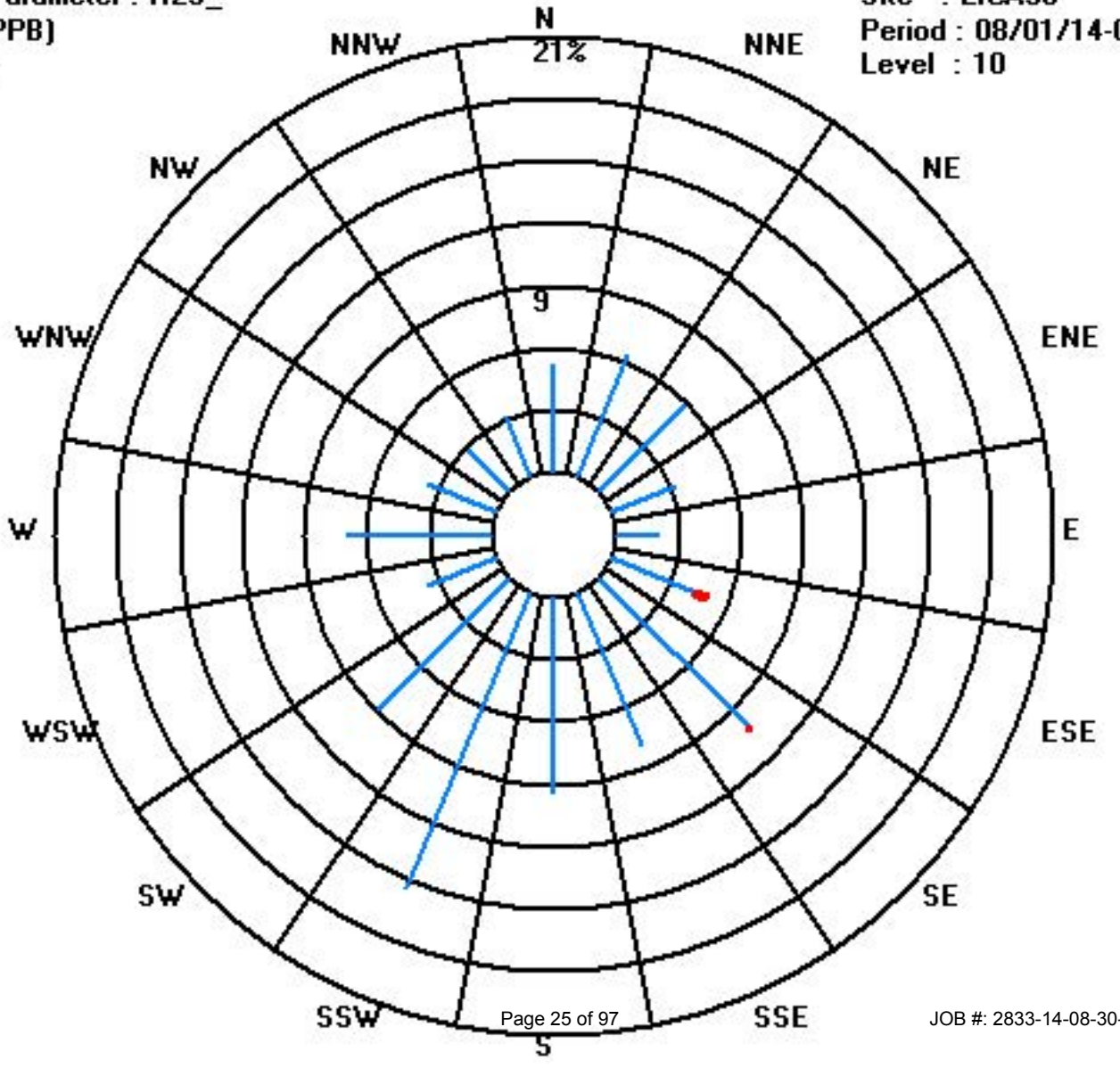
Calm : .00 %

Total # Operational Hours : 707

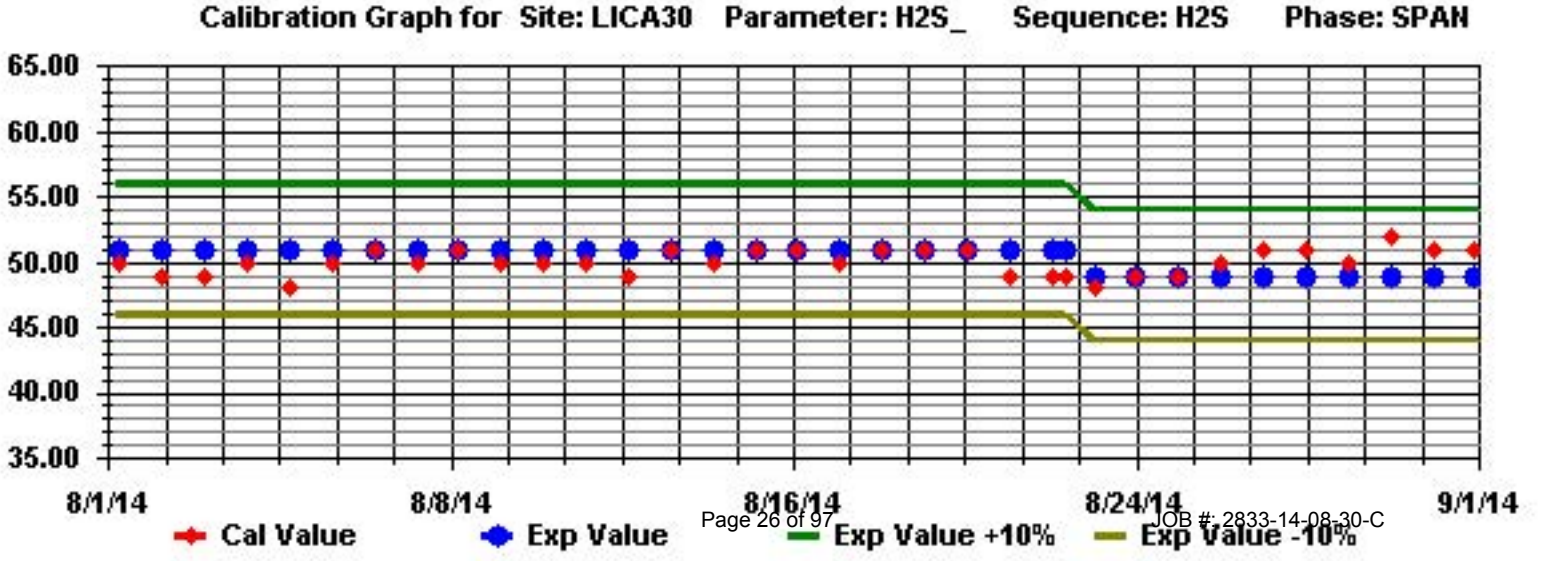
Logger : 30 Parameter : H2S_
Class Limits (PPB)

>= 50
< 50
< 10
< 3

Site : LICA30
Period : 08/01/14-08/31/14
Level : 10



JOB #: 2833-14-08-30-C


Calibration Graph for Site: LICA30 Parameter: H2S_ Sequence: H2S Phase: SPAN
65.00
60.00
55.00
50.00
45.00
40.00
35.00
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

Lakeland Industry & Community Association - Maskwa Site

AUGUST 2014

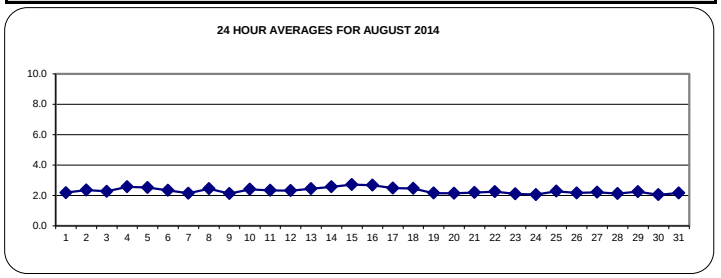
TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST

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

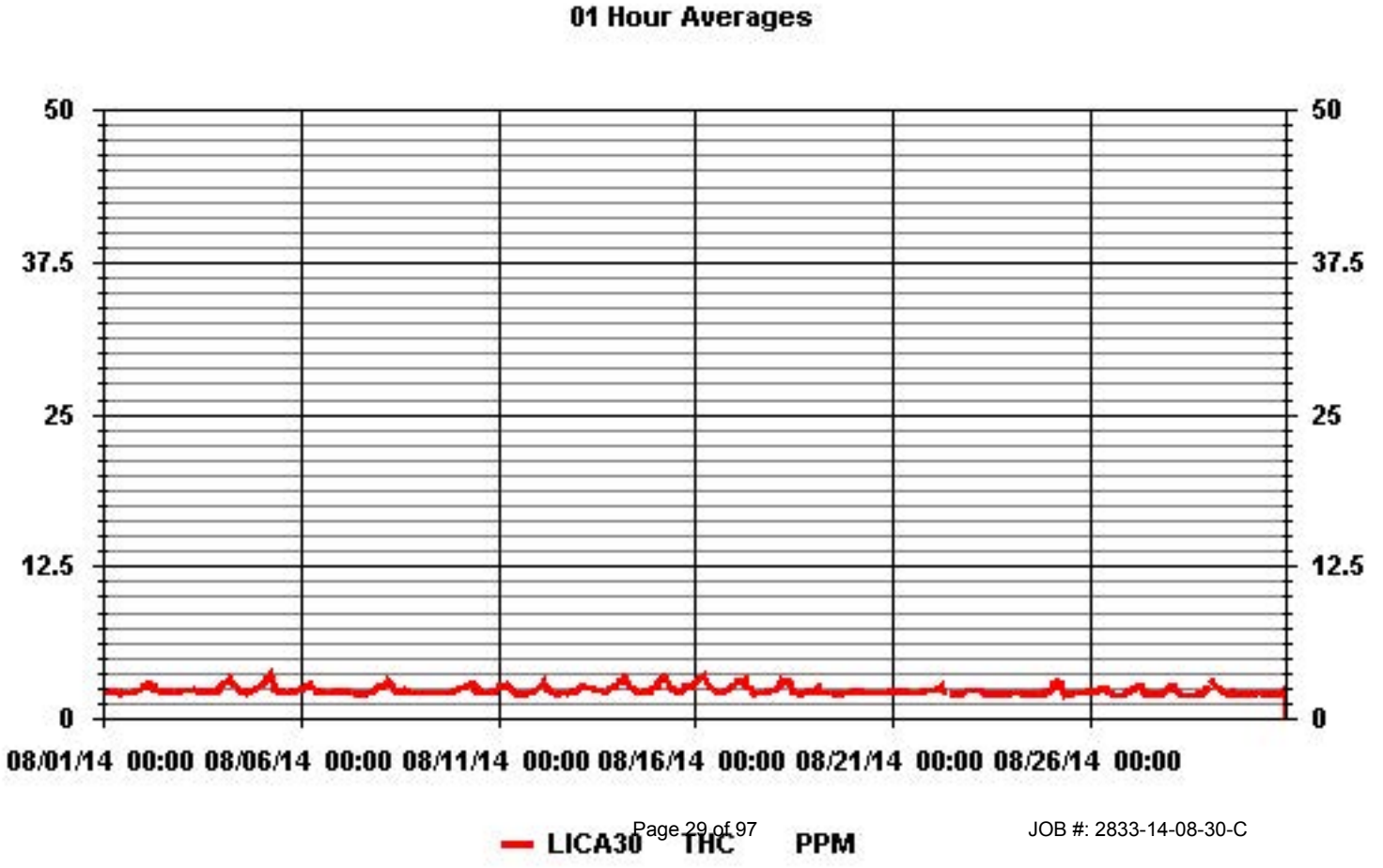
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	705					
MAXIMUM 1-HR AVERAGE:	3.6	PPM	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	2.7	PPM			ON DAY(S)	15
				VAR-VARIOUS		
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.32		MONTHLY AVERAGE:		2.31	PPM



JOB #: 2833-14-08-30-C

Lakeland Industry & Community Association - Maskwa Site

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

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 704

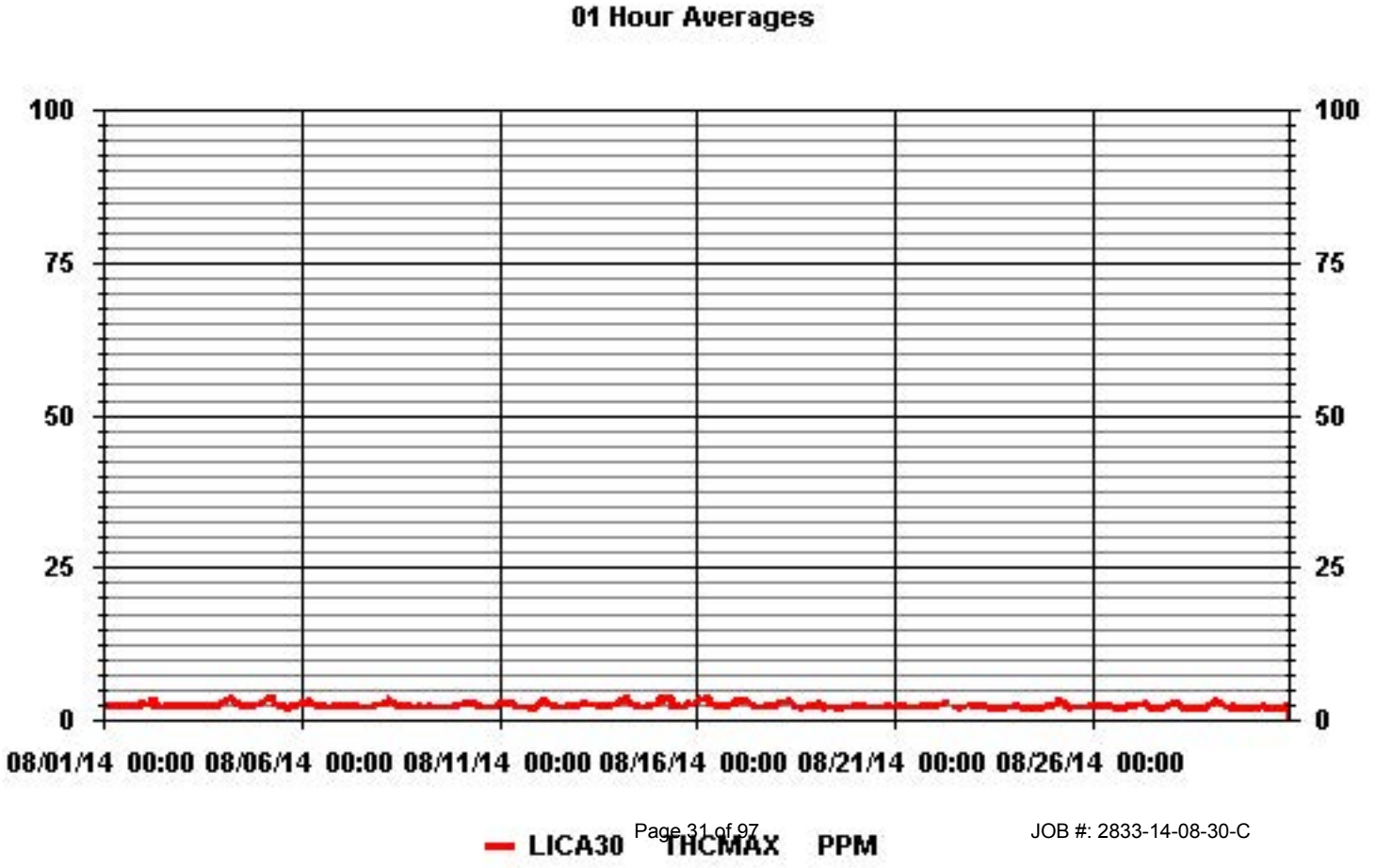
MAXIMUM INSTANTANEOUS VALUE: 4.2 PPM @ HOUR(S) 5 ON DAY(S) 14

VAR-VARIOUS

IZS CALIBRATION TIME: 34 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 6 HRS

STANDARD DEVIATION: 0.40



JOB #: 2833-14-08-30-C

LICA30
THC / WDR Joint Frequency Distribution (Percent)

August 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	4.82	5.81	5.53	3.12	1.56	4.25	9.78	7.65	8.93	14.46	8.51	3.54	6.66	3.40	2.83	3.12	94.04
< 10.0	.28	.42	.70	.14	.42	.70	.42	.42	.42	1.13	.42	.00	.28	.14	.00	.00	5.95
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.10	6.24	6.24	3.26	1.98	4.96	10.21	8.08	9.36	15.60	8.93	3.54	6.95	3.54	2.83	3.12	

Calm : .00 %

Total # Operational Hours : 705

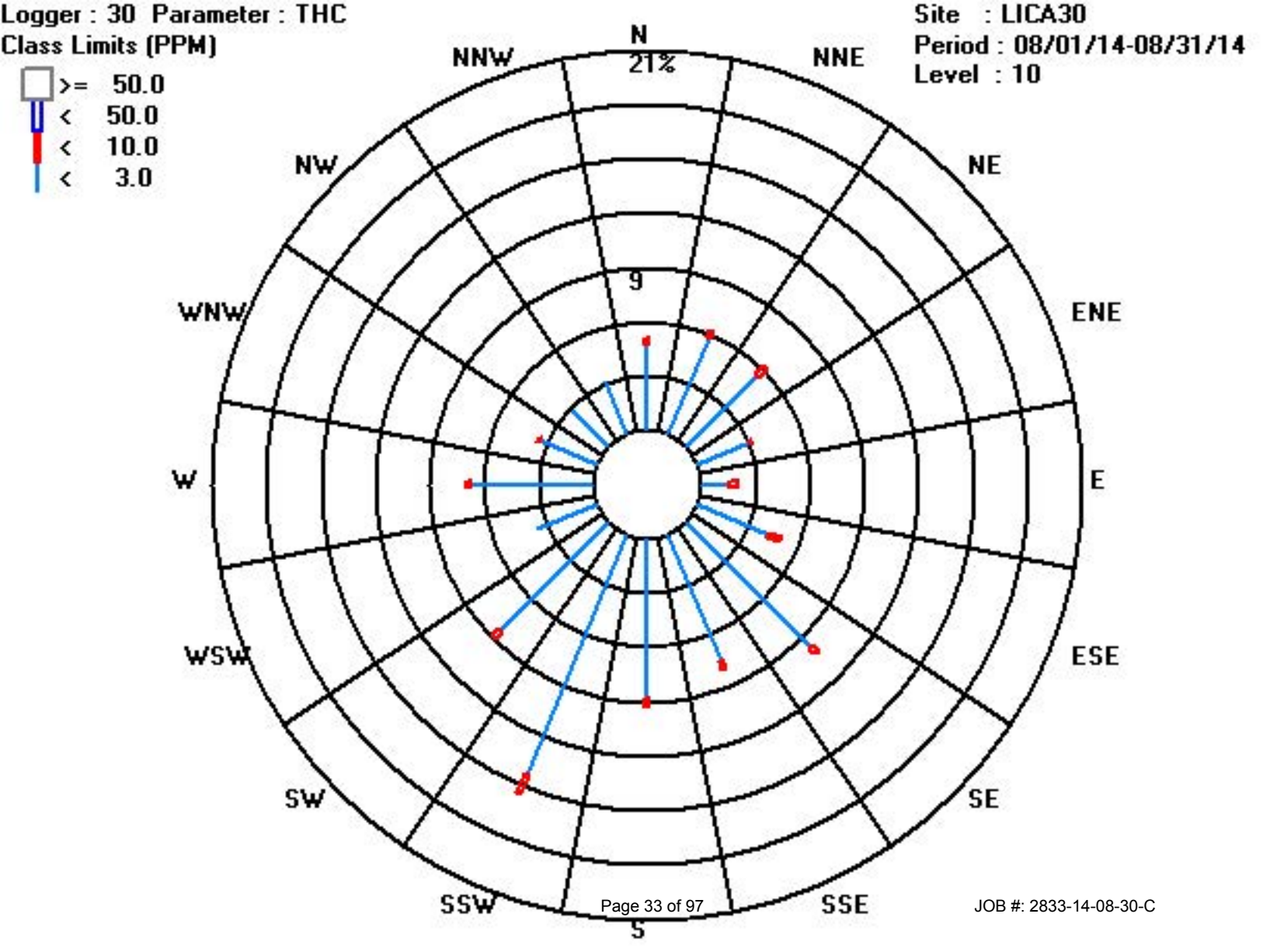
Distribution By Samples

Direction

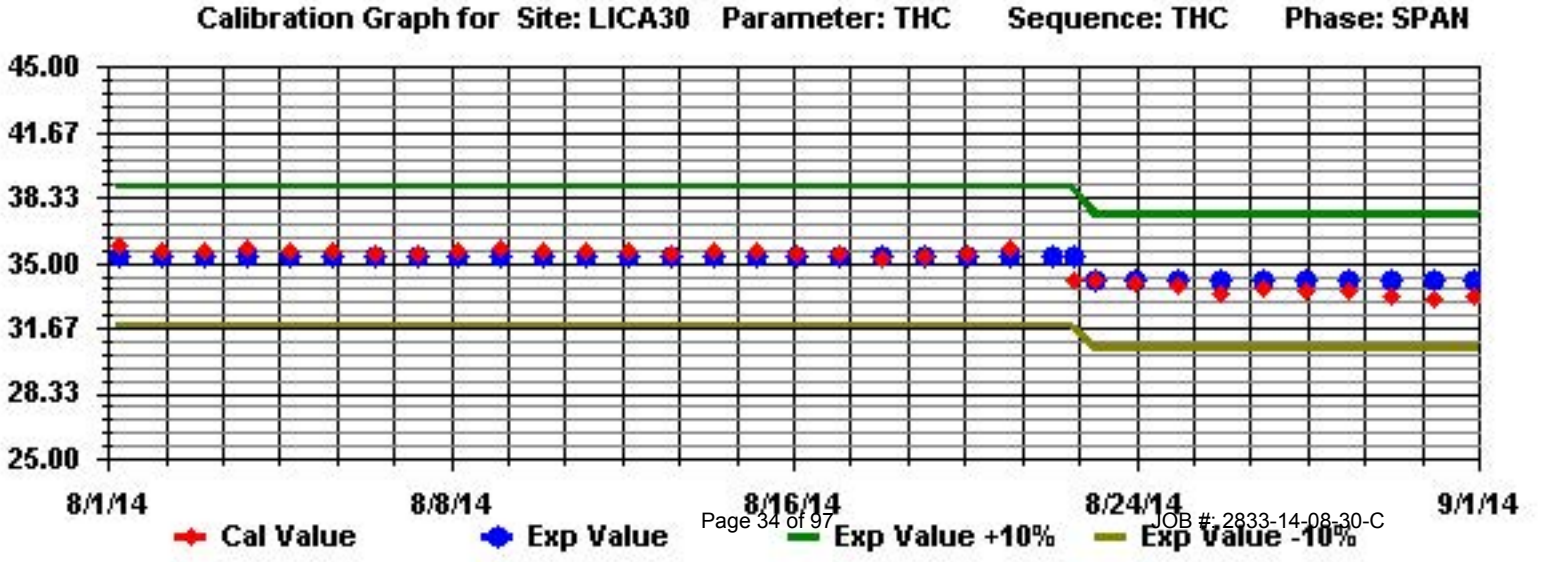
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	34	41	39	22	11	30	69	54	63	102	60	25	47	24	20	22	663
< 10.0	2	3	5	1	3	5	3	3	3	8	3		2	1			42
< 50.0																	
>= 50.0																	
Totals	36	44	44	23	14	35	72	57	66	110	63	25	49	25	20	22	

Calm : .00 %

Total # Operational Hours : 705



JOB #: 2833-14-08-30-C


Calibration Graph for Site: LICA30 Parameter: THC Sequence: THC Phase: SPAN
45.00
41.67
38.33
35.00
31.67
28.33
25.00
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitrogen Dioxide

Lakeland Industry & Community Association - Maskwa Site

AUGUST 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

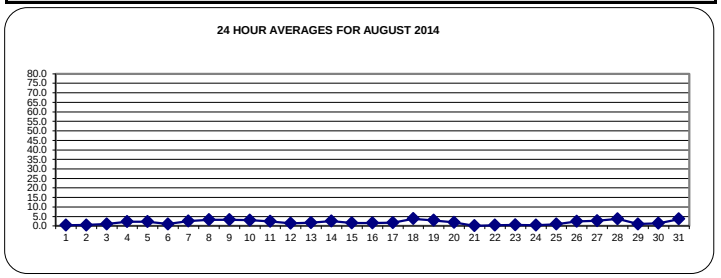
MST

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	0.9	0.7	0.2	0	0.4	0	**S**	0.4	0.6	0.1	0.2	0.2	0.3	0.3	0.2	0.7	0.2	0.7	0.1	0.1	0.5	0.3	0.9	1	1	0.4	24
2	0.8	0.4	0.5	0.3	0.6	**S**	0.1	0.5	0.5	0.3	0.8	0.4	0.3	0.3	0.3	0.4	0.3	0.5	1	0.7	0.2	0.7	0.3	0.5	1	0.5	24
3	0.5	0.7	0.5	0.6	**S**	1.1	1.5	2.1	2.2	1.6	0.4	0.2	1.5	1.3	0.9	1.9	0.8	0.7	0.7	0.9	1.1	0.9	1	0.6	2.2	1.0	24
4	0.8	0.9	0.6	**S**	0.6	0.9	1.3	3.2	9.3	10.6	5.9	2.3	2.4	2.1	0.7	0.4	0.4	0.4	0.5	1.2	1.7	2.1	2.3	2.1	10.6	2.3	24
5	2.3	2.5	**S**	2.5	2.6	2.5	1.6	2	2.9	2.4	2.1	1	1	1.3	1.6	4.3	1.4	1.4	2.1	3.4	3.8	3	2.3	1.4	4.3	2.2	24
6	1.1	**S**	0.7	0.5	0.6	0.4	0.9	2	4	1.1	1.3	0.5	1	1	1	0.8	0.8	0.9	0.5	0.7	0.7	0.5	0.5	1.5	4	1.0	24
7	**S**	0.8	0.7	1.9	7.1	4.7	9.5	3.4	5.8	3.8	1.4	0.4	0	1.4	0.1	0.2	0.2	0.4	2.7	0.4	0.4	2.4	7.3	**S**	9.5	2.5	24
8	6.6	4.7	3	3.6	5.2	3.1	3.1	6.5	5.4	6.8	3.1	2.5	2.2	2.4	2.3	4.5	3.8	1.6	1.3	0.9	0.7	0.7	**S**	0.4	6.8	3.2	24
9	2.4	1.2	0.5	0.8	0.7	11.9	8.8	9.4	9	4.9	1.9	2.8	1	1.7	2.1	7.1	2.8	0.7	0.4	0.1	0.3	**S**	3.1	1.8	11.9	3.3	24
10	2.1	3.9	6.3	5.9	3.5	4.8	5.4	6.2	6.3	5.7	2.9	2.4	2.1	1.4	1.4	1.2	0.7	0.5	0.1	0.3	**S**	0.3	1.5	4.6	6.3	3.0	24
11	6.5	5.7	5.1	3.5	3.3	3.6	5.7	5.7	3.6	3.4	1.9	0.9	0.3	0.9	0.8	1.1	0.6	0	0	**S**	0.2	0.6	0.6	0.6	6.5	2.4	24
12	1.3	1.4	0.8	0.5	0.6	0.1	0.2	0.3	3.3	3.2	1.9	1.7	1.7	2.4	1.7	2.1	1.7	2.9	**S**	1	0.6	0.4	0.8	0.8	3.3	1.4	24
13	1.1	0.8	0.9	1.5	1.9	1.6	3	2.7	2.3	2.5	2.3	1.7	1.6	1.7	1.6	2.4	2.8	**S**	1.1	1.3	1.4	1.1	1.6	1.3	3	1.7	24
14	1	1.1	0.9	0.5	0.7	0.9	3.1	6.9	6.5	6	6.4	5.9	1.4	2	2	1.8	**S**	1.9	1.7	1.9	2.5	1.4	0.9	2.2	6.9	2.6	24
15	1	0.2	0.4	0.7	0.6	1.1	1	1.3	1.8	1.3	1.7	2.3	1.8	1.5	0.9	**S**	1.3	1.7	2.3	2.2	2.3	3.1	2.9	2.8	3.1	1.6	24
16	2.4	1.9	1.7	1	1	1	1	2	2.7	2.5	2.7	3	2.1	1.5	**S**	1	0.9	0.6	0.8	1.3	1.1	1.7	1.7	0.8	3	1.6	24
17	0.5	0.4	0.6	0.9	0.8	1.2	1.4	2.7	7.3	4.5	5.6	4.2	1	**S**	1.2	0.2	0.4	1.4	2.5	1.5	0.3	0.5	0.7	0.8	7.3	1.8	24
18	0.6	1.2	4	7.1	4.9	6.2	8.2	9.1	8	8.2	5.2	2.4	**S**	2.4	2.5	1.9	0.8	1	1	1.3	5	3.1	1.9	1.2	9.1	***3.8***	24
19	1.8	4.1	9.5	7.5	2.6	1.8	5.5	4.1	3	2.7	2.3	**S**	1.8	1.4	1.1	1.5	1.3	1.9	1.4	1.1	5	1.7	2.4	1.5	9.5	2.9	24
20	1.4	5.3	6.4	5.9	4.2	2.7	3	2.5	2.4	2	**S**	0.6	0.7	0.8	1	0.8	0.6	0.2	0.1	0.1	0.2	0.1	1.7	1.2	6.4	1.9	24
21	0.5	0.2	0.1	0	0	0	0	0.3	0.2	**S**	0.2	0.5	0.5	0.2	0.1	0.1	0	0	0	0	0	0	0	0	0.5	0.1	24
22	1.5	0	0	0	0	0	0.1	0.2	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0.1	1	0.4	0.1	0.2	0.4	1.7	0.5	0.3	1.7	0.4	24
23	0.1	0.3	0.4	0.8	0.9	0.1	0.3	**S**	0.1	0.3	0.1	0.3	0.3	0	0	0.3	0	0.1	0	0.2	0.4	1.8	3.5	1.5	3.5	0.5	24
24	0.8	0.4	1.2	0.4	0.3	0.5	**S**	0.2	0.1	0.2	0.2	0.1	0.3	0.6	0.2	0.3	0.2	0.2	0.1	0.6	0.5	0.6	0.3	0.2	1.2	0.4	24
25	0.6	0.3	0.3	0.4	0.5	**S**	2.5	1	1.3	1.7	0.3	0.2	0.6	0.5	0.7	0.7	0.9	0.6	1	0.7	0.8	1.4	1.9	2.5	2.5	0.9	24
26	1.8	2.4	2.9	2.8	**S**	1.6	2.1	4.4	4.3	4.8	4	4	2.8	2.2	2	0.9	0.8	0.2	0.2	0.5	2.3	2.1	2	3.3	4.8	2.4	24
27	3.8	5.5	7.3	**S**	5.3	8.7	7.4	7.4	4.8	2	0.8	0.4	0.7	0.4	0.6	0.7	0.2	0.1	0.2	0.1	0.3	0.3	2	3.7	8.7	2.7	24
28	7.9	8.9	**S**	8	7.6	9.1	7.5	3.8	1.6	1.1	1.9	1.8	4.5	5.8	2.5	4.5	3.1	1.1	0.8	0.7	0.6	0.5	0.7	0.9	9.1	3.7	24
29	1.3	**S**	0.2	0.4	0.5	0.6	1	1.2	1.8	2.1	1.7	1.1	0.9	1.1	1	0.9	0.6	0.7	1.8	1	0.6	0.8	0.6	0.5	2.1	1.0	24
30	**S**	1.3	0.5	0.6	0.1	0.4	1.5	1.4	2.8	3.3	1.6	2	0.3	1.4	1.4	0.3	0.1	0	0	0.1	2.3	5.1	5.8	**S**	5.8	1.5	24
31	***13.1***	11.7	7.3	6.4	4.7	7.8	5.5	2.8	3.4	1.2	1	0.1	0.3	0	0	0	5.7	1.8	1.1	0	0.3	9	**S**	0.4	***13.1***	3.6	24
HOURLY MAX	13	12	10	8	8	12	10	9	9	11	6	6	5	6	3	7	6	3	3	3	5	9	7	5			
HOURLY AVG	2.3	2.4	2.2	2.2	2.1	2.7	3.2	3.2	3.6	3.1	2.1	1.6	1.2	1.4	1.1	1.4	1.1	0.8	0.9	0.8	1.2	1.6	1.8	1.4			

STATUS FLAG CODES

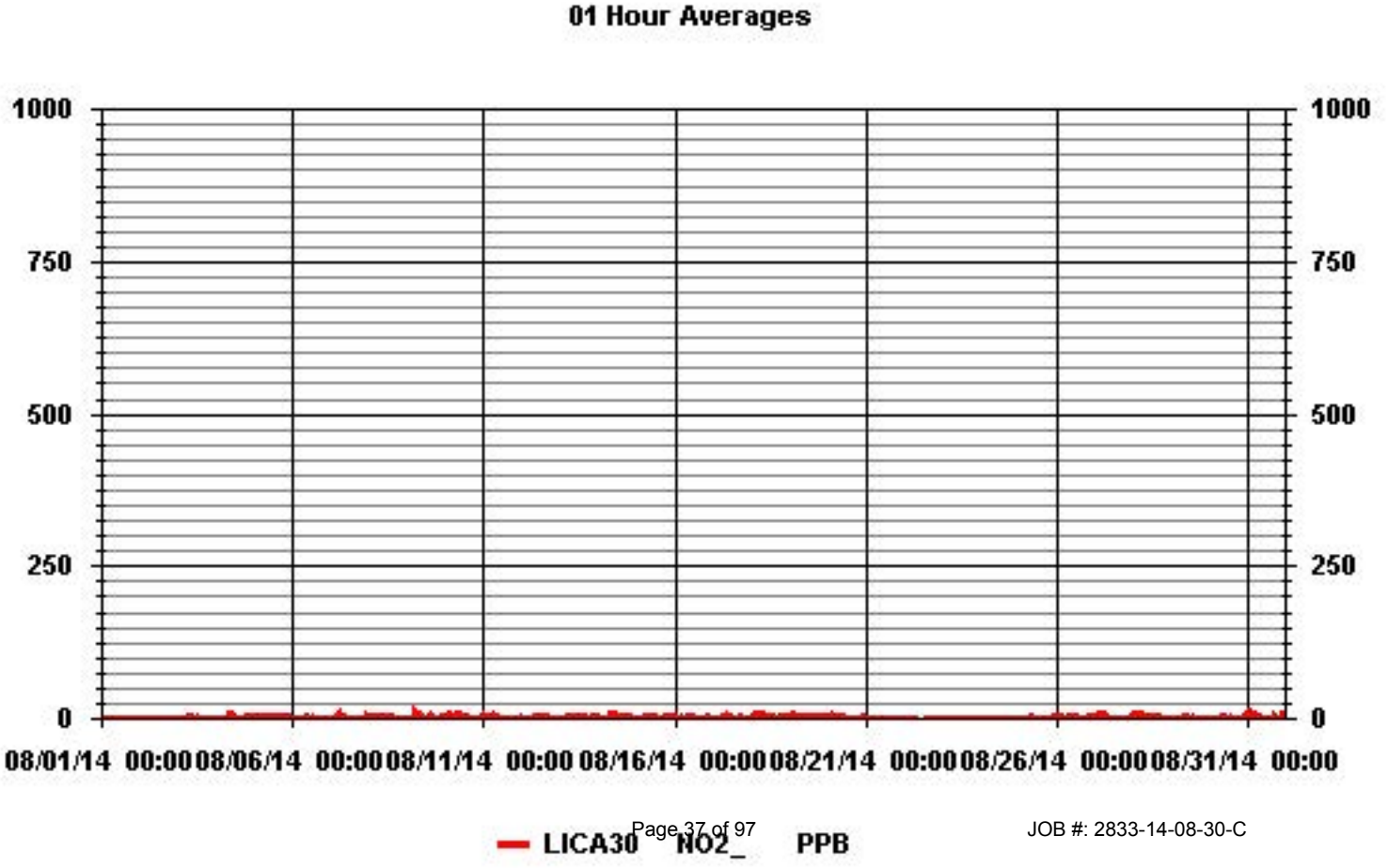
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	673					
MAXIMUM 1-HR AVERAGE:	13.1	PPB	@ HOUR(S)	0	ON DAY(S)	31
MAXIMUM 24-HR AVERAGE:	3.8	PPB			ON DAY(S)	18
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	2.13		MONTHLY AVERAGE:		1.89	PPB



JOB #: 2833-14-08-30-C

Lakeland Industry & Community Association - Maskwa Site

AUGUST 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	2.4	1.8	1.2	1	1.4	0.7	**S**	0.6	1.4	0.4	0.6	0.6	0.6	0.6	0.5	1.7	0.8	2	0.6	0.5	0.9	0.7	1.3	1.6	2.4	1.0	24
2	1	1	0.6	0.7	0.9	**S**	0.7	0.8	0.8	0.8	1	1	0.9	0.8	1.3	1.3	0.9	1.1	2.8	1.8	0.8	1.8	0.9	1.2	2.8	1.1	24
3	1.9	1.6	1	1.2	**S**	1.2	2	2.1	2.6	1.8	0.7	0.7	2.6	1.6	1.8	4.8	1.5	1.1	1.1	1.4	1.5	1.4	1.4	1	4.8	1.7	24
4	1.5	1.6	1.1	**S**	0.8	1	1.7	3.1	15	13.2	13.3	3.4	4.6	5.7	1.6	0.8	0.8	0.7	1.1	1.7	2.3	2.8	2.8	2.7	15	3.6	24
5	2.9	3.1	**S**	2.2	2.8	3	1.6	2	14.9	2.6	2.5	0.9	0.9	1.4	1.7	15	1.4	1.3	2.5	4.1	4.2	4	2.7	1.4	15	3.4	24
6	1.1	**S**	0.9	0.9	1.2	1	1.5	2.5	5.7	2.5	1.9	1	1.5	1.6	2	1.6	1.4	1.6	1.1	1.3	1.3	0.9	0.9	2.2	5.7	1.6	24
7		1.5	1.5	2.6	11.6	13.2	14.6	7.3	15.8	10.2	6.1	2.5	1	11	1.6	1.8	1.1	1.4	4.4	1.7	1.1	6.4	9.3	**S**	15.8	5.8	23
8	5.8	5.8	3.8	4.5	6.2	4.3	4.3	9.4	9.7	8.3	3.6	2.9	2.4	4.1	3.9	6.3	12.7	2.1	2.1	1.3	1	0.9	**S**	0.7	12.7	4.6	24
9	5	1.5	0.9	2.6	3	19.1	18.4	15.4	13.3	8.7	5.3	5	1.3	3.1	4.5	12.7	3.7	2.5	1.5	0.5	1.7	**S**	5.6	2.5	19.1	6.0	24
10	3.3	6	8.7	8.4	4.7	6.6	6.5	7.1	7.6	8.6	5.2	7.4	2.9	2.6	2.3	2.2	1.1	1.4	1	0.8	**S**	1	4.4	5.9	8.7	4.6	24
11	11.4	7.3	6.4	4.8	4.4	5	7.5	7	4.7	4.3	2.9	2.3	1.1	5.7	3.3	5.6	1.7	0.9	0.6	**S**	1	1.1	1.1	1.2	11.4	4.0	24
12	1.8	2.4	1.3	1.2	1.6	0.8	0.8	0.9	5.7	6.2	5.4	3.6	5.2	5.2	3	4.2	3	6.9	**S**	3.8	0.8	0.8	1.2	0.8	6.9	2.9	24
13	1.4	1.2	1.9	2.6	2.6	2.3	5.2	3	2.4	3.2	14.5	2	1.8	2	4.5	4.6	4.1	**S**	1.7	1.8	1.7	1.8	2.2	2.3	14.5	3.1	24
14	1.6	1.6	1.6	1	1	1.1	6.6	11.7	12.2	11.3	10.2	9.5	2	3.2	2.6	2.4	**S**	2.4	2.3	2.8	4	2.4	1.6	3.4	12.2	4.3	24
15	2.4	1.2	1.4	1.4	1.6	2	2.4	1.8	2.2	1.7	2.2	2.9	2.4	2.4	1.4	**S**	1.3	1.9	2.6	2.3	2.9	3.3	3	2.8	3.3	2.2	24
16	2.6	2.8	1.8	1.3	1.2	1	1.2	2.7	2.7	3.2	3.3	3.2	2.8	1.7	**S**	1.1	1.1	0.7	0.9	1.8	1.6	2.5	3	0.9	3.3	2.0	24
17	0.8	0.6	0.8	0.9	1.2	1.3	2	3.9	11.4	12.2	9.7	11.8	1.5	**S**	1.4	0.6	0.6	3.5	10	6.2	0.6	0.8	0.7	1.5	12.2	3.7	24
18	1.4	2.9	6.6	8.4	5.7	7	8.4	9.8	8.2	8.1	6.4	3	**S**	4.3	3.5	3.6	1.1	1.5	1.3	2.1	5.7	4.3	2.3	1.3	9.8	4.6	24
19	3	5	12.1	10.6	5.4	2.4	6.4	5.8	3.7	2.9	2.3	**S**	2.1	1.5	2.6	3.1	1.8	2.5	1.8	1.7	11.2	2.2	3.3	1.6	12.1	4.1	24
20	1.7	10.5	8	8.3	5.1	3.1	3.8	3.9	2.7	2.4	**S**	1	1.1	1.5	1.5	1.6	1.3	1.3	0.5	1.1	0.7	0.9	8.2	2.4	10.5	3.2	24
21	1.3	0.8	0.7	0.8	0.9	0.8	0.9	1.1	0.9	**S**	1.3	1.2	1.7	1.1	2.2	2.2	0.9	0.9	0.9	0.8	0.8	1	1	1	2.2	1.1	24
22	7.6	1	1	1.2	0.9	1	1.3	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0.9	3.7	1.6	1.3	1.2	1.8	2.6	1.6	1.4	7.6	1.9	24
23	1.2	1.2	1.7	1.7	2.3	1.3	1.4	**S**	1.2	1.4	1	2.4	1.9	1.2	1	2	1.2	0.9	1.2	1.3	4.8	6	8.3	7.8	8.3	2.4	24
24	2.7	3	2.9	1.2	1.2	2.2	**S**	0.8	0.9	0.9	1	0.8	1.1	1.4	1.1	1	0.9	1	0.9	2.2	1.3	1.4	1.3	1.1	3	1.4	24
25	1.4	1.2	1	1.2	1.4	**S**	4.8	2.6	3	3.2	1.5	1.5	1.7	1.9	2	1.9	2	1.9	2.1	1.9	1.7	2.7	3.5	3.5	4.8	2.2	24
26	3	3.8	4	4.4	**S**	2.5	5.7	5.9	16.3	14.4	5.5	12.7	3.9	3.2	4.1	2.5	2.2	1.4	1.5	2.6	3.8	3.7	3.1	4.8	16.3	5.0	24
27	6	6.8	8.5	**S**	6.2	12.5	9.4	10.7	8.5	2.9	2.2	1.4	12.2	2.8	2.4	14.4	1	1	1.2	1.2	1.5	1.3	3.9	7.9	14.4	5.5	24
28	12.6	12.6	**S**	9	10.7	13.9	14.7	4.9	3.3	2.6	4.3	5.7	11.2	15.4	9.2	14.2	12	7.1	1.6	1.2	1.1	1.2	1.8	1.7	15.4	***7.5***	24
29	2.3	**S**	1	1.2	1.5	1.5	2.9	2.5	3	2.9	3	2	2	2.3	1.8	2.5	1.5	2.6	3.3	2.2	1.6	2.1	1.8	1.4	3.3	2.1	24
30	**S**	3.5	2	2.1	1.2	1.5	4.1	2.8	4.3	6	4.2	4.2	3.2	5.6	4.3	1.2	2.7	0.9	0.9	1.4	6.1	6.4	6.8	**S**	6.8	3.4	24
31	16.9	15.1	10	8.1	7.3	9.8	6.8	4.8	7.2	4.3	2.4	1.1	1.4	0.9	1.1	1	***29.7***	6.2	4.5	1	1.4	20.9	**S**	1.4	***29.7***	7.1	24
HOURLY MAX	17	15	12	11	12	19	18	15	16	14	15	13	12	15	9	15	30	7	10	6	11	21	9	8			
HOURLY AVG	3.7	3.7	3.3	3.3	3.3	4.2	5.1	4.7	6.4	5.2	4.3	3.4	2.7	3.3	2.6	4.0	3.3	2.1	2.0	1.9	2.4	3.0	3.1	2.4			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 704

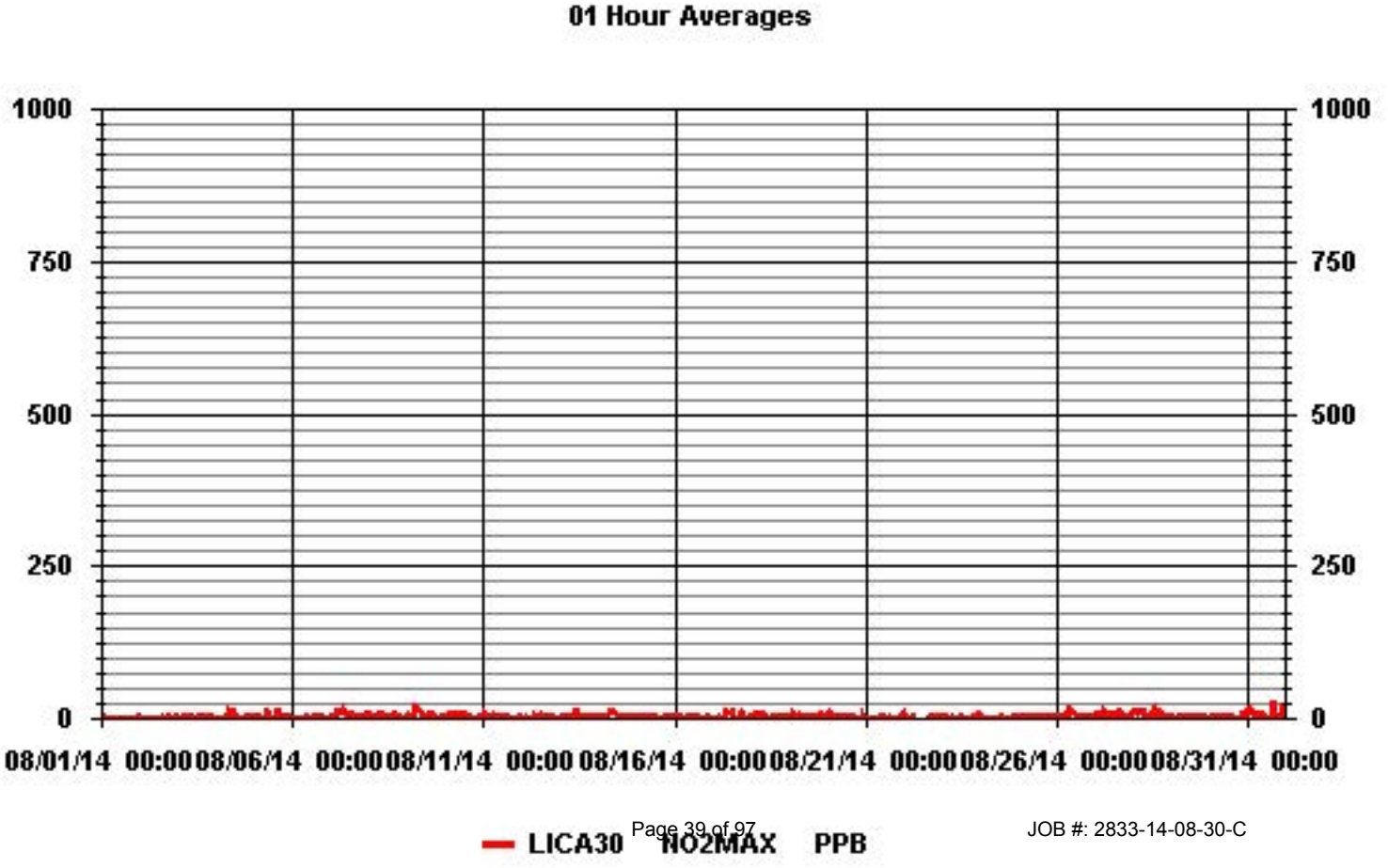
MAXIMUM INSTANTANEOUS VALUE: 29.7 PPB @ HOUR(S) 16 ON DAY(S) 31

VAR-VARIOUS

IZS CALIBRATION TIME: 31 HRS OPERATIONAL TIME: 743 HRS

MONTHLY CALIBRATION TIME: 8 HRS

STANDARD DEVIATION: 3.58



JOB #: 2833-14-08-30-C

LICA30
NO2_ / WDR Joint Frequency Distribution (Percent)

August 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	5.11	6.10	6.10	3.12	1.98	4.97	10.36	8.09	9.51	15.62	8.94	3.55	6.96	3.55	2.84	3.12	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	5.11	6.10	6.10	3.12	1.98	4.97	10.36	8.09	9.51	15.62	8.94	3.55	6.96	3.55	2.84	3.12	

Calm : .00 %

Total # Operational Hours : 704

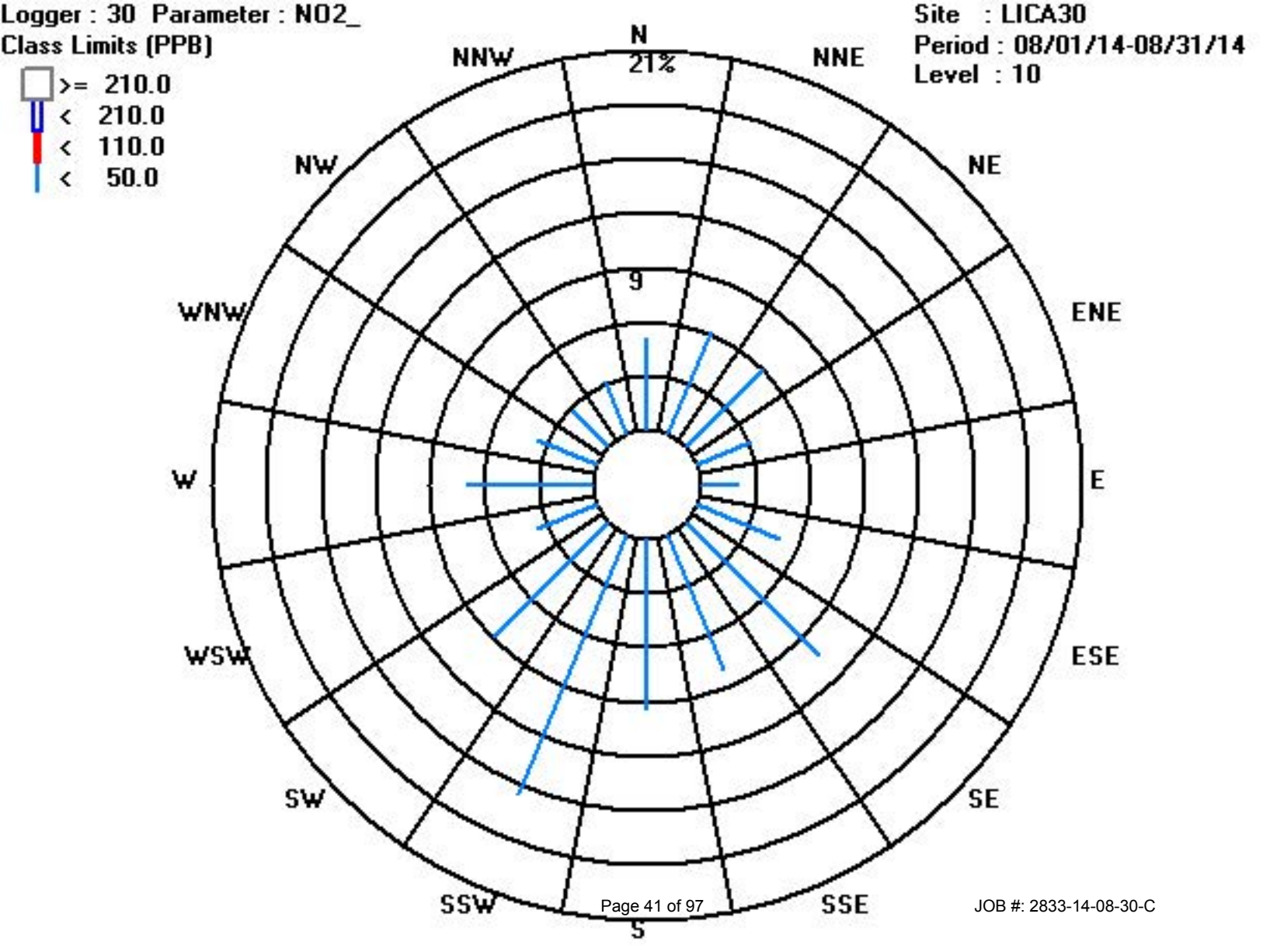
Distribution By Samples

Direction

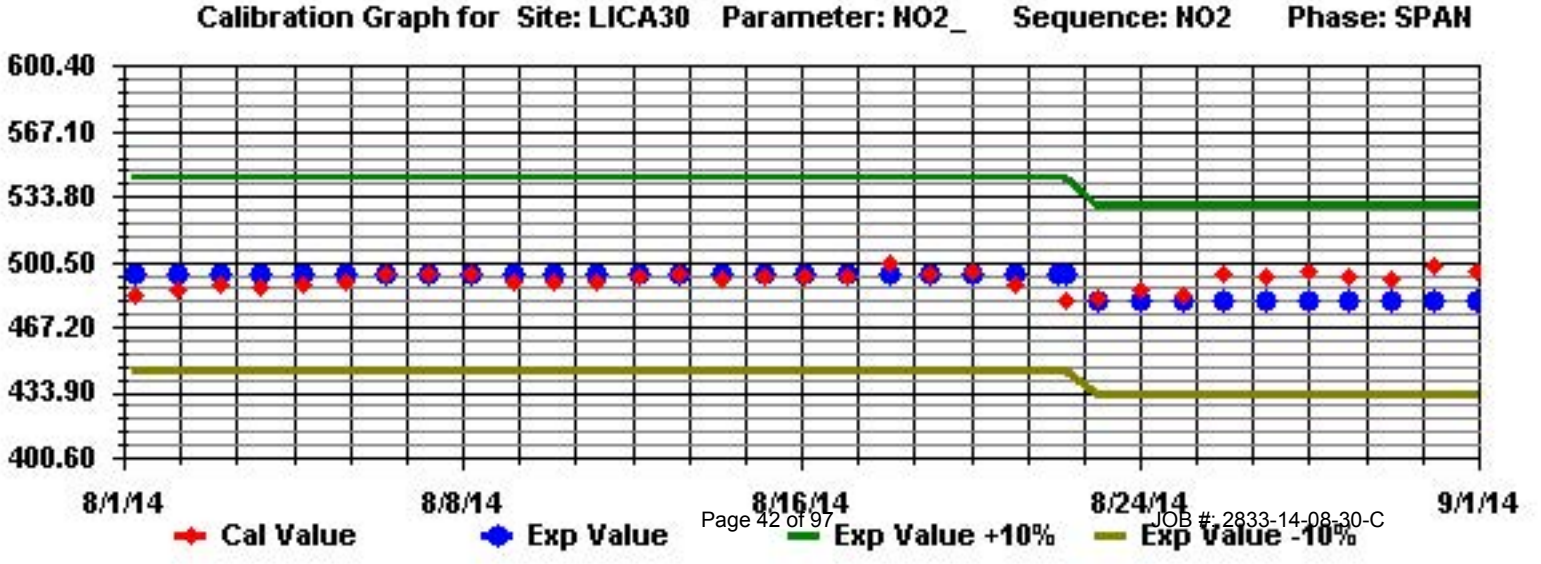
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	36	43	43	22	14	35	73	57	67	110	63	25	49	25	20	22	704
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	36	43	43	22	14	35	73	57	67	110	63	25	49	25	20	22	

Calm : .00 %

Total # Operational Hours : 704



JOB #: 2833-14-08-30-C


Calibration Graph for Site: LICA30 Parameter: NO2_ Sequence: NO2 Phase: SPAN
600.40
567.10
533.80
500.50
467.20
433.90
400.60
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

Lakeland Industry & Community Association - Maskwa Site

AUGUST 2014

NITRIC OXIDE (NO) hourly averages in ppb

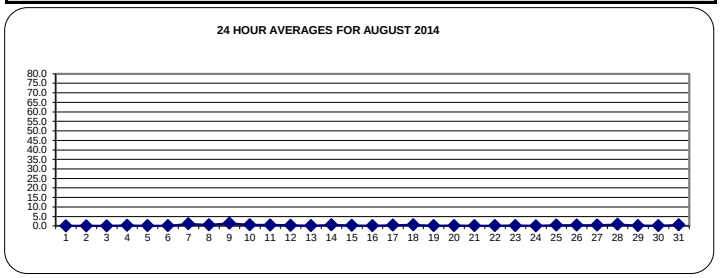
MST

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	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
2	0	0	0	0	0	S	0.3	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.0	24
3	0	0	0	0	S	0	0	0.3	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.0	24
4	0	0	0	S	0	0	0	0.2	3.3	2.1	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	3.3	0.3	24
5	0	0	S	0	0.2	0.5	0.9	0.3	0.4	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	0.1	24
6	0	S	0	0	0	0	0	0.2	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.5	0.1	24
7	S	0.3	0.4	0.1	0.6	1.7	5.5	2	4.6	2.3	0.9	0.5	0.3	1.2	0.4	0.5	0.4	0.3	0.6	0	0.3	0.3	0.3	S	5.5	1.1	24
8	0	0	0	0	0	0.9	2.3	3.6	1.8	2.3	0.2	0	0	0	0	0	0	0	0	0	0	0	S	0	3.6	0.5	24
9	0	0	0	0	0	***7.9***	5.4	5.7	5.1	2.5	0.6	0.9	0	0.1	0.6	3.9	0.7	0	0	0	0	S	0.1	0.1	***7.9***	***1.5***	24
10	0.2	0.1	0.3	0.2	0.1	0.7	1.3	2	2.6	2.5	1.1	1	0.9	0.3	0.2	0.1	0	0.1	0	0	S	0	0	0	2.6	0.6	24
11	0.8	0	0	0	0	0.6	3.3	4	1.4	0.7	0	0	0	0.1	0	0.1	0	0	0	S	0	0	0	0	4	0.5	24
12	0.1	0	0.1	0	1.2	0	0	0.1	2.2	1.4	0.4	0.3	0.2	0.5	0.1	0.2	0.1	0.6	S	0	0	0	0	0	2.2	0.3	24
13	0	0	0	0	0	0	0.3	0.1	0.3	0.3	0.4	0.1	0	0	0	0	0.1	S	0	0	0	0	0	0	0.4	0.1	24
14	0	0	0	0	0	0.9	0.9	4.9	2.8	1.6	1.4	0.1	0	0	0	0	S	0	0	0	0	0	0	0	4.9	0.5	24
15	0	0	0	0	0	3.3	1.1	0.5	0.4	0	0	0	0	0	0	S	0.1	0	0	0	0.1	0	0.1	0	3.3	0.2	24
16	0	0	0	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.3	0.2	0	0	S	0	0	0	0	0	0	0	0	0	0.3	0.1	24
17	0	0	0	0	0	0.6	1.9	0.4	2.5	1.4	2.1	0.3	0	S	0	0	0	0	0	0	0	0	0	0	2.5	0.4	24
18	0	0	0	0	0	0.3	1.9	3.4	3.7	3.2	0.5	0	S	0.5	0.2	0	0	0	0	0	0	0	0	0	3.7	0.6	24
19	0	0	0	0	0	0	0.3	0.5	0.6	0.7	0.1	S	0.1	0	0.1	0.3	0	0	0	0	0.2	0	0	0	0.7	0.1	24
20	0	0.2	0	0	0	0.1	0.4	0.8	0.8	0.3	S	0	0.1	0.2	0.3	0	0	0	0	0	0	0	0.5	0.4	0.8	0.2	24
21	0.1	0.1	0.1	0.2	0	0.3	0.3	0.6	0.5	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.1	24
22	1	0	0	0	0	0	0	0.1	C	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	1	0.1	24
23	0	0	0	0	0	0	0	S	0.1	0	0	0.1	0.2	0.1	0.3	0.2	0.1	0	0.1	0	0.3	0.5	0.9	0.3	0.9	0.1	24
24	0.2	0	0	0.1	0.1	0.2	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.0	24
25	0	0	0.1	0	0	S	5.8	1	0.4	0.7	0	0	0.1	0.2	0.1	0	0	0.3	0.1	0	0.1	0	0.1	0.1	5.8	0.4	24
26	0.2	0.2	0.1	0	S	0	0.4	1.3	2.8	2.5	1.5	1	0.3	0	0	0	0	0	0	0	0	0	0	0	2.8	0.4	24
27	0	0	0	S	0	0.6	1	2.3	2	0.7	0.1	0	0.7	0.1	0.2	0.5	0	0	0	0	0	0.1	0.1	0	2.3	0.4	24
28	0	0	S	0.1	0.1	0.7	2.1	0.9	0.2	0	0.3	0.8	2.2	3.7	1	3.1	1.9	0.3	0	0	0.1	0.2	0.1	0.3	3.7	0.8	24
29	0.1	S	0	0	0	0	0.9	0.6	0.6	0.7	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	0.1	24
30	S	0	0	0	0	0	0.1	0.4	0.1	0.9	0.3	0.4	0	0.2	0	0	0	0	0	0	0	0	0	S	0.9	0.1	24
31	0.1	0	0	0	0	0.6	1.9	1.7	2.1	0.3	0	0	0	0	0	0	3.3	0	0	0	0	2.9	S	0	3.3	0.6	24
HOURLY MAX	1	0	0	0	1	8	6	6	5	3	2	1	2	4	1	4	3	1	1	0	0	3	1	0			
HOURLY AVG	0.1	0.0	0.0	0.0	0.1	0.7	1.3	1.3	1.4	0.9	0.4	0.2	0.2	0.2	0.1	0.3	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.0			

STATUS FLAG CODES

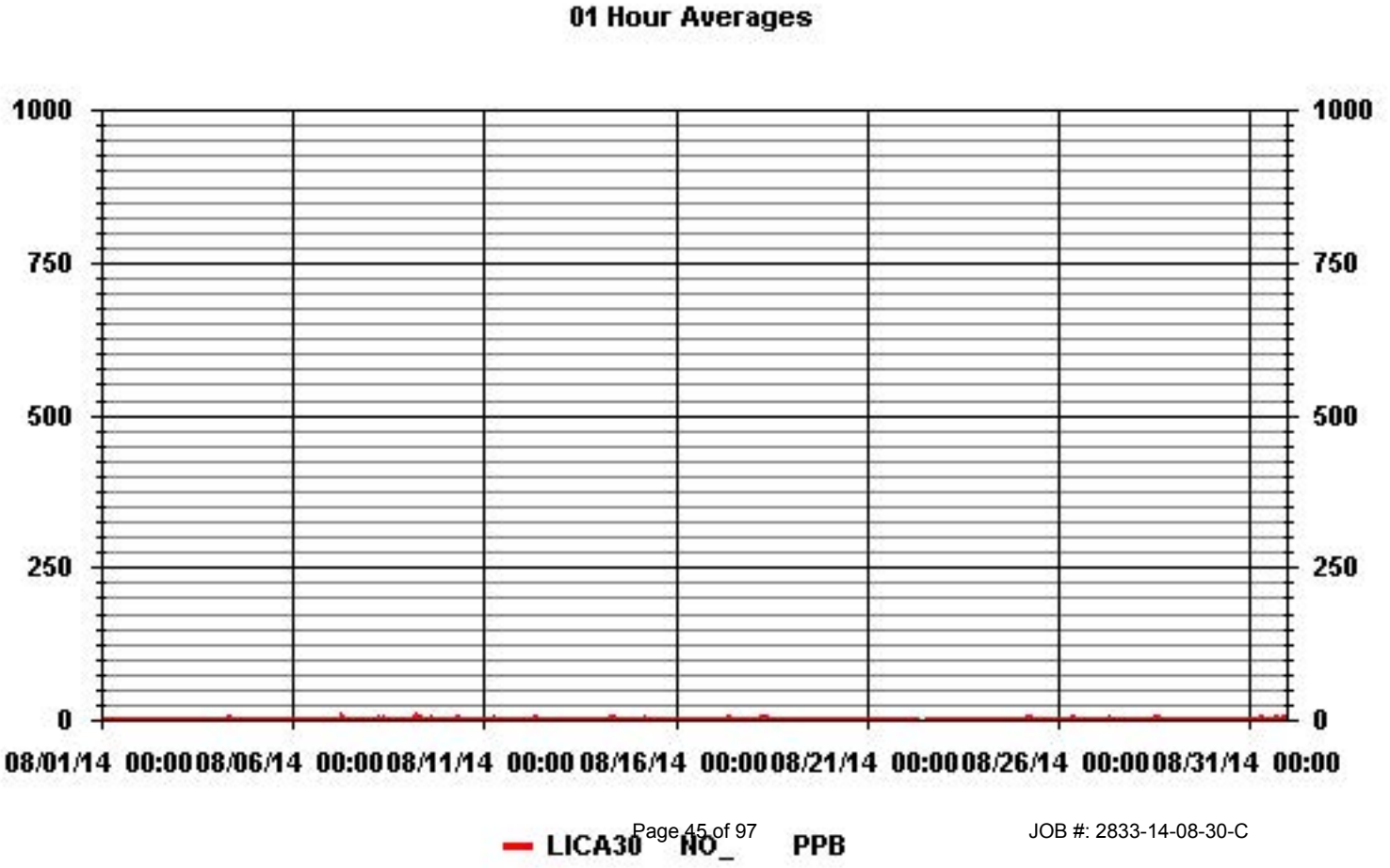
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	261					
MAXIMUM 1-HR AVERAGE:	7.9	PPB	@ HOUR(S)	5	ON DAY(S)	9
MAXIMUM 24-HR AVERAGE:	1.5	PPB			ON DAY(S) VAR-VARIOUS	9
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.87		MONTHLY AVERAGE:		0.33	PPB



JOB #: 2833-14-08-30-C

Lakeland Industry & Community Association - Maskwa Site

AUGUST 2014

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	0	0	**S**	0.3	1	0	0.1	0.2	0.2	0.2	0.2	0.6	0.4	0.4	0.1	0.4	0.2	0.2	0.5	0.3	1	0.2	24
2	0.5	0.3	0.4	0.4	0.4	**S**	0.9	0.9	0.6	0.5	0.7	0.3	0.5	0.5	0.5	0.5	0.1	0.5	0.5	0.6	0.3	0.5	0.6	0.8	0.9	0.5	24
3	0.6	0.6	0.7	0.5	**S**	0.7	0.7	0.9	1.1	0.8	0.1	0	0.3	0.3	0.1	0.8	0	0.1	0	0.3	0.1	0	0.1	0	1.1	0.4	24
4	0.1	0	0	**S**	0.2	0.4	0.5	1	9	3.7	3.7	0.1	0.5	1.9	0	0	0	0	0	0	0.2	0	0	0	9	0.9	24
5	0	0.2	**S**	0.8	0.9	1.4	1.8	1	6.6	0.8	1.1	0.3	0.3	0.3	0.4	0.5	0.2	0.4	0.5	0.4	0.4	0.3	0.6	0.4	6.6	0.9	24
6	0.4	**S**	0.5	0.3	0.2	0.6	1.6	1.3	3.7	0.5	0.2	0	0.5	0.3	0.2	0.2	0	0.1	0.2	0.3	0.3	0	0	0	3.7	0.5	24
7	**S**	1.2	1.2	0.7	2	6	11	5.1	15.5	7.6	3.8	1.7	1	8.3	1.7	1.8	0.9	1	1.4	0.5	0.9	0.9	1	**S**	15.5	3.4	24
8	0.4	0.5	0.4	0.5	0.9	2.2	3.2	6.8	4.1	3.7	1	0.5	0.6	0.7	0.7	0.4	2	0.4	0.2	0.2	0.2	0.4	**S**	0.2	6.8	1.3	24
9	0.5	0.3	0.3	0.4	0.2	19.3	18.9	12.7	10.5	6.6	4.5	4.2	0.8	0.9	3	10.5	1.8	0.4	0.4	0.2	0.2	**S**	0.6	0.7	19.3	***4.3***	24
10	0.9	0.9	1.6	0.8	0.7	2.9	2.4	2.8	3.8	5	4.8	31.9	1.7	0.8	0.8	0.6	0.7	1	0.4	0.5	**S**	0.2	0.4	1.2	31.9	2.9	24
11	21.7	0.5	0.5	0.3	0.4	3.5	5.8	6.5	3.1	1.8	0.8	0.8	0.5	3.4	1.3	2.6	0.4	0.1	0.1	**S**	0.3	0.7	0.6	0.6	21.7	2.4	24
12	0.7	0.6	0.7	0.7	8	1.1	0.7	0.6	3.5	4.2	2.7	1.2	2.2	2.6	1	1.6	1	2.2	**S**	0.5	0.6	0.4	0.6	0.6	8	1.7	24
13	0.6	0.2	0.5	0.3	0.6	0.8	0.9	0.7	0.9	1.4	12.4	0.7	0.5	0.6	1.3	1.4	0.8	**S**	0.2	0.2	0.3	0	0.1	0.4	12.4	1.1	24
14	0.5	0.4	0.4	0.4	0.6	4.4	5.5	13.9	8.4	5.6	4.2	1.9	0.4	0.4	0.5	0.4	**S**	0.4	0.4	0.6	0.3	0.1	0.4	0.2	13.9	2.2	24
15	0.4	0.2	0.4	0.4	0.2	17.7	8.2	1.6	1.8	0.6	0.6	0.4	0.4	0.3	0.4	**S**	0.8	0.5	0.9	0.6	0.7	0.6	0.8	0.7	17.7	1.7	24
16	0.3	0.4	0.6	0.8	0.7	1.1	0.8	0.7	1	1	1	1	0.7	0.6	**S**	0.5	0.5	0.3	0.6	0.2	0	0.4	0.3	0.8	1.1	0.6	24
17	0.3	0.6	0.5	0.5	0.7	1.9	4.3	1.3	6	6.8	6.7	2.2	1	**S**	0.6	0.1	0	0.6	0.6	0.2	0	0	0.2	0.2	6.8	1.5	24
18	0.1	0	0.6	0.2	0.2	3	3	5.4	5	4.4	2	0.2	**S**	2.6	1.6	0.7	0.4	0.4	0.3	0.3	0.4	0.2	0.3	0.4	5.4	1.4	24
19	0.2	0.4	1.5	0.3	0.1	0.3	1.1	1.3	2.6	1.7	0.9	**S**	0.8	0.6	2.2	2.5	0.6	0.6	0.3	0.6	3.9	0.2	0.6	0.4	3.9	1.0	24
20	0.4	2.1	0.7	0.6	0.4	0.9	1.4	1.6	1.6	1	**S**	0.8	0.7	0.8	0.9	0.6	0.8	0.3	0.5	0.7	0.8	0.5	2.9	0.9	2.9	1.0	24
21	0.7	0.9	0.8	0.9	0.9	0.9	0.7	1.3	1.3	**S**	0.4	0.6	0.7	0.9	0.8	0.8	0.4	0.5	0.3	0.4	0.3	0.5	0.7	0.4	1.3	0.7	24
22	7.2	0.4	0.6	0.3	0.4	0.4	0.7	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0.5	0.7	0.4	0.3	0.6	0.4	0.7	0.3	0.7	7.2	0.9	24
23	0.6	0.5	0.5	0.4	0.4	0.4	0.7	**S**	0.7	0.5	0.5	0.9	1.2	0.7	1	0.9	0.6	0.5	0.7	0.6	1.1	1.8	3.3	2.7	3.3	0.9	24
24	0.8	0.4	0.7	0.6	0.7	1	**S**	0.7	0.5	0.4	0.4	0.2	0.2	0.2	0	0.3	0.3	0.2	0.4	0.5	0.4	0.5	0.5	0.5	1	0.5	24
25	0.6	0.5	0.8	0.6	0.6	**S**	14.3	2.6	1.8	2.2	0.6	0.4	0.7	1.3	1.4	0.5	0.7	0.8	0.7	0.4	0.6	0.7	0.6	0.7	14.3	1.5	24
26	0.8	1	0.7	0.3	**S**	0.6	1.9	2.6	17.9	15	3.4	4.3	0.9	0.6	1.8	0.3	0.4	0.1	0	0.2	0	0	0	0	17.9	2.3	24
27	0	0.1	0.1	**S**	0.4	2.8	1.9	6.4	3.4	1.5	1.1	0.6	37.6	0.9	0.8	20.7	0.6	0.5	0.5	0.3	0.6	0.6	0.7	0.5	37.6	3.6	24
28	0.6	0.6	**S**	0.7	0.6	3.9	4.9	1.8	1	0.7	1.3	3.5	7.4	12.2	6.6	13.3	9.9	4.3	0.5	0.7	0.8	1	1	1	13.3	3.4	24
29	0.7	**S**	0.5	0.7	0.5	0.6	6.5	1.1	1.2	1.6	1.1	0.3	0.2	0.3	0.2	0.7	0.2	0.1	0.2	0.3	0	0.5	0.2	0.4	6.5	0.8	24
30	**S**	0.3	0.3	0.3	0.3	0.3	4	2.7	1.1	3.4	2.3	2.1	1	2.3	1.1	0.4	0.5	0.2	0	0.5	0.3	0.5	0.6	**S**	4	1.1	24
31	0.6	0.6	0.6	0.7	0.6	2.3	4.7	3.1	5.2	1.8	1.4	0.4	0.8	0.1	0.2	0.2	***42.6***	1.6	0.2	0	0.3	28	**S**	0.5	***42.6***	4.2	24
HOURLY MAX	22	2	2	1	8	19	19	14	18	15	12	32	38	12	7	21	43	4	1	1	4	28	3	3			
HOURLY AVG	1.4	0.5	0.6	0.5	0.8	2.8	3.9	3.1	4.1	2.9	2.2	2.1	2.2	1.6	1.1	2.2	2.3	0.6	0.4	0.4	0.5	1.3	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: 659

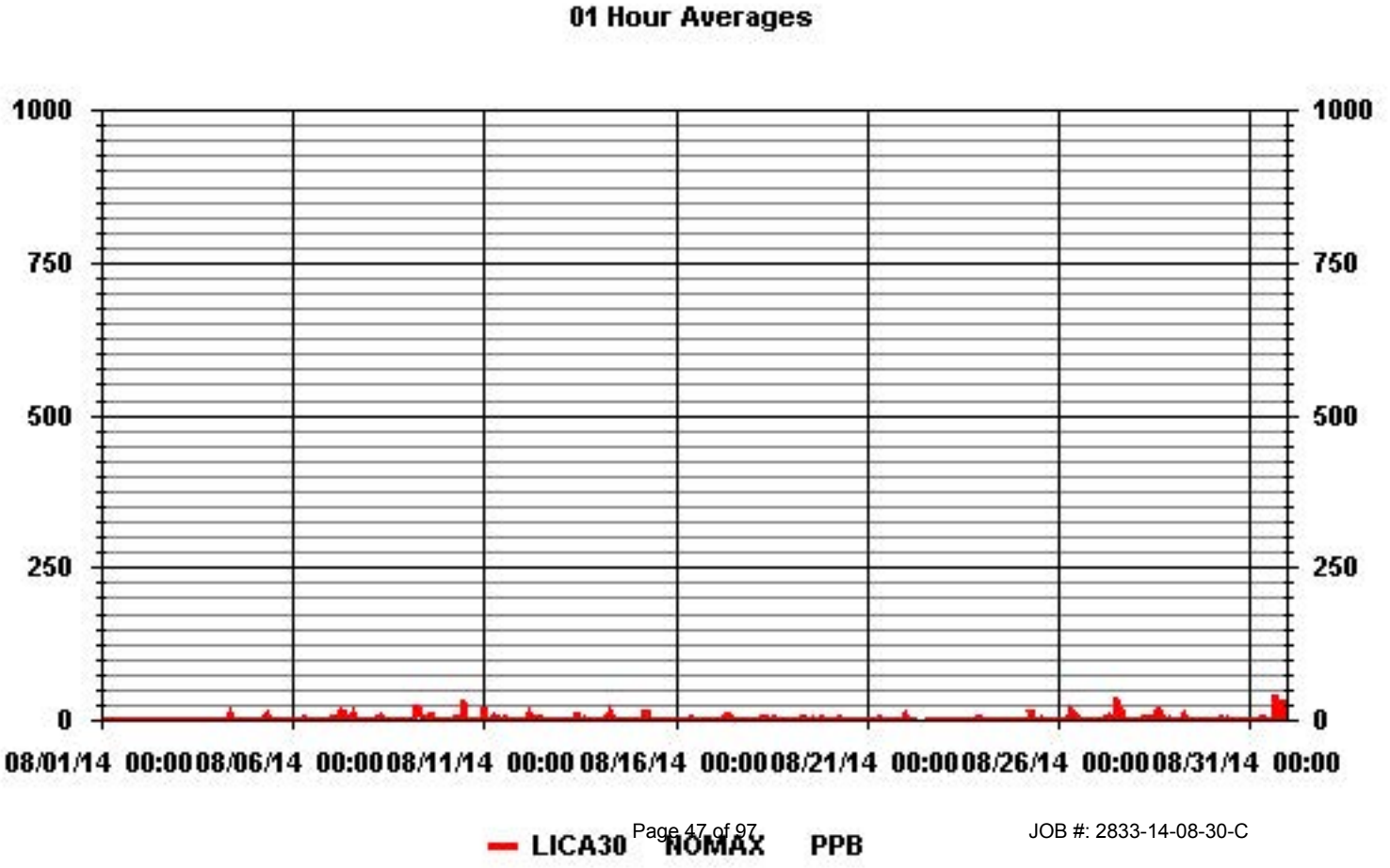
MAXIMUM INSTANTANEOUS VALUE: 42.6 PPB @ HOUR(S) 16 ON DAY(S) 31

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 8 HRS

STANDARD DEVIATION: 3.70



JOB #: 2833-14-08-30-C

LICA30
NO_ / WDR Joint Frequency Distribution (Percent)

August 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	5.10	6.09	6.09	3.26	1.98	4.96	10.35	8.08	9.50	15.60	8.93	3.54	6.95	3.54	2.83	3.12	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	5.10	6.09	6.09	3.26	1.98	4.96	10.35	8.08	9.50	15.60	8.93	3.54	6.95	3.54	2.83	3.12	

Calm : .00 %

Total # Operational Hours : 705

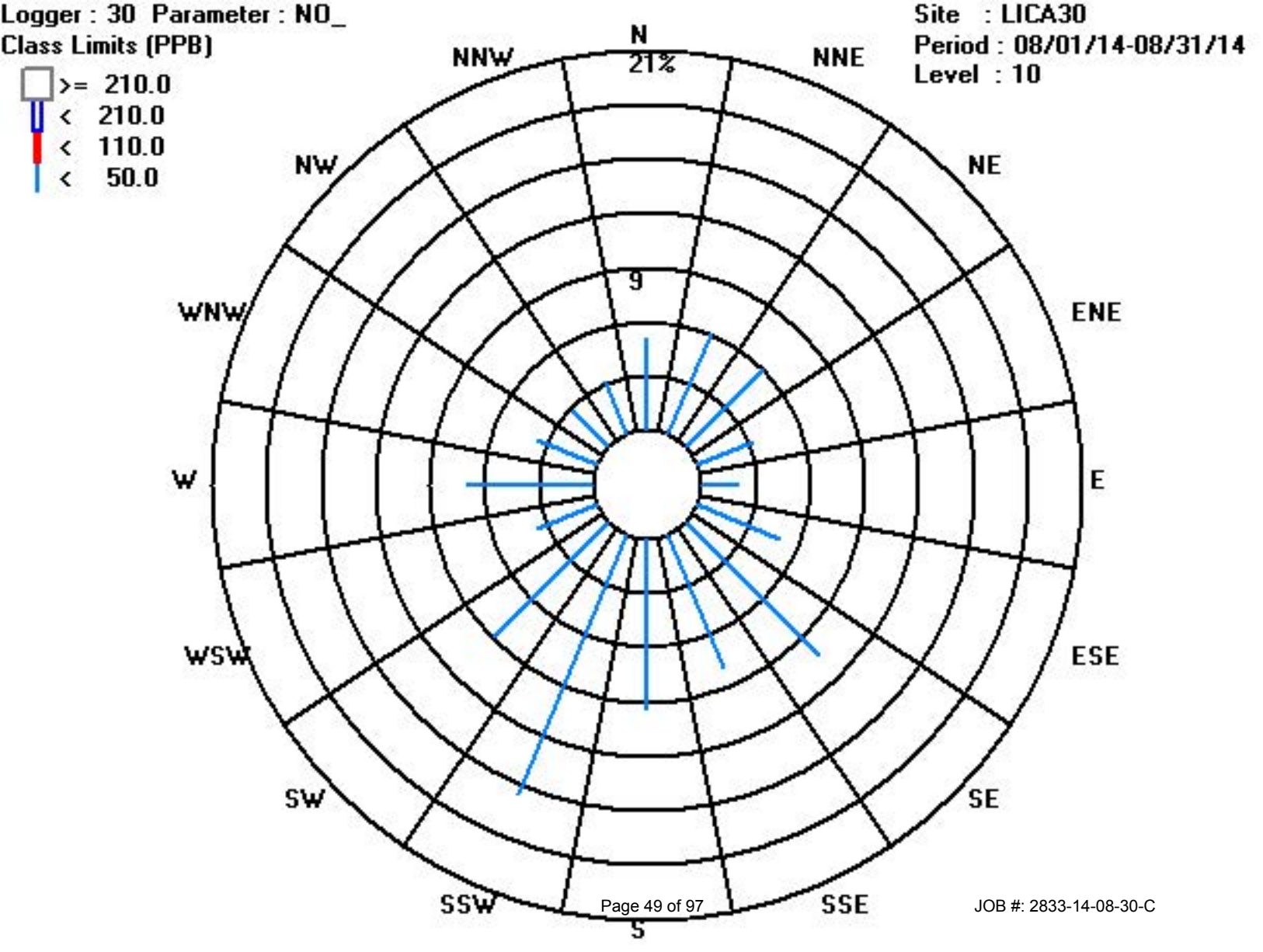
Distribution By Samples

Direction

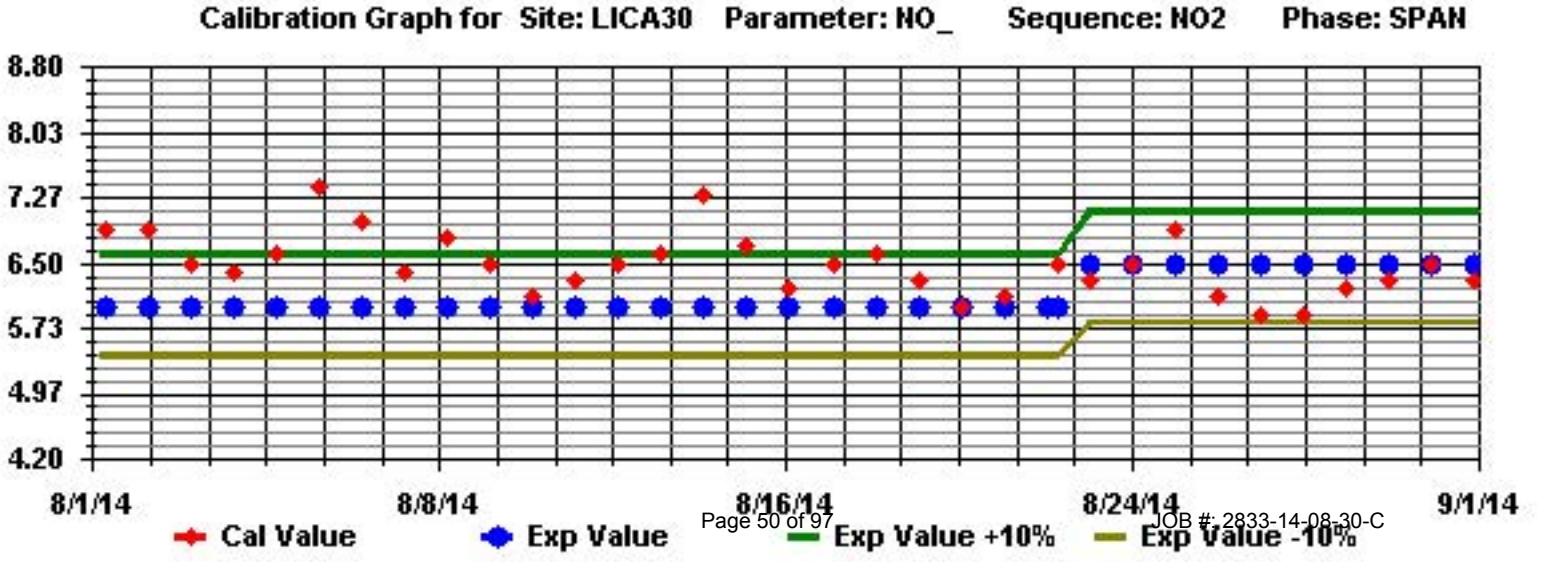
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	36	43	43	23	14	35	73	57	67	110	63	25	49	25	20	22	705
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	36	43	43	23	14	35	73	57	67	110	63	25	49	25	20	22	

Calm : .00 %

Total # Operational Hours : 705



JOB #: 2833-14-08-30-C


Calibration Graph for Site: LICA30 Parameter: NO_ Sequence: NO2 Phase: SPAN
8.80
8.03
7.27
6.50
5.73
4.97
4.20
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Oxides of Nitrogen

Lakeland Industry & Community Association - Maskwa Site

AUGUST 2014

OXIDES OF NITROGEN (NOx) hourly averages in ppb

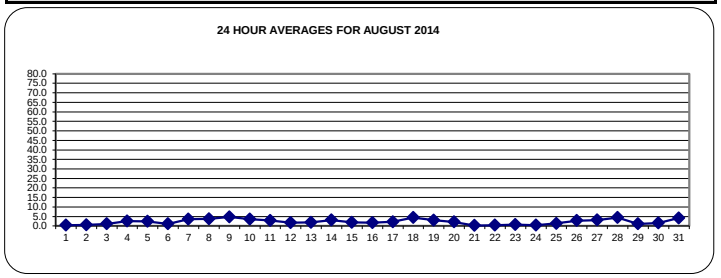
MST

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	0.9	0.7	0.2	0	0.4	0	**S**	0.4	0.6	0.1	0.2	0.2	0.3	0.3	0.2	0.7	0.2	0.7	0.1	0.1	0.5	0.3	0.9	1	1	0.4	24
2	0.8	0.4	0.5	0.3	0.6	**S**	0.4	0.7	0.5	0.3	0.8	0.4	0.3	0.3	0.3	0.4	0.3	0.5	1	0.7	0.2	0.7	0.3	0.5	1	0.5	24
3	0.5	0.7	0.5	0.6	**S**	1.1	1.5	2.4	2.5	1.6	0.4	0.2	1.5	1.3	0.9	1.9	0.8	0.7	0.7	0.9	1.1	0.9	1	0.6	2.5	1.1	24
4	0.8	0.9	0.6	**S**	0.6	0.9	1.3	3.4	12.6	12.7	6.4	2.3	2.4	2.1	0.7	0.4	0.4	0.4	0.5	1.2	1.7	2.1	2.3	2.1	12.7	2.6	24
5	2.3	2.5	**S**	2.5	2.8	3	2.5	2.3	3.3	2.5	2.2	1	1	1.3	1.6	4.3	1.4	1.4	2.1	3.4	3.8	3	2.3	1.4	4.3	2.3	24
6	1.1	**S**	0.7	0.5	0.6	0.4	0.9	2.2	5.5	1.1	1.3	0.5	1	1	1	0.8	0.8	0.9	0.5	0.7	0.7	0.5	0.5	1.5	5.5	1.1	24
7	**S**	1.1	1.1	2	7.7	6.4	15	5.4	10.4	6.1	2.3	0.9	0.3	2.6	0.5	0.7	0.6	0.7	3.3	0.4	0.7	2.7	7.6	**S**	15	3.6	24
8	6.6	4.7	3	3.6	5.2	4	5.4	10.1	7.2	9.1	3.3	2.5	2.2	2.4	2.3	4.5	3.8	1.6	1.3	0.9	0.7	0.7	**S**	0.4	10.1	3.7	24
9	2.4	1.2	0.5	0.8	0.7	***19.8***	14.2	15.1	14.1	7.4	2.5	3.7	1	1.8	2.7	11	3.5	0.7	0.4	0.1	0.3	**S**	3.2	1.9	***19.8***	***4.7***	24
10	2.3	4	6.6	6.1	3.6	5.5	6.7	8.2	8.9	8.2	4	3.4	3	1.7	1.6	1.3	0.7	0.6	0.1	0.3	**S**	0.3	1.5	4.6	8.9	3.6	24
11	7.3	5.7	5.1	3.5	3.3	4.2	9	9.7	5	4.1	1.9	0.9	0.3	1	0.8	1.2	0.6	0	0	**S**	0.2	0.6	0.6	0.6	9.7	2.9	24
12	1.4	1.4	0.9	0.5	1.8	0.1	0.2	0.4	5.5	4.6	2.3	2	1.9	2.9	1.8	2.3	1.8	3.5	**S**	1	0.6	0.4	0.8	0.8	5.5	1.7	24
13	1.1	0.8	0.9	1.5	1.9	1.6	3.3	2.8	2.6	2.8	2.7	1.8	1.6	1.7	1.6	2.4	2.9	**S**	1.1	1.3	1.4	1.1	1.6	1.3	3.3	1.8	24
14	1	1.1	0.9	0.5	0.7	1.8	4	11.8	9.3	7.6	7.8	6	1.4	2	2	1.8	**S**	1.9	1.7	1.9	2.5	1.4	0.9	2.2	11.8	3.1	24
15	1	0.2	0.4	0.7	0.6	4.4	2.1	1.8	2.2	1.3	1.7	2.3	1.8	1.5	0.9	**S**	1.4	1.7	2.3	2.2	2.4	3.1	3	2.8	4.4	1.8	24
16	2.4	1.9	1.7	1.1	1.1	1.2	1.2	2.1	2.8	2.7	3	3.2	2.1	1.5	**S**	1	0.9	0.6	0.8	1.3	1.1	1.7	1.7	0.8	3.2	1.6	24
17	0.5	0.4	0.6	0.9	0.8	1.8	3.3	3.1	9.8	5.9	7.7	4.5	1	**S**	1.2	0.2	0.4	1.4	2.5	1.5	0.3	0.5	0.7	0.8	9.8	2.2	24
18	0.6	1.2	4	7.1	4.9	6.5	10.1	12.5	11.7	11.4	5.7	2.4	**S**	2.9	2.7	1.9	0.8	1	1	1.3	5	3.1	1.9	1.2	12.5	4.4	24
19	1.8	4.1	9.5	7.5	2.6	1.8	5.8	4.6	3.6	3.4	2.4	**S**	1.9	1.4	1.2	1.8	1.3	1.9	1.4	1.1	5.2	1.7	2.4	1.5	9.5	3.0	24
20	1.4	5.5	6.4	5.9	4.2	2.8	3.4	3.3	3.2	2.3	**S**	0.6	0.8	1	1.3	0.8	0.6	0.2	0.1	0.1	0.2	0.1	2.2	1.6	6.4	2.1	24
21	0.6	0.3	0.2	0.2	0	0.3	0.3	0.9	0.7	**S**	0.2	0.5	0.5	0.2	0.1	0.1	0	0	0	0	0	0	0	0	0.9	0.2	24
22	2.5	0	0	0	0	0	0.1	0.3	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0.1	1	0.4	0.1	0.2	0.4	1.7	0.5	0.3	2.5	0.4	24
23	0.1	0.3	0.4	0.8	0.9	0.1	0.3	**S**	0.2	0.3	0.1	0.4	0.5	0.1	0.3	0.5	0.1	0.1	0.1	0.2	0.7	2.3	4.4	1.8	4.4	0.7	24
24	1	0.4	1.2	0.5	0.4	0.7	**S**	0.2	0.1	0.2	0.2	0.1	0.3	0.6	0.2	0.3	0.2	0.2	0.1	0.6	0.5	0.6	0.3	0.2	1.2	0.4	24
25	0.6	0.3	0.4	0.4	0.5	**S**	8.3	2	1.7	2.4	0.3	0.2	0.7	0.7	0.8	0.7	0.9	0.9	1.1	0.7	0.9	1.4	2	2.6	8.3	1.3	24
26	2	2.6	3	2.8	**S**	1.6	2.5	5.7	7.1	7.3	5.5	5	3.1	2.2	2	0.9	0.8	0.2	0.2	0.5	2.3	2.1	2	3.3	7.3	2.8	24
27	3.8	5.5	7.3	**S**	5.3	9.3	8.4	9.7	6.8	2.7	0.9	0.4	1.4	0.5	0.8	1.2	0.2	0.1	0.2	0.1	0.3	0.4	2.1	3.7	9.7	3.1	24
28	7.9	8.9	**S**	8.1	7.7	9.8	9.6	4.7	1.8	1.1	2.2	2.6	6.7	9.5	3.5	7.6	5	1.4	0.8	0.7	0.7	0.7	0.8	1.2	9.8	4.5	24
29	1.4	**S**	0.2	0.4	0.5	0.6	1.9	1.8	2.4	2.8	1.8	1.1	0.9	1.1	1	0.9	0.6	0.7	1.8	1	0.6	0.8	0.6	0.5	2.8	1.1	24
30	**S**	1.3	0.5	0.6	0.1	0.4	1.6	1.8	2.9	4.2	1.9	2.4	0.3	1.6	1.4	0.3	0.1	0	0	0.1	2.3	5.1	5.8	**S**	5.8	1.6	24
31	13.2	11.7	7.3	6.4	4.7	8.4	7.4	4.5	5.5	1.5	1	0.1	0.3	0	0	0	9	1.8	1.1	0	0.3	11.9	**S**	0.4	13.2	4.2	24
HOURLY MAX	13	12	10	8	8	20	15	15	14	13	8	6	7	10	4	11	9	4	3	3	5	12	8	5			
HOURLY AVG	2.4	2.4	2.2	2.3	2.2	3.4	4.5	4.5	5.0	4.1	2.5	1.8	1.4	1.6	1.2	1.7	1.4	0.9	0.9	0.8	1.3	1.7	1.9	1.4			

STATUS FLAG CODES

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

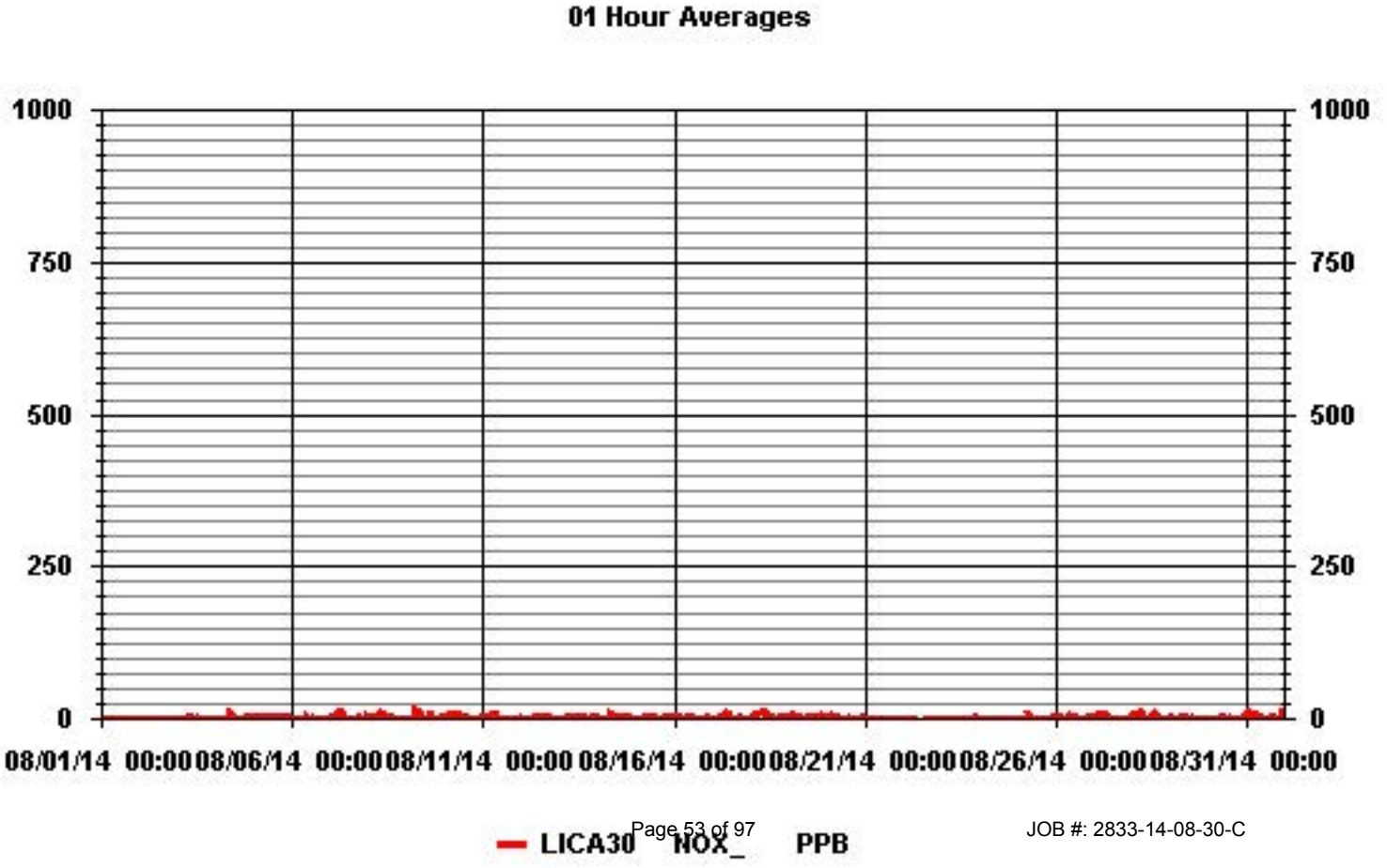
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR NA PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	681					
MAXIMUM 1-HR AVERAGE:	19.8	PPB	@ HOUR(S)	5	ON DAY(S)	9
MAXIMUM 24-HR AVERAGE:	4.7	PPB			ON DAY(S) VAR-VARIOUS	9

IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	2.73		MONTHLY AVERAGE:	2.22	PPB



JOB #: 2833-14-08-30-C

Lakeland Industry & Community Association - Maskwa Site

AUGUST 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	1.6	1	0.8	1.1	0.6	**S**	1.2	2.9	0.8	1	1	0.9	1	0.9	2.8	1.4	2.7	0.8	1.2	1.2	1.1	1.8	1.8	2.9	1.4	24
2	1.5	1.3	1	1.1	1.3	**S**	1.1	1.3	1.2	1	1.4	1.1	1.4	1.2	1.7	1.9	1.1	1.2	3.3	2	0.8	2.1	0.9	1.2	3.3	1.4	24
3	1.8	1.5	1.2	1.2	**S**	2.1	2.7	3.1	3.9	3	1.3	0.9	3.3	2.3	2.3	6	1.5	1.5	1.3	2.1	1.9	1.6	1.5	1.3	6	2.1	24
4	1.7	1.6	1.4	**S**	1.3	1.7	2.5	4.4	24.6	17.7	17.5	3.7	5.7	8.2	1.9	1.2	1.1	1.2	1.4	2	2.5	3.3	3.1	3.1	24.6	4.9	24
5	3.2	3.4	**S**	3.2	4.1	5	3.5	3.9	22	3.6	4	1.9	1.7	2.1	3.1	16.3	2.4	2.1	3.2	5.1	5	5.1	3.7	2.2	22	4.8	24
6	2.1	**S**	1.6	1.6	1.3	1.2	3.3	3.8	9.8	3.5	2.4	1.3	2.2	2.2	2.5	1.8	1.7	1.9	1.3	1.4	1.6	1.2	1	2.5	9.8	2.3	24
7	**S**	2	1.9	3	12.8	19.1	25.5	12.2	30.9	17.6	9.7	3.8	1.1	18.9	2.8	3	1.4	1.7	4.9	1.6	1.4	6.6	9.4	**S**	30.9	8.7	24
8	6.5	6.2	4.1	4.6	6.8	5.5	7.7	16.7	14.2	12.6	4.9	3.6	3.1	5.2	5.1	7	15.2	2.5	2.8	1.6	1.5	1.4	**S**	1	16.7	6.1	24
9	5.8	2	1.2	3.3	3.2	38.9	37.6	28.2	24.1	15.5	10.1	9.8	2.1	4.5	7.9	23.7	6	3.3	2	0.7	2	**S**	6.1	2.7	38.9	10.5	24
10	3.3	6.1	9.8	8.7	5	9	8	9.5	11	12.9	9.9	38.5	4.3	2.7	2.8	2.3	1.6	2.1	0.9	1.1	**S**	0.9	4.4	7.4	38.5	7.1	24
11	32.9	7.5	6.3	4.8	4.5	8.5	13.5	13.4	8	6.1	3.4	2.7	1.8	9	4.6	8.3	1.9	0.6	0.8	**S**	0.8	1.3	1.3	1.4	32.9	6.2	24
12	2.1	2.5	1.6	1.2	9.2	1.3	0.8	1.5	9.4	10.3	7.9	4.7	7.5	7.7	3.9	5.7	3.9	8.9	**S**	4.7	1.3	1.2	1.5	1.5	10.3	4.4	24
13	2.1	1.5	2.3	2.9	2.9	2.8	6.4	4	3.5	4.8	27.2	2.5	2.3	2.7	6.1	6.4	5.2	**S**	1.8	2	1.9	2	2.4	2.4	27.2	4.3	24
14	1.9	2.2	1.8	1.6	1.6	5.7	12.6	22.3	20.6	17.3	15	11.3	2	4	3.2	2.9	**S**	3	2.9	3.1	4	2.2	1.6	3.5	22.3	6.4	24
15	2.7	1	1.6	1.7	1.7	19.7	10.7	3.3	3.8	2.1	2.5	3.2	2.9	2.7	1.5	**S**	2.1	2.8	3	2.8	3.6	3.8	3.7	3.5	19.7	3.8	24
16	3.3	3.3	2.3	1.9	1.6	1.9	2	3.5	3.7	4	4.5	4.4	3.7	2.5	**S**	1.9	1.6	1.2	1.7	2.6	1.9	3.1	3.7	1.6	4.5	2.7	24
17	1.1	1.1	1.8	1.5	1.9	2.9	6.6	6	18	19.6	17.4	14.5	2.9	**S**	2.7	0.9	1.3	4.8	11.1	7.6	1	1.4	1.3	1.6	19.6	5.6	24
18	1.8	3.3	7.4	8.9	6.4	10.6	11.8	15.9	14.3	13.1	8.6	3.9	**S**	7.2	5	4.6	1.9	1.9	1.8	2.6	6.4	4.9	2.7	1.9	15.9	6.4	24
19	3.3	5.2	14.2	11.1	6	3	8.2	7.3	7	4.8	3.6	**S**	3.3	2.4	5.3	5.8	2.5	3.2	2.2	2.7	15.1	2.6	4.1	2	15.1	5.4	24
20	2.1	13	8.8	9.3	5.5	4	5.5	5.5	4.3	3.6	**S**	1.5	1.5	1.8	2.1	1.9	1.5	1	0.9	1.1	1	0.8	10.9	2.8	13	3.9	24
21	1.6	1.1	1.1	1	0.8	1.1	1	1.7	1.7	**S**	1	1	1.8	1.8	3	2.7	0.6	0.5	0.5	0.2	0.6	0.7	0.7	0.5	3	1.2	24
22	13	0.5	0.8	0.6	0.7	0.4	1.1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0.8	4.1	1.6	1.1	1	1.7	2.8	1.4	1.2	13	2.1	24
23	0.8	0.9	1.4	1.4	2.4	1.2	1.5	**S**	1	0.9	0.9	2.7	2.3	0.9	1.1	2.1	0.8	0.7	1	1	5.2	7.3	10.9	10.1	10.9	2.5	24
24	2.6	2.4	2.5	1.2	1.2	2.5	**S**	1.1	0.8	0.8	0.9	0.9	1.1	1.3	0.9	1	0.9	1	0.8	2.3	1.5	1.4	1.1	0.9	2.6	1.4	24
25	1.4	1.1	1.1	1.1	1.4	**S**	17.4	4.5	4.2	4.6	1.2	0.9	1.4	2.8	2.8	1.7	1.8	1.6	1.6	1.4	1.5	2.4	3.2	3.2	17.4	2.8	24
26	2.8	3.8	3.6	3.9	**S**	2.4	7.2	7.4	31.9	28	8.2	16.6	4.1	3	5.6	2.8	2.3	1	0.9	2.2	3.9	3.2	2.8	4.4	31.9	6.6	24
27	5.1	6.8	8.3	**S**	6.5	14.9	11.3	16.8	11.1	3.8	2.6	1.5	48.2	3.1	2.7	32.8	1.1	0.9	1.2	0.9	1.1	1.1	3.5	7.6	48.2	8.4	24
28	12.2	12.3	**S**	9.7	11.4	17.8	19.8	6.6	4.2	3.4	5.5	9.1	18.6	27.7	15.9	27.4	21.8	11.7	1.9	1.5	1.5	1.5	1.7	2.2	27.7	***10.7***	24
29	2.3	**S**	0.8	1	1.4	1.4	9	3.1	3.8	3.8	3.7	2.1	2.2	2.1	2	3.2	1.2	2.3	3.2	1.8	1.4	1.8	1.6	1.1	9	2.4	24
30	**S**	3.4	1.6	1.7	1	1.4	7.9	5.3	4.8	8.2	6.1	6.1	4	7.8	5.1	1.2	3.1	0.5	0.7	0.8	5.9	6	7	**S**	8.2	4.1	24
31	16.9	14.8	9.9	8.2	7.4	11.6	11	7.3	12.3	5.8	3.3	1	1.9	0.6	0.7	0.8	***71.6***	7.5	4.7	0.6	1.1	45.1	**S**	1.2	***71.6***	10.7	24
HOURLY MAX	33	15	14	11	13	39	38	28	32	28	27	39	48	28	16	33	72	12	11	8	15	45	11	10			
HOURLY AVG	4.8	3.9	3.5	3.5	3.9	6.8	8.9	7.6	10.4	8.0	6.4	5.4	4.8	4.8	3.6	6.0	5.5	2.6	2.2	2.1	2.7	4.0	3.4	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: 704

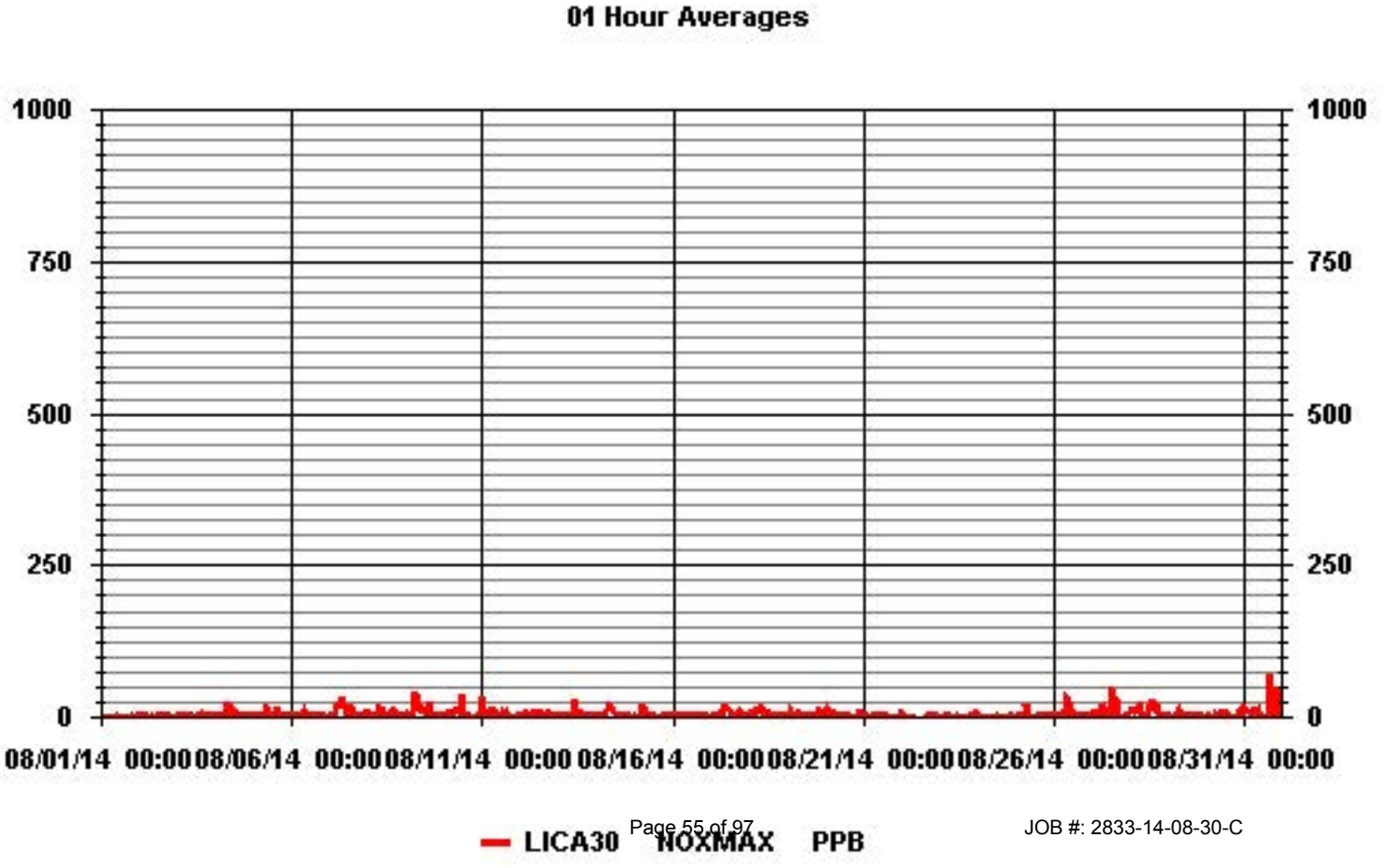
MAXIMUM INSTANTANEOUS VALUE: 71.6 PPB @ HOUR(S) 16 ON DAY(S) 31

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 8 HRS

STANDARD DEVIATION: 6.61



JOB #: 2833-14-08-30-C

LICA30
NOX_ / WDR Joint Frequency Distribution (Percent)

August 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	5.10	6.09	6.09	3.26	1.98	4.96	10.35	8.08	9.50	15.60	8.93	3.54	6.95	3.54	2.83	3.12	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	5.10	6.09	6.09	3.26	1.98	4.96	10.35	8.08	9.50	15.60	8.93	3.54	6.95	3.54	2.83	3.12	

Calm : .00 %

Total # Operational Hours : 705

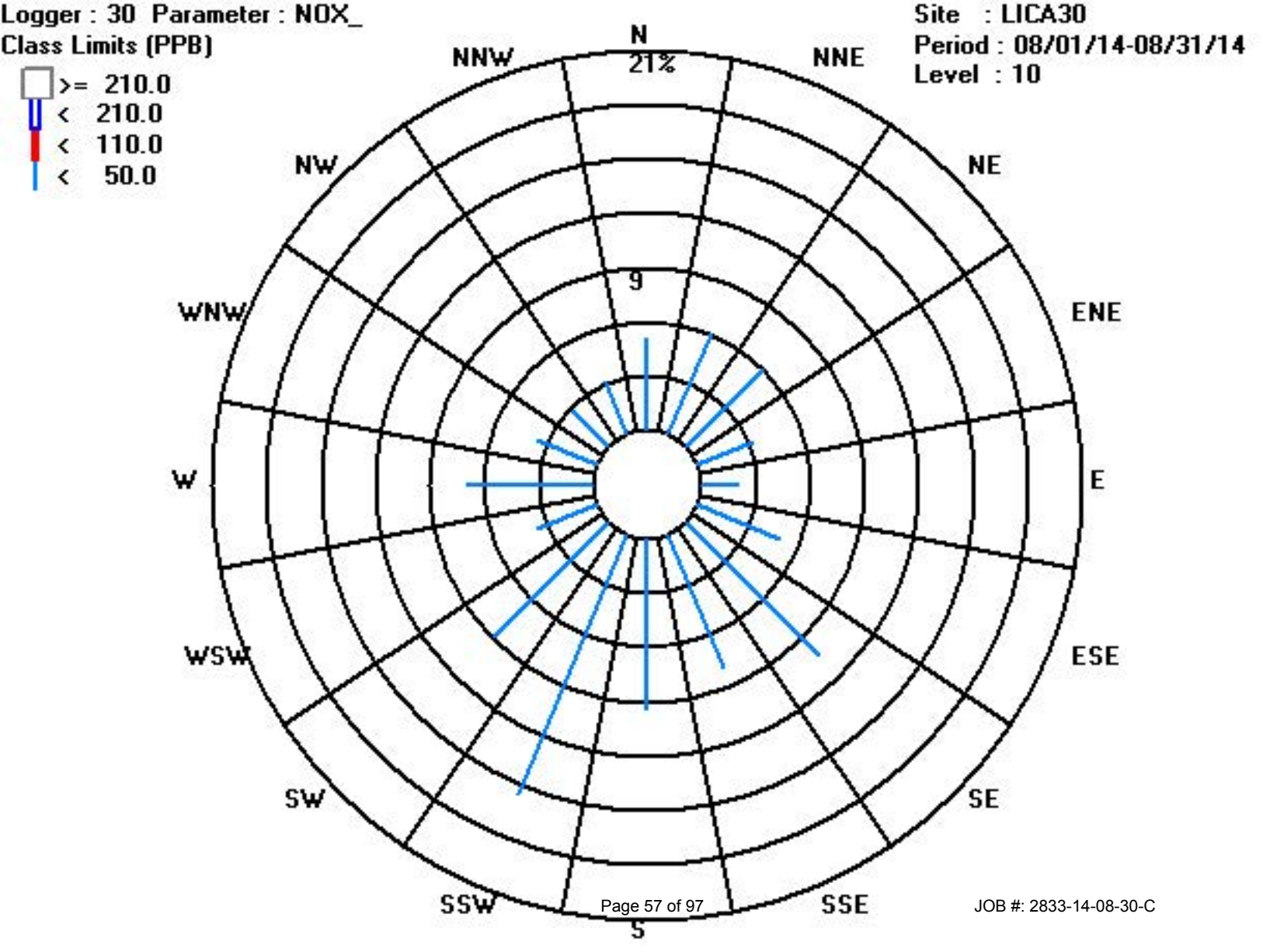
Distribution By Samples

Direction

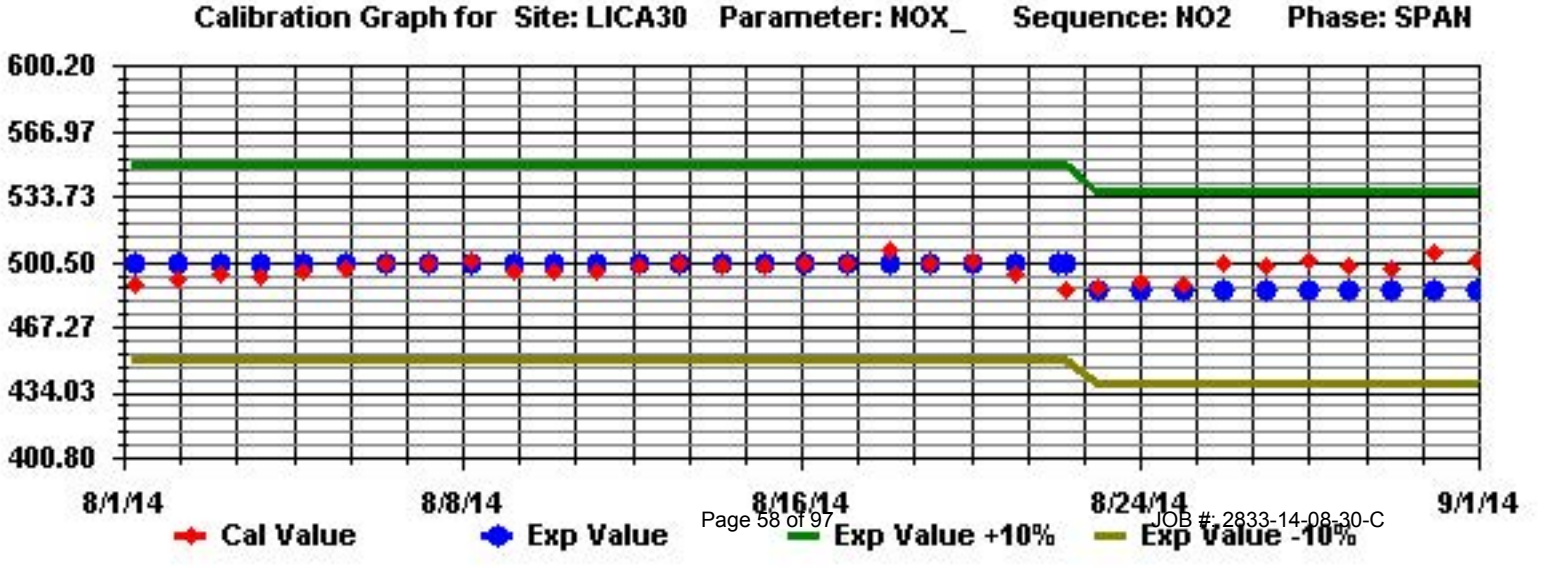
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	36	43	43	23	14	35	73	57	67	110	63	25	49	25	20	22	705
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	36	43	43	23	14	35	73	57	67	110	63	25	49	25	20	22	

Calm : .00 %

Total # Operational Hours : 705



JOB #: 2833-14-08-30-C


Calibration Graph for Site: LICA30 Parameter: NOX_ Sequence: NO2 Phase: SPAN
600.20
566.97
533.73
500.50
467.27
434.03
400.80
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Temperature

Lakeland Industry & Community Association - Maskwa Site

AUGUST 2014

AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

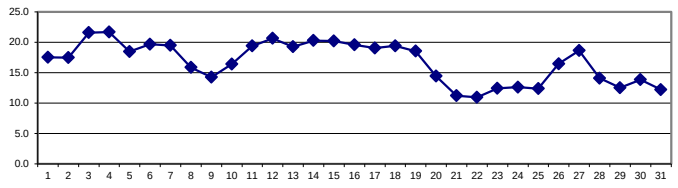
MST

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	15.9	15.6	15.5	14.4	13.2	13.7	15.2	16.7	16.5	16.9	19.2	21.1	22.7	23.3	23.7	22.7	23.3	21.2	21.3	18	14.8	12.9	11.8	11.2	23.7	17.5	24
2	10.5	10.2	9.7	8.8	8.3	8.7	11.9	16.3	19.4	21	21.7	23.1	24	25.3	25.6	24.9	24.2	21.8	19.4	18.9	16.6	16.2	16	16.5	25.6	17.5	24
3	15.7	15.5	15.8	15.4	14.2	15.2	17.2	20.5	22	24.3	26.2	27.7	28.4	28.3	28.6	27.9	27.9	27.1	25.7	22	19.8	19.4	17.2	15.7	28.6	21.6	24
4	15.3	14.9	13.9	13.6	12.8	13.1	15.5	20	24.4	26.7	28.7	29.3	***30.3***	***30.3***	29.4	28.8	28.3	27.3	25.6	22.5	19.3	18.4	16.5	15.1	***30.3***	***21.7***	24
5	14.8	14.5	13.6	13.3	12.7	13.2	14.7	18.6	23	25.5	27	28.5	28	28.4	25.9	20.2	16.6	16.3	16.5	16	14.4	14.7	13.9	12.9	28.5	18.5	24
6	12.8	13.2	13.3	12.9	12.4	13.1	14.1	16.9	20.3	22.9	23	24.5	25.5	26	26.3	26.3	26.4	26.3	24.9	20.7	19.2	16.8	16.5	17.6	26.4	19.7	24
7	15.6	15.3	15.9	15.7	15	14.5	16.3	19.7	22.3	24.1	24.8	25.3	25.7	25.5	25.4	25.1	24.2	22.5	21.7	18	15.3	14.1	12.8	12.3	25.7	19.5	24
8	11.7	10.6	9.8	9	8.6	8.9	11.2	16.3	21.5	24.4	24.3	25.9	25.6	25.4	20.4	15	15.2	14.5	14.1	13.8	13.6	13.4	13.5	13.7	25.9	15.9	24
9	13.3	13.2	12.7	12.3	12.1	12.1	12.1	12.4	12.8	14	16	16.2	13.6	15.6	18.4	18.3	19.2	19.2	18	14.7	12.2	11.3	11.1	10.9	19.2	14.2	24
10	10.8	11.3	12	12.1	12.3	12.4	13.1	14.2	14.8	15.1	17.6	17.7	20.5	22.2	23.8	24.9	24.3	24	21.9	18	15.2	12.5	11.9	11.3	24.9	16.4	24
11	11	10.5	10	9.4	10.9	11.6	13.4	17.3	21	23.9	25.7	26.5	27.4	28	28.2	28.2	28	27.3	24.9	20.5	17.3	15.4	14.9	13.9	28.2	19.4	24
12	13	12.3	11.8	11.4	10.8	10.9	13	17.9	22.5	24.5	26	28	28.9	28.8	29.2	27.9	28.4	27.4	25.3	22	19.6	19.1	19.1	17.2	29.2	20.6	24
13	17.6	15.9	15	15	14.8	15	18.1	19.2	21	21.3	22.6	23.7	24.7	23.9	23.1	22.3	21.4	20.7	22.3	20.1	17.6	16.4	15.7	15	24.7	19.3	24
14	14.3	13.7	13.4	13	12.8	13.6	15.5	17.8	21.5	24.8	27.2	27.5	28.2	29.2	29.1	28.6	27.9	26.4	22.5	18.8	16.7	15.4	14.9	13.9	29.2	20.3	24
15	13.4	12.7	12.2	12	11.3	11.4	13	16.1	21.5	24.5	25.5	26.4	27.3	27.8	28.1	27.7	26.9	25.9	23.5	20.9	20.2	19.8	18.9	18.2	28.1	20.2	24
16	16.8	15.8	15.1	14.1	13.3	12.9	14.1	18	21.6	23.9	24.7	26	26.3	27.3	27.3	26.3	24.5	22.9	20.9	18	15.7	15	14.8	14.3	27.3	19.6	24
17	13.8	13.5	13.5	13.5	13.3	13.5	14.9	17.4	21.2	23.6	26.7	20.8	20.4	24	25.6	26.3	26.6	26.4	23.8	18.5	16.2	15.3	14.5	13.9	26.7	19.1	24
18	13.2	13.1	13.6	14	14.2	14	15.4	17.1	19.5	22.4	23.9	24.8	26.2	26.2	26.1	25.6	24	22.7	21.5	20.9	19.4	17.3	15.3	15.1	26.2	19.4	24
19	15.6	16.3	16.5	16.5	15.5	15.4	15.6	16.5	17.9	19.1	20.9	21.7	22.9	23.6	24.1	24.2	23.1	21.8	20	18.1	16.4	15.3	14.2	13.8	24.2	18.5	24
20	12.7	13	12.4	11.6	10.8	10.7	11.7	14.1	16.6	18.4	19.3	18.9	18.3	18.2	19	17.9	17.8	17.5	14	12.5	11.6	9.2	9.8	10	19.3	14.4	24
21	9.8	10.1	9.8	9.4	8.6	8.4	8.7	9.6	11.2	12.9	13.8	14	15.7	15.2	16.1	15.4	14.2	13.7	12.7	9.7	7.6	7.2	7.8	8	16.1	11.2	24
22	7.8	7.8	7.8	7.5	7.5	7.5	8.9	11.5	12.5	14.1	15.1	15.1	16.8	16.3	16.8	15.1	15.1	15.7	11.7	8.7	6.7	5.9	5.4	5.6	16.8	11.0	24
23	6.3	6.2	5.8	4.4	5.2	5.7	6.6	9.3	12.6	15.2	16.9	17.3	17.3	17	17.3	17.7	18.4	18.3	16	13.2	13.6	12.9	12.8	12	18.4	12.4	24
24	10.9	9.7	9.9	9.9	9.7	9.9	10.4	12.4	14.6	16.1	17.6	18.2	18.6	18.5	17.8	17.6	16.8	16	12.9	10	8.1	6.5	5.7	5	18.6	12.6	24
25	4.2	3.5	3	2.5	2.2	3.6	4.7	8.5	13.4	15.7	17.8	18.8	18.6	20.3	20.4	20.2	19.2	18.8	14.8	13.9	13.5	13.1	13.3	13.2	20.4	12.4	24
26	12.2	11.5	10.2	8.2	8.8	7	7.7	12.9	15.2	17.7	18.7	20.6	21.8	23.2	24.5	24.8	23.3	23.2	20.9	19.5	16.2	14.5	15.7	16.4	24.8	16.4	24
27	16.7	16.6	16.1	15.6	15.1	13.8	15.3	16.5	20.5	22.5	23.1	23.1	25	24.3	24.2	24.6	24.3	22.9	19.1	15.8	13.5	13	12.7	12.4	25	18.6	24
28	12.8	12.9	12.3	12.3	12.3	12.1	12.9	14.7	16.3	17.9	17.8	19.4	19	20	20.6	19.6	19.2	17.8	15.2	10.3	7.8	6.2	4.8	4	20.6	14.1	24
29	3.4	3.1	2.7	2.2	1.8	***1.2***	2.4	8.1	13.9	16.6	19	20.2	20.5	20.7	20.5	20.1	19.2	18.1	16	14.6	14.5	14.1	14.1	13.7	20.7	12.5	24
30	12.6	11.4	11.1	11.3	11.1	11	11.2	12.1	12.4	14	16.4	17.7	18.5	19.2	18.9	19.2	19.9	19.2	15.9	12.4	10.8	9	8.2	8.9	19.9	13.9	24
31	8	7.8	7.5	7.4	7	6.6	7.4	10.7	15.1	17	18.1	19.4	19.3	18.5	18.6	17.4	14.8	13.2	13.3	10.6	9.1	9.6	9.2	7.5	19.4	12.2	24
HOURLY MAX	17.6	16.6	16.5	16.5	15.5	15.4	18.1	20.5	24.4	26.7	28.7	29.3	30.3	30.3	29.4	28.8	28.4	27.4	25.7	22.5	20.2	19.8	19.1	18.2			
HOURLY AVG	12.3	12.0	11.7	11.2	10.9	11.0	12.3	15.1	18.0	20.0	21.5	22.2	22.8	23.2	23.3	22.6	22.0	21.2	19.2	16.5	14.6	13.5	13.0	12.6			

STATUS FLAG CODES

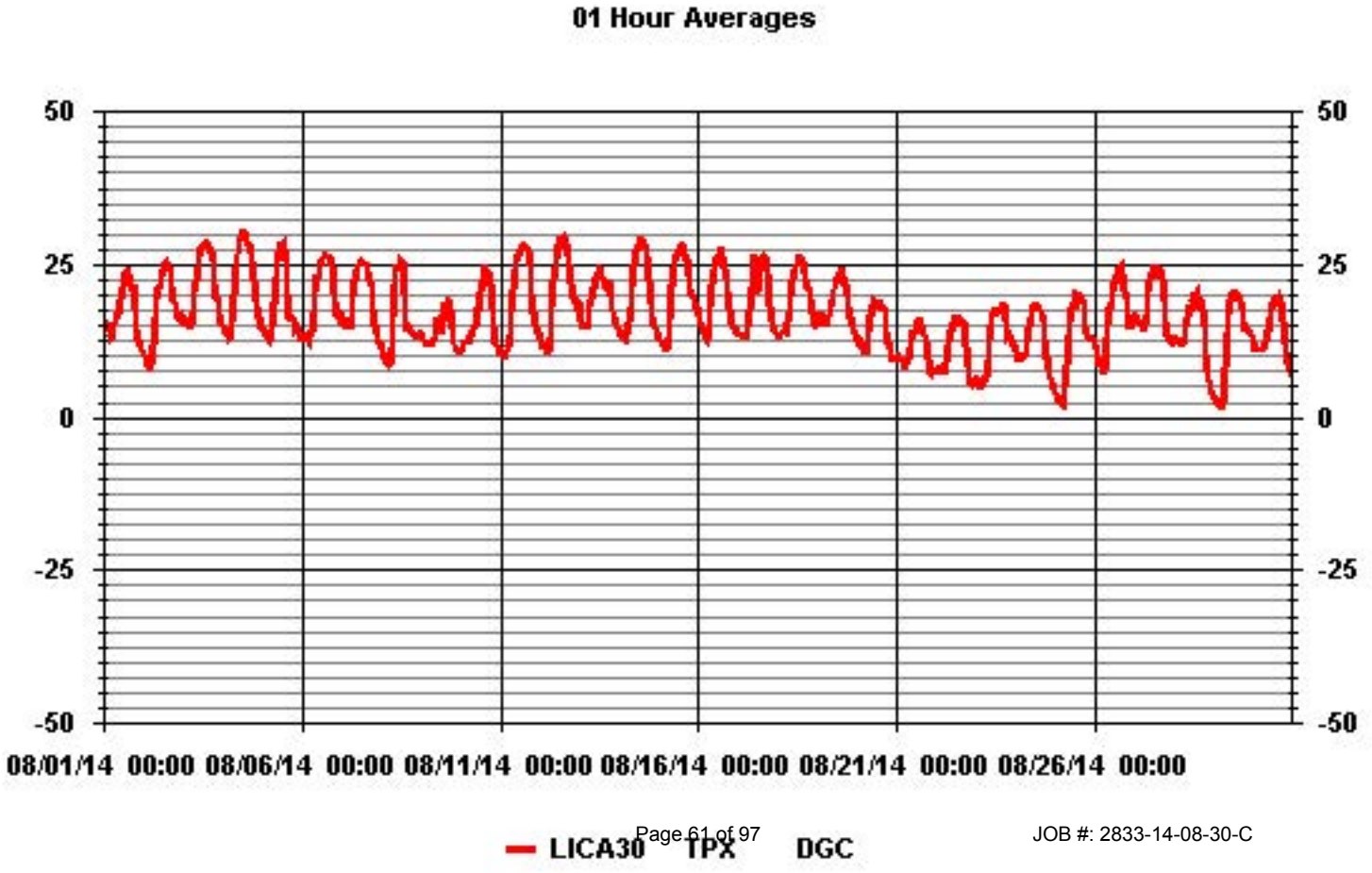
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

24 HOUR AVERAGES FOR AUGUST 2014



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	1.2	°C	@ HOUR(S)	5	ON DAY(S)	29
MAXIMUM 1-HR AVERAGE:	30.3	°C	@ HOUR(S)	12, 13	ON DAY(S)	4
MAXIMUM 24-HR AVERAGE:	21.7	°C			ON DAY(S)	4
					VAR-VARIOUS	
			OPERATIONAL TIME:		744	HRS
			AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	6.04		MONTHLY AVERAGE:		16.79	°C



JOB #: 2833-14-08-30-C

Precipitation

Lakeland Industry & Community Association - Maskwa Site

AUGUST 2014

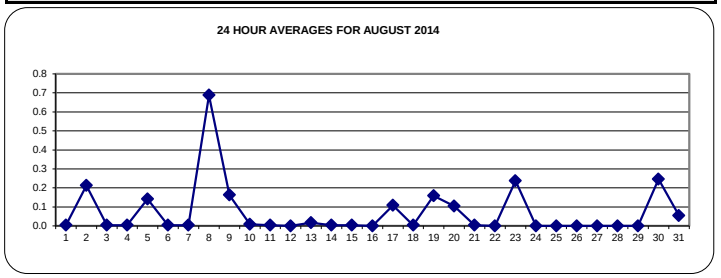
PRECIPITATION hourly averages in millimeter

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	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	4.7	0	0	0	0	0	4.7	0.2	24
3	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
4	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	0.1	0.0	24
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.5	0.6	1.2	0	0	0	0.1	0	0	1.5	0.1	24
6	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	24
7	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	0.1	0.0	24
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	***8.4***	1.6	2	2	0.7	0	0.1	0	0	1.7	***8.4***	***0.7***	24
9	2.1	1.6	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.1	0.2	24
10	0	0	0	0.1	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
11	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	0.1	0.0	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.1	0	0	0	0	0	0	0.3	0.0	24
14	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	24
15	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	0.1	0.0	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
17	0	0	0	0	0	0	0	0	0	0	0	2.6	0	0	0	0	0	0	0	0	0	0	0	0	2.6	0.1	24
18	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	24
19	0	0	0	0.2	1.9	1.3	0.4	0	0	0	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	0.1	0	0	0	0	0	0	0	0	0.2	0	0	0.8	1.4	0	0	0	0	1.4	0.1	24
21	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	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	2.4	3.3	0	0	3.3	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	0	0	0	0	0.0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
30	3.8	0	0.1	0.2	1.4	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.8	0.2	24
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	0	0	0	0	0	0	1	0.1	24
HOURLY MAX	3.8	1.6	0.1	0.2	1.9	1.3	0.4	0	0.1	0	0	2.6	0	0	8.4	1.6	2	2	4.7	1.4	2.4	3.3	0	1.7			
HOURLY AVG	0.2	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.0	0.1			

STATUS FLAG CODES

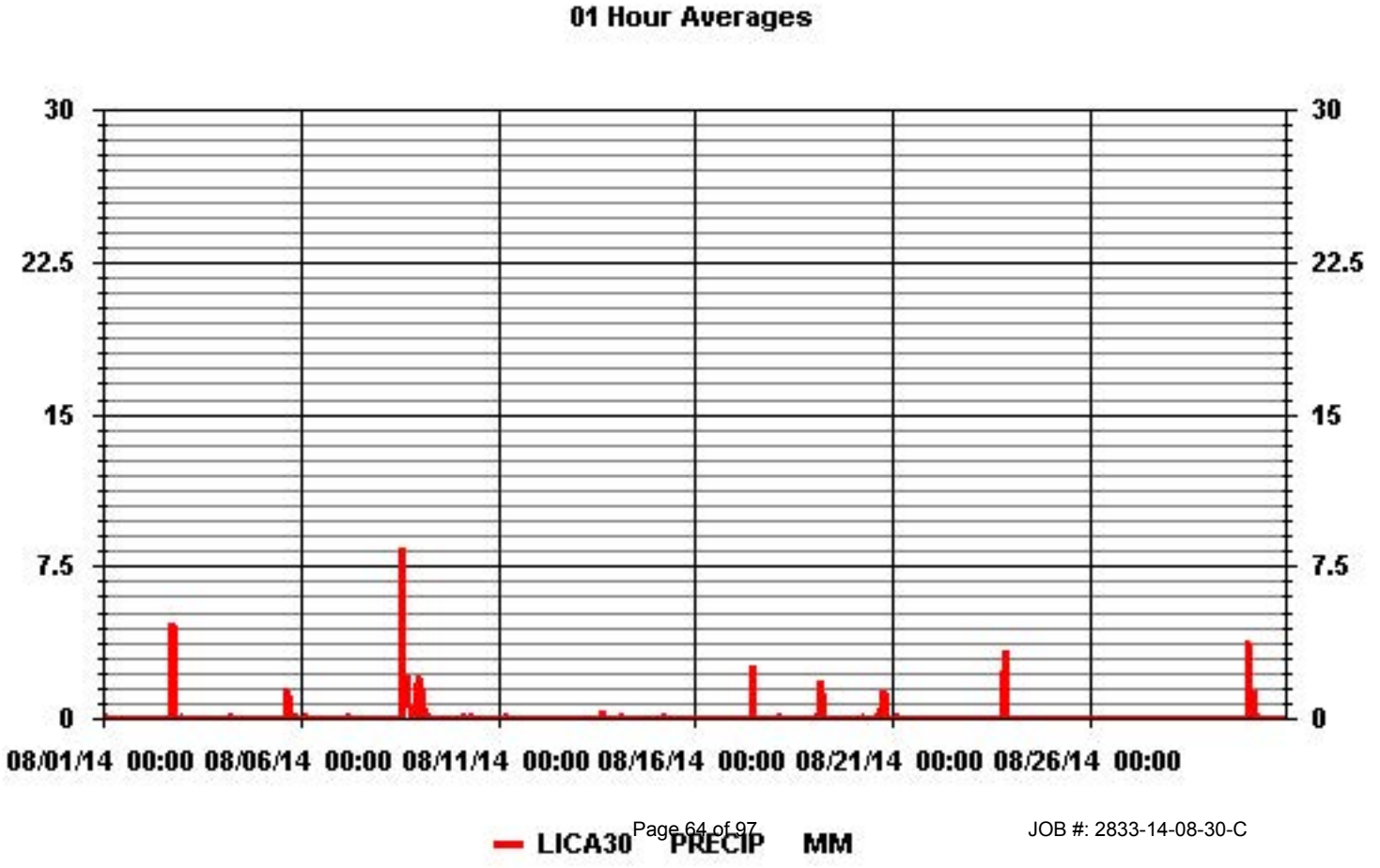
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:		8.4	MM	@ HOUR(S)	14	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:		0.7	MM			ON DAY(S)	8
MONTHLY TOTAL	51 MM					VAR-VARIOUS	
						VAR-VARIOUS	
				OPERATIONAL TIME:		744	HRS
				AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.47			MONTHLY AVERAGE:		0.07	MM

JOB #: 2833-14-08-30-C



JOB #: 2833-14-08-30-C

Relative Humidity

Lakeland Industry & Community Association - Maskwa Site

AUGUST 2014

RELATIVE HUMIDITY (RH) hourly averages in %

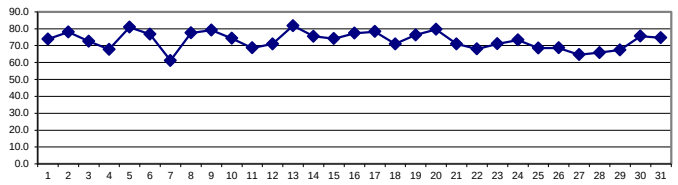
MST

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	80	84	81	84	89	90	87	79	79	76	67	59	53	51	48	55	52	60	61	74	86	90	93	93	93	73.8	24
2	93	93	93	93	93	93	***94***	81	68	65	65	62	55	51	52	55	59	68	86	86	90	92	93	91	***94***	78.0	24
3	93	93	92	92	93	93	88	76	72	66	58	51	49	51	50	52	51	55	60	71	77	79	87	92	93	72.5	24
4	93	93	93	***94***	***94***	***94***	***94***	83	64	57	45	40	***31***	33	35	36	39	43	55	68	81	82	88	92	***94***	67.8	24
5	93	93	***94***	***94***	***94***	***94***	***94***	88	70	57	52	46	49	51	59	79	87	91	91	92	93	93	93	93	***94***	80.8	24
6	***94***	***94***	***94***	***94***	***94***	***94***	***94***	***94***	83	70	70	62	57	55	52	54	54	54	60	78	81	87	88	83	***94***	76.7	24
7	89	90	87	86	85	86	77	62	49	42	36	37	34	32	33	35	38	45	47	62	73	77	82	84	90	61.2	24
8	87	91	91	92	93	93	93	79	57	43	36	38	40	43	64	90	90	90	91	91	92	92	92	92	93	77.5	24
9	92	93	91	90	90	91	89	86	83	77	69	68	76	69	61	59	57	57	62	77	88	90	91	92	93	79.1	24
10	92	91	87	87	86	87	85	81	81	83	71	72	66	58	53	46	46	44	51	66	79	89	91	92	92	74.3	24
11	92	93	93	93	93	***94***	89	75	64	57	50	47	41	39	38	37	38	41	50	70	83	89	89	92	***94***	68.6	24
12	93	93	93	93	93	***94***	***94***	82	66	60	55	47	41	41	44	49	48	52	59	71	81	83	83	89	***94***	71.0	24
13	86	91	93	93	93	93	83	80	74	74	71	69	64	64	68	73	78	84	74	85	92	93	***94***	93	***94***	***81.8***	24
14	***94***	***94***	***94***	***94***	***94***	***94***	***94***	***94***	83	71	63	59	48	44	39	39	41	53	71	83	88	92	93	93	***94***	75.5	24
15	***94***	***94***	***94***	***94***	***94***	***94***	***94***	92	72	61	57	55	52	50	47	48	51	56	69	78	79	82	84	87	***94***	74.1	24
16	91	93	93	93	***94***	***94***	***94***	87	70	64	63	60	58	55	56	56	55	58	68	84	91	93	93	93	***94***	77.3	24
17	93	***94***	***94***	***94***	***94***	***94***	***94***	93	75	69	62	82	84	66	57	54	55	43	48	77	87	89	90	91	***94***	78.3	24
18	93	93	92	91	88	89	86	81	74	64	59	53	45	42	44	47	54	58	63	65	71	79	86	87	93	71.0	24
19	83	81	81	81	89	91	91	90	86	81	73	69	62	58	56	54	56	61	69	77	82	83	88	88	91	76.3	24
20	92	91	90	90	91	92	91	82	72	65	63	63	65	66	62	65	67	67	79	90	91	92	93	92	93	79.6	24
21	92	91	90	90	89	88	87	84	73	61	57	54	48	46	44	46	49	51	60	78	82	85	80	79	92	71.0	24
22	82	84	86	87	88	89	83	65	58	51	45	42	37	38	40	46	49	48	69	82	89	91	91	92	92	68.0	24
23	90	88	87	90	90	86	84	74	65	53	45	45	48	52	53	53	52	53	65	79	83	90	90	90	90	71.0	24
24	92	92	93	93	93	93	93	88	77	62	52	48	43	43	44	44	47	51	69	81	88	91	92	92	93	73.4	24
25	92	92	92	92	92	93	93	93	73	60	53	46	47	42	43	42	47	50	64	68	69	69	66	66	93	68.5	24
26	69	73	78	86	84	90	91	75	69	63	64	59	56	53	48	46	51	52	61	64	77	83	79	76	91	68.6	24
27	75	75	78	80	82	87	80	77	64	56	53	50	44	38	43	39	38	39	53	69	80	83	84	84	87	64.6	24
28	81	83	87	87	86	88	83	70	59	50	49	43	45	42	38	39	39	41	50	71	81	86	91	91	91	65.8	24
29	92	92	91	91	91	92	92	85	66	59	52	50	44	41	43	41	46	52	61	66	65	67	68	70	92	67.4	24
30	78	90	92	91	92	92	92	90	89	84	73	64	56	51	51	50	47	50	62	74	80	88	91	88	92	75.6	24
31	89	90	90	90	91	91	90	80	67	61	56	48	48	49	46	50	65	80	77	82	88	86	86	90	91	74.6	24
HOURLY MAX	94	94	94	94	94	94	94	94	89	84	73	82	84	69	68	90	90	91	91	92	93	93	94	93			
HOURLY AVG	88.7	89.7	89.8	90.3	90.7	91.4	89.5	82.1	71.0	63.3	57.5	54.5	51.2	48.8	48.7	50.9	53.1	56.4	64.7	76.1	82.8	86.0	87.4	88.0			

STATUS FLAG CODES

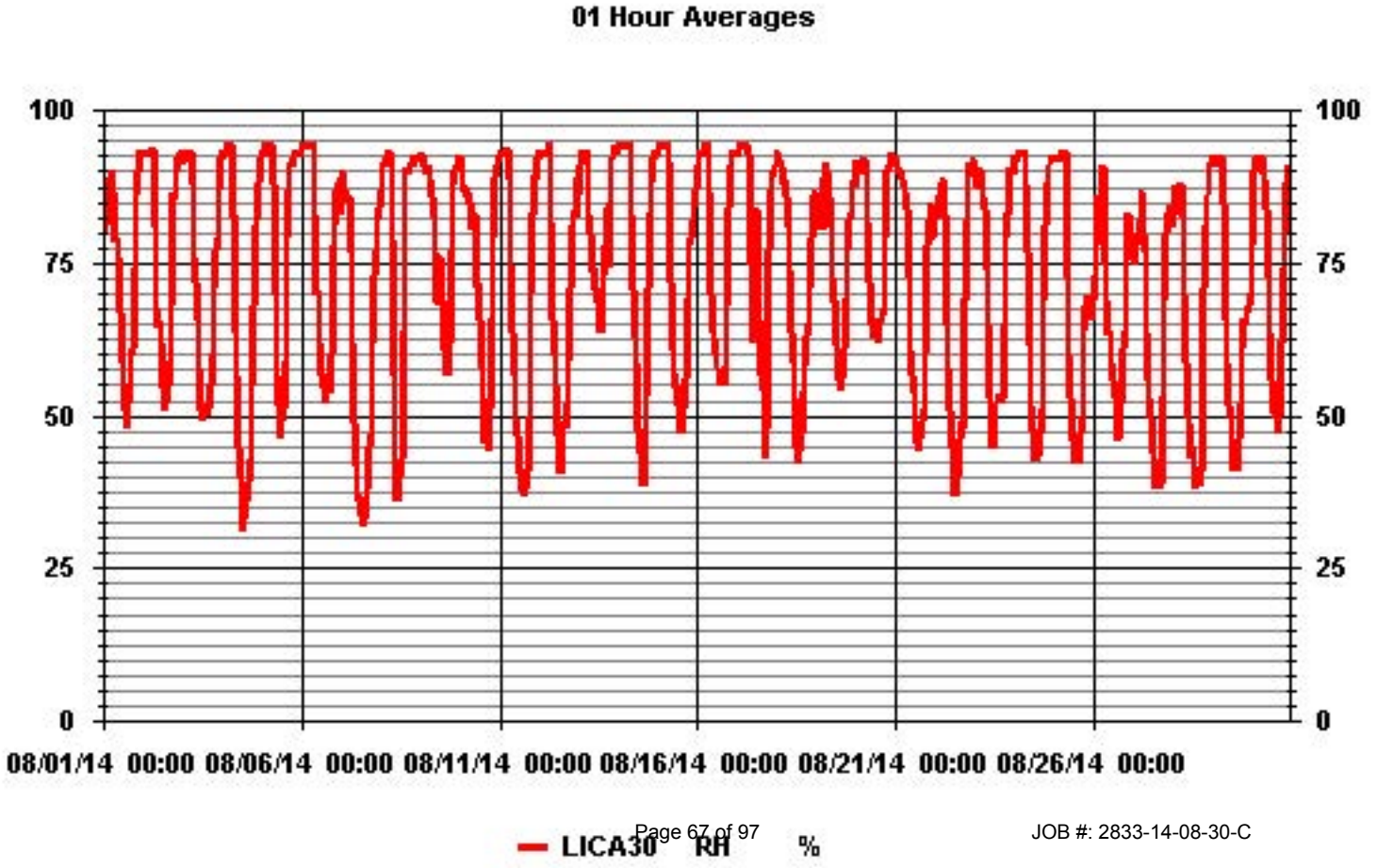
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

24 HOUR AVERAGES FOR AUGUST 2014



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	94	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	81.8	%			ON DAY(S)	13
					VAR-VARIOUS	
			OPERATIONAL TIME:		744	HRS
			AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	18.43		MONTHLY AVERAGE:		73.02	%



JOB #: 2833-14-08-30-C

Barometric Pressure

Lakeland Industry & Community Association - Maskwa Site

AUGUST 2014

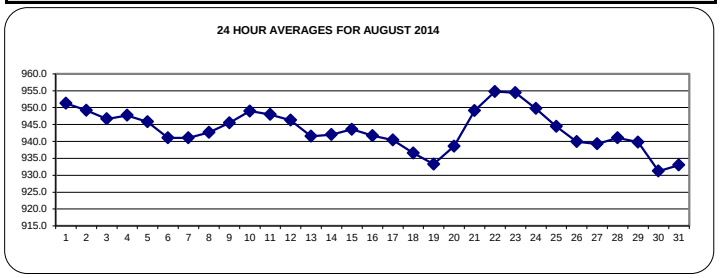
BAROMETRIC PRESSURE (BP) hourly averages in millibar

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	949	949	949	950	950	950	951	952	952	952	953	952	953	953	952	952	952	952	952	952	951	951	951	951	953	951.3	24
2	951	951	951	950	950	951	951	951	951	951	951	951	950	949	949	948	948	948	947	947	946	946	946	946	951	949.2	24
3	946	946	944	946	946	946	946	947	947	947	948	948	948	947	947	947	947	947	946	946	947	947	947	947	948	946.7	24
4	947	947	947	947	947	947	948	948	949	949	949	949	949	948	948	948	948	948	947	947	947	947	947	947	949	947.7	24
5	947	947	946	946	946	946	946	947	947	947	947	947	947	946	946	946	946	946	945	944	944	944	943	943	947	945.8	24
6	943	943	943	943	942	942	942	942	942	942	942	942	942	941	940	940	940	940	939	939	939	939	939	940	943	941.1	24
7	939	939	940	940	940	940	940	941	942	942	942	942	942	942	942	941	941	941	941	941	941	942	942	942	942	941.0	24
8	942	942	942	942	942	942	943	943	944	945	944	944	944	943	943	943	943	943	943	942	942	941	941	941	945	942.7	24
9	941	940	941	941	941	942	943	944	945	945	946	947	947	947	948	948	948	948	949	948	948	948	948	948	949	945.5	24
10	948	948	948	948	949	949	949	949	950	950	950	950	950	950	949	949	949	949	949	949	949	948	948	948	950	949.0	24
11	948	948	948	948	948	948	948	948	949	949	949	949	949	948	948	948	948	948	948	947	947	947	947	947	949	948.0	24
12	947	947	947	947	947	947	947	948	948	948	948	948	947	947	946	946	945	945	945	945	944	944	944	944	948	946.3	24
13	943	943	943	943	942	942	942	942	942	942	942	942	942	942	942	941	941	940	940	940	940	940	940	940	943	941.5	24
14	940	940	940	940	940	940	941	941	942	943	943	943	943	943	943	943	943	943	943	943	943	943	943	943	943	942.0	24
15	943	943	943	943	943	943	944	944	945	945	945	945	945	945	944	944	943	943	943	942	943	943	943	942	945	943.6	24
16	942	942	942	942	942	942	942	942	942	943	943	943	942	942	942	942	942	941	941	941	940	940	940	940	943	941.7	24
17	940	939	939	939	939	940	940	940	940	941	941	941	941	941	941	941	941	941	941	941	941	941	941	940	941	940.4	24
18	940	939	939	939	939	938	938	938	938	938	938	937	937	936	936	936	936	935	935	935	934	934	934	933	940	936.6	24
19	933	933	933	933	934	934	933	933	933	934	934	934	933	933	933	933	933	933	933	933	933	933	933	934	934	933.3	24
20	933	934	934	934	935	935	936	936	937	938	938	938	939	940	940	940	941	941	942	942	943	943	943	944	944	938.6	24
21	944	945	946	946	944	946	948	948	949	950	950	950	950	951	951	951	951	951	951	951	951	951	952	952	952	949.1	24
22	952	952	952	953	953	954	953	955	955	***956***	***956***	***956***	***956***	***956***	***956***	***956***	***956***	***956***	***956***	955	955	955	955	955	***956***	***954.8***	24
23	955	955	955	955	955	955	955	***956***	***956***	***956***	***956***	***956***	955	955	955	954	954	953	953	953	953	952	952	952	***956***	954.4	24
24	952	951	951	951	950	951	951	951	951	951	951	951	950	950	950	949	949	949	948	948	947	947	947	947	952	949.7	24
25	947	946	946	946	945	945	946	946	946	946	946	945	945	945	944	944	943	943	943	942	942	942	942	942	947	944.5	24
26	941	941	940	940	940	940	940	940	941	941	941	941	941	940	940	940	940	940	939	939	939	938	938	938	941	939.9	24
27	939	939	938	938	938	939	939	939	940	940	940	940	940	940	940	940	940	940	940	939	939	939	939	938	940	939.3	24
28	938	939	939	939	938	939	940	940	941	942	942	942	942	942	942	942	942	943	943	942	942	942	942	942	943	941.0	24
29	943	943	942	942	942	942	942	942	943	943	943	942	941	940	939	938	938	938	937	936	936	935	934	934	943	939.8	24
30	933	932	932	931	931	***930***	931	931	931	931	931	931	931	931	932	931	931	932	932	931	931	931	931	931	933	931.3	24
31	931	931	931	931	932	932	931	933	933	934	934	934	934	934	933	933	934	933	934	934	934	934	934	934	934	933.0	24
HOURLY MAX	955	955	955	955	955	955	955	956	956	956	956	956	956	956	956	956	956	956	956	955	955	955	955	955			
HOURLY AVG	943.1	943.0	942.9	943.0	942.9	943.1	943.4	943.8	944.2	944.5	944.6	944.5	944.3	944.1	943.9	943.7	943.6	943.5	943.4	943.0	942.9	942.8	942.8	942.7			

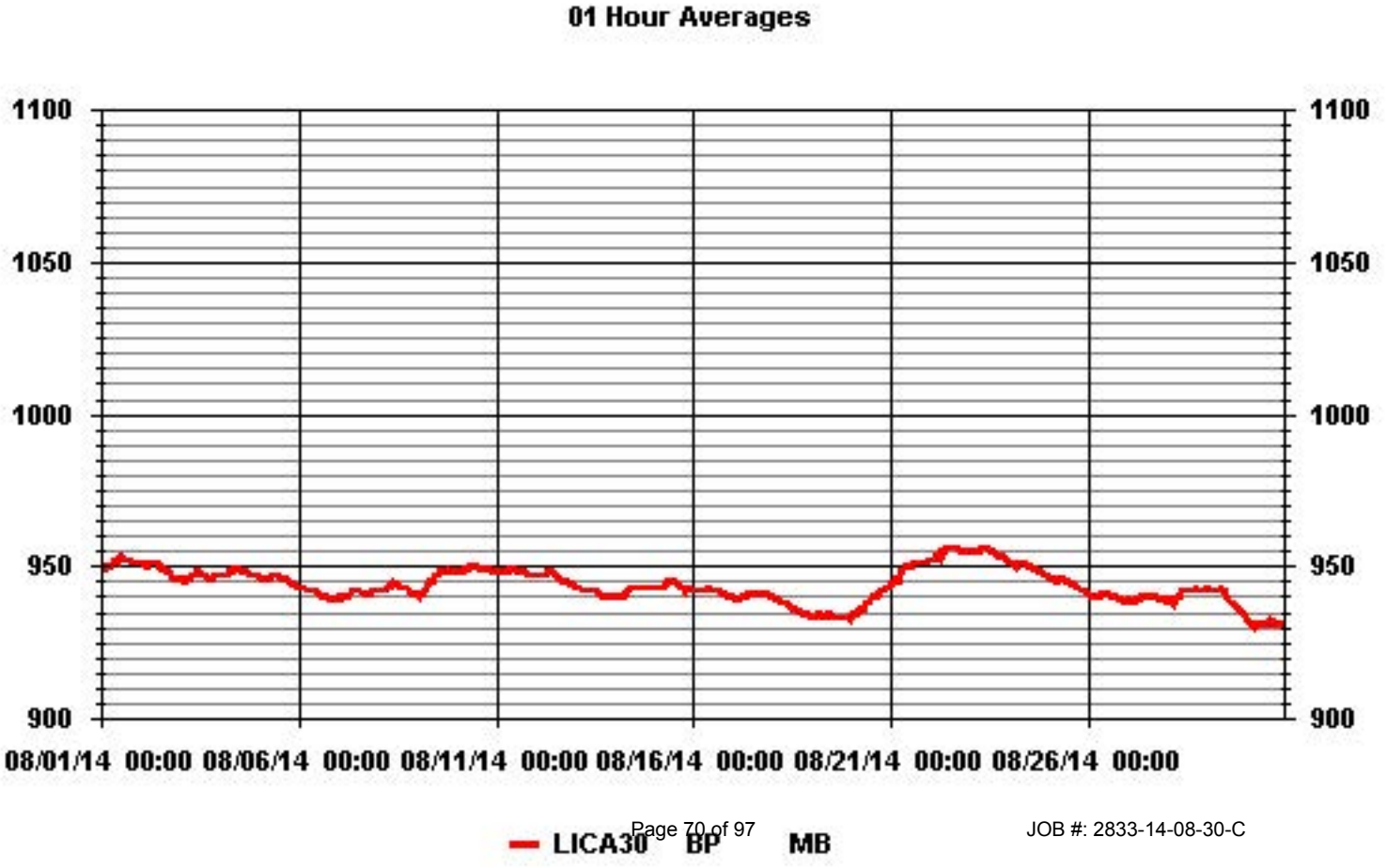
STATUS FLAG CODES

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:	956	MB	@ HOUR(S)	VAR	ON DAY(S)	22, 23
MAXIMUM 24-HR AVERAGE:	954.8	MB			ON DAY(S)	22
					VAR-VARIOUS	
OPERATIONAL TIME:					744	HRS
AMD OPERATION UPTIME:					100.0	%
STANDARD DEVIATION:	5.95		MONTHLY AVERAGE:		943.5	MB



JOB #: 2833-14-08-30-C

Vector Wind Speed

Lakeland Industry & Community Association - Maskwa Site

AUGUST 2014

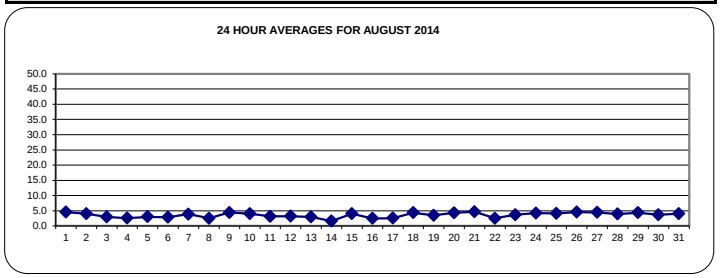
WIND SPEED (WS) hourly averages in km/hr

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	0.8	2.6	7.2	4.6	5.1	5.6	6.1	***10***	7.7	7.2	6.5	8	5.2	6	4.6	3.9	3.4	3.5	3.9	2.2	2.5	1.2	0.2	0.4	***10.0***	4.5	24
2	1	0.8	0.9	0.6	0.4	0.8	2.6	4.6	5.9	5.6	6.1	7.2	8.1	6.6	7.4	7.8	5.4	3.7	3	5.9	3.6	3	2.3	2.7	8.1	4.0	24
3	1.5	3.1	3.9	2.6	1.1	2.5	1.8	0.7	1.3	2.2	3	1.3	2.2	4.6	5.2	4.5	5.5	4.9	4	3.5	4.8	4.6	1.8	0.6	5.5	3.0	24
4	3.3	0.5	0.9	0.8	0.5	0.8	0.3	0.1	1.6	1.6	0.6	3.6	3.6	4.9	5.7	4.9	5.1	4.3	3.4	2.4	4.5	5	1.4	1.9	5.7	2.6	24
5	2.6	0.3	1.5	1.7	0.4	0.5	1.2	2.2	4	5.9	5.1	4.9	4.6	4.2	5.1	8.8	6.6	0.4	1.8	1.3	2.9	3.5	0.7	1.9	8.8	3.0	24
6	1.1	0.3	1	0.5	0.5	0.3	0.9	1.8	2.9	4.1	5	4.2	4.6	5.7	4.9	5	4.2	3.7	1.9	3	2.6	2.1	4	3.3	5.7	2.8	24
7	1.6	2.2	3.2	3.2	3.5	3	2.6	3.9	5	5	5.3	5.5	4.8	4.5	5.8	4.7	4.6	4.4	3.7	2	2.9	4.3	3.5	3.6	5.8	3.9	24
8	2.9	3.1	1.7	0.8	1.5	0.7	0.5	0.4	0.7	1.5	5.6	4.4	3.8	3.8	2	3.4	2.8	4.1	4.1	3.8	3.4	3.4	1	1	5.6	2.5	24
9	0.3	3	4.7	6.2	5.7	6	6.1	6.1	5.6	5.4	5.2	5.5	5.4	3.1	4.4	5	4	3.2	2.2	2.2	3.9	4.3	4.1	3.9	6.2	4.4	24
10	4.2	3.9	4.4	4.2	5.1	5	4	2.5	2.8	2.9	5.3	3.8	6.7	7.4	5.4	3.6	4	5.1	3.4	2.2	3.2	2.9	2.8	2.2	7.4	4.0	24
11	1.1	1.1	1.6	0.9	3.4	3.6	3.8	3.9	3.6	4.1	4.6	5.3	5.6	5.1	4.8	4	3.6	2.7	2.5	2.6	3.4	1.8	1.5	0.8	5.6	3.1	24
12	0.8	0.4	0.2	0.6	0.7	0.7	2	4	3.8	4.9	4.4	3.7	4.9	5.2	4.5	4.2	5.3	5.2	4	3.9	3.8	4.1	4.1	2	5.3	3.2	24
13	2.2	1.3	1.2	1	1	1.4	3.8	4.1	5.3	4.7	4.2	6	7.9	7.3	4.7	4.2	3.1	3.4	1.2	0	1.3	1	0.4	0.4	7.9	3.0	24
14	0.4	0.7	0.7	0.3	0.4	1	0.7	0.9	0.8	2.3	2.4	2.4	3.2	3	3.7	3.3	2.6	1.1	0.7	2.2	2.1	1.7	1.3	0.7	3.7	1.6	24
15	0.7	0.2	0.8	0.2	0.2	0.2	0.6	0.9	3.2	4.7	5.8	7	8.5	7.7	9	8.9	7.9	5.3	2.4	3.7	5.3	5.3	4.3	3.9	9.0	4.0	24
16	2.2	0.1	0.4	0.4	0.6	1.2	0.8	2.4	2.7	2.6	4.6	5.1	6.8	4.3	4.9	5.6	4.4	3.8	2.2	1	0.5	1.5	0.3	0.7	6.8	2.5	24
17	1	0.9	1	0.5	1.4	1.1	1.7	1.5	2.6	3.5	4	3.5	3.7	5.7	4.2	4.6	4.9	4	2.3	1.8	1.4	1.7	2.2	2.3	5.7	2.6	24
18	3	3.7	4.9	4.7	6.9	5.3	3.8	4.8	6.1	5.8	6.1	7.2	4.7	5.8	5.5	4	3.5	3.1	2.3	3.3	3.4	2.3	2.1	3	7.2	4.4	24
19	4.3	4.8	3.1	3.1	3.6	4.1	3.6	2.8	2.7	4.3	2.7	6.3	6.4	4.6	3.7	4	4.6	3.4	2.4	2.6	1.3	0.9	1.7	2.8	6.4	3.5	24
20	0.9	2.5	2.5	2.1	2.6	2.1	2.9	4.1	3.7	4.8	5.9	9.1	9.3	7.7	8.8	5.9	3.7	6.3	2.9	5.4	3.7	0.8	2.7	2.8	9.3	4.3	24
21	3.6	4.4	4.1	4.1	4.3	4.7	4	6.1	9.5	***10***	6.2	7.4	7.1	6.4	5.8	5.6	5.4	5.1	2.6	0.8	0.2	0.9	0.9	1.4	***10.0***	***4.6***	24
22	0.7	0.6	1	0.5	0.2	0.8	2.2	4.1	7.3	5.9	5.2	5.4	4.8	4.5	3.2	3.9	2.2	2.1	2.1	1	1.5	0.8	0.7	0.1	7.3	2.5	24
23	0.6	1.3	1.6	2	1.3	3.3	2.8	4.1	4.8	6.5	6.4	5	4.5	6.2	5.7	4.6	4.2	3.5	5.6	2.9	2.5	1.9	4	3.4	6.5	3.7	24
24	1.4	1.2	1.5	2.2	2.6	2.1	3.6	5.3	5.5	5.2	5.6	8.3	9.6	8.5	9.8	9.1	8.2	6.4	1.9	0.2	1.8	0.1	0.2	0.6	9.8	4.2	24
25	0.2	0.7	0.6	0.6	1.4	0.5	1	1.2	4.5	6.6	6.3	7.2	5	6.3	5.4	5.8	4.6	4.7	3.8	5.3	5.7	6.8	7.4	6.6	7.4	4.1	24
26	5.8	3.9	2.3	3	1.2	0.8	1.5	4.3	4.6	5.3	5.6	9.2	7.4	7.3	7.1	5.8	3.5	3.2	2.3	3.8	4.3	4.4	5.4	6.5	9.2	4.5	24
27	6.2	5.5	4.7	5.5	5	3.5	5.8	3.9	3.1	5.2	4.8	4.4	5.7	5.5	6	6.3	5.7	5.1	2.6	1.4	2.2	3	2.2	3.8	6.3	4.5	24
28	3.9	3.7	1.6	1.5	1.5	2	2.7	4	5.9	4.6	4.8	6	6.3	6.7	8.2	7.1	6.3	6.6	4.8	1.2	1.7	1.2	1.2	0.5	8.2	3.9	24
29	0.7	0.3	0.4	0.6	0.3	0.2	0.6	1.4	5.9	6.7	7.1	7.9	6.6	7.6	8.4	8	6.4	4.5	3.6	4.3	5.3	5.4	6.5	6	8.4	4.4	24
30	3.6	0.7	1.4	2.4	0.6	0.8	1.4	2.2	5	4.8	6.6	6.4	6.8	6.1	5.4	5.1	4.6	3.4	2.4	3.3	4.4	3.1	3.3	4.1	6.8	3.7	24
31	2.9	4	3.9	4.8	5.1	4.1	4.2	3.7	3.8	4.3	4.8	5.4	5.4	6.1	6.4	5.4	5.1	2.4	2.3	2.5	2.4	2.9	2.5	2.2	6.4	4.0	24
HOURLY MAX	6.2	5.5	7.2	6.2	6.9	6.0	6.1	10.0	9.5	10.0	7.1	9.2	9.6	8.5	9.8	9.1	8.2	6.6	5.6	5.9	5.7	6.8	7.4	6.6			
HOURLY AVG	2.1	2.0	2.2	2.1	2.2	2.2	2.6	3.3	4.3	4.8	5.0	5.7	5.8	5.8	5.7	5.4	4.7	4.0	2.8	2.6	3.0	2.8	2.5	2.5			

STATUS FLAG CODES

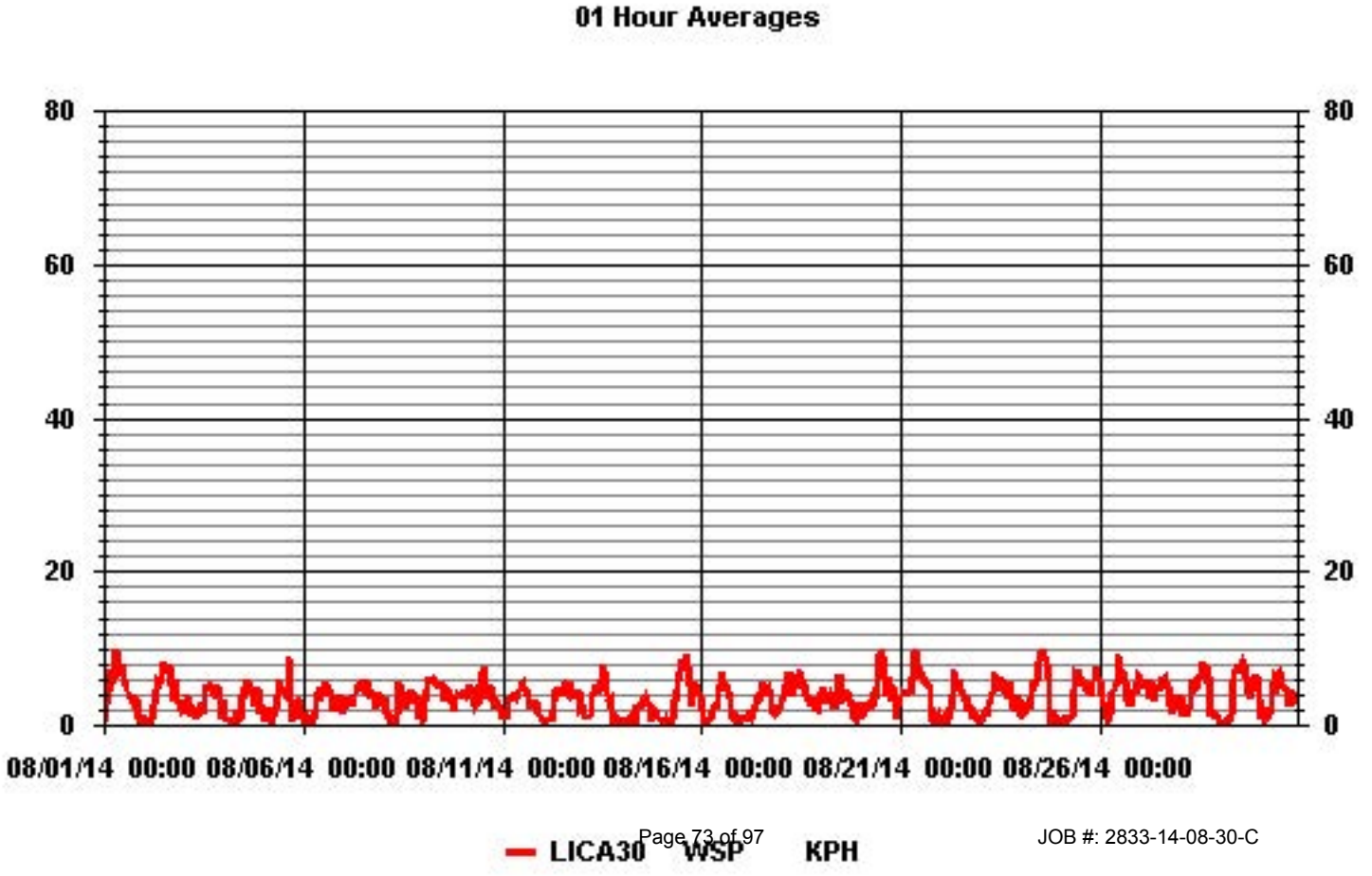
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	743						
MAXIMUM 1-HR AVERAGE:	10.0	KPH	@ HOUR(S)	7, 9	ON DAY(S)	1, 21	
MAXIMUM 24-HR AVERAGE:	4.6	KPH			ON DAY(S)	21	
					VAR-VARIOUS		
			OPERATIONAL TIME:		744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	2.15		MONTHLY AVERAGE:		3.58	KPH	



JOB #: 2833-14-08-30-C

Lakeland Industry & Community Association - Maskwa Site

AUGUST 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

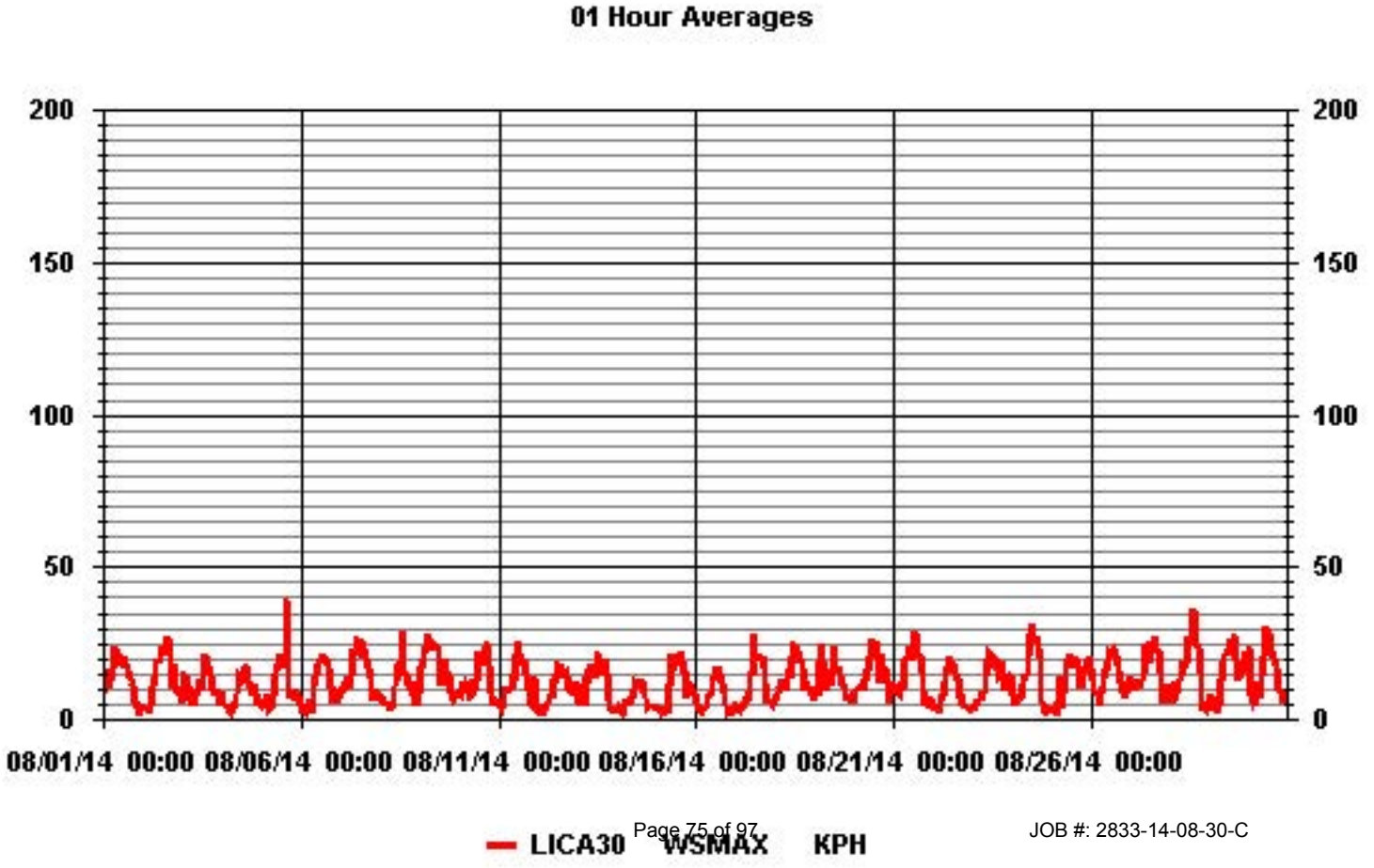
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	9.5	14.6	16.6	10.4	12.7	14.1	16.3	24.2	19.4	18	21.4	19.6	19.8	16.4	18.7	15	15.3	13.4	11.7	6	4.7	4.7	1.7	2.8	24	13.6	24
2	3.7	4.4	3.9	2.9	2.8	4.1	11	14	19.2	19.4	19.3	21.9	23.4	20.6	24.5	27.5	22.6	12.1	12.4	18.1	10.3	9.5	8.5	10.4	28	13.6	24
3	5.4	14.7	14.4	10.8	6	10.5	5.8	5.6	7.8	9.5	13.3	11.5	11.2	16.3	21.2	15.7	17.9	15.1	10.1	8	9.2	9.4	6.2	5	21	10.9	24
4	8.7	5.6	4.3	4.4	3.2	4.2	2.6	3.7	5.9	8.4	14.1	13.3	15.6	16.7	17.6	17.5	12.7	11.4	9	9.2	11.3	8.9	5.9	5.4	18	9.2	24
5	6.7	4.3	4.6	5.5	8.1	3.1	3.7	7.3	14.5	16.1	18.2	21.6	19.5	17.7	17.9	***39.5***	31.2	7.1	8.2	7.7	7.3	9.4	7.7	7.4	***40***	12.3	24
6	5.3	2.2	4.9	3.3	4.5	3.4	3.3	6.8	10.9	13.9	17.5	18.6	19.8	21.6	19.2	20.6	18.6	16.8	11.3	7.4	8.1	5.5	8.9	9.3	22	10.9	24
7	6.7	10.3	9.1	12.3	14.1	12	10.2	14.5	23.1	20.5	26	25.5	25.6	22.7	23.5	21.4	20.5	17.4	14.2	7.7	7.5	9.8	6.4	8.6	26	15.4	24
8	7	7.6	7.1	5.4	5.1	5.2	3.8	3.6	4.5	10.6	15.9	15.1	19.2	15.2	29	16.3	15.1	12.1	10.4	9.8	7.7	12.5	4.3	6.4	29	10.4	24
9	8.2	17	19.9	23.8	22.2	27.6	22.4	26.2	24.2	23.8	24.1	23.3	16	11.1	15.9	19.9	18.8	16.4	14.4	9.1	6.8	7.6	7.9	7.8	28	***17.3***	24
10	8.8	8.2	12.5	8.4	11.8	10.9	11.6	7.9	8.2	11.6	11.1	12.6	22.4	21.5	17.3	19.9	23.6	25.8	17.9	9	6.6	4.9	6.5	6.2	26	12.7	24
11	5.3	4.9	4	6.4	8.2	10.9	8.5	10.1	10.7	13.9	13.8	21.3	25.5	22.2	19.1	18.2	20	15.1	9.7	5.7	5.2	4.7	14	3.5	26	11.7	24
12	2.9	2.8	2.5	5	3.6	3.8	5.3	7.4	7.7	12.3	12.3	14.4	18.5	16.2	18.4	13.5	15.1	15.9	14.6	10.3	9.7	11.7	11	8.5	19	10.1	24
13	12.5	6.4	4.4	7.6	4.5	12.6	12.6	15.9	17	17.3	13.6	14.8	22.3	20.4	16.6	14.4	17.4	19.8	15.5	7.1	4.1	3.2	3.3	2.8	22	11.9	24
14	2.8	4.3	3.3	2.3	3.2	5.4	5.3	5.6	5.8	6.9	9.6	12.1	11.1	11.5	12.3	12.3	9.2	7.5	3.7	4	4.4	4.2	4.2	2.7	12	6.4	24
15	4.5	4.2	3.3	2.2	3.1	2.6	3.2	3.1	11.2	21.4	15.8	17.7	21.1	18	21	22.1	19.3	16.1	6.7	9.4	11	11	10.1	8.8	22	11.1	24
16	6.1	3.5	2.6	3.5	2.8	3.2	3.6	7.1	7.7	8.8	14.2	12.9	15.7	14.9	17.4	15.7	12.2	9.3	5.1	2.9	3.6	3.3	2.9	3.9	17	7.6	24
17	5.4	3.8	4.4	3.5	4.9	3.3	6.1	6.5	9.4	15.3	14.4	28.4	19.7	21.1	18.9	21.4	19.4	20.3	12.5	5.8	5.8	6.4	6	4.8	28	11.1	24
18	5.9	7.6	8.6	10.3	12.5	12.4	9.4	10.6	15.7	15.4	20.4	25.7	19.6	24.1	22.9	18.5	19.7	17.3	11.1	11.4	10.5	8.9	9.3	6.2	26	13.9	24
19	8.3	10	9.6	18.7	24.5	19.6	13.4	9.2	12	12.3	12.2	16.5	24	17.6	15.5	17.5	14.4	11.9	10.8	7.6	7.9	6.7	7.2	7.9	25	13.1	24
20	5.5	9.6	10	10.3	10.4	9.2	13	13.4	16.1	20.7	19.7	26	22.6	22.4	25	21.9	11.4	21	13.9	16.8	14.5	4.9	12.7	11.7	26	15.1	24
21	9.3	11.1	9.7	8.9	11.6	11.6	9.7	19.5	20.8	23.3	20.9	19.7	28	27.9	22.1	20.7	20.4	15.4	9.7	4.7	5.6	5.2	6.3	7.6	28	14.6	24
22	5.1	4.4	3.7	3.4	2.4	6.1	8	12.4	17.1	15.2	20.4	19.3	15.7	17.7	15.3	13.6	7.1	9.3	5.3	4.4	4.2	3.9	3.3	3.4	20	9.2	24
23	4.5	4.1	4.9	5.8	6.7	8.8	6.4	8.4	14.2	19.9	22.2	21.6	17.7	17.9	20.5	16.8	13.7	14.3	18.9	9.2	10.6	13.9	15	14.6	22	12.9	24
24	8.2	4.6	5.9	5.9	7.3	6.4	11.6	13.1	14.6	15.1	20.5	28.1	30.9	24.8	26.1	27	20.1	23.3	6.3	3.8	4.2	2.5	2.6	3.1	31	13.2	24
25	2.9	3.2	2.9	2.7	5.7	14.4	3.7	8.6	13	17.8	19.3	21.2	16.8	20.7	16.9	20.2	12.8	13.5	10.2	17.2	15	19	19.7	19.8	21	13.2	24
26	17.4	13.1	9.7	7.4	9.3	4.4	8.3	10.8	13.6	16.2	18.5	22.3	21.7	21.6	22.8	20.9	18.5	16.4	12.7	9.4	7.3	8.9	11.7	11.5	23	13.9	24
27	13.6	12.3	9.7	11.8	13	10.1	11.8	13	14.9	24.7	19.5	19.5	25.1	22.5	22.7	27.2	23.3	22.4	15.7	7.8	5.3	6.6	7.8	11.3	27	15.5	24
28	10.3	11.7	5.5	12.5	8.6	12.1	12.7	14.3	18.7	17.7	18.8	26.1	25.8	28.1	36.4	28.9	25.3	23.7	15.4	5.9	3.7	3.7	3	5.3	36	15.6	24
29	3.8	8.3	5.9	3.4	2.6	2.6	4	12.9	18.6	21.3	22.3	22.1	26	24.8	23.7	28.3	19.8	12.5	14	14.2	15	16.3	21	20.6	28	15.2	24
30	23.7	8.1	5.5	6.3	6	12	6.9	8.2	14.3	20.7	30.5	26.2	27.6	26.4	22.8	20.6	18.5	17.2	10	9.3	7.7	5.5	7.1	8.5	31	14.6	24
31	9.4	10.4	8.8	10.3	9.8	10	9.3	10.9	15	16.7	22.2	25	23.5	30.4	27.6	23.3	27.4	13.4	11.1	7.3	10.3	12.5	13.6	7.2	30	15.2	24
HOURLY MAX	24	17	20	24	25	28	22	26	24	25	31	28	31	30	36	40	31	26	19	18	15	19	21	21			
HOURLY AVG	7.7	7.7	7.2	7.6	8.1	8.9	8.5	10.8	13.7	16.3	18.1	20.1	21.0	20.4	20.9	20.5	18.1	15.6	11.4	8.6	7.9	7.9	8.3	7.8			

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:	40	KPH	@ HOUR(S)	15	ON DAY(S) 5
					VAR-VARIOUS
OPERATIONAL TIME:					744 HRS



JOB #: 2833-14-08-30-C

LICA30
WSP / WDR Joint Frequency Distribution (Percent)

August 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	4.16	4.43	5.37	3.36	1.88	5.10	9.40	6.04	6.72	14.11	8.60	3.62	5.91	2.41	2.01	3.36	86.55
<	12.0	1.07	2.28	.80	.13	.00	.00	.53	1.74	2.28	1.88	.13	.00	.80	.94	.67	.00	13.30
<	20.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	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	5.24	6.72	6.18	3.49	1.88	5.10	9.94	7.79	9.00	15.99	8.73	3.62	6.72	3.36	2.68	3.36	

Calm : .13 %

Total # Operational Hours : 744

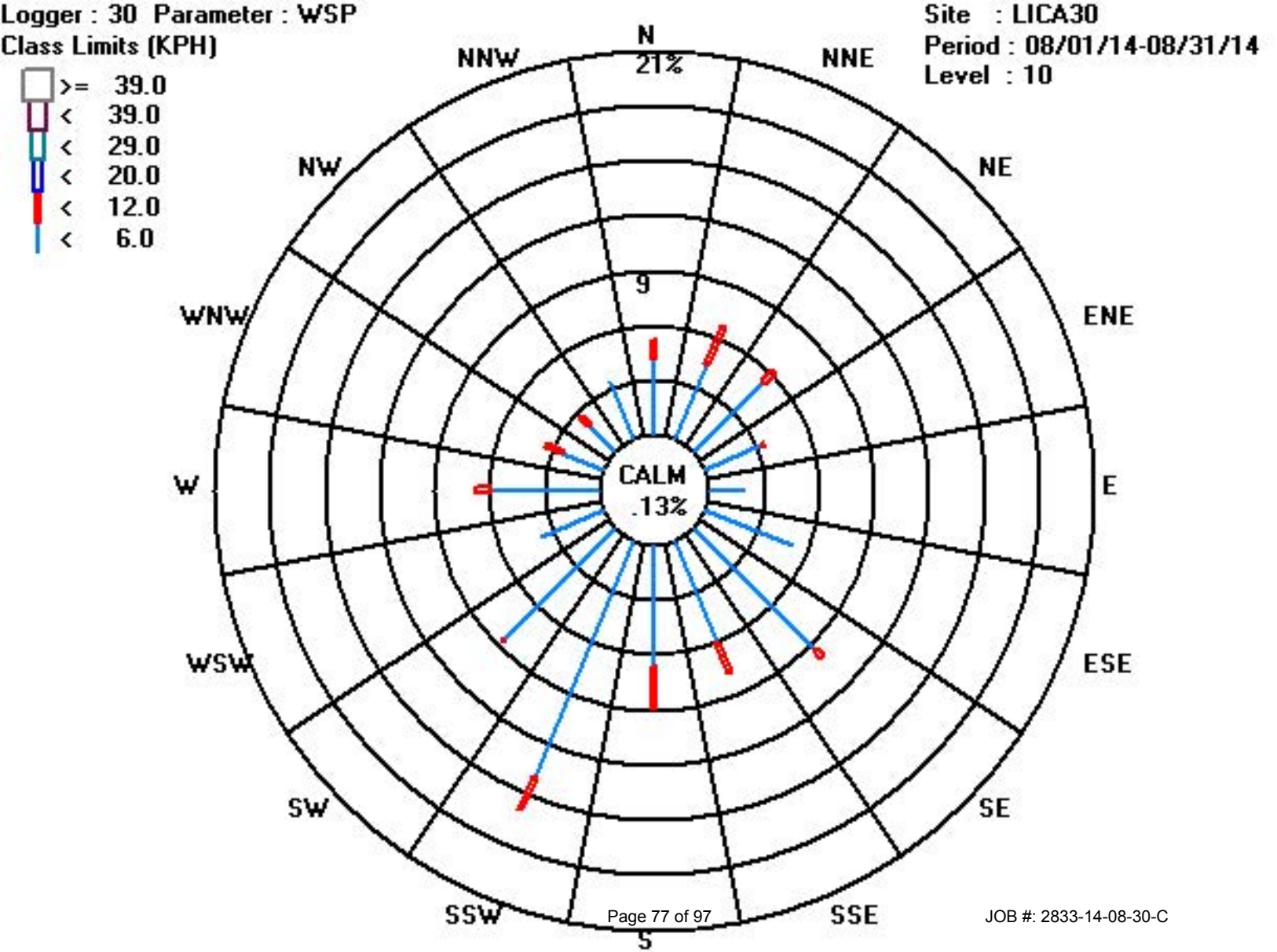
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	31	33	40	25	14	38	70	45	50	105	64	27	44	18	15	25	644
<	12.0	8	17	6	1			4	13	17	14	1		6	7	5		99
<	20.0																	
<	29.0																	
<	39.0																	
>=	39.0																	
	Totals	39	50	46	26	14	38	74	58	67	119	65	27	50	25	20	25	

Calm : .13 %

Total # Operational Hours : 744



JOB #: 2833-14-08-30-C

Vector Wind Direction

Lakeland Industry & Community Association - Maskwa Site

AUGUST 2014

WIND DIRECTION (WD) hourly averages in degrees

MST

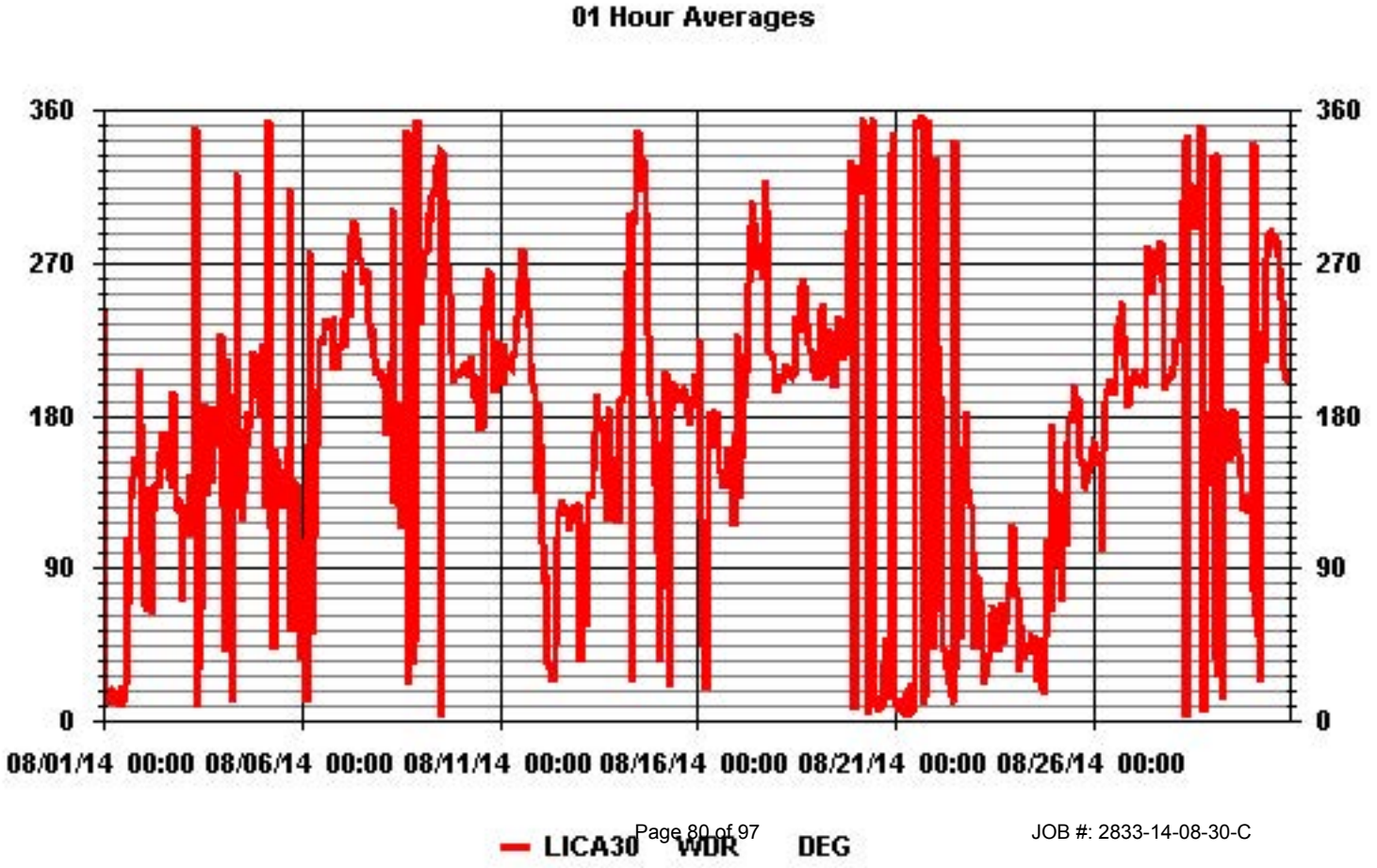
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	242	21	14	9	14	14	18	17	13	14	8	20	12	14	21	109	68	131	144	154	154	156	208	176	242	WSW	24
2	101	69	64	88	138	63	123	139	140	137	158	161	171	168	149	158	143	137	194	156	126	125	132	129	194	SSW	24
3	70	119	116	124	109	145	128	117	350	7	30	65	159	156	187	132	166	140	150	163	185	174	162	228	350	N	24
4	128	40	129	213	54	119	10	137	193	323	125	172	117	135	167	166	183	172	204	218	197	195	192	179	323	NW	24
5	183	222	125	167	355	115	45	42	160	155	149	137	143	125	137	142	162	315	52	137	142	140	132	108	355	N	24
6	36	42	97	10	163	278	50	122	109	161	196	225	226	221	235	237	231	235	236	206	222	209	207	218	278	W	24
7	222	237	219	262	261	238	284	284	295	286	285	273	272	260	257	265	267	236	225	233	215	204	206	206	295	WNW	24
8	202	204	203	168	198	187	212	303	127	161	188	131	132	113	172	343	348	21	33	40	33	46	355	353	355	N	24
9	233	261	267	276	277	299	294	310	313	309	327	333	1	336	335	308	271	269	252	218	200	202	204	204	336	NNW	24
10	206	208	204	207	207	202	212	215	190	204	188	172	172	178	172	245	261	265	264	232	207	193	203	202	265	W	24
11	224	209	197	222	210	209	209	208	215	217	222	238	259	275	278	272	262	244	233	212	200	194	133	189	278	W	24
12	138	164	105	80	88	35	31	26	23	30	44	108	124	122	130	120	126	125	112	117	117	122	127	125	164	SSE	24
13	129	35	51	104	55	115	135	133	133	147	170	193	180	177	172	153	138	117	185	144	130	130	117	155	193	S	24
14	116	190	187	191	218	265	267	299	23	292	301	313	349	311	332	331	328	301	228	193	190	179	139	126	349	NNW	24
15	100	34	121	164	77	206	95	19	186	183	200	190	187	196	187	193	195	192	180	174	185	187	202	202	206	SSW	24
16	200	225	120	44	25	18	86	182	170	167	184	160	182	148	146	148	137	147	154	161	144	137	114	169	225	SW	24
17	228	149	130	154	190	217	205	258	292	307	295	290	266	278	272	260	281	319	302	218	215	218	214	199	319	NW	24
18	193	204	202	203	202	206	211	202	205	203	205	205	239	233	229	256	260	257	236	222	217	220	206	208	260	WSW	24
19	200	205	214	243	246	229	205	206	232	206	214	196	205	231	238	223	213	221	216	219	289	330	313	6	330	NNW	24
20	328	314	310	322	356	327	342	3	352	329	356	11	12	5	12	8	9	34	49	12	16	332	335	347	356	N	24
21	9	6	6	13	7	6	12	16	19	22	6	7	353	353	352	355	358	9	13	355	344	185	41	69	358	N	24
22	68	332	222	193	187	40	43	31	25	26	15	10	343	30	50	50	89	127	161	183	138	129	126	101	343	NNW	24
23	42	65	86	72	54	42	21	25	35	40	64	68	58	50	40	52	64	70	45	56	78	77	111	115	115	ESE	24
24	105	80	74	29	57	47	36	39	41	41	52	41	43	50	25	24	19	21	15	49	107	70	64	175	175	S	24
25	91	136	129	110	103	70	133	103	165	178	175	182	198	180	177	191	156	151	139	138	140	145	152	162	198	SSW	24
26	165	164	152	152	157	99	159	188	195	200	200	197	191	201	215	232	239	247	228	209	190	185	196	198	247	WSW	24
27	203	207	203	201	204	201	200	208	268	280	272	253	253	262	277	273	281	283	260	195	200	203	202	203	283	W	24
28	208	210	224	224	243	239	307	342	1	346	313	317	300	304	290	316	324	351	7	5	174	165	138	183	351	N	24
29	173	333	35	335	25	256	12	184	179	158	153	158	179	183	176	168	158	145	123	129	128	122	134	130	335	NNW	24
30	75	341	62	65	51	23	217	230	211	273	287	288	279	285	285	284	274	268	249	208	202	201	205	205	341	NNW	24
31	204	208	207	209	203	207	213	223	278	229	231	247	272	263	259	269	276	276	257	221	221	275	249	213	278	W	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:	90.17		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	199	DEG



JOB #: 2833-14-08-30-C

Standard Deviation Wind Direction

Lakeland Industry & Community Association - Maskwa Site

AUGUST 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST

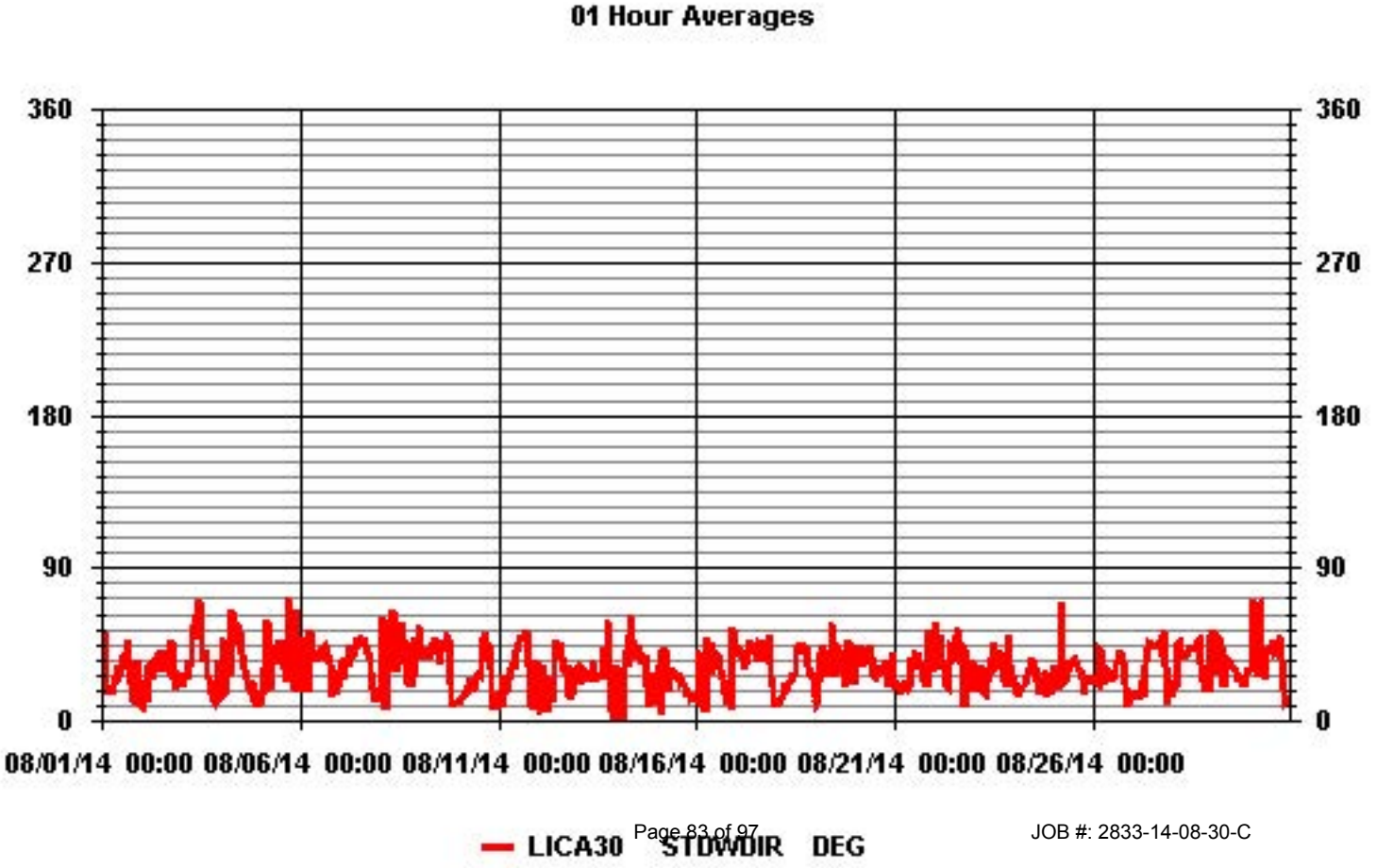
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	46	53	19	17	17	17	17	21	27	22	32	26	35	34	40	31	47	25	26	12	9	36	34	10
2	9	14	24	11	32	33	24	28	36	38	34	35	29	41	35	32	32	25	48	26	19	21	25	23
3	23	20	28	26	26	35	32	56	60	59	47	71	57	34	38	39	27	25	17	13	11	13	35	26
4	31	49	15	16	26	32	31	65	51	46	58	45	53	40	32	31	25	20	16	24	12	10	8	18
5	10	15	31	16	59	25	18	45	37	33	42	45	45	45	32	27	22	72	36	54	20	18	65	27
6	16	39	40	49	35	17	54	36	39	41	35	41	42	40	44	45	41	39	34	13	25	19	16	20
7	30	35	24	37	35	31	45	40	39	40	46	45	48	50	44	48	45	41	37	30	20	11	14	15
8	17	11	61	8	8	50	31	57	64	64	29	43	52	48	58	33	47	21	25	22	20	25	49	36
9	57	39	43	38	38	40	39	42	45	42	49	41	33	45	45	41	45	51	49	23	9	9	10	11
10	11	13	14	15	18	15	20	25	17	19	20	27	28	27	34	49	51	43	46	32	18	7	11	10
11	15	14	8	27	16	18	19	24	31	35	34	41	46	48	48	49	51	53	33	18	9	7	27	35
12	12	4	15	33	28	5	14	16	15	25	37	47	42	36	46	39	31	29	30	15	12	16	21	31
13	32	29	21	32	22	27	22	27	29	36	29	23	25	26	27	24	43	35	59	55	20	6	0	25
14	33	5	7	1	9	42	32	50	62	38	47	44	36	44	37	38	35	36	21	8	20	9	28	14
15	16	32	41	3	27	43	21	17	29	29	29	26	25	26	23	25	23	21	14	16	13	14	15	13
16	12	41	25	27	27	4	49	46	27	46	33	33	30	39	38	31	25	16	9	15	15	6	55	51
17	39	45	38	42	37	31	33	40	48	39	46	44	40	35	46	45	45	41	37	36	50	26	21	14
18	8	11	11	13	14	16	22	17	22	23	28	26	41	40	41	46	44	42	44	33	26	28	25	15
19	11	13	22	40	45	35	27	27	42	36	58	26	32	46	42	41	32	29	20	23	47	40	31	21
20	40	32	43	43	32	41	43	33	40	44	39	27	26	31	26	33	29	29	33	33	20	31	38	38
21	19	22	20	16	19	19	22	22	19	20	37	30	41	37	38	35	31	24	21	21	53	51	34	29
22	35	58	30	36	51	36	34	21	20	33	45	44	40	50	55	37	36	46	7	41	20	28	16	36
23	23	19	19	17	33	22	17	16	22	31	37	44	44	32	33	37	41	36	24	20	32	50	34	28
24	21	18	19	14	19	19	20	22	27	31	35	35	31	33	24	19	20	19	25	29	13	23	18	15
25	32	26	33	19	22	70	22	23	33	28	36	34	36	37	36	32	30	25	15	22	23	23	25	26
26	25	25	24	23	43	42	21	27	25	30	29	23	25	29	35	40	40	42	35	23	8	12	15	13
27	15	18	14	14	14	23	14	32	40	39	46	45	46	45	44	44	46	43	37	53	33	10	17	14
28	20	24	19	45	46	38	40	40	37	41	42	42	43	42	42	47	48	34	22	29	17	19	17	50
29	34	53	48	27	51	42	44	20	27	31	35	33	31	31	31	29	25	24	21	21	26	31	29	30
30	48	71	51	26	68	69	41	33	24	39	42	43	45	45	40	41	44	51	37	19	11	12	13	12
31	15	13	12	14	12	15	18	30	43	39	48	50	47	46	42	42	38	40	41	24	26	41	36	32

STATUS FLAG CODES

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

LAST CALIBRATION: February 5, 2014

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS



JOB #: 2833-14-08-30-C

Calibration Reports

Sulphur Dioxide

API 100E SO2 Analyzer Calibration

Date:	22-Aug-14	**Start/End Time (mst):**	8:10/12:00
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:	16-Jul-14	**As Found C.F.**	1.019
Previous Cal High Point C.F.:	1.001	**New C.F.:**	1.004

	As found:	As left:
SLOPE:	1.269	1.288
OFFSET:	87.0	85.6
HVPS:	491	491
RCELL TEMP:	50.0	50.0
BOX TEMP:	28.3	28.3
PMT TEMP:	7.7	7.7
IZS TEMP:	45.0	45.0
TEST:	NA	NA
STABIL:	0.1	0.1
PRES:	24.8	24.8
SAMP FL:	596	596
PMT:	71.4	71.4
NORM PMT:	84.7	84.7
UV LAMP:	2467	2467
LAMP RATIO:	82.1	82.1
STR. LGT	55.2	55.2
DRK PMT:	11.7	11.7
DRK LMP:	-1.8	-1.8
Internal Span:	268.5	268.5

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	4995	0	4995
high	4916	78	4994
mid	4957	38	4995
low	4975	19	4994

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	-1.3	NA
adjusted zero	4995	0.0	4995	0	-0.1	NA
as found high	4916	77.63	4994	749.3	735.0	1.019
adjusted high	4916	77.63	4994	749.3	750.0	0.999
mid	4957	37.81	4995	364.9	363.0	1.005
low	4975	18.90	4994	182.4	181.0	1.007
calibrator zero	4995	0.00	4995	0	0.0	NA
					Average C.F.=	1.004

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)=	**0.12%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-1.83%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

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

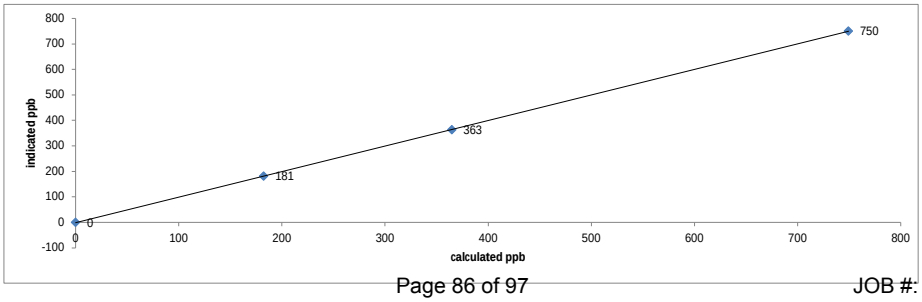
SO_2 High Point gas concentration: NA Time gas run (mst): NA

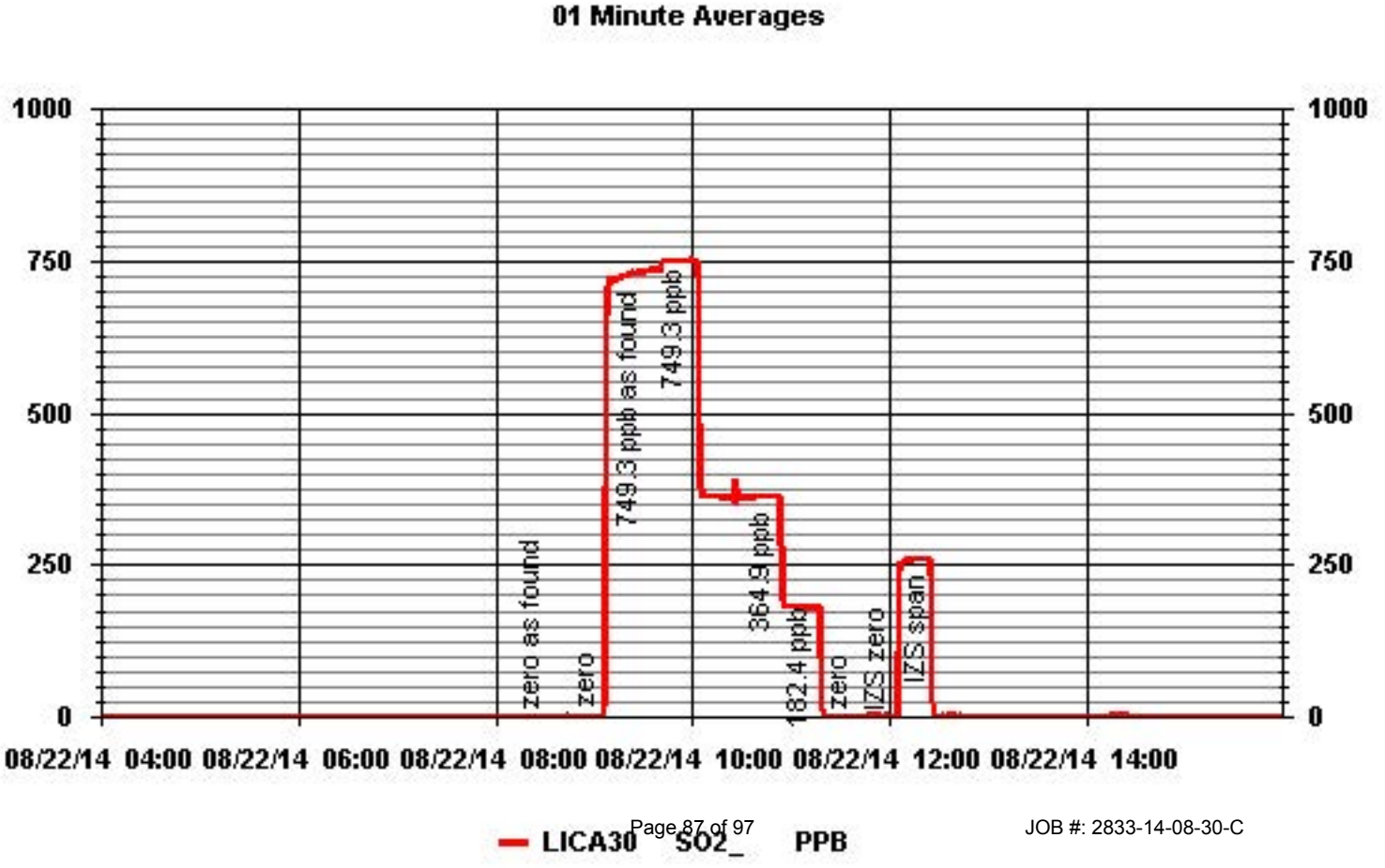
Zero corrrected analyzer response: NA

Comments:

Sample filter changed.

API 100E SO2 Analyzer Calibration





JOB #: 2833-14-08-30-C

Hydrogen Sulphide

API 101E H2S Analyzer Calibration

Date:	22-Aug-14	**Start/End Time (mst):**	12:41/15:27
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:	16-Jul-14	**As Found C.F.**	1.001
Previous Cal High Point C.F.:	0.997	**New C.F.:**	1.017

	As found:	As left:
SLOPE:	1.210	1.208
OFFSET:	32.8	32.7
HVPS:	584	584
RCELL TEMP:	50.0	50.0
BOX TEMP:	31.3	31.3
PMT TEMP:	7.9	7.9
IZS TEMP:	45.0	45.0
TEST:	NA	NA
STABIL:	0.1	0.1
PRES:	29.6	29.6
SAMP FL:	672	672
PMT:	59.8	59.8
NORM PMT:	33.1	33.1
UV LAMP:	3152	3152
LAMP RATIO:	87.5	87.5
STR. LGT	19.8	19.8
DRK PMT:	29.2	29.2
DRK LMP:	5.6	5.6
Internal Span:	50.78	50.78

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	4959	39	4998
mid	4979	19	4998
low	4990	11	5001

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	4959	38.60	4998	78.0	78.0	1.001
adjusted high	4959	38.60	4998	78.0	78.0	1.001
mid	4979	18.80	4998	38.0	37.3	1.021
low	4990	10.90	5001	22.0	21.5	1.029
calibrator zero	5000	0.00	5000	0	0.2	NA
					Average C.F.=	1.017

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)=	**0.28%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-0.44%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

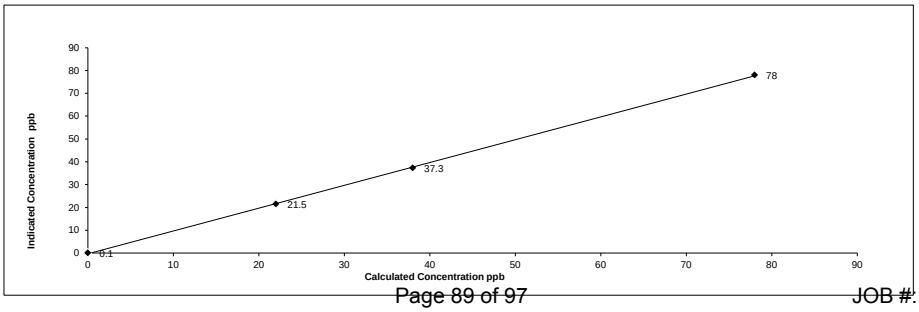
****run converter effeciency test immediately following zero adjust****

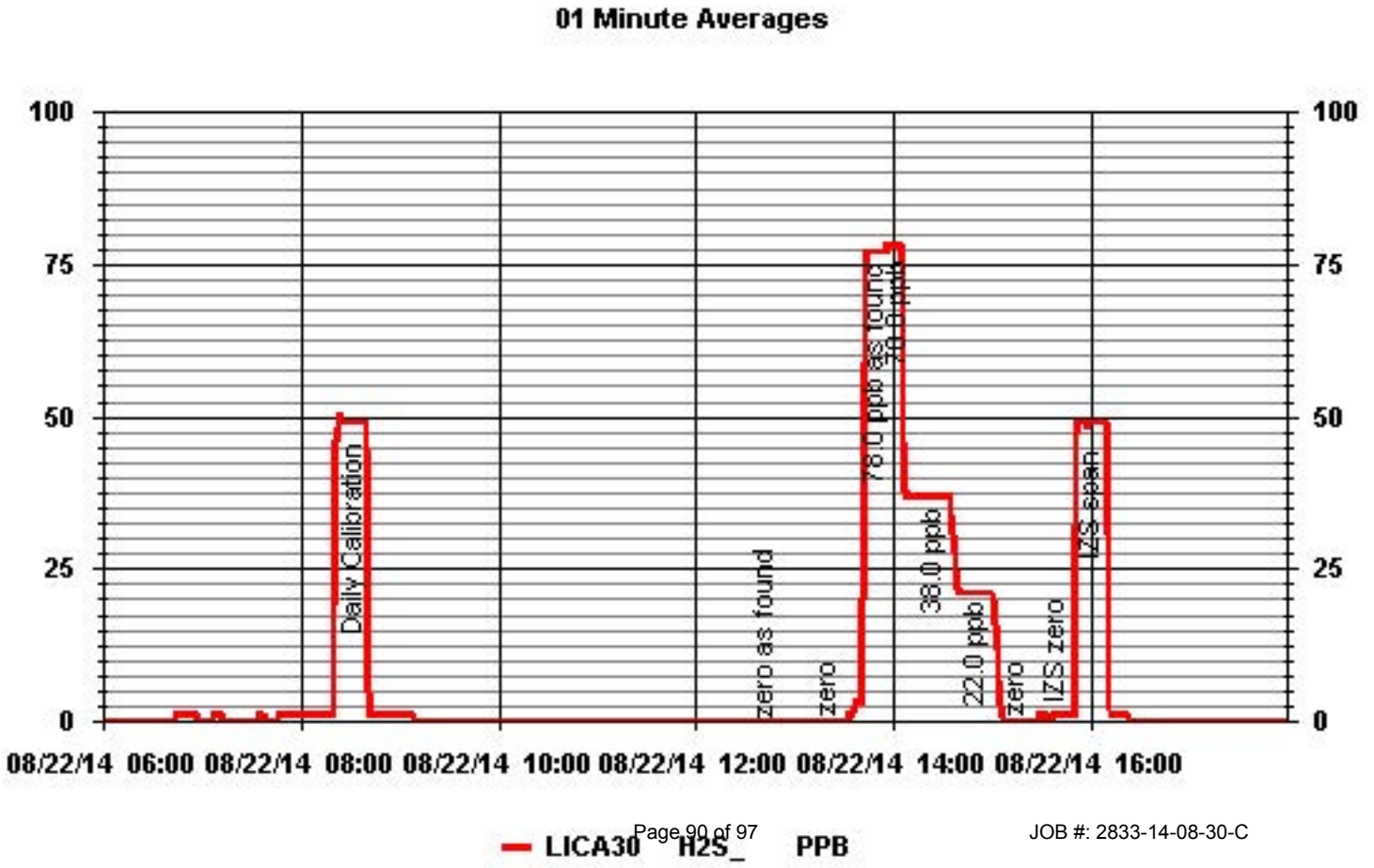
SO_2 High Point gas concentration:	200 PPB	Time gas run (mst):	13:32-13:37
Zero corrrected analyzer response:	2.8		

Comments:

Sample filter changed. No high adjustment needed as it was bang on.

API 101E H2S Analyzer Calibration





JOB #: 2833-14-08-30-C

Total Hydrocarbons

Maxxam Thermo 51C THC Analyzer Calibration

Date:	22-Aug-14	**Start Time (mst):**	8:45
Company:	LICA	**End Time (mst):**	12:39
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:	16-Jul-14	**As Found C.F.**	1.035
Previous Cal High Point C.F.:	1.001	**New C.F.:**	1.019

		As found:	As left:
	H_2 cylinder (psi):	550	550
	H_2 cylinder reg set (psi):	25	25
	Span Cylinder (psi):	1500	1500
	Span Cylinder Reg Set (psi):	27	27
	Zero Air Gen Pressure:	35	35
	measurement alarms:	None	None
	service alarms:	None	None
FID status:	cnt:	2557	2557
	rng:	1	1
	try:	3	3
	flm:	181.3	181.3
	det:	125.8	125.8
Oven Readings:	Flame:	181	181
	Filter:	125	125
	Base:	125	125
	Pump:	7.49	7.49
Voltages:	+5	4.9	4.9
	+15	14.8	14.8
	-15	-15.0	-15.0
	Internal Span:	36.6	36.6

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	0.03	NA
adjusted zero	2000	0.00	2000	0	0.00	NA
as found high	2000	65.00	2065	36.42	35.20	1.035
adjusted high	2000	65.00	2065	36.42	36.40	1.000
mid	2000	30.00	2030	17.10	16.80	1.018
low	2000	15.00	2015	8.61	8.30	1.038
calibrator zero	2000	0.00	2000	0	0.00	NA
					Average C.F.=	1.019

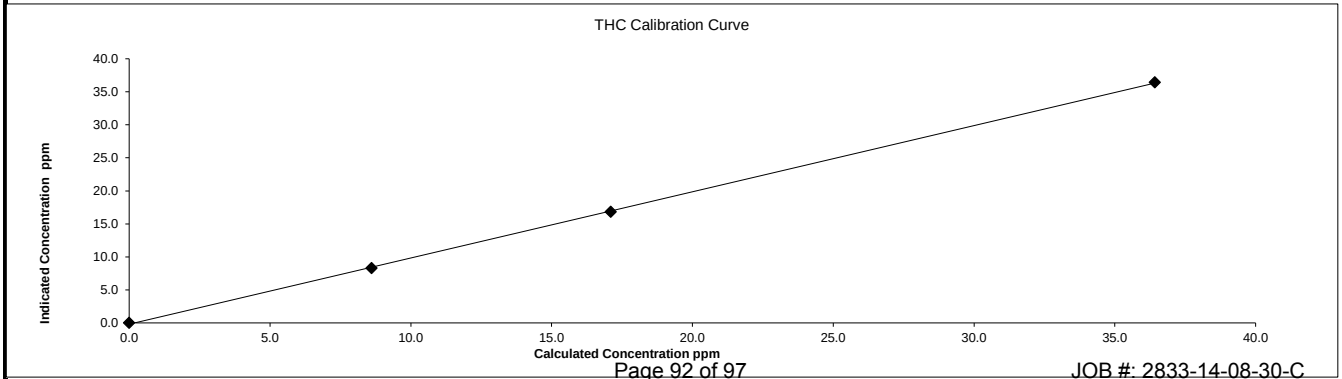
Linear Regression/Calibration Results:

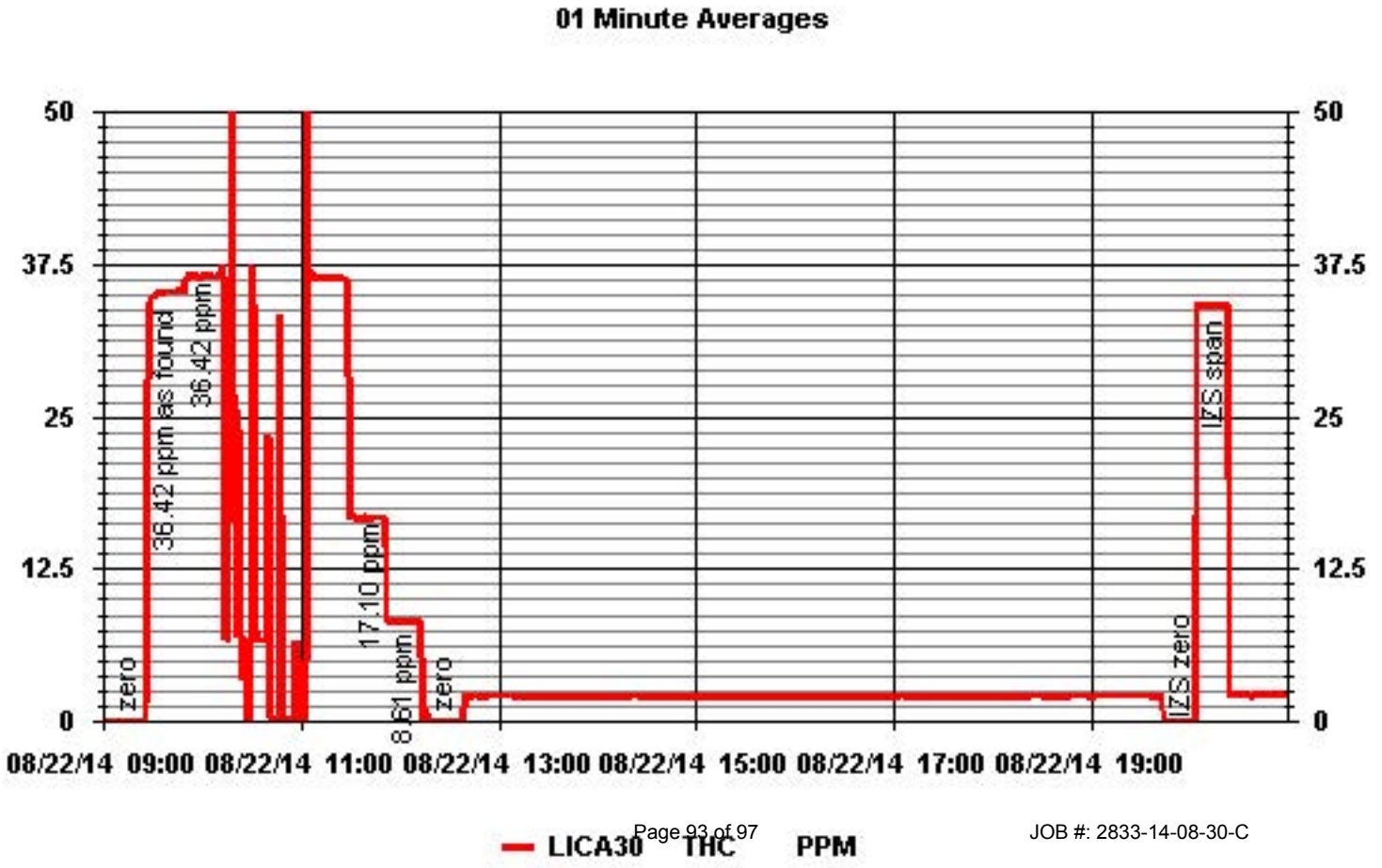
		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.002**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.369%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-3.35%**	**± 15%**	**PASS**

Comments:

Sample filter changed. The high span point was repeated.

Thermo 51C THC Analyzer Calibration





JOB #: 2833-14-08-30-C

Nitrogen Dioxide

API 200E NOx Analyzer Calibration

Date:	22-Aug-14	**Start Time (mst):**	8:10
Company:	LICA	**End Time (mst):**	13:40
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:	16-Jul-14
Range ppb:	1000

Correction Factors:

	As found C.F.	Previous Cal High Point C.F.:
NO=	0.992	1.000
NOx=	0.993	1.001
NO_2=	0.990	0.995

	As found:	**As left:**
NOx SLOPE:	1.067	1.059
NOx OFFS:	0.6	-0.2
NO SLOPE:	1.065	1.054
NO OFFS:	-0.2	0.1
TEST:	NA	NA
SAMP FLW:	462	455
OZONE FL:	79	80
PMT:	15.0	22.1
NORM PMT:	2.5	-1.2
AZERO:	14.9	14.9
HVPS:	750	750
RCELL TEMP:	49.8	49.8
BOX TEMP:	28.5	28.5
PMT TEMP:	6.6	6.6
IZS TEMP:	42.1	42.1
MOLY TEMP:	315.8	315.8
RCEL:	6.0	6.0
SAMP:	27.3	27.3
Internal Span:	500/6/494	500/6/494

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	4995	0	0	4995
high	4916	78	500.00	4994
mid	4957	38	270.00	4995
low	4975	19	94.00	4994

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	0.2	-0.2	NA	NA
adjusted zero	4995	0.0	4995	0	0	-0.1	-0.1	NA	NA
as found high	4916	77.63	4994	778.8	780.4	785	786	0.992	0.993
adjusted high	4916	77.63	4994	778.8	780.4	779	781	1.000	0.999
mid	4957	37.81	4995	379.2	380.0	378	380	1.003	1.000
low	4975	18.90	4994	189.6	190.0	189	190	1.003	0.999
calibrator zero	4995	0.00	4995	0	0	-0.1	-0.1	NA	NA
							Average C.F.=	1.002	0.999

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	4916	77.64	4994	0.0	778.0	781.0	2.0	-0.1	0.0	
as found NO_2	4916	77.64	4994	500.0	206.0	786.0	580.0	572.0	578.0	0.990
adjusted NO_2	4916	77.64	4994	500.0	206.0	786.0	580.0	572.0	578.0	0.990
gpt mid	4916	77.64	4994	270.0	465.0	786.0	321.0	313.0	319.0	0.981
gpt low	4916	77.64	4994	94.0	670.0	784.0	114.0	108.0	112.0	0.964
									Average NO_2 C.F.=	0.978

Linear Regression/Calibration Results:

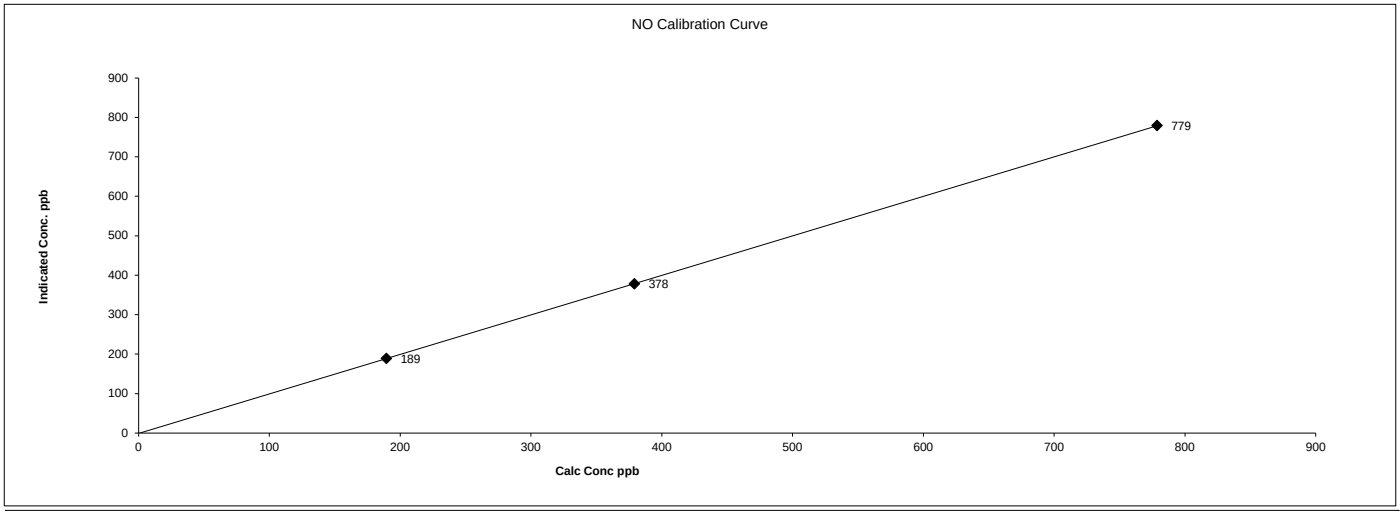
	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**1.000**	**1.001**	**1.009**	**0.85-1.15**
b (Intercept as % of full scale)=	**-0.06%**	**-0.02%**	**0.17%**	**± 3% F.S.**
% change in C.F. from last cal=	**0.80%**	**0.82%**	**0.54%**	**+/-15%**
NO2 converter effeciency			**102.2%**	**>85%**

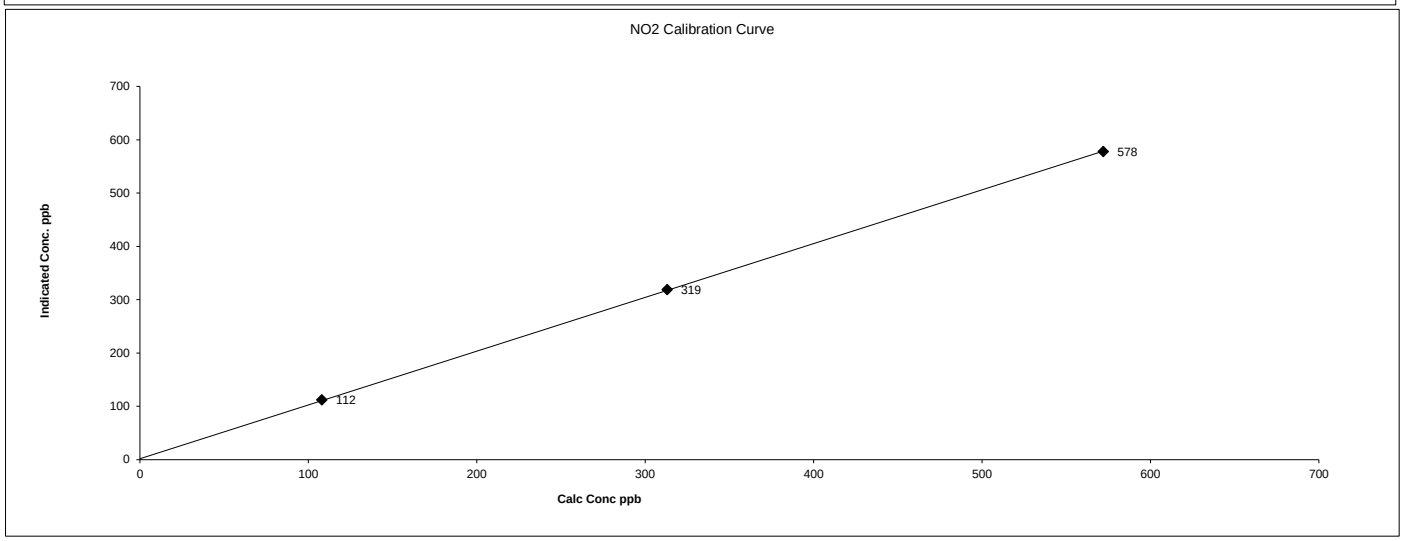
Comments:

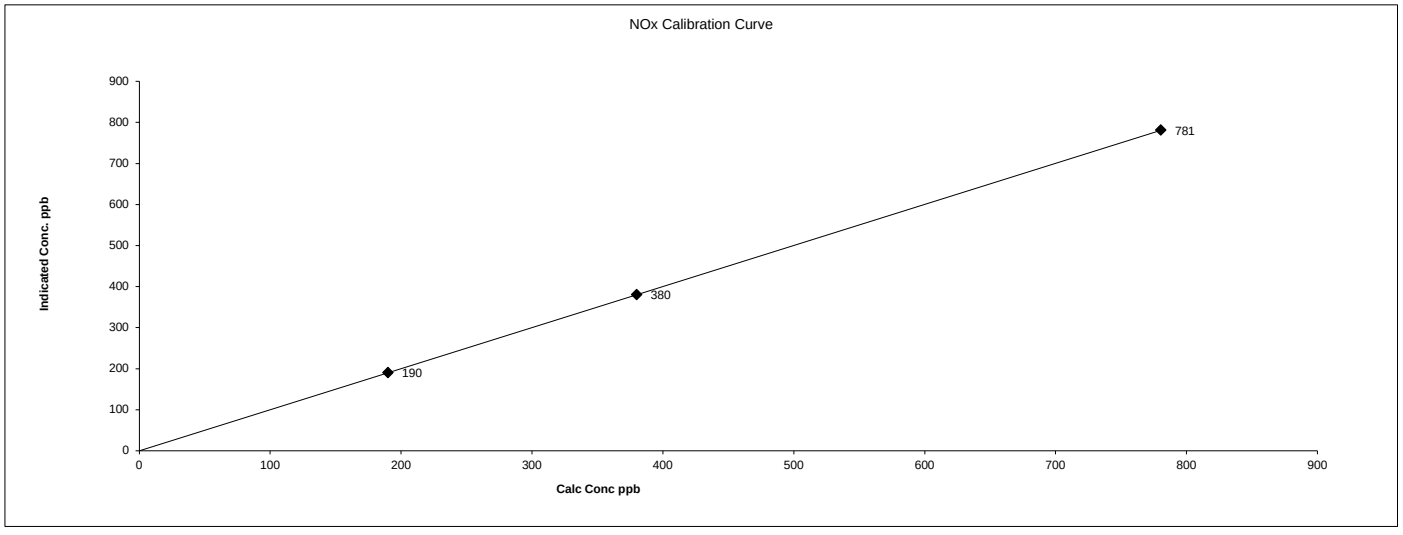
Sample filter changed.

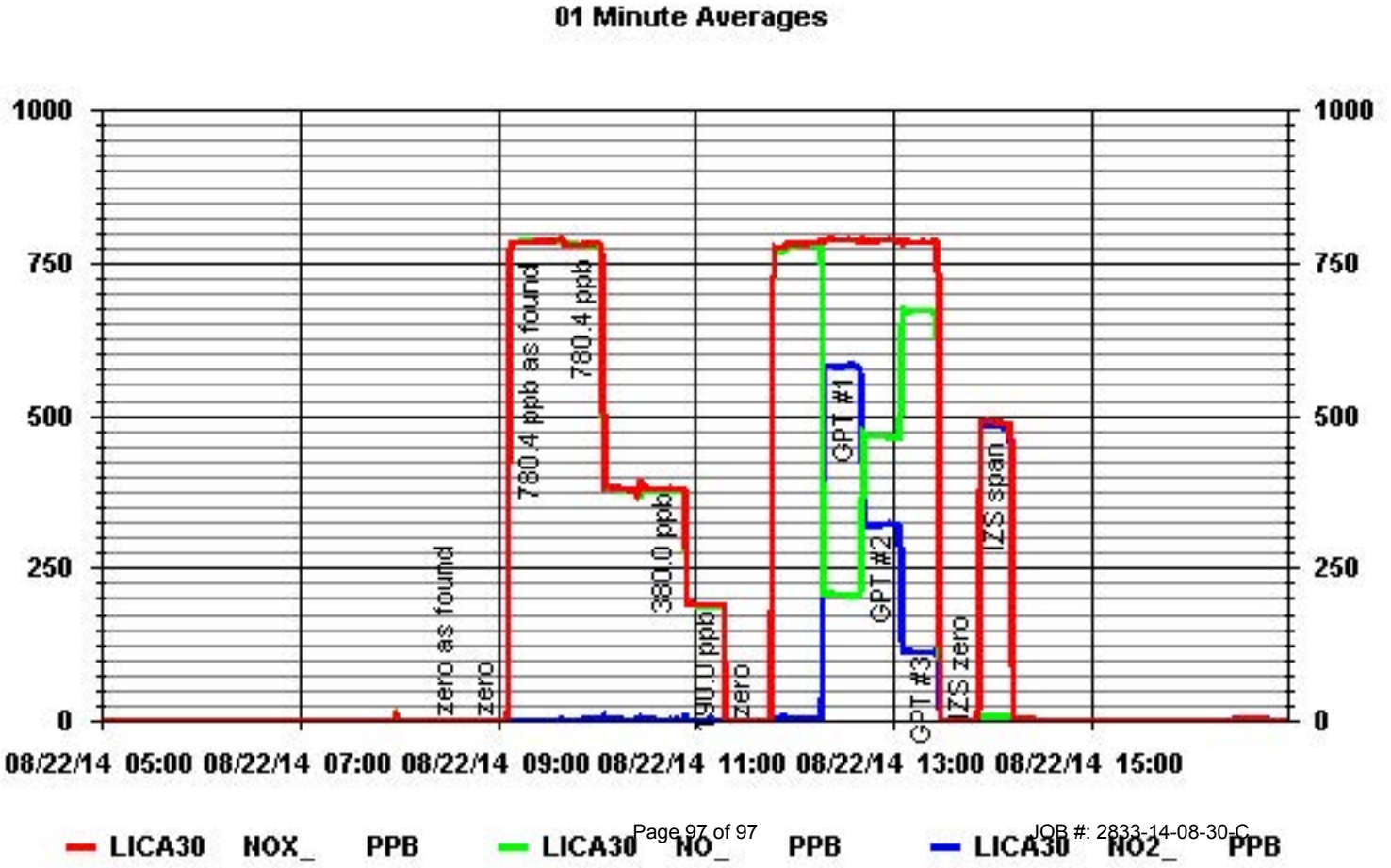
Date:	22-Aug-14	**Start Time (mst):**	8:10
Company:	LICA	**End Time (mst):**	13:40
Station Name/Location:	Maskwa	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-18

API 200E NOx Analyzer Calibration









JOB #: 2833-14-08-30-C

Lakeland Industry & Community Association

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

Prepared By:

Maxxam
A Bureau Veritas Group Company

October 1, 2014

Lakeland Industry & Community Association
St. Lina
Ambient Air Monitoring

Table of Contents

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: August 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 – August 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	0.02	4	7	1	7.5	299(WNW)	0.2	5, 7	98.3
H2S (PPB)	10	3	0	0	0.19	3	VAR	VAR	VAR	VAR	0.9	2. 6	94.9
THC (PPM)	-	-	-	-	2.15	3.2	23	6	7.3	60(ENE)	2.4	14	98.5
OZONE (PPB)	82	-	0	-	28.51	59	12	14	NA	NA	40.5	5	98.0
NO2 (PPB)	159	-	-	-	0.83	10.6	23	5	7.2	53(NE)	2.5	23	98.3
NO (PPB)	-	-	-	-	0.09	2	18	7	5.3	208(SSW)	0.4	9	98.3
NO_x (PPB)	-	-	-	-	0.92	11.8	23	6	7.3	60(ENE)	2.7	23	98.3
PM2.5 (ug/m3)	-	30	-	1	9.79	96	17	11	7	322(NW)	36.3	16	94.5
TEMPERATURE (DEGREE C)	-	-	-	-	17.84	29.3	3	15	5.8	360(N)	22.8	12	98.8
BP (MILLIBAR)	-	-	-	-	934.0	946	22, 23	VAR	VAR	VAR	943.8	22	98.8
RH (%)	-	-	-	-	67.04	92	VAR	VAR	VAR	VAR	75.6	8	98.8
PRECIPITATION (MM)	-	-	-	-	0.04	8.2	30	1	8	226(SW)	0.5	30	98.8
VECTOR WS (KPH)	-	-	-	-	8.17	22.1	31	11	-	252(WSW)	11.7	31	98.8
VECTOR WD (DEGREES)	-	-	-	-	239(WSW)	-	-	-	-	-	-	-	98.8

VAR-VARIOUS

General Monthly Summary

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

AQM STATION – LICA – St. Lina

Sulphur Dioxide (PPB)
Analyzer make / model - API 100E, S/N: 468
The analyzer was working well throughout the month. The monthly calibration was performed on August 14th. The inlet filter was changed before the calibration was started. The analyzer was put into the maintenance mode on August 15th between hour 14 and hour 15 for O3 analyzer calibration performance. A total of nine hourly data collected on August 14th between hour 9 and hour 11, on August 17th between hour 20 and hour 21, and between August 18th hour 23 and August 19th hour 2 are missing due to power failures. Hourly data collected on August 19th hour 3 was invalidated as the analyzer was recovering from the power failure. Hourly maximum data collected on August 15th hour 0, on August 17th hour 11, and on August 18th hour 22 were invalidated due to small power outages that affected data quality. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)
Analyzer make / model - API 101E, S/N: 722 replaced with API 101E, S/N: 510
Following a removal calibration on August 12th, the analyzer Maxxam owned API 101E 722 was replaced with LICA owned API 101E 510. An installation calibration was performed after the analyzer switching on August 12th. After a power outage occurred on August 14th the analyzer showed malfunction. The zero was drifted to outside the acceptable limit. After changing the sample filter, the analyzer was recalibrated on August 15th. 23 hours of data were invalidated due to this event. The daily span result went above +10% acceptance limits on August 19th. An as found points check was performed on August 21st and repeated on August 29th to ensure the analyzer's functionality. The results were good. A total of nine hourly data collected on August 14th between hour 9 and hour 11, on August 17th between hour 20 and hour 21, and between August 18th hour 23 and August 19th hour 2 are missing due to power failures. Hourly data collected on August 19th hour 3 was invalidated as the analyzer was recovering from the power failure. Hourly maximum data collected on August 17th hour 19, and on August 18th hour 22 were invalidated due to small power outages that affected data quality. 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 August 14th. The inlet filter was changed before the calibration was started. A total of nine hourly data collected on August 14th between hour 9 and hour 11, on August 17th between hour 20 and hour 21, and between August 18th hour 23 and August 19th hour 2 are missing due to power failures. Hourly data collected on August 19th hour 3 was invalidated as the analyzer was recovering from the power failure. Hourly maximum data collected on August 15th hour 0, on August 17th hour 11, and on August 18th hour 22 were invalidated due to small power outages that affected data quality. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

Analyzer make / model - API 200A S/N: 592

The analyzer was working well throughout the month. The monthly calibration was performed on August 14th and the GPT calibration was completed on August 15th. The inlet filter was changed before the calibration was started. The analyzer was put into the maintenance mode on August 6th between hour 9 and hour 10 for O3 analyzer calibration performance. A total of nine hourly data collected on August 14th between hour 9 and hour 11, on August 17th between hour 20 and hour 21, and between August 18th hour 23 and August 19th hour 2 are missing due to power failures. Hourly data collected on August 19th hour 3 was invalidated as the analyzer was recovering from the power failure. Hourly maximum data collected on August 15th hour 0, on August 17th hour 11, and on August 18th hour 22 were invalidated due to small power outages that affected data quality. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – St. Lina

Ozone (PPB)

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

The analyzer spanned high on August 5th. An as found points check was performed on August 6th and the result was good. It was found that the zero air charcoal scrubber was wet. The charcoal was died. A 3-points calibration was following after the maintenance on August 6th. No data was discarded due to this issue. The analyzer was put into the maintenance mode on August 14th between hour 11 and hour 16 for NOx analyzer calibration performance. The monthly calibration was performed on August 15th. The inlet filter was changed before the calibration was started. A total of nine hourly data collected on August 14th between hour 9 and hour 11, on August 17th between hour 20 and hour 21, and between August 18th hour 23 and August 19th hour 2 are missing due to power failures. Hourly data collected on August 19th hour 3 was invalidated as the analyzer was recovering from the power failure. Hourly maximum data collected on August 15th hour 0, on August 17th hour 11, and on August 18th hour 22 were invalidated due to small power outages that affected data quality. Data was corrected using daily zero information.

Particulate Matter 2.5 (UG/M3)

Analyzer make / model – Thermo Teom 1400A S/N: 140AB228720001

Two Teom audits were performed this month: one was completed on August 7th, and the other was performed on August 18th. The analyzer showed some high readings on August 6th. The site was visited on August 7th. It was found that the unit 1400a had a filter overload alarm. An audit was performed on August 7th. A total of 17 hours of data invalidated due to this event. The filter was overloaded again on August 17th. A Teom audit was performed on August 18th after the filter replacement and the leak/ flow check. 12 hours of data were invalidated due to this issue. Nine hours of data collected on August 14th between hour 9 and hour 11, on August 17th between hour 20 and hour 21, and between August 18th hour 23 and August 19th hour 2 are missing due to power failures. Hourly data collected on August 19th hour 3 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. Three hourly data were invalidated as the data were below –3 ug/m3. One 24-Hour exceedence was recorded this month: concentration of 36.3 ug/m3 on August 16th. AESRD Ref#288382, respectively.

General Monthly Summary

AQM STATION – LICA – St. Lina

Temperature (Degree C)
Analyzer make / model – Met One 060
The temperature sensor was working well throughout the month. Nine hours of data collected on August 14th between hour 9 and hour 11, on August 17th between hour 20 and hour 21, and between August 18th hour 23 and August 19th hour 2 are missing due to power failures.

Barometric Pressure (Millibar)
Analyzer make / model - Met One 092
The BP sensor was working well throughout the month. Nine hours of data collected on August 14th between hour 9 and hour 11, on August 17th between hour 20 and hour 21, and between August 18th hour 23 and August 19th hour 2 are missing due to power failures.

Relative Humidity (%)
Analyzer make / model - Met One 083
The RH sensor was working well throughout the month. Nine hours of data collected on August 14th between hour 9 and hour 11, on August 17th between hour 20 and hour 21, and between August 18th hour 23 and August 19th hour 2 are missing due to power failures.

Precipitation (MM)
Analyzer make / model - Met One 387
No issue was noticed this month. Nine hours of data collected on August 14th between hour 9 and hour 11, on August 17th between hour 20 and hour 21, and between August 18th hour 23 and August 19th hour 2 are missing due to power failures.

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 replaced with RM Young 5103VK, S/N: 41334
The wind system is reported as vector wind speed and vector wind direction. The wind direction data included in this report represents where the wind was coming from.
The wind system calibration was performed on August 12th, 2014. Magnetic declination was recalculated to: 13° 52.4' East
The wind system was working well throughout the month. Nine hours of data collected on August 14th between hour 9 and hour 11, on August 17th between hour 20 and hour 21, and between August 18th hour 23 and August 19th hour 2 are missing due to power failures.

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

Trailer
The sample manifold was cleaned on August 14th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

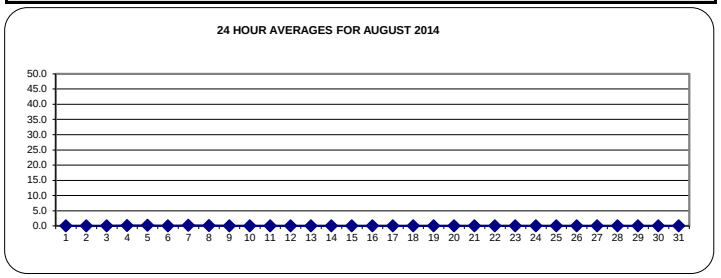
SULPHUR DIOXIDE (SO2) hourly averages in ppb

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	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
2	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
3	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
4	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.1	24
5	1	2	1	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	***0.2***	24
6	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	S	S	0	0	0	0	0	0	0	0	0.0	24
7	0	***4***	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	***4***	***0.2***	24
8	0	S	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0.0	24
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0.0	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	0	0	S	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0.0	24
14	0	0	0	0	0	0	0	0	Y	P	P	P	C	C	C	C	C	0	S	0	0	0	0	0	0	0.0	20
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Y	Y	0	S	0	0	0	0	0	0	0	0.0	22
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	P	P	0	0	0	0.0	22
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	P	0	0.0	23
19	P	P	P	R	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0.0	20
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	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
24	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	S	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	1	4	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1			
HOURLY AVG	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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

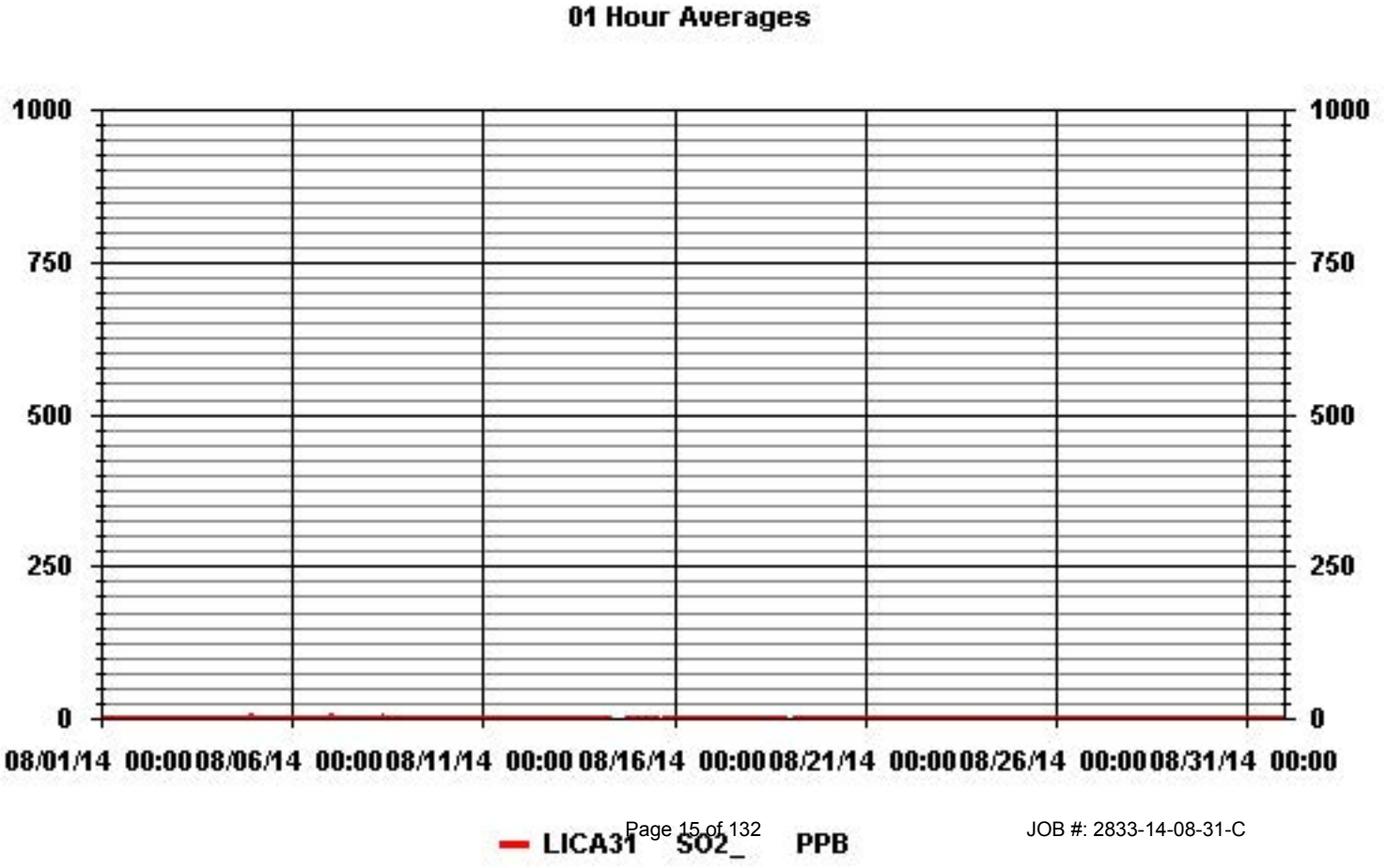


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB 24-HR 48 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	8					
MAXIMUM 1-HR AVERAGE:	4	PPB	@ HOUR(S)	1	ON DAY(S)	7
MAXIMUM 24-HR AVERAGE:	0.2	PPB			ON DAY(S) VAR-VARIOUS	5, 7
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:		731	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:		98.3	%
STANDARD DEVIATION:	0.19		MONTHLY AVERAGE:		0.02	PPB

JOB #: 2833-14-08-31-C



JOB #: 2833-14-08-31-C

Lakeland Industry & Community Association - St. Lina Site

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

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 148

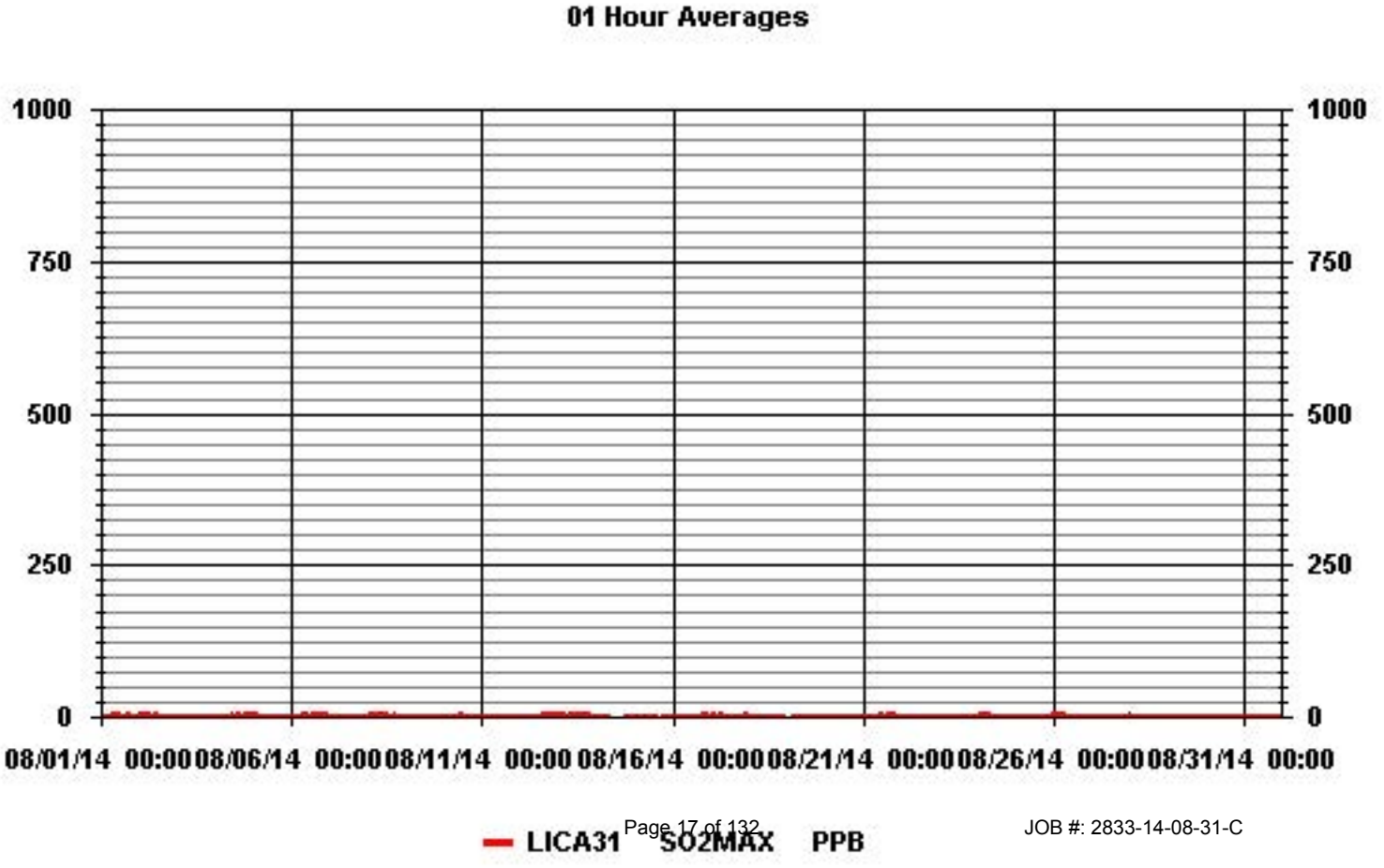
MAXIMUM INSTANTANEOUS VALUE: 4 PPB @ HOUR(S) 22 ON DAY(S) 17

VAR-VARIOUS

IZS CALIBRATION TIME: 39 HRS OPERATIONAL TIME: 727 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 0.49



JOB #: 2833-14-08-31-C

LICA31
SO2_ / WDR Joint Frequency Distribution (Percent)

August 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	3.93	3.20	5.10	5.24	2.62	3.20	4.66	10.78	9.91	3.93	6.85	11.07	8.16	9.03	7.72	4.51	100.00
<	60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.93	3.20	5.10	5.24	2.62	3.20	4.66	10.78	9.91	3.93	6.85	11.07	8.16	9.03	7.72	4.51	

Calm : .00 %

Total # Operational Hours : 686

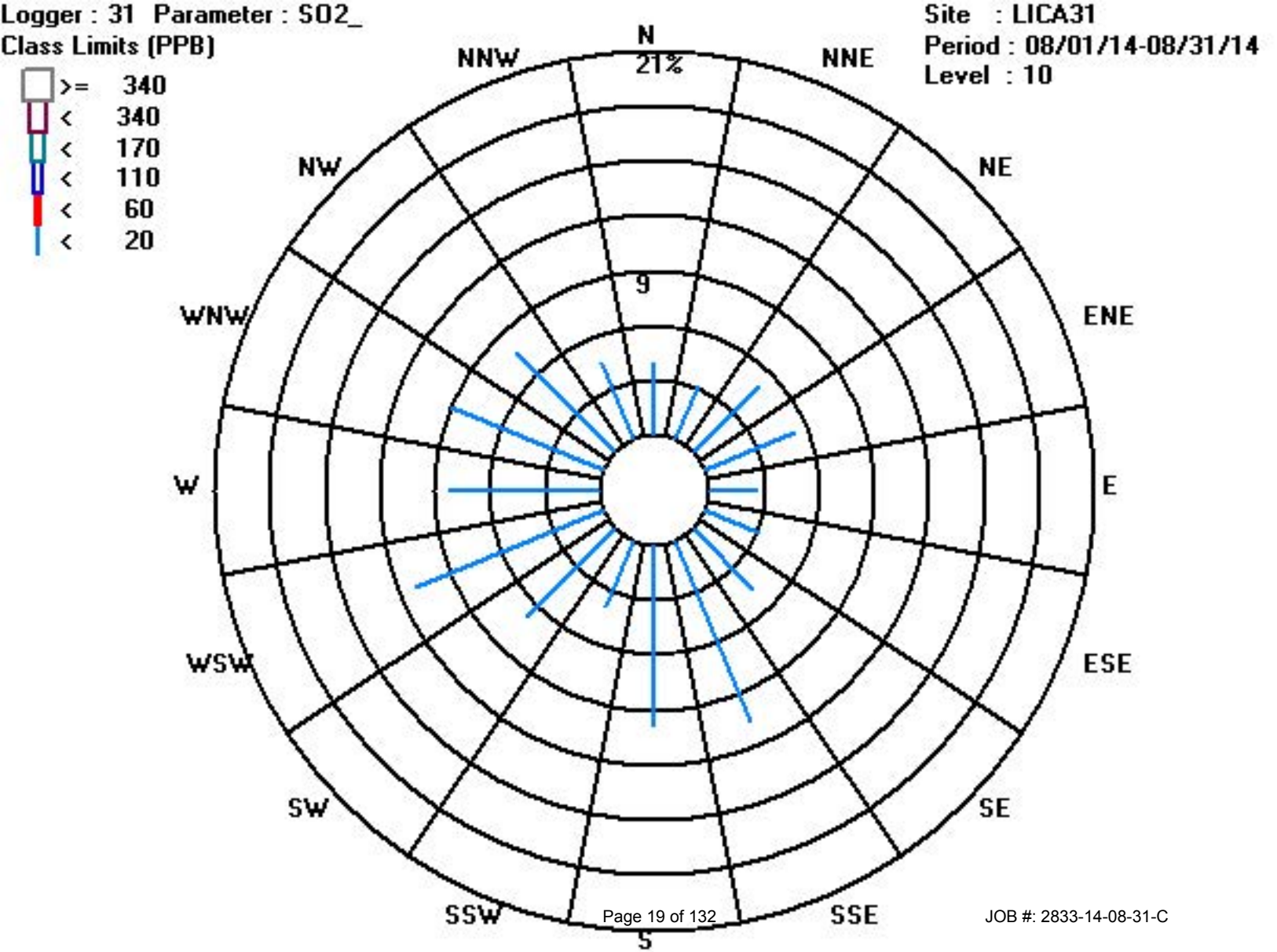
Distribution By Samples

Direction

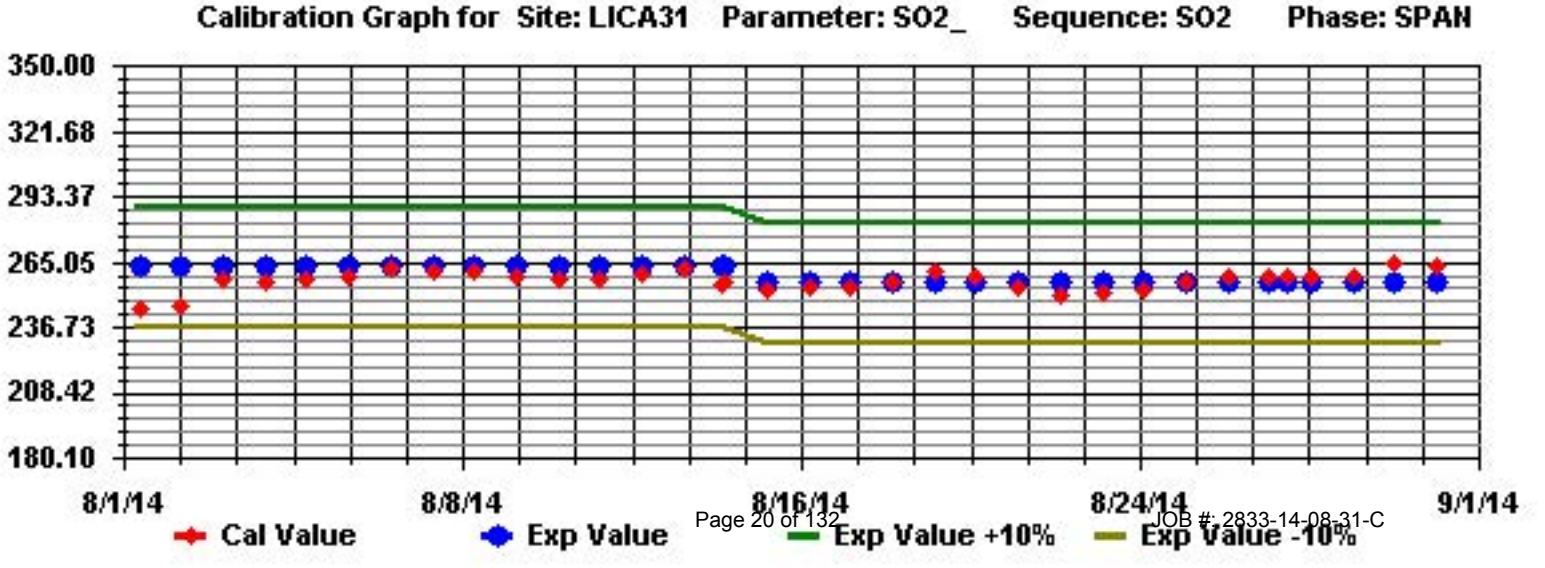
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	27	22	35	36	18	22	32	74	68	27	47	76	56	62	53	31	686
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	27	22	35	36	18	22	32	74	68	27	47	76	56	62	53	31	

Calm : .00 %

Total # Operational Hours : 686



JOB #: 2833-14-08-31-C


Calibration Graph for Site: LICA31 Parameter: SO2_ Sequence: SO2 Phase: SPAN
350.00
321.68
293.37
265.05
236.73
208.42
180.10
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Hydrogen Sulphide

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

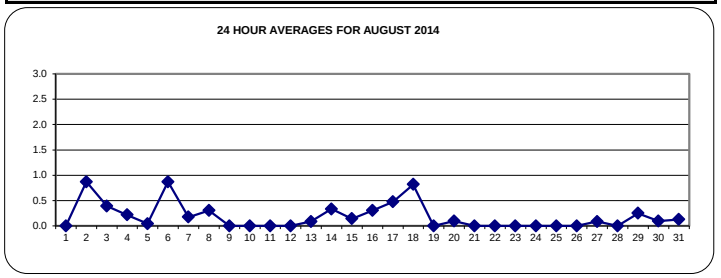
HYDROGEN SULPHIDE (H2S) hourly averages in ppb

MST

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

STATUS FLAG CODES

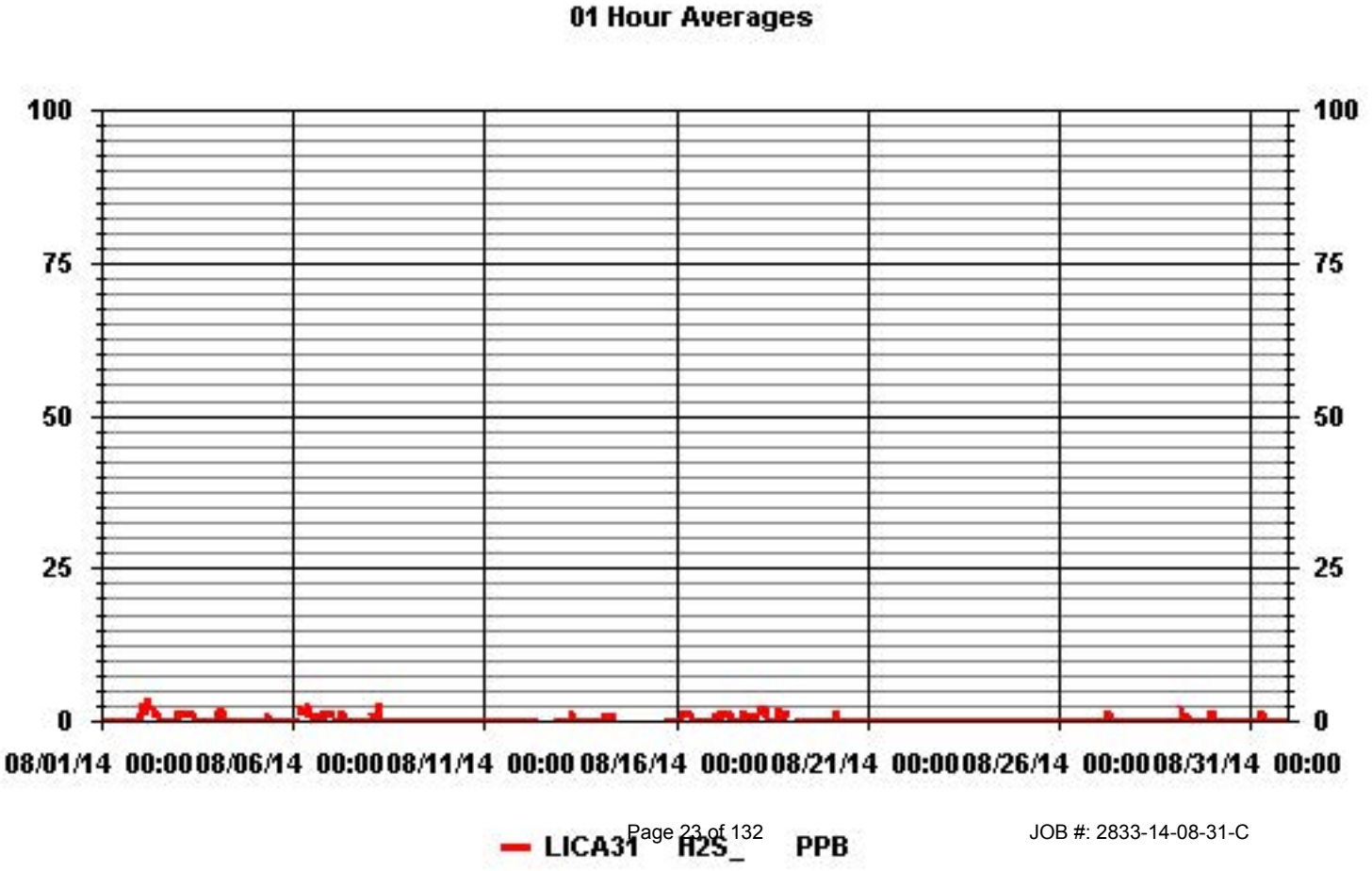
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 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:	97						
MAXIMUM 1-HR AVERAGE:	3	PPB	@ HOUR(S)	VAR	ON DAY(S)		VAR
MAXIMUM 24-HR AVERAGE:	0.9	PPB			ON DAY(S)		2, 6
					VAR-VARIOUS		
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:			706	HRS
MONTHLY CALIBRATION TIME:	17	HRS	AMD OPERATION UPTIME:			94.9	%
STANDARD DEVIATION:	0.49		MONTHLY AVERAGE:			0.19	PPB



JOB #: 2833-14-08-31-C

Lakeland Industry & Community Association - St. Lina Site

AUGUST 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	0	0	0	0	0	0	0	**S**	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0.1	24
2	2	3	4	2	3	3	3	**S**	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	***1.7***	24
3	1	1	1	1	1	1	**S**	2	2	1	1	1	1	1	1	0	0	1	0	1	0	1	1	1	2	0.9	24
4	1	2	1	2	2	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
5	0	0	0	0	**S**	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
6	0	1	1	**S**	3	2	3	2	2	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.4	24
7	1	**S**	**S**	1	1	1	2	2	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0.5	24
8	0	**S**	2	0	2	4	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.5	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	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	1	0.2	24
11	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	1	0.2	24
12	0	0	0	0	1	0	0	0	0	**C**	**C**	**C**	**Y**	**Y**	**Y**	**Y**	**C**	**C**	**C**	**C**	**C**	0	0	0	1	0.1	20
13	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	**S**	0	0	0	0	1	0.2	24
14	0	1	0	1	2	0	1	1	2	**P**	**P**	**P**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	2	0.9	9
15	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**C**	**C**	**C**	**C**	**C**	1	**S**	0	0	0	1	1	1	1	0.6	13
16	0	1	1	1	1	1	1	2	1	1	1	1	0	1	0	0	**S**	0	1	1	0	0	1	0	2	0.7	24
17	1	1	1	1	2	2	1	2	1	1	1	**S**	0	0	0	**S**	1	1	1	**P**	**P**	**P**	***7***	0	***7***	1.3	21
18	0	0	1	2	3	3	2	3	2	1	0	0	1	0	**S**	2	3	2	2	1	2	2	**P**	**P**	3	1.5	22
19	**P**	**P**	**P**	**R**	0	0	1	1	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	1	1	0.2	20
20	1	1	1	1	2	2	**S**	**S**	0	0	0	0	**S**	3	0	0	0	1	0	0	0	0	0	0	3	0.6	24
21	0	0	0	0	0	0	0	**S**	0	0	0	**S**	0	**C**	**C**	**C**	0	0	0	0	0	0	0	0	0	0.0	24
22	0	1	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
23	0	0	0	0	0	0	0	1	1	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
24	0	0	1	1	0	1	0	0	**S**	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0.2	24
25	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
26	0	1	0	0	1	1	**S**	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.3	24
27	0	0	1	0	1	**S**	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0.3	24
28	0	0	1	1	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
29	0	0	0	**S**	3	1	1	5	1	**C**	**C**	**C**	0	2	0	0	0	0	1	1	1	1	1	1	5	1.0	24
30	1	2	**S**	1	0	0	0	**S**	**S**	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24
31	0	**S**	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24
HOURLY MAX	2	3	4	2	3	4	3	5	2	3	3	1	1	3	1	2	3	2	2	1	2	2	7	1			
HOURLY AVG	0.3	0.6	0.6	0.6	1.0	0.9	0.9	1.1	0.8	0.4	0.3	0.2	0.2	0.4	0.1	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.5	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: 209

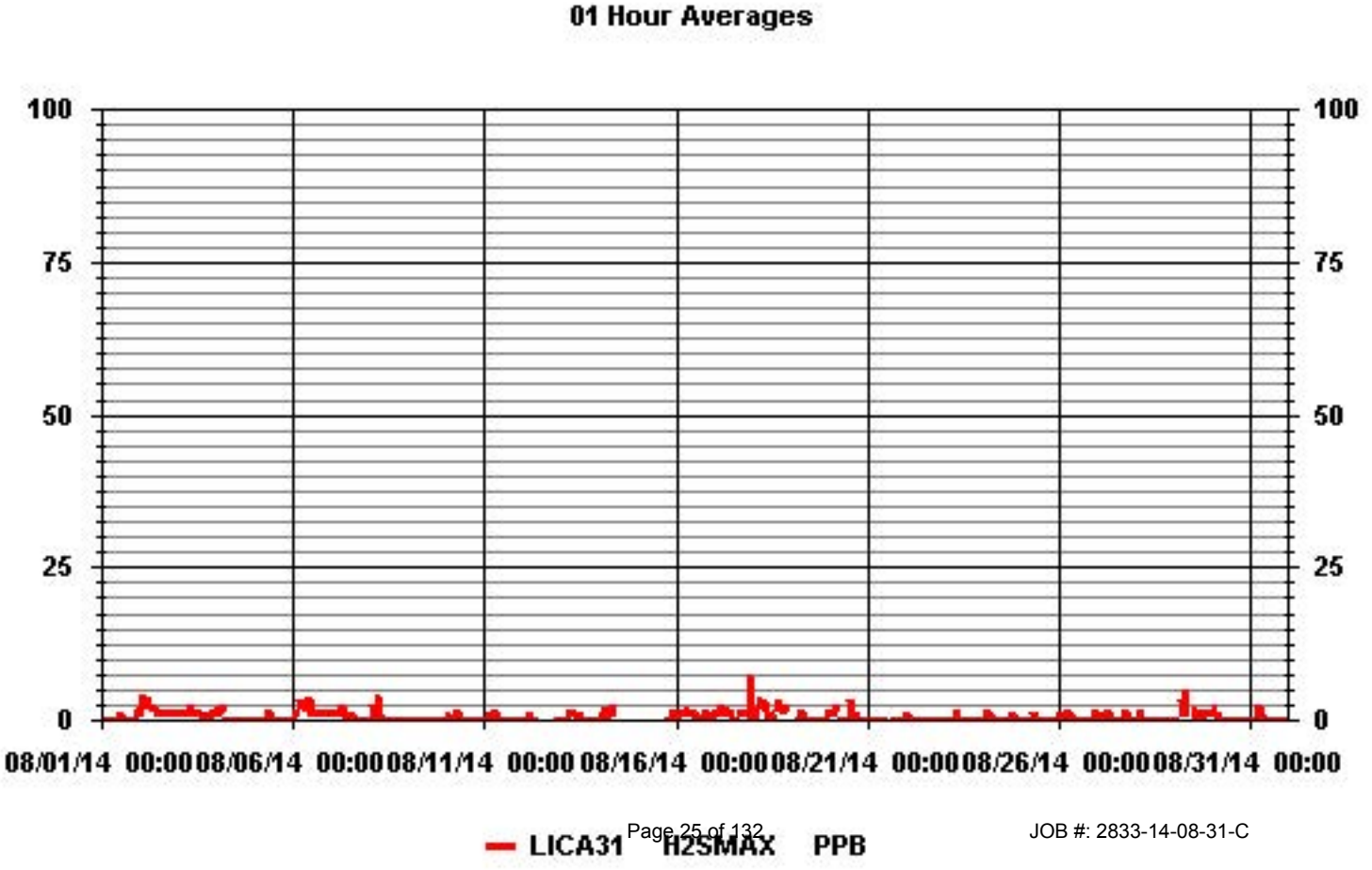
MAXIMUM INSTANTANEOUS VALUE: 7 PPB @ HOUR(S) 22 ON DAY(S) 18

VAR-VARIOUS

IZS CALIBRATION TIME: 38 HRS OPERATIONAL TIME: 705 HRS

MONTHLY CALIBRATION TIME: 19 HRS

STANDARD DEVIATION: 0.79



JOB #: 2833-14-08-31-C

LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

August 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	3.96	2.90	5.34	5.34	2.59	2.59	4.58	10.22	8.54	3.81	6.87	11.60	8.70	9.46	7.93	4.58	99.08
< 10	.00	.00	.00	.00	.00	.00	.00	.45	.00	.15	.15	.00	.00	.00	.00	.00	.76
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15	.00	.15
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.96	2.90	5.34	5.34	2.59	2.59	4.58	10.68	8.54	3.96	7.02	11.60	8.70	9.46	8.09	4.58	

Calm : .00 %

Total # Operational Hours : 655

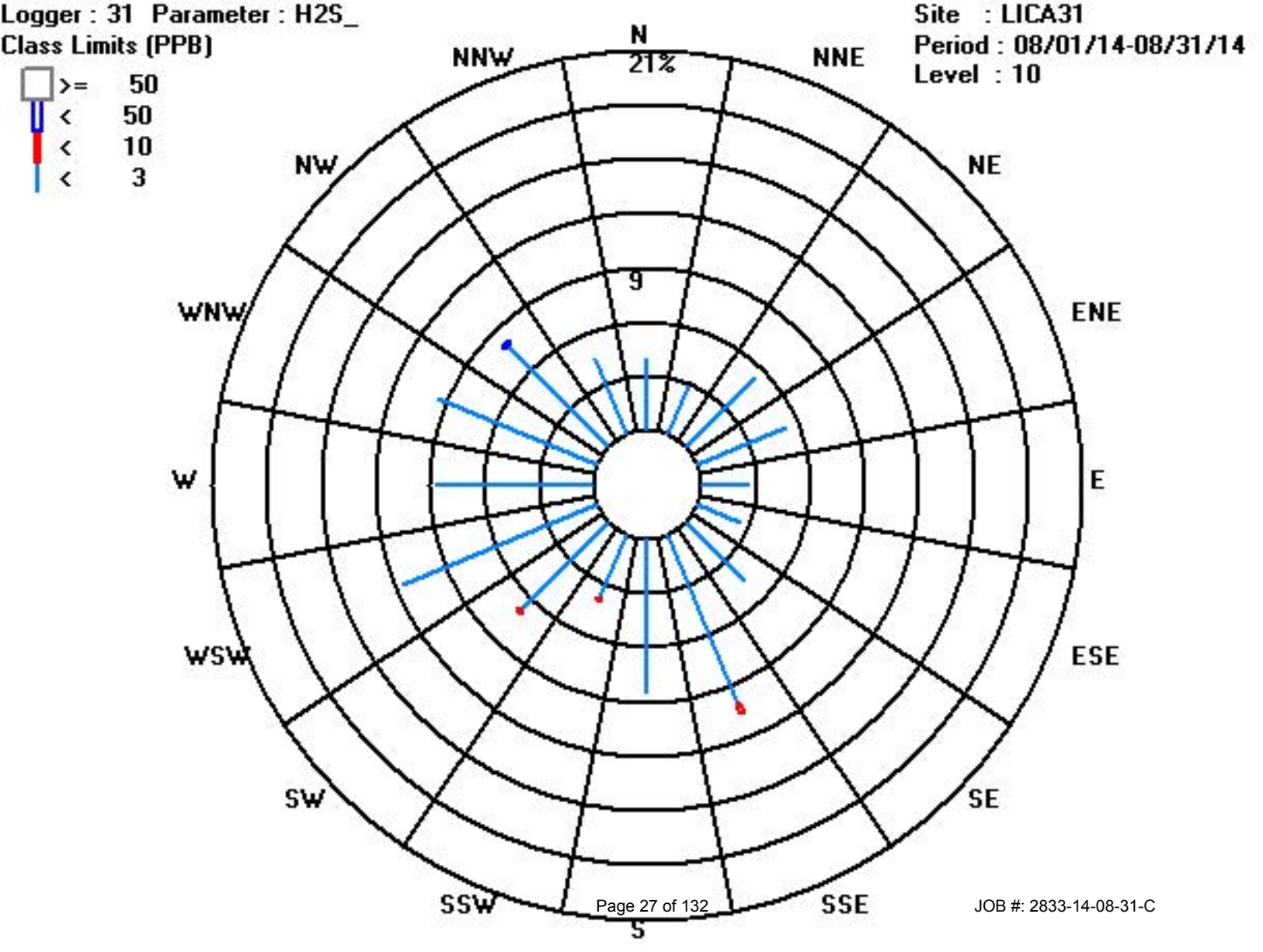
Distribution By Samples

Direction

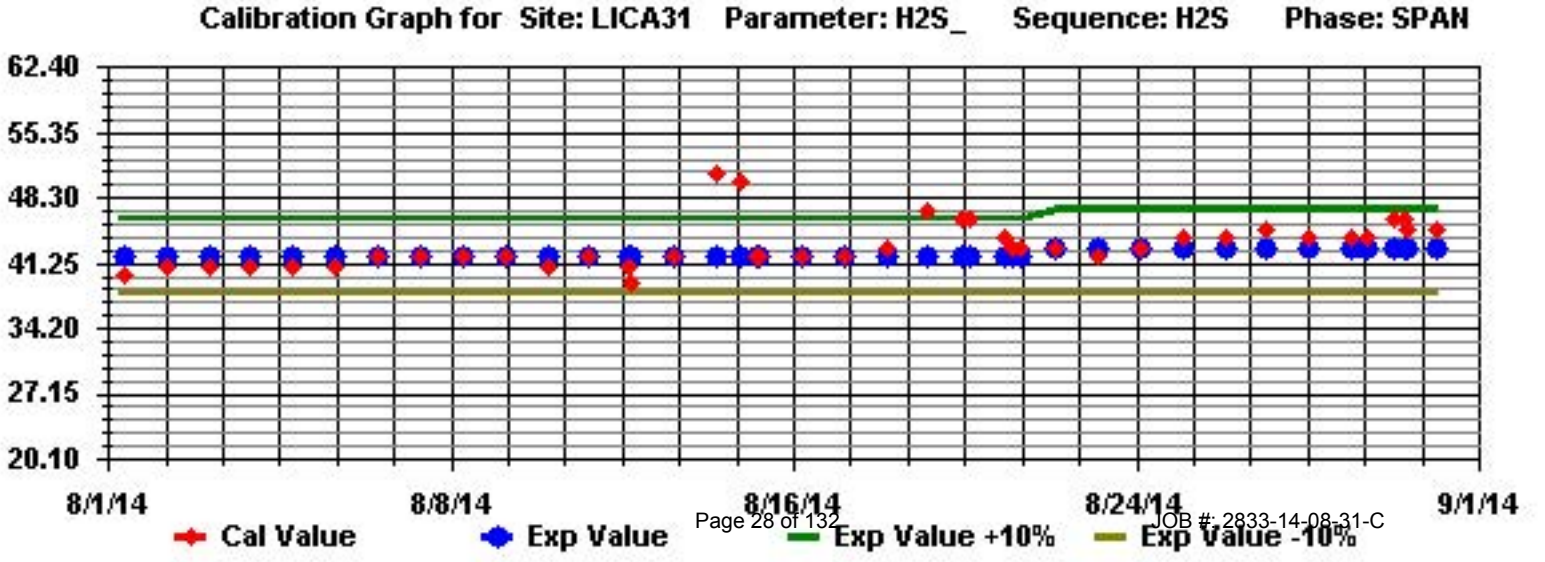
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	26	19	35	35	17	17	30	67	56	25	45	76	57	62	52	30	649
< 10								3		1	1						5
< 50															1		1
>= 50																	
Totals	26	19	35	35	17	17	30	70	56	26	46	76	57	62	53	30	

Calm : .00 %

Total # Operational Hours : 655



JOB #: 2833-14-08-31-C


Calibration Graph for Site: LICA31 Parameter: H2S_ Sequence: H2S Phase: SPAN
62.40
55.35
48.30
41.25
34.20
27.15
20.10
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

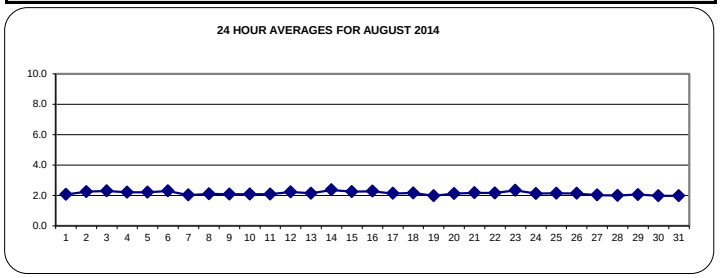
TOTAL HYDROCARBONS (THC) hourly averages in ppm

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	2.0	2.0	2.1	2.2	2.1	2.0	2.1	2.1	**S**	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.3	2.1	2.2	2.1	2.2	2.3	2.1	24
2	2.3	2.3	2.3	2.4	2.6	2.5	2.4	**S**	2.4	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.3	2.3	2.4	2.6	2.2	24
3	2.3	2.3	2.3	2.3	2.5	2.6	**S**	2.5	2.4	2.4	2.4	2.6	2.4	2.2	2.2	2.0	2.1	2.1	2.1	2.2	2.2	2.3	2.2	2.3	2.6	2.3	24
4	2.2	2.3	2.3	2.8	2.2	**S**	2.2	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.4	2.2	2.2	2.8	2.2	24
5	2.1	2.1	2.1	2.0	**S**	2.0	2.2	2.2	2.5	2.4	2.2	2.2	2.5	2.2	2.2	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.5	2.6	2.6	2.2	24
6	2.8	2.8	2.7	**S**	3.0	2.7	3.1	2.4	2.6	2.4	2.2	2.1	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.1	2.0	2.2	2.1	3.1	2.3	24
7	2.0	2.0	**S**	1.9	2.0	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	2.2	2.1	2.1	2.2	2.0	24
8	2.1	**S**	2.1	2.0	2.1	2.7	2.5	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.3	2.1	2.0	2.0	2.7	2.1	24
9	**S**	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.2	2.2	**S**	2.2	2.1	24
10	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.3	2.0	2.0	**S**	2.1	2.3	2.1	24
11	2.1	2.1	2.1	2.3	2.3	2.4	2.4	2.3	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	**S**	2.0	2.0	2.4	2.1	24
12	2.0	2.0	2.1	2.1	2.5	2.4	2.6	2.5	2.5	2.3	2.2	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.1	2.3	**S**	2.4	2.4	2.3	2.6	2.2	24
13	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.2	2.4	**S**	2.5	2.4	2.4	2.4	2.5	2.1	24
14	2.3	2.4	2.3	2.5	2.8	2.3	2.5	2.5	2.7	**P**	**P**	**P**	**C**	**C**	**C**	**C**	2.0	2.1	**S**	2.3	2.3	2.3	2.3	2.3	2.8	***2.4***	21
15	2.2	2.3	2.3	2.2	2.4	2.5	2.4	2.4	2.5	2.5	2.4	2.4	2.3	2.3	2.2	2.1	2.1	**S**	2.0	2.0	2.1	2.0	2.1	2.0	2.5	2.2	24
16	2.0	2.0	2.1	2.7	2.8	2.7	2.7	2.6	2.5	2.4	2.3	2.2	2.1	2.1	2.2	2.1	**S**	2.2	2.2	2.2	2.2	2.2	2.0	2.1	2.8	2.3	24
17	2.2	2.3	2.2	2.2	2.4	2.2	2.1	2.3	2.3	2.3	2.1	1.6	1.9	1.9	2.0	**S**	2.2	2.1	2.1	2.1	**P**	**P**	**R**	2.2	2.4	2.1	21
18	2.3	2.2	2.2	2.3	2.4	2.4	2.4	2.4	2.3	2.2	2.1	2.1	2.0	2.0	**S**	2.0	2.0	2.0	2.0	2.1	2.2	2.0	**P**	2.4	2.2	23
19	**P**	**P**	**P**	**R**	2.1	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	**S**	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.2	2.1	2.2	2.0	20
20	2.1	2.1	2.2	2.3	2.1	2.2	2.1	2.2	2.1	2.1	2.1	2.1	**S**	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.1	24
21	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	**S**	2.0	2.0	2.0	2.0	2.1	2.1	2.8	2.1	2.1	2.2	2.2	2.2	2.8	2.2	24
22	2.2	2.2	2.1	2.2	2.2	2.2	2.3	2.3	2.4	2.4	**S**	2.2	2.2	2.2	2.0	2.0	2.0	2.0	2.2	2.1	2.1	2.1	2.1	2.1	2.4	2.2	24
23	2.1	2.2	2.5	2.6	2.7	3.1	***3.2***	2.8	2.5	**S**	2.0	2.0	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	***3.2***	2.3	24
24	2.3	2.4	2.4	2.4	2.4	2.3	2.3	2.2	**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	2.2	2.0	2.4	2.1	24
25	2.1	2.2	2.2	2.2	2.1	2.2	2.1	**S**	2.2	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.5	2.5	2.1	24
26	2.4	2.3	2.2	2.2	2.2	2.2	**S**	2.2	2.2	2.3	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.1	2.1	2.4	2.1	24
27	2.1	2.2	2.1	2.1	2.2	**S**	2.2	2.2	2.3	2.0	2.0	1.9	2.0	2.0	2.0	2.1	2.0	2.0	2.0	1.9	2.0	1.8	1.8	1.8	2.3	2.0	24
28	1.8	1.9	1.9	1.9	**S**	2.0	2.1	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	2.1	2.1	2.0	2.2	2.0	24
29	2.1	2.0	1.9	**S**	2.1	2.2	2.2	2.3	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	2.1	2.1	2.2	2.2	2.3	2.1	24
30	2.1	2.1	**S**	2.2	2.2	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	1.9	1.9	2.0	2.1	2.0	2.0	2.2	2.0	24
31	2.0	**S**	2.0	2.1	2.1	2.1	2.1	2.0	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.0	1.9	2.1	2.0	24
HOURLY MAX	3	3	3	3	3	3	3	3	3	3	2	3	3	2	2	2	2	2	3	2	3	2	3	3			
HOURLY AVG	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.2			

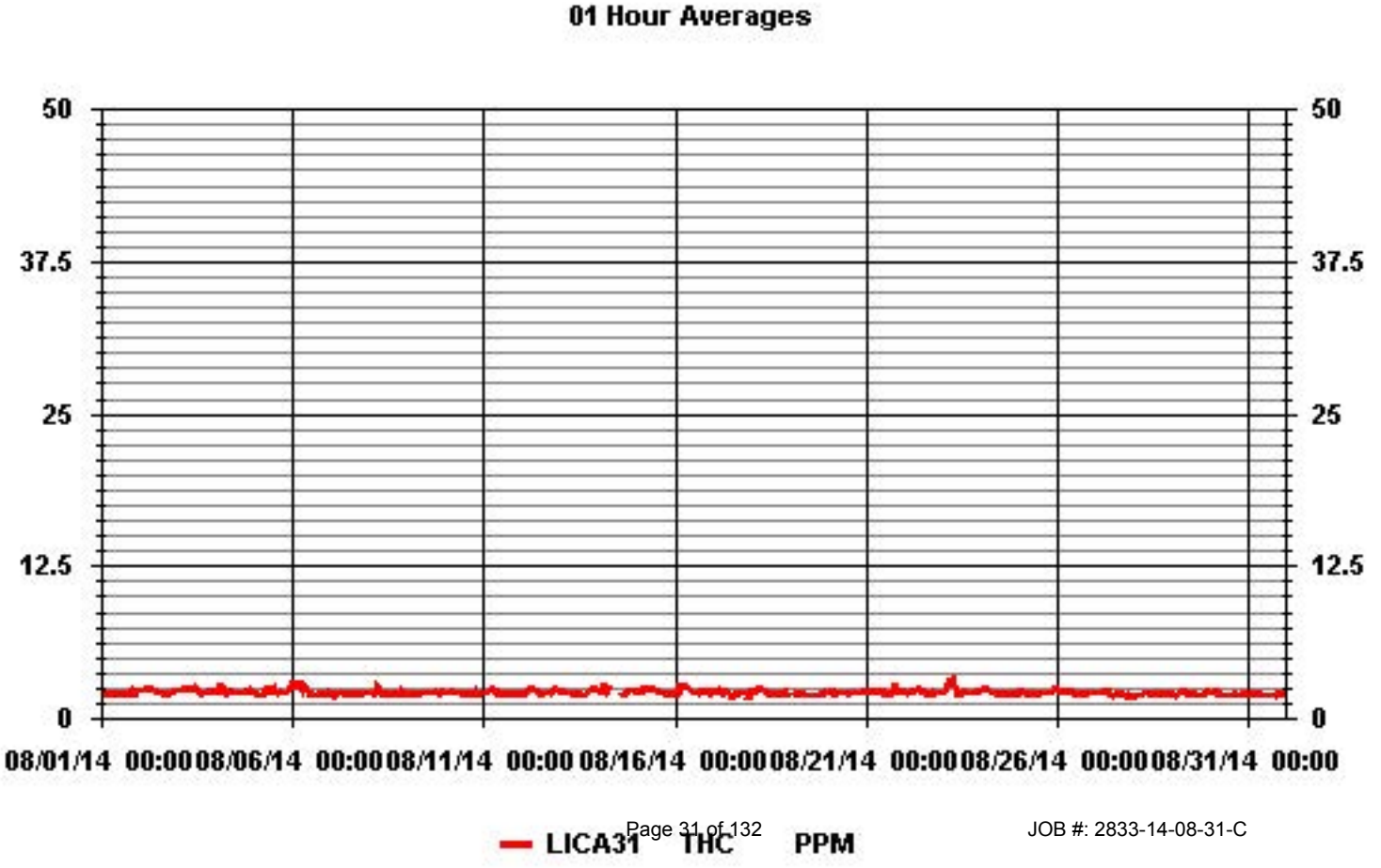
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	697					
MAXIMUM 1-HR AVERAGE:	3.2	PPM	@ HOUR(S)	6	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	2.4	PPM			ON DAY(S)	14
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		733	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		98.5	%
STANDARD DEVIATION:	0.19		MONTHLY AVERAGE:		2.15	PPM



JOB #: 2833-14-08-31-C

Lakeland Industry & Community Association - St. Lina Site

AUGUST 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	2.1	2.1	2.2	2.3	2.2	2.1	2.1	2.2	**S**	2.1	2	2.3	2.1	2.1	2.1	2.1	2.2	2.1	2.6	3	2.2	2.2	2.2	2.2	3	2.2	24
2	2.3	2.3	2.3	2.5	2.7	2.6	2.5	**S**	2.5	2.4	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2	2.1	2.1	2.2	2.3	2.4	2.5	2.7	2.3	24
3	2.4	2.3	2.4	2.5	2.7	2.7	**S**	2.7	2.5	2.5	2.5	2.7	2.6	2.3	2.2	2.1	2.1	2.1	2.4	2.6	3	2.8	2.3	2.9	3	2.5	24
4	2.2	2.6	2.7	2.9	3	**S**	2.5	2.5	2.4	2.3	2.3	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.4	2.8	2.3	2.2	3	2.4	24
5	2.6	2.1	2.2	2.1	**S**	2.1	2.6	2.4	2.6	2.6	2.3	2.3	2.8	2.6	2.3	2.2	2.3	2.3	2.1	2.1	2.2	2.3	2.6	2.7	2.8	2.4	24
6	2.9	3	2.9	**S**	3.1	3.1	3.3	2.7	2.8	2.5	2.4	2.2	2.1	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.2	3.3	2.4	24
7	2	**S**	**S**	2	2	2.3	2.2	2.2	2.1	2.1	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2	2.1	2.1	2.3	2.3	2.1	2.2	2.4	2.1	24
8	2.4	**S**	2.3	2.1	2.3	2.9	2.7	2.3	2.2	2.1	2.1	2	2	2.1	2	2.1	2.2	2.2	2.1	2.3	2.8	2.2	2.1	2.1	2.9	2.2	24
9	**S**	2	2.1	2	2	2	2.1	2.1	2.2	2.8	2.3	2.1	2.2	2.1	2.3	2.2	2.3	2.2	3	2.5	2.2	2.2	2.3	**S**	3	2.2	24
10	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.3	2.1	2.1	2.1	2	2.1	2.1	2	2.1	2.1	2.4	3.8	2	2.1	**S**	2.2	3.8	2.2	24
11	2.2	2.2	2.2	2.3	2.4	2.4	2.4	2.4	2.3	2.1	2	2.1	2	2	2.1	2.1	2	2.1	2.3	2	2.2	**S**	2	2.1	2.4	2.2	24
12	2.1	2.1	2.1	2.2	3.1	2.6	2.7	2.7	2.6	2.6	2.4	2.1	2	**S**	**S**	2.2	2.2	2.2	2.2	2.4	**S**	2.4	2.4	2.4	3.1	2.4	24
13	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2.1	2	2	2	2.1	2.4	2.4	**S**	2.7	2.4	2.4	2.4	2.7	2.2	24
14	2.4	4.3	2.3	2.9	3.2	2.5	2.7	2.8	2.8	**P**	**P**	**P**	**C**	**C**	**C**	**C**	2.4	2.7	**S**	2.5	2.4	2.3	2.4	2.4	4.3	***2.7***	21
15	**P**	2.4	2.4	2.3	2.7	2.7	2.5	2.4	2.6	2.6	2.5	2.4	2.3	2.3	2.3	2.2	2.2	**S**	2	2	2.1	2.1	2.1	2.1	2.7	2.3	23
16	2.1	2.1	2.3	2.9	2.9	2.8	2.7	2.6	2.6	2.4	2.3	2.3	2.1	2.2	2.3	2.3	**S**	2.3	2.3	2.3	2.3	2.3	2.1	2.2	2.9	2.4	24
17	2.5	2.9	2.8	2.4	2.6	2.5	2.2	2.5	2.5	2.6	2.8	**S**	2	2.1	3.1	**S**	2.5	2.5	2.2	**P**	**P**	**P**	**P**	2.2	3.1	2.5	20
18	2.4	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.3	2.1	2.1	2.1	2	**S**	2.1	2	2	2	2.6	2.6	3	**P**	**P**	3	2.3	22
19	**P**	**P**	**P**	**R**	4.2	2.1	2.1	2.1	2.1	2	2	2	2.2	**S**	2.6	2.1	1.9	1.9	2	2	2	2.4	2.9	2.8	4.2	2.3	20
20	2.5	2.6	2.6	3.3	2.2	2.5	2.2	2.5	2.5	2.8	2.5	2.5	**S**	2.2	2.4	2.5	2.6	2.4	2.5	2.3	2.2	2.2	2.3	3.4	3.4	2.5	24
21	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	**S**	2.1	4.2	2.1	2.1	2.2	2.1	***7.5***	2.2	2.2	3.5	2.3	2.3	***7.5***	2.6	24
22	2.2	2.2	2.2	2.8	2.3	2.3	2.4	2.4	2.5	2.5	**S**	2.5	2.3	2.2	2.2	2	2.1	2.1	3.5	3.1	2.1	2.1	2.1	2.1	3.5	2.4	24
23	2.1	2.4	2.6	2.7	2.9	3.3	3.5	3.1	2.5	**S**	2.1	2.1	2.3	2.2	2.8	2.9	2.2	2.2	2.1	2.1	2.3	2.3	2.3	2.4	3.5	2.5	24
24	2.4	2.5	2.5	2.5	2.4	2.4	2.3	2.3	**S**	2.1	2	2	2	2	2.1	2.1	2.1	2	2	2.1	2	2.2	2.3	2	2.5	2.2	24
25	2.1	2.3	2.3	2.3	2.2	2.2	2.1	**S**	2.2	2.2	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.5	2.5	2.5	2.2	24
26	2.4	2.3	2.3	2.2	2.2	2.3	**S**	2.2	2.3	2.3	2.3	2.2	2.1	2.1	2	2.1	2.1	2	2.9	2.1	2.5	3.7	2.1	2.1	3.7	2.3	24
27	2.6	2.7	2.1	2.2	2.5	**S**	2.3	2.3	3.2	2.8	2.2	2.1	2.2	2.2	2.1	3	2.2	2.7	2.9	2.3	4.2	1.9	1.8	2.6	4.2	2.5	24
28	1.9	1.9	2	2	**S**	2.1	2.8	2.9	2.3	2.2	2.1	2.3	2.1	2.2	2.2	2.1	2.2	2.7	2.1	2	2.1	2.2	2.2	2.1	2.9	2.2	24
29	2.2	2	2	**S**	2.1	2.2	2.3	2.3	2.3	2.2	2.2	2	2	2	2	2	2	2	1.9	2	2.1	2.2	2.2	2.2	2.3	2.1	24
30	2.2	2.4	**S**	3.2	2.6	2	2.1	2.1	2	2.1	2.1	2.1	2.1	2	2	2.1	2.1	2.3	2	1.9	2.5	2.1	2.1	2.3	3.2	2.2	24
31	2	**S**	2.1	2.2	2.1	2.1	2.1	2	2.1	2.2	2	2	2	2	2.1	2.1	2.4	1.9	2.5	2.1	2.1	2.1	3	2	3	2.1	24
HOURLY MAX	3	4	3	3	4	3	4	3	3	3	3	3	3	4	3	3	3	3	8	4	4	4	3	3			
HOURLY AVG	2.3	2.4	2.3	2.4	2.5	2.4	2.4	2.4	2.4	2.3	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.5	2.3	2.4	2.4	2.3	2.3			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 690

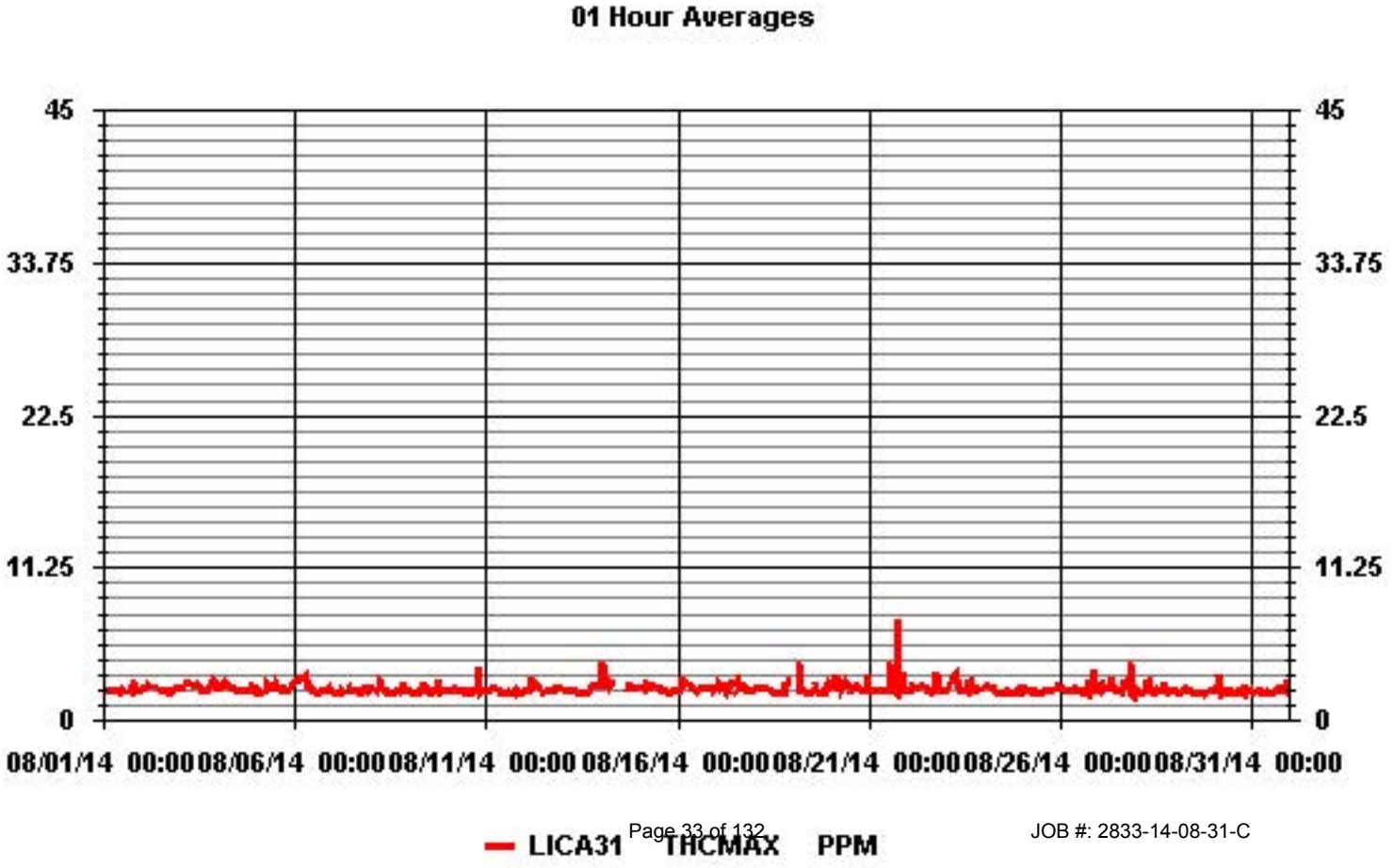
MAXIMUM INSTANTANEOUS VALUE: 7.5 PPM @ HOUR(S) 18 ON DAY(S) 21

VAR-VARIOUS

IZS CALIBRATION TIME: 36 HRS OPERATIONAL TIME: 730 HRS

MONTHLY CALIBRATION TIME: 4 HRS

STANDARD DEVIATION: 0.38



JOB #: 2833-14-08-31-C

LICA31
THC / WDR Joint Frequency Distribution (Percent)

August 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	3.89	3.17	4.90	5.05	2.59	3.17	4.61	10.53	9.81	4.18	6.78	10.82	8.36	9.09	7.79	4.61	99.42
<	10.0	.00	.00	.14	.14	.00	.00	.00	.28	.00	.00	.00	.00	.00	.00	.00	.00	.57
<	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.89	3.17	5.05	5.19	2.59	3.17	4.61	10.82	9.81	4.18	6.78	10.82	8.36	9.09	7.79	4.61	

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	27	22	34	35	18	22	32	73	68	29	47	75	58	63	54	32	689
<	10.0			1	1				2									4
<	50.0																	
>=	50.0																	
	Totals	27	22	35	36	18	22	32	75	68	29	47	75	58	63	54	32	

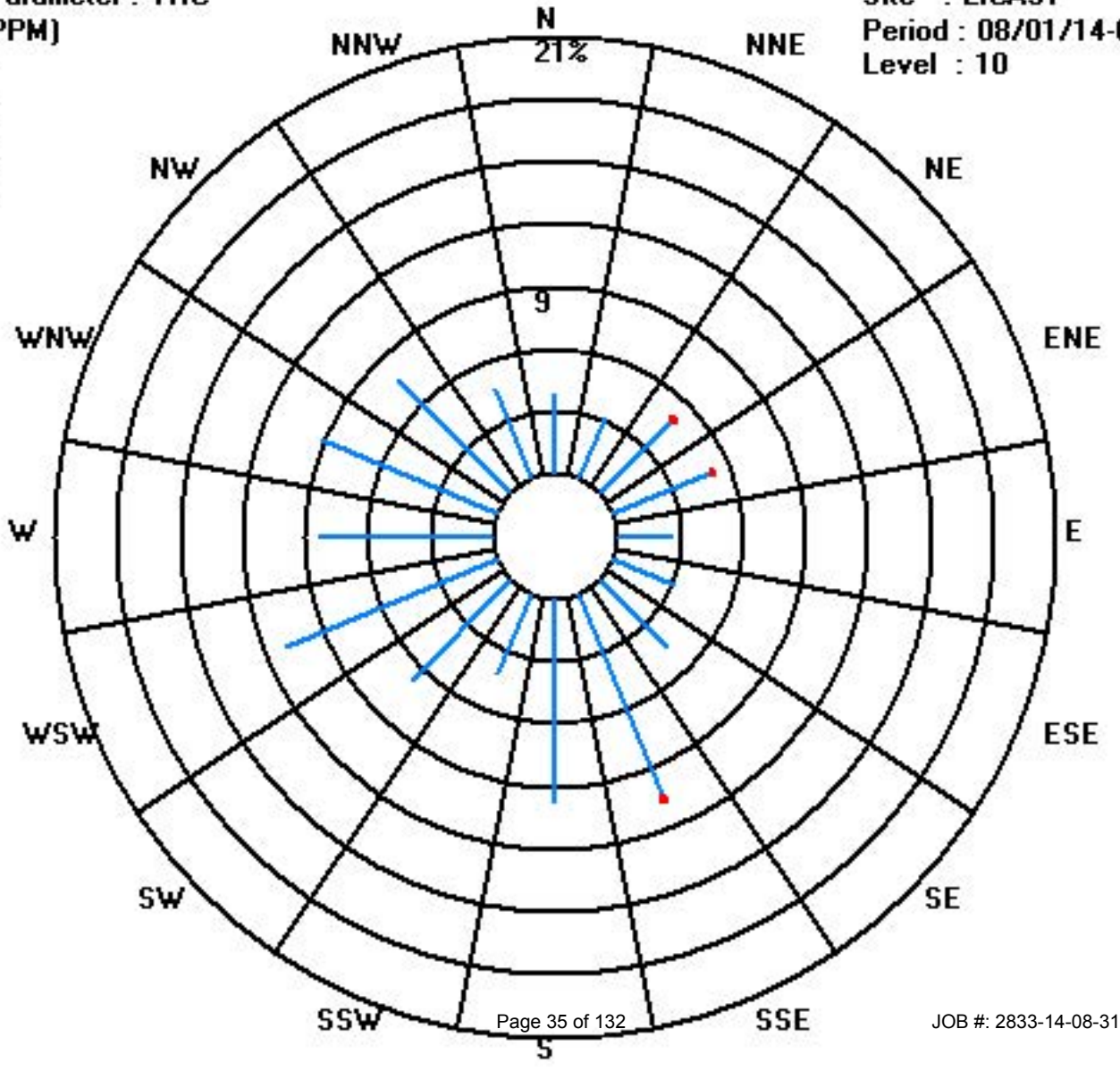
Calm : .00 %

Total # Operational Hours : 693

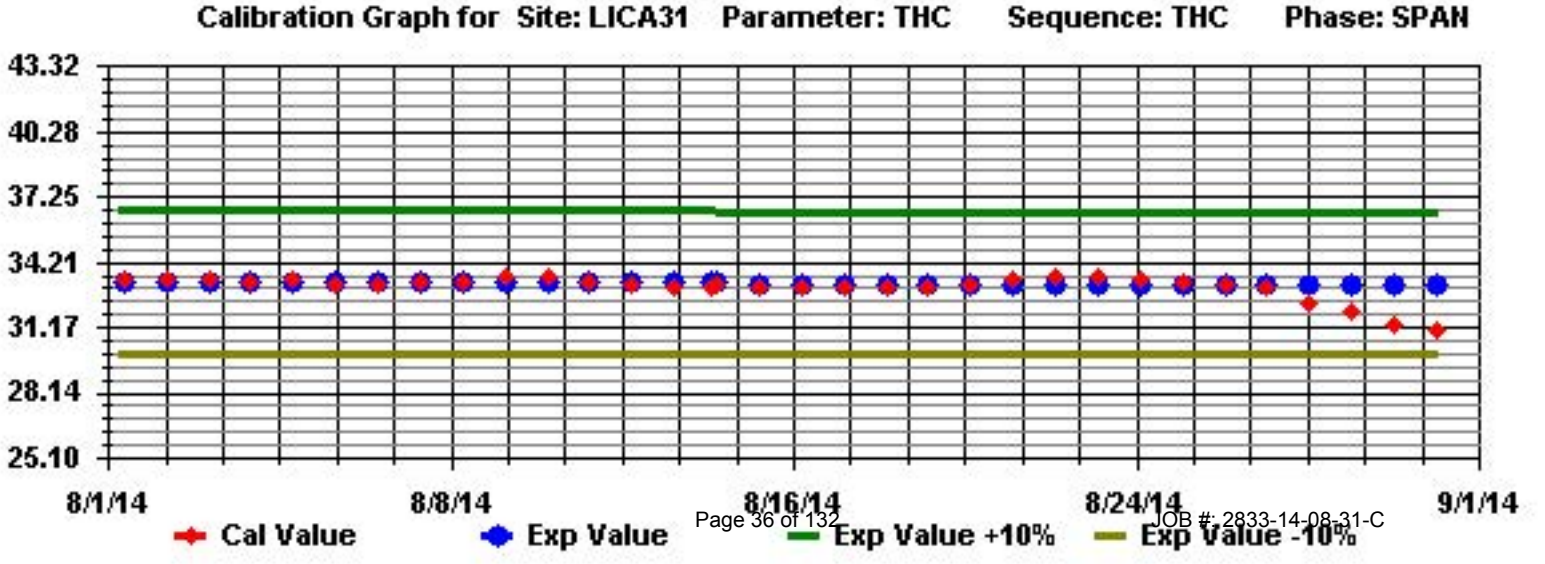
Logger : 31 Parameter : THC
Class Limits (PPM)

>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA31
Period : 08/01/14-08/31/14
Level : 10



JOB #: 2833-14-08-31-C


Calibration Graph for Site: LICA31 Parameter: THC Sequence: THC Phase: SPAN
43.32
40.28
37.25
34.21
31.17
28.14
25.10
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

OZONE (O3) hourly averages in ppb

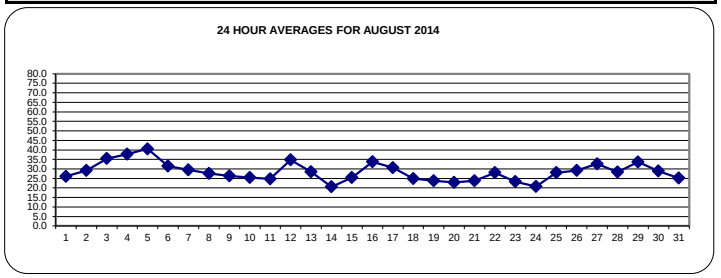
MST

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	33	28	22	21	24	22	23	24	S	25	27	25	26	26	27	29	30	30	28	22	23	29	29	26	33	26.0	24
2	23	22	22	20	18	19	20	S	25	27	32	34	37	38	38	39	39	39	36	33	30	28	25	25	39	29.1	24
3	26	25	23	22	14	12	S	18	23	28	38	50	55	55	49	47	47	44	40	41	42	43	36	36	55	35.4	24
4	41	34	32	19	35	S	36	35	35	36	42	48	49	45	40	43	39	35	31	30	30	33	52	47	52	37.7	24
5	52	58	54	50	S	45	38	36	34	36	40	40	49	46	45	42	37	35	38	35	35	32	29	26	58	***40.5***	24
6	22	19	22	S	17	23	15	28	25	33	40	C	C	C	C	C	57	55	46	38	35	36	27	28	57	31.4	24
7	27	30	S	27	27	25	24	24	26	27	30	31	34	37	36	37	35	35	28	27	29	28	27	26	37	29.4	24
8	30	S	31	30	27	12	18	25	33	43	44	41	39	33	29	29	26	21	22	20	20	18	19	24	44	27.6	24
9	S	23	24	23	24	22	21	23	25	26	27	27	27	29	30	31	30	30	29	29	29	26	23	S	31	26.3	24
10	18	17	16	14	15	15	22	18	17	27	32	37	39	39	33	32	30	30	28	27	29	27	S	23	39	25.4	24
11	24	23	26	18	16	13	14	19	26	29	28	29	30	28	28	27	28	28	26	25	25	S	30	30	30	24.8	24
12	29	28	26	25	19	18	16	20	27	35	36	37	42	52	***59***	54	52	50	46	41	S	32	28	26	***59***	34.7	24
13	26	26	27	27	27	25	S	S	24	27	30	29	30	29	33	36	34	36	31	S	24	27	26	23	36	28.4	24
14	22	23	24	15	11	23	14	14	Y	P	P	P	Y	Y	Y	Y	26	S	19	21	21	25	31	31	31	20.6	15
15	30	28	26	28	22	16	18	19	21	23	27	C	C	C	C	38	36	S	30	28	25	23	22	23	38	25.4	24
16	25	27	26	21	19	19	18	21	25	30	35	38	43	46	45	47	S	42	40	39	39	40	47	43	47	33.7	24
17	38	34	36	37	22	28	28	24	24	24	27	37	32	33	31	S	34	37	33	30	P	P	28	26	38	30.6	22
18	24	25	25	19	13	9	8	12	21	33	38	41	37	33	S	33	30	27	25	25	24	21	P	41	24.9	23
19	P	P	P	22	19	14	14	15	17	19	21	24	29	S	31	33	32	30	29	27	26	27	24	21	33	23.7	21
20	21	23	18	16	16	16	19	21	23	26	23	19	S	25	26	30	31	29	30	28	25	23	21	18	31	22.9	24
21	15	13	12	15	15	15	18	18	20	25	28	S	32	31	30	31	31	31	28	28	29	29	26	27	32	23.8	24
22	28	30	31	24	27	26	19	15	15	18	S	30	32	35	40	37	34	32	29	29	30	31	27	24	40	28.0	24
23	23	21	16	16	15	9	10	15	23	S	33	34	35	34	34	33	33	29	27	23	22	20	17	13	35	23.3	24
24	10	9	8	7	4	5	6	8	S	12	22	26	29	32	34	34	34	33	31	28	28	27	24	25	34	20.7	24
25	22	20	18	17	19	18	18	S	21	25	30	32	34	35	37	39	40	36	35	33	31	30	28	27	40	28.0	24
26	27	27	27	24	22	20	S	15	17	19	25	31	35	36	35	36	39	36	33	35	33	34	33	33	39	29.2	24
27	38	36	34	32	24	S	23	22	25	27	29	31	37	40	S	38	40	40	37	36	30	35	34	30	40	32.6	24
28	26	26	22	19	S	22	20	20	24	29	33	35	36	36	36	36	35	34	30	26	25	27	27	27	36	28.3	24
29	24	27	25	S	23	24	24	21	25	32	40	44	47	47	46	45	44	43	40	36	32	30	27	28	47	33.7	24
30	28	25	S	20	25	28	26	25	26	27	28	31	33	33	35	36	35	35	32	31	30	23	25	26	36	28.8	24
31	25	S	19	16	20	18	17	19	23	27	30	33	33	33	31	30	28	25	22	25	24	26	29	26	33	25.2	24
HOURLY MAX	52	58	54	50	35	45	38	36	35	43	44	50	55	55	59	54	57	55	46	41	42	43	52	47			
HOURLY AVG	26.8	26.0	24.7	22.2	20.0	19.3	19.5	20.5	23.9	27.4	31.6	33.9	36.3	36.5	36.1	36.5	35.9	34.4	32.0	29.8	28.5	28.6	27.9	27.2			

STATUS FLAG CODES

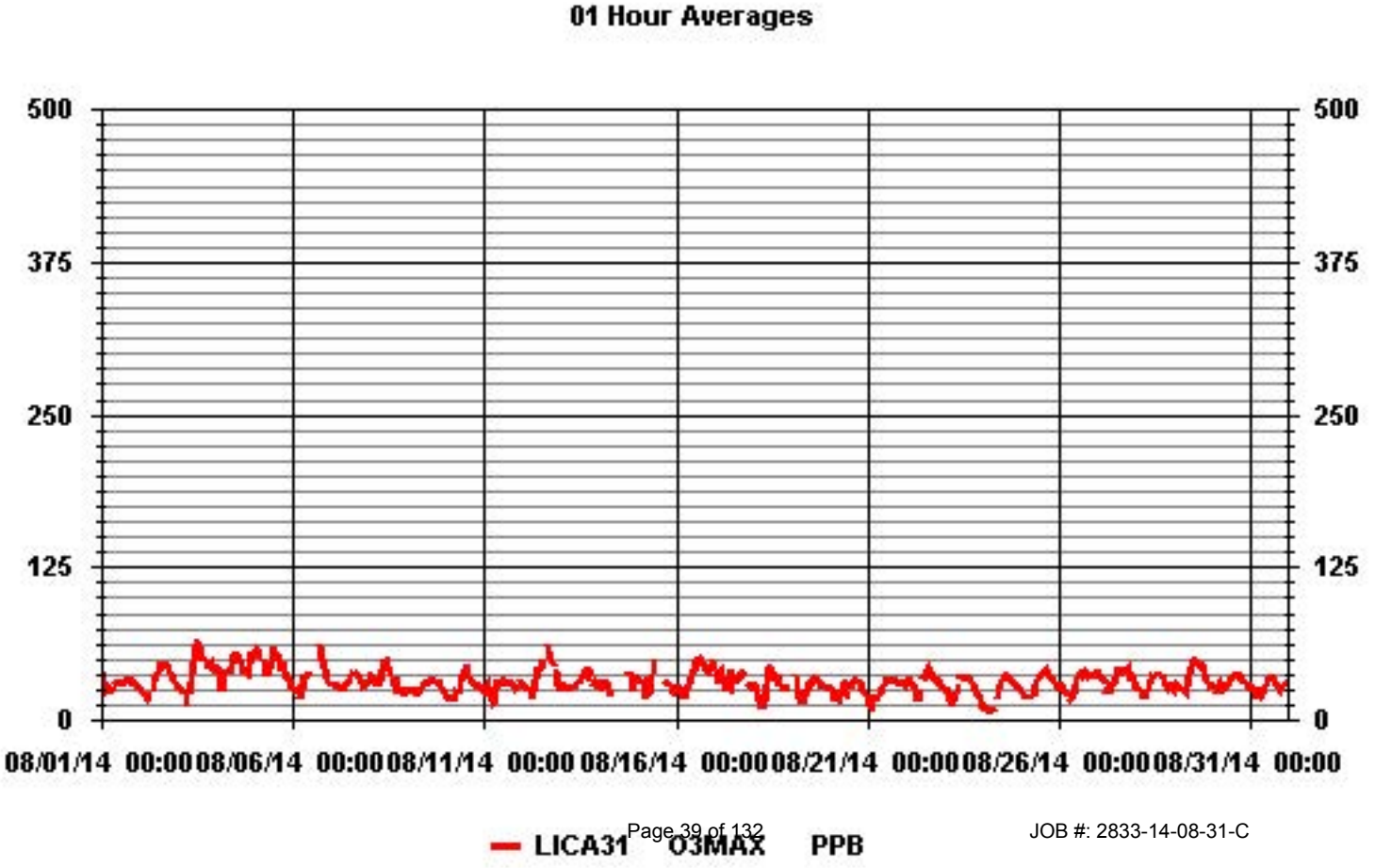
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	685					
MAXIMUM 1-HR AVERAGE:	59	PPB	@ HOUR(S)	14	ON DAY(S)	12
MAXIMUM 24-HR AVERAGE:	40.5	PPB			ON DAY(S) VAR-VARIOUS	5
IZS CALIBRATION TIME:	35	HRS	OPERATIONAL TIME:		729	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		98.0	%
STANDARD DEVIATION:	8.83		MONTHLY AVERAGE:		28.51	PPB



JOB #: 2833-14-08-31-C

Lakeland Industry & Community Association - St. Lina Site

AUGUST 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	39	32	28	24	26	24	24	25	**S**	30	31	30	30	30	31	33	33	34	33	29	29	31	30	28	39	29.7	24
2	25	24	23	22	19	21	21	**S**	26	33	36	39	44	43	45	46	44	44	42	40	37	35	32	27	46	33.4	24
3	27	26	25	23	23	14	**S**	23	30	38	48	61	***65***	60	57	51	51	50	44	44	45	47	41	42	***65***	40.7	24
4	43	40	39	22	39	**S**	40	39	39	42	52	53	53	53	46	49	43	41	39	39	38	48	56	53	56	43.7	24
5	57	60	59	52	**S**	48	41	42	36	41	47	49	59	56	53	52	45	46	45	41	36	34	33	28	60	***46.1***	24
6	25	21	25	**S**	20	28	25	35	35	38	**C**	**C**	**C**	**C**	**C**	**C**	**C**	59	51	43	38	39	32	29	59	33.9	24
7	29	**S**	**S**	28	28	26	25	25	27	29	32	33	37	39	38	39	37	37	34	29	31	30	29	30	39	31.5	24
8	37	**S**	35	34	30	29	29	31	40	48	49	44	42	37	31	32	33	24	24	24	25	22	23	25	49	32.5	24
9	**S**	24	25	24	25	23	22	25	26	29	29	30	30	32	33	32	32	31	31	31	31	28	25	**S**	33	28.1	24
10	19	19	17	17	17	18	24	23	23	31	37	40	42	46	36	34	32	31	30	29	30	28	**S**	25	46	28.2	24
11	24	27	29	21	19	15	17	25	31	32	31	32	32	31	30	30	30	30	29	26	27	**S**	32	30	32	27.4	24
12	30	29	27	25	25	19	19	24	33	41	42	43	47	**S**	**S**	60	56	53	49	46	**S**	39	30	27	60	36.4	24
13	26	27	29	29	28	26	**S**	**S**	28	29	31	31	35	35	39	39	37	42	39	**S**	30	33	32	29	42	32.1	24
14	28	31	31	25	30	30	22	22	**Y**	**P**	**P**	**P**	**Y**	**Y**	**Y**	**Y**	**Y**	38	**S**	38	35	24	31	35	38	30.0	15
15	**P**	33	31	31	32	19	21	22	25	37	47	**C**	**C**	**C**	**C**	**C**	39	**S**	31	30	29	24	23	25	47	29.4	23
16	27	28	27	23	20	20	20	25	29	35	38	41	49	50	49	51	**S**	45	42	41	40	45	48	47	51	36.5	24
17	42	36	38	40	30	33	33	26	26	25	38	**S**	34	35	33	**S**	37	39	37	**P**	**P**	**P**	29	27	42	33.6	21
18	26	28	28	22	17	12	9	15	29	41	40	45	41	35	**S**	35	31	30	27	28	26	26	**P**	**P**	45	28.1	22
19	**P**	**P**	**R**	34	21	19	16	16	22	22	24	29	31	**S**	33	35	34	32	31	29	28	28	27	23	35	26.7	21
20	27	27	19	18	18	17	22	22	29	30	25	21	**S**	28	28	32	33	32	31	31	26	24	23	21	33	25.4	24
21	17	15	13	17	17	17	19	20	22	27	30	**S**	33	33	32	33	33	32	31	30	30	30	30	28	33	25.6	24
22	31	32	33	30	28	28	25	17	17	22	**S**	35	37	40	43	40	36	34	32	31	32	32	29	26	43	30.9	24
23	24	25	18	18	19	11	15	21	26	**S**	35	35	36	35	36	35	35	32	30	25	23	21	20	15	36	25.7	24
24	12	10	9	9	7	7	8	9	**S**	20	25	29	32	35	35	37	36	35	33	30	30	29	26	26	37	23.0	24
25	24	22	21	19	19	19	19	**S**	23	28	32	34	35	37	39	40	42	39	36	35	33	32	29	27	42	29.7	24
26	28	28	28	25	23	22	**S**	17	18	22	29	34	37	39	37	39	41	40	36	37	35	35	35	36	41	31.3	24
27	41	38	36	35	32	**S**	24	27	26	29	31	35	41	42	**S**	39	41	42	40	42	35	36	36	33	42	35.5	24
28	29	27	25	20	**S**	22	21	24	31	31	37	36	37	37	37	37	37	36	33	29	26	28	29	29	37	30.3	24
29	26	29	27	**S**	25	25	25	23	28	37	43	46	48	49	47	47	46	45	42	39	35	32	28	29	49	35.7	24
30	29	28	**S**	24	27	30	27	29	27	28	30	33	35	35	37	37	36	37	34	33	32	29	30	29	37	31.1	24
31	26	**S**	25	18	21	20	19	21	26	28	33	34	34	34	34	31	30	28	25	28	29	29	30	31	34	27.6	24
HOURLY MAX	57	60	59	52	39	48	41	42	40	48	52	61	65	60	57	60	56	59	51	46	45	48	56	53			
HOURLY AVG	29.2	28.4	27.5	25.1	23.6	22.1	22.6	24.0	27.8	31.8	35.8	37.4	39.9	39.5	38.4	39.4	37.9	37.9	35.4	33.7	31.8	31.7	31.0	29.7			

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: 675

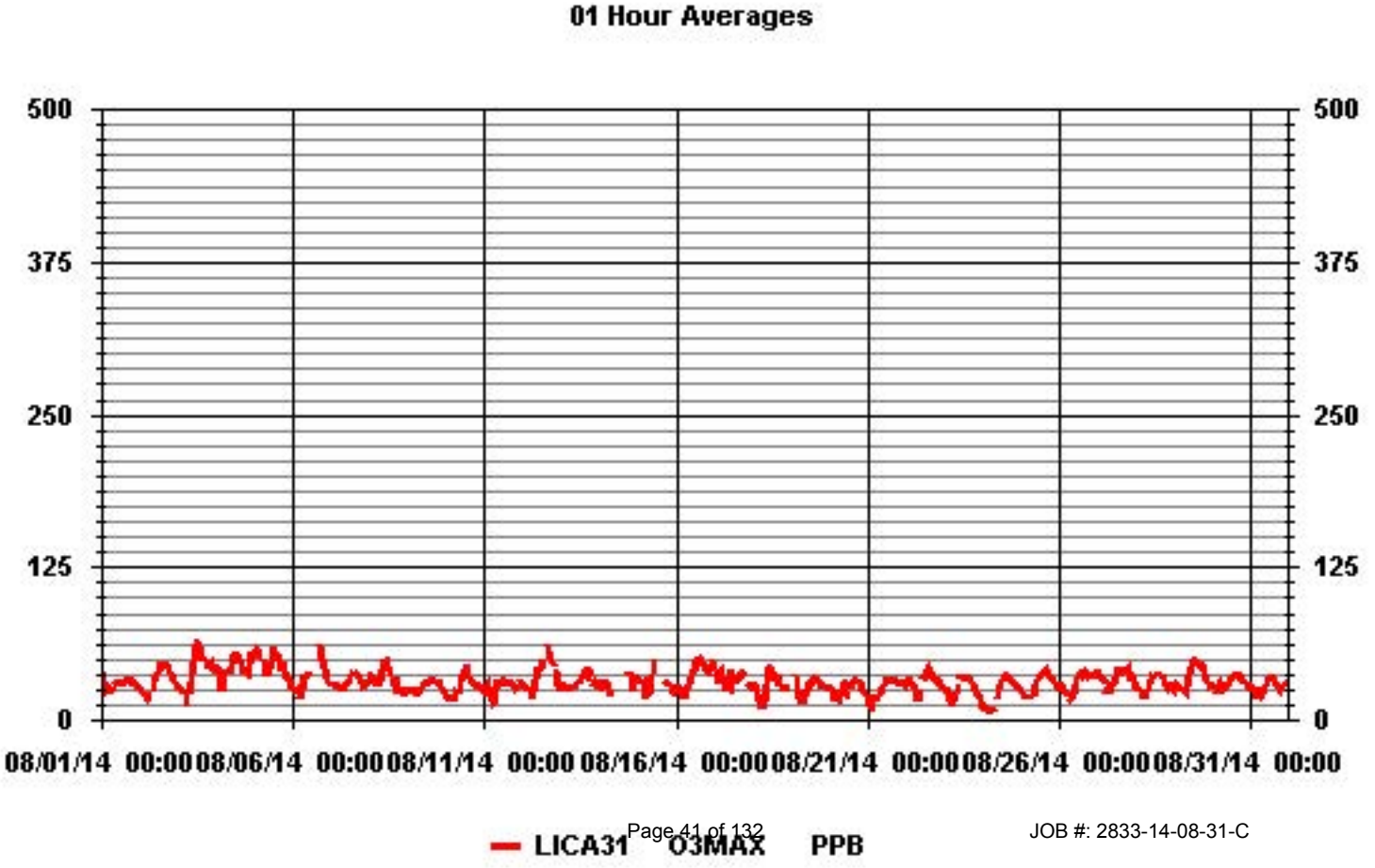
MAXIMUM INSTANTANEOUS VALUE: 65 PPB @ HOUR(S) 12 ON DAY(S) 3

VAR-VARIOUS

IZS CALIBRATION TIME: 39 HRS OPERATIONAL TIME: 726 HRS

MONTHLY CALIBRATION TIME: 12 HRS

STANDARD DEVIATION: 9.29



JOB #: 2833-14-08-31-C

LICA31
O3_ / WDR Joint Frequency Distribution (Percent)

August 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	3.81	3.23	4.99	5.13	2.34	3.08	4.55	10.71	9.54	3.96	6.60	11.01	8.22	8.81	7.78	4.40	98.23
< 110	.14	.00	.14	.14	.29	.14	.14	.00	.00	.00	.00	.00	.29	.29	.00	.14	1.76
< 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	3.96	3.23	5.13	5.28	2.64	3.23	4.69	10.71	9.54	3.96	6.60	11.01	8.51	9.10	7.78	4.55	

Calm : .00 %

Total # Operational Hours : 681

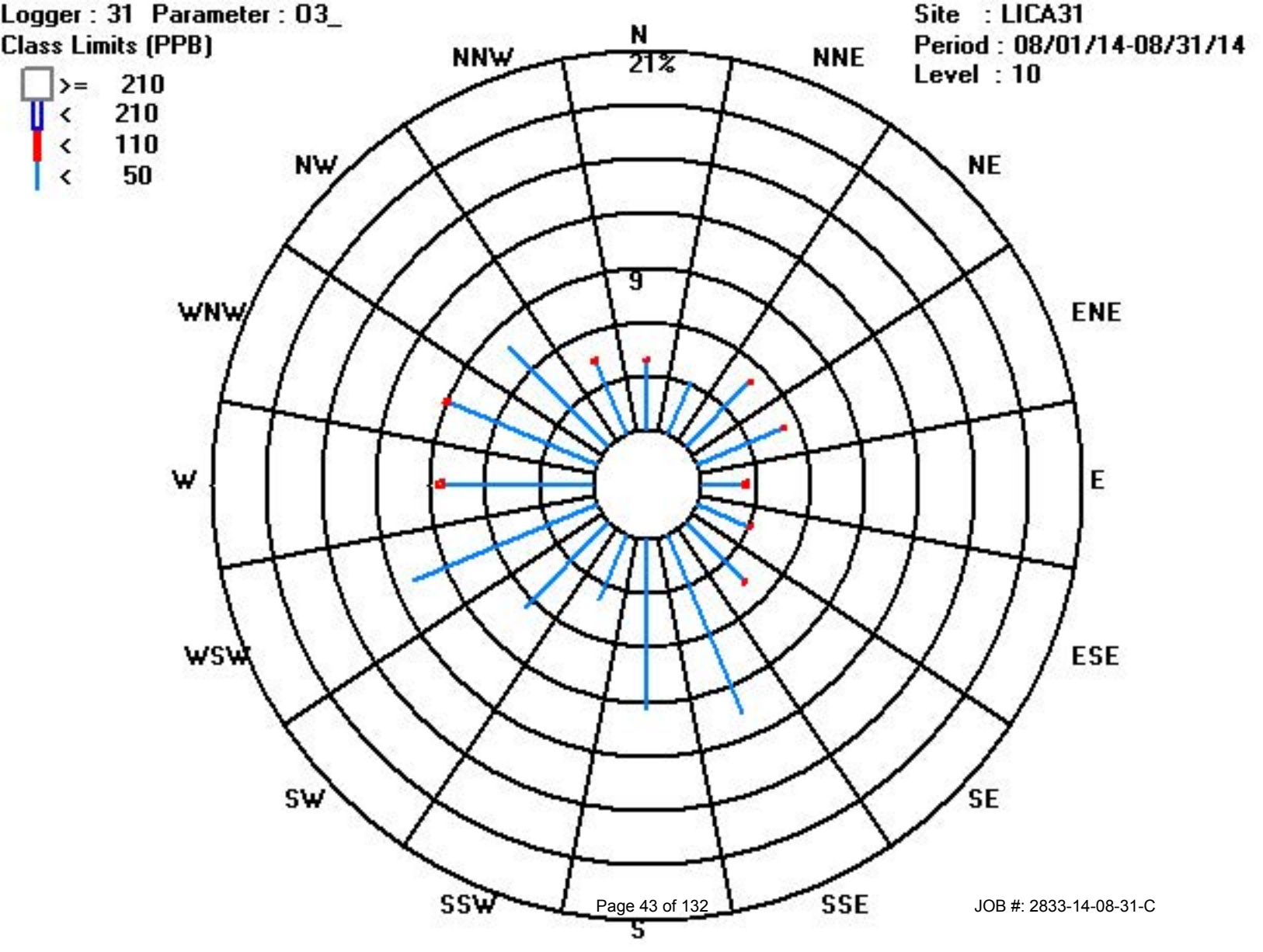
Distribution By Samples

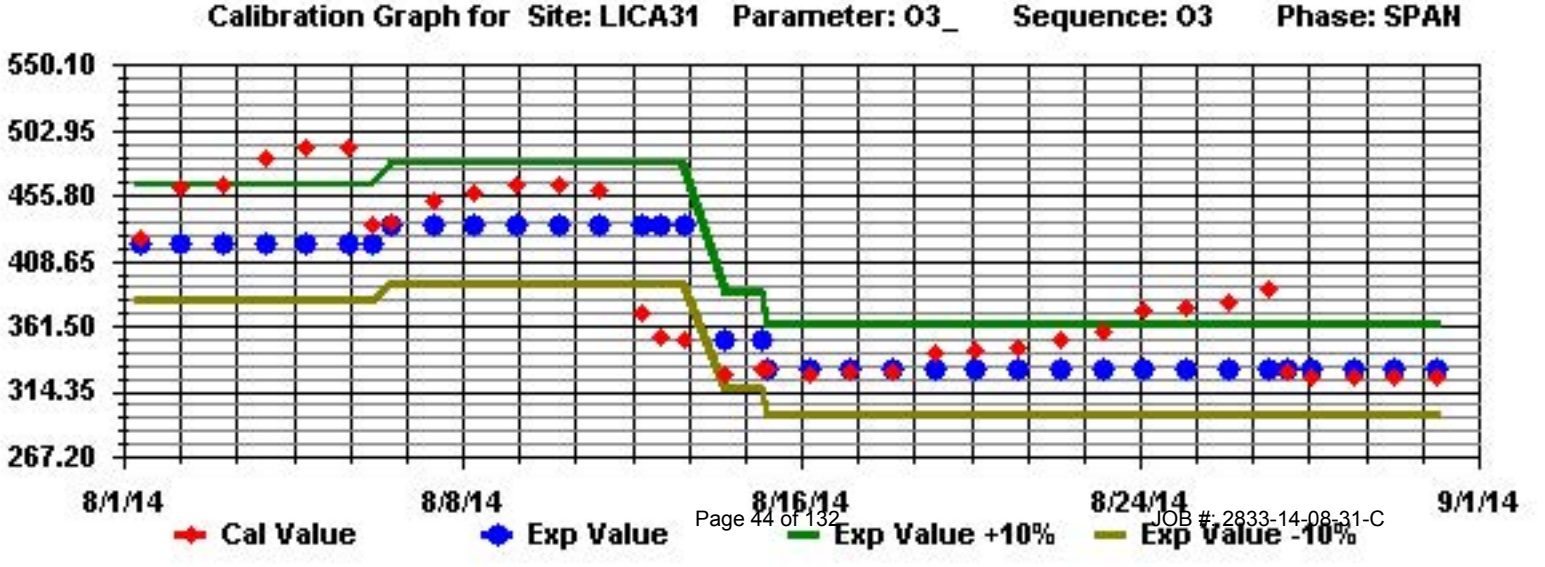
Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	26	22	34	35	16	21	31	73	65	27	45	75	56	60	53	30	669
< 110	1		1	1	2	1	1						2	2		1	12
< 210																	
>= 210																	
Totals	27	22	35	36	18	22	32	73	65	27	45	75	58	62	53	31	

Calm : .00 %

Total # Operational Hours : 681


Logger : 31 Parameter : 03_
Class Limits (PPB)
>= 210
< 210
< 110
< 50
Site : LICA31
Period : 08/01/14-08/31/14
Level : 10
N
21%
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
9


Calibration Graph for Site: LICA31 Parameter: O3_ Sequence: O3 Phase: SPAN
550.10
502.95
455.80
408.65
361.50
314.35
267.20
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitrogen Dioxide

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

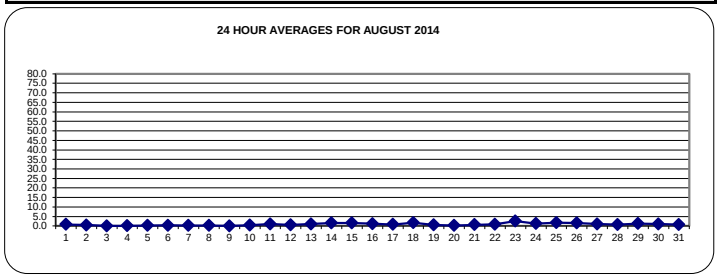
NITROGEN DIOXIDE (NO2) hourly averages in ppb

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	0.3	0.2	1	2.2	1.4	0.9	0.8	0.5	S	0.7	0.5	0.2	0.1	0.4	0.3	0.4	0.3	0.3	0.9	2.6	1.9	0.8	0.8	0.9	2.6	0.8	24
2	1.2	1.4	1.3	1.6	2.1	1.9	1.4	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.1	0.5	24
3	0	0	0	0	0	0.3	S	0	0	0	0	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0.8	0.0	24
4	0	0	0	0.1	0	S	0	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.3	0.4	0.3	0.6	0.1	24
5	0.8	0.4	0	0	S	0.3	0.6	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1.6	2.1	2.1	0.3	24
6	2.5	1.9	1.3	S	0.8	0	0	0	0	Y	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	2.5	0.3	22
7	0	1.1	S	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1	1.3	0.7	0.8	1.3	0.2	24
8	0	S	0.4	0.4	0.9	0.5	0.3	0.3	0.9	0.5	0	0	0	0	0	0	0	0	0	0	0.7	0	0	0	0.9	0.2	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	0.7	0.1	0.2	0.7	0.9	0.7	0.5	1.6	0.2	0	0.5	0	0	0	0	0	0	0	0	0	0	0	S	1.7	1.7	0.3	24
11	1.4	1.6	1.9	2.2	2.1	1.9	2.2	2.4	2.2	1	0.4	0.2	0.4	0.3	0.5	0.3	0	0.3	0.1	0.7	0.5	S	0	0	2.4	1.0	24
12	0	0	0.1	0.5	0	0.3	1.1	1	1.1	0.8	0.3	0	0	0	0	0	0	0	0.1	0	S	2.2	2.4	1.6	2.4	0.5	24
13	1.1	0.8	1	0.7	0.6	0.7	0.8	0.9	0.8	0.8	0.6	0.5	0.6	1	0.5	0.1	0.6	1.1	1.4	S	2	1.8	2.4	2.2	2.4	1.0	24
14	2	1.8	1.5	1.9	2.2	1.9	2	1.6	Y	P	P	P	C	C	C	C	1	S	1.4	0.8	0.9	1.7	1.9	2.2	1.6	20
15	1.9	1.8	2	1.7	1.8	2.8	2.4	2.7	C	C	C	C	1.6	1.5	1.1	0.7	1	S	0.7	0.5	0.9	1.4	1.4	1.1	2.8	1.5	24
16	0.7	0.6	0.8	2	2.1	2	1.5	1.3	1.2	1.3	1	0.8	0.6	0.8	0.9	0.8	S	1.1	1	1.4	1.3	1	0.9	1.1	2.1	1.1	24
17	0.8	1.7	1.1	0.9	1.4	0.9	1.2	1.5	1.2	0.7	0.4	1.2	0.7	0.4	0.4	S	0.1	0.3	0.1	0.2	P	P	0.7	0.9	1.7	0.8	22
18	0.9	1.5	1.6	2.4	4	5.5	4.6	4.1	3.6	2.8	1.2	1.2	0.7	0.6	S	0.9	0.5	0.8	0.6	0.5	0.5	0.2	0.2	P	5.5	1.8	23
19	P	P	P	R	0.1	0.7	1.6	1.3	1	0.7	0.8	0.5	0	S	0	0	0	0	0.3	1	0.7	0.5	0.7	0	1.6	0.5	20
20	0	0	0.1	0.4	0.3	0	0.2	0.1	0.1	0.2	0	0	S	0	0.2	0.2	0.1	1.5	0.3	0.2	S	0.5	0.4	0.6	1.5	0.2	24
21	1	1.2	1.4	1.1	0.9	0.8	0.1	0.2	0.4	0.3	0.7	S	0.2	0.1	0.4	0.6	0.9	0.8	0.8	0.5	0.6	0.9	0.4	0.2	1.4	0.6	24
22	0.4	0.1	0.2	0.3	0.5	0.7	0.7	1.8	2.8	2.3	S	1.4	1.5	1.5	0.6	0.5	0.1	0.2	1.3	1	0.8	0.4	1	0.8	2.8	0.9	24
23	1	2.4	5.8	6.7	6.4	***10.6***	10.2	4.5	2.2	S	0.4	0.3	0.1	0.1	0.4	0.4	0.2	0.1	0.5	0.6	1.2	1.5	1.3	1.6	***10.6***	***2.5***	24
24	1.6	1.7	1.6	1.5	1.5	1.1	0.8	0.7	S	0.8	0.3	0.3	0	0.4	0.6	0.6	0.6	0.5	0.9	0.6	1.5	2.4	5.8	3.6	5.8	1.3	24
25	5.3	6.1	4.4	4	3.7	3.6	2.5	S	0.9	0.4	0.1	0.2	0	0	0.1	0.2	0.2	0.2	0.3	0.8	0.8	1	1.8	1.7	6.1	1.7	24
26	1.6	1.1	1.2	1.2	1.4	1.5	S	2	3	3.2	2.9	2.2	0.9	0.6	0.1	0.3	0.4	0.2	1.6	1.2	1.4	1.7	2.1	3.6	3.6	1.5	24
27	2.7	2.8	2.1	1.8	2.4	S	2.9	2.6	0.9	0.6	0.2	0.3	0.2	0	0	0.1	0	0	0.1	0.6	1	0.5	0.4	0.4	2.9	1.0	24
28	1.3	2	1.8	1.7	S	0.8	1.4	0.7	0.9	0.3	0.4	0.1	0.1	0.5	0.1	0	0.1	0.3	0	0.5	0.5	0.5	0.2	1.2	2	0.7	24
29	2.8	1.2	0.9	S	1	0.9	S	S	1.7	1.4	1.1	0.9	1	0.6	0.4	0.5	0.7	0.6	0.6	0.9	2.1	2.6	2.9	2.5	2.9	1.3	24
30	2.2	1.7	S	1.5	1.2	0.9	1	1	S	0.5	0.7	0.5	0.5	0.4	0.3	0.3	0.3	0.1	0.6	0.9	1.4	3.3	1.6	1.2	3.3	1.0	24
31	1.5	S	1.4	1.7	1.5	1.2	1.1	0.9	0.7	0.4	0.4	0.2	0.4	0.3	0.2	0.1	0.6	0.5	0.7	0.6	0.7	0.5	0.7	0.8	1.7	0.7	24
HOURLY MAX	5	6	6	7	6	11	10	5	4	3	3	2	2	2	1	1	1	2	2	3	2	3	6	4			
HOURLY AVG	1.2	1.3	1.3	1.4	1.4	1.5	1.5	1.2	1.0	0.7	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.4	0.6	0.8	0.9	1.1	1.1			

STATUS FLAG CODES

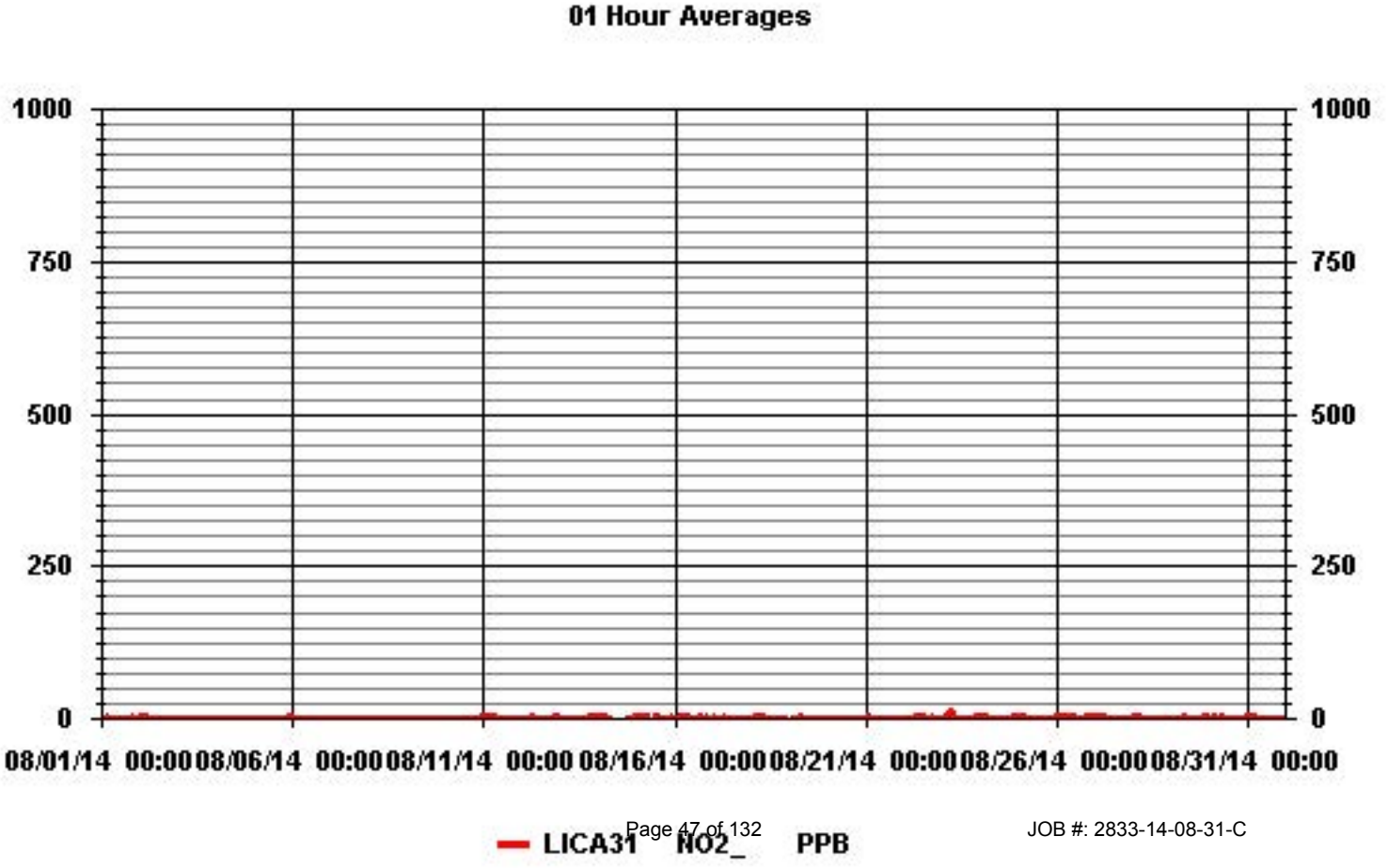
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	502					
MAXIMUM 1-HR AVERAGE:	10.6	PPB	@ HOUR(S)	5	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	2.5	PPB			ON DAY(S) VAR-VARIOUS	23
IZS CALIBRATION TIME:	36	HRS	OPERATIONAL TIME:		731	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		98.3	%
STANDARD DEVIATION:	1.11		MONTHLY AVERAGE:		0.83	PPB



JOB #: 2833-14-08-31-C

Lakeland Industry & Community Association - St. Lina Site

AUGUST 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	0.9	0.9	2.2	3	3.3	1.3	1.3	1.1	**S**	1.3	1.1	0.9	0.6	1.2	0.9	1.2	1	1	3.4	6.6	7.5	1.5	1.5	1.8	7.5	2.0	24
2	2.1	2.1	2.1	2.7	3	2.6	2.1	**S**	0.4	0.3	0.2	0.1	0	0	0.2	0	0.1	0	0	0.1	0.5	0.9	0.7	1	3	0.9	24
3	0.7	0.8	0.9	0.8	1	1.1	**S**	0.4	0	0.5	0.6	1.6	1.3	0.4	0.2	0	0	0.7	3.3	4	2.5	0.8	0.7	0.6	4	1.0	24
4	0.1	0.9	1.1	1.3	0.8	**S**	1.2	3.5	0.9	1	0	0	0	0.1	0.4	0	0.4	0.4	0.9	3.1	2	2	1.3	1.2	3.5	1.0	24
5	2.3	1.5	0.7	0.6	**S**	1.3	1.3	1	0.9	0.6	0.3	0.2	1.2	1.1	0.4	0	0.8	0.9	0.6	0.5	0.6	1.3	2.9	3.3	3.3	1.1	24
6	3.3	3.2	2.4	**S**	1.9	0.8	1.2	0	**Y**	**Y**	**Y**	0	0	0	0	0	0	0	0	0	0	0	0	0	3.3	0.6	21
7	0	**S**	**S**	1.2	0.8	0.8	1.1	0.6	0.6	0.4	0.1	0.6	0.1	0.6	0.5	0.2	0.8	0.2	3.3	1.6	5.4	6.1	1.8	2.6	6.1	1.3	24
8	1.2	**S**	1.4	1.2	2.1	1.9	1.6	1.4	1.8	1.5	1.1	0	0	1	0.8	1.6	0.3	2.5	0	0.9	2	1.2	0	0	2.5	1.1	24
9	**S**	0.4	0.6	0.6	0.4	0.3	0.2	0.2	0.4	0.1	0.4	0.4	0.4	0.1	0.5	0.2	0.3	0.3	0.4	0.6	0.3	0.7	1	**S**	1	0.4	24
10	1.7	1	1	1.4	1.6	1.6	1.3	19.1	1.3	0.8	1.6	0.8	0.2	0.5	0.2	0	0	0	0.1	2.2	0	0	**S**	2.9	19.1	1.7	24
11	2.2	2.2	2.5	3.5	4	3.5	3.4	3.3	2.9	2.4	1.2	0.7	1.8	1.1	1.2	1.1	0.7	1.2	1	1.7	1	**S**	0.7	0.6	4	1.9	24
12	0.6	0.7	1	1.4	1.2	1.3	2.2	1.9	2	2	1.9	0.8	0.5	**Y**	**Y**	0.8	0.5	1	1	1.3	**S**	3.2	3.3	2.4	3.3	1.5	22
13	1.8	1.6	1.6	1.3	1.2	1.4	1.2	1.4	1.5	1.5	1.4	1.2	1.6	1.7	1.2	0.9	1.2	2	2.1	**S**	3.1	3	3.3	3.1	3.3	1.8	24
14	3.2	2.6	2.3	2.8	3.2	3	3.5	2.5	**Y**	**P**	**P**	**P**	**C**	**C**	**C**	**C**	**C**	2.9	**S**	3.3	1.4	1.2	3.1	2.6	3.5	2.7	20
15	**P**	2.5	2.5	2	4.3	4.4	4.2	3.9	**C**	**C**	**C**	**C**	2.5	2.1	1.9	1.4	1.8	**S**	1.4	1.7	1.7	1.9	2.2	2.1	4.4	2.5	23
16	1.5	1.3	1.6	2.9	2.8	2.7	2.2	1.9	1.9	1.7	1.8	1.9	1.3	1.7	1.6	1.7	**S**	1.6	1.8	2.2	1.8	1.8	1.4	1.5	2.9	1.9	24
17	1.7	2.3	2	1.4	2.4	1.7	1.8	2.2	1.6	1.4	1.1	**S**	2.4	1.2	1	**S**	0.5	1.2	0.7	**P**	**P**	**P**	1.4	1.9	2.4	1.6	21
18	1.8	3.8	2.8	3.5	6.7	8.3	5.8	4.9	4.3	3.9	1.9	2.1	1.2	1.4	**S**	12.5	1	1.7	1.3	1.7	2.1	0.9	**P**	**P**	12.5	3.5	22
19	**P**	**P**	**R**	3.2	1.1	1.9	16.1	2.1	1.7	1.1	7.4	1.1	0.7	**S**	1	0.7	0.9	1.1	1.7	2.6	1.7	1.7	1.8	1.5	16.1	2.6	21
20	1	1.1	1.1	1.4	1.4	1.1	1.1	1.2	1.2	1.2	0.8	0.6	**S**	1.3	1	1.3	1.5	***19.9***	1.3	1.4	1.3	1.6	1.6	1.5	***19.9***	2.0	24
21	2.2	2.4	2.3	2.3	2.1	1.9	1.2	1.3	1.2	1.3	1.6	**S**	0.9	0.9	0.7	1.3	3.2	1.6	1.8	1.1	1.6	1.8	1.1	1	3.2	1.6	24
22	1.1	0.7	1.1	0.9	1.1	1.8	1.9	3	4.1	3.8	**S**	3.6	3.4	2.2	1.7	1.1	1	1.6	2.4	3.3	2.2	1.4	2.2	1.7	4.1	2.1	24
23	2	7	7.8	8.2	7.8	13.9	13.5	7.7	3.2	**S**	0.9	0.7	0.8	0.8	0.9	0.9	0.9	0.9	1.1	1.2	2.1	2.1	2.2	2.4	13.9	***3.9***	24
24	2.2	2.4	2.4	2.4	2.1	1.9	1.5	1.5	**S**	1.2	0.8	0.7	0.7	1	0.9	1	1.1	1	1.2	1.4	2.5	5.4	8.2	5.9	8.2	2.1	24
25	6.6	7.5	5.5	4.8	4.6	4.6	3.8	**S**	1.8	1.2	0.9	0.9	0.9	0.7	0.7	0.9	0.8	1.3	1.3	1.4	1.8	2.2	2.6	2.4	7.5	2.6	24
26	2.3	1.9	1.8	2	2.3	2.4	**S**	2.9	3.6	4.1	3.8	3.3	1.6	1.2	0.8	0.9	0.7	1.1	4.8	2.1	1.8	2.4	3.5	17.2	17.2	3.0	24
27	3.5	3.5	2.8	2.4	3.9	**S**	4.1	3.7	2.2	2.4	0.8	1.7	1.8	0.8	0.6	1	0.6	0.6	1.1	2.7	3.3	1.2	1.1	1	4.1	2.0	24
28	2.3	2.7	2.7	2.5	**S**	1.7	9.9	1.8	2.7	1.2	1.8	1	0.8	2.8	1.2	0.9	1.2	1.2	0.6	1.6	1.5	1.3	1	4.3	9.9	2.1	24
29	4.9	2.4	2.6	**S**	2	1.8	**S**	**S**	2.4	2.2	1.8	1.5	2	2	1.5	1.3	1.4	1.4	1.5	1.8	3.4	3.4	4	3.5	4.9	2.3	24
30	3.1	2.3	**S**	2.5	2.2	1.9	2.2	2.2	1.7	1.4	2.1	1.4	1.2	1.4	1.3	1.3	1.3	1.5	2.5	4.4	3.4	6.5	5	3	6.5	2.4	24
31	2.5	**S**	2.2	3	2.7	2.3	2.2	1.8	1.7	1.2	1.6	1.2	1.4	1.4	1	1.1	2.1	1.8	2.1	1.8	1.7	1.5	1.6	1.5	3	1.8	24
HOURLY MAX	7	8	8	8	8	14	16	19	4	4	7	4	3	3	2	13	3	20	5	7	8	7	8	17			
HOURLY AVG	2.1	2.3	2.2	2.3	2.6	2.6	3.3	2.8	1.8	1.5	1.4	1.1	1.1	1.1	0.9	1.2	0.9	1.8	1.5	2.0	2.1	2.0	2.1	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: 643

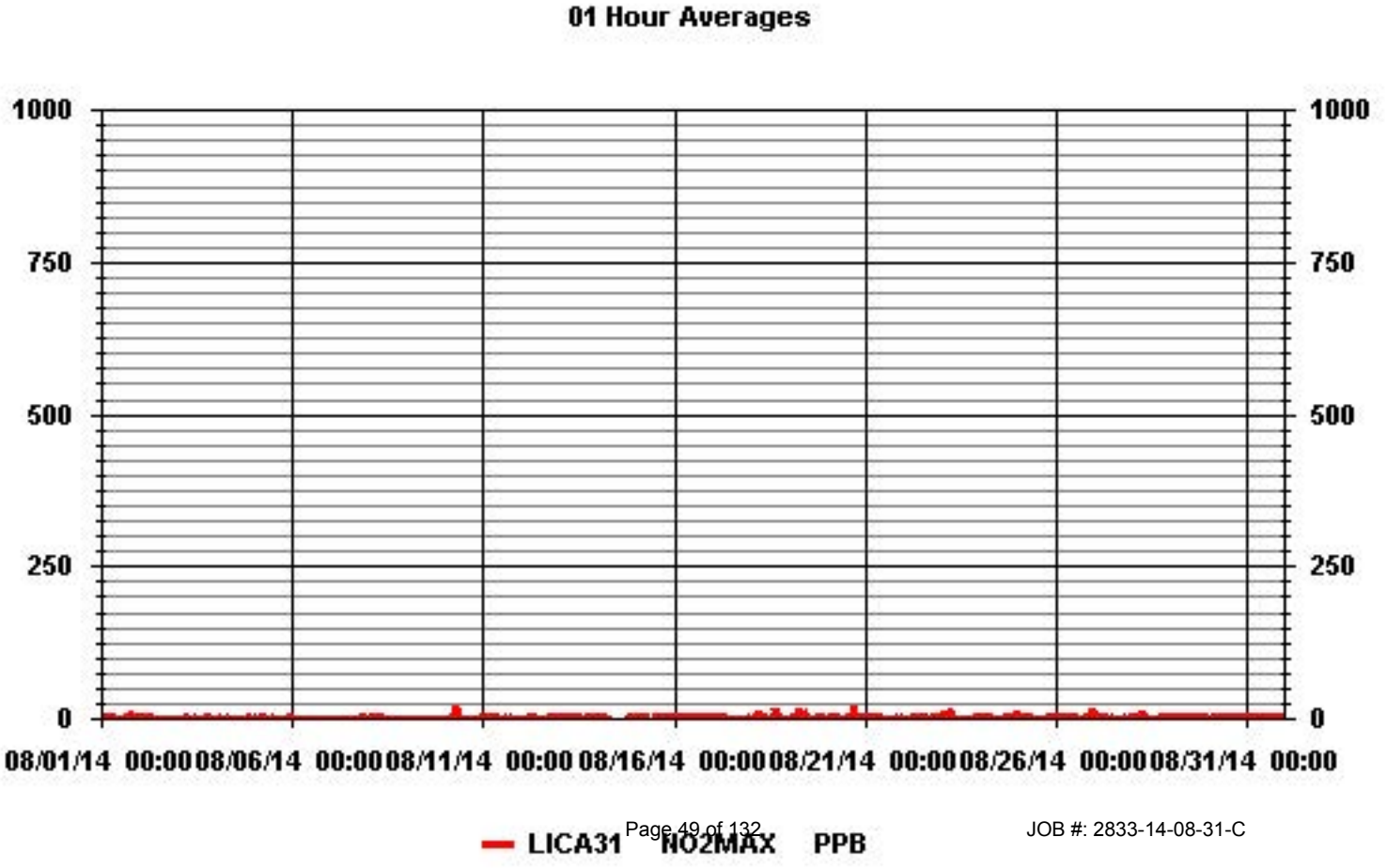
MAXIMUM INSTANTANEOUS VALUE: 19.9 PPB @ HOUR(S) 17 ON DAY(S) 20

VAR-VARIOUS

IZS CALIBRATION TIME: 36 HRS OPERATIONAL TIME: 726 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 2.02



JOB #: 2833-14-08-31-C

LICA31
NO2_ / WDR Joint Frequency Distribution (Percent)

August 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	3.95	3.22	5.13	5.27	2.63	3.22	4.69	10.70	9.23	4.10	6.89	11.14	8.35	9.23	7.77	4.39	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.95	3.22	5.13	5.27	2.63	3.22	4.69	10.70	9.23	4.10	6.89	11.14	8.35	9.23	7.77	4.39	

Calm : .00 %

Total # Operational Hours : 682

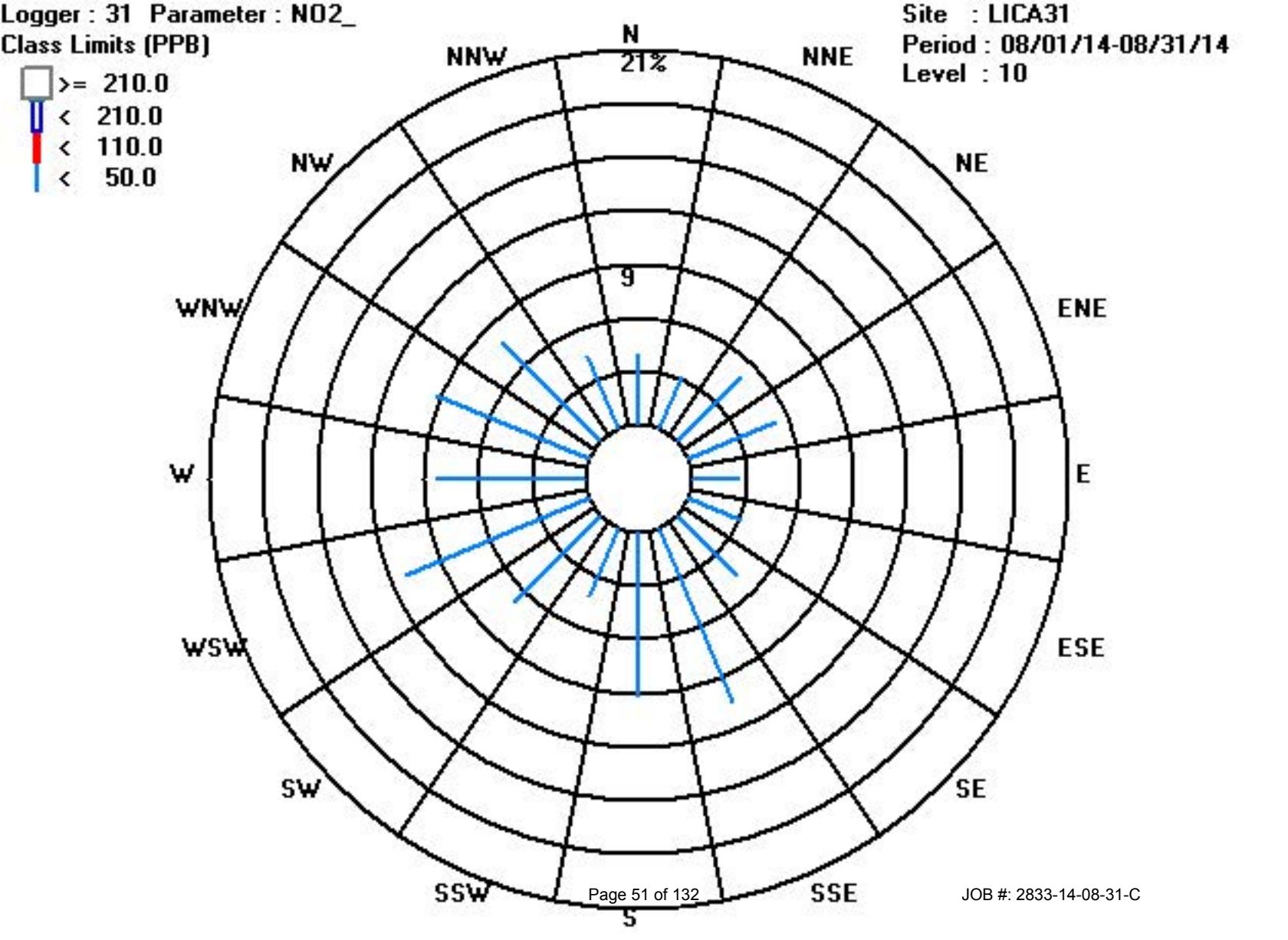
Distribution By Samples

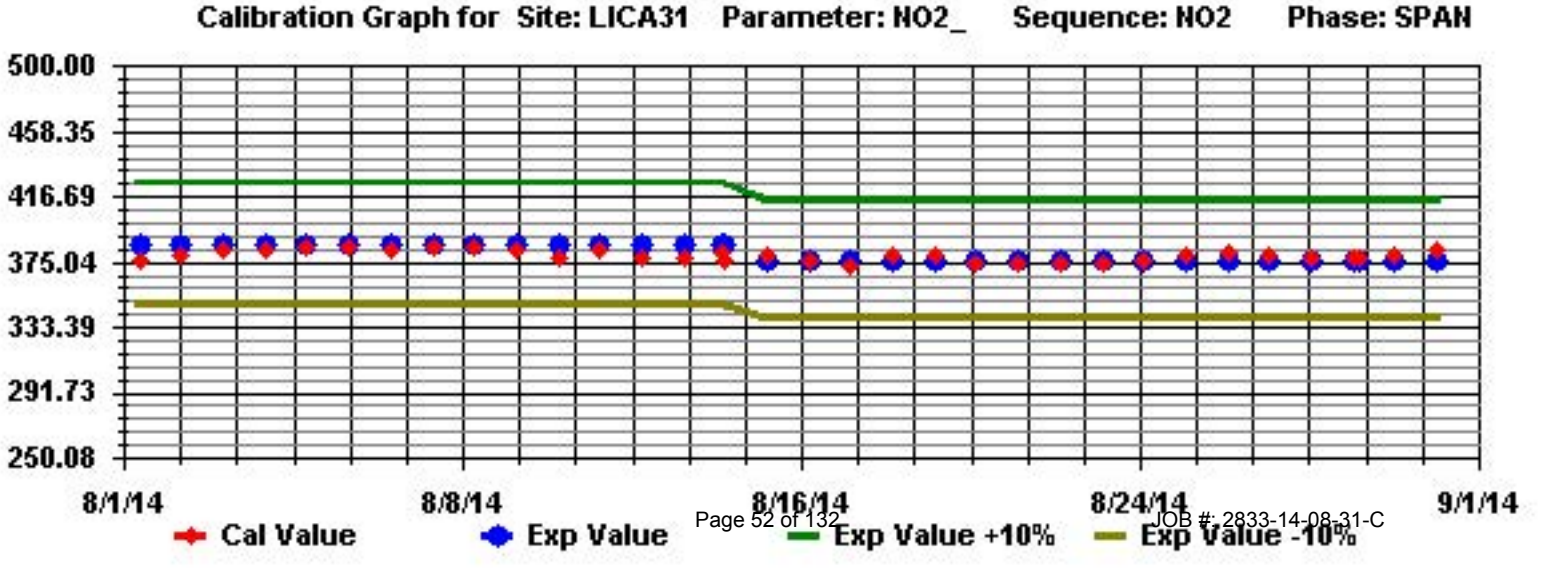
Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	27	22	35	36	18	22	32	73	63	28	47	76	57	63	53	30	682
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	27	22	35	36	18	22	32	73	63	28	47	76	57	63	53	30	

Calm : .00 %

Total # Operational Hours : 682


Logger : 31 Parameter : NO2_
Class Limits (PPB)
>= 210.0
< 210.0
< 110.0
< 50.0
Site : LICA31
Period : 08/01/14-08/31/14
Level : 10
N
21%
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
9


Calibration Graph for Site: LICA31 Parameter: NO2_ Sequence: NO2 Phase: SPAN
500.00
458.35
416.69
375.04
333.39
291.73
250.08
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

NITRIC OXIDE (NO) hourly averages in ppb

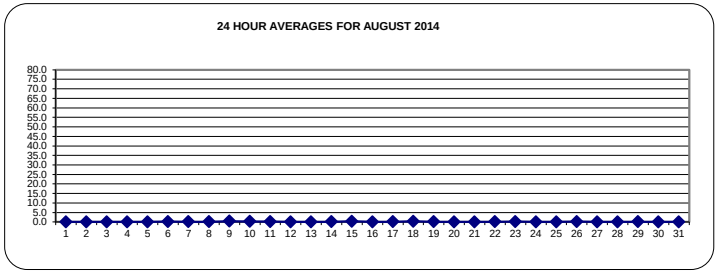
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	0.1	0.1	0.2	0	0	0	0.2	0.0	24
2	0	0	0	0	0	0	0.2	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.0	24
3	0	0	0	0	0	0	**S**	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
4	0	0	0	0	0	**S**	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.0	24
5	0	0	0	0	**S**	0	0.2	0	0.1	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0.2	0	0	0.2	0.0	24
6	0.2	0.1	0.1	**S**	0.3	0.2	1	0.3	0.4	**Y**	**Y**	0	0.1	0	0.2	0	0.1	0	0	0	0	0	0	0	1	0.1	22
7	0	0.1	**S**	0	0	0	0	0.3	0	0.2	0.2	0.3	0	0	0.1	0	0.1	0	0.1	0	0.1	0	0	0	0.3	0.1	24
8	0	**S**	0	0	0	0.1	0.5	0.3	0.3	0	0.1	0	0	0.1	0.2	0.1	0	0	0	0	0	0	0	0	0.5	0.1	24
9	**S**	0.3	0.5	0.4	0.3	0.6	0.6	0.6	0.4	0.5	0.4	0.3	0.5	0.2	0.4	0.3	0.4	0.6	0.5	0.5	0.4	0.2	0	**S**	0.6	***0.4***	24
10	0.2	0	0.3	0.1	0.1	0.2	0.1	1.9	0.5	0.5	0.5	0.2	0.2	0.2	0.1	0.1	0.1	0	0	0.3	0.1	0.2	**S**	0	1.9	0.3	24
11	0	0	0	0.2	0.3	0.3	0.7	0.7	0.7	0	0	0	0	0.2	0.2	0	0	0.2	0	0	0	**S**	0	0	0.7	0.2	24
12	0	0	0	0	0	0	0.3	0.4	0.2	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0.4	0.0	24
13	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
14	0	0	0	0	0	0	0	0	**Y**	**P**	**P**	**P**	**C**	**C**	**C**	**C**	**C**	0.2	**S**	0.2	0.2	0.4	0.3	0.3	0.4	0.1	20
15	0.3	0.5	0.5	0.2	0.5	0.3	0.6	0.4	**C**	**C**	**C**	**C**	0.8	0.6	0.3	0.6	0.7	**S**	0	0	0	0	0	0	0.8	0.3	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0.1	0	0	0	0.1	0.1	0	0.1	0.0	24
17	0	0	0	0	0	0	0	0.1	0	0	0	0	0.2	0.3	0	**S**	0	0	0	0	**P**	**P**	1.3	0	1.3	0.1	22
18	0	0.1	0	0	0	0.4	1.6	***2***	1.3	0.4	0.2	0	0	0.2	**S**	0.2	0.2	0.1	0	0	0	0	0	**P**	***2***	0.3	23
19	**P**	**P**	**P**	**R**	0	0	0.5	0.2	0.1	0.1	0.2	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0.5	0.1	20
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	0.1	0.1	0.2	0.2	0	0	0	0	0	0	0.2	0.0	24
22	0.2	0	0	0.1	0	0	0	0.3	0.7	0.6	**S**	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0.1	24
23	0	0	0	0	0	0.5	1.6	1.2	0.6	**S**	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	1.6	0.2	24
24	0	0	0	0	0	0	0.1	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
25	0	0	0	0	0	0	0.1	**S**	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.0	24
26	0	0	0	0	0	0	**S**	0.3	0.9	0.9	0.6	0	0	0	0	0	0	0	0.1	0	0	0	0	0.2	0.9	0.1	24
27	0	0	0.1	0	0	**S**	0.3	0.5	0.2	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.1	24
28	0	0	0	0	**S**	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.0	24
29	0	0	0	**S**	0	0	**S**	**S**	0.5	0.3	0	0	0.1	0.2	0.1	0	0.1	0.1	0	0	0.1	0	0	0	0.5	0.1	24
30	0	0.1	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.1	0.0	24
31	0	**S**	0	0	0	0	0.1	0.2	0.2	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.2	0.0	24
HOURLY MAX	0	1	1	0	1	1	2	2	1	1	1	0	1	1	0	1	1	1	1	1	0	0	1	0			
HOURLY AVG	0.0	0.0	0.1	0.0	0.1	0.1	0.3	0.4	0.3	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0			

STATUS FLAG CODES

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

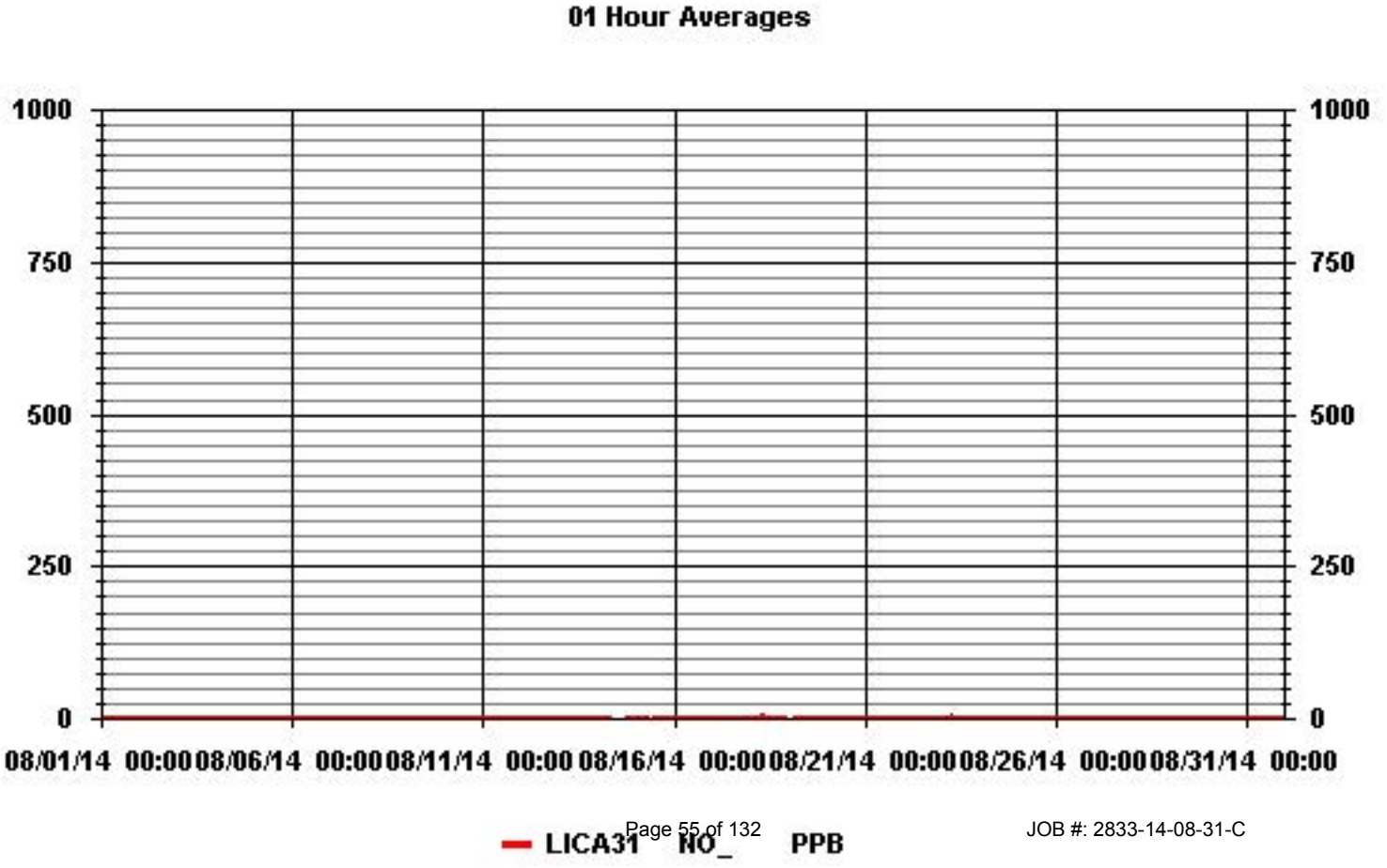
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR NA PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	177					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	7	ON DAY(S)	18
MAXIMUM 24-HR AVERAGE:	0.4	PPB			ON DAY(S)	9
					VAR-VARIOUS	

IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:	731	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	98.3	%
STANDARD DEVIATION:	0.22		MONTHLY AVERAGE:	0.09	PPB



JOB #: 2833-14-08-31-C

Lakeland Industry & Community Association - St. Lina Site

AUGUST 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	0.4	0.4	0.6	0.4	0.5	0.6	0.6	0.6	**S**	0.5	0.6	0.5	0.4	0.8	0.4	0.7	0.6	0.5	0.9	2.3	4	0.5	0.5	0.5	4	0.8	24
2	0.4	1	0.4	0.4	0.4	0.7	1	**S**	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0.2	0.2	0.2	0.1	0.1	0.1	0	1	0.3	24
3	0.4	0.3	0.2	0.2	0.1	0.4	**S**	0.6	0.8	0.7	0.5	0.6	0.3	0.3	0.6	0.5	0.5	0.7	2.4	2.7	0.3	0.3	0.4	0.3	2.7	0.6	24
4	0.5	0.3	0.3	0.3	0.4	**S**	0.5	2.4	0.5	1.1	0.3	0.4	0.3	0.5	0.7	0.3	0.7	0.5	0.4	0.5	0.7	0.4	0.5	0.4	2.4	0.6	24
5	0.3	0.3	0.3	0.3	**S**	0.5	1	0.7	0.6	0.5	0.5	0.6	0.8	0.5	0.6	0.6	0.9	0.6	0.8	0.9	0.6	0.9	0.5	0.6	1	0.6	24
6	0.8	0.7	0.9	**S**	0.8	0.8	1.7	0.9	**Y**	**Y**	**Y**	1.2	0.8	0.8	0.8	0.6	0.8	0.8	0.7	0.7	0.7	0.5	0.8	0.5	1.7	0.8	21
7	0.5	**S**	**S**	0.5	0.5	0.8	1	1	1	1.3	0.9	1.3	0.7	1	1.4	0.8	1.7	0.6	1.7	1.7	3	2.7	0.3	1	3	1.2	24
8	0.2	**S**	0.8	0.4	0.6	0.6	1.7	1.2	0.9	0.4	0.8	0.6	0.5	1.1	1	1	0.6	1.2	0.4	0.7	0.4	0.7	0.4	0.5	1.7	0.7	24
9	**S**	1	1	0.9	1.1	1.3	1.2	1.3	1	1.2	1.2	0.9	1.1	0.9	1.2	0.9	1.1	1.3	1.1	1.1	1.1	0.8	0.8	**S**	1.3	1.1	24
10	0.7	0.5	0.8	0.8	0.8	0.9	1	***50.2***	1.2	1.4	1.1	1.1	0.8	0.9	1	0.8	0.8	0.7	0.6	1.6	0.6	0.9	**S**	0.7	***50.2***	***3.0***	24
11	0.7	0.7	0.7	1	2.4	2	2.5	1.5	1.8	0.9	0.4	0.7	4.1	1.5	1.5	0.7	0.5	1.4	0.6	0.6	0.5	**S**	0.6	0.3	4.1	1.2	24
12	0.4	0.3	0.3	0.7	0.4	0.4	1	1.2	1	0.4	0.4	0.4	0.6	**P**	**P**	0.5	0.5	0.4	0.4	0.3	**S**	0.7	0.4	0.6	1.2	0.5	22
13	0.4	0.6	0.6	0.6	0.3	0.3	0.6	0.3	0.6	0.4	0.4	0.5	0.6	0.7	0.6	0.3	0.6	0.6	0.4	**S**	0.3	0.3	0.2	0.4	0.7	0.5	24
14	0.3	0.3	0.4	0.6	0.4	1.3	1.6	0.5	**Y**	**P**	**P**	**P**	**C**	**C**	**C**	**C**	**C**	1.2	**S**	0.9	0.9	1	1	1.1	1.6	0.8	20
15	**P**	1.2	1.3	0.9	2	1.9	1.4	1.2	**C**	**C**	**C**	**C**	1.5	1.2	0.9	1.3	1.3	**S**	0.3	0.3	0.3	0.4	0	0	2	1.0	23
16	0.2	0.1	0.3	0.2	0.3	0.3	0.3	0.1	0.2	0.5	0.3	0.3	0.1	0.3	0.5	0.3	**S**	0.7	0.6	0.6	0.6	0.6	0.8	0.6	0.8	0.4	24
17	0.3	0.6	0.5	0.5	0.5	0.6	0.4	1	0.8	0.4	0.5	**S**	1.8	1.4	0.8	**S**	0.7	0.6	0.5	**P**	**P**	**P**	14.2	0.3	14.2	1.4	21
18	0.4	0.8	0.8	0.5	2.5	3.2	4	2.7	2.4	1.1	0.9	0.7	0.7	0.9	**S**	11.9	1.4	0.8	0.7	0.7	0.5	0.5	**P**	**P**	11.9	1.8	22
19	**P**	**P**	**P**	**R**	0.3	0.9	20	1.6	0.9	0.7	12.1	0.7	0.6	**S**	0.3	0	0	0.2	0.7	0.5	0.4	0	0.2	0	20	2.1	20
20	0	0.2	0.2	0	0	0.3	0.2	0	0.1	0.5	0	0.7	**S**	0.5	0.5	1.2	0.6	37.3	0.6	0.3	0.6	0.3	0.3	0.3	37.3	1.9	24
21	0.5	0.3	0.5	0.4	0.4	0.4	0.2	0.5	0.4	0.4	0.6	**S**	0.8	0.4	1.1	0.7	1.6	0.6	0.6	0.7	0.6	0.7	0.6	0.4	1.6	0.6	24
22	0.8	0.6	0.5	0.8	0.5	0.7	0.7	1	1.3	1.3	**S**	1.3	0.7	0.7	0.5	0.4	0.2	0.2	0.9	0.8	0.3	0.3	0.3	0.5	1.3	0.7	24
23	0.6	0.5	0.4	0.6	0.3	2.2	3	2.4	1.1	**S**	0.7	0.5	0.7	0.4	0.7	0.7	0.5	0.3	0.7	0.5	0.7	0.8	0.6	0.7	3	0.9	24
24	0.8	0.7	0.6	0.6	0.6	0.6	0.9	0.7	**S**	0.8	0.4	0.6	0.1	0.4	0.6	0.4	0.4	0.6	0.6	0.2	0.3	0.3	0.4	0.4	0.9	0.5	24
25	0.6	0.6	0.4	0.4	0.6	0.6	0.7	**S**	1	0.5	0.6	0.6	0.2	0.5	0.3	0.4	0.5	0.2	0.1	0.5	0.7	0.6	0.4	0.4	1	0.5	24
26	0.6	0.3	0.7	0.4	0.4	0.4	**S**	1.3	1.7	2.6	2	0.7	0.6	0.5	0.4	0.4	0.7	0.5	1.3	0.4	0.5	0.5	0.6	16.1	16.1	1.5	24
27	0.8	0.5	0.6	0.5	0.5	**S**	1.6	2.2	1.4	2.9	0.5	1	1.1	0.6	0.5	0.8	0.5	0.3	0.2	1.6	0.9	0.4	0.4	0.6	2.9	0.9	24
28	0.4	0.6	0.4	0.4	**S**	0.3	16.9	1.3	3.4	0.3	1.3	1	0.7	1.4	0.4	0.5	0.5	1	0.3	0.1	0.3	0.2	0.3	0.3	16.9	1.4	24
29	0.3	0.1	0.1	**S**	0.1	0.3	**S**	**S**	1.2	1.2	0.7	0.6	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.6	0.5	0.6	0.5	1.2	0.6	24
30	0.4	0.9	**S**	0.5	0.2	0.3	0.7	1	0.5	0.1	1.8	0.7	1.2	1.2	0.4	0.7	0.7	0.1	0.5	0.4	0.4	3	1.8	0.1	3	0.8	24
31	0.1	**S**	0.6	0.4	0.5	0.3	0.8	0.9	0.9	0.7	0.6	0.4	0.8	0.6	0.6	0.3	1.6	0.6	0.6	0.3	0.6	0.4	0.5	0.7	1.6	0.6	24
HOURLY MAX	1	1	1	1	3	3	20	50	3	3	12	1	4	2	2	12	2	37	2	3	4	3	14	16			
HOURLY AVG	0.5	0.5	0.5	0.5	0.6	0.8	2.4	2.9	1.0	0.9	1.1	0.7	0.8	0.8	0.7	1.0	0.7	1.9	0.7	0.8	0.7	0.7	1.0	1.0			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 667

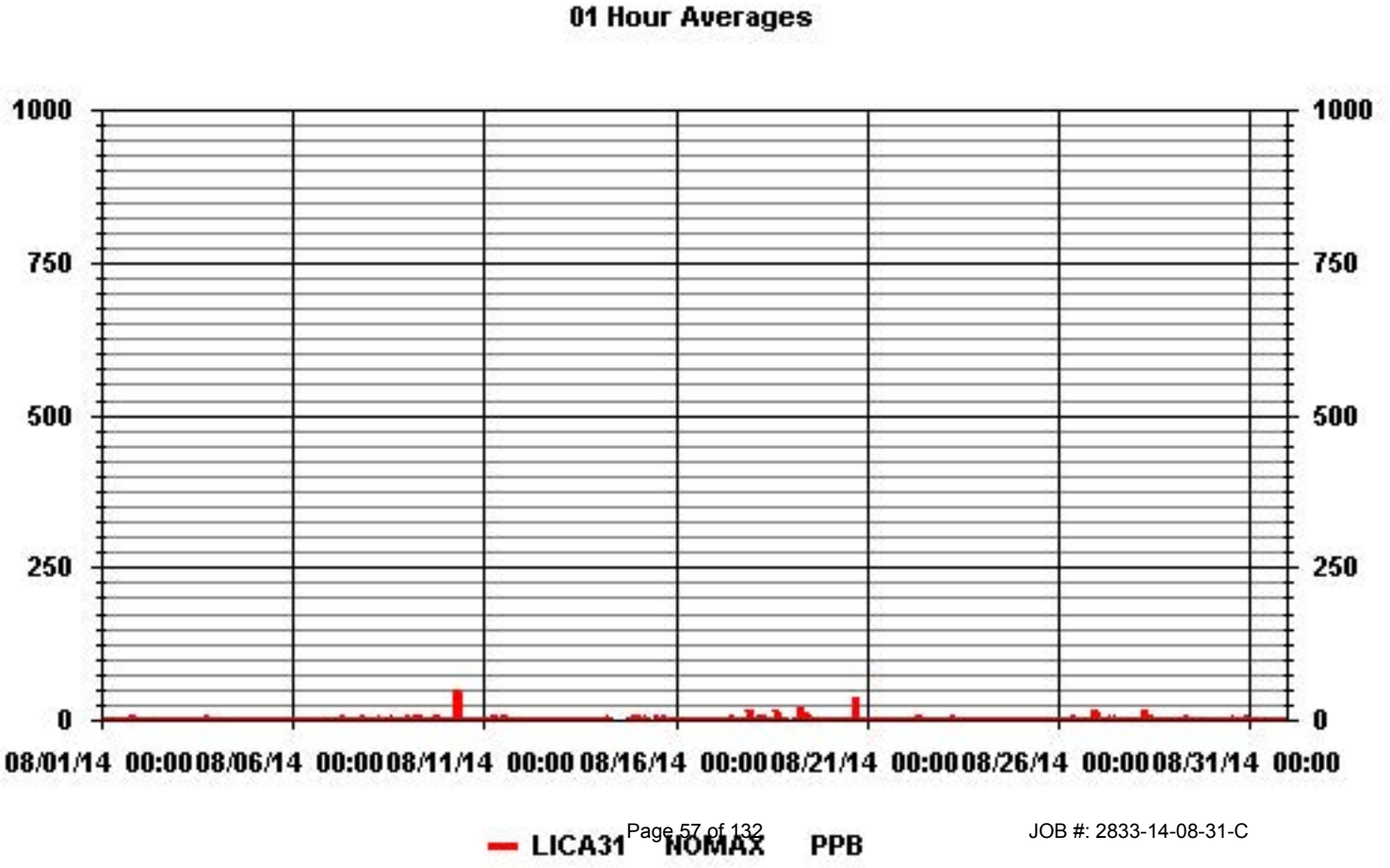
MAXIMUM INSTANTANEOUS VALUE: 50.2 PPB @ HOUR(S) 7 ON DAY(S) 10

VAR-VARIOUS

IZS CALIBRATION TIME: 36 HRS OPERATIONAL TIME: 725 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 2.78



JOB #: 2833-14-08-31-C

LICA31
NO_ / WDR Joint Frequency Distribution (Percent)

August 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	3.94	3.21	5.11	5.26	2.63	3.21	4.67	10.67	9.21	4.09	6.87	11.11	8.47	9.21	7.74	4.53	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	3.94	3.21	5.11	5.26	2.63	3.21	4.67	10.67	9.21	4.09	6.87	11.11	8.47	9.21	7.74	4.53	

Calm : .00 %

Total # Operational Hours : 684

Distribution By Samples

Direction

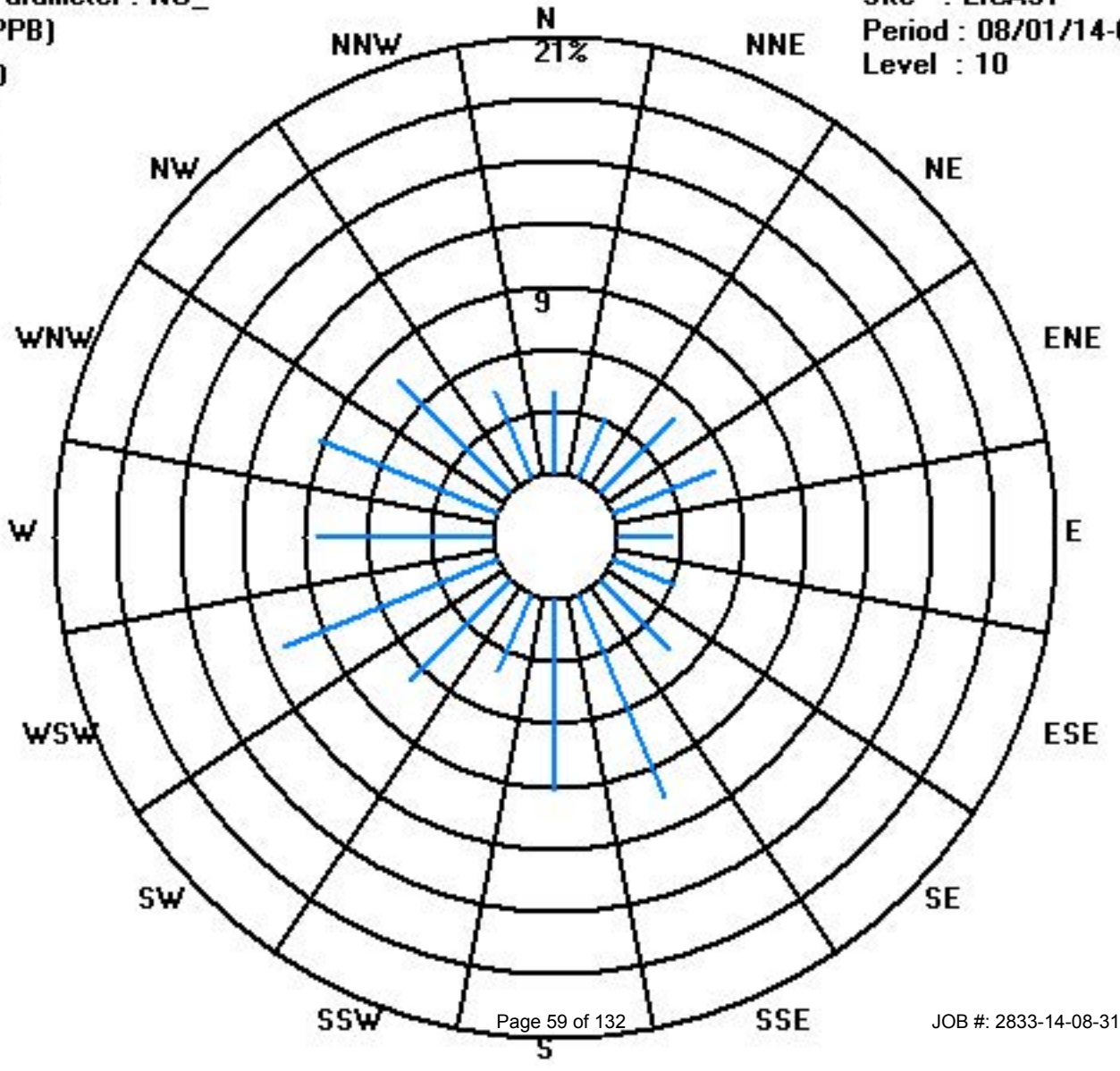
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	27	22	35	36	18	22	32	73	63	28	47	76	58	63	53	31	684
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	27	22	35	36	18	22	32	73	63	28	47	76	58	63	53	31	

Calm : .00 %

Total # Operational Hours : 684

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

Site : LICA31
Period : 08/01/14-08/31/14
Level : 10



JOB #: 2833-14-08-31-C

Oxides of Nitrogen

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

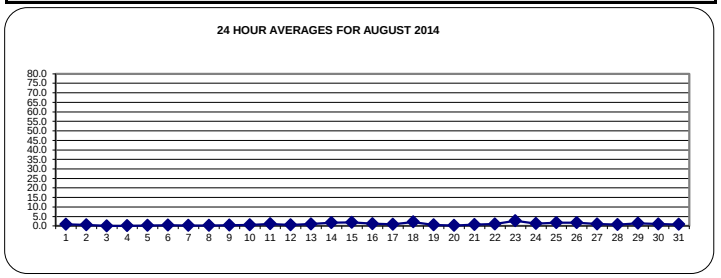
OXIDES OF NITROGEN (NOx) hourly averages in ppb

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	0.3	0.2	1	2.2	1.4	0.9	0.8	0.5	S	0.7	0.5	0.2	0.1	0.4	0.3	0.4	0.3	0.3	1	2.7	2.1	0.8	0.8	0.9	2.7	0.8	24
2	1.2	1.4	1.3	1.6	2.1	1.9	1.6	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.1	0.5	24
3	0	0	0	0	0	0.3	S	0	0.1	0	0	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0.8	0.1	24
4	0	0	0	0.1	0	S	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.3	0.4	0.3	1	0.1	24
5	0.8	0.4	0	0	S	0.3	0.8	0.1	0.2	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0.3	1.6	2.1	2.1	0.3	24
6	2.7	2	1.4	S	1.1	0.2	1	0.3	0.4	Y	Y	0	0.1	0	0.2	0	0.1	0	0	0	0	0	0	0	2.7	0.5	22
7	0	1.2	S	0.2	0	0	0	0.3	0	0.2	0.2	0.3	0	0	0.1	0	0.1	0	0.1	0.2	1.1	1.3	0.7	0.8	1.3	0.3	24
8	0	S	0.4	0.4	0.9	0.6	0.8	0.6	1.2	0.5	0.1	0	0	0.1	0.2	0.1	0	0	0	0	0.7	0	0	0	1.2	0.3	24
9	S	0.3	0.5	0.4	0.3	0.6	0.6	0.6	0.4	0.5	0.4	0.3	0.5	0.2	0.4	0.3	0.4	0.6	0.5	0.5	0.4	0.2	0	S	0.6	0.4	24
10	0.9	0.1	0.5	0.8	1	0.9	0.6	3.5	0.7	0.5	1	0.2	0.2	0.2	0.1	0.1	0.1	0	0	0.3	0.1	0.2	S	1.7	3.5	0.6	24
11	1.4	1.6	1.9	2.4	2.4	2.2	2.9	3.1	2.9	1	0.4	0.2	0.4	0.5	0.7	0.3	0	0.5	0.1	0.7	0.5	S	0	0	3.1	1.1	24
12	0	0	0.1	0.5	0	0.3	1.4	1.4	1.3	0.8	0.3	0	0	0	0	0	0	0	0.1	0	S	2.2	2.4	1.6	2.4	0.5	24
13	1.1	0.8	1	0.7	0.6	0.7	0.8	0.9	0.8	0.8	0.6	0.5	0.6	1	0.5	0.1	0.6	1.1	1.4	S	2	1.8	2.4	2.2	2.4	1.0	24
14	2	1.8	1.5	1.9	2.2	1.9	2	1.6	Y	P	P	P	C	C	C	C	C	1.2	S	1.6	1	1.3	2	2.2	2.2	1.7	20
15	2.2	2.3	2.5	1.9	2.3	3.1	3	3.1	C	C	C	C	2.4	2.1	1.4	1.3	1.7	S	0.7	0.5	0.9	1.4	1.4	1.1	3.1	1.9	24
16	0.7	0.6	0.8	2	2.1	2	1.5	1.3	1.2	1.3	1	0.8	0.6	0.8	0.9	0.8	S	1.2	1	1.4	1.3	1.1	1	1.1	2.1	1.2	24
17	0.8	1.7	1.1	0.9	1.4	0.9	1.2	1.6	1.2	0.7	0.4	1.2	0.9	0.7	0.4	S	0.1	0.3	0.1	0.2	P	P	2	0.9	2	0.9	22
18	0.9	1.6	1.6	2.4	4	5.9	6.2	6.1	4.9	3.2	1.4	1.2	0.7	0.8	S	1.1	0.7	0.9	0.6	0.5	0.5	0.2	0.2	P	6.2	2.1	23
19	P	P	P	R	0.1	0.7	2.1	1.5	1.1	0.8	1	0.5	0	S	0	0	0	0	0.3	1	0.7	0.5	0.7	0	2.1	0.6	20
20	0	0	0.1	0.4	0.3	0	0.2	0.1	0.1	0.2	0	0	S	0	0.2	0.2	0.1	1.5	0.3	0.2	0.4	0.5	0.4	0.6	1.5	0.3	24
21	1	1.2	1.4	1.1	0.9	0.8	0.1	0.2	0.4	0.3	0.7	S	0.2	0.1	0.5	0.7	1.1	1	0.8	0.5	0.6	0.9	0.4	0.2	1.4	0.7	24
22	0.6	0.1	0.2	0.4	0.5	0.7	0.7	2.1	3.5	2.9	S	1.6	1.5	1.5	0.6	0.5	0.1	0.2	1.3	1	0.8	0.4	1	0.8	3.5	1.0	24
23	1	2.4	5.8	6.7	6.4	11.1	***11.8***	5.7	2.8	S	0.4	0.3	0.1	0.1	0.4	0.4	0.2	0.1	0.6	0.6	1.2	1.5	1.3	1.6	***11.8***	***2.7***	24
24	1.6	1.7	1.6	1.5	1.5	1.1	0.9	0.7	S	0.8	0.3	0.3	0	0.4	0.6	0.6	0.6	0.5	0.9	0.6	1.5	2.4	5.8	3.6	5.8	1.3	24
25	5.3	6.1	4.4	4	3.7	3.6	2.6	S	1.3	0.4	0.1	0.2	0	0	0.1	0.2	0.2	0.2	0.3	0.8	0.8	1	1.8	1.7	6.1	1.7	24
26	1.6	1.1	1.2	1.2	1.4	1.5	S	2.3	3.9	4.1	3.5	2.2	0.9	0.6	0.1	0.3	0.4	0.2	1.7	1.2	1.4	1.7	2.1	3.8	4.1	1.7	24
27	2.7	2.8	2.2	1.8	2.4	S	3.2	3.1	1.1	0.7	0.2	0.3	0.2	0	0	0.1	0	0	0.1	0.6	1	0.5	0.4	0.4	3.2	1.0	24
28	1.3	2	1.8	1.7	S	0.8	1.7	0.7	0.9	0.3	0.4	0.1	0.1	0.5	0.1	0	0.1	0.3	0	0.5	0.5	0.5	0.2	1.2	2	0.7	24
29	2.8	1.2	0.9	S	1	0.9	S	S	2.2	1.7	1.1	0.9	1.1	0.8	0.5	0.5	0.8	0.7	0.6	0.9	2.2	2.6	2.9	2.5	2.9	1.4	24
30	2.2	1.8	S	1.5	1.2	0.9	1	1	0.6	0.5	0.7	0.5	0.5	0.4	0.3	0.3	0.3	0.1	0.6	0.9	1.4	3.4	1.6	1.2	3.4	1.0	24
31	1.5	S	1.4	1.7	1.5	1.2	1.2	1.1	0.9	0.4	0.4	0.2	0.5	0.3	0.2	0.1	0.6	0.5	0.7	0.6	0.7	0.5	0.7	0.8	1.7	0.8	24
HOURLY MAX	5	6	6	7	6	11	12	6	5	4	4	2	2	2	1	1	2	2	2	3	2	3	6	4			
HOURLY AVG	1.3	1.3	1.3	1.4	1.5	1.6	1.8	1.6	1.3	0.9	0.6	0.5	0.4	0.4	0.3	0.3	0.3	0.4	0.5	0.6	0.8	0.9	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

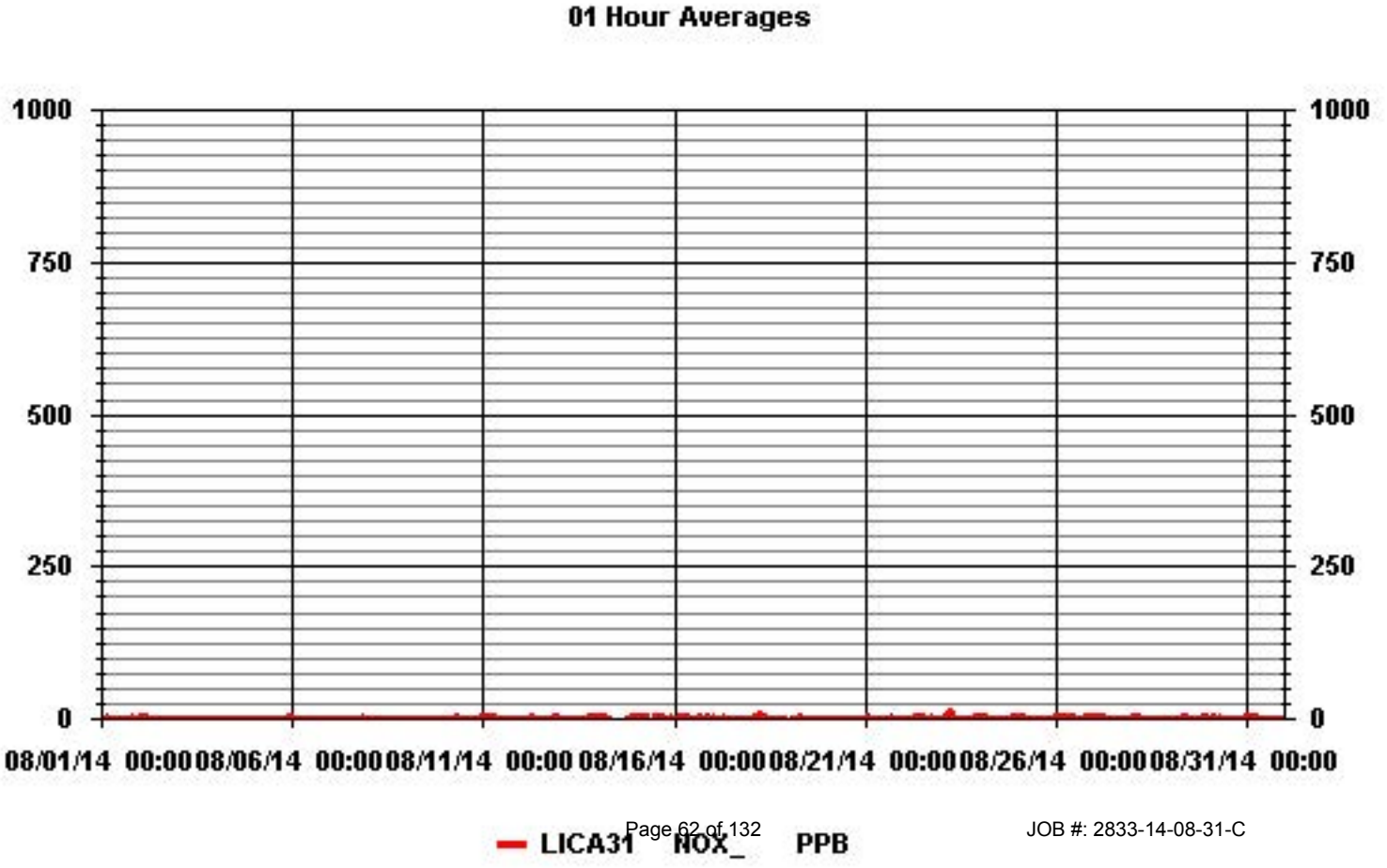


OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR NA PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	556					
MAXIMUM 1-HR AVERAGE:	11.8	PPB	@ HOUR(S)	6	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	2.7	PPB			ON DAY(S) VAR-VARIOUS	23
IZS CALIBRATION TIME:	34	HRS	OPERATIONAL TIME:		731	HRS
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:		98.3	%
STANDARD DEVIATION:	1.20		MONTHLY AVERAGE:		0.92	PPB



JOB #: 2833-14-08-31-C

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0.9	0.9	2.2	3	3.3	1.6	1.4	1.4	**S**	1.4	1.4	1.1	0.6	1.6	1.1	1.3	1.2	1.2	4.3	8.5	10.9	1.5	1.5	1.5	10.9	2.3	24
2	2	2.2	1.9	2.5	2.8	2.5	2.3	**S**	0.3	0.1	0	0	0	0	0	0	0	0	0	0	0.1	0.6	0.3	0.3	2.8	0.8	24
3	0.3	0.3	0.3	0.4	0.6	0.8	**S**	0.7	0.1	0.7	0.7	1.6	0.8	0.1	0.2	0	0	0.9	5.5	6.1	2.1	0.7	0.5	0.1	6.1	1.0	24
4	0	0.5	0.5	1.1	0.5	**S**	1.3	5.7	0.9	1.6	0	0	0	0.2	0.6	0	1	0.8	1	3.4	2.4	2.1	1.5	1.1	5.7	1.1	24
5	2.1	1.3	0.2	0.4	**S**	1.3	1.4	0.9	0.8	0.7	0.2	0.1	1	0.7	0.4	0	0.5	0.8	0.5	0.4	0.7	1.5	2.8	3.2	3.2	1.0	24
6	3.4	3.3	2.3	**S**	2.1	1.1	2.4	0	**Y**	**Y**	**Y**	0	0	0	0	0	0	0	0	0	0	0	0	0	3.4	0.7	21
7	0	**S**	**S**	0.8	0.7	1	1.5	1	1.2	0.9	0.4	1.5	0.2	1.3	1.4	0.4	2.4	0.2	4.7	3	8.1	8.3	1.7	3.3	8.3	2.0	24
8	1.2	**S**	1.6	1.1	1.9	1.9	2.5	1.9	2.1	1.5	0.8	0	0	1.6	1.3	1.9	0.6	3.2	0	0.6	1.4	1.2	0	0	3.2	1.2	24
9	**S**	0.9	0.8	0.8	0.8	0.8	0.6	0.8	0.6	0.6	1.1	0.4	0.8	0.4	1.2	0.6	0.4	1.3	0.7	1.1	1	0.9	0.7	**S**	1.3	0.8	24
10	1.8	1.1	1.2	1.6	1.5	1.5	1.5	***60.6***	1.9	1.5	2.1	1.1	0.5	0.5	0.7	0.1	0.1	0	0.2	3.2	0	0	**S**	3.4	***60.6***	3.7	24
11	2.4	2.4	2.7	4.3	6	5.2	5.5	4.5	4.4	3.1	1.3	1.2	4.5	2	2.3	1.7	0.7	2.5	1.3	1.6	1	**S**	0.8	0.5	6	2.7	24
12	0.3	0.5	0.7	1.1	0.8	1.1	2.7	2.4	2	1.6	1.5	0.2	0.4	**P**	**P**	0.7	0.2	0.7	0.9	0.7	**S**	3	3	2.4	3	1.3	22
13	1.8	1.5	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.2	1.1	1.6	2	1.2	0.9	1.3	2	2.3	**S**	2.9	2.5	3	2.9	3	1.8	24
14	2.8	2.6	2.1	2.6	3.3	3.6	4.8	2.6	**Y**	**P**	**P**	**P**	**C**	**C**	**C**	**C**	**C**	3.2	**S**	3.8	2	2	3.9	3.4	4.8	3.1	20
15	**P**	3.2	3.1	2.8	6	5.9	4.6	4.3	**C**	**C**	**C**	**C**	3.8	3.1	2.6	2.5	2.8	**S**	1.5	1.5	1.5	2.2	2	1.9	6	3.1	23
16	1.3	1.4	1.6	2.9	2.8	2.7	2.1	1.9	1.9	2.3	1.7	1.9	1.3	2	1.5	1.6	**S**	2.1	1.8	2.6	2	2.1	1.5	1.8	2.9	1.9	24
17	1.6	2.4	2	1.6	2.2	1.8	1.9	3	2	1.7	1	**S**	3.9	1.5	1.2	**S**	1.1	1.2	0.9	**P**	**P**	**P**	14.3	1.5	14.3	2.5	21
18	1.8	3.9	2.9	3.6	9.2	11	9.4	7.1	6.3	4.5	2.2	2.2	1.6	2.1	**S**	23	1.8	2.3	1.3	1.9	2	1	**P**	**P**	23	***4.8***	22
19	**P**	**P**	**P**	**R**	0.8	2.4	35.4	2.8	2	1.5	19.7	1.4	0.7	**S**	0.9	0.3	0.3	0.9	1.9	2.7	1.4	1.1	1.5	1.1	35.4	4.1	20
20	0.5	0.8	0.7	1.1	1	1	1.3	1	0.8	1	0.5	1.1	**S**	1	0.8	1.9	1.4	53.6	1.2	0.8	1.1	1.2	1.1	1.3	53.6	3.3	24
21	1.6	1.8	2.1	1.7	1.6	1.4	0.8	1.1	1	1.1	1.9	**S**	1.1	0.8	1.6	1.3	4.2	1.8	2.1	1.1	1.8	2.2	1.1	0.8	4.2	1.6	24
22	1.6	1	1.1	1.4	1.1	2	2.1	3.4	4.8	4.8	**S**	4.6	3.7	2.2	1.4	1.2	1	1.5	3	3.9	2.3	1.2	1.7	1.5	4.8	2.3	24
23	1.7	6.7	7.4	7.7	7.5	15.6	15.5	9.8	4	**S**	1.2	1	0.8	0.6	1.1	1	0.6	0.9	1.2	1.2	2.3	2.3	2.3	2.3	15.6	4.1	24
24	2.2	2.8	2.5	2.4	2.3	1.8	1.6	1.4	**S**	1.4	1	0.9	0.6	1	1.2	1.2	1.2	1.2	1.6	1.5	2.5	5.2	8.2	6.2	8.2	2.3	24
25	6.9	7.8	5.6	4.9	4.4	4.7	4	**S**	2.1	1.5	0.8	0.8	0.7	0.9	0.8	1	0.9	1	0.9	1.6	1.7	2	2.6	2.3	7.8	2.6	24
26	2.3	1.7	2.2	2	2	2.3	**S**	3.6	5.1	6.4	5.5	3.6	1.7	1.5	1	0.9	1.3	1.1	6.2	2.2	2	2.7	3.2	32.6	32.6	4.0	24
27	3.6	3.6	2.9	2.5	3.6	**S**	5.1	5.1	3.4	4.9	1	2.5	2.6	1	0.7	1.5	0.6	0.5	1.1	4	4	1.1	1	1.4	5.1	2.5	24
28	2.4	2.7	2.4	2.2	**S**	1.6	25.2	3	5.9	1.5	3.1	1.8	1	4.1	0.9	1.4	1.4	1.8	0.7	1.3	1.1	1.2	0.8	4.2	25.2	3.1	24
29	4.5	2	2.1	**S**	1.9	1.6	**S**	**S**	3.2	2.9	1.9	1.6	2.2	2.2	1.7	1.4	1.3	1.5	1.4	1.7	3.4	3.3	3.6	3.4	4.5	2.3	24
30	2.9	2.7	**S**	2.6	1.8	1.6	2.3	3.1	1.6	1.3	3.3	1.6	1.9	2.1	1	1.4	1.4	1	2.3	4.4	3	8.1	6.7	2.6	8.1	2.6	24
31	2.4	**S**	2.1	2.7	2.2	1.9	1.8	1.6	2	1.3	1.1	0.9	1.8	1.1	0.8	0.9	3.2	1.8	2.3	1.7	1.4	1.2	1.4	1.6	3.2	1.7	24
HOURLY MAX	7	8	7	8	9	16	35	61	6	6	20	5	5	4	3	23	4	54	6	9	11	8	14	33			
HOURLY AVG	2.0	2.3	2.1	2.3	2.6	2.9	5.1	4.9	2.4	2.0	2.1	1.3	1.4	1.3	1.1	1.7	1.1	3.0	1.8	2.3	2.3	2.2	2.5	3.1			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 639

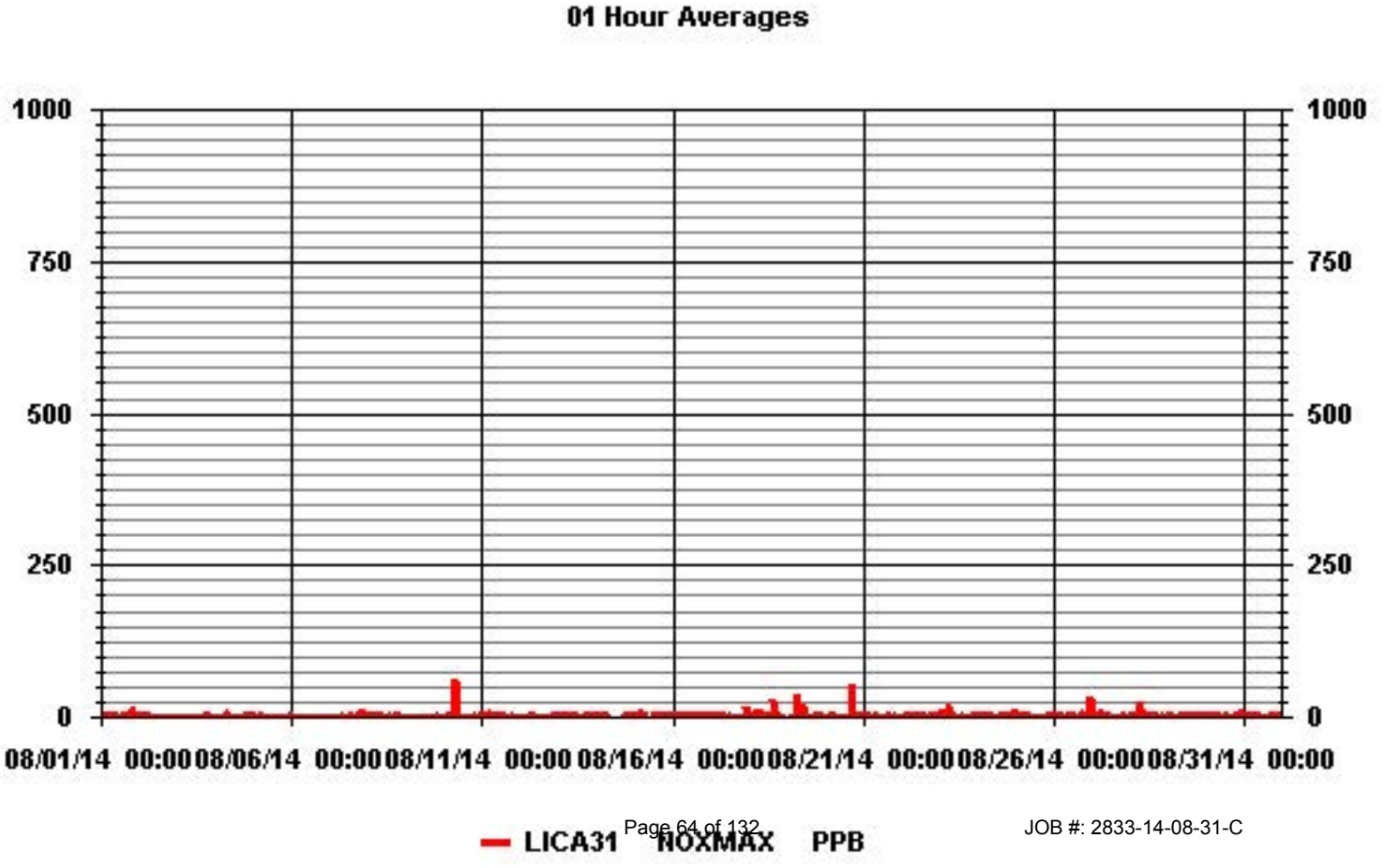
MAXIMUM INSTANTANEOUS VALUE: 60.6 PPB @ HOUR(S) 7 ON DAY(S) 10

VAR-VARIOUS

IZS CALIBRATION TIME: 36 HRS OPERATIONAL TIME: 725 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 4.15



JOB #: 2833-14-08-31-C

LICA31
NOX_ / WDR Joint Frequency Distribution (Percent)

August 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	3.94	3.21	5.11	5.26	2.63	3.21	4.67	10.67	9.21	4.09	6.87	11.11	8.47	9.21	7.74	4.53	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	3.94	3.21	5.11	5.26	2.63	3.21	4.67	10.67	9.21	4.09	6.87	11.11	8.47	9.21	7.74	4.53	

Calm : .00 %

Total # Operational Hours : 684

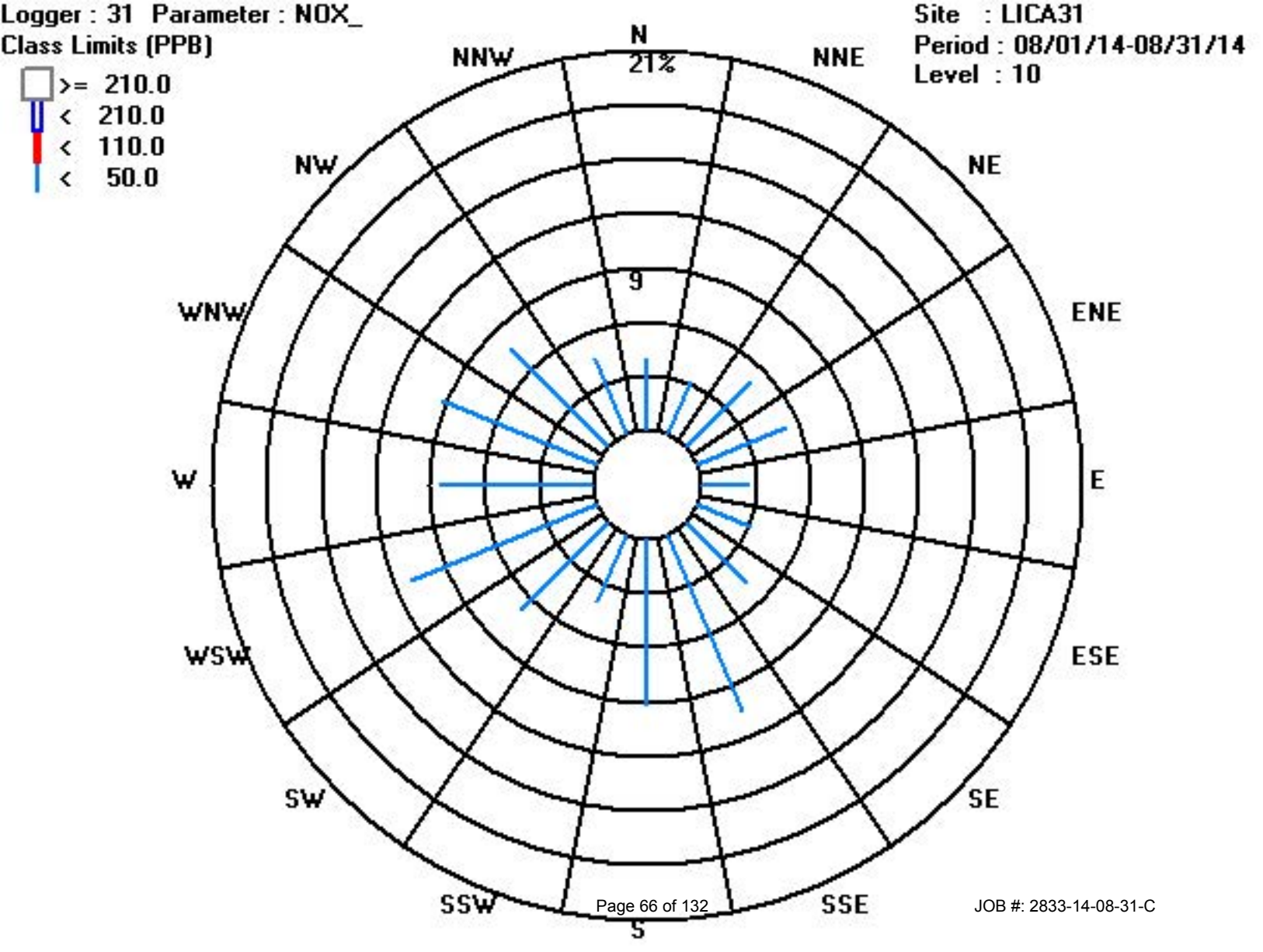
Distribution By Samples

Direction

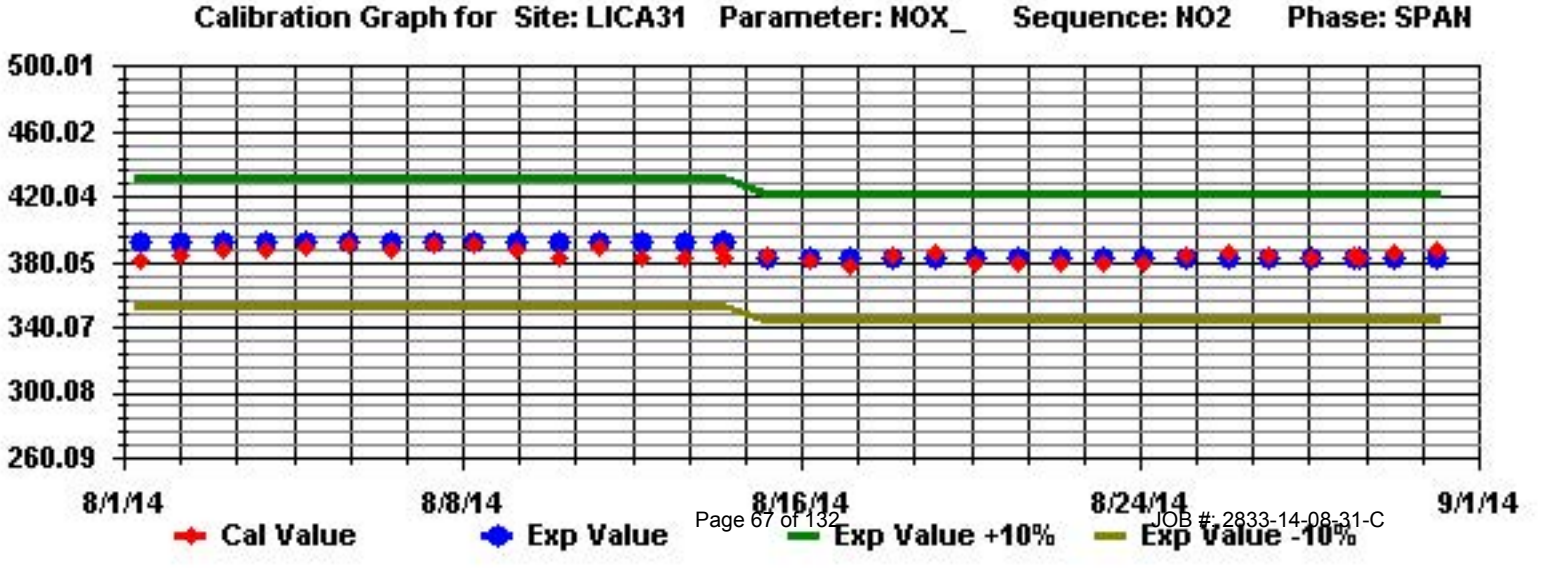
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50.0	27	22	35	36	18	22	32	73	63	28	47	76	58	63	53	31	684
< 110.0																	
< 210.0																	
>= 210.0																	
Totals	27	22	35	36	18	22	32	73	63	28	47	76	58	63	53	31	

Calm : .00 %

Total # Operational Hours : 684



JOB #: 2833-14-08-31-C


Calibration Graph for Site: LICA31 Parameter: NOX_ Sequence: NO2 Phase: SPAN
500.01
460.02
420.04
380.05
340.07
300.08
260.09
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

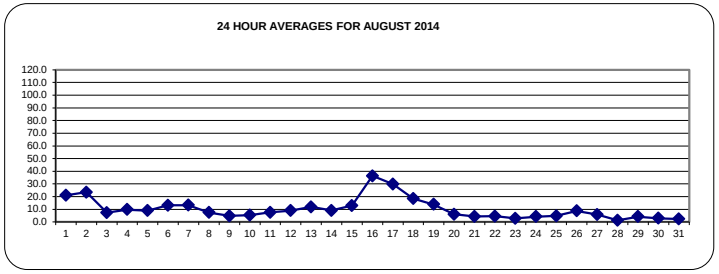
PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5) hourly averages in ug/m3

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	1	0	6	2	3	7	21	38	41	33	28	23	21	21	22	22	21	21	21	21	20	26	40	47	47	21.1	24
2	44	39	40	42	39	35	35	36	35	35	28	25	19	15	13	10	6	10	10	10	10	11	9	7	44	23.5	24
3	5	4	4	3	2	7	9	5	8	8	4	9	8	6	5	0	10	11	15	7	13	7	15	11	15	7.3	24
4	9	17	10	13	4	13	11	12	13	11	1	0	5	24	7	2	13	11	12	9	8	7	9	13	24	9.8	24
5	10	6	7	8	9	9	14	14	14	12	12	10	12	8	10	10	12	6	3	4	5	6	8	5	14	8.9	24
6	8	7	7	9	9	10	26	9	9	7	0	6	0	6	2	15	20	20	24	68	**X**	**X**	**X**	**X**	68	13.1	20
7	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**C**	**C**	18	17	14	13	11	12	12	11	11	18	13.2	11
8	11	12	8	12	11	9	8	10	8	5	6	6	10	10	7	5	5	8	7	5	7	6	2	2	12	7.5	24
9	4	8	5	5	5	6	6	5	5	4	4	6	6	5	4	4	4	3	4	3	4	6	4	5	8	4.8	24
10	4	5	5	9	8	9	5	8	7	5	4	1	4	5	5	4	4	2	5	4	4	5	7	8	9	5.3	24
11	9	9	9	10	10	12	13	13	11	4	2	3	6	6	4	2	3	2	6	8	10	8	10	11	13	7.5	24
12	10	11	6	8	9	9	11	12	12	13	6	6	9	5	12	7	9	8	11	8	9	9	8	6	13	8.9	24
13	7	5	6	6	6	7	7	8	9	9	8	8	10	9	4	2	8	16	12	12	72	41	8	5	72	11.9	24
14	7	8	8	3	3	12	9	21	10	**P**	**P**	**P**	10	7	7	10	11	11	11	9	8	10	10	5	21	9.0	21
15	4	12	12	12	11	12	12	16	21	17	13	13	**X**	21	7	12	16	16	14	15	12	9	9	9	21	12.8	23
16	7	10	13	18	20	23	26	36	47	50	47	46	46	54	48	47	35	37	39	44	43	42	44	49	54	***36.3***	24
17	46	43	44	41	44	34	37	38	33	29	9	***96***	24	18	14	**X**	4	2	7	4	**P**	**P**	**X**	**X**	***96***	29.8	19
18	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**C**	9	23	17	24	37	28	25	19	17	12	7	3	**P**	37	18.4	13
19	**P**	**P**	**P**	73	18	14	14	17	12	11	8	8	3	11	10	10	17	15	12	8	6	6	7	10	73	13.8	21
20	7	8	7	7	6	7	8	6	6	6	7	4	2	0	2	4	6	9	9	9	6	5	6	7	9	6.0	24
21	9	8	7	6	5	5	2	2	2	1	1	1	2	5	3	2	6	6	7	6	5	5	5	3	9	4.3	24
22	3	3	4	5	4	3	5	5	5	5	4	0	5	5	8	9	7	5	6	5	4	3	4	3	9	4.6	24
23	3	2	3	4	3	3	4	**X**	2	2	1	2	1	4	0	2	2	4	4	4	3	4	4	3	4	2.8	23
24	2	2	1	0	1	1	1	4	1	0	0	0	0	0	1	3	8	8	11	11	12	12	13	9	13	4.2	24
25	10	9	8	6	5	6	4	3	4	1	0	2	2	3	3	4	5	6	5	6	5	5	6	6	10	4.8	24
26	5	4	4	4	5	5	5	7	8	14	18	17	11	10	10	10	6	10	7	6	10	11	11	12	18	8.8	24
27	9	12	12	14	15	15	16	16	7	3	3	1	0	1	4	1	0	2	4	1	4	0	0	0	16	5.8	24
28	2	1	2	2	1	2	2	3	2	0	0	1	0	1	0	1	2	0	3	3	2	1	0	0	3	1.3	24
29	2	2	0	2	1	1	2	3	4	8	3	6	8	7	8	7	6	4	5	5	5	4	3	4	8	4.2	24
30	3	11	6	4	4	3	3	4	3	0	0	0	6	2	0	1	2	2	3	4	2	4	2	2	11	3.0	24
31	2	3	3	0	2	1	2	2	1	0	0	0	1	2	8	2	6	4	4	4	2	4	1	2	8	2.3	24
HOURLY MAX	46	43	44	73	44	35	37	38	47	50	47	96	46	54	48	47	35	37	39	68	72	42	44	49			
HOURLY AVG	8.7	9.3	8.8	11.3	9.1	9.7	11.0	12.6	11.7	10.5	7.8	10.7	8.8	9.6	8.4	8.8	9.6	9.6	10.1	10.7	10.9	9.5	8.9	9.1			

STATUS FLAG CODES

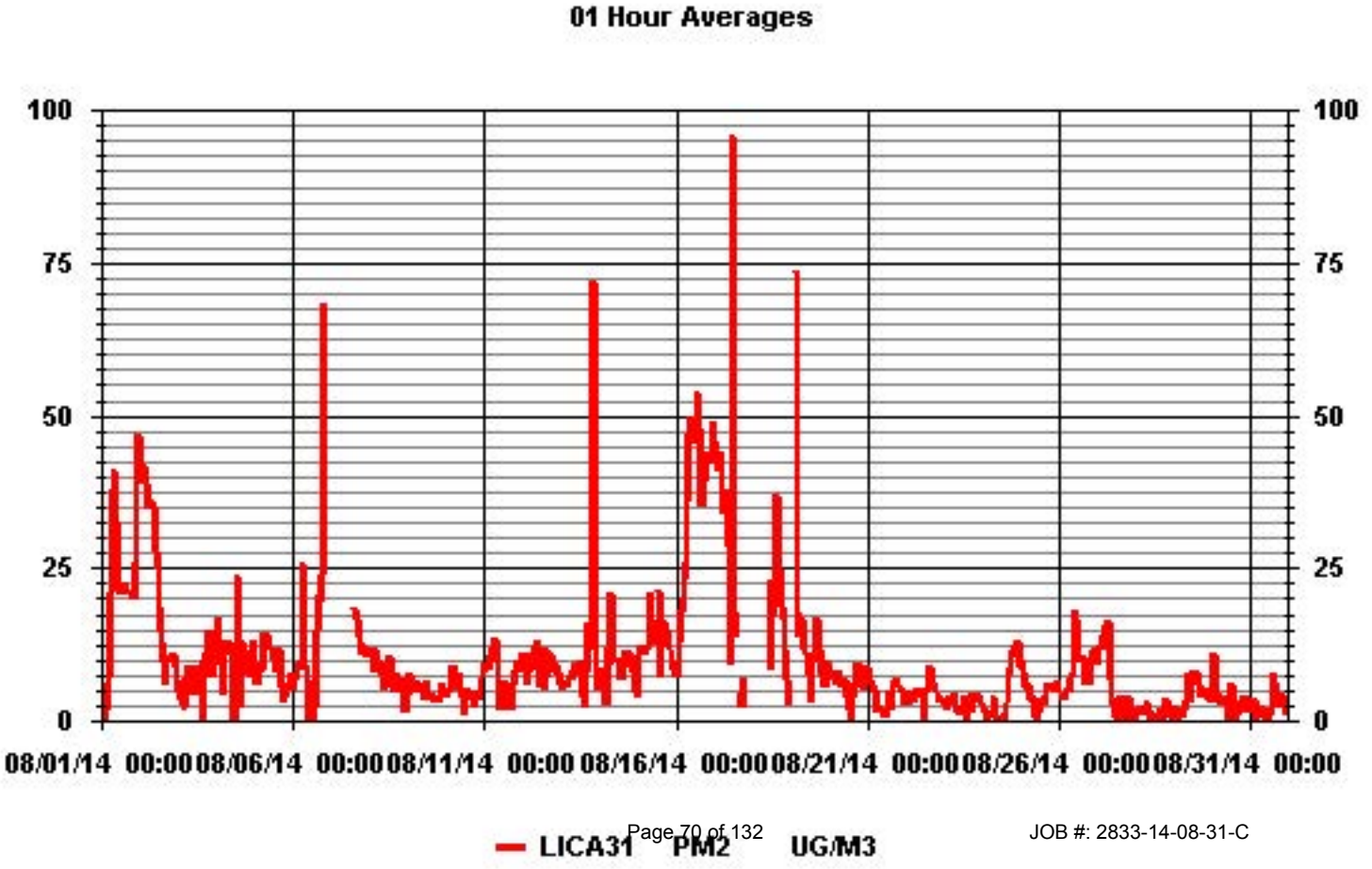
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	1						
NUMBER OF NON-ZERO READINGS:	664						
MAXIMUM 1-HR AVERAGE:	96	ug/m3	@ HOUR(S)	11	ON DAY(S)	14	
MAXIMUM 24-HR AVERAGE:	36.3	ug/m3			ON DAY(S)	16	
					VAR-VARIOUS		
			OPERATIONAL TIME:			703	HRS
MONTHLY CALIBRATION TIME:	3	HRS	AMD OPERATION UPTIME:			94.5	%
STANDARD DEVIATION:	11.09		MONTHLY AVERAGE:			9.79	ug/m3



JOB #: 2833-14-08-31-C

LICA31
PM2 / WDR Joint Frequency Distribution (Percent)

August 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	4.16	3.15	5.45	5.30	2.72	2.72	3.87	9.03	9.32	3.87	6.02	10.32	7.31	7.74	7.31	4.73	93.11
<	60	.00	.28	.14	.00	.00	.71	.86	2.29	.43	.14	.00	.28	.71	.28	.00	.00	6.16
<	80	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.28	.00	.00	.00	.43
<	120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.28	.00	.28
<	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.16	3.44	5.59	5.30	2.86	3.44	4.73	11.33	9.75	4.01	6.02	10.61	8.32	8.03	7.60	4.73	

Calm : .00 %

Total # Operational Hours : 697

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30	29	22	38	37	19	19	27	63	65	27	42	72	51	54	51	33	649
<	60		2	1			5	6	16	3	1		2	5	2			43
<	80					1								2				3
<	120															2		2
<	240																	
>=	240																	
	Totals	29	24	39	37	20	24	33	79	68	28	42	74	58	56	53	33	

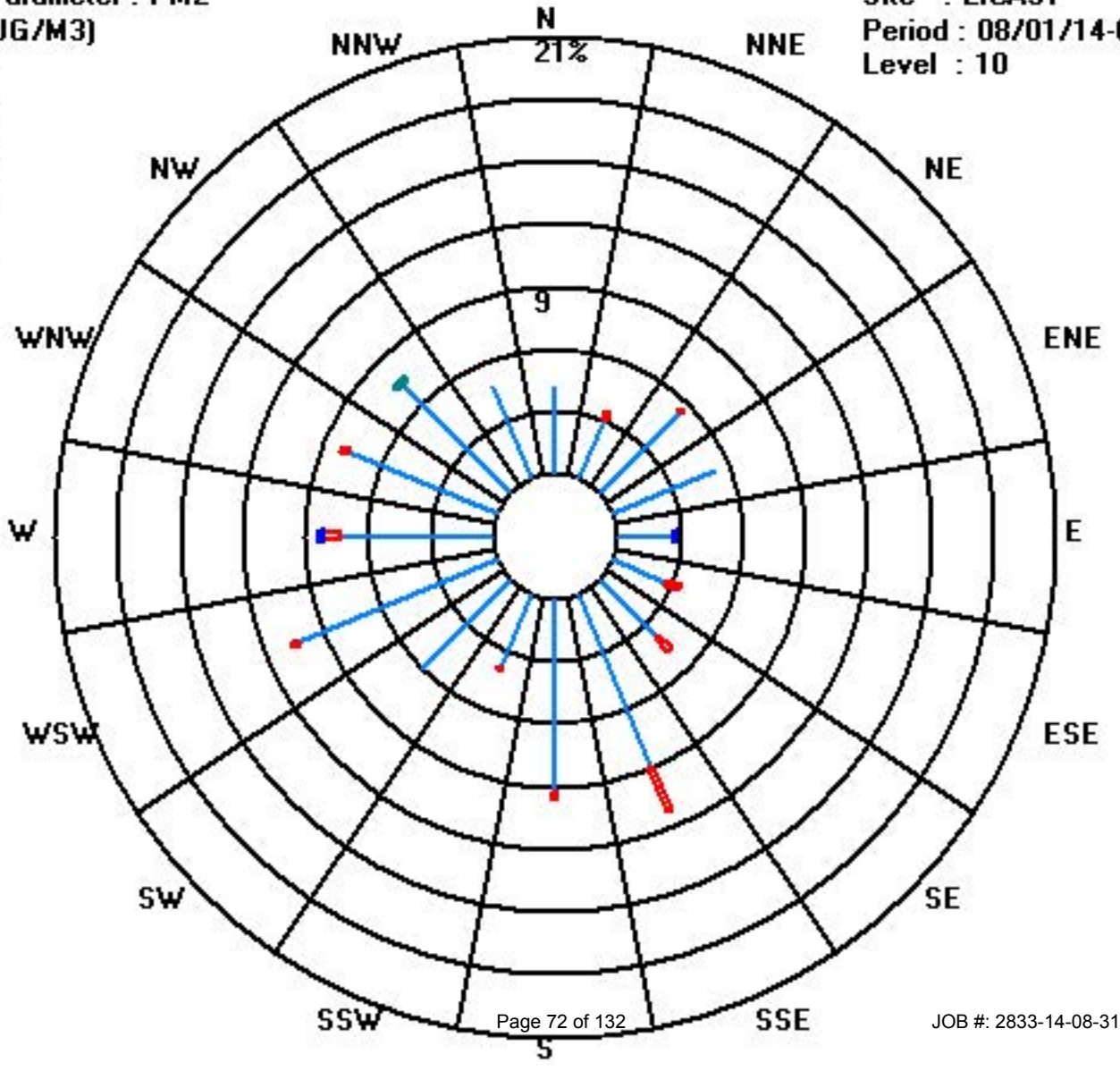
Calm : .00 %

Total # Operational Hours : 697

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

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

Site : LICA31
Period : 08/01/14-08/31/14
Level : 10



JOB #: 2833-14-08-31-C

Temperature

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

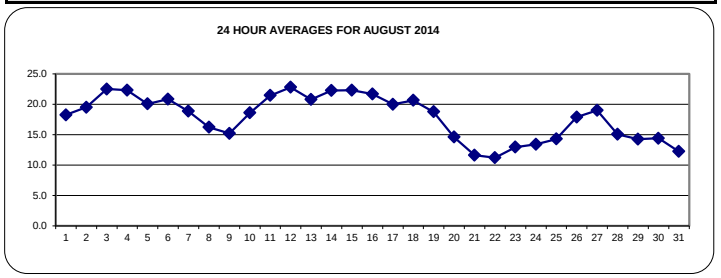
AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

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	16.7	16	15.4	14.4	13.5	13	14.4	16.4	17.7	18.4	20.1	20.8	21.7	21.3	22	22.9	22.7	22.1	20.9	18.8	17.6	17.6	17.2	16.2	22.9	18.2	24
2	15.9	15.7	14.6	14.3	13.6	13.8	15.3	16.7	18.7	20.3	21.7	23.2	24	23.7	24.2	24.6	24	23.8	22.8	21.6	20	19	18.4	18.1	24.6	19.5	24
3	18	17.4	16.4	16	14.9	14.8	17.8	20.5	23	25	26.2	27.3	28.2	28.4	29.1	***29.3***	28.7	27.4	25.3	23.3	21.5	21.3	20.3	19.8	***29.3***	22.5	24
4	20	17.8	17	15.7	16.1	17.2	21.3	24.8	27.1	28.5	28.2	28.9	29	27	26.4	26.3	25.2	23.6	22.5	20.7	18.6	17.7	18.2	17.4	29	22.3	24
5	17.5	18	17.9	16.4	16.3	16.5	17.9	20.3	20.5	23.3	25.3	25.4	25.3	25.2	25.6	24	22.2	20.5	19.4	18.5	17.3	16.4	16	15.7	25.6	20.1	24
6	15.2	14.8	14.7	14.8	14.5	14.6	15.5	19.5	22	22.3	23.4	24.2	26.3	27.7	27.9	28	27.7	26.2	24.3	21.7	20.2	19.2	17.7	17.7	28	20.8	24
7	17.2	16.2	14.5	13.6	13.9	14	16.4	18.4	20.2	21.5	22.4	23.9	24	23.9	24.1	23.7	22.5	22.3	20.5	18.3	16.1	15.2	14.4	15.2	24.1	18.9	24
8	16.1	13.7	14.4	14.3	12.6	12.4	16.2	20.4	22.7	23.5	23.3	22.6	21.9	15.8	15.2	15	14.9	14.4	14.3	14	13.5	13.5	12.5	12.1	23.5	16.2	24
9	11.9	11.8	11.6	11.1	10.4	10.2	10.5	11.3	12.7	15.2	17.3	18.4	18.7	20.1	20.3	21.4	20.9	19.9	18.7	16.5	15.3	14.6	13.5	12.5	21.4	15.2	24
10	11.7	12.6	12.8	12.9	12.7	12.8	14.2	15	16.4	20.4	21.1	24.2	25.1	24.4	24.6	24.4	24	23.4	22	20.2	19	17.8	17.4	16.5	25.1	18.6	24
11	15.1	14	14	12.2	11.7	12.2	17.1	20.7	23.3	24.9	26	26.8	27.7	28.2	28.7	28.9	28.6	27.5	25.6	22.3	19.4	19.7	20.3	19.6	28.9	21.4	24
12	19.2	18.5	18.3	18.3	16.2	15.4	18.4	21.5	23.6	25.9	27.1	28	28	28.2	27.2	27.9	27.4	26.5	24.7	22.8	21.8	21.4	20.5	20.1	28.2	***22.8***	24
13	19.6	19.1	19.3	19	19.1	18.9	19	19.8	20.7	21.5	21.8	21.7	21	20.5	23	24.9	24.6	23.8	22.9	20.9	19.7	19.6	19.5	18.3	24.9	20.8	24
14	17.9	17.6	17.6	16.8	16	17.6	17.4	20.4	21.6	**P**	**P**	**P**	28.4	29	29	29.2	28.6	27.3	24.8	22.4	21.8	21.4	21.2	20.9	29.2	22.2	21
15	20.4	19.4	18.8	18.9	17.7	16.3	17.7	19	20.3	22.5	24.4	25.3	26.6	27.5	28.7	28.4	27.6	25.8	24.9	23.4	22	20.6	19.7	19.2	28.7	22.3	24
16	19.2	19.1	18.9	18	17.7	17.8	18.8	20.2	22.1	24.6	25.5	26.1	26.4	26.6	26.4	25.6	25	23.3	21.7	20.1	19.5	18.9	19.9	19.1	26.6	21.7	24
17	18.1	17.3	17.7	18.2	16.1	16	16.9	18.4	21.4	22.9	22.9	18.6	18.5	20	23.6	25.7	25.4	24.4	22.7	21.3	**P**	**P**	17.1	16.4	25.7	20.0	22
18	15.4	15.2	14.5	13.6	13.6	13.6	15.3	19.5	22.9	25.1	25.7	26.9	26.2	26.6	26.2	25.5	24	23.2	21.8	20.9	20.1	19.9	18.9	**P**	26.9	20.6	23
19	**P**	**P**	**P**	15.2	15.1	14.9	15.4	16.3	18.3	20	21.4	23.3	23.5	23.7	23.4	22.9	22	20.7	19.2	17.5	16	15.7	15	14.4	23.7	18.8	21
20	13.8	13	11.9	11.2	10.6	10.5	12.8	14.2	15.5	17.8	16.3	15.2	16.4	19.4	20.7	20.9	20.5	19.2	16.1	13.7	11.7	10.4	9.4	9	20.9	14.6	24
21	9.7	9.8	9.7	9.6	9.5	9.3	9.5	11.3	12.3	14.3	14.9	14.5	15.4	15.1	14.3	13.6	12.2	12.8	12.4	10.7	10	9.4	9.3	9.2	15.4	11.6	24
22	9.2	8.9	8.2	***6.4***	6.8	6.9	8	9.2	10.5	11.9	13.5	14.6	14.7	15	16	14.9	14.6	13.9	12.7	11.7	11.1	10.6	10	9.3	16	11.2	24
23	8	8.2	8.1	8.4	8.5	7.8	8.9	10.9	14.7	15.8	17	16.8	17.6	17.5	17	18.1	18.3	16.9	15.1	12.8	12	11.2	10.9	10.5	18.3	13.0	24
24	10.7	10.5	10.4	10	10.3	10.7	11	11.4	12.5	13.9	17.2	17.8	17.4	18.1	18.4	18.5	18.1	16.6	14.8	12.4	10.8	10.1	10.2	9.7	18.5	13.4	24
25	9	8.7	8.6	7.6	7.7	8	9.8	11.5	14.5	16	17.8	18.6	19.5	20.2	20.5	20.8	19.4	18.4	17.8	15.7	14.5	13.7	12.6	11.7	20.8	14.3	24
26	11.6	11.2	11.6	11.5	11.1	11	11.5	13.3	15.7	18.3	21.1	22.4	24.1	25.3	24.3	24.7	25.1	23.5	21.8	20.1	18.6	17.3	17.4	16.3	25.3	17.9	24
27	16.7	16.7	16.6	16.3	14.4	15.1	15.1	17.9	21.3	23.1	22.8	22.4	22.9	23	23	23.8	23.7	22.4	19.8	18.2	16.5	15.9	14.8	13.1	23.8	19.0	24
28	12.5	13.2	12.6	12.3	12.7	12.3	12.5	13.7	15.9	15.9	18.3	18.9	18.9	19.8	20.2	20.4	20.4	18.8	16.2	13.2	11.3	10.4	9.9	10.5	20.4	15.0	24
29	10	9.8	9.4	9	8.7	8.5	9.4	11.2	13.6	16.7	18.7	19.3	19.3	19.6	19.6	18.9	18.4	17.5	16.4	15	14	13.9	12.4	12.6	19.6	14.2	24
30	12.2	11.4	10.9	11	11.2	11.3	11.4	11.9	13.1	15.5	17.3	17.7	18	19.3	19.7	19.3	19.5	18.6	16.9	14.1	12.6	11.5	10.8	10.4	19.7	14.4	24
31	10.5	10.6	8.3	6.8	7.3	7	9.4	12.1	13.9	15.9	17.5	17.4	17.6	18.4	14.4	15.8	13.2	14	13.3	11.8	10.8	10.6	8.9	8.1	18.4	12.2	24
HOURLY MAX	20.4	19.4	19.3	19	19.1	18.9	21.3	24.8	27.1	28.5	28.2	28.9	29	29	29.1	29.3	28.7	27.5	25.6	23.4	22	21.4	21.2	20.9			
HOURLY AVG	14.6	14.2	13.8	13.3	12.9	12.9	14.3	16.4	18.3	20.0	21.2	21.7	22.3	22.5	22.7	22.8	22.2	21.2	19.8	17.9	16.4	15.8	15.3	14.7			

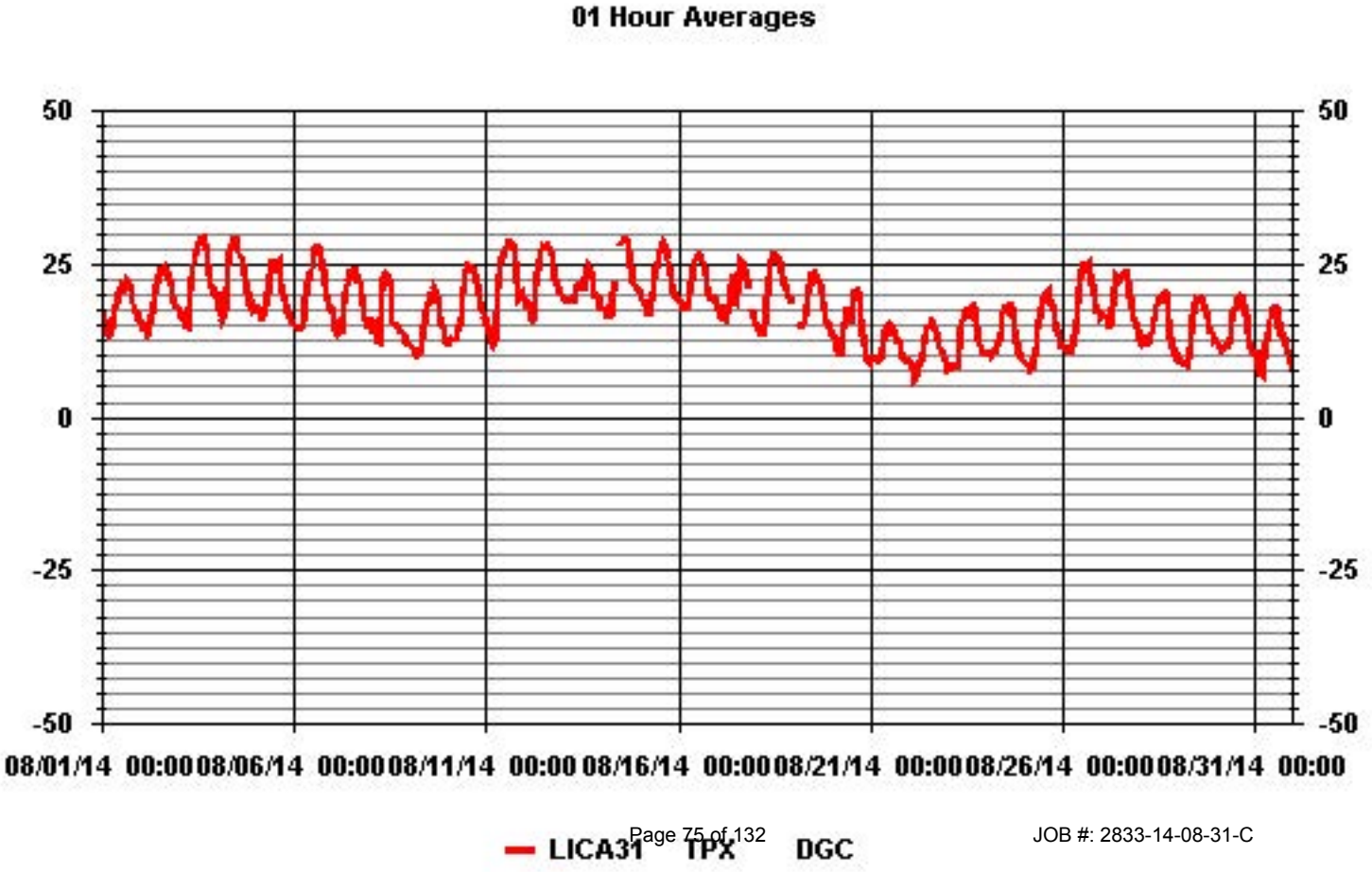
STATUS FLAG CODES

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



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	6.4	°C	@ HOUR(S)	3	ON DAY(S)	22
MAXIMUM 1-HR AVERAGE:	29.3	°C	@ HOUR(S)	15	ON DAY(S)	3
MAXIMUM 24-HR AVERAGE:	22.8	°C			ON DAY(S)	12
					VAR-VARIOUS	
OPERATIONAL TIME:					735	HRS
AMD OPERATION UPTIME:					98.8	%
STANDARD DEVIATION:	5.30		MONTHLY AVERAGE:		17.83	°C



JOB #: 2833-14-08-31-C

Barometric Pressure

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

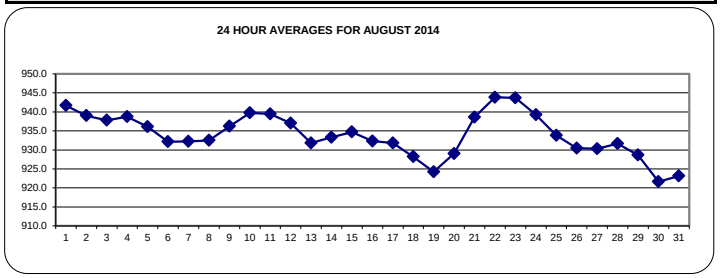
BAROMETRIC PRESSURE (BP) hourly averages in millibar

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	939	938	938	939	939	940	940	941	942	943	943	943	944	944	944	944	944	944	943	942	942	942	941	941	944	941.7	24
2	941	940	940	940	940	940	940	940	940	940	940	940	940	940	939	939	938	939	938	937	937	936	936	936	941	939.0	24
3	936	935	935	935	935	935	936	936	937	938	939	939	940	940	940	940	940	940	940	939	938	938	938	938	940	937.8	24
4	938	938	937	937	937	937	938	939	940	940	941	941	941	941	940	940	940	939	939	938	938	937	937	937	941	938.8	24
5	937	937	936	936	936	936	936	937	937	937	938	938	938	937	937	937	936	936	936	935	934	934	933	933	938	936.1	24
6	933	932	932	932	932	932	932	932	933	933	933	933	933	933	933	933	932	932	932	931	931	930	931	931	933	932.1	24
7	930	930	930	930	930	931	931	932	932	933	933	934	934	934	934	934	933	934	934	933	932	932	932	932	934	932.3	24
8	932	932	932	933	932	932	932	933	934	935	935	935	934	933	933	932	931	932	932	932	931	931	931	931	935	932.5	24
9	931	931	932	932	932	932	933	934	935	936	937	937	938	938	939	939	940	940	940	940	939	938	938	938	940	936.2	24
10	938	938	938	938	939	939	939	939	939	940	941	941	941	941	941	941	941	941	941	941	940	939	939	939	941	939.8	24
11	939	939	938	938	938	938	938	939	940	940	940	941	941	941	941	941	941	941	940	940	939	938	938	938	941	939.5	24
12	938	938	938	937	937	937	937	938	938	939	939	939	939	938	938	938	937	937	936	935	934	934	934	933	939	937.0	24
13	933	933	933	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	931	931	931	930	930	933	931.8	24
14	930	930	930	930	930	931	931	932	933	**P**	**P**	**P**	935	936	936	936	936	936	936	935	934	934	934	934	936	933.3	21
15	934	934	934	934	934	934	934	935	935	936	936	936	936	936	936	936	936	935	934	934	934	934	933	933	936	934.7	24
16	932	932	932	932	932	932	932	932	933	933	934	934	933	934	933	933	933	932	932	931	931	931	931	931	934	932.3	24
17	931	930	930	930	930	930	930	931	931	932	933	933	932	932	933	934	934	934	934	933	**P**	**P**	931	931	934	931.8	22
18	930	930	930	929	929	929	929	929	930	930	929	929	929	928	928	928	928	927	926	926	926	925	925	**P**	930	928.2	23
19	**P**	**P**	**P**	924	924	924	923	924	924	924	924	925	925	925	925	925	925	924	924	924	924	924	924	924	925	924.2	21
20	924	924	924	924	924	925	926	927	927	929	929	929	930	931	931	932	932	933	933	932	932	933	933	933	933	929.0	24
21	934	934	935	935	936	936	937	937	938	939	940	940	940	941	940	940	940	940	941	941	940	940	941	941	941	938.6	24
22	941	941	941	941	941	942	942	943	944	944	945	945	***946***	945	***946***	***946***	***946***	945	945	945	945	945	944	944	***946***	***943.8***	24
23	944	944	944	944	944	944	944	944	945	945	***946***	945	945	945	944	945	944	944	944	942	941	941	940	940	***946***	943.7	24
24	940	940	939	939	939	939	939	940	940	940	941	941	940	940	940	940	940	940	940	938	937	937	936	936	941	939.2	24
25	936	935	935	935	934	934	934	935	935	936	935	935	935	935	935	934	934	933	932	932	931	931	931	930	936	933.8	24
26	930	930	929	929	929	929	930	930	930	931	932	932	932	932	932	932	932	932	931	930	930	929	929	929	932	930.5	24
27	929	929	929	929	929	929	929	930	930	931	931	931	932	932	932	932	932	932	931	930	930	930	929	929	932	930.3	24
28	929	929	929	929	929	929	930	930	931	932	933	933	933	933	933	934	934	934	934	933	932	932	932	932	934	931.6	24
29	932	932	932	931	931	931	931	931	931	931	932	931	930	930	929	928	927	926	926	925	924	923	922	921	932	928.6	24
30	921	921	921	921	***920***	***920***	***920***	921	921	922	922	922	922	923	923	923	923	924	923	922	922	921	921	921	924	921.7	24
31	921	921	921	921	921	921	922	922	923	924	924	924	925	925	924	924	924	924	925	924	924	924	924	924	925	923.2	24
HOURLY MAX	944	944	944	944	944	944	944	944	945	945	946	945	946	945	946	946	946	945	945	945	945	945	944	944			
HOURLY AVG	933.4	933.2	933.1	932.8	932.7	932.9	933.1	933.7	934.2	934.8	935.2	935.3	935.3	935.3	935.2	935.2	935.0	934.9	934.6	933.9	933.4	933.1	932.8	933.0			

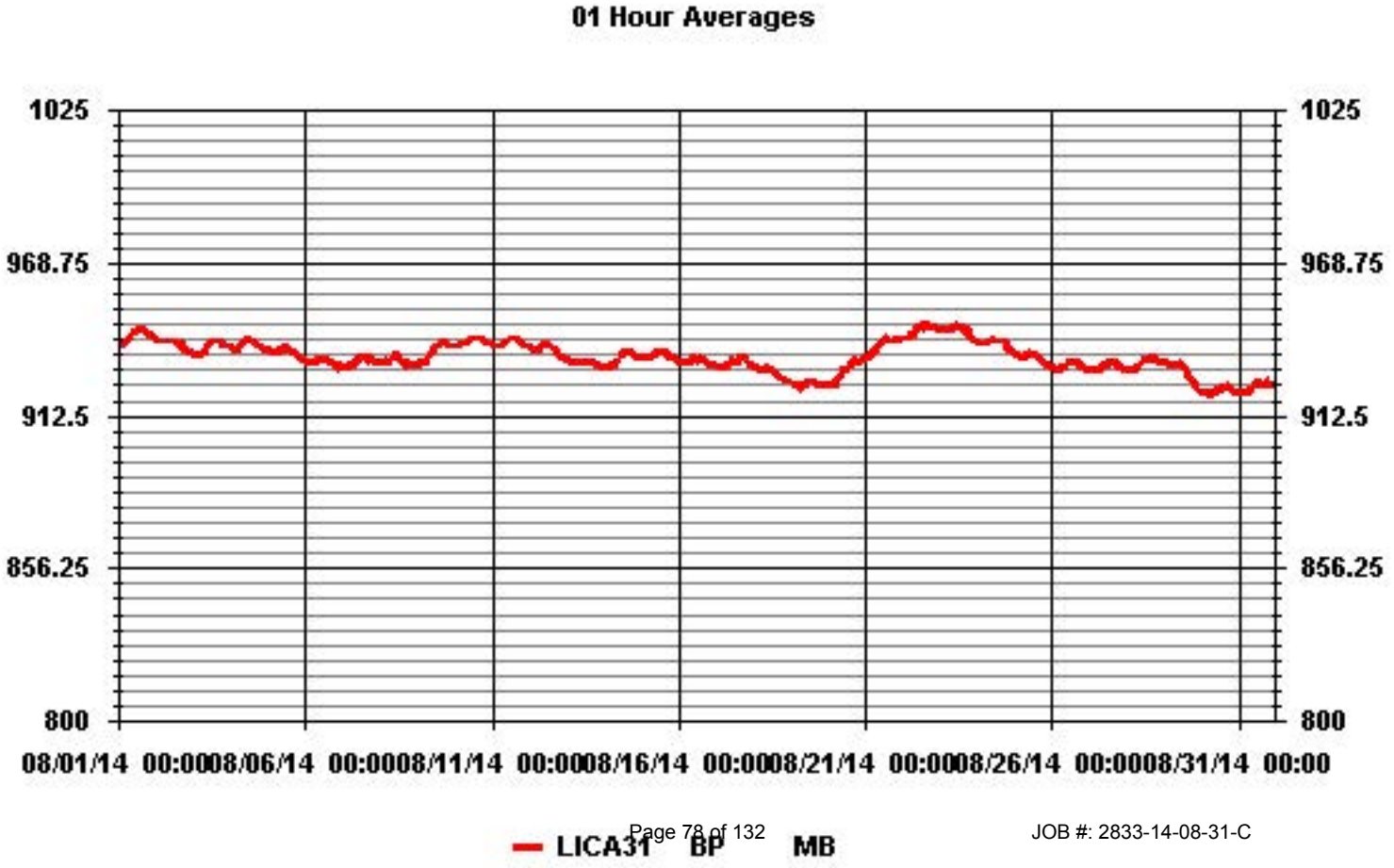
STATUS FLAG CODES

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:	946	MB	@ HOUR(S)	VAR	ON DAY(S)	22, 23
MAXIMUM 24-HR AVERAGE:	943.8	MB			ON DAY(S)	22
					VAR-VARIOUS	
			OPERATIONAL TIME:		735	HRS
			AMD OPERATION UPTIME:		98.8	%
STANDARD DEVIATION:	5.79		MONTHLY AVERAGE:		934.0	MB



JOB #: 2833-14-08-31-C

Relative Humidity

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

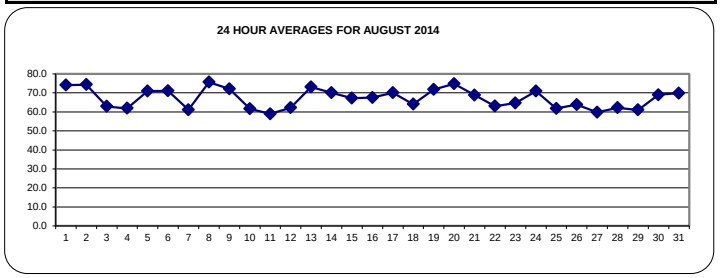
RELATIVE HUMIDITY (RH) hourly averages in %

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	82	86	88	88	88	89	87	81	77	74	66	64	61	62	60	58	59	61	65	74	77	74	75	80	89	74.0	24
2	83	85	88	88	90	89	85	81	75	71	66	63	61	62	61	59	60	60	66	72	76	80	81	81	90	74.3	24
3	80	83	87	89	90	91	83	75	68	63	58	53	49	46	41	33	34	38	48	51	57	58	66	68	91	62.9	24
4	64	75	77	87	78	74	62	52	48	45	42	33	***31***	44	50	46	54	62	69	76	80	82	75	79	87	61.9	24
5	78	69	67	72	73	73	72	69	69	63	59	60	59	58	58	61	70	76	76	79	81	85	87	89	89	71.0	24
6	91	***92***	***92***	***92***	***92***	91	88	79	71	70	64	61	51	48	44	46	49	50	58	68	73	75	82	80	***92***	71.1	24
7	79	82	87	87	84	81	71	65	58	53	48	42	37	35	35	35	40	42	55	62	68	72	75	72	87	61.0	24
8	66	84	72	72	80	87	72	62	55	49	48	47	51	82	84	85	86	89	90	90	91	91	91	90	91	***75.6***	24
9	89	89	88	89	90	90	89	87	82	73	66	60	59	53	52	50	51	53	57	64	68	73	76	82	90	72.1	24
10	84	82	82	83	83	82	71	72	73	58	56	46	42	40	39	40	41	43	49	55	57	62	66	72	84	61.6	24
11	77	81	79	88	89	89	72	63	58	51	44	41	38	37	36	36	36	39	46	59	70	65	58	61	89	58.9	24
12	63	66	68	68	79	82	73	68	64	58	53	49	46	43	48	46	49	52	60	68	70	70	73	75	82	62.1	24
13	75	76	74	73	72	73	74	72	70	69	67	68	71	75	63	53	55	66	74	84	88	87	85	89	89	73.0	24
14	91	91	***92***	***92***	***92***	***92***	91	82	77	**P**	**P**	**P**	53	45	43	41	43	50	60	68	66	68	68	65	***92***	70.0	21
15	65	72	77	77	82	88	82	78	76	71	64	61	55	52	45	41	48	56	60	66	71	74	76	76	88	67.2	24
16	73	73	75	81	82	82	80	76	70	63	60	59	56	55	55	55	48	57	63	71	74	75	66	72	82	67.5	24
17	79	83	81	77	89	86	79	77	71	69	66	75	77	74	61	48	44	46	55	59	**P**	**P**	69	77	89	70.1	22
18	81	80	85	90	91	***92***	88	77	65	55	46	40	41	41	39	41	48	55	61	63	64	61	68	**P**	***92***	64.0	23
19	**P**	**P**	**P**	90	91	91	90	88	80	73	68	60	52	50	52	51	54	61	67	73	76	75	80	84	91	71.7	21
20	84	83	88	90	91	91	85	81	78	70	74	76	68	56	52	47	47	53	64	74	81	85	87	90	91	74.8	24
21	89	87	86	83	83	83	80	75	71	59	53	53	49	52	57	58	61	60	64	68	69	70	72	69	89	68.8	24
22	67	66	69	78	76	75	77	77	74	69	65	53	51	47	42	46	49	51	59	61	61	61	67	72	78	63.0	24
23	78	77	78	77	77	82	79	75	61	53	45	45	41	45	47	45	43	52	59	71	74	78	82	88	88	64.7	24
24	90	91	91	***92***	***92***	***92***	***92***	91	89	78	60	54	52	46	46	45	46	48	55	66	71	72	70	72	***92***	70.9	24
25	75	77	79	83	82	83	76	72	64	59	49	45	42	40	40	39	42	51	54	60	63	65	69	73	83	61.8	24
26	72	74	73	76	80	81	81	78	71	64	58	55	48	44	45	45	42	50	56	59	66	71	70	73	81	63.8	24
27	68	68	68	69	79	76	77	69	57	51	51	50	44	40	42	41	41	44	55	58	68	68	71	78	79	59.7	24
28	81	79	83	85	81	80	80	76	66	63	52	48	43	41	38	36	36	39	49	62	68	71	70	65	85	62.2	24
29	68	69	74	74	75	74	72	71	66	58	50	42	39	37	40	45	50	53	59	65	69	69	73	72	75	61.0	24
30	73	82	90	91	91	91	91	89	82	71	60	52	48	46	44	44	45	46	54	65	69	78	77	76	91	69.0	24
31	74	74	83	88	86	87	78	70	64	58	52	49	48	44	63	57	68	69	73	75	76	77	80	83	88	69.8	24
HOURLY MAX	91	92	92	92	92	92	92	91	89	78	74	76	77	82	84	85	86	89	90	90	91	91	91	90			
HOURLY AVG	77.3	79.2	80.7	82.9	84.1	84.4	79.9	75.1	69.4	62.7	57.0	53.5	50.4	49.7	49.1	47.5	49.6	53.9	60.6	67.3	71.4	73.1	74.4	76.8			

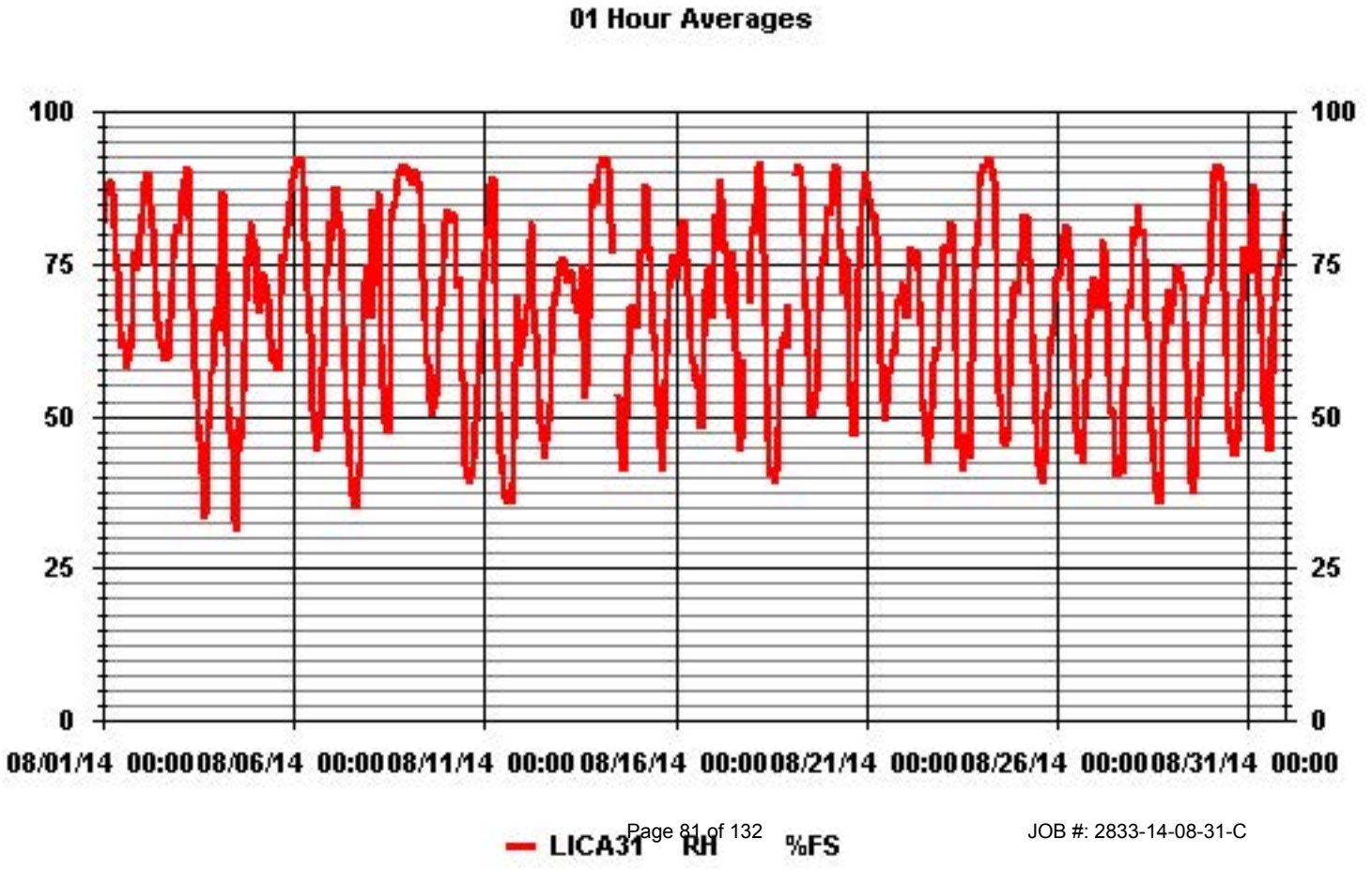
STATUS FLAG CODES

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



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	92	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	75.6	%			ON DAY(S)	8
					VAR-VARIOUS	
			OPERATIONAL TIME:		735	HRS
			AMD OPERATION UPTIME:		98.8	%
STANDARD DEVIATION:	15.35		MONTHLY AVERAGE:		67.04	%



JOB #: 2833-14-08-31-C

Precipitation

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

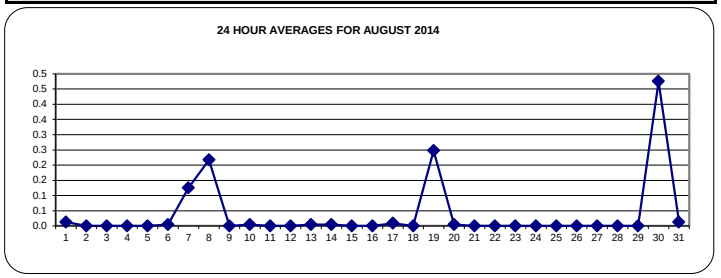
PRECIPITATION hourly averages in millimeter

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	0.2	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.0	24
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
6	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	0.1	0.0	24
7	0	2.9	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.9	0.1	24
8	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.6	1.8	0.8	0	0.7	0	0	0	0.1	0	0	1.8	0.2	24
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
10	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	0.1	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	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	0.1	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
14	0	0	0	0.1	0	0	0	0	0	**P**	**P**	**P**	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	21
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	0.2	0	0	0	0	0	0	0	**P**	**P**	0	0	0.2	0.0	22
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**P**	0	0.0	23
19	**P**	**P**	**P**	3.7	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.7	0.2	21
20	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.0	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
30	0	8.2	2.4	0.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8.2	***0.5***	24
31	0	0	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	0.2	8.2	2.4	3.7	1.5	0.1	0.1	0	0	0.1	0	0	0.2	1.6	1.8	0.8	0.2	0.7	0	0	0	0.1	0	0			
HOURLY AVG	0.0	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

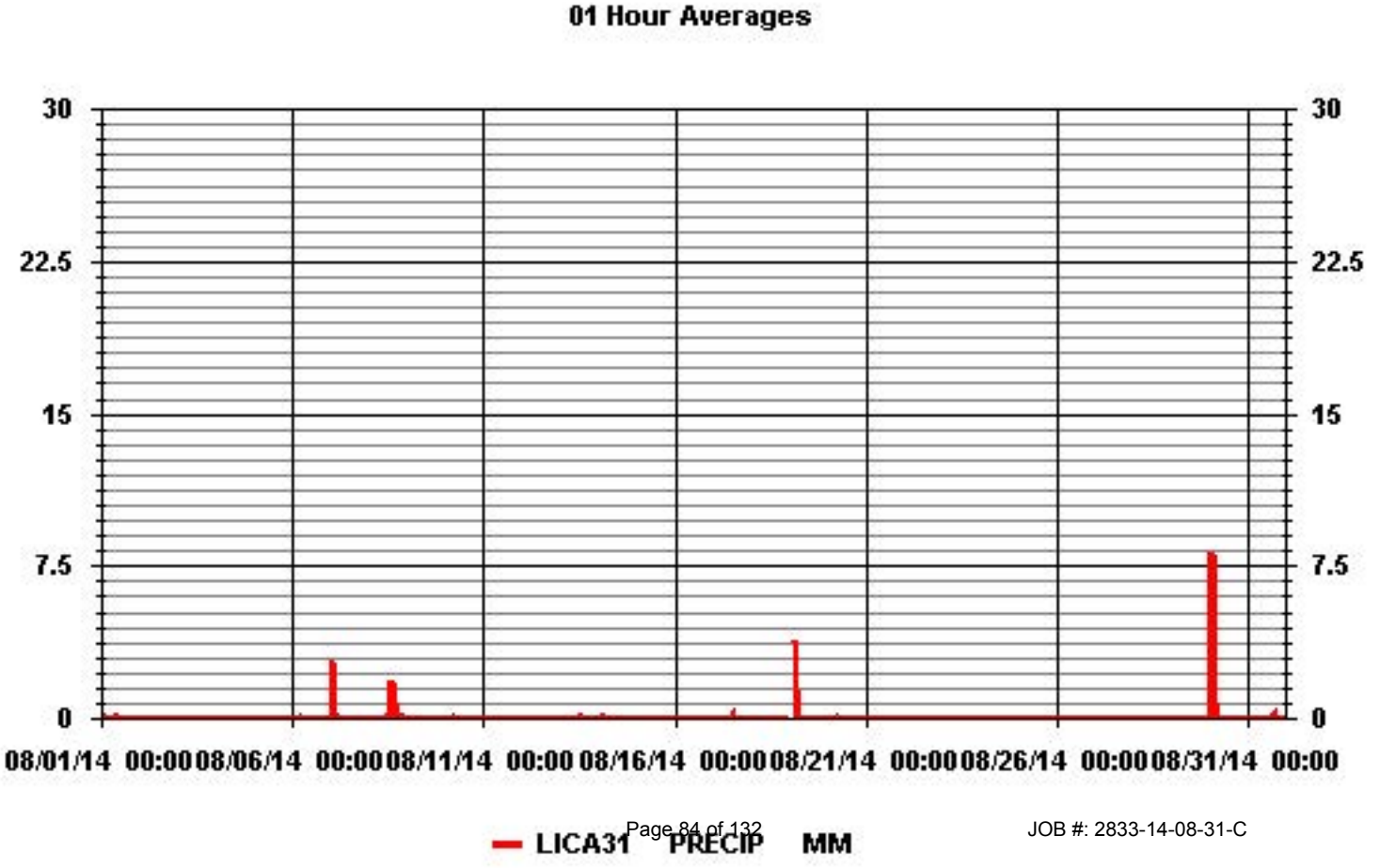
STATUS FLAG CODES

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:	8.2	MM	@ HOUR(S)	1	ON DAY(S)	30
MAXIMUM 24-HR AVERAGE:	0.5	MM			ON DAY(S)	30
					VAR-VARIOUS	
			OPERATIONAL TIME:		735	HRS
			AMD OPERATION UPTIME:		98.8	%
STANDARD DEVIATION:	0.38		MONTHLY AVERAGE:		0.04	MM



JOB #: 2833-14-08-31-C

Vector Wind Speed

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

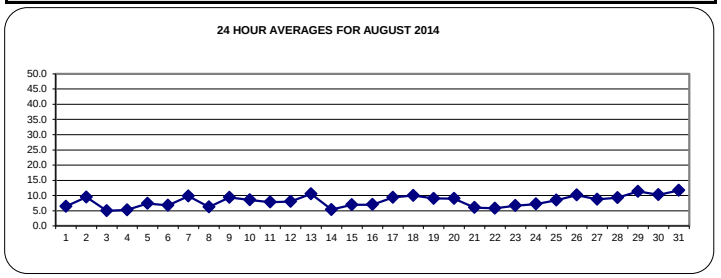
WIND SPEED (WS) hourly averages in km/hr

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	7.6	8.2	6.5	8.5	8.6	5.9	6.3	7.5	7.7	6.8	7.2	9.2	7.5	8.9	7.1	5	4.7	2.7	1.5	2.5	2.8	7.3	7.4	7.7	9.2	6.5	24
2	8.8	8.2	6.9	8.3	8.6	8.3	8.1	9	10.3	10.8	11.7	10.2	10.5	11.3	12.8	11.4	10.7	10.7	7.5	9.2	9	8	8.8	8.1	12.8	9.5	24
3	9.4	6.2	4.7	5.2	4.4	4.8	3.3	3.1	4.2	4.6	7.3	7.2	4.4	2.9	3.3	5.8	5.8	5.7	5	6.2	5.9	6	3.8	0.6	9.4	5.0	24
4	1.9	4	4.8	4.8	5.9	6.7	5.4	2.9	3.3	1.3	4.5	5	2.8	8.1	8	9	7.8	6.5	4.5	6.1	5.5	6.3	6	5.4	9.0	5.3	24
5	5.2	6.4	5.9	4.3	7.9	7.6	4.5	5.5	6.1	5.7	7	8.6	12.3	9.9	9.4	6.5	9.1	12.6	8.4	4.6	7.8	7.6	8	6.3	12.6	7.4	24
6	5.7	5.5	5.7	5.4	5.8	4.9	4.1	5.6	6.1	6.4	7	6.2	4.5	7.2	10.1	12.4	8.9	8.7	4.8	6.5	6.3	5	8.4	10.5	12.4	6.7	24
7	9.9	7.5	11.8	11.6	11.9	11	9.6	9.2	10.6	10.6	11.3	9.4	12.2	13.5	11.3	12.6	10.7	10.7	5.5	7.1	7.2	6.9	5.9	7.2	13.5	9.8	24
8	6.3	6.4	6.5	6.2	7	5.3	4	2.2	2.1	4	8.6	8	9.5	8.3	7.6	2.9	4.7	5.5	4.4	3.9	1.5	8.4	13.4	13.3	13.4	6.3	24
9	13.1	13.1	13.2	13.4	13.4	12.6	12.5	10.3	8.2	9.3	10.8	12.5	10.4	11.1	10.8	8	8.1	7.8	5	1.2	2.2	5.8	5.9	6.1	13.4	9.4	24
10	6	5.4	6.3	5.4	5.9	5.9	5	5.4	8.3	8.1	8.7	18.3	17.8	18.3	15.6	13.1	13.9	9.5	5.7	2.1	2.9	6.2	5.8	6	18.3	8.6	24
11	5.9	6.8	6.7	5.3	5.6	5.3	5.2	6.4	7.9	12.6	13.6	13.6	13.3	12.1	10	6.8	7.5	7	4.1	4	6.3	7.4	7.2	7.2	13.6	7.8	24
12	8	7.9	7.3	7.1	6.8	7.4	5.3	3.8	3.5	4.8	6	7.2	**C**	**C**	**C**	**C**	10.5	10.3	9.8	9.8	11.6	11.9	11	10.6	11.9	8.0	24
13	10.9	11.2	11.9	10.7	11.2	12.3	13.1	12.9	14	12.4	12.7	10.7	14.7	12.8	11.4	12.3	8.5	6.3	5.5	7.2	7.3	8.1	7.8	7.7	14.7	10.6	24
14	8.3	7.1	8.1	7.6	6.7	8.1	5	2.7	6.7	**P**	**P**	**P**	4.8	5.1	3.7	1.1	2.5	3.1	4.4	4.8	4.3	5.8	6.7	6.7	8.3	5.4	21
15	7.5	6.7	4.6	6	6.1	6.1	6.4	5.9	5.9	6.5	7.6	8	7.3	6.9	8.1	8.2	6.6	6.7	7.1	7.5	8.4	8.4	7.5	6.3	8.4	6.9	24
16	7.3	7.9	8.6	8.3	8.7	7.9	6.7	8	6.2	4.6	4.6	5.6	6	5.7	8.8	9.9	8.3	6.9	7	7.7	6	6.1	4.7	6.9	9.9	7.0	24
17	4.7	7.3	7.9	8.6	7.5	9.4	7.4	8.6	6.4	12	16.9	11.6	6.8	11.4	9.8	9.1	10.2	9.7	9.3	10.1	**P**	**P**	11.5	10.9	16.9	9.4	22
18	8	8.2	6.1	5.9	6.3	5.8	6.3	5.3	7.6	8.9	14.1	19.8	19.6	19.6	20.7	14.8	11.6	9.9	7.9	7.2	6.9	5.4	4.8	**P**	20.7	10.0	23
19	**P**	**P**	**P**	10.2	7.4	3.9	5.1	8.1	9.2	8	10.8	12.2	14.5	10.8	10.6	13.4	10.3	9.9	10.2	6.7	7.9	8	5.5	6.9	14.5	9.0	21
20	8.8	7.3	8	10	7.7	7.6	8.2	7	7.9	9.3	9.8	10.1	11	10.4	9.3	12.3	12.1	8.9	10.5	9.4	8.1	7.4	7.3	7	12.3	9.0	24
21	6.7	6.6	4.8	5.1	5.8	5.3	7.3	7.2	7.5	7.2	6.1	3.9	5.2	5.6	6.5	6.1	6.8	5.7	3.8	5.2	6.3	6.1	7.4	6.5	7.5	6.0	24
22	5.5	6.9	7	6.9	8.7	7.5	6	3.6	4.4	4.8	5.4	6.2	6.8	4.8	4.3	5.9	3.6	4.9	3.8	5.4	6.5	6.7	7.5	5.7	8.7	5.8	24
23	5.7	6.9	7.1	6.7	5.9	7.2	7.3	7.4	7.4	8.5	7.3	5.9	5	5.1	4.8	5	5.1	5.9	5.8	6.6	7.8	9.1	8.1	8.1	9.1	6.7	24
24	8.7	6.9	6.6	7	6.1	7	6.7	5.7	5	7.7	9.1	9.2	7.9	8.2	7.5	8.2	8.7	8.3	5.2	5.8	5.4	6.8	7.6	8.2	9.2	7.2	24
25	7.9	7.8	8.3	8.1	6.7	7.4	6.5	6.5	5.7	8.3	8.4	9.1	8.7	7.7	8.5	7.8	8.9	6.9	7.8	9.8	11.2	11	11.7	12.9	12.9	8.5	24
26	12.7	11.1	10.2	9	7.3	8.5	7.1	7.4	9.4	10.7	8.5	9.5	18.4	16.7	21.2	16.1	14.6	8.8	4	6.1	6.6	6.7	6.2	7.2	21.2	10.2	24
27	6.8	5.7	5.4	5.3	7.1	6.1	5.5	7	8.1	10	9.8	11.5	13.1	14.3	13.8	10.9	9.6	7.3	5.4	3.4	10.5	13.2	12	8.1	14.3	8.7	24
28	12.9	12	10.2	10.1	11.9	12.7	10.4	8.7	9.3	8.5	8	7.1	10.4	8.5	12.2	12.1	11.2	8.9	6.4	6.5	4.9	6.6	6.6	7.5	12.9	9.3	24
29	7.2	7.6	9.5	10.3	11.7	11.1	12	11.6	10.4	9.5	11.7	16.1	17	16.5	15.6	13.1	12.7	12.3	9.2	10.2	10.4	9.7	8.4	9	17.0	11.4	24
30	8.3	8	5.8	3.9	8.6	12.5	11.4	11.5	12.7	14.5	14.2	14.7	15.6	15.5	13.9	12.9	11.8	8.7	5.5	5.9	5.8	6.5	7.8	9.5	15.6	10.2	24
31	11.8	10.4	9.8	9.8	12.2	11.9	11.3	14.1	13.3	16	16.9	***22.1***	15.9	19.1	16.2	17.7	7.2	5.4	3.5	5.3	9.4	7	5.1	9.5	***22.1***	***11.7***	24
HOURLY MAX	13.1	13.1	13.2	13.4	13.4	12.7	13.1	14.1	14.0	16.0	16.9	22.1	19.6	19.6	21.2	17.7	14.6	12.6	10.5	10.2	11.6	13.2	13.4	13.3			
HOURLY AVG	7.9	7.7	7.5	7.6	7.9	7.9	7.2	7.1	7.6	8.4	9.5	10.3	10.5	10.5	10.4	9.7	8.8	7.8	6.1	6.3	6.8	7.5	7.6	7.8			

STATUS FLAG CODES

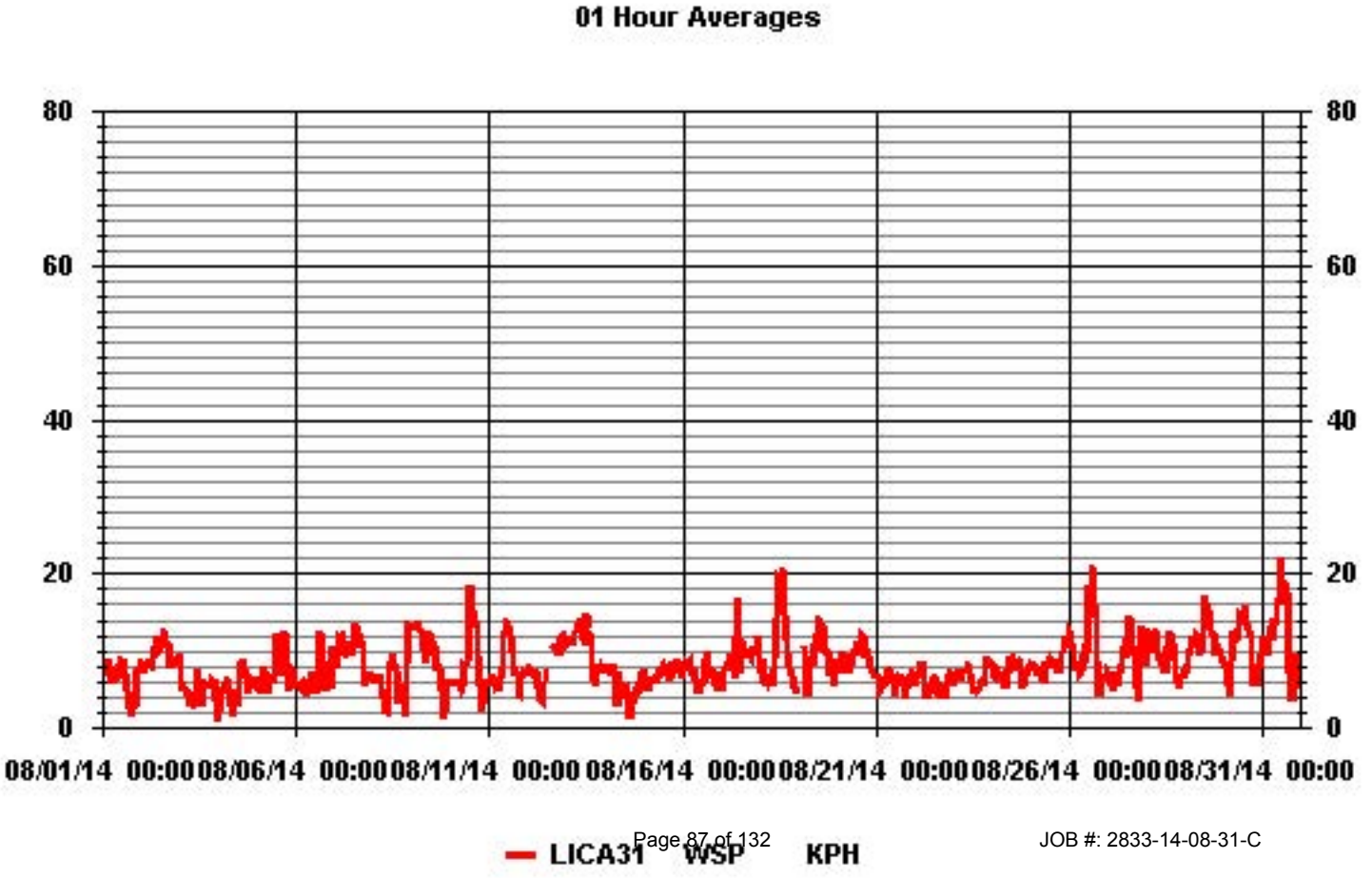
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



LAST CALIBRATION:	August 12, 2014
DECLINATION :	MAGNETIC DECLINATION 13 DEGREE EAST

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	731						
MAXIMUM 1-HR AVERAGE:	22.1	KPH	@ HOUR(S)	11	ON DAY(S)		31
MAXIMUM 24-HR AVERAGE:	11.7	KPH			ON DAY(S)		31
					VAR-VARIOUS		
			OPERATIONAL TIME:			735	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:			98.8	%
STANDARD DEVIATION:	3.26		MONTHLY AVERAGE:			8.17	KPH



JOB #: 2833-14-08-31-C

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

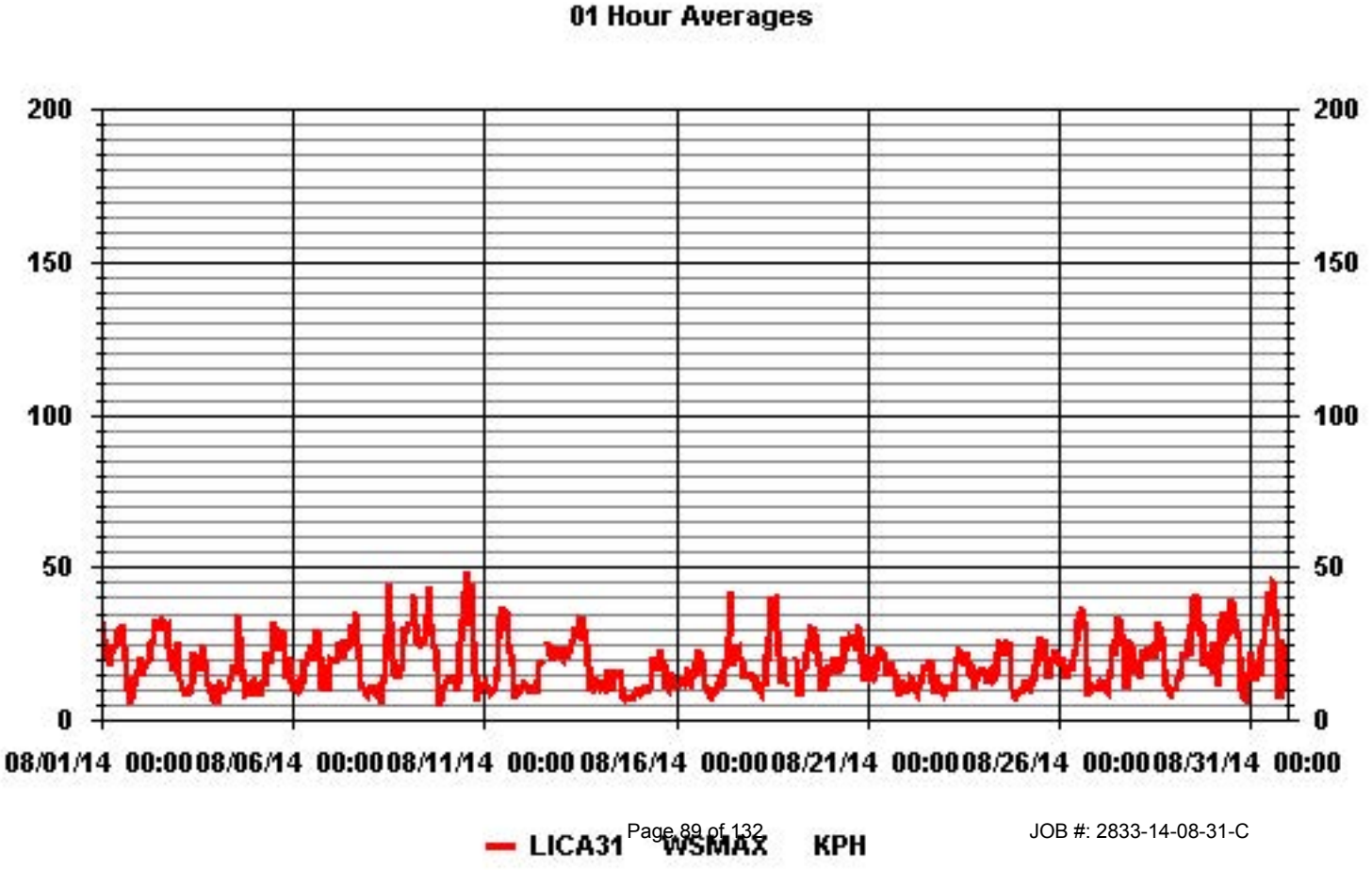
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	31.4	26.9	19.7	22.8	23.2	17.8	21.3	23.9	24.1	27.4	26.7	28.9	29.8	30.9	24.5	19.6	14.7	10.1	5.3	6.6	10.8	13.8	15.2	15.2	31	20.4	24
2	20.2	18.2	14.5	16.7	18.2	18.6	19.1	25	26.5	31.3	33.1	31.3	28.9	31.7	33.4	32	30.2	30.9	23.7	19.1	20.4	15.8	17.1	16.4	33	23.8	24
3	25.4	13.6	10.3	10.3	8.8	8.4	8.4	8.8	11.4	19.1	22.1	20.2	18.4	15.8	20.4	25	20.6	19.3	12.1	10.8	11.9	9.6	5.7	11.4	25	14.5	24
4	5.5	7.9	12.9	9.4	9.3	9.7	10.5	10.8	13.2	13.6	18.2	16	16.1	34.2	22.3	26.9	16.9	13.6	8.6	9.1	9.2	11.6	12.3	8.1	34	13.6	24
5	9.9	11.8	11	8	11.2	12.1	12.1	22.3	21.2	18.6	21.9	29.8	32	30.7	29.1	22.6	25.8	29.6	24.1	13.4	15.1	15.6	20.4	12.7	32	19.2	24
6	9.9	11.2	10.1	9.4	10.5	12.7	12.7	19.7	17.8	20.7	21.7	24.8	19.1	23	26	30	23.9	21.3	11.2	10.5	10.5	9.2	17.8	20.2	30	16.8	24
7	19.8	**P**	19.9	18.4	24.5	24.1	21.2	21	26.7	22.8	25	24.7	30.2	31.1	26.9	35.7	25.2	20.6	13.2	11.6	11	9	8.3	9.9	36	20.9	23
8	10.4	8.3	9.9	9.2	11.4	9.4	7.9	5.1	12.1	14.5	27.6	24.1	44.4	33.1	20.6	15.2	13.2	15.6	13.6	18.2	16.4	24.8	30.2	28.3	44	17.6	24
9	30.7	32.2	30.5	41	30.7	32.5	25.6	25.4	24.7	25.4	27.1	28.9	34.2	43.3	32.2	28	25.6	23.9	16.2	5.1	6	8.3	9.9	11.4	43	***25.0***	24
10	12.5	13.6	13.6	11.5	14.3	12.3	9.4	11.6	25.4	26.1	33.3	42.1	39	***48.8***	45.3	30.9	44.2	26.1	16	5.6	8.8	9.7	10.8	12.1	***49***	21.8	24
11	12.9	11.8	11.2	9.1	9.9	9.7	10.1	12.9	17.3	26.3	34	36.8	34	36.4	29.6	25.6	22.1	18.2	12.6	8.1	8.3	9.2	9.7	11.6	37	17.8	24
12	12.7	12.3	11	10.3	9.9	10.8	10.8	9.7	9.5	12.8	18.2	18.8	**C**	**C**	**C**	**C**	24.5	22	19.3	22.3	21.7	23.4	21.6	23.6	25	16.3	24
13	21.1	20.2	22.3	20.1	22.9	22.8	25.8	26.2	30.8	29.6	28.9	32.7	31.9	33.7	25.7	29.5	25.5	18.4	10.7	10.9	10.4	12.9	12.8	12	34	22.4	24
14	13.3	10.1	10.5	10.2	12.8	16.1	13.7	9.5	15.7	**P**	**P**	**P**	14.8	16.2	11.6	7.7	6.8	7.4	6.9	7.2	7	8	9.4	9	16	10.7	21
15	**P**	9.9	8.7	9.1	10.6	10.6	9	10.9	11.2	16.6	20.2	16.8	16.6	16.8	22.9	20.3	18.7	10.6	12	10.8	12.7	15.3	13.9	10.4	23	13.7	23
16	11.4	11.4	11.6	13	13	12.2	13.7	17.1	13.1	12.3	14.3	14.7	18.7	16.2	21.8	21.8	20.7	15.7	10.6	11.7	9.2	8.3	7.8	9.3	22	13.7	24
17	9.4	10.3	12.3	14.7	10.2	11.4	16.4	20	17.6	27.4	40.9	**P**	18.5	24.5	23.5	24.1	20.7	19.8	14.7	**P**	**P**	**P**	14.9	14.7	41	18.3	20
18	12.8	14.4	11.2	10.1	9.9	9	11.5	11.5	21.2	19.4	27.1	40.5	35.9	38.9	39.5	29.8	21.9	19.6	11.9	20.8	13	11.8	**P**	**P**	41	20.1	22
19	**P**	**P**	**P**	19.8	14.8	7.7	12.2	16.2	17.4	16.4	22.5	25.9	30.9	26	30.7	29	22.6	17.6	18.5	10.8	10.7	12.7	11.4	14	31	18.5	21
20	18.4	17.5	17.1	20.6	18.1	15.2	20.4	16.1	18.4	27.3	22.8	25.2	26.4	24.7	27.8	26.7	25.3	22.2	31.1	27.9	19.4	14.7	15.2	14.5	31	21.4	24
21	21.4	20	14.3	13.5	14.3	16.3	21.4	23.4	22	22	19.7	14.5	19.2	17.2	17.6	18.2	17.3	15.3	10.3	8	9.7	11.7	13.2	11.4	23	16.3	24
22	9.9	9.5	10.1	13.4	12.6	10.8	10.5	9	10.4	12.2	14.7	16	18.1	16.6	18.5	18.6	12.1	15.7	8.2	11.2	12.3	10.6	12.3	10.8	19	12.7	24
23	8.6	9.5	10.6	10.3	10.5	10.3	15.5	18.3	20.2	23.8	19.9	21.5	17.3	19.9	21.8	19.4	14.7	15.8	13.9	9.8	12.7	14.9	16.6	14.5	24	15.4	24
24	17.2	15.5	15	12.3	13.6	16.5	16.9	13.6	14.3	21.8	26	22.5	24.6	21.4	22.9	26.2	23.4	25.7	10.5	8.1	7.7	8.8	8.7	9.8	26	16.8	24
25	9.6	10.6	10.7	12.9	10.3	10	11.3	13.3	13.5	17.7	22.7	26.4	26.5	24	24.5	19.4	20.6	13.9	15	18.8	20.7	23.1	20.4	22	27	17.4	24
26	20.3	18	20.6	17.4	13.7	15.9	17.4	17.2	19.3	22.7	21.1	25.5	32.9	35.2	36.9	32.9	30.2	18.4	8	9.2	10.2	11.4	10.7	11.3	37	19.9	24
27	12	9.5	13.4	11.7	10.4	10.5	9.8	13.6	16.8	23.2	22.8	26.2	31.2	33.6	29.6	28.6	24.5	14.3	10.3	20.2	26.2	22.5	24.1	14.9	34	19.2	24
28	18.5	19.9	13.7	18.4	19.2	22.8	21.7	23	23.2	21.4	24.4	19.8	25.2	23.9	32.4	31.2	27.7	23.5	17.6	11.9	10.2	8.7	8.3	9.6	32	19.8	24
29	10	10.6	13.2	14	16.6	19.8	22.3	20	26.7	20.6	31.5	37.7	39.9	37.6	40.8	29.5	27.4	31.9	17.7	19.2	20.7	22.3	19.8	17.8	41	23.7	24
30	15	25.3	21.4	11	18.6	32.8	24.8	35.2	26.2	27.2	30.4	33.4	39.1	34.1	33.4	29.5	27.6	21.7	10.3	8.3	7.7	10.8	12.7	15.5	39	23.0	24
31	22.2	19	14.3	12.9	17.6	17.1	14.3	24	26.4	30.7	33.6	42	38.2	45.4	44.8	37.1	30.3	12.4	6.4	26.5	21.4	24.4	9.3	13.2	45	24.3	24
HOURLY MAX	31	32	31	41	31	33	26	35	31	31	41	42	44	49	45	37	44	32	31	28	26	25	30	28			
HOURLY AVG	15.6	14.8	14.2	14.2	14.6	15.0	15.4	17.2	19.2	21.7	25.1	26.5	27.7	28.8	27.9	25.7	22.7	19.1	13.6	13.1	13.1	13.8	14.0	13.9			

STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	49	KPH	@ HOUR(S)	13	ON DAY(S)	10
					VAR-VARIOUS	
OPERATIONAL TIME:					730	HRS



JOB #: 2833-14-08-31-C

LICA31
WSP / WDR Joint Frequency Distribution (Percent)

August 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	2.18	1.77	1.91	1.91	1.50	.40	.95	1.50	1.63	1.91	2.59	1.50	.95	1.09	1.22	1.91	25.00
<	12.0	1.77	1.50	3.41	3.27	1.09	2.73	3.41	7.78	6.69	2.59	3.82	6.28	4.78	4.23	6.01	2.59	62.02
<	20.0	.00	.00	.00	.00	.13	.13	.13	1.50	1.09	.00	.00	2.59	2.86	3.55	.40	.00	12.43
<	29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00	.40
<	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.96	3.27	5.32	5.19	2.73	3.27	4.50	10.79	9.42	4.50	6.42	10.79	8.60	8.87	7.65	4.50	

Calm : .13 %

Total # Operational Hours : 732

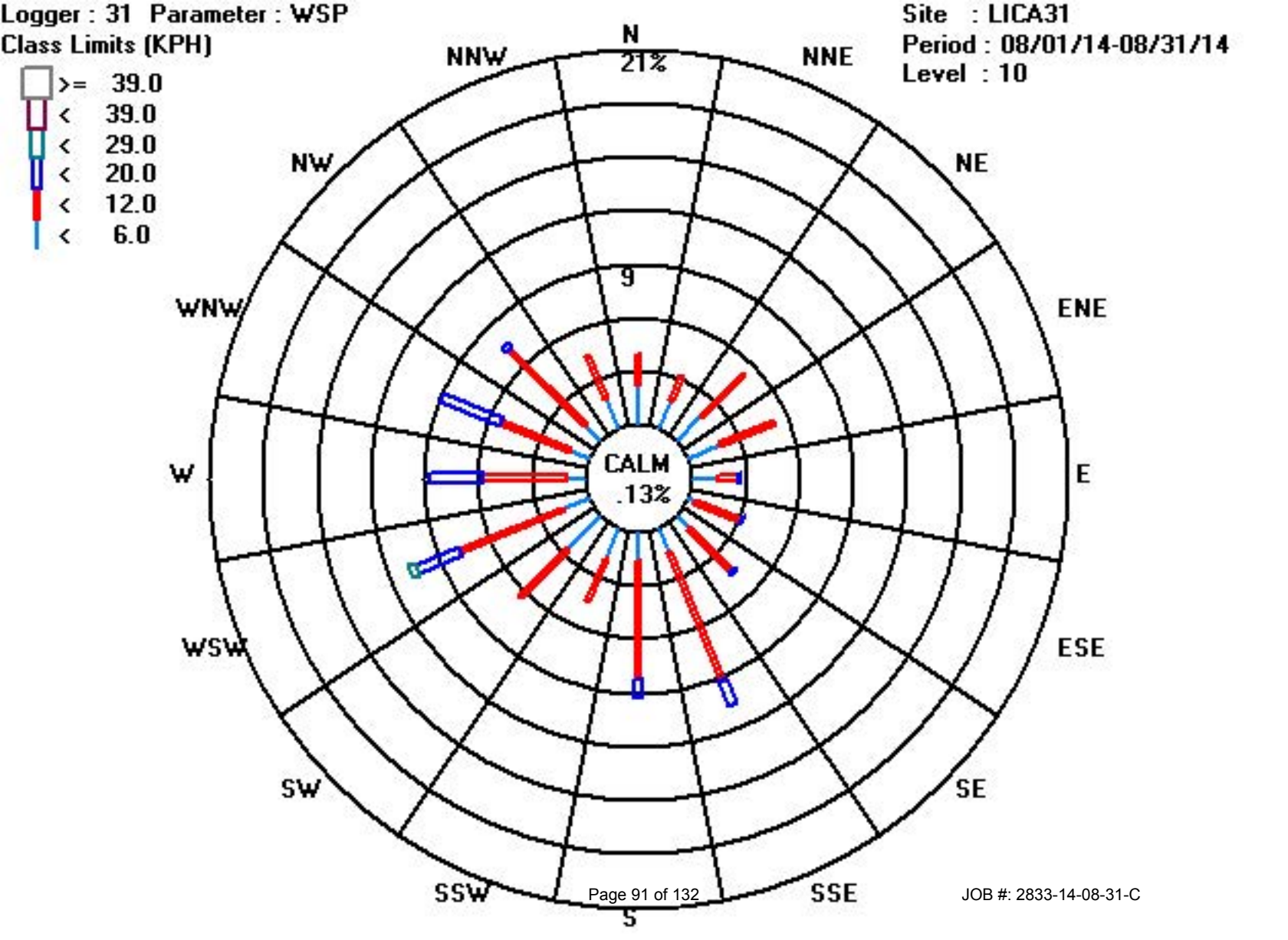
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	16	13	14	14	11	3	7	11	12	14	19	11	7	8	9	14	183
<	12.0	13	11	25	24	8	20	25	57	49	19	28	46	35	31	44	19	454
<	20.0					1	1	1	11	8			19	21	26	3		91
<	29.0												3					3
<	39.0																	
>=	39.0																	
	Totals	29	24	39	38	20	24	33	79	69	33	47	79	63	65	56	33	

Calm : .13 %

Total # Operational Hours : 732



JOB #: 2833-14-08-31-C

Vector Wind Direction

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

WIND DIRECTION (WD) hourly averages in degrees

MST

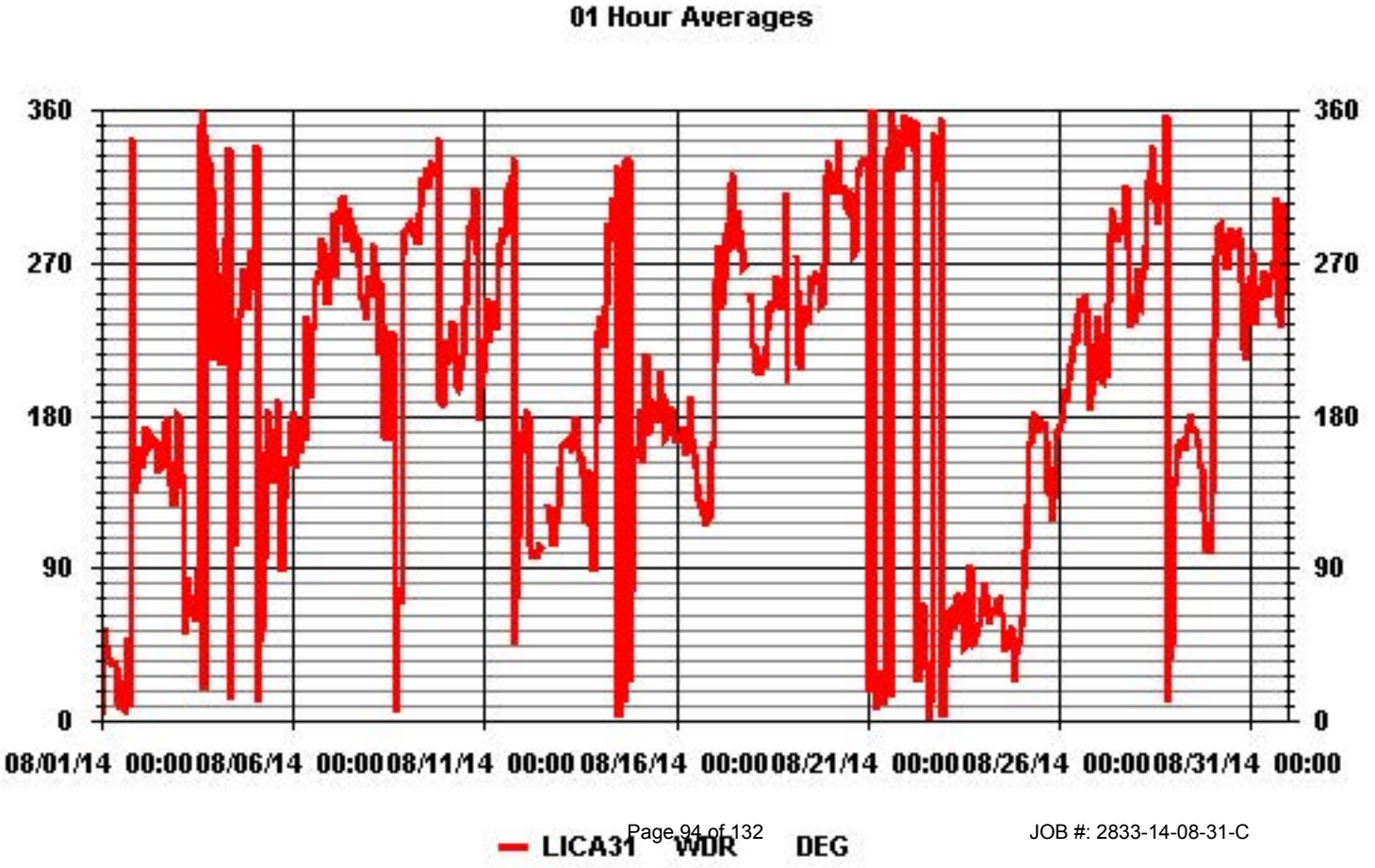
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	5	43	55	45	41	38	35	31	36	33	13	14	7	9	8	24	49	42	7	344	134	145	139	162	344	NNW	24
2	158	159	149	156	173	159	161	168	162	166	165	146	148	161	160	155	176	179	150	138	152	127	135	137	179	S	24
3	181	180	139	145	51	80	85	76	64	63	59	63	81	89	351	360	18	345	333	328	328	314	212	279	360	N	24
4	245	258	237	209	264	252	284	322	338	12	129	103	123	206	237	243	265	265	251	249	242	253	277	270	338	NNW	24
5	298	339	10	46	56	53	95	158	184	173	156	140	146	161	190	177	118	88	100	130	155	150	152	176	339	NNW	24
6	183	149	151	167	158	178	167	167	239	207	191	195	232	232	257	260	265	285	283	266	262	245	256	275	285	WNW	24
7	269	299	261	274	292	301	307	308	310	291	282	302	298	294	276	284	284	268	249	247	248	251	236	259	310	NW	24
8	263	249	281	270	258	215	242	260	235	166	181	165	174	216	230	226	5	24	76	75	68	274	288	290	290	WNW	24
9	293	294	291	293	286	283	281	299	303	320	317	313	326	315	330	323	324	324	323	344	190	187	185	209	344	NNW	24
10	222	222	211	226	236	230	198	196	198	206	215	239	245	271	284	292	295	308	315	276	184	177	196	205	315	NW	24
11	226	242	249	223	231	232	232	232	247	267	281	291	289	286	312	315	314	322	332	44	72	108	126	157	332	NNW	24
12	171	177	183	180	104	102	97	97	97	99	103	102	**C**	**C**	**C**	**C**	126	118	112	103	112	116	126	149	183	S	24
13	161	162	164	165	166	162	160	161	169	179	177	153	158	156	146	116	125	149	116	98	87	117	175	229	229	SW	24
14	231	239	237	220	245	293	284	284	307	**P**	**P**	**P**	2	22	34	11	331	304	332	23	76	139	156	156	332	NNW	21
15	161	182	182	151	193	216	168	170	176	189	185	178	183	175	206	194	191	167	168	176	181	185	183	165	216	SW	24
16	165	167	167	164	172	172	157	160	170	191	168	159	150	140	131	126	126	122	114	123	129	118	161	164	191	S	24
17	210	259	269	280	242	245	259	287	290	294	317	323	280	281	286	301	291	278	267	268	**P**	**P**	251	247	323	NW	22
18	220	223	206	206	205	205	215	208	221	230	244	241	248	243	255	262	258	245	243	256	312	299	201	**P**	312	NW	23
19	**P**	**P**	**P**	273	255	211	207	231	242	242	238	237	252	262	259	265	263	258	252	244	245	270	322	330	330	NNW	21
20	324	322	320	310	323	317	343	315	311	315	304	302	305	313	301	275	276	304	320	326	331	328	331	328	343	NNW	24
21	17	26	23	360	359	7	10	12	18	29	9	20	332	338	14	359	341	350	324	337	328	325	354	357	360	N	24
22	351	338	344	356	343	335	355	23	35	48	47	69	36	31	1	10	26	347	317	340	344	344	356	2	356	N	24
23	15	32	48	64	65	53	60	74	71	76	69	58	43	44	76	90	92	60	46	47	50	58	56	69	92	E	24
24	68	82	76	63	57	67	63	66	63	70	71	65	62	51	41	52	52	53	57	43	22	39	47	47	82	E	24
25	55	62	78	101	128	163	164	178	182	170	173	173	178	175	173	177	166	135	133	118	130	150	166	171	182	S	24
26	172	175	180	187	196	188	200	211	220	226	225	222	240	249	247	249	250	245	222	182	191	223	207	214	250	WSW	24
27	239	202	201	214	229	202	215	246	287	303	285	284	282	292	294	287	291	294	316	279	231	243	250	235	316	NW	24
28	245	267	244	243	260	266	280	307	319	325	339	319	307	292	297	308	308	316	339	358	11	36	45	88	358	N	24
29	138	144	155	163	166	162	159	168	175	173	181	175	171	171	164	164	152	150	124	102	101	103	98	117	181	S	24
30	133	226	274	291	292	275	285	285	278	267	269	283	290	281	282	287	288	286	259	241	219	213	243	244	292	WNW	24
31	263	277	234	236	256	250	248	252	265	257	249	252	264	262	271	259	308	250	239	232	253	306	292	254	308	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:	August 12, 2014
DECLINATION :	MAGNETIC DECLINATION 13 DEGREE EAST

MONTHLY CALIBRATION TIME:	4	HRS	OPERATIONAL TIME:	735	HRS
STANDARD DEVIATION:	93.68		AMD OPERATION UPTIME:	98.8	%
			MONTHLY AVERAGE:	239	DEG



JOB #: 2833-14-08-31-C

Standard Deviation Wind Direction

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST

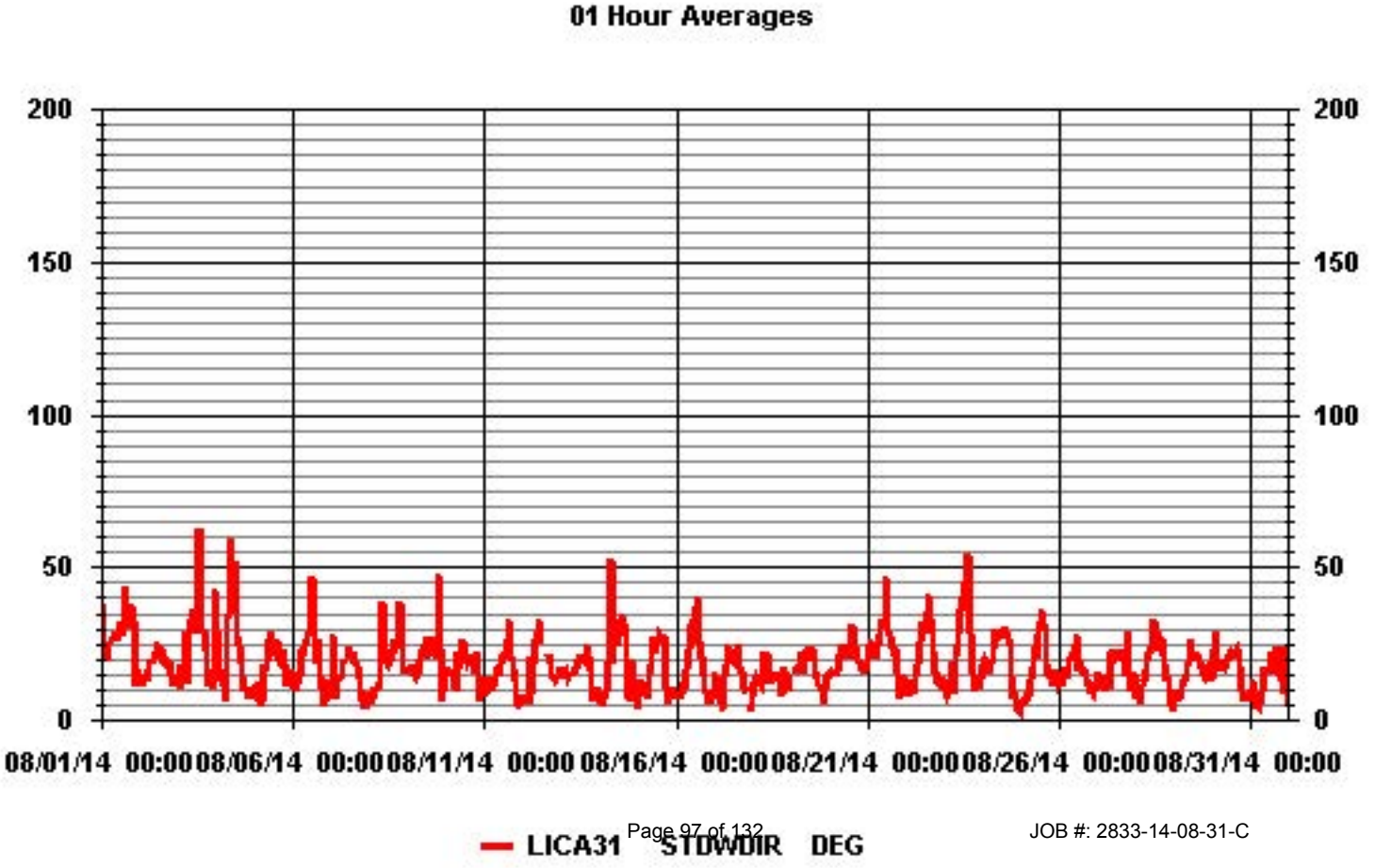
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	38	22	24	19	22	25	27	28	28	26	29	27	32	27	31	44	30	37	33	38	33	12	12	14
2	15	14	11	14	13	16	19	19	19	20	22	25	24	21	20	21	19	18	20	15	15	12	12	12
3	11	11	18	13	29	12	20	33	30	36	29	29	45	63	54	30	29	23	17	11	13	11	11	43
4	30	18	13	16	12	6	14	33	35	59	41	37	52	28	25	19	15	10	11	8	8	8	9	10
5	9	11	11	8	5	6	18	16	19	26	29	26	21	22	26	20	19	20	23	19	12	12	15	16
6	11	10	10	12	14	22	22	24	26	29	28	35	47	29	24	18	26	15	11	5	6	13	11	12
7	10	28	7	8	13	14	15	19	19	20	23	24	21	20	22	19	18	14	11	7	6	4	6	5
8	9	5	7	11	9	11	11	25	39	34	23	19	18	19	23	26	24	25	30	39	26	15	16	16
9	16	16	17	17	15	14	15	20	23	24	24	20	27	25	24	26	26	23	20	48	24	6	10	11
10	14	17	15	15	15	11	9	22	17	24	26	18	21	19	20	20	20	19	15	22	15	6	8	12
11	12	8	14	10	10	11	14	17	15	15	18	21	22	24	23	33	21	20	17	13	5	4	7	7
12	7	7	6	6	21	8	16	18	26	29	33	26	**C**	**C**	**C**	**C**	21	19	14	14	13	14	15	17
13	14	15	15	16	14	15	15	16	16	18	17	21	18	21	20	21	25	21	17	9	6	8	10	10
14	6	5	5	7	9	19	18	53	19	**P**	**P**	25	33	32	34	32	28	13	8	6	20	8	7	5
15	4	10	13	8	12	10	7	15	18	25	27	22	26	28	27	25	28	11	10	5	7	11	9	8
16	8	8	8	10	9	10	16	17	23	31	32	30	37	40	26	20	21	15	9	9	6	6	10	7
17	16	7	10	11	6	3	14	18	25	19	20	20	19	20	23	25	18	16	11	10	**P**	**P**	4	4
18	8	12	14	13	12	11	13	22	21	21	12	15	15	14	15	15	13	9	8	17	11	16	10	**P**
19	**P**	**P**	**P**	16	16	18	22	16	15	23	19	24	22	24	20	16	14	12	11	10	5	10	14	14
20	15	16	15	15	15	16	21	25	22	24	24	20	21	27	31	22	21	22	20	19	17	15	17	16
21	25	24	26	21	21	21	24	28	30	33	32	47	34	29	28	24	21	24	16	7	10	12	15	13
22	12	8	9	13	9	9	14	18	25	26	31	31	28	35	41	28	33	23	16	13	12	13	13	13
23	10	8	9	10	19	8	13	21	25	28	36	40	45	38	53	53	29	22	16	9	11	11	14	14
24	18	20	19	16	16	19	19	23	30	26	29	29	28	27	30	29	27	25	15	7	9	6	4	3
25	5	6	7	8	7	8	13	17	24	20	28	32	31	36	30	30	19	15	14	11	15	16	12	11
26	12	12	15	15	17	13	20	21	21	19	25	28	16	20	15	17	15	11	13	9	10	9	11	10
27	16	10	15	14	9	13	12	10	22	21	23	20	20	20	22	22	22	17	14	29	15	10	11	16
28	7	11	5	10	11	13	16	19	22	24	28	33	25	30	23	23	27	22	19	13	14	5	5	3
29	9	9	6	7	8	11	13	15	18	19	26	19	21	21	21	20	18	18	15	14	15	17	16	14
30	13	23	29	19	16	17	17	20	18	19	21	22	21	21	22	23	21	18	10	6	7	9	7	7
31	10	13	8	4	5	4	5	9	17	16	16	15	22	19	17	15	24	15	14	13	8	24	17	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: August 12, 2014

CALIBRATION TIME: 4 HRS OPERATIONAL TIME: 736 HRS



JOB #: 2833-14-08-31-C

Calibration Reports

Sulphur Dioxide

API 100E SO2 Analyzer Calibration

Date:	14-Aug-14	**Start/End Time (mst):**	13:00/15:57
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:**	4-Feb-14

Analyzer:

Serial Number:	468	**Range ppb:**	1000
Last Calibration Date:	10-Jul-14	**As Found C.F.**	0.974
Previous Cal High Point C.F.:	1.000	**New C.F.:**	1.003

	As found:	As left:
SLOPE:	1.028	0.984
OFFSET:	145.0	150.9
HVPS:	544	544
RCELL TEMP:	50.0	50.0
BOX TEMP:	27.5	30.8
PMT TEMP:	7.8	7.9
IZS TEMP:	40.0	40.0
TEST:	NA	NA
STABIL:	0.2	0.2
PRES:	24.0	24.0
SAMP FL:	588	588
PMT:	135.5	135.5
NORM PMT:	151.9	151.9
UV LAMP:	1758	1758
LAMP RATIO:	99.2	99.2
STR. LGT	74.5	74.5
DRK PMT:	16.5	16.5
DRK LMP:	3.5	3.5
Internal Span:	263	263

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	4995	0	4995
high	4916	78	4994
mid	4956	38	4994
low	4977	19	4996

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	3.0	NA
adjusted zero	4995	0.0	4995	0	0.0	NA
as found high	4916	77.66	4994	749.6	770.0	0.974
adjusted high	4916	77.66	4994	749.6	749.5	1.000
mid	4956	37.81	4994	364.9	363.0	1.005
low	4977	18.92	4996	182.5	182.0	1.003
calibrator zero	4995	0.00	4995	0	0.2	NA
					Average C.F.=	1.003

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)=	**0.06%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**2.65%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

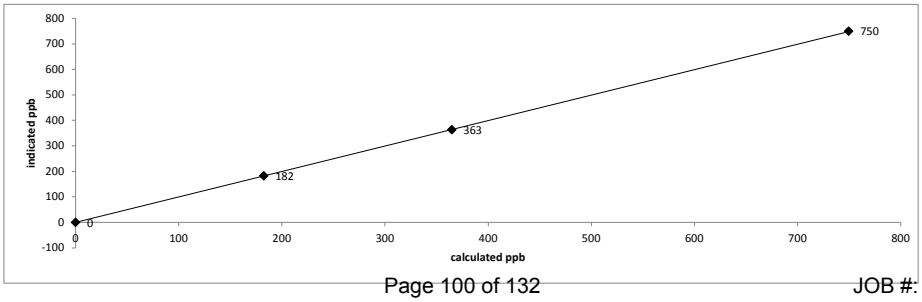
****run converter effeciency test immediately following zero adjust****

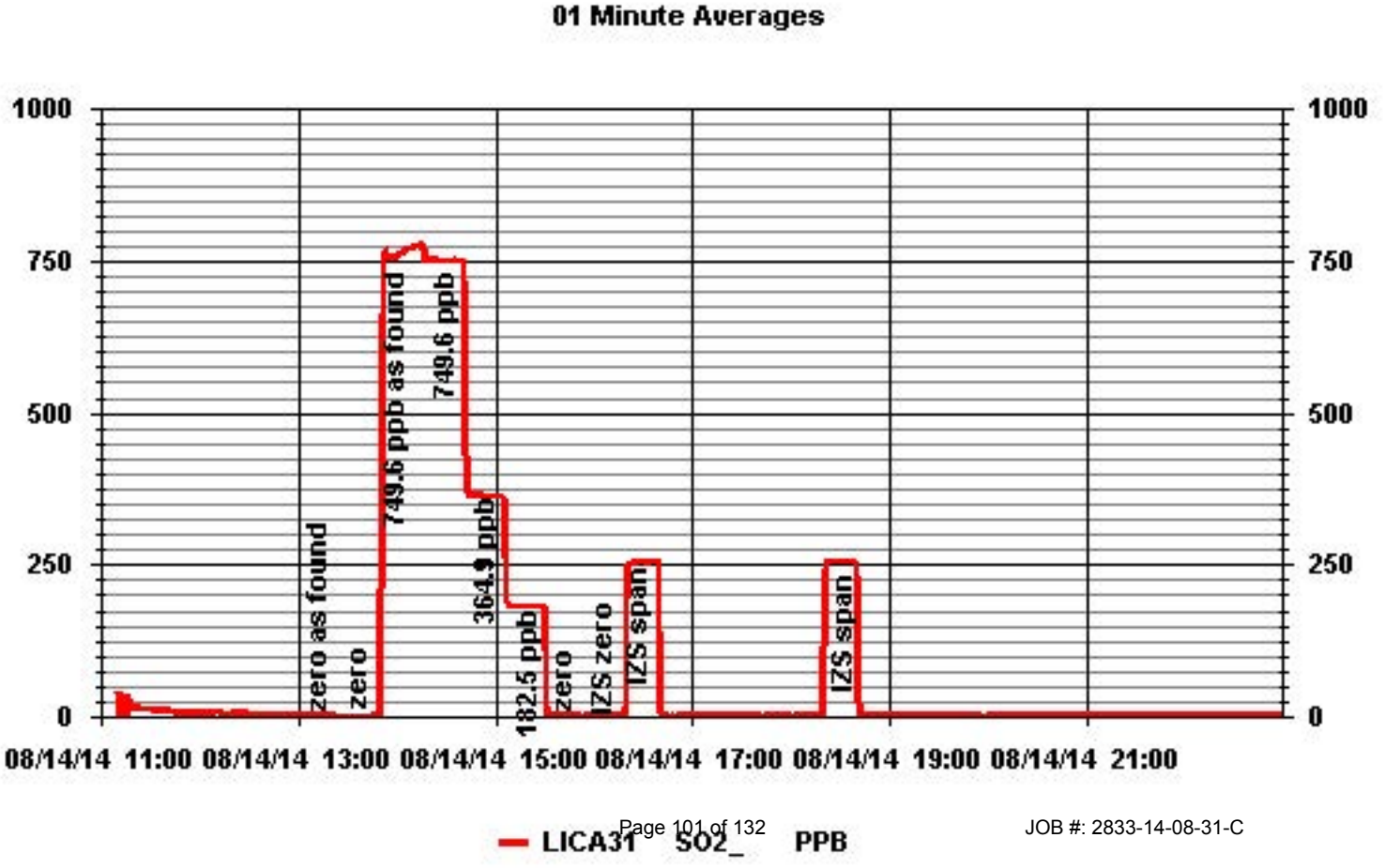
SO_2 High Point gas concentration:	NA	Time gas run (mst):	NA
Zero corrrected analyzer response:	NA		

Comments:

Sample filter changed.

API 100E SO2 Analyzer Calibration





JOB #: 2833-14-08-31-C

Hydrogen Sulphide

API 101E H2S Analyzer Calibration

Date:	12-Aug-14	**Start/End Time (mst):**	0948-1145
Company:	LICA	**Calibration Purpose:**	Removal
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:**	8-Jul-16

Analyzer:

Serial Number:	722	**Range ppb:**	100
Last Calibration Date:	10-Jul-14	**As Found C.F.**	0.917
Previous Cal High Point C.F.:	0.999	**New C.F.:**	0.894

	As found:	As left:
SLOPE:	0.999	NA
OFFSET:	58.4	NA
HVPS:	623	NA
RCELL TEMP:	50.0	NA
BOX TEMP:	29.3	NA
PMT TEMP:	8.1	NA
IZS TEMP:	45.0	NA
TEST:	ConvTemp=315.0	NA
STABIL:	0.2	NA
PRES:	25.3	NA
SAMP FL:	613	NA
PMT:	79.3	NA
NORM PMT:	59.0	NA
UV LAMP:	2275.3	NA
LAMP RATIO:	103.3	NA
STR. LGT	29.2	NA
DRK PMT:	29.0	NA
DRK LMP:	3.2	NA
Internal Span:	NA	NA

Calibrator:

Flow Meter ID's:	NA
Make & Model:	Environics 6100
Serial #:	5212
Cal Gas Cylinder I.D. # :	BLM1434
Cal Gas Conc. (ppm):	10.3

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	11	5001

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	0.3	NA
adjusted zero	NA	0.0	######	0		NA
as found high	4960	37.76	4998	78.0	85.0	0.917
adjusted high		NA				
mid	4978	18.37	4996	37.9	42.0	0.903
low	4985	10.62	4996	21.9	25.5	0.860
calibrator zero	NA	0.00	######	0		NA
					Average C.F.=	0.894

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**0.922**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.67%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**8.18%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

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

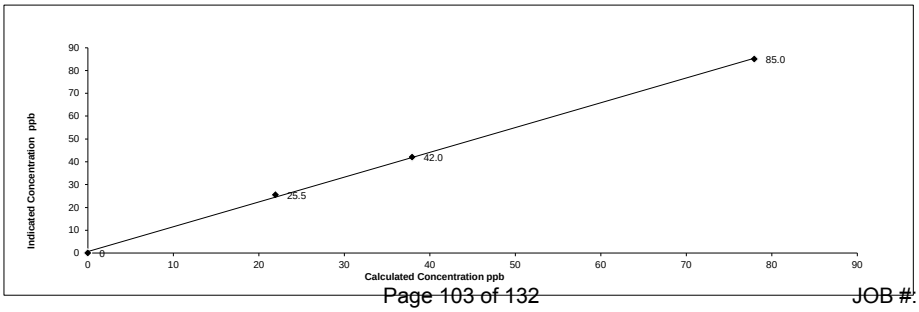
SO_2 High Point gas concentration: NA Time gas run (mst): NA

Zero corrrected analyzer response: NA

Comments:

Removal calibration

API 101E H2S Analyzer Calibration



API 101E H2S Analyzer Calibration

Date:	12-Aug-14	**Start/End Time (mst):**	1628-1921
Company:	LICA	**Calibration Purpose:**	Installation
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:**	8-Jul-16

Analyzer:

Serial Number:	510	**Range ppb:**	100
Last Calibration Date:	NA	**As Found C.F.**	NA
Previous Cal High Point C.F.:	NA	**New C.F.:**	1.000

	As found:	As left:
SLOPE:	0.982	1.035
OFFSET:	100.9	104.9
HVPS:	542	542
RCELL TEMP:	50.0	50.0
BOX TEMP:	32.6	33.7
PMT TEMP:	8.3	8.3
IZS TEMP:	45.0	45.0
TEST:	ConvTemp=315.2	ConvTemp=315.4
STABIL:	0.2.	2.2
PRES:	21.8	21.7
SAMP FL:	594	594
PMT:	166	153.3
NORM PMT:	102	106.1
UV LAMP:	1286	1284.8
LAMP RATIO:	83.9	83.8
STR. LGT	49.6	54.3
DRK PMT:	102.2	87.3
DRK LMP:	-4.3	-4.3
Internal Span:	41.7	41.7

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API700
Serial #:	690
Cal Gas Cylinder I.D. # :	BLM1434
Cal Gas Conc. (ppm):	10.3

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	11	5001

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	4999	0.0	4999	0	0.1	NA
as found high		na				
adjusted high	4962	37.80	5000	78.0	78.2	0.999
mid	4984	18.40	5002	38.0	38.4	0.991
low	4989	10.70	5000	22.1	22.0	1.009
calibrator zero	4998	0.00	4998	0	1.0	NA
					Average C.F.=	1.000

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)=	**-0.08%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**#VALUE!**	**± 15%**	**######**

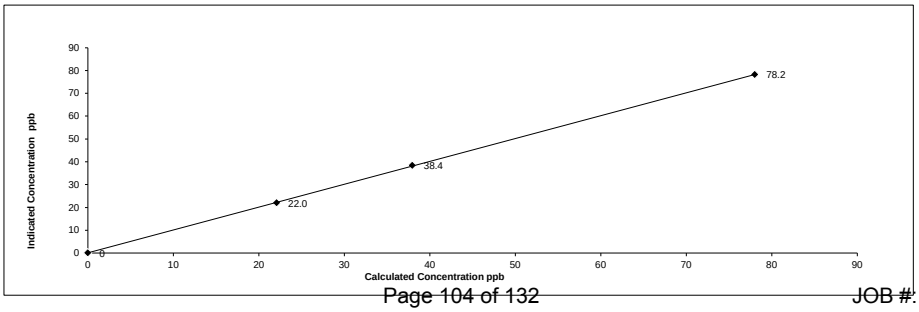
Converter Effeciency Check for H_2S/TRS application:

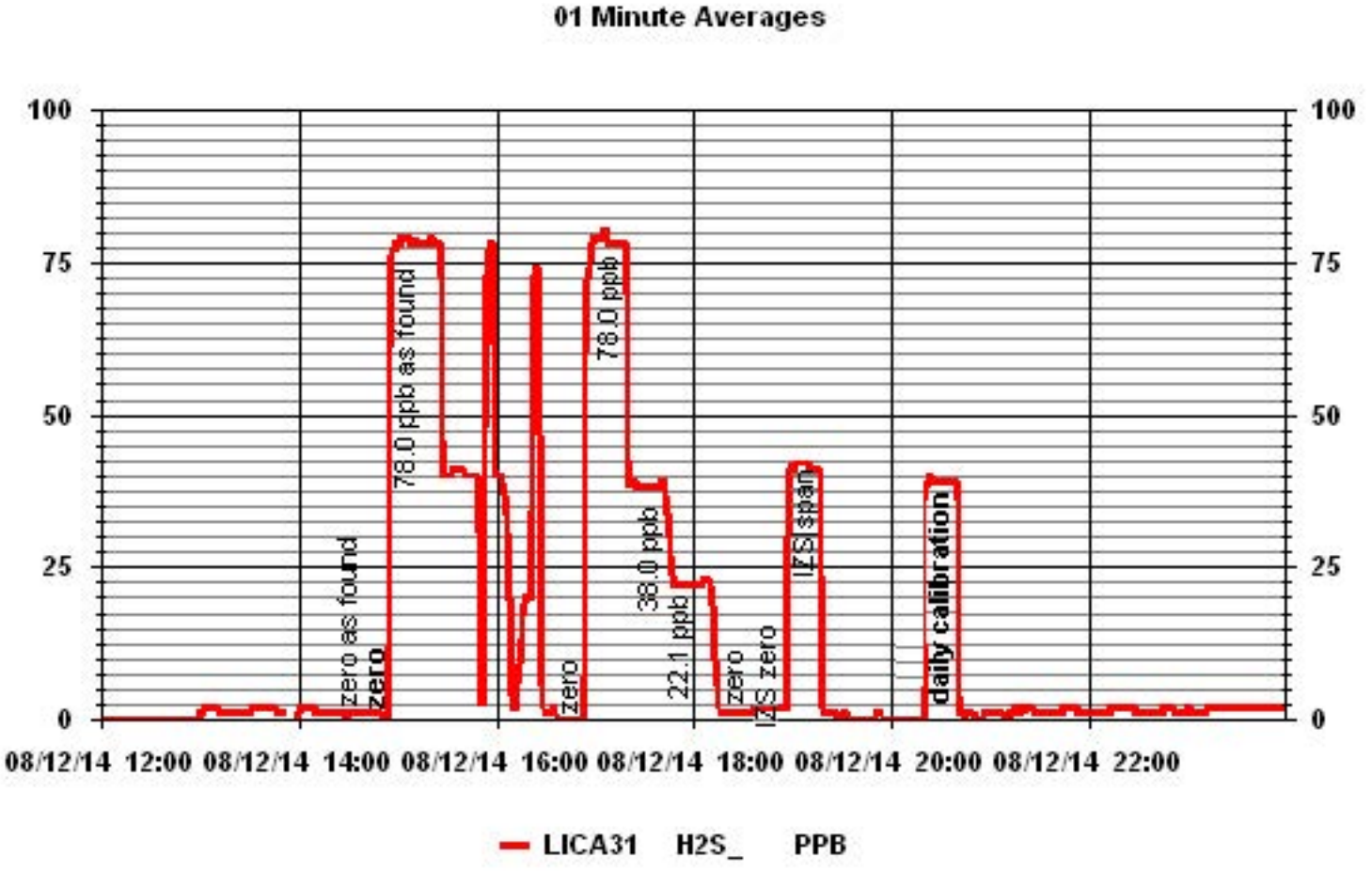
****run converter effeciency test immediately following zero adjust****

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

Comments:

API 101E H2S Analyzer Calibration




01 Minute Averages
100
75
50
25
0
zero as found
zero
78.0 ppb as found
zero
78.0 ppb
38.0 ppb
22.1 ppb
zero
IZS zero
IFS span
daily calibration
08/12/14 12:00
08/12/14 14:00
08/12/14 16:00
08/12/14 18:00
08/12/14 20:00
08/12/14 22:00
LICA31 H2S_ PPB

API 101E H2S Analyzer Calibration

Date:	15-Aug-14	**Start/End Time (mst):**	11:43/15:11
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:	12-Aug-14	**As Found C.F.**	0.927
Previous Cal High Point C.F.:	0.999	**New C.F.:**	1.015

	As found:	As left:
SLOPE:	1.035	1.019
OFFSET:	104.9	117.8
HVPS:	542	542
RCELL TEMP:	50.0	50.0
BOX TEMP:	32.5	32.5
PMT TEMP:	8.4	8.4
IZS TEMP:	45.0	45.0
TEST:	314.9	314.9
STABIL:	0.1	0.1
PRES:	21.8	21.8
SAMP FL:	581	581
PMT:	122.5	122.5
NORM PMT:	120.1	120.1
UV LAMP:	1227	1227
LAMP RATIO:	80.1	80.1
STR. LGT	54.3	54.3
DRK PMT:	52.2	52.2
DRK LMP:	-4.9	-4.9
Internal Span:	41.7	41.7

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	4959	39	4998
mid	4975	19	4994
low	4989	11	5000

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	7.0	NA
adjusted zero	5000	0.0	5000	0	0.3	NA
as found high	4959	38.60	4998	78.0	84.5	0.927
adjusted high	4959	38.60	4998	78.0	78.4	0.999
mid	4975	18.80	4994	38.0	37.7	1.017
low	4989	10.90	5000	22.0	21.7	1.029
calibrator zero	5000	0.00	5000	0	0.4	NA
					Average C.F.=	1.015

Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**0.997**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.08%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**7.26%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

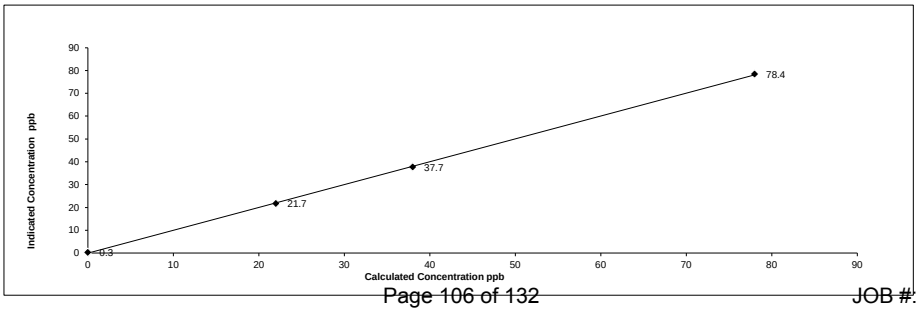
****run converter effeciency test immediately following zero adjust****

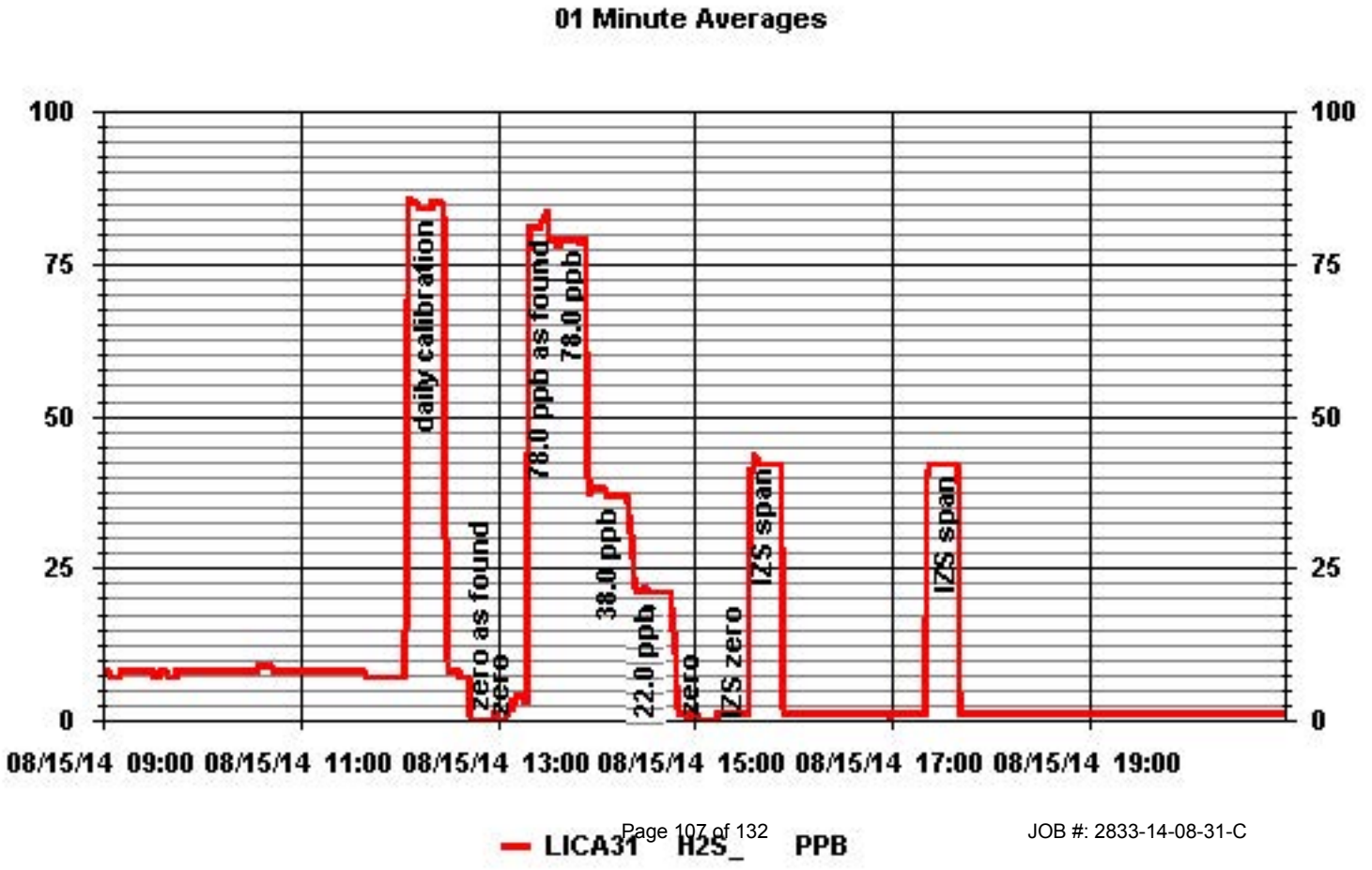
SO_2 High Point gas concentration:	200 PPB	Time gas run (mst):	13:05-13:15
Zero corrrected analyzer response:	3.7		

Comments:

Sample filter changed.

API 101E H2S Analyzer Calibration





JOB #: 2833-14-08-31-C

API 101E H2S Analyzer Calibration

Date:	21-Aug-14	**Start/End Time (mst):**	13:52/14:35
Company:	LICA	**Calibration Purpose:**	As founds
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:	15-Aug-14	**As Found C.F.**	0.994
Previous Cal High Point C.F.:	0.999	**New C.F.:**	NA

	As found:	As left:
SLOPE:	1.019	1.019
OFFSET:	117.8	117.8
HVPS:	542	542
RCELL TEMP:	50.0	50.0
BOX TEMP:	34.2	34.2
PMT TEMP:	8.4	8.4
IZS TEMP:	45.0	45.0
TEST:	315.5	315.5
STABIL:	0.3	0.3
PRES:	22.0	22.0
SAMP FL:	583	583
PMT:	117.7	117.7
NORM PMT:	119.0	119.0
UV LAMP:	1234	1234
LAMP RATIO:	80.5	80.5
STR. LGT	60.0	60.0
DRK PMT:	44.8	44.8
DRK LMP:	-5.2	-5.2
Internal Span:	41.93	41.93

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	4959	39	4998
mid	NA		#VALUE!
low	NA		#VALUE!

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	NA	0.0	######	0		NA
as found high	4959	38.60	4998	78.0	78.5	0.994
adjusted high	NA		######	#VALUE!		#VALUE!
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	**0.52%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

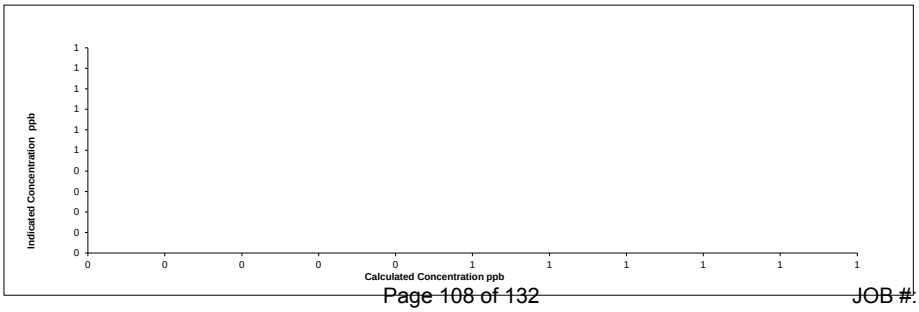
****run converter effeciency test immediately following zero adjust****

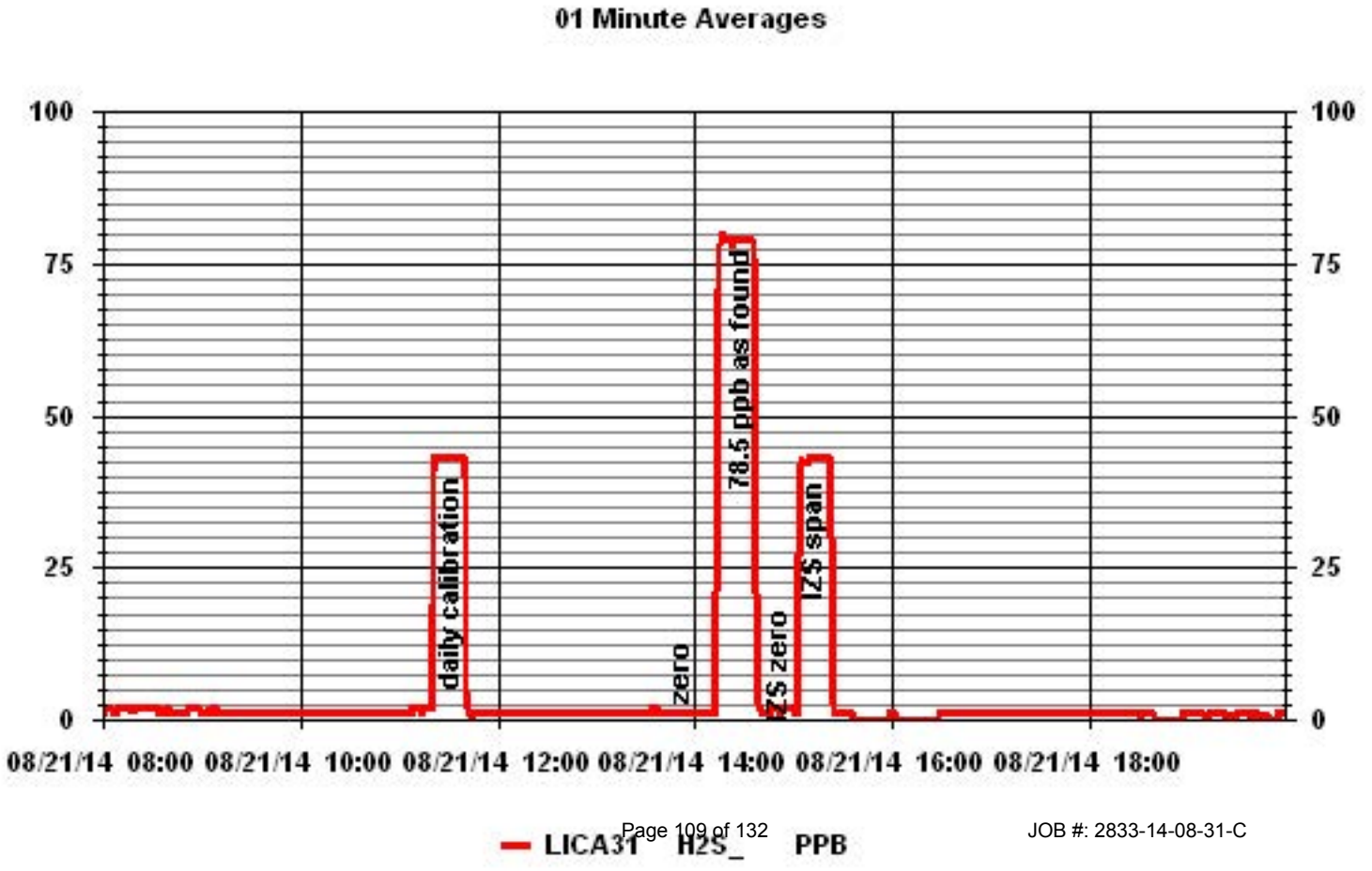
SO_2 High Point gas concentration:	NA	Time gas run (mst):	NA
Zero corrrected analyzer response:	NA		

Comments:

As founds as a precaution due to high span yesterday and high zero today.

API 101E H2S Analyzer Calibration





JOB #: 2833-14-08-31-C

API 101E H2S Analyzer Calibration

Date:	29-Aug-14	**Start/End Time (mst):**	9:20/10:04
Company:	LICA	**Calibration Purpose:**	As Founds
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:	21-Aug-14	**As Found C.F.**	0.990
Previous Cal High Point C.F.:	0.994	**New C.F.:**	NA

	As found:	As left:
SLOPE:	1.019	1.019
OFFSET:	117.8	117.8
HVPS:	542	542
RCELL TEMP:	50.0	50.0
BOX TEMP:	37.0	37.0
PMT TEMP:	8.4	8.4
IZS TEMP:	45.0	45.0
TEST:	314.7	314.7
STABIL:	0.1	0.1
PRES:	21.7	21.7
SAMP FL:	571	571
PMT:	117.9	117.9
NORM PMT:	121.7	121.7
UV LAMP:	1234	1234
LAMP RATIO:	80.5	80.5
STR. LGT	60.0	60.0
DRK PMT:	42.4	42.4
DRK LMP:	-5.1	-5.1
Internal Span:	42.71	42.71

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	4959	39	4998
mid	NA	NA	#VALUE!
low	NA	NA	#VALUE!

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	1.1	NA
adjusted zero	NA	0.0	######	0		NA
as found high	4959	38.60	4998	78.0	78.8	0.990
adjusted high	NA		######	#VALUE!		#VALUE!
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	**0.40%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

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

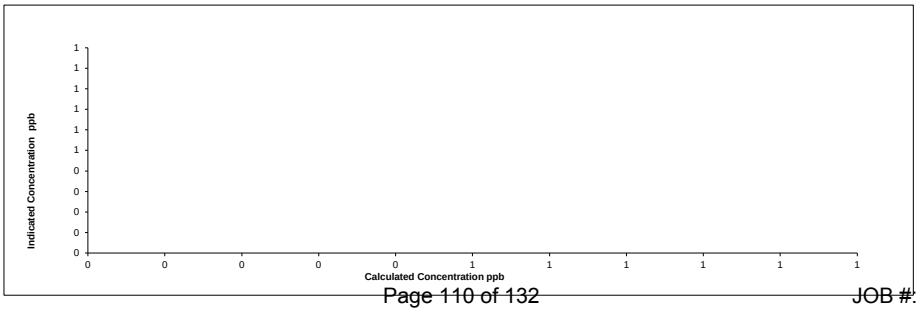
SO_2 High Point gas concentration: NA Time gas run (mst): NA

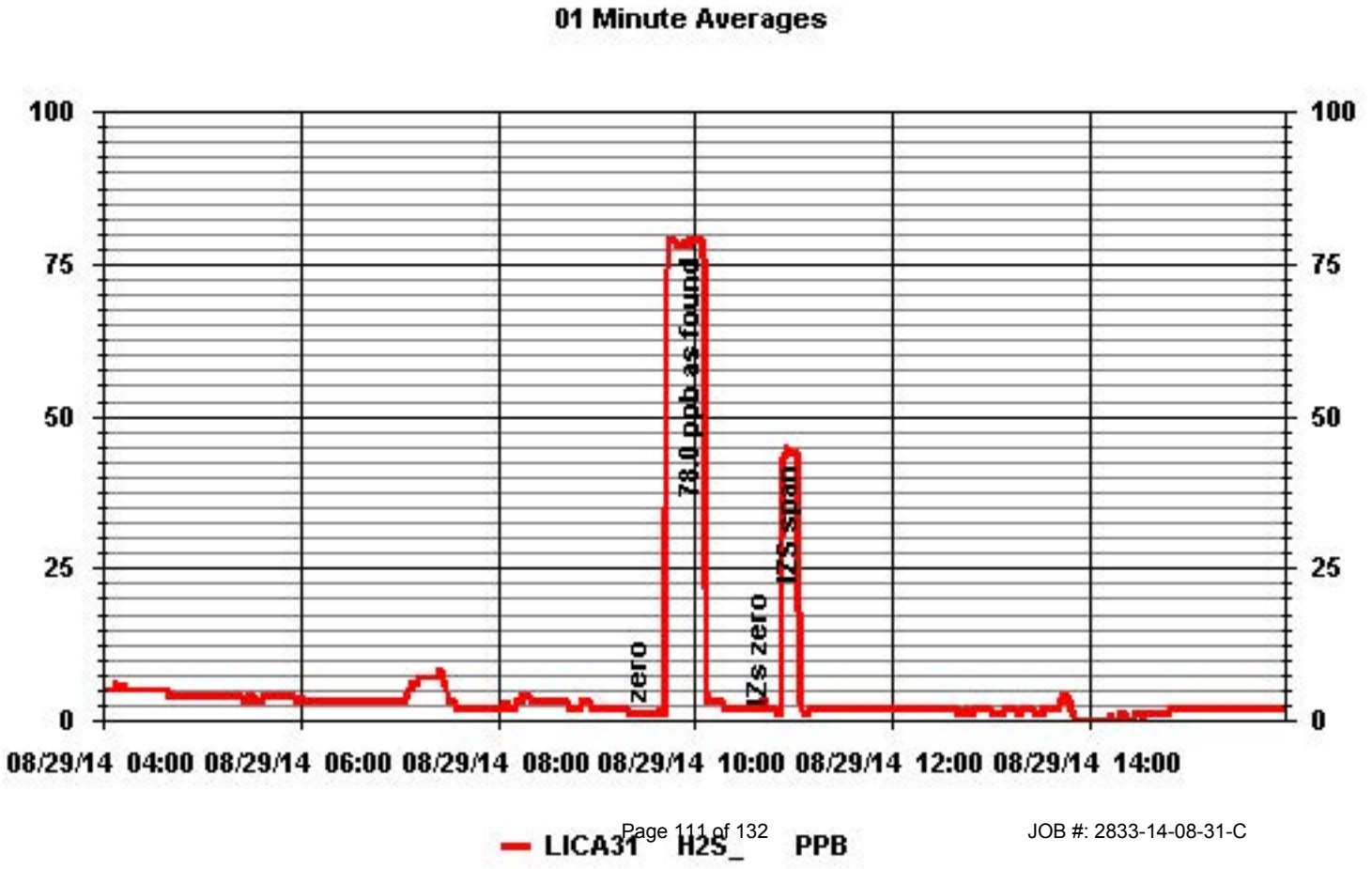
Zero corrrected analyzer response: NA

Comments:

As founds due to high zero (between 2 and 3 ppb) over the last number of days.

API 101E H2S Analyzer Calibration





JOB #: 2833-14-08-31-C

Total Hydrocarbons

Maxxam Thermo 51C THC Analyzer Calibration

Date:	14-Aug-14	**Start Time (mst):**	12:12
Company:	LICA	**End Time (mst):**	14:33
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:	11-Jul-14	**As Found C.F.**	0.995
Previous Cal High Point C.F.:	1.000	**New C.F.:**	1.019

		As found:		As left:
	H_2 cylinder (psi):	1500	H_2 cylinder (psi):	1500
	H_2 cylinder reg set (psi):	25	H_2 cylinder reg set (psi):	25
	Span Cylinder (psi):	1500	Span Cylinder (psi):	1500
	Span Cylinder Reg Set (psi):	30	Span Cylinder Reg Set (psi):	30
	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:	3902	cnt:	3902
	rng:	1	rng:	1
	try:	0	try:	0
	flm:	206.6	flm:	206.6
	det:	125.8	det:	125.8
Oven Readings:	Flame:	206	Flame:	206
	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:	33.25	Internal Span:	33.25

Calibrator:

Flow Meter ID's:	NA	
Make & Model:	API 700	
Serial #:	4760	
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	0.00	NA
adjusted zero	2000	0.00	2000	0	0.00	NA
as found high	2000	65.00	2065	36.42	36.60	0.995
adjusted high	2000	65.00	2065	36.42	36.40	1.000
mid	2000	30.00	2030	17.10	16.80	1.018
low	2000	15.00	2015	8.61	8.30	1.038
calibrator zero	2000	0.00	2000	0	0.00	NA
					Average C.F.=	1.019

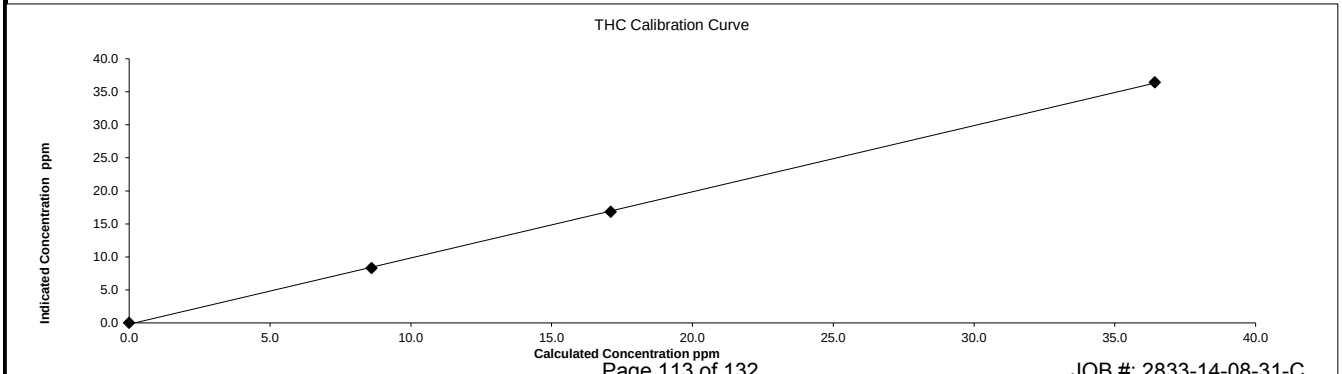
Linear Regression/Calibration Results:

		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.002**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**-0.369%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**0.50%**	**± 15%**	**PASS**

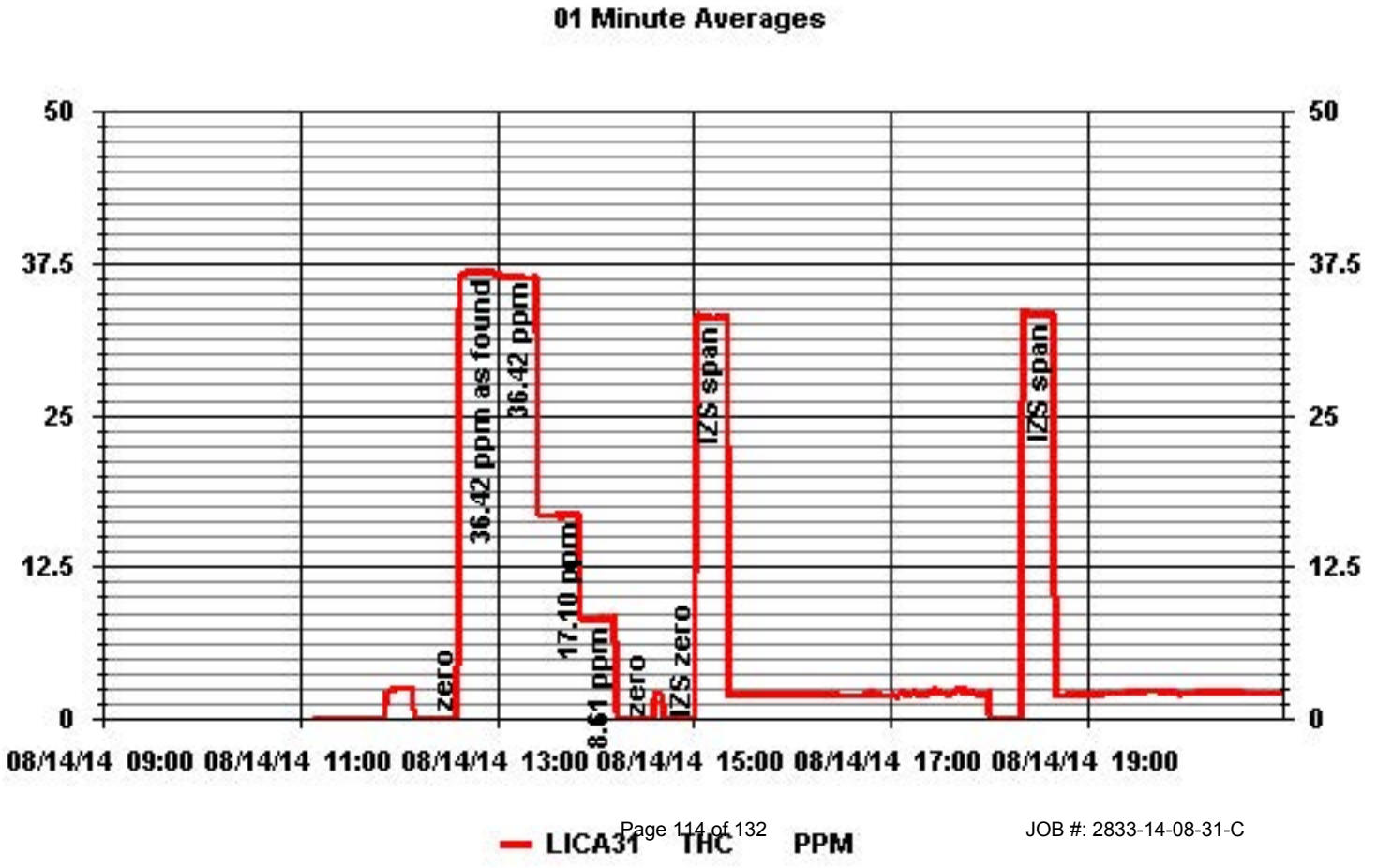
Comments:

No zero adjustment made as it was 0.00. Sample filter changed.

Thermo 51C THC Analyzer Calibration



JOB #: 2833-14-08-31-C



JOB #: 2833-14-08-31-C

Nitrogen Dioxide

API 200E NOx Analyzer Calibration

Date:	14-Aug-14	**Start Time (mst):**	13:01
Company:	LICA	**End Time (mst):**	15:57
Station Name/Location:	St.Lina	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-14

Analyzer Serial Number:	592
Last Calibration Date:	10-Jul-14
Range ppb:	1000

Correction Factors:

	As found C.F.	Previous Cal High Point C.F.:
NO=	0.999	0.998
NOx=	1.010	0.999
NO_2=	NA	0.996

	As found:	As left:
NOx SLOPE:	0.898	0.905
NOx OFFS:	-0.4	-0.2
NO SLOPE:	0.901	0.900
NO OFFS:	-0.5	-1.0
TEST:	130.7	130.7
SAMP FLW:	475	475
OZONE FL:	74	74
PMT:	24.0	24.0
NORM PMT:	0.5	0.5
AZERO:	20.5	20.5
HVPS:	654	654
RCELL TEMP:	50.0	50.0
BOX TEMP:	27.6	27.6
PMT TEMP:	6.8	6.8
IZS TEMP:	40.2	40.2
MOLY TEMP:	313.9	313.9
RCEL:	6.7	6.7
SAMP:	26.3	26.3
Internal Span:	392.2/5.8/386.7	392.2/5.8/386.7

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	4995	0	0	4995
high	4916	78	500.00	4994
mid	4956	38	270.00	4994
low	4977	19	95.00	4996

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	0.1	0.4	NA	NA
adjusted zero	4995	0.0	4995	0	0	0.0	0.0	NA	NA
as found high	4916	77.66	4994	779.1	780.7	780	773	0.999	1.010
adjusted high	4916	77.66	4994	779.1	780.7	779	781	1.000	1.000
mid	4956	37.81	4994	379.3	380.1	379	380	1.001	1.000
low	4977	18.92	4996	189.7	190.1	189	190	1.004	1.001
calibrator zero	4995	0.00	4995	0	0	0.2	0.4	NA	NA
							Average C.F.=	1.001	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										
as found NO_2										
adjusted NO_2										
gpt mid										
gpt low										
									Average NO_2 C.F.=	

Linear Regression/Calibration Results:

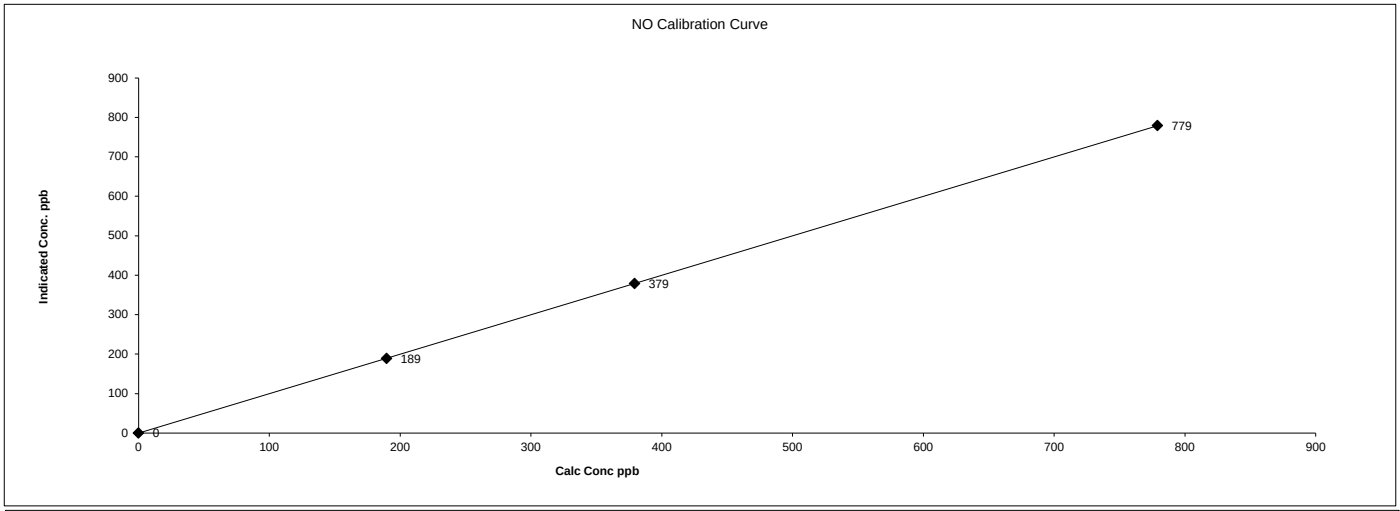
	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**		**> or = 0.995**
Slope =	**1.000**	**1.000**		**0.85-1.15**
b (Intercept as % of full scale)=	**-0.03%**	**-0.01%**		**± 3% F.S.**
% change in C.F. from last cal=	**-0.09%**	**-1.10%**	**#VALUE!**	**+/-15%**
NO2 converter effeciency				**>85%**

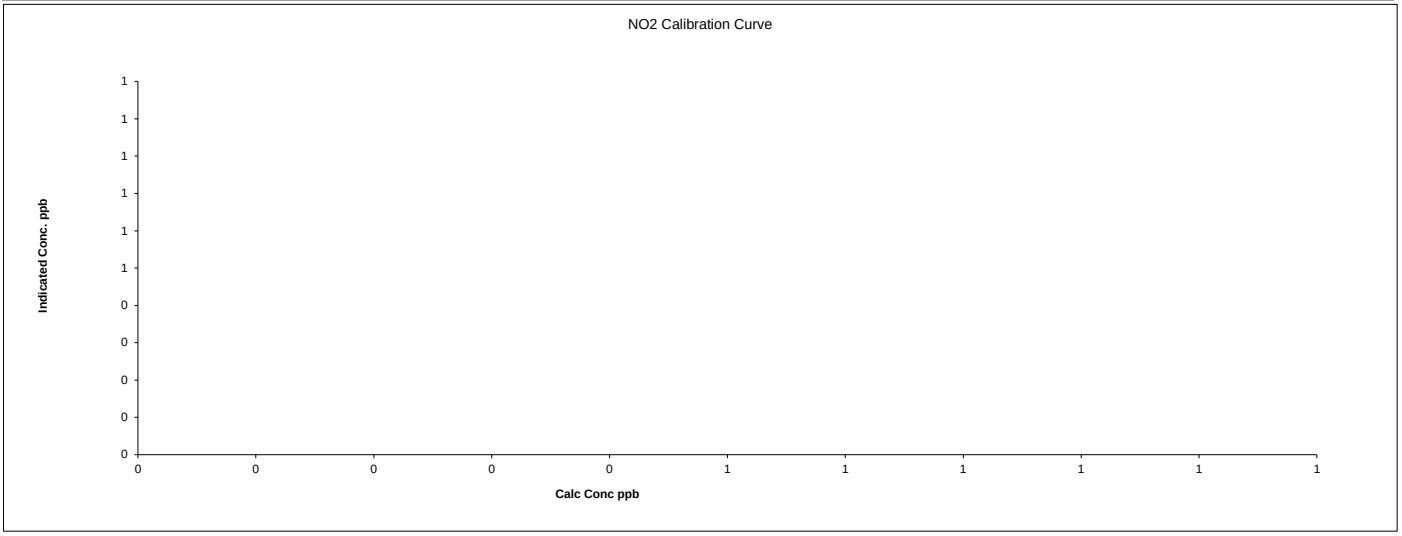
Comments:

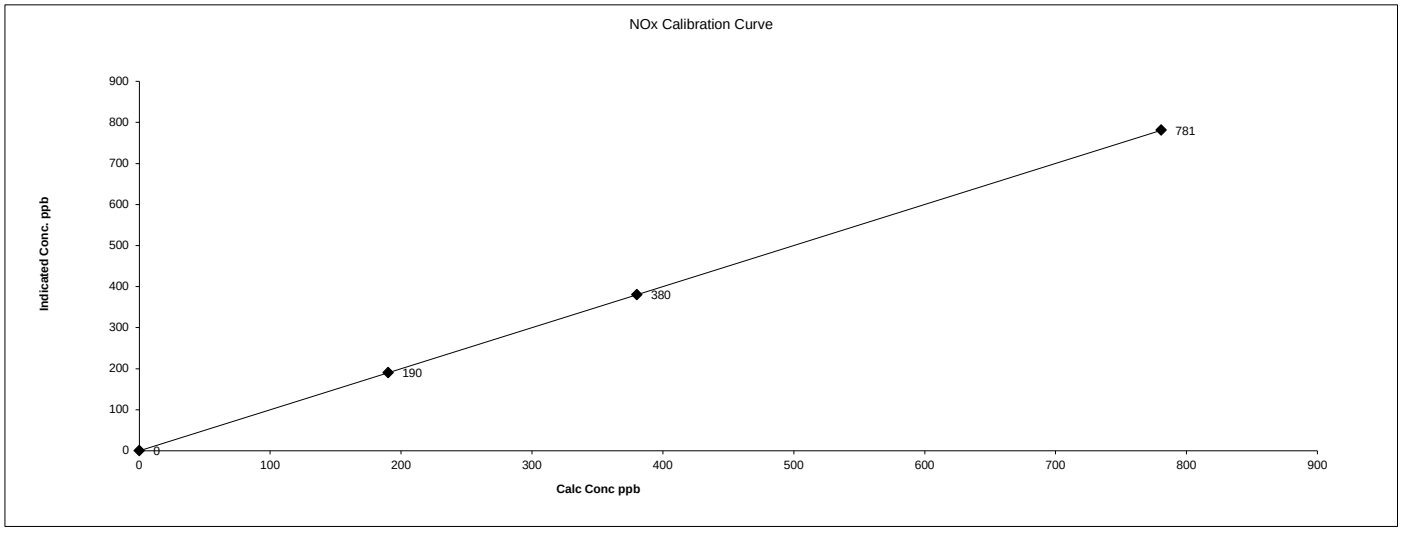
Sample filter changed. No GPT done due to time constraints. Will complete tomorrow.

Date:	14-Aug-14	**Start Time (mst):**	13:01
Company:	LICA	**End Time (mst):**	15:57
Station Name/Location:	St.Lina	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-14

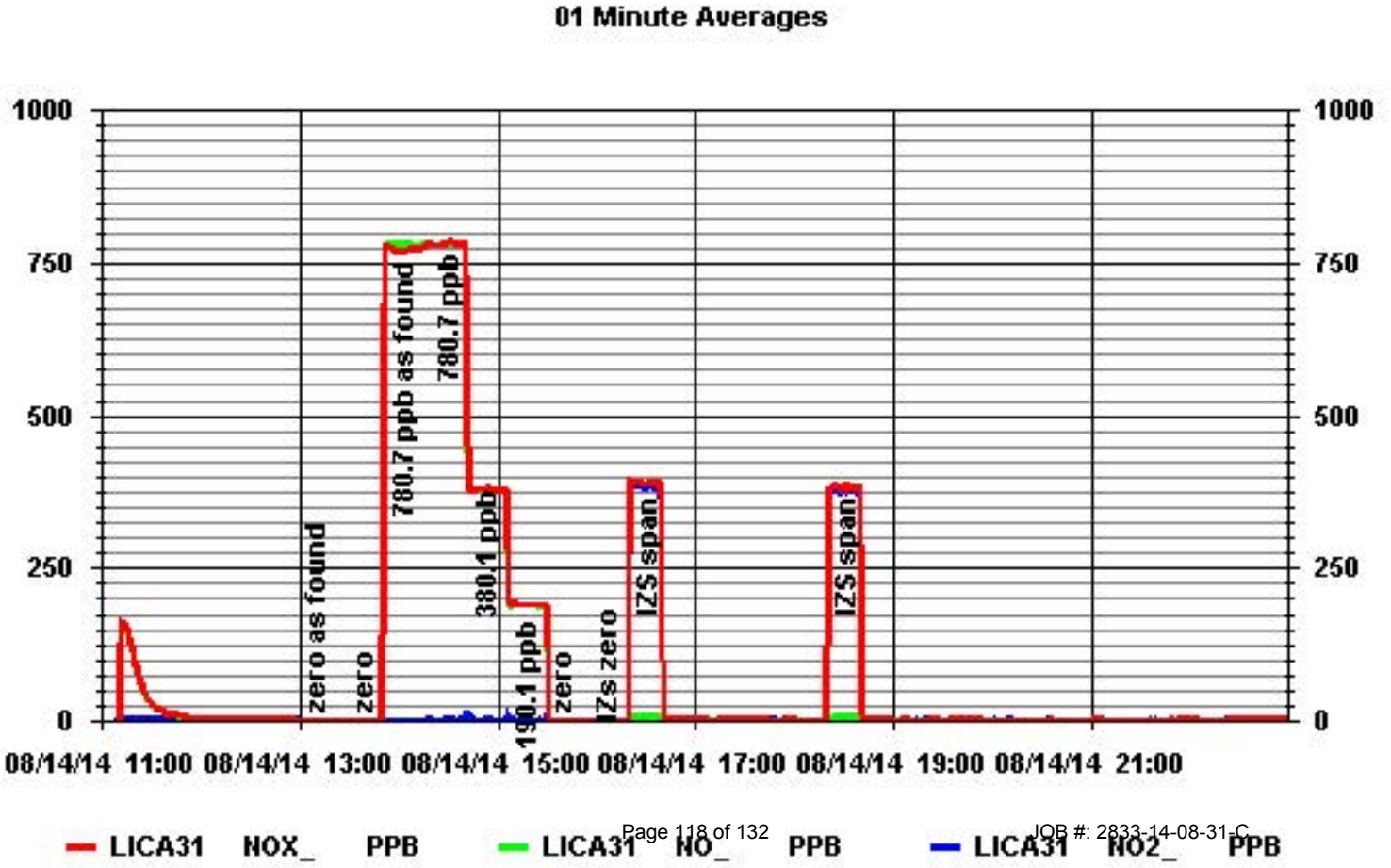
API 200E NOx Analyzer Calibration







JOB #: 2833-14-08-31-C


01 Minute Averages
1000
750
500
250
0
zero as found
zero
780.7 ppb as found
780.7 ppb
380.1 ppb
190.1 ppb
zero
IZS zero
IZS span
IZS span
08/14/14 11:00
08/14/14 13:00
08/14/14 15:00
08/14/14 17:00
08/14/14 19:00
08/14/14 21:00
LICA31 NOX_ PPB
LICA31 NO_ PPB
LICA31 NO2_ PPB

API 200E NOx Analyzer Calibration

Date:	15-Aug-14	**Start Time (mst):**	8:29
Company:	LICA	**End Time (mst):**	10:15
Station Name/Location:	St.Lina	**Calibration Purpose:**	GPT
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-18

Analyzer Serial Number:	592
Last Calibration Date:	10-Jul-14
Range ppb:	1000

Correction Factors:

	As found C.F.	Previous Cal High Point C.F.:
NO=	NA	0.998
NOx=	NA	0.999
NO_2=	1.002	0.996

	As found:	**As left:**
NOx SLOPE:	0.905	0.905
NOx OFFS:	-0.2	-0.2
NO SLOPE:	0.900	0.900
NO OFFS:	-1.0	-1.0
TEST:	130.7	130.7
SAMP FLW:	476	476
OZONE FL:	74	74
PMT:	23.2	23.2
NORM PMT:	0.5	0.5
AZERO:	20.9	20.9
HVPS:	654	654
RCELL TEMP:	50.0	50.0
BOX TEMP:	31.1	31.1
PMT TEMP:	6.9	6.9
IZS TEMP:	40.1	40.1
MOLY TEMP:	314.3	314.3
RCEL:	6.3	6.3
SAMP:	26.3	26.3
Internal Span:	392.2/5.8/386.7	392.2/5.8/386.7

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	4995	0	0	4995
high	4916	78	450.00	4994
mid	4916	78	230.00	4994
low	4916	78	75.00	4994

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								NA	NA
as found high									
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	4916	77.70	4994	0.0	779.0	779.0	0.0	0.0	0.0	
as found NO_2	4916	77.70	4994	450.0	238.0	778.0	540.0	541.0	540.0	1.002
adjusted NO_2	4916	77.70	4994	450.0	238.0	778.0	540.0	541.0	540.0	1.002
gpt mid	4916	77.70	4994	230.0	494.0	779.0	286.0	285.0	286.0	0.997
gpt low	4916	77.70	4994	75.0	689.0	779.0	92.0	90.0	92.0	0.978
									Average NO_2 C.F.=	0.992

Linear Regression/Calibration Results:

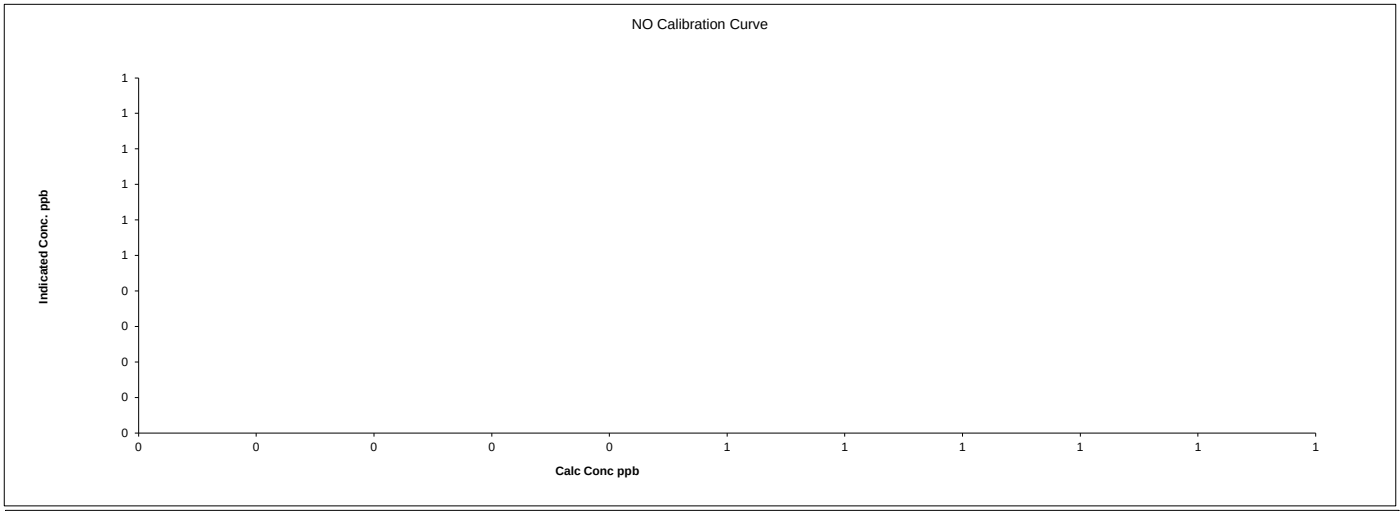
	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =			**1.000**	**> or = 0.995**
Slope =			**0.997**	**0.85-1.15**
b (Intercept as % of full scale)=			**0.12%**	**± 3% F.S.**
% change in C.F. from last cal=	**#VALUE!**	**#VALUE!**	**-0.59%**	**+/-15%**
NO2 converter effeciency			**100.8%**	**>85%**

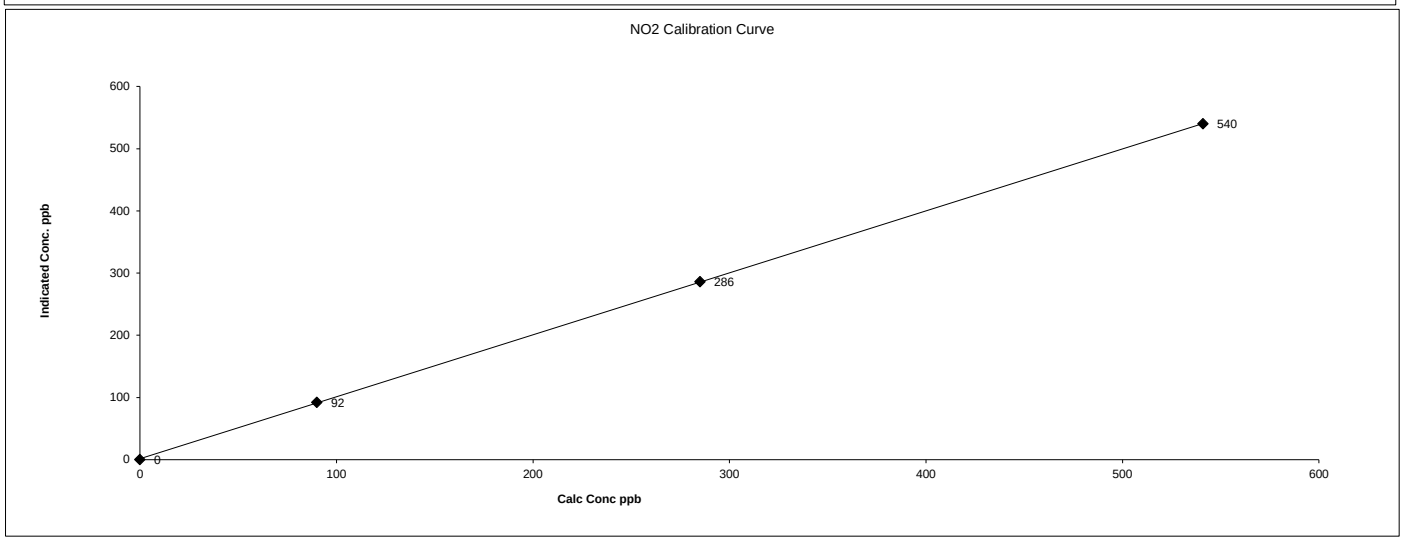
Comments:

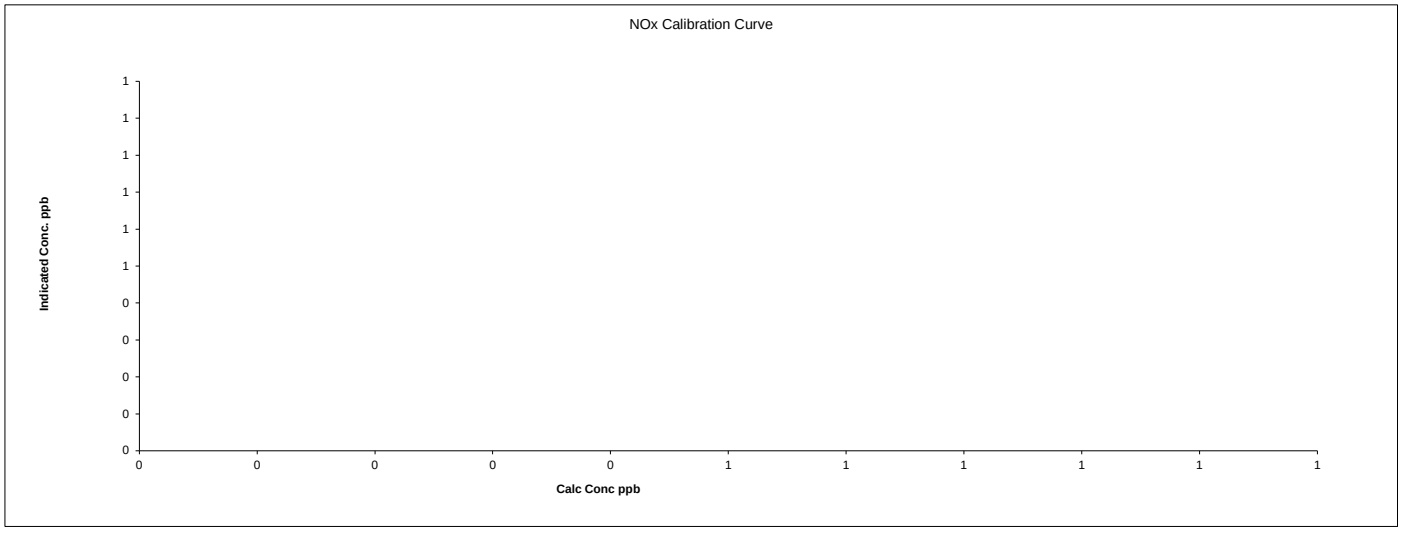
GPT only

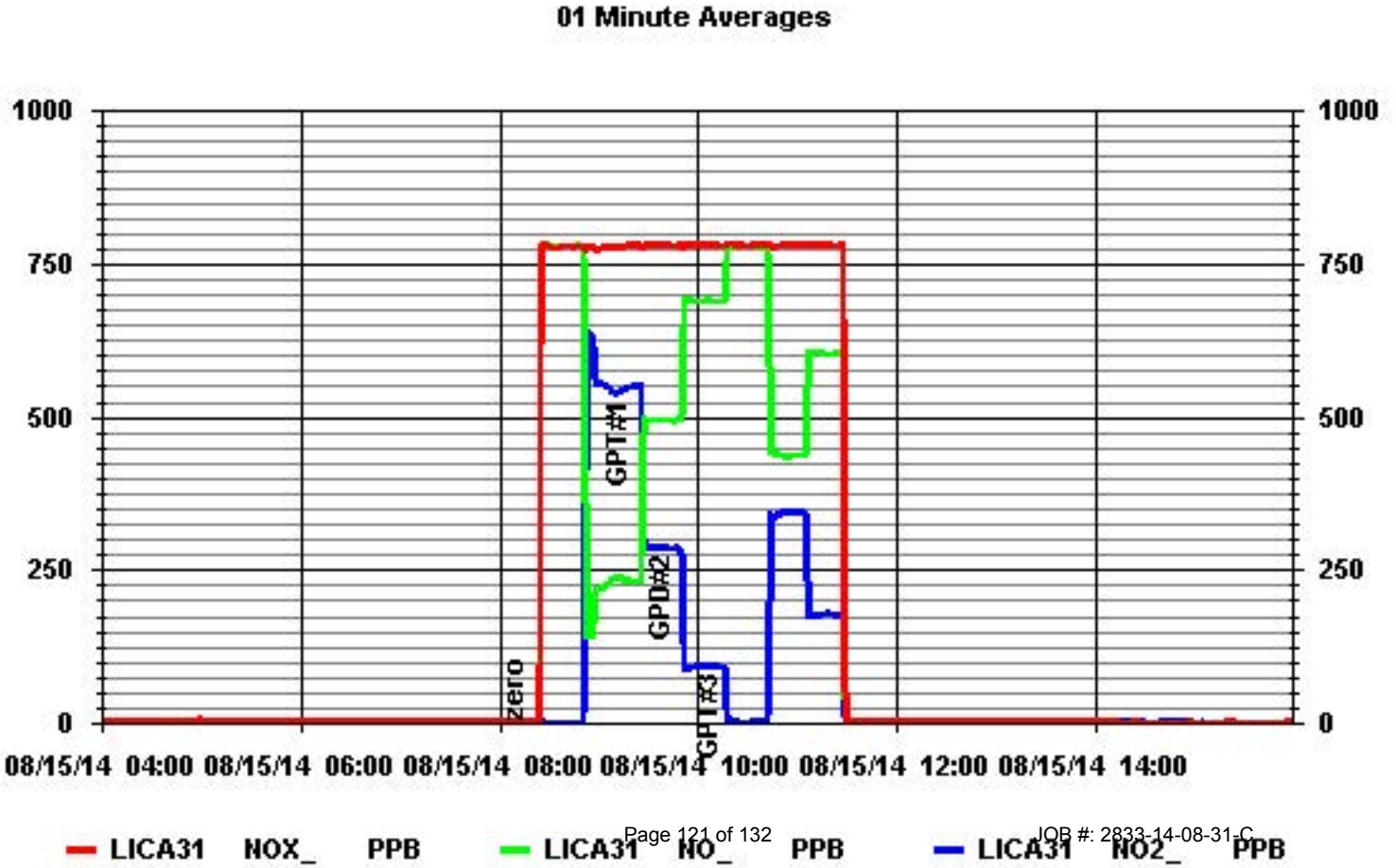
Date:	15-Aug-14	**Start Time (mst):**	8:29
Company:	LICA	**End Time (mst):**	10:15
Station Name/Location:	St.Lina	**Calibration Purpose:**	GPT
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-18

API 200E NOx Analyzer Calibration








01 Minute Averages
1000
750
500
250
0
zero
GPT#1
GPD#2
GPT#3
08/15/14 04:00
08/15/14 06:00
08/15/14 08:00
08/15/14 10:00
08/15/14 12:00
08/15/14 14:00
LICA31 NOX_ PPB
LICA31 NO_ PPB
LICA31 NO2_ PPB

Ozone

Maxxam Thermo 49i O_3 Analyzer Calibration

Date:	6-Aug-14	**Start Time (mst):**	11:13
Company:	LICA	**End Time (mst):**	12:00
Station Name/Location:	St.Lina	**Calibration Purpose:**	As found
Performed by:	Kevin Hope	**G.P.T. Date:**	6-Aug-14

Analyzer:

Serial Number:	1002240371	**Range ppm:**	500
Last Calibration Date:	11-Jul-14	**As Found C.F.**	0.964
Previous Cal High Point C.F.:	1.000	**New C.F.:**	#DIV/0!

		As found:		**As left:**
	O_3 Bkg:	0.1	O_3 Bkg:	0.1
	O_3 Coef:	1.077	O_3 Coef:	1.077
Motherboard:	3.3	3.3	3.3	3.3
	15.0	14.8	15.0	14.8
	24.0	23.8	24.0	23.8
	-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	23.4	24.0	23.4
	O_3 Lamp	8.3	O_3 Lamp	8.3
	Bench:	26.0	Bench:	26.0
	Bench Lamp:	53.5	Bench Lamp:	53.5
	O_3 Lamp:	67.8	O_3 Lamp:	67.8
	Pressure:	681.5	Pressure:	681.5
	Cell A lpm:	0.731	Cell A lpm:	0.731
	Cell B lpm:	0.721	Cell B lpm:	0.721
	O_3 ppb:	47.1	O_3 ppb:	47.1
	Cell A ppb:	55.1	Cell A ppb:	55.1
	Cell B ppb:	39.5	Cell B ppb:	39.5
	Cell A int:	67941	Cell A int:	67941
	Cell B int:	77900	Cell B int:	77900
	Internal Span:	422	Internal Span:	422

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	4995	0
high	4995	320
mid	NA	
low	NA	

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	0.0	-0.3	NA
adjusted zero	NA	0.0	######	0.0		NA
as found high	4995	0.00	4995	378.0	392.0	0.964
adjusted high	NA		######			#DIV/0!
mid						
low						
calibrator zero						NA

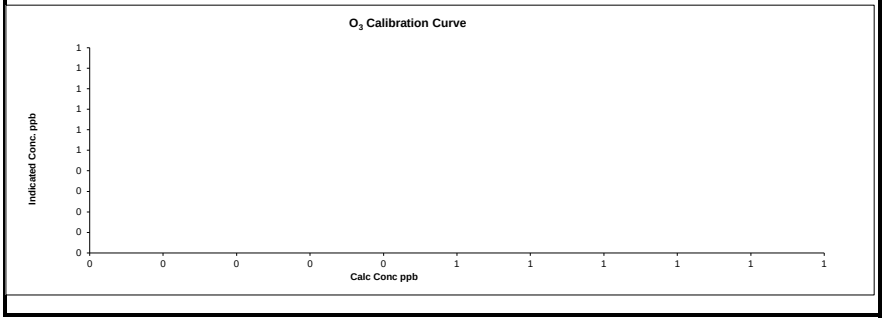
copy and paste flows and NO decrease from NOx cal in to calculated concentration **Average C.F.=** #DIV/0!

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	**4%**	**± 15%**	**PASS**

Comments:

Thermo 49i O3 Analyzer Calibration



Maxxam — Thermo 49i O_3 Analyzer Calibration

Date:	6-Aug-14	**Start Time (mst):**	12:16
Company:	LICA	**End Time (mst):**	15:26
Station Name/Location:	St.Lina	**Calibration Purpose:**	3-pts calibration
Performed by:	Kevin Hope	**G.P.T. Date:**	6-Aug-14

Analyzer:

Serial Number:	1002240371	**Range ppm:**	500
Last Calibration Date:	11-Jul-14	**As Found C.F.**	0.957
Previous Cal High Point C.F.:	1.000	**New C.F.:**	1.000

		As found:		As left:
	O_3 Bkg:	0.1	O_3 Bkg:	-0.0
	O_3 Coef:	1.077	O_3 Coef:	1.028
Motherboard:	3.3	3.3	3.3	3.3
	15.0	14.8	15.0	14.8
	24.0	23.8	24.0	23.8
	-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	23.4	24.0	23.4
	O_3 Lamp	8.3	O_3 Lamp	8.3
	Bench:	26.0	Bench:	26.0
	Bench Lamp:	53.5	Bench Lamp:	53.5
	O_3 Lamp:	67.8	O_3 Lamp:	67.8
	Pressure:	681.5	Pressure:	681.5
	Cell A lpm:	0.731	Cell A lpm:	0.731
	Cell B lpm:	0.721	Cell B lpm:	0.721
	O_3 ppb:	47.1	O_3 ppb:	47.1
	Cell A ppb:	55.1	Cell A ppb:	55.1
	Cell B ppb:	39.5	Cell B ppb:	39.5
	Cell A int:	67941	Cell A int:	67941
	Cell B int:	77900	Cell B int:	77900
	Internal Span:	422	Internal Span:	435.2

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	4995	0
high	4995	320
mid	4995	125
low	4995	60

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	0.0	-0.2	NA
adjusted zero	4995	0.0	4995	0.0	0.0	NA
as found high	4995	0.00	4995	378.0	395.0	0.957
adjusted high	4995	0.00	4995	378.0	378.0	1.000
mid	4995	0.00	4995	150.0	150.0	1.000
low	4995	0.00	4995	69.0	69.0	1.000
calibrator zero	4995	0.00	4995	0.0	0.1	NA

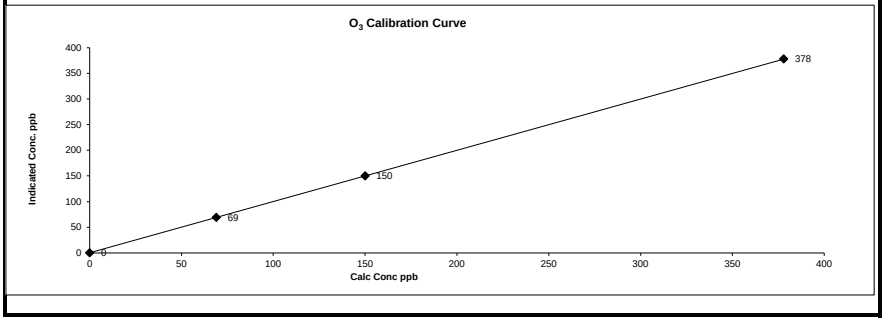
copy and paste flows and NO decrease from NOx cal in to calculated concentration **Average C.F.=** 1.000

Linear Regression/Calibration Results:

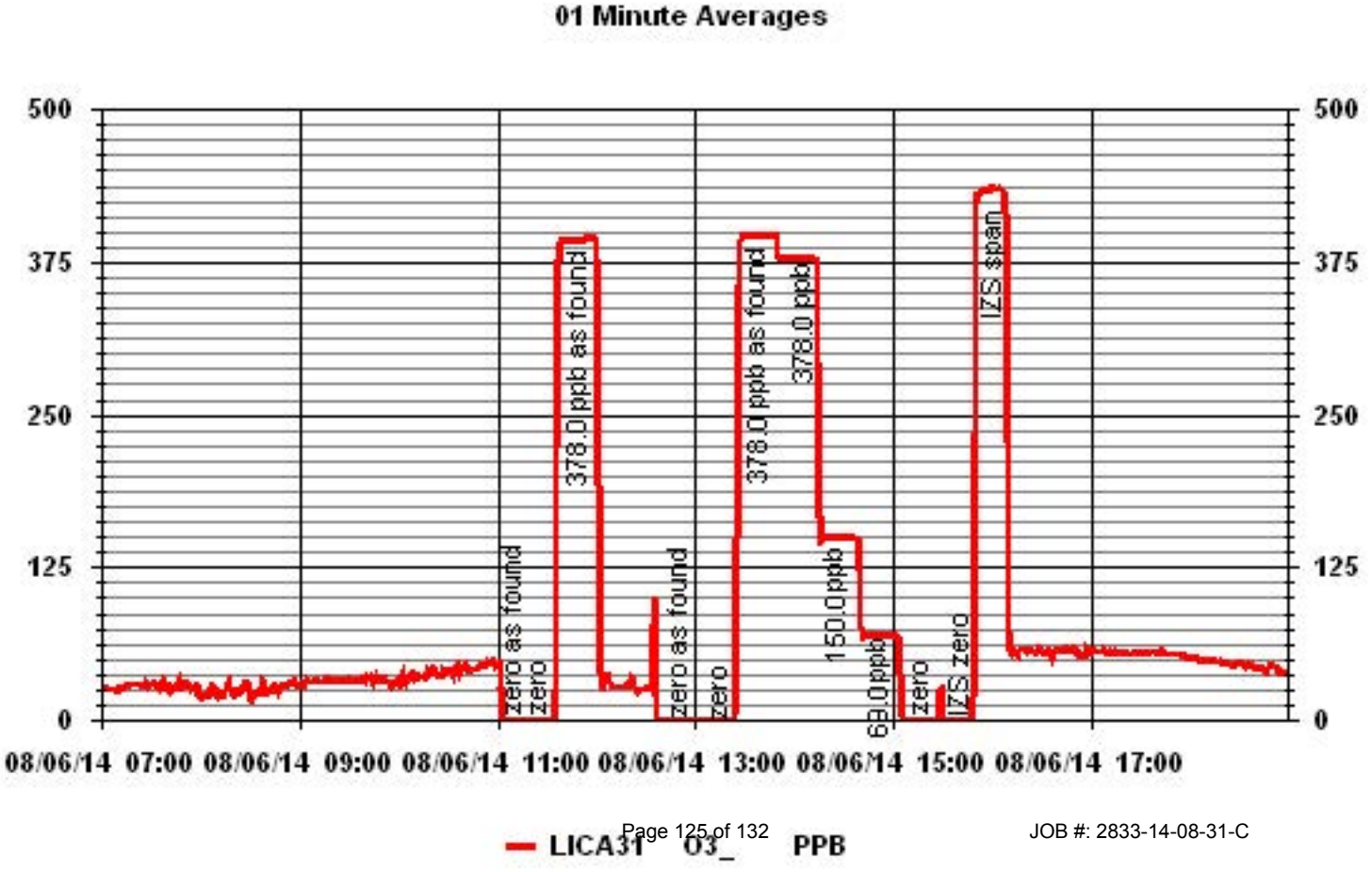
		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.000**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.000%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**4%**	**± 15%**	**PASS**

Comments:

Thermo 49i O3 Analyzer Calibration



JOB #: 2833-14-08-31-C



JOB #: 2833-14-08-31-C

Maxxam Thermo 49i O_3 Analyzer Calibration

Date:	15-Aug-14	**Start Time (mst):**	11:45
Company:	LICA	**End Time (mst):**	14:28
Station Name/Location:	St.Lina	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**G.P.T. Date:**	15-Aug-14

Analyzer:

Serial Number:	1002240371	**Range ppm:**	500
Last Calibration Date:	11-Jul-14	**As Found C.F.**	1.009
Previous Cal High Point C.F.:	1.000	**New C.F.:**	1.001

		As found:		As left:
	O_3 Bkg:	-0.0	O_3 Bkg:	-0.3
	O_3 Coef:	1.028	O_3 Coef:	1.036
Motherboard:	3.3	3.3	3.3	3.3
	15.0	14.8	15.0	14.8
	24.0	23.8	24.0	23.8
	-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	23.4	24.0	23.4
	O_3 Lamp	5.7	O_3 Lamp	5.7
	Bench:	26.5	Bench:	26.5
	Bench Lamp:	53.7	Bench Lamp:	53.7
	O_3 Lamp:	67.8	O_3 Lamp:	67.8
	Pressure:	683.2	Pressure:	683.2
	Cell A lpm:	0.745	Cell A lpm:	0.745
	Cell B lpm:	0.727	Cell B lpm:	0.727
	O_3 ppb:	31.4	O_3 ppb:	31.4
	Cell A ppb:	30.6	Cell A ppb:	30.6
	Cell B ppb:	32.2	Cell B ppb:	32.2
	Cell A int:	67987	Cell A int:	67987
	Cell B int:	77551	Cell B int:	77551
	Internal Span:	351	Internal Span:	351

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	4995	0
high	4995	280
mid	4995	140
low	4995	75

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	0.0	-0.2	NA
adjusted zero	4995	0.0	4995	0.0	0.1	NA
as found high	4995	0.00	4995	343.0	340.0	1.009
adjusted high	4995	0.00	4995	343.0	343.0	1.000
mid	4995	0.00	4995	175.0	175.0	1.001
low	4995	0.00	4995	90.0	90.0	1.001
calibrator zero	4995	0.00	4995	0.0	0.0	NA

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

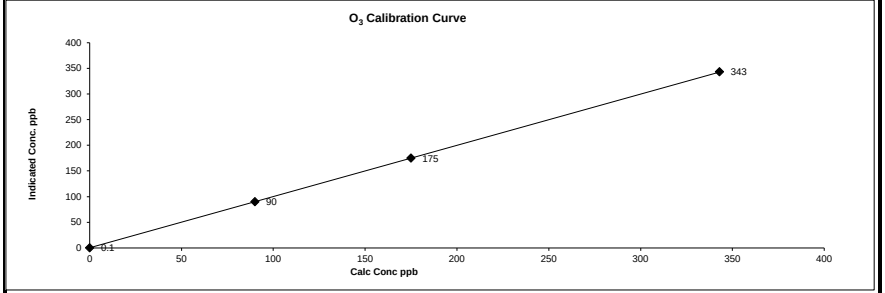
Linear Regression/Calibration Results:

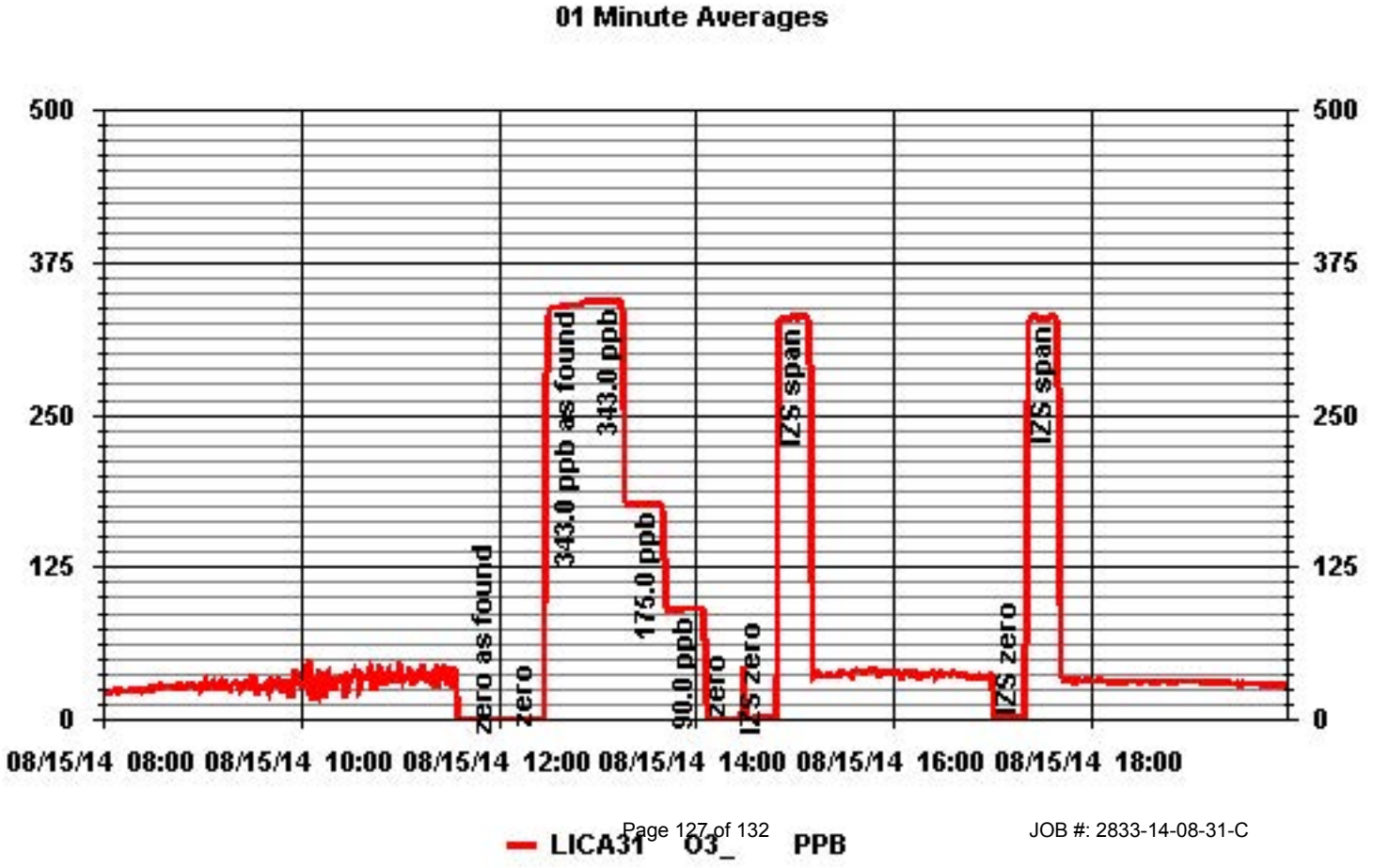
		LIMITS	Pass/Fail ?
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**1.000**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.012%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**-1%**	**± 15%**	**PASS**

Comments:

Sample filter changed.

Thermo 49i O3 Analyzer Calibration





JOB #: 2833-14-08-31-C

Particulate Matter 2.5

R & P 1400A TEOM PM 2.5 Analyzer Calibration

Date:	7-Aug-14	**Parameter:**	PM 2.5
Company:	LICA	**Performed by:**	Kevin Hope
Station Name/Location:	St.Lina	**Start/End Time (mst):**	13:48/14:08
Previous Audit Date:	11-Jul-14	**Calibration Purpose:**	Monthly Audit

1400A Information and Status:

Serial Number:	140AB228720001	**As Found Filter Loading %:**	121.00
K_o Factor:	15003	**As Left Filter Loading %:**	18.00
Ambient Temperature °C:	25.1	**As Found Noise:**	0.009
Ambient Pressure atm:	0.935	**As Left Noise:**	0.000
Main Flow Reading lpm:	3.00	**Pump Vacuum:**	ok
Aux Flow Reading lpm:	13.68	**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)	0.03	0.19	
seconds to reach full flow (max. 60s)	45	55	**(maintenance required if either > 60 seconds)**
leak rate (lpm)	0.11	0.22	
0 corrected leak rate (lpm)	0.08	0.03	
limit (lpm)	0.15	.15 or (.60 with FDMS unit)	

As Left Pump Off Test and Leak Check (same as above if as found adequate):

	main flow	**auxillary flow**	
pump unplugged zero (lpm)	0.03	0.19	
seconds to reach full flow (max. 60s)	45	55	**(maintenance required if either > 60 seconds)**
leak rate (lpm)	0.11	0.22	
0 corrected leak rate (lpm)	0.08	0.03	
limit (lpm)	0.15	.15 or (.60 with FDMS unit)	

As found temperature and pressure:

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1400A temperature °C:	24.9	**1400A pressure atm:**	0.932
reference temperature °C:	25.1	**reference pressure:**	0.935
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**
1400A temperature oC:	24.9	**1400A pressure atm:**	0.932
reference temperature °C:	25.1	**reference pressure:**	0.935
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%**	
1400A main flow lpm:	2.98	**1400A total/aux flow lpm:**	13.61
reference main flow lpm:	3.00	**reference total/aux flow lpm:**	13.68
difference lpm:	0.02	**difference lpm:**	0.07

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:	3.00	**reference total/aux flow lpm:**	13.68
difference lpm:	0.02	**difference lpm:**	0.07

K_o Audit:

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

Comments:

X alarm when I arrived (filter nearing capacity). Filter loading percent was 121%. Changed filter, performed leak check and flow audit. Both ok. Cleaned inlet.

R & P 1400A TEOM PM 2.5 Analyzer Calibration

Date:	18-Aug-14	**Parameter:**	PM 2.5
Company:	LICA	**Performed by:**	Kevin Hope
Station Name/Location:	St.Lina	**Start/End Time (mst):**	10:28/10:54
Previous Audit Date:	15-Aug-14	**Calibration Purpose:**	As found

1400A Information and Status:

Serial Number:	140AB228720001	**As Found Filter Loading %:**	92.00
K_o Factor:	15003	**As Left Filter Loading %:**	20.00
Ambient Temperature °C:	24.0	**As Found Noise:**	0.035
Ambient Pressure atm:	0.938	**As Left Noise:**	0.000
Main Flow Reading lpm:	3.16	**Pump Vacuum:**	ok
Aux Flow Reading lpm:	13.87	**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)	0.05	0.20	
seconds to reach full flow (max. 60s)	46	53	**(maintenance required if either > 60 seconds)**
leak rate (lpm)	0.07	0.04	
0 corrected leak rate (lpm)	0.02	-0.16	
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)	0.05	0.20	
seconds to reach full flow (max. 60s)	46	53	**(maintenance required if either > 60 seconds)**
leak rate (lpm)	0.07	0.04	
0 corrected leak rate (lpm)	0.02	-0.16	
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:	23.8	**1400A pressure atm:**	0.935
reference temperature °C:	24.0	**reference pressure:**	0.938
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**	
1400A temperature oC:	23.8	**1400A pressure atm:**	0.935
reference temperature °C:	24.0	**reference pressure:**	0.938
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%**	
1400A main flow lpm:	2.98	**1400A total/aux flow lpm:**	13.60
reference main flow lpm:	3.16	**reference total/aux flow lpm:**	13.87
difference lpm:	0.18	**difference lpm:**	0.27

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:**	13.60
reference main flow lpm:	3.16	**reference total/aux flow lpm:**	13.87
difference lpm:	0.18	**difference lpm:**	0.27

K_o Audit:

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

Comments:

Full audit done due to highreadings. Found "x" alarm (filter capacity reached) and filter loading percent of 92. Performed leak check, flow audit, changed filter. All good after filter change.

Wind System Audit

Meteorological Sensor Audit

Station Information

Company:	LICA	Performed By:	Chris Wesson
Location:	St Lina	Reason:	Install
Audit Date:	12-Aug-14	Start Time (mst):	13:35
Previous Audit Date:	NA	End Time (mst):	13:45

Wind Speed

Sensor make:	RM Young	Sensor height:	15m
Sensor model:	5103VK	Serial Number:	41334
Calibrator:	RM Young 18802 #CA03309	Variable speed motor:	RM Young 18802 #CA03309
Voltage range:	0-1	Output signal range:	0-200

Wind Speed Audit Data

RPM	Wind Speed Actual	Indicated WS - CW	Indicated WS-CCW	Correction Factor
0	0.0	0.45	0.46	-
1000	17.6	17.99	17.94	0.98
2000	35.28	35.67	35.63	0.99
3000	52.92	53.23	53.2	0.99
4000	70.56	70.84	70.84	1.00
5000	88.2	88.47	88.44	1.00
6000	105.84	106	106	1.00
7000	123.48	123.2	123.7	1.00
8000	141.12	141.3	141.2	1.00
9000	158.76	158.9	158.9	1.00
10000	176.4	176.5	176.8	1.00
			Average Correction Factor:	1.00

Wind Direction

Sensor make:	Rm Young	Sensor height:	15m
Sensor model:	5103VK	Serial Number:	54097
Calibrator:	Rm Young	Variable speed motor:	NA
Voltage range:	0-1	Output signal range:	0 - 360

Wind Direction Audit Data

Wind Direction	Indicated	Correction Factor
0	0.8	NA
45	45.0	1.00
90	90.4	1.00
135	136.0	0.99
180	182.0	0.99
225	228.0	0.99
270	272.5	0.99
315	315.8	1.00
360	1.9	NA
		NA
	Average Correction Factor:	0.99

Remarks:

Audit Performed by: Chris Wesson

Lakeland Industry & Community Association

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

Prepared By:

Maxxam
A Bureau Veritas Group Company

September 30, 2014

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

Table of Contents

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: August 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 – August 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	0.13	2	18	12	14.2	243(WSW)	0.5	2	100.0
H_2S (PPB)	10	3	0	0	0.17	3	8, 14	4, 4	6.2, 4.7	272(W) 270(W)	0.8	13	100.0
THC (55i) (PPM)	-	-	-	-	2.86	8.7	4, 15	5, 4	3.7, 3	283(W) 231(SW)	4.7	15	100.0
Methane (PPM)	-	-	-	-	2.81	8.5	14	4	4.7	270(W)	4.6	15	100.0
NMHC (PPM)	-	-	-	-	0.05	0.4	4, 15	VAR	VAR	VAR	0.2	15	100.0
NO_2 (PPB)	159	-	0	-	5.00	21.5	30	22	3.6	299(WNW)	8.1	18	100.0
NO (PPB)	-	-	-	-	4.13	75.4	25	5	0.4	249(WSW)	16.6	25	100.0
NOx (PPB)	-	-	-	-	9.13	82.2	25	5	0.4	249(WSW)	24.1	15	100.0
O_3 (PPB)	82	-	0	-	20.77	53	3	VAR	VAR	VAR	28.1	1	97.8
PM 2.5 (UG/M^3)	-	30	-	3	19.21	81	16	10	11.8	118(ESE)	50.1	16	95.7
VECTOR WS (KPH)	-	-	-	-	8.68	30.6	31	1	-	256(WSW)	16.1	9	100.0
VECTOR WD (DEGREES)	-	-	-	-	291(WNW)	-	-	-	-	-	-	-	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 with API 100A, S/N: 837

The analyzer was working well throughout the month. The monthly calibration was performed on August 12th. The inlet filter was changed before the calibration was started. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)
- Analyzer make / model –API 101E, S/N: 509
- Converter - Internal

The analyzer zeroed high on August 6th due to high shelter temperature. An as fond point check was performed on August 7th after the AC unit fixed and the shelter temperature drop down to around 25 °C. The result was good. The monthly calibration was performed on August 13th. The inlet filter was changed before the calibration was started. Another as found point check was completed on August 19th to ensure the analyzer's functionality. The as found points check result was good. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

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 August 12th. The inlet filter was changed before the calibration was started. Data was corrected using daily zero information.

THC 55i (PPM)

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

The analyzer was working well throughout the month. The monthly calibration was performed on August 12th. The inlet filter was changed before the calibration was started. Data was corrected using daily zero information.

Ozone (PPB)

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

The monthly calibration was performed on August 13th. The inlet filter was changed before the calibration was started. 16 hours of data collected between August 8th hour 16 and August 9th hour 7 were invalidated due to the span valve failure. Data was corrected using daily zero information.

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 August 12th and the other was completed on August 19th. The sample inlet was cleaned and the filter was replaced on August 12th. 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. Three 24-Hour average exceedances were recorded this month: concentration of 38.3 ug/m3 on August 1st, concentration of 39.1 ug/m3 on the 2nd, and concentration of 50.1 ug/m3 on the 16th. AESRD Ref# 287677, 287703, and 288383, respectively.

General Monthly Summary

AQM STATION – LICA – PORTABLE

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 wind direction data included in this report represents where the wind was coming from. 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 AC unit was fixed on August 7th. The cabinet exhaust fan pump was installed on August 8th.
The manifold system was cleaned on August 12th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

Lakeland Industry & Community Association - Elk Point Site

AUGUST 2014

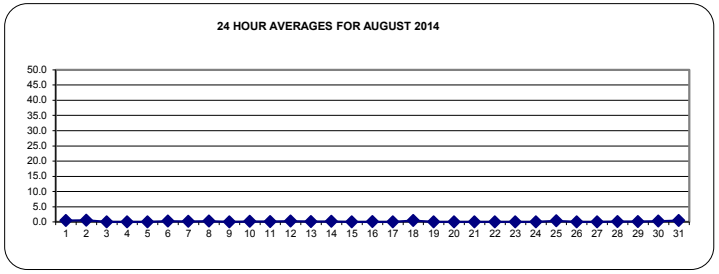
SULPHUR DIOXIDE (SO2) hourly averages in ppb

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	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	S	0	1	0.4	24
2	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	S	1	0	1	***0.5***	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	0	0	0	0	0	0	0	0	S	1	1	1	1	1	1	1	0.3	24
7	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	S	0	0	0	0	0	0	0	1	0.1	24
8	0	1	0	1	1	0	0	0	1	1	0	0	0	0	0	S	0	0	0	0	0	0	0	0	1	0.2	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	1	1	0	1	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	1	0.1	24
11	0	0	0	0	0	0	0	0	1	1	0	0	S	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
12	0	0	0	0	0	0	0	0	0	C	C	C	C	C	1	1	1	1	1	0	0	0	0	0	1	0.3	24
13	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0.1	24
14	0	0	0	1	1	1	1	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	0	0	0	0	0	0	0	0	0	0.0	24
16	0	0	0	0	0	0	0	S	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
17	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
18	0	0	0	0	0	S	0	1	1	1	1	1	***2***	1	1	1	0	0	0	0	0	0	0	0	***2***	0.4	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	0	0	0	0	0	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	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	S	0	0	1	0.3	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	0	0	1	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	0	0	0	0	0	0	0	0	S	1	1	0	0	0	0	1	0.1	24
30	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	S	0	0	0	1	1	1	1	1	0.3	24
31	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	S	0	0	0	0	1	1	1	0	1	0.4	24
HOURLY MAX	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1			
HOURLY AVG	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1			

STATUS FLAG CODES

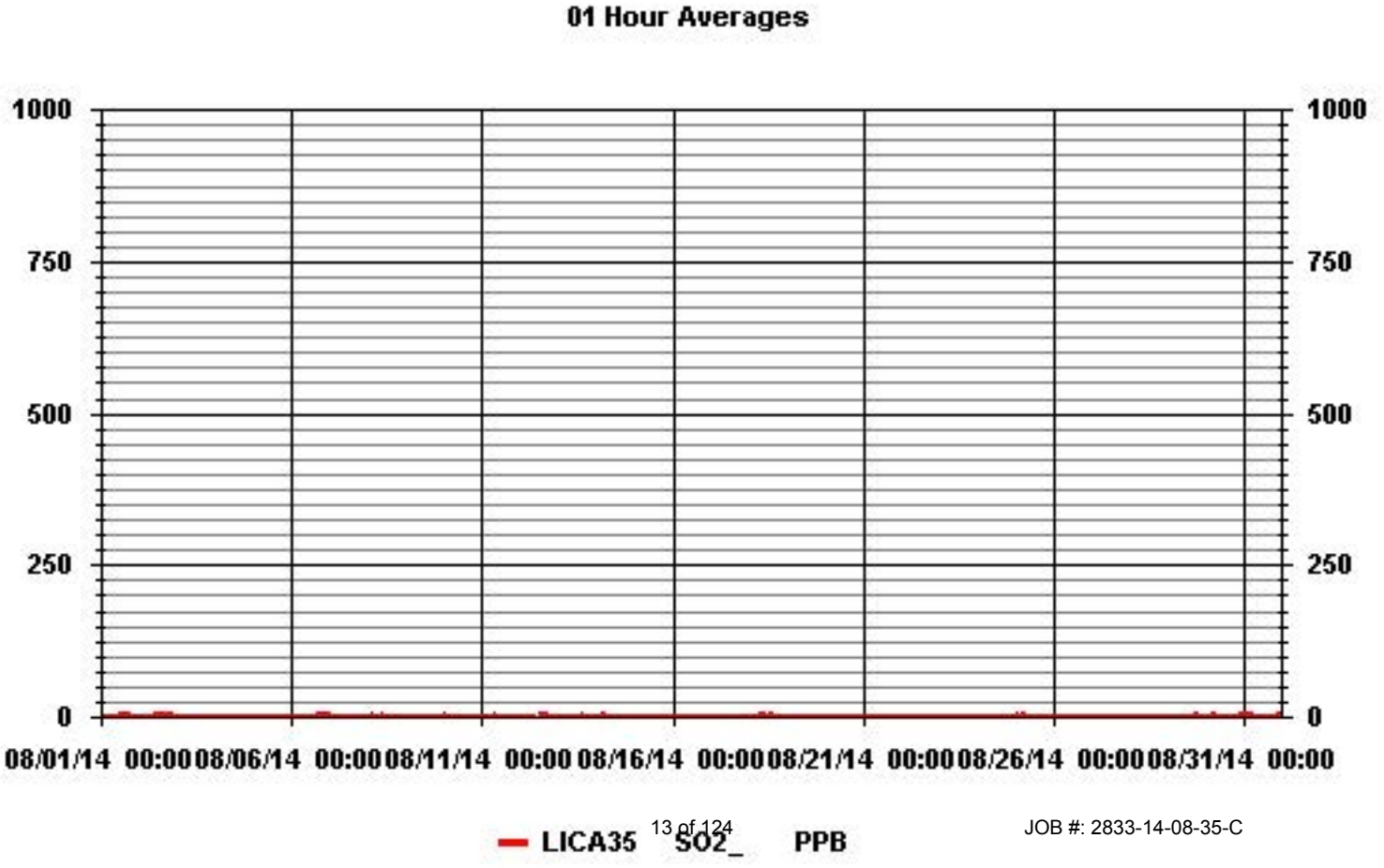
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 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:	89					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	12	ON DAY(S)	18
MAXIMUM 24-HR AVERAGE:	0.5	PPB			ON DAY(S)	2
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.34		MONTHLY AVERAGE:		0.13	PPB



JOB #: 2833-14-08-35-C

Lakeland Industry & Community Association - Elk Point Site

AUGUST 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	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	**S**	0	1	0.7	24
2	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	**S**	0	0	1	0.5	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	0	0	0	0	0	0	0	0	**S**	2	2	1	1	1	1	2	0.3	24
7	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	**S**	0	0	0	0	0	1	0	1	0.3	24
8	1	1	1	1	2	1	1	1	2	2	1	0	0	1	0	**S**	0	0	0	0	0	0	0	0	2	0.7	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	1	1	1	1	1	0	0	0	0	0	0	0	0	**S**	1	0	0	0	0	0	1	0	0	0	1	0.3	24
11	0	1	1	0	0	1	1	1	1	1	1	0	**S**	0	0	0	0	0	0	0	1	0	0	0	1	0.4	24
12	0	0	0	0	1	0	1	0	**C**	**C**	**C**	**C**	**C**	**C**	1	1	1	1	1	0	0	0	0	0	1	0.4	24
13	0	0	0	0	0	0	0	0	0	0	**S**	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0.1	24
14	0	0	0	2	1	2	1	0	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
15	0	0	0	0	1	1	0	0	**S**	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
16	0	0	0	0	0	0	0	**S**	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
17	0	0	0	0	1	0	**S**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
18	0	0	0	0	0	**S**	1	1	2	2	2	2	***3***	2	1	1	0	0	0	0	1	0	0	0	***3***	0.8	24
19	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
20	0	0	0	**S**	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	1	0.3	24
21	0	0	**S**	1	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	**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	1	0	0	**S**	0	1	0.0	24
25	1	1	1	1	2	2	2	1	0	1	0	0	0	0	0	0	1	0	1	1	1	**S**	0	0	2	0.7	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**	1	1	1	1	1	0.2	24
28	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0	1	1	**S**	0	0	0	0	1	1	0.6	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	1	1	1	0	0	0	1	0.1	24
30	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	**S**	1	1	1	1	1	1	1	1	***0.9***	24
31	1	1	1	1	1	1	1	1	0	0	0	1	1	0	1	**S**	1	1	0	1	1	1	1	1	1	0.8	24
HOURLY MAX	1	1	1	2	2	2	2	1	2	2	2	2	3	2	1	1	1	1	2	2	1	1	1	1			
HOURLY AVG	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.2	0.2	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.2	0.2	0.2			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 180

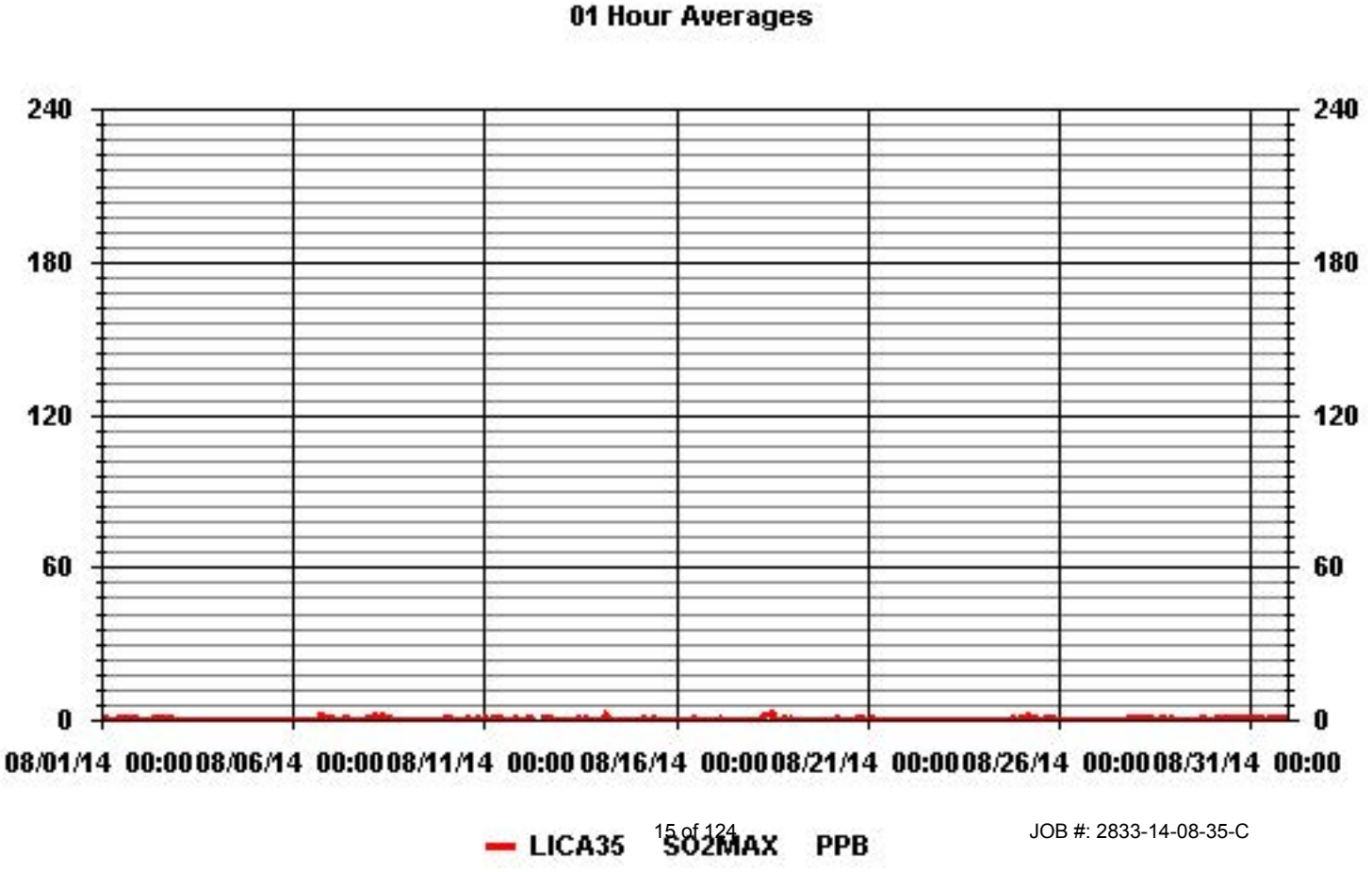
MAXIMUM INSTANTANEOUS VALUE: 3 PPB @ HOUR(S) 12 ON DAY(S) 18

VAR-VARIOUS

IZS CALIBRATION TIME: 31 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 6 HRS

STANDARD DEVIATION: 0.50



JOB #: 2833-14-08-35-C

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

August 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	4.66	3.10	3.38	4.23	7.20	11.29	6.21	3.81	1.41	1.55	1.27	9.60	13.84	14.54	10.31	3.53	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.66	3.10	3.38	4.23	7.20	11.29	6.21	3.81	1.41	1.55	1.27	9.60	13.84	14.54	10.31	3.53	

Calm : .00 %

Total # Operational Hours : 708

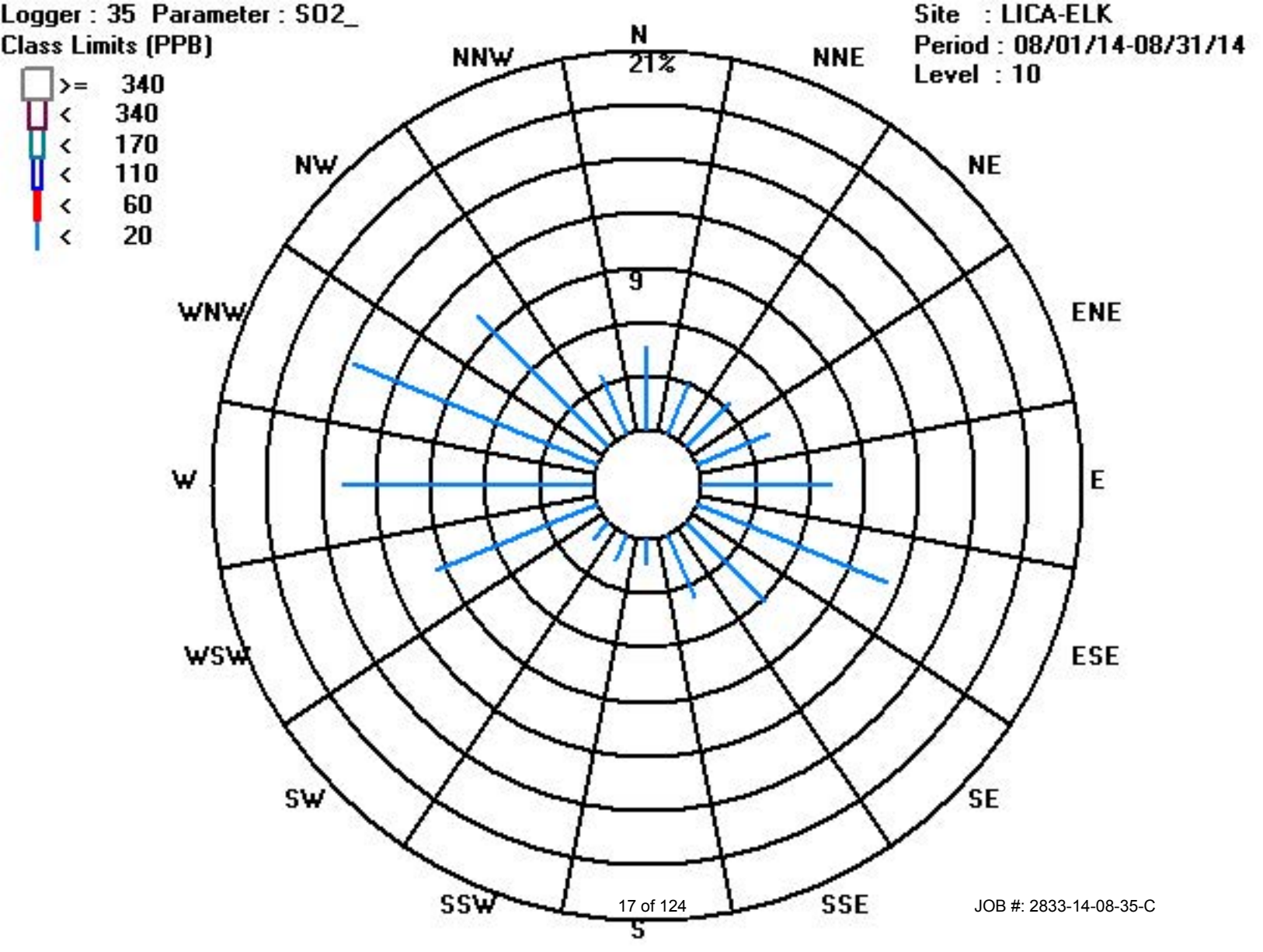
Distribution By Samples

Direction

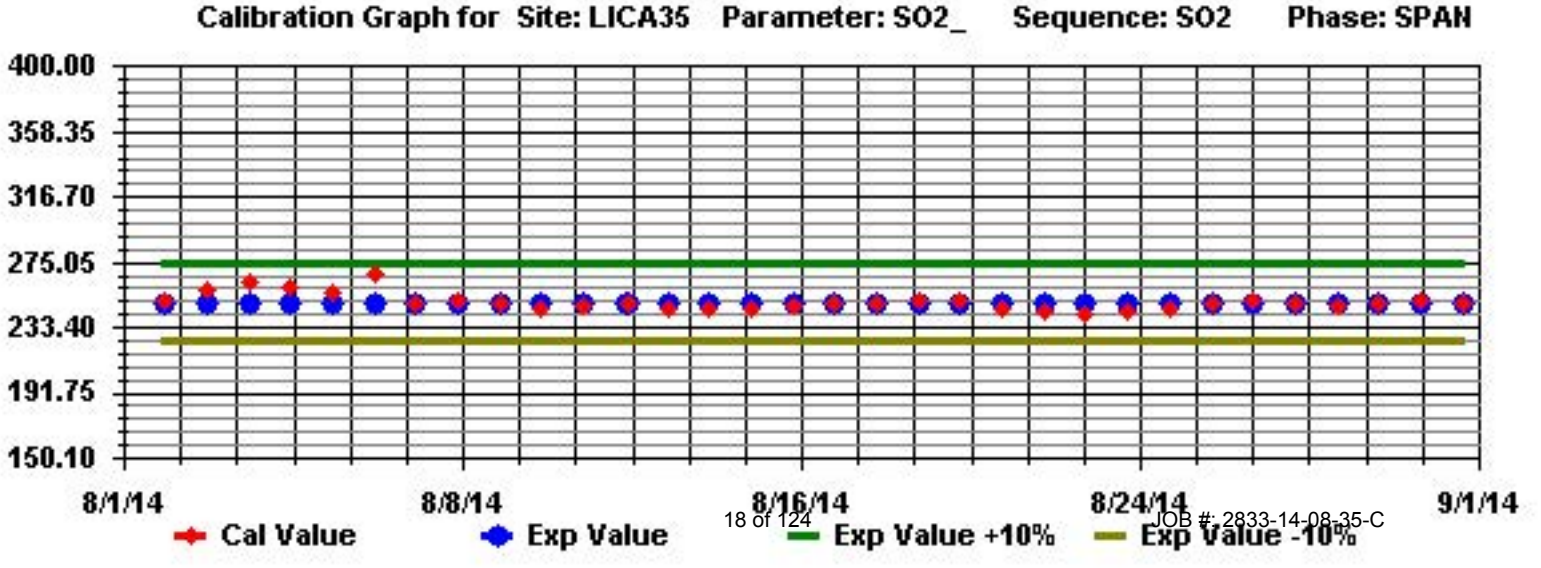
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	33	22	24	30	51	80	44	27	10	11	9	68	98	103	73	25	708
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	33	22	24	30	51	80	44	27	10	11	9	68	98	103	73	25	

Calm : .00 %

Total # Operational Hours : 708



JOB #: 2833-14-08-35-C


Calibration Graph for Site: LICA35 Parameter: SO2_ Sequence: SO2 Phase: SPAN
400.00
358.35
316.70
275.05
233.40
191.75
150.10
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Hydrogen Sulphide

Lakeland Industry & Community Association - Elk Point Site

AUGUST 2014

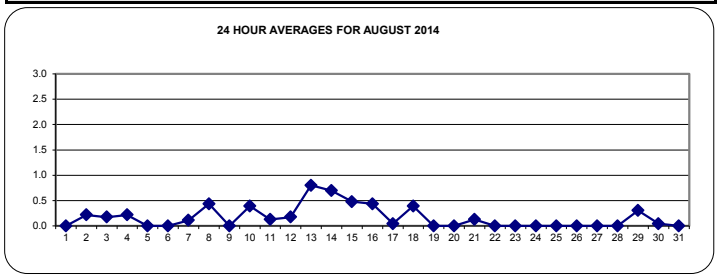
HYDROGEN SULPHIDE (H2S) hourly averages in ppb

MST

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

STATUS FLAG CODES

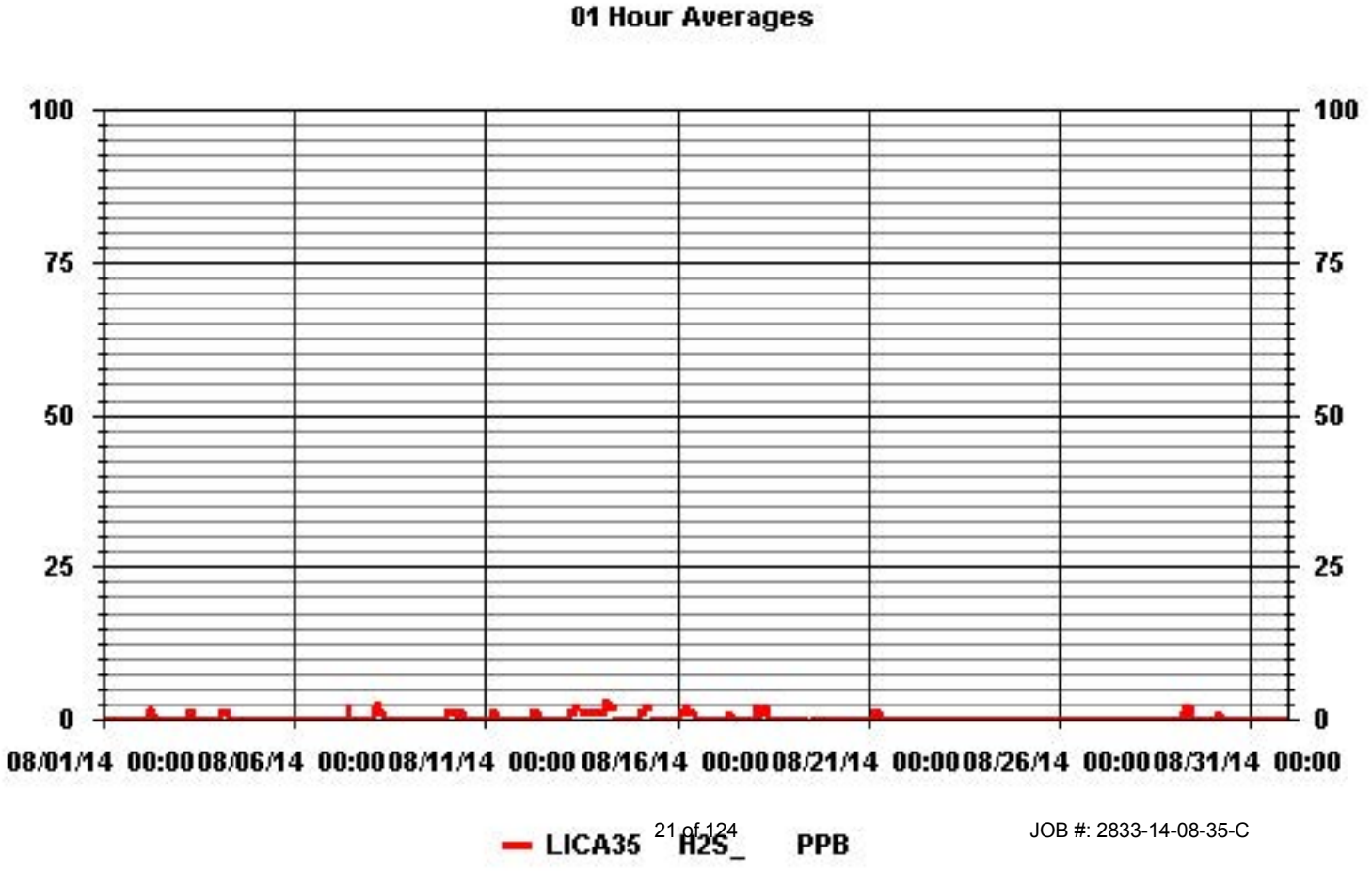
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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:	89						
MAXIMUM 1-HR AVERAGE:	3	PPB	@ HOUR(S)	4, 4	ON DAY(S)		8, 14
MAXIMUM 24-HR AVERAGE:	0.8	PPB			ON DAY(S)		13
					VAR-VARIOUS		
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:			744	HRS
MONTHLY CALIBRATION TIME:	12	HRS	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	0.47		MONTHLY AVERAGE:			0.17	PPB



JOB #: 2833-14-08-35-C

Lakeland Industry & Community Association - Elk Point Site

AUGUST 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	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	1	0.1	24
2	1	1	1	1	1	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	2	0.5	24
3	1	0	1	1	1	1	1	2	1	1	0	0	0	0	0	0	0	0	0	1	**S**	0	0	0	2	0.5	24
4	0	0	3	3	1	3	3	1	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	3	0.6	24
5	0	0	0	0	0	0	1	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	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0.0	24
7	0	0	0	0	0	0	**S**	**S**	0	0	**C**	**C**	**C**	**C**	0	0	**S**	0	0	0	0	0	1	1	1	0.1	24
8	0	1	***4***	2	3	2	2	1	1	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	***4***	0.7	24
9	0	0	0	1	1	1	1	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0	0	0	1	0.2	24
10	2	2	2	1	2	2	1	1	1	1	0	0	0	**S**	0	0	0	0	0	0	1	0	0	0	2	0.7	24
11	0	1	1	1	1	1	2	1	1	0	0	0	**S**	0	0	0	0	0	0	0	1	0	0	0	2	0.4	24
12	0	0	0	1	1	1	1	1	1	1	1	**S**	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
13	0	0	0	1	1	1	1	1	**C**	**C**	**C**	**C**	**C**	2	1	1	1	1	2	1	2	2	2	1	2	1.1	24
14	2	2	2	***4***	3	3	3	3	3	**S**	1	0	0	0	0	0	0	0	0	0	0	0	0	0	***4***	***1.1***	24
15	1	2	2	2	3	2	3	3	**S**	1	1	1	1	0	0	0	0	0	1	0	0	0	2	1	3	***1.1***	24
16	1	1	1	2	2	2	3	**S**	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0.7	24
17	0	0	0	1	1	1	**S**	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
18	1	1	3	3	1	**S**	2	2	2	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	3	0.9	24
19	0	1	0	0	**S**	0	0	1	1	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	1	0	0	1	0.2	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**	1	1	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	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	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	1	0.2	24
26	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	1	0.1	24
27	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	1	0.3	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	1	1	0.0	24
29	1	0	0	1	1	1	3	3	3	2	1	0	0	0	0	0	0	**S**	0	0	0	0	0	0	3	0.7	24
30	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	1	0.3	24
31	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
HOURLY MAX	2	2	4	4	3	3	3	3	3	2	2	1	1	2	1	1	1	1	2	1	2	2	2	1			
HOURLY AVG	0.4	0.5	0.7	0.9	0.9	1.0	1.2	0.9	0.7	0.3	0.3	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 181

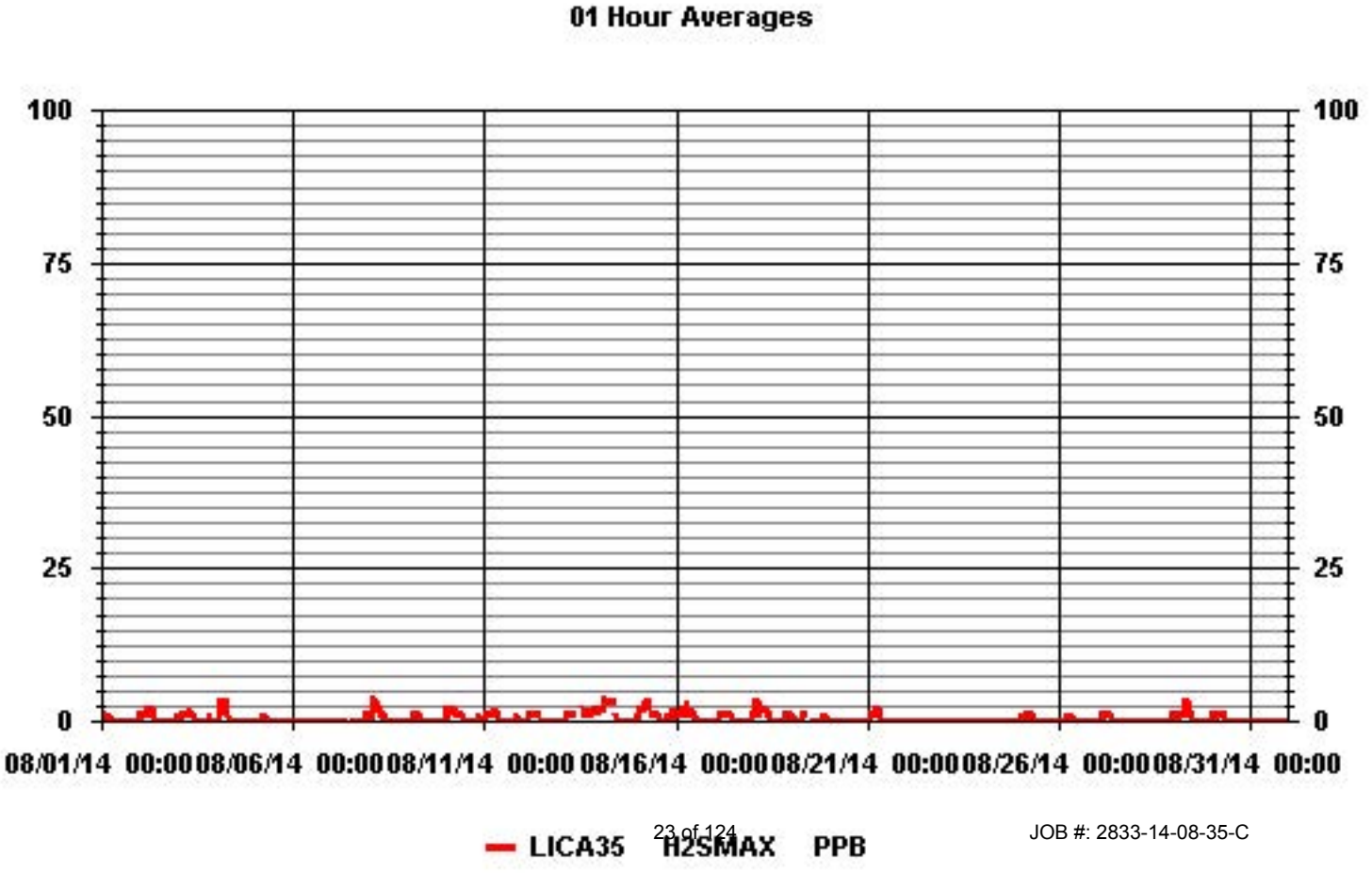
MAXIMUM INSTANTANEOUS VALUE: 4 PPB @ HOUR(S) 2, 3 ON DAY(S) 8, 14

VAR-VARIOUS

IZS CALIBRATION TIME: 33 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 14 HRS

STANDARD DEVIATION: 0.73



JOB #: 2833-14-08-35-C

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

August 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	4.72	3.14	3.43	4.29	7.29	11.87	6.00	3.86	1.43	1.57	1.28	9.72	12.87	14.30	10.30	3.57	99.71
<	10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.28	.00	.00	.00	.28
<	50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.72	3.14	3.43	4.29	7.29	11.87	6.00	3.86	1.43	1.57	1.28	9.72	13.16	14.30	10.30	3.57	

Calm : .00 %

Total # Operational Hours : 699

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3	33	22	24	30	51	83	42	27	10	11	9	68	90	100	72	25	697
<	10													2				2
<	50																	
>=	50																	
	Totals	33	22	24	30	51	83	42	27	10	11	9	68	92	100	72	25	

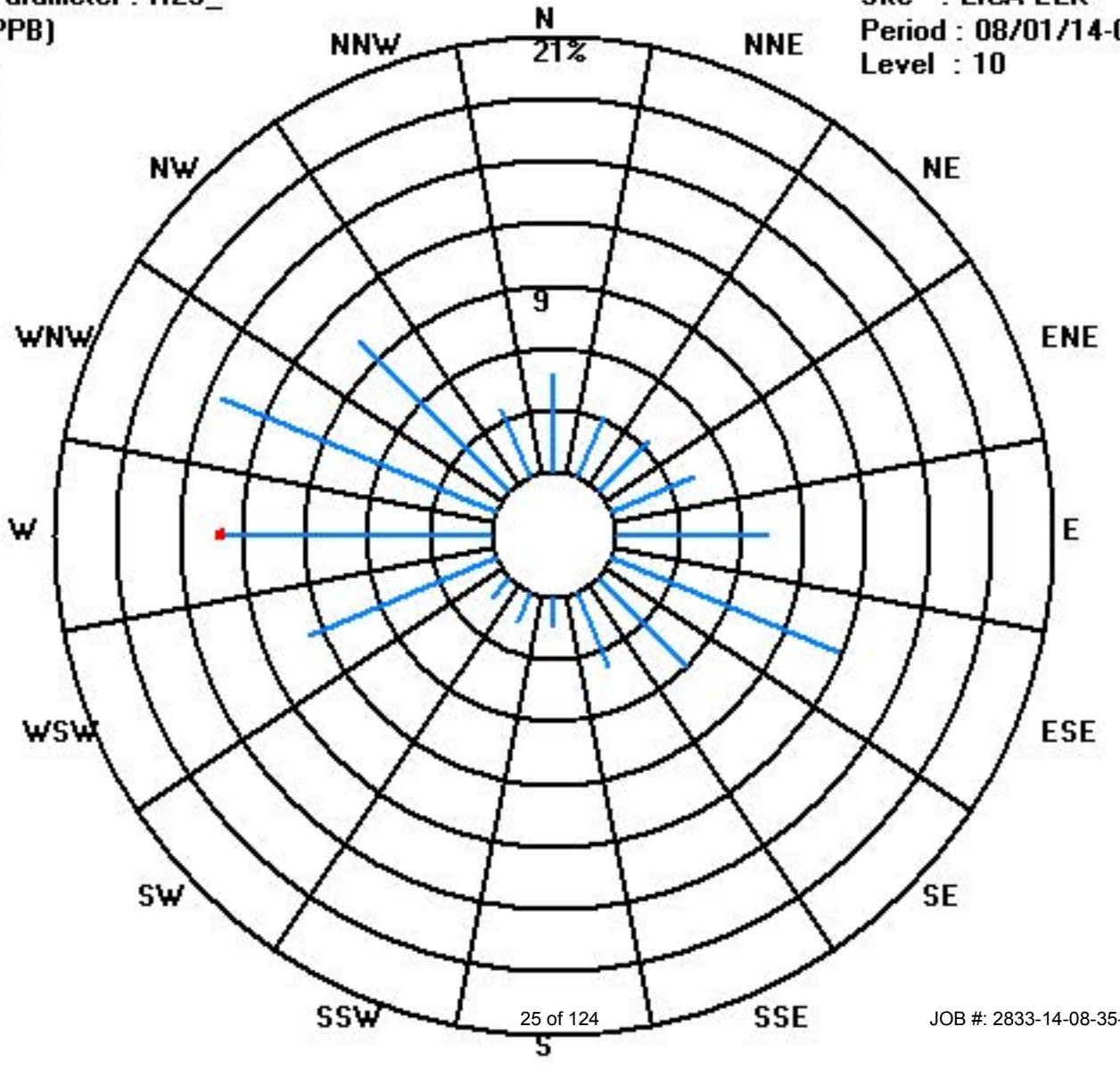
Calm : .00 %

Total # Operational Hours : 699

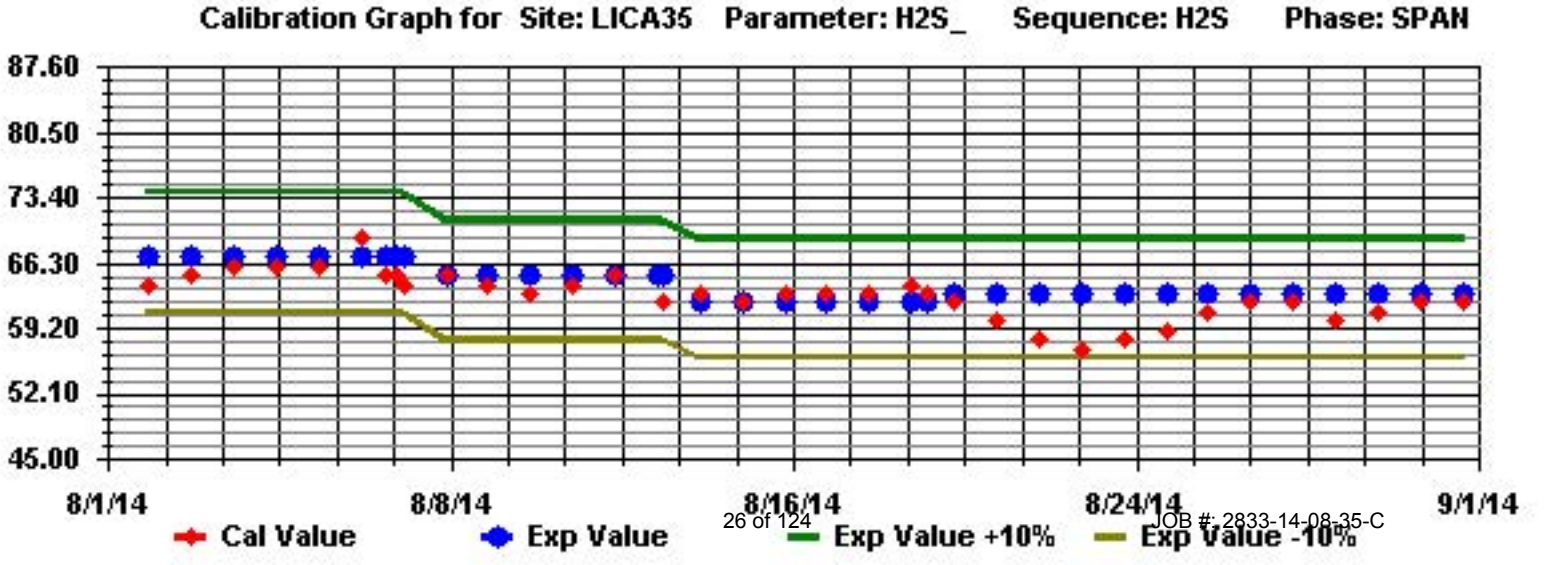
Logger : 35 Parameter : H2S_
Class Limits (PPB)

>= 50
< 50
< 10
< 3

Site : LICA-ELK
Period : 08/01/14-08/31/14
Level : 10



JOB #: 2833-14-08-35-C


Calibration Graph for Site: LICA35 Parameter: H2S_ Sequence: H2S Phase: SPAN
87.60
80.50
73.40
66.30
59.20
52.10
45.00
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

Lakeland Industry & Community Association - Elk Point Site

AUGUST 2014

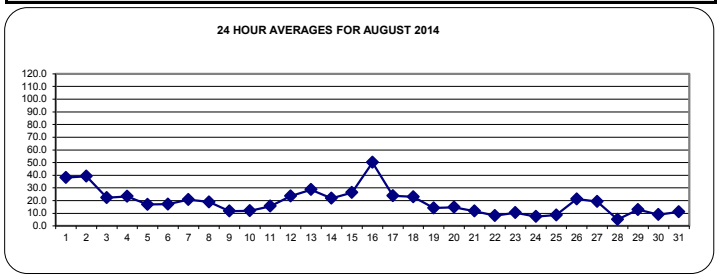
PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5) hourly averages in ug/m3

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	13	17	12	7	5	6	11	29	51	59	50	50	41	28	40	55	42	56	53	59	58	60	58	58	60	38.3	24
2	60	47	41	28	32	31	48	55	58	55	52	45	51	33	40	27	30	22	27	28	41	44	22	22	60	39.1	24
3	21	17	20	14	15	17	18	14	10	13	33	8	28	20	**X**	**X**	23	38	40	23	20	27	52	17	52	22.2	22
4	24	18	15	17	10	14	33	23	15	8	15	15	19	40	36	30	26	19	24	23	27	55	26	29	55	23.4	24
5	8	14	5	16	8	19	19	20	17	27	38	29	30	16	28	8	16	11	17	15	12	11	9	12	38	16.9	24
6	8	8	3	4	5	8	3	1	9	4	18	26	14	18	9	13	20	26	34	29	30	40	56	26	56	17.2	24
7	32	22	15	9	10	8	15	39	34	12	6	21	32	13	21	19	20	25	21	28	26	30	23	18	39	20.8	24
8	17	17	23	16	16	21	24	34	28	24	33	4	25	21	14	14	17	26	11	17	16	14	11	11	34	18.9	24
9	13	9	8	3	15	8	14	6	19	**X**	23	**X**	28	24	4	8	13	8	8	11	12	7	10	8	28	11.8	22
10	13	11	10	13	9	12	5	13	11	17	10	13	7	6	15	15	13	18	14	15	13	11	17	8	18	12.0	24
11	12	13	12	8	12	10	23	19	22	28	21	18	11	8	10	9	17	16	12	12	17	20	21	23	28	15.6	24
12	12	23	14	22	22	27	24	21	22	26	30	29	20	**C**	0	17	9	31	25	25	56	38	26	21	56	23.5	24
13	34	15	31	28	6	21	37	16	35	20	19	39	34	33	52	38	32	36	36	30	28	33	2	33	52	28.7	24
14	36	32	27	17	8	**X**	**X**	**X**	21	17	25	36	15	19	19	18	18	15	22	39	30	6	9	30	39	21.9	21
15	23	8	15	17	24	16	5	12	19	23	19	42	47	25	30	26	24	23	43	42	44	35	47	22	47	26.3	24
16	36	54	59	32	37	36	58	64	72	65	***81***	68	74	50	57	48	48	43	40	39	37	40	28	37	***81***	***50.1***	24
17	8	11	**X**	5	23	23	32	35	33	48	48	30	29	27	23	16	12	17	15	9	28	28	26	20	48	23.7	23
18	15	4	14	12	10	14	2	23	37	29	28	28	22	35	40	29	31	19	27	23	23	34	10	42	42	23.0	24
19	11	4	28	17	0	1	4	5	10	19	20	26	**C**	6	**X**	26	32	12	21	12	**X**	**X**	**X**	**X**	32	14.1	19
20	3	2	16	14	15	3	9	1	**X**	0	55	30	9	60	27	1	10	5	17	**X**	7	10	20	11	60	14.8	22
21	19	16	17	11	19	22	21	18	10	**X**	**X**	1	12	14	1	2	5	17	4	4	13	10	13	9	22	11.7	22
22	8	10	6	8	9	13	3	8	14	5	3	10	2	6	15	8	12	13	4	2	10	1	10	13	15	8.0	24
23	8	12	8	6	10	5	0	0	14	24	15	10	**X**	29	8	**X**	4	13	10	18	8	8	9	12	29	10.5	22
24	4	7	13	11	4	5	10	4	4	0	**X**	11	**X**	4	13	24	19	8	0	4	1	5	8	4	24	7.4	22
25	1	4	6	4	2	2	1	9	0	6	12	**X**	22	7	20	12	10	10	17	12	14	9	10	7	22	8.6	23
26	7	22	33	1	5	1	9	5	23	31	41	32	29	34	31	29	30	15	26	26	29	15	20	17	41	21.3	24
27	27	17	24	13	21	29	54	33	39	59	18	30	21	8	9	1	10	4	8	7	2	14	8	6	59	19.3	24
28	2	**X**	**X**	**X**	0	0	4	**X**	9	0	5	11	14	5	3	14	7	6	0	9	4	4	0	7	14	5.2	20
29	0	8	9	7	7	6	8	0	2	15	15	34	33	35	10	11	13	10	10	16	14	18	14	14	35	12.9	24
30	17	13	14	7	18	7	**X**	3	4	0	9	0	**X**	11	8	7	1	0	0	11	11	5	23	27	27	8.9	22
31	30	27	23	31	**X**	0	6	2	11	20	**X**	0	3	8	24	10	5	8	2	1	9	3	**X**	**X**	31	11.2	20
HOURLY MAX	60	54	59	32	37	36	58	64	72	65	81	68	74	60	57	55	48	56	53	59	58	60	58	58			
HOURLY AVG	16.8	16.1	18.0	13.3	12.6	12.8	17.2	17.7	21.8	22.6	26.5	24.0	24.9	21.4	20.9	18.4	18.4	18.4	19.0	19.6	21.3	21.2	20.3	19.4			

STATUS FLAG CODES

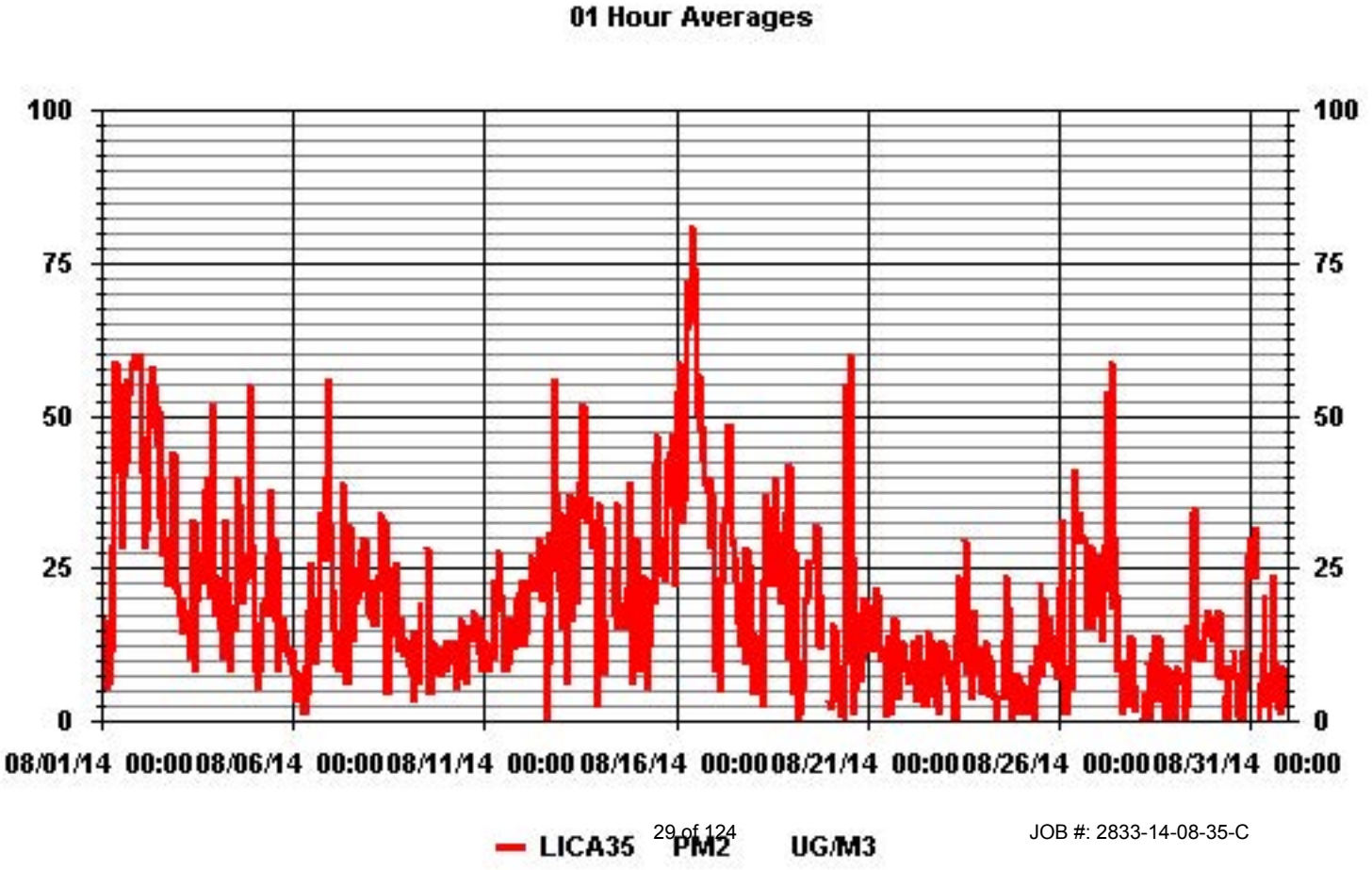
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES:	3					
NUMBER OF NON-ZERO READINGS:	689					
MAXIMUM 1-HR AVERAGE:	81	ug/m3	@ HOUR(S)	10	ON DAY(S)	16
MAXIMUM 24-HR AVERAGE:	50.1	ug/m3			ON DAY(S) VAR-VARIOUS	16
			OPERATIONAL TIME:		712	HRS
MONTHLY CALIBRATION TIME:	2	HRS	AMD OPERATION UPTIME:		95.7	%
STANDARD DEVIATION:	14.35		MONTHLY AVERAGE:		19.21	ug/m3



JOB #: 2833-14-08-35-C

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

August 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	3.66	1.83	2.39	3.09	5.49	7.88	4.36	2.53	.98	1.26	1.26	6.90	11.83	13.23	9.85	3.23	79.85
<	60	.84	.84	.70	.98	1.54	3.38	2.39	1.26	.42	.42	.14	2.11	1.54	1.12	.84	.28	18.87
<	80	.00	.00	.00	.00	.42	.56	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	1.12
<	120	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
<	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.50	2.67	3.09	4.08	7.46	11.97	6.76	3.80	1.40	1.69	1.40	9.01	13.38	14.36	10.84	3.52	

Calm : .00 %

Total # Operational Hours : 710

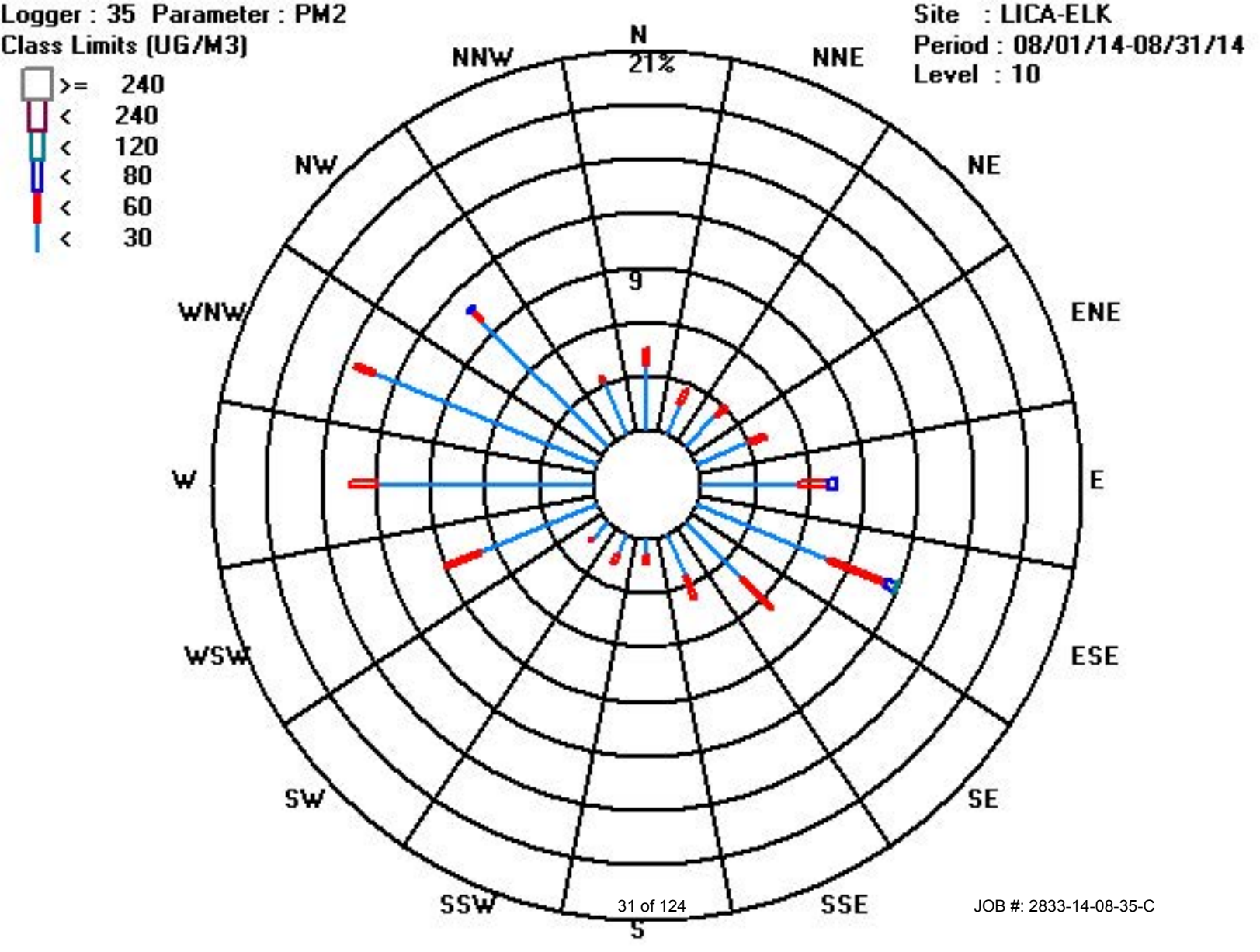
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30	26	13	17	22	39	56	31	18	7	9	9	49	84	94	70	23	567
<	60	6	6	5	7	11	24	17	9	3	3	1	15	11	8	6	2	134
<	80					3	4									1		8
<	120						1											1
<	240																	
>=	240																	
	Totals	32	19	22	29	53	85	48	27	10	12	10	64	95	102	77	25	

Calm : .00 %

Total # Operational Hours : 710



JOB #: 2833-14-08-35-C

Nitrogen Dioxide

Lakeland Industry & Community Association - Elk Point Site

AUGUST 2014

NITROGEN DIOXIDE (NO2) hourly averages in ppb

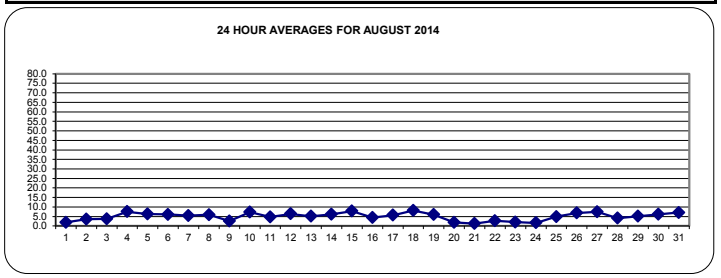
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1.8	2.1	2	1.8	1.7	2.2	1.4	0.8	0.8	0.8	0.6	1	1	1	0.6	0.5	0.6	0.5	0.4	0.5	4.2	9	**S**	8.5	9	1.9	24
2	7.2	4.9	7.3	8	7.6	7.1	5.7	3.9	2.6	1.9	1.6	1.4	1.2	1.4	1.1	1.1	1.2	0.7	1.7	3.6	5.3	**S**	3.5	3.3	8	3.6	24
3	5.4	6.7	3.8	8.2	9.3	5.9	3.2	3.7	2.6	1.7	1.9	0.8	0.4	0.3	0.2	0.2	0.1	0.1	0.3	5.1	**S**	9.6	8.4	8.2	9.6	3.7	24
4	11.4	13.4	13.2	12.3	12.2	11.2	13.3	10.3	6	4.5	1.8	3	2.3	1.5	1.5	1.4	1.4	0.8	1.5	**S**	12	10.1	12	16.1	16.1	7.5	24
5	17.1	13.5	10.2	7.4	12.2	7.7	8.9	5.5	4.7	3.3	1.9	1.3	1.3	2	6	3	3	2.8	**S**	6	8.9	5.8	4.7	6.7	17.1	6.3	24
6	8	6.5	6	6.5	4.8	4.2	5.2	5.6	4.1	5	3.9	3	2.7	1.1	0.7	0.9	0.4	**S**	4.3	9	15.2	19	16.3	6.5	19	6.0	24
7	4.3	4.7	5.5	4.4	7.2	7.6	**S**	**S**	2	1.9	0.8	0.4	0.9	0.5	0.8	1.5	**S**	1.2	6.2	4.5	9.5	18.4	18	12.9	18.4	5.4	24
8	10	12.2	10	10.8	10.2	8.7	7.6	10.5	9.5	4.3	4.7	2	2.2	2.9	3.4	**S**	5.3	4.2	1.9	2.7	2	2	6.5	1.6	12.2	5.9	24
9	3.1	1.2	1.5	1.5	1.3	1.1	1.6	1.4	0.2	0.3	0.3	0.1	0.2	0.2	**S**	0.2	0.1	0.3	0.3	2.2	6.1	10.1	13.2	10.8	13.2	2.5	24
10	11.9	11.1	9.7	7.9	7	8.5	7.5	7.1	7.5	7.6	3.4	1.2	0.9	**S**	1	1.1	0.9	0.6	1.4	19.5	17.1	10	12	11.7	19.5	7.2	24
11	10.3	10.8	8.1	7.2	6	6.3	13	6.1	4.6	3.4	1.8	1	**S**	0.4	0.4	0.2	0.2	0.7	0.4	1.2	8.6	6.2	6	5.1	13	4.7	24
12	5.5	6	5.5	5.9	7	8.7	6.3	6.9	7.5	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2.1	2.2	4.7	8.3	8.2	10.2	7.4	5.6	10.2	6.4	24
13	5	7.3	4.9	5.9	5.2	9.3	6	**S**	**S**	**S**	**S**	3.6	3.9	2.9	2	1.6	1.6	3.6	3.8	4.9	12.4	9.9	5.3	3	12.4	5.1	24
14	5.2	4.8	5.9	9.7	11.3	13.2	11	**S**	7.2	**S**	2.9	2.6	1.6	1.1	1.1	1.1	1.6	1.7	1.8	7.9	14.8	6.3	8.4	13.7	14.8	6.1	24
15	11.3	7.7	8.6	8.3	9.4	8.1	7.8	9	**S**	11.3	10.5	9	6	3.3	2.1	3.3	2.3	3.6	6.5	7.2	11.3	11.4	12.5	8.4	12.5	7.8	24
16	9	7.4	6.5	6.4	7.2	7.9	7.6	**S**	3.6	2.8	2.3	2.2	1.6	1.4	1.5	1.6	1.4	2	2.2	2.5	4.2	7.5	7.3	4.5	9	4.4	24
17	6.1	7.1	6.3	3.8	7	8.9	**S**	8	4.9	2.9	2	1	0.9	1.8	2.4	1.5	0.8	2.9	7	13.6	9.3	10.9	10.7	10	13.6	5.6	24
18	12.9	13	13.8	11.6	13.3	**S**	5.5	6	4.6	2.5	2.6	2	2.9	2	2.5	1.4	1.9	5.9	12.3	5.9	14.3	18	17.1	13.7	18	***8.1***	24
19	13.6	12.2	0.8	2.5	**S**	5.1	8.1	6.8	6	2.6	1.2	0.7	0.8	0.7	0.6	0.5	0.5	2.5	13.3	9	12.6	16.6	12.8	8.6	16.6	6.0	24
20	8.5	7.8	4.9	**S**	2.7	2.3	2	1.5	1.3	1	0.7	0.5	0.5	0.7	0.5	0.3	0.1	0.8	0.5	2	1.1	0.7	1.4	1.4	8.5	1.9	24
21	1.6	1.3	**S**	2	1.8	1.4	1.7	1.2	0.5	0.4	0.2	0	0.2	0.3	0.4	0.5	0.5	0.3	0.4	0.7	4.1	4.7	2.6	2.3	4.7	1.3	24
22	1.8	**S**	2.4	4.9	3	4.3	3.8	**S**	1.9	1	0.5	0.5	0.6	0.8	0.9	0.7	1	0.8	0.9	3.3	5.4	5.2	7.8	8.7	8.7	2.7	24
23	**S**	4.8	4.3	4.9	4	3.7	3.1	2.3	1.3	0.1	0.1	0.1	0	0	0	0	0.3	0.6	1.8	2.8	3	3.1	4.8	**S**	4.9	2.1	24
24	5.7	2.9	2.1	2	1.9	1.7	1.8	1.2	0.4	0	0	0	0	0.1	0.1	0.3	0.3	0.2	0.3	3.1	2.1	2	**S**	9.4	9.4	1.6	24
25	15.8	9.7	6.8	7.6	6.4	6.8	6.6	**S**	6.9	6.4	2.1	0.8	1	0.8	1	1.1	1	1.5	4.3	4.6	4.6	**S**	5.4	5.9	15.8	4.9	24
26	7.3	7.4	6	5.9	7.4	9.8	8.8	8.3	7.4	6.7	5.3	2.8	1.9	1.4	1.2	1.9	2.9	2.1	6.1	10.9	**S**	14.2	15.7	15.3	15.7	6.8	24
27	12.3	14.8	17	12.5	11.7	10.7	13	10.3	13.3	15.3	8.7	2.3	0.5	0.1	0.1	0	0.2	0.3	0.3	**S**	7.4	11.4	3.4	5.5	17	7.4	24
28	16.5	8.7	7.4	4.4	5.8	8.9	6.1	4.2	1.8	0.9	0.9	0.7	0.2	0	0	0	0.1	0	**S**	1.8	6	3.4	6.6	9.8	16.5	4.1	24
29	11.5	11.4	10.8	7.3	5.1	5.3	5.9	6.1	4.6	3.6	3.2	2.4	2.1	1.9	2.6	2.7	0.9	**S**	5	6.5	6.6	4.8	3	3.7	11.5	5.1	24
30	4.1	4	5.3	5	10.6	5.7	7.5	5.9	2.1	1.1	0.6	0.5	0.2	0.2	0.2	0.8	**S**	2.3	2.4	12.7	12	16.6	***21.5***	19.8	***21.5***	6.1	24
31	17.7	12.3	12.3	15	15.2	14.1	**S**	**S**	3.2	2.9	1.1	0.2	0.4	0.3	0.8	**S**	1	1.7	4.6	8.4	14.9	12	5.5	4.2	17.7	7.0	24
HOURLY MAX	18	15	17	15	15	14	13	11	13	15	11	9	6	3	6	3	5	6	13	20	17	19	22	20			
HOURLY AVG	8.7	7.9	7.0	6.7	7.2	6.9	6.4	5.5	4.2	3.4	2.3	1.6	1.3	1.1	1.2	1.1	1.2	1.6	3.3	5.9	8.4	9.3	9.0	8.2			

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

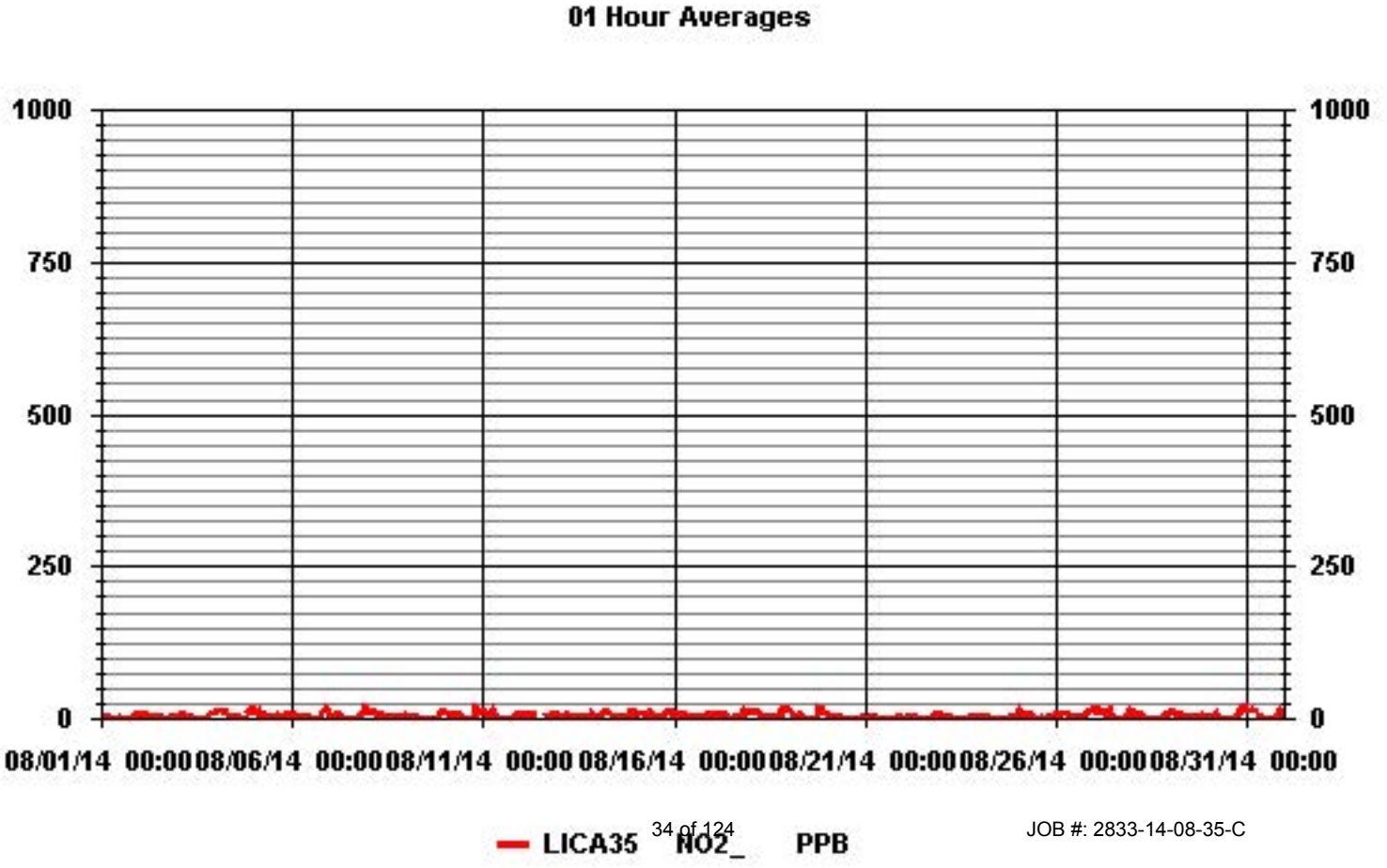
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 159 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	682					
MAXIMUM 1-HR AVERAGE:	21.5	PPB	@ HOUR(S)	22	ON DAY(S)	30
MAXIMUM 24-HR AVERAGE:	8.1	PPB			ON DAY(S)	18
					VAR-VARIOUS	

IZS CALIBRATION TIME:	41	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	4.45		MONTHLY AVERAGE:	5.00	PPB



JOB #: 2833-14-08-35-C

Lakeland Industry & Community Association - Elk Point Site

AUGUST 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	2.9	5.3	2.9	3.8	3	3.2	2.7	1.7	1.6	1.6	1.4	2	1.9	1.7	1.6	1.5	1.5	1.4	1.4	2.4	8.9	13.9	**S**	14.7	14.7	3.6	24
2	8.9	6.6	10.2	10.5	9.6	8.5	8	6	3.6	3.2	2.7	2.2	2	2.2	2.1	2.1	2.3	1.7	3.3	6.3	8.8	**S**	7	7.6	10.5	5.5	24
3	7.2	9.4	7.9	11.7	13.2	10.1	6.9	5	3.8	2.8	3	1.5	1.3	1.3	1.2	1	1.2	1.3	1.3	15.1	**S**	12.1	10.5	12.6	15.1	6.1	24
4	14.3	20.8	16.5	15.1	16.3	18.8	17.5	12.4	9.8	6.8	3.7	4.7	5	2.9	3.3	2.9	4.2	2.5	3.6	**S**	22.7	15.6	17.9	17.7	22.7	11.1	24
5	19.4	16.5	14.6	10.7	17.4	14.7	10.2	7	5.9	5	3.9	2.5	2.5	4.9	19.8	5.3	6.5	4.9	**S**	9.3	14.2	8.6	7.8	9.4	19.8	9.6	24
6	10.4	9.4	7.7	8.5	6.9	5.4	8.4	14.3	5.8	7.5	5.4	4.6	5.5	2.3	1.7	2.5	1.5	**S**	5.5	17.6	18.3	25.3	24.6	14.6	25.3	9.3	24
7	6.8	7.6	9	9.1	11.5	13.7	**S**	**S**	4.6	13.9	2.2	1.5	3.5	1.4	2.1	4.7	**S**	3.1	17.8	11.9	26	24.3	21.8	19.1	26	10.3	24
8	12.9	15.5	12.3	13.5	14.8	11	12.1	15.6	13.6	7	7.5	5.8	4.4	7.4	9.7	**S**	10.3	8	4.5	8.2	3.4	7.4	10.2	3.4	15.6	9.5	24
9	6.1	2.8	4.1	2.7	3.2	2.4	4.7	3.9	1.2	1.6	1.5	1.3	1.3	1.2	**S**	1.3	1.4	1.4	1.6	6.8	36.5	17.8	16.5	14.6	36.5	5.9	24
10	15.4	13.5	13	11.7	11.1	10.5	9.7	8.6	15.8	10.1	6.7	2.7	2.4	**S**	2.6	3.1	2.7	3.3	15.2	24.1	44.5	18.6	15.6	14.6	44.5	12.0	24
11	13.7	12.8	10.1	9.3	8.6	10.3	***75.3***	10.7	6.6	5.2	8.6	8.7	**S**	1.5	1.9	1.2	6.9	6.3	2.6	6	43.8	11	10	6.9	***75.3***	***12.1***	24
12	8.6	8.2	8.1	8	9.8	10.4	9.3	9.6	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	3.9	3.5	8.7	13.9	13.1	17.7	11.6	9.4	17.7	9.6	24
13	7.3	10.7	7.5	8.8	7.8	12.6	**S**	**S**	**S**	**S**	**S**	5.5	5.4	4.4	3.7	3.3	3.3	6.5	7.5	7.9	28.8	14.6	13.4	4.3	28.8	8.6	24
14	10.3	15.5	14.9	26	14.5	19.3	13.3	**S**	10.7	**S**	4.9	4.4	2.6	2	2.1	2.3	2.7	2.7	2.7	17	20.2	13.1	13.7	18.8	26	10.6	24
15	14.4	10.4	16.3	17.3	13	11.3	9.7	11	**S**	14.4	12.1	12.5	7.4	6	3.3	6.3	4.8	6.8	11.7	12.3	16.5	16.4	17.1	10.4	17.3	11.4	24
16	11.5	10.6	7.9	7.8	9.7	13.3	10.9	**S**	5.3	4.1	3.8	3.4	2.8	2.6	2.7	2.8	2.8	3.6	4.4	5.5	13.6	9.8	10.8	8	13.6	6.9	24
17	8.7	10.1	9	5.4	12.4	11	**S**	10.4	7.4	4.5	3.5	2.3	2.1	7.2	6.5	3.3	2.7	14	15.6	20.6	13.4	14.4	14.5	21.6	21.6	9.6	24
18	14.9	15.5	15.3	14.7	15.7	**S**	9.5	7.5	7.4	4.1	4.2	4.2	4.8	3.3	3.8	3.3	7.8	17.5	17.8	16.3	25.3	21.6	18.6	17.9	25.3	11.8	24
19	16.9	17.4	3.6	5.2	**S**	11.1	11.2	10.4	8.1	4.6	2.8	2	2.1	2.1	1.6	1.5	2.3	6.6	23.5	28.9	17.9	28.3	16.9	16.2	28.9	10.5	24
20	11.9	10.9	8.7	**S**	3.7	3.5	3.5	3	2.1	2.1	1.7	1.6	1.5	1.7	1.7	1.3	1.2	19.1	1.4	4.1	2.9	2.3	3	3.9	19.1	4.2	24
21	3	2.4	**S**	3.2	2.9	2.9	2.9	2.5	1.7	1.5	1.3	1.1	1.6	1.3	1.5	1.5	1.5	1.5	1.4	2.5	7.6	8.8	4	3.7	8.8	2.7	24
22	2.9	**S**	3.9	11.8	4.5	7.6	8.5	**S**	3.6	2.3	1.7	1.4	1.7	1.7	1.8	1.8	2.1	2	2	26.1	17.3	7.6	13	11.3	26.1	6.2	24
23	**S**	7.7	7	9.9	5.8	7	4.7	3.8	3.1	1.3	1.2	1	1.3	1.1	1.1	1.2	1.7	3.1	8.5	8.5	19.2	5.8	6.8	**S**	19.2	5.0	24
24	8	4.8	3.5	3.7	3.8	3.2	3.1	2.7	1.7	1.2	0.8	0.9	1	1.2	1.3	1.5	1.4	1.2	2.6	19.8	21.6	3.3	**S**	22.9	22.9	5.0	24
25	23.1	15.5	8	10	9.1	10.6	**S**	**S**	9.8	8.5	4.5	2.5	3.2	2.3	2.7	3.2	2.4	3.6	7.6	8.1	8.4	**S**	6.5	7.4	23.1	7.5	24
26	8.5	8.4	8.2	7.7	11.2	12.2	10.9	10.1	8.6	8.3	6.8	4.8	3.3	2.5	2.5	4	6.4	4.1	11.6	22.7	**S**	18.6	23.5	19.4	23.5	9.8	24
27	16.5	20.2	21	17.2	16.2	12.9	17.2	16.3	19.5	18.8	13.7	6.5	1.8	1.4	1.1	1.3	1.6	2.6	1.5	**S**	19.2	22.8	7.3	9.4	22.8	11.6	24
28	24.7	13.9	14.8	6.8	9.4	11.1	8.4	7.2	3.5	1.9	1.9	1.7	1.2	1.1	0.9	0.8	1.3	0.8	**S**	3.1	10.9	11.1	12.4	18.6	24.7	7.3	24
29	15.8	13.4	13.4	8.7	6.6	6.1	7.6	7.4	5.9	4.9	4.4	4.3	5.3	4.3	8.3	7	2.2	**S**	10.8	16.2	11.9	6.7	4.1	6.5	16.2	7.9	24
30	8.2	7.7	8.6	8.2	14.4	11.3	11.6	8.4	5.3	2.9	1.8	1.9	1.3	1.7	1.6	4	**S**	9.1	6.8	33.2	17.6	24.4	29.8	24.6	33.2	10.6	24
31	20	17.1	15.4	17.5	18.4	17.8	**S**	**S**	5.4	5	2.5	1.7	1.4	1.5	2.4	**S**	2.5	4.8	12.4	16.6	21.6	16.5	17.2	9.1	21.6	10.8	24
HOURLY MAX	25	21	21	26	18	19	75	16	20	19	14	13	7	7	20	7	10	19	24	33	45	28	30	25			
HOURLY AVG	11.8	11.4	10.1	10.2	10.2	10.1	11.5	8.1	6.5	5.5	4.1	3.4	2.8	2.6	3.3	2.7	3.2	5.1	7.4	13.5	18.4	14.4	13.3	12.6			

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: 693

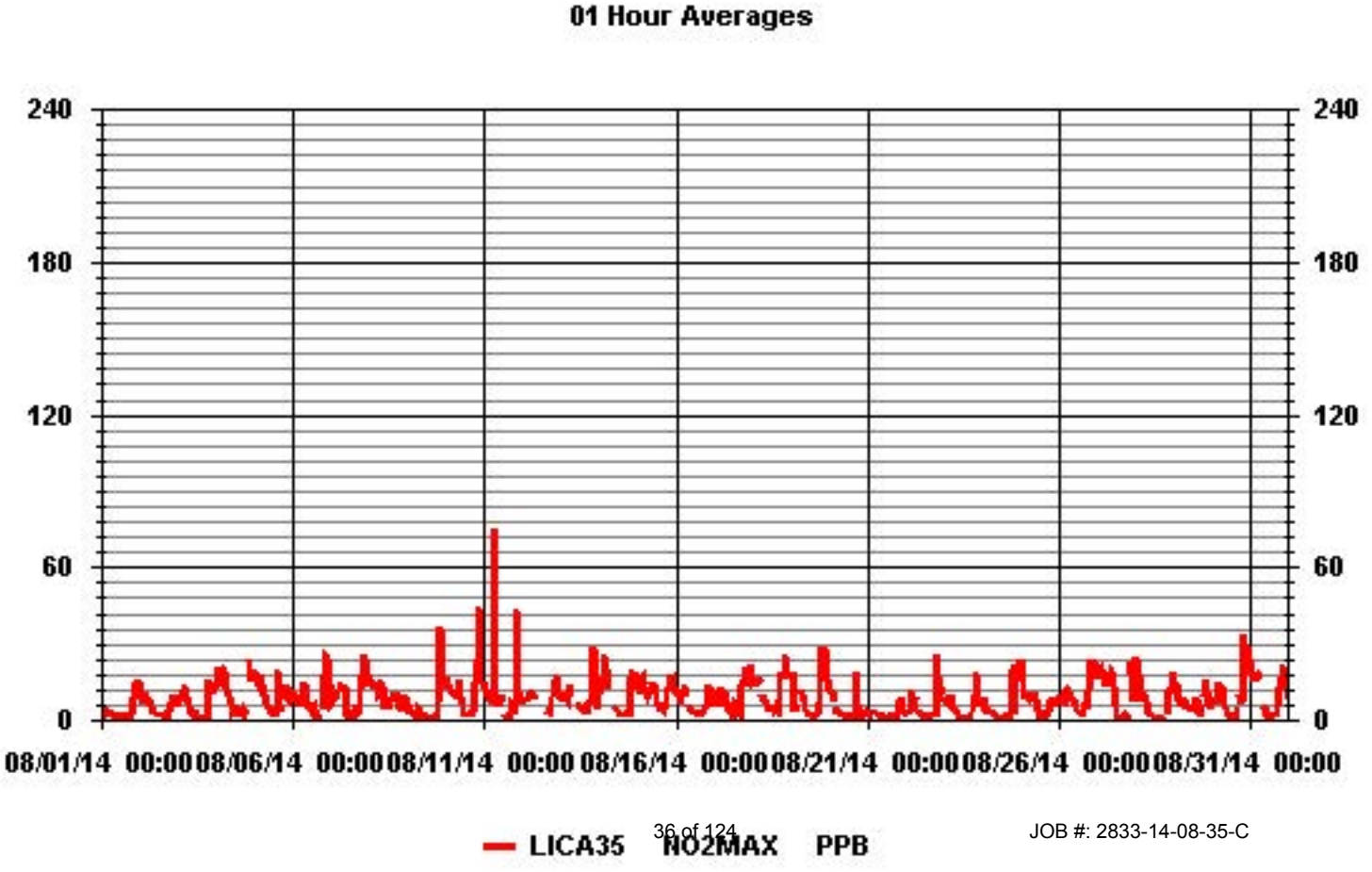
MAXIMUM INSTANTANEOUS VALUE: 75.3 PPB @ HOUR(S) 6 ON DAY(S) 11

VAR-VARIOUS

IZS CALIBRATION TIME: 43 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 8 HRS

STANDARD DEVIATION: 7.11



JOB #: 2833-14-08-35-C

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

August 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	4.74	3.16	3.44	4.31	7.18	11.06	6.03	3.87	1.43	1.58	1.29	9.62	13.79	14.51	10.48	3.44	100.00
<	110.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.74	3.16	3.44	4.31	7.18	11.06	6.03	3.87	1.43	1.58	1.29	9.62	13.79	14.51	10.48	3.44	

Calm : .00 %

Total # Operational Hours : 696

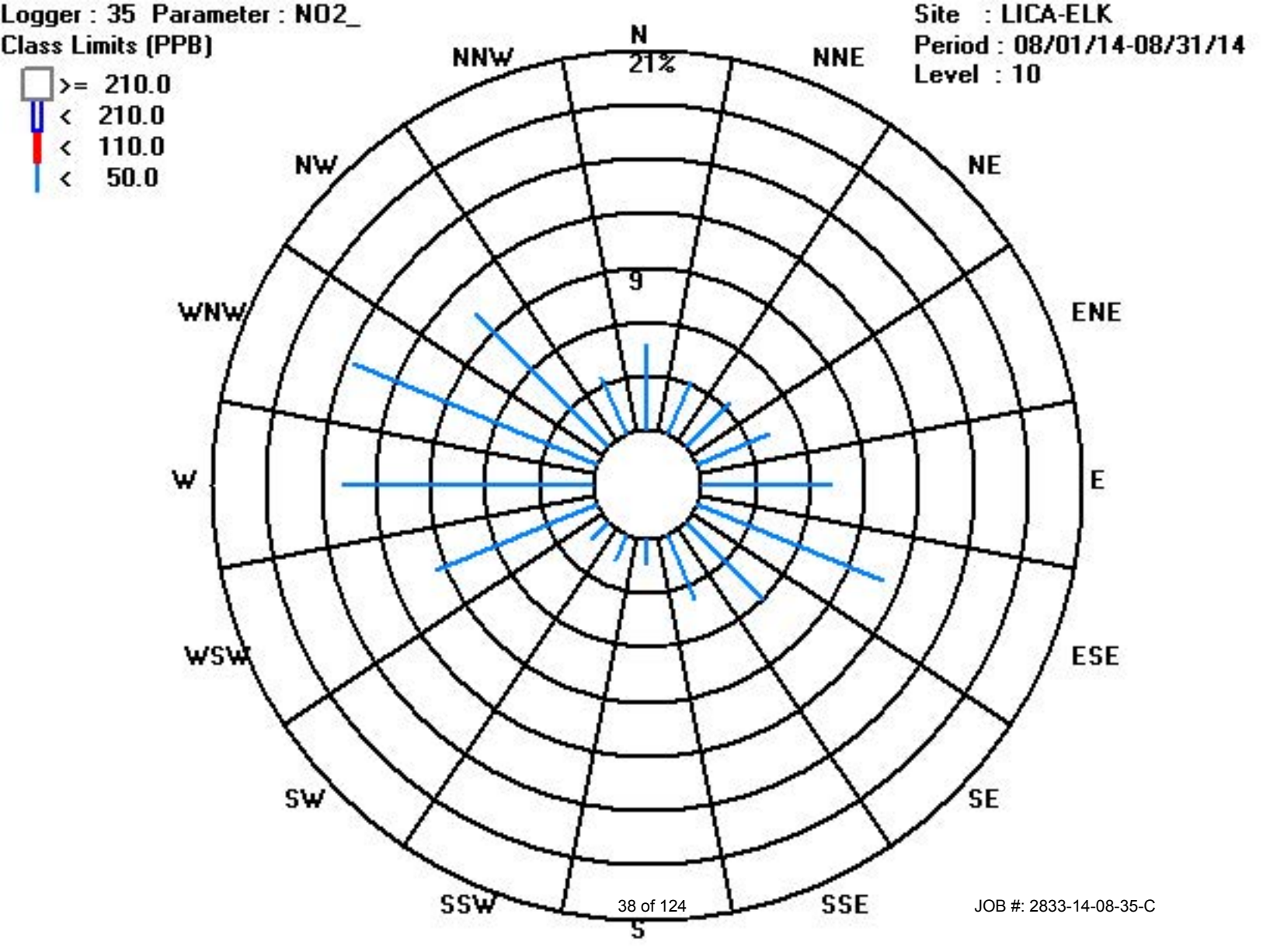
Distribution By Samples

Direction

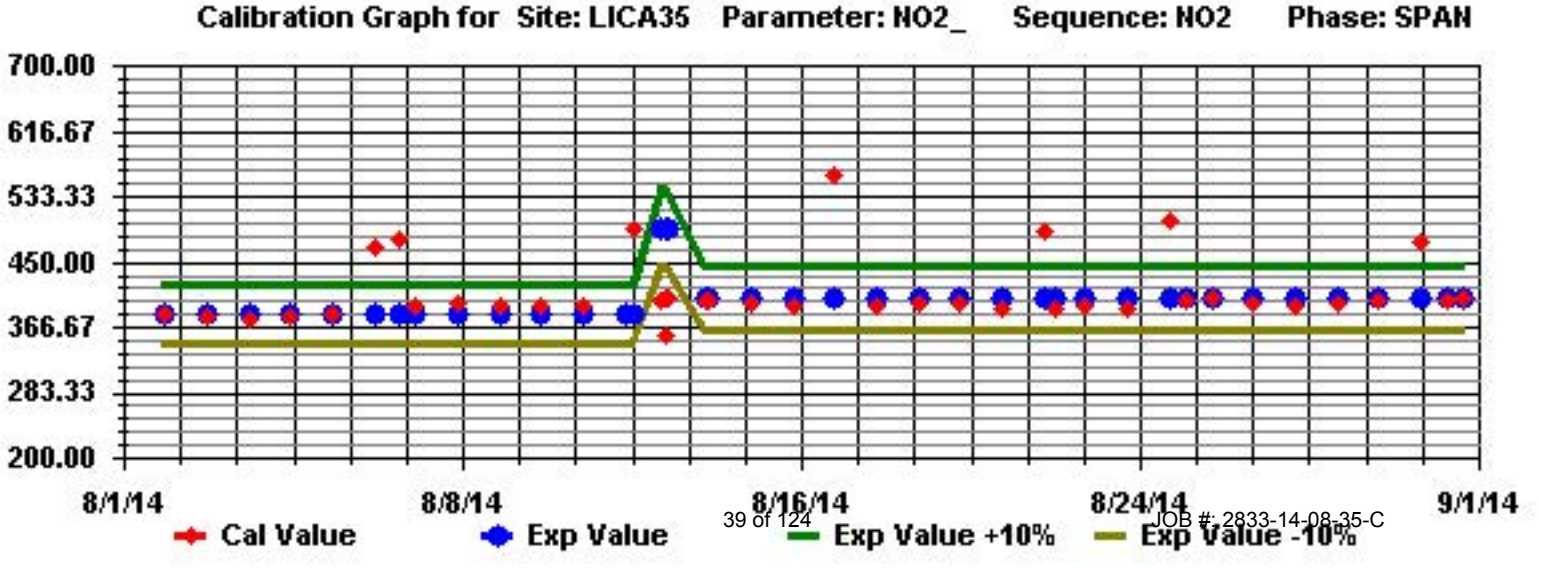
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	33	22	24	30	50	77	42	27	10	11	9	67	96	101	73	24	696
<	110.0																	
<	210.0																	
>=	210.0																	
	Totals	33	22	24	30	50	77	42	27	10	11	9	67	96	101	73	24	

Calm : .00 %

Total # Operational Hours : 696



JOB #: 2833-14-08-35-C


Calibration Graph for Site: LICA35 Parameter: NO2_ Sequence: NO2 Phase: SPAN
700.00
616.67
533.33
450.00
366.67
283.33
200.00
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

Lakeland Industry & Community Association - Elk Point Site

AUGUST 2014

NITRIC OXIDE (NO) hourly averages in ppb

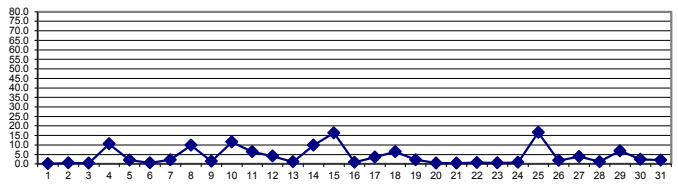
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	0	0	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.8	**S**	1.3	1.3	0.1	24
2	0.6	0.4	1.5	2.2	1.3	2.1	2.3	1.8	1	0.7	0.3	0	0	0	0	0	0	0	0	0	0	**S**	0	0	2.3	0.6	24
3	0	0.1	0	0.5	1.5	2	1.4	2	1.2	0.3	0	0	0	0	0	0	0	0	0	0	**S**	0	0	1.4	2	0.5	24
4	1.7	14.2	26	38.7	39.2	53.8	48	14.2	1.7	0.7	0	0	0	0	0	0	0	0	0	**S**	0.5	0	0.3	2.5	53.8	10.5	24
5	3.1	3.2	1.8	3.9	9.5	7.4	10.1	2.5	1.2	0.4	0	0	0	0	0	0	0	0.1	**S**	0.8	1.4	0.1	0.1	0.4	10.1	2.0	24
6	0.4	0.2	0.1	0.2	0.1	0.5	2.1	3.1	1.4	2.1	1.9	0.5	0.1	0	0	0	0	**S**	0	0	0	0	0	0	3.1	0.6	24
7	0	0	0	0	0	0.9	**S**	**S**	0.8	1.5	0.1	0.4	0.2	0.2	0.7	0.5	**S**	0.7	1.7	0.6	1.8	3.7	18	13.9	18	2.2	24
8	14.3	30.1	21.9	34.9	51.4	25.4	19.1	11.3	8.1	1.6	2	0.8	0.7	0.6	0.9	**S**	1	0.8	0.5	0.5	0.2	0.3	0.4	0.3	51.4	9.9	24
9	0.5	0.3	0.3	0.2	0.3	0.3	0.4	0.7	0.3	0.4	0.4	0.5	0.4	0.3	**S**	0.4	0.5	0.3	0.3	0.4	2.4	3.5	9.4	9.3	9.4	1.4	24
10	35.9	44.9	33.7	34.7	17.8	12.1	8.9	9.1	14.1	13.6	3.2	0.8	0.7	**S**	0.9	0.7	0.5	0.4	0.6	7.2	13.5	2.9	2.8	6.7	44.9	11.6	24
11	14.9	18.2	27.7	25.1	16.1	10.3	15	4.6	2.4	1.7	0.8	0.5	**S**	0.5	0.5	0.4	0.4	0.4	0.2	0.2	3.5	2.1	1.7	1.5	27.7	6.5	24
12	1.5	3.7	3.5	3.5	8.1	16.3	13.9	7.4	5	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0.9	0.5	0.6	1	0.6	1.7	0.5	0.4	16.3	4.1	24
13	0.2	0.9	0.4	0.6	0.8	4.6	2.9	**S**	**S**	**S**	**S**	1.5	1.4	0.9	0.7	0.5	0.3	0.5	0.7	0.4	2.6	0.6	0.3	0.3	4.6	1.1	24
14	0.5	1.6	4	33.2	47.4	56.6	48.2	**S**	7.4	**S**	1.1	0.7	0.4	0.3	0.4	0.4	0.2	0.3	0.2	1.4	2.1	0.5	0.8	8.4	56.6	9.8	24
15	19.1	10.3	29	43.9	60.5	58.8	57	54.1	**S**	16.6	10.9	3.4	1.1	0.8	0.4	0.7	0.4	0.7	1.2	1	1.4	0.6	2.9	1	60.5	16.3	24
16	0.8	0.6	0.4	0.3	1.4	2.1	3.5	**S**	1.9	1	0.7	0.7	0.7	0.5	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.6	0.7	0.4	3.5	0.8	24
17	1.1	1.8	1.2	0.6	18.1	27	**S**	13.4	2.6	1.4	0.6	0.4	0.3	0.7	0.9	0.6	0.4	1.1	2.2	2.9	0.6	0.6	0.7	3.4	27	3.6	24
18	6.7	12.8	31.3	24.5	9.9	**S**	13.4	6.1	2.4	0.7	0.8	0.6	0.7	0.5	0.6	0.5	0.8	2.1	3.3	1.3	6.1	5.4	9.1	7.8	31.3	6.4	24
19	6.9	8.3	0.2	0.3	**S**	1	3	3.4	3.3	1.8	1	0.5	0.7	0.4	0.4	0.4	0.4	0.9	4	2.3	0.8	8.2	0.7	0.6	8.3	2.2	24
20	0.4	0.5	0.3	**S**	0.6	0.5	0.8	0.9	0.6	0.6	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.8	0.3	0.3	0.2	0.4	0.4	0.4	0.9	0.5	24
21	0.3	0.3	**S**	0.5	0.5	0.4	0.5	0.9	0.6	0.5	0.5	0.4	0.5	0.4	0.3	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0.4	0.3	0.9	0.4	24
22	0.2	**S**	0.6	0.7	0.5	0.7	1.2	**S**	1.1	0.7	0.6	0.3	0.4	0.4	0.4	0.5	0.4	0.4	0.3	1.8	1.5	0.7	0.7	1.8	1.8	0.7	24
23	**S**	0.9	0.7	0.8	0.5	0.8	0.9	1.1	1	0.5	0.4	0.3	0.4	0.5	0.5	0.4	0.4	0.3	0.6	0.6	1	0.4	0.7	**S**	1.1	0.6	24
24	0.8	0.7	0.5	0.5	0.4	0.5	0.8	1.4	0.8	0.4	0.4	0.5	0.5	0.4	0.5	0.5	0.4	0.4	0.3	2.5	0.7	0.5	**S**	3.3	3.3	0.8	24
25	43.2	33.4	12.4	40.7	66.6	***75.4***	64.2	**S**	12.5	5.8	1.7	0.7	1	0.8	0.6	0.7	0.6	0.8	0.9	0.7	0.6	**S**	0.4	0.4	***75.4***	***16.6***	24
26	0.2	0.1	0	0.4	0.9	1.2	6.8	6.1	6.5	5.1	2.8	1.2	0.5	0.5	0.5	0.6	0.6	0.4	0.7	1	**S**	0.6	2.1	2	6.8	1.8	24
27	0.2	0.6	2.7	4.7	4.2	2.1	15.5	12.1	17.9	16.6	7.4	1.2	0.4	0.4	0.5	0.4	0.3	0.4	0.3	**S**	1	0.9	0	0	17.9	3.9	24
28	2	0.3	0.2	0	0.3	1	1.6	2.2	1.2	0.4	0.5	0.4	0.3	0.5	0.3	0.1	0.3	0.3	**S**	0.3	0.8	0.1	0.9	12.9	12.9	1.2	24
29	25.4	24.7	24.1	21.2	9.5	8.2	10.5	13.2	6.2	3.9	1.8	1	1.1	1	1.1	1.2	0.3	**S**	0.8	1.1	0.9	0.4	0.2	0.7	25.4	6.9	24
30	1	0.5	0.4	0.1	1.8	0.1	1.2	1.5	0.6	0.4	0.4	0.4	0.3	0.5	0.4	0.7	**S**	0.9	0.9	4.4	1	3.5	24.7	10.9	24.7	2.5	24
31	11.1	0.8	0.9	3.4	7.5	2.5	**S**	**S**	2.2	1.9	0.9	0.5	0.4	0.3	0.5	**S**	0.7	0.5	1	0.6	2.7	1	1.9	0.6	11.1	2.0	24
HOURLY MAX	43	45	34	44	67	75	64	54	18	17	11	3	1	1	1	1	1	2	4	7	14	8	25	14			
HOURLY AVG	6.4	7.1	7.5	10.7	12.6	12.5	12.6	7.2	3.7	2.9	1.4	0.6	0.5	0.4	0.4	0.4	0.4	0.5	0.8	1.2	1.7	1.4	2.8	3.1			

STATUS FLAG CODES

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

24 HOUR AVERAGES FOR AUGUST 2014

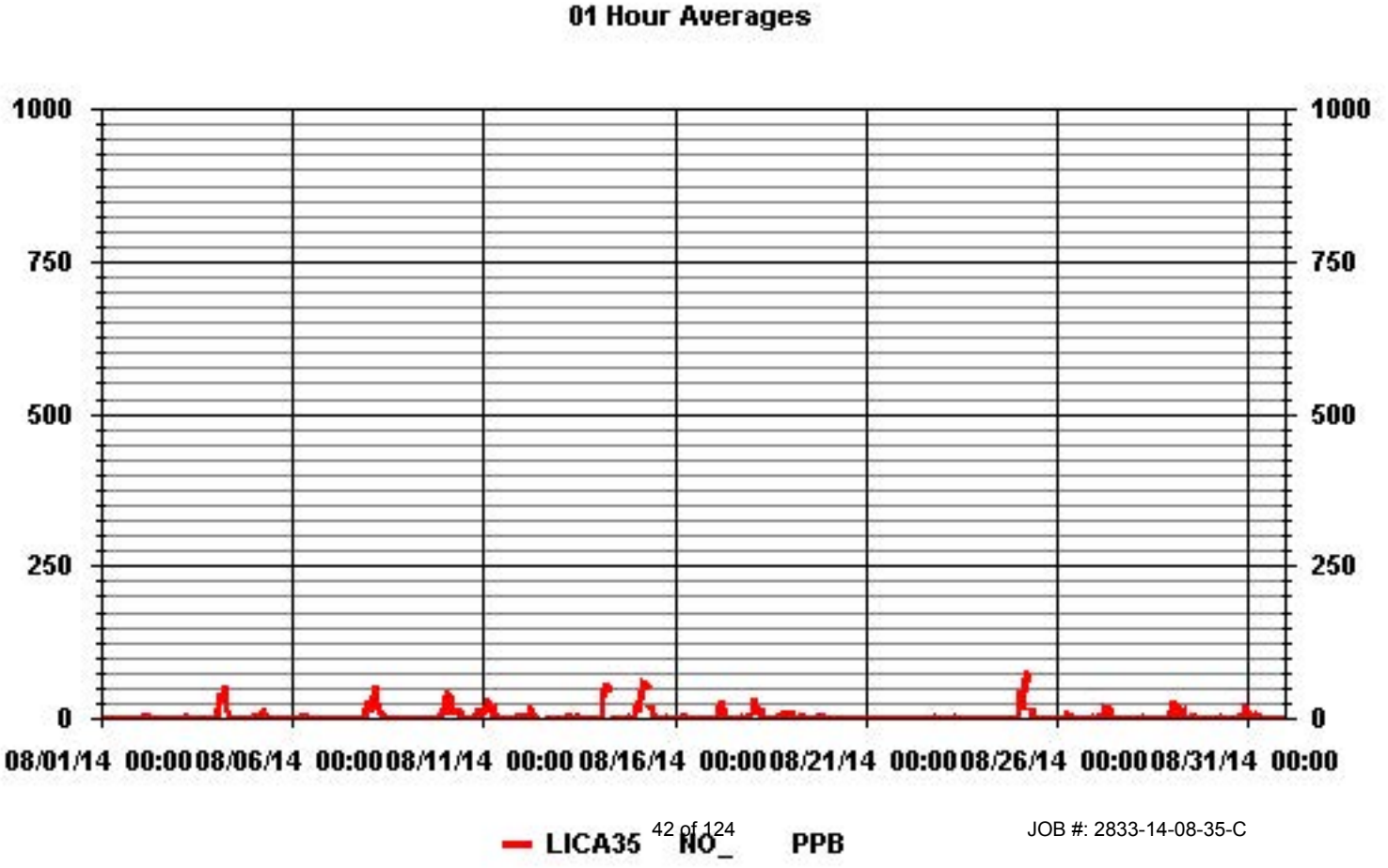


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR NA PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	616					
MAXIMUM 1-HR AVERAGE:	75.4	PPB	@ HOUR(S)	5	ON DAY(S)	25
MAXIMUM 24-HR AVERAGE:	16.6	PPB			ON DAY(S) VAR-VARIOUS	25

IZS CALIBRATION TIME:	41	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	10.02		MONTHLY AVERAGE:	4.13	PPB



JOB #: 2833-14-08-35-C

Lakeland Industry & Community Association - Elk Point Site

AUGUST 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	0.3	0.4	0.5	0.4	0.4	0.4	0.6	0.6	0.6	0.5	0.4	0.4	0.5	0.4	0	0.2	0	0.2	0.2	0	0.6	2.1	S	7.8	7.8	0.8	24
2	2.4	1.6	3.6	6.3	2.6	3.9	3.6	3.2	1.7	1.3	0.8	0.8	0.5	0.7	0.4	0.4	0.7	0	0.2	0.6	0.8	S	1	0.5	6.3	1.6	24
3	0.5	0.6	0.8	2.3	5.9	7	3.9	2.6	2.2	0.8	0.8	0.2	0	0	0	0	0	0	0	2.1	S	0.6	0.9	13	13	1.9	24
4	4.3	62.2	40.9	45.9	46.4	84.6	82.2	28.5	6	1.4	0.8	0.7	0.7	0.6	0.4	0.2	0.3	0	0	S	4.4	0.6	5.5	5.6	84.6	18.4	24
5	4.8	5.1	5.6	14.7	20.4	21.3	17.2	4.6	2	1.2	0.6	0.6	0.4	0.4	0.7	0.4	0.9	0.7	S	3.4	5	0.6	1	1	21.3	4.9	24
6	1	0.8	0.6	0.7	0.6	1.2	4.8	21.9	2.3	3.2	3.8	3.3	1.8	0	0	0.3	0	S	0.3	0.2	0.8	1.3	1.1	0.4	21.9	2.2	24
7	0.5	0.3	0.4	0.6	0.6	2.6	S	S	1.8	9.6	2.7	0.8	2	0.8	4.1	1.2	S	1.1	5.3	3	9.4	12.2	27.4	45.9	45.9	6.3	24
8	19	45.4	43.9	48.9	102.4	35	41.8	21.5	15	2.9	3.6	2.4	1.4	1.3	2.9	S	2.9	3	1.1	1.8	0.7	1	1	0.9	102.4	17.4	24
9	1	0.8	0.7	0.7	0.8	0.8	1.3	1.5	0.8	0.9	1.1	0.9	0.9	0.8	S	1	0.9	0.9	0.9	1.3	50.1	16.5	16.5	22.5	50.1	5.4	24
10	54.1	58.6	44.4	44.8	35.4	25.1	23.4	17.3	29.5	23.2	6.4	1.4	1.3	S	1.9	1.3	1.1	1.1	6.5	14.6	105.6	31	7.5	14.2	105.6	23.9	24
11	21.7	34.7	34.5	29.1	24.4	13.1	83.1	11.9	3.6	2.3	1.5	1.2	S	1	1.5	1.1	4.7	1.5	0.9	0.7	45.3	8	6.1	5.6	83.1	14.7	24
12	5.2	10.6	9.3	12.5	24.5	25.4	26.8	14.5	C	C	C	C	C	C	C	C	1.6	1.2	1.5	3.4	1.3	7	1.3	1	26.8	9.2	24
13	0.8	3	0.8	2.1	1.7	11	S	S	S	S	S	3	2.4	1.6	1.2	1	0.8	1	1.4	1.2	31.4	1.8	0.9	0.9	31.4	3.6	24
14	1.6	27.6	22.7	***145.6***	73.1	93.5	60.2	S	13.9	S	1.8	1.2	0.9	0.8	0.7	0.9	0.8	0.8	0.8	4.2	6	2.7	2.4	15.9	***145.6***	21.7	24
15	27.4	20.5	70.6	73.6	74.2	76.8	70.1	71.6	S	23.4	13.3	8.2	1.6	1.3	1	1.5	1.1	2	3.1	2.9	4.3	2.5	11.3	2.1	76.8	***24.5***	24
16	2.7	1.3	0.9	0.6	4.7	5.7	6.8	S	2.9	1.8	1.3	1.1	1.1	0.8	1	1	0.8	1	1	0.8	1.5	1.5	2.6	1	6.8	1.9	24
17	2.6	6	2	1.4	63.2	36.9	S	34.8	4.1	2.1	1.2	1.1	0.8	2.9	2.2	1.3	0.9	4.7	5.9	6.6	1	1	2	32.2	63.2	9.4	24
18	26.8	28.5	40.6	39.2	21.8	S	20.4	15.6	4.7	1.2	1.5	1.2	1.4	1.1	1.2	1.1	2.5	8.4	6.6	8.2	36.1	13.5	23.2	11.9	40.6	13.8	24
19	10.1	23.2	0.7	0.7	S	2.3	7.8	7.1	5.8	3.1	1.9	1.1	1.3	1	1	1	1.1	2.1	11.3	36.5	2.5	57.8	2.1	1.7	57.8	8.0	24
20	1	1.2	2	S	1.2	1	1.7	1.7	1.2	1.1	1.1	0.8	0.9	1	0.9	1	0.8	13.7	0.7	0.7	0.7	0.9	0.8	0.9	13.7	1.6	24
21	0.7	0.7	S	1.3	1	0.8	1	1.5	1.1	1.1	1	0.8	1.3	1	0.8	0.8	1	1	0.9	2.2	0.8	1	1	1	2.2	1.0	24
22	0.7	S	1.1	1.8	1.1	1.5	2.8	S	2.6	1.3	1.1	0.8	1	0.9	0.8	1	0.8	1	1	31.5	10	1.6	1.6	3.7	31.5	3.2	24
23	S	1.9	1.5	2.2	1	2.3	1.3	1.6	1.7	1.1	1	1	1	0.9	1.1	1	1	0.9	2.9	2.6	17.6	1	1.7	S	17.6	2.2	24
24	1.6	1.1	1.1	1	0.9	1	1.4	2.2	1.7	1	1	1	1	0.9	0.9	0.8	0.8	0.8	1	23	13.7	1.1	S	42.2	42.2	4.4	24
25	65.2	69.5	22.4	50.8	95.7	96.4	S	S	19.2	8.4	3.2	1.8	1.9	1.3	1.7	1.5	1.3	2	2.3	2.4	3.5	S	1.1	1.1	96.4	21.6	24
26	0.6	0.7	0.4	1.1	3	2.4	16.1	8.2	8	6.7	5	2.3	1.2	1.2	1.1	1	1.5	1.1	1.5	3.3	S	1.2	8.1	6.7	16.1	3.6	24
27	0.8	2.5	9	8	7.8	12.8	29.1	22.8	21	19.6	13.9	3.6	1	0.8	1.1	1	0.9	0.9	0.9	S	3.3	3.1	0.5	0.7	29.1	7.2	24
28	5.9	1.2	0.7	0.4	1	2.9	2.9	3.7	2.2	0.9	1.2	1	0.8	1.9	1.3	0.6	0.8	1	S	1.1	2.6	1.9	5.4	72	72	4.9	24
29	46.7	35	32.1	29	15.8	11.1	12	14.7	9.4	5.7	2.9	2	2.6	2.5	3.8	3.7	1	S	1.8	4.6	2.3	1.2	0.8	1.5	46.7	10.5	24
30	2.2	1	1	0.6	5.2	0.8	2.7	2.7	1.2	1.1	1.1	1.2	0.9	1.3	1	1.8	S	3.1	2	30.9	5.4	17.4	54.2	21.3	54.2	7.0	24
31	19.1	5	3.4	16.1	17	7	S	S	3	3.3	1.5	1	1.1	1.1	1.2	S	1.4	1.1	2.9	4.3	10.7	3.8	10.9	2.7	19.1	5.6	24
HOURLY MAX	65	70	71	146	102	96	83	72	30	23	14	8	3	3	4	4	5	14	11	37	106	58	54	72			
HOURLY AVG	11.0	15.0	13.3	19.4	21.8	19.6	20.2	13.2	6.0	4.7	2.7	1.6	1.2	1.0	1.2	1.0	1.1	1.9	2.2	6.8	13.0	6.8	6.9	11.3			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 677

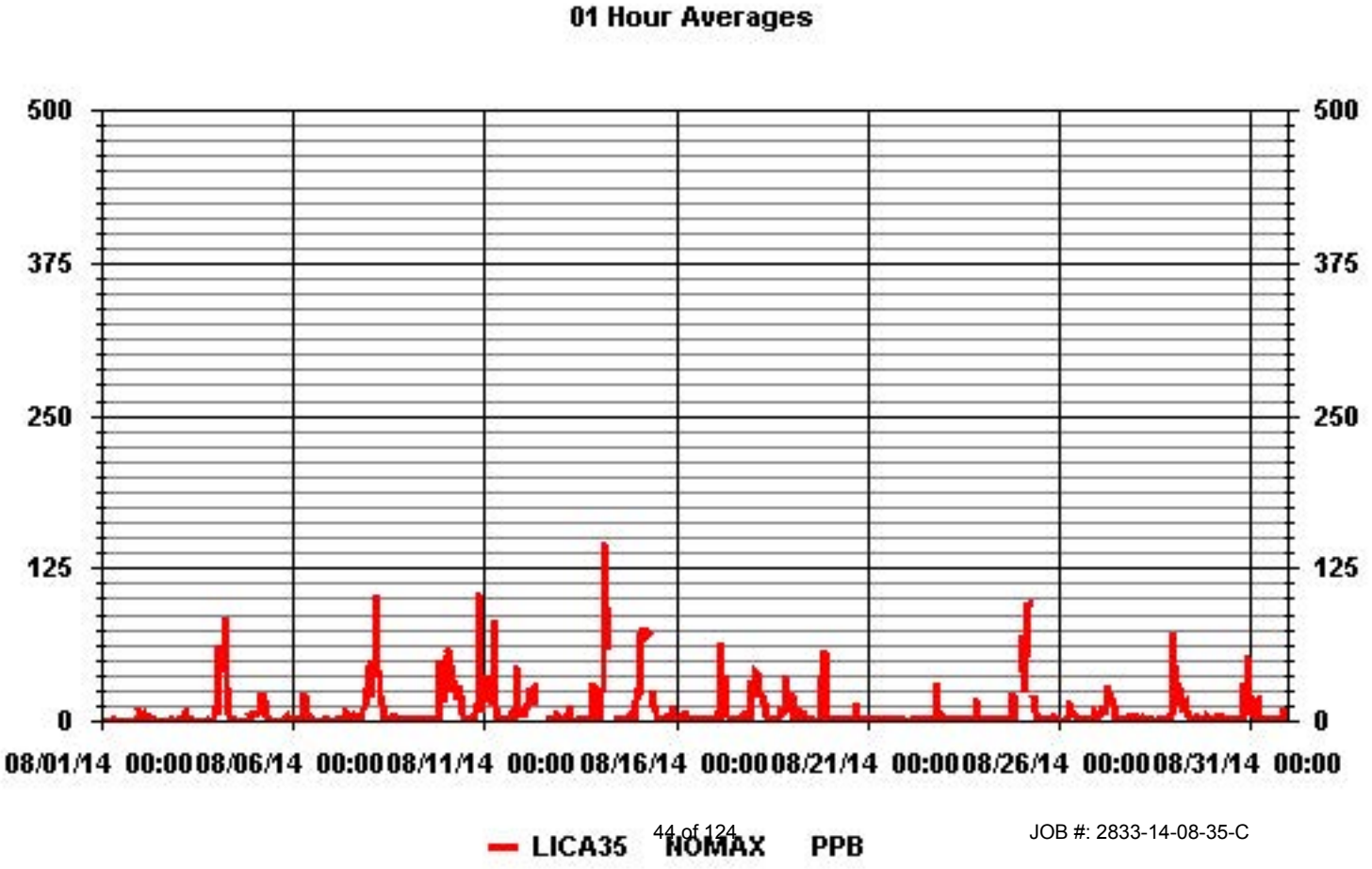
MAXIMUM INSTANTANEOUS VALUE: 145.6 PPB @ HOUR(S) 3 ON DAY(S) 14

VAR-VARIOUS

IZS CALIBRATION TIME: 43 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 8 HRS

STANDARD DEVIATION: 17.12



JOB #: 2833-14-08-35-C

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

August 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	4.74	3.16	3.44	4.31	7.18	10.91	6.03	3.59	1.43	1.58	1.14	9.33	13.50	14.36	10.34	3.44	98.56
<	110.0	.00	.00	.00	.00	.00	.14	.00	.28	.00	.00	.14	.28	.28	.14	.14	.00	1.43
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.74	3.16	3.44	4.31	7.18	11.06	6.03	3.87	1.43	1.58	1.29	9.62	13.79	14.51	10.48	3.44	

Calm : .00 %

Total # Operational Hours : 696

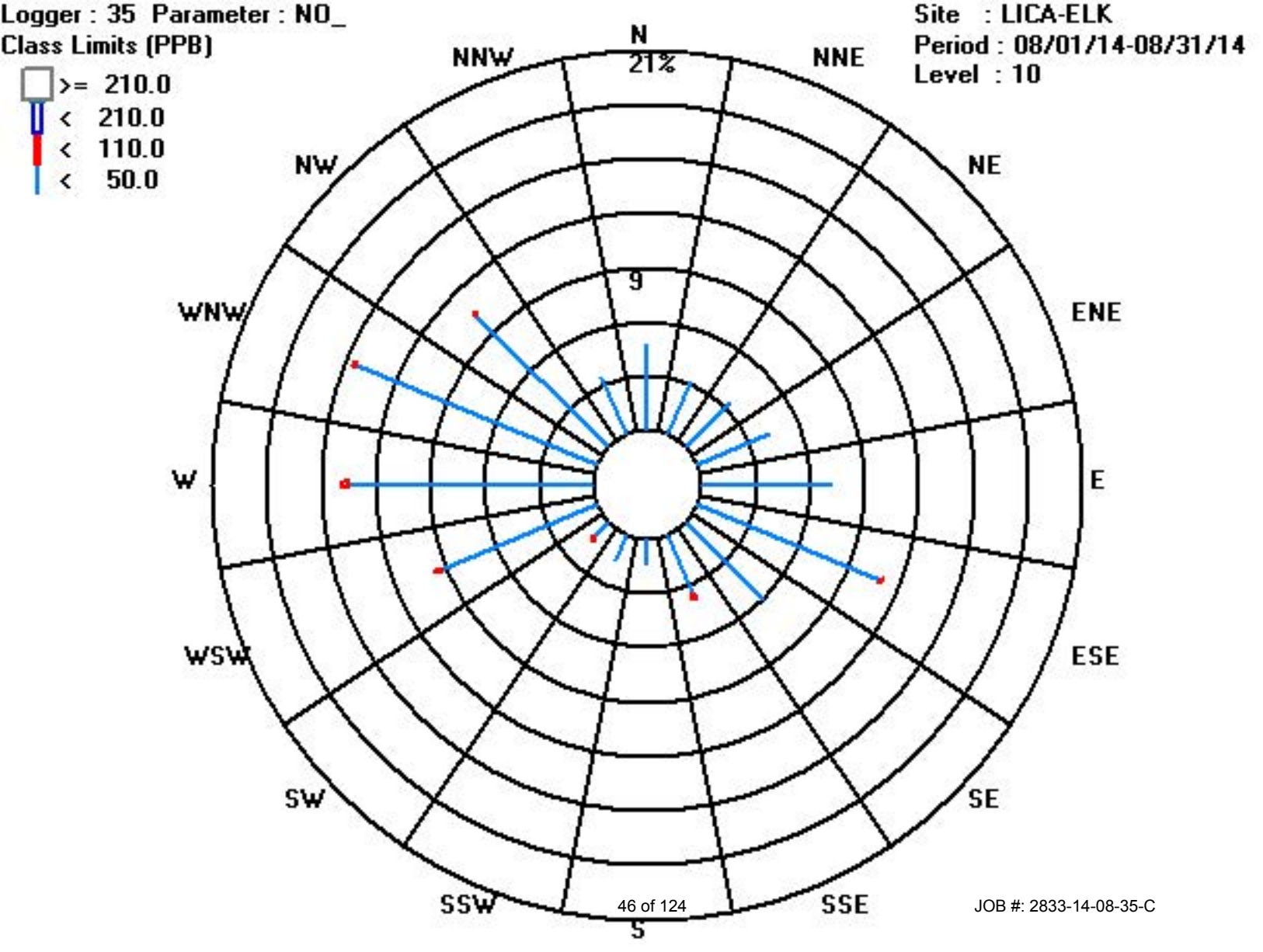
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	33	22	24	30	50	76	42	25	10	11	8	65	94	100	72	24	686
<	110.0						1		2			1	2	2	1	1		10
<	210.0																	
>=	210.0																	
	Totals	33	22	24	30	50	77	42	27	10	11	9	67	96	101	73	24	

Calm : .00 %

Total # Operational Hours : 696



JOB #: 2833-14-08-35-C

Oxides of Nitrogen

Lakeland Industry & Community Association - Elk Point Site

AUGUST 2014

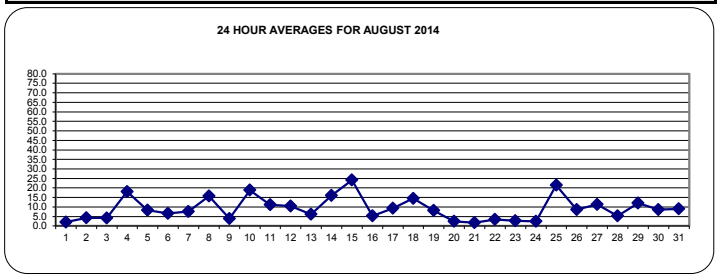
OXIDES OF NITROGEN (NOx) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1.8	2.1	2	1.8	1.7	2.2	1.5	0.9	0.9	0.8	0.6	1	1	1	0.6	0.5	0.6	0.5	0.4	0.5	4.2	9.8	**S**	9.8	9.8	2.0	24
2	7.8	5.3	8.8	10.2	8.9	9.2	8	5.7	3.6	2.6	1.9	1.4	1.2	1.4	1.1	1.1	1.2	0.7	1.7	3.6	5.3	**S**	3.5	3.3	10.2	4.2	24
3	5.4	6.8	3.8	8.7	10.8	7.9	4.6	5.7	3.8	2	1.9	0.8	0.4	0.3	0.2	0.2	0.1	0.1	0.3	5.1	**S**	9.6	8.4	9.6	10.8	4.2	24
4	13.1	27.6	39.2	51	51.4	65	61.3	24.5	7.7	5.2	1.8	3	2.3	1.5	1.5	1.4	1.4	0.8	1.5	**S**	12.5	10.1	12.3	18.6	65	18.0	24
5	20.2	16.7	12	11.3	21.7	15.1	19	8	5.9	3.7	1.9	1.3	1.3	2	6	3	3	2.9	**S**	6.8	10.3	5.9	4.8	7.1	21.7	8.3	24
6	8.4	6.7	6.1	6.7	4.9	4.7	7.3	8.7	5.5	7.1	5.8	3.5	2.8	1.1	0.7	0.9	0.4	**S**	4.3	9	15.2	19	16.3	6.5	19	6.6	24
7	4.3	4.7	5.5	4.4	7.2	8.5	**S**	**S**	2.8	3.4	0.9	0.8	1.1	0.7	1.5	2	**S**	1.9	7.9	5.1	11.3	22.1	36	26.8	36	7.6	24
8	24.3	42.3	31.9	45.7	61.6	34.1	26.7	21.8	17.6	5.9	6.7	2.8	2.9	3.5	4.3	**S**	6.3	5	2.4	3.2	2.2	2.3	6.9	1.9	61.6	15.8	24
9	3.6	1.5	1.8	1.7	1.6	1.4	2	2.1	0.5	0.7	0.7	0.6	0.6	0.5	**S**	0.6	0.6	0.6	0.6	2.6	8.5	13.6	22.6	20.1	22.6	3.9	24
10	47.8	56	43.4	42.6	24.8	20.6	16.4	16.2	21.6	21.2	6.6	2	1.6	**S**	1.9	1.8	1.4	1	2	26.7	30.6	12.9	14.8	18.4	56	18.8	24
11	25.2	29	35.8	32.3	22.1	16.6	28	10.7	7	5.1	2.6	1.5	**S**	0.9	0.9	0.6	0.6	1.1	0.6	1.4	12.1	8.3	7.7	6.6	35.8	11.2	24
12	7	9.7	9	9.4	15.1	25	20.2	14.3	12.5	**C**	**C**	**C**	**C**	**C**	**C**	**C**	3	2.7	5.3	9.3	8.8	11.9	7.9	6	25	10.4	24
13	5.2	8.2	5.3	6.5	6	13.9	8.9	**S**	**S**	**S**	**S**	5.1	5.3	3.8	2.7	2.1	1.9	4.1	4.5	5.3	15	10.5	5.6	3.3	15	6.2	24
14	5.7	6.4	9.9	42.9	58.7	69.8	59.2	**S**	14.6	**S**	4	3.3	2	1.4	1.5	1.5	1.8	2	2	9.3	16.9	6.8	9.2	22.1	69.8	16.0	24
15	30.4	18	37.6	52.2	69.9	66.9	64.8	63.1	**S**	27.9	21.4	12.4	7.1	4.1	2.5	4	2.7	4.3	7.7	8.2	12.7	12	15.4	9.4	69.9	***24.1***	24
16	9.8	8	6.9	6.7	8.6	10	11.1	**S**	5.5	3.8	3	2.9	2.3	1.9	1.9	2	1.8	2.5	2.7	2.9	4.6	8.1	8	4.9	11.1	5.2	24
17	7.2	8.9	7.5	4.4	25.1	35.9	**S**	21.4	7.5	4.3	2.6	1.4	1.2	2.5	3.3	2.1	1.2	4	9.2	16.5	9.9	11.5	11.4	13.4	35.9	9.2	24
18	19.6	25.8	45.1	36.1	23.2	**S**	18.9	12.1	7	3.2	3.4	2.6	3.6	2.5	3.1	1.9	2.7	8	15.6	7.2	20.4	23.4	26.2	21.5	45.1	14.5	24
19	20.5	20.5	1	2.8	**S**	6.1	11.1	10.2	9.3	4.4	2.2	1.2	1.5	1.1	1	0.9	0.9	3.4	17.3	11.3	13.4	24.8	13.5	9.2	24.8	8.2	24
20	8.9	8.3	5.2	**S**	3.3	2.8	2.8	2.4	1.9	1.6	1.2	0.9	0.9	1.1	0.8	0.7	0.5	1.6	0.8	2.3	1.3	1.1	1.8	1.8	8.9	2.3	24
21	1.9	1.6	**S**	2.5	2.3	1.8	2.2	2.1	1.1	0.9	0.7	0.4	0.7	0.7	0.7	0.9	0.9	0.7	0.7	1.1	4.5	5	3	2.6	5	1.7	24
22	2	**S**	3	5.6	3.5	5	5	**S**	3	1.7	1.1	0.8	1	1.2	1.3	1.2	1.4	1.2	1.2	5.1	6.9	5.9	8.5	10.5	10.5	3.5	24
23	**S**	5.7	5	5.7	4.5	4.5	4	3.4	2.3	0.6	0.5	0.4	0.4	0.5	0.5	0.4	0.7	0.9	2.4	3.4	4	3.5	5.5	**S**	5.7	2.7	24
24	6.5	3.6	2.6	2.5	2.3	2.2	2.6	2.6	1.2	0.4	0.4	0.5	0.5	0.5	0.6	0.8	0.7	0.6	0.6	5.6	2.8	2.5	**S**	12.7	12.7	2.4	24
25	59	43.1	19.2	48.3	73	***82.2***	70.8	**S**	19.4	12.2	3.8	1.5	2	1.6	1.6	1.8	1.6	2.3	5.2	5.3	5.2	**S**	5.8	6.3	***82.2***	21.4	24
26	7.5	7.5	6	6.3	8.3	11	15.6	14.4	13.9	11.8	8.1	4	2.4	1.9	1.7	2.5	3.5	2.5	6.8	11.9	**S**	14.8	17.8	17.3	17.8	8.6	24
27	12.5	15.4	19.7	17.2	15.9	12.8	28.5	22.4	31.2	31.9	16.1	3.5	0.9	0.5	0.6	0.4	0.5	0.7	0.6	**S**	8.4	12.3	3.4	5.5	31.9	11.3	24
28	18.5	9	7.6	4.4	6.1	9.9	7.7	6.4	3	1.3	1.4	1.1	0.5	0.5	0.3	0.1	0.4	0.3	**S**	2.1	6.8	3.5	7.5	22.7	22.7	5.3	24
29	36.9	36.1	34.9	28.5	14.6	13.5	16.4	19.3	10.8	7.5	5	3.4	3.2	2.9	3.7	3.9	1.2	**S**	5.8	7.6	7.5	5.2	3.2	4.4	36.9	12.0	24
30	5.1	4.5	5.7	5.1	12.4	5.8	8.7	7.4	2.7	1.5	1	0.9	0.5	0.7	0.6	1.5	**S**	3.2	3.3	17.1	13	20.1	46.2	30.7	46.2	8.6	24
31	28.8	13.1	13.2	18.4	22.7	16.6	**S**	**S**	5.4	4.8	2	0.7	0.8	0.6	1.3	**S**	1.7	2.2	5.6	9	17.6	13	7.4	4.8	28.8	9.0	24
HOURLY MAX	59	56	45	52	73	82	71	63	31	32	21	12	7	4	6	4	6	8	17	27	31	25	46	31			
HOURLY AVG	15.2	15.1	14.5	17.4	19.7	19.4	19.0	12.7	7.9	6.3	3.8	2.2	1.8	1.5	1.7	1.5	1.5	2.1	4.1	7.1	10.1	10.7	11.7	11.3			

STATUS FLAG CODES

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

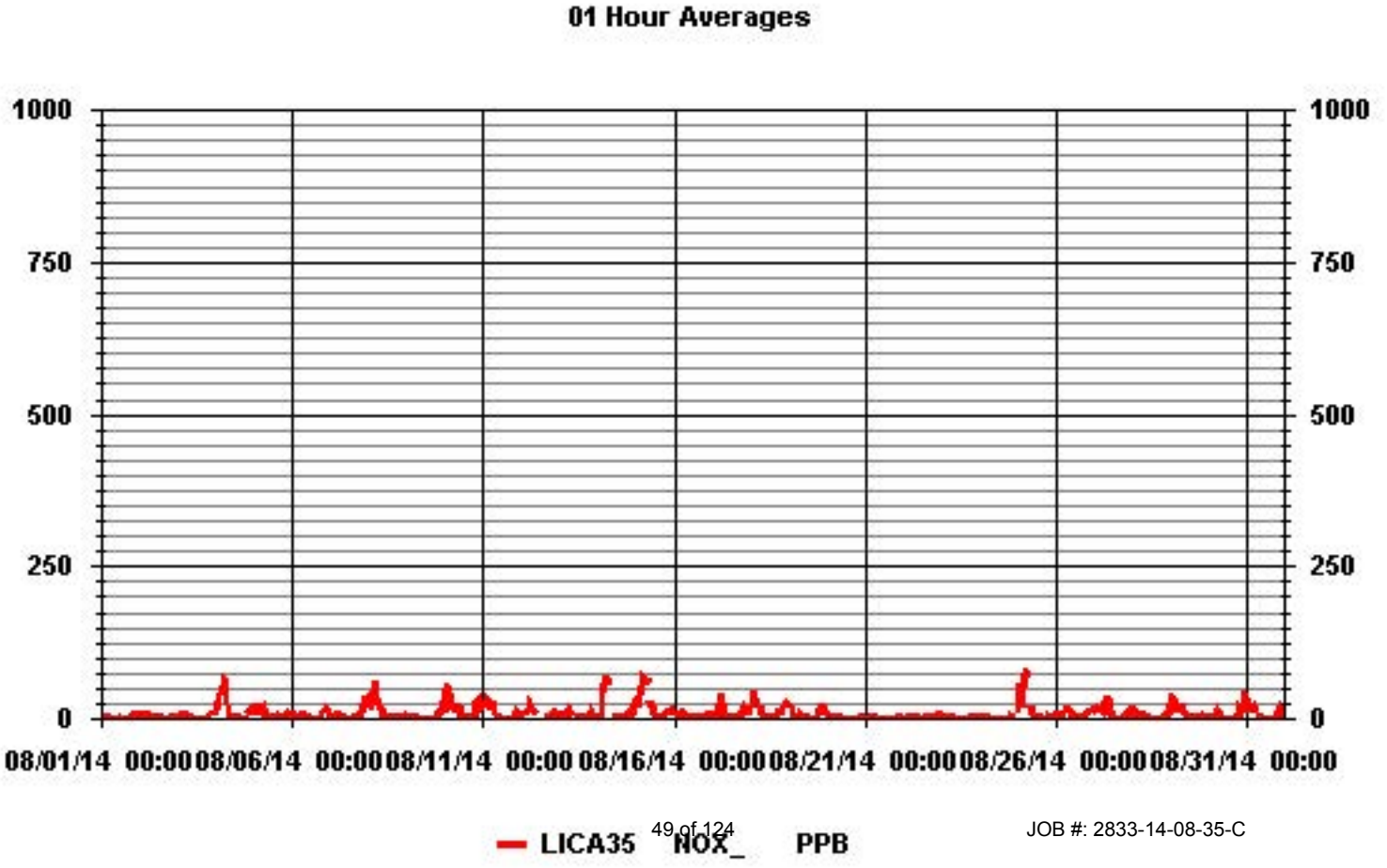


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR NA PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	NA					
NUMBER OF NON-ZERO READINGS:	696					
MAXIMUM 1-HR AVERAGE:	82.2	PPB	@ HOUR(S)	5	ON DAY(S)	25
MAXIMUM 24-HR AVERAGE:	24.1	PPB			ON DAY(S) VAR-VARIOUS	15

IZS CALIBRATION TIME:	41	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	12.56		MONTHLY AVERAGE:	9.13	PPB



JOB #: 2833-14-08-35-C

Lakeland Industry & Community Association - Elk Point Site

AUGUST 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	2.6	5.2	2.7	3.5	2.7	2.8	2.4	1.5	1.3	1.3	1.2	1.7	1.7	1.6	1.2	1	1.2	1	1	1.7	9.2	15.5	**S**	22.2	22.2	3.7	24
2	10.3	7.1	13.5	14.7	11	11.7	11.1	8.4	4.5	3.8	2.6	2.3	1.9	2.5	2.1	2	2.9	1.5	3.2	6.5	9.3	**S**	7.5	7.4	14.7	6.4	24
3	7	9.3	8.2	13.5	18.5	14.7	10.3	7	5.3	3	3.4	1.3	1	0.9	0.8	0.7	0.6	0.9	0.8	16.4	**S**	12.4	11.2	25.3	25.3	7.5	24
4	16.8	80.8	53.1	59.9	60.9	95.8	93.8	40.5	15.3	7.5	4.3	4.8	5.5	3.1	3.4	2.7	4.2	1.9	3.3	**S**	26.6	15.5	23.4	23.1	95.8	28.1	24
5	23.3	19.6	19.2	24.9	34.4	35.6	26	11.1	6.9	5.5	3.9	2.6	2.7	5	20.4	5.5	7	5.2	**S**	12.2	18.8	8.7	8.2	9.9	35.6	13.8	24
6	10.3	9.3	7.8	8.4	6.8	5.3	12.7	35	7.7	10.1	9	7.2	6.8	2.1	1.5	2.3	1.2	**S**	5.8	17.8	18.6	25.9	25.5	14.3	35	10.9	24
7	6.5	7.4	8.7	8.8	11.3	15.5	**S**	**S**	5.8	21.6	4.3	1.6	4.8	1.6	4.3	4.9	**S**	3.3	22.3	14.3	34.3	31.9	46.2	61.3	61.3	15.3	24
8	29.9	59	54.9	61.5	113.7	43.8	52.7	31	25.7	9	10	7.4	4.9	8	11.7	**S**	11.8	10	4.7	9.3	3.1	7.4	10.2	3.1	113.7	25.3	24
9	6.2	2.7	4.1	2.5	3.1	2.1	5.2	4.5	1	1.6	1.5	1.3	1.2	1	**S**	1.2	1.2	1	1.2	7.4	80.8	29.1	29.5	33.6	80.8	9.7	24
10	66.3	71.2	55.9	52.9	45.3	33.5	32.1	24.7	38.5	32.1	12.3	3.1	2.8	**S**	3.4	3.4	2.8	3.2	21	36.4	129.7	49	21.8	25.8	129.7	33.4	24
11	32.5	43.4	43.2	36.2	32.3	22.1	131.5	21.9	9.1	6.6	9.3	8.4	**S**	1.7	2.2	1.2	10.9	7.1	2.7	6	86.8	18.1	15.4	11.8	131.5	24.4	24
12	11.3	15.9	14.3	19.5	33.7	35.1	35.2	23.3	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	4.9	4.1	9.7	17.1	13.7	24.3	11.9	9.7	35.2	17.7	24
13	7.3	13	7.6	10.1	8.6	23	**S**	**S**	**S**	**S**	**S**	7.9	7.1	4.8	3.9	3.8	3	6.8	8.4	8.1	57.7	15.7	13.7	4.2	57.7	11.3	24
14	10.8	40.2	36.5	***160.7***	86.6	110.5	72.2	**S**	24.1	**S**	6	4.9	2.6	1.9	2	1.9	2.4	2.7	2.8	20.2	25.8	15.2	15.5	34.2	***160.7***	30.9	24
15	41	28	82.1	84.8	86.2	87.4	78.7	79.9	**S**	37.3	22.9	19.9	8.2	6.5	3.3	7	5.3	8.1	13.7	14.5	19.8	17.6	27.8	11.1	87.4	***34.4***	24
16	13.1	11.2	7.8	7.8	13.6	18.1	17.2	**S**	7.6	4.9	4.1	3.7	3	2.5	2.8	2.8	2.7	3.7	4.4	5.4	13.8	10.5	11.9	8	18.1	7.9	24
17	9.5	15.3	9.9	5.9	74.9	46.3	**S**	41	10.6	5.7	3.7	2.3	2	9.4	8.1	3.8	2.6	18.1	20.8	26.3	13.6	14.7	15.5	47.8	74.9	17.7	24
18	40.5	41.7	54.3	51.2	36.6	**S**	26.9	21.3	11.4	4.7	4.8	4.5	5	3.3	3.9	3.7	9.5	25.5	23.5	24.1	58.9	32	40.8	26.3	58.9	24.1	24
19	26	38.9	3.5	5.2	**S**	12.5	18.5	17	13	6.9	3.9	1.9	2.3	2.2	1.6	1.7	2.4	7.9	34.2	61.6	19.7	85.1	18	17.3	85.1	17.4	24
20	11.8	11.3	10.5	**S**	3.9	3.5	4.6	3.9	2.5	2	1.7	1.5	1.4	1.6	1.4	1.2	1.2	32.2	1.3	3.8	2.9	2	2.8	3.6	32.2	4.9	24
21	2.7	2.3	**S**	3.1	3	2.5	2.7	3	1.7	1.4	1.2	0.9	1.9	1.3	1.2	1.5	1.4	1.4	1.2	2.5	7.7	8.7	3.7	3.4	8.7	2.6	24
22	2.5	**S**	4	12.8	4.4	8.1	10.7	**S**	5.2	2.7	1.7	1.2	1.7	1.7	1.8	1.7	1.9	1.9	1.7	56	26.6	8.2	13.7	13.3	56	8.3	24
23	**S**	8.8	7.9	11.1	5.8	8.6	4.9	4.2	3.7	1.2	1.2	0.9	1	1	1.2	1	1.9	3	10.3	10	36.1	6	7.8	**S**	36.1	6.3	24
24	8.4	4.9	3.3	3.5	4.1	3.1	3.4	3.1	2.3	0.9	0.8	0.9	1	1	1.2	1.4	1.2	1.2	2.5	37.9	34.3	3.3	**S**	64.8	64.8	8.2	24
25	79.4	83.2	29.2	58.9	101.5	105.8	**S**	**S**	25.1	16.5	6.6	3.3	4.2	2.8	3.5	3.7	2.8	4.5	9	9.8	11.5	**S**	7	7.9	105.8	27.4	24
26	8.6	8.5	7.9	8	13.8	14.1	26.7	17.7	15.9	14.4	11.1	6.2	3.6	2.9	2.9	3.9	7.1	4.3	12.2	25.4	**S**	19.1	30.3	26	30.3	12.6	24
27	16.9	22.1	29.5	24	20.4	25.7	42.3	37.2	40.2	38.1	26.8	9.5	1.9	1.5	1.2	1.5	1.6	2.7	1.5	**S**	21.6	24.5	7.3	9.5	42.3	17.7	24
28	30.1	14.7	14.8	6.8	9.8	12.7	9.8	9.9	5.1	2.1	2.2	1.7	1.1	1	1	0.5	1.3	0.9	**S**	3.3	13.5	12.9	15.3	89.9	89.9	11.3	24
29	62.4	46.5	43.5	35.6	22	15.9	19.2	21.7	14.7	9.7	6.3	5.9	7.4	6	11.3	10	2.1	**S**	12.1	20.2	13.1	7	3.9	7.2	62.4	17.6	24
30	9.6	8	8.5	7.8	18	11.9	12.5	10.3	5.8	3.4	2.3	2.2	1.3	1.9	1.4	5	**S**	11.7	8.1	58.8	18.4	41.5	80.5	45.8	80.5	16.3	24
31	38.1	21.9	16.9	33	34.1	24.5	**S**	**S**	7.2	7.5	3.3	1.5	1.5	1.8	2.7	**S**	3.1	5.2	14.8	20.4	31.8	18	27.5	11.3	38.1	15.5	24
HOURLY MAX	79	83	82	161	114	111	132	80	40	38	27	20	8	9	20	10	12	32	34	62	130	85	81	90			
HOURLY AVG	21.4	25.0	22.1	27.9	30.7	28.4	29.4	20.0	11.3	9.3	5.9	4.1	3.2	2.8	3.7	2.9	3.5	6.2	8.9	19.1	29.6	20.0	19.1	22.6			

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: 693

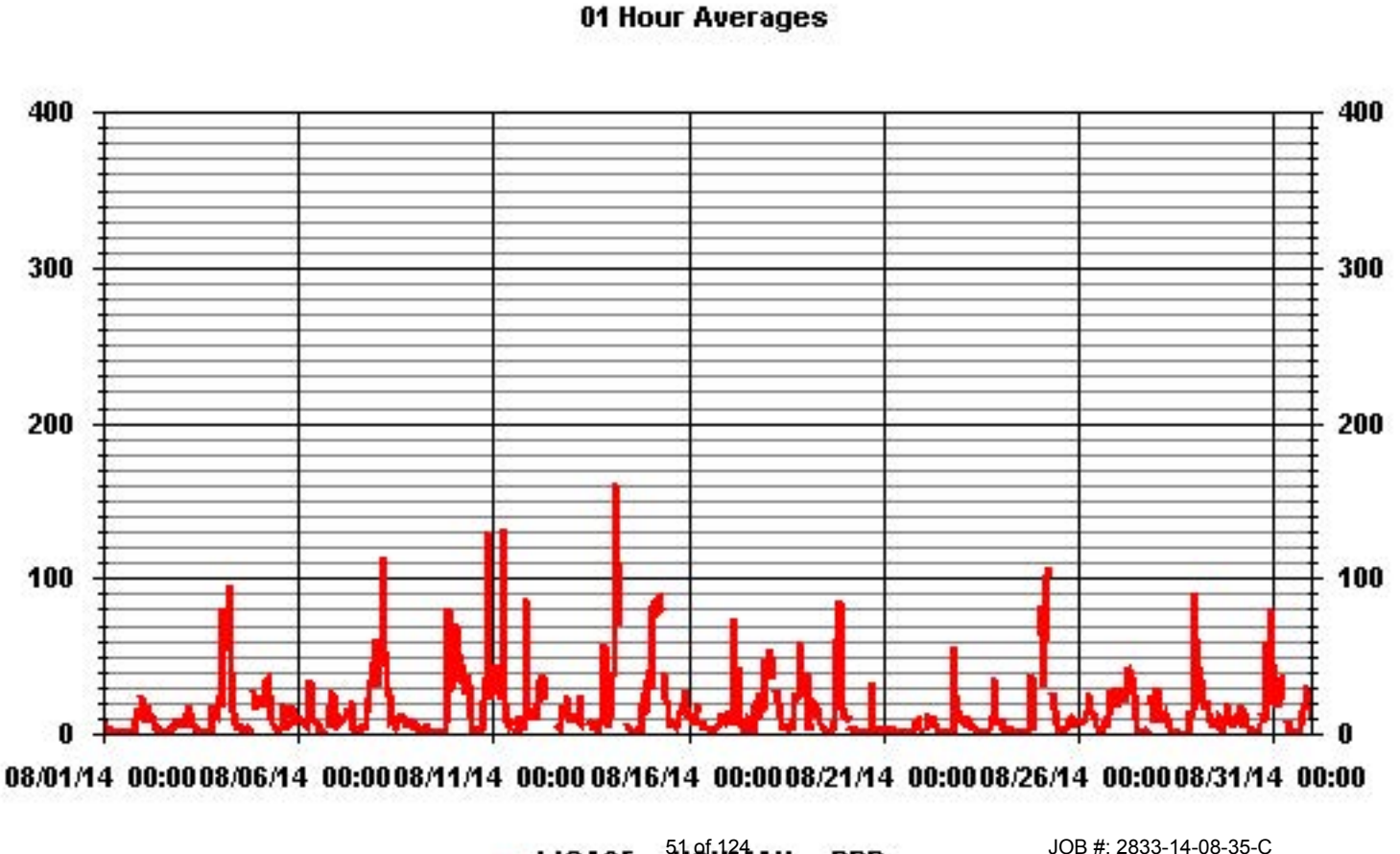
MAXIMUM INSTANTANEOUS VALUE: 160.7 PPB @ HOUR(S) 3 ON DAY(S) 14

VAR-VARIOUS

IZS CALIBRATION TIME: 43 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 8 HRS

STANDARD DEVIATION: 20.92



JOB #: 2833-14-08-35-C

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

August 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	4.74	3.16	3.44	4.31	7.18	10.91	6.03	3.44	1.43	1.58	1.14	9.19	13.21	13.79	10.34	3.44	97.41
<	110.0	.00	.00	.00	.00	.00	.14	.00	.43	.00	.00	.14	.43	.57	.71	.14	.00	2.58
<	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.74	3.16	3.44	4.31	7.18	11.06	6.03	3.87	1.43	1.58	1.29	9.62	13.79	14.51	10.48	3.44	

Calm : .00 %

Total # Operational Hours : 696

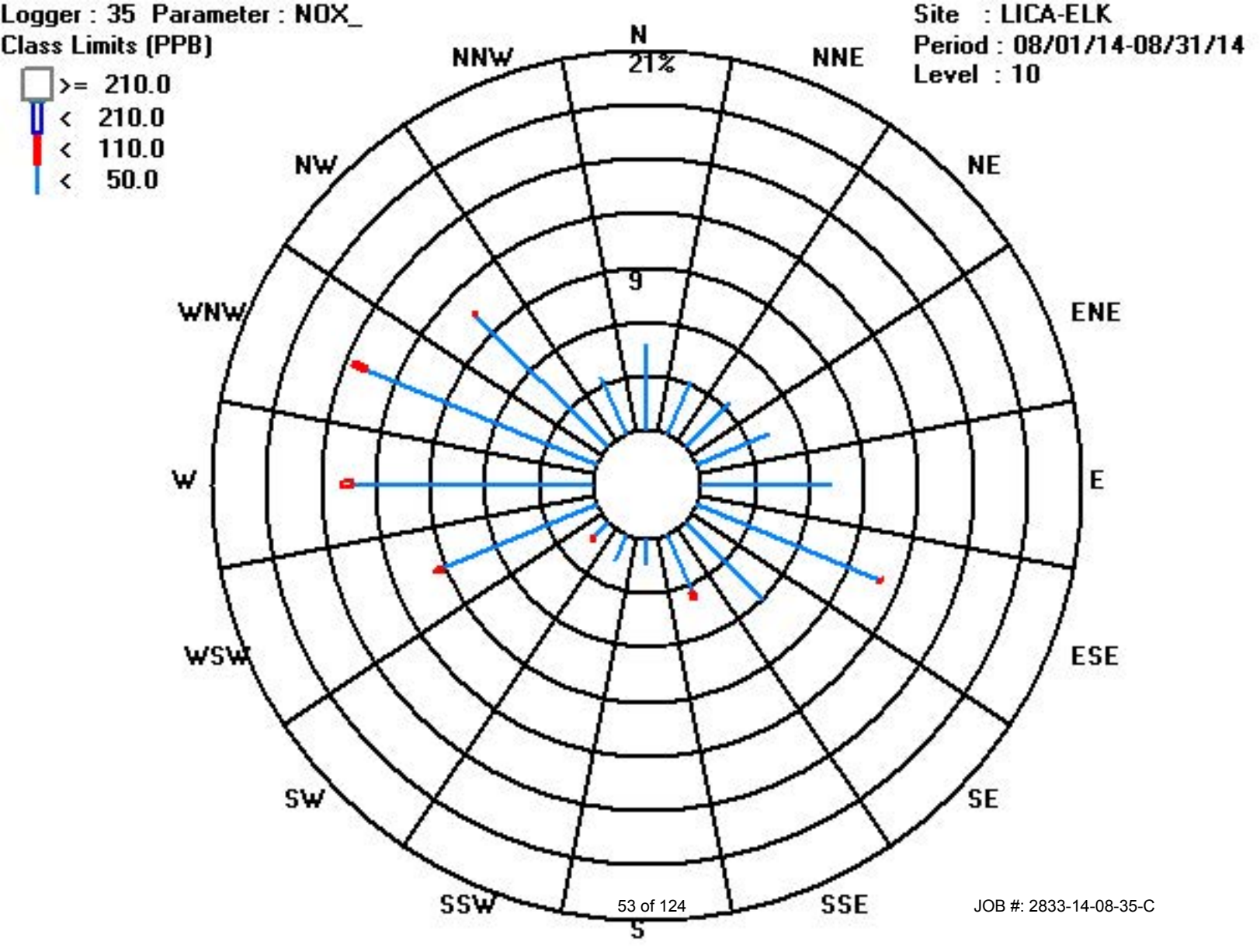
Distribution By Samples

Direction

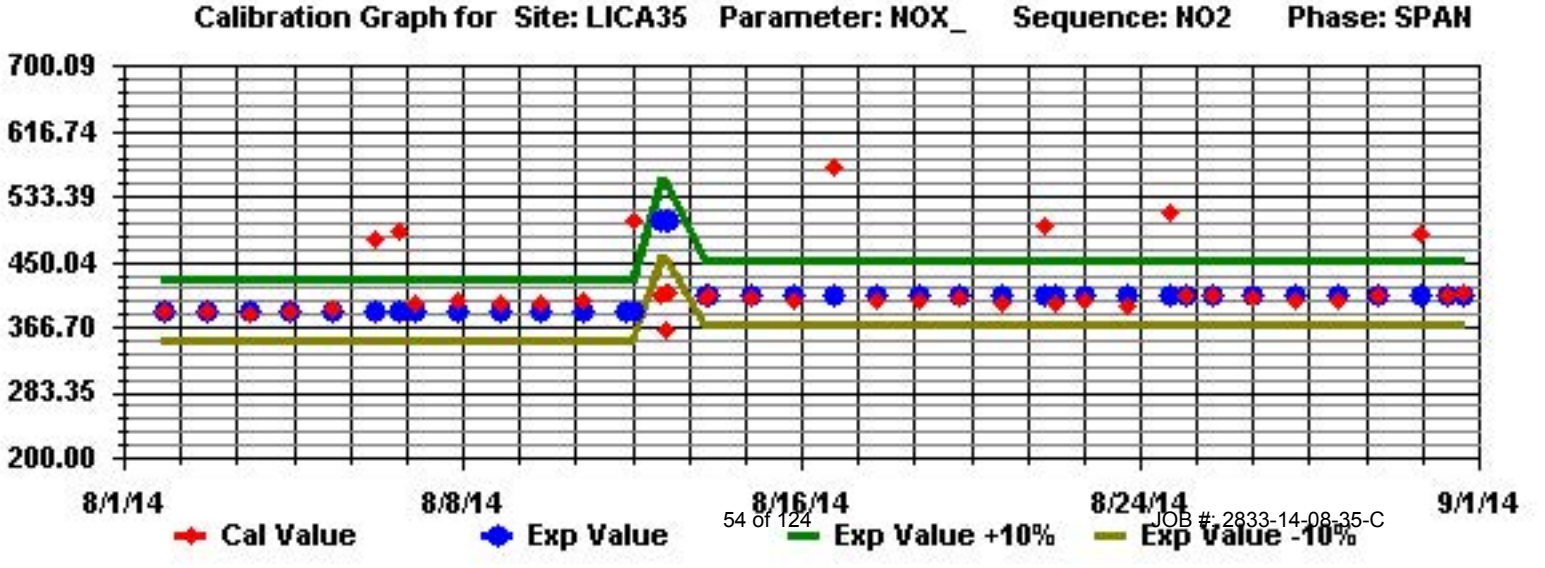
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50.0	33	22	24	30	50	76	42	24	10	11	8	64	92	96	72	24	678
<	110.0						1		3			1	3	4	5	1		18
<	210.0																	
>=	210.0																	
	Totals	33	22	24	30	50	77	42	27	10	11	9	67	96	101	73	24	

Calm : .00 %

Total # Operational Hours : 696



JOB #: 2833-14-08-35-C


Calibration Graph for Site: LICA35 Parameter: NOX_ Sequence: NO2 Phase: SPAN
700.09
616.74
533.39
450.04
366.70
283.35
200.00
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

Lakeland Industry & Community Association - St. Lina Site

AUGUST 2014

OZONE (O3) hourly averages in ppb

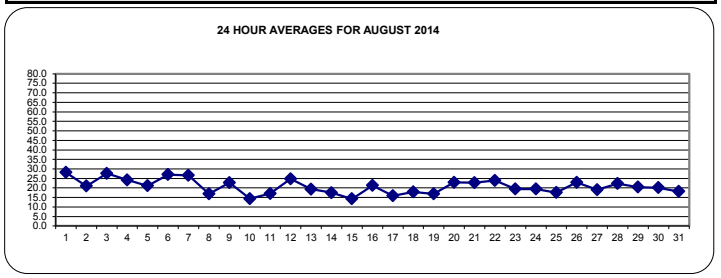
MST

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	29	25	28	29	26	23	25	28	28	29	30	34	38	36	35	38	39	35	30	26	19	12	S	5	39	***28.1***	24
2	4	3	2	2	4	5	9	12	16	23	28	32	36	36	36	36	35	38	35	28	21	S	21	20	38	21.0	24
3	17	13	14	9	7	8	13	18	22	30	38	38	41	43	51	***53***	***53***	***53***	47	33	S	18	10	7	***53***	27.7	24
4	2	1	1	1	1	1	2	7	31	37	46	52	48	47	48	49	48	45	40	S	22	17	9	2	52	24.2	24
5	1	1	2	2	1	3	6	20	31	40	42	41	45	45	42	38	35	30	S	17	11	13	12	7	45	21.1	24
6	7	10	10	11	13	13	11	14	18	26	32	42	49	51	51	50	51	S	48	33	22	17	17	26	51	27.0	24
7	24	30	30	32	26	24	24	22	29	31	34	39	40	40	40	37	S	36	28	27	16	3	0	0	40	26.6	24
8	0	0	0	0	0	1	2	11	21	37	37	39	38	37	30	S	X	X	X	X	X	X	X	X	39	16.9	16
9	X	X	X	X	X	X	X	X	S	29	31	31	30	30	S	32	32	31	30	22	13	6	1	0	32	22.7	16
10	0	0	0	0	0	0	1	3	3	7	24	39	39	S	43	42	42	36	30	7	4	5	4	0	43	14.3	24
11	0	0	0	0	0	1	6	18	27	32	35	36	S	33	33	32	30	30	28	24	10	8	5	4	36	17.0	24
12	3	1	2	2	1	2	4	10	19	36	49	S	51	52	52	52	50	50	38	27	25	16	15	11	52	24.7	24
13	14	11	13	12	11	6	12	16	17	C	C	C	C	25	37	43	38	30	23	24	16	14	16	9	43	19.4	24
14	8	4	1	2	0	0	1	2	7	S	34	41	36	36	39	42	45	40	29	15	5	8	5	2	45	17.5	24
15	1	2	1	1	1	1	1	1	S	3	6	20	33	37	39	39	41	31	24	21	9	9	4	3	41	14.3	24
16	6	8	6	7	5	5	6	S	17	25	29	32	38	45	41	39	39	36	31	27	18	13	10	7	45	21.3	24
17	2	2	1	3	0	0	S	4	13	18	30	30	26	26	31	33	36	28	20	10	14	13	13	11	36	15.8	24
18	2	1	0	0	1	S	1	11	20	28	36	40	50	49	47	35	31	21	11	17	8	2	1	0	50	17.9	24
19	0	5	20	18	S	10	6	8	11	17	24	26	25	26	29	29	31	29	15	16	11	8	9	14	31	16.8	24
20	12	10	11	S	14	17	16	20	23	30	33	35	30	26	27	30	30	28	27	21	24	26	20	17	35	22.9	24
21	14	20	S	10	9	10	11	16	20	25	28	30	33	35	34	33	34	33	31	26	19	16	17	18	35	22.7	24
22	17	S	16	15	16	12	14	14	23	26	31	37	40	38	38	37	37	37	34	26	21	12	6	3	40	23.9	24
23	S	7	8	7	6	8	15	19	24	31	30	31	27	27	26	25	27	27	24	20	16	12	10	S	31	19.4	24
24	8	9	9	7	7	7	6	7	14	22	29	31	33	31	33	36	34	31	27	24	19	18	S	5	36	19.4	24
25	0	0	0	0	0	0	1	2	10	19	28	31	33	35	36	36	37	35	25	22	21	S	17	15	37	17.5	24
26	13	11	10	9	6	4	5	7	10	15	24	35	39	42	44	48	43	45	43	36	S	19	11	7	48	22.9	24
27	8	6	1	1	0	2	2	3	4	8	19	31	33	37	42	44	40	37	33	S	18	20	28	21	44	19.0	24
28	9	16	16	15	10	7	9	13	20	27	31	37	38	37	36	37	35	34	S	26	19	19	14	7	38	22.3	24
29	0	0	0	0	0	0	2	3	11	16	28	41	42	43	43	42	41	S	32	28	23	25	26	24	43	20.4	24
30	22	20	17	13	8	14	12	17	26	29	30	31	32	32	33	33	S	33	30	16	10	3	0	1	33	20.1	24
31	2	8	6	3	4	7	12	16	17	21	29	35	36	34	33	S	32	29	22	17	9	9	18	18	36	18.1	24
HOURLY MAX	29	30	30	32	26	24	25	28	31	40	49	52	51	52	52	53	53	53	48	36	25	26	28	26			
HOURLY AVG	7.8	7.7	7.8	7.3	6.1	6.6	8.1	11.8	18.3	24.7	30.8	35.1	37.2	37.0	38.3	38.6	38.1	34.6	29.8	22.7	15.8	12.9	11.4	9.1			

STATUS FLAG CODES

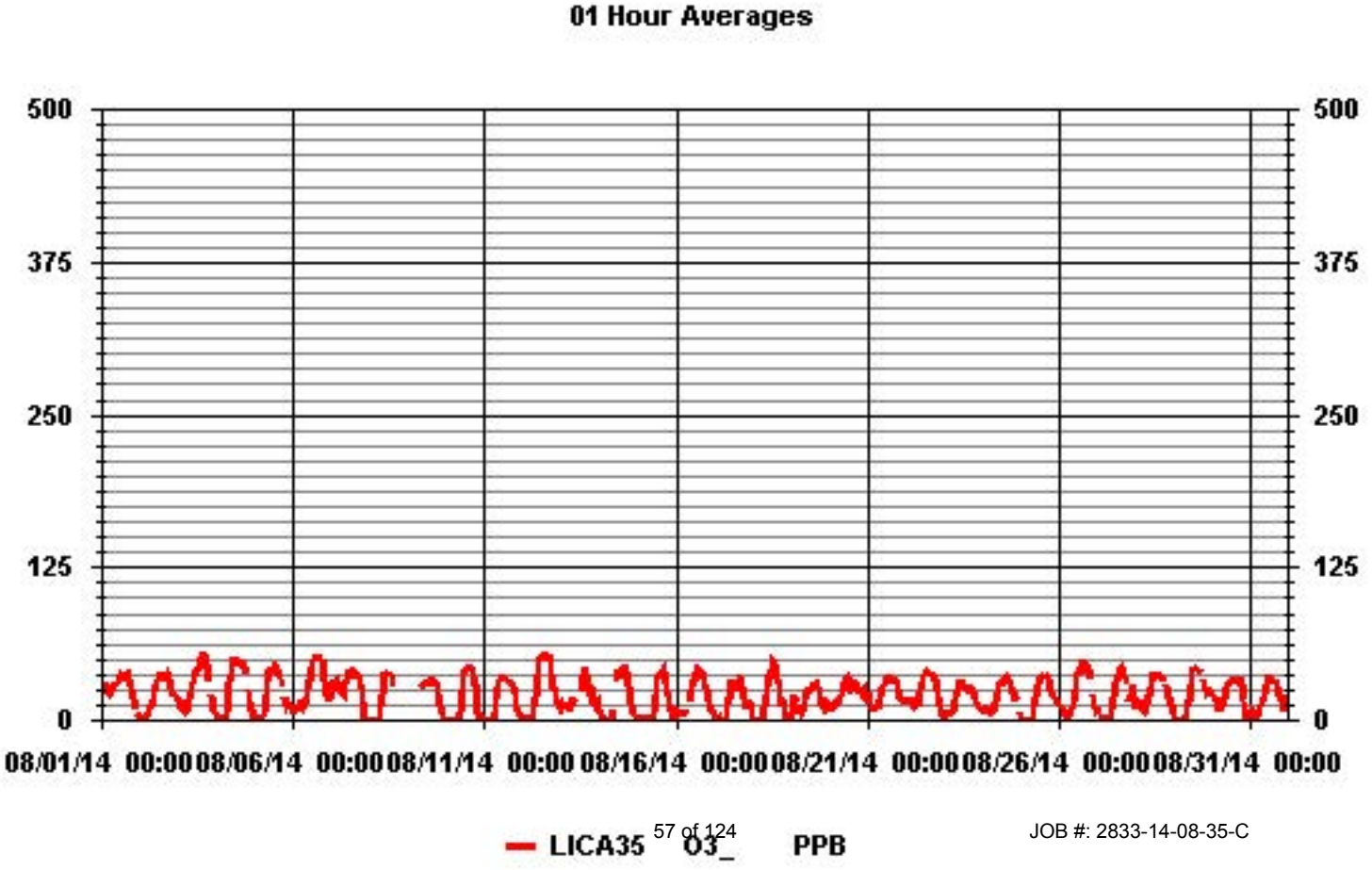
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR

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



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	650					
MAXIMUM 1-HR AVERAGE:	53	PPB	@ HOUR(S)	VAR	ON DAY(S)	3
MAXIMUM 24-HR AVERAGE:	28.1	PPB			ON DAY(S)	1
				VAR-VARIOUS		
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		728	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		97.8	%
STANDARD DEVIATION:	14.45		MONTHLY AVERAGE:		20.77	PPB



JOB #: 2833-14-08-35-C

Lakeland Industry & Community Association - Elk Point Site

AUGUST 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	32	28	31	33	27	26	29	29	29	30	33	37	40	40	38	40	41	38	32	28	24	17	**S**	11	41	31.0	24
2	5	6	5	3	6	8	10	14	19	26	31	35	38	38	38	37	37	39	38	32	27	**S**	23	22	39	23.3	24
3	19	17	15	14	11	13	17	20	25	34	41	40	45	47	54	55	55	54	53	42	**S**	30	14	11	55	***31.6***	24
4	5	2	2	1	2	2	4	19	37	41	53	56	51	50	50	51	52	48	44	**S**	35	23	16	5	56	28.2	24
5	3	3	3	5	4	6	12	34	35	44	43	43	49	48	52	44	38	33	**S**	23	18	20	19	11	52	25.7	24
6	12	13	14	13	15	16	16	18	24	30	38	47	53	53	52	52	53	**S**	52	46	31	25	22	30	53	31.5	24
7	27	33	33	35	29	29	29	28	31	34	36	41	41	41	42	40	**S**	38	36	32	26	15	1	1	42	30.3	24
8	1	1	1	1	1	2	4	19	33	43	42	41	40	42	34	**S**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	43	20.3	16
9	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**S**	30	32	32	31	32	**S**	34	34	32	32	29	21	14	3	1	34	25.5	16
10	1	1	1	1	1	1	4	7	5	14	38	41	40	**S**	44	45	47	39	35	11	10	12	9	2	47	17.8	24
11	1	1	1	1	1	3	12	25	30	36	37	37	**S**	35	34	33	32	32	29	27	19	15	7	6	37	19.7	24
12	4	3	4	4	3	2	7	14	29	44	52	**S**	54	54	54	54	55	55	48	33	29	24	20	14	55	28.7	24
13	17	15	16	15	13	10	17	18	**C**	**C**	**C**	**C**	**C**	36	40	46	45	34	27	27	23	19	20	12	46	23.7	24
14	14	11	4	5	1	1	2	4	13	**S**	39	45	40	39	42	44	47	47	34	24	11	10	9	7	47	21.4	24
15	2	3	2	2	2	2	2	2	**S**	4	10	29	38	39	43	42	43	35	31	27	14	15	9	4	43	17.4	24
16	9	9	7	9	8	8	10	**S**	22	30	34	35	41	50	45	42	41	38	35	31	25	24	13	11	50	25.1	24
17	5	4	4	6	2	1	**S**	10	21	25	35	35	30	31	37	36	38	35	26	18	19	18	17	17	38	20.4	24
18	6	5	1	1	2	**S**	2	15	25	32	42	48	***60***	52	51	42	34	28	22	22	18	6	2	1	***60***	22.5	24
19	1	15	22	21	**S**	15	9	12	15	19	28	28	27	28	31	30	33	32	26	25	16	17	15	20	33	21.1	24
20	15	14	13	**S**	16	18	19	22	27	32	35	36	34	28	31	31	32	30	29	25	27	27	25	22	36	25.6	24
21	15	22	**S**	12	10	11	13	20	23	28	30	31	34	36	36	34	35	35	33	28	24	19	19	22	36	24.8	24
22	21	**S**	21	19	19	17	18	20	25	30	37	43	43	40	40	39	38	38	37	32	27	19	12	6	43	27.9	24
23	**S**	11	12	11	8	11	18	21	28	33	32	32	30	27	27	27	29	28	27	22	20	14	13	**S**	33	21.9	24
24	11	11	10	9	9	8	7	11	17	27	31	32	36	33	36	37	36	33	30	27	24	21	**S**	9	37	22.0	24
25	1	1	1	1	1	1	2	3	18	25	30	32	36	37	37	38	38	38	30	26	23	**S**	20	17	38	19.8	24
26	15	13	13	11	9	6	7	10	13	20	29	39	41	45	46	51	47	48	47	43	**S**	26	20	13	51	26.6	24
27	12	10	4	2	2	4	3	4	6	11	28	33	34	41	45	45	43	39	37	**S**	29	33	32	27	45	22.8	24
28	20	20	21	18	16	10	11	18	24	29	35	38	39	39	37	37	36	35	**S**	29	25	22	18	12	39	25.6	24
29	1	1	1	1	1	1	3	7	14	21	36	44	44	45	46	44	43	**S**	35	33	27	27	27	25	46	22.9	24
30	25	24	20	19	17	19	17	22	29	31	32	32	33	33	34	35	**S**	35	34	29	16	7	1	2	35	23.7	24
31	11	12	11	7	11	11	15	18	19	27	33	37	37	35	35	**S**	35	31	30	23	14	14	25	25	37	22.4	24
HOURLY MAX	32	33	33	35	29	29	29	34	37	44	53	56	60	54	54	55	55	55	53	46	35	33	32	30			
HOURLY AVG	10.7	10.7	10.1	9.7	8.5	9.0	11.0	16.0	22.7	28.6	35.1	37.9	40.0	39.8	41.0	40.9	40.6	37.4	34.6	28.4	22.2	19.0	15.4	12.6			

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: 691

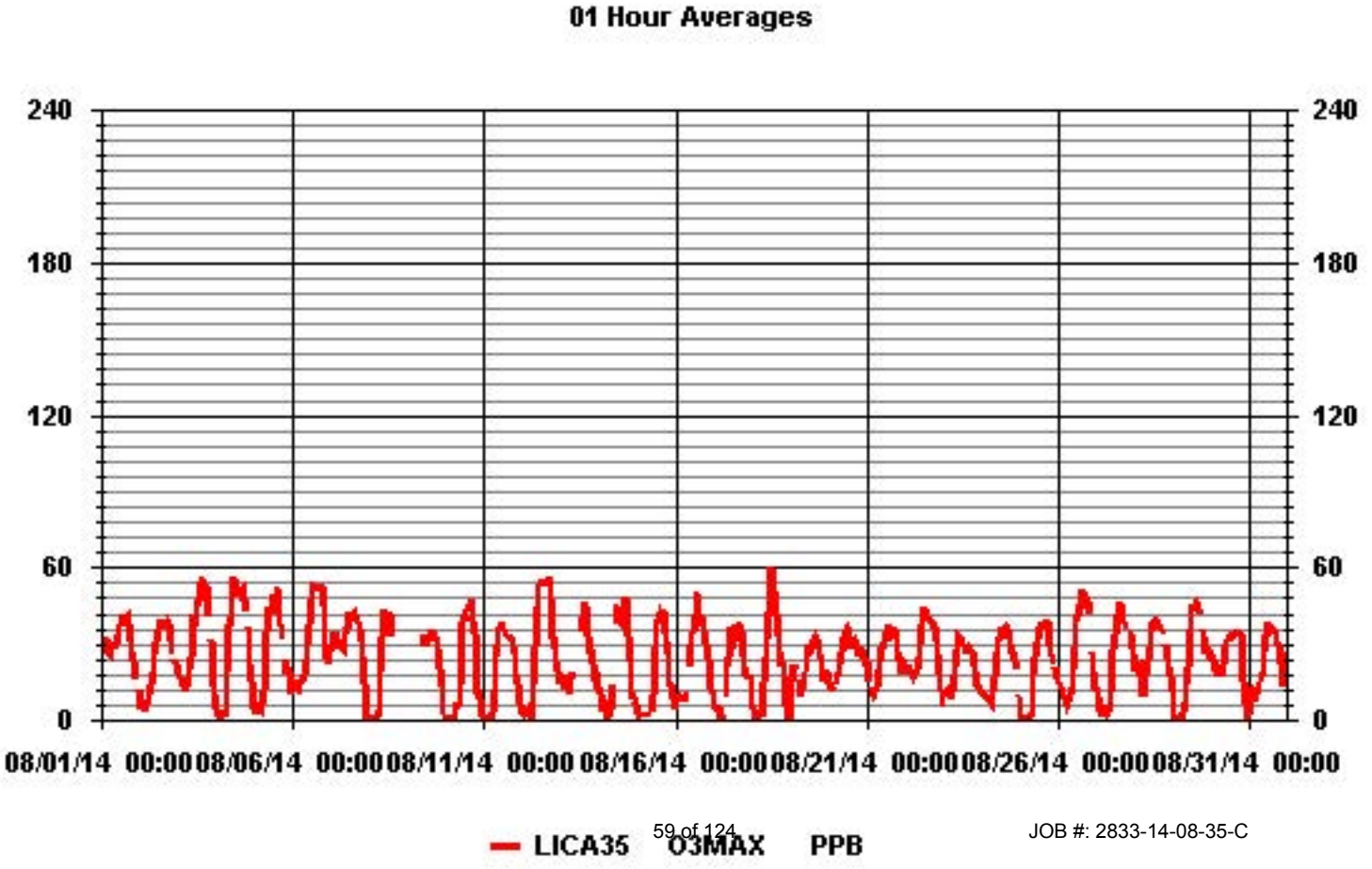
MAXIMUM INSTANTANEOUS VALUE: 60 PPB @ HOUR(S) 12 ON DAY(S) 18

VAR-VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 728 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 14.64



JOB #: 2833-14-08-35-C

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

August 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	4.62	2.89	3.32	4.19	7.36	11.41	5.78	3.90	1.30	1.58	1.30	9.24	12.42	14.30	10.40	3.61	97.68
<	110	.14	.28	.14	.00	.00	.57	.28	.00	.14	.00	.00	.43	.28	.00	.00	.00	2.31
<	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.76	3.17	3.46	4.19	7.36	11.99	6.06	3.90	1.44	1.58	1.30	9.68	12.71	14.30	10.40	3.61	

Calm : .00 %

Total # Operational Hours : 692

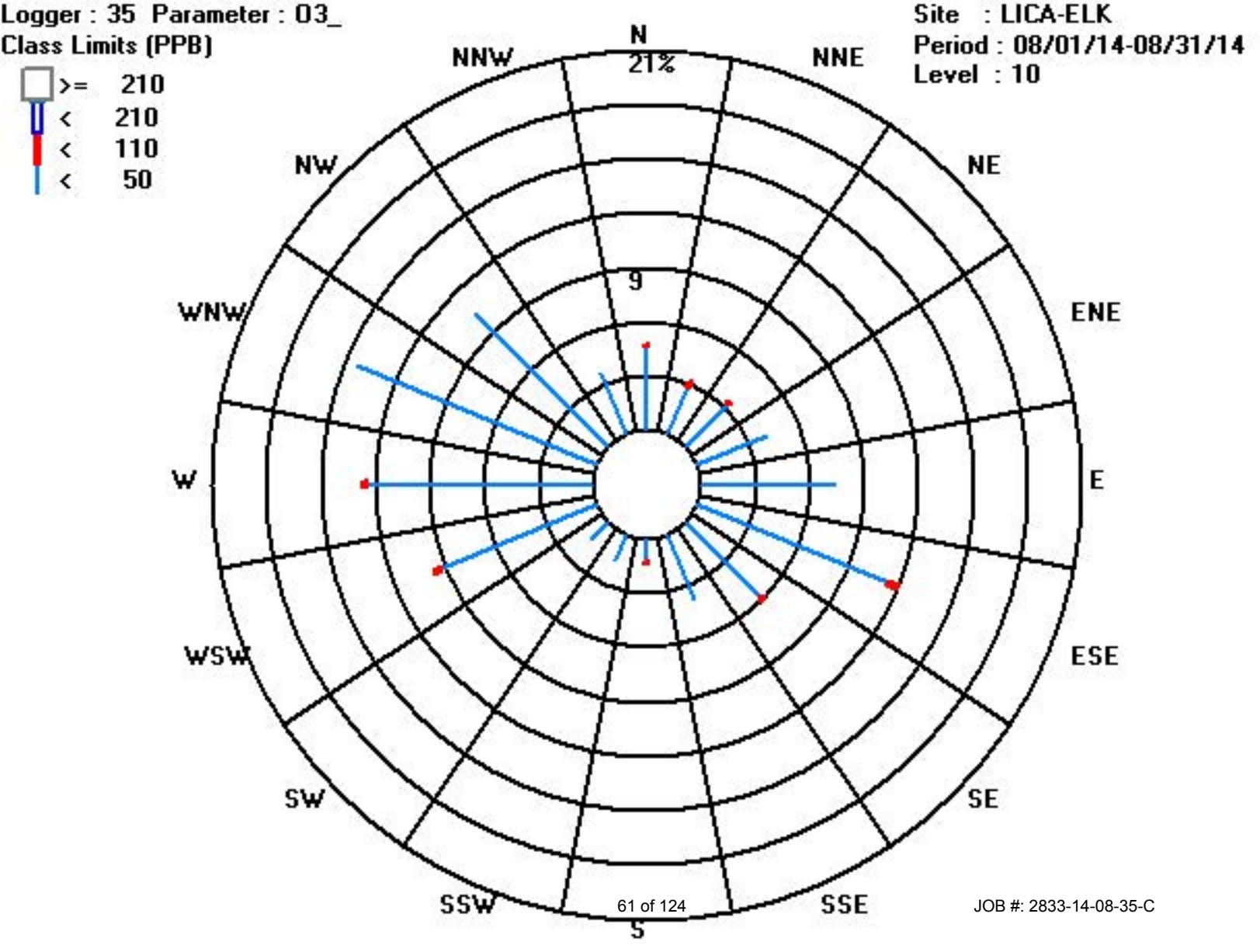
Distribution By Samples

Direction

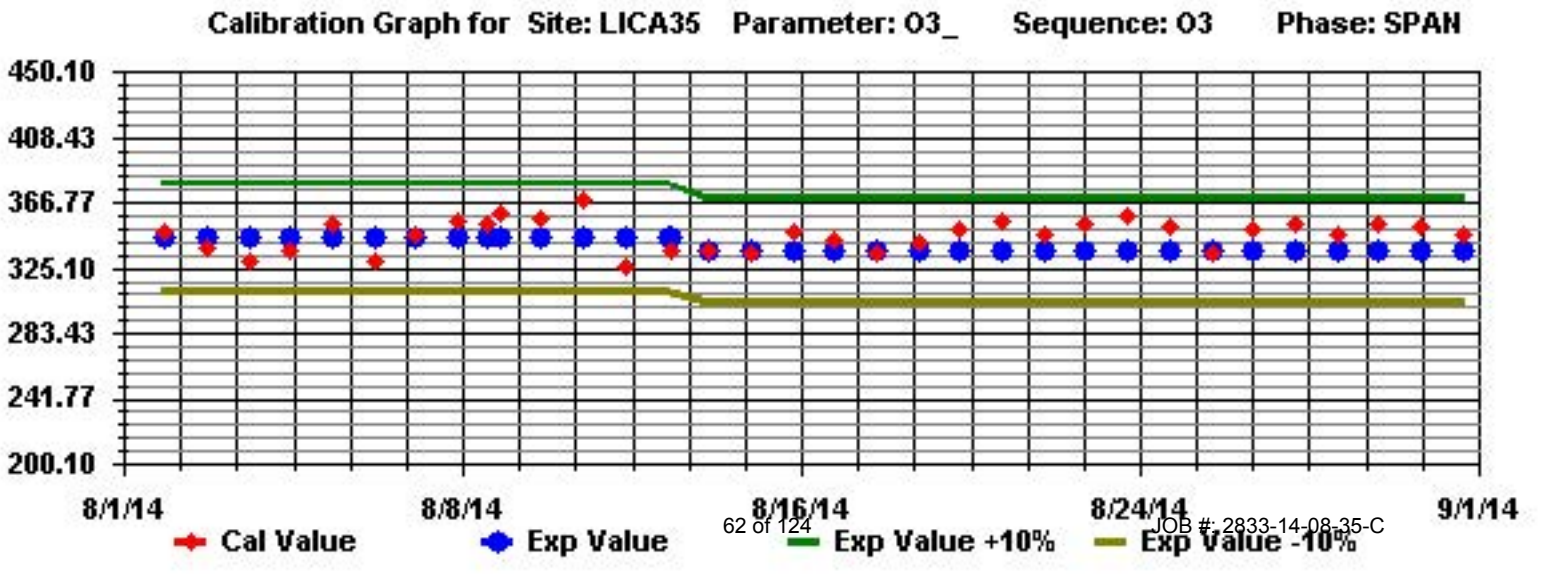
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	32	20	23	29	51	79	40	27	9	11	9	64	86	99	72	25	676
<	110	1	2	1			4	2		1			3	2				16
<	210																	
>=	210																	
	Totals	33	22	24	29	51	83	42	27	10	11	9	67	88	99	72	25	

Calm : .00 %

Total # Operational Hours : 692



JOB #: 2833-14-08-35-C


Calibration Graph for Site: LICA35 Parameter: O3_ Sequence: O3 Phase: SPAN
450.10
408.43
366.77
325.10
283.43
241.77
200.10
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons (55i)

Lakeland Industry & Community Association - Elk Point Site

AUGUST 2014

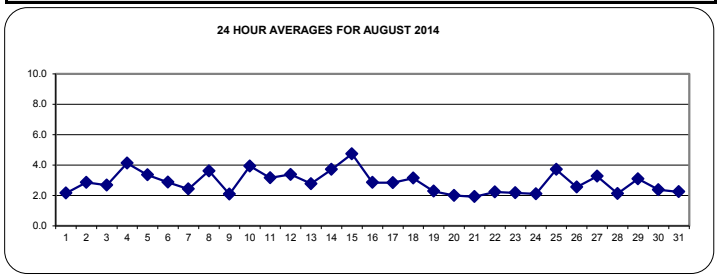
TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2.1	2.1	2.0	2.1	2.2	2.1	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.1	2.8	2.6	**S**	3.9	3.9	2.2	24
2	3.6	3.7	4.7	4.1	4.3	4.3	3.8	3.0	2.7	2.7	2.5	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.5	2.3	**S**	2.6	2.7	4.7	2.9	24
3	2.9	3.0	2.7	3.5	3.7	2.9	3.1	3.1	2.6	2.4	2.4	2.1	2.0	2.0	2.0	2.0	1.9	2.0	2.1	2.3	**S**	3.6	3.6	3.8	3.8	2.7	24
4	4.0	5.2	6.6	7.9	8.2	***8.7***	6.7	6.4	3.4	3.3	2.4	2.5	2.3	2.2	2.2	2.2	2.1	2.1	2.2	**S**	2.9	3.3	4.0	4.3	***8.7***	4.1	24
5	4.1	4.3	4.6	4.9	4.5	5.1	6.6	4.3	3.8	2.9	2.4	2.2	2.1	2.2	2.2	2.2	2.1	2.3	**S**	2.4	2.9	2.9	2.8	3.3	6.6	3.4	24
6	3.7	3.3	3.3	3.2	3.2	3.3	3.4	3.7	3.3	3.0	2.9	2.6	2.5	2.2	2.0	1.9	1.9	**S**	1.9	2.2	3.1	3.3	3.4	2.7	3.7	2.9	24
7	2.2	2.1	2.4	2.1	2.2	2.2	2.2	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	**S**	1.9	2.2	2.3	2.6	3.5	5.4	5.6	5.6	2.4	24
8	7.3	6.2	6.4	6.8	7.6	5.1	4.2	3.6	3.4	2.8	3.1	2.1	2.1	2.2	2.3	**S**	2.2	2.4	2.3	2.3	2.2	2.1	2.5	2.0	7.6	3.6	24
9	2.0	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.8	1.9	1.9	1.8	1.8	1.8	**S**	1.8	1.8	1.8	1.9	1.9	2.4	3.2	2.9	3.8	3.8	2.1	24
10	7.1	8.3	7.1	6.9	5.6	4.9	4.4	4.0	5.3	5.3	2.6	2.0	1.9	**S**	1.9	1.9	1.9	1.8	1.9	2.9	3.0	3.0	2.8	3.9	8.3	3.9	24
11	5.1	5.6	6.1	6.2	5.4	5.1	4.2	2.7	2.3	2.1	1.9	1.9	**S**	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.8	2.4	2.9	3.1	6.2	3.2	24
12	3.4	3.7	4.2	4.3	4.4	5.2	5.3	4.9	4.1	**C**	**C**	**C**	**C**	1.9	2.1	2.1	2.1	2.2	2.3	2.8	3.4	3.3	3.0	3.0	5.3	3.4	24
13	2.9	3.4	3.0	3.0	3.3	3.5	3.1	2.9	2.8	2.8	**S**	2.8	2.8	2.5	2.1	2.1	2.2	2.2	2.2	2.4	2.5	2.8	3.0	3.5	3.5	2.8	24
14	3.3	3.4	4.2	5.6	***8.7***	6.9	7.3	5.1	3.5	**S**	2.5	2.2	2.1	2.0	2.0	2.0	2.1	2.2	2.3	2.4	4.4	3.7	3.5	4.1	***8.7***	3.7	24
15	4.8	4.7	5.3	7.0	8.3	8.4	8.5	7.8	**S**	6.0	6.6	4.5	3.7	2.6	2.4	2.2	2.1	2.2	3.1	2.8	3.7	3.7	4.4	4.2	8.5	***4.7***	24
16	3.9	3.6	3.7	3.8	3.8	3.7	4.0	**S**	3.1	2.5	2.5	2.4	2.3	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.2	3.6	3.2	3.0	4.0	2.9	24
17	3.2	3.7	3.7	3.3	5.2	5.9	**S**	5.0	2.9	2.5	2.2	2.0	2.0	1.9	1.9	1.8	1.8	2.0	2.2	2.5	2.3	2.3	2.5	2.4	5.9	2.8	24
18	4.2	5.2	6.6	6.6	4.1	**S**	4.7	3.2	2.4	2.0	2.0	1.9	1.8	1.8	1.8	1.8	1.9	2.0	2.5	2.2	2.6	3.3	3.5	4.2	6.6	3.1	24
19	3.9	3.8	1.8	1.9	**S**	2.1	2.4	2.3	2.2	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.5	2.4	2.6	3.2	2.6	2.4	3.9	2.3	24
20	2.8	2.8	2.4	**S**	2.1	2.1	2.0	2.0	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	1.9	1.9	2.0	2.0	2.8	2.0	24
21	2.0	1.9	**S**	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	2.2	2.4	2.2	2.1	2.4	1.9	24
22	2.1	**S**	2.2	2.4	2.3	2.6	2.3	2.6	2.1	2.0	1.9	1.8	1.8	1.9	1.9	1.8	1.9	1.9	1.9	1.9	2.0	2.5	3.4	4.0	4.0	2.2	24
23	**S**	2.8	2.8	2.7	2.8	2.5	2.3	2.2	2.1	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	2.1	2.1	2.3	2.6	**S**	2.8	2.2	24
24	2.6	2.4	2.3	2.4	2.3	2.3	2.3	2.3	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.1	1.9	2.1	**S**	3.3	3.3	2.1	24
25	5.6	5.2	4.9	6.0	7.2	6.8	6.3	5.9	4.8	3.4	2.3	1.9	2.0	2.0	1.9	1.9	1.9	2.0	2.3	2.7	2.9	**S**	2.7	2.9	7.2	3.7	24
26	2.7	2.6	2.7	2.7	2.8	3.1	3.2	3.8	3.8	3.1	2.5	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.9	2.1	**S**	2.8	2.8	3.1	3.8	2.5	24
27	3.7	4.4	4.4	4.9	5.6	4.9	5.4	5.2	5.5	4.7	2.9	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.9	**S**	2.2	2.6	1.9	2.0	5.6	3.3	24
28	2.7	2.3	2.2	1.9	2.0	2.1	2.0	2.1	1.9	1.8	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	**S**	1.9	2.6	2.7	2.4	3.7	3.7	2.1	24
29	4.8	3.5	4.2	4.5	4.8	4.5	4.7	4.9	3.7	3.2	2.8	2.1	1.9	1.8	1.8	1.9	1.8	**S**	2.3	2.6	2.4	2.4	2.3	2.3	4.9	3.1	24
30	2.3	2.4	2.4	2.3	2.8	2.5	2.5	2.1	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	**S**	1.8	1.8	2.3	2.4	3.3	4.5	4.7	4.7	2.4	24
31	3.7	2.5	2.5	3.1	3.4	2.5	2.3	2.1	1.9	1.9	1.8	1.8	1.8	1.8	1.8	**S**	1.8	1.8	1.9	2.1	2.4	2.2	2.4	2.1	3.7	2.2	24
HOURLY MAX	7	8	7	8	9	9	9	8	6	6	7	5	4	3	2	2	2	2	3	3	4	4	5	6			
HOURLY AVG	3.6	3.7	3.8	4.0	4.2	4.0	3.8	3.5	2.9	2.7	2.4	2.1	2.0	2.0	1.9	1.9	1.9	2.0	2.1	2.3	2.6	2.9	3.0	3.3			

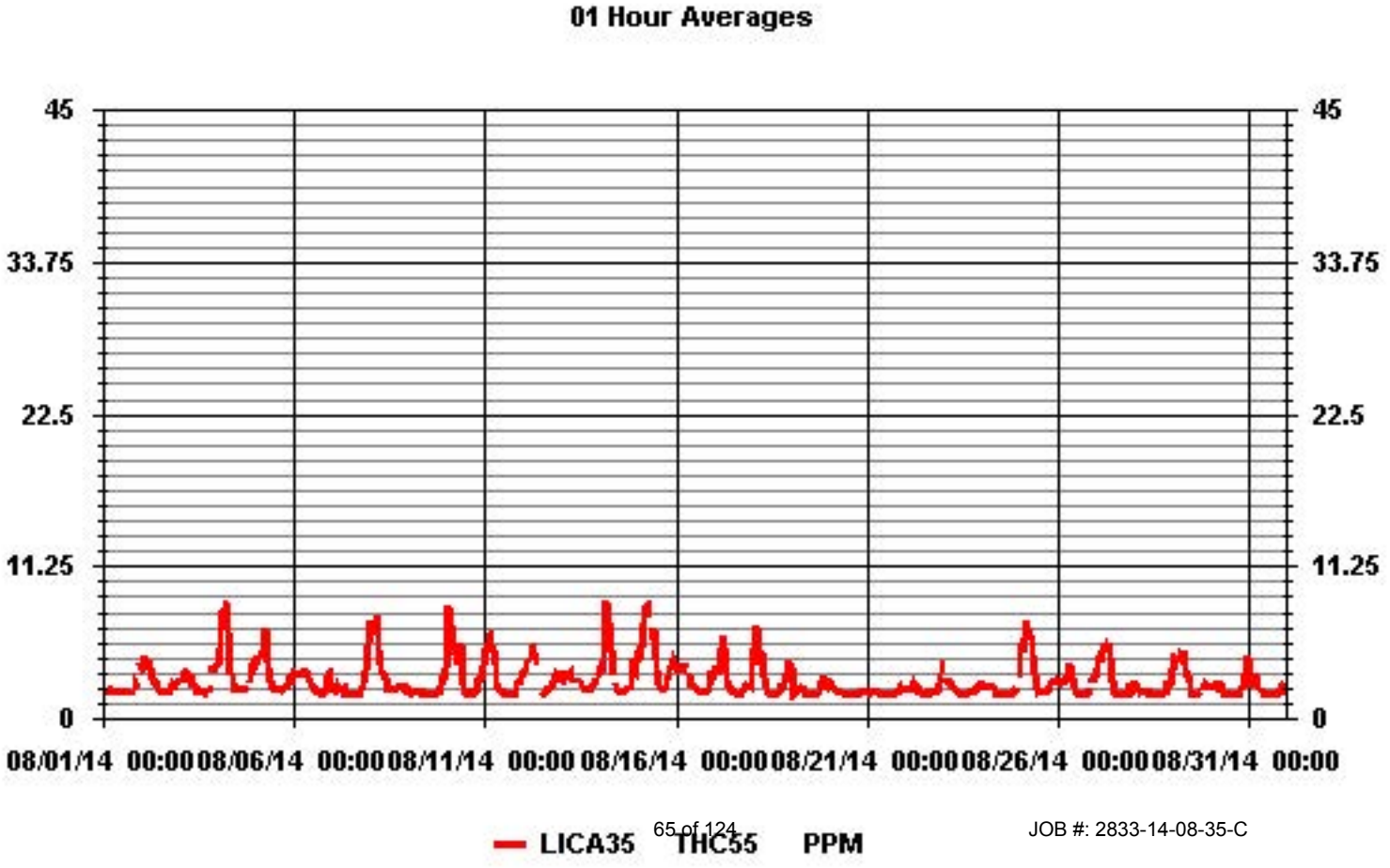
STATUS FLAG CODES

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



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	709					
MAXIMUM 1-HR AVERAGE:	8.7	PPM	@ HOUR(S)	5, 4	ON DAY(S)	4, 15
MAXIMUM 24-HR AVERAGE:	4.7	PPM			ON DAY(S)	15
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	1.35		MONTHLY AVERAGE:		2.86	PPM



JOB #: 2833-14-08-35-C

Lakeland Industry & Community Association - Elk Point Site

AUGUST 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	2.35	2.69	2.19	2.71	2.45	2.28	2.22	2.33	2.17	2.16	2.11	2.13	2.18	2.24	2.28	2.49	2.31	2.45	2.26	2.44	4.26	4.29	**S**	5.13	5.13	2.6	24
2	3.82	4.06	8.79	4.91	4.75	4.78	4.57	3.49	2.94	3	2.8	2.58	2.24	2.28	2.25	2.19	2.24	2.28	2.55	3.19	2.67	**S**	2.87	4.72	8.79	3.5	24
3	3.77	4.44	3.27	9.02	5.47	3.31	4.91	3.69	3.13	2.73	2.6	2.5	2.33	2.28	2.28	2.28	2.19	2.7	2.43	3.06	**S**	4.36	4.3	4.79	9.02	3.6	24
4	4.54	7.07	7.99	8.78	8.61	10.14	9.33	8.1	5.02	4.37	3.01	3.09	2.65	2.51	2.49	2.72	2.46	2.49	2.53	**S**	3.45	4.36	5.87	5.21	10.14	5.1	24
5	4.75	4.77	4.95	6	5.02	8.22	8.19	5.34	4.15	3.62	2.91	2.51	2.51	2.69	2.76	2.65	2.51	2.66	**S**	2.82	3.87	3.72	3.15	3.8	8.22	4.1	24
6	4.15	3.86	3.7	3.51	3.46	3.53	3.67	4.29	3.9	3.35	3.31	2.92	2.83	2.5	2.28	2.23	2.31	**S**	2.27	2.75	3.66	3.7	4.89	3.53	4.89	3.3	24
7	2.44	2.37	3.64	2.43	2.47	2.52	2.67	2.64	2.03	2.02	2.23	1.87	1.84	1.99	2.01	2.08	**S**	2.13	2.97	2.72	3.6	4.69	6.97	9.4	9.4	3.0	24
8	***14.76***	7.48	8.72	8.25	11.83	5.99	6.22	4.08	5.15	3.73	3.71	2.26	2.32	2.54	2.66	**S**	2.41	3.33	2.91	2.87	2.45	2.81	2.97	2.25	***14.76***	4.9	24
9	2.31	2.04	2.19	2.2	2.08	2.06	2.14	2.09	1.94	1.93	1.92	2	1.99	1.89	**S**	1.9	1.96	1.9	2.28	2.85	3.5	5.41	3.48	5.27	5.41	2.5	24
10	12.23	10.73	8.6	7.56	7.01	5.56	5.43	5.47	8.42	8	3.77	2.27	2.13	**S**	2.18	1.96	2.08	1.96	2.96	4.03	3.66	3.85	3.65	5.27	12.23	5.2	24
11	6.44	6.31	6.68	6.8	6.03	5.48	6.46	4.03	3.5	2.33	2.2	2.11	**S**	1.91	2.01	1.86	2.15	2.16	2.79	3.48	5.24	4.26	4.97	3.67	6.8	4.0	24
12	4.25	4.43	5.25	5.11	5.54	6.04	5.77	5.83	**C**	**C**	**C**	**C**	**C**	2.26	2.36	2.4	2.48	2.37	2.7	3.46	4.13	3.71	3.56	3.44	6.04	4.0	24
13	3.47	5	3.26	3.39	3.86	3.91	3.79	3.4	3.35	3.25	**S**	3.28	3.09	2.78	2.38	2.37	2.62	2.62	2.52	2.8	2.92	3.31	3.64	4.26	5	3.3	24
14	3.9	4.74	8.89	10.51	13.38	7.72	8.93	6.65	4.31	**S**	2.81	2.56	2.33	2.18	2.26	2.31	2.35	2.45	2.46	3.42	8.56	4.7	4.18	5.25	13.38	5.1	24
15	5.62	6.12	5.93	10.14	9.57	9.32	8.86	8.99	**S**	7.71	7.11	5.9	3.98	3.32	2.71	2.61	2.41	2.58	3.98	3.61	4.11	4.16	5.41	4.41	10.14	***5.6***	24
16	4.54	4.32	4.06	4.14	4.48	4.21	4.56	**S**	3.5	2.92	2.79	2.69	2.48	2.3	2.2	2.29	2.17	2.55	2.25	2.55	3.08	5.01	3.68	3.35	5.01	3.3	24
17	4.18	5.22	4.05	3.99	6.88	6.79	**S**	7.47	3.26	2.84	2.47	2.33	2.12	2.29	2.19	2.04	1.89	2.63	3.02	3.06	2.61	2.55	2.96	3.63	7.47	3.5	24
18	7.31	7.57	8.18	8.49	5.39	**S**	5.58	5.05	2.9	2.24	2.23	2.1	2.17	2.08	2.09	2.04	2.27	2.77	2.93	2.43	4.1	4.6	4.25	8.06	8.49	4.2	24
19	5.33	7.09	2.17	2.12	**S**	2.62	2.76	2.64	2.71	2.12	2	1.99	1.96	2.04	1.85	1.91	1.95	2.28	3.38	3.71	3.2	6.33	3.7	2.89	7.09	3.0	24
20	3.34	3.34	2.83	**S**	2.26	2.12	2.21	2.09	2.21	1.98	1.91	2.04	2	2.01	1.89	1.86	1.87	1.91	2.03	2.32	2.04	1.99	2.26	2.4	3.34	2.2	24
21	2.33	2.04	**S**	2.24	2	2.07	2.02	1.98	1.93	1.91	1.91	1.89	1.88	1.88	1.89	2	1.9	1.89	2.24	1.95	2.61	3.09	2.42	2.24	3.09	2.1	24
22	2.37	**S**	2.35	3.17	2.38	3.04	2.64	3.82	2.3	2.07	2	1.91	1.93	1.96	1.93	1.93	1.91	1.93	1.96	2.09	2.17	3	4.47	4.68	4.68	2.5	24
23	**S**	3.4	3.22	3.02	3.16	2.9	2.64	2.39	2.47	2	1.93	1.91	1.9	1.9	1.89	1.91	1.93	2.05	2.05	2.21	2.25	2.63	3.06	**S**	3.4	2.4	24
24	2.79	2.63	2.43	2.63	2.63	2.56	2.51	2.5	2.16	1.98	2.08	1.89	1.94	1.87	1.99	1.87	2	1.93	2	2.86	2.2	2.28	**S**	12.11	12.11	2.7	24
25	8.35	6.65	5.51	7.09	11.62	9.6	7.77	7.88	5.94	4.11	2.87	2.07	2.13	2.07	2	1.96	2.11	2.63	2.84	3.82	4.15	**S**	3.18	3.23	11.62	4.8	24
26	2.96	2.79	2.98	2.89	3.19	3.36	3.88	4.99	4.93	3.94	3.13	2.19	1.96	2	1.96	1.94	2.05	1.93	2.24	2.36	**S**	3.21	3.12	3.5	4.99	2.9	24
27	4.73	5.55	5.27	6.73	6.73	7.43	7.98	6.26	6.37	5.14	4.05	2.51	1.85	1.83	1.84	1.81	1.96	2	2.13	**S**	3.27	3.81	2.25	2.26	7.98	4.1	24
28	4.24	2.74	2.76	2.08	2.35	2.38	2.21	2.43	2.22	1.97	2.04	1.93	1.91	1.87	2.02	1.94	1.91	1.86	**S**	2.59	4.06	4.34	3.34	7.53	7.53	2.7	24
29	8.25	4.11	4.85	4.81	5.09	4.86	4.98	5.19	4.35	3.55	3.17	2.5	2.03	1.96	2.04	2	1.95	**S**	2.9	3.55	2.96	2.69	2.45	2.41	8.25	3.6	24
30	2.69	2.94	2.59	2.54	3.32	3.05	3.05	2.27	2.03	1.96	1.89	1.87	1.85	1.88	1.85	1.99	**S**	2.14	2.32	3.12	2.77	5.51	6.4	5.59	6.4	2.9	24
31	5.28	2.84	2.92	4.77	5.12	3.05	2.85	2.33	2.02	2.14	1.94	2	1.87	1.9	1.96	**S**	1.89	2.02	2.28	2.4	2.94	2.96	4.47	3.04	5.28	2.8	24
HOURLY MAX	15	11	9	11	13	10	9	9	8	8	7	6	4	3	3	3	3	3	4	4	9	6	7	12			
HOURLY AVG	4.9	4.6	4.7	5.1	5.3	4.7	4.7	4.3	3.5	3.1	2.7	2.4	2.2	2.2	2.2	2.1	2.1	2.3	2.6	2.9	3.5	3.8	3.9	4.6			

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: 708

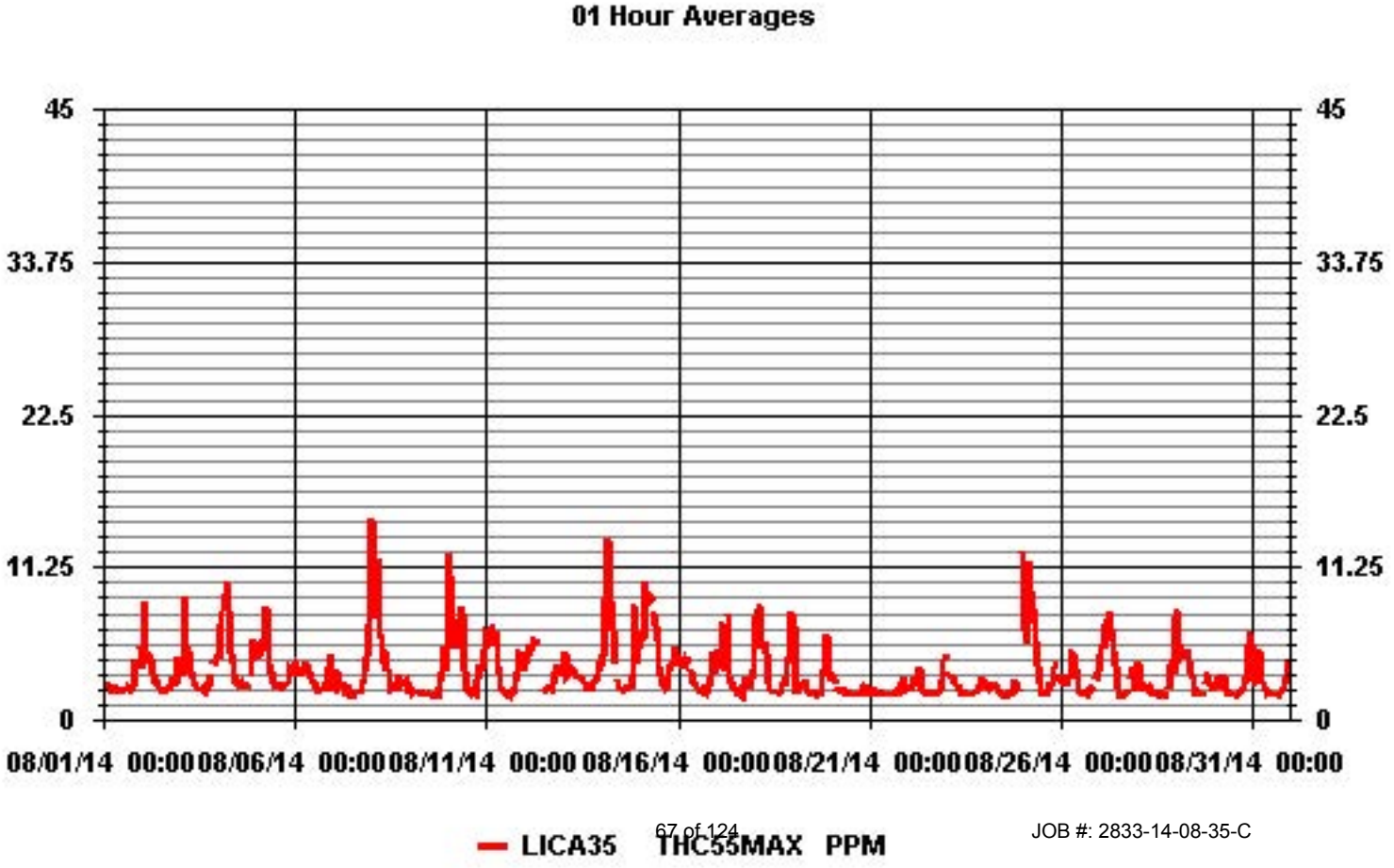
MAXIMUM INSTANTANEOUS VALUE: 14.76 PPM @ HOUR(S) 0 ON DAY(S) 8

VAR-VARIOUS

IZS CALIBRATION TIME: 31 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 1.98



JOB #: 2833-14-08-35-C

LICA35
THC55 / WDR Joint Frequency Distribution (Percent)

August 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	4.51	2.39	2.96	2.82	3.24	5.64	4.37	2.82	.98	.84	.70	6.91	10.29	8.74	9.16	2.96	69.39
<	10.0	.14	.70	.42	1.41	3.94	5.78	1.83	.98	.42	.70	.56	2.67	3.52	5.78	1.12	.56	30.60
<	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.65	3.10	3.38	4.23	7.19	11.42	6.20	3.80	1.41	1.55	1.26	9.59	13.82	14.52	10.29	3.52	

Calm : .00 %

Total # Operational Hours : 709

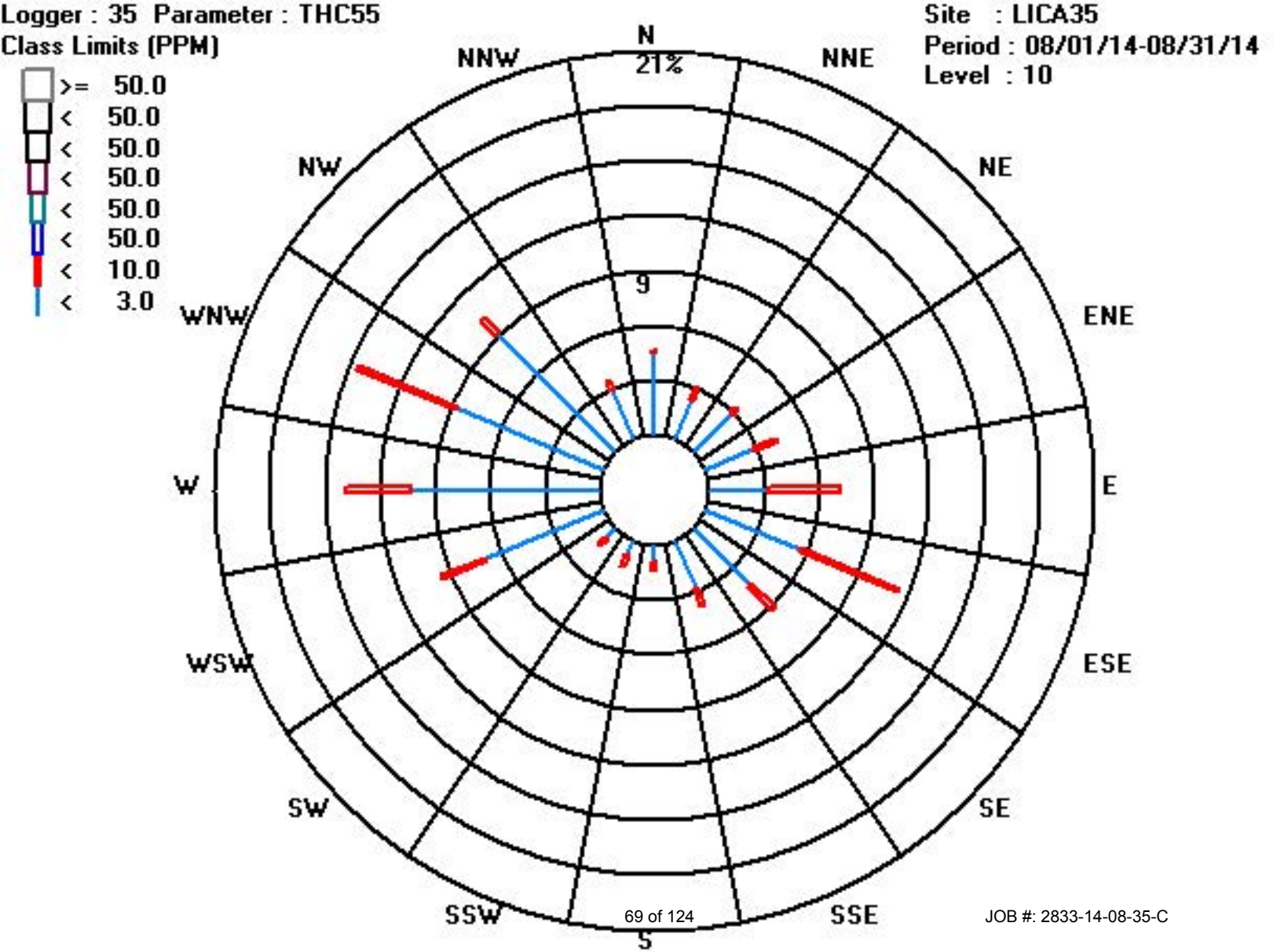
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	32	17	21	20	23	40	31	20	7	6	5	49	73	62	65	21	492
<	10.0	1	5	3	10	28	41	13	7	3	5	4	19	25	41	8	4	217
<	50.0																	
>=	50.0																	
	Totals	33	22	24	30	51	81	44	27	10	11	9	68	98	103	73	25	

Calm : .00 %

Total # Operational Hours : 709



JOB #: 2833-14-08-35-C

Methane

Lakeland Industry & Community Association - Elk Point Site

AUGUST 2014

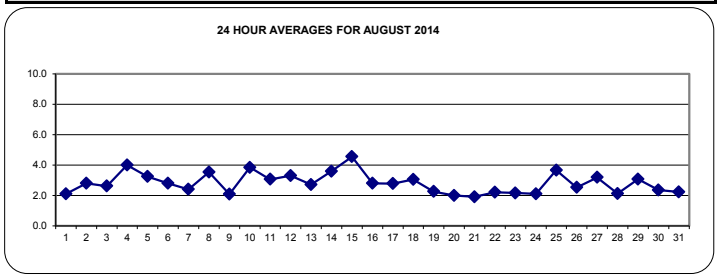
METHANE (CH4) hourly averages in ppm

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	2.0	2.1	2.0	2.0	2.2	2.1	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.7	2.6	**S**	3.7	3.7	2.1	24
2	3.4	3.6	4.6	4.0	4.2	4.2	3.7	2.9	2.7	2.6	2.5	2.1	2.0	2.0	2.0	2.0	2.0	1.9	2.1	2.5	2.3	**S**	2.5	2.7	4.6	2.8	24
3	2.9	3.0	2.7	3.4	3.6	2.9	3.0	3.1	2.6	2.3	2.3	2.1	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.3	**S**	3.4	3.4	3.7	3.7	2.6	24
4	3.8	5.0	6.3	7.6	7.8	8.4	6.4	6.1	3.3	3.2	2.4	2.5	2.3	2.1	2.2	2.2	2.1	2.1	2.2	**S**	2.8	3.1	3.8	4.2	8.4	4.0	24
5	3.9	4.1	4.4	4.7	4.2	4.9	6.4	4.1	3.7	2.9	2.3	2.2	2.1	2.2	2.2	2.1	2.1	2.3	**S**	2.4	2.8	2.9	2.7	3.2	6.4	3.3	24
6	3.5	3.2	3.3	3.2	3.2	3.2	3.3	3.6	3.3	2.9	2.8	2.6	2.5	2.1	2.0	1.9	1.9	**S**	1.9	2.1	3.0	3.2	3.3	2.6	3.6	2.8	24
7	2.2	2.1	2.4	2.1	2.2	2.2	2.2	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	**S**	1.9	2.2	2.3	2.6	3.4	5.2	5.5	5.5	2.4	24
8	7.1	6.0	6.2	6.6	7.4	4.9	4.0	3.5	3.3	2.8	3.0	2.1	2.1	2.2	2.3	**S**	2.1	2.4	2.3	2.3	2.2	2.1	2.5	2.0	7.4	3.5	24
9	2.0	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.8	1.9	1.9	1.8	1.8	1.8	**S**	1.8	1.8	1.8	1.9	1.9	2.4	3.1	2.9	3.7	3.7	2.1	24
10	6.9	8.1	6.9	6.8	5.4	4.8	4.3	3.9	5.2	5.2	2.6	2.0	1.9	**S**	1.9	1.9	1.8	1.8	1.9	2.9	2.9	2.9	2.7	3.8	8.1	3.8	24
11	4.9	5.4	5.8	5.9	5.2	4.9	3.9	2.6	2.2	2.1	1.9	1.9	**S**	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.8	2.3	2.9	3.1	5.9	3.1	24
12	3.3	3.6	4.0	4.2	4.2	5.0	5.1	4.7	4.0	**C**	**C**	**C**	**C**	1.9	2.1	2.1	2.1	2.2	2.3	2.8	3.2	3.2	3.0	3.0	5.1	3.3	24
13	2.9	3.3	2.9	2.9	3.2	3.4	3.1	2.9	2.7	2.8	**S**	2.7	2.7	2.4	2.1	2.0	2.1	2.1	2.1	2.3	2.5	2.8	3.0	3.5	3.5	2.7	24
14	3.2	3.3	4.1	5.5	***8.5***	6.7	7.1	4.9	3.4	**S**	2.4	2.1	2.0	1.9	1.9	2.0	2.1	2.1	2.1	2.3	4.2	3.6	3.4	3.9	***8.5***	3.6	24
15	4.5	4.5	5.1	6.7	8.0	8.0	8.1	7.4	**S**	5.8	6.3	4.3	3.5	2.6	2.4	2.2	2.1	2.2	3.0	2.7	3.5	3.5	4.3	4.0	8.1	***4.6***	24
16	3.8	3.5	3.6	3.6	3.7	3.6	3.9	**S**	3.0	2.5	2.4	2.4	2.3	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.2	3.5	3.2	2.9	3.9	2.8	24
17	3.2	3.5	3.6	3.3	5.0	5.7	**S**	4.8	2.8	2.5	2.2	2.0	1.9	1.9	1.9	1.8	1.8	2.0	2.2	2.5	2.3	2.3	2.5	2.4	5.7	2.8	24
18	4.1	5.0	6.4	6.3	4.0	**S**	4.5	3.1	2.3	2.0	2.0	1.9	1.8	1.8	1.8	1.8	1.9	2.0	2.5	2.1	2.6	3.1	3.4	4.0	6.4	3.1	24
19	3.8	3.7	1.8	1.9	**S**	2.0	2.3	2.3	2.2	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.5	2.4	2.6	3.2	2.6	2.4	3.8	2.3	24
20	2.8	2.8	2.4	**S**	2.1	2.1	2.0	2.0	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	1.9	1.9	2.0	2.0	2.8	2.0	24
21	2.0	1.9	**S**	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.2	2.4	2.2	2.1	2.4	1.9	24
22	2.1	**S**	2.2	2.4	2.3	2.6	2.3	2.6	2.1	2.0	1.9	1.8	1.8	1.9	1.9	1.8	1.9	1.9	1.9	1.9	2.0	2.5	3.4	3.9	3.9	2.2	24
23	**S**	2.8	2.7	2.7	2.8	2.5	2.3	2.2	2.1	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	2.1	2.1	2.3	2.6	**S**	2.8	2.2	24
24	2.6	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.0	1.9	2.1	**S**	3.3	3.3	2.1	24
25	5.5	5.1	4.8	5.9	7.0	6.6	6.2	5.8	4.7	3.4	2.3	1.9	2.0	2.0	1.9	1.9	1.9	2.0	2.3	2.7	2.9	**S**	2.7	2.9	7.0	3.7	24
26	2.7	2.6	2.6	2.7	2.8	3.1	3.2	3.8	3.8	3.1	2.5	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.1	**S**	2.8	2.7	3.0	3.8	2.5	24
27	3.6	4.3	4.2	4.7	5.5	4.8	5.2	5.0	5.3	4.5	2.9	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.9	**S**	2.2	2.6	1.9	2.0	5.5	3.2	24
28	2.7	2.3	2.2	1.9	2.0	2.1	2.0	2.1	1.9	1.8	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	**S**	1.9	2.6	2.7	2.4	3.6	3.6	2.1	24
29	4.8	3.5	4.1	4.4	4.7	4.5	4.6	4.8	3.7	3.2	2.8	2.1	1.9	1.8	1.8	1.9	1.8	**S**	2.3	2.6	2.4	2.4	2.3	2.3	4.8	3.1	24
30	2.3	2.4	2.4	2.3	2.8	2.5	2.5	2.1	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	**S**	1.8	1.8	2.3	2.4	3.2	4.3	4.6	4.6	2.4	24
31	3.7	2.5	2.5	3.0	3.4	2.5	2.3	2.1	1.9	1.9	1.8	1.8	1.8	1.8	1.8	**S**	1.8	1.8	1.9	2.1	2.4	2.2	2.3	2.1	3.7	2.2	24
HOURLY MAX	7	8	7	8	9	8	8	7	5	6	6	4	4	3	2	2	2	2	3	3	4	4	5	6			
HOURLY AVG	3.5	3.6	3.7	3.9	4.1	3.9	3.7	3.4	2.9	2.6	2.3	2.1	2.0	1.9	1.9	1.9	1.9	1.9	2.1	2.3	2.6	2.8	3.0	3.2			

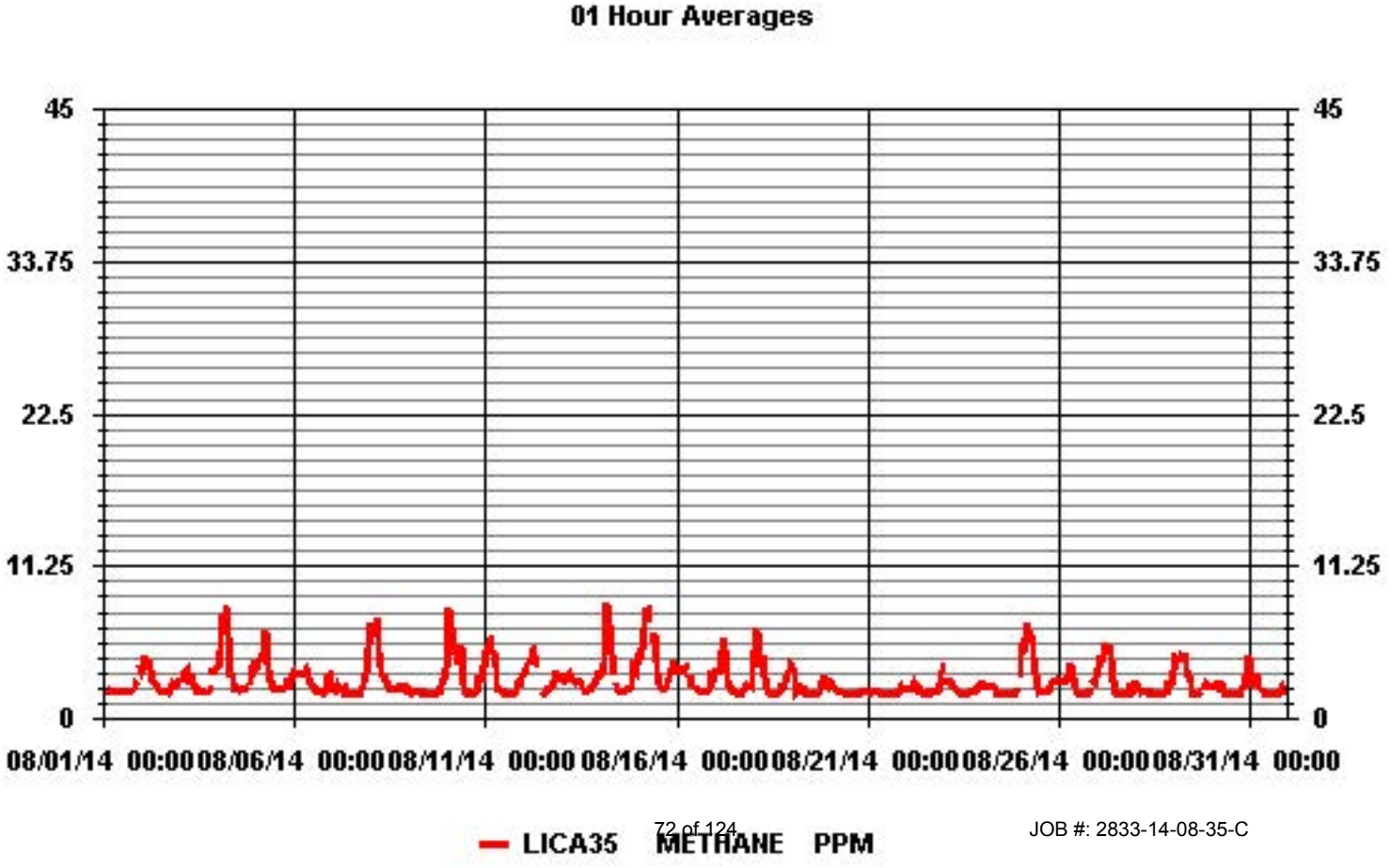
STATUS FLAG CODES

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:	709					
MAXIMUM 1-HR AVERAGE:	8.5	PPM	@ HOUR(S)	4	ON DAY(S)	14
MAXIMUM 24-HR AVERAGE:	4.6	PPM			ON DAY(S)	15
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	1.29		MONTHLY AVERAGE:		2.81	PPM



JOB #: 2833-14-08-35-C

Lakeland Industry & Community Association - Elk Point Site

AUGUST 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	2.18	2.56	2.05	2.72	2.36	2.29	2.13	2.04	2.02	2	1.99	1.98	1.97	2	1.99	1.99	1.99	2	2.09	2.32	4.04	4.28	**S**	4.93	4.93	2.4	24
2	3.82	3.88	8.71	4.71	4.57	4.62	4.43	3.46	2.93	2.79	2.67	2.46	2.11	2.12	2.11	2.12	2.09	2.07	2.37	3.04	2.5	**S**	2.77	4.53	8.71	3.3	24
3	3.65	4.25	3.13	8.91	5.31	3.19	4.75	3.57	2.92	2.46	2.44	2.21	2.09	2.06	2.02	2.01	1.99	2	2.25	2.84	**S**	4.12	4.05	4.53	8.91	3.3	24
4	4.3	6.73	7.72	8.67	8.2	9.99	9.2	7.56	4.79	4.08	2.9	2.91	2.52	2.33	2.3	2.44	2.39	2.41	2.33	**S**	3.28	4.19	5.64	4.99	9.99	4.9	24
5	4.51	4.55	4.77	5.76	4.76	8.12	8.1	5.08	3.97	3.43	2.87	2.28	2.28	2.47	2.59	2.63	2.34	2.58	**S**	2.69	3.67	3.57	3.05	3.62	8.12	3.9	24
6	3.97	3.67	3.57	3.37	3.28	3.42	3.47	4.12	3.71	3.24	3.15	2.65	2.6	2.28	2.13	2	2	**S**	2	2.59	3.36	3.53	4.66	3.38	4.66	3.1	24
7	2.44	2.26	3.58	2.43	2.46	2.53	2.64	2.64	2.03	1.91	1.88	1.87	1.84	1.86	2.01	2.04	**S**	2.02	2.97	2.73	3.59	4.46	6.9	9.15	9.15	3.0	24
8	***14.75***	7.24	8.61	7.99	11.38	5.79	6.02	3.91	4.86	3.73	3.7	2.27	2.32	2.53	2.66	**S**	2.36	3.16	2.76	2.87	2.38	2.82	2.8	2.26	***14.75***	4.7	24
9	2.31	2.03	2.19	2.18	2.06	2.06	2.15	2.1	1.94	1.93	1.92	1.9	1.92	1.89	**S**	1.9	1.92	1.9	1.94	2.01	3.39	5.23	3.34	5.06	5.23	2.4	24
10	12.04	10.58	8.35	7.33	6.78	5.35	5.21	5.4	8.28	7.91	3.63	2.27	2.12	**S**	1.98	1.95	2	1.97	2.95	3.89	3.55	3.78	3.48	5.16	12.04	5.0	24
11	6.17	6.05	6.42	6.64	5.76	5.3	4.39	3.88	2.53	2.22	2.1	1.94	**S**	1.91	1.9	1.86	1.86	1.83	1.99	2.02	5.06	4.06	4.82	3.55	6.64	3.7	24
12	4.06	4.26	5.05	5.07	5.34	5.75	5.55	5.43	**C**	**C**	**C**	**C**	**C**	2.05	2.16	2.21	2.3	2.34	2.59	3.31	3.95	3.58	3.57	3.22	5.75	3.8	24
13	3.47	4.83	3.17	3.35	3.73	3.77	3.78	3.36	3.35	3.11	**S**	3.09	2.93	2.63	2.23	2.15	2.46	2.46	2.36	2.72	2.82	3.22	3.64	4.18	4.83	3.2	24
14	3.82	4.59	8.6	10.18	12.87	7.27	8.57	6.43	4.14	**S**	2.63	2.38	2.09	2.02	2.02	2.13	2.24	2.21	2.38	3.23	8.34	4.44	3.95	4.96	12.87	4.8	24
15	5.32	5.87	5.65	9.83	9.2	8.8	8.46	8.63	**S**	7.38	6.81	5.61	3.74	3.18	2.53	2.44	2.19	2.41	3.76	3.45	3.93	3.93	5.17	4.22	9.83	***5.3***	24
16	4.39	4.16	3.84	3.91	4.26	4.08	4.26	**S**	3.3	2.78	2.61	2.55	2.38	2.29	2.2	2.1	2.11	2.38	2.1	2.38	2.97	4.87	3.51	3.22	4.87	3.2	24
17	4	4.9	3.91	3.83	6.76	6.44	**S**	7.2	3.19	2.64	2.4	2.11	2.13	2.2	2.1	2	1.89	2.51	2.9	2.91	2.53	2.45	2.85	3.32	7.2	3.4	24
18	6.97	7.3	7.88	8.2	5.14	**S**	5.06	4.84	2.76	2.14	2.13	2.08	1.9	1.91	1.92	1.88	2.27	2.71	2.76	2.34	3.88	4.24	3.96	7.74	8.2	4.0	24
19	5.17	6.8	2.17	2.09	**S**	2.55	2.65	2.55	2.54	1.97	1.97	1.86	1.92	1.9	1.85	1.85	1.9	2.28	3.39	3.57	3.19	6.25	3.56	2.85	6.8	2.9	24
20	3.31	3.25	2.83	**S**	2.17	2.13	2.11	2.1	2.07	1.97	1.91	1.87	1.89	1.91	1.89	1.86	1.87	1.91	1.95	2.32	2.04	1.98	2.27	2.4	3.31	2.2	24
21	2.11	2.02	**S**	1.99	1.99	1.99	2.01	1.97	1.93	1.91	1.91	1.89	1.88	1.89	1.89	1.89	1.9	1.9	1.93	1.95	2.62	3.1	2.42	2.25	3.1	2.1	24
22	2.36	**S**	2.33	3.17	2.37	3.04	2.65	3.7	2.31	2.07	2	1.91	1.93	1.95	1.93	1.93	1.91	1.93	1.96	2.1	2.07	3.01	4.41	4.53	4.53	2.5	24
23	**S**	3.36	3.07	3.01	3.15	2.9	2.65	2.29	2.28	2	1.94	1.91	1.9	1.9	1.89	1.91	1.93	1.95	2.05	2.21	2.2	2.64	3.06	**S**	3.36	2.4	24
24	2.8	2.47	2.43	2.5	2.5	2.43	2.45	2.39	2.16	1.98	1.9	1.89	1.88	1.87	1.88	1.88	1.88	1.93	2	2.16	2.07	2.29	**S**	11.83	11.83	2.6	24
25	8.15	6.58	5.33	6.95	11.34	9.43	7.48	7.74	5.84	4.06	2.77	2.08	2.15	2.08	2	1.96	2.01	2.64	2.83	3.68	4.15	**S**	3.15	3.12	11.34	4.7	24
26	2.96	2.79	2.79	2.89	3.16	3.27	3.75	4.92	4.72	3.86	2.9	2.14	1.95	1.91	1.86	1.87	1.93	1.93	2.24	2.32	**S**	3.2	2.97	3.24	4.92	2.9	24
27	4.55	5.32	5.08	6.49	6.49	7.34	7.89	6.04	6.13	4.93	4.05	2.51	1.84	1.83	1.84	1.82	1.95	2.01	2.14	**S**	3.14	3.71	2.26	2.27	7.89	4.0	24
28	4.05	2.66	2.76	2.05	2.21	2.37	2.21	2.34	2.07	1.96	1.96	1.93	1.91	1.87	1.87	1.84	1.91	1.86	**S**	2.6	4.05	4.33	3.34	7.27	7.27	2.7	24
29	7.94	3.99	4.61	4.7	5	4.84	4.84	5.02	4.31	3.55	3.06	2.5	2.02	1.96	2.04	2	1.95	**S**	2.89	3.56	2.73	2.7	2.45	2.4	7.94	3.5	24
30	2.58	2.92	2.6	2.54	3.32	2.94	3.04	2.28	2.03	1.97	1.89	1.87	1.85	1.88	1.84	1.98	**S**	2.14	2.32	3.13	2.77	5.35	6.34	5.36	6.34	2.8	24
31	5.11	2.76	2.72	4.6	4.96	2.84	2.84	2.28	2.03	2.05	1.94	1.89	1.87	1.9	1.96	**S**	1.89	2.02	2.29	2.4	2.94	2.96	4.31	3.05	5.11	2.8	24
HOURLY MAX	15	11	9	10	13	10	9	9	8	8	7	6	4	3	3	3	2	3	4	4	8	6	7	12			
HOURLY AVG	4.8	4.5	4.5	4.9	5.1	4.6	4.5	4.2	3.3	3.0	2.6	2.3	2.1	2.1	2.1	2.0	2.0	2.2	2.4	2.7	3.4	3.7	3.7	4.4			

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 708

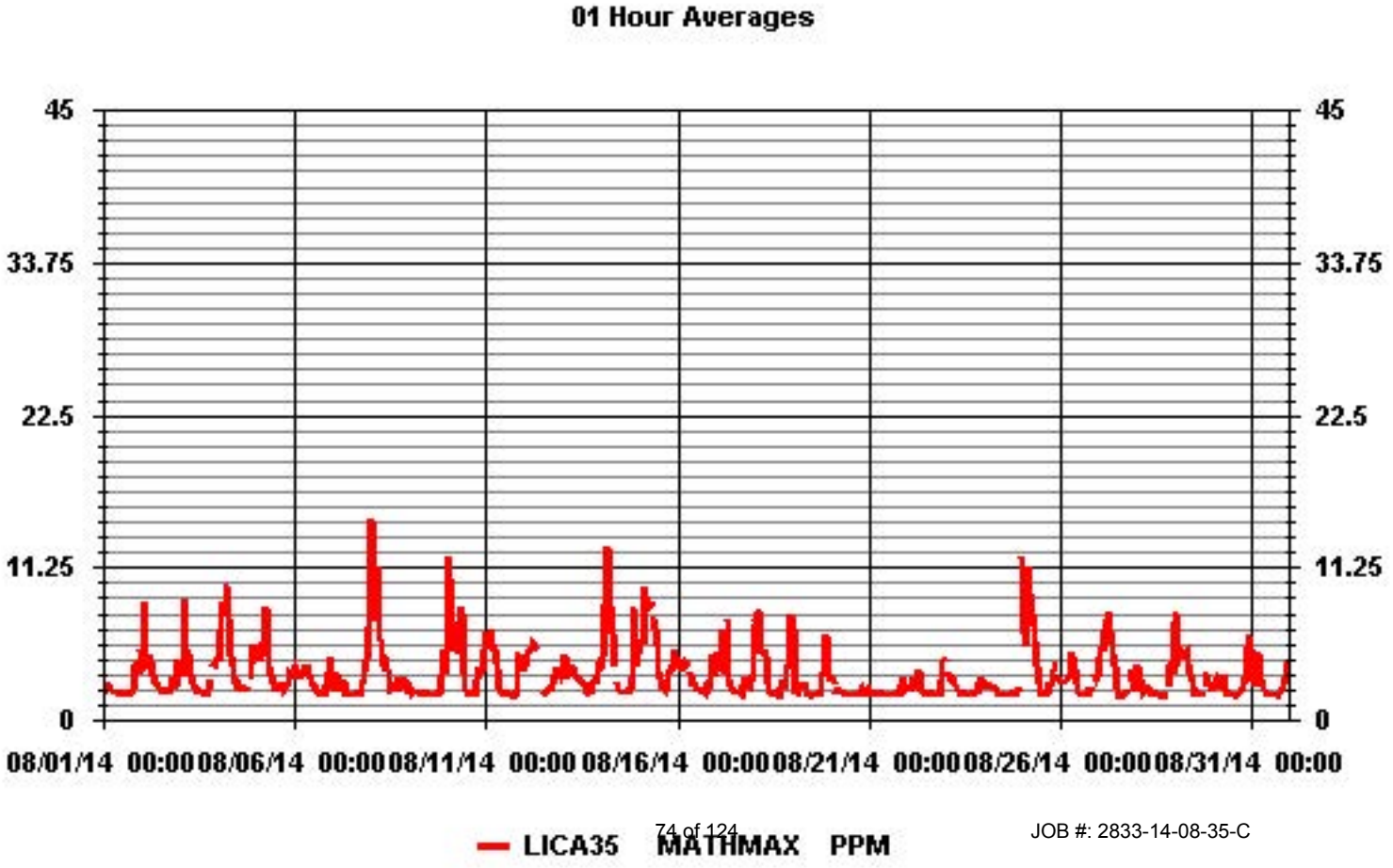
MAXIMUM INSTANTANEOUS VALUE: 14.75 PPM @ HOUR(S) 0 ON DAY(S) 8

VAR-VARIOUS

IZS CALIBRATION TIME: 31 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 1.92



JOB #: 2833-14-08-35-C

LICA35
METHANE / WDR Joint Frequency Distribution (Percent)

August 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	4.51	2.53	2.96	2.82	3.52	5.78	4.51	2.82	.98	.98	.70	7.05	10.29	8.74	9.16	2.96	70.38
< 10.0	.14	.56	.42	1.41	3.66	5.64	1.69	.98	.42	.56	.56	2.53	3.52	5.78	1.12	.56	29.61
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.65	3.10	3.38	4.23	7.19	11.42	6.20	3.80	1.41	1.55	1.26	9.59	13.82	14.52	10.29	3.52	

Calm : .00 %

Total # Operational Hours : 709

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	32	18	21	20	25	41	32	20	7	7	5	50	73	62	65	21	499
< 10.0	1	4	3	10	26	40	12	7	3	4	4	18	25	41	8	4	210
< 50.0																	
>= 50.0																	
Totals	33	22	24	30	51	81	44	27	10	11	9	68	98	103	73	25	

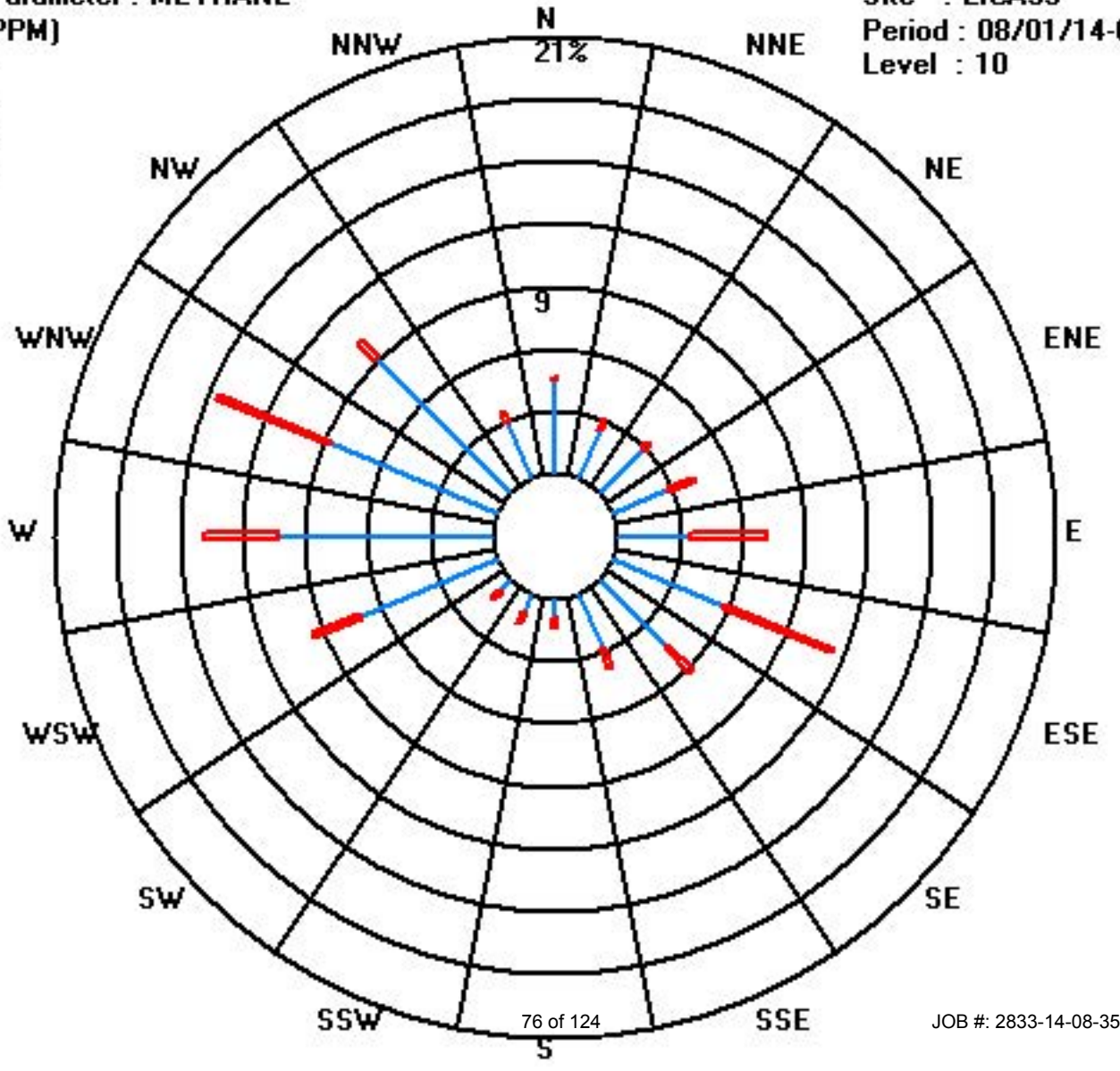
Calm : .00 %

Total # Operational Hours : 709

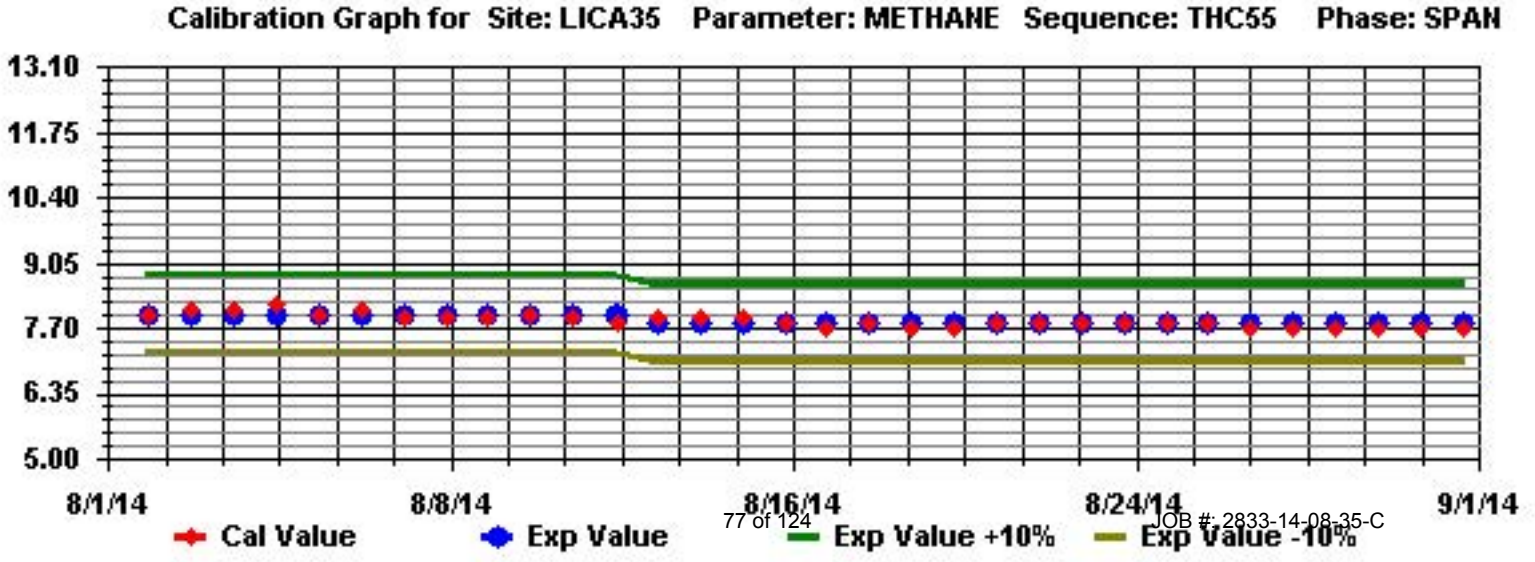
Logger : 35 Parameter : METHANE
Class Limits (PPM)

>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA35
Period : 08/01/14-08/31/14
Level : 10



JOB #: 2833-14-08-35-C


Calibration Graph for Site: LICA35 Parameter: METHANE Sequence: THC55 Phase: SPAN
13.10
11.75
10.40
9.05
7.70
6.35
5.00
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Non-Methane Hydrocarbons

Lakeland Industry & Community Association - Elk Point Site

AUGUST 2014

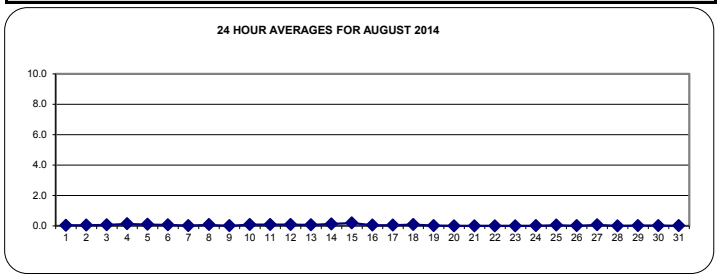
NON-METHANE HYDROCARBONS (NMHC) hourly averages in ppm

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	0.1	0	0	0	0	0	0.1	0	0	0	0	0	0.1	0.1	0.1	0	0	0.1	0	**S**	0.2	0.2	0.0	24
2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0.1	0	0.1	0	0	0	0	0	0.1	0	0	0	**S**	0.1	0	0.2	0.1	24
3	0	0	0	0.1	0.1	0	0.1	0	0	0.1	0.1	0	0	0	0.1	0.1	0	0.1	0.1	0	**S**	0.2	0.2	0.1	0.2	0.1	24
4	0.2	0.2	0.3	0.3	***0.4***	0.3	0.3	0.3	0.1	0.1	0	0	0	0.1	0	0	0	0	0	**S**	0.1	0.2	0.2	0.1	***0.4***	0.1	24
5	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0	0.1	0	0	0	0	0.1	0	0	**S**	0	0.1	0	0.1	0.1	0.3	0.1	24
6	0.2	0.1	0	0	0	0.1	0.1	0.1	0	0.1	0.1	0	0	0.1	0	0	0	**S**	0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0.1	0.2	0.1	0.2	0.0	24
8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0	0.1	0	0	0	0	**S**	0.1	0	0	0	0	0	0	0	0.2	0.1	24
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0.1	0	0.1	0.1	0.0	24
10	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0	0	0	**S**	0	0	0.1	0	0	0	0.1	0.1	0.1	0.1	0.2	0.1	24
11	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.1	0.1	0	0	0	**S**	0	0	0	0	0	0	0.1	0	0.1	0	0	0.3	0.1	24
12	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.1	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0.2	0.1	0	0	0.2	0.1	24
13	0	0.1	0.1	0.1	0.1	0.1	0	0	0.1	0	**S**	0.1	0.1	0.1	0	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0.1	0.1	24
14	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	**S**	0.1	0.1	0.1	0.1	0.1	0	0	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.1	24
15	0.3	0.2	0.2	0.3	0.3	***0.4***	***0.4***	***0.4***	**S**	0.2	0.3	0.2	0.2	0	0	0	0	0	0.1	0.1	0.2	0.2	0.1	0.2	***0.4***	***0.2***	24
16	0.1	0.1	0.1	0.2	0.1	0.1	0.1	**S**	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0.2	0.1	24
17	0	0.2	0.1	0	0.2	0.2	**S**	0.2	0.1	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0.2	0.0	24
18	0.1	0.2	0.2	0.3	0.1	**S**	0.2	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0.1	0	0.2	0.1	0.2	0.3	0.1	24
19	0.1	0.1	0	0	**S**	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	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	0.1	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	0.1	0.1	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	0	**S**	0.1	0.0	24
24	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	**S**	0	0.1	0.0	24
25	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0.2	0.0	24
26	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	0.1	0.1	0.0	24
27	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0.2	0.1	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	0.1	0.1	0.0	24
29	0	0	0.1	0.1	0.1	0	0.1	0.1	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0	0	0	0.1	0.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**S**	0	0	0	0.1	0.2	0.1	0.2	0.0	24
31	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	0.1	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1			

STATUS FLAG CODES

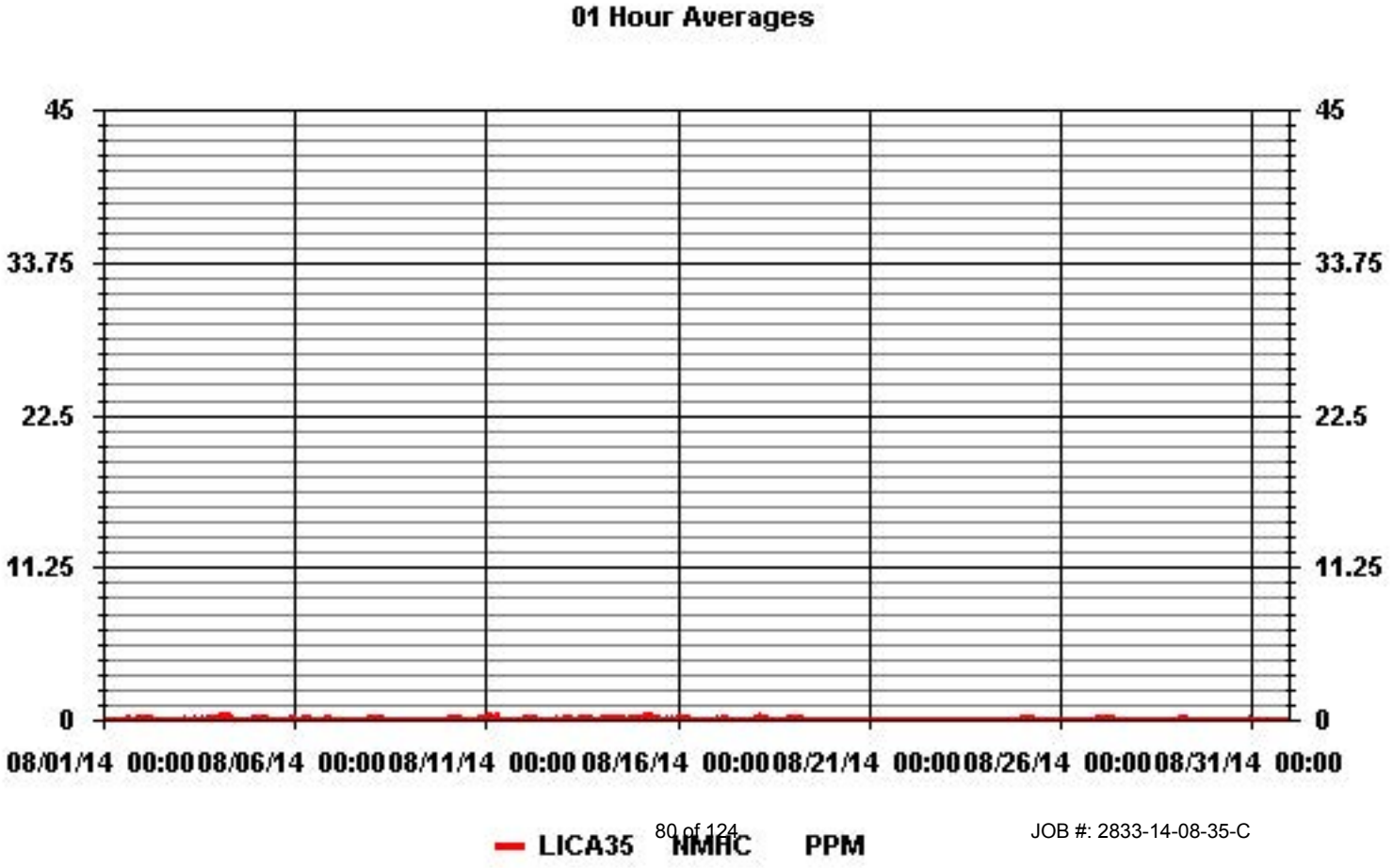
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	252					
MAXIMUM 1-HR AVERAGE:	0.4	PPM	@ HOUR(S)	VAR	ON DAY(S)	4, 15
MAXIMUM 24-HR AVERAGE:	0.2	PPM			ON DAY(S)	15
				VAR-VARIOUS		

IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.08		MONTHLY AVERAGE:	0.05	PPM



JOB #: 2833-14-08-35-C

Lakeland Industry & Community Association - Elk Point Site

AUGUST 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	0.26	0.26	0.18	0.15	0.12	0	0.15	0.28	0.16	0.16	0.15	0.19	0.21	0.27	0.32	0.51	0.33	0.49	0.22	0.27	0.22	0.28	**S**	0.26	0.51	0.2	24
2	0.28	0.24	0.29	0.24	0.23	0.2	0.24	0.18	0.21	0.24	0.29	0.31	0.22	0.22	0.23	0.14	0.26	0.29	0.28	0.23	0.22	**S**	0.26	0.28	0.31	0.2	24
3	0.22	0.25	0.32	0.25	0.27	0.31	0.31	0.22	0.25	0.34	0.21	0.32	0.28	0.25	0.28	0.29	0.24	0.72	0.33	0.37	**S**	0.32	0.29	0.29	0.72	0.3	24
4	0.43	0.35	0.4	0.41	0.46	0.42	0.64	0.56	0.42	0.31	0.28	0.24	0.3	0.27	0.31	0.29	0.25	0.28	0.27	**S**	0.25	0.33	0.3	0.27	0.64	0.3	24
5	0.3	0.32	0.25	0.53	0.45	0.3	0.44	0.26	0.22	0.21	0.24	0.31	0.3	0.33	0.23	0.24	0.21	0.28	**S**	0.28	0.2	0.27	0.2	0.19	0.53	0.3	24
6	0.25	0.23	0.21	0.19	0.21	0.2	0.24	0.26	0.25	0.26	0.27	0.27	0.24	0.26	0.28	0.28	0.37	**S**	0.3	0.28	0.32	0.33	0.25	0.3	0.37	0.3	24
7	0.14	0.2	0.17	0.16	0.15	0	0.22	0.15	0	0.13	0.38	0	0	0.14	0	0.18	**S**	0.19	0.15	0	0.11	0.26	0.34	0.31	0.38	0.1	24
8	0.31	0.3	0.33	0.33	0.44	0.34	0.3	0.22	0.34	0.17	0.23	0	0	0.21	0.19	**S**	0.19	0.16	0.21	0	0.16	0.26	0.21	0	0.44	0.2	24
9	0	0	0	0.18	0.1	0	0.2	0.02	0	0	0	0.11	0.1	0	**S**	0	0.07	0	0.34	0.85	0.16	0.21	0.23	0.23	0.85	0.1	24
10	0.32	0.3	0.37	0.31	0.26	0.25	0.25	0.24	0.25	0.31	0.15	0	0.22	**S**	0.19	0	0.18	0	0.81	0.28	0.2	0.27	0.31	0.24	0.81	0.2	24
11	0.34	0.3	0.33	0.33	0.3	0.9	***2.17***	1.06	1.04	0.18	0.15	0.23	**S**	0.02	0.15	0	0.3	0.34	0.81	1.45	0.37	0.22	0.27	0.26	***2.17***	***0.5***	24
12	0.22	0.32	0.31	0.23	0.26	0.3	0.29	0.56	**C**	**C**	**C**	**C**	**C**	0.22	0.25	0.25	0.25	0.14	0.3	0.29	0.25	0.21	0.27	0.22	0.56	0.3	24
13	0.25	0.21	0.22	0.17	0.22	0.2	0.27	0.28	0.25	0.21	**S**	0.24	0.22	0.26	0.2	0.27	0.18	0.17	0.22	0.28	0.25	0.21	0.18	0.22	0.28	0.2	24
14	0.14	0.25	0.3	0.37	0.5	0.47	0.38	0.27	0.23	**S**	0.32	0.29	0.3	0.22	0.27	0.23	0.18	0.31	0.29	0.25	0.35	0.32	0.26	0.3	0.5	0.3	24
15	0.81	0.3	0.32	0.39	0.54	0.96	0.62	0.47	**S**	0.45	0.46	0.33	0.33	0.16	0.18	0.22	0.28	0.28	0.29	0.25	0.31	0.29	0.28	0.24	0.96	0.4	24
16	0.28	0.31	0.23	0.31	0.24	0.23	0.33	**S**	0.25	0.17	0.27	0.21	0.14	0.16	0.13	0.23	0.16	0.17	0.16	0.25	0.24	0.24	0.24	0.23	0.33	0.2	24
17	0.3	0.32	0.2	0.23	0.32	0.36	**S**	0.41	0.25	0.28	0.21	0.29	0.22	0.3	0.2	0.18	0	0.17	0.29	0.25	0.25	0.21	0.24	0.35	0.41	0.3	24
18	0.35	0.34	0.36	0.4	0.25	**S**	0.56	0.46	0.24	0.18	0.15	0.19	0.27	0.23	0.19	0.21	0.07	0.14	0.25	0.17	0.22	0.65	0.57	1.56	1.56	0.3	24
19	0.36	0.3	0.14	0.15	**S**	0.22	0.3	0.15	0.17	0.23	0.11	0.14	0.15	0.23	0	0.12	0.14	0.08	0.22	0.22	0.2	0.23	0.15	0.22	0.36	0.2	24
20	0.14	0.19	0.18	**S**	0.11	0	0.16	0	0.16	0	0	0.18	0.14	0.12	0	0	0	0	0.14	0.15	0	0	0	0.12	0.19	0.1	24
21	0.26	0.1	**S**	0.29	0	0.11	0	0	0	0	0	0	0	0	0	0.12	0	0	0.32	0	0	0.14	0	0	0.32	0.1	24
22	0	**S**	0.09	0.22	0.06	0	0.08	0.17	0.13	0	0	0	0	0	0	0	0	0	0	0	0	0.11	0.12	0.23	0.18	0.23	0.1	24
23	**S**	0.11	0.26	0.12	0.12	0	0.14	0.12	0.23	0	0	0	0	0	0	0	0	0.11	0	0.13	0.16	0.2	0.09	**S**	0.26	0.1	24
24	0	0.21	0	0.18	0.19	0.16	0.1	0.16	0	0	0.19	0	0.08	0	0.12	0	0.13	0	0	0.78	0.23	0	**S**	0.28	0.78	0.1	24
25	0.29	0.27	0.23	0.31	0.44	0.31	0.31	0.31	0.25	0.18	0.1	0	0	0	0	0	0.22	0	0	0.15	0.18	**S**	0.15	0.16	0.44	0.2	24
26	0.2	0.12	0.22	0.14	0.16	0.27	0.18	0.21	0.22	0.27	0.24	0.12	0	0.13	0.12	0.11	0.13	0.08	0	0.13	**S**	0.23	0.19	0.26	0.27	0.2	24
27	0.23	0.24	0.28	0.3	0.31	0.24	0.27	0.32	0.29	0.24	0.27	0	0	0	0	0	0	0	0.08	**S**	0.2	0.23	0	0.19	0.32	0.2	24
28	0.23	0.12	0.12	0.12	0.14	0.12	0.18	0.12	0.25	0.09	0.13	0	0	0	0.2	0.11	0	0	**S**	0.14	0	0.13	0.02	0.28	0.28	0.1	24
29	0.33	0.21	0.31	0.2	0.22	0.2	0.21	0.25	0.17	0.17	0.13	0.12	0	0	0	0	0	**S**	0.11	0.09	0.24	0	0.15	0	0.33	0.1	24
30	0.18	0.11	0	0.12	0.14	0.15	0.13	0	0	0	0	0	0	0	0	0	**S**	0	0	0.15	0.11	0.22	0.28	0.23	0.28	0.1	24
31	0.18	0.11	0.21	0.17	0.19	0.23	0.13	0.2	0	0.17	0	0.14	0	0	0	**S**	0	0	0	0.08	0.13	0.22	0.15	0.11	0.23	0.1	24
HOURLY MAX	1	0	0	1	1	1	2	1	1	0	0	0	0	0	0	1	0	1	1	1	0	1	1	2			
HOURLY AVG	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	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: 571

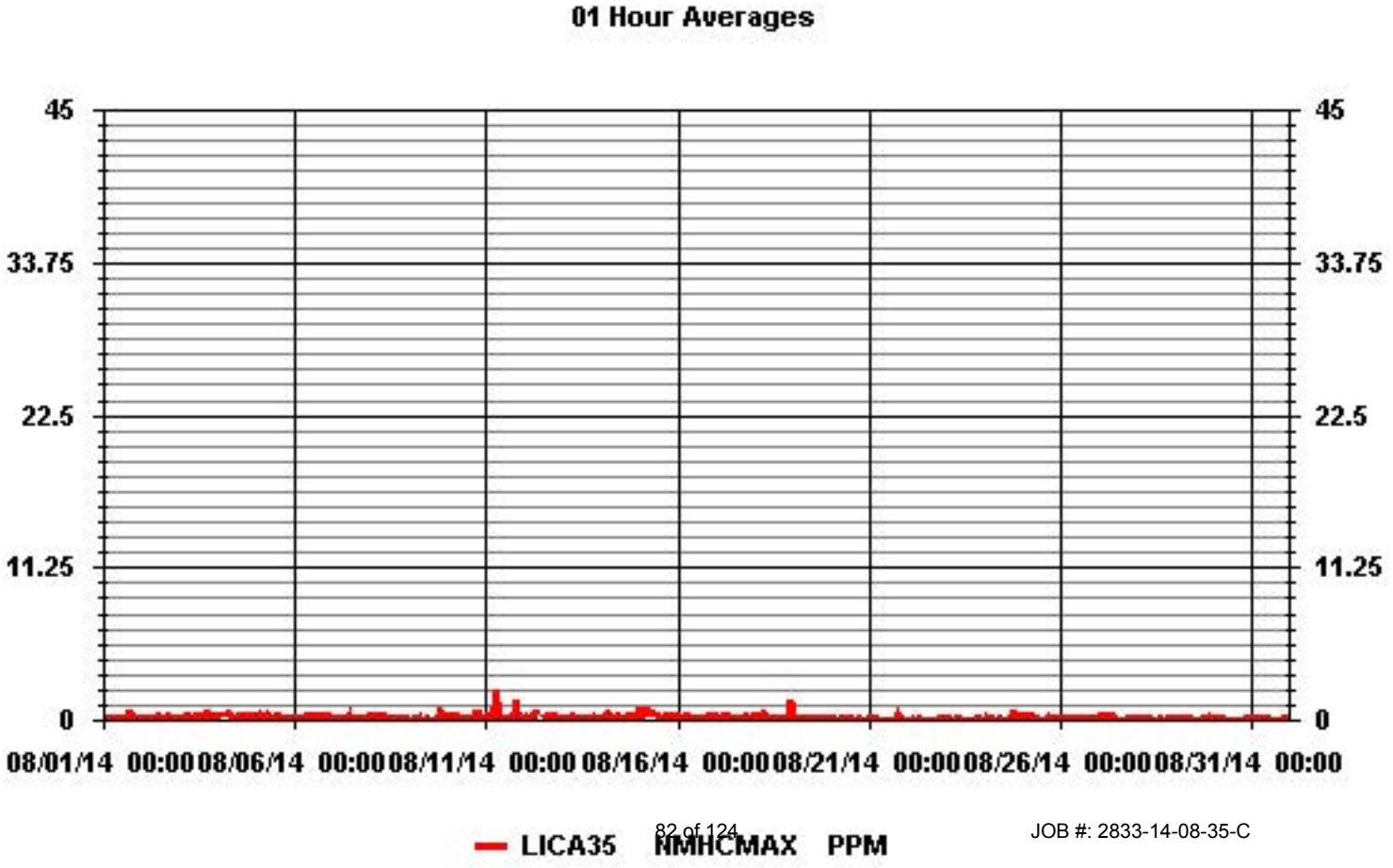
MAXIMUM INSTANTANEOUS VALUE: 2.17 PPM @ HOUR(S) 6 ON DAY(S) 11

VAR-VARIOUS

IZS CALIBRATION TIME: 31 HRS OPERATIONAL TIME: 744 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 0.18



JOB #: 2833-14-08-35-C

LICA35
NMHC / WDR Joint Frequency Distribution (Percent)

August 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	4.65	2.96	3.24	4.23	7.05	11.14	6.20	3.66	1.41	1.55	1.12	9.30	13.39	13.96	10.01	3.52	97.46
< .5	.00	.14	.14	.00	.14	.28	.00	.14	.00	.00	.14	.28	.42	.56	.28	.00	2.53
< 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	4.65	3.10	3.38	4.23	7.19	11.42	6.20	3.80	1.41	1.55	1.26	9.59	13.82	14.52	10.29	3.52	

Calm : .00 %

Total # Operational Hours : 709

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< .2	33	21	23	30	50	79	44	26	10	11	8	66	95	99	71	25	691
< .5		1	1		1	2		1			1	2	3	4	2		18
< 1.0																	
< 2.0																	
< 4.0																	
>= 4.0																	
Totals	33	22	24	30	51	81	44	27	10	11	9	68	98	103	73	25	

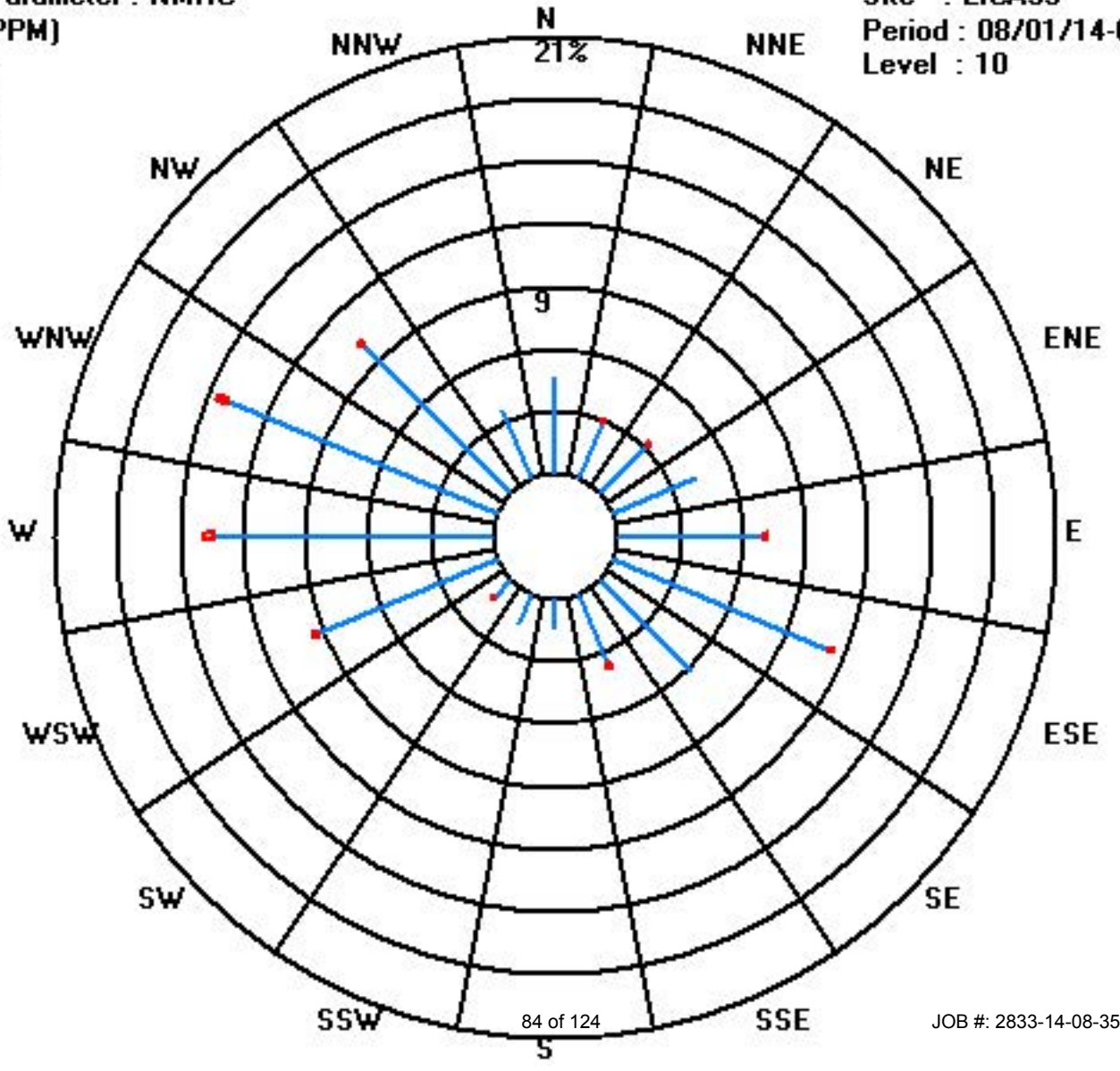
Calm : .00 %

Total # Operational Hours : 709

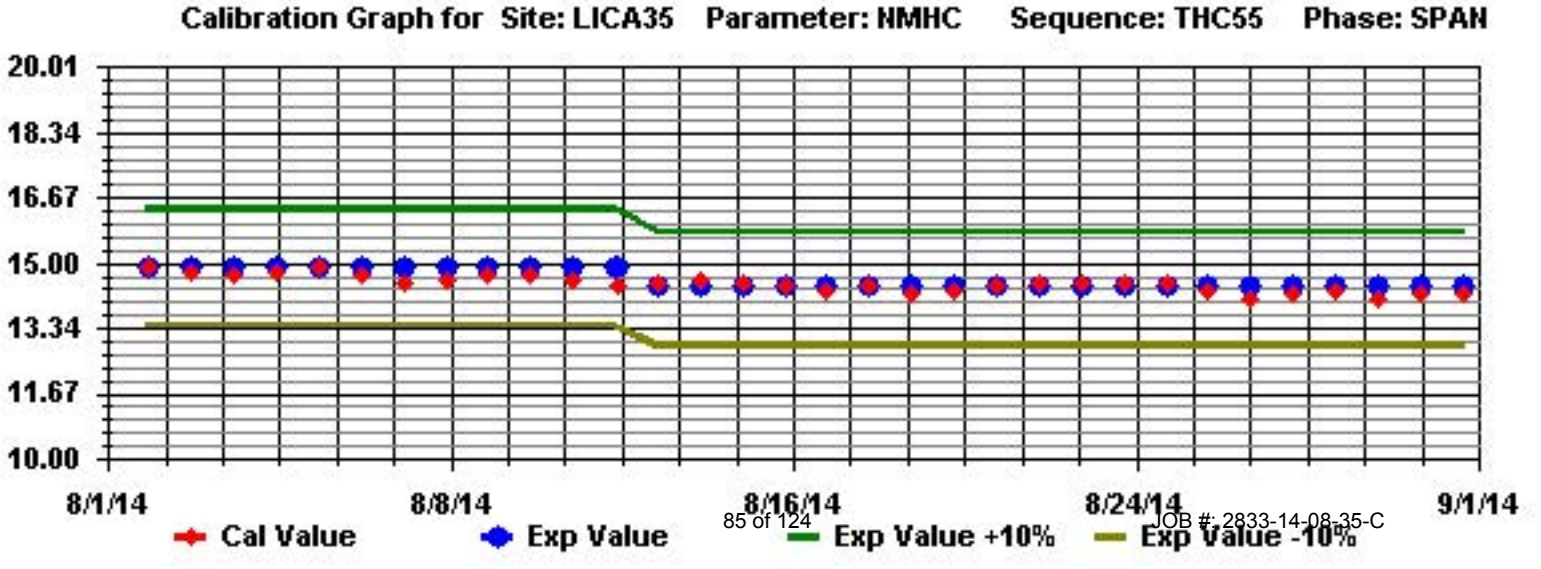
Logger : 35 Parameter : NMHC
Class Limits (PPM)

>= 4.0
< 4.0
< 2.0
< 1.0
< .5
< .2

Site : LICA35
Period : 08/01/14-08/31/14
Level : 10



JOB #: 2833-14-08-35-C


Calibration Graph for Site: LICA35 Parameter: NMHC Sequence: THC55 Phase: SPAN
20.01
18.34
16.67
15.00
13.34
11.67
10.00
8/1/14
8/8/14
8/16/14
8/24/14
9/1/14
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Vector Wind Speed

Lakeland Industry & Community Association - Elk Point Site

AUGUST 2014

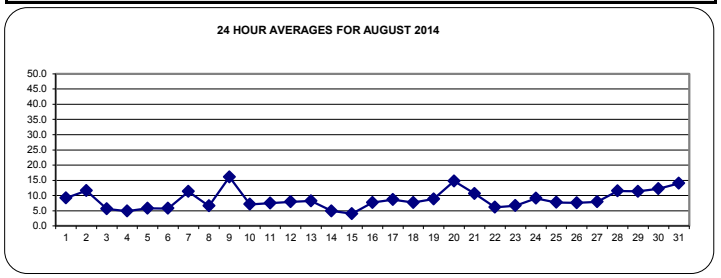
WIND SPEED (WS) hourly averages in km/hr

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	7.7	11.3	6.4	8.3	7.1	8.5	7.2	13	13.7	14.5	16.3	14.9	9.9	12.6	13.6	7.6	7.1	9.3	6.8	3.9	7.1	4.9	3.5	4.9	16.3	9.2	24
2	3.9	4.4	5.8	4.8	7.3	6.9	9.2	12	12.2	13.2	14.8	14.5	13.9	18	19.8	19.3	17.8	14.7	12.7	10.7	10.5	12.2	11.3	9	19.8	11.6	24
3	6.1	7.8	7.7	5.8	6.4	3.7	5.6	5.1	3.3	5.6	7.8	10	9.3	6.7	6.8	6.6	8.7	6.7	5	0.6	1.7	4.5	1.9	1.3	10.0	5.6	24
4	0.8	2	3.4	1.7	0.5	3.7	2	2.5	1.4	5	4.2	9.3	11.3	10.1	8.5	6.6	6.8	5.6	8.2	6	6.4	5.2	4.4	1.5	11.3	4.9	24
5	0.7	0.5	1.6	0.4	1.2	2.1	3.9	5.4	5	9.3	9.9	10.4	14.1	10.9	16.8	9.4	5.1	4.1	1.3	7.1	6.7	2.3	4.8	5.8	16.8	5.8	24
6	4.1	4.3	6.1	2.9	2.1	3	1.3	5	6.5	2.1	7.1	2.5	0.7	6.4	10.7	12	11.6	7.8	5.1	5.7	8	6.5	4.5	12.2	12.2	5.8	24
7	12.6	12.3	10.6	10.1	8.4	12.1	12.5	14.1	12.5	12	14.7	18.5	18.6	14.9	19.8	12.4	11	11	10.6	8.8	5.7	4.8	3.2	0.5	19.8	11.3	24
8	1	2.2	2	0.8	6.2	1.4	1.8	2	2	6.3	10	10.9	9.4	6.8	11.1	15.1	3.4	10.7	3.9	9.5	7.3	4.1	10.4	19.1	19.1	6.6	24
9	21.9	20.3	17.9	15.6	20.8	24.5	22.8	24.2	28.9	21.8	18.3	21.7	24.3	17.7	21.1	18.6	17.5	12.4	8.1	1.5	1.4	1.7	0.8	1.8	28.9	***16.1***	24
10	3.1	3.2	1.6	0.7	2.1	0.1	0.6	2.2	1.8	2.2	9.3	14.1	15.4	15.8	18.1	15.5	18.1	19.5	13.2	6.3	3	1.4	1.8	1.3	19.5	7.1	24
11	1.5	0.3	0.9	0.3	0.4	2.1	3.6	5.5	7.7	7.6	13.9	19.3	19.6	21.9	18.4	18.2	12.5	9.5	4.9	1.9	0.7	2.7	4	3.2	21.9	7.5	24
12	2.2	1.9	2	1.8	4.2	3.8	3.1	4.1	4.5	6	11.5	13.8	13.8	13.9	13.3	14.2	12.2	13.6	10.7	7.8	8	7.9	7.1	9.3	14.2	7.9	24
13	7	8.6	9.8	9.8	9.7	9.4	11.5	17.9	12.4	12.8	11.2	6.1	5.6	4.4	12.1	3.6	5.1	13.4	5.3	7.2	6.4	4.2	2.3	1.8	17.9	8.2	24
14	0.6	0.2	1.8	4.9	4.7	1.8	2.1	4	7.8	2.6	1.9	8.8	12	10.5	8.5	6	6.3	5.9	4.9	4.4	5.5	6.3	4.3	2.4	12.0	4.9	24
15	1.4	3.8	3.4	3.9	3	0.9	0.5	0.8	0.7	1.5	3.5	3.6	4.4	6	7.7	8.6	8	6.5	6.8	6.5	4.7	1.3	3.1	5.3	8.6	4.0	24
16	8.8	6.5	4.1	5.6	7.3	7.1	5.6	6.9	8.8	10.1	11.8	10	9	12	14.7	12.9	10.2	8.8	5.7	3.5	1.9	6.7	4.5	1.7	14.7	7.7	24
17	1.6	0.9	0.7	3.1	2.4	1.9	1.8	4.7	6.7	7.2	11.2	20	15.5	6.8	13	14.2	18.1	14.8	12.2	13.2	10.2	9.6	10.4	7.2	20.0	8.6	24
18	6.4	4.3	5.7	2.1	1.6	0.7	0.8	5.1	9	8.3	8.6	11.4	14.2	16.4	14.2	18.7	20.9	14.3	6.2	4.4	4.4	2.1	3.3	1.3	20.9	7.7	24
19	2.8	12.2	10.5	9	10	6.6	1.5	2.8	4.2	7.3	10.3	10.3	10.4	11.2	10.5	13.6	12.9	12.6	9.9	6.2	8.7	10.5	7.6	10.5	13.6	8.8	24
20	8.2	7.1	8.4	13.7	16.5	16	11.4	16.5	17.6	20.9	22.9	21.4	22.9	20.7	19.1	17.5	17.1	14.8	11	9.3	16	7.8	8.1	9.6	22.9	14.8	24
21	9.1	10.1	10.4	11.6	9.9	10.2	12	13.8	11.8	12.7	14.1	10.4	11.8	12.2	12.8	12.9	13.7	10.9	8.3	6.9	7.2	6.6	7.8	8	14.1	10.6	24
22	7.8	6.4	6	5.3	3	2.9	0.4	2.3	6.5	8	8.1	9.2	10.8	10.5	12.7	7.8	6	6.5	3.2	2.1	4.2	4.9	7.5	5.7	12.7	6.2	24
23	5.8	3.8	4.5	3.7	4.7	2.4	3.6	5.2	7.6	11.6	11.4	10.9	9.8	7.2	8.9	8.9	7.5	6.3	5.9	3.3	4.2	5.9	8.6	8.6	11.6	6.7	24
24	6.6	6.4	4.6	6.8	8	7	5.9	8	9.8	11.9	15.7	16	15.4	16.7	14.2	15.6	14.1	9.4	5.9	5.4	2.5	4.1	3.5	5	16.7	9.1	24
25	5	6.8	4.9	3.1	1.7	0.4	1.7	3.9	7.2	7.4	8.6	11.9	9.8	9.8	10.9	9.9	10.3	11.6	8.9	10.4	12.1	11.7	11	6.5	12.1	7.7	24
26	6.9	8.7	8.4	7.8	7.7	4.8	4.4	5.5	4.8	4.3	5.1	9.3	13.6	16.9	20	18.6	11.4	9.9	6.5	5.8	0.8	0.5	0.2	0.6	20.0	7.6	24
27	0.5	1.6	1.9	2.4	1.5	2.6	3.5	0.5	1.2	4.5	2.9	9	18.7	22.1	21.2	17.7	14.8	9.1	7.8	7.4	5.8	14.2	12	8.2	22.1	8.0	24
28	9.6	4	8	9.9	10.6	11.2	10.6	13.1	14.8	16.3	15.4	15.7	17.2	18.1	17	17.3	12.3	16	9.4	7.8	7.7	5.1	4.2	4.8	18.1	11.5	24
29	3	0.5	1.7	3	3.4	4.8	6.1	6.2	9.4	9.3	12.3	17.2	21.6	21.7	22.1	17.7	15.2	12.3	11.4	11.5	11	13.1	19.1	18.8	22.1	11.4	24
30	18.1	7.4	5.5	6.3	4.4	5.5	6.1	8.1	16.6	22.5	23.7	24	24.3	24.5	20.7	16.7	16.7	13.8	8.6	5.2	3.8	2.6	3.6	5.7	24.5	12.3	24
31	5.5	9.8	7.4	3.6	5.9	9.3	10.6	10.5	12.6	12.3	16	23.4	24.4	27.9	23.4	***30.6***	27	20.8	10.1	9	10.5	7.6	10.8	7.2	***30.6***	14.0	24
HOURLY MAX	21.9	20.3	17.9	15.6	20.8	24.5	22.8	24.2	28.9	22.5	23.7	24.0	24.4	27.9	23.4	30.6	27.0	20.8	13.2	13.2	16.0	14.2	19.1	19.1			
HOURLY AVG	5.8	5.8	5.6	5.4	5.9	5.7	5.6	7.4	8.7	9.6	11.4	13.2	13.9	13.9	14.9	13.7	12.2	11.1	7.7	6.4	6.3	5.9	6.1	6.1			

STATUS FLAG CODES

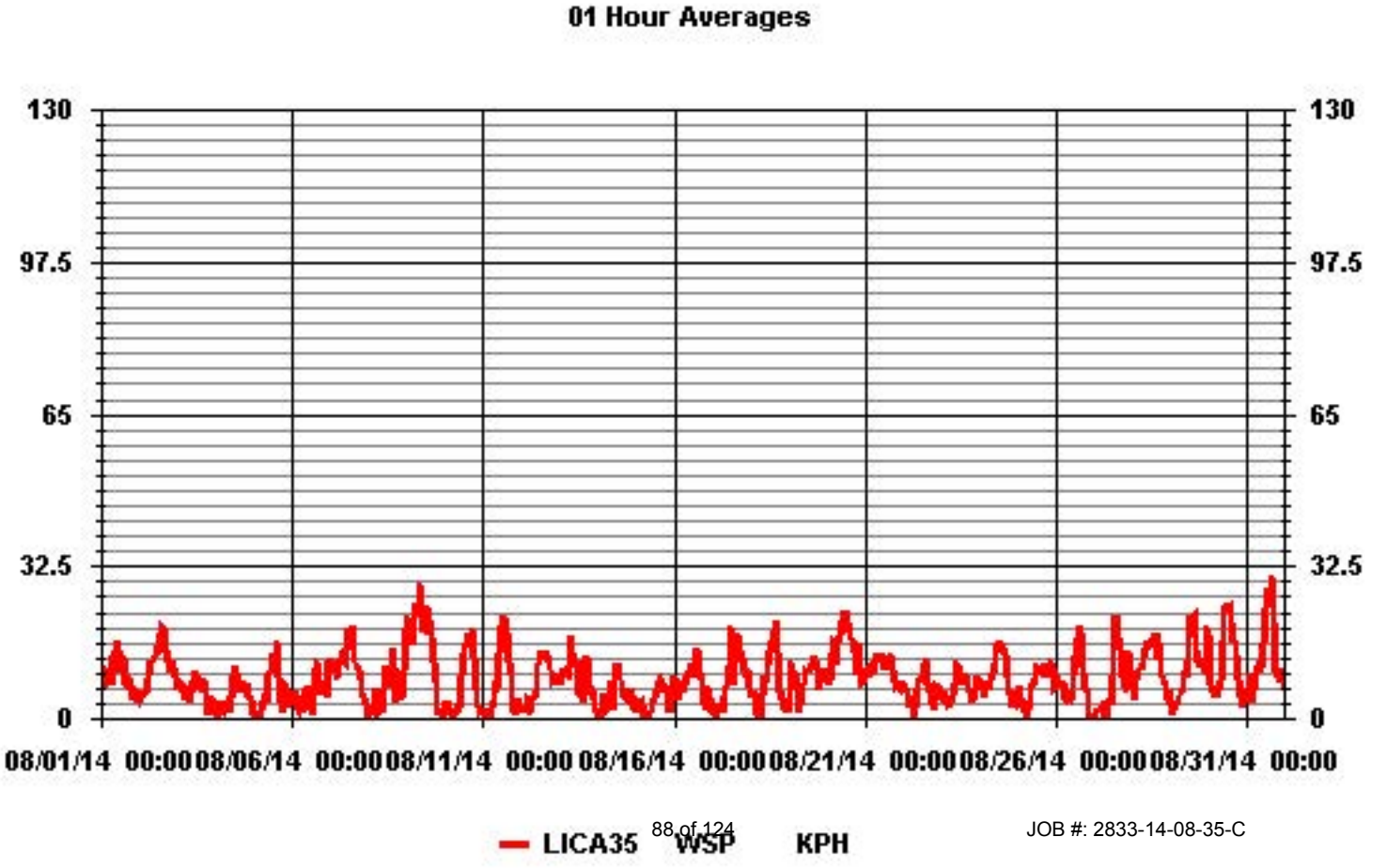
C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- MAINTENANCE	R	- RECOVERY
S	- DAILY ZERO/SPAN CHECK	X	- MACHINE MALFUNCTION
P	- POWER FAILURE	O	- OPERATOR ERROR
G	- OUT FOR REPAIR	K	- COLLECTION ERROR



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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	744						
MAXIMUM 1-HR AVERAGE:	30.6	KPH	@ HOUR(S)	1	ON DAY(S)	31	
MAXIMUM 24-HR AVERAGE:	16.1	KPH			ON DAY(S)	9	
					VAR-VARIOUS		
			OPERATIONAL TIME:			744	HRS
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	5.78		MONTHLY AVERAGE:			8.68	KPH



JOB #: 2833-14-08-35-C

Lakeland Industry & Community Association - Elk Point Site

AUGUST 2014

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

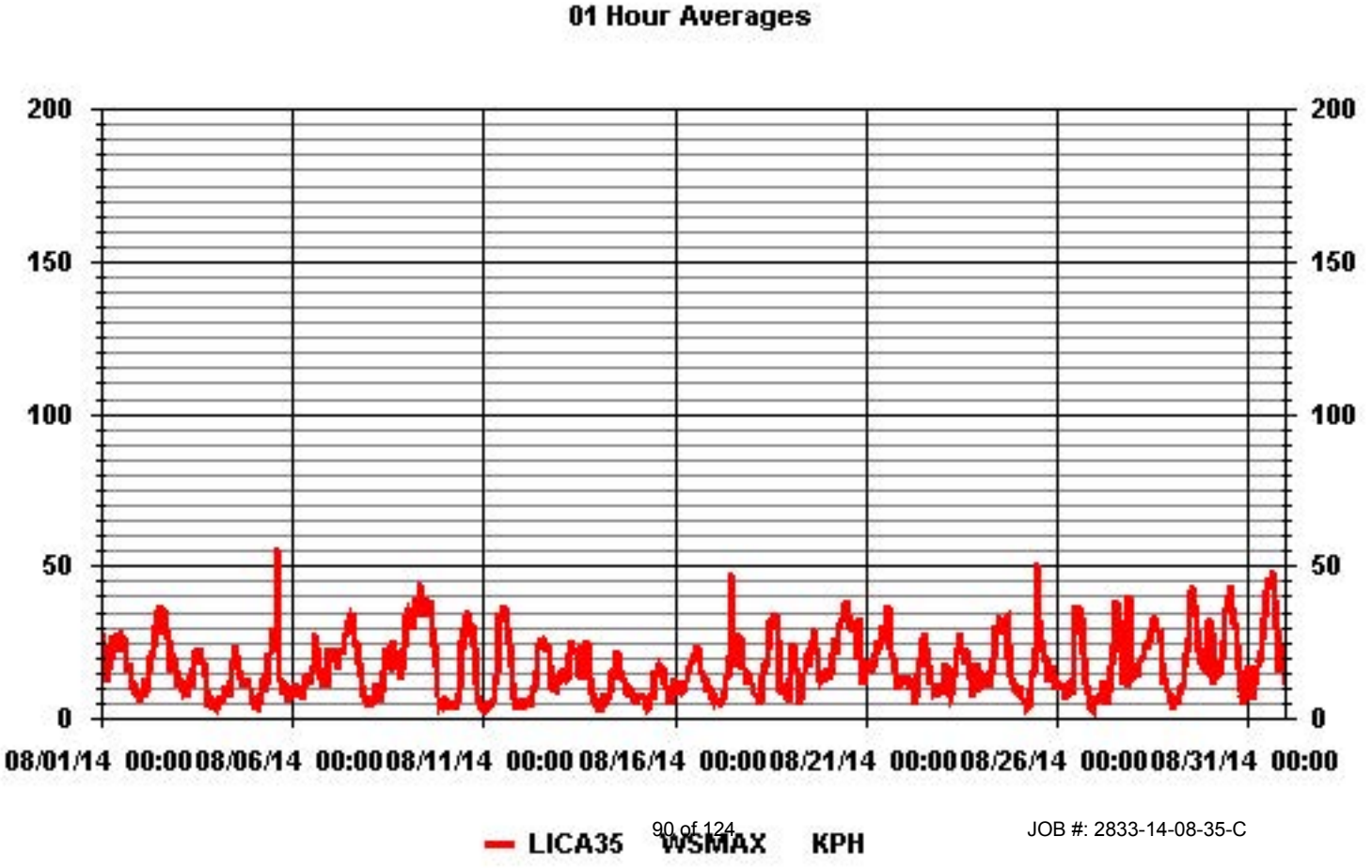
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	27.5	24.6	17	19.8	11.4	15.6	19	26.3	26.1	24.1	27.1	27.5	21.5	25.7	27.2	24.5	15	18.4	16.3	9.1	12.4	8.8	7.5	7.5	28	19.2	24
2	5.7	8.6	9	8.6	12.7	11.8	15	20.7	21.7	23.7	30.1	35.6	27.5	36.3	36.2	35.9	34.2	29.5	26.5	16.7	16.9	21.5	20.3	16.4	36	21.7	24
3	10.3	12.5	12.3	9	9.9	7.1	10.2	12.4	11.9	16.6	18.4	21.6	22.6	17.5	22.6	18.2	18	14.4	9.8	4.6	4.3	7.2	5.3	3.8	23	12.5	24
4	3.2	5	7.1	5.8	6.3	10.4	8.2	8.2	6.7	12.2	16	18.5	24.2	21.7	16.3	13.2	13.2	9.9	12.2	10.2	13.4	10.7	6.3	6.7	24	11.1	24
5	3.8	3.4	6.3	5.4	5.6	13.1	8.6	13.3	12.9	21	21.2	22.1	30	23.1	***55.8***	24.8	12	13.4	7.8	10.4	11.3	6.6	6.7	8	***56***	14.4	24
6	7.8	10.7	11.2	10.9	6.8	8.1	5.7	10.7	13.9	10.5	14.9	10.6	15.5	17.4	27.6	23.1	22.3	17.5	13.2	10	14.7	11.8	10	23.3	28	13.7	24
7	20.8	22.2	18.7	22	16.2	21.8	21.7	23.1	21	27.4	27.9	32.3	34.3	33.4	34.2	23	25.1	17.5	19.3	13.8	11	7.8	6.2	4.1	34	21.0	24
8	4.1	5.2	6.4	4.7	11.9	6.3	7.2	4.9	8.3	15.7	22.1	21.8	18	17.5	24	25.3	18.9	21.9	17	17.2	12.5	16.2	23	33.9	34	15.2	24
9	35.8	34.7	33.8	29.6	31.3	38.7	38.4	38.4	44.4	33.2	36.2	35.3	39.6	32.9	38.9	37.1	30.4	24.4	17.2	7.5	3.9	4.6	3.6	4.3	44	***28.1***	24
10	6.2	5.7	4.4	4.1	5.6	4.1	3.9	7.2	6.8	9.8	25.8	25.1	29.4	33.6	35.7	29.1	29.8	31.1	24	11.4	4.9	7.1	3.9	3.5	36	14.7	24
11	4.3	2.9	3.3	3.5	3.8	5.8	6.9	10.8	14	15.4	34.3	33.1	34.1	36.8	32.7	30.7	25	17.7	12.4	7	4	4.3	5.7	5.8	37	14.8	24
12	4.3	4.1	4.4	4.9	6.1	5.5	5.2	8.3	10.4	15.4	24	23.8	26.6	24.8	26	25.1	22.2	23.5	18.3	10.3	10.1	9.5	11.3	13	27	14.0	24
13	12.8	15	15.6	14.7	12.7	13.2	21.1	25.7	23.5	22.7	21.3	15.7	14.1	12.8	24	13.7	15.5	25.3	13.7	13.4	8.8	6.7	7.7	4.2	26	15.6	24
14	4.5	2.1	5.8	7.5	7.5	5.7	6.4	8.3	14.5	14.2	16.4	19.4	21.8	20.4	16.6	13.6	12.9	10.5	8.7	7.2	9.4	8.6	7	7.4	22	10.7	24
15	4.7	6.9	7.5	7.4	8.3	4.9	5.6	3.6	4.6	7.7	7.5	15.4	13.3	15.7	17.8	17.1	16.8	11.9	11.2	10.1	7.9	4.8	6.5	9.4	18	9.4	24
16	13	11.1	8	10.3	10.9	9.3	10.1	11.8	16.7	16.4	19.1	18	20.6	20.2	23.5	19.9	16.2	15.2	12.1	13.6	8.3	10.2	9.8	6.9	24	13.8	24
17	5.2	6.3	4.3	5.7	5.5	4.1	6	8.8	12.8	13.8	20.7	47.6	36.2	16.2	25.4	22.1	26.7	26.3	16	17.1	13	13.5	15.1	12.3	48	15.9	24
18	11.8	9	8.7	7.7	5.9	5.8	4.7	14	17.8	18.1	16.9	22.1	31.7	32.4	29.3	34.5	33.4	26	9.7	9	9.3	11.7	6.5	5.1	35	15.9	24
19	13	20.1	24.3	19.9	16.5	15.7	4.2	6.4	10.7	14.6	19.6	19.1	18.6	23.2	25.8	29.6	23.6	21.3	13.8	12	12.9	14	12.2	14	30	16.9	24
20	12.8	15.7	14	21.1	26.7	24.7	20.9	29.1	31.4	33.2	36.6	37.8	38.8	34.6	29.8	28.2	32.2	29.3	19.1	25.6	33.2	20.5	11	15	39	25.9	24
21	15.6	17.1	17.7	19.1	16.5	17	21	25.4	22.9	24.6	30.4	28.3	26.8	25.9	37.3	23.5	22.1	20.7	16.2	10.1	10.2	10.5	12.9	13	37	20.2	24
22	13.2	10.6	13.2	14.3	9.6	10.7	4.7	6.7	14.8	17	19.2	21	26.1	28.3	24	17.8	12.4	11.9	8.1	8.7	8	8.1	11.1	8.7	28	13.7	24
23	8.7	7.7	18.4	7.8	9.2	6.6	7.5	13	16.7	22.8	21.2	27.7	22.2	22.4	17.4	23.1	18.6	13	10.8	7.3	8.4	14.4	18.3	16.6	28	15.0	24
24	10.1	10.5	10.9	12.6	13.6	12.2	10.3	14.5	19.5	30.4	29.4	33.2	32.9	32.5	27.5	32.5	33.2	21.8	22.3	14	11	12.6	9.6	8.7	33	19.4	24
25	8.1	10.2	6.8	6.2	5.3	3.3	3.9	9.7	14	15.5	23.4	50.7	31.5	32.7	26	22.6	19.6	19.5	12.3	13.8	16.4	16.6	14.9	10.6	51	16.4	24
26	10.6	11.4	11.5	10.4	10.3	7.2	7.4	10.5	9.9	9.4	12.9	36.9	27.5	35.8	36.8	33.5	21.4	20	11.5	8.1	5.5	4.2	3.3	5.5	37	15.1	24
27	4.7	5.2	6.8	7.6	6.2	12.3	8.2	4.8	6.6	8.8	17.6	23.7	39.1	37.4	38.2	32.8	22.6	22.3	10.9	12.9	10	40.3	24.6	13.6	40	17.4	24
28	14.3	15.3	13.1	17.5	18.5	20.2	19.1	24	24.6	24.1	24.9	28.5	32.3	33	32.2	29.5	27.1	27.7	19.3	12.2	12.4	9.6	7	7.4	33	20.6	24
29	5.8	2.8	5.7	5.6	7.1	7.9	10.6	11.7	16.6	21.5	26.5	38.3	41.7	43.3	38	34	29.6	22.6	18.4	16.8	16.1	23.3	30.3	29.7	43	21.0	24
30	32.6	29	11.2	14.9	13.2	13.7	14.6	18.9	25.9	35.2	36	37.6	40.4	43.8	37.2	31.7	30	24.6	16.2	9.5	7.9	4.5	6.1	8.3	44	22.6	24
31	16.3	16.6	16.6	5.9	10.8	15.8	17.1	18.5	22.5	25.6	33.3	41.9	45.2	45.1	45.9	48.8	43.2	39.8	30	15.2	16.6	18.6	24.2	11.6	49	26.0	24
HOURLY MAX	36	35	34	30	31	39	38	38	44	35	37	51	45	45	56	49	43	40	30	26	33	40	30	34			
HOURLY AVG	11.3	11.7	11.4	11.1	11.0	11.6	11.4	14.5	16.9	19.4	23.6	28.1	28.5	28.3	30.0	26.4	23.3	20.9	15.3	11.8	11.1	11.9	11.2	10.9			

STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	56	KPH	@ HOUR(S)	14	ON DAY(S) 5
					VAR-VARIOUS
OPERATIONAL TIME:					744 HRS



JOB #: 2833-14-08-35-C

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

August 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	1.34	1.07	1.34	2.41	3.36	4.03	1.34	1.07	.67	1.07	.80	3.62	4.30	7.25	1.74	1.34	36.82
<	12.0	1.47	1.20	1.47	1.61	3.89	5.77	2.28	1.61	.67	.26	.40	4.03	4.43	2.82	4.03	1.34	37.36
<	20.0	1.61	.67	.40	.00	.00	1.74	2.82	.80	.00	.26	.13	1.61	3.09	3.09	3.76	.67	20.69
<	29.0	.00	.00	.00	.00	.00	.00	.00	.40	.00	.00	.00	.13	1.88	1.20	1.34	.00	4.97
<	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00	.13
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	4.43	2.95	3.22	4.03	7.25	11.55	6.45	3.89	1.34	1.61	1.34	9.40	13.84	14.38	10.88	3.36	

Calm : .00 %

Total # Operational Hours : 744

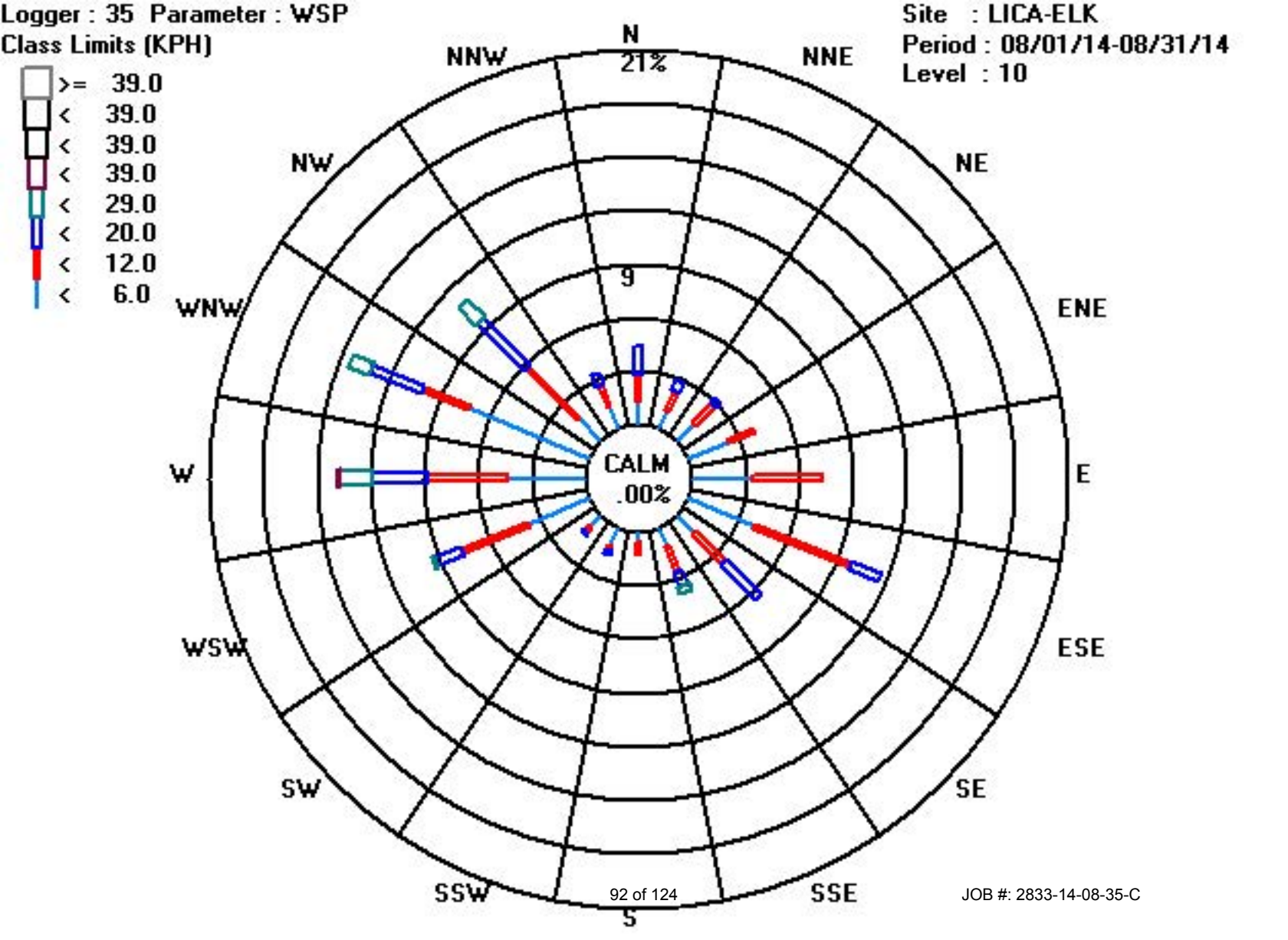
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	10	8	10	18	25	30	10	8	5	8	6	27	32	54	13	10	274
<	12.0	11	9	11	12	29	43	17	12	5	2	3	30	33	21	30	10	278
<	20.0	12	5	3			13	21	6		2	1	12	23	23	28	5	154
<	29.0								3				1	14	9	10		37
<	39.0													1				1
>=	39.0																	
	Totals	33	22	24	30	54	86	48	29	10	12	10	70	103	107	81	25	

Calm : .00 %

Total # Operational Hours : 744



JOB #: 2833-14-08-35-C

Vector Wind Direction

Lakeland Industry & Community Association - Elk Point Site

AUGUST 2014

WIND DIRECTION (WD) hourly averages in degrees

MST

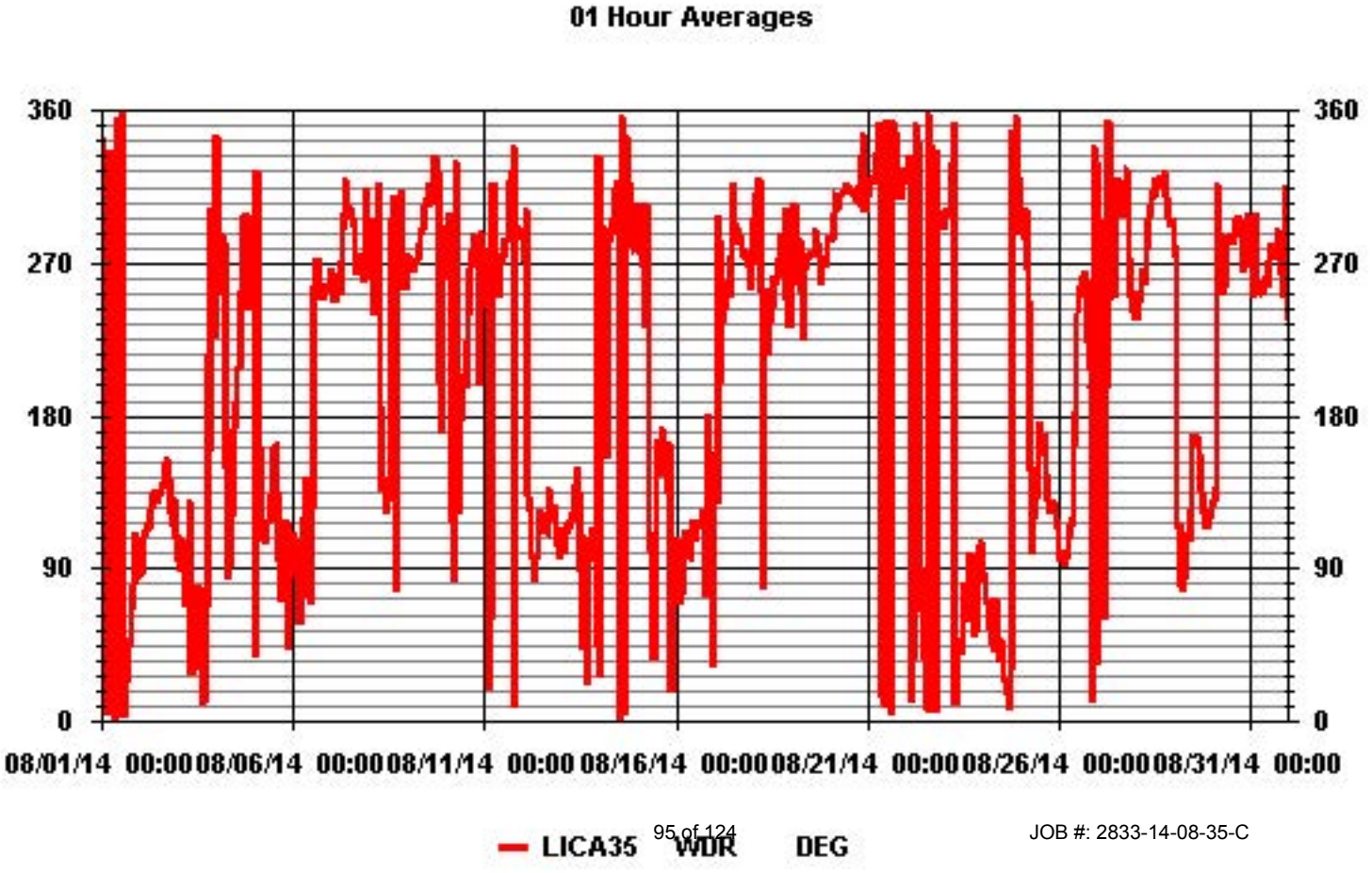
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	343	325	23	69	3	334	334	9	7	1	356	335	353	359	2	24	22	44	49	65	80	111	109	96	359	N	24
2	98	87	88	109	112	117	113	125	135	137	128	133	136	133	137	141	152	156	144	123	115	132	119	109	156	SSE	24
3	95	88	97	107	106	67	100	130	27	54	56	76	76	80	32	15	10	34	67	217	159	303	291	226	303	WNW	24
4	346	286	275	287	251	283	150	83	91	140	120	172	188	209	207	254	294	293	296	300	242	288	268	246	346	NNW	24
5	37	324	271	163	108	108	119	104	117	118	134	130	161	162	137	95	90	70	109	106	118	42	85	102	324	NW	24
6	111	101	98	107	57	65	111	120	144	80	74	68	125	257	273	257	272	260	250	248	255	252	257	252	273	W	24
7	267	258	247	262	263	251	271	289	299	320	302	297	304	297	292	272	263	269	276	271	258	274	314	270	320	NW	24
8	260	297	270	239	272	250	317	187	135	142	121	144	129	154	297	310	283	75	290	290	313	270	254	269	317	NW	24
9	275	270	273	265	268	269	272	281	287	290	304	308	303	317	304	316	312	333	319	320	201	169	260	276	333	NNW	24
10	291	292	300	133	118	81	330	203	121	177	191	201	200	224	239	267	277	287	283	278	252	198	289	280	330	NNW	24
11	252	244	262	18	59	318	301	263	257	249	269	276	273	285	283	295	318	325	339	7	294	286	287	288	339	NNW	24
12	285	270	302	133	124	98	96	82	97	98	122	125	118	111	113	112	138	126	121	120	128	116	104	95	302	WNW	24
13	114	111	98	110	117	113	118	123	140	136	150	137	89	42	110	66	21	105	93	114	106	104	43	334	334	NNW	24
14	25	248	250	292	270	155	282	287	296	315	288	319	312	0	357	345	3	345	319	279	296	292	279	280	357	N	24
15	306	274	288	268	231	305	250	113	101	75	35	111	144	166	144	174	156	145	133	148	165	17	75	94	306	NW	24
16	108	93	69	74	97	100	113	99	98	106	118	115	105	116	116	116	114	122	122	73	181	121	111	31	181	S	24
17	159	127	298	284	199	235	242	251	259	249	275	304	317	295	292	280	288	278	279	278	273	269	254	258	317	NW	24
18	296	269	311	302	320	254	77	246	255	241	215	234	243	262	257	261	273	279	287	279	247	303	279	232	320	NW	24
19	253	285	305	256	268	284	254	224	265	266	272	275	276	275	273	290	283	282	275	256	268	272	268	284	305	WNW	24
20	286	282	284	300	310	309	307	310	311	312	317	315	315	314	312	310	308	307	315	312	333	347	299	311	347	NNW	24
21	311	318	320	316	322	335	333	353	21	15	11	9	354	346	350	3	354	348	340	322	307	315	324	326	354	N	24
22	319	316	334	10	36	320	353	343	87	92	65	37	11	12	359	4	339	22	4	336	297	291	299	298	359	N	24
23	290	303	297	302	303	329	353	9	33	44	43	49	81	62	59	78	99	86	85	49	52	81	103	107	353	N	24
24	88	87	69	71	54	60	47	41	72	46	34	49	45	24	24	17	16	6	30	349	303	358	322	286	358	N	24
25	295	298	283	303	267	249	149	98	119	130	149	156	176	158	167	168	147	131	122	125	130	126	120	114	303	WNW	24
26	95	97	101	90	101	96	107	115	120	162	183	240	254	253	258	262	265	261	224	208	197	10	340	32	340	NNW	24
27	329	289	212	119	60	295	196	355	248	278	249	308	300	320	315	318	297	312	324	323	274	250	240	253	355	N	24
28	237	240	247	253	267	262	257	278	297	304	312	308	319	319	316	321	316	315	325	310	297	295	291	296	325	NW	24
29	281	274	115	115	81	76	85	86	111	105	124	164	168	166	168	164	159	137	122	126	115	113	119	123	281	W	24
30	126	130	138	317	250	287	251	256	272	286	281	287	281	287	297	293	298	285	294	264	273	295	299	292	317	NW	24
31	269	256	250	299	255	254	259	251	254	260	259	271	275	281	272	281	274	290	284	264	250	260	316	238	316	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:	100.72		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	291	DEG



JOB #: 2833-14-08-35-C

Standard Deviation Wind Direction

Lakeland Industry & Community Association - Elk Point Site

AUGUST 2014

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST

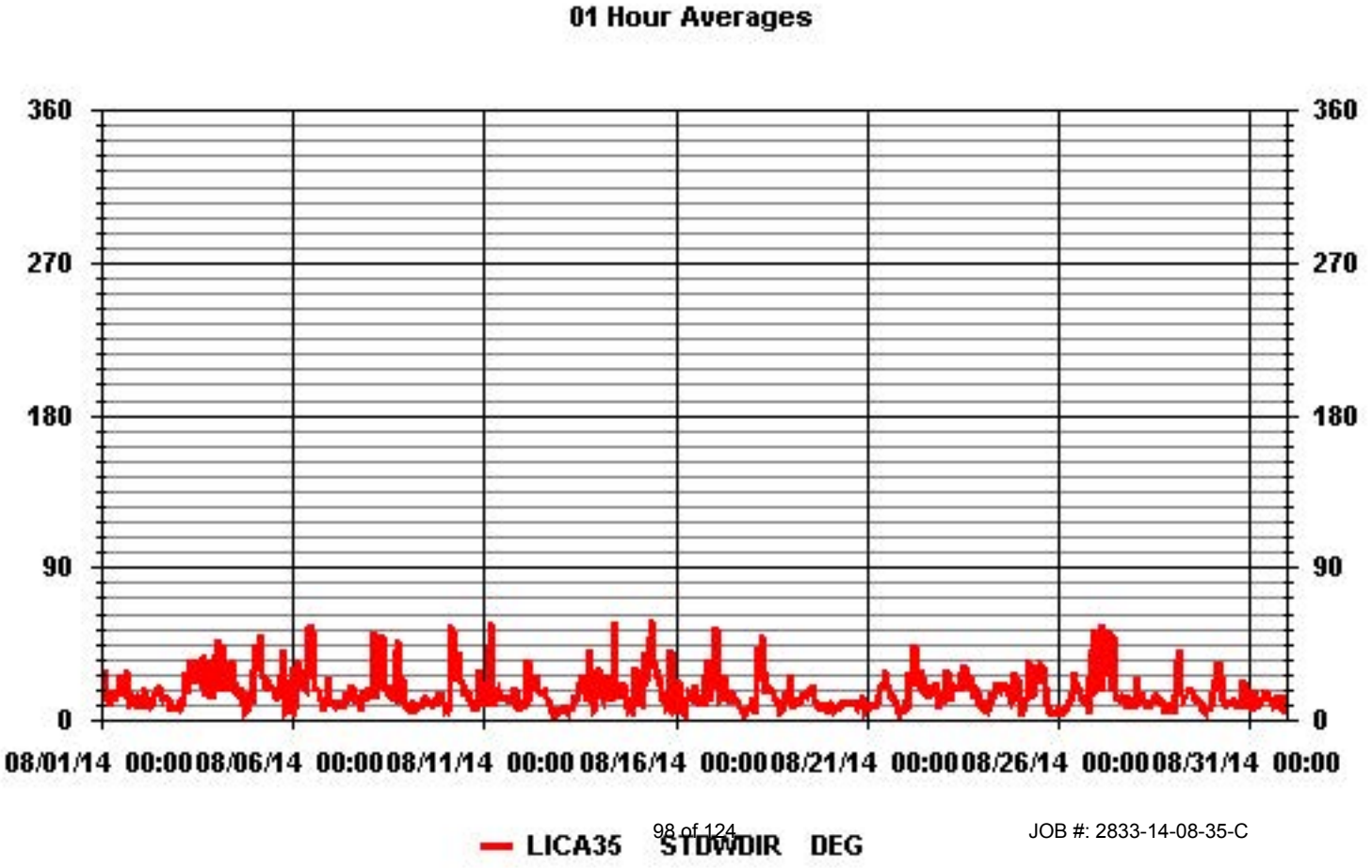
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY									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

STATUS FLAG CODES

C	- CALIBRATION	Q	- QUALITY ASSURANCE
Y	- 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 20, 2012

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS



JOB #: 2833-14-08-35-C

Calibration Reports

Sulphur Dioxide

API 100A SO2 Analyzer Calibration

Date:	12-Aug-14	**Start/End Time (mst):**	9:16/12:54
Company:	LICA	**Calibration Purpose:**	Removal 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:	14-Jul-14	**As Found C.F.**	0.996
Previous Cal High Point C.F.:	1.000	**New C.F.:**	1.001

	As found:	As left:
SLOPE:	0.977	0.968
OFFSET:	23.9	24.2
HVPS:	755	756
DCPS:	2593	2587
RCELL TEMP:	50.7	50.1
BOX TEMP:	27.2	31.9
PMT TEMP:	7.3	7.1
IZS TEMP:	40.3	40.2
STABIL:	0.0	0.3
PRES:	27.1	27.1
SAMP FL:	665	660
PMT:	64.9	66.3
UV LAMP:	3270	3213
STR. LGT	11.7	11.7
DRK PMT:	37.1	38.4
DRK LMP:	-6.6	-7.1
Internal Span:	248.9	248.9

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	4995	0	4995
high	4916	78	4994
mid	4957	38	4995
low	4975	19	4994

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	0.2	NA
adjusted zero	4995	0.0	4995	0	0.0	NA
as found high	4916	77.57	4994	748.7	751.5	0.996
adjusted high	4916	77.57	4994	748.7	748.7	1.000
mid	4957	37.78	4995	364.6	364.0	1.002
low	4975	18.89	4994	182.3	182.0	1.002
calibrator zero	4995	0.00	4995	0	0.0	NA
					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)=	**0.02%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**0.37%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

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

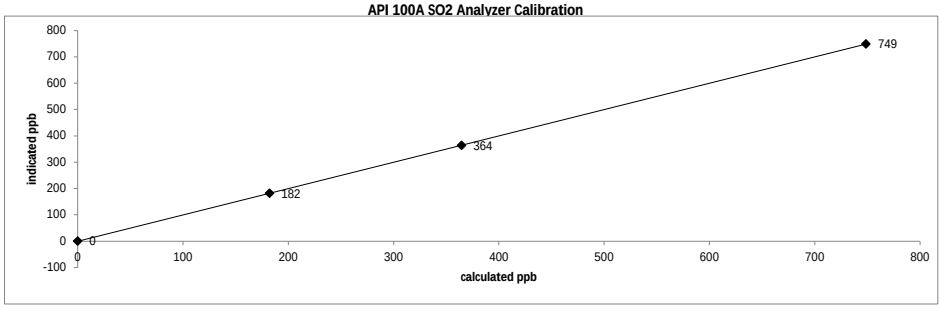
SO_2 High Point gas concentration: NA Time gas run (mst): NA

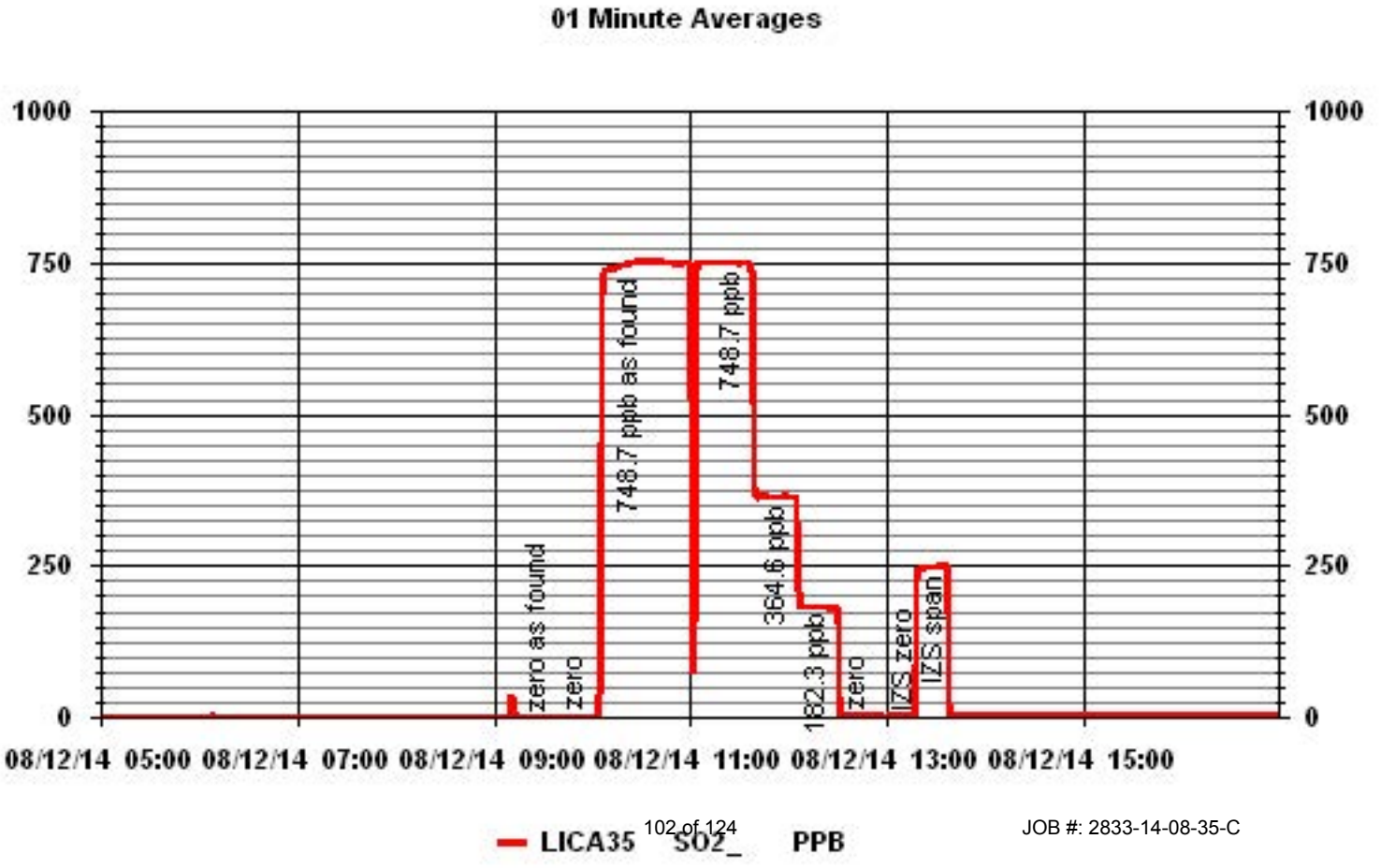
Zero corrrected analyzer response: NA

Comments:

Sample filter changed

API 100A SO2 Analyzer Calibration





JOB #: 2833-14-08-35-C

Hydrogen Sulphide

API 101E H2S Analyzer Calibration

Date:	7-Aug-14	**Start/End Time (mst):**	10:52/11:40
Company:	LICA	**Calibration Purpose:**	As Founds
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:	30-Jul-14	**As Found C.F.**	0.988
Previous Cal High Point C.F.:	1.000	**New C.F.:**	NA

	As found:	As left:
SLOPE:	1.183	1.183
OFFSET:	97.6	97.6
HVPS:	536	536
RCELL TEMP:	50.0	50.0
BOX TEMP:	27.6	27.6
PMT TEMP:	7.9	7.9
IZS TEMP:	45	45
TEST:	NA	NA
STABIL:	0.1	0.1
PRES:	27.6	27.6
SAMP FL:	570	570
PMT:	99.3	99.3
NORM PMT:	100.7	100.7
UV LAMP:	3539	3539
LAMP RATIO:	100.0	100.0
STR. LGT	57.7	57.7
DRK PMT:	10.3	10.3
DRK LMP:	0.8	0.8
Internal Span:	67.42	67.42

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	4959	39	4998
mid	NA		#VALUE!
low	NA		#VALUE!

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	1.5	NA
adjusted zero	NA	0.0	######	0		NA
as found high	4959	38.60	4998	78.0	79.0	0.988
adjusted high	NA		######	#VALUE!		#VALUE!
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	**1.25%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

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

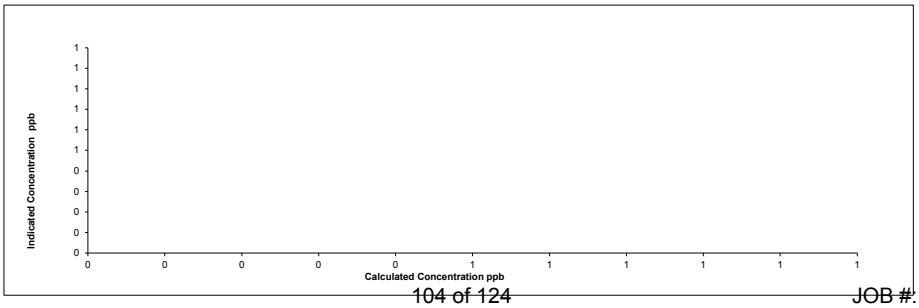
SO_2 High Point gas concentration: NA Time gas run (mst): NA

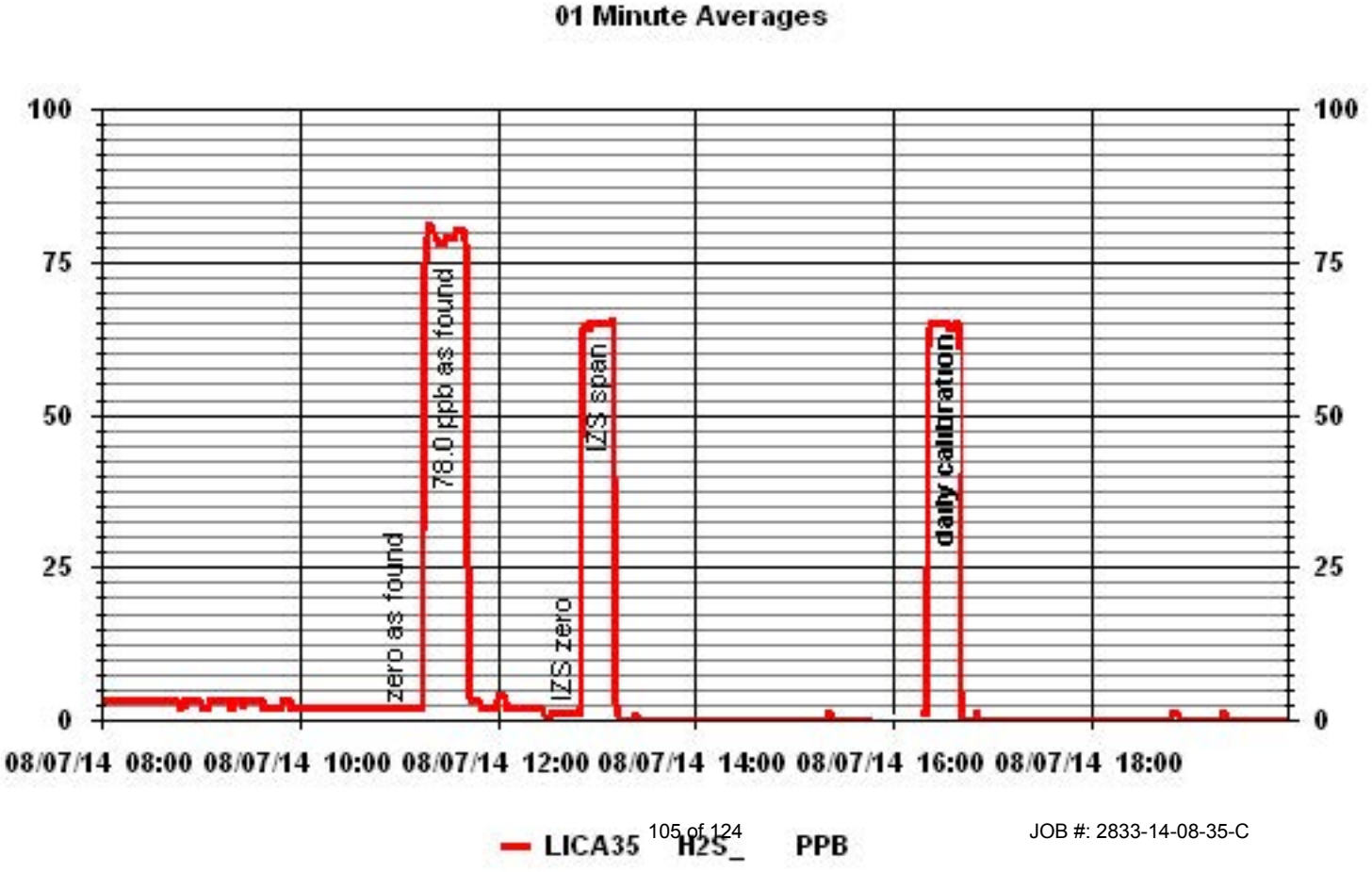
Zero corrrected analyzer response: NA

Comments:

As founds due to high zero.

API 101E H2S Analyzer Calibration





JOB #: 2833-14-08-35-C

API 101E H2S Analyzer Calibration

Date:	13-Aug-14	**Start/End Time (mst):**	9:08/12:15
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:	30-Jul-14	**As Found C.F.**	0.966
Previous Cal High Point C.F.:	1.000	**New C.F.:**	1.010

	As found:	As left:
SLOPE:	1.213	1.155
OFFSET:	100.8	100.3
HVPS:	536	536
RCELL TEMP:	50.0	50.0
BOX TEMP:	28.9	28.9
PMT TEMP:	7.9	7.9
IZS TEMP:	45.0	45.0
TEST:	NA	NA
STABIL:	0.0	0.0
PRES:	27.6	27.6
SAMP FL:	570	570
PMT:	106.1	106.1
NORM PMT:	103.5	103.5
UV LAMP:	3514	3514
LAMP RATIO:	99.3	99.3
STR. LGT	61.1	61.1
DRK PMT:	9.8	9.8
DRK LMP:	0.5	0.5
Internal Span:	64.5	64.5

Calibrator:

Flow Meter ID's:	NA
Make & Model:	API 700
Serial #:	4760
Cal Gas Cylinder I.D. # :	BLM000711
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	4959	39	4998
mid	4980	19	4999
low	4990	11	5001

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	4959	38.60	4998	78.0	80.9	0.966
adjusted high	4959	38.60	4998	78.0	78.1	1.000
mid	4980	18.80	4999	38.0	37.5	1.016
low	4990	10.90	5001	22.0	21.8	1.015
calibrator zero	5000	0.00	5000	0	0.5	NA
					Average C.F.=	1.010

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)=	**0.15%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**3.45%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

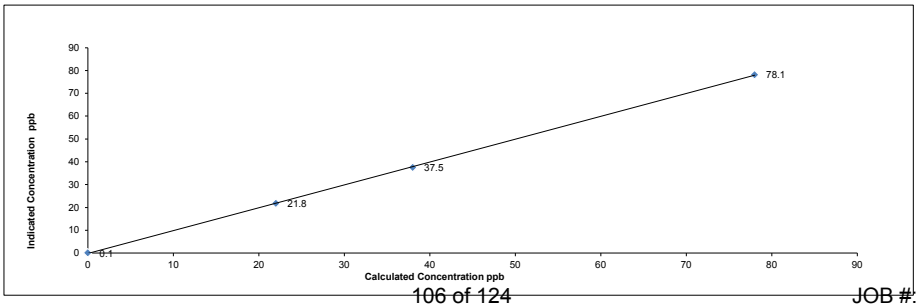
****run converter effeciency test immediately following zero adjust****

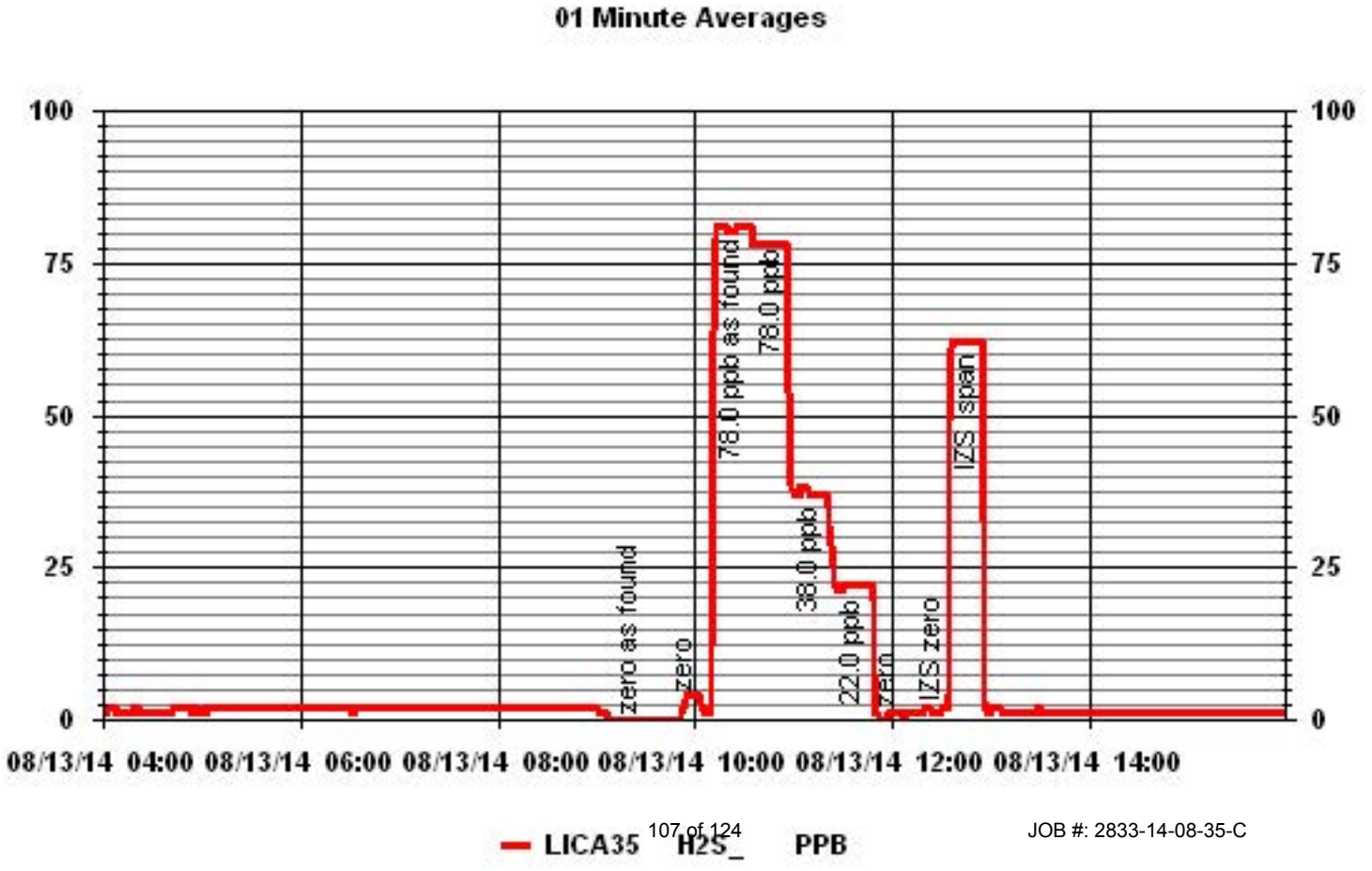
SO_2 High Point gas concentration:	200 PPB	Time gas run (mst):	9:52-9:59
Zero corrrected analyzer response:	4.5		

Comments:

Sample filter changed.

API 101E H2S Analyzer Calibration





JOB #: 2833-14-08-35-C

API 101E H2S Analyzer Calibration

Date:	19-Aug-14	**Start/End Time (mst):**	10:05/11:03
Company:	LICA	**Calibration Purpose:**	As founds
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:	13-Aug-14	**As Found C.F.**	1.000
Previous Cal High Point C.F.:	1.000	**New C.F.:**	NA

	As found:	As left:
SLOPE:	1.155	1.155
OFFSET:	100.3	100.3
HVPS:	536	536
RCELL TEMP:	50.0	50.0
BOX TEMP:	29.3	29.3
PMT TEMP:	7.9	7.9
IZS TEMP:	45.0	45.0
TEST:	314.7	314.7
STABIL:	0.1	0.1
PRES:	27.3	27.3
SAMP FL:	565	565
PMT:	103.3	103.3
NORM PMT:	104.4	104.4
UV LAMP:	3504	3504
LAMP RATIO:	99.0	99.0
STR. LGT	57.9	57.9
DRK PMT:	10.0	10.0
DRK LMP:	0.4	0.4
Internal Span:	62.38	62.38

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	4959	39	4998
mid	NA		#VALUE!
low	NA		#VALUE!

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	1.3	NA
adjusted zero	NA	0.0	######	0		NA
as found high	4959	38.60	4998	78.0	78.0	1.000
adjusted high	NA		######	#VALUE!		#VALUE!
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	**-0.01%**	**± 15%**	**PASS**

Converter Effeciency Check for H_2S/TRS application:

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

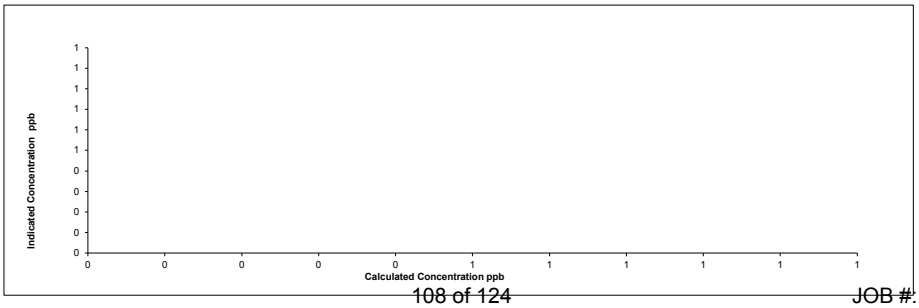
SO_2 High Point gas concentration: NA Time gas run (mst): NA

Zero corrrected analyzer response: NA

Comments:

As founds due to high zero reading during morning izs check.

API 101E H2S Analyzer Calibration



API 101E H2S Analyzer Calibration

Date:	19-Aug-14	**Start/End Time (mst):**	11:12/12:48
Company:	LICA	**Calibration Purpose:**	1point 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:	13-Aug-14	**As Found C.F.**	0.993
Previous Cal High Point C.F.:	1.000	**New C.F.:**	NA

	As found:	As left:
SLOPE:	1.155	1.149
OFFSET:	100.3	102.6
HVPS:	536	536
RCELL TEMP:	50.0	50.0
BOX TEMP:	29.3	29.3
PMT TEMP:	7.9	7.9
IZS TEMP:	45.0	45.0
TEST:	314.7	314.7
STABIL:	0.1	0.1
PRES:	27.3	27.3
SAMP FL:	565	565
PMT:	103.3	103.3
NORM PMT:	104.4	104.4
UV LAMP:	3504	3504
LAMP RATIO:	99.0	99.0
STR. LGT	57.9	57.9
DRK PMT:	10.0	10.0
DRK LMP:	0.4	0.4
Internal Span:	62.38	62.38

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	4959	39	4998
mid			
low			

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	1.6	NA
adjusted zero	5000	0.0	5000	0	0.2	NA
as found high	4959	38.60	4998	78.0	78.8	0.993
adjusted high	4959	38.60	4998	78.0	78.1	1.001
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	**0.75%**	**± 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

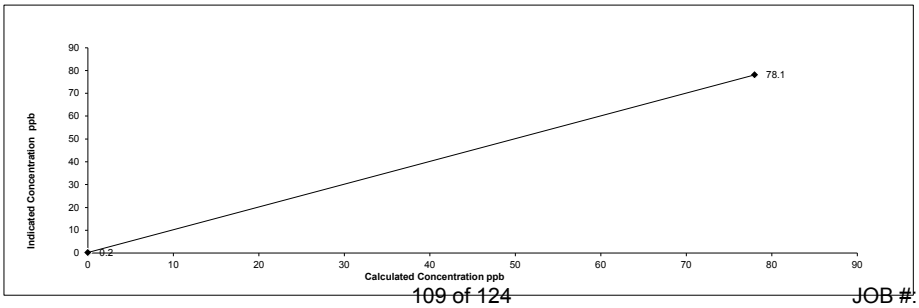
Time gas run (mst): NA

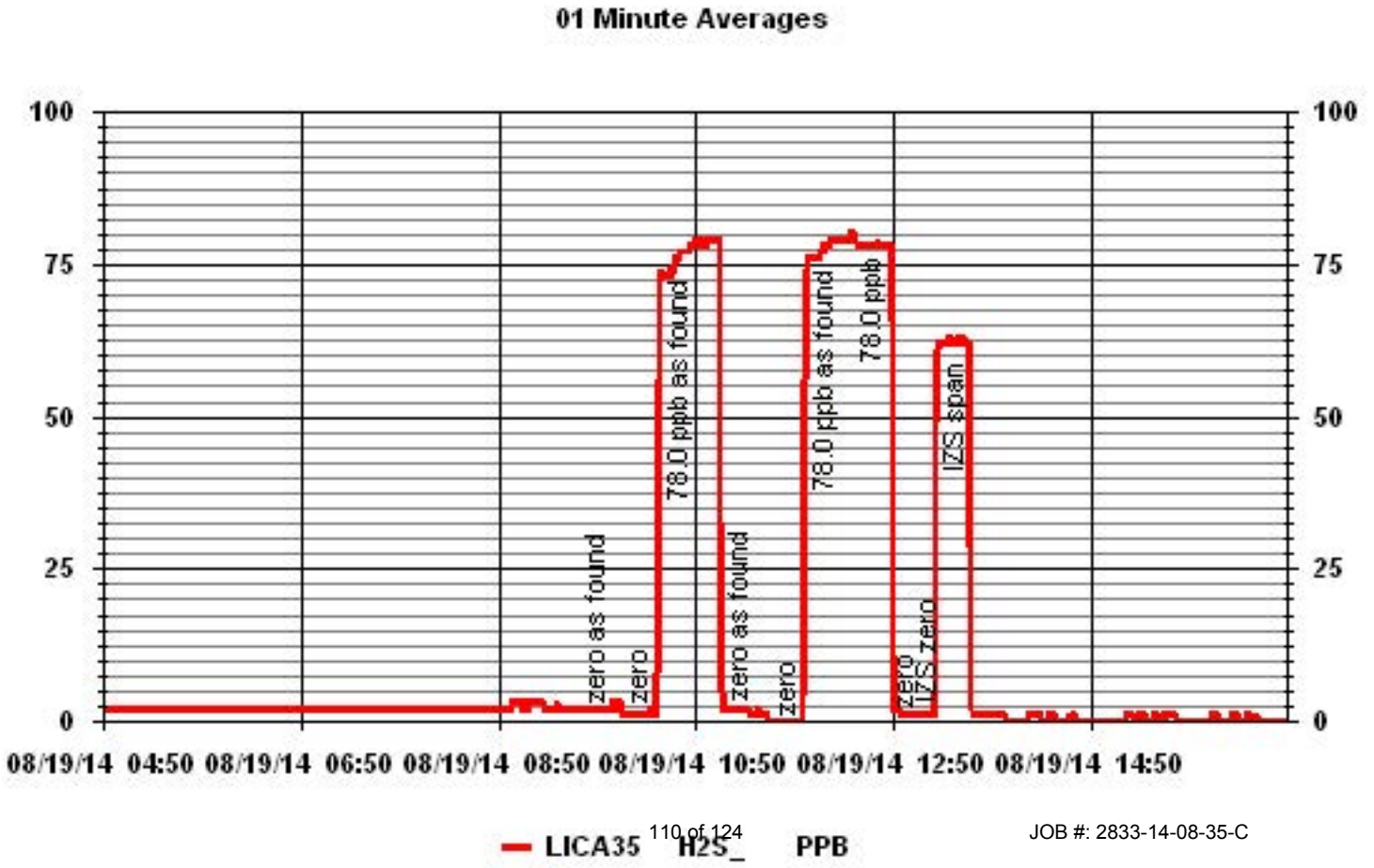
Zero corrrected analyzer response: NA

Comments:

1point calibration due to high zero.

API 101E H2S Analyzer Calibration





JOB #: 2833-14-08-35-C

Total Hydrocarbons (55i)

Thermo 55C Methane/Non-Methane Analyzer Calibration

Date:	12-Aug-14	**Start Time (mst):**	9:14
Company:	LICA	**End Time (mst):**	11:48
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= 1.017	CH_4= 1.007	CH_4= 20
Last Calibration Date:	7-Jul-14	NMHC= 1.010	NMHC= 0.998	NMHC= 20
		THC= 1.005	THC= 0.998	THC= 40

Mother Board Voltages:	3.3:	3.3	Calibration History cnt'd>1:	CH_4 SP Ratio:	0.000723
	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:	9866
	-3.3:	-3.2		NM Span Conc:	6.59
Interface Board Voltages:	3.3:	3.3		NM SP Ratio:	0.000161
	5.0:	5.0		NM Peak Area:	40874
	15.0:	15.0	Run History>1:	Date:	12AUG14
	24.0:	23.4		Time:	10:32
	-15.0:	-15.1		CH_4 PK HT:	5031
	Bias Supply:	-293.1		CH_4 RT:	12.2
Temperatures:	Detector Oven:	175.1		CH_4 Baseline:	1742
	Filter:	175.0		CH_4 LOD:	45
	Column Oven:	75.2		CH_4 SD:	15
	Flame:	368.3		CH_4 CONC:	3.64
	Internal:	35.8		NM PK HT:	32
Pressures cylinder/reg.:	Carrier:	1900 / 31.1		NM Peak Area:	1174
	Fuel:	1900 / 40.3		NM CONC:	0.00
	Air:	1250 / 32.4		NM Base Start:	1814
FID Status:	Status:	LIT		NM Base End:	1836
	Counts:	22653		NM LOD:	8
	Flame:	368.4		NM Start IDX:	2
	Det Base:	175.1		NM End IDX:	80
Flame and Power Stats:	Last Power On:	30APR2014 17:19		NM Max Slope:	1.8e+00
	Flameouts:	17		NM Min Slope:	-9.8e-01
	Det Oven at Start:	169.0		NM PT Count:	0
	Col Oven at Start:	74.6	Daily Zero/Span Values:	Previous CH4:	8.05
Calibration History>1:	Time:	05JUN2014 17:56		Previous NMHC	14.93
	Type:	SPAN		Previous THC:	23.02
	Status:	Good		New CH4:	8.05
	Check/Adjust:	Adjust		New NMHC	14.93
	CH_4 Span Conc:	7.13		New THC:	23.02

Calibrator and Gas Information:

Make & Model:	API 700		
Serial #:	830		
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	0.00	0.00	0.00	NA	NA	NA
20 min adjusted zero	3000	0.00	3000	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA
20 min as found high point	3000	36.00	3036	7.13	6.59	13.72	7.01	6.52	13.65	1.017	1.010	1.005
20 min adjusted high	3000	36.00	3036	7.13	6.59	13.72	7.13	6.60	13.72	1.000	0.998	1.000
20 min mid	3000	18.00	3018	3.59	3.31	6.90	3.51	3.32	6.89	1.022	0.998	1.002
20 min low	3000	10.00	3010	2.00	1.85	3.84	1.99	1.90	3.83	1.004	0.971	1.004
20 min calibrator zero	3000	0.00	3000	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA
									Average C.F.=	1.009	0.989	1.002

Linear Regression/Calibration Results:

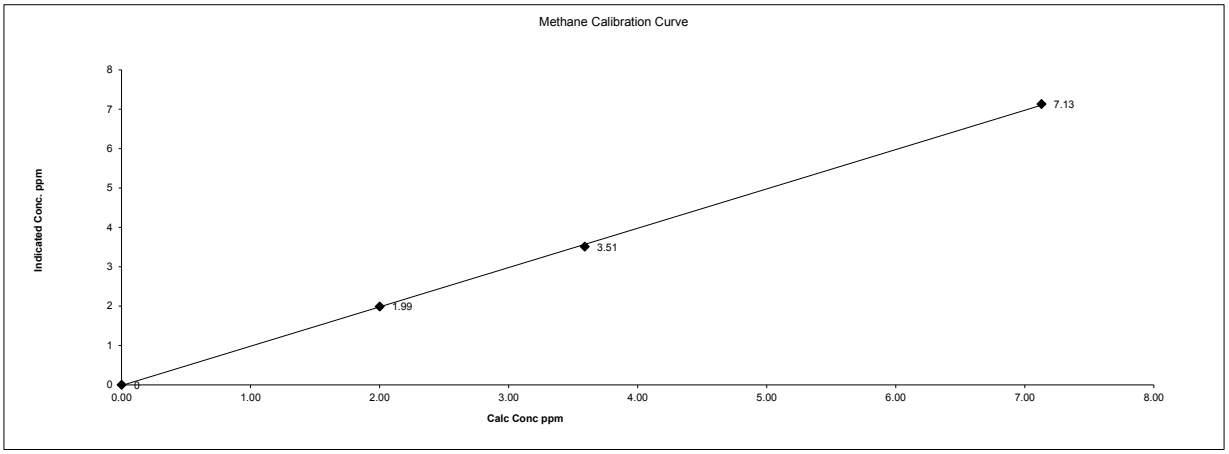
	CH_4	NMHC	THC	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**0.999**	**0.999**	**1.000**	**0.85-1.15**
b (Intercept as % of full scale)=	**-0.10%**	**0.10%**	**-0.01%**	**± 3% F.S.**
% change in C.F. from last cal=	**-1.01%**	**1.22%**	**0.70%**	**+/-15%**

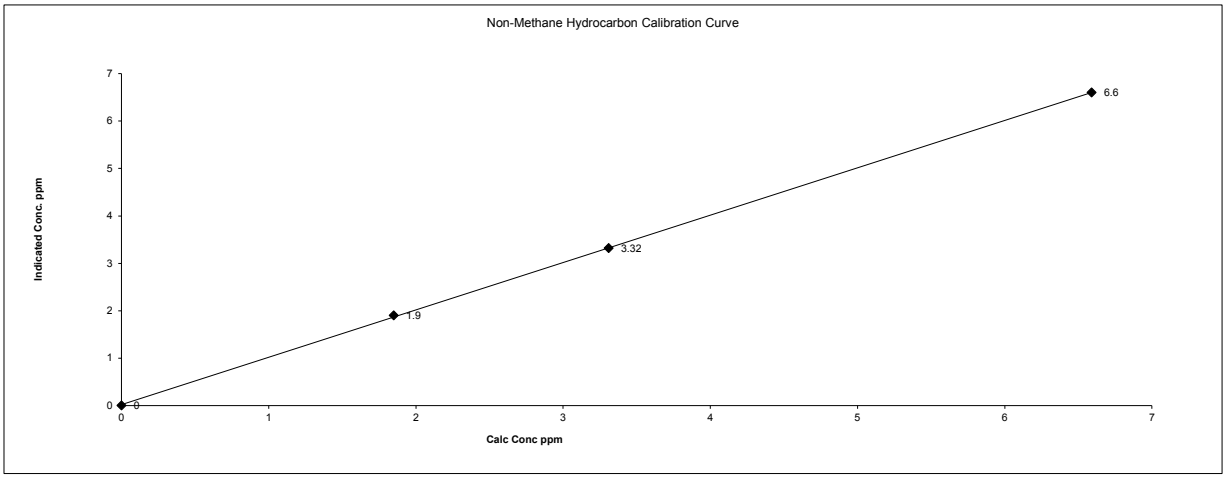
Comments:

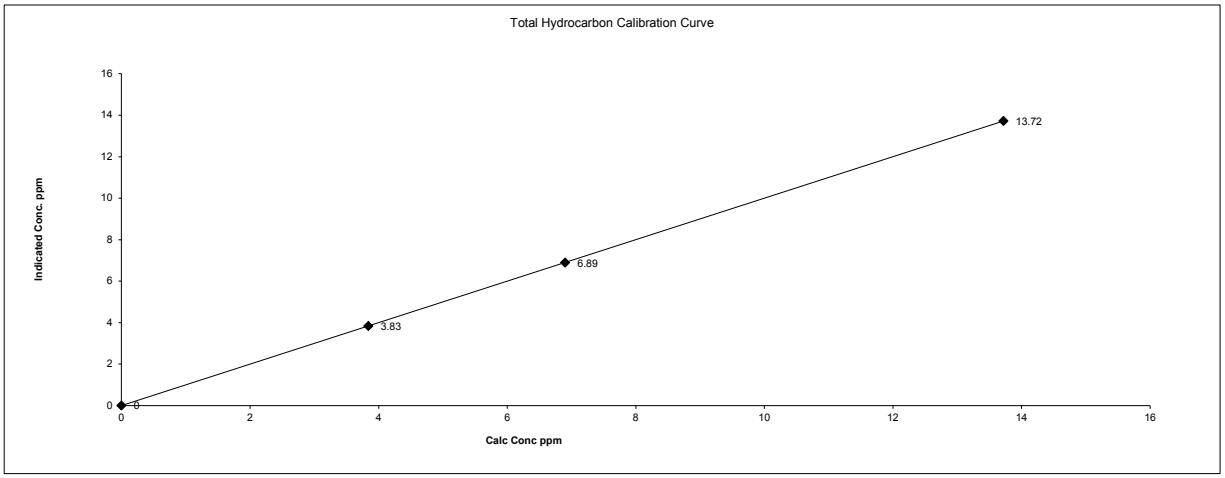
Sample filter changed.

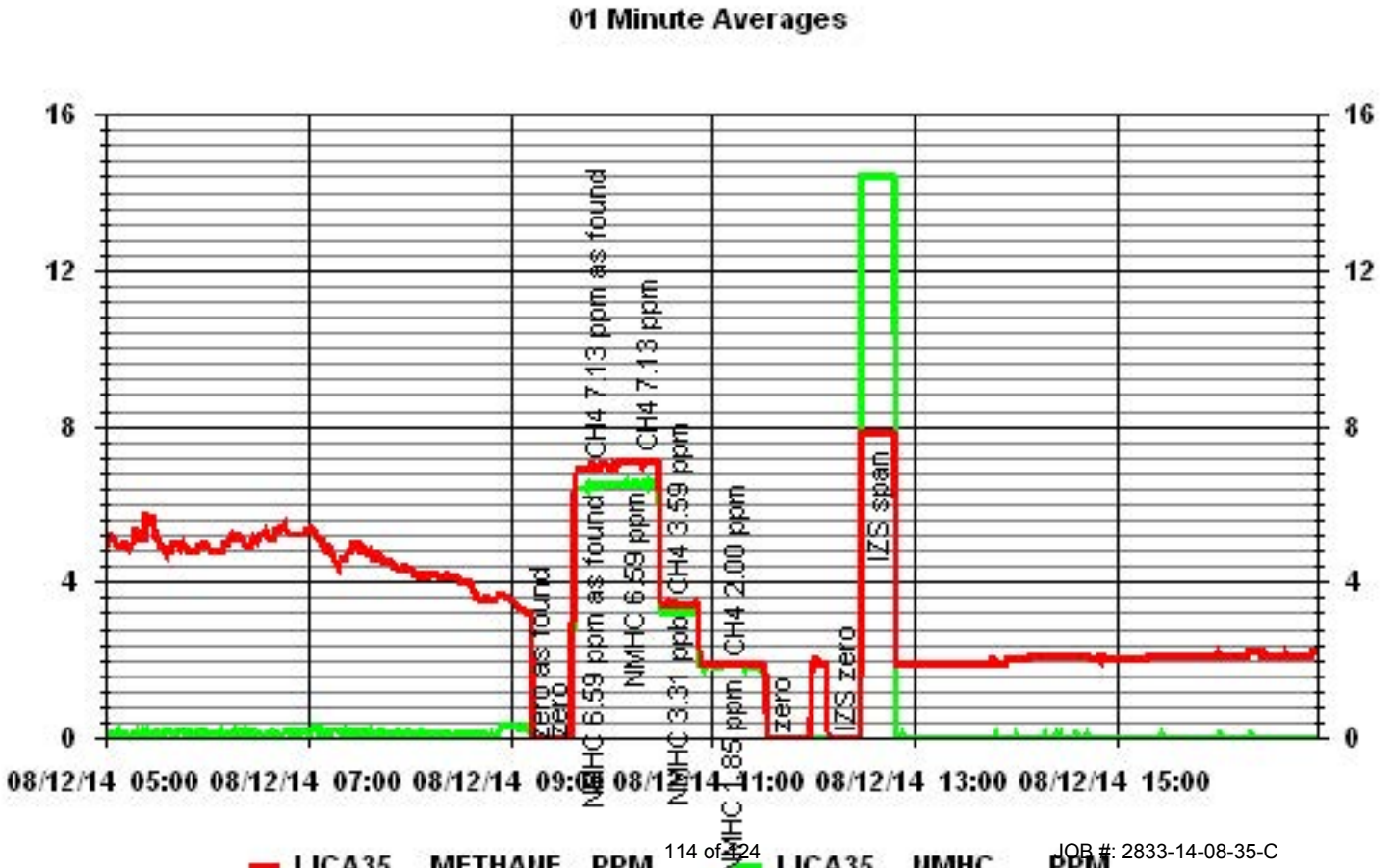
Date:	12-Aug-14	**Start Time (mst):**	9:14
Company:	LICA	**End Time (mst):**	11:48
Station Name:	Elk Point	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	26-Mar-17

Thermo 55C Methane/Non-Methane Analyzer Calibration









JOB #: 2833-14-08-35-C

Particulate Matter 2.5

R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date:	12-Aug-14	**Parameter:**	PM 2.5
Company:	LICA	**Performed by:**	Kevin Hope
Station Name/Location:	Elk Point	**Start/End Time (mst):**	13:54/14:27
Previous Audit Date:	14-Jul-14	**Calibration Purpose:**	Monthly Calibration

1400A Information and Status:

Serial Number:	1405A208301003	**As Found Filter Loading %:**	23.28
Ko Factor:	NA	**As Left Filter Loading %:**	18.00
Ambient Temperature °C:	28.0	**As Found Noise:**	0.010
Ambient Pressure atm:	0.937	**As Left Noise:**	0.000
Main Flow Reading lpm:	2.98	**Pump Vacuum:**	0.27
Aux Flow Reading lpm:	16.88	**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	0.00	0.18	0.01	0.18
	limit	0.15		0.15	
Bypass Flow	actual	0.02	14.37	0.03	14.33
	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	0.00	0.18	0.01	0.18
	limit	0.15		0.15	
Bypass Flow	actual	0.02	14.37	0.03	14.33
	limit	0.60		0.60	

As found temperature and pressure:

	tolerance +/- 2.0°C		**tolerance +/- 0.01 atm**
1405F temperature °C:	27.8	**1405F pressure atm:**	0.933
reference temperature °C:	28.0	**reference pressure:**	0.937
difference °C:	0.2	**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:	27.8	**1405F pressure atm:**	0.933
reference temperature °C:	28.0	**reference pressure:**	0.937
difference °C:	0.2	**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:**	17.20
reference main flow lpm:	2.98	**reference total/aux flow lpm:**	16.88
difference lpm:	-0.02	**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:	3.00	**1400A total/aux flow lpm:**	17.20
reference main flow lpm:	2.98	**reference total/aux flow lpm:**	16.88
difference lpm:	-0.02	**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 #: 2833-14-08-35-C

Leak check, flow audit, cleaned inlet, changed filter. All good.

R & P 1405F TEOM PM 2.5 Analyzer Calibration

Date:	19-Aug-14	**Parameter:**	PM 2.5
Company:	LICA	**Performed by:**	Kevin Hope
Station Name/Location:	Elk Point	**Start/End Time (mst):**	12:34/12:53
Previous Audit Date:	12-Aug-14	**Calibration Purpose:**	Monthly Calibration

1400A Information and Status:

Serial Number:	1405A208301003	**As Found Filter Loading %:**	23.28
Ko Factor:	NA	**As Left Filter Loading %:**	22.46
Ambient Temperature °C:	21.15	**As Found Noise:**	0.006
Ambient Pressure atm:	0.931	**As Left Noise:**	0.000
Main Flow Reading lpm:	2.98	**Pump Vacuum:**	0.27
Aux Flow Reading lpm:	16.84	**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	0.01	0.18	0.01	0.18
	limit	0.15		0.15	
Bypass Flow	actual	0.02	14.07	-0.03	14.12
	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	0.18	0.01	0.18
	limit	0.15		0.15	
Bypass Flow	actual	0.02	14.07	-0.03	14.12
	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:**	0.929
reference temperature °C:	21.2	**reference pressure:**	0.931
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**
1405F temperature °C:	21.3	**1405F pressure atm:**	0.929
reference temperature °C:	21.2	**reference pressure:**	0.931
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%**
1405F main flow lpm:	3.00	**1400A total/aux flow lpm:**	17.08
reference main flow lpm:	2.98	**reference total/aux flow lpm:**	16.84
difference lpm:	-0.02	**difference lpm:**	-0.24

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:**	17.08
reference main flow lpm:	2.98	**reference total/aux flow lpm:**	16.84
difference lpm:	-0.02	**difference lpm:**	-0.24

K_o Audit:

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

Comments:

Leak check, flow audit, cleaned inlet. All good.

JOB #: 2833-14-08-35-C

Nitrogen Dioxide

Maxxam

API 200E NOx Analyzer Calibration

Date:	12-Aug-14	**Start Time (mst):**	9:19
Company:	LICA	**End Time (mst):**	14:40
Station Name/Location:	Elk Point	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-14

Analyzer Serial Number:	593
Last Calibration Date:	17-Jul-14
Range ppb:	1000

Correction Factors:

	As found C.F.	Previous Cal High Point C.F.:
NO=	1.020	1.000
NOx=	1.022	1.000
NO_2=	0.997	0.996

	As found:	**As left:**
NOx SLOPE:	1.233	1.257
NOx OFFS:	0.3	0.2
NO SLOPE:	1.223	1.251
NO OFFS:	-0.1	-0.2
TEST:	125.8	126.0
SAMP FLW:	482	475
OZONE FL:	78	78
PMT:	11.2	825
NORM PMT:	11.9	1114
AZERO:	6.9	7.9
HVPS:	630	630
RCELL TEMP:	50.0	50.0
BOX TEMP:	28.5	28.5
PMT TEMP:	6.7	6.7
IZS TEMP:	45.2	45.2
MOLY TEMP:	314.6	314.6
RCEL:	6.4	6.4
SAMP:	27.2	27.2
Internal Span:	406.1/7.16/39.2	406.1/7.16/39.2

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	4995	0	0	4995
high	4916	78	340.00	4994
mid	4957	38	170.00	4995
low	4975	19	75.00	4994

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	-0.1	-0.1	NA	NA
adjusted zero	4995	0.0	4995	0	0	0.0	0.0	NA	NA
as found high	4916	77.57	4994	778.3	779.8	763	763	1.020	1.022
adjusted high	4916	77.57	4994	778.3	779.8	779	780	0.999	1.000
mid	4957	37.78	4995	379.0	379.7	382	381	0.992	0.997
low	4975	18.89	4994	189.5	189.9	190	190	0.997	0.999
calibrator zero	4995	0.00	4995	0	0	0.0	0.0	NA	NA
							Average C.F.=	0.996	0.999

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	4916	77.56	4994	0.0	786.0	786.0	1.0	0.0	0.0	
as found NO_2	4916	77.56	4994	340.0	398.0	788.0	390.0	388.0	389.0	0.997
adjusted NO_2	4916	77.56	4994	340.0	398.0	788.0	390.0	388.0	389.0	0.997
gpt mid	4916	77.56	4994	170.0	588.0	788.0	199.0	198.0	198.0	1.000
gpt low	4916	77.56	4994	75.0	705.0	787.0	82.0	81.0	81.0	1.000
									Average NO_2 C.F.=	0.999

Linear Regression/Calibration Results:

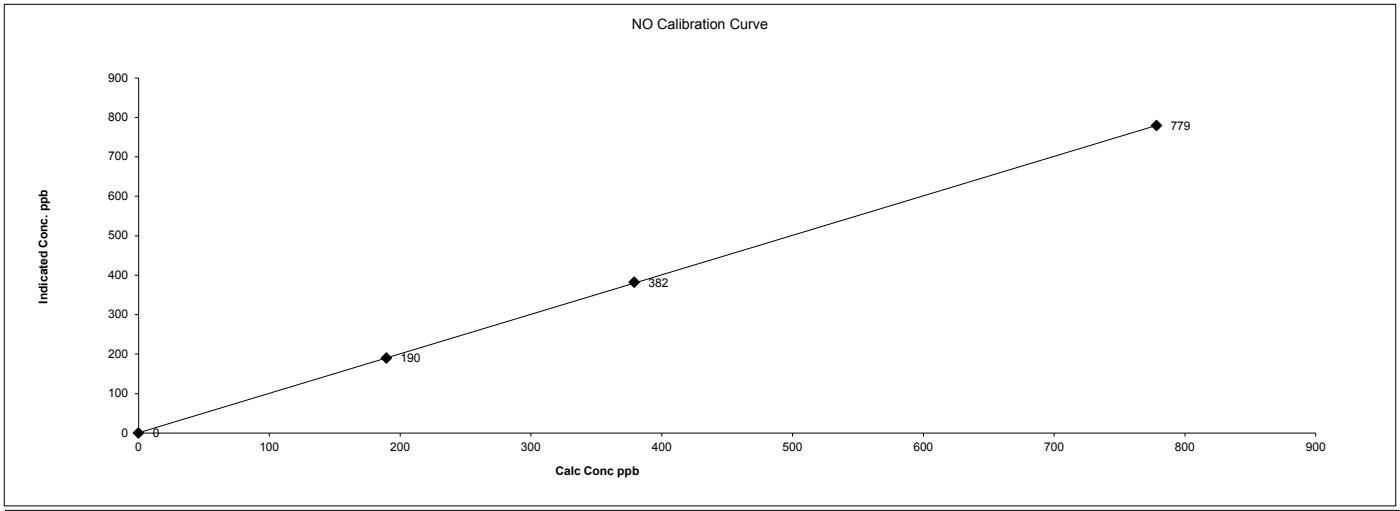
	NO	NOx	NO_2	LIMITS
Correlation Coeffecient =	**1.000**	**1.000**	**1.000**	**> or = 0.995**
Slope =	**1.001**	**1.000**	**1.003**	**0.85-1.15**
b (Intercept as % of full scale)=	**0.07%**	**0.03%**	**-0.02%**	**± 3% F.S.**
% change in C.F. from last cal=	**-2.00%**	**-2.20%**	**-0.14%**	**+/-15%**
NO2 converter effeciency			**100.1%**	**>85%**

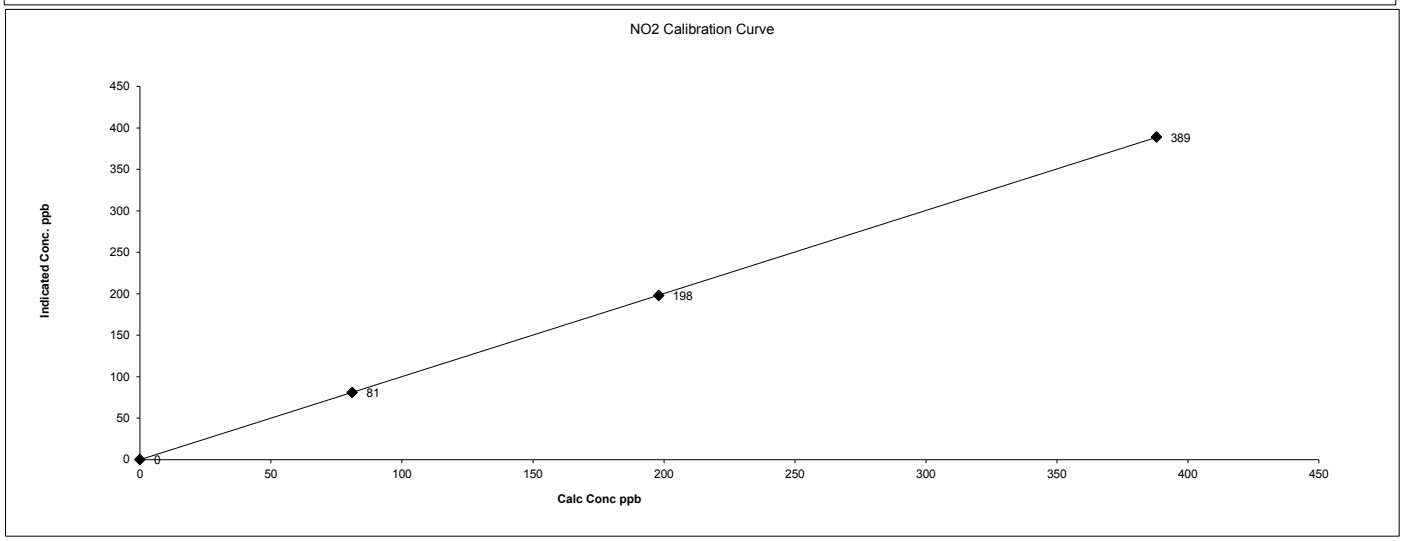
Comments:

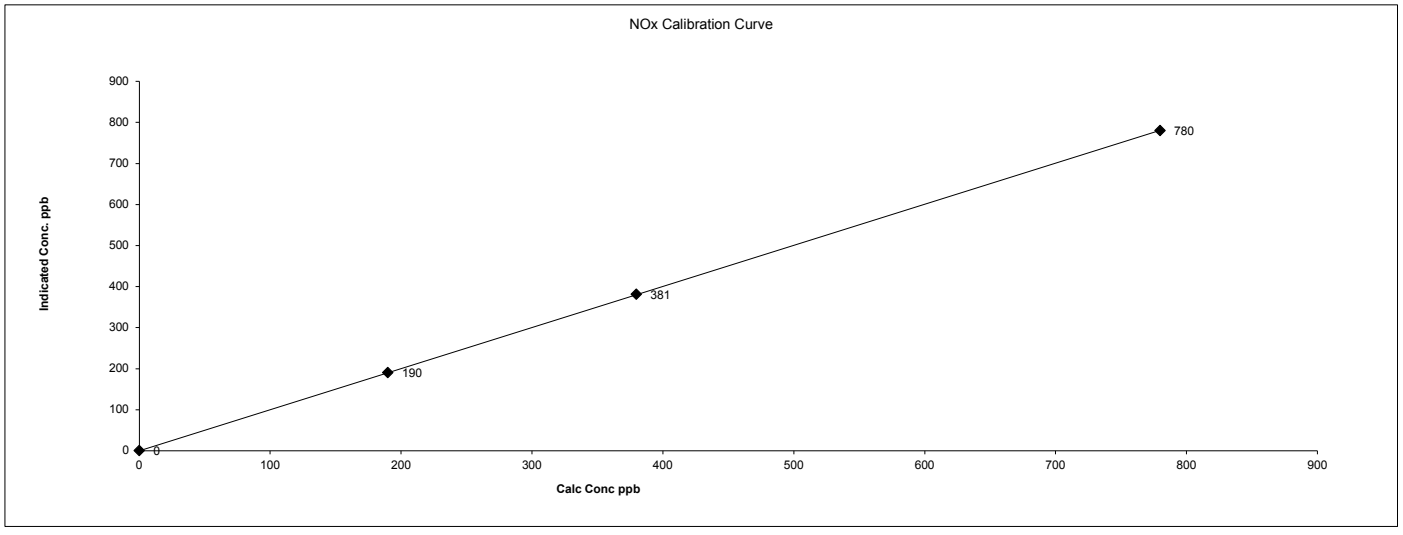
Sample filter changed

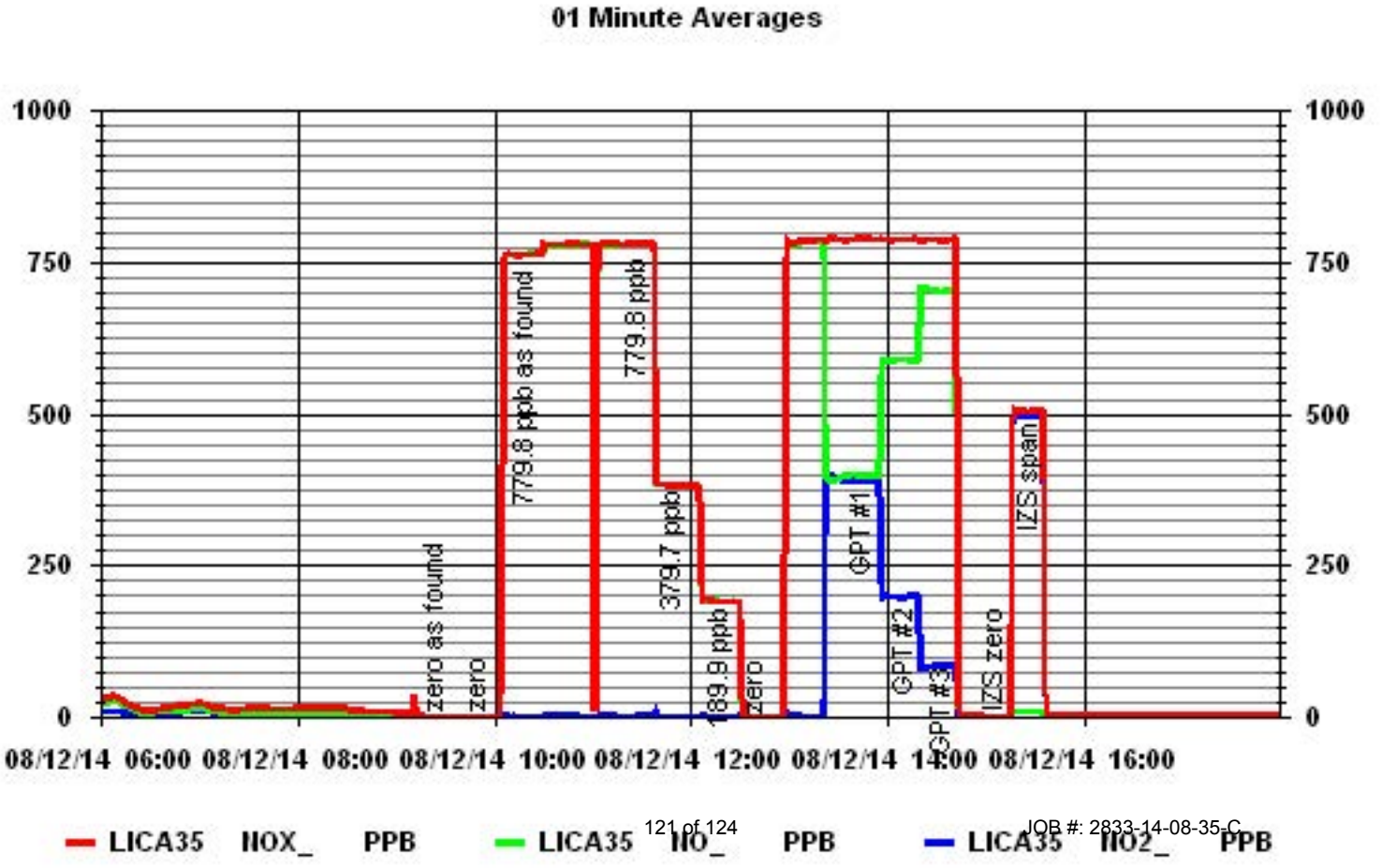
Date:	12-Aug-14	**Start Time (mst):**	9:19
Company:	LICA	**End Time (mst):**	14:40
Station Name/Location:	Elk Point	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**Cal Gas Expiry Date:**	4-Feb-14

API 200E NOx Analyzer Calibration








01 Minute Averages
1000
750
500
250
0
zero as found
zero
779.8 ppb as found
779.8 ppb
379.7 ppb
189.9 ppb
zero
GPT #1
GPT #2
GPT #3
IZS zero
IZS span
08/12/14 06:00
08/12/14 08:00
08/12/14 10:00
08/12/14 12:00
08/12/14 14:00
08/12/14 16:00
LICA35 NOX_ PPB
LICA35 NO_ PPB
LICA35 NO2_ PPB

Ozone

Thermo 49i O_3 Analyzer Calibration

Date:	13-Aug-14	**Start Time (mst):**	9:08
Company:	LICA	**End Time (mst):**	12:05
Station Name/Location:	Elk Point	**Calibration Purpose:**	Monthly Calibration
Performed by:	Kevin Hope	**G.P.T. Date:**	12-Aug-14

Analyzer:

Serial Number:	1002240372	**Range ppm:**	500
Last Calibration Date:	7-Jul-14	**As Found C.F.**	0.963
Previous Cal High Point C.F.:	1.000	**New C.F.:**	0.991

		As found:		**As left:**
	O_3 Bkg:	0.0	O_3 Bkg:	-0.2
	O_3 Coef:	1.078	O_3 Coef:	1.003
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	-15.2	-15.0	-15.2
	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:	29.9	Bench:	29.9
	Bench Lamp:	54.1	Bench Lamp:	54.1
	O_3 Lamp:	68.2	O_3 Lamp:	68.2
	Pressure:	695.9	Pressure:	695.9
	Cell A lpm:	0.751	Cell A lpm:	0.751
	Cell B lpm:	0.760	Cell B lpm:	0.760
	O_3 ppb:	19.0	O_3 ppb:	19.0
	Cell A ppb:	21.3	Cell A ppb:	21.3
	Cell B ppb:	14.4	Cell B ppb:	14.4
	Cell A int:	49113	Cell A int:	49113
	Cell B int:	49222	Cell B int:	49222
	Internal Span:	344.8	Internal Span:	344.8

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	4995	0
high	4995	340
mid	4995	170
low	4995	75

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	0.0	-0.1	NA
adjusted zero	4995	0.0	4995	0.0	0.0	NA
as found high	4995	0.00	4995	388.0	403.0	0.963
adjusted high	4995	0.00	4995	388.0	388.2	0.999
mid	4995	0.00	4995	198.0	198.3	0.998
low	4995	0.00	4995	81.0	83.2	0.974
calibrator zero	4995	0.00	4995	0.0	0.0	NA

copy and paste flows and NO decrease from NOx cal in to calculated concentration **Average C.F.=** 0.991

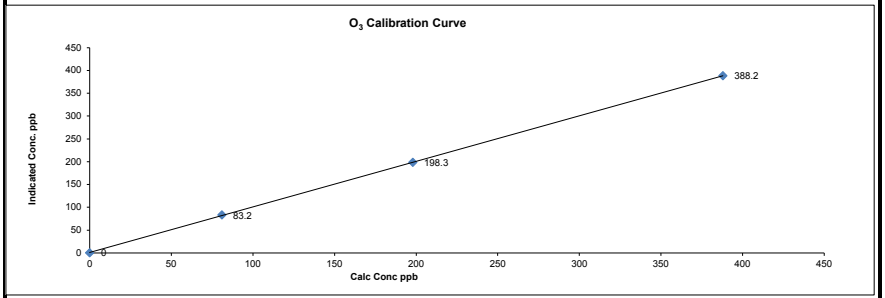
Linear Regression/Calibration Results:

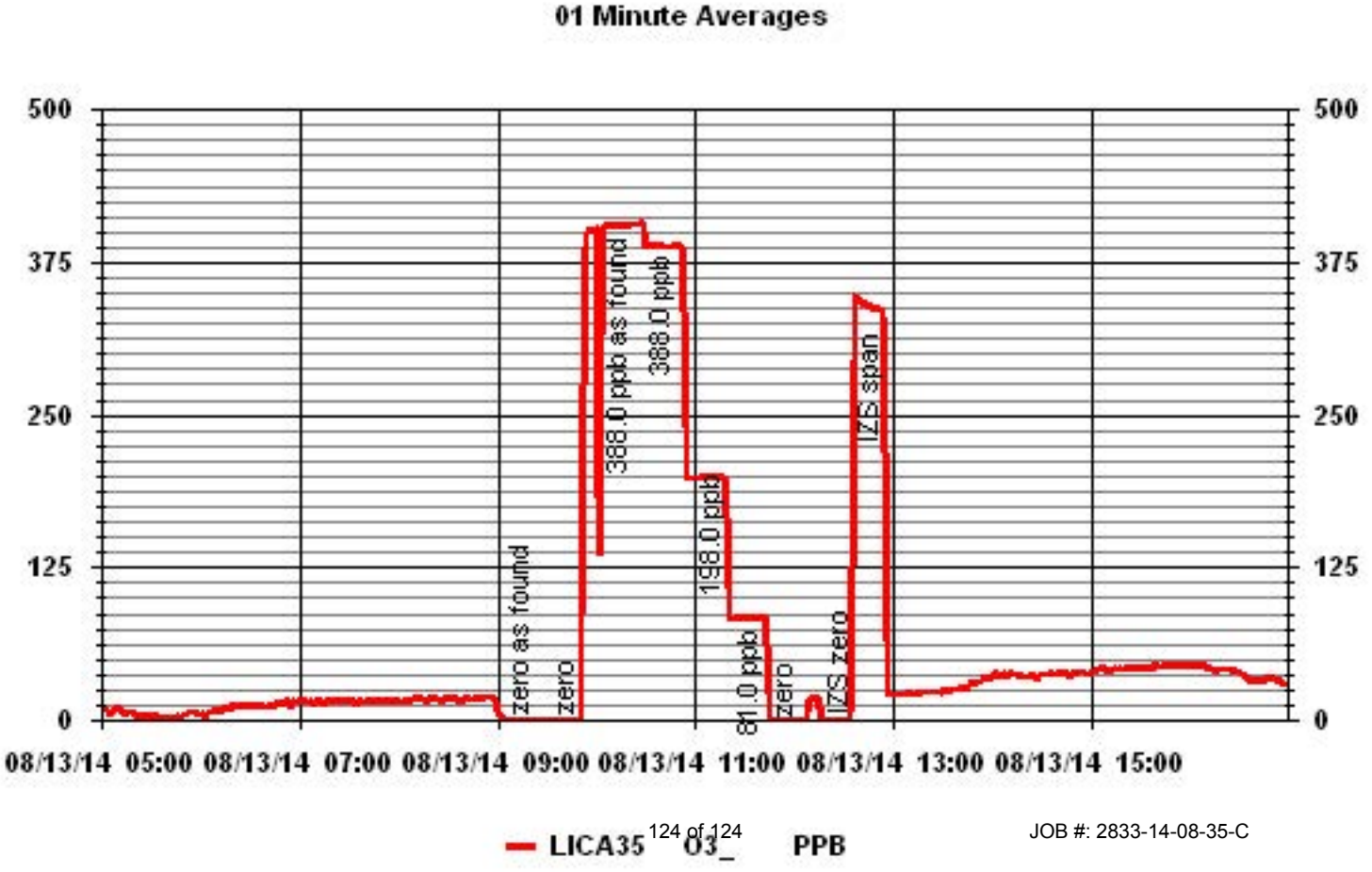
		LIMITS	**Pass/Fail ?**
Correlation Coeffecient =	**1.000**	**> or = 0.995**	**PASS**
Slope =	**0.998**	**0.85-1.15**	**PASS**
b (Intercept as % of full scale)=	**0.188%**	**± 3% F.S.**	**PASS**
% change in C.F. from last cal	**4%**	**± 15%**	**PASS**

Comments:

Sample filter changed.

Thermo 49i O3 Analyzer Calibration





JOB #: 2833-14-08-35-C