Lakeland Industry & Community Association

Maskwa Monitoring Site
Ambient Air Monitoring
Data Report
For
September 2012

Prepared By:

October 30, 2012

Lakeland Industry & Community Association
Ambient Air Monitoring
Maskwa

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Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: Maskwa
Data Period: September 2012

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Craig Snider

Calibration Procedure

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

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

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

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

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

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

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

MONTHLY CONTINUOUS DATA SUMMARY
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – MASKWA

Continuous Ambient Monitoring – September 2012

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	0.46	8	4	16	7.7	312(NW)	1.9	4	100.0
H2S (PPB)	10	3	0	0	0.28	4	1, 9	18, 19	6.7, 2.2	115(ESE), 66(ENE)	1.1	24	100.0
THC (PPM)	-	-	-	-	2.14	3.2	6	7	0.5	311(NW)	2.3	VAR	100.0
NOx (PPB)	-	-	-	-	3.18	26	4	4	7.7	306(NW)	7.3	4	100.0
NO (PPB)	-	-	-	-	0.64	18	24	6	0.9	111(ESE)	2.8	4	100.0
NO_2 (PPB)	159	-	0	-	2.55	19	29	22	3.8	275(W)	6.0	19	100.0
VECTOR WS (KPH)	-	-	-	-	5.20	16.2	7	13	-	13(NNE)	10.8	11	100.0
VECTOR WD (DEGREES)	-	-	-	-	253(WSW)	-	-	-	-	-	-	-	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	67.83	92	VAR	VAR	VAR	VAR	90.2	2	100.0
TEMPERATURE (DEG C)	-	-	-	-	11.95	25.5	23	14	2.5	264(W)	15.7	28	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	942	954	16	VAR	VAR	VAR	951.5	16	100.0
PRECIPITATION (MM)	-	-	-	-	0.08	6.8	2	16	5.4	295(WNW)	33.8	2	100.0

NA-NOT APPLICABLE VAR-VARIOUS

General Monthly Summary

Equipment Operation

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

AQM STATION – LICA – Maskwa

A trailer audit was performed by Alberta Environment on September 20th.

Sulphur Dioxide (PPB)

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

No operational issues were observed during the month. The inlet filter was changed before the monthly calibration was started on September 24th. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

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

The analyzer spanned low on September 20th. During the site visit on the 22nd, it was found that the wire for the daily calibration system was loose. Tightened the wire and ran a zero/span check on September 22nd. The check result was good. No data was invalidated due to this issue. The monthly calibration was performed on September 24th. 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 inlet filter was changed before the monthly calibration was started on September 24th. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – Maskwa

Nitrogen Dioxide (PPB)

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

No operational issues were observed during the month. The inlet filter was changed before the monthly calibration was started on September 24th. Data was corrected using daily zero information.

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

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

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

Relative Humidity (PERCENT)

- System make / model - Met One 083

No operational issues were observed during the month.

Precipitation (MM)

- System make / model - Met One 387

No operational issues were observed during the month.

General Monthly Summary

AQM STATION – LICA – Maskwa

Barometric Pressure (MILLIBAR)

- System make / model - Met One 092

No operation issues were observed during the month.

Ambient Temperature (DEGC)

- System make / model - Met One 060

No operational issues were observed during the month.

Trailer Temperature (DEG C)

- System make / model – R&R 61

No operational issues were observed during the month.

Standard Deviation Wind Direction (DEG)

- System make / model –Met One 50.5H

No operational issues were observed during the month.

General Monthly Summary

AQM STATION – LICA – Maskwa

Datalogger

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

No operational issues were observed during the month.

Trailer

The manifold was cleaned on September 24th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 2012

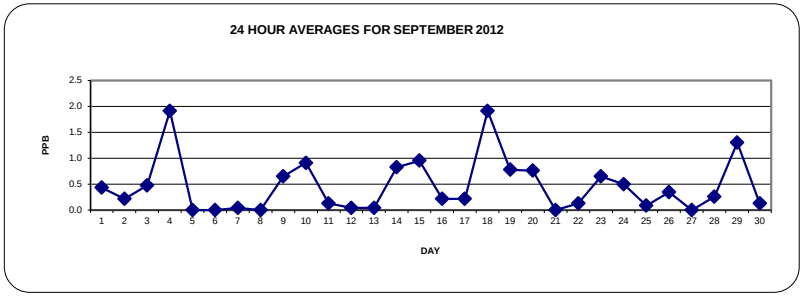
SULPHUR DIOXIDE (SO_2) hourly averages in ppb

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	**IZS**	4	3	3	0	0	0	0	0	0	4	0.4	24
2	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	3	0	0	0	0	0	1	1	0	0	3	0.2	24
3	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	2	2	3	4	0	0	0	4	0.5	24
4	0	0	0	2	7	2	1	1	1	2	2	**IZS**	4	3	2	6	**8**	2	1	0	0	0	0	0	**8**	**1.9**	24
5	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
6	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
7	0	0	0	0	0	0	0	0	**IZS**	1	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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
9	0	0	0	0	0	0	**IZS**	0	0	3	2	3	2	1	1	2	1	0	0	0	0	0	0	0	3	0.7	24
10	1	1	1	3	3	**IZS**	2	1	0	2	1	1	0	0	3	1	0	0	1	0	0	0	0	0	3	0.9	24
11	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0.1	24
12	1	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
13	0	0	**IZS**	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
14	0	**IZS**	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	4	1	5	0	5	0.8	24
15	**IZS**	0	0	0	0	3	4	5	1	0	1	2	2	1	0	0	2	0	0	0	0	0	0	**IZS**	5	1.0	24
16	1	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1	0	0	0	0	**IZS**	0	2	0.2	24
17	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	1	0	**IZS**	0	0	1	0.2	24
18	1	1	2	1	1	1	1	1	2	3	3	2	4	4	4	2	2	0	0	0	**IZS**	1	4	4	4	1.9	24
19	2	1	1	1	2	0	0	0	0	1	0	0	0	1	1	1	0	0	0	**IZS**	1	1	3	2	3	0.8	24
20	3	1	0	0	0	0	0	**C**	**C**	3	2	1	1	1	1	1	2	0	**IZS**	0	0	0	0	0	3	0.8	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0.0	24
22	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	**IZS**	0	1	0	0	0	0	0	1	0.1	24
23	0	0	0	0	0	0	0	0	0	2	3	3	2	2	2	**IZS**	1	0	0	0	0	0	0	0	3	0.7	24
24	0	0	0	0	0	0	1	0	**C**	**C**	**C**	**C**	**C**	1	**IZS**	2	2	1	0	0	0	0	1	1	2	0.5	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	1	1	1	0.1	24
26	1	0	0	0	0	1	0	0	0	0	0	1	**IZS**	2	1	1	1	0	0	0	0	0	0	0	2	0.3	24
27	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	1	**IZS**	1	0	0	0	0	0	0	1	0	1	1	1	0	1	0.3	24
29	0	0	0	1	2	4	5	3	2	**IZS**	2	2	2	0	0	0	0	0	0	0	2	2	3	0	5	1.3	24
30	0	0	0	1	1	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.1	24
HOURLY MAX	3	1	2	3	7	4	5	5	2	3	3	3	4	4	4	6	8	3	2	3	4	2	5	4			
HOURLY AVG	0.3	0.1	0.1	0.3	0.6	0.4	0.5	0.4	0.3	0.8	0.7	0.7	0.7	0.6	0.7	0.7	0.8	0.3	0.2	0.2	0.4	0.3	0.7	0.3			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



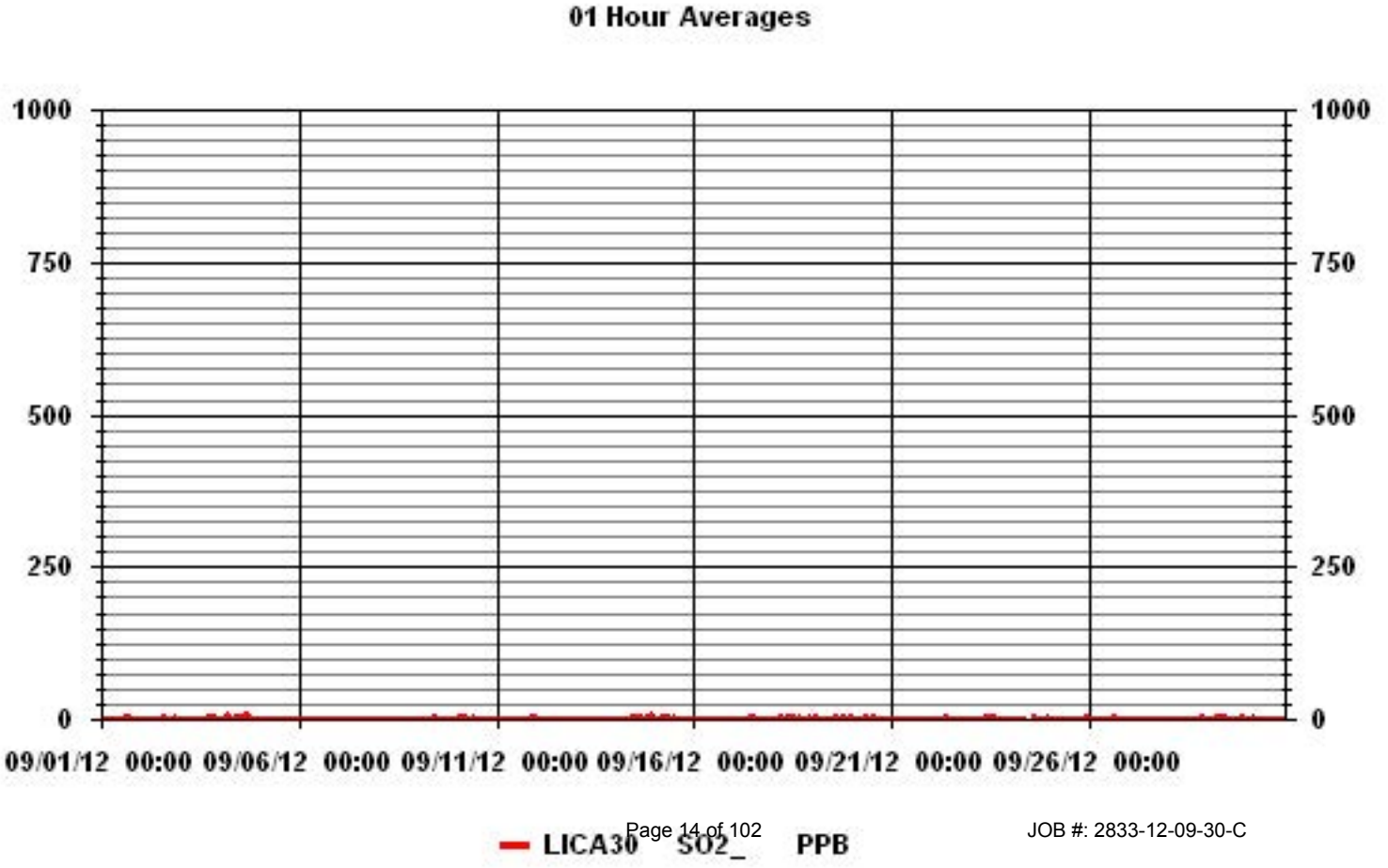
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB | 24-HR 48 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	172					
MAXIMUM 1-HR AVERAGE:	8	PPB	@ HOUR(S)	16	ON DAY(S)	4
MAXIMUM 24-HR AVERAGE:	1.9	PPB			ON DAY(S)	4

IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	1.01		MONTHLY AVERAGE:	0.46	PPB

JOB #: 2833-12-09-30-C



JOB #: 2833-12-09-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

SEPTEMBER 2012

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

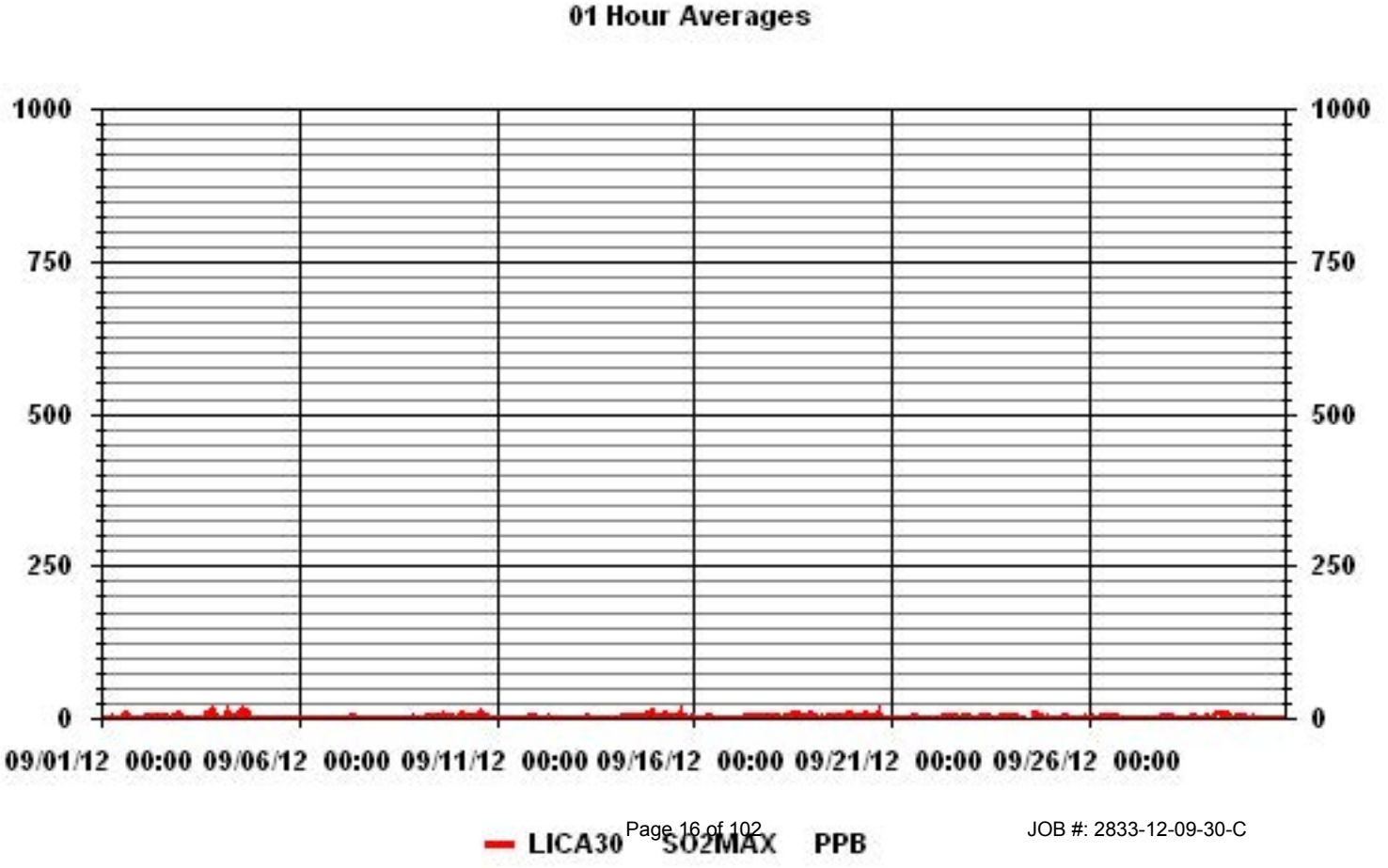
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	**IZS**	9	7	6	1	0	1	0	0	0	9	1.1	24
2	0	1	0	1	1	1	1	1	1	1	1	1	1	**IZS**	6	0	3	3	0	0	5	3	6	6	6	1.9	24
3	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	1	0	6	6	8	**14**	10	1	0	0	**14**	2.0	24
4	0	0	1	4	10	4	2	2	3	5	4	**IZS**	10	13	7	11	13	7	2	0	0	0	0	0	13	4.3	24
5	0	0	0	0	0	0	0	1	0	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
6	0	0	0	0	0	0	0	0	1	**IZS**	2	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24
7	0	0	0	0	0	0	0	0	**IZS**	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
8	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0.1	24
9	0	0	1	0	0	0	**IZS**	1	1	6	7	5	4	4	1	5	1	1	1	1	1	1	1	1	7	1.9	24
10	2	2	1	8	6	**IZS**	7	3	1	5	4	6	1	1	9	4	1	0	3	2	0	0	0	0	9	2.9	24
11	0	0	1	2	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	0.5	24
12	3	0	0	**IZS**	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24
13	0	0	**IZS**	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
14	0	**IZS**	0	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1	5	8	8	10	2	10	2.3	24
15	**IZS**	1	1	0	3	4	6	9	5	1	2	4	4	5	3	1	8	0	0	0	2	3	2	**IZS**	9	2.9	24
16	5	2	0	0	0	0	0	1	2	5	6	2	1	0	2	0	1	2	0	0	0	0	**IZS**	0	6	1.3	24
17	0	0	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	0.8	24
18	1	3	3	2	1	1	2	1	3	5	5	7	7	7	10	7	4	1	1	1	**IZS**	5	9	6	10	4.0	24
19	6	5	1	2	2	1	1	1	2	2	1	1	1	1	1	1	1	1	1	**IZS**	1	3	7	6	7	2.1	24
20	7	2	1	1	1	1	1	**C**	**C**	7	6	5	4	4	4	2	9	1	**IZS**	0	0	0	0	0	9	2.7	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	2	**IZS**	0	0	0	1	0	0	5	0.5	24
22	0	1	0	0	0	1	0	1	1	1	1	1	1	1	1	1	**IZS**	0	2	1	1	1	1	1	2	0.8	24
23	1	1	0	0	0	1	1	1	1	3	4	4	4	4	3	**IZS**	2	1	1	1	1	1	1	1	4	1.6	24
24	1	1	1	1	1	1	2	1	**C**	**C**	**C**	**C**	**C**	4	**IZS**	6	6	6	1	1	1	1	2	2	6	2.2	24
25	0	0	0	0	0	0	0	0	1	1	1	1	0	**IZS**	0	0	0	0	0	1	0	1	1	1	1	0.3	24
26	2	1	1	1	1	2	1	1	1	1	1	1	**IZS**	6	2	1	1	1	1	0	0	0	0	0	6	1.1	24
27	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	1	0	0	1	0	0	0	1	1	0	1	1	0.2	24
28	1	1	1	1	1	0	0	0	1	2	**IZS**	1	2	1	1	1	1	1	2	1	1	2	1	1	2	1.0	24
29	1	1	1	2	5	7	9	10	6	**IZS**	8	7	6	3	1	1	0	1	1	0	3	4	5	1	10	3.6	24
30	2	1	1	2	2	1	0	0	**IZS**	0	0	0	0	1	0	2	0	0	0	0	0	0	0	2	2	0.6	24
HOURLY MAX	7	5	3	8	10	7	9	10	6	7	8	7	10	13	10	11	13	7	8	14	10	8	10	6			
HOURLY AVG	1.1	0.8	0.5	1.0	1.2	0.9	1.2	1.4	1.3	1.9	2.1	1.8	1.8	2.1	2.0	2.0	2.4	1.4	1.0	1.0	1.3	1.3	1.7	1.2			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	379					
MAXIMUM INSTANTANEOUS VALUE:	14	PPB	@ HOUR(S)	19	ON DAY(S)	3
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		720	HRS
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	2.27					



JOB #: 2833-12-09-30-C

LICA30
SO2_ / WDR Joint Frequency Distribution (Percent)

September 2012

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	2.63	4.25	3.51	3.37	1.61	3.66	3.22	4.54	9.38	16.86	9.82	4.39	7.62	15.68	6.30	3.07	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.63	4.25	3.51	3.37	1.61	3.66	3.22	4.54	9.38	16.86	9.82	4.39	7.62	15.68	6.30	3.07	

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
< 20	18	29	24	23	11	25	22	31	64	115	67	30	52	107	43	21	682
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	18	29	24	23	11	25	22	31	64	115	67	30	52	107	43	21	

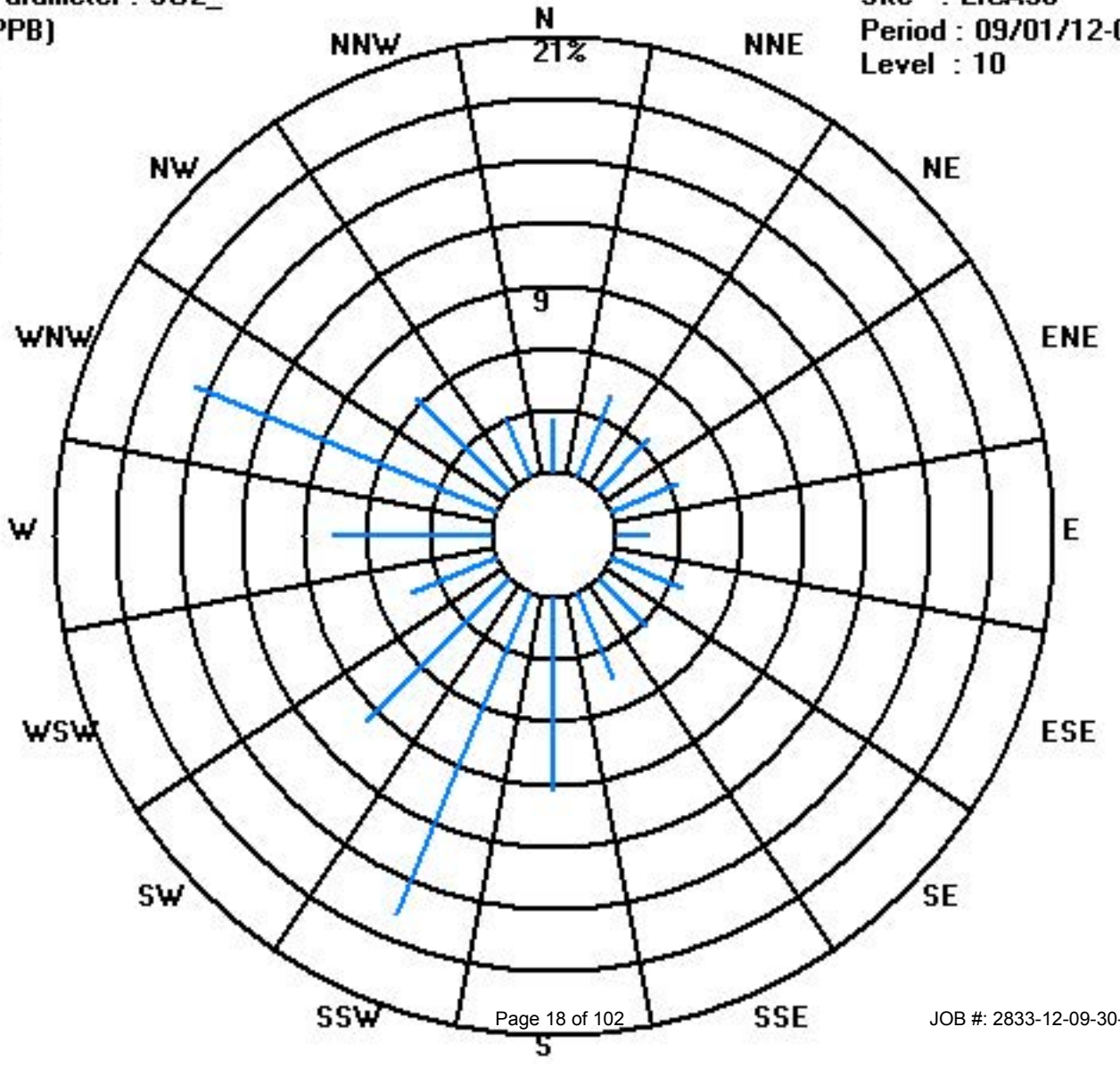
Calm : .00 %

Total # Operational Hours : 682

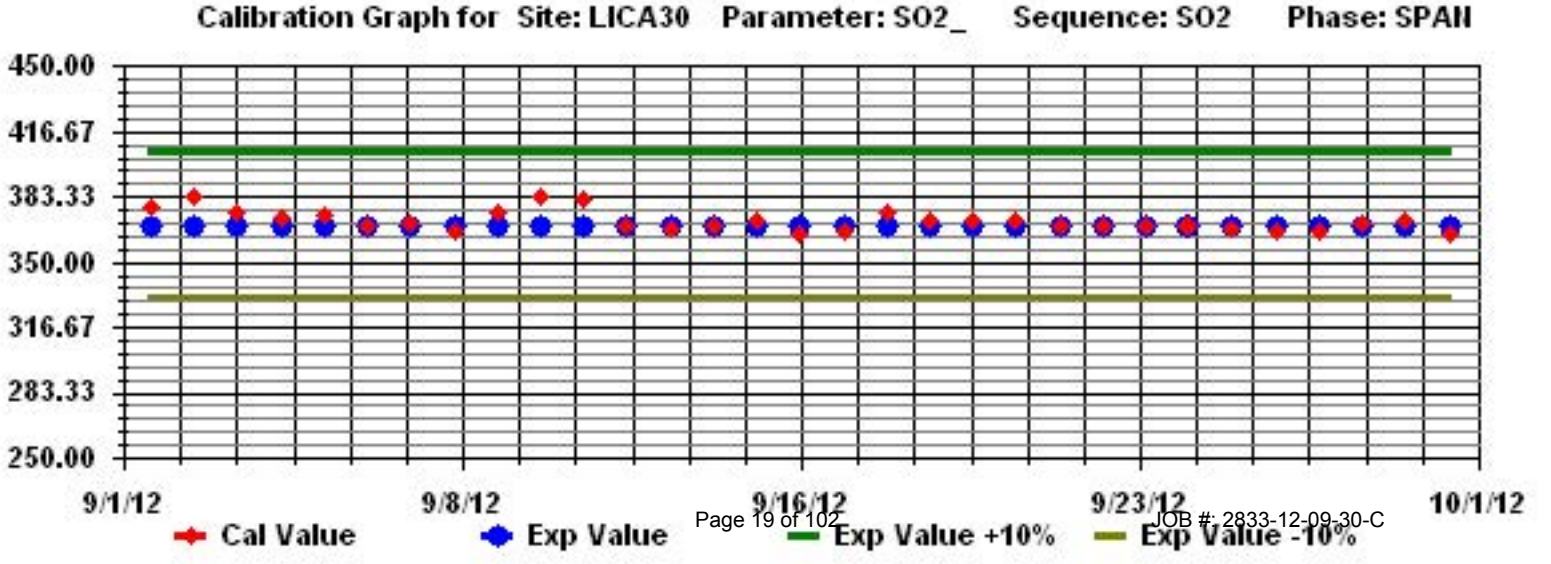
Logger : 30 Parameter : SO2_
Class Limits (PPB)

>= 340
< 340
< 170
< 110
< 60
< 20

Site : LICA30
Period : 09/01/12-09/30/12
Level : 10



JOB #: 2833-12-09-30-C


Calibration Graph for Site: LICA30 Parameter: SO2_ Sequence: SO2 Phase: SPAN
450.00
416.67
383.33
350.00
316.67
283.33
250.00
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 2012

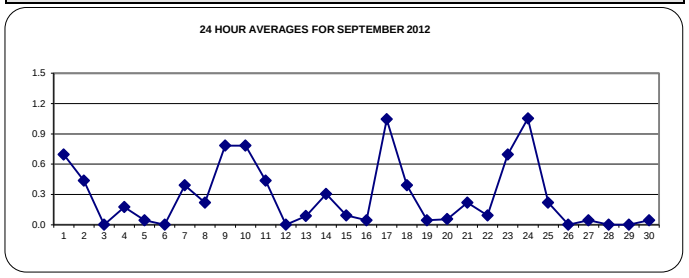
HYDROGEN SULPHIDE (H_2S) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	1	0	0	0	1	1	1	1	1	0	**IZS**	1	1	1	**4**	1	1	1	0	0	**4**	0.7	24
2	0	1	0	1	1	1	1	1	1	1	1	0	1	**IZS**	0	0	0	0	0	0	0	0	0	0	1	0.4	24
3	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	1	1	0	0	1	0	0	1	0	0	0	0	1	0.2	24
5	0	0	0	0	0	0	0	1	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
6	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
7	0	0	0	1	1	1	1	1	**IZS**	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24
8	0	0	0	0	0	1	1	**IZS**	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	1	0.2	24
9	0	1	1	1	1	0	**IZS**	0	0	2	0	1	0	0	0	1	1	0	1	**4**	2	1	1	0	**4**	0.8	24
10	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1	1	0	0	0	1	1	0	0	1	1	1	0.8	24
11	1	1	1	1	**IZS**	0	1	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	1	0.4	24
12	0	0	0	**IZS**	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	**IZS**	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
14	0	**IZS**	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	1	0	0	0	1	0	1	0.3	24
15	**IZS**	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	0.1	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	0.0	24
17	1	1	1	1	1	1	1	2	1	1	1	1	2	2	1	1	1	1	1	1	1	**IZS**	0	0	2	1.0	24
18	1	1	0	0	1	0	0	1	1	1	1	0	1	1	0	0	0	0	0	0	**IZS**	0	0	0	1	0.4	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	1	0	1	0.0	24
20	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	**IZS**	0	0	0	0	1	1	0.1	24
21	0	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	**IZS**	1	0	0	0	0	0	1	0.2	24
22	0	0	0	0	0	0	0	0	0	**C**	0	0	0	0	1	0	**IZS**	0	0	0	0	0	0	1	1	0.1	24
23	1	1	1	2	2	1	1	0	1	0	1	1	0	1	0	**IZS**	1	0	0	0	1	1	0	0	2	0.7	24
24	0	1	0	1	0	0	0	1	**C**	**C**	**C**	**C**	0	0	**IZS**	1	2	0	3	3	2	1	3	2	3	**1.1**	24
25	0	0	0	0	0	1	0	0	2	1	0	0	0	**IZS**	0	0	0	1	0	0	0	0	0	0	2	0.2	24
26	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
27	0	0	0	0	0	0	0	0	1	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
28	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
30	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0.0	24
HOURLY MAX	1	1	1	2	2	1	1	2	2	2	1	1	2	2	1	1	2	1	4	4	2	1	3	2			
HOURLY AVG	0.2	0.3	0.2	0.3	0.4	0.2	0.2	0.4	0.4	0.4	0.3	0.3	0.4	0.2	0.2	0.1	0.3	0.1	0.4	0.4	0.2	0.2	0.2	0.3			

STATUS FLAG CODES

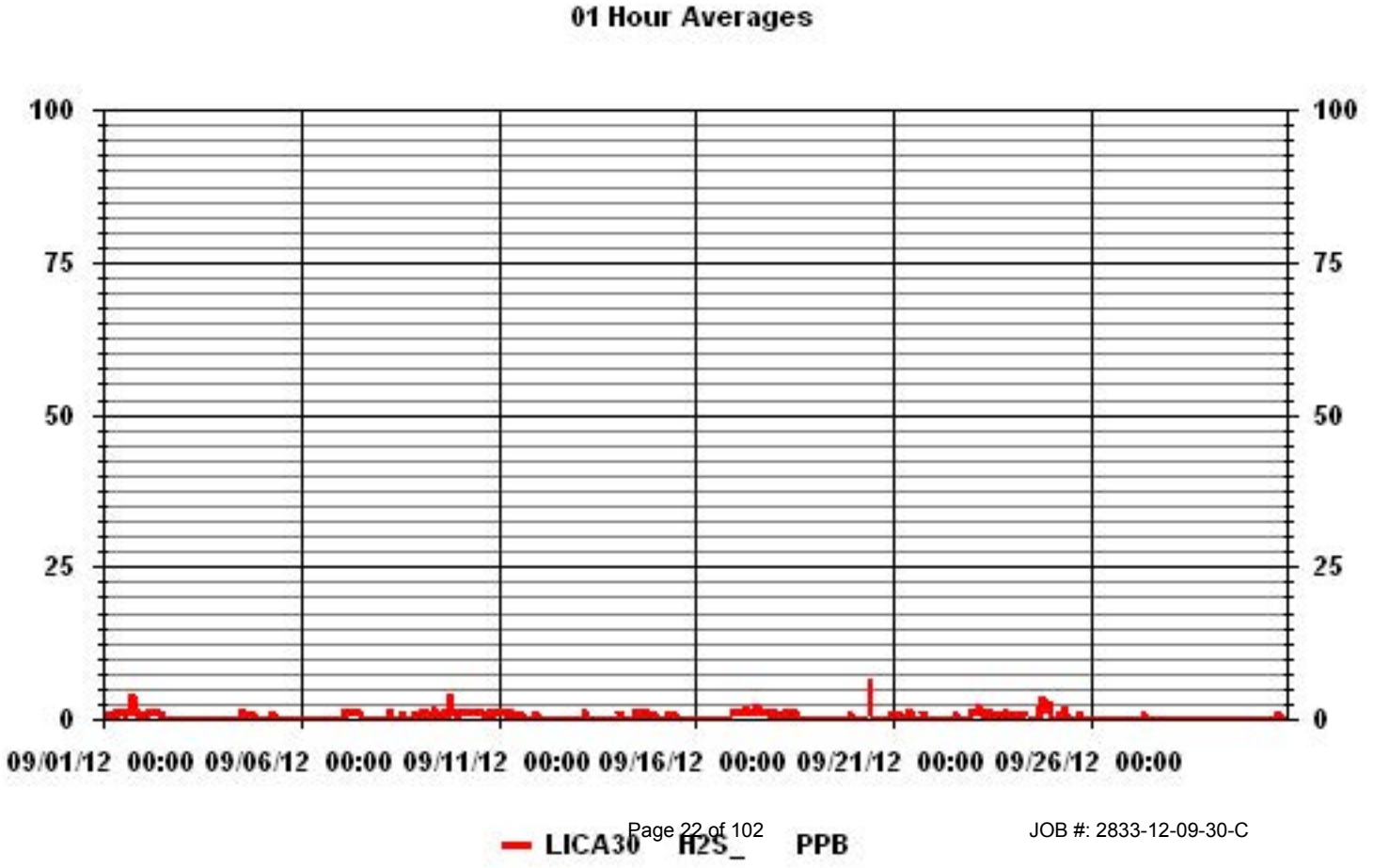
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



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:	165					
MAXIMUM 1-HR AVERAGE:	4	PPB	@ HOUR(S)	18, 19	ON DAY(S)	1, 9
MAXIMUM 24-HR AVERAGE:	1.1	PPB			ON DAY(S)	24
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		720	HRS
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.54		MONTHLY AVERAGE:		0.28	PPB



JOB #: 2833-12-09-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

SEPTEMBER 2012

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST

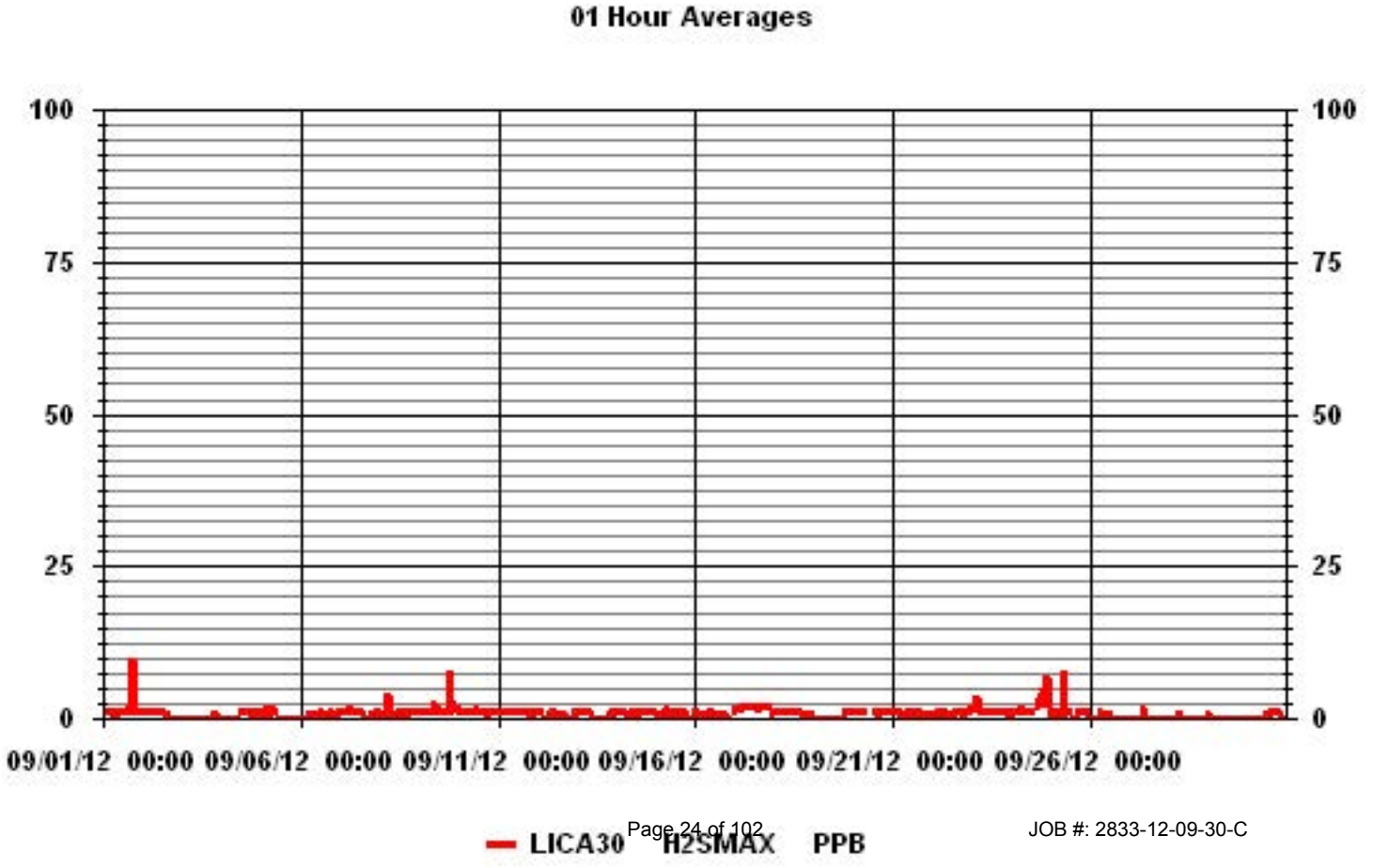
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	**IZS**	1	2	4	**10**	3	1	1	1	1	**10**	1.6	24
2	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	0	0	0	0	0	0	0	0	0	1	0.6	24
3	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	1	0	0	0	1	0.0	24
4	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	1	1	1	1	0	1	1	1	0	1	1	0.4	24
5	1	1	1	2	0	1	1	2	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.5	24
6	0	0	0	0	0	0	1	0	0	**IZS**	1	0	1	1	0	0	1	0	1	1	0	0	0	1	1	0.3	24
7	1	1	1	1	1	1	2	1	**IZS**	1	1	1	1	1	0	0	0	0	0	1	0	0	1	1	2	0.7	24
8	0	0	0	0	0	4	1	**IZS**	1	0	0	0	1	1	1	1	0	1	1	1	1	1	1	1	4	0.7	24
9	1	1	1	1	1	1	**IZS**	1	1	3	1	2	1	1	1	1	1	1	1	8	3	2	2	1	8	1.6	24
10	2	1	1	1	1	**IZS**	1	1	1	1	1	2	1	1	1	1	1	0	1	1	1	1	1	1	2	1.0	24
11	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1.0	24
12	1	1	1	**IZS**	0	0	0	1	0	1	1	0	1	0	1	0	1	0	0	0	0	0	0	1	1	0.4	24
13	1	1	**IZS**	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0.5	24
14	1	**IZS**	1	1	1	1	0	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0.8	24
15	**IZS**	0	0	1	0	1	1	2	0	0	1	1	1	0	0	1	1	1	1	0	0	0	0	**IZS**	2	0.5	24
16	1	1	0	1	0	0	0	1	0	1	1	0	0	0	0	1	0	0	1	0	0	0	**IZS**	1	1	0.4	24
17	2	1	2	1	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	**IZS**	0	1	2	1.7	24
18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	**IZS**	0	1	0	1	0.8	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	1	1	1	0.2	24
20	1	1	1	1	1	1	1	**C**	**C**	**C**	**C**	**C**	**C**	1	1	0	1	1	**IZS**	1	1	1	1	1	1	0.9	24
21	1	1	1	1	1	0	1	0	0	1	1	1	0	0	1	1	1	**IZS**	1	0	1	0	1	0	1	0.7	24
22	1	0	0	0	1	1	0	1	1	**C**	**C**	1	0	0	1	1	**IZS**	1	1	0	1	1	1	2	2	0.7	24
23	1	2	3	3	3	2	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	0	3	1.3	24
24	1	1	1	1	1	1	2	1	**C**	**C**	**C**	**C**	1	1	**IZS**	2	3	2	4	5	3	2	7	5	7	2.3	24
25	1	0	1	1	1	1	0	0	8	2	1	1	1	**IZS**	0	0	1	1	1	1	1	1	1	0	8	1.1	24
26	0	0	0	0	0	0	1	1	0	0	0	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
27	0	0	0	0	0	0	0	0	2	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24
28	0	0	0	0	0	0	1	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
29	1	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
30	0	0	0	0	0	0	0	0	**IZS**	0	0	1	0	0	1	1	1	1	1	1	0	0	0	0	1	0.3	24
HOURLY MAX	2	2	3	3	3	4	2	2	8	3	2	2	2	2	1	2	3	4	10	8	3	2	7	5			
HOURLY AVG	0.8	0.6	0.7	0.7	0.6	0.8	0.7	0.7	0.9	0.8	0.7	0.7	0.7	0.5	0.5	0.6	0.7	0.7	1.0	1.0	0.7	0.5	0.8	0.8			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	382					
MAXIMUM INSTANTANEOUS VALUE:	10	PPB	@ HOUR(S)	18	ON DAY(S)	1
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		720	HRS
MONTHLY CALIBRATION TIME:	12	HRS				
STANDARD DEVIATION:	0.93					



JOB #: 2833-12-09-30-C

LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

September 2012

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	2.65	4.27	3.53	3.24	1.62	3.09	3.38	4.41	9.42	16.93	9.86	4.41	7.65	15.61	6.18	2.94	99.26
< 10	.00	.00	.00	.14	.00	.58	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.73
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.65	4.27	3.53	3.38	1.62	3.68	3.38	4.41	9.42	16.93	9.86	4.41	7.65	15.61	6.18	2.94	

Calm : .00 %

Total # Operational Hours : 679

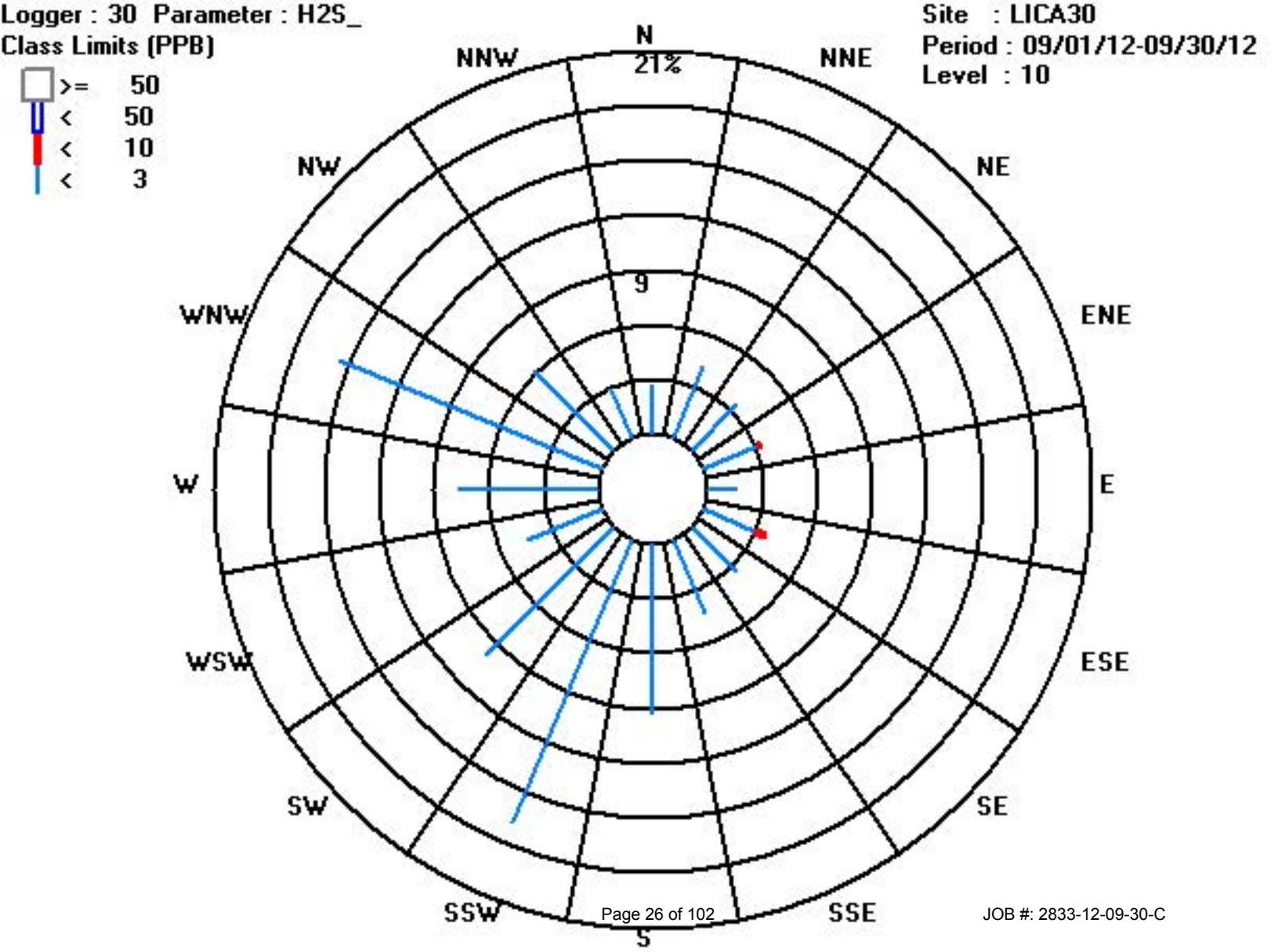
Distribution By Samples

Direction

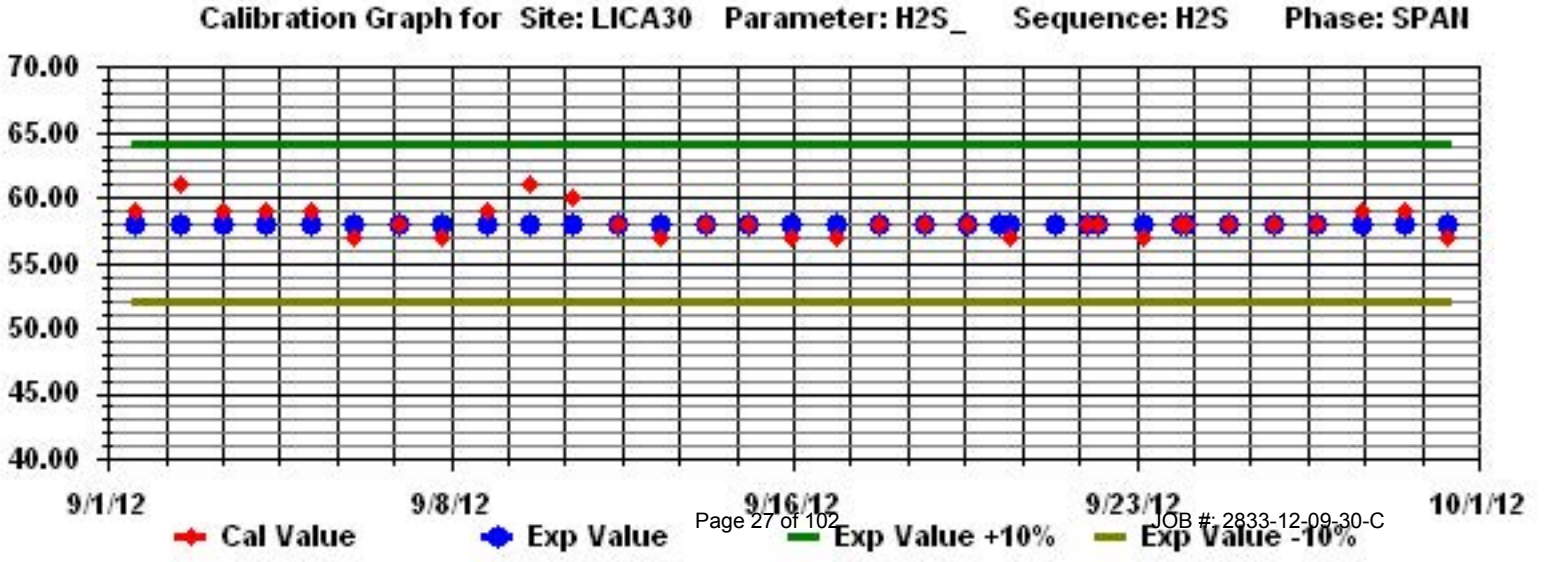
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	18	29	24	22	11	21	23	30	64	115	67	30	52	106	42	20	674
< 10				1		4											5
< 50																	
>= 50																	
Totals	18	29	24	23	11	25	23	30	64	115	67	30	52	106	42	20	

Calm : .00 %

Total # Operational Hours : 679



JOB #: 2833-12-09-30-C


Calibration Graph for Site: LICA30 Parameter: H2S_ Sequence: H2S Phase: SPAN
70.00
65.00
60.00
55.00
50.00
45.00
40.00
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

SEPTEMBER 2012

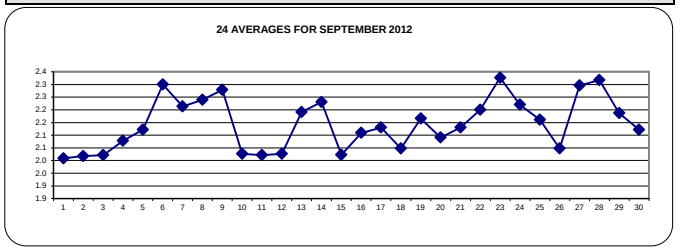
TOTAL HYDROCARBONS hourly averages in ppm

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	2	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	**IZS**	2.1	2.1	2.2	2	2.1	2.1	2.1	2	2.1	2.2	2.0	24
2	2	2	2	2	2	2	2	2.1	2	2	1.9	1.9	1.9	**IZS**	2.1	2	1.9	2.1	2	2.1	2.1	2.2	2.1	2	2.2	2.0	24
3	2	2	2	2	2	2	2	2	2	2	2	2	**IZS**	2	2	2	2.1	2.1	2.1	2.1	2.1	2	2	2	2.1	2.0	24
4	2	2	2.1	2.2	2.1	2.3	2.2	2.2	2.3	2.2	2.2	**IZS**	2	2	2.1	2	2	2	2	1.9	2	2	2	2	2.3	2.1	24
5	2.1	2.1	2.2	2.3	2.3	2.3	2.4	2.6	2.2	1.9	**IZS**	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.6	2.1	24
6	2.2	2.3	2.5	2.7	2.8	3.1	2.9	**3.2**	2.5	**IZS**	2.1	2.1	2.1	2	2	2	2	2	2	2	2.1	2	2.1	2.2	**3.2**	2.3	24
7	2.3	2.3	2.4	2.6	2.6	2.5	2.6	2.5	**IZS**	2.5	2.2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.2	2.6	2.2	24
8	2.4	2.4	2.4	2.4	2.3	2.4	2.5	**IZS**	2.8	2.6	2.3	2.2	2.1	2	2	2	2	2	2.1	2.1	2.1	2.1	2.2	2.1	2.8	2.2	24
9	2.2	2.3	2.3	2.4	2.4	2.3	**IZS**	2.3	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.3	2.3	2.4	2.4	2.3	24
10	2.4	2.3	2.3	2.2	2.1	**IZS**	2	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	2	2	1.9	2	2	1.9	2.4	2.0	24
11	1.9	1.9	1.9	2	**IZS**	1.9	2	2	2	2	2	2	2	2	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	24
12	2.1	2.1	2.1	**IZS**	2	2	2	2.1	2	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.0	24
13	2.3	2.4	**IZS**	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.1	2	2	2	2	2	2	2	2	2	2.1	2.2	2.3	2.4	2.4	2.2	24
14	3.2	**IZS**	2.5	2.4	2.3	2.4	2.4	2.5	2.4	2.4	2.3	2.3	2.2	2.1	2	2	2	1.9	1.9	1.9	2.1	2	2.1	2	3.2	2.2	24
15	**IZS**	2	2	2	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2.1	2	2	2	**IZS**	2.1	2.0	24
16	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.1	2.1	2.1	2	2.1	2	2	2	2	2.1	2	2	2.1	2.1	**IZS**	2.3	2.3	2.1	24
17	2.3	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.3	2.4	2.2	2.2	2.1	2	2	2	1.9	1.9	1.9	1.9	1.9	**IZS**	2	2.1	2.4	2.1	24
18	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.1	2	2.1	2	2	2	2	2	2	2	2	2	2	**IZS**	1.9	2.1	2	2.2	2.0	24
19	2.3	2.3	2	2.1	2.1	2	2	2.1	2.1	2.3	2.3	2.3	2.1	2	2	2	2	2	2	**IZS**	2.6	2.2	2.8	2.2	2.8	2.2	24
20	2.4	2.2	2.1	2.2	2.1	2.2	2.1	2.1	2.2	2.2	C	2	2	2	2	2	2	1.9	**IZS**	2	2	2.1	2.1	2.1	2.4	2.1	24
21	2.2	2.4	2.3	2.2	2.3	2.2	2.2	2.6	2.2	2	2	2	2	2	2.1	2.1	2	**IZS**	2	2	2	2.1	2.1	2	2.6	2.1	24
22	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.3	2.3	2.2	2.2	2.2	2.1	2.2	2.2	2.2	**IZS**	2.1	2.2	2.2	2.1	2.1	2.2	2.2	2.4	2.2	24
23	2.2	2.2	2.3	2.3	2.3	2.3	2.5	2.9	2.7	2.5	2.4	2.3	2.3	2.3	2.1	**IZS**	2.1	2.1	2.3	2.4	2.3	2.2	2.2	2.3	2.9	2.3	24
24	2.4	2.4	2.3	2.3	2.5	2.5	2.6	2.6	2.3	2.1	2.1	**C**	**C**	**C**	**C**	2.1	2	2	2	2	2.1	2.1	2	2	2.6	2.2	24
25	2	2	2	2	2	2	2	2.1	2.6	2.4	2.4	2.3	2.2	**IZS**	2.2	2.1	2.2	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.6	2.2	24
26	2.2	2.1	2	2	2	2	2	2	2	2	2	2	**IZS**	2	2	2	2	2	2	2.1	2.1	2.1	2.2	2.3	2.3	2.0	24
27	2.3	2.3	2.4	2.4	2.5	2.5	2.5	2.5	2.6	2.3	2.3	**IZS**	2.2	2.1	2.2	2.4	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.3	2.6	2.3	24
28	2.4	2.5	2.5	2.5	2.6	2.6	2.5	2.6	2.4	2.3	**IZS**	2.3	2.3	2.2	2.2	2.1	2.1	2	2.1	2.1	2.2	2.2	2.3	2.3	2.6	2.3	24
29	2.3	2.5	2.7	2.6	2.6	2.2	2.3	2.2	2.1	**IZS**	2	2	2	2	2.1	2	2	2	2	2	2.2	2.2	2.2	2.1	2.7	2.2	24
30	2.1	2.3	2.4	2.5	2.5	2.4	2.3	2.2	**IZS**	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.5	2.1	24
HOURLY MAX	3.2	2.5	2.7	2.7	2.8	3.1	2.9	3.2	2.8	2.6	2.4	2.3	2.3	2.3	2.2	2.4	2.2	2.3	2.3	2.4	2.6	2.3	2.8	2.4			
HOURLY AVG	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1			

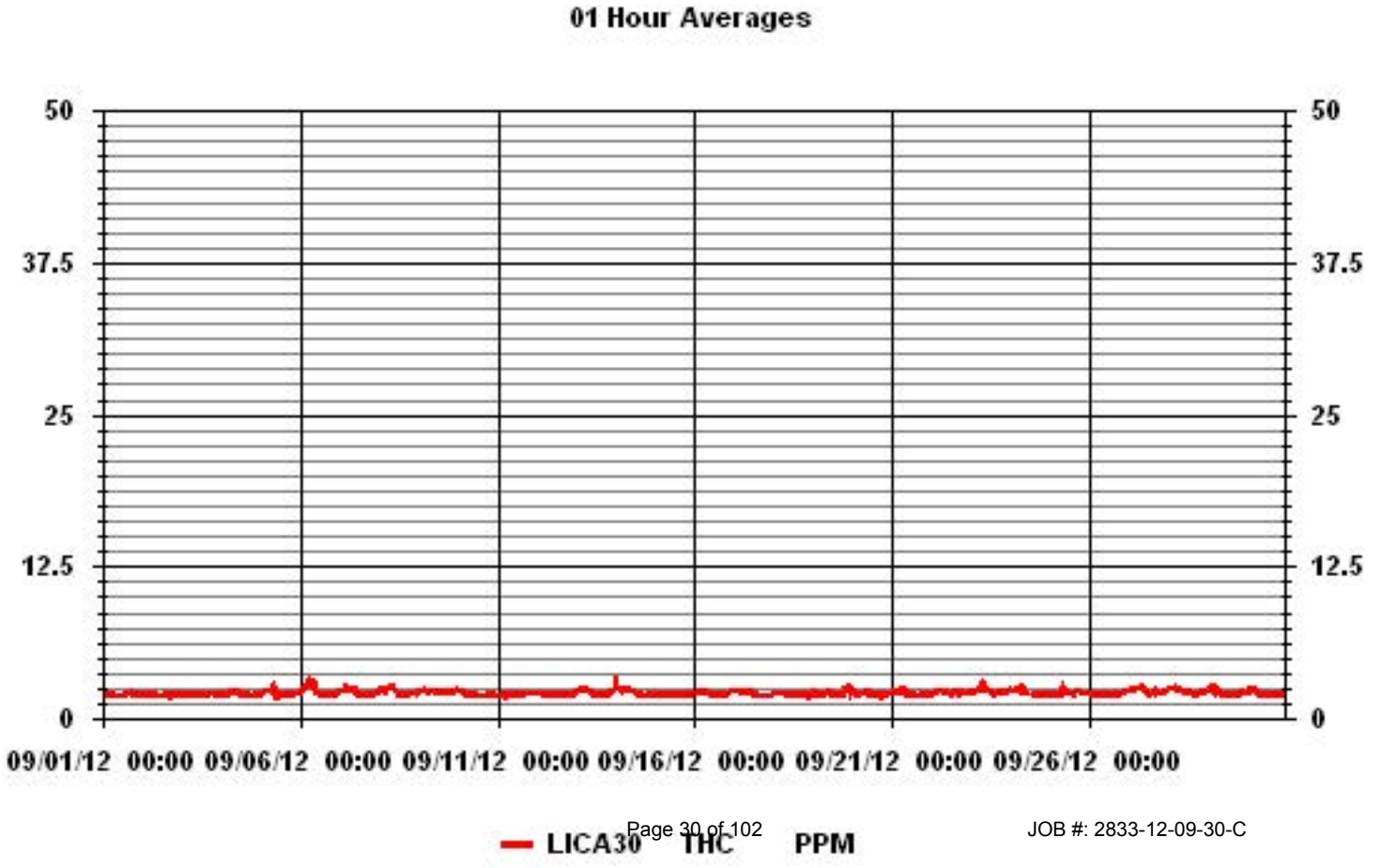
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	685						
MAXIMUM 1-HR AVERAGE:	3.2	PPM	@ HOUR(S)	7	ON DAY(S)	6	
MAXIMUM 24-HR AVERAGE:	2.3	PPM			ON DAY(S)	VAR	
					VAR- VARIOUS		
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:		720	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	0.19		MONTHLY AVERAGE:		2.14	PPM	



JOB #: 2833-12-09-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

SEPTEMBER 2012

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

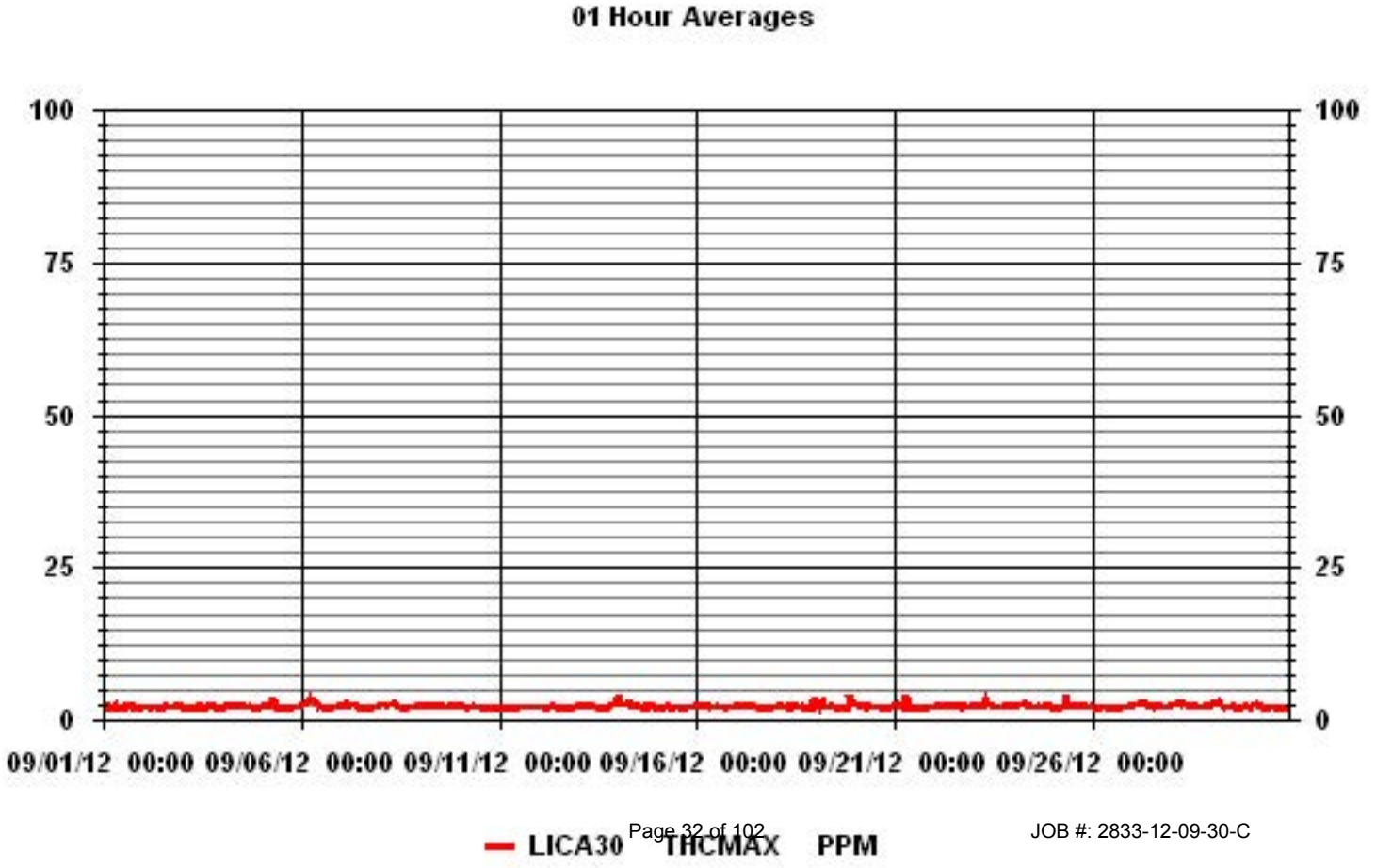
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2.1	2.1	2	2.4	2	2	2	2.5	2	1.9	2	2	1.9	1.9	**IZS**	2.4	2.4	2.5	2.1	2.2	2.2	2.1	2	2.1	2.5	2.1	24
2	2.1	2.1	2.1	2.1	2.1	2	2.1	2.1	2.1	2	2	1.9	1.9	**IZS**	2.3	2.2	2.1	2.3	2.1	2.2	2.2	2.4	2.4	2.3	2.4	2.1	24
3	2	2	2	2	2	2	2	2.1	2	2.2	2.2	2.2	**IZS**	2.1	2	2.2	2.5	2.4	2.4	2.3	2.3	2.2	2	2	2.5	2.1	24
4	2	2.1	2.3	2.3	2.3	2.4	2.3	2.3	2.4	2.3	2.3	**IZS**	2.2	2.2	2.2	2.2	2.1	2.2	2.3	2	2	2	2	2.1	2.4	2.2	24
5	2.1	2.2	2.2	2.3	2.3	2.4	2.5	3.4	2.4	2.1	**IZS**	2	2.1	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.2	3.4	2.2	24
6	2.3	2.4	2.6	2.8	2.9	3.6	3.2	3.4	3.1	**IZS**	2.1	2.2	2.2	2.1	2.1	2	2	2	2	2	2.1	2.1	2.2	2.2	3.6	2.4	24
7	2.3	2.3	2.4	2.8	2.8	2.5	2.8	2.7	**IZS**	2.6	2.4	2.2	2	2	2	2	2	2	2	2	2.1	2.1	2.2	2.4	2.8	2.3	24
8	2.4	2.5	2.5	2.4	2.3	2.5	2.5	**IZS**	2.9	2.8	2.4	2.2	2.1	2.1	2	2	2	2.1	2.1	2.1	2.1	2.2	2.4	2.4	2.9	2.3	24
9	2.2	2.3	2.4	2.5	2.4	2.4	**IZS**	2.4	2.4	2.7	2.6	2.4	2.4	2.3	2.2	2.4	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.6	2.7	2.4	24
10	2.5	2.3	2.4	2.4	2.2	**IZS**	2.2	2.1	2.2	2.3	2.1	2.1	2.3	2	1.9	1.9	1.9	1.9	2	2	1.9	2.1	2.1	1.9	2.5	2.1	24
11	1.9	1.9	2	2	**IZS**	2	2	2	2	2	2	2	2.1	2.1	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.1	24
12	2.1	2.1	2.1	**IZS**	2	2	2	2.1	2.2	2.2	2.2	2.1	2	2	2	2	2	2	2	2	2	2	2.1	2.2	2.2	2.1	24
13	2.3	2.4	**IZS**	2.5	2.5	2.4	2.4	2.4	2.4	2.3	2.2	2.1	2	2.1	2.1	2	2	2	2	2.1	2.4	2.5	2.7	3.3	3.3	2.3	24
14	3.8	**IZS**	2.9	2.5	2.5	2.6	2.6	2.8	2.5	2.4	2.4	2.4	2.3	2.2	2.1	2	2.2	2.2	1.9	2	2.4	2.5	2.4	2	3.8	2.4	24
15	**IZS**	2	2	2	2.1	2.1	2.1	2.4	2	2	2.2	2.1	2.2	2.1	2	2	2	2	2.1	2.1	2.1	2.1	2.1	**IZS**	2.4	2.1	24
16	2.2	2.2	2.3	2.3	2.2	2.2	2.3	2.5	2.2	2.4	2.2	2.1	2.2	2.3	2.1	2.1	2.1	2.2	2	2.1	2.1	2.1	**IZS**	2.3	2.5	2.2	24
17	2.5	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.4	2.4	2.3	2.3	2.2	2.1	2	2	2	1.9	2	2	2	**IZS**	2.1	2.1	2.5	2.2	24
18	2.1	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.1	2.4	2.1	2.2	2.2	2.2	2.1	2.1	2.4	2	2	2	**IZS**	2	3.3	2.6	3.3	2.2	24
19	3.8	2.9	2.1	2.6	3	2.1	2.1	2.1	2.2	2.4	2.4	2.4	2.1	2	2	2	2	2	2	**IZS**	**3.9**	2.8	3.2	3	**3.9**	2.5	24
20	2.7	2.6	2.2	2.2	2.1	2.3	2.5	2.2	2.4	**C**	**C**	2.2	2.1	2.1	2.1	2.1	2.2	2	**IZS**	2	2	2.2	2.1	2.3	2.7	2.2	24
21	2.3	2.8	2.4	2.3	2.4	2.3	2.2	3.9	3	2.1	2	2	2	2	2.2	2.3	2.1	**IZS**	2	2	2.1	2.1	2.1	2.1	3.9	2.3	24
22	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	**IZS**	2.1	2.2	2.2	2.2	2.1	2.3	2.3	2.4	2.2	24
23	2.3	2.3	2.5	2.4	2.4	2.4	2.8	3.5	3	2.6	2.4	2.3	2.3	2.4	2.3	**IZS**	2.1	2.1	2.4	2.5	2.4	2.3	2.3	2.5	3.5	2.5	24
24	2.5	2.5	2.3	2.4	2.7	2.6	2.8	2.9	2.6	2.2	2.3	**C**	**C**	**C**	**C**	2.4	2.2	2.1	2.1	2.3	2.3	2.4	2.2	2.3	2.9	2.4	24
25	2	2	2	2	2	2	2.1	2.1	**3.9**	2.5	2.4	2.3	2.2	**IZS**	2.3	2.2	2.3	2.3	2.4	2.3	2.2	2.1	2.1	2.2	**3.9**	2.3	24
26	2.2	2.1	2	2	2	2.1	2.1	2.1	2.1	2.1	2	2	**IZS**	2.1	2	2	2	2	2.1	2.1	2.1	2.1	2.5	2.3	2.5	2.1	24
27	2.3	2.4	2.5	2.5	2.6	2.6	2.8	2.8	2.8	2.4	2.3	**IZS**	2.4	2.1	2.4	2.6	2.2	2.2	2.2	2.1	2.2	2.1	2.2	2.3	2.8	2.4	24
28	2.5	2.5	2.5	2.5	2.8	2.9	2.6	2.8	2.7	2.3	**IZS**	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.4	2.4	2.9	2.4	24
29	2.6	2.9	2.9	2.7	3	2.5	2.5	2.5	2.1	**IZS**	2.1	2.1	2.1	2.2	2.2	2	2	2	2	2.2	2.3	2.3	2.4	2.1	3	2.3	24
30	2.2	2.4	2.5	2.6	2.6	2.5	2.3	2.2	**IZS**	2	2	2	2.1	2.1	2.1	2.1	2	2	2	2.1	2.1	2	2.1	2.3	2.6	2.2	24
HOURLY MAX	4	3	3	3	3	4	3	4	4	3	3	2	2	2	2	3	3	3	2	3	4	3	3	3			
HOURLY AVG	2.4	2.3	2.3	2.4	2.4	2.4	2.4	2.5	2.4	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.3			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	684					
MAXIMUM INSTANTANEOUS VALUE:	3.9	PPM	@ HOUR(S)	20, 8	ON DAY(S)	19, 25
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:		720	HRS
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION:	0.29					



JOB #: 2833-12-09-30-C

LICA30
THC / WDR Joint Frequency Distribution (Percent)

September 2012

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	2.62	4.23	3.79	3.35	1.75	3.64	2.91	4.52	9.34	16.64	9.92	4.37	7.73	15.62	5.98	3.06	99.56
< 10.0	.00	.00	.00	.00	.00	.00	.14	.00	.00	.14	.00	.00	.00	.00	.14	.00	.43
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.62	4.23	3.79	3.35	1.75	3.64	3.06	4.52	9.34	16.78	9.92	4.37	7.73	15.62	6.13	3.06	

Calm : .00 %

Total # Operational Hours : 685

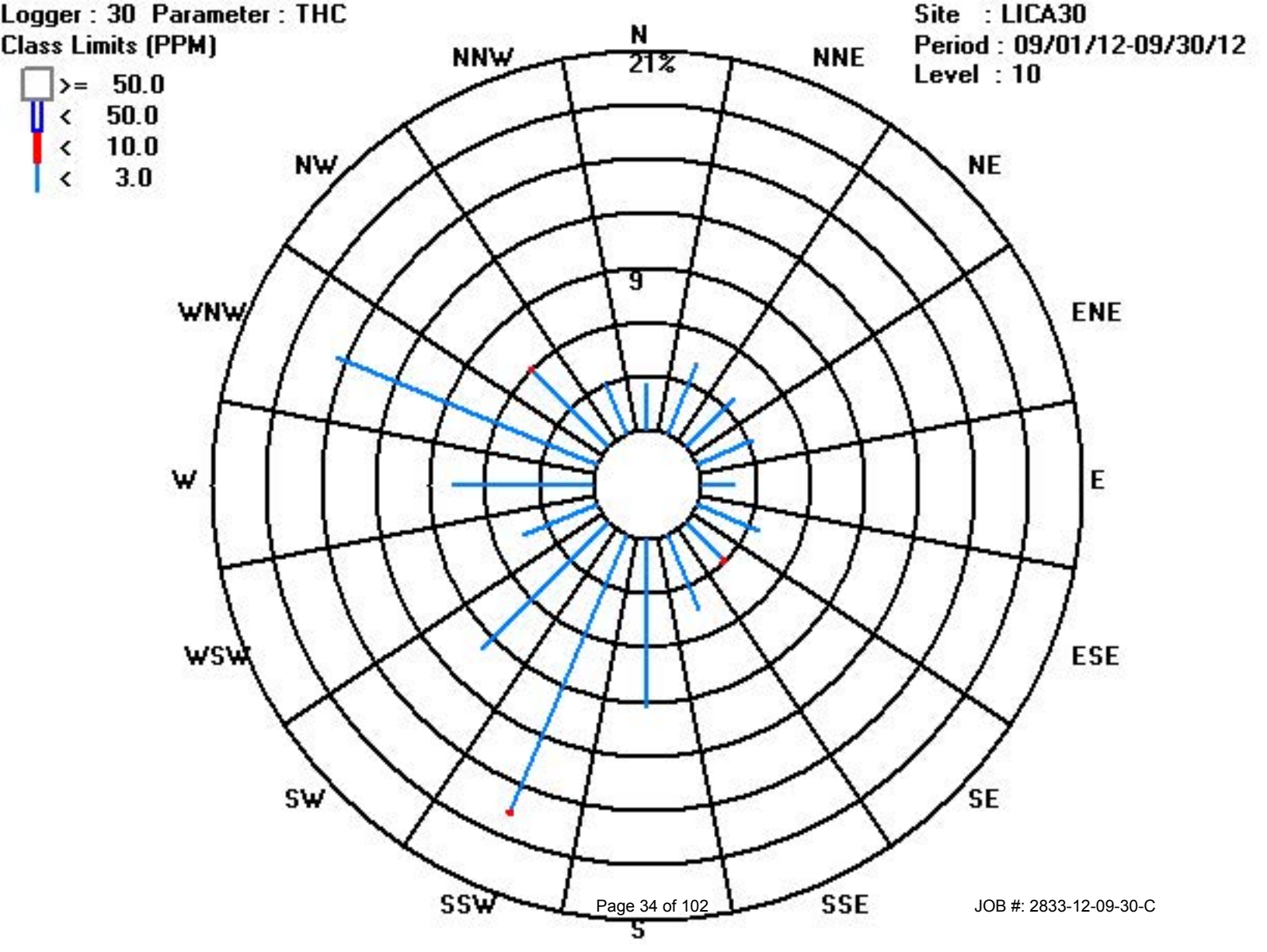
Distribution By Samples

Direction

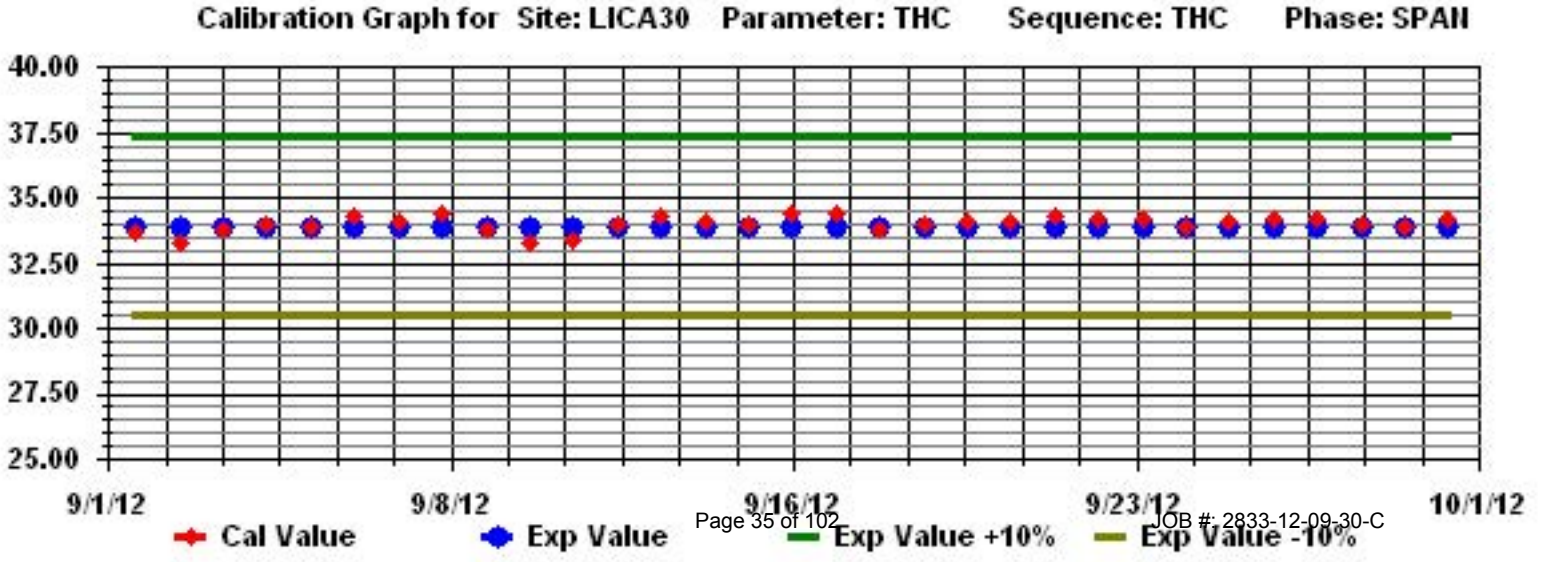
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	18	29	26	23	12	25	20	31	64	114	68	30	53	107	41	21	682
< 10.0							1			1					1		3
< 50.0																	
>= 50.0																	
Totals	18	29	26	23	12	25	21	31	64	115	68	30	53	107	42	21	

Calm : .00 %

Total # Operational Hours : 685



JOB #: 2833-12-09-30-C


Calibration Graph for Site: LICA30 Parameter: THC Sequence: THC Phase: SPAN
40.00
37.50
35.00
32.50
30.00
27.50
25.00
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 2012

NITROGEN DIOXIDE hourly averages in ppb

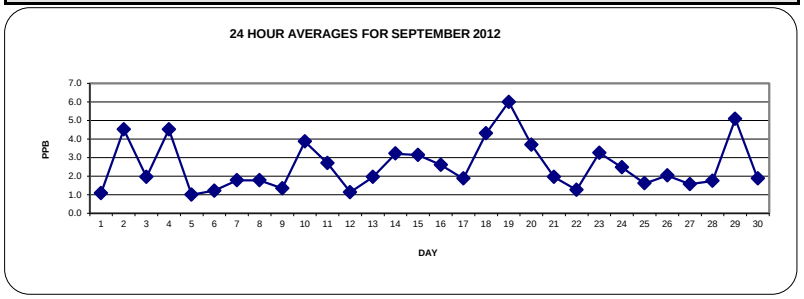
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	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	0	0	0	0	0	**IZS**	5	5	7	1	1	2	1	1	1	7	1.1	24
2	1	1	1	1	1	2	2	3	1	1	0	0	0	**IZS**	15	4	5	11	3	10	12	13	11	6	15	4.5	24
3	1	1	1	0	1	0	1	1	0	1	0	1	**IZS**	0	0	0	2	5	5	9	14	2	0	0	14	2.0	24
4	0	2	8	8	11	7	9	7	5	4	4	**IZS**	5	4	5	5	9	5	5	0	0	0	0	1	11	4.5	24
5	1	1	3	3	2	2	2	4	1	1	**IZS**	1	0	0	1	1	0	0	0	0	0	0	0	0	4	1.0	24
6	0	1	1	0	1	1	1	3	4	**IZS**	1	1	2	1	1	1	1	1	1	1	1	1	1	2	4	1.2	24
7	2	2	2	3	3	3	3	**4**	**IZS**	4	3	2	1	1	0	1	1	1	0	1	1	1	1	1	4	1.8	24
8	4	4	4	3	3	3	4	**IZS**	3	2	1	1	0	0	0	1	1	1	1	1	1	1	1	1	4	1.8	24
9	1	1	0	0	0	1	**IZS**	1	1	3	3	4	3	2	1	3	1	1	1	1	1	0	1	1	4	1.3	24
10	2	3	2	9	9	**IZS**	6	5	3	6	4	3	1	1	8	4	5	1	8	5	1	1	1	1	9	3.9	24
11	0	0	4	6	**IZS**	1	1	1	1	0	1	1	0	1	2	1	2	3	1	2	5	10	9	10	10	2.7	24
12	9	0	0	**IZS**	0	1	1	3	2	0	1	1	0	1	1	1	0	1	0	0	1	0	1	2	9	1.1	24
13	3	3	**IZS**	3	4	4	5	5	4	3	1	1	0	0	1	1	1	1	1	0	1	1	1	1	5	2.0	24
14	1	**IZS**	1	2	2	3	2	2	2	2	2	2	2	2	2	1	3	4	0	3	13	4	17	2	17	3.2	24
15	**IZS**	1	1	1	3	15	16	10	1	0	2	3	3	2	1	1	4	0	0	1	1	2	1	**IZS**	16	3.1	24
16	4	5	5	6	3	7	5	5	2	4	2	1	1	0	1	0	0	3	2	1	0	1	**IZS**	2	7	2.6	24
17	2	2	3	3	3	2	3	2	2	3	2	3	2	2	2	1	1	0	1	1	1	**IZS**	1	1	3	1.9	24
18	3	6	6	3	2	3	5	4	4	8	5	3	7	7	7	3	2	0	0	0	**IZS**	2	10	9	10	4.3	24
19	6	9	10	9	13	6	7	7	7	6	4	3	2	2	2	3	2	1	2	**IZS**	6	9	16	6	16	**6.0**	24
20	12	6	3	5	3	9	8	**C**	**C**	**C**	5	2	2	2	2	2	5	0	**IZS**	1	2	1	2	2	12	3.7	24
21	4	6	7	5	4	2	5	4	2	0	0	0	0	0	2	2	0	**IZS**	0	0	1	1	0	0	7	2.0	24
22	0	1	1	1	1	1	2	2	1	1	1	2	1	1	1	1	**IZS**	1	2	2	1	1	2	2	2	1.3	24
23	1	1	1	1	1	4	4	4	6	5	6	6	5	4	4	**IZS**	2	2	2	3	3	2	3	5	6	3.3	24
24	4	2	3	3	3	6	6	2	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2	2	1	1	1	3	1	1	1	6	2.5	24
25	0	0	0	0	0	0	1	6	4	2	2	2	1	**IZS**	1	1	1	1	1	2	2	1	4	5	6	1.6	24
26	6	3	2	2	2	2	3	2	2	2	1	1	**IZS**	3	2	3	2	1	2	1	1	2	1	1	6	2.0	24
27	2	2	1	1	1	1	1	1	4	3	2	**IZS**	1	1	1	2	1	1	1	1	2	2	2	2	4	1.6	24
28	2	2	3	3	3	2	2	1	2	2	**IZS**	1	1	1	1	1	1	1	1	2	2	2	2	2	3	1.7	24
29	2	2	4	7	12	12	14	5	2	**IZS**	3	3	3	1	1	0	0	0	0	0	13	13	**19**	1	**19**	5.1	24
30	2	4	4	8	8	6	2	2	**IZS**	0	0	0	0	1	0	1	0	0	0	0	0	0	0	5	8	1.9	24
HOURLY MAX	12	9	10	9	13	15	16	10	7	8	6	6	7	7	15	5	9	11	8	10	14	13	19	10			
HOURLY AVG	2.6	2.4	2.8	3.3	3.4	3.7	4.2	3.5	2.5	2.4	2.1	1.8	1.6	1.5	2.3	1.8	2.0	1.9	1.4	1.7	3.1	2.6	3.8	2.5			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

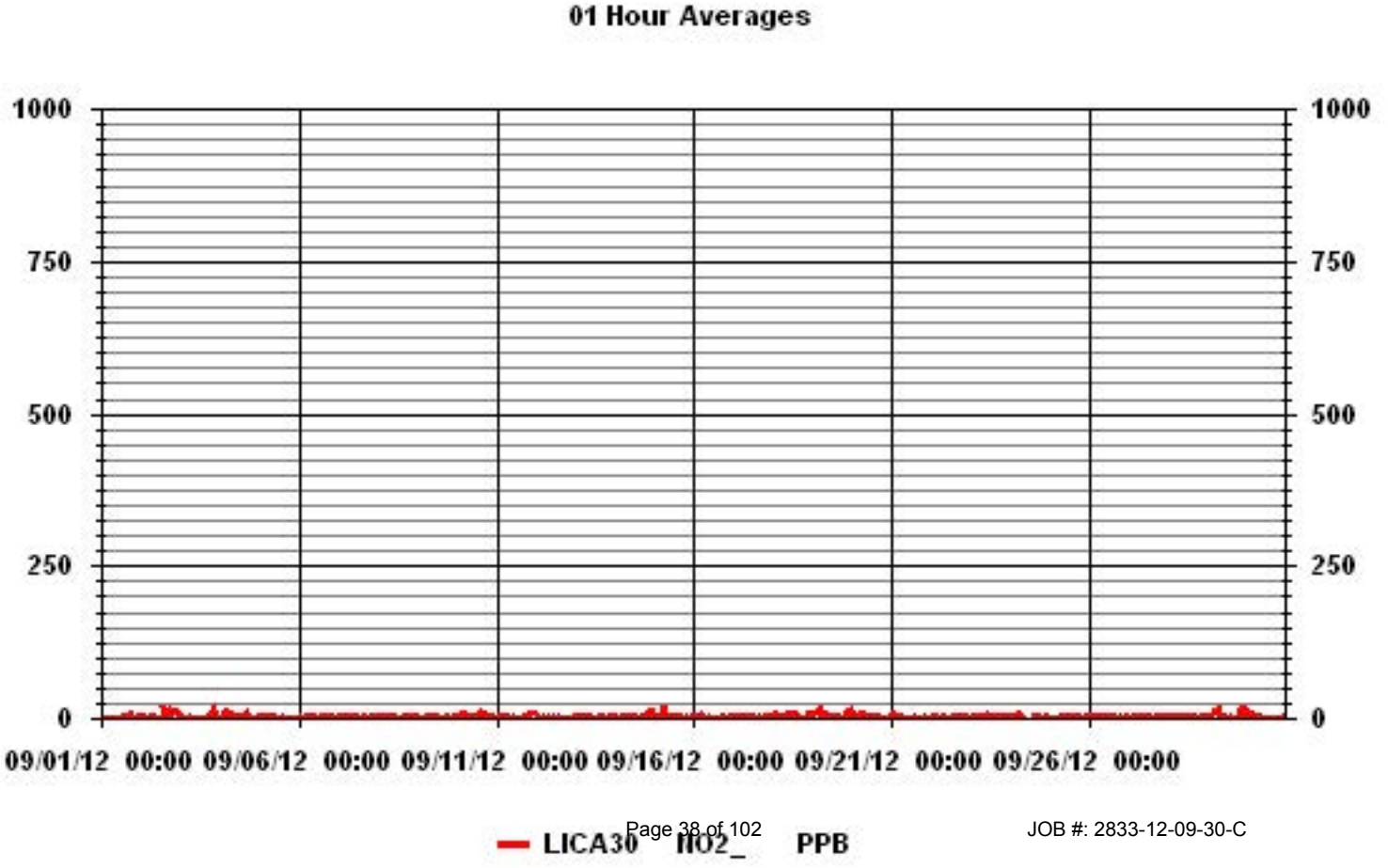
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 159 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	566					
MAXIMUM 1-HR AVERAGE:	19	PPB	@ HOUR(S)	22	ON DAY(S)	29
MAXIMUM 24-HR AVERAGE:	6.0	PPB			ON DAY(S)	19

IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	2.90		MONTHLY AVERAGE:	2.55	PPB



JOB #: 2833-12-09-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

SEPTEMBER 2012

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	1	0	2	0	0	0	5	4	0	0	1	1	0	**IZS**	9	10	10	4	2	2	2	1	1	10	2.4	24
2	1	1	1	2	1	4	9	9	1	2	1	1	1	**IZS**	22	12	16	23	9	11	23	17	19	20	23	9.0	24
3	2	1	1	1	1	1	1	2	1	1	1	1	**IZS**	1	1	1	10	16	13	21	23	8	1	1	23	4.8	24
4	2	3	13	12	14	12	12	9	7	7	6	**IZS**	10	9	7	9	13	8	8	2	1	1	2	2	14	7.3	24
5	2	3	4	5	4	3	4	5	3	2	**IZS**	1	0	1	1	1	0	0	0	0	0	0	0	0	5	1.7	24
6	0	1	1	1	1	1	4	4	4	**IZS**	4	1	2	1	1	1	1	1	1	1	2	2	2	2	4	1.7	24
7	3	2	2	3	3	5	4	4	**IZS**	4	4	2	1	1	1	1	1	1	1	2	1	2	2	2	5	2.3	24
8	4	7	6	4	3	4	4	**IZS**	3	3	2	1	1	1	1	1	1	1	2	1	1	1	1	2	7	2.4	24
9	1	1	1	1	1	2	**IZS**	1	1	5	6	5	4	4	1	5	2	1	1	1	1	1	2	2	6	2.2	24
10	3	5	2	20	21	**IZS**	18	10	5	9	7	9	3	2	15	14	10	3	13	12	4	3	2	1	21	8.3	24
11	0	0	12	14	**IZS**	1	3	1	1	1	0	1	1	0	4	10	4	5	2	4	11	11	12	13	14	4.8	24
12	16	2	0	**IZS**	1	3	2	5	3	2	1	1	1	1	1	1	1	1	0	1	1	1	2	2	16	2.1	24
13	3	3	**IZS**	4	4	5	6	4	5	4	2	1	0	0	1	1	2	1	1	1	1	1	1	2	6	2.3	24
14	1	**IZS**	2	2	2	9	2	2	3	2	3	3	3	4	3	3	7	8	1	15	25	23	**30**	5	**30**	6.9	24
15	**IZS**	3	1	1	11	16	24	15	10	1	3	6	6	7	3	3	9	0	1	2	5	7	6	IZS	24	6.4	24
16	12	9	7	7	6	9	9	7	5	7	7	3	2	1	3	1	2	5	6	2	1	1	**IZS**	3	12	5.0	24
17	2	3	4	4	3	3	4	3	3	3	3	3	3	2	3	3	1	1	2	2	1	**IZS**	1	2	4	2.6	24
18	4	7	8	5	3	4	8	8	9	11	9	8	12	11	14	12	7	0	0	0	**IZS**	12	20	12	20	8.0	24
19	17	16	12	13	15	10	11	8	8	9	5	3	3	2	3	6	2	2	1	**IZS**	9	14	19	19	19	9.0	24
20	19	13	4	7	5	25	11	**C**	**C**	**C**	11	9	6	4	8	3	17	11	**IZS**	1	2	1	2	5	25	8.2	24
21	5	12	8	7	5	3	23	9	9	1	0	0	0	0	4	6	2	**IZS**	3	1	2	2	2	2	23	4.6	24
22	2	3	3	3	3	3	3	4	3	3	3	3	2	2	2	2	**IZS**	1	3	3	1	1	3	2	4	2.5	24
23	2	1	1	2	2	8	6	6	8	6	8	7	8	7	7	**IZS**	4	4	3	4	4	3	5	7	8	4.9	24
24	4	4	4	3	4	13	14	4	**C**	**C**	**C**	**C**	**C**	**C**	**C**	9	8	5	3	4	5	3	4	5	14	5.6	24
25	1	1	1	1	1	6	6	9	7	3	4	3	2	**IZS**	1	5	3	1	2	4	2	1	5	5	9	3.2	24
26	6	4	2	2	2	5	12	3	3	2	1	1	**IZS**	9	6	6	4	2	3	2	3	3	2	3	12	3.7	24
27	3	2	2	2	2	3	4	2	8	5	4	**IZS**	3	2	3	3	3	2	2	2	4	3	3	3	8	3.0	24
28	4	3	4	4	4	4	4	3	4	3	**IZS**	1	1	3	1	1	1	1	2	2	2	3	3	3	4	2.7	24
29	2	3	4	14	17	20	21	17	6	**IZS**	9	8	8	5	4	1	1	1	1	1	19	18	28	7	28	9.3	24
30	5	5	8	10	11	11	5	4	**IZS**	1	1	1	2	4	2	7	1	1	1	1	1	1	2	8	11	4.0	24
HOURLY MAX	19	16	13	20	21	25	24	17	10	11	11	9	12	11	22	14	17	23	13	21	25	23	30	20			
HOURLY AVG	4.4	4.1	4.1	5.4	5.2	6.7	8.1	5.8	4.8	3.7	3.9	3.1	3.2	3.1	4.4	4.7	4.9	4.0	3.1	3.6	5.4	5.0	6.3	4.9			

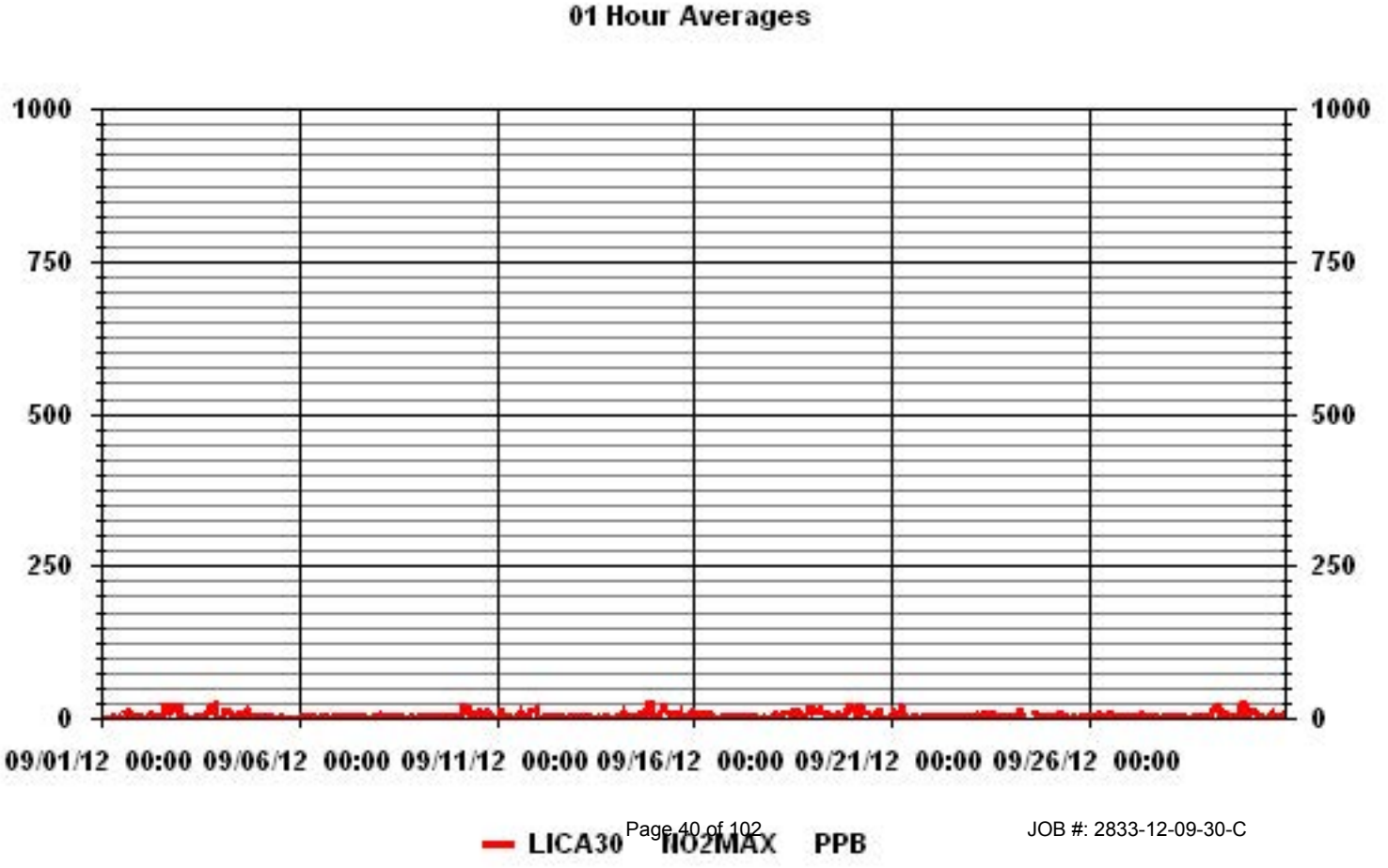
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	647					
MAXIMUM INSTANTANEOUS VALUE:	30	PPB	@ HOUR(S)	22	ON DAY(S)	14
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:		720	HRS
MONTHLY CALIBRATION TIME:	10	HRS				
STANDARD DEVIATION:	4.98					

JOB #: 2833-12-09-30-C



JOB #: 2833-12-09-30-C

LICA30
NO2_ / WDR Joint Frequency Distribution (Percent)

September 2012

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	2.64	4.26	3.52	3.38	1.61	3.67	3.08	4.55	9.41	16.91	9.85	4.41	7.64	15.58	6.32	3.08	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.64	4.26	3.52	3.38	1.61	3.67	3.08	4.55	9.41	16.91	9.85	4.41	7.64	15.58	6.32	3.08	

Calm : .00 %

Total # Operational Hours : 680

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	18	29	24	23	11	25	21	31	64	115	67	30	52	106	43	21	680
< 110																	
< 210																	
>= 210																	
Totals	18	29	24	23	11	25	21	31	64	115	67	30	52	106	43	21	

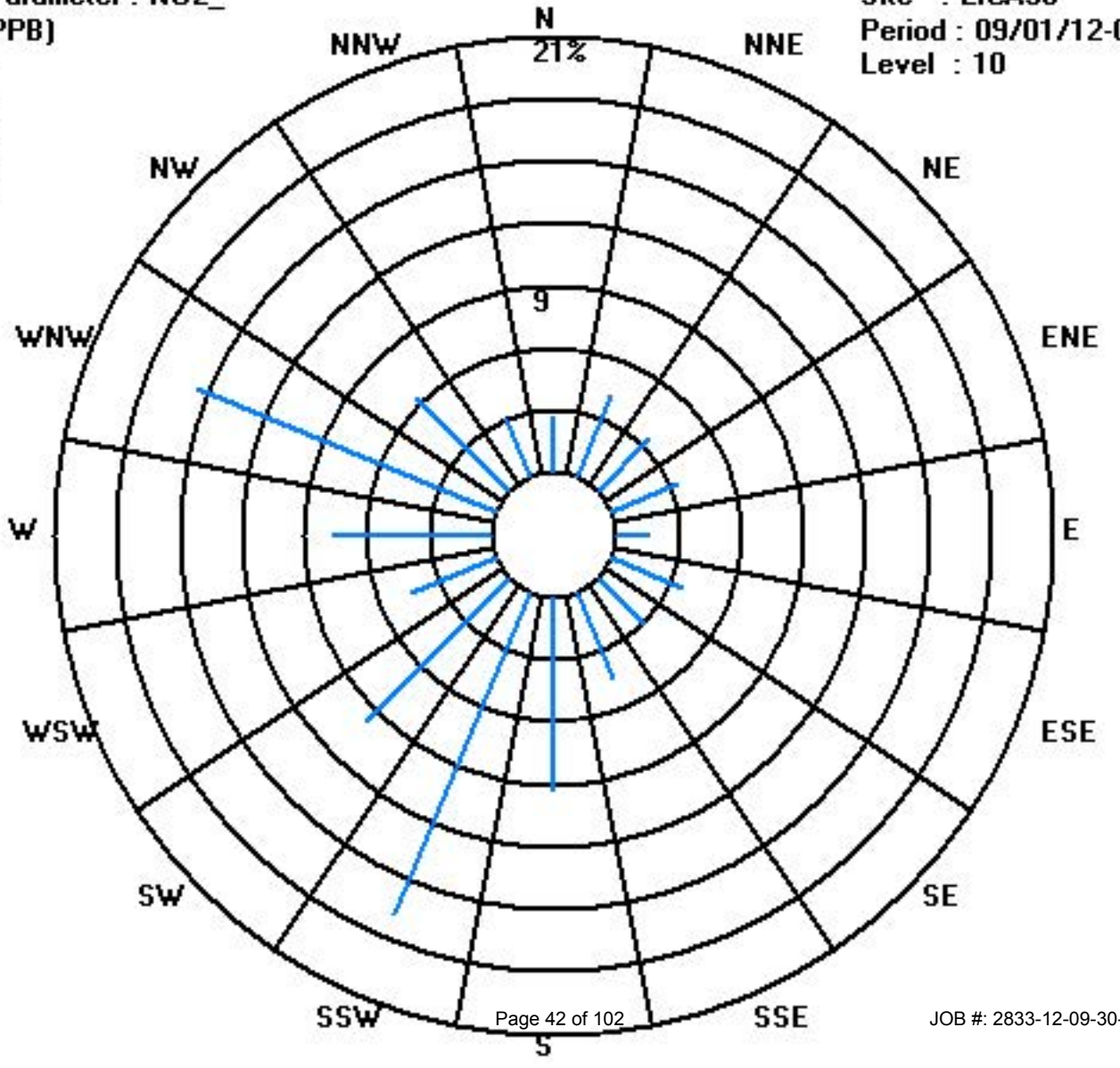
Calm : .00 %

Total # Operational Hours : 680

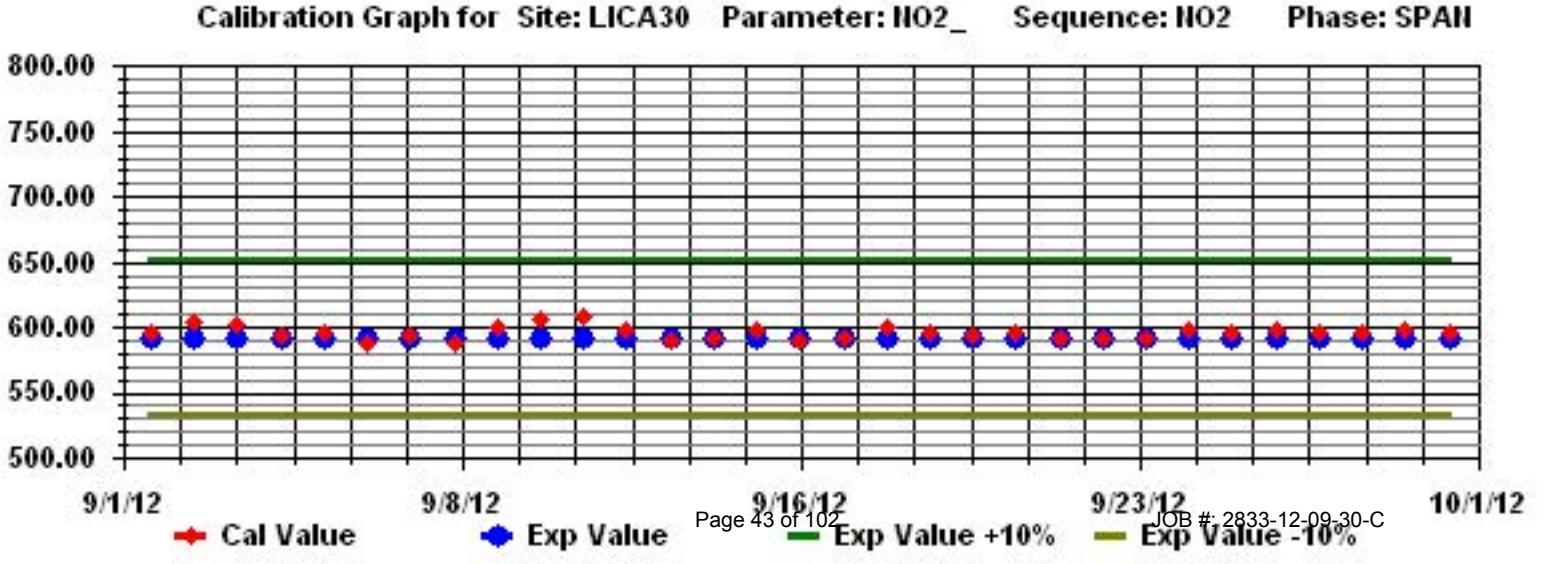
Logger : 30 Parameter : NO2_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA30
Period : 09/01/12-09/30/12
Level : 10



JOB #: 2833-12-09-30-C


Calibration Graph for Site: LICA30 Parameter: NO2_ Sequence: NO2 Phase: SPAN
800.00
750.00
700.00
650.00
600.00
550.00
500.00
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSCOICATION - MASKWA

SEPTEMBER 2012

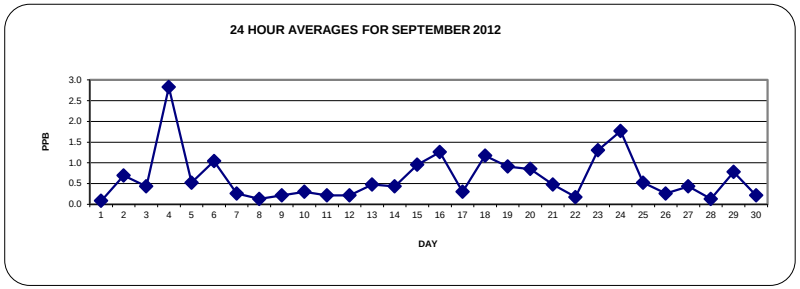
NITRIC OXIDE hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	0	0	0	0	0	0	0	1	0.1	24
2	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	6	1	0	1	0	0	3	3	1	1	6	0.7	24
3	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	1	1	2	6	0	0	0	6	0.4	24
4	0	0	1	4	15	2	5	3	3	4	2	**IZS**	5	5	3	7	5	1	0	0	0	0	0	0	15	**2.8**	24
5	0	0	0	0	0	0	6	5	1	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0.5	24
6	0	0	0	0	0	0	5	12	5	**IZS**	1	1	0	0	0	0	0	0	0	0	0	0	0	0	12	1.0	24
7	0	0	0	0	0	0	1	1	**IZS**	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24
8	0	0	0	0	0	0	0	**IZS**	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24
9	0	0	0	0	0	0	**IZS**	0	0	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24
10	0	0	0	0	0	**IZS**	0	0	0	1	1	1	0	0	2	1	0	0	1	0	0	0	0	0	2	0.3	24
11	0	0	0	2	**IZS**	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	2	0.2	24
12	1	0	0	**IZS**	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
13	0	0	**IZS**	1	0	0	1	2	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.5	24
14	0	**IZS**	0	0	0	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	2	0	2	0.4	24
15	**IZS**	0	0	0	0	0	4	6	1	0	1	3	3	1	0	0	2	0	0	0	0	0	0	**IZS**	6	1.0	24
16	1	1	1	1	1	2	5	5	2	5	3	1	1	0	0	0	0	0	0	0	0	0	**IZS**	0	5	1.3	24
17	0	0	0	0	0	0	0	1	1	1	2	1	1	0	0	0	0	0	0	0	0	**IZS**	0	0	2	0.3	24
18	0	0	0	0	0	0	1	1	1	3	3	2	3	3	3	1	1	0	0	0	**IZS**	1	2	2	3	1.2	24
19	1	1	0	0	1	1	1	2	3	3	1	1	1	0	0	0	0	0	0	**IZS**	1	0	3	1	3	0.9	24
20	2	0	0	0	0	2	2	**C**	**C**	**C**	3	2	1	1	1	1	2	0	**IZS**	0	0	0	0	0	3	0.9	24
21	0	1	0	0	0	0	4	4	2	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	4	0.5	24
22	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	1	0.2	24
23	0	0	0	0	0	4	3	4	6	3	4	3	1	1	1	**IZS**	0	0	0	0	0	0	0	0	6	1.3	24
24	0	0	0	0	0	6	**18**	3	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	1	1	0	0	0	0	0	0	**18**	1.8	24
25	0	0	0	0	0	1	1	3	4	1	1	0	0	**IZS**	0	1	0	0	0	0	0	0	0	0	4	0.5	24
26	0	0	0	0	0	0	1	1	1	1	0	0	**IZS**	1	1	0	0	0	0	0	0	0	0	0	1	0.3	24
27	0	0	0	0	0	0	1	1	4	2	1	**IZS**	1	0	0	0	0	0	0	0	0	0	0	0	4	0.4	24
28	0	0	0	0	0	0	0	1	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
29	0	0	0	1	1	2	3	2	1	**IZS**	2	1	2	1	0	0	0	0	0	0	0	1	1	0	3	0.8	24
30	0	0	0	0	0	1	1	1	**IZS**	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0.2	24
HOURLY MAX	2	1	1	4	15	6	18	12	6	5	4	3	5	5	6	7	5	1	1	2	6	3	3	2			
HOURLY AVG	0.2	0.1	0.1	0.3	0.6	0.8	2.2	2.2	1.7	1.5	1.1	0.7	0.8	0.5	0.6	0.6	0.4	0.1	0.1	0.1	0.3	0.2	0.3	0.2			

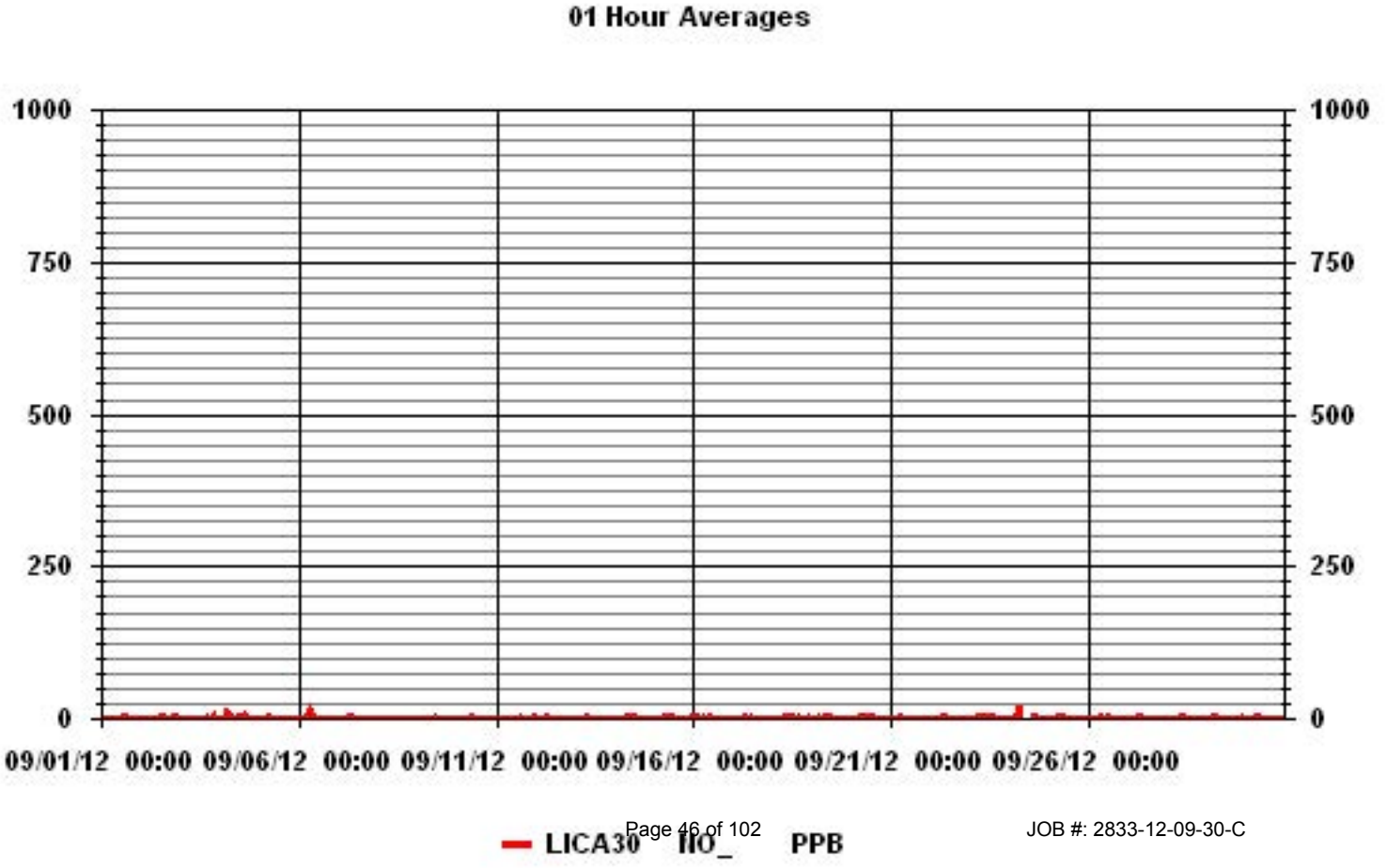
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	204						
MAXIMUM 1-HR AVERAGE:	18	PPB	@ HOUR(S)	6	ON DAY(S)	24	
MAXIMUM 24-HR AVERAGE:	2.8	PPB			ON DAY(S)	4	
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:		720	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	1.51		MONTHLY AVERAGE:		0.64	PPB	



JOB #: 2833-12-09-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

SEPTEMBER 2012

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

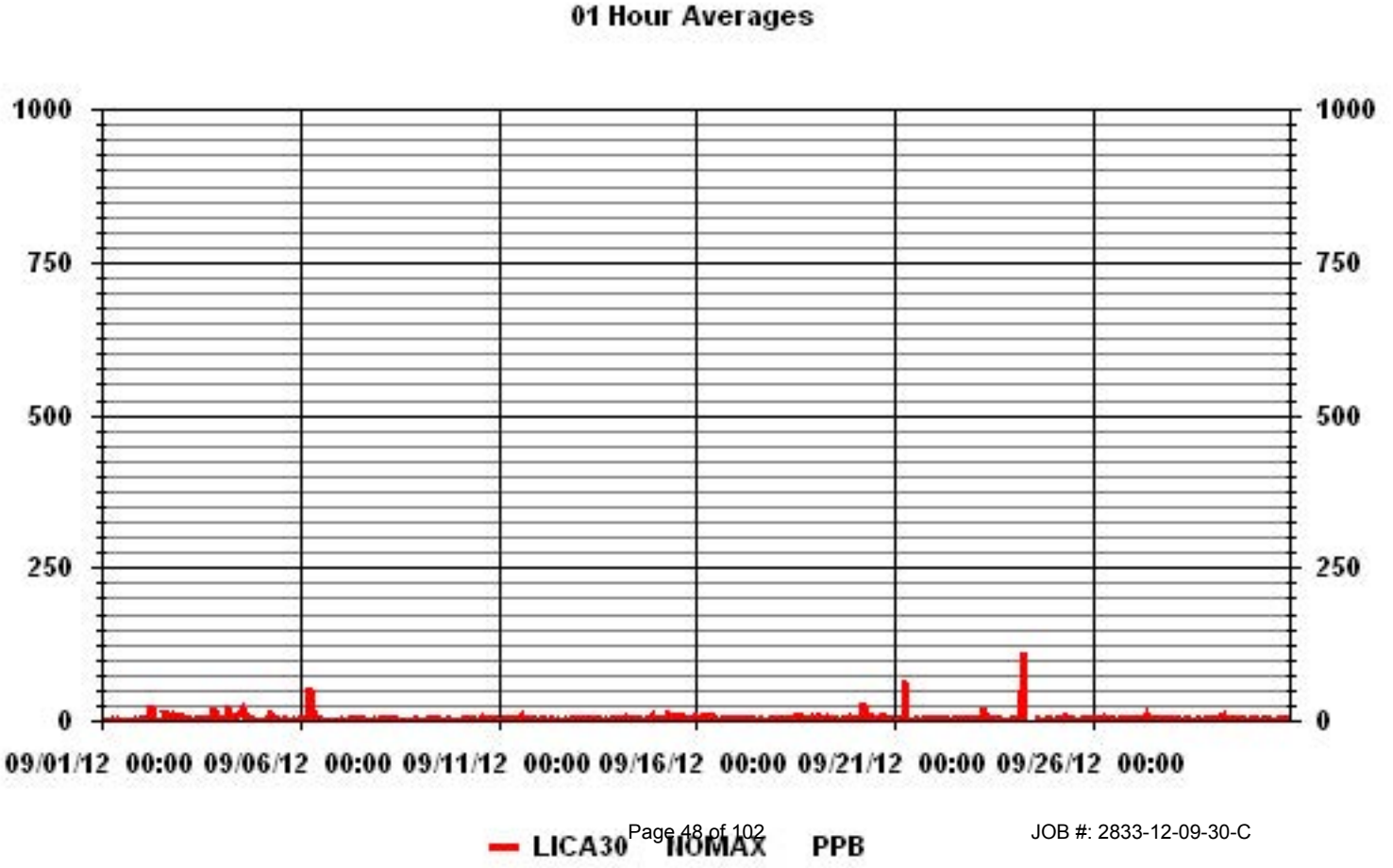
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	1	0	1	0	1	2	2	1	1	0	0	0	**IZS**	2	3	1	0	0	1	1	0	0	3	0.7	24
2	1	1	1	1	1	0	23	17	0	2	0	1	0	**IZS**	13	2	2	6	1	1	10	7	9	10	23	4.7	24
3	1	1	1	1	1	1	1	1	0	1	1	1	**IZS**	1	1	1	4	5	5	12	18	1	0	0	18	2.6	24
4	1	1	2	8	23	7	6	5	5	9	7	**IZS**	13	18	10	12	10	5	1	1	1	0	0	1	23	6.3	24
5	0	0	0	1	1	1	15	8	2	1	**IZS**	1	1	0	1	1	1	0	0	0	1	1	0	1	15	1.6	24
6	1	1	1	1	1	2	54	21	10	**IZS**	4	1	1	1	1	0	1	0	0	0	0	0	0	0	54	4.4	24
7	0	1	1	0	1	2	2	3	**IZS**	4	4	1	1	0	1	1	0	0	0	0	0	1	1	0	4	1.0	24
8	1	1	1	1	1	2	2	**IZS**	3	2	1	1	0	1	0	1	0	0	0	0	0	1	1	1	3	0.9	24
9	0	0	0	0	1	2	**IZS**	1	1	3	5	3	2	2	1	2	1	1	1	1	1	0	0	0	5	1.2	24
10	0	1	0	3	3	**IZS**	2	2	1	4	3	4	1	1	7	4	1	0	5	3	0	1	1	1	7	2.1	24
11	1	0	1	7	**IZS**	1	1	1	1	1	1	1	1	1	2	8	1	1	1	1	1	1	1	1	8	1.6	24
12	2	1	1	**IZS**	1	1	2	4	3	2	1	2	1	1	1	2	0	1	1	0	1	1	1	1	4	1.3	24
13	1	1	**IZS**	1	1	1	4	4	5	4	2	1	1	1	1	1	2	1	1	0	1	1	1	1	5	1.6	24
14	1	**IZS**	1	1	1	6	1	2	2	2	2	3	2	3	1	1	2	1	1	1	1	3	8	1	8	2.0	24
15	**IZS**	1	1	1	1	1	12	11	9	1	3	7	8	8	3	1	9	0	0	1	2	2	1	**IZS**	12	3.8	24
16	7	4	2	3	1	8	10	9	6	9	9	3	2	1	2	1	1	1	1	1	1	1	**IZS**	1	10	3.7	24
17	1	1	1	1	1	1	1	1	2	2	2	3	2	1	1	1	1	1	0	1	0	**IZS**	1	1	3	1.2	24
18	1	1	1	1	1	1	1	2	2	5	6	5	8	7	8	7	3	1	1	1	**IZS**	2	6	3	8	3.2	24
19	5	7	1	2	2	4	4	7	4	4	2	2	2	1	1	3	1	1	1	**IZS**	2	1	7	5	7	3.0	24
20	5	1	1	1	1	28	7	**C**	**C**	**C**	8	8	4	3	4	3	9	10	**IZS**	1	1	1	1	1	28	4.9	24
21	1	2	1	1	1	1	64	10	7	1	0	0	1	1	2	2	1	**IZS**	1	1	1	1	1	1	64	4.4	24
22	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	2	1.0	24
23	1	1	1	1	1	22	14	9	8	5	6	4	4	2	3	**IZS**	1	1	0	0	1	0	1	1	22	3.8	24
24	1	1	1	1	1	50	**112**	7	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2	2	1	0	1	1	1	1	1	**112**	10.8	24
25	0	0	1	1	1	5	5	7	7	2	1	1	1	**IZS**	1	2	1	1	1	1	1	1	1	1	7	1.9	24
26	1	1	1	1	1	1	5	1	2	2	1	1	**IZS**	4	2	1	1	1	1	1	1	1	1	1	5	1.4	24
27	1	1	1	1	1	1	2	2	9	3	2	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	9	1.6	24
28	1	1	1	1	1	1	1	2	2	1	**IZS**	1	1	3	1	1	1	1	0	1	1	1	1	1	3	1.1	24
29	1	1	1	1	4	6	6	10	4	**IZS**	6	5	5	2	4	1	1	1	1	1	1	1	2	1	10	2.9	24
30	1	1	1	1	2	2	1	2	**IZS**	1	1	1	1	2	1	3	1	1	1	1	1	1	1	1	3	1.3	24
HOURLY MAX	7	7	2	8	23	50	112	21	10	9	9	8	13	18	13	12	10	10	5	12	18	7	9	10			
HOURLY AVG	1.3	1.2	1.0	1.5	2.0	5.5	12.4	5.4	3.8	2.8	3.0	2.3	2.4	2.5	2.7	2.3	2.1	1.6	0.9	1.2	1.8	1.2	1.7	1.3			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	600					
MAXIMUM INSTANTANEOUS VALUE:	112	PPB	@ HOUR(S)	6	ON DAY(S)	24
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:		720	HRS
MONTHLY CALIBRATION TIME:	10	HRS				
STANDARD DEVIATION:	6.39					



JOB #: 2833-12-09-30-C

LICA30
NO_ / WDR Joint Frequency Distribution (Percent)

September 2012

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	2.64	4.26	3.52	3.38	1.61	3.67	3.08	4.55	9.41	16.91	9.85	4.41	7.64	15.58	6.32	3.08	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.64	4.26	3.52	3.38	1.61	3.67	3.08	4.55	9.41	16.91	9.85	4.41	7.64	15.58	6.32	3.08	

Calm : .00 %

Total # Operational Hours : 680

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	18	29	24	23	11	25	21	31	64	115	67	30	52	106	43	21	680
< 110																	
< 210																	
>= 210																	
Totals	18	29	24	23	11	25	21	31	64	115	67	30	52	106	43	21	

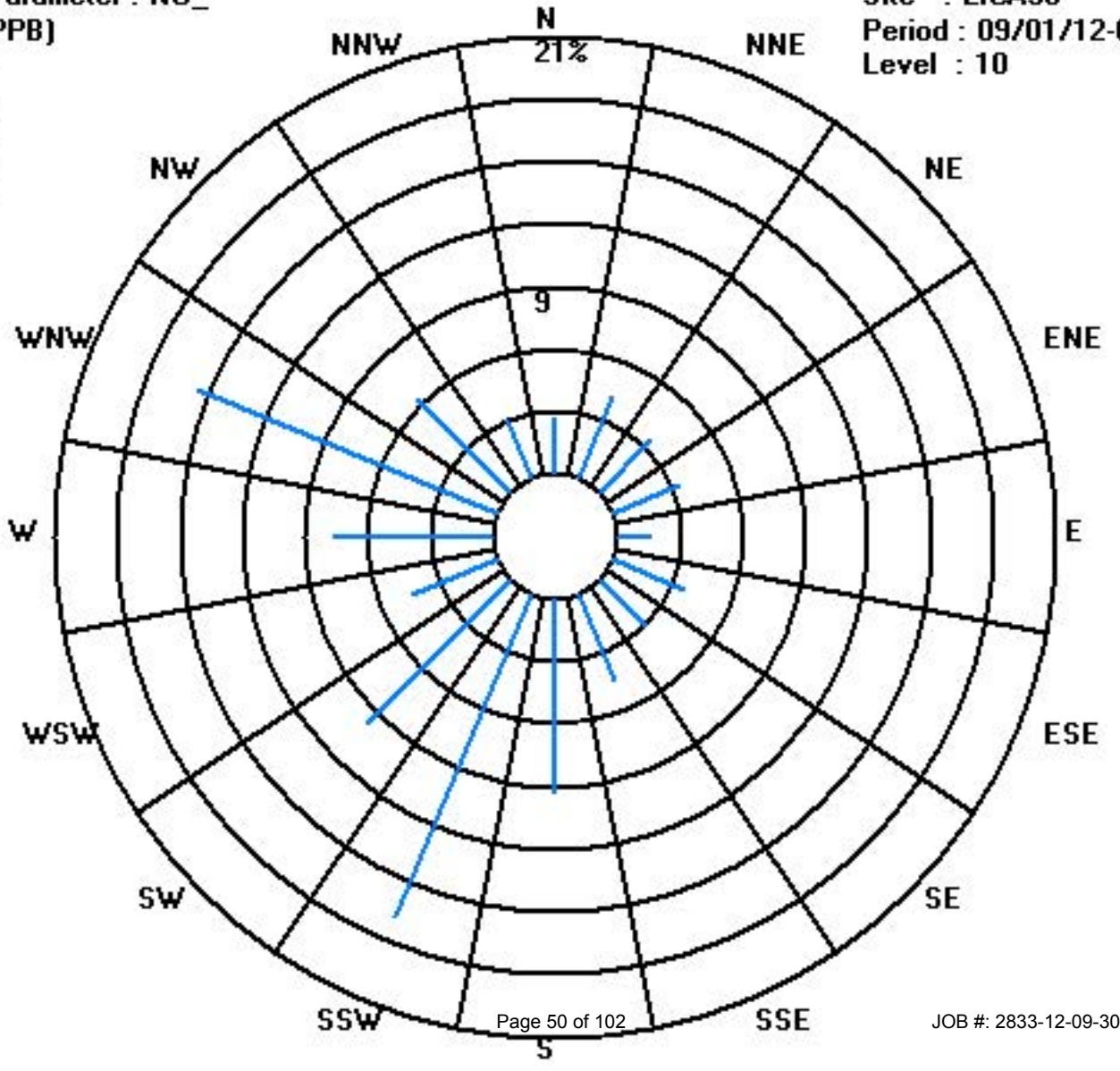
Calm : .00 %

Total # Operational Hours : 680

Logger : 30 Parameter : NO_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA30
Period : 09/01/12-09/30/12
Level : 10



JOB #: 2833-12-09-30-C

Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

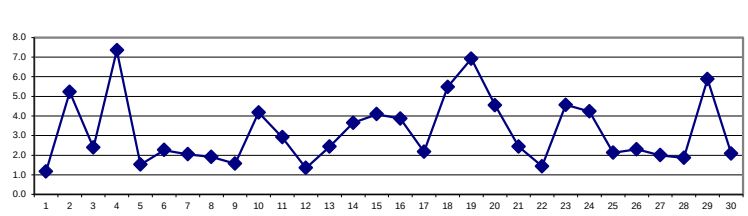
SEPTEMBER 2012

OXIDES OF NITROGEN hourly averages in ppb

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	**IZS**	6	6	7	1	1	2	1	1	1	7	1.2	24
2	1	1	1	1	1	2	2	3	1	1	0	0	0	**IZS**	21	5	5	12	3	10	15	16	12	7	21	5.2	24
3	1	1	1	0	1	0	1	1	0	1	0	1	**IZS**	0	0	0	2	6	6	11	20	2	0	0	20	2.4	24
4	0	2	9	12	**26**	9	14	10	8	8	6	**IZS**	10	9	8	12	14	6	5	0	0	0	0	1	**26**	**7.3**	24
5	1	1	3	3	2	2	8	9	2	1	**IZS**	1	0	0	1	1	0	0	0	0	0	0	0	0	9	1.5	24
6	0	1	1	0	1	1	6	15	9	**IZS**	2	2	2	1	1	1	1	1	1	1	1	1	1	2	15	2.3	24
7	2	2	2	3	3	3	4	5	**IZS**	7	4	2	1	1	0	1	1	1	0	1	1	1	1	1	7	2.0	24
8	4	4	4	3	3	3	4	**IZS**	5	3	1	1	0	0	0	1	1	1	1	1	1	1	1	1	5	1.9	24
9	1	1	0	0	0	1	**IZS**	1	1	5	4	5	4	2	1	3	1	1	1	1	1	0	1	1	5	1.6	24
10	2	3	2	9	9	**IZS**	6	5	3	7	5	4	1	1	10	5	5	1	9	5	1	1	1	1	10	4.2	24
11	0	0	4	8	**IZS**	1	1	1	1	0	1	1	0	1	2	2	3	3	1	2	5	10	9	11	11	2.9	24
12	10	0	0	**IZS**	0	1	2	4	3	1	1	1	0	1	1	1	0	1	0	0	1	0	1	2	10	1.3	24
13	3	3	**IZS**	4	4	4	6	7	7	6	2	1	0	0	1	1	1	1	1	0	1	1	1	1	7	2.4	24
14	1	**IZS**	1	2	2	4	2	3	3	3	3	3	3	3	2	1	3	4	0	3	13	4	19	2	19	3.7	24
15	**IZS**	1	1	1	3	15	20	16	2	0	3	6	6	3	1	1	6	0	0	1	1	2	1	**IZS**	20	4.1	24
16	5	6	6	7	4	9	10	10	4	9	5	2	2	0	1	0	0	3	2	1	0	1	**IZS**	2	10	3.9	24
17	2	2	3	3	3	2	3	3	3	4	4	4	3	2	2	1	1	0	1	1	1	**IZS**	1	1	4	2.2	24
18	3	6	6	3	2	3	6	5	5	11	8	5	10	10	10	4	3	0	0	0	**IZS**	3	12	11	12	5.5	24
19	7	10	10	9	14	7	8	9	10	9	5	4	3	2	2	3	2	1	2	**IZS**	7	9	19	7	19	6.9	24
20	14	6	3	5	3	11	10	**C**	**C**	**C**	8	4	3	3	3	3	7	0	**IZS**	1	2	1	2	2	14	4.6	24
21	4	7	7	5	4	2	9	8	4	0	0	0	0	0	2	2	0	**IZS**	0	0	1	1	0	0	9	2.4	24
22	0	1	1	1	1	1	2	3	2	2	2	2	1	1	1	1	**IZS**	1	2	2	1	1	2	2	3	1.4	24
23	1	1	1	1	1	8	7	8	12	8	10	9	6	5	5	**IZS**	2	2	2	3	3	2	3	5	12	4.6	24
24	4	2	3	3	3	12	24	5	**C**	**C**	**C**	**C**	**C**	**C**	**C**	3	3	2	1	1	3	1	1	1	24	4.2	24
25	0	0	0	0	0	1	2	9	8	3	3	2	1	**IZS**	1	2	1	1	1	2	2	1	4	5	9	2.1	24
26	6	3	2	2	2	2	4	3	3	3	1	1	**IZS**	4	3	3	2	1	2	1	1	2	1	1	6	2.3	24
27	2	2	1	1	1	1	2	2	8	5	3	**IZS**	2	1	1	2	1	1	1	1	2	2	2	2	8	2.0	24
28	2	2	3	3	3	2	2	2	3	3	**IZS**	1	1	1	1	1	1	1	1	2	2	2	2	2	3	1.9	24
29	2	2	4	8	13	14	17	7	3	**IZS**	5	4	5	2	1	0	0	0	0	0	13	14	20	1	20	5.9	24
30	2	4	4	8	8	7	3	3	**IZS**	1	0	0	0	1	0	2	0	0	0	0	0	0	0	5	8	2.1	24
HOURLY MAX	14	10	10	12	26	15	24	16	12	11	10	9	10	10	21	12	14	12	9	11	20	16	20	11			
HOURLY AVG	2.8	2.6	2.9	3.6	4.0	4.4	6.4	5.6	4.2	3.9	3.2	2.4	2.4	2.0	2.9	2.3	2.5	2.0	1.5	1.8	3.5	2.8	4.1	2.7			

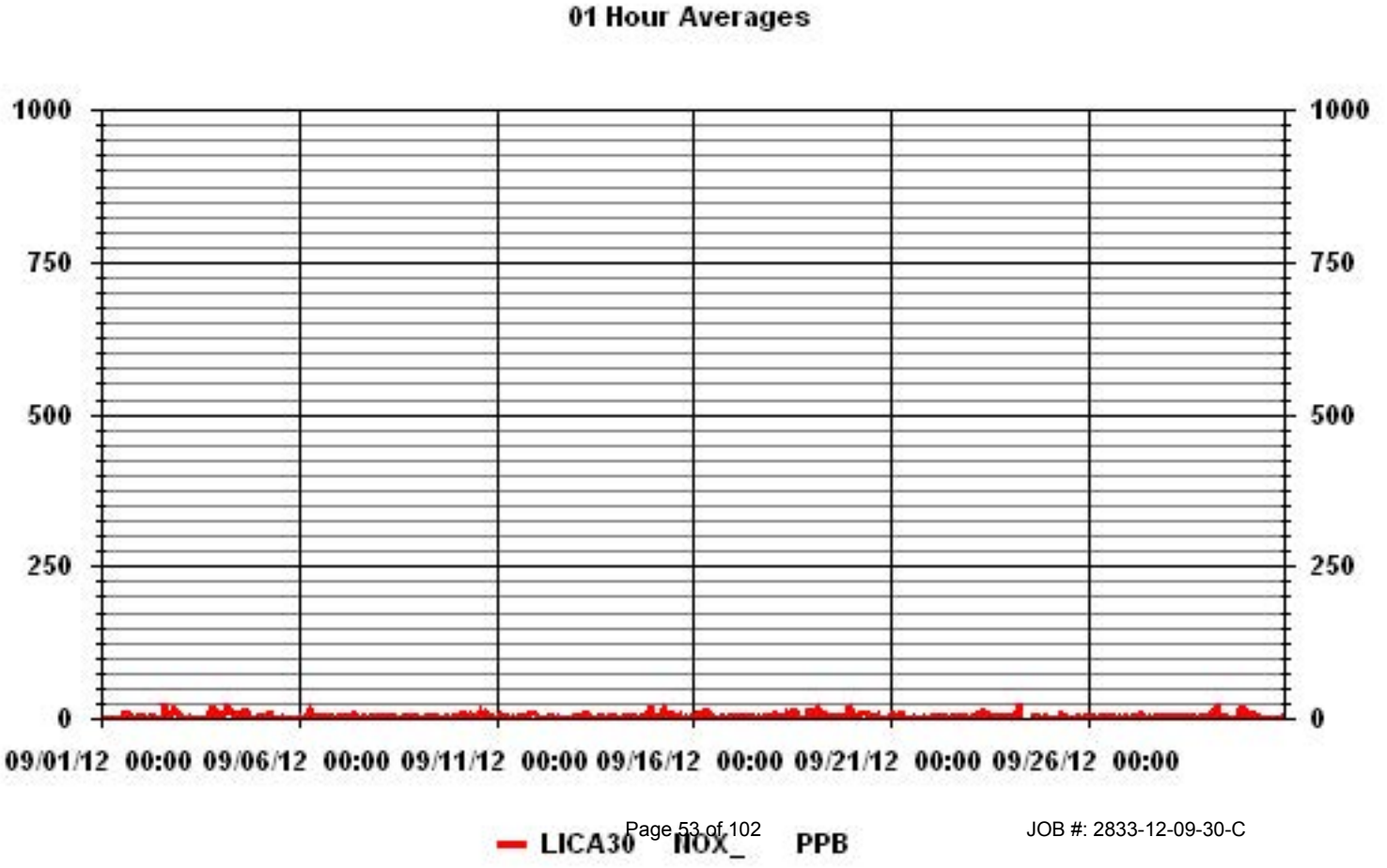
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	569						
MAXIMUM 1-HR AVERAGE:	26	PPB	@ HOUR(S)	4	ON DAY(S)	4	
MAXIMUM 24-HR AVERAGE:	7.3	PPB			ON DAY(S)	4	
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:		720	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	3.81		MONTHLY AVERAGE:		3.18	PPB	



JOB #: 2833-12-09-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

SEPTEMBER 2012

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

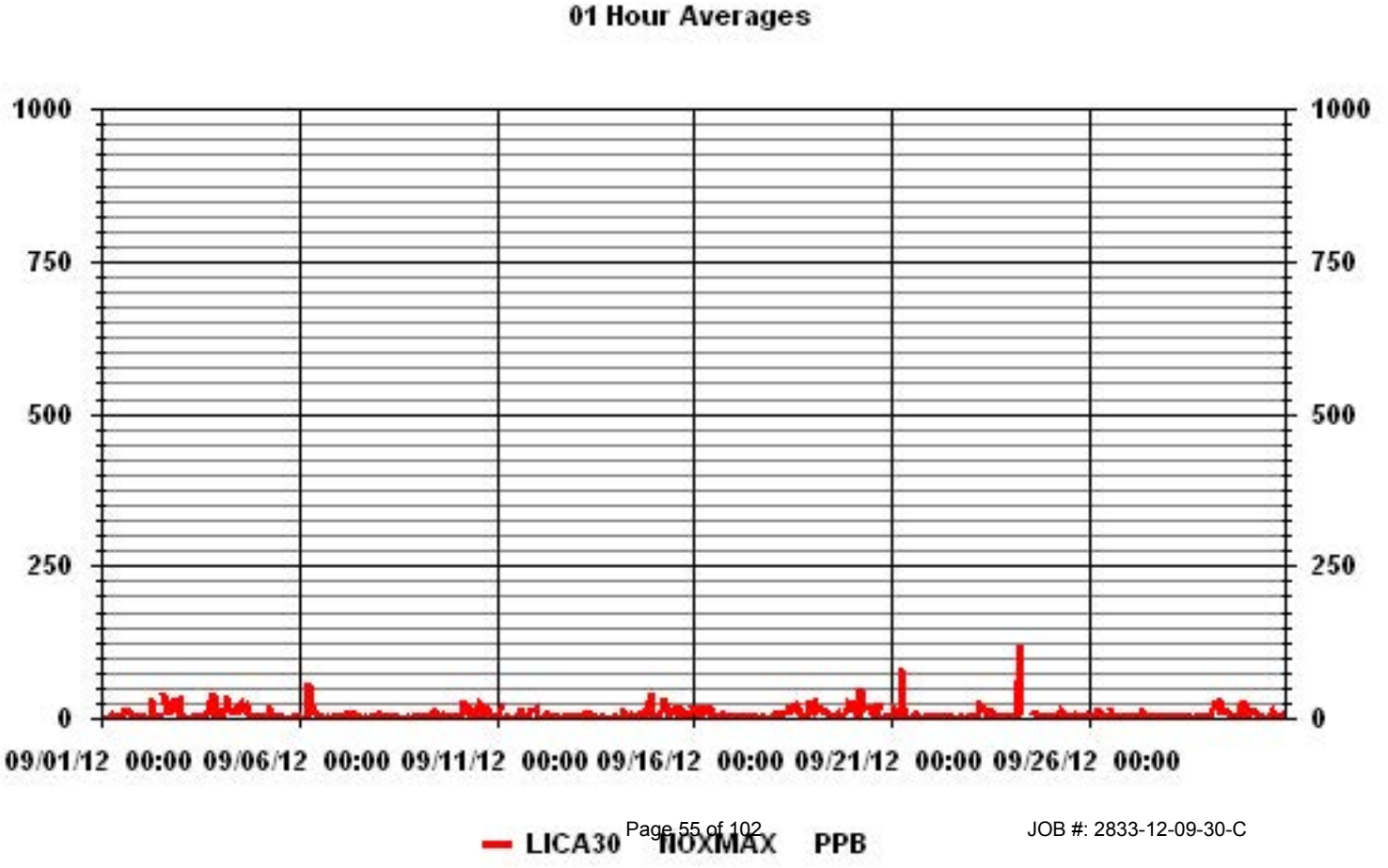
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	1	1	2	1	1	1	8	6	1	1	1	1	1	**IZS**	12	12	12	4	2	2	2	2	2	12	3.3	24
2	2	2	2	2	2	4	28	26	2	4	1	1	1	**IZS**	35	15	18	29	10	11	33	25	28	30	35	13.5	24
3	2	2	1	1	1	2	2	4	1	2	2	2	**IZS**	1	1	1	13	20	16	33	41	8	0	1	41	6.8	24
4	1	3	14	17	36	16	16	13	11	16	12	**IZS**	22	26	17	19	22	12	8	1	1	1	1	1	36	12.4	24
5	1	2	3	4	3	4	18	12	4	2	**IZS**	1	1	1	2	2	1	0	1	0	1	1	1	1	18	2.9	24
6	1	2	2	1	2	2	56	24	14	**IZS**	8	3	3	2	2	2	2	1	1	1	2	2	2	3	56	6.0	24
7	3	3	3	4	4	7	6	7	**IZS**	8	8	5	1	1	1	2	1	1	1	2	2	2	2	3	8	3.3	24
8	5	7	7	4	4	5	6	**IZS**	6	5	2	3	1	1	1	2	1	1	2	2	1	2	2	2	7	3.1	24
9	1	1	1	1	1	4	**IZS**	2	2	8	12	8	6	7	2	7	2	2	2	2	1	1	2	2	12	3.3	24
10	4	6	3	24	24	**IZS**	20	12	6	14	10	14	4	3	23	19	11	3	16	15	4	3	3	1	24	10.5	24
11	1	1	14	21	**IZS**	1	2	2	2	1	2	1	2	2	5	15	6	6	2	5	12	12	13	14	21	6.2	24
12	17	3	1	**IZS**	1	4	4	8	5	5	2	3	2	2	2	3	1	1	1	1	1	1	2	3	17	3.2	24
13	3	3	**IZS**	5	5	6	10	8	10	8	3	1	1	1	1	2	4	2	2	1	1	2	1	2	10	3.6	24
14	2	**IZS**	2	3	3	15	3	4	4	4	6	6	5	7	4	4	9	9	2	16	26	27	39	6	39	9.0	24
15	**IZS**	4	1	1	12	17	33	26	18	2	6	13	15	15	6	4	18	1	2	2	7	9	7	**IZS**	33	10.0	24
16	19	14	9	9	7	17	19	16	11	16	15	5	4	2	5	1	3	6	7	3	1	2	**IZS**	3	19	8.4	24
17	3	4	4	4	4	4	4	4	5	5	5	6	5	4	4	4	1	1	2	3	2	**IZS**	1	2	6	3.5	24
18	5	8	9	5	3	5	9	9	11	15	16	13	20	19	23	19	10	1	1	1	**IZS**	14	26	16	26	11.2	24
19	21	24	13	16	17	14	15	14	11	12	7	5	4	4	4	9	3	2	2	**IZS**	11	15	26	23	26	11.8	24
20	24	14	5	7	7	49	16	**C**	**C**	**C**	19	17	11	7	12	6	26	20	**IZS**	2	3	2	3	5	49	12.8	24
21	5	14	9	7	6	3	83	16	16	1	0	0	0	0	6	8	4	**IZS**	2	1	1	1	1	1	83	8.0	24
22	1	3	2	2	2	2	2	4	3	3	3	3	2	2	2	1	**IZS**	2	3	3	2	1	4	3	4	2.4	24
23	2	2	2	2	2	29	19	15	15	11	14	10	12	8	10	**IZS**	5	5	4	4	3	3	5	7	29	8.2	24
24	5	4	4	4	4	60	**121**	10	**C**	**C**	**C**	**C**	**C**	**C**	**C**	11	9	6	2	4	5	3	4	5	**121**	15.4	24
25	1	0	1	1	1	10	9	15	13	5	5	3	3	**IZS**	2	7	4	2	3	5	2	2	5	6	15	4.6	24
26	7	5	2	2	2	6	17	4	5	4	2	2	**IZS**	13	7	7	4	2	2	2	2	3	2	2	17	4.5	24
27	3	2	2	2	2	2	5	3	15	8	5	**IZS**	3	2	2	3	3	2	2	2	3	3	2	3	15	3.4	24
28	3	3	4	3	4	3	3	3	4	3	**IZS**	2	2	5	2	2	1	1	2	3	3	3	3	3	5	2.8	24
29	3	4	5	16	19	25	27	27	11	**IZS**	14	12	12	6	7	1	1	1	1	1	19	19	29	7	29	11.6	24
30	5	5	7	10	10	11	5	4	**IZS**	2	1	1	2	5	2	9	1	0	1	1	1	1	2	8	11	4.1	24
HOURLY MAX	24	24	14	24	36	60	121	27	18	16	19	17	22	26	35	19	26	29	16	33	41	27	39	30			
HOURLY AVG	5.2	5.0	4.6	6.2	6.5	11.3	19.3	10.7	8.1	6.3	6.7	5.2	5.4	5.4	6.8	6.8	6.8	5.2	3.6	4.4	6.7	5.9	7.5	5.7			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	671					
MAXIMUM INSTANTANEOUS VALUE:	121	PPB	@ HOUR(S)	6	ON DAY(S)	24
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:		720	HRS
MONTHLY CALIBRATION TIME:	10	HRS				
STANDARD DEVIATION:	9.35					



JOB #: 2833-12-09-30-C

LICA30
NOX_ / WDR Joint Frequency Distribution (Percent)

September 2012

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	2.64	4.26	3.52	3.38	1.61	3.67	3.08	4.55	9.41	16.91	9.85	4.41	7.64	15.58	6.32	3.08	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.64	4.26	3.52	3.38	1.61	3.67	3.08	4.55	9.41	16.91	9.85	4.41	7.64	15.58	6.32	3.08	

Calm : .00 %

Total # Operational Hours : 680

Distribution By Samples

Direction

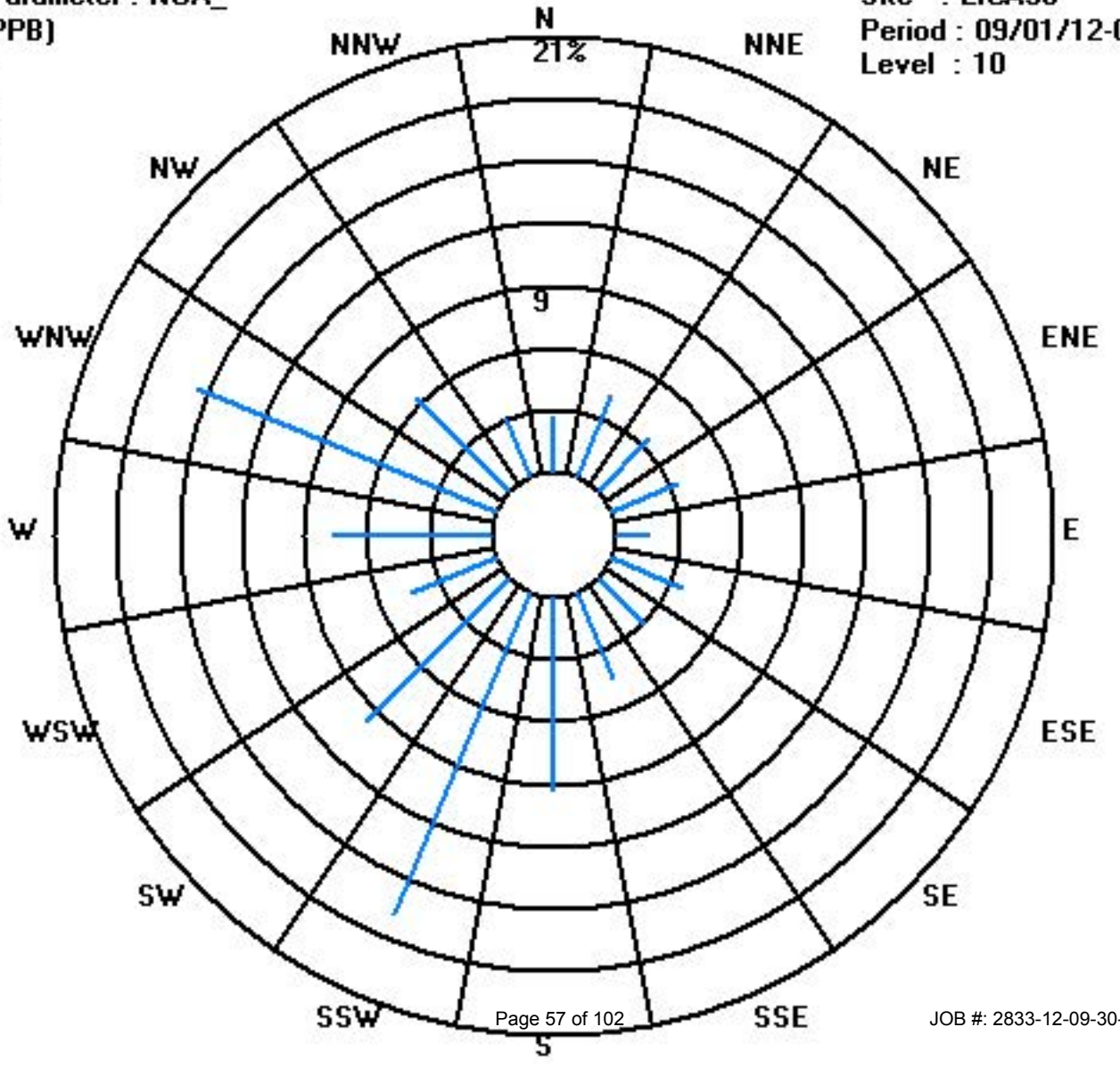
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	18	29	24	23	11	25	21	31	64	115	67	30	52	106	43	21	680
< 110																	
< 210																	
>= 210																	
Totals	18	29	24	23	11	25	21	31	64	115	67	30	52	106	43	21	

Calm : .00 %

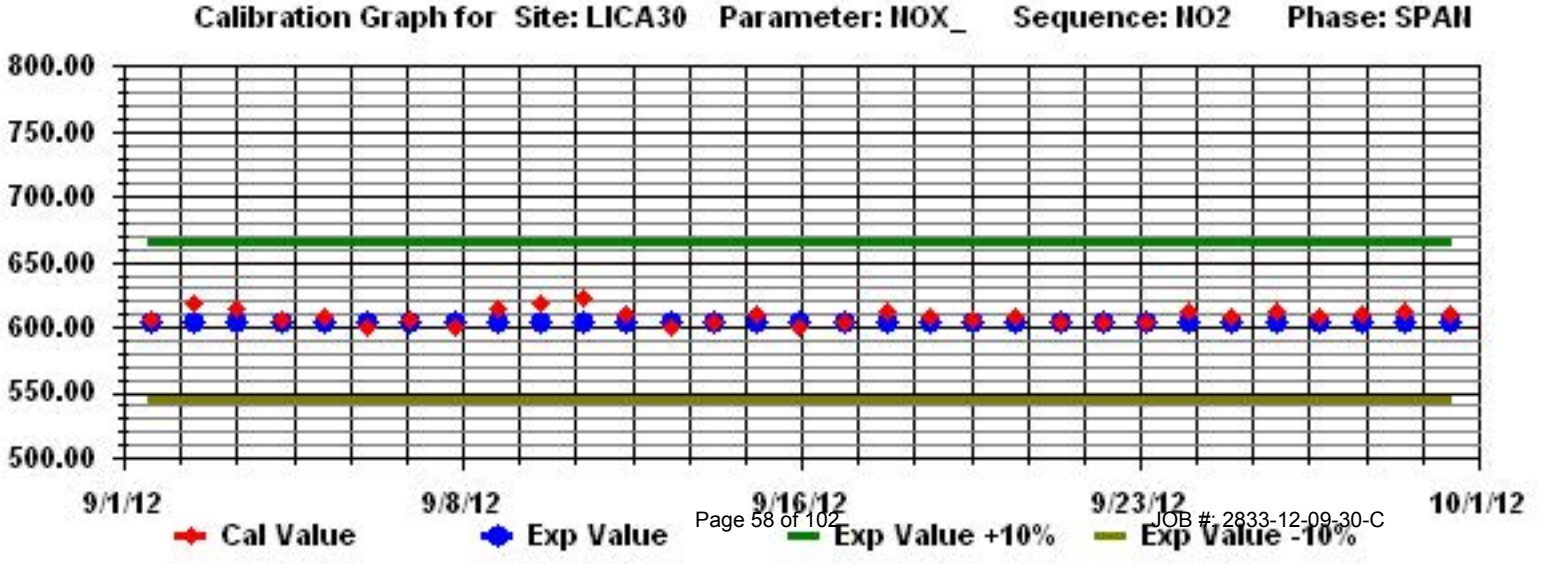
Total # Operational Hours : 680

Logger : 30 Parameter : NOX_
Class Limits (PPB)
>= 210
< 210
< 110
< 50

Site : LICA30
Period : 09/01/12-09/30/12
Level : 10



JOB #: 2833-12-09-30-C


Calibration Graph for Site: LICA30 Parameter: NOX_ Sequence: NO2 Phase: SPAN
800.00
750.00
700.00
650.00
600.00
550.00
500.00
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 2012

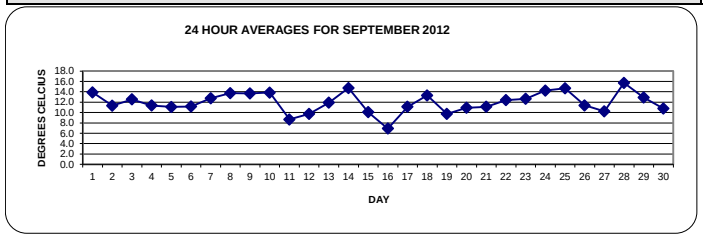
AMBIENT TEMPERATURE hourly averages (Degrees C)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	10.8	10.8	10.7	10.6	10.5	10.9	12.2	12	12.6	13.3	14.1	16	17.4	19.4	21.1	20.2	18.8	16.3	14.7	14.2	13.3	12.2	10.9	10.2	21.1	13.9	24
2	9.8	9.3	9.4	9.3	9.8	10.3	10.5	10.8	11.1	11.7	12.3	12.3	12.5	12.6	12.5	12.5	11.8	12	12.1	11.8	11.7	11.8	11.7	11.7	12.6	11.3	24
3	11.7	11.6	11.1	10.2	10	10.1	10.8	12.1	13.8	15	15.7	16.1	16.8	16.2	16.9	17.3	15.3	13	11.6	10.7	9.2	8.8	8.4	8.5	17.3	12.5	24
4	8.6	8.7	8.9	9.2	9.7	9.7	10.1	10.5	11	11.6	12.6	13.2	13.9	13.2	12.8	14.5	14.1	14.6	12.8	11.1	11.4	10.6	10.4	9.1	14.6	11.3	24
5	8.4	8.7	9	9	7.2	5.8	6.3	9.3	12.4	16.5	17.4	18.3	17.3	15.2	14.5	15.1	16	15.7	12.7	8.4	7	6.1	5.2	4.5	18.3	11.1	24
6	3.8	3	2.3	1	1.3	0.8	1.6	6.1	11.4	14	16	17.6	18.9	19.8	20.4	20.4	20.9	19.3	14.9	11.7	10.6	11.1	10.8	9.9	20.9	11.2	24
7	9.9	9.6	9.6	9.3	8.6	8.9	9.3	11	13	15	19.2	21.3	19.8	18.1	18.7	18.8	18.8	16.7	12.9	9.4	7.4	6.9	6.5	7.4	21.3	12.8	24
8	8	8.4	8.1	7.5	7.1	7.7	8.2	10.4	12.2	14.6	16.9	18.2	19.5	20.6	21.1	21.2	21.5	19.9	16.2	15.2	15.3	13.8	10.3	8.1	21.5	13.8	24
9	7.5	6.6	6.8	6.4	5.6	5.3	4.9	8.1	11.7	16.7	18.7	21.4	22.2	23.2	21.9	21.9	21.5	17.7	15.4	13.6	12.8	12	12.6	13.8	23.2	13.7	24
10	14	14.8	15	15	14.9	14.6	15	15.4	15.8	18.5	21.8	23.2	19.2	16.4	14	11.1	10.6	10	9.4	9.1	9.1	9.2	8.3	7.8	23.2	13.8	24
11	7.5	7.3	7.1	6.8	6.6	6.6	7	7.3	7.9	7.9	8.1	8.2	8.9	9.7	10.2	10.2	10.2	10.3	10.2	10.3	10.2	10.2	9.9	9.3	10.3	8.7	24
12	8.1	6.8	5.5	4.7	4.9	4.7	4.9	7.7	10.1	11.9	13.3	14	14.8	14.8	14.4	15	13.3	11.5	10.8	10	9.1	8.3	7.4	7.4	15.0	9.7	24
13	7.2	6.8	7.1	7.8	7.4	6.7	6.8	8.6	11	13.5	16.2	17.5	18.8	19.4	19.9	20.3	19.4	17.1	12.8	10	8.9	7.6	7.1	8.1	20.3	11.9	24
14	6.5	5.5	5.4	9.9	10.4	8.4	5.8	11.2	14.4	16.4	18	19.4	21	22.6	23.6	24.8	23.6	21.9	17.5	15.4	15.6	13.5	12.4	9.8	24.8	14.7	24
15	8.2	7.6	7.4	6.9	6.2	6.3	5.9	9	10.5	11.8	13.2	14.3	15.3	15.5	15.1	14.5	14.6	12.2	10.2	8.3	8.3	8.2	6.6	5.3	15.5	10.1	24
16	4.4	2.6	1.1	1.2	0.6	-0.1	0	4	7	10.5	12	13	14.9	14.3	15.9	15.6	13.3	12.5	7.9	4.8	3	2.8	1.9	2.2	15.9	6.9	24
17	1.5	1.6	2.8	3.4	4.4	4.4	4.6	6.6	9	10.7	14.1	16.1	18	19.4	20.5	20.6	20	17.6	14.3	13.1	11.4	10.9	10.7	10.8	20.6	11.1	24
18	10	9.5	9.4	9.5	8.1	9.5	10.1	11.5	14.5	16.6	18.2	19.1	18.7	19.1	18.8	18.1	17.5	15.3	13.1	12.1	11.5	10.6	9.6	8.6	19.1	13.3	24
19	7.2	6	4.5	4	4.3	4.6	5.1	6.5	7.8	8.8	10.9	12.3	14.2	15.9	17.3	17	16.4	15	11.6	8.7	9.2	8.8	8.7	8.9	17.3	9.7	24
20	7.5	5.4	3.9	3	2.5	3	3.4	6.2	11.2	15.1	16.6	17.8	19	19.9	20.1	20.1	19.4	16.1	12.2	10	8.5	7.5	6.5	6.6	20.1	10.9	24
21	5.5	5.6	4.8	3.9	2.9	3.3	3	6.5	11.2	14.2	16.1	17.9	18.7	18.9	19.2	19	18.2	14.9	11.1	11.2	11.7	10.9	9.4	8.6	19.2	11.1	24
22	7.6	5	4.3	5.3	5.5	5	4.7	7.6	10.8	14	16.6	19.2	21.4	21.9	22.4	22.2	21.5	18.8	15	13.3	11.2	10	8.1	6	22.4	12.4	24
23	4.7	3.6	2.8	2.1	1.7	1.4	1.6	5.5	11.3	15.3	18.4	21.1	23	24.6	**25.5**	25.3	23.8	19.9	16.6	13.9	12.2	10.5	9.9	9.1	**25.5**	12.7	24
24	8.4	8.1	7.5	6.8	6.2	5.6	4.8	6.8	11.4	16.5	20.9	22.5	23.5	24.2	24.5	23.3	21.6	18.4	14.5	13.9	12.4	12.5	13.7	13.3	24.5	14.2	24
25	12	10.8	8.6	7.9	6.4	5.6	5	7.8	12.7	17.2	19.5	21.1	22.1	22.8	23.8	23.6	22.5	19.9	16.2	16.2	14	13.3	12.4	11.1	23.8	14.7	24
26	10.8	11.2	10.9	10.5	10.5	10.2	9.7	9.6	10.7	13.7	16	16.7	18.1	18.5	17	17.7	16.8	13.7	10.5	7.2	4.8	3.5	2.5	2	18.5	11.4	24
27	1.3	0.4	0	-0.3	-0.9	-1.2	**-1.3**	1	7.5	12.2	14.8	16.5	18.7	19.3	19.4	19.9	19.2	16.7	14.4	13.8	14.2	14.2	13.3	12.6	19.9	10.2	24
28	12	10.8	9.7	10.5	7.9	4.7	4.2	6	13.5	16.5	18.9	21.6	23.5	24.6	25	25	23.8	21.5	19.3	17.6	17.6	17.2	15.1	10.7	25.0	**15.7**	24
29	8.4	7.1	6.1	6.5	7	9.5	9.4	11.3	14.3	17.9	18.5	18.3	17.9	20.1	19.7	20	18.1	15.3	12.1	11	11.8	11.4	9.4	8.1	20.1	12.9	24
30	8.9	8.9	8.1	7.5	7.3	6.1	4.9	7.7	11.4	13.2	14.7	15.8	16.4	16.8	17.1	15.8	14.6	13.3	11	9.2	8.9	8.1	6.9	6.3	17.1	10.8	24
HOURLY MAX	14.0	14.8	15.0	15.0	14.9	14.6	15.0	15.4	15.8	18.5	21.8	23.2	23.5	24.6	25.5	25.3	23.8	21.9	19.3	17.6	17.6	17.2	15.1	13.8			
HOURLY AVG	8.0	7.4	6.9	6.8	6.5	6.3	6.3	8.5	11.4	14.0	16.0	17.3	18.1	18.6	18.8	18.7	17.9	15.9	13.1	11.5	10.7	10.1	9.2	8.5			

STATUS FLAG CODES

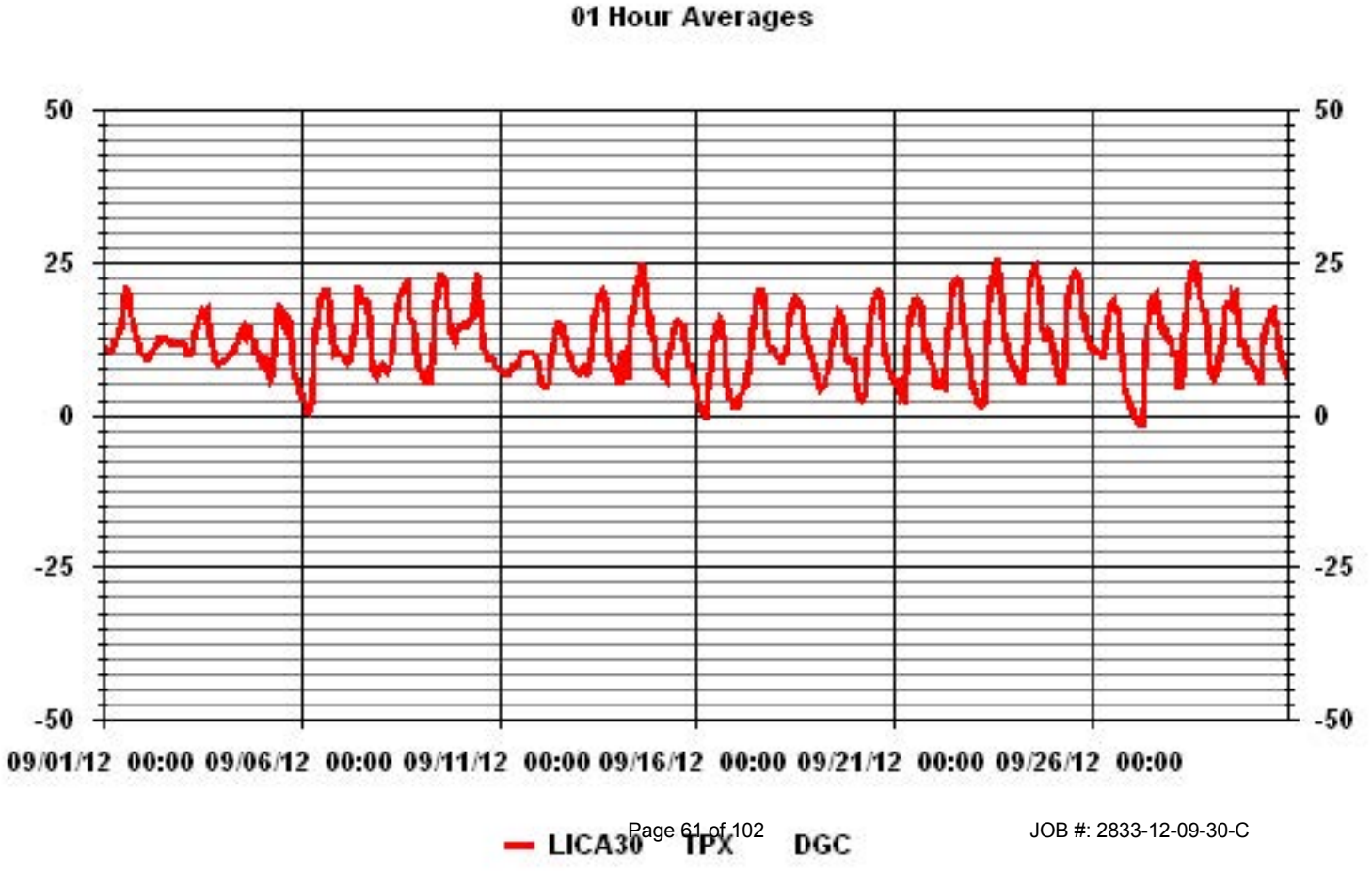
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-1.3	^{O}C	@ HOUR(S)	6	ON DAY(S)	27
MAXIMUM 1-HR AVERAGE:	25.5	^{O}C	@ HOUR(S)	14	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	15.7	^{O}C			ON DAY(S)	28

CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS
			AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	5.56		MONTHLY AVERAGE:	11.95	^{O}C



JOB #: 2833-12-09-30-C

Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 2012

PRECIPITATION hourly averages (mm)

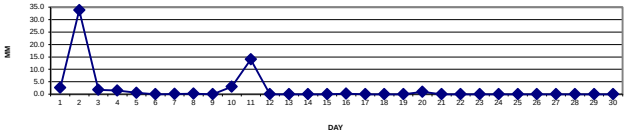
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	TOTAL	RDGS.
DAY																											
1	0	0	0	0	0	0	0	1.1	0	0	0	0	0	0	0	0	0	0.3	0.2	0.9	0.1	0	0	0	1.1	2.6	24
2	0	0	0	0	0.1	0.2	0.7	0.1	0.4	0.7	2.9	2.9	1.7	3.8	1.2	2.3	**6.8**	3.2	1.5	2.3	1.4	0.6	0.8	0.2	**6.8**	**33.8**	24
3	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.3	0.9	0.2	0.9	1.8	24
4	0.2	0.2	0	0.1	0	0	0	0	0	0	0	0	0.9	0.1	0	0	0	0	0	0	0	0	0	0	0.9	1.5	24
5	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0.5	0.6	24
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
7	0.1	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	0.1	24
8	0	0.1	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	24
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
10	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	1	0.8	0.1	0	0	0	0	0.3	0.7	1.0	3.0	24
11	0.9	2.9	3.5	5.1	1.4	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.1	14.0	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
16	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
20	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1.0	1.0	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	0.0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
HOURLY MAX	0.9	2.9	3.5	5.1	1.4	0.2	0.7	1.1	0.4	0.7	2.9	2.9	1.7	3.8	1.2	2.3	6.8	3.2	1.5	2.3	1.4	0.6	0.9	0.7			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	MD	-MISSING DATA

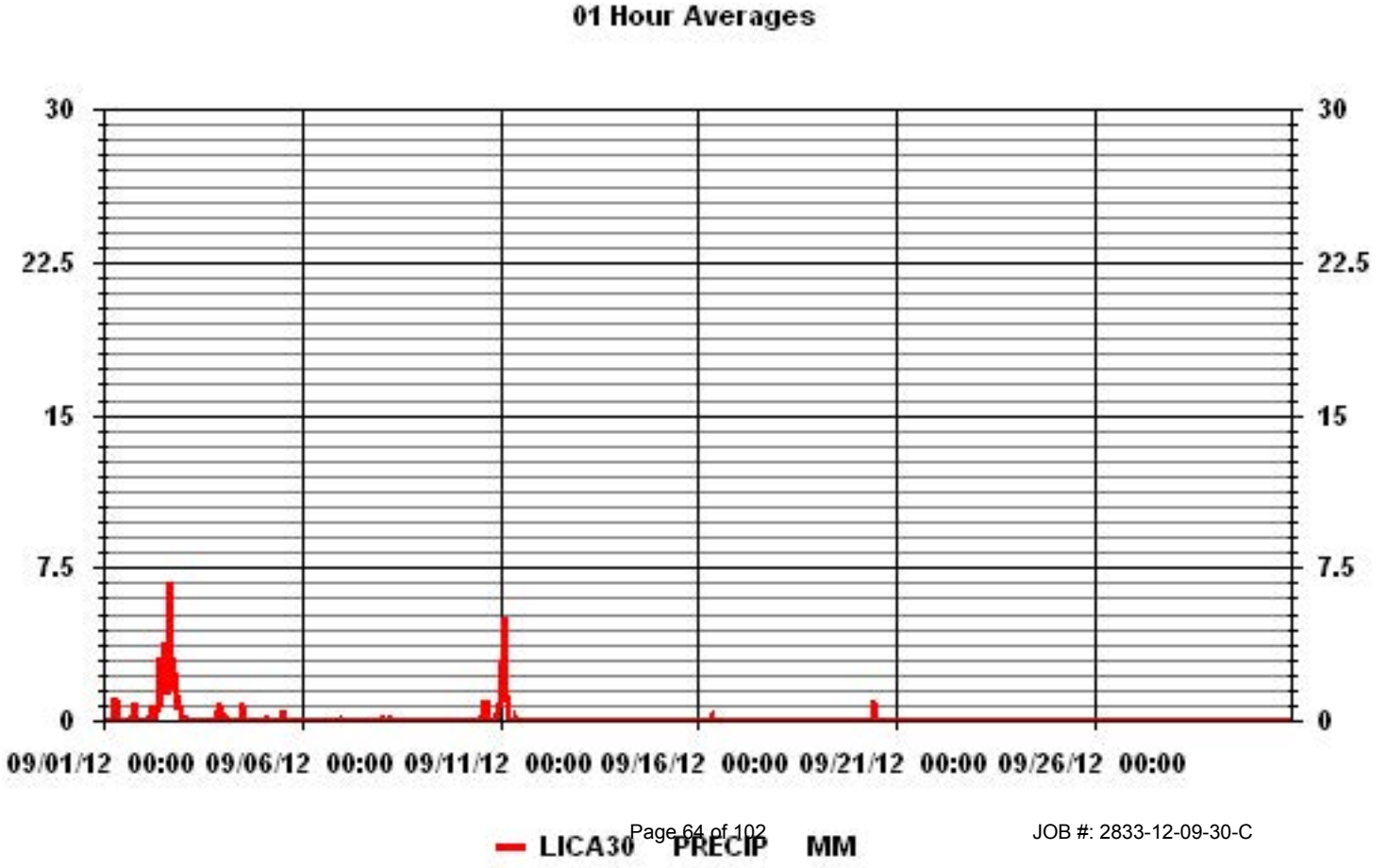
DAILY TOTALS FOR SEPTEMBER 2012



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	6.8	MM	HOUR(S)	16	ON DAY(S)	2
MAXIMUM DAILY TOTAL	33.8	MM			ON DAY(S)	2
MONTHLY TOTAL	58.8	MM				

CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS
			AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.47		MONTHLY AVERAGE:	0.08	MM



JOB #: 2833-12-09-30-C

Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 2012

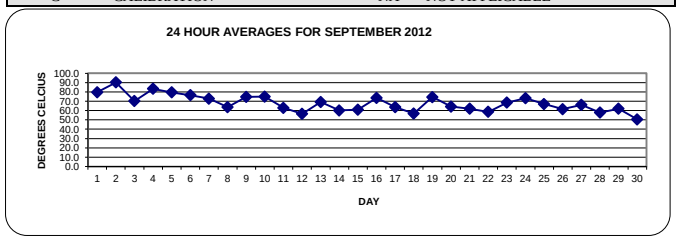
RELATIVE HUMIDITY hourly averages (%)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	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	86	84	82	83	82	81	78	83	87	84	81	75	71	65	58	61	67	76	87	89	89	88	88	87	89	79.7	24
2	85	86	88	92	92	92	92	92	91	91	91	91	90	89	90	90	91	91	90	90	90	90	89	91	92	**90.2**	24
3	91	90	88	86	86	87	84	78	69	61	53	49	45	47	43	39	47	60	68	72	84	84	87	88	91	70.3	24
4	89	89	89	89	88	88	88	88	87	84	80	78	79	83	81	73	71	69	75	84	84	86	88	90	90	83.3	24
5	92	92	92	91	91	92	92	91	79	63	57	53	61	68	76	72	63	60	70	87	91	91	92	92	92	79.5	24
6	92	92	92	91	92	91	92	92	84	76	69	62	56	52	50	50	48	53	73	86	87	83	85	87	92	76.5	24
7	87	86	85	85	87	84	82	76	70	67	58	52	54	55	52	47	47	54	70	85	90	91	91	92	92	72.8	24
8	88	83	83	86	88	88	86	80	74	63	46	39	36	36	37	38	39	46	58	59	56	61	74	83	88	63.6	24
9	87	90	90	91	91	91	91	84	76	59	51	48	49	44	48	53	57	73	81	87	88	90	89	83	91	74.6	24
10	80	77	76	75	75	76	74	73	74	64	54	49	60	65	66	83	88	87	84	82	80	79	89	88	89	74.9	24
11	89	89	89	89	89	86	82	79	76	75	68	65	54	46	42	43	45	44	44	42	43	43	44	45	89	63.0	24
12	50	56	64	72	74	75	72	60	51	44	40	37	36	35	40	38	45	54	54	60	68	73	78	79	79	56.5	24
13	81	83	82	82	84	86	85	79	71	64	54	49	42	40	40	40	43	52	73	84	86	89	89	84	89	69.3	24
14	88	89	89	75	73	77	88	69	59	55	52	50	47	45	43	41	47	45	56	61	51	47	44	51	89	60.1	24
15	57	60	62	64	67	69	72	64	61	58	54	51	48	47	47	47	47	56	65	73	71	69	75	80	80	61.0	24
16	83	86	90	91	91	91	91	90	81	68	61	56	48	45	40	37	45	50	72	85	89	91	91	91	91	73.5	24
17	91	91	90	85	80	77	76	68	64	63	55	51	45	41	38	36	37	46	59	61	67	68	69	68	91	63.6	24
18	71	73	73	71	74	66	64	60	50	48	46	43	36	32	33	37	41	50	58	61	61	66	70	76	76	56.7	24
19	81	84	88	89	89	89	88	85	82	78	70	67	61	52	45	47	54	68	80	88	80	76	74	72	89	74.5	24
20	78	85	89	91	91	91	91	85	68	51	42	37	34	29	28	30	33	43	59	68	75	80	83	83	91	64.3	24
21	87	88	89	91	91	92	91	86	62	52	44	35	33	35	35	32	33	45	62	59	57	58	63	65	92	61.9	24
22	69	80	81	77	77	78	79	70	59	52	47	42	35	35	35	35	37	42	54	55	60	61	69	77	81	58.6	24
23	81	85	87	89	90	90	91	85	63	50	45	42	41	39	37	37	42	55	68	78	83	88	89	90	91	68.5	24
24	91	92	92	92	92	92	92	92	82	68	54	50	46	44	43	48	52	64	78	79	84	84	76	72	92	73.3	24
25	72	74	82	84	89	90	91	86	71	63	56	50	46	45	41	39	41	50	63	64	73	79	79	80	91	67.0	24
26	83	83	78	74	69	66	68	70	67	55	40	35	32	31	34	33	36	49	59	71	81	86	88	90	90	61.6	24
27	90	91	91	91	91	91	91	90	79	65	59	54	46	43	42	41	40	47	54	54	53	56	61	65	91	66.0	24
28	69	73	79	76	83	89	91	85	65	56	51	44	38	35	35	33	35	39	44	47	47	48	55	70	91	57.8	24
29	79	85	88	89	87	80	80	75	65	57	57	58	59	45	41	42	45	50	57	57	47	42	48	53	89	61.9	24
30	55	57	61	65	66	69	72	63	53	47	41	38	36	35	33	37	38	40	45	50	49	50	55	58	72	50.5	24
HOURLY MAX	92	92	92	92	92	92	92	92	91	91	91	91	90	89	90	90	91	91	90	90	91	91	92	92			
HOURLY AVG	80.7	82.4	83.6	83.5	84.0	83.8	83.8	79.3	70.7	62.7	55.9	51.7	48.8	46.8	45.8	46.0	48.5	55.3	65.3	70.6	72.1	73.2	75.7	77.7			

STATUS FLAG CODES

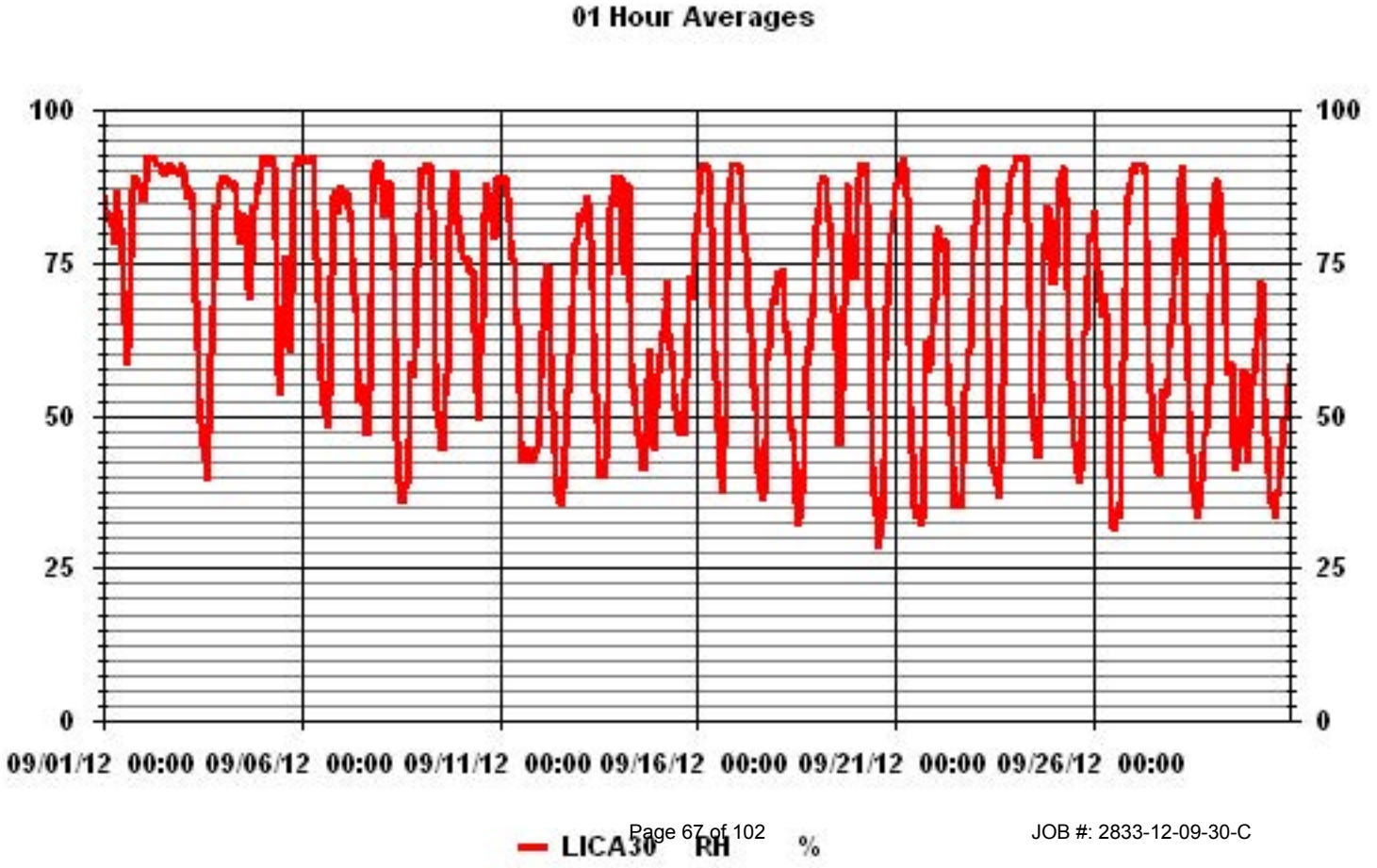
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	92	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	90.2	%			ON DAY(S)	2
				VAR-VARIOUS		

CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS
			AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	18.70		MONTHLY AVERAGE:	67.83	%



JOB #: 2833-12-09-30-C

Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

SEPTEMBER 2012

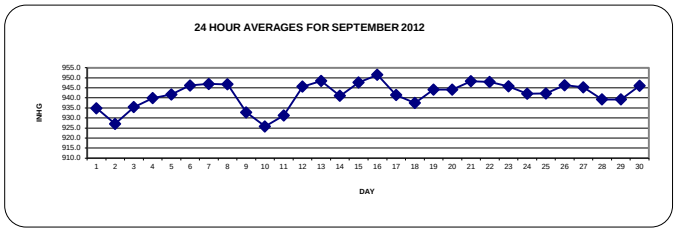
BAROMETRIC PRESSURE hourly averages (millibar)

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	940	939	938	938	938	936	936	935	936	936	936	936	935	935	934	934	933	933	931	932	932	932	931	930	940	934.8	24
2	929	928	927	927	926	925	925	925	923	923	923	923	924	924	926	927	928	929	929	930	931	932	932	933	933	927.0	24
3	933	933	933	932	933	934	934	935	935	936	936	937	937	937	936	937	937	937	937	937	937	936	935	936	937	935.4	24
4	936	936	937	937	937	938	939	940	940	940	941	941	941	941	941	942	942	942	942	941	941	941	941	940	942	939.9	24
5	940	940	940	940	939	939	939	940	940	941	941	941	941	942	942	943	943	944	944	944	944	945	945	945	945	941.8	24
6	945	945	945	945	946	946	946	947	947	948	948	948	948	947	947	947	946	946	946	945	945	945	945	945	948	946.2	24
7	945	945	944	944	944	943	943	943	944	944	944	945	947	948	949	950	950	951	951	951	950	950	951	951	951	947.0	24
8	951	951	951	951	950	950	950	950	950	950	949	949	948	947	946	945	944	944	943	942	941	941	940	939	951	946.8	24
9	938	937	937	936	936	935	935	934	934	935	935	934	933	933	932	931	931	931	930	929	928	927	928	927	938	932.8	24
10	925	926	926	926	925	925	925	925	925	925	925	925	925	926	926	926	927	927	927	926	927	926	926	926	927	925.8	24
11	925	925	925	926	926	926	926	927	928	929	930	931	931	932	933	934	934	935	936	936	937	938	939	940	940	931.2	24
12	941	941	942	942	943	944	945	946	947	947	948	948	948	948	947	947	946	946	946	947	947	946	946	947	948	945.6	24
13	947	947	947	947	948	948	948	948	949	949	950	950	950	950	950	950	950	949	949	948	948	947	947	946	950	948.4	24
14	946	945	944	944	943	942	941	941	941	941	940	940	940	939	939	939	939	939	939	939	940	941	941	941	946	941.0	24
15	942	942	943	944	944	945	946	947	948	948	949	949	949	949	949	949	949	949	949	950	950	951	951	951	951	947.6	24
16	951	951	951	951	952	952	952	953	954	954	954	954	953	953	953	952	952	951	950	950	949	949	948	948	**954**	**951.5**	24
17	947	947	947	946	946	945	944	943	943	943	943	942	941	940	940	939	939	938	938	937	937	936	936	936	947	941.4	24
18	935	935	934	934	933	933	933	933	934	935	936	936	937	937	938	938	939	941	941	942	943	943	944	944	944	937.4	24
19	945	945	945	945	945	945	945	945	945	946	945	945	944	944	943	943	942	943	943	942	943	943	943	944	946	944.1	24
20	944	944	944	944	944	944	944	944	945	945	945	945	945	945	945	944	944	944	943	943	943	943	943	944	945	944.1	24
21	944	944	945	945	946	947	947	948	949	950	951	951	951	951	950	950	950	949	949	948	948	949	949	948	951	948.3	24
22	948	948	948	948	948	948	948	948	949	949	949	949	949	948	948	948	948	948	947	947	947	947	947	947	949	948.0	24
23	947	946	946	946	946	946	946	946	947	947	948	948	947	947	946	946	946	945	945	944	944	943	943	943	948	945.8	24
24	943	943	942	942	942	942	942	942	943	943	944	943	943	943	942	942	942	942	941	941	941	941	941	941	944	942.1	24
25	941	941	941	940	940	940	940	941	942	942	943	943	943	943	943	943	943	943	943	943	944	944	944	944	944	942.3	24
26	945	945	945	945	946	946	946	946	947	947	948	948	947	947	947	947	947	947	946	946	946	946	946	946	948	946.3	24
27	946	946	946	946	946	946	946	946	947	947	947	947	947	946	946	945	945	944	943	943	943	943	943	942	947	945.3	24
28	942	942	942	942	941	941	940	940	941	941	941	941	940	939	939	938	938	937	937	936	936	936	936	935	942	939.2	24
29	935	935	935	935	935	937	937	938	939	940	940	940	940	940	940	940	941	941	941	941	942	943	943	943	943	939.2	24
30	943	944	944	944	944	944	945	946	947	947	947	947	947	947	947	947	947	947	947	947	947	947	947	947	947	946.1	24
HOURLY MAX	951	951	951	951	952	952	952	953	954	954	954	954	953	953	953	952	952	951	951	951	950	951	951	951			
HOURLY AVG	941	941	941	941	941	941	941	941	942	942	943	943	942	942	942	942	942	942	942	942	942	942	942	942			

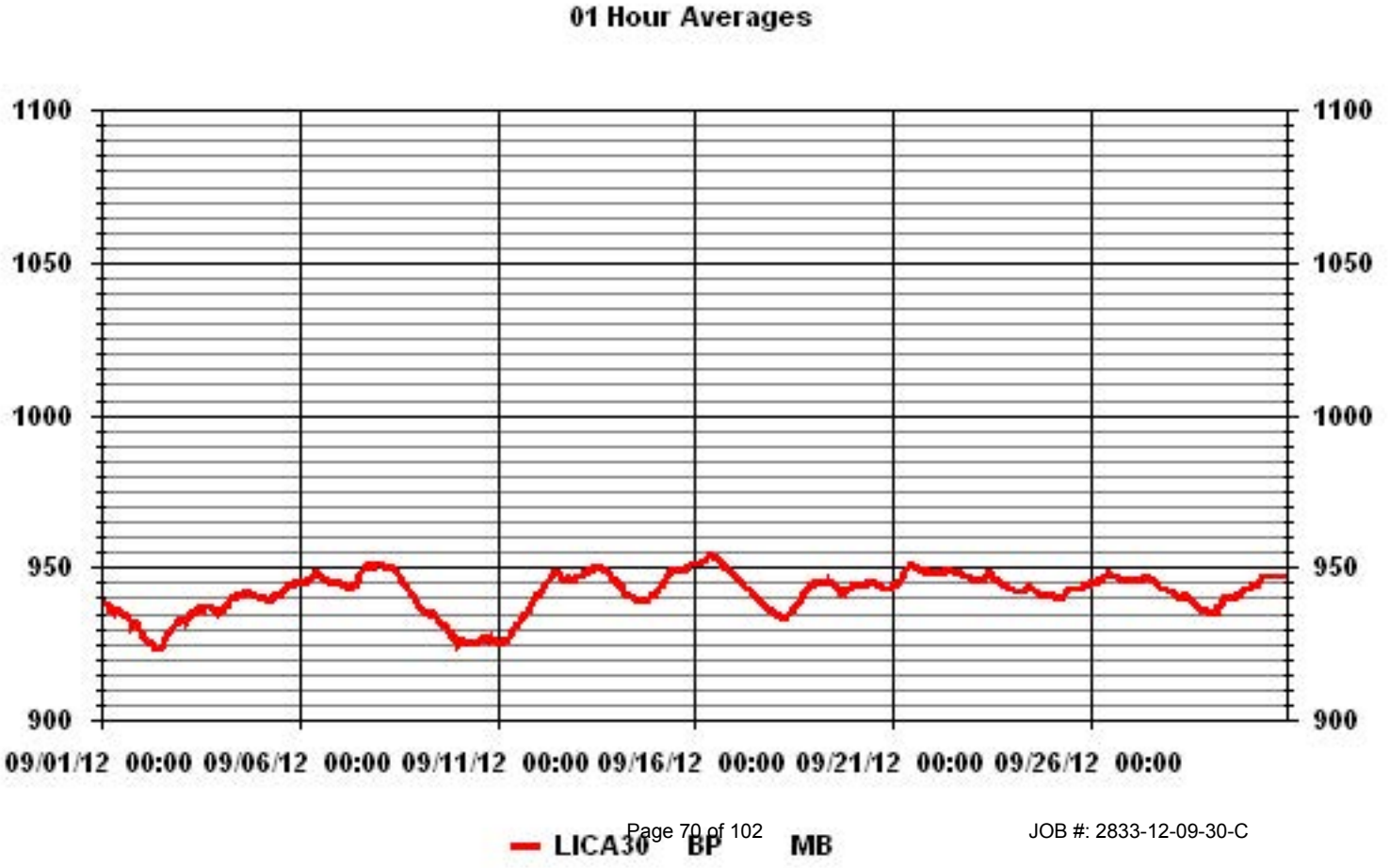
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	954	MB	@ HOUR(S)	VAR	ON DAY(S)	16
MAXIMUM 24-HR AVERAGE:	951.5	MB			ON DAY(S)	16
				VAR-VARIOUS		
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		720	HRS
			AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	6.77		MONTHLY AVERAGE:		942	MB



JOB #: 2833-12-09-30-C

Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 2012

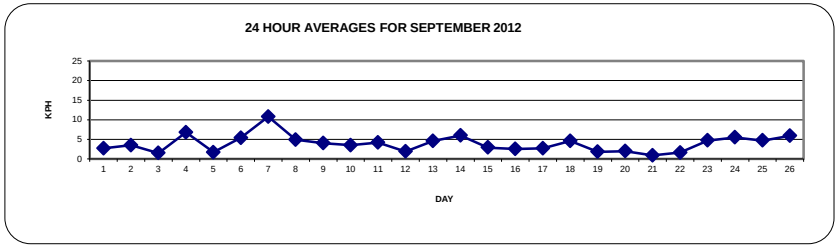
WIND SPEED hourly averages (km/hr)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	4.9	5.3	5	4.1	3.8	5.7	5.7	6.5	6.7	5.6	7.6	8	7.3	6.6	7.2	6.6	7.4	8.1	6.7	6.3	6.2	8.1	7.8	7.2	8.1	3.6	24
2	7.5	6.6	8.4	7.8	7.5	6.4	5.7	5.7	9	6.3	6.6	10.2	9.6	7.4	5.9	6.2	5.4	7.6	10.8	10.1	9.7	6.4	7.5	3.6	10.8	5.6	24
3	4.6	4.5	5	4.9	6.4	6.8	8.3	9.2	8.7	10.5	12.3	13.3	11.4	9.6	10.8	11.8	9.4	6.3	5.7	5.5	6.9	8.1	8.6	8.5	13.3	8	24
4	8.9	8.2	8.5	8	7.7	8	7.3	7.2	8	7.9	8.6	8.1	6.6	7.7	8.1	7.9	7.7	6.1	3.5	3.3	3.6	2.1	2.6	2.8	8.9	6.1	24
5	2.6	4	3.2	2.1	1.7	0.7	1.3	1.5	3.9	4.4	7.9	8.1	9	8.6	9	9.6	6.9	8.2	5.1	1.3	1	1.1	1.5	1.6	9.6	2.7	24
6	1.5	1.1	1.5	0.4	1.3	1	0.4	0.5	2.9	5.5	6.8	7.5	6.9	6.3	5.1	5.3	4.3	4.2	3	3.9	4.4	4.8	5.1	5.6	7.5	3.5	24
7	5.4	5.7	6.4	6.4	6	7.4	8.9	7	5.9	7.4	5.1	8.5	13	**16.2**	8.3	9.2	7.2	5.8	0.6	3.6	2.6	3.3	2.6	3.4	**16.2**	1.5	24
8	4.7	5.1	4.8	5.3	5	6.3	5.1	5.4	9.4	9.9	13	14	13.1	11.8	11.1	10.9	8.5	4.9	4.6	7.3	7.3	3.7	1.2	1.8	14	6.8	24
9	3	2.8	3.2	2.8	1.9	2.4	1.7	2.9	2.7	0.9	1	1.3	3.7	3	3.8	3.2	2.4	2.1	2.4	2.2	2.7	0.6	4.2	1.2	4.2	1.7	24
10	2.5	3.9	3.8	4.3	5.5	3	3.3	2.5	3.2	4.6	4.1	5	8.1	13.7	13.9	8.7	7.3	8.4	9.7	8.2	5.2	5.5	5.7	7.2	13.9	5.4	24
11	6.8	7.5	9.4	8.4	8.7	9	9.9	9.5	10.8	13.1	13.9	11.9	14.3	14.1	15.5	14.9	13.7	12.4	9.8	10.2	9.6	10.4	9.5	8.7	15.5	**10.8**	24
12	7.6	5.7	3.7	3.9	5.4	5.6	6.2	7.6	7.1	7.7	7	6.6	6.3	7.6	6.7	6.5	4	3.2	4.3	3.5	2.6	3	2.8	4	7.7	4.9	24
13	3.8	4	5	6.6	6.9	5.6	5.5	4.6	6.3	6	5.7	6.2	6.6	5.8	4.9	4.9	5.4	3	2.8	2.7	1.9	0.8	2.3	4.2	6.9	4	24
14	2.5	0.2	2.4	4.8	4.9	2	1.9	4.8	7.4	8.1	7.7	8.3	8.6	7.8	6	2.9	2	5	2.4	4.3	5.7	5.3	3.4	3.4	8.6	3.5	24
15	3.2	3.7	3.6	3.7	4.2	4.7	4.8	6.5	6.6	6.9	6.4	5.4	6.2	6.5	6.2	6.5	6.3	3.8	4.1	4.1	3.3	4	2.9	2.7	6.9	4.2	24
16	2.2	2	1	1.9	2.2	1.9	1.9	1.8	3.4	4.2	4.9	4.8	7.1	4.5	5.6	3.6	3.2	3.1	3	2.3	3.3	2.2	1.2	3.2	7.1	1.9	24
17	2.7	3.3	4	4.8	5.9	6.2	5.4	6.3	6.6	6.2	6.6	7.6	7.1	6.8	6.4	6.8	6.8	3.1	4.9	3.9	3.2	2.8	3	4.3	7.6	4.6	24
18	4.9	5.6	6.5	5.1	4.2	3.8	6.3	4.8	8.6	8.6	10.6	11.6	13.1	11.9	12.7	10.5	11	10.5	7.5	7.4	7.1	5.9	6	5.8	13.1	6	24
19	4.3	2.9	3	2.4	2.5	2.6	2.5	3.1	4.3	4.7	4.8	7.2	6.2	5.6	5.8	4.7	2.3	0.8	0.9	1.8	3.4	3.2	3.9	2.8	7.2	2.9	24
20	2.5	1.1	0.9	2.2	2.5	2.4	2.7	2.8	3.5	4.9	6	5.9	6.3	5.6	4.6	5.3	6.2	3.3	2.4	2.7	1.8	1.3	2.1	1.7	6.3	2.5	24
21	0.7	1.7	1.4	1.6	1.6	2.7	0.4	1.4	4.4	5.3	5.8	3.7	4	4.6	4.2	5.9	5.2	3.9	2.7	6.6	8.2	6.9	4.3	5.4	8.2	2.7	24
22	2.9	2.7	3	4	3.8	4	3.2	5.3	6.7	6.4	7.5	7.9	8.7	9	8.6	8.5	6.7	5.1	3.9	4.6	3.6	3.4	2.8	1.3	9	4.6	24
23	0.8	0.6	0.3	0.5	0.7	0.9	1.2	0.1	0.8	3.2	3.1	3.7	4.2	3.3	2.5	2.8	2.2	3.4	3.9	3	2.4	1.5	2.5	1.1	4.2	1.8	24
24	1.6	1.6	1.4	0.4	1.1	1.1	0.9	2	4.7	4.3	3.1	4	2	4.5	4.5	5.3	4.5	2.3	2.2	3.5	2.1	2.5	3.8	3.3	5.3	2	24
25	3.1	1.7	2.4	2.2	1.4	1.6	0.5	1.8	2.1	1.8	2.9	4.9	7.9	8	8.2	8.5	6.7	3.9	3.3	2.1	3.3	5.3	6.1	4.4	8.5	0.9	24
26	4.3	4	5.8	4.3	3.6	4.1	2.8	1.7	2.7	3.8	6	5.8	3.5	3.2	1.5	2.5	3.8	3.5	3.9	1	1	0.3	0.1	0.8	6	1.6	24
27	0.5	1	1	0.7	0.1	1.2	0.4	1.1	1.4	6.4	7.1	8.5	9	9.1	8.8	9.5	7.3	4.9	5.2	5.7	8	8.5	7.8	7.6	9.5	4.7	24
28	7.7	3.6	4.7	4.9	0.6	0.7	1.2	1.5	4.6	7	8.2	9.7	9.1	9.5	9	10.8	9.3	7.8	6.3	6.8	8.3	7.3	1.9	0.5	10.8	5.5	24
29	0.2	1.1	1.3	1.4	3	6	4.1	5.8	5.9	7.5	6.8	6.4	6.7	8.7	8	7.3	6.8	6	2.8	3.9	8.3	7.3	3.8	3.3	8.7	4.7	24
30	5.3	4.5	4.7	6.7	5	3.9	3.4	3.1	7.1	9.6	9.1	10.1	10.7	11.2	10.7	10.6	9.6	9	4.7	3.5	4.4	3.5	3.1	5.5	11.2	5.9	24
HOURLY MAX	8.9	8.2	9.4	8.4	8.7	9.0	9.9	9.5	10.8	13.1	13.9	14.0	14.3	16.2	15.5	14.9	13.7	12.4	10.8	10.2	9.7	10.4	9.5	8.7			
HOURLY AVG	3.8	3.5	3.8	3.9	3.8	3.9	3.8	4.1	5.5	6.3	6.9	7.5	7.9	7.9	7.5	7.3	6.3	5.3	4.4	4.5	4.7	4.3	4.0	3.9			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

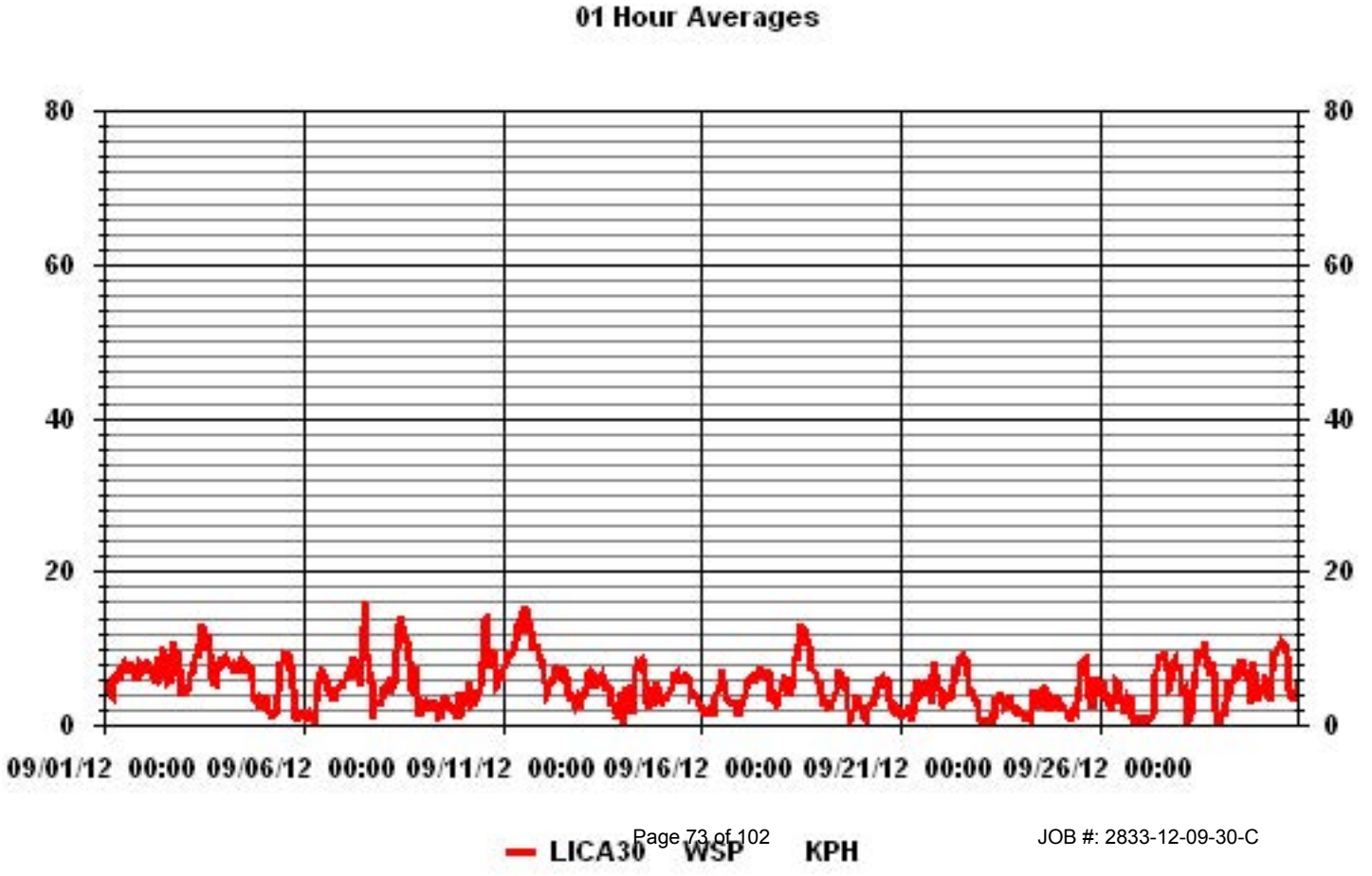


LAST CALIBRATION: December 20, 2011

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:			16.2	KPH	@ HOUR(S)	13	ON DAY(S) 7
MAXIMUM 24-HR AVERAGE:			10.8	KPH			ON DAY(S) 11
CALMS (≤ 1 KPH)	4.17	%	OPERATIONAL TIME:			720	HRS
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	3.01		MONTHLY AVERAGE:			5.20	KPH

JOB #: 2833-12-09-30-C



JOB #: 2833-12-09-30-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

SEPTEMBER 2012

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

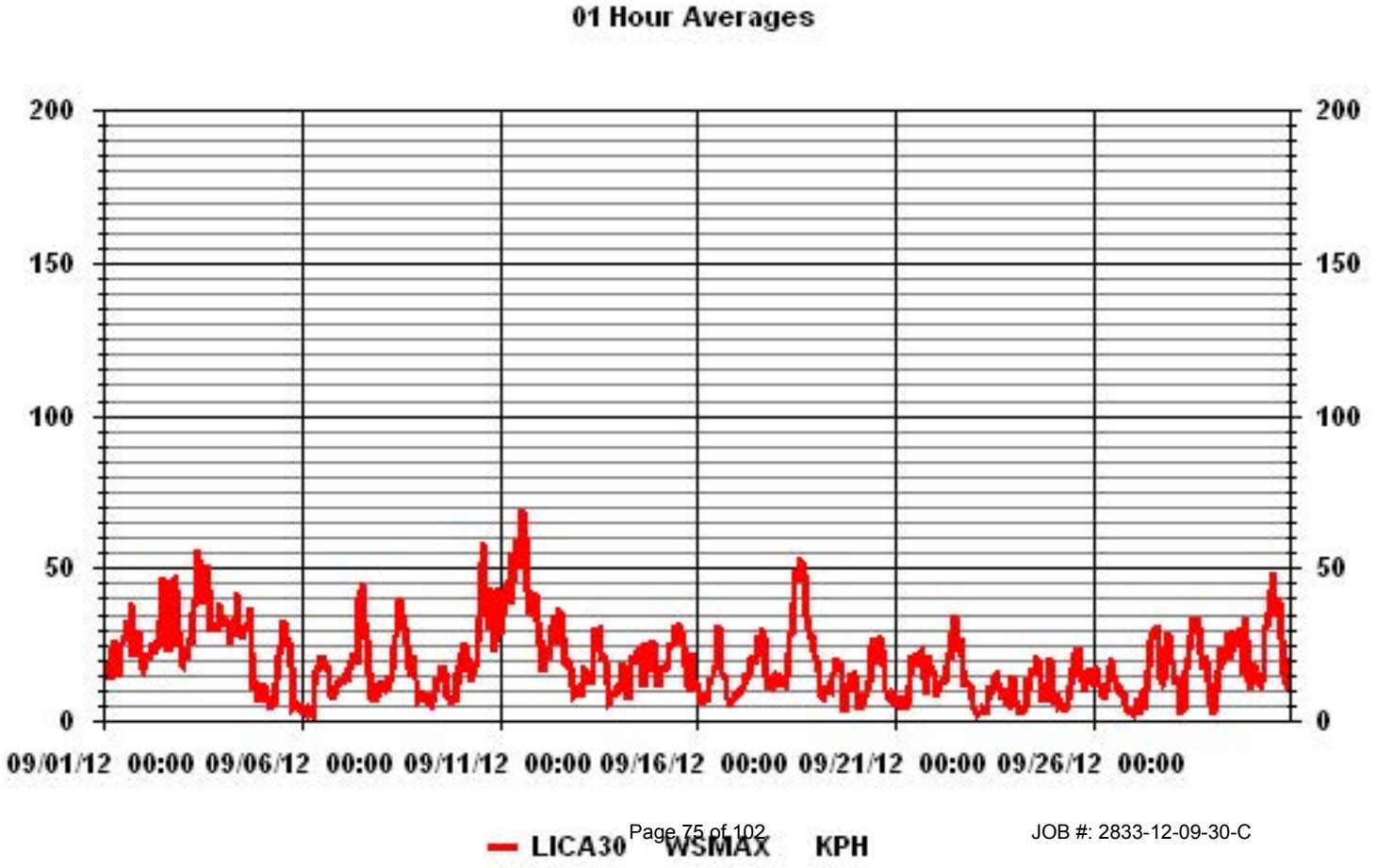
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.
DAY																									
1	15.9	15.9	13.9	19.4	13.1	23.6	15.5	26.2	18.5	14.1	25.2	25.6	28	25.6	32.9	27.1	33.1	38.9	20.5	29.7	23.6	29.7	21.4	18.5	38.9
2	17.4	19.2	22.5	19.9	21.1	25.8	23.1	21.4	26.2	23.6	32.6	38.5	47	31.7	24.7	22.3	25.1	35.9	46	46.4	43.4	24.4	29.7	18.5	47
3	17.9	23.8	20.3	22	26.6	26.4	35.4	39.8	37.6	56.4	52.9	51.8	46.3	38.2	46.3	51.1	43.3	29.3	32.3	29.9	29.9	30.1	38.9	35.4	56.4
4	32.7	33.1	31.1	33.2	31.7	25.1	27.1	32.3	33.4	41.7	28.2	29	26.6	30.4	30.8	31.9	29	36.9	23.3	9.8	12.8	10.9	6.5	8	41.7
5	6.5	12.6	9.2	8.7	6.6	3.6	5.2	5.8	12.2	13.3	21.6	24.4	29.9	32.6	24.2	25.5	26.8	26	18.3	4.5	5.2	6.5	4.3	3.6	32.6
6	4.5	3.2	3.4	2.6	4	3	2.5	5.2	11.5	16.1	17.4	18.5	20.7	20.9	18.1	17.9	16.8	12.4	8.7	6.7	10.2	10	12.8	11.5	20.9
7	13.5	12	14.4	15.7	12.4	17	20.3	19.5	21	20.2	19.9	40.4	42.6	45.5	26.8	32.3	27.3	16.1	8.2	7.6	6.1	9.1	8.9	11.8	45.5
8	12.2	12.6	10.9	10	10.4	15	12.8	16.3	24.7	27.7	37.8	37.3	40	35.1	31.2	30.8	25.6	17.4	14	21.5	20.2	14.2	7.2	7.8	40
9	10	8.7	7.6	8.2	6.9	6.3	5.8	8.5	6.5	9.5	13.5	12.6	18.1	13.3	17.9	16.6	8.5	8	7.6	5.6	6.9	6.1	15.5	11.8	18.1
10	17.7	22.3	16.1	25.3	18.9	21.5	17.3	13.1	15.1	17.6	18.5	25.3	34.1	51.8	58.8	43.1	34.5	29.5	43.5	35.2	22.5	26	31	43.3	58.8
11	28.2	33.9	39.6	34.8	44	44.8	46.2	38.3	55	45.7	59.5	49.2	56.2	61.3	**69.3**	59.9	60.8	43.3	35	40.7	35.6	35.8	42.4	33.2	**69.3**
12	24.9	27.5	15.7	17.4	23.4	19.7	23.6	25.3	31.2	34.3	29.5	24.9	36.7	35.8	31	27.9	19	18.1	20.1	17.7	11.8	8.5	9.3	10.9	36.7
13	9.1	8	12.6	17.7	14.5	13.2	12.5	12.6	16.8	30.1	24	29.9	30.3	22.9	19	22	19.6	12.6	6.1	6.7	9.3	7.8	9.8	11.5	30.3
14	8.9	12.2	15.2	18.5	15.2	13.5	6.5	18.3	21.1	19.4	19.4	21	22.8	23.6	18.6	11.6	11.6	25.6	15.5	19	20.3	26.6	17.2	11.8	26.6
15	11.8	14.1	17	17	17	17.9	18.1	25.8	24.9	25.8	31.2	25.1	27.7	31.7	29.7	25.8	24.2	18.1	11.8	9.3	14.9	21.9	14.1	10.2	31.7
16	12.2	7.6	5.2	7.8	9.3	6.1	7.1	12.6	13.3	14.1	17.7	18	31.3	21.9	30.5	15.8	15.1	14	7.6	5.6	5.4	6.5	7.6	8.5	31.3
17	8.9	9.1	10.2	11.1	13.5	12.6	13.7	15.4	20.6	19.1	21	18.3	21.1	27.3	28.1	30.1	28.1	14.8	11.3	11.1	12.6	14.6	15.2	11.8	30.1
18	12.6	12.8	15.5	13.7	12.6	12.2	14.6	22.3	29	28.1	38.7	45.2	49	45.2	53.8	47.2	51.4	48.5	34.7	31	27.4	27.4	23.4	22.1	53.8
19	20.7	16.6	10.4	8.7	8	10.2	10.2	9.8	11.5	10.7	15.3	16.6	20.3	17	19.6	16.3	8.7	2.8	6.1	8.9	12.3	15.3	15.6	11.8	20.7
20	12.6	9.1	3.4	5.4	5.6	9.3	7.4	9.8	12.8	24	23.8	26.2	26.2	21.4	18.8	27.9	24	18.5	10.2	8.7	9.3	7.1	6.6	9.6	27.9
21	5.7	8.5	5.6	3.9	6.5	7.8	3.4	5.4	11.8	14.8	21.1	21.4	19	17.4	22.2	22.9	20.7	13.9	8	20.1	21.6	19.2	15.7	17	22.9
22	13.3	8.1	9.8	11.8	12.8	13.3	12.4	17.9	21.8	20.3	28.8	23.8	34.3	27.5	24.6	25.3	21.8	17.6	12	12.2	12.6	11.8	7.4	4.7	34.3
23	2.8	3	1.9	2.4	2.6	4.1	3.4	2.5	6.9	11.5	9.1	10.4	14.6	15	11.1	12.6	8.5	7.1	10.9	6.3	5.6	5.2	6.7	14.6	15
24	5.4	6.9	5.2	3.4	3.2	3.2	3.3	4.6	14.4	10.4	17	16.8	15.7	21.3	16.1	20.1	13	7.1	7.1	10.2	8.5	7.8	20.7	13.1	21.3
25	8.9	7.1	7.6	5.4	6.1	4.7	4.3	4.1	5	6.9	11.5	17.2	21.8	22	23.1	23.3	15.4	13.5	9.1	16.3	14.9	16	16.9	12.5	23.3
26	10.7	12.4	18.3	12.4	11.5	12.6	8.5	6.9	9.3	12.4	18.3	20.7	15	13.3	10.2	12	9.8	8.2	10.2	6.1	4.1	3	2.8	3.2	20.7
27	2.2	3.2	3.7	7.4	1.9	9.6	10.3	3.2	10.2	16.4	17.7	26.6	28.8	28.1	27.9	31	19.8	14.1	12.4	13.3	24.2	27.7	27.6	18.6	31
28	19.5	15.3	12.4	13.7	7.4	2.3	3.4	3.9	16.6	20.7	22.9	27.9	33.4	30.3	30.1	33.4	31	22.5	17	18.1	21.6	19.4	13.3	5.8	33.4
29	3.4	3.6	6.1	8.9	16.3	24.2	18.1	22.1	19.9	28.7	24.5	20.1	22.5	29.7	24	27	24.4	30.1	14.6	22.7	34.1	26.9	13.7	10	34.1
30	15.2	18.5	12.2	15	12.6	12	14.1	13.3	29.9	31	35.2	38.7	42.5	48.8	36.4	34.2	40.1	39.2	26.9	14.6	21.8	12.8	10.7	12	48.8
PEAK	32.7	33.9	39.6	34.8	44.0	44.8	46.2	39.8	55.0	56.4	59.5	51.8	56.2	61.3	69.3	59.9	60.8	48.5	46.0	46.4	43.4	35.8	42.4	43.3	

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	69.3	KPH	@ HOUR(S)	14
			ON DAY(S)	11



JOB #: 2833-12-09-30-C

LICA30
WSP / WDR Joint Frequency Distribution (Percent)

September 2012

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	1.94	2.77	3.61	2.63	1.66	2.91	3.05	2.08	5.41	10.13	8.61	4.02	4.86	3.33	3.05	1.66	61.80
<	12.0	.55	1.25	.27	.55	.13	.55	.55	2.22	3.61	6.25	1.38	.55	2.77	10.41	3.19	1.25	35.55
<	20.0	.13	.13	.00	.00	.00	.00	.00	.00	.13	.27	.00	.00	.00	1.66	.27	.00	2.63
<	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	2.63	4.16	3.88	3.19	1.80	3.47	3.61	4.30	9.16	16.66	10.00	4.58	7.63	15.41	6.52	2.91	

Calm : .00 %

Total # Operational Hours : 720

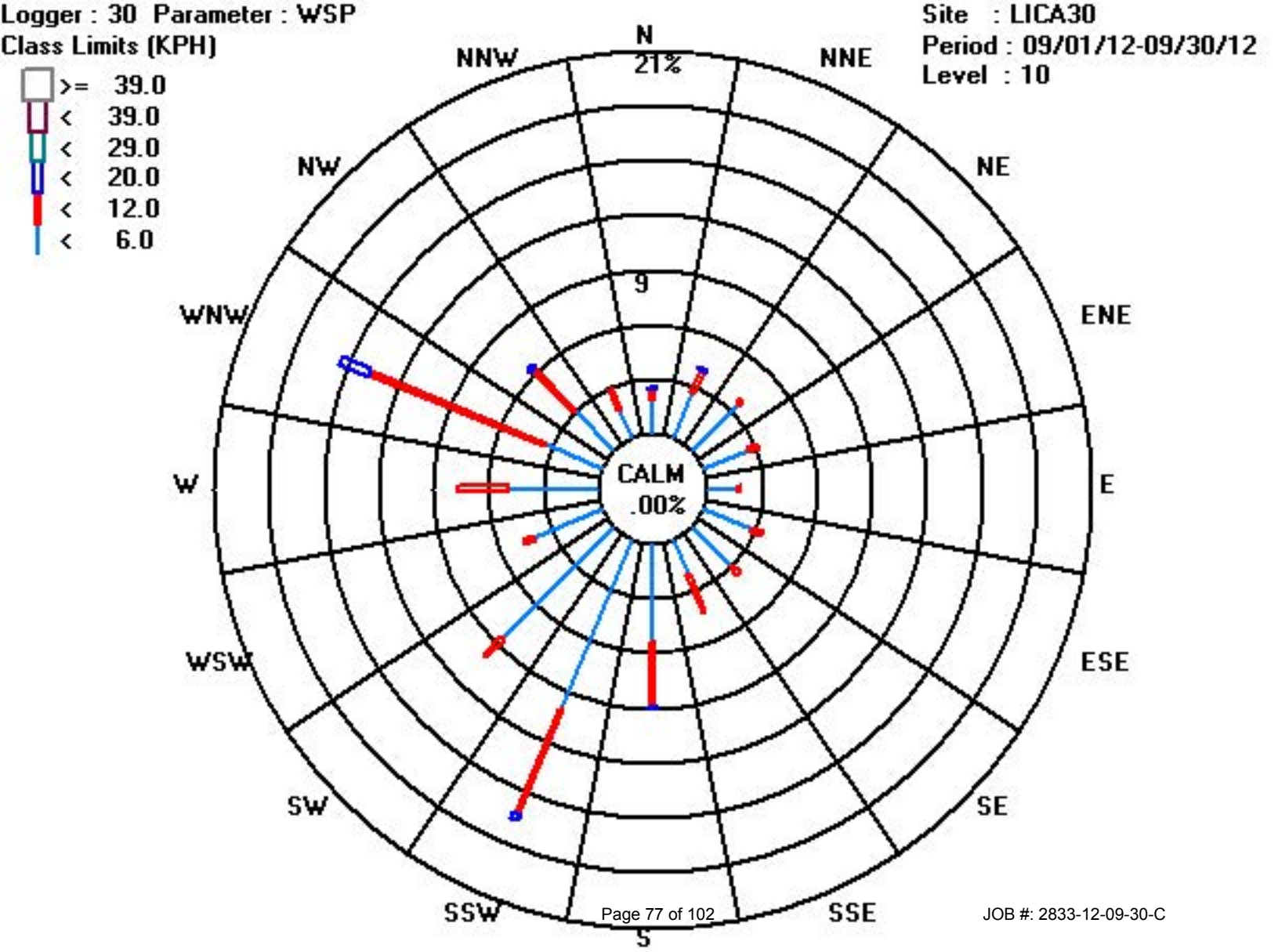
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	14	20	26	19	12	21	22	15	39	73	62	29	35	24	22	12	445
<	12.0	4	9	2	4	1	4	4	16	26	45	10	4	20	75	23	9	256
<	20.0	1	1							1	2				12	2		19
<	29.0																	
<	39.0																	
>=	39.0																	
	Totals	19	30	28	23	13	25	26	31	66	120	72	33	55	111	47	21	

Calm : .00 %

Total # Operational Hours : 720



JOB #: 2833-12-09-30-C

Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

SEPTEMBER 2012

WIND DIRECTION hourly averages in degrees

MST

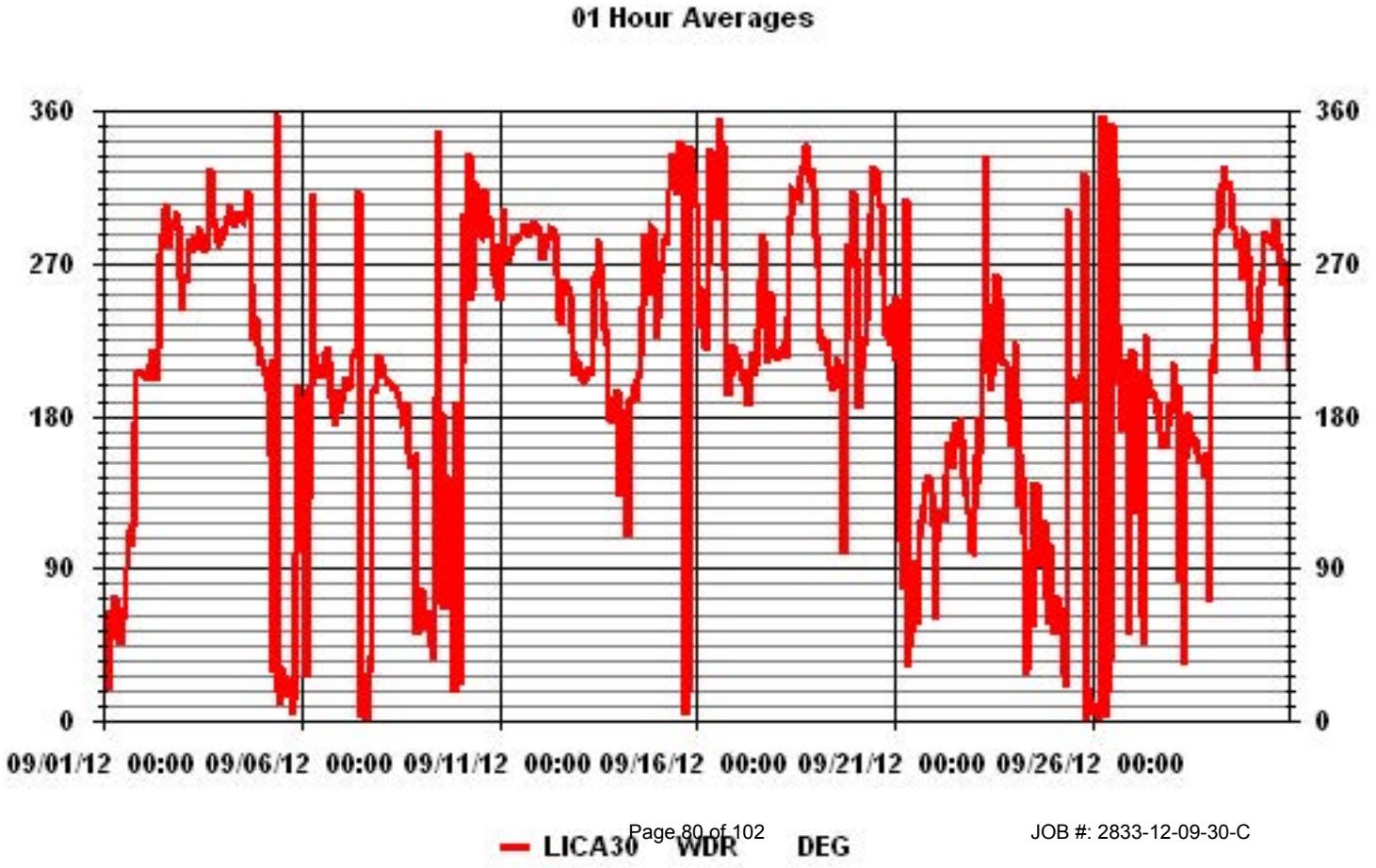
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	36	33	43	18	65	48	55	72	72	55	46	46	66	60	90	112	113	103	115	177	206	207	206	206	85	E	24
2	205	204	202	202	211	219	213	208	200	219	275	285	287	302	306	279	295	294	290	293	300	298	294	262	259	WSW	24
3	242	261	259	264	281	280	285	284	278	284	292	288	285	280	277	286	295	326	298	297	292	284	282	285	284	WNW	24
4	285	287	292	298	306	295	294	291	297	300	297	298	296	300	297	303	312	300	260	225	229	239	222	209	291	WNW	24
5	214	208	209	208	196	156	214	28	32	359	18	9	32	27	25	27	15	17	15	4	12	100	198	192	21	NNE	24
6	187	185	138	25	196	130	198	311	217	212	206	202	207	202	215	214	220	213	191	181	174	187	196	186	200	SSW	24
7	182	188	201	203	195	197	198	215	216	219	264	313	2	13	5	0	0	28	39	195	196	193	208	217	252	WSW	24
8	209	212	204	203	197	201	200	198	195	198	195	192	185	177	178	187	187	159	149	154	155	156	51	55	186	S	24
9	75	78	66	56	54	65	44	51	36	191	179	348	68	183	66	97	146	73	116	66	83	16	189	91	80	E	24
10	21	162	211	299	290	311	335	248	254	319	305	294	288	287	302	314	287	285	298	289	278	264	256	281	289	WNW	24
11	248	270	290	303	277	270	276	276	280	286	283	284	286	287	291	291	291	290	285	289	292	293	294	293	285	WNW	24
12	288	279	272	274	279	285	285	289	287	291	288	264	253	237	234	255	261	253	258	252	230	220	204	208	266	W	24
13	213	206	202	200	201	207	208	207	204	225	262	265	285	271	257	249	232	222	185	178	178	176	191	194	223	SW	24
14	194	132	185	179	163	153	108	190	187	191	199	188	202	206	215	245	288	286	251	282	292	291	272	226	212	SSW	24
15	237	271	265	271	282	282	287	313	333	333	321	316	311	325	342	338	328	3	9	17	340	332	324	304	318	NW	24
16	306	231	256	245	229	222	218	268	338	297	316	305	296	328	356	343	340	267	199	192	200	203	223	206	286	WNW	24
17	217	214	211	204	205	199	195	185	204	211	218	204	210	231	259	288	284	242	211	226	233	253	240	216	222	SW	24
18	215	213	219	220	215	223	213	238	287	298	314	313	311	311	310	322	327	338	339	338	322	323	316	315	301	WNW	24
19	287	268	232	224	219	226	221	222	211	202	195	197	209	214	211	209	177	98	204	226	281	267	292	313	225	SW	24
20	296	275	184	200	208	222	226	236	278	300	310	328	322	322	324	305	304	264	228	231	226	245	221	246	285	WNW	24
21	212	250	214	195	107	77	175	309	31	43	52	95	79	56	84	108	118	128	135	141	143	143	141	135	110	ESE	24
22	116	59	106	124	118	123	118	145	165	151	160	148	170	177	162	176	177	167	144	133	123	125	102	101	149	SSE	24
23	125	157	140	180	158	225	205	334	248	230	195	204	224	237	264	247	250	213	209	213	210	177	182	162	214	SSW	24
24	183	224	191	126	158	145	111	27	35	34	101	55	137	136	141	115	109	90	105	118	73	56	105	74	99	E	24
25	53	51	70	74	57	67	35	29	19	302	187	192	202	201	195	188	198	202	202	323	1	12	19	14	185	S	24
26	11	4	10	8	0	13	358	341	2	20	18	36	353	322	321	234	201	181	170	184	214	174	51	170	4	N	24
27	219	121	145	207	175	121	63	44	229	201	201	195	190	195	186	187	189	172	161	163	161	169	174	186	182	S	24
28	188	212	182	187	199	82	112	33	154	180	182	170	170	162	168	159	158	154	153	145	149	159	144	70	165	SSE	24
29	214	205	223	289	290	313	290	317	328	317	316	318	312	293	291	279	281	284	260	278	289	288	275	243	295	WNW	24
30	224	235	217	206	218	229	256	266	287	287	287	284	283	285	278	296	284	283	271	257	272	260	226	210	267	W	24
HOURLY AVG	306	287	292	303	306	313	358	341	338	359	321	348	353	328	356	343	340	338	339	338	340	332	324	315			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

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

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS
STANDARD DEVIATION:	87.56		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	253	DEG



JOB #: 2833-12-09-30-C

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *MASKWA*

SEPTEMBER 2012

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

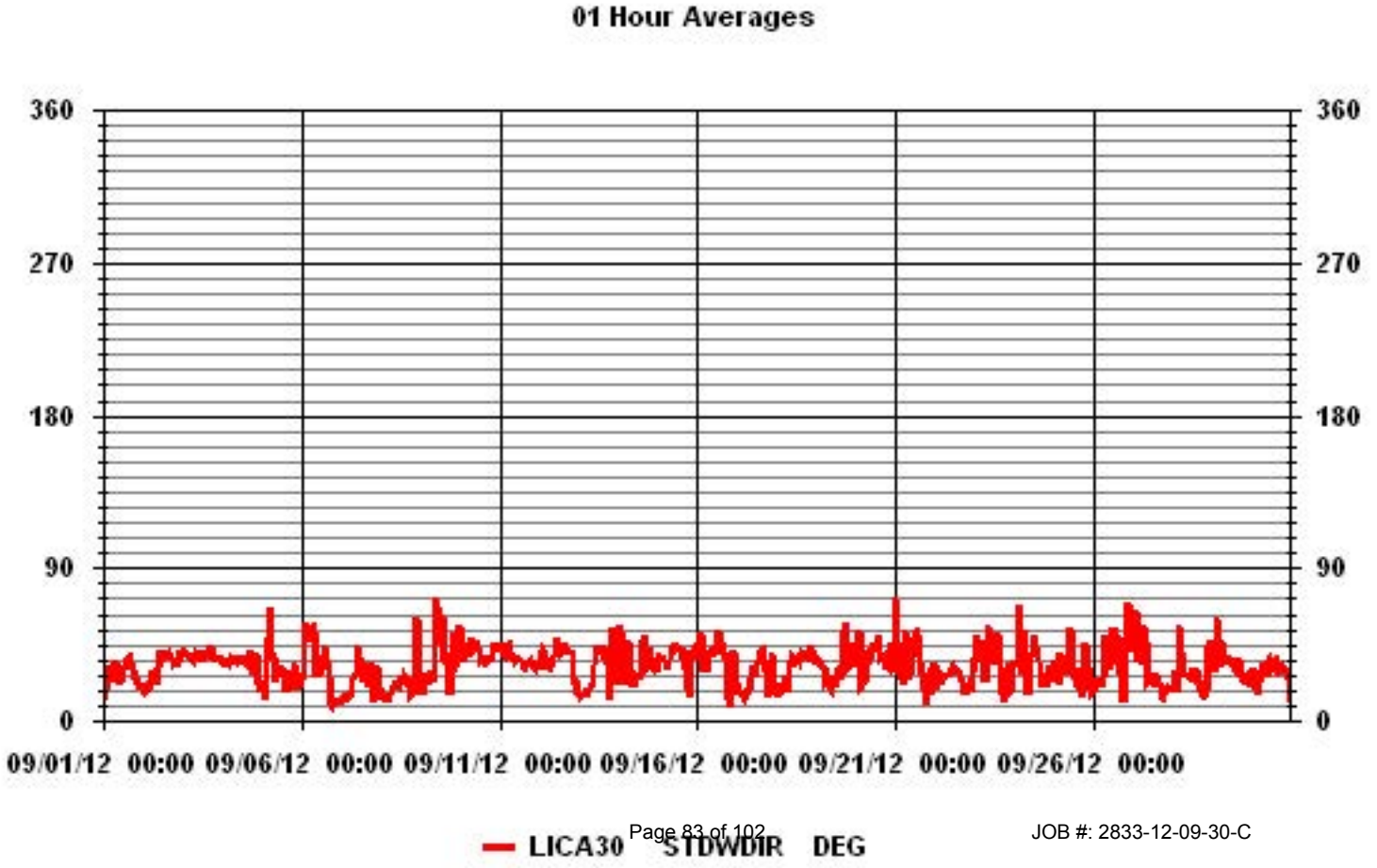
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	14	18	21	30	32	23	26	35	26	21	25	23	31	31	36	37	38	35	31	24	27	23	21	20
2	18	20	18	19	24	28	28	25	21	31	42	35	38	40	40	37	40	38	34	35	32	36	34	42
3	38	43	39	39	37	38	36	39	41	40	38	35	39	39	39	40	37	45	38	38	34	38	35	38
4	35	34	35	34	37	35	35	38	34	38	35	36	37	35	34	38	40	40	30	27	30	40	23	17
5	24	19	12	37	49	66	41	38	22	32	28	33	26	31	19	19	29	22	18	30	33	29	18	27
6	25	28	48	57	46	55	56	51	51	26	29	29	31	39	44	33	36	26	11	9	11	11	11	11
7	13	13	15	14	16	15	16	25	27	27	45	38	30	23	32	31	34	20	34	11	13	30	33	21
8	15	15	13	13	13	15	16	21	18	22	22	21	25	24	27	25	25	21	15	16	18	38	61	35
9	21	16	19	28	22	24	29	23	25	72	53	66	44	63	35	41	35	28	16	21	28	52	32	40
10	56	45	35	42	37	46	43	49	41	42	47	44	35	36	35	38	35	36	36	36	43	45	40	45
11	43	44	39	38	43	44	36	40	39	35	36	37	37	36	33	32	34	33	33	35	33	34	32	35
12	30	39	42	40	34	35	33	32	35	38	43	48	46	42	44	43	44	41	40	40	42	23	23	17
13	16	14	15	15	15	18	19	21	22	33	42	41	42	39	43	43	38	34	13	18	45	54	45	21
14	42	57	53	25	22	40	47	34	22	22	27	26	26	26	28	47	51	39	40	33	34	32	34	29
15	36	39	36	37	36	33	31	36	42	42	40	46	43	43	40	41	39	31	19	14	41	39	37	43
16	44	36	52	33	34	31	29	41	42	38	41	42	39	54	41	47	41	37	20	14	8	29	41	20
17	22	18	17	15	16	14	16	19	25	28	32	25	34	35	40	41	32	33	13	29	31	40	35	19
18	20	15	17	18	20	26	16	26	33	33	39	38	37	38	36	40	39	40	39	38	45	42	38	34
19	37	37	32	36	31	33	23	24	21	19	22	22	26	30	31	24	33	53	58	32	33	36	32	46
20	36	47	54	20	21	42	23	33	40	39	41	46	43	41	51	37	38	39	30	33	32	46	28	42
21	73	48	29	29	26	21	53	36	25	27	38	48	52	53	48	35	29	19	10	17	21	20	31	23
22	34	18	23	21	27	26	27	27	27	29	30	32	30	29	29	25	25	18	15	19	21	18	18	29
23	37	51	35	44	47	26	23	45	57	38	38	34	37	34	52	42	32	16	11	15	16	34	16	32
24	35	32	36	68	39	27	54	19	15	18	39	40	51	44	42	36	30	21	21	21	27	27	33	27
25	23	35	28	21	40	33	27	29	29	45	55	36	28	29	23	24	20	13	24	46	30	32	20	16
26	17	25	20	23	25	20	25	50	37	38	31	33	53	53	46	51	28	13	13	40	51	69	40	53
27	52	47	65	35	55	33	57	45	48	23	24	23	28	23	28	22	22	15	14	16	19	21	20	19
28	19	29	17	19	56	26	40	28	27	27	27	26	29	29	31	23	23	19	16	15	17	19	44	48
29	34	29	38	61	32	35	47	35	35	37	37	37	33	31	30	35	35	27	29	25	24	23	27	28
30	22	31	20	15	20	23	27	34	28	28	35	37	34	35	36	31	29	30	32	30	31	30	25	13

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: December 20, 2011

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 720 HRS



JOB #: 2833-12-09-30-C

Calibration Reports

Sulphur Dioxide

SO2 Calibration Report

Station Information

Calibration Date	September 24, 2012	Previous Calibration	August 13, 2012
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	8:18	End Time (MST)	12:39
Reason:		Monthly Calibration	
Barometric Pressure	943 mmHg	Station Temperature	22 Deg C
Cal Gas	49.6 ppm	Gas Cyl. # LL42502	Cal Gas Expiry date December 29, 2013
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	508	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	Environics 6000	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Environics 6000	S/N :	4760		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range			0 - 1000 ppb					
Sample Flow / Box Temp	600 ccm		29.7 Deg C		601 ccm		31.9 Deg C	
HVPS / Lamp Setting	494		2351		494		2347	
PMT / RxCell Temp	7.7 Deg C		50 Deg C		7.7 Deg C		50 Deg C	
Converter / IZS Temp	NA Deg C		45 Deg C		NA Deg C		45.0 Deg C	
Offset / Slope	48.2		1.229		50.9		1.224	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	2	N/A
4994	0	0	1	N/A
4921	74.6	741	747	0.9915
4921	74.6	741	742	0.9982
4955	39.8	395	392	1.0082
4976	19.9	198	195	1.0132
4995	0	0	1	N/A
			Sum of Least Squares	1.0011
			New Correction Factor	0.9982

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	2.4	1.1
Auto Span	369.0	369.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9993
Current Correction Factor Before Span Adjust:	0.9915
Percent Change:	0.8%

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

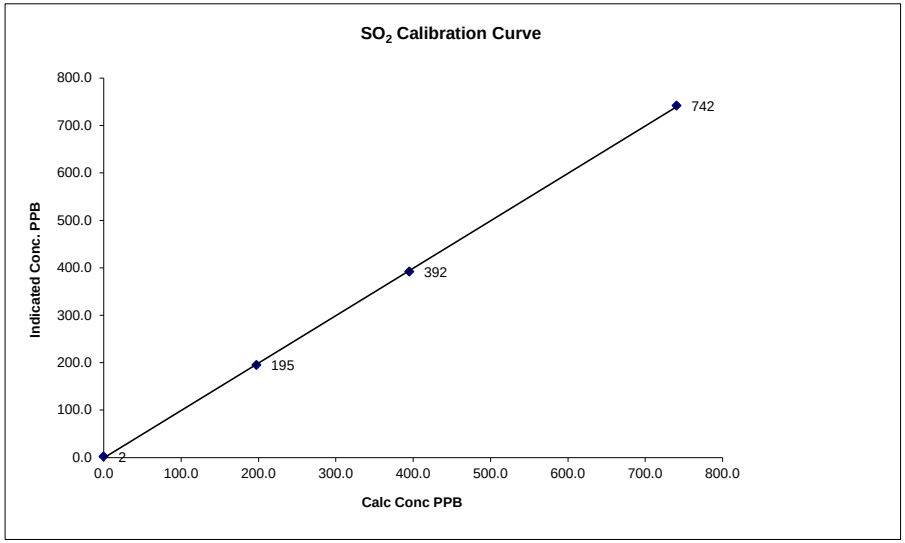
Calibration Performed by: Ting Xu

SO_2 Calibration Curve

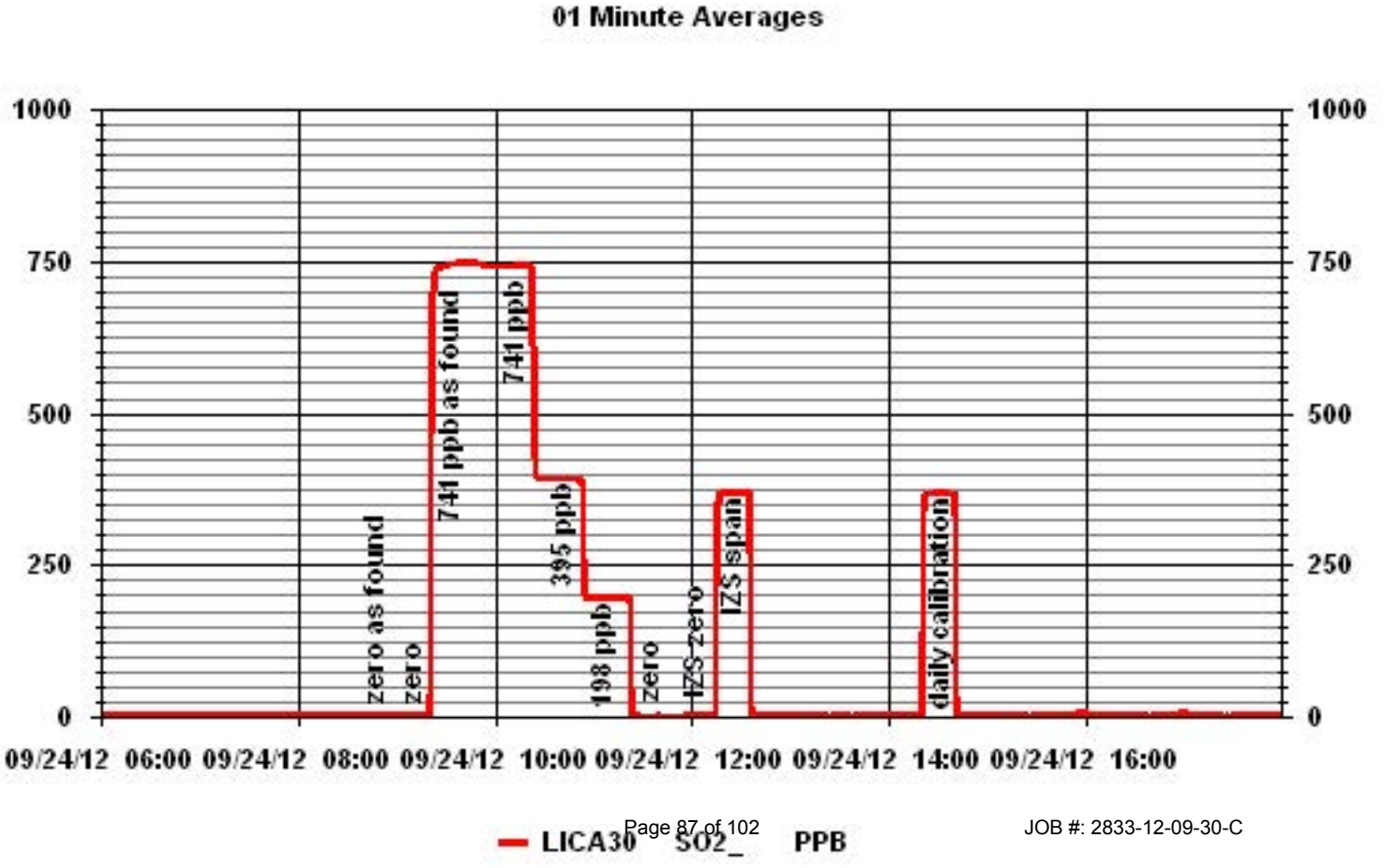
Calibration Date	September 24, 2012		
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	8:18	End Time (MST)	12:39

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	2	n/a
198	195	1.0132
395	392	1.0082
741	742	0.9982

Correlation Coefficient	(≥ 0.995)	0.999929
Slope	(0.85 to 1.15)	1.000063
Intercept	(± 3% F.S.)	-0.641104



Notes:



JOB #: 2833-12-09-30-C

Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	September 24, 2012		Previous Calibration	August 13, 2012	
Company	**Lakelnad Industry & Community Association**				
Plant / Location	**Cold Lake - Maskwa**				
Start Time (MST)	8:18		End Time (MST)	11:42	
Reason:			Monthly Calibration		
Barometric Pressure	943	mBar	Station Temperature	22	Deg C
Cal Gas	10 ppm		Gas Cyl. #	LL42648	Cal Gas Expiry date: December 27, 2012
DAS Output Voltage	0 - 1	Volts	Chart Rec. Output	NA	Volts

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	511	Method:	Fluorescent
Converter Make / Model:	Internal	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Chart Recorder Make / Model:	Not in use	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range			0 - 100	ppb				
Sample Flow / Box Temp	477	ccm	32.2	Deg C	475	ccm	33	Deg C
HVPS / Lamp Setting	552		2355		552		2301	
PMT / RxCell Temp	7.9	Deg C	50	Deg C	7.9	Deg C	50	Deg C
Converter / IZS Temp	315	Deg C	45	Deg C	316	Deg C	45.0	Deg C
Offset / Slope	36.8		0.837		36.8		0.837	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4997	0	0	0	NA
	No Zero Adj.			
4958	40.0	80	80	1.0000
	No Span Adj.			
4977	20.0	40	41	0.9762
4987	11.5	23	24	0.9586
4998	0	0	0	NA
			Sum of Least Squares	0.9931
			New Correction Factor	

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.1	0.2
Auto Span	57.4	57.9
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9880
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	-1.2%

Notes: **NA : Not Applicable**

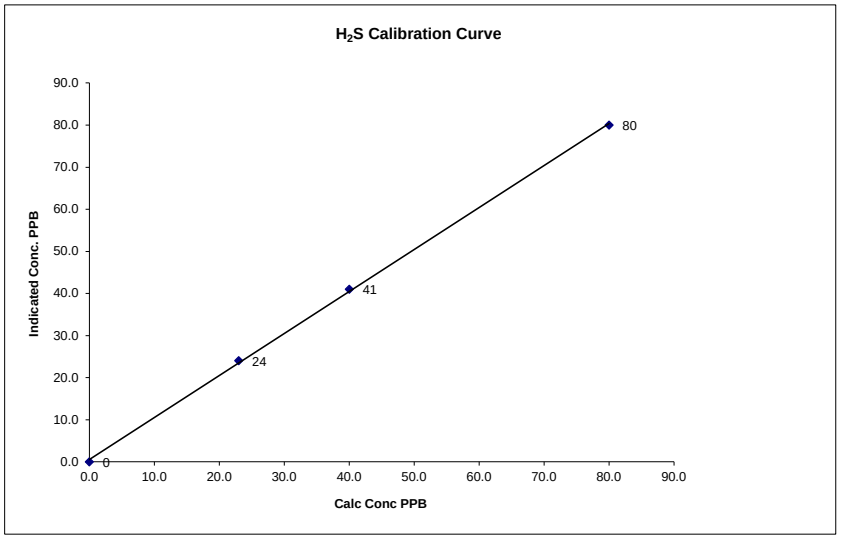
Calibration Performed by: Ting Xu

H_2S Calibration Curve

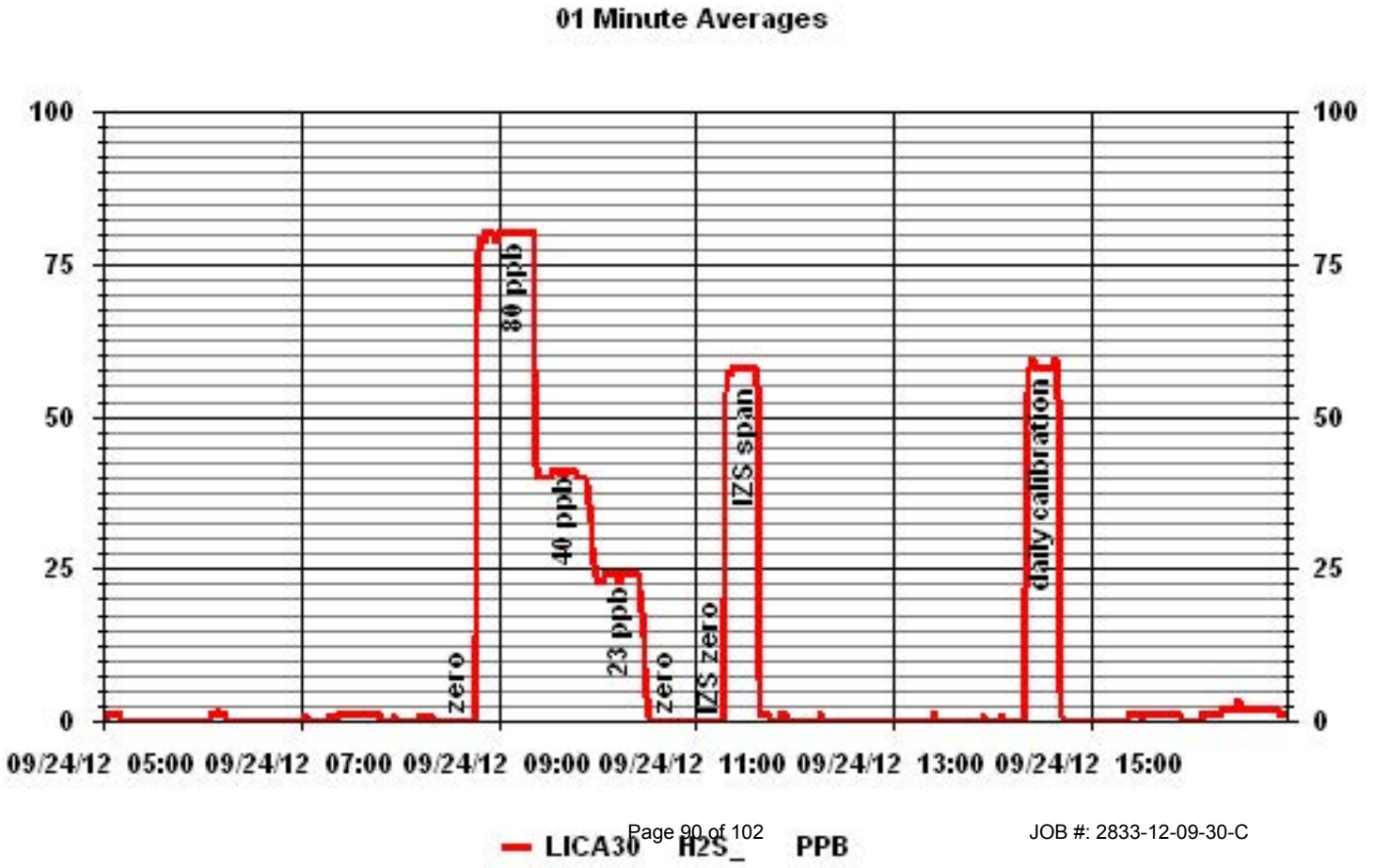
Calibration Date	September 24, 2012				
Company	**Lakelnad Industry & Community Association**				
Plant / Location	**Cold Lake - Maskwa**				
Start Time (MST)	8:18	End Time (MST)	11:42		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	
23	24	0.9586
40	41	0.9762
80	80	1.0004

Correlation Coefficient	(≥ 0.995)	0.999714
Slope	(0.85 to 1.15)	0.997096
Intercept	(± 3% F.S.)	0.588145



Notes:



JOB #: 2833-12-09-30-C

Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	September 24, 2012		Previous Calibration	August 13, 2012	
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location:	Maskwa				
Start Time (MST)	11:30		End Time (MST)	14:54	
Reason:	Monthly Calibration				
Barometric Pressure:	944	mmHg	Station Temperature:	25	Deg C
Calibrator:	API 700		S/N:	831	
Cal Gas Concentration:	CH4 600 PPM		C3H8	204 PPM	
	TOTAL CH4 1161.0 PPM		Gas Cyl. #	LL155310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832		S/N :	AO 791	
Chart Recorder:	NA		S/N:	NA	
Output Voltage Range:	0 - 1	VDC	Chart Speed:	NA	mm/hr

Analyzer Information

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

Analyzer Settings

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

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	0.0	NA
	No Zero Adj.			
2000	74.0	41.4	41.5	0.9982
	No Span Adj.			
2000	37.0	21.1	21.1	0.9976
2000	20.0	11.5	11.6	0.9910
2000	0.0	0.0	0.0	NA
			New Correction Factor:	0.9982

Percent Change

Previous Calibration Correction Factor:	0.9934
Current Correction Factor Before Span Adjust:	0.9982
Percent Change:	-0.5%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.1	0.1
Auto Span	34.2	33.9
Sample Lines Connected		**YES**

Cylinder Pressures

Span 1600 psi Hydrogen 1600 psi Zero Air 32 psi

Notes: **NA : Not Applicable**

During the first point, there was a calibration gas alarm. Re-did the point.

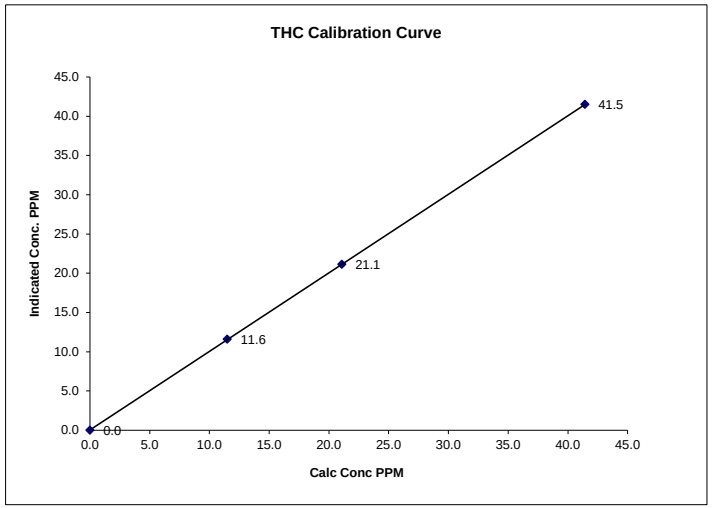
Calibration Performed by: Ting Xu

THC Calibration Curve

Calibration Date	September 24, 2012				
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	Maskwa				
Start Time (MST)	11:30	End Time	(MST)	14:54	

Calculated Conc. ppm	Indicated Response ppm	Correction Factor
0.0	0.0	NA
11.5	11.6	0.9910
21.1	21.1	0.9976
41.4	41.5	0.9982

Correlation Coefficient	(≥ 0.995)	0.999995
Slope	(0.85 to 1.15)	1.001227
Intercept	(± 3% F.S.)	0.03537



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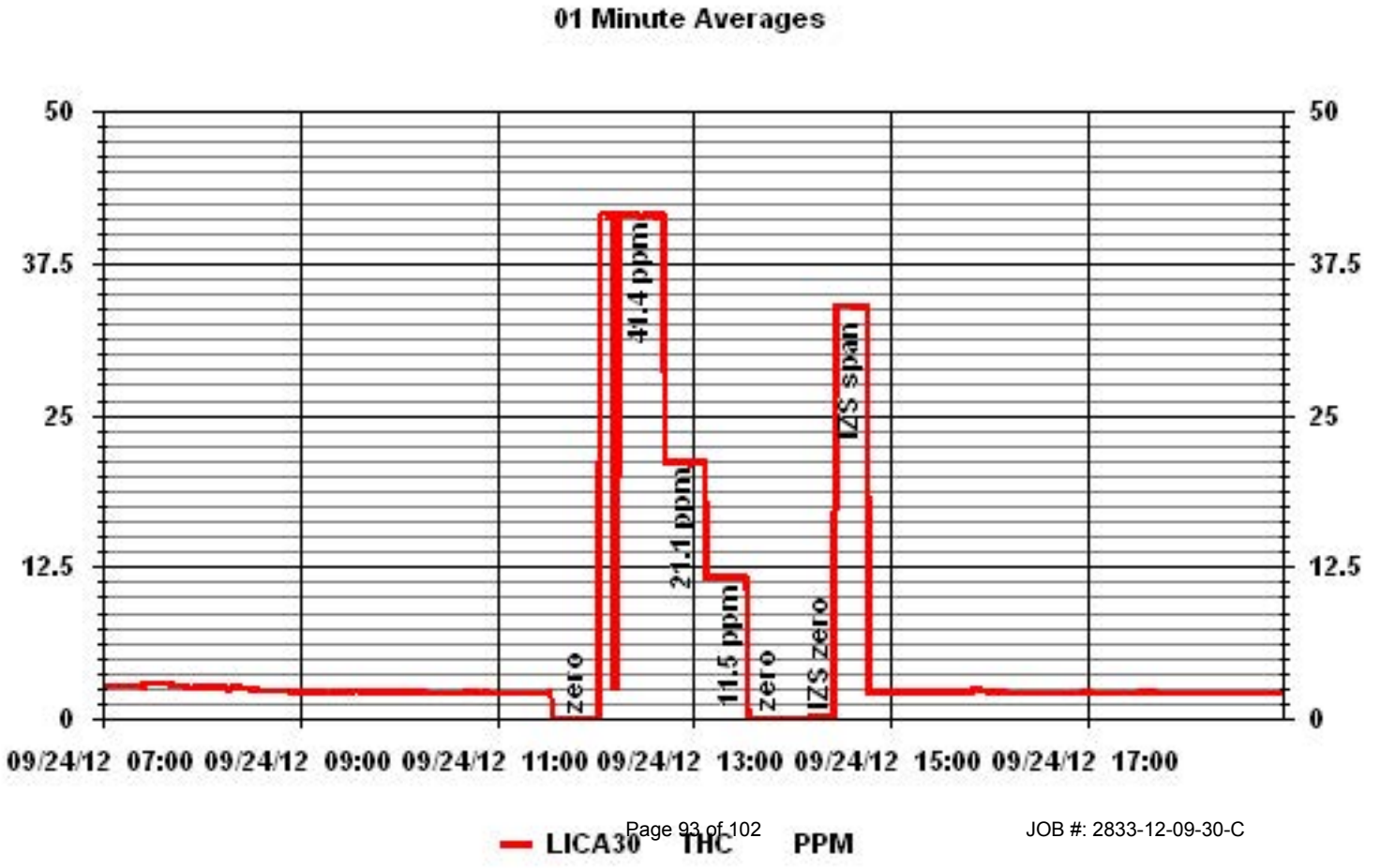


JOB #: 2833-12-09-30-C

Nitrogen Dioxide

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	September 24, 2012		Previous Calibration	August 13, 2012	
Company	LICA		Plant/Location	Maskwa	
Start Time (MST)	9:26		End Time (MST)	14:54	
Reason:	Monthly Calibration				
Barometric Pressure	943	mBar	Station Temperature	22	Deg C
Cal Gas Concentration	NOx 50.1	ppm	NO 50.1	ppm	
Cal Gas Cylinder #	LL42502				
DAS Output Voltage	0 - 1	Volts	Chart Rec. Output	NA	Volts

MFCF	1						
Cal Gas Expiry date	December 29, 2013						

Equipment Information

Analyzer Make / Model:	API 200E	S/N :	594	Method:	Chemiluminescent
Calibrator Make / Model:	Environics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Chart Recorder Make / Model:	Not in use	S/N:	NA		
Flow Meter:	Environics 6100	S/N :	4760		

Analyzer Settings

	Before Calibration					After Calibration			
Concentration Range					0 - 1000		ppb		
Sample Flow/Conv. Temp	456	ccm	315	Deg C		461	ccm	314	Deg C
Ozone Flow / Vacuum	79	ccm	5.6	"Hg-A		79	ccm	5.6	"Hg-A
HVPS / A ZERO	767	Volts	17.1	MV		767	Volts	17.5	MV
Rx/ Temp / PMT Temp	50.0	Deg C	6.5	Deg C		50.0	Deg C	6.6	Deg C
Box Temp / IZS Temp	30.0	Deg C	40.1	Deg C		32.4	Deg C	40.3	Deg C
Offset	-0.3	NOx	-0.5	NO		0.1	NOx	-0.7	NO
Slope	1.224	NOx	1.217	NO		1.238	NOx	1.235	NO
NO_2 COEF / Conv Efficency	NA	NO2	0.994			NA	NO2	0.994	

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	1	1	1	NA	NA
4994	0.0	NA	0	0	NA	0	1	0	NA	NA
4921	74.6	NA	748	748	NA	741	737	4	1.0110	1.0165
4921	74.6	NA	748	748	NA	750	748	1	0.9989	1.0000
4956	39.8	NA	399	399	NA	398	397	1	1.0054	1.0079
4976	19.9	NA	200	200	NA	200	200	0	1.0000	1.0000
4995	0.0	NA	0	0	NA	0	1	0	NA	NA

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO_2 Correction Factor	NO2 Conv Efficency
			NOx	NO	NO2	NOx	NO	NO2		
4920	74.6	NA	748	748	NA	750	750	-1	NA	NA
	No Adj.									
4920	74.6	600	748	NA	524	748	225	523	1.0019	99.81%
4920	74.6	250	748	NA	219	750	530	221	0.9910	100.91%
4920	74.6	140	748	NA	122	751	627	124	0.9839	101.63%

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx=	1.008	NO=	1.012	NO2=	1.000
				NOx=	0.9989	NO=	1.0000	NO2=	1.0019
				Average Converter Efficiency=		100.78%			

IZS Calibration Data

	Before Calibration					After Calibration			
Auto Zero	1.1	NOx	0.8	NO2		0.8	NOx	-0.1	NO2
Auto Span	605	NOx	592	NO2		612	NOx	599	NO2
Sample Lines Connected						YES			

Percent Change from Previous Calibration	NOx	-1.3%	NO	-1.6%	NO2	0.0%

Notes

NA : Not Applicable

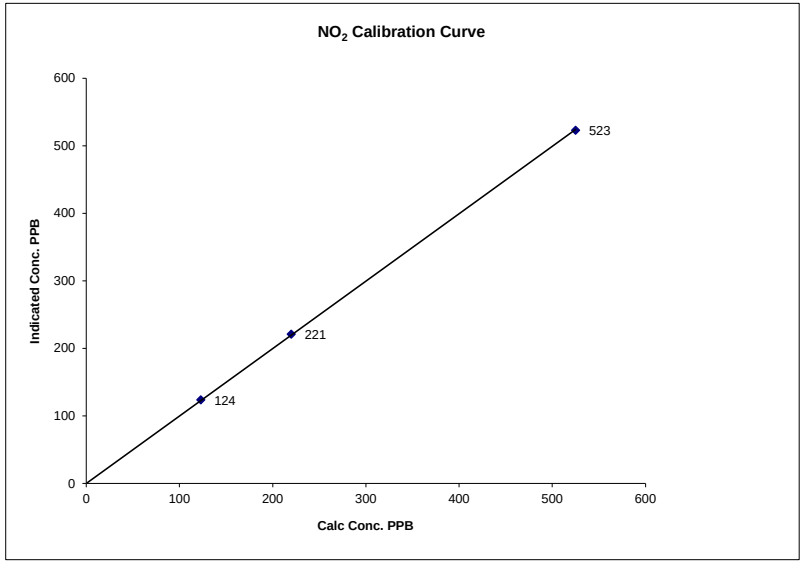
Calibration Performed by: Ting Xu

NO_2 Calibration Curve

Calibration Date	September 24, 2012				
Company	LICA				
Plant / Location	Maskwa				
Start Time (MST)	9:26	End Time	(MST)	14:54	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
1	-1	N/A
123	124	0.9919
220	221	0.9955
525	523	1.0038

Correlation Coefficient	(≥ 0.995)	0.999943
Slope	(0.85 to 1.15)	0.998174
Intercept	(± 3% F.S.)	-0.10340

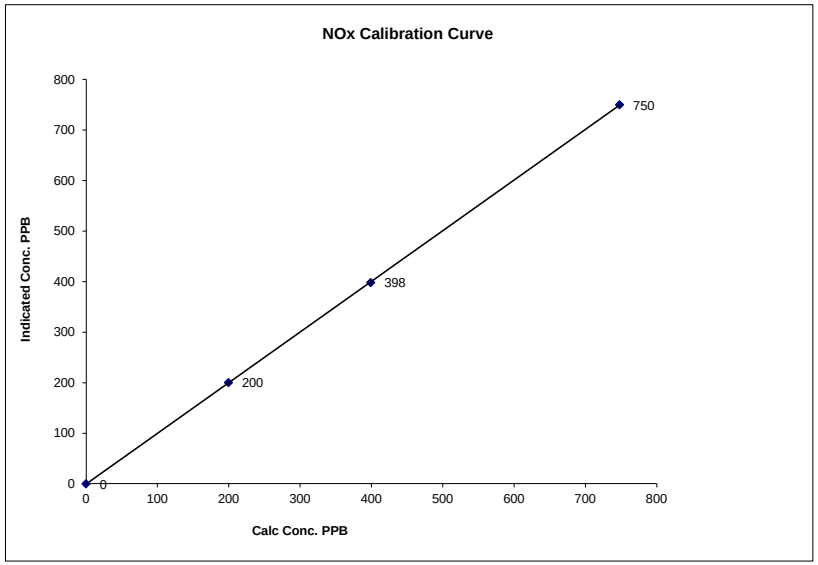


Notes:

NOx Calibration Curve

Calibration Date	September 24, 2012				
Company	LICA				
Plant / Location	Maskwa				
Start Time (MST)	9:26	End Time (MST)	14:54		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999989
			Slope (0.85 to 1.15)	1.002064
0	0	N/A	Intercept (± 3% F.S.)	-0.40580
200	200	0.9978		
399	398	1.0028		
748	750	0.9975		

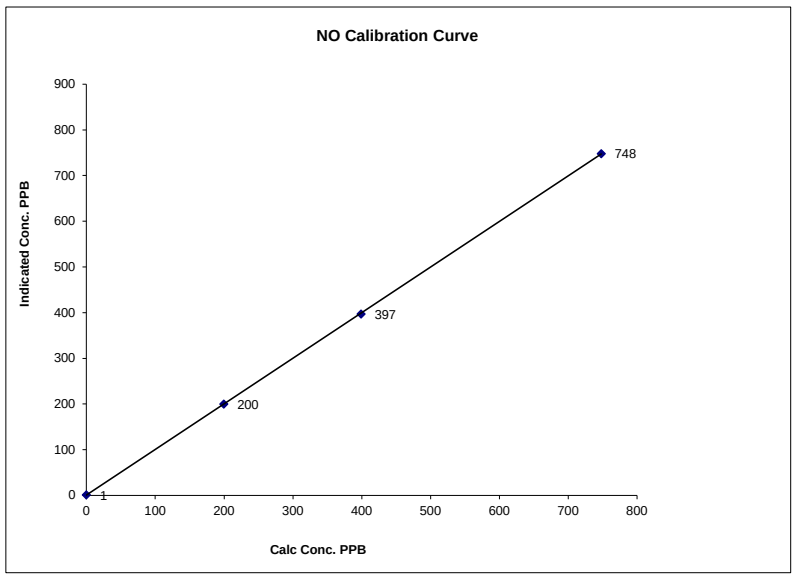


Notes:

NO Calibration Curve

Calibration Date	September 24, 2012				
Company	LICA				
Plant / Location	Maskwa				
Start Time (MST)	9:26	End Time (MST)	14:54		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999985
			Slope (0.85 to 1.15)	0.999688
0	1	N/A	Intercept (± 3% F.S.)	-4.3966
200	200	0.9978		
399	397	1.0054		
748	748	1.0002		



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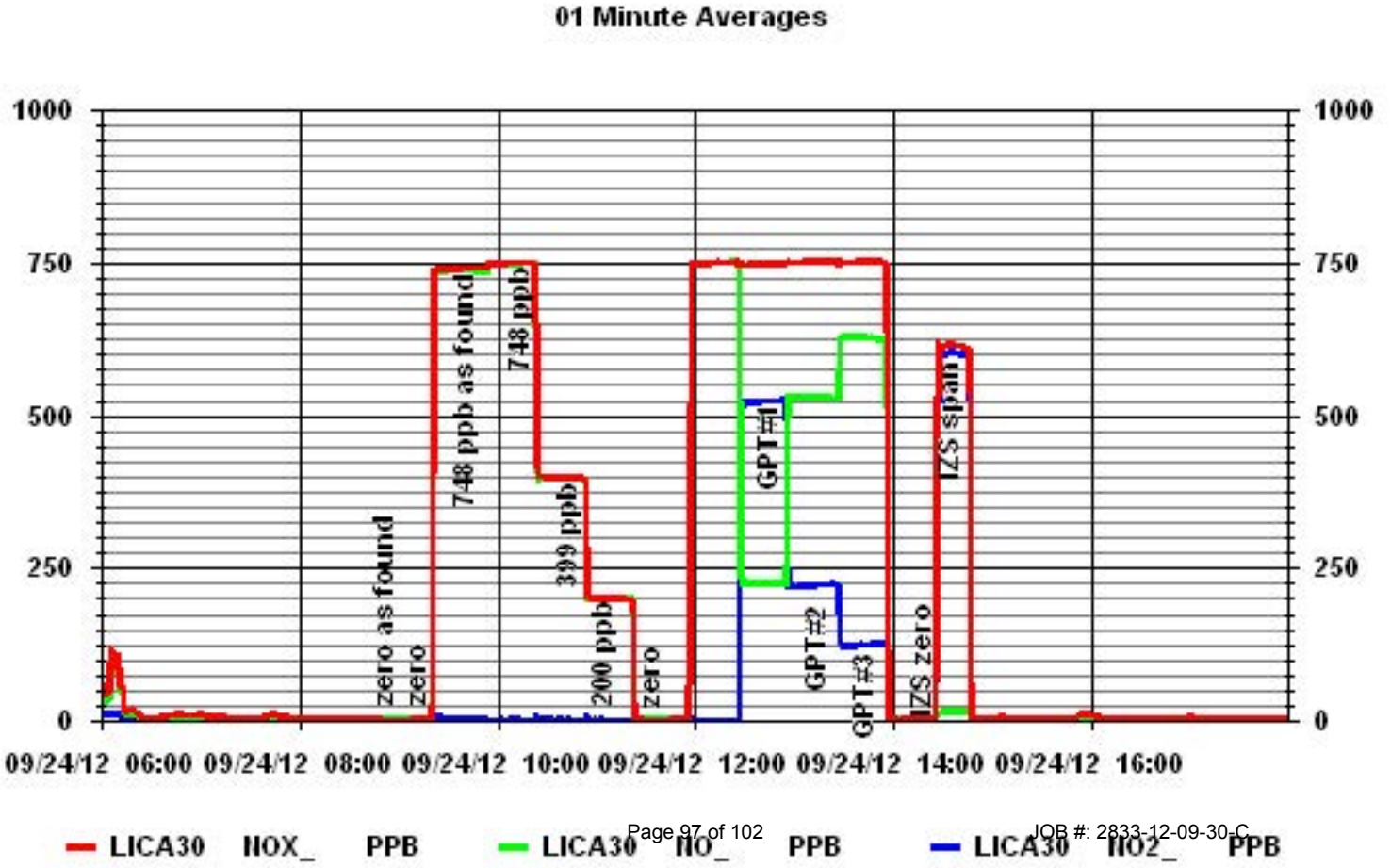
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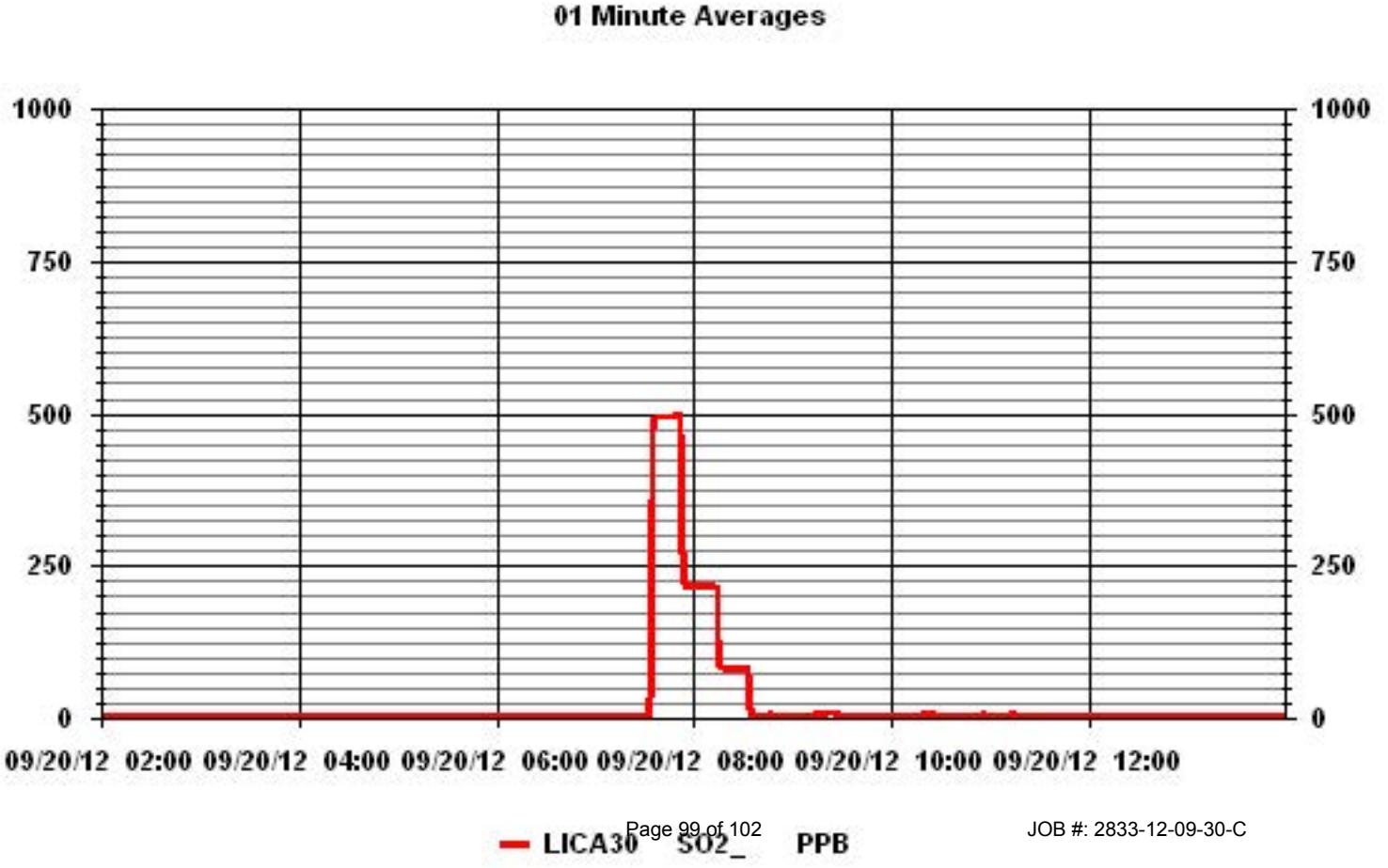
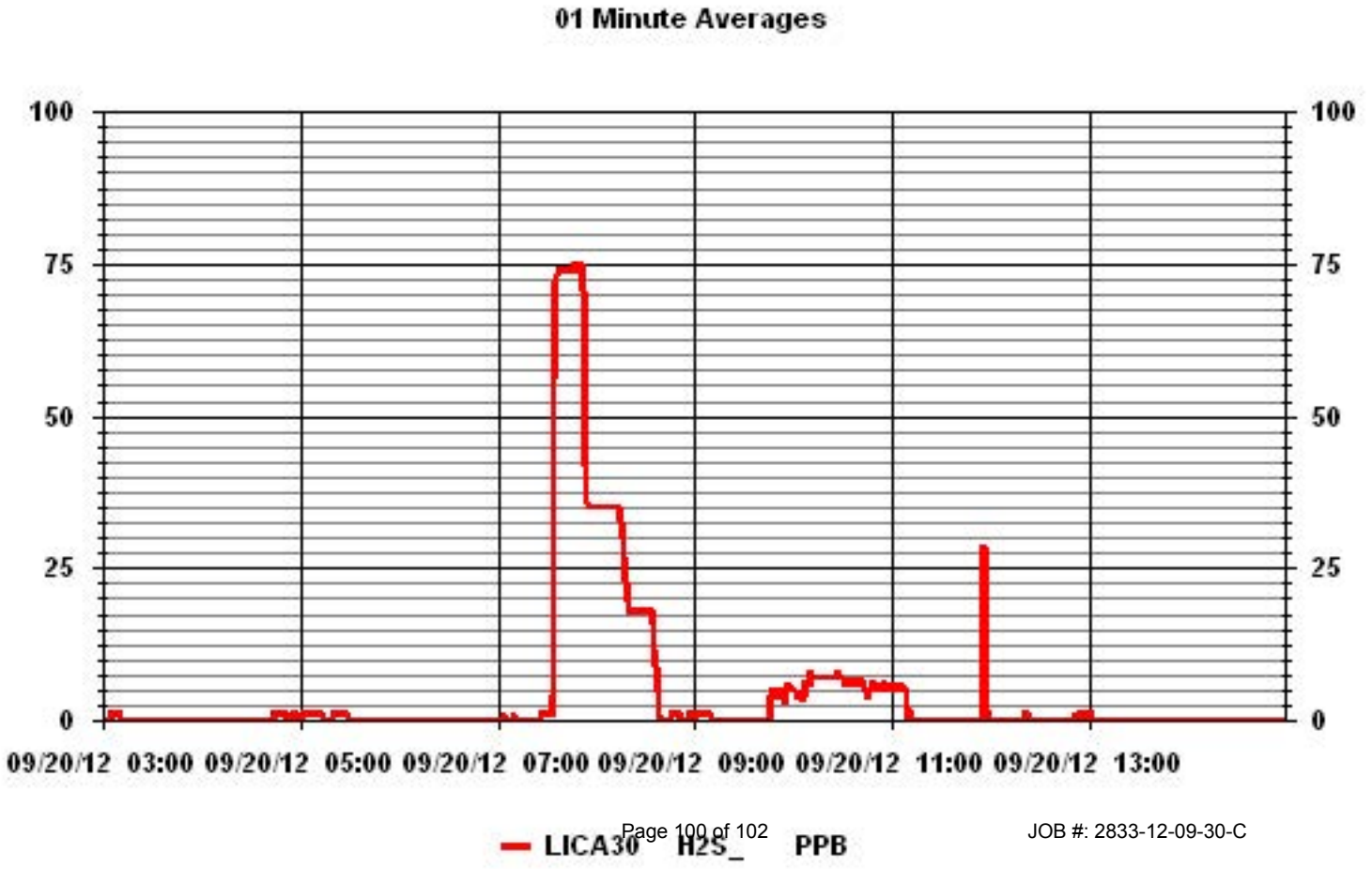
1000
750
500
250
0
zero as found
zero
748 ppb as found
748 ppb
399 ppb
200 ppb
zero
GPT#1
GPT#2
GPT#3
IZS zero
IZS span
09/24/12 06:00
09/24/12 08:00
09/24/12 10:00
09/24/12 12:00
09/24/12 14:00
09/24/12 16:00
LICA30 NOX_ PPB
LICA30 NO_ PPB
LICA30 NO2_ PPB

AE Audit Graphs



JOB #: 2833-12-09-30-C



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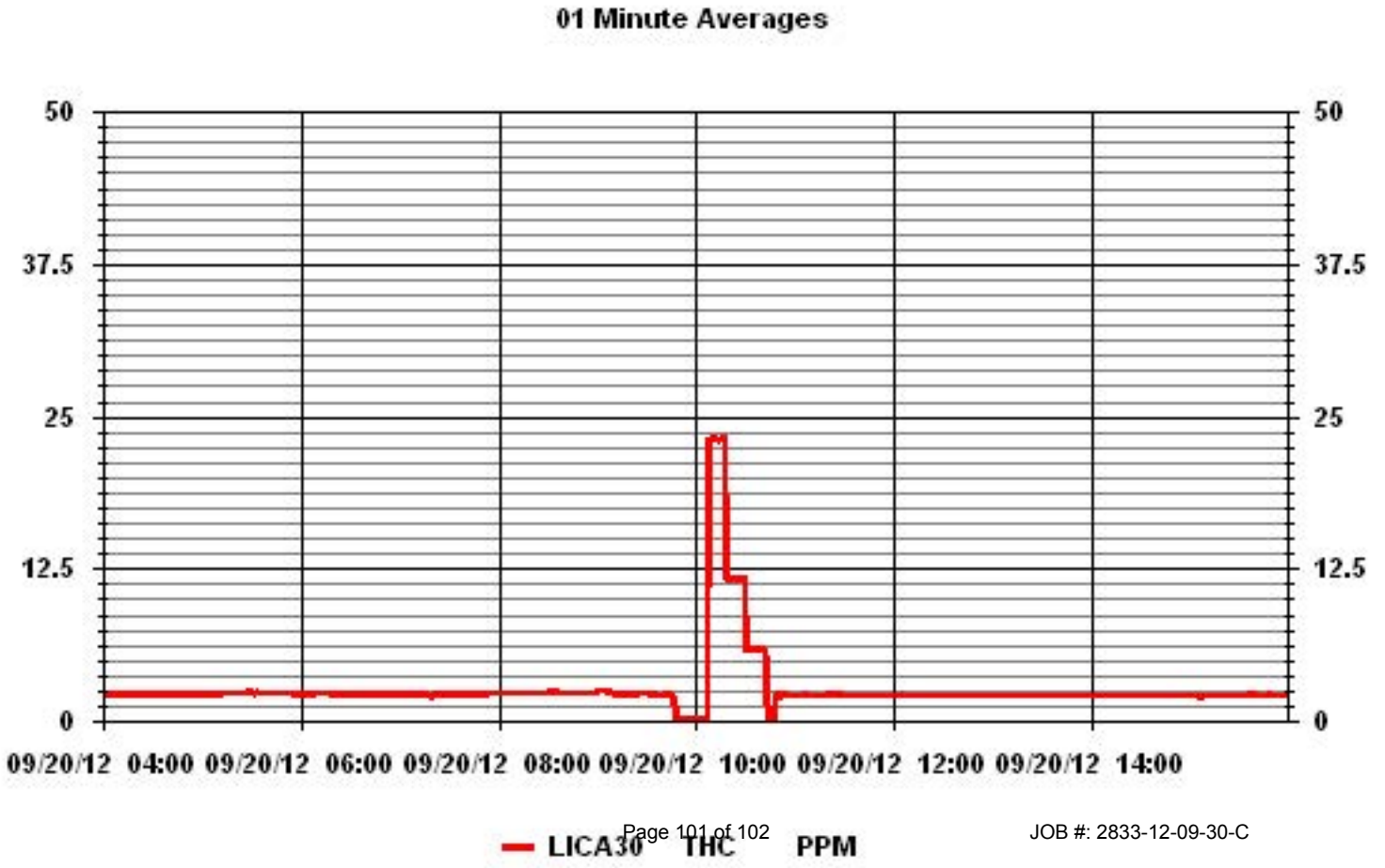

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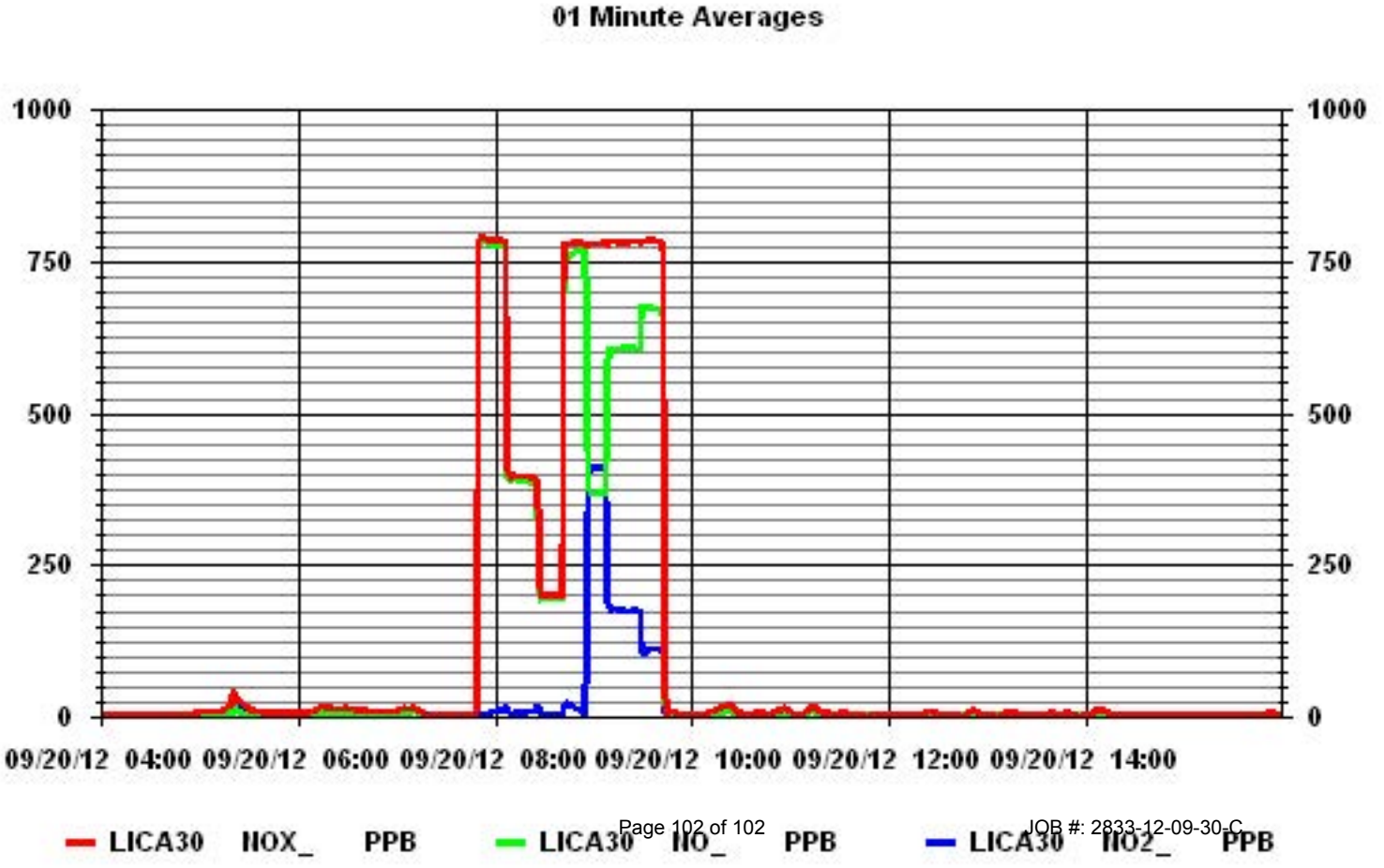
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1000
750
500
250
0
09/20/12 04:00
09/20/12 06:00
09/20/12 08:00
09/20/12 10:00
09/20/12 12:00
09/20/12 14:00
LICA30 NOX_ PPB
LICA30 NO_ PPB
LICA30 NO2_ PPB

Lakeland Industry & Community Association

Portable / Elk Point Airport Monitoring Site
Ambient Air Monitoring Data Report
For
September 2012

Prepared By:

October 31, 2012

JOB #: 2833-12-09-35-C

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: September 2012

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Craig Snider

The 6-days analytical report for VOCs and PAHs:
Authorized by Petro Oh

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 – September 2012

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PORTABEL / 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	0.03	1	VAR	VAR	VAR	VAR	0.3	17	99.7
H_2S (PPB)	10	3	0	0	0.04	1	VAR	VAR	VAR	VAR	0.3	17	99.7
THC (PPM)	-	-	-	-	2.96	10.0	24	0	3.2	282(W)	5.5	24	90.3
NO_2 (PPB)	159	-	0	-	4.84	30	23	21	4.5	296(WNW)	10.9	24	99.0
NO (PPB)	-	-	-	-	2.10	44	24	7	3.7	263(W)	7.8	24	99.0
NOx (PPB)	-	-	-	-	6.94	56	24	7	3.7	263(W)	18.7	24	99.0
O_3 (PPB)	82	-	0	-	21.58	53	28	15	20.1	177(S)	32.6	28	99.9
PM 2.5 (UG/M^3)	-	30	-	0	7.77	44	24	7	3.7	263(W)	18.5	25	99.9
VECTOR WS (KPH)	-	-	-	-	11.54	41.9	18	14	-	304(WNW)	24.3	3	89.0
VECTOR WD (DEGREES)	-	-	-	-	290(WNW)	-	-	-	-	-	-	-	89.0

VAR-VARIOUS

Volatile Organics Data Summary
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
- PORTABLE – Elk Point Airport Site

Xontech Model 910A – August 25, 2012

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – August 31, 2012

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – September 06, 2012

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – September 12, 2012

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – September 18, 2012

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – September 24, 2012

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – September 30, 2012

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

- PORTABLE – Elk Point Airport Site

PUF cartridge – August 31, 2012

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – September 06, 2012

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – September 12, 2012

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – September 18, 2012

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – September 24, 2012

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – September 30, 2012

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

General Monthly Summary

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

AQM STATION – LICA – PORTABLE

A trailer audit was performed by Alberta Environment on September 19th.

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

The analyzer was working well throughout the month. The monthly calibration was performed on September 4th. The inlet filter was replaced before the monthly calibration was started. The SO2 channel was put into the Maintenance mode on September 14th at hour 11 for the wind system repair. A daily calibration check was triggered after. Data was corrected using daily zero information.

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

The analyzer was working well throughout the month. The monthly calibration was performed on September 5th. The inlet filter was replaced before the monthly calibration was started. The H2S channel was put into the Maintenance mode on September 14th at hour 11 for the wind system repair. A daily calibration check was triggered after. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

THC (PPM)

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

The monthly calibration was performed on September 4th.The inlet filter was changed before the monthly calibration was started. The THC channel was put into the Maintenance mode on September 14th at hour 11 for the wind system repair. A daily calibration check was triggered after. The analyzer spanned high on September 16th. Upon arrival on September 17th, it was noticed that the analyzer had a "flow high" alarm. Performed an as found points check on the 17th, and then cleared the alarm. Also, the sample pressure was increased from 7.2 psi to 7.5 psi. A post repair calibration was then performed. The analyzer failed the AE audit on September 19th. It was found that the sample pressure was high (9.0psi) on September 20th. Performed troubleshooting by cleaning the flow restrictors and tubing that is connected with FID. An as found points check was then performed. Following the as found points check, a cool fan was installed and the sample pressure was lowered to 6.8 psi from 7.5 psi. A post –repair calibration was performed after the troubleshooting on September 20th. Because the analyzer failed the AE audit, data from the last valid calibration on September 17th until the analyzer was repaired and recalibrated on September 20th were invalidated. A total of 65 hours of data was invalidated. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

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

The analyzer was working well throughout the month. Following the as found points check on September 4th, the O-ring and sintered filter for the flow control system were replaced, the optical filter was cleaned, and both HVPS voltage and slope were adjusted. The analyzer was allowed time to stabilize. A post-repair calibration was performed on September 5th. The inlet filter was replaced before the as found points check was started on September 4th. The NO2 channel was put into the Maintenance mode on September 14th at hour 11 for the wind system repair. A daily calibration check was triggered after. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Ozone (PPB)

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

The analyzer was working well throughout the month. The inlet filter was replaced before the monthly calibration was started on September 7th. The O3 channel was put into the Maintenance mode on September 14th at hour 11 for the wind system repair. A daily calibration check was triggered after. Data was corrected using daily zero information.

Particulate Matter 2.5 (ug/m^3)

- Analyzer make / model –TEOM 1405F, S/N: 1405A207691003 replaced to TEOM 1400a, S/N: 30002

A routine Teom audit was performed on September 7th. It was noticed that the Ko number was input incorrectly when the unit was installed on August 15th. A Teom audit was performed on September 20th to verify the Ko with the standard Ko. The result showed 1.7% drift. Data was corrected using Alberta air quality guideline for PM2.5 analyzer. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. One hour of data was invalidated as it was below –3.0 ug/m^3.

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

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

The wind system is reported as vector wind speed and vector wind direction.
The wind system failed on September 11th. It was replaced on September 14th. A total of 77 hours of data was invalidated.
The total operational time for the month was 641 hours (89.0%).
The latest wind system calibration was done on May 15th, 2012.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Datalogger

- System make / model - ESC 8832, S/N: AO717
- Software make / version - ESC v 5.51a

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

Trailer

The manifold was cleaned on September 7th.

Air Quality Index (AQI)

No AQI report is included in this report, as the AQI value is no longer used by Alberta Environment.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Volatile Organics (VOCs)
The volatile organics were sampled from September 1st to September 31st. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the VOCs in this report were reported as ug/m3 in 3 significant figures.
Sample results for September 25th and September 31st are not included in this monthly report because they are not available when the monthly report was preparing. The results will be included in the following monthly report.

Polycyclic Aromatic Hydrocarbons (PAHs)
The PAHs scheduled to be sampled from September 1st to September 31st. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the PAHs in this report were reported as ng/m3.
Sample result for September 31st is not included in this monthly report because it is not available when the monthly report was preparing. The result will be included in the following monthly report.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

SEPTEMBER 2012

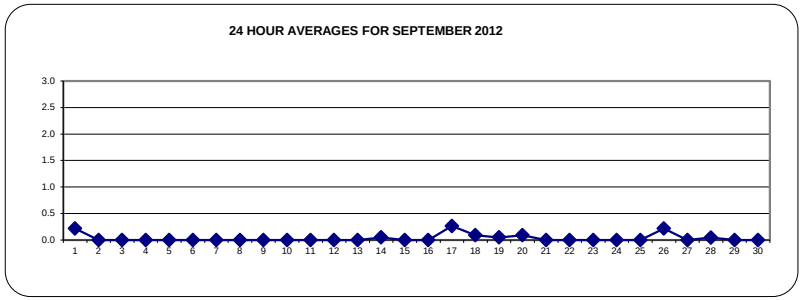
SULPHUR DIOXIDE (SO_2) hourly averages in ppb

MST

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

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

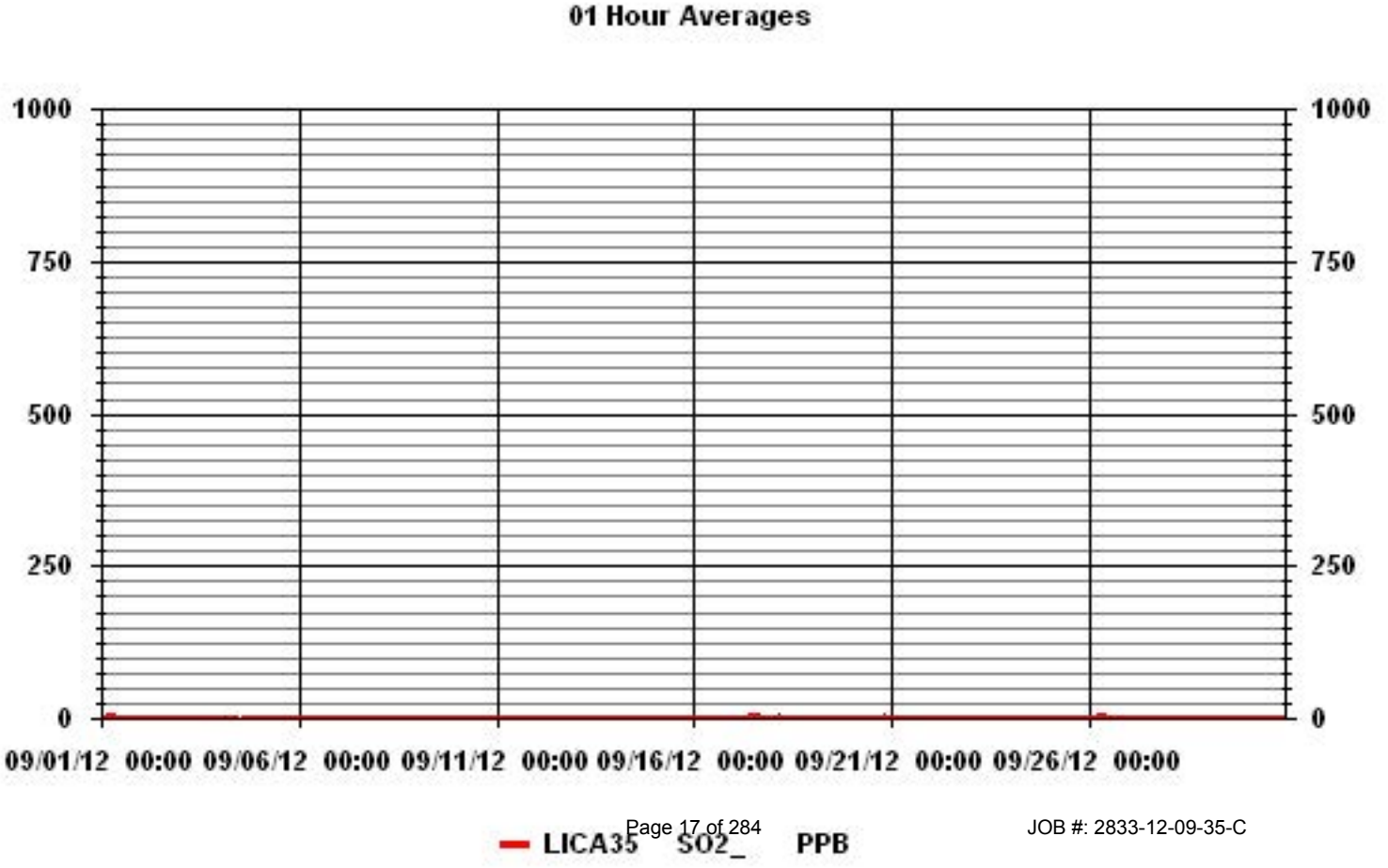


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB | 24-HR 48 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	23					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.3	PPB			ON DAY(S)	17
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		718	HRS
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:		99.7	%
STANDARD DEVIATION:	0.18		MONTHLY AVERAGE:		0.03	PPB

JOB #: 2833-12-09-35-C



JOB #: 2833-12-09-35-C

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

SEPTEMBER 2012

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

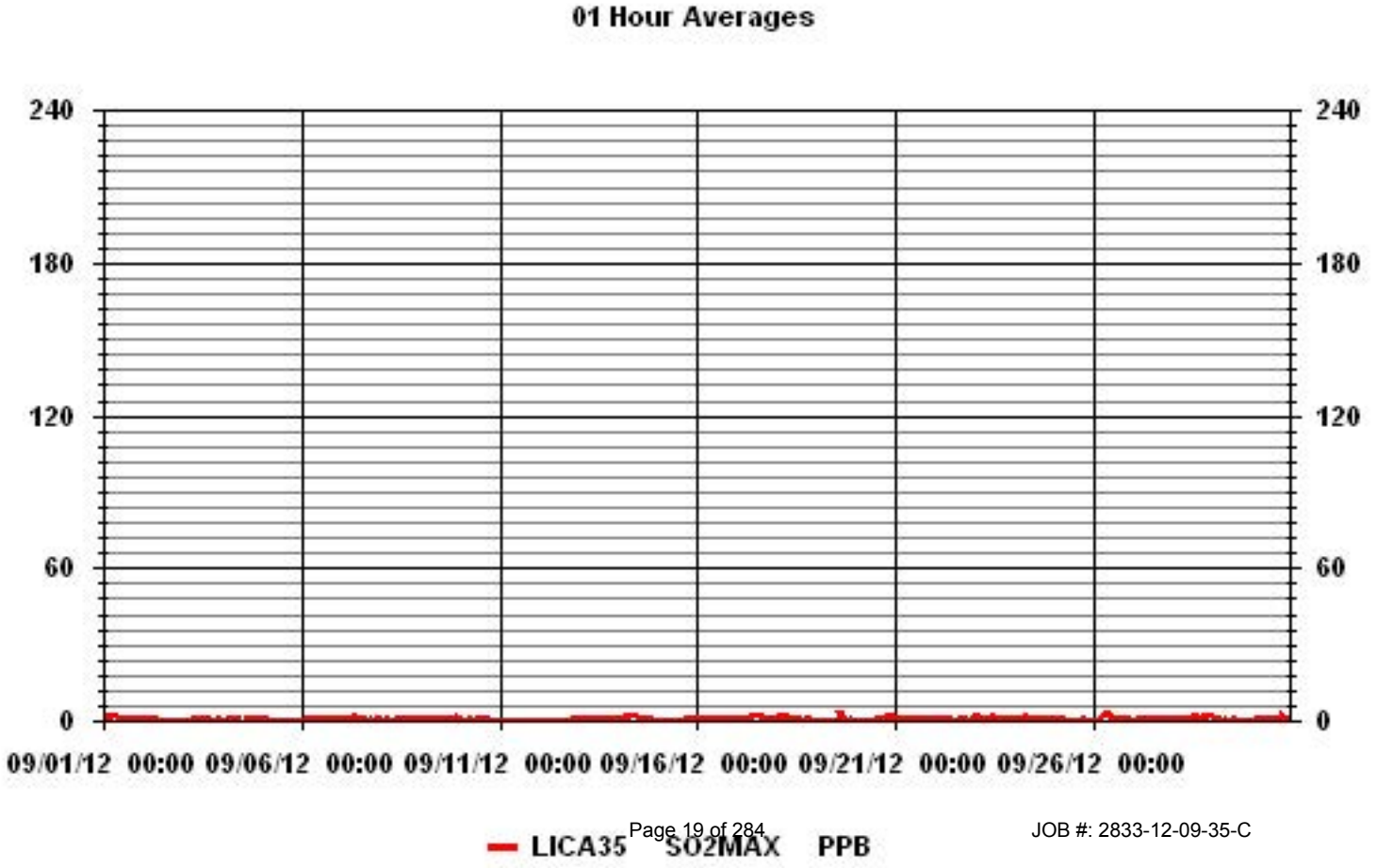
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	1	2	1	2	2	2	2	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.2	24
2	1	1	1	1	1	1	1	**IZS**	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24
3	0	0	0	0	0	0	**IZS**	1	1	0	1	1	0	1	1	0	1	1	0	0	0	0	1	1	1	0.4	24
4	0	0	0	0	1	**IZS**	0	1	1	1	1	**C**	**C**	**C**	**C**	**C**	1	1	1	1	1	1	1	1	1	0.7	24
5	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
6	0	0	0	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24
7	1	1	**IZS**	1	1	1	1	1	2	1	1	1	**M**	1	1	1	0	0	1	0	0	1	0	0	2	0.8	23
8	1	**IZS**	0	0	1	1	0	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0.7	24
9	**IZS**	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	**IZS**	2	1.0	24
10	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	**IZS**	0	1	0.2	24
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	1	1	1	1	0.1	24
13	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1.0	24
14	1	1	1	1	1	2	1	2	2	2	2	**M**	**C**	1	1	1	1	1	**IZS**	1	1	1	0	0	2	1.1	23
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	1	1	1	1	1	0.3	24
16	1	0	1	1	0	0	1	0	1	1	0	1	1	1	0	0	**IZS**	1	1	1	1	1	1	1	1	0.7	24
17	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	**IZS**	1	1	1	1	1	1	1	1	2	1.3	24
18	1	1	2	2	2	1	2	1	1	1	1	1	1	1	**IZS**	0	0	0	0	2	0	0	0	0	2	0.9	24
19	0	0	0	0	0	0	0	0	**C**	**C**	**C**	0	0	**IZS**	3	1	2	2	1	0	0	1	0	0	3	0.5	24
20	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	1	1	1	1	2	2	1	2	2	2	0.7	24
21	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
22	1	1	1	1	1	1	1	1	1	1	**IZS**	0	0	0	0	1	1	1	1	1	0	0	1	1	1	0.7	24
23	0	3	1	0	0	1	0	1	0	**IZS**	2	1	1	1	1	1	1	1	1	1	1	1	1	1	3	0.9	24
24	1	1	1	1	1	1	2	2	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24
25	1	1	1	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0.3	24
26	0	0	0	0	1	1	**IZS**	3	2	2	3	2	1	1	1	1	1	1	1	1	1	1	1	0	3	1.1	24
27	0	0	0	1	1	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24
28	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1	2	1	2	1	1	1	2	1	2	2	2	2	1.3	24
29	2	2	1	**IZS**	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0.3	24
30	0	0	**IZS**	1	1	1	1	0	1	1	1	0	1	1	1	0	0	2	1	1	1	1	1	1	2	0.8	24
HOURLY MAX	2	3	2	2	2	2	2	3	2	2	3	2	2	2	3	2	2	2	1	2	2	2	2	2			
HOURLY AVG	0.6	0.7	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.6	0.8	0.8	0.6	0.7	0.8	0.7	0.8	0.7	0.8	0.8	0.7			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	-MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	430					
MAXIMUM INSTANTANEOUS VALUE:	3	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		718	HRS
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	0.61					



JOB #: 2833-12-09-35-C

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

September 2012

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	2.15	.66	.49	1.82	8.60	8.94	7.45	2.15	2.98	.99	1.82	8.11	12.74	19.53	16.72	4.80	100.00
<	60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.15	.66	.49	1.82	8.60	8.94	7.45	2.15	2.98	.99	1.82	8.11	12.74	19.53	16.72	4.80	

Calm : .00 %

Total # Operational Hours : 604

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	13	4	3	11	52	54	45	13	18	6	11	49	77	118	101	29	604
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	13	4	3	11	52	54	45	13	18	6	11	49	77	118	101	29	

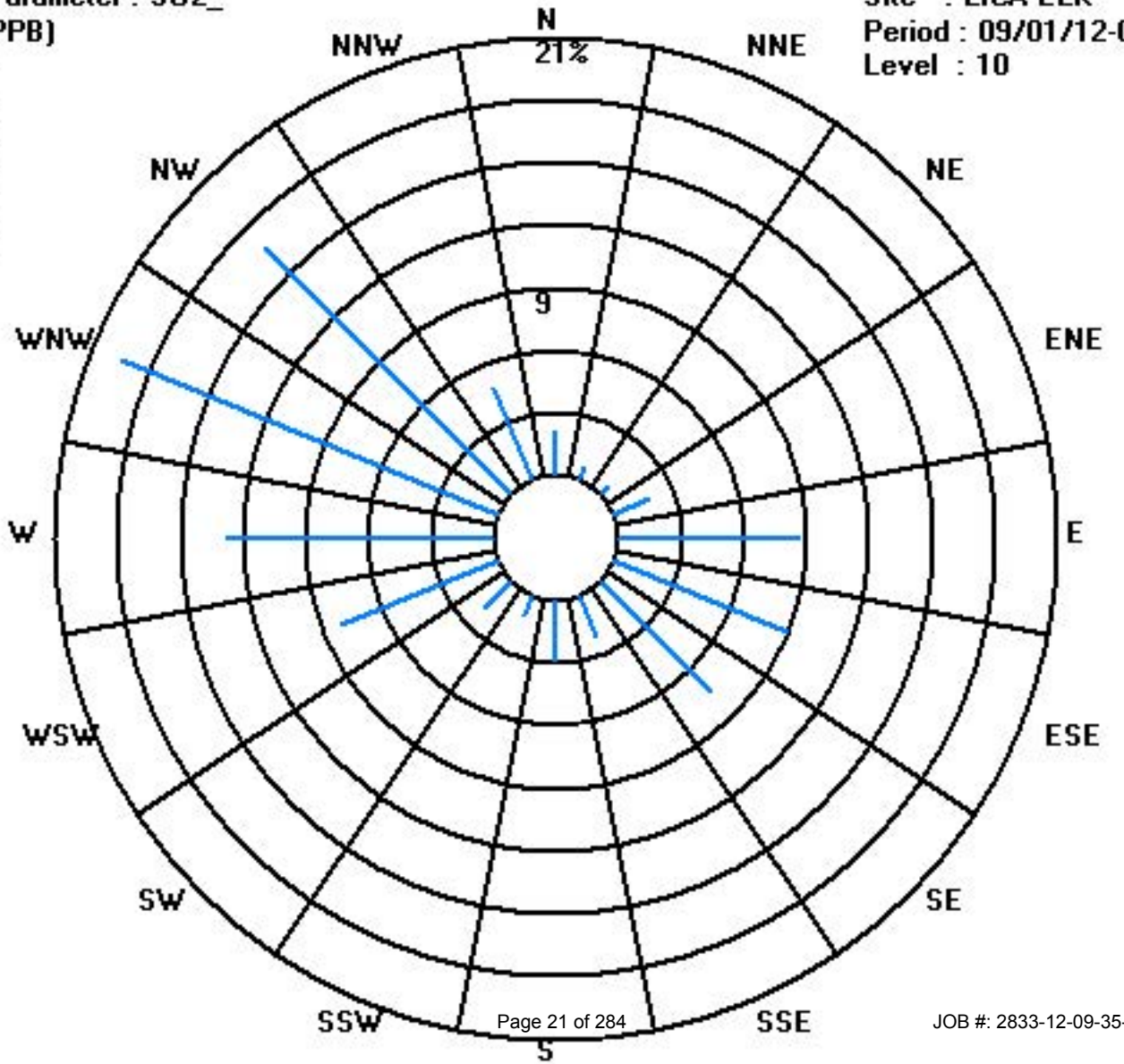
Calm : .00 %

Total # Operational Hours : 604

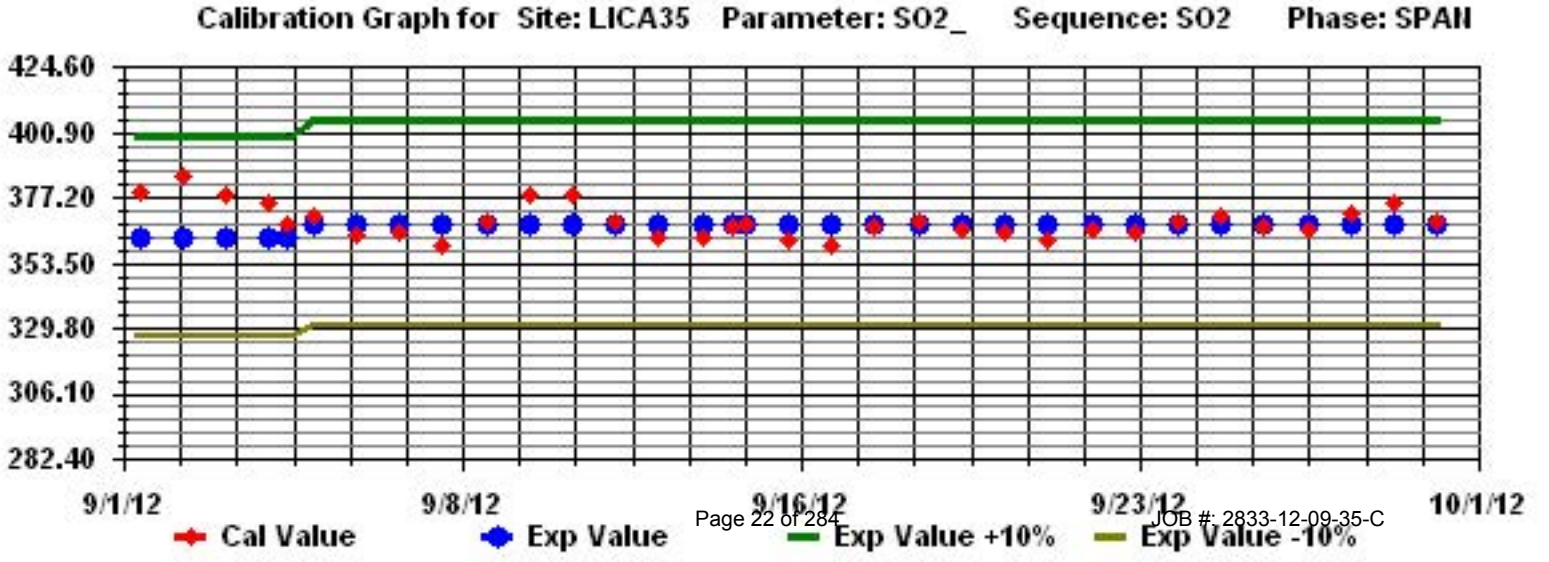
Logger : 35 Parameter : SO2_
Class Limits (PPB)

>= 340
< 340
< 170
< 110
< 60
< 20

Site : LICA-ELK
Period : 09/01/12-09/30/12
Level : 10



JOB #: 2833-12-09-35-C


Calibration Graph for Site: LICA35 Parameter: SO2_ Sequence: SO2 Phase: SPAN
424.60
400.90
377.20
353.50
329.80
306.10
282.40
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE - Elk Point Airport

SEPTEMBER 2012

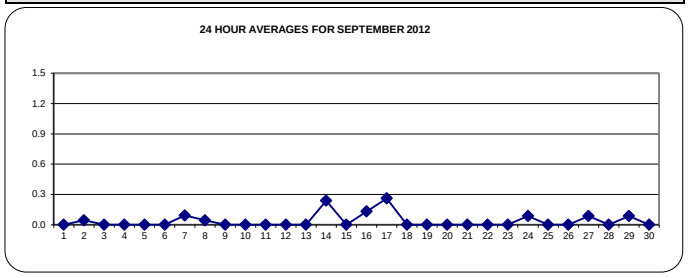
HYDROGEN SULPHIDE (H_2S) hourly averages in ppb

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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
2	0	0	0	0	1	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
3	0	0	0	0	0	0	**IZS**	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	**IZS**	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	**IZS**	0	0	0	0	0	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0	0	0	0	0.0	24
6	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
7	0	0	**IZS**	0	0	0	1	1	0	0	0	0	**M**	0	0	0	0	0	0	0	0	0	0	0	1	0.1	23
8	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.0	24
9	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	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	**IZS**	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	**IZS**	0	0	0	0	0.0	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0.0	24
14	0	0	0	0	0	0	0	0	0	0	0	**M**	**C**	1	1	1	1	1	**IZS**	0	0	0	0	0	1	0.2	23
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	0	0	0	0	1	1	1	1	0.1	24
17	0	0	1	0	1	1	0	0	1	1	1	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	1	**0.3**	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0.0	24
19	0	0	0	0	0	0	0	0	**C**	**C**	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0.0	24
20	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	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	**IZS**	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	**IZS**	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	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
25	0	0	0	0	0	0	0	**IZS**	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	**IZS**	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	**IZS**	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
28	0	0	0	0	**IZS**	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	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
30	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX	0	1	1	0	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	0	1	1	1			
HOURLY AVG	0.0	0.0	0.1	0.0	0.1	0.0	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			

STATUS FLAG CODES

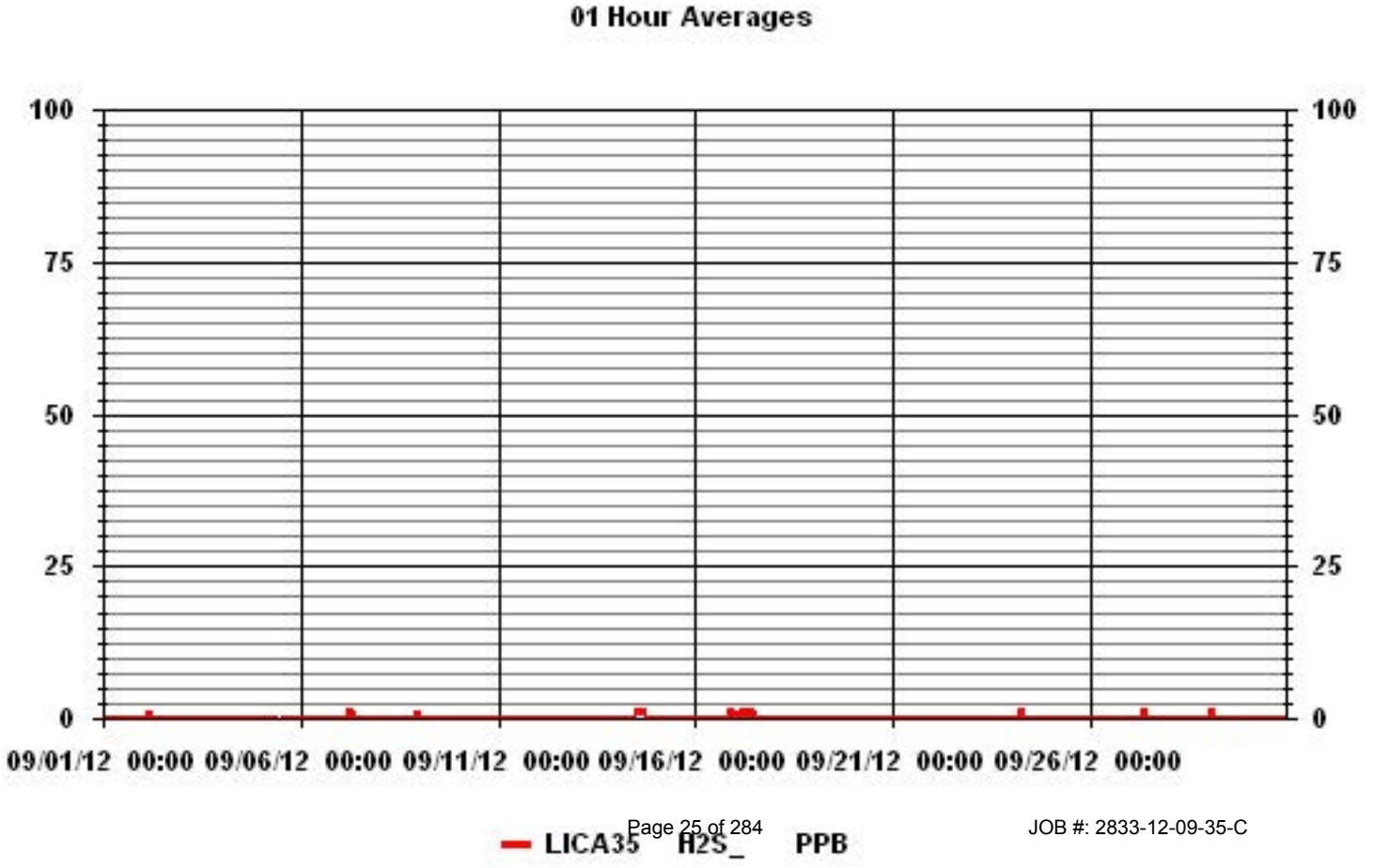
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



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:	24					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.3	PPB			ON DAY(S)	17
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		718	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:		99.7	%
STANDARD DEVIATION:	0.18		MONTHLY AVERAGE:		0.04	PPB



JOB #: 2833-12-09-35-C

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

SEPTEMBER 2012

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	**IZS**	1	0	0	1	0	0	1	0	0	0	0	0	0	1	1	1	0.2	24
2	0	1	1	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
3	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0.1	24
4	0	0	0	0	0	**IZS**	0	1	1	1	1	0	0	0	0	1	0	0	0	0	1	0	1	1	1	0.3	24
5	1	0	0	1	**IZS**	1	2	0	0	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0	0	0	2	0.3	24
6	0	0	0	**IZS**	3	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.2	24
7	0	5	**IZS**	1	1	1	1	1	1	1	1	0	**M**	0	0	0	0	0	0	0	0	0	0	0	5	0.6	23
8	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0.2	24
9	**IZS**	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	**IZS**	1	0.7	24
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0.0	24
11	0	0	0	0	0	0	0	0	0	0	0	0	**17**	0	0	0	0	0	0	0	0	**IZS**	0	0	**17**	0.7	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	1	1	0.0	24
13	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	2	0.1	24
14	0	0	0	0	0	0	0	0	1	1	0	**M**	**C**	1	1	1	1	1	**IZS**	0	0	0	0	0	1	0.3	23
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	1	1	1	1	1	1	1	1	0.3	24
17	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	**IZS**	0	0	0	1	1	1	1	0	2	0.9	24
18	1	1	1	1	1	1	1	1	1	1	1	1	0	0	**IZS**	0	0	0	0	0	0	0	0	0	1	0.5	24
19	0	0	0	0	0	0	0	0	**C**	**C**	**C**	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0.0	24
20	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	1	0	1	0	0	1	0.1	24
21	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	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	1	1	**IZS**	0	0	0	0	0	0	1	0	1	0	0	1	1	1	1	0.3	24
24	1	0	0	0	0	0	1	1	**IZS**	1	1	0	0	0	1	0	1	0	0	0	1	1	1	1	1	0.5	24
25	0	0	0	1	0	0	1	**IZS**	1	1	1	0	1	1	0	1	0	0	1	1	1	1	0	0	1	0.5	24
26	0	0	1	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
27	0	0	0	0	0	**IZS**	0	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0.2	24
28	0	0	0	1	**IZS**	1	1	1	1	1	0	1	0	0	0	0	0	1	1	1	1	1	0	1	1	0.6	24
29	1	1	2	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24
30	0	0	**IZS**	0	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	5	2	1	3	1	2	1	2	1	1	1	17	1	1	1	1	1	1	1	1	1	1	1			
HOURLY AVG	0.2	0.3	0.2	0.3	0.3	0.3	0.5	0.3	0.4	0.4	0.3	0.1	0.8	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.3	0.3			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	-MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 160

MAXIMUM INSTANTANEOUS VALUE: 17 PPB @ HOUR(S) 12 ON DAY(S) 11

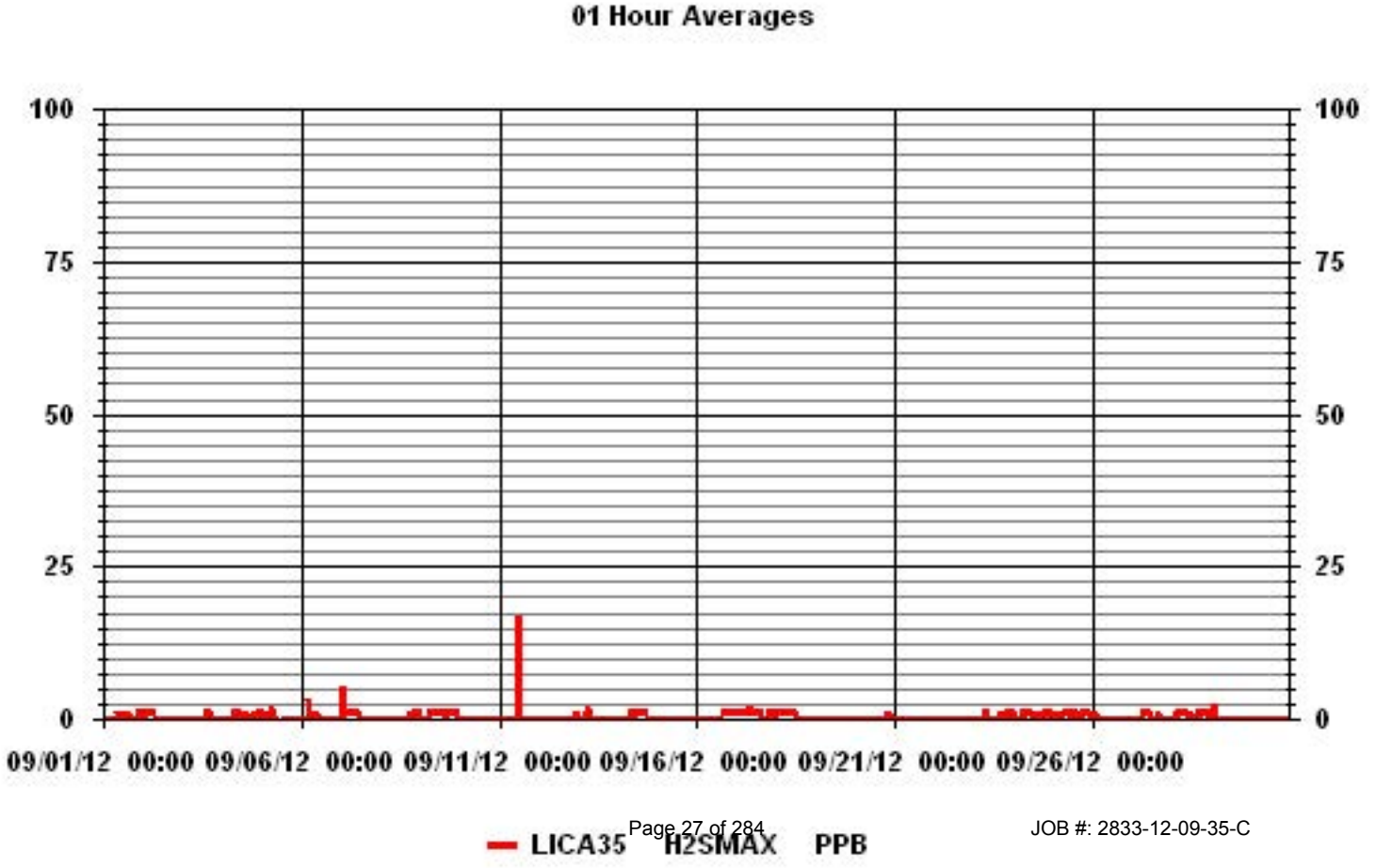
VAR - VARIOUS

IZS CALIBRATION TIME: 31 HRS OPERATIONAL TIME: 718 HRS

MONTHLY CALIBRATION TIME: 9 HRS

STANDARD DEVIATION: 0.81

JOB #: 2833-12-09-35-C



JOB #: 2833-12-09-35-C

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

September 2012

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	2.14	.66	.49	1.81	8.59	8.92	7.43	2.14	2.97	.99	1.81	8.09	12.72	19.50	17.19	4.46	100.00
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.14	.66	.49	1.81	8.59	8.92	7.43	2.14	2.97	.99	1.81	8.09	12.72	19.50	17.19	4.46	

Calm : .00 %

Total # Operational Hours : 605

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	13	4	3	11	52	54	45	13	18	6	11	49	77	118	104	27	605
< 10																	
< 50																	
>= 50																	
Totals	13	4	3	11	52	54	45	13	18	6	11	49	77	118	104	27	

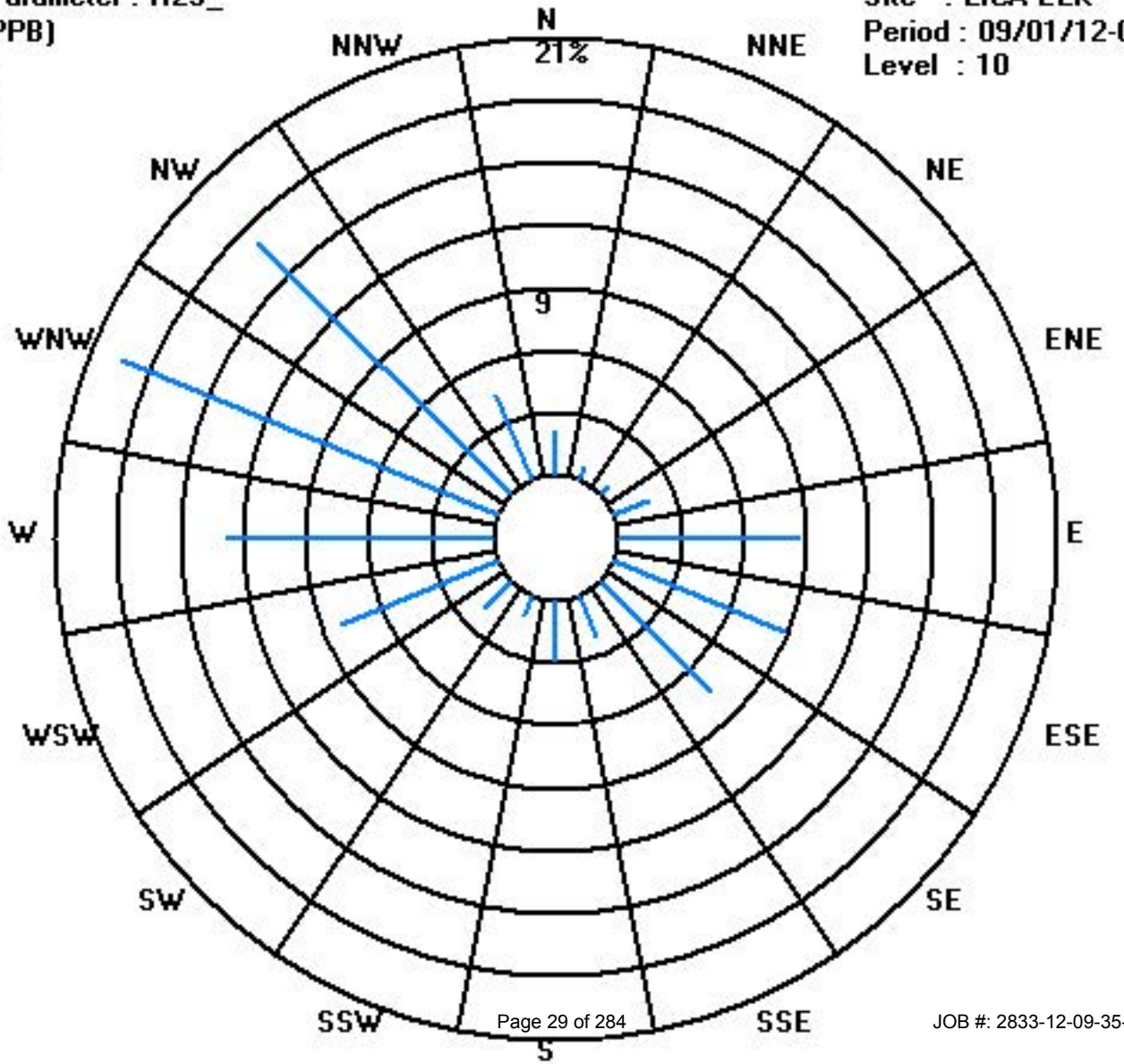
Calm : .00 %

Total # Operational Hours : 605

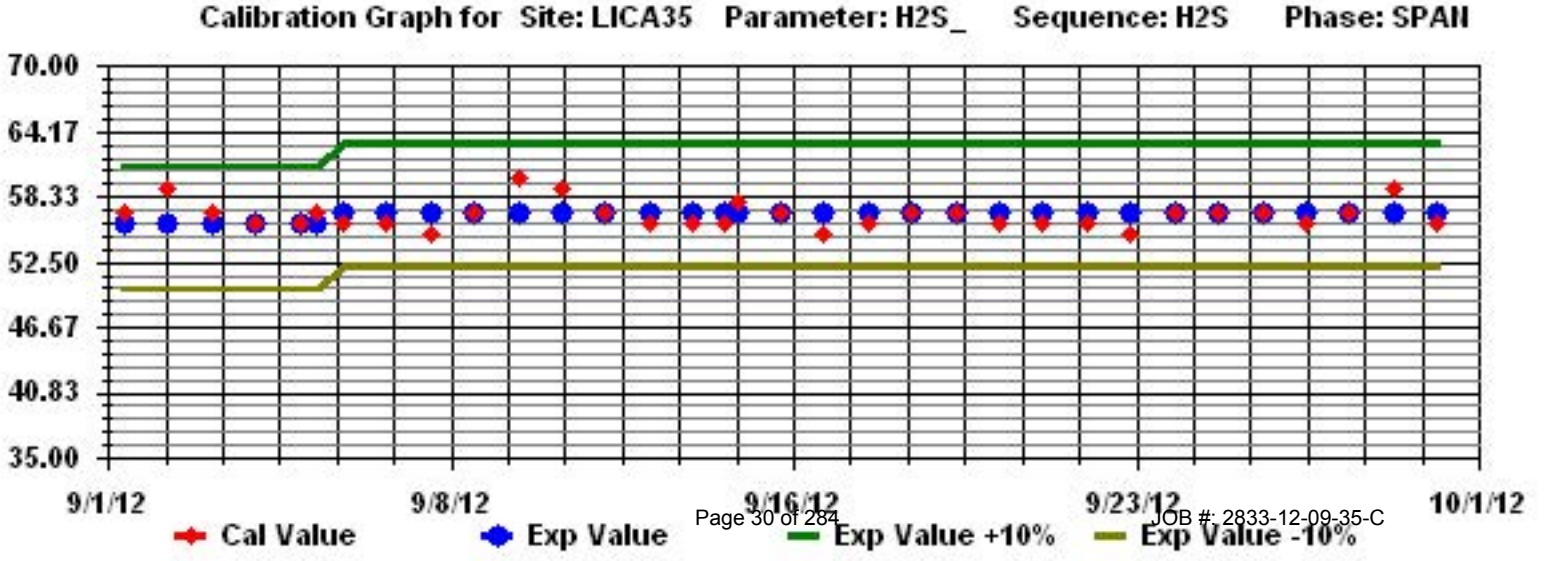
Logger : 35 Parameter : H2S_
Class Limits (PPB)

>= 50
< 50
< 10
< 3

Site : LICA-ELK
Period : 09/01/12-09/30/12
Level : 10



JOB #: 2833-12-09-35-C


Calibration Graph for Site: LICA35 Parameter: H2S_ Sequence: H2S Phase: SPAN
70.00
64.17
58.33
52.50
46.67
40.83
35.00
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

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

SEPTEMBER 2012

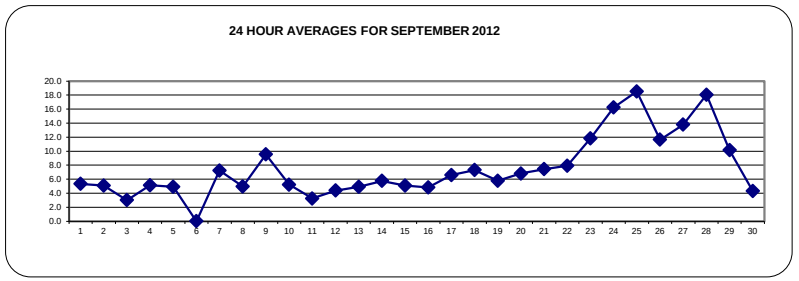
PARTICULATE MATTER 2.5 (PM2.5) hourly averages in ug/m^3

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	4	0	4	6	2	4	7	3	6	8	9	4	9	8	10	14	10	6	9	3	1	0	0	1	14	5.3	24
2	4	3	4	4	4	3	3	4	2	5	5	7	6	6	7	8	7	6	7	5	8	4	5	5	8	5.1	24
3	3	3	1	2	3	4	4	5	4	3	0	2	2	1	3	3	2	2	3	4	3	3	5	7	7	3.0	24
4	3	5	5	6	5	4	5	6	6	13	7	6	5	1	6	6	10	4	2	3	5	3	3	4	13	5.1	24
5	2	4	4	2	3	5	5	6	8	7	5	3	7	4	5	5	7	9	7	6	5	3	4	2	9	4.9	24
6	1	2	3	4	3	3	6	6	9	8	6	4	3	4	2	5	6	12	22	43	18	10	7	5	43	0.0	24
7	3	3	2	3	4	5	13	13	4	**C**	**C**	4	7	7	5	8	8	5	8	6	9	10	15	17	17	7.2	24
8	7	6	6	5	5	4	10	10	0	3	3	3	3	3	4	4	7	8	6	5	5	4	4	4	10	5.0	24
9	4	4	5	5	5	6	9	6	8	10	9	11	11	14	11	11	13	13	9	13	21	17	5	9	21	9.5	24
10	8	9	7	8	7	5	9	10	8	6	7	10	8	0	5	3	2	1	2	2	4	2	1	1	10	5.2	24
11	2	2	3	2	3	5	2	2	3	2	3	1	4	3	0	4	4	5	4	5	5	5	4	5	5	3.3	24
12	5	5	5	4	4	4	5	5	4	4	3	2	3	2	3	3	5	5	6	7	7	4	5	5	7	4.4	24
13	4	6	4	2	4	2	6	5	6	8	5	3	3	3	3	4	4	5	16	7	5	6	4	3	16	4.9	24
14	4	4	3	4	3	3	7	7	5	6	9	10	7	5	4	6	11	7	11	8	5	1	4	4	11	5.8	24
15	5	6	4	5	5	6	9	8	6	5	4	3	3	3	3	3	4	4	6	9	10	6	3	2	10	5.1	24
16	3	3	1	3	5	3	5	8	6	3	1	2	1	1	1	2	3	4	4	5	7	27	10	8	27	4.8	24
17	9	5	9	6	5	4	6	7	6	6	8	8	6	5	5	7	5	7	7	7	7	7	8	8	9	6.6	24
18	8	8	9	7	8	8	9	10	9	10	12	10	7	4	6	2	6	7	8	7	6	5	5	4	12	7.3	24
19	5	3	4	5	5	5	6	8	9	22	**C**	**C**	**C**	0	0	4	7	9	6	5	5	5	4	4	22	5.8	24
20	5	4	4	4	5	10	10	12	8	8	4	6	4	7	4	5	7	**C**	**C**	**C**	7	11	10	8	12	6.8	24
21	8	8	7	8	8	9	12	15	8	6	6	7	5	5	7	3	5	6	8	8	6	7	8	8	15	7.4	24
22	9	8	8	6	6	7	7	8	7	9	8	9	8	10	9	9	9	9	7	9	6	7	7	8	10	7.9	24
23	7	7	7	8	8	8	11	11	11	12	18	20	15	15	15	12	10	12	12	14	13	12	14	12	20	11.8	24
24	10	13	11	9	25	14	17	**44**	22	25	15	11	8	10	14	13	14	14	16	17	18	16	18	16	**44**	16.3	24
25	14	15	12	12	9	8	8	25	13	19	20	18	18	19	21	19	20	17	17	22	28	31	29	30	31	**18.5**	24
26	29	26	24	20	13	10	6	7	10	9	10	5	2	6	7	7	10	12	10	12	12	13	10	9	29	11.6	24
27	8	9	8	20	11	10	15	15	15	15	20	12	11	12	10	12	12	13	15	14	18	20	18	18	20	13.8	24
28	19	17	17	16	18	15	17	20	21	22	15	16	15	15	16	17	18	17	17	18	22	23	21	21	23	18.0	24
29	23	21	20	22	18	17	14	13	12	9	4	5	2	1	0	**N**	1	6	8	8	9	6	6	8	23	10.1	23
30	6	5	5	3	3	5	5	6	6	3	2	3	2	3	2	4	5	4	3	4	3	9	6	6	9	4.3	24
HOURLY MAX	29	26	24	22	25	17	17	44	22	25	20	20	18	19	21	19	20	17	22	43	28	31	29	30			
HOURLY AVG	7.4	7.1	6.9	7.0	6.9	6.5	8.3	10.2	8.1	9.2	7.8	7.1	6.4	5.9	6.3	7.0	7.7	7.9	8.8	9.5	9.3	9.2	8.1	8.1			

STATUS FLAG CODES

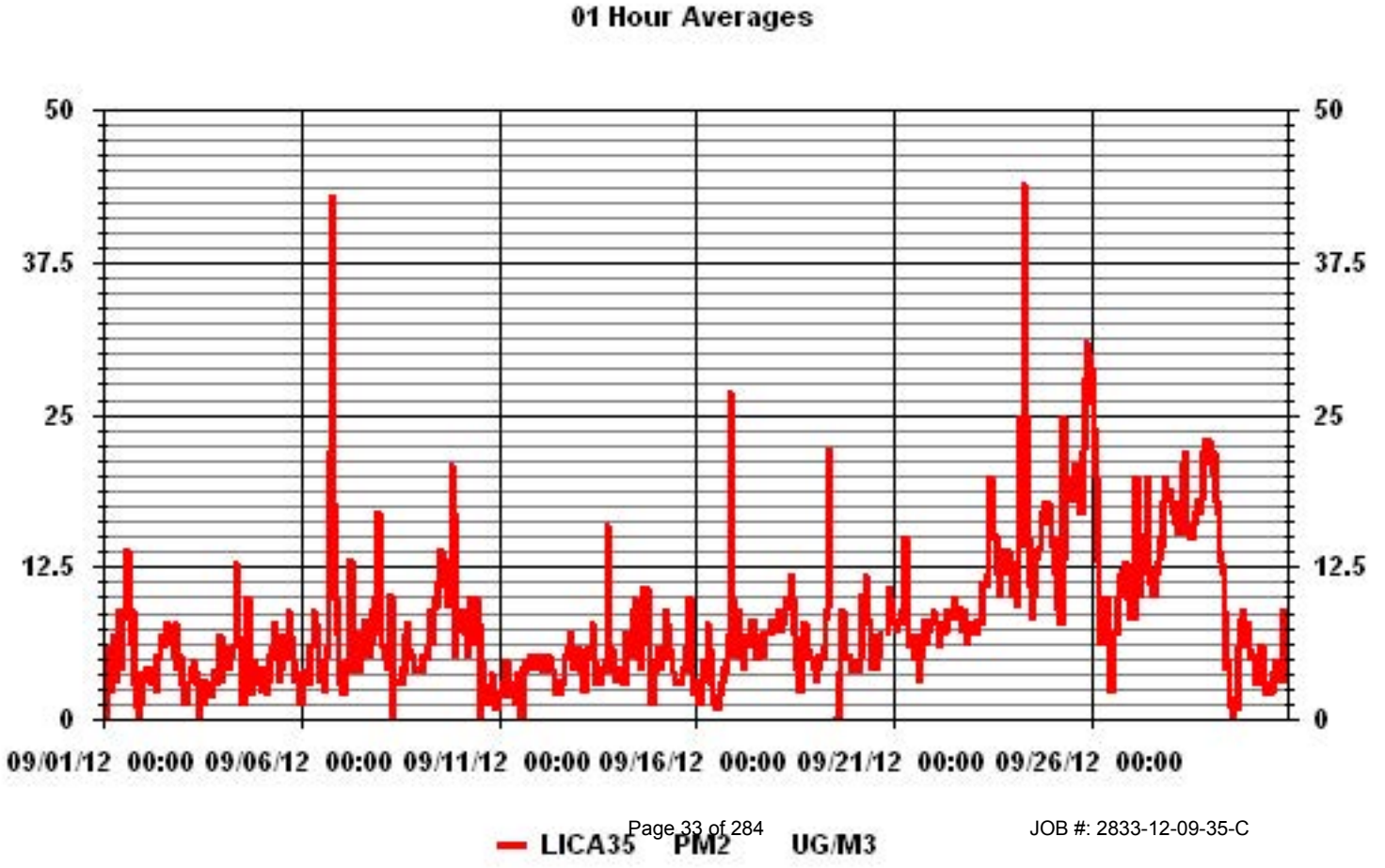
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR - PPB | 24-HR 30 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-						
NUMBER OF 24-HR EXCEEDENCES:	0						
NUMBER OF NON-ZERO READINGS:	701						
MAXIMUM 1-HR AVERAGE:	44	UG/M^3	@ HOUR(S)	7	ON DAY(S)	24	
MAXIMUM 24-HR AVERAGE:	18.5	UG/M^3			ON DAY(S)	25	
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		719	HRS	
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:		99.9	%	
STANDARD DEVIATION:	5.72		MONTHLY AVERAGE:		7.77	UG/M^3	



JOB #: 2833-12-09-35-C

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

September 2012

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	2.21	.63	.63	1.74	9.01	9.01	7.27	2.05	2.84	.79	1.58	8.06	12.02	19.46	17.24	4.74	99.36
<	60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15	.00	.00	.15	.00	.31	.00	.63
<	80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.21	.63	.63	1.74	9.01	9.01	7.27	2.05	2.84	.94	1.58	8.06	12.18	19.46	17.56	4.74	

Calm : .00 %

Total # Operational Hours : 632

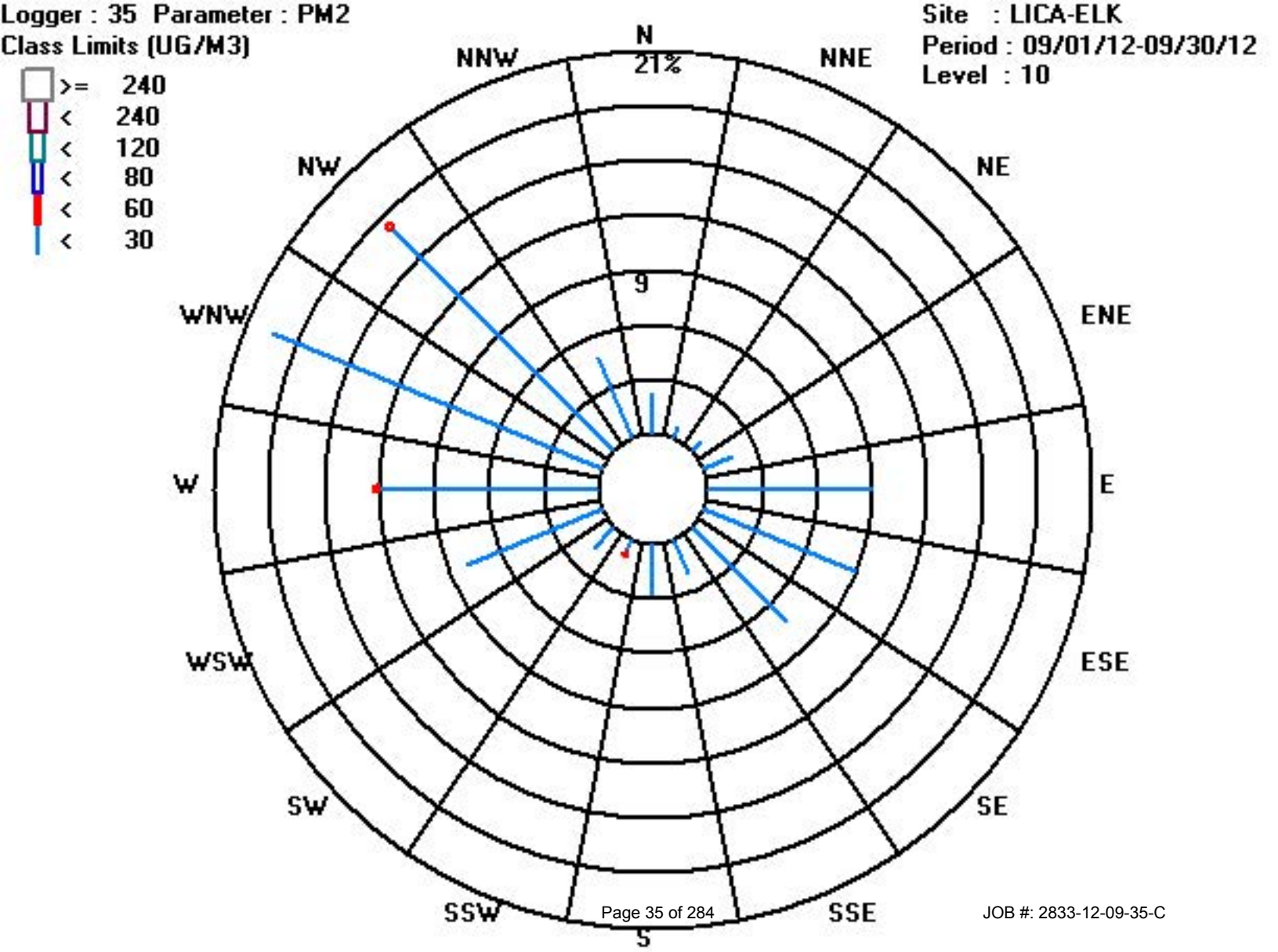
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30	14	4	4	11	57	57	46	13	18	5	10	51	76	123	109	30	628
<	60										1			1		2		4
<	80																	
<	120																	
<	240																	
>=	240																	
	Totals	14	4	4	11	57	57	46	13	18	6	10	51	77	123	111	30	

Calm : .00 %

Total # Operational Hours : 632



JOB #: 2833-12-09-35-C

Nitrogen Dioxide

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

SEPTEMBER 2012

NITROGEN DIOXIDE hourly averages in ppb

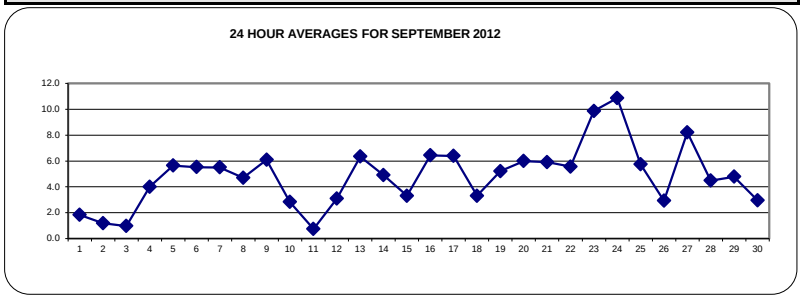
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	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	2	1	1	1	2	2	**IZS**	2	1	1	1	1	2	3	2	1	2	4	4	3	2	2	4	1.8	24
2	2	2	3	2	1	1	2	**IZS**	1	1	1	1	0	0	1	1	1	1	1	0	1	1	2	1	3	1.2	24
3	1	1	1	1	1	1	**IZS**	0	1	1	0	0	0	0	0	1	0	1	1	2	1	1	2	5	5	1.0	24
4	2	1	1	1	3	**IZS**	2	1	2	2	**C**	**C**	**M**	**M**	**M**	**M**	**M**	0	3	8	6	14	12	6	14	4.0	19
5	5	5	7	8	**IZS**	9	10	4	3	2	**C**	**C**	**C**	**C**	**C**	**C**	0	0	1	3	5	11	13	10	13	5.6	24
6	8	7	7	**IZS**	6	4	6	6	6	5	4	3	1	0	1	1	1	3	4	8	9	14	13	10	14	5.5	24
7	9	8	**IZS**	6	8	9	8	6	4	2	1	1	**M**	1	1	1	1	1	2	9	9	7	12	15	15	5.5	23
8	16	**IZS**	12	9	10	9	6	5	2	1	1	0	0	0	0	0	1	2	4	5	6	8	7	4	16	4.7	24
9	**IZS**	8	9	10	9	11	12	5	4	4	3	4	3	3	2	2	1	4	8	11	11	7	3	**IZS**	12	6.1	24
10	4	5	4	4	5	9	9	7	5	2	1	1	0	1	1	1	0	0	1	1	1	2	**IZS**	1	9	2.8	24
11	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	1	0	1	5	**IZS**	0	1	5	0.7	24
12	1	5	8	0	4	6	5	2	1	1	0	0	0	0	0	0	2	4	0	0	**IZS**	15	9	8	15	3.1	24
13	11	10	11	10	8	11	11	5	2	1	1	0	0	0	0	0	1	1	9	**IZS**	18	15	12	9	18	6.3	24
14	7	6	6	7	9	12	10	5	2	2	2	**M**	**C**	1	1	4	2	4	**IZS**	13	4	2	3	1	13	4.9	23
15	5	2	2	8	7	6	7	2	0	0	0	0	0	0	0	0	0	**IZS**	0	14	15	4	3	1	15	3.3	24
16	1	6	12	9	9	9	10	4	2	1	0	0	0	0	0	0	**IZS**	2	5	13	19	17	15	14	19	6.4	24
17	13	13	13	14	13	11	7	6	5	3	2	2	1	1	1	**IZS**	2	3	10	8	4	3	5	7	14	6.4	24
18	13	12	9	6	5	4	6	7	2	2	1	0	0	0	**IZS**	0	0	0	0	0	0	1	4	4	13	3.3	24
19	5	14	9	6	5	5	12	4	**C**	**C**	**C**	**C**	1	**IZS**	2	2	2	5	5	5	0	5	3	9	14	5.2	24
20	6	4	2	3	7	6	10	7	2	3	0	0	**IZS**	0	0	0	0	4	4	25	20	16	12	7	25	6.0	24
21	12	7	5	12	14	13	11	7	5	2	2	**IZS**	0	0	1	0	1	3	6	8	8	8	5	6	14	5.9	24
22	7	7	8	9	9	10	7	2	2	2	**IZS**	2	1	1	1	1	1	4	11	17	12	5	4	5	17	5.6	24
23	7	10	10	10	12	17	15	8	5	**IZS**	5	7	7	4	4	1	0	1	6	9	9	**30**	23	27	**30**	9.9	24
24	22	17	16	12	14	14	14	12	**IZS**	11	12	10	5	1	0	0	9	9	14	18	7	12	11	10	22	**10.9**	24
25	10	9	11	7	10	12	16	**IZS**	4	4	3	2	3	2	2	2	3	7	12	10	0	1	1	1	16	5.7	24
26	1	1	0	0	1	1	**IZS**	1	1	1	2	0	0	0	0	0	0	0	1	16	10	9	10	12	16	2.9	24
27	12	15	16	16	13	**IZS**	13	10	9	7	6	2	1	1	1	1	1	3	11	10	14	10	9	8	16	8.2	24
28	8	5	7	7	**IZS**	7	8	7	5	3	2	1	1	1	1	1	1	3	5	4	4	9	7	6	9	4.5	24
29	11	13	19	**IZS**	3	2	1	0	0	0	0	0	0	0	0	0	1	5	13	13	10	7	6	6	19	4.8	24
30	2	2	**IZS**	2	2	3	4	4	1	0	0	0	0	0	0	0	1	8	4	7	5	6	7	10	10	3.0	24
HOURLY MAX	22	17	19	16	14	17	16	12	9	11	12	10	7	4	4	4	9	9	14	25	20	30	23	27			
HOURLY AVG	7.0	6.8	7.5	6.5	6.8	7.3	8.0	4.6	2.9	2.3	1.9	1.5	1.0	0.7	0.8	0.8	1.3	2.8	4.9	8.3	7.5	8.4	7.4	7.1			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

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

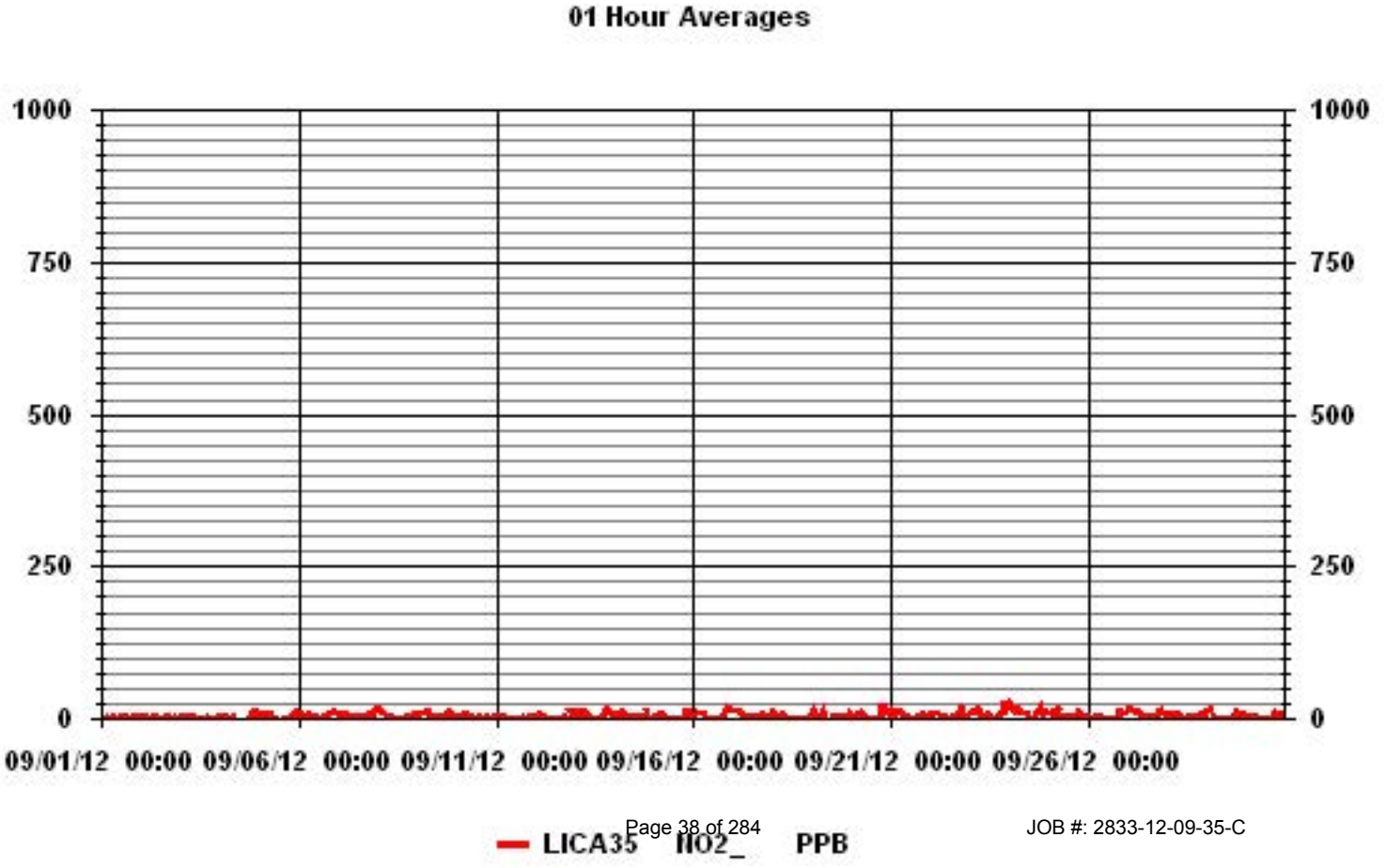


MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	559					
MAXIMUM 1-HR AVERAGE:	30	PPB	@ HOUR(S)	21	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	10.9	PPB			ON DAY(S)	24

IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	713	HRS
MONTHLY CALIBRATION TIME:	13	HRS	AMD OPERATION UPTIME:	99.0	%
STANDARD DEVIATION:	4.90		MONTHLY AVERAGE:	4.84	PPB

JOB #: 2833-12-09-35-C



JOB #: 2833-12-09-35-C

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

SEPTEMBER 2012

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	3	2	4	3	2	3	3	4	**IZS**	5	2	3	2	3	3	4	3	3	3	6	6	8	3	3	8	3.5	24
2	2	4	5	4	2	3	3	**IZS**	2	2	2	2	1	1	2	3	3	3	3	2	3	3	4	2	5	2.7	24
3	2	2	2	2	3	3	**IZS**	2	2	1	1	1	1	2	2	2	2	4	3	3	3	2	5	16	16	2.9	24
4	3	5	2	5	5	**IZS**	4	4	4	4	**C**	**C**	**M**	**M**	**M**	**M**	**M**	1	14	14	21	16	17	10	21	8.1	19
5	9	7	12	12	**IZS**	12	12	6	5	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	1	3	7	7	16	16	15	16	8.8	24
6	12	12	10	**IZS**	8	5	15	9	7	7	5	5	1	2	1	5	3	6	7	24	18	16	16	13	24	9.0	24
7	13	12	**IZS**	8	13	11	10	10	7	3	3	2	**M**	1	1	1	1	1	4	23	22	12	18	20	23	8.9	23
8	20	**IZS**	14	11	13	11	9	7	3	2	2	1	1	2	2	2	2	5	7	8	9	11	11	6	20	6.9	24
9	**IZS**	13	14	15	12	16	20	8	5	6	6	6	4	4	4	3	3	17	17	15	20	15	7	**IZS**	20	10.5	24
10	8	8	8	7	13	15	14	11	11	5	2	4	3	1	2	3	3	3	4	2	3	4	**IZS**	1	15	5.9	24
11	1	1	1	1	1	4	3	2	1	1	1	1	1	1	2	1	2	3	1	5	9	**IZS**	2	2	9	2.0	24
12	7	11	13	3	10	10	8	3	2	2	1	1	1	4	1	2	8	14	1	3	**IZS**	20	15	10	20	6.5	24
13	14	11	13	14	12	13	14	9	5	3	2	1	2	1	1	2	1	2	24	**IZS**	22	20	17	10	24	9.3	24
14	9	8	10	9	12	21	33	10	4	4	**M**	**M**	**C**	3	3	7	5	14	**IZS**	19	16	18	14	11	33	11.5	22
15	15	4	5	12	12	13	9	5	1	1	1	1	1	1	1	1	1	**IZS**	5	20	21	9	9	6	21	6.7	24
16	3	17	15	13	14	12	12	9	3	2	2	1	0	1	1	0	**IZS**	9	11	24	29	21	21	16	29	10.3	24
17	15	17	17	16	15	16	10	8	7	7	4	3	3	2	2	**IZS**	5	13	30	12	7	5	11	12	30	10.3	24
18	21	18	15	8	9	9	8	12	11	4	4	1	1	1	**IZS**	2	1	0	0	0	1	9	12	7	21	6.7	24
19	14	19	17	10	7	8	15	8	**C**	**C**	**C**	**C**	3	**IZS**	5	3	4	19	19	30	3	28	18	18	30	13.1	24
20	15	16	14	8	12	10	15	11	4	4	1	1	**IZS**	1	2	1	1	30	28	32	33	22	18	11	33	12.6	24
21	14	11	8	18	17	18	16	13	12	3	3	**IZS**	1	1	15	2	5	6	10	12	11	12	10	8	18	9.8	24
22	12	9	11	12	15	13	13	4	3	3	**IZS**	3	2	2	2	3	3	13	23	25	19	10	5	9	25	9.3	24
23	10	21	17	14	16	22	19	10	8	**IZS**	7	8	8	6	5	4	2	3	12	16	20	34	28	31	34	14.0	24
24	28	21	18	17	17	16	18	15	**IZS**	14	13	**58**	34	3	2	3	20	15	19	23	16	16	21	14	**58**	18.3	24
25	15	12	14	10	14	15	21	**IZS**	7	5	4	4	4	4	4	4	5	15	20	19	3	3	5	2	21	9.1	24
26	2	2	2	2	2	2	**IZS**	3	2	2	3	2	1	1	1	1	1	2	2	38	16	11	13	16	38	5.5	24
27	19	18	20	19	19	**IZS**	16	17	10	8	8	4	2	3	2	3	3	6	18	16	20	13	12	10	20	11.6	24
28	12	7	11	10	**IZS**	19	21	12	9	5	4	3	3	3	3	3	3	8	9	6	7	16	15	9	21	8.6	24
29	14	19	29	**IZS**	8	6	5	2	1	1	1	2	2	5	4	1	3	22	29	28	16	19	17	18	29	11.0	24
30	6	6	**IZS**	4	4	8	8	6	4	2	2	1	1	1	2	2	5	19	7	12	7	10	12	14	19	6.2	24
HOURLY MAX	28	21	29	19	19	22	33	17	12	14	13	58	34	6	15	7	20	30	30	38	33	34	28	31			
HOURLY AVG	11.0	10.8	11.5	9.5	10.3	11.2	12.6	7.9	5.2	3.9	3.4	4.8	3.3	2.2	2.8	2.5	3.5	8.9	11.5	15.3	13.4	13.8	12.8	11.0			

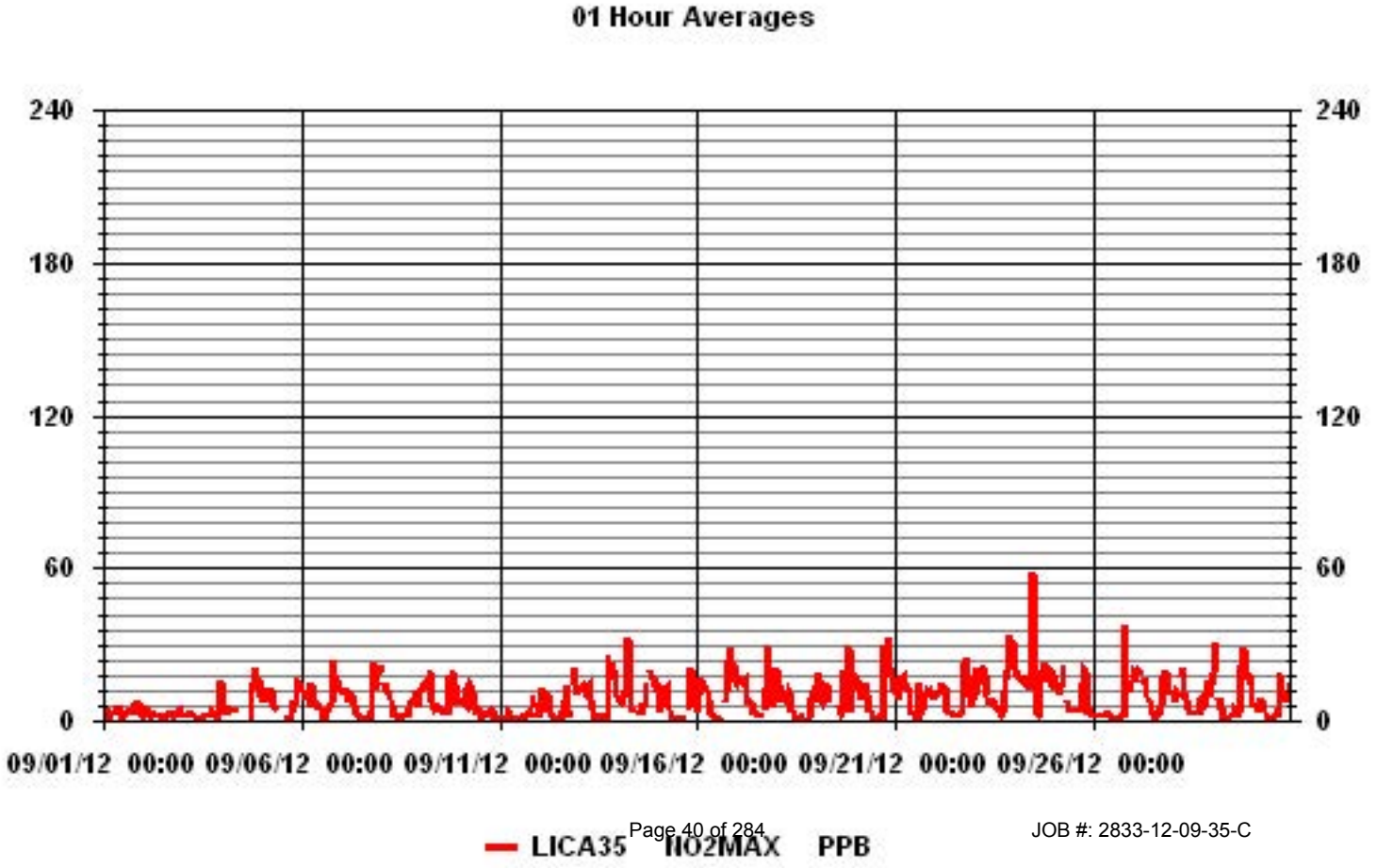
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	-MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	662					
MAXIMUM INSTANTANEOUS VALUE:	58	PPB	@ HOUR(S)	11	ON DAY(S)	24
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		712	HRS
MONTHLY CALIBRATION TIME:	14	HRS				
STANDARD DEVIATION:	7.46					

JOB #: 2833-12-09-35-C



JOB #: 2833-12-09-35-C

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

September 2012

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	2.18	.67	.50	1.85	8.75	9.09	7.57	2.18	3.03	1.01	1.51	8.24	12.96	19.86	16.49	4.04	100.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.18	.67	.50	1.85	8.75	9.09	7.57	2.18	3.03	1.01	1.51	8.24	12.96	19.86	16.49	4.04	

Calm : .00 %

Total # Operational Hours : 594

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	13	4	3	11	52	54	45	13	18	6	9	49	77	118	98	24	594
<	110																	
<	210																	
>=	210																	
	Totals	13	4	3	11	52	54	45	13	18	6	9	49	77	118	98	24	

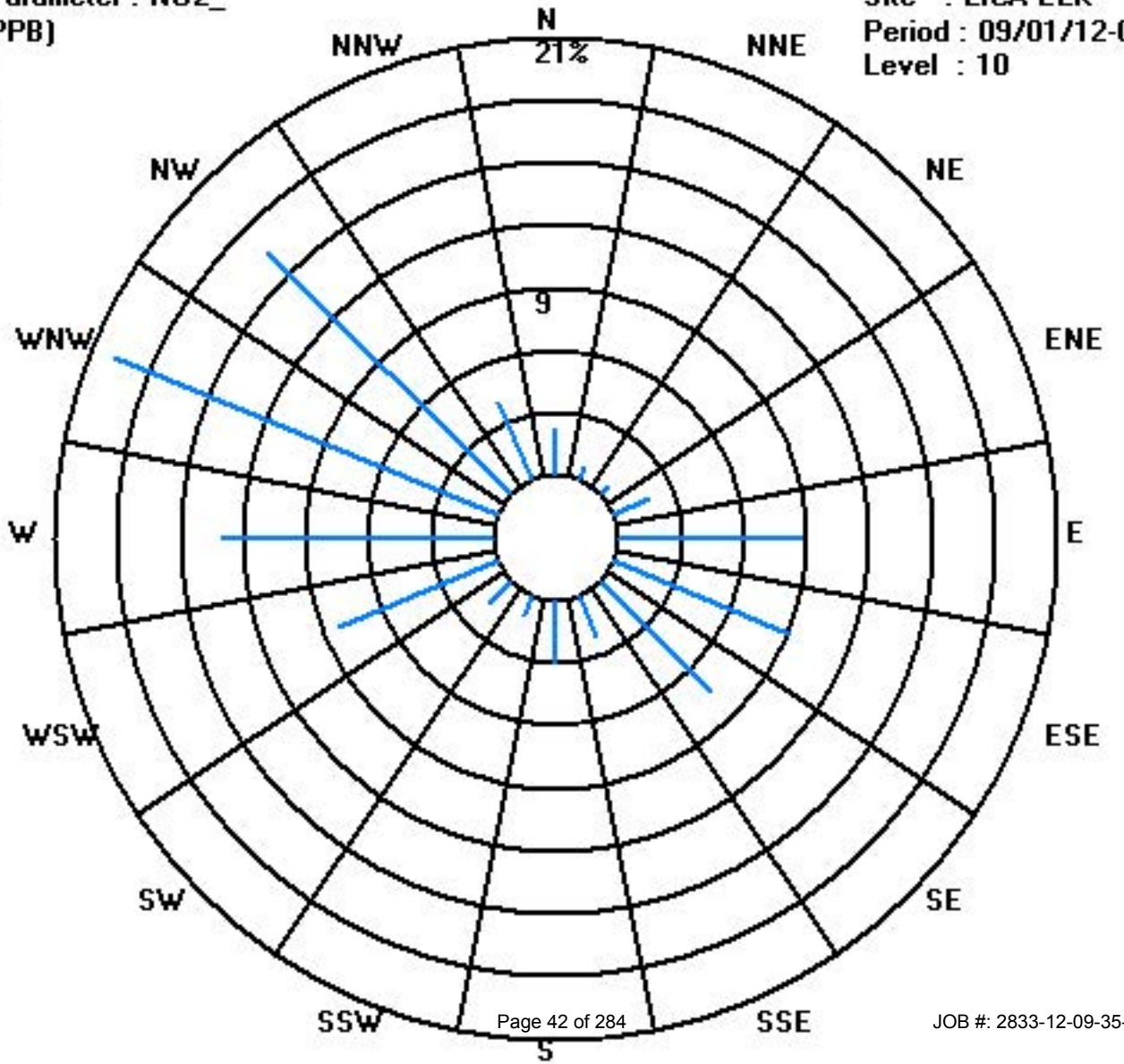
Calm : .00 %

Total # Operational Hours : 594

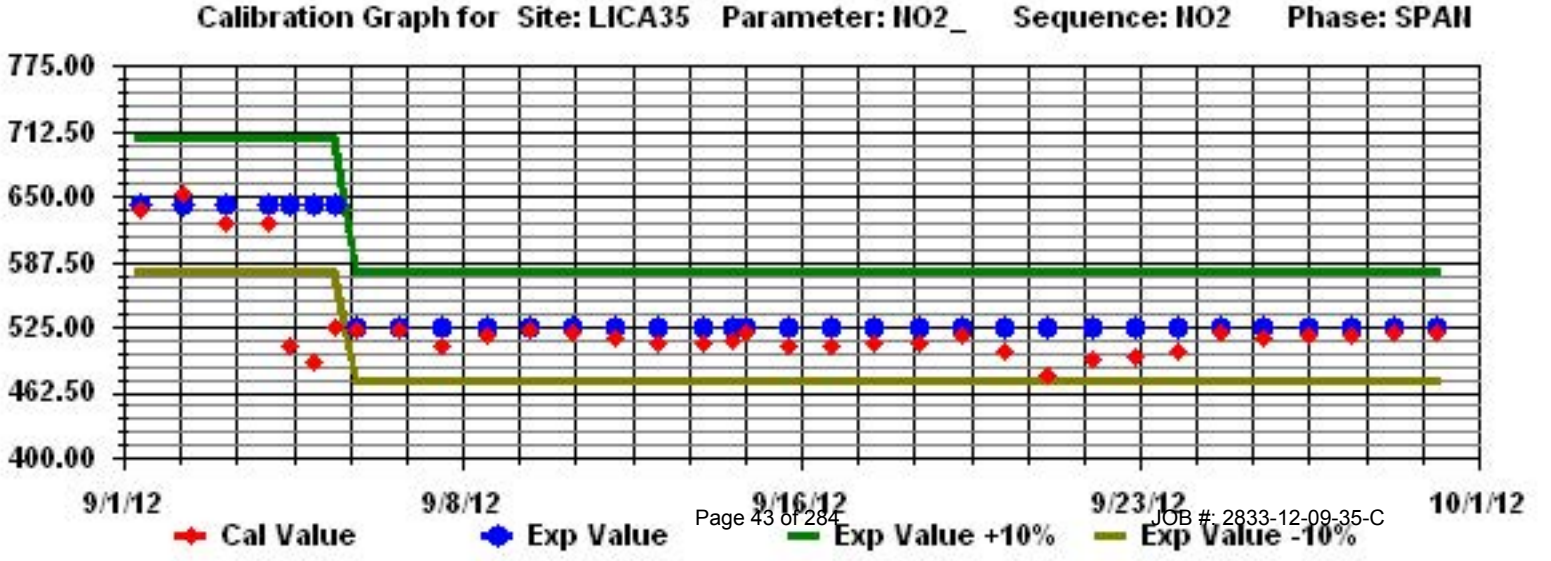
Logger : 35 Parameter : NO2_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA-ELK
Period : 09/01/12-09/30/12
Level : 10



JOB #: 2833-12-09-35-C


Calibration Graph for Site: LICA35 Parameter: NO2_ Sequence: NO2 Phase: SPAN
775.00
712.50
650.00
587.50
525.00
462.50
400.00
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

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

SEPTEMBER 2012

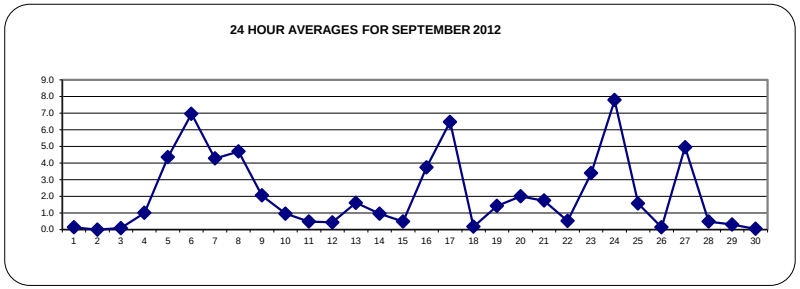
NITRIC OXIDE hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	0	0	0	0	**IZS**	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
2	0	0	0	0	0	0	0	**IZS**	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	**IZS**	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.1	24
4	0	0	0	0	0	**IZS**	1	1	2	1	**C**	**C**	**M**	**M**	**M**	**M**	**M**	0	1	2	2	2	3	1	3	1.0	19
5	2	1	3	3	**IZS**	10	13	2	2	3	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	10	18	7	18	4.4	24
6	7	4	7	**IZS**	13	8	26	23	18	17	13	4	0	0	0	1	0	1	2	3	0	1	10	2	26	7.0	24
7	5	3	**IZS**	6	8	9	19	19	5	2	2	1	**M**	0	0	0	0	0	0	1	1	2	2	9	19	4.3	23
8	21	**IZS**	20	9	12	17	10	6	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	21	4.7	24
9	**IZS**	1	1	1	1	1	12	4	3	5	3	3	2	1	1	1	1	1	1	1	1	0	0	**IZS**	12	2.0	24
10	1	0	0	0	1	1	3	3	3	2	1	1	1	0	0	1	1	1	1	0	1	0	**IZS**	0	3	1.0	24
11	0	0	0	0	0	1	1	1	0	1	1	0	1	1	1	0	1	1	0	0	1	**IZS**	0	0	1	0.5	24
12	0	1	3	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	2	1	1	3	0.4	24
13	2	2	3	2	1	2	5	3	3	2	1	1	1	1	1	1	0	1	2	**IZS**	1	1	1	0	5	1.6	24
14	0	0	0	0	0	5	6	3	2	2	2	**M**	**C**	0	0	0	0	0	**IZS**	0	0	0	0	0	6	1.0	23
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	7	4	0	0	0	7	0.5	24
16	0	3	5	6	8	2	12	5	3	0	0	0	0	0	0	0	**IZS**	0	1	4	6	11	7	13	13	3.7	24
17	17	16	33	28	17	11	12	4	4	4	1	1	0	0	0	**IZS**	0	0	1	0	0	0	0	0	33	6.5	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	0	1	0	0	0	1	1	0	1	0.2	24
19	1	7	4	1	1	1	6	2	**C**	**C**	**C**	**C**	2	**IZS**	1	0	0	0	0	0	0	1	0	0	7	1.4	24
20	0	0	1	0	0	0	2	3	1	1	0	0	**IZS**	1	1	1	1	3	2	17	7	3	1	1	17	2.0	24
21	1	1	1	3	3	2	10	10	5	2	1	**IZS**	0	0	1	0	0	0	0	0	0	0	0	0	10	1.7	24
22	0	0	0	0	1	3	3	1	1	1	**IZS**	0	0	0	0	0	0	0	1	1	0	0	0	0	3	0.5	24
23	0	0	1	0	1	6	9	3	5	**IZS**	4	4	3	0	0	0	0	0	0	0	0	16	8	18	18	3.4	24
24	27	7	3	4	8	14	34	**44**	**IZS**	20	11	4	1	0	0	0	1	0	0	0	0	0	1	0	**44**	**7.8**	24
25	1	0	1	0	2	2	19	**IZS**	3	3	2	1	0	0	0	0	0	1	1	0	0	0	0	0	19	1.6	24
26	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	2	0.1	24
27	1	1	3	8	9	**IZS**	25	24	13	12	6	1	1	1	1	1	1	1	1	1	1	1	0	1	25	5.0	24
28	1	1	1	1	**IZS**	1	1	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.5	24
29	0	0	5	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	5	0.3	24
30	0	0	**IZS**	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
HOURLY MAX	27	16	33	28	17	17	34	44	18	20	13	4	3	1	1	1	1	3	2	17	7	16	18	18			
HOURLY AVG	3.0	1.7	3.4	2.6	3.1	3.5	8.2	5.9	2.9	2.9	1.9	0.9	0.5	0.2	0.3	0.3	0.3	0.4	0.6	1.4	0.9	1.8	1.8	1.9			

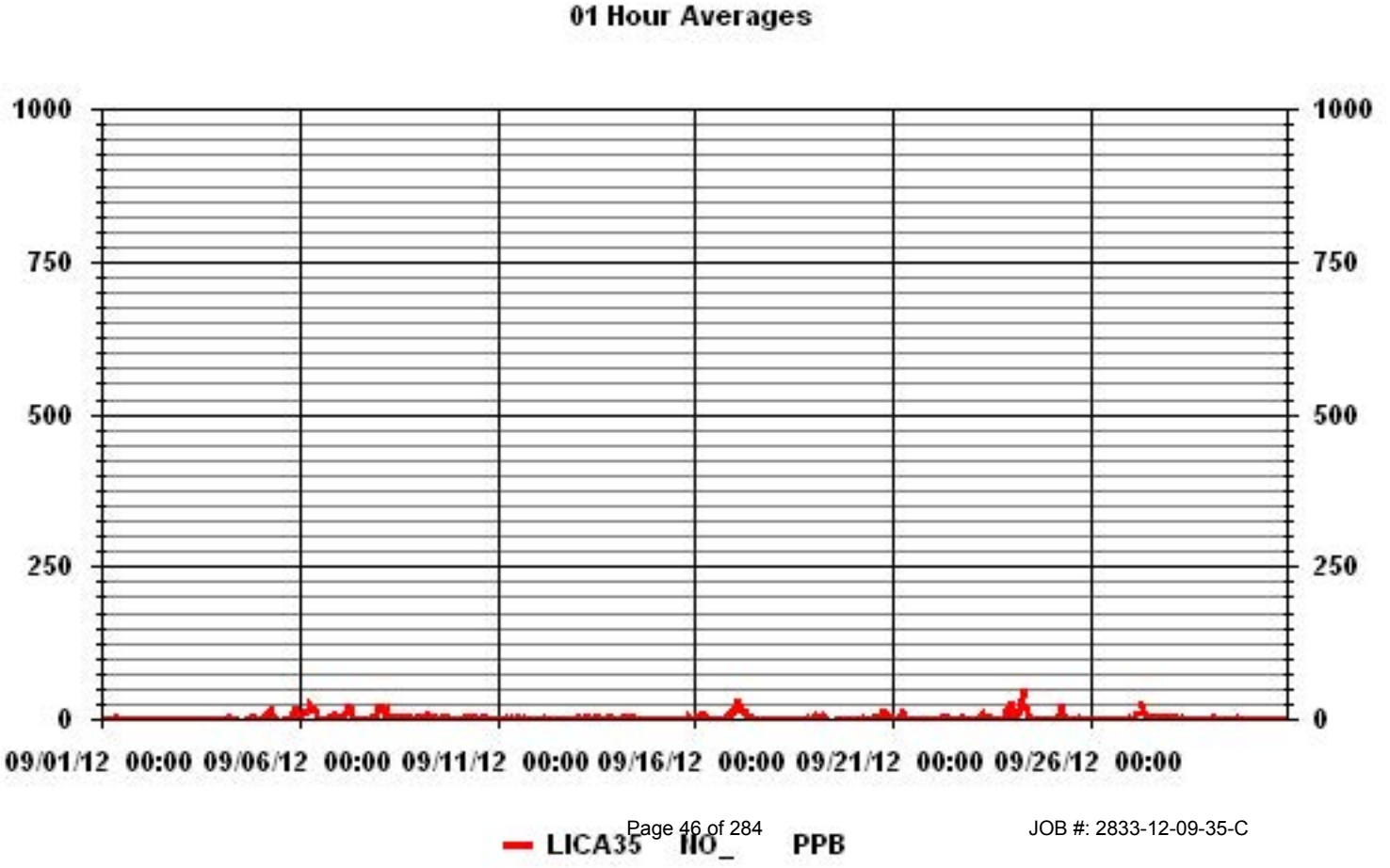
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	315						
MAXIMUM 1-HR AVERAGE:	44	PPB	@ HOUR(S)	7	ON DAY(S)	24	
MAXIMUM 24-HR AVERAGE:	7.8	PPB			ON DAY(S)	24	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		713	HRS	
MONTHLY CALIBRATION TIME:	13	HRS	AMD OPERATION UPTIME:		99.0	%	
STANDARD DEVIATION:	4.83		MONTHLY AVERAGE:		2.10	PPB	



JOB #: 2833-12-09-35-C

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

SEPTEMBER 2012

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	1	0	0	0	0	0	1	1	**IZS**	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	0.8	24
2	1	1	1	0	0	1	1	**IZS**	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	0.8	24
3	1	0	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	6	6	1.1	24
4	1	1	1	1	2	**IZS**	2	2	3	3	**C**	**C**	**M**	**M**	**M**	**M**	**M**	1	6	7	25	6	8	3	25	4.5	19
5	5	3	5	5	**IZS**	27	26	2	5	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	0	0	1	2	21	32	13	32	9.3	24
6	11	18	21	**IZS**	22	16	55	28	20	18	15	10	1	1	1	4	1	2	4	34	2	4	22	7	55	13.8	24
7	14	7	**IZS**	9	15	13	32	34	13	3	3	1	**M**	1	1	1	1	1	1	7	4	6	3	23	34	8.8	23
8	48	**IZS**	26	14	16	23	17	9	2	2	1	1	1	1	1	2	1	1	2	2	2	1	1	1	48	7.6	24
9	**IZS**	2	3	1	1	4	31	5	4	6	6	4	3	2	1	1	1	3	3	1	3	2	1	**IZS**	31	4.0	24
10	1	1	1	1	1	3	5	6	6	3	1	2	2	1	1	1	2	1	1	1	1	1	**IZS**	1	6	1.9	24
11	1	1	1	1	1	2	1	1	1	1	1	1	2	1	1	1	2	2	1	1	2	**IZS**	1	1	2	1.2	24
12	1	5	6	0	1	2	3	1	1	1	1	0	0	1	0	0	1	2	0	0	**IZS**	6	3	2	6	1.6	24
13	5	5	5	5	2	3	9	6	4	3	2	1	2	1	1	1	1	1	8	**IZS**	6	4	4	2	9	3.5	24
14	0	0	0	1	1	42	70	9	3	3	**M**	**M**	**C**	1	1	2	1	2	**IZS**	2	1	4	2	2	70	7.4	22
15	1	0	0	2	1	1	1	1	0	0	0	0	0	0	0	0	0	**IZS**	0	22	10	4	4	1	22	2.1	24
16	0	15	8	20	32	7	25	19	7	1	1	0	0	0	0	0	**IZS**	2	3	15	15	21	15	22	32	9.9	24
17	23	30	48	36	24	19	33	5	8	8	2	1	1	0	0	**IZS**	1	2	28	1	0	0	0	2	48	11.8	24
18	1	2	0	1	0	0	1	1	1	1	1	0	0	0	**IZS**	2	1	1	1	1	1	2	4	1	4	1.0	24
19	4	15	11	2	2	2	11	4	**C**	**C**	**C**	**C**	3	**IZS**	2	1	0	3	3	18	0	23	7	7	23	6.2	24
20	7	3	8	5	6	2	5	5	2	3	0	0	**IZS**	1	1	1	1	23	48	45	40	16	5	4	48	10.0	24
21	6	3	2	7	7	7	22	20	15	3	2	**IZS**	0	0	14	0	1	1	1	1	1	1	3	0	22	5.1	24
22	0	2	2	2	5	7	9	2	2	2	**IZS**	1	1	0	0	1	1	2	6	5	1	0	0	0	9	2.2	24
23	0	3	8	2	7	17	22	5	5	**IZS**	4	5	5	2	1	0	0	0	0	2	0	29	17	46	46	7.8	24
24	53	16	13	13	13	27	51	**77**	**IZS**	36	14	7	4	0	0	0	5	1	2	1	1	1	9	2	**77**	15.0	24
25	4	2	5	0	9	6	68	**IZS**	7	4	3	2	1	1	1	0	0	4	5	1	0	0	1	0	68	5.4	24
26	0	0	0	0	0	0	**IZS**	0	0	0	1	0	0	0	0	0	0	0	0	26	0	0	1	6	26	1.5	24
27	5	2	6	14	17	**IZS**	33	66	20	15	12	3	2	2	1	2	1	1	2	3	4	1	1	1	66	9.3	24
28	2	1	2	2	**IZS**	9	10	7	3	2	1	0	0	1	1	0	0	1	1	0	0	0	0	0	10	1.9	24
29	0	0	15	**IZS**	1	2	1	0	0	0	0	0	0	1	1	0	0	7	4	2	0	1	5	4	15	1.9	24
30	2	2	**IZS**	0	0	0	1	3	2	1	0	0	0	0	0	0	0	2	0	1	1	1	0	0	3	0.7	24
HOURLY MAX	53	30	48	36	32	42	70	77	20	36	15	10	5	2	14	4	5	23	48	45	40	29	32	46			
HOURLY AVG	6.8	4.8	7.1	5.2	6.7	8.7	19.5	11.4	5.0	4.6	3.0	1.7	1.2	0.8	1.2	0.9	0.9	2.4	4.6	7.0	4.3	5.4	5.2	5.4			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	-MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 533

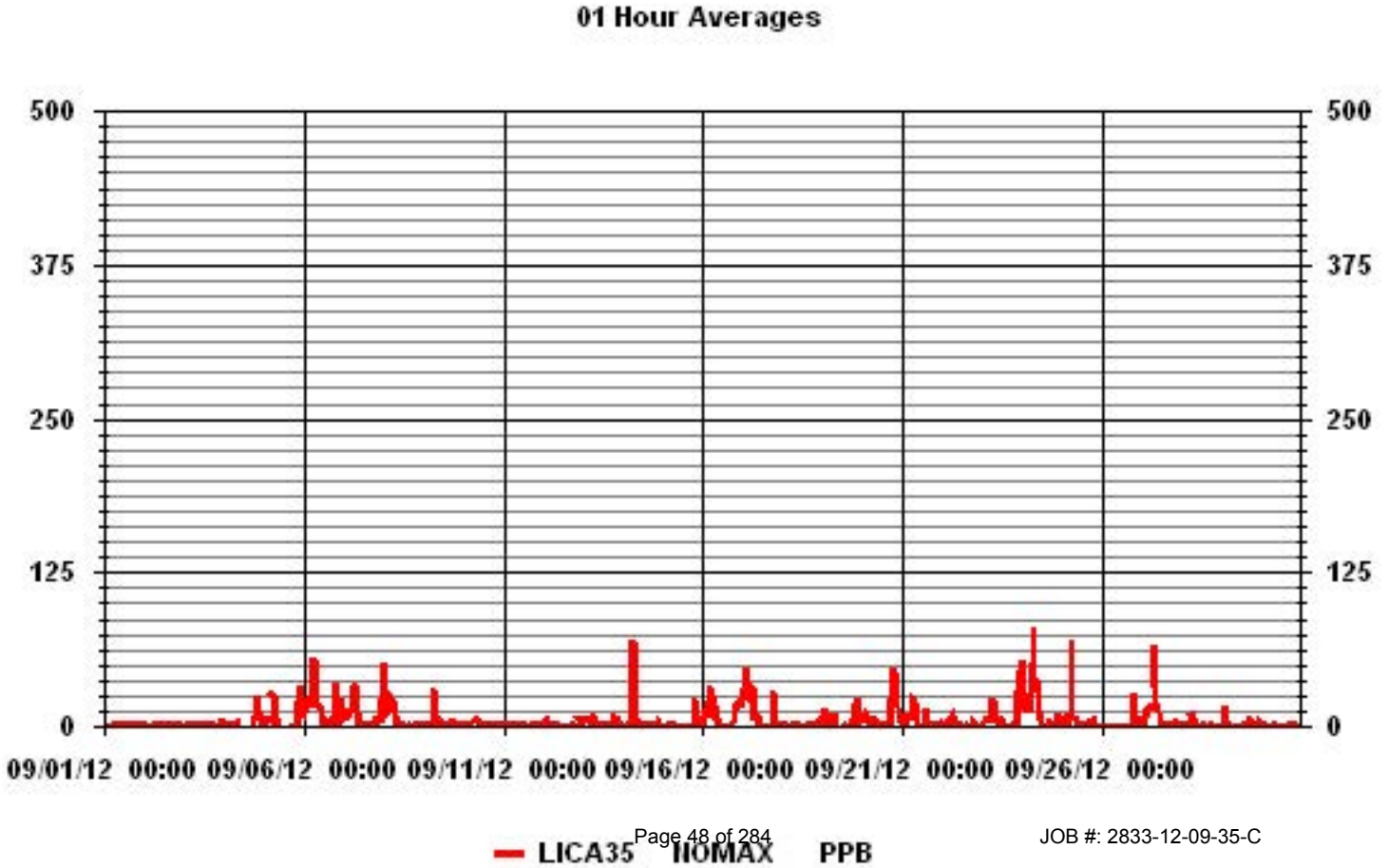
MAXIMUM INSTANTANEOUS VALUE: 77 PPB @ HOUR(S) 7 ON DAY(S) 24

IZS CALIBRATION TIME: 31 HRS OPERATIONAL TIME: 712 HRS

MONTHLY CALIBRATION TIME: 14 HRS

STANDARD DEVIATION: 9.96

JOB #: 2833-12-09-35-C



JOB #: 2833-12-09-35-C

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

September 2012

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	2.18	.67	.50	1.85	8.75	9.09	7.57	2.18	3.03	1.01	1.51	8.24	12.96	19.86	16.49	4.04	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.18	.67	.50	1.85	8.75	9.09	7.57	2.18	3.03	1.01	1.51	8.24	12.96	19.86	16.49	4.04	

Calm : .00 %

Total # Operational Hours : 594

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	13	4	3	11	52	54	45	13	18	6	9	49	77	118	98	24	594
< 110																	
< 210																	
>= 210																	
Totals	13	4	3	11	52	54	45	13	18	6	9	49	77	118	98	24	

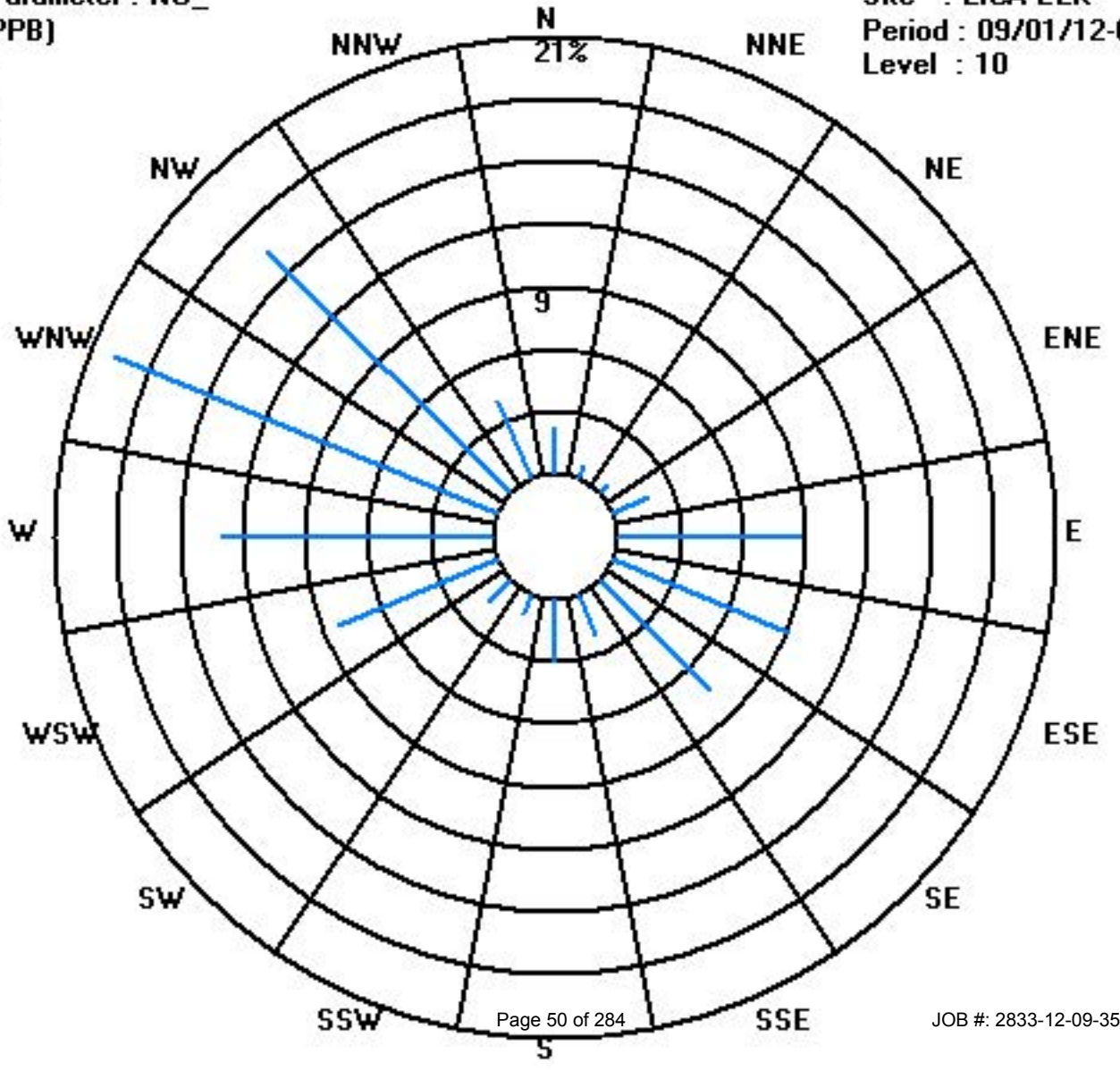
Calm : .00 %

Total # Operational Hours : 594

Logger : 35 Parameter : NO_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA-ELK
Period : 09/01/12-09/30/12
Level : 10



JOB #: 2833-12-09-35-C

Oxides of Nitrogen

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

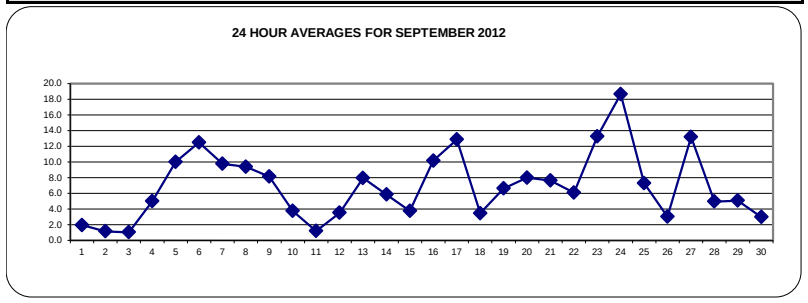
SEPTEMBER 2012

OXIDES OF NITROGEN hourly averages in ppb

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	1	2	1	1	1	2	2	**IZS**	3	2	2	1	1	2	3	2	1	2	4	4	3	2	2	4	2.0	24
2	2	2	3	2	1	1	2	**IZS**	1	1	1	1	0	0	1	1	1	1	1	0	1	1	2	1	3	1.2	24
3	1	1	1	1	1	1	**IZS**	1	1	1	0	0	0	0	0	1	0	1	1	2	1	1	2	6	6	1.0	24
4	2	1	1	1	3	**IZS**	3	2	4	3	**C**	**C**	**M**	**M**	**M**	**M**	**M**	0	4	10	8	16	15	7	16	5.0	19
5	7	6	10	11	**IZS**	19	23	6	5	5	**C**	**C**	**C**	**C**	**C**	**C**	0	0	1	3	5	21	31	17	31	10.0	24
6	15	11	14	**IZS**	19	12	32	29	24	22	17	7	1	0	1	2	1	4	6	11	9	15	23	12	32	12.5	24
7	14	11	**IZS**	12	16	18	27	25	9	4	3	2	**M**	1	1	1	1	1	2	10	10	9	14	24	27	9.8	23
8	37	**IZS**	32	18	22	26	16	11	3	2	2	1	1	1	1	1	2	3	5	6	7	8	7	4	37	9.4	24
9	**IZS**	9	10	11	10	12	24	9	7	9	6	7	5	4	3	3	2	5	9	12	12	7	3	**IZS**	24	8.1	24
10	5	5	4	4	6	10	12	10	8	4	2	2	1	1	1	2	1	1	2	1	2	2	**IZS**	1	12	3.8	24
11	1	1	1	1	1	2	2	1	1	1	1	0	1	1	1	0	2	2	0	1	6	**IZS**	0	1	6	1.2	24
12	1	6	11	0	4	7	6	2	1	1	0	0	0	0	0	0	2	4	0	0	**IZS**	17	10	9	17	3.5	24
13	13	12	14	12	9	13	16	8	5	3	2	1	1	1	1	1	1	2	11	**IZS**	19	16	13	9	19	8.0	24
14	7	6	6	7	9	17	16	8	4	4	4	**M**	**C**	1	1	4	2	4	**IZS**	13	4	2	3	1	17	5.9	23
15	5	2	2	8	7	6	7	2	0	0	0	0	0	0	0	0	0	**IZS**	0	21	19	4	3	1	21	3.8	24
16	1	9	17	15	17	11	22	9	5	1	0	0	0	0	0	0	**IZS**	2	6	17	25	28	22	27	28	10.2	24
17	30	29	46	42	30	22	19	10	9	7	3	3	1	1	1	**IZS**	2	3	11	8	4	3	5	7	46	12.9	24
18	13	12	9	6	5	4	6	7	2	2	1	0	0	0	**IZS**	1	0	1	0	0	0	2	5	4	13	3.5	24
19	6	21	13	7	6	6	18	6	**C**	**C**	**C**	**C**	3	**IZS**	3	2	2	5	5	5	0	6	3	9	21	6.6	24
20	6	4	3	3	7	6	12	10	3	4	0	0	**IZS**	1	1	1	1	7	6	42	27	19	13	8	42	8.0	24
21	13	8	6	15	17	15	21	17	10	4	3	**IZS**	0	0	2	0	1	3	6	8	8	8	5	6	21	7.7	24
22	7	7	8	9	10	13	10	3	3	3	**IZS**	2	1	1	1	1	1	4	12	18	12	5	4	5	18	6.1	24
23	7	10	11	10	13	23	24	11	10	**IZS**	9	11	10	4	4	1	0	1	6	9	9	46	31	45	46	13.3	24
24	49	24	19	16	22	28	48	**56**	**IZS**	31	23	14	6	1	0	0	10	9	14	18	7	12	12	10	**56**	**18.7**	24
25	11	9	12	7	12	14	35	**IZS**	7	7	5	3	3	2	2	2	3	8	13	10	0	1	1	1	35	7.3	24
26	1	1	0	0	1	1	**IZS**	1	1	1	2	0	0	0	0	0	0	0	1	18	10	9	10	13	18	3.0	24
27	13	16	19	24	22	**IZS**	38	34	22	19	12	3	2	2	2	2	2	4	12	11	15	11	9	9	38	13.2	24
28	9	6	8	8	**IZS**	8	9	9	7	4	2	1	1	1	1	1	1	3	5	4	4	9	7	6	9	5.0	24
29	11	13	24	**IZS**	3	2	1	0	0	0	0	0	0	0	0	0	1	6	14	13	10	7	6	6	24	5.1	24
30	2	2	**IZS**	2	2	3	4	4	2	0	0	0	0	0	0	0	1	8	4	7	5	6	7	10	10	3.0	24
HOURLY MAX	49	29	46	42	30	28	48	56	24	31	23	14	10	4	4	4	10	9	14	42	27	46	31	45			
HOURLY AVG	10.0	8.4	10.9	9.0	9.9	10.8	16.3	10.5	5.7	5.2	3.8	2.4	1.5	0.9	1.1	1.1	1.5	3.2	5.5	9.7	8.4	10.1	9.2	9.0			

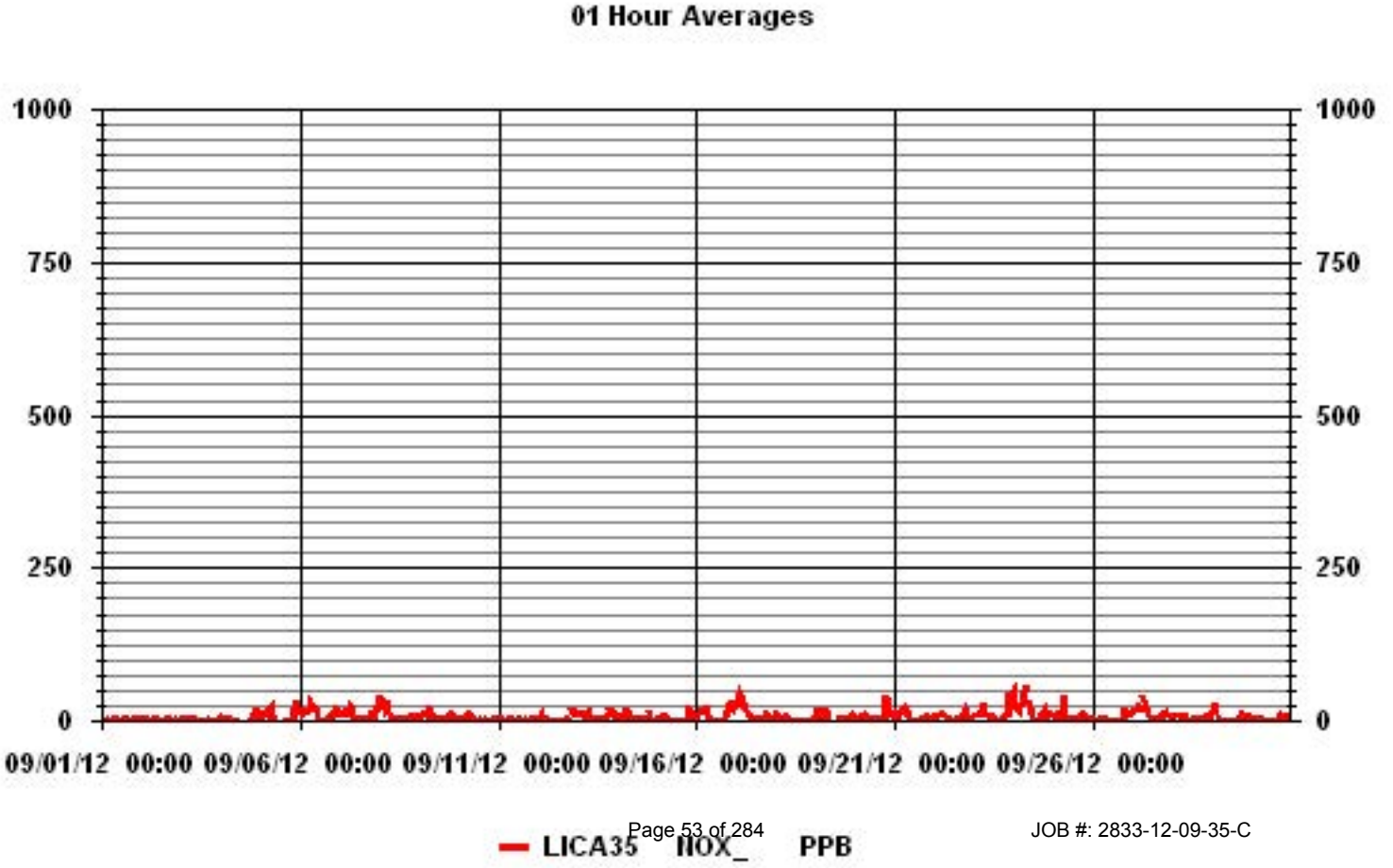
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	585						
MAXIMUM 1-HR AVERAGE:	56	PPB	@ HOUR(S)	7	ON DAY(S)	24	
MAXIMUM 24-HR AVERAGE:	18.7	PPB			ON DAY(S)	24	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		713	HRS	
MONTHLY CALIBRATION TIME:	13	HRS	AMD OPERATION UPTIME:		99.0	%	
STANDARD DEVIATION:	8.43		MONTHLY AVERAGE:		6.94	PPB	



JOB #: 2833-12-09-35-C

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

SEPTEMBER 2012

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

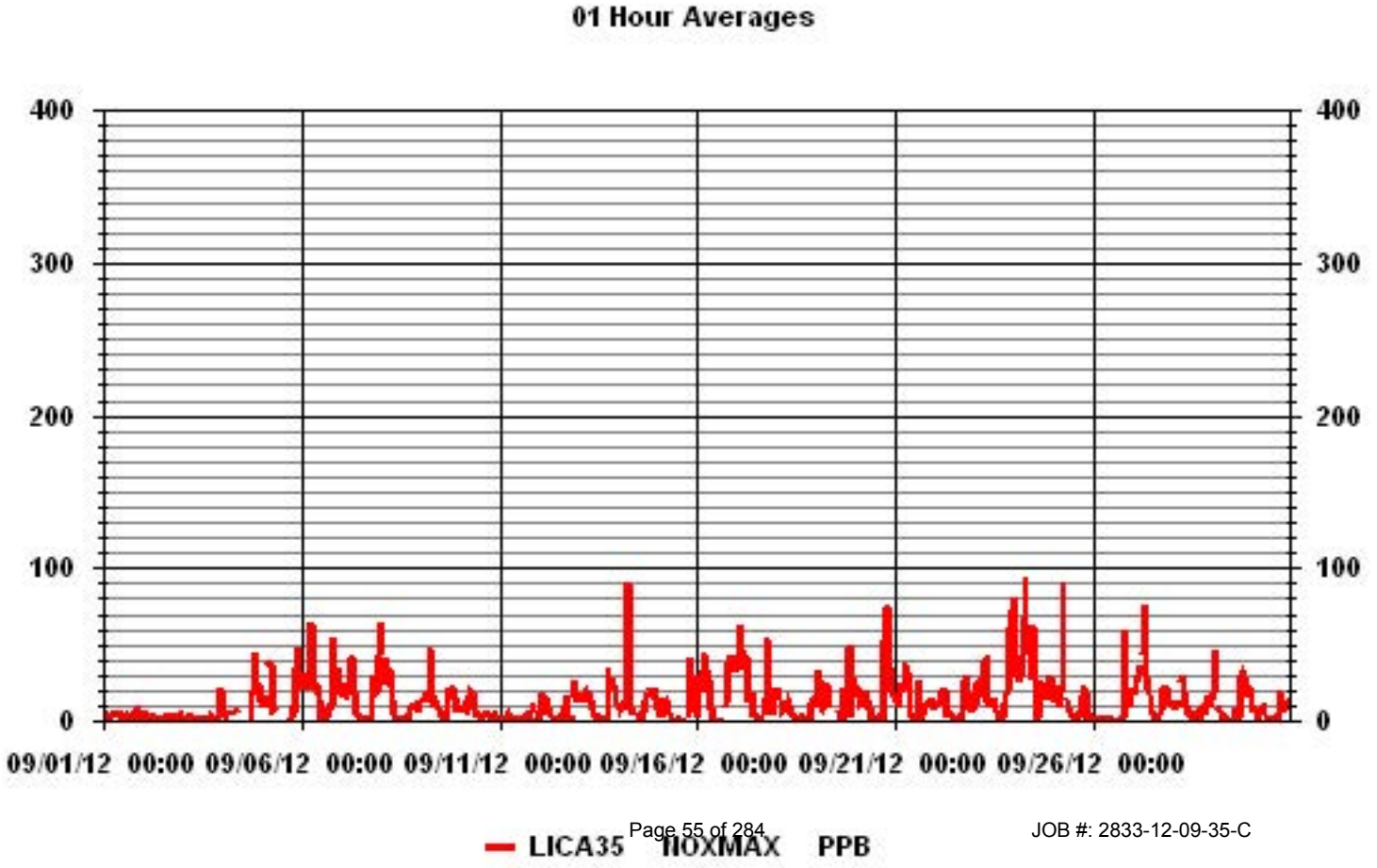
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	3	2	4	2	2	3	4	4	**IZS**	6	3	3	2	3	4	4	3	3	3	5	6	7	3	3	7	3.6	24
2	2	4	4	3	2	3	3	**IZS**	2	2	2	2	2	1	3	3	3	3	3	2	3	4	5	2	5	2.7	24
3	3	2	2	2	3	4	**IZS**	**2**	2	2	1	2	1	2	2	1	2	4	3	3	2	2	5	21	21	3.2	24
4	3	5	2	5	6	**IZS**	5	5	6	7	**C**	**C**	**M**	**M**	**M**	**M**	**M**	1	19	20	44	20	24	12	44	11.5	19
5	14	8	14	15	**IZS**	38	37	8	9	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	0	3	8	8	34	47	24	47	16.8	24
6	20	27	30	**IZS**	29	20	65	35	26	24	19	14	2	2	2	8	3	8	11	55	19	19	35	19	65	21.4	24
7	25	18	**IZS**	15	25	22	41	43	19	5	5	3	**M**	1	1	1	1	1	4	30	26	18	19	43	43	16.6	23
8	62	**IZS**	40	24	26	34	23	15	5	3	3	2	2	2	2	3	3	5	9	10	10	11	11	7	62	13.6	24
9	**IZS**	14	16	16	13	19	48	13	8	13	11	9	7	5	4	3	3	19	19	16	23	16	7	**IZS**	48	13.7	24
10	8	8	8	7	13	16	19	17	17	8	2	5	4	1	3	4	4	4	4	2	4	5	**IZS**	2	19	7.2	24
11	2	2	2	2	2	5	3	2	2	2	2	1	2	2	2	1	3	4	1	6	10	**IZS**	1	2	10	2.7	24
12	7	15	18	3	11	12	9	4	2	2	2	1	1	3	0	2	9	16	0	2	**IZS**	25	17	12	25	7.5	24
13	18	15	16	18	13	16	19	15	9	4	4	2	3	2	1	2	1	3	32	**IZS**	27	24	21	12	32	12.0	24
14	9	7	9	9	13	58	90	19	6	6	**M**	**M**	**C**	3	3	8	6	16	**IZS**	20	15	22	16	12	90	17.4	22
15	14	4	4	14	11	13	9	6	0	0	0	0	1	1	1	0	0	**IZS**	4	42	31	13	12	7	42	8.1	24
16	2	30	23	33	45	19	33	28	9	2	2	0	0	0	0	0	**IZS**	11	13	37	43	39	33	35	45	19.0	24
17	38	42	63	47	36	33	43	12	14	15	5	4	3	2	2	**IZS**	6	15	55	11	6	4	10	13	63	20.8	24
18	22	18	15	7	8	9	8	13	11	4	4	1	1	0	**IZS**	3	2	1	1	1	1	11	15	8	22	7.1	24
19	17	33	28	11	8	10	25	11	**C**	**C**	**C**	**C**	5	**IZS**	6	3	3	21	22	47	2	50	24	25	50	18.5	24
20	20	18	21	12	13	12	20	15	5	6	1	1	**IZS**	1	3	1	1	52	73	75	69	37	20	15	75	21.3	24
21	18	13	8	25	22	24	37	33	27	5	4	**IZS**	1	0	27	1	6	6	10	12	11	12	12	8	37	14.0	24
22	11	10	11	13	19	20	22	4	4	4	**IZS**	3	3	2	1	3	3	14	26	30	19	9	5	8	30	10.6	24
23	10	24	25	15	23	39	40	14	13	**IZS**	11	13	13	7	5	3	1	2	11	18	20	61	44	73	73	21.1	24
24	81	32	30	26	29	43	68	**92**	**IZS**	50	27	63	38	3	1	2	26	15	19	23	16	16	30	14	**92**	32.3	24
25	17	12	18	9	23	19	88	**IZS**	13	9	7	5	3	4	3	4	4	17	23	19	1	2	5	1	88	13.3	24
26	1	1	1	1	1	1	**IZS**	2	2	2	2	1	1	0	1	0	1	1	2	59	16	10	12	22	59	6.1	24
27	19	19	25	30	35	**IZS**	46	76	30	22	18	6	4	4	3	3	4	7	19	19	23	14	13	11	76	19.6	24
28	13	7	11	11	**IZS**	27	30	19	11	6	4	2	2	4	4	3	3	8	9	6	6	15	15	8	30	9.7	24
29	13	18	44	**IZS**	8	7	6	1	0	0	0	1	2	6	5	0	3	29	32	29	16	18	21	21	44	12.2	24
30	7	7	**IZS**	3	3	7	8	9	5	2	1	1	1	1	1	2	5	20	6	12	7	11	11	14	20	6.3	24
HOURLY MAX	81	42	63	47	45	58	90	92	30	50	27	63	38	7	27	8	26	52	73	75	69	61	47	73			
HOURLY AVG	16.5	14.3	17.6	13.5	15.8	19.0	30.3	18.5	9.5	7.8	5.6	5.8	4.2	2.3	3.3	2.5	3.9	10.6	15.0	21.3	16.7	18.2	17.0	15.7			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	-MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	645					
MAXIMUM INSTANTANEOUS VALUE:	92	PPB	@ HOUR(S)	7	ON DAY(S)	24
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		712	HRS
MONTHLY CALIBRATION TIME:	14	HRS				
STANDARD DEVIATION:	14.83					



JOB #: 2833-12-09-35-C

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

September 2012

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	2.18	.67	.50	1.85	8.75	9.09	7.57	2.18	3.03	1.01	1.51	8.24	12.79	19.86	16.49	4.04	99.83
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.16	.00	.00	.00	.16
<	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.18	.67	.50	1.85	8.75	9.09	7.57	2.18	3.03	1.01	1.51	8.24	12.96	19.86	16.49	4.04	

Calm : .00 %

Total # Operational Hours : 594

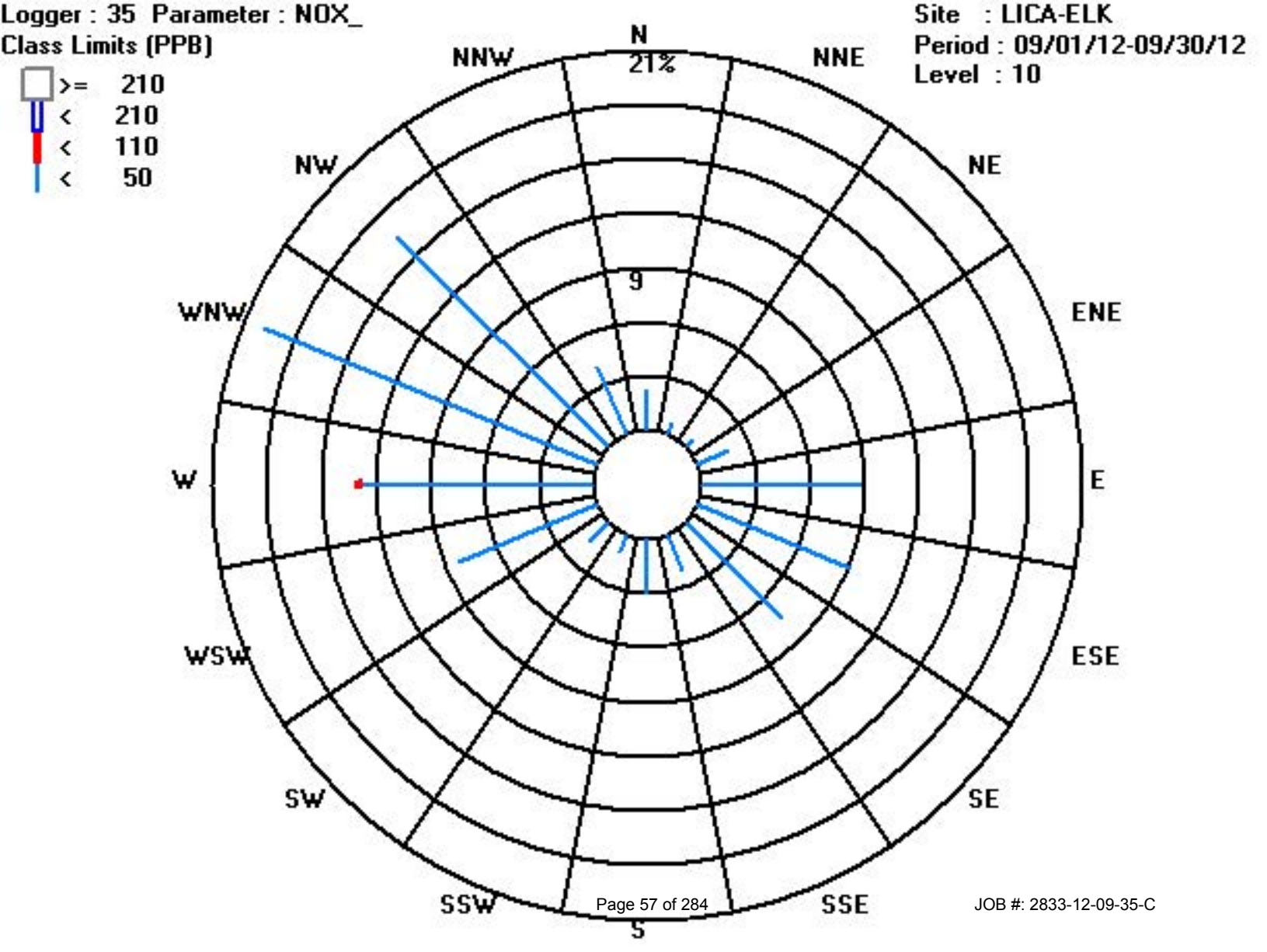
Distribution By Samples

Direction

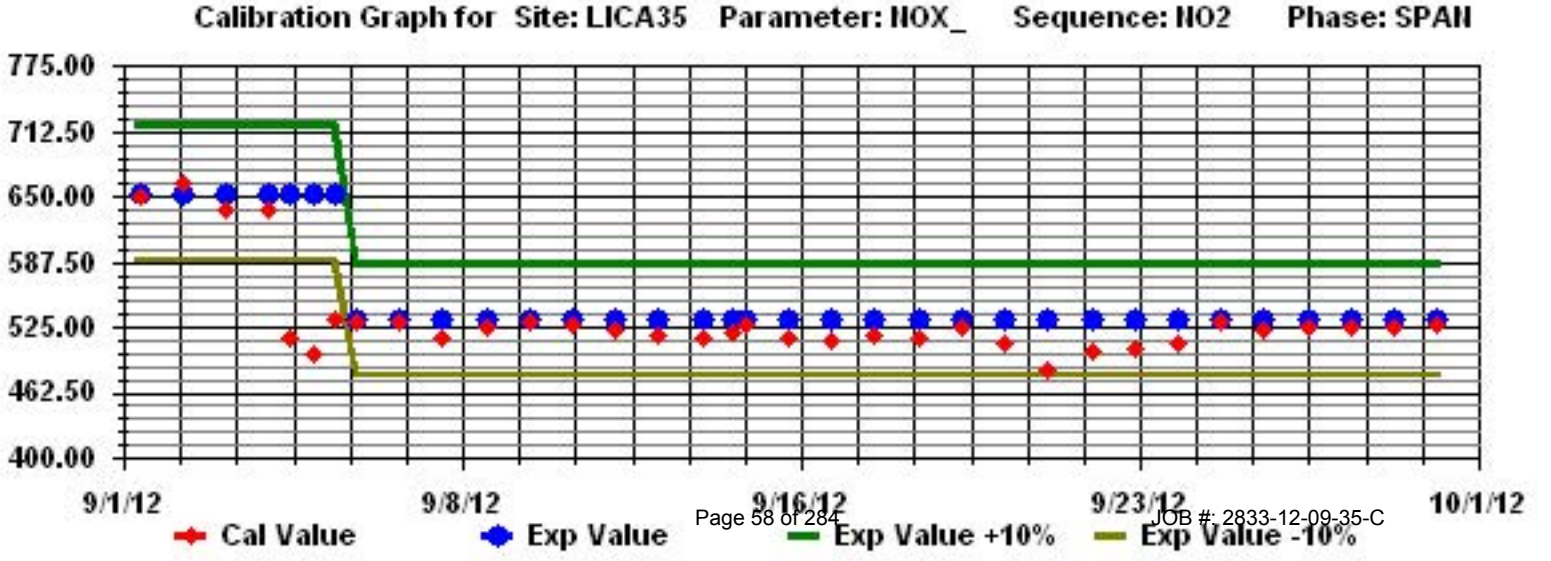
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	13	4	3	11	52	54	45	13	18	6	9	49	76	118	98	24	593
<	110													1				1
<	210																	
>=	210																	
	Totals	13	4	3	11	52	54	45	13	18	6	9	49	77	118	98	24	

Calm : .00 %

Total # Operational Hours : 594



JOB #: 2833-12-09-35-C


Calibration Graph for Site: LICA35 Parameter: NOX_ Sequence: NO2 Phase: SPAN
775.00
712.50
650.00
587.50
525.00
462.50
400.00
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

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

SEPTEMBER 2012

OZONE (O_3) hourly averages in ppb

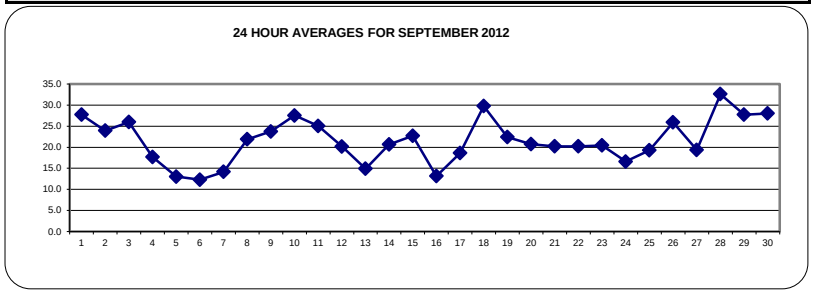
MST

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	28	27	24	24	24	22	21	20	**IZS**	20	24	28	41	48	45	29	25	27	23	22	24	27	32	32	48	27.7	24
2	31	26	24	25	24	24	17	**IZS**	24	23	23	26	25	21	21	24	28	27	27	31	27	19	18	15	31	23.9	24
3	15	17	21	22	21	21	**IZS**	21	24	28	30	31	31	32	32	31	32	31	30	28	27	27	26	19	32	26.0	24
4	22	25	24	22	18	**IZS**	16	16	15	15	14	16	19	23	25	26	24	24	20	12	11	4	5	10	26	17.7	24
5	9	9	4	4	**IZS**	1	3	8	9	13	14	17	24	29	27	26	27	24	20	16	12	3	0	1	29	13.0	24
6	0	1	1	**IZS**	0	0	1	2	4	4	6	19	30	29	31	31	33	31	24	16	11	5	2	2	33	12.3	24
7	1	1	**IZS**	0	0	0	1	4	13	**C**	**C**	**C**	**C**	29	30	36	37	36	31	22	14	10	3	1	37	14.2	24
8	0	**IZS**	0	0	0	0	2	11	25	29	33	36	38	39	39	40	39	35	28	24	22	21	20	22	40	21.9	24
9	**IZS**	13	11	10	8	9	5	13	15	15	22	22	29	34	42	47	49	40	32	24	17	30	35	**IZS**	49	23.7	24
10	24	23	28	25	22	18	15	18	26	34	40	38	36	33	38	33	29	27	24	26	24	24	**IZS**	28	40	27.5	24
11	27	25	26	27	26	25	23	23	23	22	22	24	26	25	25	26	26	26	28	28	23	**IZS**	26	24	28	25.0	24
12	22	17	14	20	16	14	14	17	20	22	24	26	27	28	28	29	26	26	30	25	**IZS**	6	8	5	30	20.2	24
13	4	4	1	2	3	1	4	13	18	20	25	27	29	30	30	31	32	30	16	**IZS**	8	6	4	5	32	14.9	24
14	9	10	10	9	9	5	7	11	15	19	22	**M**	**C**	35	38	36	34	27	**IZS**	15	25	32	32	33	38	20.6	23
15	28	29	29	23	23	22	20	24	25	25	25	27	28	28	28	30	30	**IZS**	25	6	5	13	14	15	30	22.7	24
16	14	8	2	5	3	5	2	8	10	18	22	25	27	29	31	31	**IZS**	27	21	9	3	1	1	0	31	13.1	24
17	0	1	0	0	0	0	1	5	7	16	27	31	36	39	42	**IZS**	36	32	25	25	28	28	26	23	42	18.6	24
18	16	15	18	24	24	25	26	25	32	34	36	38	40	41	**IZS**	41	40	36	34	33	31	27	25	24	41	29.8	24
19	18	8	13	14	14	12	6	13	14	16	**C**	**C**	30	**IZS**	38	42	41	35	31	28	30	24	24	19	42	22.4	24
20	21	20	21	21	15	15	11	14	18	20	29	33	**IZS**	35	35	36	35	28	27	5	4	7	11	16	36	20.7	24
21	11	15	17	8	6	6	6	9	18	24	29	**IZS**	35	35	34	34	34	33	27	20	17	16	17	14	35	20.2	24
22	12	10	9	7	7	6	9	13	15	19	**IZS**	29	35	37	38	38	37	31	21	13	16	21	22	20	38	20.2	24
23	16	12	12	11	9	4	4	11	13	**IZS**	21	23	30	42	44	47	44	39	33	27	21	2	3	2	47	20.4	24
24	1	2	2	2	1	1	1	2	**IZS**	7	15	30	40	43	43	43	33	30	20	15	17	11	12	11	43	16.6	24
25	8	7	6	9	4	3	1	**IZS**	11	13	16	24	32	38	39	38	37	29	23	24	26	21	18	16	39	19.3	24
26	14	14	14	15	19	20	**IZS**	24	25	27	31	35	38	40	40	40	41	39	36	22	21	19	13	8	41	25.9	24
27	5	2	1	1	1	**IZS**	1	3	8	9	19	36	40	41	41	42	41	38	27	23	16	18	17	15	42	19.3	24
28	16	17	14	15	**IZS**	15	16	15	22	27	40	45	49	50	51	**53**	52	47	42	42	38	29	28	26	**53**	**32.6**	24
29	21	16	9	**IZS**	26	28	27	27	29	31	31	31	32	35	37	40	39	33	22	24	24	26	25	24	40	27.7	24
30	26	25	**IZS**	24	24	22	21	22	24	28	31	33	35	36	37	37	35	28	32	28	29	27	24	16	37	28.0	24
HOURLY MAX	31	29	29	27	26	28	27	27	32	34	40	45	49	50	51	53	52	47	42	42	38	32	35	33			
HOURLY AVG	14.4	13.8	12.7	13.2	12.4	11.6	10.0	14.0	17.9	20.6	24.9	28.8	32.7	34.6	35.5	35.8	35.0	31.6	26.9	21.8	19.7	17.4	16.9	15.4			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

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

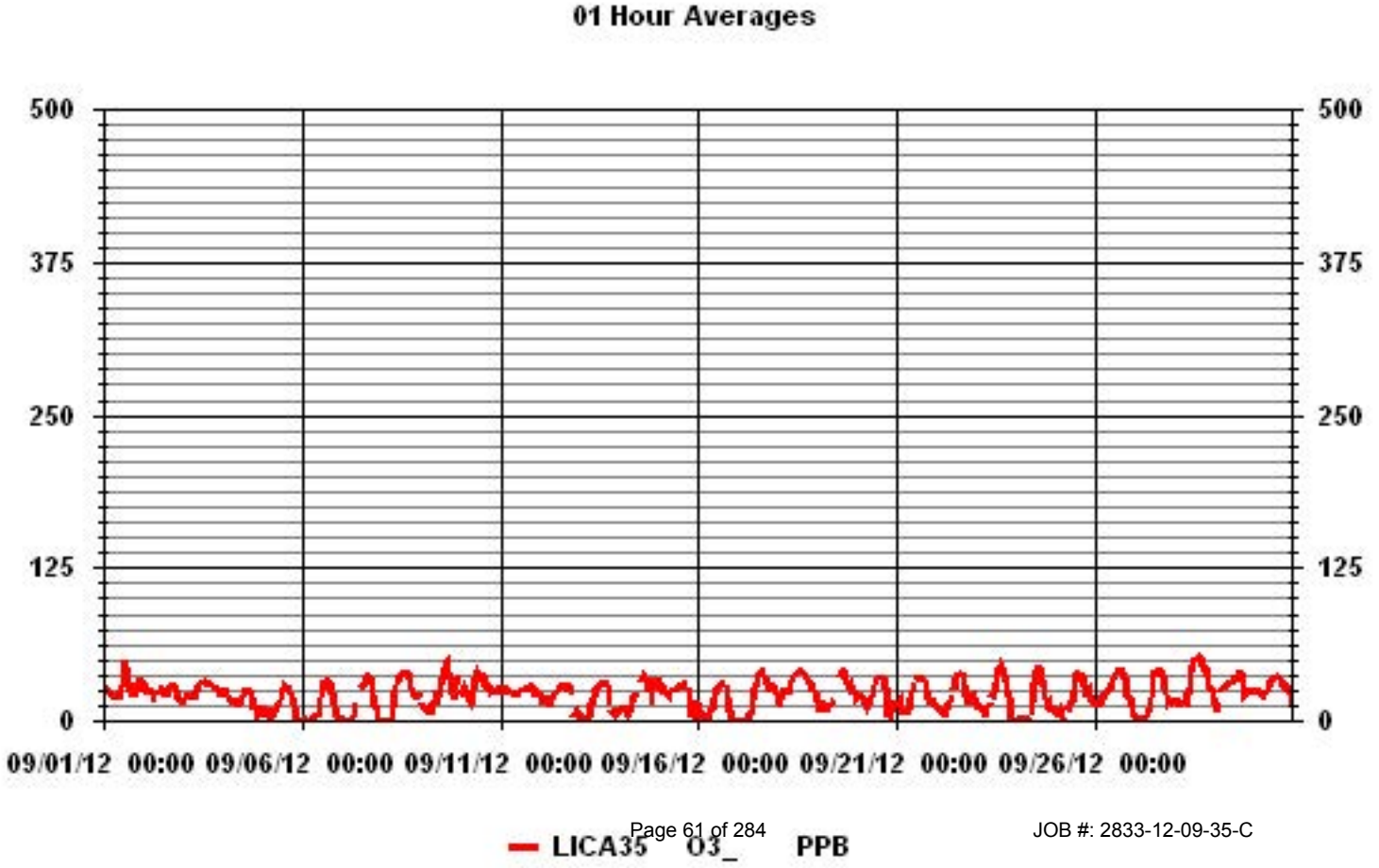


MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	663					
MAXIMUM 1-HR AVERAGE:	53	PPB	@ HOUR(S)	15	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	32.6	PPB			ON DAY(S)	28
					VAR-VARIOUS	

IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.9	%
STANDARD DEVIATION:	11.84		MONTHLY AVERAGE:	21.58	PPB

JOB #: 2833-12-09-35-C



JOB #: 2833-12-09-35-C

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

SEPTEMBER 2012

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	29	28	27	24	24	23	22	22	**IZS**	23	27	33	50	50	49	42	30	30	25	24	27	30	34	33	50	30.7	24
2	33	29	27	27	26	25	20	**IZS**	26	24	24	28	28	22	24	28	31	30	31	33	35	21	21	17	35	26.5	24
3	17	20	22	22	23	21	**IZS**	22	27	29	31	32	32	33	33	32	34	33	32	29	28	28	30	25	34	27.6	24
4	24	27	26	24	20	**IZS**	18	17	17	17	16	17	22	25	26	27	26	25	25	19	16	9	9	11	27	20.1	24
5	12	15	13	8	**IZS**	5	9	10	10	14	17	20	27	32	32	28	29	26	23	20	17	9	1	2	32	16.5	24
6	2	2	3	**IZS**	1	1	1	3	5	5	9	29	31	31	32	33	35	35	30	23	20	10	9	5	35	15.4	24
7	2	1	**IZS**	1	1	1	3	7	**C**	**C**	**C**	**C**	**C**	30	34	37	37	38	36	31	20	15	11	2	38	17.1	24
8	1	**IZS**	1	1	1	1	5	23	29	31	37	38	39	40	40	41	40	39	31	27	24	24	24	25	41	24.4	24
9	**IZS**	18	15	14	12	13	12	18	18	18	25	26	32	38	46	50	51	45	39	30	26	40	39	**IZS**	51	28.4	24
10	30	32	32	31	27	23	22	27	31	39	42	41	43	40	40	38	32	30	26	28	26	26	**IZS**	29	43	32.0	24
11	29	27	28	28	29	29	25	24	24	23	23	26	39	26	41	27	28	28	29	29	27	**IZS**	27	25	41	27.9	24
12	24	22	21	21	18	18	18	19	21	23	26	28	28	29	30	30	30	31	31	28	**IZS**	13	12	8	31	23.0	24
13	9	7	4	8	9	3	12	17	19	22	26	28	30	31	31	32	33	33	30	**IZS**	13	10	7	7	33	18.3	24
14	12	12	12	11	12	10	11	13	18	21	**M**	**M**	**C**	38	40	39	39	32	**IZS**	22	34	36	36	36	40	24.2	22
15	35	31	31	28	27	27	23	27	26	25	27	28	29	29	29	31	31	**IZS**	28	19	18	19	18	18	35	26.3	24
16	16	13	6	9	8	9	4	10	15	21	25	27	28	31	32	32	**IZS**	31	24	22	9	6	2	1	32	16.6	24
17	1	2	1	1	1	1	3	7	8	25	30	33	38	42	43	**IZS**	39	37	33	29	31	30	30	28	43	21.4	24
18	24	20	25	26	26	28	28	28	33	38	38	40	41	42	**IZS**	42	42	38	35	34	32	31	28	27	42	32.4	24
19	27	19	20	17	17	15	12	16	16	21	**C**	**C**	31	**IZS**	42	45	45	40	35	32	31	29	28	28	45	27.0	24
20	25	25	24	23	21	19	15	19	19	26	33	34	**IZS**	37	36	37	36	35	30	13	15	14	18	21	37	25.0	24
21	17	20	20	15	9	15	13	13	22	28	32	**IZS**	36	36	36	35	37	37	35	25	21	21	20	19	37	24.4	24
22	14	13	14	10	12	8	13	15	18	21	**IZS**	33	37	39	39	39	38	36	29	20	23	23	24	24	39	23.6	24
23	20	17	16	15	13	8	9	12	17	**IZS**	24	26	39	45	46	49	47	43	39	32	30	8	11	8	49	25.0	24
24	4	4	3	5	5	1	1	2	**IZS**	10	22	**63**	53	44	45	45	45	37	35	23	22	13	18	19	**63**	22.6	24
25	11	11	10	10	9	7	2	**IZS**	13	15	18	31	37	40	41	39	39	35	31	32	31	23	21	17	41	22.7	24
26	15	14	15	17	20	20	**IZS**	25	25	30	33	38	41	41	41	42	42	41	39	35	28	25	17	14	42	28.6	24
27	9	5	4	1	1	**IZS**	2	4	10	11	29	39	41	42	42	43	42	41	36	30	20	20	20	18	43	22.2	24
28	20	20	17	20	**IZS**	21	19	19	26	34	43	48	41	52	53	54	54	51	46	43	40	34	32	32	54	35.6	24
29	25	21	18	**IZS**	30	30	28	28	30	32	32	33	35	37	39	42	41	40	36	30	30	33	30	27	42	31.6	24
30	28	26	**IZS**	25	26	24	22	24	28	30	33	35	36	37	38	38	38	35	35	32	32	30	30	25	38	30.7	24
HOURLY MAX	35	32	32	31	30	30	28	28	33	39	43	63	53	52	53	54	54	51	46	43	40	40	39	36			
HOURLY AVG	17.8	17.3	16.3	15.8	15.3	14.5	13.3	16.8	20.4	23.4	27.8	32.8	35.7	36.5	37.9	37.8	37.6	35.6	32.2	27.4	25.0	21.7	20.9	19.0			

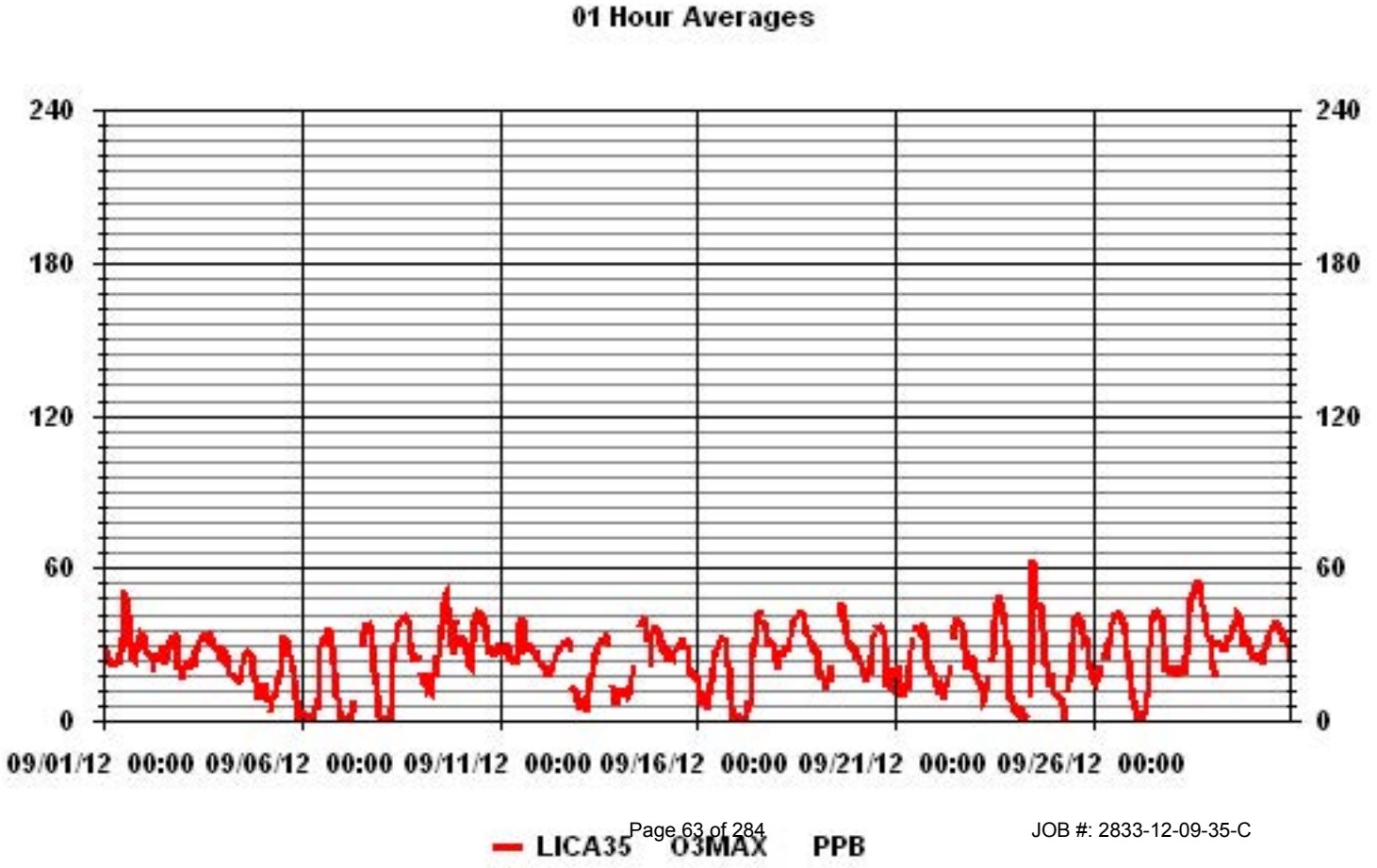
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	-MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	679					
MAXIMUM INSTANTANEOUS VALUE:	63	PPB	@ HOUR(S)	11	ON DAY(S)	24
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		718	HRS
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	11.80					

JOB #: 2833-12-09-35-C



JOB #: 2833-12-09-35-C

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

September 2012

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	2.14	.66	.49	1.81	8.58	8.91	7.42	1.98	2.47	.99	1.48	8.25	12.37	19.30	17.49	4.95	99.33
<	110	.00	.00	.00	.00	.00	.00	.00	.16	.49	.00	.00	.00	.00	.00	.00	.00	.66
<	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.14	.66	.49	1.81	8.58	8.91	7.42	2.14	2.97	.99	1.48	8.25	12.37	19.30	17.49	4.95	

Calm : .00 %

Total # Operational Hours : 606

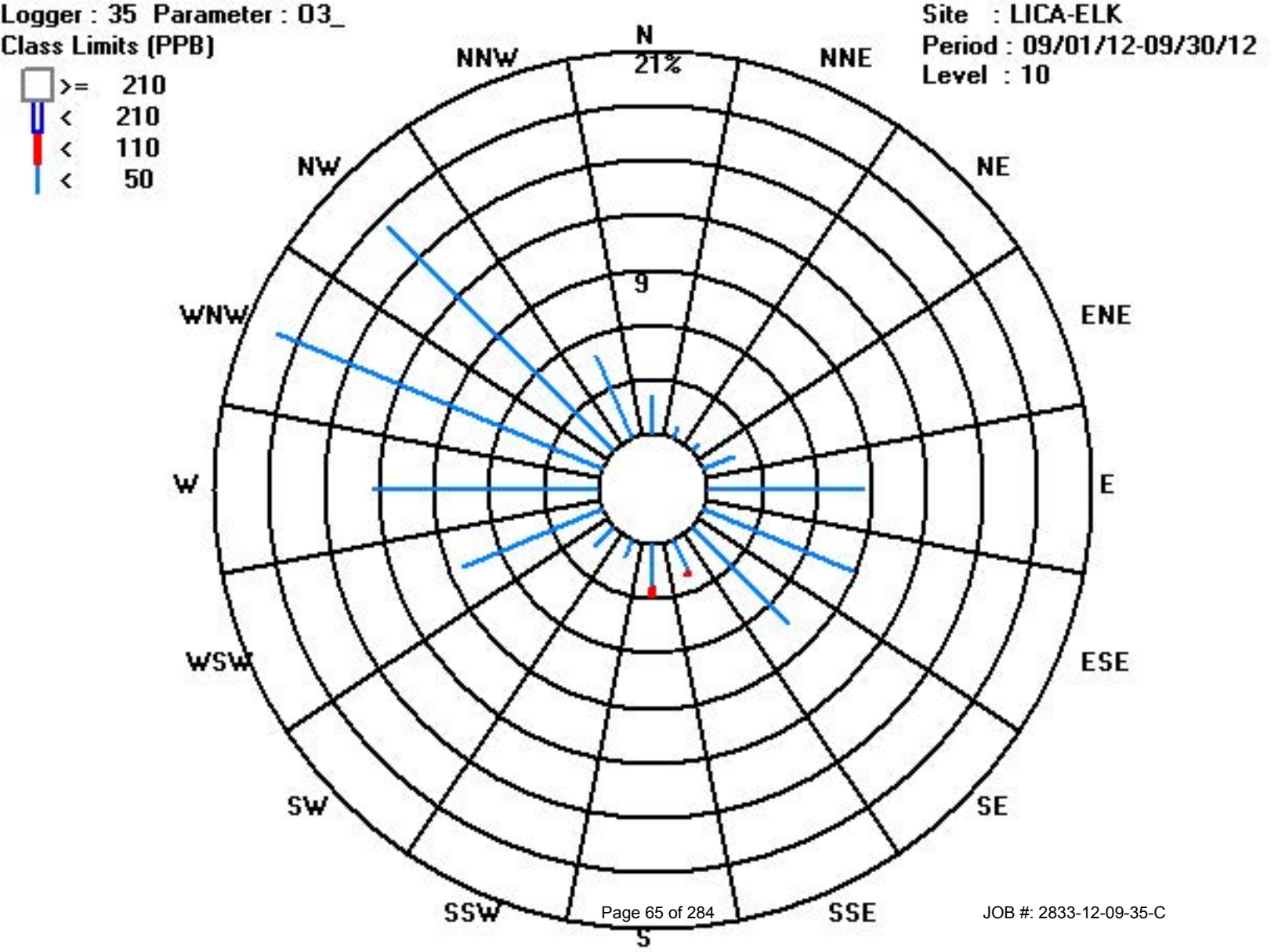
Distribution By Samples

Direction

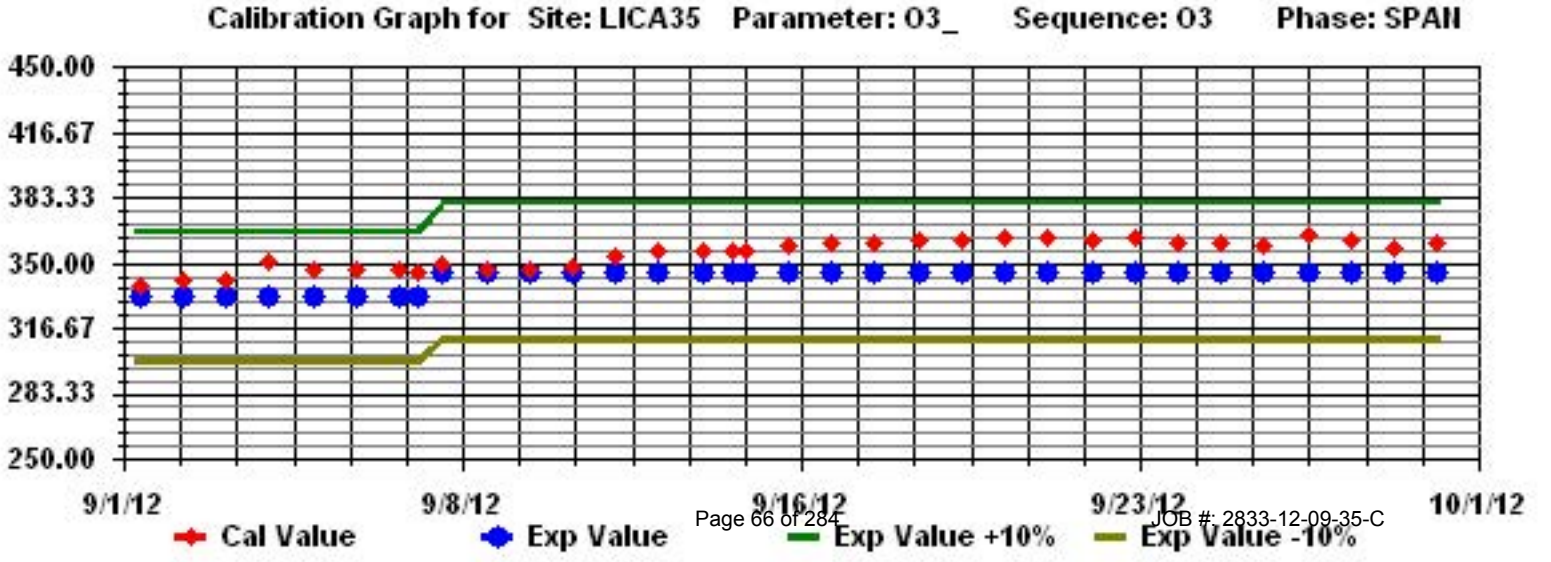
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	13	4	3	11	52	54	45	12	15	6	9	50	75	117	106	30	602
<	110								1	3								4
<	210																	
>=	210																	
	Totals	13	4	3	11	52	54	45	13	18	6	9	50	75	117	106	30	

Calm : .00 %

Total # Operational Hours : 606



JOB #: 2833-12-09-35-C


Calibration Graph for Site: LICA35 Parameter: O3_ Sequence: O3 Phase: SPAN
450.00
416.67
383.33
350.00
316.67
283.33
250.00
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

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

SEPTEMBER 2012

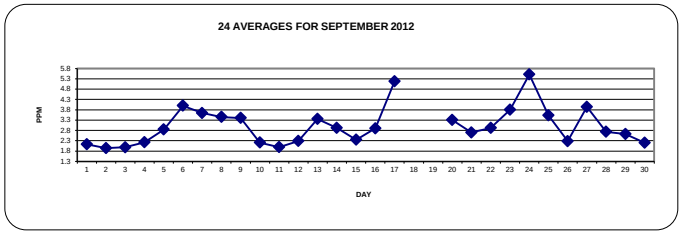
TOTAL HYDROCARBONS (THC) hourly averages in ppm

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	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	**IZS**	2.4	2.4	2.3	2.1	1.9	2.1	2.1	2	1.9	2	2.1	2.1	2.1	2	2	2.4	2.1	24
2	1.9	2	2.1	1.9	1.8	1.9	1.9	**IZS**	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	2	1.9	1.9	2	2	2.1	2.1	2.1	1.9	24
3	2	2.1	2	2	2.1	2	**IZS**	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	1.9	2	2.5	2.5	2.0	24
4	2.1	1.9	1.9	2	2	**IZS**	2	2	2	2	**C**	**C**	**C**	**C**	**C**	1.9	1.8	1.8	1.9	2.3	2.5	3.5	3.6	2.9	3.6	2.2	24
5	3.1	3	3.8	3.7	**IZS**	4	4.6	2.5	2.2	2.1	2	2.1	2	2	2	2	1.9	1.9	2	2.5	2.2	4.1	5.1	4.7	5.1	2.8	24
6	4.7	5	4.9	**IZS**	5.7	5.3	6.7	5.9	6.2	6.2	5.1	3.2	1.9	1.9	1.9	2	1.9	2.1	2.4	4	3.1	3.9	3.8	4	6.7	4.0	24
7	4.9	6.1	**IZS**	6.1	6.5	6.5	6.1	5.2	2.9	2	2	1.9	**M**	1.9	1.9	1.9	1.9	1.9	2.3	2.8	3.4	3.1	3.4	5.4	6.5	3.6	23
8	7.1	**IZS**	7	5.8	5.6	6.1	5.3	3.8	2.4	2.2	2.1	2.1	2	2	2	1.9	2	2.2	2.5	2.9	3.2	3.2	3.2	2.7	7.1	3.4	24
9	**IZS**	3.9	4	4.2	4.4	4.1	4.7	3.5	3.4	3.3	3	3.3	2.9	3	2.9	2.7	2.6	3	3	3.8	4	3	2.2	**IZS**	4.7	3.4	24
10	2.6	3.1	2.3	2.4	2.3	2.3	2.5	2.9	2.9	2.3	2.1	1.9	1.9	1.8	1.9	1.9	1.9	2	2	2	2	2	**IZS**	1.9	3.1	2.2	24
11	1.9	1.9	1.9	1.9	2	2	2	1.9	1.9	2	2	2	2	2	1.8	2	2.1	2.1	2.1	2.1	2.2	**IZS**	1.9	2	2.2	2.0	24
12	2	2.1	2.2	2.1	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2	2	2	2.1	2.2	2.2	2	2	**IZS**	3.8	3	3.6	3.8	2.3	24
13	4.2	4.2	5.3	5	4.7	5.3	4.3	2.8	2.3	2.1	2	2	2	2	1.9	2	1.9	2	3.4	**IZS**	5	4.1	4.1	4.5	5.3	3.4	24
14	3.6	3.2	3.7	4.2	4.5	4.9	4.8	3.7	3	2.5	2.4	**M**	**C**	1.8	1.8	2	1.9	2	**IZS**	2.8	2.3	2	2	2.1	4.9	2.9	23
15	2.4	2.3	2.3	2.6	2.6	2.5	2.6	2.3	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	**IZS**	2.1	3.1	3.3	2.7	2.2	2.2	3.3	2.3	24
16	2.4	3	3.2	3.9	3.9	3.3	3.4	2.7	3	2.3	2.1	2.1	2.1	2.1	2.1	2.1	**IZS**	2	2.4	2.8	3.6	3.5	4	4.7	4.7	2.9	24
17	5.8	5.4	5.5	6.3	6.1	6.5	5.4	4.1	3.8	2.9	**C**	**C**	**C**	**C**	**C**	**C**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	6.5	5.2	16
18	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
19	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**C**	**C**	**C**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			3
20	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**M**	**M**	**C**	**C**	**M**	**C**	**C**	**C**	3.1	3.7	3.6	2.8	3.7	3.3	9
21	3	2.9	2.6	2.9	3.2	3.2	**C**	**C**	2.9	2.6	2.3	**IZS**	2	2	2	2	2.1	2.2	2.4	2.9	4.3	3.1	2.7	3.4	4.3	2.7	24
22	3.5	3.5	3.5	3.5	3.5	3.3	3.1	2.9	2.8	2.7	**IZS**	2.3	2.2	2.2	2.2	2.2	2.3	2.4	3.1	3.6	3	3	2.8	3.4	3.6	2.9	24
23	3.4	3.6	4.2	4.6	4.5	4.5	4.9	4.3	4.2	**IZS**	3.4	3.7	3.4	2.7	2.7	2.3	2	2.1	2.2	2.7	3.7	5.9	4.7	7.7	7.7	3.8	24
24	**10**	7.8	6.9	5.7	7.1	7.6	8.8	8	**IZS**	7	6	4.8	3.2	2.2	2.2	2.2	2.6	3.2	5	4.8	6.7	5.8	4.6	4.6	**10.0**	**5.5**	24
25	5.5	4.7	4.8	4.3	5.5	5.7	5.4	**IZS**	3.3	3.4	3.3	3	2.8	2.6	2.5	2.5	2.5	3.1	4.1	3.4	2.2	2.1	2.1	2.2	5.7	3.5	24
26	2.2	2.2	2.2	2.1	2.1	2.2	**IZS**	2	2	2.1	2.1	2.1	2	2	2.1	2	2.1	2.1	2.1	2.2	2.5	3.1	3.1	3.8	3.8	2.3	24
27	3.7	4.4	5.6	6.4	7.1	**IZS**	7.1	6.9	6.2	6.1	4.4	2.3	2.1	2.1	2	2	2	2	2.5	3.3	3	3.2	2.9	3.3	7.1	3.9	24
28	3.5	2.9	3.1	3.1	**IZS**	3.3	3.4	3.3	3.1	2.8	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.4	2.6	3.6	3.2	3.2	3.6	2.7	24
29	4.9	5.1	5.5	**IZS**	2.9	2.3	2.1	2	2	1.9	1.9	2	1.9	2	2	2	2	2.2	2.6	2.7	2.8	2.5	2.5	2.5	5.5	2.6	24
30	2.2	2.2	**IZS**	2.1	2.1	2.1	2.2	2.1	2.1	2	2	2	2	2	2	2	2.1	2.5	2.3	2.6	2.5	2.3	2.4	2.9	2.9	2.2	24
HOURLY MAX	10.0	7.8	7.0	6.4	7.1	7.6	8.8	8.0	6.2	7.0	6.0	4.8	3.4	3.0	2.9	2.7	2.6	3.2	5.0	4.8	6.7	5.9	5.1	7.7			
HOURLY AVG	3.6	3.5	3.7	3.6	3.9	3.8	4.1	3.4	2.9	2.8	2.6	2.4	2.2	2.1	2.1	2.1	2.1	2.2	2.5	2.8	3.1	3.2	3.0	3.4			

STATUS FLAG CODES

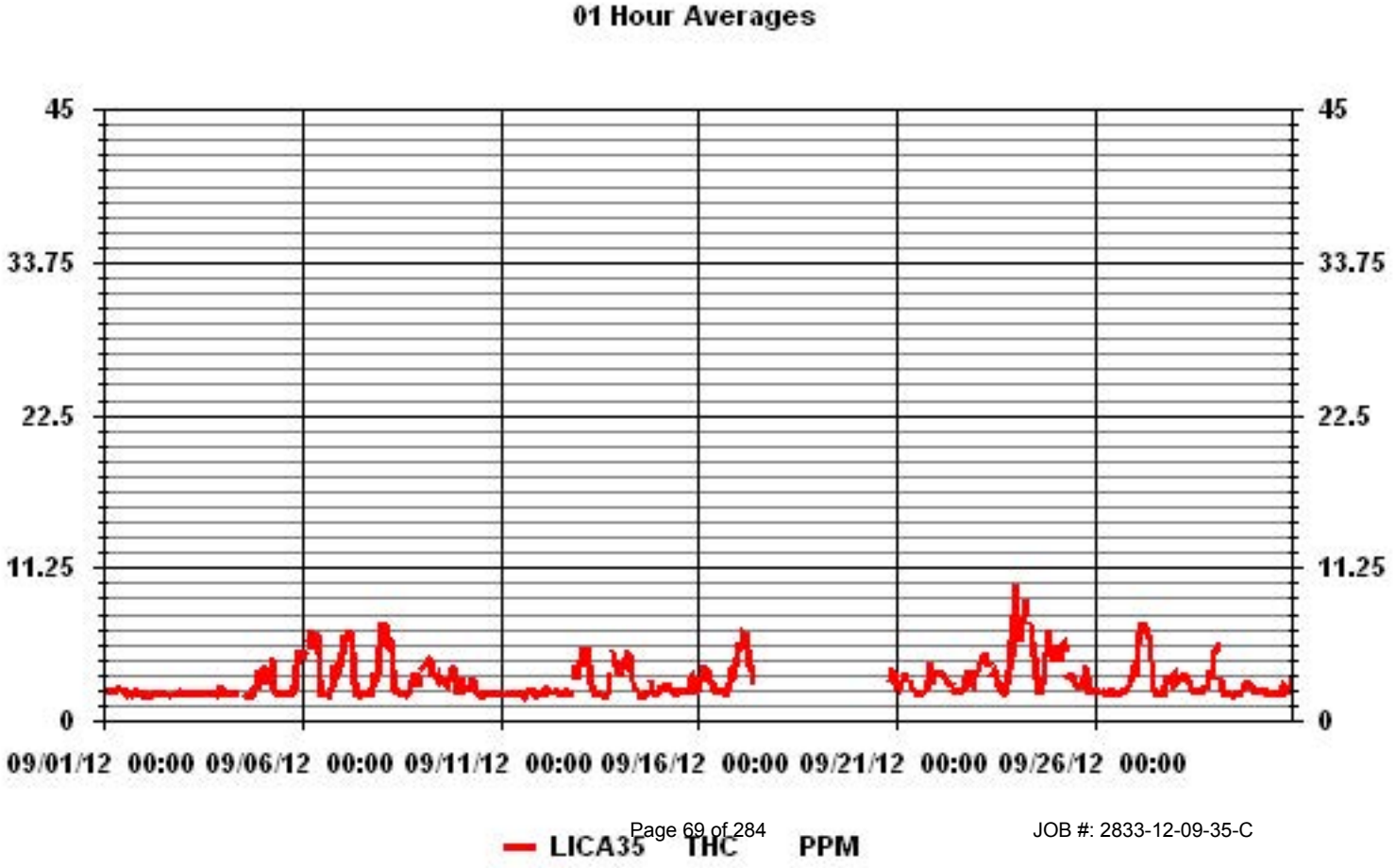
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	601					
MAXIMUM 1-HR AVERAGE:	10.0	PPM	@ HOUR(S)	0	ON DAY(S)	24
MAXIMUM 24-HR AVERAGE:	5.5	PPM			ON DAY(S)	24
IZS CALIBRATION TIME:	27	HRS	OPERATIONAL TIME:		650	HRS
MONTHLY CALIBRATION TIME:	22	HRS	AMD OPERATION UPTIME:		90.3	%
STANDARD DEVIATION:	1.34		MONTHLY AVERAGE:		2.96	PPM

JOB #: 2833-12-09-35-C



JOB #: 2833-12-09-35-C

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

SEPTEMBER 2012

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

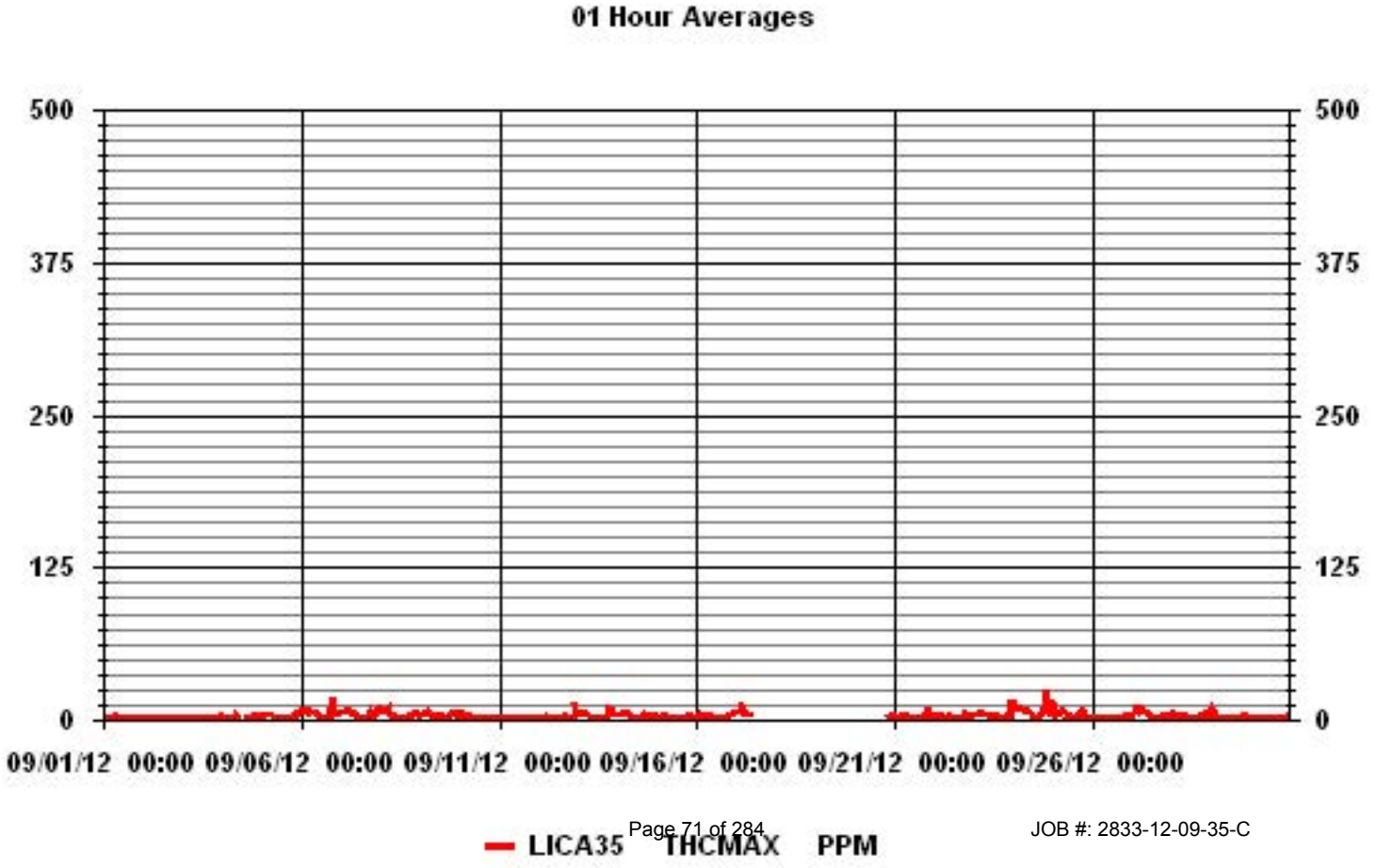
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2.7	2.4	2.4	2.5	2.5	2.4	2.7	2.7	**IZS**	2.6	2.5	2.5	2.5	2.2	2.3	2.5	2.1	2	2.1	2.2	2.2	2.8	2.2	2.1	2.8	2.4	24
2	2	2.2	2.2	2.2	2	2	1.9	**IZS**	2	2	2	2	2	2	2.1	2.1	2.1	2.3	2.1	2.1	2.3	2.2	2.2	2.3	2.3	2.1	24
3	2.2	2.3	2.3	2.2	2.1	2.1	**IZS**	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.2	2	2.3	4	4	2.2	24
4	2.4	2.2	2.1	2.2	2.2	**IZS**	2.5	2.1	4.5	2.2	**C**	**C**	**C**	**C**	**C**	2	1.9	1.9	2.2	2.8	3.1	4.1	4.8	3.1	4.8	2.7	24
5	3.9	3.9	4.7	5	**IZS**	5.2	5.8	3.4	2.6	2.4	2.3	3.5	2.1	2.1	2.2	2.3	2	1.9	2.9	4.2	2.5	6.3	5.8	6	6.3	3.6	24
6	7.7	7.3	6.9	**IZS**	9.7	6.6	7.4	6.6	6.6	6.5	5.7	4.5	2.5	2.5	2	2.7	2.1	2.4	9.9	18	5.3	4.7	4.5	5.7	18	6.0	24
7	6.2	7.3	**IZS**	8	7.6	9	7.4	5.9	5.3	2.1	2.1	2	**M**	2	2	2	2	2.1	7.8	5.6	6.5	4.3	5.2	9.1	9.1	5.1	23
8	10.2	**IZS**	8.6	6.7	6.7	9.2	5.8	4.5	2.8	2.7	2.6	2.3	2.2	2.1	2	2.2	2.1	2.9	3.6	3.6	4.7	6.6	6.1	3.6	10.2	4.5	24
9	**IZS**	4.6	4.7	4.7	5.5	7.7	6.3	4.3	3.8	3.5	3.3	3.5	3.2	3.1	3.1	3	3.1	4.5	3.5	5.2	5.6	6.4	2.8	**IZS**	7.7	4.3	24
10	5.1	8.7	2.9	3.1	2.9	2.4	2.9	3.6	4	2.7	2.2	2.1	2.3	2	2.1	2.1	2.1	2.2	2.4	2	2.2	2.1	**IZS**	2	8.7	2.9	24
11	2.1	2	2	2	2	2.1	2.1	2	2	2.1	2	2.1	2.2	2.1	2.1	2.2	2.2	2.3	2.1	2.3	2.4	**IZS**	2	2.1	2.4	2.1	24
12	2.2	2.3	2.4	2.3	2.7	2.9	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.8	3	2.1	2.1	**IZS**	13.2	4.1	6.2	13.2	3.0	24
13	5.7	5.3	5.8	5.6	5.4	5.6	5.2	4.8	2.7	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	10.1	**IZS**	8.9	5.6	4.4	5	10.1	4.3	24
14	4.4	4.9	5.7	6	5.9	6.8	6	4.4	3.8	2.7	**M**	**M**	**C**	1.9	1.9	4.8	2.1	2.5	**IZS**	3.3	3.4	2.8	2.7	2.7	6.8	3.9	22
15	2.7	2.5	2.5	2.9	3.1	3	2.8	2.6	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	**IZS**	2.8	3.7	4.2	3.3	2.6	2.5	4.2	2.6	24
16	2.7	5.3	3.7	4.6	5.5	3.9	4	3.1	4.3	2.5	2.5	2.2	2.1	2.1	2.2	2.2	**IZS**	2.3	2.6	3.5	4.3	4.1	5.2	6.1	6.1	3.5	24
17	7.4	6.5	7	14.2	6.8	7.4	6.7	4.7	4.3	4.3	**C**	**C**	**C**	**C**	**C**	**C**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	14.2	6.9	16
18	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
19	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**C**	**C**	**C**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			3
20	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**M**	**M**	**C**	**C**	**M**	**C**	**C**	**C**	3.5	4.4	4.4	3	4.4	3.8	9
21	3.4	3.9	2.7	3.7	3.9	3.6	**C**	**C**	3.9	2.8	2.5	**IZS**	2	2.1	2.1	2.2	2.3	2.4	3	3.6	10.9	5.7	4.3	4.8	10.9	3.6	24
22	4.6	5.3	4.5	3.8	3.8	3.7	4	3	2.9	2.9	**IZS**	2.5	2.3	2.3	2.3	2.4	2.5	2.8	6	5.3	3.7	3.9	3.5	4.7	6	3.6	24
23	4.1	4.3	5.2	6.3	5.8	6.7	5.8	4.8	4.6	**IZS**	3.9	4	3.8	2.9	2.8	2.7	2.1	2.2	2.4	3.1	5.6	6.9	5.4	14.3	14.3	4.8	24
24	14.6	12.4	9.1	8.8	9.3	9.9	10.2	9.5	**IZS**	7.4	6.6	5.9	4.5	2.6	2.3	2.4	3.5	4.9	8.4	6.4	**24.1**	7.9	5.2	5.6	**24.1**	7.9	24
25	16.1	5.4	7	5.6	6.7	7.3	8.5	**IZS**	4.2	3.7	3.4	3.2	3.2	2.7	2.7	2.7	2.8	6.5	7.8	5.1	2.3	2.2	2.3	2.2	16.1	4.9	24
26	2.2	2.2	2.3	2.2	2.3	2.3	**IZS**	2	2.1	2.2	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.5	4.7	4.5	4.1	5.2	5.2	2.6	24
27	4.4	5.6	9.6	8	10.7	**IZS**	8.2	7.7	6.9	6.5	5.8	3.1	2.6	2.2	2.8	2.3	2.3	2.4	2.8	4.8	4.1	4.8	3.2	4.5	10.7	5.0	24
28	6	3.3	3.7	3.5	**IZS**	4.2	4.8	3.8	3.7	3.2	2.5	2.3	2.2	2.9	2.3	2.9	2.3	3.1	3	2.5	4.5	6	4.4	4.1	6	3.5	24
29	8.8	5.9	7.7	**IZS**	3.4	2.5	2.2	2.1	2	2	2	2.1	2.1	2.1	2	2	2.1	2.7	3.3	3.2	3.2	3.3	2.9	3.2	8.8	3.2	24
30	2.5	2.5	**IZS**	2.2	2.2	2.3	2.3	2.2	2.3	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.3	3.3	2.6	3.2	2.7	2.5	3.1	3.5	3.5	2.5	24
HOURLY MAX	16.1	12.4	9.6	14.2	10.7	9.9	10.2	9.5	6.9	7.4	6.6	5.9	4.5	3.1	3.1	4.8	3.5	6.5	10.1	18.0	24.1	13.2	6.1	14.3			
HOURLY AVG	5.2	4.6	4.7	4.7	4.8	4.8	4.9	3.9	3.5	3.1	2.9	2.7	2.5	2.3	2.2	2.4	2.3	2.8	4.0	4.1	5.0	4.7	3.8	4.5			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	600					
MAXIMUM INSTANTANEOUS VALUE:	24.1	PPM	@ HOUR(S)	20	ON DAY(S)	24
IZS CALIBRATION TIME:	27	HRS	OPERATIONAL TIME:			649 HRS
MONTHLY CALIBRATION TIME:	22	HRS				
STANDARD DEVIATION:	2.41					



JOB #: 2833-12-09-35-C

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

September 2012

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
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	2.27	.18	.18	.94	2.46	2.65	4.55	1.70	3.03	.56	.75	5.88	8.91	12.14	12.90	4.93	64.13
<	10.0	.18	.56	.37	1.13	7.40	7.59	3.98	.75	.37	.56	.75	.75	2.84	6.07	1.70	.56	35.67
<	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.18	.00	.00	.18
>=	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.46	.75	.56	2.08	9.86	10.24	8.53	2.46	3.41	1.13	1.51	6.64	11.76	18.40	14.61	5.50	

Calm : .00 %

Total # Operational Hours : 527

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	12	1	1	5	13	14	24	9	16	3	4	31	47	64	68	26	338
<	10.0	1	3	2	6	39	40	21	4	2	3	4	4	15	32	9	3	188
<	50.0														1			1
>=	50.0																	
	Totals	13	4	3	11	52	54	45	13	18	6	8	35	62	97	77	29	

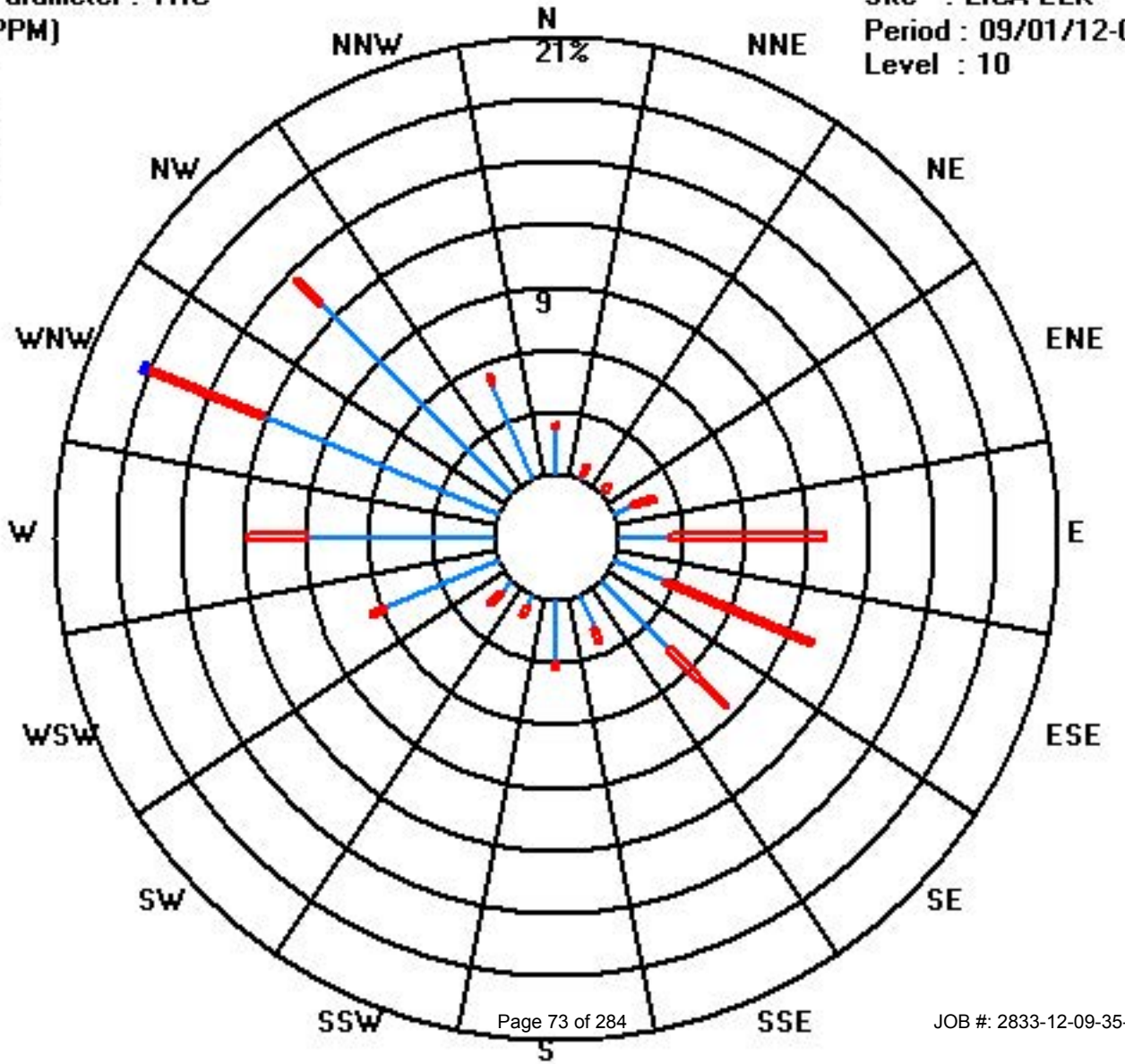
Calm : .00 %

Total # Operational Hours : 527

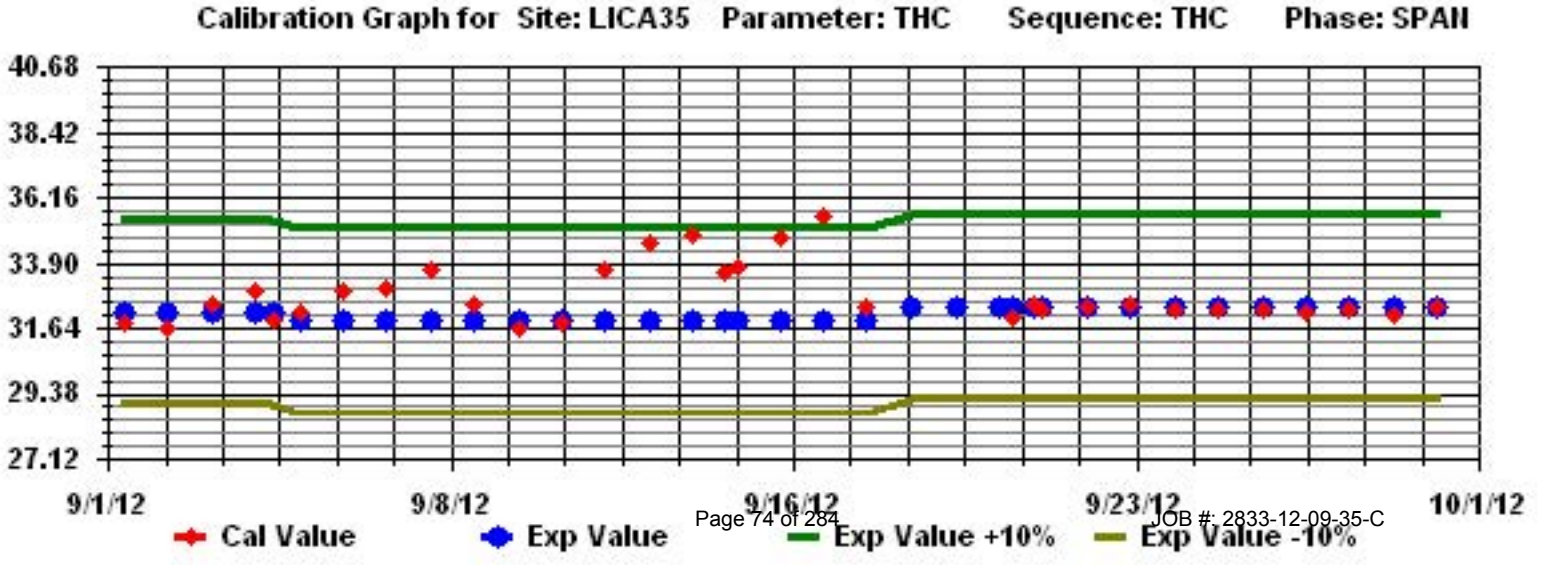
Logger : 35 Parameter : THC
Class Limits (PPM)

>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA-ELK
Period : 09/01/12-09/30/12
Level : 10



JOB #: 2833-12-09-35-C


Calibration Graph for Site: LICA35 Parameter: THC Sequence: THC Phase: SPAN
40.68
38.42
36.16
33.90
31.64
29.38
27.12
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *PORTABLE SITE*

SEPTEMBER 2012

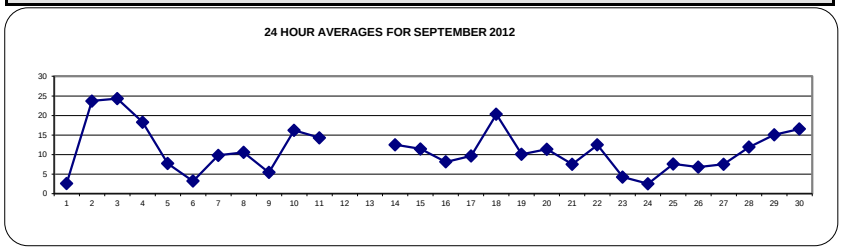
VECTOR WIND SPEED (WS) hourly averages (km/hr)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	11.6	12.7	9	12.5	15.8	16.2	11.9	13	7.4	5.3	8.3	8.3	17.7	23.7	16.8	19.5	19.1	22.2	16.4	11.6	10.3	12.9	15	16.3	23.7	2.6	24
2	15.2	15.1	16.9	18.1	18.8	20.4	17.5	19	21.7	22.7	26.5	34	36.4	36.1	34.1	31.4	34.2	31	34.2	28.9	26.1	24.4	21.9	19.3	36.4	23.7	24
3	20.2	22.1	24	27	27.9	25.6	22.6	27.6	29.5	33	32.1	30.7	30.4	31.8	33.4	31.1	30.5	26.9	17.1	12.8	13	13.2	16.6	13.4	33.4	**24.3**	24
4	18.9	27.2	25.5	24	20.1	22	20.8	23	27.5	27.7	25.3	25.8	25.2	21.5	21.7	24.9	14.5	14.7	11.3	6	8.1	7	8.3	9.9	27.7	18.3	24
5	6.2	4.6	4.1	3.6	4.6	4.7	4.1	5.4	8.6	12	11.3	10.4	9.6	13.8	12	14.9	13	8.4	7	6.4	6.5	5.4	5	3.7	14.9	7.7	24
6	0.9	3.2	4.7	0.2	1.5	1.7	0.7	2.8	1.8	2.9	5.4	0.9	6.6	5.7	4.3	4.4	7.4	5.4	5.7	6.5	1.1	2	0.9	0.5	7.4	3.2	24
7	3.2	3.1	3.8	4.2	3.2	3.6	2.9	2.2	8.7	13.4	14.8	18.1	26	26.6	26.5	21	19.4	13.8	5.1	5.9	3.7	1.5	1.8	2.3	26.6	9.8	24
8	3.7	2.4	2.8	3.6	4.2	5	4	5.3	9.6	18.2	16.9	19.9	20	19.7	18.9	18.3	13.7	12.7	11.6	9.8	10.6	9.9	6.6	6.8	20.0	10.6	24
9	6.3	5.1	7	4.4	3.1	4.2	2	6.1	1.1	1.7	2.3	4.8	3.9	4.5	5.1	3.5	4.8	8.1	6.2	4.9	2.3	19.3	14.7	4.9	19.3	5.4	24
10	3.1	5	6.5	5.5	7	5.5	6.9	4.2	3.3	0.4	1.9	13.6	25.8	33.1	28.6	29.6	27.6	27.2	25.7	21	20.9	24.8	28.6	33.7	33.7	16.2	24
11	33.9	16	1.4	3.3	16.9	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	33.9	14.3	5
12	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
13	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
14	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**M**	**M**	10.3	11.1	11	17	15.1	9.6	8.7	8.2	15.1	15	16	13.2	17.0	12.5	12
15	10.4	13.9	12.1	13.4	11.8	9.6	8.1	10.6	15.9	16.2	15.4	17.8	18.8	15.3	15	13.2	13.7	8.3	3.5	3.8	5.6	8.5	6.2	7.9	18.8	11.5	24
16	8	10.2	10.7	9.9	9	10.1	3.1	5.1	1.5	4.1	7.7	9.4	14.4	16.3	20.6	15.3	11.6	9	7.9	1.6	3	1.5	2.9	2.2	20.6	8.1	24
17	0.7	0.8	2.3	1.3	4.2	4.5	4.6	5.3	4.7	5.7	13	14.3	11.4	16.4	22.3	26.9	21.7	12.4	9.5	12	11	10.8	9.6	5.8	26.9	9.6	24
18	4	6	7.1	8.8	12.6	11.8	12.5	10.7	21.2	22.4	30.2	33	37.7	40.8	**41.9**	37.7	34.8	29	22.2	20.7	14.9	8.4	9.5	9.7	**41.9**	20.3	24
19	15.1	14.2	8.7	9.3	9.2	7	4.9	6.2	2.7	0.6	7.1	15	15.2	11.2	11	10.3	12.3	12	14.7	14.5	14.3	9.8	9.3	7.4	15.2	10.1	24
20	11.5	12	13.9	10.4	8.7	13.7	11.3	10.3	9.3	6.4	12.4	16.5	17.3	17.5	15.9	14.8	13.4	16.6	11.1	5.4	3.2	2.7	8.3	9.7	17.5	11.3	24
21	7.8	10.7	7.4	5.7	7.8	8.6	9.8	4.9	3.1	2	5.3	4.6	7.7	5.9	8.4	9.6	9.2	9.3	8	8.8	9.9	10.3	7.6	7.4	10.7	7.5	24
22	8.3	9.8	10.3	8.2	9.5	10.2	11.6	14.7	16	16.6	15.8	17.2	17.7	16.6	16.2	18.3	17.2	12.7	9.6	9.7	9.8	9.8	8.1	5.3	18.3	12.5	24
23	5	5.3	4.3	5.2	5.3	5.2	5.3	3.7	2.1	0.1	2.5	1.2	2.5	3.4	1.8	4.9	8.3	4.6	3.8	6.1	6.4	4.5	4.3	6.3	8.3	4.3	24
24	3.2	2.1	1.3	2.6	1.6	1.5	1.9	0.7	0.6	0.7	0.5	1.5	2.8	5.7	4.3	4.1	7.3	5.8	3.5	1.2	0.6	4.3	1	1.7	7.3	2.5	24
25	5.7	4.9	7.2	4.4	6.2	4.4	3.6	4.1	10.5	7.2	5.8	5.3	6.6	9.1	9.5	13	13	11	8.2	5.8	14.7	5.7	7	9.2	14.7	7.6	24
26	9.1	11.7	11.9	11.9	10	8.7	9.2	8.4	7.7	6.6	6.6	7.2	9.1	8.2	5.8	7.5	4.4	4.3	6.4	0.4	2	2.6	1.9	1.9	11.9	6.8	24
27	1.2	0.6	0.3	1.9	4.5	2.3	2.3	3.8	7	4.3	6	13.8	15.1	14.3	14.9	16.3	14.7	8.1	9.3	11.2	9.8	6.8	5	6.8	16.3	7.5	24
28	7.6	6.5	5.9	6.7	7.2	6.6	6.2	7.1	11.1	11.9	18.1	21.6	23.1	24.4	22.1	20.1	15.5	13.6	11.6	13.2	12.8	5.1	2.4	5.3	24.4	11.9	24
29	4.3	0.4	7.6	11.5	10.7	19.5	21	23.5	21.6	22.7	22.8	20.5	19.6	18.3	19.2	23	22.1	15.7	6.5	8.6	10.6	11.4	10	10.2	23.5	15.1	24
30	8.6	9.9	11.3	11.2	11.6	11.9	12.2	10.6	11.3	18	26.4	30.9	30	30.3	32.9	34.9	28.9	18.8	11.9	11	9.7	8.2	2.4	4.2	34.9	16.5	24
HOURLY MAX	33.9	27.2	25.5	27.0	27.9	25.6	22.6	27.6	29.5	33.0	32.1	34.0	37.7	40.8	41.9	37.7	34.8	31.0	34.2	28.9	26.1	24.8	28.6	33.7			
HOURLY AVG	8.7	8.7	8.4	8.5	9.4	9.4	8.5	9.2	10.2	10.9	13.1	15.2	17.1	17.8	17.6	18.0	16.6	13.7	11.0	9.5	9.5	9.1	8.6	8.3			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	-MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

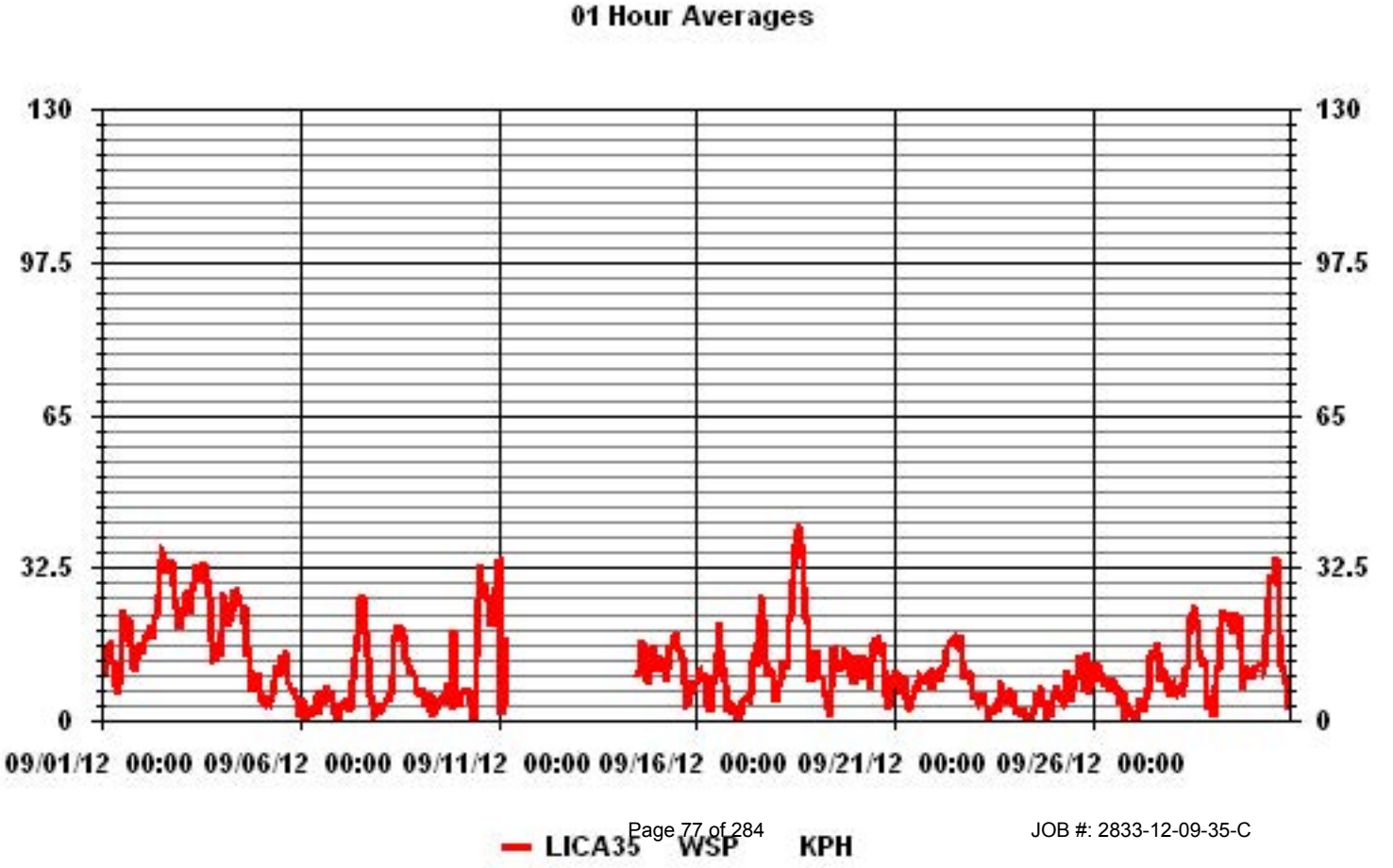


LAST CALIBRATION: November 24, 2011

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	41.9	KPH	@ HOUR(S)	14	ON DAY(S)	18	
MAXIMUM 24-HR AVERAGE:	24.3	KPH			ON DAY(S)	3	
CALMS (≤ 1 KPH)	0.40	%	OPERATIONAL TIME:		641	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:		89.0	%	
STANDARD DEVIATION:	8.46		MONTHLY AVERAGE:		11.54	KPH	

JOB #: 2833-12-09-35-C



JOB #: 2833-12-09-35-C

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

SEPTEMBER 2012

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

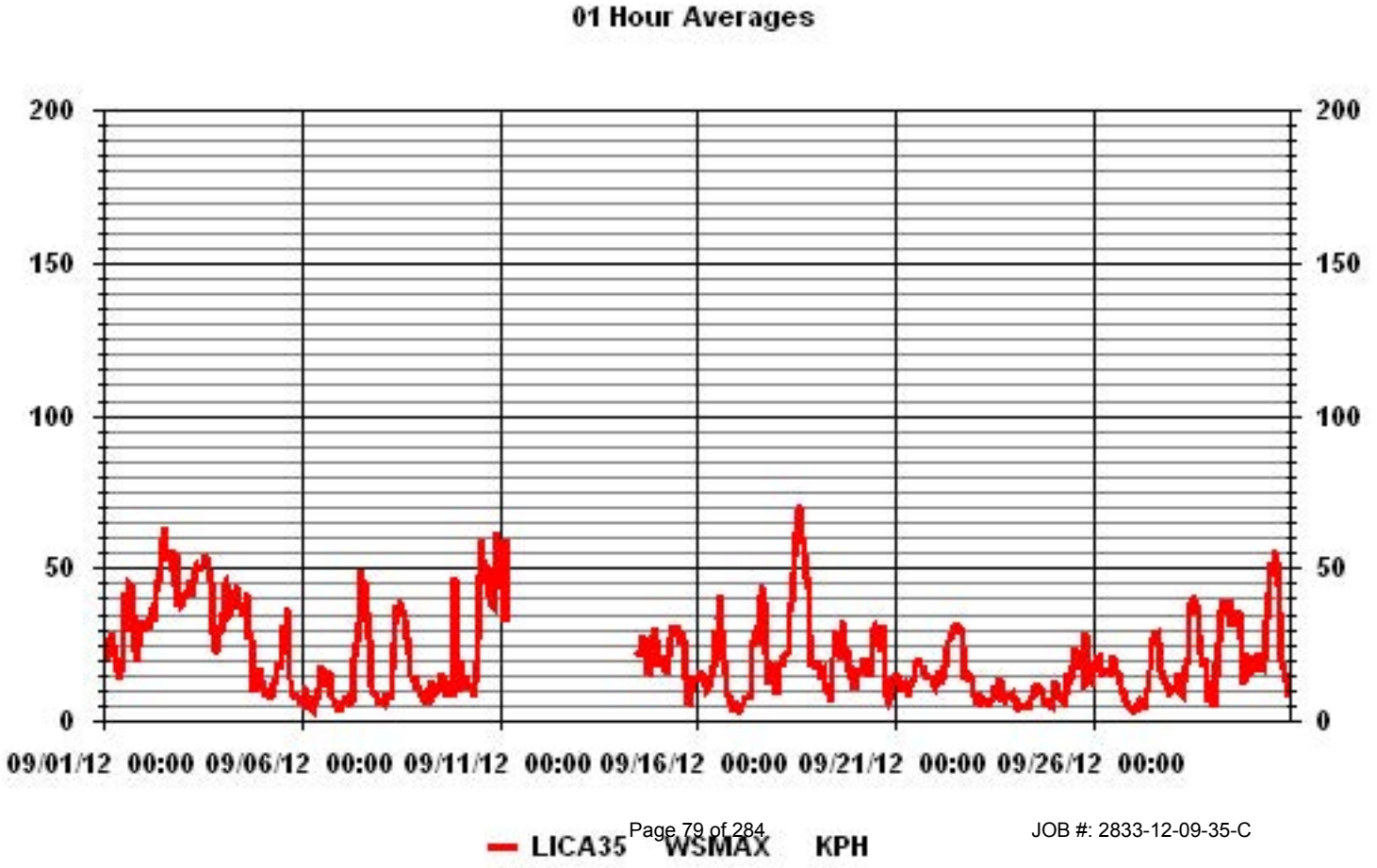
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.
DAY																									
1	21.7	19	26.9	25.1	27	28.8	25.7	21.5	16.6	13.3	18.9	15.9	42.3	40	28.7	44.6	43.9	44.1	35.2	22.9	19.2	23.7	28.3	30	44.6
2	32.8	29.1	32.5	29.7	34	36.8	32.1	38.4	42.2	45.9	49.5	56	59.3	63.8	54.1	52.2	55.9	48.7	56.2	43.9	55.3	37.4	42.4	38.1	63.8
3	38.9	40.9	41.1	42.5	46.3	44	40.9	45.7	49.8	50.9	50	50.5	50.7	53.1	53.1	51.4	50.1	45.9	28.9	23.5	23	23.8	31.1	28.7	53.1
4	35.1	44.7	45.5	41.1	34.6	35.2	36.3	38.4	42.8	44.2	39.4	36.9	38.3	34	35.6	42.3	27.2	28.4	27.1	9.3	11.1	11.4	14.5	17.3	45.5
5	10.4	11.3	8	9.1	8.4	8.8	7.4	12	13.9	18.5	18.3	16.8	21.9	31.6	26.4	37.1	32	14.1	9.8	8.8	8.1	8.6	8.4	6.9	37.1
6	5.1	8.1	11.6	3.4	4.8	4.8	4	8.3	5.7	6.8	10.8	14.6	18.1	16.4	13.2	11.5	15.7	15.7	9	8.1	6.8	5.6	4	3.9	18.1
7	5.5	5.8	6.2	8.3	7	8.1	5.9	6.2	20.8	25.3	26.3	32	49.6	42.9	46.4	42.2	36	27.2	11.4	9.6	8.9	8.1	5	7.1	49.6
8	7.1	6.9	5.9	7.8	7.7	7.8	9.4	16.3	25.8	31.6	37.8	35.1	39.2	36.6	34.6	33.3	27.7	22.3	15.4	13.6	13.7	14.1	10.3	11.6	39.2
9	9.5	8.3	9.9	7.1	5.3	10.5	6.2	13.1	8.3	8.7	10.9	11	9.8	15.8	11.9	8	11.4	12.2	11.2	10.5	7.7	47	44.3	13.4	47
10	9.6	19.9	13.7	13.2	14.9	11.5	11.2	10.9	7.6	12.6	19.9	26.1	47.9	59.5	53.2	45.8	44.9	50.9	41.3	38.4	37.6	42.9	61.9	57.2	61.9
11	56.6	59.1	36.3	32.2	58.1	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	59.1
12	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	
13	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	
14	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**M**	**M**	22.4	23	20.8	27.7	26.8	18.5	16.7	16.3	27.7	26.4	30.4	26.8	30.4
15	17.7	19.9	18.7	21	17.8	18.3	15.1	20.8	27.1	31.2	27.2	29	31.6	24.8	29.8	25.1	27.5	14	6.7	6.2	9.3	14.8	12.6	13.9	31.6
16	14.6	14.1	15.9	14	13	14.6	10.3	10.9	14.4	17.4	18	28.9	29.3	33.5	40.9	30.6	20.8	15.5	9.8	8.7	6.2	4.5	4.8	6.5	40.9
17	3.6	3.2	4.8	5.6	6.7	7.4	7.9	8.6	8.3	24.6	26	29.5	24.9	31.6	41.3	44.3	39.2	22.7	12	18	19.8	16.4	19.2	12.6	44.3
18	8.3	12.8	19	17.5	21.1	22.4	22	22.9	35.3	39	48.6	53.8	62	69.2	**71**	60.8	58.4	55.3	47.4	44	28.9	17.6	19.2	16.6	**71**
19	18.8	20.1	13.2	16	16.8	12.4	9.7	12	9.6	6.4	20.4	28.6	28.2	21.7	23.2	19.8	33.1	22.6	21.3	23.6	16.6	14.1	13.3	10.3	33.1
20	16.4	15.8	17.2	15.5	16.9	20.9	18	16.8	15.8	14.9	24.1	30.2	31.1	29.7	27.9	27.6	22	30.9	15	8.7	6.2	6.9	14	14.6	31.1
21	13.8	15.4	12.9	9.5	13.1	11.8	12.7	11.3	8	11.4	12.7	14.2	19.3	17.7	20.5	18.5	16.5	16.9	13.7	14.8	14.5	14.1	14.2	12.3	20.5
22	11.3	14.2	16.4	11.6	13.6	14.1	17.8	24	25.7	27.1	28.3	29.6	31.1	32.3	28.6	31.2	29.5	24.5	14.5	14.3	12.6	15	14.2	8.4	32.3
23	7.1	6.9	6.4	8.5	7.2	7	7	6.5	6.2	4.6	7.6	6.5	10.2	9.8	8.4	13.1	12.9	7.1	6.7	7.8	8.3	8.2	8.1	9	13.1
24	6.7	4.5	4.1	5.6	4.6	4.7	4.4	4.5	4.5	6.1	7	8	10.8	11.7	11.7	9.8	11.3	9.3	6.3	4.1	6.3	6.5	4.9	4.5	11.7
25	12.2	12.3	10.5	9	8.2	6.9	6.3	8.1	15.9	12.8	13.5	17.2	17.3	23.5	18.3	22.1	20.2	17.1	10.4	29.1	26	15.3	14.1	13.3	29.1
26	16.3	18.4	20.6	21	18.7	14.7	16.4	16.6	14.9	16.3	15.8	18.5	21.5	17.8	15.8	16.8	12.2	8.5	10.7	6.4	7.6	5.5	4.1	4.4	21.5
27	3.7	4.9	2.8	5.1	6.3	4.9	4.8	7.6	10.9	9.2	16.7	26.1	26.3	28.7	28.4	28.9	26.4	17	14.7	14.3	12.4	11.1	9.3	9.6	28.9
28	10.8	10.6	10.9	14.6	14.8	9.5	8.8	12.4	18.1	20.7	34.8	38.4	39.4	40.1	38.8	35.9	29	22.7	18	19.8	19.8	14.1	6.5	7.7	40.1
29	7.9	4	17.2	16.6	25.8	35.9	34.4	39.2	34.8	38.6	38.7	30.5	32.2	32.1	32.8	35	35.9	26.9	13.4	13.1	14.2	22.2	15.1	15.4	39.2
30	17.2	21	17.3	17.2	21.9	17.5	18.7	17.9	20.1	33.1	41.7	47.1	51.7	48.4	56.2	52.4	45	36.6	19.6	17.4	16.4	13	7.6	11.1	56.2
PEAK	56.6	59.1	45.5	42.5	58.1	44.0	40.9	45.7	49.8	50.9	50.0	56.0	62.0	69.2	71.0	60.8	58.4	55.3	56.2	44.0	55.3	47.0	61.9	57.2	

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	-MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	71	KPH	@ HOUR(S)	14
			ON DAY(S)	18



JOB #: 2833-12-09-35-C

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

September 2012

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	.93	.46	.46	1.40	5.46	4.68	1.56	.46	.31	.46	.62	1.40	3.43	5.30	2.65	1.24	30.88
<	12.0	.46	.15	.15	.31	2.80	3.27	3.43	.78	.15	.15	.46	4.68	4.99	4.52	3.27	2.02	31.66
<	20.0	.46	.00	.00	.00	.62	.93	2.02	.78	1.40	.31	.78	1.87	2.80	2.80	5.30	.93	21.06
<	29.0	.31	.00	.00	.00	.00	.00	.15	.00	.93	.00	.00	.15	.93	3.43	4.83	.31	11.07
<	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15	3.43	1.24	.15	4.99
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.31	.00	.31
	Totals	2.18	.62	.62	1.71	8.89	8.89	7.17	2.02	2.80	.93	1.87	8.11	12.32	19.50	17.62	4.68	

Calm : .00 %

Total # Operational Hours : 641

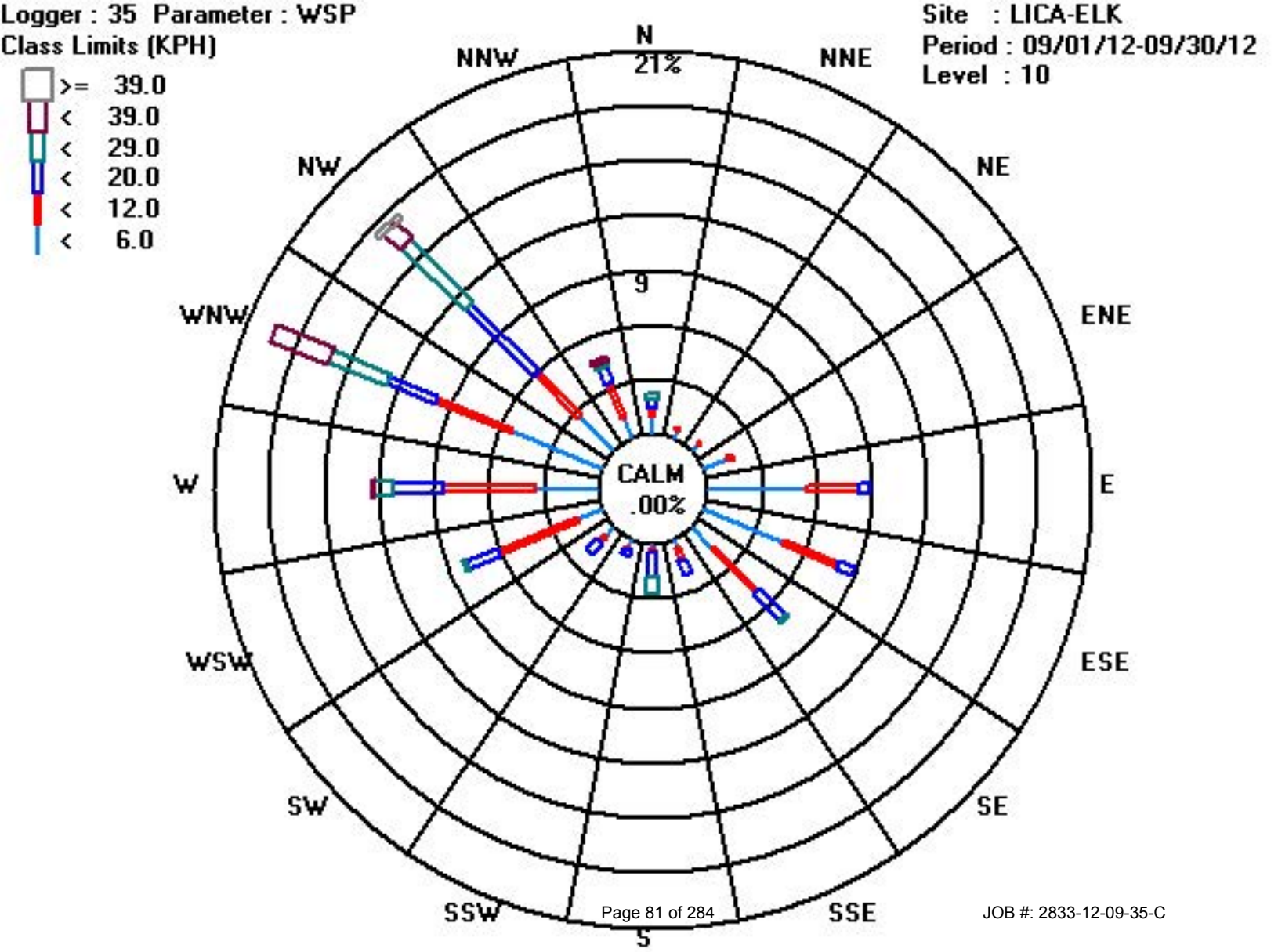
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	6	3	3	9	35	30	10	3	2	3	4	9	22	34	17	8	198
<	12.0	3	1	1	2	18	21	22	5	1	1	3	30	32	29	21	13	203
<	20.0	3				4	6	13	5	9	2	5	12	18	18	34	6	135
<	29.0	2						1		6			1	6	22	31	2	71
<	39.0													1	22	8	1	32
>=	39.0															2		2
	Totals	14	4	4	11	57	57	46	13	18	6	12	52	79	125	113	30	

Calm : .00 %

Total # Operational Hours : 641



JOB #: 2833-12-09-35-C

Vector Wind Direction

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

SEPTEMBER 2012

VECTOR WIND DIRECTION (WD) hourly averages in degrees

MST

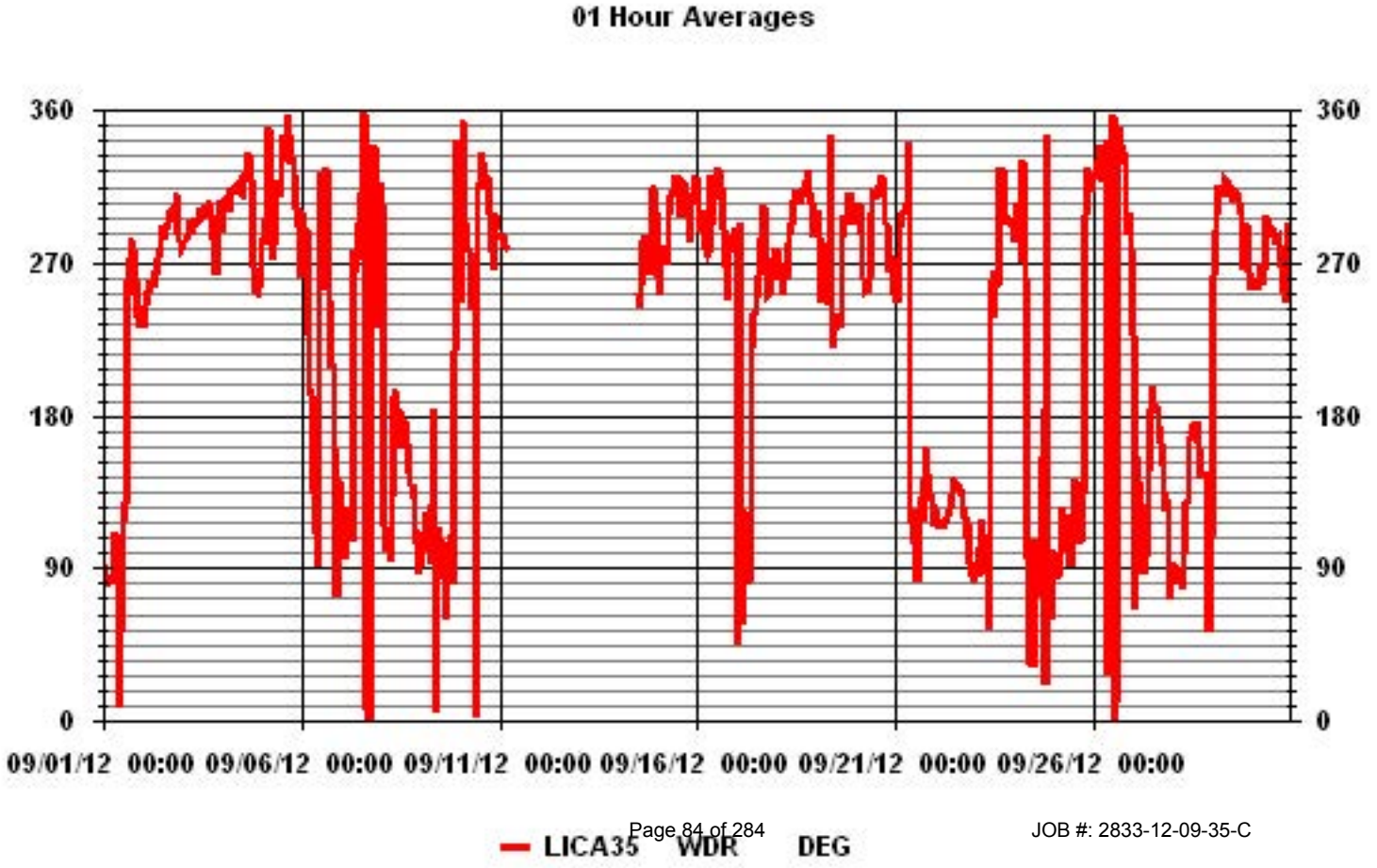
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	91	87	79	85	80	86	104	111	103	8	52	84	117	128	129	259	272	285	279	255	256	239	231	236	142	SE	24
2	232	244	246	253	259	257	257	265	263	273	279	292	286	284	290	294	300	301	302	302	312	288	283	279	282	W	24
3	281	283	285	286	293	292	286	291	296	294	295	302	296	297	303	297	307	299	285	265	265	265	307	298	293	WNW	24
4	288	307	308	304	300	314	312	312	314	315	318	313	312	321	323	322	335	331	320	269	254	253	256	262	309	NW	24
5	282	282	296	311	350	302	272	281	289	312	319	309	330	346	335	333	357	347	329	332	323	302	291	302	320	NW	24
6	261	300	286	291	228	196	193	135	124	111	91	323	253	299	281	326	257	249	210	209	161	73	95	142	246	WSW	24
7	102	120	95	124	124	108	114	106	278	264	272	294	312	341	359	7	2	2	339	325	340	231	319	314	335	NNW	24
8	315	306	116	100	110	110	93	132	191	196	185	178	179	160	172	178	165	147	140	135	136	114	106	87	159	SSE	24
9	91	99	111	123	121	103	92	128	184	5	98	114	104	107	85	60	85	100	90	109	80	218	343	288	103	ESE	24
10	246	319	354	288	293	280	277	242	258	247	2	316	316	335	330	313	318	321	299	278	266	299	289	286	305	WNW	24
11	286	285	287	281	279	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	284	WNW	5
12	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
13	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
14	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**M**	**M**	251	244	256	283	286	279	262	282	313	314	310	301	286	WNW	12
15	262	251	269	280	274	268	274	298	309	313	322	313	318	322	296	319	318	312	309	282	305	311	322	312	300	WNW	24
16	320	292	288	301	291	279	275	277	321	292	313	308	324	324	320	315	291	269	248	286	276	282	289	289	300	WNW	24
17	44	281	293	57	124	102	94	81	98	220	240	242	250	262	285	296	304	287	251	252	263	272	270	259	270	W	24
18	278	266	267	252	252	263	261	282	287	293	307	311	310	312	304	309	314	316	319	325	312	306	285	299	302	WNW	24
19	296	301	286	247	251	264	262	281	244	346	219	230	237	232	240	231	285	298	294	295	312	300	295	292	273	W	24
20	304	304	304	288	261	254	255	252	261	299	312	311	312	308	316	320	322	310	294	293	264	268	274	253	295	WNW	24
21	248	248	273	291	299	300	305	298	341	121	122	105	109	82	114	132	117	142	161	147	138	129	133	129	152	SSE	24
22	114	124	120	113	115	115	117	119	121	125	134	143	140	137	141	137	134	127	121	111	112	94	86	84	124	ESE	24
23	85	89	85	102	119	111	98	89	88	54	259	237	265	261	256	324	324	326	308	299	293	296	291	295	335	NNW	24
24	282	306	283	298	270	331	295	263	96	33	81	31	107	74	74	103	128	156	184	21	346	91	60	101	99	E	24
25	97	87	96	84	99	126	109	100	121	109	90	106	128	143	126	107	105	129	134	298	326	322	311	321	102	E	24
26	320	323	330	328	340	338	318	334	342	27	73	348	357	1	11	339	349	341	328	335	286	300	296	279	340	NNW	24
27	228	65	157	142	111	118	86	127	118	96	147	184	197	188	186	182	175	165	152	137	123	131	72	91	157	SSE	24
28	93	80	90	89	84	85	78	98	129	131	168	171	169	173	175	177	161	144	146	145	145	101	52	72	145	SE	24
29	109	263	289	298	315	310	310	314	320	319	317	308	315	307	309	312	307	299	284	266	276	294	265	254	305	WNW	24
30	261	261	258	254	258	270	268	257	265	298	287	290	290	287	281	283	285	281	268	254	253	247	293	256	277	W	24
HOURLY AVG	320	323	354	328	350	338	318	334	342	346	322	348	357	346	359	339	357	347	339	335	346	322	343	321			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	-MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

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

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	641	HRS
STANDARD DEVIATION:	91.23		AMD OPERATION UPTIME:	89.0	%
			MONTHLY AVERAGE:	290	DEG



JOB #: 2833-12-09-35-C

Standard Deviation Wind Direction

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

SEPTEMBER 2012

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	8	7	35	11	10	15	30	10	19	43	13	15	11	9	10	14	14	12	13	11	11	11	12	12
2	12	12	11	10	11	10	11	13	13	14	13	8	10	10	10	8	8	8	8	8	11	8	11	12
3	12	11	9	9	8	8	10	9	8	9	10	11	10	11	9	10	8	8	9	12	12	12	11	8
4	10	9	9	7	8	8	7	8	8	8	9	8	10	10	12	11	11	11	8	9	6	8	6	18
5	13	22	22	24	16	17	14	15	11	10	11	13	21	14	10	13	11	11	6	6	4	10	7	13
6	46	11	21	36	30	11	22	16	23	19	18	47	30	28	48	37	18	13	5	4	11	27	8	48
7	14	9	21	8	12	9	13	33	37	15	16	12	13	13	15	13	13	12	14	9	26	45	12	25
8	10	9	18	18	12	9	11	16	15	12	16	13	15	14	16	15	13	9	4	3	4	4	7	9
9	8	7	4	2	8	8	14	14	32	59	48	25	37	39	33	24	18	4	9	19	32	16	22	50
10	41	29	21	20	14	12	10	32	24	68	60	15	8	11	11	9	8	8	9	13	12	8	9	9
11	9	10	9	10	12	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
12	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
13	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
14	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**M**	**M**	17	16	16	8	7	8	10	17	9	7	7	7
15	9	6	9	8	8	13	11	9	9	11	14	13	13	15	14	19	15	9	9	7	10	7	13	10
16	5	5	4	3	4	6	14	12	48	55	21	18	13	11	11	12	10	7	3	29	10	10	6	7
17	50	8	5	22	14	20	14	12	18	36	19	14	18	17	13	9	7	6	5	7	10	7	9	8
18	10	19	11	9	9	11	11	8	8	9	8	9	11	9	8	10	10	9	8	9	7	10	8	6
19	4	3	6	7	8	12	7	14	20	53	37	13	12	16	19	16	15	7	5	5	3	3	4	6
20	5	4	4	7	8	5	8	10	12	27	17	14	15	14	13	12	9	7	8	7	10	10	7	4
21	8	4	10	7	8	3	5	9	20	68	38	52	33	41	32	17	12	12	8	8	5	3	6	7
22	6	4	4	4	5	5	6	8	10	11	13	14	13	16	15	13	10	6	4	3	5	6	8	7
23	6	5	6	7	7	6	7	16	35	77	35	49	55	26	33	24	7	9	8	5	7	7	8	4
24	8	19	11	10	25	14	20	27	73	74	72	64	62	24	37	39	7	8	7	49	20	10	31	37
25	9	27	4	13	4	9	23	13	9	18	24	39	34	22	19	13	8	5	3	44	7	16	12	6
26	8	8	9	9	13	9	12	15	17	23	24	33	25	26	34	23	32	14	14	32	16	14	10	5
27	13	31	23	21	7	24	19	12	12	21	24	19	14	20	16	12	12	10	8	5	3	11	12	7
28	9	23	16	18	13	8	7	8	10	13	15	13	13	13	13	13	13	9	8	8	9	11	49	14
29	16	31	11	5	11	6	6	7	8	9	8	9	10	14	12	9	7	4	9	9	7	10	**12**	9
30	11	11	8	7	10	8	8	10	13	11	9	10	13	9	11	8	8	6	10	7	11	15	28	15

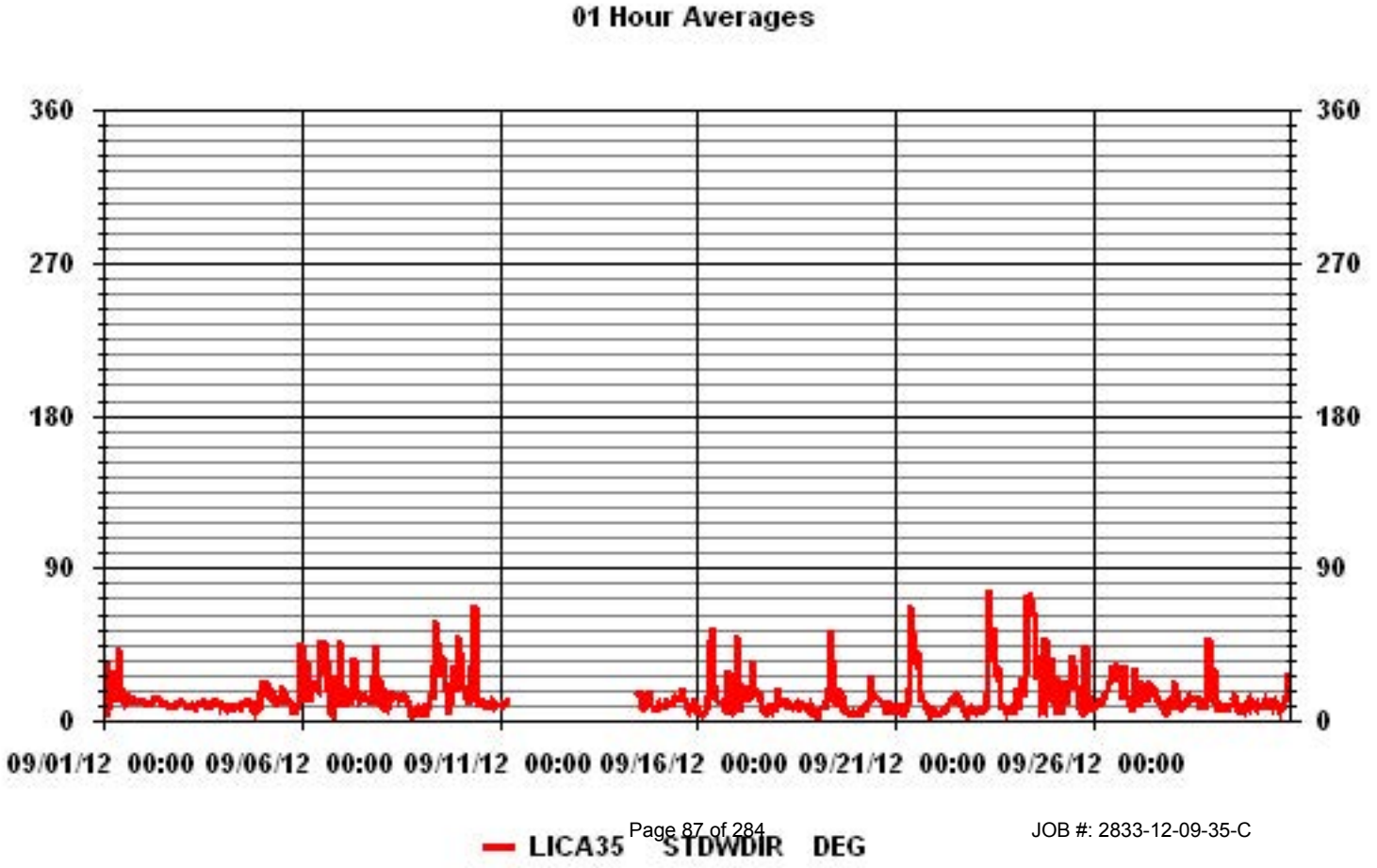
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	-MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: November 24, 2011

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 641 HRS

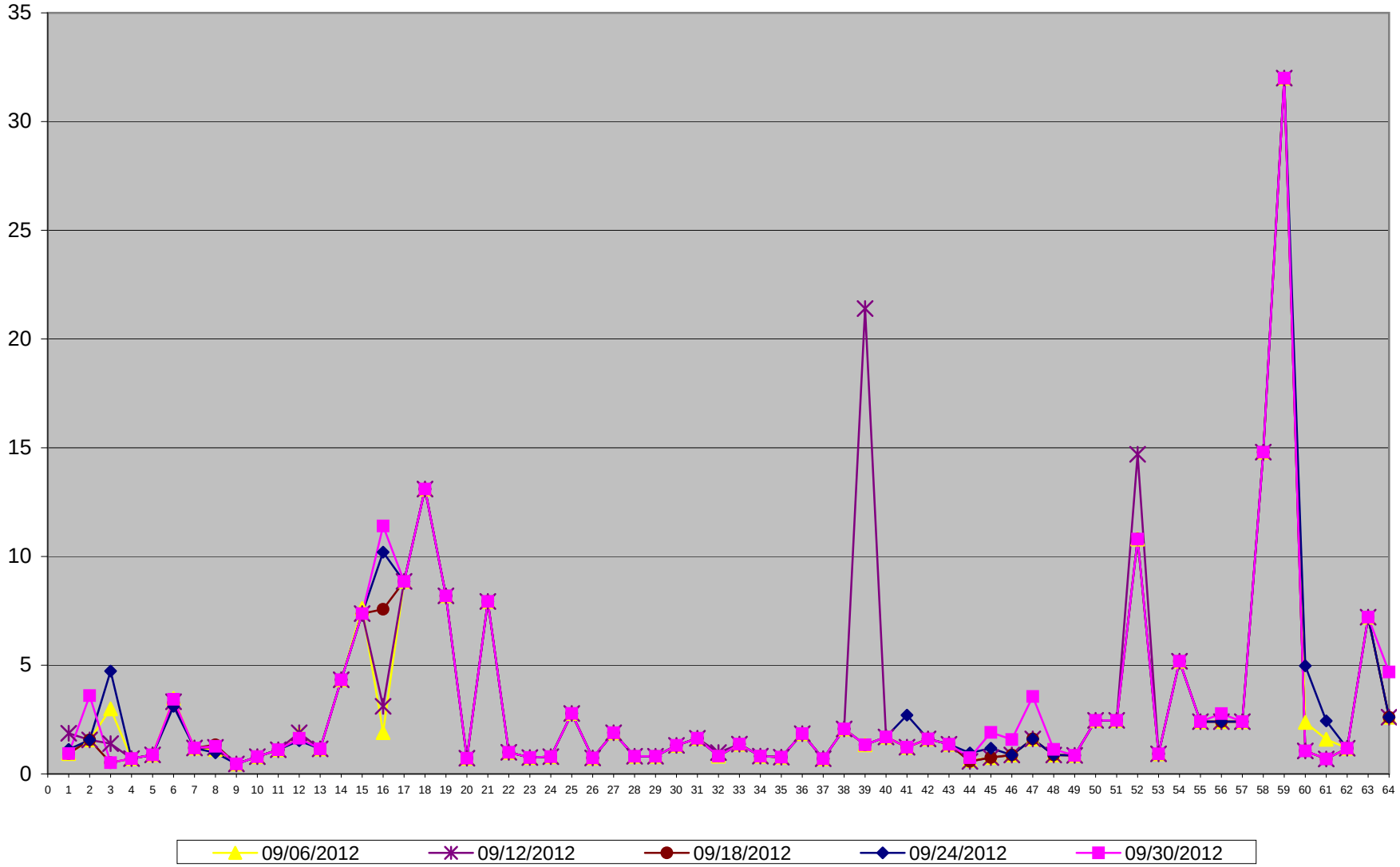
JOB #: 2833-12-09-35-C



JOB #: 2833-12-09-35-C

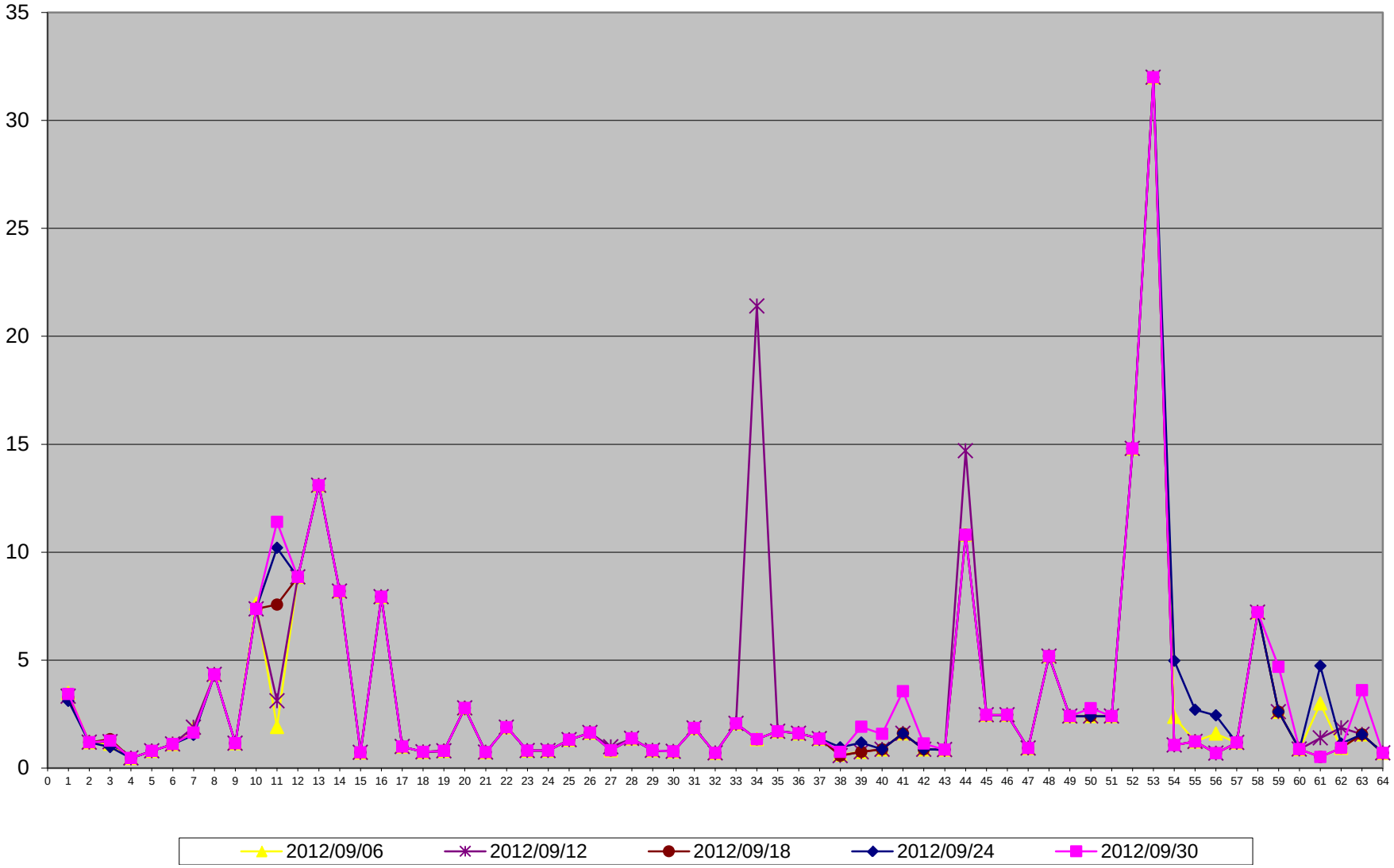
Volatile Organics

Volatile Organics in ug/m3 Site: LICA - Portable - Elk Point Airport



1	2,2,4-Trimethylpentane	33	1,1,2,2-Tetrachloroethane
2	Carbon Disulfide	34	cis-1,3-Dichloropropene
3	Propene	35	trans-1,3-Dichloropropene
4	Vinyl Acetate	36	1,2-Dichloropropane
5	Vinyl Bromide	37	Bromomethane
6	Dichlorodifluoromethane (FREON 12)	38	Bromoform
7	1,2-Dichlorotetrafluoroethane	39	Bromodichloromethane
8	Chloromethane	40	Dibromochloromethane
9	Vinyl Chloride	41	Heptane
10	Chloroethane	42	Trichloroethylene
11	1,3-Butadiene	43	Tetrachloroethylene
12	Trichlorofluoromethane (FREON 11)	44	Benzene
13	Trichlorotrifluoroethane	45	Toluene
14	Ethanol	46	Ethylbenzeze
15	2-Propanol	47	p+m-Xylene
16	2-Propanone	48	o-Xylene
17	Wethyl Ethyl Ketone (2-Butanone)	49	Styrene
18	Methyl Isobutyl Ketone	50	1,3,5-Trimethylbenzene
19	Methyl Butyl Ketone (2-Hexanone)	51	1,2,4-Trimethylbenzene
20	Methyl t-butyl ether (MTBE)	52	4-ethyltoluene
21	Ethyl Acetate	53	Chlorobenzene
22	1,1-Dichloroethylene	54	Benzyl chloride
23	cis-1,2-Dichloroethylene	55	1,3-Dichlorobenzene
24	trans-1,2-Dichloroethylene	56	1,4-Dichlorobenzene
25	Methylene Chloride (Dichloromethane)	57	1,2-Dichlorobenzene
26	Chloroform	58	1,2,4-Trichlorobenzene
27	Carbon Tetrachloride	59	Hexachlorobutadiene
28	1,1-Dichloroethane	60	Hexane
29	1,2-Dichloroethane	61	Cyclohexane
30	Ethylene Dibromide	62	Tetrahydrofuran
31	1,1,1-Trichloroethane	63	1,4-Dioxane
32	1,1,2-Trichloroethane	64	Xylene (Total)

Volatile Organics in ug/m3 Site: LICA - Portable - Elk Point Airport



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7	1,2-Dichlorotetrafluoroethane	39	Bromodichloromethane
8	Chloromethane	40	Dibromochloromethane
9	Vinyl Chloride	41	Heptane
10	Chloroethane	42	Trichloroethylene
11	1,3-Butadiene	43	Tetrachloroethylene
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22	1,1-Dichloroethylene	54	Benzyl chloride
23	cis-1,2-Dichloroethylene	55	1,3-Dichlorobenzene
24	trans-1,2-Dichloroethylene	56	1,4-Dichlorobenzene
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26	Chloroform	58	1,2,4-Trichlorobenzene
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28	1,1-Dichloroethane	60	Hexane
29	1,2-Dichloroethane	61	Cyclohexane
30	Ethylene Dibromide	62	Tetrahydrofuran
31	1,1,1-Trichloroethane	63	1,4-Dioxane
32	1,1,2-Trichloroethane	64	Xylene (Total)

Polycyclic Aromatic Hydrocarbons

Polycyclic Aromatic Hydrocarbons (PAHs) Results for August 2012

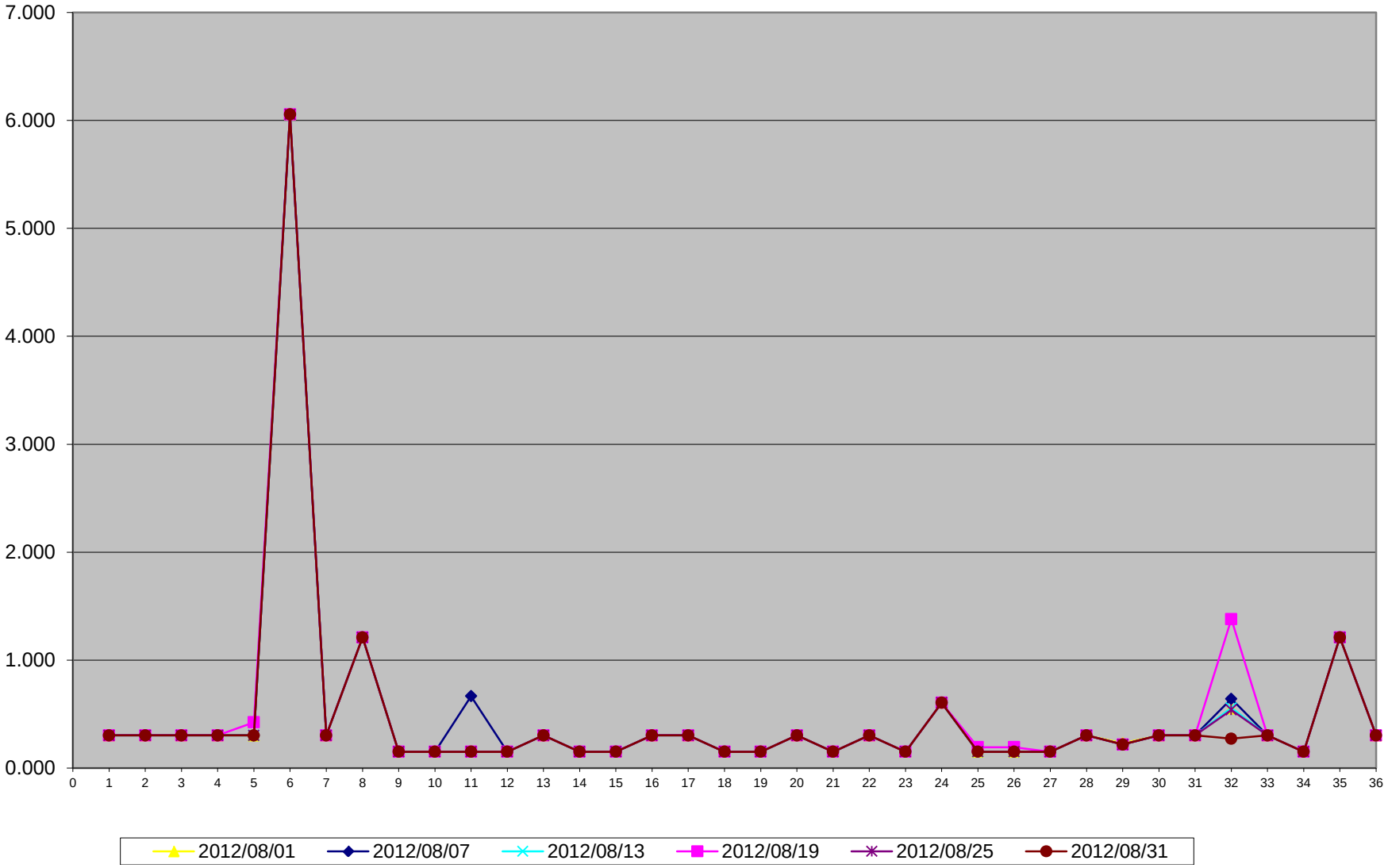
LICA - Portable Site - Elk Point Airport

Unit: ng/m3

	PAHs	2012/08/01	2012/08/07	2012/08/13	2012/08/19	2012/08/25	2012/08/31
	Sample Volume (unit: m3)	330.33	330.34	330.34	330.33	330.33	330.34
1	1-Methylnaphthalene	0.303	0.303	0.303	0.303	0.303	0.303
2	1-Methylphenanthrene	0.303	0.303	0.303	0.303	0.303	0.303
3	2-Chloronaphthalene	0.303	0.303	0.303	0.303	0.303	0.303
4	2-Methlyanthracene	0.303	0.303	0.303	0.303	0.303	0.303
5	2-Methylnaphthalene	0.303	0.303	0.303	0.424	0.303	0.303
6	3-Methylcholanthrene	6.054	6.054	6.054	6.054	6.054	6.054
7	7,12-Dimethylbenzo(a)anthracene	0.303	0.303	0.303	0.303	0.303	0.303
8	9,10-Dimethylanthracene	1.211	1.211	1.211	1.211	1.211	1.211
9	Acenaphthene	0.151	0.151	0.151	0.151	0.151	0.151
10	Acenaphthylene	0.151	0.151	0.151	0.151	0.151	0.151
11	Anthracene	0.151	0.666	0.151	0.151	0.151	0.151
12	Benzo(a)anthracene	0.151	0.151	0.151	0.151	0.151	0.151
13	Benzo(a)fluorene	0.303	0.303	0.303	0.303	0.303	0.303
14	Benzo(a)pyrene	0.151	0.151	0.151	0.151	0.151	0.151
15	Benzo(b)fluoranthene	0.151	0.151	0.151	0.151	0.151	0.151
16	Benzo(b)fluorene	0.303	0.303	0.303	0.303	0.303	0.303
17	Benzo(e)pyrene	0.303	0.303	0.303	0.303	0.303	0.303
18	Benzo(g,h,I)perylene	0.151	0.151	0.151	0.151	0.151	0.151
19	Benzo(k)fluoranthene	0.151	0.151	0.151	0.151	0.151	0.151
20	Biphenyl	0.303	0.303	0.303	0.303	0.303	0.303
21	Chrysene	0.151	0.151	0.151	0.151	0.151	0.151
22	Coronene	0.303	0.303	0.303	0.303	0.303	0.303
23	Dibenz(a,h)anthracene	0.151	0.151	0.151	0.151	0.151	0.151
24	Dibenzo(a,e)pyrene	0.605	0.605	0.605	0.605	0.605	0.605
25	Fluoranthene	0.151	0.151	0.151	0.194	0.151	0.151
26	Fluorene	0.151	0.151	0.151	0.194	0.151	0.151
27	Indeno(1,2,3-cd)pyrene	0.151	0.151	0.151	0.151	0.151	0.151
28	m-Terphenyl	0.303	0.303	0.303	0.303	0.303	0.303
29	Naphthalene	0.230	0.218	0.218	0.218	0.218	0.218
30	o-Terphenyl	0.303	0.303	0.303	0.303	0.303	0.303
31	Perylene	0.303	0.303	0.303	0.303	0.303	0.303
32	Phenanthrene	0.551	0.642	0.557	1.380	0.539	0.272
33	p-Terphenyl	0.303	0.303	0.303	0.303	0.303	0.303
34	Pyrene	0.151	0.151	0.151	0.151	0.151	0.151
35	Quinoline	1.211	1.211	1.211	1.211	1.211	1.211
36	Tetralin	0.303	0.303	0.303	0.303	0.303	0.303

Note: - Values were calculated by the formula of [reading (ug) x 1000 / sample volume (m3)].
- Where the analytical results are less than the minimum detection limit (MDL), the MDL has been used in calculations.
- Sample result for August 31st is not included in this monthly report because it is not available when the monthly report was preparing. The result for August 31st will be included in the following monthly report.

PAHs in ng/m3 Site: LICA - Portable - Elk Point Airport



1	1-Methylnaphthalene
2	1-Methylphenanthrene
3	2-Chloronaphthalene
4	2-Methlyanthracene
5	2-Methylnaphthalene
6	3-Methylcholanthrene
7	7,12-Dimethylbenzo(a)anthracene
8	9,10-Dimethylanthracene
9	Acenaphthene
10	Acenaphthylene
11	Anthracene
12	Benzo(a)anthracene
13	Benzo(a)fluorene
14	Benzo(a)pyrene
15	Benzo(b)fluoranthene
16	Benzo(b)fluorene
17	Benzo(e)pyrene
18	Benzo(g,h,I)perylene
19	Benzo(k)fluoranthene
20	Biphenyl
21	Chrysene
22	Coronene
23	Dibenz(a,h)anthracene
24	Dibenzo(a,e)pyrene
25	Fluoranthene
26	Fluorene
27	Indeno(1,2,3-cd)pyrene
28	m-Terphenyl
29	Naphthalene
30	o-Terphenyl
31	Perylene
32	Phenanthrene
33	p-Terphenyl
34	Pyrene
35	Quinoline
36	Tetralin

Polycyclic Aromatic Hydrocarbons (PAHs) Results for September 2012

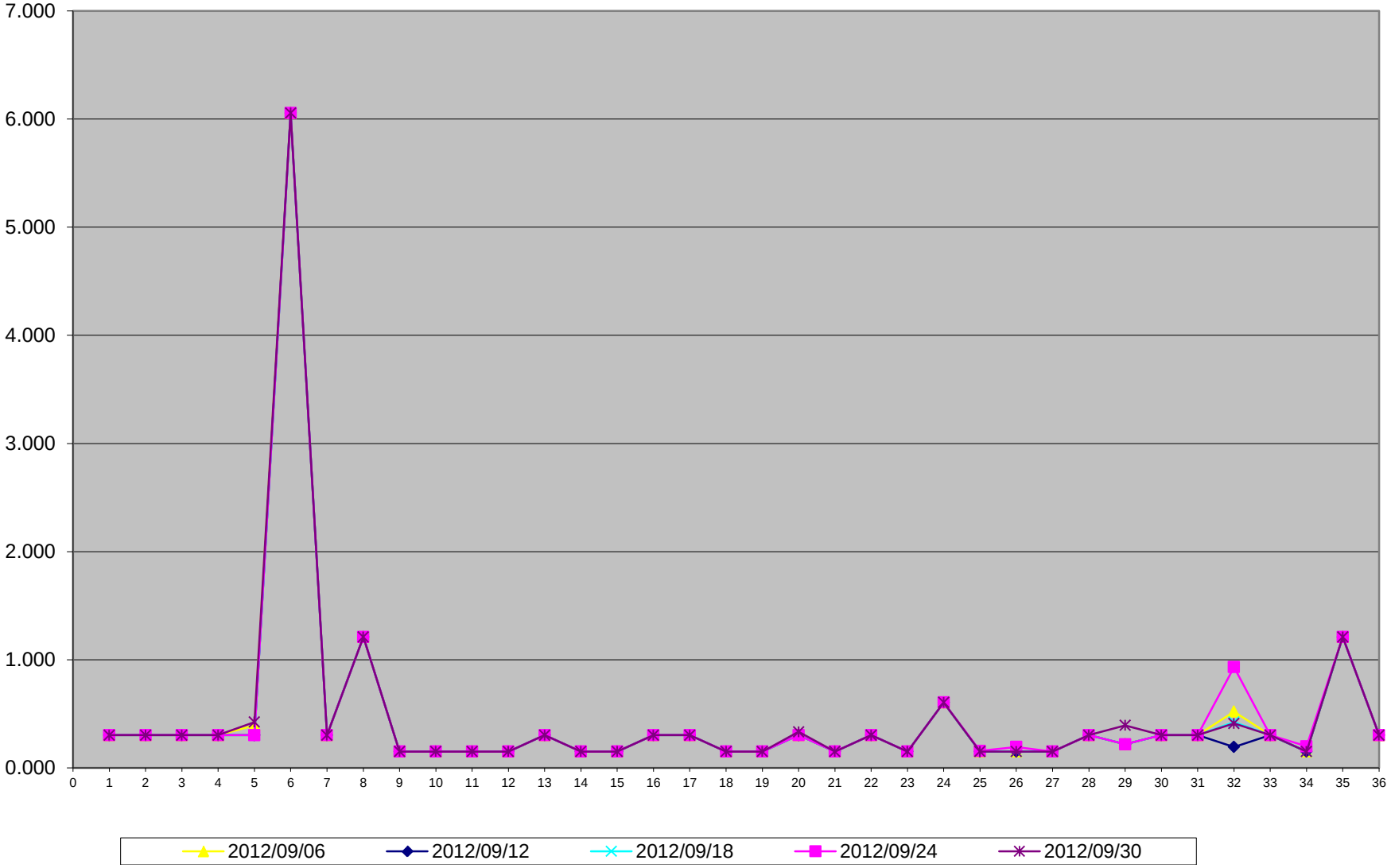
LICA - Portable Site - Elk Point Airport

Unit: ng/m3

	PAHs	2012/09/06	2012/09/12	2012/09/18	2012/09/24	2012/09/30
	Sample Volume (unit: m3)	330.33	330.34	330.34	330.33	330.33
1	1-Methylnaphthalene	0.303	0.303	0.303	0.303	0.303
2	1-Methylphenanthrene	0.303	0.303	0.303	0.303	0.303
3	2-Chloronaphthalene	0.303	0.303	0.303	0.303	0.303
4	2-Methlyanthracene	0.303	0.303	0.303	0.303	0.303
5	2-Methylnaphthalene	0.394	0.303	0.303	0.303	0.424
6	3-Methylcholanthrene	6.054	6.054	6.054	6.054	6.054
7	7,12-Dimethylbenzo(a)anthracene	0.303	0.303	0.303	0.303	0.303
8	9,10-Dimethylanthracene	1.211	1.211	1.211	1.211	1.211
9	Acenaphthene	0.151	0.151	0.151	0.151	0.151
10	Acenaphthylene	0.151	0.151	0.151	0.151	0.151
11	Anthracene	0.151	0.151	0.151	0.151	0.151
12	Benzo(a)anthracene	0.151	0.151	0.151	0.151	0.151
13	Benzo(a)fluorene	0.303	0.303	0.303	0.303	0.303
14	Benzo(a)pyrene	0.151	0.151	0.151	0.151	0.151
15	Benzo(b)fluoranthene	0.151	0.151	0.151	0.151	0.151
16	Benzo(b)fluorene	0.303	0.303	0.303	0.303	0.303
17	Benzo(e)pyrene	0.303	0.303	0.303	0.303	0.303
18	Benzo(g,h,I)perylene	0.151	0.151	0.151	0.151	0.151
19	Benzo(k)fluoranthene	0.151	0.151	0.151	0.151	0.151
20	Biphenyl	0.303	0.303	0.303	0.303	0.333
21	Chrysene	0.151	0.151	0.151	0.151	0.151
22	Coronene	0.303	0.303	0.303	0.303	0.303
23	Dibenz(a,h)anthracene	0.151	0.151	0.151	0.151	0.151
24	Dibenzo(a,e)pyrene	0.605	0.605	0.605	0.605	0.605
25	Fluoranthene	0.151	0.151	0.151	0.157	0.151
26	Fluorene	0.151	0.151	0.151	0.194	0.151
27	Indeno(1,2,3-cd)pyrene	0.151	0.151	0.151	0.151	0.151
28	m-Terphenyl	0.303	0.303	0.303	0.303	0.303
29	Naphthalene	0.218	0.218	0.218	0.218	0.394
30	o-Terphenyl	0.303	0.303	0.303	0.303	0.303
31	Perylene	0.303	0.303	0.303	0.303	0.303
32	Phenanthrene	0.521	0.194	0.424	0.932	0.412
33	p-Terphenyl	0.303	0.303	0.303	0.303	0.303
34	Pyrene	0.151	0.151	0.151	0.200	0.151
35	Quinoline	1.211	1.211	1.211	1.211	1.211
36	Tetralin	0.303	0.303	0.303	0.303	0.303

Note: - Values were calculated by the formula of [reading (ug) x 1000 / sample volume (m3)].
- Where the analytical results are less than the minimum detection limit (MDL), the MDL has been used in calculations.
- Sample result for August 31st is not included in this monthly report because it is not available when the monthly report was preparing. The result for August 31st will be included in the following monthly report.

PAHs in ng/m3 Site: LICA - Portable - Elk Point Airport



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28	m-Terphenyl
29	Naphthalene
30	o-Terphenyl
31	Perylene
32	Phenanthrene
33	p-Terphenyl
34	Pyrene
35	Quinoline
36	Tetralin

Calibration Reports

Sulphur Dioxide

SO2 Calibration Report

Station Information

Calibration Date	September 4, 2012		Previous Calibration	August 15, 2012	
Company	Lakeland Community and Industry Association				
Plant / Location	Portable / Elk Poin Airport				
Start Time (MST)	11:22		End Time (MST)	15:27	
Reason:			Monthly Calibration		
Barometric Pressure	27.83	inHg	Station Temperature	22	Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	LL42502	Cal Gas Expiry date	December 29, 2013
DAS Output Voltage	0 - 1	Volts	Chart Rec. Output	NA	Volts

Equipment Information

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

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range	0 - 1000 ppb							
Sample Flow / Box Temp	591	ccm	30.3	Deg C	597	ccm	30.6	Deg C
HVPS / Lamp Setting	612		1707		612		1715	
PMT / RxCell Temp	8.1	Deg C	50	Deg C	8.1	Deg C	50	Deg C
Converter / IZS Temp	NA	Deg C	45	Deg C	NA	Deg C	45.0	Deg C
Offset / Slope	88.8		1.22		91.4		1.211	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	2	N/A
4995	0	0	0	N/A
4920	75.4	749	755	0.9916
4920	75.4	749	751	0.9969
4954	40.2	399	397	1.0057
4978	17.1	170	168	1.0107
4995	0	0	0	N/A
			Sum of Least Squares	0.9993
			New Correction Factor	0.9969

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	3.2	1.0
Auto Span	375.0	368.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9916
Percent Change:	0.8%

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

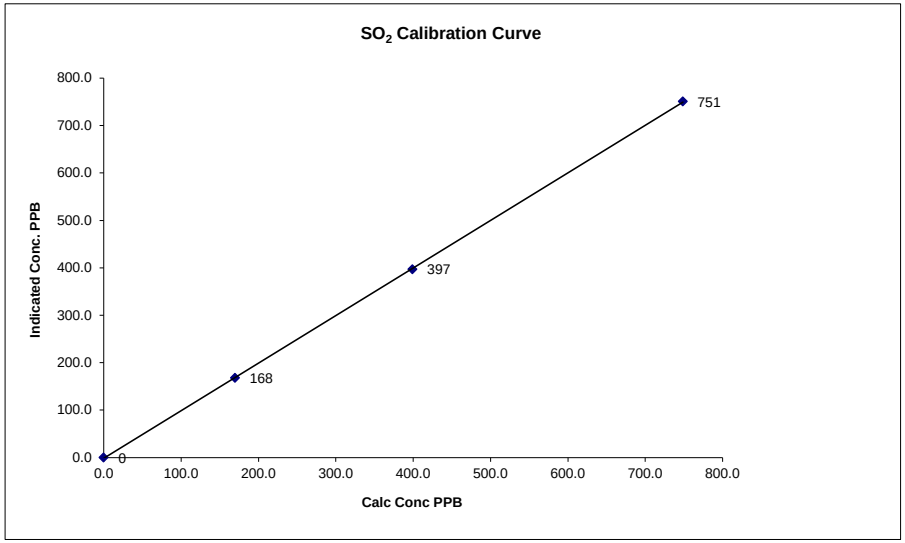
Calibration Performed by: Ting Xu

SO_2 Calibration Curve

Calibration Date	September 4, 2012		
Company	Lakeland Community and Industry Association		
Plant / Location	Portable / Elk Poin Airport		
Start Time (MST)	11:22	End Time (MST)	15:27

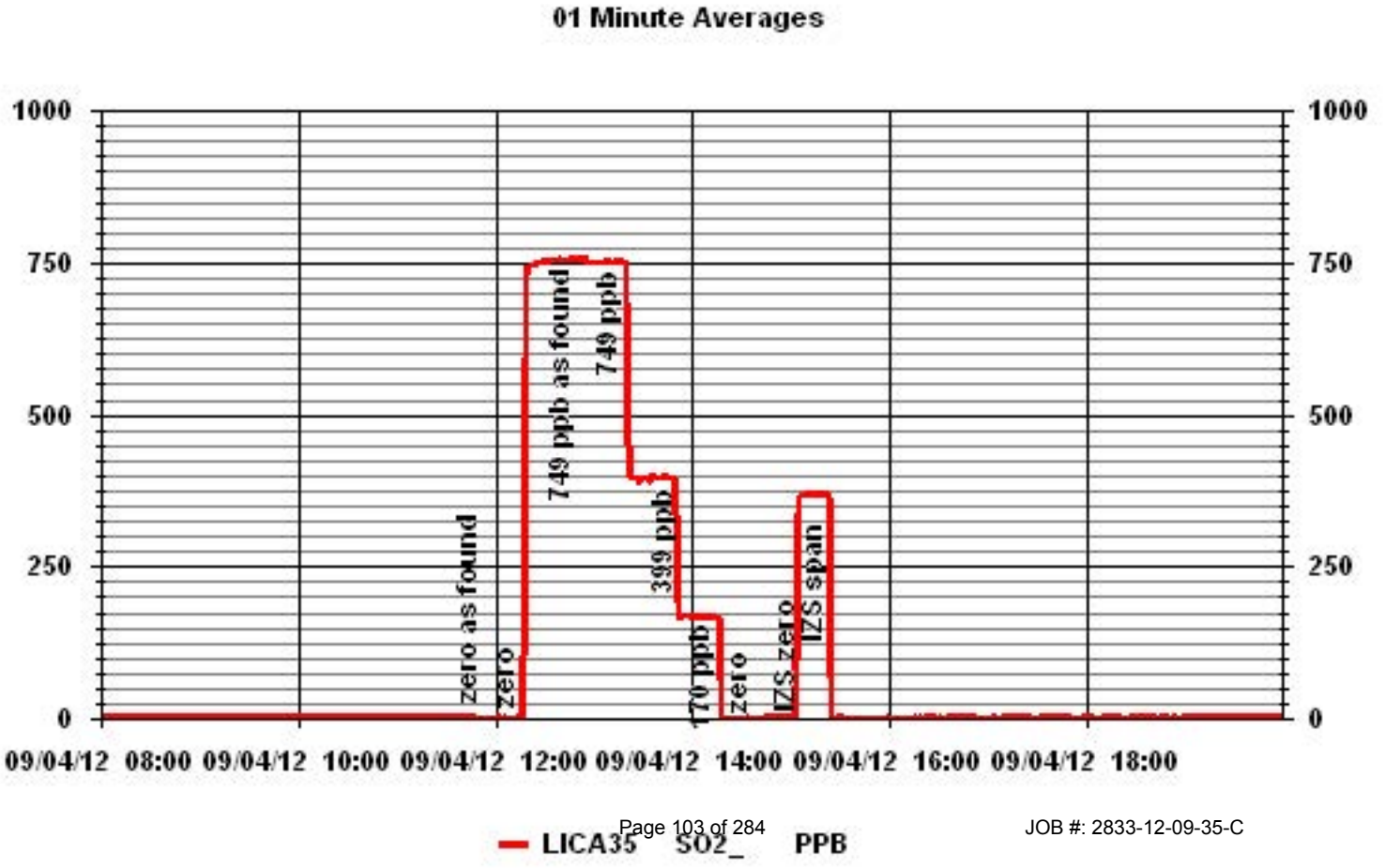
Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
170	168	1.0107
399	397	1.0057
749	751	0.9969

Correlation Coefficient	(≥ 0.995)	0.999971
Slope	(0.85 to 1.15)	1.003536
Intercept	(± 3% F.S.)	-1.590417



Notes:

JOB #: 2833-12-09-35-C



JOB #: 2833-12-09-35-C

Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	September 5, 2012		Previous Calibration	August 14, 2012	
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	Portable/ Elk Point Airport				
Start Time (MST)	9:51		End Time (MST)	13:50	
Reason:	Monthly Calibration				
Barometric Pressure	27.8	inHg	Station Temperature	22	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 2012
DAS Output Voltage	0 - 1	Volts	Chart Rec. Output	NA	Volts

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	509	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range			0 - 100	ppb				
Sample Flow / Box Temp	517	ccm	30.4	Deg C	518	ccm	31	Deg C
HVPS / Lamp Setting	540		1987		540		1989	
PMT / RxCell Temp	7.9	Deg C	50	Deg C	7.9	Deg C	50	Deg C
Converter / IZS Temp	315	Deg C	45	Deg C	316	Deg C	45.0	Deg C
Offset / Slope	88.4		0.983		90		1	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	1	NA
4995	0	0	0	NA
4960	40.0	80	79	1.0127
4960	40.0	80	80	1.0000
4977	20.0	40	41	0.9762
4987	11.5	23	24	0.9586
4996	0	0	0	NA
			Sum of Least Squares	0.9928
			New Correction Factor	1.0000

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.6	0.6
Auto Span	56.4	57.3
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0127
Percent Change:	-1.3%

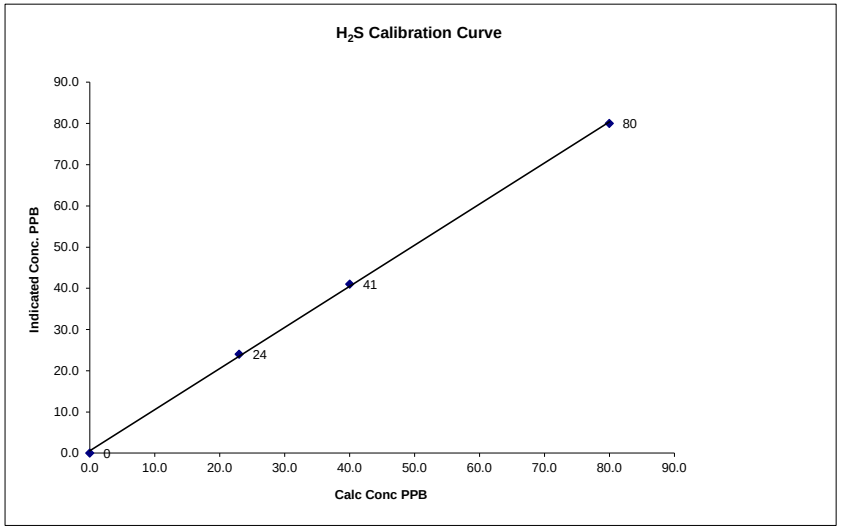
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

H_2S Calibration Curve

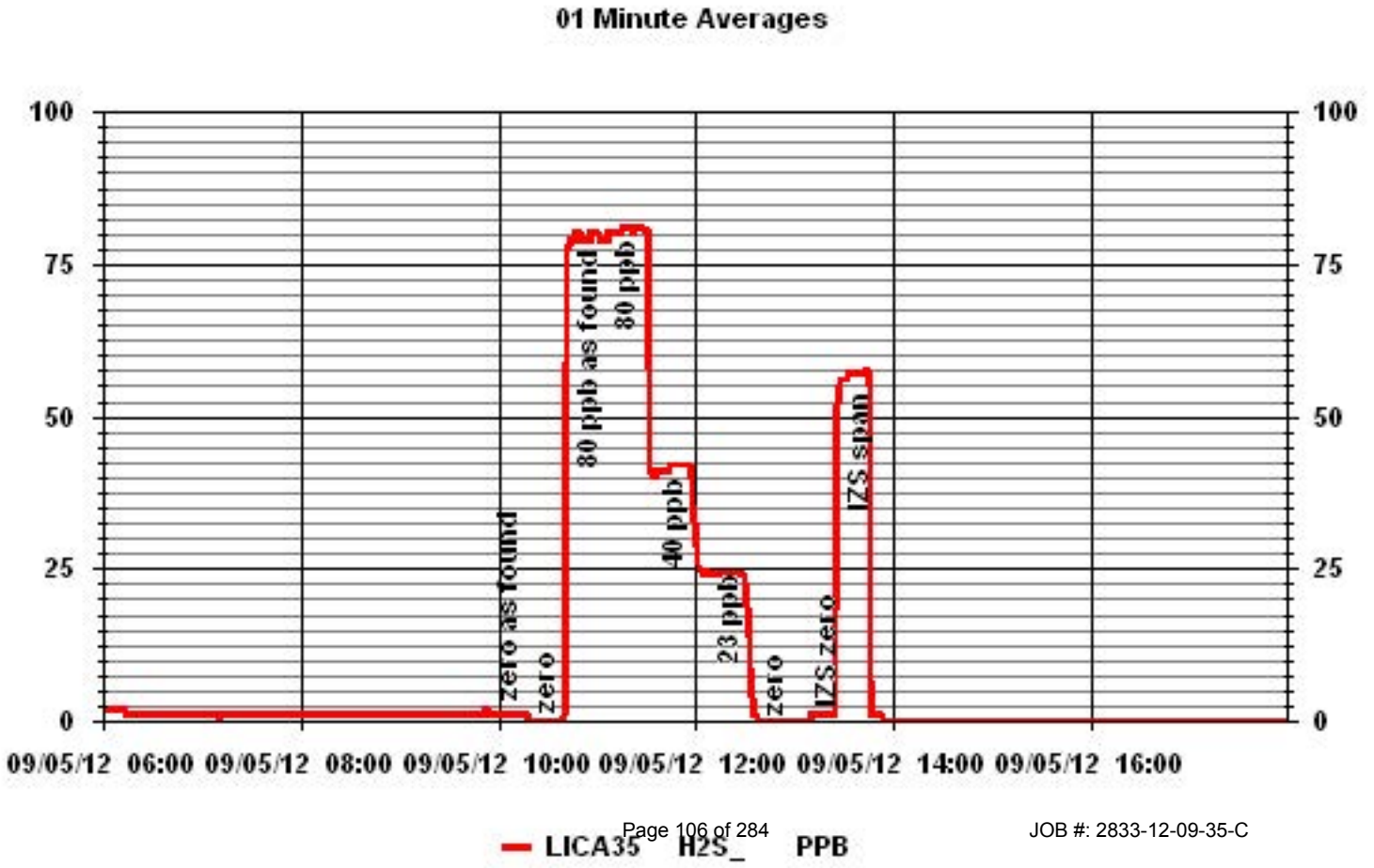
Calibration Date	September 5, 2012				
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	Portable/ Elk Point Airport				
Start Time (MST)	9:51	End Time	(MST)	13:50	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor			
0	0		Correlation Coefficient	(≥ 0.995)	0.999721
23	24	0.9586	Slope	(0.85 to 1.15)	0.997513
40	41	0.9762	Intercept	(± 3% F.S.)	0.581216
80	80	1.0000			



Notes:

JOB #: 2833-12-09-35-C



JOB #: 2833-12-09-35-C

Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	September 4, 2012		Previous Calibration	August 30, 2012	
Company:	**Lakeland Industry and Community Association**				
Plant / Location:	**ELICA Portable Station / Elk Point Airport**				
Start Time (MST)	10:02		End Time (MST)	11:18	
Reason:	As Found				
Barometric Pressure:	27.84	inHg	Station Temperature:	22	Deg C
Calibrator:	API 700		S/N:	831	
Cal Gas Concentration:	CH4 600 PPM		C3H8	204 PPM	
	TOTAL CH4 1161.0 PPM		Gas Cyl. #	LL155310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832		S/N :	AO 717	
Chart Recorder:	NA		S/N:	NA	
Output Voltage Range:	0 - 10	VDC	Chart Speed:	NA	mm/hr

Analyzer Information

Make / Model	Thermo 51C	S/N :	04366-09739	Method	Flame Ionization

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	6.8	psi	6.8	psi
Hydrogen Pressure	8	psi	8	psi
Air Pressure	21	psi	21	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	0.0	NA
	No Zero Adj.			
2000	74.0	41.4	41.6	0.9958
			New Correction Factor:	0.9958

Percent Change

Previous Calibration Correction Factor:	0.9958
Current Correction Factor Before Span Adjust:	0.9958
Percent Change:	0.0%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.6	-
Auto Span	32.9	-
Sample Lines Connected		**YES**

Cylinder Pressures

Span 1300 psi Hydrogen 2000 psi Zero Air 34 psi

Notes: **NA : Not Applicable**

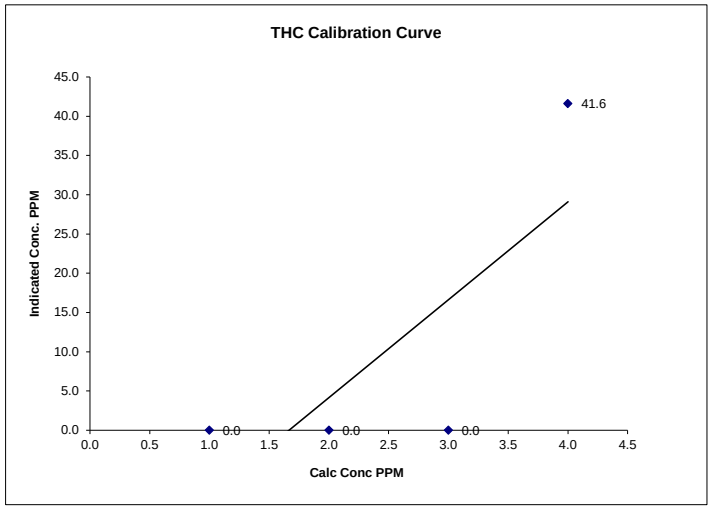
Checked the analyzer's functionality.

Calibration Performed by: Ting Xu

THC Calibration Curve

Calibration Date	September 4, 2012		
Company	**Lakeland Industry and Community Association**		
Plant / Location	**ELICA Portable Station / Elk Point Airport**		
Start Time (MST)	10:02	End Time (MST)	11:18

Calculated Conc. ppm	Indicated Response ppm	Correction Factor			
			Correlation Coefficient	(≥ 0.995)	#DIV/0!
	0.0	NA	Slope	(0.85 to 1.15)	#DIV/0!
	0.0	#VALUE!	Intercept	(± 3% F.S.)	#DIV/0!
	0.0	#VALUE!			
41.4	41.6	0.9958			



Notes:

THC Calibration Report

Station Information

Calibration Date:	September 4, 2012		Previous Calibration	August 30, 2012	
Company:	**Lakeland Industry and Community Association**				
Plant / Location:	**ELICA Portable Station / Elk Point Airport**				
Start Time (MST)	11:19		End Time (MST)	14:49	
Reason:	Monthly Calibration				
Barometric Pressure:	27.83	inHg	Station Temperature:	22	Deg C
Calibrator:	API 700		S/N:	831	
Cal Gas Concentration:	CH4 600 PPM		C3H8	204 PPM	
	TOTAL CH4 1161.0 PPM		Gas Cyl. #	LL155310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832		S/N :	AO 717	
Chart Recorder:	NA		S/N:	NA	
Output Voltage Range:	0 - 10	VDC	Chart Speed:	NA	mm/hr

Analyzer Information

Make / Model	Thermo 51C	S/N :	04366-09739	Method	Flame Ionization

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	6.8	psi	6.8	psi
Hydrogen Pressure	8	psi	8	psi
Air Pressure	21	psi	21	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	0.0	NA
	No Zero Adj.			
2000	74.0	41.4	41.5	0.9982
	No Span Adj.			
2000	37.0	21.1	20.9	1.0090
2000	20.0	11.5	11.5	1.0000
2000	0.0	0.0	0.0	NA
			New Correction Factor:	0.9982

Percent Change

Previous Calibration Correction Factor:	0.9958
Current Correction Factor Before Span Adjust:	0.9982
Percent Change:	-0.2%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-	0.0
Auto Span	-	31.9
Sample Lines Connected		**YES**

Cylinder Pressures

Span 1300 psi Hydrogen 2000 psi Zero Air 34 psi

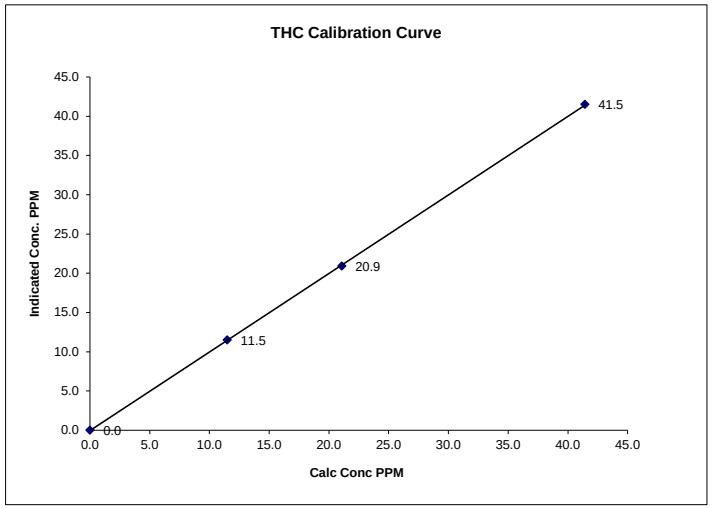
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

THC Calibration Curve

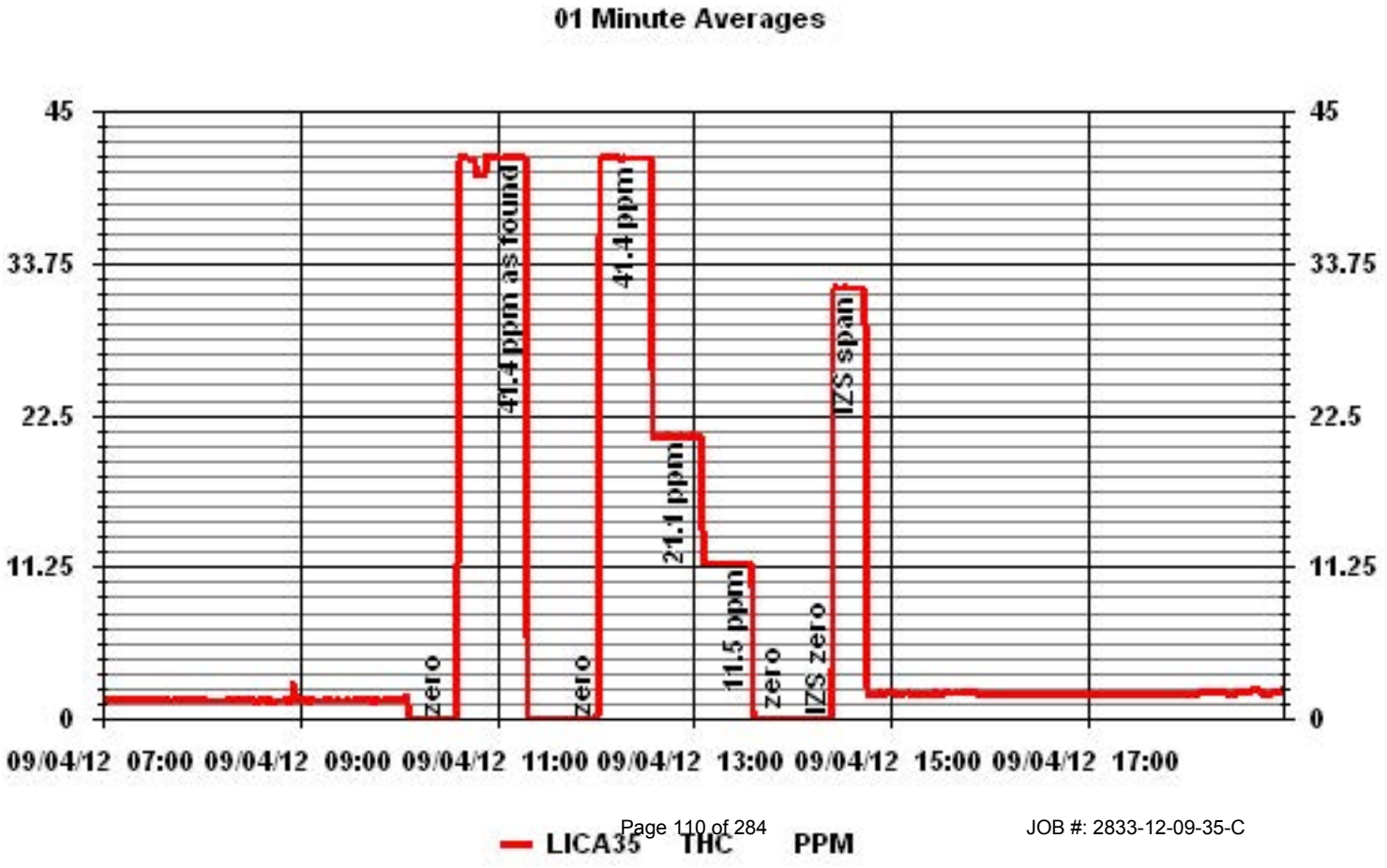
Calibration Date	September 4, 2012				
Company	**Lakeland Industry and Community Association**				
Plant / Location	**ELICA Portable Station / Elk Point Airport**				
Start Time (MST)	11:19	End Time	(MST)	14:49	

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999960
			Slope (0.85 to 1.15)	1.001314
0.0	0.0	NA	Intercept (± 3% F.S.)	-0.05124
11.5	11.5	0.9996		
21.1	20.9	1.0090		
41.4	41.5	0.9982		



Notes:

JOB #: 2833-12-09-35-C



JOB #: 2833-12-09-35-C

THC Calibration Report

Station Information

Calibration Date:	September 17, 2012		Previous Calibration	September 4, 2012	
Company:	**Lakeland Industry and Community Association**				
Plant / Location:	**ELICA Portable Station / Elk Point Airport**				
Start Time (MST)	10:09		End Time (MST)	11:01	
Reason:			As Found		
Barometric Pressure:	27.83	inHg	Station Temperature:	22	Deg C
Calibrator:	API 700		S/N:	831	
Cal Gas Concentration:	CH4 600 PPM		C3H8	204 PPM	
	TOTAL CH4 1161.0 PPM		Gas Cyl. #	LL155310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832		S/N :	AO 717	
Chart Recorder:	NA		S/N:	NA	
Output Voltage Range:	0 - 10	VDC	Chart Speed:	NA	mm/hr

Analyzer Information

Make / Model	Thermo 51C	S/N :	04366-09739	Method	Flame Ionization

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	7.2	psi	7.5	psi
Hydrogen Pressure	8	psi	8	psi
Air Pressure	22	psi	21	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	0.0	NA
	No Zero Adj.			
2000	74.0	41.4	43.3	0.9567
			New Correction Factor:	0.9567

Percent Change

Previous Calibration Correction Factor:	0.9982
Current Correction Factor Before Span Adjust:	0.9567
Percent Change:	4.3%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.2	-
Auto Span	35.5	-
Sample Lines Connected		**YES**

Cylinder Pressures

Span 1100 psi Hydrogen 1800 psi Zero Air 34 psi

Notes: **NA : Not Applicable**

After A/F points, cleared the flow high alarm, and increased the sample pressure to 7.5 psi.

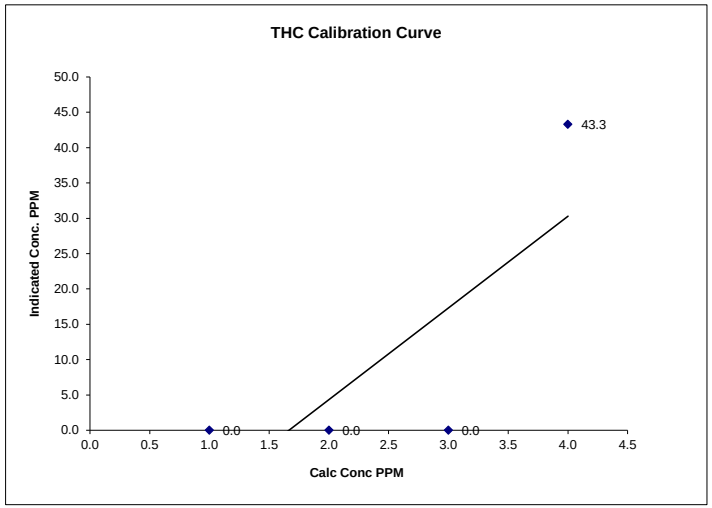
Calibration Performed by: Ting Xu

THC Calibration Curve

Calibration Date	September 17, 2012			
Company	**Lakeland Industry and Community Association**			
Plant / Location	**ELICA Portable Station / Elk Point Airport**			
Start Time (MST)	10:09	End Time (MST)	11:01	

Calculated Conc. ppm	Indicated Response ppm	Correction Factor
	0.0	NA
	0.0	#VALUE!
	0.0	#VALUE!
41.4	43.3	0.9567

Correlation Coefficient	(≥ 0.995)	#DIV/0!
Slope	(0.85 to 1.15)	#DIV/0!
Intercept	(± 3% F.S.)	#DIV/0!



Notes:

THC Calibration Report

Station Information

Calibration Date:	September 17, 2012		Previous Calibration	September 4, 2012	
Company:	**Lakeland Industry and Community Association**				
Plant / Location:	**ELICA Portable Station / Elk Point Airport**				
Start Time (MST)	12:10		End Time (MST)	15:10	
Reason:	Post Repair Calibration				
Barometric Pressure:	27.84	inHg	Station Temperature:	22	Deg C
Calibrator:	API 700		S/N:	831	
Cal Gas Concentration:	CH4 600 PPM		C3H8	204 PPM	
	TOTAL CH4 1161.0 PPM		Gas Cyl. #	LL155310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832		S/N :	AO 717	
Chart Recorder:	NA		S/N:	NA	
Output Voltage Range:	0 - 10	VDC	Chart Speed:	NA	mm/hr

Analyzer Information

Make / Model	Thermo 51C	S/N :	04366-09739	Method	Flame Ionization

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	7.5	psi	7.5	psi
Hydrogen Pressure	8	psi	8	psi
Air Pressure	22	psi	22	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	0.0	NA
	No Zero Adj.			
2000	74.0	41.4	41.4	1.0000
	No Span Adj.			
2000	37.0	21.1	20.8	1.0139
2000	20.0	11.5	11.3	1.0173
2000	0.0	0.0	-0.1	NA
			New Correction Factor:	1.0000

Percent Change

Previous Calibration Correction Factor:	0.9982
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	-0.2%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.2	0.0
Auto Span	35.5	32.4
Sample Lines Connected		**YES**

Cylinder Pressures

Span 1100 psi Hydrogen 1800 psi Zero Air 34 psi

Notes: **NA : Not Applicable**

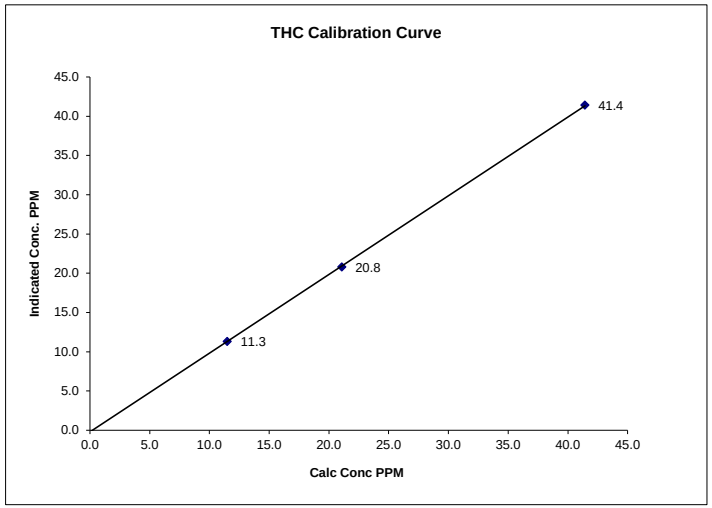
Calibration Performed by: Ting Xu

THC Calibration Curve

Calibration Date	September 17, 2012				
Company	**Lakeland Industry and Community Association**				
Plant / Location	**ELICA Portable Station / Elk Point Airport**				
Start Time (MST)	12:10	End Time	(MST)	15:10	

Calculated Conc. ppm	Indicated Response ppm	Correction Factor
0.0	-0.1	NA
11.5	11.3	1.0173
21.1	20.8	1.0139
41.4	41.4	1.0006

Correlation Coefficient	(≥ 0.995)	0.999962
Slope	(0.85 to 1.15)	1.002072
Intercept	(± 3% F.S.)	-0.19027



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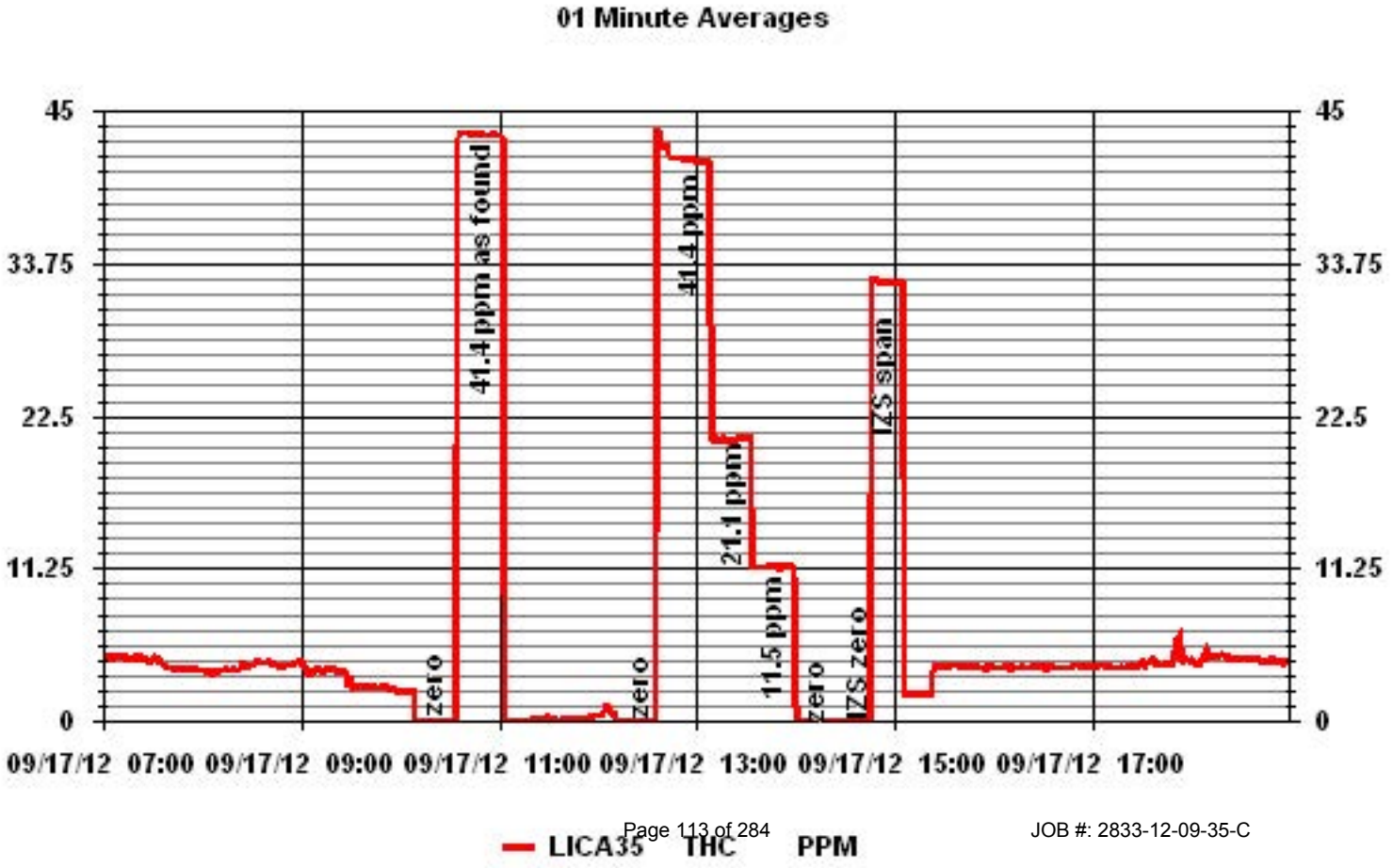


JOB #: 2833-12-09-35-C

THC Calibration Report

Station Information

Calibration Date:	September 20, 2012		Previous Calibration	September 17, 2012	
Company:	**Lakeland Industry and Community Association**				
Plant / Location:	**ELICA Portable Station / Elk Point Airport**				
Start Time (MST)	14:45		End Time (MST)	15:45	
Reason:	As Found				
Barometric Pressure:	27.89	inHg	Station Temperature:	22	Deg C
Calibrator:	API 700		S/N:	831	
Cal Gas Concentration:	CH4 600 PPM		C3H8	204 PPM	
	TOTAL CH4 1161.0 PPM		Gas Cyl. #	LL155310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832		S/N :	AO 717	
Chart Recorder:	NA		S/N:	NA	
Output Voltage Range:	0 - 10	VDC	Chart Speed:	NA	mm/hr

Analyzer Information

Make / Model	Thermo 51C	S/N :	04366-09739	Method	Flame Ionization

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	7.5	psi	6.8	psi
Hydrogen Pressure	8	psi	8	psi
Air Pressure	22	psi	21	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	0.0	NA
	No Zero Adj.			
2000	74.0	41.4	41.3	1.0030
			New Correction Factor:	1.0030

Percent Change

Previous Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0030
Percent Change:	-0.3%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	1.1	-
Auto Span	52.3	-
Sample Lines Connected		**YES**

Cylinder Pressures

Span 1100 psi Hydrogen 1800 psi Zero Air 34 psi

Notes: **NA : Not Applicable**

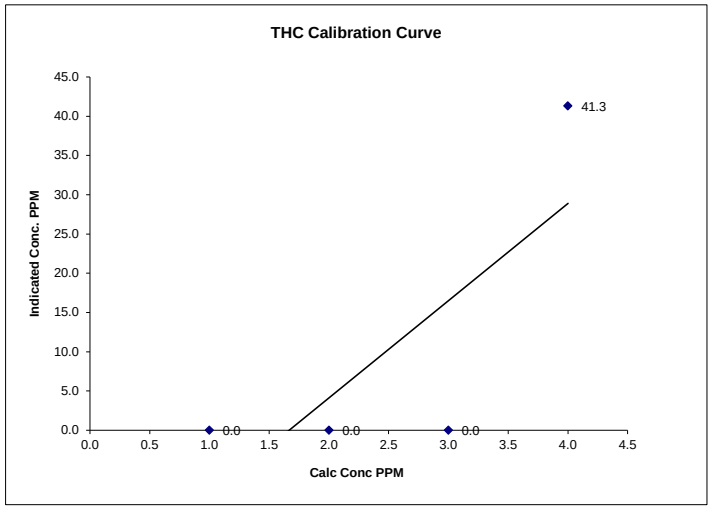
Ceaned the flow restrictor and tubing which was connected with FID prior to A/F points. Following the A/F points, installed a cool fan, lower the sample pressure to 6.8 psi.

Calibration Performed by: Ting Xu

THC Calibration Curve

Calibration Date	September 20, 2012		
Company	**Lakeland Industry and Community Association**		
Plant / Location	**ELICA Portable Station / Elk Point Airport**		
Start Time (MST)	14:45	End Time (MST)	15:45

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient (≥ 0.995)	#DIV/0!
	0.0	NA	Slope (0.85 to 1.15)	#DIV/0!
	0.0	#VALUE!	Intercept (± 3% F.S.)	#DIV/0!
	0.0	#VALUE!		
41.4	41.3	1.0030		



Notes:

THC Calibration Report

Station Information

Calibration Date:	September 20, 2012		Previous Calibration	September 17, 2012	
Company:	**Lakeland Industry and Community Association**				
Plant / Location:	**ELICA Portable Station / Elk Point Airport**				
Start Time (MST)	16:51		End Time (MST)	19:55	
Reason:	Post Repair Calibration				
Barometric Pressure:	27.88	inHg	Station Temperature:	22	Deg C
Calibrator:	API 700		S/N:	831	
Cal Gas Concentration:	CH4 600 PPM		C3H8	204 PPM	
	TOTAL CH4 1161.0 PPM		Gas Cyl. #	LL155310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832		S/N :	AO 717	
Chart Recorder:	NA		S/N:	NA	
Output Voltage Range:	0 - 10	VDC	Chart Speed:	NA	mm/hr

Analyzer Information

Make / Model	Thermo 51C	S/N :	04366-09739	Method	Flame Ionization

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	6.8	psi	6.8	psi
Hydrogen Pressure	8	psi	8	psi
Air Pressure	22	psi	21	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	0.0	NA
	No Zero Adj.			
2000	74.0	41.4	41.6	0.9958
	No Span Adj.			
2000	37.0	21.1	21.0	1.0042
2000	20.0	11.5	11.5	1.0000
2000	0.0	0.0	-0.1	NA
			New Correction Factor:	0.9958

Percent Change

Previous Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9958
Percent Change:	0.4%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-	0.0
Auto Span	-	32.0
Sample Lines Connected		**YES**

Cylinder Pressures

Span 1100 psi Hydrogen 1800 psi Zero Air 34 psi

Notes: **NA : Not Applicable**

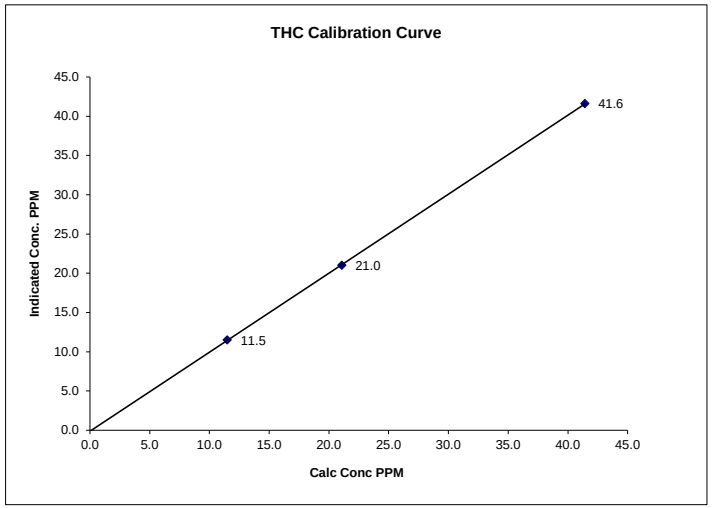
Calibration Performed by: Ting Xu

THC Calibration Curve

Calibration Date	September 20, 2012				
Company	**Lakeland Industry and Community Association**				
Plant / Location	**ELICA Portable Station / Elk Point Airport**				
Start Time (MST)	16:51	End Time	(MST)	19:55	

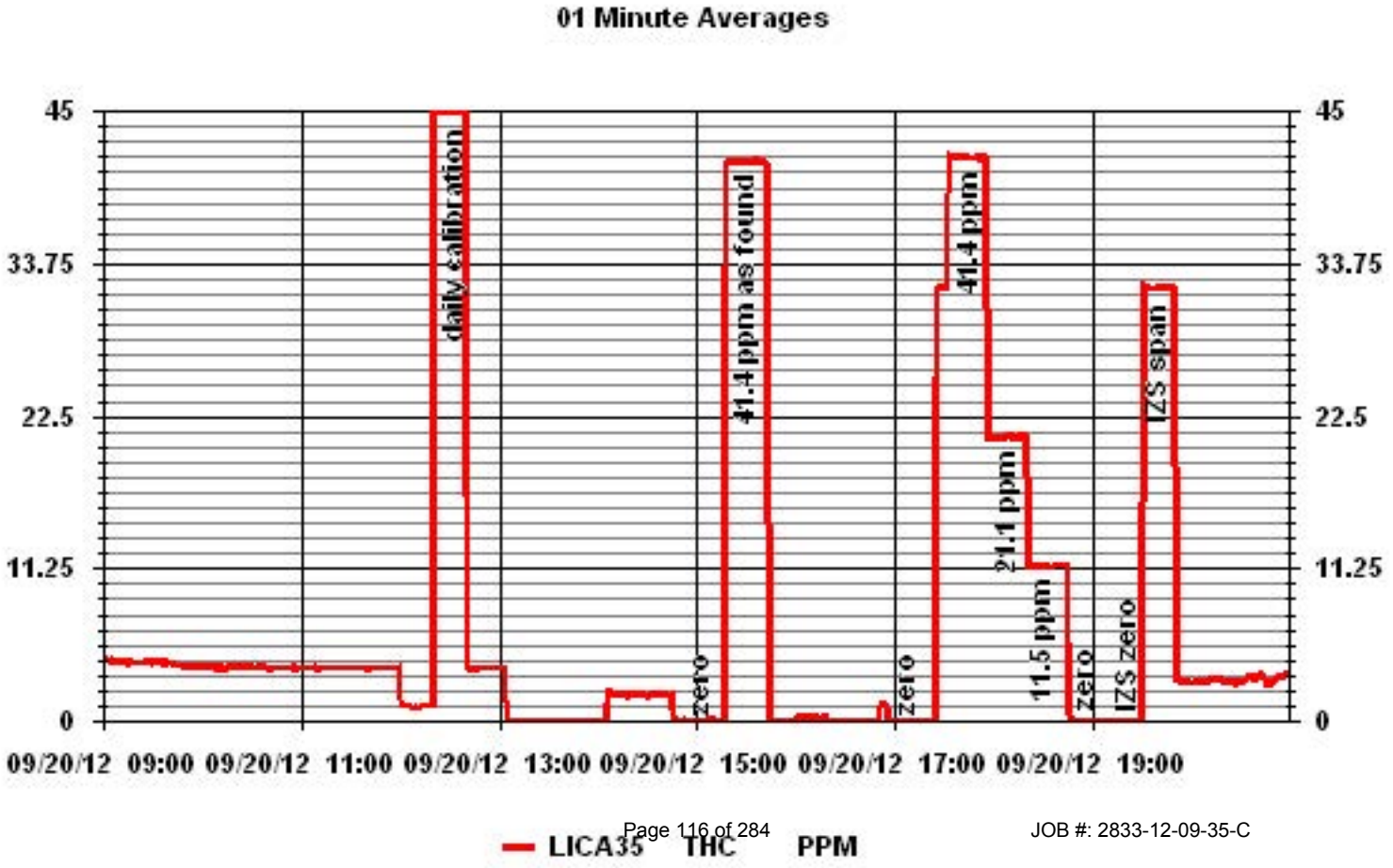
Calculated Conc. ppm	Indicated Response ppm	Correction Factor
0.0	-0.1	NA
11.5	11.5	0.9996
21.1	21.0	1.0042
41.4	41.6	0.9958

Correlation Coefficient	(≥ 0.995)	0.999984
Slope	(0.85 to 1.15)	1.006079
Intercept	(± 3% F.S.)	-0.11441



Notes:

JOB #: 2833-12-09-35-C



JOB #: 2833-12-09-35-C

Particulate Matter 2.5

TEOM Calibration

Station		Transfer Standard	
Date:	September 7, 2012	Make/Model:	Streamline FTS
Station Name:	Lafarge	Serial Number:	Lo091099, Hi 091001
Location:	Exshaw - Lagoons	Cell s/n:	NA
Operator:	Maxxam Analytics	Thermometer s/n:	Fisher Brand 15-021B

Sampler		Set-up and current Sampler readings	
Make/Model	R&P Teom 1400a	F-Main Set Pt (l/min)	3.00
Unit #	30002	F-Aux Set Pt (l/min)	13.67
Control unit s/n	140AB228730001	Filter Load (%)	13%
Transducer s/n	1200C140189708	K_o Factor	14568
Parameter	PM 2.5	Temp (^oC)	15.3
		Press (ATM)	0.929

Conversion from mmHg or "Hg to ATM (Atmospheres)

ATM = (mmHg) X (1.316 X 10 -3) or ATM = ("Hg) X (3.34207 X 10 -2)

Note: Tolerances are noted as BOLD in Brackets

Calibration

Zero flow

	Pump Off		Pump On (Time to reach set points)	
F-Main (l/min)	0.07		**(45-60 Sec)**	47
F-Aux (l/min)	0.18		**(45-60 Sec)**	53

Temperature/Pressure

Measured Temp **(± 1 ^oC)**	16	**D ^oC**	0.7
Measured Press **(± 1.5% ATM)**	0.933	**D % ATM**	0.4%

Flow Audit

Indicated Main/Aux Flow (l/min)	2.98 / 13.65	**D % from Set-pt (± 2%)**	0.7% / 0.1%
Total Flow = Main + Aux (l/min)	16.63	**(± 2%)**	0.2%
Measured Total Flow (l/min)	16.60	**(± 1.0 l/min. (5.65%))**	0.2%
Measured Main Flow (l/min)	2.93	**(± 0.2 l/min. (6.25%))**	1.7%

Leak Check

		Actual leakage = Pump On - Pump Off
Main **(< 0.15 l/min)**	0.05	-0.02
Aux **(< 0.15 l/min)**	0.20	0.02

K_o Factor

Measured	NA
K_o Difference **(± 2.5%)**	NA

Start Time: 9:20 **Finish Time:** 11:08

Sample Inlet Cleaned: YES **Sample Inlet Connected:** YES

Comments:

Calibrator/s: Ting Xu

TEOM Calibration

Station		Transfer Standard	
Date:	September 20, 2012	Make/Model:	Streamline FTS
Station Name:	Lafarge	Serial Number:	Lo091099, Hi 091001
Location:	Exshaw - Lagoons	Cell s/n:	NA
Operator:	Maxxam Analytics	Thermometer s/n:	Fisher Brand 15-021B

Sampler		Set-up and current Sampler readings	
Make/Model	R&P Teom 1400a	F-Main Set Pt (l/min)	3.00
Unit #	30002	F-Aux Set Pt (l/min)	13.67
Control unit s/n	140AB228730001	Filter Load (%)	19%
Transducer s/n	1200C140189708	K_o Factor	14568
Parameter	PM 2.5	Temp (^oC)	14.4
		Press (ATM)	0.927

Conversion from mmHg or "Hg to ATM (Atmospheres)

ATM = (mmHg) X (1.316 X 10 -3) or ATM = ("Hg) X (3.34207 X 10 -2)

Note: Tolerances are noted as BOLD in Brackets

Calibration

Zero flow

	Pump Off		Pump On (Time to reach set points)	
F-Main (l/min)	0.07		**(45-60 Sec)**	48
F-Aux (l/min)	0.17		**(45-60 Sec)**	55

Temperature/Pressure

Measured Temp **(± 1 ^oC)**	14	**D ^oC**	-0.4
Measured Press **(± 1.5% ATM)**	0.931	**D % ATM**	0.4%

Flow Audit

			D % from Set-pt	
Indicated Main/Aux Flow (l/min)	2.99 /	13.65	**(± 2%)**	0.3% / 0.1%
Total Flow = Main + Aux (l/min)	16.64		**(± 2%)**	0.2%
Measured Total Flow (l/min)	16.59		**(± 1.0 l/min. (5.65%))**	0.3%
Measured Main Flow (l/min)	2.94		**(± 0.2 l/min. (6.25%))**	1.7%

Leak Check

		Actual leakage = Pump On - Pump Off
Main **(< 0.15 l/min)**	0.04	-0.03
Aux **(< 0.15 l/min)**	0.20	0.03

K_o Factor

Measured	14320
K_o Difference **(± 2.5%)**	1.70%

Start Time: **17:01** **Finish Time:** **19:25**

Sample Inlet Cleaned: **YES** **Sample Inlet Connected:** **YES**

Comments: Verified the Ko with the standard Ko.

Calibrator/s: Ting Xu

JOB #: 2833-12-09-35-C

Nitrogen Dioxide

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	September 4, 2012		Previous Calibration	August 4, 2012	
Company	LICA		Plant/Location	**Portable/Elk Point Airport**	
Start Time (MST)	10:02		End Time (MST)	16:19	
Reason:	As found				
Barometric Pressure	27.84 inHg	Station Temperature	22 Deg C	MFCF	0
Cal Gas Concentration	NOx 50.1 ppm	NO 50.1 ppm	Cal Gas Expiry date	December 29, 2013	
Cal Gas Cylinder #	LL42502				
DAS Output Voltage	0 - 1 Volts		Chart Rec. Output	NA Volts	

Equipment Information

Analyzer Make / Model:	TAPI 200E	S/N :	593	Method:	Chemiluminescent
Calibrator Make / Model:	Environics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Environics 6100	S/N :	4760		

Analyzer Settings

	Before Calibration					After Calibration			
Concentration Range				0 - 1000	ppb				
Sample Flow/Conv. Temp	471	ccm	315	Deg C		467	ccm	315	Deg C
Ozone Flow / Vacuum	78	ccm	4.6	"Hg-A		78	ccm	4.9	"Hg-A
HVPS / A ZERO	646	Volts	6.8	MV		638	Volts	13	MV
Rx/ Temp / PMT Temp	50.0	Deg C	6.7	Deg C		50.1	Deg C	6.7	Deg C
Box Temp / IZS Temp	30.6	Deg C	45.2	Deg C		29.6	Deg C	45.3	Deg C
Offset	0.5	NOx	0.2	NO		-2.3	NOx	-3.6	NO
Slope	1.303	NOx	1.291	NO		0.983	NOx	0.980	NO
NO_2 COEF / Conv Efficency	NA	NO2	0.996			NA	NO2	0.996	

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	0	0	0	NA	NA
	No Zero Adj.									
4918	74.6	NA	749	749	NA	745	737	7	1.0048	1.0157

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO_2 Correction Factor	NO2 Conv Efficency
			NOx	NO	NO2	NOx	NO	NO2		

Linearity		Sum of Least Squares	NOx=	#VALUE!	NO=	#VALUE!	NO2=	
OK?	**Yes** No	Correction Factors:	NOx=	1.0048	NO=	1.0157	NO2=	1.0048
			Average Converter Efficiency=					

IZS Calibration Data

	Before Calibration					After Calibration			
Auto Zero	-0.2	NOx	0.1	NO2		-0.3	NOx	-0.2	NO2
Auto Span	637	NOx	491	NO2		515	NOx	507	NO2
					Sample Lines Connected	YES			

Percent Change from Previous Calibration	NOx	-0.3%	NO	-1.4%	NO2	#VALUE!

Notes

NA : Not Applicable

Following the A/F points, replaced O-ring and sintered filter for the flow control system, cleaned the optical filter, adjusted the HVPS voltage and slope. Will do a full calibration tomorrow.

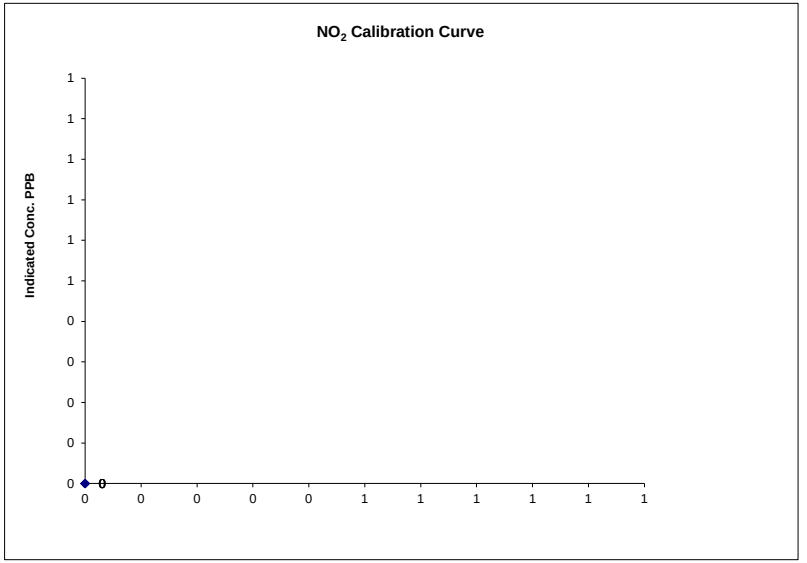
Calibration Performed by: Ting Xu

NO_2 Calibration Curve

Calibration Date	September 4, 2012		
Company	**LICA**		
Plant / Location	**Portable/Elk Point Airport**		
Start Time (MST)	10:02	End Time (MST)	16:19

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	N/A
0	0	#DIV/0!
0	0	#DIV/0!
0	0	#DIV/0!

Correlation Coefficient	(≥ 0.995)	#DIV/0!
Slope	(0.85 to 1.15)	#DIV/0!
Intercept	(± 3% F.S.)	#DIV/0!



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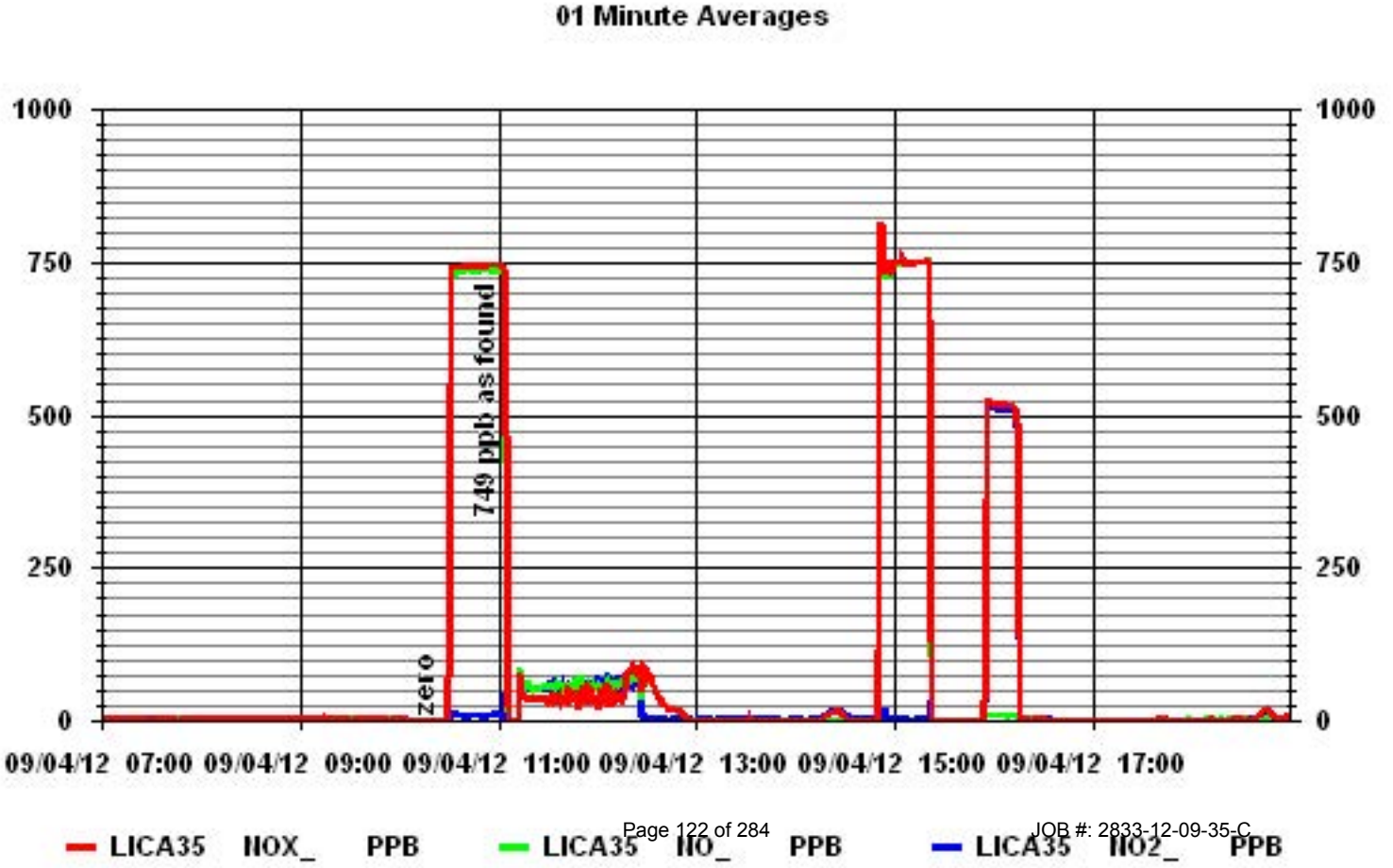

01 Minute Averages
1000
750
500
250
0
749 ppb as found
zero
09/04/12 07:00
09/04/12 09:00
09/04/12 11:00
09/04/12 13:00
09/04/12 15:00
09/04/12 17:00
LICA35 NOX_ PPB
LICA35 NO_ PPB
LICA35 NO2_ PPB

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	September 5, 2012		Previous Calibration	September 4, 2012	
Company	LICA		Plant/Location	**Portable/Elk Point Airport**	
Start Time (MST)	9:51		End Time (MST)	15:57	
Reason:	Post Repair Calibration				
Barometric Pressure	27.8 inHg	Station Temperature	22 Deg C	MFCF	0
Cal Gas Concentration	NOx 50.1 ppm	NO 50.1 ppm	Cal Gas Expiry date	December 29, 2013	
Cal Gas Cylinder #	LL42502				
DAS Output Voltage	0 - 1 Volts		Chart Rec. Output	NA Volts	

Equipment Information

Analyzer Make / Model:	TAPI 200E	S/N :	593	Method:	Chemiluminescent
Calibrator Make / Model:	Environics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Environics 6100	S/N :	4760		

Analyzer Settings

	Before Calibration					After Calibration			
Concentration Range				0 - 1000	ppb				
Sample Flow/Conv. Temp	469	ccm	314	Deg C		467	ccm	315	Deg C
Ozone Flow / Vacuum	78	ccm	4.9	"Hg-A		78	ccm	4.9	"Hg-A
HVPS / A ZERO	638	Volts	9.0	MV		638	Volts	8.2	MV
Rx/ Temp / PMT Temp	50.1	Deg C	6.7	Deg C		50.0	Deg C	6.7	Deg C
Box Temp / IZS Temp	32.0	Deg C	45.0	Deg C		31.2	Deg C	45.3	Deg C
Offset	-2.3	NOx	-3.6	NO		-0.4	NOx	-0.9	NO
Slope	0.983	NOx	0.980	NO		0.993	NOx	0.989	NO
NO_2 COEF / Conv Efficency	NA	NO2	0.996			NA	NO2	0.996	

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	0	0	0	NA	NA
	No Zero Adj.									
4918	74.6	NA	749	749	NA	751	750	1	0.9968	0.9981
	No Span Adj.									
4955	39.8	NA	399	399	NA	398	398	1	1.0030	1.0030
4977	20.2	NA	203	203	NA	199	199	1	1.0177	1.0177
4994	0.0	NA	0	0	NA	0	0	0	NA	NA

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO_2 Correction Factor	NO2 Conv Efficency
			NOx	NO	NO2	NOx	NO	NO2		
4919	74.6	NA	748	748	NA	748	748	0	NA	NA
4919	74.6	600	748	NA	526	746	222	524	1.0038	99.62%
	No Adj. Needed									
4919	74.6	250	748	NA	222	748	526	222	1.0000	100.00%
4919	74.6	140	748	NA	125	748	623	125	1.0000	100.00%

Linearity		Sum of Least Squares	NOx=	0.999	NO=	1.000	NO2=	1.003	
OK?	**Yes** No	Correction Factors:	NOx=	0.9968	NO=	0.9981	NO2=	0.9968	
					Average Converter Efficiency=			99.87%	

IZS Calibration Data

	Before Calibration					After Calibration			
Auto Zero	0.4	NOx	-0.4	NO2		-0.3	NOx	-0.2	NO2
Auto Span	500	NOx	491	NO2		532	NOx	525	NO2
					Sample Lines Connected	YES			
Percent Change from Previous Calibration			NOx	0.5%	NO	0.3%	NO2	-0.2%	

Notes

NA : Not Applicable

Additional point done for ozone cal: O3 set point 420, NOx 747, NO 375, NO2 372

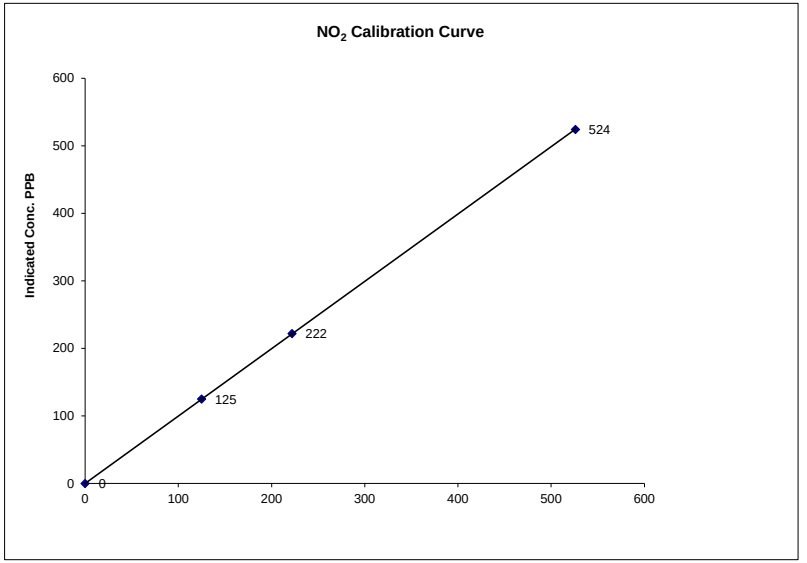
Calibration Performed by: Ting Xu

NO_2 Calibration Curve

Calibration Date	September 5, 2012		
Company	**LICA**		
Plant / Location	**Portable/Elk Point Airport**		
Start Time (MST)	9:51	End Time (MST)	15:57

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	N/A
125	125	1.0000
222	222	1.0000
526	524	1.0038

Correlation Coefficient	(≥ 0.995)	0.999997
Slope	(0.85 to 1.15)	0.995925
Intercept	(± 3% F.S.)	0.38931

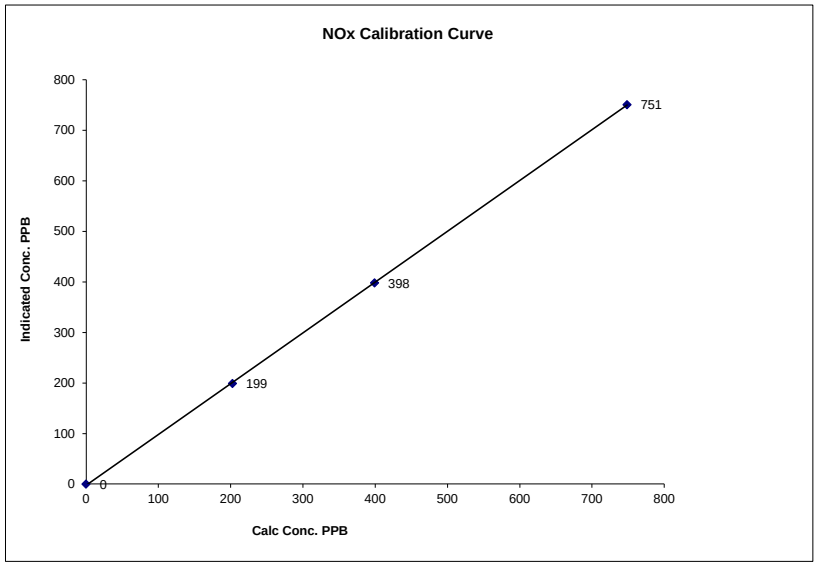


Notes:

NOx Calibration Curve

Calibration Date	September 5, 2012			
Company	LICA			
Plant / Location	Portable/Elk Point Airport			
Start Time (MST)	9:51	End Time (MST)	15:57	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999961
			Slope (0.85 to 1.15)	1.004548
0	0	N/A	Intercept (± 3% F.S.)	-2.11751
203	199	1.0177		
399	398	1.0030		
749	751	0.9968		

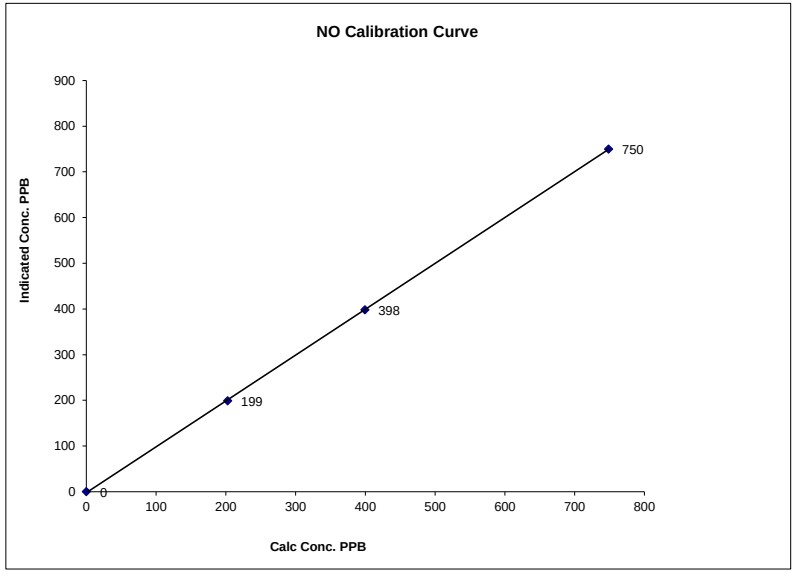


Notes:

NO Calibration Curve

Calibration Date	September 5, 2012			
Company	LICA			
Plant / Location	Portable/Elk Point Airport			
Start Time (MST)	9:51	End Time (MST)	15:57	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999968
			Slope (0.85 to 1.15)	1.008827
0	0	N/A	Intercept (± 3% F.S.)	-4.1948
203	199	1.0177		
399	398	1.0030		
749	750	0.9981		



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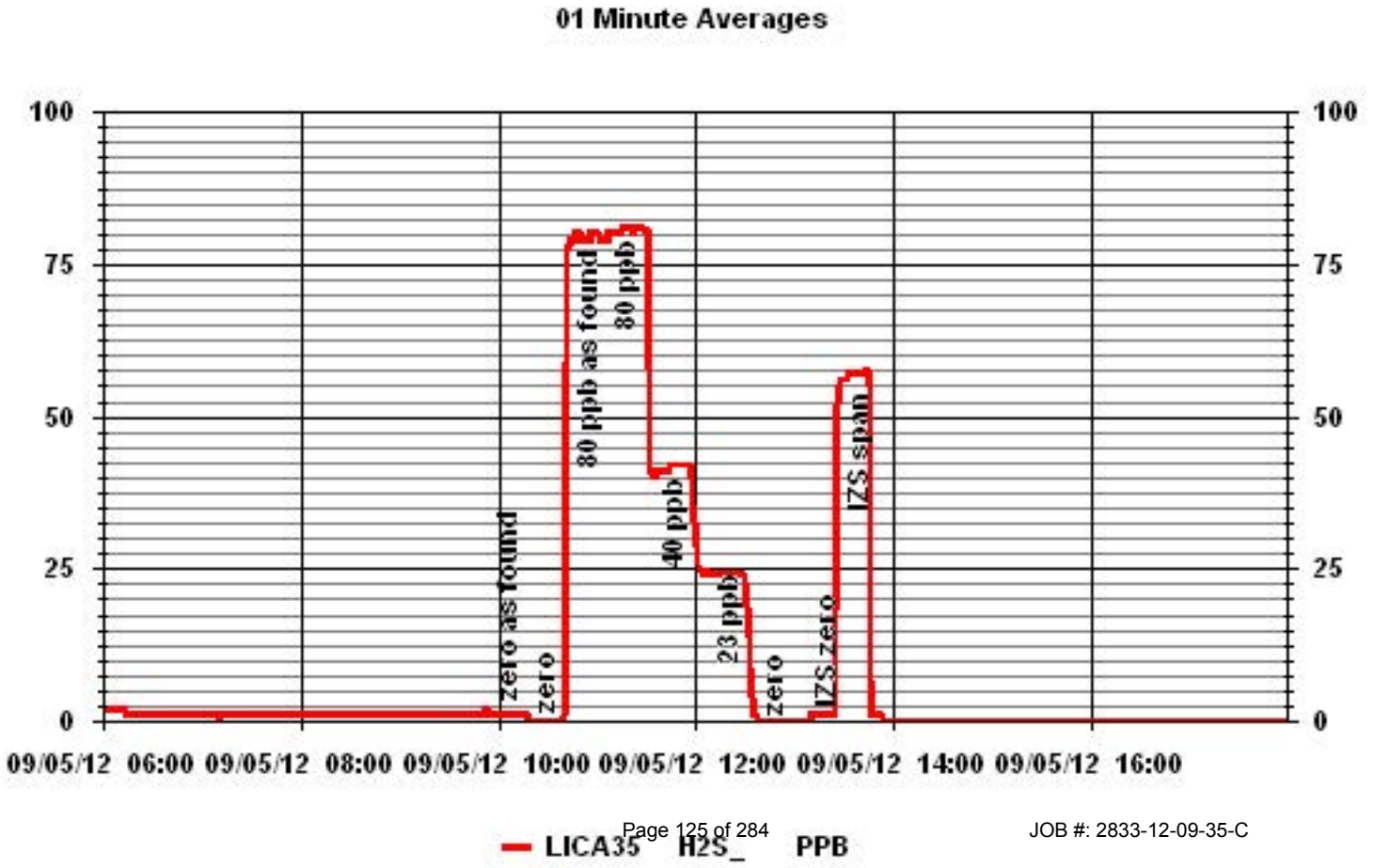


JOB #: 2833-12-09-35-C

Ozone

O_3 Calibration Report

Station Information

Calibration Date	September 7, 2012	Previous Calibration	August 15, 2012
Company	**Lakeland Industry & Community Association**		
Plant / Location	**Portable / Elk Point Airport**		
Start Time (MST)	8:47	End Time (MST)	12:28
Reason:		Monthly Calibration	
Barometric Pressure	27.3 inHg	Station Temperature	22 Deg C
DAS Output Voltage	0-10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	1002240372	Method:	Photometric
Calibrator Make / Model:	Environics 6100		4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO 717		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range			0 - 500	ppb				
Cell A Flow / Cell B Flow	753	ccm	760	ccm	757	ccm	765	ccm
Pressure	693		mmHg		698		mmHg	
Bench Lamp	54.1		Deg C		54.1		DegC	
O3 Lamp / Box Temp	68.2	Deg C	30.5	Deg C	68.2	Deg C	30.3	Deg C
Offset / Slope	-0.2		1.005		-0.2		0.992	

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	NA
	No Zero Adj.			
4994	420	373	377	0.9894
4994	420	373	373	1.0000
4994	250	222	223	0.9955
4994	140	125	125	1.0000
4994	0	0	0	NA
			Sum of Least Squares	0.9989
			New Correction Factor	1.0000

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.1	0.0
Auto Span	347.0	346.0
Sample Lines Connected		YES
Previous Calibration Correction Factor:		1.0027
Current Correctio Factor Before Span Adjust:		0.9894
Percent Change:		1.3%

Note: **NA : Not Applicable**

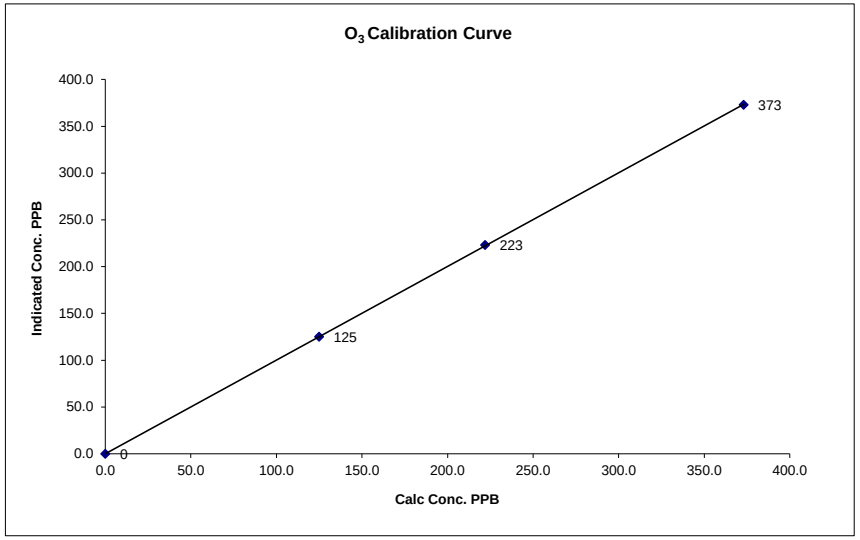
Calibration Performed by: Ting Xu

O_3 Calibration Curve

Calibration Date	September 7, 2012		
Company	**Lakeland Industry & Community Association**		
Plant / Location	**Portable / Elk Point Airport**		
Start Time (MST)	8:47	End Time (MST)	12:28

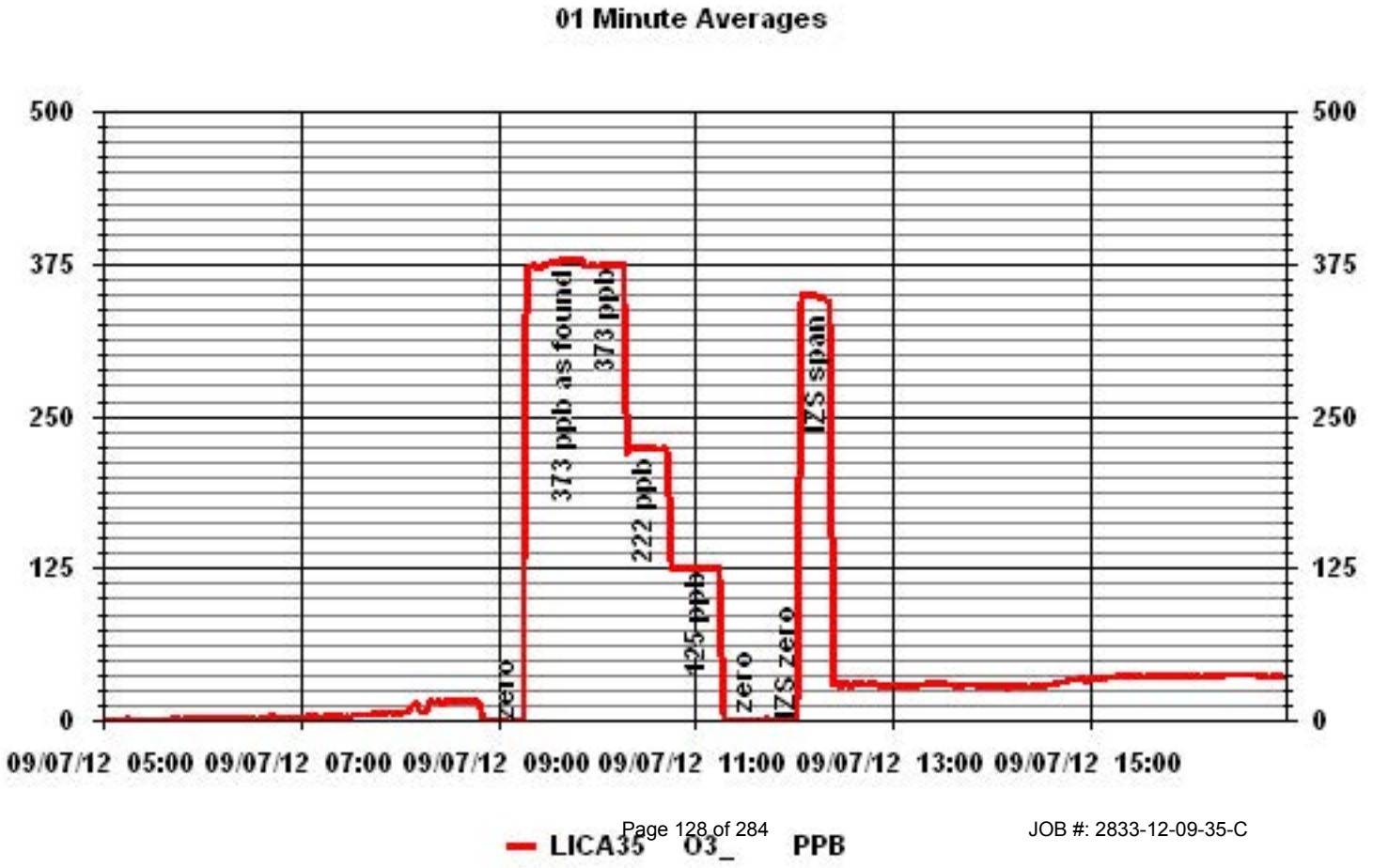
Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
125	125	1.0000
222	223	0.9955
373	373	1.0000

Correlation Coefficient	(≥ 0.995)	0.999990
Slope	(0.85 to 1.15)	1.000564
Intercept	(± 3% F.S.)	0.148439



Notes:

JOB #: 2833-12-09-35-C



JOB #: 2833-12-09-35-C

Volatile Organics Laboratory Analysis

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA PUF/PORT/Jul Aug 31, 12

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Aug 31, 2012 @ 16:20 mst
Removal Date/Time: Sept 04, 2012 @ 15:15 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
31-Aug-12	08/31/2012 0:00	09/01/2012 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
29-Aug-12	04-Sep-12	10-Sep-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
708	229	15.2	330.34

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC #11643
GB2B4295 Puff #2
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Aug 31 , 12

Technician Signiture: Ting Xu

Maxxam

Success Through Science®

Your C.O.C. #: 11643

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/09/20

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2D7358
Received: 2012/09/07, 08:30

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/09/09	2012/09/20	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B2D7358
Report Date: 2012/09/20

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OT4463	OT4464		
Sampling Date		2012/08/31	2012/08/31		
COC Number		11643	11643		
	Units	**LICA PUFF+QFF/CLS/AUG 31,2012**	**LICA PUFF+QFF/PORT/AUG 31,2012**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2964271
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2964271
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2964271
2-Methylanthracene	ug	<0.10	<0.10	0.10	2964271
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2964271
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2964271
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2964271
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2964271
Acenaphthene	ug	<0.050	<0.050	0.050	2964271
Acenaphthylene	ug	<0.050	<0.050	0.050	2964271
Anthracene	ug	<0.050	<0.050	0.050	2964271
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2964271
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2964271
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2964271
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2964271
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2964271
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2964271
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2964271
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2964271
Biphenyl	ug	<0.10	<0.10	0.10	2964271
Chrysene	ug	<0.050	<0.050	0.050	2964271
Coronene	ug	<0.10	<0.10	0.10	2964271
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2964271
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2964271
Fluoranthene	ug	0.070	<0.050	0.050	2964271
Fluorene	ug	0.056	<0.050	0.050	2964271
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2964271
m-Terphenyl	ug	<0.10	<0.10	0.10	2964271
Naphthalene	ug	<0.072	<0.072	0.072	2964271
o-Terphenyl	ug	<0.10	<0.10	0.10	2964271
Perylene	ug	<0.10	<0.10	0.10	2964271

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2D7358
Report Date: 2012/09/20

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OT4463	OT4464		
Sampling Date		2012/08/31	2012/08/31		
COC Number		11643	11643		
	Units	**LICA PUFF+QFF/CLS/AUG 31,2012**	**LICA PUFF+QFF/PORT/AUG 31,2012**	**RDL**	**QC Batch**
Phenanthrene	ug	0.344	0.090	0.050	2964271
p-Terphenyl	ug	<0.10	<0.10	0.10	2964271
Pyrene	ug	0.054	<0.050	0.050	2964271
Quinoline	ug	<0.40	<0.40	0.40	2964271
Tetralin	ug	<0.10	<0.10	0.10	2964271
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	56	68		2964271
D10-Fluoranthene	%	92	88		2964271
D10-Fluorene (FS)	%	6.0 (1)	6.0 (1)		2964271
D10-Phenanthrene	%	76	78		2964271
D12-Benzo(a)anthracene	%	90	100		2964271
D12-Benzo(a)pyrene	%	86	90		2964271
D12-Benzo(b)fluoranthene	%	86	88		2964271
D12-Benzo(ghi)perylene	%	84	86		2964271
D12-Benzo(k)fluoranthene	%	76	86		2964271
D12-Chrysene	%	74	80		2964271
D12-Indeno(1,2,3-cd)pyrene	%	84	86		2964271
D12-Perylene	%	82	86		2964271
D14-Dibenzo(a,h)anthracene	%	84	86		2964271
D14-Terphenyl (FS)	%	85	83		2964271
D8-Acenaphthylene	%	58	72		2964271
D8-Naphthalene	%	52	66		2964271

QC Batch = Quality Control Batch
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Maxxam Analytics

Maxxam Job #: B2D7358
Report Date: 2012/09/20

Test Summary

Maxxam ID OT4463 **Collected** 2012/08/31
Sample ID LICA PUFF+QFF/CLS/AUG 31,2012 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2964271	2012/09/09	2012/09/20	Lidija Tomic

Maxxam ID OT4464 **Collected** 2012/08/31
Sample ID LICA PUFF+QFF/PORT/AUG 31,2012 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2964271	2012/09/09	2012/09/20	Lidija Tomic

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Maxxam Analytics

Maxxam Job #: B2D7358
Report Date: 2012/09/20

GENERAL COMMENTS

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2D7358

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2964271	LTO	Spiked Blank	D10-2-Methylnaphthalene	2012/09/19		78	%	50 - 150
			D10-Fluoranthene	2012/09/19		90	%	50 - 150
			D10-Phenanthrene	2012/09/19		80	%	50 - 150
			D12-Benzo(a)anthracene	2012/09/19		94	%	50 - 150
			D12-Benzo(a)pyrene	2012/09/19		94	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/09/19		94	%	50 - 150
			D12-Benzo(ghi)perylene	2012/09/19		90	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/09/19		86	%	50 - 150
			D12-Chrysene	2012/09/19		82	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/09/19		94	%	50 - 150
			D12-Perylene	2012/09/19		92	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/09/19		94	%	50 - 150
			D8-Acenaphthylene	2012/09/19		76	%	50 - 150
			D8-Naphthalene	2012/09/19		74	%	50 - 150
			Acenaphthene	2012/09/19		82	%	60 - 130
		RPD	Acenaphthene	2012/09/19	3.1		%	50
		Spiked Blank	Acenaphthylene	2012/09/19		80	%	60 - 130
		RPD	Acenaphthylene	2012/09/19	3.2		%	50
		Spiked Blank	Anthracene	2012/09/19		80	%	60 - 130
		RPD	Anthracene	2012/09/19	2.9		%	50
		Spiked Blank	Benzo(a)anthracene	2012/09/19		103	%	60 - 130
		RPD	Benzo(a)anthracene	2012/09/19	0		%	50
		Spiked Blank	Benzo(a)pyrene	2012/09/19		80	%	60 - 130
		RPD	Benzo(a)pyrene	2012/09/19	0		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/09/19		87	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/09/19	0.3		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/09/19		81	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/09/19	2.5		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/09/19		94	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/09/19	2.4		%	50
		Spiked Blank	Chrysene	2012/09/19		84	%	60 - 130
		RPD	Chrysene	2012/09/19	0.3		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/09/19		82	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/09/19	3.7		%	50
		Spiked Blank	Fluoranthene	2012/09/19		95	%	60 - 130
		RPD	Fluoranthene	2012/09/19	4.6		%	50
		Spiked Blank	Fluorene	2012/09/19		81	%	60 - 130
		RPD	Fluorene	2012/09/19	3.2		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/09/19		82	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/09/19	2.5		%	50
		Spiked Blank	Naphthalene	2012/09/19		82	%	60 - 130
		RPD	Naphthalene	2012/09/19	4.0		%	50
		Spiked Blank	Phenanthrene	2012/09/19		86	%	60 - 130
		RPD	Phenanthrene	2012/09/19	3.2		%	50
		Spiked Blank	Pyrene	2012/09/19		85	%	60 - 130
		RPD	Pyrene	2012/09/19	4.5		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/09/20		78	%	50 - 150
			D10-Fluoranthene	2012/09/20		88	%	50 - 150
			D10-Phenanthrene	2012/09/20		80	%	50 - 150
			D12-Benzo(a)anthracene	2012/09/20		92	%	50 - 150
			D12-Benzo(a)pyrene	2012/09/20		90	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/09/20		92	%	50 - 150
			D12-Benzo(ghi)perylene	2012/09/20		88	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/09/20		84	%	50 - 150
			D12-Chrysene	2012/09/20		82	%	50 - 150

Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2D7358

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2964271	LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/09/20		88	%	50 - 150
			D12-Perylene	2012/09/20		88	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/09/20		88	%	50 - 150
			D8-Acenaphthylene	2012/09/20		76	%	50 - 150
			D8-Naphthalene	2012/09/20		76	%	50 - 150
			1-Methylnaphthalene	2012/09/20	<0.10		ug	
			1-Methylphenanthrene	2012/09/20	<0.10		ug	
			2-Chloronaphthalene	2012/09/20	<0.10		ug	
			2-Methylanthracene	2012/09/20	<0.10		ug	
			2-Methylnaphthalene	2012/09/20	<0.10		ug	
			3-Methylcholanthrene	2012/09/20	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/09/20	<0.10		ug	
			9,10-Dimethylanthracene	2012/09/20	<0.40		ug	
			Acenaphthene	2012/09/20	<0.050		ug	
			Acenaphthylene	2012/09/20	<0.050		ug	
			Anthracene	2012/09/20	<0.050		ug	
			Benzo(a)anthracene	2012/09/20	<0.050		ug	
			Benzo(a)fluorene	2012/09/20	<0.10		ug	
			Benzo(a)pyrene	2012/09/20	<0.050		ug	
			Benzo(b)fluoranthene	2012/09/20	<0.050		ug	
			Benzo(b)fluorene	2012/09/20	<0.10		ug	
			Benzo(e)pyrene	2012/09/20	<0.10		ug	
			Benzo(g,h,i)perylene	2012/09/20	<0.050		ug	
			Benzo(k)fluoranthene	2012/09/20	<0.050		ug	
			Biphenyl	2012/09/20	<0.10		ug	
			Chrysene	2012/09/20	<0.050		ug	
			Coronene	2012/09/20	<0.10		ug	
			Dibenz(a,h)anthracene	2012/09/20	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/09/20	<0.20		ug	
			Fluoranthene	2012/09/20	<0.050		ug	
			Fluorene	2012/09/20	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/09/20	<0.050		ug	
			m-Terphenyl	2012/09/20	<0.10		ug	
			Naphthalene	2012/09/20	<0.072		ug	
			o-Terphenyl	2012/09/20	<0.10		ug	
			Perylene	2012/09/20	<0.10		ug	
			Phenanthrene	2012/09/20	<0.050		ug	
			p-Terphenyl	2012/09/20	<0.10		ug	
			Pyrene	2012/09/20	<0.050		ug	
			Quinoline	2012/09/20	<0.40		ug	
			Tetralin	2012/09/20	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA PUF/PORT/Sept 06, 12

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Sept 05, 2012 @ 13:42 mst
Removal Date/Time: Sept 07, 2012 @ 11:10 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
06-Sep-12	09/06/2012 0:00	09/07/2012 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
31-Aug-12	10-Sep-12	12-Sep-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
711	229	11.5	330.33

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC #09504
GB2B4296 Puff #2
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Sept 06 , 12

Technician Signiture: Ting Xu

JOB #: 2833-12-09-35-C

Maxxam

Success Through Science®

Your C.O.C. #: 09504

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/09/21

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2D9844
Received: 2012/09/12, 09:35

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/09/13	2012/09/20	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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

Total cover pages: 1

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OU6554	OU6555		
Sampling Date		2012/09/06	2012/09/06		
COC Number		09504	09504		
	Units	**LICA PUFF+QFF/CLS/SEPT 06,12**	**LICA PUFF+QFF/PORT/SEPT 06,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	0.17	<0.10	0.10	2968788
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2968788
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2968788
2-Methylanthracene	ug	<0.10	<0.10	0.10	2968788
2-Methylnaphthalene	ug	0.34	0.13	0.10	2968788
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2968788
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2968788
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2968788
Acenaphthene	ug	0.066	<0.050	0.050	2968788
Acenaphthylene	ug	<0.050	<0.050	0.050	2968788
Anthracene	ug	<0.050	<0.050	0.050	2968788
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2968788
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2968788
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2968788
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2968788
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2968788
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2968788
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2968788
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2968788
Biphenyl	ug	<0.10	<0.10	0.10	2968788
Chrysene	ug	<0.050	<0.050	0.050	2968788
Coronene	ug	<0.10	<0.10	0.10	2968788
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2968788
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2968788
Fluoranthene	ug	<0.050	<0.050	0.050	2968788
Fluorene	ug	0.106	<0.050	0.050	2968788
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2968788
m-Terphenyl	ug	<0.10	<0.10	0.10	2968788
Naphthalene	ug	0.214	<0.072	0.072	2968788
o-Terphenyl	ug	<0.10	<0.10	0.10	2968788
Perylene	ug	<0.10	<0.10	0.10	2968788

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OU6554	OU6555		
Sampling Date		2012/09/06	2012/09/06		
COC Number		09504	09504		
	Units	**LICA PUFF+QFF/CLS/SEPT 06,12**	**LICA PUFF+QFF/PORT/SEPT 06,12**	**RDL**	**QC Batch**
Phenanthrene	ug	0.316	0.172	0.050	2968788
p-Terphenyl	ug	<0.10	<0.10	0.10	2968788
Pyrene	ug	<0.050	<0.050	0.050	2968788
Quinoline	ug	<0.40	<0.40	0.40	2968788
Tetralin	ug	<0.10	<0.10	0.10	2968788
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	86	78		2968788
D10-Fluoranthene	%	90	100		2968788
D10-Fluorene (FS)	%	8.6 (1)	6.2 (1)		2968788
D10-Phenanthrene	%	86	88		2968788
D12-Benzo(a)anthracene	%	104	106		2968788
D12-Benzo(a)pyrene	%	92	96		2968788
D12-Benzo(b)fluoranthene	%	96	94		2968788
D12-Benzo(ghi)perylene	%	86	94		2968788
D12-Benzo(k)fluoranthene	%	84	88		2968788
D12-Chrysene	%	84	80		2968788
D12-Indeno(1,2,3-cd)pyrene	%	88	96		2968788
D12-Perylene	%	88	90		2968788
D14-Dibenzo(a,h)anthracene	%	88	96		2968788
D14-Terphenyl (FS)	%	78	92		2968788
D8-Acenaphthylene	%	86	84		2968788
D8-Naphthalene	%	84	74		2968788

QC Batch = Quality Control Batch
(1) Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

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Maxxam Analytics

Maxxam Job #: B2D9844
Report Date: 2012/09/21

Test Summary

Maxxam ID OU6554 **Collected** 2012/09/06
Sample ID LICA PUFF+QFF/CLS/SEPT 06,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2968788	2012/09/13	2012/09/20	Lidija Tomic

Maxxam ID OU6555 **Collected** 2012/09/06
Sample ID LICA PUFF+QFF/PORT/SEPT 06,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2968788	2012/09/13	2012/09/20	Lidija Tomic

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Maxxam Analytics

Maxxam Job #: B2D9844
Report Date: 2012/09/21

GENERAL COMMENTS

Coronene and Dibenzo (a,e)pyrene are above 25% RSD in initial calibration. No positives found for these 2 compounds.

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2D9844

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2968788	LTO	Spiked Blank	D10-2-Methylnaphthalene	2012/09/20		82	%	50 - 150
			D10-Fluoranthene	2012/09/20		100	%	50 - 150
			D10-Phenanthrene	2012/09/20		90	%	50 - 150
			D12-Benzo(a)anthracene	2012/09/20		104	%	50 - 150
			D12-Benzo(a)pyrene	2012/09/20		102	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/09/20		98	%	50 - 150
			D12-Benzo(ghi)perylene	2012/09/20		96	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/09/20		88	%	50 - 150
			D12-Chrysene	2012/09/20		80	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/09/20		98	%	50 - 150
			D12-Perylene	2012/09/20		96	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/09/20		98	%	50 - 150
			D8-Acenaphthylene	2012/09/20		84	%	50 - 150
			D8-Naphthalene	2012/09/20		78	%	50 - 150
			Acenaphthene	2012/09/20		89	%	60 - 130
		RPD	Acenaphthene	2012/09/20	1.1		%	50
		Spiked Blank	Acenaphthylene	2012/09/20		89	%	60 - 130
		RPD	Acenaphthylene	2012/09/20	4.0		%	50
		Spiked Blank	Anthracene	2012/09/20		92	%	60 - 130
		RPD	Anthracene	2012/09/20	9.7		%	50
		Spiked Blank	Benzo(a)anthracene	2012/09/20		108	%	60 - 130
		RPD	Benzo(a)anthracene	2012/09/20	4.0		%	50
		Spiked Blank	Benzo(a)pyrene	2012/09/20		82	%	60 - 130
		RPD	Benzo(a)pyrene	2012/09/20	7.3		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/09/20		89	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/09/20	1.7		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/09/20		74	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/09/20	5.6		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/09/20		90	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/09/20	5.4		%	50
		Spiked Blank	Chrysene	2012/09/20		82	%	60 - 130
		RPD	Chrysene	2012/09/20	0		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/09/20		74	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/09/20	6.3		%	50
		Spiked Blank	Fluoranthene	2012/09/20		104	%	60 - 130
		RPD	Fluoranthene	2012/09/20	12.2		%	50
		Spiked Blank	Fluorene	2012/09/20		89	%	60 - 130
		RPD	Fluorene	2012/09/20	3.4		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/09/20		76	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/09/20	6.8		%	50
		Spiked Blank	Naphthalene	2012/09/20		86	%	60 - 130
		RPD	Naphthalene	2012/09/20	2.9		%	50
		Spiked Blank	Phenanthrene	2012/09/20		95	%	60 - 130
		RPD	Phenanthrene	2012/09/20	6.0		%	50
		Spiked Blank	Pyrene	2012/09/20		94	%	60 - 130
		RPD	Pyrene	2012/09/20	12.8		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/09/20		86	%	50 - 150
			D10-Fluoranthene	2012/09/20		82	%	50 - 150
			D10-Phenanthrene	2012/09/20		82	%	50 - 150
			D12-Benzo(a)anthracene	2012/09/20		98	%	50 - 150
			D12-Benzo(a)pyrene	2012/09/20		88	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/09/20		94	%	50 - 150
			D12-Benzo(ghi)perylene	2012/09/20		84	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/09/20		82	%	50 - 150
			D12-Chrysene	2012/09/20		82	%	50 - 150

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2D9844

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2968788	LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/09/20		86	%	50 - 150
			D12-Perylene	2012/09/20		86	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/09/20		84	%	50 - 150
			D8-Acenaphthylene	2012/09/20		82	%	50 - 150
			D8-Naphthalene	2012/09/20		82	%	50 - 150
			1-Methylnaphthalene	2012/09/20	<0.10		ug	
			1-Methylphenanthrene	2012/09/20	<0.10		ug	
			2-Chloronaphthalene	2012/09/20	<0.10		ug	
			2-Methylanthracene	2012/09/20	<0.10		ug	
			2-Methylnaphthalene	2012/09/20	<0.10		ug	
			3-Methylcholanthrene	2012/09/20	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/09/20	<0.10		ug	
			9,10-Dimethylanthracene	2012/09/20	<0.40		ug	
			Acenaphthene	2012/09/20	<0.050		ug	
			Acenaphthylene	2012/09/20	<0.050		ug	
			Anthracene	2012/09/20	<0.050		ug	
			Benzo(a)anthracene	2012/09/20	<0.050		ug	
			Benzo(a)fluorene	2012/09/20	<0.10		ug	
			Benzo(a)pyrene	2012/09/20	<0.050		ug	
			Benzo(b)fluoranthene	2012/09/20	<0.050		ug	
			Benzo(b)fluorene	2012/09/20	<0.10		ug	
			Benzo(e)pyrene	2012/09/20	<0.10		ug	
			Benzo(g,h,i)perylene	2012/09/20	<0.050		ug	
			Benzo(k)fluoranthene	2012/09/20	<0.050		ug	
			Biphenyl	2012/09/20	<0.10		ug	
			Chrysene	2012/09/20	<0.050		ug	
			Coronene	2012/09/20	<0.10		ug	
			Dibenz(a,h)anthracene	2012/09/20	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/09/20	<0.20		ug	
			Fluoranthene	2012/09/20	<0.050		ug	
			Fluorene	2012/09/20	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/09/20	<0.050		ug	
			m-Terphenyl	2012/09/20	<0.10		ug	
			Naphthalene	2012/09/20	<0.072		ug	
			o-Terphenyl	2012/09/20	<0.10		ug	
			Perylene	2012/09/20	<0.10		ug	
			Phenanthrene	2012/09/20	<0.050		ug	
			p-Terphenyl	2012/09/20	<0.10		ug	
			Pyrene	2012/09/20	<0.050		ug	
			Quinoline	2012/09/20	<0.40		ug	
			Tetralin	2012/09/20	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA PUF/PORT/Sept 12, 12

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Sept 10, 2012 @ 11:02 mst
Removal Date/Time: Sept 13, 2012 @ 08:38 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
12-Sep-12	09/12/2012 0:00	09/13/2012 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
06-Sep-12	13-Sep-12	19-Sep-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
711	229	9.1	330.34

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC #
GB2B4297 Puff #2
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Sept 12 , 12

Technician Signiture: Ting Xu

JOB #: 2833-12-09-35-C

Success Through Science®

Your C.O.C. #: 09915

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/10/02

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2E3392
Received: 2012/09/18, 09:50

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/09/19	2012/09/27	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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

Total cover pages: 1

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OW4492	OW4493		
Sampling Date		2012/09/12	2012/09/12		
COC Number		09915	09915		
	Units	**LICA PUFF/CLS/SEPT 12,12**	**LICA PUFF/PORT/SEPT 12,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2974460
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2974460
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2974460
2-Methylanthracene	ug	<0.10	<0.10	0.10	2974460
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2974460
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2974460
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2974460
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2974460
Acenaphthene	ug	<0.050	<0.050	0.050	2974460
Acenaphthylene	ug	<0.050	<0.050	0.050	2974460
Anthracene	ug	<0.050	<0.050	0.050	2974460
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2974460
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2974460
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2974460
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2974460
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2974460
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2974460
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2974460
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2974460
Biphenyl	ug	<0.10	<0.10	0.10	2974460
Chrysene	ug	<0.050	<0.050	0.050	2974460
Coronene	ug	<0.10	<0.10	0.10	2974460
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2974460
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2974460
Fluoranthene	ug	<0.050	<0.050	0.050	2974460
Fluorene	ug	<0.050	<0.050	0.050	2974460
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2974460
m-Terphenyl	ug	<0.10	<0.10	0.10	2974460
Naphthalene	ug	<0.072	<0.072	0.072	2974460
o-Terphenyl	ug	<0.10	<0.10	0.10	2974460
Perylene	ug	<0.10	<0.10	0.10	2974460

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OW4492	OW4493		
Sampling Date		2012/09/12	2012/09/12		
COC Number		09915	09915		
	Units	**LICA PUFF/CLS/SEPT 12,12**	**LICA PUFF/PORT/SEPT 12,12**	**RDL**	**QC Batch**
Phenanthrene	ug	0.136	0.064	0.050	2974460
p-Terphenyl	ug	<0.10	<0.10	0.10	2974460
Pyrene	ug	<0.050	<0.050	0.050	2974460
Quinoline	ug	<0.40	<0.40	0.40	2974460
Tetralin	ug	<0.10	<0.10	0.10	2974460
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	70	72		2974460
D10-Fluoranthene	%	92	90		2974460
D10-Fluorene (FS)	%	9.0 (1)	7.8 (1)		2974460
D10-Phenanthrene	%	82	82		2974460
D12-Benzo(a)anthracene	%	94	94		2974460
D12-Benzo(a)pyrene	%	90	90		2974460
D12-Benzo(b)fluoranthene	%	88	88		2974460
D12-Benzo(ghi)perylene	%	90	92		2974460
D12-Benzo(k)fluoranthene	%	96	98		2974460
D12-Chrysene	%	90	92		2974460
D12-Indeno(1,2,3-cd)pyrene	%	92	94		2974460
D12-Perylene	%	88	88		2974460
D14-Dibenzo(a,h)anthracene	%	92	92		2974460
D14-Terphenyl (FS)	%	93	91		2974460
D8-Acenaphthylene	%	70	72		2974460
D8-Naphthalene	%	68	68		2974460

QC Batch = Quality Control Batch
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Maxxam Analytics

Maxxam Job #: B2E3392
Report Date: 2012/10/02

Test Summary

Maxxam ID OW4492 **Collected** 2012/09/12
Sample ID LICA PUFF/CLS/SEPT 12,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2974460	2012/09/19	2012/09/27	Lidija Tomic

Maxxam ID OW4493 **Collected** 2012/09/12
Sample ID LICA PUFF/PORT/SEPT 12,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2974460	2012/09/19	2012/09/27	Lidija Tomic

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Maxxam Analytics

Maxxam Job #: B2E3392
Report Date: 2012/10/02

GENERAL COMMENTS

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2E3392

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2974460	LTO	Spiked Blank	D10-2-Methylnaphthalene	2012/09/26		72	%	50 - 150
			D10-Fluoranthene	2012/09/26		86	%	50 - 150
			D10-Phenanthrene	2012/09/26		78	%	50 - 150
			D12-Benzo(a)anthracene	2012/09/26		90	%	50 - 150
			D12-Benzo(a)pyrene	2012/09/26		92	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/09/26		88	%	50 - 150
			D12-Benzo(ghi)perylene	2012/09/26		96	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/09/26		96	%	50 - 150
			D12-Chrysene	2012/09/26		88	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/09/26		92	%	50 - 150
			D12-Perylene	2012/09/26		90	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/09/26		92	%	50 - 150
			D8-Acenaphthylene	2012/09/26		74	%	50 - 150
			D8-Naphthalene	2012/09/26		70	%	50 - 150
			Acenaphthene	2012/09/26		82	%	60 - 130
		RPD	Acenaphthene	2012/09/26	0.6		%	50
		Spiked Blank	Acenaphthylene	2012/09/26		78	%	60 - 130
		RPD	Acenaphthylene	2012/09/26	1.6		%	50
		Spiked Blank	Anthracene	2012/09/26		79	%	60 - 130
		RPD	Anthracene	2012/09/26	3.4		%	50
		Spiked Blank	Benzo(a)anthracene	2012/09/26		105	%	60 - 130
		RPD	Benzo(a)anthracene	2012/09/26	3.3		%	50
		Spiked Blank	Benzo(a)pyrene	2012/09/26		87	%	60 - 130
		RPD	Benzo(a)pyrene	2012/09/26	0.9		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/09/26		94	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/09/26	3.1		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/09/26		101	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/09/26	0.7		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/09/26		99	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/09/26	0.8		%	50
		Spiked Blank	Chrysene	2012/09/26		91	%	60 - 130
		RPD	Chrysene	2012/09/26	2.4		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/09/26		101	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/09/26	2.0		%	50
		Spiked Blank	Fluoranthene	2012/09/26		90	%	60 - 130
		RPD	Fluoranthene	2012/09/26	1.1		%	50
		Spiked Blank	Fluorene	2012/09/26		81	%	60 - 130
		RPD	Fluorene	2012/09/26	0.6		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/09/26		100	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/09/26	1.5		%	50
		Spiked Blank	Naphthalene	2012/09/26		82	%	60 - 130
		RPD	Naphthalene	2012/09/26	1.9		%	50
		Spiked Blank	Phenanthrene	2012/09/26		84	%	60 - 130
		RPD	Phenanthrene	2012/09/26	2.1		%	50
		Spiked Blank	Pyrene	2012/09/26		82	%	60 - 130
		RPD	Pyrene	2012/09/26	0.3		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/09/26		76	%	50 - 150
			D10-Fluoranthene	2012/09/26		78	%	50 - 150
			D10-Phenanthrene	2012/09/26		76	%	50 - 150
			D12-Benzo(a)anthracene	2012/09/26		86	%	50 - 150
			D12-Benzo(a)pyrene	2012/09/26		90	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/09/26		86	%	50 - 150
			D12-Benzo(ghi)perylene	2012/09/26		88	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/09/26		96	%	50 - 150
			D12-Chrysene	2012/09/26		88	%	50 - 150

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E3392

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2974460	LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/09/26		88	%	50 - 150
			D12-Perylene	2012/09/26		88	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/09/26		86	%	50 - 150
			D8-Acenaphthylene	2012/09/26		76	%	50 - 150
			D8-Naphthalene	2012/09/26		74	%	50 - 150
			1-Methylnaphthalene	2012/09/26	<0.10		ug	
			1-Methylphenanthrene	2012/09/26	<0.10		ug	
			2-Chloronaphthalene	2012/09/26	<0.10		ug	
			2-Methylanthracene	2012/09/26	<0.10		ug	
			2-Methylnaphthalene	2012/09/26	<0.10		ug	
			3-Methylcholanthrene	2012/09/26	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/09/26	<0.10		ug	
			9,10-Dimethylanthracene	2012/09/26	<0.40		ug	
			Acenaphthene	2012/09/26	<0.050		ug	
			Acenaphthylene	2012/09/26	<0.050		ug	
			Anthracene	2012/09/26	<0.050		ug	
			Benzo(a)anthracene	2012/09/26	<0.050		ug	
			Benzo(a)fluorene	2012/09/26	<0.10		ug	
			Benzo(a)pyrene	2012/09/26	<0.050		ug	
			Benzo(b)fluoranthene	2012/09/26	<0.050		ug	
			Benzo(b)fluorene	2012/09/26	<0.10		ug	
			Benzo(e)pyrene	2012/09/26	<0.10		ug	
			Benzo(g,h,i)perylene	2012/09/26	<0.050		ug	
			Benzo(k)fluoranthene	2012/09/26	<0.050		ug	
			Biphenyl	2012/09/26	<0.10		ug	
			Chrysene	2012/09/26	<0.050		ug	
			Coronene	2012/09/26	<0.10		ug	
			Dibenz(a,h)anthracene	2012/09/26	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/09/26	<0.20		ug	
			Fluoranthene	2012/09/26	<0.050		ug	
			Fluorene	2012/09/26	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/09/26	<0.050		ug	
			m-Terphenyl	2012/09/26	<0.10		ug	
			Naphthalene	2012/09/26	<0.072		ug	
			o-Terphenyl	2012/09/26	<0.10		ug	
			Perylene	2012/09/26	<0.10		ug	
			Phenanthrene	2012/09/26	<0.050		ug	
			p-Terphenyl	2012/09/26	<0.10		ug	
			Pyrene	2012/09/26	<0.050		ug	
			Quinoline	2012/09/26	<0.40		ug	
			Tetralin	2012/09/26	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA PUF/PORT/Sept 18, 12

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Sept 17, 2012 @ 10:12 mst
Removal Date/Time: Sept 19, 2012 @ 09:20 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
18-Sep-12	09/18/2012 0:00	09/19/2012 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
13-Sep-12	19-Sep-12	25-Sep-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
704	229	13.4	330.34

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC #11298
GB2C3710 Puff #2
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Sept 18 , 12

Technician Signiture: Ting Xu

JOB #: 2833-12-09-35-C

Success Through Science®

Your C.O.C. #: 11298

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/10/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2E6145
Received: 2012/09/21, 08:55

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/09/24	2012/09/27	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

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

Total cover pages: 1

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OX7077	OX7078		
Sampling Date		2012/09/18	2012/09/18		
COC Number		11298	11298		
	Units	**LICA PUFF+QFF/CLS/SEPT 18,12**	**LICA PUFF+QFF/PORT/SEPT 18,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2979417
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2979417
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2979417
2-Methylanthracene	ug	<0.10	<0.10	0.10	2979417
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2979417
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2979417
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2979417
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2979417
Acenaphthene	ug	<0.050	<0.050	0.050	2979417
Acenaphthylene	ug	<0.050	<0.050	0.050	2979417
Anthracene	ug	<0.050	<0.050	0.050	2979417
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2979417
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2979417
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2979417
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2979417
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2979417
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2979417
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2979417
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2979417
Biphenyl	ug	<0.10	<0.10	0.10	2979417
Chrysene	ug	<0.050	<0.050	0.050	2979417
Coronene	ug	<0.10	<0.10	0.10	2979417
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2979417
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2979417
Fluoranthene	ug	<0.050	<0.050	0.050	2979417
Fluorene	ug	<0.050	<0.050	0.050	2979417
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2979417
m-Terphenyl	ug	<0.10	<0.10	0.10	2979417
Naphthalene	ug	<0.072	<0.072	0.072	2979417
o-Terphenyl	ug	<0.10	<0.10	0.10	2979417
Perylene	ug	<0.10	<0.10	0.10	2979417

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E6145
Report Date: 2012/10/05

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OX7077	OX7078		
Sampling Date		2012/09/18	2012/09/18		
COC Number		11298	11298		
	Units	**LICA PUFF+QFF/CLS/SEPT 18,12**	**LICA PUFF+QFF/PORT/SEPT 18,12**	**RDL**	**QC Batch**
Phenanthrene	ug	0.200	0.140	0.050	2979417
p-Terphenyl	ug	<0.10	<0.10	0.10	2979417
Pyrene	ug	<0.050	<0.050	0.050	2979417
Quinoline	ug	<0.40	<0.40	0.40	2979417
Tetralin	ug	<0.10	<0.10	0.10	2979417
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	66	68		2979417
D10-Fluoranthene	%	90	88		2979417
D10-Fluorene (FS)	%	6.6 (1)	7.2 (1)		2979417
D10-Phenanthrene	%	80	78		2979417
D12-Benzo(a)anthracene	%	88	90		2979417
D12-Benzo(a)pyrene	%	86	86		2979417
D12-Benzo(b)fluoranthene	%	86	86		2979417
D12-Benzo(ghi)perylene	%	94	90		2979417
D12-Benzo(k)fluoranthene	%	92	94		2979417
D12-Chrysene	%	86	88		2979417
D12-Indeno(1,2,3-cd)pyrene	%	90	90		2979417
D12-Perylene	%	84	84		2979417
D14-Dibenzo(a,h)anthracene	%	90	90		2979417
D14-Terphenyl (FS)	%	91	89		2979417
D8-Acenaphthylene	%	66	68		2979417
D8-Naphthalene	%	64	66		2979417

QC Batch = Quality Control Batch
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Maxxam Analytics

Maxxam Job #: B2E6145
Report Date: 2012/10/05

Test Summary

Maxxam ID OX7077 **Collected** 2012/09/18
Sample ID LICA PUFF+QFF/CLS/SEPT 18,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2979417	2012/09/24	2012/09/27	Lidija Tomic

Maxxam ID OX7078 **Collected** 2012/09/18
Sample ID LICA PUFF+QFF/PORT/SEPT 18,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2979417	2012/09/24	2012/09/27	Lidija Tomic

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Maxxam Analytics

Maxxam Job #: B2E6145
Report Date: 2012/10/05

GENERAL COMMENTS

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2E6145

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2979417	LTO	Spiked Blank	D10-2-Methylnaphthalene	2012/09/27		78	%	50 - 150
			D10-Fluoranthene	2012/09/27		84	%	50 - 150
			D10-Phenanthrene	2012/09/27		76	%	50 - 150
			D12-Benzo(a)anthracene	2012/09/27		86	%	50 - 150
			D12-Benzo(a)pyrene	2012/09/27		90	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/09/27		86	%	50 - 150
			D12-Benzo(ghi)perylene	2012/09/27		94	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/09/27		94	%	50 - 150
			D12-Chrysene	2012/09/27		86	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/09/27		92	%	50 - 150
			D12-Perylene	2012/09/27		88	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/09/27		90	%	50 - 150
			D8-Acenaphthylene	2012/09/27		76	%	50 - 150
			D8-Naphthalene	2012/09/27		76	%	50 - 150
			Acenaphthene	2012/09/27		84	%	60 - 130
		RPD	Acenaphthene	2012/09/27	4.9		%	50
		Spiked Blank	Acenaphthylene	2012/09/27		81	%	60 - 130
		RPD	Acenaphthylene	2012/09/27	6.3		%	50
		Spiked Blank	Anthracene	2012/09/27		81	%	60 - 130
		RPD	Anthracene	2012/09/27	1.3		%	50
		Spiked Blank	Benzo(a)anthracene	2012/09/27		104	%	60 - 130
		RPD	Benzo(a)anthracene	2012/09/27	1.7		%	50
		Spiked Blank	Benzo(a)pyrene	2012/09/27		87	%	60 - 130
		RPD	Benzo(a)pyrene	2012/09/27	1.2		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/09/27		96	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/09/27	0.5		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/09/27		99	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/09/27	0.8		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/09/27		94	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/09/27	0.8		%	50
		Spiked Blank	Chrysene	2012/09/27		91	%	60 - 130
		RPD	Chrysene	2012/09/27	0.8		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/09/27		100	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/09/27	0.3		%	50
		Spiked Blank	Fluoranthene	2012/09/27		90	%	60 - 130
		RPD	Fluoranthene	2012/09/27	0.3		%	50
		Spiked Blank	Fluorene	2012/09/27		82	%	60 - 130
		RPD	Fluorene	2012/09/27	3.7		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/09/27		99	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/09/27	0.5		%	50
		Spiked Blank	Naphthalene	2012/09/27		87	%	60 - 130
		RPD	Naphthalene	2012/09/27	6.8		%	50
		Spiked Blank	Phenanthrene	2012/09/27		84	%	60 - 130
		RPD	Phenanthrene	2012/09/27	0.9		%	50
		Spiked Blank	Pyrene	2012/09/27		81	%	60 - 130
		RPD	Pyrene	2012/09/27	1.2		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/09/27		78	%	50 - 150
			D10-Fluoranthene	2012/09/27		84	%	50 - 150
			D10-Phenanthrene	2012/09/27		76	%	50 - 150
			D12-Benzo(a)anthracene	2012/09/27		84	%	50 - 150
			D12-Benzo(a)pyrene	2012/09/27		88	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/09/27		84	%	50 - 150
			D12-Benzo(ghi)perylene	2012/09/27		90	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/09/27		94	%	50 - 150
			D12-Chrysene	2012/09/27		90	%	50 - 150

Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E6145

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2979417	LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/09/27		88	%	50 - 150
			D12-Perylene	2012/09/27		88	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/09/27		88	%	50 - 150
			D8-Acenaphthylene	2012/09/27		76	%	50 - 150
			D8-Naphthalene	2012/09/27		78	%	50 - 150
			1-Methylnaphthalene	2012/09/27	<0.10		ug	
			1-Methylphenanthrene	2012/09/27	<0.10		ug	
			2-Chloronaphthalene	2012/09/27	<0.10		ug	
			2-Methylanthracene	2012/09/27	<0.10		ug	
			2-Methylnaphthalene	2012/09/27	<0.10		ug	
			3-Methylcholanthrene	2012/09/27	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/09/27	<0.10		ug	
			9,10-Dimethylanthracene	2012/09/27	<0.40		ug	
			Acenaphthene	2012/09/27	<0.050		ug	
			Acenaphthylene	2012/09/27	<0.050		ug	
			Anthracene	2012/09/27	<0.050		ug	
			Benzo(a)anthracene	2012/09/27	<0.050		ug	
			Benzo(a)fluorene	2012/09/27	<0.10		ug	
			Benzo(a)pyrene	2012/09/27	<0.050		ug	
			Benzo(b)fluoranthene	2012/09/27	<0.050		ug	
			Benzo(b)fluorene	2012/09/27	<0.10		ug	
			Benzo(e)pyrene	2012/09/27	<0.10		ug	
			Benzo(g,h,i)perylene	2012/09/27	<0.050		ug	
			Benzo(k)fluoranthene	2012/09/27	<0.050		ug	
			Biphenyl	2012/09/27	<0.10		ug	
			Chrysene	2012/09/27	<0.050		ug	
			Coronene	2012/09/27	<0.10		ug	
			Dibenz(a,h)anthracene	2012/09/27	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/09/27	<0.20		ug	
			Fluoranthene	2012/09/27	<0.050		ug	
			Fluorene	2012/09/27	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/09/27	<0.050		ug	
			m-Terphenyl	2012/09/27	<0.10		ug	
			Naphthalene	2012/09/27	<0.072		ug	
			o-Terphenyl	2012/09/27	<0.10		ug	
			Perylene	2012/09/27	<0.10		ug	
			Phenanthrene	2012/09/27	<0.050		ug	
			p-Terphenyl	2012/09/27	<0.10		ug	
			Pyrene	2012/09/27	<0.050		ug	
			Quinoline	2012/09/27	<0.40		ug	
			Tetralin	2012/09/27	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA PUF/PORT/Sept 24, 12

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Sept 19, 2012 @ 09:40 mst
Removal Date/Time: Sept 25, 2012 @ 09:10 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
24-Sep-12	09/24/2012 0:00	09/25/2012 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
18-Sep-12	25-Sep-12	01-Oct-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
708	229	14.7	330.34

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC #09983
GB2C3716 Puff #2
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Sept 24 , 12

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 09983

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/10/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2E9540
Received: 2012/09/27, 09:30

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/09/29	2012/10/01	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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Total cover pages: 1

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OZ4845	OZ4846		
Sampling Date		2012/09/24	2012/09/24		
COC Number		09983	09983		
	Units	**LICA PUFF+QFF/CLS/SEPT 24,12**	**LICA PUFF+QFF/PORT/SEPT 24,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2986558
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2986558
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2986558
2-Methylanthracene	ug	<0.10	<0.10	0.10	2986558
2-Methylnaphthalene	ug	<0.10	0.10	0.10	2986558
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2986558
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2986558
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2986558
Acenaphthene	ug	<0.050	<0.050	0.050	2986558
Acenaphthylene	ug	<0.050	<0.050	0.050	2986558
Anthracene	ug	<0.050	<0.050	0.050	2986558
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2986558
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2986558
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2986558
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2986558
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2986558
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2986558
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2986558
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2986558
Biphenyl	ug	<0.10	<0.10	0.10	2986558
Chrysene	ug	<0.050	<0.050	0.050	2986558
Coronene	ug	<0.10	<0.10	0.10	2986558
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2986558
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2986558
Fluoranthene	ug	0.112	0.052	0.050	2986558
Fluorene	ug	0.128	0.064	0.050	2986558
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2986558
m-Terphenyl	ug	<0.10	<0.10	0.10	2986558
Naphthalene	ug	<0.072	0.072	0.072	2986558
o-Terphenyl	ug	<0.10	<0.10	0.10	2986558
Perylene	ug	<0.10	<0.10	0.10	2986558

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OZ4845	OZ4846		
Sampling Date		2012/09/24	2012/09/24		
COC Number		09983	09983		
	Units	**LICA PUFF+QFF/CLS/SEPT 24,12**	**LICA PUFF+QFF/PORT/SEPT 24,12**	**RDL**	**QC Batch**
Phenanthrene	ug	0.692	0.308	0.050	2986558
p-Terphenyl	ug	<0.10	<0.10	0.10	2986558
Pyrene	ug	0.106	0.066	0.050	2986558
Quinoline	ug	<0.40	<0.40	0.40	2986558
Tetralin	ug	<0.10	<0.10	0.10	2986558
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	68	66		2986558
D10-Fluoranthene	%	92	88		2986558
D10-Fluorene (FS)	%	7.2 (1)	7.2 (1)		2986558
D10-Phenanthrene	%	82	82		2986558
D12-Benzo(a)anthracene	%	88	88		2986558
D12-Benzo(a)pyrene	%	84	86		2986558
D12-Benzo(b)fluoranthene	%	86	86		2986558
D12-Benzo(ghi)perylene	%	94	94		2986558
D12-Benzo(k)fluoranthene	%	94	94		2986558
D12-Chrysene	%	88	86		2986558
D12-Indeno(1,2,3-cd)pyrene	%	90	90		2986558
D12-Perylene	%	84	86		2986558
D14-Dibenzo(a,h)anthracene	%	90	88		2986558
D14-Terphenyl (FS)	%	88	85		2986558
D8-Acenaphthylene	%	72	74		2986558
D8-Naphthalene	%	66	64		2986558

QC Batch = Quality Control Batch
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Maxxam Analytics

Maxxam Job #: B2E9540
Report Date: 2012/10/05

Test Summary

Maxxam ID OZ4845 **Collected** 2012/09/24
Sample ID LICA PUFF+QFF/CLS/SEPT 24,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2986558	2012/09/29	2012/10/01	Lidija Tomic

Maxxam ID OZ4846 **Collected** 2012/09/24
Sample ID LICA PUFF+QFF/PORT/SEPT 24,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2986558	2012/09/29	2012/10/01	Lidija Tomic

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

Maxxam Job #: B2E9540
Report Date: 2012/10/05

GENERAL COMMENTS

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2E9540

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2986558	LTO	Spiked Blank	D10-2-Methylnaphthalene	2012/10/01		76	%	50 - 150
			D10-Fluoranthene	2012/10/01		86	%	50 - 150
			D10-Phenanthrene	2012/10/01		76	%	50 - 150
			D12-Benzo(a)anthracene	2012/10/01		80	%	50 - 150
			D12-Benzo(a)pyrene	2012/10/01		88	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/10/01		86	%	50 - 150
			D12-Benzo(ghi)perylene	2012/10/01		94	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/10/01		94	%	50 - 150
			D12-Chrysene	2012/10/01		88	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/10/01		88	%	50 - 150
			D12-Perylene	2012/10/01		90	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/10/01		86	%	50 - 150
			D8-Acenaphthylene	2012/10/01		74	%	50 - 150
			D8-Naphthalene	2012/10/01		76	%	50 - 150
			Acenaphthene	2012/10/01		85	%	60 - 130
		RPD	Acenaphthene	2012/10/01	1.5		%	50
		Spiked Blank	Acenaphthylene	2012/10/01		80	%	60 - 130
		RPD	Acenaphthylene	2012/10/01	0.6		%	50
		Spiked Blank	Anthracene	2012/10/01		76	%	60 - 130
		RPD	Anthracene	2012/10/01	2.6		%	50
		Spiked Blank	Benzo(a)anthracene	2012/10/01		95	%	60 - 130
		RPD	Benzo(a)anthracene	2012/10/01	2.3		%	50
		Spiked Blank	Benzo(a)pyrene	2012/10/01		84	%	60 - 130
		RPD	Benzo(a)pyrene	2012/10/01	0.9		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/10/01		96	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/10/01	1.6		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/10/01		98	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/10/01	0.5		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/10/01		93	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/10/01	3.9		%	50
		Spiked Blank	Chrysene	2012/10/01		92	%	60 - 130
		RPD	Chrysene	2012/10/01	3.2		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/10/01		94	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/10/01	2.4		%	50
		Spiked Blank	Fluoranthene	2012/10/01		92	%	60 - 130
		RPD	Fluoranthene	2012/10/01	1.1		%	50
		Spiked Blank	Fluorene	2012/10/01		82	%	60 - 130
		RPD	Fluorene	2012/10/01	1.5		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/10/01		96	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/10/01	1.0		%	50
		Spiked Blank	Naphthalene	2012/10/01		84	%	60 - 130
		RPD	Naphthalene	2012/10/01	0.6		%	50
		Spiked Blank	Phenanthrene	2012/10/01		82	%	60 - 130
		RPD	Phenanthrene	2012/10/01	1.2		%	50
		Spiked Blank	Pyrene	2012/10/01		83	%	60 - 130
		RPD	Pyrene	2012/10/01	1.2		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/10/01		84	%	50 - 150
			D10-Fluoranthene	2012/10/01		86	%	50 - 150
			D10-Phenanthrene	2012/10/01		74	%	50 - 150
			D12-Benzo(a)anthracene	2012/10/01		78	%	50 - 150
			D12-Benzo(a)pyrene	2012/10/01		90	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/10/01		86	%	50 - 150
			D12-Benzo(ghi)perylene	2012/10/01		94	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/10/01		98	%	50 - 150
			D12-Chrysene	2012/10/01		94	%	50 - 150

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E9540

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2986558	LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/10/01		88	%	50 - 150
			D12-Perylene	2012/10/01		94	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/10/01		86	%	50 - 150
			D8-Acenaphthylene	2012/10/01		80	%	50 - 150
			D8-Naphthalene	2012/10/01		82	%	50 - 150
			1-Methylnaphthalene	2012/10/01	<0.10		ug	
			1-Methylphenanthrene	2012/10/01	<0.10		ug	
			2-Chloronaphthalene	2012/10/01	<0.10		ug	
			2-Methylanthracene	2012/10/01	<0.10		ug	
			2-Methylnaphthalene	2012/10/01	<0.10		ug	
			3-Methylcholanthrene	2012/10/01	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/10/01	<0.10		ug	
			9,10-Dimethylanthracene	2012/10/01	<0.40		ug	
			Acenaphthene	2012/10/01	<0.050		ug	
			Acenaphthylene	2012/10/01	<0.050		ug	
			Anthracene	2012/10/01	<0.050		ug	
			Benzo(a)anthracene	2012/10/01	<0.050		ug	
			Benzo(a)fluorene	2012/10/01	<0.10		ug	
			Benzo(a)pyrene	2012/10/01	<0.050		ug	
			Benzo(b)fluoranthene	2012/10/01	<0.050		ug	
			Benzo(b)fluorene	2012/10/01	<0.10		ug	
			Benzo(e)pyrene	2012/10/01	<0.10		ug	
			Benzo(g,h,i)perylene	2012/10/01	<0.050		ug	
			Benzo(k)fluoranthene	2012/10/01	<0.050		ug	
			Biphenyl	2012/10/01	<0.10		ug	
			Chrysene	2012/10/01	<0.050		ug	
			Coronene	2012/10/01	<0.10		ug	
			Dibenz(a,h)anthracene	2012/10/01	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/10/01	<0.20		ug	
			Fluoranthene	2012/10/01	<0.050		ug	
			Fluorene	2012/10/01	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/10/01	<0.050		ug	
			m-Terphenyl	2012/10/01	<0.10		ug	
			Naphthalene	2012/10/01	<0.072		ug	
			o-Terphenyl	2012/10/01	<0.10		ug	
			Perylene	2012/10/01	<0.10		ug	
			Phenanthrene	2012/10/01	<0.050		ug	
			p-Terphenyl	2012/10/01	<0.10		ug	
			Pyrene	2012/10/01	<0.050		ug	
			Quinoline	2012/10/01	<0.40		ug	
			Tetralin	2012/10/01	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA PUF/PORT/Sept 30, 12

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Sept 28, 2012 @ 09:48 mst
Removal Date/Time: Oct 03, 2012 @ 15:45 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
30-Sep-12	09/30/2012 0:00	10/01/2012 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
25-Sep-12	04-Oct-12	08-Oct-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
711	229	10.5	330.34

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC #10069
GB2C3720 Puff #2
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Sept 30 , 12

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 10069

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/10/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2F7043
Received: 2012/10/10, 09:25

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/10/11	2012/10/16	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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

Total cover pages: 1

Maxxam Job #: B2F7043
Report Date: 2012/10/16

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		PD4583	PD4584		
Sampling Date		2012/09/30	2012/09/30		
COC Number		10069	10069		
	Units	**LICA PUFF+QFF/CLS/SEPT 30,12**	**LICA PUFF+QFF/PORT/SEPT 30,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2998206
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2998206
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2998206
2-Methylanthracene	ug	<0.10	<0.10	0.10	2998206
2-Methylnaphthalene	ug	0.14	0.14	0.10	2998206
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2998206
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2998206
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2998206
Acenaphthene	ug	<0.050	<0.050	0.050	2998206
Acenaphthylene	ug	<0.050	<0.050	0.050	2998206
Anthracene	ug	<0.050	<0.050	0.050	2998206
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2998206
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2998206
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2998206
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2998206
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2998206
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2998206
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2998206
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2998206
Biphenyl	ug	<0.10	0.11	0.10	2998206
Chrysene	ug	<0.050	<0.050	0.050	2998206
Coronene	ug	<0.10	<0.10	0.10	2998206
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2998206
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2998206
Fluoranthene	ug	<0.050	<0.050	0.050	2998206
Fluorene	ug	0.066	<0.050	0.050	2998206
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2998206
m-Terphenyl	ug	<0.10	<0.10	0.10	2998206
Naphthalene	ug	0.142	0.130	0.072	2998206
o-Terphenyl	ug	<0.10	<0.10	0.10	2998206
Perylene	ug	<0.10	<0.10	0.10	2998206

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		PD4583	PD4584		
Sampling Date		2012/09/30	2012/09/30		
COC Number		10069	10069		
	Units	**LICA PUFF+QFF/CLS/SEPT 30,12**	**LICA PUFF+QFF/PORT/SEPT 30,12**	**RDL**	**QC Batch**
Phenanthrene	ug	0.168	0.136	0.050	2998206
p-Terphenyl	ug	<0.10	<0.10	0.10	2998206
Pyrene	ug	<0.050	<0.050	0.050	2998206
Quinoline	ug	<0.40	<0.40	0.40	2998206
Tetralin	ug	<0.10	<0.10	0.10	2998206
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	74	76		2998206
D10-Fluoranthene	%	94	90		2998206
D10-Fluorene (FS)	%	14 (1)	14 (1)		2998206
D10-Phenanthrene	%	86	82		2998206
D12-Benzo(a)anthracene	%	92	88		2998206
D12-Benzo(a)pyrene	%	90	86		2998206
D12-Benzo(b)fluoranthene	%	90	90		2998206
D12-Benzo(ghi)perylene	%	92	90		2998206
D12-Benzo(k)fluoranthene	%	74	72		2998206
D12-Chrysene	%	86	86		2998206
D12-Indeno(1,2,3-cd)pyrene	%	92	88		2998206
D12-Perylene	%	90	86		2998206
D14-Dibenzo(a,h)anthracene	%	90	90		2998206
D14-Terphenyl (FS)	%	95	92		2998206
D8-Acenaphthylene	%	72	74		2998206
D8-Naphthalene	%	68	72		2998206

QC Batch = Quality Control Batch
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Maxxam Analytics

Maxxam Job #: B2F7043
Report Date: 2012/10/16

Test Summary

Maxxam ID PD4583 **Collected** 2012/09/30
Sample ID LICA PUFF+QFF/CLS/SEPT 30,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/10/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2998206	2012/10/11	2012/10/16	Lidija Tomic

Maxxam ID PD4584 **Collected** 2012/09/30
Sample ID LICA PUFF+QFF/PORT/SEPT 30,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/10/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2998206	2012/10/11	2012/10/16	Lidija Tomic

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Maxxam Analytics

Maxxam Job #: B2F7043
Report Date: 2012/10/16

GENERAL COMMENTS

Coronene and Dibenzo(a,e)pyrene are above 25% RSD in initial calibration. No positives found for these 2 compounds.
Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2F7043

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2998206	LTO	Spiked Blank	D10-2-Methylnaphthalene	2012/10/16		82	%	50 - 150
			D10-Fluoranthene	2012/10/16		88	%	50 - 150
			D10-Phenanthrene	2012/10/16		82	%	50 - 150
			D12-Benzo(a)anthracene	2012/10/16		92	%	50 - 150
			D12-Benzo(a)pyrene	2012/10/16		92	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/10/16		92	%	50 - 150
			D12-Benzo(ghi)perylene	2012/10/16		92	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/10/16		80	%	50 - 150
			D12-Chrysene	2012/10/16		96	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/10/16		92	%	50 - 150
			D12-Perylene	2012/10/16		94	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/10/16		90	%	50 - 150
			D8-Acenaphthylene	2012/10/16		76	%	50 - 150
			D8-Naphthalene	2012/10/16		78	%	50 - 150
			Acenaphthene	2012/10/16		86	%	60 - 130
		RPD	Acenaphthene	2012/10/16	2.6		%	50
		Spiked Blank	Acenaphthylene	2012/10/16		80	%	60 - 130
		RPD	Acenaphthylene	2012/10/16	1.9		%	50
		Spiked Blank	Anthracene	2012/10/16		87	%	60 - 130
		RPD	Anthracene	2012/10/16	0.9		%	50
		Spiked Blank	Benzo(a)anthracene	2012/10/16		107	%	60 - 130
		RPD	Benzo(a)anthracene	2012/10/16	7.0		%	50
		Spiked Blank	Benzo(a)pyrene	2012/10/16		80	%	60 - 130
		RPD	Benzo(a)pyrene	2012/10/16	2.5		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/10/16		91	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/10/16	1.7		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/10/16		82	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/10/16	3.4		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/10/16		99	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/10/16	12.0		%	50
		Spiked Blank	Chrysene	2012/10/16		99	%	60 - 130
		RPD	Chrysene	2012/10/16	15.8		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/10/16		83	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/10/16	2.4		%	50
		Spiked Blank	Fluoranthene	2012/10/16		95	%	60 - 130
		RPD	Fluoranthene	2012/10/16	0.3		%	50
		Spiked Blank	Fluorene	2012/10/16		86	%	60 - 130
		RPD	Fluorene	2012/10/16	0.9		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/10/16		82	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/10/16	2.2		%	50
		Spiked Blank	Naphthalene	2012/10/16		87	%	60 - 130
		RPD	Naphthalene	2012/10/16	1.7		%	50
		Spiked Blank	Phenanthrene	2012/10/16		87	%	60 - 130
		RPD	Phenanthrene	2012/10/16	1.1		%	50
		Spiked Blank	Pyrene	2012/10/16		84	%	60 - 130
		RPD	Pyrene	2012/10/16	0.3		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/10/16		84	%	50 - 150
			D10-Fluoranthene	2012/10/16		88	%	50 - 150
			D10-Phenanthrene	2012/10/16		84	%	50 - 150
			D12-Benzo(a)anthracene	2012/10/16		90	%	50 - 150
			D12-Benzo(a)pyrene	2012/10/16		90	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/10/16		92	%	50 - 150
			D12-Benzo(ghi)perylene	2012/10/16		92	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/10/16		76	%	50 - 150
			D12-Chrysene	2012/10/16		90	%	50 - 150

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2F7043

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2998206	LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/10/16		92	%	50 - 150
			D12-Perylene	2012/10/16		92	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/10/16		90	%	50 - 150
			D8-Acenaphthylene	2012/10/16		80	%	50 - 150
			D8-Naphthalene	2012/10/16		78	%	50 - 150
			1-Methylnaphthalene	2012/10/16	<0.10		ug	
			1-Methylphenanthrene	2012/10/16	<0.10		ug	
			2-Chloronaphthalene	2012/10/16	<0.10		ug	
			2-Methylanthracene	2012/10/16	<0.10		ug	
			2-Methylnaphthalene	2012/10/16	<0.10		ug	
			3-Methylcholanthrene	2012/10/16	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/10/16	<0.10		ug	
			9,10-Dimethylanthracene	2012/10/16	<0.40		ug	
			Acenaphthene	2012/10/16	<0.050		ug	
			Acenaphthylene	2012/10/16	<0.050		ug	
			Anthracene	2012/10/16	<0.050		ug	
			Benzo(a)anthracene	2012/10/16	<0.050		ug	
			Benzo(a)fluorene	2012/10/16	<0.10		ug	
			Benzo(a)pyrene	2012/10/16	<0.050		ug	
			Benzo(b)fluoranthene	2012/10/16	<0.050		ug	
			Benzo(b)fluorene	2012/10/16	<0.10		ug	
			Benzo(e)pyrene	2012/10/16	<0.10		ug	
			Benzo(g,h,i)perylene	2012/10/16	<0.050		ug	
			Benzo(k)fluoranthene	2012/10/16	<0.050		ug	
			Biphenyl	2012/10/16	<0.10		ug	
			Chrysene	2012/10/16	<0.050		ug	
			Coronene	2012/10/16	<0.10		ug	
			Dibenz(a,h)anthracene	2012/10/16	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/10/16	<0.20		ug	
			Fluoranthene	2012/10/16	<0.050		ug	
			Fluorene	2012/10/16	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/10/16	<0.050		ug	
			m-Terphenyl	2012/10/16	<0.10		ug	
			Naphthalene	2012/10/16	<0.072		ug	
			o-Terphenyl	2012/10/16	<0.10		ug	
			Perylene	2012/10/16	<0.10		ug	
			Phenanthrene	2012/10/16	<0.050		ug	
			p-Terphenyl	2012/10/16	<0.10		ug	
			Pyrene	2012/10/16	<0.050		ug	
			Quinoline	2012/10/16	<0.40		ug	
			Tetralin	2012/10/16	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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Polycyclic Aromatic Hydrocarbons Laboratory Analysis

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA VOC/PORT/ Aug 25, 12

Sampler s/n: 6200
Canister ID: 7837
Canister Installation Date/Time: Aug 24, 12 @ 11:30 mst
Canister Removal Date/Time: Aug 27, 12 @ 10:43 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
25-Aug-12	08/25/2012 0:00	08/26/2012 0:00	24.0000

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1496	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	22

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC # 10922

Technician Signature: Ting Xu

Maxxam

Success Through Science®

Your C.O.C. #: 10922

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/09/17

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2D2921
Received: 2012/08/30, 09:35

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/09/11	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/09/15	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B2D2921
Report Date: 2012/09/17

RESULTS OF ANALYSES OF AIR

Maxxam ID		OR0705	OR0706	
Sampling Date		2012/08/25	2012/08/25	
COC Number		10922	10922	
	Units	**LICA VOC\CLS\AUG 25,12**	**LICA VOC\PORT\AUG 25,12**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	23	22	2967119

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2D2921
Report Date: 2012/09/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OR0705			OR0706				
Sampling Date		2012/08/25			2012/08/25				
COC Number		10922			10922				
	Units	**LICA VOC\CLS\AUG 25,12**	**ug/m3**	**DL (ug/m3)**	**LICA VOC\PORT\AUG 25,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics									
Dichlorodifluoromethane (FREON 12)	ppbv	0.66	3.26	0.989	0.68	0.20	3.38	0.989	2972144
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2972144
Chloromethane	ppbv	0.62	1.29	0.620	0.60	0.30	1.24	0.620	2972144
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2972144
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2972144
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2972144
Trichlorofluoromethane (FREON 11)	ppbv	0.30	1.68	1.12	0.29	0.20	1.62	1.12	2972144
Ethanol (ethyl alcohol)	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2972144
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2972144
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2972144
2-Propanone	ppbv	7.71	18.3	1.90	4.79	0.80	11.4	1.90	2972144
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2972144
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2972144
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2972144
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2972144
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2972144
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2972144
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2972144
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2972144
Methylene Chloride(Dichloromethane)	ppbv	<0.80	<2.78	2.78	<0.80	0.80	<2.78	2.78	2972144
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2972144
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2972144
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2972144
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2972144
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2972144
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2972144
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2972144
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2972144
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2972144
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2972144
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2972144

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OR0705			OR0706				
Sampling Date		2012/08/25			2012/08/25				
COC Number		10922			10922				
	Units	**LICA VOC\CLS\AUG 25,12**	**ug/m3**	**DL (ug/m3)**	**LICA VOC\PORT\AUG 25,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2972144
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2972144
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2972144
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2972144
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2972144
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2972144
Benzene	ppbv	<0.18	<0.575	0.575	<0.18	0.18	<0.575	0.575	2972144
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2972144
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2972144
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2972144
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2972144
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2972144
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2972144
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2972144
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2972144
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2972144
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2972144
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2972144
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2972144
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2972144
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2972144
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2972144
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2972144
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2972144
Cyclohexane	ppbv	<0.20	<0.688	0.688	<0.20	0.20	<0.688	0.688	2972144
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2972144
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2972144
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2972144
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2972144
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2972144
2,2,4-Trimethylpentane	ppbv	<0.20	<0.934	0.934	<0.20	0.20	<0.934	0.934	2972144
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	0.95	0.50	2.95	1.56	2972144
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2972144

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2D2921
Report Date: 2012/09/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OR0705			OR0706				
Sampling Date		2012/08/25			2012/08/25				
COC Number		10922			10922				
	Units	**LICA VOC\CLS\AUG 25,12**	**ug/m3**	**DL (ug/m3)**	**LICA VOC\PORT\AUG 25,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)									
Bromochloromethane	%	82	N/A	N/A	80		N/A	N/A	2972144
D5-Chlorobenzene	%	78	N/A	N/A	77		N/A	N/A	2972144
Difluorobenzene	%	83	N/A	N/A	82		N/A	N/A	2972144

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2D2921
Report Date: 2012/09/17

Test Summary

Maxxam ID OR0705 **Collected** 2012/08/25
Sample ID LICA VOC\CLS\AUG 25,12 **Shipped**
Matrix AIR **Received** 2012/08/30

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2967119	N/A	2012/09/11	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2972144	N/A	2012/09/15	Diane Temniuk

Maxxam ID OR0706 **Collected** 2012/08/25
Sample ID LICA VOC\PORT\AUG 25,12 **Shipped**
Matrix AIR **Received** 2012/08/30

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2967119	N/A	2012/09/11	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2972144	N/A	2012/09/15	Diane Temniuk

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Maxxam Analytics

Maxxam Job #: B2D2921
Report Date: 2012/09/17

GENERAL COMMENTS

Sample OR0705-01: Increase MDL for propene due to matrix interference on a possible positive.

Sample OR0706-01: Increase MDL for propene due to matrix interference on a possible positive.

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2D2921

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2972144	DVO	Spiked Blank	Bromochloromethane	2012/09/15		99	%	60 - 140
			D5-Chlorobenzene	2012/09/15		102	%	60 - 140
			Difluorobenzene	2012/09/15		101	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/15		109	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/09/15		125	%	70 - 130
			Chloromethane	2012/09/15		118	%	70 - 130
			Vinyl Chloride	2012/09/15		115	%	70 - 130
			Chloroethane	2012/09/15		110	%	70 - 130
			1,3-Butadiene	2012/09/15		115	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/09/15		101	%	70 - 130
			Ethanol (ethyl alcohol)	2012/09/15		102	%	70 - 130
			Trichlorotrifluoroethane	2012/09/15		106	%	70 - 130
			2-propanol	2012/09/15		127	%	70 - 130
			2-Propanone	2012/09/15		127	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/09/15		114	%	70 - 130
			Methyl Isobutyl Ketone	2012/09/15		119	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/09/15		123	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/09/15		112	%	70 - 130
			Ethyl Acetate	2012/09/15		127	%	70 - 130
			1,1-Dichloroethylene	2012/09/15		111	%	70 - 130
			cis-1,2-Dichloroethylene	2012/09/15		115	%	70 - 130
			trans-1,2-Dichloroethylene	2012/09/15		114	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/09/15		109	%	70 - 130
			Chloroform	2012/09/15		106	%	70 - 130
			Carbon Tetrachloride	2012/09/15		97	%	70 - 130
			1,1-Dichloroethane	2012/09/15		116	%	70 - 130
			1,2-Dichloroethane	2012/09/15		108	%	70 - 130
			Ethylene Dibromide	2012/09/15		103	%	70 - 130
			1,1,1-Trichloroethane	2012/09/15		99	%	70 - 130
			1,1,2-Trichloroethane	2012/09/15		109	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/09/15		108	%	70 - 130
			cis-1,3-Dichloropropene	2012/09/15		112	%	70 - 130
			trans-1,3-Dichloropropene	2012/09/15		106	%	70 - 130
			1,2-Dichloropropane	2012/09/15		117	%	70 - 130
			Bromomethane	2012/09/15		102	%	70 - 130
			Bromoform	2012/09/15		100	%	70 - 130
			Bromodichloromethane	2012/09/15		112	%	70 - 130
			Dibromochloromethane	2012/09/15		104	%	70 - 130
			Trichloroethylene	2012/09/15		99	%	70 - 130
			Tetrachloroethylene	2012/09/15		97	%	70 - 130
			Benzene	2012/09/15		109	%	70 - 130
			Toluene	2012/09/15		108	%	70 - 130
			Ethylbenzene	2012/09/15		106	%	70 - 130
			p+m-Xylene	2012/09/15		103	%	70 - 130
			o-Xylene	2012/09/15		103	%	70 - 130
			Styrene	2012/09/15		83	%	70 - 130
			4-ethyltoluene	2012/09/15		103	%	70 - 130
			1,3,5-Trimethylbenzene	2012/09/15		96	%	70 - 130
			1,2,4-Trimethylbenzene	2012/09/15		92	%	70 - 130
			Chlorobenzene	2012/09/15		99	%	70 - 130
			Benzyl chloride	2012/09/15		79	%	70 - 130
			1,3-Dichlorobenzene	2012/09/15		80	%	70 - 130
			1,4-Dichlorobenzene	2012/09/15		76	%	70 - 130
			1,2-Dichlorobenzene	2012/09/15		76	%	70 - 130
			1,2,4-Trichlorobenzene	2012/09/15		63 (1)	%	70 - 130

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2D2921

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2972144	DVO	Spiked Blank	Hexachlorobutadiene	2012/09/15		95	%	70 - 130
			Hexane	2012/09/15		123	%	70 - 130
			Heptane	2012/09/15		121	%	70 - 130
			Cyclohexane	2012/09/15		118	%	70 - 130
			Tetrahydrofuran	2012/09/15		126	%	70 - 130
			1,4-Dioxane	2012/09/15		104	%	70 - 130
			Xylene (Total)	2012/09/15		103	%	70 - 130
			Vinyl Bromide	2012/09/15		109	%	70 - 130
			Propene	2012/09/15		120	%	70 - 130
			2,2,4-Trimethylpentane	2012/09/15		120	%	70 - 130
			Carbon Disulfide	2012/09/15		115	%	70 - 130
			Vinyl Acetate	2012/09/15		121	%	70 - 130
		Method Blank	Bromochloromethane	2012/09/15		86	%	60 - 140
			D5-Chlorobenzene	2012/09/15		74	%	60 - 140
			Difluorobenzene	2012/09/15		87	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/15	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/09/15	<0.17		ppbv	
			Chloromethane	2012/09/15	<0.30		ppbv	
			Vinyl Chloride	2012/09/15	<0.18		ppbv	
			Chloroethane	2012/09/15	<0.30		ppbv	
			1,3-Butadiene	2012/09/15	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/09/15	<0.20		ppbv	
			Ethanol (ethyl alcohol)	2012/09/15	<2.3		ppbv	
			Trichlorotrifluoroethane	2012/09/15	<0.15		ppbv	
			2-propanol	2012/09/15	<3.0		ppbv	
			2-Propanone	2012/09/15	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/09/15	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/09/15	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/09/15	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/09/15	<0.20		ppbv	
			Ethyl Acetate	2012/09/15	<2.2		ppbv	
			1,1-Dichloroethylene	2012/09/15	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/09/15	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/09/15	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/09/15	<0.80		ppbv	
			Chloroform	2012/09/15	<0.15		ppbv	
			Carbon Tetrachloride	2012/09/15	<0.30		ppbv	
			1,1-Dichloroethane	2012/09/15	<0.20		ppbv	
			1,2-Dichloroethane	2012/09/15	<0.20		ppbv	
			Ethylene Dibromide	2012/09/15	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/09/15	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/09/15	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/09/15	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/09/15	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/09/15	<0.17		ppbv	
			1,2-Dichloropropane	2012/09/15	<0.40		ppbv	
			Bromomethane	2012/09/15	<0.18		ppbv	
			Bromoform	2012/09/15	<0.20		ppbv	
			Bromodichloromethane	2012/09/15	<0.20		ppbv	
			Dibromochloromethane	2012/09/15	<0.20		ppbv	
			Trichloroethylene	2012/09/15	<0.30		ppbv	
			Tetrachloroethylene	2012/09/15	<0.20		ppbv	
			Benzene	2012/09/15	<0.18		ppbv	
			Toluene	2012/09/15	<0.20		ppbv	
			Ethylbenzene	2012/09/15	<0.20		ppbv	

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2D2921

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2972144	DVO	Method Blank	p+m-Xylene	2012/09/15	<0.37		ppbv	
			o-Xylene	2012/09/15	<0.20		ppbv	
			Styrene	2012/09/15	<0.20		ppbv	
			4-ethyltoluene	2012/09/15	<2.2		ppbv	
			1,3,5-Trimethylbenzene	2012/09/15	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/09/15	<0.50		ppbv	
			Chlorobenzene	2012/09/15	<0.20		ppbv	
			Benzyl chloride	2012/09/15	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/09/15	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/09/15	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/09/15	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/09/15	<2.0		ppbv	
			Hexachlorobutadiene	2012/09/15	<3.0		ppbv	
			Hexane	2012/09/15	<0.30		ppbv	
			Heptane	2012/09/15	<0.30		ppbv	
			Cyclohexane	2012/09/15	<0.20		ppbv	
			Tetrahydrofuran	2012/09/15	<0.40		ppbv	
			1,4-Dioxane	2012/09/15	<2.0		ppbv	
			Xylene (Total)	2012/09/15	<0.60		ppbv	
			Vinyl Bromide	2012/09/15	<0.20		ppbv	
			Propene	2012/09/15	<0.30		ppbv	
			2,2,4-Trimethylpentane	2012/09/15	<0.20		ppbv	
			Carbon Disulfide	2012/09/15	<0.50		ppbv	
			Vinyl Acetate	2012/09/15	<0.20		ppbv	

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA VOC/PORT/ Aug 31, 12

Sampler s/n: 6200
Canister ID: 293
Canister Installation Date/Time: Aug 30, 12 @ 16:10 mst
Canister Removal Date/Time: Sept 04, 12 @ 13:30 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
31-Aug-12	08/31/2012 0:00	09/01/2012 0:00	24.0000

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1496	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	22

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC #11642

Technician Signature: Ting Xu

Maxxam

Success Through Science®

Your C.O.C. #: 11642

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/09/19

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2D7337
Received: 2012/09/07, 10:29

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/09/18	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/09/18	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

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

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B2D7337
Report Date: 2012/09/19

RESULTS OF ANALYSES OF AIR

Maxxam ID		OT4363	OT4364	
Sampling Date		2012/08/31 00:00	2012/08/31 00:00	
COC Number		11642	11642	
	Units	**LICA VOC/CLS/AUG 31,12 - 287**	**LICA VOC/PORT/AUG 31,12 - 293**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	23	22	2974767

QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OT4363				
Sampling Date		2012/08/31 00:00				
COC Number		11642				
	Units	**LICA VOC/CLS/AUG 31,12 - 287**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.68	0.20	3.35	0.989	2974763
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2974763
Chloromethane	ppbv	0.57	0.30	1.17	0.620	2974763
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2974763
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2974763
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2974763
Trichlorofluoromethane (FREON 11)	ppbv	0.32	0.20	1.79	1.12	2974763
Ethanol (ethyl alcohol)	ppbv	3.0	2.3	5.71	4.33	2974763
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2974763
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2974763
2-Propanone	ppbv	1.76	0.80	4.18	1.90	2974763
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2974763
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2974763
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2974763
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2974763
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2974763
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2974763
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2974763
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2974763
Methylene Chloride(Dichloromethane)	ppbv	1.10	0.80	3.82	2.78	2974763
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2974763
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2974763
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2974763
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2974763
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2974763
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2974763
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2974763
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2974763
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2974763
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2974763

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OT4363				
Sampling Date		2012/08/31 00:00				
COC Number		11642				
	Units	**LICA VOC/CLS/AUG 31,12 - 287**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2974763
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2974763
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2974763
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2974763
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2974763
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2974763
Tetrachloroethylene	ppbv	0.46	0.20	3.11	1.36	2974763
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2974763
Toluene	ppbv	0.37	0.20	1.40	0.753	2974763
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2974763
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2974763
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2974763
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2974763
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2974763
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2974763
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2974763
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2974763
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2974763
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2974763
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2974763
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2974763
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2974763
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2974763
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2974763
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2974763
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2974763
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2974763
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2974763
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2974763
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2974763
Propene	ppbv	0.92	0.30	1.58	0.516	2974763
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2974763

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2D7337
Report Date: 2012/09/19

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OT4363				
Sampling Date		2012/08/31 00:00				
COC Number		11642				
	Units	**LICA VOC/CLS/AUG 31,12 - 287**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2974763
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2974763
Surrogate Recovery (%)						
Bromochloromethane	%	83		N/A	N/A	2974763
D5-Chlorobenzene	%	72		N/A	N/A	2974763
Difluorobenzene	%	88		N/A	N/A	2974763

N/A = Not Applicable
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OT4364				
Sampling Date		2012/08/31 00:00				
COC Number		11642				
	Units	**LICA VOC/PORT/AUG 31,12 - 293**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.65	0.20	3.24	0.989	2974763
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2974763
Chloromethane	ppbv	0.56	0.30	1.16	0.620	2974763
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2974763
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2974763
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2974763
Trichlorofluoromethane (FREON 11)	ppbv	0.32	0.20	1.80	1.12	2974763
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2974763
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2974763
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2974763
2-Propanone	ppbv	1.92	0.80	4.57	1.90	2974763
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2974763
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2974763
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2974763
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2974763
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2974763
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2974763
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2974763
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2974763
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2974763
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2974763
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2974763
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2974763
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2974763
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2974763
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2974763
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2974763
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2974763
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2974763
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2974763

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OT4364				
Sampling Date		2012/08/31 00:00				
COC Number		11642				
	Units	**LICA VOC/PORT/AUG 31,12 - 293**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2974763
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2974763
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2974763
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2974763
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2974763
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2974763
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2974763
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2974763
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2974763
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2974763
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2974763
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2974763
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2974763
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2974763
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2974763
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2974763
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2974763
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2974763
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2974763
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2974763
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2974763
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2974763
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2974763
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2974763
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2974763
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2974763
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2974763
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2974763
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2974763
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2974763
Propene	ppbv	0.97	0.30	1.67	0.516	2974763
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2974763

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2D7337
Report Date: 2012/09/19

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OT4364				
Sampling Date		2012/08/31 00:00				
COC Number		11642				
	Units	**LICA VOC/PORT/AUG 31,12 - 293**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2974763
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2974763
Surrogate Recovery (%)						
Bromochloromethane	%	80		N/A	N/A	2974763
D5-Chlorobenzene	%	69		N/A	N/A	2974763
Difluorobenzene	%	84		N/A	N/A	2974763

N/A = Not Applicable
QC Batch = Quality Control Batch

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Test Summary

Maxxam ID OT4363 **Collected** 2012/08/31
Sample ID LICA VOC/CLS/AUG 31,12 - 287 **Shipped**
Matrix AIR **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2974767	N/A	2012/09/18	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2974763	N/A	2012/09/18	Melanie Mabini

Maxxam ID OT4364 **Collected** 2012/08/31
Sample ID LICA VOC/PORT/AUG 31,12 - 293 **Shipped**
Matrix AIR **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2974767	N/A	2012/09/18	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2974763	N/A	2012/09/18	Melanie Mabini

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Maxxam Analytics

Maxxam Job #: B2D7337
Report Date: 2012/09/19

GENERAL COMMENTS

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2D7337

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2974763	MM2	Spiked Blank	Bromochloromethane	2012/09/18		98	%	60 - 140
			D5-Chlorobenzene	2012/09/18		104	%	60 - 140
			Difluorobenzene	2012/09/18		103	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/18		109	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/09/18		130	%	70 - 130
			Chloromethane	2012/09/18		119	%	70 - 130
			Vinyl Chloride	2012/09/18		113	%	70 - 130
			Chloroethane	2012/09/18		119	%	70 - 130
			1,3-Butadiene	2012/09/18		119	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/09/18		111	%	70 - 130
			Ethanol (ethyl alcohol)	2012/09/18		107	%	70 - 130
			Trichlorotrifluoroethane	2012/09/18		108	%	70 - 130
			2-propanol	2012/09/18		113	%	70 - 130
			2-Propanone	2012/09/18		107	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/09/18		109	%	70 - 130
			Methyl Isobutyl Ketone	2012/09/18		126	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/09/18		128	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/09/18		104	%	70 - 130
			Ethyl Acetate	2012/09/18		117	%	70 - 130
			1,1-Dichloroethylene	2012/09/18		109	%	70 - 130
			cis-1,2-Dichloroethylene	2012/09/18		105	%	70 - 130
			trans-1,2-Dichloroethylene	2012/09/18		107	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/09/18		103	%	70 - 130
			Chloroform	2012/09/18		107	%	70 - 130
			Carbon Tetrachloride	2012/09/18		107	%	70 - 130
			1,1-Dichloroethane	2012/09/18		108	%	70 - 130
			1,2-Dichloroethane	2012/09/18		113	%	70 - 130
			Ethylene Dibromide	2012/09/18		105	%	70 - 130
			1,1,1-Trichloroethane	2012/09/18		107	%	70 - 130
			1,1,2-Trichloroethane	2012/09/18		106	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/09/18		111	%	70 - 130
			cis-1,3-Dichloropropene	2012/09/18		104	%	70 - 130
			trans-1,3-Dichloropropene	2012/09/18		105	%	70 - 130
			1,2-Dichloropropane	2012/09/18		104	%	70 - 130
			Bromomethane	2012/09/18		118	%	70 - 130
			Bromoform	2012/09/18		126	%	70 - 130
			Bromodichloromethane	2012/09/18		116	%	70 - 130
			Dibromochloromethane	2012/09/18		118	%	70 - 130
			Trichloroethylene	2012/09/18		106	%	70 - 130
			Tetrachloroethylene	2012/09/18		107	%	70 - 130
			Benzene	2012/09/18		104	%	70 - 130
			Toluene	2012/09/18		103	%	70 - 130
			Ethylbenzene	2012/09/18		106	%	70 - 130
			p+m-Xylene	2012/09/18		103	%	70 - 130
			o-Xylene	2012/09/18		107	%	70 - 130
			Styrene	2012/09/18		89	%	70 - 130
			4-ethyltoluene	2012/09/18		120	%	70 - 130
			1,3,5-Trimethylbenzene	2012/09/18		109	%	70 - 130
			1,2,4-Trimethylbenzene	2012/09/18		107	%	70 - 130
			Chlorobenzene	2012/09/18		103	%	70 - 130
			Benzyl chloride	2012/09/18		112	%	70 - 130
			1,3-Dichlorobenzene	2012/09/18		108	%	70 - 130
			1,4-Dichlorobenzene	2012/09/18		109	%	70 - 130
			1,2-Dichlorobenzene	2012/09/18		108	%	70 - 130
			1,2,4-Trichlorobenzene	2012/09/18		94	%	70 - 130

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2D7337

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2974763	MM2	Spiked Blank	Hexachlorobutadiene	2012/09/18		107	%	70 - 130
			Hexane	2012/09/18		109	%	70 - 130
			Heptane	2012/09/18		114	%	70 - 130
			Cyclohexane	2012/09/18		107	%	70 - 130
			Tetrahydrofuran	2012/09/18		113	%	70 - 130
			1,4-Dioxane	2012/09/18		108	%	70 - 130
			Vinyl Bromide	2012/09/18		123	%	70 - 130
			Propene	2012/09/18		96	%	70 - 130
			2,2,4-Trimethylpentane	2012/09/18		110	%	70 - 130
			Carbon Disulfide	2012/09/18		100	%	70 - 130
			Vinyl Acetate	2012/09/18		115	%	70 - 130
		Method Blank	Bromochloromethane	2012/09/18		89	%	60 - 140
			D5-Chlorobenzene	2012/09/18		86	%	60 - 140
			Difluorobenzene	2012/09/18		93	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/18	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/09/18	<0.17		ppbv	
			Chloromethane	2012/09/18	<0.30		ppbv	
			Vinyl Chloride	2012/09/18	<0.18		ppbv	
			Chloroethane	2012/09/18	<0.30		ppbv	
			1,3-Butadiene	2012/09/18	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/09/18	<0.20		ppbv	
			Ethanol (ethyl alcohol)	2012/09/18	<2.3		ppbv	
			Trichlorotrifluoroethane	2012/09/18	<0.15		ppbv	
			2-propanol	2012/09/18	<3.0		ppbv	
			2-Propanone	2012/09/18	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/09/18	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/09/18	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/09/18	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/09/18	<0.20		ppbv	
			Ethyl Acetate	2012/09/18	<2.2		ppbv	
			1,1-Dichloroethylene	2012/09/18	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/09/18	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/09/18	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/09/18	<0.80		ppbv	
			Chloroform	2012/09/18	<0.15		ppbv	
			Carbon Tetrachloride	2012/09/18	<0.30		ppbv	
			1,1-Dichloroethane	2012/09/18	<0.20		ppbv	
			1,2-Dichloroethane	2012/09/18	<0.20		ppbv	
			Ethylene Dibromide	2012/09/18	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/09/18	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/09/18	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/09/18	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/09/18	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/09/18	<0.17		ppbv	
			1,2-Dichloropropane	2012/09/18	<0.40		ppbv	
			Bromomethane	2012/09/18	<0.18		ppbv	
			Bromoform	2012/09/18	<0.20		ppbv	
			Bromodichloromethane	2012/09/18	<0.20		ppbv	
			Dibromochloromethane	2012/09/18	<0.20		ppbv	
			Trichloroethylene	2012/09/18	<0.30		ppbv	
			Tetrachloroethylene	2012/09/18	<0.20		ppbv	
			Benzene	2012/09/18	<0.18		ppbv	
			Toluene	2012/09/18	<0.20		ppbv	
			Ethylbenzene	2012/09/18	<0.20		ppbv	
			p+m-Xylene	2012/09/18	<0.37		ppbv	

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2D7337

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2974763	MM2	Method Blank	o-Xylene	2012/09/18	<0.20		ppbv	
			Styrene	2012/09/18	<0.20		ppbv	
			4-ethyltoluene	2012/09/18	<2.2		ppbv	
			1,3,5-Trimethylbenzene	2012/09/18	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/09/18	<0.50		ppbv	
			Chlorobenzene	2012/09/18	<0.20		ppbv	
			Benzyl chloride	2012/09/18	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/09/18	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/09/18	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/09/18	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/09/18	<2.0		ppbv	
			Hexachlorobutadiene	2012/09/18	<3.0		ppbv	
			Hexane	2012/09/18	<0.30		ppbv	
			Heptane	2012/09/18	<0.30		ppbv	
			Cyclohexane	2012/09/18	<0.20		ppbv	
			Tetrahydrofuran	2012/09/18	<0.40		ppbv	
			1,4-Dioxane	2012/09/18	<2.0		ppbv	
			Xylene (Total)	2012/09/18	<0.60		ppbv	
			Vinyl Bromide	2012/09/18	<0.20		ppbv	
			Propene	2012/09/18	<0.30		ppbv	
			2,2,4-Trimethylpentane	2012/09/18	<0.20		ppbv	
			Carbon Disulfide	2012/09/18	<0.50		ppbv	
			Vinyl Acetate	2012/09/18	<0.20		ppbv	

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA VOC/PORT/ Sept 06, 12

Sampler s/n: 6200
Canister ID: 266
Canister Installation Date/Time: Sept 05, 12 @ 12:32 mst
Canister Removal Date/Time: Sept 07, 12 @ 11:06 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
06-Sep-12	09/06/2012 0:00	09/07/2012 0:00	24.0000

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1496	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	22

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC# 09503

Technician Signature: Ting Xu

Maxxam

Success Through Science®

Your C.O.C. #: 09503

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/09/24

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2E1455
Received: 2012/09/12, 10:00

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/09/12	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/09/20	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B2E1455
Report Date: 2012/09/24

RESULTS OF ANALYSES OF AIR

Maxxam ID		OV4627	OV4628	
Sampling Date		2012/09/06	2012/09/06	
COC Number		09503	09503	
	Units	**LICA VOC\CLS\SEPT 06,12**	**LICA VOC\PORT\SEPT 06,12**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	23	22	2976665

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E1455
Report Date: 2012/09/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OV4627				
Sampling Date		2012/09/06				
COC Number		09503				
	Units	**LICA VOC\CLS\SEPT 06,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.68	0.20	3.38	0.989	2976664
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2976664
Chloromethane	ppbv	0.57	0.30	1.17	0.620	2976664
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2976664
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2976664
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2976664
Trichlorofluoromethane (FREON 11)	ppbv	0.32	0.20	1.78	1.12	2976664
Ethanol (ethyl alcohol)	ppbv	2.7	2.3	5.06	4.33	2976664
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2976664
2-propanol	ppbv	3.6	3.0	8.79	7.37	2976664
2-Propanone	ppbv	<0.80	0.80	<1.90	1.90	2976664
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2976664
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2976664
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2976664
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2976664
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2976664
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2976664
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2976664
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2976664
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2976664
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2976664
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2976664
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2976664
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2976664
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2976664
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2976664
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2976664
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2976664
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2976664
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2976664
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2976664

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OV4627				
Sampling Date		2012/09/06				
COC Number		09503				
	Units	**LICA VOC\CLS\SEPT 06,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2976664
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2976664
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2976664
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2976664
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2976664
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2976664
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2976664
Toluene	ppbv	0.24	0.20	0.919	0.753	2976664
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2976664
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2976664
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2976664
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2976664
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2976664
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2976664
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2976664
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2976664
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2976664
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2976664
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2976664
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2976664
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2976664
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2976664
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2976664
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2976664
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2976664
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2976664
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2976664
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2976664
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2976664
Propene	ppbv	<1.1	1.1	<1.84	1.84	2976664
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2976664
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2976664
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2976664

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E1455
Report Date: 2012/09/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OV4627				
Sampling Date		2012/09/06				
COC Number		09503				
	Units	**LICA VOC\CLS\SEPT 06,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	100		N/A	N/A	2976664
D5-Chlorobenzene	%	102		N/A	N/A	2976664
Difluorobenzene	%	108		N/A	N/A	2976664

N/A = Not Applicable
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OV4628				
Sampling Date		2012/09/06				
COC Number		09503				
	Units	**LICA VOC\PORT\SEPT 06,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.70	0.20	3.47	0.989	2976664
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2976664
Chloromethane	ppbv	0.54	0.30	1.12	0.620	2976664
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2976664
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2976664
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2976664
Trichlorofluoromethane (FREON 11)	ppbv	0.33	0.20	1.85	1.12	2976664
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2976664
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2976664
2-propanol	ppbv	3.1	3.0	7.61	7.37	2976664
2-Propanone	ppbv	<0.80	0.80	<1.90	1.90	2976664
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2976664
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2976664
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2976664
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2976664
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2976664
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2976664
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2976664
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2976664
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2976664
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2976664
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2976664
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2976664
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2976664
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2976664
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2976664
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2976664
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2976664
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2976664
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2976664
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2976664

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OV4628				
Sampling Date		2012/09/06				
COC Number		09503				
	Units	**LICA VOC\PORT\SEPT 06,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2976664
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2976664
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2976664
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2976664
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2976664
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2976664
Benzene	ppbv	0.19	0.18	0.621	0.575	2976664
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2976664
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2976664
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2976664
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2976664
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2976664
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2976664
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2976664
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2976664
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2976664
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2976664
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2976664
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2976664
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2976664
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2976664
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2976664
Hexane	ppbv	0.67	0.30	2.37	1.06	2976664
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2976664
Cyclohexane	ppbv	0.46	0.20	1.59	0.688	2976664
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2976664
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2976664
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2976664
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2976664
Propene	ppbv	<1.7	1.7	<2.99	2.99	2976664
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2976664
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2976664
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2976664

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E1455
Report Date: 2012/09/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OV4628				
Sampling Date		2012/09/06				
COC Number		09503				
	Units	**LICA VOC\PORT\SEPT 06,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	92		N/A	N/A	2976664
D5-Chlorobenzene	%	95		N/A	N/A	2976664
Difluorobenzene	%	101		N/A	N/A	2976664

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E1455
Report Date: 2012/09/24

Test Summary

Maxxam ID OV4627 **Collected** 2012/09/06
Sample ID LICA VOC\CLS\SEPT 06,12 **Shipped**
Matrix AIR **Received** 2012/09/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2976665	N/A	2012/09/12	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2976664	N/A	2012/09/20	Melanie Mabini

Maxxam ID OV4628 **Collected** 2012/09/06
Sample ID LICA VOC\PORT\SEPT 06,12 **Shipped**
Matrix AIR **Received** 2012/09/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2976665	N/A	2012/09/12	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2976664	N/A	2012/09/20	Melanie Mabini

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Maxxam Analytics

Maxxam Job #: B2E1455
Report Date: 2012/09/24

GENERAL COMMENTS

Sample OV4627-01: Increase MDL for propene due to matrix interference on a possible positive.

Sample OV4628-01: Increase MDL for propene due to matrix interference on a possible positive.

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2E1455

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2976664	MM2	Spiked Blank	Bromochloromethane	2012/09/20		98	%	60 - 140
			D5-Chlorobenzene	2012/09/20		100	%	60 - 140
			Difluorobenzene	2012/09/20		101	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/20		117	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/09/20		136 (1)	%	70 - 130
			Chloromethane	2012/09/20		119	%	70 - 130
			Vinyl Chloride	2012/09/20		117	%	70 - 130
			Chloroethane	2012/09/20		123	%	70 - 130
			1,3-Butadiene	2012/09/20		120	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/09/20		117	%	70 - 130
			Ethanol (ethyl alcohol)	2012/09/20		99	%	70 - 130
			Trichlorotrifluoroethane	2012/09/20		112	%	70 - 130
			2-propanol	2012/09/20		116	%	70 - 130
			2-Propanone	2012/09/20		108	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/09/20		104	%	70 - 130
			Methyl Isobutyl Ketone	2012/09/20		121	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/09/20		124	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/09/20		111	%	70 - 130
			Ethyl Acetate	2012/09/20		118	%	70 - 130
			1,1-Dichloroethylene	2012/09/20		114	%	70 - 130
			cis-1,2-Dichloroethylene	2012/09/20		111	%	70 - 130
			trans-1,2-Dichloroethylene	2012/09/20		114	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/09/20		104	%	70 - 130
			Chloroform	2012/09/20		111	%	70 - 130
			Carbon Tetrachloride	2012/09/20		120	%	70 - 130
			1,1-Dichloroethane	2012/09/20		112	%	70 - 130
			1,2-Dichloroethane	2012/09/20		118	%	70 - 130
			Ethylene Dibromide	2012/09/20		109	%	70 - 130
			1,1,1-Trichloroethane	2012/09/20		117	%	70 - 130
			1,1,2-Trichloroethane	2012/09/20		108	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/09/20		112	%	70 - 130
			cis-1,3-Dichloropropene	2012/09/20		109	%	70 - 130
			trans-1,3-Dichloropropene	2012/09/20		114	%	70 - 130
			1,2-Dichloropropane	2012/09/20		109	%	70 - 130
			Bromomethane	2012/09/20		120	%	70 - 130
			Bromoform	2012/09/20		134 (1)	%	70 - 130
			Bromodichloromethane	2012/09/20		124	%	70 - 130
			Dibromochloromethane	2012/09/20		126	%	70 - 130
			Trichloroethylene	2012/09/20		108	%	70 - 130
			Tetrachloroethylene	2012/09/20		112	%	70 - 130
			Benzene	2012/09/20		107	%	70 - 130
			Toluene	2012/09/20		107	%	70 - 130
			Ethylbenzene	2012/09/20		110	%	70 - 130
			p+m-Xylene	2012/09/20		106	%	70 - 130
			o-Xylene	2012/09/20		109	%	70 - 130
			Styrene	2012/09/20		90	%	70 - 130
			4-ethyltoluene	2012/09/20		123	%	70 - 130
			1,3,5-Trimethylbenzene	2012/09/20		110	%	70 - 130
			1,2,4-Trimethylbenzene	2012/09/20		108	%	70 - 130
			Chlorobenzene	2012/09/20		106	%	70 - 130
			Benzyl chloride	2012/09/20		114	%	70 - 130
			1,3-Dichlorobenzene	2012/09/20		106	%	70 - 130
			1,4-Dichlorobenzene	2012/09/20		106	%	70 - 130
			1,2-Dichlorobenzene	2012/09/20		106	%	70 - 130
			1,2,4-Trichlorobenzene	2012/09/20		90	%	70 - 130

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E1455

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2976664	MM2	Spiked Blank	Hexachlorobutadiene	2012/09/20		112	%	70 - 130
			Hexane	2012/09/20		112	%	70 - 130
			Heptane	2012/09/20		112	%	70 - 130
			Cyclohexane	2012/09/20		110	%	70 - 130
			Tetrahydrofuran	2012/09/20		110	%	70 - 130
			1,4-Dioxane	2012/09/20		109	%	70 - 130
			Vinyl Bromide	2012/09/20		126	%	70 - 130
			Propene	2012/09/20		95	%	70 - 130
			2,2,4-Trimethylpentane	2012/09/20		114	%	70 - 130
			Carbon Disulfide	2012/09/20		104	%	70 - 130
			Vinyl Acetate	2012/09/20		118	%	70 - 130
		Method Blank	Bromochloromethane	2012/09/20		84	%	60 - 140
			D5-Chlorobenzene	2012/09/20		82	%	60 - 140
			Difluorobenzene	2012/09/20		88	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/20	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/09/20	<0.17		ppbv	
			Chloromethane	2012/09/20	<0.30		ppbv	
			Vinyl Chloride	2012/09/20	<0.18		ppbv	
			Chloroethane	2012/09/20	<0.30		ppbv	
			1,3-Butadiene	2012/09/20	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/09/20	<0.20		ppbv	
			Ethanol (ethyl alcohol)	2012/09/20	<2.3		ppbv	
			Trichlorotrifluoroethane	2012/09/20	<0.15		ppbv	
			2-propanol	2012/09/20	<3.0		ppbv	
			2-Propanone	2012/09/20	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/09/20	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/09/20	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/09/20	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/09/20	<0.20		ppbv	
			Ethyl Acetate	2012/09/20	<2.2		ppbv	
			1,1-Dichloroethylene	2012/09/20	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/09/20	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/09/20	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/09/20	<0.80		ppbv	
			Chloroform	2012/09/20	<0.15		ppbv	
			Carbon Tetrachloride	2012/09/20	<0.30		ppbv	
			1,1-Dichloroethane	2012/09/20	<0.20		ppbv	
			1,2-Dichloroethane	2012/09/20	<0.20		ppbv	
			Ethylene Dibromide	2012/09/20	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/09/20	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/09/20	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/09/20	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/09/20	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/09/20	<0.17		ppbv	
			1,2-Dichloropropane	2012/09/20	<0.40		ppbv	
			Bromomethane	2012/09/20	<0.18		ppbv	
			Bromoform	2012/09/20	<0.20		ppbv	
			Bromodichloromethane	2012/09/20	<0.20		ppbv	
			Dibromochloromethane	2012/09/20	<0.20		ppbv	
			Trichloroethylene	2012/09/20	<0.30		ppbv	
			Tetrachloroethylene	2012/09/20	<0.20		ppbv	
			Benzene	2012/09/20	<0.18		ppbv	
			Toluene	2012/09/20	<0.20		ppbv	
			Ethylbenzene	2012/09/20	<0.20		ppbv	
			p+m-Xylene	2012/09/20	<0.37		ppbv	

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E1455

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2976664	MM2	Method Blank	o-Xylene	2012/09/20	<0.20		ppbv	
			Styrene	2012/09/20	<0.20		ppbv	
			4-ethyltoluene	2012/09/20	<2.2		ppbv	
			1,3,5-Trimethylbenzene	2012/09/20	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/09/20	<0.50		ppbv	
			Chlorobenzene	2012/09/20	<0.20		ppbv	
			Benzyl chloride	2012/09/20	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/09/20	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/09/20	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/09/20	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/09/20	<2.0		ppbv	
			Hexachlorobutadiene	2012/09/20	<3.0		ppbv	
			Hexane	2012/09/20	<0.30		ppbv	
			Heptane	2012/09/20	<0.30		ppbv	
			Cyclohexane	2012/09/20	<0.20		ppbv	
			Tetrahydrofuran	2012/09/20	<0.40		ppbv	
			1,4-Dioxane	2012/09/20	<2.0		ppbv	
			Xylene (Total)	2012/09/20	<0.60		ppbv	
			Vinyl Bromide	2012/09/20	<0.20		ppbv	
			Propene	2012/09/20	<0.30		ppbv	
			2,2,4-Trimethylpentane	2012/09/20	<0.20		ppbv	
			Carbon Disulfide	2012/09/20	<0.50		ppbv	
			Vinyl Acetate	2012/09/20	<0.20		ppbv	

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA VOC/PORT/ Sept 12, 12

Sampler s/n: 6200
Canister ID: 120
Canister Installation Date/Time: Sept 10, 12 @ 10:49 mst
Canister Removal Date/Time: Sept 13, 12 @ 08:23 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
12-Sep-12	09/12/2012 0:00	09/13/2012 0:00	24.0000

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1496	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	22

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC# 09914

Technician Signature: Ting Xu

Success Through Science®

Your C.O.C. #: 09914

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/09/28

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2E3260
Received: 2012/09/18, 11:08

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/09/21	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	1	N/A	2012/09/21	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	1	N/A	2012/09/22	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

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

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B2E3260
Report Date: 2012/09/28

RESULTS OF ANALYSES OF AIR

Maxxam ID		OW3991	OW3992	
Sampling Date		2012/09/12	2012/09/12	
COC Number		09914	09914	
	Units	**LICA VOC\CLS\SEPT 12,12**	**LICA VOC\PORT\SEPT 12,12**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	23	22	2978829

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E3260
Report Date: 2012/09/28

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OW3991				
Sampling Date		2012/09/12				
COC Number		09914				
	Units	**LICA VOC\CLS\SEPT 12,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.71	0.20	3.52	0.989	2984458
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2984458
Chloromethane	ppbv	0.56	0.30	1.16	0.620	2984458
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2984458
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2984458
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2984458
Trichlorofluoromethane (FREON 11)	ppbv	0.31	0.20	1.72	1.12	2984458
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2984458
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2984458
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2984458
2-Propanone	ppbv	<0.80	0.80	<1.90	1.90	2984458
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2984458
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2984458
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2984458
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2984458
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2984458
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2984458
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2984458
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2984458
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2984458
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2984458
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2984458
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2984458
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2984458
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2984458
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2984458
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2984458
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2984458
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2984458
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2984458
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2984458

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OW3991				
Sampling Date		2012/09/12				
COC Number		09914				
	Units	**LICA VOC\CLS\SEPT 12,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2984458
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2984458
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2984458
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2984458
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2984458
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2984458
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2984458
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2984458
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2984458
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2984458
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2984458
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2984458
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2984458
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2984458
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2984458
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2984458
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2984458
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2984458
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2984458
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2984458
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2984458
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2984458
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2984458
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2984458
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2984458
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2984458
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2984458
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2984458
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2984458
Propene	ppbv	<0.30	0.30	<0.516	0.516	2984458
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2984458
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2984458
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2984458

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E3260
Report Date: 2012/09/28

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OW3991				
Sampling Date		2012/09/12				
COC Number		09914				
	Units	**LICA VOC\CLS\SEPT 12,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	82		N/A	N/A	2984458
D5-Chlorobenzene	%	81		N/A	N/A	2984458
Difluorobenzene	%	84		N/A	N/A	2984458

N/A = Not Applicable
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OW3992				
Sampling Date		2012/09/12				
COC Number		09914				
	Units	**LICA VOC\PORT\SEPT 12,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.67	0.20	3.32	0.989	2980011
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2980011
Chloromethane	ppbv	0.59	0.30	1.22	0.620	2980011
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2980011
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2980011
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2980011
Trichlorofluoromethane (FREON 11)	ppbv	0.34	0.20	1.89	1.12	2980011
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2980011
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2980011
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2980011
2-Propanone	ppbv	1.31	0.80	3.11	1.90	2980011
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2980011
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2980011
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2980011
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2980011
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2980011
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2980011
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2980011
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2980011
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2980011
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2980011
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2980011
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2980011
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2980011
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2980011
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2980011
1,1,2-Trichloroethane	ppbv	<0.18	0.18	<0.982	0.982	2980011
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2980011
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2980011
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2980011
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2980011

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OW3992				
Sampling Date		2012/09/12				
COC Number		09914				
	Units	**LICA VOC\PORT\SEPT 12,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2980011
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2980011
Bromodichloromethane	ppbv	<3.2	3.2	<21.4	21.4	2980011
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2980011
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2980011
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2980011
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2980011
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2980011
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2980011
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2980011
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2980011
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2980011
4-ethyltoluene	ppbv	<3.0	3.0	<14.7	14.7	2980011
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2980011
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2980011
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2980011
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2980011
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2980011
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2980011
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2980011
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2980011
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2980011
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2980011
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2980011
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2980011
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2980011
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2980011
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2980011
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2980011
Propene	ppbv	0.81	0.30	1.39	0.516	2980011
2,2,4-Trimethylpentane	ppbv	<0.40	0.40	<1.87	1.87	2980011
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2980011
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2980011

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E3260
Report Date: 2012/09/28

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OW3992				
Sampling Date		2012/09/12				
COC Number		09914				
	Units	**LICA VOC\PORT\SEPT 12,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	82		N/A	N/A	2980011
D5-Chlorobenzene	%	85		N/A	N/A	2980011
Difluorobenzene	%	87		N/A	N/A	2980011

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E3260
Report Date: 2012/09/28

Test Summary

Maxxam ID OW3991 **Collected** 2012/09/12
Sample ID LICA VOC\CLS\SEPT 12,12 **Shipped**
Matrix AIR **Received** 2012/09/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2978829	N/A	2012/09/21	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2984458	N/A	2012/09/21	Melanie Mabini

Maxxam ID OW3992 **Collected** 2012/09/12
Sample ID LICA VOC\PORT\SEPT 12,12 **Shipped**
Matrix AIR **Received** 2012/09/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2978829	N/A	2012/09/21	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2980011	N/A	2012/09/22	Melanie Mabini

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GENERAL COMMENTS

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2E3260

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2980011	MM2	Spiked Blank	Bromochloromethane	2012/09/22		111	%	60 - 140
			D5-Chlorobenzene	2012/09/22		119	%	60 - 140
			Difluorobenzene	2012/09/22		117	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/22		102	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/09/22		122	%	70 - 130
			Chloromethane	2012/09/22		113	%	70 - 130
			Vinyl Chloride	2012/09/22		111	%	70 - 130
			Chloroethane	2012/09/22		117	%	70 - 130
			1,3-Butadiene	2012/09/22		117	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/09/22		108	%	70 - 130
			Ethanol (ethyl alcohol)	2012/09/22		105	%	70 - 130
			Trichlorotrifluoroethane	2012/09/22		101	%	70 - 130
			2-propanol	2012/09/22		112	%	70 - 130
			2-Propanone	2012/09/22		105	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/09/22		122	%	70 - 130
			Methyl Isobutyl Ketone	2012/09/22		120	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/09/22		123	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/09/22		101	%	70 - 130
			Ethyl Acetate	2012/09/22		115	%	70 - 130
			1,1-Dichloroethylene	2012/09/22		105	%	70 - 130
			cis-1,2-Dichloroethylene	2012/09/22		102	%	70 - 130
			trans-1,2-Dichloroethylene	2012/09/22		105	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/09/22		102	%	70 - 130
			Chloroform	2012/09/22		102	%	70 - 130
			Carbon Tetrachloride	2012/09/22		110	%	70 - 130
			1,1-Dichloroethane	2012/09/22		104	%	70 - 130
			1,2-Dichloroethane	2012/09/22		110	%	70 - 130
			Ethylene Dibromide	2012/09/22		101	%	70 - 130
			1,1,1-Trichloroethane	2012/09/22		105	%	70 - 130
			1,1,2-Trichloroethane	2012/09/22		100	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/09/22		104	%	70 - 130
			cis-1,3-Dichloropropene	2012/09/22		98	%	70 - 130
			trans-1,3-Dichloropropene	2012/09/22		103	%	70 - 130
			1,2-Dichloropropane	2012/09/22		99	%	70 - 130
			Bromomethane	2012/09/22		114	%	70 - 130
			Bromoform	2012/09/22		125	%	70 - 130
			Bromodichloromethane	2012/09/22		112	%	70 - 130
			Dibromochloromethane	2012/09/22		117	%	70 - 130
			Trichloroethylene	2012/09/22		100	%	70 - 130
			Tetrachloroethylene	2012/09/22		105	%	70 - 130
			Benzene	2012/09/22		98	%	70 - 130
			Toluene	2012/09/22		98	%	70 - 130
			Ethylbenzene	2012/09/22		98	%	70 - 130
			p+m-Xylene	2012/09/22		95	%	70 - 130
			o-Xylene	2012/09/22		99	%	70 - 130
			Styrene	2012/09/22		81	%	70 - 130
			4-ethyltoluene	2012/09/22		113	%	70 - 130
			1,3,5-Trimethylbenzene	2012/09/22		101	%	70 - 130
			1,2,4-Trimethylbenzene	2012/09/22		100	%	70 - 130
			Chlorobenzene	2012/09/22		96	%	70 - 130
			Benzyl chloride	2012/09/22		107	%	70 - 130
			1,3-Dichlorobenzene	2012/09/22		99	%	70 - 130
			1,4-Dichlorobenzene	2012/09/22		99	%	70 - 130
			1,2-Dichlorobenzene	2012/09/22		98	%	70 - 130
			1,2,4-Trichlorobenzene	2012/09/22		82	%	70 - 130

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E3260

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2980011	MM2	Spiked Blank	Hexachlorobutadiene	2012/09/22		97	%	70 - 130
			Hexane	2012/09/22		106	%	70 - 130
			Heptane	2012/09/22		108	%	70 - 130
			Cyclohexane	2012/09/22		103	%	70 - 130
			Tetrahydrofuran	2012/09/22		108	%	70 - 130
			1,4-Dioxane	2012/09/22		99	%	70 - 130
			Xylene (Total)	2012/09/22		97	%	70 - 130
			Vinyl Bromide	2012/09/22		119	%	70 - 130
			Propene	2012/09/22		91	%	70 - 130
			2,2,4-Trimethylpentane	2012/09/22		104	%	70 - 130
			Carbon Disulfide	2012/09/22		97	%	70 - 130
			Vinyl Acetate	2012/09/22		116	%	70 - 130
		Method Blank	Bromochloromethane	2012/09/22		91	%	60 - 140
			D5-Chlorobenzene	2012/09/22		90	%	60 - 140
			Difluorobenzene	2012/09/22		93	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/22	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/09/22	<0.17		ppbv	
			Chloromethane	2012/09/22	<0.30		ppbv	
			Vinyl Chloride	2012/09/22	<0.18		ppbv	
			Chloroethane	2012/09/22	<0.30		ppbv	
			1,3-Butadiene	2012/09/22	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/09/22	<0.20		ppbv	
			Ethanol (ethyl alcohol)	2012/09/22	<2.3		ppbv	
			Trichlorotrifluoroethane	2012/09/22	<0.15		ppbv	
			2-propanol	2012/09/22	<3.0		ppbv	
			2-Propanone	2012/09/22	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/09/22	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/09/22	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/09/22	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/09/22	<0.20		ppbv	
			Ethyl Acetate	2012/09/22	<2.2		ppbv	
			1,1-Dichloroethylene	2012/09/22	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/09/22	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/09/22	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/09/22	<0.80		ppbv	
			Chloroform	2012/09/22	<0.15		ppbv	
			Carbon Tetrachloride	2012/09/22	<0.30		ppbv	
			1,1-Dichloroethane	2012/09/22	<0.20		ppbv	
			1,2-Dichloroethane	2012/09/22	<0.20		ppbv	
			Ethylene Dibromide	2012/09/22	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/09/22	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/09/22	<0.18		ppbv	
			1,1,2,2-Tetrachloroethane	2012/09/22	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/09/22	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/09/22	<0.17		ppbv	
			1,2-Dichloropropane	2012/09/22	<0.40		ppbv	
			Bromomethane	2012/09/22	<0.18		ppbv	
			Bromoform	2012/09/22	<0.20		ppbv	
			Bromodichloromethane	2012/09/22	<3.2		ppbv	
			Dibromochloromethane	2012/09/22	<0.20		ppbv	
			Trichloroethylene	2012/09/22	<0.30		ppbv	
			Tetrachloroethylene	2012/09/22	<0.20		ppbv	
			Benzene	2012/09/22	<0.18		ppbv	
			Toluene	2012/09/22	<0.20		ppbv	
			Ethylbenzene	2012/09/22	<0.20		ppbv	

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Attention: Michael Bisaga
Client Project #:
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Quality Assurance Report (Continued)

Maxxam Job Number: GB2E3260

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2980011	MM2	Method Blank	p+m-Xylene	2012/09/22	<0.37		ppbv	
			o-Xylene	2012/09/22	<0.20		ppbv	
			Styrene	2012/09/22	<0.20		ppbv	
			4-ethyltoluene	2012/09/22	<3.0		ppbv	
			1,3,5-Trimethylbenzene	2012/09/22	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/09/22	<0.50		ppbv	
			Chlorobenzene	2012/09/22	<0.20		ppbv	
			Benzyl chloride	2012/09/22	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/09/22	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/09/22	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/09/22	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/09/22	<2.0		ppbv	
			Hexachlorobutadiene	2012/09/22	<3.0		ppbv	
			Hexane	2012/09/22	<0.30		ppbv	
			Heptane	2012/09/22	<0.30		ppbv	
			Cyclohexane	2012/09/22	<0.20		ppbv	
			Tetrahydrofuran	2012/09/22	<0.40		ppbv	
			1,4-Dioxane	2012/09/22	<2.0		ppbv	
			Xylene (Total)	2012/09/22	<0.60		ppbv	
			Vinyl Bromide	2012/09/22	<0.20		ppbv	
			Propene	2012/09/22	0.70, RDL=0.30		ppbv	
			2,2,4-Trimethylpentane	2012/09/22	<0.40		ppbv	
			Carbon Disulfide	2012/09/22	<0.50		ppbv	
			Vinyl Acetate	2012/09/22	<0.20		ppbv	
2984458	MM2	Spiked Blank	Bromochloromethane	2012/09/21		109	%	60 - 140
			D5-Chlorobenzene	2012/09/21		112	%	60 - 140
			Difluorobenzene	2012/09/21		110	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/21		102	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/09/21		120	%	70 - 130
			Chloromethane	2012/09/21		110	%	70 - 130
			Vinyl Chloride	2012/09/21		105	%	70 - 130
			Chloroethane	2012/09/21		112	%	70 - 130
			1,3-Butadiene	2012/09/21		111	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/09/21		106	%	70 - 130
			Ethanol (ethyl alcohol)	2012/09/21		96	%	70 - 130
			Trichlorotrifluoroethane	2012/09/21		100	%	70 - 130
			2-propanol	2012/09/21		109	%	70 - 130
			2-Propanone	2012/09/21		101	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/09/21		116	%	70 - 130
			Methyl Isobutyl Ketone	2012/09/21		118	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/09/21		120	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/09/21		100	%	70 - 130
			Ethyl Acetate	2012/09/21		111	%	70 - 130
			1,1-Dichloroethylene	2012/09/21		103	%	70 - 130
			cis-1,2-Dichloroethylene	2012/09/21		100	%	70 - 130
			trans-1,2-Dichloroethylene	2012/09/21		103	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/09/21		98	%	70 - 130
			Chloroform	2012/09/21		101	%	70 - 130
			Carbon Tetrachloride	2012/09/21		111	%	70 - 130
			1,1-Dichloroethane	2012/09/21		103	%	70 - 130
			1,2-Dichloroethane	2012/09/21		109	%	70 - 130
			Ethylene Dibromide	2012/09/21		102	%	70 - 130
			1,1,1-Trichloroethane	2012/09/21		106	%	70 - 130
			1,1,2-Trichloroethane	2012/09/21		100	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/09/21		102	%	70 - 130

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
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Quality Assurance Report (Continued)

Maxxam Job Number: GB2E3260

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2984458	MM2	Spiked Blank	cis-1,3-Dichloropropene	2012/09/21		99	%	70 - 130
			trans-1,3-Dichloropropene	2012/09/21		103	%	70 - 130
			1,2-Dichloropropane	2012/09/21		100	%	70 - 130
			Bromomethane	2012/09/21		109	%	70 - 130
			Bromoform	2012/09/21		125	%	70 - 130
			Bromodichloromethane	2012/09/21		114	%	70 - 130
			Dibromochloromethane	2012/09/21		118	%	70 - 130
			Trichloroethylene	2012/09/21		100	%	70 - 130
			Tetrachloroethylene	2012/09/21		106	%	70 - 130
			Benzene	2012/09/21		98	%	70 - 130
			Toluene	2012/09/21		99	%	70 - 130
			Ethylbenzene	2012/09/21		99	%	70 - 130
			p+m-Xylene	2012/09/21		97	%	70 - 130
			o-Xylene	2012/09/21		100	%	70 - 130
			Styrene	2012/09/21		81	%	70 - 130
			4-ethyltoluene	2012/09/21		113	%	70 - 130
			1,3,5-Trimethylbenzene	2012/09/21		101	%	70 - 130
			1,2,4-Trimethylbenzene	2012/09/21		98	%	70 - 130
			Chlorobenzene	2012/09/21		97	%	70 - 130
			Benzyl chloride	2012/09/21		104	%	70 - 130
			1,3-Dichlorobenzene	2012/09/21		97	%	70 - 130
			1,4-Dichlorobenzene	2012/09/21		97	%	70 - 130
			1,2-Dichlorobenzene	2012/09/21		96	%	70 - 130
			1,2,4-Trichlorobenzene	2012/09/21		80	%	70 - 130
			Hexachlorobutadiene	2012/09/21		99	%	70 - 130
			Hexane	2012/09/21		104	%	70 - 130
			Heptane	2012/09/21		107	%	70 - 130
			Cyclohexane	2012/09/21		102	%	70 - 130
			Tetrahydrofuran	2012/09/21		105	%	70 - 130
			1,4-Dioxane	2012/09/21		101	%	70 - 130
			Vinyl Bromide	2012/09/21		115	%	70 - 130
			Propene	2012/09/21		88	%	70 - 130
			2,2,4-Trimethylpentane	2012/09/21		104	%	70 - 130
			Carbon Disulfide	2012/09/21		95	%	70 - 130
			Vinyl Acetate	2012/09/21		112	%	70 - 130
		Method Blank	Bromochloromethane	2012/09/21		88	%	60 - 140
			D5-Chlorobenzene	2012/09/21		83	%	60 - 140
			Difluorobenzene	2012/09/21		89	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/21	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/09/21	<0.17		ppbv	
			Chloromethane	2012/09/21	<0.30		ppbv	
			Vinyl Chloride	2012/09/21	<0.18		ppbv	
			Chloroethane	2012/09/21	<0.30		ppbv	
			1,3-Butadiene	2012/09/21	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/09/21	<0.20		ppbv	
			Ethanol (ethyl alcohol)	2012/09/21	<2.3		ppbv	
			Trichlorotrifluoroethane	2012/09/21	<0.15		ppbv	
			2-propanol	2012/09/21	<3.0		ppbv	
			2-Propanone	2012/09/21	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/09/21	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/09/21	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/09/21	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/09/21	<0.20		ppbv	
			Ethyl Acetate	2012/09/21	<2.2		ppbv	
			1,1-Dichloroethylene	2012/09/21	<0.25		ppbv	

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E3260

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2984458	MM2	Method Blank	cis-1,2-Dichloroethylene	2012/09/21	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/09/21	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/09/21	<0.80		ppbv	
			Chloroform	2012/09/21	<0.15		ppbv	
			Carbon Tetrachloride	2012/09/21	<0.30		ppbv	
			1,1-Dichloroethane	2012/09/21	<0.20		ppbv	
			1,2-Dichloroethane	2012/09/21	<0.20		ppbv	
			Ethylene Dibromide	2012/09/21	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/09/21	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/09/21	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/09/21	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/09/21	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/09/21	<0.17		ppbv	
			1,2-Dichloropropane	2012/09/21	<0.40		ppbv	
			Bromomethane	2012/09/21	<0.18		ppbv	
			Bromoform	2012/09/21	<0.20		ppbv	
			Bromodichloromethane	2012/09/21	<0.20		ppbv	
			Dibromochloromethane	2012/09/21	<0.20		ppbv	
			Trichloroethylene	2012/09/21	<0.30		ppbv	
			Tetrachloroethylene	2012/09/21	<0.20		ppbv	
			Benzene	2012/09/21	<0.18		ppbv	
			Toluene	2012/09/21	<0.20		ppbv	
			Ethylbenzene	2012/09/21	<0.20		ppbv	
			p+m-Xylene	2012/09/21	<0.37		ppbv	
			o-Xylene	2012/09/21	<0.20		ppbv	
			Styrene	2012/09/21	<0.20		ppbv	
			4-ethyltoluene	2012/09/21	<2.2		ppbv	
			1,3,5-Trimethylbenzene	2012/09/21	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/09/21	<0.50		ppbv	
			Chlorobenzene	2012/09/21	<0.20		ppbv	
			Benzyl chloride	2012/09/21	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/09/21	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/09/21	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/09/21	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/09/21	<2.0		ppbv	
			Hexachlorobutadiene	2012/09/21	<3.0		ppbv	
			Hexane	2012/09/21	<0.30		ppbv	
			Heptane	2012/09/21	<0.30		ppbv	
			Cyclohexane	2012/09/21	<0.20		ppbv	
			Tetrahydrofuran	2012/09/21	<0.40		ppbv	
			1,4-Dioxane	2012/09/21	<2.0		ppbv	
			Xylene (Total)	2012/09/21	<0.60		ppbv	
			Vinyl Bromide	2012/09/21	<0.20		ppbv	
			Propene	2012/09/21	<0.30		ppbv	
			2,2,4-Trimethylpentane	2012/09/21	<0.20		ppbv	
			Carbon Disulfide	2012/09/21	<0.50		ppbv	
			Vinyl Acetate	2012/09/21	<0.20		ppbv	

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA VOC/PORT/ Sept 18, 12

Sampler s/n: 6200
Canister ID: 136
Canister Installation Date/Time: Sept 17, 12 @ 09:50 mst
Canister Removal Date/Time: Sept 19, 12 @ 09:10 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
18-Sep-12	09/18/2012 0:00	09/19/2012 0:00	24.0000

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1496	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	22

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC# 11297

Technician Signature: Ting Xu

Maxxam

Success Through Science®

Your C.O.C. #: 11297

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/10/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2E5920
Received: 2012/09/21, 10:15

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/10/04	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/10/04	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

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

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B2E5920
Report Date: 2012/10/05

RESULTS OF ANALYSES OF AIR

Maxxam ID		OX6148	OX6149	
Sampling Date		2012/09/18	2012/09/18	
COC Number		11297	11297	
	Units	**LICA VOC\CLS\SEPT 18,12**	**LICA VOC\PORT\SEPT 18,12**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	23	22	2993170

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E5920
Report Date: 2012/10/05

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OX6148				
Sampling Date		2012/09/18				
COC Number		11297				
	Units	**LICA VOC\CLS\SEPT 18,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.67	0.20	3.33	0.989	2993365
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2993365
Chloromethane	ppbv	0.63	0.30	1.29	0.620	2993365
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2993365
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2993365
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2993365
Trichlorofluoromethane (FREON 11)	ppbv	0.28	0.20	1.55	1.12	2993365
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2993365
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2993365
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2993365
2-Propanone	ppbv	2.89	0.80	6.87	1.90	2993365
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2993365
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2993365
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2993365
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2993365
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2993365
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2993365
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2993365
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2993365
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2993365
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2993365
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2993365
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2993365
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2993365
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2993365
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2993365
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2993365
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2993365
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2993365
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2993365
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2993365

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OX6148				
Sampling Date		2012/09/18				
COC Number		11297				
	Units	**LICA VOC\CLS\SEPT 18,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2993365
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2993365
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2993365
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2993365
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2993365
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2993365
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2993365
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2993365
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2993365
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2993365
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2993365
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2993365
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2993365
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2993365
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2993365
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2993365
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2993365
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2993365
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2993365
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2993365
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2993365
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2993365
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2993365
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2993365
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2993365
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2993365
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2993365
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2993365
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2993365
Propene	ppbv	<0.30	0.30	<0.516	0.516	2993365
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2993365
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2993365
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2993365

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E5920
Report Date: 2012/10/05

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OX6148				
Sampling Date		2012/09/18				
COC Number		11297				
	Units	**LICA VOC\CLS\SEPT 18,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	86		N/A	N/A	2993365
D5-Chlorobenzene	%	86		N/A	N/A	2993365
Difluorobenzene	%	88		N/A	N/A	2993365

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E5920
Report Date: 2012/10/05

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OX6149				
Sampling Date		2012/09/18				
COC Number		11297				
	Units	**LICA VOC\PORT\SEPT 18,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.66	0.20	3.26	0.989	2993365
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2993365
Chloromethane	ppbv	0.65	0.30	1.34	0.620	2993365
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2993365
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2993365
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2993365
Trichlorofluoromethane (FREON 11)	ppbv	0.28	0.20	1.60	1.12	2993365
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2993365
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2993365
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2993365
2-Propanone	ppbv	3.19	0.80	7.57	1.90	2993365
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2993365
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2993365
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2993365
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2993365
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2993365
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2993365
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2993365
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2993365
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2993365
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2993365
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2993365
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2993365
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2993365
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2993365
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2993365
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2993365
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2993365
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2993365
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2993365
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2993365

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OX6149				
Sampling Date		2012/09/18				
COC Number		11297				
	Units	**LICA VOC\PORT\SEPT 18,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2993365
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2993365
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2993365
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2993365
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2993365
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2993365
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2993365
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2993365
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2993365
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2993365
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2993365
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2993365
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2993365
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2993365
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2993365
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2993365
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2993365
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2993365
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2993365
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2993365
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2993365
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2993365
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2993365
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2993365
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2993365
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2993365
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2993365
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2993365
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2993365
Propene	ppbv	<0.30	0.30	<0.516	0.516	2993365
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2993365
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2993365
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2993365

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E5920
Report Date: 2012/10/05

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OX6149				
Sampling Date		2012/09/18				
COC Number		11297				
	Units	**LICA VOC\PORT\SEPT 18,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	85		N/A	N/A	2993365
D5-Chlorobenzene	%	85		N/A	N/A	2993365
Difluorobenzene	%	87		N/A	N/A	2993365

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E5920
Report Date: 2012/10/05

Test Summary

Maxxam ID OX6148 **Collected** 2012/09/18
Sample ID LICA VOC\CLS\SEPT 18,12 **Shipped**
Matrix AIR **Received** 2012/09/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2993170	N/A	2012/10/04	Yao Liang Sun
Volatile Organics in Air (TO-15)	GC/MS	2993365	N/A	2012/10/04	Yao Liang Sun

Maxxam ID OX6149 **Collected** 2012/09/18
Sample ID LICA VOC\PORT\SEPT 18,12 **Shipped**
Matrix AIR **Received** 2012/09/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2993170	N/A	2012/10/04	Yao Liang Sun
Volatile Organics in Air (TO-15)	GC/MS	2993365	N/A	2012/10/04	Yao Liang Sun

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Maxxam Analytics

Maxxam Job #: B2E5920
Report Date: 2012/10/05

GENERAL COMMENTS

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2E5920

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2993365	LSY	Spiked Blank	Bromochloromethane	2012/10/04		96	%	60 - 140
			D5-Chlorobenzene	2012/10/04		99	%	60 - 140
			Difluorobenzene	2012/10/04		99	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/10/04		89	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/10/04		110	%	70 - 130
			Chloromethane	2012/10/04		97	%	70 - 130
			Vinyl Chloride	2012/10/04		95	%	70 - 130
			Chloroethane	2012/10/04		93	%	70 - 130
			1,3-Butadiene	2012/10/04		96	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/10/04		97	%	70 - 130
			Ethanol (ethyl alcohol)	2012/10/04		84	%	70 - 130
			Trichlorotrifluoroethane	2012/10/04		115	%	70 - 130
			2-propanol	2012/10/04		99	%	70 - 130
			2-Propanone	2012/10/04		99	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/10/04		98	%	70 - 130
			Methyl Isobutyl Ketone	2012/10/04		96	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/10/04		94	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/10/04		96	%	70 - 130
			Ethyl Acetate	2012/10/04		96	%	70 - 130
			1,1-Dichloroethylene	2012/10/04		111	%	70 - 130
			cis-1,2-Dichloroethylene	2012/10/04		95	%	70 - 130
			trans-1,2-Dichloroethylene	2012/10/04		92	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/10/04		100	%	70 - 130
			Chloroform	2012/10/04		100	%	70 - 130
			Carbon Tetrachloride	2012/10/04		96	%	70 - 130
			1,1-Dichloroethane	2012/10/04		101	%	70 - 130
			1,2-Dichloroethane	2012/10/04		95	%	70 - 130
			Ethylene Dibromide	2012/10/04		91	%	70 - 130
			1,1,1-Trichloroethane	2012/10/04		97	%	70 - 130
			1,1,2-Trichloroethane	2012/10/04		93	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/10/04		85	%	70 - 130
			cis-1,3-Dichloropropene	2012/10/04		91	%	70 - 130
			trans-1,3-Dichloropropene	2012/10/04		92	%	70 - 130
			1,2-Dichloropropane	2012/10/04		92	%	70 - 130
			Bromomethane	2012/10/04		94	%	70 - 130
			Bromoform	2012/10/04		95	%	70 - 130
			Bromodichloromethane	2012/10/04		97	%	70 - 130
			Dibromochloromethane	2012/10/04		99	%	70 - 130
			Trichloroethylene	2012/10/04		91	%	70 - 130
			Tetrachloroethylene	2012/10/04		91	%	70 - 130
			Benzene	2012/10/04		94	%	70 - 130
			Toluene	2012/10/04		92	%	70 - 130
			Ethylbenzene	2012/10/04		91	%	70 - 130
			p+m-Xylene	2012/10/04		88	%	70 - 130
			o-Xylene	2012/10/04		88	%	70 - 130
			Styrene	2012/10/04		65 (1)	%	70 - 130
			4-ethyltoluene	2012/10/04		95	%	70 - 130
			1,3,5-Trimethylbenzene	2012/10/04		87	%	70 - 130
			1,2,4-Trimethylbenzene	2012/10/04		84	%	70 - 130
			Chlorobenzene	2012/10/04		91	%	70 - 130
			Benzyl chloride	2012/10/04		74	%	70 - 130
			1,3-Dichlorobenzene	2012/10/04		82	%	70 - 130
			1,4-Dichlorobenzene	2012/10/04		77	%	70 - 130
			1,2-Dichlorobenzene	2012/10/04		76	%	70 - 130
			1,2,4-Trichlorobenzene	2012/10/04		71	%	70 - 130

Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E5920

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2993365	LSY	Spiked Blank	Hexachlorobutadiene	2012/10/04		76	%	70 - 130
			Hexane	2012/10/04		95	%	70 - 130
			Heptane	2012/10/04		94	%	70 - 130
			Cyclohexane	2012/10/04		94	%	70 - 130
			Tetrahydrofuran	2012/10/04		97	%	70 - 130
			1,4-Dioxane	2012/10/04		94	%	70 - 130
			Xylene (Total)	2012/10/04		92	%	70 - 130
			Vinyl Bromide	2012/10/04		103	%	70 - 130
			Propene	2012/10/04		89	%	70 - 130
			2,2,4-Trimethylpentane	2012/10/04		98	%	70 - 130
			Carbon Disulfide	2012/10/04		83	%	70 - 130
			Vinyl Acetate	2012/10/04		95	%	70 - 130
		Method Blank	Bromochloromethane	2012/10/04		89	%	60 - 140
			D5-Chlorobenzene	2012/10/04		88	%	60 - 140
			Difluorobenzene	2012/10/04		92	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/10/04	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/10/04	<0.17		ppbv	
			Chloromethane	2012/10/04	<0.30		ppbv	
			Vinyl Chloride	2012/10/04	<0.18		ppbv	
			Chloroethane	2012/10/04	<0.30		ppbv	
			1,3-Butadiene	2012/10/04	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/10/04	<0.20		ppbv	
			Ethanol (ethyl alcohol)	2012/10/04	<2.3		ppbv	
			Trichlorotrifluoroethane	2012/10/04	<0.15		ppbv	
			2-propanol	2012/10/04	<3.0		ppbv	
			2-Propanone	2012/10/04	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/10/04	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/10/04	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/10/04	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/10/04	<0.20		ppbv	
			Ethyl Acetate	2012/10/04	<2.2		ppbv	
			1,1-Dichloroethylene	2012/10/04	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/10/04	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/10/04	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/10/04	<0.80		ppbv	
			Chloroform	2012/10/04	<0.15		ppbv	
			Carbon Tetrachloride	2012/10/04	<0.30		ppbv	
			1,1-Dichloroethane	2012/10/04	<0.20		ppbv	
			1,2-Dichloroethane	2012/10/04	<0.20		ppbv	
			Ethylene Dibromide	2012/10/04	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/10/04	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/10/04	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/10/04	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/10/04	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/10/04	<0.17		ppbv	
			1,2-Dichloropropane	2012/10/04	<0.40		ppbv	
			Bromomethane	2012/10/04	<0.18		ppbv	
			Bromoform	2012/10/04	<0.20		ppbv	
			Bromodichloromethane	2012/10/04	<0.20		ppbv	
			Dibromochloromethane	2012/10/04	<0.20		ppbv	
			Trichloroethylene	2012/10/04	<0.30		ppbv	
			Tetrachloroethylene	2012/10/04	<0.20		ppbv	
			Benzene	2012/10/04	<0.18		ppbv	
			Toluene	2012/10/04	<0.20		ppbv	
			Ethylbenzene	2012/10/04	<0.20		ppbv	

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E5920

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2993365	LSY	Method Blank	p+m-Xylene	2012/10/04	<0.37		ppbv	
			o-Xylene	2012/10/04	<0.20		ppbv	
			Styrene	2012/10/04	<0.20		ppbv	
			4-ethyltoluene	2012/10/04	<2.2		ppbv	
			1,3,5-Trimethylbenzene	2012/10/04	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/10/04	<0.50		ppbv	
			Chlorobenzene	2012/10/04	<0.20		ppbv	
			Benzyl chloride	2012/10/04	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/10/04	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/10/04	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/10/04	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/10/04	<2.0		ppbv	
			Hexachlorobutadiene	2012/10/04	<3.0		ppbv	
			Hexane	2012/10/04	<0.30		ppbv	
			Heptane	2012/10/04	<0.30		ppbv	
			Cyclohexane	2012/10/04	<0.20		ppbv	
			Tetrahydrofuran	2012/10/04	<0.40		ppbv	
			1,4-Dioxane	2012/10/04	<2.0		ppbv	
			Xylene (Total)	2012/10/04	<0.60		ppbv	
			Vinyl Bromide	2012/10/04	<0.20		ppbv	
			Propene	2012/10/04	<0.30		ppbv	
			2,2,4-Trimethylpentane	2012/10/04	<0.20		ppbv	
			Carbon Disulfide	2012/10/04	<0.50		ppbv	
			Vinyl Acetate	2012/10/04	<0.20		ppbv	
		RPD - Sample/Sample Dup	Dichlorodifluoromethane (FREON 12)	2012/10/04	NC		%	25
			1,2-Dichlorotetrafluoroethane	2012/10/04	NC		%	25
			Chloromethane	2012/10/04	NC		%	25
			Vinyl Chloride	2012/10/04	NC		%	25
			Chloroethane	2012/10/04	NC		%	25
			1,3-Butadiene	2012/10/04	NC		%	25
			Trichlorofluoromethane (FREON 11)	2012/10/04	NC		%	25
			Ethanol (ethyl alcohol)	2012/10/04	2.4		%	25
			Trichlorotrifluoroethane	2012/10/04	NC		%	25
			2-propanol	2012/10/04	NC		%	25
			2-Propanone	2012/10/04	5.9		%	25
			Methyl Ethyl Ketone (2-Butanone)	2012/10/04	NC		%	25
			Methyl Isobutyl Ketone	2012/10/04	NC		%	25
			Methyl Butyl Ketone (2-Hexanone)	2012/10/04	NC		%	25
			Methyl t-butyl ether (MTBE)	2012/10/04	NC		%	25
			Ethyl Acetate	2012/10/04	NC		%	25
			1,1-Dichloroethylene	2012/10/04	NC		%	25
			cis-1,2-Dichloroethylene	2012/10/04	NC		%	25
			trans-1,2-Dichloroethylene	2012/10/04	NC		%	25
			Methylene Chloride(Dichloromethane)	2012/10/04	NC		%	25
			Chloroform	2012/10/04	2.9		%	25
			Carbon Tetrachloride	2012/10/04	NC		%	25
			1,1-Dichloroethane	2012/10/04	NC		%	25
			1,2-Dichloroethane	2012/10/04	NC		%	25
			Ethylene Dibromide	2012/10/04	NC		%	25
			1,1,1-Trichloroethane	2012/10/04	NC		%	25
			1,1,2-Trichloroethane	2012/10/04	NC		%	25
			1,1,2,2-Tetrachloroethane	2012/10/04	NC		%	25
			cis-1,3-Dichloropropene	2012/10/04	NC		%	25

Maxxam Analytics
Attention: Michael Bisaga
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Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E5920

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2993365	LSY	RPD - Sample/Sample Dup	trans-1,3-Dichloropropene	2012/10/04	NC		%	25
			1,2-Dichloropropane	2012/10/04	NC		%	25
			Bromomethane	2012/10/04	NC		%	25
			Bromoform	2012/10/04	NC		%	25
			Bromodichloromethane	2012/10/04	NC		%	25
			Dibromochloromethane	2012/10/04	NC		%	25
			Trichloroethylene	2012/10/04	NC		%	25
			Tetrachloroethylene	2012/10/04	NC		%	25
			Benzene	2012/10/04	NC		%	25
			Toluene	2012/10/04	0.4		%	25
			Ethylbenzene	2012/10/04	NC		%	25
			p+m-Xylene	2012/10/04	NC		%	25
			o-Xylene	2012/10/04	NC		%	25
			Styrene	2012/10/04	NC		%	25
			4-ethyltoluene	2012/10/04	NC		%	25
			1,3,5-Trimethylbenzene	2012/10/04	NC		%	25
			1,2,4-Trimethylbenzene	2012/10/04	NC		%	25
			Chlorobenzene	2012/10/04	NC		%	25
			Benzyl chloride	2012/10/04	NC		%	25
			1,3-Dichlorobenzene	2012/10/04	NC		%	25
			1,4-Dichlorobenzene	2012/10/04	NC		%	25
			1,2-Dichlorobenzene	2012/10/04	NC		%	25
			1,2,4-Trichlorobenzene	2012/10/04	NC		%	25
			Hexachlorobutadiene	2012/10/04	NC		%	25
			Hexane	2012/10/04	2.5		%	25
			Heptane	2012/10/04	NC		%	25
			Cyclohexane	2012/10/04	1.9		%	25
			Tetrahydrofuran	2012/10/04	NC		%	25
			1,4-Dioxane	2012/10/04	NC		%	25
			Xylene (Total)	2012/10/04	NC		%	25
			Vinyl Bromide	2012/10/04	NC		%	25
			Propene	2012/10/04	NC		%	25
			2,2,4-Trimethylpentane	2012/10/04	NC		%	25
			Carbon Disulfide	2012/10/04	NC		%	25
			Vinyl Acetate	2012/10/04	NC		%	25

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA VOC/PORT/ Sept 24, 12

Sampler s/n: 6200
Canister ID: 267
Canister Installation Date/Time: Sept 19, 12 @ 13:05 mst
Canister Removal Date/Time: Sept 25, 12 @ 08:58 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
24-Sep-12	09/24/2012 0:00	09/25/2012 0:00	24.0000

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1496	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	22

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC# 09982

Technician Signature: Ting Xu

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Your C.O.C. #: 09982

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/10/12

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2E9374
Received: 2012/09/27, 09:43

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/10/11	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/10/11	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B2E9374
Report Date: 2012/10/12

RESULTS OF ANALYSES OF AIR

Maxxam ID		OZ4027	OZ4028	
Sampling Date		2012/09/24	2012/09/24	
COC Number		09982	09982	
	Units	**LICAVOC\CLS\SEPT 24,12 / 249**	**LICAVOC\PORT\SEPT 24,12 / 267**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	23	22	2999177

QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OZ4027				
Sampling Date		2012/09/24				
COC Number		09982				
	Units	**LICAVOC\CLS\SEPT 24,12 / 249**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.64	0.20	3.15	0.989	2999175
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2999175
Chloromethane	ppbv	0.49	0.30	1.00	0.620	2999175
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2999175
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2999175
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2999175
Trichlorofluoromethane (FREON 11)	ppbv	0.30	0.20	1.71	1.12	2999175
Ethanol (ethyl alcohol)	ppbv	4.0	2.3	7.46	4.33	2999175
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2999175
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2999175
2-Propanone	ppbv	3.26	0.80	7.75	1.90	2999175
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2999175
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2999175
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2999175
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2999175
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2999175
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2999175
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2999175
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2999175
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2999175
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2999175
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2999175
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2999175
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2999175
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2999175
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2999175
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2999175
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2999175
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2999175
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2999175
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2999175
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2999175

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OZ4027				
Sampling Date		2012/09/24				
COC Number		09982				
	Units	**LICAVOC\CLS\SEPT 24,12 / 249**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2999175
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2999175
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2999175
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2999175
Tetrachloroethylene	ppbv	0.59	0.20	4.00	1.36	2999175
Benzene	ppbv	0.26	0.18	0.829	0.575	2999175
Toluene	ppbv	0.78	0.20	2.94	0.753	2999175
Ethylbenzene	ppbv	0.48	0.20	2.06	0.868	2999175
p+m-Xylene	ppbv	1.61	0.37	7.01	1.61	2999175
o-Xylene	ppbv	0.41	0.20	1.76	0.868	2999175
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2999175
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2999175
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2999175
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2999175
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2999175
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2999175
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2999175
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2999175
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2999175
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2999175
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2999175
Hexane	ppbv	0.33	0.30	1.16	1.06	2999175
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2999175
Cyclohexane	ppbv	0.25	0.20	0.863	0.688	2999175
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2999175
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2999175
Xylene (Total)	ppbv	2.02	0.60	8.77	2.61	2999175
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2999175
Propene	ppbv	<2.0	2.0	<3.42	3.42	2999175
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2999175
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2999175
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2999175
Surrogate Recovery (%)						
Bromochloromethane	%	77		N/A	N/A	2999175

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E9374
Report Date: 2012/10/12

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OZ4027				
Sampling Date		2012/09/24				
COC Number		09982				
	Units	**LICAVOC\CLS\SEPT 24,12 / 249**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
D5-Chlorobenzene	%	73		N/A	N/A	2999175
Difluorobenzene	%	83		N/A	N/A	2999175

N/A = Not Applicable
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OZ4028				
Sampling Date		2012/09/24				
COC Number		09982				
	Units	**LICAVOC\PORT\SEPT 24,12 / 267**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.63	0.20	3.11	0.989	2999175
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2999175
Chloromethane	ppbv	0.47	0.30	0.972	0.620	2999175
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2999175
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2999175
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2999175
Trichlorofluoromethane (FREON 11)	ppbv	0.27	0.20	1.53	1.12	2999175
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2999175
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2999175
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2999175
2-Propanone	ppbv	4.29	0.80	10.2	1.90	2999175
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2999175
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2999175
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2999175
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2999175
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2999175
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2999175
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2999175
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2999175
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2999175
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2999175
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2999175
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2999175
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2999175
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2999175
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2999175
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2999175
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2999175
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2999175
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2999175
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2999175
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2999175

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OZ4028				
Sampling Date		2012/09/24				
COC Number		09982				
	Units	**LICAVOC\PORT\SEPT 24,12 / 267**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2999175
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2999175
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2999175
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2999175
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2999175
Benzene	ppbv	0.30	0.18	0.964	0.575	2999175
Toluene	ppbv	0.31	0.20	1.18	0.753	2999175
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2999175
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2999175
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2999175
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2999175
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2999175
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2999175
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2999175
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2999175
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2999175
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2999175
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2999175
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2999175
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2999175
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2999175
Hexane	ppbv	1.41	0.30	4.97	1.06	2999175
Heptane	ppbv	0.66	0.30	2.70	1.23	2999175
Cyclohexane	ppbv	0.71	0.20	2.44	0.688	2999175
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2999175
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2999175
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2999175
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2999175
Propene	ppbv	<2.8	2.8	<4.73	4.73	2999175
2,2,4-Trimethylpentane	ppbv	0.24	0.20	1.13	0.934	2999175
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2999175
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2999175
Surrogate Recovery (%)						
Bromochloromethane	%	78		N/A	N/A	2999175

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E9374
Report Date: 2012/10/12

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OZ4028				
Sampling Date		2012/09/24				
COC Number		09982				
	Units	**LICAVOC\PORT\SEPT 24,12 / 267**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
D5-Chlorobenzene	%	87		N/A	N/A	2999175
Difluorobenzene	%	85		N/A	N/A	2999175

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E9374
Report Date: 2012/10/12

Test Summary

Maxxam ID OZ4027 **Collected** 2012/09/24
Sample ID LICAVOC\CLS\SEPT 24,12 / 249 **Shipped**
Matrix AIR **Received** 2012/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2999177	N/A	2012/10/11	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2999175	N/A	2012/10/11	Melanie Mabini

Maxxam ID OZ4028 **Collected** 2012/09/24
Sample ID LICAVOC\PORT\SEPT 24,12 / 267 **Shipped**
Matrix AIR **Received** 2012/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2999177	N/A	2012/10/11	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2999175	N/A	2012/10/11	Melanie Mabini

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GENERAL COMMENTS

Sample OZ4027-01: Increase MDL for propene due to matrix interference on a possible positive.

Sample OZ4028-01: Increase MDL for propene due to matrix interference on a possible positive.

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2E9374

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2999175	MM2	Spiked Blank	Bromochloromethane	2012/10/11		113	%	60 - 140
			D5-Chlorobenzene	2012/10/11		116	%	60 - 140
			Difluorobenzene	2012/10/11		120	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/10/11		90	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/10/11		105	%	70 - 130
			Chloromethane	2012/10/11		94	%	70 - 130
			Vinyl Chloride	2012/10/11		95	%	70 - 130
			Chloroethane	2012/10/11		90	%	70 - 130
			1,3-Butadiene	2012/10/11		94	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/10/11		103	%	70 - 130
			Ethanol (ethyl alcohol)	2012/10/11		85	%	70 - 130
			Trichlorotrifluoroethane	2012/10/11		83	%	70 - 130
			2-propanol	2012/10/11		91	%	70 - 130
			2-Propanone	2012/10/11		89	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/10/11		109	%	70 - 130
			Methyl Isobutyl Ketone	2012/10/11		91	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/10/11		95	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/10/11		94	%	70 - 130
			Ethyl Acetate	2012/10/11		95	%	70 - 130
			1,1-Dichloroethylene	2012/10/11		86	%	70 - 130
			cis-1,2-Dichloroethylene	2012/10/11		93	%	70 - 130
			trans-1,2-Dichloroethylene	2012/10/11		92	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/10/11		85	%	70 - 130
			Chloroform	2012/10/11		92	%	70 - 130
			Carbon Tetrachloride	2012/10/11		92	%	70 - 130
			1,1-Dichloroethane	2012/10/11		97	%	70 - 130
			1,2-Dichloroethane	2012/10/11		91	%	70 - 130
			Ethylene Dibromide	2012/10/11		96	%	70 - 130
			1,1,1-Trichloroethane	2012/10/11		91	%	70 - 130
			1,1,2-Trichloroethane	2012/10/11		95	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/10/11		95	%	70 - 130
			cis-1,3-Dichloropropene	2012/10/11		96	%	70 - 130
			trans-1,3-Dichloropropene	2012/10/11		97	%	70 - 130
			1,2-Dichloropropane	2012/10/11		91	%	70 - 130
			Bromomethane	2012/10/11		92	%	70 - 130
			Bromoform	2012/10/11		107	%	70 - 130
			Bromodichloromethane	2012/10/11		93	%	70 - 130
			Dibromochloromethane	2012/10/11		97	%	70 - 130
			Trichloroethylene	2012/10/11		88	%	70 - 130
			Tetrachloroethylene	2012/10/11		95	%	70 - 130
			Benzene	2012/10/11		92	%	70 - 130
			Toluene	2012/10/11		96	%	70 - 130
			Ethylbenzene	2012/10/11		99	%	70 - 130
			p+m-Xylene	2012/10/11		98	%	70 - 130
			o-Xylene	2012/10/11		100	%	70 - 130
			Styrene	2012/10/11		104	%	70 - 130
			4-ethyltoluene	2012/10/11		110	%	70 - 130
			1,3,5-Trimethylbenzene	2012/10/11		100	%	70 - 130
			1,2,4-Trimethylbenzene	2012/10/11		97	%	70 - 130
			Chlorobenzene	2012/10/11		98	%	70 - 130
			Benzyl chloride	2012/10/11		96	%	70 - 130
			1,3-Dichlorobenzene	2012/10/11		99	%	70 - 130
			1,4-Dichlorobenzene	2012/10/11		100	%	70 - 130
			1,2-Dichlorobenzene	2012/10/11		92	%	70 - 130
			1,2,4-Trichlorobenzene	2012/10/11		87	%	70 - 130

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E9374

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2999175	MM2	Spiked Blank	Hexachlorobutadiene	2012/10/11		90	%	70 - 130
			Hexane	2012/10/11		97	%	70 - 130
			Heptane	2012/10/11		92	%	70 - 130
			Cyclohexane	2012/10/11		93	%	70 - 130
			Tetrahydrofuran	2012/10/11		95	%	70 - 130
			1,4-Dioxane	2012/10/11		92	%	70 - 130
			Vinyl Bromide	2012/10/11		89	%	70 - 130
			Propene	2012/10/11		79	%	70 - 130
			2,2,4-Trimethylpentane	2012/10/11		90	%	70 - 130
			Carbon Disulfide	2012/10/11		90	%	70 - 130
			Vinyl Acetate	2012/10/11		97	%	70 - 130
		Method Blank	Bromochloromethane	2012/10/11		80	%	60 - 140
			D5-Chlorobenzene	2012/10/11		78	%	60 - 140
			Difluorobenzene	2012/10/11		85	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/10/11	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/10/11	<0.17		ppbv	
			Chloromethane	2012/10/11	<0.30		ppbv	
			Vinyl Chloride	2012/10/11	<0.18		ppbv	
			Chloroethane	2012/10/11	<0.30		ppbv	
			1,3-Butadiene	2012/10/11	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/10/11	<0.20		ppbv	
			Ethanol (ethyl alcohol)	2012/10/11	<2.3		ppbv	
			Trichlorotrifluoroethane	2012/10/11	<0.15		ppbv	
			2-propanol	2012/10/11	<3.0		ppbv	
			2-Propanone	2012/10/11	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/10/11	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/10/11	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/10/11	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/10/11	<0.20		ppbv	
			Ethyl Acetate	2012/10/11	<2.2		ppbv	
			1,1-Dichloroethylene	2012/10/11	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/10/11	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/10/11	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/10/11	<0.80		ppbv	
			Chloroform	2012/10/11	<0.15		ppbv	
			Carbon Tetrachloride	2012/10/11	<0.30		ppbv	
			1,1-Dichloroethane	2012/10/11	<0.20		ppbv	
			1,2-Dichloroethane	2012/10/11	<0.20		ppbv	
			Ethylene Dibromide	2012/10/11	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/10/11	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/10/11	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/10/11	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/10/11	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/10/11	<0.17		ppbv	
			1,2-Dichloropropane	2012/10/11	<0.40		ppbv	
			Bromomethane	2012/10/11	<0.18		ppbv	
			Bromoform	2012/10/11	<0.20		ppbv	
			Bromodichloromethane	2012/10/11	<0.20		ppbv	
			Dibromochloromethane	2012/10/11	<0.20		ppbv	
			Trichloroethylene	2012/10/11	<0.30		ppbv	
			Tetrachloroethylene	2012/10/11	<0.20		ppbv	
			Benzene	2012/10/11	<0.18		ppbv	
			Toluene	2012/10/11	<0.20		ppbv	
			Ethylbenzene	2012/10/11	<0.20		ppbv	
			p+m-Xylene	2012/10/11	<0.37		ppbv	

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E9374

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2999175	MM2	Method Blank	o-Xylene	2012/10/11	<0.20		ppbv	
			Styrene	2012/10/11	<0.20		ppbv	
			4-ethyltoluene	2012/10/11	<2.2		ppbv	
			1,3,5-Trimethylbenzene	2012/10/11	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/10/11	<0.50		ppbv	
			Chlorobenzene	2012/10/11	<0.20		ppbv	
			Benzyl chloride	2012/10/11	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/10/11	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/10/11	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/10/11	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/10/11	<2.0		ppbv	
			Hexachlorobutadiene	2012/10/11	<3.0		ppbv	
			Hexane	2012/10/11	<0.30		ppbv	
			Heptane	2012/10/11	<0.30		ppbv	
			Cyclohexane	2012/10/11	<0.20		ppbv	
			Tetrahydrofuran	2012/10/11	<0.40		ppbv	
			1,4-Dioxane	2012/10/11	<2.0		ppbv	
			Xylene (Total)	2012/10/11	<0.60		ppbv	
			Vinyl Bromide	2012/10/11	<0.20		ppbv	
			Propene	2012/10/11	<0.30		ppbv	
			2,2,4-Trimethylpentane	2012/10/11	<0.20		ppbv	
			Carbon Disulfide	2012/10/11	<0.50		ppbv	
			Vinyl Acetate	2012/10/11	<0.20		ppbv	
		RPD - Sample/Sample Dup	Dichlorodifluoromethane (FREON 12)	2012/10/11	NC		%	25
			1,2-Dichlorotetrafluoroethane	2012/10/11	NC		%	25
			Chloromethane	2012/10/11	NC		%	25
			Vinyl Chloride	2012/10/11	NC		%	25
			Chloroethane	2012/10/11	NC		%	25
			1,3-Butadiene	2012/10/11	NC		%	25
			Trichlorofluoromethane (FREON 11)	2012/10/11	NC		%	25
			Ethanol (ethyl alcohol)	2012/10/11	NC		%	25
			Trichlorotrifluoroethane	2012/10/11	NC		%	25
			2-propanol	2012/10/11	NC		%	25
			2-Propanone	2012/10/11	NC		%	25
			Methyl Ethyl Ketone (2-Butanone)	2012/10/11	NC		%	25
			Methyl Isobutyl Ketone	2012/10/11	NC		%	25
			Methyl Butyl Ketone (2-Hexanone)	2012/10/11	NC		%	25
			Methyl t-butyl ether (MTBE)	2012/10/11	NC		%	25
			Ethyl Acetate	2012/10/11	NC		%	25
			1,1-Dichloroethylene	2012/10/11	NC		%	25
			cis-1,2-Dichloroethylene	2012/10/11	NC		%	25
			trans-1,2-Dichloroethylene	2012/10/11	NC		%	25
			Methylene Chloride(Dichloromethane)	2012/10/11	NC		%	25
			Chloroform	2012/10/11	NC		%	25
			Carbon Tetrachloride	2012/10/11	NC		%	25
			1,1-Dichloroethane	2012/10/11	NC		%	25
			1,2-Dichloroethane	2012/10/11	NC		%	25
			Ethylene Dibromide	2012/10/11	NC		%	25
			1,1,1-Trichloroethane	2012/10/11	NC		%	25
			1,1,2-Trichloroethane	2012/10/11	NC		%	25
			1,1,2,2-Tetrachloroethane	2012/10/11	NC		%	25
			cis-1,3-Dichloropropene	2012/10/11	NC		%	25
			trans-1,3-Dichloropropene	2012/10/11	NC		%	25

Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
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Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E9374

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2999175	MM2	RPD - Sample/Sample Dup	1,2-Dichloropropane	2012/10/11	NC		%	25
			Bromomethane	2012/10/11	NC		%	25
			Bromoform	2012/10/11	NC		%	25
			Bromodichloromethane	2012/10/11	NC		%	25
			Dibromochloromethane	2012/10/11	NC		%	25
			Trichloroethylene	2012/10/11	NC		%	25
			Tetrachloroethylene	2012/10/11	NC		%	25
			Benzene	2012/10/11	4.6		%	25
			Toluene	2012/10/11	3.3		%	25
			Ethylbenzene	2012/10/11	NC		%	25
			p+m-Xylene	2012/10/11	NC		%	25
			o-Xylene	2012/10/11	NC		%	25
			Styrene	2012/10/11	NC		%	25
			4-ethyltoluene	2012/10/11	NC		%	25
			1,3,5-Trimethylbenzene	2012/10/11	NC		%	25
			1,2,4-Trimethylbenzene	2012/10/11	NC		%	25
			Chlorobenzene	2012/10/11	NC		%	25
			Benzyl chloride	2012/10/11	NC		%	25
			1,3-Dichlorobenzene	2012/10/11	NC		%	25
			1,4-Dichlorobenzene	2012/10/11	NC		%	25
			1,2-Dichlorobenzene	2012/10/11	NC		%	25
			1,2,4-Trichlorobenzene	2012/10/11	NC		%	25
			Hexachlorobutadiene	2012/10/11	NC		%	25
			Hexane	2012/10/11	NC		%	25
			Heptane	2012/10/11	NC		%	25
			Cyclohexane	2012/10/11	NC		%	25
			Tetrahydrofuran	2012/10/11	NC		%	25
			1,4-Dioxane	2012/10/11	NC		%	25
			Xylene (Total)	2012/10/11	NC		%	25
			Vinyl Bromide	2012/10/11	NC		%	25
			Propene	2012/10/11	NC		%	25
			2,2,4-Trimethylpentane	2012/10/11	NC		%	25
			Carbon Disulfide	2012/10/11	NC		%	25
			Vinyl Acetate	2012/10/11	NC		%	25

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Elk Point Airport
Station ID: Lica 35 (Portable)
Field Sample ID: LICA VOC/PORT/ Sept 30, 12

Sampler s/n: 6200
Canister ID: 255
Canister Installation Date/Time: Sept 28, 12 @ 09:36 mst
Canister Removal Date/Time: Oct 03, 12 @ 15:37 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
30-Sep-12	09/30/2012 0:00	10/01/2012 0:00	24.0000

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1496	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	22

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC# 10068

Technician Signature: Ting Xu

Maxxam

Success Through Science®

Your C.O.C. #: 10068

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/10/24

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2F6937
Received: 2012/10/10, 11:55

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/10/23	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/10/23	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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

Total cover pages: 1

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Maxxam Analytics

Maxxam Job #: B2F6937
Report Date: 2012/10/24

RESULTS OF ANALYSES OF AIR

Maxxam ID		PD3929	PD3930	
Sampling Date		2012/09/30 00:00	2012/09/30 00:00	
COC Number		10068	10068	
	Units	**LICA VOC/CLS/SEPT 30,12 - 7837**	**LICA VOC/PORT/SEPT 30,12 - 255**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	22	22	3012555

QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		PD3929				
Sampling Date		2012/09/30 00:00				
COC Number		10068				
	Units	**LICA VOC/CLS/SEPT 30,12 - 7837**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.73	0.20	3.61	0.989	3012911
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	3012911
Chloromethane	ppbv	0.58	0.30	1.21	0.620	3012911
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	3012911
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	3012911
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	3012911
Trichlorofluoromethane (FREON 11)	ppbv	0.29	0.20	1.65	1.12	3012911
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	3012911
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	3012911
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	3012911
2-Propanone	ppbv	2.43	0.80	5.77	1.90	3012911
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	3012911
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	3012911
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	3012911
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	3012911
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	3012911
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	3012911
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	3012911
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	3012911
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	3012911
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	3012911
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	3012911
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3012911
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3012911
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	3012911
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	3012911
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	3012911
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	3012911
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	3012911
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	3012911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		PD3929				
Sampling Date		2012/09/30 00:00				
COC Number		10068				
	Units	**LICA VOC/CLS/SEPT 30,12 - 7837**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	3012911
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	3012911
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	3012911
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	3012911
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	3012911
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	3012911
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	3012911
Benzene	ppbv	<0.18	0.18	<0.575	0.575	3012911
Toluene	ppbv	<0.20	0.20	<0.753	0.753	3012911
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	3012911
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	3012911
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	3012911
Styrene	ppbv	<0.20	0.20	<0.852	0.852	3012911
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	3012911
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3012911
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3012911
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	3012911
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	3012911
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3012911
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3012911
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3012911
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	3012911
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	3012911
Hexane	ppbv	<0.30	0.30	<1.06	1.06	3012911
Heptane	ppbv	<0.30	0.30	<1.23	1.23	3012911
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	3012911
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	3012911
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	3012911
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	3012911
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	3012911
Propene	ppbv	<0.30	0.30	<0.516	0.516	3012911
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	3012911

QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		PD3929				
Sampling Date		2012/09/30 00:00				
COC Number		10068				
	Units	**LICA VOC/CLS/SEPT 30,12 - 7837**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	3012911
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	3012911
Surrogate Recovery (%)						
Bromochloromethane	%	86		N/A	N/A	3012911
D5-Chlorobenzene	%	87		N/A	N/A	3012911
Difluorobenzene	%	88		N/A	N/A	3012911

N/A = Not Applicable
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		PD3930				
Sampling Date		2012/09/30 00:00				
COC Number		10068				
	Units	**LICA VOC/PORT/SEPT 30,12 - 255**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.69	0.20	3.43	0.989	3012911
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	3012911
Chloromethane	ppbv	0.61	0.30	1.27	0.620	3012911
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	3012911
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	3012911
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	3012911
Trichlorofluoromethane (FREON 11)	ppbv	0.29	0.20	1.64	1.12	3012911
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	3012911
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	3012911
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	3012911
2-Propanone	ppbv	4.81	0.80	11.4	1.90	3012911
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	3012911
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	3012911
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	3012911
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	3012911
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	3012911
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	3012911
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	3012911
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	3012911
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	3012911
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	3012911
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	3012911
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3012911
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3012911
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	3012911
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	3012911
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	3012911
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	3012911
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	3012911
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	3012911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		PD3930				
Sampling Date		2012/09/30 00:00				
COC Number		10068				
	Units	**LICA VOC/PORT/SEPT 30,12 - 255**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	3012911
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	3012911
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	3012911
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	3012911
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	3012911
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	3012911
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	3012911
Benzene	ppbv	0.23	0.18	0.748	0.575	3012911
Toluene	ppbv	0.51	0.20	1.91	0.753	3012911
Ethylbenzene	ppbv	0.36	0.20	1.58	0.868	3012911
p+m-Xylene	ppbv	0.82	0.37	3.56	1.61	3012911
o-Xylene	ppbv	0.26	0.20	1.13	0.868	3012911
Styrene	ppbv	<0.20	0.20	<0.852	0.852	3012911
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	3012911
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3012911
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3012911
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	3012911
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	3012911
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3012911
1,4-Dichlorobenzene	ppbv	0.46	0.40	2.77	2.40	3012911
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3012911
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	3012911
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	3012911
Hexane	ppbv	<0.30	0.30	<1.06	1.06	3012911
Heptane	ppbv	<0.30	0.30	<1.23	1.23	3012911
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	3012911
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	3012911
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	3012911
Xylene (Total)	ppbv	1.08	0.60	4.69	2.61	3012911
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	3012911
Propene	ppbv	<0.30	0.30	<0.516	0.516	3012911
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	3012911

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2F6937
Report Date: 2012/10/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		PD3930				
Sampling Date		2012/09/30 00:00				
COC Number		10068				
	Units	**LICA VOC/PORT/SEPT 30,12 - 255**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Carbon Disulfide	ppbv	1.16	0.50	3.60	1.56	3012911
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	3012911
Surrogate Recovery (%)						
Bromochloromethane	%	83		N/A	N/A	3012911
D5-Chlorobenzene	%	85		N/A	N/A	3012911
Difluorobenzene	%	86		N/A	N/A	3012911

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2F6937
Report Date: 2012/10/24

Test Summary

Maxxam ID PD3929 **Collected** 2012/09/30
Sample ID LICA VOC/CLS/SEPT 30,12 - 7837 **Shipped**
Matrix AIR **Received** 2012/10/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	3012555	N/A	2012/10/23	Yao Liang Sun
Volatile Organics in Air (TO-15)	GC/MS	3012911	N/A	2012/10/23	Yao Liang Sun

Maxxam ID PD3930 **Collected** 2012/09/30
Sample ID LICA VOC/PORT/SEPT 30,12 - 255 **Shipped**
Matrix AIR **Received** 2012/10/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	3012555	N/A	2012/10/23	Yao Liang Sun
Volatile Organics in Air (TO-15)	GC/MS	3012911	N/A	2012/10/23	Yao Liang Sun

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Maxxam Analytics

Maxxam Job #: B2F6937
Report Date: 2012/10/24

GENERAL COMMENTS

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2F6937

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3012911	LSY	Spiked Blank	Bromochloromethane	2012/10/23		95	%	60 - 140
			D5-Chlorobenzene	2012/10/23		97	%	60 - 140
			Difluorobenzene	2012/10/23		97	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/10/23		93	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/10/23		112	%	70 - 130
			Chloromethane	2012/10/23		97	%	70 - 130
			Vinyl Chloride	2012/10/23		99	%	70 - 130
			Chloroethane	2012/10/23		95	%	70 - 130
			1,3-Butadiene	2012/10/23		97	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/10/23		101	%	70 - 130
			Ethanol (ethyl alcohol)	2012/10/23		94	%	70 - 130
			Trichlorotrifluoroethane	2012/10/23		99	%	70 - 130
			2-propanol	2012/10/23		100	%	70 - 130
			2-Propanone	2012/10/23		96	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/10/23		99	%	70 - 130
			Methyl Isobutyl Ketone	2012/10/23		98	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/10/23		96	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/10/23		99	%	70 - 130
			Ethyl Acetate	2012/10/23		99	%	70 - 130
			1,1-Dichloroethylene	2012/10/23		95	%	70 - 130
			cis-1,2-Dichloroethylene	2012/10/23		98	%	70 - 130
			trans-1,2-Dichloroethylene	2012/10/23		98	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/10/23		92	%	70 - 130
			Chloroform	2012/10/23		100	%	70 - 130
			Carbon Tetrachloride	2012/10/23		103	%	70 - 130
			1,1-Dichloroethane	2012/10/23		100	%	70 - 130
			1,2-Dichloroethane	2012/10/23		98	%	70 - 130
			Ethylene Dibromide	2012/10/23		96	%	70 - 130
			1,1,1-Trichloroethane	2012/10/23		98	%	70 - 130
			1,1,2-Trichloroethane	2012/10/23		99	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/10/23		93	%	70 - 130
			cis-1,3-Dichloropropene	2012/10/23		95	%	70 - 130
			trans-1,3-Dichloropropene	2012/10/23		95	%	70 - 130
			1,2-Dichloropropane	2012/10/23		98	%	70 - 130
			Bromomethane	2012/10/23		99	%	70 - 130
			Bromoform	2012/10/23		94	%	70 - 130
			Bromodichloromethane	2012/10/23		98	%	70 - 130
			Dibromochloromethane	2012/10/23		97	%	70 - 130
			Trichloroethylene	2012/10/23		97	%	70 - 130
			Tetrachloroethylene	2012/10/23		98	%	70 - 130
			Benzene	2012/10/23		97	%	70 - 130
			Toluene	2012/10/23		98	%	70 - 130
			Ethylbenzene	2012/10/23		99	%	70 - 130
			p+m-Xylene	2012/10/23		97	%	70 - 130
			o-Xylene	2012/10/23		98	%	70 - 130
			Styrene	2012/10/23		91	%	70 - 130
			4-ethyltoluene	2012/10/23		94	%	70 - 130
			1,3,5-Trimethylbenzene	2012/10/23		96	%	70 - 130
			1,2,4-Trimethylbenzene	2012/10/23		93	%	70 - 130
			Chlorobenzene	2012/10/23		98	%	70 - 130
			Benzyl chloride	2012/10/23		76	%	70 - 130
			1,3-Dichlorobenzene	2012/10/23		86	%	70 - 130
			1,4-Dichlorobenzene	2012/10/23		79	%	70 - 130
			1,2-Dichlorobenzene	2012/10/23		83	%	70 - 130
			1,2,4-Trichlorobenzene	2012/10/23		81	%	70 - 130

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2F6937

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3012911 LSY	Spiked Blank	Hexachlorobutadiene	2012/10/23		96	%	70 - 130
		Hexane	2012/10/23		97	%	70 - 130
		Heptane	2012/10/23		95	%	70 - 130
		Cyclohexane	2012/10/23		95	%	70 - 130
		Tetrahydrofuran	2012/10/23		101	%	70 - 130
		1,4-Dioxane	2012/10/23		100	%	70 - 130
		Xylene (Total)	2012/10/23		97	%	70 - 130
		Vinyl Bromide	2012/10/23		96	%	70 - 130
		Propene	2012/10/23		92	%	70 - 130
		2,2,4-Trimethylpentane	2012/10/23		95	%	70 - 130
		Carbon Disulfide	2012/10/23		100	%	70 - 130
		Vinyl Acetate	2012/10/23		98	%	70 - 130
	Method Blank	Bromochloromethane	2012/10/23		81	%	60 - 140
		D5-Chlorobenzene	2012/10/23		80	%	60 - 140
		Difluorobenzene	2012/10/23		83	%	60 - 140
		Dichlorodifluoromethane (FREON 12)	2012/10/23	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2012/10/23	<0.17		ppbv	
		Chloromethane	2012/10/23	<0.30		ppbv	
		Vinyl Chloride	2012/10/23	<0.18		ppbv	
		Chloroethane	2012/10/23	<0.30		ppbv	
		1,3-Butadiene	2012/10/23	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2012/10/23	<0.20		ppbv	
		Ethanol (ethyl alcohol)	2012/10/23	<2.3		ppbv	
		Trichlorotrifluoroethane	2012/10/23	<0.15		ppbv	
		2-propanol	2012/10/23	<3.0		ppbv	
		2-Propanone	2012/10/23	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2012/10/23	<3.0		ppbv	
		Methyl Isobutyl Ketone	2012/10/23	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2012/10/23	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2012/10/23	<0.20		ppbv	
		Ethyl Acetate	2012/10/23	<2.2		ppbv	
		1,1-Dichloroethylene	2012/10/23	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2012/10/23	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2012/10/23	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2012/10/23	<0.80		ppbv	
		Chloroform	2012/10/23	<0.15		ppbv	
		Carbon Tetrachloride	2012/10/23	<0.30		ppbv	
		1,1-Dichloroethane	2012/10/23	<0.20		ppbv	
		1,2-Dichloroethane	2012/10/23	<0.20		ppbv	
		Ethylene Dibromide	2012/10/23	<0.17		ppbv	
		1,1,1-Trichloroethane	2012/10/23	<0.30		ppbv	
		1,1,2-Trichloroethane	2012/10/23	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2012/10/23	<0.20		ppbv	
		cis-1,3-Dichloropropene	2012/10/23	<0.18		ppbv	
		trans-1,3-Dichloropropene	2012/10/23	<0.17		ppbv	
		1,2-Dichloropropane	2012/10/23	<0.40		ppbv	
		Bromomethane	2012/10/23	<0.18		ppbv	
		Bromoform	2012/10/23	<0.20		ppbv	
		Bromodichloromethane	2012/10/23	<0.20		ppbv	
		Dibromochloromethane	2012/10/23	<0.20		ppbv	
		Trichloroethylene	2012/10/23	<0.30		ppbv	
		Tetrachloroethylene	2012/10/23	<0.20		ppbv	
		Benzene	2012/10/23	<0.18		ppbv	
		Toluene	2012/10/23	<0.20		ppbv	
		Ethylbenzene	2012/10/23	<0.20		ppbv	

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2F6937

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3012911	LSY	Method Blank	p+m-Xylene	2012/10/23	<0.37		ppbv	
			o-Xylene	2012/10/23	<0.20		ppbv	
			Styrene	2012/10/23	<0.20		ppbv	
			4-ethyltoluene	2012/10/23	<2.2		ppbv	
			1,3,5-Trimethylbenzene	2012/10/23	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/10/23	<0.50		ppbv	
			Chlorobenzene	2012/10/23	<0.20		ppbv	
			Benzyl chloride	2012/10/23	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/10/23	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/10/23	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/10/23	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/10/23	<2.0		ppbv	
			Hexachlorobutadiene	2012/10/23	<3.0		ppbv	
			Hexane	2012/10/23	<0.30		ppbv	
			Heptane	2012/10/23	<0.30		ppbv	
			Cyclohexane	2012/10/23	<0.20		ppbv	
			Tetrahydrofuran	2012/10/23	<0.40		ppbv	
			1,4-Dioxane	2012/10/23	<2.0		ppbv	
			Xylene (Total)	2012/10/23	<0.60		ppbv	
			Vinyl Bromide	2012/10/23	<0.20		ppbv	
			Propene	2012/10/23	<0.30		ppbv	
			2,2,4-Trimethylpentane	2012/10/23	<0.20		ppbv	
			Carbon Disulfide	2012/10/23	<0.50		ppbv	
			Vinyl Acetate	2012/10/23	<0.20		ppbv	
		RPD - Sample/Sample Dup	Dichlorodifluoromethane (FREON 12)		TBA		%	25
			1,2-Dichlorotetrafluoroethane		TBA		%	25
			Chloromethane		TBA		%	25
			Vinyl Chloride		TBA		%	25
			Chloroethane		TBA		%	25
			1,3-Butadiene		TBA		%	25
			Trichlorofluoromethane (FREON 11)		TBA		%	25
			Ethanol (ethyl alcohol)		TBA		%	25
			Trichlorotrifluoroethane		TBA		%	25
			2-propanol		TBA		%	25
			2-Propanone		TBA		%	25
			Methyl Ethyl Ketone (2-Butanone)		TBA		%	25
			Methyl Isobutyl Ketone		TBA		%	25
			Methyl Butyl Ketone (2-Hexanone)		TBA		%	25
			Methyl t-butyl ether (MTBE)		TBA		%	25
			Ethyl Acetate		TBA		%	25
			1,1-Dichloroethylene		TBA		%	25
			cis-1,2-Dichloroethylene		TBA		%	25
			trans-1,2-Dichloroethylene		TBA		%	25
			Methylene Chloride(Dichloromethane)		TBA		%	25
			Chloroform		TBA		%	25
			Carbon Tetrachloride		TBA		%	25
			1,1-Dichloroethane		TBA		%	25
			1,2-Dichloroethane		TBA		%	25
			Ethylene Dibromide		TBA		%	25
			1,1,1-Trichloroethane		TBA		%	25
			1,1,2-Trichloroethane		TBA		%	25
			1,1,2,2-Tetrachloroethane		TBA		%	25
			cis-1,3-Dichloropropene		TBA		%	25

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2F6937

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3012911	LSY	RPD - Sample/Sample Dup	trans-1,3-Dichloropropene		TBA		%	25
			1,2-Dichloropropane		TBA		%	25
			Bromomethane		TBA		%	25
			Bromoform		TBA		%	25
			Bromodichloromethane		TBA		%	25
			Dibromochloromethane		TBA		%	25
			Trichloroethylene		TBA		%	25
			Tetrachloroethylene		TBA		%	25
			Benzene		TBA		%	25
			Toluene		TBA		%	25
			Ethylbenzene		TBA		%	25
			p+m-Xylene		TBA		%	25
			o-Xylene		TBA		%	25
			Styrene		TBA		%	25
			4-ethyltoluene		TBA		%	25
			1,3,5-Trimethylbenzene		TBA		%	25
			1,2,4-Trimethylbenzene		TBA		%	25
			Chlorobenzene		TBA		%	25
			Benzyl chloride		TBA		%	25
			1,3-Dichlorobenzene		TBA		%	25
			1,4-Dichlorobenzene		TBA		%	25
			1,2-Dichlorobenzene		TBA		%	25
			1,2,4-Trichlorobenzene		TBA		%	25
			Hexachlorobutadiene		TBA		%	25
			Hexane		TBA		%	25
			Heptane		TBA		%	25
			Cyclohexane		TBA		%	25
			Tetrahydrofuran		TBA		%	25
			1,4-Dioxane		TBA		%	25
			Xylene (Total)		TBA		%	25
			Vinyl Bromide		TBA		%	25
			Propene		TBA		%	25
			2,2,4-Trimethylpentane		TBA		%	25
			Carbon Disulfide		TBA		%	25
			Vinyl Acetate		TBA		%	25

TBA = Result to follow
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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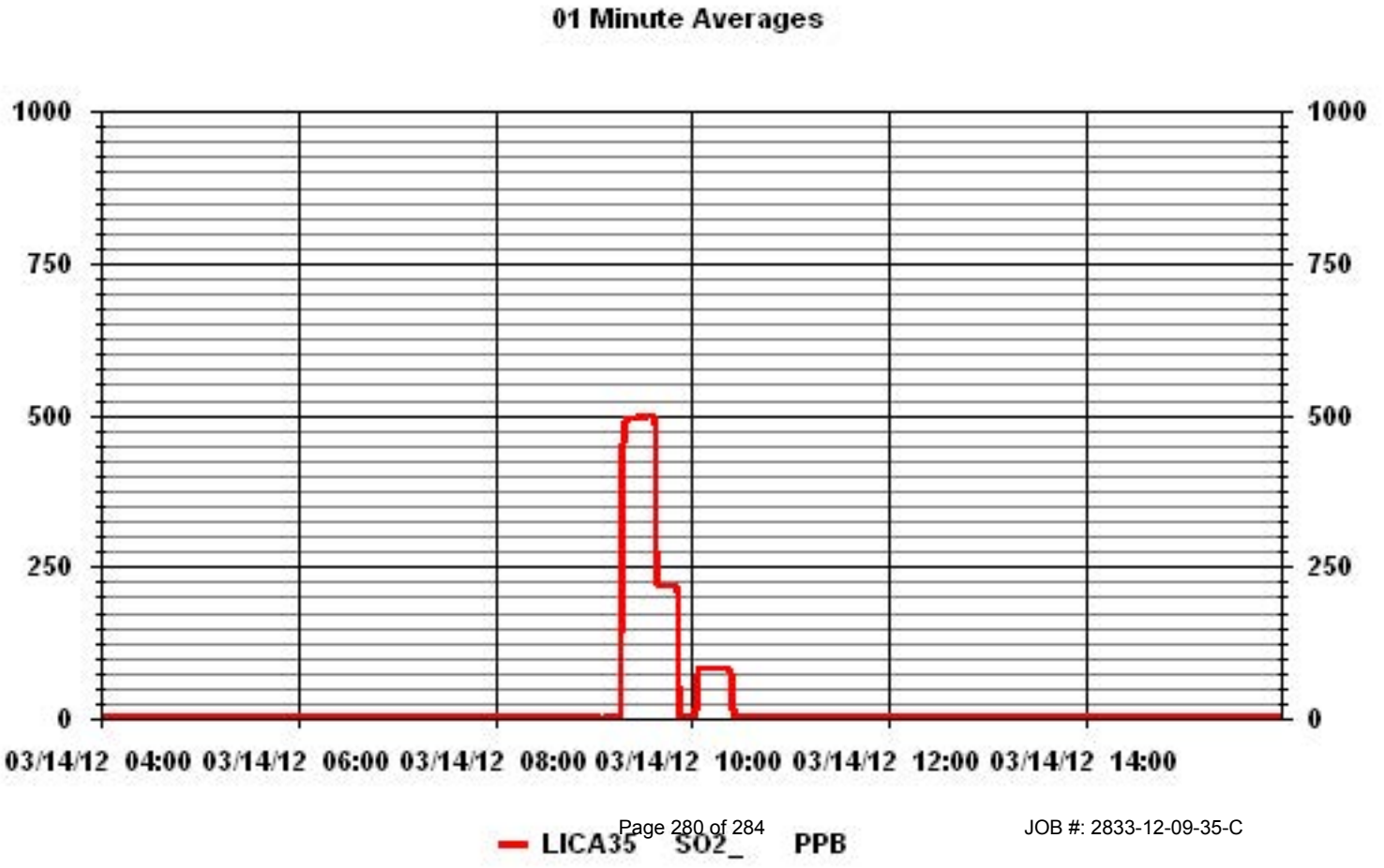
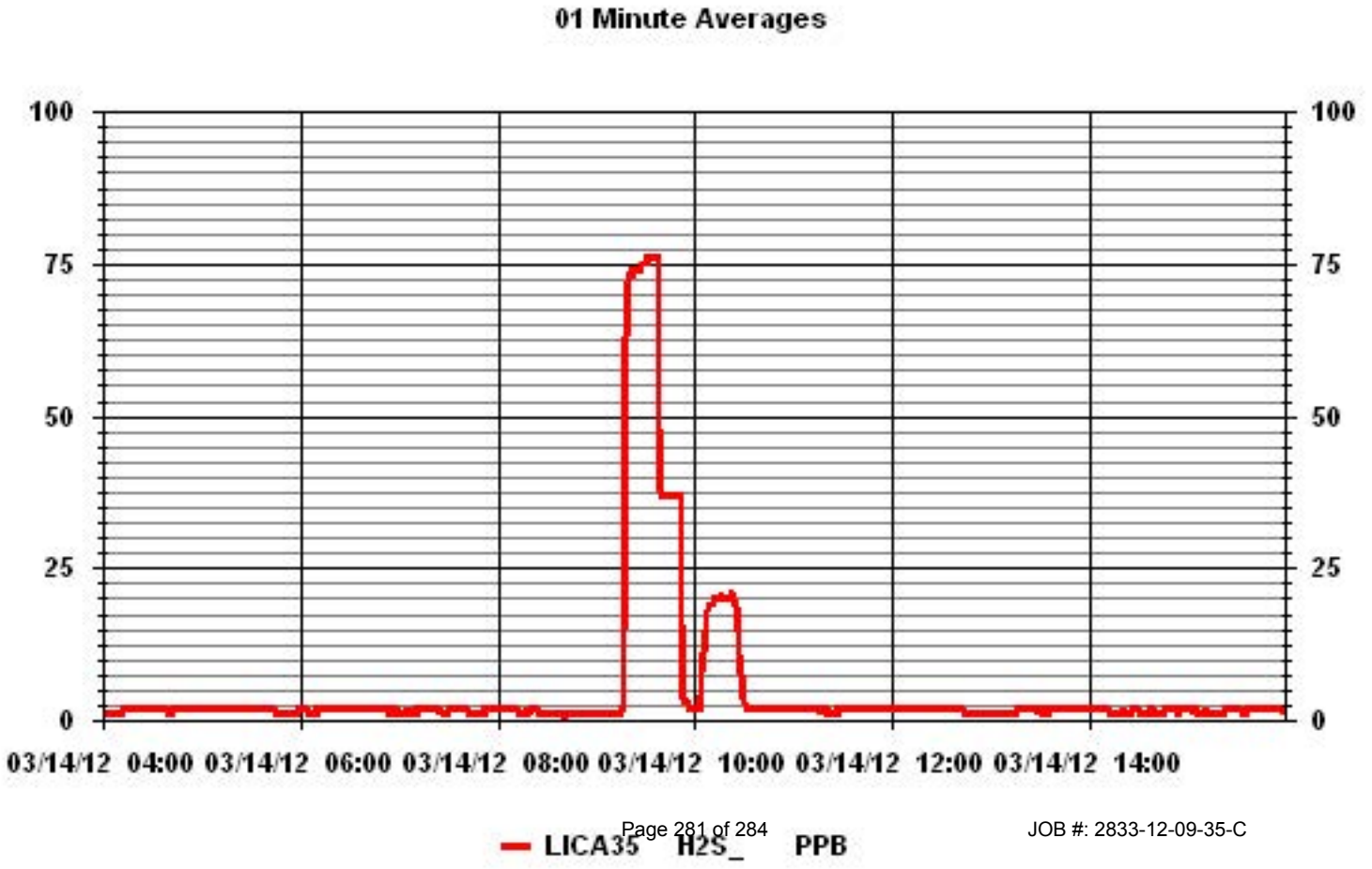
AE Audit Grpahs



JOB #: 2833-12-09-35-C



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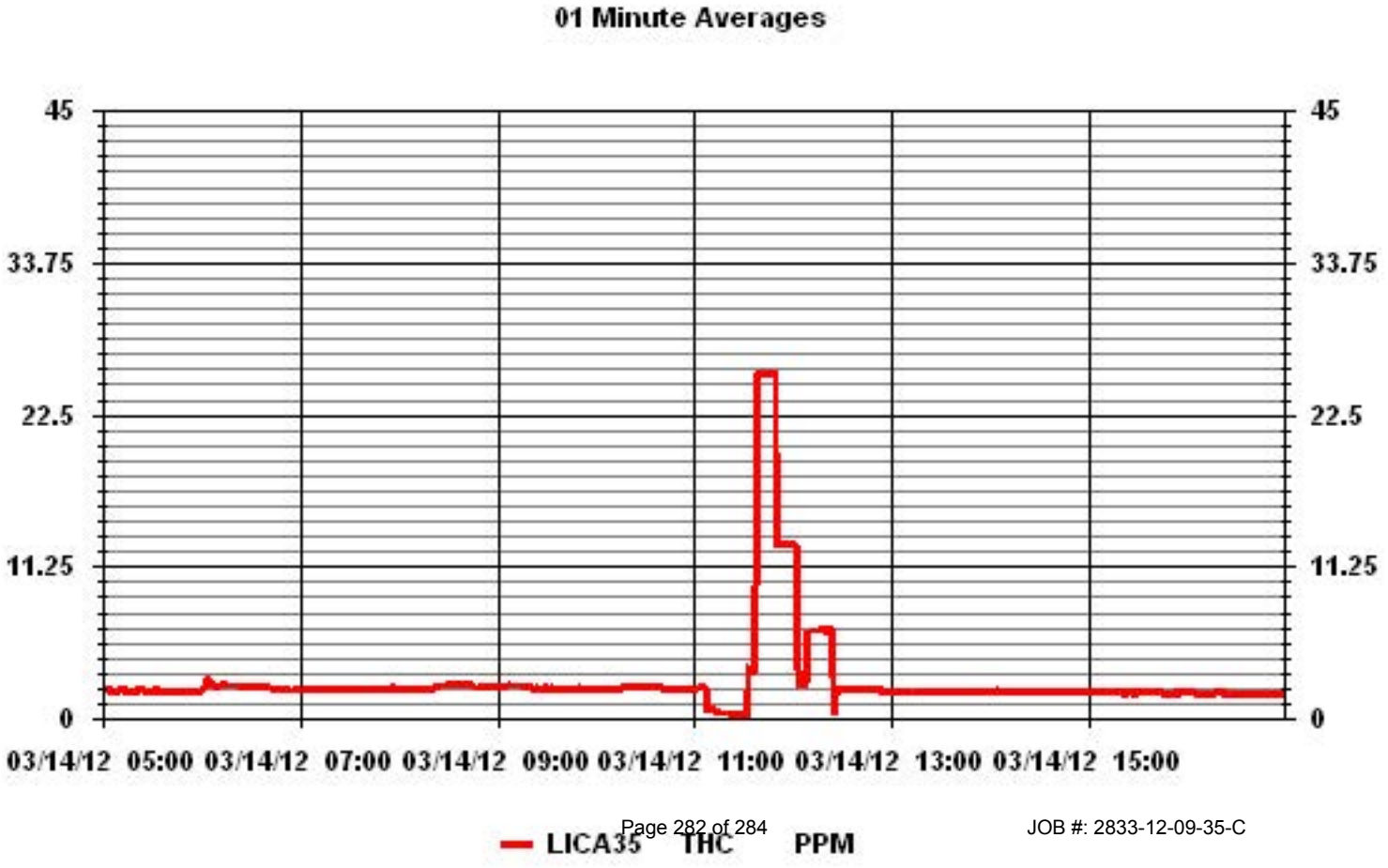
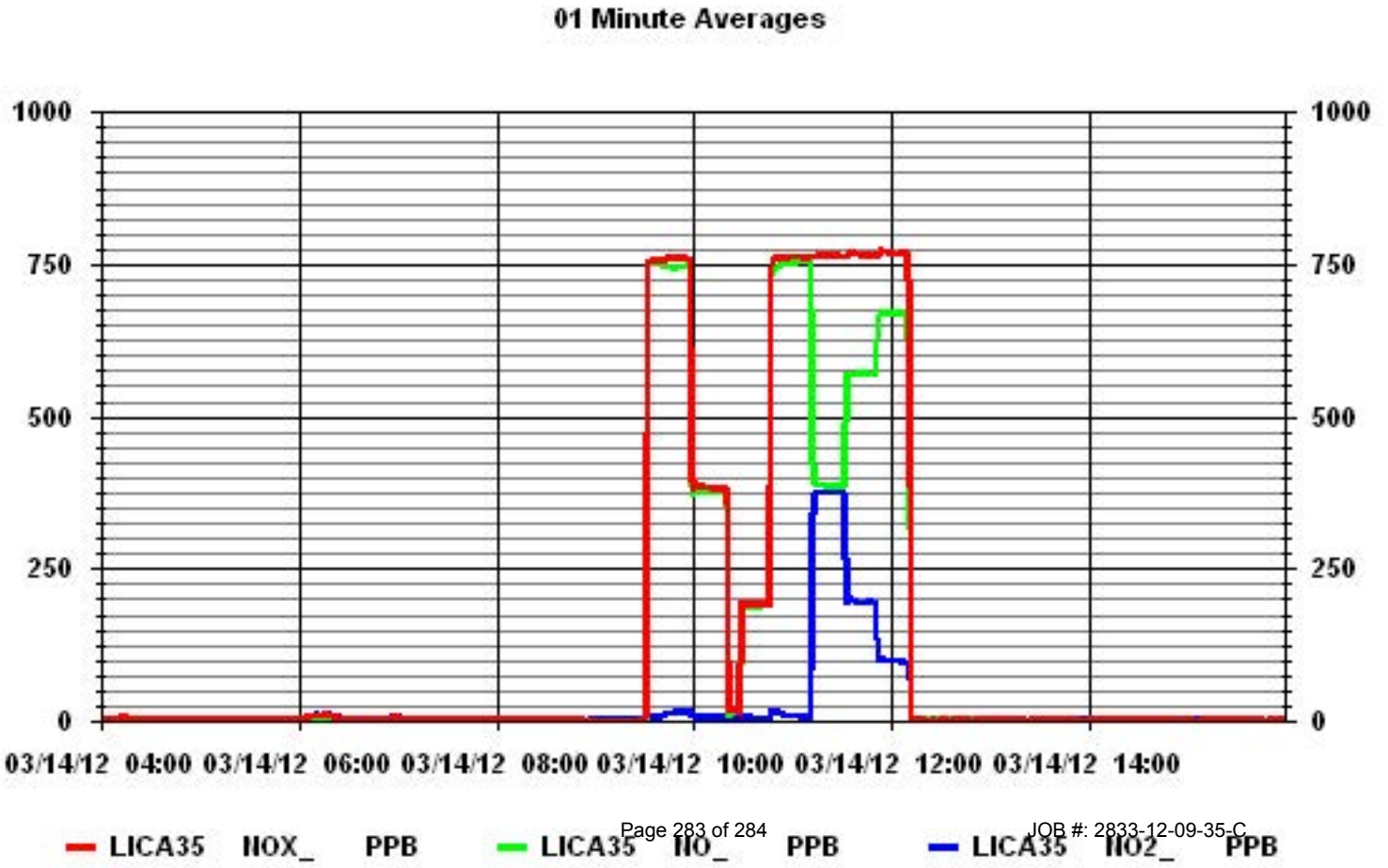
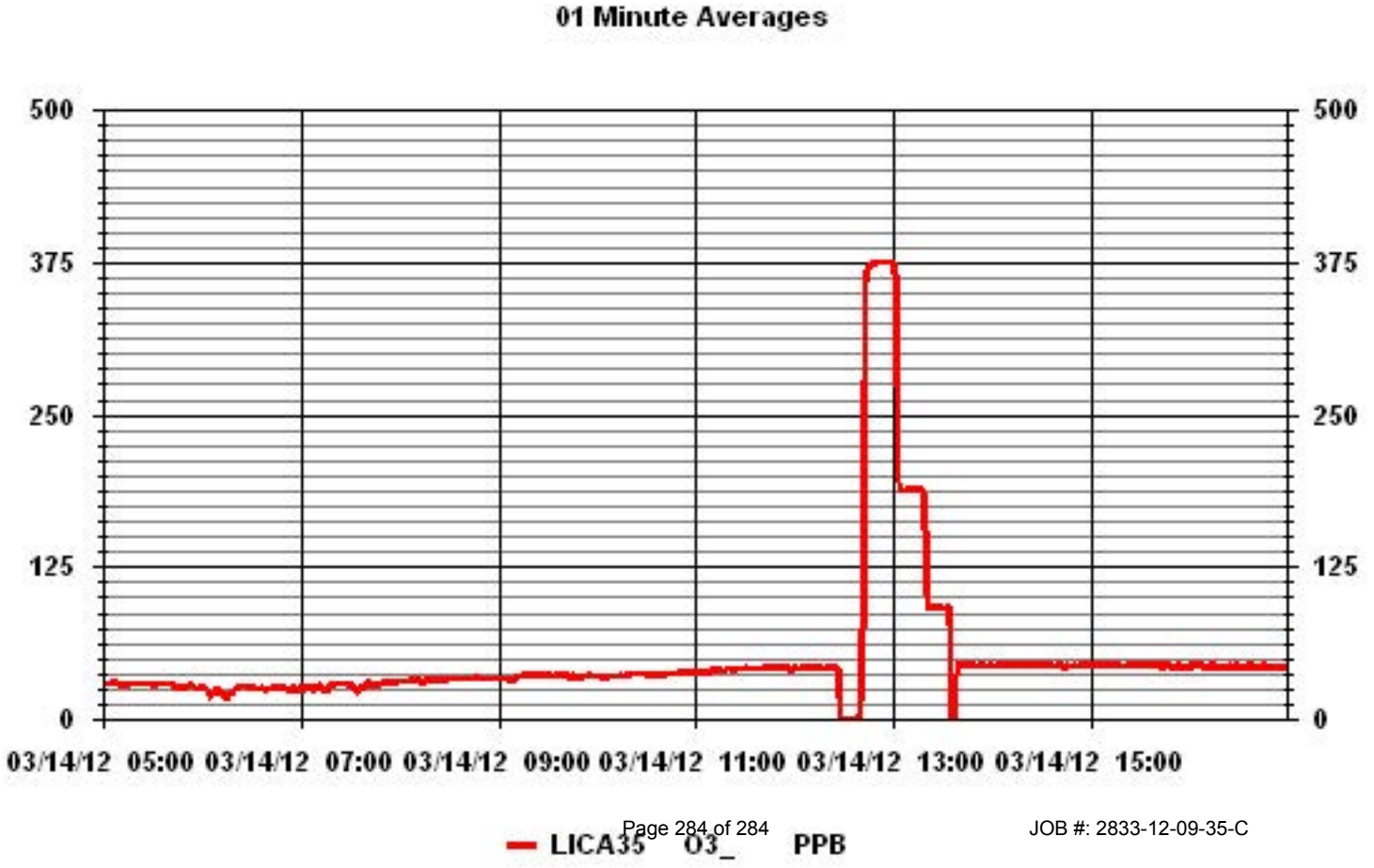


JOB #: 2833-12-09-35-C


01 Minute Averages
1000
750
500
250
0
03/14/12 04:00
03/14/12 06:00
03/14/12 08:00
03/14/12 10:00
03/14/12 12:00
03/14/12 14:00
LICA35 NOX_ PPB
LICA35 NO_ PPB
LICA35 NO2_ PPB



JOB #: 2833-12-09-35-C

Lakeland Industry & Community Association

St. Lina Monitoring Site
Ambient Air Monitoring
Data Report
For
September 2012

Prepared By:

October 30, 2012

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: September 2012

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Craig Snider

Calibration Procedure

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

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

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

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

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

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

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

MONTHLY CONTINUOUS DATA SUMMARY
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – ST. LINA

Continuous Ambient Monitoring – September 2012

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	0.14	4	27	11, 12	13.3, 13.2	199(SSW), 202(SSW)	1.0	28	99.4
H2S (PPB)	10	3	0	0	0.15	6	11	19	17.7	290(WNW)	0.7	1, 2	99.4
THC (PPM)	-	-	-	-	2.11	3.7	25	7	7.2	187(S)	2.6	25	89.2
OZONE (PPB)	82	-	0	-	27.1	51	28	15	14	194(SSW)	39.1	28	99.6
NOx (PPB)	-	-	-	-	1.48	14	11	19	17.7	290(WNW)	3.0	23	98.8
NO (PPB)	-	-	-	-	0.34	13	11	19	17.7	290(WNW)	0.9	14	98.8
NO_2 (PPB)	159	-	0	-	1.14	6	18	5	10.9	236(SW)	2.5	24, 25	98.8
PM2.5 (ug/m3)	-	30	-	0	6.12	31	28	9	9.4	196(SSW)	18.2	28	99.6
TEMPERATURE (DEGREE C)	-	-	-	-	13.29	25.8	23	14	3	338(NNW)	18.2	24	99.6
BP (MILLIBAR)	-	-	-	-	927	938	16	VAR	VAR	VAR	936.4	16	99.6
RH (%)	-	-	-	-	61.08	91	6	5	7.8	250(WSW)	86.3	2	99.6
PRECIPITATION (MM)	-	-	-	-	0.06	3.0	10	14	19.3	313(NW)	15.1	2	100.0
VECTOR WS (KPH)	-	-	-	-	10.95	32.3	11	12	-	296(WNW)	24.1	11	99.4
VECTOR WD (DEGREES)	-	-	-	-	269(W)	-	-	-	-	-	-	-	99.4

VAR-VARIOUS

General Monthly Summary

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

AQM STATION – LICA – St. Lina

A trailer audit was performed by Alberta Environment on September 18th.

Sulphur Dioxide (PPB)
Analyzer make / model - API 100E, S/N: 468
The analyzer was working well throughout the month. The inlet filter was changed before the monthly calibration was started on September 12th. Three hours of data were invalidated due to power failures this month. Five hourly maximum data were invalidated due to small power outages. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)
Analyzer make / model - API 101E, S/N: 510
The analyzer was working well throughout the month. The inlet filter was changed before the monthly calibration was started on September 12th. Three hours of data were invalidated due to power failures this month. Five hourly maximum data were invalidated due to small power outages. Data was corrected using daily zero information.

Ozone (PPB)
Analyzer make / model Thermo 49C, S/N: 49C-54926-302
The analyzer was working well throughout the month. The inlet filter was changed before the monthly calibration was started on September 14th. Three hours of data were invalidated due to power failures this month. Five hourly maximum data were invalidated due to small power outages. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – St. Lina

Total Hydrocarbon (PPM)

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

The analyzer flamed out after power failures on September 11th at hour 19 and on September 26th at hour 14. It was relit on September 12 at hour 8 and September 27 at hour 10, respectively. A daily calibration was triggered to verify the analyzer's functionality after the analyzer was relit. A total of 33 hours of data was invalidated. Both H2 and CH4 gas cylinders were replaced before the monthly calibration was started on September 12th. The inlet filter was changed before the monthly calibration was started. The CH4 gas cylinder was changed again on September 14th. The analyzer spanned low on September 20th. During the site visit on September 21st, an as found points check was performed. The analyzer failed the as found points check. Found that the sample pressure was low. Replaced the pump and cleaned the flow restrictors and tubing that are connected with the FID on September 21st. A post-repair calibration was then performed. Data was invalidated back to the last good calibration date, which was September 19th. A total of 41 hours of data was invalidated due to this issue. Three hours of data were invalidated due to power failure this month. Five hourly maximum data were invalidated due to small power outages. Hourly maximum data on September 27th at hour 15 and on September 28th at hour 16 were invalidated because less than 100% of data for the hour was collected; reason unknown. Data was corrected using daily zero information. The total operational time for the month was 642 hours (89.2%).

Nitrogen Dioxide (PPB)

Analyzer make / model - API 200E, S/N: 592

The analyzer was working well throughout the month. Following the as found points check on September 12th, A maintenance was performed: the O-ring was replaced, 4-Mil orifice and sintered filter for the flow control system was changed, the optical filter was cleaned, the HVPS voltage and slope were adjusted, and the IZS temperature was adjusted. The analyzer was allowed time to stabilize, and a post-repair calibration was performed on September 13th. The inlet filter was changed before the post-repair calibration was started. The expected span value was adjusted on September 14th. Three hours of data were invalidated due to power failure this month. Five hourly maximum data were invalidated due to small power outages. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – St. Lina

Particulate Matter 2.5 (UG/M3)
Analyzer make / model –Thermo Scientific Series 1405F, S/N: 1405A207691003
The Teom unit was working well throughout the month. A routine Teom audit was performed on September 13th. Both the Teom and FDMS filters were changed on September 13th. 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.

Temperature (Degree C)
Analyzer make / model – Met One 060
No operational issues were observed during the month. Three hours of data were invalidated due to power failure this month.

Barometric Pressure (Millibar)
Analyzer make / model - Met One 092
No operational issues were observed during the month. Three hours of data were invalidated due to power failure this month.

Relative Humidity (%)
Analyzer make / model - Met One 083
No operational issues were observed during the month. Three hours of data were invalidated due to power failure this month.

Precipitation (MM)
Analyzer make / model - Met One 387
No operational issues were observed during the month.

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
No operational issues were observed during the month. The wind system was checked on September 14th. It was found that the wind direction was 4 degree off from the true north. The wind direction sensor was adjusted so that it is facing the true north on September 14th. Three hours of data were invalidated due to power failure this month. Five hourly maximum data were invalidated due to small power outages.

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 manifold was cleaned on September 14th.

Air Quality Index (AQI)
No AQI report is included in this report, as the AQI value is no longer used by Alberta Environment.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

SEPTEMBER 2012

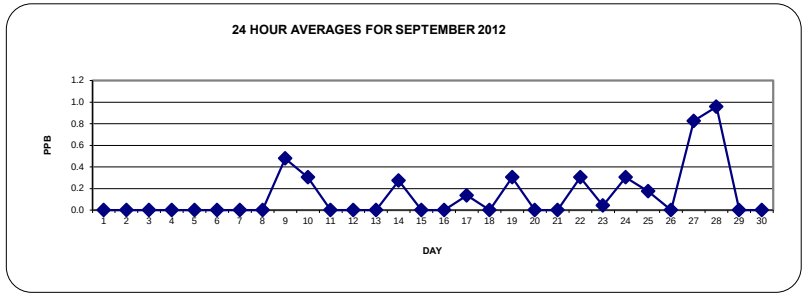
SULPHUR DIOXIDE (SO_2) hourly averages in ppb

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	**IZS**	0	0	0	0	0	0	0	0	0.0	24
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	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	**IZS**	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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
6	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
7	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
8	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
9	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0.5	24
10	1	1	1	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
11	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	**P**	0	0	0	0	0	0	0.0	23
12	0	0	0	0	0	**IZS**	0	0	0	0	0	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0	0	0	0.0	24
13	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
14	0	0	0	**IZS**	0	0	0	0	0	1	1	1	1	1	0	0	**M**	1	0	0	0	0	0	0	1	0.3	23
15	0	0	**IZS**	0	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	**IZS**	0	0	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	**IZS**	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	0.1	24
18	0	0	0	0	0	0	0	**C**	**C**	**C**	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0.0	24
19	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	1	0	0	0	0	0	**IZS**	0	0	2	0.3	24
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0.0	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0.0	24
22	0	0	0	0	0	0	0	0	1	1	1	2	0	1	1	0	0	0	**IZS**	0	0	0	0	0	2	0.3	24
23	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	**IZS**	0	0	0	0	0	0	1	0.0	24
24	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	**IZS**	0	1	1	0	0	0	0	1	0.3	24
25	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1	**IZS**	0	0	0	0	0	0	0	0	1	0.2	24
26	0	0	0	0	0	0	0	0	0	0	0	0	**P**	**P**	**IZS**	0	0	0	0	0	0	0	0	0	0	0.0	22
27	0	0	0	0	0	0	0	0	0	0	1	**4**	**4**	**IZS**	1	1	1	1	1	1	1	1	1	1	**4**	0.8	24
28	1	1	2	2	1	1	1	2	2	2	2	3	**IZS**	1	1	0	0	0	0	0	0	0	0	0	3	**1.0**	24
29	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
30	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX	1	1	2	2	1	1	1	2	2	2	2	4	4	2	2	1	1	1	1	1	1	1	1	1			
HOURLY AVG	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.5	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

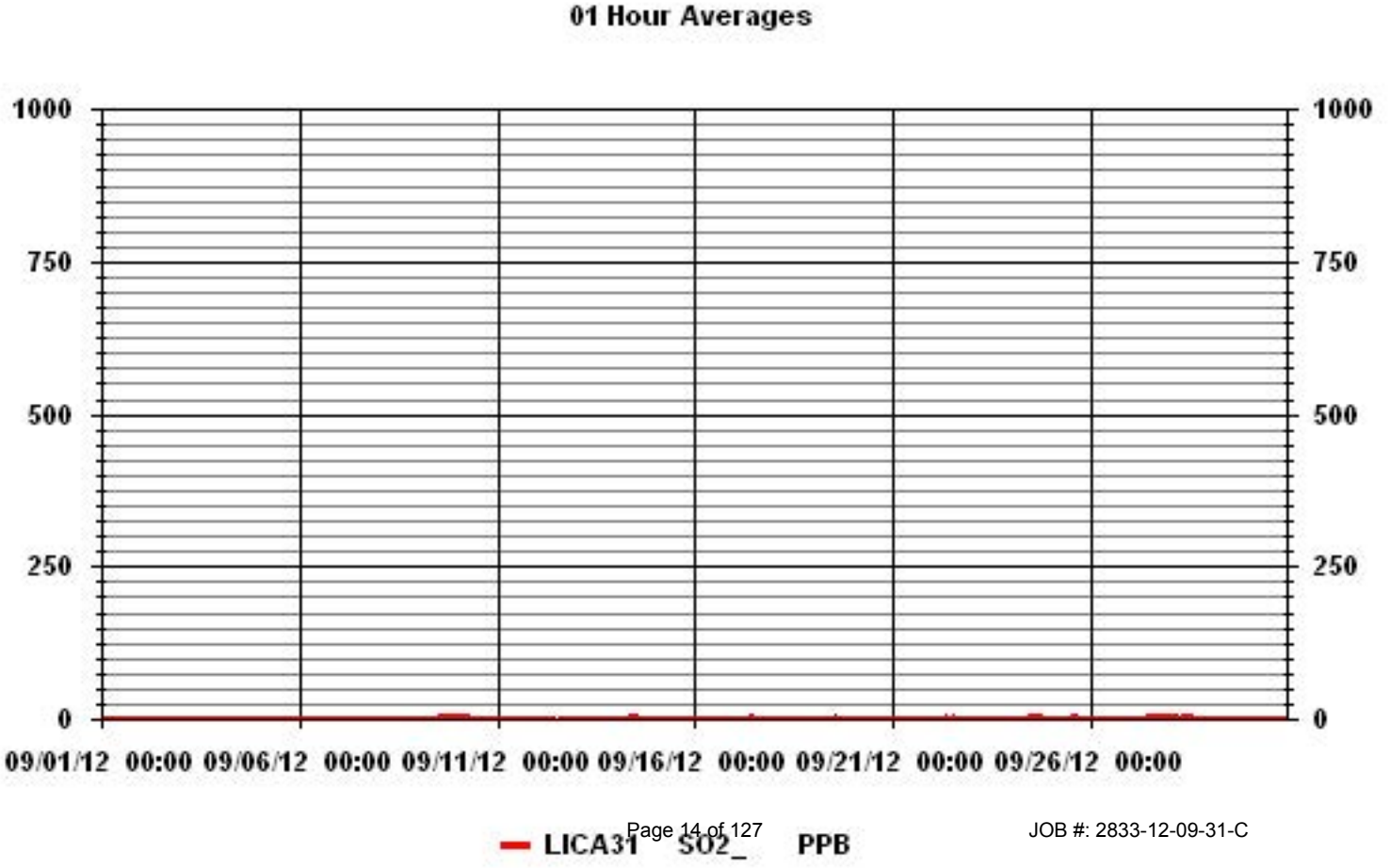


OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB | 24-HR 48 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	77					
MAXIMUM 1-HR AVERAGE:	4	PPB	@ HOUR(S)	11, 12	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	1.0	PPB			ON DAY(S)	28
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		716	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:		99.4	%
STANDARD DEVIATION:	0.44		MONTHLY AVERAGE:		0.14	PPB

JOB #: 2833-12-09-31-C



JOB #: 2833-12-09-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 2012

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

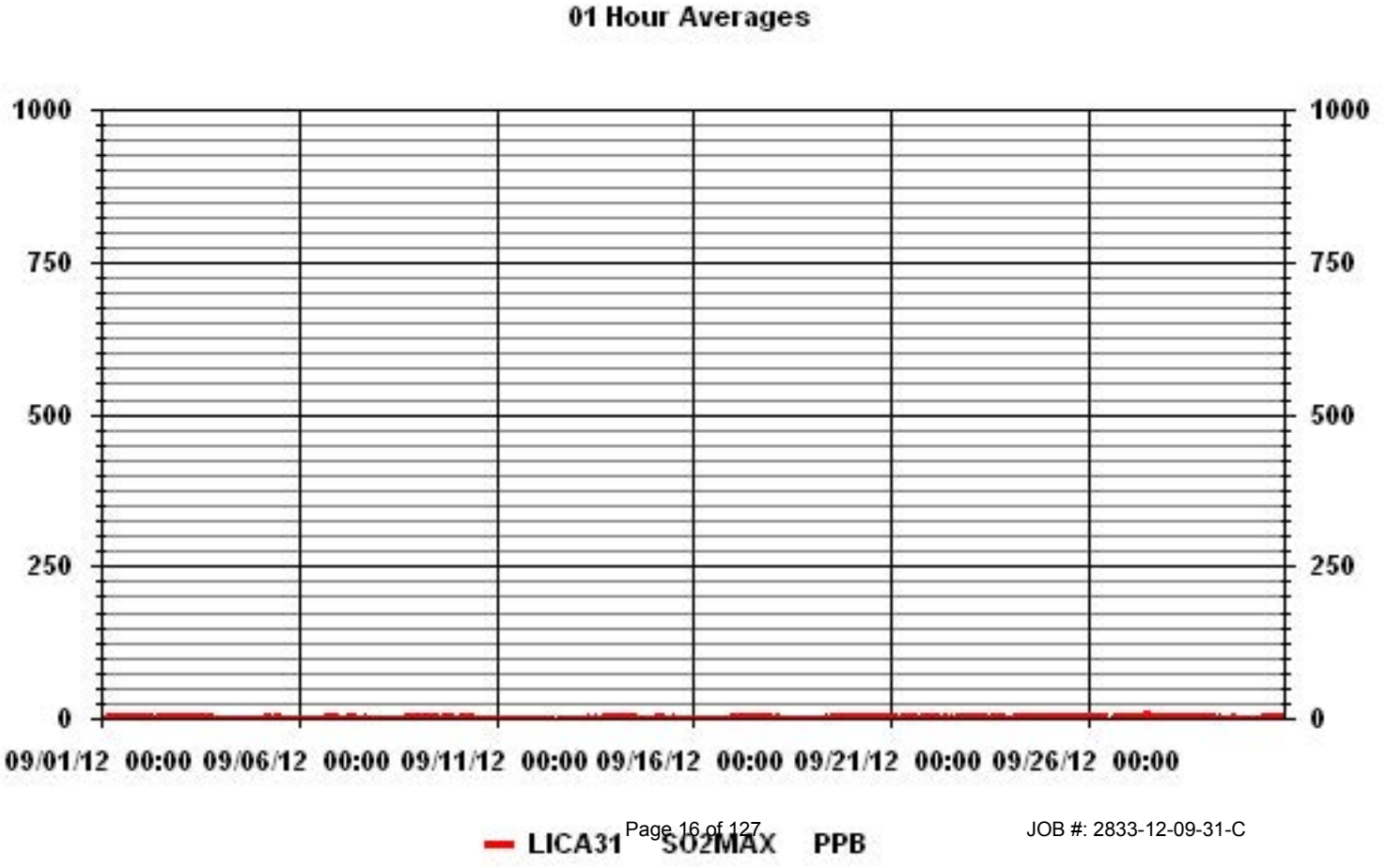
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1	0.9	24
2	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1	3	1.1	24
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	0	1	0	1	0.9	24
4	1	0	1	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	1	0	0	0	0	0	1	0.1	24
5	0	0	0	0	1	1	1	1	0	1	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
6	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	1	1	1	1	1	1	1	1	1	0.3	24
7	1	1	0	0	0	0	1	1	1	1	**IZS**	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0.3	24
8	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0.3	24
9	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	2	1	1	1	1	2	2	2	2	1	2	1.2	24
10	2	1	2	2	2	2	2	**IZS**	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0.7	24
11	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	**P**	**P**	0	0	0	0	0	0.0	22
12	0	0	0	0	0	**IZS**	0	0	0	0	**C**	**C**	**C**	**C**	**C**	1	0	0	0	0	0	1	0	0	1	0.1	24
13	0	0	0	0	**IZS**	0	1	0	1	1	0	0	1	1	0	1	0	1	1	1	1	1	1	1	1	0.6	24
14	1	1	1	**IZS**	1	1	1	1	1	2	2	2	2	2	2	1	**M**	**M**	0	0	0	0	0	0	2	1.0	22
15	0	0	**IZS**	1	1	1	1	0	0	0	0	1	1	0	0	1	0	0	0	0	**P**	0	0	0	1	0.3	23
16	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0.1	24
17	**IZS**	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	**IZS**	2	1.2	24
18	0	0	1	1	1	1	0	**C**	**C**	**C**	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	0.3	24
19	0	1	0	0	0	1	0	2	1	1	1	2	2	3	4	3	1	1	1	1	1	**IZS**	1	1	4	1.2	24
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1.0	24
21	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	**IZS**	1	1	1	1	1	0.9	24
22	1	1	1	1	1	1	1	1	2	2	3	4	1	3	2	1	1	1	**IZS**	1	1	1	1	1	4	1.4	24
23	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	**IZS**	1	1	1	1	1	2	2	1.1	24
24	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	2	1.0	24
25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	1	1	1	1	1.0	24
26	1	1	1	1	1	1	1	1	1	1	1	1	**P**	**P**	**IZS**	2	1	1	1	1	1	1	1	1	2	1.0	22
27	1	1	1	1	1	1	1	1	1	2	3	**6**	**6**	**IZS**	3	2	2	2	2	2	2	2	2	2	**6**	2.0	24
28	2	2	4	4	2	2	2	3	3	4	3	4	**IZS**	3	2	1	1	1	1	1	1	1	1	1	4	2.1	24
29	1	1	1	1	1	1	1	0	1	1	0	**IZS**	0	0	0	1	1	1	0	0	1	0	0	0	1	0.6	24
30	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	24
HOURLY MAX	2	2	4	4	2	2	2	3	3	4	3	6	6	3	4	3	2	2	2	2	2	2	2	2			
HOURLY AVG	0.7	0.7	0.8	0.7	0.8	0.8	0.8	0.8	0.8	1.1	1.0	1.3	1.0	0.9	0.9	0.8	0.7	0.8	0.7	0.7	0.8	0.7	0.7	0.7			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	444					
MAXIMUM INSTANTANEOUS VALUE:	6	PPB	@ HOUR(S)	11, 12	ON DAY(S)	27
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		713	HRS
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	0.77					



JOB #: 2833-12-09-31-C

LICA31
SO2_ / WDR Joint Frequency Distribution (Percent)

September 2012

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	3.54	2.06	1.18	2.06	2.51	2.95	1.47	2.65	10.93	9.30	7.82	8.27	13.14	11.81	13.44	6.79	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	3.54	2.06	1.18	2.06	2.51	2.95	1.47	2.65	10.93	9.30	7.82	8.27	13.14	11.81	13.44	6.79	

Calm : .00 %

Total # Operational Hours : 677

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	24	14	8	14	17	20	10	18	74	63	53	56	89	80	91	46	677
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	24	14	8	14	17	20	10	18	74	63	53	56	89	80	91	46	

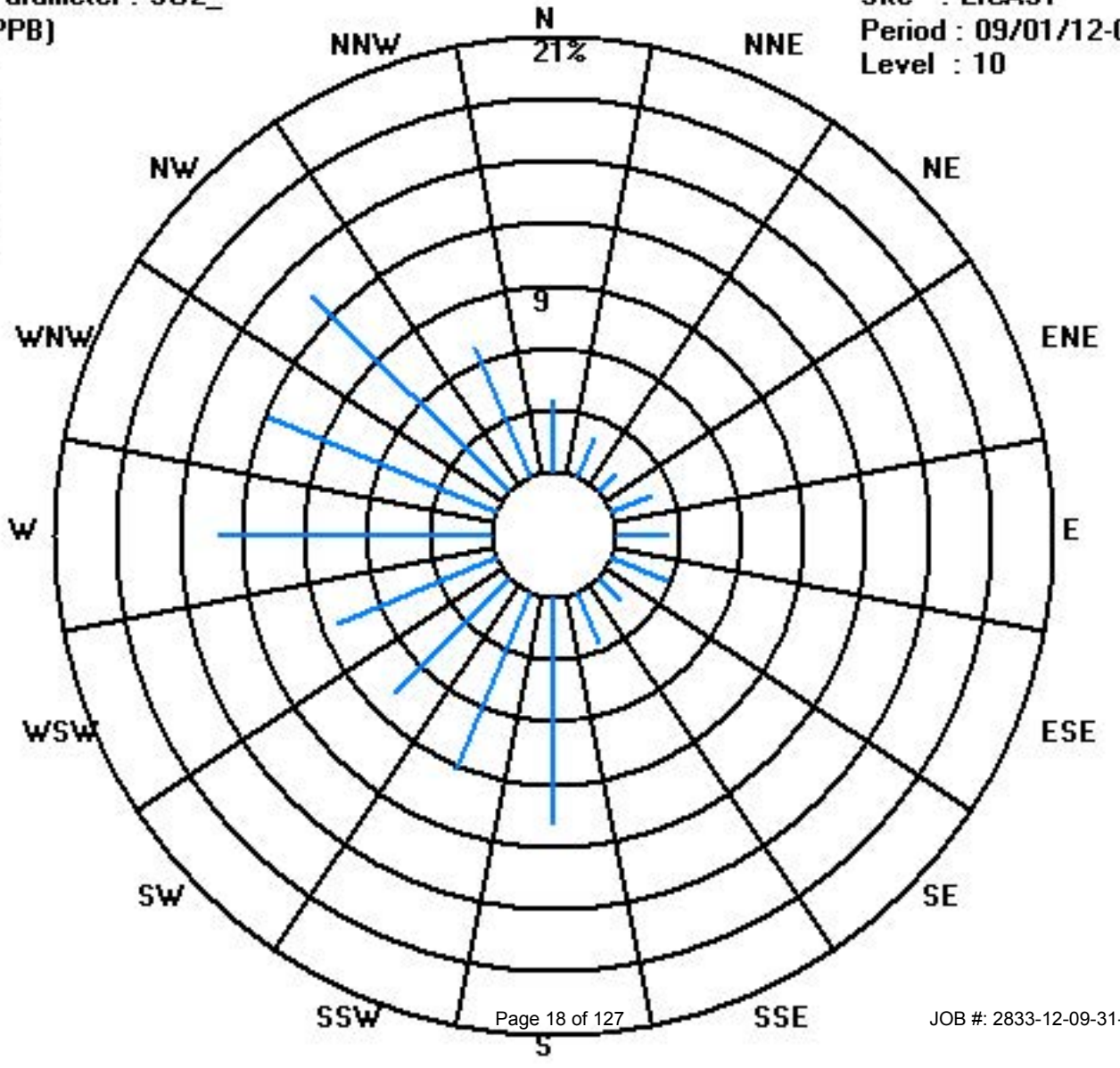
Calm : .00 %

Total # Operational Hours : 677

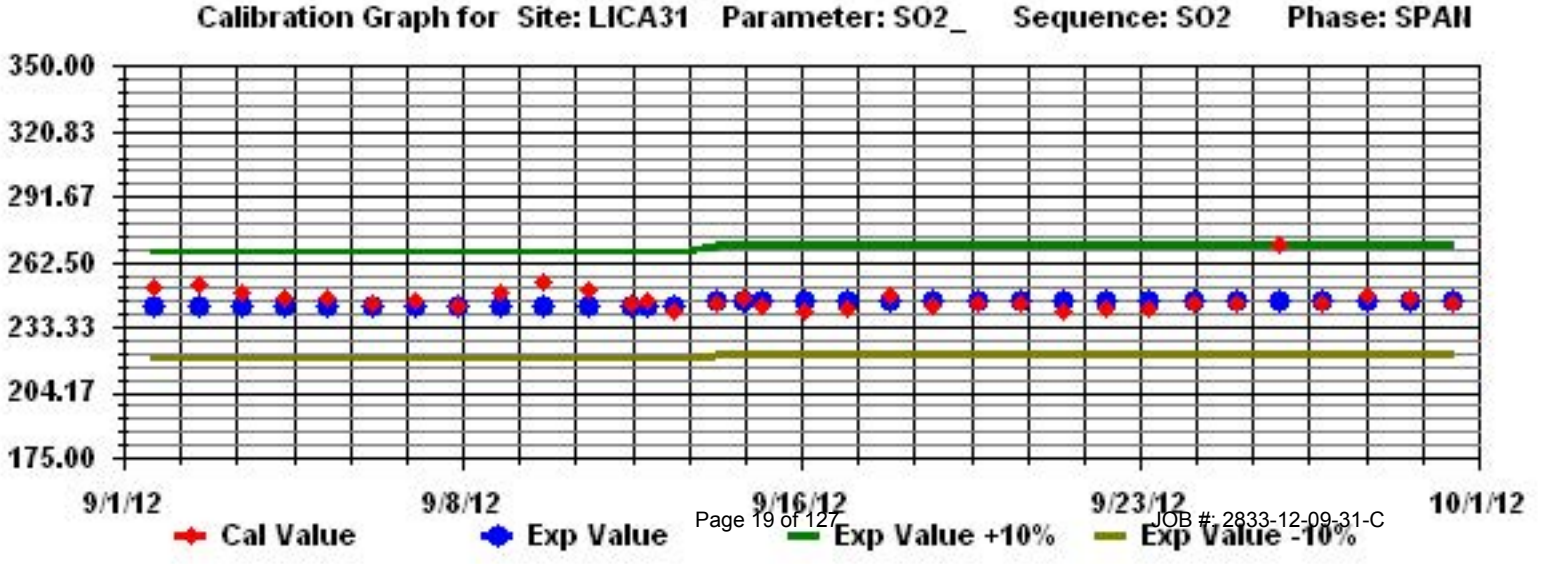
Logger : 31 Parameter : SO2_
Class Limits (PPB)

>= 340
< 340
< 170
< 110
< 60
< 20

Site : LICA31
Period : 09/01/12-09/30/12
Level : 10



JOB #: 2833-12-09-31-C


Calibration Graph for Site: LICA31 Parameter: SO2_ Sequence: SO2 Phase: SPAN
350.00
320.83
291.67
262.50
233.33
204.17
175.00
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 2012

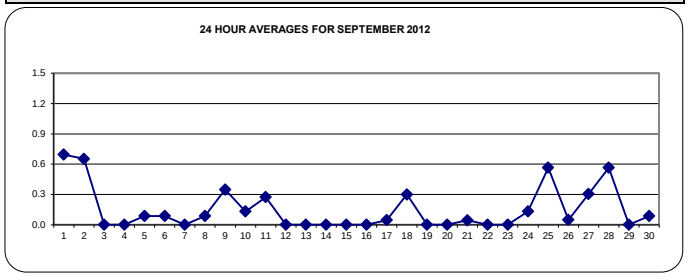
HYDROGEN SULPHIDE (H_2S) hourly averages in ppb

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	1	1	1	1	1	1	1	1	1	1	**IZS**	1	1	1	0	1	1	1	1	**0.7**	24
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	1	**0.7**	24
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0.0	24
5	0	0	0	0	0	0	0	0	1	0	0	0	**IZS**	1	0	0	0	0	0	0	0	0	0	0	1	0.1	24
6	0	0	0	0	0	0	0	0	0	0	0	**IZS**	2	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24
7	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
8	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.1	24
9	1	1	1	0	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0.3	24
10	0	0	0	0	0	1	1	**IZS**	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
11	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	**P**	**6**	0	0	0	0	**6**	0.3	23
12	0	0	0	0	0	**IZS**	0	0	0	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0	0	0	0	0.0	24
13	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
14	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	**M**	0	0	0	0	0	0	0	0	0.0	23
15	0	0	**IZS**	0	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	**IZS**	0	0	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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	**IZS**	1	0.0	24
18	1	0	1	1	1	1	1	**C**	**C**	**C**	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	1	0.3	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0.0	24
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0.0	24
21	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	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	**IZS**	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	**IZS**	0	0	1	0	0	1	1	1	0.1	24
25	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	**IZS**	0	0	0	0	0	0	0	0	1	0.6	24
26	0	0	0	0	0	0	0	0	0	0	0	1	**P**	**P**	**IZS**	0	0	0	0	0	0	0	0	0	1	0.0	22
27	0	0	0	0	0	0	0	1	0	0	0	0	0	**IZS**	0	0	0	0	1	1	1	1	1	1	1	0.3	24
28	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	1	0	0	1	0.6	24
29	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
30	0	0	0	0	0	0	0	0	0	0	**IZS**	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
HOURLY MAX	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	0	1	1	6	1	1	1	1			
HOURLY AVG	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.3	0.1	0.1	0.2	0.1			

STATUS FLAG CODES

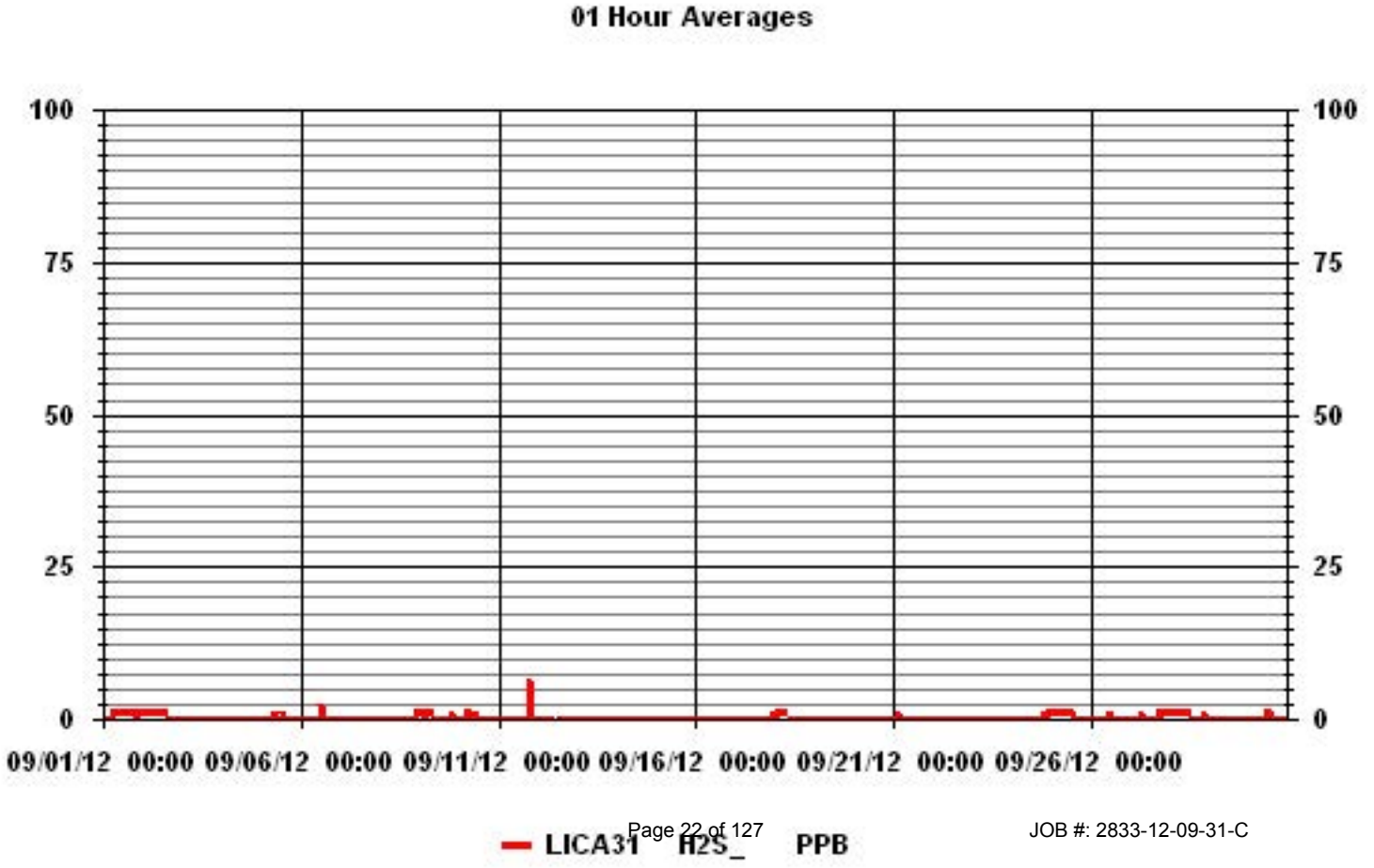
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



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:	95					
MAXIMUM 1-HR AVERAGE:	6	PPB	@ HOUR(S)	19	ON DAY(S)	11
MAXIMUM 24-HR AVERAGE:	0.7	PPB			ON DAY(S)	1, 2
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		716	HRS
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:		99.4	%
STANDARD DEVIATION:	0.42		MONTHLY AVERAGE:		0.15	PPB



JOB #: 2833-12-09-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *ST. LINA*

SEPTEMBER 2012

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST

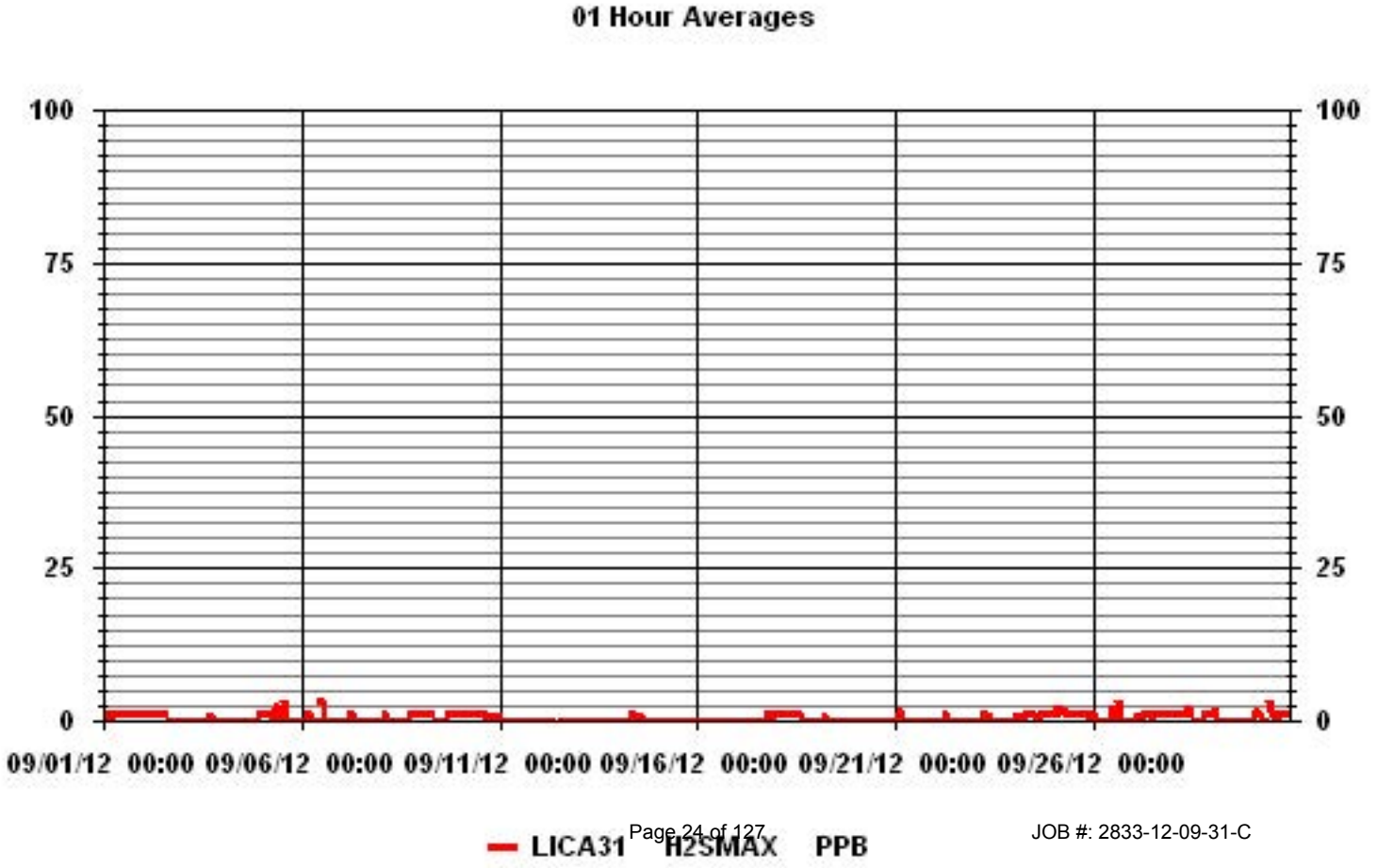
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00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

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	220					
MAXIMUM INSTANTANEOUS VALUE:	3	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		714	HRS
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	0.57					



JOB #: 2833-12-09-31-C

LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

September 2012

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	3.55	2.07	1.18	2.07	2.51	2.95	1.47	2.66	10.94	9.31	7.84	8.28	13.01	11.68	13.46	6.80	99.85
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.14
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.55	2.07	1.18	2.07	2.51	2.95	1.47	2.66	10.94	9.31	7.84	8.28	13.01	11.83	13.46	6.80	

Calm : .00 %

Total # Operational Hours : 676

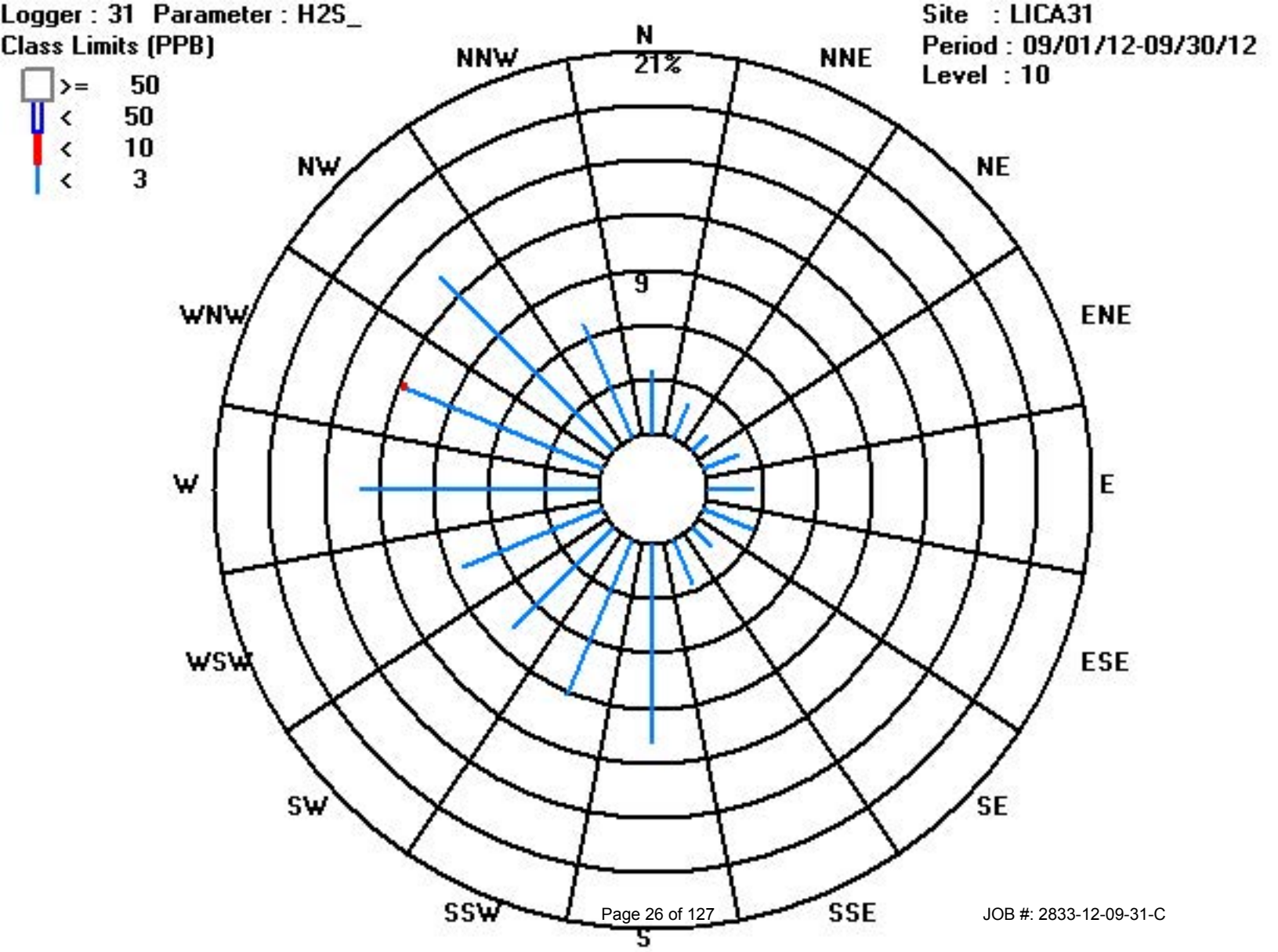
Distribution By Samples

Direction

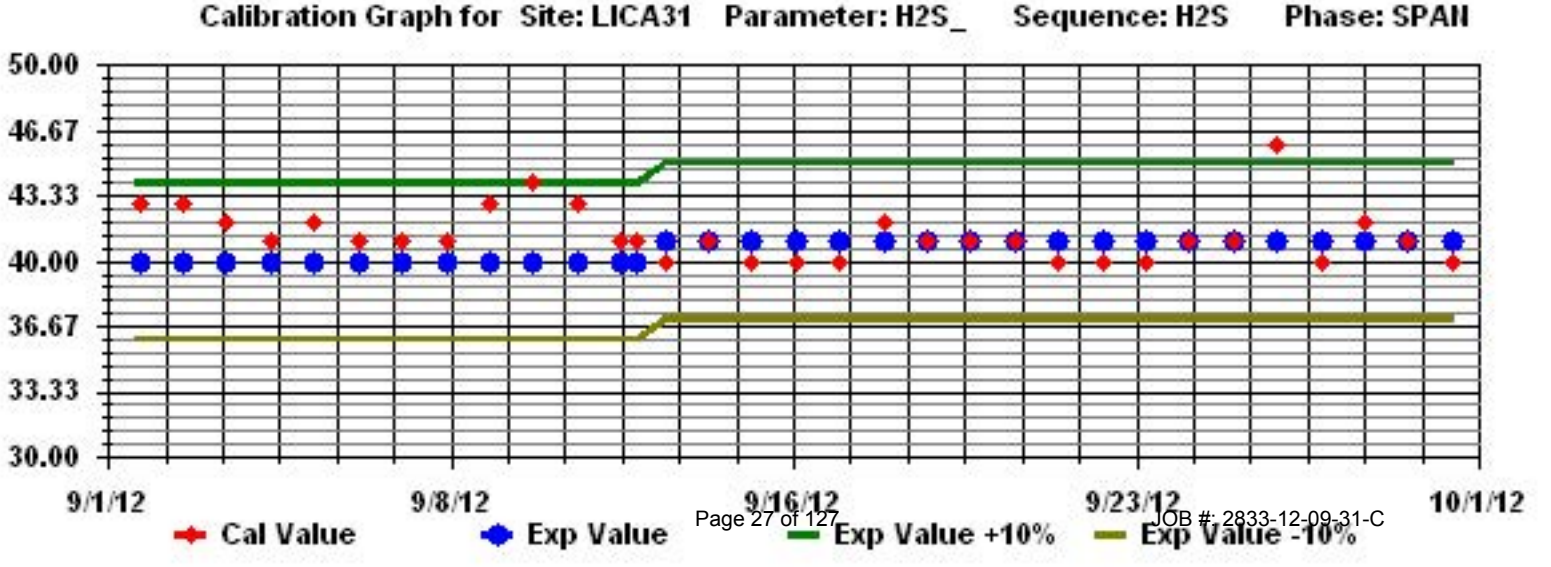
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	24	14	8	14	17	20	10	18	74	63	53	56	88	79	91	46	675
< 10														1			1
< 50																	
>= 50																	
Totals	24	14	8	14	17	20	10	18	74	63	53	56	88	80	91	46	

Calm : .00 %

Total # Operational Hours : 676



JOB #: 2833-12-09-31-C


Calibration Graph for Site: LICA31 Parameter: H2S_ Sequence: H2S Phase: SPAN
50.00
46.67
43.33
40.00
36.67
33.33
30.00
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 2012

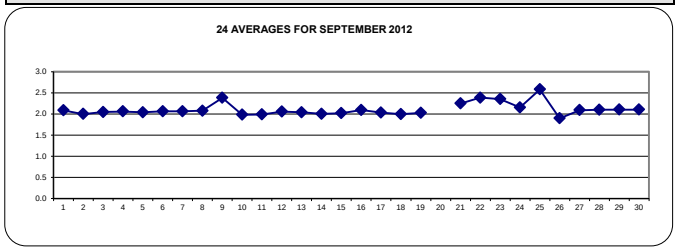
TOTAL HYDROCARBONS hourly averages in ppm

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2.1	2.1	2.1	2.1	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2	2	2.1	2.1	24
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	**IZS**	2	2	2	2	2	2	2	2	2.0	2.0	24
3	2	2	2	2	2	2	2.1	2.1	2	2	2	2.1	2.1	2	**IZS**	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	24
4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**IZS**	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	24
5	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	**IZS**	2	1.9	1.9	2	2	2	2	2	2	2	2.2	2.2	2.0	24
6	2.1	2	2	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2	**IZS**	2	2	2	2	2	2	2.1	2.1	2	2	2	2.1	2.2	2.1	24
7	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**IZS**	2	2	2	2	2	2	2	2.1	2.1	2.1	2	2.1	2.1	2.1	2.1	24
8	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	**IZS**	2	2	2	2	2	2	2	2	2	2.1	2.1	2.2	2.1	2.2	2.2	2.1	24
9	2.2	2.3	2.5	2.6	2.6	2.7	2.9	2.9	**IZS**	2.5	2.4	2.3	2.2	2.2	2.2	2.1	2.3	2.2	2.4	2.4	2.5	2.5	2	1.9	2.9	2.4	24
10	1.9	2	2	1.9	1.9	1.9	2	**IZS**	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	2.0	24
11	2	2	2	2	2	2	**IZS**	1.9	1.9	2	2	2	2	2	2	2	2	2	**P**	**N**	**N**	**N**	**N**	**N**	2.0	2.0	18
12	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**C**	**C**	2.1	2.1	2.1	**C**	**C**	**C**	**C**	2	2	2	2	2.1	2.1	2.1	2.1	2.1	16
13	2.1	2.1	2.1	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.0	24
14	2	2	2	**IZS**	2	2.1	2.1	2	2	2	2	2	2	2	2	**M**	**C**	1.9	1.9	2	2	2.1	2	2	2.1	2.0	23
15	2	2	**IZS**	2	2	2.1	2.1	2.1	2	2	2	2	2.1	2	2	2	2	2	2	2	2.1	2	2	2	2.1	2.0	24
16	2.2	**IZS**	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2.1	2	2	2.1	2.1	2.1	2.3	2.1	24
17	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	1.9	1.9	1.9	1.9	2	2	**IZS**	2.1	2.0	24
18	2	2	2	2	2	2.1	2.1	2	2	2	1.9	**C**	1.9	1.9	2	2	2	1.9	2	2	2	2	**IZS**	2.1	2.1	2.0	24
19	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	**IZS**	**N**	**N**	2.1	2.0	22
20	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
21	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**C**	**C**	**C**	**C**	**IZS**	2.2	2.2	2.3	2.3	2.3	2.3	9
22	2.5	2.5	2.4	2.5	2.5	2.5	2.8	2.8	2.6	2.5	2.4	2.3	2.3	2.2	2.1	2.1	2.1	2.1	**IZS**	2.2	2.3	2.3	2.4	2.5	2.8	2.4	24
23	2.6	2.6	2.7	2.8	2.7	2.7	2.7	2.8	2.6	2.5	2.3	2.3	2.1	2.1	2.1	2.1	2.1	**IZS**	2.1	2.1	2	2	2	2.1	2.8	2.4	24
24	2.1	2.1	2.1	2	2	2.1	2.1	2	2.2	2.1	2.1	2.1	2	2	2	2	**IZS**	2.1	2.2	2.3	2.4	2.5	2.5	2.6	2.6	2.2	24
25	2.6	2.7	2.8	2.8	2.8	3.2	3.6	**3.7**	3.3	3	2.8	2.7	2.6	2.5	2.4	**IZS**	2.3	2.1	2	1.9	1.9	1.9	1.9	1.9	**3.7**	**2.6**	24
26	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	**P**	**P**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	1.9	1.9	12
27	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**C**	**C**	2	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	14
28	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	**IZS**	2	2	2	2	2	2	2.1	2.1	2.2	2.1	2.1	2.2	2.1	24
29	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	**IZS**	2	2	2	2	2.1	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.1	24
30	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	**IZS**	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.2	2.1	24
HOURLY MAX	2.6	2.7	2.8	2.8	2.8	3.2	3.6	3.7	3.3	3.0	2.8	2.7	2.6	2.5	2.4	2.1	2.3	2.3	2.4	2.4	2.5	2.5	2.5	2.6			
HOURLY AVG	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1			

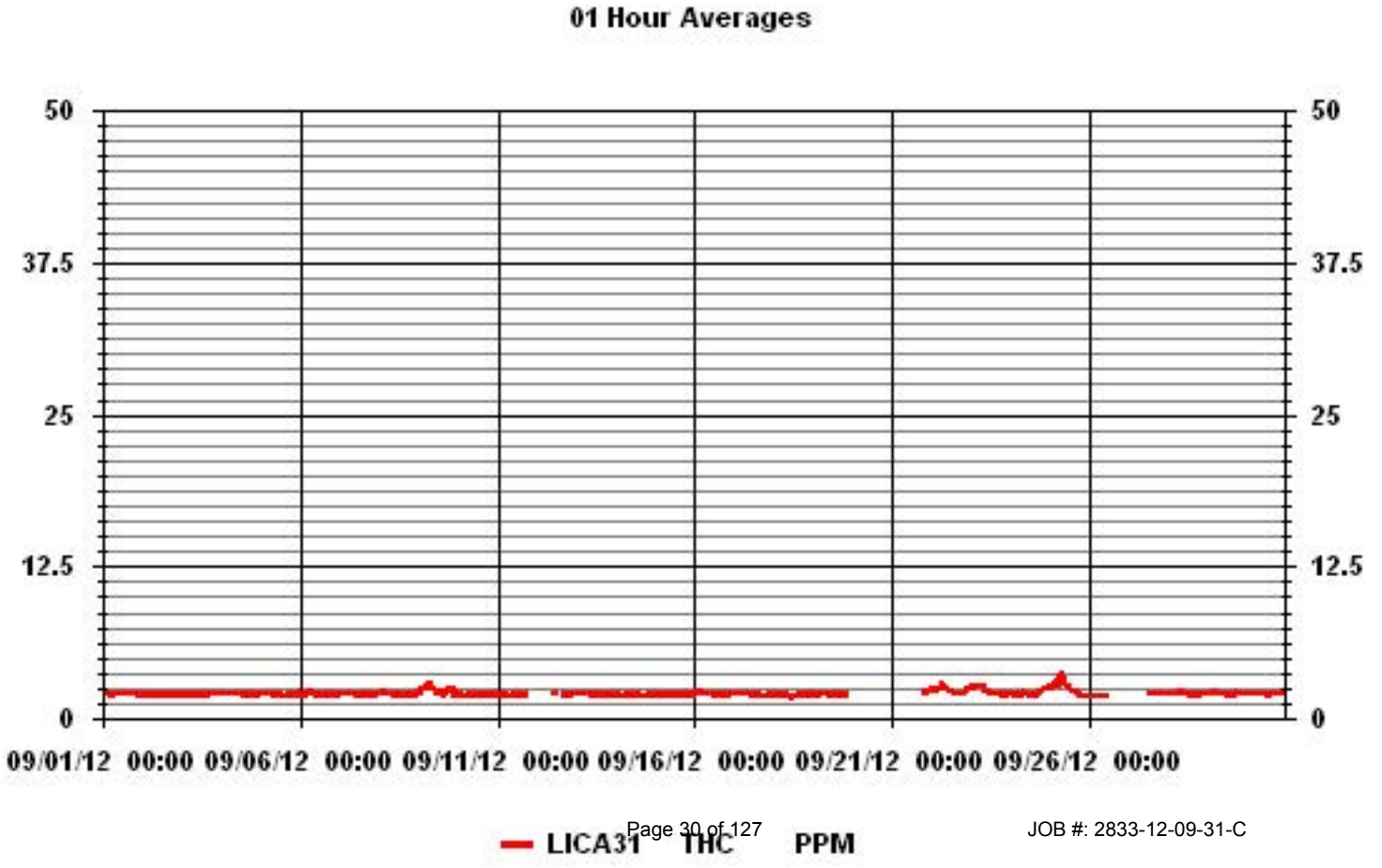
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	600						
MAXIMUM 1-HR AVERAGE:	3.7	PPM	@ HOUR(S)	7	ON DAY(S)	25	
MAXIMUM 24-HR AVERAGE:	2.6	PPM			ON DAY(S)	25	
					VAR- VARIOUS		
IZS CALIBRATION TIME:	28	HRS	OPERATIONAL TIME:			642	HRS
MONTHLY CALIBRATION TIME:	14	HRS	AMD OPERATION UPTIME:			89.2	%
STANDARD DEVIATION:	0.21		MONTHLY AVERAGE:			2.11	PPM



JOB #: 2833-12-09-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *ST. LINA*

SEPTEMBER 2012

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

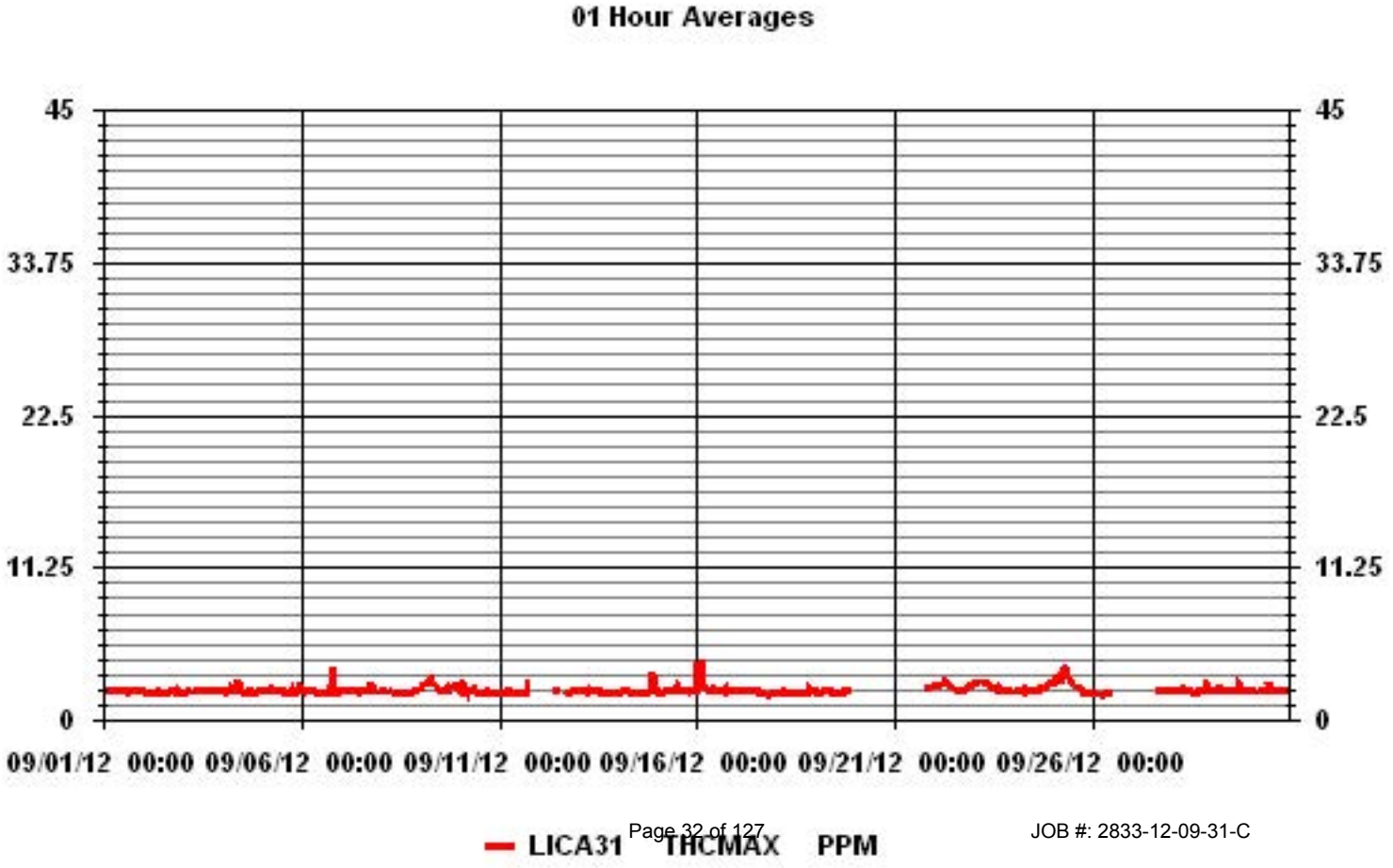
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2.1	2.1	2.2	2.1	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	**IZS**	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.1	24
2	2.1	2.1	2	2	2	2	2	2	2.1	2.2	2.2	2.1	2	2	2	**IZS**	2.1	2.2	2.2	2.1	2.3	2.1	2	2.1	2.3	2.1	24
3	2	2	2	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	24
4	2.3	2.2	2.1	2.3	2.2	2.5	2.3	2.4	2.2	2.2	3	2.2	2.2	**IZS**	2	2	2.1	2.1	2.1	2.1	2	2.1	2.1	2.1	3	2.2	24
5	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.2	2.1	2.1	2.1	**IZS**	2.1	2.1	2	2.1	2	2.3	2	2	2.2	2.2	2.5	2.5	2.1	24
6	2.5	2.3	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2	**IZS**	2.1	2	2.1	2	2	2	2.6	3.8	2	2	2	2.1	3.8	2.2	24
7	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	**IZS**	2	2.1	2.1	2.1	2.1	2.1	2.2	2.6	2.6	2.2	2.2	2.2	2.1	2.6	2.2	24
8	2.1	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.1	**IZS**	2	2	2	2	2	2	2	2	2	2.1	2.2	2.2	2.1	2.2	2.2	2.1	24
9	2.3	2.4	2.6	2.7	2.7	2.7	3	3.1	**IZS**	2.7	2.5	2.4	2.3	2.2	2.2	2.2	2.4	2.3	2.6	2.5	2.6	2.6	2.4	2.8	3.1	2.5	24
10	2.2	2.1	3	2.3	2.3	2	2.3	**IZS**	2.3	2.4	2.2	2.1	2	2	2	2.1	2	2.1	2.1	2	2	2	2	2	3	2.2	24
11	2	2	2	2	2.1	2.3	**IZS**	2.1	2	2	2	2	2	2	2	2	2	2.7	**P**	**P**	**N**	**N**	**N**	**N**	2.7	2.1	18
12	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**C**	**C**	2.1	2.1	2.1	**C**	**C**	**C**	**C**	2.1	2	2.1	2.2	2.2	2.1	2.1	2.2	2.1	16
13	2.1	2.1	2.1	2.1	**IZS**	2.1	2.3	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2.1	2	2	2.3	2.1	24
14	2	2	2	**IZS**	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	**M**	**C**	2	2	2.1	2.2	3.5	2.3	2.1	3.5	2.1	23
15	2.2	2.1	**IZS**	2	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.6	2.4	2.1	2.1	2.1	2.1	2.2	2.1	**P**	2.1	2.1	2.1	2.6	2.2	23
16	4.1	**IZS**	3.4	**4.5**	2.6	2.5	2.3	2.1	2.1	2.2	2.3	2.3	2.2	2.2	2.2	2.1	2.2	2.1	2.4	2.1	2.1	2.1	2.1	2.1	**4.5**	2.4	24
17	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	1.9	2	2	2	**IZS**	2.1	2.1	24
18	2	2	2	2	2.1	2.1	2.1	2	2	2	**C**	**C**	2	2	2	2	2	2	2	2	2.5	2.4	**IZS**	2.3	2.5	2.1	24
19	2.1	2.2	2.1	2	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2	2	2	2	2	2.2	2	2.1	2.1	2.1	**IZS**	**N**	**N**	2.2	2.1	22
20	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
21	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**C**	**C**	**C**	**C**	**C**	**IZS**	2.3	2.3	2.4	2.4	2.4	2.4	9
22	2.6	2.6	2.5	2.6	2.6	2.6	2.9	2.9	2.7	2.6	2.5	2.4	2.4	2.3	2.2	2.2	2.2	2.2	**IZS**	2.3	2.4	2.5	2.5	2.6	2.9	2.5	24
23	2.7	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.4	2.4	2.3	2.3	2.5	2.3	2.2	**IZS**	2.2	2.2	2.1	2.1	2.1	2.1	2.8	2.5	24
24	2.1	2.2	2.2	2.1	2.1	2.2	2.1	2.4	2.4	2.2	2.2	2.2	2.1	2.1	2.1	2.1	**IZS**	2.3	2.3	2.4	2.6	2.6	2.8	2.7	2.8	2.3	24
25	2.7	3.1	3.1	2.9	2.9	3.5	3.8	3.9	3.6	3.2	2.9	2.9	2.7	2.6	2.5	**IZS**	2.4	2.4	2	2	1.9	1.9	1.9	1.9	3.9	2.7	24
26	1.9	1.9	1.9	1.9	1.9	2	1.9	2	2	1.9	1.9	1.9	**P**	**P**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	2	1.9	12
27	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**C**	**C**	2.1	**IZS**	2.1	**N**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	13
28	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	**IZS**	2.1	2	2	**N**	2.1	2.1	2.1	2.1	2.9	2.1	2.1	2.9	2.2	23
29	2.1	2.3	2.2	2.2	2.4	2.3	2.3	2.2	2.3	2.2	2.2	**IZS**	2.1	2.1	2.1	2.1	2.9	2.8	2.4	2.4	2.2	2.3	2.2	2.1	2.9	2.3	24
30	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	**IZS**	2.6	2.2	2.1	2.1	2.1	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.6	2.2	24
HOURLY MAX	4.1	3.1	3.4	4.5	2.9	3.5	3.8	3.9	3.6	3.2	3.0	2.9	2.7	2.6	2.5	2.3	2.9	2.8	2.6	3.8	2.6	3.5	2.8	2.8			
HOURLY AVG	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	596						
MAXIMUM INSTANTANEOUS VALUE:	4.5	PPM	@ HOUR(S)	3	ON DAY(S)	16	
IZS CALIBRATION TIME:	28	HRS	OPERATIONAL TIME:			639	HRS
MONTHLY CALIBRATION TIME:	16	HRS					
STANDARD DEVIATION:	0.30						



JOB #: 2833-12-09-31-C

LICA31
THC / WDR Joint Frequency Distribution (Percent)

September 2012

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	3.83	1.83	1.00	2.17	2.67	2.00	1.16	2.83	10.68	9.01	8.68	9.51	12.85	11.35	12.52	7.01	99.16
< 10.0	.00	.00	.00	.00	.00	.00	.16	.00	.33	.16	.16	.00	.00	.00	.00	.00	.83
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.83	1.83	1.00	2.17	2.67	2.00	1.33	2.83	11.01	9.18	8.84	9.51	12.85	11.35	12.52	7.01	

Calm : .00 %

Total # Operational Hours : 599

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	11	6	13	16	12	7	17	64	54	52	57	77	68	75	42	594
< 10.0							1		2	1	1						5
< 50.0																	
>= 50.0																	
Totals	23	11	6	13	16	12	8	17	66	55	53	57	77	68	75	42	

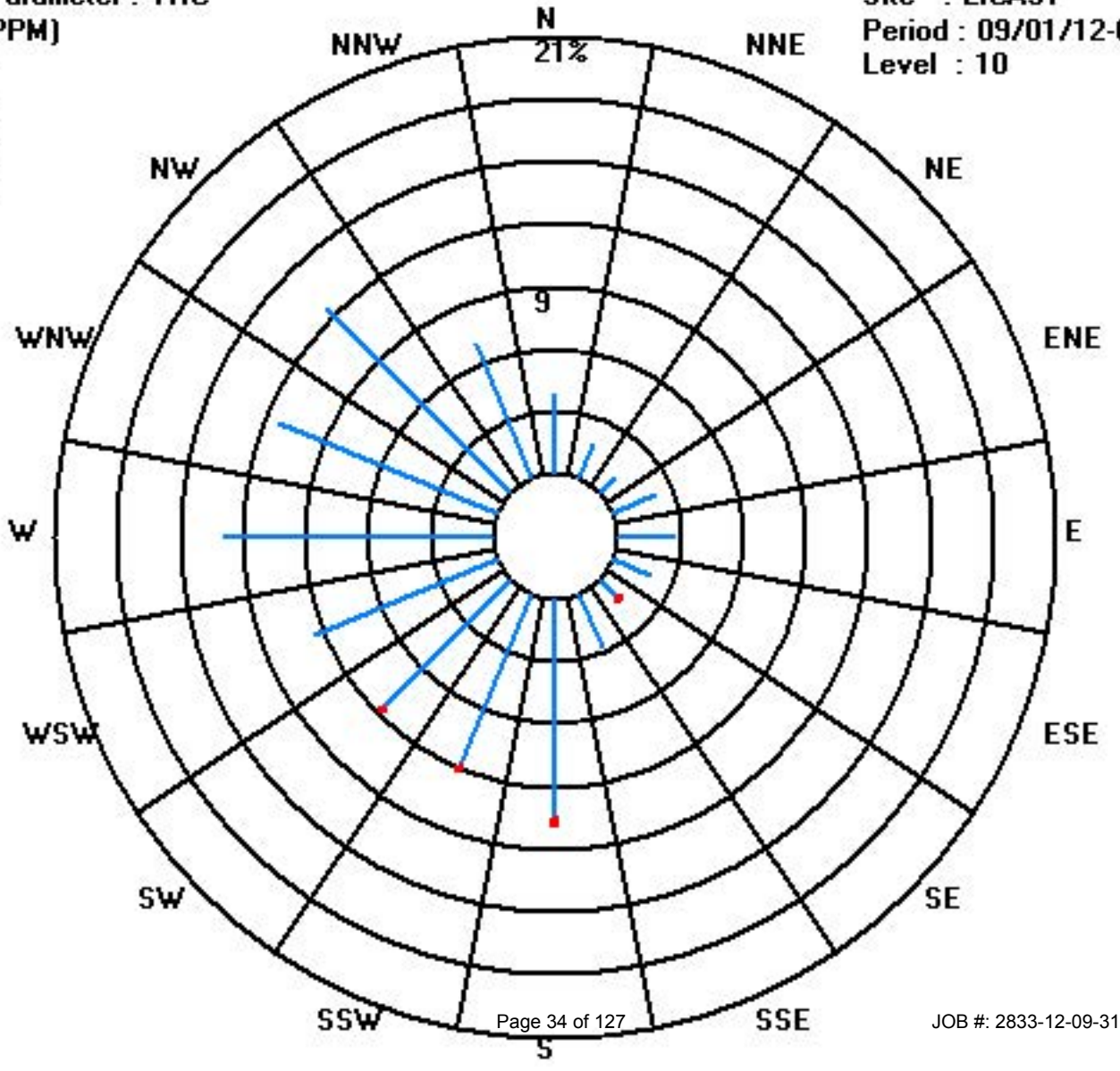
Calm : .00 %

Total # Operational Hours : 599

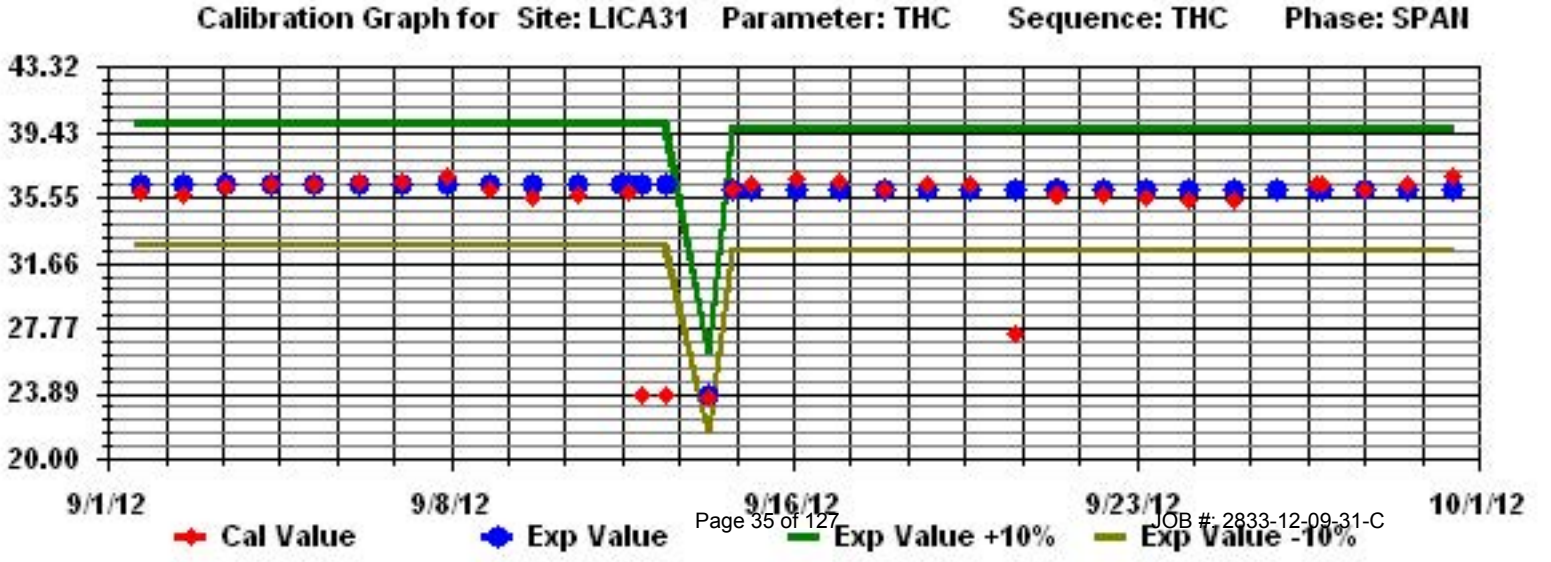
Logger : 31 Parameter : THC
Class Limits (PPM)

>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA31
Period : 09/01/12-09/30/12
Level : 10



JOB #: 2833-12-09-31-C


Calibration Graph for Site: LICA31 Parameter: THC Sequence: THC Phase: SPAN
43.32
39.43
35.55
31.66
27.77
23.89
20.00
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *ST. LINA*

SEPTEMBER 2012

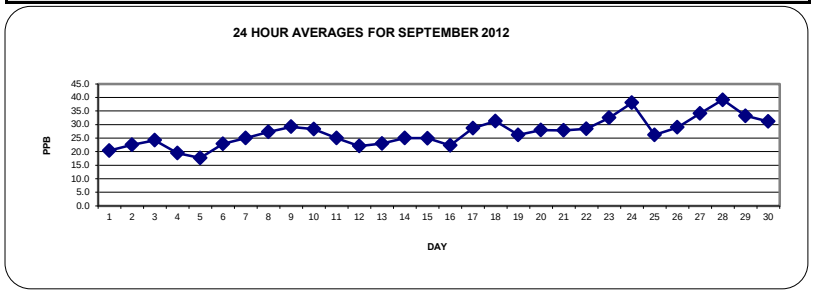
OZONE (O_3) hourly averages in ppb

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	15	15	16	17	18	19	20	19	16	16	16	18	22	25	24	22	**IZS**	20	21	21	24	28	30	27	30	20.4	24
2	23	22	26	24	22	21	20	23	22	24	28	29	23	22	24	**IZS**	23	22	27	26	17	17	19	15	29	22.6	24
3	18	18	19	19	19	18	18	21	23	26	27	28	29	29	**IZS**	30	30	30	28	28	28	26	22	22	30	24.2	24
4	24	24	23	21	18	17	16	15	14	14	14	16	19	**IZS**	23	24	24	23	21	21	21	21	18	17	24	19.5	24
5	14	11	15	15	15	11	11	13	12	13	13	17	**IZS**	24	25	23	23	21	21	25	22	21	21	20	25	17.7	24
6	19	20	22	17	7	9	9	8	13	17	21	**IZS**	27	28	30	33	36	34	30	30	29	30	30	27	36	22.9	24
7	25	23	21	20	19	15	13	13	14	18	**IZS**	25	25	24	32	36	37	35	33	33	33	32	28	22	37	25.0	24
8	20	20	18	19	21	22	19	20	22	**IZS**	31	33	33	34	36	36	35	33	31	28	28	29	30	29	36	27.3	24
9	28	26	22	18	19	18	13	12	**IZS**	21	28	32	35	39	39	41	37	37	32	33	33	37	36	35	41	29.2	24
10	37	35	39	37	33	30	26	**IZS**	28	28	26	28	28	33	29	27	25	22	22	23	20	23	25	27	39	28.3	24
11	26	25	25	25	27	24	**IZS**	22	21	21	21	24	24	24	25	25	26	26	**P**	34	27	27	26	26	34	25.0	23
12	25	24	23	21	19	**IZS**	19	18	20	21	23	24	26	**C**	**C**	27	28	27	24	23	19	19	16	17	28	22.0	24
13	14	14	16	14	**IZS**	18	16	15	17	19	23	25	26	27	27	29	31	31	31	31	28	26	25	25	31	23.0	24
14	25	24	23	**IZS**	20	18	17	17	16	16	19	23	29	**C**	**C**	**C**	**C**	30	29	30	35	36	35	33	36	25.0	24
15	32	33	**IZS**	30	30	27	24	23	22	23	23	24	26	28	29	29	28	27	25	24	20	16	15	16	33	25.0	24
16	17	**IZS**	16	16	15	16	12	14	14	19	22	28	28	28	28	29	30	29	30	29	27	23	22	21	30	22.3	24
17	**IZS**	20	20	21	22	21	20	20	21	24	26	30	34	38	39	38	38	36	34	32	32	33	32	**IZS**	39	28.7	24
18	29	29	28	27	26	20	23	30	33	**C**	**C**	39	40	40	39	40	36	33	31	31	29	27	**IZS**	26	40	31.2	24
19	25	24	24	21	21	19	12	12	13	16	20	24	31	35	38	41	38	34	33	32	31	**IZS**	29	28	41	26.1	24
20	27	27	27	26	25	25	22	21	23	25	28	31	32	34	34	33	33	30	31	31	**IZS**	28	24	26	34	28.0	24
21	26	24	23	23	23	20	19	19	21	25	29	33	34	36	37	38	35	31	30	**IZS**	31	28	28	27	38	27.8	24
22	25	25	24	22	22	21	19	20	21	22	26	29	32	37	39	39	40	38	**IZS**	33	33	31	29	27	40	28.4	24
23	25	24	22	21	21	20	19	17	19	23	29	33	44	45	42	42	42	**IZS**	41	44	44	44	44	42	45	32.5	24
24	37	35	37	40	38	32	38	38	23	28	36	40	44	45	45	44	**IZS**	44	42	39	42	41	35	32	45	38.0	24
25	28	24	22	19	15	16	16	17	21	24	29	34	38	42	45	**IZS**	45	37	25	22	22	21	20	20	45	26.2	24
26	22	24	25	25	25	24	25	23	24	26	30	31	**P**	**P**	**IZS**	33	34	33	34	34	34	34	35	33	35	29.0	22
27	33	32	32	32	31	29	25	24	25	26	30	34	37	**IZS**	45	44	44	41	38	37	37	36	36	35	45	34.0	24
28	33	33	32	31	33	33	30	29	30	34	35	38	**IZS**	48	49	**51**	50	48	46	46	44	42	43	42	**51**	**39.1**	24
29	41	40	35	32	28	26	25	24	25	25	28	**IZS**	35	36	39	39	40	39	38	37	35	33	33	31	41	33.2	24
30	30	30	29	28	27	26	26	25	26	28	**IZS**	33	35	35	36	35	35	36	35	34	33	32	32	31	36	31.2	24
HOURLY MAX	41	40	39	40	38	33	38	38	33	34	36	40	44	48	49	51	50	48	46	46	44	44	44	42			
HOURLY AVG	25.6	25.0	24.3	23.5	22.7	21.2	19.7	19.7	20.7	22.2	25.2	28.7	31.0	33.4	34.5	34.4	34.2	32.0	30.8	30.7	29.6	29.0	28.2	26.9			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



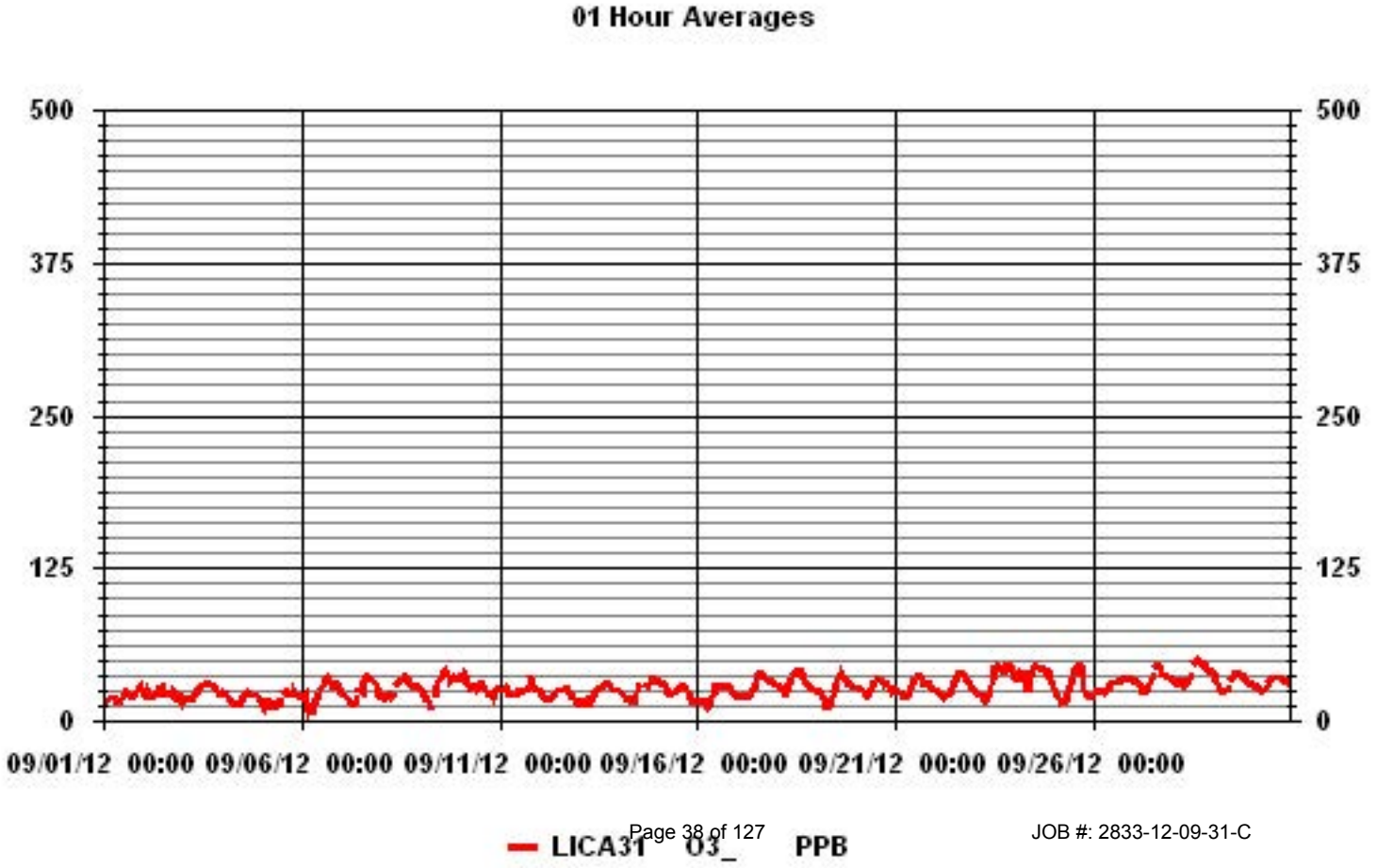
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	678					
MAXIMUM 1-HR AVERAGE:	51	PPB	@ HOUR(S)	15	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	39.1	PPB			ON DAY(S)	28
					VAR-VARIOUS	

IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	717	HRS
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	99.6	%
STANDARD DEVIATION:	7.99		MONTHLY AVERAGE:	27.1	PPB

JOB #: 2833-12-09-31-C



JOB #: 2833-12-09-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *ST. LINA*

SEPTEMBER 2012

OZONE MAX instantaneous maximum in ppb

MST

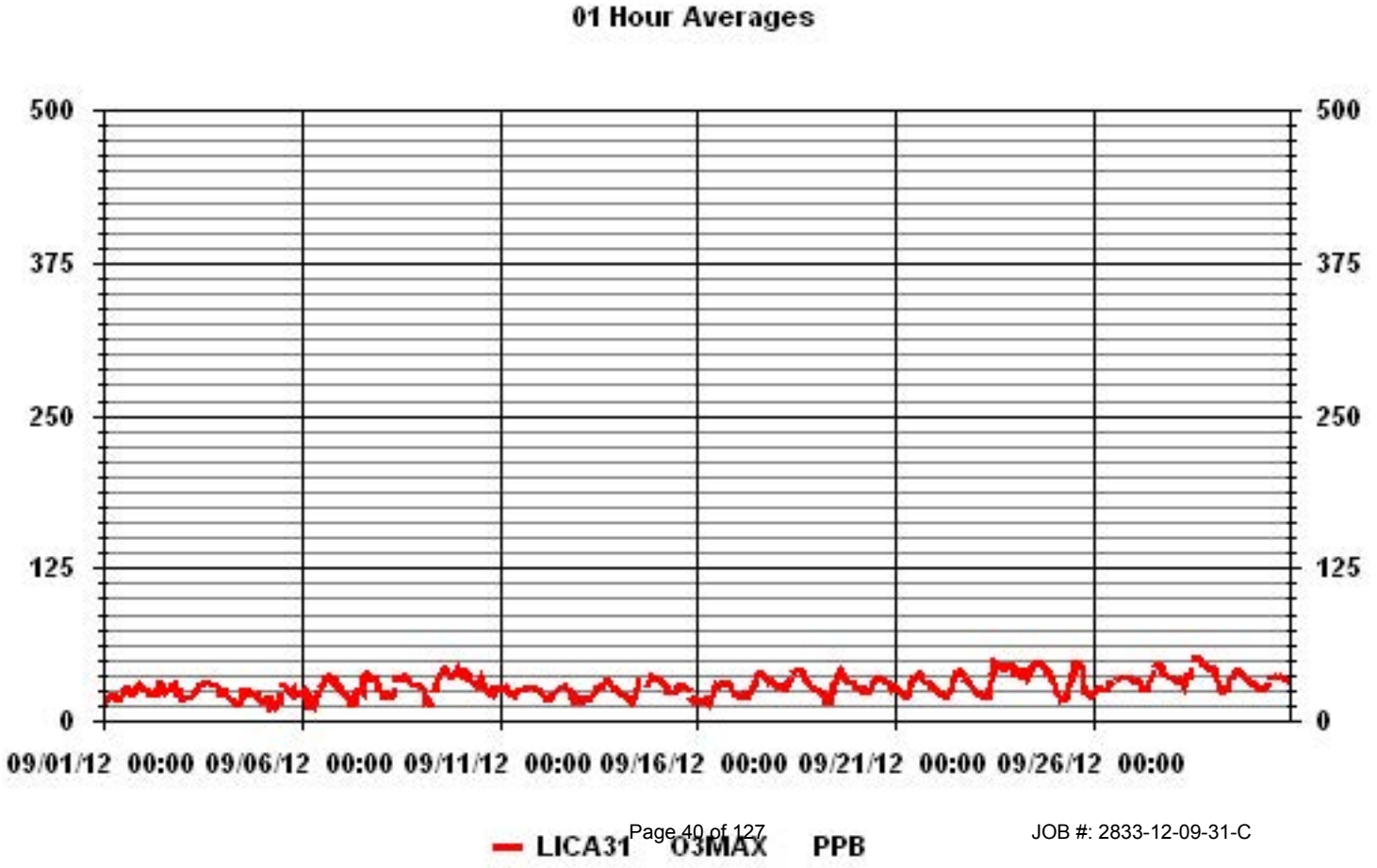
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	17	16	17	18	19	20	21	20	18	18	18	20	25	25	26	27	**IZS**	22	23	23	27	29	31	30	31	22.2	24
2	25	25	26	25	23	22	22	24	23	26	30	30	26	24	26	**IZS**	26	27	30	31	19	23	24	16	31	24.9	24
3	19	19	19	19	19	19	20	23	25	28	28	29	30	30	**IZS**	31	31	31	29	29	29	29	23	22	31	25.3	24
4	25	25	24	22	19	18	17	16	15	14	15	17	24	**IZS**	24	26	25	23	22	22	21	22	19	18	26	20.6	24
5	16	16	16	18	19	12	13	14	12	14	15	20	**IZS**	29	29	25	24	23	25	27	22	23	22	22	29	19.8	24
6	22	21	25	23	10	13	13	11	14	20	24	**IZS**	28	29	32	35	37	37	32	32	30	33	31	29	37	25.3	24
7	25	24	22	21	20	17	15	14	15	23	**IZS**	26	27	25	36	37	39	38	34	34	34	35	32	27	39	27.0	24
8	26	21	20	20	23	23	20	21	25	**IZS**	34	34	34	35	37	36	36	35	32	30	29	29	30	29	37	28.7	24
9	28	27	27	18	20	19	15	14	**IZS**	26	31	34	39	41	41	45	41	40	35	35	37	40	43	39	45	32.0	24
10	40	38	40	40	35	36	36	**IZS**	32	30	28	29	32	35	31	28	26	24	23	25	22	24	27	28	40	30.8	24
11	27	26	26	26	28	25	**IZS**	22	22	21	23	25	25	25	25	26	27	27	**P**	**P**	27	27	27	26	28	25.4	22
12	25	24	23	22	19	**IZS**	20	19	21	22	24	26	27	**C**	**C**	28	29	28	26	25	21	24	18	19	29	23.3	24
13	17	16	17	16	**IZS**	19	17	17	19	22	25	26	27	28	28	30	32	32	32	32	30	27	26	26	32	24.4	24
14	26	24	23	**IZS**	21	20	18	18	16	18	20	26	33	**C**	**C**	**C**	**C**	**C**	30	32	37	37	35	34	37	26.0	24
15	33	33	**IZS**	31	30	29	24	24	23	23	23	25	27	29	30	29	30	28	27	26	**P**	18	16	16	33	26.1	23
16	18	**IZS**	17	16	16	17	17	15	18	20	26	30	28	29	30	30	31	30	31	30	30	25	23	22	31	23.9	24
17	**IZS**	21	20	21	23	21	20	21	23	26	28	33	37	39	40	39	38	37	35	32	33	34	32	**IZS**	40	29.7	24
18	29	30	29	28	28	23	28	32	34	**C**	**C**	40	41	41	41	42	38	34	32	32	30	28	**IZS**	27	42	32.7	24
19	26	25	25	23	22	22	15	15	15	19	22	30	33	38	41	43	41	36	34	33	32	**IZS**	31	28	43	28.2	24
20	27	27	27	27	25	26	23	23	24	26	31	32	34	35	35	34	34	33	33	32	**IZS**	30	26	28	35	29.2	24
21	28	25	25	24	24	22	21	20	23	27	32	35	35	37	40	39	37	34	32	**IZS**	32	29	28	28	40	29.4	24
22	26	26	25	23	22	22	20	20	22	24	27	31	35	39	40	41	41	39	**IZS**	34	33	32	30	28	41	29.6	24
23	26	25	23	22	22	21	20	20	20	27	32	38	49	48	45	44	44	**IZS**	42	45	45	45	44	44	49	34.4	24
24	39	38	39	42	41	34	41	41	35	37	40	44	47	46	46	46	**IZS**	46	45	41	43	42	39	34	47	41.1	24
25	32	26	24	21	17	18	18	19	23	28	31	38	39	47	47	**IZS**	47	43	30	23	23	22	20	21	47	28.6	24
26	23	25	26	26	26	26	26	25	25	29	31	32	**P**	**P**	**IZS**	34	35	35	35	35	35	35	36	35	36	30.2	22
27	34	32	33	33	33	30	27	26	26	28	33	36	40	**IZS**	46	45	44	44	40	38	37	37	36	35	46	35.3	24
28	35	34	34	33	34	34	32	29	33	36	36	41	**IZS**	51	51	**52**	51	50	47	47	46	43	44	43	**52**	40.7	24
29	43	43	38	33	30	27	26	25	26	26	31	**IZS**	36	39	40	40	41	40	39	38	36	34	33	32	43	34.6	24
30	31	30	30	29	28	27	26	26	27	30	**IZS**	35	35	36	37	36	36	37	35	35	34	33	33	32	37	32.1	24
HOURLY MAX	43	43	40	42	41	36	41	41	35	37	40	44	49	51	51	52	51	50	47	47	46	45	44	44			
HOURLY AVG	27.2	26.3	25.5	24.8	24.0	22.8	21.8	21.2	22.6	24.6	27.3	30.8	33.1	35.2	36.3	35.9	35.6	34.0	32.5	32.1	31.2	30.7	29.6	28.2			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	675						
MAXIMUM INSTANTANEOUS VALUE:	52	PPB	@ HOUR(S)	15	ON DAY(S)	28	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:			715	HRS
MONTHLY CALIBRATION TIME:	9	HRS					
STANDARD DEVIATION:	8.09						



JOB #: 2833-12-09-31-C

LICA31
O3_ / WDR Joint Frequency Distribution (Percent)

September 2012

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	3.53	2.06	1.17	2.06	2.50	2.94	1.47	2.65	10.76	9.14	7.81	8.55	12.97	11.94	13.27	6.78	99.70
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.14	.14	.00	.00	.00	.00	.00	.00	.29
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.53	2.06	1.17	2.06	2.50	2.94	1.47	2.65	10.91	9.29	7.81	8.55	12.97	11.94	13.27	6.78	

Calm : .00 %

Total # Operational Hours : 678

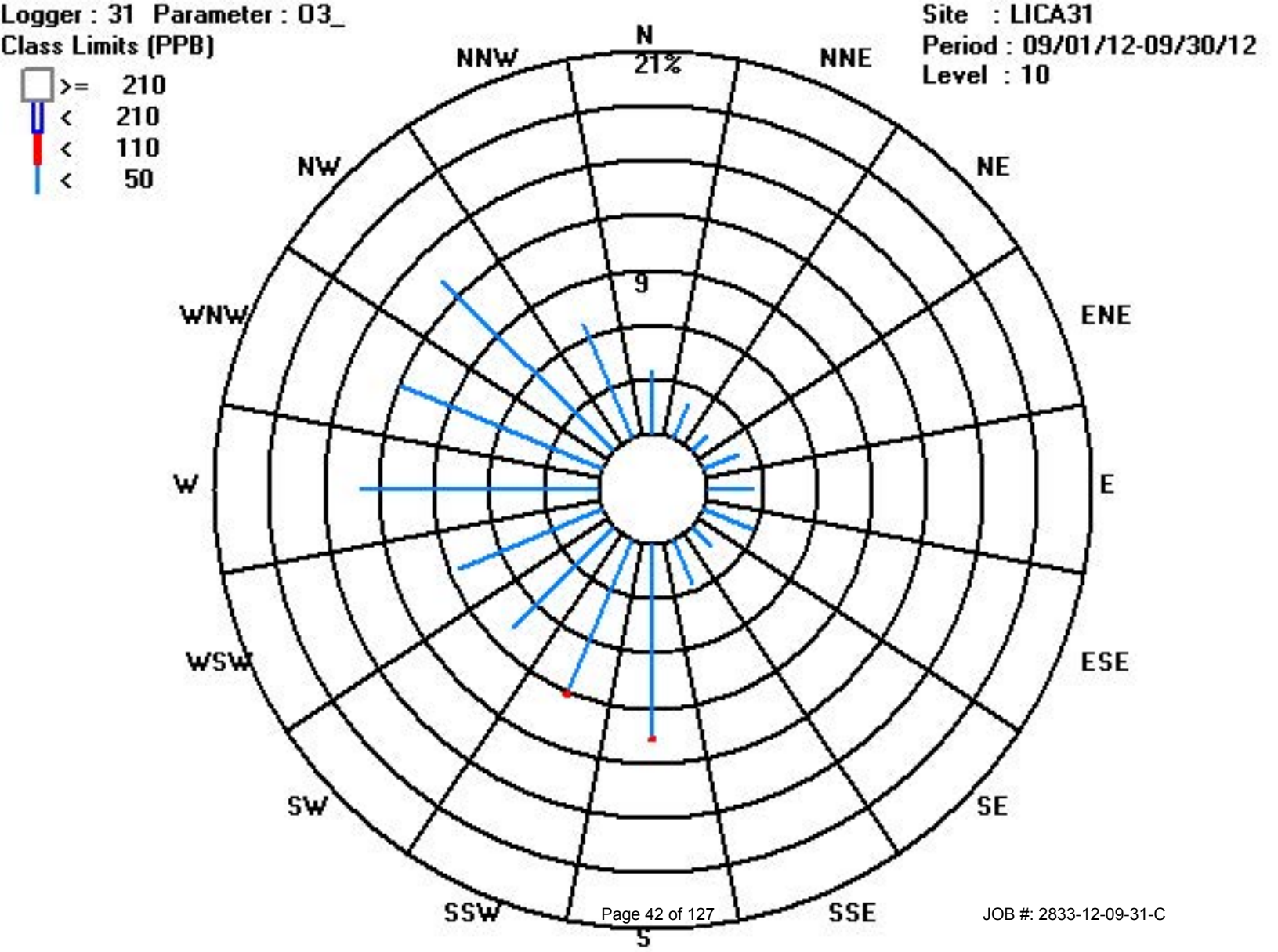
Distribution By Samples

Direction

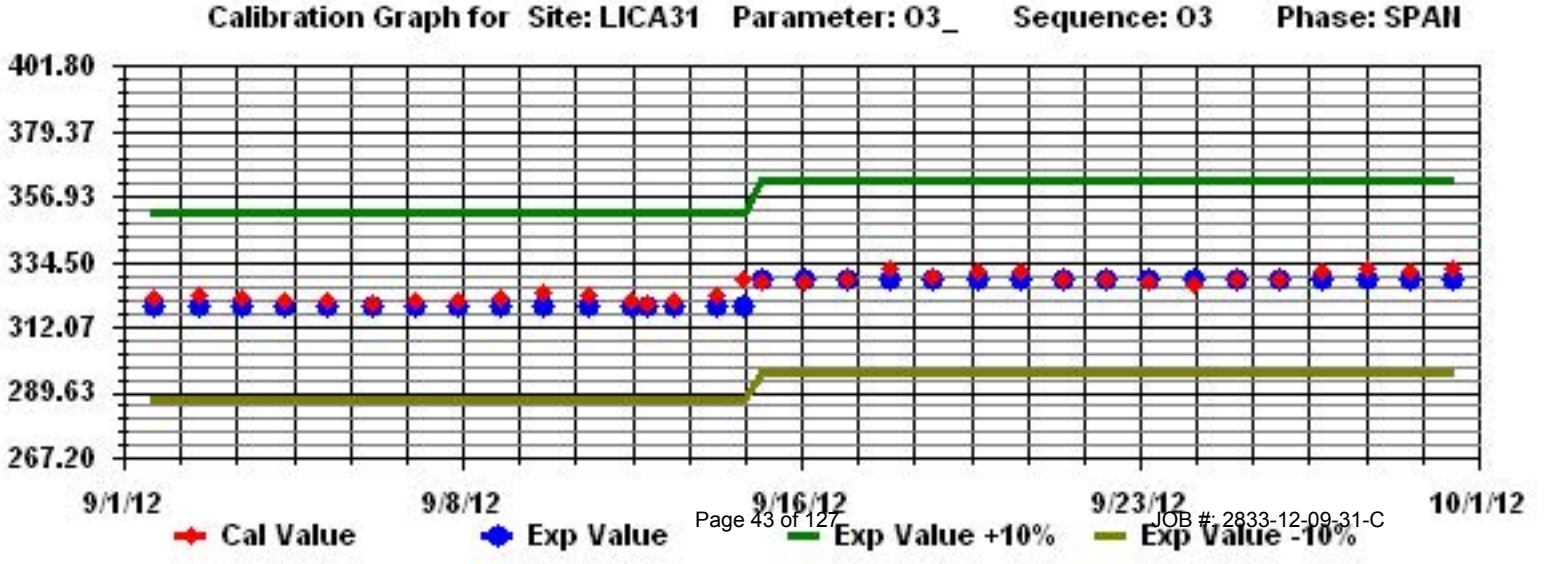
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	24	14	8	14	17	20	10	18	73	62	53	58	88	81	90	46	676
< 110									1	1							2
< 210																	
>= 210																	
Totals	24	14	8	14	17	20	10	18	74	63	53	58	88	81	90	46	

Calm : .00 %

Total # Operational Hours : 678



JOB #: 2833-12-09-31-C


Calibration Graph for Site: LICA31 Parameter: O3_ Sequence: O3 Phase: SPAN
401.80
379.37
356.93
334.50
312.07
289.63
267.20
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 2012

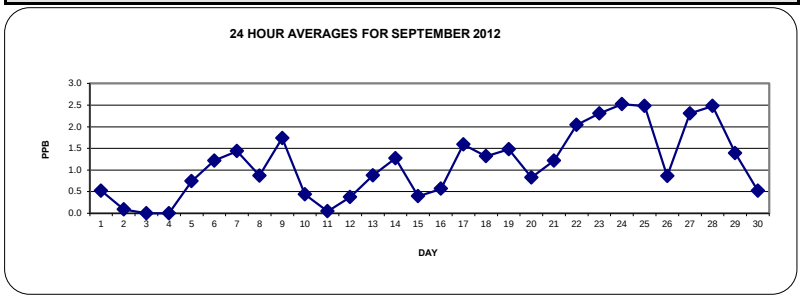
NITROGEN DIOXIDE hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	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	1	0	0	0	0	0	0	0	1	0	1	0	1	1	**IZS**	0	1	1	1	1	1	1	1	0.5	24
2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	1	0.1	24
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0.0	24
5	1	1	1	1	2	2	2	1	1	1	1	1	**IZS**	0	0	0	0	0	1	0	0	0	0	1	2	0.7	24
6	1	1	1	1	1	2	2	1	1	1	1	**IZS**	0	0	0	1	1	1	2	2	2	2	2	2	2	1.2	24
7	2	2	2	2	3	3	3	2	2	2	**IZS**	0	1	1	1	1	0	1	1	1	1	0	0	2	3	1.4	24
8	1	2	3	3	2	1	1	1	0	**IZS**	0	0	0	0	0	0	0	0	1	1	1	1	1	1	3	0.9	24
9	1	2	2	1	2	2	4	4	**IZS**	1	1	1	1	1	1	1	1	1	2	3	3	3	1	1	4	1.7	24
10	0	0	0	0	0	1	4	**IZS**	0	1	1	0	1	0	0	1	0	0	1	0	0	0	0	0	4	0.4	24
11	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	**P**	1	0	0	0	0	1	0.0	23
12	0	0	0	0	0	**IZS**	0	0	0	**C**	**C**	**M**	**M**	**M**	**M**	**M**	0	1	1	0	1	1	1	1	1	0.4	19
13	0	0	1	1	**IZS**	2	2	1	2	1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	1	1	1	1	2	0.9	24
14	1	1	1	**IZS**	1	1	2	2	2	2	2	3	2	3	1	0	**M**	0	0	0	1	1	1	1	3	1.3	23
15	1	0	**IZS**	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	1	1	2	0.4	24
16	0	**IZS**	0	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	0.6	24
17	**IZS**	3	3	3	2	2	3	2	1	3	3	2	2	1	0	0	0	0	0	1	1	1	2	**IZS**	3	1.6	24
18	2	2	3	3	4	**6**	4	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	**6**	1.3	24
19	1	1	0	0	0	1	3	5	4	2	2	2	2	2	4	2	0	0	1	0	0	**IZS**	1	1	5	1.5	24
20	0	0	0	1	1	1	1	1	1	0	1	0	0	0	0	1	0	3	1	1	**IZS**	2	3	1	3	0.8	24
21	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	**IZS**	1	1	2	1	2	1.2	24
22	1	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	**IZS**	1	2	2	3	3	3	2.0	24
23	3	3	3	3	2	3	4	4	3	2	3	2	1	2	3	2	2	**IZS**	2	1	1	1	1	2	4	2.3	24
24	3	3	2	2	2	3	2	3	3	5	3	2	2	2	2	1	**IZS**	1	1	3	3	2	4	4	5	**2.5**	24
25	3	2	3	4	4	4	4	5	4	3	2	2	2	3	2	**IZS**	2	2	1	1	1	1	1	1	5	**2.5**	24
26	1	0	0	1	1	1	1	2	1	1	1	1	**P**	**P**	**IZS**	0	0	1	0	1	0	1	1	3	3	0.9	22
27	2	2	2	2	2	2	4	3	3	3	2	3	3	**IZS**	2	1	1	1	2	2	3	2	3	3	4	2.3	24
28	2	2	3	3	3	3	3	3	3	4	2	2	**IZS**	1	2	2	2	2	2	2	3	3	3	2	4	2.5	24
29	3	3	3	2	2	2	2	2	2	1	2	**IZS**	1	0	0	0	1	0	1	1	1	2	1	0	3	1.4	24
30	1	0	0	1	0	1	1	1	1	0	**IZS**	0	0	0	0	0	0	0	0	0	1	1	2	2	2	0.5	24
HOURLY MAX	3	3	3	4	4	6	4	5	4	5	3	3	3	3	4	2	2	3	2	3	3	3	4	4			
HOURLY AVG	1.1	1.2	1.3	1.3	1.3	1.7	2.0	1.7	1.4	1.4	1.2	0.9	0.9	0.8	0.8	0.7	0.5	0.6	0.9	0.8	1.0	1.1	1.3	1.3			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



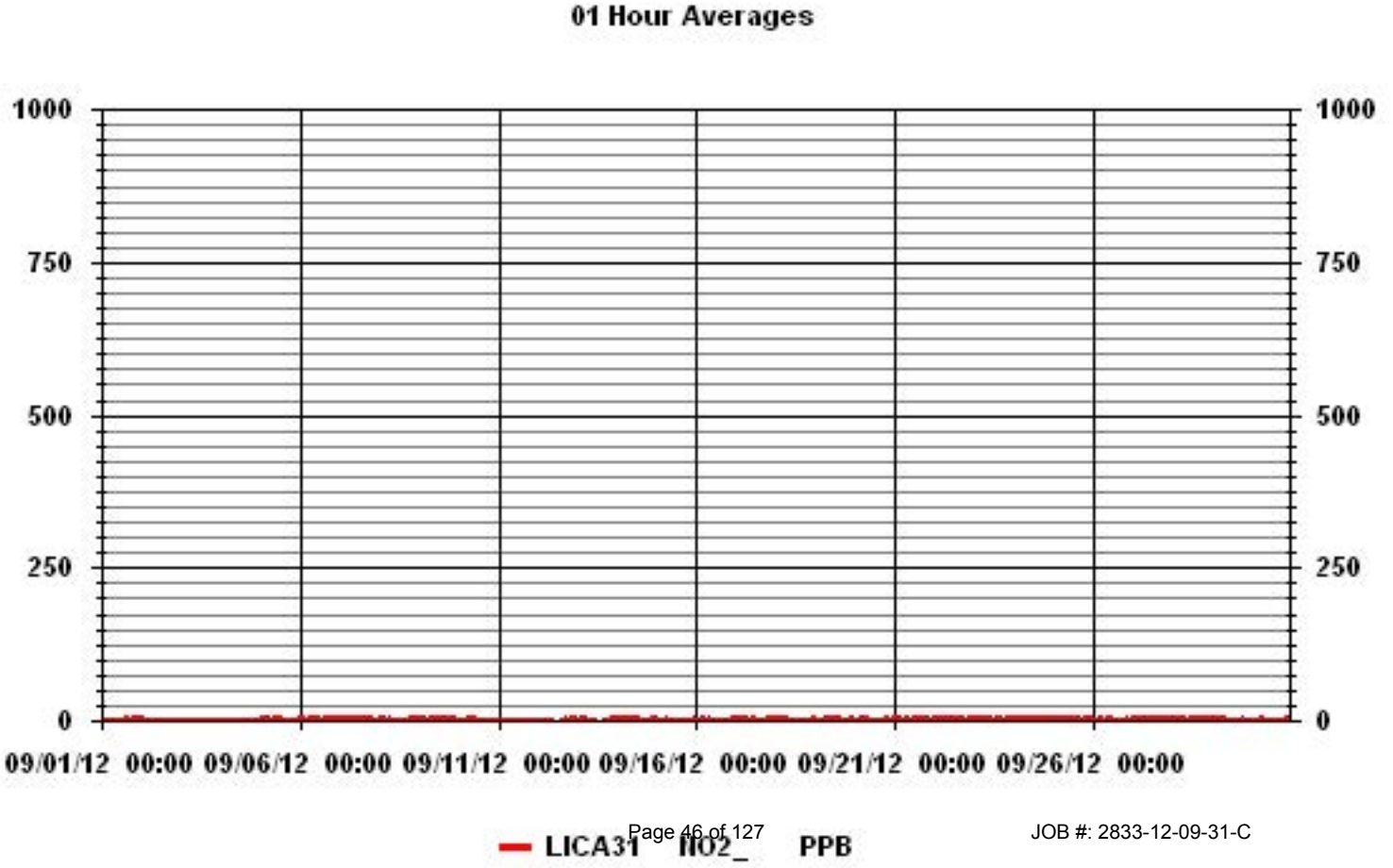
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	424					
MAXIMUM 1-HR AVERAGE:	6	PPB	@ HOUR(S)	5	ON DAY(S)	18
MAXIMUM 24-HR AVERAGE:	2.5	PPB			ON DAY(S)	24, 25

IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	711	HRS
MONTHLY CALIBRATION TIME:	13	HRS	AMD OPERATION UPTIME:	98.8	%
STANDARD DEVIATION:	1.14		MONTHLY AVERAGE:	1.14	PPB

JOB #: 2833-12-09-31-C



JOB #: 2833-12-09-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *ST. LINA*

SEPTEMBER 2012

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	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	**IZS**	1	2	2	2	3	2	3	3	2.0	24
2	3	3	2	1	2	2	1	2	2	2	1	1	1	2	1	**IZS**	1	1	1	1	1	1	1	1	3	1.5	24
3	1	1	2	2	1	1	2	1	1	1	2	2	1	1	**IZS**	0	1	1	1	1	1	1	2	1	2	1.2	24
4	1	1	1	1	2	1	1	2	2	1	1	2	1	**IZS**	1	1	2	1	1	1	2	2	2	1	2	1.3	24
5	3	3	2	2	3	4	4	3	3	2	2	2	**IZS**	1	1	2	2	1	3	1	2	2	2	2	4	2.3	24
6	3	3	2	2	3	3	4	2	3	2	2	**IZS**	1	2	3	2	2	2	6	3	5	5	4	3	6	2.9	24
7	3	4	3	4	6	4	5	3	4	3	**IZS**	1	1	1	2	2	2	2	4	3	3	2	2	3	6	2.9	24
8	3	3	5	5	5	2	3	3	2	**IZS**	1	1	2	2	1	1	1	2	2	3	3	2	2	3	5	2.5	24
9	3	3	3	3	3	4	5	5	**IZS**	2	2	2	2	3	4	2	2	2	4	5	4	4	4	4	5	3.3	24
10	2	2	1	2	2	2	33	**IZS**	3	18	2	2	9	1	2	2	2	1	10	1	2	2	1	1	33	4.5	24
11	2	1	2	2	1	1	**IZS**	1	1	1	13	1	1	2	1	1	1	1	**P**	**P**	2	2	1	1	13	1.9	22
12	1	1	2	2	1	**IZS**	1	1	2	**C**	**C**	**M**	**M**	**M**	**M**	**M**	2	2	2	2	2	2	2	2	2	1.7	19
13	2	2	2	3	**IZS**	3	4	3	4	3	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2	2	2	3	3	3	3	4	2.8	24
14	3	3	3	**IZS**	3	3	4	3	3	4	4	4	3	4	4	2	**M**	2	2	2	2	2	2	3	4	3.0	23
15	2	2	**IZS**	0	1	2	1	1	1	1	1	3	1	1	1	1	1	5	23	1	**P**	1	4	1	23	2.5	23
16	1	**IZS**	1	1	2	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	3	3	1.4	24
17	**IZS**	3	3	3	4	3	3	2	3	3	5	3	2	2	1	1	1	1	1	2	2	1	2	**IZS**	5	2.3	24
18	2	2	3	4	14	7	5	**C**	**C**	**C**	**C**	0	1	0	0	0	1	1	0	1	1	1	**IZS**	1	14	2.3	24
19	3	1	1	1	1	1	5	10	5	4	3	4	2	3	5	4	1	1	2	2	3	**IZS**	1	1	10	2.8	24
20	1	1	1	2	2	2	12	1	2	1	2	1	1	1	1	11	1	5	3	5	**IZS**	4	4	2	12	2.9	24
21	2	2	2	2	2	3	4	3	2	2	2	2	1	1	2	2	1	2	2	**IZS**	1	2	2	2	4	2.0	24
22	2	2	2	2	2	2	3	3	2	2	2	3	2	4	2	1	1	2	**IZS**	2	2	2	2	2	4	2.1	24
23	3	3	3	3	3	5	25	15	17	21	6	2	2	2	17	3	2	**IZS**	2	1	1	1	1	3	25	6.1	24
24	4	3	3	2	3	5	3	5	4	**37**	18	3	4	15	21	18	**IZS**	1	2	3	3	3	4	5	**37**	7.3	24
25	3	3	4	5	5	4	5	8	4	3	3	2	4	4	3	**IZS**	6	2	2	1	2	1	1	1	8	3.3	24
26	1	1	1	1	1	2	2	3	2	1	1	1	**P**	**P**	**IZS**	2	2	6	2	3	2	2	3	4	6	2.0	22
27	3	3	3	4	3	4	6	4	5	4	4	4	4	**IZS**	2	2	2	2	2	2	2	2	2	2	6	3.1	24
28	2	2	4	3	2	3	4	4	5	6	3	3	**IZS**	2	1	2	2	2	2	2	3	3	2	2	6	2.8	24
29	4	3	3	2	2	2	2	2	2	2	2	**IZS**	1	1	2	1	1	1	1	1	1	2	1	1	4	1.7	24
30	1	1	1	1	1	2	1	1	1	1	**IZS**	0	1	1	0	1	1	2	1	1	2	2	2	3	3	1.2	24
HOURLY MAX	4	4	5	5	14	7	33	15	17	37	18	4	9	15	21	18	6	6	23	5	5	5	4	5			
HOURLY AVG	2.3	2.2	2.3	2.3	2.8	2.8	5.2	3.4	3.1	4.8	3.4	2.0	2.0	2.4	3.1	2.6	1.6	1.9	3.1	2.0	2.1	2.2	2.2	2.2			

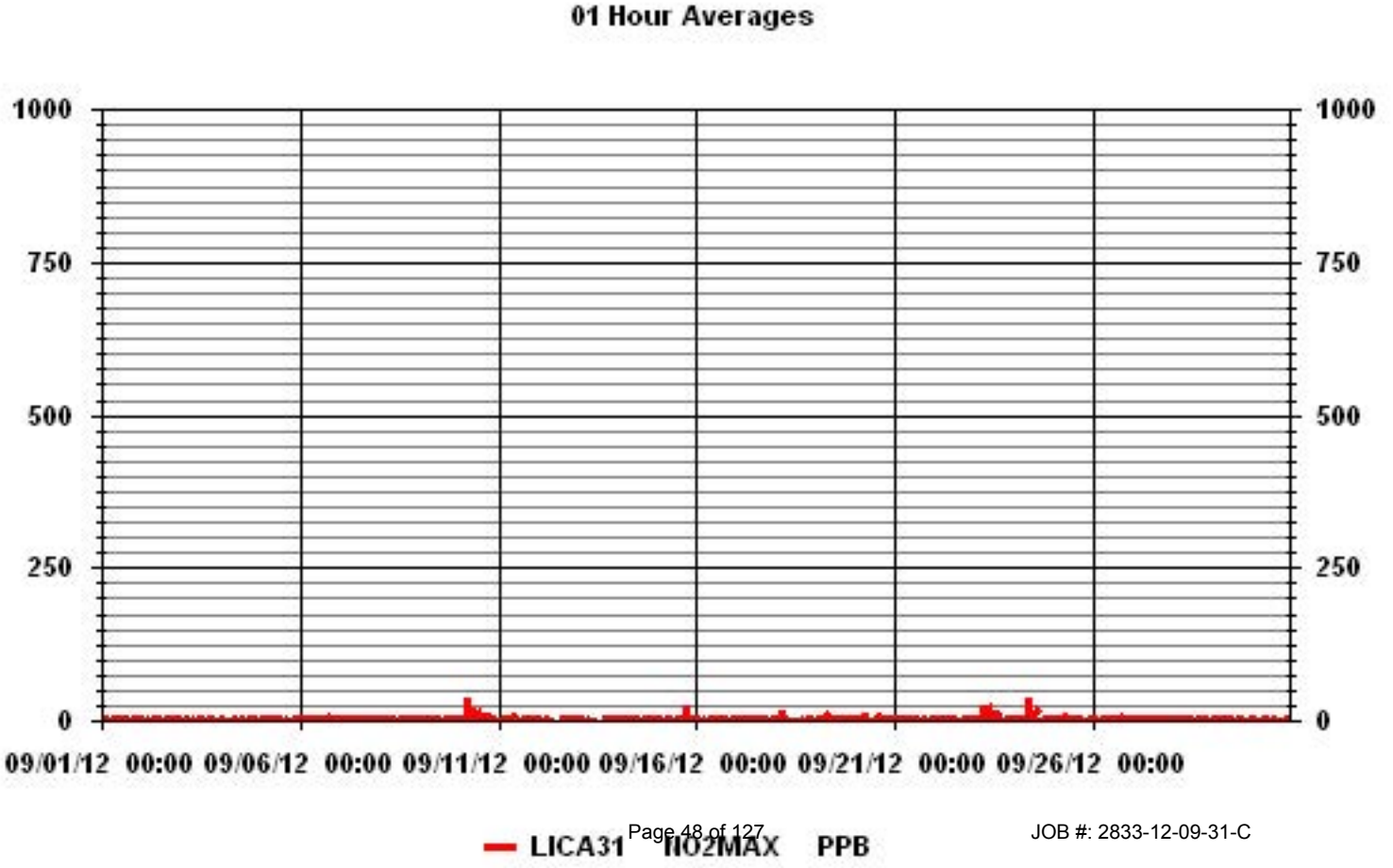
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	656					
MAXIMUM INSTANTANEOUS VALUE:	37	PPB	@ HOUR(S)	9	ON DAY(S)	24
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		709	HRS
MONTHLY CALIBRATION TIME:	13	HRS				
STANDARD DEVIATION:	3.18					

JOB #: 2833-12-09-31-C



JOB #: 2833-12-09-31-C

LICA31
NO2_ / WDR Joint Frequency Distribution (Percent)

September 2012

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	3.60	2.10	1.20	2.10	2.55	3.00	1.50	2.70	11.11	9.45	7.95	8.25	12.16	11.86	13.51	6.90	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.60	2.10	1.20	2.10	2.55	3.00	1.50	2.70	11.11	9.45	7.95	8.25	12.16	11.86	13.51	6.90	

Calm : .00 %

Total # Operational Hours : 666

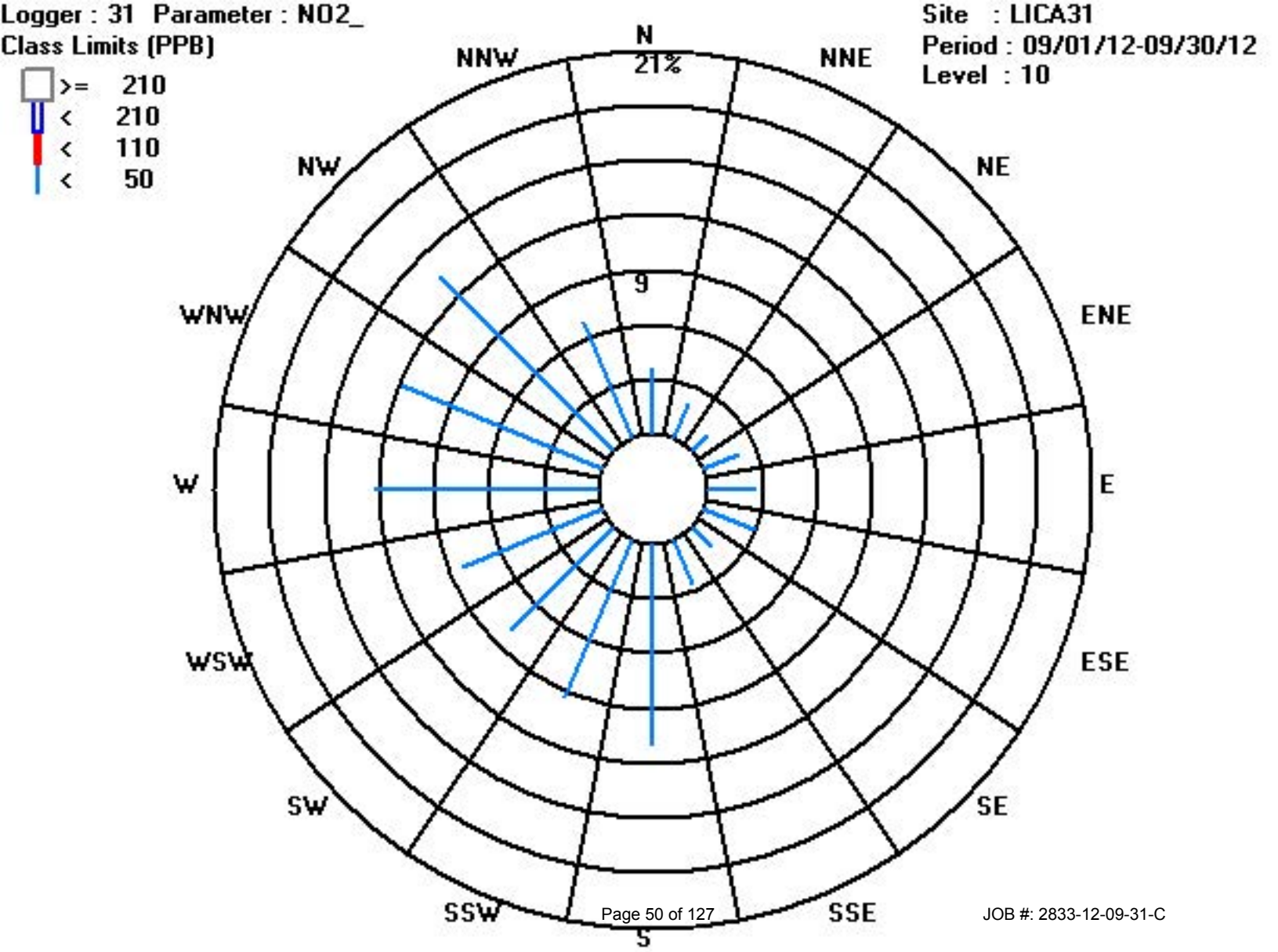
Distribution By Samples

Direction

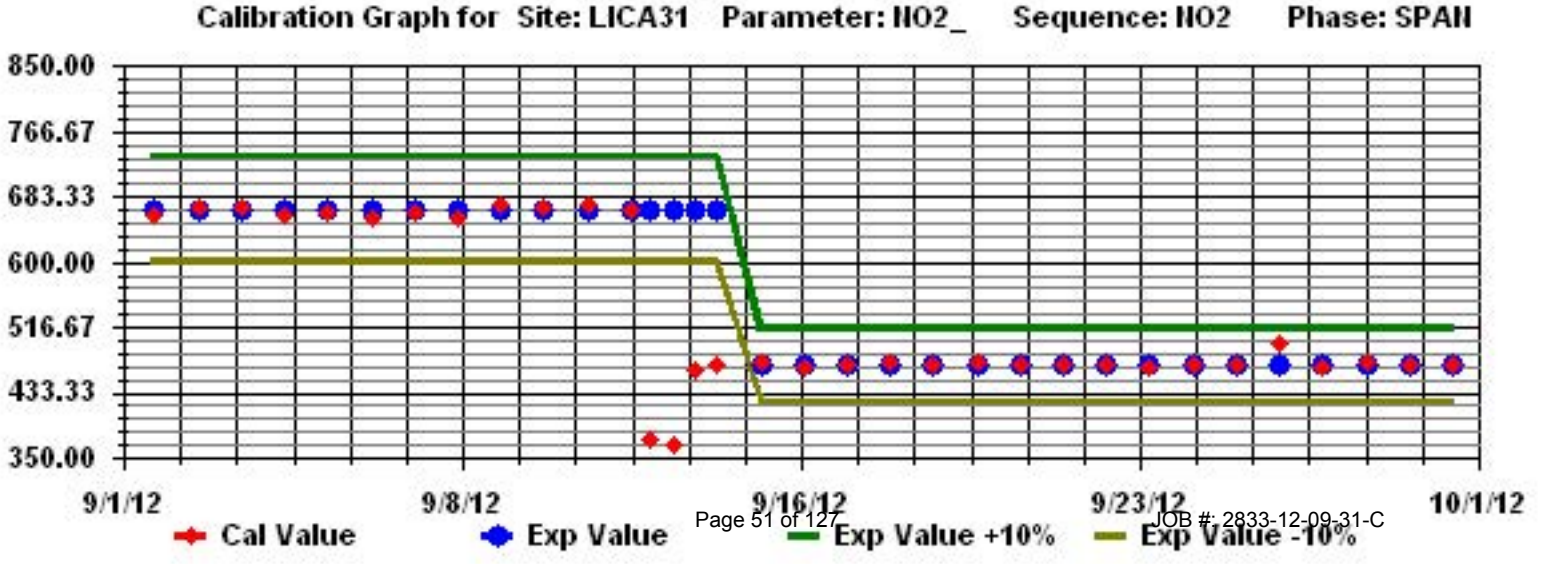
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	24	14	8	14	17	20	10	18	74	63	53	55	81	79	90	46	666
< 110																	
< 210																	
>= 210																	
Totals	24	14	8	14	17	20	10	18	74	63	53	55	81	79	90	46	

Calm : .00 %

Total # Operational Hours : 666



JOB #: 2833-12-09-31-C


Calibration Graph for Site: LICA31 Parameter: NO2_ Sequence: NO2 Phase: SPAN
850.00
766.67
683.33
600.00
516.67
433.33
350.00
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

LAKELAND INDUSTRY & COMMUNICATY ASSOCIATION - ST. LINA

SEPTEMBER 2012

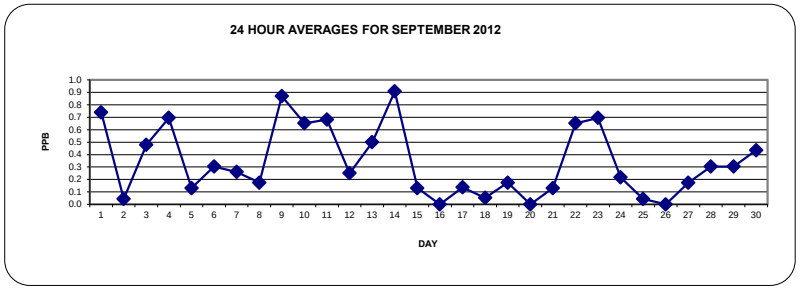
NITRIC OXIDE hourly averages in ppb

MST

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

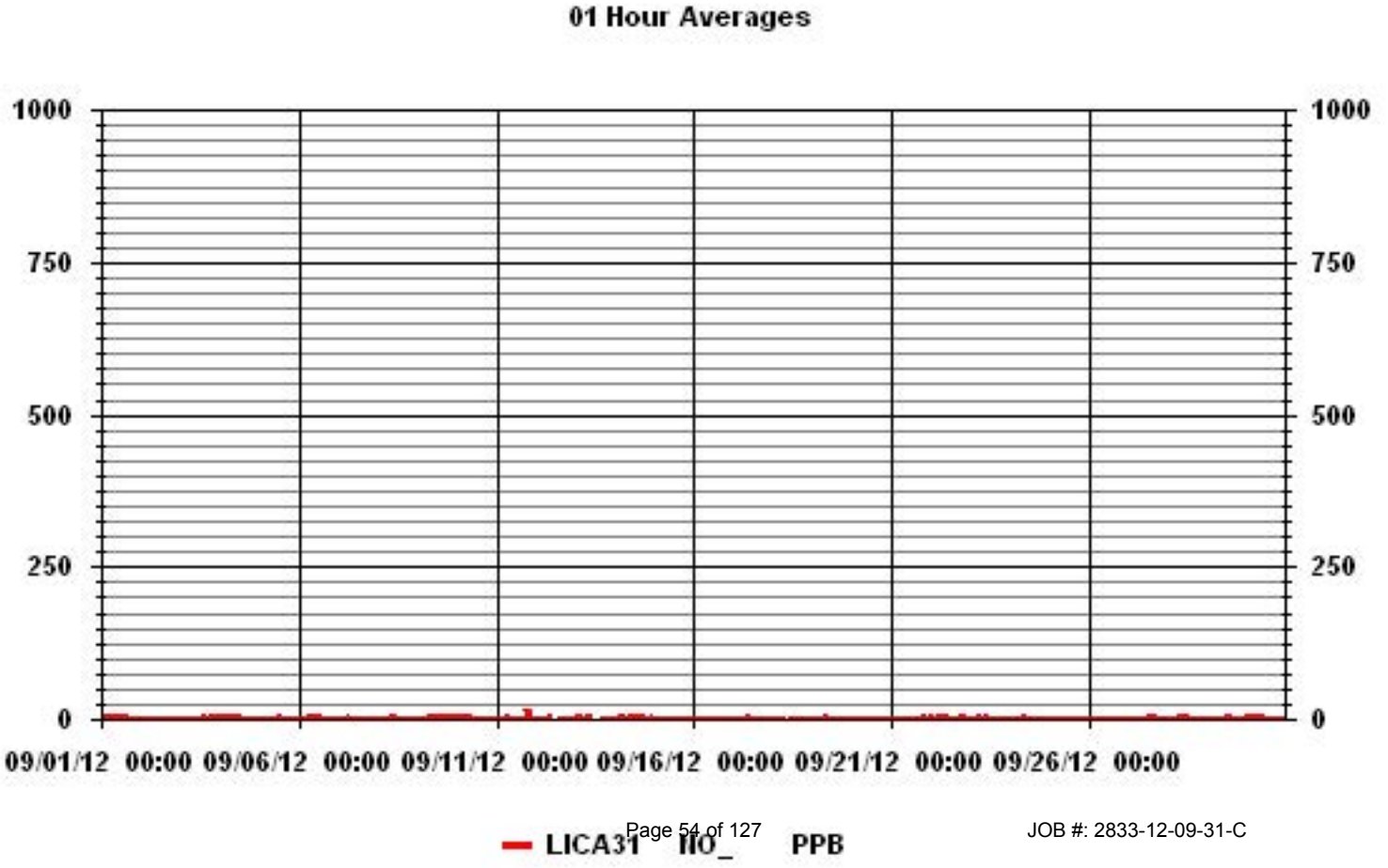
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	185						
MAXIMUM 1-HR AVERAGE:	13	PPB	@ HOUR(S)	19	ON DAY(S)	11	
MAXIMUM 24-HR AVERAGE:	0.9	PPB			ON DAY(S)	14	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		711	HRS	
MONTHLY CALIBRATION TIME:	13	HRS	AMD OPERATION UPTIME:		98.8	%	
STANDARD DEVIATION:	0.77		MONTHLY AVERAGE:		0.34	PPB	



JOB #: 2833-12-09-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *ST. LINA*

SEPTEMBER 2012

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

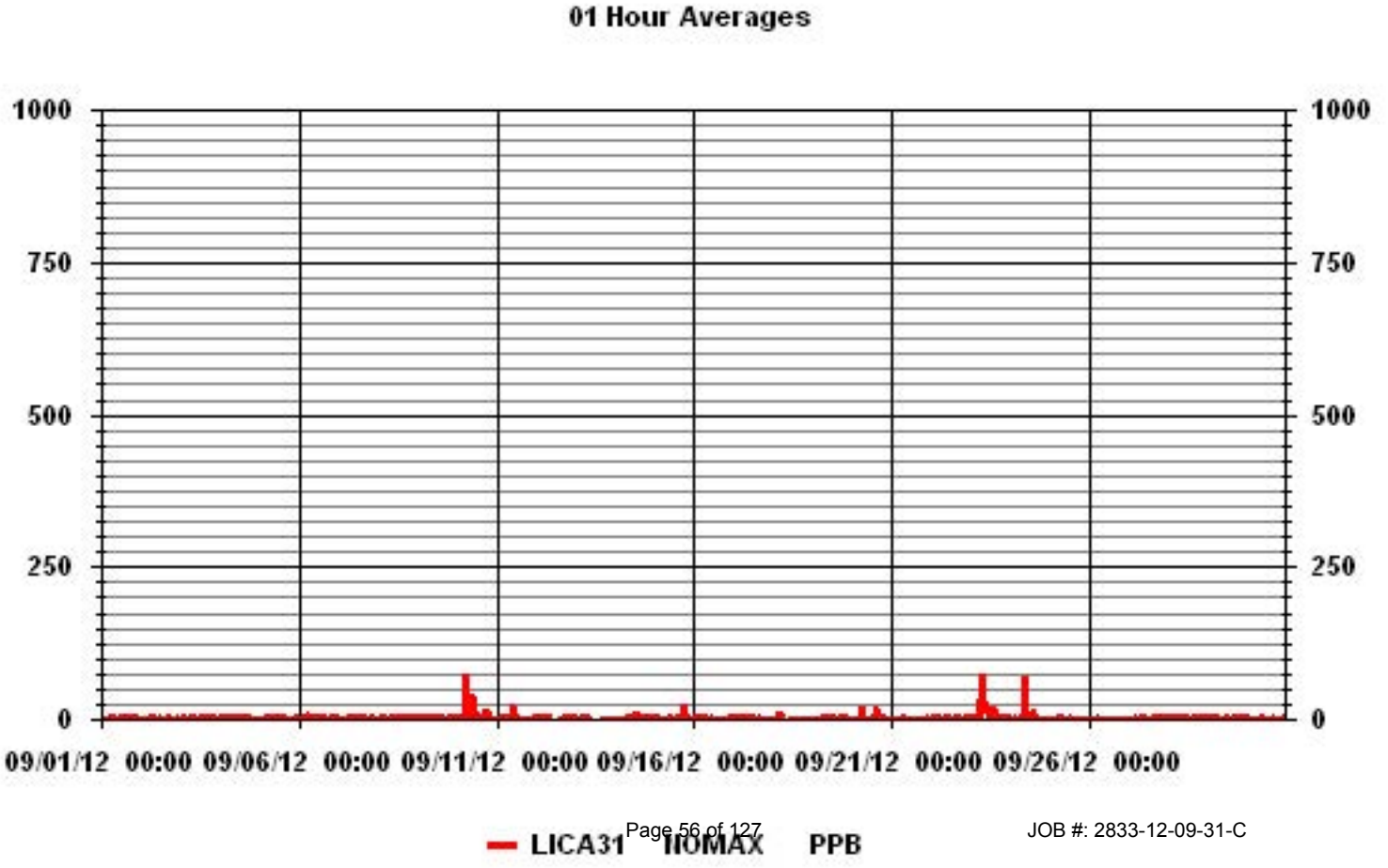
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2	1	2	1	2	1	1	2	2	2	1	1	1	1	2	2	**IZS**	4	1	1	1	1	1	1	4	1.5	24
2	0	1	0	0	0	1	1	1	1	1	0	1	1	1	0	**IZS**	3	1	1	1	0	0	1	1	3	0.7	24
3	0	1	1	1	1	2	1	1	1	1	1	2	1	1	**IZS**	4	2	2	2	2	2	2	2	1	4	1.5	24
4	2	2	2	2	2	2	2	3	2	2	2	2	2	**IZS**	3	2	2	1	1	1	2	1	0	0	3	1.7	24
5	0	1	0	1	3	2	1	2	2	2	2	2	**IZS**	3	1	1	1	1	2	1	0	1	1	1	3	1.3	24
6	1	2	1	1	2	3	8	5	3	2	2	**IZS**	3	4	4	1	1	1	3	1	1	1	1	1	8	2.3	24
7	1	1	0	1	3	1	3	2	4	2	**IZS**	3	1	1	1	1	1	1	2	1	1	1	0	1	4	1.4	24
8	0	1	1	1	1	1	1	2	2	**IZS**	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24
9	1	1	1	1	1	1	2	3	**IZS**	5	3	2	2	2	2	2	2	1	2	2	2	2	2	2	5	1.9	24
10	2	2	1	1	1	2	68	**IZS**	4	40	2	1	12	0	0	2	1	1	16	0	1	2	1	0	68	7.0	24
11	1	0	1	1	1	1	**IZS**	2	2	1	23	1	1	1	1	0	2	1	**P**	**P**	0	2	1	1	23	2.1	22
12	1	1	1	1	1	**IZS**	4	3	4	**C**	**C**	**M**	**M**	**M**	**M**	**M**	0	1	1	1	1	1	1	1	4	1.4	19
13	1	1	1	2	**IZS**	3	3	3	3	1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	3	1.1	24
14	0	0	0	**IZS**	2	1	3	2	3	3	3	2	2	12	2	1	**M**	2	2	1	1	1	1	1	12	2.0	23
15	1	1	**IZS**	1	0	3	1	0	0	0	2	3	1	0	1	1	0	3	23	0	**P**	1	1	0	23	2.0	23
16	0	**IZS**	1	1	1	1	1	1	1	2	1	1	1	0	1	0	0	1	0	0	0	1	1	1	2	0.7	24
17	**IZS**	1	1	1	1	1	1	1	2	2	3	1	1	1	0	1	1	1	0	0	0	0	1	**IZS**	3	1.0	24
18	1	0	0	0	12	2	3	**C**	**C**	**C**	**C**	2	1	0	0	0	0	1	0	0	0	0	**IZS**	1	12	1.2	24
19	2	1	0	0	0	1	5	5	3	2	2	4	1	1	1	0	0	1	1	1	1	**IZS**	1	0	5	1.4	24
20	0	0	0	0	0	1	21	2	2	0	1	0	1	1	1	21	0	2	1	1	**IZS**	2	3	0	21	2.6	24
21	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	**IZS**	2	1	1	1	2	0.4	24
22	2	1	1	1	1	1	1	1	2	2	2	1	1	3	1	1	1	1	**IZS**	2	1	1	1	1	3	1.3	24
23	1	1	1	1	1	3	34	**73**	30	27	13	1	1	1	22	1	1	**IZS**	1	1	1	1	1	1	**73**	9.5	24
24	1	0	0	1	1	0	0	2	2	72	16	1	2	8	10	2	**IZS**	1	1	0	0	1	0	1	72	5.3	24
25	0	0	0	0	0	1	1	4	1	1	0	0	2	2	1	**IZS**	1	0	0	0	0	0	0	0	4	0.6	24
26	0	0	0	0	0	1	1	2	1	0	0	0	**P**	**P**	**IZS**	0	0	1	0	0	0	0	0	0	2	0.3	22
27	0	1	0	0	1	1	2	1	1	1	1	1	2	**IZS**	2	1	1	1	1	1	1	1	1	1	2	1.0	24
28	1	1	1	1	1	1	1	1	2	2	1	1	**IZS**	2	1	1	1	1	1	1	1	1	1	1	2	1.1	24
29	1	1	1	1	1	1	1	1	1	3	1	**IZS**	1	1	2	1	1	1	1	1	1	1	1	1	3	1.1	24
30	1	1	2	1	1	2	1	1	2	2	**IZS**	1	0	0	0	0	1	1	0	0	1	0	1	1	2	0.9	24
HOURLY MAX	2	2	2	2	12	3	68	73	30	72	23	4	12	12	22	21	3	4	23	2	2	2	3	2			
HOURLY AVG	0.8	0.8	0.7	0.8	1.4	1.4	6.0	4.5	3.0	6.6	3.4	1.4	1.7	1.9	2.3	1.8	0.9	1.2	2.3	0.8	0.8	0.9	0.9	0.8			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	522					
MAXIMUM INSTANTANEOUS VALUE:	73	PPB	@ HOUR(S)	7	ON DAY(S)	23
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		709	HRS
MONTHLY CALIBRATION TIME:	13	HRS				
STANDARD DEVIATION:	5.77					



JOB #: 2833-12-09-31-C

LICA31
NO_ / WDR Joint Frequency Distribution (Percent)

September 2012

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	3.60	2.10	1.20	2.10	2.55	3.00	1.50	2.70	11.11	9.45	7.95	8.25	12.16	11.86	13.51	6.90	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.60	2.10	1.20	2.10	2.55	3.00	1.50	2.70	11.11	9.45	7.95	8.25	12.16	11.86	13.51	6.90	

Calm : .00 %

Total # Operational Hours : 666

Distribution By Samples

Direction

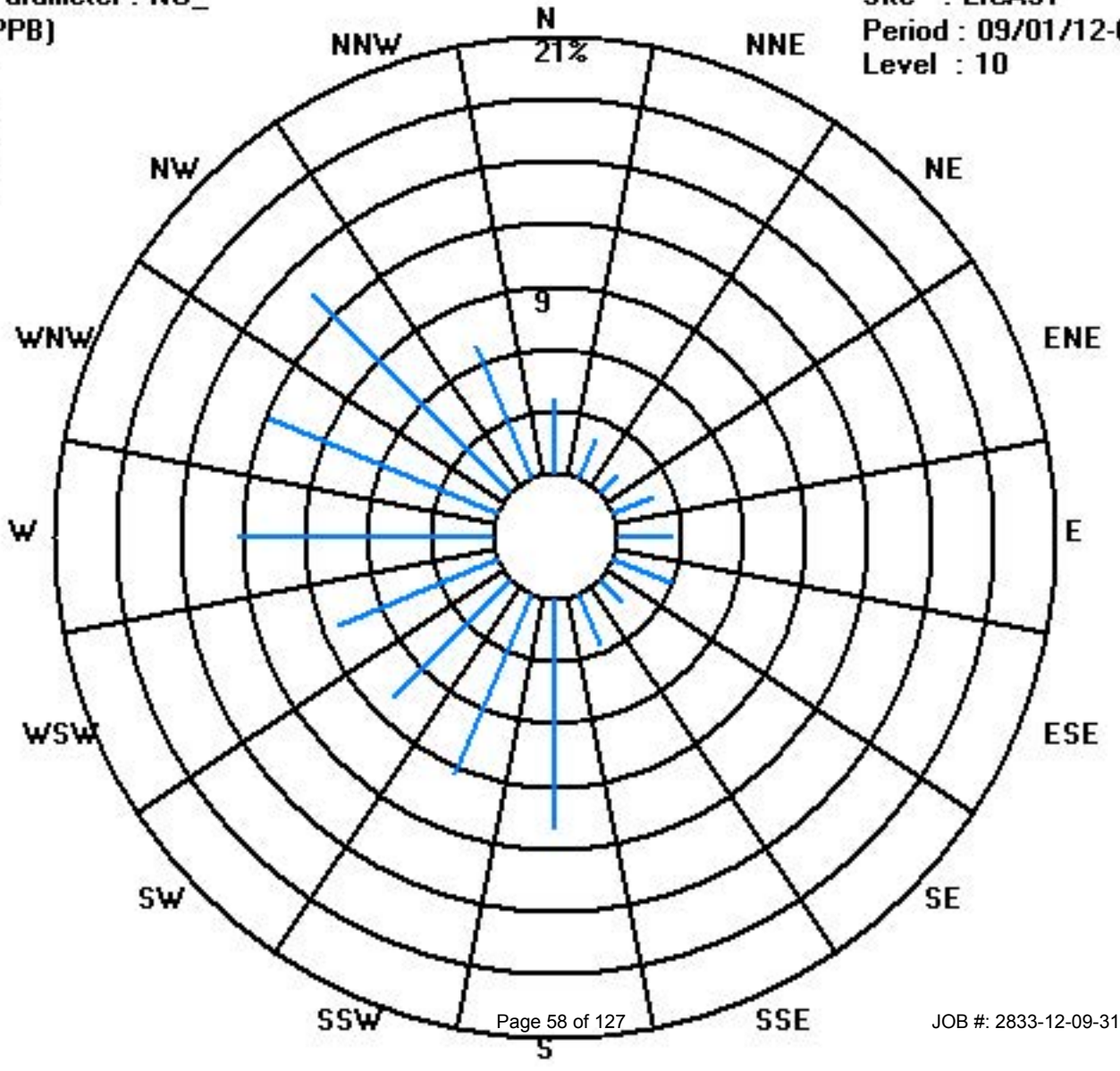
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	24	14	8	14	17	20	10	18	74	63	53	55	81	79	90	46	666
< 110																	
< 210																	
>= 210																	
Totals	24	14	8	14	17	20	10	18	74	63	53	55	81	79	90	46	

Calm : .00 %

Total # Operational Hours : 666

Logger : 31 Parameter : NO_
Class Limits (PPB)
>= 210
< 210
< 110
< 50

Site : LICA31
Period : 09/01/12-09/30/12
Level : 10



JOB #: 2833-12-09-31-C

Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

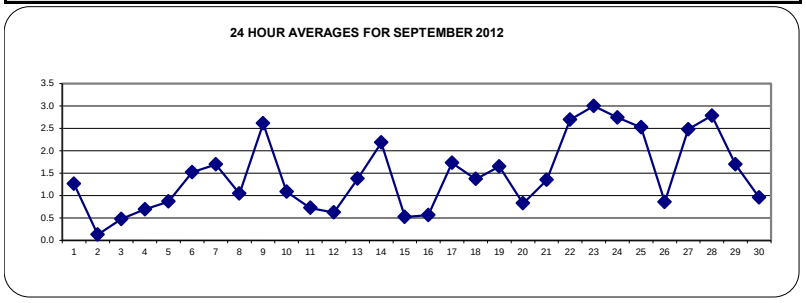
SEPTEMBER 2012

OXIDES OF NITROGEN hourly averages in ppb

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2	1	2	1	1	1	1	1	1	1	2	1	2	1	2	2	**IZS**	1	1	1	1	1	1	1	2	1.3	24
2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	0	0	0	0	0	0	0	1	0.1	24
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	2	2	1	1	1	1	1	1	1	2	0.5	24
4	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	2	1	0	0	0	0	0	0	0	0	2	0.7	24
5	1	1	1	1	2	3	2	1	1	1	1	1	**IZS**	1	1	0	0	0	1	0	0	0	0	1	3	0.9	24
6	1	1	1	1	1	2	3	2	2	2	1	**IZS**	1	1	1	1	1	1	2	2	2	2	2	2	3	1.5	24
7	2	2	2	2	3	3	4	3	4	3	**IZS**	1	1	1	1	1	0	1	1	1	1	0	0	2	4	1.7	24
8	1	2	3	3	2	1	1	1	1	**IZS**	1	1	1	0	0	0	0	0	1	1	1	1	1	1	3	1.0	24
9	1	2	2	1	2	2	5	5	**IZS**	4	3	2	2	2	2	2	2	2	3	4	4	4	2	2	5	2.6	24
10	1	1	1	1	1	2	10	**IZS**	2	2	1	0	1	0	0	1	0	0	1	0	0	0	0	0	10	1.1	24
11	0	0	0	0	0	0	**IZS**	1	1	0	0	0	0	0	0	0	0	0	**P**	**14**	0	0	0	0	**14**	0.7	23
12	0	0	0	0	0	**IZS**	2	1	1	**C**	**C**	**M**	**M**	**M**	**M**	**M**	0	1	1	0	1	1	1	1	2	0.6	19
13	1	1	2	2	**IZS**	2	3	2	3	2	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	1	1	1	1	3	1.4	24
14	1	1	1	**IZS**	2	2	3	3	4	4	4	4	3	4	2	1	**M**	1	1	1	1	1	2	2	4	2.2	23
15	1	1	**IZS**	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	1	1	4	0.5	24
16	0	**IZS**	0	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	0.6	24
17	**IZS**	3	3	3	2	2	3	2	2	4	4	2	2	1	0	0	0	0	0	1	1	1	2	**IZS**	4	1.7	24
18	2	2	3	3	4	6	4	**C**	**C**	**C**	**C**	1	0	0	0	0	0	0	0	0	0	0	**IZS**	1	6	1.4	24
19	1	1	0	0	0	1	3	6	5	3	3	2	2	2	4	2	0	0	1	0	0	**IZS**	1	1	6	1.7	24
20	0	0	0	1	1	1	1	1	1	0	1	0	0	0	0	1	0	3	1	1	**IZS**	2	3	1	3	0.8	24
21	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	**IZS**	2	2	2	2	2	1.3	24
22	2	3	3	3	3	3	3	3	3	3	3	3	2	3	2	2	2	2	**IZS**	2	3	3	3	3	3	2.7	24
23	3	3	3	3	3	4	7	8	5	4	5	2	1	2	4	2	2	**IZS**	2	1	1	1	1	2	8	**3.0**	24
24	3	3	2	2	2	3	2	3	3	9	4	2	2	2	2	1	**IZS**	1	1	3	3	2	4	4	9	2.7	24
25	3	2	3	4	4	4	4	6	4	3	2	2	2	3	2	**IZS**	2	2	1	1	1	1	1	1	6	2.5	24
26	1	0	0	1	1	1	1	2	1	1	1	1	**P**	**P**	**IZS**	0	0	1	0	1	0	1	1	3	3	0.9	22
27	2	2	2	2	2	2	4	3	3	3	2	3	3	**IZS**	3	2	2	2	2	2	3	2	3	3	4	2.5	24
28	2	2	3	3	3	3	4	4	4	5	3	3	**IZS**	2	2	2	2	2	2	2	3	3	3	2	5	2.8	24
29	3	3	3	2	2	2	2	2	2	2	2	**IZS**	2	1	1	1	1	1	1	1	1	2	1	1	3	1.7	24
30	2	1	1	2	1	2	2	2	2	1	**IZS**	0	0	0	0	0	0	0	0	0	1	1	2	2	2	1.0	24
HOURLY MAX	3	3	3	4	4	6	10	8	5	9	5	4	3	4	4	2	2	3	4	14	4	4	4	4			
HOURLY AVG	1.3	1.4	1.5	1.6	1.6	1.9	2.7	2.3	2.1	2.3	1.8	1.3	1.2	1.1	1.2	1.0	0.7	0.8	1.0	1.4	1.1	1.2	1.4	1.5			

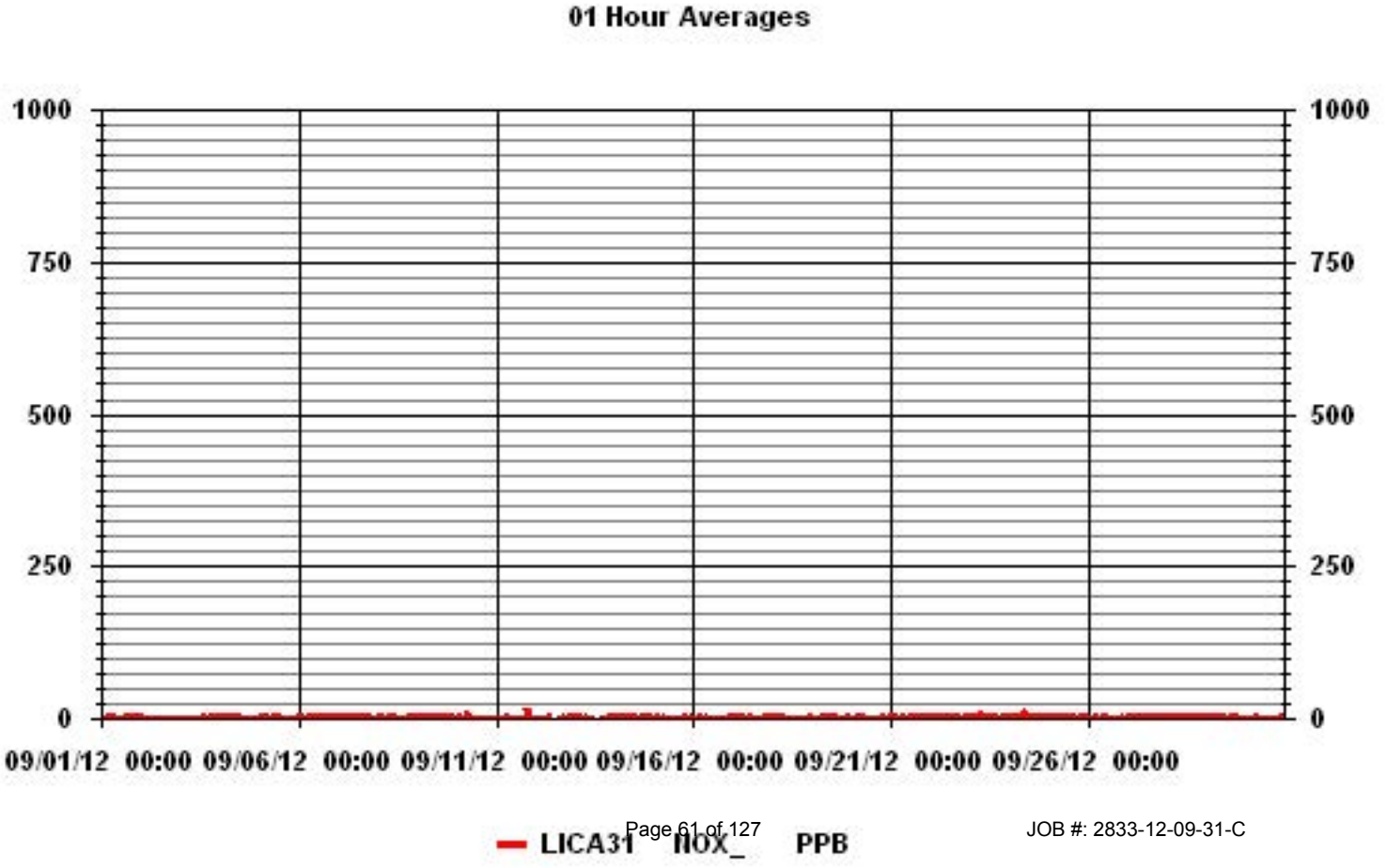
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	498						
MAXIMUM 1-HR AVERAGE:	14	PPB	@ HOUR(S)	19	ON DAY(S)	11	
MAXIMUM 24-HR AVERAGE:	3.0	PPB			ON DAY(S)	23	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		711	HRS	
MONTHLY CALIBRATION TIME:	13	HRS	AMD OPERATION UPTIME:		98.8	%	
STANDARD DEVIATION:	1.42		MONTHLY AVERAGE:		1.48	PPB	



JOB #: 2833-12-09-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *ST. LINA*

SEPTEMBER 2012

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

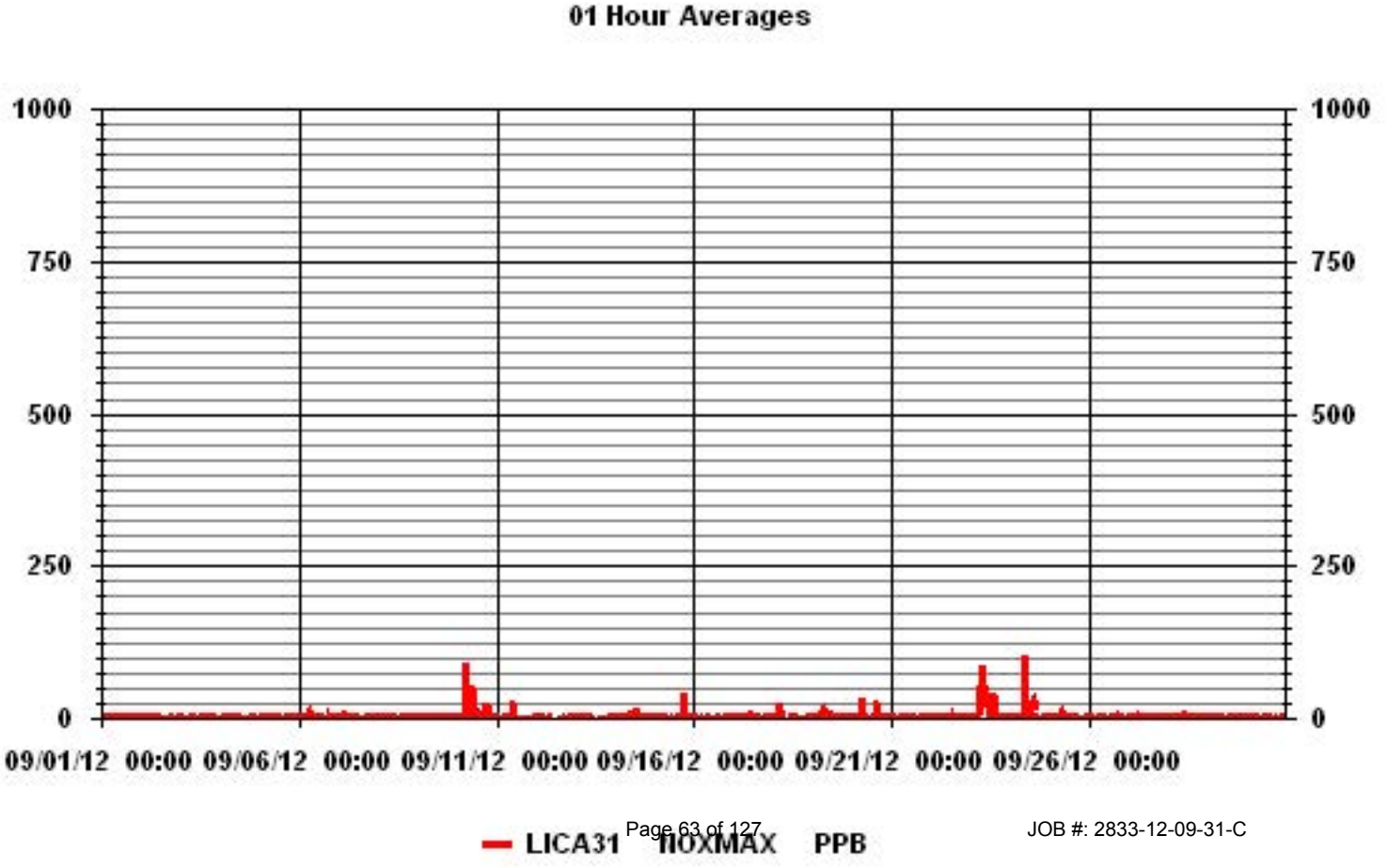
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	3	2	3	2	2	2	2	2	2	2	3	2	2	2	2	3	**IZS**	3	2	2	3	3	2	2	3	2.3	24
2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1	**IZS**	2	1	1	1	1	0	1	1	2	1.1	24
3	1	1	1	0	1	2	1	1	1	1	1	3	1	1	**IZS**	2	2	2	2	2	2	2	3	1	3	1.5	24
4	1	2	2	2	2	2	2	3	3	2	2	2	2	**IZS**	2	1	2	1	2	2	3	1	1	0	3	1.8	24
5	2	2	2	2	5	5	3	3	3	3	3	3	**IZS**	3	1	2	1	1	4	1	1	1	2	2	5	2.4	24
6	3	4	2	2	4	5	11	6	5	3	4	**IZS**	2	5	5	2	1	2	8	3	5	4	4	2	11	4.0	24
7	3	3	3	4	7	4	7	5	7	4	**IZS**	3	2	1	2	1	2	2	4	3	3	1	1	3	7	3.3	24
8	2	3	4	4	5	2	3	3	3	**IZS**	2	2	2	1	1	1	1	1	1	2	2	2	2	2	5	2.2	24
9	2	3	2	2	2	4	5	6	**IZS**	6	4	3	4	4	5	3	2	2	5	6	5	5	4	5	6	3.9	24
10	2	2	2	2	2	3	87	**IZS**	6	55	3	2	16	1	1	3	1	1	24	1	2	3	1	1	87	9.6	24
11	1	1	1	1	2	2	**IZS**	2	2	1	29	1	1	2	1	1	2	1	**P**	**P**	1	2	1	1	29	2.7	22
12	1	1	1	1	1	**IZS**	3	4	4	**C**	**C**	**M**	**M**	**M**	**M**	**M**	1	2	2	1	2	2	2	2	4	1.9	19
13	2	2	2	3	**IZS**	5	6	5	6	3	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	2	1	2	2	2	2	6	2.9	24
14	2	2	2	**IZS**	3	3	6	4	5	6	7	5	4	15	4	3	**M**	3	3	2	2	2	2	3	15	4.0	23
15	2	2	**IZS**	1	1	4	1	1	1	1	4	4	2	1	1	1	2	8	40	2	**P**	2	5	1	40	4.0	23
16	1	**IZS**	1	1	2	2	3	1	2	2	2	1	2	1	1	1	1	2	1	1	2	3	4	4	4	1.8	24
17	**IZS**	4	3	3	5	3	4	3	4	5	8	4	3	3	2	1	1	2	1	2	2	2	3	**IZS**	8	3.1	24
18	3	3	3	4	25	9	8	**C**	**C**	**C**	**C**	1	1	1	1	1	1	2	1	2	1	1	**IZS**	1	25	3.6	24
19	4	1	1	1	1	2	10	15	8	5	5	8	3	4	6	4	1	2	3	2	4	**IZS**	3	1	15	4.1	24
20	1	1	1	2	2	2	32	3	4	2	3	1	3	2	2	28	1	7	3	6	**IZS**	7	6	2	32	5.3	24
21	2	2	2	2	1	3	5	3	3	2	2	2	1	1	2	2	1	2	2	**IZS**	3	3	3	3	5	2.3	24
22	3	3	3	3	3	3	4	4	4	4	4	4	3	8	3	2	2	2	**IZS**	3	3	3	3	3	8	3.3	24
23	4	4	4	4	4	8	54	88	42	45	20	3	2	3	39	4	3	**IZS**	2	2	2	2	2	3	88	15.0	24
24	5	4	3	3	4	5	4	7	6	**103**	31	5	6	23	29	20	**IZS**	2	2	4	3	3	5	5	**103**	12.3	24
25	3	3	4	5	5	5	6	12	5	4	3	2	6	7	4	**IZS**	7	3	2	1	3	1	1	1	12	4.0	24
26	1	1	1	1	1	3	3	5	3	2	2	1	**P**	**P**	**IZS**	1	1	6	1	2	1	1	2	4	6	2.0	22
27	3	3	3	3	3	3	8	4	5	4	4	4	5	**IZS**	4	3	3	3	3	3	3	3	3	4	8	3.7	24
28	3	3	4	4	3	4	5	5	6	8	4	4	**IZS**	3	2	3	3	2	3	3	4	4	3	3	8	3.7	24
29	5	4	4	3	3	3	3	2	3	5	2	**IZS**	2	3	4	2	2	2	2	2	2	3	2	2	5	2.8	24
30	2	2	2	2	2	3	2	2	3	2	**IZS**	1	1	1	1	1	2	4	1	1	3	2	3	3	4	2.0	24
HOURLY MAX	5	4	4	5	25	9	87	88	42	103	31	8	16	23	39	28	7	8	40	6	5	7	6	5			
HOURLY AVG	2.4	2.4	2.3	2.3	3.5	3.5	10.0	7.1	5.3	10.4	6.1	2.8	3.1	3.9	4.8	3.7	1.8	2.5	4.5	2.3	2.5	2.4	2.6	2.3			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	662					
MAXIMUM INSTANTANEOUS VALUE:	103	PPB	@ HOUR(S)	9	ON DAY(S)	24
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		709	HRS
MONTHLY CALIBRATION TIME:	13	HRS				
STANDARD DEVIATION:	8.02					



JOB #: 2833-12-09-31-C

LICA31
NOX_ / WDR Joint Frequency Distribution (Percent)

September 2012

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	3.60	2.10	1.20	2.10	2.55	3.00	1.50	2.70	11.11	9.45	7.95	8.25	12.16	11.86	13.51	6.90	100.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.60	2.10	1.20	2.10	2.55	3.00	1.50	2.70	11.11	9.45	7.95	8.25	12.16	11.86	13.51	6.90	

Calm : .00 %

Total # Operational Hours : 666

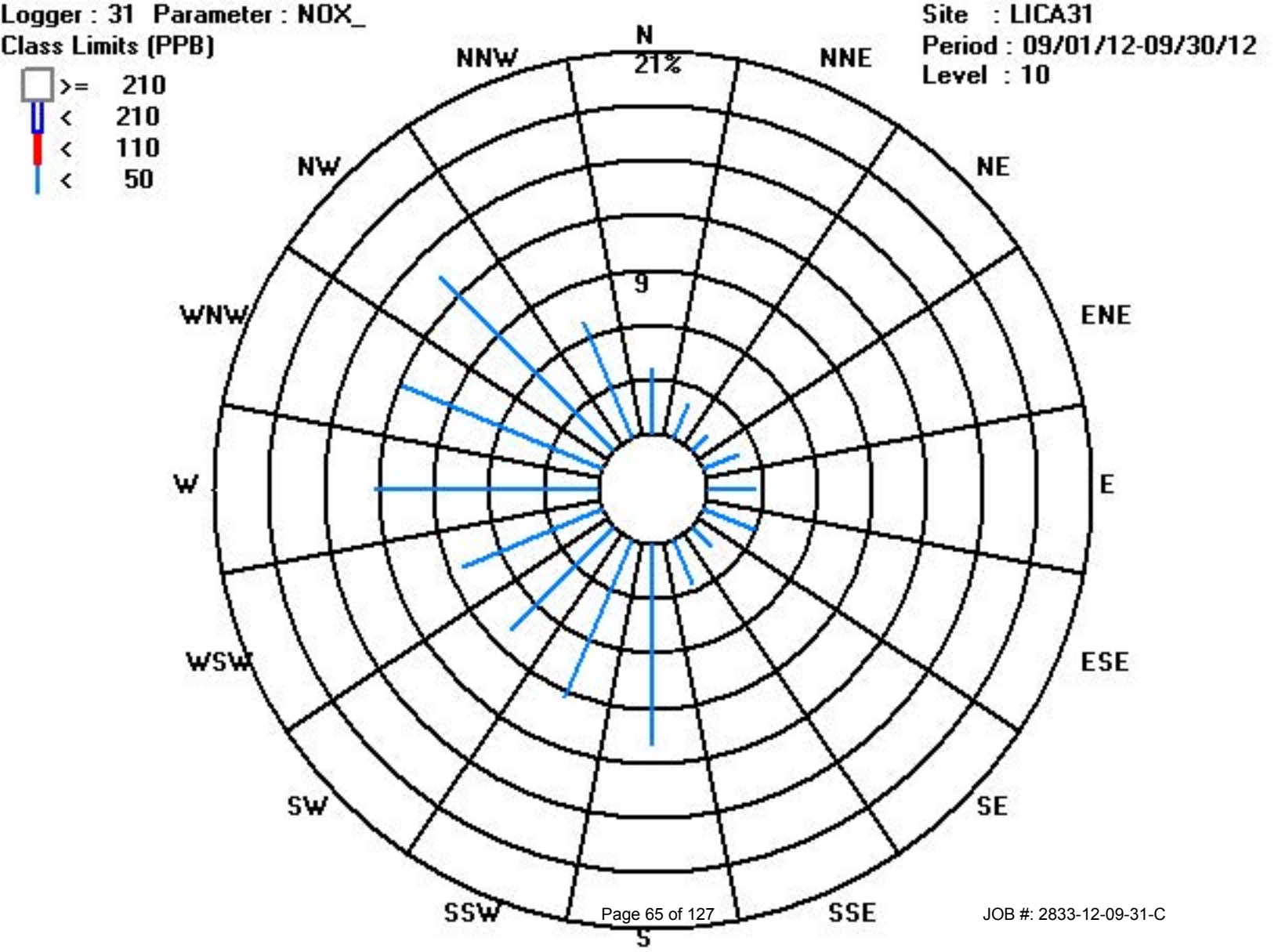
Distribution By Samples

Direction

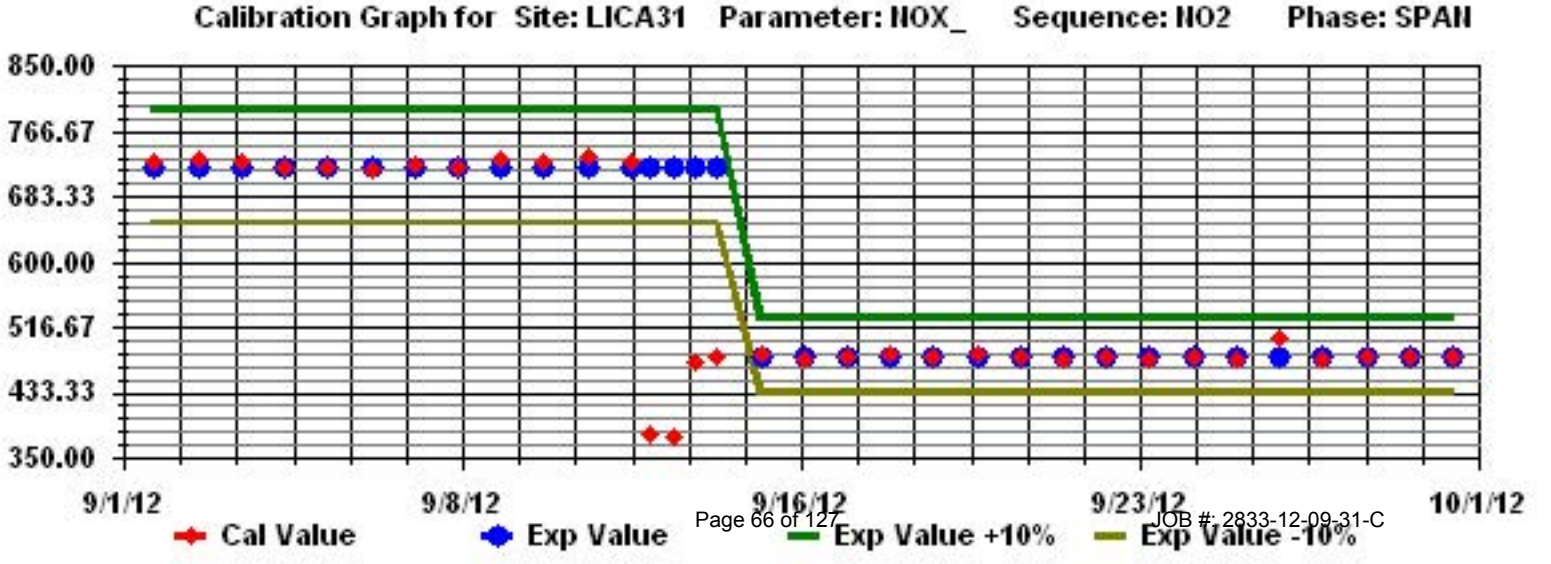
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	24	14	8	14	17	20	10	18	74	63	53	55	81	79	90	46	666
<	110																	
<	210																	
>=	210																	
	Totals	24	14	8	14	17	20	10	18	74	63	53	55	81	79	90	46	

Calm : .00 %

Total # Operational Hours : 666



JOB #: 2833-12-09-31-C


Calibration Graph for Site: LICA31 Parameter: NOX_ Sequence: NO2 Phase: SPAN
850.00
766.67
683.33
600.00
516.67
433.33
350.00
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 2012

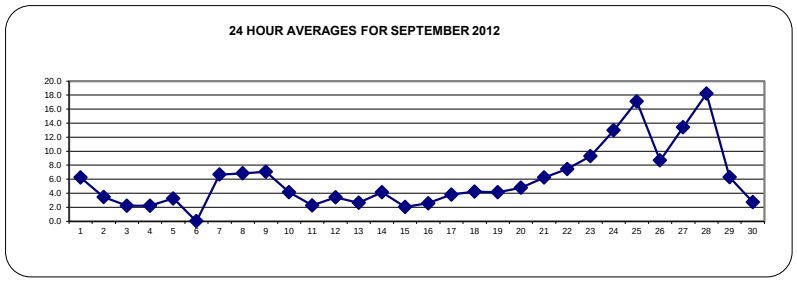
PARTICULATE MATTER 2.5 (PM2.5) hourly averages in ug/m^3

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	4	5	11	6	8	0	5	17	0	8	4	5	8	11	12	11	15	5	4	1	2	0	2	6	17	6.3	24
2	4	0	3	4	3	0	0	1	4	2	6	5	2	1	6	2	5	5	9	4	5	3	6	3	9	3.5	24
3	5	4	4	1	2	1	0	3	2	3	2	3	0	5	4	3	1	3	0	1	2	2	0	2	5	2.2	24
4	0	5	1	2	1	5	0	3	2	3	3	4	3	0	1	1	0	0	3	2	5	4	3	2	5	2.2	24
5	2	3	5	4	5	4	4	5	5	4	4	0	3	5	1	0	0	6	5	2	2	3	2	4	6	3.3	24
6	6	4	2	4	0	0	8	1	5	3	2	2	7	1	6	3	7	7	7	8	4	4	5	5	8	0.0	24
7	10	7	10	1	8	5	5	1	4	7	7	3	6	7	8	11	8	8	4	5	15	8	5	7	15	6.7	24
8	11	10	12	13	10	11	13	10	9	4	1	6	5	6	4	2	3	2	6	8	7	4	2	5	13	6.8	24
9	9	6	5	8	4	4	8	3	3	6	3	7	8	10	10	9	9	6	5	5	8	11	13	9	13	7.0	24
10	7	8	7	5	6	5	4	5	7	4	6	8	0	0	1	1	2	2	5	5	0	5	1	5	8	4.1	24
11	0	0	3	5	1	6	4	4	0	2	0	0	1	6	3	4	**N**	1	4	1	3	1	2	1	6	2.3	23
12	7	7	0	0	1	1	2	3	3	5	11	5	4	3	0	1	5	1	1	4	9	3	3	3	11	3.4	24
13	2	4	5	0	0	0	4	3	4	3	4	2	**C**	**C**	1	4	2	2	3	3	4	4	2	2	5	2.6	24
14	4	6	4	2	3	4	3	3	6	4	5	5	3	5	4	3	4	3	0	5	6	5	5	7	7	4.1	24
15	0	4	3	0	0	**N**	1	3	2	3	3	3	5	0	4	3	1	0	3	2	1	0	2	4	5	2.0	23
16	3	0	3	0	2	8	2	**N**	2	5	7	0	0	2	2	3	3	4	2	2	2	1	4	2	8	2.6	23
17	4	3	3	5	2	5	2	3	3	4	7	7	3	6	2	4	4	6	0	3	1	3	5	6	7	3.8	24
18	5	6	10	7	5	10	11	3	0	**C**	**C**	4	2	1	4	3	2	1	4	6	3	2	2	2	11	4.2	24
19	4	2	2	4	4	3	6	3	1	8	7	8	9	1	7	3	7	6	4	4	3	2	1	0	9	4.1	24
20	2	2	5	5	0	5	4	9	4	7	5	6	8	2	4	4	3	5	7	2	9	5	6	6	9	4.8	24
21	5	9	8	7	5	3	7	6	10	6	9	6	10	10	5	4	6	5	7	6	4	5	6	1	10	6.3	24
22	3	6	4	8	10	7	2	8	7	8	9	7	13	5	11	6	13	1	12	10	9	9	6	5	13	7.5	24
23	7	6	8	9	5	7	8	11	9	11	11	13	16	11	2	0	7	11	11	9	10	13	14	14	16	9.3	24
24	13	11	12	13	14	13	11	12	12	11	7	9	8	17	14	15	13	15	13	15	13	16	17	17	17	13.0	24
25	12	17	13	15	14	14	14	20	13	17	16	18	15	15	15	18	13	18	24	31	22	21	18	17	31	17.1	24
26	14	14	5	10	5	9	6	12	7	15	10	13	11	1	3	9	8	4	7	8	9	8	10	10	15	8.7	24
27	12	10	8	8	8	12	11	11	14	19	22	14	14	7	17	11	13	13	12	14	13	18	21	20	22	13.4	24
28	18	21	16	18	14	19	18	16	17	**31**	23	20	17	17	11	15	13	18	16	18	20	23	19	19	**31**	**18.2**	24
29	20	21	8	10	9	7	8	7	4	4	4	2	0	6	2	2	2	5	3	6	5	5	5	6	21	6.3	24
30	0	0	2	4	6	7	0	2	0	4	6	2	3	6	5	0	0	3	4	2	0	4	3	2	7	2.7	24
HOURLY MAX	20.0	21.0	16.0	18.0	14.0	19.0	18.0	20.0	17.0	31.0	23.0	20.0	17.0	17.0	17.0	18.0	15.0	18.0	24.0	31.0	22.0	23.0	21.0	20.0			
HOURLY AVG	6.4	6.7	6.1	5.9	5.2	6.0	5.7	6.5	5.3	7.3	7.0	6.2	6.3	5.8	5.6	5.2	5.8	5.5	6.2	6.4	6.5	6.4	6.3	6.4			

STATUS FLAG CODES

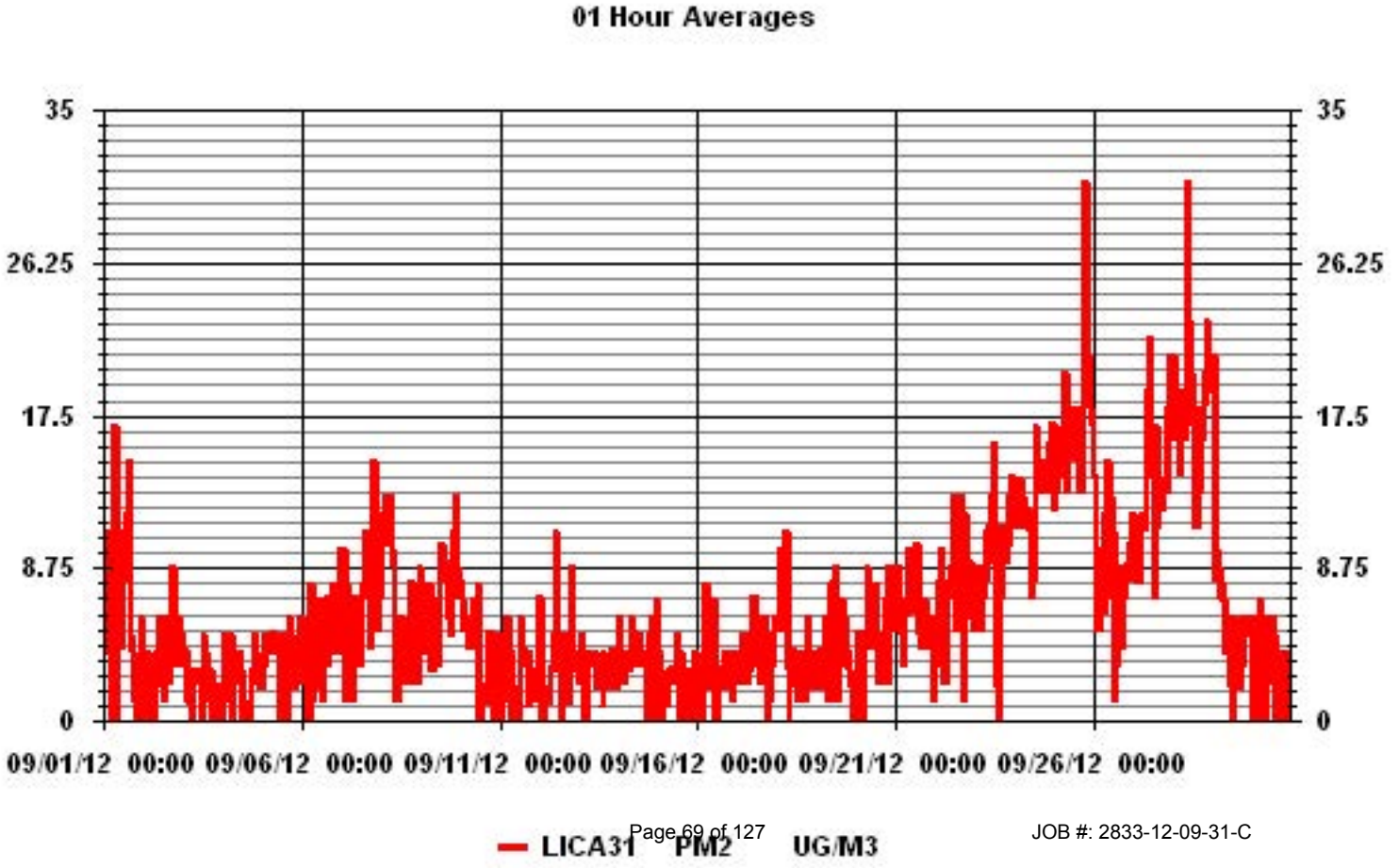
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR - ug/m3 | 24-HR 30 ug/m3

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	655					
MAXIMUM 1-HR AVERAGE:	31	UG/M^3	@ HOUR(S)	9	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	18.2	UG/M^3			ON DAY(S)	28
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	717	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.6	%	
STANDARD DEVIATION:	5.11		MONTHLY AVERAGE:	6.12	UG/M^3	



JOB #: 2833-12-09-31-C

LICA31
PM2 / WDR Joint Frequency Distribution (Percent)

September 2012

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30	3.38	1.97	1.12	2.11	2.39	2.96	1.55	2.67	10.71	9.16	7.61	8.60	13.39	12.12	13.25	6.62	99.71
<	60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.14	.28
<	80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.38	1.97	1.12	2.11	2.39	2.96	1.55	2.67	10.71	9.30	7.61	8.60	13.39	12.12	13.25	6.77	

Calm : .00 %

Total # Operational Hours : 709

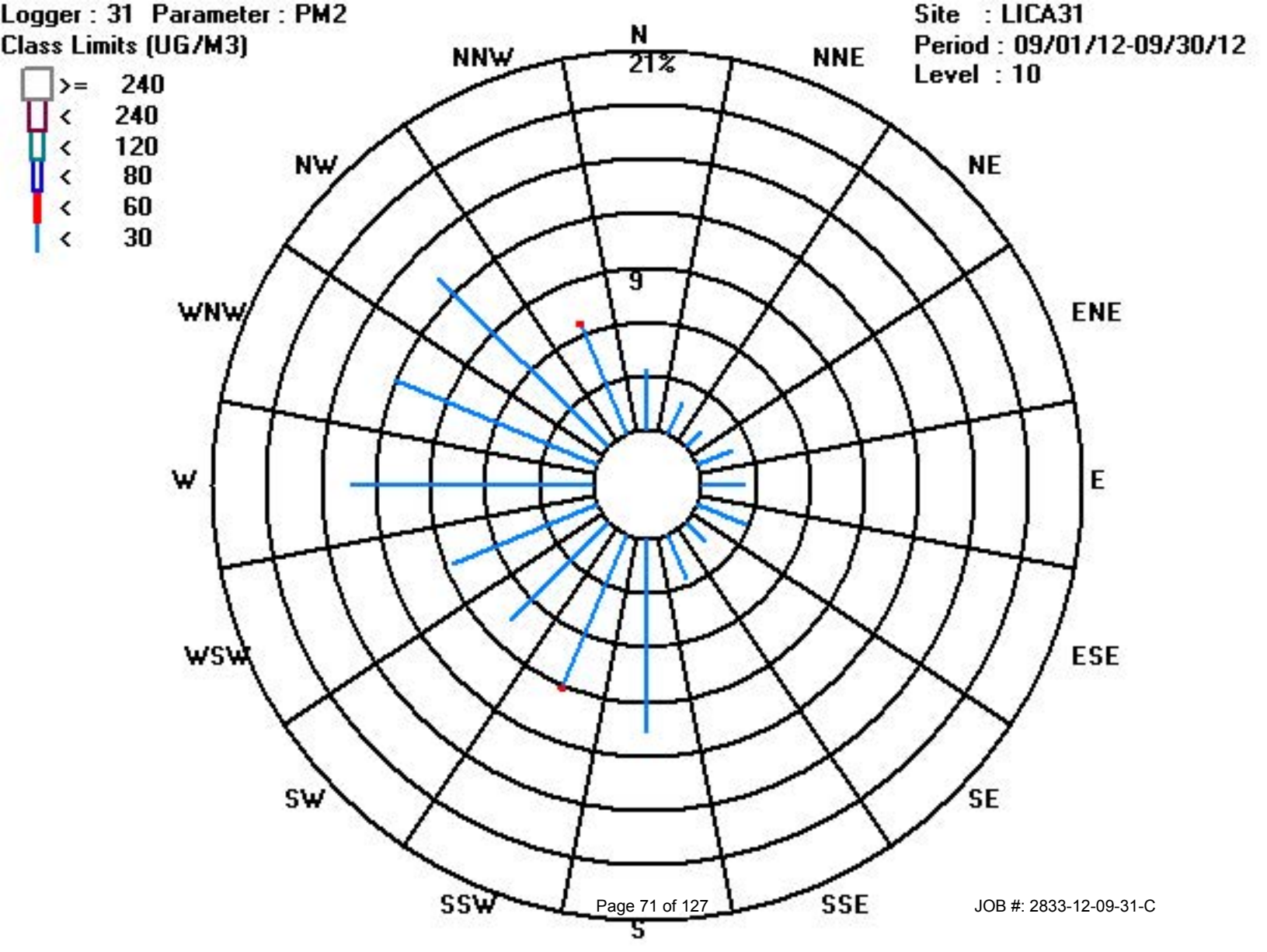
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30	24	14	8	15	17	21	11	19	76	65	54	61	95	86	94	47	707
<	60										1						1	2
<	80																	
<	120																	
<	240																	
>=	240																	
	Totals	24	14	8	15	17	21	11	19	76	66	54	61	95	86	94	48	

Calm : .00 %

Total # Operational Hours : 709



JOB #: 2833-12-09-31-C

Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 2012

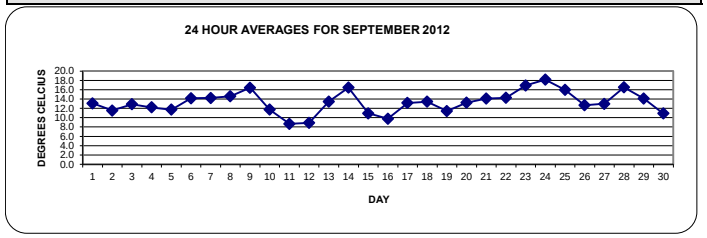
AMBIENT TEMPERATURE hourly averages (Degrees C)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	11.7	11.6	11.8	11.5	11.3	11.5	11.8	11.8	11.9	12.2	13.9	15	17.2	18.3	18.4	17.2	15.6	15	12.9	11.2	11.2	10.9	10.2	9.2	18.4	13.1	24
2	9.2	9.6	9.9	10	10	9.9	10.3	10.5	11	11.7	11.8	12.4	12.7	12.6	12.9	12.9	12.7	12.9	12.1	11.7	12.4	12.6	12.5	12.8	12.9	11.5	24
3	12.7	11.7	10.6	10.2	9.4	8.7	9.7	11.9	13.2	14.3	15.1	15.7	15.9	16.5	16.5	16.2	16.3	15.1	13.7	12.7	12.3	11.1	9.9	9.9	16.5	12.9	24
4	10.1	9.5	9.4	9.5	9.7	9.8	9.6	10.1	10.6	11.2	11.9	12.8	14.6	16	16.2	16.8	16.6	16.3	14.5	12.8	12.2	12.1	10.9	10	16.8	12.2	24
5	9.2	8.8	8.7	9.1	9.3	8.5	9.3	9.8	10.2	11.6	12.3	15.4	16.6	17.8	13	13.8	16.3	15.8	13.3	11.8	10.5	10.4	10.1	9.7	17.8	11.7	24
6	9.5	9.8	9.4	8.4	6.2	6.2	8.4	12	14.3	15.7	17.9	19.3	19.1	20.5	20.9	20.6	20.9	20	16.7	14.5	13.7	12.5	12.2	11.3	20.9	14.2	24
7	10.5	10.2	9.5	8.7	8.1	7.1	9	12.4	14.8	17.2	19.3	20.3	20.3	20.1	19.2	18.7	19	18.1	15.9	14.1	12.9	13.3	11.9	10.4	20.3	14.2	24
8	9.7	8.9	8.3	8.5	7.6	7.6	8.1	10.5	12.1	13.9	16.2	17.9	19.3	20.3	21	21.6	22.2	21.3	18.8	16.7	16	15.4	14.8	14.1	22.2	14.6	24
9	13.3	12.6	10.8	8.9	8.9	8.3	7.6	9.9	13.3	18.6	20.5	21.8	22.7	23.9	24	23.4	22.1	21.1	18.7	17.7	17.2	17.3	16.6	14.8	24.0	16.4	24
10	14.2	13.9	14.4	14.1	13.1	12.6	13	14.6	17.4	18.3	17.5	15.2	11.8	10.6	9.4	9.4	8.8	8.4	8.2	8.1	8.2	7.5	6.6	6.1	18.3	11.7	24
11	5.9	5.8	6	6.2	7	7	6.7	6.9	7.8	8.4	8.8	9.4	10.3	11.7	12	12.2	12.1	11.4	**P**	10	9.2	8.5	8.3	7.8	12.2	8.7	23
12	7.3	6.6	6	4.5	3.2	**3**	4.4	6.6	8.8	10.9	12.6	13.8	14	13.9	13.8	13.7	12.4	10.8	8.9	7.9	7.4	7.6	7.4	7.5	14.0	8.9	24
13	7.7	7.1	6.4	6.1	6.9	7.9	8.1	10.4	13	14.6	16	17.1	18.1	19.4	19.8	20.5	20.2	19.5	17	15.3	14.1	13	12.7	12.4	20.5	13.5	24
14	12.4	11.8	11.5	11.4	10.8	10	10.1	12.3	14	17	19.6	22.3	24.2	25.3	24.7	23.4	23.1	22	19.2	17.3	15.4	14.2	12.4	10.8	25.3	16.5	24
15	9.7	9.6	8.5	7.6	7.1	6.3	6.4	8.7	11.1	12	13.3	14.7	15.7	16.2	16.4	16.7	15.7	14.1	11.8	10.7	9.2	8.5	6.7	5.8	16.7	10.9	24
16	6	5.3	4.8	4.5	4.8	4.8	5.4	7.9	9	11.6	13.1	14.4	15	15.5	15.2	15.2	15.7	14.1	11.5	10	9.7	7.7	6.8	6.5	15.7	9.8	24
17	5.8	5	4.5	4.3	5.1	5.6	6.3	8.1	11.4	14.1	16.7	18.5	19.5	20.1	20.7	20.9	21.4	20.1	17.2	15.6	14.7	14.7	12.9	12.4	21.4	13.2	24
18	11.9	11.5	10.2	10.4	9.8	8.3	8.8	11.7	14.3	16.8	18.5	19.2	19.2	19	19.1	18.9	17.9	15.4	13.8	12.2	10.1	9.2	8.5	8.1	19.2	13.5	24
19	7.4	6.5	5.9	4.9	5.1	4.8	3.8	5.9	7.2	9.8	12.7	14.7	16.5	18.9	19.9	19.8	18.9	16.7	15.1	14.3	12.7	12	11.1	9.8	19.9	11.4	24
20	9	8.5	8.2	7.7	7.2	6.9	5.8	8	11	14.7	16.2	17.5	18.5	19.4	20	20.4	20.4	19.1	15.5	14.9	13.8	12.7	10.7	11.7	20.4	13.2	24
21	11.8	10.8	9.9	9.1	9.2	8	8.8	13.2	14.8	15.8	16.9	18.1	19.1	19.6	20	19.9	19.6	17.4	14.7	14.1	13.4	11.9	11.3	10.8	20.0	14.1	24
22	10.2	9.7	9.1	8	7.7	7.3	6.8	8.7	11.1	13.5	15.6	17.7	19.4	21.4	21.8	22.6	22.2	20.6	18.1	16.5	15.1	14	13.2	12	22.6	14.3	24
23	11.2	10.7	9.7	9	8.5	7.7	7.9	11.5	14.3	18.2	21.2	23	24.3	24.9	**25.8**	25	24.2	21	18.8	18.3	17.9	18.4	17.3	16.4	**25.8**	16.9	24
24	13.8	13.2	12.9	13.6	13.5	11.6	12.8	16.1	18.6	19.7	21.7	24	24.1	25.4	25	24.5	24.2	22.2	19.3	17.3	17.1	16.8	14.7	13.8	25.4	**18.2**	24
25	13.9	12.6	10.7	10.1	9.8	9.9	10.3	11.8	14.1	17.8	20.4	22	24	24.9	25.2	24.9	22.8	19	16.1	14.4	12.9	12.4	11.9	11.1	25.2	16.0	24
26	11.1	10.8	10.6	10.3	9.9	9.3	8.5	9.3	12.8	15.7	16.9	17.5	**P**	**P**	16.8	18.3	18.1	15.2	12.9	12.8	12.1	10.8	10.2	9.3	18.3	12.7	22
27	8.8	8.2	7.7	7.2	6.3	5.4	4.9	6.5	9.5	12.8	15.4	17.4	18.8	19.9	20.2	20.4	20.1	18.4	15.8	14.9	14.3	13.4	12.9	12.2	20.4	13.0	24
28	11.5	10.9	10.8	10.5	10.2	10.1	9.4	10.6	12.9	15.7	17.8	20.3	22.4	23.9	25.2	25.4	24.6	22.9	19.9	18.7	17.2	15.4	15.9	14.5	25.4	16.5	24
29	13.7	13.6	14	13.9	10.9	10.1	10.2	12.1	13.9	15.1	17	18.5	18.3	17.8	18.4	18.7	18.1	15.8	14.3	12.8	11.3	10.4	9.9	9.1	18.7	14.1	24
30	9.2	8.9	8.4	7.9	7.2	6.7	6.2	8	10.8	12.9	14.1	15	15.4	16.4	16.3	14.9	15.3	13.8	11.2	10.1	9.1	8.2	8.2	7.5	16.4	10.9	24
HOURLY MAX	14.2	13.9	14.4	14.1	13.5	12.6	13.0	16.1	18.6	19.7	21.7	24.0	24.3	25.4	25.8	25.4	24.6	22.9	19.9	18.7	17.9	18.4	17.3	16.4			
HOURLY AVG	10.3	9.8	9.3	8.9	8.5	8.0	8.3	10.3	12.3	14.4	16.0	17.4	18.2	19.0	18.9	18.9	18.6	17.1	15.0	13.6	12.8	12.1	11.3	10.6			

STATUS FLAG CODES

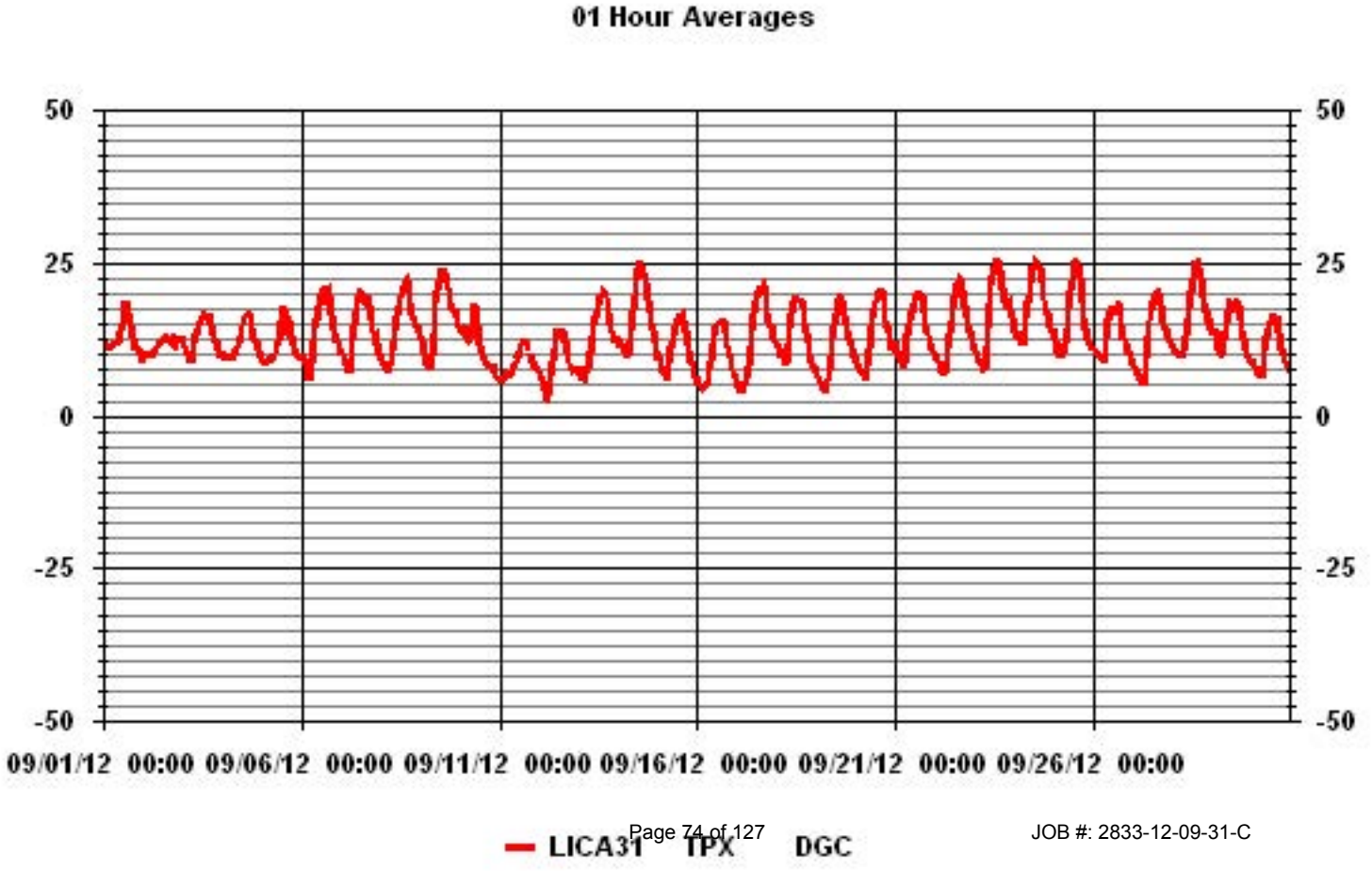
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	3	^{O}C	@ HOUR(S)	5	ON DAY(S)	12
MAXIMUM 1-HR AVERAGE:	25.8	^{O}C	@ HOUR(S)	14	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	18.2	^{O}C			ON DAY(S)	24

CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	717	HRS
			AMD OPERATION UPTIME:	99.6	%
STANDARD DEVIATION:	4.86		MONTHLY AVERAGE:	13.29	^{O}C



JOB #: 2833-12-09-31-C

Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 2012

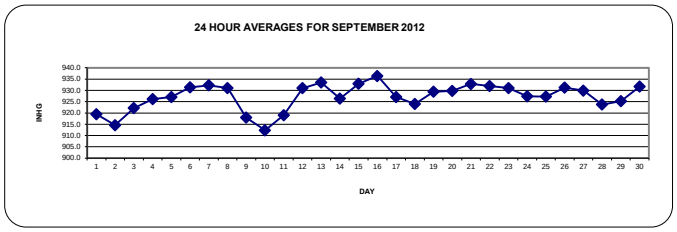
BAROMETRIC PRESSURE hourly averages (millibar)

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	923	923	923	922	921	920	919	920	920	920	919	920	919	919	919	919	919	919	918	918	918	917	916	915	923	919.4	24
2	915	914	913	913	912	912	912	911	911	911	912	912	913	914	914	915	916	917	918	918	919	919	919	920	920	914.6	24
3	920	920	920	920	920	921	921	922	922	923	923	923	923	923	923	923	924	923	923	923	923	923	923	923	924	922.2	24
4	923	923	923	924	924	925	925	926	926	927	927	927	927	927	928	928	928	928	928	927	927	927	927	926	928	926.2	24
5	926	925	925	925	924	924	924	925	925	925	926	926	927	927	927	928	929	930	930	930	930	930	930	931	931	927.0	24
6	931	931	931	931	931	931	931	931	932	932	933	933	932	932	932	932	932	932	932	931	930	930	930	930	933	931.4	24
7	930	929	929	929	928	928	928	929	929	930	930	931	932	933	935	935	936	936	936	936	936	936	936	936	936	932.2	24
8	936	936	935	935	935	935	934	934	934	934	933	932	932	931	930	929	929	928	927	926	926	925	924	924	936	931.0	24
9	923	922	921	921	920	920	919	919	919	920	919	919	919	918	918	917	917	916	915	914	914	914	913	913	923	917.9	24
10	912	912	912	912	911	911	911	911	911	912	912	912	912	912	912	913	913	913	913	913	913	914	914	914	914	912.3	24
11	913	914	914	914	915	915	915	916	916	917	918	919	919	920	920	921	922	922	**P**	924	925	925	926	927	927	919.0	23
12	927	928	928	929	929	930	930	931	932	933	933	933	933	932	932	932	932	932	932	931	931	931	931	931	933	931.0	24
13	932	932	932	932	932	933	933	933	934	935	935	935	935	935	935	935	935	935	934	933	933	932	932	931	935	933.5	24
14	931	930	929	928	927	926	926	926	925	925	925	925	925	925	925	925	925	925	925	926	926	927	928	928	931	926.4	24
15	928	929	929	930	930	931	931	932	933	933	934	934	934	934	934	934	934	934	934	935	935	936	936	936	936	932.9	24
16	936	936	936	936	937	937	937	937	938	938	938	938	938	938	937	937	937	936	936	935	934	934	934	933	**938**	**936.4**	24
17	933	932	932	931	930	929	929	928	928	928	928	927	927	926	926	926	925	925	924	924	923	923	923	922	933	927.0	24
18	922	921	921	921	920	920	920	920	921	921	922	923	924	924	925	925	926	926	927	928	929	929	930	930	930	924.0	24
19	930	930	930	930	930	930	930	930	930	930	930	930	929	929	928	928	928	928	929	929	929	929	929	930	930	929.4	24
20	930	930	930	930	930	930	930	930	930	930	930	930	930	930	930	930	930	930	929	929	929	929	929	930	930	929.8	24
21	930	930	930	931	931	932	932	933	934	934	934	935	935	935	934	934	934	934	933	933	933	933	932	932	935	932.8	24
22	932	932	932	932	932	931	931	931	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	932	931.9	24
23	931	931	931	931	931	931	931	931	932	932	932	932	932	932	932	932	931	931	931	930	930	929	929	929	932	931.0	24
24	929	928	928	928	928	928	927	928	928	928	928	928	928	928	927	927	927	927	926	926	926	926	926	926	929	927.3	24
25	926	926	925	925	925	925	925	926	926	927	927	927	928	928	928	928	928	929	928	929	929	929	930	930	930	927.3	24
26	930	930	930	931	931	931	931	931	931	932	932	932	**P**	**P**	932	932	932	932	931	931	931	931	931	932	932	931.2	22
27	932	931	931	931	931	931	931	931	931	931	931	931	931	931	930	930	929	929	928	928	928	927	927	927	932	929.9	24
28	927	926	926	926	926	925	925	925	925	925	925	925	924	924	923	923	922	922	922	921	921	921	920	920	927	923.7	24
29	921	921	922	922	923	923	924	924	925	925	925	925	926	926	926	926	927	927	927	927	928	928	928	929	929	925.2	24
30	929	929	930	930	930	930	931	931	932	932	933	933	932	932	932	932	933	933	933	933	933	933	932	932	933	931.7	24
HOURLY MAX	936	936	936	936	937	937	937	937	938	938	938	938	938	938	937	937	937	936	936	936	936	936	936	936			
HOURLY AVG	927	927	927	927	926	927	926	927	927	927	928	928	928	927	928	928	928	928	928	927	927	927	927	927			

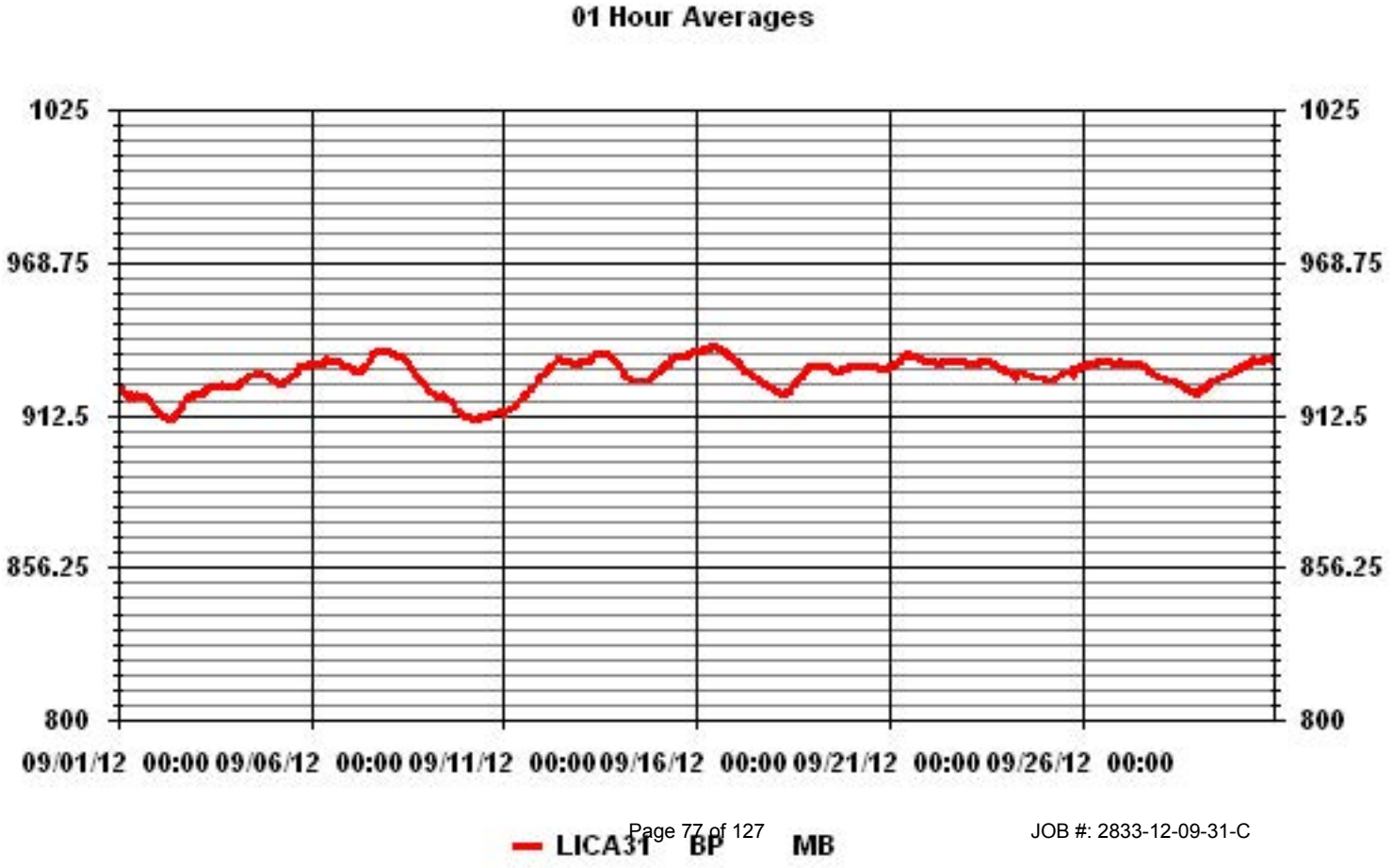
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	938	MB	@ HOUR(S)	VAR	ON DAY(S)	16
MAXIMUM 24-HR AVERAGE:	936.4	MB			ON DAY(S)	16
				VAR-VARIOUS		
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		717	HRS
			AMD OPERATION UPTIME:		99.6	%
STANDARD DEVIATION:	6.14		MONTHLY AVERAGE:		927	MB



JOB #: 2833-12-09-31-C

Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 2012

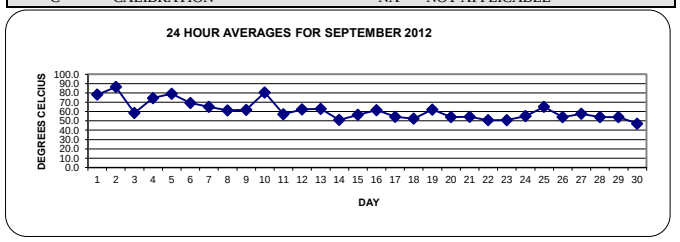
RELATIVE HUMIDITY hourly averages (%)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	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	83	84	82	81	81	79	77	78	80	83	79	75	69	67	70	71	73	74	80	83	81	79	79	86	86	78.1	24
2	88	91	91	90	91	90	91	90	90	89	89	87	86	86	84	84	84	83	85	87	83	80	78	74	91	**86.3**	24
3	70	70	72	72	74	78	75	68	65	57	49	48	44	40	39	39	38	41	48	51	51	64	75	74	78	58.4	24
4	72	79	82	82	82	83	86	85	84	81	80	77	70	62	61	58	57	59	66	73	75	73	79	81	86	74.5	24
5	84	86	84	81	80	84	83	85	87	84	82	70	65	58	78	78	68	69	74	76	83	85	86	87	87	79.0	24
6	89	87	89	89	90	**91**	89	76	73	72	65	57	53	48	45	46	43	49	61	66	68	70	70	73	**91**	69.1	24
7	75	75	76	77	79	82	77	68	66	61	55	53	54	55	54	51	49	51	57	62	65	63	73	81	82	65.0	24
8	82	83	82	80	83	83	82	76	69	58	47	44	45	42	40	41	42	48	54	59	59	57	55	56	83	61.1	24
9	57	58	68	74	72	74	79	74	63	51	46	46	45	41	45	47	58	61	70	68	70	69	69	78	79	61.8	24
10	79	80	75	75	79	82	80	77	68	66	69	70	76	83	89	87	87	89	88	85	86	85	87	86	89	80.3	24
11	87	87	86	81	73	73	72	71	64	55	50	41	40	39	38	36	37	40	**P**	43	47	50	51	54	87	57.2	23
12	57	62	66	72	76	76	71	64	59	52	47	45	43	42	41	41	47	58	73	78	82	80	84	82	84	62.4	24
13	84	85	84	85	82	79	77	70	63	60	54	51	48	46	44	42	43	46	52	56	61	65	66	65	85	62.8	24
14	65	66	66	66	66	68	68	62	60	56	52	45	37	32	33	33	38	41	47	48	43	40	43	49	68	51.0	24
15	52	48	53	57	60	64	66	61	58	57	54	50	47	43	40	39	41	48	54	59	68	73	80	84	84	56.5	24
16	81	80	81	82	83	83	82	74	72	63	57	47	44	42	40	38	36	42	46	51	56	62	67	68	83	61.5	24
17	70	72	73	72	69	69	70	67	59	54	49	45	41	36	32	32	32	38	47	52	55	54	60	59	73	54.5	24
18	59	60	64	63	64	71	68	57	49	45	42	39	33	32	31	25	33	42	50	54	65	69	72	73	73	52.5	24
19	77	79	83	86	84	85	87	82	78	71	63	56	46	41	38	35	36	40	45	48	54	56	59	62	87	62.1	24
20	65	66	67	69	72	72	76	68	60	49	43	38	33	31	32	33	35	40	49	51	55	60	70	65	76	54.1	24
21	66	70	74	77	76	81	77	63	58	51	45	41	37	36	36	37	36	42	47	48	49	53	52	53	81	54.4	24
22	55	55	57	62	64	65	68	63	57	53	49	46	43	39	39	38	37	41	45	45	46	47	50	54	68	50.8	24
23	56	57	60	61	62	66	65	56	51	45	42	40	37	36	34	36	39	51	56	53	53	50	55	59	66	50.8	24
24	70	72	70	65	65	76	67	58	59	55	48	42	38	35	36	38	37	43	54	59	55	53	64	66	76	55.2	24
25	69	77	84	87	90	87	83	77	69	59	52	49	42	38	33	37	44	57	66	68	70	73	75	77	90	65.1	24
26	75	73	71	72	71	70	69	68	58	48	40	38	**P**	**P**	38	34	32	38	44	45	48	51	52	56	75	54.1	22
27	58	60	61	63	69	76	80	76	72	67	61	51	44	39	38	35	36	43	52	54	56	60	64	68	80	57.6	24
28	71	72	71	72	73	73	74	70	64	58	52	45	39	35	30	30	31	35	43	45	50	56	53	57	74	54.1	24
29	59	59	59	60	72	75	76	71	67	63	56	48	42	39	33	31	32	37	44	49	55	57	56	56	76	54.0	24
30	57	56	56	58	60	62	63	57	49	43	40	36	34	31	31	36	33	35	43	46	49	50	51	53	63	47.0	24
HOURLY MAX	89	91	91	90	91	91	91	90	90	89	89	87	86	86	89	87	87	89	88	87	86	85	87	87			
HOURLY AVG	70.4	71.6	72.9	73.7	74.7	76.6	75.9	70.4	65.7	60.2	55.2	50.7	47.4	44.6	44.1	43.6	44.5	49.4	56.6	58.7	61.3	62.8	65.8	67.9			

STATUS FLAG CODES

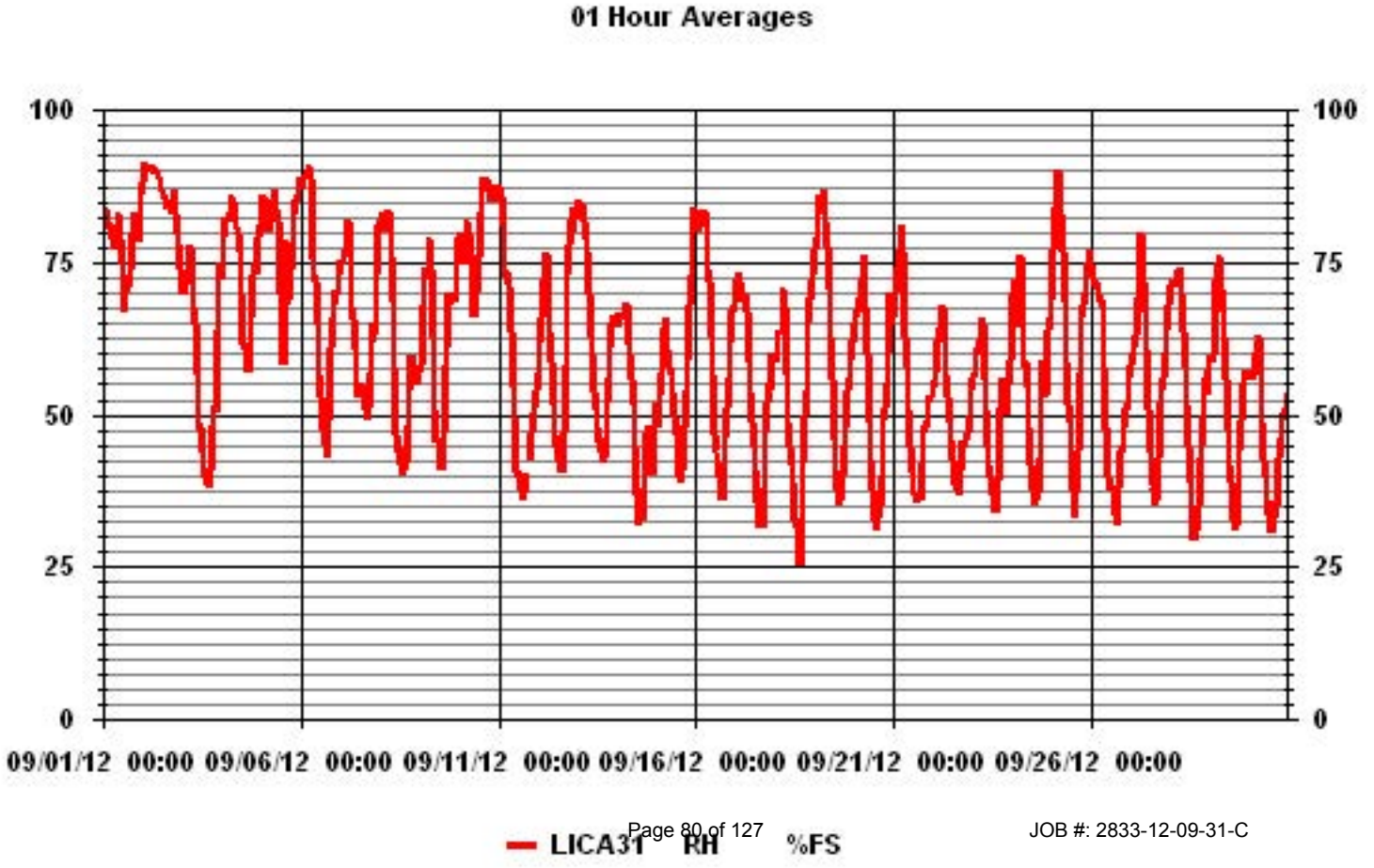
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	91	%	@ HOUR(S)	5	ON DAY(S)	6
MAXIMUM 24-HR AVERAGE:	86.3	%			ON DAY(S)	2
					VAR-VARIOUS	

CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	717	HRS
			AMD OPERATION UPTIME:	99.6	%
STANDARD DEVIATION:	16.35		MONTHLY AVERAGE:	61.08	%



JOB #: 2833-12-09-31-C

Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

SEPTEMBER 2012

PRECIPITATION hourly averages (mm)

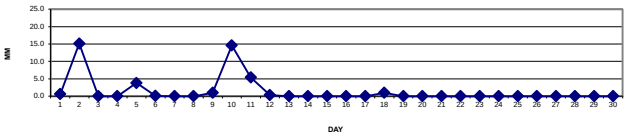
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	TOTAL	RDGS.
DAY																											
1	0	0	0	0	0	0	0	0	0.2	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.6	24
2	0	0	0	1.6	2.9	1.5	1.1	1.7	0.3	0.3	1	0.6	1.1	0.9	0.2	0.4	0.4	0.5	0.6	0	0	0	0	0	2.9	**15.1**	24
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
5	0	0	0	0	0	0	0	0.3	0.2	0	0	0	0	1.9	0.4	1	0	0	0	0	0	0	0	0	1.9	3.8	24
6	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7	0.7	1.0	24
10	0.1	0.7	0	0	0	0	0	0	0	0	0	0	0	1.1	**3**	0.3	1.5	0.8	0.1	0	0.6	1.9	2.4	2.1	**3.0**	14.6	24
11	2.2	1.9	1	0.1	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.2	5.4	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.1	0	0	0	0	0.2	0.3	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	1	0	0	0	0	0	0	0	0	0	0	0	0	1.0	1.0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	0.0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
HOURLY MAX	2.2	1.9	1.0	1.6	2.9	1.5	1.1	1.7	0.3	0.4	1.0	1.0	1.1	1.9	3.0	1.0	1.5	0.8	0.6	0.1	0.6	1.9	2.4	2.1			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	MD	-MISSING DATA

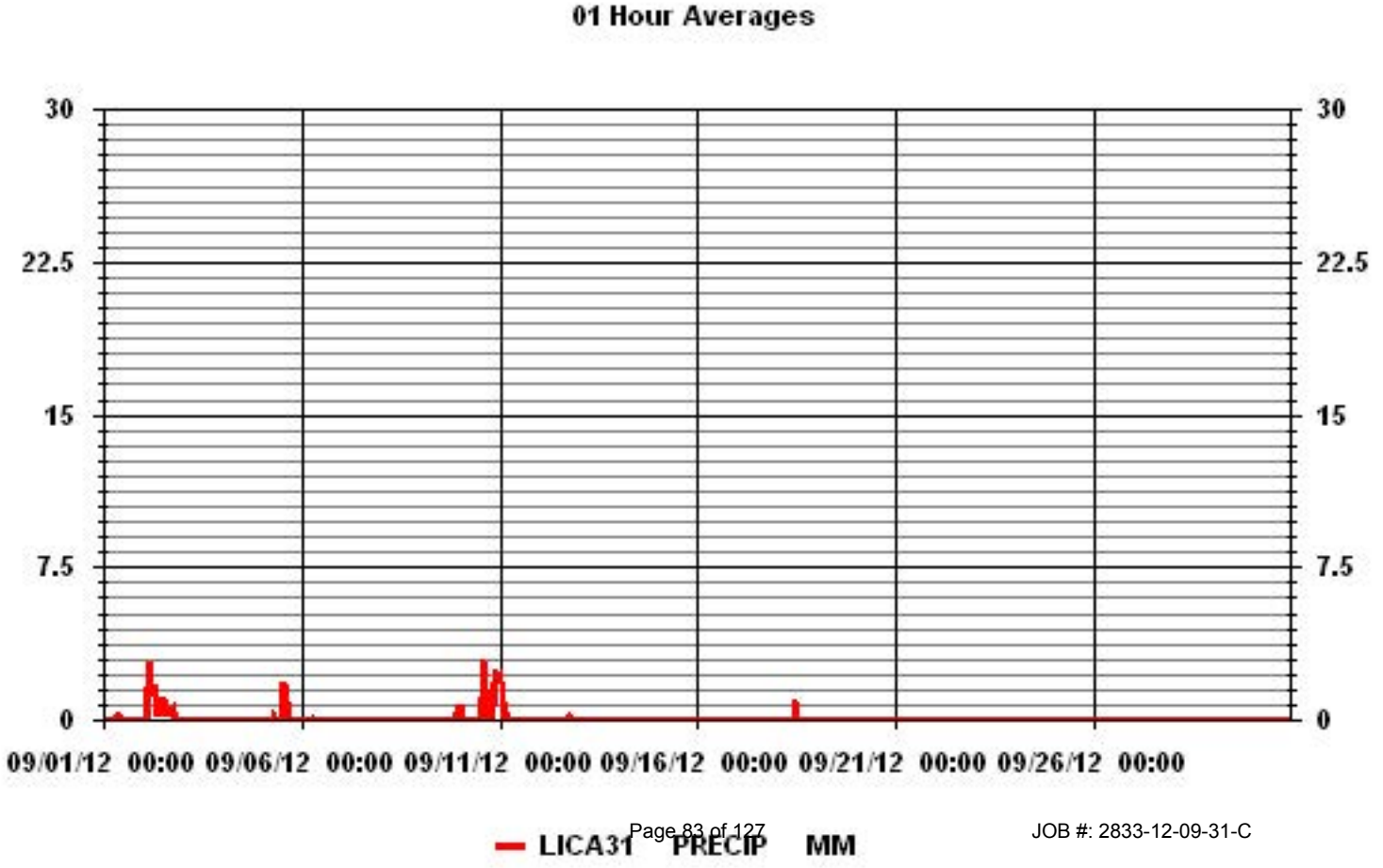
DAILY TOTALS FOR SEPTEMBER 2012



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	3.0	MM	HOUR(S)	14	ON DAY(S)	10
MAXIMUM DAILY TOTAL	15.1	MM			ON DAY(S)	2
MONTHLY TOTAL	41.9	MM				

CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS
			AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.30		MONTHLY AVERAGE:	0.06	MM



JOB #: 2833-12-09-31-C

Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

SEPTEMBER 2012

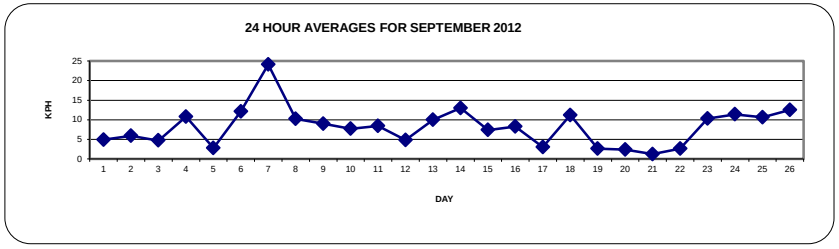
WIND SPEED hourly averages (km/hr)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	11	13.8	10.7	13	13.7	18.4	20.1	7.8	7	9.5	12.8	11.9	11.9	8	5.5	16.6	19.2	22.8	20	15.4	14.5	14.1	17.2	13.4	22.8	2	24
2	9.7	14.9	18.2	16.3	17.2	18.9	19.5	26.4	21.3	23	22.7	23.1	26.4	23.9	23.1	21	20	22.3	18.2	12.4	14.5	13.7	14.1	17	26.4	18.1	24
3	16	18.1	17.7	16.4	13.2	12.1	11.8	16.5	16.8	19.9	19.4	18.9	22.2	24.9	20.7	20	18.2	16.5	12.9	13.9	17.1	9.2	8.2	13.6	24.9	16	24
4	18.1	18.9	17.2	17	17	14.5	14	14	13.9	14.1	15.1	12	12.4	14	14.5	16.3	14.5	11.4	7.3	7.8	8.1	8.1	9.4	8.6	18.9	12.9	24
5	8.3	6.2	6.3	6	8	6.7	10.5	10.9	8.4	8.2	8.8	9.6	10.1	10.4	4	7.8	6.2	4.6	5.1	6.9	6.4	6.5	6.2	5.1	10.9	4.9	24
6	6.3	5.4	1.8	3.6	6.6	7.8	5.8	4.9	5.5	6	7.2	6.8	11.2	8.6	10.1	10.4	11.6	6.9	5.7	7.1	7.1	6.7	6.8	9.1	11.6	5.9	24
7	9.4	10.6	9.9	8.4	9.2	8	9.5	12.4	11.2	13.4	14.7	17.7	18.2	15.1	15.1	10.4	8.5	7.4	6.1	5.2	4.6	3.1	5.9	7.1	18.2	4.7	24
8	7.7	7.3	8.1	8.7	10.4	10.8	11.9	13.2	15.3	15.3	16.8	18	16.3	15.6	18	15.6	10.5	8.4	9.6	10.4	9.6	9.6	9.6	9.6	18	10.8	24
9	9.7	6.8	6.6	7.7	7.5	7.7	7.7	1.2	1.7	1.3	2.3	3.5	4.4	3	2.5	2.4	3.6	5.2	7.4	7.9	6.1	8.4	6.6	10.9	10.9	2.8	24
10	10.4	9.2	10.4	7.8	5.3	1.2	4.7	4.9	6.1	10.1	11.3	19.9	18.5	13.6	19.3	15.1	15.2	13.2	12.6	16.4	20.7	21.4	25.6	25.3	25.6	12.1	24
11	28.6	24.1	29.2	24.6	25.5	19.5	22.7	24.1	26.3	27.8	28.5	29.1	**32.3**	32	29.2	30	28.9	23.2	**P**	17.7	15.2	15.9	14.8	13.9	**32.3**	**24.1**	23
12	13.8	12.1	12.3	11.3	12.1	11.8	11.6	12	12.1	12	12.2	16.8	22.5	21.1	19.2	13.8	14	9.1	5.6	3.3	4.1	3.2	5.9	5.1	22.5	10.2	24
13	4.5	6.2	6.4	7.2	9.1	9.8	10.4	6.9	12.7	12.8	17.4	20.6	17.8	14.5	13.4	10.8	13	6.3	5.6	8.6	9.3	10.3	11.2	11.6	20.6	9	24
14	12.3	12.4	12.9	13.2	14.6	13.8	8	11	9.7	10	9.6	12.3	15.3	**M**	14.3	12.8	14.3	11.4	8.1	8.9	9.6	8.9	9.2	8.8	15.3	7.7	23
15	9.7	10.9	10.8	10.4	11.4	12.1	11.5	9.9	8.8	11.5	11.4	9.1	10.1	12.3	13	11.9	8.8	6.1	6.7	6.6	7.8	5.4	4.3	4	13	8.4	24
16	4.6	5.7	6.4	7.5	9	8.1	8.3	7.3	7	7.9	7.9	8.1	8.4	7.9	7.8	6.2	7.9	6.5	4.7	6	6.5	7.4	7.4	7.8	9	4.8	24
17	7.9	8.2	9.4	9.9	10.8	11.6	12.1	9.2	12.5	18.9	12.1	9.2	18.5	16.3	16.3	16.8	12.9	10.9	10.6	11.3	10.6	11.4	12.2	12.6	18.9	10	24
18	14	14.2	13.2	14.7	12.8	10.9	9.2	10.2	13.3	15.5	19.9	21.6	24.8	26.7	23.3	24.7	17.6	15.7	15.8	14.6	7.4	8.9	8.9	10.3	26.7	13	24
19	9.1	6.2	8.4	8.8	8.2	7.9	8.1	5.1	5.8	7	8.8	9.5	15.1	12.4	13.4	15.3	12	11.3	10.3	10.5	8.3	8.2	10.1	9.2	15.3	7.4	24
20	9.3	10.3	11.3	11.9	10.7	8.7	9.2	8.7	5.8	7.3	10	9.9	10.9	11.9	9.9	11.5	7.3	4.2	5.1	6.8	5.8	6.8	9.1	9.3	11.9	8.3	24
21	9.3	11	9.2	7.7	7.5	7	5.7	4.6	5.5	6	7.6	6.6	6.7	7.8	6.8	8.2	8.1	6.3	9.9	11.8	12.2	10.5	11.7	13.8	13.8	3	24
22	12.9	13.4	12.2	10.8	12.9	13.8	13.1	11.8	13.4	10.8	12.1	11.3	10.4	12.5	12.7	11.3	10.1	6.9	9.6	9.9	9.9	10.5	11.6	12.2	13.8	11.2	24
23	11.6	10.1	10.6	10	7.8	7.2	6.4	6.2	5.8	4.7	3.4	2.4	1.9	2.2	3	2.2	2.6	4.2	5.4	3.2	0.8	3.1	1.3	5.7	11.6	2.6	24
24	6.4	6.9	7	6.1	4.4	4	2.8	2.7	3.3	3.9	5.1	5.4	4.7	4.9	3.7	3	3.2	3	6.3	9.3	7.7	6.5	7.7	8.5	9.3	2.4	24
25	8.3	7	8.7	8	6.9	7.4	8	7.2	7.7	4.9	1.6	3.8	3.5	5.2	4.9	5.1	8.9	11.4	11.8	12.6	10.9	11.2	10.7	9.5	12.6	1.2	24
26	10.7	10.2	10	7.1	7.6	7.7	7.7	5.7	7	5.5	4.7	4.8	**P**	**P**	3.6	2.5	2.2	1.9	3.8	4.8	5.4	7.5	8.4	8.4	10.7	2.6	22
27	8.2	7.8	7.7	8.3	8.9	7.8	8.1	8.9	8.4	8.4	11	13.3	13.2	14.2	13.5	14.7	11.6	10.2	9.5	11.4	11.6	11.5	11.2	10.8	14.7	10.3	24
28	12.1	10.3	10.3	12.5	12.2	12	11.4	12	12.9	9.4	9.3	12.4	17.2	19.1	18.5	14	12.8	9.3	9.8	9.7	10	7.3	8.5	7.1	19.1	11.4	24
29	8.5	12.8	12	11.3	12.4	10.8	12.3	11.2	8.5	7.3	9.8	13.8	15	15.2	15.3	13.7	14.7	11.3	8.6	8.7	8.4	8.7	8.2	9.6	15.3	10.6	24
30	9.9	9	9.6	10.2	9	11.4	12.4	12.8	11.1	14	17.7	21.7	22.4	28.4	29	17.9	14	10.9	7.6	7.4	7.1	6.6	5.3	6.6	29	12.5	24
HOURLY MAX	28.6	24.1	29.2	24.6	25.5	19.5	22.7	26.4	26.3	27.8	28.5	29.1	32.3	32.0	29.2	30.0	28.9	23.2	20.0	17.7	20.7	21.4	25.6	25.3			
HOURLY AVG	10.6	10.7	10.8	10.5	10.7	10.3	10.5	10.0	10.2	10.9	11.7	12.8	14.6	14.3	13.5	12.7	11.7	10.0	9.0	9.6	9.2	9.0	9.6	10.2			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

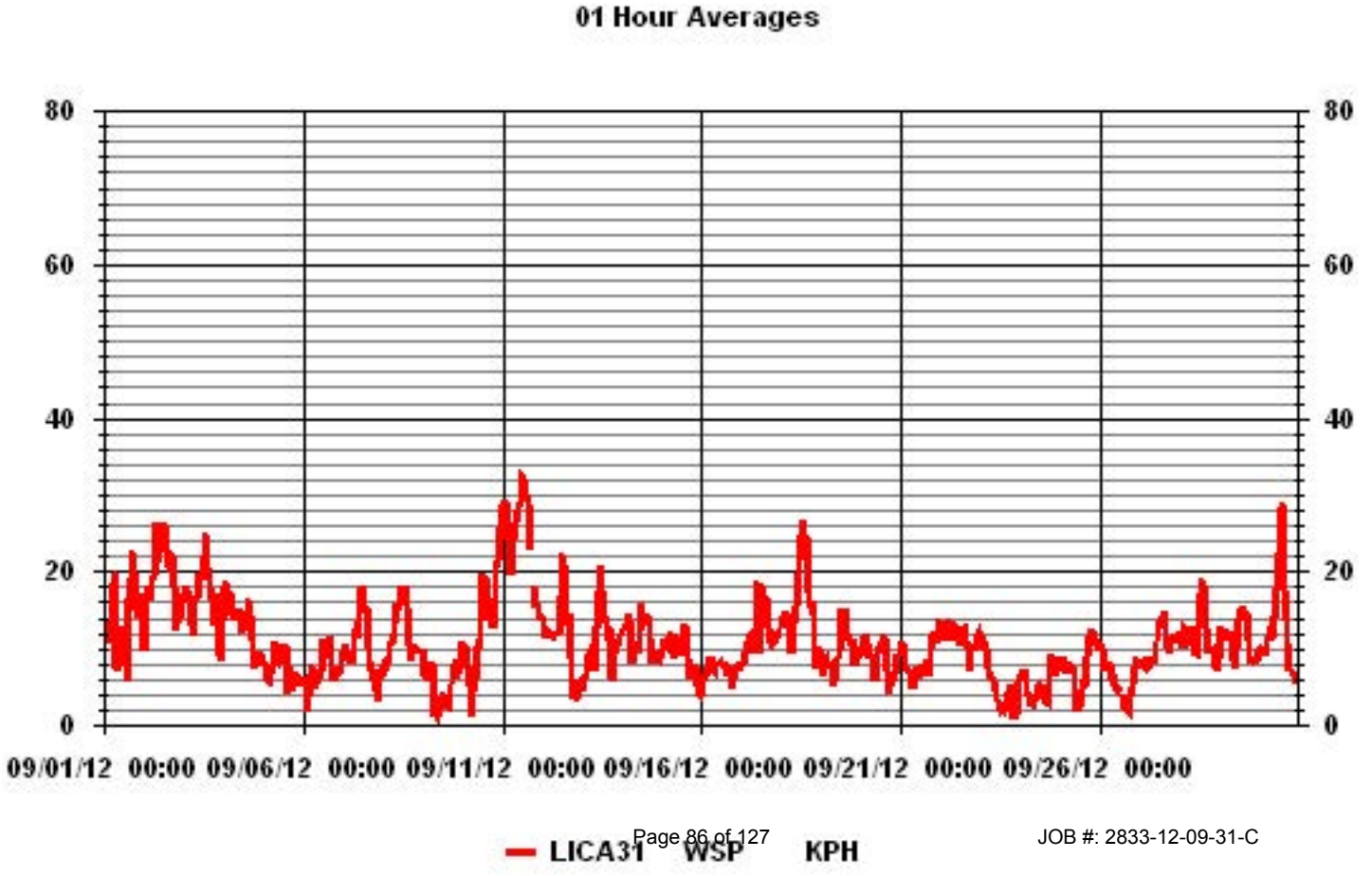


LAST CALIBRATION: June 12, 2012

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:			32.3	KPH	@ HOUR(S)	12	ON DAY(S) 11
MAXIMUM 24-HR AVERAGE:			24.1	KPH			ON DAY(S) 11
CALMS (≤ 0 KPH)	0.13	%	OPERATIONAL TIME:			716	HRS
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:			99.4	%
STANDARD DEVIATION:	5.45		MONTHLY AVERAGE:			10.95	KPH

JOB #: 2833-12-09-31-C



JOB #: 2833-12-09-31-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *ST. LINA*

SEPTEMBER 2012

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

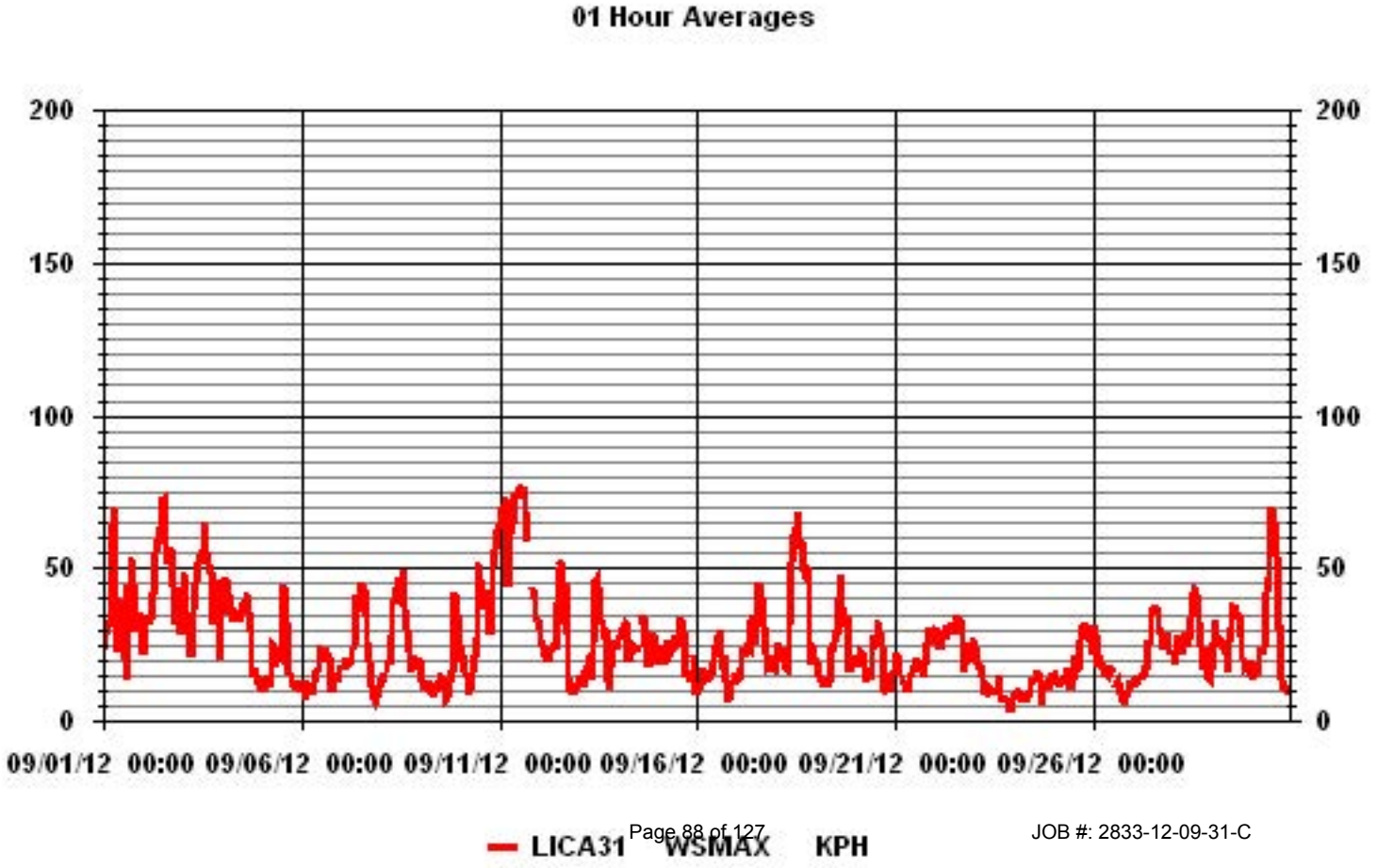
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.
DAY																									
1	24.1	27.8	32.9	30.5	32.4	64.3	70	41.6	22.6	25.8	39.9	26.7	26.3	21	13.6	44.2	42.5	53.4	45.6	28.7	34.8	32.4	35.7	32.2	70
2	21.5	27.8	34.6	32	34	32.9	41.6	54.8	55.4	59.1	63.5	57.8	72.9	73.3	52.8	51.2	54.9	57.1	44.7	31.5	34	32.2	27.8	44	73.3
3	40.5	48.6	36.1	28.7	27.1	20.6	28.5	36.3	45.3	51.6	51.9	53.9	56.3	64.8	51.2	55.4	52.1	49	31.8	41.4	46.2	38.8	20.2	34.8	64.8
4	46.2	45.3	47.1	39.9	40.3	35.7	32	36.6	35.4	34.8	35.3	32.2	35	38.1	39.6	42	36	29.4	15.8	14.2	17.1	15.1	12.9	10.4	47.1
5	12.5	9.7	13.6	11.4	15.1	11.2	25.2	24.5	17.8	20.8	19.3	22.1	22.8	44.5	18.6	32.6	16	15.6	13.6	11.8	10.1	11.6	12.1	9.2	44.5
6	12.7	12.5	7	9	11.4	10.8	8.3	9.7	12.5	16.3	17.1	24.3	22.1	22.8	23	19.3	22.3	21	9	16	12.9	14.9	12.9	16.7	24.3
7	17.7	18.2	16.9	20.2	17.3	19.9	18.2	23.9	25	41.6	35.7	39.4	45.3	44.4	43.6	34.4	26.7	19.7	11.6	9.9	8.1	6.4	7.7	11	45.3
8	13.8	12.5	14.9	15.8	19.1	19.1	28.3	39.2	39.4	42.5	42.5	47.3	39	38.5	49.7	37.4	30.2	23.2	15.5	21.3	18	19.5	18.6	16.4	49.7
9	20.2	13.6	11.6	11.4	11.4	10.5	12.9	9	7.7	9.9	10.6	12.9	15.1	13.8	12.5	13.6	7	7.7	14.7	14.2	15.6	42	35	34.8	42
10	25.8	20.2	20.4	16.4	14.7	8.6	12.7	12.3	15.8	21.1	27.6	51.9	46.8	42.5	43.8	36.1	42.7	32.6	28.3	34	50.1	56.3	62.5	64.1	64.1
11	63	69.6	70.7	63.7	73.5	43.8	55.6	60.9	64.4	74.2	73.3	74.6	76.2	**77.7**	72.4	76.8	69.2	59.5	**P**	**P**	42.7	40.7	33.3	32.9	**77.7**
12	30.7	26.5	25.2	21.3	18.9	20.8	20.6	24.1	22.6	25.6	23	38.5	50.1	52.3	49.2	31.6	44.9	28.7	14.7	9.9	9	9	11.4	11.4	52.3
13	11.8	14.7	12.5	12.3	16.3	18.2	21.2	13.6	22.1	25.6	46.2	47.1	44.7	32.2	33.1	26.7	30.7	13.4	10.3	14.1	17.1	23.6	25.8	23	47.1
14	26.5	27.8	26.8	30.7	32.9	32.6	19.3	26.3	21.9	25.5	23	24.3	**M**	**M**	32.4	34.4	24.9	22.8	17.1	23.6	21.5	29.1	22.1	18.8	34.4
15	20	24.3	21	18.2	23.6	24.5	25.9	21.5	22.3	26	28	25	25.8	32	33.6	27.8	30	14.5	15.3	14.2	**P**	20.2	8.6	9.9	33.6
16	8.3	10.7	11.6	16.7	16.4	14.5	13.8	14	14.9	19.1	20.8	24.5	28	20.8	29.6	19.3	19.9	13.6	7.5	7.7	10.8	12.9	13.2	15.1	29.6
17	13.4	14	17.5	21.7	23.7	21	24.3	23.7	32.4	34.2	25.2	26.7	37.4	44.9	40.1	41.4	31.3	22.5	18	18.8	20.6	21.5	17.3	16.9	44.9
18	24.7	25	21.2	22.1	20.6	17.8	17.3	23.7	31.1	51.6	60.6	63.4	61.5	68.3	56	59.7	49.3	46.6	50.8	46.2	18.2	25.8	18.4	20.4	68.3
19	19.3	15.1	14.9	13.8	11	12.6	12.9	10.8	12.9	23.6	22.6	25.8	29.2	28.2	40.1	47.5	38.1	34.6	31.1	34.6	15.8	19.5	20.2	20.4	47.5
20	17.5	19.1	19.5	23.4	22.8	18	12.7	17.1	13.8	15.6	23.4	27.4	27.1	32.9	25.8	30	24.6	10.1	9	12.7	11.6	11.2	15.3	16.5	32.9
21	18.9	21.7	19.3	15.8	13.4	13.2	12.3	9.4	12.9	15.1	15.8	17.7	17.5	20.4	18	17.7	18.2	13.8	18.6	25.2	30.7	24.6	29.6	30	30.7
22	30.2	29.1	29.1	23.6	28.3	29.1	28.7	31.1	31.5	29.8	29.6	29.6	28.5	34.2	30.4	32.6	32.2	15.8	18.6	20.9	20.6	25.6	20.8	26.9	34.2
23	24.5	19.3	18	18	15.1	14	9.9	9.4	11.8	9.7	8.3	10.1	9.4	9.4	14	14	6.9	6.9	7	7	4.2	4.6	4.4	7.2	24.5
24	8.4	9.4	9.9	9.9	7.9	8.3	6.8	6.8	8.1	9.9	14	11.6	13.4	14.2	16.7	13.2	9.7	5.5	11.4	12.5	11.6	10.1	13.8	14.7	16.7
25	15.3	12.7	12.7	11.4	13.4	13.2	14.5	14.9	17.1	14.2	9.9	15.6	15.3	21.1	16.2	17.1	26.5	29.6	29.1	32	29.8	26.5	26.5	21.5	32
26	29.4	30.9	29.1	18	19.3	17.7	19.1	14.7	16	15.1	16.7	17.1	**P**	**P**	12.1	13	9.2	6.8	6.6	6.4	7.5	10.1	13.4	12.3	30.9
27	13.4	12.1	12.5	13.8	14.2	14.5	14.7	17.3	17.5	26.3	25	35.1	36.8	35.2	37.4	35.7	30.9	29.1	23.4	24.8	27.6	28.7	22.8	23	37.4
28	22.1	18.2	23	27.6	26.3	25.2	21.7	26.1	28.9	24.5	26.5	33.5	42	44.2	41.1	40.3	33.3	25	18	17.1	24.1	14.5	13.8	13.2	44.2
29	16.3	25.2	33.1	28.5	26.9	24.3	25.4	24.3	22.3	16	26	30.4	38.5	33.1	38.2	34.9	34.6	28	21	17.1	17.5	18.2	16.5	17.3	38.5
30	19.5	13.6	14.5	16.4	16.3	23.3	23.6	21.5	24.3	41.8	46.6	67	70	67.4	65.6	54.3	30	32	14.1	10.8	10.5	9.9	10.5	11	70
PEAK	63.0	69.6	70.7	63.7	73.5	64.3	70.0	60.9	64.4	74.2	73.3	74.6	76.2	77.7	72.4	76.8	69.2	59.5	50.8	46.2	50.1	56.3	62.5	64.1	

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	77.7	KPH	@ HOUR(S)	13
			ON DAY(S)	11



JOB #: 2833-12-09-31-C

LICA31
WSP / WDR Joint Frequency Distribution (Percent)

September 2012

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	1.25	1.39	1.11	.83	.41	.41	.41	.69	.69	1.11	2.51	1.39	.41	.41	.55	.55	14.24
<	12.0	1.67	.41	.00	.97	1.25	2.51	1.11	1.81	6.00	5.72	4.46	3.35	4.60	4.18	7.68	5.16	50.97
<	20.0	.41	.13	.00	.27	.41	.00	.00	.13	3.91	2.37	.55	3.35	5.86	4.46	4.60	.97	27.51
<	29.0	.00	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00	.55	2.37	2.37	.69	.00	6.14
<	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.27	.69	.00	.00	.97
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	3.35	1.95	1.11	2.09	2.23	2.93	1.53	2.65	10.61	9.21	7.54	8.65	13.54	12.15	13.54	6.70	

Calm : .13 %

Total # Operational Hours : 716

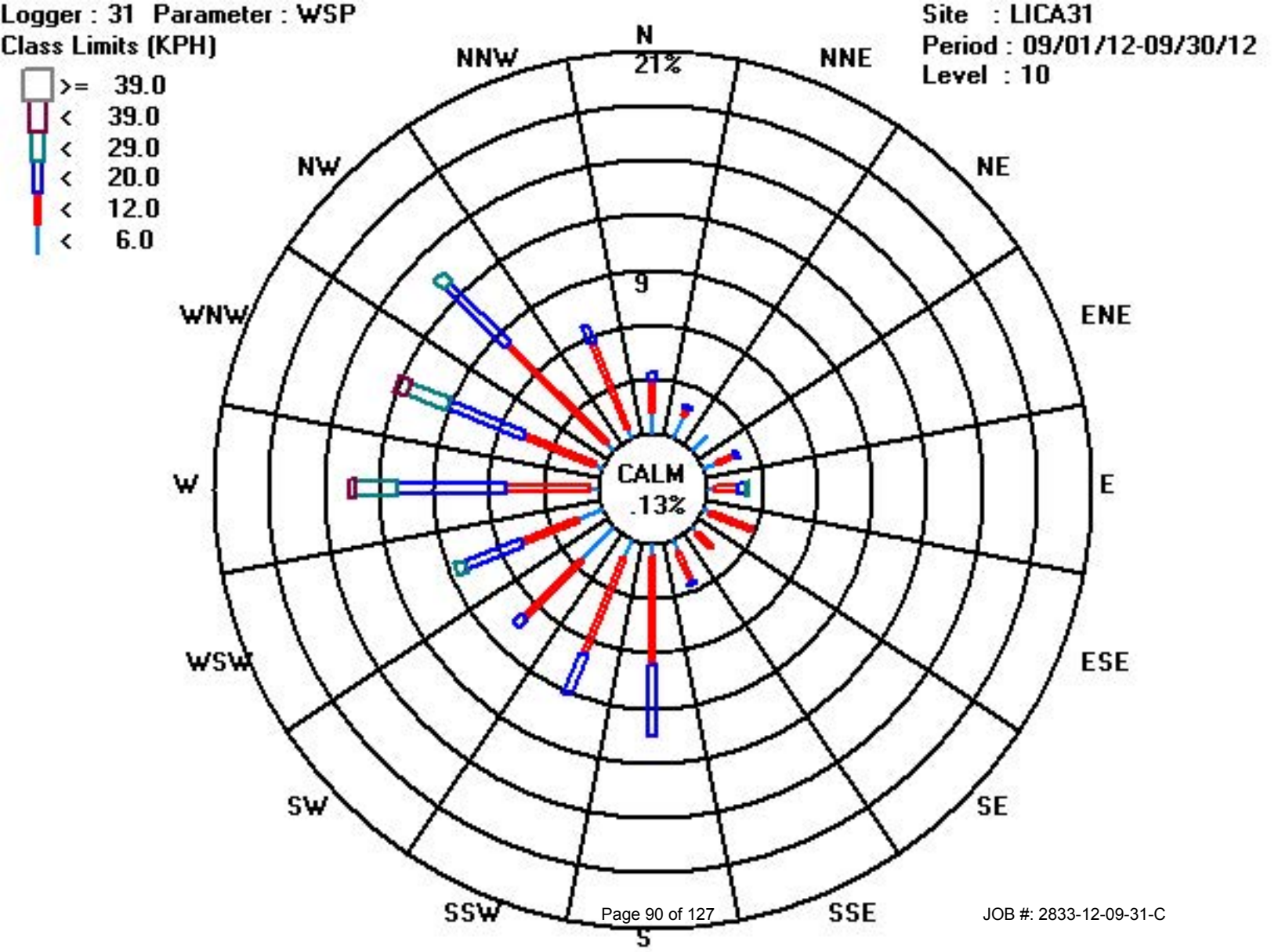
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	9	10	8	6	3	3	3	5	5	8	18	10	3	3	4	4	102
<	12.0	12	3		7	9	18	8	13	43	41	32	24	33	30	55	37	365
<	20.0	3	1		2	3			1	28	17	4	24	42	32	33	7	197
<	29.0					1							4	17	17	5		44
<	39.0													2	5			7
>=	39.0																	
	Totals	24	14	8	15	16	21	11	19	76	66	54	62	97	87	97	48	

Calm : .13 %

Total # Operational Hours : 716



JOB #: 2833-12-09-31-C

Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

SEPTEMBER 2012

WIND DIRECTION hourly averages in degrees

MST

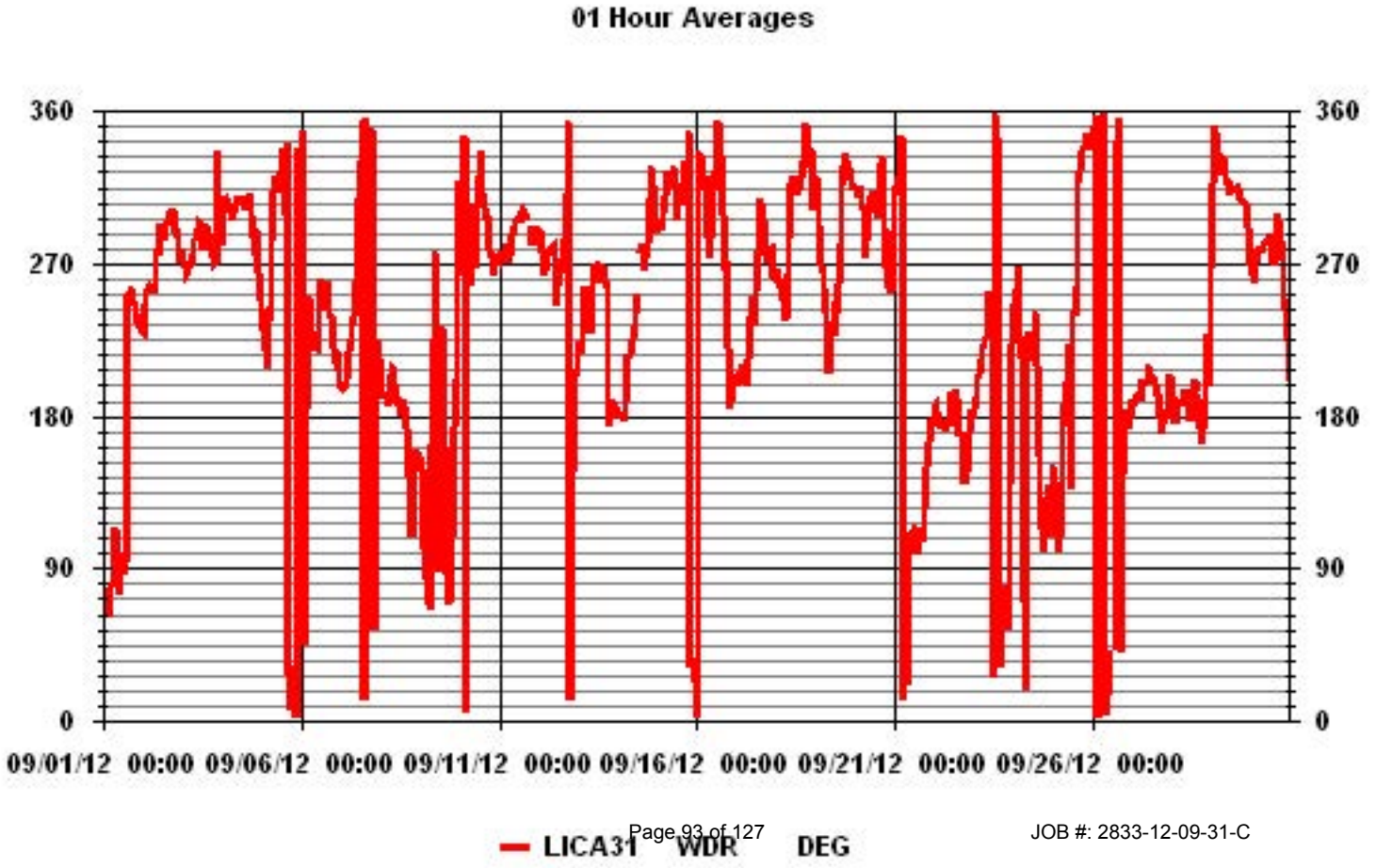
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	63	63	63	61	79	82	89	114	90	75	92	92	86	100	93	252	255	255	249	247	242	236	233	231	138	SE	24
2	230	246	253	255	252	255	258	253	277	277	291	291	283	288	293	295	300	298	302	288	292	287	271	275	277	W	24
3	278	268	264	266	270	268	275	285	288	287	295	294	279	279	294	287	287	282	275	269	270	336	292	280	281	W	24
4	304	309	307	309	307	301	296	302	302	310	308	308	307	309	301	305	309	311	300	286	275	291	265	250	302	WNW	24
5	244	232	219	208	236	245	284	313	321	319	311	325	317	338	300	27	341	34	6	9	9	2	338	318	314	NW	24
6	324	349	45	184	223	250	226	219	222	221	229	243	261	242	256	252	259	240	239	221	211	220	208	198	238	SW	24
7	198	196	197	199	202	218	225	233	239	259	294	308	330	355	12	356	349	328	308	350	54	210	225	215	277	W	24
8	191	193	193	193	186	188	204	209	208	200	192	187	184	180	189	186	174	145	120	108	131	156	160	148	180	S	24
9	157	149	103	93	85	70	65	163	225	277	104	88	208	233	208	163	88	69	74	71	108	173	202	263	119	ESE	24
10	319	307	318	346	4	282	257	303	306	267	287	304	322	336	313	304	296	299	279	274	262	273	274	272	294	WNW	24
11	271	277	271	274	281	279	271	275	287	292	296	297	296	296	300	302	300	298	**P**	290	281	283	285	292	287	WNW	23
12	288	288	278	264	266	274	279	274	280	281	260	245	257	264	272	282	281	311	355	12	172	147	203	207	271	W	24
13	218	223	217	232	257	254	246	228	254	268	268	267	271	258	262	269	260	257	181	174	180	189	186	180	242	WSW	24
14	180	182	180	178	178	188	215	215	217	225	233	240	250	**M**	278	281	265	273	282	308	328	317	306	292	239	WSW	23
15	289	294	296	290	299	310	325	315	322	320	327	319	295	312	304	311	311	331	329	349	31	37	28	24	317	NW	24
16	2	336	329	330	317	318	286	273	289	285	313	324	334	354	333	333	300	266	273	221	184	189	205	202	298	WNW	24
17	198	203	206	210	207	201	197	213	239	251	246	233	254	277	308	306	297	276	270	275	278	279	263	262	253	WSW	24
18	264	266	256	261	249	236	238	264	285	317	322	320	316	311	314	321	330	344	353	346	327	338	301	310	305	WNW	24
19	322	310	294	270	265	256	242	219	205	218	233	232	248	240	258	282	316	327	335	332	327	321	314	317	281	W	24
20	314	309	313	315	304	303	273	283	304	310	300	312	309	311	297	329	334	310	267	290	255	261	253	284	300	WNW	24
21	316	310	322	328	346	12	24	21	66	106	110	112	115	98	109	109	114	106	124	150	165	178	165	179	115	ESE	24
22	185	187	183	176	172	176	176	171	175	175	194	192	187	195	191	168	171	152	139	151	147	171	184	178	176	S	24
23	184	191	202	205	213	221	222	226	233	253	247	237	25	359	338	344	32	61	62	67	80	53	140	223	209	SSW	24
24	246	253	255	268	228	215	72	18	225	230	226	229	212	241	211	158	117	114	100	110	132	140	108	117	182	S	24
25	151	124	113	99	109	141	174	187	200	223	178	136	242	239	257	317	325	336	338	338	344	343	346	342	334	NNW	24
26	337	352	2	358	1	341	346	359	3	19	16	39	**P**	**P**	340	41	356	40	145	164	184	172	175	179	4	N	22
27	190	187	189	192	194	188	201	198	201	202	210	199	202	205	200	194	193	180	169	176	179	184	188	204	193	S	24
28	199	193	176	181	187	187	190	194	193	196	189	177	188	191	201	194	191	173	163	172	180	229	197	215	189	S	24
29	267	317	352	348	327	324	322	332	331	318	318	310	316	314	314	315	311	312	307	307	307	306	292	268	315	NW	24
30	280	264	258	271	275	279	279	276	282	283	281	286	288	272	269	288	300	296	284	273	250	243	225	203	276	W	24
HOURLY AVG	337	352	352	358	346	341	346	359	331	320	327	325	334	359	340	356	356	344	355	350	344	343	346	342			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

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

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	716	HRS
STANDARD DEVIATION:	81.73		AMD OPERATION UPTIME:	99.4	%
			MONTHLY AVERAGE:	269	DEG



JOB #: 2833-12-09-31-C

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

SEPTEMEBR 2012

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

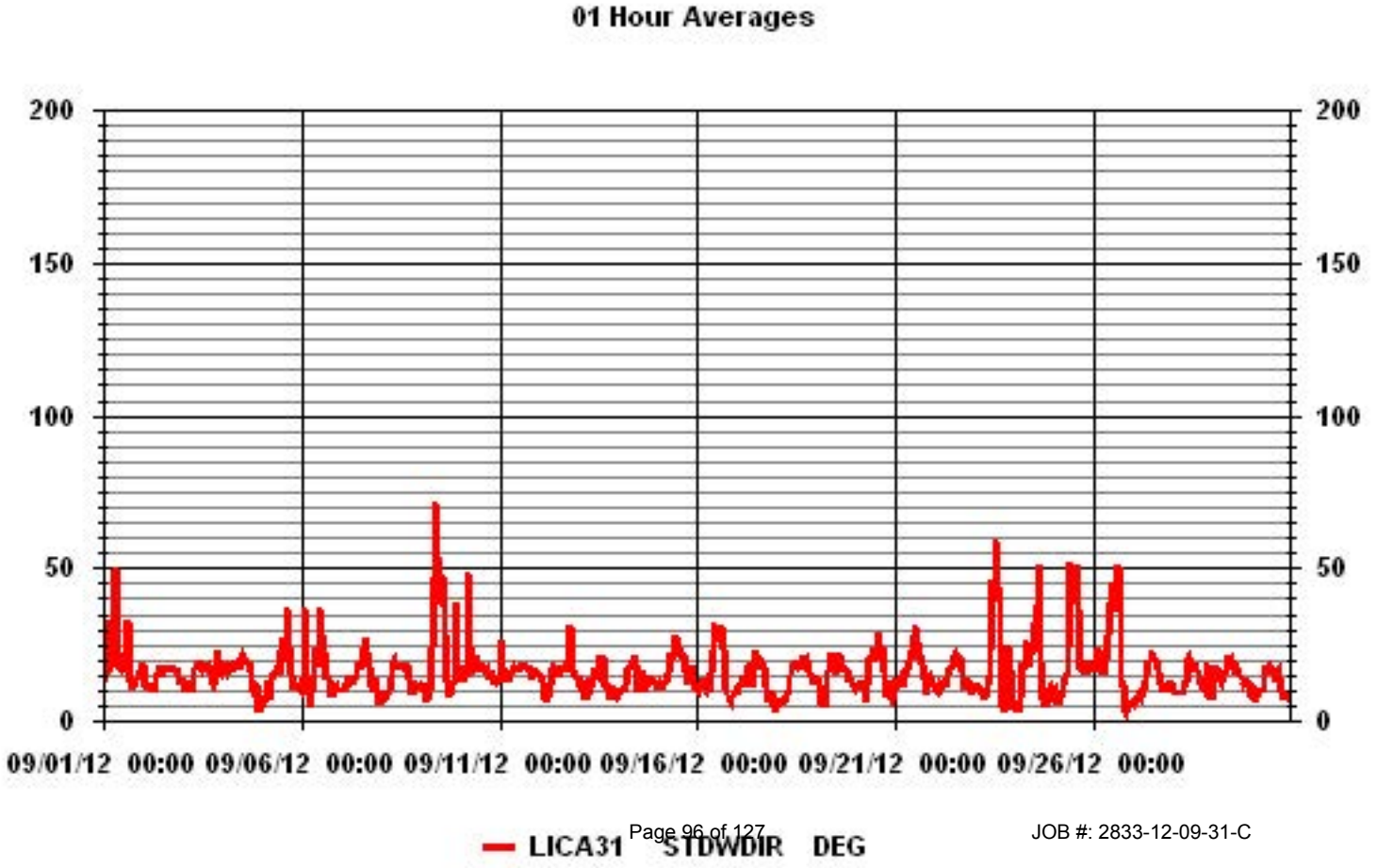
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	14	15	33	16	19	18	28	50	19	23	18	17	18	21	21	33	13	10	12	11	14	15	16	18
2	18	12	11	11	11	10	10	12	15	15	17	17	16	17	17	17	17	17	17	17	16	16	12	13
3	14	10	10	12	12	9	13	17	18	17	20	19	17	18	18	17	18	16	13	12	14	23	17	16
4	18	17	18	16	17	18	16	18	19	19	17	20	22	21	19	19	20	17	14	10	8	12	4	4
5	5	6	8	13	10	7	14	15	16	18	15	22	22	27	19	37	23	25	16	10	12	11	11	10
6	12	11	37	9	9	4	9	15	23	23	24	37	17	28	23	14	15	14	8	10	11	12	11	10
7	10	10	11	13	12	13	15	12	14	14	18	18	20	24	22	27	23	18	11	12	9	14	6	6
8	9	9	9	8	9	10	14	19	20	18	18	18	18	18	17	17	19	14	9	9	11	13	11	11
9	12	11	12	7	7	8	10	24	47	72	54	40	38	48	38	29	13	8	9	10	12	13	39	17
10	17	16	13	14	18	49	15	24	19	20	21	16	18	19	16	18	16	17	15	14	12	14	13	14
11	13	26	13	15	17	15	13	15	16	18	17	17	17	18	18	18	18	17	**P**	17	14	15	16	16
12	15	15	13	8	6	8	11	12	17	19	17	18	14	18	17	18	16	20	19	31	25	17	15	14
13	12	13	12	8	8	8	9	14	11	16	16	15	17	20	20	20	12	11	11	7	9	11	9	8
14	9	9	10	10	11	12	17	18	19	18	21	19	10	**M**	16	14	10	11	12	15	14	14	13	11
15	11	13	12	10	12	13	15	16	22	20	23	28	24	24	22	21	21	17	12	15	16	18	12	11
16	10	12	11	14	11	10	11	9	16	23	32	29	31	26	29	31	24	11	9	7	6	8	9	9
17	9	11	12	14	15	12	12	18	19	11	17	23	17	21	19	19	18	12	7	7	8	10	5	3
18	5	6	6	6	7	7	9	9	15	18	18	19	19	18	19	17	21	19	20	18	15	15	13	13
19	14	14	12	6	5	5	7	16	18	22	20	22	15	20	22	17	17	17	16	16	13	14	13	12
20	11	12	11	11	12	13	6	12	20	21	19	24	23	26	29	20	25	17	11	8	13	8	7	9
21	14	12	13	14	12	12	14	17	20	23	20	28	31	23	25	22	19	14	8	13	14	12	15	12
22	11	10	12	11	12	12	12	14	15	17	18	21	22	20	18	21	17	13	10	13	13	12	9	10
23	10	11	11	11	10	11	7	8	12	15	23	46	43	59	44	40	24	5	3	12	25	5	17	4
24	5	4	3	6	8	18	18	26	18	19	24	22	32	34	38	51	20	8	8	5	6	10	11	9
25	10	8	6	6	8	10	12	14	16	24	52	38	51	44	51	37	18	17	16	16	20	17	17	17
26	17	19	19	24	18	16	16	18	20	28	39	44	**P**	**P**	37	51	36	14	12	4	3	5	5	6
27	7	6	7	8	9	8	10	13	15	20	19	22	22	21	20	18	16	13	10	10	10	11	11	13
28	10	10	9	9	9	9	9	11	13	20	21	19	17	16	19	17	15	13	11	10	10	19	9	8
29	8	13	17	17	13	14	13	15	16	21	19	20	18	19	19	18	16	15	14	12	13	13	12	8
30	12	8	6	8	9	10	10	10	15	18	17	18	17	16	13	16	17	15	10	7	8	7	10	7

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: July 18, 2012

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 716 HRS



JOB #: 2833-12-09-31-C

Calibration Reports

Sulphur Dioxide

SO2 Calibration Report

Station Information

Calibration Date	September 12, 2012	Previous Calibration	August 10, 2012
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	10:45	End Time (MST)	14:27
Reason:		Monthly Calibration	
Barometric Pressure	933 mBar	Station Temperature	25 Deg C
Cal Gas	49.6 ppm	Gas Cyl. # LL42502	Cal Gas Expiry date December 29, 2013
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

Equipment Information

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

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range			0 - 1000 ppb					
Sample Flow / Box Temp	586 ccm		31.7 Deg C		582 ccm		32.9 Deg C	
HVPS / Lamp Setting	540		2246		540		2232	
PMT / RxCell Temp	7.8 Deg C		50 Deg C		7.8 Deg C		50 Deg C	
Converter / IZS Temp	NA Deg C		40 Deg C		NA Deg C		40.0 Deg C	
Offset / Slope	91.3		0.996		93		0.997	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	1	N/A
4996	0	0	0	N/A
4921	75.4	749	752	0.9954
	No Span Adj.			
4954	40.2	399	399	1.0000
4980	17.1	170	170	1.0000
4997	0	0	0	N/A
			Sum of Least Squares	0.9966
			New Correction Factor	0.9954

IZS alibration Data

	Before Calibration	After Calibration
Auto Zero	1.6	1.0
Auto Span	244.0	245.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9954
Percent Change:	0.5%

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

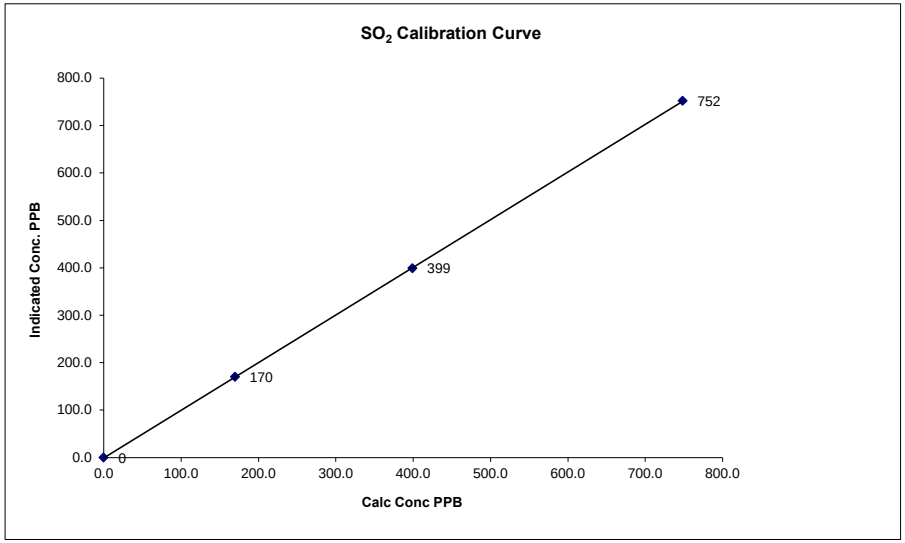
Calibration Performed by: Ting Xu

SO_2 Calibration Curve

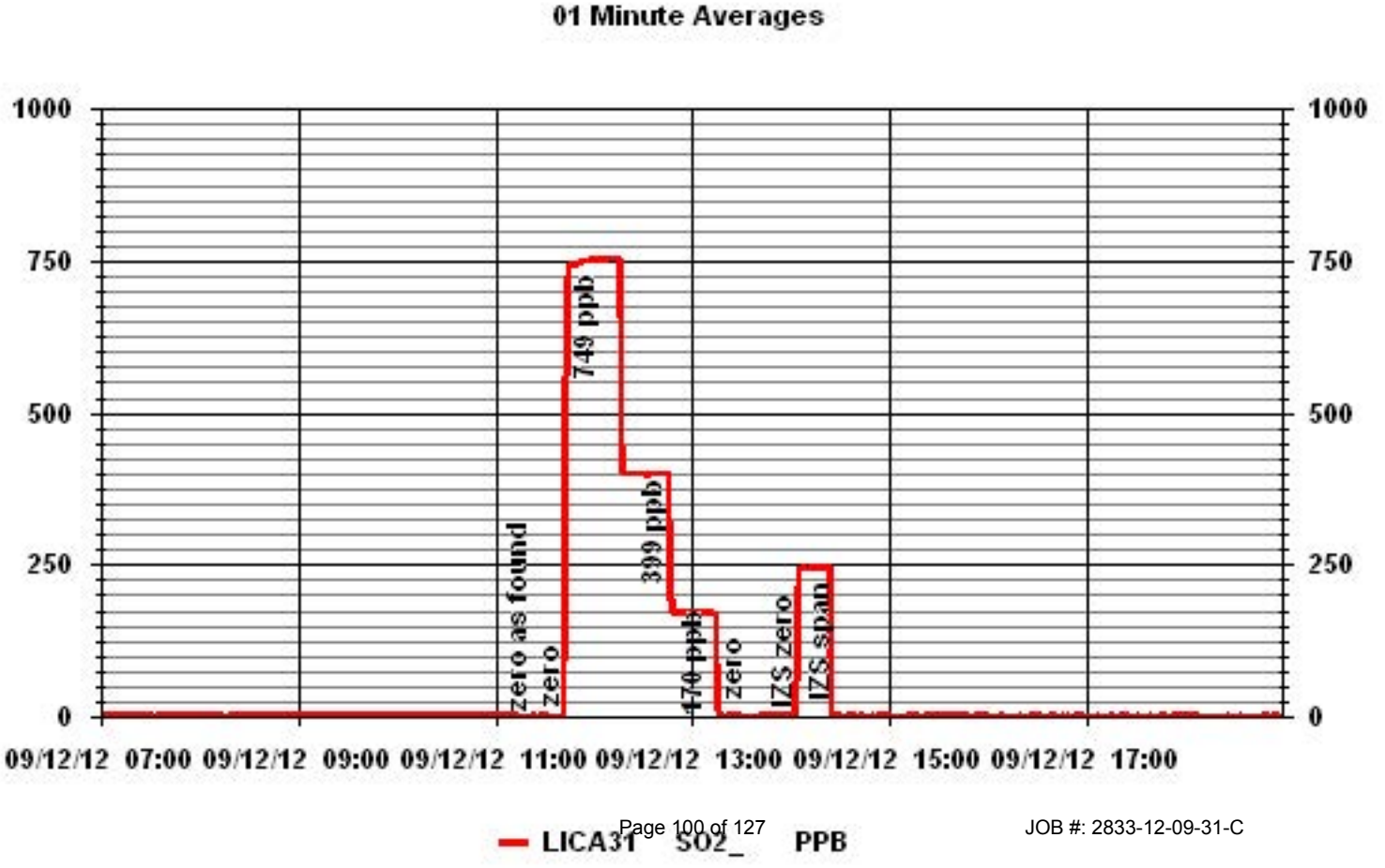
Calibration Date	September 12, 2012		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	10:45	End Time (MST)	14:27

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
170	170	0.9984
399	399	1.0006
749	752	0.9954

Correlation Coefficient	(≥ 0.995)	0.999991
Slope	(0.85 to 1.15)	1.004463
Intercept	(± 3% F.S.)	-0.591143



Notes:



JOB #: 2833-12-09-31-C

Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	September 12, 2012		Previous Calibration	August 9, 2012	
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	ST.LINA				
Start Time (MST)	9:31		End Time (MST)	13:27	
Reason:			Monthly Calibration		
Barometric Pressure	933	mBar	Station Temperature	23	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 2012
DAS Output Voltage	0 - 1	Volts	Chart Rec. Output	NA	Volts

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	510	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range			0 - 100	ppb				
Sample Flow / Box Temp	539	ccm	33.2	Deg C	535	ccm	35.9	Deg C
HVPS / Lamp Setting	518		2197		518		2194	
PMT / RxCell Temp	8.4	Deg C	50	Deg C	8.4	Deg C	50	Deg C
Converter / IZS Temp	315	Deg C	45	Deg C	315	Deg C	45.0	Deg C
Offset / Slope	91.6		0.995		94.4		1.014	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4997	0	0	2	NA
4997	0	0	0	1.0000
4959	40.0	80	80	1.0000
	No Span Adj.			
4979	20.0	40	41	0.9758
4986	11.5	23	24	0.9588
4996	0	0	0	NA
			Sum of Least Squares	0.9929
			New Correction Factor	

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	2.1	0.6
Auto Span	40.5	40.6
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	0.0%

Notes: **NA : Not Applicable**

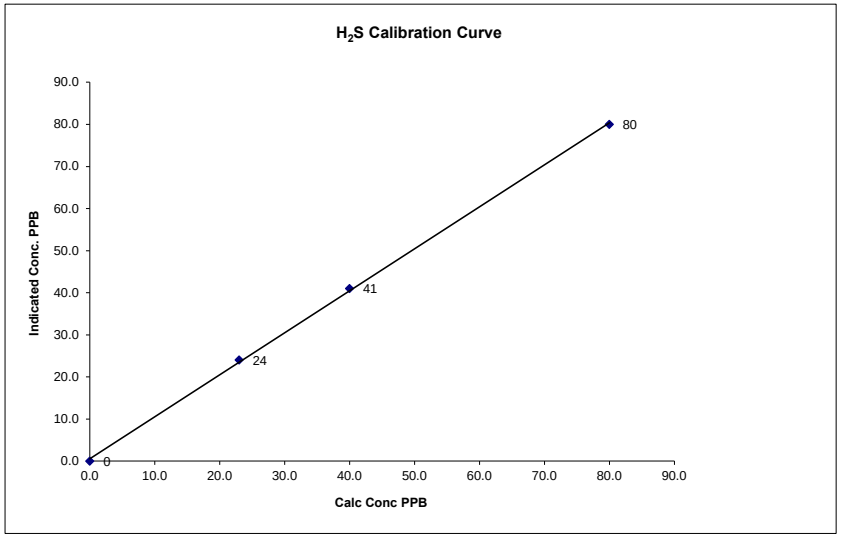
When starting the third point, accidentially put a wrong concentration, which made the reading went high, aborted the point and re[-did it.

Calibration Performed by: Ting Xu

H_2S Calibration Curve

Calibration Date	September 12, 2012				
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	ST.LINA				
Start Time (MST)	9:31		End Time (MST)	13:27	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor			
0	0		Correlation Coefficient	(≥ 0.995)	0.999714
23	24	0.9588	Slope	(0.85 to 1.15)	0.997339
40	41	0.9758	Intercept	(± 3% F.S.)	0.586263
80	80	1.0002			



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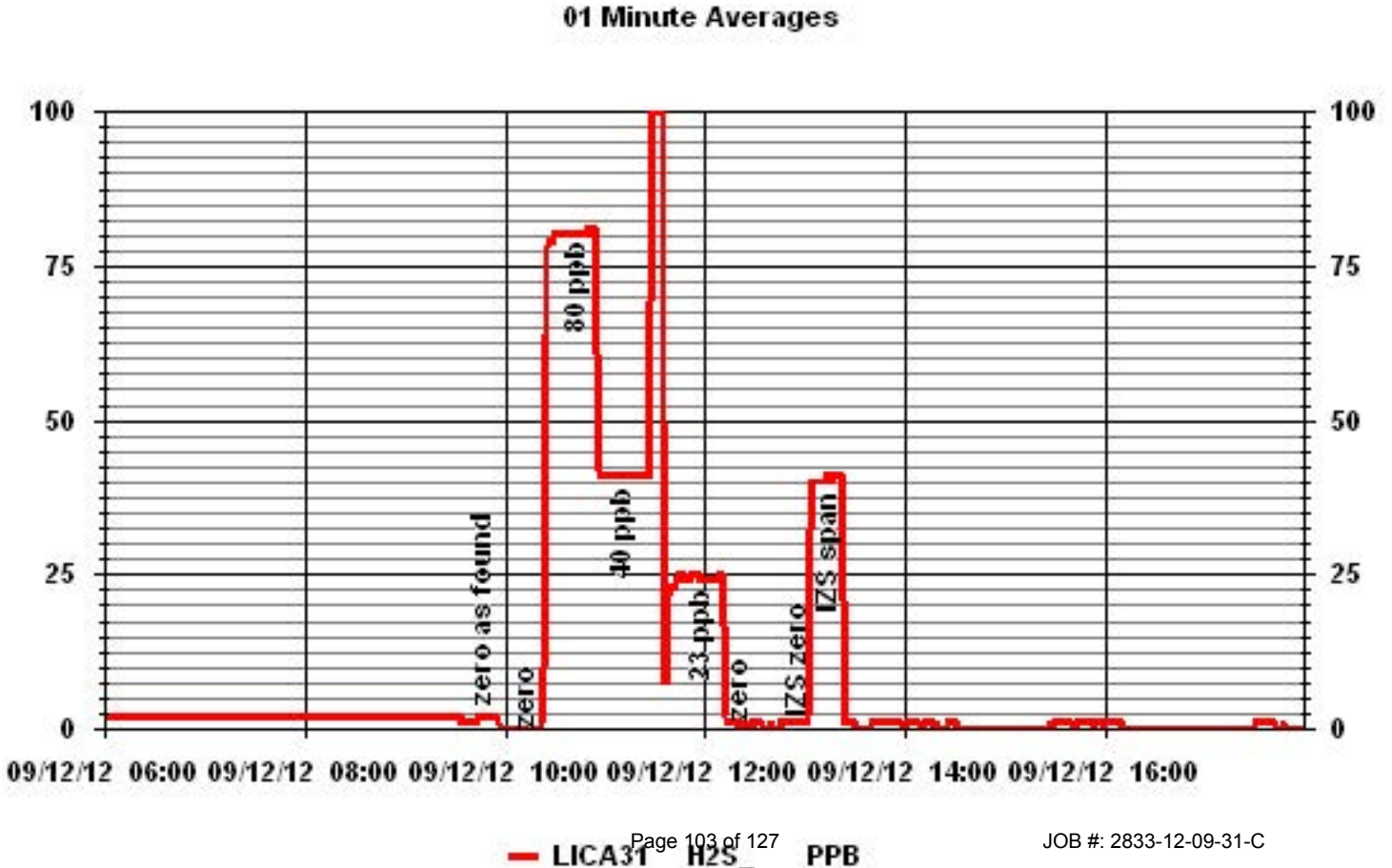


JOB #: 2833-12-09-31-C

Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	September 12, 2012		Previous Calibration	August 9, 2012	
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location:	ST. LINA				
Start Time (MST)	13:20		End Time (MST)	16:27	
Reason:	Monthly Calibration				
Barometric Pressure:	932	mBar	Station Temperature:	26	Deg C
Calibrator:	API 700		S/N:	831	
Cal Gas Concentration:	CH4 600 PPM		C3H8	204 PPM	
	TOTAL CH4 1161.0 PPM		Gas Cyl. #	LL155310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832		S/N :	AO 717	
Chart Recorder:	NA		S/N:	NA	
Output Voltage Range:	0 - 10	VDC	Chart Speed:	NA	mm/hr

Analyzer Information

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

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	6.9	psi	6.9	psi
Hydrogen Pressure	10	psi	10	psi
Air Pressure	21	psi	21	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	0.1	NA
	No Zero Adj.			
2000	74.0	41.4	41.5	0.9982
	No Span Adj.			
2000	37.0	21.1	20.9	1.0090
2000	20.0	11.5	11.5	1.0000
2000	0.0	0.0	0.0	NA
			New Correction Factor:	0.9982

Percent Change

Previous Calibration Correction Factor:	0.9934
Current Correction Factor Before Span Adjust:	0.9982
Percent Change:	-0.5%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.1	0.0
Auto Span	35.9	23.8
Sample Lines Connected		YES

Cylinder Pressures

Span 2000 psi Hydrogen 1300 psi Zero Air 34 psi

Notes: **NA : Not Applicable**

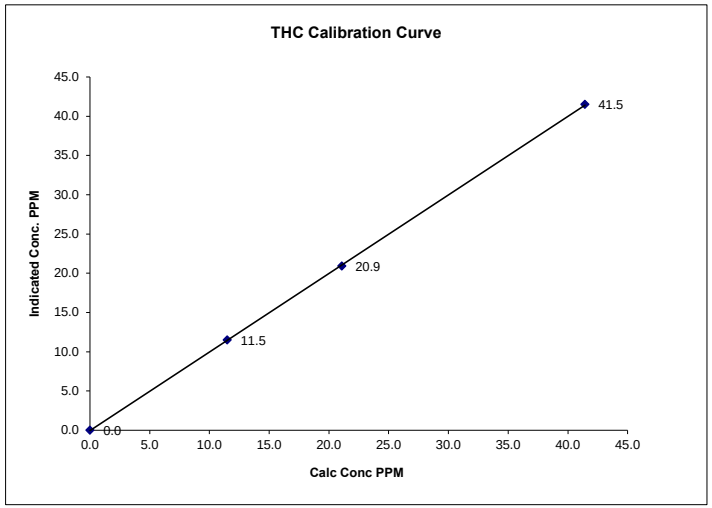
Calibration Performed by: Ting Xu

THC Calibration Curve

Calibration Date	September 12, 2012		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	13:20	End Time (MST)	16:27

Calculated Conc. ppm	Indicated Response ppm	Correction Factor
0.0	0.0	NA
11.5	11.5	0.9996
21.1	20.9	1.0090
41.4	41.5	0.9982

Correlation Coefficient	(≥ 0.995)	0.999960
Slope	(0.85 to 1.15)	1.001314
Intercept	(± 3% F.S.)	-0.05124



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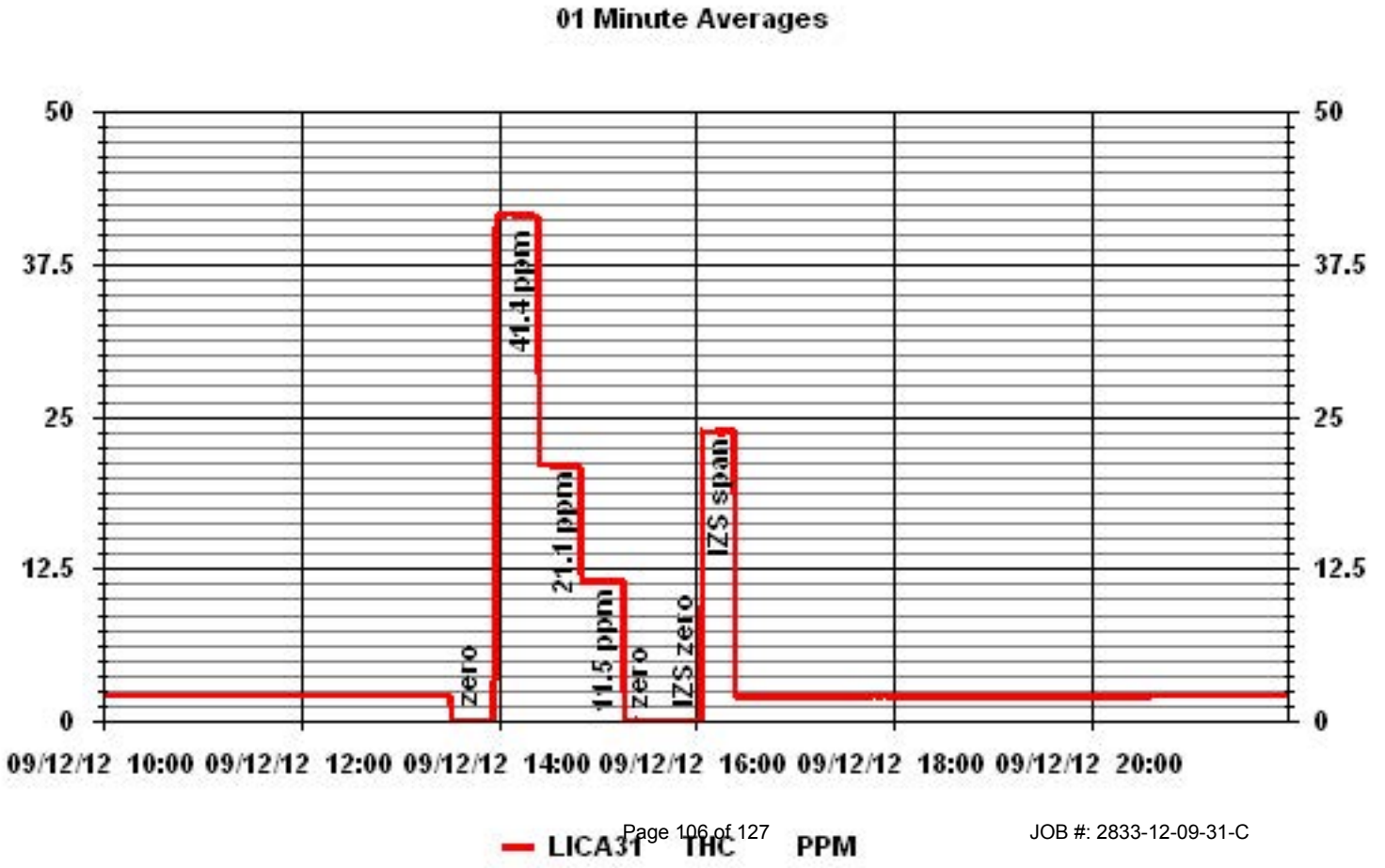


JOB #: 2833-12-09-31-C

THC Calibration Report

Station Information

Calibration Date:	September 21, 2012		Previous Calibration	September 12, 2012	
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location:	ST. LINA				
Start Time (MST)	12:39		End Time (MST)	8:22	
Reason:	Monthly Calibration				
Barometric Pressure:	930	mBar	Station Temperature:	24	Deg C
Calibrator:	API 700		S/N:	831	
Cal Gas Concentration:	CH4 600 PPM		C3H8	204 PPM	
	TOTAL CH4 1161.0 PPM		Gas Cyl. #	LL155310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832		S/N :	AO 717	
Chart Recorder:	NA		S/N:	NA	
Output Voltage Range:	0 - 10	VDC	Chart Speed:	NA	mm/hr

Analyzer Information

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

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	5.6	psi	6.9	psi
Hydrogen Pressure	10	psi	10	psi
Air Pressure	21	psi	21	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	0.1	NA
	No Zero Adj.			
2000	74.0	41.4	24.9	1.6636
			New Correction Factor:	1.6636

Percent Change

Previous Calibration Correction Factor:	0.9934
Current Correction Factor Before Span Adjust:	1.6636
Percent Change:	-40.3%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.2	-
Auto Span	27.5	-
Sample Lines Connected		YES

Cylinder Pressures

Span 1900 psi Hydrogen 1200 psi Zero Air 34 psi

Notes: **NA : Not Applicable**

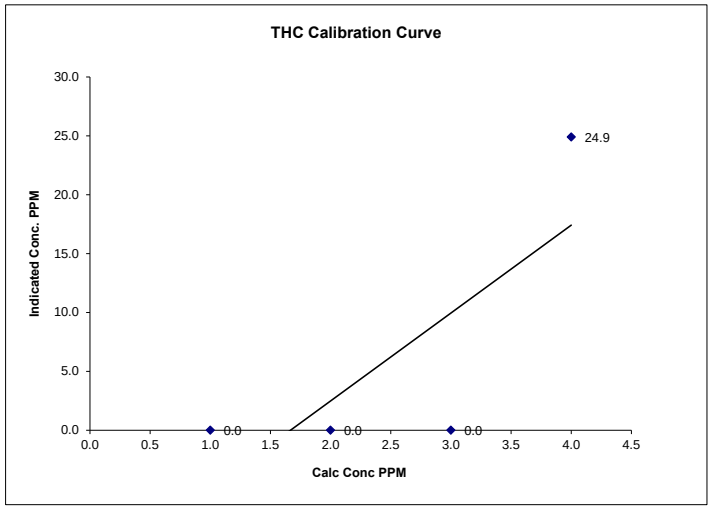
Following rge A/F point, replaced the pump, cleaned the glow restrictor and tubing which is connected with FID.

Calibration Performed by: Ting Xu

THC Calibration Curve

Calibration Date	September 21, 2012		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	12:39	End Time (MST)	8:22

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient (≥ 0.995)	#DIV/0!
	0.0	NA	Slope (0.85 to 1.15)	#DIV/0!
	0.0	#VALUE!	Intercept (± 3% F.S.)	#DIV/0!
	0.0	#VALUE!		
41.4	24.9	1.6636		



Notes:

THC Calibration Report

Station Information

Calibration Date:	September 21, 2012		Previous Calibration	September 21, 2012	
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location:	ST. LINA				
Start Time (MST)	15:40		End Time (MST)	18:42	
Reason:	Post- Repair Calibration				
Barometric Pressure:	928	mBar	Station Temperature:	25	Deg C
Calibrator:	API 700		S/N:	831	
Cal Gas Concentration:	CH4 600 PPM		C3H8	204 PPM	
	TOTAL CH4 1161.0 PPM		Gas Cyl. #	LL155310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832		S/N :	AO 717	
Chart Recorder:	NA		S/N:	NA	
Output Voltage Range:	0 - 10	VDC	Chart Speed:	NA	mm/hr

Analyzer Information

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

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	6.9	psi	6.9	psi
Hydrogen Pressure	10	psi	10	psi
Air Pressure	21	psi	21	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	0.0	NA
	No Zero Adj.			
2000	74.0	41.4	41.3	1.0030
	No Span Adj.			
2000	37.0	21.1	20.7	1.0188
2000	20.0	11.5	11.2	1.0263
2000	0.0	0.0	-0.3	NA
			New Correction Factor:	1.0030

Percent Change

Previous Calibration Correction Factor:	-
Current Correction Factor Before Span Adjust:	1.0030
Percent Change:	#VALUE!

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-	-0.4
Auto Span	-	35.7
Sample Lines Connected		**YES**

Cylinder Pressures

Span 1900 psi Hydrogen 1200 psi Zero Air 34 psi

Notes: **NA : Not Applicable**

During the last zero point, diluent gas alramed, cleared the alarm and re-did the point.

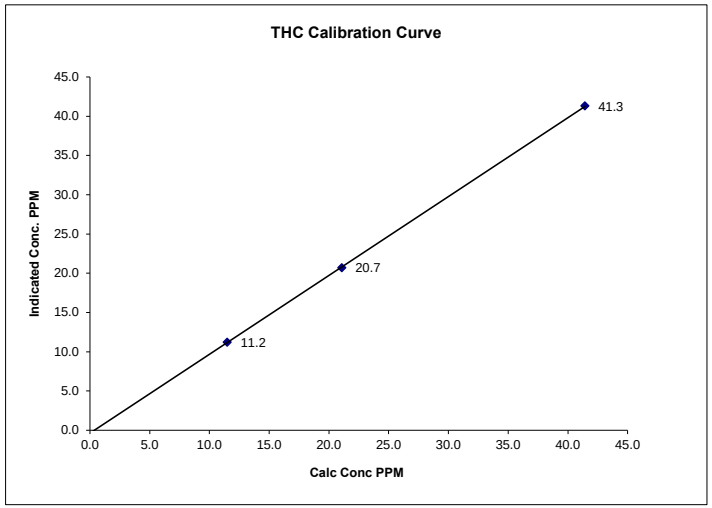
Calibration Performed by: Ting Xu

THC Calibration Curve

Calibration Date	September 21, 2012		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	15:40	End Time (MST)	18:42

Calculated Conc. ppm	Indicated Response ppm	Correction Factor
0.0	-0.3	NA
11.5	11.2	1.0263
21.1	20.7	1.0188
41.4	41.3	1.0030

Correlation Coefficient	(≥ 0.995)	0.999977
Slope	(0.85 to 1.15)	1.004076
Intercept	(± 3% F.S.)	-0.35234



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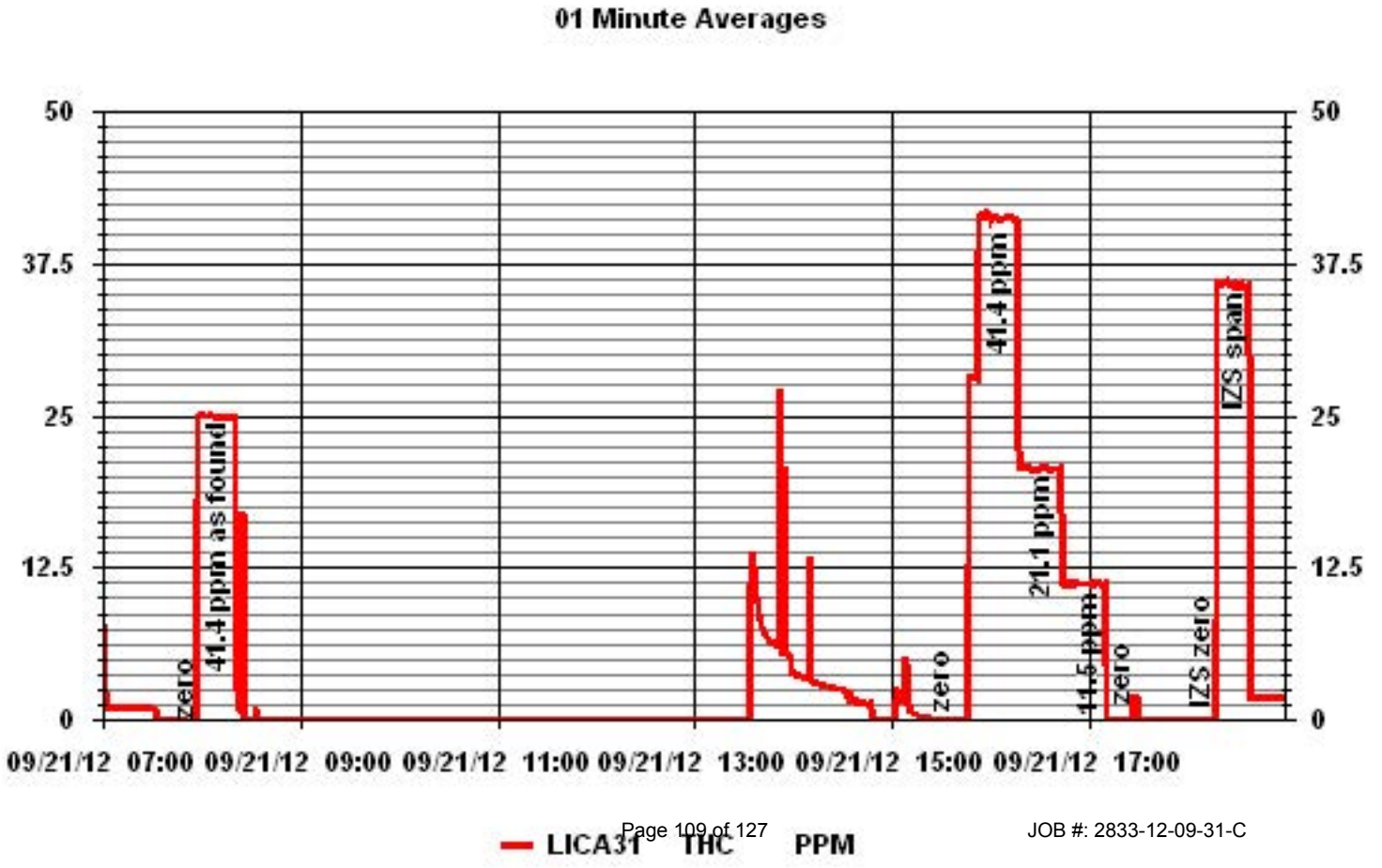


JOB #: 2833-12-09-31-C

Nitrogen Dioxide

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	September 12, 2012			Previous Calibration	August 9, 2012		
Company	LICA			Plant/Location	St. Lina		
Start Time (MST)	9:31			End Time (MST)	15:37		
Reason:	As Found						
Barometric Pressure	933	mBar	Station Temperature	23	Deg C	MFCF	1
Cal Gas Concentration	NOx 50.1	ppm	NO 50.1	ppm	Cal Gas Expiry date	December 29, 2013	
Cal Gas Cylinder #	LL42502						
DAS Output Voltage	0 - 1	Volts	Chart Rec. Output	NA	Volts		

Equipment Information

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

Analyzer Settings

	Before Calibration					After Calibration			
Concentration Range					0 - 1000 ppb				
Sample Flow/Conv. Temp	484	ccm	316	Deg C		476	ccm	314	Deg C
Ozone Flow / Vacuum	71	ccm	5.4	"Hg-A		74	ccm	5.6	"Hg-A
HVPS / A ZERO	694	Volts	26.5	MV		637	Volts	23.4	MV
Rx/ Temp / PMT Temp	50.0	Deg C	6.9	Deg C		50.0	Deg C	6.9	Deg C
Box Temp / IZS Temp	30.6	Deg C	42.3	Deg C		34.1	Deg C	45	Deg C
Offset	2.4	NOx	1.5	NO		-4.3	NOx	-4.6	NO
Slope	1.134	NOx	1.096	NO		1.005	NOx	0.998	NO
NO_2 COEF / Conv Efficency	NA	NO2	0.993			NA	NO2	0.993	

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	0	0	1	NA	NA
	No Zero Adj.									
4921	74.6	NA	748	748	NA	742	728	15	1.0083	1.0277

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO_2 Correction Factor	NO2 Conv Efficency
			NOx	NO	NO2	NOx	NO	NO2		

Linearity			Sum of Least Squares	NOx=	#VALUE!	NO=	#VALUE!	NO2= #VALUE!
OK?	Yes	No	Correction Factors:	NOx=	1.0083	NO=	1.0277	NO2=
				Average Converter Efficiency=		#DIV/0!		

IZS Calibration Data

	Before Calibration					After Calibration			
Auto Zero	-0.1	NOx	0.3	NO2		0.8	NOx	0.5	NO2
Auto Span	729	NOx	667	NO2		381	NOx	372	NO2
					Sample Lines Connected	YES			

Percent Change from Previous Calibration	NOx	-1.3%	NO	-2.7%	NO2	#VALUE!

Notes

NA : Not Applicable

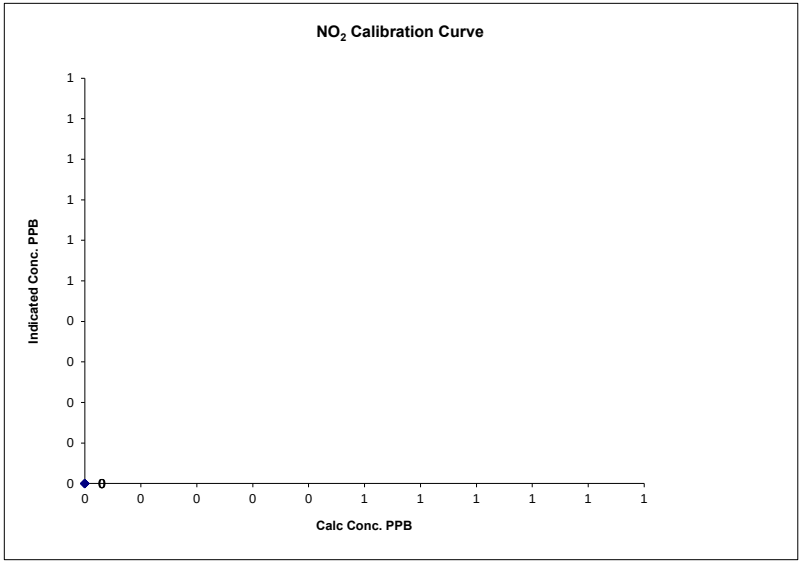
Following the A/F point, replaced the O-ring, 4-Mil orifice and sintered filter of the flow control system, cleaned the optical filter, adjusted the HVPS voltage and slope, adjusted IZS temperature. Let the analyzer stablize overnight. Will perform a calibration tomorrow.

Calibration Performed by: Ting Xu

NO_2 Calibration Curve

Calibration Date	September 12, 2012			
Company	LICA			
Plant / Location	St. Lina			
Start Time (MST)	9:31	End Time (MST)	15:37	

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



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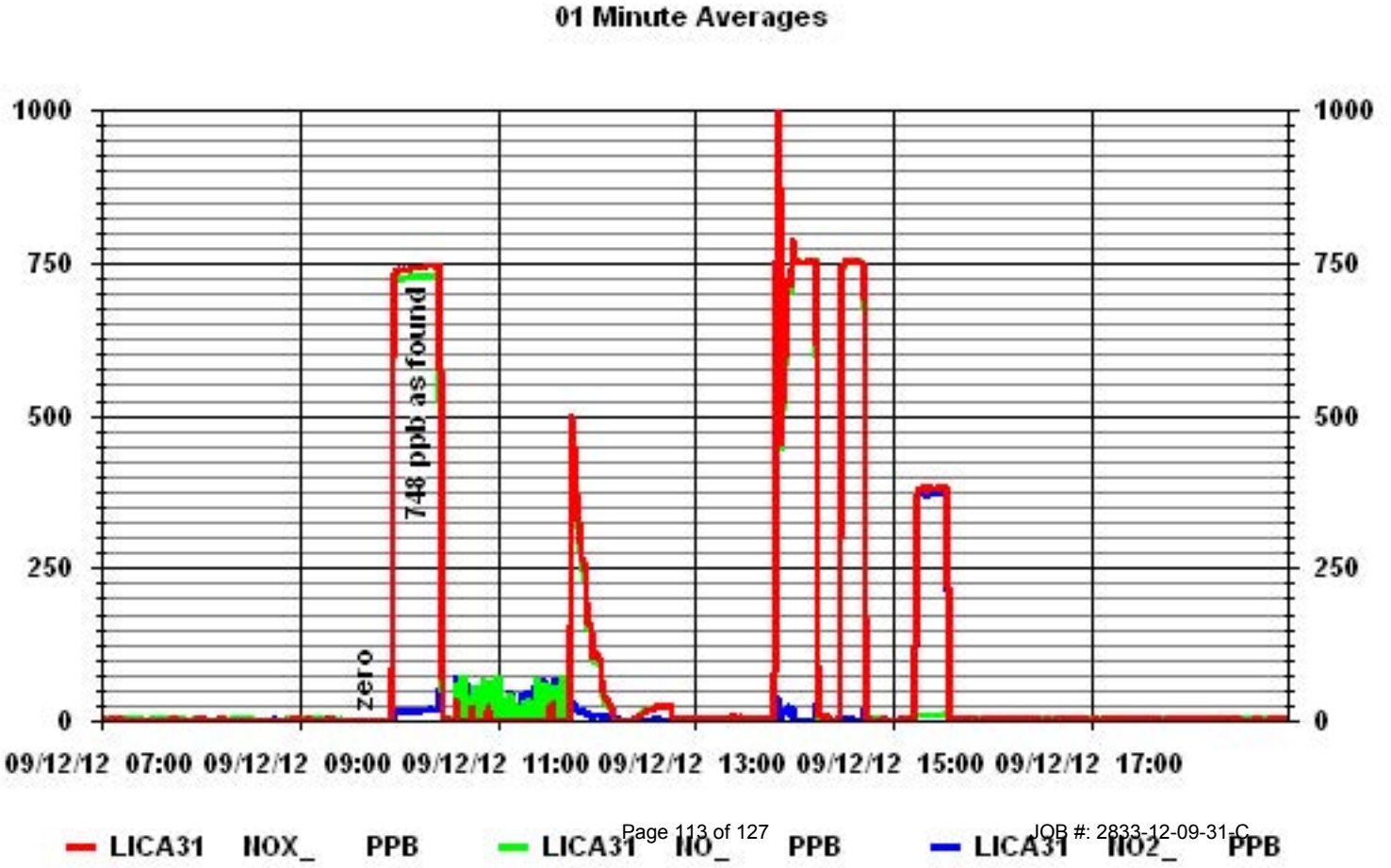
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750
500
250
0
748 ppb as found
zero
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09/12/12 09:00
09/12/12 11:00
09/12/12 13:00
09/12/12 15:00
09/12/12 17:00
LICA31 NOX_ PPB
LICA31 NO_ PPB
LICA31 NO2_ PPB

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	September 13, 2012		Previous Calibration	September 12, 2012	
Company	LICA		Plant/Location	St. Lina	
Start Time (MST)	10:23		End Time (MST)	16:18	
Reason:	Post Repair Calibration				
Barometric Pressure	935 mBar	Station Temperature	24 Deg C	MFCF	1
Cal Gas Concentration	NOx 50.1 ppm	NO 50.1 ppm	Cal Gas Expiry date	December 29, 2013	
Cal Gas Cylinder #	LL42502				
DAS Output Voltage	0 - 1 Volts		Chart Rec. Output	NA Volts	

Equipment Information

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

Analyzer Settings

	Before Calibration					After Calibration			
Concentration Range					0 - 1000 ppb				
Sample Flow/Conv. Temp	478	ccm	314	Deg C		479	ccm	316	Deg C
Ozone Flow / Vacuum	74	ccm	5.9	"Hg-A		71	ccm	5.9	"Hg-A
HVPS / A ZERO	637	Volts	20.5	MV		637	Volts	19.6	MV
Rx/ Temp / PMT Temp	50.0	Deg C	6.9	Deg C		50.0	Deg C	6.8	Deg C
Box Temp / IZS Temp	31.3	Deg C	45.1	Deg C		30.8	Deg C	45.3	Deg C
Offset	-4.3	NOx	-4.6	NO		-1.1	NOx	-1.3	NO
Slope	1.005	NOx	0.998	NO		1.007	NOx	1.002	NO
NO_2 COEF / Conv Efficency	NA	NO2	0.993			NA	NO2	0.993	

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	1	0	0	NA	NA
	No Zero Adj.									
4921	74.6	NA	748	748	NA	749	749	1	1.0002	0.9989
	No Span Adj.									
4960	34.8	NA	349	349	NA	350	349	1	1.0002	1.0000
4978	16.9	NA	170	170	NA	171	170	1	0.9971	1.0000
4994	0.0	NA	0	0	NA	1	1	1	NA	NA

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO_2 Correction Factor	NO2 Conv Efficency
			NOx	NO	NO2	NOx	NO	NO2		
4921	74.6	NA	748	748	NA	751	749	2	NA	NA
4921	74.6	600	748	NA	519	753	232	521	0.9962	100.39%
	No Adj.									
4921	74.6	300	748	NA	263	753	488	265	0.9925	100.77%
4921	74.6	120	748	NA	107	754	644	110	0.9727	102.86%

Linearity			Sum of Least Squares	NOx=	0.998	NO=	0.999	NO2=	0.995
OK?	Yes	No	Correction Factors:	NOx=	1.0002	NO=	0.9989	NO2=	0.9962
						Average Converter Efficiency=		101.34%	

IZS Calibration Data

	Before Calibration					After Calibration			
Auto Zero	2.0	NOx	0.4	NO2		0.8	NOx	0.2	NO2
Auto Span	378	NOx	368	NO2		471	NOx	461	NO2
					Sample Lines Connected	YES			

Percent Change from Previous Calibration	NOx	-	NO	-	NO2	-

Notes

NA : Not Applicable

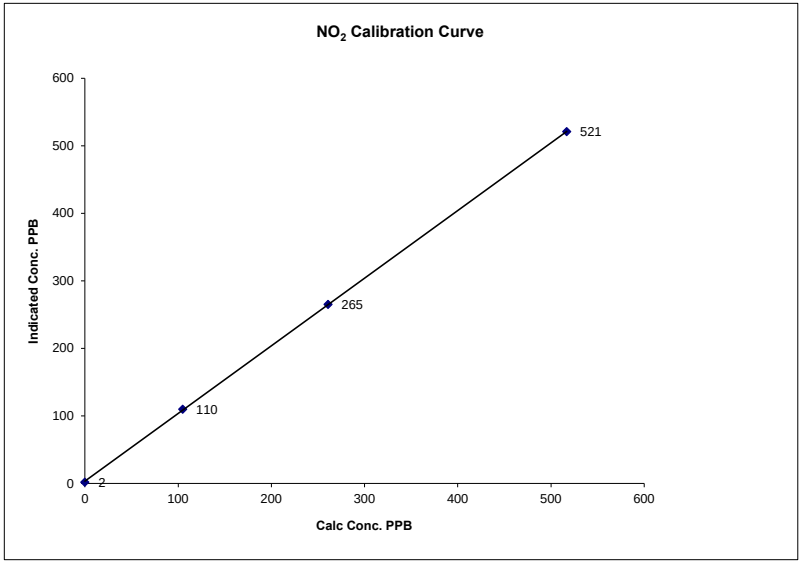
Additional GPT point done for ozone calibration. O3 set point 450, NOx=752, NO=358, NO2=394

Calibration Performed by: Ting Xu

NO_2 Calibration Curve

Calibration Date	September 13, 2012			
Company	LICA			
Plant / Location	St. Lina			
Start Time (MST)	10:23	End Time (MST)	16:18	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor			
0	2	N/A	Correlation Coefficient	(≥ 0.995)	0.999973
105	110	0.9545	Slope	(0.85 to 1.15)	1.002150
261	265	0.9849	Intercept	(± 3% F.S.)	3.27539
517	521	0.9923			

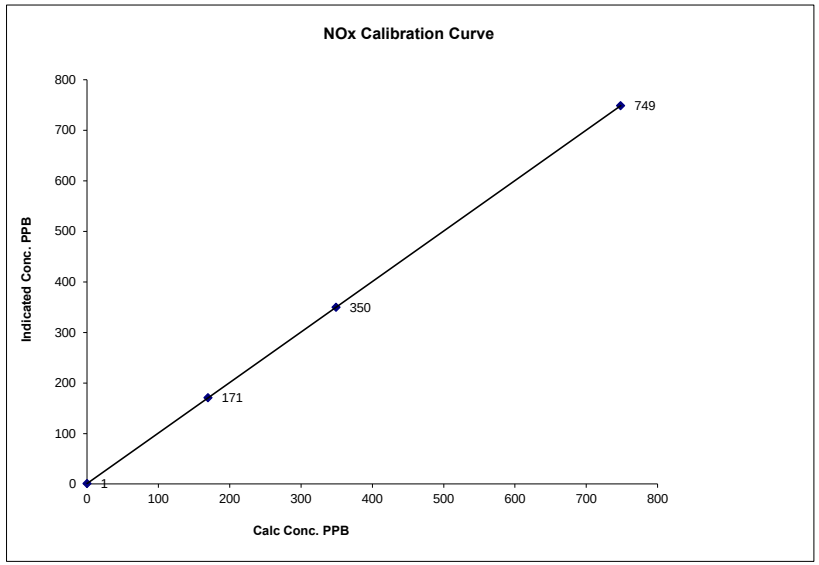


Notes:

NOx Calibration Curve

Calibration Date	September 13, 2012		
Company	LICA		
Plant / Location	St. Lina		
Start Time (MST)	10:23	End Time (MST)	16:18

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999999
			Slope (0.85 to 1.15)	0.999551
0	1	N/A	Intercept (± 3% F.S.)	1.21207
170	171	0.9913		
349	350	0.9973		
748	749	0.9989		

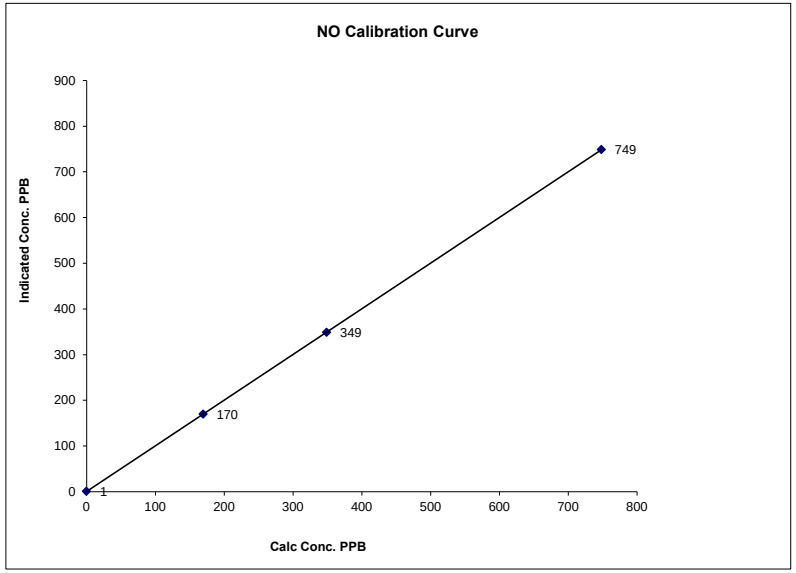


Notes:

NO Calibration Curve

Calibration Date	September 13, 2012		
Company	LICA		
Plant / Location	St. Lina		
Start Time (MST)	10:23	End Time (MST)	16:18

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999998
			Slope (0.85 to 1.15)	1.000898
0	1	N/A	Intercept (± 3% F.S.)	-0.8538
170	170	0.9971		
349	349	1.0002		
748	749	0.9989		



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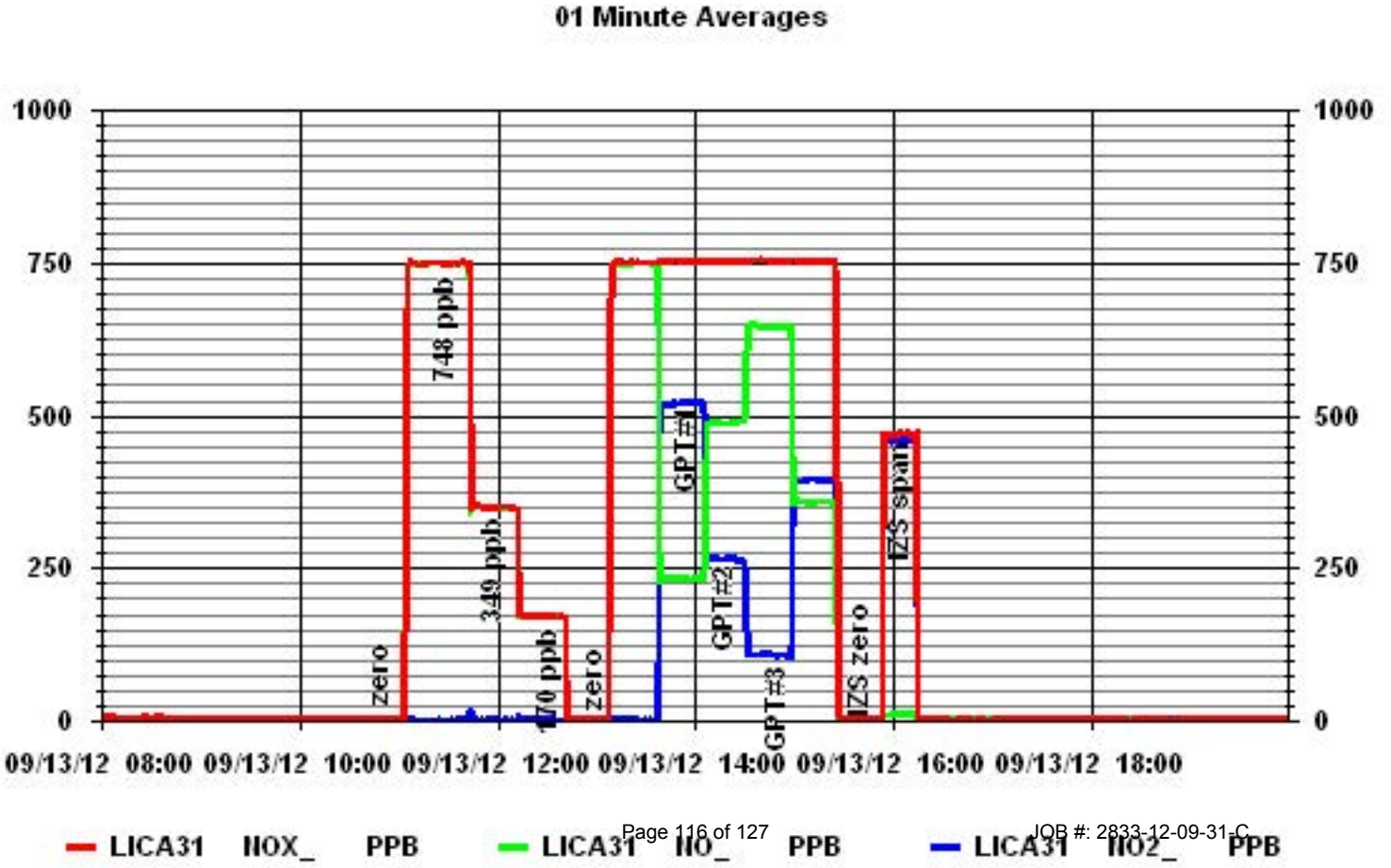
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1000
750
500
250
0
zero
748 ppb
349 ppb
170 ppb
zero
GPT#1
GPT#2
GPT#3
IZS zero
IZS span
09/13/12 08:00
09/13/12 10:00
09/13/12 12:00
09/13/12 14:00
09/13/12 16:00
09/13/12 18:00
LICA31 NOX_ PPB
LICA31 NO_ PPB
LICA31 NO2_ PPB

Ozone

O_3 Calibration Report

Station Information

Calibration Date	September 14, 2012	Previous Calibration	August 10, 2012
Company	**Lakeland Industry & Community Association**		
Plant / Location	**St. Lina**		
Start Time (MST)	13:30	End Time (MST)	17:13
Reason:	Monthly Calibration		
Barometric Pressure	925 mBar	Station Temperature	24 Deg C
DAS Output Voltage	0-10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49C	S/N :	49C-54926-302	Method:	Fluorescent
Calibrator Make / Model:	Environics 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO 717		

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 500 ppb			
CellA Flow / Cell B Flow	836 ccm	834 ccm	838 ccm	855 ccm
Pressure	700 mmHg		702 mmHg	
Bench Temp	56.8 Deg C		56.8 Deg C	
O3 Lamp / Box Temp	80 Deg C	33.4 Deg C	80 Deg C	33.7 Deg C
Offset / Slope	0.1	0.991	0.1	1.012

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	NA
	No Zero Adj			
4994	450	391	382	1.0236
4994	450	391	391	1.0000
4994	300	261	262	0.9962
4994	120	105	105	1.0000
4994	0	0	0	N/A
			Sum of Least Squares	N/A
			New Correction Factor	1.0000

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.9	0.9
Auto Span	323	329
Sample Lines Connected		YES
Percent Change from Previous Calibration		-2.8%

Note: **NA: Not Applicable**

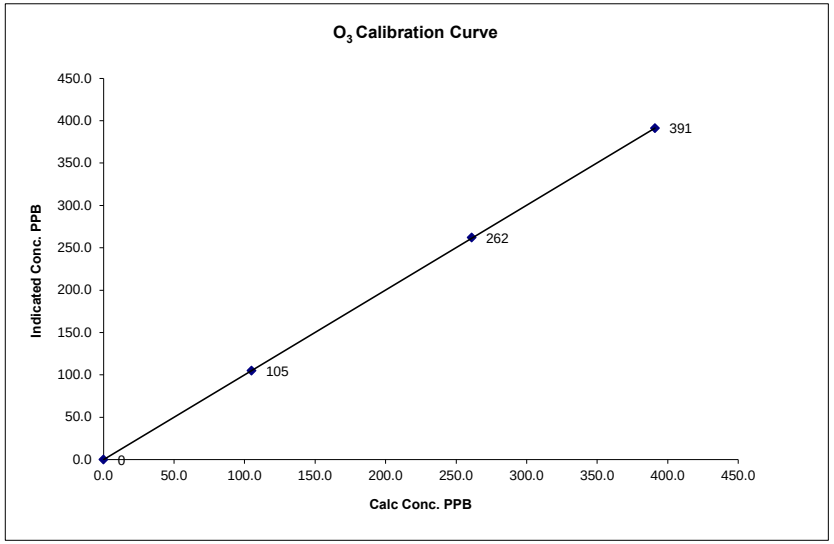
Calibration Performed by: Ting Xu

O_3 Calibration Curve

Calibration Date	September 14, 2012		
Company	**Lakeland Industry & Community Association**		
Plant / Location	**St. Lina**		
Start Time (MST)	13:30	End Time (MST)	17:13

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
105	105	1.0000
261	262	0.9962
391	391	1.0000

Correlation Coefficient	(≥ 0.995)	0.999992
Slope	(0.85 to 1.15)	1.000808
Intercept	(± 3% F.S.)	0.097026



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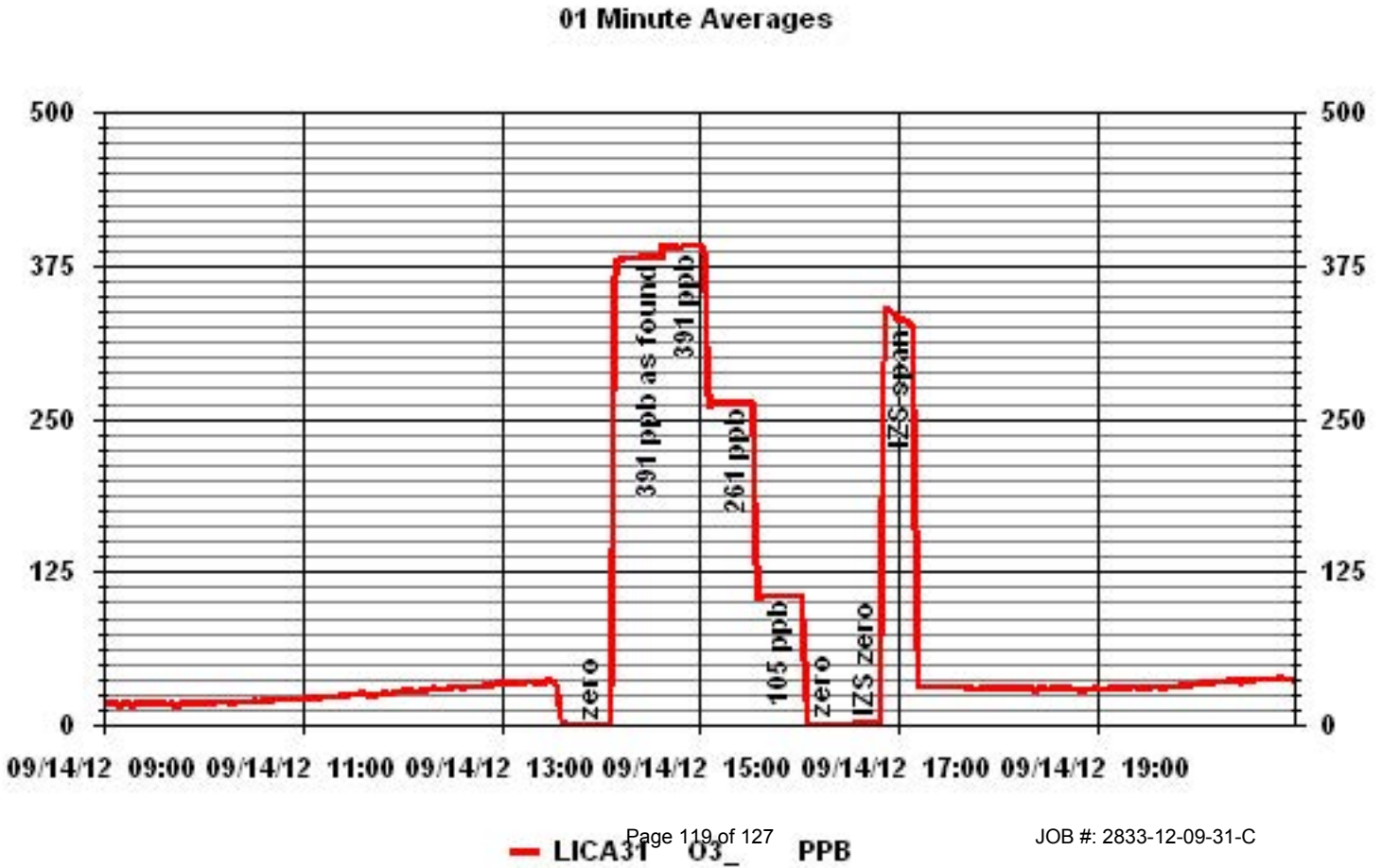


JOB #: 2833-12-09-31-C

Particulate Matter 2.5

TEOMÒ 1405F Audit

Station		Audit Transfer Standard	
Date:	September 13, 2012	Make/Model:	Streamline FTS
Station Name:	Lica St. Lina (CASA # 31)	Serial Number:	LO 091099, Hi 091001
Location:	St. Lina Station	Cell s/n:	NA
Operator:	LICA	Thermometer s/	Station Temp. Sensor

Sampler		Set-up and current Sampler readings	
Make/Model	Thermo Scientific Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	NA	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A207691003	Filter Load (%)	28.0%
Firmware Ver.	1.55	K_o Factor	15634.0
Parameter	PM 2.5 (with FDMS)	Temp (^oC)	18.1
		Press (ATM)	0.929

Conversion from mmHg or "Hg to ATM (Atmospheres)

ATM = (mmHg) X (1.316 X 10 -3) or ATM = ("Hg) X (3.34207 X 10 -2)

Note: Tolerances are noted as BOLD in Brackets

Audit

Status

Noise **<0.10*u* g**	0.003	Warnings	None
Pump Vacuum **<0.4atm**	0.30	Pump Gauge (inHg)	-20

Temperature/Pressure

Measured Temp **(± 2 °C)**	17.62	**D °C**	0.5
Measured Press **(± 0.01atm)**	0.928	**DATM**	0.001

Flow Audit

Indicated Main Flow (l/min)	3.00	Main Flow Drift **(±10.0%)**	1.01%
Measured Main Flow (l/min)	3.02	Flow Adjusted to Measured?	YES
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift **(±10.0%)**	1.14%
Measured Bypass Flow (l/min)	13.80	Flow Adjusted to Measured?	YES

Leak Check

Main **(< 0.15 l/min)**	Base=-0.01 Ref=-0.01
Aux **(< 0.6 l/min)**	Base=-0.01 Ref=-0.01

Instrument Setup

Flow Control = Active
Report Conditions = Actual

K_o Factor

Measured	NA
K_o Difference **(± 2.5%)**	NA

Start Time: 13:17 **Finish Time:** 14:48

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

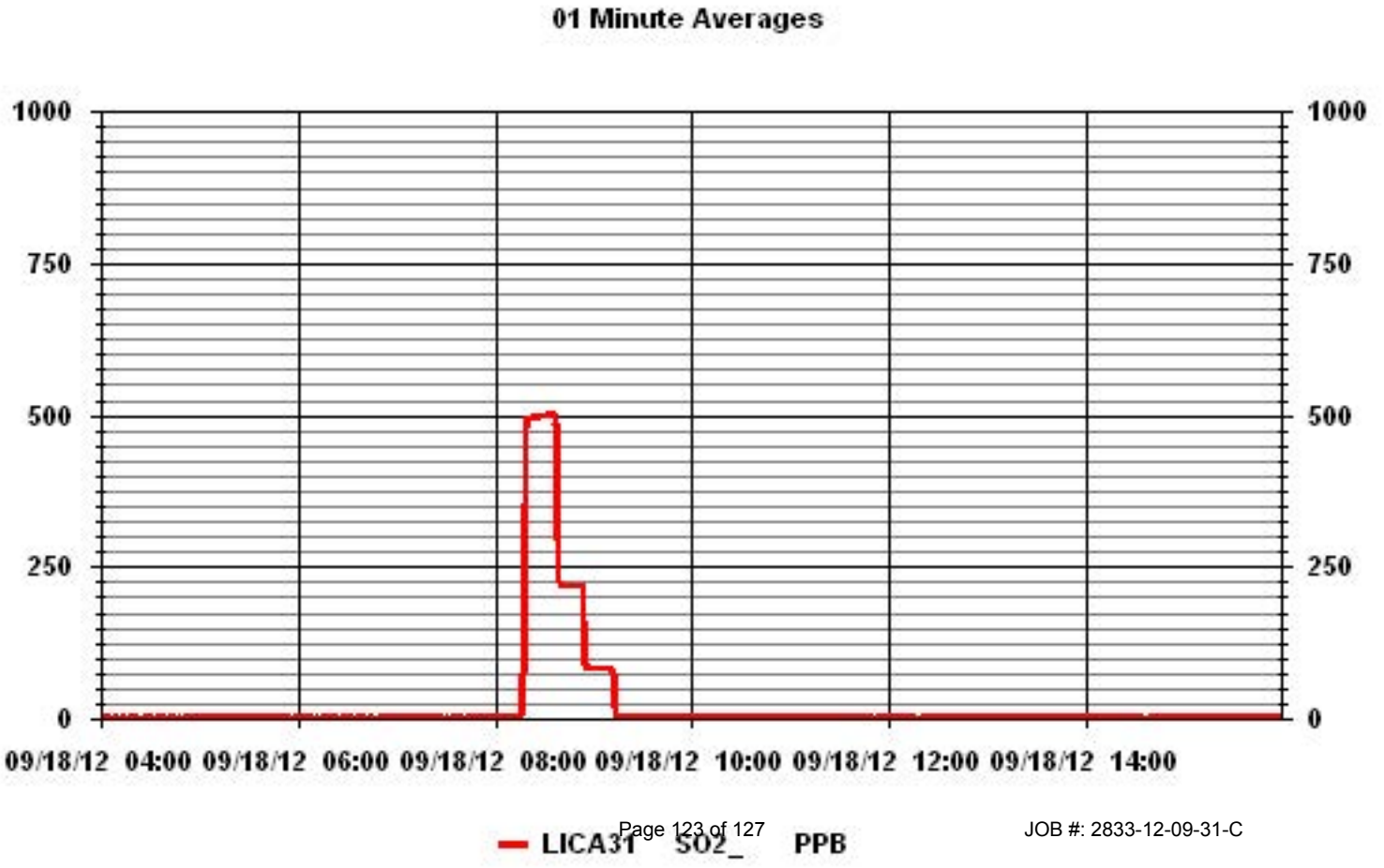
New Filter Loading %: 18.0%

Comments:

Auditor/s: Ting Xu

JOB #: 2833-12-09-31-C

AE Audit Graphs



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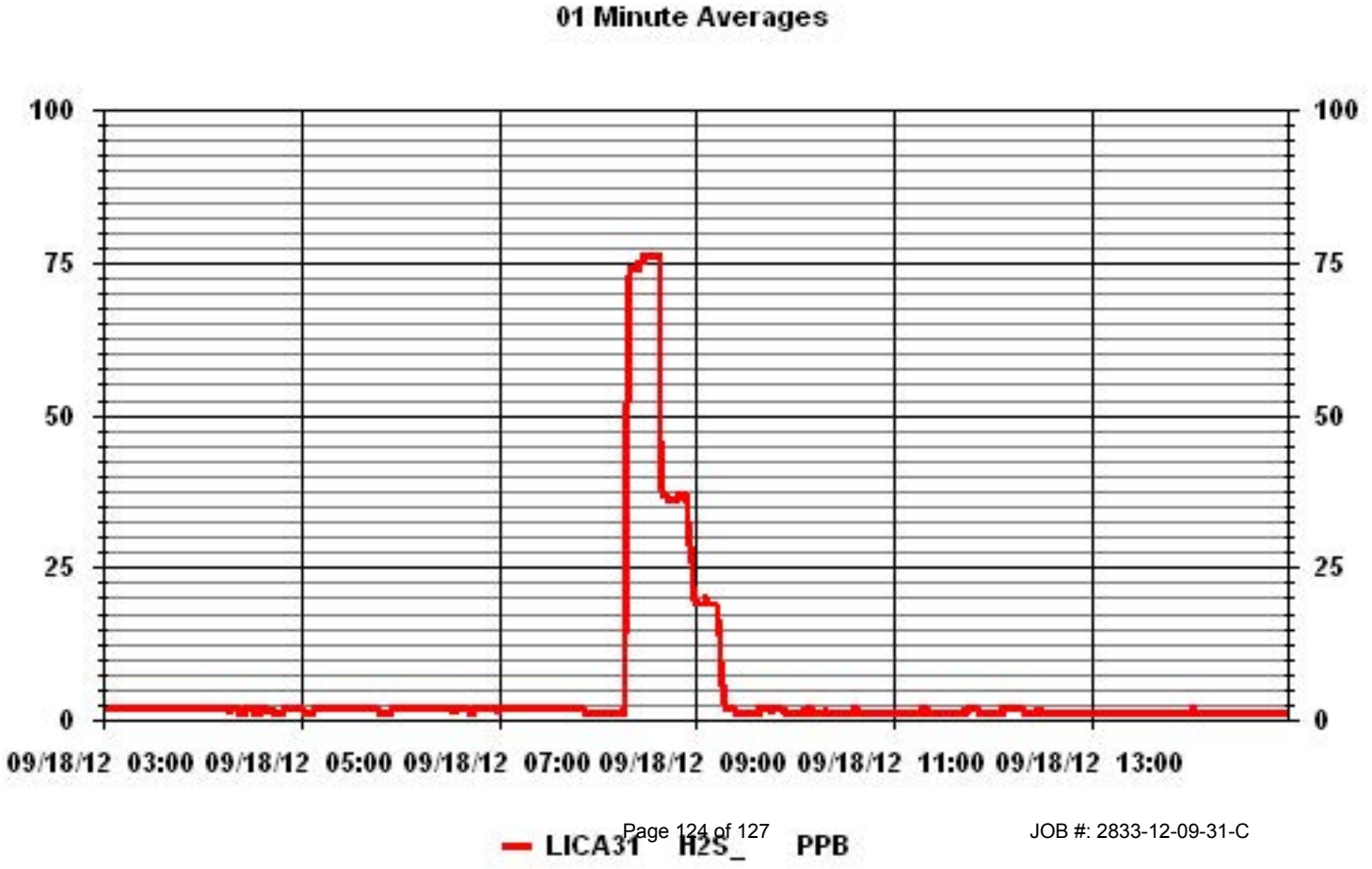

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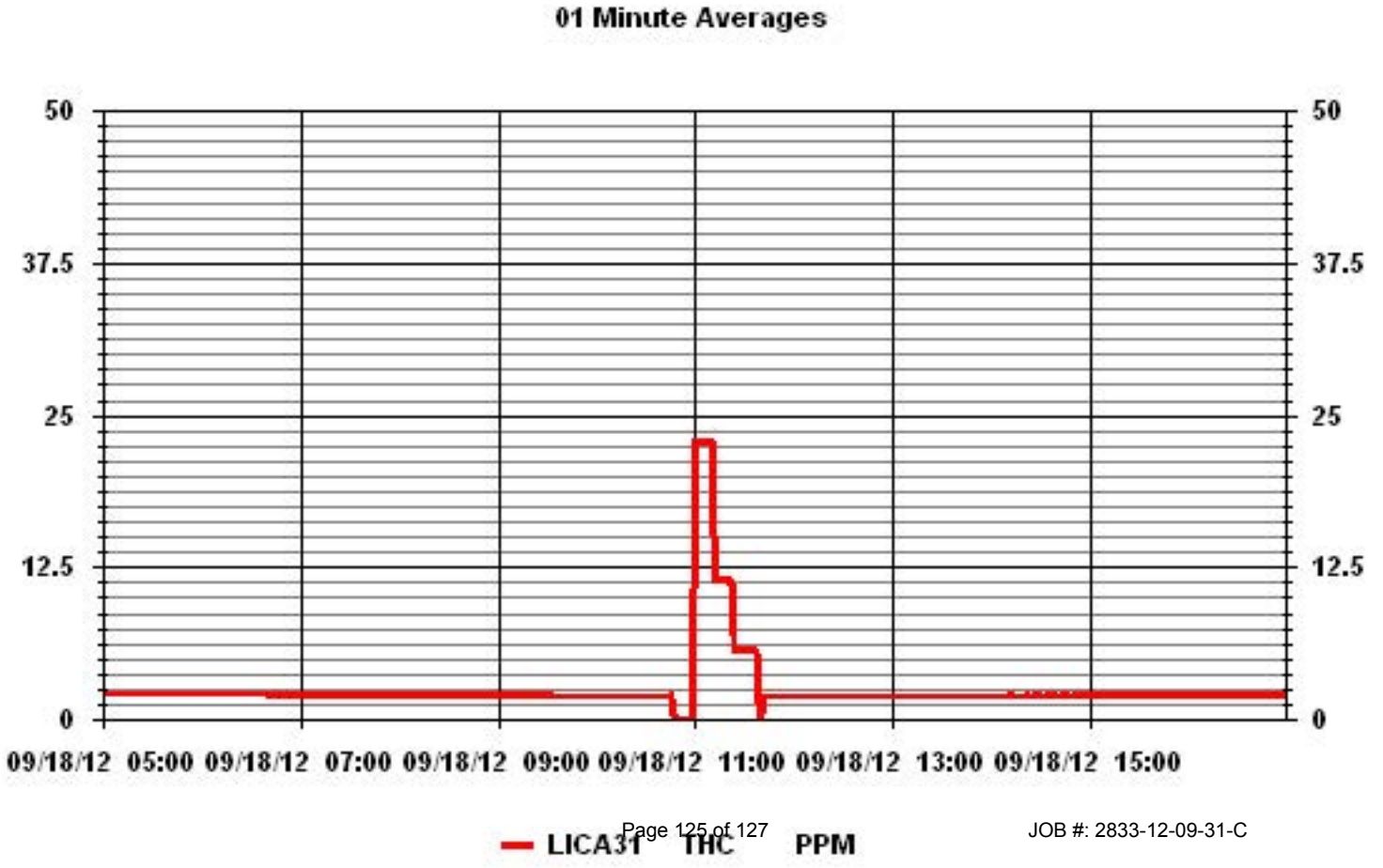

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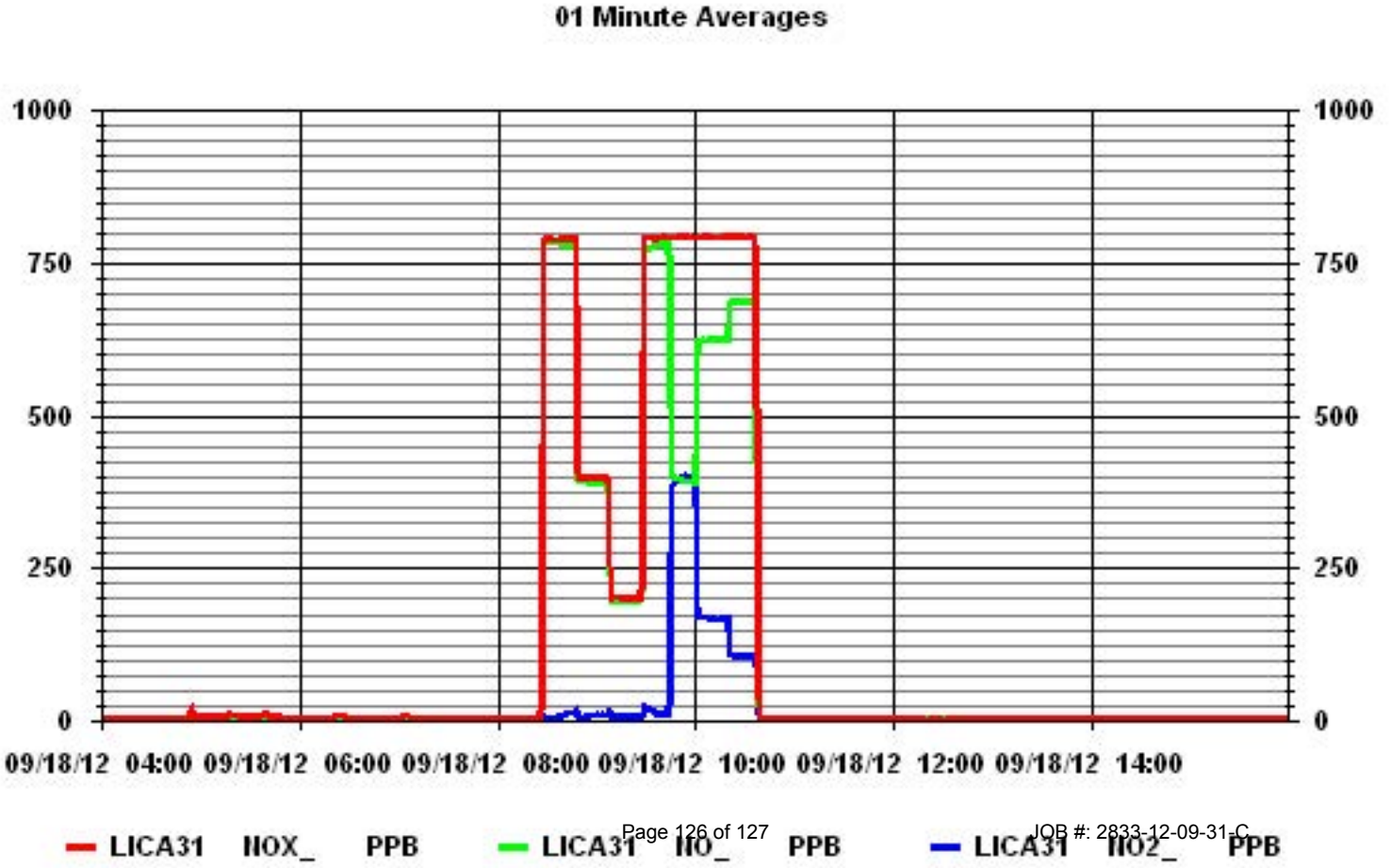
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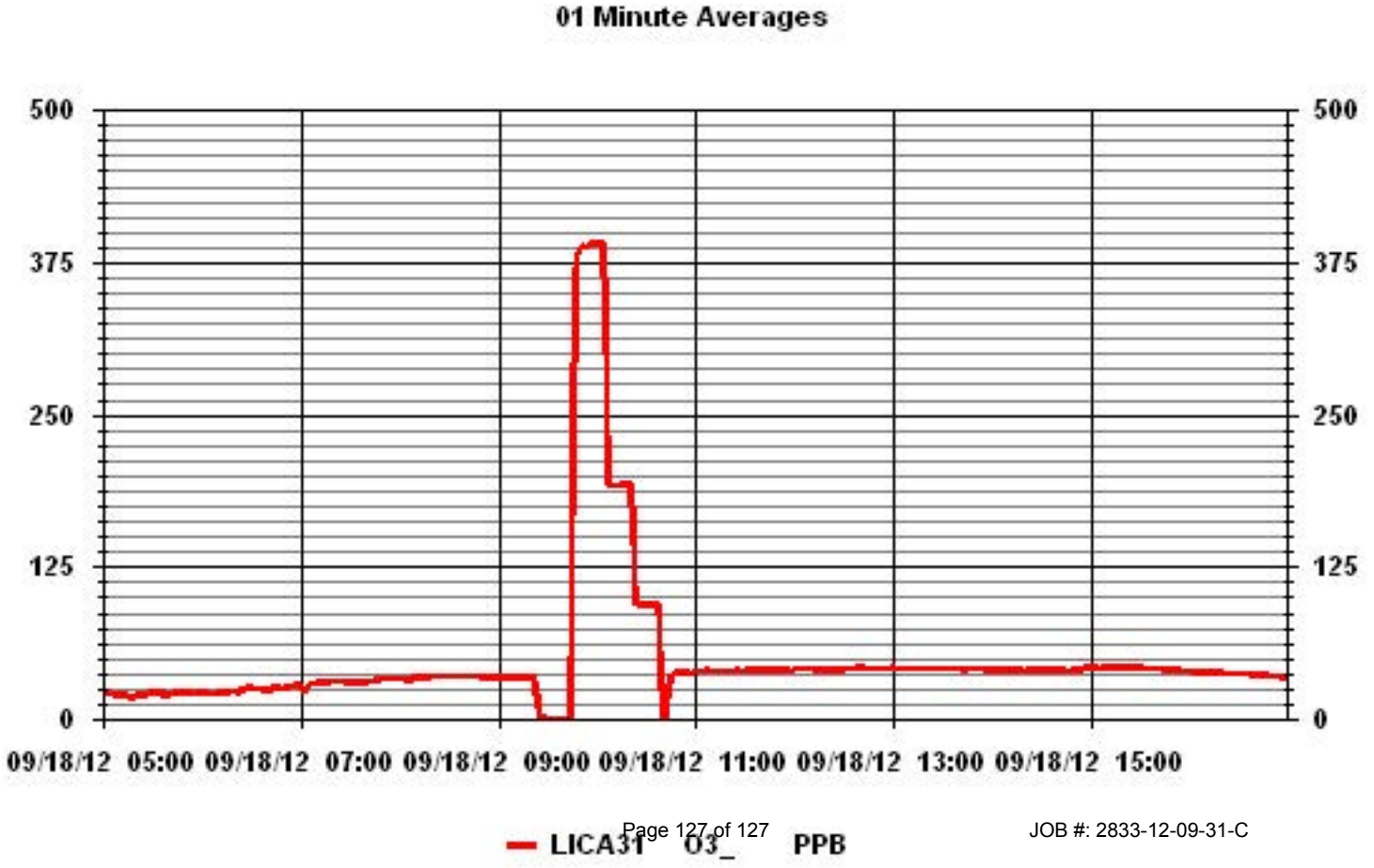
750
500
250
0
09/18/12 04:00
09/18/12 06:00
09/18/12 08:00
09/18/12 10:00
09/18/12 12:00
09/18/12 14:00
LICA31 NOX_ PPB
LICA31 NO_ PPB
LICA31 NO2_ PPB



JOB #: 2833-12-09-31-C

Lakeland Industry & Community Association

Cold Lake Monitoring Site
Ambient Air Monitoring
Data Report
For
September 2012

Prepared By:

October 31, 2012

JOB #: 2833-12-09-01-C

Lakeland Industry & Community Association
Cold Lake Monitoring Site
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: Cold Lake
Data Period: September 2012

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Craig Snider

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

The 6-day analytical report for VOCs and PAHs:
Authorized by Petro Oh

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 – September 2012

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	0.13	2	25, 26	VAR	VAR	VAR	0.8	26	100.0
TRS (PPB)	-	-	-	-	0.00	1	20	22	0.6	213(SSW)	0.0	ALL	99.7
NO_2 (PPB)	159	-	0	-	2.50	14	28	7	1.4	59(ENE)	4.3	28	100.0
NO (PPB)	-	-	-	-	0.70	28	24	7	1.2	247(WSW)	3.3	24	100.0
NOx (PPB)	-	-	-	-	3.20	39	28	7	1.4	59(ENE)	7.7	24	100.0
O_3 (PPB)	82	-	0	-	21.67	55	28	15, 16	7.9, 8	154(SSE), 142(SE)	34.8	28	100.0
THC (PPM)	-	-	-	-	2.27	3.9	24	8	0.6	329(NNW)	2.7	24	100.0
PM 2.5 (UG/M^3)	-	30	-	0	8.66	21	26	1	4.3	347(NNW)	14.3	28	37.6
TEMPERATURE (DEG C)	-	-	-	-	12.13	25.4	28	14	8.1	194(SSW)	15.5	28	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	67.96	97	2	7, 8	6.8, 6.9	223(SW), 214(SSW)	94.0	2	100.0
VECTOR WS (KPH)	-	-	-	-	5.81	22.1	18	14	-	307(NW)	16.2	11	100.0
VECTOR WD (DEGREES)	-	-	-	-	262(W)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS NA: NOT AVAILABLE

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

Passive Ambient Monitoring Network – September 2012

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO_2	#27	1.3	0.32
H_2S	#27	0.37	0.15
NO_2	#36	2.5	1.0
O_3	#19	22.3	17.4

Volatile Organics Data Summary
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

Xontech Model 910A – August 25, 2012

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – August 31, 2012

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – September 06, 2012

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – September 12, 2012

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – September 18, 2012

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – September 24, 2012

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – September 30, 2012

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

PUF cartridge – August 31, 2012

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.05	3-Methylcholanthrene

PUF cartridge – September 06, 2012

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – September 12, 2012

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – September 18, 2012

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – September 24, 2012

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – September 30, 2012

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

General Monthly Summary - Cold Lake

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

A trailer audit was performed by Alberta Environment on September 18th.

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

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

Total Reduced Sulphur (PPB)
- Analyzer make / model –TEI 450i, S/N: 812728560
- Converter - CD NOVA CDN 101, S/N: 250

No operational issues were observed during the month. Following the as found points check on September 10th, the flow filter was replaced, the PMT voltage and the slope were adjusted, and the inlet filter was changed. The analyzer was allowed time to stabilize overnight. A post repair calibration was performed on September 11th. Data was corrected using daily zero information.

Ozone (PPB)
- Analyzer make / model –Thermo 49i, S/N: 700419951

No operational issues were observed during the month. The inlet filter was changed before the monthly calibration was started on September 11th. Hourly maximum data recorded on September 21st at hour 6 was invalidated as less than 100% of the data were collected during that hour. Data was corrected using daily zero information.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Total Hydrocarbon (PPM)

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

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

Nitrogen Dioxide (PPB)

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

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

Particulate Matter 2.5 (UG/M3)

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

A Teom audit attempted to be performed on September 17th. However, the audit did not pass the leak check. The issue could not be fixed on September 17th. The Teom failed the AE audit on September 18th. Performed a ambient pressure calibration on September 18th. Performed troubleshooting by cleaning the cooler, cleaning the switching valve on September 19th. It was found that one O-ring inside the switching valve was broken, and the other O-ring was crack. Temporary fixed the issue by switching these two O-ring. The switching valve was changed in October. After the troubleshooting, another leak check was performed, and the Teom passed the leak check. A full Teom audit was then performed. The audit passed all requirements. Both the Teom filter and the FDMS filter were changed on September 19th. Because we cannot with certainty establish when the unit went out of specification, will have to invalidate the data back to the last valid leak check and flow audit, which was August 7th. A total of 443 hours of data was invalidated this month. Data was corrected using Alberta air quality guideline. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. Four hours of data were invalid as the data were below –3 ug/m3. The operational time for the month was 271 hours (37.6%).

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

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

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

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

Relative Humidity (PERCENT)

- System make / model - Rotronic Hygroclip-S3

No operational issues were observed during the month.

Ambient Temperature (DEGC)

- System make / model - Rotronic Hygroclip-S3

No operational issues were observed during the month.

Trailer Temperature (DEGC)

- System make / model - R&R 61

No operational issues were observed during the month.

Datalogger

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

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

Trailer

The manifold was cleaned on September 11th.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Air Quality Index (AQI)
No AQI report is included in this report, as the AQI value is no longer used by Alberta Environment.

Passive Network
The 10% duplicate sampling program was run this month.
The ozone sample at site #32 was damaged.

Volatile Organics (VOCs)
The volatile organics were sampled from September 1st to September 31st. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the VOCs in this report were reported as ug/m3 in 3 significant figures.
Sample results for September 25th and September 31st are not included in this monthly report because they are not available when the monthly report was preparing. The results will be included in the following monthly report.

Polycyclic Aromatic Hydrocarbons (PAHs)
The PAHs scheduled to be sampled on September 1st to September 31st. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the PAHs in this report were reported as ng/m3.
Sample result for September 31st is not included in this monthly report because it is not available when the monthly report was preparing. The result will be included in the following monthly report.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

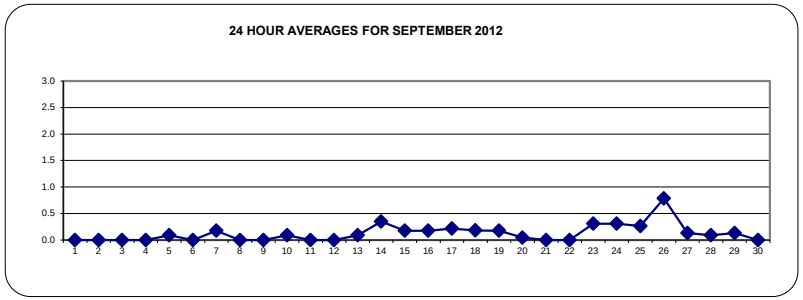
SULPHUR DIOXIDE (SO_2) hourly averages in ppb

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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
2	0	0	0	**IZS**	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	**IZS**	0	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	**IZS**	0	0	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	**IZS**	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	0.1	24
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0.0	24
7	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	**IZS**	0	0	1	0.2	24
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0.0	24
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0.0	24
10	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	**IZS**	0	0	0	0	0	1	0.1	24
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	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	**IZS**	0	0	0	0	0	0	0	0	0.0	24
13	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	1	0.1	24
14	0	0	0	0	0	0	1	0	0	1	1	1	1	1	**IZS**	1	1	0	0	0	0	0	0	0	1	0.3	24
15	0	0	0	0	0	0	0	0	1	1	1	0	0	**IZS**	0	0	0	0	0	0	0	0	1	0	1	0.2	24
16	0	0	0	0	0	0	0	0	1	1	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
17	0	0	0	0	0	0	0	0	0	1	1	**IZS**	1	1	1	0	0	0	0	0	0	0	0	0	1	0.2	24
18	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	**C**	0	0	0	0	1	1	1	1	0	1	0.2	24
19	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	1	1	1	1	0	0	0	0	0	0	1	0.2	24
20	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.0	24
21	0	0	0	0	0	0	0	**IZS**	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	**IZS**	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	**IZS**	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0.3	24
24	0	0	0	0	**IZS**	0	0	0	0	0	1	1	0	1	1	1	1	1	0	0	0	0	0	0	1	0.3	24
25	0	0	0	**IZS**	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	2	**2**	0.3	24
26	2	2	**IZS**	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	0	0	0	0	0	**2**	**0.8**	24
27	0	**IZS**	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.1	24
28	**IZS**	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	**IZS**	1	0.1	24
29	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	1	0.1	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0.0	24
HOURLY MAX	2	2	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	2			
HOURLY AVG	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.3	0.4	0.3	0.2	0.3	0.2	0.2	0.2	0.1	0.0	0.1	0.0	0.0	0.1	0.1			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



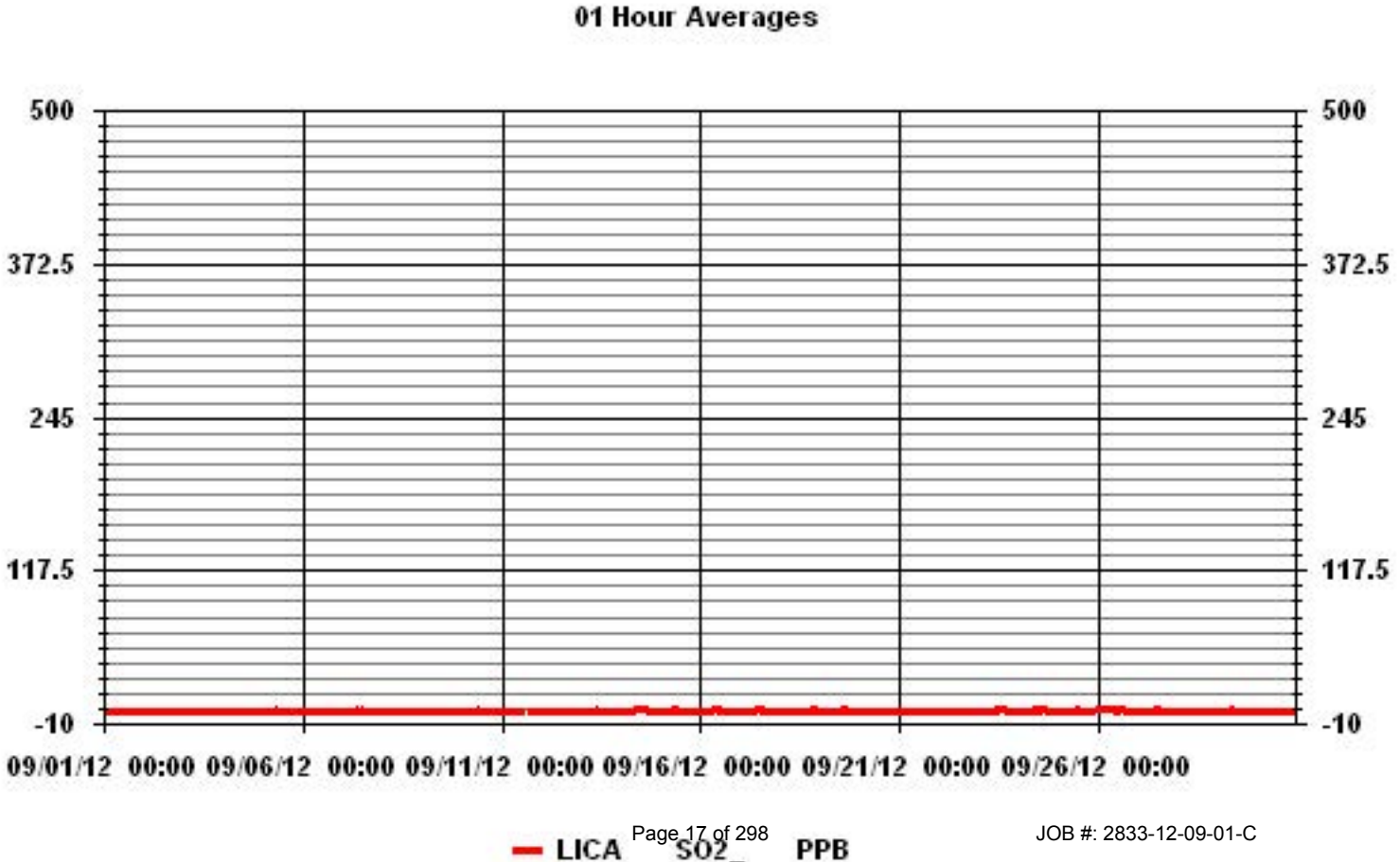
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB | 24-HR 48 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	83					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	25, 26
MAXIMUM 24-HR AVERAGE:	0.8	PPB			ON DAY(S)	26

IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.34		MONTHLY AVERAGE:	0.13	PPB

JOB #: 2833-12-09-01-C



JOB #: 2833-12-09-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

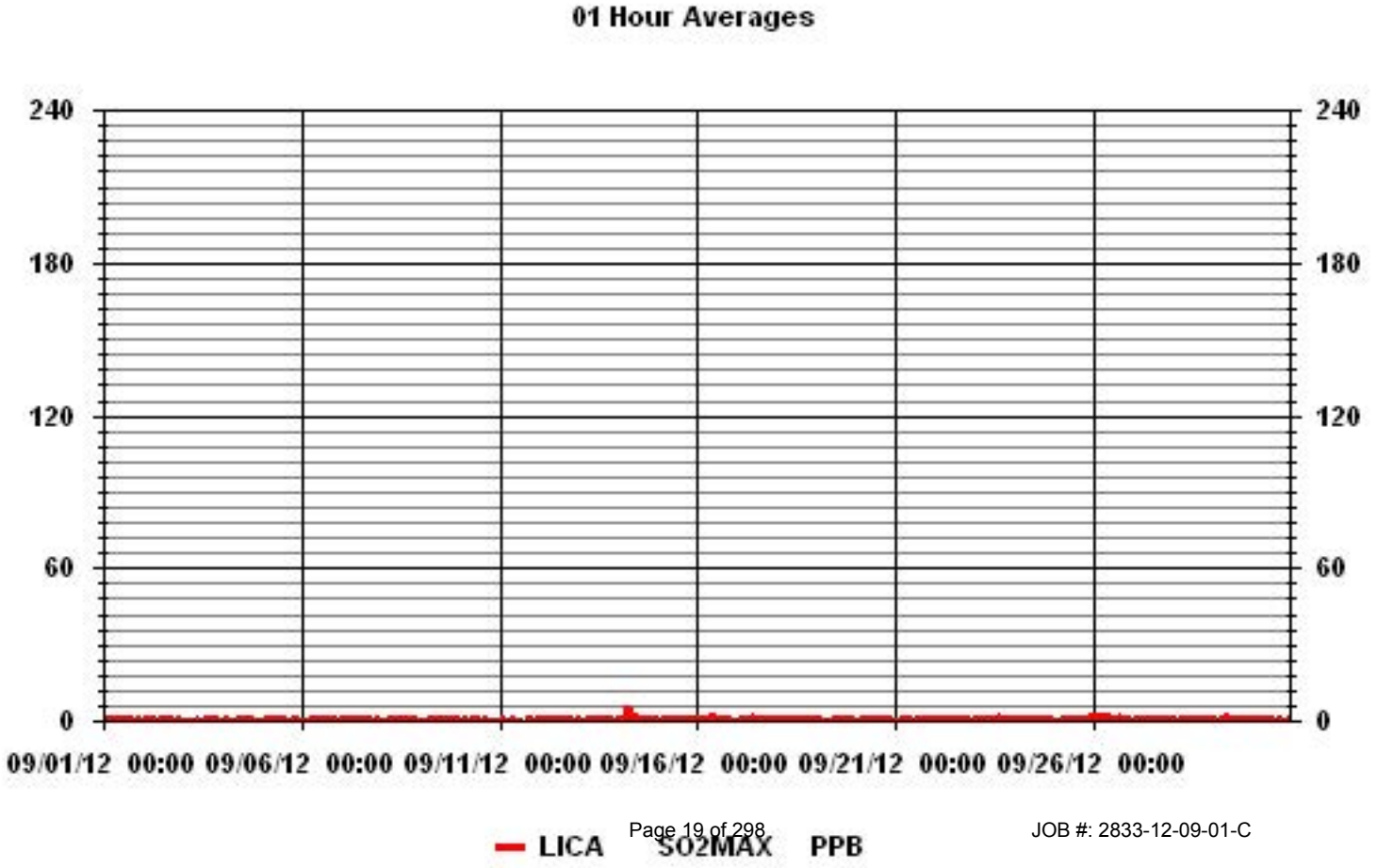
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00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

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	457					
MAXIMUM INSTANTANEOUS VALUE:	6	PPB	@ HOUR(S)	6	ON DAY(S)	14
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:		720	HRS
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	0.55					



JOB #: 2833-12-09-01-C

LICA
SO2_ / WDR Joint Frequency Distribution (Percent)

September 2012

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	2.63	1.75	1.46	3.36	5.55	3.65	10.81	3.36	5.70	6.14	10.52	15.64	15.35	7.89	3.94	2.19	100.00
<	60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.63	1.75	1.46	3.36	5.55	3.65	10.81	3.36	5.70	6.14	10.52	15.64	15.35	7.89	3.94	2.19	

Calm : .00 %

Total # Operational Hours : 684

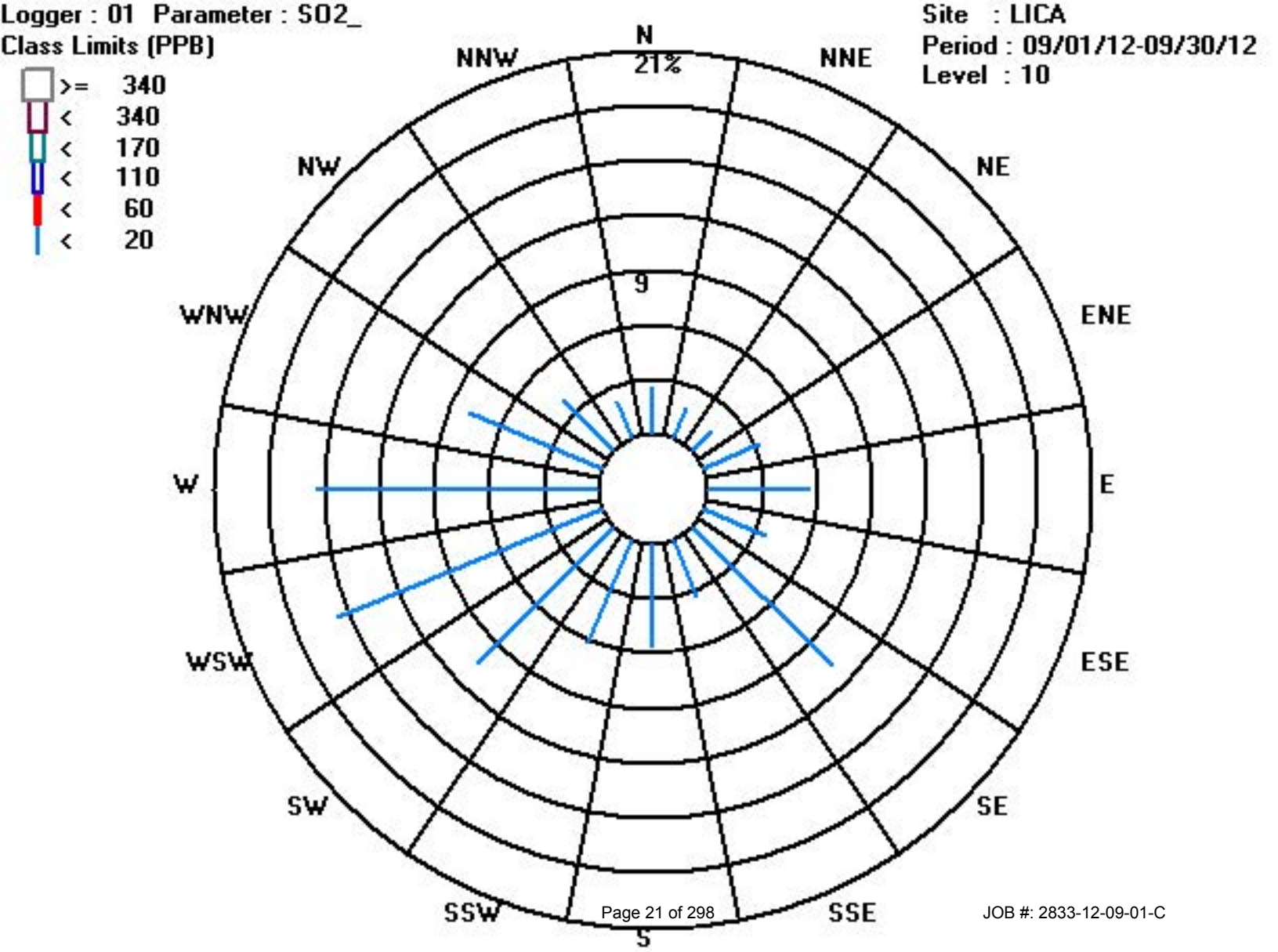
Distribution By Samples

Direction

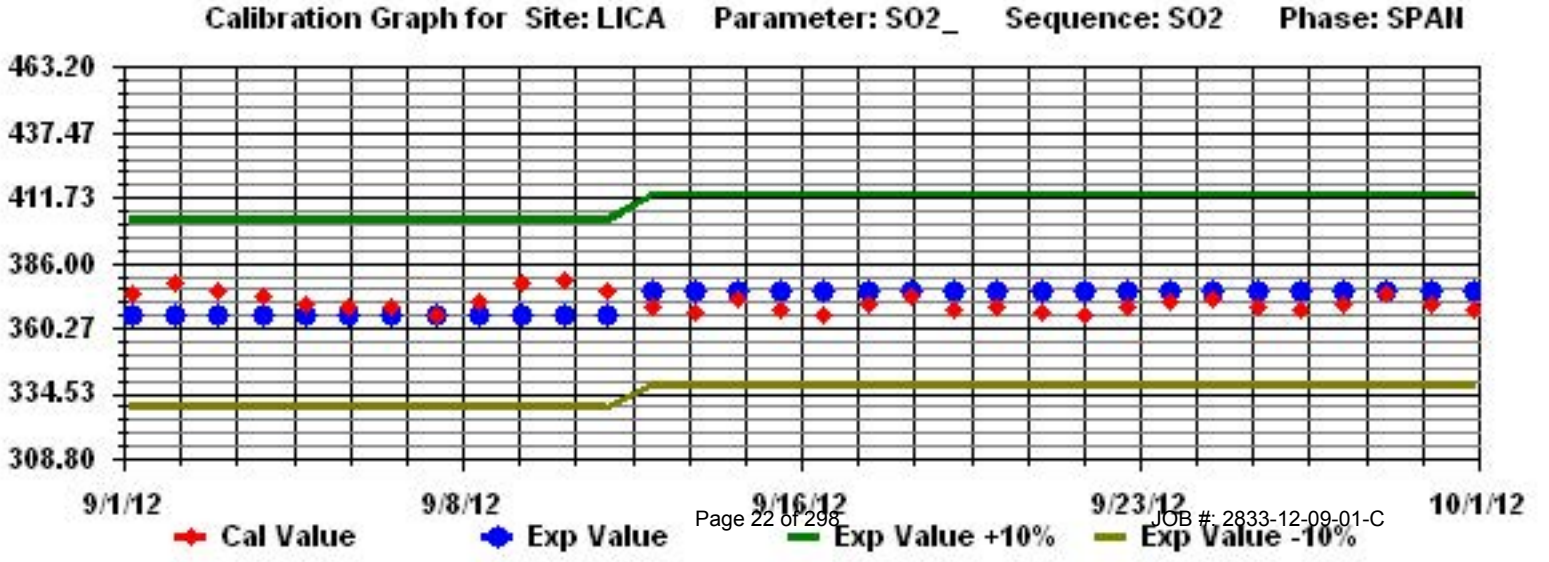
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	18	12	10	23	38	25	74	23	39	42	72	107	105	54	27	15	684
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	18	12	10	23	38	25	74	23	39	42	72	107	105	54	27	15	

Calm : .00 %

Total # Operational Hours : 684



JOB #: 2833-12-09-01-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
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Reduced Sulphur

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

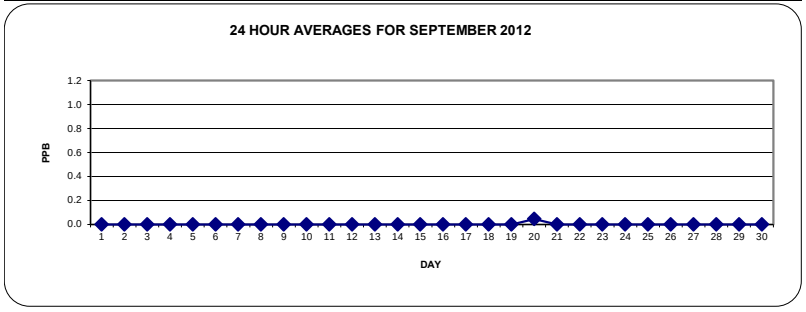
TOTAL REDUCED SULPHUR (TRS) hourly averages in ppb

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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
2	0	0	0	**IZS**	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	**IZS**	0	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	**IZS**	0	0	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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0.0	24
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0.0	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0.0	24
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0.0	24
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0.0	24
10	0	0	0	0	0	0	0	0	0	0	0	0	0	**C**	**C**	**M**	**M**	0	**IZS**	0	0	0	0	0	0	0.0	22
11	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	0	0	0	0	0	**IZS**	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	**IZS**	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	**IZS**	0	0	0	0	0	0	0	0	0	0.0	24
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0.0	24
15	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
18	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	**C**	0	0	0	0	0	0	0	0	0	0	0.0	24
19	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
20	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0.0	24
21	0	0	0	0	0	0	0	**IZS**	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	**IZS**	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	**IZS**	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	**IZS**	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	**IZS**	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	**IZS**	0	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	**IZS**	0	0	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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	0	0	0.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0.0	24
HOURLY MAX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0			
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

STATUS FLAG CODES

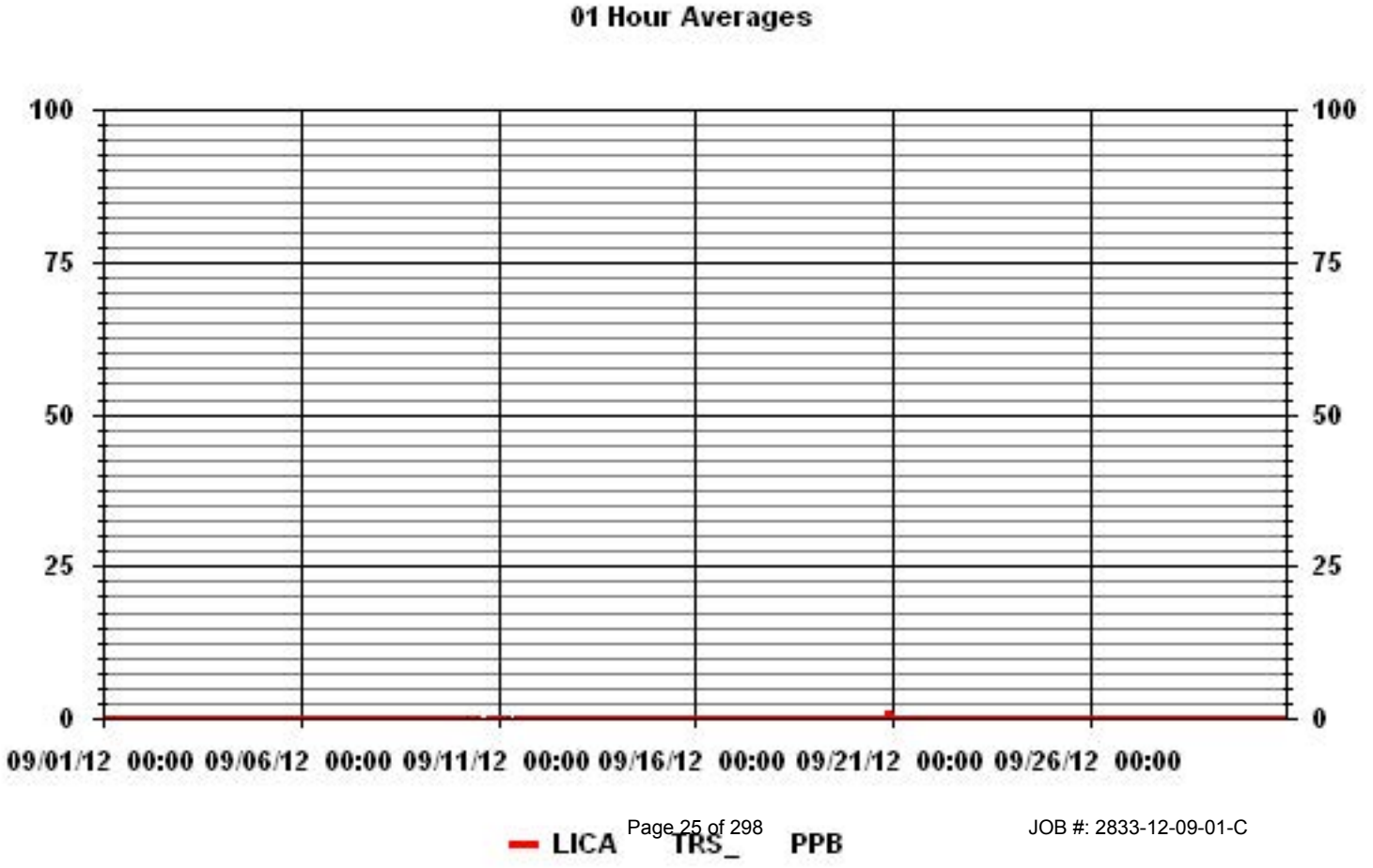
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	1					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	22	ON DAY(S)	20
MAXIMUM 24-HR AVERAGE:	0.0	PPB			ON DAY(S)	ALL
					VAR-VARIOUS	

IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	718	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.7	%
STANDARD DEVIATION:	0.04		MONTHLY AVERAGE:	0.00	PPB



JOB #: 2833-12-09-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

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	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
2	0	0	0	**IZS**	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	**IZS**	0	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	**IZS**	0	0	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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0.0	24
6	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	1	0.1	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0.0	24
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0.0	24
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0.0	24
10	0	0	0	0	0	0	0	0	0	0	0	0	0	**C**	**C**	**M**	**M**	1	**IZS**	0	1	0	0	0	1	0.1	22
11	1	0	0	1	1	1	0	**C**	**C**	**C**	**C**	**C**	0	0	0	0	**M**	**IZS**	1	0	0	0	0	0	1	0.3	24
12	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	**IZS**	0	1	1	1	1	1	1	1	0.3	24
13	1	1	0	1	1	1	0	1	1	1	1	0	1	1	1	**IZS**	1	1	1	1	1	1	0	1	1	0.8	24
14	1	0	0	1	1	0	1	1	1	0	0	0	0	0	**IZS**	1	1	0	0	0	1	1	1	0	1	0.5	24
15	1	0	0	0	0	0	0	1	1	0	1	0	1	**IZS**	1	0	1	1	0	1	1	1	0	0	1	0.5	24
16	0	0	0	0	1	0	0	0	1	1	1	0	**IZS**	0	1	1	0	0	0	1	0	0	1	0	1	0.3	24
17	0	1	1	0	1	1	1	1	0	0	0	**IZS**	0	1	0	0	0	0	0	1	0	1	0	1	1	0.4	24
18	0	0	1	0	1	0	1	0	1	0	**IZS**	1	1	**C**	**C**	**C**	1	1	1	1	1	1	0	1	1	0.7	24
19	1	1	0	0	0	1	0	1	0	**IZS**	1	1	0	0	0	1	0	0	1	1	1	0	0	1	1	0.5	24
20	0	0	1	1	0	0	0	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	1	0	**3**	0	**3**	0.3	24
21	1	1	1	1	1	1	1	**IZS**	1	1	1	0	0	1	0	0	0	1	0	1	0	1	0	0	1	0.6	24
22	1	0	0	0	0	0	**IZS**	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0	1	1	0.3	24
23	1	0	1	0	0	**IZS**	0	0	1	0	0	1	0	1	0	0	0	0	0	1	0	1	1	1	1	0.4	24
24	0	1	0	1	**IZS**	0	1	1	1	0	1	0	0	1	0	0	0	0	0	1	1	0	0	1	1	0.4	24
25	0	0	0	**IZS**	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0.3	24
26	0	0	**IZS**	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	1	0.2	24
27	0	**IZS**	1	1	0	1	1	1	1	1	0	0	1	0	1	0	0	0	1	0	0	0	0	0	1	0.4	24
28	**IZS**	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	0.1	24
29	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	1	0.0	24
30	0	0	0	0	0	0	0	1	0	0	1	0	1	1	0	0	1	1	0	0	0	**IZS**	0	0	1	0.3	24
HOURLY MAX	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1			
HOURLY AVG	0.3	0.2	0.2	0.3	0.3	0.2	0.3	0.4	0.4	0.2	0.3	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.4	0.4	0.3	0.3	0.3			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 174

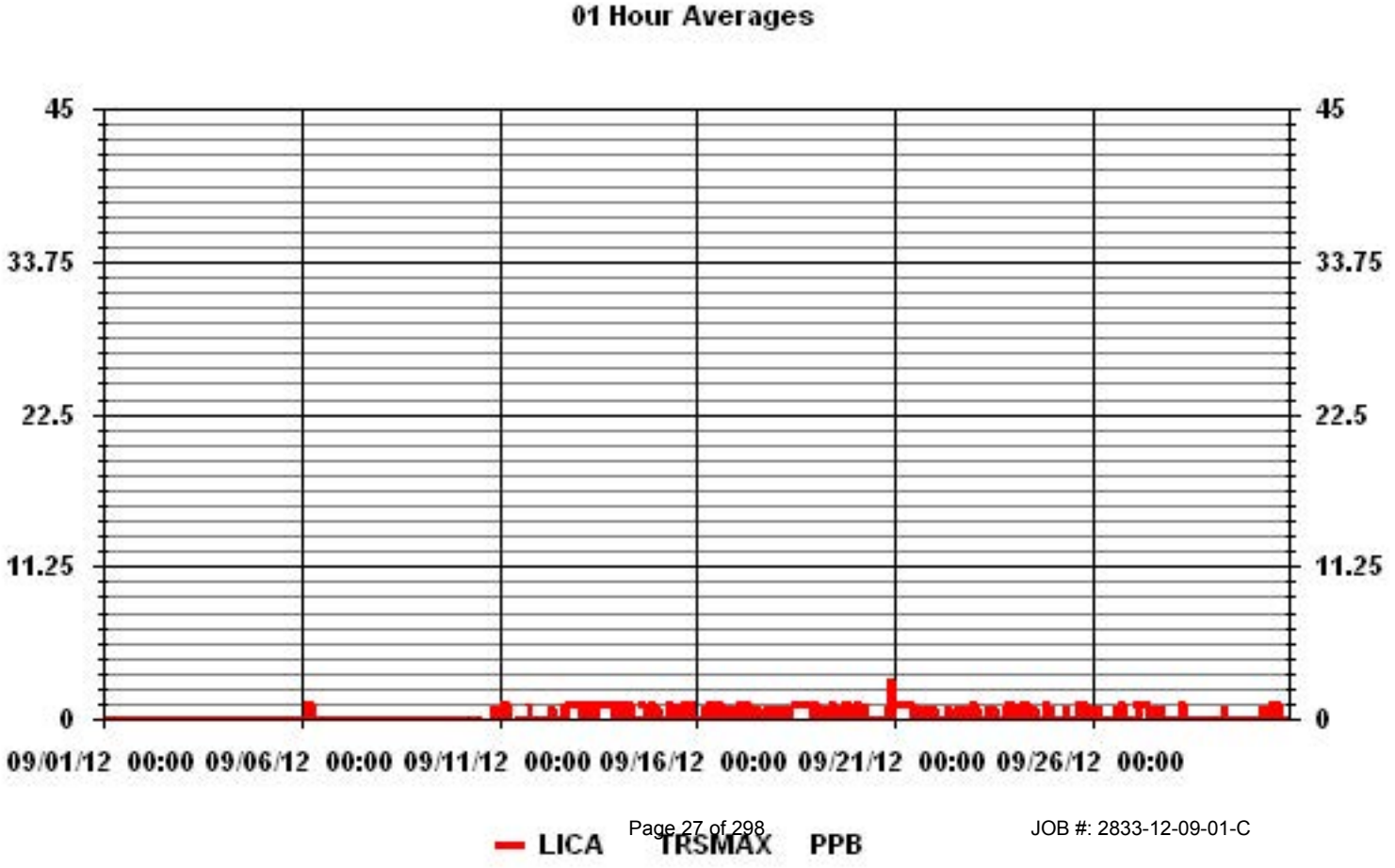
MAXIMUM INSTANTANEOUS VALUE: 3 PPB @ HOUR(S) 22 ON DAY(S) 20

VAR - VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 718 HRS

MONTHLY CALIBRATION TIME: 10 HRS

STANDARD DEVIATION: 0.45



JOB #: 2833-12-09-01-C

LICA
TRS_ / WDR Joint Frequency Distribution (Percent)

September 2012

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	2.65	1.76	1.47	3.38	5.59	3.68	10.89	3.38	5.74	6.18	10.60	15.75	14.87	7.80	3.97	2.20	100.00
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.65	1.76	1.47	3.38	5.59	3.68	10.89	3.38	5.74	6.18	10.60	15.75	14.87	7.80	3.97	2.20	

Calm : .00 %

Total # Operational Hours : 679

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	18	12	10	23	38	25	74	23	39	42	72	107	101	53	27	15	679
< 10																	
< 50																	
>= 50																	
Totals	18	12	10	23	38	25	74	23	39	42	72	107	101	53	27	15	

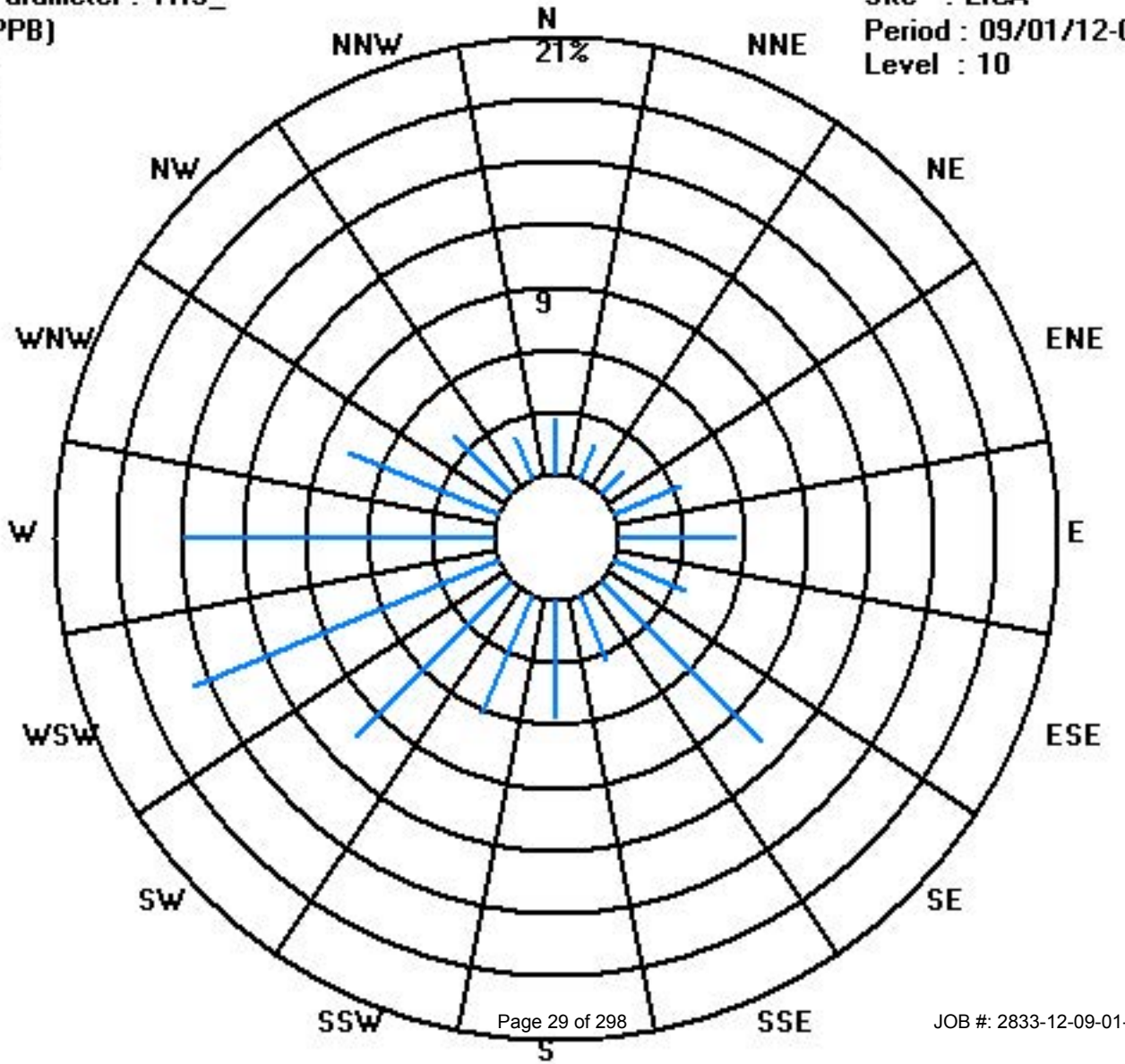
Calm : .00 %

Total # Operational Hours : 679

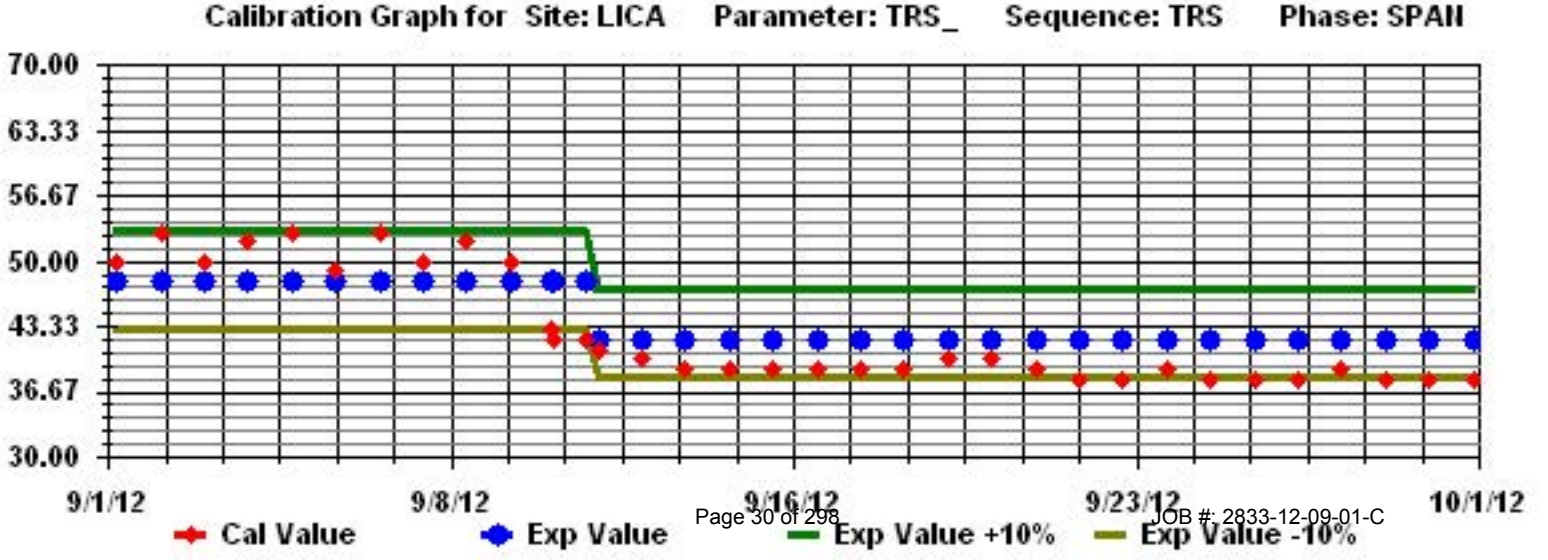
Logger : 01 Parameter : TRS_
Class Limits (PPB)

>= 50
< 50
< 10
< 3

Site : LICA
Period : 09/01/12-09/30/12
Level : 10



JOB #: 2833-12-09-01-C


Calibration Graph for Site: LICA Parameter: TRS_ Sequence: TRS Phase: SPAN
70.00
63.33
56.67
50.00
43.33
36.67
30.00
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

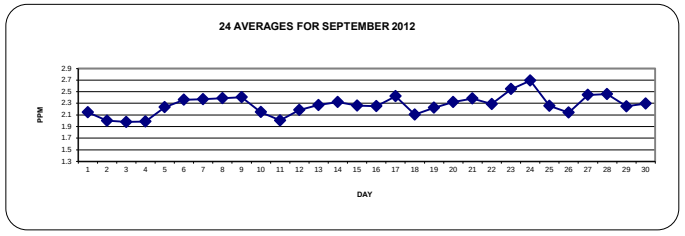
TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2.9	2.9	2.9	2.9	**IZS**	2	2	2	2	2	2	2	2	2	1.9	2	2	2	2	2	2	2	1.9	1.9	2.9	2.1	24
2	2	2	2	**IZS**	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	2.0	24
3	2.1	2.1	**IZS**	1.9	2	2	2	2	2	2	2	2	2	2	2	1.9	1.9	1.9	2	1.9	2	1.9	1.9	2	2.1	2.0	24
4	1.9	**IZS**	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.2	2.2	2.2	2.0	24
5	**IZS**	2.3	2.3	2.6	2.6	2.7	2.7	2.6	2.7	2.5	2	2	2	2	2	2	2	2	1.9	2	2	2.1	2.1	**IZS**	2.7	2.2	24
6	2.2	2.3	2.4	2.7	2.8	2.9	3.2	2.9	2.6	2.5	2.6	2.4	2.1	2	2	2	2	2	2	2	2	2.1	2.3	**IZS**	2.3	3.2	2.4	24
7	2.6	2.8	2.8	2.7	2.8	2.8	3	2.9	2.7	2.3	2.1	2.2	2	2	2	2	2	2	2.1	2	2.1	**IZS**	2.3	2.3	3.0	2.4	24
8	2.3	2.4	2.5	2.6	2.8	3	3.1	2.9	2.5	2.3	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	**IZS**	2.3	2.4	2.4	3.1	2.4	24
9	2.4	2.5	2.8	3	2.9	2.6	2.4	2.4	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	**IZS**	2.3	2.4	2.4	2.5	3.0	2.4	24
10	2.5	2.5	2.5	2.3	2.4	2.3	2.4	2.5	2.5	2.2	2	2	2	2	2	1.9	1.9	1.9	**IZS**	1.9	1.9	1.9	1.9	2	2.5	2.1	24
11	2	2	2	2	2	2	2	2	2	2	2	**C**	**C**	**C**	**C**	2	2	**IZS**	2	2	2	2	2	2.1	2.1	2.0	24
12	2.1	2.2	2.3	2.2	2.2	2.3	2.4	2.4	2.3	2.2	2.1	2.2	2.1	2.1	2.1	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.4	2.2	24
13	2.3	2.4	2.4	2.4	2.4	2.6	2.8	2.6	2.3	2.2	2.3	2.2	2.2	2.1	2.1	**IZS**	2	2	2	2	2.1	2.2	2.3	2.3	2.8	2.3	24
14	2.4	2.4	2.4	2.4	2.6	2.8	2.8	2.7	2.5	2.3	2.3	2.4	2.4	2.3	**IZS**	2.1	2	2.1	2.1	2.1	2.1	2.1	2	2.1	2.8	2.3	24
15	2.2	2.3	2.4	2.5	2.6	2.6	2.6	2.5	2.2	2.1	2.1	2.1	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.4	2.6	2.3	24
16	2.4	2.3	2.2	2.3	2.3	2.3	2.3	2.4	2.5	2.4	2.2	2.1	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.5	2.5	2.3	24
17	2.5	2.5	2.5	2.5	2.6	2.7	3.1	3.1	2.8	2.5	2.3	**IZS**	2.2	2.1	2.1	2.1	2	2	2.1	2.1	2.4	2.4	2.5	2.6	3.1	2.4	24
18	2.4	2.6	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	**IZS**	2	2	2	2	2	**C**	**C**	2	2	2	2	2	2	2.6	2.1	24
19	2.1	2.1	2.1	2.4	2.5	2.7	2.5	2.4	2.4	**IZS**	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.2	2.7	2.2	24
20	2.2	2.3	2.3	2.4	2.6	3	2.9	2.6	**IZS**	2.5	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.4	3.0	2.3	24
21	2.6	2.7	2.9	3.2	3.1	2.9	3	**IZS**	2.7	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.2	3.2	2.4	24
22	2.2	2.2	2.2	2.3	2.4	2.4	**IZS**	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.3	2.5	2.2	2.3	2.4	2.5	2.3	24
23	2.4	2.4	2.5	2.5	2.4	**IZS**	2.5	2.6	2.6	2.7	2.6	2.6	2.5	2.4	2.3	2.3	2.3	2.3	2.4	2.8	2.7	2.8	2.9	3	3.0	2.5	24
24	3.1	3.1	3.1	3.2	**IZS**	3.5	3.7	3.8	**3.9**	3.3	2.8	2.5	2.3	2.2	2.2	2.1	2.1	2.1	2.2	2.3	2.2	2.1	2.1	2	**3.9**	**2.7**	24
25	2.1	2.1	2.1	**IZS**	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.4	2.3	2.2	2.2	2.2	2.3	2.3	2.3	2.5	2.5	2.4	2.2	2.1	2.5	2.3	24
26	2.1	2.1	**IZS**	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.4	2.5	2.5	2.1	24
27	2.6	**IZS**	2.6	2.7	2.8	2.9	3	3	2.6	2.5	2.6	2.1	2.2	2.3	2.2	2.2	2.3	2.2	2.2	2.4	2.1	2.2	2.2	2.3	3.0	2.4	24
28	**IZS**	2.6	2.7	2.7	2.8	2.9	3	2.9	2.6	2.7	2.5	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.4	2.4	**IZS**	3.0	2.5	24
29	2.5	2.7	2.7	2.7	2.7	2.7	2.6	2.4	2.1	2.1	2	2	2	2	2	2	2	2	2	2.1	2.2	2	**IZS**	2.2	2.7	2.2	24
30	2.4	2.5	2.4	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.3	2.3	**IZS**	2.4	2.5	2.5	2.3	24
HOURLY MAX	3.1	3.1	3.1	3.2	3.1	3.5	3.7	3.8	3.9	3.3	2.8	2.6	2.5	2.4	2.3	2.3	2.3	2.4	2.8	2.7	2.8	2.9	3.0				
HOURLY AVG	2.3	2.4	2.4	2.5	2.5	2.5	2.6	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	2.2	2.3			

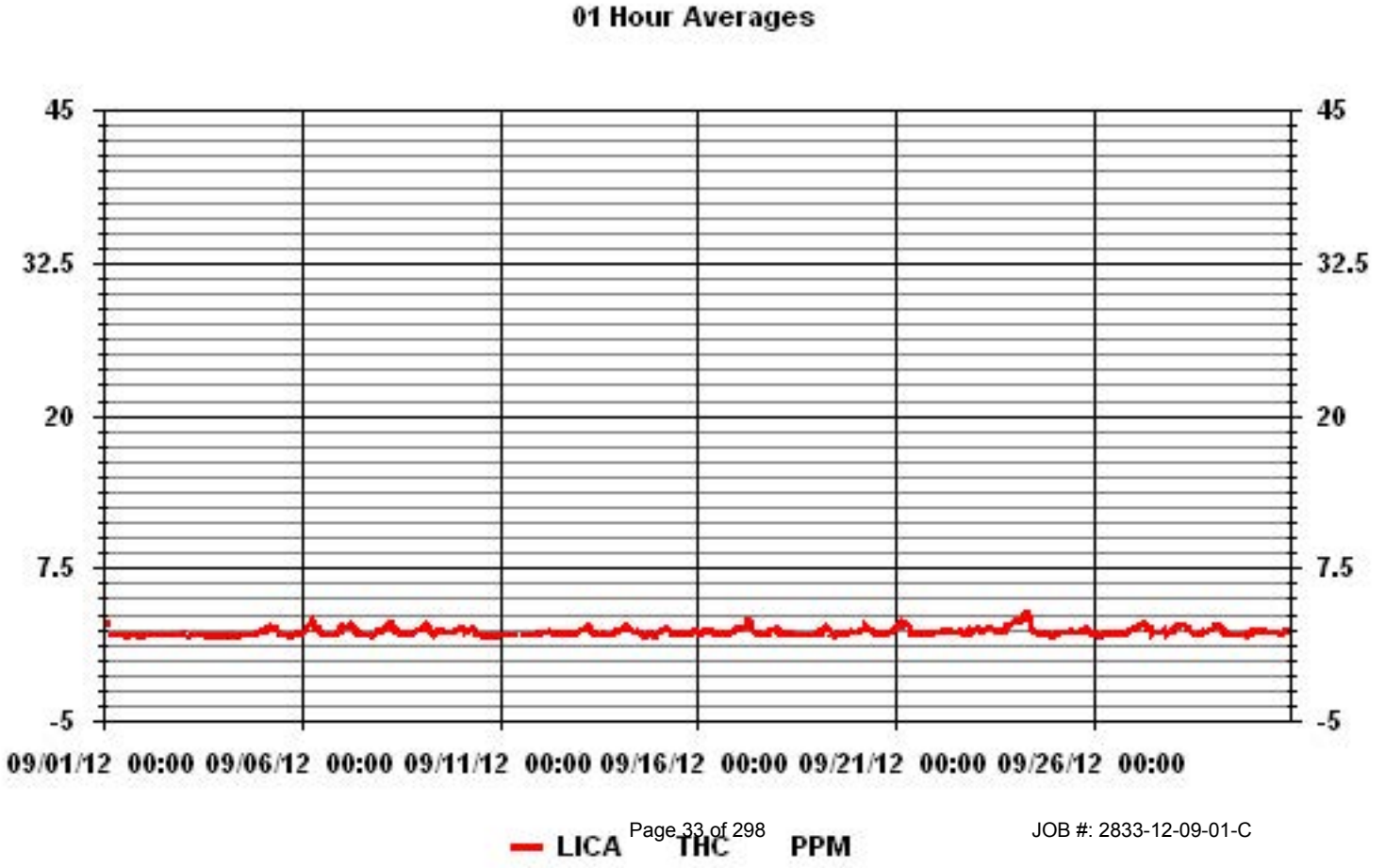
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	682					
MAXIMUM 1-HR AVERAGE:	3.9	PPM	@ HOUR(S)	8	ON DAY(S)	24
MAXIMUM 24-HR AVERAGE:	2.7	PPM			ON DAY(S)	24
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		720	HRS
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	0.30		MONTHLY AVERAGE:		2.27	PPM



JOB #: 2833-12-09-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

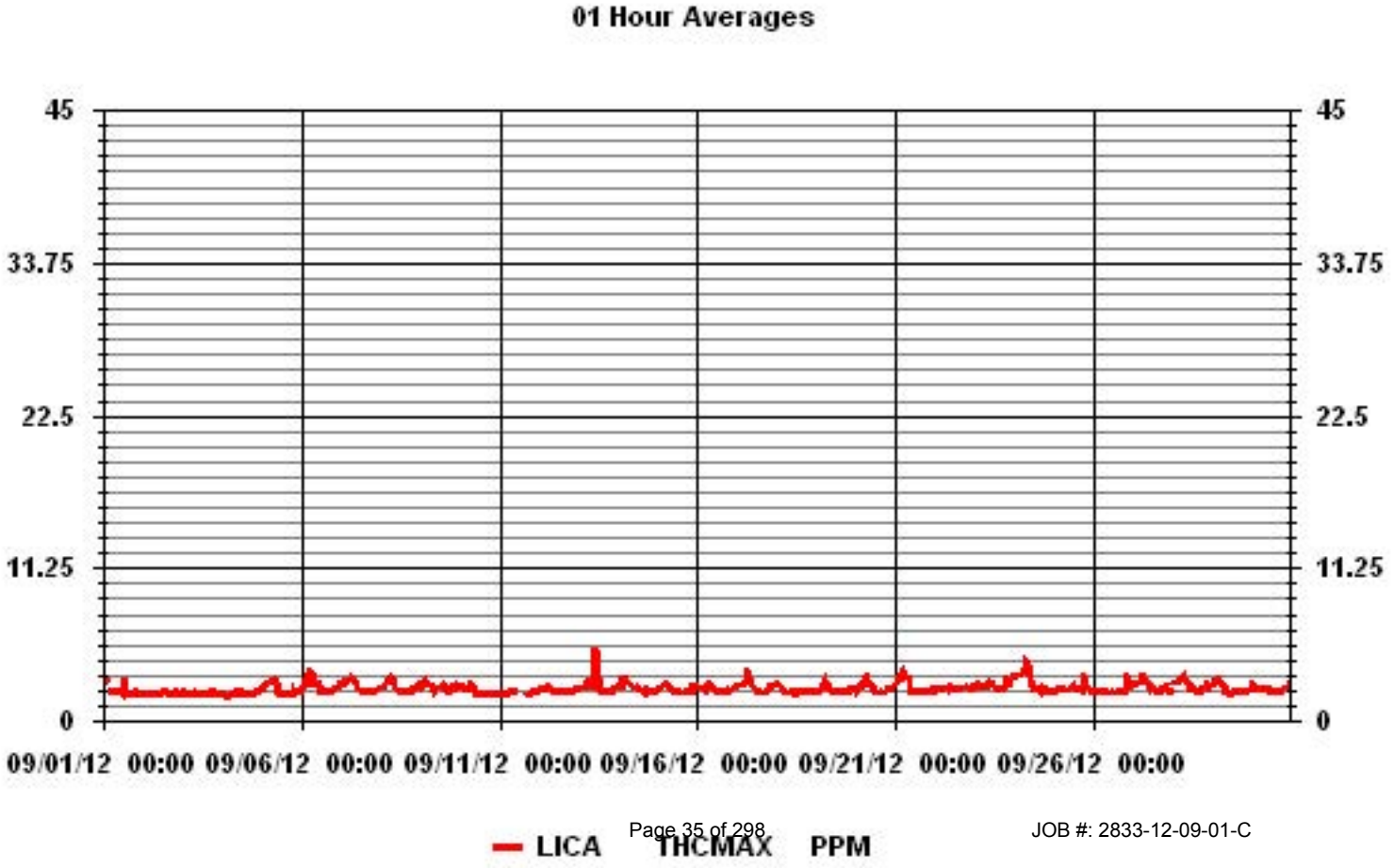
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2.9	2.9	3	3	**IZS**	2.1	2.1	2.1	2.1	2.1	2.3	2.1	2.5	3.1	2	2	2	2	2	2.1	2.1	2	2	2	3.1	2.3	24
2	2	2	2	**IZS**	2	2	2	2.1	2	2	2.1	2	2.1	2.1	2.1	2.1	2	2	2	2	2.1	2.1	2	2.1	2.1	2.0	24
3	2.2	2.2	**IZS**	2	2	2.1	2	2.1	2.1	2	2	2	2.1	2	2	2	2	2	2.4	2	2	2	2	2	2.4	2.1	24
4	2	**IZS**	1.9	2	1.9	2	2	2.2	2	2	2.1	2.1	2.1	2	2	2	2	2	2	2	2.1	2.2	2.3	2.2	2.4	2.1	24
5	**IZS**	2.4	2.6	2.7	2.8	2.8	2.9	2.9	3.1	2.9	2.1	2	2	2	2	2	2	2	2	2.4	2.2	2.3	2.2	**IZS**	3.1	2.4	24
6	2.3	2.4	2.6	3.1	3.4	3.1	3.5	3.3	2.7	2.7	2.8	2.6	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.4	2.5	**IZS**	2.6	3.5	2.6	24
7	2.8	2.9	2.9	2.8	2.9	3	3.3	3.2	2.9	2.8	2.5	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	**IZS**	2.4	2.5	3.3	2.5	24
8	2.4	2.4	2.6	2.7	3	3.1	3.3	3.2	2.8	2.4	2.4	2.3	2.2	2.3	2.2	2.2	2.2	2.3	2.4	2.3	**IZS**	2.4	2.6	2.7	3.3	2.5	24
9	2.5	2.6	2.9	3.1	3	2.9	2.7	2.6	2.2	2.4	2.4	2.4	2.4	2.4	2.6	2.4	2.4	2.2	2.3	**IZS**	2.6	2.5	2.7	2.6	3.1	2.6	24
10	2.6	2.6	2.6	2.4	2.5	2.4	2.7	2.7	2.6	2.3	2.1	2	2	2	2	2	2	2	**IZS**	2	2.1	2	2	2	2.7	2.2	24
11	2	2	2	2	2	2	2.1	2.1	2.1	2.1	**C**	**C**	**C**	**C**	**C**	2.1	**M**	**IZS**	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	23
12	2.2	2.3	2.3	2.3	2.3	2.4	2.6	2.5	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	**IZS**	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.6	2.3	24
13	2.4	2.5	2.4	2.4	2.5	2.8	2.9	2.9	2.5	2.3	**5.3**	2.2	3.4	2.3	2.2	**IZS**	2.1	2.1	2.1	2.2	2.2	2.4	2.4	2.4	**5.3**	2.6	24
14	2.5	2.5	2.5	3.4	2.9	2.9	2.9	2.8	2.7	2.4	2.4	2.5	2.5	2.4	**IZS**	2.2	2.1	2.3	2.3	2.2	2.3	2.2	2.1	2.2	3.4	2.5	24
15	2.3	2.4	2.5	2.6	2.6	2.7	2.7	2.6	2.3	2.2	2.2	2.2	2.2	**IZS**	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.5	2.5	2.5	2.7	2.4	24
16	2.5	2.4	2.4	2.4	2.4	2.3	2.6	2.7	2.7	2.6	2.3	2.2	**IZS**	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.6	2.7	2.4	24
17	2.6	2.6	2.6	2.6	2.8	3	3.9	3.3	3	2.7	2.5	**IZS**	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.3	2.5	2.5	2.6	2.7	3.9	2.6	24
18	2.7	2.8	2.7	2.3	2.2	2.2	2.1	2.1	2.2	2.2	**IZS**	2	2.1	2.1	2.1	2.1	**C**	**C**	2.1	2.1	2.1	2.1	2.1	2.2	2.8	2.2	24
19	2.2	2.2	2.3	2.5	2.5	2.9	2.6	2.5	2.5	**IZS**	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.3	2.2	2.3	2.3	2.5	2.4	2.9	2.3	24
20	2.2	2.4	2.5	2.5	2.9	3.1	3.2	2.8	**IZS**	2.6	2.6	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.4	2.3	2.3	2.5	2.6	3.2	2.4	24
21	2.7	3	3.2	3.3	3.6	3.2	3.3	**IZS**	3.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.6	3.6	2.6	24
22	2.2	2.3	2.3	2.5	2.4	2.5	**IZS**	2.5	2.6	2.3	2.4	2.3	2.3	2.3	2.3	2.4	2.5	2.4	2.4	2.6	2.6	2.5	2.4	2.5	2.6	2.4	24
23	2.5	2.5	2.7	2.7	2.5	**IZS**	2.6	2.8	2.7	2.9	2.8	2.7	2.6	2.5	2.4	2.3	2.3	2.4	2.5	3	2.9	2.8	3	3.3	3.3	2.7	24
24	3.2	3.2	3.3	3.4	**IZS**	3.6	3.8	4.3	4.1	3.5	3.1	2.7	2.4	2.3	2.4	2.4	2.2	2.5	2.3	2.4	2.3	2.2	2.2	2.1	4.3	2.9	24
25	2.1	2.1	2.3	**IZS**	2.5	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.6	2.3	2.3	2.3	2.4	2.3	3.5	2.9	2.6	2.5	2.3	2.2	3.5	2.4	24
26	2.2	2.2	**IZS**	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.2	3.5	2.3	2.6	2.7	3.5	2.2	24
27	2.7	**IZS**	2.7	2.8	2.8	3	3.5	3.1	3	2.7	3	2.3	2.4	2.4	2.2	2.3	2.4	2.3	2.5	2.6	2.3	2.2	2.2	2.3	3.5	2.6	24
28	**IZS**	2.9	2.8	2.8	3	3.2	3.4	3.1	2.9	2.9	2.8	2.4	2.3	2.3	2.3	2.2	2.2	2.3	2.5	2.4	2.4	3	2.4	**IZS**	3.4	2.7	24
29	2.7	2.8	3	3.1	2.8	2.8	2.8	2.7	2.1	2.1	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	**IZS**	2.3	3.1	2.4	24
30	2.7	2.7	2.5	2.4	2.3	2.3	2.4	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.4	**IZS**	2.5	2.8	2.8	2.4	24
HOURLY MAX	3	3	3	3	4	4	4	4	4	4	5	3	3	3	3	2	3	3	4	3	4	3	3	3			
HOURLY AVG	2.4	2.5	2.6	2.6	2.6	2.6	2.8	2.7	2.6	2.4	2.5	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.4			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	680						
MAXIMUM INSTANTANEOUS VALUE:	5.3	PPM	@ HOUR(S)	10	ON DAY(S)	13	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:			719	HRS
MONTHLY CALIBRATION TIME:	7	HRS					
STANDARD DEVIATION:	0.38						



JOB #: 2833-12-09-01-C

LICA
THC / WD Joint Frequency Distribution (Percent)

September 2012

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	2.63	1.75	1.02	3.07	4.98	3.51	10.70	2.93	5.57	5.86	9.97	15.39	14.95	8.21	3.81	2.05	96.48
<	10.0	.00	.00	.43	.29	.58	.14	.14	.43	.14	.29	.58	.29	.00	.00	.00	.14	3.51
<	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.63	1.75	1.46	3.37	5.57	3.66	10.85	3.37	5.71	6.15	10.55	15.68	14.95	8.21	3.81	2.19	

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
<	3.0	18	12	7	21	34	24	73	20	38	40	68	105	102	56	26	14	658
<	10.0			3	2	4	1	1	3	1	2	4	2				1	24
<	50.0																	
>=	50.0																	
	Totals	18	12	10	23	38	25	74	23	39	42	72	107	102	56	26	15	

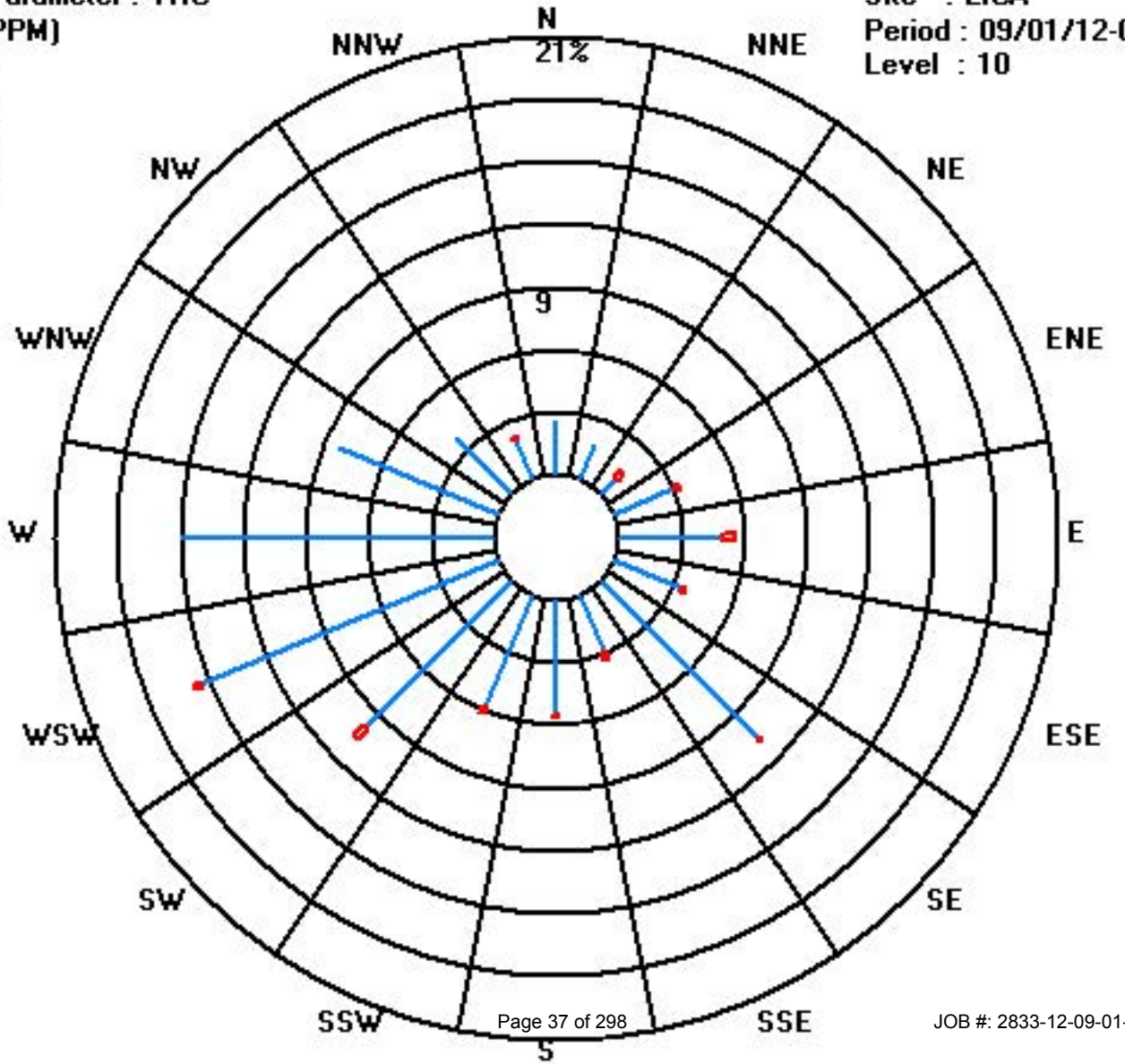
Calm : .00 %

Total # Operational Hours : 682

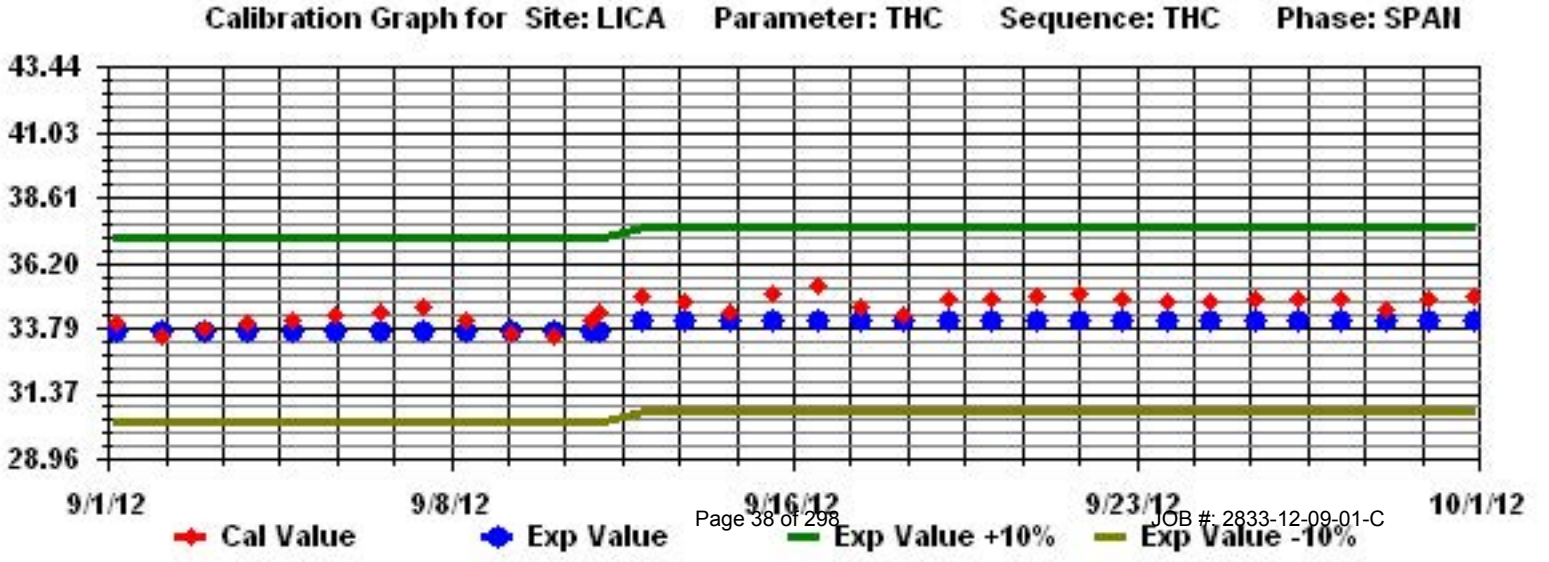
Logger : 01 Parameter : THC
Class Limits (PPM)

>= 50.0
< 50.0
< 10.0
< 3.0

Site : LICA
Period : 09/01/12-09/30/12
Level : 10



JOB #: 2833-12-09-01-C


Calibration Graph for Site: LICA Parameter: THC Sequence: THC Phase: SPAN
43.44
41.03
38.61
36.20
33.79
31.37
28.96
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

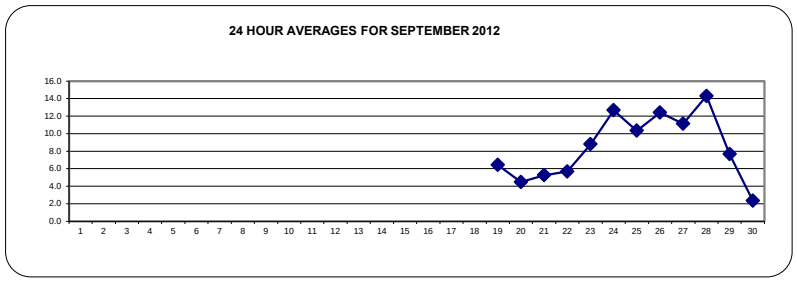
PARTICULATE MATTER 2.5 (PM2.5) hourly averages in ug/m^3

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	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	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
2	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
3	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
4	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
5	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
6	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
7	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
8	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
9	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
10	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
11	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
12	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
13	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
14	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
15	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
16	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**			0
17	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**M**	**M**	**M**	**N**	**N**	**N**	**N**	**N**			0
18	**N**	**N**	**N**	**N**	**N**	**C**	**C**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**M**	**M**	**N**	**N**	**N**	**N**	**N**	**N**			2
19	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**M**	**C**	**C**	5	8	10	3	8	5	6	10	6.4	9
20	7	8	6	3	5	3	6	5	0	2	8	10	2	4	3	2	0	2	3	7	3	3	7	8	10	4.5	24
21	4	6	5	5	7	4	9	3	6	5	N	15	6	4	5	1	1	4	11	5	3	4	3	5	15	5.3	23
22	3	3	4	3	3	5	0	6	4	4	14	7	9	5	7	5	6	6	1	13	11	6	5	6	14	5.7	24
23	5	4	7	6	6	2	4	7	4	10	2	11	8	10	11	10	12	10	13	16	14	14	14	11	16	8.8	24
24	12	10	14	12	9	13	10	13	13	12	14	14	13	12	16	14	11	11	16	18	17	15	9	6	18	12.7	24
25	5	5	7	0	4	3	2	6	10	10	11	11	14	11	13	13	14	14	18	14	14	16	15	18	18	10.3	24
26	19	**21**	18	19	15	10	13	10	11	13	14	13	6	3	19	12	6	9	14	12	9	11	11	10	**21**	12.4	24
27	11	8	14	11	12	7	11	10	11	11	14	10	11	8	11	12	11	10	14	15	12	14	9	10	15	11.1	24
28	11	16	12	13	15	12	18	16	16	17	14	15	16	13	16	9	11	13	14	15	14	14	19	14	19	**14.3**	24
29	17	14	15	14	15	15	**12**	12	8	11	8	6	6	6	3	1	1	2	6	3	3	2	2	2	17	7.7	24
30	4	5	2	N	2	3	1	1	1	4	5	0	5	N	N	0	0	1	3	3	2	0	2	5	5	2.3	21
HOURLY MAX	19	21	18	19	15	15	18	16	16	17	14	15	16	13	19	14	14	14	18	18	17	16	19	18			
HOURLY AVG	8.9	9.1	9.5	8.6	8.5	7.0	7.8	8.1	7.6	9.0	10.4	10.2	8.7	7.6	10.4	7.2	6.6	7.3	10.1	10.9	8.8	8.9	8.4	8.4			

STATUS FLAG CODES

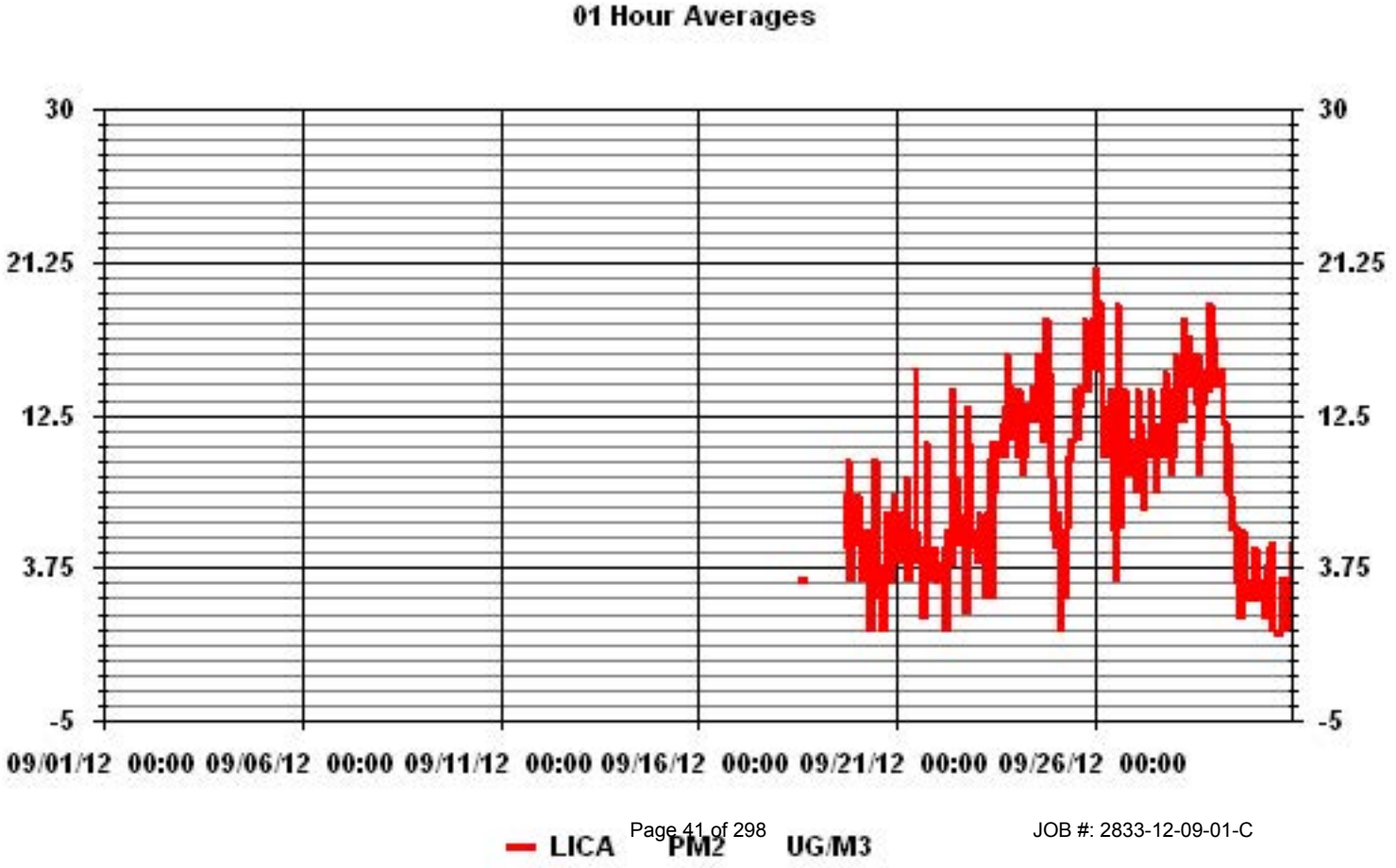
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR - ug/m3 | 24-HR 30 ug/m3

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-						
NUMBER OF 24-HR EXCEEDENCES:	0						
NUMBER OF NON-ZERO READINGS:	259						
MAXIMUM 1-HR AVERAGE:	21	UG/M^3	@ HOUR(S)	1	ON DAY(S)	26	
MAXIMUM 24-HR AVERAGE:	14.3	UG/M^3			ON DAY(S)	28	
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		271	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:		37.6	%	
STANDARD DEVIATION:	5.03		MONTHLY AVERAGE:		8.66	UG/M^3	



JOB #: 2833-12-09-01-C

LICA
PM2 / WD Joint Frequency Distribution (Percent)

September 2012

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	2.97	2.23	1.85	4.46	7.80	5.57	19.33	3.34	5.94	4.46	7.43	14.12	10.40	3.71	3.34	2.97	100.00
<	60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	240	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.97	2.23	1.85	4.46	7.80	5.57	19.33	3.34	5.94	4.46	7.43	14.12	10.40	3.71	3.34	2.97	

Calm : .00 %

Total # Operational Hours : 269

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30	8	6	5	12	21	15	52	9	16	12	20	38	28	10	9	8	269
<	60																	
<	80																	
<	120																	
<	240																	
>=	240																	
	Totals	8	6	5	12	21	15	52	9	16	12	20	38	28	10	9	8	

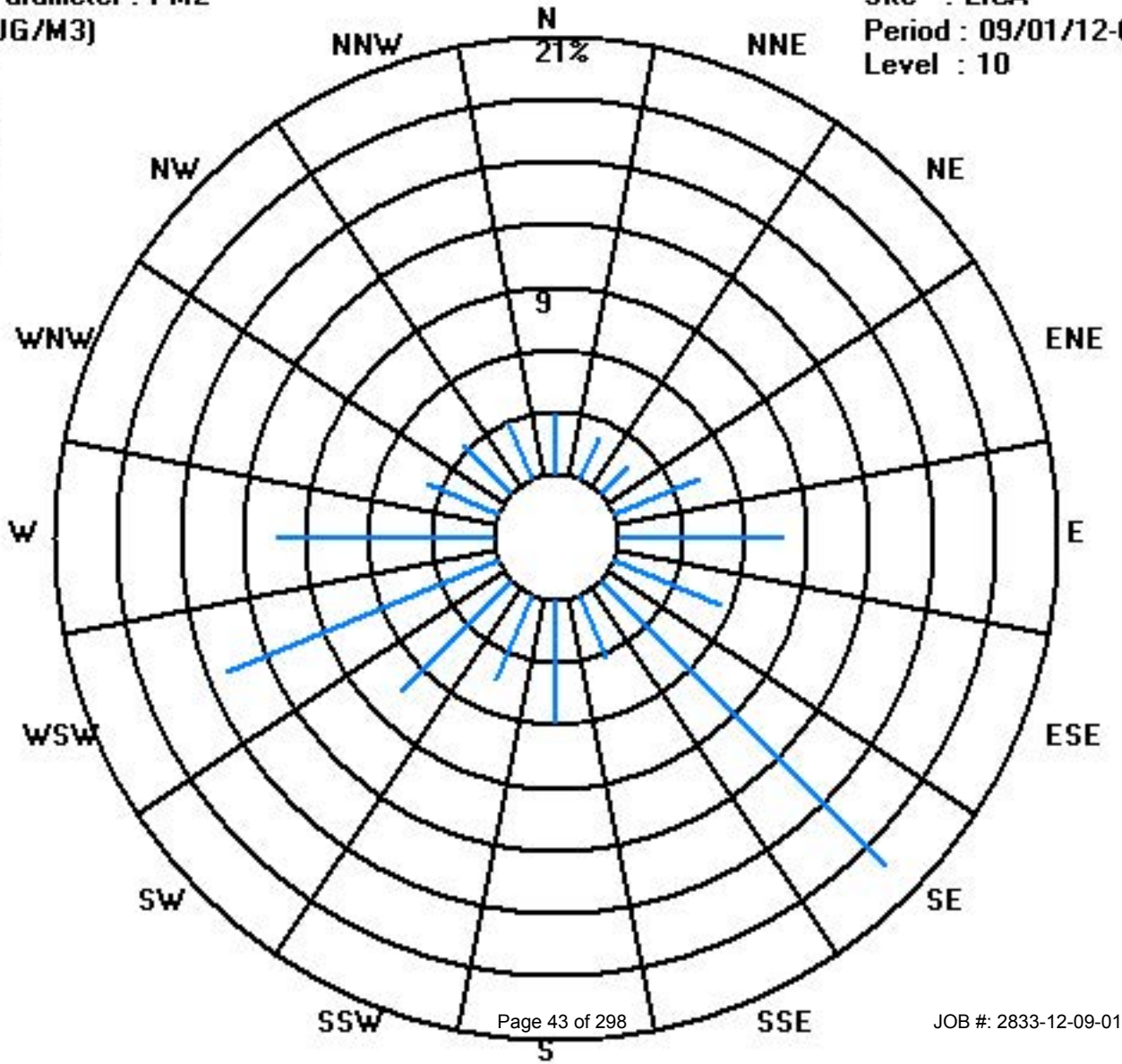
Calm : .00 %

Total # Operational Hours : 269

Logger : 01 Parameter : PM2
Class Limits (UG/M3)

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

Site : LICA
Period : 09/01/12-09/30/12
Level : 10



JOB #: 2833-12-09-01-C

Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

NITROGEN DIOXIDE hourly averages in ppb

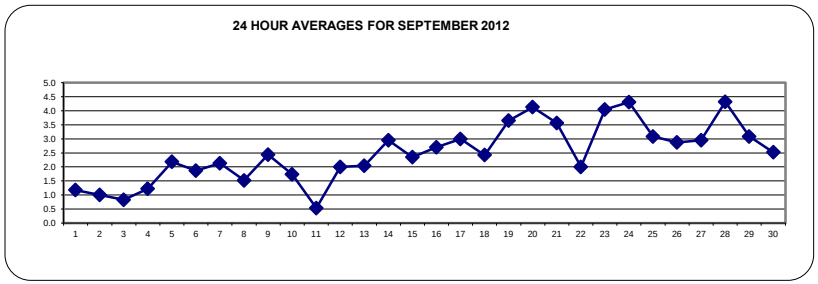
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	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	**IZS**	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	2	1	1	1	2	1.2	24
2	2	2	2	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	2	1.0	24
3	2	2	**IZS**	2	2	2	1	1	0	1	0	0	1	0	1	0	0	0	1	1	1	0	0	1	2	0.8	24
4	0	**IZS**	0	0	1	1	1	1	1	1	1	0	0	1	0	0	0	1	0	4	2	3	5	5	5	1.2	24
5	**IZS**	5	3	3	1	3	4	7	5	2	1	1	1	1	1	1	0	0	1	2	2	2	2	**IZS**	7	2.2	24
6	1	1	1	1	1	2	2	2	2	3	3	1	1	1	1	1	1	2	3	4	4	4	**IZS**	1	4	1.9	24
7	2	2	2	1	1	2	4	3	4	4	2	1	1	1	1	1	1	1	2	3	3	**IZS**	4	3	4	2.1	24
8	2	2	2	1	2	2	1	2	2	1	1	1	1	1	1	1	1	1	2	3	**IZS**	2	2	1	3	1.5	24
9	1	1	3	3	3	3	2	2	1	1	1	2	2	2	2	2	2	3	4	**IZS**	6	6	2	2	6	2.4	24
10	2	1	2	2	2	3	4	4	4	3	1	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	4	1.7	24
11	1	1	1	1	1	1	1	2	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	**IZS**	0	0	0	0	0	0	2	0.5	24
12	0	2	2	2	2	4	8	4	2	1	0	1	1	1	1	1	**IZS**	3	2	1	2	2	2	2	8	2.0	24
13	1	1	2	2	2	2	3	3	2	3	1	2	1	1	1	**IZS**	1	2	2	4	3	3	2	3	4	2.0	24
14	2	2	2	2	3	5	8	5	2	1	1	2	2	2	**IZS**	2	3	4	7	6	4	1	1	1	8	3.0	24
15	2	3	4	4	5	5	5	4	2	1	1	1	0	**IZS**	0	1	1	2	2	2	1	2	3	3	5	2.3	24
16	4	4	4	3	3	3	2	3	5	4	2	1	**IZS**	0	1	1	2	2	3	5	4	2	2	2	5	2.7	24
17	1	1	1	1	2	3	4	4	2	3	3	**IZS**	2	2	2	2	1	3	7	6	5	7	5	2	7	3.0	24
18	2	2	3	3	4	4	4	5	6	3	**IZS**	1	0	**C**	**C**	**C**	**C**	1	1	1	1	2	2	1	6	2.4	24
19	2	2	2	4	5	6	6	4	5	**IZS**	2	1	2	1	2	2	2	4	6	9	7	5	3	2	9	3.7	24
20	2	1	2	4	6	9	9	6	**IZS**	4	3	2	1	1	1	1	1	2	5	10	9	5	6	5	10	4.1	24
21	4	5	6	10	11	6	5	**IZS**	6	1	1	1	1	1	1	1	2	3	4	3	1	1	1	7	11	3.6	24
22	1	1	1	2	1	2	**IZS**	1	1	1	1	1	2	1	1	1	2	1	2	10	7	2	2	2	10	2.0	24
23	4	4	4	4	4	**IZS**	2	2	3	3	4	3	2	3	3	3	4	4	6	8	8	6	5	4	8	4.0	24
24	6	4	4	3	**IZS**	3	4	5	9	11	5	4	3	3	2	2	3	3	7	10	5	1	1	1	11	4.3	24
25	1	1	1	**IZS**	2	5	9	8	4	3	2	2	3	2	1	1	1	1	5	5	6	2	1	5	9	3.1	24
26	6	6	**IZS**	2	2	2	2	2	3	1	1	1	1	0	1	2	1	1	7	7	6	4	4	4	7	2.9	24
27	4	**IZS**	4	4	4	4	3	4	3	3	1	1	1	1	1	1	2	2	5	9	3	2	2	4	9	3.0	24
28	**IZS**	4	4	4	5	12	13	**14**	5	3	2	2	1	2	2	1	2	2	5	4	3	3	2	**IZS**	**14**	**4.3**	24
29	2	2	2	4	7	9	9	6	4	3	1	1	1	1	1	1	1	2	2	6	3	1	**IZS**	2	9	3.1	24
30	4	4	6	3	3	2	3	3	3	1	1	1	1	1	1	1	1	0	1	4	6	**IZS**	3	5	6	2.5	24
HOURLY MAX	6	6	6	10	11	12	13	14	9	11	5	4	3	3	3	3	4	4	7	10	9	7	6	7			
HOURLY AVG	2.2	2.4	2.5	2.7	3.1	3.7	4.2	3.8	3.1	2.5	1.6	1.4	1.3	1.2	1.1	1.2	1.4	1.8	3.2	4.5	3.6	2.5	2.3	2.5			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

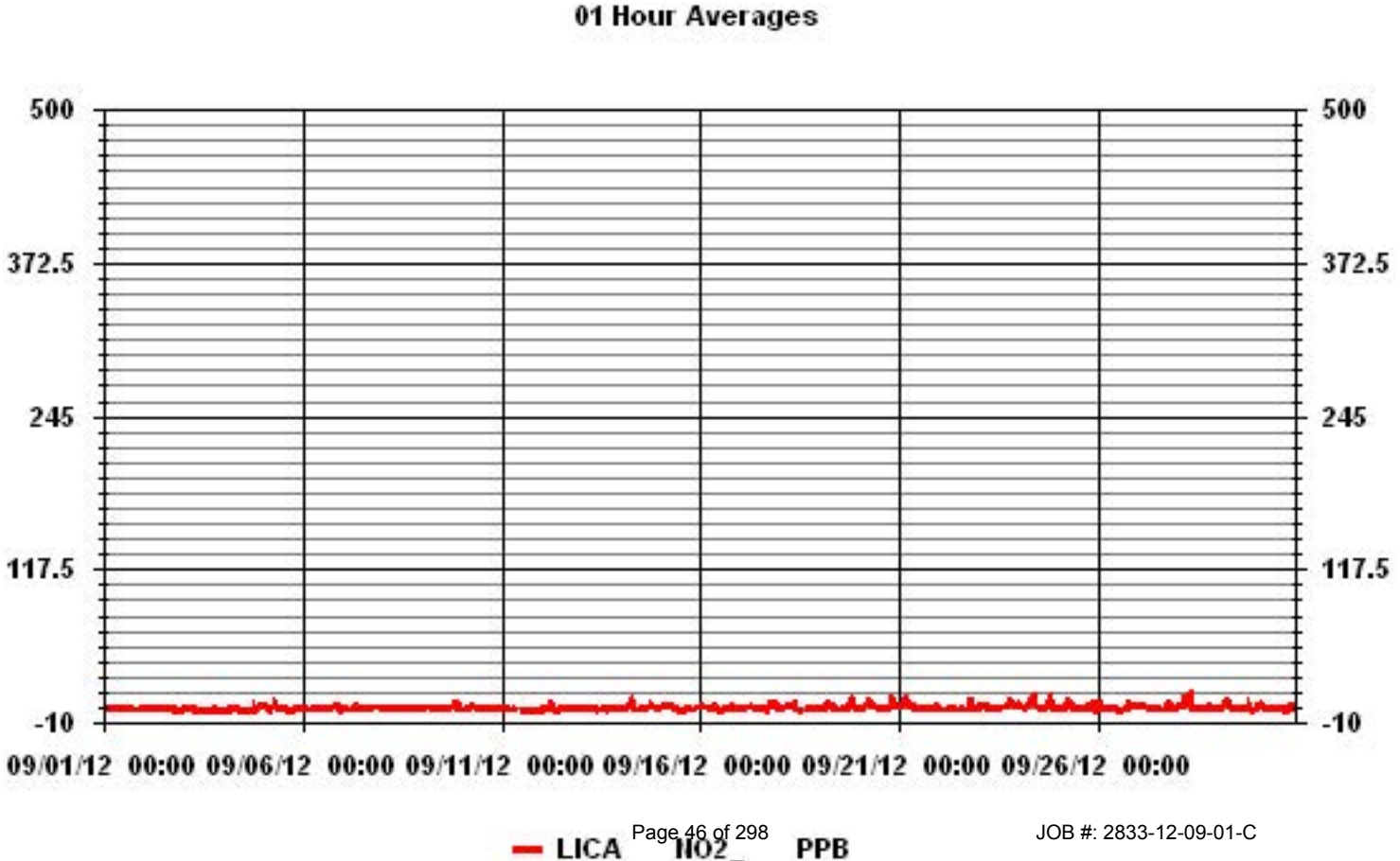
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 159 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	638					
MAXIMUM 1-HR AVERAGE:	14	PPB	@ HOUR(S)	7	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	4.3	PPB			ON DAY(S)	28

IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	2.10		MONTHLY AVERAGE:	2.50	PPB



JOB #: 2833-12-09-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

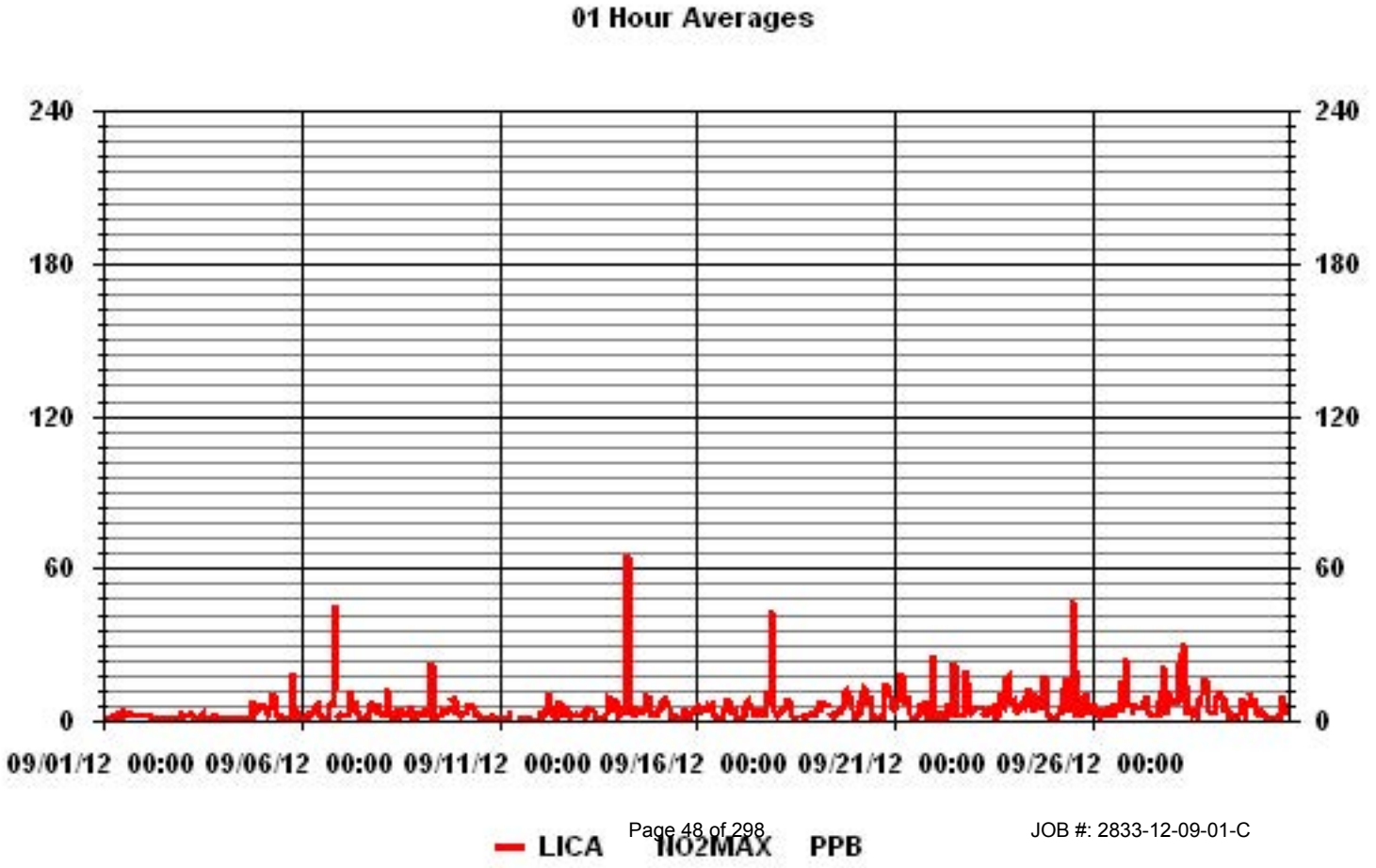
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	1	1	1	**IZS**	2	1	1	2	3	3	2	4	4	3	2	2	3	2	2	2	2	2	2	4	2.1	24
2	2	2	2	**IZS**	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1.3	24
3	3	2	**IZS**	2	2	3	2	2	1	1	1	2	3	1	1	1	1	1	2	1	3	1	1	1	3	1.7	24
4	1	**IZS**	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8	4	5	6	5	8	2.0	24
5	**IZS**	6	5	3	4	5	7	11	8	3	1	2	2	1	1	1	1	1	1	19	3	4	3	**IZS**	19	4.2	24
6	1	1	1	2	3	2	3	3	3	5	6	3	2	2	1	1	2	6	6	8	12	44	**IZS**	2	44	5.2	24
7	3	2	2	2	2	3	12	4	6	8	4	3	2	1	1	1	1	3	6	7	6	**IZS**	6	4	12	3.9	24
8	3	3	2	2	13	3	3	3	2	1	1	5	1	5	2	4	1	4	3	5	**IZS**	2	4	2	13	3.2	24
9	2	3	4	3	4	3	4	23	1	1	2	2	2	4	3	3	3	4	5	**IZS**	9	8	4	3	23	4.3	24
10	3	2	3	3	3	6	6	4	7	5	2	2	2	2	1	1	1	1	**IZS**	1	2	2	1	1	7	2.7	24
11	1	1	1	1	1	1	1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	1	**M**	**IZS**	1	1	1	0	0	0	1	0.8	23
12	0	3	3	2	3	5	11	7	3	3	2	1	7	7	2	2	**IZS**	5	3	2	3	2	2	3	11	3.5	24
13	2	2	2	3	2	4	5	4	4	4	2	2	1	1	1	**IZS**	2	3	8	7	10	5	3	9	10	3.7	24
14	3	4	3	3	6	17	**65**	11	3	2	2	5	5	4	**IZS**	4	5	10	10	9	5	2	2	2	**65**	7.9	24
15	3	4	5	7	8	6	8	6	2	2	1	2	1	**IZS**	1	1	1	5	3	3	2	3	4	4	8	3.6	24
16	5	6	5	4	5	4	4	6	5	6	3	2	**IZS**	1	1	1	4	4	5	9	6	3	3	4	9	4.2	24
17	2	1	1	1	2	6	7	8	5	5	3	**IZS**	4	2	2	2	2	5	11	11	6	44	10	4	44	6.3	24
18	3	2	3	4	4	5	5	8	8	3	**IZS**	1	1	**C**	**C**	**C**	**C**	2	1	2	2	3	3	2	8	3.3	24
19	2	4	4	7	7	7	7	6	6	**IZS**	3	2	3	3	3	4	5	6	11	12	10	9	5	2	12	5.6	24
20	3	2	3	8	11	13	12	8	**IZS**	9	4	2	1	1	1	1	1	3	10	15	11	10	7	6	15	6.2	24
21	5	7	9	13	19	11	8	**IZS**	9	3	1	1	1	1	2	3	7	5	6	8	1	2	8	26	26	6.8	24
22	1	2	3	3	2	3	**IZS**	2	7	4	3	2	23	2	2	2	2	2	3	20	16	4	3	4	23	5.0	24
23	5	5	5	5	5	**IZS**	3	4	3	4	5	4	3	7	3	4	8	7	11	16	17	11	7	7	17	6.5	24
24	8	5	4	5	**IZS**	7	6	8	10	13	10	6	3	11	4	7	8	4	11	18	14	2	2	2	18	7.3	24
25	1	1	1	**IZS**	4	6	12	12	17	4	5	4	47	21	2	3	2	2	10	9	11	4	2	6	47	8.1	24
26	6	6	**IZS**	4	2	3	4	3	4	2	2	2	2	7	3	5	5	3	16	12	25	7	7	6	25	5.9	24
27	4	**IZS**	6	5	5	5	5	8	7	10	3	3	2	2	2	2	2	8	12	22	5	2	12	8	22	6.1	24
28	**IZS**	8	6	8	7	23	27	31	15	3	3	3	5	3	4	3	9	6	10	17	14	17	4	**IZS**	31	10.3	24
29	3	3	4	8	10	12	10	9	4	4	4	1	1	1	1	1	2	3	3	9	5	2	**IZS**	10	12	4.8	24
30	6	6	9	4	4	3	4	4	3	2	2	1	1	1	1	1	2	1	3	9	9	**IZS**	4	6	9	3.7	24
HOURLY MAX	8	8	9	13	19	23	65	31	17	13	10	6	47	21	4	7	9	10	16	22	25	44	12	26			
HOURLY AVG	2.9	3.4	3.5	4.0	5.0	5.9	8.4	7.1	5.3	4.0	2.9	2.4	4.7	3.6	1.8	2.3	3.0	3.8	6.0	9.1	7.4	7.2	4.1	4.8			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	671					
MAXIMUM INSTANTANEOUS VALUE:	65	PPB	@ HOUR(S)	6	ON DAY(S)	14
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		719	HRS
MONTHLY CALIBRATION TIME:	11	HRS				
STANDARD DEVIATION:	5.48					



JOB #: 2833-12-09-01-C

LICA
NO2_ / WD Joint Frequency Distribution (Percent)

September 2012

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	2.65	1.76	1.47	3.39	5.60	3.68	10.91	3.39	5.75	6.19	10.61	15.78	14.74	8.11	3.68	2.21	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.65	1.76	1.47	3.39	5.60	3.68	10.91	3.39	5.75	6.19	10.61	15.78	14.74	8.11	3.68	2.21	

Calm : .00 %

Total # Operational Hours : 678

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	18	12	10	23	38	25	74	23	39	42	72	107	100	55	25	15	678
< 110																	
< 210																	
>= 210																	
Totals	18	12	10	23	38	25	74	23	39	42	72	107	100	55	25	15	

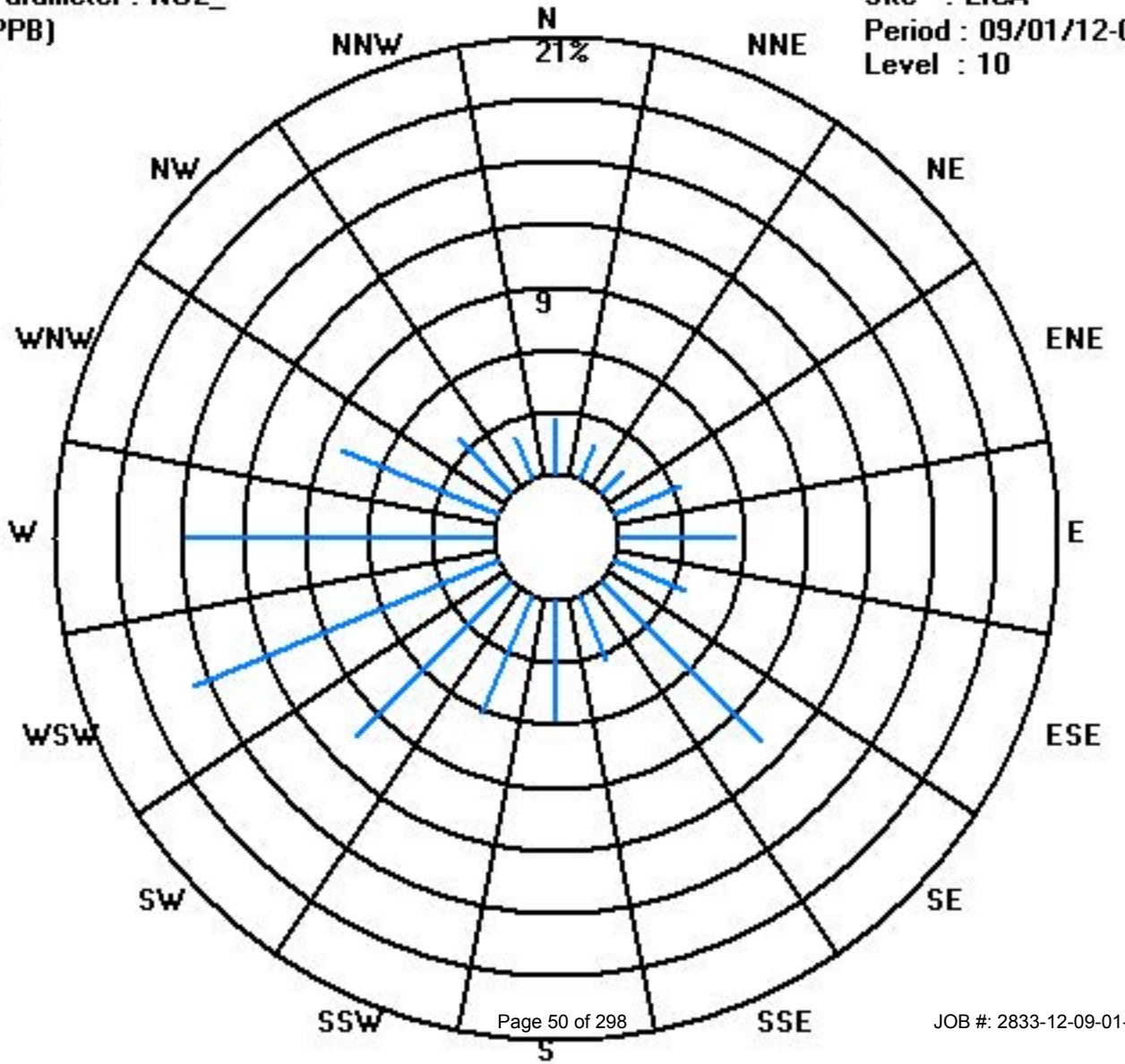
Calm : .00 %

Total # Operational Hours : 678

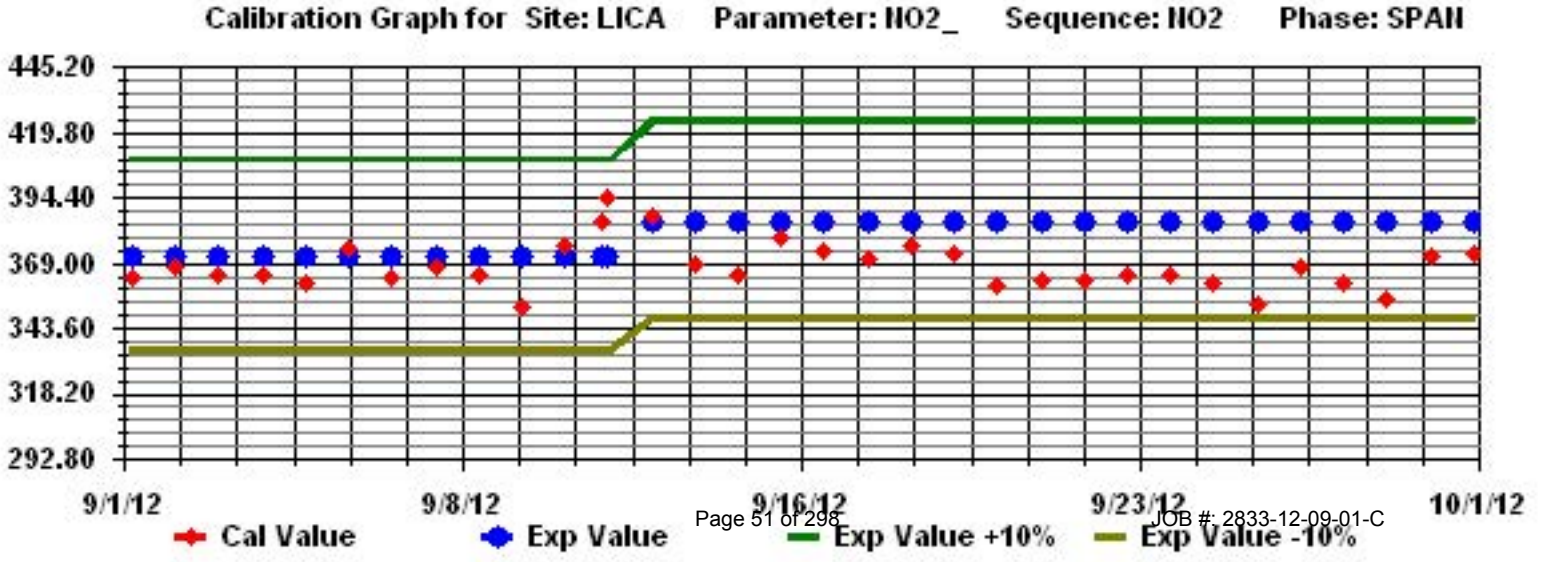
Logger : 01 Parameter : NO2_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA
Period : 09/01/12-09/30/12
Level : 10



JOB #: 2833-12-09-01-C


Calibration Graph for Site: LICA Parameter: NO2_ Sequence: NO2 Phase: SPAN
445.20
419.80
394.40
369.00
343.60
318.20
292.80
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

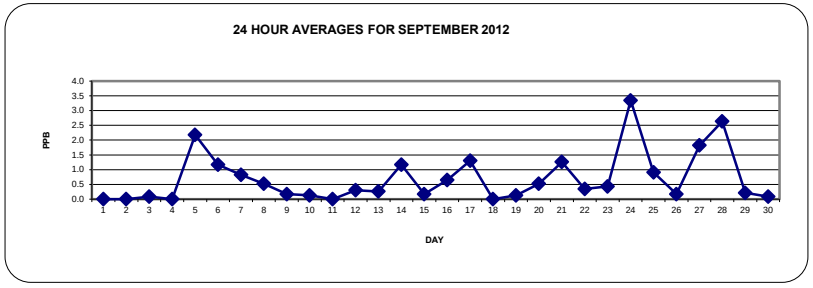
NITRIC OXIDE hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
2	0	0	0	**IZS**	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	**IZS**	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
4	0	**IZS**	0	0	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	**IZS**	0	0	0	1	3	14	14	8	3	0	0	0	0	0	0	0	0	0	4	0	1	0	**IZS**	14	2.2	24
6	0	0	0	1	1	2	5	2	2	3	2	1	0	0	0	0	0	0	0	2	0	6	**IZS**	0	6	1.2	24
7	0	0	0	0	0	1	7	2	2	3	1	1	0	0	0	0	0	0	0	0	1	**IZS**	1	0	7	0.8	24
8	0	0	0	0	3	3	5	1	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	5	0.5	24
9	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	1	0	0	2	0.2	24
10	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	1	0.1	24
11	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	**IZS**	0	0	0	0	0	0	0	0.0	24
12	0	0	0	0	0	0	2	2	1	1	1	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	2	0.3	24
13	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	**IZS**	0	0	0	0	1	0	0	0	1	0.3	24
14	0	0	0	0	0	1	16	3	1	1	1	1	1	1	**IZS**	0	0	1	0	0	0	0	0	0	16	1.2	24
15	0	0	0	0	0	0	1	1	1	1	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	1	0.2	24
16	0	0	0	0	0	0	1	3	4	5	1	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	5	0.7	24
17	0	0	0	0	0	4	8	6	3	1	1	**IZS**	1	0	0	0	0	0	0	0	0	4	2	0	8	1.3	24
18	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	0	0.0	24
19	0	0	0	0	0	0	0	1	1	**IZS**	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.1	24
20	0	0	0	1	1	1	2	3	**IZS**	2	1	0	0	0	0	0	0	0	0	0	0	1	0	0	3	0.5	24
21	0	1	1	2	5	2	4	**IZS**	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6	7	1.3	24
22	0	0	1	0	0	0	**IZS**	1	1	1	1	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0.3	24
23	0	0	0	0	0	**IZS**	0	3	1	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	3	0.4	24
24	1	0	0	1	**IZS**	2	8	**28**	15	12	3	1	0	1	1	1	1	0	0	1	1	0	0	0	**28**	**3.3**	24
25	0	0	0	**IZS**	0	0	7	6	2	1	1	0	4	0	0	0	0	0	0	0	0	0	0	0	7	0.9	24
26	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	0	0	0	2	0.2	24
27	0	**IZS**	1	1	1	1	5	24	6	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	24	1.8	24
28	**IZS**	0	0	0	1	6	20	25	2	1	0	0	0	0	0	0	0	0	0	1	1	1	0	**IZS**	25	2.6	24
29	0	0	0	0	0	0	0	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	2	0.2	24
30	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	1	0.1	24
HOURLY MAX	1	1	1	2	5	6	20	28	15	12	3	1	4	1	1	1	1	1	1	4	2	6	2	6			
HOURLY AVG	0.0	0.0	0.1	0.2	0.5	0.9	3.7	4.5	2.2	1.5	0.6	0.2	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.5	0.1	0.2			

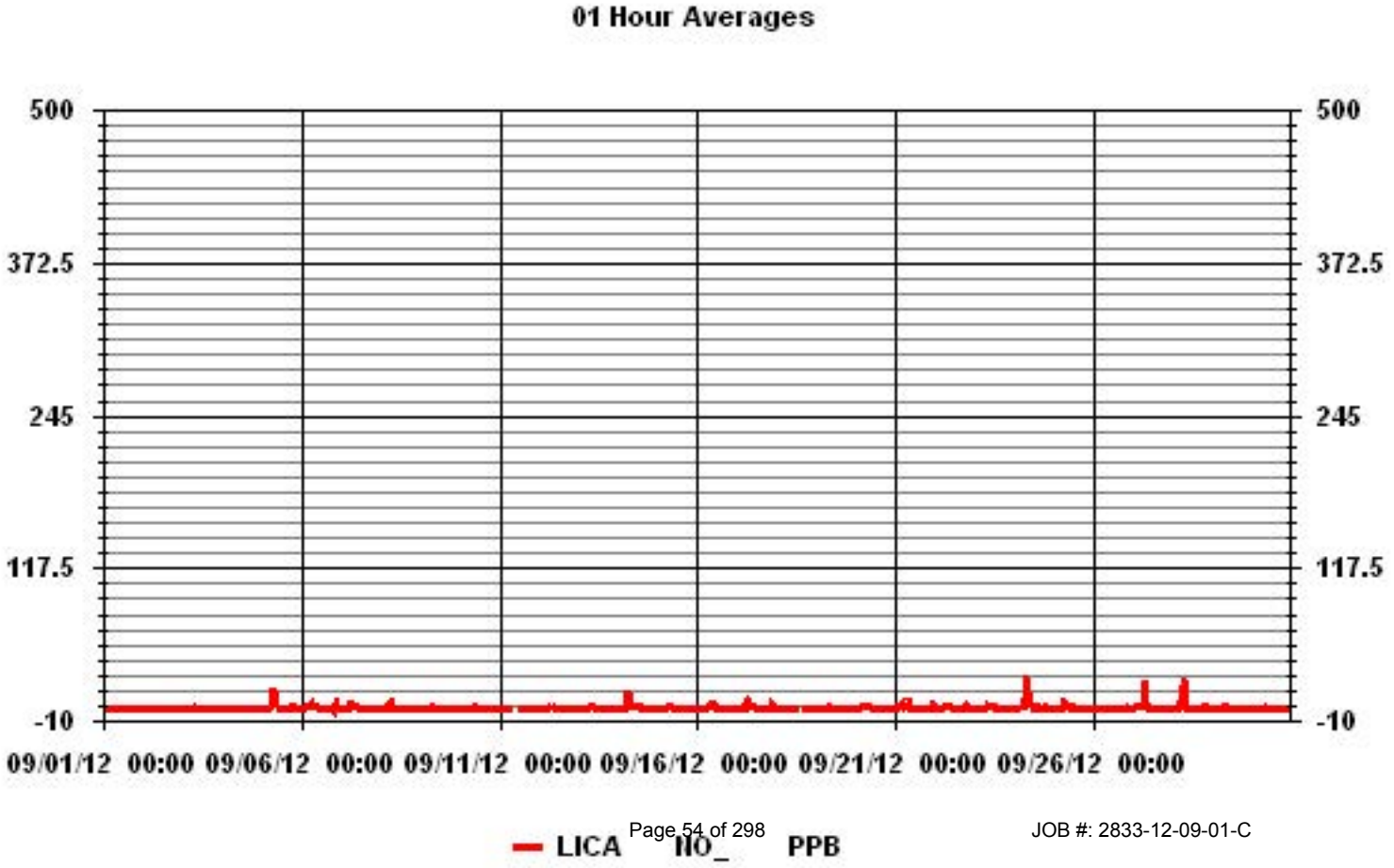
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	163						
MAXIMUM 1-HR AVERAGE:	28	PPB	@ HOUR(S)	7	ON DAY(S)	24	
MAXIMUM 24-HR AVERAGE:	3.3	PPB			ON DAY(S)	24	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		720	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	2.47		MONTHLY AVERAGE:		0.70	PPB	



JOB #: 2833-12-09-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

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	1	**IZS**	0	1	3	1	5	5	3	1	2	1	1	1	3	0	0	0	0	0	0	5	1.2	24
2	0	0	0	**IZS**	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
3	0	0	**IZS**	0	0	0	1	1	1	1	1	2	4	1	1	0	1	0	0	0	0	0	0	0	4	0.6	24
4	0	**IZS**	0	0	0	0	0	1	1	1	1	0	1	1	1	0	1	0	0	1	0	0	0	1	1	0.4	24
5	**IZS**	1	0	0	7	7	29	27	11	5	1	2	4	1	6	1	1	1	1	57	3	2	2	**IZS**	57	7.7	24
6	1	1	1	2	2	5	7	7	3	6	4	2	1	2	2	1	1	2	2	9	4	146	**IZS**	0	146	9.2	24
7	0	0	1	1	1	5	34	2	4	17	2	1	1	1	1	0	0	4	1	1	7	**IZS**	3	1	34	3.8	24
8	1	1	1	1	21	5	7	3	1	1	1	6	0	2	1	1	0	1	0	2	**IZS**	0	0	0	21	2.4	24
9	1	1	1	1	1	2	3	20	1	1	1	1	1	1	2	1	1	1	1	**IZS**	3	7	1	1	20	2.3	24
10	0	0	0	1	0	7	1	1	4	2	1	1	0	1	0	0	0	0	**IZS**	0	0	0	0	0	7	0.8	24
11	0	0	0	0	0	0	1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	1	**M**	**IZS**	0	0	0	0	0	0	1	0.1	23
12	0	0	0	0	0	1	4	7	2	2	1	1	5	5	1	1	**IZS**	1	0	0	0	0	0	1	7	1.4	24
13	1	1	0	1	1	3	2	4	2	2	2	1	1	1	1	**IZS**	1	3	3	2	25	1	1	7	25	2.9	24
14	1	2	1	1	2	12	**171**	9	2	1	1	3	3	1	**IZS**	1	1	7	1	1	0	0	0	0	**171**	9.6	24
15	0	0	0	0	0	0	2	1	1	1	1	1	0	**IZS**	0	1	1	2	1	1	0	0	0	0	2	0.6	24
16	0	0	1	1	2	2	3	4	6	6	3	1	**IZS**	1	1	1	2	2	0	3	1	1	4	2	6	2.0	24
17	1	1	1	1	2	14	12	15	19	4	1	**IZS**	2	2	1	1	1	1	8	1	0	46	22	0	46	6.8	24
18	1	1	0	0	0	0	1	1	1	1	**IZS**	0	0	**C**	**C**	**C**	**C**	0	1	0	0	0	0	0	1	0.4	24
19	0	0	0	5	2	1	1	2	2	**IZS**	1	1	1	2	1	1	1	1	1	1	2	3	2	0	5	1.3	24
20	1	1	1	16	11	12	6	6	**IZS**	7	3	1	1	1	1	0	1	0	1	4	1	12	1	2	16	3.9	24
21	1	3	6	8	19	5	13	**IZS**	14	3	3	1	1	1	1	3	5	1	2	2	0	2	4	30	30	5.6	24
22	0	0	12	1	0	1	**IZS**	5	4	10	2	2	1	1	1	3	4	1	1	16	4	0	0	0	16	3.0	24
23	1	1	1	1	1	**IZS**	2	18	2	2	2	2	1	2	1	1	1	0	0	13	9	3	1	6	18	3.1	24
24	17	1	1	3	**IZS**	4	21	60	21	16	7	4	1	5	4	6	7	1	3	16	11	1	2	0	60	9.2	24
25	0	0	1	**IZS**	5	2	18	12	5	2	4	2	76	31	1	2	1	0	1	2	1	0	0	0	76	7.2	24
26	0	0	**IZS**	1	0	1	1	3	4	2	1	1	2	19	1	3	3	1	13	1	44	0	1	2	44	4.5	24
27	1	**IZS**	3	2	4	3	18	37	29	5	2	1	1	1	0	1	2	2	1	3	0	2	9	4	37	5.7	24
28	**IZS**	6	2	4	2	50	63	85	20	1	3	1	1	1	2	1	5	3	2	17	17	11	1	**IZS**	85	13.5	24
29	0	0	1	1	1	1	3	3	2	2	1	0	0	0	0	1	0	0	0	0	0	0	**IZS**	0	3	0.7	24
30	0	0	0	0	0	0	0	1	2	1	1	0	1	2	0	1	1	0	0	0	0	**IZS**	0	0	2	0.4	24
HOURLY MAX	17	6	12	16	21	50	171	85	29	17	7	6	76	31	6	6	7	7	13	57	44	146	22	30			
HOURLY AVG	1.0	0.8	1.3	1.9	3.0	4.9	14.7	12.1	5.9	3.9	2.0	1.5	4.0	3.3	1.1	1.2	1.6	1.3	1.5	5.3	4.6	8.5	1.9	2.0			

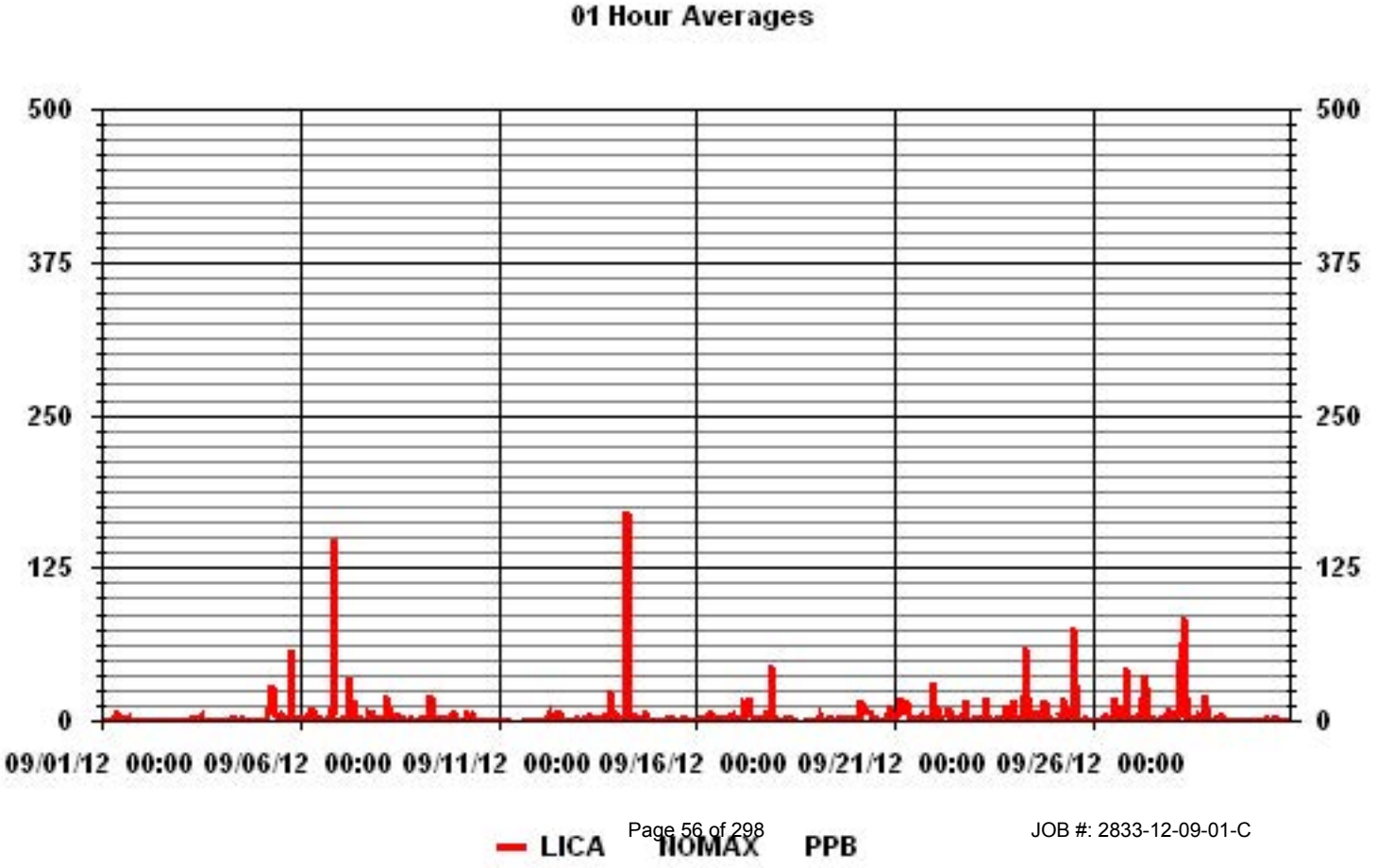
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	478					
MAXIMUM INSTANTANEOUS VALUE:	171	PPB	@ HOUR(S)	6	ON DAY(S)	14
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		719	HRS
MONTHLY CALIBRATION TIME:	11	HRS				
STANDARD DEVIATION:	11.64					

JOB #: 2833-12-09-01-C



JOB #: 2833-12-09-01-C

LICA
NO_ / WD Joint Frequency Distribution (Percent)

September 2012

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	2.65	1.76	1.47	3.39	5.60	3.68	10.91	3.39	5.75	6.19	10.61	15.78	14.74	8.11	3.68	2.21	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.65	1.76	1.47	3.39	5.60	3.68	10.91	3.39	5.75	6.19	10.61	15.78	14.74	8.11	3.68	2.21	

Calm : .00 %

Total # Operational Hours : 678

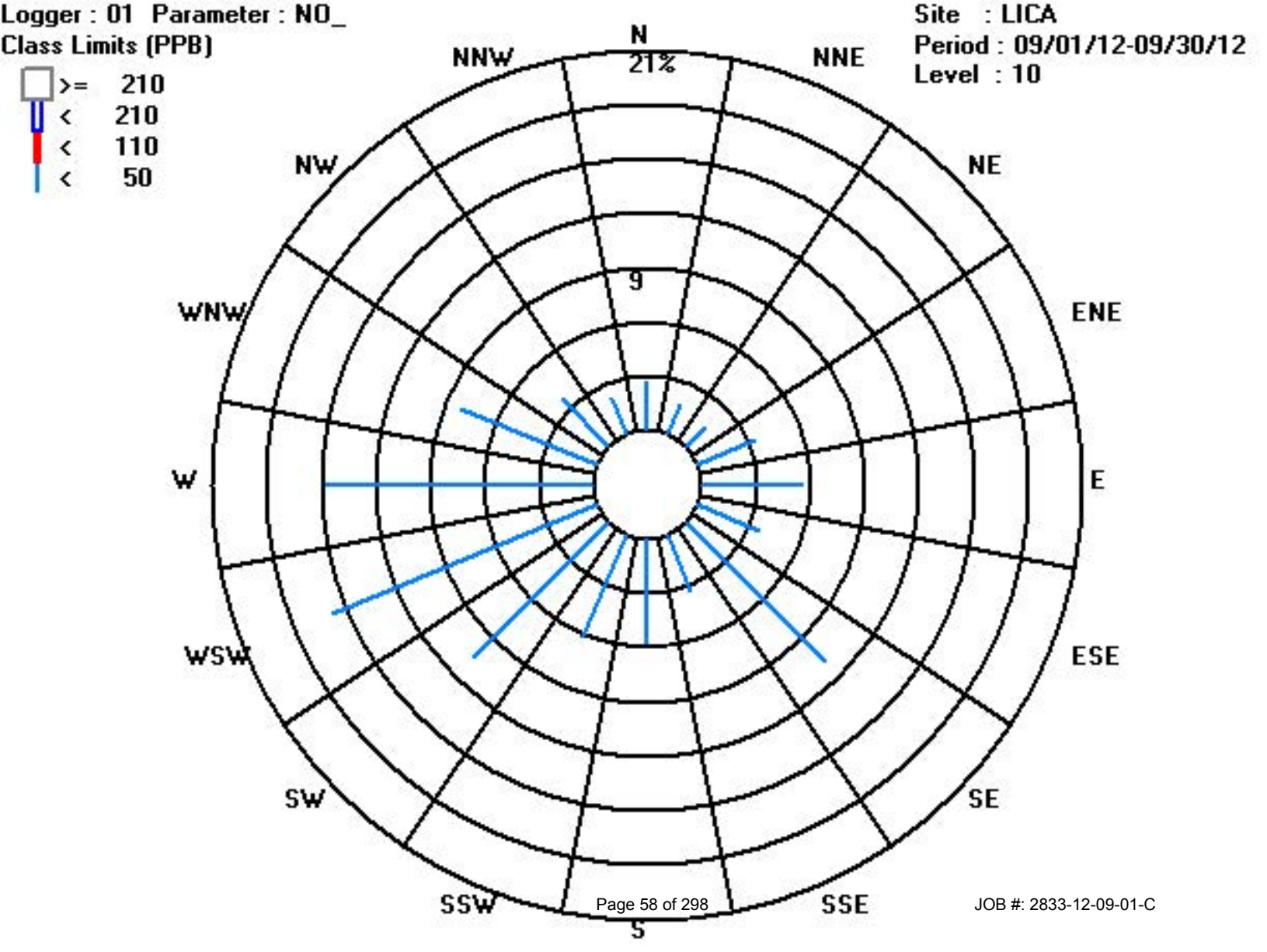
Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	18	12	10	23	38	25	74	23	39	42	72	107	100	55	25	15	678
< 110																	
< 210																	
>= 210																	
Totals	18	12	10	23	38	25	74	23	39	42	72	107	100	55	25	15	

Calm : .00 %

Total # Operational Hours : 678



JOB #: 2833-12-09-01-C

Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

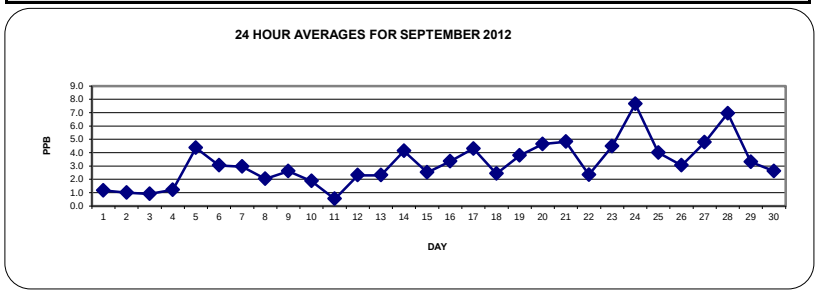
OXIDES OF NITROGEN hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	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	**IZS**	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	2	1	1	1	2	1.2	24
2	2	2	2	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	2	1.0	24
3	2	2	**IZS**	2	2	2	1	2	1	1	0	0	1	0	1	0	0	0	1	1	1	0	0	1	2	0.9	24
4	0	**IZS**	0	0	1	1	1	1	1	1	1	0	0	1	0	0	0	1	0	4	2	3	5	5	5	1.2	24
5	**IZS**	5	3	3	2	6	18	21	13	5	1	1	1	1	1	1	0	0	1	6	2	3	2	**IZS**	21	4.4	24
6	1	1	1	2	2	4	7	4	4	6	5	2	1	1	1	1	1	2	3	6	4	10	**IZS**	1	10	3.0	24
7	2	2	2	1	1	3	11	5	6	7	3	2	1	1	1	1	1	1	2	3	4	**IZS**	5	3	11	3.0	24
8	2	2	2	1	5	5	6	3	2	1	1	1	1	1	1	1	1	1	2	3	**IZS**	2	2	1	6	2.0	24
9	1	1	3	3	3	3	3	4	1	1	1	2	2	2	2	2	2	3	4	**IZS**	6	7	2	2	7	2.6	24
10	2	1	2	2	2	3	4	4	5	4	2	1	1	1	1	1	1	1	**IZS**	1	1	1	1	1	5	1.9	24
11	1	1	1	1	1	1	1	2	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	**IZS**	0	0	0	0	0	0	2	0.5	24
12	0	2	2	2	2	4	10	6	3	2	1	1	1	1	1	1	**IZS**	3	2	1	2	2	2	2	10	2.3	24
13	1	1	2	2	2	2	4	4	3	4	2	2	1	1	1	**IZS**	1	2	2	4	4	3	2	3	4	2.3	24
14	2	2	2	2	3	6	24	8	3	2	2	3	3	3	**IZS**	2	3	5	7	6	4	1	1	1	24	4.1	24
15	2	3	4	4	5	5	6	5	3	2	1	1	0	**IZS**	0	1	1	2	2	2	1	2	3	3	6	2.5	24
16	4	4	4	3	3	3	3	6	9	9	3	2	**IZS**	0	1	1	2	2	3	5	4	2	2	2	9	3.3	24
17	1	1	1	1	2	7	12	10	5	4	4	**IZS**	3	2	2	2	1	3	7	6	5	11	7	2	12	4.3	24
18	2	2	3	3	4	4	4	5	6	3	**IZS**	1	0	**C**	**C**	**C**	**C**	1	1	1	1	2	2	1	6	2.4	24
19	2	2	2	4	5	6	6	5	6	**IZS**	2	1	2	2	2	2	2	4	6	9	7	5	3	2	9	3.8	24
20	2	1	2	5	7	10	11	9	**IZS**	6	4	2	1	1	1	1	1	2	5	10	9	6	6	5	11	4.7	24
21	4	6	7	12	16	8	9	**IZS**	13	2	1	1	1	1	1	1	2	3	4	3	1	1	1	13	16	4.8	24
22	1	1	2	2	1	2	**IZS**	2	2	2	2	1	2	1	1	1	2	1	2	13	7	2	2	2	13	2.3	24
23	4	4	4	4	4	**IZS**	2	5	4	4	5	4	3	4	3	3	4	4	6	8	9	6	5	4	9	4.5	24
24	7	4	4	4	**IZS**	5	12	33	24	23	8	5	3	4	3	3	4	3	7	11	6	1	1	1	33	**7.7**	24
25	1	1	1	**IZS**	2	5	16	14	6	4	3	2	7	2	1	1	1	1	5	5	6	2	1	5	16	4.0	24
26	6	6	**IZS**	2	2	2	2	2	3	1	1	1	1	1	1	2	1	1	8	7	8	4	4	4	8	3.0	24
27	4	**IZS**	5	5	5	5	8	28	9	4	2	1	1	1	1	1	2	2	5	9	3	2	3	4	28	4.8	24
28	**IZS**	4	4	4	6	18	33	**39**	7	4	2	2	1	2	2	1	2	2	5	5	4	4	2	**IZS**	**39**	7.0	24
29	2	2	2	4	7	9	9	8	5	4	2	1	1	1	1	1	1	2	2	6	3	1	**IZS**	2	9	3.3	24
30	4	4	6	3	3	2	3	3	4	2	1	1	1	1	1	1	1	0	1	4	6	**IZS**	3	5	6	2.6	24
HOURLY MAX	7	6	7	12	16	18	33	39	24	23	8	5	7	4	3	3	4	5	8	13	9	11	7	13			
HOURLY AVG	2.3	2.4	2.6	2.9	3.5	4.6	7.9	8.3	5.4	4.0	2.3	1.6	1.5	1.4	1.2	1.2	1.4	1.9	3.3	4.9	3.9	3.0	2.4	2.8			

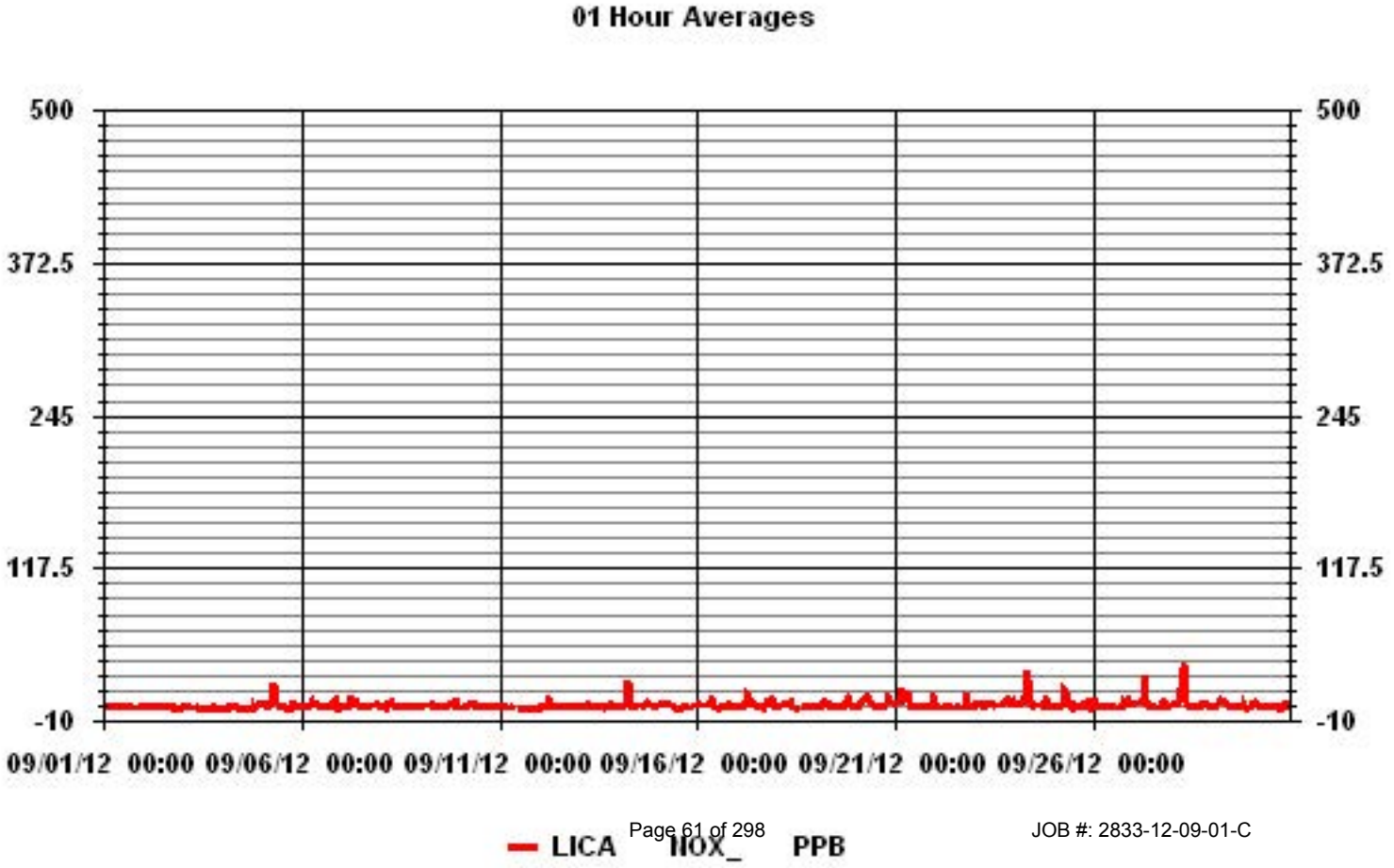
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	641						
MAXIMUM 1-HR AVERAGE:	39	PPB	@ HOUR(S)	7	ON DAY(S)	28	
MAXIMUM 24-HR AVERAGE:	7.7	PPB			ON DAY(S)	24	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		720	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	3.86		MONTHLY AVERAGE:		3.20	PPB	



JOB #: 2833-12-09-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

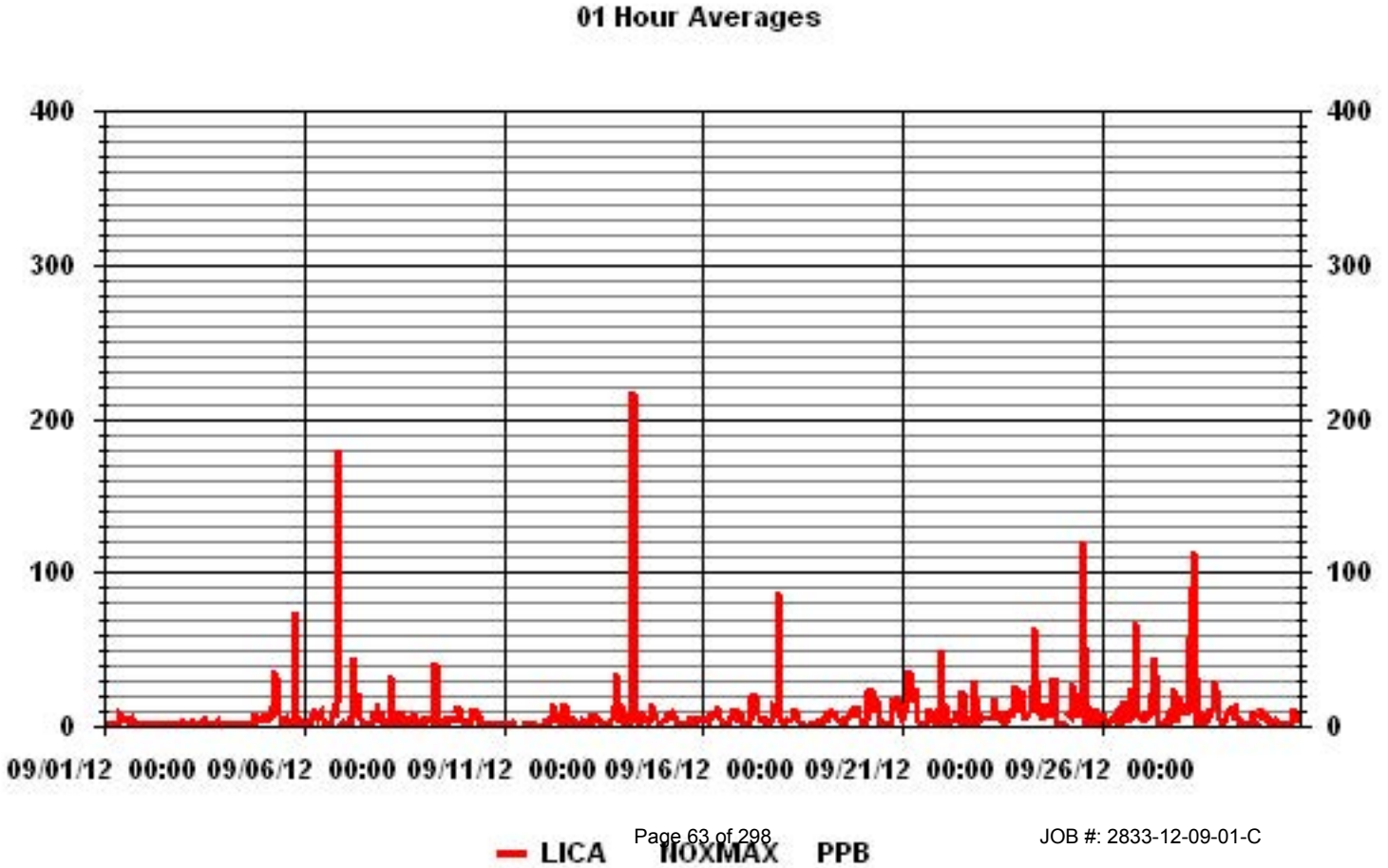
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	1	1	1	**IZS**	2	2	2	2	7	5	5	4	5	4	2	3	5	2	2	2	2	2	2	7	2.8	24
2	2	2	2	**IZS**	2	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	3	3	1.3	24
3	3	2	**IZS**	2	2	3	2	2	2	1	1	4	5	2	1	1	1	1	2	1	3	1	1	1	5	1.9	24
4	1	**IZS**	1	0	1	1	2	1	2	2	1	1	1	1	1	1	1	1	1	8	4	5	6	5	8	2.1	24
5	**IZS**	7	5	3	11	10	36	33	19	8	2	3	4	1	4	2	2	2	2	75	6	6	5	**IZS**	75	11.2	24
6	2	2	2	2	4	7	9	9	6	9	10	5	3	3	2	2	2	7	7	14	16	178	**IZS**	2	178	13.2	24
7	3	2	2	2	2	7	45	5	10	22	6	4	3	2	2	1	2	3	7	7	13	**IZS**	9	4	45	7.1	24
8	3	4	3	2	33	7	8	6	3	2	2	10	1	7	2	5	1	5	3	7	**IZS**	2	4	2	33	5.3	24
9	2	4	4	4	5	4	6	42	2	2	2	3	2	4	4	3	4	4	6	**IZS**	11	13	4	4	42	6.0	24
10	3	2	3	3	3	11	6	4	11	7	3	2	2	2	1	2	1	1	**IZS**	1	2	2	1	1	11	3.2	24
11	1	1	1	1	1	1	3	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1	1	**M**	**IZS**	1	1	1	0	0	0	3	0.9	23
12	0	3	3	2	3	6	14	10	4	4	3	2	12	12	2	2	**IZS**	5	3	2	3	2	2	4	14	4.5	24
13	2	2	2	3	3	6	6	6	6	5	4	3	2	1	1	**IZS**	3	5	10	9	34	5	3	15	34	5.9	24
14	4	5	3	3	8	27	**218**	20	4	3	3	8	7	5	**IZS**	4	5	15	10	9	5	2	2	2	**218**	16.2	24
15	3	4	5	7	8	7	9	7	3	3	2	2	1	**IZS**	1	1	1	7	3	3	2	3	4	4	9	3.9	24
16	5	6	5	4	7	5	6	9	11	11	6	2	**IZS**	1	1	2	5	5	5	12	7	3	7	5	12	5.7	24
17	2	2	2	2	4	20	17	21	17	8	4	**IZS**	6	3	3	2	2	5	13	12	6	88	26	4	88	11.7	24
18	3	2	3	4	4	5	5	9	9	4	**IZS**	1	1	**C**	**C**	**C**	**C**	2	1	2	2	3	3	2	9	3.4	24
19	2	4	4	8	9	7	8	7	7	**IZS**	4	2	4	4	3	4	6	7	11	12	10	11	7	2	12	6.2	24
20	3	2	4	23	19	24	15	11	**IZS**	16	6	3	2	2	1	1	1	3	10	18	12	19	8	8	24	9.2	24
21	6	9	14	20	36	15	18	**IZS**	23	4	2	1	2	1	2	5	11	5	6	8	1	3	11	50	50	11.0	24
22	1	2	14	3	3	3	**IZS**	4	8	10	4	3	23	2	2	2	4	2	3	29	20	4	3	4	29	6.7	24
23	6	5	5	5	5	**IZS**	5	18	5	5	7	5	4	9	4	5	8	8	11	27	25	13	8	13	27	9.0	24
24	23	5	5	7	**IZS**	10	26	64	30	29	16	9	4	15	8	11	14	5	11	32	24	3	2	2	64	15.4	24
25	2	1	2	**IZS**	8	7	28	23	20	5	9	5	121	52	3	4	3	2	10	9	11	4	2	6	121	14.7	24
26	6	6	**IZS**	4	2	3	5	6	8	3	3	2	3	16	4	8	6	3	24	13	67	7	7	6	67	9.2	24
27	4	**IZS**	8	6	7	8	21	44	34	14	3	3	2	3	2	3	3	10	12	24	5	3	19	12	44	10.9	24
28	**IZS**	13	7	11	9	57	90	113	33	4	5	4	6	3	6	3	11	9	11	27	26	24	5	**IZS**	113	21.7	24
29	3	3	4	8	10	12	11	12	6	5	5	1	1	1	1	1	2	3	3	9	5	2	**IZS**	10	12	5.1	24
30	6	6	9	4	4	3	4	4	5	3	2	1	1	2	1	1	2	1	3	9	9	**IZS**	5	7	9	4.0	24
HOURLY MAX	23	13	14	23	36	57	218	113	34	29	16	10	121	52	8	11	14	15	24	75	67	178	26	50			
HOURLY AVG	3.6	3.8	4.4	5.1	7.6	9.6	21.6	17.6	10.4	7.0	4.4	3.4	8.1	5.9	2.4	2.9	3.9	4.6	6.6	13.2	11.5	14.6	5.6	6.4			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	671					
MAXIMUM INSTANTANEOUS VALUE:	218	PPB	@ HOUR(S)	6	ON DAY(S)	14
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		719	HRS
MONTHLY CALIBRATION TIME:	11	HRS				
STANDARD DEVIATION:	15.37					



JOB #: 2833-12-09-01-C

LICA
NOX_ / WD Joint Frequency Distribution (Percent)

September 2012

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	2.65	1.76	1.47	3.39	5.60	3.68	10.91	3.39	5.75	6.19	10.61	15.78	14.74	8.11	3.68	2.21	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.65	1.76	1.47	3.39	5.60	3.68	10.91	3.39	5.75	6.19	10.61	15.78	14.74	8.11	3.68	2.21	

Calm : .00 %

Total # Operational Hours : 678

Distribution By Samples

Direction

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	18	12	10	23	38	25	74	23	39	42	72	107	100	55	25	15	678
< 110																	
< 210																	
>= 210																	
Totals	18	12	10	23	38	25	74	23	39	42	72	107	100	55	25	15	

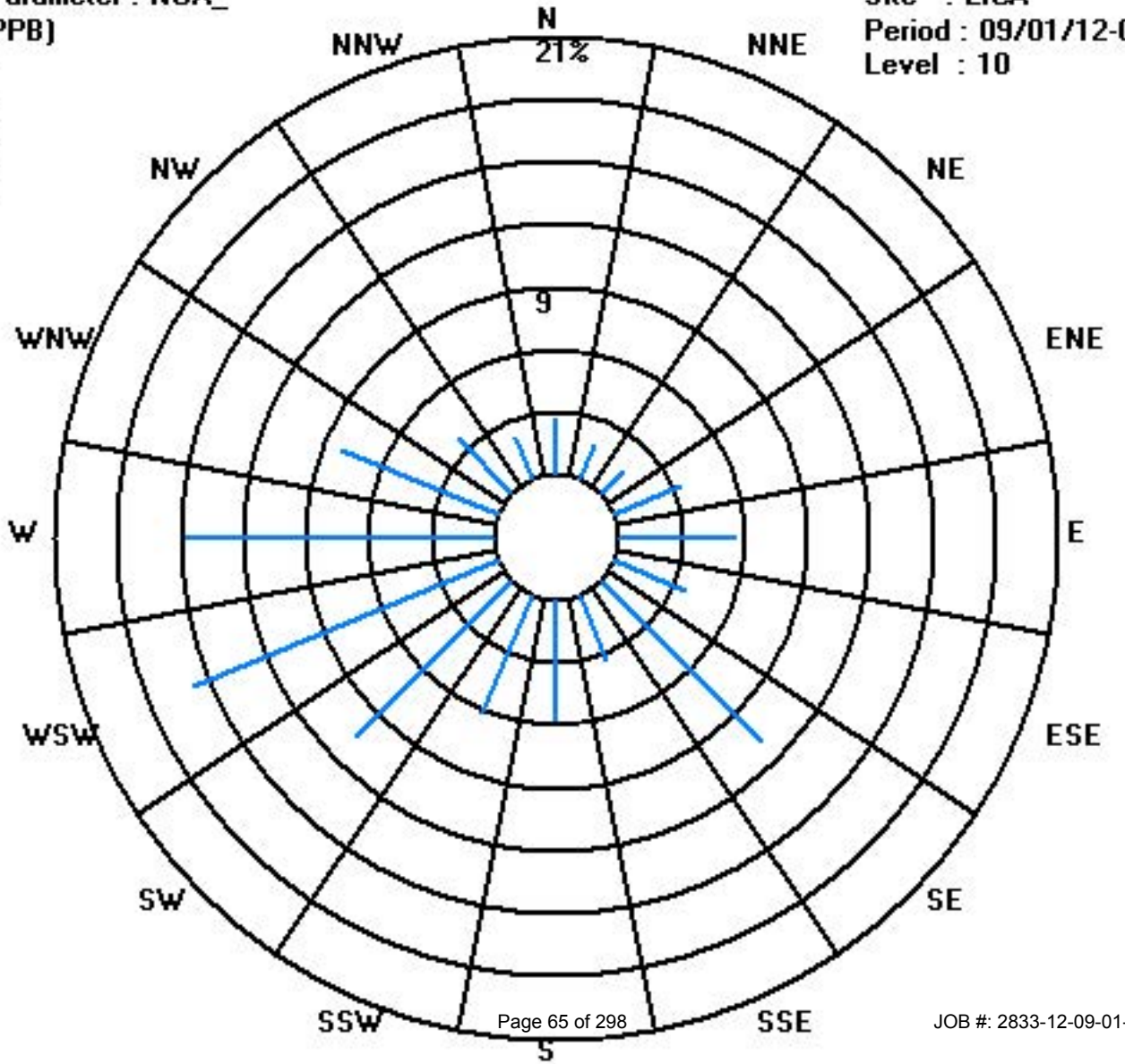
Calm : .00 %

Total # Operational Hours : 678

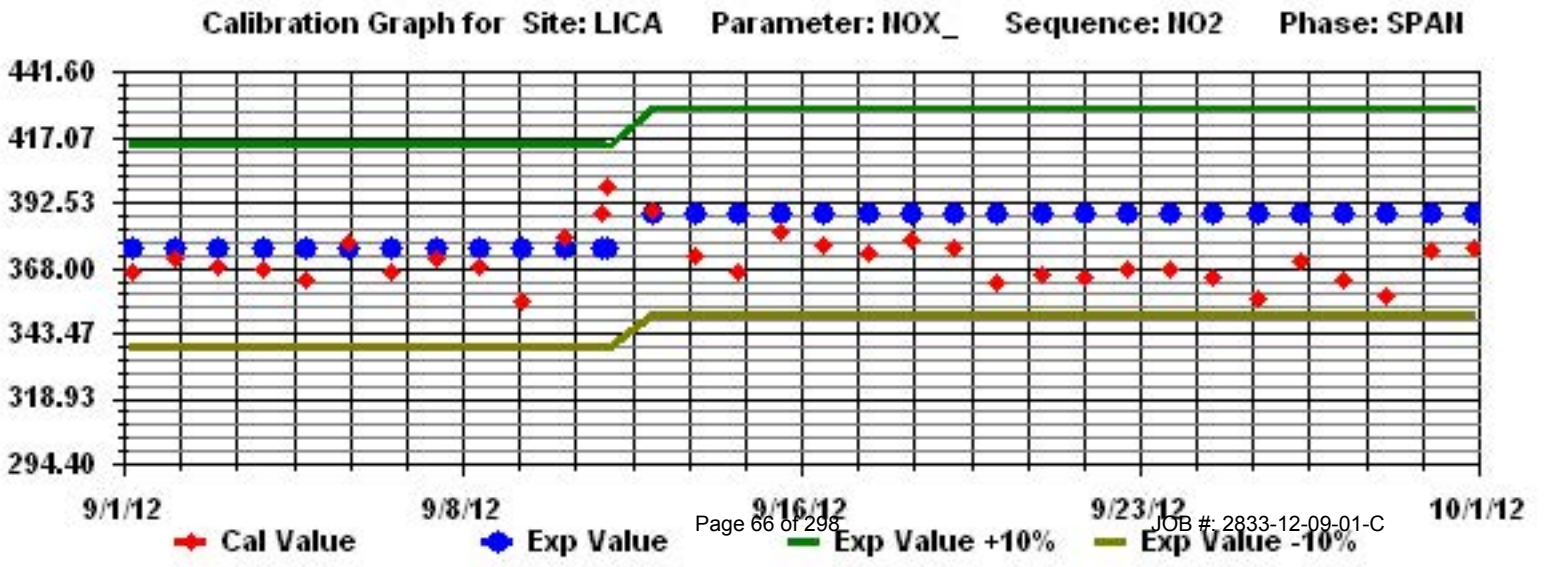
Logger : 01 Parameter : NOX_
Class Limits (PPB)

>= 210
< 210
< 110
< 50

Site : LICA
Period : 09/01/12-09/30/12
Level : 10



JOB #: 2833-12-09-01-C


Calibration Graph for Site: LICA Parameter: NOX_ Sequence: NO2 Phase: SPAN
441.60
417.07
392.53
368.00
343.47
318.93
294.40
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

OZONE (O_3) hourly averages in ppb

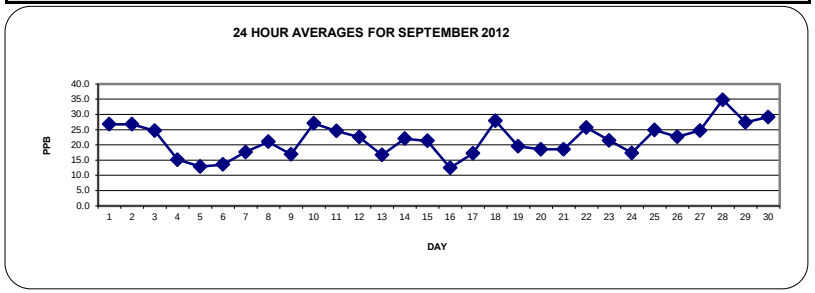
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	26	27	29	28	**IZS**	27	26	25	24	23	22	24	33	37	37	32	31	30	25	19	17	22	26	25	37	26.7	24
2	21	25	25	**IZS**	21	24	22	19	19	21	22	27	31	30	33	33	37	33	31	30	29	29	29	25	37	26.8	24
3	16	12	**IZS**	15	16	15	17	19	21	27	29	30	30	32	31	32	34	32	28	30	27	26	25	23	34	24.7	24
4	22	**IZS**	19	17	16	15	13	13	13	13	15	16	16	16	17	17	20	23	20	11	12	10	7	7	23	15.1	24
5	**IZS**	6	8	7	3	1	1	3	6	13	23	20	21	23	25	22	22	28	28	15	5	2	2	**IZS**	28	12.9	24
6	1	1	1	0	1	1	1	5	7	13	21	26	30	31	31	32	31	27	17	5	9	12	**IZS**	8	32	13.5	24
7	11	13	9	6	3	2	4	12	15	20	25	29	29	32	32	34	37	37	31	13	8	**IZS**	2	2	37	17.7	24
8	2	1	1	1	1	1	1	14	23	30	31	34	36	38	39	40	39	38	32	29	**IZS**	24	17	11	40	21.0	24
9	9	6	5	4	3	3	3	7	21	23	25	29	34	35	32	32	31	27	19	**IZS**	7	3	12	18	35	16.9	24
10	24	23	25	29	24	14	18	18	21	30	39	44	40	30	33	36	31	28	**IZS**	25	23	22	21	25	44	27.1	24
11	27	29	28	25	24	24	23	23	22	21	20	20	22	**C**	**C**	**C**	**C**	**IZS**	26	26	27	27	26	26	29	24.5	24
12	26	22	22	21	20	17	11	15	19	21	25	27	30	30	29	28	**IZS**	24	25	26	25	21	20	14	30	22.5	24
13	10	6	8	12	13	10	8	12	17	20	24	26	28	29	31	**IZS**	29	27	19	10	10	11	10	13	31	16.7	24
14	7	15	14	9	15	15	9	13	20	24	26	28	32	34	**IZS**	36	36	31	21	12	16	34	35	24	36	22.0	24
15	21	22	24	23	22	20	19	21	23	23	23	24	25	**IZS**	27	26	26	24	20	18	19	16	14	10	27	21.3	24
16	11	10	6	4	3	4	3	5	8	10	19	21	**IZS**	27	30	30	28	20	17	11	7	6	4	3	30	12.5	24
17	3	2	2	2	2	1	1	9	16	22	28	**IZS**	35	39	41	42	40	36	20	14	15	12	7	7	42	17.2	24
18	12	9	20	22	20	21	24	25	29	32	**IZS**	38	41	42	42	**C**	**C**	34	31	30	30	29	28	27	42	27.9	24
19	25	22	20	15	6	10	13	13	15	**IZS**	23	28	30	31	36	37	33	26	17	10	7	5	13	14	37	19.5	24
20	12	9	5	3	9	7	6	12	**IZS**	20	26	30	34	36	37	37	36	34	28	15	9	9	7	5	37	18.5	24
21	3	2	1	2	3	4	2	**IZS**	12	26	28	29	30	31	30	30	30	27	24	23	26	26	24	13	31	18.5	24
22	22	20	20	20	20	19	**IZS**	19	20	22	27	36	38	38	39	38	37	36	33	18	14	25	18	12	39	25.7	24
23	9	8	5	3	5	**IZS**	6	5	17	22	25	31	38	44	50	50	47	40	29	20	12	11	9	8	50	21.5	24
24	5	4	2	1	**IZS**	1	1	1	5	12	25	31	31	34	32	32	30	27	20	14	21	25	23	22	34	17.3	24
25	24	20	14	**IZS**	8	6	2	7	16	20	25	31	33	39	41	41	41	40	32	30	25	33	25	18	41	24.8	24
26	16	15	**IZS**	17	19	20	23	22	23	27	29	33	35	35	34	34	33	31	18	13	14	13	9	7	35	22.6	24
27	5	**IZS**	1	1	1	1	1	1	14	22	27	39	41	43	43	44	45	42	33	27	35	36	34	32	45	24.7	24
28	**IZS**	15	14	10	12	4	1	2	28	32	41	48	51	53	53	**55**	**55**	53	48	49	48	47	46	**IZS**	**55**	**34.8**	24
29	30	21	15	13	13	14	13	16	23	27	32	34	31	32	37	38	39	38	36	27	32	37	**IZS**	32	39	27.4	24
30	27	26	24	26	26	26	26	24	25	28	30	34	35	36	37	37	36	36	34	31	24	**IZS**	20	22	37	29.1	24
HOURLY MAX	30	29	29	29	26	27	26	25	29	32	41	48	51	53	53	55	55	53	48	49	48	47	46	32			
HOURLY AVG	15.3	14.0	13.1	12.0	11.8	11.3	10.3	13.1	18.0	22.2	26.0	29.9	32.4	34.2	35.0	35.0	34.6	32.0	26.3	20.7	19.1	20.5	18.3	16.2			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

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

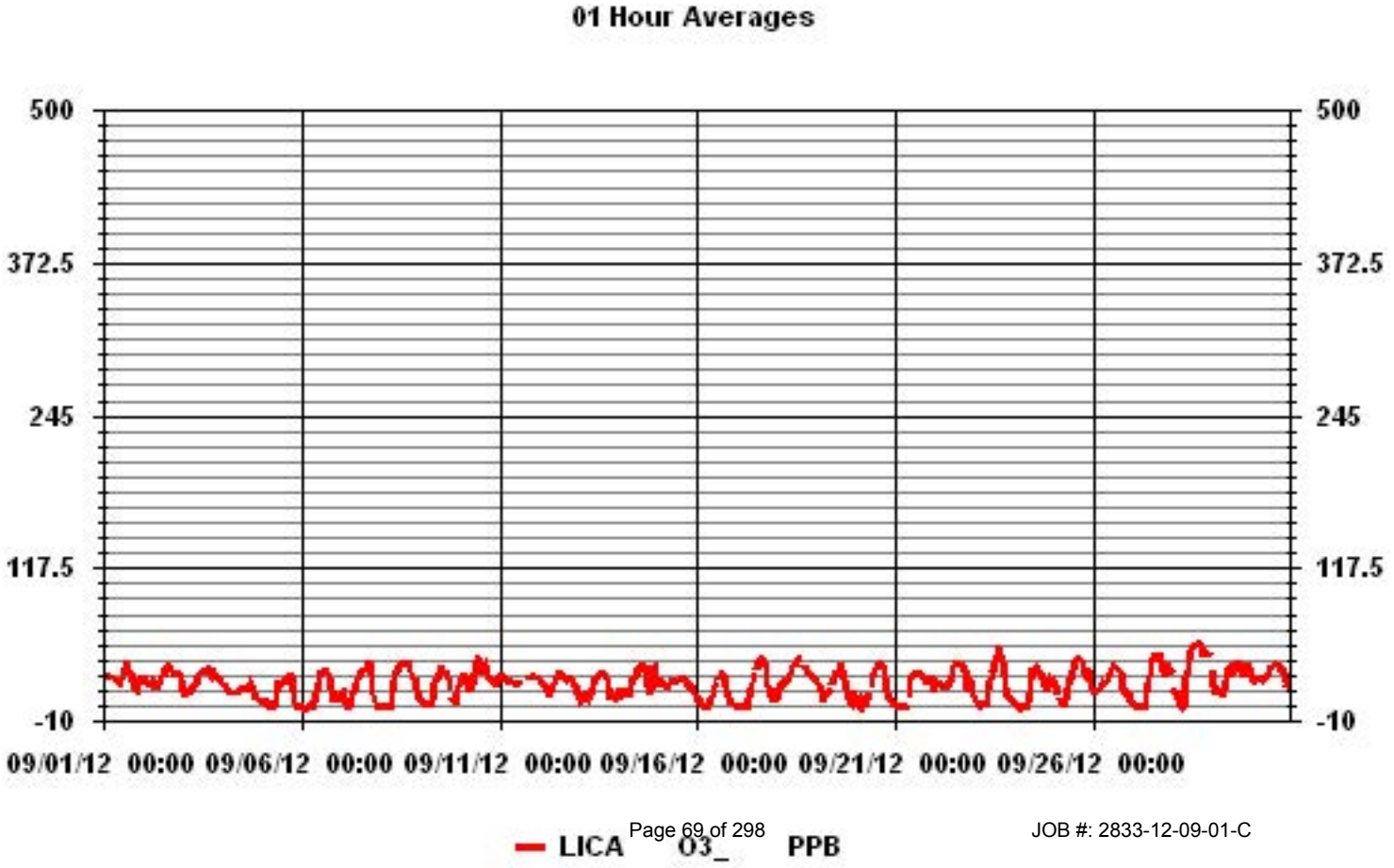


MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	681					
MAXIMUM 1-HR AVERAGE:	55	PPB	@ HOUR(S)	15, 16	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	34.8	PPB			ON DAY(S)	28
					VAR-VARIOUS	

IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	11.80		MONTHLY AVERAGE:	21.67	PPB

JOB #: 2833-12-09-01-C



JOB #: 2833-12-09-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

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	26	28	29	29	**IZS**	28	27	27	25	24	23	27	36	39	41	33	33	32	28	22	20	23	27	27	41	28.4	24
2	24	26	27	**IZS**	24	25	24	21	21	23	25	31	32	32	40	37	40	37	33	31	30	30	30	28	40	29.2	24
3	22	13	**IZS**	17	17	16	18	20	24	30	31	31	32	33	33	34	35	34	32	31	29	28	27	24	35	26.6	24
4	23	**IZS**	21	18	16	15	14	14	14	14	17	17	17	17	18	19	22	25	22	17	14	12	8	9	25	16.7	24
5	**IZS**	8	9	9	6	1	2	5	9	23	25	23	23	27	28	25	25	31	30	23	7	5	3	**IZS**	31	15.8	24
6	2	1	1	1	2	1	2	7	13	19	25	30	31	33	33	34	33	31	26	9	14	15	**IZS**	11	34	16.3	24
7	14	16	13	10	8	3	12	15	19	22	27	31	31	34	33	37	38	39	36	17	13	**IZS**	3	4	39	20.7	24
8	4	2	2	3	1	1	7	18	29	31	33	36	38	39	40	41	41	40	35	30	**IZS**	28	22	19	41	23.5	24
9	14	14	6	6	3	6	5	19	23	25	27	32	36	37	35	35	35	30	23	**IZS**	12	6	20	36	37	21.1	24
10	27	26	30	33	30	20	22	20	24	38	43	46	43	34	39	39	34	30	**IZS**	27	25	25	22	29	46	30.7	24
11	28	30	30	26	25	25	24	24	23	22	21	20	25	**C**	**C**	**C**	**C**	**IZS**	27	27	28	28	27	27	30	25.6	24
12	27	25	22	22	21	19	15	18	20	22	27	28	31	31	30	29	**IZS**	26	27	27	26	24	23	17	31	24.2	24
13	14	8	13	16	16	13	11	15	19	22	25	28	29	30	32	**IZS**	31	29	27	15	15	18	15	18	32	20.0	24
14	11	21	21	17	18	19	16	19	23	26	28	30	33	37	**IZS**	38	38	35	29	16	26	38	37	31	38	26.4	24
15	25	25	26	24	23	22	20	23	23	24	25	25	27	**IZS**	28	28	28	26	22	19	20	18	15	13	28	23.0	24
16	12	11	11	5	5	7	4	8	9	18	21	22	**IZS**	29	33	31	31	26	23	14	11	9	7	5	33	15.3	24
17	5	3	2	3	2	1	6	15	18	27	30	**IZS**	38	41	42	43	41	39	31	19	19	17	16	13	43	20.5	24
18	18	14	23	23	23	25	25	27	34	34	**IZS**	39	42	43	43	**C**	**C**	36	32	30	32	32	29	29	43	30.1	24
19	26	24	23	18	10	14	14	14	17	**IZS**	26	30	31	34	39	39	36	33	22	15	11	7	22	20	39	22.8	24
20	19	12	8	7	13	9	11	13	**IZS**	23	29	34	35	37	38	38	37	36	33	22	13	12	9	8	38	21.6	24
21	5	3	2	3	5	6	**N**	**IZS**	23	27	30	30	32	32	31	31	32	30	28	26	26	27	26	22	32	21.7	23
22	23	22	22	21	20	20	**IZS**	20	21	25	31	38	39	39	39	39	38	38	36	29	22	29	25	17	39	28.4	24
23	14	11	6	6	9	**IZS**	10	10	22	24	28	35	41	48	52	52	51	46	35	26	21	14	13	12	52	25.5	24
24	8	7	4	2	**IZS**	1	1	3	9	19	29	34	35	37	37	34	33	29	26	18	26	26	24	24	37	20.3	24
25	26	25	17	**IZS**	12	9	8	13	18	21	29	33	36	42	43	42	42	42	38	34	31	35	32	22	43	28.3	24
26	17	16	**IZS**	19	20	21	25	24	26	29	31	35	37	36	36	36	36	36	33	18	22	17	13	9	37	25.7	24
27	7	**IZS**	2	1	2	2	2	2	22	24	37	41	42	44	44	45	47	46	40	34	37	37	36	35	47	27.3	24
28	**IZS**	20	18	12	18	12	3	6	33	34	46	51	36	54	55	**56**	**56**	55	53	52	50	50	48	**IZS**	**56**	37.2	24
29	43	25	21	18	16	16	16	22	25	30	35	35	32	36	39	39	40	39	38	34	34	38	**IZS**	36	43	30.7	24
30	30	27	27	27	27	27	27	25	27	29	32	35	36	37	38	38	37	37	36	34	29	**IZS**	26	27	38	31.1	24
HOURLY MAX	43	30	30	33	30	28	27	27	34	38	46	51	43	54	55	56	56	55	53	52	50	50	48	36			
HOURLY AVG	18.4	16.5	15.6	14.1	14.0	13.2	13.3	16.1	21.1	25.1	28.8	32.0	33.7	36.1	37.1	36.7	36.7	34.9	31.1	24.7	22.9	23.1	21.6	20.4			

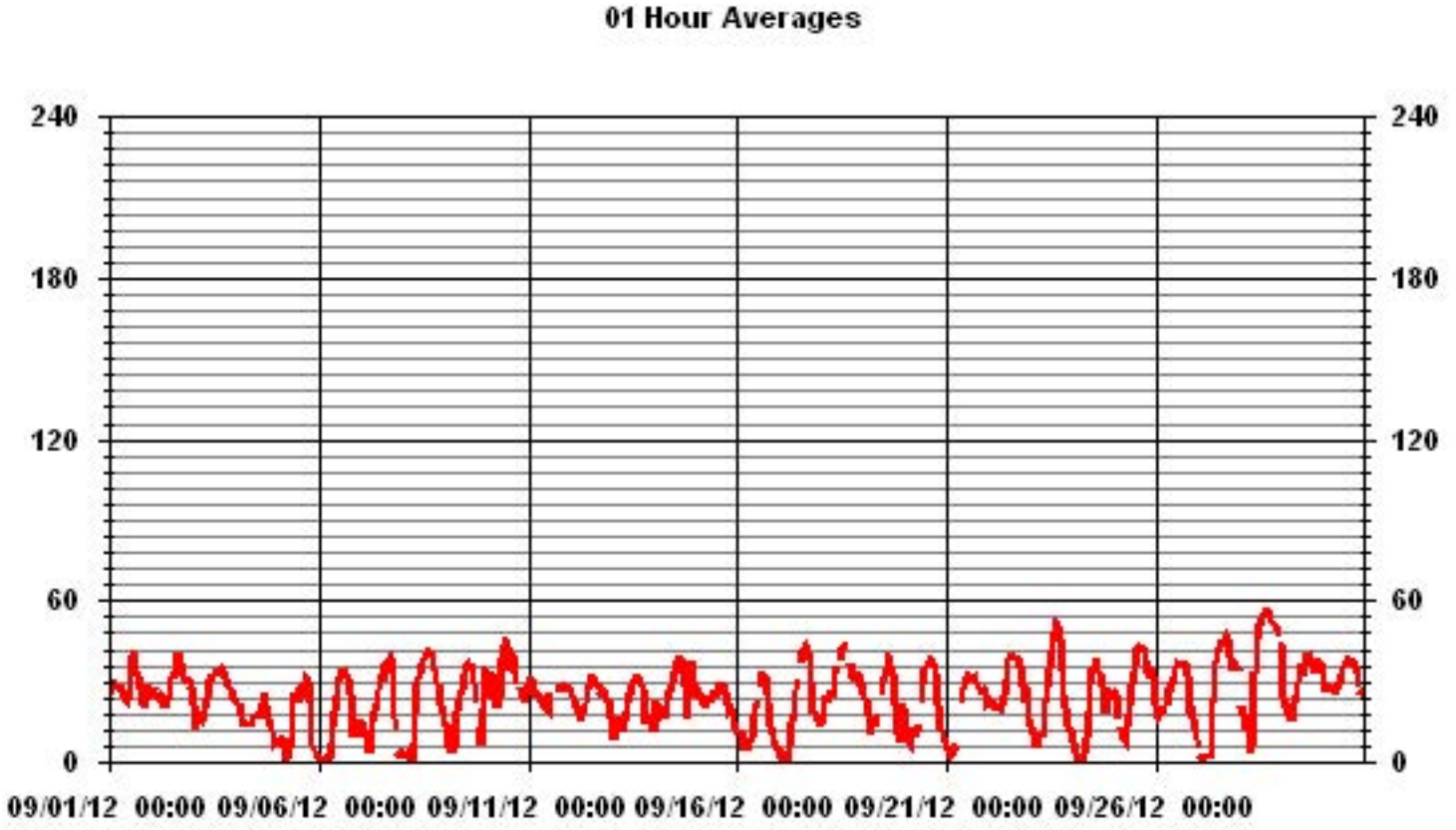
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	681						
MAXIMUM INSTANTANEOUS VALUE:	56	PPB	@ HOUR(S)	15, 16	ON DAY(S)	28	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:			719	HRS
MONTHLY CALIBRATION TIME:	6	HRS					
STANDARD DEVIATION:	11.58						

JOB #: 2833-12-09-01-C



JOB #: 2833-12-09-01-C

LICA
O3_ / WD Joint Frequency Distribution (Percent)

September 2012

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	2.63	1.75	1.46	3.37	5.57	3.66	10.55	3.22	5.71	5.71	10.55	15.68	14.95	7.91	3.81	2.19	98.82
< 110	.00	.00	.00	.00	.00	.00	.29	.14	.00	.43	.00	.00	.29	.00	.00	.00	1.17
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.63	1.75	1.46	3.37	5.57	3.66	10.85	3.37	5.71	6.15	10.55	15.68	15.24	7.91	3.81	2.19	

Calm : .00 %

Total # Operational Hours : 682

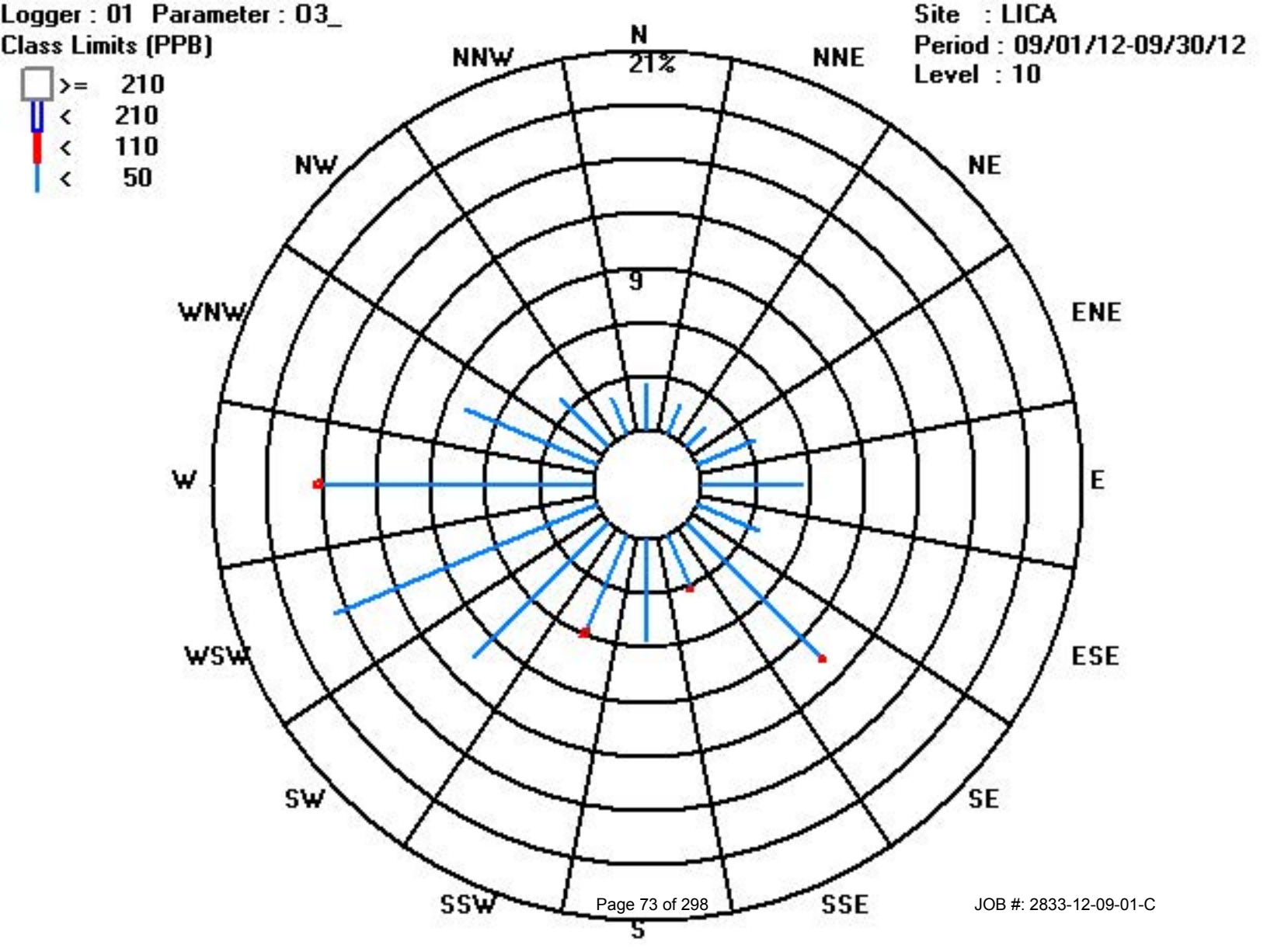
Distribution By Samples

Direction

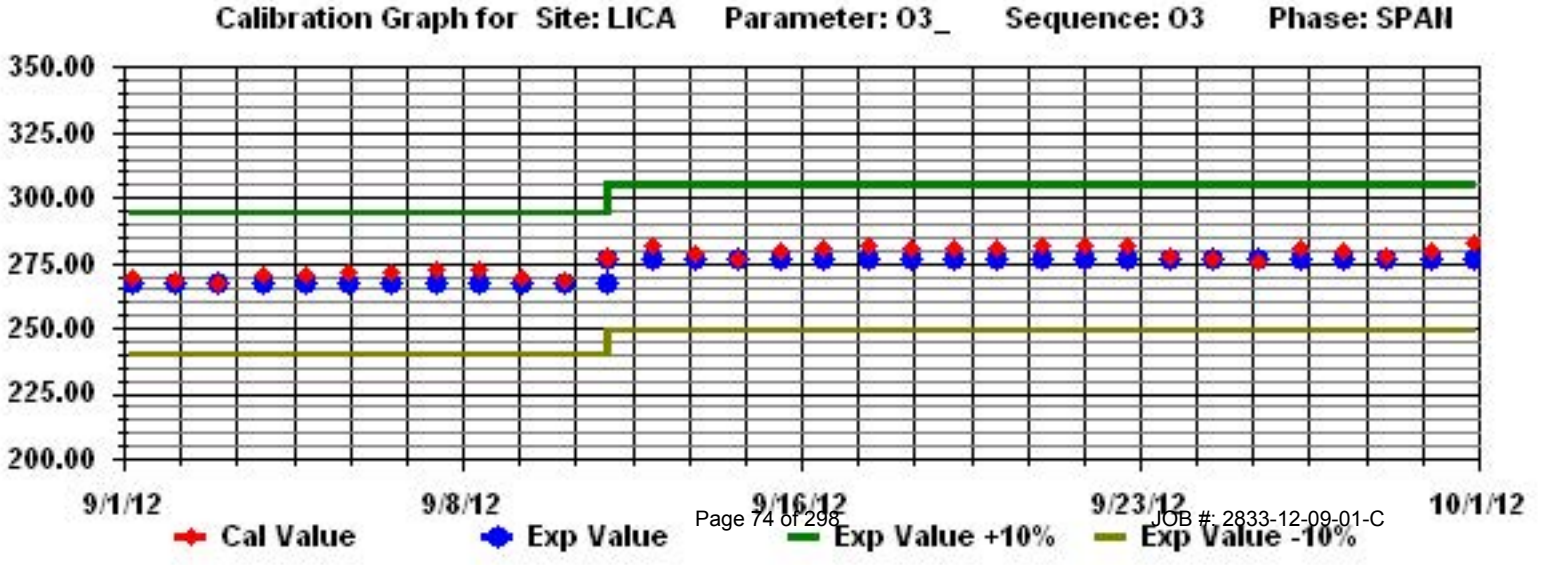
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	18	12	10	23	38	25	72	22	39	39	72	107	102	54	26	15	674
< 110							2	1		3			2				8
< 210																	
>= 210																	
Totals	18	12	10	23	38	25	74	23	39	42	72	107	104	54	26	15	

Calm : .00 %

Total # Operational Hours : 682



JOB #: 2833-12-09-01-C


Calibration Graph for Site: LICA Parameter: O3_ Sequence: O3 Phase: SPAN
350.00
325.00
300.00
275.00
250.00
225.00
200.00
9/1/12
9/8/12
9/16/12
9/23/12
10/1/12
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ambient Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

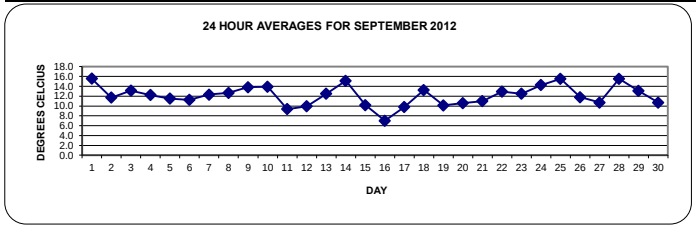
AMBIENT TEMPERATURE hourly averages (Degrees C)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	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	15.7	15.6	15.2	15.3	14.9	14.6	14.2	14.4	14.8	15.3	16.8	18.1	19.1	19.5	18.7	18.6	17.3	15.9	14.9	13.8	12.4	11.5	10.5	19.5	15.5	24
2	9.1	9.2	9.5	9.6	10.3	11.2	11	11	11.3	11.8	12.6	12.9	12.9	13.2	12.8	12.8	12.3	12.7	12.8	12.5	12.3	12.3	12.3	12.3	13.2	11.7	24
3	12.2	12.1	12	11.2	10.6	10.5	10.9	12.1	13.3	14.4	15.6	16.2	16.3	16.5	16.5	16.1	16.7	15.3	13.2	12.7	11.5	10.5	9.7	9.3	16.7	13.1	24
4	9.3	9.5	9.6	10	10.3	10.5	10.6	11.1	11.5	12.2	13.3	13.7	14.3	14.4	14.7	14.9	15.5	15.5	14.3	11.8	11.8	12	11.6	10.9	15.5	12.2	24
5	9	9.1	9.1	9.1	8	6.4	7	10.7	11.9	15.5	16.1	16.9	17.1	16.2	15.4	15.3	15.5	16	14.5	11	8.5	7.3	5.8	5.1	17.1	11.5	24
6	4.3	3.4	2.6	2	2	2	3.7	6.4	8.6	12.2	15.2	17.4	18.4	19	20.1	20.4	20.6	20	17.2	12.9	12	11.2	10	8.8	20.6	11.3	24
7	9	9	7.7	6.6	5.4	4.5	6	11.2	13.6	16	18.3	20	21.2	19.6	18.6	18.7	18.5	17	15.6	10.8	8.5	7.4	6.6	5.7	21.2	12.3	24
8	4.9	4.2	3.7	3.1	2.6	2.2	3.5	10.3	13.7	15.8	16.7	18.1	19.4	20.4	20.9	21.6	21.5	20.6	18	15.7	14.7	13.2	10.5	8.8	21.6	12.7	24
9	8.1	7.5	7.4	7.1	6.6	6.3	6	9	12.3	15.4	17.3	18.7	20.1	21.6	21.2	21.9	22.6	20.2	16.8	14.7	13.2	11.7	12.3	13.4	22.6	13.8	24
10	15	14.5	14.6	15.4	14.7	13.5	13.7	14.2	15.5	18.4	20.1	21.5	20.8	16.5	14.7	12.1	11.4	10.8	10.4	9.9	9.7	9.3	8.7	8.3	21.5	13.9	24
11	7.6	7.2	6.9	6.9	7.1	7.3	7.8	8.2	8.6	9	9	9	9.4	10.2	10.9	11	11	11.1	11.3	11.3	11.3	11.2	11	10.6	11.3	9.4	24
12	9.6	7.7	6.7	6.2	5.6	4.7	4.3	6.4	8.5	10.3	11.9	13.1	14.1	14.4	14	14.4	13.9	12.6	11.9	11.4	10.5	9.5	8.8	8	14.4	9.9	24
13	7.5	6.9	7.2	7.6	8	6.7	7	9.3	11.4	14.2	15.8	16.8	17.7	18.7	19.7	20	19.1	19.2	15.7	11.8	10.4	10.3	9.3	9.2	20.0	12.5	24
14	7.7	8.6	8.6	6.7	8.1	8.5	7.9	12.5	15.5	17	18.4	20	21.5	22.4	23.7	24.2	23.9	22.6	19.3	14.4	13.3	15.1	13.6	9.3	24.2	15.1	24
15	7.4	7.2	7.2	6.8	6.1	5.2	5.3	7.8	10.4	11.7	12.8	13.8	14.7	15.4	15.8	14.7	15	13.7	11.5	10.6	9.6	8.3	7.5	5.7	15.8	10.2	24
16	5.2	4	2.7	1	0.6	0.5	0.7	3.8	6.4	8.6	11.1	11.7	13	14.3	15	15	14	11.9	9.9	6.7	4.7	3.5	2.5	1.5	15.0	7.0	24
17	0.6	0	-0.3	**-0.5**	0	0.8	1.1	4.5	8.7	12.3	14.2	15.9	18	19.6	20.4	20.7	20.1	19.9	15	11.3	9.6	8.7	7.8	6.8	20.7	9.8	24
18	7.5	6.2	8.6	9.4	8.3	8	9.9	11.1	13.2	15.1	17.5	18.9	19.2	19.3	19.3	19	17.9	17	14.8	13.4	12.6	11.7	10.5	9.2	19.3	13.2	24
19	8	7.2	6	4.8	3.7	4.1	4.9	6	7.5	9.4	11.5	13.6	15.1	16.4	17.7	18.4	17.3	16.6	14	10.6	8.5	7.1	7.2	7.1	18.4	10.1	24
20	6	4.7	3.8	3	3.9	4	3.6	6	8.7	12.1	14.6	16.4	17.9	18.9	19.7	19.9	19.8	18.2	15.1	11.1	8.8	7.1	5.9	5.2	19.9	10.6	24
21	4.5	3.9	3.4	4	4.5	3.7	3	6.4	11.3	13.8	14.7	16.1	16.8	17.5	18.3	18.6	18.3	17.4	14.5	12.3	11.5	11	10.1	7.9	18.6	11.0	24
22	8.4	7.7	7.2	6.8	6.3	6.2	6.1	7.2	9.8	12.7	16.1	19.6	21	22.1	22.3	22	21.1	19.7	17	13.7	10.9	11.2	8.6	6.9	22.3	12.9	24
23	5.7	4.8	4	3.3	2.7	2.2	2.3	6.2	11	13.5	16.5	19	21.4	23.5	24.4	24.7	23.9	21	16.4	13.6	11.8	10.4	9.4	8.3	24.7	12.5	24
24	7.7	6.9	6.3	5.8	4.9	4.2	4.1	6.7	11.7	15	18.2	20.5	21.9	22.9	23.1	22.9	22.8	21.2	18.6	15.9	15.8	16.2	14.9	14	23.1	14.3	24
25	13.3	11.8	9.1	8.5	8.2	7.9	6.9	9.1	12.4	15	17.3	19.9	21.6	23.3	24	24	23.2	21.6	18	16.9	16.2	15.9	14.4	13.5	24.0	15.5	24
26	12.6	12.2	11.8	11.7	11.5	11.2	11.1	11.2	11.9	12.6	13.8	14.8	16	16.6	16.8	16.6	16.4	16.2	11.6	8.5	6.4	4.9	3.8	2.9	16.8	11.8	24
27	2.1	1.3	0.9	0.3	0.1	-0.4	-0.4	2.6	8.7	12	15.5	18.2	19.1	19.9	20.6	20.4	20.2	18.8	14.6	12.5	13.1	13	12.2	11.5	20.6	10.7	24
28	8.9	6.9	6.1	5.4	5.8	5.4	5.1	7.8	13.1	16.3	20	22.3	24	24.6	**25.4**	25.2	24.5	22.9	19.9	18.4	17.3	16.4	15.4	14.9	**25.4**	**15.5**	24
29	11.2	8.6	7	6.1	5.4	6	7	9.3	13.8	16.9	18.9	19.5	19.1	18.9	19.6	19.8	18.8	17	14.8	11.9	11.6	11.8	11.1	9.8	19.8	13.1	24
30	8.2	7.9	8.5	8.3	8.1	7.7	6.7	6.9	9.8	11.7	13.4	14.8	15.6	16.4	17	16.7	16.1	15	12.9	11	8.7	5.4	4.7	5.1	17.0	10.7	24
HOURLY MAX	16.0	15.7	15.6	15.4	15.3	14.9	14.6	14.2	15.5	18.4	20.1	22.3	24.0	24.6	25.4	25.2	24.5	22.9	19.9	18.4	17.3	16.4	15.4	14.9			
HOURLY AVG	8.2	7.5	7.1	6.7	6.5	6.2	6.4	8.6	11.3	13.5	15.4	16.9	17.9	18.4	18.7	18.7	18.4	17.3	14.9	12.5	11.3	10.5	9.6	8.7			

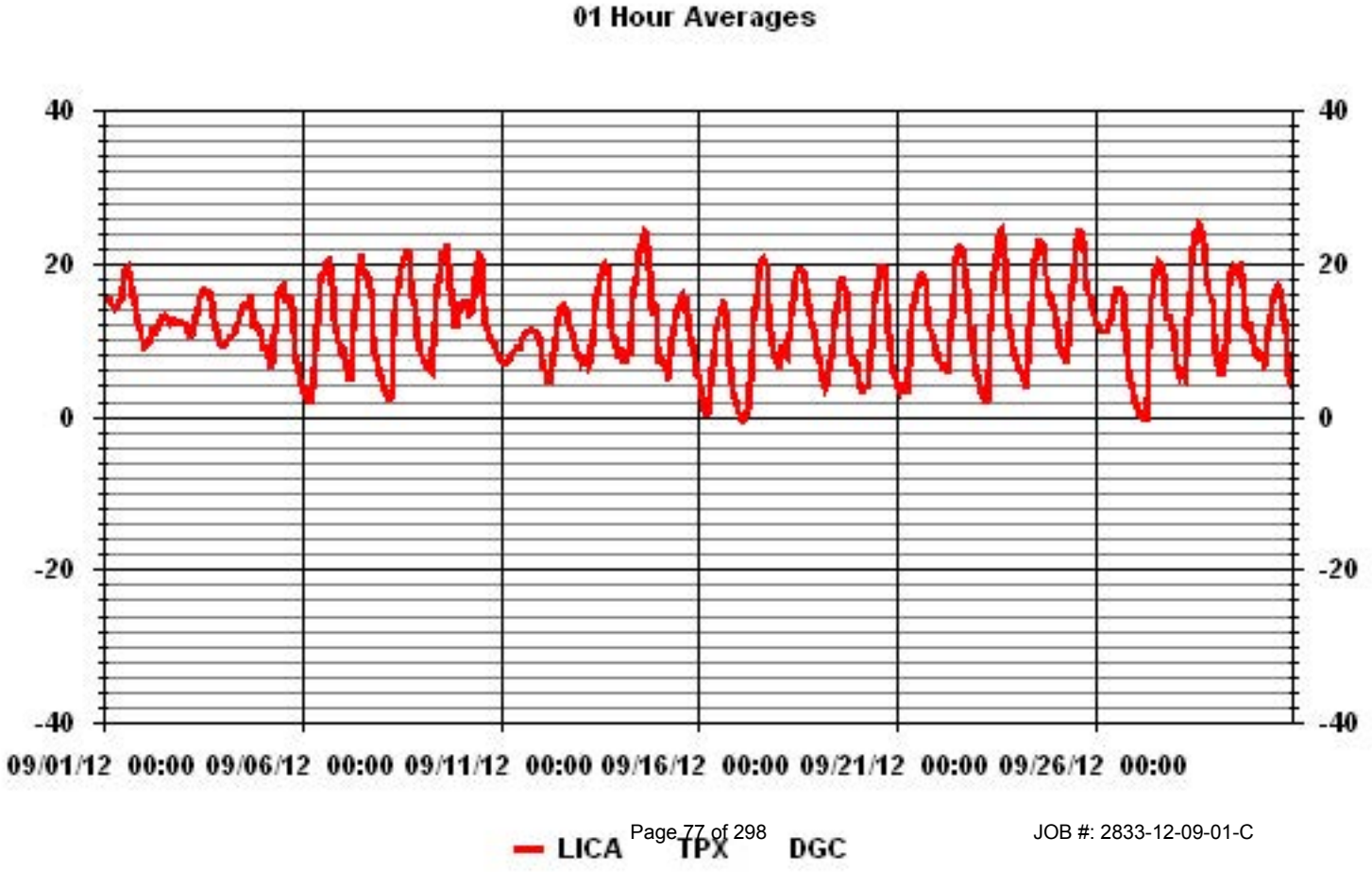
STATUS FLAG CODES

S	- OUT OF SERVICE	OD	- OUTSIDE DECTECTION LIMITS
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:		-0.5	^{O}C	@ HOUR(S)	3	ON DAY(S)	17
MAXIMUM 1-HR AVERAGE:		25.4	^{O}C	@ HOUR(S)	14	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:		15.5	^{O}C			ON DAY(S)	28
						VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:			720	HRS
			AMD OPERATION UPTIME:			100.0	%
STANDARD DEVIATION:	5.56		MONTHLY AVERAGE:			12.13	^{O}C



JOB #: 2833-12-09-01-C

Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

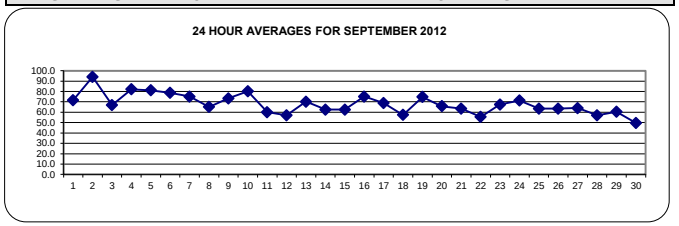
RELATIVE HUMIDITY hourly averages (%)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	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	64	63	62	62	61	64	66	71	72	72	71	68	67	65	62	66	68	75	83	89	91	87	84	86	91	71.6	24
2	91	88	89	95	96	92	94	**97**	**97**	96	96	95	94	95	95	96	95	95	94	93	94	94	91	93	**97**	**94.0**	24
3	95	92	87	83	83	84	82	77	72	64	53	47	46	43	42	45	38	42	57	60	67	75	83	89	95	66.9	24
4	89	88	88	88	88	89	90	88	87	82	79	78	76	77	73	71	66	65	73	84	86	87	89	90	90	82.1	24
5	93	95	94	93	94	95	94	86	82	69	61	62	62	66	71	73	71	64	68	84	91	92	93	94	95	81.1	24
6	94	94	93	94	95	96	96	95	92	80	69	63	58	53	50	49	48	53	69	87	88	89	91	94	96	78.8	24
7	93	91	93	95	95	95	94	80	74	64	57	55	52	52	54	50	47	53	61	84	90	91	91	92	95	75.1	24
8	94	93	93	93	93	93	92	83	71	53	42	40	36	35	35	35	37	41	52	59	62	68	78	84	94	65.1	24
9	86	87	86	87	88	90	91	82	66	57	55	52	49	48	52	52	53	60	76	84	89	92	92	87	92	73.4	24
10	81	83	83	79	83	91	89	88	82	67	56	50	55	73	66	83	91	91	88	85	85	88	93	94	94	80.2	24
11	93	93	93	93	90	85	78	72	71	68	65	62	53	40	39	39	40	40	37	38	38	38	39	39	93	60.1	24
12	43	56	63	68	73	78	80	72	63	54	46	41	34	33	39	39	42	48	50	55	63	72	76	83	83	57.1	24
13	86	89	89	87	85	90	89	79	71	61	55	50	45	43	41	40	45	49	66	82	85	84	87	86	90	70.2	24
14	89	85	84	90	84	82	85	67	59	52	48	46	43	43	41	42	42	44	62	82	79	44	43	64	90	62.5	24
15	71	68	66	67	70	74	75	69	63	58	56	52	48	44	44	46	45	49	61	66	70	76	77	85	85	62.5	24
16	85	88	91	93	93	93	93	88	81	77	62	62	55	46	39	39	43	62	71	83	88	90	90	91	93	75.1	24
17	92	92	92	92	93	92	92	85	73	58	51	48	44	38	36	34	35	39	61	75	79	82	84	87	93	68.9	24
18	84	89	78	75	78	78	69	64	54	51	45	43	38	30	28	31	36	42	51	57	58	61	66	73	89	57.5	24
19	79	84	88	90	92	92	91	89	85	79	69	58	53	50	40	40	49	57	73	84	89	90	87	86	92	74.8	24
20	88	93	93	94	93	92	92	86	78	64	51	45	36	31	29	27	29	34	43	61	72	79	84	86	94	65.8	24
21	88	89	89	90	90	92	93	82	69	58	52	46	42	38	37	36	36	40	49	55	57	59	62	72	93	63.4	24
22	68	70	73	73	75	76	75	71	63	55	46	35	32	31	31	32	33	35	41	54	65	57	68	76	76	55.6	24
23	79	81	85	87	88	89	89	76	60	52	46	42	40	38	37	37	41	53	71	79	84	87	88	90	90	67.5	24
24	92	92	92	91	92	93	92	86	77	72	63	55	53	48	48	47	49	56	65	74	71	67	69	68	93	71.3	24
25	62	68	81	82	84	85	87	79	71	67	61	53	48	40	36	35	38	43	54	60	66	68	77	77	87	63.4	24
26	79	80	83	84	82	80	70	69	64	58	52	44	36	35	36	37	39	42	59	69	75	80	83	86	86	63.4	24
27	87	89	89	90	90	91	91	83	76	68	58	44	39	38	36	36	36	40	53	59	57	58	62	67	91	64.0	24
28	78	83	87	88	89	88	89	80	67	58	45	38	33	32	30	31	32	34	41	43	47	50	53	56	89	57.2	24
29	71	80	84	86	89	88	86	81	67	57	52	51	54	51	42	39	38	41	48	58	55	45	43	48	89	60.6	24
30	56	60	60	61	62	62	64	63	54	49	43	37	35	33	32	31	33	34	39	43	50	63	65	65	65	49.8	24
HOURLY MAX	95	95	94	95	96	96	96	97	97	96	96	95	94	95	95	96	95	95	94	93	94	94	93	94			
HOURLY AVG	81.7	83.4	84.3	85.0	85.6	86.3	85.6	79.6	72.0	64.0	56.8	52.1	48.5	46.3	44.7	45.3	46.5	50.7	60.5	69.5	73.0	73.8	76.3	79.6			

STATUS FLAG CODES

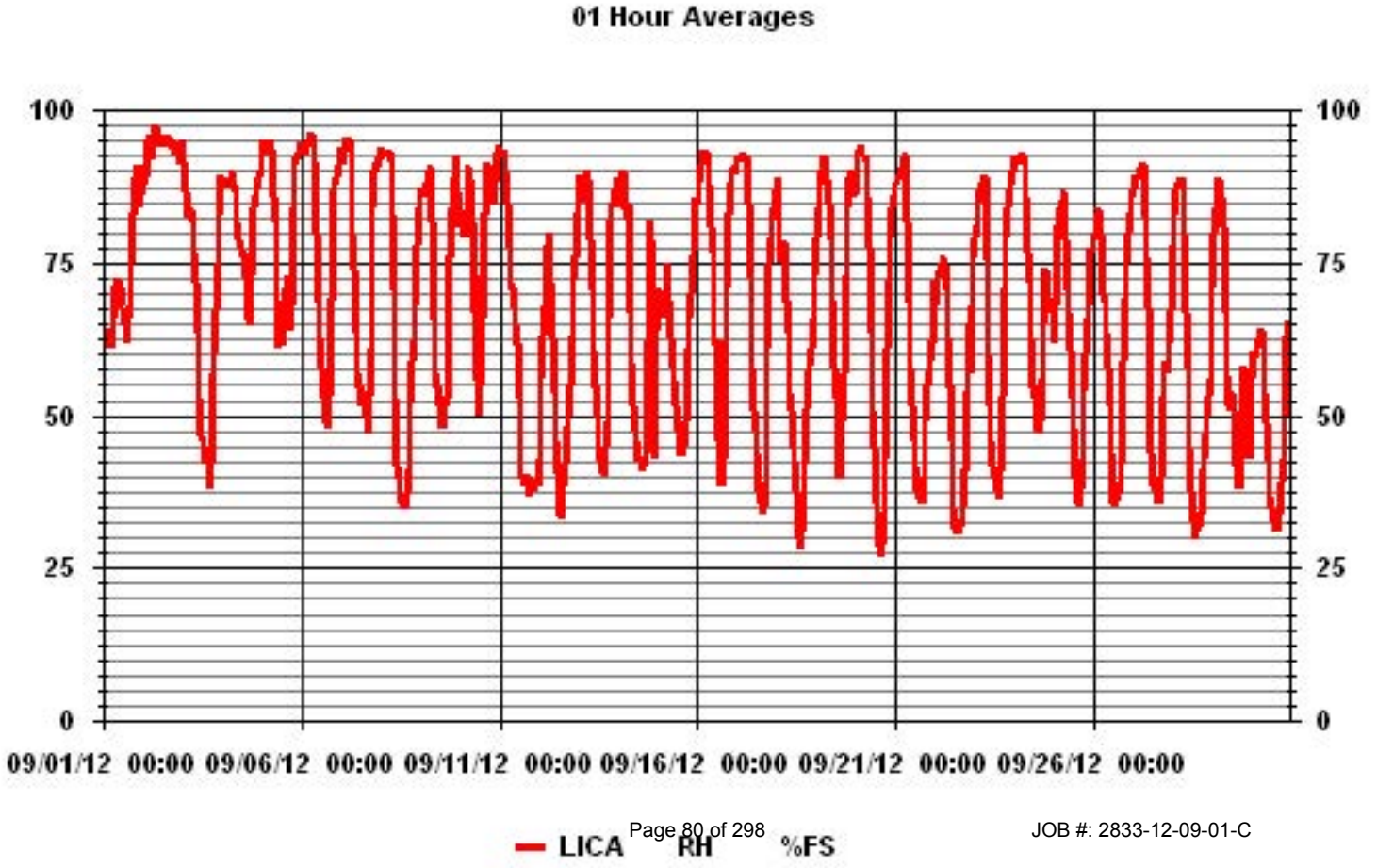
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	97	%	@ HOUR(S)	7, 8	ON DAY(S)	2
MAXIMUM 24-HR AVERAGE:	94.0	%			ON DAY(S)	2

CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS
			AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	19.90		MONTHLY AVERAGE:	67.96	%



JOB #: 2833-12-09-01-C

Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

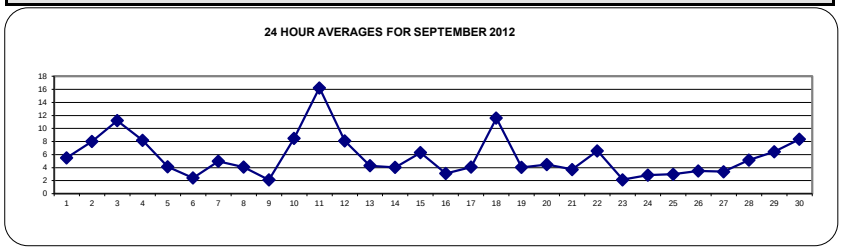
VECTOR WIND SPEED (WS) hourly averages (km/hr)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	10.6	10.7	9.8	6.5	5.7	6.5	7.9	9.3	7.7	6.5	7.5	8	8.8	8.4	8.7	8.5	9.6	7.4	3.8	4.6	5.4	9.4	7.4	5	10.7	5.5	24
2	3.5	4.6	4.8	3.6	6.7	7.5	7.5	6.8	6.9	8.1	12.8	14.7	14.8	14.3	10.4	8.1	8.3	11.8	12.1	13.1	10.9	10.8	9	6	14.8	8	24
3	6.9	7.6	9.8	12.1	10.9	9.3	11.1	11.2	13.5	15.7	15.1	16.7	16.2	15.7	14.9	15.2	16	10.8	7.7	5.3	8	9.7	10.5	9.5	16.7	11.2	24
4	10.7	10	9.3	8.8	9.7	7.2	6.3	8.4	8.8	10.3	12.1	11.4	10.6	9.8	12.5	12.7	11.5	11.2	5.1	3.7	4.4	3.8	4.3	3.9	12.7	8.2	24
5	1.9	4.9	3.8	3	0.4	0.8	1.1	2.1	3.9	3.4	6.8	7	7.4	8.9	9	9.5	8.2	6.9	4.4	1.5	0.7	0.7	1.7	0.5	9.5	4.1	24
6	0.8	0.3	1.1	0.6	1.9	0.5	0.9	1.5	2.3	3.9	5.7	6.2	4.6	4.9	5.2	2.5	4.7	2.5	1.7	0.8	2	1.2	1.1	0.6	6.2	2.4	24
7	0.1	1.1	1.5	1.4	0.5	0.2	0.6	2.4	6.1	8.8	10.6	12	13.7	17.2	12.1	11.1	9.6	5.5	1.8	1.1	1.2	0.6	0.3	0.1	17.2	5.0	24
8	0.2	0.7	1.1	0.3	0.7	0.5	0.4	2	3.7	6.4	8.2	8.5	7.3	8.5	9.7	6.6	6.1	6.4	5	4.2	6	3	1.3	1.1	9.7	4.1	24
9	0.8	0.7	1.5	1.1	0.7	0.5	0.2	2	5.6	2	1	3	2.1	2.7	4.5	3	3.5	4.3	1.3	1.4	1.1	0.6	1.8	5.2	5.6	2.1	24
10	5.1	2.9	7.1	4.6	1.8	1.9	5.2	5.6	5.4	7.3	8.5	6.5	7.6	17.4	19.1	10.9	7.6	10.2	11.5	8.7	8.1	11.4	14.6	14.5	19.1	8.5	24
11	17.9	18.7	18.1	15.3	16.5	19.1	17.5	17.6	17.3	19	18.6	16.6	19.3	20.4	18.9	16.2	15.9	13.6	13.5	11	12	11.5	11.9	13.2	20.4	**16.2**	24
12	9.8	8.9	8.7	8	7.2	7.6	6.8	8.2	9.4	10.2	10.5	10	10	11.1	10.1	10.9	8.3	7	9.3	9.4	5.9	3.1	3	1	11.1	8.1	24
13	1	1	1.4	1.7	1.7	1.7	1.7	3.1	6.2	6.4	9	9.9	10.3	10.4	8.3	8.4	6.2	3.9	1.8	1.6	2.2	1.9	1.8	1.5	10.4	4.3	24
14	0.9	3	1.4	0.7	3	2.7	0.8	3.5	3.4	5.4	5.6	6.9	8.3	8.2	7.5	4.4	4.9	5.2	2.6	1.9	4.1	5.1	4.3	2.8	8.3	4.0	24
15	4.6	5.1	6.2	6.3	5.3	5	4.7	5.1	8	9.7	8	7.9	9.7	11.7	11	10.2	8.2	5.3	2.5	3.3	3.5	3.3	3.5	3.2	11.7	6.3	24
16	4.2	3.8	1.1	2.5	2	3.6	2	0.9	1.2	1.9	6.7	6.5	7.6	9.5	5.9	5	3.3	1.9	2	1.2	0.6	0.4	0.5	0.3	9.5	3.1	24
17	0.1	0.7	0.3	0.4	0.2	0.7	0.9	1.8	4.8	5	8.8	9.1	8.1	8.7	11.1	11.5	10.3	4.3	1.6	1.2	2.6	2.7	1.1	1.5	11.5	4.1	24
18	3.2	2.8	6.2	6	4.8	5.6	7	7.4	9.8	10.5	13.9	16.8	20.9	18.4	**22.1**	21.6	16.6	18.7	17.6	11.8	12.7	9.6	7.5	6.8	**22.1**	11.6	24
19	4.4	3.9	6.2	2.2	1.8	5.3	4.8	5.4	5	3.2	3.6	4.8	8.9	6.2	8.3	6.9	2	0.5	1	2	0.5	2.4	4	3.2	8.9	4.0	24
20	2.1	1.6	1.5	3.5	4.4	3.5	3.2	4.2	5.6	5.9	7	8.6	8.1	8.3	8.8	7.2	6.6	7.3	4.6	2.9	0.7	0.6	0.6	0.4	8.8	4.5	24
21	0.1	0.5	1	2	1.2	1.4	1.4	2.5	1.4	5.1	5.6	4.2	7	5.4	4.5	3.8	4.3	3.6	4.2	6.2	7.3	8.7	5	2.6	8.7	3.7	24
22	4.8	3.6	3.4	5.9	8.3	8.2	8.8	9.3	7.5	8.3	8.1	10.5	10.9	10	10.5	10.9	9.8	7.2	4.2	2.4	1.4	2.6	0.2	0.7	10.9	6.6	24
23	0.8	1.3	0.7	0.3	0.4	1.6	0.6	0.6	1.9	4.9	3.6	3.4	3.5	4.2	4.4	4	4.5	2.9	2.3	2.5	0.4	0.8	0.6	1.1	4.9	2.1	24
24	0.3	0.6	0.3	0.7	0.7	0.5	0.1	1.2	0.6	2.4	3.4	3.8	4.1	3.7	5.3	6.2	5.7	5.4	2.8	2.3	3.9	5.8	5	3.9	6.2	2.9	24
25	3.3	1.3	0.2	0.4	0.1	0.1	1.2	2.2	2.8	3.7	2.2	1.3	1.1	5.3	5.8	5.9	5.1	3.3	1.8	2.7	1.9	4.4	7.1	8.4	8.4	3.0	24
26	6.2	4.3	3.6	5.4	5	4.1	3.8	3.7	3.6	5.3	5.5	5.8	5.8	6.2	4	3.1	3	1.3	1.2	0.8	0.6	0.4	0.7	0.3	6.2	3.5	24
27	0.3	0.6	0.6	0.7	0.5	0.5	0.3	0.5	3.6	3	3.7	5.4	5.9	5.9	4.9	5.5	4.8	3.1	3.5	4.2	5.9	7.5	6	4.1	7.5	3.4	24
28	2.4	0.9	1.3	1.9	2.8	1	1.5	1.4	6.5	5.3	6.5	5.8	9	8.4	8.1	7.9	8	5.9	4.5	5.3	7.1	7.4	7.6	6.8	9.0	5.1	24
29	1.2	0.8	0.6	2.6	4.5	5.5	4.1	3.8	7.8	8.9	13	11.8	11.1	10.6	9.8	10.8	10	8.9	4.6	3.8	4.2	6.3	4.7	4.7	13.0	6.4	24
30	5.2	6.2	6.5	5.5	5.2	6.1	5.7	5.3	7.9	11.3	12.5	14.6	15.2	13.1	14.5	16.2	12.5	10	5.6	5.6	4	3	4.5	4	16.2	8.3	24
HOURLY MAX	17.9	18.7	18.1	15.3	16.5	19.1	17.5	17.6	17.3	19.0	18.6	16.8	20.9	20.4	22.1	21.6	16.6	18.7	17.6	13.1	12.7	11.5	14.6	14.5			
HOURLY AVG	3.8	3.8	4.0	3.8	3.8	4.0	3.9	4.6	5.9	6.9	8.1	8.6	9.3	9.8	9.7	8.8	7.8	6.5	4.9	4.2	4.3	4.6	4.4	3.9			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

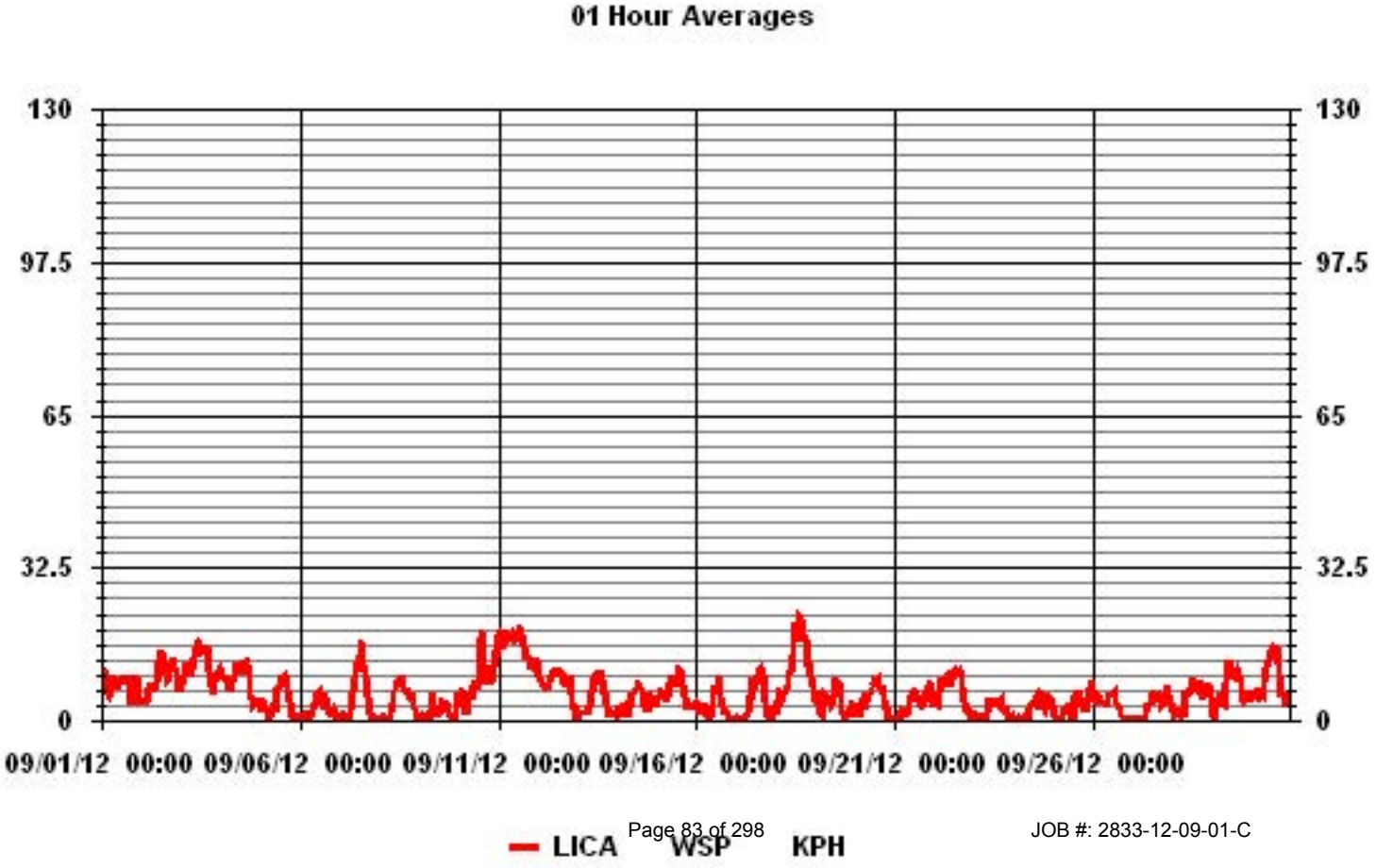


LAST CALIBRATION: December 16, 2010

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	22.1	KPH	@ HOUR(S)	14	ON DAY(S)	18	
MAXIMUM 24-HR AVERAGE:	16.2	KPH			ON DAY(S)	11	
CALMS (≤ 0 KPH)	3.23	%	OPERATIONAL TIME:		720	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	4.49		MONTHLY AVERAGE:		5.81	KPH	

JOB #: 2833-12-09-01-C



JOB #: 2833-12-09-01-C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

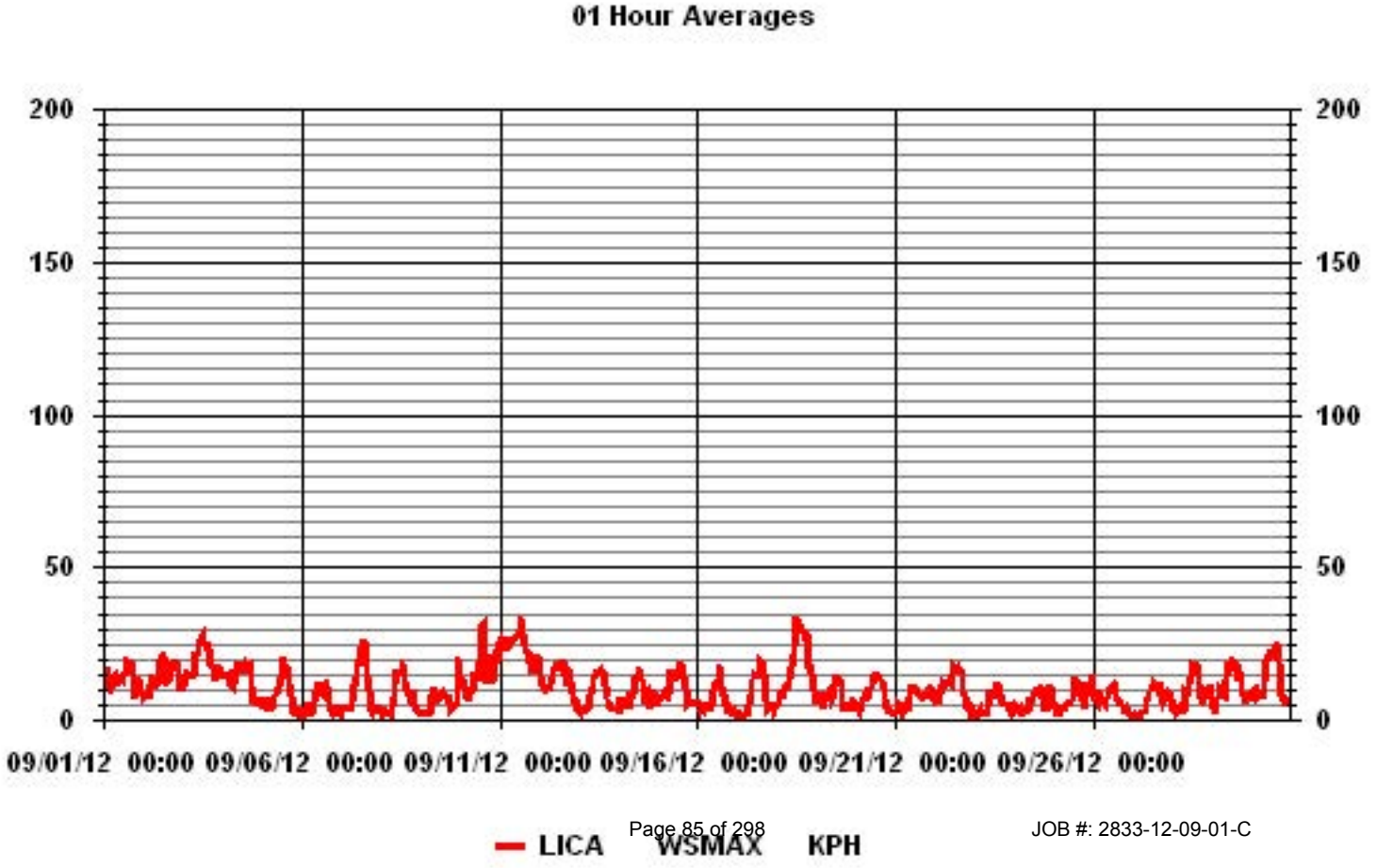
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.
DAY																									
1	16.8	15.5	17.4	10.8	10.2	11.9	14.4	15.1	12.9	11.5	13.6	13	15.7	14.6	20.3	16.8	16.6	19.7	8	7.9	11.8	13.8	12.2	8.9	20.3
2	7.2	7.9	8.6	7	11.5	14.3	12.6	11.5	11.2	12.1	19.5	20.8	19.8	20.7	19.6	12.7	13	19.3	18.3	19.5	15.6	18.4	15.5	9.5	20.8
3	11.3	11.4	15.4	15.2	14.9	13.6	16	15.7	21.5	21.7	26.2	27.2	28.2	25.3	24.1	24.6	23.5	18.5	17.3	12.3	15.6	16.2	18.2	13.7	28.2
4	15.3	14.7	14.9	14.9	15.3	11.7	10.8	12.9	13.1	17.9	17.8	16.9	16.5	16.3	18.4	17.5	17.4	18.1	11.2	5.2	6.8	5.7	5.8	6.3	18.4
5	3.4	6.9	5.6	6.2	2.9	5.4	3.4	6.5	7.6	8.7	10.8	13.9	16.9	20.5	16.8	16.8	14.3	12.3	8.2	3	2.8	2.5	3	1.7	20.5
6	2.7	2.1	3.1	3.5	5.4	2.3	2.6	4.1	6.3	9.4	11.2	11.1	9.7	11.1	11.6	9.3	10.4	5.8	3.4	2.3	3.8	3	3.9	2.9	11.6
7	2	3.7	3.6	3.7	3.4	3.5	4.4	5.8	11.3	14	17.6	19.4	24.2	23.1	26.2	18	14.6	10.2	3.8	2.5	3.7	2.7	2.7	4.7	26.2
8	4.5	2.3	3.1	2	2.1	2.4	2	4.6	7.4	11.4	16	14.9	15.8	17.8	17	12.9	10.4	8.9	6.5	5.8	9.4	5	4	2.3	17.8
9	2.6	2.2	2.7	2.9	2.1	1.9	2.1	8.4	10.2	6.5	7.2	9.2	7.2	7.8	8.9	7.8	6.8	7.2	2.9	3.4	4.2	5.1	5.6	20.5	20.5
10	11.7	10.7	14	11.4	7.7	6.4	8.7	9.1	9.9	15.5	14.3	12.9	19	31.2	31.8	19.5	12	16.7	21.1	13.6	12.2	18.6	23.1	19.5	31.8
11	25.1	26.7	25.4	23.5	23.4	27.3	23.6	25.4	26.4	26.8	27.1	27.4	28.9	34	28.3	25	23.4	22.6	19.5	15.4	17.7	17.3	20	21.5	34
12	16.1	14.2	12.1	10.8	10	10.8	9.4	11.9	14	16.7	17.9	17.6	17.4	19.5	16.7	19.6	15.1	10.8	17	12.9	9.6	5.5	7.6	3.5	19.6
13	2.9	2.1	3.4	3.4	3.3	4.3	3.3	8.3	10.4	13.6	14.4	15.7	15.9	16.6	13.9	16.4	11.5	7.6	5.5	5	3.8	3.9	3.5	3.7	16.6
14	3.5	7	5.8	4	7.2	5.2	3.6	8.4	8.3	12	11.2	14.5	16.5	16.4	13.7	7.9	8.7	9.6	5.9	3.9	6.3	9.8	6.9	4.5	16.5
15	5.8	6.5	7.9	8.9	7.6	7.5	7.4	8.5	16.5	14.8	14.5	13.1	16	18	18.5	17.7	14.6	10.6	4.8	5.4	5.1	5	5.6	5.7	18.5
16	6.1	5	3.2	4.4	3.5	5.2	3.7	3.5	4.5	9.9	10.8	11.8	13.5	17.8	13.6	11.2	8.7	4.6	5.4	4.5	2.7	3	1.4	3	17.8
17	1.7	2.4	1.2	2	1.7	2.2	2	4.8	8.1	13.4	15.2	14.5	14.4	15.8	19.6	19	15.6	6.8	3.6	4.5	4.5	4.6	2.5	3.5	19.6
18	5.1	5.1	9.5	7.9	7.9	10.5	10.6	11.7	13.5	17.4	21	24	**34**	29.6	32	30.5	28.9	26.1	29.2	17.1	18.9	15.6	10.6	9.7	**34**
19	6.2	6.3	8.7	5.7	3.2	9.2	7.2	8.2	9.2	6.5	7.3	10.6	14.7	11.9	13.6	11.8	5.8	3.1	6	4	3.7	3.9	7	5.6	14.7
20	5.6	3.8	2.9	5.5	7.1	8	7.6	6.5	10.3	10.5	12.3	14.1	14.6	15.1	14.9	13.9	12.9	10.9	7.4	4.2	1.9	3.9	2	2.1	15.1
21	2.6	5.2	4.2	3.2	2.2	4.6	4	3.9	7.3	9.4	11.3	8.6	11.4	10	9.1	8.1	7.4	7.6	7.5	8.7	10.2	11.7	8.2	7	11.7
22	8	6.7	6.6	9.2	11.8	10.8	12.3	12.3	11	12.9	12.1	17.6	16.9	16.6	17.5	16.4	15.9	9.9	8.4	4.1	2.9	5.6	1.9	2.2	17.6
23	2.4	2.6	1.7	3	1.2	2.6	2.7	2.4	4.2	9.7	7.4	8.7	8.9	8.7	12.5	7.7	7.8	6.3	5	5	4.8	3.8	2.5	3.8	12.5
24	5.1	4.1	3.4	2.8	3.9	2.8	2.3	2.9	3.1	6.4	6.3	7.1	8.5	8.8	10.8	9.4	10.8	10.3	6.5	3.1	6.3	8.8	11.1	7.8	11.1
25	6.2	4.2	2.3	2.1	4	4.2	2.5	4.2	5	6	5.5	6.1	7.6	14	11.5	11.3	9.2	7	3.5	12.1	7.4	9.4	11.3	14.9	14.9
26	10.1	7	6.1	9.7	7.9	7.1	6.9	5.7	7.1	9.2	10.1	11.3	11.9	11	7.4	6.7	5	4.9	2.8	2.8	3.9	2.9	2.3	1.7	11.9
27	1.5	2.1	2	1.7	1.6	2.6	2.6	2.7	6.1	6.9	9.1	11.2	12.9	12.4	9.6	11.4	11.7	8.3	5.3	6	9.1	9.9	9.5	7.4	12.9
28	3.7	3.1	2.2	2.8	4	2.5	2.5	3.1	10	9.5	11.8	14.1	17.8	17.2	18.4	16.2	12.4	8	6.4	7	9.5	10.1	8.9	9.7	18.4
29	4.8	3.2	3	7.5	9.8	8.7	7.9	7.5	13.3	14.5	19	16.2	20.3	18	19.2	15.6	16.4	13.3	8.3	6	6.1	9.3	6.7	6.7	20.3
30	8	9.1	9.8	7.5	8.1	8.8	9.2	7	12.5	19.5	21.2	21.8	23.3	20.1	24.2	25.1	20.2	18.8	8.8	7.4	6.9	4.8	7.3	6	25.1
PEAK	25.1	26.7	25.4	23.5	23.4	27.3	23.6	25.4	26.4	26.8	27.1	27.4	34.0	34.0	32.0	30.5	28.9	26.1	29.2	19.5	18.9	18.6	23.1	21.5	

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	34	KPH	@ HOUR(S)	12
			ON DAY(S)	18



JOB #: 2833-12-09-01-C

LICA
WSP / WD Joint Frequency Distribution (Percent)

September 2012

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	1.25	1.11	.97	2.63	3.88	3.33	6.66	2.22	5.13	4.58	7.22	9.44	3.05	1.52	.69	1.80	55.55
<	12.0	1.11	.41	.27	.83	1.25	.41	4.02	.55	.27	.83	3.19	4.86	6.80	5.13	1.66	.27	31.94
<	20.0	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.97	4.72	1.52	1.11	.13	8.61
<	29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.00	.41	.00	.55
<	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	2.50	1.52	1.25	3.47	5.13	3.75	10.69	2.77	5.41	5.41	10.41	15.27	14.72	8.19	3.88	2.22	

Calm : 3.33 %

Total # Operational Hours : 720

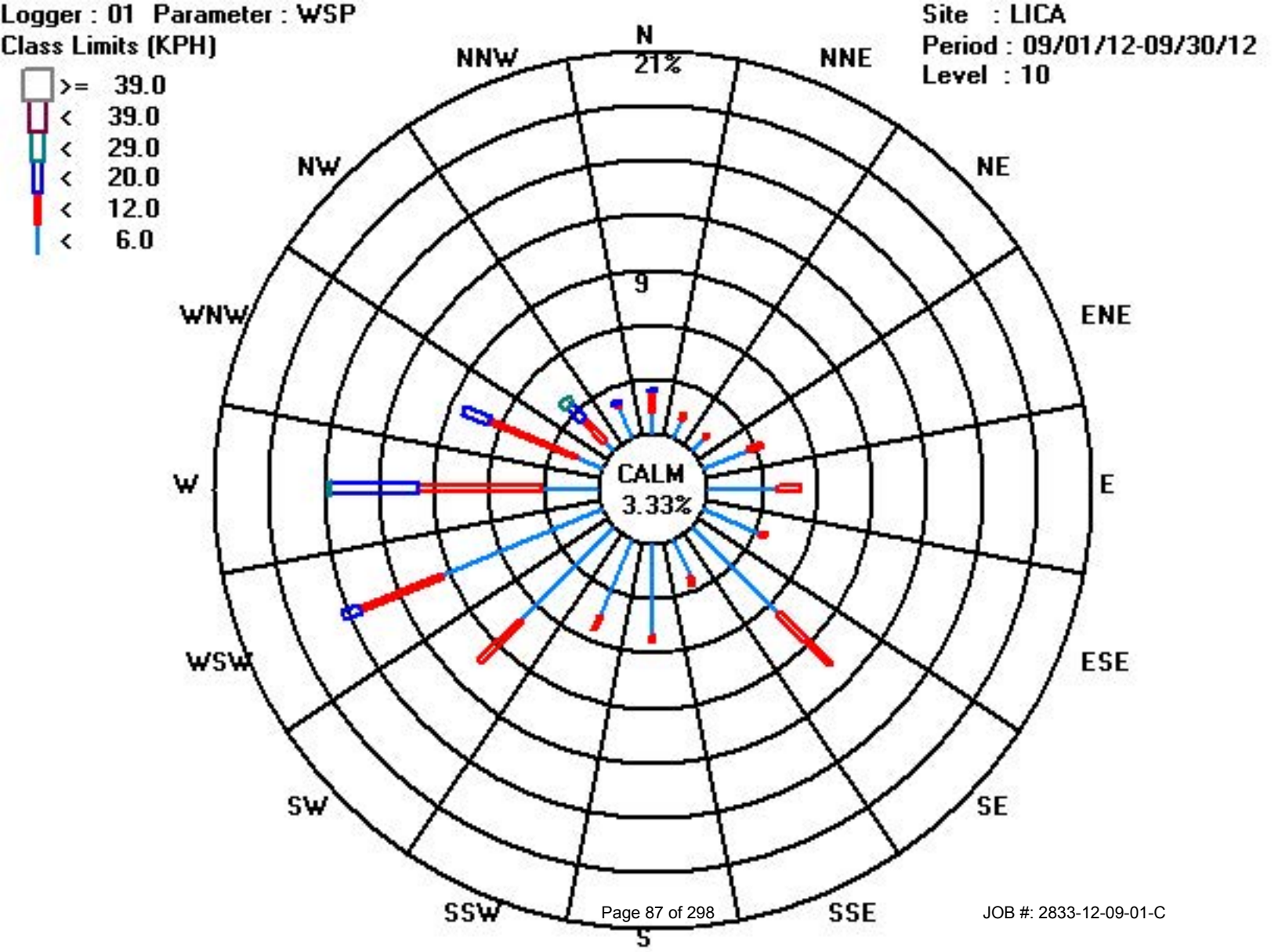
Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	9	8	7	19	28	24	48	16	37	33	52	68	22	11	5	13	400
<	12.0	8	3	2	6	9	3	29	4	2	6	23	35	49	37	12	2	230
<	20.0	1											7	34	11	8	1	62
<	29.0													1		3		4
<	39.0																	
>=	39.0																	
	Totals	18	11	9	25	37	27	77	20	39	39	75	110	106	59	28	16	

Calm : 3.33 %

Total # Operational Hours : 720



JOB #: 2833-12-09-01-C

Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

VECTOR WIND DIRECTION (WD) hourly averages in degrees

MST

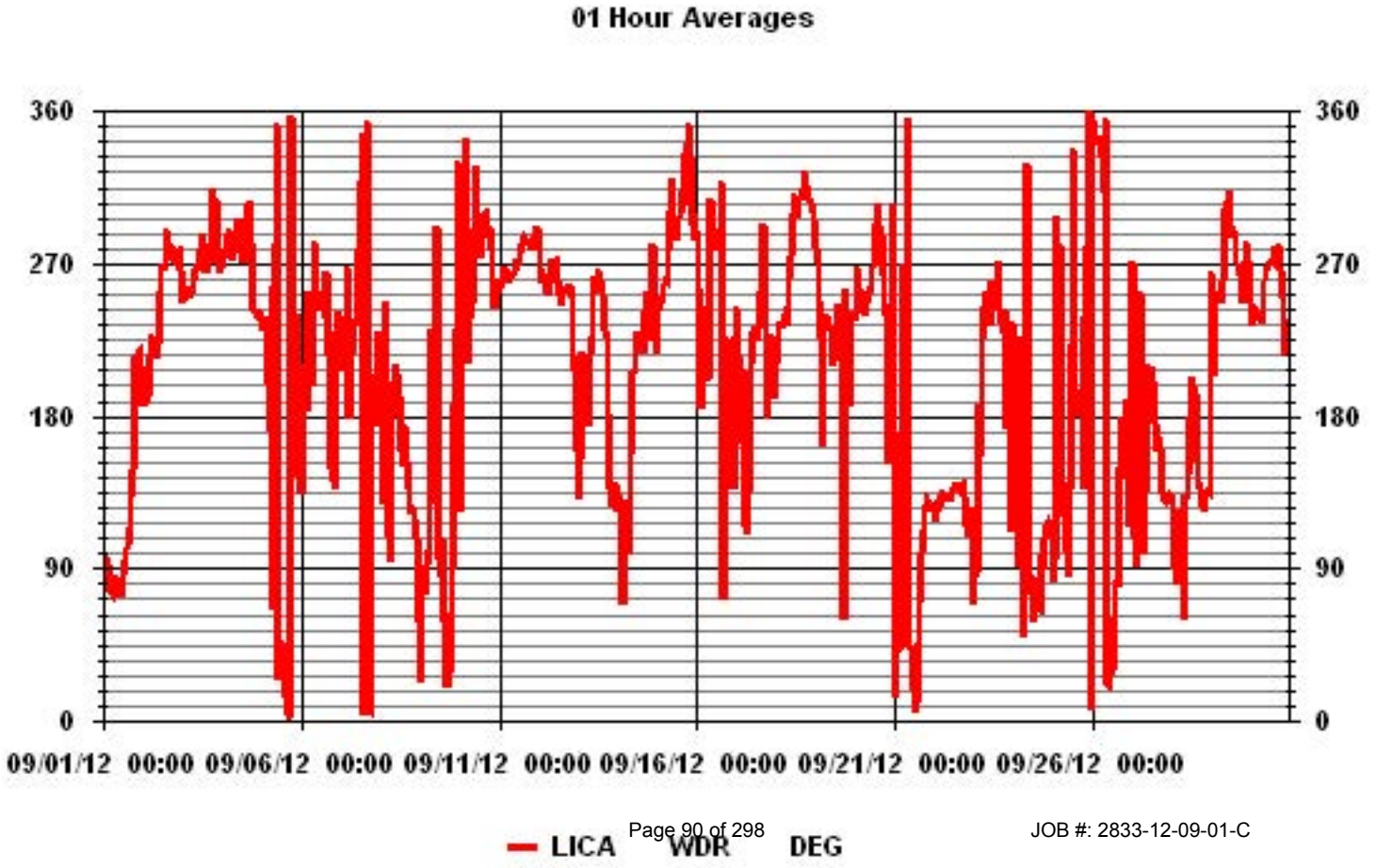
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUANDRANT	RDGS.
DAY																											
1	98	94	95	93	77	75	79	86	76	85	75	75	87	94	102	104	114	132	148	214	216	219	220	210	104	ESE	24
2	185	199	188	191	217	228	225	223	214	222	254	267	270	266	290	278	271	282	273	272	279	277	278	267	257	WSW	24
3	247	249	250	254	253	256	253	260	266	269	278	276	288	279	264	280	277	281	315	270	308	290	265	268	271	W	24
4	276	278	277	287	290	275	272	276	278	285	297	292	287	270	292	305	298	307	283	244	242	240	242	241	283	W	24
5	230	235	236	232	200	172	66	256	282	353	24	35	47	28	15	5	2	3	358	317	171	144	240	170	2	N	24
6	133	158	210	182	254	210	198	248	283	255	243	245	246	251	237	265	217	194	150	143	137	230	241	235	232	SW	24
7	213	206	238	225	269	178	181	217	234	237	254	279	318	347	3	346	354	7	6	177	205	174	230	228	313	NW	24
8	186	135	128	248	108	158	93	184	200	211	206	180	193	160	150	175	154	138	129	122	126	120	108	60	163	SSE	24
9	22	76	86	74	92	101	232	128	130	160	292	97	84	108	60	47	19	45	28	64	89	187	232	331	73	ENE	24
10	123	203	271	303	344	211	243	238	246	290	328	292	276	274	299	300	287	287	292	279	251	243	254	261	275	W	24
11	255	256	258	267	267	261	258	261	264	265	270	269	273	276	281	286	285	283	283	279	279	286	290	292	271	W	24
12	287	258	262	264	262	254	251	260	271	271	272	259	261	253	245	257	255	255	254	257	251	216	208	160	259	WSW	24
13	131	155	218	205	192	182	173	216	227	253	262	260	266	261	254	252	231	227	182	138	135	127	138	141	237	SW	24
14	124	134	131	69	123	131	98	124	157	205	207	217	228	228	228	217	241	251	254	224	257	281	272	217	218	SW	24
15	246	243	246	251	258	260	259	277	301	320	297	283	290	298	300	312	304	335	341	353	334	293	301	283	291	WNW	24
16	289	256	184	232	234	244	238	201	308	282	292	277	288	281	284	319	72	189	227	195	175	167	136	227	272	W	24
17	244	217	163	172	207	116	110	135	138	210	229	232	224	231	254	267	294	253	178	198	224	228	194	190	235	SW	24
18	221	211	234	234	234	238	237	244	261	274	300	311	309	296	307	312	311	324	313	315	310	307	301	297	296	WNW	24
19	280	271	249	227	161	230	233	240	231	233	209	212	231	225	246	241	169	60	255	231	186	217	241	239	234	SW	24
20	237	268	257	249	249	242	239	247	253	257	268	269	294	304	306	294	288	264	248	240	151	202	213	305	269	W	24
21	14	170	72	43	44	270	216	245	356	42	44	20	5	10	46	70	100	112	128	132	131	130	125	125	85	E	24
22	127	118	124	130	133	131	134	133	135	130	133	137	139	138	139	137	138	139	133	116	108	124	126	69	133	SE	24
23	90	87	88	187	156	225	244	253	251	239	233	260	247	246	260	272	242	236	229	243	172	190	112	236	242	WSW	24
24	148	226	196	91	219	227	49	247	329	74	84	86	58	67	69	68	67	95	94	108	115	118	116	108	90	E	24
25	82	95	298	120	282	263	143	126	101	84	137	222	338	187	183	180	195	188	137	238	280	349	360	6	146	SE	24
26	355	347	345	342	341	332	345	312	356	23	22	28	30	61	81	81	150	179	153	143	184	190	115	237	14	NNE	24
27	271	109	90	143	118	254	98	168	135	183	210	198	209	202	176	159	169	161	135	132	130	132	134	132	160	SSE	24
28	132	114	91	80	125	97	83	59	132	133	146	180	203	198	194	154	142	138	128	124	130	132	136	135	147	SE	24
29	266	218	203	249	253	248	248	259	302	306	311	311	289	290	287	271	267	268	262	246	268	283	273	251	280	W	24
30	233	240	246	241	236	242	236	236	259	267	267	271	272	271	280	273	277	281	267	251	239	216	223	236	261	W	24
HOURLY AVG	355	347	345	342	344	332	345	312	356	353	328	311	338	347	307	346	354	335	358	353	334	349	360	331			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION:	December 16, 2010
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS
STANDARD DEVIATION:	80.51		AMD OPERATION UPTIME:	100.0	%
			MONTHLY AVERAGE:	262	DEG



JOB #: 2833-12-09-01-C

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

SEPTEMBER 2012

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

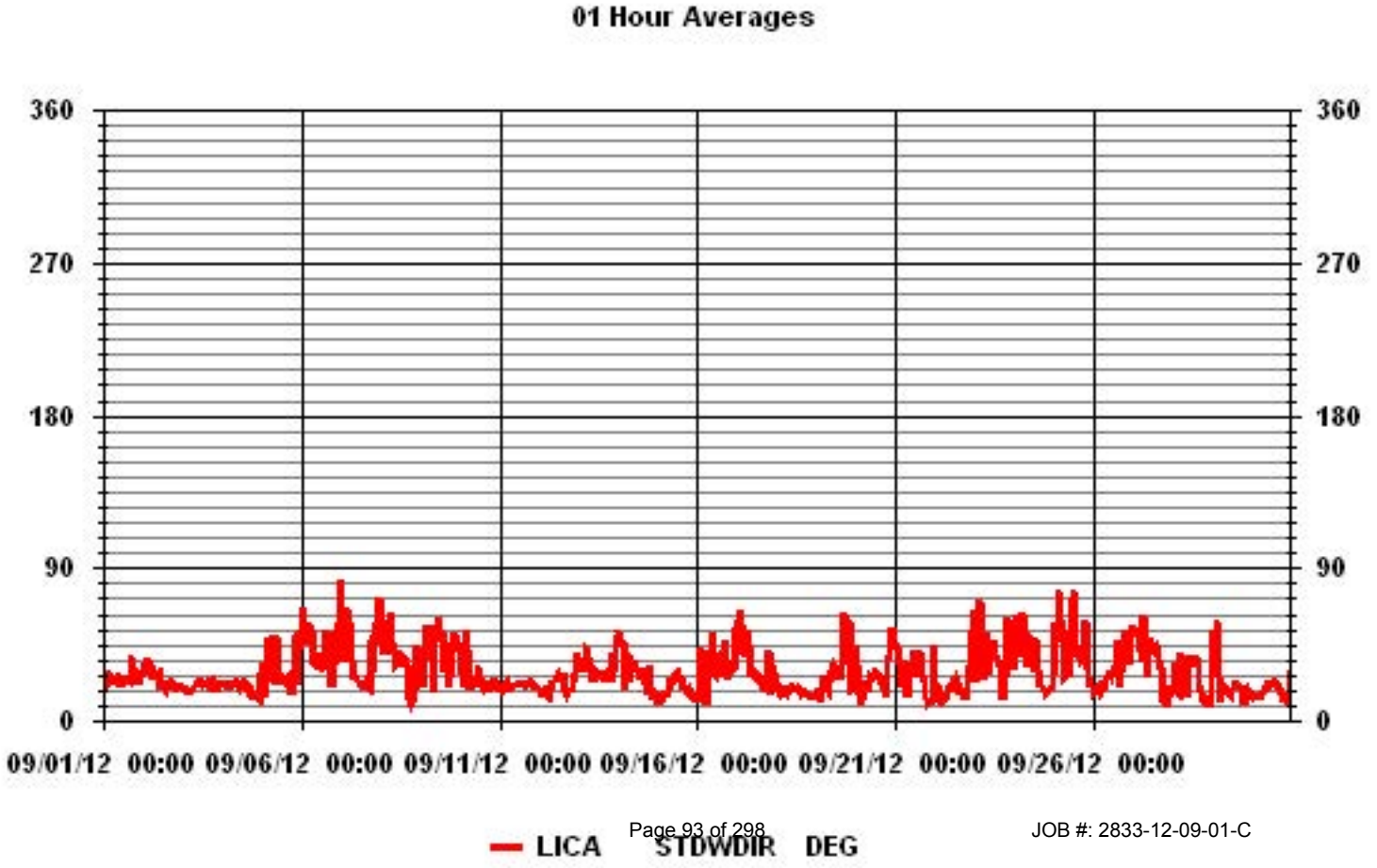
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	21	20	23	29	24	27	21	24	23	28	22	22	24	25	24	25	24	38	30	28	31	22	24	26
2	29	33	35	35	27	29	25	29	27	28	21	20	21	19	23	20	21	24	21	20	22	21	21	20
3	20	18	19	17	17	18	18	20	22	23	23	24	22	23	22	24	23	24	17	20	17	22	21	22
4	22	22	22	20	20	22	23	22	23	21	19	21	22	23	21	18	20	18	17	12	16	15	14	28
5	34	18	17	22	49	25	35	50	21	50	22	26	26	23	23	25	22	20	15	30	49	50	21	42
6	49	66	45	51	51	57	55	37	38	34	33	32	36	34	36	53	32	31	19	44	33	53	58	66
7	83	57	35	48	67	56	58	37	24	26	24	23	22	19	22	24	20	19	47	28	51	57	52	72
8	45	59	39	60	57	50	63	48	40	32	33	38	41	38	31	38	34	14	10	12	12	18	45	36
9	36	41	19	36	57	48	52	38	17	56	54	61	47	53	29	41	46	20	39	25	45	51	48	47
10	42	29	20	22	54	43	20	20	24	23	26	33	27	21	19	20	22	21	20	22	20	25	20	18
11	18	20	19	21	23	19	19	20	21	21	21	22	22	22	22	22	21	22	22	23	21	20	21	21
12	20	17	18	19	19	16	15	19	23	24	24	26	28	25	25	26	19	16	18	18	18	22	28	40
13	35	29	37	35	43	42	38	30	23	32	26	25	26	26	29	23	25	27	24	31	23	40	28	50
14	53	43	48	47	18	26	40	23	33	34	36	29	31	25	29	31	22	15	26	32	12	19	16	18
15	11	11	12	16	15	16	16	23	22	24	27	28	29	25	27	20	20	17	16	19	17	14	13	13
16	13	14	43	25	22	9	32	41	38	52	27	26	30	26	39	40	33	47	25	27	36	29	30	55
17	59	39	65	57	43	37	54	46	26	33	27	26	29	28	23	23	20	18	27	42	16	19	33	29
18	24	19	17	19	14	16	20	17	19	21	21	18	18	20	18	16	17	17	16	16	14	14	14	14
19	18	18	11	19	27	20	20	18	22	29	33	31	25	32	26	24	33	64	42	38	59	19	20	19
20	45	34	23	10	13	24	21	17	23	27	26	27	30	27	25	28	25	20	13	37	37	55	48	54
21	47	44	34	19	27	31	36	14	33	26	27	42	26	35	39	39	28	24	14	10	11	12	14	44
22	14	15	22	14	11	12	14	14	21	17	21	23	23	26	24	15	18	16	15	13	30	29	53	66
23	23	25	39	71	52	24	36	52	39	27	37	45	45	39	37	33	18	12	20	25	61	44	37	30
24	49	62	55	37	54	63	50	31	52	41	32	36	28	49	31	22	21	21	19	16	17	18	20	21
25	27	58	51	77	61	48	26	27	27	27	54	72	77	45	40	38	35	36	36	59	32	20	25	22
26	16	17	17	22	16	17	23	18	26	24	29	27	31	31	38	47	20	28	44	54	40	33	36	56
27	50	54	53	44	45	35	62	53	26	38	49	40	44	42	44	41	37	32	13	11	12	11	14	21
28	19	34	29	17	16	40	18	32	14	26	31	37	37	36	39	33	22	18	12	14	12	10	10	14
29	43	52	53	60	27	11	22	21	18	19	18	16	19	22	22	22	20	20	17	10	17	19	17	15
30	16	14	15	15	14	14	16	18	21	20	22	21	23	24	22	22	20	19	17	13	12	15	12	28

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: December 16, 2010

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 720 HRS



JOB #: 2833-12-09-01-C

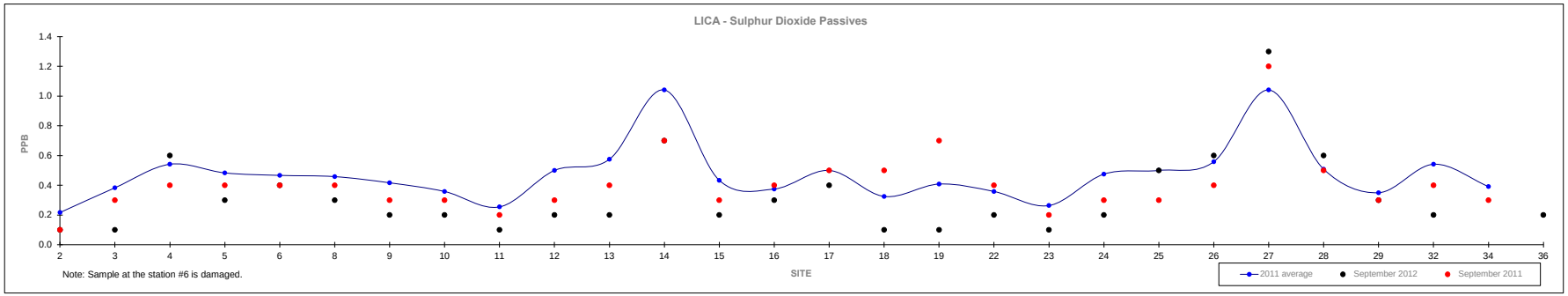
Non-Continuous Monitoring

Passive Summary Results for September 2012

Lakeland Industry & Community Association

Sulphur Dioxide
ppb

	2011																									September 2012	
	2	**3**	**4**	**5**	**6**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**32**	**36**	**Reading**	**Site**
Mean	0.2	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.5	0.6	1.0	0.4	0.4	0.5	0.3	0.4	0.4	0.3	0.5	0.5	0.6	1.0	0.5	0.4	0.5	0.4	0.32	-
Minimum	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.1	0.2	0.1	<0.1	#2, #11
Maximum	0.6	1.3	1.3	1.1	1.0	1.0	1.0	1.0	0.6	1.5	1.9	2.2	1.1	0.9	1.3	0.8	1.0	1.3	0.5	1.4	1.4	1.1	1.7	1.1	0.9	1.4	0.9	1.3	#27



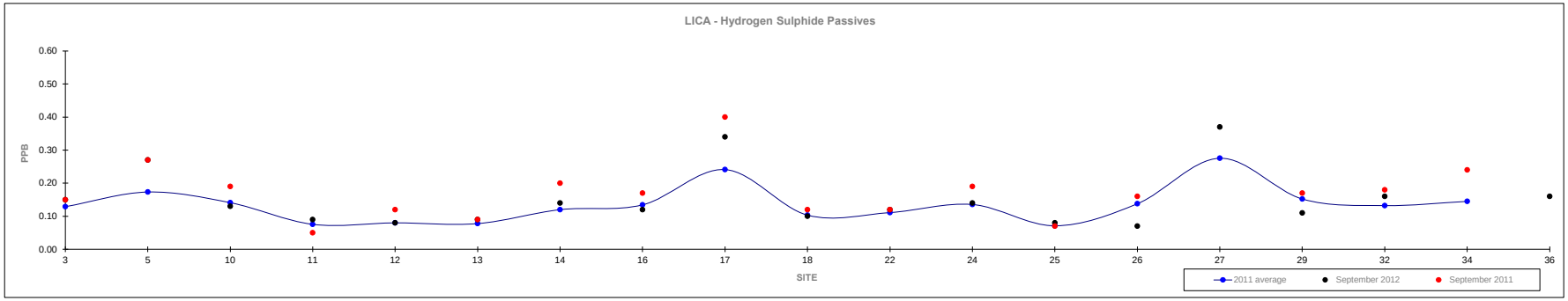
Note: Sample at the station #6 is damaged.

Passive Summary Results for September 2012

Lakeland Industry & Community Association

Hydrogen Sulphide
ppb

	2011																		September 2012	
	3	5	10	11	12	13	14	16	17	18	22	24	25	26	27	29	32	36	Reading	Site
Mean	0.15	0.20	0.14	0.09	0.11	0.15	0.17	0.15	0.29	0.12	0.14	0.16	0.09	0.17	0.48	0.15	0.15	0.18	0.15	-
Minimum	0.03	0.10	0.10	0.04	0.06	0.04	0.12	0.06	0.08	0.05	0.08	0.09	0.04	0.12	0.13	0.09	0.09	0.09	0.07	#26
Maximum	0.29	0.38	0.21	0.13	0.17	0.80	0.21	0.21	0.67	0.18	0.23	0.21	0.18	0.25	1.12	0.25	0.22	0.29	0.37	#27

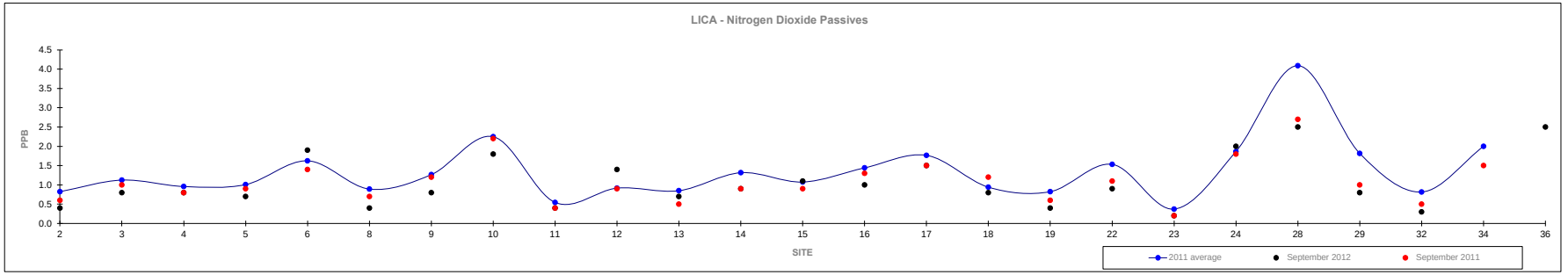


Passive Summary Results for September 2012

Lakeland Industry & Community Association

Nitrogen Dioxide
ppb

	2011																							September 2012	
	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	0.8	1.1	1.0	1.0	1.6	0.9	1.3	2.3	0.5	0.9	0.9	1.3	1.1	1.4	1.8	0.9	0.8	1.5	0.4	1.9	4.1	1.8	0.8	2.0	1.0	-
Minimum	0.1	0.4	0.1	0.2	0.6	0.2	0.4	0.7	0.1	0.2	0.1	0.1	0.2	0.4	0.9	0.2	0.2	0.3	0.1	0.8	1.6	0.3	0.2	0.5	0.2	#23
Maximum	2.5	2.6	2.2	2.2	3.5	2.4	3.0	5.6	1.2	2.3	2.1	3.0	2.4	3.0	3.5	2.2	2.3	3.7	1.0	3.7	11.3	4.7	2.3	6.9	2.5	#36



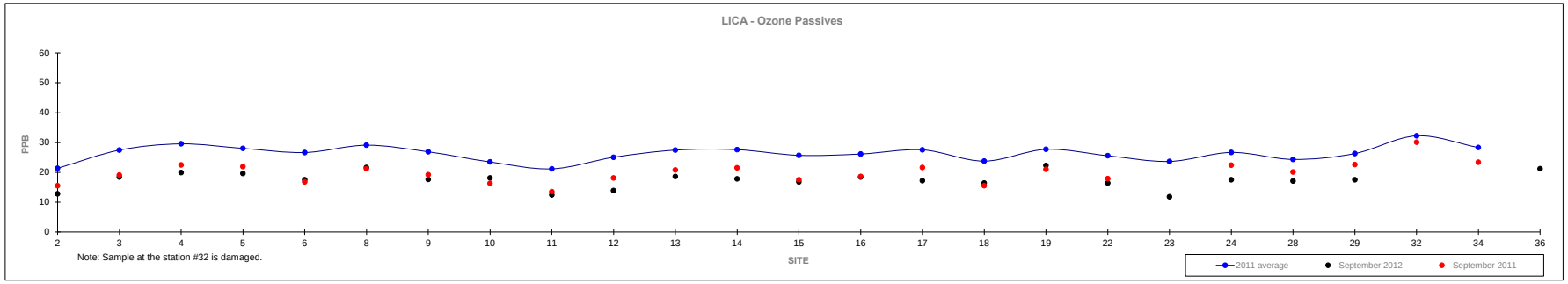
Passive Summary Results for September 2012

Lakeland Industry & Community Association

Ozone
ppb

	2	3	4	5	6	8	9	10	11	12	2011 13	14	15	16	17	18	19	22	23	24	28	29	32	36
Mean	21.4	27.5	29.6	28.0	26.6	29.1	26.9	23.5	21.2	25.1	27.5	27.6	25.7	26.1	27.5	23.8	27.7	25.6	23.7	26.7	24.3	26.3	32.2	28.3
Minimum	11.9	17.6	20.0	18.5	16.8	19.1	18.0	13.9	11.5	14.0	18.4	19.1	16.1	16.6	17.8	13.3	18.6	15.1	12.8	17.1	15.8	17.3	25.0	17.6
Maximum	33.2	39.2	39.6	44.1	40.8	42.4	38.2	33.9	30.9	34.9	38.1	39.1	40.3	37.0	40.3	35.4	40.1	37.0	32.5	35.9	34.8	36.4	42.0	42.5

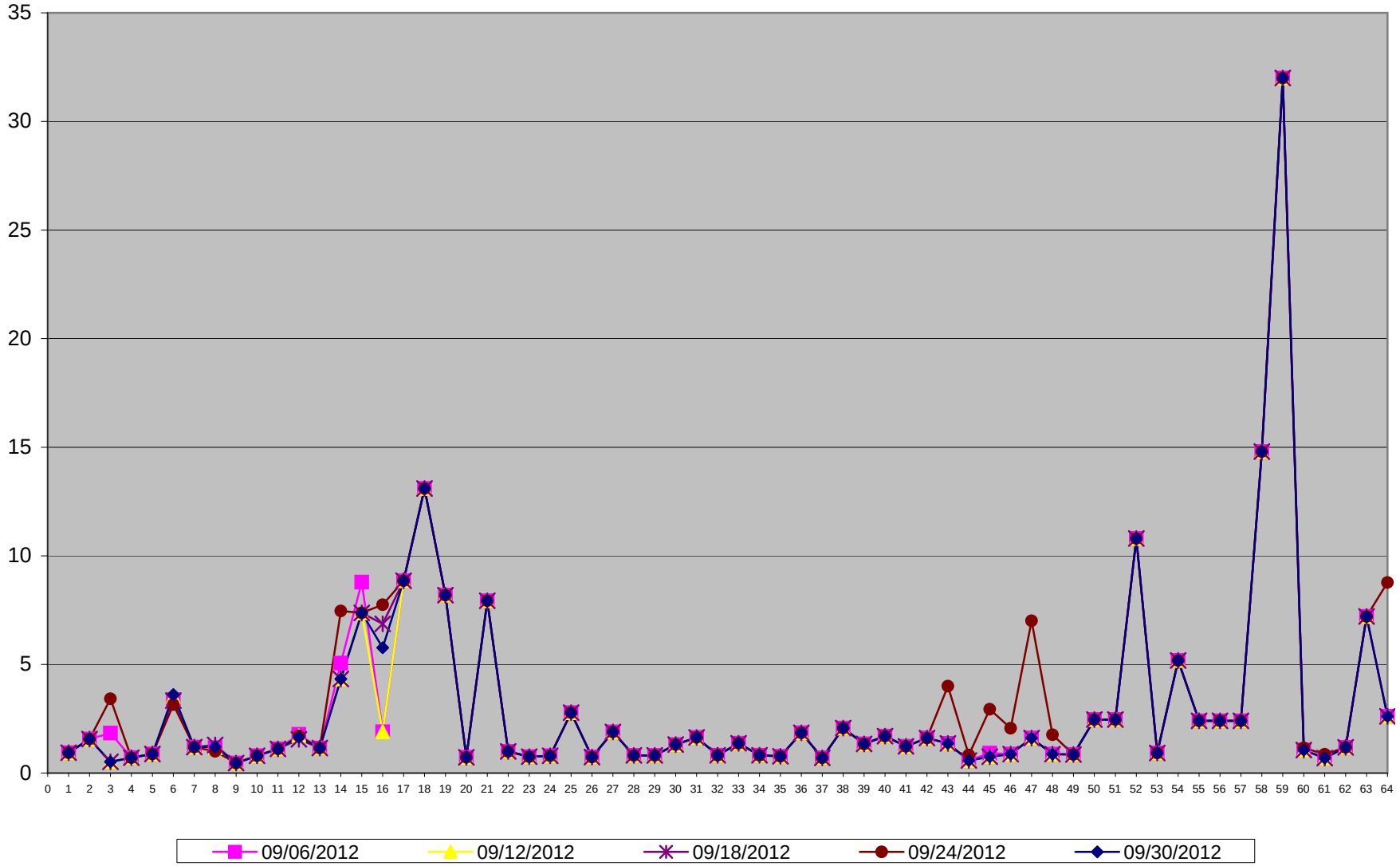
September 2012	
Reading	**Site**
17.4	-
11.8	#23
22.3	#19



Note: Sample at the station #32 is damaged.

Volatile Organics

Volatile Organics in ug/m3 Site: LICA - Cold Lake South



1	2,2,4-Trimethylpentane	33	1,1,2,2-Tetrachloroethane
2	Carbon Disulfide	34	cis-1,3-Dichloropropene
3	Propene	35	trans-1,3-Dichloropropene
4	Vinyl Acetate	36	1,2-Dichloropropane
5	Vinyl Bromide	37	Bromomethane
6	Dichlorodifluoromethane (FREON 12)	38	Bromoform
7	1,2-Dichlorotetrafluoroethane	39	Bromodichloromethane
8	Chloromethane	40	Dibromochloromethane
9	Vinyl Chloride	41	Heptane
10	Chloroethane	42	Trichloroethylene
11	1,3-Butadiene	43	Tetrachloroethylene
12	Trichlorofluoromethane (FREON 11)	44	Benzene
13	Trichlorotrifluoroethane	45	Toluene
14	Ethanol	46	Ethylbenzeze
15	2-Propanol	47	p+m-Xylene
16	2-Propanone	48	o-Xylene
17	Wethyl Ethyl Ketone (2-Butanone)	49	Styrene
18	Methyl Isobutyl Ketone	50	1,3,5-Trimethylbenzene
19	Methyl Butyl Ketone (2-Hexanone)	51	1,2,4-Trimethylbenzene
20	Methyl t-butyl ether (MTBE)	52	4-ethyltoluene
21	Ethyl Acetate	53	Chlorobenzene
22	1,1-Dichloroethylene	54	Benzyl chloride
23	cis-1,2-Dichloroethylene	55	1,3-Dichlorobenzene
24	trans-1,2-Dichloroethylene	56	1,4-Dichlorobenzene
25	Methylene Chloride (Dichloromethane)	57	1,2-Dichlorobenzene
26	Chloroform	58	1,2,4-Trichlorobenzene
27	Carbon Tetrachloride	59	Hexachlorobutadiene
28	1,1-Dichloroethane	60	Hexane
29	1,2-Dichloroethane	61	Cyclohexane
30	Ethylene Dibromide	62	Tetrahydrofuran
31	1,1,1-Trichloroethane	63	1,4-Dioxane
32	1,1,2-Trichloroethane	64	Xylene (Total)

Polycyclic Aromatic Hydrocarbons

Polycyclic Aromatic Hydrocarbons (PAHs) Results for September 2012

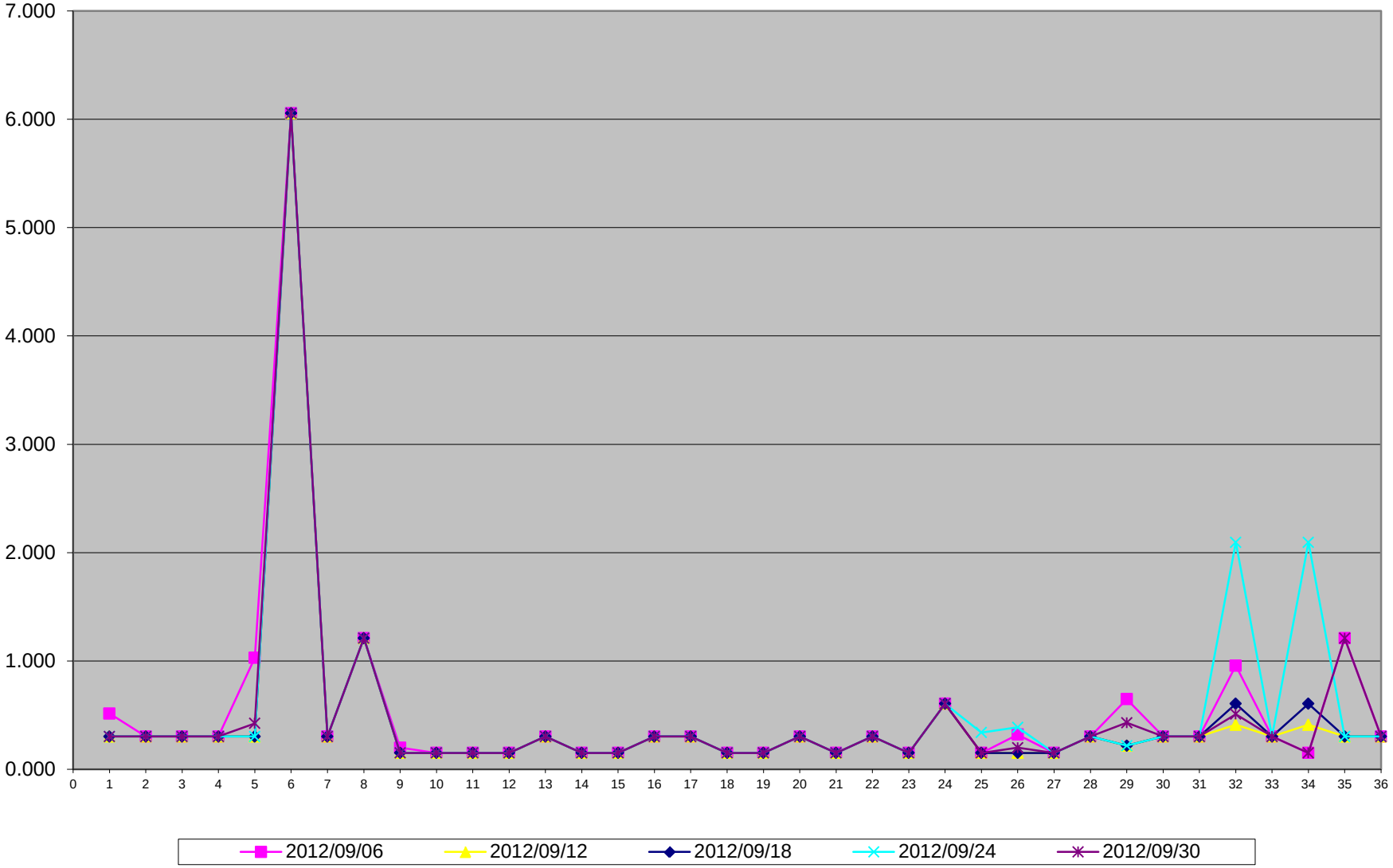
LICA- Cold Lake South Site

Unit: ng/m3

	PAHs	2012/09/06	2012/09/12	2012/09/18	2012/09/24	2012/09/30
	Sample Volume (unit: m3)	330.33	330.33	330.34	330.33	330.33
1	1-Methylnaphthalene	0.515	0.303	0.303	0.303	0.303
2	1-Methylphenanthrene	0.303	0.303	0.303	0.303	0.303
3	2-Chloronaphthalene	0.303	0.303	0.303	0.303	0.303
4	2-Methlyanthracene	0.303	0.303	0.303	0.303	0.303
5	2-Methylnaphthalene	1.029	0.303	0.303	0.303	0.424
6	3-Methylcholanthrene	6.054	6.054	6.054	6.054	6.054
7	7,12-Dimethylbenzo(a)anthracene	0.303	0.303	0.303	0.303	0.303
8	9,10-Dimethylanthracene	1.211	1.211	1.211	1.211	1.211
9	Acenaphthene	0.200	0.151	0.151	0.151	0.151
10	Acenaphthylene	0.151	0.151	0.151	0.151	0.151
11	Anthracene	0.151	0.151	0.151	0.151	0.151
12	Benzo(a)anthracene	0.151	0.151	0.151	0.151	0.151
13	Benzo(a)fluorene	0.303	0.303	0.303	0.303	0.303
14	Benzo(a)pyrene	0.151	0.151	0.151	0.151	0.151
15	Benzo(b)fluoranthene	0.151	0.151	0.151	0.151	0.151
16	Benzo(b)fluorene	0.303	0.303	0.303	0.303	0.303
17	Benzo(e)pyrene	0.303	0.303	0.303	0.303	0.303
18	Benzo(g,h,I)perylene	0.151	0.151	0.151	0.151	0.151
19	Benzo(k)fluoranthene	0.151	0.151	0.151	0.151	0.151
20	Biphenyl	0.303	0.303	0.303	0.303	0.303
21	Chrysene	0.151	0.151	0.151	0.151	0.151
22	Coronene	0.303	0.303	0.303	0.303	0.303
23	Dibenz(a,h)anthracene	0.151	0.151	0.151	0.151	0.151
24	Dibenzo(a,e)pyrene	0.605	0.605	0.605	0.605	0.605
25	Fluoranthene	0.151	0.151	0.151	0.339	0.151
26	Fluorene	0.321	0.151	0.151	0.387	0.200
27	Indeno(1,2,3-cd)pyrene	0.151	0.151	0.151	0.151	0.151
28	m-Terphenyl	0.303	0.303	0.303	0.303	0.303
29	Naphthalene	0.648	0.218	0.218	0.218	0.430
30	o-Terphenyl	0.303	0.303	0.303	0.303	0.303
31	Perylene	0.303	0.303	0.303	0.303	0.303
32	Phenanthrene	0.957	0.412	0.605	2.095	0.509
33	p-Terphenyl	0.303	0.303	0.303	0.303	0.303
34	Pyrene	0.151	0.412	0.605	2.095	0.151
35	Quinoline	1.211	0.303	0.303	0.303	1.211
36	Tetralin	0.303	0.303	0.303	0.303	0.303

Note: - Values were calculated by the formula of [reading (ug) x 1000 / sample volume (m3)].
- Where the analytical results are less than the minimum detection limit (MDL), the MDL has been used in calculations.
- Sample result for August 31st is not included in this monthly report because it is not available when the monthly report was preparing. The result for August 31st will be included in the following monthly report.

PAHs in ng/m3 Site: LICA - Cold Lake South



1	1-Methylnaphthalene
2	1-Methylphenanthrene
3	2-Chloronaphthalene
4	2-Methlyanthracene
5	2-Methylnaphthalene
6	3-Methylcholanthrene
7	7,12-Dimethylbenzo(a)anthracene
8	9,10-Dimethylanthracene
9	Acenaphthene
10	Acenaphthylene
11	Anthracene
12	Benzo(a)anthracene
13	Benzo(a)fluorene
14	Benzo(a)pyrene
15	Benzo(b)fluoranthene
16	Benzo(b)fluorene
17	Benzo(e)pyrene
18	Benzo(g,h,I)perylene
19	Benzo(k)fluoranthene
20	Biphenyl
21	Chrysene
22	Coronene
23	Dibenz(a,h)anthracene
24	Dibenzo(a,e)pyrene
25	Fluoranthene
26	Fluorene
27	Indeno(1,2,3-cd)pyrene
28	m-Terphenyl
29	Naphthalene
30	o-Terphenyl
31	Perylene
32	Phenanthrene
33	p-Terphenyl
34	Pyrene
35	Quinoline
36	Tetralin

Calibration Reports

Sulphur Dioxide

SO2 Calibration Report

Station Information

Calibration Date	September 11, 2012		Previous Calibration	August 7, 2012	
Company	Lakeland Community and Industry Association				
Plant / Location	LICA 1 - Cold Lake South				
Start Time (MST)	14:06		End Time (MST)	17:17	
Reason:			Monthly Calibration		
Barometric Pressure	27.79	inHg	Station Temperature	22	Deg C
Cal Gas	49.6 ppm	Gas Cyl. #	LL42502	Cal Gas Expiry date	December 29, 2013
DAS Output Voltage	0 - 10	Volts	Chart Rec. Output	NA	Volts

Equipment Information

Analyzer Make / Model:	Thermo 43i	S/N :	806528242	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	3485		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range			0 - 500	ppb				
Sample Flow / Box Temp	445	ccm	30.9	Deg C	446	ccm	31.6	Deg C
HVPS / Lamp Setting	-632		731		-632		734	
PMT / RxCell Temp	OK	Deg C	44.9	Deg C	OK	Deg C	45	Deg C
Converter / IZS Temp	NA	Deg C	45	Deg C	NA	Deg C	45.0	Deg C
Offset / Slope	6.1		1.031		6		1.031	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4997	0	0	0	N/A
	No Zero Adj			
4956	40.4	401	403	0.9952
	No Span Adj.			
4972	22.7	225	229	0.9844
4982	12.7	126	129	0.9777
4994	0	0	0	N/A
			Sum of Least Squares	0.9915
			New Correction Factor	0.9952

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.3	0.3
Auto Span	379.0	375.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9981
Current Correction Factor Before Span Adjust:	0.9952
Percent Change:	0.3%

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

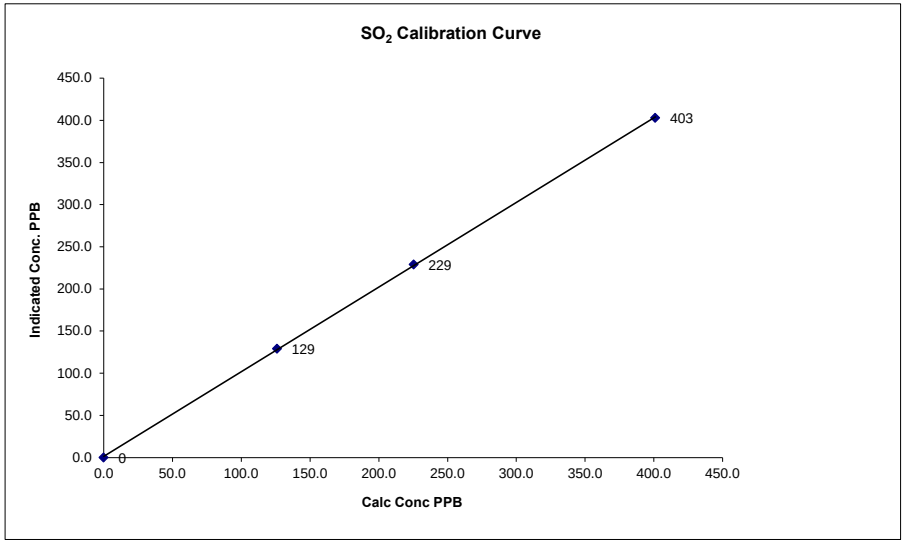
Calibration Performed by: Ting Xu

SO_2 Calibration Curve

Calibration Date	September 11, 2012		
Company	Lakeland Community and Industry Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	14:06	End Time (MST)	17:17

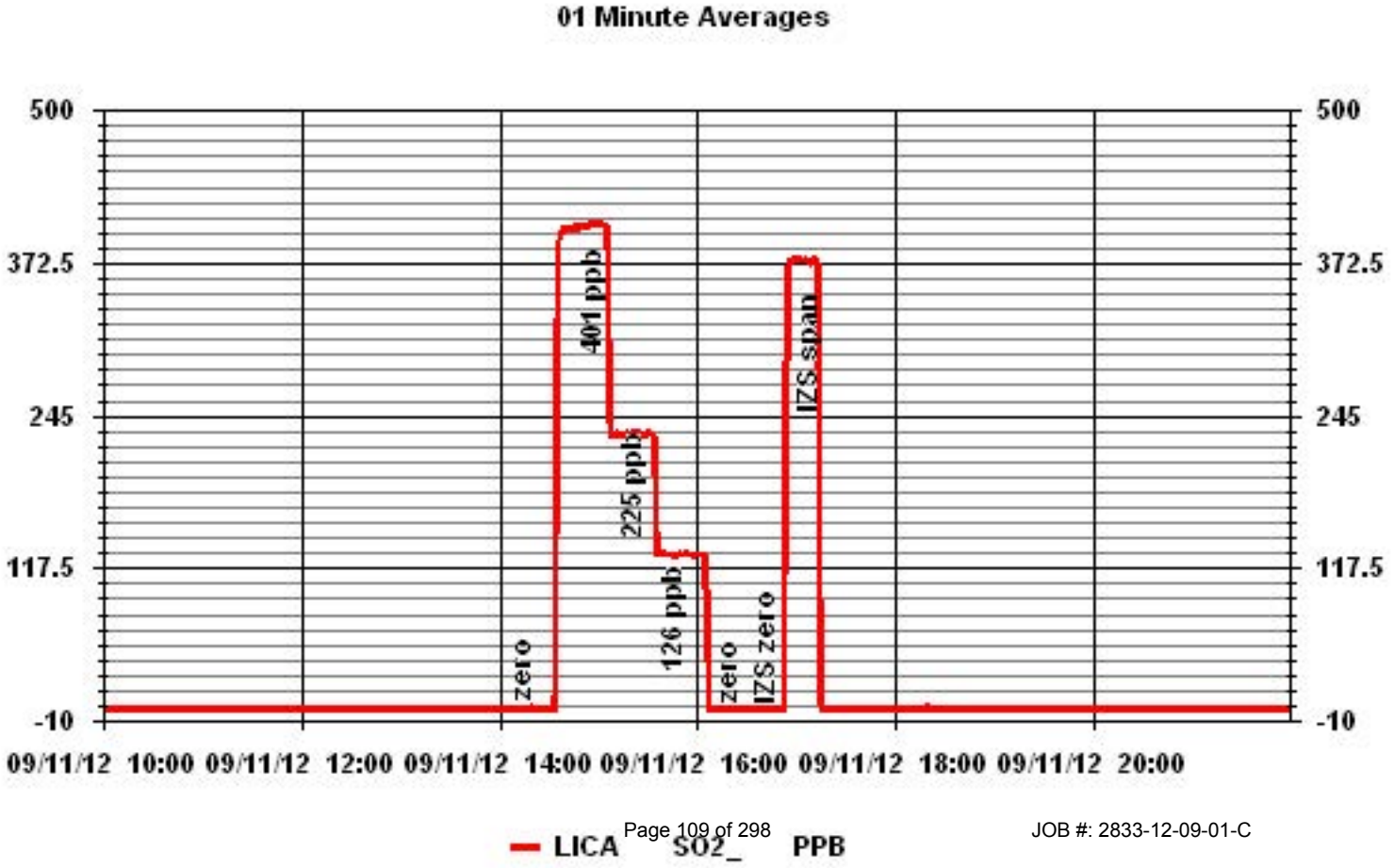
Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
126	129	0.9777
225	229	0.9844
401	403	0.9952

Correlation Coefficient	(≥ 0.995)	0.999935
Slope	(0.85 to 1.15)	1.004284
Intercept	(± 3% F.S.)	1.294659



Notes:

JOB #: 2833-12-09-01-C



JOB #: 2833-12-09-01-C

Total Reduced Sulphur

TRS Calibration Report

Station Information

Calibration Date	September 10, 2012		Previous Calibration	August 7, 2012	
Company	**Lakeland Industry & Community Association**				
Plant / Location	**LICA 1 - Cold Lake South**				
Start Time (MST)	13:07		End Time (MST)	16:32	
Reason:	As Found				
Barometric Pressure	27.59	inHg	Station Temperature	23	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 2012
DAS Output Voltage	0 - 10 Volts		Chart Rec. Output	NA	Volts

Equipment Information

Analyzer Make / Model:	Thermo 450i	S/N :	812728560	Method:	Fluorescent
Converter Make / Model:	CDN 101	S/N :	250		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	3485		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range			0 - 100	ppb				
Sample Flow / Box Temp	335	ccm	33.2	Deg C	443	ccm	31.2	Deg C
HVPS / Lamp Setting	-623.1		745		-640.5		743	
PMT / RxCell Temp	OK	Deg C	45.1	Deg C	OK	Deg C	45	Deg C
Converter / IZS Temp	810	Deg C	45	Deg C	810	Deg C	45.0	Deg C
Offset / Slope	13.7		1.291		12.9		1.001	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	-1	N/A
	No Zero Adj			
4960	40.0	80	76	1.0526
			Sum of Least Squares	
			New Correction Factor	1.0526

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.4	0.0
Auto Span	50.3	42.7
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0526
Percent Change:	-5.0%

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

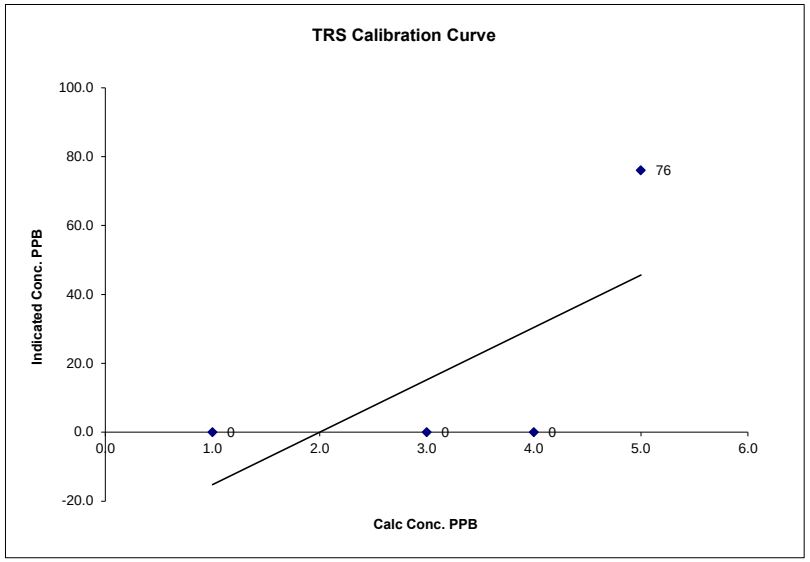
Following the A/F points, replaced the flow filter, adjusted PMT voltage, adjusted the slope, let the analyzer stabilize for a night. Will do a calibration tomorrow.

Calibration Performed by: Ting Xu

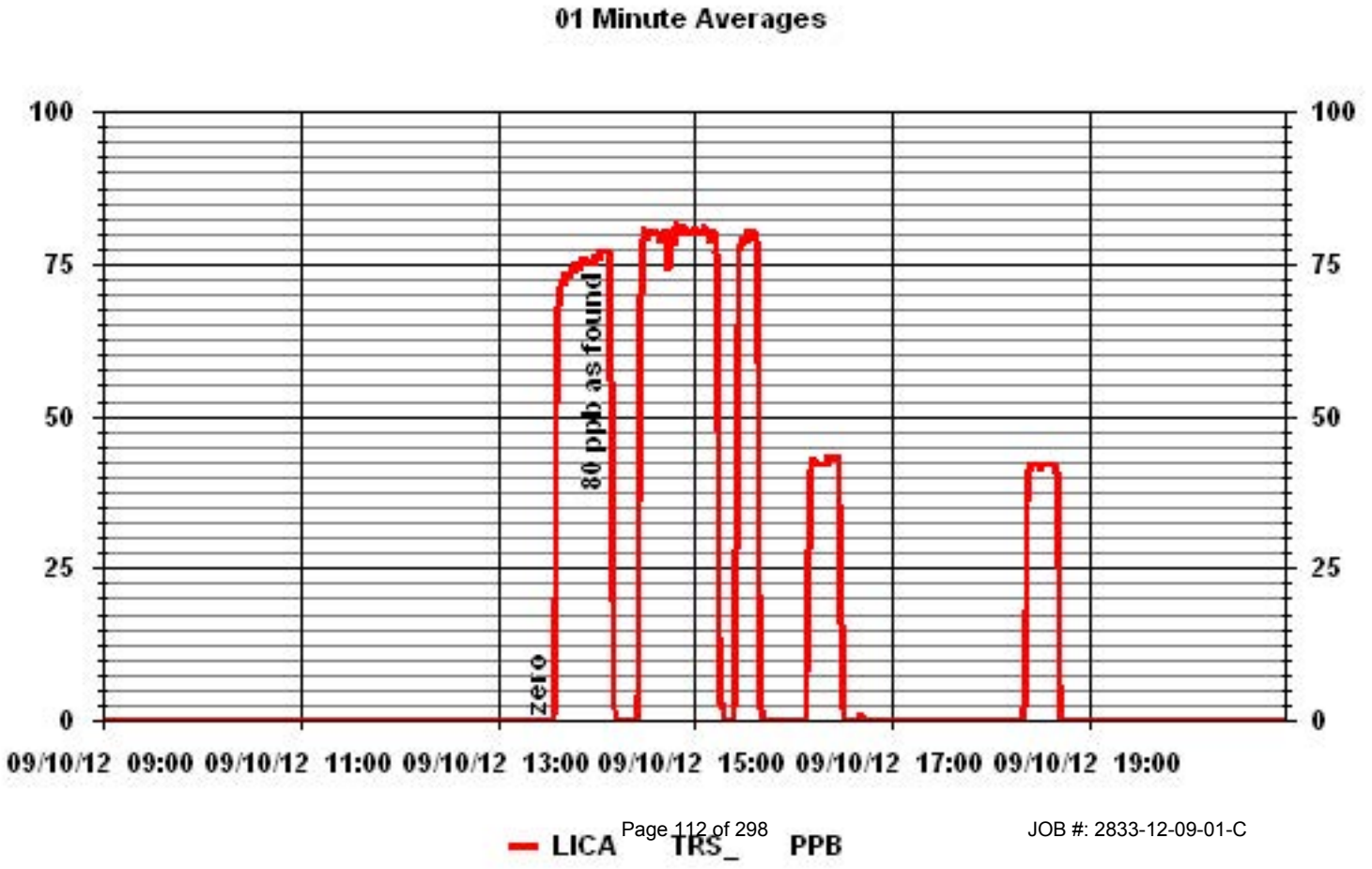
TRS Calibration Curve

Calibration Date	September 10, 2012				
Company	**Lakeland Industry & Community Association**				
Plant / Location	**LICA 1 - Cold Lake South**				
Start Time (MST)	13:07		End Time (MST)	16:32	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor		
	0	n/a	Correlation Coefficient (≥ 0.995)	#DIV/0!
	0	#DIV/0!	Slope (0.85 to 1.15)	#DIV/0!
	0	#VALUE!	Intercept (± 3% F.S.)	#DIV/0!
80	76	#VALUE!		



Notes:



JOB #: 2833-12-09-01-C

TRS Calibration Report

Station Information

Calibration Date	September 11, 2012		Previous Calibration	September 10, 2012	
Company	**Lakeland Industry & Community Association**				
Plant / Location	**LICA 1 - Cold Lake South**				
Start Time (MST)	7:52		End Time (MST)	11:33	
Reason:	Post Repair Calibration				
Barometric Pressure	27.66	inHg	Station Temperature	23	Deg C
Cal Gas	10 ppm	Gas Cyl. #	LL42648	Cal Gas Expiry date	December 27, 2012
DAS Output Voltage	0 - 10	Volts	Chart Rec. Output	NA	Volts

Equipment Information

Analyzer Make / Model:	Thermo 450i	S/N :	812728560	Method:	Fluorescent
Converter Make / Model:	CDN 101	S/N :	250		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	3485		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range	0 - 100 ppb							
Sample Flow / Box Temp	449	ccm	33.7	Deg C	449	ccm	33.8	Deg C
HVPS / Lamp Setting	-640.5		746		-640.5		745	
PMT / RxCell Temp	OK	Deg C	45	Deg C	OK	Deg C	45.2	Deg C
Converter / IZS Temp	810	Deg C	45	Deg C	810	Deg C	45.0	Deg C
Offset / Slope	12.8		1.001		13		1.014	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	N/A
	No Zero Adj			
4960	40.0	80	80	1.0000
	No Span Adj.			
4976	20.0	40	41	0.9764
4987	11.5	23	24	0.9586
4996	0.0	0	0	N/A
			Sum of Least Squares	0.9928
			New Correction Factor	1.0000

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.1	0.2
Auto Span	42.2	42.4
Sample Lines Connected		YES

Percent Change

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

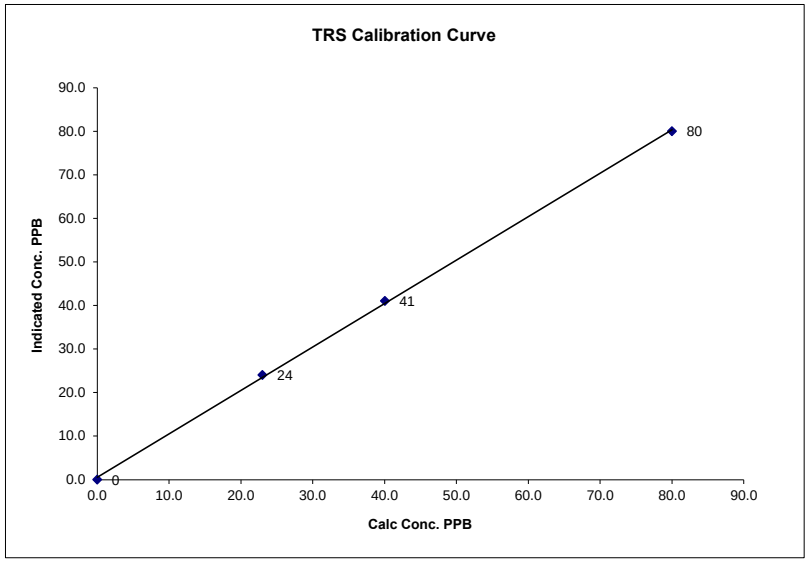
Notes: **N/A : Not applicable**

Calibration Performed by: Ting Xu

TRS Calibration Curve

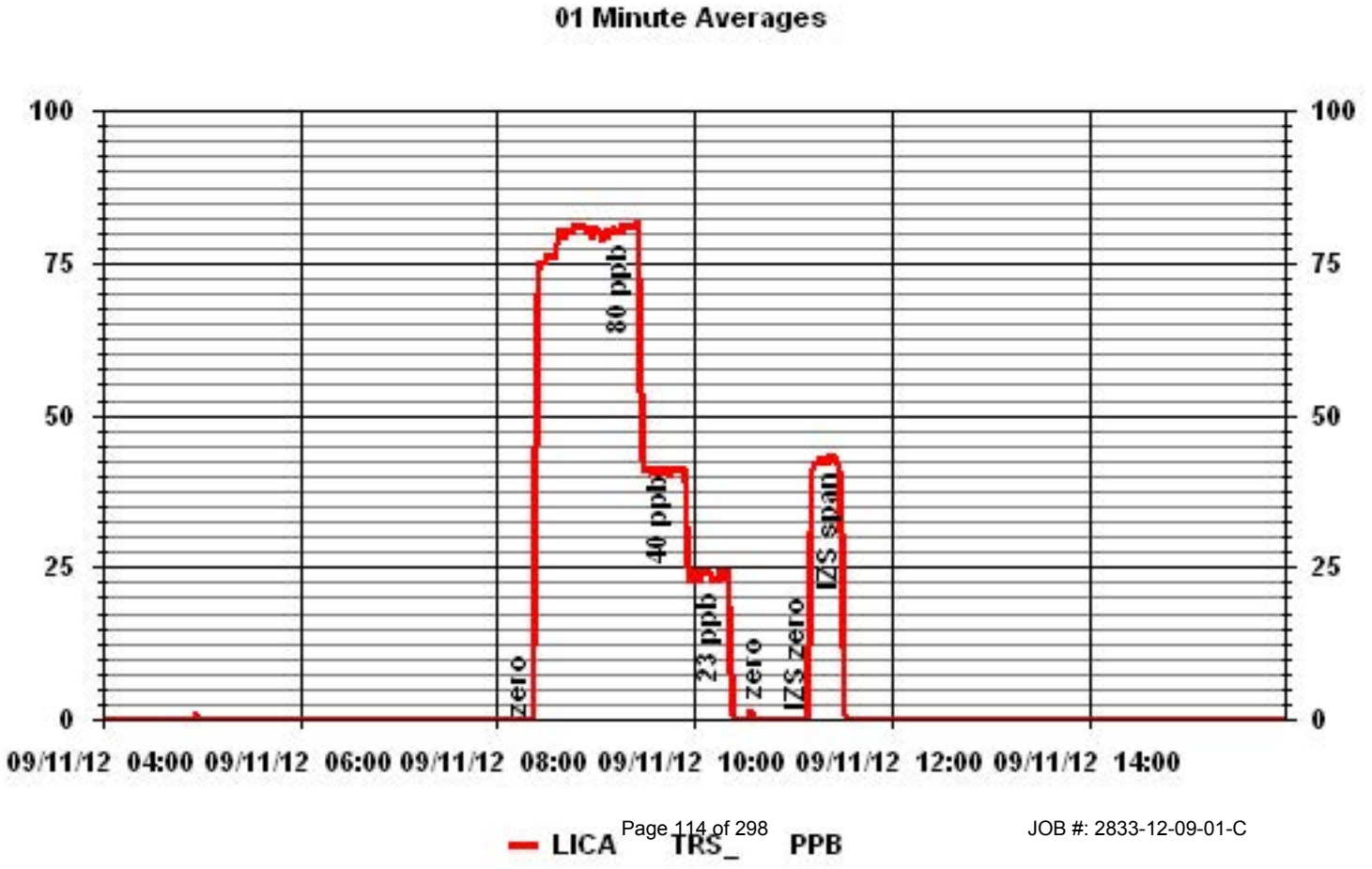
Calibration Date	September 11, 2012		
Company	**Lakeland Industry & Community Association**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	7:52	End Time (MST)	11:33

Calculated Conc. ppb	Indicated Response ppb	Correction Factor			
0	0	n/a	Correlation Coefficient	(≥ 0.995)	0.999723
23	24	0.0000	Slope	(0.85 to 1.15)	0.997504
40	41	0.5611	Intercept	(± 3% F.S.)	0.579534
80	80	0.5004			



Notes:

JOB #: 2833-12-09-01-C



JOB #: 2833-12-09-01-C

Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	September 11, 2012		Previous Calibration	August 3, 2012	
Company:	**Lakeland Industry and Community Association**				
Plant / Location:	**LICA1/Cold Lake**				
Start Time (MST)	10:56		End Time (MST)	14:42	
Reason:	Monthly Calibration				
Barometric Pressure:	27.73	inHg	Station Temperature:	24	Deg C
Calibrator:	API 700		S/N:	831	
Cal Gas Concentration:	CH4 600 PPM		C3H8	204 PPM	
	TOTAL CH4 1161.0 PPM		Gas Cyl. #	LL55310	Cal Gas Expiry Date: September 9, 2013
DAS make & Model:	ESC 8832		S/N :	3485	
Chart Recorder:	NA		S/N:	NA	
Output Voltage Range:	0 - 10	VDC	Chart Speed:	NA	mm/hr

Analyzer Information

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

Analyzer Settings

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

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0.0	0.0	-0.2	NA
2000	0.0	0.0	0.0	NA
2000	74.0	41.4	41.0	1.0103
2000	74.0	41.4	41.5	0.9982
2000	37.0	21.1	20.8	1.0139
2000	20.0	11.5	11.4	1.0083
2000	0.0	0.0	0.0	NA
			New Correction Factor:	0.9982

Percent Change

Previous Calibration Correction Factor:	1.0030
Current Correction Factor Before Span Adjust:	1.0103
Percent Change:	-0.7%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.2	0.0
Auto Span	33.5	34.1
Sample Lines Connected		**YES**

Cylinder Pressures

Span 1100 psi Hydrogen 1500 psi Zero Air 32 psi

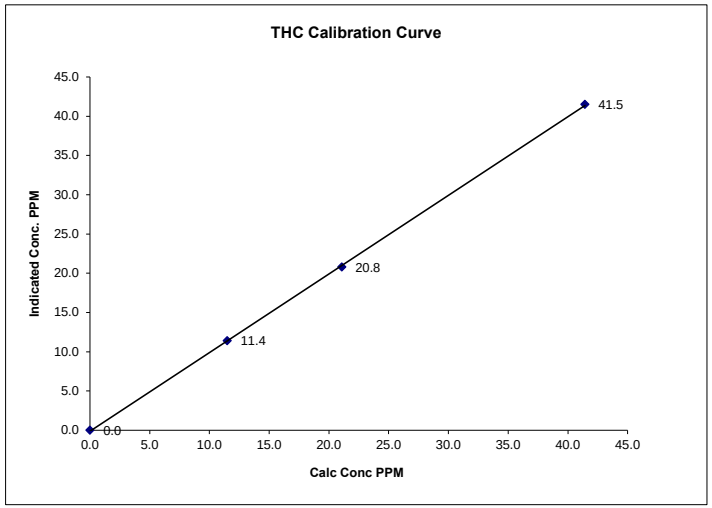
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

THC Calibration Curve

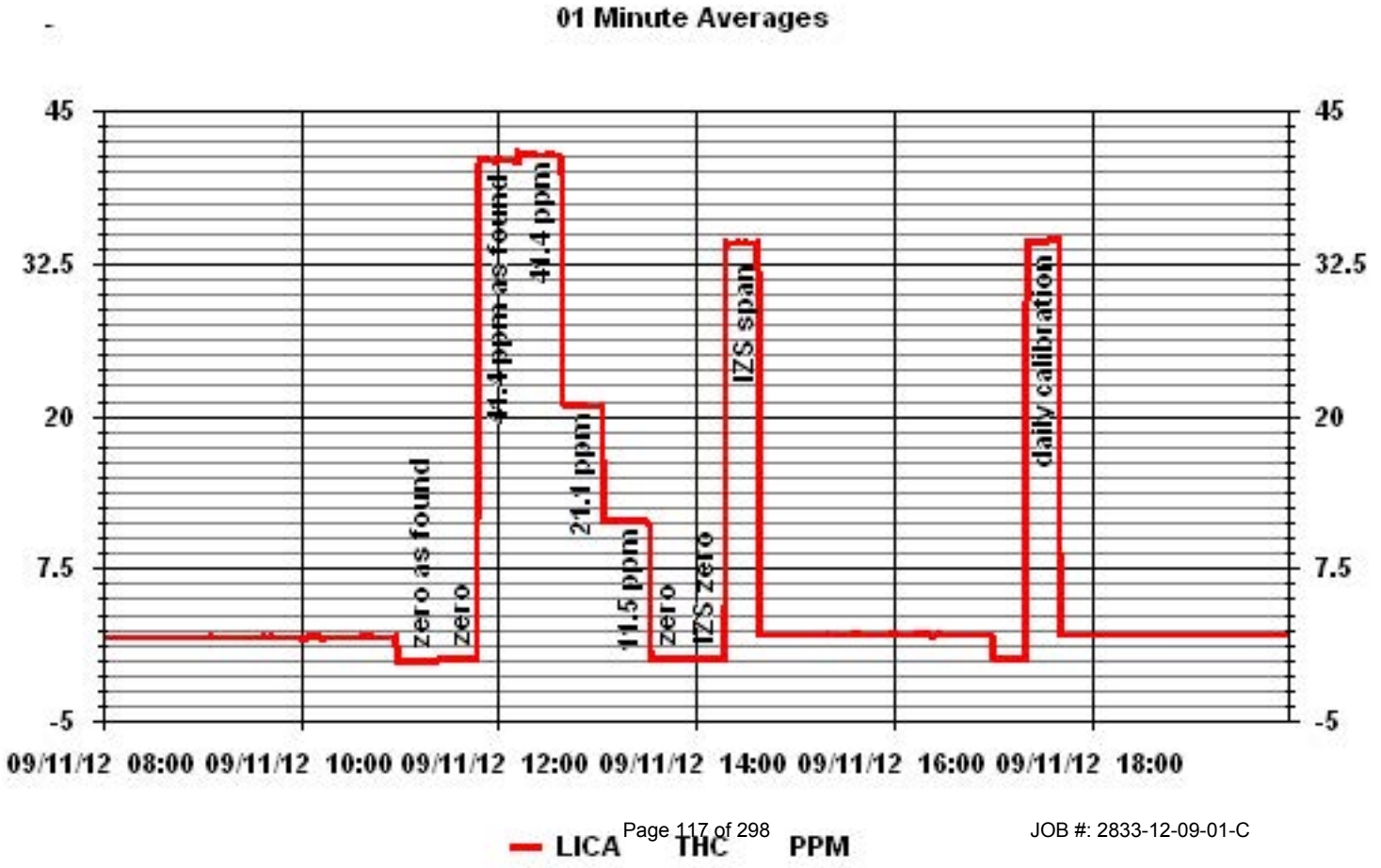
Calibration Date	September 11, 2012				
Company	**Lakeland Industry and Community Association**				
Plant / Location	**LICA1/Cold Lake**				
Start Time (MST)	10:56	End Time	(MST)	14:42	

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999923
			Slope (0.85 to 1.15)	1.001792
0.0	0.0	NA	Intercept (± 3% F.S.)	-0.11009
11.5	11.4	1.0083		
21.1	20.8	1.0139		
41.4	41.5	0.9982		



Notes:

JOB #: 2833-12-09-01-C



JOB #: 2833-12-09-01-C

Particulate Matter 2.5

TEOM 1405F Audit

Station		Audit Transfer Standard	
Date:	September 19, 2012	Make/Model:	Streamline FTS
Station Name:	LICA 1	Serial Number:	Hi 091001, Lo 091099
Location:	Cold Lake South	Cell s/n:	NA
Operator:	LICA	Thermometer s/n:	Station Temp Sensor

Sampler		Set-up and current Sampler readings	
Make/Model	Thermo Scientific Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	AMU 1775	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A201620804	Filter Load (%)	18.9%
Firmware Ver.	1.52	K_o Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (^oC)	17.6
		Press (ATM)	0.937

Conversion from mmHg or "Hg to ATM (Atmospheres)

ATM = (mmHg) X (1.316 X 10 -3) or ATM = ("Hg) X (3.34207 X 10 -2)

Note: Tolerances are noted as BOLD in Brackets

Audit

Status

Noise **<0.10*u* g**	0.004	Warnings	None
Pump Vacuum **< 0.40 atm**	0.32	Pump Guage (in Hg)	NA

Temperature/Pressure

Measured Temp **(± 2 °C)**	17.44	Δ **°C**	0.16
Measured Press **(± 0.01atm)**	0.937	**DATM**	0.000

Flow Audit

Indicated Main Flow (l/min)	3.00	Main Flow Drift **(±10.0%)**	0.96%
Measured Main Flow (l/min)	3.09	Flow Adjusted to Measured?	YES
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift **(±10.0%)**	0.28%
Measured Bypass Flow (l/min)	13.34	Flow Adjusted to Measured?	YES

Leak Check

Main **(< 0.15 l/min)**	Base=-0.01 Ref=0.01
Aux **(< 0.6 l/min)**	Base=-0.01 Ref=0.01

Instrument Setup

Flow Control = Active

Report Conditions = Actual

K_o Factor

Measured	NA
K_o Difference **(± 2.5%)**	NA

Start Time: 14:50 **Finish Time:** 17:46

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

New Filter Loading %: 17.7%

Comments:

Auditor/s: Ting Xu

JOB #: 2833-12-09-01-C

Nitrogen Dioxide

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	September 11, 2012		Previous Calibration	August 3, 2012	
Company	LICA		Plant/Location	Cold Lake South	
Start Time (MST)	7:52		End Time (MST)	13:46	
Reason:	Monthly Calibration				
Barometric Pressure	24.66 inHg	Station Temperature	23 Deg C	MFCF	0
Cal Gas Concentration	NOx 50.1 ppm	NO 50.1 ppm	Cal Gas Expiry date	December 29, 2013	
Cal Gas Cylinder #	LL42502				
DAS Output Voltage	0 - 10 Volts		Chart Rec. Output	NA Volts	

Equipment Information

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

Analyzer Settings

	Before Calibration					After Calibration			
Concentration Range					0 - 500 ppb				
Sample Flow/Conv. Temp	722	ccm	317	Deg C		726	ccm	317	Deg C
Ozone Flow / Vacuum	OK	ccm	177.0	"Hg-A		OK	ccm	178	"Hg-A
HVPS / A ZERO	-821	Volts	NA	MV		-821	Volts	NA	MV
Rx/ Temp / PMT Temp	49.8	Deg C	-2.5	Deg C		50.0	Deg C	-2.5	Deg C
Box Temp / IZS Temp	30.4	Deg C	OK	Deg C		30.9	Deg C	OK	Deg C
Offset	3.9	NOx	3.6	NO		4	NOx	3.7	NO
Slope	1.005	NOx	0.933	NO		1.002	NOx	0.956	NO
NO_2 COEF / Conv Efficency	0.998	NO2	NA			0.998	NO2	NA	

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4995	0.0	NA	0	0	NA	0	0	0	NA	NA
	No Zero Adj									
4955	39.8	NA	399	399	NA	391	390	1	1.0210	1.0236
4955	39.8	NA	399	399	NA	399	399	0	1.0000	1.0000
4976	19.9	NA	200	200	NA	200	200	0	1.0000	1.0000
4985	9.9	NA	99	99	NA	101	101	0	0.9832	0.9832
4995	0.0	NA	0	0	NA	0	0	0	NA	NA

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO_2 Correction Factor	NO2 Conv Efficency
			NOx	NO	NO2	NOx	NO	NO2		
4954	39.8	NA	399	399	NA	399	399	0	NA	NA
4954	39.8	350	399	NA	311	400	88	312	0.9968	100.32%
	No Adj. Needed									
4954	39.8	150	399	NA	134	400	265	136	0.9853	101.49%
4954	39.8	75	399	NA	66	400	333	67	0.9851	101.52%

Linearity			Sum of Least Squares	NOx=	0.999	NO=	0.999	NO2= 0.995
OK?	Yes	No	Correction Factors:	NOx=	1.0000	NO=	1.0000	NO2= 0.9968
						Average Converter Efficiency=		101.11%

IZS Calibration Data

	Before Calibration					After Calibration			
Auto Zero	0.1	NOx	0.2	NO2		0.1	NOx	0.2	NO2
Auto Span	380	NOx	376	NO2		389	NOx	385	NO2
					Sample Lines Connected	YES			

Percent Change from Previous Calibration	NOx	-2.1%	NO	-2.3%	NO2	0.3%

Notes

NA : Not Applicable

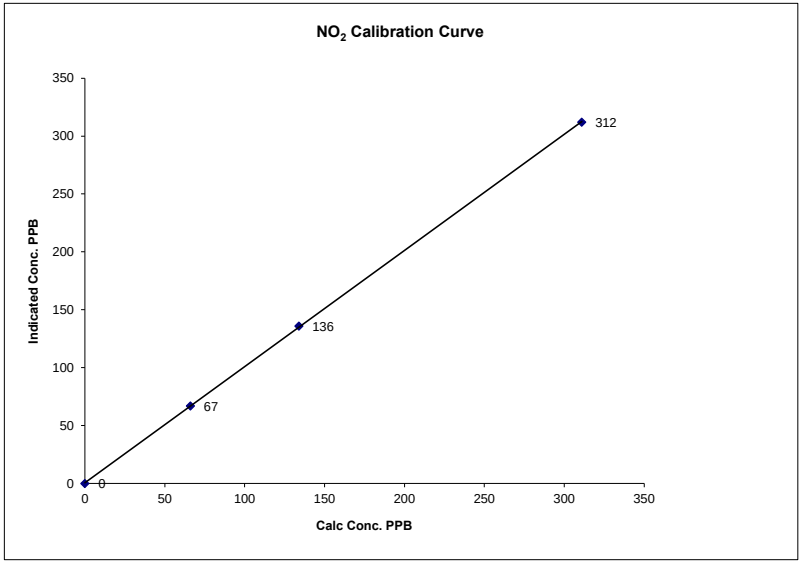
Calibration Performed by: Ting Xu

NO_2 Calibration Curve

Calibration Date	September 11, 2012		
Company	LICA		
Plant / Location	Cold Lake South		
Start Time (MST)	7:52	End Time (MST)	13:46

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	N/A
66	67	0.9851
134	136	0.9853
311	312	0.9968

Correlation Coefficient	(≥ 0.995)	0.999969
Slope	(0.85 to 1.15)	1.002493
Intercept	(± 3% F.S.)	0.68153

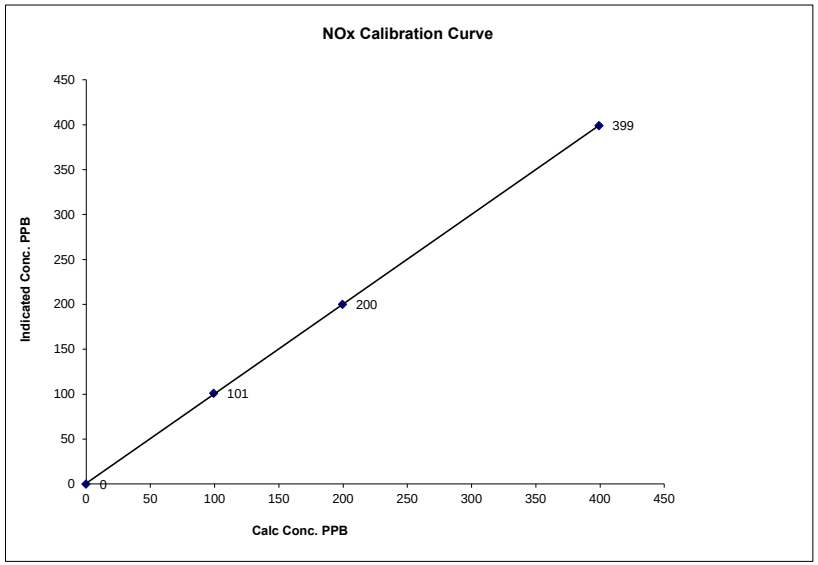


Notes:

NOx Calibration Curve

Calibration Date	September 11, 2012				
Company	LICA				
Plant / Location	Cold Lake South				
Start Time (MST)	7:52	End Time (MST)	13:46		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999978
			Slope	(0.85 to 1.15)	0.998115
0	0	N/A	Intercept	(± 3% F.S.)	0.81088
99	101	0.9832			
200	200	0.9978			
399	399	1.0005			

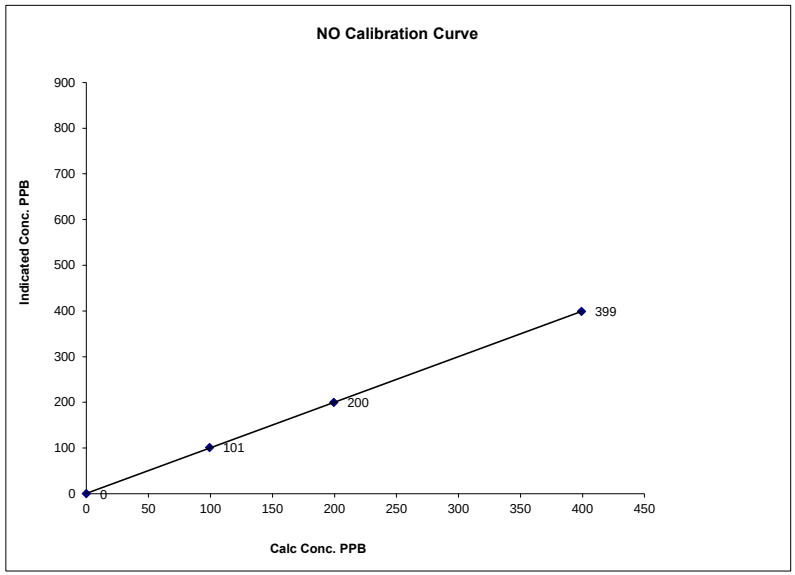


Notes:

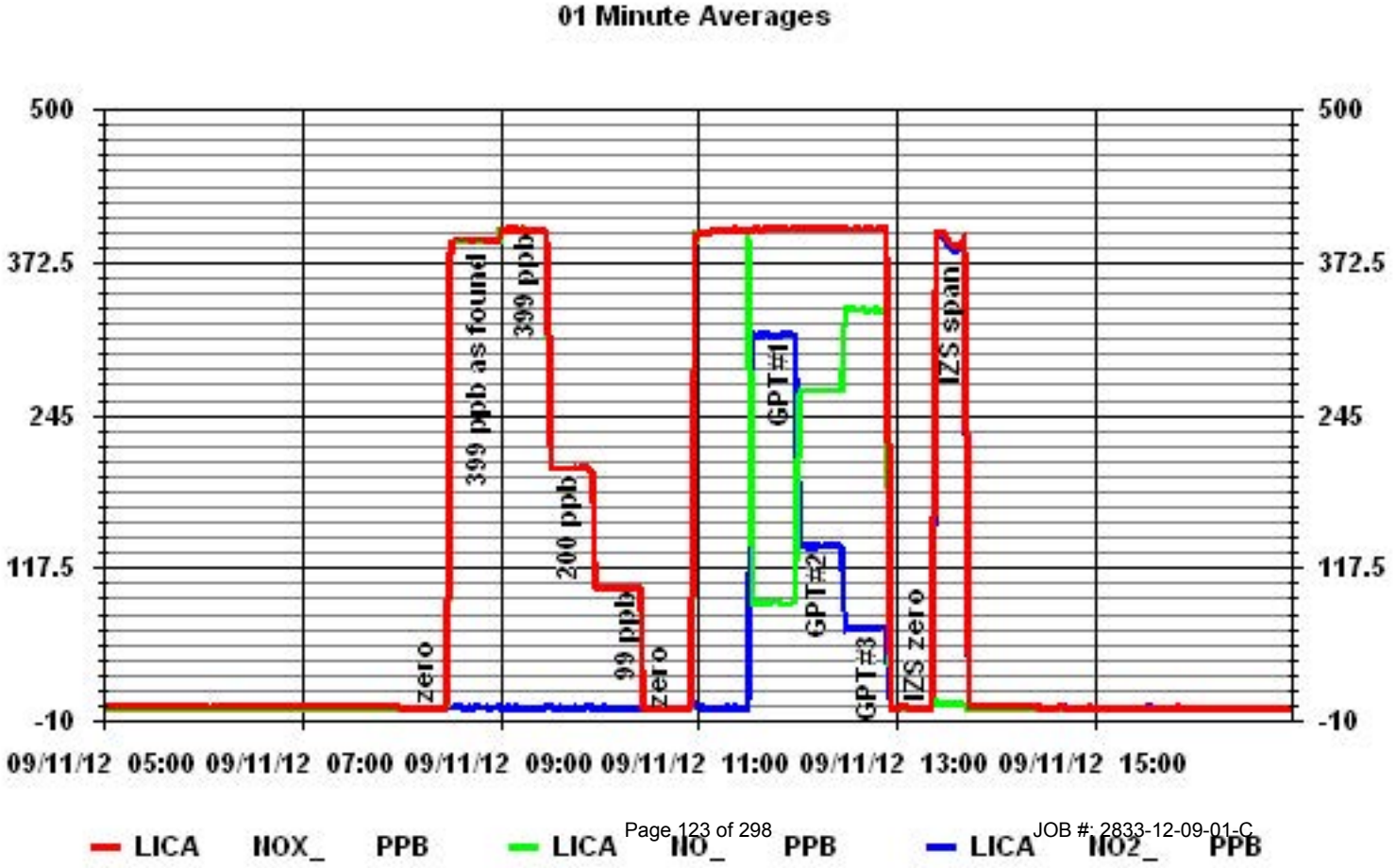
NO Calibration Curve

Calibration Date	September 11, 2012				
Company	LICA				
Plant / Location	Cold Lake South				
Start Time (MST)	7:52	End Time (MST)	13:46		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999978
			Slope	(0.85 to 1.15)	0.994068
0	0	N/A	Intercept	(± 3% F.S.)	1.0876
99	101	0.9832			
200	200	0.9978			
399	399	1.0005			



Notes:


01 Minute Averages
500
372.5
245
117.5
-10
zero
399 ppb as found
399 ppb
200 ppb
99 ppb
zero
GPT#1
GPT#2
GPT#3
IZS zero
IZS span
09/11/12 05:00
09/11/12 07:00
09/11/12 09:00
09/11/12 11:00
09/11/12 13:00
09/11/12 15:00
LICA NOX_ PPB
LICA NO_ PPB
LICA NO2_ PPB

Ozone

O_3 Calibration Report

Station Information

Calibration Date	September 11, 2012	Previous Calibration	August 7, 2012
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	13:04	End Time (MST)	16:57
Reason:		Monthly Calibration	
Barometric Pressure	27.78 inHg	Station Temperature	22 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	700419951	Method:	Photometric
Calibrator Make / Model:	Environics 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	3485		

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 -500 ppb			
Cell A Flow / Cell B Flow	701 LPM	747 LPM	710 LPM	753 LPM
O_3 Set Level	692 mmHg		708 mmHg	
Bench Lamp	53.5 Deg C		53.6 Deg C	
O3 Lamp / Box Temp	67.5 Deg	29.3 Deg C	67.6 Deg C	30 Deg C
Offset / Slope	-0.1	1.021	-0.1	1.039

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	NA
	No Zero Adj			
4994	350	311	305	1.0197
4994	350	311	312	0.9968
4994	150	134	135	0.9926
4994	75	66	67	0.9851
4994	0	0	0	NA
			Sum of Least Squares	0.9957
			New Correction Factor	0.9968

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.1	0.1
Auto Span	269	277
Sample Lines Connected		YES
Previous Calibration Correction Factor:		1.0032
Current Correctio Factor Before Span Adjust:		1.0197
Percent Change:		-1.6%

Note: **NA : Not Applicable**

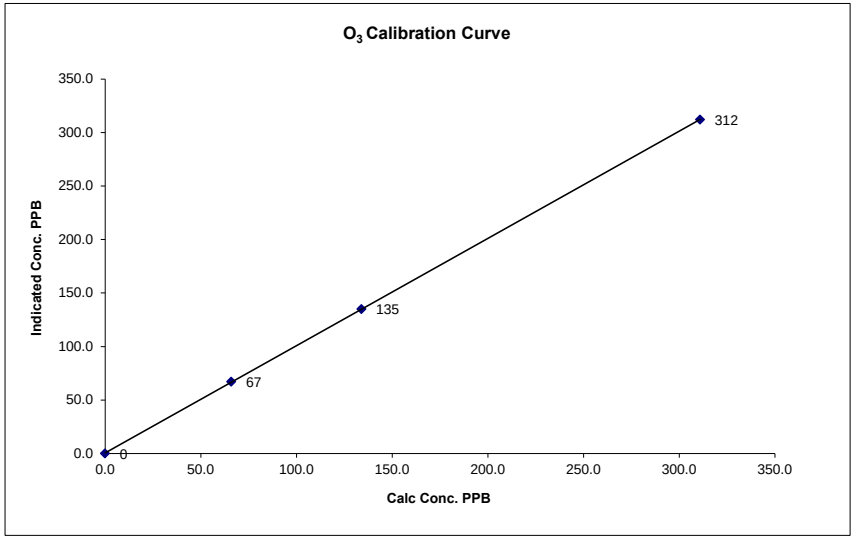
Calibration Performed by: Ting Xu

O_3 Calibration Curve

Calibration Date	September 11, 2012
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	13:04
End Time (MST)	16:57

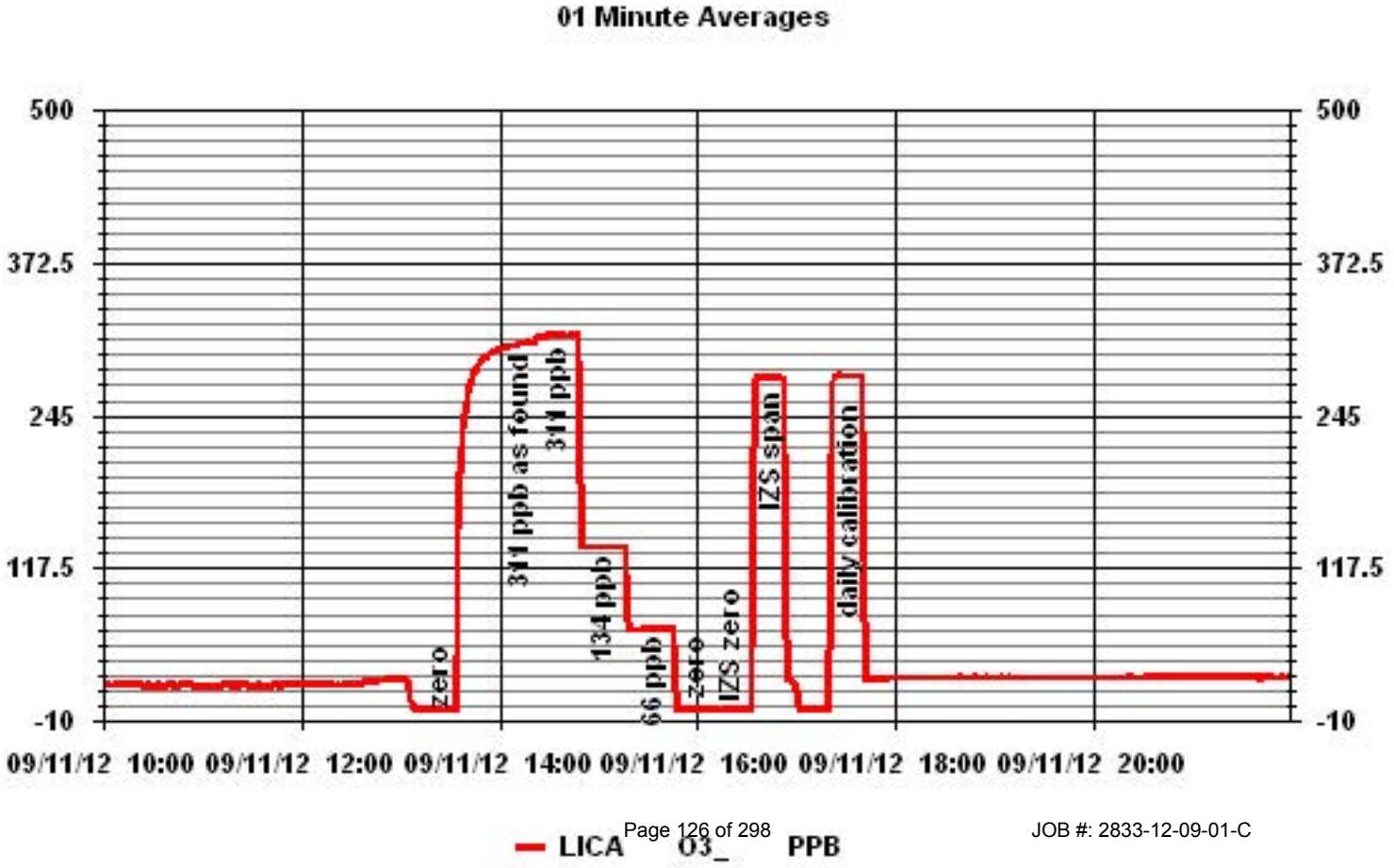
Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
66	67	0.9851
134	135	0.9926
311	312	0.9968

Correlation Coefficient	(≥ 0.995)	0.999992
Slope	(0.85 to 1.15)	1.002377
Intercept	(± 3% F.S.)	0.446386



Notes:

JOB #: 2833-12-09-01-C



JOB #: 2833-12-09-01-C

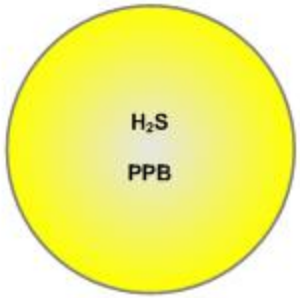
Passive Bubble Maps

Lakeland Industry & Community Association
H_2S Passive Bubble Map

SEPTEMBER 2012

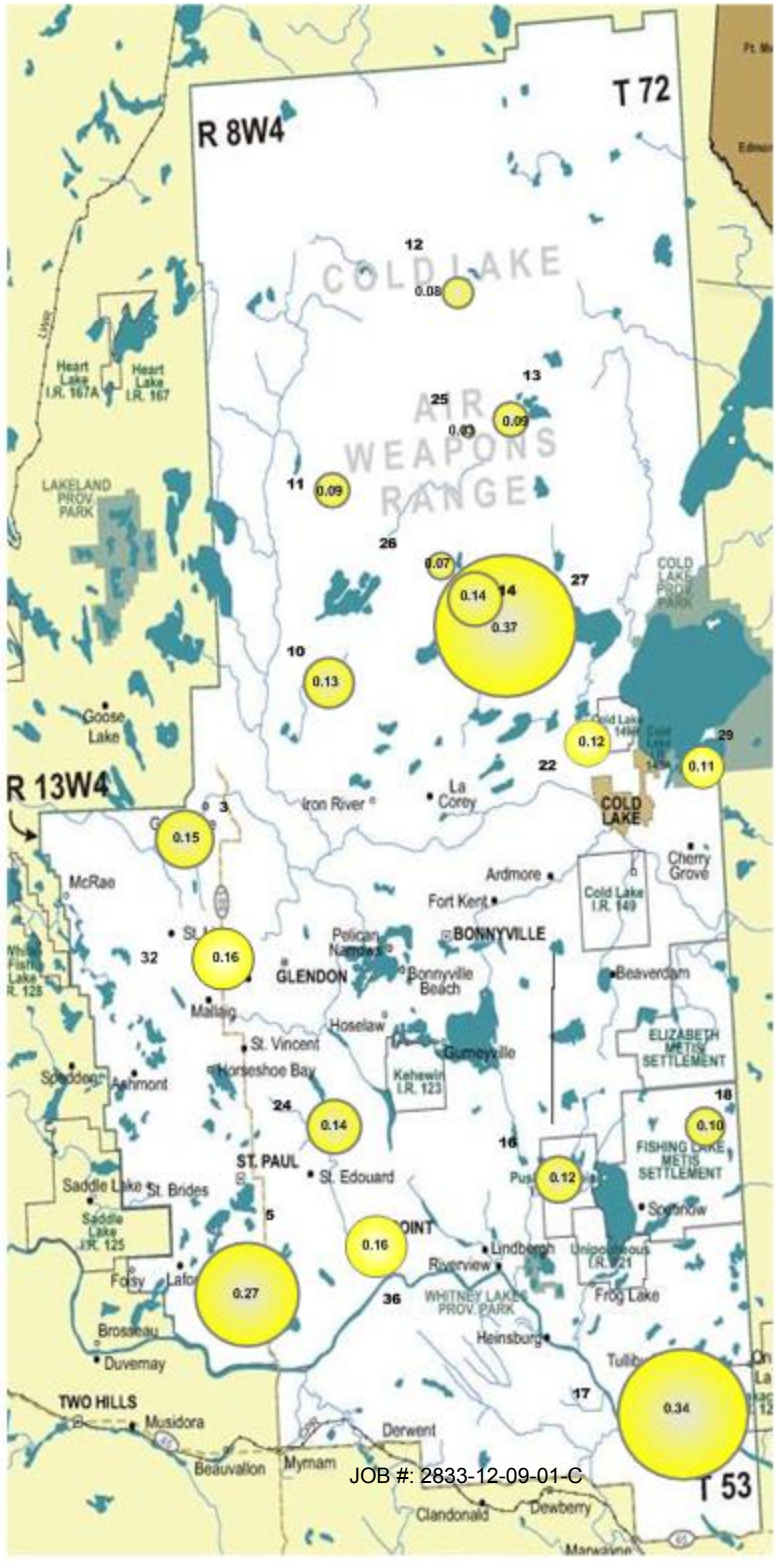
PASSIVE STATIONS

		DUPLICATE
3 – Therien	0.15 PPB	NA
5 – Lake Eliza	0.27 PPB	NA
10 – La Corey	0.13 PPB	NA
11 – Wolf Lake	0.09 PPB	0.09 PPB
12 – Foster Creek	0.09 PPB	0.07 PPB
13 – Primrose	0.09 PPB	NA
14 – Maskwa	0.14 PPB	NA
16 – Frog Lake	0.12 PPB	NA
17 – Clear Range	0.34 PPB	NA
18 – Fishing Lake	0.10 PPB	NA
22 – Cold Lake South	0.12 PPB	NA
24 – Fort George	0.14 PPB	NA
25 – Burnt Lake	0.08 PPB	NA
26 – Mahihkan	0.07 PPB	NA
27 – Mahkeses	0.37 PPB	NA
29 – Cold Lake South 2	0.11 PPB	NA
32 – St. Lina	0.16 PPB	NA
36 – Elk Point	0.16 PPB	NA



Summary

Minimum : 0.07 PPB – Mahihkan
Maximum: 0.37 PPB –Mahkeses
Average: 0.15 PPB *Includes Duplicates



JOB #: 2833-12-09-01-C

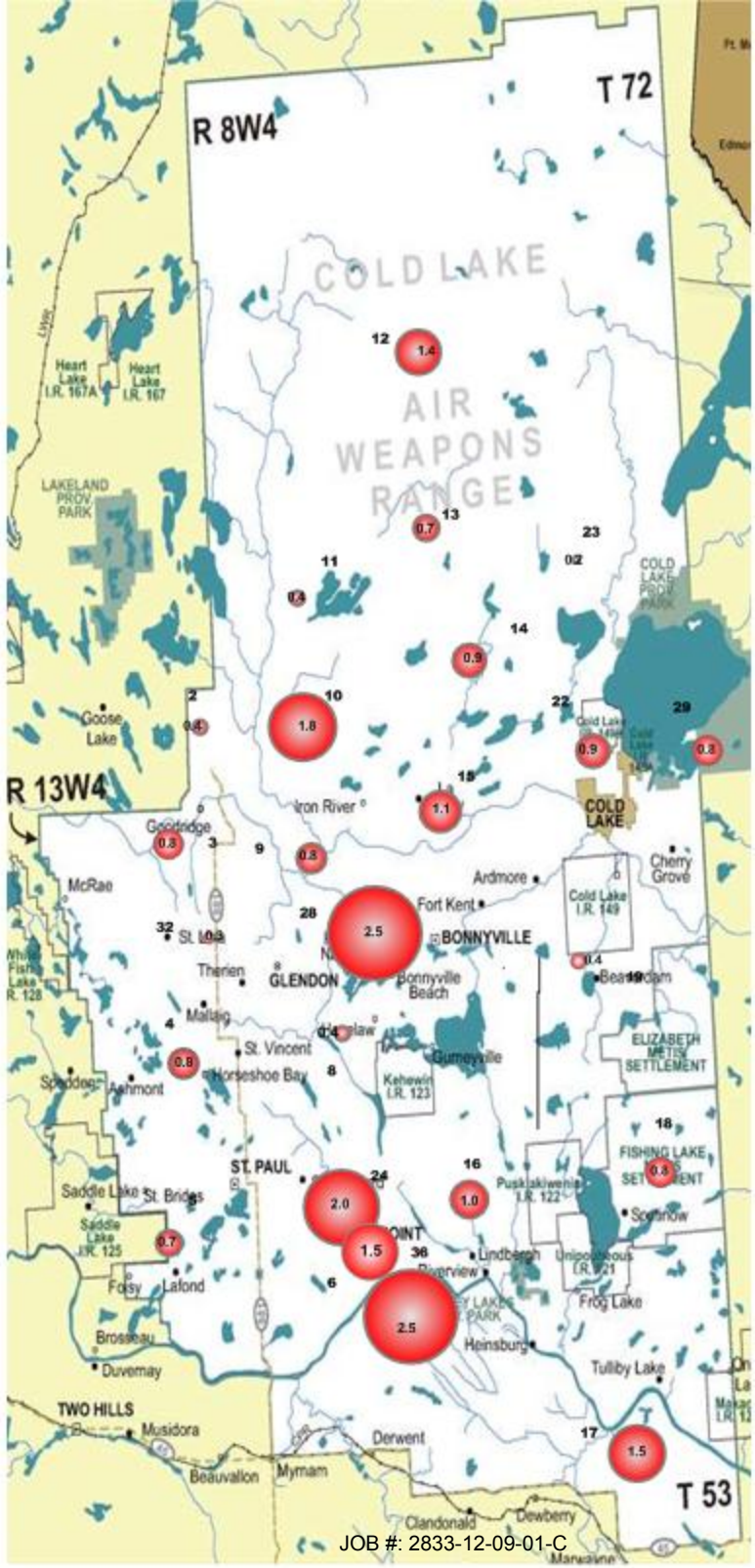
Lakeland Industry & Community Association
NO_2 Passive Bubble Map

SEPTEMBER 2012

PASSIVE STATIONS		DUPLICATE
2 – Sand River	0.4 PPB	NA
3 – Therien	0.8 PPB	NA
4 – Flat Lake	0.8 PPB	NA
5 – Lake Eliza	0.7 PPB	NA
6 – Telegraph Creek	1.9 PPB	NA
8 – Muriel-Kehewin	0.4 PPB	NA
9 – Dupre	0.8 PPB	NA
10 – La Corey	1.8 PPB	NA
11 – Wolf Lake	0.4 PPB	NA
12 – Foster Creek	1.4 PPB	NA
13 – Primrose	0.7 PPB	NA
14 – Maskwa	0.9 PPB	NA
15 – Ardmore	1.1 PPB	NA
16 – Frog Lake	1.0 PPB	NA
17 – Clear Range	1.5 PPB	NA
18 – Fishing Lake	0.8 PPB	NA
19 – Beaverdam	0.4 PPB	NA
22 – Cold Lake South	0.9 PPB	NA
23 – Medley-Martineau	0.2 PPB	NA
24 – Fort George	2.0 PPB	NA
28 – Town of Bonnyville	2.5 PPB	2.4 PPB
29 – Cold Lake South 2	0.7 PPB	0.8 PPB
32 – St. Lina	0.3 PPB	NA
36 – Elk Point	2.5 PPB	NA

Summary

Minimum : 0.2 PPB – Medley-Martineau
Maximum: 2.5 PPB – Town of Bonnyville and Elk Point
Average: 1.0 PPB *Includes Duplicates



JOB #: 2833-12-09-01-C

Lakeland Industry & Community Association
O_3 Passive Bubble Map

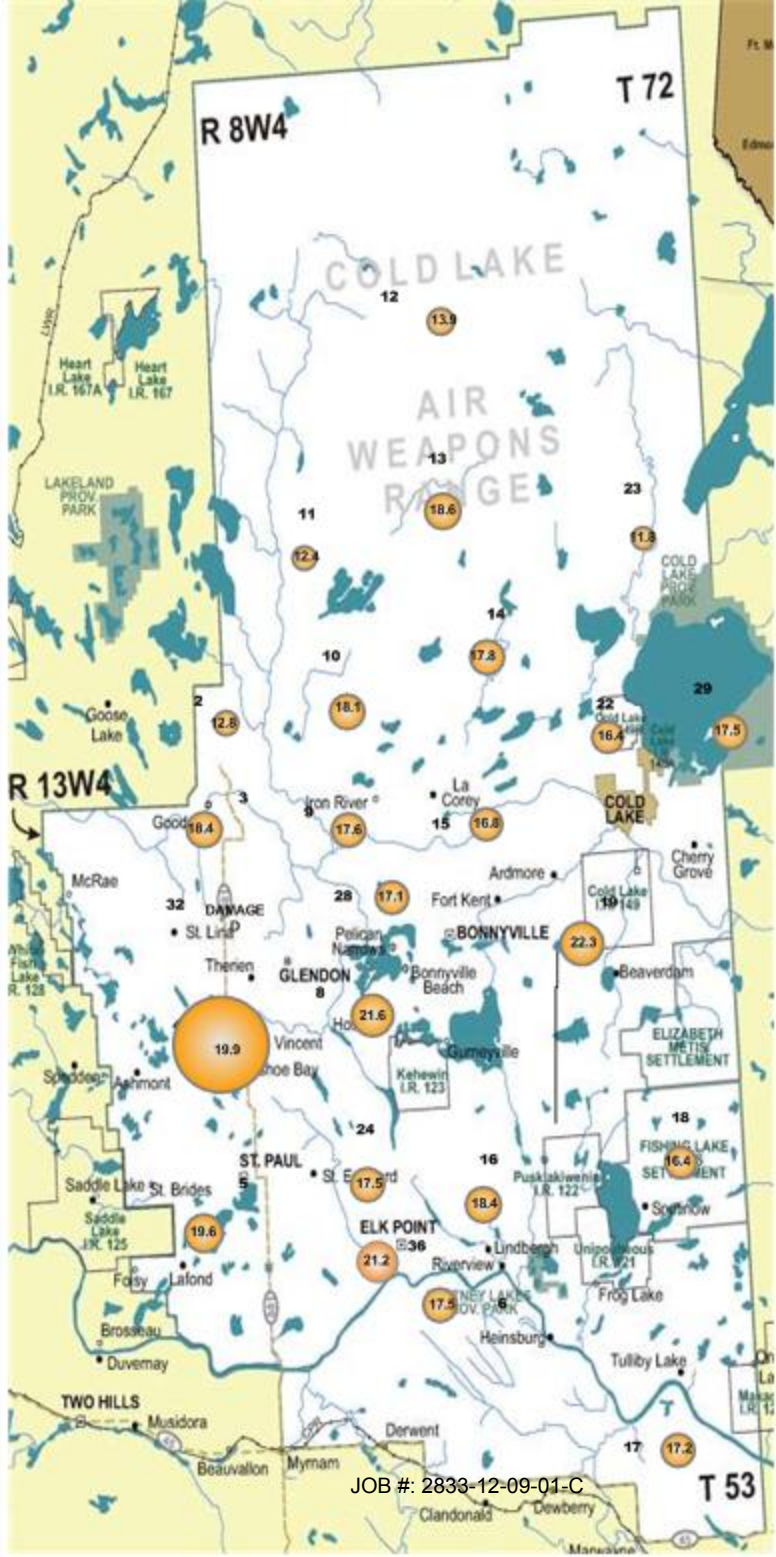
SEPTEMBER 2012

PASSIVE STATIONS		DUPLICATE
2 – Sand River	12.8 PPB	NA
3 – Therien	18.4 PPB	NA
4 – Flat Lake	19.9 PPB	NA
5 – Lake Eliza	19.6 PPB	NA
6 – Telegraph Creek	17.5 PPB	NA
8 – Muriel-Kehewin	21.6 PPB	NA
9 – Dupre	17.6 PPB	NA
10 – La Corey	18.1 PPB	NA
11 – Wolf Lake	12.4 PPB	NA
12 – Foster Creek	13.9 PPB	NA
13 – Primrose	18.6 PPB	NA
14 – Maskwa	17.8 PPB	NA
15 – Ardmore	16.8 PPB	NA
16 – Frog Lake	18.4 PPB	NA
17 – Clear Range	17.2 PPB	NA
18 – Fishing Lake	16.4 PPB	NA
19 – Beaverdam	22.3 PPB	NA
22 – Cold Lake South	16.4 PPB	NA
23 – Medley-Martineau	11.8 PPB	NA
24 – Fort George	17.5 PPB	NA
28 – Town of Bonnyville	17.4 PPB	16.7 PPB
29 – Cold Lake South 2	17.9 PPB	17.1 PPB
32 – St. Lina	DAMAGED	NA
36 – Elk Point	21.2 PPB	NA

O_3 PPB

Summary

Minimum : 11.8 PPB – Medley-Martineau
Maximum: 22.3 PPB – Beaverdam
Average: 17.4 PPB *Includes Duplicates



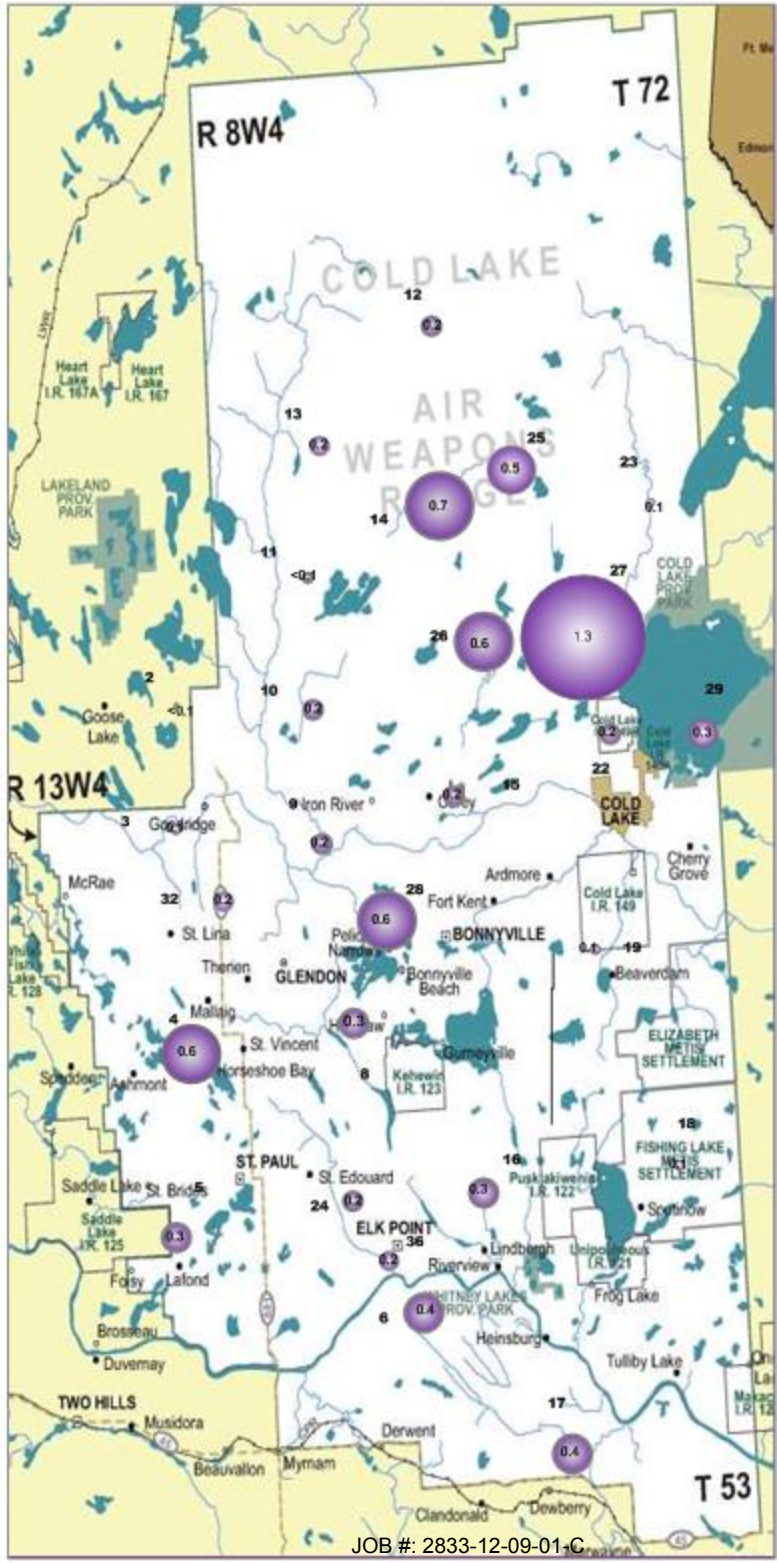
Lakeland Industry & Community Association
SO_2 Passive Bubble Map

SEPTEMBER 2012

PASSIVE STATIONS		DUPLICATE
2 – Sand River	<0.1 PPB	NA
3 – Therien	0.1 PPB	NA
4 – Flat Lake	0.5 PPB	0.6 PPB
5 – Lake Eliza	0.2 PPB	0.3 PPB
6 – Telegraph Creek	0.3 PPB	0.4 PPB
8 – Muriel-Kehewin	0.3 PPB	NA
9 – Dupre	0.2 PPB	NA
10 – La Corey	0.2 PPB	NA
11 – Wolf Lake	<0.1 PPB	NA
12 – Foster Creek	0.2 PPB	NA
13 – Primrose	0.2 PPB	NA
14 – Maskwa	0.7 PPB	NA
15 – Ardmore	0.2 PPB	NA
16 – Frog Lake	0.3 PPB	NA
17 – Clear Range	0.4 PPB	NA
18 – Fishing Lake	0.1 PPB	NA
19 – Beaverdam	0.1 PPB	NA
22 – Cold Lake South	0.2 PPB	NA
23 – Medley-Martineau	0.1 PPB	NA
24 – Fort George	0.2 PPB	NA
25 – Burnt Lake	0.5 PPB	NA
26 – Mahikan	0.6 PPB	NA
27 – Mahkeses	1.3 PPB	NA
28 – Town of Bonnyville	0.6 PPB	NA
29 – Cold Lake South 2	0.3 PPB	NA
32 – St. Lina	0.2 PPB	NA
36 – Elk Point	0.2 PPB	NA

Summary

Minimum : <0.1 PPB –Sand River and Wolf Lake
Maximum: 1.3 PPB –Mahkeses
Average: 0.32 PPB *Includes Duplicates



Passive Field Data

Field Notes

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
2	$SO_2/NO_2/O_3$	08/29/2012	12:45	09/27/2012	10:35	
3	$H_2S/SO_2/NO_2/O_3$	08/29/2012	13:25	09/27/2012	11:20	
4	$SO_2/NO_2/O_3$	08/29/2012	14:45	09/27/2012	13:15	
5	$H_2S/SO_2/NO_2/O_3$	08/29/2012	15:25	09/27/2012	13:50	
6	$SO_2/NO_2/O_3$	08/30/2012	12:45	09/28/2012	12:00	
8	$SO_2/NO_2/O_3$	08/29/2012	16:30	09/27/2012	14:50	
9	$SO_2/NO_2/O_3$	08/29/2012	1730	09/27/2012	15:53	
10	$H_2S/SO_2/NO_2/O_3$	08/28/2012	18:40	09/26/2012	18:50	
11	$H_2S/SO_2/NO_2/O_3$	08/28/2012	15:25	09/26/2012	15:35	
12	$H_2S/SO_2/NO_2/O_3$	08/28/2012	16:30	09/26/2012	16:40	
13	$H_2S/SO_2/NO_2/O_3$	08/29/2012	11:05	09/27/2012	09:00	
14	$H_2S/SO_2/NO_2/O_3$	08/29/2012	10:20	09/27/2012	08:05	
15	$SO_2/NO_2/O_3$	08/29/2012	08:35	09/27/2012	16:40	
16	$H_2S/SO_2/NO_2/O_3$	08/30/2012	11:10	09/28/2012	13:20	
17	$H_2S/SO_2/NO_2/O_3$	08/30/2012	12:00	09/28/2012	12:55	
18	$H_2S/SO_2/NO_2/O_3$	08/30/2012	09:45	09/28/2012	14:44	
19	$SO_2/NO_2/O_3$	08/30/2012	08:45	09/28/2012	15:40	
22	$H_2S/SO_2/NO_2/O_3$	08/29/2012	18:35	09/28/2012	07:50	
23	$SO_2/NO_2/O_3$	08/29/2012	07:40	09/27/2012	17:30	
24	$H_2S/SO_2/NO_2/O_3$	08/30/2012	13:20	09/28/2012	11:30	
25	H_2S/SO_2	08/28//2012	17:45	09/26/2012	17:58	
26	H_2S/SO_2	08/29/2012	10:30	09/27/2012	08:30	
27	H_2S/SO_2	08/29/2012	09:50	09/27/2012	07:40	
28	$SO_2/NO_2/O_3$	08/29/2012	17:05	09/27/2012	15:33	
29	$H_2S/SO_2/NO_2/O_3$	08/29/2012	18:45	09/28/2012	08:15	
32	$H_2S/SO_2/NO_2/O_3$	08/29/2012	14:05	09/27/2012	12:20	
36	$H_2S/SO_2/NO_2/O_3$	08/30/2012	13:35	09/28/2012	10:20	

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
Duplicate # 04	SO_2	08/29/2012	14:45	09/27/2012	13:15	
Duplicate # 05	SO_2	08/29/2012	15:25	09/27/2012	13:50	
Duplicate # 06	SO_2	08/30/2012	12:45	09/28/2012	12:00	
Duplicate # 11	H_2S	08/28/2012	15:25	09/26/2012	15:35	
Duplicate # 12	H_2S	08/28/2012	16:30	09/26/2012	16:40	
Duplicate # 28	NO_2	08/29/2012	17:05	09/27/2012	15:33	
Duplicate # 29	NO_2	08/29/2012	18:45	09/28/2012	08:15	
Duplicate # 28	O_3	08/29/2012	17:05	09/27/2012	15:33	
Duplicate # 29	O_3	08/29/201	18:45	09/28/2012	08:15	

Passive Network Laboratory Analysis

Your Project #: 2012/08/29 - 2012/09/27
Site Location: LICA

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

Report Date: 2012/10/12

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B289017
Received: 2012/10/03, 11:58

Sample Matrix: Air
Samples Received: 34

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
H2S Passive Analysis (1)	20	2012/10/05	2012/10/10	EINDSOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (1)	26	2012/10/06	2012/10/10	EINDSOP-00148	Tang Passive NO2 in
O3 Passive Analysis (1)	26	2012/10/11	2012/10/12	EINDSOP-00197	EPA 300 R2.1
SO2 Passive Analysis (1)	30	2012/10/06	2012/10/10	EINDSOP-00149	Tang Passive SO2 in

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

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

Encryption Key

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

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

==========

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

Total cover pages: 1

Maxxam Job #: B289017
Report Date: 2012/10/12

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2012/08/29 - 2012/09/27
Site Location: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		EQ1862	EQ1863	EQ1864	EQ1865	EQ1866		
Sampling Date		2012/08/29 12:45	2012/08/29 13:25	2012/08/29 14:45	2012/08/29 15:25	2012/08/30 12:45		
	UNITS	**2**	**3**	**4**	**5**	**6**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb		0.15		0.27		0.02	6233390
Calculated NO2	ppb	0.4	0.8	0.8	0.7	1.9	0.1	6234583
Calculated O3	ppb	12.8	18.4	19.9	19.6	17.5	0.1	6245743
Calculated SO2	ppb	<0.1	0.1	0.5	0.2	0.3	0.1	6234587

RDL = Reportable Detection Limit

Maxxam ID		EQ1867	EQ1868		EQ1869	EQ1870		
Sampling Date		2012/08/29 16:30	2012/08/29 17:30		2012/08/29 18:40	2012/08/28 15:25		
	UNITS	**8**	**9**	**QC Batch**	**10**	**11**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb				0.13	0.09	0.02	6233390
Calculated NO2	ppb	0.4	0.8	6234583	1.8	0.4	0.1	6234584
Calculated O3	ppb	21.6	17.6	6245774	18.1	12.4	0.1	6245774
Calculated SO2	ppb	0.3	0.2	6234587	0.2	<0.1	0.1	6234587

RDL = Reportable Detection Limit

Maxxam ID		EQ1871	EQ1872	EQ1873	EQ1874	EQ1875		
Sampling Date		2012/08/28 16:30	2012/08/29 11:05	2012/08/29 10:20	2012/08/29 08:35	2012/08/30 11:10		
	UNITS	**12**	**13**	**14**	**15**	**16**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb	0.09	0.09	0.14		0.12	0.02	6233390
Calculated NO2	ppb	1.4	0.7	0.9	1.1	1.0	0.1	6234584
Calculated O3	ppb	13.9	18.6	17.8	16.8	18.4	0.1	6245774
Calculated SO2	ppb	0.2	0.2	0.7	0.2	0.3	0.1	6234587

RDL = Reportable Detection Limit

Maxxam

Maxxam Job #: B289017
Report Date: 2012/10/12

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2012/08/29 - 2012/09/27
Site Location: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		EQ1877	EQ1878	EQ1879	EQ1880	EQ1881		
Sampling Date		2012/08/30 12:00	2012/08/30 09:45	2012/08/30 08:45	2012/08/29 18:35	2012/08/29 07:40		
	UNITS	**17**	**18**	**19**	**22**	**23**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb	0.34	0.10		0.12		0.02	6233390
Calculated NO2	ppb	1.5	0.8	0.4	0.9	0.2	0.1	6234584
Calculated O3	ppb	17.2	16.4	22.3	16.4	11.8	0.1	6245774
Calculated SO2	ppb	0.4	0.1	0.1	0.2	0.1	0.1	6234589

RDL = Reportable Detection Limit

Maxxam ID		EQ1883	EQ1884	EQ1885	EQ1886	EQ1887		
Sampling Date		2012/08/30 13:20	2012/08/28 17:45	2012/08/29 10:30	2012/08/29 09:50	2012/08/29 17:05		
	UNITS	**24**	**25**	**26**	**27**	**28**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb	0.14	0.08	0.07	0.37		0.02	6233390
Calculated NO2	ppb	2.0				2.5	0.1	6234584
Calculated O3	ppb	17.5				17.4	0.1	6245774
Calculated SO2	ppb	0.2	0.5	0.6	1.3	0.6	0.1	6234589

RDL = Reportable Detection Limit

Maxxam ID		EQ1888	EQ1889	EQ1890	EQ1895	EQ1896		
Sampling Date		2012/08/29 18:45	2012/08/29 14:05	2012/08/30 13:35	2012/08/29 12:45	2012/08/29 12:45		
	UNITS	**29**	**32**	**36**	**28 DUP**	**29 DUP**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb	0.11	0.16	0.16			0.02	6233390
Calculated NO2	ppb	0.7	0.3	2.5	2.4	0.8	0.1	6234584
Calculated O3	ppb	17.9	DAMAGED	21.2	16.7	17.1	0.1	6245774
Calculated SO2	ppb	0.3	0.2	0.2			0.1	6234589

RDL = Reportable Detection Limit

Maxxam Job #: B289017
Report Date: 2012/10/12

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2012/08/29 - 2012/09/27
Site Location: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		EQ1897	EQ1898	EQ1899	EQ1900	EQ1901		
Sampling Date		2012/08/29 12:45	2012/08/29 12:45	2012/08/29 12:45	2012/08/29 12:45	2012/08/29 12:45		
	UNITS	**4 DUP**	**5 DUP**	**6 DUP**	**11 DUP**	**12 DUP**	**RDL**	**QC Batch**
Passive Monitoring								
Calculated H2S	ppb				0.09	0.07	0.02	6233390
Calculated SO2	ppb	0.6	0.3	0.4			0.1	6234587

RDL = Reportable Detection Limit

General Comments

Results relate only to the items tested.

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Attention: MICHAEL BISAGA
Client Project #: 2012/08/29 - 2012/09/27
P.O. #:
Site Location: LICA

Quality Assurance Report

Maxxam Job Number: PB289017

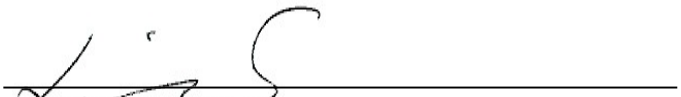
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
6233390	WC6	Calibration Check	Calculated H2S	2012/10/05		98	%	80 - 120
		Spiked Blank	Calculated H2S	2012/10/05		99	%	N/A
6234583	DF4	Calibration Check	Calculated NO2	2012/10/06		100	%	76 - 118
		Spiked Blank	Calculated NO2	2012/10/06		100	%	N/A
		Method Blank	Calculated NO2	2012/10/06	<0.1		ppb	
6234584	DF4	Calibration Check	Calculated NO2	2012/10/06		100	%	76 - 118
		Spiked Blank	Calculated NO2	2012/10/06		99	%	N/A
		Method Blank	Calculated NO2	2012/10/06	<0.1		ppb	
6234587	DF4	Calibration Check	Calculated SO2	2012/10/06		103	%	95 - 105
		Spiked Blank	Calculated SO2	2012/10/06		101	%	N/A
		Method Blank	Calculated SO2	2012/10/06	<0.1		ppb	
6234589	DF4	Calibration Check	Calculated SO2	2012/10/06		103	%	95 - 105
		Spiked Blank	Calculated SO2	2012/10/06		105	%	N/A
		Method Blank	Calculated SO2	2012/10/06	<0.1		ppb	
6245743	OZ	Calibration Check	Calculated O3	2012/10/11		99	%	91 - 107
		Spiked Blank	Calculated O3	2012/10/11		102	%	N/A
		Method Blank	Calculated O3	2012/10/11	<0.1		ppb	
6245774	OZ	Calibration Check	Calculated O3	2012/10/11		100	%	91 - 107
		Spiked Blank	Calculated O3	2012/10/11		100	%	N/A
		Method Blank	Calculated O3	2012/10/11	<0.1		ppb	

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

Validation Signature Page

Maxxam Job #: B289017

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.

Volatile Organics Laboratory Analysis

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Cold Lake South
Station ID: Lica 1
Field Sample ID: LICA VOC/ CLS /Aug 31, 2012

Sampler s/n: 6167
Canister ID: 287
Canister Installation Date/Time: Aug 30, 2012 @ 06:30 mst
Canister Removal Date/Time: Sept 04, 2012 @ 07:33 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
31-Aug-12	08/31/2012 0:00	09/01/2012 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	646	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	24

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC #11642

Technician Signiture: Ting Xu

Maxxam

Success Through Science®

Your C.O.C. #: 10922

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/09/17

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2D2921
Received: 2012/08/30, 09:35

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/09/11	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/09/15	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B2D2921
Report Date: 2012/09/17

RESULTS OF ANALYSES OF AIR

Maxxam ID		OR0705	OR0706	
Sampling Date		2012/08/25	2012/08/25	
COC Number		10922	10922	
	Units	**LICA VOC\CLS\AUG 25,12**	**LICA VOC\PORT\AUG 25,12**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	23	22	2967119

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2D2921
Report Date: 2012/09/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OR0705			OR0706				
Sampling Date		2012/08/25			2012/08/25				
COC Number		10922			10922				
	Units	**LICA VOC\CLS\AUG 25,12**	**ug/m3**	**DL (ug/m3)**	**LICA VOC\PORT\AUG 25,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics									
Dichlorodifluoromethane (FREON 12)	ppbv	0.66	3.26	0.989	0.68	0.20	3.38	0.989	2972144
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2972144
Chloromethane	ppbv	0.62	1.29	0.620	0.60	0.30	1.24	0.620	2972144
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2972144
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2972144
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2972144
Trichlorofluoromethane (FREON 11)	ppbv	0.30	1.68	1.12	0.29	0.20	1.62	1.12	2972144
Ethanol (ethyl alcohol)	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2972144
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2972144
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2972144
2-Propanone	ppbv	7.71	18.3	1.90	4.79	0.80	11.4	1.90	2972144
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2972144
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2972144
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2972144
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2972144
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2972144
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2972144
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2972144
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2972144
Methylene Chloride(Dichloromethane)	ppbv	<0.80	<2.78	2.78	<0.80	0.80	<2.78	2.78	2972144
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2972144
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2972144
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2972144
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2972144
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2972144
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2972144
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2972144
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2972144
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2972144
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2972144
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2972144

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OR0705			OR0706				
Sampling Date		2012/08/25			2012/08/25				
COC Number		10922			10922				
	Units	**LICA VOC\CLS\AUG 25,12**	**ug/m3**	**DL (ug/m3)**	**LICA VOC\PORT\AUG 25,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2972144
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2972144
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2972144
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2972144
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2972144
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2972144
Benzene	ppbv	<0.18	<0.575	0.575	<0.18	0.18	<0.575	0.575	2972144
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2972144
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2972144
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2972144
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2972144
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2972144
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2972144
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2972144
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2972144
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2972144
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2972144
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2972144
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2972144
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2972144
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2972144
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2972144
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2972144
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2972144
Cyclohexane	ppbv	<0.20	<0.688	0.688	<0.20	0.20	<0.688	0.688	2972144
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2972144
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2972144
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2972144
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2972144
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2972144
2,2,4-Trimethylpentane	ppbv	<0.20	<0.934	0.934	<0.20	0.20	<0.934	0.934	2972144
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	0.95	0.50	2.95	1.56	2972144
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2972144

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2D2921
Report Date: 2012/09/17

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OR0705			OR0706				
Sampling Date		2012/08/25			2012/08/25				
COC Number		10922			10922				
	Units	**LICA VOC\CLS\AUG 25,12**	**ug/m3**	**DL (ug/m3)**	**LICA VOC\PORT\AUG 25,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)									
Bromochloromethane	%	82	N/A	N/A	80		N/A	N/A	2972144
D5-Chlorobenzene	%	78	N/A	N/A	77		N/A	N/A	2972144
Difluorobenzene	%	83	N/A	N/A	82		N/A	N/A	2972144

N/A = Not Applicable
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

Maxxam Job #: B2D2921
Report Date: 2012/09/17

Test Summary

Maxxam ID OR0705 **Collected** 2012/08/25
Sample ID LICA VOC\CLS\AUG 25,12 **Shipped**
Matrix AIR **Received** 2012/08/30

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2967119	N/A	2012/09/11	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2972144	N/A	2012/09/15	Diane Temniuk

Maxxam ID OR0706 **Collected** 2012/08/25
Sample ID LICA VOC\PORT\AUG 25,12 **Shipped**
Matrix AIR **Received** 2012/08/30

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2967119	N/A	2012/09/11	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2972144	N/A	2012/09/15	Diane Temniuk

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

Maxxam Job #: B2D2921
Report Date: 2012/09/17

GENERAL COMMENTS

Sample OR0705-01: Increase MDL for propene due to matrix interference on a possible positive.

Sample OR0706-01: Increase MDL for propene due to matrix interference on a possible positive.

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2D2921

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2972144	DVO	Spiked Blank	Bromochloromethane	2012/09/15		99	%	60 - 140
			D5-Chlorobenzene	2012/09/15		102	%	60 - 140
			Difluorobenzene	2012/09/15		101	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/15		109	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/09/15		125	%	70 - 130
			Chloromethane	2012/09/15		118	%	70 - 130
			Vinyl Chloride	2012/09/15		115	%	70 - 130
			Chloroethane	2012/09/15		110	%	70 - 130
			1,3-Butadiene	2012/09/15		115	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/09/15		101	%	70 - 130
			Ethanol (ethyl alcohol)	2012/09/15		102	%	70 - 130
			Trichlorotrifluoroethane	2012/09/15		106	%	70 - 130
			2-propanol	2012/09/15		127	%	70 - 130
			2-Propanone	2012/09/15		127	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/09/15		114	%	70 - 130
			Methyl Isobutyl Ketone	2012/09/15		119	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/09/15		123	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/09/15		112	%	70 - 130
			Ethyl Acetate	2012/09/15		127	%	70 - 130
			1,1-Dichloroethylene	2012/09/15		111	%	70 - 130
			cis-1,2-Dichloroethylene	2012/09/15		115	%	70 - 130
			trans-1,2-Dichloroethylene	2012/09/15		114	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/09/15		109	%	70 - 130
			Chloroform	2012/09/15		106	%	70 - 130
			Carbon Tetrachloride	2012/09/15		97	%	70 - 130
			1,1-Dichloroethane	2012/09/15		116	%	70 - 130
			1,2-Dichloroethane	2012/09/15		108	%	70 - 130
			Ethylene Dibromide	2012/09/15		103	%	70 - 130
			1,1,1-Trichloroethane	2012/09/15		99	%	70 - 130
			1,1,2-Trichloroethane	2012/09/15		109	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/09/15		108	%	70 - 130
			cis-1,3-Dichloropropene	2012/09/15		112	%	70 - 130
			trans-1,3-Dichloropropene	2012/09/15		106	%	70 - 130
			1,2-Dichloropropane	2012/09/15		117	%	70 - 130
			Bromomethane	2012/09/15		102	%	70 - 130
			Bromoform	2012/09/15		100	%	70 - 130
			Bromodichloromethane	2012/09/15		112	%	70 - 130
			Dibromochloromethane	2012/09/15		104	%	70 - 130
			Trichloroethylene	2012/09/15		99	%	70 - 130
			Tetrachloroethylene	2012/09/15		97	%	70 - 130
			Benzene	2012/09/15		109	%	70 - 130
			Toluene	2012/09/15		108	%	70 - 130
			Ethylbenzene	2012/09/15		106	%	70 - 130
			p+m-Xylene	2012/09/15		103	%	70 - 130
			o-Xylene	2012/09/15		103	%	70 - 130
			Styrene	2012/09/15		83	%	70 - 130
			4-ethyltoluene	2012/09/15		103	%	70 - 130
			1,3,5-Trimethylbenzene	2012/09/15		96	%	70 - 130
			1,2,4-Trimethylbenzene	2012/09/15		92	%	70 - 130
			Chlorobenzene	2012/09/15		99	%	70 - 130
			Benzyl chloride	2012/09/15		79	%	70 - 130
			1,3-Dichlorobenzene	2012/09/15		80	%	70 - 130
			1,4-Dichlorobenzene	2012/09/15		76	%	70 - 130
			1,2-Dichlorobenzene	2012/09/15		76	%	70 - 130
			1,2,4-Trichlorobenzene	2012/09/15		63 (1)	%	70 - 130

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2D2921

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2972144	DVO	Spiked Blank	Hexachlorobutadiene	2012/09/15		95	%	70 - 130
			Hexane	2012/09/15		123	%	70 - 130
			Heptane	2012/09/15		121	%	70 - 130
			Cyclohexane	2012/09/15		118	%	70 - 130
			Tetrahydrofuran	2012/09/15		126	%	70 - 130
			1,4-Dioxane	2012/09/15		104	%	70 - 130
			Xylene (Total)	2012/09/15		103	%	70 - 130
			Vinyl Bromide	2012/09/15		109	%	70 - 130
			Propene	2012/09/15		120	%	70 - 130
			2,2,4-Trimethylpentane	2012/09/15		120	%	70 - 130
			Carbon Disulfide	2012/09/15		115	%	70 - 130
			Vinyl Acetate	2012/09/15		121	%	70 - 130
		Method Blank	Bromochloromethane	2012/09/15		86	%	60 - 140
			D5-Chlorobenzene	2012/09/15		74	%	60 - 140
			Difluorobenzene	2012/09/15		87	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/15	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/09/15	<0.17		ppbv	
			Chloromethane	2012/09/15	<0.30		ppbv	
			Vinyl Chloride	2012/09/15	<0.18		ppbv	
			Chloroethane	2012/09/15	<0.30		ppbv	
			1,3-Butadiene	2012/09/15	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/09/15	<0.20		ppbv	
			Ethanol (ethyl alcohol)	2012/09/15	<2.3		ppbv	
			Trichlorotrifluoroethane	2012/09/15	<0.15		ppbv	
			2-propanol	2012/09/15	<3.0		ppbv	
			2-Propanone	2012/09/15	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/09/15	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/09/15	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/09/15	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/09/15	<0.20		ppbv	
			Ethyl Acetate	2012/09/15	<2.2		ppbv	
			1,1-Dichloroethylene	2012/09/15	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/09/15	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/09/15	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/09/15	<0.80		ppbv	
			Chloroform	2012/09/15	<0.15		ppbv	
			Carbon Tetrachloride	2012/09/15	<0.30		ppbv	
			1,1-Dichloroethane	2012/09/15	<0.20		ppbv	
			1,2-Dichloroethane	2012/09/15	<0.20		ppbv	
			Ethylene Dibromide	2012/09/15	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/09/15	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/09/15	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/09/15	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/09/15	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/09/15	<0.17		ppbv	
			1,2-Dichloropropane	2012/09/15	<0.40		ppbv	
			Bromomethane	2012/09/15	<0.18		ppbv	
			Bromoform	2012/09/15	<0.20		ppbv	
			Bromodichloromethane	2012/09/15	<0.20		ppbv	
			Dibromochloromethane	2012/09/15	<0.20		ppbv	
			Trichloroethylene	2012/09/15	<0.30		ppbv	
			Tetrachloroethylene	2012/09/15	<0.20		ppbv	
			Benzene	2012/09/15	<0.18		ppbv	
			Toluene	2012/09/15	<0.20		ppbv	
			Ethylbenzene	2012/09/15	<0.20		ppbv	

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2D2921

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2972144	DVO	Method Blank	p+m-Xylene	2012/09/15	<0.37		ppbv	
			o-Xylene	2012/09/15	<0.20		ppbv	
			Styrene	2012/09/15	<0.20		ppbv	
			4-ethyltoluene	2012/09/15	<2.2		ppbv	
			1,3,5-Trimethylbenzene	2012/09/15	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/09/15	<0.50		ppbv	
			Chlorobenzene	2012/09/15	<0.20		ppbv	
			Benzyl chloride	2012/09/15	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/09/15	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/09/15	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/09/15	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/09/15	<2.0		ppbv	
			Hexachlorobutadiene	2012/09/15	<3.0		ppbv	
			Hexane	2012/09/15	<0.30		ppbv	
			Heptane	2012/09/15	<0.30		ppbv	
			Cyclohexane	2012/09/15	<0.20		ppbv	
			Tetrahydrofuran	2012/09/15	<0.40		ppbv	
			1,4-Dioxane	2012/09/15	<2.0		ppbv	
			Xylene (Total)	2012/09/15	<0.60		ppbv	
			Vinyl Bromide	2012/09/15	<0.20		ppbv	
			Propene	2012/09/15	<0.30		ppbv	
			2,2,4-Trimethylpentane	2012/09/15	<0.20		ppbv	
			Carbon Disulfide	2012/09/15	<0.50		ppbv	
			Vinyl Acetate	2012/09/15	<0.20		ppbv	

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Cold Lake South
Station ID: Lica 1
Field Sample ID: LICA VOC/ CLS /Aug 25, 2012

Sampler s/n: 6167
Canister ID: 142
Canister Installation Date/Time: Aug 24, 2012 @ 07:38 mst
Canister Removal Date/Time: Aug 27, 2012 @ 07:54 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
25-Aug-12	08/25/2012 0:00	08/26/2012 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	646	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	24

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC # 10922

Technician Signiture: Ting Xu

Maxxam

Success Through Science®

Your C.O.C. #: 11642

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/09/19

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2D7337
Received: 2012/09/07, 10:29

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/09/18	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/09/18	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B2D7337
Report Date: 2012/09/19

RESULTS OF ANALYSES OF AIR

Maxxam ID		OT4363	OT4364	
Sampling Date		2012/08/31 00:00	2012/08/31 00:00	
COC Number		11642	11642	
	Units	**LICA VOC/CLS/AUG 31,12 - 287**	**LICA VOC/PORT/AUG 31,12 - 293**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	23	22	2974767

QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OT4363				
Sampling Date		2012/08/31 00:00				
COC Number		11642				
	Units	**LICA VOC/CLS/AUG 31,12 - 287**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.68	0.20	3.35	0.989	2974763
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2974763
Chloromethane	ppbv	0.57	0.30	1.17	0.620	2974763
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2974763
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2974763
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2974763
Trichlorofluoromethane (FREON 11)	ppbv	0.32	0.20	1.79	1.12	2974763
Ethanol (ethyl alcohol)	ppbv	3.0	2.3	5.71	4.33	2974763
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2974763
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2974763
2-Propanone	ppbv	1.76	0.80	4.18	1.90	2974763
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2974763
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2974763
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2974763
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2974763
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2974763
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2974763
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2974763
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2974763
Methylene Chloride(Dichloromethane)	ppbv	1.10	0.80	3.82	2.78	2974763
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2974763
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2974763
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2974763
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2974763
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2974763
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2974763
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2974763
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2974763
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2974763
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2974763

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OT4363				
Sampling Date		2012/08/31 00:00				
COC Number		11642				
	Units	**LICA VOC/CLS/AUG 31,12 - 287**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2974763
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2974763
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2974763
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2974763
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2974763
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2974763
Tetrachloroethylene	ppbv	0.46	0.20	3.11	1.36	2974763
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2974763
Toluene	ppbv	0.37	0.20	1.40	0.753	2974763
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2974763
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2974763
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2974763
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2974763
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2974763
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2974763
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2974763
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2974763
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2974763
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2974763
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2974763
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2974763
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2974763
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2974763
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2974763
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2974763
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2974763
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2974763
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2974763
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2974763
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2974763
Propene	ppbv	0.92	0.30	1.58	0.516	2974763
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2974763

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2D7337
Report Date: 2012/09/19

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OT4363				
Sampling Date		2012/08/31 00:00				
COC Number		11642				
	Units	**LICA VOC/CLS/AUG 31,12 - 287**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2974763
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2974763
Surrogate Recovery (%)						
Bromochloromethane	%	83		N/A	N/A	2974763
D5-Chlorobenzene	%	72		N/A	N/A	2974763
Difluorobenzene	%	88		N/A	N/A	2974763

N/A = Not Applicable
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OT4364				
Sampling Date		2012/08/31 00:00				
COC Number		11642				
	Units	**LICA VOC/PORT/AUG 31,12 - 293**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.65	0.20	3.24	0.989	2974763
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2974763
Chloromethane	ppbv	0.56	0.30	1.16	0.620	2974763
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2974763
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2974763
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2974763
Trichlorofluoromethane (FREON 11)	ppbv	0.32	0.20	1.80	1.12	2974763
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2974763
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2974763
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2974763
2-Propanone	ppbv	1.92	0.80	4.57	1.90	2974763
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2974763
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2974763
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2974763
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2974763
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2974763
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2974763
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2974763
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2974763
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2974763
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2974763
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2974763
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2974763
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2974763
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2974763
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2974763
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2974763
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2974763
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2974763
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2974763

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OT4364				
Sampling Date		2012/08/31 00:00				
COC Number		11642				
	Units	**LICA VOC/PORT/AUG 31,12 - 293**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2974763
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2974763
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2974763
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2974763
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2974763
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2974763
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2974763
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2974763
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2974763
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2974763
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2974763
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2974763
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2974763
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2974763
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2974763
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2974763
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2974763
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2974763
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2974763
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2974763
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2974763
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2974763
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2974763
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2974763
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2974763
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2974763
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2974763
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2974763
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2974763
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2974763
Propene	ppbv	0.97	0.30	1.67	0.516	2974763
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2974763

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2D7337
Report Date: 2012/09/19

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OT4364				
Sampling Date		2012/08/31 00:00				
COC Number		11642				
	Units	**LICA VOC/PORT/AUG 31,12 - 293**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2974763
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2974763
Surrogate Recovery (%)						
Bromochloromethane	%	80		N/A	N/A	2974763
D5-Chlorobenzene	%	69		N/A	N/A	2974763
Difluorobenzene	%	84		N/A	N/A	2974763

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2D7337
Report Date: 2012/09/19

Test Summary

Maxxam ID OT4363 **Collected** 2012/08/31
Sample ID LICA VOC/CLS/AUG 31,12 - 287 **Shipped**
Matrix AIR **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2974767	N/A	2012/09/18	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2974763	N/A	2012/09/18	Melanie Mabini

Maxxam ID OT4364 **Collected** 2012/08/31
Sample ID LICA VOC/PORT/AUG 31,12 - 293 **Shipped**
Matrix AIR **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2974767	N/A	2012/09/18	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2974763	N/A	2012/09/18	Melanie Mabini

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Maxxam Analytics

Maxxam Job #: B2D7337
Report Date: 2012/09/19

GENERAL COMMENTS

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2D7337

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2974763	MM2	Spiked Blank	Bromochloromethane	2012/09/18		98	%	60 - 140
			D5-Chlorobenzene	2012/09/18		104	%	60 - 140
			Difluorobenzene	2012/09/18		103	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/18		109	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/09/18		130	%	70 - 130
			Chloromethane	2012/09/18		119	%	70 - 130
			Vinyl Chloride	2012/09/18		113	%	70 - 130
			Chloroethane	2012/09/18		119	%	70 - 130
			1,3-Butadiene	2012/09/18		119	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/09/18		111	%	70 - 130
			Ethanol (ethyl alcohol)	2012/09/18		107	%	70 - 130
			Trichlorotrifluoroethane	2012/09/18		108	%	70 - 130
			2-propanol	2012/09/18		113	%	70 - 130
			2-Propanone	2012/09/18		107	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/09/18		109	%	70 - 130
			Methyl Isobutyl Ketone	2012/09/18		126	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/09/18		128	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/09/18		104	%	70 - 130
			Ethyl Acetate	2012/09/18		117	%	70 - 130
			1,1-Dichloroethylene	2012/09/18		109	%	70 - 130
			cis-1,2-Dichloroethylene	2012/09/18		105	%	70 - 130
			trans-1,2-Dichloroethylene	2012/09/18		107	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/09/18		103	%	70 - 130
			Chloroform	2012/09/18		107	%	70 - 130
			Carbon Tetrachloride	2012/09/18		107	%	70 - 130
			1,1-Dichloroethane	2012/09/18		108	%	70 - 130
			1,2-Dichloroethane	2012/09/18		113	%	70 - 130
			Ethylene Dibromide	2012/09/18		105	%	70 - 130
			1,1,1-Trichloroethane	2012/09/18		107	%	70 - 130
			1,1,2-Trichloroethane	2012/09/18		106	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/09/18		111	%	70 - 130
			cis-1,3-Dichloropropene	2012/09/18		104	%	70 - 130
			trans-1,3-Dichloropropene	2012/09/18		105	%	70 - 130
			1,2-Dichloropropane	2012/09/18		104	%	70 - 130
			Bromomethane	2012/09/18		118	%	70 - 130
			Bromoform	2012/09/18		126	%	70 - 130
			Bromodichloromethane	2012/09/18		116	%	70 - 130
			Dibromochloromethane	2012/09/18		118	%	70 - 130
			Trichloroethylene	2012/09/18		106	%	70 - 130
			Tetrachloroethylene	2012/09/18		107	%	70 - 130
			Benzene	2012/09/18		104	%	70 - 130
			Toluene	2012/09/18		103	%	70 - 130
			Ethylbenzene	2012/09/18		106	%	70 - 130
			p+m-Xylene	2012/09/18		103	%	70 - 130
			o-Xylene	2012/09/18		107	%	70 - 130
			Styrene	2012/09/18		89	%	70 - 130
			4-ethyltoluene	2012/09/18		120	%	70 - 130
			1,3,5-Trimethylbenzene	2012/09/18		109	%	70 - 130
			1,2,4-Trimethylbenzene	2012/09/18		107	%	70 - 130
			Chlorobenzene	2012/09/18		103	%	70 - 130
			Benzyl chloride	2012/09/18		112	%	70 - 130
			1,3-Dichlorobenzene	2012/09/18		108	%	70 - 130
			1,4-Dichlorobenzene	2012/09/18		109	%	70 - 130
			1,2-Dichlorobenzene	2012/09/18		108	%	70 - 130
			1,2,4-Trichlorobenzene	2012/09/18		94	%	70 - 130

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2D7337

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2974763	MM2	Spiked Blank	Hexachlorobutadiene	2012/09/18		107	%	70 - 130
			Hexane	2012/09/18		109	%	70 - 130
			Heptane	2012/09/18		114	%	70 - 130
			Cyclohexane	2012/09/18		107	%	70 - 130
			Tetrahydrofuran	2012/09/18		113	%	70 - 130
			1,4-Dioxane	2012/09/18		108	%	70 - 130
			Vinyl Bromide	2012/09/18		123	%	70 - 130
			Propene	2012/09/18		96	%	70 - 130
			2,2,4-Trimethylpentane	2012/09/18		110	%	70 - 130
			Carbon Disulfide	2012/09/18		100	%	70 - 130
			Vinyl Acetate	2012/09/18		115	%	70 - 130
		Method Blank	Bromochloromethane	2012/09/18		89	%	60 - 140
			D5-Chlorobenzene	2012/09/18		86	%	60 - 140
			Difluorobenzene	2012/09/18		93	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/18	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/09/18	<0.17		ppbv	
			Chloromethane	2012/09/18	<0.30		ppbv	
			Vinyl Chloride	2012/09/18	<0.18		ppbv	
			Chloroethane	2012/09/18	<0.30		ppbv	
			1,3-Butadiene	2012/09/18	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/09/18	<0.20		ppbv	
			Ethanol (ethyl alcohol)	2012/09/18	<2.3		ppbv	
			Trichlorotrifluoroethane	2012/09/18	<0.15		ppbv	
			2-propanol	2012/09/18	<3.0		ppbv	
			2-Propanone	2012/09/18	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/09/18	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/09/18	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/09/18	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/09/18	<0.20		ppbv	
			Ethyl Acetate	2012/09/18	<2.2		ppbv	
			1,1-Dichloroethylene	2012/09/18	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/09/18	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/09/18	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/09/18	<0.80		ppbv	
			Chloroform	2012/09/18	<0.15		ppbv	
			Carbon Tetrachloride	2012/09/18	<0.30		ppbv	
			1,1-Dichloroethane	2012/09/18	<0.20		ppbv	
			1,2-Dichloroethane	2012/09/18	<0.20		ppbv	
			Ethylene Dibromide	2012/09/18	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/09/18	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/09/18	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/09/18	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/09/18	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/09/18	<0.17		ppbv	
			1,2-Dichloropropane	2012/09/18	<0.40		ppbv	
			Bromomethane	2012/09/18	<0.18		ppbv	
			Bromoform	2012/09/18	<0.20		ppbv	
			Bromodichloromethane	2012/09/18	<0.20		ppbv	
			Dibromochloromethane	2012/09/18	<0.20		ppbv	
			Trichloroethylene	2012/09/18	<0.30		ppbv	
			Tetrachloroethylene	2012/09/18	<0.20		ppbv	
			Benzene	2012/09/18	<0.18		ppbv	
			Toluene	2012/09/18	<0.20		ppbv	
			Ethylbenzene	2012/09/18	<0.20		ppbv	
			p+m-Xylene	2012/09/18	<0.37		ppbv	

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2D7337

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2974763	MM2	Method Blank	o-Xylene	2012/09/18	<0.20		ppbv	
			Styrene	2012/09/18	<0.20		ppbv	
			4-ethyltoluene	2012/09/18	<2.2		ppbv	
			1,3,5-Trimethylbenzene	2012/09/18	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/09/18	<0.50		ppbv	
			Chlorobenzene	2012/09/18	<0.20		ppbv	
			Benzyl chloride	2012/09/18	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/09/18	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/09/18	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/09/18	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/09/18	<2.0		ppbv	
			Hexachlorobutadiene	2012/09/18	<3.0		ppbv	
			Hexane	2012/09/18	<0.30		ppbv	
			Heptane	2012/09/18	<0.30		ppbv	
			Cyclohexane	2012/09/18	<0.20		ppbv	
			Tetrahydrofuran	2012/09/18	<0.40		ppbv	
			1,4-Dioxane	2012/09/18	<2.0		ppbv	
			Xylene (Total)	2012/09/18	<0.60		ppbv	
			Vinyl Bromide	2012/09/18	<0.20		ppbv	
			Propene	2012/09/18	<0.30		ppbv	
			2,2,4-Trimethylpentane	2012/09/18	<0.20		ppbv	
			Carbon Disulfide	2012/09/18	<0.50		ppbv	
			Vinyl Acetate	2012/09/18	<0.20		ppbv	

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Cold Lake South
Station ID: Lica 1
Field Sample ID: LICA VOC/ CLS /Sept 06, 2012

Sampler s/n: 6167
Canister ID: 140
Canister Installation Date/Time: Sept 05, 2012 @ 07:26 mst
Canister Removal Date/Time: Sept 07, 2012 @ 14:24 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
06-Sep-12	09/06/2012 0:00	09/07/2012 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	646	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	23

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC# 09503

Technician Signiture: Ting Xu

Maxxam

Success Through Science®

Your C.O.C. #: 09503

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/09/24

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2E1455
Received: 2012/09/12, 10:00

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/09/12	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/09/20	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B2E1455
Report Date: 2012/09/24

RESULTS OF ANALYSES OF AIR

Maxxam ID		OV4627	OV4628	
Sampling Date		2012/09/06	2012/09/06	
COC Number		09503	09503	
	Units	**LICA VOC\CLS\SEPT 06,12**	**LICA VOC\PORT\SEPT 06,12**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	23	22	2976665

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E1455
Report Date: 2012/09/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OV4627				
Sampling Date		2012/09/06				
COC Number		09503				
	Units	**LICA VOC\CLS\SEPT 06,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.68	0.20	3.38	0.989	2976664
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2976664
Chloromethane	ppbv	0.57	0.30	1.17	0.620	2976664
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2976664
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2976664
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2976664
Trichlorofluoromethane (FREON 11)	ppbv	0.32	0.20	1.78	1.12	2976664
Ethanol (ethyl alcohol)	ppbv	2.7	2.3	5.06	4.33	2976664
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2976664
2-propanol	ppbv	3.6	3.0	8.79	7.37	2976664
2-Propanone	ppbv	<0.80	0.80	<1.90	1.90	2976664
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2976664
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2976664
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2976664
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2976664
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2976664
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2976664
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2976664
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2976664
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2976664
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2976664
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2976664
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2976664
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2976664
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2976664
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2976664
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2976664
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2976664
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2976664
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2976664
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2976664

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OV4627				
Sampling Date		2012/09/06				
COC Number		09503				
	Units	**LICA VOC\CLS\SEPT 06,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2976664
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2976664
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2976664
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2976664
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2976664
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2976664
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2976664
Toluene	ppbv	0.24	0.20	0.919	0.753	2976664
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2976664
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2976664
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2976664
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2976664
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2976664
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2976664
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2976664
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2976664
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2976664
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2976664
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2976664
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2976664
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2976664
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2976664
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2976664
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2976664
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2976664
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2976664
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2976664
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2976664
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2976664
Propene	ppbv	<1.1	1.1	<1.84	1.84	2976664
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2976664
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2976664
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2976664

QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OV4627				
Sampling Date		2012/09/06				
COC Number		09503				
	Units	**LICA VOC\CLS\SEPT 06,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	100		N/A	N/A	2976664
D5-Chlorobenzene	%	102		N/A	N/A	2976664
Difluorobenzene	%	108		N/A	N/A	2976664

N/A = Not Applicable
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OV4628				
Sampling Date		2012/09/06				
COC Number		09503				
	Units	**LICA VOC\PORT\SEPT 06,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.70	0.20	3.47	0.989	2976664
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2976664
Chloromethane	ppbv	0.54	0.30	1.12	0.620	2976664
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2976664
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2976664
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2976664
Trichlorofluoromethane (FREON 11)	ppbv	0.33	0.20	1.85	1.12	2976664
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2976664
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2976664
2-propanol	ppbv	3.1	3.0	7.61	7.37	2976664
2-Propanone	ppbv	<0.80	0.80	<1.90	1.90	2976664
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2976664
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2976664
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2976664
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2976664
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2976664
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2976664
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2976664
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2976664
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2976664
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2976664
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2976664
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2976664
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2976664
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2976664
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2976664
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2976664
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2976664
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2976664
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2976664
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2976664

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OV4628				
Sampling Date		2012/09/06				
COC Number		09503				
	Units	**LICA VOC\PORT\SEPT 06,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2976664
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2976664
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2976664
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2976664
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2976664
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2976664
Benzene	ppbv	0.19	0.18	0.621	0.575	2976664
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2976664
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2976664
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2976664
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2976664
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2976664
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2976664
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2976664
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2976664
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2976664
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2976664
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2976664
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2976664
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2976664
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2976664
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2976664
Hexane	ppbv	0.67	0.30	2.37	1.06	2976664
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2976664
Cyclohexane	ppbv	0.46	0.20	1.59	0.688	2976664
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2976664
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2976664
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2976664
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2976664
Propene	ppbv	<1.7	1.7	<2.99	2.99	2976664
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2976664
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2976664
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2976664

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E1455
Report Date: 2012/09/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OV4628				
Sampling Date		2012/09/06				
COC Number		09503				
	Units	**LICA VOC\PORT\SEPT 06,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	92		N/A	N/A	2976664
D5-Chlorobenzene	%	95		N/A	N/A	2976664
Difluorobenzene	%	101		N/A	N/A	2976664

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E1455
Report Date: 2012/09/24

Test Summary

Maxxam ID OV4627 **Collected** 2012/09/06
Sample ID LICA VOC\CLS\SEPT 06,12 **Shipped**
Matrix AIR **Received** 2012/09/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2976665	N/A	2012/09/12	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2976664	N/A	2012/09/20	Melanie Mabini

Maxxam ID OV4628 **Collected** 2012/09/06
Sample ID LICA VOC\PORT\SEPT 06,12 **Shipped**
Matrix AIR **Received** 2012/09/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2976665	N/A	2012/09/12	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2976664	N/A	2012/09/20	Melanie Mabini

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GENERAL COMMENTS

Sample OV4627-01: Increase MDL for propene due to matrix interference on a possible positive.

Sample OV4628-01: Increase MDL for propene due to matrix interference on a possible positive.

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2E1455

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2976664	MM2	Spiked Blank	Bromochloromethane	2012/09/20		98	%	60 - 140
			D5-Chlorobenzene	2012/09/20		100	%	60 - 140
			Difluorobenzene	2012/09/20		101	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/20		117	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/09/20		136 (1)	%	70 - 130
			Chloromethane	2012/09/20		119	%	70 - 130
			Vinyl Chloride	2012/09/20		117	%	70 - 130
			Chloroethane	2012/09/20		123	%	70 - 130
			1,3-Butadiene	2012/09/20		120	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/09/20		117	%	70 - 130
			Ethanol (ethyl alcohol)	2012/09/20		99	%	70 - 130
			Trichlorotrifluoroethane	2012/09/20		112	%	70 - 130
			2-propanol	2012/09/20		116	%	70 - 130
			2-Propanone	2012/09/20		108	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/09/20		104	%	70 - 130
			Methyl Isobutyl Ketone	2012/09/20		121	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/09/20		124	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/09/20		111	%	70 - 130
			Ethyl Acetate	2012/09/20		118	%	70 - 130
			1,1-Dichloroethylene	2012/09/20		114	%	70 - 130
			cis-1,2-Dichloroethylene	2012/09/20		111	%	70 - 130
			trans-1,2-Dichloroethylene	2012/09/20		114	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/09/20		104	%	70 - 130
			Chloroform	2012/09/20		111	%	70 - 130
			Carbon Tetrachloride	2012/09/20		120	%	70 - 130
			1,1-Dichloroethane	2012/09/20		112	%	70 - 130
			1,2-Dichloroethane	2012/09/20		118	%	70 - 130
			Ethylene Dibromide	2012/09/20		109	%	70 - 130
			1,1,1-Trichloroethane	2012/09/20		117	%	70 - 130
			1,1,2-Trichloroethane	2012/09/20		108	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/09/20		112	%	70 - 130
			cis-1,3-Dichloropropene	2012/09/20		109	%	70 - 130
			trans-1,3-Dichloropropene	2012/09/20		114	%	70 - 130
			1,2-Dichloropropane	2012/09/20		109	%	70 - 130
			Bromomethane	2012/09/20		120	%	70 - 130
			Bromoform	2012/09/20		134 (1)	%	70 - 130
			Bromodichloromethane	2012/09/20		124	%	70 - 130
			Dibromochloromethane	2012/09/20		126	%	70 - 130
			Trichloroethylene	2012/09/20		108	%	70 - 130
			Tetrachloroethylene	2012/09/20		112	%	70 - 130
			Benzene	2012/09/20		107	%	70 - 130
			Toluene	2012/09/20		107	%	70 - 130
			Ethylbenzene	2012/09/20		110	%	70 - 130
			p+m-Xylene	2012/09/20		106	%	70 - 130
			o-Xylene	2012/09/20		109	%	70 - 130
			Styrene	2012/09/20		90	%	70 - 130
			4-ethyltoluene	2012/09/20		123	%	70 - 130
			1,3,5-Trimethylbenzene	2012/09/20		110	%	70 - 130
			1,2,4-Trimethylbenzene	2012/09/20		108	%	70 - 130
			Chlorobenzene	2012/09/20		106	%	70 - 130
			Benzyl chloride	2012/09/20		114	%	70 - 130
			1,3-Dichlorobenzene	2012/09/20		106	%	70 - 130
			1,4-Dichlorobenzene	2012/09/20		106	%	70 - 130
			1,2-Dichlorobenzene	2012/09/20		106	%	70 - 130
			1,2,4-Trichlorobenzene	2012/09/20		90	%	70 - 130

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E1455

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2976664	MM2	Spiked Blank	Hexachlorobutadiene	2012/09/20		112	%	70 - 130
			Hexane	2012/09/20		112	%	70 - 130
			Heptane	2012/09/20		112	%	70 - 130
			Cyclohexane	2012/09/20		110	%	70 - 130
			Tetrahydrofuran	2012/09/20		110	%	70 - 130
			1,4-Dioxane	2012/09/20		109	%	70 - 130
			Vinyl Bromide	2012/09/20		126	%	70 - 130
			Propene	2012/09/20		95	%	70 - 130
			2,2,4-Trimethylpentane	2012/09/20		114	%	70 - 130
			Carbon Disulfide	2012/09/20		104	%	70 - 130
			Vinyl Acetate	2012/09/20		118	%	70 - 130
		Method Blank	Bromochloromethane	2012/09/20		84	%	60 - 140
			D5-Chlorobenzene	2012/09/20		82	%	60 - 140
			Difluorobenzene	2012/09/20		88	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/20	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/09/20	<0.17		ppbv	
			Chloromethane	2012/09/20	<0.30		ppbv	
			Vinyl Chloride	2012/09/20	<0.18		ppbv	
			Chloroethane	2012/09/20	<0.30		ppbv	
			1,3-Butadiene	2012/09/20	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/09/20	<0.20		ppbv	
			Ethanol (ethyl alcohol)	2012/09/20	<2.3		ppbv	
			Trichlorotrifluoroethane	2012/09/20	<0.15		ppbv	
			2-propanol	2012/09/20	<3.0		ppbv	
			2-Propanone	2012/09/20	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/09/20	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/09/20	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/09/20	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/09/20	<0.20		ppbv	
			Ethyl Acetate	2012/09/20	<2.2		ppbv	
			1,1-Dichloroethylene	2012/09/20	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/09/20	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/09/20	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/09/20	<0.80		ppbv	
			Chloroform	2012/09/20	<0.15		ppbv	
			Carbon Tetrachloride	2012/09/20	<0.30		ppbv	
			1,1-Dichloroethane	2012/09/20	<0.20		ppbv	
			1,2-Dichloroethane	2012/09/20	<0.20		ppbv	
			Ethylene Dibromide	2012/09/20	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/09/20	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/09/20	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/09/20	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/09/20	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/09/20	<0.17		ppbv	
			1,2-Dichloropropane	2012/09/20	<0.40		ppbv	
			Bromomethane	2012/09/20	<0.18		ppbv	
			Bromoform	2012/09/20	<0.20		ppbv	
			Bromodichloromethane	2012/09/20	<0.20		ppbv	
			Dibromochloromethane	2012/09/20	<0.20		ppbv	
			Trichloroethylene	2012/09/20	<0.30		ppbv	
			Tetrachloroethylene	2012/09/20	<0.20		ppbv	
			Benzene	2012/09/20	<0.18		ppbv	
			Toluene	2012/09/20	<0.20		ppbv	
			Ethylbenzene	2012/09/20	<0.20		ppbv	
			p+m-Xylene	2012/09/20	<0.37		ppbv	

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E1455

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2976664	MM2	Method Blank	o-Xylene	2012/09/20	<0.20		ppbv	
			Styrene	2012/09/20	<0.20		ppbv	
			4-ethyltoluene	2012/09/20	<2.2		ppbv	
			1,3,5-Trimethylbenzene	2012/09/20	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/09/20	<0.50		ppbv	
			Chlorobenzene	2012/09/20	<0.20		ppbv	
			Benzyl chloride	2012/09/20	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/09/20	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/09/20	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/09/20	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/09/20	<2.0		ppbv	
			Hexachlorobutadiene	2012/09/20	<3.0		ppbv	
			Hexane	2012/09/20	<0.30		ppbv	
			Heptane	2012/09/20	<0.30		ppbv	
			Cyclohexane	2012/09/20	<0.20		ppbv	
			Tetrahydrofuran	2012/09/20	<0.40		ppbv	
			1,4-Dioxane	2012/09/20	<2.0		ppbv	
			Xylene (Total)	2012/09/20	<0.60		ppbv	
			Vinyl Bromide	2012/09/20	<0.20		ppbv	
			Propene	2012/09/20	<0.30		ppbv	
			2,2,4-Trimethylpentane	2012/09/20	<0.20		ppbv	
			Carbon Disulfide	2012/09/20	<0.50		ppbv	
			Vinyl Acetate	2012/09/20	<0.20		ppbv	

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Cold Lake South
Station ID: Lica 1
Field Sample ID: LICA VOC/ CLS /Sept 12, 2012

Sampler s/n: 6167
Canister ID: 269
Canister Installation Date/Time: Sept 10, 2012 @ 07:38 mst
Canister Removal Date/Time: Sept 13, 2012 @ 06:22 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
12-Sep-12	09/12/2012 0:00	09/13/2012 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	646	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	23

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC# 09914

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 09914

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/09/28

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2E3260
Received: 2012/09/18, 11:08

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/09/21	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	1	N/A	2012/09/21	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	1	N/A	2012/09/22	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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.

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Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B2E3260
Report Date: 2012/09/28

RESULTS OF ANALYSES OF AIR

Maxxam ID		OW3991	OW3992	
Sampling Date		2012/09/12	2012/09/12	
COC Number		09914	09914	
	Units	**LICA VOC\CLS\SEPT 12,12**	**LICA VOC\PORT\SEPT 12,12**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	23	22	2978829

QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OW3991				
Sampling Date		2012/09/12				
COC Number		09914				
	Units	**LICA VOC\CLS\SEPT 12,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.71	0.20	3.52	0.989	2984458
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2984458
Chloromethane	ppbv	0.56	0.30	1.16	0.620	2984458
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2984458
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2984458
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2984458
Trichlorofluoromethane (FREON 11)	ppbv	0.31	0.20	1.72	1.12	2984458
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2984458
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2984458
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2984458
2-Propanone	ppbv	<0.80	0.80	<1.90	1.90	2984458
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2984458
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2984458
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2984458
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2984458
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2984458
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2984458
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2984458
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2984458
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2984458
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2984458
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2984458
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2984458
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2984458
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2984458
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2984458
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2984458
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2984458
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2984458
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2984458
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2984458

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OW3991				
Sampling Date		2012/09/12				
COC Number		09914				
	Units	**LICA VOC\CLS\SEPT 12,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2984458
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2984458
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2984458
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2984458
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2984458
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2984458
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2984458
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2984458
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2984458
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2984458
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2984458
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2984458
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2984458
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2984458
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2984458
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2984458
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2984458
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2984458
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2984458
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2984458
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2984458
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2984458
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2984458
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2984458
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2984458
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2984458
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2984458
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2984458
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2984458
Propene	ppbv	<0.30	0.30	<0.516	0.516	2984458
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2984458
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2984458
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2984458

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E3260
Report Date: 2012/09/28

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OW3991				
Sampling Date		2012/09/12				
COC Number		09914				
	Units	**LICA VOC\CLS\SEPT 12,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	82		N/A	N/A	2984458
D5-Chlorobenzene	%	81		N/A	N/A	2984458
Difluorobenzene	%	84		N/A	N/A	2984458

N/A = Not Applicable
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OW3992				
Sampling Date		2012/09/12				
COC Number		09914				
	Units	**LICA VOC\PORT\SEPT 12,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.67	0.20	3.32	0.989	2980011
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2980011
Chloromethane	ppbv	0.59	0.30	1.22	0.620	2980011
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2980011
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2980011
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2980011
Trichlorofluoromethane (FREON 11)	ppbv	0.34	0.20	1.89	1.12	2980011
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2980011
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2980011
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2980011
2-Propanone	ppbv	1.31	0.80	3.11	1.90	2980011
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2980011
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2980011
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2980011
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2980011
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2980011
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2980011
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2980011
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2980011
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2980011
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2980011
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2980011
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2980011
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2980011
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2980011
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2980011
1,1,2-Trichloroethane	ppbv	<0.18	0.18	<0.982	0.982	2980011
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2980011
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2980011
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2980011
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2980011

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OW3992				
Sampling Date		2012/09/12				
COC Number		09914				
	Units	**LICA VOC\PORT\SEPT 12,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2980011
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2980011
Bromodichloromethane	ppbv	<3.2	3.2	<21.4	21.4	2980011
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2980011
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2980011
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2980011
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2980011
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2980011
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2980011
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2980011
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2980011
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2980011
4-ethyltoluene	ppbv	<3.0	3.0	<14.7	14.7	2980011
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2980011
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2980011
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2980011
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2980011
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2980011
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2980011
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2980011
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2980011
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2980011
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2980011
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2980011
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2980011
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2980011
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2980011
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2980011
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2980011
Propene	ppbv	0.81	0.30	1.39	0.516	2980011
2,2,4-Trimethylpentane	ppbv	<0.40	0.40	<1.87	1.87	2980011
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2980011
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2980011

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E3260
Report Date: 2012/09/28

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OW3992				
Sampling Date		2012/09/12				
COC Number		09914				
	Units	**LICA VOC\PORT\SEPT 12,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	82		N/A	N/A	2980011
D5-Chlorobenzene	%	85		N/A	N/A	2980011
Difluorobenzene	%	87		N/A	N/A	2980011

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Job #: B2E3260
Report Date: 2012/09/28

Test Summary

Maxxam ID OW3991 **Collected** 2012/09/12
Sample ID LICA VOC\CLS\SEPT 12,12 **Shipped**
Matrix AIR **Received** 2012/09/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2978829	N/A	2012/09/21	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2984458	N/A	2012/09/21	Melanie Mabini

Maxxam ID OW3992 **Collected** 2012/09/12
Sample ID LICA VOC\PORT\SEPT 12,12 **Shipped**
Matrix AIR **Received** 2012/09/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2978829	N/A	2012/09/21	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2980011	N/A	2012/09/22	Melanie Mabini

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GENERAL COMMENTS

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
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Quality Assurance Report

Maxxam Job Number: GB2E3260

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2980011	MM2	Spiked Blank	Bromochloromethane	2012/09/22		111	%	60 - 140
			D5-Chlorobenzene	2012/09/22		119	%	60 - 140
			Difluorobenzene	2012/09/22		117	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/22		102	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/09/22		122	%	70 - 130
			Chloromethane	2012/09/22		113	%	70 - 130
			Vinyl Chloride	2012/09/22		111	%	70 - 130
			Chloroethane	2012/09/22		117	%	70 - 130
			1,3-Butadiene	2012/09/22		117	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/09/22		108	%	70 - 130
			Ethanol (ethyl alcohol)	2012/09/22		105	%	70 - 130
			Trichlorotrifluoroethane	2012/09/22		101	%	70 - 130
			2-propanol	2012/09/22		112	%	70 - 130
			2-Propanone	2012/09/22		105	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/09/22		122	%	70 - 130
			Methyl Isobutyl Ketone	2012/09/22		120	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/09/22		123	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/09/22		101	%	70 - 130
			Ethyl Acetate	2012/09/22		115	%	70 - 130
			1,1-Dichloroethylene	2012/09/22		105	%	70 - 130
			cis-1,2-Dichloroethylene	2012/09/22		102	%	70 - 130
			trans-1,2-Dichloroethylene	2012/09/22		105	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/09/22		102	%	70 - 130
			Chloroform	2012/09/22		102	%	70 - 130
			Carbon Tetrachloride	2012/09/22		110	%	70 - 130
			1,1-Dichloroethane	2012/09/22		104	%	70 - 130
			1,2-Dichloroethane	2012/09/22		110	%	70 - 130
			Ethylene Dibromide	2012/09/22		101	%	70 - 130
			1,1,1-Trichloroethane	2012/09/22		105	%	70 - 130
			1,1,2-Trichloroethane	2012/09/22		100	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/09/22		104	%	70 - 130
			cis-1,3-Dichloropropene	2012/09/22		98	%	70 - 130
			trans-1,3-Dichloropropene	2012/09/22		103	%	70 - 130
			1,2-Dichloropropane	2012/09/22		99	%	70 - 130
			Bromomethane	2012/09/22		114	%	70 - 130
			Bromoform	2012/09/22		125	%	70 - 130
			Bromodichloromethane	2012/09/22		112	%	70 - 130
			Dibromochloromethane	2012/09/22		117	%	70 - 130
			Trichloroethylene	2012/09/22		100	%	70 - 130
			Tetrachloroethylene	2012/09/22		105	%	70 - 130
			Benzene	2012/09/22		98	%	70 - 130
			Toluene	2012/09/22		98	%	70 - 130
			Ethylbenzene	2012/09/22		98	%	70 - 130
			p+m-Xylene	2012/09/22		95	%	70 - 130
			o-Xylene	2012/09/22		99	%	70 - 130
			Styrene	2012/09/22		81	%	70 - 130
			4-ethyltoluene	2012/09/22		113	%	70 - 130
			1,3,5-Trimethylbenzene	2012/09/22		101	%	70 - 130
			1,2,4-Trimethylbenzene	2012/09/22		100	%	70 - 130
			Chlorobenzene	2012/09/22		96	%	70 - 130
			Benzyl chloride	2012/09/22		107	%	70 - 130
			1,3-Dichlorobenzene	2012/09/22		99	%	70 - 130
			1,4-Dichlorobenzene	2012/09/22		99	%	70 - 130
			1,2-Dichlorobenzene	2012/09/22		98	%	70 - 130
			1,2,4-Trichlorobenzene	2012/09/22		82	%	70 - 130

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Quality Assurance Report (Continued)

Maxxam Job Number: GB2E3260

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2980011	MM2	Spiked Blank	Hexachlorobutadiene	2012/09/22		97	%	70 - 130
			Hexane	2012/09/22		106	%	70 - 130
			Heptane	2012/09/22		108	%	70 - 130
			Cyclohexane	2012/09/22		103	%	70 - 130
			Tetrahydrofuran	2012/09/22		108	%	70 - 130
			1,4-Dioxane	2012/09/22		99	%	70 - 130
			Xylene (Total)	2012/09/22		97	%	70 - 130
			Vinyl Bromide	2012/09/22		119	%	70 - 130
			Propene	2012/09/22		91	%	70 - 130
			2,2,4-Trimethylpentane	2012/09/22		104	%	70 - 130
			Carbon Disulfide	2012/09/22		97	%	70 - 130
			Vinyl Acetate	2012/09/22		116	%	70 - 130
		Method Blank	Bromochloromethane	2012/09/22		91	%	60 - 140
			D5-Chlorobenzene	2012/09/22		90	%	60 - 140
			Difluorobenzene	2012/09/22		93	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/22	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/09/22	<0.17		ppbv	
			Chloromethane	2012/09/22	<0.30		ppbv	
			Vinyl Chloride	2012/09/22	<0.18		ppbv	
			Chloroethane	2012/09/22	<0.30		ppbv	
			1,3-Butadiene	2012/09/22	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/09/22	<0.20		ppbv	
			Ethanol (ethyl alcohol)	2012/09/22	<2.3		ppbv	
			Trichlorotrifluoroethane	2012/09/22	<0.15		ppbv	
			2-propanol	2012/09/22	<3.0		ppbv	
			2-Propanone	2012/09/22	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/09/22	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/09/22	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/09/22	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/09/22	<0.20		ppbv	
			Ethyl Acetate	2012/09/22	<2.2		ppbv	
			1,1-Dichloroethylene	2012/09/22	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/09/22	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/09/22	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/09/22	<0.80		ppbv	
			Chloroform	2012/09/22	<0.15		ppbv	
			Carbon Tetrachloride	2012/09/22	<0.30		ppbv	
			1,1-Dichloroethane	2012/09/22	<0.20		ppbv	
			1,2-Dichloroethane	2012/09/22	<0.20		ppbv	
			Ethylene Dibromide	2012/09/22	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/09/22	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/09/22	<0.18		ppbv	
			1,1,2,2-Tetrachloroethane	2012/09/22	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/09/22	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/09/22	<0.17		ppbv	
			1,2-Dichloropropane	2012/09/22	<0.40		ppbv	
			Bromomethane	2012/09/22	<0.18		ppbv	
			Bromoform	2012/09/22	<0.20		ppbv	
			Bromodichloromethane	2012/09/22	<3.2		ppbv	
			Dibromochloromethane	2012/09/22	<0.20		ppbv	
			Trichloroethylene	2012/09/22	<0.30		ppbv	
			Tetrachloroethylene	2012/09/22	<0.20		ppbv	
			Benzene	2012/09/22	<0.18		ppbv	
			Toluene	2012/09/22	<0.20		ppbv	
			Ethylbenzene	2012/09/22	<0.20		ppbv	

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Quality Assurance Report (Continued)

Maxxam Job Number: GB2E3260

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2980011	MM2	Method Blank	p+m-Xylene	2012/09/22	<0.37		ppbv	
			o-Xylene	2012/09/22	<0.20		ppbv	
			Styrene	2012/09/22	<0.20		ppbv	
			4-ethyltoluene	2012/09/22	<3.0		ppbv	
			1,3,5-Trimethylbenzene	2012/09/22	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/09/22	<0.50		ppbv	
			Chlorobenzene	2012/09/22	<0.20		ppbv	
			Benzyl chloride	2012/09/22	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/09/22	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/09/22	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/09/22	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/09/22	<2.0		ppbv	
			Hexachlorobutadiene	2012/09/22	<3.0		ppbv	
			Hexane	2012/09/22	<0.30		ppbv	
			Heptane	2012/09/22	<0.30		ppbv	
			Cyclohexane	2012/09/22	<0.20		ppbv	
			Tetrahydrofuran	2012/09/22	<0.40		ppbv	
			1,4-Dioxane	2012/09/22	<2.0		ppbv	
			Xylene (Total)	2012/09/22	<0.60		ppbv	
			Vinyl Bromide	2012/09/22	<0.20		ppbv	
			Propene	2012/09/22	0.70, RDL=0.30		ppbv	
			2,2,4-Trimethylpentane	2012/09/22	<0.40		ppbv	
			Carbon Disulfide	2012/09/22	<0.50		ppbv	
			Vinyl Acetate	2012/09/22	<0.20		ppbv	
2984458	MM2	Spiked Blank	Bromochloromethane	2012/09/21		109	%	60 - 140
			D5-Chlorobenzene	2012/09/21		112	%	60 - 140
			Difluorobenzene	2012/09/21		110	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/21		102	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/09/21		120	%	70 - 130
			Chloromethane	2012/09/21		110	%	70 - 130
			Vinyl Chloride	2012/09/21		105	%	70 - 130
			Chloroethane	2012/09/21		112	%	70 - 130
			1,3-Butadiene	2012/09/21		111	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/09/21		106	%	70 - 130
			Ethanol (ethyl alcohol)	2012/09/21		96	%	70 - 130
			Trichlorotrifluoroethane	2012/09/21		100	%	70 - 130
			2-propanol	2012/09/21		109	%	70 - 130
			2-Propanone	2012/09/21		101	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/09/21		116	%	70 - 130
			Methyl Isobutyl Ketone	2012/09/21		118	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/09/21		120	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/09/21		100	%	70 - 130
			Ethyl Acetate	2012/09/21		111	%	70 - 130
			1,1-Dichloroethylene	2012/09/21		103	%	70 - 130
			cis-1,2-Dichloroethylene	2012/09/21		100	%	70 - 130
			trans-1,2-Dichloroethylene	2012/09/21		103	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/09/21		98	%	70 - 130
			Chloroform	2012/09/21		101	%	70 - 130
			Carbon Tetrachloride	2012/09/21		111	%	70 - 130
			1,1-Dichloroethane	2012/09/21		103	%	70 - 130
			1,2-Dichloroethane	2012/09/21		109	%	70 - 130
			Ethylene Dibromide	2012/09/21		102	%	70 - 130
			1,1,1-Trichloroethane	2012/09/21		106	%	70 - 130
			1,1,2-Trichloroethane	2012/09/21		100	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/09/21		102	%	70 - 130

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Quality Assurance Report (Continued)

Maxxam Job Number: GB2E3260

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2984458	MM2	Spiked Blank	cis-1,3-Dichloropropene	2012/09/21		99	%	70 - 130
			trans-1,3-Dichloropropene	2012/09/21		103	%	70 - 130
			1,2-Dichloropropane	2012/09/21		100	%	70 - 130
			Bromomethane	2012/09/21		109	%	70 - 130
			Bromoform	2012/09/21		125	%	70 - 130
			Bromodichloromethane	2012/09/21		114	%	70 - 130
			Dibromochloromethane	2012/09/21		118	%	70 - 130
			Trichloroethylene	2012/09/21		100	%	70 - 130
			Tetrachloroethylene	2012/09/21		106	%	70 - 130
			Benzene	2012/09/21		98	%	70 - 130
			Toluene	2012/09/21		99	%	70 - 130
			Ethylbenzene	2012/09/21		99	%	70 - 130
			p+m-Xylene	2012/09/21		97	%	70 - 130
			o-Xylene	2012/09/21		100	%	70 - 130
			Styrene	2012/09/21		81	%	70 - 130
			4-ethyltoluene	2012/09/21		113	%	70 - 130
			1,3,5-Trimethylbenzene	2012/09/21		101	%	70 - 130
			1,2,4-Trimethylbenzene	2012/09/21		98	%	70 - 130
			Chlorobenzene	2012/09/21		97	%	70 - 130
			Benzyl chloride	2012/09/21		104	%	70 - 130
			1,3-Dichlorobenzene	2012/09/21		97	%	70 - 130
			1,4-Dichlorobenzene	2012/09/21		97	%	70 - 130
			1,2-Dichlorobenzene	2012/09/21		96	%	70 - 130
			1,2,4-Trichlorobenzene	2012/09/21		80	%	70 - 130
			Hexachlorobutadiene	2012/09/21		99	%	70 - 130
			Hexane	2012/09/21		104	%	70 - 130
			Heptane	2012/09/21		107	%	70 - 130
			Cyclohexane	2012/09/21		102	%	70 - 130
			Tetrahydrofuran	2012/09/21		105	%	70 - 130
			1,4-Dioxane	2012/09/21		101	%	70 - 130
			Vinyl Bromide	2012/09/21		115	%	70 - 130
			Propene	2012/09/21		88	%	70 - 130
			2,2,4-Trimethylpentane	2012/09/21		104	%	70 - 130
			Carbon Disulfide	2012/09/21		95	%	70 - 130
			Vinyl Acetate	2012/09/21		112	%	70 - 130
		Method Blank	Bromochloromethane	2012/09/21		88	%	60 - 140
			D5-Chlorobenzene	2012/09/21		83	%	60 - 140
			Difluorobenzene	2012/09/21		89	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/09/21	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/09/21	<0.17		ppbv	
			Chloromethane	2012/09/21	<0.30		ppbv	
			Vinyl Chloride	2012/09/21	<0.18		ppbv	
			Chloroethane	2012/09/21	<0.30		ppbv	
			1,3-Butadiene	2012/09/21	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/09/21	<0.20		ppbv	
			Ethanol (ethyl alcohol)	2012/09/21	<2.3		ppbv	
			Trichlorotrifluoroethane	2012/09/21	<0.15		ppbv	
			2-propanol	2012/09/21	<3.0		ppbv	
			2-Propanone	2012/09/21	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/09/21	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/09/21	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/09/21	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/09/21	<0.20		ppbv	
			Ethyl Acetate	2012/09/21	<2.2		ppbv	
			1,1-Dichloroethylene	2012/09/21	<0.25		ppbv	

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Client Project #:
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Quality Assurance Report (Continued)

Maxxam Job Number: GB2E3260

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2984458	MM2	Method Blank	cis-1,2-Dichloroethylene	2012/09/21	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/09/21	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/09/21	<0.80		ppbv	
			Chloroform	2012/09/21	<0.15		ppbv	
			Carbon Tetrachloride	2012/09/21	<0.30		ppbv	
			1,1-Dichloroethane	2012/09/21	<0.20		ppbv	
			1,2-Dichloroethane	2012/09/21	<0.20		ppbv	
			Ethylene Dibromide	2012/09/21	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/09/21	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/09/21	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/09/21	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/09/21	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/09/21	<0.17		ppbv	
			1,2-Dichloropropane	2012/09/21	<0.40		ppbv	
			Bromomethane	2012/09/21	<0.18		ppbv	
			Bromoform	2012/09/21	<0.20		ppbv	
			Bromodichloromethane	2012/09/21	<0.20		ppbv	
			Dibromochloromethane	2012/09/21	<0.20		ppbv	
			Trichloroethylene	2012/09/21	<0.30		ppbv	
			Tetrachloroethylene	2012/09/21	<0.20		ppbv	
			Benzene	2012/09/21	<0.18		ppbv	
			Toluene	2012/09/21	<0.20		ppbv	
			Ethylbenzene	2012/09/21	<0.20		ppbv	
			p+m-Xylene	2012/09/21	<0.37		ppbv	
			o-Xylene	2012/09/21	<0.20		ppbv	
			Styrene	2012/09/21	<0.20		ppbv	
			4-ethyltoluene	2012/09/21	<2.2		ppbv	
			1,3,5-Trimethylbenzene	2012/09/21	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/09/21	<0.50		ppbv	
			Chlorobenzene	2012/09/21	<0.20		ppbv	
			Benzyl chloride	2012/09/21	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/09/21	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/09/21	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/09/21	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/09/21	<2.0		ppbv	
			Hexachlorobutadiene	2012/09/21	<3.0		ppbv	
			Hexane	2012/09/21	<0.30		ppbv	
			Heptane	2012/09/21	<0.30		ppbv	
			Cyclohexane	2012/09/21	<0.20		ppbv	
			Tetrahydrofuran	2012/09/21	<0.40		ppbv	
			1,4-Dioxane	2012/09/21	<2.0		ppbv	
			Xylene (Total)	2012/09/21	<0.60		ppbv	
			Vinyl Bromide	2012/09/21	<0.20		ppbv	
			Propene	2012/09/21	<0.30		ppbv	
			2,2,4-Trimethylpentane	2012/09/21	<0.20		ppbv	
			Carbon Disulfide	2012/09/21	<0.50		ppbv	
			Vinyl Acetate	2012/09/21	<0.20		ppbv	

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Cold Lake South
Station ID: Lica 1
Field Sample ID: LICA VOC/ CLS /Sept 18, 2012

Sampler s/n: 6167
Canister ID: 122
Canister Installation Date/Time: Sept 17, 2012 @ 08:00 mst
Canister Removal Date/Time: Sept 19, 2012 @ 06:23 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
18-Sep-12	09/18/2012 0:00	09/19/2012 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	646	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	23

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC# 11297

Technician Signiture: Ting Xu

Maxxam

Success Through Science®

Your C.O.C. #: 11297

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/10/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2E5920
Received: 2012/09/21, 10:15

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/10/04	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/10/04	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B2E5920
Report Date: 2012/10/05

RESULTS OF ANALYSES OF AIR

Maxxam ID		OX6148	OX6149	
Sampling Date		2012/09/18	2012/09/18	
COC Number		11297	11297	
	Units	**LICA VOC\CLS\SEPT 18,12**	**LICA VOC\PORT\SEPT 18,12**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	23	22	2993170

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E5920
Report Date: 2012/10/05

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OX6148				
Sampling Date		2012/09/18				
COC Number		11297				
	Units	**LICA VOC\CLS\SEPT 18,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.67	0.20	3.33	0.989	2993365
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2993365
Chloromethane	ppbv	0.63	0.30	1.29	0.620	2993365
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2993365
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2993365
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2993365
Trichlorofluoromethane (FREON 11)	ppbv	0.28	0.20	1.55	1.12	2993365
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2993365
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2993365
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2993365
2-Propanone	ppbv	2.89	0.80	6.87	1.90	2993365
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2993365
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2993365
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2993365
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2993365
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2993365
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2993365
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2993365
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2993365
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2993365
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2993365
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2993365
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2993365
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2993365
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2993365
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2993365
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2993365
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2993365
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2993365
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2993365
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2993365

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OX6148				
Sampling Date		2012/09/18				
COC Number		11297				
	Units	**LICA VOC\CLS\SEPT 18,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2993365
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2993365
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2993365
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2993365
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2993365
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2993365
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2993365
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2993365
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2993365
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2993365
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2993365
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2993365
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2993365
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2993365
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2993365
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2993365
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2993365
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2993365
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2993365
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2993365
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2993365
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2993365
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2993365
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2993365
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2993365
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2993365
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2993365
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2993365
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2993365
Propene	ppbv	<0.30	0.30	<0.516	0.516	2993365
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2993365
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2993365
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2993365

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E5920
Report Date: 2012/10/05

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OX6148				
Sampling Date		2012/09/18				
COC Number		11297				
	Units	**LICA VOC\CLS\SEPT 18,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	86		N/A	N/A	2993365
D5-Chlorobenzene	%	86		N/A	N/A	2993365
Difluorobenzene	%	88		N/A	N/A	2993365

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E5920
Report Date: 2012/10/05

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OX6149				
Sampling Date		2012/09/18				
COC Number		11297				
	Units	**LICA VOC\PORT\SEPT 18,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.66	0.20	3.26	0.989	2993365
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2993365
Chloromethane	ppbv	0.65	0.30	1.34	0.620	2993365
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2993365
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2993365
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2993365
Trichlorofluoromethane (FREON 11)	ppbv	0.28	0.20	1.60	1.12	2993365
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2993365
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2993365
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2993365
2-Propanone	ppbv	3.19	0.80	7.57	1.90	2993365
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2993365
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2993365
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2993365
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2993365
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2993365
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2993365
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2993365
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2993365
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2993365
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2993365
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2993365
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2993365
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2993365
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2993365
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2993365
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2993365
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2993365
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2993365
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2993365
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2993365

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OX6149				
Sampling Date		2012/09/18				
COC Number		11297				
	Units	**LICA VOC\PORT\SEPT 18,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2993365
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2993365
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2993365
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2993365
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2993365
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2993365
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2993365
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2993365
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2993365
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2993365
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2993365
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2993365
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2993365
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2993365
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2993365
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2993365
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2993365
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2993365
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2993365
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2993365
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2993365
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2993365
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2993365
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2993365
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2993365
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2993365
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2993365
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2993365
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2993365
Propene	ppbv	<0.30	0.30	<0.516	0.516	2993365
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2993365
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2993365
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2993365

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E5920
Report Date: 2012/10/05

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OX6149				
Sampling Date		2012/09/18				
COC Number		11297				
	Units	**LICA VOC\PORT\SEPT 18,12**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Surrogate Recovery (%)						
Bromochloromethane	%	85		N/A	N/A	2993365
D5-Chlorobenzene	%	85		N/A	N/A	2993365
Difluorobenzene	%	87		N/A	N/A	2993365

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E5920
Report Date: 2012/10/05

Test Summary

Maxxam ID OX6148 **Collected** 2012/09/18
Sample ID LICA VOC\CLS\SEPT 18,12 **Shipped**
Matrix AIR **Received** 2012/09/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2993170	N/A	2012/10/04	Yao Liang Sun
Volatile Organics in Air (TO-15)	GC/MS	2993365	N/A	2012/10/04	Yao Liang Sun

Maxxam ID OX6149 **Collected** 2012/09/18
Sample ID LICA VOC\PORT\SEPT 18,12 **Shipped**
Matrix AIR **Received** 2012/09/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2993170	N/A	2012/10/04	Yao Liang Sun
Volatile Organics in Air (TO-15)	GC/MS	2993365	N/A	2012/10/04	Yao Liang Sun

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Maxxam Analytics

Maxxam Job #: B2E5920
Report Date: 2012/10/05

GENERAL COMMENTS

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2E5920

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2993365	LSY	Spiked Blank	Bromochloromethane	2012/10/04		96	%	60 - 140
			D5-Chlorobenzene	2012/10/04		99	%	60 - 140
			Difluorobenzene	2012/10/04		99	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/10/04		89	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/10/04		110	%	70 - 130
			Chloromethane	2012/10/04		97	%	70 - 130
			Vinyl Chloride	2012/10/04		95	%	70 - 130
			Chloroethane	2012/10/04		93	%	70 - 130
			1,3-Butadiene	2012/10/04		96	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/10/04		97	%	70 - 130
			Ethanol (ethyl alcohol)	2012/10/04		84	%	70 - 130
			Trichlorotrifluoroethane	2012/10/04		115	%	70 - 130
			2-propanol	2012/10/04		99	%	70 - 130
			2-Propanone	2012/10/04		99	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/10/04		98	%	70 - 130
			Methyl Isobutyl Ketone	2012/10/04		96	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/10/04		94	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/10/04		96	%	70 - 130
			Ethyl Acetate	2012/10/04		96	%	70 - 130
			1,1-Dichloroethylene	2012/10/04		111	%	70 - 130
			cis-1,2-Dichloroethylene	2012/10/04		95	%	70 - 130
			trans-1,2-Dichloroethylene	2012/10/04		92	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/10/04		100	%	70 - 130
			Chloroform	2012/10/04		100	%	70 - 130
			Carbon Tetrachloride	2012/10/04		96	%	70 - 130
			1,1-Dichloroethane	2012/10/04		101	%	70 - 130
			1,2-Dichloroethane	2012/10/04		95	%	70 - 130
			Ethylene Dibromide	2012/10/04		91	%	70 - 130
			1,1,1-Trichloroethane	2012/10/04		97	%	70 - 130
			1,1,2-Trichloroethane	2012/10/04		93	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/10/04		85	%	70 - 130
			cis-1,3-Dichloropropene	2012/10/04		91	%	70 - 130
			trans-1,3-Dichloropropene	2012/10/04		92	%	70 - 130
			1,2-Dichloropropane	2012/10/04		92	%	70 - 130
			Bromomethane	2012/10/04		94	%	70 - 130
			Bromoform	2012/10/04		95	%	70 - 130
			Bromodichloromethane	2012/10/04		97	%	70 - 130
			Dibromochloromethane	2012/10/04		99	%	70 - 130
			Trichloroethylene	2012/10/04		91	%	70 - 130
			Tetrachloroethylene	2012/10/04		91	%	70 - 130
			Benzene	2012/10/04		94	%	70 - 130
			Toluene	2012/10/04		92	%	70 - 130
			Ethylbenzene	2012/10/04		91	%	70 - 130
			p+m-Xylene	2012/10/04		88	%	70 - 130
			o-Xylene	2012/10/04		88	%	70 - 130
			Styrene	2012/10/04		65 (1)	%	70 - 130
			4-ethyltoluene	2012/10/04		95	%	70 - 130
			1,3,5-Trimethylbenzene	2012/10/04		87	%	70 - 130
			1,2,4-Trimethylbenzene	2012/10/04		84	%	70 - 130
			Chlorobenzene	2012/10/04		91	%	70 - 130
			Benzyl chloride	2012/10/04		74	%	70 - 130
			1,3-Dichlorobenzene	2012/10/04		82	%	70 - 130
			1,4-Dichlorobenzene	2012/10/04		77	%	70 - 130
			1,2-Dichlorobenzene	2012/10/04		76	%	70 - 130
			1,2,4-Trichlorobenzene	2012/10/04		71	%	70 - 130

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E5920

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2993365	LSY	Spiked Blank	Hexachlorobutadiene	2012/10/04		76	%	70 - 130
			Hexane	2012/10/04		95	%	70 - 130
			Heptane	2012/10/04		94	%	70 - 130
			Cyclohexane	2012/10/04		94	%	70 - 130
			Tetrahydrofuran	2012/10/04		97	%	70 - 130
			1,4-Dioxane	2012/10/04		94	%	70 - 130
			Xylene (Total)	2012/10/04		92	%	70 - 130
			Vinyl Bromide	2012/10/04		103	%	70 - 130
			Propene	2012/10/04		89	%	70 - 130
			2,2,4-Trimethylpentane	2012/10/04		98	%	70 - 130
			Carbon Disulfide	2012/10/04		83	%	70 - 130
			Vinyl Acetate	2012/10/04		95	%	70 - 130
		Method Blank	Bromochloromethane	2012/10/04		89	%	60 - 140
			D5-Chlorobenzene	2012/10/04		88	%	60 - 140
			Difluorobenzene	2012/10/04		92	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/10/04	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/10/04	<0.17		ppbv	
			Chloromethane	2012/10/04	<0.30		ppbv	
			Vinyl Chloride	2012/10/04	<0.18		ppbv	
			Chloroethane	2012/10/04	<0.30		ppbv	
			1,3-Butadiene	2012/10/04	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/10/04	<0.20		ppbv	
			Ethanol (ethyl alcohol)	2012/10/04	<2.3		ppbv	
			Trichlorotrifluoroethane	2012/10/04	<0.15		ppbv	
			2-propanol	2012/10/04	<3.0		ppbv	
			2-Propanone	2012/10/04	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/10/04	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/10/04	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/10/04	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/10/04	<0.20		ppbv	
			Ethyl Acetate	2012/10/04	<2.2		ppbv	
			1,1-Dichloroethylene	2012/10/04	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/10/04	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/10/04	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/10/04	<0.80		ppbv	
			Chloroform	2012/10/04	<0.15		ppbv	
			Carbon Tetrachloride	2012/10/04	<0.30		ppbv	
			1,1-Dichloroethane	2012/10/04	<0.20		ppbv	
			1,2-Dichloroethane	2012/10/04	<0.20		ppbv	
			Ethylene Dibromide	2012/10/04	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/10/04	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/10/04	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/10/04	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/10/04	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/10/04	<0.17		ppbv	
			1,2-Dichloropropane	2012/10/04	<0.40		ppbv	
			Bromomethane	2012/10/04	<0.18		ppbv	
			Bromoform	2012/10/04	<0.20		ppbv	
			Bromodichloromethane	2012/10/04	<0.20		ppbv	
			Dibromochloromethane	2012/10/04	<0.20		ppbv	
			Trichloroethylene	2012/10/04	<0.30		ppbv	
			Tetrachloroethylene	2012/10/04	<0.20		ppbv	
			Benzene	2012/10/04	<0.18		ppbv	
			Toluene	2012/10/04	<0.20		ppbv	
			Ethylbenzene	2012/10/04	<0.20		ppbv	

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E5920

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2993365	LSY	Method Blank	p+m-Xylene	2012/10/04	<0.37		ppbv	
			o-Xylene	2012/10/04	<0.20		ppbv	
			Styrene	2012/10/04	<0.20		ppbv	
			4-ethyltoluene	2012/10/04	<2.2		ppbv	
			1,3,5-Trimethylbenzene	2012/10/04	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/10/04	<0.50		ppbv	
			Chlorobenzene	2012/10/04	<0.20		ppbv	
			Benzyl chloride	2012/10/04	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/10/04	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/10/04	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/10/04	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/10/04	<2.0		ppbv	
			Hexachlorobutadiene	2012/10/04	<3.0		ppbv	
			Hexane	2012/10/04	<0.30		ppbv	
			Heptane	2012/10/04	<0.30		ppbv	
			Cyclohexane	2012/10/04	<0.20		ppbv	
			Tetrahydrofuran	2012/10/04	<0.40		ppbv	
			1,4-Dioxane	2012/10/04	<2.0		ppbv	
			Xylene (Total)	2012/10/04	<0.60		ppbv	
			Vinyl Bromide	2012/10/04	<0.20		ppbv	
			Propene	2012/10/04	<0.30		ppbv	
			2,2,4-Trimethylpentane	2012/10/04	<0.20		ppbv	
			Carbon Disulfide	2012/10/04	<0.50		ppbv	
			Vinyl Acetate	2012/10/04	<0.20		ppbv	
		RPD - Sample/Sample Dup	Dichlorodifluoromethane (FREON 12)	2012/10/04	NC		%	25
			1,2-Dichlorotetrafluoroethane	2012/10/04	NC		%	25
			Chloromethane	2012/10/04	NC		%	25
			Vinyl Chloride	2012/10/04	NC		%	25
			Chloroethane	2012/10/04	NC		%	25
			1,3-Butadiene	2012/10/04	NC		%	25
			Trichlorofluoromethane (FREON 11)	2012/10/04	NC		%	25
			Ethanol (ethyl alcohol)	2012/10/04	2.4		%	25
			Trichlorotrifluoroethane	2012/10/04	NC		%	25
			2-propanol	2012/10/04	NC		%	25
			2-Propanone	2012/10/04	5.9		%	25
			Methyl Ethyl Ketone (2-Butanone)	2012/10/04	NC		%	25
			Methyl Isobutyl Ketone	2012/10/04	NC		%	25
			Methyl Butyl Ketone (2-Hexanone)	2012/10/04	NC		%	25
			Methyl t-butyl ether (MTBE)	2012/10/04	NC		%	25
			Ethyl Acetate	2012/10/04	NC		%	25
			1,1-Dichloroethylene	2012/10/04	NC		%	25
			cis-1,2-Dichloroethylene	2012/10/04	NC		%	25
			trans-1,2-Dichloroethylene	2012/10/04	NC		%	25
			Methylene Chloride(Dichloromethane)	2012/10/04	NC		%	25
			Chloroform	2012/10/04	2.9		%	25
			Carbon Tetrachloride	2012/10/04	NC		%	25
			1,1-Dichloroethane	2012/10/04	NC		%	25
			1,2-Dichloroethane	2012/10/04	NC		%	25
			Ethylene Dibromide	2012/10/04	NC		%	25
			1,1,1-Trichloroethane	2012/10/04	NC		%	25
			1,1,2-Trichloroethane	2012/10/04	NC		%	25
			1,1,2,2-Tetrachloroethane	2012/10/04	NC		%	25
			cis-1,3-Dichloropropene	2012/10/04	NC		%	25

Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
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Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E5920

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2993365	LSY	RPD - Sample/Sample Dup	trans-1,3-Dichloropropene	2012/10/04	NC		%	25
			1,2-Dichloropropane	2012/10/04	NC		%	25
			Bromomethane	2012/10/04	NC		%	25
			Bromoform	2012/10/04	NC		%	25
			Bromodichloromethane	2012/10/04	NC		%	25
			Dibromochloromethane	2012/10/04	NC		%	25
			Trichloroethylene	2012/10/04	NC		%	25
			Tetrachloroethylene	2012/10/04	NC		%	25
			Benzene	2012/10/04	NC		%	25
			Toluene	2012/10/04	0.4		%	25
			Ethylbenzene	2012/10/04	NC		%	25
			p+m-Xylene	2012/10/04	NC		%	25
			o-Xylene	2012/10/04	NC		%	25
			Styrene	2012/10/04	NC		%	25
			4-ethyltoluene	2012/10/04	NC		%	25
			1,3,5-Trimethylbenzene	2012/10/04	NC		%	25
			1,2,4-Trimethylbenzene	2012/10/04	NC		%	25
			Chlorobenzene	2012/10/04	NC		%	25
			Benzyl chloride	2012/10/04	NC		%	25
			1,3-Dichlorobenzene	2012/10/04	NC		%	25
			1,4-Dichlorobenzene	2012/10/04	NC		%	25
			1,2-Dichlorobenzene	2012/10/04	NC		%	25
			1,2,4-Trichlorobenzene	2012/10/04	NC		%	25
			Hexachlorobutadiene	2012/10/04	NC		%	25
			Hexane	2012/10/04	2.5		%	25
			Heptane	2012/10/04	NC		%	25
			Cyclohexane	2012/10/04	1.9		%	25
			Tetrahydrofuran	2012/10/04	NC		%	25
			1,4-Dioxane	2012/10/04	NC		%	25
			Xylene (Total)	2012/10/04	NC		%	25
			Vinyl Bromide	2012/10/04	NC		%	25
			Propene	2012/10/04	NC		%	25
			2,2,4-Trimethylpentane	2012/10/04	NC		%	25
			Carbon Disulfide	2012/10/04	NC		%	25
			Vinyl Acetate	2012/10/04	NC		%	25

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Cold Lake South
Station ID: Lica 1
Field Sample ID: LICA VOC/ CLS /Sept 24, 2012

Sampler s/n: 6167
Canister ID: 249
Canister Installation Date/Time: Sept 19, 2012 @ 07:48 mst
Canister Removal Date/Time: Sept 25, 2012 @ 07:19 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
24-Sep-12	09/24/2012 0:00	09/25/2012 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	646	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	23

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC# 09982

Technician Signiture: Ting Xu

Maxxam

Success Through Science®

Your C.O.C. #: 09982

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/10/12

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2E9374
Received: 2012/09/27, 09:43

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/10/11	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/10/11	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B2E9374
Report Date: 2012/10/12

RESULTS OF ANALYSES OF AIR

Maxxam ID		OZ4027	OZ4028	
Sampling Date		2012/09/24	2012/09/24	
COC Number		09982	09982	
	Units	**LICAVOC\CLS\SEPT 24,12 / 249**	**LICAVOC\PORT\SEPT 24,12 / 267**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	23	22	2999177
QC Batch = Quality Control Batch				

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OZ4027				
Sampling Date		2012/09/24				
COC Number		09982				
	Units	**LICAVOC\CLS\SEPT 24,12 / 249**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.64	0.20	3.15	0.989	2999175
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2999175
Chloromethane	ppbv	0.49	0.30	1.00	0.620	2999175
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2999175
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2999175
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2999175
Trichlorofluoromethane (FREON 11)	ppbv	0.30	0.20	1.71	1.12	2999175
Ethanol (ethyl alcohol)	ppbv	4.0	2.3	7.46	4.33	2999175
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2999175
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2999175
2-Propanone	ppbv	3.26	0.80	7.75	1.90	2999175
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2999175
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2999175
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2999175
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2999175
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2999175
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2999175
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2999175
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2999175
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2999175
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2999175
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2999175
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2999175
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2999175
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2999175
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2999175
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2999175
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2999175
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2999175
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2999175
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2999175
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2999175

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OZ4027				
Sampling Date		2012/09/24				
COC Number		09982				
	Units	**LICAVOC\CLS\SEPT 24,12 / 249**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2999175
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2999175
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2999175
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2999175
Tetrachloroethylene	ppbv	0.59	0.20	4.00	1.36	2999175
Benzene	ppbv	0.26	0.18	0.829	0.575	2999175
Toluene	ppbv	0.78	0.20	2.94	0.753	2999175
Ethylbenzene	ppbv	0.48	0.20	2.06	0.868	2999175
p+m-Xylene	ppbv	1.61	0.37	7.01	1.61	2999175
o-Xylene	ppbv	0.41	0.20	1.76	0.868	2999175
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2999175
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2999175
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2999175
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2999175
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2999175
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2999175
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2999175
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2999175
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2999175
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2999175
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2999175
Hexane	ppbv	0.33	0.30	1.16	1.06	2999175
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2999175
Cyclohexane	ppbv	0.25	0.20	0.863	0.688	2999175
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2999175
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2999175
Xylene (Total)	ppbv	2.02	0.60	8.77	2.61	2999175
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2999175
Propene	ppbv	<2.0	2.0	<3.42	3.42	2999175
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2999175
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2999175
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2999175
Surrogate Recovery (%)						
Bromochloromethane	%	77		N/A	N/A	2999175

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E9374
Report Date: 2012/10/12

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OZ4027				
Sampling Date		2012/09/24				
COC Number		09982				
	Units	**LICAVOC\CLS\SEPT 24,12 / 249**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
D5-Chlorobenzene	%	73		N/A	N/A	2999175
Difluorobenzene	%	83		N/A	N/A	2999175

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E9374
Report Date: 2012/10/12

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OZ4028				
Sampling Date		2012/09/24				
COC Number		09982				
	Units	**LICAVOC\PORT\SEPT 24,12 / 267**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.63	0.20	3.11	0.989	2999175
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2999175
Chloromethane	ppbv	0.47	0.30	0.972	0.620	2999175
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2999175
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2999175
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2999175
Trichlorofluoromethane (FREON 11)	ppbv	0.27	0.20	1.53	1.12	2999175
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	2999175
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2999175
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2999175
2-Propanone	ppbv	4.29	0.80	10.2	1.90	2999175
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2999175
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2999175
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2999175
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2999175
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2999175
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2999175
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2999175
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2999175
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2999175
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2999175
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2999175
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2999175
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2999175
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2999175
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2999175
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2999175
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2999175
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2999175
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2999175
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2999175
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2999175

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OZ4028				
Sampling Date		2012/09/24				
COC Number		09982				
	Units	**LICAVOC\PORT\SEPT 24,12 / 267**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2999175
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2999175
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2999175
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2999175
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2999175
Benzene	ppbv	0.30	0.18	0.964	0.575	2999175
Toluene	ppbv	0.31	0.20	1.18	0.753	2999175
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2999175
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2999175
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2999175
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2999175
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2999175
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2999175
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2999175
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2999175
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2999175
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2999175
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2999175
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2999175
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2999175
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2999175
Hexane	ppbv	1.41	0.30	4.97	1.06	2999175
Heptane	ppbv	0.66	0.30	2.70	1.23	2999175
Cyclohexane	ppbv	0.71	0.20	2.44	0.688	2999175
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2999175
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2999175
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2999175
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2999175
Propene	ppbv	<2.8	2.8	<4.73	4.73	2999175
2,2,4-Trimethylpentane	ppbv	0.24	0.20	1.13	0.934	2999175
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2999175
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2999175
Surrogate Recovery (%)						
Bromochloromethane	%	78		N/A	N/A	2999175

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E9374
Report Date: 2012/10/12

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		OZ4028				
Sampling Date		2012/09/24				
COC Number		09982				
	Units	**LICAVOC\PORT\SEPT 24,12 / 267**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
D5-Chlorobenzene	%	87		N/A	N/A	2999175
Difluorobenzene	%	85		N/A	N/A	2999175

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E9374
Report Date: 2012/10/12

Test Summary

Maxxam ID OZ4027 **Collected** 2012/09/24
Sample ID LICAVOC\CLS\SEPT 24,12 / 249 **Shipped**
Matrix AIR **Received** 2012/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2999177	N/A	2012/10/11	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2999175	N/A	2012/10/11	Melanie Mabini

Maxxam ID OZ4028 **Collected** 2012/09/24
Sample ID LICAVOC\PORT\SEPT 24,12 / 267 **Shipped**
Matrix AIR **Received** 2012/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2999177	N/A	2012/10/11	Melanie Mabini
Volatile Organics in Air (TO-15)	GC/MS	2999175	N/A	2012/10/11	Melanie Mabini

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Maxxam Analytics

Maxxam Job #: B2E9374
Report Date: 2012/10/12

GENERAL COMMENTS

Sample OZ4027-01: Increase MDL for propene due to matrix interference on a possible positive.

Sample OZ4028-01: Increase MDL for propene due to matrix interference on a possible positive.

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2E9374

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2999175	MM2	Spiked Blank	Bromochloromethane	2012/10/11		113	%	60 - 140
			D5-Chlorobenzene	2012/10/11		116	%	60 - 140
			Difluorobenzene	2012/10/11		120	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/10/11		90	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/10/11		105	%	70 - 130
			Chloromethane	2012/10/11		94	%	70 - 130
			Vinyl Chloride	2012/10/11		95	%	70 - 130
			Chloroethane	2012/10/11		90	%	70 - 130
			1,3-Butadiene	2012/10/11		94	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/10/11		103	%	70 - 130
			Ethanol (ethyl alcohol)	2012/10/11		85	%	70 - 130
			Trichlorotrifluoroethane	2012/10/11		83	%	70 - 130
			2-propanol	2012/10/11		91	%	70 - 130
			2-Propanone	2012/10/11		89	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/10/11		109	%	70 - 130
			Methyl Isobutyl Ketone	2012/10/11		91	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/10/11		95	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/10/11		94	%	70 - 130
			Ethyl Acetate	2012/10/11		95	%	70 - 130
			1,1-Dichloroethylene	2012/10/11		86	%	70 - 130
			cis-1,2-Dichloroethylene	2012/10/11		93	%	70 - 130
			trans-1,2-Dichloroethylene	2012/10/11		92	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/10/11		85	%	70 - 130
			Chloroform	2012/10/11		92	%	70 - 130
			Carbon Tetrachloride	2012/10/11		92	%	70 - 130
			1,1-Dichloroethane	2012/10/11		97	%	70 - 130
			1,2-Dichloroethane	2012/10/11		91	%	70 - 130
			Ethylene Dibromide	2012/10/11		96	%	70 - 130
			1,1,1-Trichloroethane	2012/10/11		91	%	70 - 130
			1,1,2-Trichloroethane	2012/10/11		95	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/10/11		95	%	70 - 130
			cis-1,3-Dichloropropene	2012/10/11		96	%	70 - 130
			trans-1,3-Dichloropropene	2012/10/11		97	%	70 - 130
			1,2-Dichloropropane	2012/10/11		91	%	70 - 130
			Bromomethane	2012/10/11		92	%	70 - 130
			Bromoform	2012/10/11		107	%	70 - 130
			Bromodichloromethane	2012/10/11		93	%	70 - 130
			Dibromochloromethane	2012/10/11		97	%	70 - 130
			Trichloroethylene	2012/10/11		88	%	70 - 130
			Tetrachloroethylene	2012/10/11		95	%	70 - 130
			Benzene	2012/10/11		92	%	70 - 130
			Toluene	2012/10/11		96	%	70 - 130
			Ethylbenzene	2012/10/11		99	%	70 - 130
			p+m-Xylene	2012/10/11		98	%	70 - 130
			o-Xylene	2012/10/11		100	%	70 - 130
			Styrene	2012/10/11		104	%	70 - 130
			4-ethyltoluene	2012/10/11		110	%	70 - 130
			1,3,5-Trimethylbenzene	2012/10/11		100	%	70 - 130
			1,2,4-Trimethylbenzene	2012/10/11		97	%	70 - 130
			Chlorobenzene	2012/10/11		98	%	70 - 130
			Benzyl chloride	2012/10/11		96	%	70 - 130
			1,3-Dichlorobenzene	2012/10/11		99	%	70 - 130
			1,4-Dichlorobenzene	2012/10/11		100	%	70 - 130
			1,2-Dichlorobenzene	2012/10/11		92	%	70 - 130
			1,2,4-Trichlorobenzene	2012/10/11		87	%	70 - 130

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E9374

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2999175	MM2	Spiked Blank	Hexachlorobutadiene	2012/10/11		90	%	70 - 130
			Hexane	2012/10/11		97	%	70 - 130
			Heptane	2012/10/11		92	%	70 - 130
			Cyclohexane	2012/10/11		93	%	70 - 130
			Tetrahydrofuran	2012/10/11		95	%	70 - 130
			1,4-Dioxane	2012/10/11		92	%	70 - 130
			Vinyl Bromide	2012/10/11		89	%	70 - 130
			Propene	2012/10/11		79	%	70 - 130
			2,2,4-Trimethylpentane	2012/10/11		90	%	70 - 130
			Carbon Disulfide	2012/10/11		90	%	70 - 130
			Vinyl Acetate	2012/10/11		97	%	70 - 130
		Method Blank	Bromochloromethane	2012/10/11		80	%	60 - 140
			D5-Chlorobenzene	2012/10/11		78	%	60 - 140
			Difluorobenzene	2012/10/11		85	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/10/11	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/10/11	<0.17		ppbv	
			Chloromethane	2012/10/11	<0.30		ppbv	
			Vinyl Chloride	2012/10/11	<0.18		ppbv	
			Chloroethane	2012/10/11	<0.30		ppbv	
			1,3-Butadiene	2012/10/11	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/10/11	<0.20		ppbv	
			Ethanol (ethyl alcohol)	2012/10/11	<2.3		ppbv	
			Trichlorotrifluoroethane	2012/10/11	<0.15		ppbv	
			2-propanol	2012/10/11	<3.0		ppbv	
			2-Propanone	2012/10/11	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/10/11	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/10/11	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/10/11	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/10/11	<0.20		ppbv	
			Ethyl Acetate	2012/10/11	<2.2		ppbv	
			1,1-Dichloroethylene	2012/10/11	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/10/11	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/10/11	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/10/11	<0.80		ppbv	
			Chloroform	2012/10/11	<0.15		ppbv	
			Carbon Tetrachloride	2012/10/11	<0.30		ppbv	
			1,1-Dichloroethane	2012/10/11	<0.20		ppbv	
			1,2-Dichloroethane	2012/10/11	<0.20		ppbv	
			Ethylene Dibromide	2012/10/11	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/10/11	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/10/11	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/10/11	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/10/11	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/10/11	<0.17		ppbv	
			1,2-Dichloropropane	2012/10/11	<0.40		ppbv	
			Bromomethane	2012/10/11	<0.18		ppbv	
			Bromoform	2012/10/11	<0.20		ppbv	
			Bromodichloromethane	2012/10/11	<0.20		ppbv	
			Dibromochloromethane	2012/10/11	<0.20		ppbv	
			Trichloroethylene	2012/10/11	<0.30		ppbv	
			Tetrachloroethylene	2012/10/11	<0.20		ppbv	
			Benzene	2012/10/11	<0.18		ppbv	
			Toluene	2012/10/11	<0.20		ppbv	
			Ethylbenzene	2012/10/11	<0.20		ppbv	
			p+m-Xylene	2012/10/11	<0.37		ppbv	

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E9374

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2999175	MM2	Method Blank	o-Xylene	2012/10/11	<0.20		ppbv	
			Styrene	2012/10/11	<0.20		ppbv	
			4-ethyltoluene	2012/10/11	<2.2		ppbv	
			1,3,5-Trimethylbenzene	2012/10/11	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/10/11	<0.50		ppbv	
			Chlorobenzene	2012/10/11	<0.20		ppbv	
			Benzyl chloride	2012/10/11	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/10/11	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/10/11	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/10/11	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/10/11	<2.0		ppbv	
			Hexachlorobutadiene	2012/10/11	<3.0		ppbv	
			Hexane	2012/10/11	<0.30		ppbv	
			Heptane	2012/10/11	<0.30		ppbv	
			Cyclohexane	2012/10/11	<0.20		ppbv	
			Tetrahydrofuran	2012/10/11	<0.40		ppbv	
			1,4-Dioxane	2012/10/11	<2.0		ppbv	
			Xylene (Total)	2012/10/11	<0.60		ppbv	
			Vinyl Bromide	2012/10/11	<0.20		ppbv	
			Propene	2012/10/11	<0.30		ppbv	
			2,2,4-Trimethylpentane	2012/10/11	<0.20		ppbv	
			Carbon Disulfide	2012/10/11	<0.50		ppbv	
			Vinyl Acetate	2012/10/11	<0.20		ppbv	
		RPD - Sample/Sample Dup	Dichlorodifluoromethane (FREON 12)	2012/10/11	NC		%	25
			1,2-Dichlorotetrafluoroethane	2012/10/11	NC		%	25
			Chloromethane	2012/10/11	NC		%	25
			Vinyl Chloride	2012/10/11	NC		%	25
			Chloroethane	2012/10/11	NC		%	25
			1,3-Butadiene	2012/10/11	NC		%	25
			Trichlorofluoromethane (FREON 11)	2012/10/11	NC		%	25
			Ethanol (ethyl alcohol)	2012/10/11	NC		%	25
			Trichlorotrifluoroethane	2012/10/11	NC		%	25
			2-propanol	2012/10/11	NC		%	25
			2-Propanone	2012/10/11	NC		%	25
			Methyl Ethyl Ketone (2-Butanone)	2012/10/11	NC		%	25
			Methyl Isobutyl Ketone	2012/10/11	NC		%	25
			Methyl Butyl Ketone (2-Hexanone)	2012/10/11	NC		%	25
			Methyl t-butyl ether (MTBE)	2012/10/11	NC		%	25
			Ethyl Acetate	2012/10/11	NC		%	25
			1,1-Dichloroethylene	2012/10/11	NC		%	25
			cis-1,2-Dichloroethylene	2012/10/11	NC		%	25
			trans-1,2-Dichloroethylene	2012/10/11	NC		%	25
			Methylene Chloride(Dichloromethane)	2012/10/11	NC		%	25
			Chloroform	2012/10/11	NC		%	25
			Carbon Tetrachloride	2012/10/11	NC		%	25
			1,1-Dichloroethane	2012/10/11	NC		%	25
			1,2-Dichloroethane	2012/10/11	NC		%	25
			Ethylene Dibromide	2012/10/11	NC		%	25
			1,1,1-Trichloroethane	2012/10/11	NC		%	25
			1,1,2-Trichloroethane	2012/10/11	NC		%	25
			1,1,2,2-Tetrachloroethane	2012/10/11	NC		%	25
			cis-1,3-Dichloropropene	2012/10/11	NC		%	25
			trans-1,3-Dichloropropene	2012/10/11	NC		%	25

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E9374

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2999175	MM2	RPD - Sample/Sample Dup	1,2-Dichloropropane	2012/10/11	NC		%	25
			Bromomethane	2012/10/11	NC		%	25
			Bromoform	2012/10/11	NC		%	25
			Bromodichloromethane	2012/10/11	NC		%	25
			Dibromochloromethane	2012/10/11	NC		%	25
			Trichloroethylene	2012/10/11	NC		%	25
			Tetrachloroethylene	2012/10/11	NC		%	25
			Benzene	2012/10/11	4.6		%	25
			Toluene	2012/10/11	3.3		%	25
			Ethylbenzene	2012/10/11	NC		%	25
			p+m-Xylene	2012/10/11	NC		%	25
			o-Xylene	2012/10/11	NC		%	25
			Styrene	2012/10/11	NC		%	25
			4-ethyltoluene	2012/10/11	NC		%	25
			1,3,5-Trimethylbenzene	2012/10/11	NC		%	25
			1,2,4-Trimethylbenzene	2012/10/11	NC		%	25
			Chlorobenzene	2012/10/11	NC		%	25
			Benzyl chloride	2012/10/11	NC		%	25
			1,3-Dichlorobenzene	2012/10/11	NC		%	25
			1,4-Dichlorobenzene	2012/10/11	NC		%	25
			1,2-Dichlorobenzene	2012/10/11	NC		%	25
			1,2,4-Trichlorobenzene	2012/10/11	NC		%	25
			Hexachlorobutadiene	2012/10/11	NC		%	25
			Hexane	2012/10/11	NC		%	25
			Heptane	2012/10/11	NC		%	25
			Cyclohexane	2012/10/11	NC		%	25
			Tetrahydrofuran	2012/10/11	NC		%	25
			1,4-Dioxane	2012/10/11	NC		%	25
			Xylene (Total)	2012/10/11	NC		%	25
			Vinyl Bromide	2012/10/11	NC		%	25
			Propene	2012/10/11	NC		%	25
			2,2,4-Trimethylpentane	2012/10/11	NC		%	25
			Carbon Disulfide	2012/10/11	NC		%	25
			Vinyl Acetate	2012/10/11	NC		%	25

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA
Location: Cold Lake South
Station ID: Lica 1
Field Sample ID: LICA VOC/ CLS /Sept 30, 2012

Sampler s/n: 6167
Canister ID: 7837
Canister Installation Date/Time: Sept 28, 2012 @ 15:42 mst
Canister Removal Date/Time: Oct 01, 2012 @ 16:43 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
30-Sep-12	09/30/2012 0:00	10/01/2012 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	646	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	23

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC# 10068

Technician Signiture: Ting Xu

Maxxam

Success Through Science®

Your C.O.C. #: 10068

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/10/24

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2F6937
Received: 2012/10/10, 11:55

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2012/10/23	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) (1)	2	N/A	2012/10/23	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

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

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B2F6937
Report Date: 2012/10/24

RESULTS OF ANALYSES OF AIR

Maxxam ID		PD3929	PD3930	
Sampling Date		2012/09/30 00:00	2012/09/30 00:00	
COC Number		10068	10068	
	Units	**LICA VOC/CLS/SEPT 30,12 - 7837**	**LICA VOC/PORT/SEPT 30,12 - 255**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	22	22	3012555

QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		PD3929				
Sampling Date		2012/09/30 00:00				
COC Number		10068				
	Units	**LICA VOC/CLS/SEPT 30,12 - 7837**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.73	0.20	3.61	0.989	3012911
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	3012911
Chloromethane	ppbv	0.58	0.30	1.21	0.620	3012911
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	3012911
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	3012911
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	3012911
Trichlorofluoromethane (FREON 11)	ppbv	0.29	0.20	1.65	1.12	3012911
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	3012911
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	3012911
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	3012911
2-Propanone	ppbv	2.43	0.80	5.77	1.90	3012911
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	3012911
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	3012911
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	3012911
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	3012911
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	3012911
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	3012911
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	3012911
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	3012911
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	3012911
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	3012911
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	3012911
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3012911
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3012911
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	3012911
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	3012911
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	3012911
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	3012911
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	3012911
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	3012911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		PD3929				
Sampling Date		2012/09/30 00:00				
COC Number		10068				
	Units	**LICA VOC/CLS/SEPT 30,12 - 7837**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	3012911
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	3012911
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	3012911
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	3012911
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	3012911
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	3012911
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	3012911
Benzene	ppbv	<0.18	0.18	<0.575	0.575	3012911
Toluene	ppbv	<0.20	0.20	<0.753	0.753	3012911
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	3012911
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	3012911
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	3012911
Styrene	ppbv	<0.20	0.20	<0.852	0.852	3012911
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	3012911
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3012911
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3012911
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	3012911
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	3012911
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3012911
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3012911
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3012911
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	3012911
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	3012911
Hexane	ppbv	<0.30	0.30	<1.06	1.06	3012911
Heptane	ppbv	<0.30	0.30	<1.23	1.23	3012911
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	3012911
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	3012911
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	3012911
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	3012911
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	3012911
Propene	ppbv	<0.30	0.30	<0.516	0.516	3012911
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	3012911

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2F6937
Report Date: 2012/10/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		PD3929				
Sampling Date		2012/09/30 00:00				
COC Number		10068				
	Units	**LICA VOC/CLS/SEPT 30,12 - 7837**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	3012911
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	3012911
Surrogate Recovery (%)						
Bromochloromethane	%	86		N/A	N/A	3012911
D5-Chlorobenzene	%	87		N/A	N/A	3012911
Difluorobenzene	%	88		N/A	N/A	3012911

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2F6937
Report Date: 2012/10/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		PD3930				
Sampling Date		2012/09/30 00:00				
COC Number		10068				
	Units	**LICA VOC/PORT/SEPT 30,12 - 255**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.69	0.20	3.43	0.989	3012911
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	3012911
Chloromethane	ppbv	0.61	0.30	1.27	0.620	3012911
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	3012911
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	3012911
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	3012911
Trichlorofluoromethane (FREON 11)	ppbv	0.29	0.20	1.64	1.12	3012911
Ethanol (ethyl alcohol)	ppbv	<2.3	2.3	<4.33	4.33	3012911
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	3012911
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	3012911
2-Propanone	ppbv	4.81	0.80	11.4	1.90	3012911
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	3012911
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	3012911
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	3012911
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	3012911
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	3012911
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	3012911
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	3012911
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	3012911
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	3012911
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	3012911
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	3012911
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3012911
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	3012911
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	3012911
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	3012911
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	3012911
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	3012911
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	3012911
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	3012911

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		PD3930				
Sampling Date		2012/09/30 00:00				
COC Number		10068				
	Units	**LICA VOC/PORT/SEPT 30,12 - 255**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	3012911
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	3012911
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	3012911
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	3012911
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	3012911
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	3012911
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	3012911
Benzene	ppbv	0.23	0.18	0.748	0.575	3012911
Toluene	ppbv	0.51	0.20	1.91	0.753	3012911
Ethylbenzene	ppbv	0.36	0.20	1.58	0.868	3012911
p+m-Xylene	ppbv	0.82	0.37	3.56	1.61	3012911
o-Xylene	ppbv	0.26	0.20	1.13	0.868	3012911
Styrene	ppbv	<0.20	0.20	<0.852	0.852	3012911
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	3012911
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3012911
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	3012911
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	3012911
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	3012911
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3012911
1,4-Dichlorobenzene	ppbv	0.46	0.40	2.77	2.40	3012911
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	3012911
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	3012911
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	3012911
Hexane	ppbv	<0.30	0.30	<1.06	1.06	3012911
Heptane	ppbv	<0.30	0.30	<1.23	1.23	3012911
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	3012911
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	3012911
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	3012911
Xylene (Total)	ppbv	1.08	0.60	4.69	2.61	3012911
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	3012911
Propene	ppbv	<0.30	0.30	<0.516	0.516	3012911
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	3012911

QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2F6937
Report Date: 2012/10/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		PD3930				
Sampling Date		2012/09/30 00:00				
COC Number		10068				
	Units	**LICA VOC/PORT/SEPT 30,12 - 255**	**RDL**	**ug/m3**	**DL (ug/m3)**	**QC Batch**
Carbon Disulfide	ppbv	1.16	0.50	3.60	1.56	3012911
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	3012911
Surrogate Recovery (%)						
Bromochloromethane	%	83		N/A	N/A	3012911
D5-Chlorobenzene	%	85		N/A	N/A	3012911
Difluorobenzene	%	86		N/A	N/A	3012911

N/A = Not Applicable
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2F6937
Report Date: 2012/10/24

Test Summary

Maxxam ID PD3929 **Collected** 2012/09/30
Sample ID LICA VOC/CLS/SEPT 30,12 - 7837 **Shipped**
Matrix AIR **Received** 2012/10/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	3012555	N/A	2012/10/23	Yao Liang Sun
Volatile Organics in Air (TO-15)	GC/MS	3012911	N/A	2012/10/23	Yao Liang Sun

Maxxam ID PD3930 **Collected** 2012/09/30
Sample ID LICA VOC/PORT/SEPT 30,12 - 255 **Shipped**
Matrix AIR **Received** 2012/10/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	3012555	N/A	2012/10/23	Yao Liang Sun
Volatile Organics in Air (TO-15)	GC/MS	3012911	N/A	2012/10/23	Yao Liang Sun

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Maxxam Analytics

Maxxam Job #: B2F6937
Report Date: 2012/10/24

GENERAL COMMENTS

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2F6937

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3012911	LSY	Spiked Blank	Bromochloromethane	2012/10/23		95	%	60 - 140
			D5-Chlorobenzene	2012/10/23		97	%	60 - 140
			Difluorobenzene	2012/10/23		97	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/10/23		93	%	70 - 130
			1,2-Dichlorotetrafluoroethane	2012/10/23		112	%	70 - 130
			Chloromethane	2012/10/23		97	%	70 - 130
			Vinyl Chloride	2012/10/23		99	%	70 - 130
			Chloroethane	2012/10/23		95	%	70 - 130
			1,3-Butadiene	2012/10/23		97	%	70 - 130
			Trichlorofluoromethane (FREON 11)	2012/10/23		101	%	70 - 130
			Ethanol (ethyl alcohol)	2012/10/23		94	%	70 - 130
			Trichlorotrifluoroethane	2012/10/23		99	%	70 - 130
			2-propanol	2012/10/23		100	%	70 - 130
			2-Propanone	2012/10/23		96	%	70 - 130
			Methyl Ethyl Ketone (2-Butanone)	2012/10/23		99	%	70 - 130
			Methyl Isobutyl Ketone	2012/10/23		98	%	70 - 130
			Methyl Butyl Ketone (2-Hexanone)	2012/10/23		96	%	70 - 130
			Methyl t-butyl ether (MTBE)	2012/10/23		99	%	70 - 130
			Ethyl Acetate	2012/10/23		99	%	70 - 130
			1,1-Dichloroethylene	2012/10/23		95	%	70 - 130
			cis-1,2-Dichloroethylene	2012/10/23		98	%	70 - 130
			trans-1,2-Dichloroethylene	2012/10/23		98	%	70 - 130
			Methylene Chloride(Dichloromethane)	2012/10/23		92	%	70 - 130
			Chloroform	2012/10/23		100	%	70 - 130
			Carbon Tetrachloride	2012/10/23		103	%	70 - 130
			1,1-Dichloroethane	2012/10/23		100	%	70 - 130
			1,2-Dichloroethane	2012/10/23		98	%	70 - 130
			Ethylene Dibromide	2012/10/23		96	%	70 - 130
			1,1,1-Trichloroethane	2012/10/23		98	%	70 - 130
			1,1,2-Trichloroethane	2012/10/23		99	%	70 - 130
			1,1,2,2-Tetrachloroethane	2012/10/23		93	%	70 - 130
			cis-1,3-Dichloropropene	2012/10/23		95	%	70 - 130
			trans-1,3-Dichloropropene	2012/10/23		95	%	70 - 130
			1,2-Dichloropropane	2012/10/23		98	%	70 - 130
			Bromomethane	2012/10/23		99	%	70 - 130
			Bromoform	2012/10/23		94	%	70 - 130
			Bromodichloromethane	2012/10/23		98	%	70 - 130
			Dibromochloromethane	2012/10/23		97	%	70 - 130
			Trichloroethylene	2012/10/23		97	%	70 - 130
			Tetrachloroethylene	2012/10/23		98	%	70 - 130
			Benzene	2012/10/23		97	%	70 - 130
			Toluene	2012/10/23		98	%	70 - 130
			Ethylbenzene	2012/10/23		99	%	70 - 130
			p+m-Xylene	2012/10/23		97	%	70 - 130
			o-Xylene	2012/10/23		98	%	70 - 130
			Styrene	2012/10/23		91	%	70 - 130
			4-ethyltoluene	2012/10/23		94	%	70 - 130
			1,3,5-Trimethylbenzene	2012/10/23		96	%	70 - 130
			1,2,4-Trimethylbenzene	2012/10/23		93	%	70 - 130
			Chlorobenzene	2012/10/23		98	%	70 - 130
			Benzyl chloride	2012/10/23		76	%	70 - 130
			1,3-Dichlorobenzene	2012/10/23		86	%	70 - 130
			1,4-Dichlorobenzene	2012/10/23		79	%	70 - 130
			1,2-Dichlorobenzene	2012/10/23		83	%	70 - 130
			1,2,4-Trichlorobenzene	2012/10/23		81	%	70 - 130

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2F6937

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3012911	LSY	Spiked Blank	Hexachlorobutadiene	2012/10/23		96	%	70 - 130
			Hexane	2012/10/23		97	%	70 - 130
			Heptane	2012/10/23		95	%	70 - 130
			Cyclohexane	2012/10/23		95	%	70 - 130
			Tetrahydrofuran	2012/10/23		101	%	70 - 130
			1,4-Dioxane	2012/10/23		100	%	70 - 130
			Xylene (Total)	2012/10/23		97	%	70 - 130
			Vinyl Bromide	2012/10/23		96	%	70 - 130
			Propene	2012/10/23		92	%	70 - 130
			2,2,4-Trimethylpentane	2012/10/23		95	%	70 - 130
			Carbon Disulfide	2012/10/23		100	%	70 - 130
			Vinyl Acetate	2012/10/23		98	%	70 - 130
		Method Blank	Bromochloromethane	2012/10/23		81	%	60 - 140
			D5-Chlorobenzene	2012/10/23		80	%	60 - 140
			Difluorobenzene	2012/10/23		83	%	60 - 140
			Dichlorodifluoromethane (FREON 12)	2012/10/23	<0.20		ppbv	
			1,2-Dichlorotetrafluoroethane	2012/10/23	<0.17		ppbv	
			Chloromethane	2012/10/23	<0.30		ppbv	
			Vinyl Chloride	2012/10/23	<0.18		ppbv	
			Chloroethane	2012/10/23	<0.30		ppbv	
			1,3-Butadiene	2012/10/23	<0.50		ppbv	
			Trichlorofluoromethane (FREON 11)	2012/10/23	<0.20		ppbv	
			Ethanol (ethyl alcohol)	2012/10/23	<2.3		ppbv	
			Trichlorotrifluoroethane	2012/10/23	<0.15		ppbv	
			2-propanol	2012/10/23	<3.0		ppbv	
			2-Propanone	2012/10/23	<0.80		ppbv	
			Methyl Ethyl Ketone (2-Butanone)	2012/10/23	<3.0		ppbv	
			Methyl Isobutyl Ketone	2012/10/23	<3.2		ppbv	
			Methyl Butyl Ketone (2-Hexanone)	2012/10/23	<2.0		ppbv	
			Methyl t-butyl ether (MTBE)	2012/10/23	<0.20		ppbv	
			Ethyl Acetate	2012/10/23	<2.2		ppbv	
			1,1-Dichloroethylene	2012/10/23	<0.25		ppbv	
			cis-1,2-Dichloroethylene	2012/10/23	<0.19		ppbv	
			trans-1,2-Dichloroethylene	2012/10/23	<0.20		ppbv	
			Methylene Chloride(Dichloromethane)	2012/10/23	<0.80		ppbv	
			Chloroform	2012/10/23	<0.15		ppbv	
			Carbon Tetrachloride	2012/10/23	<0.30		ppbv	
			1,1-Dichloroethane	2012/10/23	<0.20		ppbv	
			1,2-Dichloroethane	2012/10/23	<0.20		ppbv	
			Ethylene Dibromide	2012/10/23	<0.17		ppbv	
			1,1,1-Trichloroethane	2012/10/23	<0.30		ppbv	
			1,1,2-Trichloroethane	2012/10/23	<0.15		ppbv	
			1,1,2,2-Tetrachloroethane	2012/10/23	<0.20		ppbv	
			cis-1,3-Dichloropropene	2012/10/23	<0.18		ppbv	
			trans-1,3-Dichloropropene	2012/10/23	<0.17		ppbv	
			1,2-Dichloropropane	2012/10/23	<0.40		ppbv	
			Bromomethane	2012/10/23	<0.18		ppbv	
			Bromoform	2012/10/23	<0.20		ppbv	
			Bromodichloromethane	2012/10/23	<0.20		ppbv	
			Dibromochloromethane	2012/10/23	<0.20		ppbv	
			Trichloroethylene	2012/10/23	<0.30		ppbv	
			Tetrachloroethylene	2012/10/23	<0.20		ppbv	
			Benzene	2012/10/23	<0.18		ppbv	
			Toluene	2012/10/23	<0.20		ppbv	
			Ethylbenzene	2012/10/23	<0.20		ppbv	

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Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2F6937

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3012911	LSY	Method Blank	p+m-Xylene	2012/10/23	<0.37		ppbv	
			o-Xylene	2012/10/23	<0.20		ppbv	
			Styrene	2012/10/23	<0.20		ppbv	
			4-ethyltoluene	2012/10/23	<2.2		ppbv	
			1,3,5-Trimethylbenzene	2012/10/23	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2012/10/23	<0.50		ppbv	
			Chlorobenzene	2012/10/23	<0.20		ppbv	
			Benzyl chloride	2012/10/23	<1.0		ppbv	
			1,3-Dichlorobenzene	2012/10/23	<0.40		ppbv	
			1,4-Dichlorobenzene	2012/10/23	<0.40		ppbv	
			1,2-Dichlorobenzene	2012/10/23	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2012/10/23	<2.0		ppbv	
			Hexachlorobutadiene	2012/10/23	<3.0		ppbv	
			Hexane	2012/10/23	<0.30		ppbv	
			Heptane	2012/10/23	<0.30		ppbv	
			Cyclohexane	2012/10/23	<0.20		ppbv	
			Tetrahydrofuran	2012/10/23	<0.40		ppbv	
			1,4-Dioxane	2012/10/23	<2.0		ppbv	
			Xylene (Total)	2012/10/23	<0.60		ppbv	
			Vinyl Bromide	2012/10/23	<0.20		ppbv	
			Propene	2012/10/23	<0.30		ppbv	
			2,2,4-Trimethylpentane	2012/10/23	<0.20		ppbv	
			Carbon Disulfide	2012/10/23	<0.50		ppbv	
			Vinyl Acetate	2012/10/23	<0.20		ppbv	
		RPD - Sample/Sample Dup	Dichlorodifluoromethane (FREON 12)		TBA		%	25
			1,2-Dichlorotetrafluoroethane		TBA		%	25
			Chloromethane		TBA		%	25
			Vinyl Chloride		TBA		%	25
			Chloroethane		TBA		%	25
			1,3-Butadiene		TBA		%	25
			Trichlorofluoromethane (FREON 11)		TBA		%	25
			Ethanol (ethyl alcohol)		TBA		%	25
			Trichlorotrifluoroethane		TBA		%	25
			2-propanol		TBA		%	25
			2-Propanone		TBA		%	25
			Methyl Ethyl Ketone (2-Butanone)		TBA		%	25
			Methyl Isobutyl Ketone		TBA		%	25
			Methyl Butyl Ketone (2-Hexanone)		TBA		%	25
			Methyl t-butyl ether (MTBE)		TBA		%	25
			Ethyl Acetate		TBA		%	25
			1,1-Dichloroethylene		TBA		%	25
			cis-1,2-Dichloroethylene		TBA		%	25
			trans-1,2-Dichloroethylene		TBA		%	25
			Methylene Chloride(Dichloromethane)		TBA		%	25
			Chloroform		TBA		%	25
			Carbon Tetrachloride		TBA		%	25
			1,1-Dichloroethane		TBA		%	25
			1,2-Dichloroethane		TBA		%	25
			Ethylene Dibromide		TBA		%	25
			1,1,1-Trichloroethane		TBA		%	25
			1,1,2-Trichloroethane		TBA		%	25
			1,1,2,2-Tetrachloroethane		TBA		%	25
			cis-1,3-Dichloropropene		TBA		%	25

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Quality Assurance Report (Continued)

Maxxam Job Number: GB2F6937

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3012911	LSY	RPD - Sample/Sample Dup	trans-1,3-Dichloropropene		TBA		%	25
			1,2-Dichloropropane		TBA		%	25
			Bromomethane		TBA		%	25
			Bromoform		TBA		%	25
			Bromodichloromethane		TBA		%	25
			Dibromochloromethane		TBA		%	25
			Trichloroethylene		TBA		%	25
			Tetrachloroethylene		TBA		%	25
			Benzene		TBA		%	25
			Toluene		TBA		%	25
			Ethylbenzene		TBA		%	25
			p+m-Xylene		TBA		%	25
			o-Xylene		TBA		%	25
			Styrene		TBA		%	25
			4-ethyltoluene		TBA		%	25
			1,3,5-Trimethylbenzene		TBA		%	25
			1,2,4-Trimethylbenzene		TBA		%	25
			Chlorobenzene		TBA		%	25
			Benzyl chloride		TBA		%	25
			1,3-Dichlorobenzene		TBA		%	25
			1,4-Dichlorobenzene		TBA		%	25
			1,2-Dichlorobenzene		TBA		%	25
			1,2,4-Trichlorobenzene		TBA		%	25
			Hexachlorobutadiene		TBA		%	25
			Hexane		TBA		%	25
			Heptane		TBA		%	25
			Cyclohexane		TBA		%	25
			Tetrahydrofuran		TBA		%	25
			1,4-Dioxane		TBA		%	25
			Xylene (Total)		TBA		%	25
			Vinyl Bromide		TBA		%	25
			Propene		TBA		%	25
			2,2,4-Trimethylpentane		TBA		%	25
			Carbon Disulfide		TBA		%	25
			Vinyl Acetate		TBA		%	25

TBA = Result to follow
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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Polycyclic Aromatic Hydrocarbons Laboratory Analysis

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Cold Lake South
Station ID: Lica1
Field Sample ID: LICA PUF/CLS/Aug 31, 2012

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Aug 30, 2012@ 06:48 mst
Removal Date/Time: Sept 04, 2012 @ 07:40 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
31-Aug-12	08/31/2012 0:00	09/01/2012 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
29-Aug-12	04-Sep-12	10-Sep-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
712	229	15.1	330.32

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC#11643
GB2B4295 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Aug 31, 2012

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 11643

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/09/20

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2D7358
Received: 2012/09/07, 08:30

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/09/09	2012/09/20	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

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

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: B2D7358
Report Date: 2012/09/20

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OT4463	OT4464		
Sampling Date		2012/08/31	2012/08/31		
COC Number		11643	11643		
	Units	**LICA PUFF+QFF/CLS/AUG 31,2012**	**LICA PUFF+QFF/PORT/AUG 31,2012**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2964271
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2964271
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2964271
2-Methylanthracene	ug	<0.10	<0.10	0.10	2964271
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2964271
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2964271
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2964271
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2964271
Acenaphthene	ug	<0.050	<0.050	0.050	2964271
Acenaphthylene	ug	<0.050	<0.050	0.050	2964271
Anthracene	ug	<0.050	<0.050	0.050	2964271
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2964271
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2964271
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2964271
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2964271
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2964271
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2964271
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2964271
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2964271
Biphenyl	ug	<0.10	<0.10	0.10	2964271
Chrysene	ug	<0.050	<0.050	0.050	2964271
Coronene	ug	<0.10	<0.10	0.10	2964271
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2964271
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2964271
Fluoranthene	ug	0.070	<0.050	0.050	2964271
Fluorene	ug	0.056	<0.050	0.050	2964271
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2964271
m-Terphenyl	ug	<0.10	<0.10	0.10	2964271
Naphthalene	ug	<0.072	<0.072	0.072	2964271
o-Terphenyl	ug	<0.10	<0.10	0.10	2964271
Perylene	ug	<0.10	<0.10	0.10	2964271

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Analytics

Maxxam Job #: B2D7358
Report Date: 2012/09/20

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OT4463	OT4464		
Sampling Date		2012/08/31	2012/08/31		
COC Number		11643	11643		
	Units	**LICA PUFF+QFF/CLS/AUG 31,2012**	**LICA PUFF+QFF/PORT/AUG 31,2012**	**RDL**	**QC Batch**
Phenanthrene	ug	0.344	0.090	0.050	2964271
p-Terphenyl	ug	<0.10	<0.10	0.10	2964271
Pyrene	ug	0.054	<0.050	0.050	2964271
Quinoline	ug	<0.40	<0.40	0.40	2964271
Tetralin	ug	<0.10	<0.10	0.10	2964271
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	56	68		2964271
D10-Fluoranthene	%	92	88		2964271
D10-Fluorene (FS)	%	6.0 (1)	6.0 (1)		2964271
D10-Phenanthrene	%	76	78		2964271
D12-Benzo(a)anthracene	%	90	100		2964271
D12-Benzo(a)pyrene	%	86	90		2964271
D12-Benzo(b)fluoranthene	%	86	88		2964271
D12-Benzo(ghi)perylene	%	84	86		2964271
D12-Benzo(k)fluoranthene	%	76	86		2964271
D12-Chrysene	%	74	80		2964271
D12-Indeno(1,2,3-cd)pyrene	%	84	86		2964271
D12-Perylene	%	82	86		2964271
D14-Dibenzo(a,h)anthracene	%	84	86		2964271
D14-Terphenyl (FS)	%	85	83		2964271
D8-Acenaphthylene	%	58	72		2964271
D8-Naphthalene	%	52	66		2964271

QC Batch = Quality Control Batch
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Maxxam Analytics

Maxxam Job #: B2D7358
Report Date: 2012/09/20

Test Summary

Maxxam ID OT4463 **Collected** 2012/08/31
Sample ID LICA PUFF+QFF/CLS/AUG 31,2012 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2964271	2012/09/09	2012/09/20	Lidija Tomic

Maxxam ID OT4464 **Collected** 2012/08/31
Sample ID LICA PUFF+QFF/PORT/AUG 31,2012 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/07

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2964271	2012/09/09	2012/09/20	Lidija Tomic

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Maxxam Analytics

Maxxam Job #: B2D7358
Report Date: 2012/09/20

GENERAL COMMENTS

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2D7358

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2964271	LTO	Spiked Blank	D10-2-Methylnaphthalene	2012/09/19		78	%	50 - 150
			D10-Fluoranthene	2012/09/19		90	%	50 - 150
			D10-Phenanthrene	2012/09/19		80	%	50 - 150
			D12-Benzo(a)anthracene	2012/09/19		94	%	50 - 150
			D12-Benzo(a)pyrene	2012/09/19		94	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/09/19		94	%	50 - 150
			D12-Benzo(ghi)perylene	2012/09/19		90	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/09/19		86	%	50 - 150
			D12-Chrysene	2012/09/19		82	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/09/19		94	%	50 - 150
			D12-Perylene	2012/09/19		92	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/09/19		94	%	50 - 150
			D8-Acenaphthylene	2012/09/19		76	%	50 - 150
			D8-Naphthalene	2012/09/19		74	%	50 - 150
			Acenaphthene	2012/09/19		82	%	60 - 130
		RPD	Acenaphthene	2012/09/19	3.1		%	50
		Spiked Blank	Acenaphthylene	2012/09/19		80	%	60 - 130
		RPD	Acenaphthylene	2012/09/19	3.2		%	50
		Spiked Blank	Anthracene	2012/09/19		80	%	60 - 130
		RPD	Anthracene	2012/09/19	2.9		%	50
		Spiked Blank	Benzo(a)anthracene	2012/09/19		103	%	60 - 130
		RPD	Benzo(a)anthracene	2012/09/19	0		%	50
		Spiked Blank	Benzo(a)pyrene	2012/09/19		80	%	60 - 130
		RPD	Benzo(a)pyrene	2012/09/19	0		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/09/19		87	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/09/19	0.3		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/09/19		81	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/09/19	2.5		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/09/19		94	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/09/19	2.4		%	50
		Spiked Blank	Chrysene	2012/09/19		84	%	60 - 130
		RPD	Chrysene	2012/09/19	0.3		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/09/19		82	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/09/19	3.7		%	50
		Spiked Blank	Fluoranthene	2012/09/19		95	%	60 - 130
		RPD	Fluoranthene	2012/09/19	4.6		%	50
		Spiked Blank	Fluorene	2012/09/19		81	%	60 - 130
		RPD	Fluorene	2012/09/19	3.2		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/09/19		82	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/09/19	2.5		%	50
		Spiked Blank	Naphthalene	2012/09/19		82	%	60 - 130
		RPD	Naphthalene	2012/09/19	4.0		%	50
		Spiked Blank	Phenanthrene	2012/09/19		86	%	60 - 130
		RPD	Phenanthrene	2012/09/19	3.2		%	50
		Spiked Blank	Pyrene	2012/09/19		85	%	60 - 130
		RPD	Pyrene	2012/09/19	4.5		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/09/20		78	%	50 - 150
			D10-Fluoranthene	2012/09/20		88	%	50 - 150
			D10-Phenanthrene	2012/09/20		80	%	50 - 150
			D12-Benzo(a)anthracene	2012/09/20		92	%	50 - 150
			D12-Benzo(a)pyrene	2012/09/20		90	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/09/20		92	%	50 - 150
			D12-Benzo(ghi)perylene	2012/09/20		88	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/09/20		84	%	50 - 150
			D12-Chrysene	2012/09/20		82	%	50 - 150

Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2D7358

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2964271	LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/09/20		88	%	50 - 150
			D12-Perylene	2012/09/20		88	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/09/20		88	%	50 - 150
			D8-Acenaphthylene	2012/09/20		76	%	50 - 150
			D8-Naphthalene	2012/09/20		76	%	50 - 150
			1-Methylnaphthalene	2012/09/20	<0.10		ug	
			1-Methylphenanthrene	2012/09/20	<0.10		ug	
			2-Chloronaphthalene	2012/09/20	<0.10		ug	
			2-Methylanthracene	2012/09/20	<0.10		ug	
			2-Methylnaphthalene	2012/09/20	<0.10		ug	
			3-Methylcholanthrene	2012/09/20	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/09/20	<0.10		ug	
			9,10-Dimethylanthracene	2012/09/20	<0.40		ug	
			Acenaphthene	2012/09/20	<0.050		ug	
			Acenaphthylene	2012/09/20	<0.050		ug	
			Anthracene	2012/09/20	<0.050		ug	
			Benzo(a)anthracene	2012/09/20	<0.050		ug	
			Benzo(a)fluorene	2012/09/20	<0.10		ug	
			Benzo(a)pyrene	2012/09/20	<0.050		ug	
			Benzo(b)fluoranthene	2012/09/20	<0.050		ug	
			Benzo(b)fluorene	2012/09/20	<0.10		ug	
			Benzo(e)pyrene	2012/09/20	<0.10		ug	
			Benzo(g,h,i)perylene	2012/09/20	<0.050		ug	
			Benzo(k)fluoranthene	2012/09/20	<0.050		ug	
			Biphenyl	2012/09/20	<0.10		ug	
			Chrysene	2012/09/20	<0.050		ug	
			Coronene	2012/09/20	<0.10		ug	
			Dibenz(a,h)anthracene	2012/09/20	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/09/20	<0.20		ug	
			Fluoranthene	2012/09/20	<0.050		ug	
			Fluorene	2012/09/20	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/09/20	<0.050		ug	
			m-Terphenyl	2012/09/20	<0.10		ug	
			Naphthalene	2012/09/20	<0.072		ug	
			o-Terphenyl	2012/09/20	<0.10		ug	
			Perylene	2012/09/20	<0.10		ug	
			Phenanthrene	2012/09/20	<0.050		ug	
			p-Terphenyl	2012/09/20	<0.10		ug	
			Pyrene	2012/09/20	<0.050		ug	
			Quinoline	2012/09/20	<0.40		ug	
			Tetralin	2012/09/20	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Cold Lake South
Station ID: Lica1
Field Sample ID: LICA PUF/CLS/Sept 06, 2012

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Sept 05, 2012 @ 07:40 mst
Removal Date/Time: Sept 07, 2012 @ 14:29 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
06-Sep-12	09/06/2012 0:00	09/07/2012 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
31-Aug-12	10-Sep-12	12-Sep-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
714	229	13.9	330.33

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC# 09504
GB2B4296 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Sept 06, 2012

Technician Signiture: Ting Xu

Maxxam

Success Through Science®

Your C.O.C. #: 09504

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/09/21

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2D9844
Received: 2012/09/12, 09:35

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/09/13	2012/09/20	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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Total cover pages: 1

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OU6554	OU6555		
Sampling Date		2012/09/06	2012/09/06		
COC Number		09504	09504		
	Units	**LICA PUFF+QFF/CLS/SEPT 06,12**	**LICA PUFF+QFF/PORT/SEPT 06,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	0.17	<0.10	0.10	2968788
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2968788
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2968788
2-Methylanthracene	ug	<0.10	<0.10	0.10	2968788
2-Methylnaphthalene	ug	0.34	0.13	0.10	2968788
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2968788
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2968788
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2968788
Acenaphthene	ug	0.066	<0.050	0.050	2968788
Acenaphthylene	ug	<0.050	<0.050	0.050	2968788
Anthracene	ug	<0.050	<0.050	0.050	2968788
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2968788
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2968788
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2968788
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2968788
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2968788
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2968788
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2968788
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2968788
Biphenyl	ug	<0.10	<0.10	0.10	2968788
Chrysene	ug	<0.050	<0.050	0.050	2968788
Coronene	ug	<0.10	<0.10	0.10	2968788
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2968788
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2968788
Fluoranthene	ug	<0.050	<0.050	0.050	2968788
Fluorene	ug	0.106	<0.050	0.050	2968788
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2968788
m-Terphenyl	ug	<0.10	<0.10	0.10	2968788
Naphthalene	ug	0.214	<0.072	0.072	2968788
o-Terphenyl	ug	<0.10	<0.10	0.10	2968788
Perylene	ug	<0.10	<0.10	0.10	2968788

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2D9844
Report Date: 2012/09/21

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OU6554	OU6555		
Sampling Date		2012/09/06	2012/09/06		
COC Number		09504	09504		
	Units	**LICA PUFF+QFF/CLS/SEPT 06,12**	**LICA PUFF+QFF/PORT/SEPT 06,12**	**RDL**	**QC Batch**
Phenanthrene	ug	0.316	0.172	0.050	2968788
p-Terphenyl	ug	<0.10	<0.10	0.10	2968788
Pyrene	ug	<0.050	<0.050	0.050	2968788
Quinoline	ug	<0.40	<0.40	0.40	2968788
Tetralin	ug	<0.10	<0.10	0.10	2968788
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	86	78		2968788
D10-Fluoranthene	%	90	100		2968788
D10-Fluorene (FS)	%	8.6 (1)	6.2 (1)		2968788
D10-Phenanthrene	%	86	88		2968788
D12-Benzo(a)anthracene	%	104	106		2968788
D12-Benzo(a)pyrene	%	92	96		2968788
D12-Benzo(b)fluoranthene	%	96	94		2968788
D12-Benzo(ghi)perylene	%	86	94		2968788
D12-Benzo(k)fluoranthene	%	84	88		2968788
D12-Chrysene	%	84	80		2968788
D12-Indeno(1,2,3-cd)pyrene	%	88	96		2968788
D12-Perylene	%	88	90		2968788
D14-Dibenzo(a,h)anthracene	%	88	96		2968788
D14-Terphenyl (FS)	%	78	92		2968788
D8-Acenaphthylene	%	86	84		2968788
D8-Naphthalene	%	84	74		2968788

QC Batch = Quality Control Batch
(1) Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

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Maxxam Analytics

Maxxam Job #: B2D9844
Report Date: 2012/09/21

Test Summary

Maxxam ID OU6554 **Collected** 2012/09/06
Sample ID LICA PUFF+QFF/CLS/SEPT 06,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2968788	2012/09/13	2012/09/20	Lidija Tomic

Maxxam ID OU6555 **Collected** 2012/09/06
Sample ID LICA PUFF+QFF/PORT/SEPT 06,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2968788	2012/09/13	2012/09/20	Lidija Tomic

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Maxxam Analytics

Maxxam Job #: B2D9844
Report Date: 2012/09/21

GENERAL COMMENTS

Coronene and Dibenzo (a,e)pyrene are above 25% RSD in initial calibration. No positives found for these 2 compounds.

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2D9844

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2968788	LTO	Spiked Blank	D10-2-Methylnaphthalene	2012/09/20		82	%	50 - 150
			D10-Fluoranthene	2012/09/20		100	%	50 - 150
			D10-Phenanthrene	2012/09/20		90	%	50 - 150
			D12-Benzo(a)anthracene	2012/09/20		104	%	50 - 150
			D12-Benzo(a)pyrene	2012/09/20		102	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/09/20		98	%	50 - 150
			D12-Benzo(ghi)perylene	2012/09/20		96	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/09/20		88	%	50 - 150
			D12-Chrysene	2012/09/20		80	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/09/20		98	%	50 - 150
			D12-Perylene	2012/09/20		96	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/09/20		98	%	50 - 150
			D8-Acenaphthylene	2012/09/20		84	%	50 - 150
			D8-Naphthalene	2012/09/20		78	%	50 - 150
			Acenaphthene	2012/09/20		89	%	60 - 130
		RPD	Acenaphthene	2012/09/20	1.1		%	50
		Spiked Blank	Acenaphthylene	2012/09/20		89	%	60 - 130
		RPD	Acenaphthylene	2012/09/20	4.0		%	50
		Spiked Blank	Anthracene	2012/09/20		92	%	60 - 130
		RPD	Anthracene	2012/09/20	9.7		%	50
		Spiked Blank	Benzo(a)anthracene	2012/09/20		108	%	60 - 130
		RPD	Benzo(a)anthracene	2012/09/20	4.0		%	50
		Spiked Blank	Benzo(a)pyrene	2012/09/20		82	%	60 - 130
		RPD	Benzo(a)pyrene	2012/09/20	7.3		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/09/20		89	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/09/20	1.7		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/09/20		74	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/09/20	5.6		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/09/20		90	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/09/20	5.4		%	50
		Spiked Blank	Chrysene	2012/09/20		82	%	60 - 130
		RPD	Chrysene	2012/09/20	0		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/09/20		74	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/09/20	6.3		%	50
		Spiked Blank	Fluoranthene	2012/09/20		104	%	60 - 130
		RPD	Fluoranthene	2012/09/20	12.2		%	50
		Spiked Blank	Fluorene	2012/09/20		89	%	60 - 130
		RPD	Fluorene	2012/09/20	3.4		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/09/20		76	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/09/20	6.8		%	50
		Spiked Blank	Naphthalene	2012/09/20		86	%	60 - 130
		RPD	Naphthalene	2012/09/20	2.9		%	50
		Spiked Blank	Phenanthrene	2012/09/20		95	%	60 - 130
		RPD	Phenanthrene	2012/09/20	6.0		%	50
		Spiked Blank	Pyrene	2012/09/20		94	%	60 - 130
		RPD	Pyrene	2012/09/20	12.8		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/09/20		86	%	50 - 150
			D10-Fluoranthene	2012/09/20		82	%	50 - 150
			D10-Phenanthrene	2012/09/20		82	%	50 - 150
			D12-Benzo(a)anthracene	2012/09/20		98	%	50 - 150
			D12-Benzo(a)pyrene	2012/09/20		88	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/09/20		94	%	50 - 150
			D12-Benzo(ghi)perylene	2012/09/20		84	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/09/20		82	%	50 - 150
			D12-Chrysene	2012/09/20		82	%	50 - 150

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2D9844

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2968788	LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/09/20		86	%	50 - 150
			D12-Perylene	2012/09/20		86	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/09/20		84	%	50 - 150
			D8-Acenaphthylene	2012/09/20		82	%	50 - 150
			D8-Naphthalene	2012/09/20		82	%	50 - 150
			1-Methylnaphthalene	2012/09/20	<0.10		ug	
			1-Methylphenanthrene	2012/09/20	<0.10		ug	
			2-Chloronaphthalene	2012/09/20	<0.10		ug	
			2-Methylanthracene	2012/09/20	<0.10		ug	
			2-Methylnaphthalene	2012/09/20	<0.10		ug	
			3-Methylcholanthrene	2012/09/20	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/09/20	<0.10		ug	
			9,10-Dimethylanthracene	2012/09/20	<0.40		ug	
			Acenaphthene	2012/09/20	<0.050		ug	
			Acenaphthylene	2012/09/20	<0.050		ug	
			Anthracene	2012/09/20	<0.050		ug	
			Benzo(a)anthracene	2012/09/20	<0.050		ug	
			Benzo(a)fluorene	2012/09/20	<0.10		ug	
			Benzo(a)pyrene	2012/09/20	<0.050		ug	
			Benzo(b)fluoranthene	2012/09/20	<0.050		ug	
			Benzo(b)fluorene	2012/09/20	<0.10		ug	
			Benzo(e)pyrene	2012/09/20	<0.10		ug	
			Benzo(g,h,i)perylene	2012/09/20	<0.050		ug	
			Benzo(k)fluoranthene	2012/09/20	<0.050		ug	
			Biphenyl	2012/09/20	<0.10		ug	
			Chrysene	2012/09/20	<0.050		ug	
			Coronene	2012/09/20	<0.10		ug	
			Dibenz(a,h)anthracene	2012/09/20	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/09/20	<0.20		ug	
			Fluoranthene	2012/09/20	<0.050		ug	
			Fluorene	2012/09/20	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/09/20	<0.050		ug	
			m-Terphenyl	2012/09/20	<0.10		ug	
			Naphthalene	2012/09/20	<0.072		ug	
			o-Terphenyl	2012/09/20	<0.10		ug	
			Perylene	2012/09/20	<0.10		ug	
			Phenanthrene	2012/09/20	<0.050		ug	
			p-Terphenyl	2012/09/20	<0.10		ug	
			Pyrene	2012/09/20	<0.050		ug	
			Quinoline	2012/09/20	<0.40		ug	
			Tetralin	2012/09/20	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Cold Lake South
Station ID: Lica1
Field Sample ID: LICA PUF/CLS/Sept 12, 2012

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Sept 10, 2012 @ 07:55 mst
Removal Date/Time: Sept 13, 2012 @ 06:30 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
12-Sep-12	09/12/2012 0:00	09/13/2012 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
06-Sep-12	13-Sep-12	19-Sep-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
714	229	11.6	330.34

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC# 09915
GB2B4297 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Sept 12, 2012

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 09915

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/10/02

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2E3392
Received: 2012/09/18, 09:50

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/09/19	2012/09/27	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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

Total cover pages: 1

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OW4492	OW4493		
Sampling Date		2012/09/12	2012/09/12		
COC Number		09915	09915		
	Units	**LICA PUFF/CLS/SEPT 12,12**	**LICA PUFF/PORT/SEPT 12,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2974460
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2974460
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2974460
2-Methylanthracene	ug	<0.10	<0.10	0.10	2974460
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2974460
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2974460
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2974460
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2974460
Acenaphthene	ug	<0.050	<0.050	0.050	2974460
Acenaphthylene	ug	<0.050	<0.050	0.050	2974460
Anthracene	ug	<0.050	<0.050	0.050	2974460
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2974460
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2974460
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2974460
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2974460
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2974460
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2974460
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2974460
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2974460
Biphenyl	ug	<0.10	<0.10	0.10	2974460
Chrysene	ug	<0.050	<0.050	0.050	2974460
Coronene	ug	<0.10	<0.10	0.10	2974460
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2974460
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2974460
Fluoranthene	ug	<0.050	<0.050	0.050	2974460
Fluorene	ug	<0.050	<0.050	0.050	2974460
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2974460
m-Terphenyl	ug	<0.10	<0.10	0.10	2974460
Naphthalene	ug	<0.072	<0.072	0.072	2974460
o-Terphenyl	ug	<0.10	<0.10	0.10	2974460
Perylene	ug	<0.10	<0.10	0.10	2974460

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OW4492	OW4493		
Sampling Date		2012/09/12	2012/09/12		
COC Number		09915	09915		
	Units	**LICA PUFF/CLS/SEPT 12,12**	**LICA PUFF/PORT/SEPT 12,12**	**RDL**	**QC Batch**
Phenanthrene	ug	0.136	0.064	0.050	2974460
p-Terphenyl	ug	<0.10	<0.10	0.10	2974460
Pyrene	ug	<0.050	<0.050	0.050	2974460
Quinoline	ug	<0.40	<0.40	0.40	2974460
Tetralin	ug	<0.10	<0.10	0.10	2974460
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	70	72		2974460
D10-Fluoranthene	%	92	90		2974460
D10-Fluorene (FS)	%	9.0 (1)	7.8 (1)		2974460
D10-Phenanthrene	%	82	82		2974460
D12-Benzo(a)anthracene	%	94	94		2974460
D12-Benzo(a)pyrene	%	90	90		2974460
D12-Benzo(b)fluoranthene	%	88	88		2974460
D12-Benzo(ghi)perylene	%	90	92		2974460
D12-Benzo(k)fluoranthene	%	96	98		2974460
D12-Chrysene	%	90	92		2974460
D12-Indeno(1,2,3-cd)pyrene	%	92	94		2974460
D12-Perylene	%	88	88		2974460
D14-Dibenzo(a,h)anthracene	%	92	92		2974460
D14-Terphenyl (FS)	%	93	91		2974460
D8-Acenaphthylene	%	70	72		2974460
D8-Naphthalene	%	68	68		2974460

QC Batch = Quality Control Batch
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Maxxam Analytics

Maxxam Job #: B2E3392
Report Date: 2012/10/02

Test Summary

Maxxam ID OW4492 **Collected** 2012/09/12
Sample ID LICA PUFF/CLS/SEPT 12,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2974460	2012/09/19	2012/09/27	Lidija Tomic

Maxxam ID OW4493 **Collected** 2012/09/12
Sample ID LICA PUFF/PORT/SEPT 12,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2974460	2012/09/19	2012/09/27	Lidija Tomic

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Maxxam Analytics

Maxxam Job #: B2E3392
Report Date: 2012/10/02

GENERAL COMMENTS

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2E3392

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2974460	LTO	Spiked Blank	D10-2-Methylnaphthalene	2012/09/26		72	%	50 - 150
			D10-Fluoranthene	2012/09/26		86	%	50 - 150
			D10-Phenanthrene	2012/09/26		78	%	50 - 150
			D12-Benzo(a)anthracene	2012/09/26		90	%	50 - 150
			D12-Benzo(a)pyrene	2012/09/26		92	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/09/26		88	%	50 - 150
			D12-Benzo(ghi)perylene	2012/09/26		96	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/09/26		96	%	50 - 150
			D12-Chrysene	2012/09/26		88	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/09/26		92	%	50 - 150
			D12-Perylene	2012/09/26		90	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/09/26		92	%	50 - 150
			D8-Acenaphthylene	2012/09/26		74	%	50 - 150
			D8-Naphthalene	2012/09/26		70	%	50 - 150
			Acenaphthene	2012/09/26		82	%	60 - 130
		RPD	Acenaphthene	2012/09/26	0.6		%	50
		Spiked Blank	Acenaphthylene	2012/09/26		78	%	60 - 130
		RPD	Acenaphthylene	2012/09/26	1.6		%	50
		Spiked Blank	Anthracene	2012/09/26		79	%	60 - 130
		RPD	Anthracene	2012/09/26	3.4		%	50
		Spiked Blank	Benzo(a)anthracene	2012/09/26		105	%	60 - 130
		RPD	Benzo(a)anthracene	2012/09/26	3.3		%	50
		Spiked Blank	Benzo(a)pyrene	2012/09/26		87	%	60 - 130
		RPD	Benzo(a)pyrene	2012/09/26	0.9		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/09/26		94	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/09/26	3.1		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/09/26		101	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/09/26	0.7		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/09/26		99	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/09/26	0.8		%	50
		Spiked Blank	Chrysene	2012/09/26		91	%	60 - 130
		RPD	Chrysene	2012/09/26	2.4		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/09/26		101	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/09/26	2.0		%	50
		Spiked Blank	Fluoranthene	2012/09/26		90	%	60 - 130
		RPD	Fluoranthene	2012/09/26	1.1		%	50
		Spiked Blank	Fluorene	2012/09/26		81	%	60 - 130
		RPD	Fluorene	2012/09/26	0.6		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/09/26		100	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/09/26	1.5		%	50
		Spiked Blank	Naphthalene	2012/09/26		82	%	60 - 130
		RPD	Naphthalene	2012/09/26	1.9		%	50
		Spiked Blank	Phenanthrene	2012/09/26		84	%	60 - 130
		RPD	Phenanthrene	2012/09/26	2.1		%	50
		Spiked Blank	Pyrene	2012/09/26		82	%	60 - 130
		RPD	Pyrene	2012/09/26	0.3		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/09/26		76	%	50 - 150
			D10-Fluoranthene	2012/09/26		78	%	50 - 150
			D10-Phenanthrene	2012/09/26		76	%	50 - 150
			D12-Benzo(a)anthracene	2012/09/26		86	%	50 - 150
			D12-Benzo(a)pyrene	2012/09/26		90	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/09/26		86	%	50 - 150
			D12-Benzo(ghi)perylene	2012/09/26		88	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/09/26		96	%	50 - 150
			D12-Chrysene	2012/09/26		88	%	50 - 150

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E3392

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2974460	LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/09/26		88	%	50 - 150
			D12-Perylene	2012/09/26		88	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/09/26		86	%	50 - 150
			D8-Acenaphthylene	2012/09/26		76	%	50 - 150
			D8-Naphthalene	2012/09/26		74	%	50 - 150
			1-Methylnaphthalene	2012/09/26	<0.10		ug	
			1-Methylphenanthrene	2012/09/26	<0.10		ug	
			2-Chloronaphthalene	2012/09/26	<0.10		ug	
			2-Methylanthracene	2012/09/26	<0.10		ug	
			2-Methylnaphthalene	2012/09/26	<0.10		ug	
			3-Methylcholanthrene	2012/09/26	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/09/26	<0.10		ug	
			9,10-Dimethylanthracene	2012/09/26	<0.40		ug	
			Acenaphthene	2012/09/26	<0.050		ug	
			Acenaphthylene	2012/09/26	<0.050		ug	
			Anthracene	2012/09/26	<0.050		ug	
			Benzo(a)anthracene	2012/09/26	<0.050		ug	
			Benzo(a)fluorene	2012/09/26	<0.10		ug	
			Benzo(a)pyrene	2012/09/26	<0.050		ug	
			Benzo(b)fluoranthene	2012/09/26	<0.050		ug	
			Benzo(b)fluorene	2012/09/26	<0.10		ug	
			Benzo(e)pyrene	2012/09/26	<0.10		ug	
			Benzo(g,h,i)perylene	2012/09/26	<0.050		ug	
			Benzo(k)fluoranthene	2012/09/26	<0.050		ug	
			Biphenyl	2012/09/26	<0.10		ug	
			Chrysene	2012/09/26	<0.050		ug	
			Coronene	2012/09/26	<0.10		ug	
			Dibenz(a,h)anthracene	2012/09/26	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/09/26	<0.20		ug	
			Fluoranthene	2012/09/26	<0.050		ug	
			Fluorene	2012/09/26	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/09/26	<0.050		ug	
			m-Terphenyl	2012/09/26	<0.10		ug	
			Naphthalene	2012/09/26	<0.072		ug	
			o-Terphenyl	2012/09/26	<0.10		ug	
			Perylene	2012/09/26	<0.10		ug	
			Phenanthrene	2012/09/26	<0.050		ug	
			p-Terphenyl	2012/09/26	<0.10		ug	
			Pyrene	2012/09/26	<0.050		ug	
			Quinoline	2012/09/26	<0.40		ug	
			Tetralin	2012/09/26	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Cold Lake South
Station ID: Lica1
Field Sample ID: LICA PUF/CLS/Sept 18, 2012

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Sept 17, 2012 @ 08:10 mst
Removal Date/Time: Sept 19, 2012 @ 06:35 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
18-Sep-12	09/18/2012 0:00	09/19/2012 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
13-Sep-12	19-Sep-12	25-Sep-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
707	229	14.3	330.34

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC# 11298
GB2C3710 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Sept 18, 2012

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 11298

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/10/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2E6145
Received: 2012/09/21, 08:55

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/09/24	2012/09/27	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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

Total cover pages: 1

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OX7077	OX7078		
Sampling Date		2012/09/18	2012/09/18		
COC Number		11298	11298		
	Units	**LICA PUFF+QFF/CLS/SEPT 18,12**	**LICA PUFF+QFF/PORT/SEPT 18,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2979417
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2979417
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2979417
2-Methylanthracene	ug	<0.10	<0.10	0.10	2979417
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2979417
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2979417
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2979417
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2979417
Acenaphthene	ug	<0.050	<0.050	0.050	2979417
Acenaphthylene	ug	<0.050	<0.050	0.050	2979417
Anthracene	ug	<0.050	<0.050	0.050	2979417
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2979417
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2979417
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2979417
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2979417
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2979417
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2979417
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2979417
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2979417
Biphenyl	ug	<0.10	<0.10	0.10	2979417
Chrysene	ug	<0.050	<0.050	0.050	2979417
Coronene	ug	<0.10	<0.10	0.10	2979417
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2979417
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2979417
Fluoranthene	ug	<0.050	<0.050	0.050	2979417
Fluorene	ug	<0.050	<0.050	0.050	2979417
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2979417
m-Terphenyl	ug	<0.10	<0.10	0.10	2979417
Naphthalene	ug	<0.072	<0.072	0.072	2979417
o-Terphenyl	ug	<0.10	<0.10	0.10	2979417
Perylene	ug	<0.10	<0.10	0.10	2979417

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E6145
Report Date: 2012/10/05

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OX7077	OX7078		
Sampling Date		2012/09/18	2012/09/18		
COC Number		11298	11298		
	Units	**LICA PUFF+QFF/CLS/SEPT 18,12**	**LICA PUFF+QFF/PORT/SEPT 18,12**	**RDL**	**QC Batch**
Phenanthrene	ug	0.200	0.140	0.050	2979417
p-Terphenyl	ug	<0.10	<0.10	0.10	2979417
Pyrene	ug	<0.050	<0.050	0.050	2979417
Quinoline	ug	<0.40	<0.40	0.40	2979417
Tetralin	ug	<0.10	<0.10	0.10	2979417
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	66	68		2979417
D10-Fluoranthene	%	90	88		2979417
D10-Fluorene (FS)	%	6.6 (1)	7.2 (1)		2979417
D10-Phenanthrene	%	80	78		2979417
D12-Benzo(a)anthracene	%	88	90		2979417
D12-Benzo(a)pyrene	%	86	86		2979417
D12-Benzo(b)fluoranthene	%	86	86		2979417
D12-Benzo(ghi)perylene	%	94	90		2979417
D12-Benzo(k)fluoranthene	%	92	94		2979417
D12-Chrysene	%	86	88		2979417
D12-Indeno(1,2,3-cd)pyrene	%	90	90		2979417
D12-Perylene	%	84	84		2979417
D14-Dibenzo(a,h)anthracene	%	90	90		2979417
D14-Terphenyl (FS)	%	91	89		2979417
D8-Acenaphthylene	%	66	68		2979417
D8-Naphthalene	%	64	66		2979417

QC Batch = Quality Control Batch
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Maxxam Analytics

Maxxam Job #: B2E6145
Report Date: 2012/10/05

Test Summary

Maxxam ID OX7077 **Collected** 2012/09/18
Sample ID LICA PUFF+QFF/CLS/SEPT 18,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2979417	2012/09/24	2012/09/27	Lidija Tomic

Maxxam ID OX7078 **Collected** 2012/09/18
Sample ID LICA PUFF+QFF/PORT/SEPT 18,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/21

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2979417	2012/09/24	2012/09/27	Lidija Tomic

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Maxxam Analytics

Maxxam Job #: B2E6145
Report Date: 2012/10/05

GENERAL COMMENTS

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2E6145

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2979417	LTO	Spiked Blank	D10-2-Methylnaphthalene	2012/09/27		78	%	50 - 150
			D10-Fluoranthene	2012/09/27		84	%	50 - 150
			D10-Phenanthrene	2012/09/27		76	%	50 - 150
			D12-Benzo(a)anthracene	2012/09/27		86	%	50 - 150
			D12-Benzo(a)pyrene	2012/09/27		90	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/09/27		86	%	50 - 150
			D12-Benzo(ghi)perylene	2012/09/27		94	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/09/27		94	%	50 - 150
			D12-Chrysene	2012/09/27		86	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/09/27		92	%	50 - 150
			D12-Perylene	2012/09/27		88	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/09/27		90	%	50 - 150
			D8-Acenaphthylene	2012/09/27		76	%	50 - 150
			D8-Naphthalene	2012/09/27		76	%	50 - 150
			Acenaphthene	2012/09/27		84	%	60 - 130
		RPD	Acenaphthene	2012/09/27	4.9		%	50
		Spiked Blank	Acenaphthylene	2012/09/27		81	%	60 - 130
		RPD	Acenaphthylene	2012/09/27	6.3		%	50
		Spiked Blank	Anthracene	2012/09/27		81	%	60 - 130
		RPD	Anthracene	2012/09/27	1.3		%	50
		Spiked Blank	Benzo(a)anthracene	2012/09/27		104	%	60 - 130
		RPD	Benzo(a)anthracene	2012/09/27	1.7		%	50
		Spiked Blank	Benzo(a)pyrene	2012/09/27		87	%	60 - 130
		RPD	Benzo(a)pyrene	2012/09/27	1.2		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/09/27		96	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/09/27	0.5		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/09/27		99	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/09/27	0.8		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/09/27		94	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/09/27	0.8		%	50
		Spiked Blank	Chrysene	2012/09/27		91	%	60 - 130
		RPD	Chrysene	2012/09/27	0.8		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/09/27		100	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/09/27	0.3		%	50
		Spiked Blank	Fluoranthene	2012/09/27		90	%	60 - 130
		RPD	Fluoranthene	2012/09/27	0.3		%	50
		Spiked Blank	Fluorene	2012/09/27		82	%	60 - 130
		RPD	Fluorene	2012/09/27	3.7		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/09/27		99	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/09/27	0.5		%	50
		Spiked Blank	Naphthalene	2012/09/27		87	%	60 - 130
		RPD	Naphthalene	2012/09/27	6.8		%	50
		Spiked Blank	Phenanthrene	2012/09/27		84	%	60 - 130
		RPD	Phenanthrene	2012/09/27	0.9		%	50
		Spiked Blank	Pyrene	2012/09/27		81	%	60 - 130
		RPD	Pyrene	2012/09/27	1.2		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/09/27		78	%	50 - 150
			D10-Fluoranthene	2012/09/27		84	%	50 - 150
			D10-Phenanthrene	2012/09/27		76	%	50 - 150
			D12-Benzo(a)anthracene	2012/09/27		84	%	50 - 150
			D12-Benzo(a)pyrene	2012/09/27		88	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/09/27		84	%	50 - 150
			D12-Benzo(ghi)perylene	2012/09/27		90	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/09/27		94	%	50 - 150
			D12-Chrysene	2012/09/27		90	%	50 - 150

Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E6145

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2979417	LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/09/27		88	%	50 - 150
			D12-Perylene	2012/09/27		88	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/09/27		88	%	50 - 150
			D8-Acenaphthylene	2012/09/27		76	%	50 - 150
			D8-Naphthalene	2012/09/27		78	%	50 - 150
			1-Methylnaphthalene	2012/09/27	<0.10		ug	
			1-Methylphenanthrene	2012/09/27	<0.10		ug	
			2-Chloronaphthalene	2012/09/27	<0.10		ug	
			2-Methylanthracene	2012/09/27	<0.10		ug	
			2-Methylnaphthalene	2012/09/27	<0.10		ug	
			3-Methylcholanthrene	2012/09/27	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/09/27	<0.10		ug	
			9,10-Dimethylanthracene	2012/09/27	<0.40		ug	
			Acenaphthene	2012/09/27	<0.050		ug	
			Acenaphthylene	2012/09/27	<0.050		ug	
			Anthracene	2012/09/27	<0.050		ug	
			Benzo(a)anthracene	2012/09/27	<0.050		ug	
			Benzo(a)fluorene	2012/09/27	<0.10		ug	
			Benzo(a)pyrene	2012/09/27	<0.050		ug	
			Benzo(b)fluoranthene	2012/09/27	<0.050		ug	
			Benzo(b)fluorene	2012/09/27	<0.10		ug	
			Benzo(e)pyrene	2012/09/27	<0.10		ug	
			Benzo(g,h,i)perylene	2012/09/27	<0.050		ug	
			Benzo(k)fluoranthene	2012/09/27	<0.050		ug	
			Biphenyl	2012/09/27	<0.10		ug	
			Chrysene	2012/09/27	<0.050		ug	
			Coronene	2012/09/27	<0.10		ug	
			Dibenz(a,h)anthracene	2012/09/27	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/09/27	<0.20		ug	
			Fluoranthene	2012/09/27	<0.050		ug	
			Fluorene	2012/09/27	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/09/27	<0.050		ug	
			m-Terphenyl	2012/09/27	<0.10		ug	
			Naphthalene	2012/09/27	<0.072		ug	
			o-Terphenyl	2012/09/27	<0.10		ug	
			Perylene	2012/09/27	<0.10		ug	
			Phenanthrene	2012/09/27	<0.050		ug	
			p-Terphenyl	2012/09/27	<0.10		ug	
			Pyrene	2012/09/27	<0.050		ug	
			Quinoline	2012/09/27	<0.40		ug	
			Tetralin	2012/09/27	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Cold Lake South
Station ID: Lica1
Field Sample ID: LICA PUF/CLS/Sept 24, 2012

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Sept 19, 2012 @ 07:55 mst
Removal Date/Time: Sept 25, 2012 @ 07:28 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
24-Sep-12	09/24/2012 0:00	09/25/2012 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
18-Sep-12	25-Sep-12	01-Oct-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
711	229	16.1	330.32

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC# 09983
GB2C3716 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Sept 24, 2012

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 09983

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/10/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2E9540
Received: 2012/09/27, 09:30

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/09/29	2012/10/01	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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

Total cover pages: 1

Maxxam Job #: B2E9540
Report Date: 2012/10/05

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OZ4845	OZ4846		
Sampling Date		2012/09/24	2012/09/24		
COC Number		09983	09983		
	Units	**LICA PUFF+QFF/CLS/SEPT 24,12**	**LICA PUFF+QFF/PORT/SEPT 24,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2986558
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2986558
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2986558
2-Methylanthracene	ug	<0.10	<0.10	0.10	2986558
2-Methylnaphthalene	ug	<0.10	0.10	0.10	2986558
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2986558
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2986558
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2986558
Acenaphthene	ug	<0.050	<0.050	0.050	2986558
Acenaphthylene	ug	<0.050	<0.050	0.050	2986558
Anthracene	ug	<0.050	<0.050	0.050	2986558
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2986558
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2986558
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2986558
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2986558
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2986558
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2986558
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2986558
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2986558
Biphenyl	ug	<0.10	<0.10	0.10	2986558
Chrysene	ug	<0.050	<0.050	0.050	2986558
Coronene	ug	<0.10	<0.10	0.10	2986558
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2986558
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2986558
Fluoranthene	ug	0.112	0.052	0.050	2986558
Fluorene	ug	0.128	0.064	0.050	2986558
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2986558
m-Terphenyl	ug	<0.10	<0.10	0.10	2986558
Naphthalene	ug	<0.072	0.072	0.072	2986558
o-Terphenyl	ug	<0.10	<0.10	0.10	2986558
Perylene	ug	<0.10	<0.10	0.10	2986558

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2E9540
Report Date: 2012/10/05

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		OZ4845	OZ4846		
Sampling Date		2012/09/24	2012/09/24		
COC Number		09983	09983		
	Units	**LICA PUFF+QFF/CLS/SEPT 24,12**	**LICA PUFF+QFF/PORT/SEPT 24,12**	**RDL**	**QC Batch**
Phenanthrene	ug	0.692	0.308	0.050	2986558
p-Terphenyl	ug	<0.10	<0.10	0.10	2986558
Pyrene	ug	0.106	0.066	0.050	2986558
Quinoline	ug	<0.40	<0.40	0.40	2986558
Tetralin	ug	<0.10	<0.10	0.10	2986558
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	68	66		2986558
D10-Fluoranthene	%	92	88		2986558
D10-Fluorene (FS)	%	7.2 (1)	7.2 (1)		2986558
D10-Phenanthrene	%	82	82		2986558
D12-Benzo(a)anthracene	%	88	88		2986558
D12-Benzo(a)pyrene	%	84	86		2986558
D12-Benzo(b)fluoranthene	%	86	86		2986558
D12-Benzo(ghi)perylene	%	94	94		2986558
D12-Benzo(k)fluoranthene	%	94	94		2986558
D12-Chrysene	%	88	86		2986558
D12-Indeno(1,2,3-cd)pyrene	%	90	90		2986558
D12-Perylene	%	84	86		2986558
D14-Dibenzo(a,h)anthracene	%	90	88		2986558
D14-Terphenyl (FS)	%	88	85		2986558
D8-Acenaphthylene	%	72	74		2986558
D8-Naphthalene	%	66	64		2986558

QC Batch = Quality Control Batch
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Maxxam Analytics

Maxxam Job #: B2E9540
Report Date: 2012/10/05

Test Summary

Maxxam ID OZ4845 **Collected** 2012/09/24
Sample ID LICA PUFF+QFF/CLS/SEPT 24,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2986558	2012/09/29	2012/10/01	Lidija Tomic

Maxxam ID OZ4846 **Collected** 2012/09/24
Sample ID LICA PUFF+QFF/PORT/SEPT 24,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2986558	2012/09/29	2012/10/01	Lidija Tomic

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Maxxam Analytics

Maxxam Job #: B2E9540
Report Date: 2012/10/05

GENERAL COMMENTS

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2E9540

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2986558	LTO	Spiked Blank	D10-2-Methylnaphthalene	2012/10/01		76	%	50 - 150
			D10-Fluoranthene	2012/10/01		86	%	50 - 150
			D10-Phenanthrene	2012/10/01		76	%	50 - 150
			D12-Benzo(a)anthracene	2012/10/01		80	%	50 - 150
			D12-Benzo(a)pyrene	2012/10/01		88	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/10/01		86	%	50 - 150
			D12-Benzo(ghi)perylene	2012/10/01		94	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/10/01		94	%	50 - 150
			D12-Chrysene	2012/10/01		88	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/10/01		88	%	50 - 150
			D12-Perylene	2012/10/01		90	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/10/01		86	%	50 - 150
			D8-Acenaphthylene	2012/10/01		74	%	50 - 150
			D8-Naphthalene	2012/10/01		76	%	50 - 150
			Acenaphthene	2012/10/01		85	%	60 - 130
		RPD	Acenaphthene	2012/10/01	1.5		%	50
		Spiked Blank	Acenaphthylene	2012/10/01		80	%	60 - 130
		RPD	Acenaphthylene	2012/10/01	0.6		%	50
		Spiked Blank	Anthracene	2012/10/01		76	%	60 - 130
		RPD	Anthracene	2012/10/01	2.6		%	50
		Spiked Blank	Benzo(a)anthracene	2012/10/01		95	%	60 - 130
		RPD	Benzo(a)anthracene	2012/10/01	2.3		%	50
		Spiked Blank	Benzo(a)pyrene	2012/10/01		84	%	60 - 130
		RPD	Benzo(a)pyrene	2012/10/01	0.9		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/10/01		96	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/10/01	1.6		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/10/01		98	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/10/01	0.5		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/10/01		93	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/10/01	3.9		%	50
		Spiked Blank	Chrysene	2012/10/01		92	%	60 - 130
		RPD	Chrysene	2012/10/01	3.2		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/10/01		94	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/10/01	2.4		%	50
		Spiked Blank	Fluoranthene	2012/10/01		92	%	60 - 130
		RPD	Fluoranthene	2012/10/01	1.1		%	50
		Spiked Blank	Fluorene	2012/10/01		82	%	60 - 130
		RPD	Fluorene	2012/10/01	1.5		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/10/01		96	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/10/01	1.0		%	50
		Spiked Blank	Naphthalene	2012/10/01		84	%	60 - 130
		RPD	Naphthalene	2012/10/01	0.6		%	50
		Spiked Blank	Phenanthrene	2012/10/01		82	%	60 - 130
		RPD	Phenanthrene	2012/10/01	1.2		%	50
		Spiked Blank	Pyrene	2012/10/01		83	%	60 - 130
		RPD	Pyrene	2012/10/01	1.2		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/10/01		84	%	50 - 150
			D10-Fluoranthene	2012/10/01		86	%	50 - 150
			D10-Phenanthrene	2012/10/01		74	%	50 - 150
			D12-Benzo(a)anthracene	2012/10/01		78	%	50 - 150
			D12-Benzo(a)pyrene	2012/10/01		90	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/10/01		86	%	50 - 150
			D12-Benzo(ghi)perylene	2012/10/01		94	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/10/01		98	%	50 - 150
			D12-Chrysene	2012/10/01		94	%	50 - 150

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2E9540

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2986558	LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/10/01		88	%	50 - 150
			D12-Perylene	2012/10/01		94	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/10/01		86	%	50 - 150
			D8-Acenaphthylene	2012/10/01		80	%	50 - 150
			D8-Naphthalene	2012/10/01		82	%	50 - 150
			1-Methylnaphthalene	2012/10/01	<0.10		ug	
			1-Methylphenanthrene	2012/10/01	<0.10		ug	
			2-Chloronaphthalene	2012/10/01	<0.10		ug	
			2-Methylanthracene	2012/10/01	<0.10		ug	
			2-Methylnaphthalene	2012/10/01	<0.10		ug	
			3-Methylcholanthrene	2012/10/01	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/10/01	<0.10		ug	
			9,10-Dimethylanthracene	2012/10/01	<0.40		ug	
			Acenaphthene	2012/10/01	<0.050		ug	
			Acenaphthylene	2012/10/01	<0.050		ug	
			Anthracene	2012/10/01	<0.050		ug	
			Benzo(a)anthracene	2012/10/01	<0.050		ug	
			Benzo(a)fluorene	2012/10/01	<0.10		ug	
			Benzo(a)pyrene	2012/10/01	<0.050		ug	
			Benzo(b)fluoranthene	2012/10/01	<0.050		ug	
			Benzo(b)fluorene	2012/10/01	<0.10		ug	
			Benzo(e)pyrene	2012/10/01	<0.10		ug	
			Benzo(g,h,i)perylene	2012/10/01	<0.050		ug	
			Benzo(k)fluoranthene	2012/10/01	<0.050		ug	
			Biphenyl	2012/10/01	<0.10		ug	
			Chrysene	2012/10/01	<0.050		ug	
			Coronene	2012/10/01	<0.10		ug	
			Dibenz(a,h)anthracene	2012/10/01	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/10/01	<0.20		ug	
			Fluoranthene	2012/10/01	<0.050		ug	
			Fluorene	2012/10/01	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/10/01	<0.050		ug	
			m-Terphenyl	2012/10/01	<0.10		ug	
			Naphthalene	2012/10/01	<0.072		ug	
			o-Terphenyl	2012/10/01	<0.10		ug	
			Perylene	2012/10/01	<0.10		ug	
			Phenanthrene	2012/10/01	<0.050		ug	
			p-Terphenyl	2012/10/01	<0.10		ug	
			Pyrene	2012/10/01	<0.050		ug	
			Quinoline	2012/10/01	<0.40		ug	
			Tetralin	2012/10/01	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Cold Lake South
Station ID: Lica1
Field Sample ID: LICA PUF/CLS/Sept 30, 2012

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Sept 28, 2012 @ 15:52 mst
Removal Date/Time: Oct 01, 2012 @ 16:48 mst

Date and Time Information			
Sample Date	Start Time (MST)	Finish Time (MST)	Elapsed Time (Hours)
30-Sep-12	09/30/2012 0:00	10/01/2012 0:00	24.000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
25-Sep-12	04-Oct-12	08-Oct-12	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 22-Sep-11

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Tempurature (C)	Volume (Vstd m^3)
714	229	11.9	330.34

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC# 10069
GB2C3720 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Sept 30, 2012

Technician Signiture: Ting Xu

Success Through Science®

Your C.O.C. #: 10069

Attention: Michael Bisaga
Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2012/10/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2F7043
Received: 2012/10/10, 09:25

Sample Matrix: PUF AND FILTER
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2012/10/11	2012/10/16	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

Theresa Stephenson, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

==========

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Total cover pages: 1

Maxxam Job #: B2F7043
Report Date: 2012/10/16

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		PD4583	PD4584		
Sampling Date		2012/09/30	2012/09/30		
COC Number		10069	10069		
	Units	**LICA PUFF+QFF/CLS/SEPT 30,12**	**LICA PUFF+QFF/PORT/SEPT 30,12**	**RDL**	**QC Batch**
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2998206
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2998206
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2998206
2-Methylanthracene	ug	<0.10	<0.10	0.10	2998206
2-Methylnaphthalene	ug	0.14	0.14	0.10	2998206
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2998206
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2998206
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2998206
Acenaphthene	ug	<0.050	<0.050	0.050	2998206
Acenaphthylene	ug	<0.050	<0.050	0.050	2998206
Anthracene	ug	<0.050	<0.050	0.050	2998206
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2998206
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2998206
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2998206
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2998206
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2998206
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2998206
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2998206
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2998206
Biphenyl	ug	<0.10	0.11	0.10	2998206
Chrysene	ug	<0.050	<0.050	0.050	2998206
Coronene	ug	<0.10	<0.10	0.10	2998206
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2998206
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2998206
Fluoranthene	ug	<0.050	<0.050	0.050	2998206
Fluorene	ug	0.066	<0.050	0.050	2998206
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2998206
m-Terphenyl	ug	<0.10	<0.10	0.10	2998206
Naphthalene	ug	0.142	0.130	0.072	2998206
o-Terphenyl	ug	<0.10	<0.10	0.10	2998206
Perylene	ug	<0.10	<0.10	0.10	2998206

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Analytics

Maxxam Job #: B2F7043
Report Date: 2012/10/16

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		PD4583	PD4584		
Sampling Date		2012/09/30	2012/09/30		
COC Number		10069	10069		
	Units	**LICA PUFF+QFF/CLS/SEPT 30,12**	**LICA PUFF+QFF/PORT/SEPT 30,12**	**RDL**	**QC Batch**
Phenanthrene	ug	0.168	0.136	0.050	2998206
p-Terphenyl	ug	<0.10	<0.10	0.10	2998206
Pyrene	ug	<0.050	<0.050	0.050	2998206
Quinoline	ug	<0.40	<0.40	0.40	2998206
Tetralin	ug	<0.10	<0.10	0.10	2998206
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	74	76		2998206
D10-Fluoranthene	%	94	90		2998206
D10-Fluorene (FS)	%	14 (1)	14 (1)		2998206
D10-Phenanthrene	%	86	82		2998206
D12-Benzo(a)anthracene	%	92	88		2998206
D12-Benzo(a)pyrene	%	90	86		2998206
D12-Benzo(b)fluoranthene	%	90	90		2998206
D12-Benzo(ghi)perylene	%	92	90		2998206
D12-Benzo(k)fluoranthene	%	74	72		2998206
D12-Chrysene	%	86	86		2998206
D12-Indeno(1,2,3-cd)pyrene	%	92	88		2998206
D12-Perylene	%	90	86		2998206
D14-Dibenzo(a,h)anthracene	%	90	90		2998206
D14-Terphenyl (FS)	%	95	92		2998206
D8-Acenaphthylene	%	72	74		2998206
D8-Naphthalene	%	68	72		2998206

QC Batch = Quality Control Batch
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Maxxam Analytics

Maxxam Job #: B2F7043
Report Date: 2012/10/16

Test Summary

Maxxam ID PD4583 **Collected** 2012/09/30
Sample ID LICA PUFF+QFF/CLS/SEPT 30,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/10/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2998206	2012/10/11	2012/10/16	Lidija Tomic

Maxxam ID PD4584 **Collected** 2012/09/30
Sample ID LICA PUFF+QFF/PORT/SEPT 30,12 **Shipped**
Matrix PUF AND FILTER **Received** 2012/10/10

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2998206	2012/10/11	2012/10/16	Lidija Tomic

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Maxxam Analytics

Maxxam Job #: B2F7043
Report Date: 2012/10/16

GENERAL COMMENTS

Coronene and Dibenzo(a,e)pyrene are above 25% RSD in initial calibration. No positives found for these 2 compounds.
Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB2F7043

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2998206	LTO	Spiked Blank	D10-2-Methylnaphthalene	2012/10/16		82	%	50 - 150
			D10-Fluoranthene	2012/10/16		88	%	50 - 150
			D10-Phenanthrene	2012/10/16		82	%	50 - 150
			D12-Benzo(a)anthracene	2012/10/16		92	%	50 - 150
			D12-Benzo(a)pyrene	2012/10/16		92	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/10/16		92	%	50 - 150
			D12-Benzo(ghi)perylene	2012/10/16		92	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/10/16		80	%	50 - 150
			D12-Chrysene	2012/10/16		96	%	50 - 150
			D12-Indeno(1,2,3-cd)pyrene	2012/10/16		92	%	50 - 150
			D12-Perylene	2012/10/16		94	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/10/16		90	%	50 - 150
			D8-Acenaphthylene	2012/10/16		76	%	50 - 150
			D8-Naphthalene	2012/10/16		78	%	50 - 150
			Acenaphthene	2012/10/16		86	%	60 - 130
		RPD	Acenaphthene	2012/10/16	2.6		%	50
		Spiked Blank	Acenaphthylene	2012/10/16		80	%	60 - 130
		RPD	Acenaphthylene	2012/10/16	1.9		%	50
		Spiked Blank	Anthracene	2012/10/16		87	%	60 - 130
		RPD	Anthracene	2012/10/16	0.9		%	50
		Spiked Blank	Benzo(a)anthracene	2012/10/16		107	%	60 - 130
		RPD	Benzo(a)anthracene	2012/10/16	7.0		%	50
		Spiked Blank	Benzo(a)pyrene	2012/10/16		80	%	60 - 130
		RPD	Benzo(a)pyrene	2012/10/16	2.5		%	50
		Spiked Blank	Benzo(b)fluoranthene	2012/10/16		91	%	60 - 130
		RPD	Benzo(b)fluoranthene	2012/10/16	1.7		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2012/10/16		82	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2012/10/16	3.4		%	50
		Spiked Blank	Benzo(k)fluoranthene	2012/10/16		99	%	60 - 130
		RPD	Benzo(k)fluoranthene	2012/10/16	12.0		%	50
		Spiked Blank	Chrysene	2012/10/16		99	%	60 - 130
		RPD	Chrysene	2012/10/16	15.8		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2012/10/16		83	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2012/10/16	2.4		%	50
		Spiked Blank	Fluoranthene	2012/10/16		95	%	60 - 130
		RPD	Fluoranthene	2012/10/16	0.3		%	50
		Spiked Blank	Fluorene	2012/10/16		86	%	60 - 130
		RPD	Fluorene	2012/10/16	0.9		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2012/10/16		82	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2012/10/16	2.2		%	50
		Spiked Blank	Naphthalene	2012/10/16		87	%	60 - 130
		RPD	Naphthalene	2012/10/16	1.7		%	50
		Spiked Blank	Phenanthrene	2012/10/16		87	%	60 - 130
		RPD	Phenanthrene	2012/10/16	1.1		%	50
		Spiked Blank	Pyrene	2012/10/16		84	%	60 - 130
		RPD	Pyrene	2012/10/16	0.3		%	50
		Method Blank	D10-2-Methylnaphthalene	2012/10/16		84	%	50 - 150
			D10-Fluoranthene	2012/10/16		88	%	50 - 150
			D10-Phenanthrene	2012/10/16		84	%	50 - 150
			D12-Benzo(a)anthracene	2012/10/16		90	%	50 - 150
			D12-Benzo(a)pyrene	2012/10/16		90	%	50 - 150
			D12-Benzo(b)fluoranthene	2012/10/16		92	%	50 - 150
			D12-Benzo(ghi)perylene	2012/10/16		92	%	50 - 150
			D12-Benzo(k)fluoranthene	2012/10/16		76	%	50 - 150
			D12-Chrysene	2012/10/16		90	%	50 - 150

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Maxxam Analytics
Attention: Michael Bisaga
Client Project #:
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB2F7043

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2998206	LTO	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2012/10/16		92	%	50 - 150
			D12-Perylene	2012/10/16		92	%	50 - 150
			D14-Dibenzo(a,h)anthracene	2012/10/16		90	%	50 - 150
			D8-Acenaphthylene	2012/10/16		80	%	50 - 150
			D8-Naphthalene	2012/10/16		78	%	50 - 150
			1-Methylnaphthalene	2012/10/16	<0.10		ug	
			1-Methylphenanthrene	2012/10/16	<0.10		ug	
			2-Chloronaphthalene	2012/10/16	<0.10		ug	
			2-Methylanthracene	2012/10/16	<0.10		ug	
			2-Methylnaphthalene	2012/10/16	<0.10		ug	
			3-Methylcholanthrene	2012/10/16	<2.0		ug	
			7,12-Dimethylbenzo(a)anthracene	2012/10/16	<0.10		ug	
			9,10-Dimethylanthracene	2012/10/16	<0.40		ug	
			Acenaphthene	2012/10/16	<0.050		ug	
			Acenaphthylene	2012/10/16	<0.050		ug	
			Anthracene	2012/10/16	<0.050		ug	
			Benzo(a)anthracene	2012/10/16	<0.050		ug	
			Benzo(a)fluorene	2012/10/16	<0.10		ug	
			Benzo(a)pyrene	2012/10/16	<0.050		ug	
			Benzo(b)fluoranthene	2012/10/16	<0.050		ug	
			Benzo(b)fluorene	2012/10/16	<0.10		ug	
			Benzo(e)pyrene	2012/10/16	<0.10		ug	
			Benzo(g,h,i)perylene	2012/10/16	<0.050		ug	
			Benzo(k)fluoranthene	2012/10/16	<0.050		ug	
			Biphenyl	2012/10/16	<0.10		ug	
			Chrysene	2012/10/16	<0.050		ug	
			Coronene	2012/10/16	<0.10		ug	
			Dibenz(a,h)anthracene	2012/10/16	<0.050		ug	
			Dibenzo(a,e)pyrene	2012/10/16	<0.20		ug	
			Fluoranthene	2012/10/16	<0.050		ug	
			Fluorene	2012/10/16	<0.050		ug	
			Indeno(1,2,3-cd)pyrene	2012/10/16	<0.050		ug	
			m-Terphenyl	2012/10/16	<0.10		ug	
			Naphthalene	2012/10/16	<0.072		ug	
			o-Terphenyl	2012/10/16	<0.10		ug	
			Perylene	2012/10/16	<0.10		ug	
			Phenanthrene	2012/10/16	<0.050		ug	
			p-Terphenyl	2012/10/16	<0.10		ug	
			Pyrene	2012/10/16	<0.050		ug	
			Quinoline	2012/10/16	<0.40		ug	
			Tetralin	2012/10/16	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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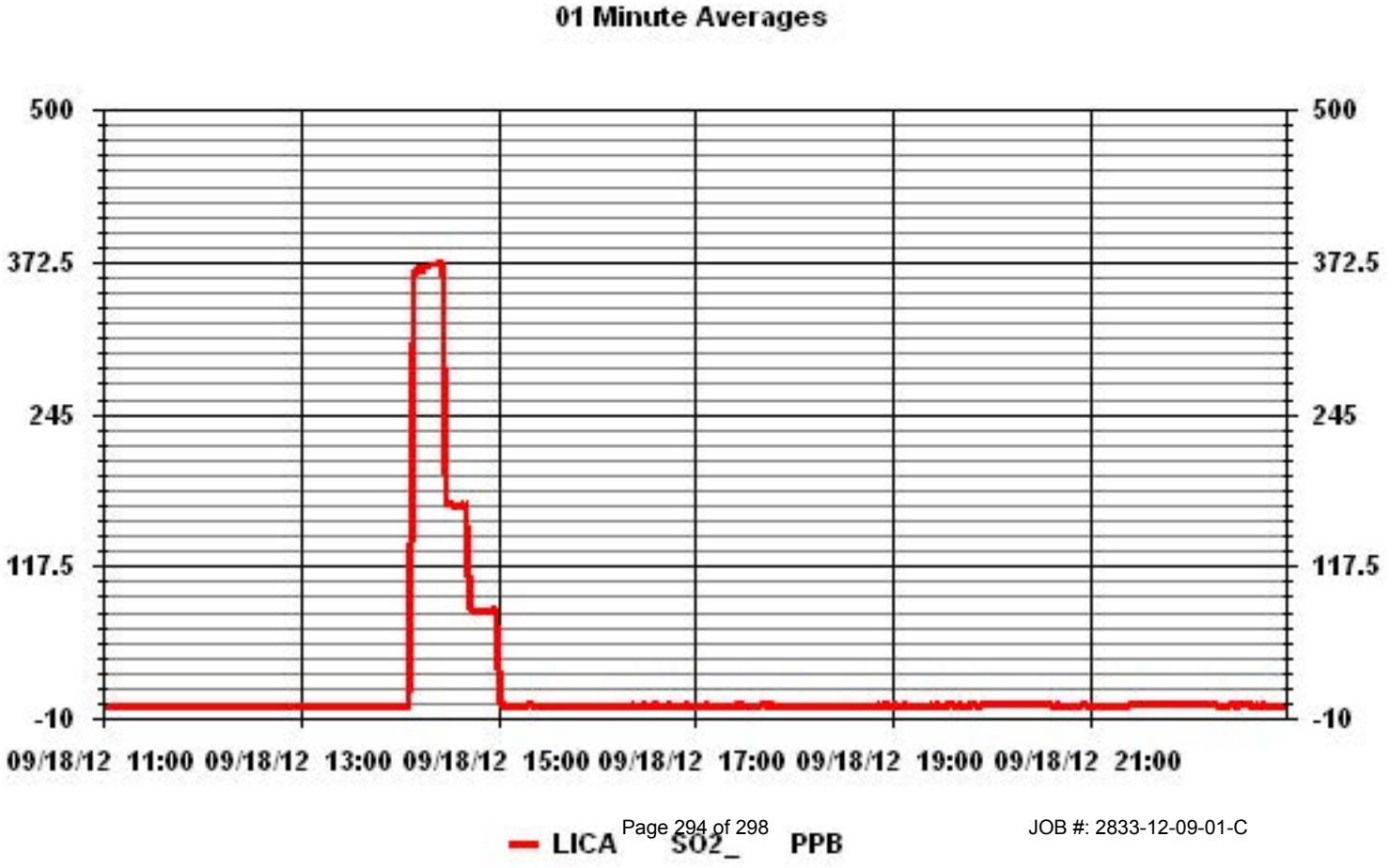
AE Audit Graphs



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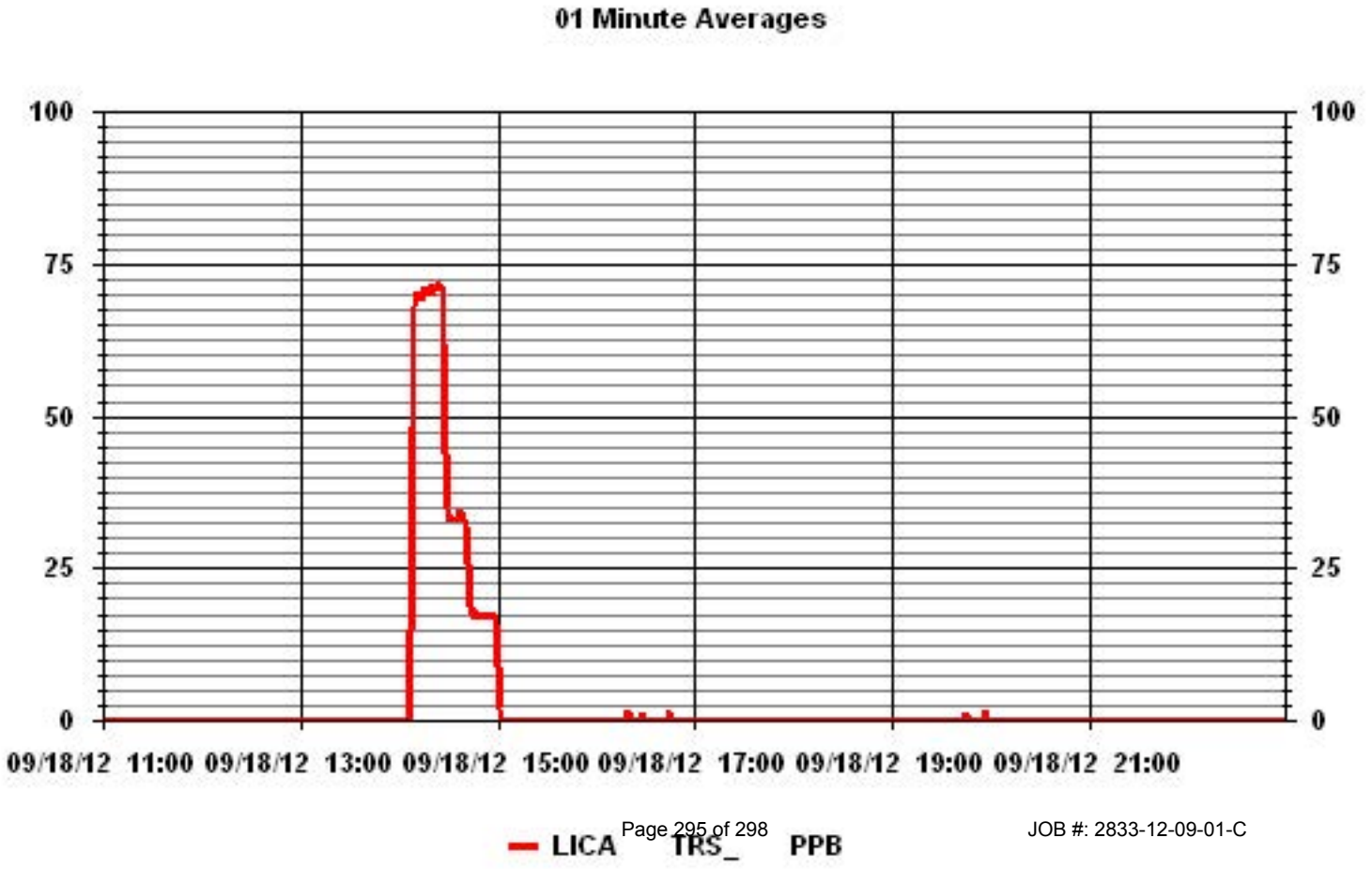

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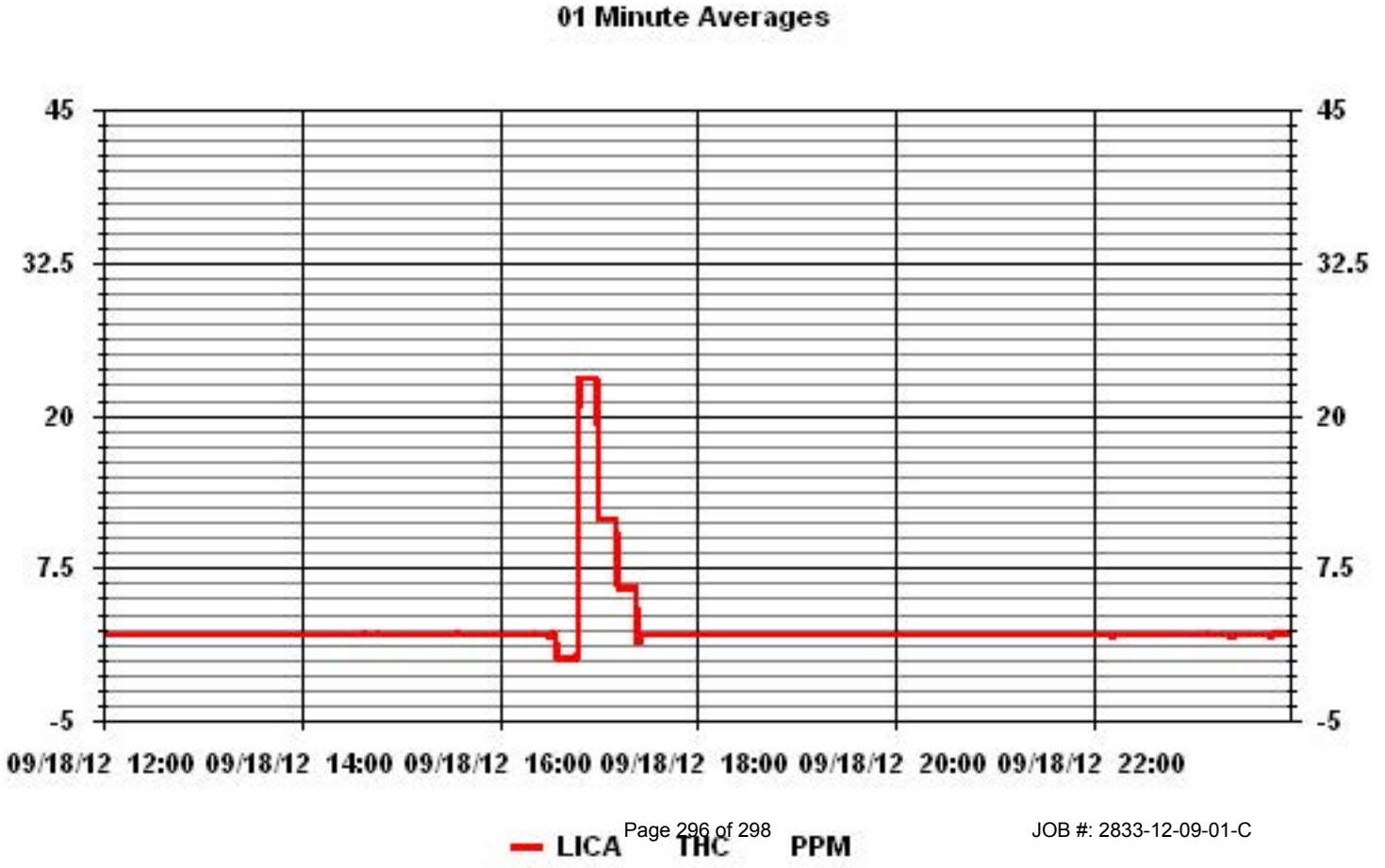

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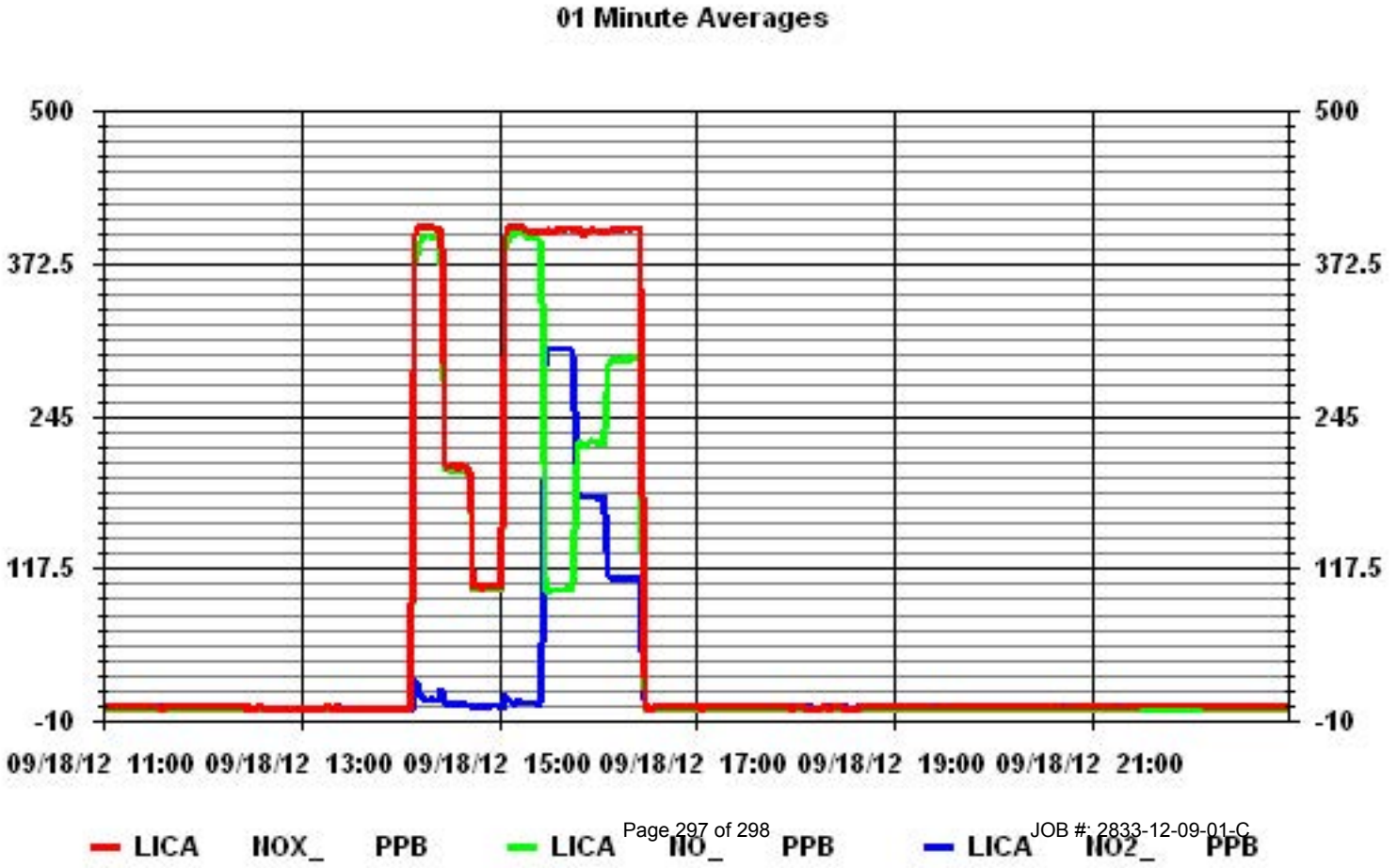
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117.5
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LICA NOX_ PPB
LICA NO_ PPB
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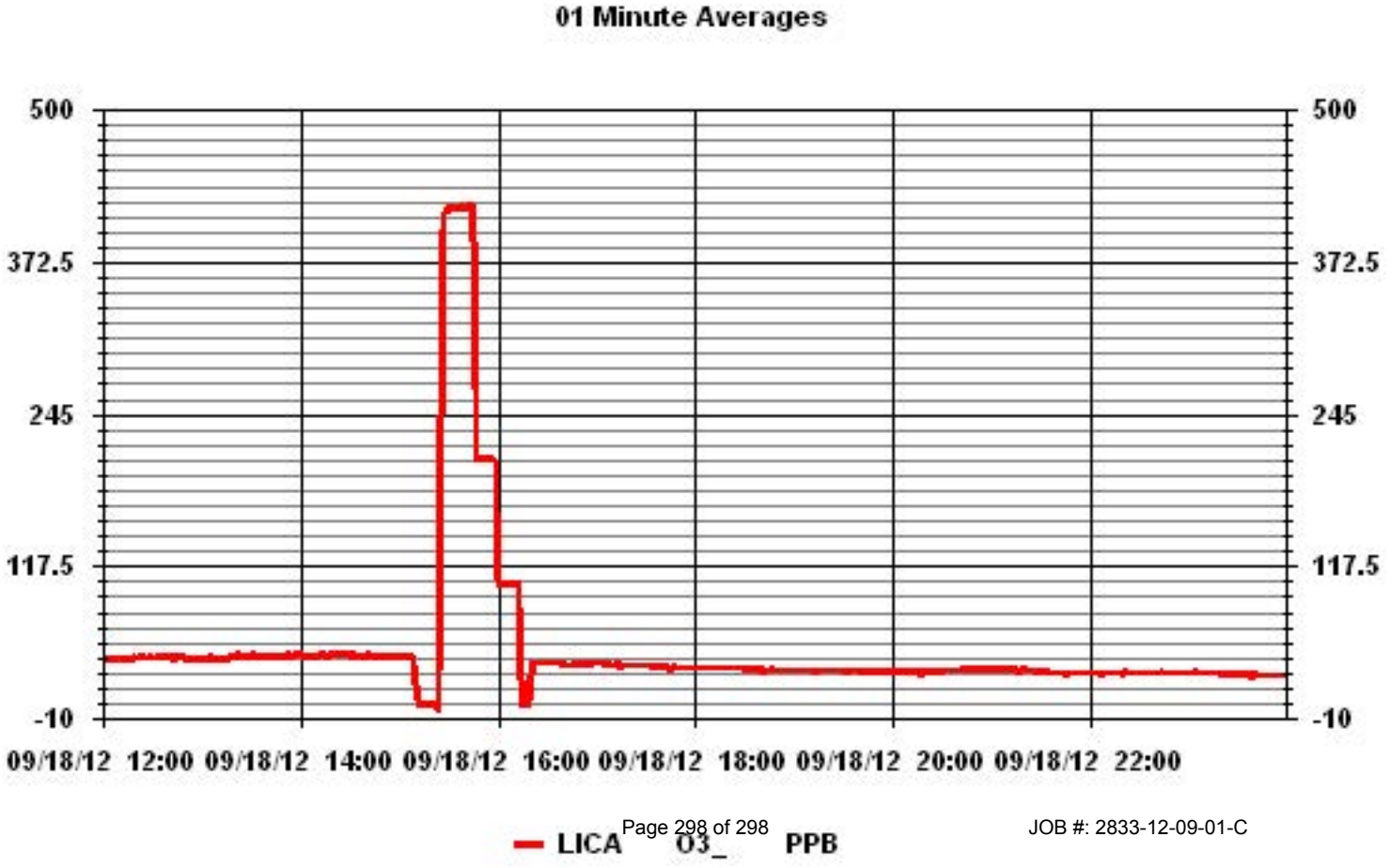

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