

Lakeland Industry & Community Association

Cold Lake Monitoring Site

Ambient Air Monitoring

Data Report

For

March 2011

Prepared By:



April 20, 2011

Lakeland Industry & Community Association

Cold Lake Monitoring Site

Ambient Air Monitoring

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Introduction

The following Ambient Air Monitoring report was prepared for:

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Monitoring Location: Cold Lake
Data Period: March 2011

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 – March 2011

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION COLD LAKE SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)	
						OBJECTIVES					EXCEEDENCES			MONTHLY AVERAGE
PARAMETER	1-HR	24-HR	1-HR	24-HR		READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY		
SO ₂ (PPB)	172	48	0	0	0.73	4	7, 8	VAR	VAR	VAR	1.6	7	99.9	
TRS (PPB)	-	-	-	-	0.78	1	VAR	VAR	VAR	VAR	1.0	VAR	99.7	
NO ₂ (PPB)	212	106	0	0	4.96	34	9	6	0.4	82(E)	13.7	9	99.9	
NO (PPB)	-	-	-	-	0.78	25	9	7	1.6	97(E)	3.8	2	99.9	
NO _x (PPB)	-	-	-	-	5.78	56	9	7	1.6	97(E)	16.5	9	99.9	
O ₃ (PPB)	82	-	0	-	37.70	55	26, 28	VAR	VAR	VAR	51.0	26	99.9	
THC (PPM)	-	-	-	-	2.21	3.7	9	6, 7	0.4, 1.6	82(E), 97(E)	3.1	9	99.9	
PM 2.5 (UG/M ³)	-	30	-	0	7.14	25.9	9, 13	16, 20	5.5, 1.5	250(WSW), 128(SE)	18.0	9	99.2	
TEMPERATURE (DEG C)	-	-	-	-	-9.13	9.1	31	15	13.1	262(W)	3.5	31	100.0	
RELATIVE HUMIDITY (%)	-	-	-	-	68.67	95	18, 20	7, 4	1.8, 9	254(WSW), 39(NE)	89.8	19	100.0	
VECTOR WS (KPH)	-	-	-	-	6.40	16.0	12	14	-	132(SE)	10.9	21	100.0	
VECTOR WD (DEGREES)	-	-	-	-	106(ESE)	-	-	-	-	-	-	-	100.0	

VAR-VARIOUS NA: NOT AVAILABLE

Monthly Non-Continuous Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

Passive Ambient Monitoring Network – March 2011

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO ₂	#14	1.6	0.74
H ₂ S	#17	0.18	0.13
NO ₂	#28	4.1	0.6
O ₃	#5	44.1	36.1

Volatile Organics Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

Xontech Model 910A – March 4, 2010

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

Xontech Model 910A – March 10, 2010

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

Xontech Model 910A – March 16, 2010

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

Xontech Model 910A – March 22, 2010

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

Xontech Model 910A – March 28, 2010

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

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

PUF cartridge – March 4, 2010

Maximum reading (ng/m3)	Semi-Volatile Organic
6.296	Naphthalene

PUF cartridge – March 10, 2010

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

PUF cartridge – March 16, 2010

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

PUF cartridge – March 22, 2010

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

PUF cartridge – March 28, 2010

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

Sulphur Dioxide (PPB)

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

No operational issues observed during the month. The inlet filter was changed before the monthly calibration was started. 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 observed during the month. The monthly calibration attempted to be performed on March 4th. However, it was found the analyzer would not stabilize. Suspected the issue may be from the zero air supply. Aborted the calibration. No change was made in the analyzer at this time. The inlet filter was changed on March 4th. On March 9th, the as found points were put on the analyzer using different zero air supply system, and the analyzer responded well. Following the as found points, the sample pump was rebuilt, and the glass sleeve inside the permeation oven was replaced. The analyzer was allowed time to stabilize before the post-repair calibration was performed. Data was corrected using daily zero information.

Ozone (PPB)

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

No operational issue was observed during the month. The inlet filter was changed before the monthly calibration was started. 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 observed during the month. The inlet filter was changed before the monthly calibration was started. The H2 gas cylinder was replaced on March 4th. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

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

No operational issues observed during the month. The inlet filter was changed before the calibration was started. Data was corrected using daily zero information.

Particulate Matter 2.5 (ug/m³)

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

The Teom unit was audited on March 8th. After the audit, the inlet was cleaned, and the Teom filter and the FDMS filter were replaced. It was noticed that the inlet filter loading was higher than normal for a new filter. On March 10th, the Teom unit was re-checked as the inlet filter loading was still higher. A new and conditioned inlet filter was installed, but the loading rate was still high. A leak check was performed, and flows, temperature, and pressure were checked; they were all good. As these are the first filters from a new box, will consult the manufacturer to see if other customers have had similar issues. 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 the data was below –3.0 ug/m³.

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 issue was observed during the month.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Relative Humidity (PERCENT)

- System make / model - Rotronic Hygroclip-S3

No operational issue was observed during the month.

Ambient Temperature (DEGC)

- System make / model - Rotronic Hygroclip-S3

No operational issues observed during the month.

Trailer Temperature (DEGC)

- System make / model - R&R 61

No operational issues observed during the month.

Datalogger

- System make / model - ESC 8832, S/N: 263

- Software make / version - ESC v 5.51a

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

Trailer

No issue was observed during this month. The manifold was cleaned on March 15th.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. Seventy-one hours of AQI values recorded in March 2011 were in the Fair range, and they were all due to ozone. Others were within the Good range. The highest hourly concentration of PM_{2.5} was 25.9ug/m³ and an AQI value of 22, hour 20 on March 13th. The highest hourly concentration of Ozone was 55 ppb and an AQI value of 29 ON March 26th and 28th in various hours.

Passive Network

Samples at site #11 were not changed in February because the road access to the site was impassable due to snow. The samples were changed on March 30th. The samples were exposure for 63 days, from January 27th to March 30th.

Volatile Organics (VOCs)

The volatile organics were sampled from March 4th to March 28th. 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.

Polycyclic Aromatic Hydrocarbons (PAHs)

The PAHs were sampled from March 4th to March 28th. 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.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

AIR QUALITY INDEX (AQI)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	0:00	DAILY	
DAY	PEAK	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	0:00	0:00	MAX	
1		10	8	-	8	7	6	4	4	8	10	12	13	13	14	14	15	15	15	14	14	13	13	10	10	10	10	15	
		O3	O3	NA	O3	O3	O3	O3	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
2		9	-	8	8	7	6	6	5	8	12	13	13	15	15	15	15	16	16	16	15	14	15	15	15	15	16	16	
		O3	NA	O3	O3	O3	O3	O3	O3	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
3		-	16	15	16	15	15	14	14	15	15	16	16	16	16	17	17	17	17	17	17	17	17	16	16	-	17	17	
		NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	
4		12	15	14	14	13	15	12	9	11	-	-	-	-	-	-	-	-	-	15	13	10	11	-	11	-	15	15	
		O3	NA	O3	O3	O3	O3	O3	O3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	O3	O3	O3	O3	NA	O3	O3	O3	
5		11	11	17	18	18	18	16	15	17	19	18	19	19	20	20	20	19	18	17	16	15	-	11	10	10	20	20	
		O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	
6		9	7	6	6	6	8	7	10	15	16	17	18	18	19	20	20	20	19	16	16	-	15	13	10	20	20	20	
		O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	
7		9	11	8	8	9	16	17	17	17	18	18	19	21	22	22	21	21	21	21	-	21	20	18	16	22	22	22	
		O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	
8		15	14	13	14	13	10	9	7	11	16	18	19	20	21	-	21	21	21	-	14	14	12	13	14	21	21	21	
		O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	NA	O3	PM2	PM2	PM2	PM2	O3	O3	O3	
9		15	13	12	12	15	9	12	18	15	20	22	23	24	25	25	28	26	-	22	24	23	20	25	27	28	28	28	
		PM2	O3	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	
10		26	24	23	24	23	20	21	21	20	20	20	20	20	20	-	-	-	-	-	19	19	19	19	18	26	26	26	
		O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	NA	NA	NA	NA	NA	O3	O3	O3	O3	O3	O3	O3	
11		18	19	20	20	20	20	19	20	20	20	19	20	20	20	20	-	19	18	18	17	18	17	18	17	19	18	20	
		O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
12		18	18	18	18	18	18	17	18	18	19	20	21	21	-	22	22	22	22	21	21	21	21	21	21	20	22	22	
		O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
13		18	16	14	14	14	13	11	11	15	18	21	22	23	-	24	25	26	24	21	19	22	11	12	15	26	26	26	
		O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	PM2	PM2	PM2	O3	O3	O3	O3	O3	
14		21	23	24	24	23	21	21	21	22	23	24	25	-	27	26	25	24	23	23	23	22	21	21	21	21	27	27	
		O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
15		20	18	14	14	12	9	8	9	17	15	17	-	19	21	22	-	19	20	21	20	20	19	17	17	22	22	22	
		O3	O3	O3	O3	O3	PM2	PM2	PM2	PM2	PM2	O3	NA	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
16		17	17	18	18	18	18	18	17	17	17	17	-	17	17	17	17	17	17	17	17	16	16	15	15	18	18	18	
		O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
17		14	15	16	16	16	15	14	15	15	-	16	16	16	17	16	16	17	18	18	17	17	17	16	16	16	18	18	
		O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
18		16	16	14	10	8	13	9	17	-	15	18	18	17	20	23	25	26	28	22	16	13	23	22	16	28	28	28	
		O3	O3	O3	O3	O3	PM2	O3	PM2	NA	O3	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	PM2	O3	
19		19	15	16	15	17	18	18	-	20	21	22	24	25	25	25	25	25	23	21	19	16	20	18	19	25	25	25	
		PM2	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
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		O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
21		21	21	21	22	20	-	20	19	18	18	17	17	17	18	19	21	22	23	22	22	22	21	21	21	21	23	23	
		O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
22		20	20	20	20	-	19	19	18	18	18	17	18	18	18	18	20	22	22	22	21	21	21	21	21	21	22	22	
		O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
23		21	21	20	-	16	12	17	17	19	20	21	22	22	23	24	24	24	24	24	24	23	22	22	22	22	24	24	
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24		22	22	-	22	22	-	21	20	21	22	23	23	24	24	25	26	27	25	24	21	19	23	27	26	27	27	27	
		O3	O3	NA	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
25		27	-	25	24	23	20	19	22	24	24	25	25	26	28	28	27	27	27	26	26	25	25	26	26	28	28	28	
		O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
26		-	26	25	25	24	23	23	23	24	24	24	25	27	28	28	29	29	28	28	28	28	28	29	29	-	29	29	
		NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	
27		28	28	28	28	25	24	24	24	26	26	27	27	27	26	26	26	26	26	25	24	24	25	25	-	28	28	28	
		O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	
28		28	28	29	28	28	28	26	25	24	24	24	24	24	24	23	23	23	24	24	25	25	-	24	24	29	29	29	
		O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	
29		26	27	27	27	27	27	26	25	25	24	24	24	24	24	23	23	23	23	22	23	23	-	22	22	22	27	27	
		O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	
30		22	22	23	23	22	22	21	21	22	22	22	23	23	24	23	22	22	22	22	22	-	22	21	20	19	24	24	
		O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	
31		20	21	21	23	24	24	22	23	24	24	25	27	27	28	28	27	28	27	-	25	25	25	25	24	28	28	28	
		PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3					

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY 1	0	0	IZS	0	0	0	0	1	1	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0.3	24	
2	0	IZS	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0.7	24	
3	IZS	1	1	0	0	0	0	0	0	1	2	2	1	1	1	1	2	1	1	1	1	1	1	IZS	2	0.9	24	
4	0	1	0	0	1	1	0	1	1	1	1	1	1	1	C	C	C	1	1	1	1	1	IZS	0	1	0.8	24	
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	1	0.0	24
6	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	0.8	24
7	1	1	0	0	0	1	1	1	1	1	1	1	2	4	4	3	3	3	3	3	IZS	2	1	1	1	4	1.6	24
8	0	0	0	0	0	0	0	1	1	1	2	2	3	4	3	3	3	3	IZS	0	0	0	0	0	4	1.1	24	
9	0	0	0	0	0	0	0	0	0	1	1	3	2	2	1	1	2	IZS	3	2	2	2	3	2	3	1.2	24	
10	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	2	1.2	24	
11	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	1.0	24
12	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	1	1.0	24
13	1	1	1	1	1	0	1	1	1	1	1	1	1	IZS	0	0	1	2	2	1	0	0	0	0	2	0.8	24	
14	1	1	1	1	1	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	2	2	1	1	2	0.8	24	
15	1	1	1	1	1	1	1	1	1	2	2	IZS	2	1	1	M	1	1	1	1	1	1	2	1	2	1.2	23	
16	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	0	1	0	0	0	0	0	1	0.7	24	
17	0	0	0	0	1	0	1	1	0	IZS	1	0	0	0	0	1	0	1	1	1	1	1	1	1	1	1	0.5	24
18	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
19	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0.9	24	
20	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.0	24	
21	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.1	24	
22	1	1	1	1	IZS	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24	
23	0	0	0	IZS	1	1	0	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	0.4	24	
24	1	1	IZS	1	0	1	0	1	1	0	0	0	1	1	0	1	1	1	1	1	0	1	1	1	1	0.7	24	
25	1	IZS	1	1	1	1	1	1	2	2	2	2	3	1	1	1	1	1	1	1	0	1	1	1	3	1.3	24	
26	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	IZS	1	0.8	24	
28	1	1	0	1	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	IZS	0	0	1	0.3	24
29	1	0	0	1	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	IZS	0	0	0	1	0.5	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	IZS	1	1	1	1	1	0.3	24	
31	1	1	1	0	0	0	0	0	1	0	1	1	0	1	1	0	0	0	IZS	0	1	0	1	0	1	0.4	24	
HOURLY MAX	2	2	2	2	1	1	1	1	2	2	2	3	3	4	4	3	3	3	3	3	2	2	2	3	2			
HOURLY AVG	0.6	0.7	0.6	0.6	0.5	0.6	0.5	0.7	0.7	0.8	0.8	0.9	0.9	1.0	0.8	0.8	0.9	0.9	0.9	0.9	0.7	0.7	0.8	0.8	0.6			

STATUS FLAG CODES

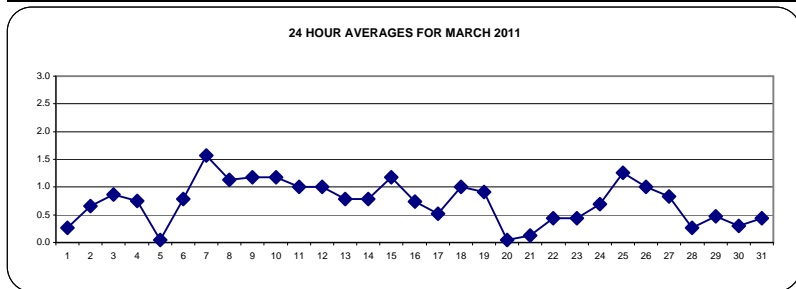
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

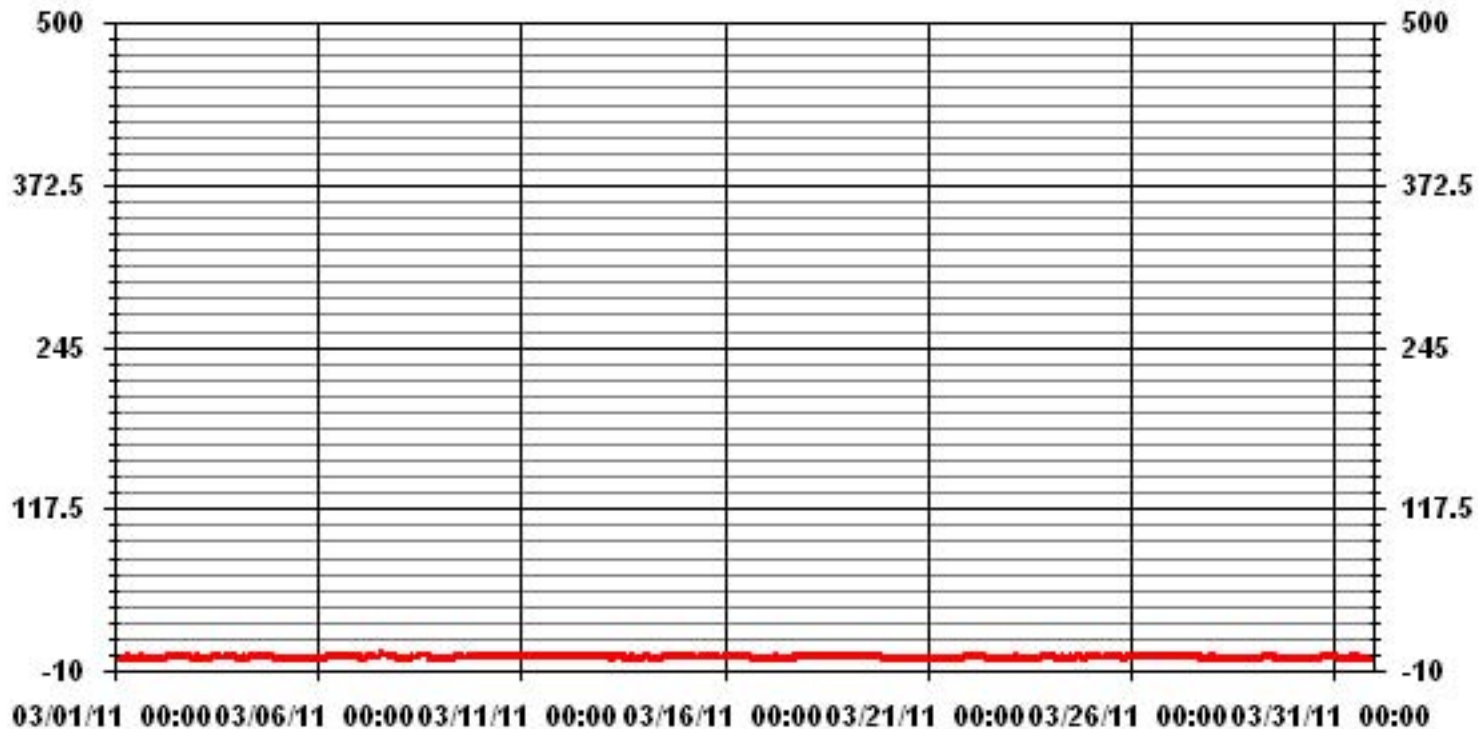
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	449					
MAXIMUM 1-HR AVERAGE:	4	PPB	@ HOUR(S)	VAR	ON DAY(S)	7, 8
MAXIMUM 24-HR AVERAGE:	1.6	PPB			ON DAY(S)	7
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	3	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.67		MONTHLY AVERAGE:	0.73	PPB	



01 Hour Averages



— LICA SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

SULPHUR DIOXIDE MAX instantaneous maximum in ppt

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY	24-HOUR	
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
2	1	1	IZS	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
3	1	IZS	1	1	1	1	1	1	1	1	1	3	2	2	2	2	2	2	1	1	1	1	1	1	1	1	3	1.4	24
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	C	C	C	C	C	1	1	1	1	1	IZS	0	1	0.9	24
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	0.1	24
6	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	1	2	2	IZS	1	1	1	2	1.3	24
7	1	1	1	1	1	1	2	2	1	1	1	1	4	5	5	4	3	4	4	4	IZS	3	2	1	1	5	2.2	24	
8	1	1	1	1	1	1	1	1	1	2	2	3	4	4	4	3	4	3	IZS	1	0	1	1	1	1	4	1.8	24	
9	0	0	0	0	0	0	0	1	1	1	2	3	3	2	2	2	2	IZS	3	3	2	3	4	3	4	3	4	1.6	24
10	2	2	2	2	2	1	2	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	2	1.3	24	
11	1	2	2	2	2	2	2	2	2	2	2	2	2	1	1	IZS	1	2	1	2	1	1	1	1	1	2	1.6	24	
12	1	1	1	1	1	1	1	1	1	1	1	2	2	1	IZS	2	1	1	1	1	1	1	1	1	1	2	1.1	24	
13	1	1	1	1	1	1	1	1	1	1	1	2	2	IZS	1	1	2	3	3	1	1	0	0	1	3	1.2	24		
14	2	2	2	1	1	1	1	1	0	0	0	0	IZS	1	1	1	2	1	1	2	2	2	2	2	2	2	1.2	24	
15	2	2	1	1	1	2	1	1	1	3	3	IZS	2	2	1	M	1	1	1	1	1	2	2	2	3	1.5	23		
16	2	2	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24	
17	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	1	1.0	24	
18	1	1	1	1	2	1	1	1	IZS	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24	
19	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
20	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
21	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
22	1	1	1	1	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	
23	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
24	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1.1	24	
25	1	IZS	1	1	1	1	1	2	2	3	3	2	2	3	2	1	1	1	1	1	1	1	1	1	1	3	1.5	24	
26	IZS	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	IZS	2	1.3	24
27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1.0	24	
28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1.0	24	
30	1	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	
31	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	2	1.0	24	
HOURLY MAX		2	2	2	2	2	2	2	2	3	3	3	4	5	5	4	4	4	4	4	4	3	3	3	4	3			
HOURLY AVG		1.1	1.1	1.0	1.0	1.0	1.0	1.1	1.0	1.1	1.3	1.3	1.5	1.4	1.4	1.3	1.3	1.3	1.3	1.2	1.1	1.1	1.1	1.2	1.1				

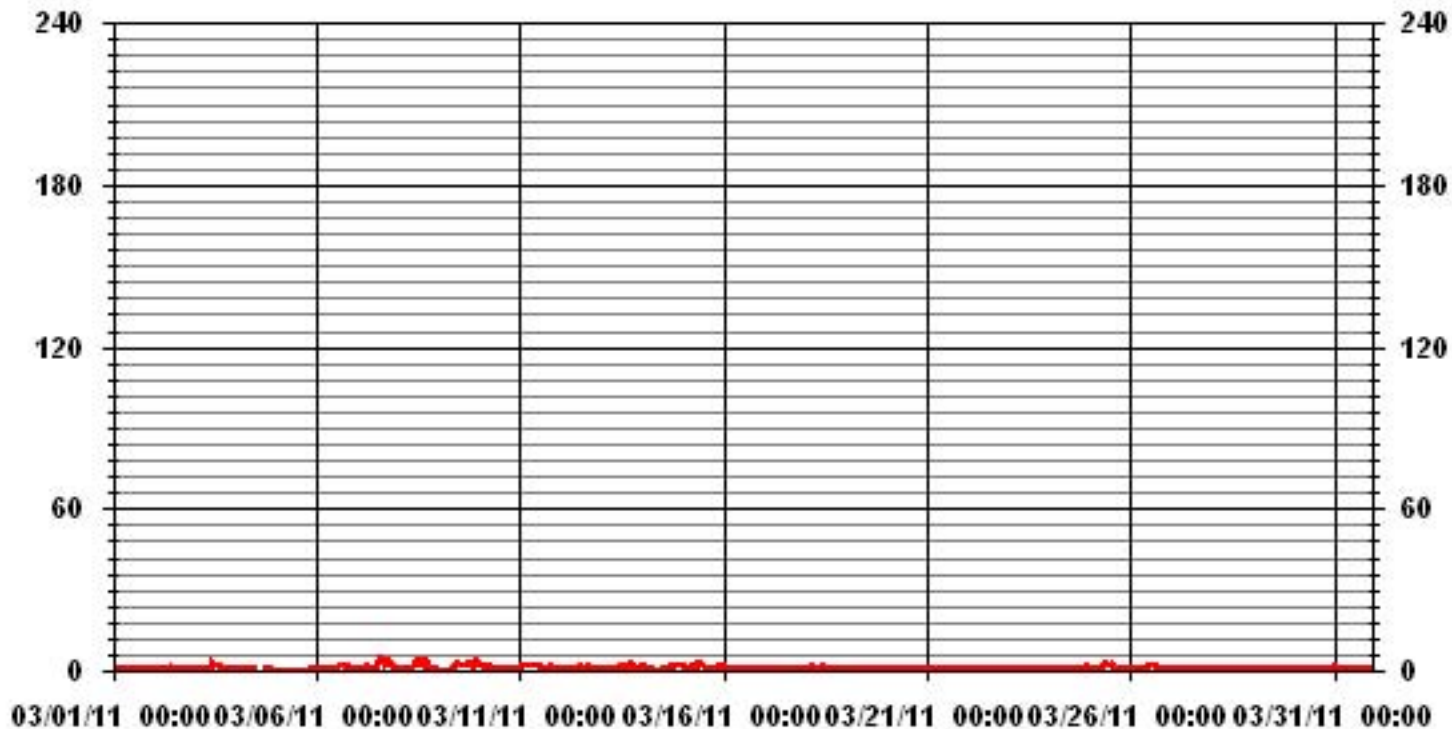
STATUS FLAG CODES

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

NUMBER OF NON-ZERO READINGS:	669					
MAXIMUM INSTANTANEOUS VALUE:	5	PPB	@ HOUR(S)	13, 14	ON DAY(S)	7
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.64					

01 Hour Averages



— LICA SO2MAX PPB

LICA
SO2_ / WDR Joint Frequency Distribution (Percent)

March 2011

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	1.27	6.78	11.59	3.81	15.27	11.45	21.35	2.12	1.41	1.27	7.35	8.06	3.39	1.69	1.83	1.27	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.27	6.78	11.59	3.81	15.27	11.45	21.35	2.12	1.41	1.27	7.35	8.06	3.39	1.69	1.83	1.27	

Calm : .00 %

Total # Operational Hours : 707

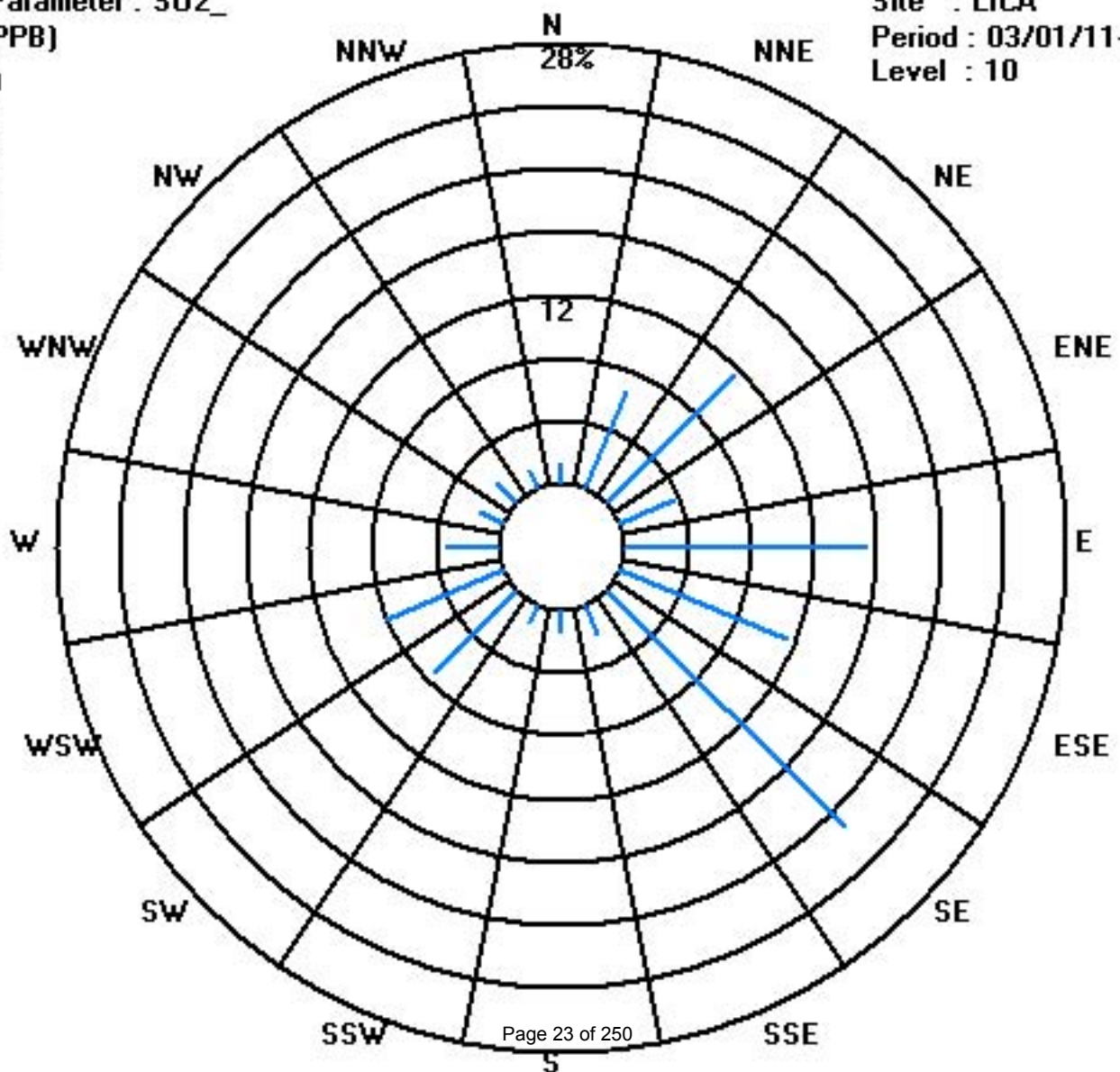
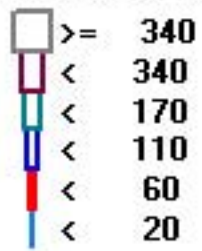
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	9	48	82	27	108	81	151	15	10	9	52	57	24	12	13	9	707
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	9	48	82	27	108	81	151	15	10	9	52	57	24	12	13	9	

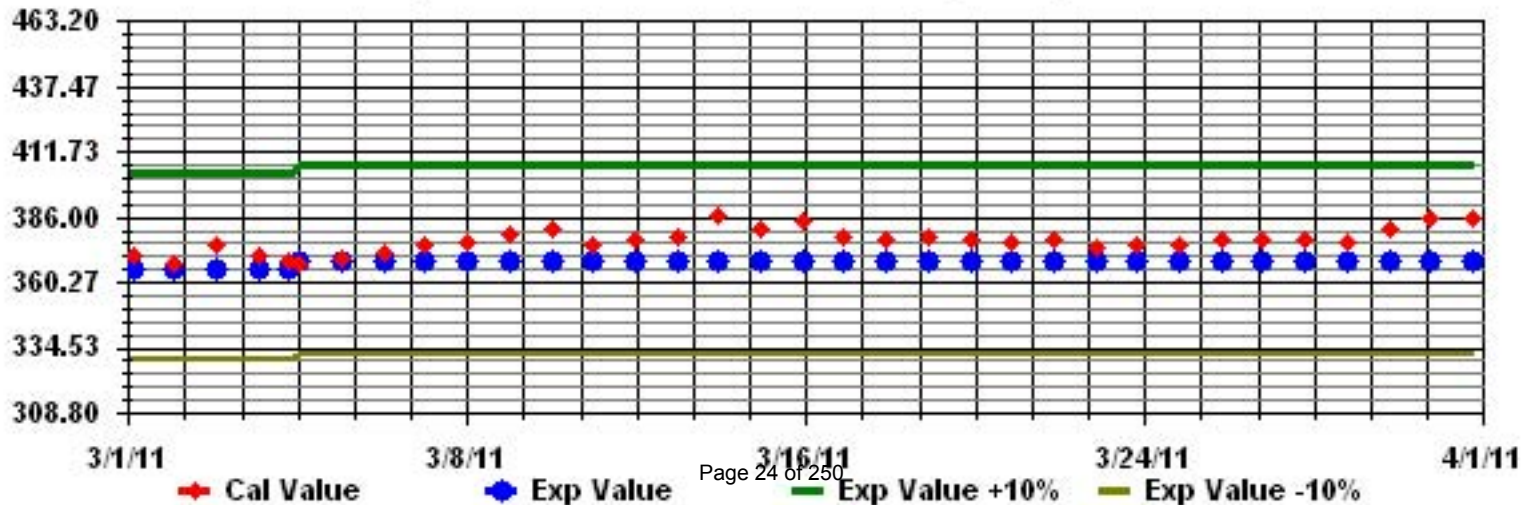
Calm : .00 %

Total # Operational Hours : 707

Class Limits (PPB)



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



Total Reduced Sulphur

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

TOTAL REDUCED SULPHUR (TRS) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	1	0	0	IZS	1	0	0	0	1	1	1	1	1	1	0	0	0	0	0	1	0	0	0	1	0	1	0.4	24
2	2	0	IZS	0	0	0	1	0	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	0	1	0.4	24
3	3	IZS	1	1	1	1	1	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	0	1	IZS	1	0.5	24
4	4	1	0	1	0	1	1	1	1	1	C	C	C	1	0	1	1	1	1	1	1	1	0	IZS	1	0.8	24	
5	5	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	IZS	1	1	0.3	24	
6	6	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	1	1	0	IZS	1	1	0	0.7	24	
7	7	1	0	1	1	1	1	0	0	1	1	0	0	0	1	0	0	0	0	0	IZS	0	0	0	0	1	0.3	24
8	8	0	1	0	0	0	0	1	1	1	1	1	1	1	C	M	C	C	C	C	C	0	0	0	0	1	0.4	23
9	9	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
10	10	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	IZS	1	1	1	1	1	1	1	1	0.9	24
11	11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	0	1	1	1	1	1	1	1	1.0	24
12	12	0	1	1	1	1	0	1	1	1	0	1	1	1	1	IZS	1	1	0	1	1	1	1	1	1	1	0.8	24
13	13	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	0	0	1	0	1	1	1	1	1	1	0.9	24
14	14	1	1	1	1	1	0	1	1	0	1	1	1	1	IZS	1	1	0	1	1	1	1	1	1	1	1	0.9	24
15	15	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	0	1	M	1	1	1	1	1	1	1	1	1.0	23
16	16	1	1	1	1	0	1	1	1	0	0	IZS	1	0	0	1	0	1	0	0	1	1	0	0	1	1	0.6	24
17	17	1	1	1	0	0	1	1	1	1	IZS	1	1	1	1	1	0	1	0	1	0	1	1	0	1	1	0.8	24
18	18	0	1	1	0	1	1	1	IZS	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24
19	19	1	1	1	0	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
20	20	0	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
21	21	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
22	22	1	1	1	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
23	23	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
24	24	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
25	25	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1.0	24
26	26	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1.0	24
27	27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	0	1	1	1	1	IZS	1	0.9	24
28	28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1.0	24
29	29	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1.0	24
30	30	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	1	0	1	IZS	1	0	1	1	1	0.8	24
31	31	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	IZS	1	1	1	1	1	1	0.9	24
HOURLY MAX		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
HOURLY AVG		0.8	0.9	0.9	0.7	0.8	0.8	0.8	0.9	0.9	0.8	0.9	0.8	0.8	0.7	0.8	0.6	0.6	0.7	0.8	0.8	0.8	0.7	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

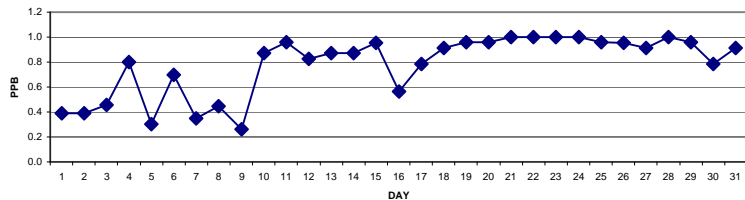
OBJECTIVE LIMIT:

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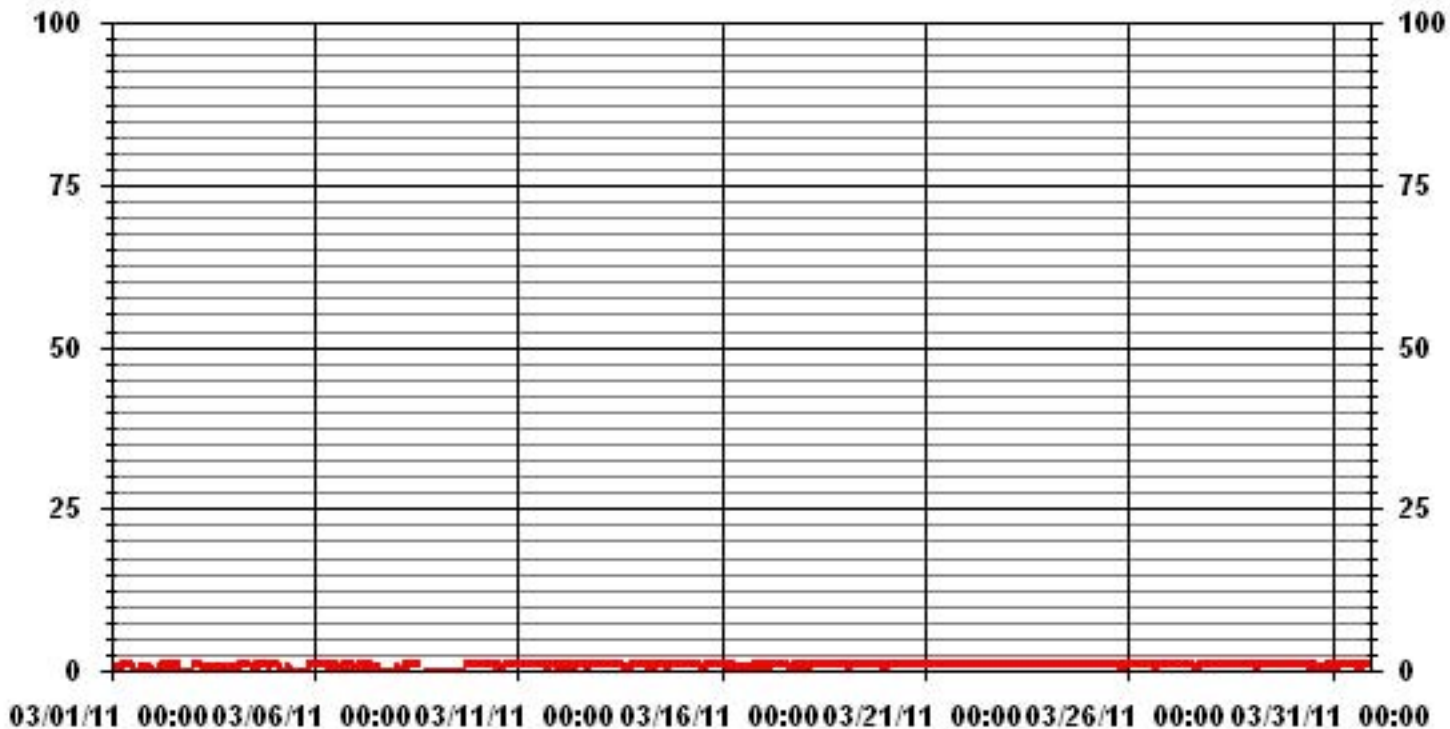
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	547		
MAXIMUM 1-HR AVERAGE:	1 PPB @ HOUR(S)		
MAXIMUM 24-HR AVERAGE:	1.0 PPB		
IZS CALIBRATION TIME:	32 HRS	OPERATIONAL TIME:	742 HRS
MONTHLY CALIBRATION TIME:	8 HRS	AMD OPERATION UPTIME:	99.7 %
STANDARD DEVIATION:	0.41	MONTHLY AVERAGE:	0.78 PPB

24 HOUR AVERAGES FOR MARCH 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

TOTAL REDUCED SULPHUR MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR			
HOUR START	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																												
1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
2	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
3	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1.0	24
4	1	1	1	1	1	1	1	1	C	C	C	C	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1.0	24	
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1.0	24	
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1.0	24	
7	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	1.0	24	
8	1	1	1	1	1	1	1	1	1	1	1	1	C	C	M	C	C	C	C	0	0	0	0	0	0	1	0.7	23
9	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	1	0.3	24
10	1	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
11	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	1.0	24
12	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	1	1.0	24
13	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
14	1	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
15	1	1	1	1	1	2	1	1	1	1	1	IZS	1	1	1	M	1	1	1	1	1	1	1	1	1	2	1.0	23
16	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	1	1.0	24
17	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
18	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
19	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
20	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
21	1	1	1	1	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
22	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
23	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
24	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
25	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
26	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1.0	24
28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1.0	24
29	1	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
30	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	1.0	24
31	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	1	1.0	24
HOURLY MAX	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
HOURLY AVG	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		

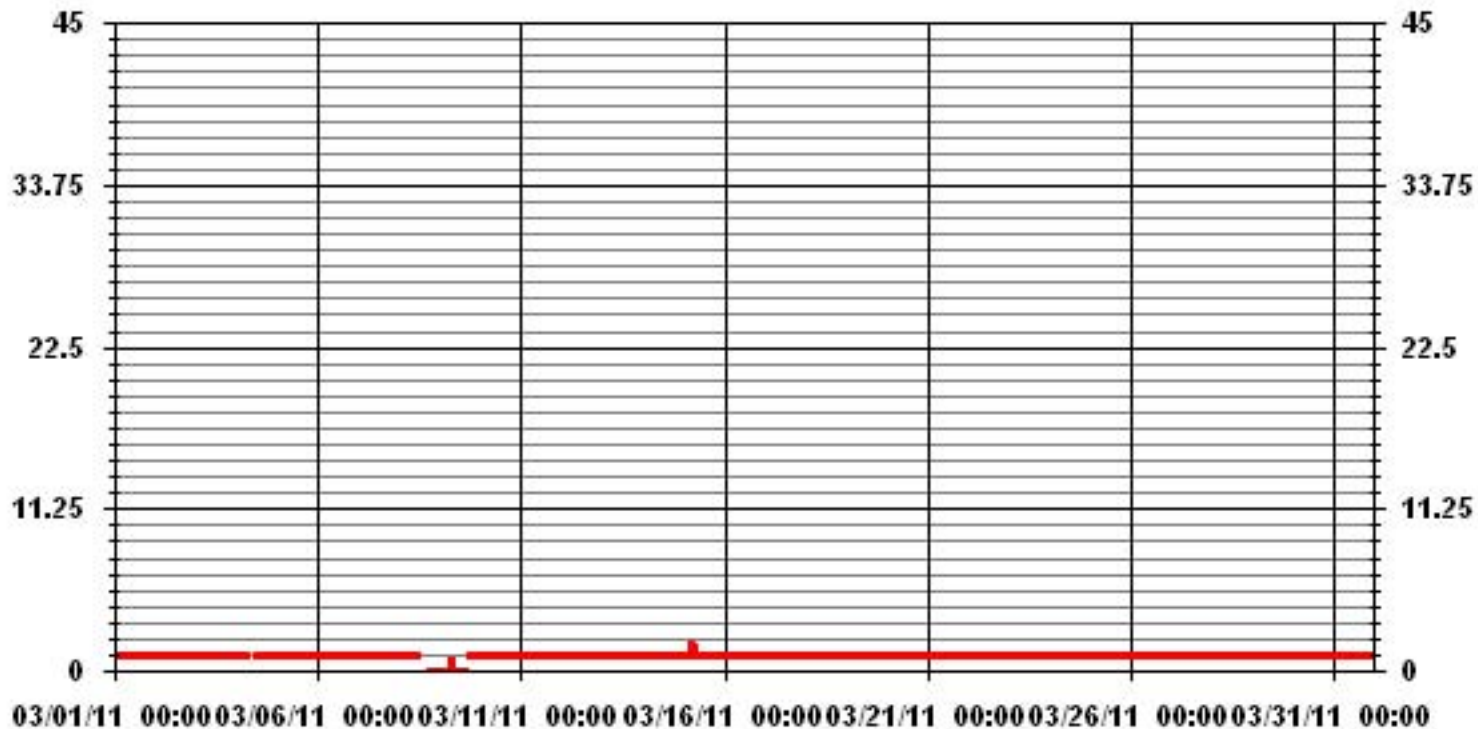
STATUS FLAG CODES

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:	679					
MAXIMUM INSTANTANEOUS VALUE:	2	PPB	@ HOUR(S)	5	ON DAY(S)	15
	VAR - VARIOUS					
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742 HRS		
MONTHLY CALIBRATION TIME:	10 HRS					
STANDARD DEVIATION:	0.17					

01 Hour Averages



LICA
 TRS_ / WD Joint Frequency Distribution (Percent)

March 2011

Distribution By % Of Samples

Logger Id : 01
 Site Name : LICA
 Parameter : TRS_
 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
< 3	1.28	6.83	11.68	3.70	15.52	11.53	21.50	2.13	1.42	1.28	7.12	7.97	3.13	1.56	1.99	1.28	100.00
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.28	6.83	11.68	3.70	15.52	11.53	21.50	2.13	1.42	1.28	7.12	7.97	3.13	1.56	1.99	1.28	

Calm : .00 %

Total # Operational Hours : 702

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	9	48	82	26	109	81	151	15	10	9	50	56	22	11	14	9	702
< 10																	
< 50																	
>= 50																	
Totals	9	48	82	26	109	81	151	15	10	9	50	56	22	11	14	9	

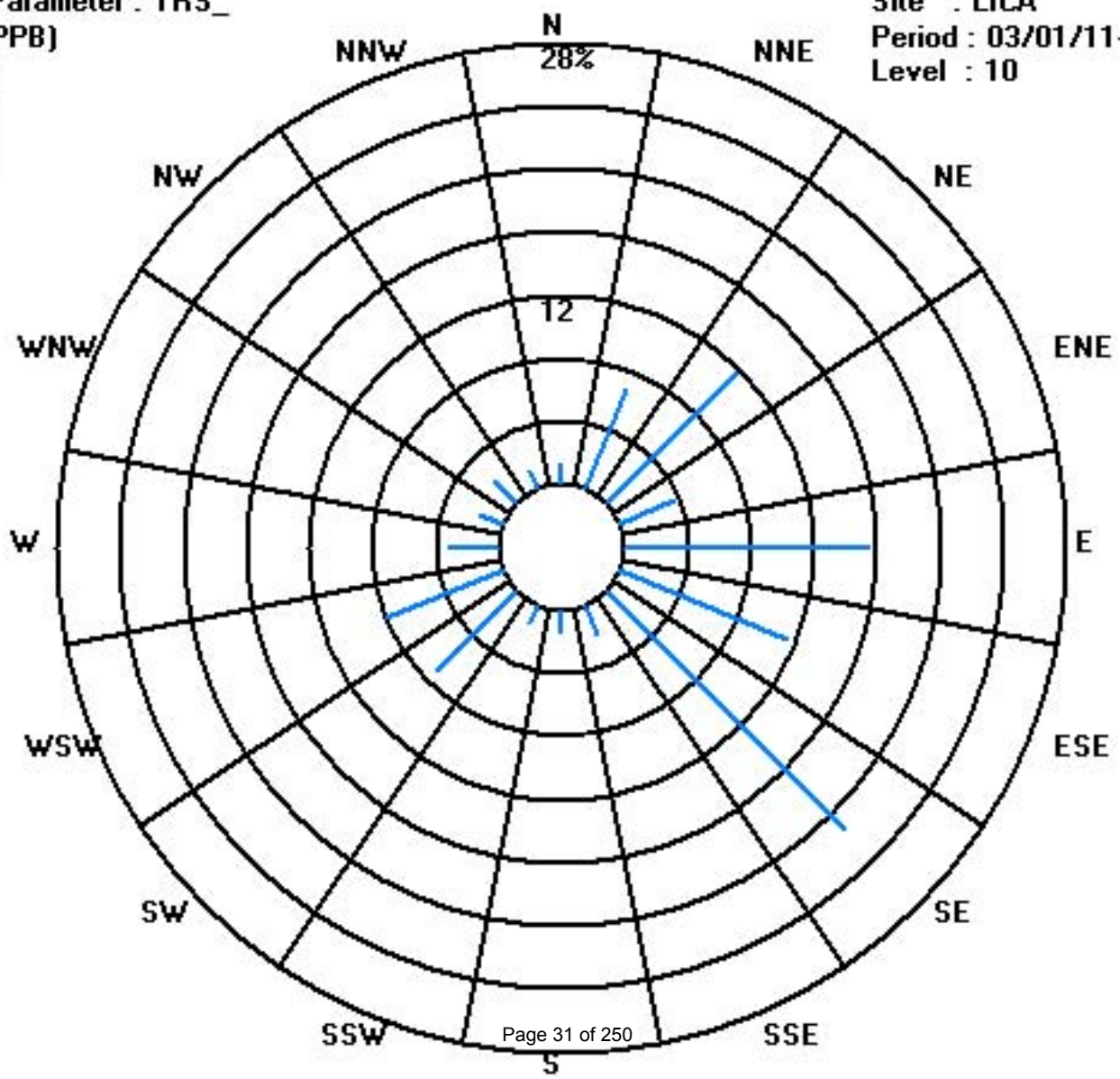
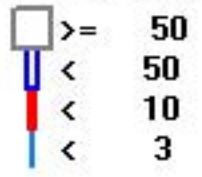
Calm : .00 %

Total # Operational Hours : 702

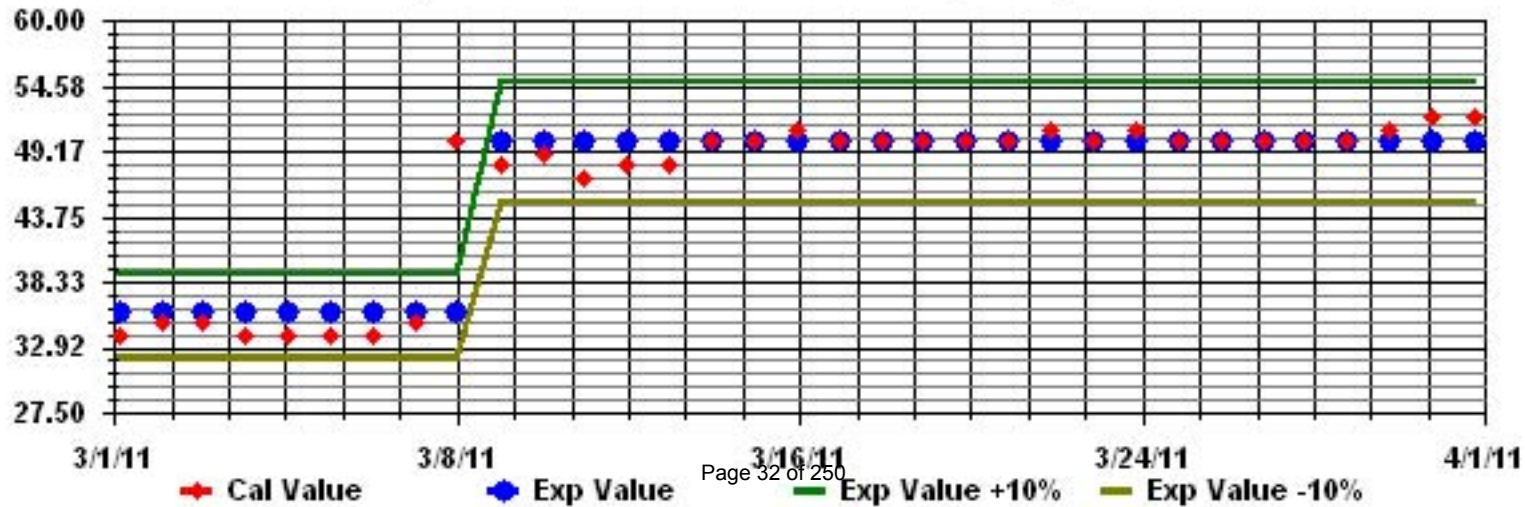
Class Limits (PPB)

Period : 03/01/11-03/31/11

Level : 10



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR			
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
1		2.1	2.1	IZS	2.4	2.5	2.6	2.7	2.8	3.4	3.1	2.6	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.3	2.3	3.4	2.4	24		
2		2.3	IZS	2.6	2.6	2.6	2.6	2.7	2.7	2.7	2.8	2.5	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2.8	2.3	24	
3		IZS	2	2	2	2	2	2	2.2	2.3	2.2	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2.3	2.1	24	
4		2	2	2	2	2.1	2	2.1	2.2	2.1	2.1	2.1	C	C	C	C	2	2.1	2.1	2.1	2.1	2.2	2.1	IZS	2.4	2.4	2.1	24		
5		2.3	2.2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	IZS	2.1	2.1	2.3	2.1	24	
6		2.2	2.4	2.5	2.5	2.5	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2.1	2.1	2.1	IZS	2.4	2.4	2.7	2.7	2.2	24		
7		2.8	3.1	3	2.9	2.9	2.7	2.7	2.8	2.7	2.7	2.6	2.5	2.2	2.3	2.4	2.4	2.4	2.4	2.4	IZS	2.6	2.7	2.8	2.8	3.1	2.6	24		
8		2.8	2.8	2.9	3	2.9	2.9	3	3.1	3.4	3.4	3.1	2.8	2.5	2.4	2.2	2.2	2.3	2.3	IZS	2.4	2.4	2.5	2.7	2.9	3.4	2.7	24		
9		3.1	3.3	3.3	3.4	3.4	3.5	3.7	3.7	3.5	3.1	2.9	2.9	2.9	2.8	2.8	2.9	3	IZS	3.1	3	3	3	2.7	2.5	3.7	3.1	24		
10		2.3	2.4	2.3	2.2	2.3	2.3	2.1	2	2	2	2	2	2	2	2	2	2	IZS	2	2	2	2	2	2	2	2.4	2.1	24	
11		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	IZS	2	2	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	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.4	2.4	2.4	IZS	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.2	24	
13		2.1	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.3	2.5	2.5	2.5	IZS	2.3	2.4	2.3	2.2	2.3	2.5	2.5	2.4	2.4	2.3	2.5	2.3	24		
14		2.4	2.5	2.4	2.1	2.1	2	2	2	2	2	2	2	2	IZS	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.5	2.1	24	
15		2.2	2.2	2.3	2.9	2.9	2.9	3	3.1	3.1	2.8	2.4	IZS	2.1	2.1	2	M	2.2	2	2	2	2	2	2	2	3.1	2.4	23		
16		2	2	2	2	2	2	2	2	2	2	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	2.0	24	
17		2	2.1	2	2	2	2	2	2	2	2	IZS	2	2	2.1	2.1	2.1	2.2	2.4	2.6	2.8	3.1	3	2.9	3.1	2.2	2.4	24		
18		2.8	2.7	2.8	2.9	2.9	2.9	2.9	2.9	IZS	2.7	2.7	2.7	2.6	2.5	2.4	2.3	2.2	2.1	2.2	2.2	2.4	2.5	2.4	2.6	2.9	2.6	24		
19		2.6	2.5	2.6	2.8	2.8	2.7	2.6	IZS	2.7	2.7	2.7	2.6	2.4	2.4	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.8	2.5	24		
20		2.2	2.2	2.2	2.2	2.1	2.1	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	2.1	2.1	2.1	2.2	2.1	24		
21		2.1	2.1	2.1	2.1	2.1	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.0	24	
22		2	2	2	2	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	2.0	24	
23		2	2	2	IZS	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2.1	2.1	2	2	2.1	2	2.1	2.1	2.1	2.1	2.0	24	
24		2.1	2.1	IZS	2	1.9	1.9	1.9	1.9	1.9	2.3	2.4	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	2	2.4	2.0	24	
25		2	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.0	24
26		IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	2.0	24	
27		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	2.0	24	
28		2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.1	2.1	2.1	24	
29		2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.1	2.1	2.2	2.1	24	
30		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.1	2.1	24	
31		2.3	2.2	2.1	2	2	2	2.1	2.1	2.1	2	2	2	2	1.9	1.9	1.9	2	2	IZS	2	2	2.1	2.1	2.1	2.3	2.0	24		
HOURLY MAX		3.1	3.3	3.3	3.4	3.4	3.5	3.7	3.7	3.5	3.4	3.1	2.9	2.9	2.8	2.8	2.9	3.0	2.4	3.1	3.0	3.0	3.1	3.0	2.9					
HOURLY AVG		2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2					

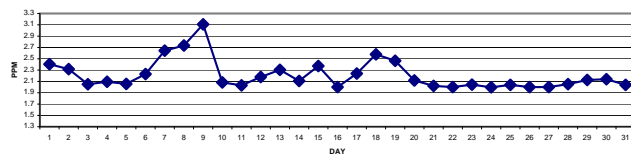
STATUS FLAG CODES

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
BB	- BELOW BACKGROUND OF 1.5 PPM		

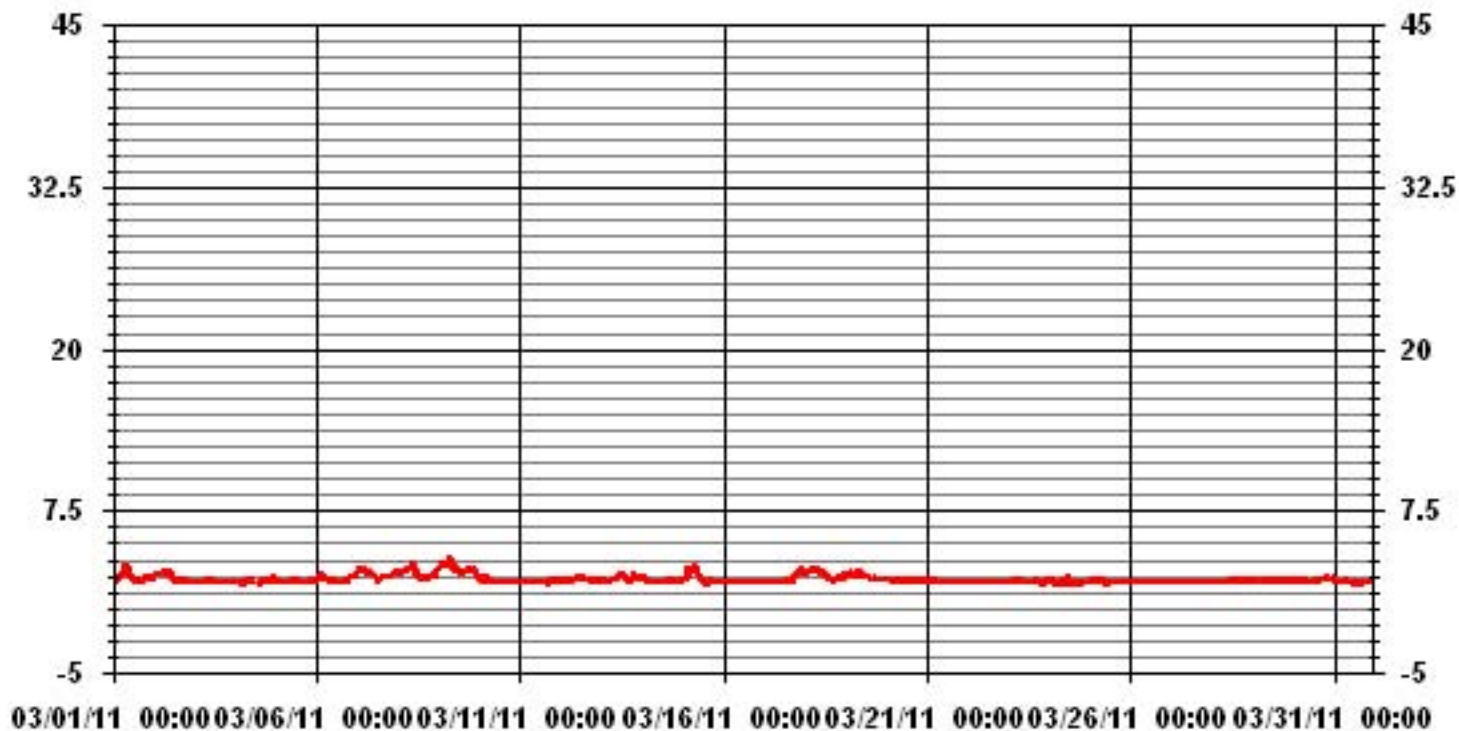
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	706		
MAXIMUM 1-HR AVERAGE:	3.7 PPM	@ HOUR(S)	6, 7 ON DAY(S) 9
MAXIMUM 24-HR AVERAGE:	3.1 PPM		ON DAY(S) 9
IZS CALIBRATION TIME:	33 HRS	OPERATIONAL TIME:	743 HRS
MONTHLY CALIBRATION TIME:	4 HRS	AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	0.32	MONTHLY AVERAGE:	2.21 PPM

24 AVERAGES FOR MARCH 2011



01 Hour Averages



— LICA THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

TOTAL HYDROCARBONS MAX instantaneous maximum in ppr

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR			
HOURLY MAX	HOURLY AVG.	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.	RDGS.			
DAY																														
1		2.1	2.2	IZS	2.5	2.7	2.8	2.8	3.2	3.6	3.3	2.9	2.5	2.4	2.3	2.2	2.2	2.2	3.3	2.3	2.5	2.4	2.3	2.4	2.4	3.6	2.6	24		
2		2.5	IZS	2.7	2.7	2.7	2.7	2.7	3.1	3	2.9	2.7	2.4	2.3	2.2	2.2	2.2	2.1	2.7	2.1	2.2	2.1	2.2	2.1	2.1	3.1	2.5	24		
3		IZS	2.1	2.2	2	2.2	2.1	2.1	2.4	2.4	2.4	2.3	2.3	2.2	2.1	2.1	2	2	2	2	2.1	2.1	2.1	2.1	IZS	2.4	2.2	24		
4		2.1	2.1	2.3	2.1	2.1	2.1	2.2	2.6	2.4	2.3	2.1	C	C	C	C	2.1	2.1	2.6	2.1	2.2	2.3	2.2	IZS	2.5	2.6	2.2	24		
5		2.9	2.3	2.2	2.1	2	2.1	2.1	2.1	2.1	2.3	2.2	2.7	2.2	2.1	2.3	2.1	2.3	2.2	2.1	2.1	2.1	IZS	2.3	2.2	2.9	2.2	24		
6		2.5	2.6	2.6	2.7	2.6	2.6	2.5	2.5	2.2	2.1	4.5	2.1	2.4	2.5	2.1	2.1	3.5	2.1	2.2	2.2	IZS	2.6	2.7	2.9	4.5	2.6	24		
7		3.2	3.3	3.2	3.1	3	2.9	2.7	2.8	2.9	2.8	2.7	2.6	2.4	2.4	2.5	2.7	2.6	2.4	IZS	2.7	2.8	3.5	2.9	3.5	2.8	24			
8		3	2.9	3.2	3.4	3.1	3	3.1	3.2	3.8	3.8	3.5	3	2.7	2.5	2.8	2.3	2.4	2.4	IZS	2.7	2.6	2.9	3	3.3	3.8	3.0	24		
9		3.5	3.5	3.5	3.8	3.6	3.6	4.6	4.1	3.9	3.2	3	2.9	3	2.9	3	3.1	3.2	IZS	3.6	3	3.1	3.2	2.8	2.7	4.6	3.3	24		
10		2.4	2.5	2.4	2.2	2.4	2.4	2.1	2.1	2.1	2	2	2	2.1	2	2	2	IZS	2	2	2	2	2	2	2	2.5	2.1	24		
11		2	2	2	2	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.3	3.8	2.1	2.2	2.2	2.2	2.1	2.1	3.8	2.2	24		
12		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.4	2.4	2.5	2.7	2.9	IZS	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.3	2.2	2.9	2.3	24		
13		2.4	5.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.7	2.8	2.6	2.7	IZS	2.4	2.6	2.4	2.3	2.5	2.7	3	2.6	2.5	2.7	5.2	2.6	24		
14		2.6	2.6	2.5	2.3	2.1	3.6	2.1	2.4	2	2	2	2	IZS	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.2	3.6	2.3	24		
15		2.2	2.3	2.4	3.2	3	3.2	3.5	3.6	3.2	3.2	2.6	IZS	2.1	2.1	2.1	M	7.5	2.1	2.1	2.3	2	2	2.1	2	7.5	2.8	23		
16		2	2	2	2	2	2.1	2.1	2.1	2	2	IZS	2	2	2	2	2	2.7	2.4	2.6	2	2.2	2	2	2	2.7	2.1	24		
17		2.2	2.2	2	2	2.1	2.2	2.1	2.2	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.3	2.5	2.7	3	3.1	3.1	3.1	3.1	2.3	24		
18		3	2.8	2.9	3	3.5	3.3	3	3	IZS	2.9	3	2.8	2.8	2.6	2.7	2.5	2.5	2.2	2.3	2.4	2.5	2.7	2.6	2.7	3.5	2.8	24		
19		2.8	2.7	2.7	2.9	2.9	2.9	2.7	IZS	2.8	2.8	2.7	2.7	2.5	2.5	2.5	2.5	2.4	2.9	2.3	2.3	2.3	2.2	2.2	2.2	2.9	2.6	24		
20		2.2	2.2	2.2	2.2	2.2	2.2	IZS	2.2	2.2	2.2	2.2	2.4	2.1	2.2	2.3	3.5	2.1	2.1	2.1	2.1	2.4	2.1	2.1	2.1	3.5	2.2	24		
21		2.1	2.1	2.1	2.1	2.4	IZS	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.2	2	2	2	2	2	2	2.5	2.1	24		
22		2	2	2.1	2	IZS	2	2.1	2.1	2	2	2.1	2.1	2	2.1	2.1	2	2	2	2	2.1	2	2	2	2	2	2.7	2.1	24	
23		2	2	2.1	IZS	2.4	2.6	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	4.4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	4.4	2.2	24		
24		2.1	2.1	IZS	2	2	2	2	2.2	2	2.7	2.7	2.1	2	2	2	2	2.5	1.9	2.2	2	2	2.2	2	2.1	2.7	2.1	24		
25		2	IZS	2.1	2.2	2.2	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2.8	2	2	2.1	2.1	2.1	2	2.8	2.1	24	
26		IZS	2	2	2	2	2.1	2.1	2.2	2.2	2.1	2.4	2	2	2	2	2	2	2	2	2	2	2	2.1	2	IZS	2.4	2.1	24	
27		2	2	2	2	2	2	2	2.1	2	2	2	2.4	2	2	2	2	2	2	2	2	2	2	2	2	IZS	2	2.4	2.0	24
28		2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.6	2.1	2.1	2.1	IZS	2.1	2.2	2.6	2.1	24		
29		2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.5	2.2	2.2	2.2	2.2	2.2	2.1	2.3	2.1	2.1	2.2	2.1	2.1	IZS	2.1	2.1	2.1	2.5	2.2	24		
30		2.2	2.2	2.1	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.7	2.1	2.2	2.2	2.3	2.3	IZS	2.4	2.4	2.4	2.6	2.7	2.2	24		
31		2.5	2.4	2.1	2.1	2	2	2.1	2.1	2.2	2.2	2	2	2.1	2	2	2	2	2	2	IZS	2	2.1	2.2	2.2	2.2	2.5	2.1	24	
HOURLY MAX		4	5	4	4	4	4	5	4	4	4	5	3	3	3	3	4	8	4	4	3	3	3	4	3					
HOURLY AVG		2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.4	2.4	2.5	2.3	2.3	2.2	2.2	2.2	2.6	2.3	2.2	2.2	2.3	2.3	2.3	2.3					

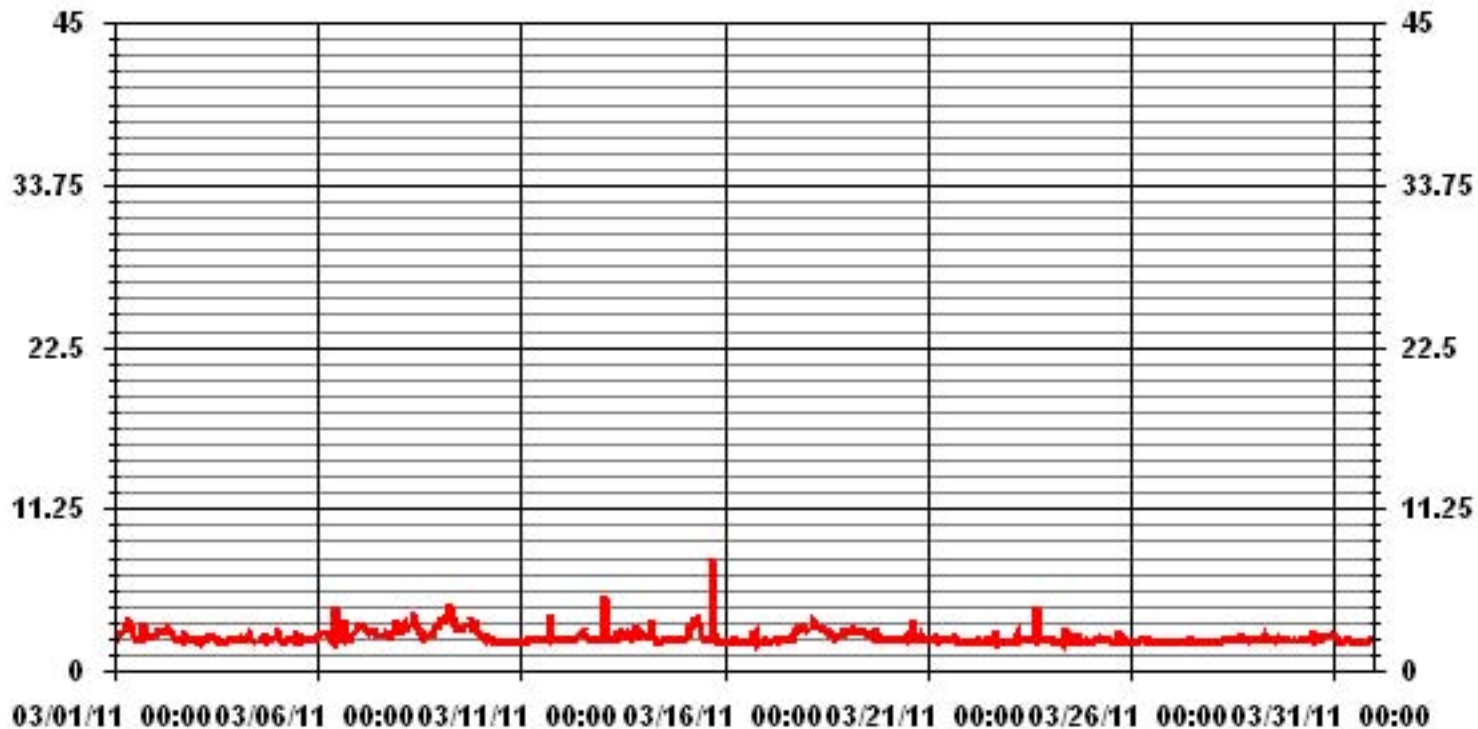
STATUS FLAG CODES

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:	706
MAXIMUM INSTANTANEOUS VALUE:	7.5 PPM @ HOUR(S) 16 ON DAY(S) 15
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	0.47
OPERATIONAL TIME:	743 HRS

01 Hour Averages



— LICA THCMAX PPM

LICA
 THC / WD Joint Frequency Distribution (Percent)

March 2011

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	1.27	6.65	11.61	3.54	15.01	11.04	21.24	1.69	1.27	.99	6.79	6.94	2.83	1.55	1.98	1.27	95.75
< 10.0	.00	.14	.00	.28	.42	.42	.14	.42	.14	.28	.42	.99	.42	.14	.00	.00	4.24
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.27	6.79	11.61	3.82	15.43	11.47	21.38	2.12	1.41	1.27	7.22	7.93	3.25	1.69	1.98	1.27	

Calm : .00 %

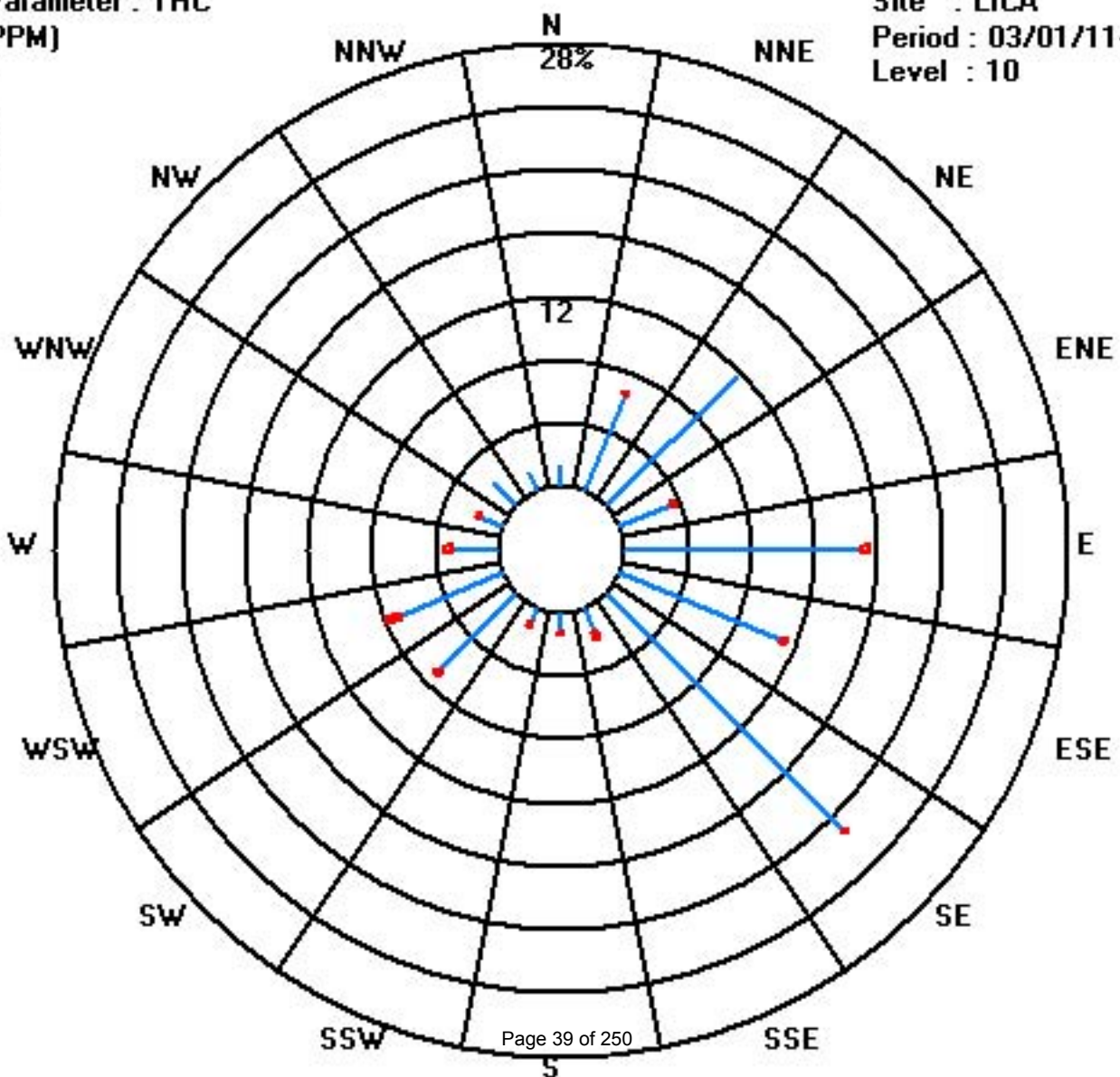
Total # Operational Hours : 706

Distribution By Samples

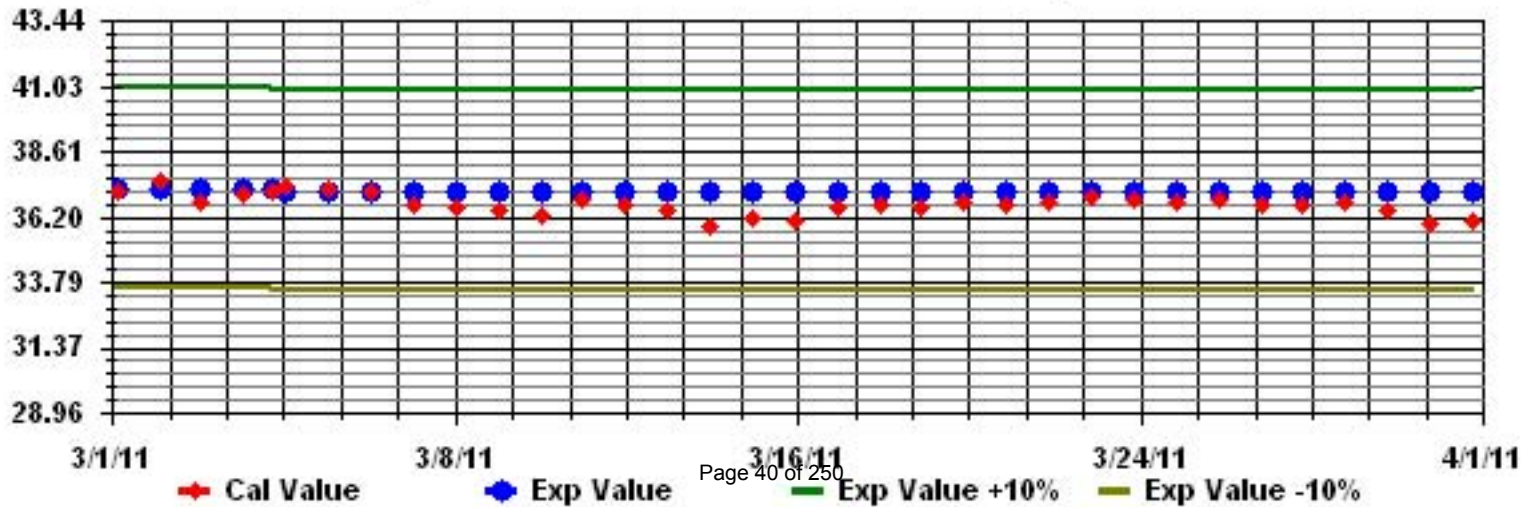
	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	9	47	82	25	106	78	150	12	9	7	48	49	20	11	14	9	676
< 10.0		1		2	3	3	1	3	1	2	3	7	3	1			30
< 50.0																	
>= 50.0																	
Totals	9	48	82	27	109	81	151	15	10	9	51	56	23	12	14	9	

Calm : .00 %

Total # Operational Hours : 706



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



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

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

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY	HOURLY MAX	HOURLY END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	1.9	6	2.5	5	3.4	4	4.4	5	9.5	1.9	9	1.4	4	5	4	3.4	8.4	7.9	6	5	4	6.4	6	3.4	9.5	4.9	24		
2	2.9	8.4	4	2.9	1	4.4	4	5	9.9	14.5	10.9	10.5	9.9	9	7.5	9	5	4.4	5.5	1	1.9	6.4	6.9	4	14.5	6.2	24		
3	5	1.9	5.5	2.9	3.4	3.4	2.5	4	6.4	2.5	4.4	4.4	4.4	4	6	6.9	1.9	2.9	6.9	2.9	4.4	3.4	3.4	2.5	6.9	4.0	24		
4	5.5	2.9	3.4	2.9	6.9	1.9	4	4	7.5	1.4	6.5	2.9	1.4	4	2.5	5	0	0.9	4.4	4	5	5	8.4	8.4	8.4	4.1	24		
5	9	7.9	4.4	6	2.5	2.9	0	5	4.4	2	1.9	5	1	5.5	5.5	6.4	4	3.4	9.4	7	5	5.9	6	5.5	9.4	4.8	24		
6	2.9	5.1	2.9	3.9	4	4.4	4	2.5	2.6	3.4	2.9	9.3	4	5	2.7	2.5	5.1	6.8	7.1	6.7	6.4	5.6	6	6.3	9.3	4.7	24		
7	4.6	3.4	6.8	6.4	3.4	3.7	3.8	5.6	6.1	5.5	6.3	4.3	4.3	6.7	6.7	6.4	7.6	8.4	10.3	10.9	5.7	8.8	7.6	6.4	10.9	6.2	24		
8	5.3	6.2	5.7	7.5	5.5	3.1	8	6.9	6.9	12	12.2	19.2	18.7	17.5	C	8.5	11.2	11.2	12.7	14.2	16.7	14.2	15.7	15	19.2	11.0	24		
9	18.2	13.9	14	14.9	17.6	10.9	14.4	22	18	14.9	20	17	17.1	23	18.5	21.6	25.9	21.1	21.5	18.9	18.8	19.5	14.6	15.3	25.9	18.0	24		
10	8.6	10.8	13.1	12.3	12.1	12.5	4.6	7.3	6.1	5.6	3.9	4.1	2.8	3.8	M	M	M	M	M	3.8	0	5	3.9	4.1	13.1	6.5	19		
11	4.9	2.5	6	5.2	3.3	6.9	6.4	2.5	2.9	2.9	1	7.4	2.4	4.5	5.4	4.5	5.9	3.4	5.5	6	4.4	5.4	4	4.4	7.4	4.5	24		
12	4	5	3.4	4	3.4	5.5	1.9	4	1	0	0.4	9.4	6.4	8	7.9	1.9	7.9	4	7.9	6.9	11.5	9.4	9	9.4	11.5	5.5	24		
13	2.5	9	8.4	7.5	5	6.4	8.4	9	6.9	13.4	8.4	4	10.9	7.9	12	9.4	11.5	17.5	16	23	25.9	13.5	7.9	17.5	25.9	10.9	24		
14	13.5	20	16.5	10.9	13.4	13.9	13.5	13.4	5	6.4	10.5	15	13.5	12.5	8.4	6	7.5	10.9	12.5	7.9	12	10.5	6.4	7.5	20.0	11.2	24		
15	4	7.5	4	12.9	9.4	10.5	9.4	10.9	20.5	17.5	9.9	12.9	6	10.5	6.4	9	9	5.5	5.5	4.4	7.5	2.9	2.9	8.4	20.5	8.6	24		
16	9.4	7.5	7.5	9.9	4	0	1	6.9	14	4.4	4	5.5	6.9	6.4	6	6.4	6	5	2.9	2.5	1.9	5	4.4	2.5	14.0	5.4	24		
17	7.5	6	3.4	1	6	1.4	0	2.9	5.5	4	4.4	7.9	9.9	9	2.9	2.5	11.5	6.4	10.9	9.4	4.4	9.9	5.5	7.5	11.5	5.8	24		
18	6.9	10.5	7.5	2.5	6	15.5	6.9	20.5	20	14.5	21.5	21	20.5	23.5	15	10.9	11.5	9	9	8.4	12	14	13	19	23.5	13.3	24		
19	23	15.5	6	17	11.5	6.9	7.9	11.5	5.5	4.4	4.4	11.5	7.9	4.4	4.4	6.9	7.5	11.5	9	12	12.5	9	9.4	10.5	23.0	9.6	24		
20	6	6	3.4	2.9	4.4	6.9	7.5	4.4	6	4	6.9	11.5	6.4	9	5	6	7.5	5	10.5	7.9	5.5	1.9	2.9	5	11.5	5.9	24		
21	3.4	9.4	7.9	6.9	5.5	9.9	6.4	8.4	9.9	2.5	4.4	1.9	1.4	2.5	5.5	1	0	1.4	4.4	6.4	3.4	4	2.9	3.4	9.9	4.7	24		
22	1.4	4	2.9	0	2.9	2.9	1.9	2.9	2.9	1.9	7.9	5	0.4	6.4	1.9	4	2.9	1	0.4	3.4	1.9	1.4	4	1.4	7.9	2.7	24		
23	2.9	0	2.9	6	1.9	6	0	3.4	5.5	5	3.4	4.4	2.9	2.9	2.9	4	1.9	5.5	4.4	0.4	1.4	3.4	1	4	6.0	3.2	24		
24	2.5	4	4	6.4	0	N	8.4	2.5	4.4	2.9	5	2.5	7.9	1.9	1	2.9	3.4	7.5	6.4	6.4	5.5	4.4	4.4	7.9	8.4	4.4	23		
25	0.4	12.9	0	5.5	4	4.4	14.9	12.5	10.5	12	13	12	9	6.4	7.5	2.9	3.4	1	4	3.4	1	4	1	4.4	14.9	6.3	24		
26	2.9	6.4	0	1	2.5	1	5.5	0	4	5.5	2.9	6.4	5.5	5.5	6	2.5	5.5	3.4	5	4	2.5	5	3.4	8.4	8.4	4.0	24		
27	7.9	6.4	8.4	7.9	3.4	0	3.4	2.5	3.4	0.4	7.9	9.9	10.9	11.5	9	4.4	6	7.5	8.4	4.4	7.5	6	10.5	6.4	11.5	6.4	24		
28	9.4	9.4	7.9	7.9	8.4	9	10.9	6	5.5	12	9.4	6.4	9	10.9	13.5	12	9.9	9.9	5.5	13	12.9	11.5	9.4	9	13.5	9.5	24		
29	9.9	5.5	12.4	14.4	13	15	15	16.5	17	15.5	16	13.5	12	16.5	12.5	7.5	6.4	9.4	10.9	10.5	16.5	15.5	6.9	7.5	17.0	12.3	24		
30	8.4	13.9	12	12	13.5	7.9	12.9	13	9.4	9.4	14	9	6.9	10.5	7.5	8.4	13.4	14	8.4	12	12	16	14.9	17.5	17.5	11.5	24		
31	24	22.5	14	6.9	1	0.4	2.5	1.9	0	1.4	4.4	6.9	0	1	5	6.4	1.4	3.4	5.9	1.9	1.9	3.4	1	1.9	24.0	5.0	24		
HOURLY MAX	24	23	17	17	18	16	15	22	21	18	22	21	21	24	19	22	26	21	22	23	26	20	16	19					
HOURLY AVG	7.1	8.1	6.5	6.9	5.9	6.1	6.3	7.2	7.7	6.6	7.7	8.5	7.2	8.2	6.9	6.3	7.0	7.0	7.9	7.4	7.5	7.6	6.6	7.6					

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

OBJECTIVE LIMIT:

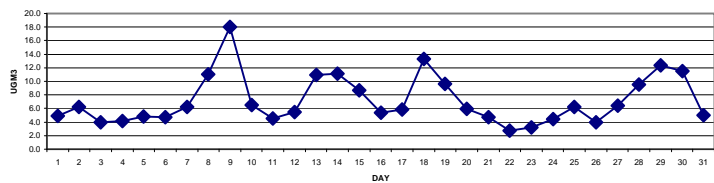
ALBERTA ENVIRONMENT:

1-HR	-	ug/m ³	24-HR	30	ug/m ³
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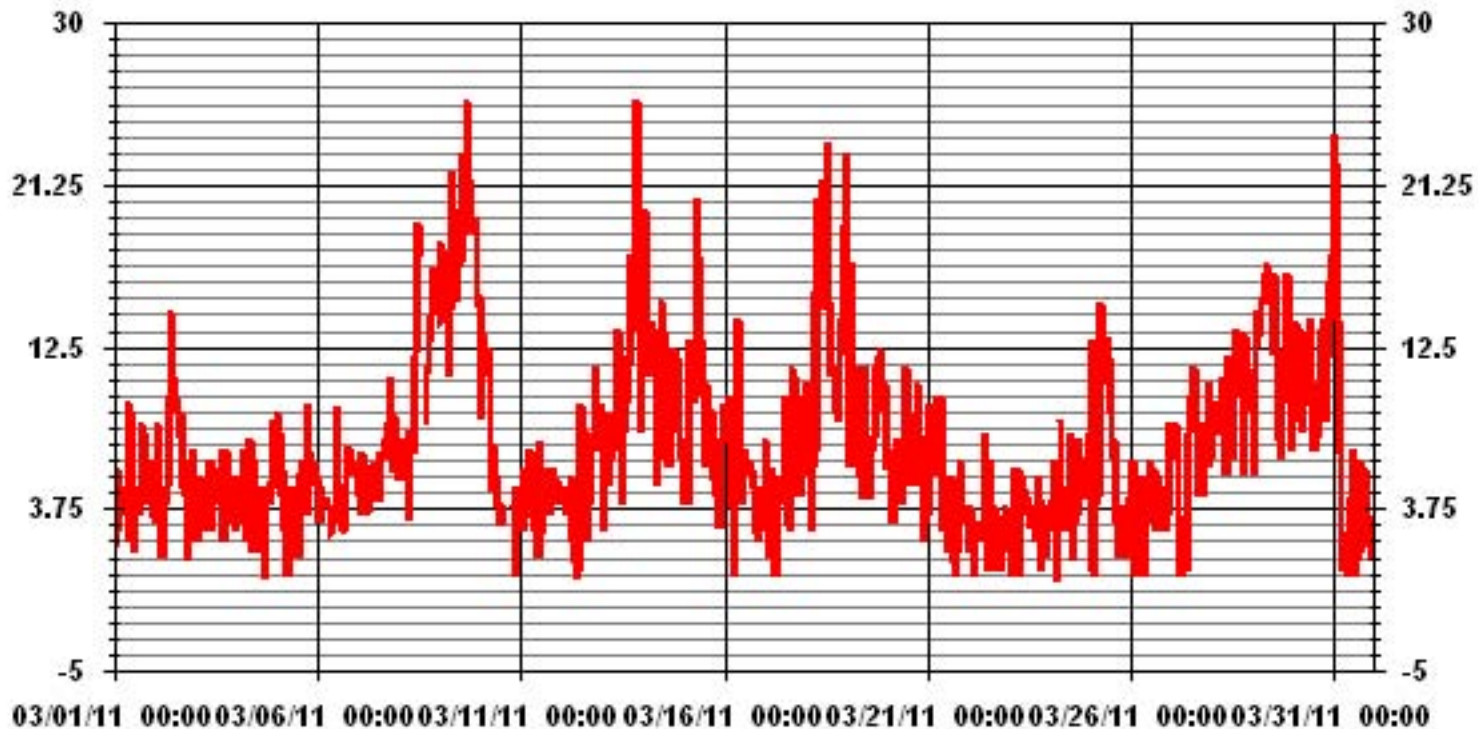
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-	PROPOSED CANADA WIDE GUIDELINE
NUMBER OF 24-HR EXCEEDENCES:	0	
NUMBER OF NON-ZERO READINGS:	720	
MAXIMUM 1-HR AVERAGE:	25.9 UG/M ³	@ HOUR(S) 16, 20 ON DAY(S) 9, 13
MAXIMUM 24-HR AVERAGE:	18.0 UG/M ³	ON DAY(S) 9
IZS CALIBRATION TIME:	0 HRS	OPERATIONAL TIME: 738 HRS
MONTHLY CALIBRATION TIME:	1 HRS	AMD OPERATION UPTIME: 99.2 %
STANDARD DEVIATION:	4.87	MONTHLY AVERAGE: 7.14 UG/M ³

24 HOUR AVERAGES FOR MARCH 2011



01 Hour Averages



— LICA PM2 UG/M3

LICA
PM2 / WD Joint Frequency Distribution (Percent)

March 2011

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	1.22	6.37	11.39	3.93	15.19	10.99	21.84	2.03	1.49	1.76	7.32	8.00	3.52	1.76	1.89	1.22	100.00
< 60.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 80.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.22	6.37	11.39	3.93	15.19	10.99	21.84	2.03	1.49	1.76	7.32	8.00	3.52	1.76	1.89	1.22	

Calm : .00 %

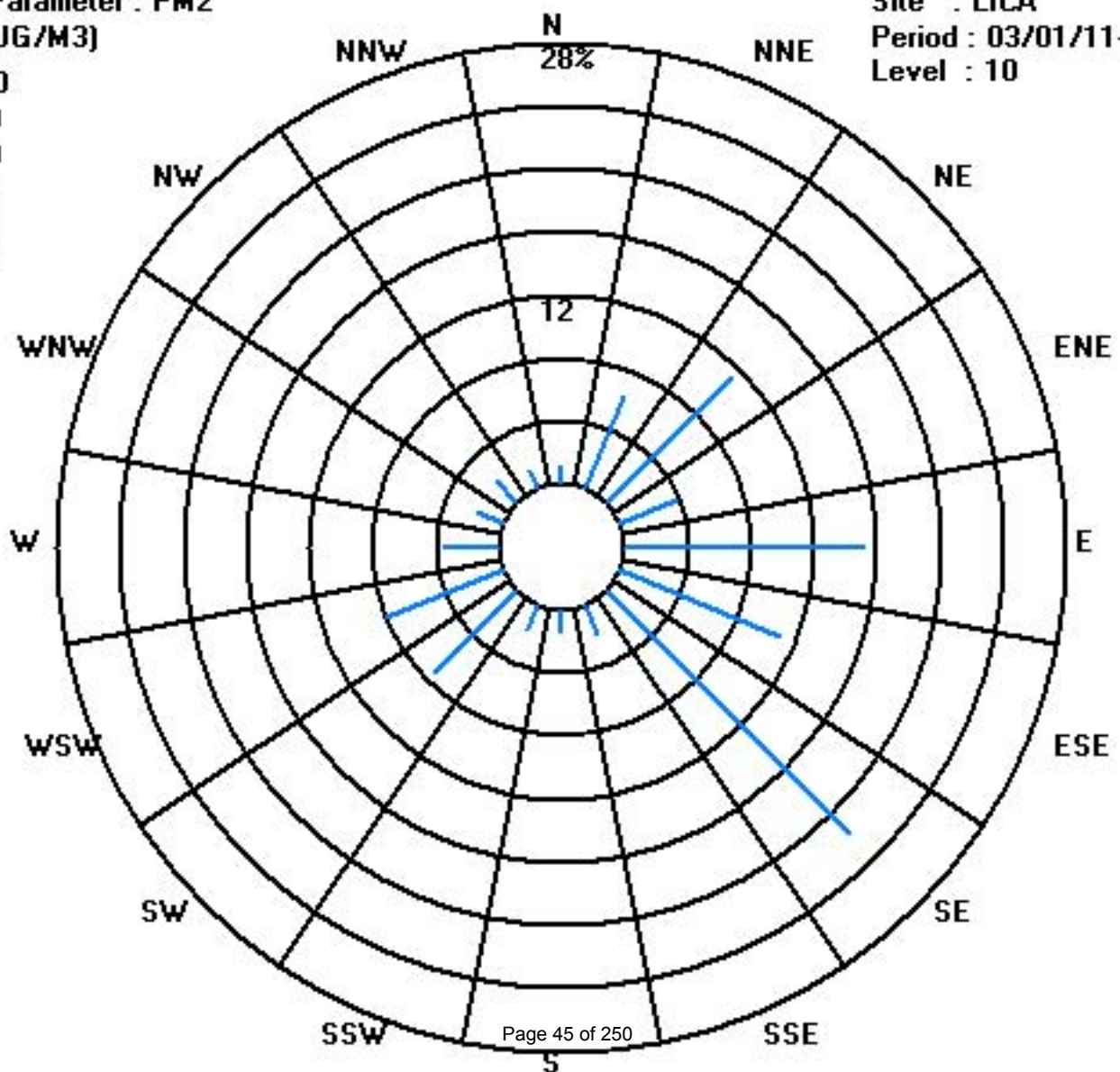
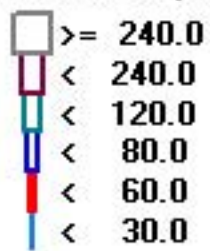
Total # Operational Hours : 737

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	9	47	84	29	112	81	161	15	11	13	54	59	26	13	14	9	737
< 60.0																	
< 80.0																	
< 120.0																	
< 240.0																	
>= 240.0																	
Totals	9	47	84	29	112	81	161	15	11	13	54	59	26	13	14	9	

Calm : .00 %

Total # Operational Hours : 737



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

NITROGEN DIOXIDE hourly averages in ppb

MST

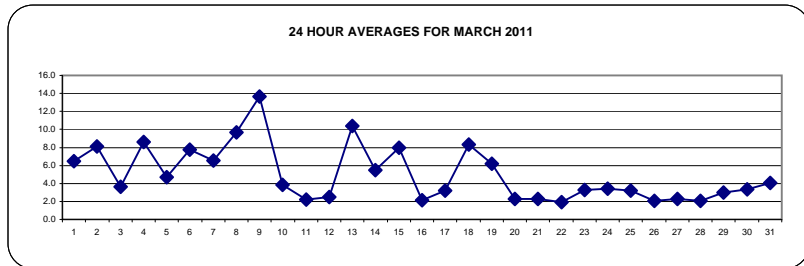
DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
1	5	7	IZS	8	10	10	13	16	11	7	5	3	3	2	2	2	3	2	4	5	6	7	10	8	16	6.5	24	
2	9	IZS	7	7	10	11	13	17	21	15	7	7	5	4	4	5	5	5	5	5	7	6	6	5	21	8.1	24	
3	IZS	4	6	4	5	4	4	5	5	4	4	3	3	3	2	2	3	2	2	3	3	4	5	IZS	6	3.6	24	
4	10	4	5	4	8	5	12	16	14	C	C	C	C	C	C	4	7	6	7	9	15	11	IZS	9	16	8.6	24	
5	10	9	5	4	5	5	6	7	6	3	3	2	2	1	1	1	3	3	4	4	5	IZS	10	9	10	4.7	24	
6	10	13	14	14	14	11	14	13	7	4	4	3	3	2	1	1	2	4	7	8	IZS	7	9	14	14	7.8	24	
7	16	10	12	13	11	5	6	5	5	4	3	3	3	3	3	4	6	6	6	IZS	6	6	8	7	16	6.6	24	
8	6	6	7	6	7	11	13	18	16	11	9	9	8	7	4	4	4	5	IZS	12	15	16	15	14	18	9.7	24	
9	13	11	11	18	25	22	34	31	15	8	6	7	7	6	8	8	10	IZS	15	11	12	19	10	7	34	13.7	24	
10	8	10	12	7	9	10	5	3	3	2	2	2	1	1	1	2	IZS	2	2	2	2	1	1	1	12	3.9	24	
11	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	IZS	3	5	5	6	4	6	2	3	6	2.2	24	
12	4	4	3	3	2	2	2	3	2	2	2	2	2	2	IZS	2	2	2	2	2	2	2	3	5	5	2.5	24	
13	8	9	11	8	10	9	12	11	6	4	3	3	3	IZS	4	4	4	7	12	28	30	23	17	12	30	10.3	24	
14	9	7	7	6	7	11	9	9	6	5	5	5	IZS	3	3	4	4	4	3	3	4	4	5	3	11	5.5	24	
15	3	5	8	9	14	25	23	24	12	13	6	IZS	3	3	2	M	5	5	3	3	3	2	2	2	25	8.0	23	
16	2	2	2	2	2	5	2	2	2	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	3	5	2.1	24	
17	4	3	1	1	2	4	7	4	2	IZS	1	1	1	1	3	3	2	3	4	5	5	6	6	5	7	3.2	24	
18	4	4	6	10	17	15	12	8	IZS	6	6	6	6	5	5	5	4	4	8	15	19	6	6	15	19	8.3	24	
19	20	9	7	8	5	4	4	IZS	4	4	4	5	3	3	4	3	3	5	7	10	13	6	7	5	20	6.2	24	
20	4	3	3	3	2	2	IZS	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2.3	24	
21	2	2	2	2	7	IZS	3	3	2	3	2	2	2	3	3	2	2	2	2	2	1	1	1	1	7	2.3	24	
22	1	1	1	1	IZS	3	2	4	3	3	4	2	1	2	2	3	2	2	2	1	1	1	1	1	4	1.9	24	
23	1	1	2	IZS	9	20	5	6	3	3	2	1	2	1	1	1	1	1	1	2	4	2	3	3	20	3.3	24	
24	2	1	IZS	2	2	4	5	6	4	2	2	2	1	2	2	1	2	3	5	10	12	5	2	2	12	3.4	24	
25	1	IZS	2	4	7	12	14	7	4	3	2	2	2	1	1	1	1	1	1	1	2	2	1	1	14	3.2	24	
26	IZS	2	2	2	4	4	3	4	3	2	3	2	2	2	2	1	1	1	1	1	1	1	1	IZS	4	2.0	24	
27	2	2	2	2	4	4	4	4	2	3	2	2	2	2	2	2	2	2	2	2	2	1	1	IZS	1	4	2.3	24
28	1	1	1	2	2	2	3	4	2	2	2	2	2	2	2	2	2	2	3	3	2	IZS	2	2	4	2.1	24	
29	2	3	3	3	3	3	3	3	3	3	3	5	3	3	3	3	3	4	3	3	IZS	3	2	2	5	3.0	24	
30	2	2	3	3	3	3	3	3	3	2	3	2	2	3	3	3	4	4	4	IZS	5	5	5	7	7	3.3	24	
31	8	6	6	4	3	4	7	6	6	4	3	3	4	2	2	2	2	2	IZS	4	4	4	4	4	8	4.1	24	
HOURLY MAX	20	13	14	18	25	25	34	31	21	15	9	9	8	7	8	8	10	7	15	28	30	23	17	15				
HOURLY AVG	5.8	4.9	5.2	5.4	7.0	7.7	8.2	8.2	5.9	4.4	3.5	3.1	2.8	2.6	2.6	2.7	3.2	3.3	4.3	5.7	6.5	5.6	5.1	5.3				

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

OBJECTIVE LIMIT:

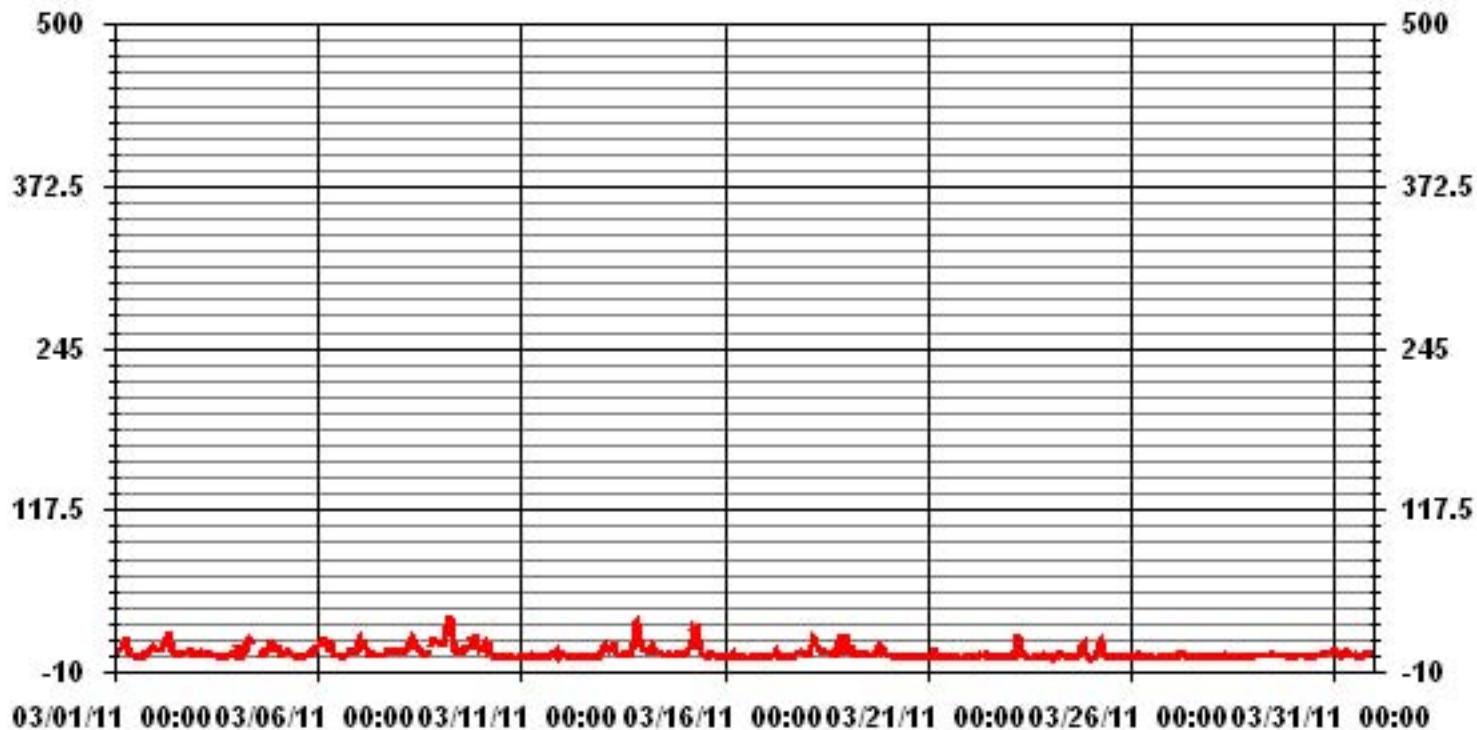
ALBERTA ENVIRONMENT:	1-HR	212	PPB	24-HR	106	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	704		
MAXIMUM 1-HR AVERAGE:	34 PPB @ HOUR(S) 6 ON DAY(S) 9		
MAXIMUM 24-HR AVERAGE:	13.7 PPB ON DAY(S) 9		
IZS CALIBRATION TIME:	33 HRS	OPERATIONAL TIME:	743 HRS
MONTHLY CALIBRATION TIME:	6 HRS	AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	4.61	MONTHLY AVERAGE:	4.96 PPB

01 Hour Averages



— LICA H02_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

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	7	12	IZS	9	17	11	18	22	16	8	6	4	3	3	2	7	17	4	5	6	9	10	17	10	22	9.7	24	
2	18	IZS	9	10	14	15	18	26	26	22	12	10	8	6	6	15	8	13	8	8	11	9	9	7	26	12.5	24	
3	IZS	7	8	7	10	6	6	7	9	6	5	6	6	4	4	3	4	3	3	5	5	6	8	IZS	10	5.8	24	
4	15	10	8	8	12	8	17	23	C	C	C	C	C	C	C	9	10	8	10	19	23	17	IZS	16	23	13.3	24	
5	17	14	10	7	7	35	11	9	8	6	6	5	2	3	3	3	5	6	7	11	11	IZS	18	11	35	9.3	24	
6	19	16	22	20	17	15	21	17	11	9	6	7	5	4	4	2	5	6	15	40	IZS	10	18	27	40	13.7	24	
7	33	20	18	19	21	6	7	6	14	6	4	8	4	4	4	7	9	8	9	IZS	7	7	15	10	33	10.7	24	
8	11	10	9	9	10	22	16	26	19	17	13	11	11	8	8	6	6	7	IZS	16	20	22	24	26	26	14.2	24	
9	29	22	16	24	34	28	87	59	30	10	8	8	9	8	10	10	12	IZS	18	12	20	30	13	10	87	22.0	24	
10	9	15	16	16	15	18	23	4	19	3	3	5	2	2	2	3	IZS	4	3	3	3	2	2	2	23	7.6	24	
11	2	1	2	2	2	2	17	4	2	1	2	2	2	4	2	IZS	7	13	10	12	7	12	4	6	17	5.1	24	
12	7	6	6	4	2	2	3	4	4	4	3	3	4	5	IZS	4	3	3	3	3	3	3	8	29	29	5.0	24	
13	12	14	20	11	14	15	15	14	10	7	4	4	5	IZS	5	5	6	12	29	40	46	25	24	19	46	15.5	24	
14	11	10	9	9	11	42	13	18	10	9	8	13	IZS	4	5	5	5	5	4	4	5	5	5	4	42	9.3	24	
15	4	8	16	13	23	144	33	41	19	22	9	IZS	4	4	3	M	17	17	5	5	4	3	3	3	144	18.2	23	
16	3	4	3	3	3	22	4	6	3	3	IZS	2	3	3	2	3	6	3	3	3	5	3	3	4	22	4.2	24	
17	6	9	3	2	4	6	18	8	4	IZS	2	4	7	3	10	9	5	4	5	5	6	7	15	6	18	6.4	24	
18	6	7	15	24	198	27	22	34	IZS	9	8	8	7	6	6	6	6	6	19	29	28	8	14	27	198	22.6	24	
19	28	15	16	16	5	9	4	IZS	5	7	7	7	4	4	8	5	6	16	9	14	18	8	9	10	28	10.0	24	
20	5	4	7	4	3	4	IZS	4	4	4	9	9	3	6	3	4	3	3	4	3	6	4	4	4	9	4.5	24	
21	4	3	3	3	41	IZS	5	4	3	4	4	5	4	5	9	8	3	2	4	3	2	3	2	2	41	5.5	24	
22	2	2	2	3	IZS	24	5	8	5	12	10	5	2	4	7	6	3	5	7	3	2	2	2	1	24	5.3	24	
23	2	3	5	IZS	20	94	10	9	5	5	7	3	5	17	29	4	9	2	6	5	6	2	11	4	94	11.4	24	
24	3	2	IZS	4	5	8	7	13	6	5	4	3	3	5	10	3	4	5	9	13	16	16	4	5	16	6.7	24	
25	2	IZS	4	8	9	18	23	18	6	4	3	3	6	2	3	2	3	2	3	2	4	4	3	2	23	5.8	24	
26	IZS	5	3	4	6	6	6	6	6	5	7	6	3	3	3	6	3	3	2	2	2	4	2	IZS	7	4.2	24	
27	2	3	3	4	5	5	5	5	4	5	4	3	2	3	3	3	3	2	16	12	3	2	IZS	5	16	4.4	24	
28	2	2	2	2	3	4	5	7	4	3	3	7	3	4	3	10	4	3	6	4	3	IZS	9	3	10	4.2	24	
29	3	3	3	3	3	7	9	5	4	4	4	45	17	8	19	5	6	12	4	4	IZS	3	3	3	45	7.7	24	
30	3	3	3	3	3	5	4	4	4	3	26	4	6	7	4	6	5	5	5	IZS	6	6	7	9	26	5.7	24	
31	10	9	7	5	4	5	19	8	9	5	4	4	8	4	3	5	3	3	IZS	6	5	5	6	6	19	6.2	24	
HOURLY MAX	33	22	22	24	198	144	87	59	30	22	26	45	17	17	29	15	17	17	29	40	46	30	24	29				
HOURLY AVG	9.5	8.2	8.6	8.5	17.4	20.4	15.0	14.0	9.3	7.2	6.6	7.0	5.1	4.9	6.2	5.7	6.2	6.2	8.0	10.1	9.9	8.2	9.0	9.3				

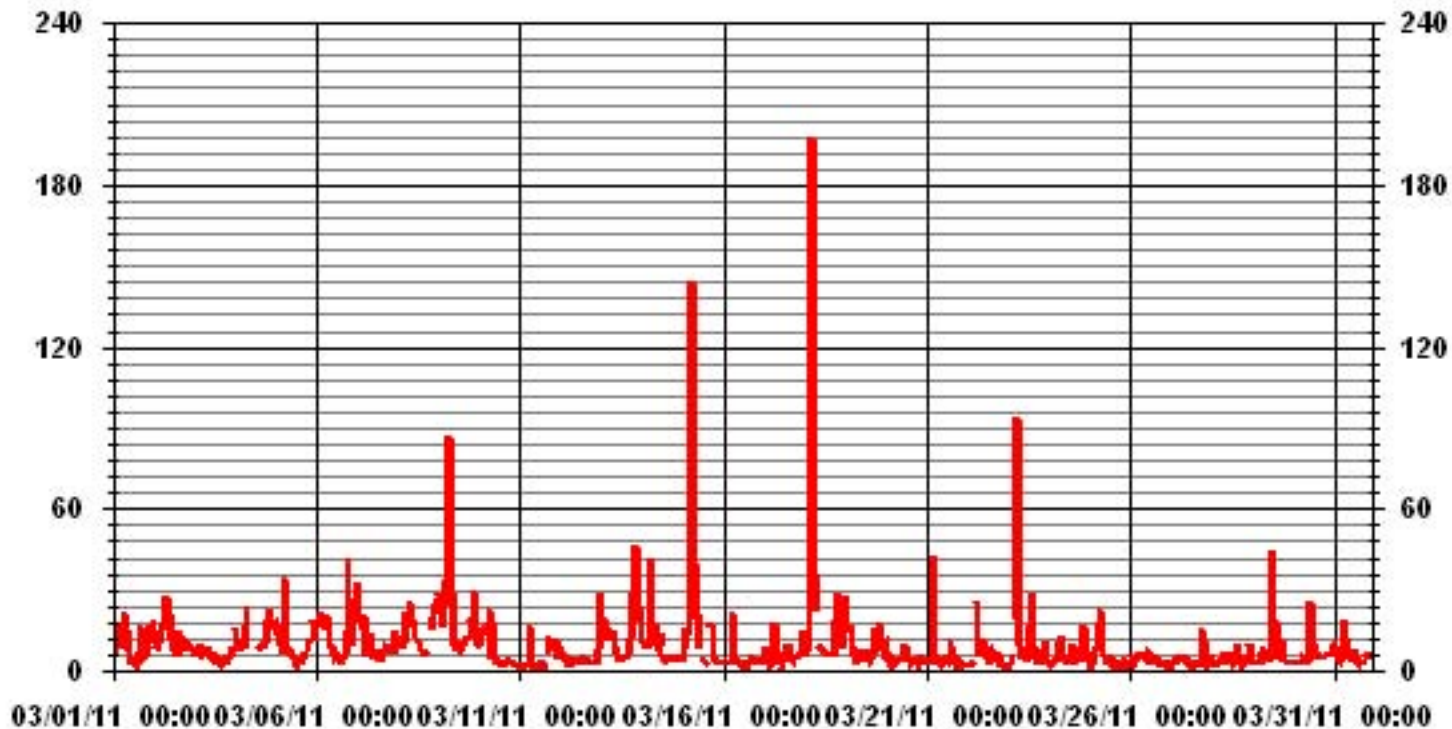
STATUS FLAG CODES

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:	703					
MAXIMUM INSTANTANEOUS VALUE:	198	PPB	@ HOUR(S)	4	ON DAY(S)	18
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	12.37					

01 Hour Averages



— LICA NO2MAX PPB

LICA
 NO2_ / WD Joint Frequency Distribution (Percent)

March 2011

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	1.27	6.81	11.64	3.69	15.48	11.50	21.44	2.13	1.42	1.27	7.24	7.95	3.26	1.56	1.98	1.27	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.27	6.81	11.64	3.69	15.48	11.50	21.44	2.13	1.42	1.27	7.24	7.95	3.26	1.56	1.98	1.27	

Calm : .00 %

Total # Operational Hours : 704

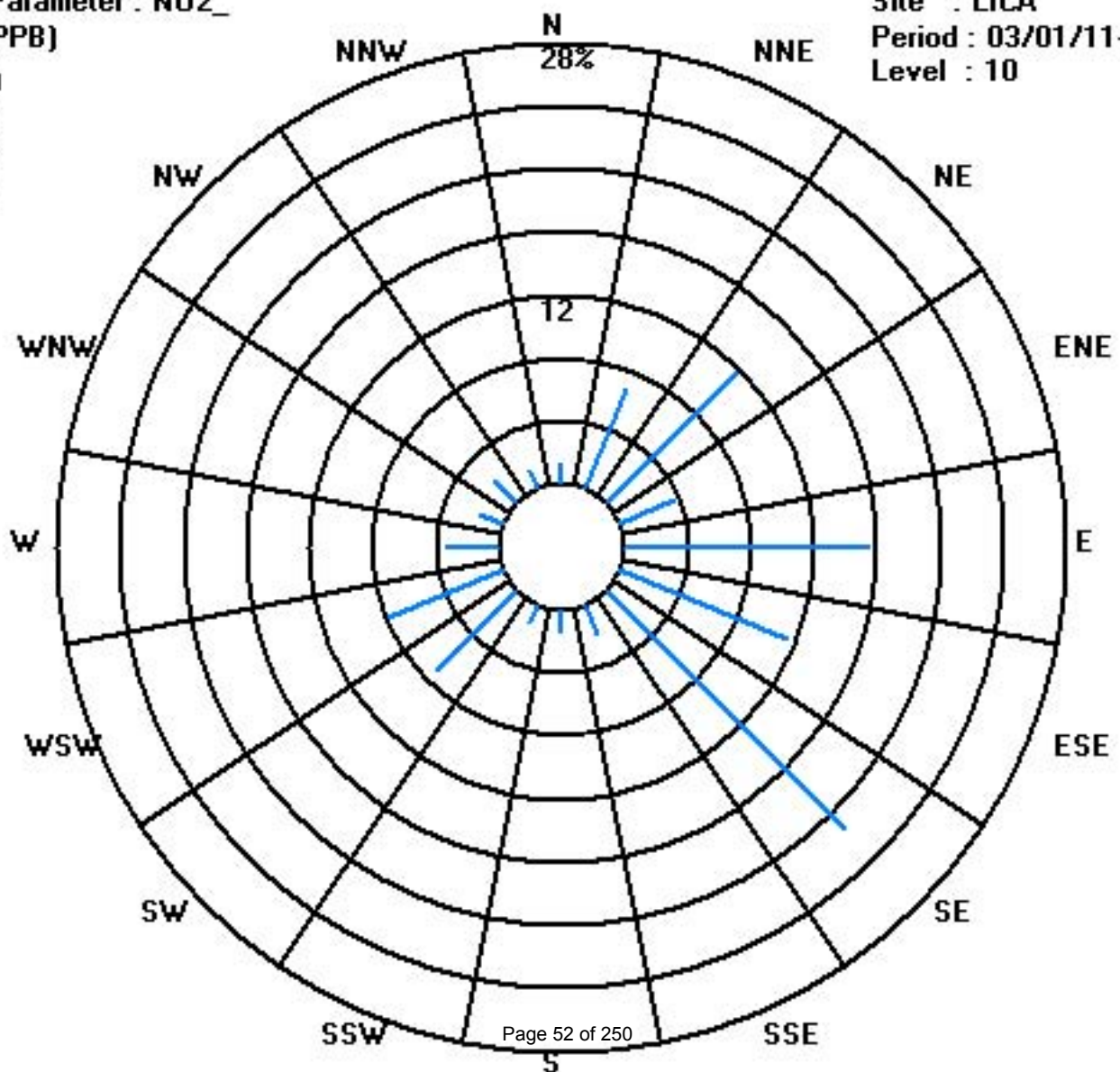
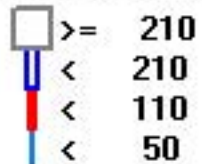
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	9	48	82	26	109	81	151	15	10	9	51	56	23	11	14	9	704
< 110																	
< 210																	
>= 210																	
Totals	9	48	82	26	109	81	151	15	10	9	51	56	23	11	14	9	

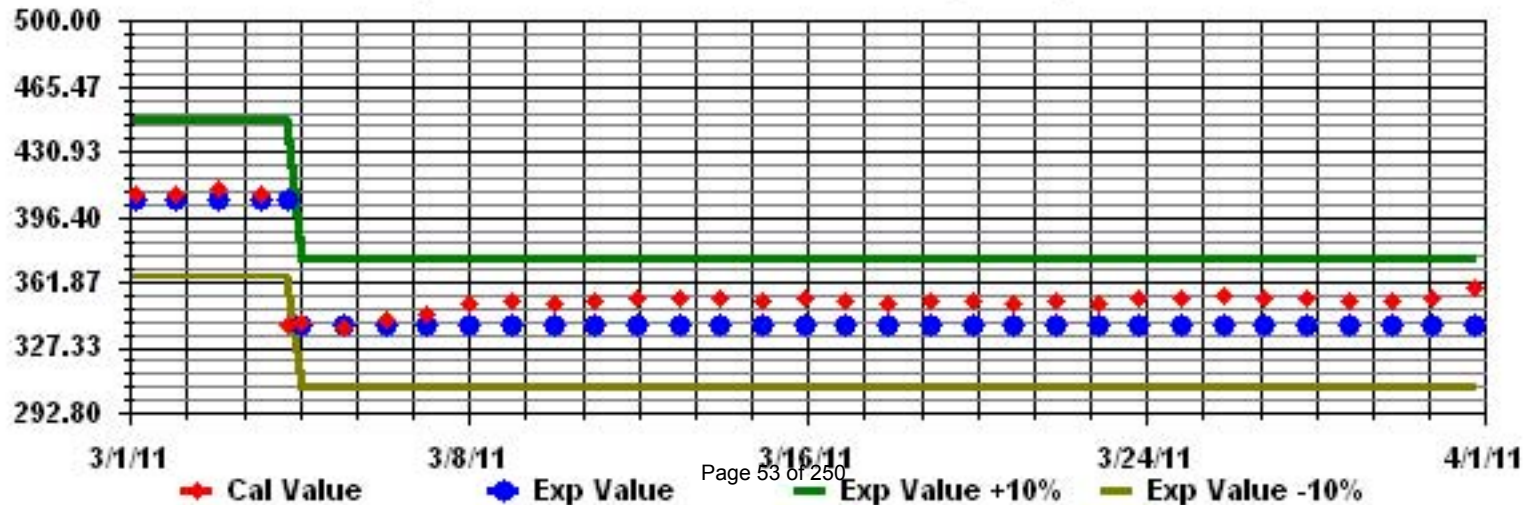
Calm : .00 %

Total # Operational Hours : 704

Class Limits (PPB)



Calibration Graph for Site: LICA Parameter: H02_ Sequence: H02 Phase: SPAN



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

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 MAX.	24-HOUR AVG.	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																												
1	0	0	IZS	0	1	0	2	10	10	8	6	4	3	2	2	1	2	0	0	0	1	0	0	0	10	2.3	24	
2	0	IZS	0	0	0	0	0	7	24	20	7	9	4	4	3	2	1	1	1	1	1	1	1	1	24	3.8	24	
3	IZS	0	0	0	0	0	0	0	1	2	3	3	2	2	1	1	1	0	0	0	0	0	0	IZS	3	0.7	24	
4	0	0	0	0	0	0	1	3	6	C	C	C	C	C	C	2	2	1	0	0	0	0	IZS	0	6	0.9	24	
5	0	0	0	0	0	0	0	1	2	2	2	1	1	1	0	1	0	0	0	0	0	IZS	0	0	2	0.5	24	
6	0	0	1	1	0	0	1	3	4	3	3	3	2	1	0	0	1	0	0	1	IZS	0	0	1	4	1.1	24	
7	1	0	1	0	0	0	0	0	1	1	1	1	1	1	1	1	2	1	0	IZS	0	0	0	0	2	0.6	24	
8	0	0	0	0	0	0	0	6	11	8	6	6	5	3	1	1	1	0	IZS	0	0	0	0	0	11	2.1	24	
9	0	0	0	1	1	1	13	25	8	3	2	3	3	2	2	1	1	IZS	0	0	0	0	0	0	25	2.9	24	
10	0	0	0	0	0	0	2	0	1	0	0	1	0	0	0	0	IZS	0	0	0	0	0	0	0	2	0.2	24	
11	0	0	0	0	0	0	3	0	0	0	0	1	1	0	1	IZS	1	1	0	1	0	0	0	0	3	0.4	24	
12	0	0	0	0	0	0	0	0	1	1	1	1	1	1	IZS	1	0	0	0	0	0	0	0	1	1	0.3	24	
13	0	0	0	0	0	0	0	2	3	2	1	1	1	1	IZS	1	1	0	0	0	1	1	0	0	3	0.6	24	
14	0	0	0	0	0	5	0	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	5	0.4	24	
15	0	0	0	0	0	11	4	23	7	9	4	IZS	1	0	0	M	1	0	0	0	0	0	0	0	23	2.7	23	
16	0	0	0	0	0	3	0	1	0	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.2	24	
17	0	0	0	0	0	0	1	1	1	IZS	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0.2	24	
18	0	0	0	1	5	3	1	1	IZS	2	2	2	2	2	1	1	0	0	0	0	0	0	0	0	5	1.0	24	
19	0	0	0	0	0	0	0	IZS	1	1	1	1	0	0	1	1	0	2	0	0	0	0	0	0	2	0.3	24	
20	0	0	0	0	0	0	IZS	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
21	0	0	0	0	2	IZS	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	2	0.4	24	
22	0	0	0	0	IZS	0	0	1	1	1	3	1	0	1	1	1	0	0	0	0	0	0	0	0	3	0.4	24	
23	0	0	0	IZS	0	6	0	1	1	1	1	0	1	2	0	0	0	0	0	0	0	0	0	0	6	0.6	24	
24	0	0	IZS	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0.4	24	
25	0	IZS	0	0	0	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
26	IZS	0	0	0	0	0	0	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0.2	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	IZS	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	IZS	1	0	1	0.0	24
29	0	0	0	0	0	0	0	0	0	0	0	4	1	0	1	0	0	1	0	0	IZS	0	0	0	4	0.3	24	
30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	IZS	0	0	0	1	0.0	24	
31	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	IZS	0	0	0	0	0	1	0.3	24	
HOURLY MAX	1	0	1	1	5	11	13	25	24	20	7	9	5	4	3	2	2	2	1	1	1	1	1	1	1			
HOURLY AVG	0.0	0.0	0.1	0.1	0.3	1.0	1.0	3.0	3.0	2.4	1.7	1.6	1.1	0.8	0.7	0.6	0.5	0.2	0.0	0.1	0.1	0.0	0.1	0.1				

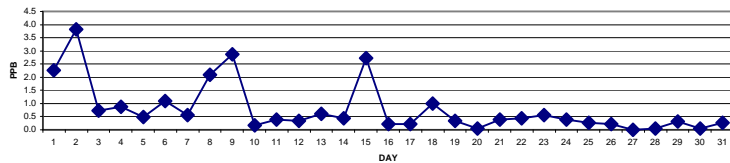
STATUS FLAG CODES

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

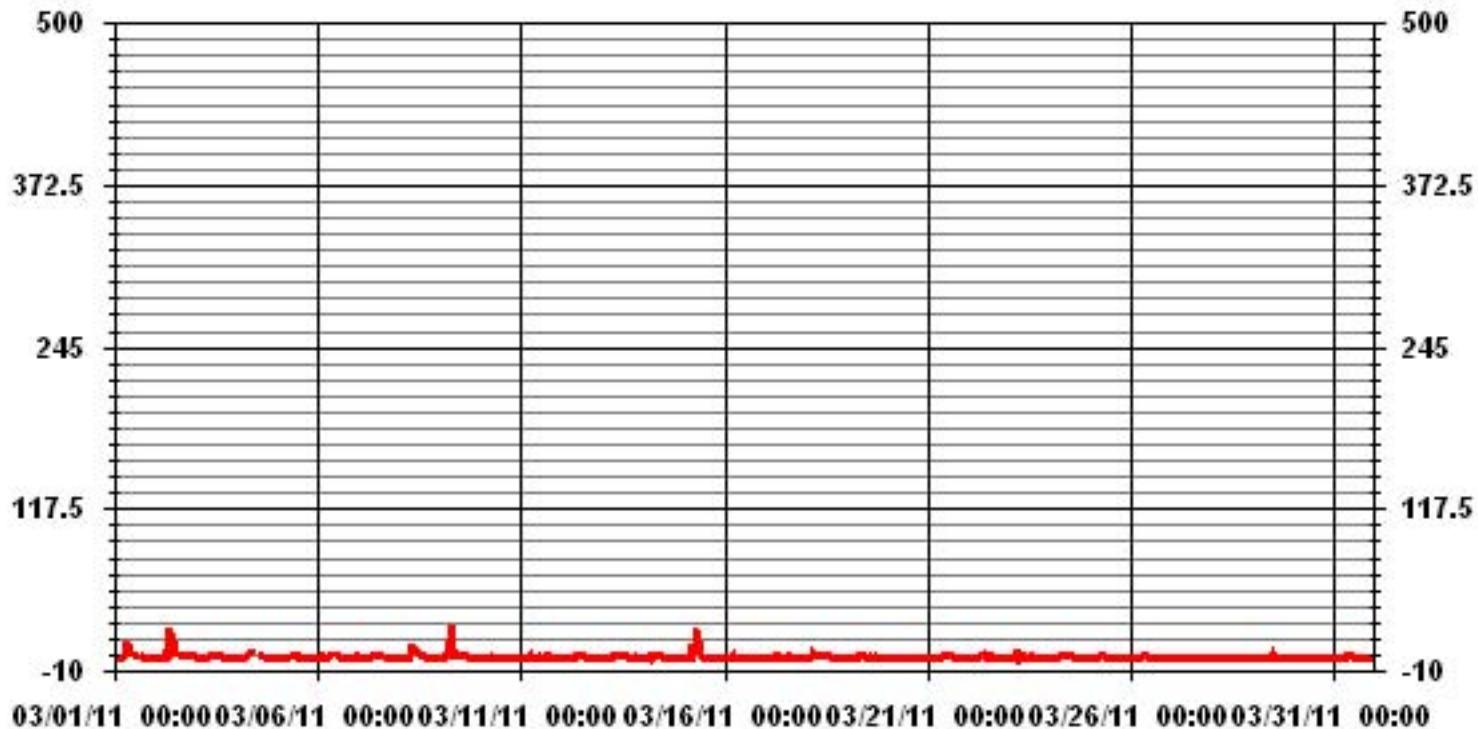
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	227					
MAXIMUM 1-HR AVERAGE:	25	PPB	@ HOUR(S)	7	ON DAY(S)	9
MAXIMUM 24-HR AVERAGE:	3.8	PPB			ON DAY(S)	2
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	2.27		MONTHLY AVERAGE:	0.78	PPB	

24 HOUR AVERAGES FOR MARCH 2011



01 Hour Averages



— LICA NO_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

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	3	IZS	0	7	5	11	22	15	10	7	5	4	3	12	5	15	2	1	2	2	1	2	1	22	6.0	24
2	8	IZS	1	0	1	1	1	27	47	31	15	13	7	7	5	15	4	3	9	4	2	5	2	2	47	9.1	24
3	IZS	1	1	1	2	0	0	1	3	3	4	4	2	3	2	1	1	1	0	0	1	0	0	IZS	4	1.4	24
4	1	0	0	0	2	2	3	9	C	C	C	C	C	C	C	5	5	4	2	1	6	2	IZS	0	9	2.6	24
5	4	1	1	1	2	9	0	2	4	3	4	3	5	2	1	1	2	4	0	0	0	IZS	3	1	9	2.3	24
6	2	1	11	9	2	2	6	7	7	7	5	6	3	2	3	0	3	1	0	9	IZS	0	3	7	11	4.2	24
7	9	6	6	3	3	1	2	1	14	2	2	4	4	2	2	3	3	0	IZS	0	0	0	2	14	3.1	24	
8	0	2	0	0	0	2	1	12	14	13	17	7	7	5	4	2	13	2	IZS	1	4	2	4	2	17	5.0	24
9	7	1	1	8	8	2	52	182	21	4	3	6	3	3	3	2	2	IZS	2	0	7	3	2	1	182	14.0	24
10	1	2	1	1	1	7	11	3	19	2	1	5	1	0	1	1	IZS	2	2	2	1	0	0	1	19	2.8	24
11	2	0	0	0	0	0	21	2	0	0	1	1	1	1	2	IZS	6	12	3	4	1	2	1	1	21	2.7	24
12	1	1	1	1	0	0	0	1	2	2	2	4	2	2	IZS	1	0	1	0	0	1	2	2	20	20	2.0	24
13	2	2	2	0	1	0	1	4	5	4	3	2	2	IZS	1	1	2	1	2	3	3	1	1	1	5	1.9	24
14	1	1	1	1	1	75	1	4	1	1	1	3	IZS	0	2	1	1	0	0	0	0	0	0	0	75	4.1	24
15	0	1	1	2	1	222	15	46	17	13	7	IZS	1	1	1	M	10	2	1	1	5	0	1	1	222	15.9	23
16	0	1	1	1	1	24	1	6	1	1	IZS	1	1	7	5	1	4	1	1	0	2	0	1	1	24	2.7	24
17	1	2	1	1	0	2	5	3	2	IZS	1	2	4	2	3	7	2	1	0	0	0	0	4	0	7	1.9	24
18	0	1	3	8	179	43	4	24	IZS	2	2	3	3	2	6	1	1	0	0	0	1	1	2	1	179	12.5	24
19	6	1	3	5	0	0	0	IZS	2	2	1	3	1	1	2	2	2	40	0	1	1	0	1	1	40	3.3	24
20	1	1	1	1	1	1	IZS	1	2	2	2	1	1	2	1	1	2	3	3	0	5	1	1	1	5	1.5	24
21	0	0	0	0	20	IZS	1	3	1	1	2	3	2	3	2	5	1	0	1	1	0	1	0	0	20	2.0	24
22	0	0	0	0	IZS	3	1	2	1	8	9	4	2	2	12	2	1	2	5	6	1	0	0	0	12	2.7	24
23	0	1	1	IZS	4	98	2	14	2	2	4	3	3	25	2	2	1	0	5	1	1	0	3	1	98	7.6	24
24	0	0	IZS	1	1	1	1	4	2	6	1	6	2	3	3	2	3	1	2	1	1	4	0	1	6	2.0	24
25	0	IZS	0	1	1	14	3	6	2	1	1	1	1	1	3	10	1	2	4	0	1	2	1	0	14	2.4	24
26	IZS	4	0	0	0	1	1	3	1	1	5	1	1	1	2	17	1	1	0	0	0	5	0	IZS	17	2.0	24
27	0	0	0	0	0	0	0	1	1	2	1	2	0	0	0	3	4	0	2	3	0	0	IZS	0	4	0.8	24
28	0	0	0	0	0	1	7	5	1	2	0	2	1	1	4	1	2	1	2	0	0	IZS	9	0	9	1.7	24
29	0	0	0	0	0	1	4	7	0	0	0	31	7	1	14	1	2	5	0	0	IZS	0	0	0	31	3.2	24
30	0	0	0	0	0	0	0	0	0	0	14	2	8	8	0	1	1	1	1	IZS	0	0	1	0	14	1.6	24
31	1	1	1	1	1	1	1	3	2	2	1	1	3	1	1	1	0	1	IZS	1	0	0	0	1	3	1.1	24
HOURLY MAX	9	6	11	9	179	222	52	182	47	31	17	31	8	25	14	17	15	40	9	9	7	5	9	20			
HOURLY AVG	1.7	1.2	1.3	1.5	8.0	17.3	5.2	13.5	6.5	4.4	4.0	4.4	2.8	3.1	3.4	3.2	3.2	3.2	1.7	1.4	1.6	1.1	1.5	1.6			

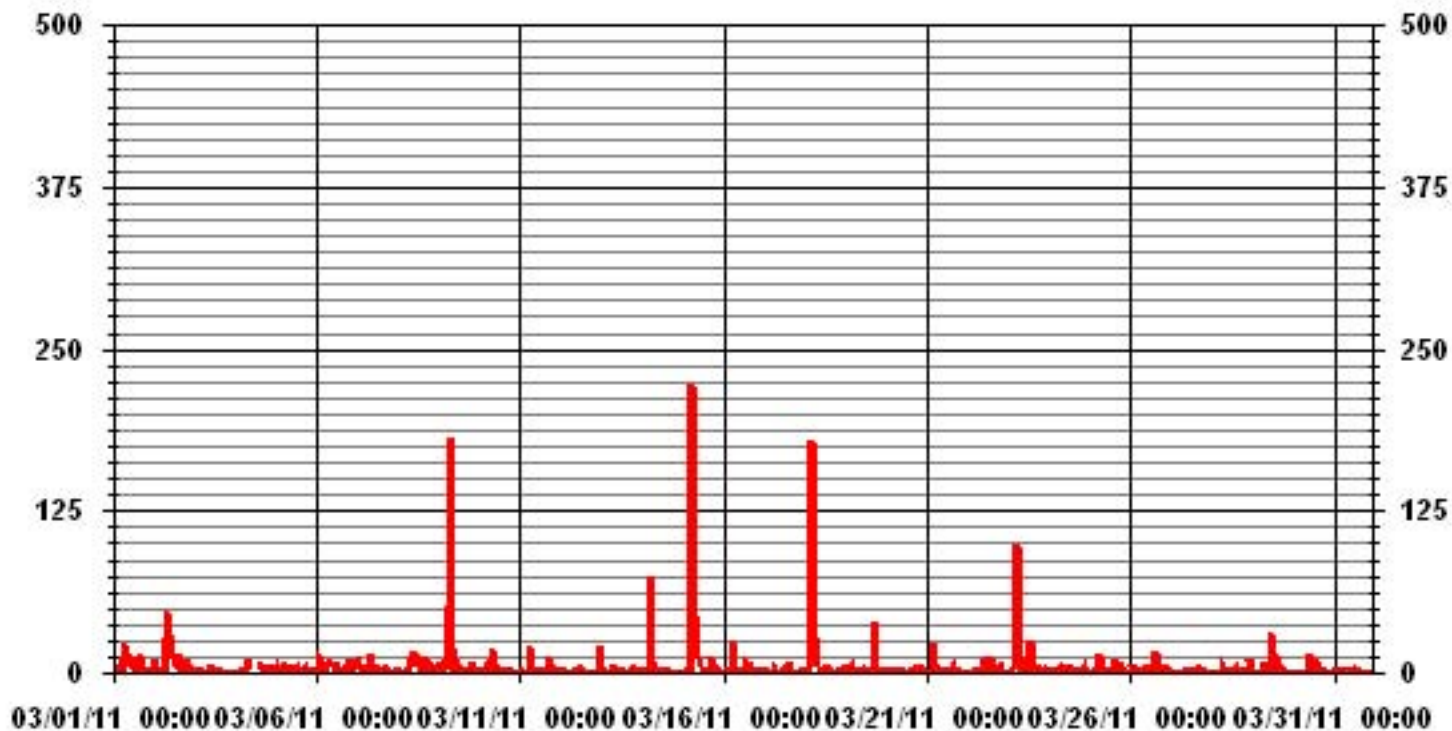
STATUS FLAG CODES

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

NUMBER OF NON-ZERO READINGS:	542					
MAXIMUM INSTANTANEOUS VALUE:	222	PPB	@ HOUR(S)	5	ON DAY(S)	15
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	14.38					

01 Hour Averages



— LICA NOMAX PPB

LICA
 NO_ / WD Joint Frequency Distribution (Percent)

March 2011

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	1.27	6.81	11.64	3.69	15.48	11.50	21.44	2.13	1.42	1.27	7.24	7.95	3.26	1.56	1.98	1.27	100.00	
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Totals	1.27	6.81	11.64	3.69	15.48	11.50	21.44	2.13	1.42	1.27	7.24	7.95	3.26	1.56	1.98	1.27		

Calm : .00 %

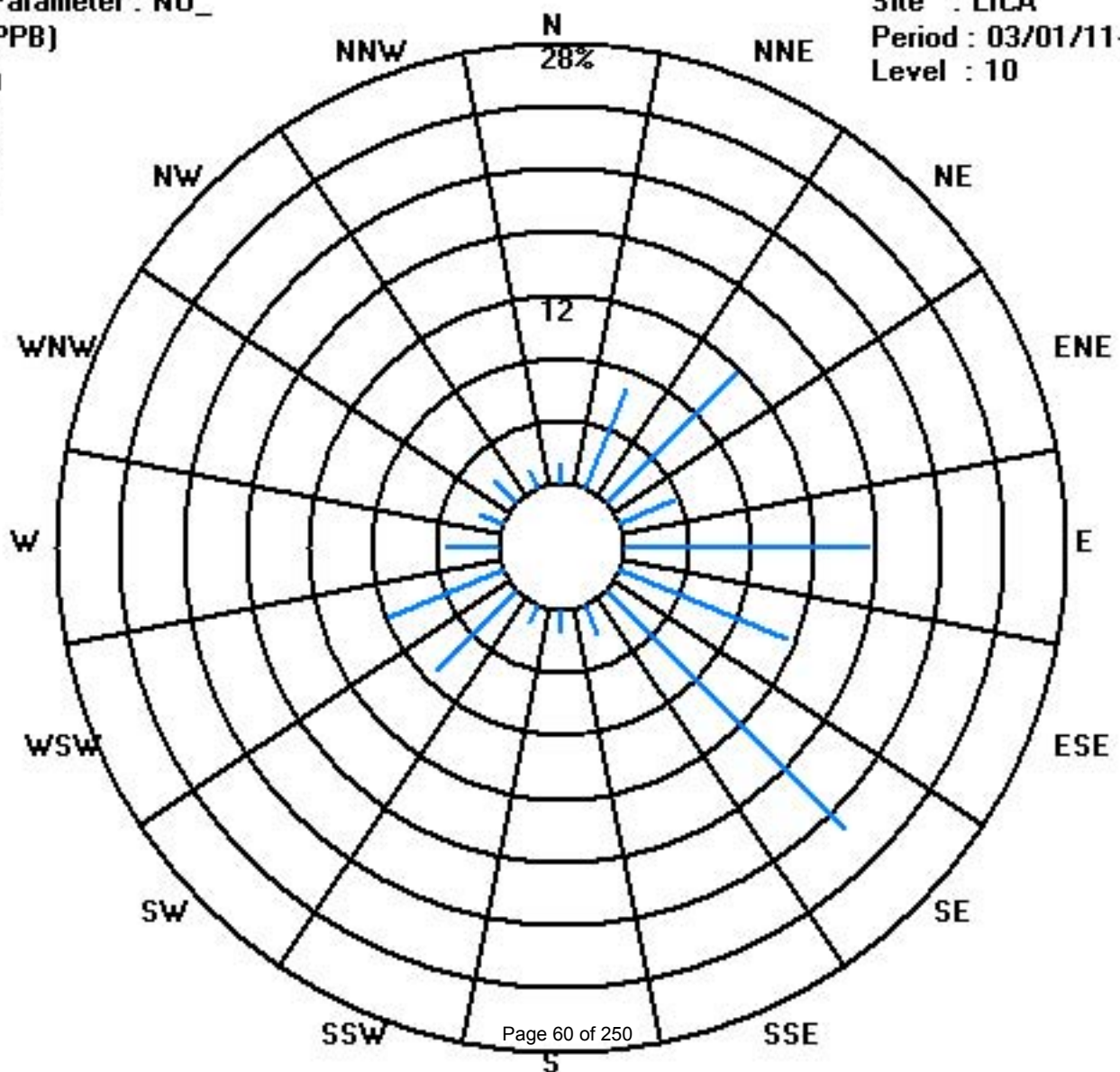
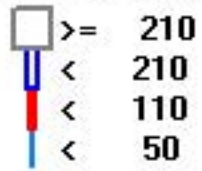
Total # Operational Hours : 704

Distribution By Samples

		Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 50	9	48	82	26	109	81	151	15	10	9	51	56	23	11	14	9	704	
< 110																		
< 210																		
>= 210																		
Totals	9	48	82	26	109	81	151	15	10	9	51	56	23	11	14	9		

Calm : .00 %

Total # Operational Hours : 704



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

OXIDES OF NITROGEN hourly averages in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR					
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	5	8	IZS	8	11	10	15	27	21	16	10	8	6	4	3	3	4	3	4	5	7	7	10	8	27	8.8	24				
2	9	IZS	7	7	10	11	13	24	45	34	14	16	9	7	6	7	6	6	6	8	7	7	6	45	11.8	24					
3	IZS	4	6	4	5	4	4	6	7	6	7	6	5	5	3	3	3	2	2	3	4	4	5	IZS	7	4.5	24				
4	10	4	5	4	8	5	12	19	19	C	C	C	C	C	C	6	9	6	7	9	15	12	IZS	9	19	9.4	24				
5	10	9	6	4	5	5	6	8	7	5	5	3	2	2	1	2	3	4	4	5	IZS	11	9	11	5.2	24					
6	10	13	15	15	14	12	15	16	10	7	7	6	5	2	1	1	3	4	7	8	IZS	7	9	15	16	8.8	24				
7	18	10	13	13	11	5	6	5	6	5	4	4	3	4	5	5	7	7	6	IZS	6	6	8	7	18	7.1	24				
8	6	6	6	6	7	12	13	24	27	19	15	15	13	10	5	5	5	5	IZS	12	15	16	15	14	27	11.8	24				
9	14	11	11	19	26	23	47	56	23	10	8	10	10	8	10	9	11	IZS	15	11	12	19	10	7	56	16.5	24				
10	8	10	12	8	9	11	7	3	4	2	2	3	2	2	2	2	IZS	2	2	2	2	2	1	1	12	4.3	24				
11	1	1	1	1	1	1	5	2	1	1	1	2	2	2	2	IZS	3	7	5	7	4	6	2	3	7	2.7	24				
12	4	4	4	3	2	2	3	3	3	3	3	3	3	3	IZS	3	3	2	2	2	2	2	3	6	6	2.9	24				
13	8	10	12	8	10	9	12	13	9	6	4	4	4	IZS	5	5	5	7	12	29	31	23	17	13	31	11.1	24				
14	9	7	7	6	7	16	9	10	7	6	5	6	IZS	3	4	4	5	4	3	3	4	4	5	3	16	6.0	24				
15	3	5	8	10	14	36	28	47	19	21	10	IZS	3	3	3	M	6	5	3	4	3	2	2	47	10.8	23					
16	2	2	2	2	2	8	2	3	2	2	IZS	2	2	2	2	2	2	2	2	2	2	2	3	8	2.3	24					
17	4	4	1	1	2	4	8	5	3	IZS	1	2	2	2	4	4	3	3	4	5	5	6	6	5	8	3.7	24				
18	4	4	6	11	22	18	13	9	IZS	7	7	8	8	7	6	5	5	4	8	15	19	6	6	15	22	9.3	24				
19	21	10	8	8	5	4	4	IZS	5	5	6	4	4	4	4	4	4	7	7	10	13	6	7	5	21	6.8	24				
20	4	3	4	3	2	2	IZS	3	3	3	2	2	2	2	2	2	2	2	2	2	3	2	2	2	4	2.4	24				
21	2	2	2	2	9	IZS	3	4	3	3	3	3	3	4	4	3	2	2	2	2	1	1	1	1	9	2.7	24				
22	1	1	1	1	IZS	3	3	4	4	4	7	3	2	2	4	3	3	2	3	2	1	1	1	1	7	2.5	24				
23	1	1	3	IZS	9	26	5	8	4	4	3	1	2	3	2	1	1	1	1	2	4	1	3	3	26	3.9	24				
24	2	1	IZS	2	3	4	6	7	5	4	3	3	2	2	3	2	2	3	6	10	12	5	2	2	12	4.0	24				
25	1	IZS	2	4	7	12	15	8	5	3	2	2	3	1	1	1	1	1	1	1	2	2	1	1	15	3.3	24				
26	IZS	2	2	2	4	4	4	4	4	3	4	3	2	2	2	2	1	1	1	1	1	1	1	IZS	4	2.3	24				
27	1	1	2	2	4	4	4	4	3	3	2	2	2	2	2	2	2	2	2	2	1	1	IZS	1	4	2.2	24				
28	1	1	1	1	2	2	4	4	2	2	2	2	2	2	2	3	2	3	3	3	2	IZS	3	2	4	2.2	24				
29	2	2	3	3	3	3	3	4	3	3	3	9	4	3	4	3	5	3	3	IZS	2	2	2	9	3.3	24					
30	2	2	2	3	3	3	3	3	3	2	3	2	3	3	3	4	4	4	4	IZS	5	5	5	7	7	3.4	24				
31	8	7	6	4	3	4	7	7	7	5	4	3	5	3	3	2	2	2	IZS	4	4	4	4	4	8	4.4	24				
HOURLY MAX	21	13	15	19	26	36	47	56	45	34	15	16	13	10	10	9	11	7	15	29	31	23	17	15							
HOURLY AVG	5.9	5.0	5.4	5.5	7.3	8.8	9.3	11.3	8.8	6.7	5.0	4.8	4.0	3.4	3.4	3.4	3.7	3.6	4.4	5.8	6.7	5.6	5.2	5.4							

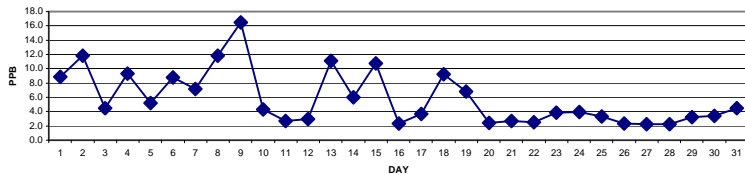
STATUS FLAG CODES

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

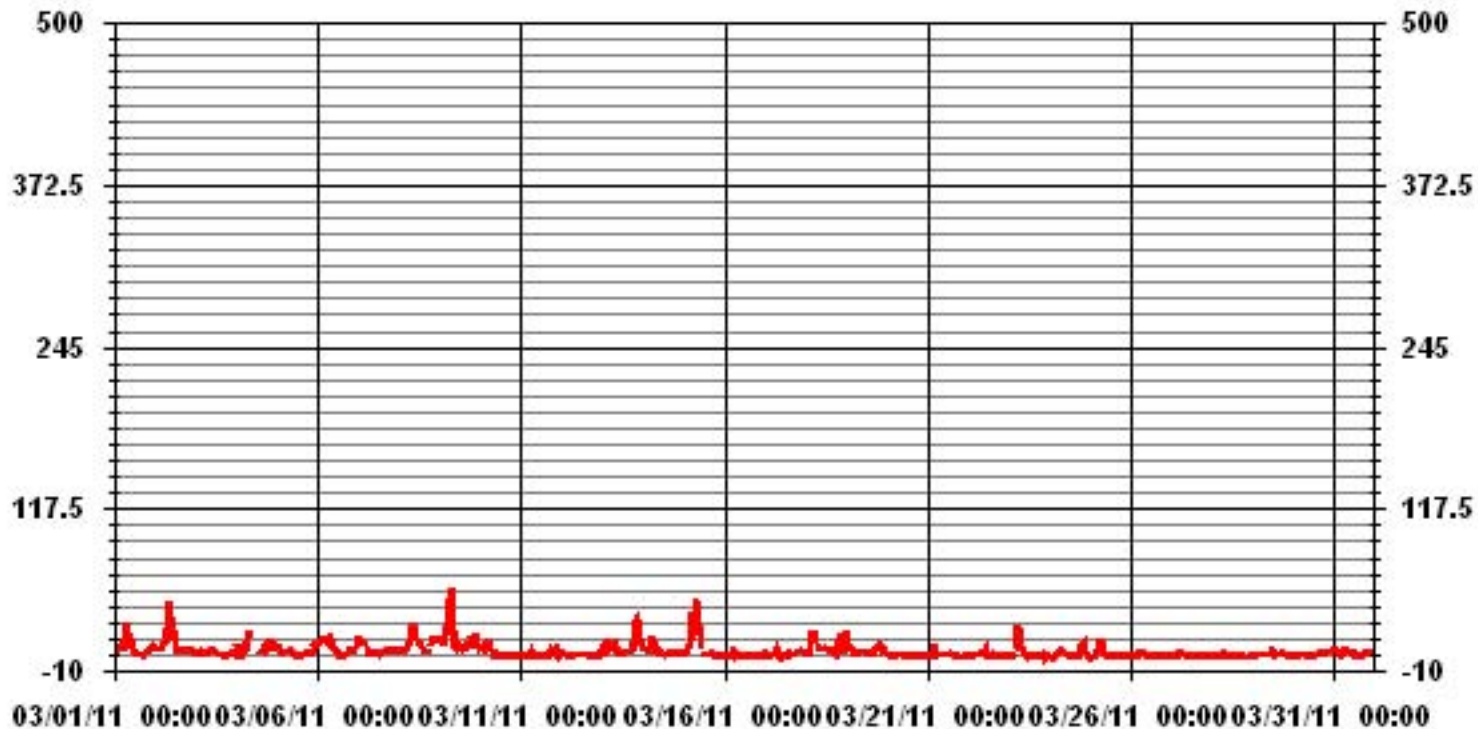
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	704
MAXIMUM 1-HR AVERAGE:	56 PPB @ HOUR(S) 7 ON DAY(S) 9
MAXIMUM 24-HR AVERAGE:	16.5 PPB ON DAY(S) 9
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	6 HRS
STANDARD DEVIATION:	6.02
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
MONTHLY AVERAGE:	5.78 PPB

24 HOUR AVERAGES FOR MARCH 2011



01 Hour Averages



— LICA NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

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	9	13	IZS	10	24	14	26	42	30	18	13	10	7	6	12	11	31	6	6	8	10	11	19	11	42	15.1	24
2	26	IZS	10	10	15	17	20	53	71	52	27	24	15	12	11	28	12	15	13	12	13	12	11	9	71	21.2	24
3	IZS	7	9	7	11	7	6	8	11	8	9	10	9	6	6	4	5	4	2	5	6	6	9	IZS	11	7.0	24
4	16	10	8	9	13	10	20	30	C	C	C	C	C	C	C	14	14	11	10	20	27	20	IZS	17	30	15.6	24
5	21	15	11	7	8	44	11	11	11	9	10	7	6	4	4	4	7	8	7	11	11	IZS	18	11	44	11.1	24
6	21	17	33	29	18	17	26	21	17	16	11	13	8	6	7	2	6	7	15	45	IZS	10	19	32	45	17.2	24
7	41	24	24	22	25	7	9	7	28	8	5	12	7	6	8	12	9	9	IZS	7	7	15	11	41	13.4	24	
8	11	12	9	9	10	24	17	37	33	30	27	18	18	13	12	8	9	8	IZS	16	21	24	28	28	37	18.3	24
9	35	23	17	30	42	30	140	219	49	15	11	13	13	11	13	12	14	IZS	21	13	23	33	15	10	219	34.9	24
10	10	16	17	17	16	18	34	6	24	5	4	8	3	2	3	4	IZS	5	5	6	3	2	2	3	34	9.3	24
11	3	2	2	2	3	2	33	5	2	2	3	3	3	5	4	IZS	13	18	13	16	8	14	5	6	33	7.3	24
12	8	7	7	5	3	3	3	4	5	6	5	6	6	7	IZS	6	4	3	4	4	4	4	10	49	49	7.1	24
13	13	16	21	11	14	15	17	18	15	11	7	6	7	IZS	6	6	8	13	31	42	48	26	24	19	48	17.1	24
14	12	10	10	10	12	102	13	22	11	11	9	16	IZS	4	6	6	6	5	4	4	5	5	5	4	102	12.7	24
15	4	8	16	14	24	356	48	87	34	35	17	IZS	5	5	4	M	18	18	6	6	7	3	3	4	356	32.8	23
16	4	4	3	3	3	35	5	12	3	4	IZS	3	4	8	3	4	9	4	4	3	7	3	4	5	35	6.0	24
17	7	11	3	2	4	7	22	10	5	IZS	4	5	12	5	13	15	6	5	5	5	7	7	19	6	22	8.0	24
18	7	7	18	32	377	71	27	54	IZS	12	11	10	10	7	8	8	7	6	19	29	28	9	16	27	377	34.8	24
19	33	16	19	21	5	9	5	IZS	7	9	8	11	5	5	11	7	8	37	9	16	18	8	10	11	37	12.5	24
20	6	6	8	5	4	4	IZS	4	6	6	9	10	4	7	4	5	4	6	5	4	8	5	5	4	10	5.6	24
21	4	3	4	4	50	IZS	5	7	4	5	5	7	7	7	12	11	4	3	5	3	2	5	2	3	50	7.0	24
22	2	2	2	3	IZS	27	6	9	6	20	18	10	3	5	13	7	4	7	12	4	3	3	2	1	27	7.3	24
23	2	4	6	IZS	23	190	12	18	6	7	11	6	8	26	29	4	10	3	7	6	7	3	13	4	190	17.6	24
24	3	2	IZS	4	6	9	8	17	8	11	5	6	4	7	13	4	6	5	9	15	15	16	4	6	17	8.0	24
25	2	IZS	4	9	10	25	25	24	8	5	4	3	7	3	3	3	4	3	4	2	4	6	3	2	25	7.1	24
26	IZS	8	3	4	6	6	6	9	7	7	11	7	4	3	5	8	3	4	2	2	2	6	2	IZS	11	5.2	24
27	3	3	3	5	6	5	5	6	5	7	6	4	3	3	3	5	3	3	19	15	3	2	IZS	5	19	5.3	24
28	2	2	2	2	3	5	9	8	4	5	3	9	3	5	4	10	6	5	7	4	3	IZS	12	3	12	5.0	24
29	4	3	3	3	3	8	13	7	4	4	4	52	23	8	24	6	8	17	4	4	IZS	4	3	3	52	9.2	24
30	3	3	3	3	4	5	4	5	5	3	34	5	11	12	5	7	6	6	5	IZS	6	6	7	10	34	6.9	24
31	11	10	8	5	5	6	20	10	11	6	5	5	12	5	4	7	3	3	IZS	6	6	5	6	6	20	7.2	24
HOURLY MAX	41	24	33	32	377	356	140	219	71	52	34	52	23	26	29	28	31	37	31	45	48	33	28	49			
HOURLY AVG	11.1	9.1	9.8	9.9	24.9	35.9	19.8	25.7	14.8	11.6	10.2	10.3	7.8	7.0	8.6	7.7	8.3	8.2	9.0	11.2	10.8	9.1	10.0	10.7			

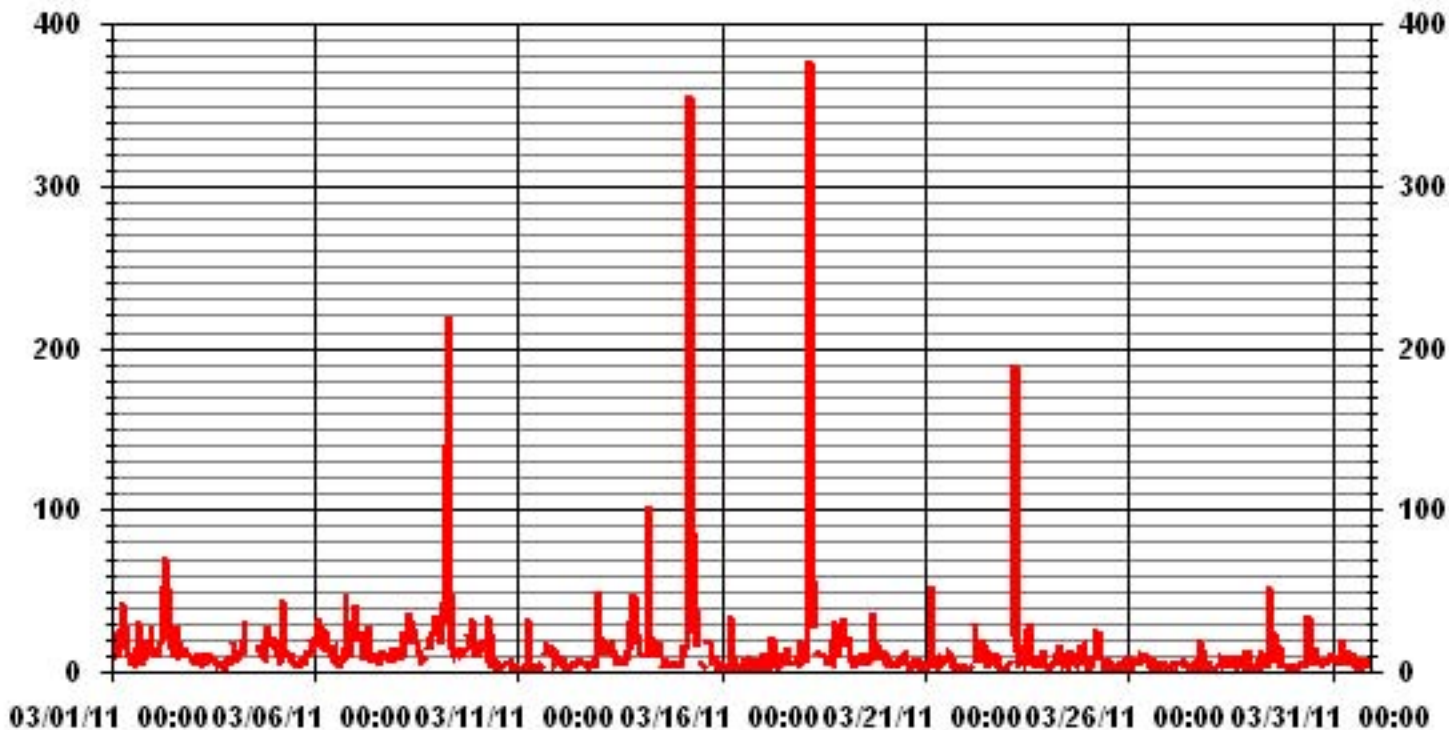
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	703
MAXIMUM INSTANTANEOUS VALUE:	377 PPB @ HOUR(S) 4 ON DAY(S) 18
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION	24.54
OPERATIONAL TIME:	743 HRS

01 Hour Averages



— LICA NOXMAX PPB

LICA
NOX_ / WD Joint Frequency Distribution (Percent)

March 2011

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	1.27	6.81	11.64	3.69	15.34	11.50	21.44	2.13	1.42	1.27	7.24	7.95	3.26	1.56	1.98	1.27	99.85
< 110	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.27	6.81	11.64	3.69	15.48	11.50	21.44	2.13	1.42	1.27	7.24	7.95	3.26	1.56	1.98	1.27	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	9	48	82	26	108	81	151	15	10	9	51	56	23	11	14	9	703
< 110					1												1
< 210																	
>= 210																	
Totals	9	48	82	26	109	81	151	15	10	9	51	56	23	11	14	9	

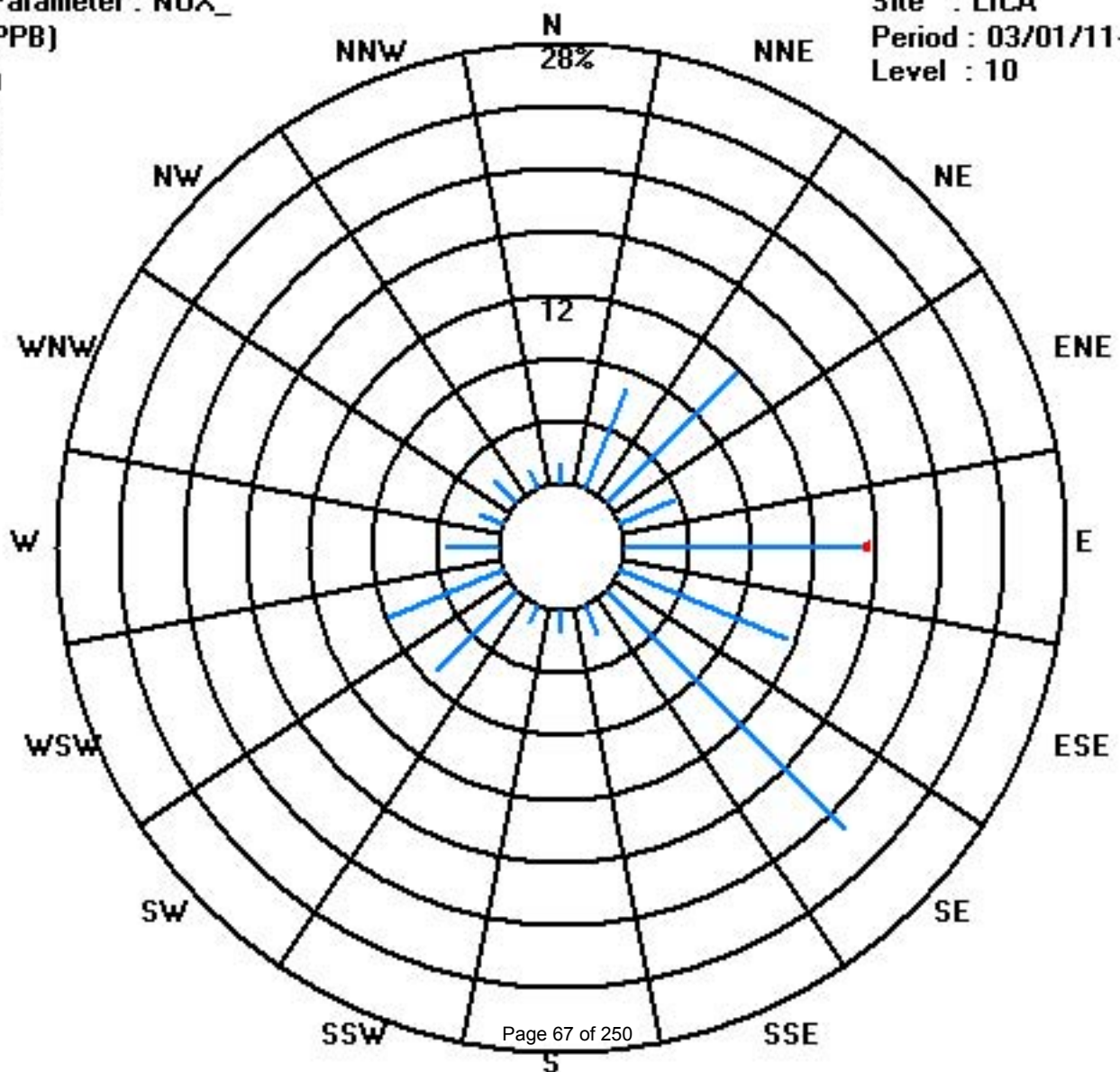
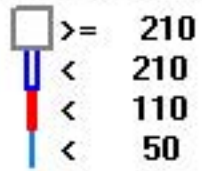
Calm : .00 %

Total # Operational Hours : 704

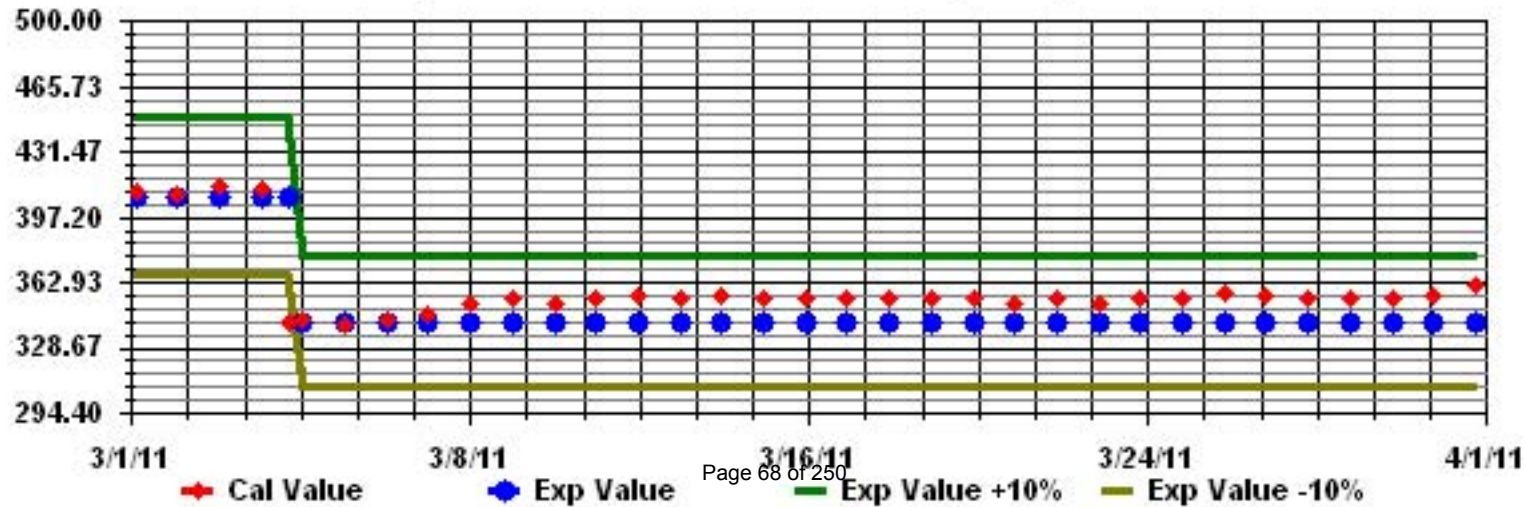
Class Limits (PPB)

Period : 03/01/11-03/31/11

Level : 10



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



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

OZONE (O₃) hourly averages in ppb

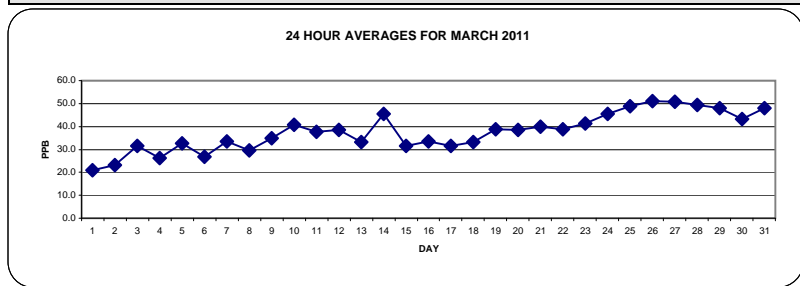
MST	OZONE (O ₃) hourly averages in ppb																								DAILY	24-HOUR	RDGS.	
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																												
1	19	16	IZS	16	14	11	8	5	15	20	24	25	26	27	28	29	29	29	28	27	25	25	19	19	29	21.0	24	
2	17	IZS	16	16	13	12	11	9	10	18	25	26	29	29	30	30	30	32	31	30	28	29	29	30	32	32	23.0	24
3	IZS	31	30	32	30	30	28	28	29	30	31	31	32	32	33	34	33	34	34	34	33	32	31	IZS	34	31.5	24	
4	24	29	28	28	25	29	23	17	22	25	32	36	35	C	C	C	C	C	30	26	19	22	IZS	22	36	26.2	24	
5	21	22	33	36	35	35	31	29	34	37	36	37	38	39	39	39	37	35	34	32	29	IZS	21	20	39	32.6	24	
6	17	14	12	12	12	16	14	19	29	32	33	35	36	38	40	40	39	37	31	31	IZS	30	26	20	40	26.7	24	
7	17	21	16	15	17	32	34	33	34	35	36	38	42	43	43	42	41	41	42	IZS	41	40	36	31	43	33.5	24	
8	29	28	26	27	25	20	17	14	22	32	35	37	39	41	42	42	42	41	IZS	27	23	21	26	27	42	29.7	24	
9	25	25	23	15	9	9	4	9	25	40	44	46	47	50	50	54	51	IZS	43	48	46	39	49	52	54	34.9	24	
10	51	48	45	48	45	40	41	41	40	40	40	40	40	39	39	38	IZS	38	38	38	38	38	37	36	51	40.8	24	
11	36	38	39	40	40	39	38	39	39	38	39	39	39	39	39	IZS	38	36	35	33	35	33	37	36	40	37.6	24	
12	35	35	35	35	35	35	35	34	35	35	37	39	41	42	IZS	43	43	43	42	42	42	42	42	40	43	38.6	24	
13	36	32	28	28	27	25	21	21	30	36	42	44	46	IZS	48	49	51	48	41	22	18	20	23	30	51	33.3	24	
14	42	45	47	48	46	42	42	44	46	48	50	IZS	52	51	49	47	46	46	45	43	42	41	42	52	52	45.5	24	
15	39	35	28	28	23	13	9	7	26	27	33	IZS	38	41	44	M	37	39	41	40	40	38	33	34	44	31.5	23	
16	34	33	35	35	36	35	35	34	33	33	IZS	34	34	34	35	34	34	33	32	31	31	30	30	30	36	33.4	24	
17	28	29	31	31	31	29	27	29	30	IZS	31	31	32	33	32	32	33	35	35	34	34	33	32	32	35	31.5	24	
18	32	31	27	19	15	10	18	26	IZS	30	31	32	34	40	46	49	51	53	44	31	25	45	44	28	53	33.1	24	
19	20	30	32	30	33	35	36	IZS	39	41	41	43	48	50	49	49	49	45	42	37	32	39	36	37	50	38.8	24	
20	39	38	35	35	36	36	IZS	36	35	38	39	40	39	40	41	41	40	40	39	40	38	39	39	41	41	38.4	24	
21	42	41	42	43	40	IZS	40	37	36	35	34	34	34	35	37	42	44	45	44	43	43	42	42	41	45	39.8	24	
22	40	40	39	40	IZS	38	38	36	36	36	34	36	36	36	36	39	43	43	44	42	42	42	42	44	44	38.9	24	
23	42	41	39	IZS	31	23	34	34	38	40	42	43	44	45	47	47	47	47	48	46	43	44	43	43	48	41.3	24	
24	43	44	IZS	44	43	41	41	40	42	44	45	46	47	48	49	51	52	50	47	42	38	46	52	51	52	45.5	24	
25	52	IZS	50	47	45	40	37	44	47	48	49	50	51	53	53	52	52	52	51	51	50	50	51	51	53	49.0	24	
26	IZS	51	50	50	47	46	46	46	47	48	48	50	52	53	53	55	55	54	53	53	54	55	55	IZS	55	51.0	24	
27	54	54	54	53	50	48	48	48	51	51	52	52	52	51	51	51	49	47	48	49	50	IZS	53	54	50.7	24		
28	54	54	55	54	54	53	51	50	48	48	48	48	47	47	46	46	46	47	48	50	50	IZS	48	47	55	49.5	24	
29	51	52	52	52	52	52	51	50	49	48	48	47	48	48	46	45	45	44	45	46	IZS	44	43	43	52	47.9	24	
30	43	44	45	45	44	43	42	42	43	44	44	45	45	47	46	43	43	43	43	IZS	43	41	40	38	47	43.3	24	
31	38	41	41	45	47	47	43	45	47	48	49	52	52	53	53	52	53	52	IZS	49	50	50	49	48	53	48.0	24	
HOURLY MAX	54	54	55	54	54	53	51	50	51	51	52	52	52	53	53	55	55	54	53	53	54	55	55	53				
HOURLY AVG	35.2	35.9	35.6	34.9	33.3	32.1	31.4	31.5	35.2	37.5	39.0	40.2	40.8	42.2	43.0	43.4	43.2	42.4	40.6	38.7	37.3	38.0	37.8	36.7				

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

OBJECTIVE LIMIT:

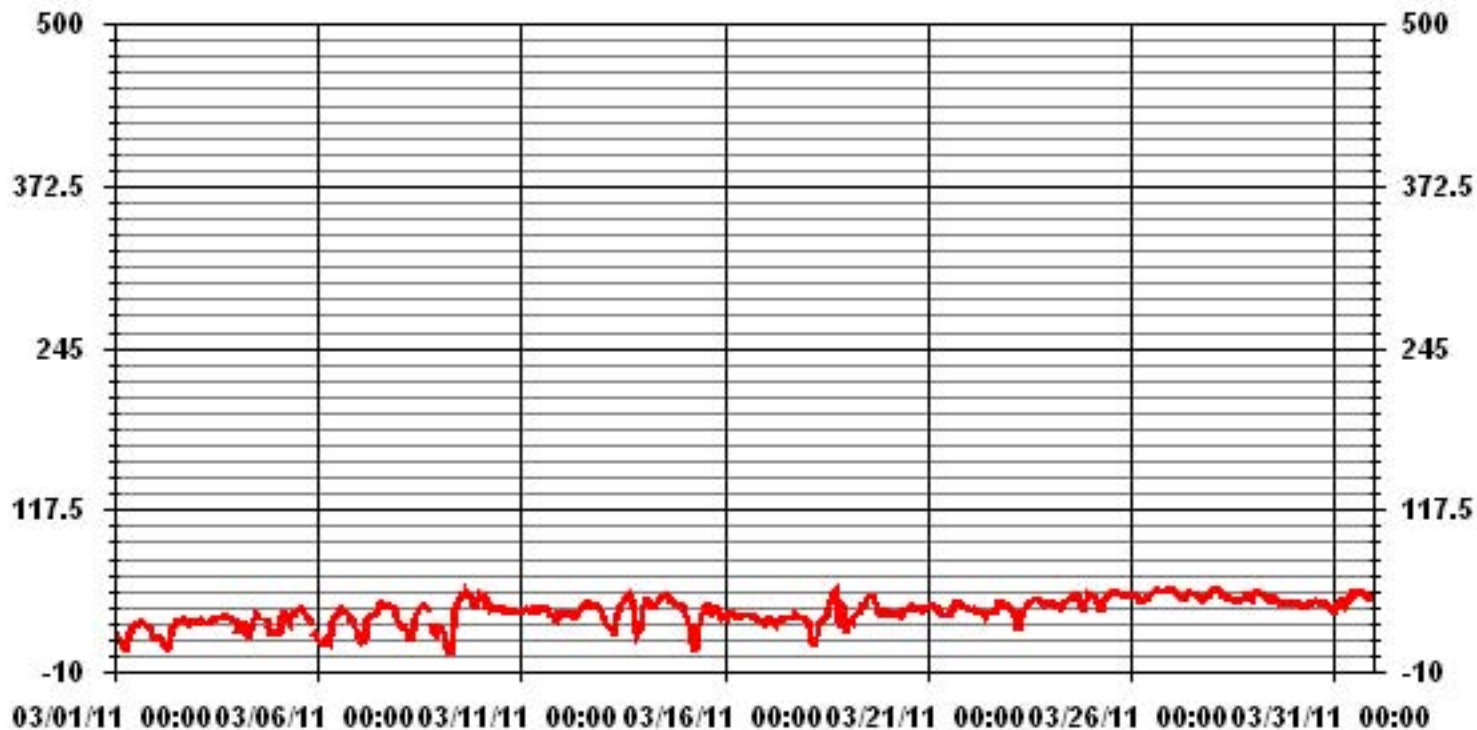
ALBERTA ENVIRONMENT: 1-HR 82 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	705				
MAXIMUM 1-HR AVERAGE:	55	PPB	@ HOUR(S)	VAR	ON DAY(S) 26, 28
MAXIMUM 24-HR AVERAGE:	51.0	PPB			ON DAY(S) 26
					VAR-VARIOUS
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME	99.9	%
STANDARD DEVIATION	10.36		MONTHLY AVERAGE	37.70	PPB

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

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	20	18	IZS	17	15	13	11	9	18	24	27	26	26	28	29	30	30	30	30	28	27	26	22	21	30	22.8	24	
2	20	IZS	18	18	16	15	15	15	14	25	27	29	31	30	31	31	31	34	34	31	30	30	30	32	34	25.5	24	
3	IZS	32	32	34	32	31	29	29	30	32	32	32	33	33	34	34	34	35	35	35	34	33	32	IZS	35	32.6	24	
4	27	31	31	30	29	30	27	25	30	29	35	38	37	C	C	C	C	C	32	29	25	28	IZS	27	38	30.0	24	
5	25	28	37	37	37	37	35	32	36	37	37	38	38	39	39	39	38	37	36	35	32	IZS	25	23	39	34.7	24	
6	20	17	16	17	18	23	20	24	33	35	35	36	37	40	40	40	40	39	37	37	IZS	33	29	26	40	30.1	24	
7	22	26	20	18	31	34	34	34	35	36	37	40	43	43	43	43	43	43	45	IZS	43	40	39	35	45	36.0	24	
8	31	31	29	29	27	26	21	20	25	35	37	39	42	43	43	43	43	42	IZS	32	30	31	35	32	43	33.3	24	
9	32	30	27	20	12	14	8	22	39	42	45	47	48	54	56	55	55	IZS	48	50	50	50	51	53	56	39.5	24	
10	53	51	50	51	48	43	42	42	41	41	41	40	40	40	39	39	IZS	39	39	38	38	38	38	38	53	42.1	24	
11	37	39	40	40	40	40	39	39	39	39	39	39	39	39	39	IZS	39	38	38	35	36	36	38	38	40	38.5	24	
12	36	36	36	36	36	36	36	35	36	36	38	41	42	43	IZS	44	44	44	43	43	43	43	42	41	44	39.6	24	
13	39	37	31	30	31	29	26	24	33	40	43	45	49	IZS	50	51	52	52	48	32	28	23	29	39	52	37.4	24	
14	44	47	48	49	48	46	45	45	47	48	50	52	IZS	52	52	51	48	47	46	46	45	43	43	42	52	47.1	24	
15	42	38	32	30	28	22	16	12	31	32	35	IZS	40	43	45	M	43	41	42	41	40	40	35	35	45	34.7	23	
16	35	34	35	36	36	36	35	34	34	33	IZS	34	35	35	35	35	35	34	34	33	32	31	31	31	36	34.0	24	
17	30	32	32	31	31	30	29	30	30	IZS	31	32	33	33	33	33	34	37	36	35	34	33	32	33	37	32.3	24	
18	33	32	30	25	24	18	27	28	IZS	31	32	33	37	42	49	54	54	54	52	39	45	46	46	40	54	37.9	24	
19	25	39	38	35	36	36	36	IZS	40	42	42	48	50	51	51	50	50	48	44	42	39	42	39	40	51	41.9	24	
20	40	40	37	36	36	36	IZS	37	37	39	40	40	40	41	42	52	41	40	40	41	39	39	41	42	42	39.4	24	
21	42	42	44	44	43	IZS	41	39	37	35	35	35	35	36	41	44	46	46	45	44	43	43	42	42	46	41.0	24	
22	41	40	40	40	IZS	40	38	37	37	37	37	36	37	37	37	37	38	41	44	44	44	43	42	42	43	44	39.8	24
23	42	42	40	IZS	37	31	37	37	40	43	43	44	45	47	49	48	49	48	49	48	45	45	44	44	49	43.3	24	
24	44	45	IZS	45	44	43	43	42	44	45	46	47	48	49	50	52	54	52	49	46	45	53	53	52	54	47.4	24	
25	52	IZS	51	49	47	46	45	47	48	49	50	51	53	53	53	53	53	52	52	51	51	51	52	51	53	50.4	24	
26	IZS	51	51	51	49	47	47	47	48	49	50	51	53	54	54	55	55	55	54	54	55	56	56	IZS	56	51.9	24	
27	55	54	54	55	51	50	49	50	52	52	53	53	53	52	52	51	51	50	48	49	50	50	IZS	54	55	51.7	24	
28	54	55	56	55	55	54	53	51	50	49	49	48	48	47	47	47	47	48	49	50	51	IZS	50	49	56	50.5	24	
29	52	53	53	53	53	53	52	51	50	49	49	49	49	49	47	46	45	45	45	48	IZS	46	43	43	53	48.8	24	
30	44	45	45	45	45	44	43	42	44	44	45	46	46	48	48	45	44	44	44	IZS	44	43	41	40	48	44.3	24	
31	40	42	43	47	48	48	46	46	49	49	51	52	54	54	54	53	53	53	IZS	50	51	51	50	50	54	49.3	24	
HOURLY MAX	55	55	56	55	55	54	53	51	52	52	53	53	54	54	56	55	55	55	54	54	55	56	56	54				
HOURLY AVG	37.1	38.2	37.8	36.8	36.1	35.0	34.2	34.2	37.6	39.2	40.3	41.4	42.0	43.3	44.2	44.5	44.6	43.8	42.7	40.9	40.3	40.2	39.7	39.2				

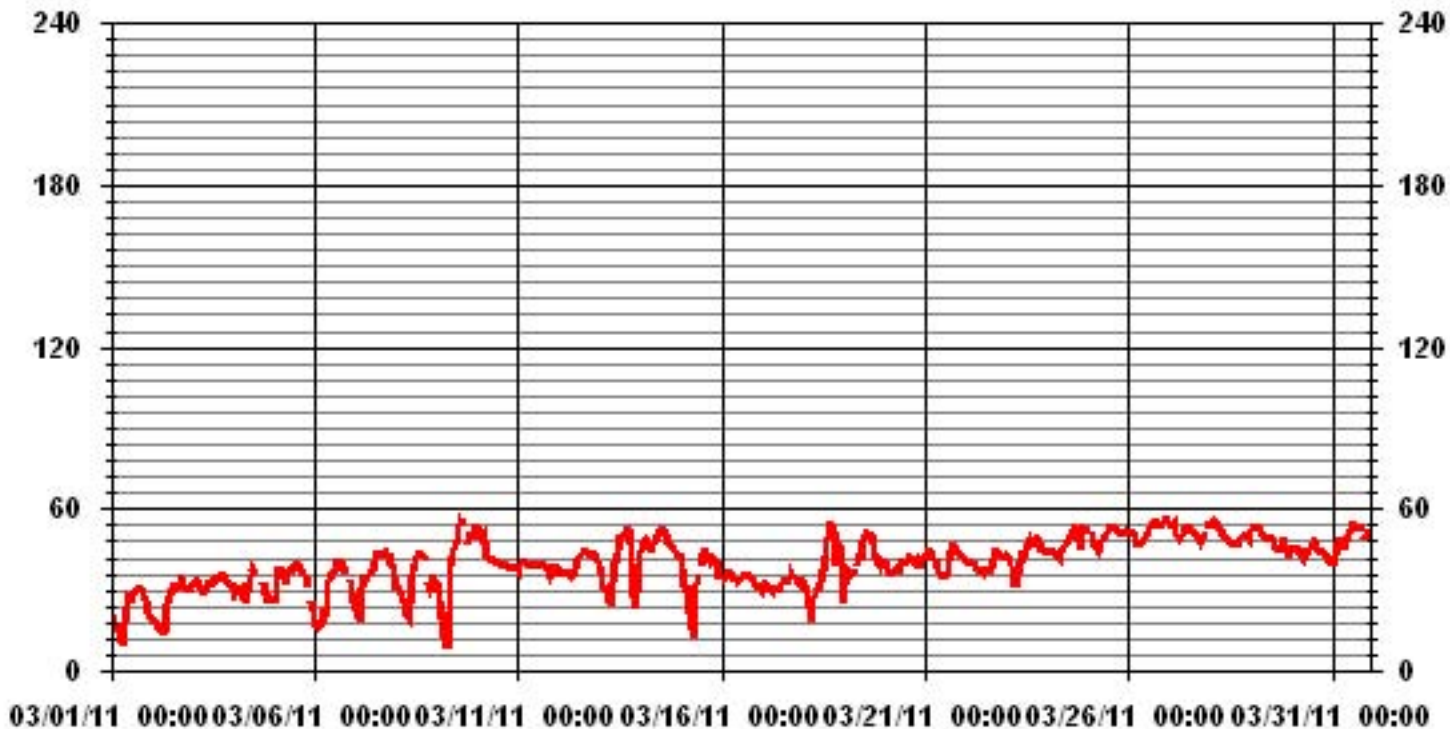
STATUS FLAG CODES

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:	705					
MAXIMUM INSTANTANEOUS VALUE:	56	PPB	@ HOUR(S)	VAR	ON DAY(S)	26, 28
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION	9.50					

01 Hour Averages



— LICA O3MAX PPB

LICA
 O3_ / WD Joint Frequency Distribution (Percent)

March 2011

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	1.27	6.80	11.63	3.82	14.32	8.36	15.03	2.12	1.41	1.27	6.52	7.09	2.83	1.70	1.70	1.13	87.09	
< 110	.00	.00	.00	.00	.99	3.12	6.38	.00	.00	.00	.56	.99	.56	.00	.14	.14	12.90	
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Totals	1.27	6.80	11.63	3.82	15.31	11.48	21.41	2.12	1.41	1.27	7.09	8.08	3.40	1.70	1.84	1.27		

Calm : .00 %

Total # Operational Hours : 705

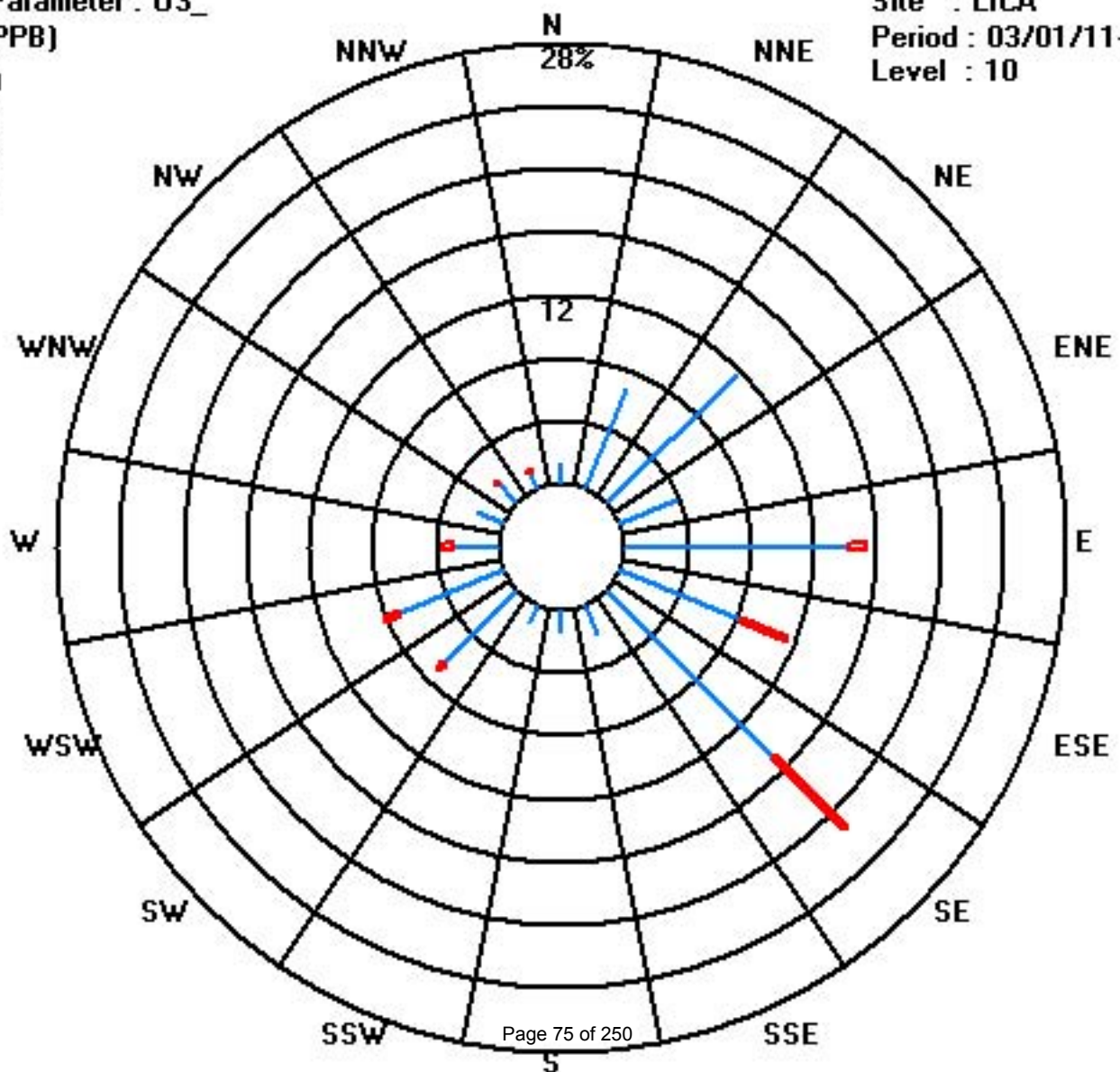
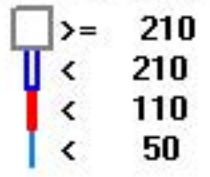
Distribution By Samples

		Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 50	9	48	82	27	101	59	106	15	10	9	46	50	20	12	12	8	614	
< 110					7	22	45				4	7	4		1	1	91	
< 210																		
>= 210																		
Totals	9	48	82	27	108	81	151	15	10	9	50	57	24	12	13	9		

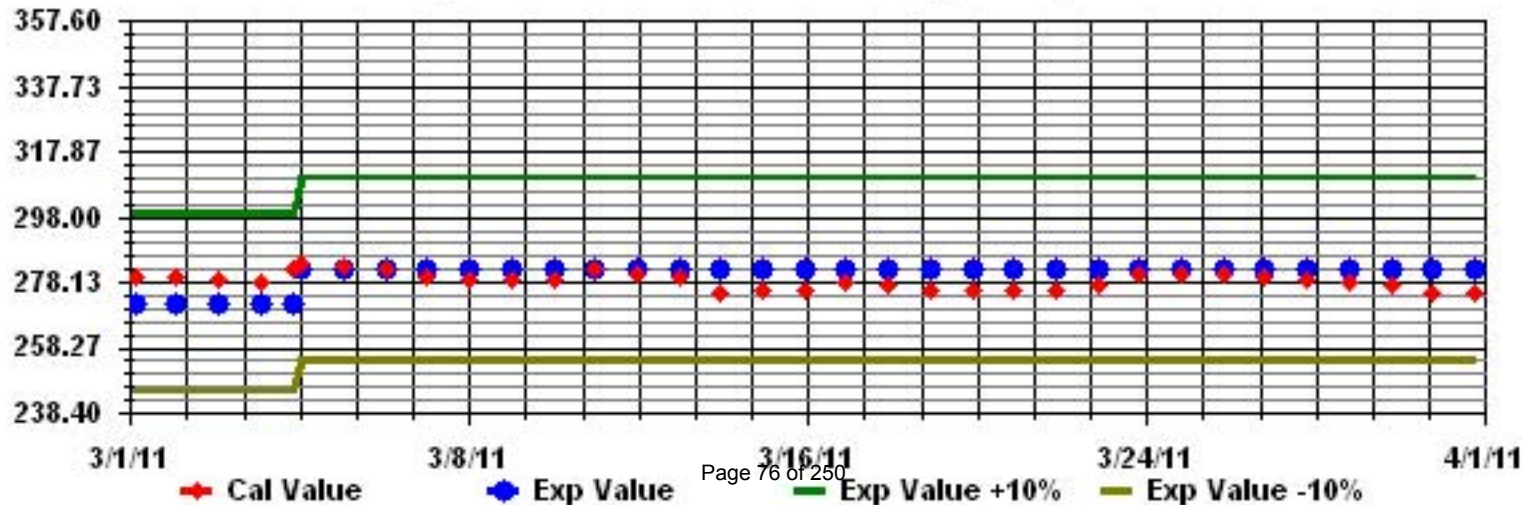
Calm : .00 %

Total # Operational Hours : 705

Class Limits (PPB)

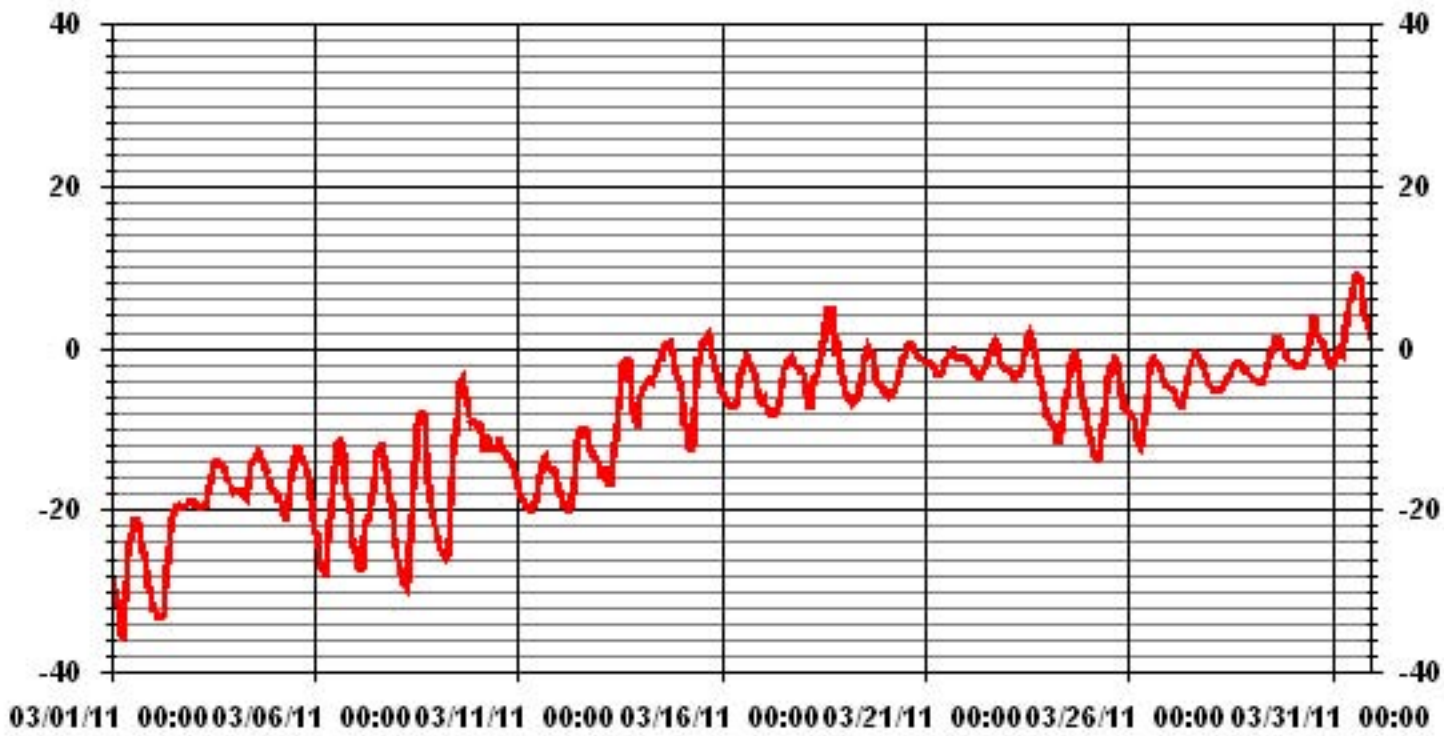


Calibration Graph for Site: LICA Parameter: 03_ Sequence: 03 Phase: SPAll



Ambient Temperature

01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

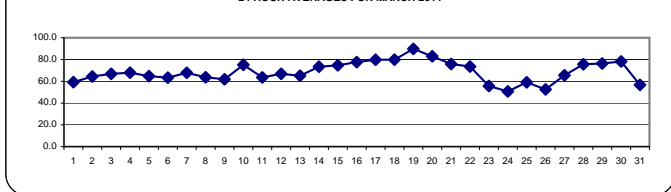
RELATIVE HUMIDITY hourly averages (%)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	71	71	71	71	70	69	67	67	68	64	56	49	47	45	43	43	44	47	52	55	58	60	66	67	71	59.2	24	
2	68	69	68	68	67	68	67	69	68	62	56	51	45	45	46	50	57	69	72	75	76	76	77	77	77	77	64.4	24
3	76	76	76	75	74	74	73	73	72	69	64	60	58	56	56	57	58	59	62	64	66	66	68	72	76	66.8	24	
4	73	72	74	75	76	76	78	77	74	69	63	60	62	59	54	53	60	60	61	67	70	72	73	72	78	67.9	24	
5	73	73	71	72	73	73	76	76	71	66	63	59	55	53	48	48	50	54	57	61	65	68	73	76	76	64.8	24	
6	77	75	74	74	72	73	72	75	71	64	60	57	53	45	42	41	43	46	58	63	65	71	74	76	77	63.4	24	
7	75	73	72	71	74	76	75	75	73	72	70	67	60	57	55	54	54	56	61	66	69	72	75	76	76	67.8	24	
8	75	73	72	71	70	70	69	69	68	67	61	52	49	48	48	46	46	50	60	68	72	73	76	76	76	63.7	24	
9	75	74	73	74	74	71	74	74	69	65	59	55	50	44	43	43	45	50	54	59	64	65	65	66	75	61.9	24	
10	67	68	70	72	78	82	80	79	78	77	76	74	70	68	69	72	75	77	77	76	80	82	80	76	82	75.1	24	
11	73	71	69	68	69	69	68	66	63	61	58	56	55	54	52	54	55	58	61	63	65	70	72	76	76	63.6	24	
12	79	80	80	79	79	79	80	78	75	69	61	53	50	50	51	51	53	57	62	65	67	68	69	70	80	66.9	24	
13	73	76	77	76	76	76	78	80	75	67	64	61	58	54	48	44	47	50	59	67	70	72	74	73	80	65.1	24	
14	67	69	70	68	69	71	71	71	71	70	70	70	73	81	78	81	79	76	74	74	74	78	79	78	81	73.4	24	
15	81	84	89	90	87	85	84	83	81	73	61	62	57	58	64	64	63	66	71	73	76	78	81	82	90	74.7	24	
16	83	84	84	84	84	85	86	85	84	82	79	74	70	67	65	66	68	70	72	74	77	78	80	82	86	77.6	24	
17	83	79	79	81	84	85	86	85	83	79	77	74	72	71	74	77	76	77	78	80	82	83	84	86	86	79.8	24	
18	86	88	91	91	91	90	92	95	94	94	91	88	79	67	57	54	54	48	61	73	78	81	85	89	95	79.9	24	
19	92	92	93	93	94	93	93	93	92	92	93	93	92	86	77	77	80	83	87	90	91	93	94	92	94	89.8	24	
20	91	91	92	94	95	94	94	94	93	91	86	82	80	77	74	71	71	73	73	74	75	76	76	75	95	83.0	24	
21	76	78	79	76	77	78	79	82	83	84	81	78	78	79	79	76	71	74	76	78	68	64	63	64	84	75.9	24	
22	64	65	67	68	69	72	74	77	78	78	77	78	75	72	71	70	67	62	63	75	84	87	87	85	87	73.5	24	
23	87	89	87	88	89	90	78	72	66	56	50	45	42	34	26	28	28	29	28	32	43	48	50	52	90	55.7	24	
24	57	61	62	63	63	63	65	65	62	57	50	47	43	40	35	33	32	34	39	42	49	47	51	57	65	50.7	24	
25	59	64	70	76	80	83	81	78	73	67	61	56	51	46	42	37	35	34	41	45	51	59	64	65	83	59.1	24	
26	62	61	60	61	63	65	65	66	65	61	56	50	43	40	39	34	31	34	35	40	50	58	61	61	66	52.5	24	
27	63	64	65	67	69	70	72	71	69	67	65	65	65	63	59	59	59	62	65	67	66	66	67	72	72	65.5	24	
28	69	71	73	75	76	77	79	79	80	79	77	78	80	75	72	73	72	75	75	75	75	75	77	78	80	75.6	24	
29	78	80	81	82	83	84	85	85	83	80	76	74	71	69	64	65	65	67	72	74	77	78	79	81	85	76.4	24	
30	82	84	87	88	88	87	87	87	85	80	75	69	65	61	67	71	72	72	73	76	77	79	81	84	88	78.2	24	
31	83	80	76	71	69	70	71	64	58	54	50	50	46	41	37	35	34	34	42	55	57	59	61	64	83	56.7	24	
HOURLY MAX	92	92	93	94	95	94	94	95	94	94	93	93	92	86	79	81	80	83	87	90	91	93	94	92				
HOURLY AVG	74.8	75.3	75.9	76.2	76.8	77.4	77.5	76.9	74.7	71.4	67.2	64.0	61.0	58.0	55.8	55.7	56.3	58.2	62.0	66.0	68.9	71.0	73.0	74.0				

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

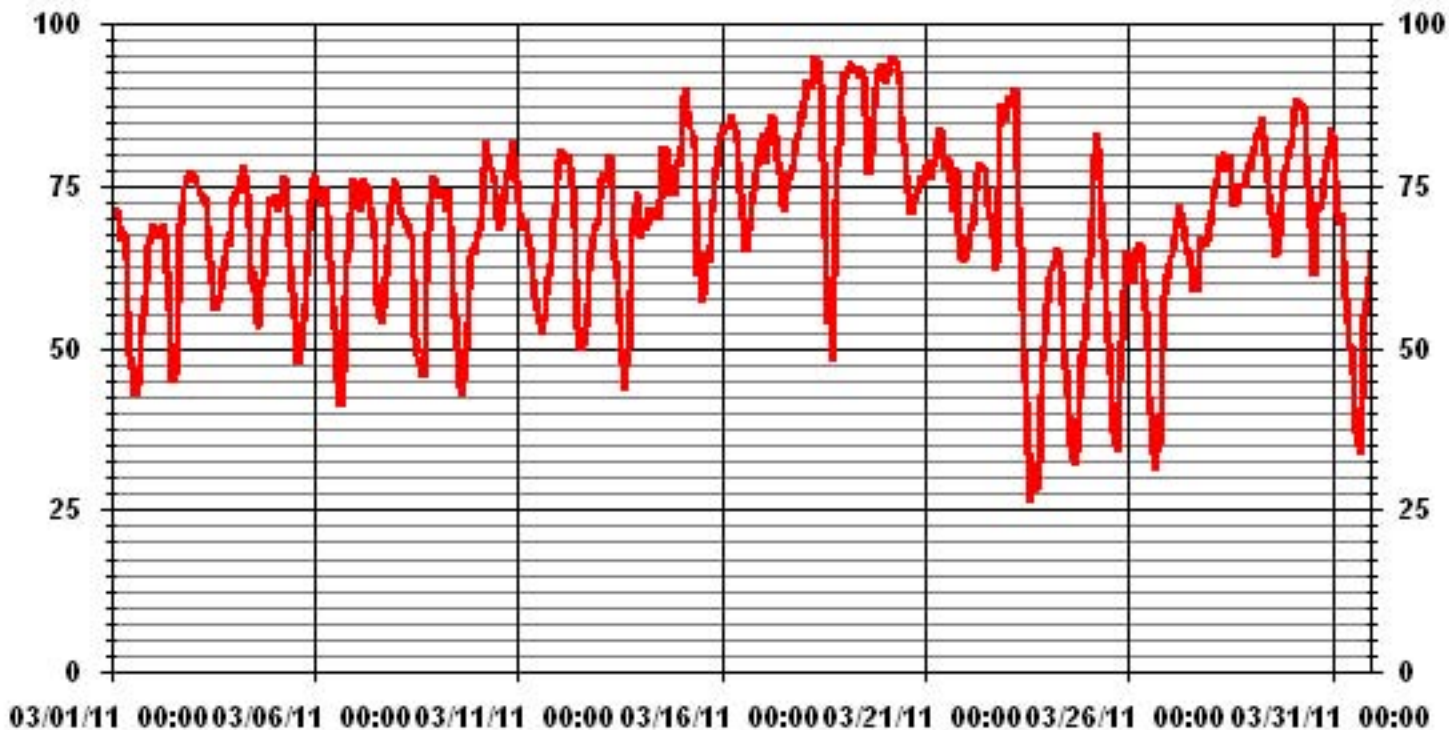
24 HOUR AVERAGES FOR MARCH 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	95	%	@ HOUR(S)	7, 4	ON DAY(S)	18, 20
MAXIMUM 24-HR AVERAGE:	89.8	%			ON DAY(S)	19
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	13.60		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	68.67	%	

01 Hour Averages



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

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

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.
HOURLY MAX	HOURLY AVG	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	
DAY																												
1		5.9	6.2	6.4	4.7	4.9	3	3.3	2.7	4.4	5.2	5.8	6.6	8.5	9.1	9.5	9	9.3	8	7.1	6.8	6.2	3.7	2.8	4.3	9.5	5.8	24
2		2.7	1	0.2	0.2	0.3	0.5	0.3	0.4	0.7	0.8	3.3	4.6	3.5	5.6	5.9	6	7.3	10	9.3	4.3	4.3	4	3.8	5.1	10	2.8	24
3		3.6	1.4	1	3.2	1.7	2	1.2	3.3	4.4	5.5	6	6.6	7.6	5	6.3	9.1	7.1	6	5.6	4.5	4.3	2.9	2.5	0.7	9.1	2.5	24
4		0.9	1.4	0.9	1.1	1.2	1.6	1.4	0.7	2	1.3	1.4	4.6	4.6	4.3	3.7	0.4	1.7	1.4	1.1	0.3	0.7	2.1	1.1	1.4	4.6	0.3	24
5		0.3	1.7	4.4	4.3	3.5	1.5	0.6	2.1	2.5	4	3.3	3.6	3.5	3.6	3.2	4.9	5.1	2.4	1.4	0.8	0.8	0.7	0.6	0.6	5.1	2.5	24
6		0.6	0.2	0.3	0.3	0.8	0.7	1.5	2.3	3	2.5	2.5	2.9	4.2	0.2	3	3.7	2.5	1	2	3.2	2.4	2	1	1.1	4.2	1.8	24
7		0.7	0.4	0.5	0.2	2.8	4.6	5	6.6	5.3	5.5	7	8	5.3	6.3	7.9	8.1	6.8	5	3.7	4.9	4.8	4.4	2.7	1.1	8.1	4.5	24
8		0.6	0.4	0.4	0.5	0.7	0.7	0.5	0.5	1.2	5	5	5.1	6	6.5	5.4	5.6	5.8	4.8	2.1	1.3	0.9	0.9	1.1	0.9	6.5	2.6	24
9		0.6	1.1	0.4	3.4	0.7	0.2	0.4	1.6	0.4	2.9	4.5	5.8	4.8	6.8	1.1	7.7	5.5	4.1	4.4	3.7	1.2	3.6	5.3	7.2	7.7	3.2	24
10		6.5	5.1	3.9	2.5	2.4	2.6	9.6	11.4	11.6	11.2	12.3	11.7	13.5	13.8	14.3	14.3	13.3	14	15.3	11.3	9.1	11.1	12.5	12.4	15.3	10.2	24
11		12.3	12.2	12.5	11.2	10.2	10.7	8.9	10.1	10.8	10.2	9	7.6	7.2	6.4	5	6.1	6.5	4.9	2.9	3.7	3.6	4.4	8.3	4.8	12.5	7.9	24
12		4	4	4.3	6.3	7.3	7.4	7.9	5.7	6.9	6.3	7.8	11.8	12.7	14.9	16	14.2	14.3	13.4	11.6	11.4	9.7	7.9	5.8	3.8	16.0	9.0	24
13		2.7	1.4	0.7	0.8	0.5	1.2	0.3	0.7	3	4.8	5.6	6	6.2	4.8	4.2	5.9	4.3	1.5	1.6	1.7	1.5	0.4	0.6	2.3	6.2	2.6	24
14		5.8	7.4	7.5	8.5	7.6	5.9	6.6	7.4	8	4	5.1	4.9	3.5	4.9	7.2	10.2	8.1	9.6	11.7	11.6	8.9	6.2	6	7.4	11.7	7.3	24
15		6	3.3	1.9	5	0.8	0.9	2.2	1.2	2	1.1	0.5	4.3	4.8	5.4	8.7	6.8	4.3	6.2	7.8	5.3	6.1	8.3	10.7	8.7	10.7	4.7	24
16		8.5	8.9	11.1	10.9	10.6	10.5	11.8	10.9	10.3	10	9.9	9	9.4	10.8	10.7	11.2	11	8	8.1	7.1	6.7	4.8	4.5	3	11.8	9.1	24
17		2.4	5.4	7	6.9	6.9	5.5	4.6	4.5	6.1	6.8	5.6	5.6	6.5	5.4	5.1	5.8	5.5	4.2	3.9	4	3.8	3.4	3.2	3.2	7.0	5.1	24
18		3.9	2.8	1.2	1.1	0.3	0.7	2	1.8	2.8	2.7	4.3	3.7	4.6	2.3	3.6	7.9	5.6	3.5	0.9	1.3	2.5	2.6	1.2	1.7	7.9	2.7	24
19		2.2	3.5	3	3	6.8	8.1	5.4	4.6	5.3	3.8	1.7	3.3	4.6	5.2	4.4	6.7	6.6	4.3	2.6	2	1.7	2.6	1.8	3.7	8.1	4.0	24
20		4	5.4	5.4	7.1	9	9.4	9.6	9.9	9.9	10.7	12.1	9.4	10.6	10.5	9.6	11	10.6	10.7	10.9	11.6	9.7	10.3	8.1	9.7	12.1	9.4	24
21		9.2	10.1	8.4	7.9	8.5	7.5	11.6	11.2	11.2	10.4	11.9	11.7	11.9	10.6	11.7	13.2	13.5	14.7	12.1	11.9	12	10.2	9.7	9.6	14.7	10.9	24
22		10.7	10.4	10.2	10.6	11.1	9.7	9.3	9	9.7	9.4	9.2	9.6	10.2	10.3	9.9	8.7	6.8	8.7	8.2	10.4	9.6	7.5	7.4	11.9	11.9	9.5	24
23		8.7	5	4	3.7	1.7	3.3	5.5	5.6	5.8	7.2	7.3	8.5	8	9	9.7	9.2	5.7	5.3	8.1	5.1	3.2	5.3	4.7	4.5	9.7	6.0	24
24		6.9	10.9	9.2	7.6	7.3	7.5	8.8	6.5	6.8	7.8	8.1	6.8	7.3	7.7	8	8.1	8.7	8.6	5.9	3.1	2	5.8	9.3	6	10.9	7.3	24
25		9.4	7.3	4.8	3.7	3.4	2.9	2.9	6.9	7.7	8.6	8.5	8.5	9.2	15.5	15.3	12.6	10.6	13	12.2	10	7.4	4.4	8	10.2	15.5	8.5	24
26		10.1	6.7	6.5	6.6	8.7	8.3	6.3	9	7.6	9.2	8.6	8.4	9.7	11.2	11.9	14	11.7	11.7	12.3	11.9	14.4	13.8	13.2	12.6	14.4	10.2	24
27		8.9	9.3	8.3	7.3	6.4	7.7	7.7	8.4	8.3	8.3	9	9.8	10.4	9.6	14.3	15.9	12.9	13	11.6	9.3	12.3	11.2	9	9.8	15.9	9.9	24
28		8.9	9.9	11.2	9.4	7.8	8.2	6.3	6.5	9.5	10.6	11.5	12.2	12.9	12.5	12.1	11.6	10	9.7	7.7	9.7	8.1	8.6	6.7	6.5	12.9	9.5	24
29		6.9	8.6	9	8.4	8.6	9.6	9.8	10.1	10.4	9	8.4	9.9	8.5	6.8	4.7	7.8	7	7	7.8	7.7	7.8	7.7	7	6.3	10.4	8.1	24
30		6	5.7	5.2	6.5	7.1	8	8	7.2	9.6	11.4	11.7	9.9	9.5	8.9	9.3	8.9	8.5	7.2	6.2	6.3	5.7	4.5	3.6	4.2	11.7	7.5	24
31		5.4	8.4	7.1	7.4	8.2	7.9	4.9	6.7	7.2	8.8	13.3	12.8	12.6	15.4	13.3	13.1	12.7	12.2	9.3	6.3	6.3	6.4	7.5	7.4	15.4	9.2	24
HOURLY MAX		12.3	12.2	12.5	11.2	11.1	10.7	11.8	11.4	11.6	11.4	13.3	12.8	13.5	15.5	16.0	15.9	14.3	14.7	15.3	11.9	14.4	13.8	13.2	12.6			
HOURLY AVG		5.3	5.3	5.1	5.2	5.1	5.1	5.3	5.7	6.3	6.6	7.1	7.5	7.8	8.0	8.2	9.0	8.0	7.6	6.9	6.2	5.7	5.5	5.6				

STATUS FLAG CODES

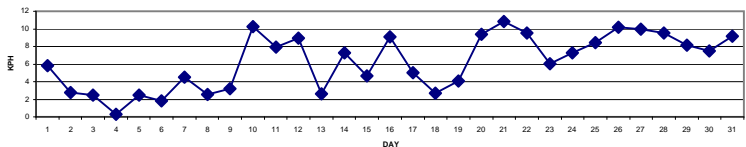
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: November 23, 2010

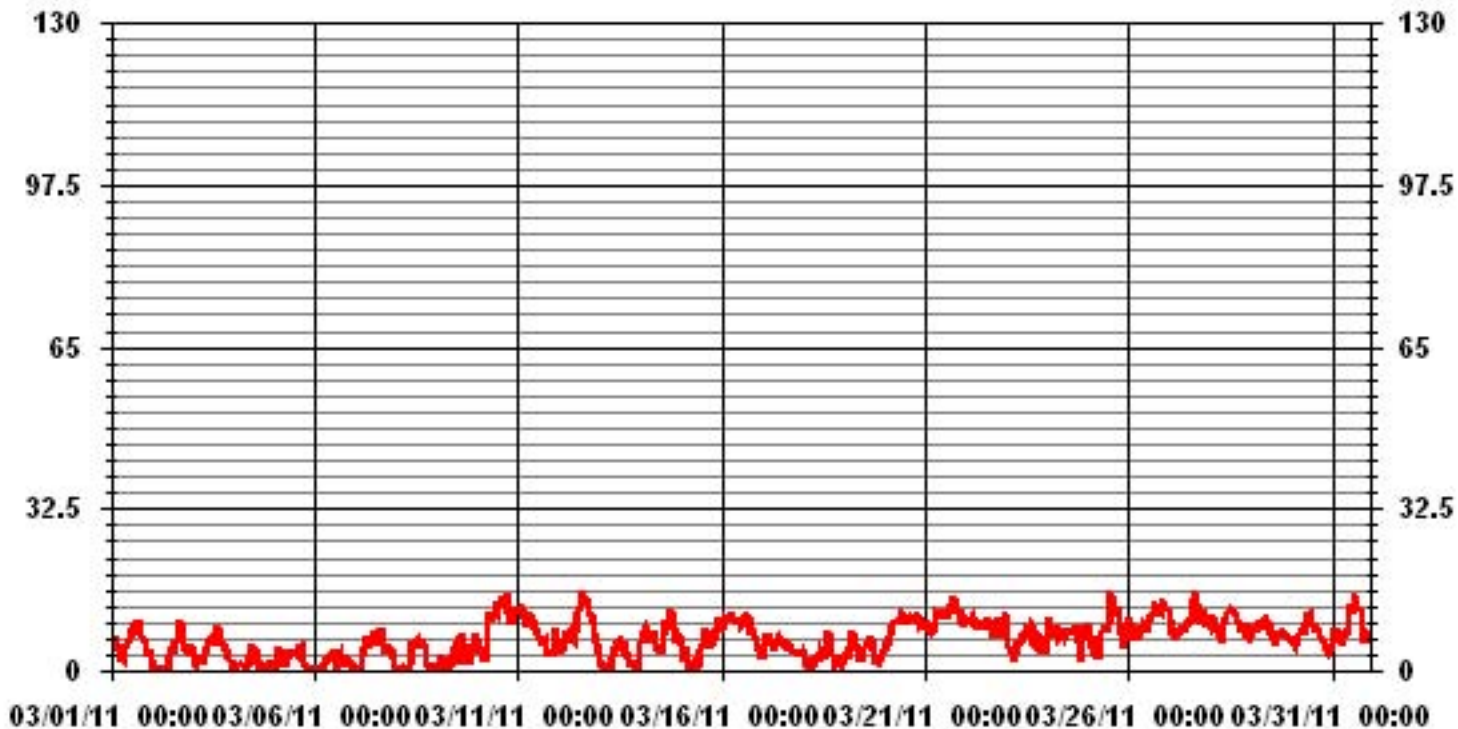
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	16.0	KPH	@ HOUR(S)	14	ON DAY(S)	12
MAXIMUM 24-HR AVERAGE:	10.9	KPH			ON DAY(S)	21
CALMS (≤ 0 KPH)	1.88	%	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	3.73		MONTHLY AVERAGE:	6.40	KPH	

24 HOUR AVERAGES FOR MARCH 2011



01 Hour Averages



— LICA WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	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		7.9	7.8	9.3	7	7	5.8	6.5	6.1	7.3	8.2	8.4	10.1	13.4	15.3	14.9	14.1	14.6	12.6	10.6	10.1	8	7.3	4.9	6.5	15.3	
2		4.7	4.8	2.5	1.5	2.3	4.7	1.4	7.3	3.2	4.1	5.1	7.2	7.2	10.1	9.5	9.7	11.8	15.2	14.4	10.5	8.6	6.8	6.9	8.7	15.2	
3		10.1	4.9	4	6.6	3.7	3.2	4.4	7.2	8	8.2	8.5	13.3	12.7	12.3	11.4	13.8	10.5	10.7	8.7	7.3	6.5	5.1	4.4	3.5	13.8	
4		2.2	3.3	2.8	1.9	3.3	3.2	3.1	2.2	3.7	3.8	6.3	8.3	8.9	8.9	8.1	5.6	4	4.6	4	3.3	4.2	4.6	5.1	3.3	8.9	
5		4	4.4	7.6	7.2	6.2	5.7	2.3	4.6	4.9	6.9	6.2	6.9	7.5	9	8.1	9.1	8	5.3	5.1	2	3.7	3.4	4	2.8	9.1	
6		12	2.1	1.8	3.1	3.8	2.4	5.3	4	5.7	5.1	5.2	5.1	9.9	6.7	7.6	8.5	6.6	6	7.2	8.2	5.2	3.4	3.4	2.3	12	
7		2.4	2.4	2.5	2.8	7.2	7.6	7.9	9.3	8	8.2	10.8	11.9	12.3	12.4	13.7	11.3	10.3	8.8	6.2	6.9	7.6	7	6.5	4.3	13.7	
8		2.5	2	3.1	6.7	2.5	3.7	2.7	7.5	4.9	7.8	9.5	8.3	9.5	10.1	8.7	8.5	10.8	6.9	3.6	2.5	2.5	2.6	2.8	3	10.8	
9		2.3	3.1	2.5	22.7	3.5	3	3.8	4.4	6.9	6.1	9.6	10.7	8.2	9.9	10.7	11.7	8.4	6.6	7.9	7.3	4.3	10.9	9.4	11.8	22.7	
10		10.5	8.2	9.1	6.9	5.7	14.2	14.9	17.9	15.9	16.4	18.1	18.1	19.1	22.1	20.9	20.2	22.1	20	21.2	23.4	13.5	17.6	20	17.2	23.4	
11		19.1	22	18.4	15.9	14.5	15.4	13.7	14.9	17.1	16.3	13.2	12.2	12	10.9	8.8	11.2	11.2	10.4	5	6.7	5.4	9.5	13.6	10	22	
12		5.9	6	7	8.8	9.4	11	10.4	8.7	12.9	10.5	13.5	16.3	19.6	21.5	22.2	19.1	19.6	20.4	18.1	18.1	15	11.7	10.7	6.4	22.2	
13		5.8	3.4	3.2	1.7	3.9	3.3	2.9	3.7	5.9	8.8	9.1	9	11.1	7.8	6.5	9	8.1	4.8	4.6	4	3.1	2.5	3.2	4.1	11.1	
14		11	11.3	12.9	12.9	13.3	13.7	12.3	11.6	13.1	8.5	9	8.3	8.3	9	11.9	14.9	11.2	13.8	17.6	20.2	14.5	11.7	11.3	12.4	20.2	
15		9.7	6.6	4.9	9.7	3.1	4.4	6.3	4.9	5.4	5.3	4.5	7.5	8.4	9.2	13.5	11.4	9	10.9	12.3	8.7	10.8	12.7	15.1	13.2	15.1	
16		13.7	14.1	14.6	15.2	15.9	14.3	16.4	16.3	14.9	14.7	14.5	13.1	14.4	15.1	16.4	17.1	15.1	12.2	11.1	11.7	10.5	8.6	7.8	5.4	17.1	
17		4.4	9.3	11.3	11.1	11.5	9.9	7.6	7.7	10.3	10.2	9	8.9	9.6	8.7	9.3	9.2	9.2	8.7	10.3	7.5	6.6	7.6	5.9	5.3	11.5	
18		5.9	7.3	2.5	2.1	2.6	2.4	3.8	5	5.6	5.4	7.6	7.4	8	6.2	9.8	10.8	8.7	6.2	3.2	2.5	6.4	6.5	3.4	2.9	10.8	
19		3.9	5.2	4.4	5.1	9.7	11.5	8.9	7.6	9.2	7.3	4.3	10.5	8.4	10.4	9.1	11.2	10.1	8.2	3.9	3.3	3.1	4.1	3.9	5.7	11.5	
20		7.3	7.4	9.1	10.9	14.1	15.6	11.9	15.7	15.2	17	17.1	13.9	14.1	15	14.3	15.9	17.4	16	16.3	17.2	16.2	15.2	15.7	14.1	17.4	
21		14.2	17	17.8	13.6	12.5	15.8	16.7	16.9	17.2	15.3	21.1	18.7	18.1	18	17.8	19.8	24.3	22.2	18	19.3	20.9	14.9	14.3	16.5	24.3	
22		17	15.6	16	20.3	17.1	16.5	15.4	14.6	14.6	17.7	13	15.7	15.4	15.3	15.8	15.6	10.9	13.7	15.6	15.4	17	12.1	14.1	15.4	20.3	
23		12.8	10.3	6.4	6.6	3.4	6.2	8.3	9.5	9.6	12.5	13.8	13.8	11.7	15	14.4	14.9	9.2	10.1	12.3	7.5	6.2	12	6.8	7.2	15	
24		10.2	15.7	12.1	12.5	10.6	11	12.7	10.9	12.4	13.3	13.9	10.6	12	12.7	14.7	13.1	15	14.3	9.1	5.3	3.9	9.7	13.4	9.3	15.7	
25		14.2	12.7	6.7	5.5	6.2	5.6	6.5	13.1	12.3	14.3	14.9	13.6	16.7	22.3	22.7	20.3	16.7	20.9	21.2	15.5	10.8	9.6	13	15.7	22.7	
26		16.8	12.5	12.3	9.4	13.4	13.4	10.3	13.1	13.5	15.1	14.5	12.9	13.3	18.9	23.1	23.8	20.5	18.7	18.3	16.5	20.3	21.3	19.8	17.5	23.8	
27		16.2	13.3	13.3	12.6	10.5	12.5	13.1	12.6	13.3	15.2	14.7	19.9	21.1	17.1	23	22.4	18	19.6	19.3	15	17.7	14.8	14.6	14.9	23	
28		16.2	15.1	16.5	12.7	11.8	13.8	10.2	10.4	14.1	16.2	16.1	17.2	16.7	17.8	18.3	16.5	13.9	12.8	10.9	13.2	12.5	13.5	10.3	12.5	18.3	
29		10.7	12.6	13.1	11.5	10.9	12.2	13.8	14.3	14	11.5	11.7	13.6	11.8	11.3	10.7	12.9	9.8	10.8	11.4	11.8	11.4	10.5	12.7	10.4	14.3	
30		8.9	10.5	10.1	9.3	9.8	10.5	11	12.7	14.5	17	18	13.5	14.8	12.5	17.5	14.9	12.5	11.9	11.1	10.6	11.2	7.1	6.8	7.8	18	
31		8.4	11.9	10.9	10.7	10.6	11.9	8.9	11.7	13.7	13.5	18	19.3	18.4	24.6	19	19	21.7	16.9	14.2	10.1	10.4	8.8	10.6	10.4	24.6	
PEAK		19.1	22.0	18.4	22.7	17.1	16.5	16.7	17.9	17.2	17.7	21.1	19.9	21.1	24.6	23.1	23.8	24.3	22.2	21.2	23.4	20.9	21.3	20.0	17.5		

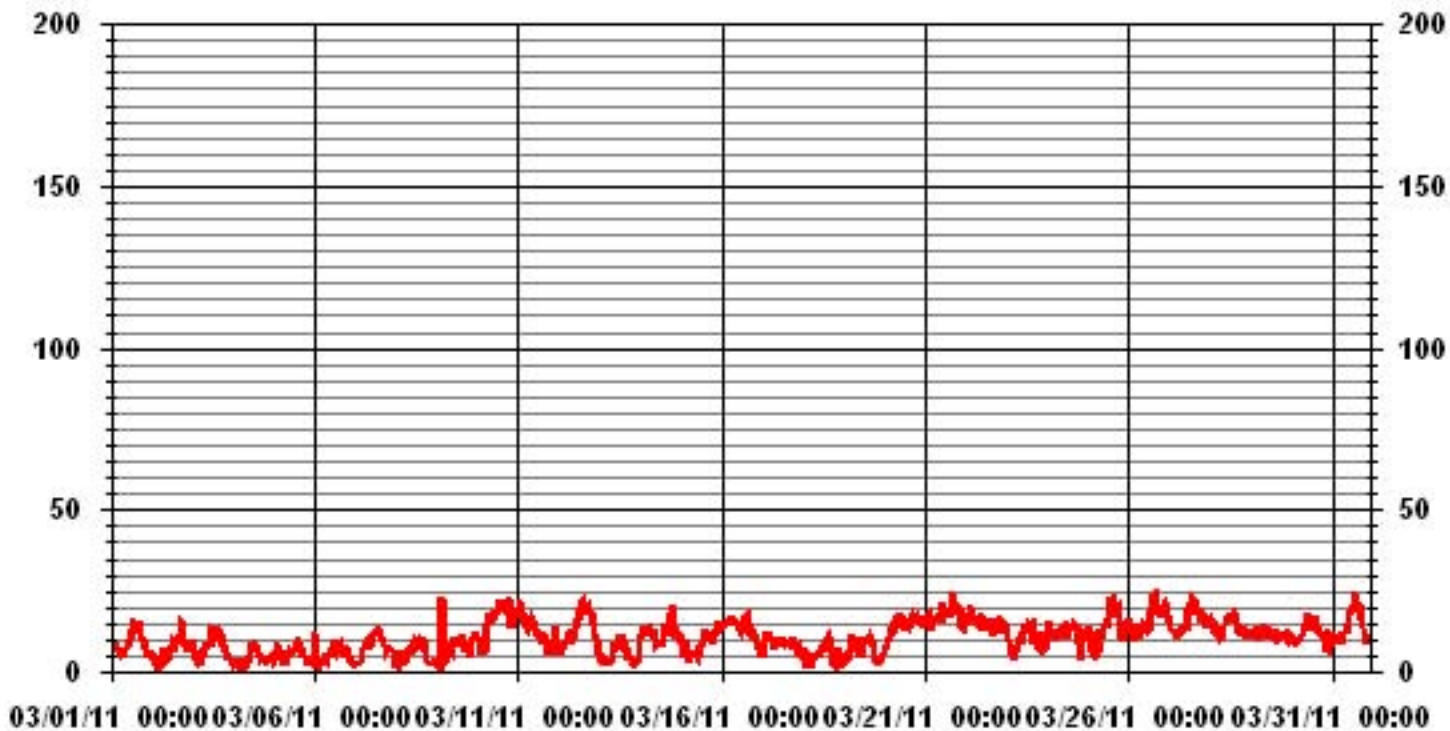
STATUS FLAG CODES

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	24.6	KPH	@ HOUR(S)	13
			ON DAY(S)	31

01 Hour Averages



— LICA WSMAX KPH

LICA
WSP / WD Joint Frequency Distribution (Percent)

March 2011

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	.94	2.01	4.70	3.62	5.37	4.56	4.56	1.74	1.34	1.47	4.16	4.97	2.01	.94	.80	1.07	44.35
< 12.0	.26	2.82	6.18	.26	9.27	6.18	13.57	.00	.00	.00	2.82	2.28	.94	.80	1.07	.13	46.63
< 20.0	.00	1.20	.67	.00	.53	.13	3.49	.00	.00	.00	.13	.53	.40	.00	.00	.00	7.12
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.20	6.04	11.55	3.89	15.18	10.88	21.63	1.74	1.34	1.47	7.12	7.79	3.36	1.74	1.88	1.20	

Calm : 1.88 %

Total # Operational Hours : 744

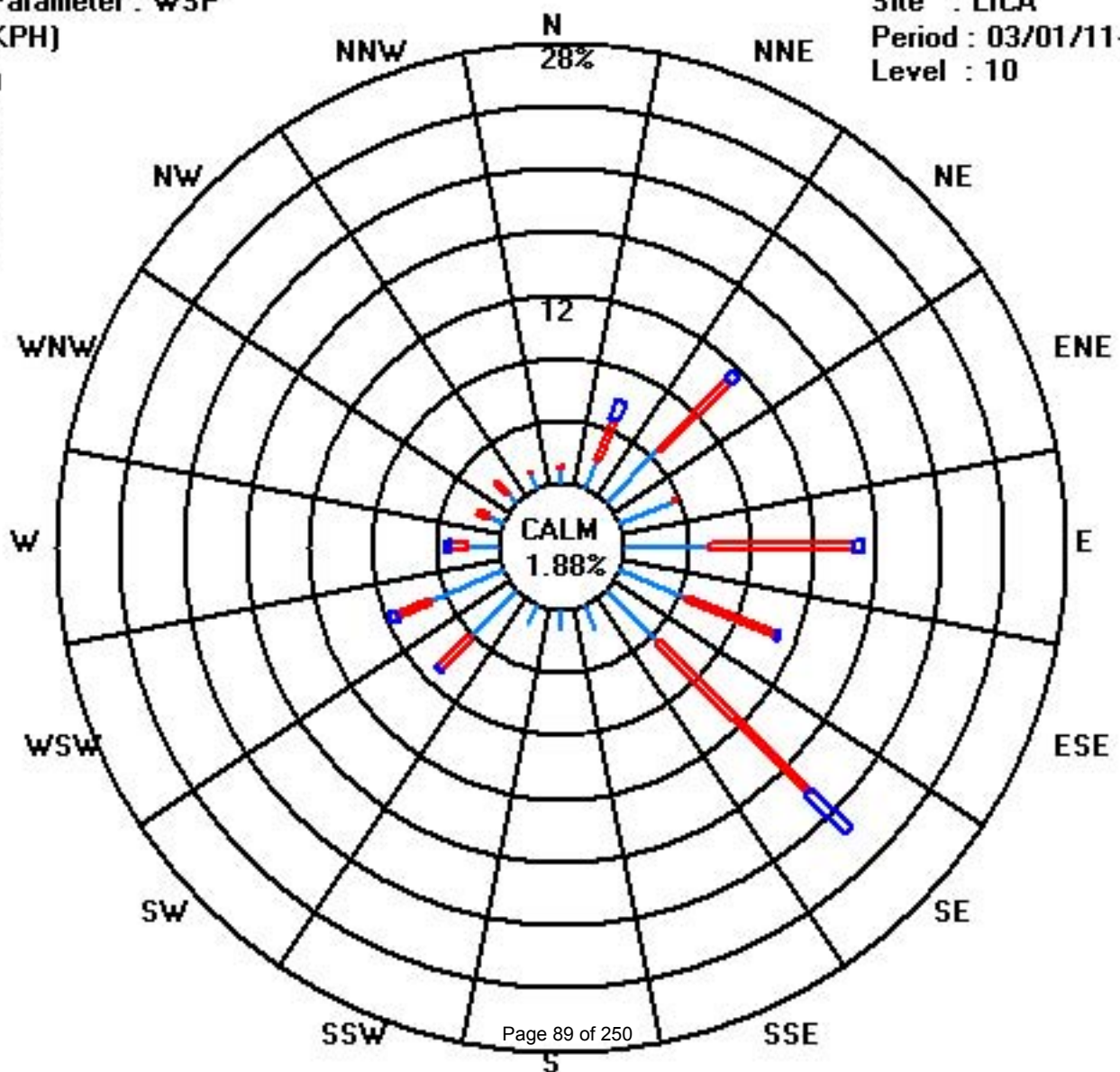
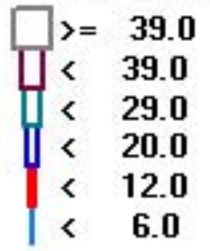
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	7	15	35	27	40	34	34	13	10	11	31	37	15	7	6	8	330
< 12.0	2	21	46	2	69	46	101				21	17	7	6	8	1	347
< 20.0		9	5		4	1	26				1	4	3				53
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	9	45	86	29	113	81	161	13	10	11	53	58	25	13	14	9	

Calm : 1.88 %

Total # Operational Hours : 744

Class Limits (KPH)



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

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	QUADRANT	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUADRANT	RDGS.	
DAY																												
1	265	264	261	244	250	249	249	230	242	243	236	232	226	227	222	226	228	227	232	239	244	237	224	230	237	237	SW	24
2	225	197	159	29	255	238	243	70	243	339	83	42	78	39	41	37	81	81	83	114	77	66	68	84	70	ENE	24	
3	96	150	75	119	87	140	238	271	265	239	233	260	275	291	299	306	321	331	317	325	345	339	352	18	296	WNW	24	
4	44	342	13	24	21	31	27	57	41	64	288	260	249	229	237	319	85	235	225	209	114	127	191	121	256	WSW	24	
5	201	105	99	97	97	136	67	91	86	54	56	40	78	12	350	8	52	36	328	247	265	204	190	253	60	ENE	24	
6	55	25	227	35	8	2	56	58	56	73	95	49	78	264	309	304	5	199	221	200	201	134	125	106	61	ENE	24	
7	72	110	61	30	128	131	122	135	135	129	131	134	190	220	246	257	251	240	215	218	215	215	222	175	187	S	24	
8	114	162	244	229	232	232	200	226	277	252	262	258	248	268	250	257	233	224	200	189	216	202	140	155	243	WSW	24	
9	116	142	272	223	74	181	82	97	161	119	120	110	90	130	339	251	250	263	243	239	17	84	81	95	140	SE	24	
10	93	72	66	79	9	34	14	22	30	37	39	27	19	19	28	28	34	37	43	37	15	16	18	13	30	NNE	24	
11	12	19	13	13	16	9	15	12	8	12	23	43	55	53	54	49	53	59	18	42	29	84	130	125	30	NNE	24	
12	126	120	125	127	132	134	132	126	125	117	124	134	135	132	132	131	133	133	128	128	128	129	123	113	129	SE	24	
13	100	86	84	48	92	239	166	215	274	264	263	293	263	252	266	239	228	175	121	47	64	20	339	48	260	WSW	24	
14	82	81	83	79	81	71	83	86	87	93	73	94	65	304	274	283	282	285	304	305	311	312	310	303	2	N	24	
15	317	298	238	240	242	233	253	147	282	251	101	66	56	38	30	39	50	41	44	43	36	38	42	39	31	NNE	24	
16	36	39	44	42	42	39	44	45	38	41	42	29	24	25	30	34	41	32	38	36	28	32	27	41	37	NE	24	
17	54	94	121	129	129	114	111	119	123	131	134	136	127	125	92	94	130	172	206	206	183	200	157	151	131	SE	24	
18	137	135	112	79	25	174	216	254	287	284	233	263	291	330	267	257	244	239	179	94	115	140	133	87	238	SW	24	
19	119	129	122	124	135	136	136	134	134	131	68	110	147	138	46	28	19	38	32	38	39	21	50	43	96	E	24	
20	38	42	40	39	39	45	41	48	49	47	53	47	37	39	38	40	36	42	50	55	62	60	79	87	48	NE	24	
21	91	91	100	95	81	82	85	83	86	87	89	94	91	88	95	96	96	94	96	99	115	109	103	98	94	E	24	
22	97	93	97	99	97	98	98	94	92	93	88	96	92	86	86	88	97	111	115	117	120	115	118	129	101	E	24	
23	126	122	95	86	64	69	91	92	97	110	105	111	107	123	139	141	151	147	140	130	101	123	113	117	117	ESE	24	
24	127	132	132	124	118	100	96	102	91	94	93	91	92	109	96	101	108	90	80	102	112	133	137	134	109	ESE	24	
25	138	136	125	118	109	114	94	115	106	104	113	104	113	136	136	137	136	126	130	134	134	135	129	126	126	SE	24	
26	129	124	112	105	96	91	97	90	97	112	98	108	109	113	115	127	118	119	127	128	129	131	130	127	116	ESE	24	
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31	241	240	241	246	245	245	224	225	238	239	247	237	230	250	260	262	260	257	244	234	233	233	235	245	244	WSW	24	
HOURLY AVG	317	342	272	246	255	249	253	271	287	339	288	293	291	330	350	319	321	331	328	325	345	339	352	303				

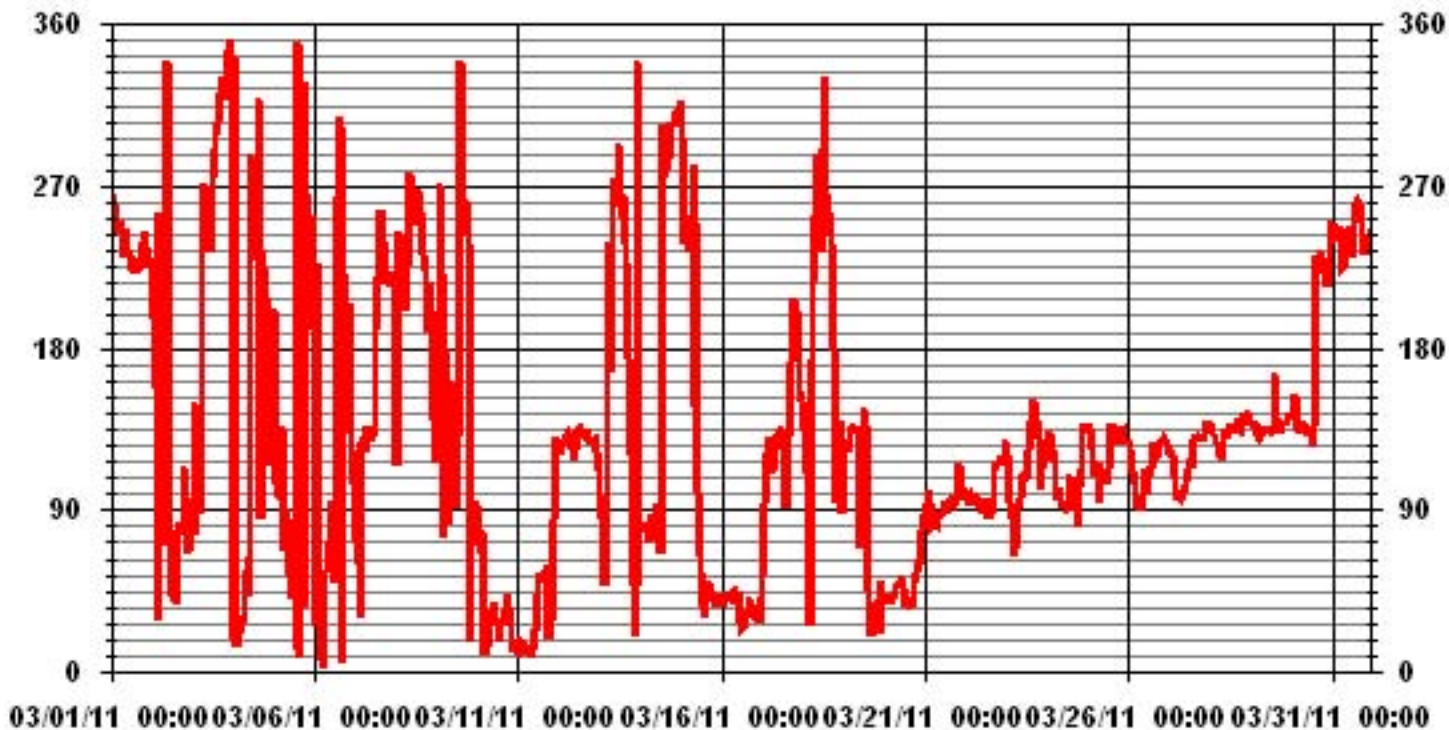
STATUS FLAG CODES

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:	November 23, 2010
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION	80.36		AMD OPERATION UPTIME	100.0	%
			MONTHLY AVERAGE	106	DEG

01 Hour Averages



— LICA WDR DEG

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MARCH 2011

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	31	26	25	18	26	34	36	40	27	23	23	21	20	21	21	19	17	17	17	14	19	17	15	
2	24	61	67	73	56	61	71	51	50	41	34	21	35	21	20	18	23	17	19	23	23	21	20	21
3	27	26	41	24	30	22	30	26	23	18	19	27	26	40	27	17	16	18	12	13	18	19	26	57
4	30	24	51	23	36	25	29	38	20	42	46	27	30	40	44	64	39	34	25	39	58	27	40	28
5	66	31	24	24	27	34	57	37	31	24	28	29	36	39	51	30	20	23	24	44	57	47	39	49
6	57	58	71	59	45	59	42	34	23	33	37	27	30	55	38	36	30	56	26	25	35	24	47	35
7	37	56	55	71	31	18	19	14	15	18	13	19	40	33	27	17	17	15	18	16	21	19	48	44
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13	26	32	41	40	43	49	62	41	26	20	23	30	24	25	26	21	25	37	27	53	35	52	48	29
14	18	18	19	17	21	26	18	20	20	24	19	23	42	23	22	17	19	18	13	13	13	12	16	13
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22	20	20	21	21	21	21	20	22	20	21	21	21	21	20	19	20	21	23	21	21	20	22	20	13
23	16	20	19	19	31	14	16	20	21	21	23	23	23	24	23	24	31	26	19	20	24	20	18	18
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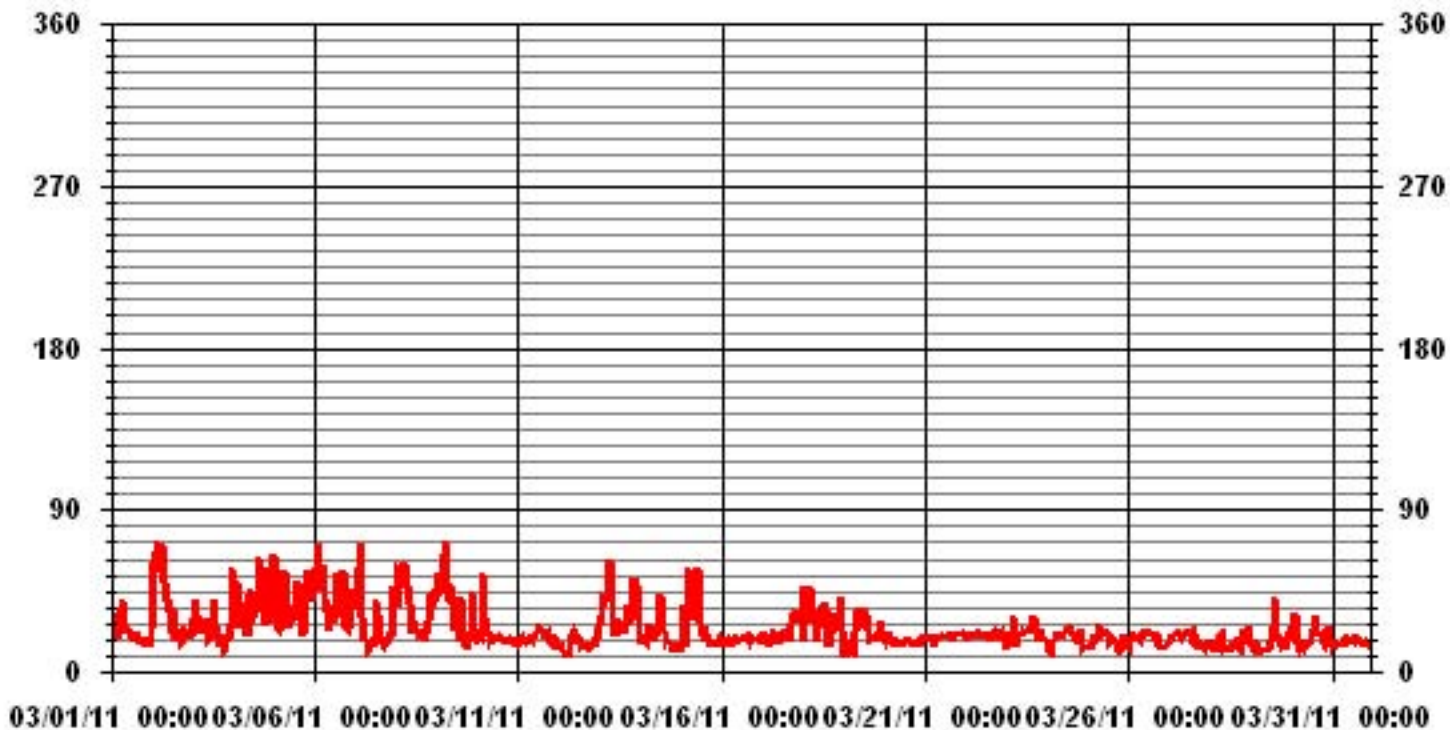
STATUS FLAG CODES

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: November 8, 2010

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS

01 Hour Averages



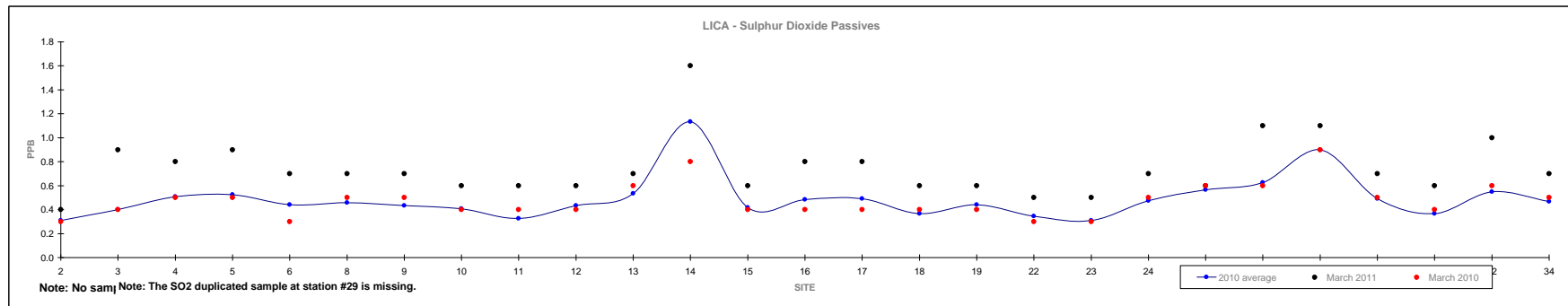
— LICA STDWDIR DEG

Non-Continuous Monitoring

Passive Summary Results for March 2011

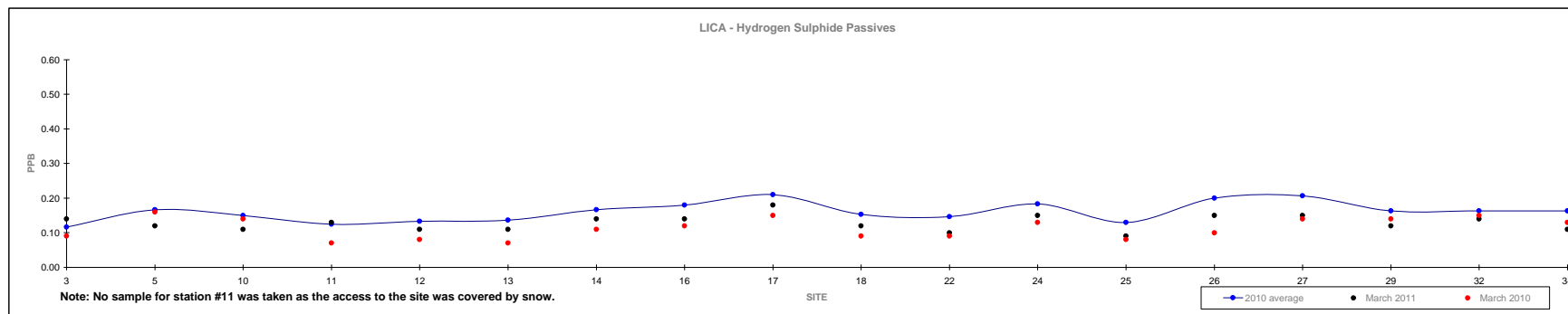
Lakeland Industry & Community Association

	Sulphur Dioxide ppb																												March 2011	Site
	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	25	26	27	28	29	32	34	Reading		
Mean	0.3	0.4	0.5	0.5	0.4	0.5	0.4	0.4	0.3	0.4	0.5	1.1	0.4	0.5	0.5	0.4	0.4	0.3	0.3	0.5	0.6	0.6	0.9	0.5	0.4	0.6	0.5	0.7	-	
Minimum	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.2	0.2	0.1	0.1	0.4	#2	
Maximum	0.7	0.8	1.2	1.1	1.1	0.9	0.8	0.8	0.8	1.0	1.0	2.3	0.9	1.0	1.3	0.9	1.0	0.7	0.7	1.1	1.1	1.3	1.5	0.8	0.7	1.2	1.0	1.6	#14	



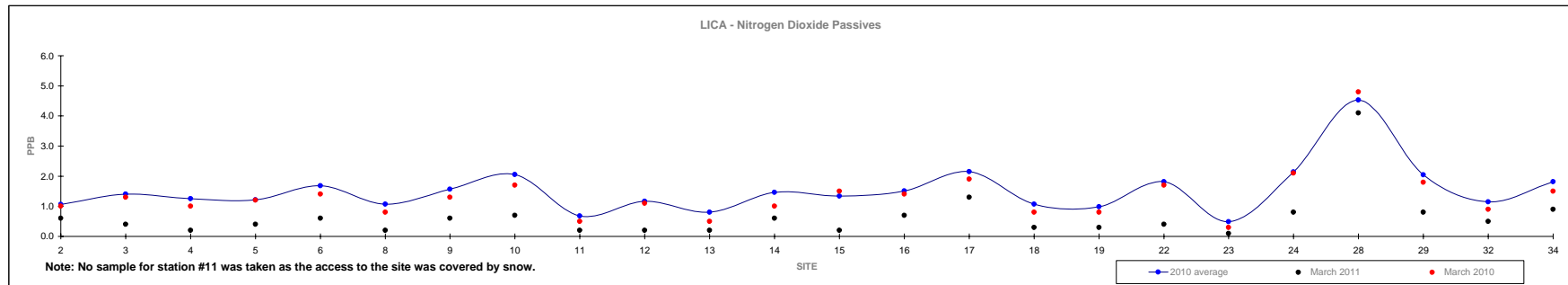
Passive Summary Results for March 2011 Lakeland Industry & Community Association

	Hydrogen Sulphide ppb																	March 2011		
	3	5	10	11	12	13	14	16	17	18	22	24	25	26	27	29	32	34	Reading	Site
Mean	0.13	0.26	0.15	0.08	0.10	0.09	0.14	0.13	0.17	0.11	0.11	0.14	0.08	0.12	0.21	0.13	0.14	0.15	0.13	-
Minimum	0.05	0.10	0.08	0.03	0.05	0.03	0.08	0.04	0.09	0.04	0.02	0.07	0.05	0.07	0.07	0.06	0.08	0.10	0.09	#25
Maximum	0.21	0.47	0.22	0.18	0.24	0.16	0.20	0.24	0.27	0.20	0.19	0.23	0.16	0.20	0.55	0.20	0.19	0.21	0.18	#17



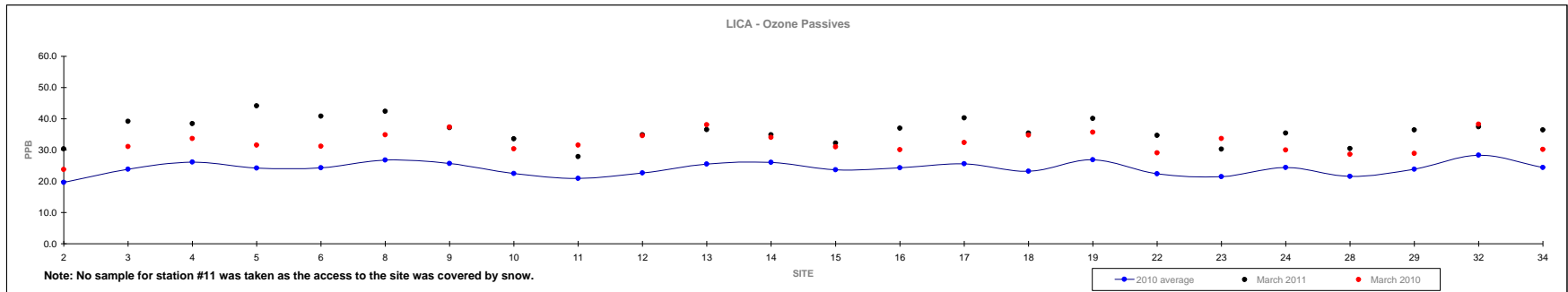
Passive Summary Results for March 2011 Lakeland Industry & Community Association

	Nitrogen Dioxide ppb																								March 2011	
	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	28	29	32	34	Reading	Site
Mean	1.1	1.4	1.3	1.2	1.7	1.1	1.6	2.1	0.7	1.2	0.8	1.5	1.3	1.5	2.2	1.1	1.0	1.8	0.5	2.1	4.5	2.0	1.2	1.8	0.6	-
Minimum	0.3	0.5	0.4	0.3	0.7	0.3	0.6	0.7	0.2	0.4	0.2	0.4	0.4	0.4	0.9	0.3	0.3	0.5	0.1	0.6	1.6	0.5	0.3	0.6	<0.1	#23
Maximum	2.8	3.5	3.1	2.8	3.4	2.8	3.7	3.9	1.5	2.8	1.7	3.4	2.6	3.2	4.5	2.3	2.3	4.4	1.1	4.5	9.6	6.0	3.0	4.6	4.1	#28



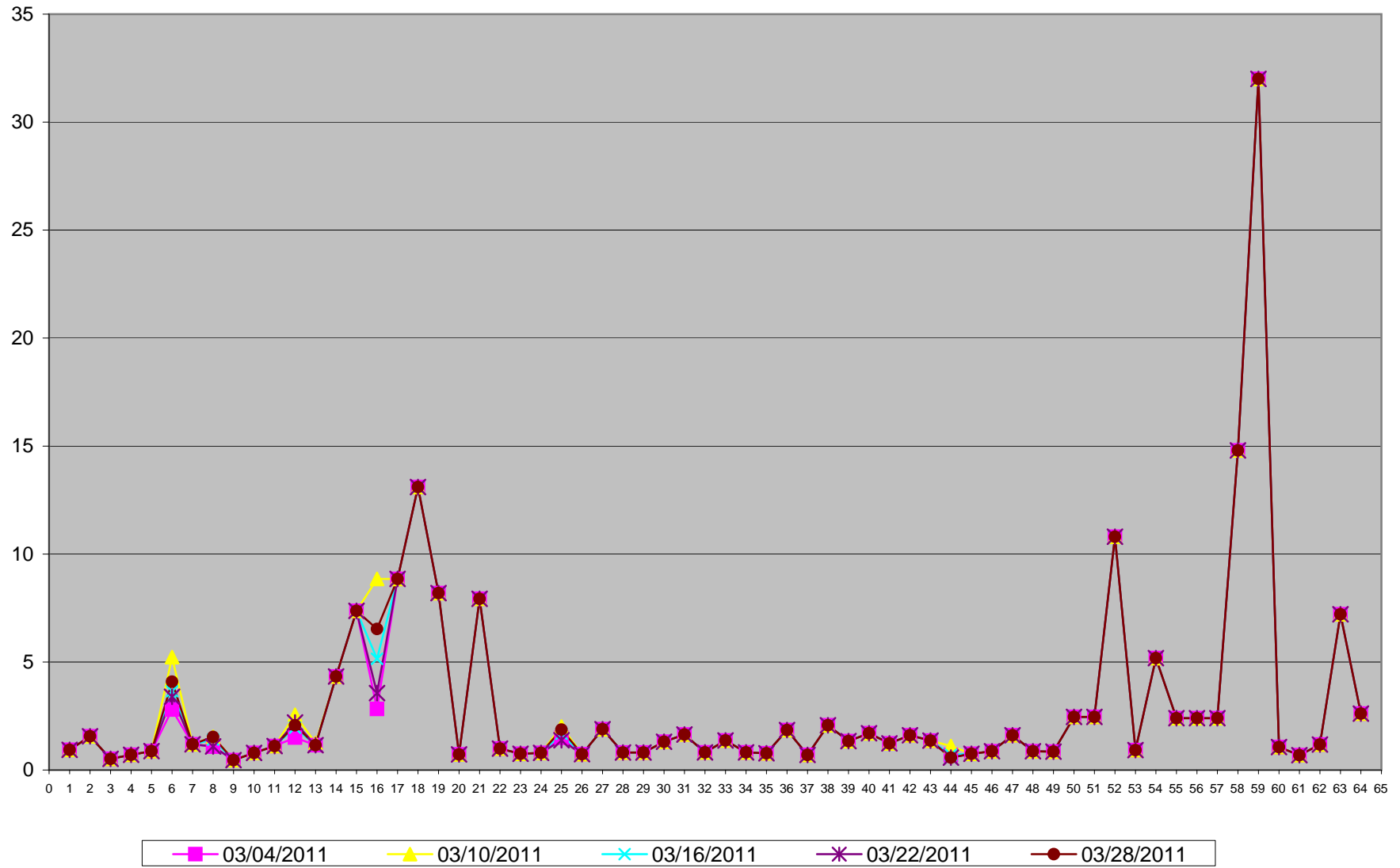
Passive Summary Results for March 2011 Lakeland Industry & Community Association

	Ozone ppb																												March 2011	Site
	2	3	4	5	6	8	9	10	11	12	2010 13	14	15	16	17	18	19	22	23	24	28	29	32	34	Reading					
Mean	19.7	23.8	26.2	24.3	24.3	26.8	25.7	22.4	20.9	22.7	25.5	26.0	23.7	24.3	25.6	23.2	26.8	22.3	21.5	24.4	21.5	23.9	28.4	24.4	36.1	-				
Minimum	12.1	15.3	17.1	15.6	15.2	16.5	15.6	13.6	12.6	13.7	16.4	18.1	14.7	17.4	16.5	14.5	18.1	15.3	12.8	16.2	14.9	16.9	20.5	17.3	27.9	#11				
Maximum	31.3	35.5	41.0	36.8	38.2	40.4	39.3	34.7	33.3	34.6	39.4	35.6	35.2	37.3	39.7	34.8	37.5	33.7	35.1	39.3	31.1	36.6	39.2	34.7	44.1	#5				



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	Ethylbenzene
15	2-Propanol	47	p+m-Xylene
16	2-Propanone	48	o-Xylene
17	Methyl 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)

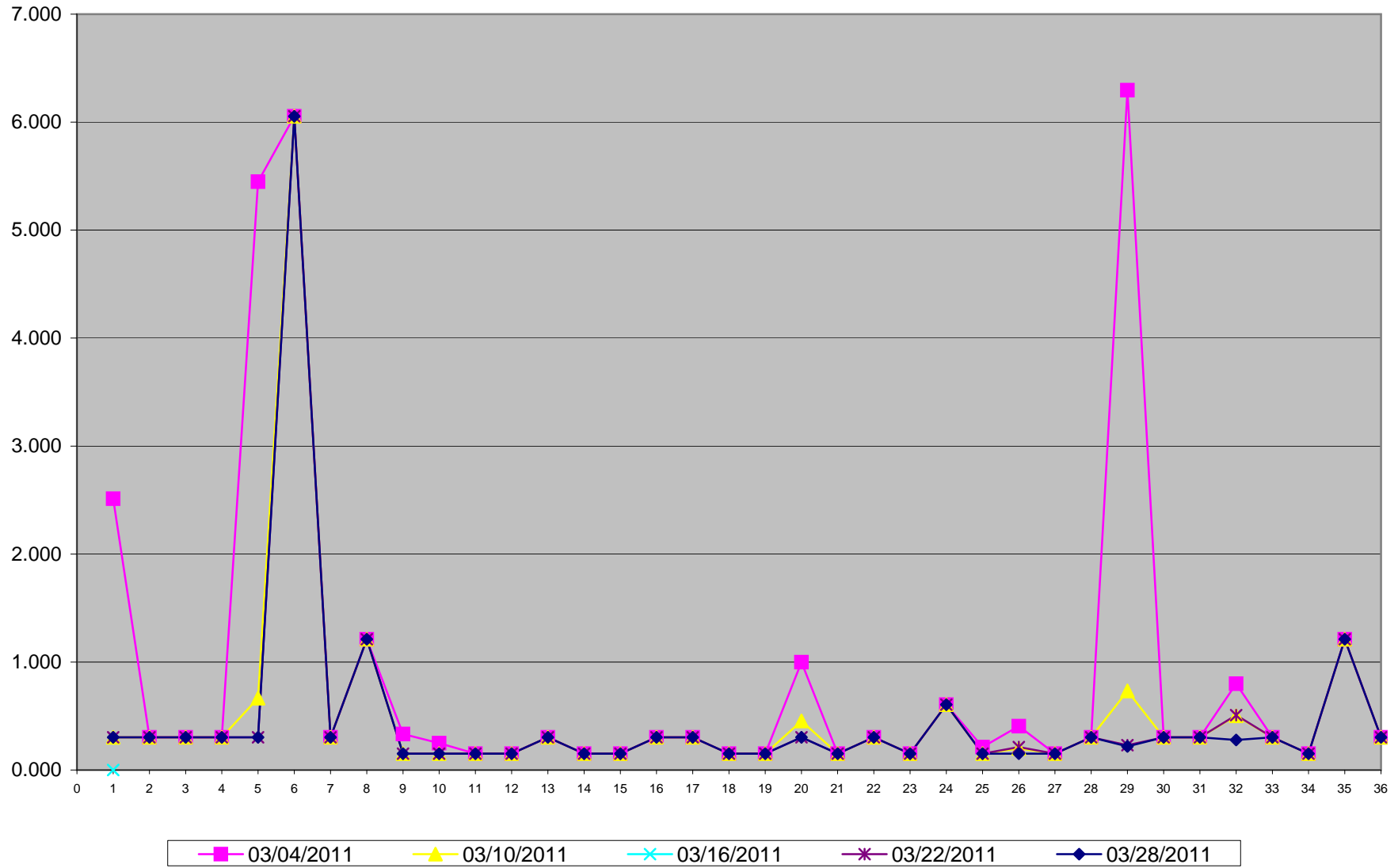
Polycyclic Aromatic Hydrocarbons

Polycyclic Aromatic Hydrocarbons (PAHs) Results for March 2011
LICA- Cold Lake South Site
Unit: ng/m3

PAHs	03/04/2011	03/10/2011	03/16/2011	03/22/2011	03/28/2011
Sample Volume (unit: m3)	330.35	330.35	330.32	330.34	330.35
1 1-Methylnaphthalene	2.512	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-Methylantracene	0.303	0.303	0.303	0.303	0.303
5 2-Methylnaphthalene	5.449	0.666	0.636	0.303	0.303
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-Dimethylantracene	1.211	1.211	1.211	1.211	1.211
9 Acenaphthene	0.333	0.151	0.151	0.151	0.151
10 Acenaphthylene	0.248	0.151	0.212	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	0.999	0.454	0.333	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	0.212	0.151	0.151	0.151	0.151
26 Fluorene	0.406	0.200	0.230	0.212	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	6.296	0.733	0.551	0.230	0.218
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	0.799	0.502	0.448	0.509	0.278
33 p-Terphenyl	0.303	0.303	0.303	0.303	0.303
34 Pyrene	0.151	0.151	0.151	0.151	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.

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,l)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	March 4, 2011	Previous Calibration	February 7, 2011
Company	Lakeland Community and Industry Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	13:55	End Time (MST)	17:05
Reason:	Monthly Calibration		
Barometric Pressure	0.958 atm	Station Temperature	22 Deg C
Cal Gas	51.4 ppm	Cal Gas Expiry date	5/8/2012
DAS Output Voltage	0 - 1 Volts		

Equipment Information

Analyzer Make / Model:	Thermon 43i	S/N :	806528242	Method:	UV absorbtion
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		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 500 ppb		
Sample Flow / Box Temp	456 ccm, 28.4 Deg C	459 ccm, 29.4 Deg C	
HVPS / Lamp Setting	-631, 754	-631, 756	
PMT / RxCell Temp	OK Deg C, 45.0 Deg C	OK Deg C, 45.0 Deg C	
Converter / IZS Temp	NA Deg C, 45.0 Deg C	NA Deg C, 45.0 Deg C	
Offset / Slope	5.4, 1.033	5.4, 1.033	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	N/A
4959	38.9	400	402	0.9952
4980	19.5	200	204	0.9827
4985	14.6	150	153	0.9810
4996	0	0	1	N/A
Sum of Least Squares				0.2792
New Correction Factor				0.9952

Before Calibration

After Calibration

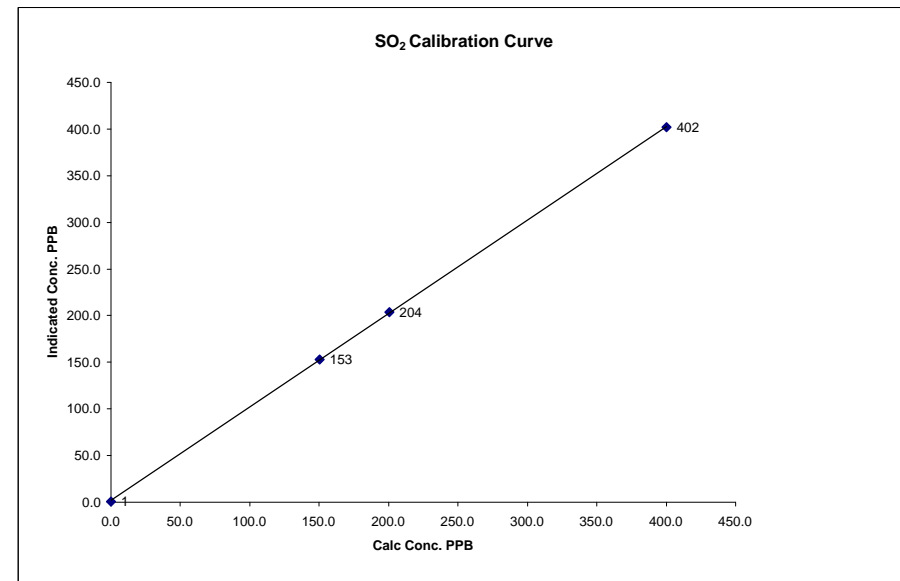
Auto Zero	0.4	0.5
Auto Span	371	369
Sample Lines Connected	YES	
Percent Change from Previous Calibration	0.5%	

Calibration Performed by: Ting Xyu

SO₂ Calibration Curve

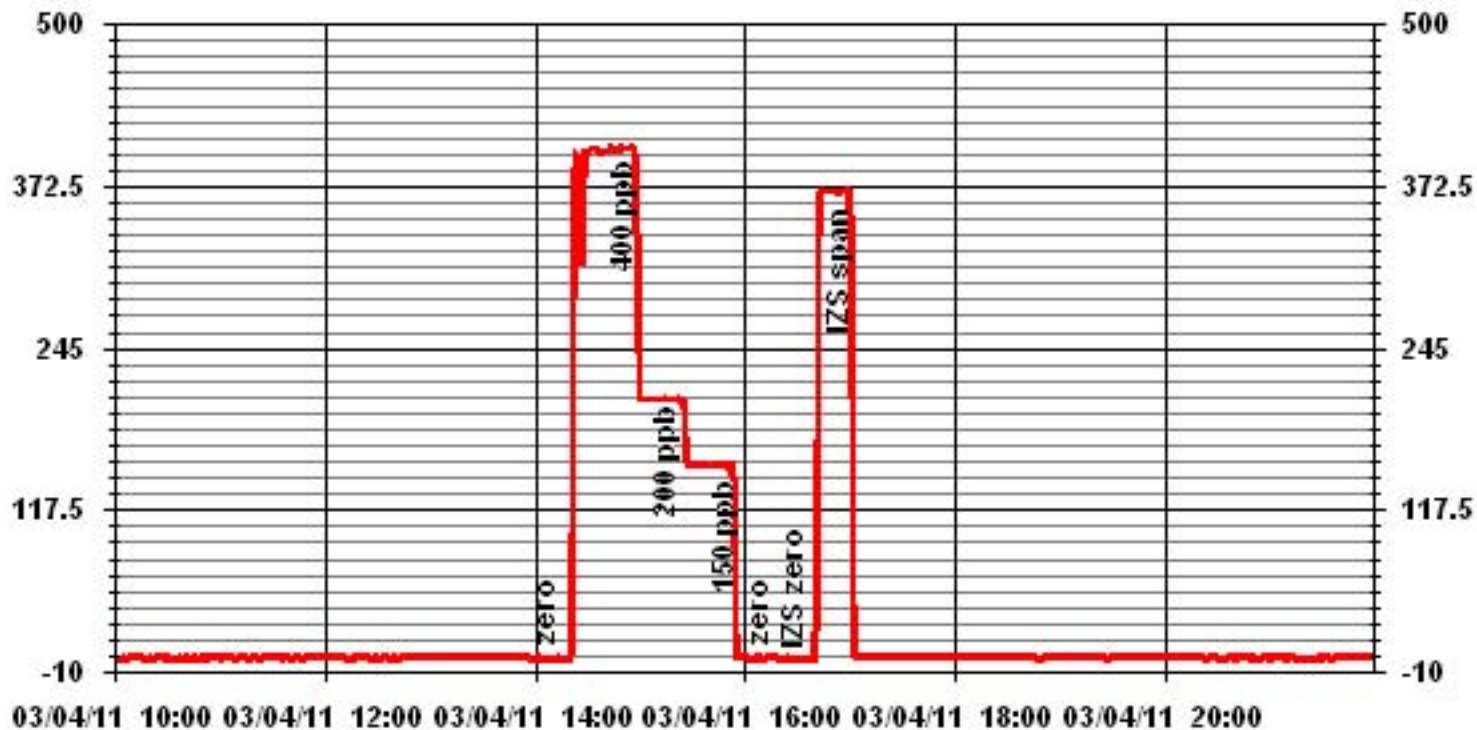
Calibration Date	March 4, 2011
Company	Lakeland Community and Industry Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	13:55
End Time (MST)	17:05

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope (≥ 0.995) (0.85 to 1.15)	Intercept (± 3% F.S.)
0	1	n/a	0.999959	1.001961
150	153	0.9810		
200	204	0.9827		
400	402	0.9952		1.972032



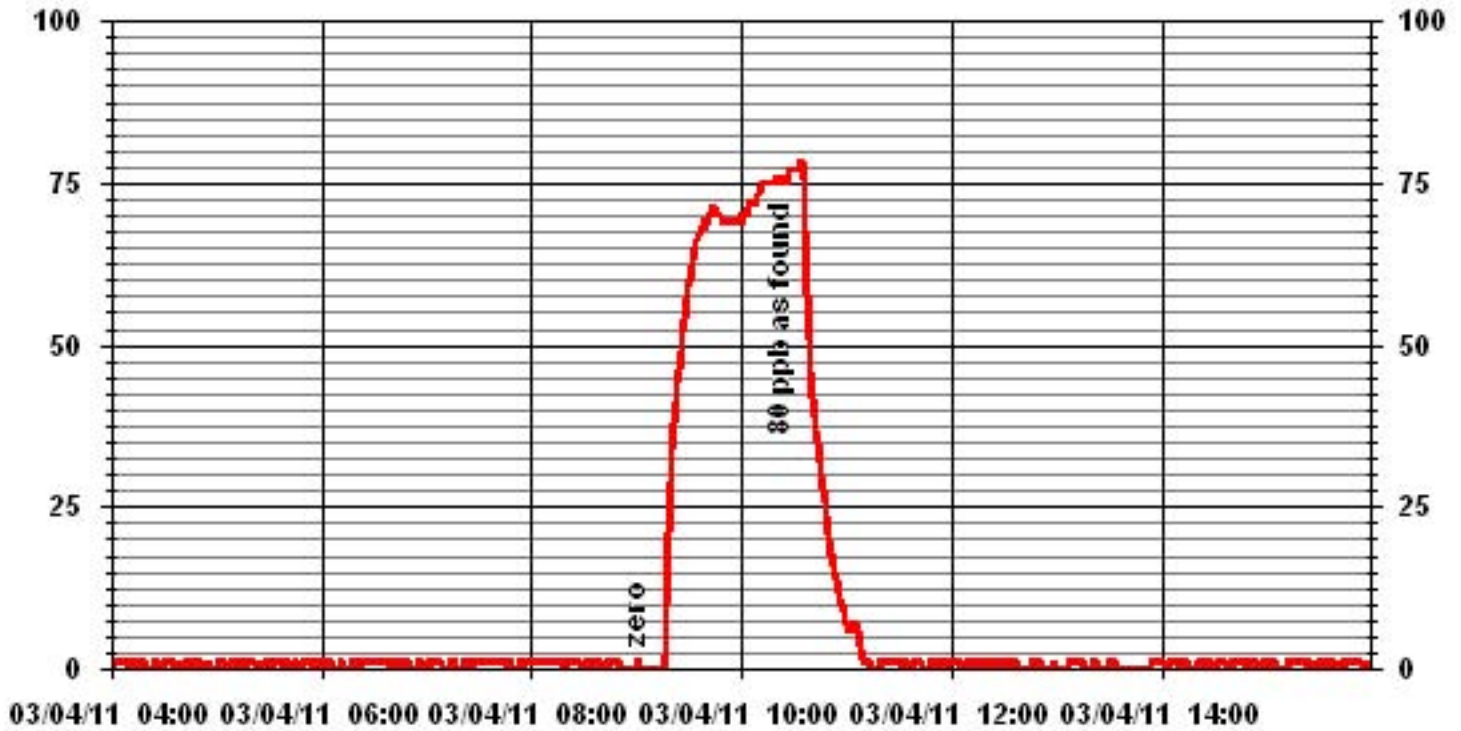
Notes: At beginning of A/F points, there was a calibration gas warning causing the reading to drop for a few minutes. Cleared the arning and re-did the points.

01 Minute Averages



Total Reduced Sulphur

01 Minute Averages



— LICA TRS_ PPB

**TRS Calibration Report
Station Information**

Calibration Date	March 8, 2011	Previous Calibration	March 4, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	12:59	End Time (MST)	18:18
Reason:	Monthly Calibration		
Barometric Pressure	0.94 atm	Station Temperature	21 Deg C
Cal Gas	10.2 ppm	Cal Gas Expiry date	February 2, 2012
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	TEI 4501	S/N :	812728560	Method:	Fluorescent
Converter Make / Model:	CD Nova CDN 101	S/N :	250		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	3485		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 100 ppb				
Sample Flow / Box Temp	363 ccm	30.3 Deg C	356 ccm	31.5 Deg C	
HVPS / Lamp Setting	-622.7	757	-622.7	756	
PMT / RxCell Temp	OK Deg C	45.2 Deg C	OK Deg C	45.0 Deg C	
Converter / IZS Temp	850 Deg C	358.0 Deg C	850 Deg C	45.0 Deg C	
Offset / Slope	11.4	1.199	12.1	1.264	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	N/A
4959	39.2	80	77	1.0389
4995	0	0	0	N/A
4959	39.2	80	81	0.9876
4981	19.6	40	41	0.9751
4985	11.3	23	24	0.9612
4995	0	0	1	N/A
Sum of Least Squares				0.9836
New Correction Factor				0.9876

Before Calibration

After Calibration

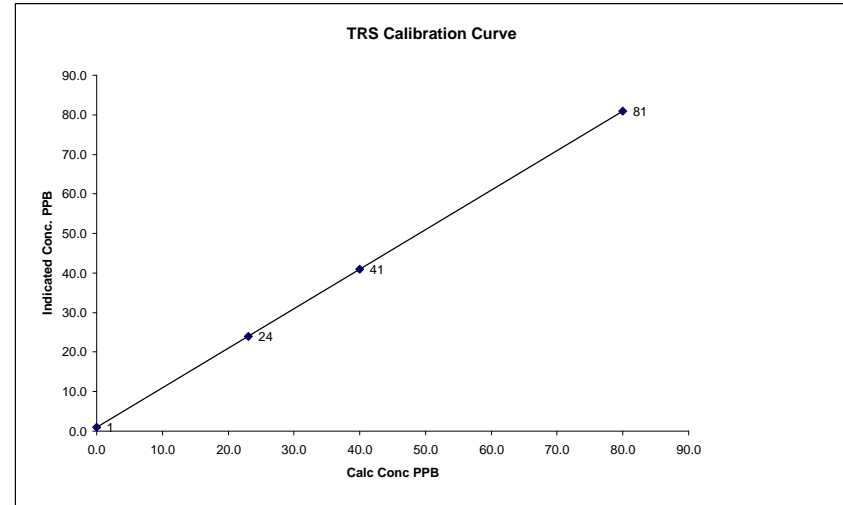
Auto Zero	0.3	0.5
Auto Span	35	50
Sample Lines Connected		YES
Percent Change from Previous Calibration		-3.8%

Calibration Performed by: Ting Xu

TRS Calibration Curve

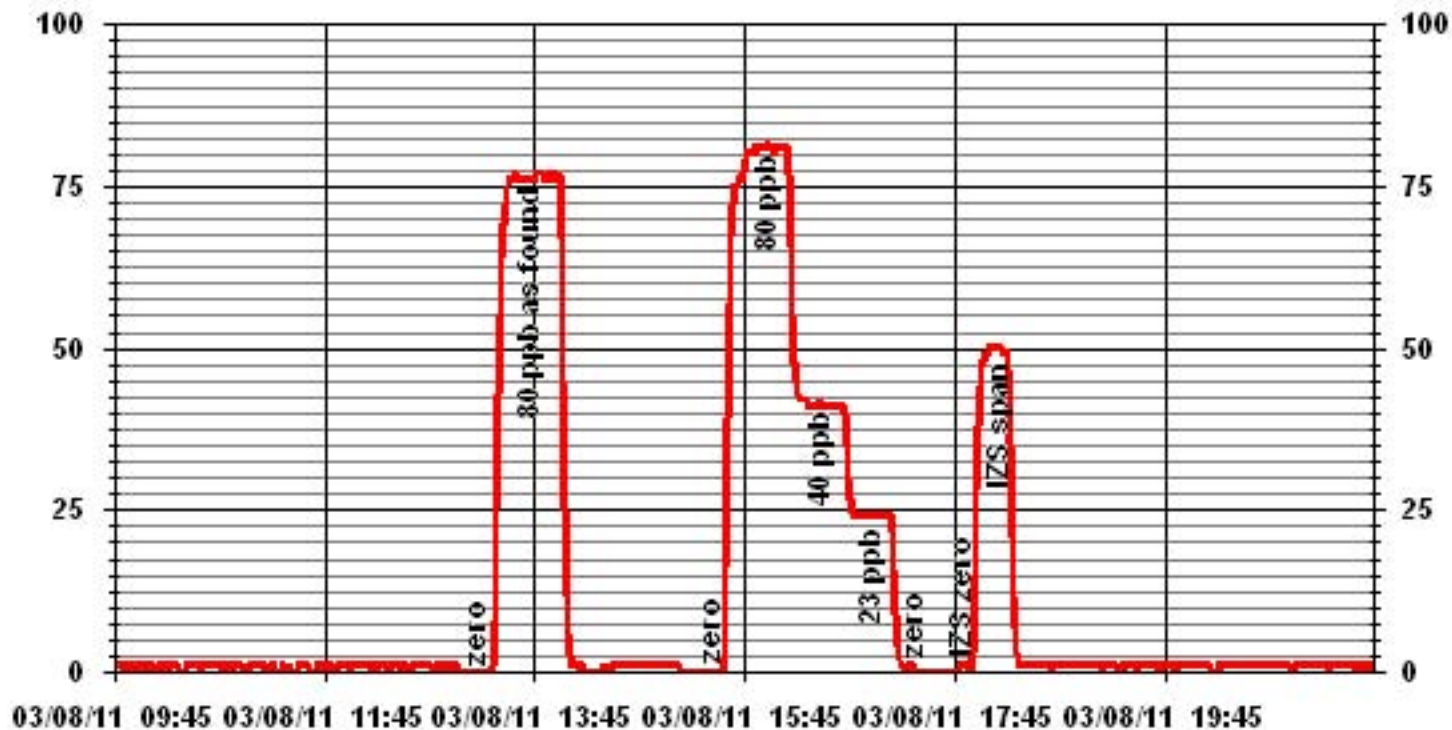
Calibration Date	March 8, 2011
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	12:59
End Time (MST)	18:18

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999999
0	1	n/a	Intercept	(± 3% F.S.)	1.000324
23	24	0.9612			0.977149
40	41	0.9751			
80	81	0.9876			



Notes: Following the A/F points, the sample pump was rebuilt and the glass permeation oven sleeve was replaced.

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	March 4, 2011	Previous Calibration	February 8, 2011
Company:	Lakeland Industry and Community Association		
Plant / Location:	LICA1/Cold Lake		
Start Time (MST)	11:26	End Time (MST)	14:33
Reason:	Monthly Calibration		
Barometric Pressure:	0.958 atm	Station Temperature:	22 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	207Prop/602Meth	ppm	Cal Gas Expiry Date: 6/11/2012
DAS make & Model:	ESC 8832	S/N :	3485
Output Voltage Range:	0 - 10 VDC		

Analyzer Information

Make / Model	TECO 51C-LT	S/N :	51CLT-42740-8718	Method	Flame Ionization
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Analyzer Settings

	Before Calibration	After Calibration
Concentration Range	0 - 50 ppm	0 - 50 ppm
Sample Pressure	6.5 psi	6.5 psi
Hydrogen Pressure	8 psi	8 psi
Air Pressure	20 psi	20 psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
1999	0	0.0	0.0	N/A
1999	70	39.6	40.0	0.9907
2000	35	20.1	19.8	1.0145
2000	20	11.6	11.4	1.0172
2000	0	0.0	0.0	N/A
Correction Factor:				0.9907

Percent Change

Previous Calibration Correction Factor:	0.9907
Current Correction Factor Before Span Adjust:	0.9907
Percent Change:	0.0%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	37.1	37.2
Sample Lines Connected		YES

Cylinder Pressures

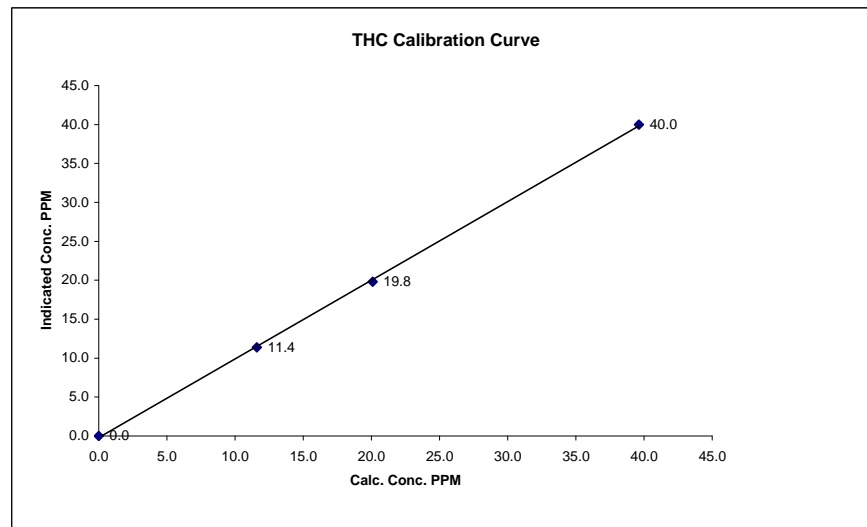
Span	700 psi
Hydrogen	800 psi
Zero Air	32 psi Maxxam-owned API 701 zero air supply with catalytic oxidizer

Calibration Performed by: Ting Xu

THC Calibration Curve

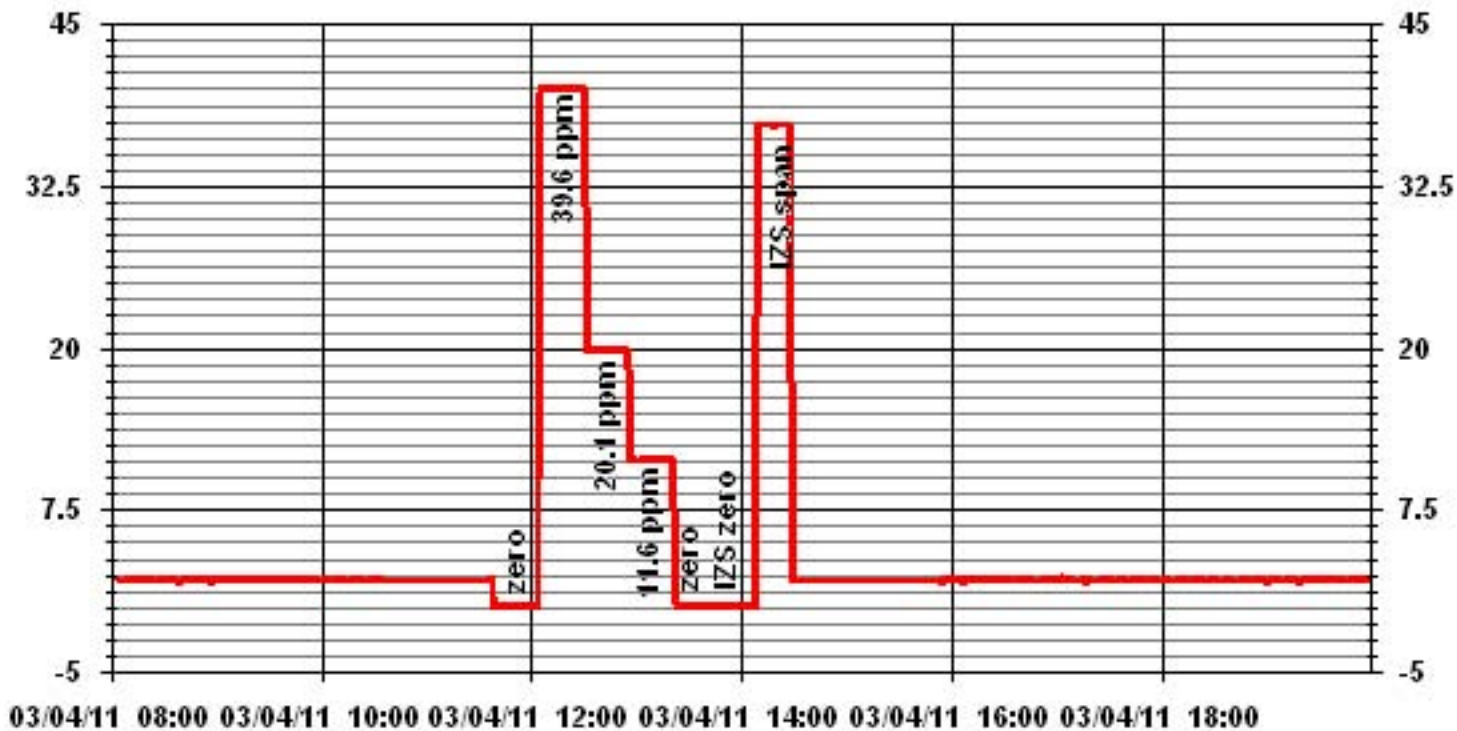
Calibration Date	March 4, 2011
Company	Lakeland Industry and Community Association
Plant / Location	LICA1/Cold Lake
Start Time (MST)	11:26
End Time (MST)	14:33

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999805
0.0	0.0		Intercept	(0.85 to 1.15)	1.010411
11.6	11.4	1.0172		(± 3% F.S.)	-0.213335
20.1	19.8	1.0145			
39.6	40.0	0.9907			



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOM 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	March 8, 2011	Make/Model:	Streamline FTS
Station Name:	LICA 1	Serial Number:	Hi 091001
Location:	Cold Lake South	Cell s/n:	Lo 091099
Operator:	LICA	Thermometer s/n:	VWR90758398

	<u>Sampler</u>		<u>Set-up and current Sampler readings</u>
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 (%)	25.7%
Firmware Ver.	1.52	K _o Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-8.7
		Press (ATM)	0.940

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 <0.10ug	0.008	Warnings	None
Pump Vacuum <0.40atm	0.36		
Temperature/Pressure			
Measured Temp (± 2 °C)	-9.2	D °C	0.5
Measured Press (± 0.01atm)	0.934	DATM	0.006
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	0.26%
Measured Main Flow (l/min)	2.94	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	2.13%
Measured Bypass Flow (l/min)	13.58	Flow Adjusted to Measured?	Yes
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	NA	Flow Control = Active	
Aux (< 0.6 l/min)	NA	Report Conditions = Standard (25.0 C and 1atm)	
K_o Factor			
Measured	NA		
K _o Difference (± 2.5%)	NA		

Start Time: 13:10 **Finish Time:** 13:59

Sample Inlet Cleaned: Yes **New Filters Installed:** YES
New Filter Loading %: 25.5%

Comments:

Auditor/s: Ting Xu

Nitrogen Dioxide

NOx - NO- NO2 Calibration Report

Station Information

Calibration Date	March 4, 2011	Previous Calibration	February 16, 2011
Company	LICA	Plant/Location	LICA 1 - Cold Lake South
Start Time (MST)	8:45	End Time (MST)	14:20
Reason:	Monthly Calibration	Other	
Barometric Pressure	0.954 atm	Station Temperature	22 Deg C
Cal Gas Concentration	NOx 50.8 ppm	NO 50.4 ppm	Cal Gas Expiry date 05-Aug-12
DAS Output Voltage	0 - 10	Volts	Chart Rec. Output NA Volts

Equipment Information

Analyzer Make / Model:	TECO 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	730	ccm	318	Deg C	729	ccm	318.0
Ozone Flow / Vacuum	OK	ccm	183.4	"Hg-A	OK	ccm	182.8
HVPS / A ZERO	-821	Volts	NA	MV	-821	Volts	NA
Rx/ Temp / PMT Temp	49.5	Deg C	-2.5	Deg C	49.9	Deg C	-2.5
Box Temp / IZS Temp	26.4	Deg C	OK	Deg C	25.4	Deg C	OK
Offset	3.8	NOx	3.5	NO	3.7	NOx	3.4
Slope	1.009	NOx	0.903	NO	1.008	NOx	0.889
NO2 COEF / Conv Efficiency	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	----	0	0	----	0	0	0	----	----
4955	39.6	----	403	400	----	409	406	3	0.9848	0.9842
4955	39.6	----	403	400	----	402	399	3	1.0019	1.0015
4973	19.8	----	201	200	----	203	202	1	0.9924	0.9895
4984	9.9	----	101	100	----	103	102	1	0.9777	0.9795
4996	0.0	----	0	0	0	0	0	0	----	----

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4955	39.6	----	403	400	----	402	399	3	----	----
4955	39.6	350	403	----	340	402	62	340	1.0089	100.00%
4955	39.6	150	403	----	149	402	253	149	1.0205	100.00%
4955	39.6	75	403	----	76	401	326	76	1.0411	100.00%

Linearity	Sum of Least Squares	NOx= 0.999	NO= 0.998	NO2= 1.000	
OK?	Yes No	Correction Factors:	NOx= 1.0019	NO= 1.0015	NO2= 1.0089
Average Converter Efficiency= 100.00%					

Before Calibration				After Calibration				
Auto Zero	0.1	NOx	0.1	NO2	0.0	NOx	0.1	
Auto Span	412	NOx	409	NO2	342	NOx	340	
Sample Lines Connected				YES				
Percent Change from Previous Calibration				NOx 1.5%	NO 1.5%	NO2 -0.3%		

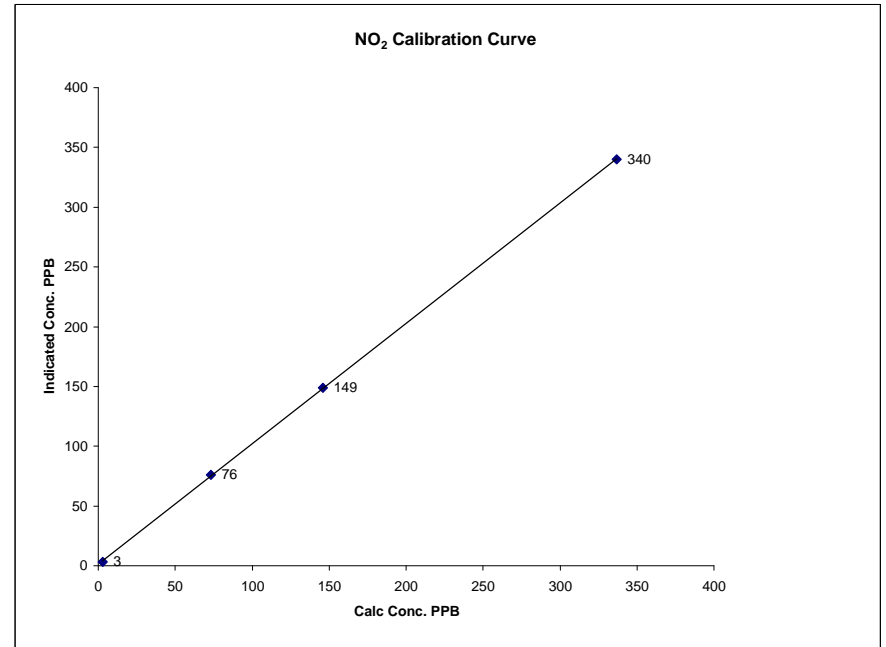
Notes

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	March 4, 2011	LICA	
Company	LICA 1 - Cold Lake South		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	8:45	End Time (MST)	14:20

Calculated Conc.	Indicated Response	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999936
ppb	ppb		Slope	(0.85 to 1.15)	1.006606
3	3	N/A	Intercept	(± 3% F.S.)	1.32681
73	76	0.9605			
146	149	0.9799			
337	340	0.9912			

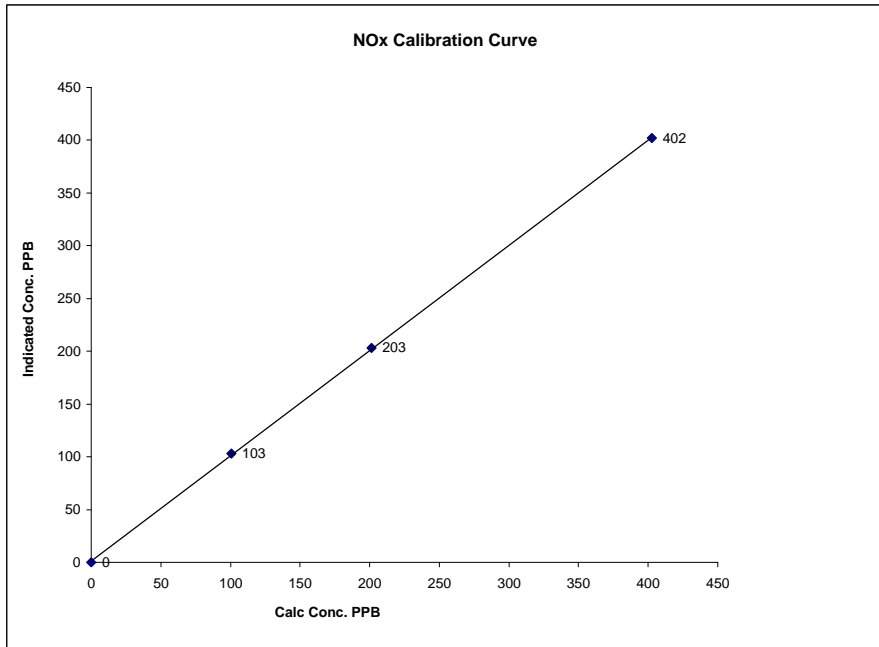


Notes:

NOx Calibration Curve

Calibration Date March 4, 2011
 Company LICA
 Plant / Location LICA 1 - Cold Lake South
 Start Time (MST) 8:45 End Time (MST) 14:20

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999945
0	0	N/A	Slope (0.85 to 1.15)	0.996518
101	103	0.9777	Intercept (± 3% F.S.)	1.37974
201	203	0.9924		
403	402	1.0019		

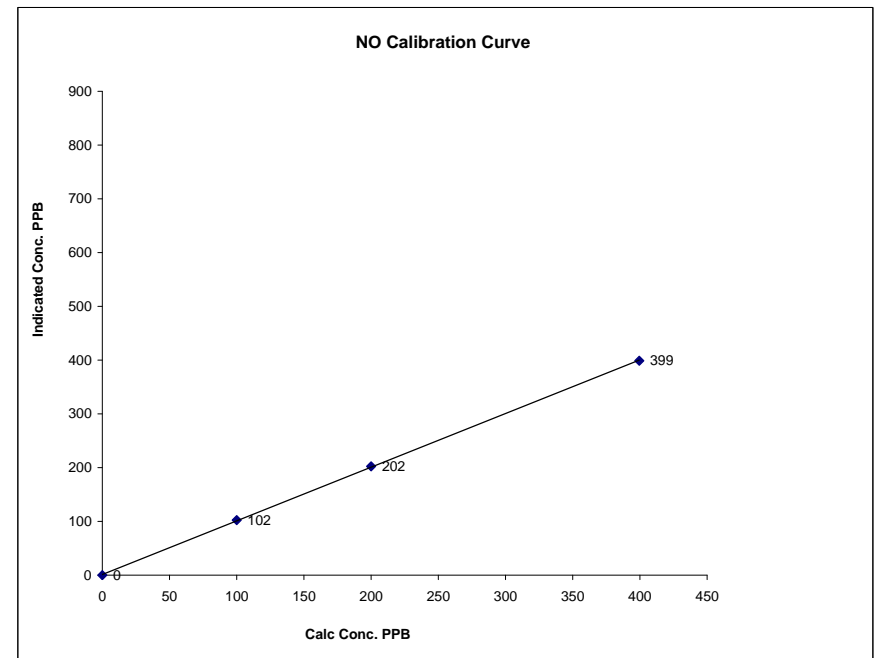


Notes:

NO Calibration Curve

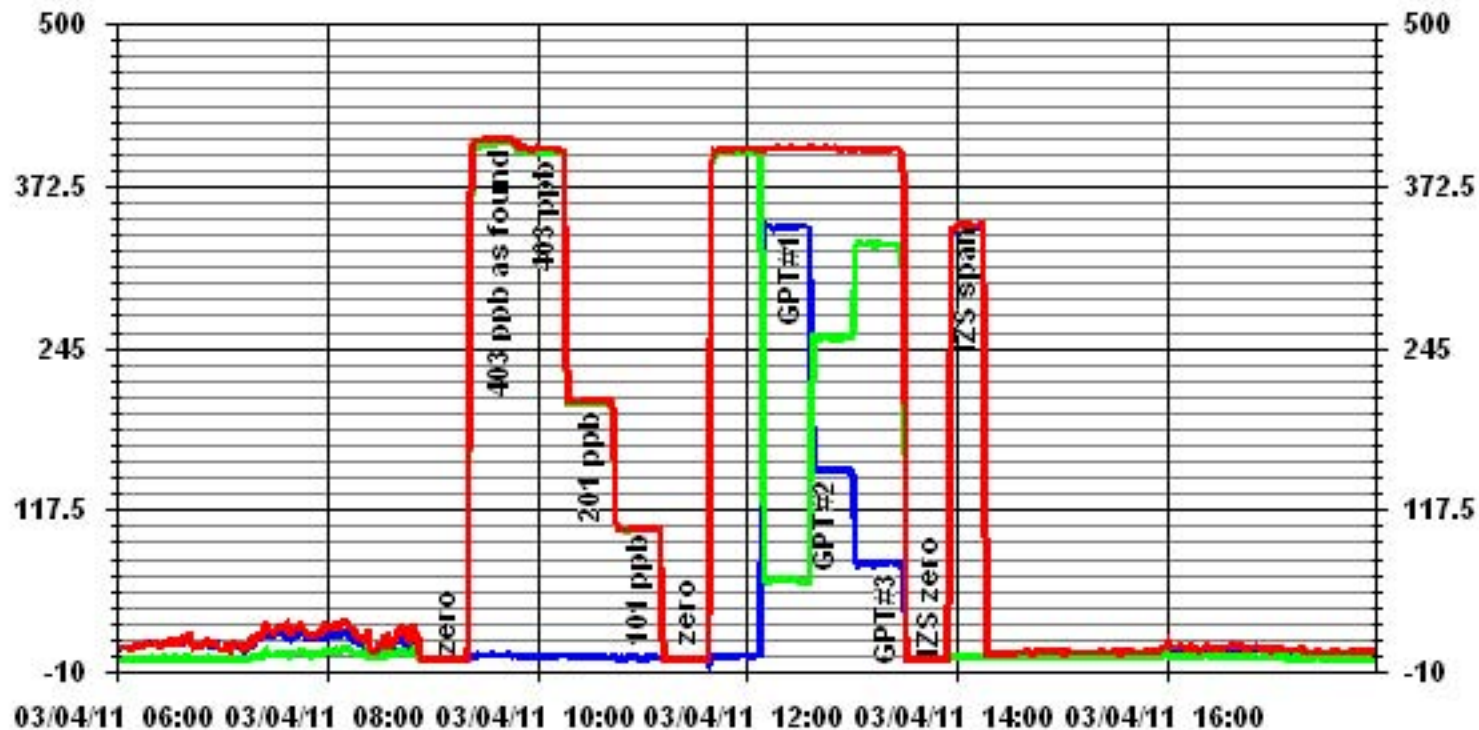
Calibration Date March 4, 2011
 Company LICA
 Plant / Location LICA 1 - Cold Lake South
 Start Time (MST) 8:45 End Time (MST) 14:20

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999939
0	0	N/A	Slope (0.85 to 1.15)	0.990369
100	102	0.9795	Intercept (± 3% F.S.)	4.8579
200	202	0.9895		
400	399	1.0015		



Notes:

01 Minute Averages



Ozone

O₃ Calibration Report

Station Information

Calibration Date	March 4, 2011	Previous Calibration	February 16, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	13:41	End Time (MST)	17:34
Reason:	Installation Calibration		
Barometric Pressure	0.958 atm	Station Temperature	22 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	Thermon 49i	S/N :	700419951	Method:	Fluorescent
Calibrator Make / Model:	Enviroics 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	717 ccm	762 ccm	717 ccm	717 ccm	760 ccm	717 ccm
Pressure	718 mmHg			717 mmHg		
Bench Lamp Temp	53.5 Deg C			53.5 Deg C		
O ₃ Lamp/Box Temp	67.5 Deg C	27.4 Deg C		67.6 Deg C	28 Deg C	
Offset / Slope	0.1	0.996		0.1	1.006	

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	N/A
4996	350	337	333	1.0120
4996	350	337	338	0.9970
4996	150	146	146	1.0000
4996	75	73	73	1.0000
4996	0	0	0	N/A
Sum of Least Squares				N/A
New Correction Factor				0.9970

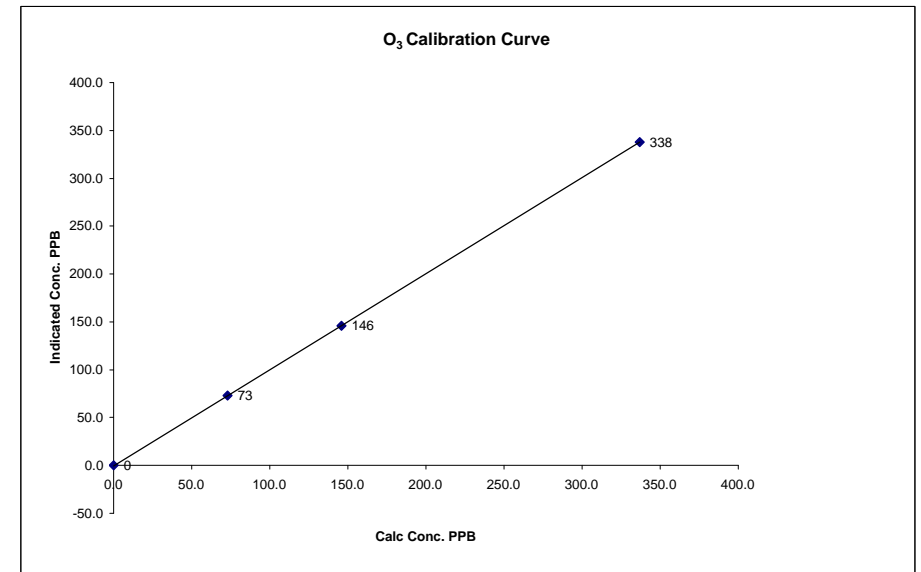
	Before Calibration	After Calibration
Auto Zero	-0.1	-0.1
Auto Span	278	282
Sample Lines Connected		YES
Percent Change from Previous Calibration		-0.9%

Calibration Performed by: Ting Xu

O₃ Calibration Curve

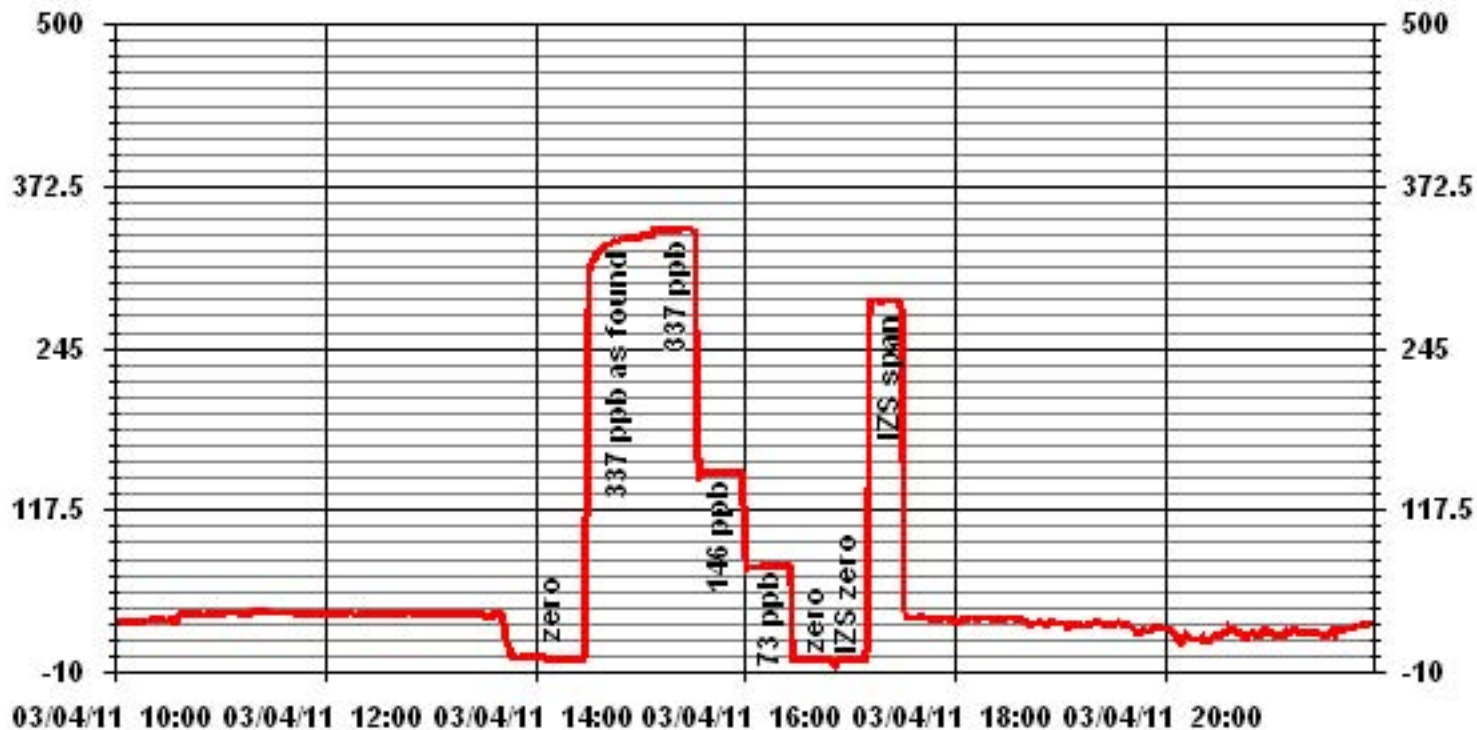
Calibration Date	March 4, 2011
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	13:41
End Time (MST)	17:34

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999998
0	0	n/a	Intercept	(0.85 to 1.15)	1.003146
73	73	1.0000			
146	146	1.0000			
337	338	0.9970			-0.187343



Notes:

01 Minute Averages



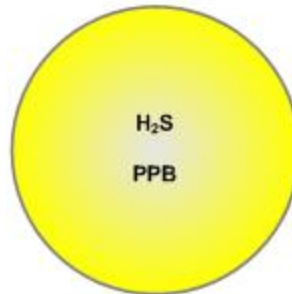
Passive Bubble Maps

Lakeland Industry & Community Association H₂S Passive Bubble Map

MARCH 2011

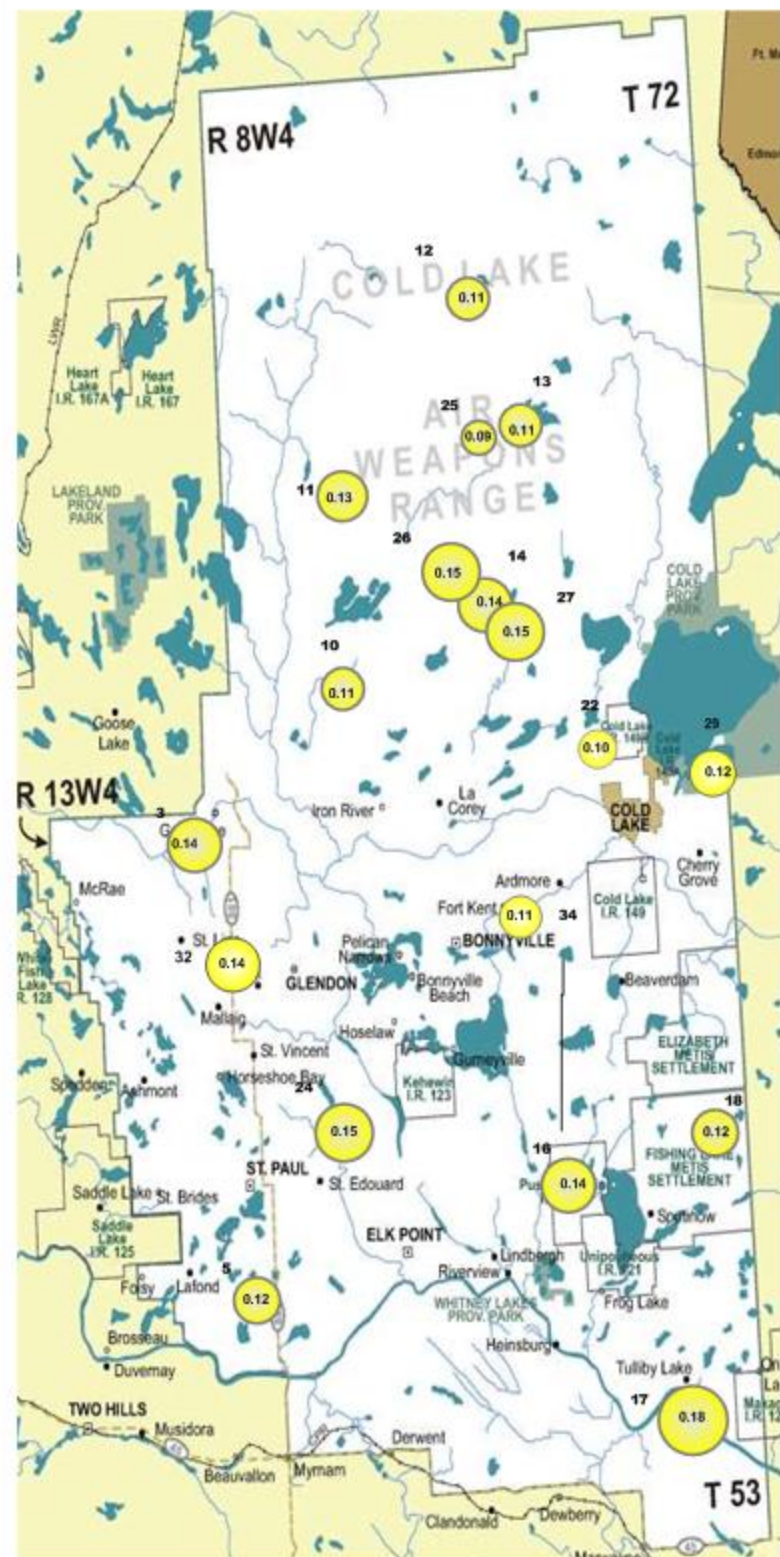
PASSIVE STATIONS

		DUPLICATE
3 – Therien	0.14 PPB	NA
5 – Lake Eliza	0.12 PPB	0.12 PPB
10 – La Corey	0.11 PPB	0.11 PPB
11 – Wolf Lake	0.14 PPB	0.12 PPB
12 – Foster Creek	0.09 PPB	0.11 PPB
13 – Primrose	0.11 PPB	NA
14 – Maskwa	0.13 PPB	0.15 PPB
16 – Frog Lake	0.14 PPB	NA
17 – Clear Range	0.17 PPB	0.18 PPB
18 – Fishing Lake	0.12 PPB	NA
22 – Cold Lake South	0.10 PPB	NA
24 – Fort George	0.15 PPB	0.15 PPB
25 – Burnt Lake	0.09 PPB	NA
26 – Mahihkan	0.14 PPB	0.15 PPB
27 – Mahkeses	0.15 PPB	NA
29 – Cold Lake South 2	0.11 PPB	0.12 PPB
32 – St. Lina	0.14 PPB	NA
34 – Portable	0.11 PPB	NA



Summary

Minimum : 0.09 PPB – Burnt Lake
 Maximum: 0.18 PPB – Clear Range
 Average: 0.13 PPB *Includes Duplicates



Lakeland Industry & Community Association NO₂ Passive Bubble Map

MSRCH 2011

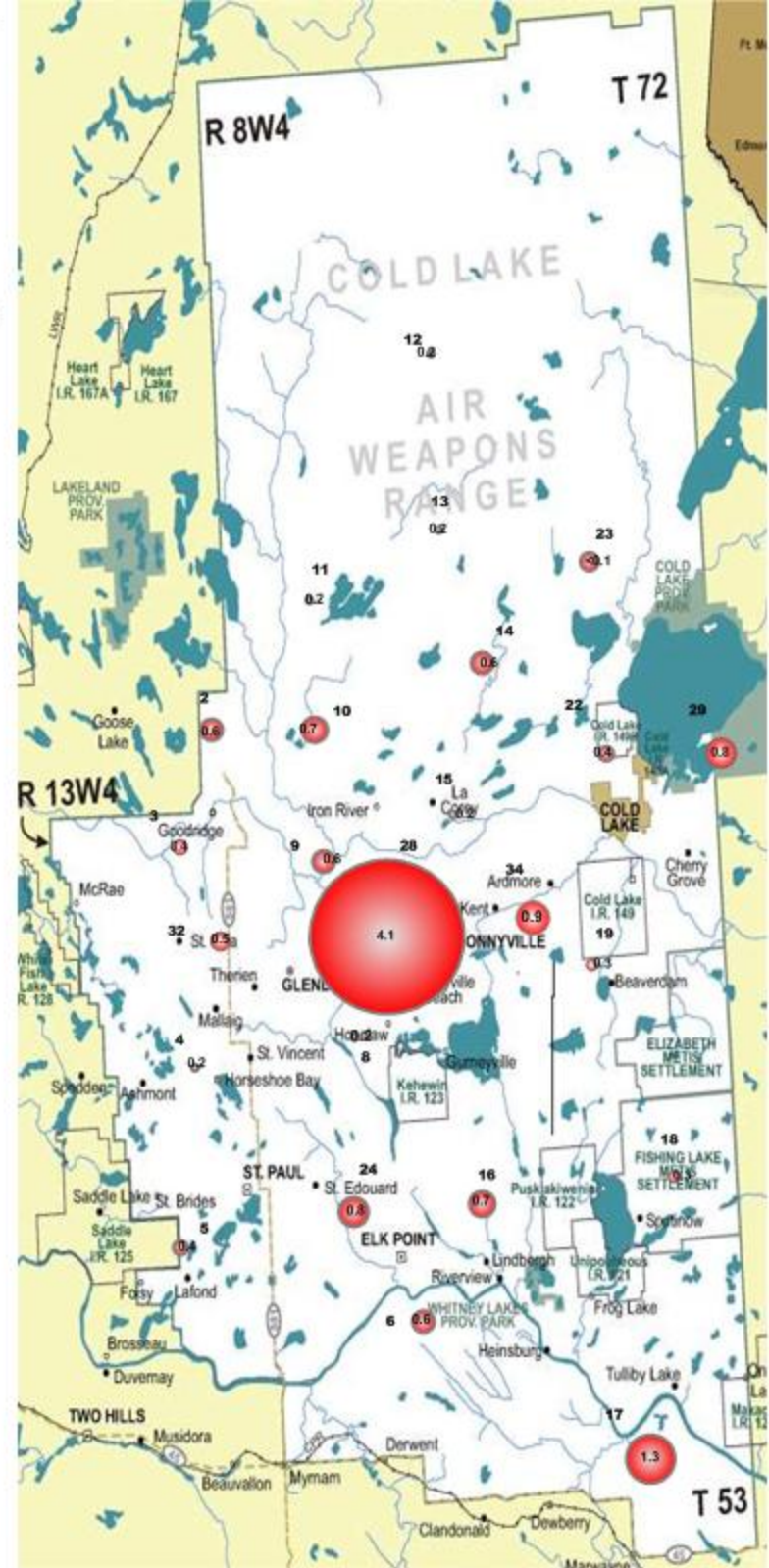
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	0.6 PPB	NA
3 – Therien	0.4 PPB	0.3 PPB
4 – Flat Lake	0.2 PPB	NA
5 – Lake Eliza	0.3 PPB	0.5 PPB
6 – Telegraph Creek	0.6 PPB	NA
8 – Muriel-Kehewin	0.2 PPB	0.1 PPB
9 – Dupre	0.6 PPB	NA
10 – La Corey	0.6 PPB	0.7 PPB
11 – Wolf Lake	0.1 PPB	0.3 PPB
12 – Foster Creek	0.2 PPB	0.1 PPB
13 – Primrose	0.2 PPB	NA
14 – Maskwa	0.6 PPB	NA
15 – Ardmore	0.2 PPB	NA
16 – Frog Lake	0.8 PPB	0.5 PPB
17 – Clear Range	1.3 PPB	NA
18 – Fishing Lake	0.3 PPB	0.3 PPB
19 – Beaverdam	0.3 PPB	NA
22 – Cold Lake South	0.4 PPB	NA
23 – Medley-Martineau	<0.1 PPB	<0.1 PPB
24 – Fort George	0.8 PPB	NA
28 – Town of Bonnyville	3.8 PPB	4.4 PPB
29 – Cold Lake South 2	0.8 PPB	NA
32 – St. Lina	0.5 PPB	NA
34 – Portable	0.9 PPB	NA



Summary

Minimum : <0.1 PPB – Medley-Martineau
Maximum: 4.1 PPB – Town of Bonnyville
Average: 0.6 PPB *Includes Duplicates

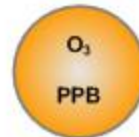


Lakeland Industry & Community Association O₃ Passive Bubble Map

MARCH 2011

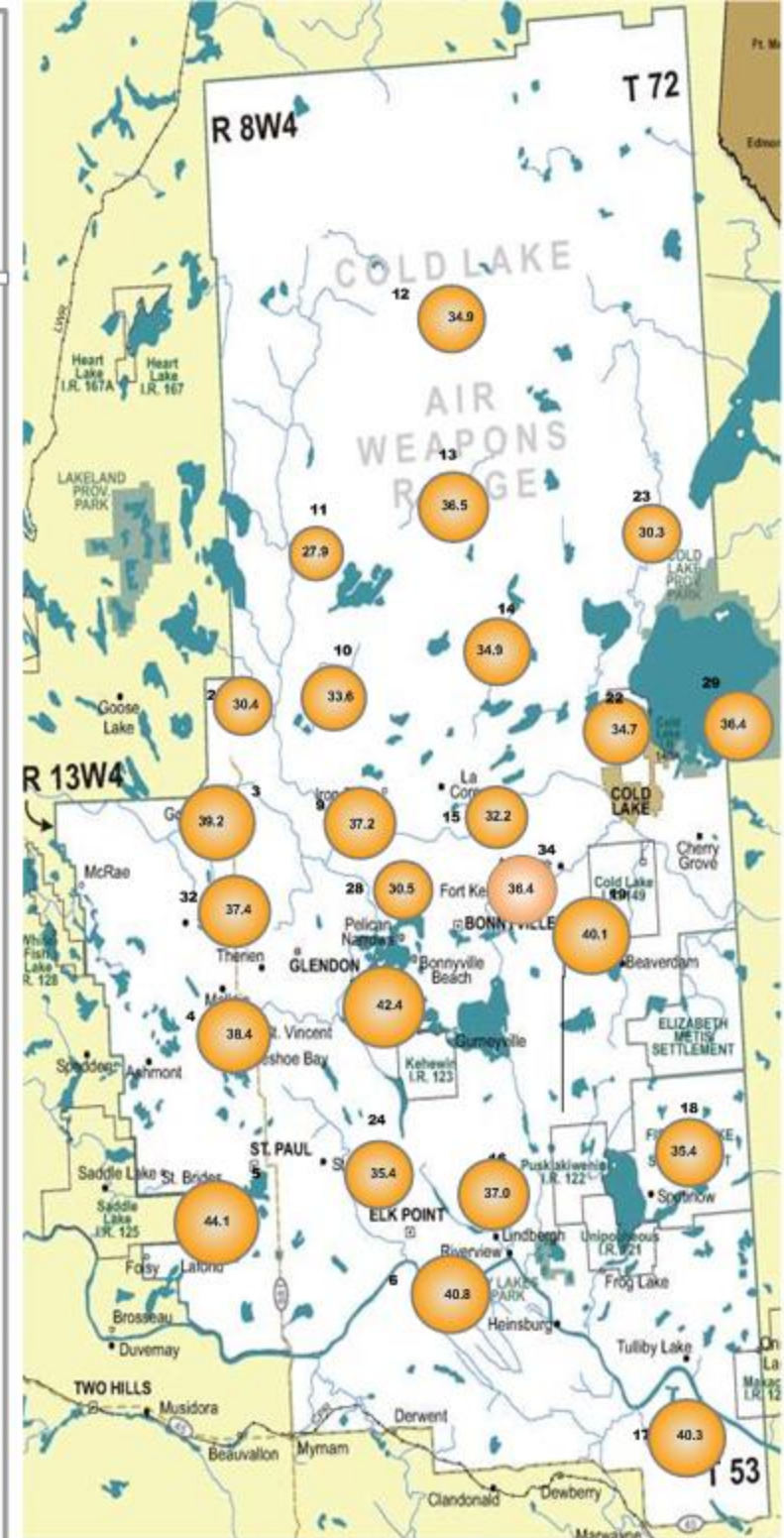
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	30.4 PPB	NA
3 – Therien	40.2 PPB	38.1 PPB
4 – Flat Lake	38.4 PPB	NA
5 – Lake Eliza	42.6 PPB	45.6 PPB
6 – Telegraph Creek	40.8 PPB	NA
8 – Muriel-Kehewin	42.8 PPB	42.0 PPB
9 – Dupre	37.2 PPB	NA
10 – La Corey	34.4 PPB	32.7 PPB
11 – Wolf Lake	27.5 PPB	28.2 PPB
12 – Foster Creek	33.3 PPB	36.5 PPB
13 – Primrose	36.5 PPB	NA
14 – Maskwa	34.2 PPB	35.5 PPB
15 – Ardmore	32.2 PPB	NA
16 – Frog Lake	36.3 PPB	37.6 PPB
17 – Clear Range	40.3 PPB	NA
18 – Fishing Lake	35.1 PPB	35.7 PPB
19 – Beaverdam	40.1 PPB	NA
22 – Cold Lake South	34.7 PPB	NA
23 – Medley-Martineau	31.2 PPB	29.4 PPB
24 – Fort George	35.4 PPB	NA
28 – Town of Bonnyville	31.9 PPB	36.4 PPB
29 – Cold Lake South 2	36.4 PPB	NA
32 – St. Lina	37.4 PPB	NA
34 – Portable	36.4 PPB	NA



Summary

Minimum : 27.9 PPB –Wolf Lake
 Maximum: 44.1 PPB –Lake Eliza
 Average: 36.1 PPB *Includes Duplicates



Lakeland Industry & Community Association SO₂ Passive Bubble Map

MARCH 2011

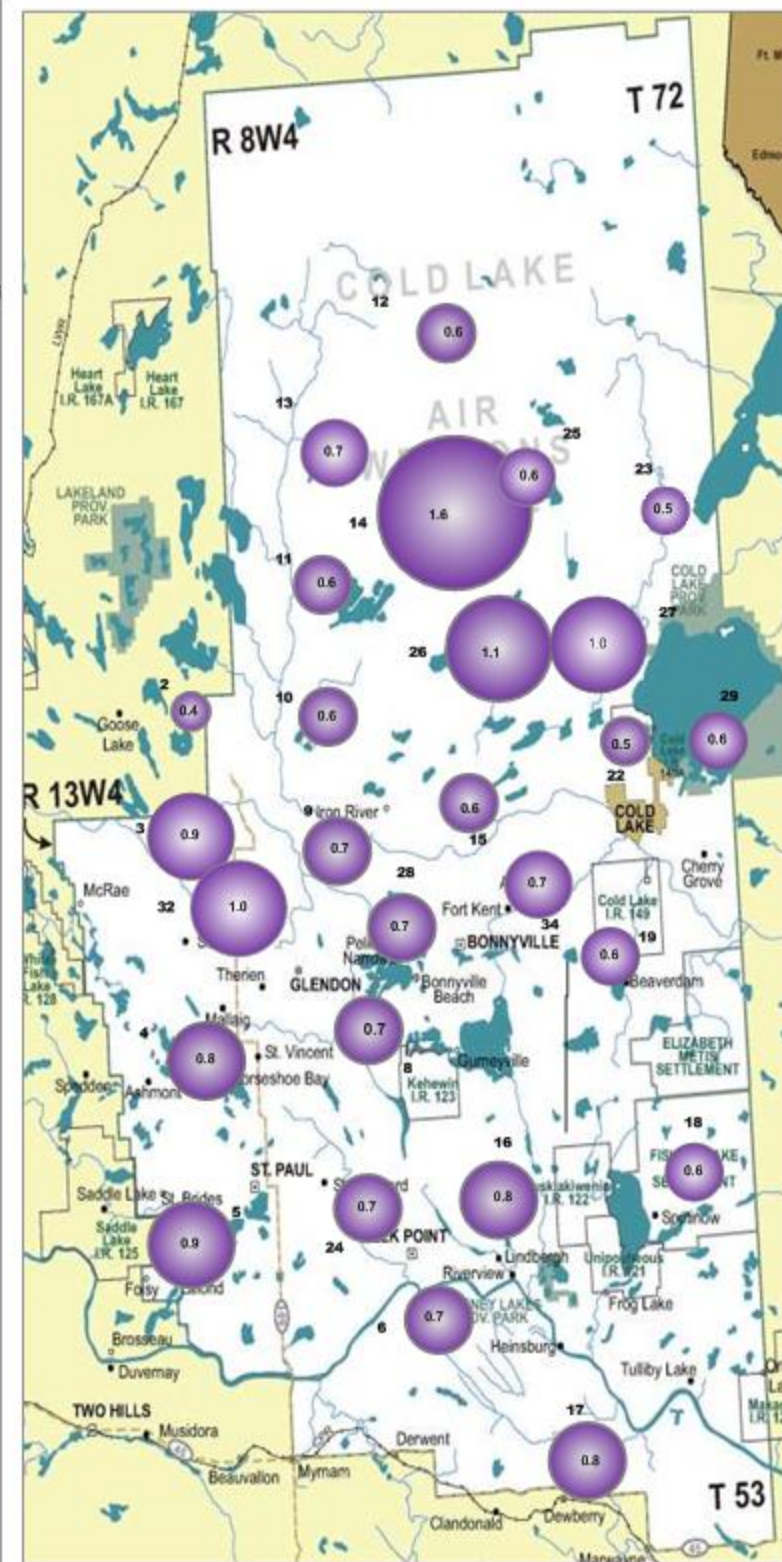
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	0.4 PPB	NA
3 – Therien	0.9 PPB	0.8 PPB
4 – Flat Lake	0.8 PPB	NA
5 – Lake Eliza	0.8 PPB	0.9 PPB
6 – Telegraph Creek	0.7 PPB	NA
8 – Muriel-Kehewin	0.7 PPB	0.7 PPB
9 – Dupre	0.7 PPB	NA
10 – La Corey	0.6 PPB	0.7 PPB
11 – Wolf Lake	0.6 PPB	0.6 PPB
12 – Foster Creek	0.5 PPB	0.6 PPB
13 – Primrose	0.7 PPB	NA
14 – Maskwa	1.5 PPB	1.6 PPB
15 – Ardmore	0.6 PPB	NA
16 – Frog Lake	0.8 PPB	0.7 PPB
17 – Clear Range	0.8 PPB	NA
18 – Fishing Lake	0.5 PPB	0.6 PPB
19 – Beaverdam	0.6 PPB	NA
22 – Cold Lake South	0.5 PPB	NA
23 – Medley-Martineau	0.4 PPB	0.5 PPB
24 – Fort George	0.7 PPB	NA
25 – Burnt Lake	0.6 PPB	0.6 PPB
26 – Mahikan	1.1 PPB	NA
27 – Mahkeses	1.0 PPB	1.1 PPB
28 – Town of Bonnyville	0.7 PPB	NA
29 – Cold Lake South 2	0.5 PPB	0.6 PPB
32 – St. Lina	1.0 PPB	NA
34 – Portable	0.7 PPB	NA



Summary

Minimum : 0.4 PPB –Sand River
 Maximum: 1.6 PPB –Maskwa
 Average: 0.74 PPB *Includes Duplicates



Passive Field Data

Field Notes

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
2	SO ₂ /NO ₂ /O ₃	03/01/11	14:57	03/30/11	10:54	
2A (Dup)	NA	NA	NA	NA	NA	
3	H ₂ S/SO ₂ /NO ₂ /O ₃	03/01/11	15:47	03/30/11	10:10	
3A (Dup)	SO ₂ /NO ₂ /O ₃	03/01/11	15:47	03/30/11	10:10	
4	SO ₂ /NO ₂ /O ₃	03/02/11	15:09	03/31/11	14:58	
4A (Dup)	NA	NA	NA	NA	NA	
5	H ₂ S/SO ₂ /NO ₂ /O ₃	03/02/11	14:20	03/31/11	13:58	
5A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	03/02/11	14:20	03/31/11	13:58	
6	SO ₂ /NO ₂ /O ₃	03/02/11	12:38	03/31/11	12:13	
6A (Dup)	NA	NA	NA	NA	NA	
8	SO ₂ /NO ₂ /O ₃	03/02/11	16:11	03/31/11	15:47	
8A (Dup)	SO ₂ /NO ₂ /O ₃	03/02/11	16:11	03/31/11	15:47	
9	SO ₂ /NO ₂ /O ₃	02/28/11	14:27	03/30/11	08:19	
9A (Dup)	NA	NA	NA	NA	NA	
10	H ₂ S/SO ₂ /NO ₂ /O ₃	03/01/11	14:02	03/30/11	11:47	
10A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	03/01/11	14:02	03/30/11	11:47	
11	H ₂ S/SO ₂ /NO ₂ /O ₃	01/27/11	12:59	03/30/11	12:55	Could not get into the site to change samples as the road wasn't plowed by CNRL in Feb. The samples were changed by the end of March. The samples were exposure for 63 days period.
11A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	01/27/11	12:59	03/30/11	12:55	
12	H ₂ S/SO ₂ /NO ₂ /O ₃	03/01/11	12:00	03/30/11	14:20	
12A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	03/01/11	12:00	03/30/11	14:20	
13	H ₂ S/SO ₂ /NO ₂ /O ₃	03/01/11	09:37	03/30/11	15:59	
13A (Dup)	NA	NA	NA	NA	NA	
14	H ₂ S/SO ₂ /NO ₂ /O ₃	03/01/11	08:23	03/30/11	16:53	
14A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	03/01/11	08:23	03/30/11	16:53	
15	SO ₂ /NO ₂ /O ₃	02/28/11	11:40	03/31/11	17:02	
15A (Dup)	NA	NA	NA	NA	NA	

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
16	H ₂ S/SO ₂ /NO ₂ /O ₃	03/02/11	10:23	03/31/11	10:19	
16A (Dup)	SO ₂ /NO ₂ /O ₃	03/02/11	10:23	03/31/11	10:19	
17	H ₂ S/SO ₂ /NO ₂ /O ₃	03/02/11	11:44	03/31/11	11:12	
17A (Dup)	H ₂ S	03/02/11	11:44	03/31/11	11:12	
18	H ₂ S/SO ₂ /NO ₂ /O ₃	03/02/11	09:28	03/31/11	09:30	
18A (Dup)	SO ₂ /NO ₂ /O ₃	03/02/11	09:28	03/31/11	09:30	
19	SO ₂ /NO ₂ /O ₃	03/02/11	08:20	03/31/11	08:23	
19A (Dup)	NA	NA	NA	NA	NA	
22	H ₂ S/SO ₂ /NO ₂ /O ₃	02/28/11	17:07	03/31/11	17:58	
22A (Dup)	NA	NA	NA	NA	NA	
23	SO ₂ /NO ₂ /O ₃	02/28/11	15:46	03/30/11	18:17	
23A (Dup)	SO ₂ /NO ₂ /O ₃	02/28/11	15:46	03/30/11	18:17	
24	H ₂ S/SO ₂ /NO ₂ /O ₃	03/02/11	13:19	03/31/11	12:50	
24A (Dup)	H ₂ S	03/02/11	13:19	03/31/11	12:50	
25	H ₂ S/SO ₂	03/01/11	10:01	03/30/11	15:29	
25A (Dup)	SO ₂	03/01/11	10:01	03/30/11	15:29	
26	H ₂ S/SO ₂	03/01/11	08:41	03/30/11	16:35	
26A (Dup)	H ₂ S	03/01/11	08:41	03/30/11	16:35	
27	H ₂ S/SO ₂	03/01/11	07:47	03/30/11	17:11	
27A (Dup)	SO ₂	03/01/11	07:47	03/30/11	17:11	
28	SO ₂ /NO ₂ /O ₃	02/28/11	13:48	03/30/11	08:40	
28A (Dup)	NO ₂ /O ₃	02/28/11	13:48	03/30/11	08:40	
29	H ₂ S/SO ₂ /NO ₂ /O ₃	02/28/11	16:52	03/31/11	17:39	
29A (Dup)	H ₂ S/SO ₂	02/28/11	16:52	03/31/11	17:39	
32	H ₂ S/SO ₂ /NO ₂ /O ₃	03/01/11	16:29	03/30/11	09:38	
32A (Dup)	NA	NA	NA	NA	NA	
34	H ₂ S/SO ₂ /NO ₂ /O ₃	02/28/11	13:02	03/31/11	16:31	
34A (Dup)	NA	NA	NA	NA	NA	

Passive Network Laboratory Analysis



Your Project #: 2011/03/01 - 2011/03/30
Site:LICA

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

Report Date: 2011/04/11

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B126006
Received: 2011/04/04, 10:29

Sample Matrix: Air
Samples Received: 44

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
H2S Passive Analysis ①	27	2011/04/08	2011/04/08	EINDSOP-00150	Tang.Passive H2S in
NO2 Passive Analysis ①	33	2011/04/08	2011/04/08	EINDSOP-00148	Tang Passive NO2 in
NO2 Passive Analysis ①	1	2011/04/08	2011/04/11	EINDSOP-00148	Tang Passive NO2 in
O3 Passive Analysis ①	35	2011/04/11	2011/04/11	EINDSOP-00197	EPA 300 R2.1
SO2 Passive Analysis ①	39	2011/04/06	2011/04/08	EINDSOP-00149	Tang Passive SO2 in
SO2 Passive Analysis ①	1	2011/04/07	2011/04/08	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,
Email: LManchak@maxxam.ca
Phone# (780) 378-8500

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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 Job #: B126006
Report Date: 2011/04/11

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2011/03/01 - 2011/03/30
Site Reference: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		AG5520	AG5522	AG5523	AG5524	AG5526		
Sampling Date		2011/03/01 14:57	2011/03/01 15:47	2011/03/01 15:47	2011/03/02 15:09	2011/03/02 14:20		
	Units	2	3	3A (DUP)	4	5	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb		0.14			0.12	0.02	4772768
Calculated NO2	ppb	0.6	0.4	0.3	0.2	0.3	0.1	4771027
Calculated O3	ppb	30.4	40.2	38.1	38.4	42.6	0.1	4775696
Calculated SO2	ppb	0.4	0.9	0.8	0.8	0.8	0.1	4763298

RDL = Reportable Detection Limit

Maxxam ID		AG5527	AG5528	AG5529	AG5530	AG5531		
Sampling Date		2011/03/02 14:20	2011/03/02 12:38	2011/03/02 16:11	2011/03/02 16:11	2011/03/02 14:27		
	Units	5A (DUP)	6	8	8A (DUP)	9	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.12					0.02	4772768
Calculated NO2	ppb	0.5	0.6	0.2	0.1	0.6	0.1	4771027
Calculated O3	ppb	45.6	40.8	42.8	42.0	37.2	0.1	4775696
Calculated SO2	ppb	0.9	0.7	0.7	0.7	0.7	0.1	4763298

RDL = Reportable Detection Limit

Maxxam ID		AG5532	AG5533	AG5534	AG5535	AG5536		
Sampling Date		2011/03/01 14:02	2011/03/01 14:02	2011/01/27 12:59	2011/01/27 12:59	2011/03/01 12:00		
	Units	10	10A (DUP)	11 - FEB	11A (DUP) - FEB	12	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.11	0.11	0.14	0.12	0.09	0.02	4772768
Calculated NO2	ppb	0.6	0.7	0.1	0.3	0.2	0.1	4771027
Calculated O3	ppb	34.4	32.7	27.5	28.2	33.3	0.1	4775696
Calculated SO2	ppb	0.6	0.6	0.6	0.6	0.5	0.1	4763298

RDL = Reportable Detection Limit



Maxxam Job #: B126006
 Report Date: 2011/04/11

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2011/03/01 - 2011/03/30
 Site Reference: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		AG5537	AG5538		AG5539	AG5540		
Sampling Date		2011/03/01 12:00	2011/03/01 09:37		2011/03/01 08:23	2011/03/01 08:23		
	Units	12A (DUP)	13	QC Batch	14	14A (DUP)	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.11	0.11	4772768	0.13	0.15	0.02	4772768
Calculated NO2	ppb	0.1	0.2	4771027	0.6		0.1	4771028
Calculated O3	ppb	36.5	36.5	4775696	34.2	35.5	0.1	4775699
Calculated SO2	ppb	0.6	0.7	4763298	1.5	1.6	0.1	4763298
RDL = Reportable Detection Limit								

Maxxam ID		AG5541	AG5542	AG5543	AG5544	AG5545		
Sampling Date		2011/02/28 11:40	2011/03/02 10:23	2011/03/02 10:23	2011/03/02 11:44	2011/03/02 11:44		
	Units	15	16	16A (DUP)	17	17A (DUP)	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb		0.14		0.17	0.18	0.02	4772768
Calculated NO2	ppb	0.2	0.8	0.5	1.3		0.1	4771028
Calculated O3	ppb	32.2	36.3	37.6	40.3		0.1	4775699
Calculated SO2	ppb	0.6	0.8	0.7	0.8		0.1	4763299
RDL = Reportable Detection Limit								

Maxxam ID		AG5547	AG5548	AG5549	AG5550	AG5551		
Sampling Date		2011/03/02 09:28	2011/03/02 09:28	2011/03/02 08:20	2011/02/28 17:07	2011/02/28 15:46		
	Units	18	18A (DUP)	19	22	23	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.12			0.10		0.02	4772768
Calculated NO2	ppb	0.3	0.3	0.3	0.4	<0.1	0.1	4771028
Calculated O3	ppb	35.1	35.7	40.1	34.7	31.2	0.1	4775699
Calculated SO2	ppb	0.5	0.6	0.6	0.5	0.4	0.1	4763299
RDL = Reportable Detection Limit								



Maxxam Job #: B126006
 Report Date: 2011/04/11

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2011/03/01 - 2011/03/30
 Site Reference: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		AG5552	AG5553	AG5554	AG5555	AG5556		
Sampling Date		2011/02/28 15:46	2011/03/02 13:19	2011/03/02 13:19	2011/03/01 10:01	2011/03/01 10:01		
	Units	23A (DUP)	24	24A (DUP)	25	25A (DUP)	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb		0.15	0.15	0.09		0.02	4772768
Calculated NO2	ppb	<0.1	0.8				0.1	4771028
Calculated O3	ppb	29.4	35.4				0.1	4775699
Calculated SO2	ppb	0.5	0.7		0.6	0.6	0.1	4763299
RDL = Reportable Detection Limit								

Maxxam ID		AG5557	AG5558	AG5559	AG5560	AG5561		
Sampling Date		2011/03/01 08:41	2011/03/01 08:41	2011/03/01 07:47	2011/03/01 07:47	2011/02/28 13:48		
	Units	26	26A (DUP)	27	27A (DUP)	28	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.14	0.15	0.15			0.02	4772768
Calculated NO2	ppb					3.8	0.1	4771028
Calculated O3	ppb					31.9	0.1	4775699
Calculated SO2	ppb	1.1		1.0	1.1	0.7	0.1	4763299
RDL = Reportable Detection Limit								

Maxxam ID		AG5562	AG5563	AG55650	AG55651	AG55652		
Sampling Date		2011/02/28 13:48	2011/02/28 16:52	2011/02/28 16:52	2011/03/01 16:29	2011/02/28 13:02		
	Units	28A (DUP)	29	29A (DUP)	32	34	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb		0.11	0.12	0.14	0.11	0.02	4772768
Calculated NO2	ppb	4.4	0.8		0.5	0.9	0.1	4771028
Calculated O3	ppb	29.1	36.4		37.4	36.4	0.1	4775699
Calculated SO2	ppb		0.5	0.6	1.0	0.7	0.1	4763299
RDL = Reportable Detection Limit								



Maxxam Job #: B126006
Report Date: 2011/04/11

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2011/03/01 - 2011/03/30
Site Reference: LICA
Sampler Initials: SB

General Comments

Results relate only to the items tested.



LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Attention: MICHAEL BISAGA
 Client Project #: 2011/03/01 - 2011/03/30
 P.O. #:
 Site Reference: LICA

Quality Assurance Report
 Maxxam Job Number: PB126006

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4763298 DF4	Calibration Check	Calculated SO2	2011/04/06		99	%	95 - 105
	Spiked Blank	Calculated SO2	2011/04/06		99	%	N/A
	Method Blank	Calculated SO2	2011/04/06	<0.1		ppb	
4763299 DF4	Calibration Check	Calculated SO2	2011/04/06		100	%	95 - 105
	Spiked Blank	Calculated SO2	2011/04/06		98	%	N/A
	Method Blank	Calculated SO2	2011/04/06	<0.1		ppb	
4771027 DF4	Calibration Check	Calculated NO2	2011/04/08		101	%	76 - 118
	Spiked Blank	Calculated NO2	2011/04/08		100	%	N/A
	Method Blank	Calculated NO2	2011/04/08	<0.1		ppb	
4771028 DF4	Calibration Check	Calculated NO2	2011/04/08		98	%	76 - 118
	Spiked Blank	Calculated NO2	2011/04/08		102	%	N/A
	Method Blank	Calculated NO2	2011/04/08	<0.1		ppb	
4772768 TM5	Calibration Check	Calculated H2S	2011/04/08		101	%	80 - 120
	Spiked Blank	Calculated H2S	2011/04/08		100	%	N/A
4775696 SS6	Calibration Check	Calculated O3	2011/04/11		98	%	91 - 107
	Spiked Blank	Calculated O3	2011/04/11		101	%	N/A
	Method Blank	Calculated O3	2011/04/11	<0.1		ppb	
4775699 SS6	Calibration Check	Calculated O3	2011/04/11		99	%	91 - 107
	Spiked Blank	Calculated O3	2011/04/11		98	%	N/A
	Method Blank	Calculated O3	2011/04/11	<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 #: B126006

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

A handwritten signature in black ink, appearing to read "Carmen Toker". The signature is written in a cursive style with a horizontal line underneath it.

CARMEN TOKER, CT, Manager Air Laboratory Services

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Volatile Organics Laboratory Analysis

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: 7802
Station ID: Lica 1 Canister Installation Date/Time: Mar 03 , 2011 @11:40 mst
Field Sample ID: LICA VOC/ CLS /Mar 04, 11 Canister Removal Date/Time: Mar 07 , 2011 @12:30 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
04-Mar-11	03/04/2011 0:00	03/05/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	618	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 # 06947

Technician Signiture: Ting Xu



Your C.O.C. #: 06947

Attention: Michael Bisaga

Maxxam Analytics
 2608 6A Ave.
 Cold Lake, AB
 CANADA T9M 2C7

Report Date: 2011/03/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B131200

Received: 2011/03/09, 09:38

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/03/14	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/03/11	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.

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Total cover pages: 1

Maxxam Job #: B131200
 Report Date: 2011/03/16

RESULTS OF ANALYSES OF AIR

Maxxam ID		IV8000	IV8001	
Sampling Date		2011/03/04	2011/03/04	
COC Number		06947	06947	
	Units	LICA VOC/CLS/MAR 04,11 - 7802	LICA VOC/PORT/MAR 04,11 - 7801	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	22	2429154

QC Batch = Quality Control Batch

Maxxam Job #: B131200
 Report Date: 2011/03/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IV8000			IV8001				
Sampling Date		2011/03/04			2011/03/04				
COC Number		06947			06947				
	Units	LICA VOC/CLS/MAR 04,11 - 7802	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 04,11 - 7801	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics									
2,2,4-Trimethylpentane	ppbv	<0.20	<0.934	0.934	<0.20	0.20	<0.934	0.934	2429170
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2429170
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2429170
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2429170
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2429170
Dichlorodifluoromethane (FREON 12)	ppbv	0.57	2.80	0.989	0.56	0.20	2.78	0.989	2429170
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2429170
Chloromethane	ppbv	0.52	1.08	0.620	0.49	0.30	1.02	0.620	2429170
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2429170
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2429170
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2429170
Trichlorofluoromethane (FREON 11)	ppbv	0.27	1.50	1.12	0.28	0.20	1.58	1.12	2429170
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2429170
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2429170
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2429170
2-Propanone	ppbv	1.19	2.83	1.90	1.10	0.80	2.61	1.90	2429170
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2429170
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2429170
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2429170
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2429170
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2429170
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2429170
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2429170
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2429170
Methylene Chloride(Dichloromethane)	ppbv	0.43	1.49	1.04	0.37	0.30	1.27	1.04	2429170
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2429170
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2429170
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2429170
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2429170
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2429170
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2429170
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

Maxxam Job #: B131200
 Report Date: 2011/03/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IV8000			IV8001				
Sampling Date		2011/03/04			2011/03/04				
COC Number		06947			06947				
	Units	LICA VOC/CLS/MAR 04,11 - 7802	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 04,11 - 7801	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2429170
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2429170
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2429170
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2429170
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2429170
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2429170
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2429170
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2429170
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2429170
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2429170
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2429170
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2429170
Benzene	ppbv	0.22	0.695	0.575	0.19	0.18	0.623	0.575	2429170
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2429170
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2429170
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2429170
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2429170
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2429170
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2429170
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2429170
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2429170
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2429170
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2429170
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2429170
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2429170
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2429170
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2429170
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2429170
Hexane	ppbv	<0.30	<1.06	1.06	0.49	0.30	1.72	1.06	2429170
Cyclohexane	ppbv	<0.20	<0.688	0.688	0.60	0.20	2.06	0.688	2429170
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2429170
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2429170
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2429170
QC Batch = Quality Control Batch									

Maxxam Job #: B131200
 Report Date: 2011/03/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IV8000			IV8001				
Sampling Date		2011/03/04			2011/03/04				
COC Number		06947			06947				
	Units	LICA VOC/CLS/MAR 04,11 - 7802	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 04,11 - 7801	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)									
Bromochloromethane	%	75	N/A	N/A	69		N/A	N/A	2429170
D5-Chlorobenzene	%	73	N/A	N/A	69		N/A	N/A	2429170
Difluorobenzene	%	77	N/A	N/A	72		N/A	N/A	2429170

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

Maxxam Job #: B131200
 Report Date: 2011/03/16

Test Summary

Maxxam ID IV8000 **Collected** 2011/03/04
Sample ID LICA VOC/CLS/MAR 04,11 - 7802 **Shipped**
Matrix AIR **Received** 2011/03/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2429154	N/A	2011/03/14	S_S
Volatile Organics in Air (TO-15)	GC/MS	2429170	N/A	2011/03/11	S_S

Maxxam ID IV8001 **Collected** 2011/03/04
Sample ID LICA VOC/PORT/MAR 04,11 - 7801 **Shipped**
Matrix AIR **Received** 2011/03/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2429154	N/A	2011/03/14	S_S
Volatile Organics in Air (TO-15)	GC/MS	2429170	N/A	2011/03/11	S_S

Maxxam Job #: B131200
Report Date: 2011/03/16

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB131200

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2429170 S_S	Spiked Blank	Bromochloromethane	2011/03/11		86	%	60 - 140
		D5-Chlorobenzene	2011/03/11		90	%	60 - 140
		Difluorobenzene	2011/03/11		87	%	60 - 140
		2,2,4-Trimethylpentane	2011/03/11		99	%	70 - 130
		Carbon Disulfide	2011/03/11		92	%	70 - 130
		Propene	2011/03/11		88	%	70 - 130
		Vinyl Acetate	2011/03/11		106	%	70 - 130
		Vinyl Bromide	2011/03/11		95	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/03/11		96	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/03/11		111	%	70 - 130
		Chloromethane	2011/03/11		100	%	70 - 130
		Vinyl Chloride	2011/03/11		96	%	70 - 130
		Chloroethane	2011/03/11		98	%	70 - 130
		1,3-Butadiene	2011/03/11		97	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/03/11		100	%	70 - 130
		Trichlorotrifluoroethane	2011/03/11		98	%	70 - 130
		Ethanol	2011/03/11		93	%	70 - 130
		2-propanol	2011/03/11		99	%	70 - 130
		2-Propanone	2011/03/11		114	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/03/11		115	%	70 - 130
		Methyl Isobutyl Ketone	2011/03/11		103	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/03/11		104	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/03/11		101	%	70 - 130
		Ethyl Acetate	2011/03/11		104	%	70 - 130
		1,1-Dichloroethylene	2011/03/11		100	%	70 - 130
		cis-1,2-Dichloroethylene	2011/03/11		103	%	70 - 130
		trans-1,2-Dichloroethylene	2011/03/11		101	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/03/11		93	%	70 - 130
		Chloroform	2011/03/11		102	%	70 - 130
		Carbon Tetrachloride	2011/03/11		103	%	70 - 130
		1,1-Dichloroethane	2011/03/11		102	%	70 - 130
		1,2-Dichloroethane	2011/03/11		105	%	70 - 130
		Ethylene Dibromide	2011/03/11		102	%	70 - 130
		1,1,1-Trichloroethane	2011/03/11		103	%	70 - 130
		1,1,2-Trichloroethane	2011/03/11		102	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/03/11		93	%	70 - 130
		cis-1,3-Dichloropropene	2011/03/11		107	%	70 - 130
		trans-1,3-Dichloropropene	2011/03/11		107	%	70 - 130
		1,2-Dichloropropane	2011/03/11		102	%	70 - 130
		Bromomethane	2011/03/11		91	%	70 - 130
		Bromoform	2011/03/11		102	%	70 - 130
		Bromodichloromethane	2011/03/11		102	%	70 - 130
		Dibromochloromethane	2011/03/11		107	%	70 - 130
		Heptane	2011/03/11		102	%	70 - 130
		Trichloroethylene	2011/03/11		99	%	70 - 130
		Tetrachloroethylene	2011/03/11		101	%	70 - 130
		Benzene	2011/03/11		100	%	70 - 130
		Toluene	2011/03/11		104	%	70 - 130
		Ethylbenzene	2011/03/11		99	%	70 - 130
		p+m-Xylene	2011/03/11		99	%	70 - 130
		o-Xylene	2011/03/11		99	%	70 - 130
		Styrene	2011/03/11		99	%	70 - 130
		1,3,5-Trimethylbenzene	2011/03/11		94	%	70 - 130
		1,2,4-Trimethylbenzene	2011/03/11		93	%	70 - 130
		4-ethyltoluene	2011/03/11		102	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB131200

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2429170 S_S	Spiked Blank	Chlorobenzene	2011/03/11		95	%	70 - 130	
		Benzyl chloride	2011/03/11		102	%	70 - 130	
1,3-Dichlorobenzene		2011/03/11		90	%	70 - 130		
1,4-Dichlorobenzene		2011/03/11		91	%	70 - 130		
1,2-Dichlorobenzene		2011/03/11		87	%	70 - 130		
1,2,4-Trichlorobenzene		2011/03/11		91	%	70 - 130		
Hexachlorobutadiene		2011/03/11		86	%	70 - 130		
Hexane		2011/03/11		104	%	70 - 130		
Cyclohexane		2011/03/11		102	%	70 - 130		
Tetrahydrofuran		2011/03/11		107	%	70 - 130		
Method Blank	Method Blank	1,4-Dioxane	2011/03/11		100	%	70 - 130	
		Bromochloromethane	2011/03/11		81	%	60 - 140	
		D5-Chlorobenzene	2011/03/11		78	%	60 - 140	
		Difluorobenzene	2011/03/11		84	%	60 - 140	
		2,2,4-Trimethylpentane	2011/03/11	<0.20			ppbv	
		Carbon Disulfide	2011/03/11	<0.50			ppbv	
		Propene	2011/03/11	<0.30			ppbv	
		Vinyl Acetate	2011/03/11	<0.20			ppbv	
		Vinyl Bromide	2011/03/11	<0.20			ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/03/11	<0.20			ppbv	
		1,2-Dichlorotetrafluoroethane	2011/03/11	<0.17			ppbv	
		Chloromethane	2011/03/11	<0.30			ppbv	
		Vinyl Chloride	2011/03/11	<0.18			ppbv	
		Chloroethane	2011/03/11	<0.30			ppbv	
		1,3-Butadiene	2011/03/11	<0.50			ppbv	
		Trichlorofluoromethane (FREON 11)	2011/03/11	<0.20			ppbv	
		Trichlorotrifluoroethane	2011/03/11	<0.15			ppbv	
		Ethanol	2011/03/11	<2.3			ppbv	
		2-propanol	2011/03/11	<3.0			ppbv	
		2-Propanone	2011/03/11	<0.80			ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/03/11	<3.0			ppbv	
		Methyl Isobutyl Ketone	2011/03/11	<3.2			ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/03/11	<2.0			ppbv	
		Methyl t-butyl ether (MTBE)	2011/03/11	<0.20			ppbv	
		Ethyl Acetate	2011/03/11	<2.2			ppbv	
		1,1-Dichloroethylene	2011/03/11	<0.25			ppbv	
		cis-1,2-Dichloroethylene	2011/03/11	<0.19			ppbv	
		trans-1,2-Dichloroethylene	2011/03/11	<0.20			ppbv	
		Methylene Chloride(Dichloromethane)	2011/03/11	<0.30			ppbv	
		Chloroform	2011/03/11	<0.15			ppbv	
		Carbon Tetrachloride	2011/03/11	<0.30			ppbv	
		1,1-Dichloroethane	2011/03/11	<0.20			ppbv	
		1,2-Dichloroethane	2011/03/11	<0.20			ppbv	
		Ethylene Dibromide	2011/03/11	<0.17			ppbv	
		1,1,1-Trichloroethane	2011/03/11	<0.30			ppbv	
		1,1,2-Trichloroethane	2011/03/11	<0.15			ppbv	
		1,1,2,2-Tetrachloroethane	2011/03/11	<0.20			ppbv	
		cis-1,3-Dichloropropene	2011/03/11	<0.18			ppbv	
trans-1,3-Dichloropropene	2011/03/11	<0.17			ppbv			
1,2-Dichloropropane	2011/03/11	<0.40			ppbv			
Bromomethane	2011/03/11	<0.18			ppbv			
Bromoform	2011/03/11	<0.20			ppbv			
Bromodichloromethane	2011/03/11	<0.20			ppbv			
Dibromochloromethane	2011/03/11	<0.20			ppbv			
Heptane	2011/03/11	<0.30			ppbv			

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB131200

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2429170 S_S	Method Blank	Trichloroethylene	2011/03/11	<0.30		ppbv	
		Tetrachloroethylene	2011/03/11	<0.20		ppbv	
		Benzene	2011/03/11	<0.18		ppbv	
		Toluene	2011/03/11	<0.20		ppbv	
		Ethylbenzene	2011/03/11	<0.20		ppbv	
		p+m-Xylene	2011/03/11	<0.37		ppbv	
		o-Xylene	2011/03/11	<0.20		ppbv	
		Styrene	2011/03/11	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/03/11	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/03/11	<0.50		ppbv	
		4-ethyltoluene	2011/03/11	<2.2		ppbv	
		Chlorobenzene	2011/03/11	<0.20		ppbv	
		Benzyl chloride	2011/03/11	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/03/11	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/03/11	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/03/11	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/03/11	<2.0		ppbv	
		Hexachlorobutadiene	2011/03/11	<3.0		ppbv	
		Hexane	2011/03/11	<0.30		ppbv	
		Cyclohexane	2011/03/11	<0.20		ppbv	
		Tetrahydrofuran	2011/03/11	<0.40		ppbv	
		1,4-Dioxane	2011/03/11	<2.0		ppbv	
		Xylene (Total)	2011/03/11	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/03/11	NC		%	25
		Carbon Disulfide	2011/03/11	NC		%	25
		Propene	2011/03/11	NC		%	25
		Vinyl Acetate	2011/03/11	NC		%	25
		Vinyl Bromide	2011/03/11	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/03/11	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/03/11	NC		%	25
		Chloromethane	2011/03/11	NC		%	25
		Vinyl Chloride	2011/03/11	NC		%	25
		Chloroethane	2011/03/11	NC		%	25
		1,3-Butadiene	2011/03/11	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/03/11	NC		%	25
		Trichlorotrifluoroethane	2011/03/11	NC		%	25
		Ethanol	2011/03/11	NC		%	25
		2-propanol	2011/03/11	NC		%	25
		2-Propanone	2011/03/11	0.8		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/03/11	0.6		%	25
		Methyl Isobutyl Ketone	2011/03/11	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/03/11	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/03/11	NC		%	25
		Ethyl Acetate	2011/03/11	NC		%	25
		1,1-Dichloroethylene	2011/03/11	NC		%	25
		cis-1,2-Dichloroethylene	2011/03/11	NC		%	25
		trans-1,2-Dichloroethylene	2011/03/11	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/03/11	1.4		%	25
		Chloroform	2011/03/11	NC		%	25
		Carbon Tetrachloride	2011/03/11	NC		%	25
		1,1-Dichloroethane	2011/03/11	NC		%	25
		1,2-Dichloroethane	2011/03/11	NC		%	25
		Ethylene Dibromide	2011/03/11	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB131200

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2429170 S_S	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2011/03/11	NC		%	25
		1,1,2-Trichloroethane	2011/03/11	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/03/11	NC		%	25
		cis-1,3-Dichloropropene	2011/03/11	NC		%	25
		trans-1,3-Dichloropropene	2011/03/11	NC		%	25
		1,2-Dichloropropane	2011/03/11	NC		%	25
		Bromomethane	2011/03/11	NC		%	25
		Bromoform	2011/03/11	NC		%	25
		Bromodichloromethane	2011/03/11	NC		%	25
		Dibromochloromethane	2011/03/11	NC		%	25
		Heptane	2011/03/11	NC		%	25
		Trichloroethylene	2011/03/11	NC		%	25
		Tetrachloroethylene	2011/03/11	1.8		%	25
		Benzene	2011/03/11	2.7		%	25
		Toluene	2011/03/11	2.8		%	25
		Ethylbenzene	2011/03/11	1.7		%	25
		p+m-Xylene	2011/03/11	0.8		%	25
		o-Xylene	2011/03/11	0.9		%	25
		Styrene	2011/03/11	8.3		%	25
		1,3,5-Trimethylbenzene	2011/03/11	NC		%	25
		1,2,4-Trimethylbenzene	2011/03/11	0.3		%	25
		4-ethyltoluene	2011/03/11	NC		%	25
		Chlorobenzene	2011/03/11	NC		%	25
		Benzyl chloride	2011/03/11	NC		%	25
		1,3-Dichlorobenzene	2011/03/11	NC		%	25
		1,4-Dichlorobenzene	2011/03/11	NC		%	25
		1,2-Dichlorobenzene	2011/03/11	NC		%	25
		1,2,4-Trichlorobenzene	2011/03/11	NC		%	25
		Hexachlorobutadiene	2011/03/11	NC		%	25
		Hexane	2011/03/11	NC		%	25
		Cyclohexane	2011/03/11	NC		%	25
		Tetrahydrofuran	2011/03/11	NC		%	25
		1,4-Dioxane	2011/03/11	NC		%	25
		Xylene (Total)	2011/03/11	0.8		%	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.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: 7865
Station ID: Lica 1 Canister Installation Date/Time: Mar 09 , 2011 @7:45 mst
Field Sample ID: LICA VOC/ CLS /Mar 10, 11 Canister Removal Date/Time: Mar 11 , 2011 @9:15 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
10-Mar-11	03/10/2011 0:00	03/11/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	618	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 # 06647

Technician Signiture: Ting Xu

Your C.O.C. #: 06647

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

Report Date: 2011/03/25

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B135110****Received: 2011/03/16, 08:55**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/03/21	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/03/21	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 Job #: B135110
 Report Date: 2011/03/25

RESULTS OF ANALYSES OF AIR

Maxxam ID		IX6171	IX6172	
Sampling Date		2011/03/10	2011/03/10	
COC Number		06647	06647	
	Units	LICAVOC\CLSMAR10,11 #7865	LICAVOC\PORTMAR10,11 #7798	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2436901

QC Batch = Quality Control Batch

Maxxam Job #: B135110
 Report Date: 2011/03/25

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IX6171				
Sampling Date		2011/03/10				
COC Number		06647				
	Units	LICAVOC\CLS\MAR10,11	RDL	ug/m3	DL (ug/m3)	QC Batch
		#7865				
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2436885
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2436885
Propene	ppbv	<0.30	0.30	<0.516	0.516	2436885
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2436885
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2436885
Dichlorodifluoromethane (FREON 12)	ppbv	1.06	0.20	5.23	0.989	2436885
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2436885
Chloromethane	ppbv	0.75	0.30	1.54	0.620	2436885
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2436885
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2436885
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2436885
Trichlorofluoromethane (FREON 11)	ppbv	0.45	0.20	2.56	1.12	2436885
Trichlorotrifluoroethane	ppbv	0.16	0.15	1.25	1.15	2436885
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2436885
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2436885
2-Propanone	ppbv	3.73	0.80	8.85	1.90	2436885
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2436885
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2436885
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2436885
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2436885
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2436885
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2436885
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2436885
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2436885
Methylene Chloride(Dichloromethane)	ppbv	0.58	0.30	2.01	1.04	2436885
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2436885
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2436885
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2436885
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2436885
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2436885
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2436885
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2436885
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B135110
 Report Date: 2011/03/25

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IX6171				
Sampling Date		2011/03/10				
COC Number		06647				
	Units	LICAVOC\CLS\MAR10,11	RDL	ug/m3	DL (ug/m3)	QC Batch
		#7865				

1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2436885
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2436885
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2436885
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2436885
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2436885
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2436885
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2436885
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2436885
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2436885
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2436885
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2436885
Benzene	ppbv	0.35	0.18	1.11	0.575	2436885
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2436885
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2436885
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2436885
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2436885
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2436885
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2436885
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2436885
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2436885
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2436885
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2436885
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2436885
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2436885
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2436885
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2436885
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2436885
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2436885
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2436885
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2436885
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2436885
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2436885
Surrogate Recovery (%)						
Bromochloromethane	%	86		N/A	N/A	2436885

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

Maxxam Job #: B135110
 Report Date: 2011/03/25

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IX6171				
Sampling Date		2011/03/10				
COC Number		06647				
	Units	LICAVOC\CLS\MAR10,11	RDL	ug/m3	DL (ug/m3)	QC Batch
		#7865				

D5-Chlorobenzene	%	83		N/A	N/A	2436885
Difluorobenzene	%	84		N/A	N/A	2436885

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

Maxxam Job #: B135110
 Report Date: 2011/03/25

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IX6172				
Sampling Date		2011/03/10				
COC Number		06647				
	Units	LICAVOC\PORTMAR10,11 #7798	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2436885
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2436885
Propene	ppbv	<0.30	0.30	<0.516	0.516	2436885
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2436885
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2436885
Dichlorodifluoromethane (FREON 12)	ppbv	1.02	0.20	5.05	0.989	2436885
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2436885
Chloromethane	ppbv	0.73	0.30	1.50	0.620	2436885
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2436885
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2436885
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2436885
Trichlorofluoromethane (FREON 11)	ppbv	0.43	0.20	2.44	1.12	2436885
Trichlorotrifluoroethane	ppbv	0.18	0.15	1.40	1.15	2436885
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2436885
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2436885
2-Propanone	ppbv	4.20	0.80	9.97	1.90	2436885
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2436885
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2436885
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2436885
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2436885
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2436885
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2436885
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2436885
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2436885
Methylene Chloride(Dichloromethane)	ppbv	0.96	0.30	3.33	1.04	2436885
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2436885
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2436885
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2436885
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2436885
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2436885
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2436885
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2436885

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B135110
 Report Date: 2011/03/25

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IX6172				
Sampling Date		2011/03/10				
COC Number		06647				
	Units	LICAVOC\PORTMAR10,11 #7798	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2436885
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2436885
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2436885
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2436885
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2436885
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2436885
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2436885
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2436885
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2436885
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2436885
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2436885
Benzene	ppbv	0.32	0.18	1.01	0.575	2436885
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2436885
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2436885
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2436885
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2436885
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2436885
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2436885
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2436885
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2436885
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2436885
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2436885
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2436885
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2436885
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2436885
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2436885
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2436885
Hexane	ppbv	0.61	0.30	2.16	1.06	2436885
Cyclohexane	ppbv	0.68	0.20	2.35	0.688	2436885
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2436885
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2436885
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2436885
Surrogate Recovery (%)						
Bromochloromethane	%	84		N/A	N/A	2436885
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B135110
 Report Date: 2011/03/25

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IX6172				
Sampling Date		2011/03/10				
COC Number		06647				
	Units	LICAVOC\PORTMAR10,11	RDL	ug/m3	DL (ug/m3)	QC Batch
		#7798				

D5-Chlorobenzene	%	76		N/A	N/A	2436885
Difluorobenzene	%	83		N/A	N/A	2436885

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

Maxxam Job #: B135110
 Report Date: 2011/03/25

Test Summary

Maxxam ID IX6171
Sample ID LICAVOC\CLSMAR10,11 #7865
Matrix AIR
Collected 2011/03/10
Shipped
Received 2011/03/16

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2436901	N/A	2011/03/21	DVO
Volatile Organics in Air (TO-15)	GC/MS	2436885	N/A	2011/03/21	DVO

Maxxam ID IX6172
Sample ID LICAVOC\PORTMAR10,11 #7798
Matrix AIR
Collected 2011/03/10
Shipped
Received 2011/03/16

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2436901	N/A	2011/03/21	DVO
Volatile Organics in Air (TO-15)	GC/MS	2436885	N/A	2011/03/21	DVO

Maxxam Job #: B135110
Report Date: 2011/03/25

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB135110

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2436885 DVO	Spiked Blank	Bromochloromethane	2011/03/21		96	%	60 - 140
		D5-Chlorobenzene	2011/03/21		98	%	60 - 140
		Difluorobenzene	2011/03/21		97	%	60 - 140
		2,2,4-Trimethylpentane	2011/03/21		105	%	70 - 130
		Carbon Disulfide	2011/03/21		102	%	70 - 130
		Propene	2011/03/21		98	%	70 - 130
		Vinyl Acetate	2011/03/21		96	%	70 - 130
		Vinyl Bromide	2011/03/21		115	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/03/21		100	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/03/21		121	%	70 - 130
		Chloromethane	2011/03/21		110	%	70 - 130
		Vinyl Chloride	2011/03/21		110	%	70 - 130
		Chloroethane	2011/03/21		107	%	70 - 130
		1,3-Butadiene	2011/03/21		115	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/03/21		108	%	70 - 130
		Trichlorotrifluoroethane	2011/03/21		107	%	70 - 130
		Ethanol	2011/03/21		103	%	70 - 130
		2-propanol	2011/03/21		107	%	70 - 130
		2-Propanone	2011/03/21		119	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/03/21		96	%	70 - 130
		Methyl Isobutyl Ketone	2011/03/21		98	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/03/21		96	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/03/21		91	%	70 - 130
		Ethyl Acetate	2011/03/21		104	%	70 - 130
		1,1-Dichloroethylene	2011/03/21		109	%	70 - 130
		cis-1,2-Dichloroethylene	2011/03/21		105	%	70 - 130
		trans-1,2-Dichloroethylene	2011/03/21		97	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/03/21		93	%	70 - 130
		Chloroform	2011/03/21		107	%	70 - 130
		Carbon Tetrachloride	2011/03/21		107	%	70 - 130
		1,1-Dichloroethane	2011/03/21		102	%	70 - 130
		1,2-Dichloroethane	2011/03/21		108	%	70 - 130
		Ethylene Dibromide	2011/03/21		103	%	70 - 130
		1,1,1-Trichloroethane	2011/03/21		108	%	70 - 130
		1,1,2-Trichloroethane	2011/03/21		104	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/03/21		98	%	70 - 130
		cis-1,3-Dichloropropene	2011/03/21		103	%	70 - 130
		trans-1,3-Dichloropropene	2011/03/21		102	%	70 - 130
		1,2-Dichloropropane	2011/03/21		101	%	70 - 130
		Bromomethane	2011/03/21		109	%	70 - 130
		Bromoform	2011/03/21		98	%	70 - 130
		Bromodichloromethane	2011/03/21		102	%	70 - 130
		Dibromochloromethane	2011/03/21		102	%	70 - 130
		Heptane	2011/03/21		97	%	70 - 130
		Trichloroethylene	2011/03/21		103	%	70 - 130
		Tetrachloroethylene	2011/03/21		100	%	70 - 130
		Benzene	2011/03/21		100	%	70 - 130
		Toluene	2011/03/21		104	%	70 - 130
		Ethylbenzene	2011/03/21		105	%	70 - 130
		p+m-Xylene	2011/03/21		102	%	70 - 130
		o-Xylene	2011/03/21		103	%	70 - 130
		Styrene	2011/03/21		99	%	70 - 130
		1,3,5-Trimethylbenzene	2011/03/21		104	%	70 - 130
		1,2,4-Trimethylbenzene	2011/03/21		101	%	70 - 130
		4-ethyltoluene	2011/03/21		100	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB135110

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2436885 DVO	Spiked Blank	Chlorobenzene	2011/03/21		104	%	70 - 130
		Benzyl chloride	2011/03/21		100	%	70 - 130
		1,3-Dichlorobenzene	2011/03/21		98	%	70 - 130
		1,4-Dichlorobenzene	2011/03/21		96	%	70 - 130
		1,2-Dichlorobenzene	2011/03/21		98	%	70 - 130
		1,2,4-Trichlorobenzene	2011/03/21		68 (1)	%	70 - 130
		Hexachlorobutadiene	2011/03/21		80	%	70 - 130
		Hexane	2011/03/21		95	%	70 - 130
		Cyclohexane	2011/03/21		102	%	70 - 130
		Tetrahydrofuran	2011/03/21		102	%	70 - 130
		1,4-Dioxane	2011/03/21		98	%	70 - 130
	Method Blank	Bromochloromethane	2011/03/21		95	%	60 - 140
		D5-Chlorobenzene	2011/03/21		95	%	60 - 140
		Difluorobenzene	2011/03/21		95	%	60 - 140
		2,2,4-Trimethylpentane	2011/03/21	<0.20		ppbv	
		Carbon Disulfide	2011/03/21	<0.50		ppbv	
		Propene	2011/03/21	<0.30		ppbv	
		Vinyl Acetate	2011/03/21	<0.20		ppbv	
		Vinyl Bromide	2011/03/21	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/03/21	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/03/21	<0.17		ppbv	
		Chloromethane	2011/03/21	<0.30		ppbv	
		Vinyl Chloride	2011/03/21	<0.18		ppbv	
		Chloroethane	2011/03/21	<0.30		ppbv	
		1,3-Butadiene	2011/03/21	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/03/21	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/03/21	<0.15		ppbv	
		Ethanol	2011/03/21	<2.3		ppbv	
		2-propanol	2011/03/21	<3.0		ppbv	
		2-Propanone	2011/03/21	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/03/21	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/03/21	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/03/21	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/03/21	<0.20		ppbv	
		Ethyl Acetate	2011/03/21	<2.2		ppbv	
		1,1-Dichloroethylene	2011/03/21	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/03/21	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/03/21	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/03/21	0.78, RDL=0.30		ppbv	
		Chloroform	2011/03/21	<0.15		ppbv	
		Carbon Tetrachloride	2011/03/21	<0.30		ppbv	
		1,1-Dichloroethane	2011/03/21	<0.20		ppbv	
		1,2-Dichloroethane	2011/03/21	<0.20		ppbv	
		Ethylene Dibromide	2011/03/21	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/03/21	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/03/21	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/03/21	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/03/21	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/03/21	<0.17		ppbv	
		1,2-Dichloropropane	2011/03/21	<0.40		ppbv	
		Bromomethane	2011/03/21	<0.18		ppbv	
		Bromoform	2011/03/21	<0.20		ppbv	
		Bromodichloromethane	2011/03/21	<0.20		ppbv	
		Dibromochloromethane	2011/03/21	<0.20		ppbv	
		Heptane	2011/03/21	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB135110

QA/QC Batch			Date Analyzed					
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2436885	DVO	Method Blank	2011/03/21	<0.30		ppbv		
		Trichloroethylene	2011/03/21	<0.20		ppbv		
		Tetrachloroethylene	2011/03/21	<0.18		ppbv		
		Benzene	2011/03/21	<0.20		ppbv		
		Toluene	2011/03/21	<0.20		ppbv		
		Ethylbenzene	2011/03/21	<0.20		ppbv		
		p+m-Xylene	2011/03/21	<0.37		ppbv		
		o-Xylene	2011/03/21	<0.20		ppbv		
		Styrene	2011/03/21	<0.20		ppbv		
		1,3,5-Trimethylbenzene	2011/03/21	<0.50		ppbv		
		1,2,4-Trimethylbenzene	2011/03/21	<0.50		ppbv		
		4-ethyltoluene	2011/03/21	<2.2		ppbv		
		Chlorobenzene	2011/03/21	<0.20		ppbv		
		Benzyl chloride	2011/03/21	<1.0		ppbv		
		1,3-Dichlorobenzene	2011/03/21	<0.40		ppbv		
		1,4-Dichlorobenzene	2011/03/21	<0.40		ppbv		
		1,2-Dichlorobenzene	2011/03/21	<0.40		ppbv		
		1,2,4-Trichlorobenzene	2011/03/21	<2.0		ppbv		
		Hexachlorobutadiene	2011/03/21	<3.0		ppbv		
		Hexane	2011/03/21	<0.30		ppbv		
		Cyclohexane	2011/03/21	<0.20		ppbv		
		Tetrahydrofuran	2011/03/21	<0.40		ppbv		
		1,4-Dioxane	2011/03/21	<2.0		ppbv		
		Xylene (Total)	2011/03/21	<0.60		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.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: 7861
Station ID: Lica 1 Canister Installation Date/Time: Mar 15, 2011 @ 16:10 mst
Field Sample ID: LICA VOC/ CLS /Mar 16, 11 Canister Removal Date/Time: Mar 17, 2011 @ 8:10 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
16-Mar-11	03/16/2011 0:00	03/17/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	618	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 # 07014

Technician Signiture: Ting Xu

Your C.O.C. #: 07014

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

Report Date: 2011/03/31

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B137244****Received: 2011/03/19, 13:59**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/03/23	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/03/23	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.

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Total cover pages: 1

Maxxam Job #: B137244
 Report Date: 2011/03/31

RESULTS OF ANALYSES OF AIR

Maxxam ID		IY5848	IY5849	
Sampling Date		2011/03/16	2011/03/16	
COC Number		07014	07014	
	Units	LICA VOC/CLS/MAR 16,2011 - 7861	LICA VOC/PORT/MAR 16,2011 - 7835	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	21	2439892

QC Batch = Quality Control Batch

Maxxam Job #: B137244
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IY5848			IY5849				
Sampling Date		2011/03/16			2011/03/16				
COC Number		07014			07014				
	Units	LICA VOC/CLS/MAR 16,2011 - 7861	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 16,2011 - 7835	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics									
2,2,4-Trimethylpentane	ppbv	<0.20	<0.934	0.934	<0.20	0.20	<0.934	0.934	2440050
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2440050
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2440050
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2440050
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2440050
Dichlorodifluoromethane (FREON 12)	ppbv	0.74	3.65	0.989	0.74	0.20	3.67	0.989	2440050
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2440050
Chloromethane	ppbv	0.68	1.41	0.620	0.68	0.30	1.40	0.620	2440050
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2440050
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2440050
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2440050
Trichlorofluoromethane (FREON 11)	ppbv	0.35	1.96	1.12	0.35	0.20	1.99	1.12	2440050
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2440050
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2440050
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2440050
2-Propanone	ppbv	2.17	5.15	1.90	2.92	0.80	6.94	1.90	2440050
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2440050
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2440050
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2440050
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2440050
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2440050
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2440050
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2440050
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2440050
Methylene Chloride(Dichloromethane)	ppbv	0.48	1.68	1.04	0.48	0.30	1.66	1.04	2440050
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2440050
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2440050
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2440050
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2440050
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2440050
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2440050
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

Maxxam Job #: B137244
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IY5848			IY5849				
Sampling Date		2011/03/16			2011/03/16				
COC Number		07014			07014				
	Units	LICA VOC/CLS/MAR 16,2011 - 7861	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 16,2011 - 7835	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2440050
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2440050
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2440050
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2440050
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2440050
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2440050
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2440050
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2440050
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2440050
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2440050
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2440050
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2440050
Benzene	ppbv	0.22	0.705	0.575	0.21	0.18	0.664	0.575	2440050
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2440050
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2440050
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2440050
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2440050
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2440050
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2440050
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2440050
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2440050
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2440050
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2440050
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2440050
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2440050
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2440050
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2440050
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2440050
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2440050
Cyclohexane	ppbv	<0.20	<0.688	0.688	0.31	0.20	1.06	0.688	2440050
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2440050
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2440050
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2440050

QC Batch = Quality Control Batch

Maxxam Job #: B137244
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IY5848			IY5849				
Sampling Date		2011/03/16			2011/03/16				
COC Number		07014			07014				
	Units	LICA VOC/CLS/MAR 16,2011 - 7861	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 16,2011 - 7835	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)									
Bromochloromethane	%	74	N/A	N/A	73		N/A	N/A	2440050
D5-Chlorobenzene	%	72	N/A	N/A	73		N/A	N/A	2440050
Difluorobenzene	%	75	N/A	N/A	75		N/A	N/A	2440050

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

Maxxam Job #: B137244
 Report Date: 2011/03/31

Test Summary

Maxxam ID IY5848 **Collected** 2011/03/16
Sample ID LICA VOC/CLS/MAR 16,2011 - 7861 **Shipped**
Matrix AIR **Received** 2011/03/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2439892	N/A	2011/03/23	LSY
Volatile Organics in Air (TO-15)	GC/MS	2440050	N/A	2011/03/23	LSY

Maxxam ID IY5849 **Collected** 2011/03/16
Sample ID LICA VOC/PORT/MAR 16,2011 - 7835 **Shipped**
Matrix AIR **Received** 2011/03/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2439892	N/A	2011/03/23	LSY
Volatile Organics in Air (TO-15)	GC/MS	2440050	N/A	2011/03/23	LSY

Maxxam Job #: B137244
Report Date: 2011/03/31

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB137244

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2440050 LSY	Spiked Blank	Bromochloromethane	2011/03/23		97	%	60 - 140
		D5-Chlorobenzene	2011/03/23		98	%	60 - 140
		Difluorobenzene	2011/03/23		99	%	60 - 140
		2,2,4-Trimethylpentane	2011/03/23		98	%	70 - 130
		Carbon Disulfide	2011/03/23		90	%	70 - 130
		Propene	2011/03/23		92	%	70 - 130
		Vinyl Acetate	2011/03/23		106	%	70 - 130
		Vinyl Bromide	2011/03/23		97	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/03/23		97	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/03/23		111	%	70 - 130
		Chloromethane	2011/03/23		97	%	70 - 130
		Vinyl Chloride	2011/03/23		100	%	70 - 130
		Chloroethane	2011/03/23		98	%	70 - 130
		1,3-Butadiene	2011/03/23		84	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/03/23		96	%	70 - 130
		Trichlorotrifluoroethane	2011/03/23		97	%	70 - 130
		Ethanol	2011/03/23		95	%	70 - 130
		2-propanol	2011/03/23		104	%	70 - 130
		2-Propanone	2011/03/23		113	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/03/23		95	%	70 - 130
		Methyl Isobutyl Ketone	2011/03/23		98	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/03/23		99	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/03/23		105	%	70 - 130
		Ethyl Acetate	2011/03/23		101	%	70 - 130
		1,1-Dichloroethylene	2011/03/23		102	%	70 - 130
		cis-1,2-Dichloroethylene	2011/03/23		103	%	70 - 130
		trans-1,2-Dichloroethylene	2011/03/23		101	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/03/23		88	%	70 - 130
		Chloroform	2011/03/23		100	%	70 - 130
		Carbon Tetrachloride	2011/03/23		97	%	70 - 130
		1,1-Dichloroethane	2011/03/23		100	%	70 - 130
		1,2-Dichloroethane	2011/03/23		101	%	70 - 130
		Ethylene Dibromide	2011/03/23		97	%	70 - 130
		1,1,1-Trichloroethane	2011/03/23		97	%	70 - 130
		1,1,2-Trichloroethane	2011/03/23		96	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/03/23		86	%	70 - 130
		cis-1,3-Dichloropropene	2011/03/23		101	%	70 - 130
		trans-1,3-Dichloropropene	2011/03/23		100	%	70 - 130
		1,2-Dichloropropane	2011/03/23		97	%	70 - 130
		Bromomethane	2011/03/23		99	%	70 - 130
		Bromoform	2011/03/23		99	%	70 - 130
		Bromodichloromethane	2011/03/23		97	%	70 - 130
		Dibromochloromethane	2011/03/23		102	%	70 - 130
		Heptane	2011/03/23		101	%	70 - 130
		Trichloroethylene	2011/03/23		97	%	70 - 130
		Tetrachloroethylene	2011/03/23		99	%	70 - 130
		Benzene	2011/03/23		100	%	70 - 130
		Toluene	2011/03/23		103	%	70 - 130
		Ethylbenzene	2011/03/23		102	%	70 - 130
		p+m-Xylene	2011/03/23		100	%	70 - 130
		o-Xylene	2011/03/23		101	%	70 - 130
		Styrene	2011/03/23		96	%	70 - 130
		1,3,5-Trimethylbenzene	2011/03/23		92	%	70 - 130
		1,2,4-Trimethylbenzene	2011/03/23		88	%	70 - 130
		4-ethyltoluene	2011/03/23		92	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB137244

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2440050 LSY	Spiked Blank	Chlorobenzene	2011/03/23		94	%	70 - 130	
		Benzyl chloride	2011/03/23		68 (1)	%	70 - 130	
1,3-Dichlorobenzene		2011/03/23		77	%	70 - 130		
1,4-Dichlorobenzene		2011/03/23		75	%	70 - 130		
1,2-Dichlorobenzene		2011/03/23		75	%	70 - 130		
1,2,4-Trichlorobenzene		2011/03/23		71	%	70 - 130		
Hexachlorobutadiene		2011/03/23		95	%	70 - 130		
Hexane		2011/03/23		104	%	70 - 130		
Cyclohexane		2011/03/23		102	%	70 - 130		
Tetrahydrofuran		2011/03/23		103	%	70 - 130		
Method Blank	Method Blank	1,4-Dioxane	2011/03/23		94	%	70 - 130	
		Bromochloromethane	2011/03/23		85	%	60 - 140	
		D5-Chlorobenzene	2011/03/23		85	%	60 - 140	
		Difluorobenzene	2011/03/23		87	%	60 - 140	
		2,2,4-Trimethylpentane	2011/03/23	<0.20			ppbv	
		Carbon Disulfide	2011/03/23	<0.50			ppbv	
		Propene	2011/03/23	<0.30			ppbv	
		Vinyl Acetate	2011/03/23	<0.20			ppbv	
		Vinyl Bromide	2011/03/23	<0.20			ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/03/23	<0.20			ppbv	
		1,2-Dichlorotetrafluoroethane	2011/03/23	<0.17			ppbv	
		Chloromethane	2011/03/23	<0.30			ppbv	
		Vinyl Chloride	2011/03/23	<0.18			ppbv	
		Chloroethane	2011/03/23	<0.30			ppbv	
		1,3-Butadiene	2011/03/23	<0.50			ppbv	
		Trichlorofluoromethane (FREON 11)	2011/03/23	<0.20			ppbv	
		Trichlorotrifluoroethane	2011/03/23	<0.15			ppbv	
		Ethanol	2011/03/23	<2.3			ppbv	
		2-propanol	2011/03/23	<3.0			ppbv	
		2-Propanone	2011/03/23	<0.80			ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/03/23	<3.0			ppbv	
		Methyl Isobutyl Ketone	2011/03/23	<3.2			ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/03/23	<2.0			ppbv	
		Methyl t-butyl ether (MTBE)	2011/03/23	<0.20			ppbv	
		Ethyl Acetate	2011/03/23	<2.2			ppbv	
		1,1-Dichloroethylene	2011/03/23	<0.25			ppbv	
		cis-1,2-Dichloroethylene	2011/03/23	<0.19			ppbv	
		trans-1,2-Dichloroethylene	2011/03/23	<0.20			ppbv	
		Methylene Chloride(Dichloromethane)	2011/03/23	0.41, RDL=0.30			ppbv	
		Chloroform	2011/03/23	<0.15			ppbv	
		Carbon Tetrachloride	2011/03/23	<0.30			ppbv	
		1,1-Dichloroethane	2011/03/23	<0.20			ppbv	
		1,2-Dichloroethane	2011/03/23	<0.20			ppbv	
		Ethylene Dibromide	2011/03/23	<0.17			ppbv	
		1,1,1-Trichloroethane	2011/03/23	<0.30			ppbv	
		1,1,2-Trichloroethane	2011/03/23	<0.15			ppbv	
		1,1,2,2-Tetrachloroethane	2011/03/23	<0.20			ppbv	
		cis-1,3-Dichloropropene	2011/03/23	<0.18			ppbv	
trans-1,3-Dichloropropene	2011/03/23	<0.17			ppbv			
1,2-Dichloropropane	2011/03/23	<0.40			ppbv			
Bromomethane	2011/03/23	<0.18			ppbv			
Bromoform	2011/03/23	<0.20			ppbv			
Bromodichloromethane	2011/03/23	<0.20			ppbv			
Dibromochloromethane	2011/03/23	<0.20			ppbv			
Heptane	2011/03/23	<0.30			ppbv			

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB137244

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2440050 LSY	Method Blank	Trichloroethylene	2011/03/23	<0.30		ppbv	
		Tetrachloroethylene	2011/03/23	<0.20		ppbv	
		Benzene	2011/03/23	<0.18		ppbv	
		Toluene	2011/03/23	<0.20		ppbv	
		Ethylbenzene	2011/03/23	<0.20		ppbv	
		p+m-Xylene	2011/03/23	<0.37		ppbv	
		o-Xylene	2011/03/23	<0.20		ppbv	
		Styrene	2011/03/23	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/03/23	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/03/23	<0.50		ppbv	
		4-ethyltoluene	2011/03/23	<2.2		ppbv	
		Chlorobenzene	2011/03/23	<0.20		ppbv	
		Benzyl chloride	2011/03/23	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/03/23	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/03/23	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/03/23	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/03/23	<2.0		ppbv	
		Hexachlorobutadiene	2011/03/23	<3.0		ppbv	
		Hexane	2011/03/23	<0.30		ppbv	
		Cyclohexane	2011/03/23	<0.20		ppbv	
		Tetrahydrofuran	2011/03/23	<0.40		ppbv	
		1,4-Dioxane	2011/03/23	<2.0		ppbv	
		Xylene (Total)	2011/03/23	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane		TBA		%	25
		Carbon Disulfide		TBA		%	25
		Propene		TBA		%	25
		Vinyl Acetate		TBA		%	25
		Vinyl Bromide		TBA		%	25
		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
		Trichlorotrifluoroethane		TBA		%	25
		Ethanol		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

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB137244

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2440050 LSY	RPD - Sample/Sample Dup	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
		trans-1,3-Dichloropropene		TBA		%	25
		1,2-Dichloropropane		TBA		%	25
		Bromomethane		TBA		%	25
		Bromoform		TBA		%	25
		Bromodichloromethane		TBA		%	25
		Dibromochloromethane		TBA		%	25
		Heptane		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
		1,3,5-Trimethylbenzene		TBA		%	25
		1,2,4-Trimethylbenzene		TBA		%	25
		4-ethyltoluene		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
		Cyclohexane		TBA		%	25
		Tetrahydrofuran		TBA		%	25
		1,4-Dioxane		TBA		%	25
		Xylene (Total)		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.

(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 Sampler s/n: 6167
Location: Cold Lake South Canister ID: 7827
Station ID: Lica 1 Canister Installation Date/Time: Mar 21 , 2011 @12:50 mst
Field Sample ID: LICA VOC/ CLS /Mar 22, 11 Canister Removal Date/Time: Mar 23 , 2011 @10:12 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
22-Mar-11	03/22/2011 0:00	03/23/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	618	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 # 07027

Technician Signiture: Ting Xu



Your C.O.C. #: 07027

Attention: Michael Bisaga

Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/03/31

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B140280

Received: 2011/03/25, 09:38

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/03/28	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/03/28	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 Job #: B140280
 Report Date: 2011/03/31

RESULTS OF ANALYSES OF AIR

Maxxam ID		IZ9823	IZ9824	
Sampling Date		2011/03/22	2011/03/22	
		00:00	00:00	
COC Number		07027	07027	
	Units	LICAVOC\CLSMAR22,11/7827	LICAVOC\PORT\MAR22,11/7794	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	22	2442720

QC Batch = Quality Control Batch

Maxxam Job #: B140280
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IZ9823				
Sampling Date		2011/03/22				
		00:00				
COC Number		07027				
	Units	LICAVOCICLSMAR22,11/7827	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2442747
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2442747
Propene	ppbv	<0.30	0.30	<0.516	0.516	2442747
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2442747
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2442747
Dichlorodifluoromethane (FREON 12)	ppbv	0.69	0.20	3.39	0.989	2442747
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2442747
Chloromethane	ppbv	0.53	0.30	1.09	0.620	2442747
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2442747
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2442747
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2442747
Trichlorofluoromethane (FREON 11)	ppbv	0.39	0.20	2.20	1.12	2442747
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2442747
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2442747
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2442747
2-Propanone	ppbv	1.50	0.80	3.56	1.90	2442747
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2442747
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2442747
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2442747
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2442747
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2442747
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2442747
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2442747
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2442747
Methylene Chloride(Dichloromethane)	ppbv	0.40	0.30	1.38	1.04	2442747
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2442747
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2442747
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2442747
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2442747
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2442747
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2442747
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2442747
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B140280
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IZ9823				
Sampling Date		2011/03/22 00:00				
COC Number		07027				
	Units	LICAVOCICLSMAR22,11/7827	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2442747
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2442747
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2442747
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2442747
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2442747
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2442747
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2442747
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2442747
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2442747
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2442747
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2442747
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2442747
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2442747
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2442747
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2442747
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2442747
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2442747
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2442747
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2442747
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2442747
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2442747
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2442747
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2442747
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2442747
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2442747
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2442747
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2442747
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2442747
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2442747
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2442747
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2442747
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2442747
Surrogate Recovery (%)						
Bromochloromethane	%	85		N/A	N/A	2442747

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

Maxxam Job #: B140280
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IZ9823				
Sampling Date		2011/03/22 00:00				
COC Number		07027				
	Units	LICAVOCICLSMAR22,11/7827	RDL	ug/m3	DL (ug/m3)	QC Batch

D5-Chlorobenzene	%	78		N/A	N/A	2442747
Difluorobenzene	%	84		N/A	N/A	2442747

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

Maxxam Job #: B140280
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IZ9824				
Sampling Date		2011/03/22				
		00:00				
COC Number		07027				
	Units	LICAVOC\PORT\MAR22,11/7794	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2442747
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2442747
Propene	ppbv	<0.30	0.30	<0.516	0.516	2442747
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2442747
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2442747
Dichlorodifluoromethane (FREON 12)	ppbv	0.70	0.20	3.48	0.989	2442747
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2442747
Chloromethane	ppbv	0.55	0.30	1.14	0.620	2442747
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2442747
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2442747
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2442747
Trichlorofluoromethane (FREON 11)	ppbv	0.40	0.20	2.26	1.12	2442747
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2442747
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2442747
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2442747
2-Propanone	ppbv	2.28	0.80	5.41	1.90	2442747
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2442747
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2442747
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2442747
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2442747
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2442747
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2442747
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2442747
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2442747
Methylene Chloride(Dichloromethane)	ppbv	0.41	0.30	1.41	1.04	2442747
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2442747
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2442747
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2442747
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2442747
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2442747
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2442747
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2442747

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B140280
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IZ9824				
Sampling Date		2011/03/22				
		00:00				
COC Number		07027				
	Units	LICAVOC\PORT\MAR22,11/7794	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2442747
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2442747
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2442747
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2442747
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2442747
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2442747
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2442747
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2442747
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2442747
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2442747
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2442747
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2442747
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2442747
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2442747
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2442747
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2442747
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2442747
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2442747
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2442747
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2442747
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2442747
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2442747
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2442747
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2442747
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2442747
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2442747
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2442747
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2442747
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2442747
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2442747
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2442747
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2442747
Surrogate Recovery (%)						
Bromochloromethane	%	82		N/A	N/A	2442747
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B140280
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IZ9824				
Sampling Date		2011/03/22				
		00:00				
COC Number		07027				
	Units	LICAVOC\PORT\MAR22,11/7794	RDL	ug/m3	DL (ug/m3)	QC Batch

D5-Chlorobenzene	%	76		N/A	N/A	2442747
Difluorobenzene	%	82		N/A	N/A	2442747

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

Maxxam Job #: B140280
 Report Date: 2011/03/31

Test Summary

Maxxam ID IZ9823
Sample ID LICAVOC\CLSMAR22,11/7827
Matrix AIR
Collected 2011/03/22
Shipped
Received 2011/03/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2442720	N/A	2011/03/28	S_S
Volatile Organics in Air (TO-15)	GC/MS	2442747	N/A	2011/03/28	S_S

Maxxam ID IZ9823 Dup
Sample ID LICAVOC\CLSMAR22,11/7827
Matrix AIR
Collected 2011/03/22
Shipped
Received 2011/03/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organics in Air (TO-15)	GC/MS	2442747	N/A	2011/03/28	S_S

Maxxam ID IZ9824
Sample ID LICAVOC\PORT/MAR22,11/7794
Matrix AIR
Collected 2011/03/22
Shipped
Received 2011/03/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2442720	N/A	2011/03/28	S_S
Volatile Organics in Air (TO-15)	GC/MS	2442747	N/A	2011/03/28	S_S

Maxxam Job #: B140280
Report Date: 2011/03/31

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB140280

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2442747 S_S	Spiked Blank	Bromochloromethane	2011/03/28		98	%	60 - 140
		D5-Chlorobenzene	2011/03/28		96	%	60 - 140
		Difluorobenzene	2011/03/28		99	%	60 - 140
		2,2,4-Trimethylpentane	2011/03/28		95	%	70 - 130
		Carbon Disulfide	2011/03/28		87	%	70 - 130
		Propene	2011/03/28		79	%	70 - 130
		Vinyl Acetate	2011/03/28		99	%	70 - 130
		Vinyl Bromide	2011/03/28		102	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/03/28		114	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/03/28		126	%	70 - 130
		Chloromethane	2011/03/28		106	%	70 - 130
		Vinyl Chloride	2011/03/28		96	%	70 - 130
		Chloroethane	2011/03/28		91	%	70 - 130
		1,3-Butadiene	2011/03/28		95	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/03/28		128	%	70 - 130
		Trichlorotrifluoroethane	2011/03/28		105	%	70 - 130
		Ethanol	2011/03/28		107	%	70 - 130
		2-propanol	2011/03/28		101	%	70 - 130
		2-Propanone	2011/03/28		120	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/03/28		109	%	70 - 130
		Methyl Isobutyl Ketone	2011/03/28		105	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/03/28		112	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/03/28		100	%	70 - 130
		Ethyl Acetate	2011/03/28		99	%	70 - 130
		1,1-Dichloroethylene	2011/03/28		104	%	70 - 130
		cis-1,2-Dichloroethylene	2011/03/28		99	%	70 - 130
		trans-1,2-Dichloroethylene	2011/03/28		98	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/03/28		90	%	70 - 130
		Chloroform	2011/03/28		109	%	70 - 130
		Carbon Tetrachloride	2011/03/28		129	%	70 - 130
		1,1-Dichloroethane	2011/03/28		95	%	70 - 130
		1,2-Dichloroethane	2011/03/28		118	%	70 - 130
		Ethylene Dibromide	2011/03/28		111	%	70 - 130
		1,1,1-Trichloroethane	2011/03/28		121	%	70 - 130
		1,1,2-Trichloroethane	2011/03/28		106	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/03/28		99	%	70 - 130
		cis-1,3-Dichloropropene	2011/03/28		105	%	70 - 130
		trans-1,3-Dichloropropene	2011/03/28		114	%	70 - 130
		1,2-Dichloropropane	2011/03/28		95	%	70 - 130
		Bromomethane	2011/03/28		103	%	70 - 130
		Bromoform	2011/03/28		118	%	70 - 130
		Bromodichloromethane	2011/03/28		119	%	70 - 130
		Dibromochloromethane	2011/03/28		129	%	70 - 130
		Heptane	2011/03/28		97	%	70 - 130
		Trichloroethylene	2011/03/28		103	%	70 - 130
		Tetrachloroethylene	2011/03/28		108	%	70 - 130
		Benzene	2011/03/28		94	%	70 - 130
		Toluene	2011/03/28		101	%	70 - 130
		Ethylbenzene	2011/03/28		99	%	70 - 130
		p+m-Xylene	2011/03/28		99	%	70 - 130
		o-Xylene	2011/03/28		100	%	70 - 130
		Styrene	2011/03/28		99	%	70 - 130
		1,3,5-Trimethylbenzene	2011/03/28		103	%	70 - 130
		1,2,4-Trimethylbenzene	2011/03/28		103	%	70 - 130
		4-ethyltoluene	2011/03/28		105	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB140280

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2442747 S_S	Spiked Blank	Chlorobenzene	2011/03/28		98	%	70 - 130
		Benzyl chloride	2011/03/28		114	%	70 - 130
		1,3-Dichlorobenzene	2011/03/28		103	%	70 - 130
		1,4-Dichlorobenzene	2011/03/28		104	%	70 - 130
		1,2-Dichlorobenzene	2011/03/28		103	%	70 - 130
		1,2,4-Trichlorobenzene	2011/03/28		121	%	70 - 130
		Hexachlorobutadiene	2011/03/28		112	%	70 - 130
		Hexane	2011/03/28		90	%	70 - 130
		Cyclohexane	2011/03/28		93	%	70 - 130
		Tetrahydrofuran	2011/03/28		95	%	70 - 130
		1,4-Dioxane	2011/03/28		105	%	70 - 130
	Method Blank	Bromochloromethane	2011/03/28		93	%	60 - 140
		D5-Chlorobenzene	2011/03/28		84	%	60 - 140
		Difluorobenzene	2011/03/28		92	%	60 - 140
		2,2,4-Trimethylpentane	2011/03/28	<0.20		ppbv	
		Carbon Disulfide	2011/03/28	<0.50		ppbv	
		Propene	2011/03/28	<0.30		ppbv	
		Vinyl Acetate	2011/03/28	<0.20		ppbv	
		Vinyl Bromide	2011/03/28	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/03/28	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/03/28	<0.17		ppbv	
		Chloromethane	2011/03/28	<0.30		ppbv	
		Vinyl Chloride	2011/03/28	<0.18		ppbv	
		Chloroethane	2011/03/28	<0.30		ppbv	
		1,3-Butadiene	2011/03/28	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/03/28	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/03/28	<0.15		ppbv	
		Ethanol	2011/03/28	<2.3		ppbv	
		2-propanol	2011/03/28	<3.0		ppbv	
		2-Propanone	2011/03/28	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/03/28	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/03/28	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/03/28	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/03/28	<0.20		ppbv	
		Ethyl Acetate	2011/03/28	<2.2		ppbv	
		1,1-Dichloroethylene	2011/03/28	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/03/28	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/03/28	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/03/28	0.33, RDL=0.30		ppbv	
		Chloroform	2011/03/28	<0.15		ppbv	
		Carbon Tetrachloride	2011/03/28	<0.30		ppbv	
		1,1-Dichloroethane	2011/03/28	<0.20		ppbv	
		1,2-Dichloroethane	2011/03/28	<0.20		ppbv	
		Ethylene Dibromide	2011/03/28	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/03/28	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/03/28	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/03/28	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/03/28	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/03/28	<0.17		ppbv	
		1,2-Dichloropropane	2011/03/28	<0.40		ppbv	
		Bromomethane	2011/03/28	<0.18		ppbv	
		Bromoform	2011/03/28	<0.20		ppbv	
		Bromodichloromethane	2011/03/28	<0.20		ppbv	
		Dibromochloromethane	2011/03/28	<0.20		ppbv	
		Heptane	2011/03/28	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB140280

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2442747 S_S	Method Blank	Trichloroethylene	2011/03/28	<0.30		ppbv	
		Tetrachloroethylene	2011/03/28	<0.20		ppbv	
		Benzene	2011/03/28	<0.18		ppbv	
		Toluene	2011/03/28	<0.20		ppbv	
		Ethylbenzene	2011/03/28	<0.20		ppbv	
		p+m-Xylene	2011/03/28	<0.37		ppbv	
		o-Xylene	2011/03/28	<0.20		ppbv	
		Styrene	2011/03/28	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/03/28	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/03/28	<0.50		ppbv	
		4-ethyltoluene	2011/03/28	<2.2		ppbv	
		Chlorobenzene	2011/03/28	<0.20		ppbv	
		Benzyl chloride	2011/03/28	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/03/28	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/03/28	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/03/28	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/03/28	<2.0		ppbv	
		Hexachlorobutadiene	2011/03/28	<3.0		ppbv	
		Hexane	2011/03/28	<0.30		ppbv	
		Cyclohexane	2011/03/28	<0.20		ppbv	
		Tetrahydrofuran	2011/03/28	<0.40		ppbv	
		1,4-Dioxane	2011/03/28	<2.0		ppbv	
		Xylene (Total)	2011/03/28	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/03/28	NC		%	25
		Carbon Disulfide	2011/03/28	NC		%	25
		Propene	2011/03/28	NC		%	25
		Vinyl Acetate	2011/03/28	NC		%	25
		Vinyl Bromide	2011/03/28	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/03/28	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/03/28	NC		%	25
		Chloromethane	2011/03/28	NC		%	25
		Vinyl Chloride	2011/03/28	NC		%	25
		Chloroethane	2011/03/28	NC		%	25
		1,3-Butadiene	2011/03/28	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/03/28	NC		%	25
		Trichlorotrifluoroethane	2011/03/28	NC		%	25
		Ethanol	2011/03/28	NC		%	25
		2-propanol	2011/03/28	NC		%	25
		2-Propanone	2011/03/28	NC		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/03/28	NC		%	25
		Methyl Isobutyl Ketone	2011/03/28	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/03/28	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/03/28	NC		%	25
		Ethyl Acetate	2011/03/28	NC		%	25
		1,1-Dichloroethylene	2011/03/28	NC		%	25
		cis-1,2-Dichloroethylene	2011/03/28	NC		%	25
		trans-1,2-Dichloroethylene	2011/03/28	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/03/28	NC		%	25
		Chloroform	2011/03/28	NC		%	25
		Carbon Tetrachloride	2011/03/28	NC		%	25
		1,1-Dichloroethane	2011/03/28	NC		%	25
		1,2-Dichloroethane	2011/03/28	NC		%	25
		Ethylene Dibromide	2011/03/28	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB140280

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2442747 S_S	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2011/03/28	NC		%	25
		1,1,2-Trichloroethane	2011/03/28	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/03/28	NC		%	25
		cis-1,3-Dichloropropene	2011/03/28	NC		%	25
		trans-1,3-Dichloropropene	2011/03/28	NC		%	25
		1,2-Dichloropropane	2011/03/28	NC		%	25
		Bromomethane	2011/03/28	NC		%	25
		Bromoform	2011/03/28	NC		%	25
		Bromodichloromethane	2011/03/28	NC		%	25
		Dibromochloromethane	2011/03/28	NC		%	25
		Heptane	2011/03/28	NC		%	25
		Trichloroethylene	2011/03/28	NC		%	25
		Tetrachloroethylene	2011/03/28	NC		%	25
		Benzene	2011/03/28	NC		%	25
		Toluene	2011/03/28	NC		%	25
		Ethylbenzene	2011/03/28	NC		%	25
		p+m-Xylene	2011/03/28	NC		%	25
		o-Xylene	2011/03/28	NC		%	25
		Styrene	2011/03/28	NC		%	25
		1,3,5-Trimethylbenzene	2011/03/28	NC		%	25
		1,2,4-Trimethylbenzene	2011/03/28	NC		%	25
		4-ethyltoluene	2011/03/28	NC		%	25
		Chlorobenzene	2011/03/28	NC		%	25
		Benzyl chloride	2011/03/28	NC		%	25
		1,3-Dichlorobenzene	2011/03/28	NC		%	25
		1,4-Dichlorobenzene	2011/03/28	NC		%	25
		1,2-Dichlorobenzene	2011/03/28	NC		%	25
		1,2,4-Trichlorobenzene	2011/03/28	NC		%	25
		Hexachlorobutadiene	2011/03/28	NC		%	25
		Hexane	2011/03/28	NC		%	25
		Cyclohexane	2011/03/28	NC		%	25
		Tetrahydrofuran	2011/03/28	NC		%	25
		1,4-Dioxane	2011/03/28	NC		%	25
		Xylene (Total)	2011/03/28	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.

Your C.O.C. #: 07051

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

Report Date: 2011/04/08

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B143292****Received: 2011/03/31, 09:24**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/04/06	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/04/06	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

Page 1 of 10

Page 200 of 250

Maxxam Job #: B143292
 Report Date: 2011/04/08

RESULTS OF ANALYSES OF AIR

Maxxam ID		JB3191	JB3192	
Sampling Date		2011/03/28	2011/03/28	
COC Number		07051	07051	
	Units	LICA VOC/CLS/MAR 28,11 - 7822	LICA VOC/PORT/MAR 28,11 - 7836	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	22	2452086

QC Batch = Quality Control Batch

Maxxam Job #: B143292
 Report Date: 2011/04/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JB3191			JB3192				
Sampling Date		2011/03/28			2011/03/28				
COC Number		07051			07051				
	Units	LICA VOC/CLS/MAR 28,11 - 7822	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 28,11 - 7836	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics									
2,2,4-Trimethylpentane	ppbv	<0.20	<0.934	0.934	<0.20	0.20	<0.934	0.934	2452107
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2452107
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2452107
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2452107
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2452107
Dichlorodifluoromethane (FREON 12)	ppbv	0.83	4.09	0.989	0.81	0.20	3.98	0.989	2452107
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2452107
Chloromethane	ppbv	0.74	1.53	0.620	0.78	0.30	1.60	0.620	2452107
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2452107
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2452107
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2452107
Trichlorofluoromethane (FREON 11)	ppbv	0.37	2.07	1.12	0.38	0.20	2.12	1.12	2452107
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2452107
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2452107
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2452107
2-Propanone	ppbv	2.75	6.53	1.90	2.87	0.80	6.81	1.90	2452107
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2452107
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2452107
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2452107
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2452107
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2452107
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2452107
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2452107
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2452107
Methylene Chloride(Dichloromethane)	ppbv	0.54	1.87	1.04	0.52	0.30	1.81	1.04	2452107
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2452107
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2452107
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2452107
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2452107
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2452107
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2452107

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B143292
 Report Date: 2011/04/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JB3191			JB3192				
Sampling Date		2011/03/28			2011/03/28				
COC Number		07051			07051				
	Units	LICA VOC/CLS/MAR 28,11 - 7822	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 28,11 - 7836	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2452107
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2452107
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2452107
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2452107
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2452107
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2452107
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2452107
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2452107
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2452107
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2452107
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2452107
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2452107
Benzene	ppbv	<0.18	<0.575	0.575	<0.18	0.18	<0.575	0.575	2452107
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2452107
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2452107
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2452107
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2452107
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2452107
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2452107
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2452107
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2452107
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2452107
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2452107
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2452107
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2452107
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2452107
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2452107
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2452107
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2452107
Cyclohexane	ppbv	<0.20	<0.688	0.688	<0.20	0.20	<0.688	0.688	2452107
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2452107
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2452107
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2452107
QC Batch = Quality Control Batch									

Maxxam Job #: B143292
 Report Date: 2011/04/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JB3191			JB3192				
Sampling Date		2011/03/28			2011/03/28				
COC Number		07051			07051				
	Units	LICA VOC/CLS/MAR 28,11 - 7822	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 28,11 - 7836	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)									
Bromochloromethane	%	83	N/A	N/A	83		N/A	N/A	2452107
D5-Chlorobenzene	%	82	N/A	N/A	84		N/A	N/A	2452107
Difluorobenzene	%	85	N/A	N/A	84		N/A	N/A	2452107

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

Maxxam Job #: B143292
 Report Date: 2011/04/08

Test Summary

Maxxam ID JB3191 **Collected** 2011/03/28
Sample ID LICA VOC/CLS/MAR 28,11 - 7822 **Shipped**
Matrix AIR **Received** 2011/03/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2452086	N/A	2011/04/06	LSY
Volatile Organics in Air (TO-15)	GC/MS	2452107	N/A	2011/04/06	LSY

Maxxam ID JB3192 **Collected** 2011/03/28
Sample ID LICA VOC/PORT/MAR 28,11 - 7836 **Shipped**
Matrix AIR **Received** 2011/03/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2452086	N/A	2011/04/06	LSY
Volatile Organics in Air (TO-15)	GC/MS	2452107	N/A	2011/04/06	LSY

Maxxam Job #: B143292
Report Date: 2011/04/08

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB143292

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2452107 LSY	Spiked Blank	Bromochloromethane	2011/04/06		102	%	60 - 140
		D5-Chlorobenzene	2011/04/06		104	%	60 - 140
		Difluorobenzene	2011/04/06		104	%	60 - 140
		2,2,4-Trimethylpentane	2011/04/06		102	%	70 - 130
		Carbon Disulfide	2011/04/06		91	%	70 - 130
		Propene	2011/04/06		98	%	70 - 130
		Vinyl Acetate	2011/04/06		114	%	70 - 130
		Vinyl Bromide	2011/04/06		98	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/04/06		104	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/04/06		115	%	70 - 130
		Chloromethane	2011/04/06		105	%	70 - 130
		Vinyl Chloride	2011/04/06		103	%	70 - 130
		Chloroethane	2011/04/06		99	%	70 - 130
		1,3-Butadiene	2011/04/06		91	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/04/06		102	%	70 - 130
		Trichlorotrifluoroethane	2011/04/06		96	%	70 - 130
		Ethanol	2011/04/06		110	%	70 - 130
		2-propanol	2011/04/06		107	%	70 - 130
		2-Propanone	2011/04/06		106	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/04/06		100	%	70 - 130
		Methyl Isobutyl Ketone	2011/04/06		106	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/04/06		112	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/04/06		109	%	70 - 130
		Ethyl Acetate	2011/04/06		108	%	70 - 130
		1,1-Dichloroethylene	2011/04/06		105	%	70 - 130
		cis-1,2-Dichloroethylene	2011/04/06		105	%	70 - 130
		trans-1,2-Dichloroethylene	2011/04/06		105	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/04/06		93	%	70 - 130
		Chloroform	2011/04/06		102	%	70 - 130
		Carbon Tetrachloride	2011/04/06		103	%	70 - 130
		1,1-Dichloroethane	2011/04/06		102	%	70 - 130
		1,2-Dichloroethane	2011/04/06		109	%	70 - 130
		Ethylene Dibromide	2011/04/06		97	%	70 - 130
		1,1,1-Trichloroethane	2011/04/06		101	%	70 - 130
		1,1,2-Trichloroethane	2011/04/06		95	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/04/06		89	%	70 - 130
		cis-1,3-Dichloropropene	2011/04/06		104	%	70 - 130
		trans-1,3-Dichloropropene	2011/04/06		108	%	70 - 130
		1,2-Dichloropropane	2011/04/06		97	%	70 - 130
		Bromomethane	2011/04/06		100	%	70 - 130
		Bromoform	2011/04/06		102	%	70 - 130
		Bromodichloromethane	2011/04/06		101	%	70 - 130
		Dibromochloromethane	2011/04/06		104	%	70 - 130
		Heptane	2011/04/06		106	%	70 - 130
		Trichloroethylene	2011/04/06		94	%	70 - 130
		Tetrachloroethylene	2011/04/06		94	%	70 - 130
		Benzene	2011/04/06		98	%	70 - 130
		Toluene	2011/04/06		102	%	70 - 130
		Ethylbenzene	2011/04/06		104	%	70 - 130
		p+m-Xylene	2011/04/06		104	%	70 - 130
		o-Xylene	2011/04/06		104	%	70 - 130
		Styrene	2011/04/06		104	%	70 - 130
		1,3,5-Trimethylbenzene	2011/04/06		96	%	70 - 130
		1,2,4-Trimethylbenzene	2011/04/06		94	%	70 - 130
		4-ethyltoluene	2011/04/06		99	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB143292

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2452107 LSY	Spiked Blank	Chlorobenzene	2011/04/06		96	%	70 - 130
		Benzyl chloride	2011/04/06		91	%	70 - 130
		1,3-Dichlorobenzene	2011/04/06		87	%	70 - 130
		1,4-Dichlorobenzene	2011/04/06		90	%	70 - 130
		1,2-Dichlorobenzene	2011/04/06		84	%	70 - 130
		1,2,4-Trichlorobenzene	2011/04/06		98	%	70 - 130
		Hexachlorobutadiene	2011/04/06		102	%	70 - 130
		Hexane	2011/04/06		107	%	70 - 130
		Cyclohexane	2011/04/06		105	%	70 - 130
		Tetrahydrofuran	2011/04/06		108	%	70 - 130
		1,4-Dioxane	2011/04/06		95	%	70 - 130
	Method Blank	Bromochloromethane	2011/04/06		85	%	60 - 140
		D5-Chlorobenzene	2011/04/06		75	%	60 - 140
		Difluorobenzene	2011/04/06		85	%	60 - 140
		2,2,4-Trimethylpentane	2011/04/06	<0.20		ppbv	
		Carbon Disulfide	2011/04/06	<0.50		ppbv	
		Propene	2011/04/06	<0.30		ppbv	
		Vinyl Acetate	2011/04/06	<0.20		ppbv	
		Vinyl Bromide	2011/04/06	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/04/06	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/04/06	<0.17		ppbv	
		Chloromethane	2011/04/06	<0.30		ppbv	
		Vinyl Chloride	2011/04/06	<0.18		ppbv	
		Chloroethane	2011/04/06	<0.30		ppbv	
		1,3-Butadiene	2011/04/06	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/04/06	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/04/06	<0.15		ppbv	
		Ethanol	2011/04/06	<2.3		ppbv	
		2-propanol	2011/04/06	<3.0		ppbv	
		2-Propanone	2011/04/06	0.93, RDL=0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/04/06	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/04/06	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/04/06	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/04/06	<0.20		ppbv	
		Ethyl Acetate	2011/04/06	<2.2		ppbv	
		1,1-Dichloroethylene	2011/04/06	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/04/06	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/04/06	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/04/06	0.56, RDL=0.30		ppbv	
		Chloroform	2011/04/06	<0.15		ppbv	
		Carbon Tetrachloride	2011/04/06	<0.30		ppbv	
		1,1-Dichloroethane	2011/04/06	<0.20		ppbv	
		1,2-Dichloroethane	2011/04/06	<0.20		ppbv	
		Ethylene Dibromide	2011/04/06	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/04/06	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/04/06	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/04/06	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/04/06	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/04/06	<0.17		ppbv	
		1,2-Dichloropropane	2011/04/06	<0.40		ppbv	
		Bromomethane	2011/04/06	<0.18		ppbv	
		Bromoform	2011/04/06	<0.20		ppbv	
		Bromodichloromethane	2011/04/06	<0.20		ppbv	
		Dibromochloromethane	2011/04/06	<0.20		ppbv	
		Heptane	2011/04/06	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB143292

QA/QC Batch			Date Analyzed					
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2452107	LSY	Method Blank	Trichloroethylene	2011/04/06	<0.30			ppbv
			Tetrachloroethylene	2011/04/06	<0.20			ppbv
			Benzene	2011/04/06	<0.18			ppbv
			Toluene	2011/04/06	<0.20			ppbv
			Ethylbenzene	2011/04/06	<0.20			ppbv
			p+m-Xylene	2011/04/06	<0.37			ppbv
			o-Xylene	2011/04/06	<0.20			ppbv
			Styrene	2011/04/06	<0.20			ppbv
			1,3,5-Trimethylbenzene	2011/04/06	<0.50			ppbv
			1,2,4-Trimethylbenzene	2011/04/06	<0.50			ppbv
			4-ethyltoluene	2011/04/06	<2.2			ppbv
			Chlorobenzene	2011/04/06	<0.20			ppbv
			Benzyl chloride	2011/04/06	<1.0			ppbv
			1,3-Dichlorobenzene	2011/04/06	<0.40			ppbv
			1,4-Dichlorobenzene	2011/04/06	<0.40			ppbv
			1,2-Dichlorobenzene	2011/04/06	<0.40			ppbv
			1,2,4-Trichlorobenzene	2011/04/06	<2.0			ppbv
			Hexachlorobutadiene	2011/04/06	<3.0			ppbv
			Hexane	2011/04/06	<0.30			ppbv
			Cyclohexane	2011/04/06	<0.20			ppbv
			Tetrahydrofuran	2011/04/06	<0.40			ppbv
			1,4-Dioxane	2011/04/06	<2.0			ppbv
			Xylene (Total)	2011/04/06	<0.60			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.

Polycyclic Aromatic Hydrocarbons Laboratory Analysis

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
 Location: Cold Lake South
 Station ID: Lica1
 Field Sample ID: LICA PUF/CLS/Mar 04,11

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: Mar 04, 2011 @ 11:55 mst
 Removal Date/Time: Mar 07, 2011 @ 12:42 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
04-Mar-11	03/04/2011 0:00	03/05/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
02-Mar-11	07-Mar-11	15-Mar-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 05-May-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
726	229	-14.4	330.35

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# 06948
GB119541 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Mar 04, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 06948

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

Report Date: 2011/03/14

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B131259****Received: 2011/03/09, 08:59**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/03/10	2011/03/11	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.

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Total cover pages: 1

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Maxxam Job #: B131259
 Report Date: 2011/03/14

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

Maxxam ID		IV8298		IV8299		
Sampling Date		2011/03/04		2011/03/04		
COC Number		06948		06948		
	Units	LICA PUFF+QFF/CLS/MARCH 04,11	RDL	LICA PUFF+QFF/PORT/MARCH 04,11	RDL	QC Batch

Semivolatile Organics						
1-Methylnaphthalene	ug	0.83	0.10	0.65	0.10	2425961
1-Methylphenanthrene	ug	<0.10	0.10	<0.10	0.10	2425961
2-Chloronaphthalene	ug	<0.10	0.10	<0.10	0.10	2425961
2-Methylantracene	ug	<0.10	0.10	<0.10	0.10	2425961
2-Methylnaphthalene	ug	1.80	0.10	1.16	0.10	2425961
3-Methylcholanthrene	ug	<2.0	2.0	<2.0	2.0	2425961
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	0.10	<0.10	0.10	2425961
9,10-Dimethylantracene	ug	<0.40	0.40	<0.40	0.40	2425961
Acenaphthene	ug	<0.11	0.11	<0.069	0.069	2425961
Acenaphthylene	ug	0.082	0.050	0.154	0.050	2425961
Anthracene	ug	<0.050	0.050	<0.050	0.050	2425961
Benzo(a)anthracene	ug	<0.050	0.050	<0.050	0.050	2425961
Benzo(a)fluorene	ug	<0.10	0.10	<0.10	0.10	2425961
Benzo(a)pyrene	ug	<0.050	0.050	<0.050	0.050	2425961
Benzo(b)fluoranthene	ug	<0.050	0.050	0.054	0.050	2425961
Benzo(b)fluorene	ug	<0.10	0.10	<0.10	0.10	2425961
Benzo(e)pyrene	ug	<0.10	0.10	<0.10	0.10	2425961
Benzo(g,h,i)perylene	ug	<0.050	0.050	<0.050	0.050	2425961
Benzo(k)fluoranthene	ug	<0.050	0.050	<0.050	0.050	2425961
Biphenyl	ug	0.33	0.10	0.38	0.10	2425961
Chrysene	ug	<0.050	0.050	0.054	0.050	2425961
Coronene	ug	<0.10	0.10	<0.10	0.10	2425961
Dibenz(a,h)anthracene	ug	<0.050	0.050	<0.050	0.050	2425961
Dibenzo(a,e)pyrene	ug	<0.20	0.20	<0.20	0.20	2425961
Fluoranthene	ug	0.070	0.050	0.158	0.050	2425961
Fluorene	ug	0.134	0.050	0.192	0.050	2425961
Indeno(1,2,3-cd)pyrene	ug	<0.050	0.050	<0.050	0.050	2425961
m-Terphenyl	ug	<0.10	0.10	<0.10	0.10	2425961
Naphthalene	ug	2.08	0.072	1.72	0.072	2425961
o-Terphenyl	ug	<0.10	0.10	<0.10	0.10	2425961
Perylene	ug	<0.10	0.10	<0.10	0.10	2425961

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B131259
 Report Date: 2011/03/14

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

Maxxam ID		IV8298		IV8299		
Sampling Date		2011/03/04		2011/03/04		
COC Number		06948		06948		
	Units	LICA PUFF+QFF/CLS/MARCH 04,11	RDL	LICA PUFF+QFF/PORT/MARCH 04,11	RDL	QC Batch
Phenanthrene	ug	0.264	0.050	0.400	0.050	2425961
p-Terphenyl	ug	<0.10	0.10	<0.10	0.10	2425961
Pyrene	ug	<0.050	0.050	0.096	0.050	2425961
Quinoline	ug	<0.40	0.40	<0.40	0.40	2425961
Tetralin	ug	<0.10	0.10	<0.10	0.10	2425961
Surrogate Recovery (%)						
D10-2-Methylnaphthalene	%	68		70		2425961
D10-Fluoranthene	%	86		84		2425961
D10-Fluorene (FS)	%	72		73		2425961
D10-Phenanthrene	%	78		78		2425961
D12-Benzo(a)anthracene	%	104		102		2425961
D12-Benzo(a)pyrene	%	96		94		2425961
D12-Benzo(b)fluoranthene	%	92		92		2425961
D12-Benzo(ghi)perylene	%	104		104		2425961
D12-Benzo(k)fluoranthene	%	86		86		2425961
D12-Chrysene	%	84		82		2425961
D12-Indeno(1,2,3-cd)pyrene	%	104		106		2425961
D12-Perylene	%	92		94		2425961
D14-Dibenzo(a,h)anthracene	%	106		110		2425961
D14-Terphenyl (FS)	%	82		81		2425961
D8-Acenaphthylene	%	72		74		2425961
D8-Naphthalene	%	66		68		2425961
QC Batch = Quality Control Batch						

Maxxam Job #: B131259
 Report Date: 2011/03/14

Test Summary

Maxxam ID	IV8298	Collected	2011/03/04
Sample ID	LICA PUFF+QFF/CLS/MARCH 04,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/03/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2425961	2011/03/10	2011/03/11	JIW

Maxxam ID	IV8299	Collected	2011/03/04
Sample ID	LICA PUFF+QFF/PORT/MARCH 04,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/03/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2425961	2011/03/10	2011/03/11	JIW

Maxxam Job #: B131259
Report Date: 2011/03/14

GENERAL COMMENTS

PAHMS-F(WS:2425961)

7,12-Dimethylbenzo(a)anthracene is above 25% RSD in initial calibration.

9.10-Dimethylanthracene is above 25% RSD in continuing calibration.

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene and Triphenylene. An estimated mdl for each of these compounds is 0.1ug.

Sample IV8298-01: PAHMS-F(WS:2425961)

Since Dibenzo(a,c) anthracene co-elutes with Dibenz(a,h) anthracene and Triphenylene with Chrysene each would have a value below estimated mdl.

Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chrysene. Picene elutes after Dibenz(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Mdl raised further for Acenaphthene due to matrix interference on a possible positive.

Sample IV8299-01: PAHMS-F(WS:2425961)

Since Dibenzo(a,c) anthracene co-elutes with Dibenz(a,h) anthracene and Triphenylene with Chrysene each would have a value below estimated mdl.

Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chrysene. Picene elutes after Dibenz(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Mdl raised further for Acenaphthene due to matrix interference on a possible positive.

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB131259

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2425961 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/03/11		72	%	50 - 150
		D10-Fluoranthene	2011/03/11		86	%	50 - 150
		D10-Phenanthrene	2011/03/11		80	%	50 - 150
		D12-Benzo(a)anthracene	2011/03/11		98	%	50 - 150
		D12-Benzo(a)pyrene	2011/03/11		94	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/03/11		90	%	50 - 150
		D12-Benzo(ghi)perylene	2011/03/11		98	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/03/11		84	%	50 - 150
		D12-Chrysene	2011/03/11		80	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/03/11		100	%	50 - 150
		D12-Perylene	2011/03/11		94	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/03/11		102	%	50 - 150
		D8-Acenaphthylene	2011/03/11		70	%	50 - 150
		D8-Naphthalene	2011/03/11		70	%	50 - 150
		Acenaphthene	2011/03/11		69	%	60 - 130
	RPD	Acenaphthene	2011/03/11	1.8		%	50
	Spiked Blank	Acenaphthylene	2011/03/11		67	%	60 - 130
	RPD	Acenaphthylene	2011/03/11	3.6		%	50
	Spiked Blank	Anthracene	2011/03/11		67	%	60 - 130
	RPD	Anthracene	2011/03/11	5.4		%	50
	Spiked Blank	Benzo(a)anthracene	2011/03/11		80	%	60 - 130
	RPD	Benzo(a)anthracene	2011/03/11	0.9		%	50
	Spiked Blank	Benzo(a)pyrene	2011/03/11		70	%	60 - 130
	RPD	Benzo(a)pyrene	2011/03/11	1.1		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/03/11		73	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/03/11	1.4		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/03/11		80	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/03/11	4.3		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/03/11		78	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/03/11	1.3		%	50
	Spiked Blank	Chrysene	2011/03/11		76	%	60 - 130
	RPD	Chrysene	2011/03/11	1.7		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/03/11		81	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/03/11	6.3		%	50
	Spiked Blank	Fluoranthene	2011/03/11		80	%	60 - 130
	RPD	Fluoranthene	2011/03/11	0.3		%	50
	Spiked Blank	Fluorene	2011/03/11		69	%	60 - 130
	RPD	Fluorene	2011/03/11	1.8		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/03/11		81	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/03/11	6.0		%	50
	Spiked Blank	Naphthalene	2011/03/11		65	%	60 - 130
	RPD	Naphthalene	2011/03/11	5.6		%	50
	Spiked Blank	Phenanthrene	2011/03/11		73	%	60 - 130
	RPD	Phenanthrene	2011/03/11	0		%	50
	Spiked Blank	Pyrene	2011/03/11		73	%	60 - 130
	RPD	Pyrene	2011/03/11	1.0		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/03/11		74	%	50 - 150
		D10-Fluoranthene	2011/03/11		86	%	50 - 150
		D10-Phenanthrene	2011/03/11		80	%	50 - 150
		D12-Benzo(a)anthracene	2011/03/11		96	%	50 - 150
		D12-Benzo(a)pyrene	2011/03/11		94	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/03/11		90	%	50 - 150
		D12-Benzo(ghi)perylene	2011/03/11		104	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/03/11		84	%	50 - 150
		D12-Chrysene	2011/03/11		78	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB131259

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2425961 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/03/11		106	%	50 - 150
		D12-Perylene	2011/03/11		92	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/03/11		106	%	50 - 150
		D8-Acenaphthylene	2011/03/11		72	%	50 - 150
		D8-Naphthalene	2011/03/11		74	%	50 - 150
		1-Methylnaphthalene	2011/03/11	<0.10		ug	
		1-Methylphenanthrene	2011/03/11	<0.10		ug	
		2-Chloronaphthalene	2011/03/11	<0.10		ug	
		2-Methylantracene	2011/03/11	<0.10		ug	
		2-Methylnaphthalene	2011/03/11	<0.10		ug	
		3-Methylcholanthrene	2011/03/11	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/03/11	<0.10		ug	
		9,10-Dimethylantracene	2011/03/11	<0.40		ug	
		Acenaphthene	2011/03/11	<0.050		ug	
		Acenaphthylene	2011/03/11	<0.050		ug	
		Anthracene	2011/03/11	<0.050		ug	
		Benzo(a)anthracene	2011/03/11	<0.050		ug	
		Benzo(a)fluorene	2011/03/11	<0.10		ug	
		Benzo(a)pyrene	2011/03/11	<0.050		ug	
		Benzo(b)fluoranthene	2011/03/11	<0.050		ug	
		Benzo(b)fluorene	2011/03/11	<0.10		ug	
		Benzo(e)pyrene	2011/03/11	<0.10		ug	
		Benzo(g,h,i)perylene	2011/03/11	<0.050		ug	
		Benzo(k)fluoranthene	2011/03/11	<0.050		ug	
		Biphenyl	2011/03/11	<0.10		ug	
		Chrysene	2011/03/11	<0.050		ug	
		Coronene	2011/03/11	<0.10		ug	
		Dibenz(a,h)anthracene	2011/03/11	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/03/11	<0.20		ug	
		Fluoranthene	2011/03/11	<0.050		ug	
		Fluorene	2011/03/11	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/03/11	<0.050		ug	
		m-Terphenyl	2011/03/11	<0.10		ug	
		Naphthalene	2011/03/11	<0.072		ug	
		o-Terphenyl	2011/03/11	<0.10		ug	
		Perylene	2011/03/11	<0.10		ug	
		Phenanthrene	2011/03/11	<0.050		ug	
		p-Terphenyl	2011/03/11	<0.10		ug	
		Pyrene	2011/03/11	<0.050		ug	
		Quinoline	2011/03/11	<0.40		ug	
		Tetralin	2011/03/11	<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.

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
 Location: Cold Lake South
 Station ID: Lica1
 Field Sample ID: LICA PUF/CLS/Mar 10,11

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: Mar 09, 2011 @ 7:55 mst
 Removal Date/Time: Mar 11, 2011 @ 10:25 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
10-Mar-11	03/10/2011 0:00	03/11/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
08-Mar-11	14-Mar-11	28-Mar-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 05-May-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
710	229	-12.1	330.35

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# 06648
GB120111 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Mar 10, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 06648

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

Report Date: 2011/03/24

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B135074****Received: 2011/03/16, 08:50**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/03/17	2011/03/21	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.

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Total cover pages: 1

Page 1 of 7

Page 220 of 250

Maxxam Job #: B135074
 Report Date: 2011/03/24

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

Maxxam ID		IX6041	IX6042		
Sampling Date		2011/03/10	2011/03/10		
COC Number		06648	06648		
	Units	LICA PUFF+QFF/CLS/MAR 10,11	LICA PUFF+QFF/PORT/MAR 10,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.10	<0.10	0.10	2432851
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2432851
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2432851
2-Methylantracene	ug	<0.10	<0.10	0.10	2432851
2-Methylnaphthalene	ug	0.22	0.16	0.10	2432851
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2432851
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2432851
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2432851
Acenaphthene	ug	<0.050	<0.050	0.050	2432851
Acenaphthylene	ug	<0.050	<0.050	0.050	2432851
Anthracene	ug	<0.050	<0.050	0.050	2432851
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2432851
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2432851
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2432851
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2432851
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2432851
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2432851
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2432851
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2432851
Biphenyl	ug	0.15	0.16	0.10	2432851
Chrysene	ug	<0.050	<0.050	0.050	2432851
Coronene	ug	<0.10	<0.10	0.10	2432851
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2432851
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2432851
Fluoranthene	ug	<0.050	<0.050	0.050	2432851
Fluorene	ug	0.066	0.058	0.050	2432851
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2432851
m-Terphenyl	ug	<0.10	<0.10	0.10	2432851
Naphthalene	ug	0.242	0.166	0.072	2432851
o-Terphenyl	ug	<0.10	<0.10	0.10	2432851
Perylene	ug	<0.10	<0.10	0.10	2432851

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B135074
 Report Date: 2011/03/24

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

Maxxam ID		IX6041	IX6042		
Sampling Date		2011/03/10	2011/03/10		
COC Number		06648	06648		
	Units	LICA PUFF+QFF/CLS/MAR 10,11	LICA PUFF+QFF/PORT/MAR 10,11	RDL	QC Batch
Phenanthrene	ug	0.166	0.116	0.050	2432851
p-Terphenyl	ug	<0.10	<0.10	0.10	2432851
Pyrene	ug	<0.050	<0.050	0.050	2432851
Quinoline	ug	<0.40	<0.40	0.40	2432851
Tetralin	ug	<0.10	<0.10	0.10	2432851
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	62	66		2432851
D10-Fluoranthene	%	88	86		2432851
D10-Fluorene (FS)	%	68	69		2432851
D10-Phenanthrene	%	78	76		2432851
D12-Benzo(a)anthracene	%	102	98		2432851
D12-Benzo(a)pyrene	%	88	84		2432851
D12-Benzo(b)fluoranthene	%	92	90		2432851
D12-Benzo(ghi)perylene	%	94	92		2432851
D12-Benzo(k)fluoranthene	%	88	84		2432851
D12-Chrysene	%	88	84		2432851
D12-Indeno(1,2,3-cd)pyrene	%	96	94		2432851
D12-Perylene	%	86	82		2432851
D14-Dibenzo(a,h)anthracene	%	96	96		2432851
D14-Terphenyl (FS)	%	84	83		2432851
D8-Acenaphthylene	%	66	70		2432851
D8-Naphthalene	%	60	64		2432851
QC Batch = Quality Control Batch					

Maxxam Job #: B135074
Report Date: 2011/03/24

Test Summary

Maxxam ID IX6041
Sample ID LICA PUFF+QFF/CLS/MAR 10,11
Matrix PUF AND FILTER
Collected 2011/03/10
Shipped
Received 2011/03/16

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2432851	2011/03/17	2011/03/21	WZ

Maxxam ID IX6042
Sample ID LICA PUFF+QFF/PORT/MAR 10,11
Matrix PUF AND FILTER
Collected 2011/03/10
Shipped
Received 2011/03/16

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2432851	2011/03/17	2011/03/21	WZ

Maxxam Job #: B135074
Report Date: 2011/03/24

GENERAL COMMENTS

PAHMS-F

7,12-Dimethylbenzo(a)anthracene are above 25% RSD in initial calibration. No positives found for these 2 compounds.

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene or Triphenylene. An estimated mdl for each of these compounds is 0.1ug .

Since Dibenzo(a,c) anthracene co-elutes with Dibenzo(a,h) anthracene and Triphenylene with Chrysene each would have a value below estimated mdl.

Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chrysene. Picene elutes after Dibenzo(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB135074

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2432851 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/03/21		72	%	50 - 150
		D10-Fluoranthene	2011/03/21		84	%	50 - 150
		D10-Phenanthrene	2011/03/21		78	%	50 - 150
		D12-Benzo(a)anthracene	2011/03/21		98	%	50 - 150
		D12-Benzo(a)pyrene	2011/03/21		88	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/03/21		96	%	50 - 150
		D12-Benzo(ghi)perylene	2011/03/21		96	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/03/21		92	%	50 - 150
		D12-Chrysene	2011/03/21		94	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/03/21		96	%	50 - 150
		D12-Perylene	2011/03/21		88	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/03/21		98	%	50 - 150
		RPD	D8-Acenaphthylene	2011/03/21		72	%
	D8-Naphthalene		2011/03/21		70	%	50 - 150
	Acenaphthene		2011/03/21		68	%	60 - 130
	Acenaphthene		2011/03/21	5.3		%	50
	Acenaphthylene		2011/03/21		65	%	60 - 130
	Acenaphthylene		2011/03/21	4.0		%	50
	Anthracene		2011/03/21		63	%	60 - 130
	Anthracene		2011/03/21	4.9		%	50
	Benzo(a)anthracene		2011/03/21		82	%	60 - 130
	Benzo(a)anthracene		2011/03/21	6.3		%	50
	Benzo(a)pyrene		2011/03/21		68	%	60 - 130
	Benzo(a)pyrene		2011/03/21	4.5		%	50
	Benzo(b)fluoranthene		2011/03/21		81	%	60 - 130
	Benzo(b)fluoranthene		2011/03/21	7.4		%	50
	Benzo(g,h,i)perylene		2011/03/21		80	%	60 - 130
	Benzo(g,h,i)perylene		2011/03/21	6.8		%	50
	Benzo(k)fluoranthene		2011/03/21		81	%	60 - 130
	Benzo(k)fluoranthene	2011/03/21	7.1		%	50	
	Spiked Blank	Chrysene	2011/03/21		84	%	60 - 130
		Chrysene	2011/03/21	6.4		%	50
		Dibenz(a,h)anthracene	2011/03/21		81	%	60 - 130
		Dibenz(a,h)anthracene	2011/03/21	5.1		%	50
		Fluoranthene	2011/03/21		75	%	60 - 130
		Fluoranthene	2011/03/21	3.8		%	50
		Fluorene	2011/03/21		67	%	60 - 130
		Fluorene	2011/03/21	6.2		%	50
		Indeno(1,2,3-cd)pyrene	2011/03/21		80	%	60 - 130
		Indeno(1,2,3-cd)pyrene	2011/03/21	4.5		%	50
Naphthalene		2011/03/21		70	%	60 - 130	
Naphthalene		2011/03/21	2.5		%	50	
Phenanthrene		2011/03/21		68	%	60 - 130	
Phenanthrene		2011/03/21	7.2		%	50	
Pyrene		2011/03/21		70	%	60 - 130	
Pyrene		2011/03/21	4.0		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/03/21		68	%	50 - 150	
	D10-Fluoranthene	2011/03/21		82	%	50 - 150	
	D10-Phenanthrene	2011/03/21		74	%	50 - 150	
	D12-Benzo(a)anthracene	2011/03/21		96	%	50 - 150	
	D12-Benzo(a)pyrene	2011/03/21		84	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/03/21		88	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/03/21		90	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/03/21		82	%	50 - 150	
	D12-Chrysene	2011/03/21		86	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB135074

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2432851 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/03/21		92	%	50 - 150
		D12-Perylene	2011/03/21		84	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/03/21		92	%	50 - 150
		D8-Acenaphthylene	2011/03/21		66	%	50 - 150
		D8-Naphthalene	2011/03/21		68	%	50 - 150
		1-Methylnaphthalene	2011/03/21	<0.10		ug	
		1-Methylphenanthrene	2011/03/21	<0.10		ug	
		2-Chloronaphthalene	2011/03/21	<0.10		ug	
		2-Methylanthracene	2011/03/21	<0.10		ug	
		2-Methylnaphthalene	2011/03/21	<0.10		ug	
		3-Methylcholanthrene	2011/03/21	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/03/21	<0.10		ug	
		9,10-Dimethylanthracene	2011/03/21	<0.40		ug	
		Acenaphthene	2011/03/21	<0.050		ug	
		Acenaphthylene	2011/03/21	<0.050		ug	
		Anthracene	2011/03/21	<0.050		ug	
		Benzo(a)anthracene	2011/03/21	<0.050		ug	
		Benzo(a)fluorene	2011/03/21	<0.10		ug	
		Benzo(a)pyrene	2011/03/21	<0.050		ug	
		Benzo(b)fluoranthene	2011/03/21	<0.050		ug	
		Benzo(b)fluorene	2011/03/21	<0.10		ug	
		Benzo(e)pyrene	2011/03/21	<0.10		ug	
		Benzo(g,h,i)perylene	2011/03/21	<0.050		ug	
		Benzo(k)fluoranthene	2011/03/21	<0.050		ug	
		Biphenyl	2011/03/21	<0.10		ug	
		Chrysene	2011/03/21	<0.050		ug	
		Coronene	2011/03/21	<0.10		ug	
		Dibenz(a,h)anthracene	2011/03/21	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/03/21	<0.20		ug	
		Fluoranthene	2011/03/21	<0.050		ug	
		Fluorene	2011/03/21	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/03/21	<0.050		ug	
		m-Terphenyl	2011/03/21	<0.10		ug	
		Naphthalene	2011/03/21	<0.072		ug	
		o-Terphenyl	2011/03/21	<0.10		ug	
		Perylene	2011/03/21	<0.10		ug	
		Phenanthrene	2011/03/21	<0.050		ug	
		p-Terphenyl	2011/03/21	<0.10		ug	
		Pyrene	2011/03/21	<0.050		ug	
		Quinoline	2011/03/21	<0.40		ug	
		Tetralin	2011/03/21	<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: Cold Lake South
 Station ID: Lica1
 Field Sample ID: LICA PUF/CLS/Mar 16,11

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: Mar 15, 2011 @ 16:29 mst
 Removal Date/Time: Mar 17, 2011 @ 8:18 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
16-Mar-11	03/16/2011 0:00	03/17/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
14-Mar-11	17-Mar-11	24-Mar-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 05-May-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
705	229	-3.8	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# 07015
GB120280 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Mar 16, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 07015

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

Report Date: 2011/03/30

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B137224****Received: 2011/03/19, 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	2011/03/23	2011/03/24	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.

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Total cover pages: 1

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Maxxam Job #: B137224
 Report Date: 2011/03/30

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

Maxxam ID		IY5690	IY5691		
Sampling Date		2011/03/16	2011/03/16		
COC Number		07015	07015		
	Units	LICA PUFF+QFF/CLS/MAR 16,11	LICA PUF+QFFF/PORT/MAR 16,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2438012
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2438012
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2438012
2-Methylantracene	ug	<0.10	<0.10	0.10	2438012
2-Methylnaphthalene	ug	0.21	<0.10	0.10	2438012
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2438012
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2438012
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2438012
Acenaphthene	ug	<0.050	<0.050	0.050	2438012
Acenaphthylene	ug	0.070	<0.050	0.050	2438012
Anthracene	ug	<0.050	<0.050	0.050	2438012
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2438012
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2438012
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2438012
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2438012
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2438012
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2438012
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2438012
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2438012
Biphenyl	ug	0.11	0.11	0.10	2438012
Chrysene	ug	<0.050	<0.050	0.050	2438012
Coronene	ug	<0.10	<0.10	0.10	2438012
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2438012
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2438012
Fluoranthene	ug	<0.050	<0.050	0.050	2438012
Fluorene	ug	0.076	<0.050	0.050	2438012
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2438012
m-Terphenyl	ug	<0.10	<0.10	0.10	2438012
Naphthalene	ug	0.182	0.100	0.072	2438012
o-Terphenyl	ug	<0.10	<0.10	0.10	2438012
Perylene	ug	<0.10	<0.10	0.10	2438012

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B137224
 Report Date: 2011/03/30

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

Maxxam ID		IY5690	IY5691		
Sampling Date		2011/03/16	2011/03/16		
COC Number		07015	07015		
	Units	LICA PUFF+QFF/CLS/MAR 16,11	LICA PUF+QFFF/PORT/MAR 16,11	RDL	QC Batch

Phenanthrene	ug	0.148	0.088	0.050	2438012
p-Terphenyl	ug	<0.10	<0.10	0.10	2438012
Pyrene	ug	<0.050	<0.050	0.050	2438012
Quinoline	ug	<0.40	<0.40	0.40	2438012
Tetralin	ug	<0.10	<0.10	0.10	2438012
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	64	76		2438012
D10-Fluoranthene	%	84	90		2438012
D10-Fluorene (FS)	%	66	48 (1)		2438012
D10-Phenanthrene	%	80	86		2438012
D12-Benzo(a)anthracene	%	96	98		2438012
D12-Benzo(a)pyrene	%	88	88		2438012
D12-Benzo(b)fluoranthene	%	90	90		2438012
D12-Benzo(ghi)perylene	%	92	96		2438012
D12-Benzo(k)fluoranthene	%	86	86		2438012
D12-Chrysene	%	88	86		2438012
D12-Indeno(1,2,3-cd)pyrene	%	92	96		2438012
D12-Perylene	%	86	88		2438012
D14-Dibenzo(a,h)anthracene	%	94	98		2438012
D14-Terphenyl (FS)	%	79	83		2438012
D8-Acenaphthylene	%	66	80		2438012
D8-Naphthalene	%	64	76		2438012

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.

Maxxam Job #: B137224
 Report Date: 2011/03/30

Test Summary

Maxxam ID IY5690 **Collected** 2011/03/16
Sample ID LICA PUFF+QFF/CLS/MAR 16,11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/03/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2438012	2011/03/23	2011/03/24	WZ

Maxxam ID IY5691 **Collected** 2011/03/16
Sample ID LICA PUF+QFFF/PORT/MAR 16,11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/03/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2438012	2011/03/23	2011/03/24	WZ

Maxxam Job #: B137224
Report Date: 2011/03/30

GENERAL COMMENTS

PAHMS-F

7,12-Dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positive found for this compound.

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene or Triphenylene. An estimated mdl for each of these compounds is 0.1ug

. Since Dibenzo(a,c) anthracene co-elutes with Dibenzo(a,h) anthracene and Triphenylene with Chrysene each would have a value below estimated mdl.

Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chrysene. Picene elutes after Dibenzo(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample IY5691-01: PAHMS-F

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
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB137224

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2438012 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/03/24		82	%	50 - 150
		D10-Fluoranthene	2011/03/24		88	%	50 - 150
		D10-Phenanthrene	2011/03/24		86	%	50 - 150
		D12-Benzo(a)anthracene	2011/03/24		94	%	50 - 150
		D12-Benzo(a)pyrene	2011/03/24		88	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/03/24		88	%	50 - 150
		D12-Benzo(ghi)perylene	2011/03/24		94	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/03/24		88	%	50 - 150
		D12-Chrysene	2011/03/24		92	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/03/24		96	%	50 - 150
		D12-Perylene	2011/03/24		88	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/03/24		98	%	50 - 150
		RPD	D8-Acenaphthylene	2011/03/24		80	%
	D8-Naphthalene		2011/03/24		82	%	50 - 150
	Spiked Blank	Acenaphthene	2011/03/24		77	%	60 - 130
		Acenaphthene	2011/03/24	3.3		%	50
	RPD	Acenaphthylene	2011/03/24		76	%	60 - 130
		Acenaphthylene	2011/03/24	4.4		%	50
	Spiked Blank	Anthracene	2011/03/24		72	%	60 - 130
		Anthracene	2011/03/24	5.3		%	50
	Spiked Blank	Benzo(a)anthracene	2011/03/24		80	%	60 - 130
		Benzo(a)anthracene	2011/03/24	0.3		%	50
	Spiked Blank	Benzo(a)pyrene	2011/03/24		66	%	60 - 130
		Benzo(a)pyrene	2011/03/24	2.2		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/03/24		75	%	60 - 130
		Benzo(b)fluoranthene	2011/03/24	3.0		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/03/24		81	%	60 - 130
		Benzo(g,h,i)perylene	2011/03/24	4.4		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/03/24		82	%	60 - 130
		Benzo(k)fluoranthene	2011/03/24	0.6		%	50
	Spiked Blank	Chrysene	2011/03/24		83	%	60 - 130
		Chrysene	2011/03/24	0.6		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/03/24		82	%	60 - 130
		Dibenz(a,h)anthracene	2011/03/24	4.7		%	50
	Spiked Blank	Fluoranthene	2011/03/24		81	%	60 - 130
		Fluoranthene	2011/03/24	4.8		%	50
	Spiked Blank	Fluorene	2011/03/24		76	%	60 - 130
		Fluorene	2011/03/24	4.0		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/03/24		83	%	60 - 130
		Indeno(1,2,3-cd)pyrene	2011/03/24	4.7		%	50
Spiked Blank	Naphthalene	2011/03/24		82	%	60 - 130	
	Naphthalene	2011/03/24	4.1		%	50	
Spiked Blank	Phenanthrene	2011/03/24		77	%	60 - 130	
	Phenanthrene	2011/03/24	5.4		%	50	
Spiked Blank	Pyrene	2011/03/24		75	%	60 - 130	
	Pyrene	2011/03/24	5.2		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/03/24		84	%	50 - 150	
	D10-Fluoranthene	2011/03/24		86	%	50 - 150	
	D10-Phenanthrene	2011/03/24		84	%	50 - 150	
	D12-Benzo(a)anthracene	2011/03/24		92	%	50 - 150	
	D12-Benzo(a)pyrene	2011/03/24		84	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/03/24		88	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/03/24		90	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/03/24		84	%	50 - 150	
	D12-Chrysene	2011/03/24		88	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB137224

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2438012 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/03/24		90	%	50 - 150
		D12-Perylene	2011/03/24		84	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/03/24		92	%	50 - 150
		D8-Acenaphthylene	2011/03/24		80	%	50 - 150
		D8-Naphthalene	2011/03/24		84	%	50 - 150
		1-Methylnaphthalene	2011/03/24	<0.10		ug	
		1-Methylphenanthrene	2011/03/24	<0.10		ug	
		2-Chloronaphthalene	2011/03/24	<0.10		ug	
		2-Methylanthracene	2011/03/24	<0.10		ug	
		2-Methylnaphthalene	2011/03/24	<0.10		ug	
		3-Methylcholanthrene	2011/03/24	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/03/24	<0.10		ug	
		9,10-Dimethylanthracene	2011/03/24	<0.40		ug	
		Acenaphthene	2011/03/24	<0.050		ug	
		Acenaphthylene	2011/03/24	<0.050		ug	
		Anthracene	2011/03/24	<0.050		ug	
		Benzo(a)anthracene	2011/03/24	<0.050		ug	
		Benzo(a)fluorene	2011/03/24	<0.10		ug	
		Benzo(a)pyrene	2011/03/24	<0.050		ug	
		Benzo(b)fluoranthene	2011/03/24	<0.050		ug	
		Benzo(b)fluorene	2011/03/24	<0.10		ug	
		Benzo(e)pyrene	2011/03/24	<0.10		ug	
		Benzo(g,h,i)perylene	2011/03/24	<0.050		ug	
		Benzo(k)fluoranthene	2011/03/24	<0.050		ug	
		Biphenyl	2011/03/24	<0.10		ug	
		Chrysene	2011/03/24	<0.050		ug	
		Coronene	2011/03/24	<0.10		ug	
		Dibenz(a,h)anthracene	2011/03/24	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/03/24	<0.20		ug	
		Fluoranthene	2011/03/24	<0.050		ug	
		Fluorene	2011/03/24	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/03/24	<0.050		ug	
		m-Terphenyl	2011/03/24	<0.10		ug	
		Naphthalene	2011/03/24	<0.072		ug	
		o-Terphenyl	2011/03/24	<0.10		ug	
		Perylene	2011/03/24	<0.10		ug	
		Phenanthrene	2011/03/24	<0.050		ug	
		p-Terphenyl	2011/03/24	<0.10		ug	
		Pyrene	2011/03/24	<0.050		ug	
		Quinoline	2011/03/24	<0.40		ug	
		Tetralin	2011/03/24	<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: Cold Lake South
Station ID: Lica1
Field Sample ID: LICA PUF/CLS/Mar 22,11

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Mar 21, 2011 @ 13:03 mst
Removal Date/Time: Mar 23, 2011 @ 10:18 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
22-Mar-11	03/22/2011 0:00	03/23/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
18-Mar-11	23-Mar-11	30-Mar-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 05-May-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
716	229	-2.1	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# 07028

GB124661 PUFF # 1

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Mar 22, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 07028

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

Report Date: 2011/04/01

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B140354****Received: 2011/03/25, 09:05**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/03/28	2011/03/29	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

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Maxxam Job #: B140354
 Report Date: 2011/04/01

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

Maxxam ID		JA0123	JA0124		
Sampling Date		2011/03/22	2011/03/22		
		00:00	00:00		
COC Number		07028	07028		
	Units	LICAPUFF/QFF/CLS/MAR22,11	LICAPUFF/QFF/PORT/MAR22,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2442004
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2442004
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2442004
2-Methylanthracene	ug	<0.10	<0.10	0.10	2442004
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2442004
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2442004
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2442004
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2442004
Acenaphthene	ug	<0.050	<0.050	0.050	2442004
Acenaphthylene	ug	<0.050	0.094	0.050	2442004
Anthracene	ug	<0.050	<0.050	0.050	2442004
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2442004
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2442004
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2442004
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2442004
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2442004
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2442004
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2442004
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2442004
Biphenyl	ug	<0.10	<0.10	0.10	2442004
Chrysene	ug	<0.050	<0.050	0.050	2442004
Coronene	ug	<0.10	<0.10	0.10	2442004
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2442004
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2442004
Fluoranthene	ug	<0.050	0.066	0.050	2442004
Fluorene	ug	0.070	0.068	0.050	2442004
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2442004
m-Terphenyl	ug	<0.10	<0.10	0.10	2442004
Naphthalene	ug	0.076	0.114	0.072	2442004
o-Terphenyl	ug	<0.10	<0.10	0.10	2442004
Perylene	ug	<0.10	<0.10	0.10	2442004
Phenanthrene	ug	0.168	0.180	0.050	2442004

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B140354
 Report Date: 2011/04/01

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

Maxxam ID		JA0123	JA0124		
Sampling Date		2011/03/22	2011/03/22		
		00:00	00:00		
COC Number		07028	07028		
	Units	LICAPUFF/QFF/CLS/MAR22,11	LICAPUFF/QFF/PORT/MAR22,11	RDL	QC Batch
p-Terphenyl	ug	<0.10	<0.10	0.10	2442004
Pyrene	ug	<0.050	<0.050	0.050	2442004
Quinoline	ug	<0.40	<0.40	0.40	2442004
Tetralin	ug	<0.10	<0.10	0.10	2442004
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	62	68		2442004
D10-Fluoranthene	%	92	92		2442004
D10-Fluorene (FS)	%	44 (1)	26 (1)		2442004
D10-Phenanthrene	%	80	82		2442004
D12-Benzo(a)anthracene	%	98	106		2442004
D12-Benzo(a)pyrene	%	94	94		2442004
D12-Benzo(b)fluoranthene	%	88	94		2442004
D12-Benzo(ghi)perylene	%	94	98		2442004
D12-Benzo(k)fluoranthene	%	86	86		2442004
D12-Chrysene	%	82	86		2442004
D12-Indeno(1,2,3-cd)pyrene	%	96	98		2442004
D12-Perylene	%	92	92		2442004
D14-Dibenzo(a,h)anthracene	%	96	98		2442004
D14-Terphenyl (FS)	%	88	86		2442004
D8-Acenaphthylene	%	70	76		2442004
D8-Naphthalene	%	60	66		2442004
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.					

Maxxam Job #: B140354
 Report Date: 2011/04/01

Test Summary

Maxxam ID JA0123 **Collected** 2011/03/22
Sample ID LICAPUFF/QFF/CLS/MAR22,11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/03/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2442004	2011/03/28	2011/03/29	WZ

Maxxam ID JA0124 **Collected** 2011/03/22
Sample ID LICAPUFF/QFF/PORT/MAR22,11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/03/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2442004	2011/03/28	2011/03/29	WZ

Maxxam Job #: B140354
Report Date: 2011/04/01

GENERAL COMMENTS

PAHMS-F

7,12-Dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positive found for this compound.

Internal Std area response criteria was high in Spike:dup. Rerun with similar results. Original run reported.

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene or Triphenylene. An estimated mdl for each of these compounds is 0.1ug. Since Dibenzo(a,c) anthracene co-elutes with Dibenzo(a,h) anthracene and Triphenylene with Chrysene each would have a value below estimated mdl.

Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chrysene. Picene elutes after Dibenzo(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample JA0123-01: PAHMS-F

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

Sample JA0124-01: PAHMS-F

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
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB140354

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2442004 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/03/29		80	%	50 - 150
		D10-Fluoranthene	2011/03/29		98	%	50 - 150
		D10-Phenanthrene	2011/03/29		86	%	50 - 150
		D12-Benzo(a)anthracene	2011/03/29		100	%	50 - 150
		D12-Benzo(a)pyrene	2011/03/29		98	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/03/29		92	%	50 - 150
		D12-Benzo(ghi)perylene	2011/03/29		98	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/03/29		86	%	50 - 150
		D12-Chrysene	2011/03/29		82	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/03/29		100	%	50 - 150
		D12-Perylene	2011/03/29		96	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/03/29		100	%	50 - 150
		RPD	Acenaphthylene	2011/03/29		84	%
	D8-Naphthalene		2011/03/29		80	%	50 - 150
	Acenaphthene		2011/03/29		78	%	60 - 130
	Acenaphthene		2011/03/29	0.6		%	50
	Acenaphthylene		2011/03/29		80	%	60 - 130
	Acenaphthylene		2011/03/29	4.9		%	50
	Anthracene		2011/03/29		76	%	60 - 130
	Anthracene		2011/03/29	7.9		%	50
	Benzo(a)anthracene		2011/03/29		82	%	60 - 130
	Benzo(a)anthracene		2011/03/29	1.8		%	50
	Benzo(a)pyrene		2011/03/29		74	%	60 - 130
	Benzo(a)pyrene		2011/03/29	2.3		%	50
	Benzo(b)fluoranthene		2011/03/29		77	%	60 - 130
	Benzo(b)fluoranthene		2011/03/29	3.3		%	50
	Benzo(g,h,i)perylene		2011/03/29		85	%	60 - 130
	Benzo(g,h,i)perylene		2011/03/29	2.6		%	50
	Spiked Blank		Benzo(k)fluoranthene	2011/03/29		77	%
		Benzo(k)fluoranthene	2011/03/29	7.2		%	50
		Chrysene	2011/03/29		76	%	60 - 130
		Chrysene	2011/03/29	2.0		%	50
		Dibenz(a,h)anthracene	2011/03/29		84	%	60 - 130
		Dibenz(a,h)anthracene	2011/03/29	6.1		%	50
		Fluoranthene	2011/03/29		91	%	60 - 130
		Fluoranthene	2011/03/29	3.5		%	50
		Fluorene	2011/03/29		78	%	60 - 130
		Fluorene	2011/03/29	1.9		%	50
		Indeno(1,2,3-cd)pyrene	2011/03/29		86	%	60 - 130
		Indeno(1,2,3-cd)pyrene	2011/03/29	3.7		%	50
Spiked Blank		Naphthalene	2011/03/29		83	%	60 - 130
	Naphthalene	2011/03/29	5.9		%	50	
	Phenanthrene	2011/03/29		78	%	60 - 130	
	Phenanthrene	2011/03/29	3.5		%	50	
	Pyrene	2011/03/29		85	%	60 - 130	
	Pyrene	2011/03/29	3.8		%	50	
	Method Blank	D10-2-Methylnaphthalene	2011/03/29		80	%	50 - 150
		D10-Fluoranthene	2011/03/29		96	%	50 - 150
		D10-Phenanthrene	2011/03/29		86	%	50 - 150
		D12-Benzo(a)anthracene	2011/03/29		100	%	50 - 150
		D12-Benzo(a)pyrene	2011/03/29		98	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/03/29		94	%	50 - 150
		D12-Benzo(ghi)perylene	2011/03/29		98	%	50 - 150
D12-Benzo(k)fluoranthene		2011/03/29		84	%	50 - 150	
D12-Chrysene		2011/03/29		82	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB140354

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2442004 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/03/29		100	%	50 - 150
		D12-Perylene	2011/03/29		96	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/03/29		100	%	50 - 150
		D8-Acenaphthylene	2011/03/29		88	%	50 - 150
		D8-Naphthalene	2011/03/29		80	%	50 - 150
		1-Methylnaphthalene	2011/03/29	<0.10		ug	
		1-Methylphenanthrene	2011/03/29	<0.10		ug	
		2-Chloronaphthalene	2011/03/29	<0.10		ug	
		2-Methylantracene	2011/03/29	<0.10		ug	
		2-Methylnaphthalene	2011/03/29	<0.10		ug	
		3-Methylcholanthrene	2011/03/29	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/03/29	<0.10		ug	
		9,10-Dimethylantracene	2011/03/29	<0.40		ug	
		Acenaphthene	2011/03/29	<0.050		ug	
		Acenaphthylene	2011/03/29	<0.050		ug	
		Anthracene	2011/03/29	<0.050		ug	
		Benzo(a)anthracene	2011/03/29	<0.050		ug	
		Benzo(a)fluorene	2011/03/29	<0.10		ug	
		Benzo(a)pyrene	2011/03/29	<0.050		ug	
		Benzo(b)fluoranthene	2011/03/29	<0.050		ug	
		Benzo(b)fluorene	2011/03/29	<0.10		ug	
		Benzo(e)pyrene	2011/03/29	<0.10		ug	
		Benzo(g,h,i)perylene	2011/03/29	<0.050		ug	
		Benzo(k)fluoranthene	2011/03/29	<0.050		ug	
		Biphenyl	2011/03/29	<0.10		ug	
		Chrysene	2011/03/29	<0.050		ug	
		Coronene	2011/03/29	<0.10		ug	
		Dibenz(a,h)anthracene	2011/03/29	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/03/29	<0.20		ug	
		Fluoranthene	2011/03/29	<0.050		ug	
		Fluorene	2011/03/29	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/03/29	<0.050		ug	
		m-Terphenyl	2011/03/29	<0.10		ug	
		Naphthalene	2011/03/29	<0.072		ug	
		o-Terphenyl	2011/03/29	<0.10		ug	
		Perylene	2011/03/29	<0.10		ug	
		Phenanthrene	2011/03/29	<0.050		ug	
		p-Terphenyl	2011/03/29	<0.10		ug	
		Pyrene	2011/03/29	<0.050		ug	
		Quinoline	2011/03/29	<0.40		ug	
		Tetralin	2011/03/29	<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: Cold Lake South
 Station ID: Lica1
 Field Sample ID: LICA PUF/CLS/Mar 28,11

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: Mar 25, 2011 @ 11:05 mst
 Removal Date/Time: Mar 29, 2011 @ 6:52 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
28-Mar-11	03/28/2011 0:00	03/29/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
24-Mar-11	29-Mar-11	05-Apr-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 05-May-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
715	229	-4.1	330.35

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# 07052

GB124668 PUFF # 1

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Mar 28, 11

Technician Signiture: Ting Xu

Site: COLD LAKE SOUTH
Your C.O.C. #: 07052

Attention: Michael Bisaga

Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/04/07

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B143433

Received: 2011/03/31, 09:15

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/04/02	2011/04/04	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 #: B143433
 Report Date: 2011/04/07

Maxxam Analytics

Project name: COLD LAKE SOUTH

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

Maxxam ID		JB3758	JB3759		
Sampling Date		2011/03/28 00:00	2011/03/28 00:00		
COC Number		07052	07052		
	Units	LICA PUFF/QFF/CLS/MAR 28, 11	LICA PUFF/QFF/PORT/MAR 28, 11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2448007
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2448007
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2448007
2-Methylantracene	ug	<0.10	<0.10	0.10	2448007
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2448007
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2448007
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2448007
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2448007
Acenaphthene	ug	<0.050	<0.050	0.050	2448007
Acenaphthylene	ug	<0.050	<0.050	0.050	2448007
Anthracene	ug	<0.050	<0.050	0.050	2448007
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2448007
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2448007
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2448007
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2448007
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2448007
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2448007
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2448007
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2448007
Biphenyl	ug	<0.10	<0.10	0.10	2448007
Chrysene	ug	<0.050	<0.050	0.050	2448007
Coronene	ug	<0.10	<0.10	0.10	2448007
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2448007
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2448007
Fluoranthene	ug	<0.050	<0.050	0.050	2448007
Fluorene	ug	<0.050	0.064	0.050	2448007
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2448007
m-Terphenyl	ug	<0.10	<0.10	0.10	2448007
Naphthalene	ug	<0.072	0.088	0.072	2448007
o-Terphenyl	ug	<0.10	<0.10	0.10	2448007

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B143433
 Report Date: 2011/04/07

Maxxam Analytics

Project name: COLD LAKE SOUTH

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

Maxxam ID		JB3758	JB3759		
Sampling Date		2011/03/28 00:00	2011/03/28 00:00		
COC Number		07052	07052		
	Units	LICA PUFF/QFF/CLS/MAR 28, 11	LICA PUFF/QFF/PORT/MAR 28, 11	RDL	QC Batch

Perylene	ug	<0.10	<0.10	0.10	2448007
Phenanthrene	ug	0.092	0.110	0.050	2448007
p-Terphenyl	ug	<0.10	<0.10	0.10	2448007
Pyrene	ug	<0.050	<0.050	0.050	2448007
Quinoline	ug	<0.40	<0.40	0.40	2448007
Tetralin	ug	<0.10	<0.10	0.10	2448007
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	70	74		2448007
D10-Fluoranthene	%	98	98		2448007
D10-Fluorene (FS)	%	35 (1)	44 (1)		2448007
D10-Phenanthrene	%	84	86		2448007
D12-Benzo(a)anthracene	%	98	98		2448007
D12-Benzo(a)pyrene	%	100	96		2448007
D12-Benzo(b)fluoranthene	%	92	92		2448007
D12-Benzo(ghi)perylene	%	104	102		2448007
D12-Benzo(k)fluoranthene	%	90	90		2448007
D12-Chrysene	%	82	86		2448007
D12-Indeno(1,2,3-cd)pyrene	%	106	104		2448007
D12-Perylene	%	98	98		2448007
D14-Dibenzo(a,h)anthracene	%	106	104		2448007
D14-Terphenyl (FS)	%	91	94		2448007
D8-Acenaphthylene	%	80	84		2448007
D8-Naphthalene	%	68	72		2448007

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.

Maxxam Job #: B143433
Report Date: 2011/04/07

Maxxam Analytics

Project name: COLD LAKE SOUTH

Test Summary

Maxxam ID JB3758 **Collected** 2011/03/28
Sample ID LICA PUFF/QFF/CLS/MAR 28, 11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/03/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2448007	2011/04/02	2011/04/04	WZ

Maxxam ID JB3759 **Collected** 2011/03/28
Sample ID LICA PUFF/QFF/PORT/MAR 28, 11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/03/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2448007	2011/04/02	2011/04/04	WZ

Maxxam Job #: B143433
Report Date: 2011/04/07

Maxxam Analytics

Project name: COLD LAKE SOUTH

GENERAL COMMENTS

PAHMS-F

9,10-Dimethylanthracene and 7,12-Dimethylbenzo(a)anthracene are above 25% RSD in initial calibration. No positives found for these 2 compounds.

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene or Triphenylene. An estimated mdl for each of these compounds is 0.1ug. Since Dibenzo(a,c) anthracene co-elutes with Dibenzo(a,h) anthracene and Triphenylene with Chrysene each would have a value below estimated mdl.

Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chrysene. Picene elutes after Dibenzo(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample JB3758-01: PAHMS-F

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

Sample JB3759-01: PAHMS-F

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
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name: COLD LAKE SOUTH

Quality Assurance Report
 Maxxam Job Number: GB143433

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2448007 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/04/04		76	%	50 - 150
		D10-Fluoranthene	2011/04/04		100	%	50 - 150
		D10-Phenanthrene	2011/04/04		84	%	50 - 150
		D12-Benzo(a)anthracene	2011/04/04		98	%	50 - 150
		D12-Benzo(a)pyrene	2011/04/04		100	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/04/04		92	%	50 - 150
		D12-Benzo(ghi)perylene	2011/04/04		102	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/04/04		90	%	50 - 150
		D12-Chrysene	2011/04/04		86	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/04/04		106	%	50 - 150
		D12-Perylene	2011/04/04		98	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/04/04		104	%	50 - 150
		RPD	D8-Acenaphthylene	2011/04/04		80	%
	D8-Naphthalene		2011/04/04		76	%	50 - 150
	Spiked Blank	Acenaphthene	2011/04/04		76	%	60 - 130
		Acenaphthene	2011/04/04	13.4		%	50
	RPD	Acenaphthylene	2011/04/04		76	%	60 - 130
		Acenaphthylene	2011/04/04	13.0		%	50
	Spiked Blank	Anthracene	2011/04/04		83	%	60 - 130
		Anthracene	2011/04/04	19.9		%	50
	Spiked Blank	Benzo(a)anthracene	2011/04/04		79	%	60 - 130
		Benzo(a)anthracene	2011/04/04	14.3		%	50
	Spiked Blank	Benzo(a)pyrene	2011/04/04		76	%	60 - 130
		Benzo(a)pyrene	2011/04/04	14.6		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/04/04		76	%	60 - 130
		Benzo(b)fluoranthene	2011/04/04	12.2		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/04/04		88	%	60 - 130
		Benzo(g,h,i)perylene	2011/04/04	18.8		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/04/04		80	%	60 - 130
		Benzo(k)fluoranthene	2011/04/04	12.0		%	50
	Spiked Blank	Chrysene	2011/04/04		79	%	60 - 130
		Chrysene	2011/04/04	13.5		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/04/04		86	%	60 - 130
		Dibenz(a,h)anthracene	2011/04/04	20.1		%	50
	Spiked Blank	Fluoranthene	2011/04/04		92	%	60 - 130
		Fluoranthene	2011/04/04	10.6		%	50
	Spiked Blank	Fluorene	2011/04/04		76	%	60 - 130
		Fluorene	2011/04/04	13.1		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/04/04		88	%	60 - 130
		Indeno(1,2,3-cd)pyrene	2011/04/04	18.7		%	50
Spiked Blank	Naphthalene	2011/04/04		72	%	60 - 130	
	Naphthalene	2011/04/04	12.9		%	50	
Spiked Blank	Phenanthrene	2011/04/04		74	%	60 - 130	
	Phenanthrene	2011/04/04	12.5		%	50	
Spiked Blank	Pyrene	2011/04/04		85	%	60 - 130	
	Pyrene	2011/04/04	8.9		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/04/04		78	%	50 - 150	
	D10-Fluoranthene	2011/04/04		90	%	50 - 150	
	D10-Phenanthrene	2011/04/04		76	%	50 - 150	
	D12-Benzo(a)anthracene	2011/04/04		90	%	50 - 150	
	D12-Benzo(a)pyrene	2011/04/04		92	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/04/04		88	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/04/04		98	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/04/04		88	%	50 - 150	
	D12-Chrysene	2011/04/04		88	%	50 - 150	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name: COLD LAKE SOUTH

Quality Assurance Report (Continued)

Maxxam Job Number: GB143433

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2448007 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/04/04		96	%	50 - 150
		D12-Perylene	2011/04/04		94	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/04/04		96	%	50 - 150
		D8-Acenaphthylene	2011/04/04		82	%	50 - 150
		D8-Naphthalene	2011/04/04		80	%	50 - 150
		1-Methylnaphthalene	2011/04/04	<0.10		ug	
		1-Methylphenanthrene	2011/04/04	<0.10		ug	
		2-Chloronaphthalene	2011/04/04	<0.10		ug	
		2-Methylanthracene	2011/04/04	<0.10		ug	
		2-Methylnaphthalene	2011/04/04	<0.10		ug	
		3-Methylcholanthrene	2011/04/04	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/04/04	<0.10		ug	
		9,10-Dimethylanthracene	2011/04/04	<0.40		ug	
		Acenaphthene	2011/04/04	<0.050		ug	
		Acenaphthylene	2011/04/04	<0.050		ug	
		Anthracene	2011/04/04	<0.050		ug	
		Benzo(a)anthracene	2011/04/04	<0.050		ug	
		Benzo(a)fluorene	2011/04/04	<0.10		ug	
		Benzo(a)pyrene	2011/04/04	<0.050		ug	
		Benzo(b)fluoranthene	2011/04/04	<0.050		ug	
		Benzo(b)fluorene	2011/04/04	<0.10		ug	
		Benzo(e)pyrene	2011/04/04	<0.10		ug	
		Benzo(g,h,i)perylene	2011/04/04	<0.050		ug	
		Benzo(k)fluoranthene	2011/04/04	<0.050		ug	
		Biphenyl	2011/04/04	<0.10		ug	
		Chrysene	2011/04/04	<0.050		ug	
		Coronene	2011/04/04	<0.10		ug	
		Dibenz(a,h)anthracene	2011/04/04	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/04/04	<0.20		ug	
		Fluoranthene	2011/04/04	<0.050		ug	
		Fluorene	2011/04/04	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/04/04	<0.050		ug	
		m-Terphenyl	2011/04/04	<0.10		ug	
		Naphthalene	2011/04/04	<0.072		ug	
		o-Terphenyl	2011/04/04	<0.10		ug	
		Perylene	2011/04/04	<0.10		ug	
		Phenanthrene	2011/04/04	<0.050		ug	
		p-Terphenyl	2011/04/04	<0.10		ug	
		Pyrene	2011/04/04	<0.050		ug	
		Quinoline	2011/04/04	<0.40		ug	
		Tetralin	2011/04/04	<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.

Lakeland Industry & Community Association

Maskwa Monitoring Site
Ambient Air Monitoring
Data Report
For
March 2011

Prepared By:



April 14, 2011

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: March 2011

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 – March 2011

LICA MASKWA SITE						MAXIMUM VALUES						OPERATIONAL TIME (PERCENT)	
						OBJECTIVES			EXCEEDENCES		MONTHLY AVERAGE		1-HOUR
PARAMETER	1-HR	24-HR	1-HR	24-HR	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING			DAY
SO2 (PPB)	172	48	0	0	0.87	20	18	11	1.4	156(SSE)	3.0	22	99.9
H2S (PPB)	10	3	0	0	0.03	1	VAR	VAR	VAR	VAR	0.5	1	99.9
THC (PPM)	-	-	-	-	2.28	4.4	2	9	0.6	319(NW)	3.0	9	99.3
NOx (PPB)	-	-	-	-	3.88	113	8	7	0.6	282(W)	16.0	8	99.9
NO (PPB)	-	-	-	-	0.81	64	8	7	0.6	282(W)	6.1	8	99.9
NO ₂ (PPB)	212	106	0	0	3.05	49	8	7	0.6	282(W)	9.8	8	99.9
VECTOR WS (KPH)	-	-	-	-	6.21	15.4	10	23	-	26(26(NNE))	11.7	10	100.0
VECTOR WD (DEGREES)	-	-	-	-	114(ESE)	-	-	-	-	-	-	-	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	63.79	88	18, 20	VAR	VAR	VAR	82.4	19	100.0
TEMPERATURE (DEG C)	-	-	-	-	-8.70	11.3	31	12, 13	7.9, 9.9	269(W), 289(WNW)	4.9	31	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	942	957	4	VAR	VAR	VAR	955.3	4	100.0
PRECIPITATION (MM)	-	-	-	-	0.01	0.7	3	9	4.4	316(NW)	1.2	17	100.0

VAR-VARIOUS

General Monthly Summary

Equipment Operation

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

AQM STATION – LICA – Maskwa

Sulphur Dioxide (PPB)

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

No operational issue was observed during the month. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

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

No operational issue was observed during the month. 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

The analyzer flamed out on March 8th due to running out the H₂ gas. The H₂ gas cylinder was replaced on March 8th. Four hours of data were invalidated. The monthly calibration was performed on March 14th. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – Maskwa

Nitrogen Dioxide (PPB)

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

No operational issue was observed during the month. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

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

- System make / model - Met One 50.5H, S/N: H10703 replaced to RM Young 5103VK, S/N: 46553

The wind system is reported as vector wind speed and vector wind direction.

The Met One wind system was removed, and a temporary RM Young wind system was installed and calibrated on March 10th. The Met One wind system was sent to the factory for calibration. 2 hours of data for wind speed maximum were invalidated this month as they went full scale. The values for wind speed maximum before the Met One system removed (between March 1st and March 10th) look higher than the expected. Data during this period of time will be re-checked to determine where it is good or bad when the manufacture calibration result is available.

Relative Humidity (PERCENT)

- System make / model - Met One 083

No operational issues observed during the month.

Precipitation (MM)

- System make / model - Met One 387

No operational issues observed during this month.

General Monthly Summary

AQM STATION – LICA – Maskwa

Barometric Pressure (MILLIBAR)

- System make / model - Met One 092

No operation issue was observed during the month.

Ambient Temperature (DEGC)

- System make / model - Met One 060

No operational issue was observed during the month.

Trailer Temperature (DEG C)

- System make / model – R&R 61

No operational issue was observed during the month.

Standard Deviation Wind Direction (DEG)

- System make / model –Met One 50.5H

No operational issue was 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 issue was observed during the month.

Trailer

The manifold was cleaned on March 15th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA
MARCH 2011
SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		2	0	0	0	0	0	0	0	1	1	4	0	IZS	0	1	0	0	0	0	0	0	0	0	0	0	4	0.4	24
2		0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	2	2	3	0	0	2	1	0	0	0	3	0.5	24
3		0	0	0	0	0	0	0	0	1	2	IZS	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0.2	24
4		0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	2	1	1	1	0	0	0	0	0	0	0	2	0.3	24
5		0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	0	1	0	0	0	0	0	1	0.3	24
6		0	0	0	0	0	1	0	IZS	0	0	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	0.5	24
7		0	1	1	0	1	0	IZS	0	1	1	1	1	1	12	4	3	3	3	3	3	4	3	1	1	1	12	2.1	24
8		1	1	0	0	0	IZS	0	0	0	0	1	1	1	1	1	2	1	1	1	1	1	0	0	0	2	0.6	24	
9		1	0	0	0	IZS	0	0	0	0	1	1	1	2	3	2	2	2	2	2	2	2	1	2	2	1	3	1.2	24
10		1	1	0	IZS	0	0	0	0	0	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	23	
11		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	0.0	24
12		0	IZS	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
13		IZS	0	0	0	0	0	0	0	0	1	12	3	1	1	1	1	1	1	1	1	1	0	0	0	IZS	12	1.1	24
14		0	1	1	1	1	1	1	0	0	1	0	0	0	0	1	2	11	9	5	4	0	2	IZS	4	11	2.0	24	
15		1	0	5	0	0	0	1	6	C	C	C	C	4	3	3	0	0	0	0	0	0	0	IZS	1	0	6	1.3	24
16		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
17		0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
18		0	0	0	0	0	0	0	0	1	9	17	20	6	4	1	0	0	0	0	IZS	0	0	0	0	0	20	2.5	24
19		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	IZS	0	0	0	0	0	0	0	3	0.2	24
20		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	0.0	24
21		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	6	7	6	5	7	7	9	9	9	2.4	24	
22		7	5	3	2	4	7	6	7	3	2	2	3	2	2	IZS	1	6	5	3	0	0	0	0	0	7	3.0	24	
23		0	0	0	0	0	0	1	4	4	0	2	2	2	IZS	0	0	0	0	0	0	0	0	0	0	0	4	0.7	24
24		0	0	0	0	1	9	1	4	7	6	3	2	IZS	2	0	1	1	1	2	2	0	0	0	0	9	1.8	24	
25		1	1	0	0	0	0	1	2	2	4	4	IZS	2	1	1	0	0	0	0	0	0	1	0	0	4	0.9	24	
26		0	0	0	2	6	2	6	5	4	7	IZS	4	4	6	5	3	0	0	1	0	0	0	0	0	7	2.4	24	
27		0	1	2	3	4	6	5	7	5	IZS	3	2	1	3	0	0	0	0	0	0	0	0	0	0	7	1.8	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	1	1	0	IZS	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
30		0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0.2	24
31		1	0	0	0	0	IZS	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	0.3	24	
HOURLY MAX		7	5	5	3	6	9	6	7	7	9	17	20	6	12	5	3	11	9	6	5	7	7	9	9				
HOURLY AVG		0.5	0.4	0.4	0.3	0.6	0.9	0.8	1.2	1.1	1.4	2.0	1.5	1.0	1.4	0.9	0.8	1.2	1.0	0.9	0.7	0.5	0.6	0.5	0.6				

STATUS FLAG CODES

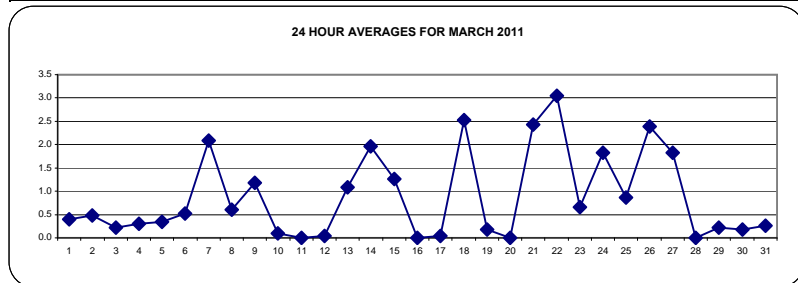
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

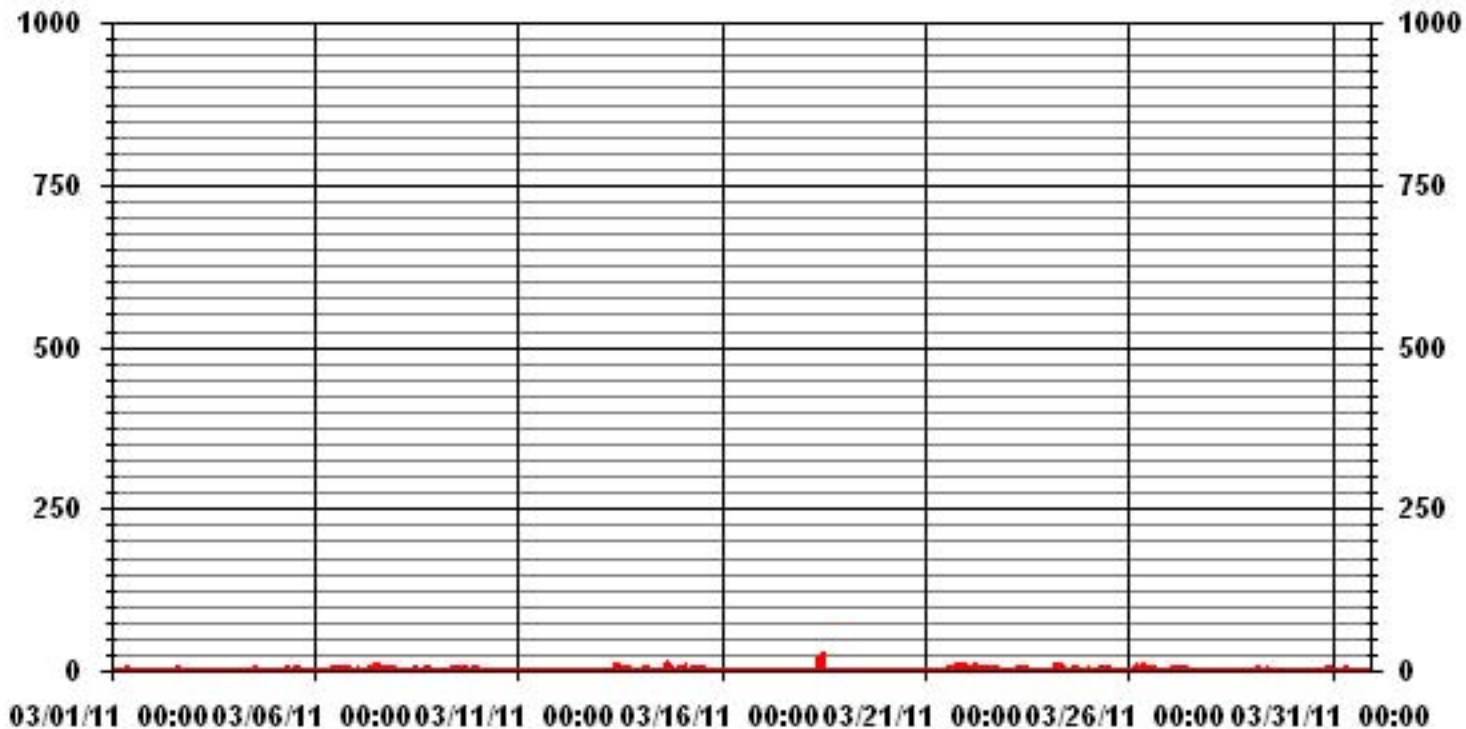
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	231					
MAXIMUM 1-HR AVERAGE:	20	PPB	@ HOUR(S)	11	ON DAY(S)	18
MAXIMUM 24-HR AVERAGE:	3.0	PPB			ON DAY(S)	22
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743 HRS		
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.9 %		
STANDARD DEVIATION:	1.98		MONTHLY AVERAGE:	0.87 PPB		



01 Hour Averages



— LICA30 SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

MARCH 2011

SULPHUR DIOXIDE MAX instantaneous maximum in ppt

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1		9	1	1	3	0	1	0	0	4	4	14	3	IZS	2	1	1	0	0	0	1	1	1	1	1	1	14	2.1	24
2		1	1	1	1	1	0	0	0	0	1	1	IZS	1	4	5	7	6	1	1	5	4	1	1	1	1	7	1.9	24
3		1	1	1	1	1	1	1	1	2	6	IZS	3	4	4	17	2	1	0	0	0	0	0	0	0	17	2.0	24	
4		0	0	0	0	0	0	0	0	0	IZS	4	4	3	3	3	8	2	1	1	1	1	1	1	1	8	1.5	24	
5		1	1	1	1	1	1	1	0	IZS	2	2	1	3	2	2	3	2	1	1	1	1	1	1	1	3	1.3	24	
6		1	1	1	1	1	1	1	1	IZS	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	2	1.2	24	
7		1	1	1	1	3	1	IZS	1	1	1	1	1	3	22	6	4	4	4	3	4	4	3	2	1	22	3.2	24	
8		1	1	1	1	1	IZS	0	2	1	1	2	2	1	1	2	2	2	2	2	2	1	1	1	1	2	1.3	24	
9		2	1	1	0	IZS	0	0	0	1	2	2	2	2	3	3	2	2	3	3	2	2	2	2	2	3	1.7	24	
10		1	1	1	IZS	1	1	1	0	1	M	M	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	22	
11		0	1	IZS	1	1	0	1	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	2	2	2	0.5	24	
12		0	IZS	0	0	0	0	0	0	0	4	4	1	1	0	1	0	0	0	1	0	0	0	0	0	4	0.6	24	
13		IZS	0	0	0	0	0	0	0	0	9	24	6	2	1	1	2	2	1	1	2	1	1	1	IZS	24	2.5	24	
14		0	2	2	2	1	1	1	1	1	2	1	1	1	2	3	12	24	22	20	19	1	7	IZS	14	24	6.1	24	
15		7	1	15	2	1	1	9	20	C	C	C	C	8	7	7	1	1	1	1	1	1	IZS	1	1	20	4.5	24	
16		1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	0.2	24	
17		0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	IZS	0	0	0	0	1	0.2	24	
18		0	0	0	0	0	0	1	1	3	26	24	26	19	7	2	0	0	0	IZS	0	0	0	0	1	26	4.8	24	
19		1	0	0	0	0	0	0	0	0	0	0	0	0	4	6	3	IZS	0	0	0	0	0	0	0	6	0.6	24	
20		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	
21		0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	IZS	9	11	10	9	12	10	11	15	15	3.9	24	
22		10	9	5	6	8	10	8	11	10	6	8	6	10	7	IZS	4	11	9	8	3	0	0	0	0	11	6.5	24	
23		0	0	0	0	2	2	8	9	8	3	7	5	8	IZS	1	1	0	1	0	0	0	1	0	0	9	2.4	24	
24		0	0	0	0	9	11	4	9	14	16	9	7	IZS	6	2	9	7	5	6	6	1	0	0	2	16	5.3	24	
25		2	2	0	1	0	0	2	3	2	11	11	IZS	5	3	2	0	0	0	0	0	0	2	2	0	11	2.1	24	
26		0	0	1	7	10	7	11	9	7	12	IZS	7	8	12	12	10	0	2	2	1	0	0	0	0	12	5.1	24	
27		0	4	4	5	8	9	7	10	8	IZS	13	13	2	9	3	0	0	0	0	0	0	0	0	0	13	4.1	24	
28		1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0.2	24	
29		0	0	1	1	1	2	0	IZS	1	1	2	2	1	1	1	0	0	0	1	0	0	0	0	0	2	0.7	24	
30		0	0	0	1	1	1	IZS	1	1	0	0	1	0	1	0	1	1	1	1	1	1	1	1	1	2	0.7	24	
31		2	1	1	1	0	IZS	0	0	6	2	1	0	0	4	4	0	0	0	1	0	1	0	8	8	8	1.7	24	
HOURLY MAX		10	9	15	7	10	11	11	20	14	26	24	26	19	22	17	12	24	22	20	19	12	10	11	15				
HOURLY AVG		1.4	1.0	1.3	1.2	1.7	1.8	1.9	2.7	2.6	4.2	5.0	3.4	2.9	3.5	2.8	2.6	2.6	2.2	2.2	2.0	1.1	1.1	1.2	1.8				

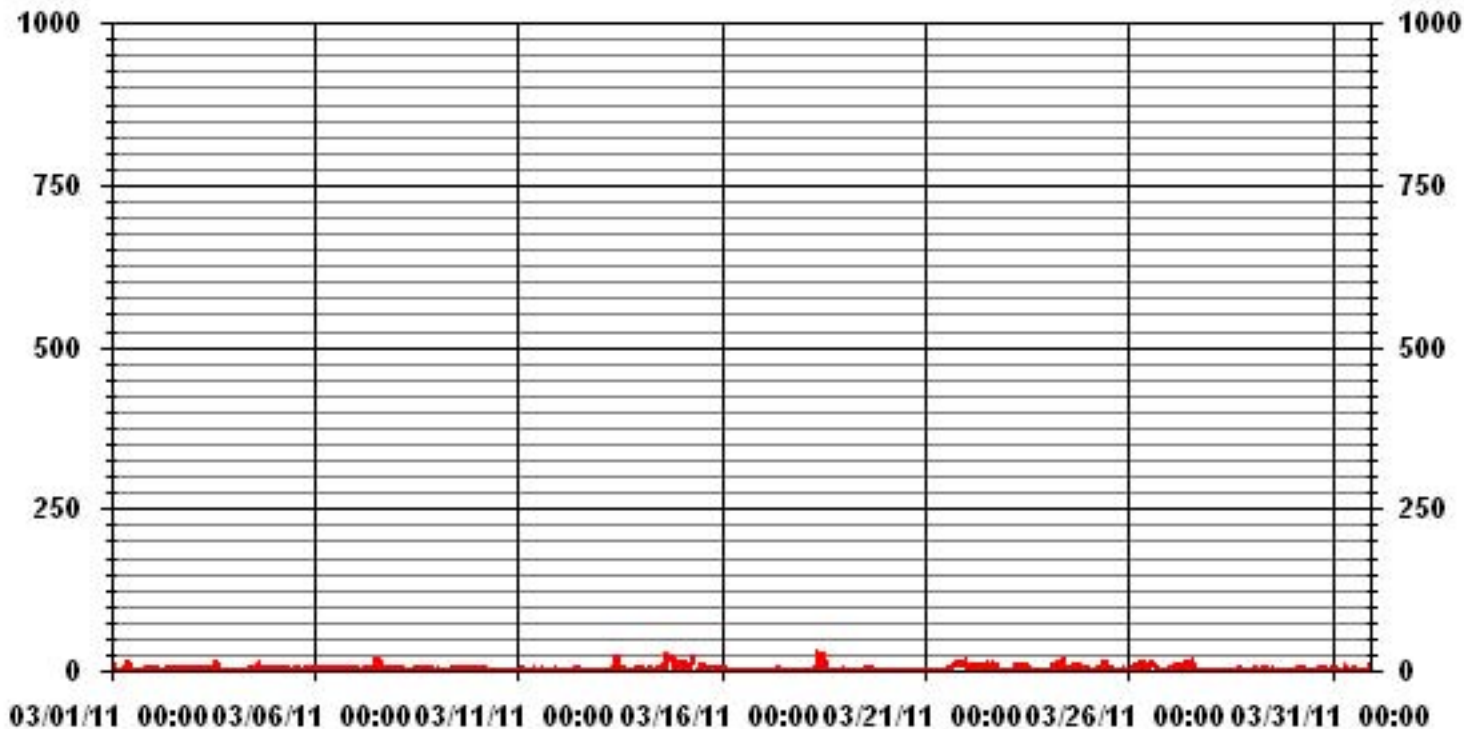
STATUS FLAG CODES

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:	423
MAXIMUM INSTANTANEOUS VALUE:	26 PPB @ HOUR(S) 9, 11 ON DAY(S) 18
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	3.96
OPERATIONAL TIME:	742 HRS

01 Hour Averages



— LICA30 SO2MAX PPB

LICA30
 SO2_ / WDR Joint Frequency Distribution (Percent)

March 2011

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	2.13	4.69	13.51	7.11	6.25	11.37	12.94	8.96	7.11	10.81	4.26	1.56	1.56	3.55	1.99	1.99	99.85
< 60	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.14
< 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	2.13	4.69	13.51	7.11	6.25	11.37	12.94	9.10	7.11	10.81	4.26	1.56	1.56	3.55	1.99	1.99	

Calm : .00 %

Total # Operational Hours : 703

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	15	33	95	50	44	80	91	63	50	76	30	11	11	25	14	14	702
< 60								1									1
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	15	33	95	50	44	80	91	64	50	76	30	11	11	25	14	14	

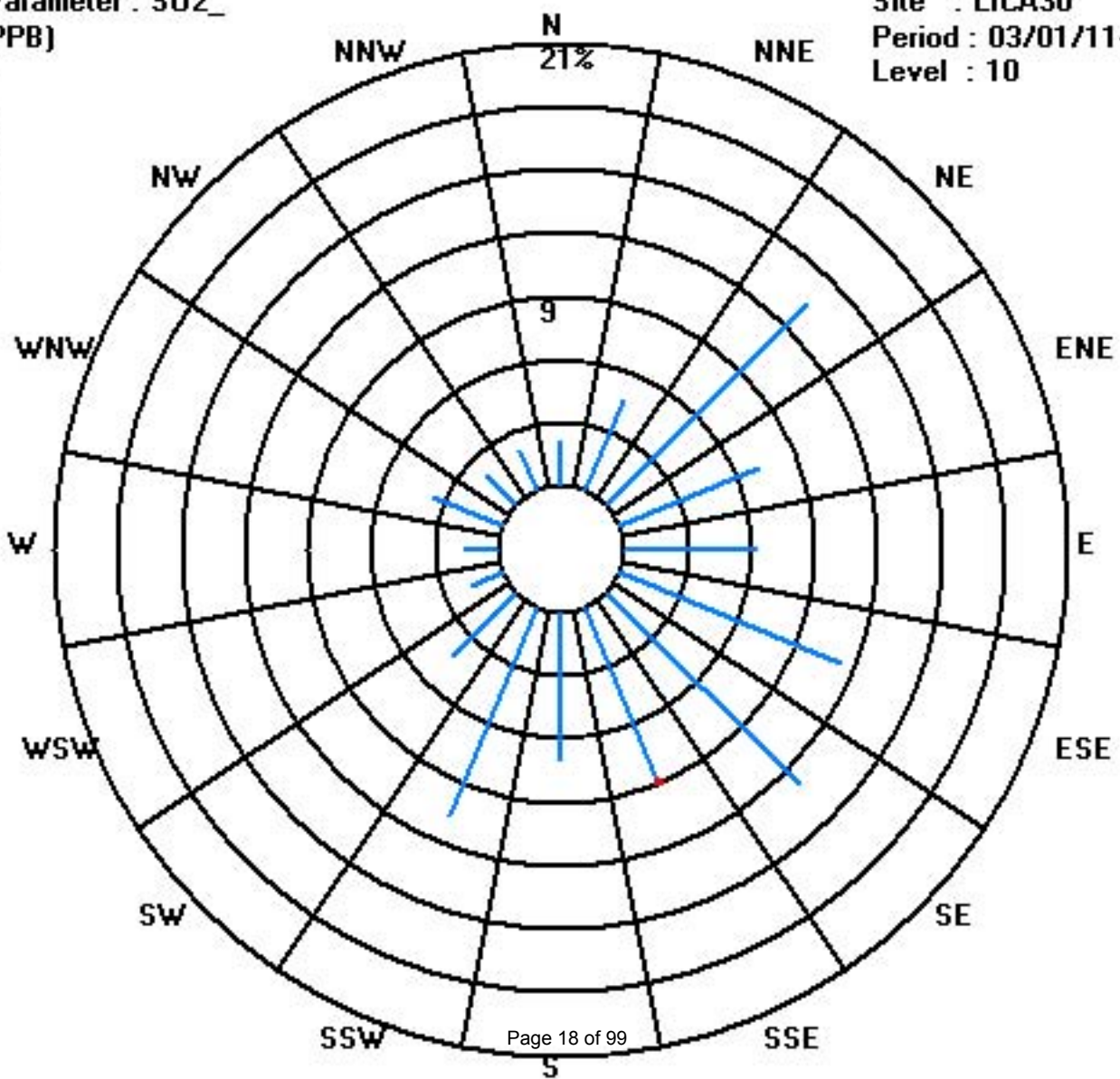
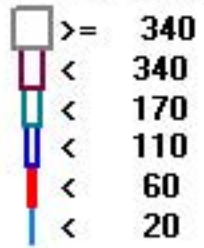
Calm : .00 %

Total # Operational Hours : 703

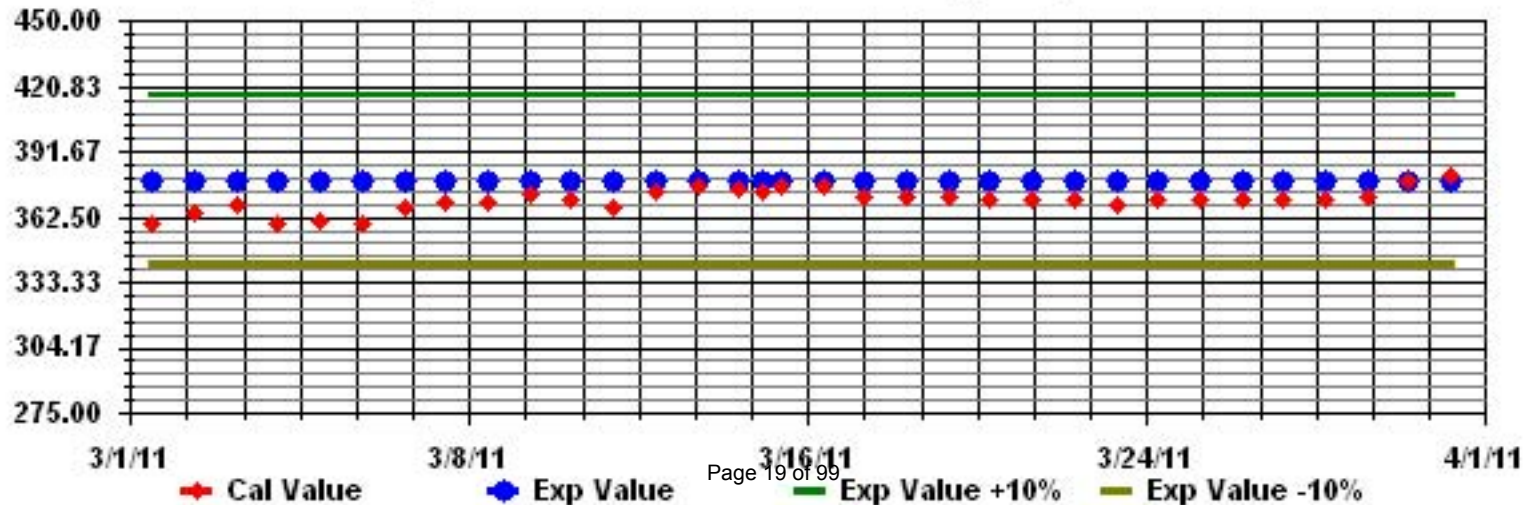
Class Limits (PPB)

Period : 03/01/11-03/31/11

Level : 10



Calibration Graph for Site: LICA30 Parameter: S02_ Sequence: S02 Phase: SPAN



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2011

HYDROGEN SULPHIDE (H₂S) hourly averages in ppb

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

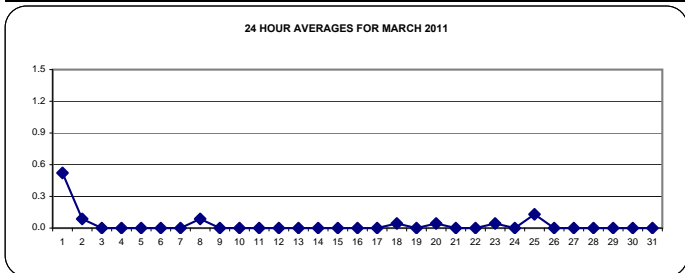
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 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:	22
MAXIMUM 1-HR AVERAGE:	1 PPB @ HOUR(S) VAR ON DAY(S) VAR
MAXIMUM 24-HR AVERAGE:	0.5 PPB ON DAY(S) VAR-VARIOUS 1
IZS CALIBRATION TIME:	32 HRS OPERATIONAL TIME: 743 HRS
MONTHLY CALIBRATION TIME:	5 HRS AMD OPERATION UPTIME: 99.9 %
STANDARD DEVIATION:	0.17 MONTHLY AVERAGE: 0.03 PPB

24 HOUR AVERAGES FOR MARCH 2011



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

MARCH 2011

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	1	1	1	1	1	1	1	1	2	2	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	2	0.6	24	
2	0	0	0	0	1	1	0	1	2	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24	
3	0	0	1	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0.1	24	
4	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	0.0	24	
5	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	0.0	24	
6	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.1	24	
7	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.0	24	
8	0	0	0	0	1	IZS	0	2	2	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0.3	24	
9	0	1	0	1	IZS	0	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	1	0	0	1	1	0.6	24	
10	0	0	0	IZS	1	0	0	0	0	M	M	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.1	22	
11	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	0.0	24	
12	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0.1	24	
13	IZS	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	IZS	1	0.1	25	
14	0	1	1	0	0	0	1	1	1	C	C	C	C	C	1	1	1	1	0	1	1	1	0	IZS	1	1	0.7	25	
15	1	1	0	0	0	0	1	1	0	1	M	M	0	0	0	0	0	1	0	0	IZS	0	0	1	0	1	0.3	22	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	IZS	1	1	0	1	0.2	24	
17	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	1	0	IZS	0	0	0	0	0	2	0.2	24	
18	0	0	0	0	0	0	0	0	1	1	0	1	1	1	0	0	0	0	IZS	0	0	0	0	0	0	1	0.2	24	
19	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	1	0.3	24	
20	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	1	0.2	24	
21	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	0.0	24	
22	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	IZS	0	1	0	0	0	0	0	0	0	1	0.2	24	
23	0	0	1	1	1	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
24	0	0	0	0	1	0	0	1	1	0	0	0	IZS	0	0	0	1	1	0	1	1	0	0	0	1	1	0.3	24	
25	0	-1	0	0	1	1	2	1	1	1	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	2	0.3	24	
26	0	0	0	0	1	0	1	1	1	0	IZS	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
27	0	1	1	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.1	24	
28	0	0	0	0	0	0	0	0	IZS	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0.1	24	
29	0	0	0	0	0	0	0	IZS	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.1	24	
30	1	0	0	0	0	0	IZS	1	0	0	0	1	0	1	1	1	1	1	1	0	0	0	0	0	1	1	0.4	24	
31	1	1	1	1	1	1	IZS	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
HOURLY MAX		1	1	1	1	1	2	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1			
HOURLY AVG		0.1	0.2	0.2	0.2	0.4	0.2	0.3	0.5	0.5	0.3	0.2	0.3	0.1	0.2	0.1	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2			

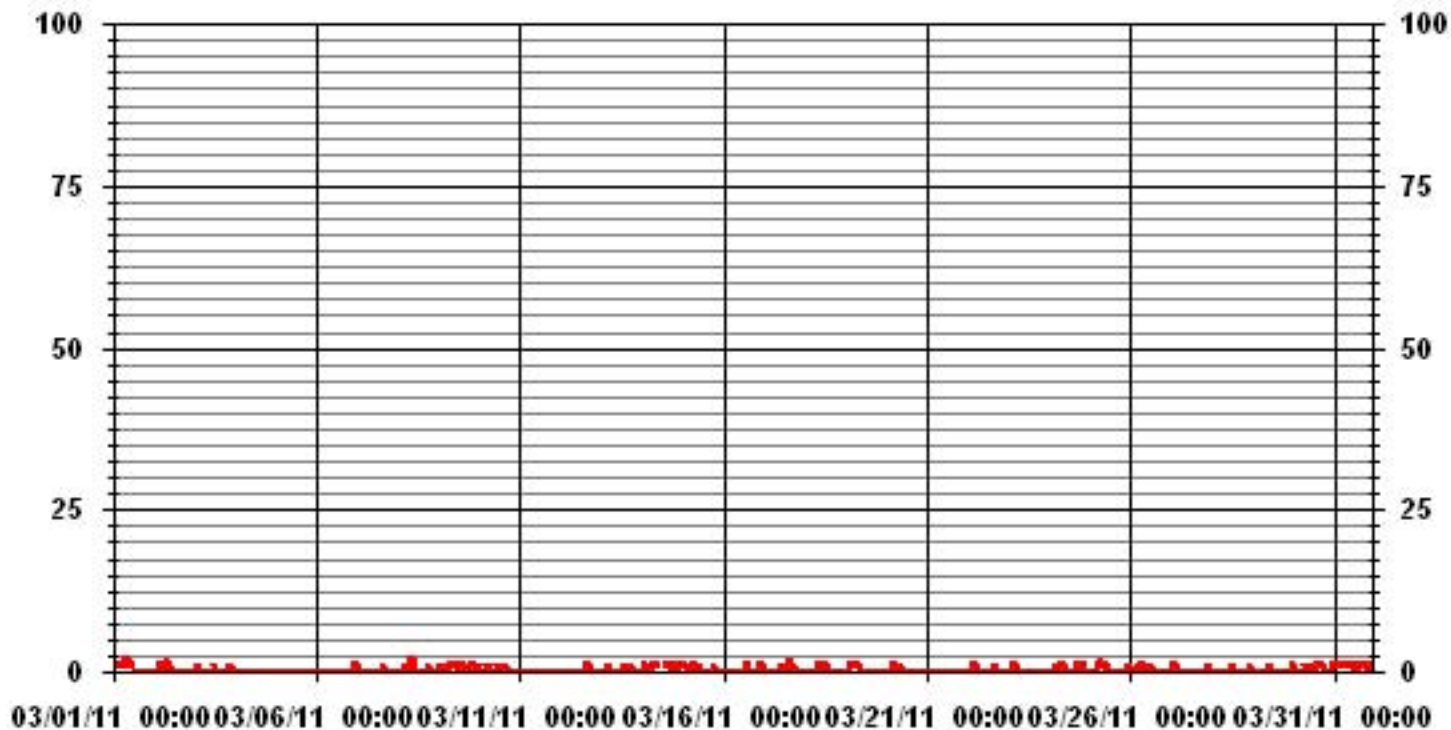
STATUS FLAG CODES

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:	151					
MAXIMUM INSTANTANEOUS VALUE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.44					

01 Hour Averages



— LICA30 H2S MAX PPB

LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

March 2011

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	2.13	4.55	13.39	6.83	6.26	11.53	12.96	9.11	7.26	10.82	4.27	1.56	1.56	3.84	1.99	1.85	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	2.13	4.55	13.39	6.83	6.26	11.53	12.96	9.11	7.26	10.82	4.27	1.56	1.56	3.84	1.99	1.85	

Calm : .00 %

Total # Operational Hours : 702

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	15	32	94	48	44	81	91	64	51	76	30	11	11	27	14	13	702
< 10																	
< 50																	
>= 50																	
Totals	15	32	94	48	44	81	91	64	51	76	30	11	11	27	14	13	

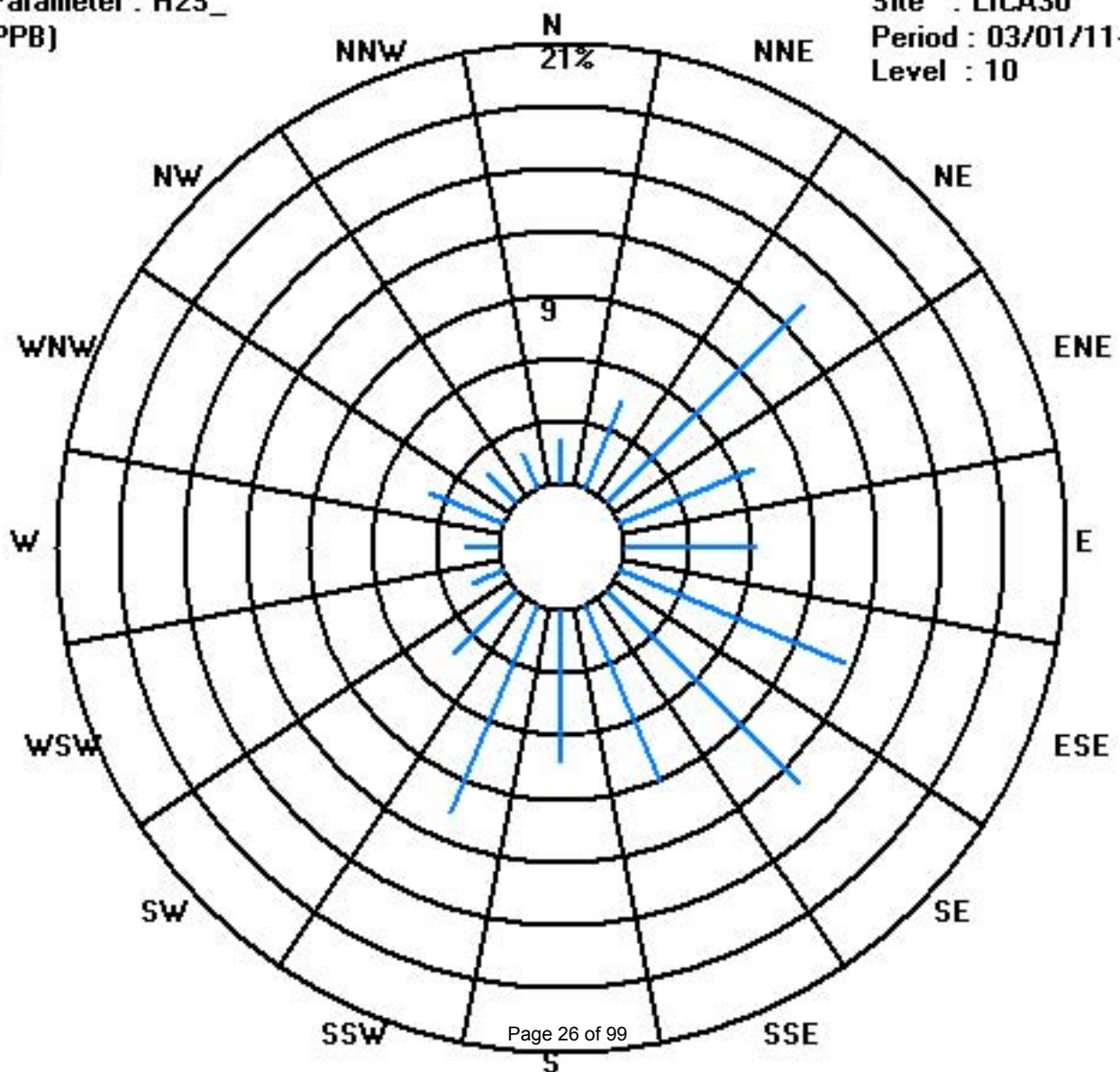
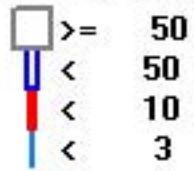
Calm : .00 %

Total # Operational Hours : 702

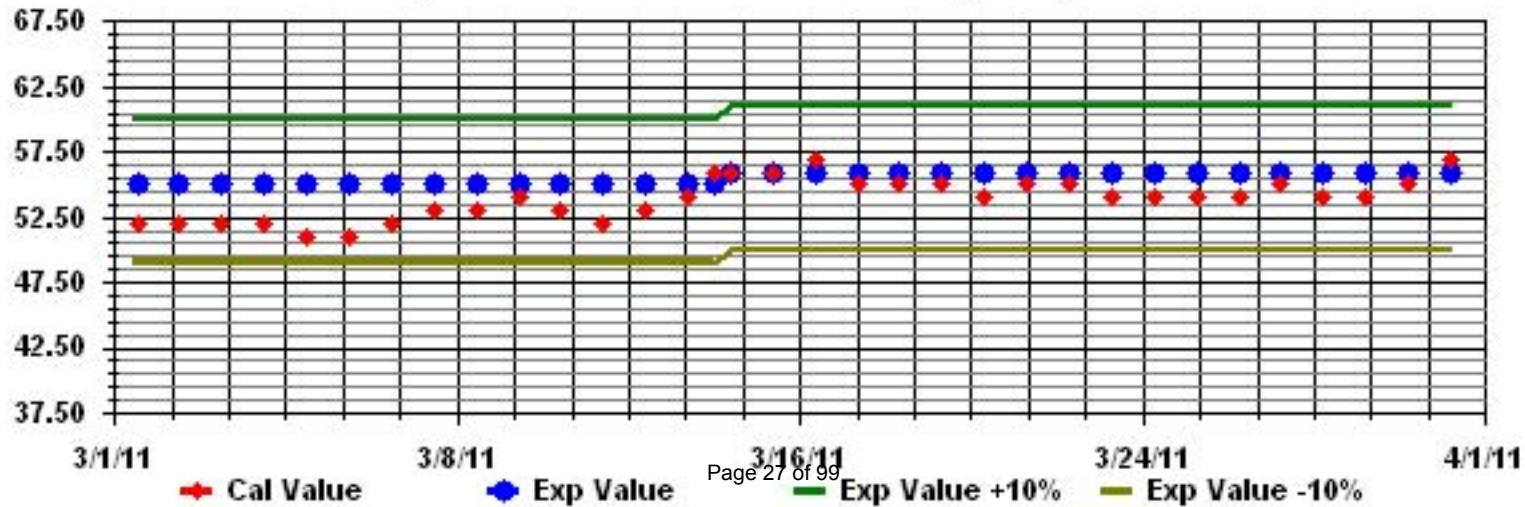
Class Limits (PPB)

Period : 03/01/11-03/31/11

Level : 10



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

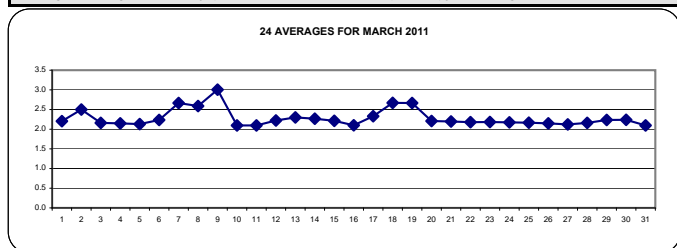
MARCH 2011

TOTAL HYDROCARBONS hourly averages in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1		2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.3	2.2	2.2	IZS	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.2	24
2		2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.7	4.3	4.4	2.6	IZS	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	4.4	2.5	24	
3		2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	IZS	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	24
4		2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	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	2.2	2.2	2.2	2.1	24
5		2.2	2.2	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	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	24
6		2.3	2.2	2.2	2.2	2.2	2.2	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.4	2.6	2.9	2.9	2.2	24	
7		3.1	3	2.8	2.7	2.7	2.7	IZS	2.8	2.8	2.8	2.8	2.8	2.7	2.6	2.5	2.5	2.4	2.4	2.4	2.4	2.5	2.6	2.6	2.7	3.1	2.7	24	
8		2.7	2.7	2.7	2.7	2.5	IZS	2	N	N	N	N	C	3.2	2.4	2.5	2.5	2.4	2.3	2.3	2.4	2.5	2.7	3	3.1	3.2	2.6	20	
9		3.1	3.1	3.1	3.1	IZS	2.9	3	3	3	3.1	3	3	3	2.9	2.9	2.9	3	3	3	3.1	3.1	3	2.8	3.1	3.0	2.6	24	
10		2.5	2.3	2.2	IZS	2.2	2.1	2.1	2.1	2.1	M	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2.5	2.1	23	
11		2	2.1	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	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24
12		2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.3	2.5	2.5	2.4	2.4	2.4	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.2	24
13		IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.2	2.4	2.6	2.6	2.4	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	IZS	2.6	2.3	24
14		2.4	2.5	2.5	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.2	C	C	C	C	C	2.2	2.2	2.2	2.2	2.2	2.2	IZS	2.2	2.5	2.3	24	
15		2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.1	2.4	2.2	24
16		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.1	2.1	2.1	24	
17		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.5	IZS	2.9	3	3.1	3.1	3.1	2.1	2.3	24	
18		3.1	3.1	3.1	3	3	3	3	2.7	2.6	2.7	2.7	2.7	2.5	2.4	2.5	2.4	2.4	2.4	IZS	2.3	2.4	2.4	2.5	2.5	3.1	2.7	24	
19		2.7	2.7	2.7	2.8	2.8	2.7	2.7	3	2.9	2.9	2.8	2.8	2.8	2.8	2.7	2.7	2.5	IZS	2.4	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.7	24
20		2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	IZS	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	24
21		2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	IZS	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	24
22		2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	IZS	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	24
23		2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	IZS	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	24
24		2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	IZS	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	24
25		2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	IZS	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.2	2.2	24
26		2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	IZS	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24
27		2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	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	2.1	2.1	2.2	2.1	24
28		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	24
29		2.3	2.3	2.3	2.4	2.4	2.4	2.3	IZS	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.2	2.1	2.4	2.2	24	
30		2.2	2.2	2.2	2.2	2.2	2.2	IZS	2.2	2.2	2.2	2.1	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.2	2.4	24
31		2.4	2.3	2.2	2.1	2	IZS	2	2	2.7	2.2	2	2	2	2.1	2	2	2	2	2	2	2	2	2	2.1	2.1	2.7	2.1	24
HOURLY MAX		3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	4.3	4.4	3.0	3.0	3.2	2.9	2.9	2.9	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.1				
HOURLY AVG		2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3				

STATUS FLAG CODES

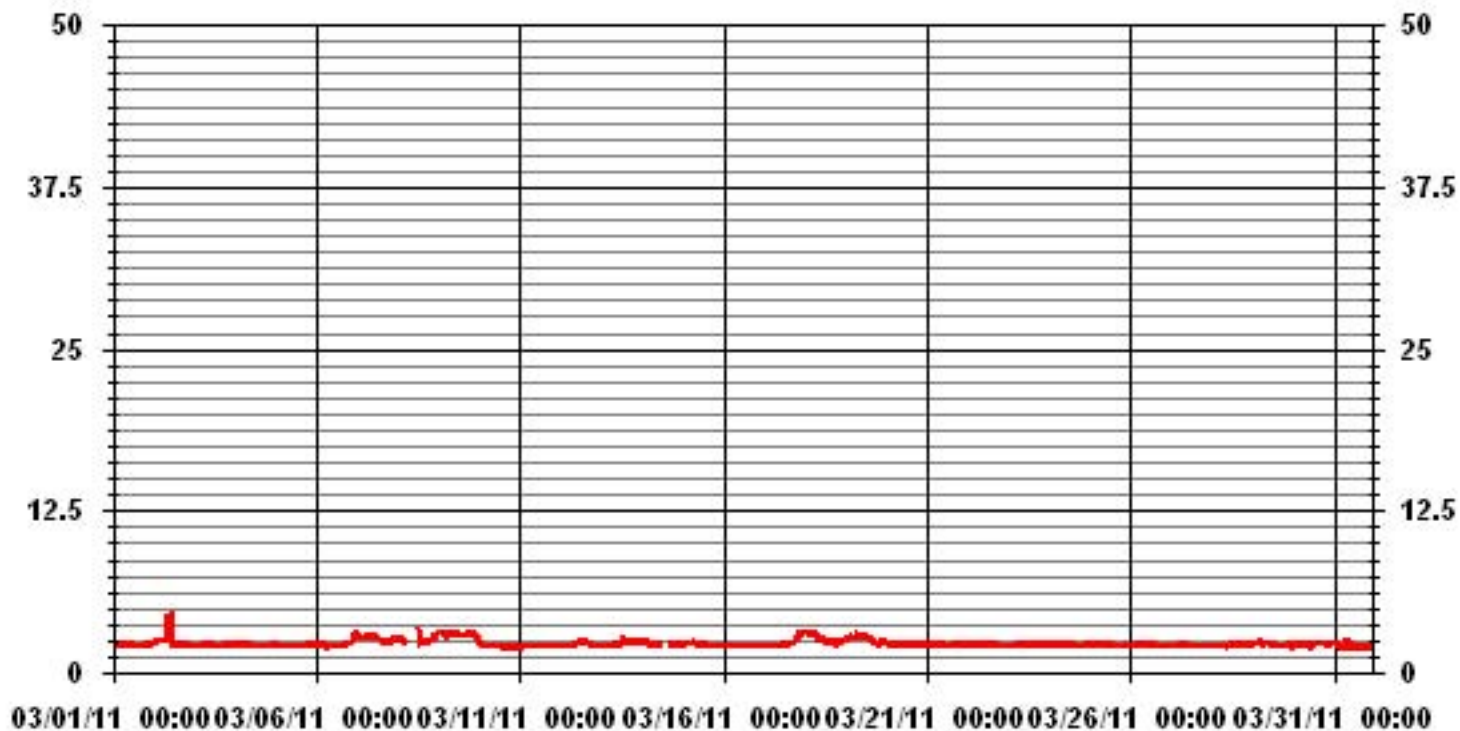
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	701					
MAXIMUM 1-HR AVERAGE:	4.4	PPM	@ HOUR(S)	9	ON DAY(S)	2
MAXIMUM 24-HR AVERAGE:	3.0	PPM			ON DAY(S)	9
					VAR- VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	739	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	99.3	%	
STANDARD DEVIATION:	0.27		MONTHLY AVERAGE:	2.28	PPM	

01 Hour Averages



— LICA30 THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2011

TOTAL HYDROCARBONS MAX instantaneous maximum in ppr

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR			
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
DAY																													
1	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.5	2.6	2.3	2.3	2.3	IZS	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.6	2.3	24		
2	2.5	2.5	2.5	2.5	2.5	2.6	2.7	3.3	6	5.6	3.4	IZS	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	6	2.7	24		
3	2.2	2.2	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	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	24		
4	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	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	2.2	2.2	2.3	2.2	24		
5	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.3	2.3	2.2	24		
6	2.3	2.3	2.2	2.3	2.3	2.2	2.2	IZS	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.4	2.8	3	3	2.3	24		
7	3.1	3.1	2.9	2.8	2.8	2.8	IZS	2.8	2.8	2.9	2.8	2.8	2.7	2.8	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.7	2.7	3.1	2.7	24		
8	2.7	2.8	2.8	2.7	2.6	IZS	2.2	N	N	N	N	C	C	2.6	2.5	2.5	2.5	2.3	2.4	2.4	2.6	2.9	3.1	3.2	3.2	2.6	20		
9	3.2	3.1	3.1	3.2	IZS	3.1	3.2	3.1	3.1	3.1	3.1	3	3	3	3	3	3	3	3	3	3.1	3.1	3.3	3.1	3	3.3	3.1	24	
10	2.7	2.4	2.2	IZS	2.2	2.2	2.1	2.1	2.1	M	M	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2.7	2.1	22	
11	2.1	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24	
12	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.4	2.5	2.6	2.5	2.5	2.4	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.2	2.6	2.3	24		
13	IZS	2.2	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.3	2.3	2.2	2.5	2.7	2.7	2.5	2.6	2.5	2.4	2.4	2.4	2.5	2.4	IZS	2.7	2.3	24		
14	2.4	2.6	2.6	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	C	C	C	C	C	2.2	2.3	2.3	2.2	2.2	IZS	2.3	2.6	2.3	24		
15	2.3	2.3	2.3	2.3	2.4	2.4	2.5	2.5	2.4	2.5	M	M	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.2	IZS	2.1	2.1	2.5	2.3	22		
16	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.1	2.1	2.2	2.1	24	
17	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.5	2.5	IZS	3	3.1	3.2	3.2	3.2	2.4	2.4	24	
18	3.2	3.2	3.1	3	3	3.1	3.1	2.8	2.7	2.7	2.7	2.7	2.6	2.5	2.6	2.6	2.4	2.5	IZS	2.4	2.4	2.5	2.6	2.7	3.2	2.7	24		
19	2.8	2.7	3.4	3	2.9	2.7	2.8	3	2.9	2.9	2.9	2.9	2.9	2.9	2.7	2.7	2.6	IZS	2.4	2.4	2.5	2.4	2.5	2.4	3.4	2.8	24		
20	2.4	2.3	2.2	2.2	2.2	2.2	2.3	2.3	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	2.2	2.2	2.2	2.4	2.2	24		
21	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	IZS	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.4	2.4	2.2	24		
22	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.3	2.3	2.3	2.3	IZS	2.3	2.4	2.3	2.3	2.1	2.1	2.1	2.1	2.1	2.4	2.3	24		
23	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.3	2.3	IZS	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	24	
24	2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.3	IZS	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.3	2.2	24	
25	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.4	IZS	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.4	2.2	24		
26	2.1	2.1	2.1	2.3	2.3	2.4	2.3	2.3	2.4	2.3	IZS	2.3	2.3	2.3	2.4	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.2	24	
27	2.1	2.2	2.2	2.2	2.2	2.3	2.2	2.3	2.2	IZS	2.3	2.2	2.2	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.2	24
28	2.2	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	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.2	24	
29	2.3	2.3	2.4	2.4	2.4	2.4	2.4	IZS	2.3	2.3	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.3	2.4	24	
30	2.2	2.2	2.2	2.2	2.2	2.2	IZS	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.3	24	
31	2.4	2.4	2.4	2.2	2.1	IZS	2	2.4	5.1	3.5	2.3	2	2.1	2.4	2.1	2	2.1	2	2	2	2	2	2.2	2.3	2.2	5.1	2.4	24	
HOURLY MAX	3	3	3	3	3	3	3	3	6	6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3				
HOURLY AVG	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.4	2.6	2.5	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.2	2.3	2.3	2.3	2.4					

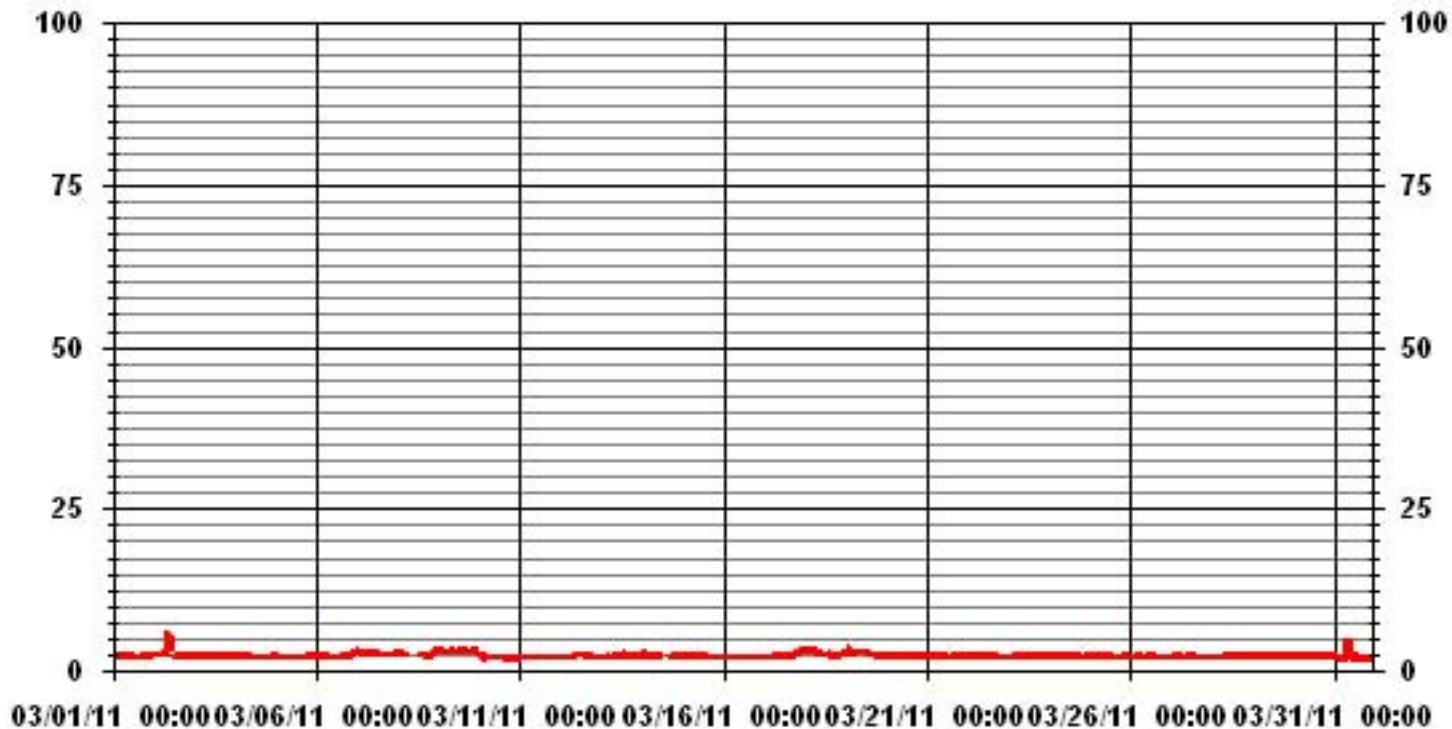
STATUS FLAG CODES

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:	697					
MAXIMUM INSTANTANEOUS VALUE:	6.0	PPM	@ HOUR(S)	8	ON DAY(S)	2
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	736	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	0.35					

01 Hour Averages



— LICA30 THCMAX PPM

LICA30
 THC / WDR Joint Frequency Distribution (Percent)

March 2011

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	2.15	4.44	13.34	7.03	6.31	11.33	12.91	9.03	6.02	8.32	4.01	1.57	1.57	3.29	1.72	1.72	94.83
< 10.0	.00	.14	.28	.14	.00	.28	.14	.14	1.29	2.29	.14	.00	.00	.00	.14	.14	5.16
< 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	2.15	4.59	13.62	7.17	6.31	11.62	13.05	9.18	7.31	10.61	4.16	1.57	1.57	3.29	1.86	1.86	

Calm : .00 %

Total # Operational Hours : 697

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	15	31	93	49	44	79	90	63	42	58	28	11	11	23	12	12	661
< 10.0		1	2	1		2	1	1	9	16	1				1	1	36
< 50.0																	
>= 50.0																	
Totals	15	32	95	50	44	81	91	64	51	74	29	11	11	23	13	13	

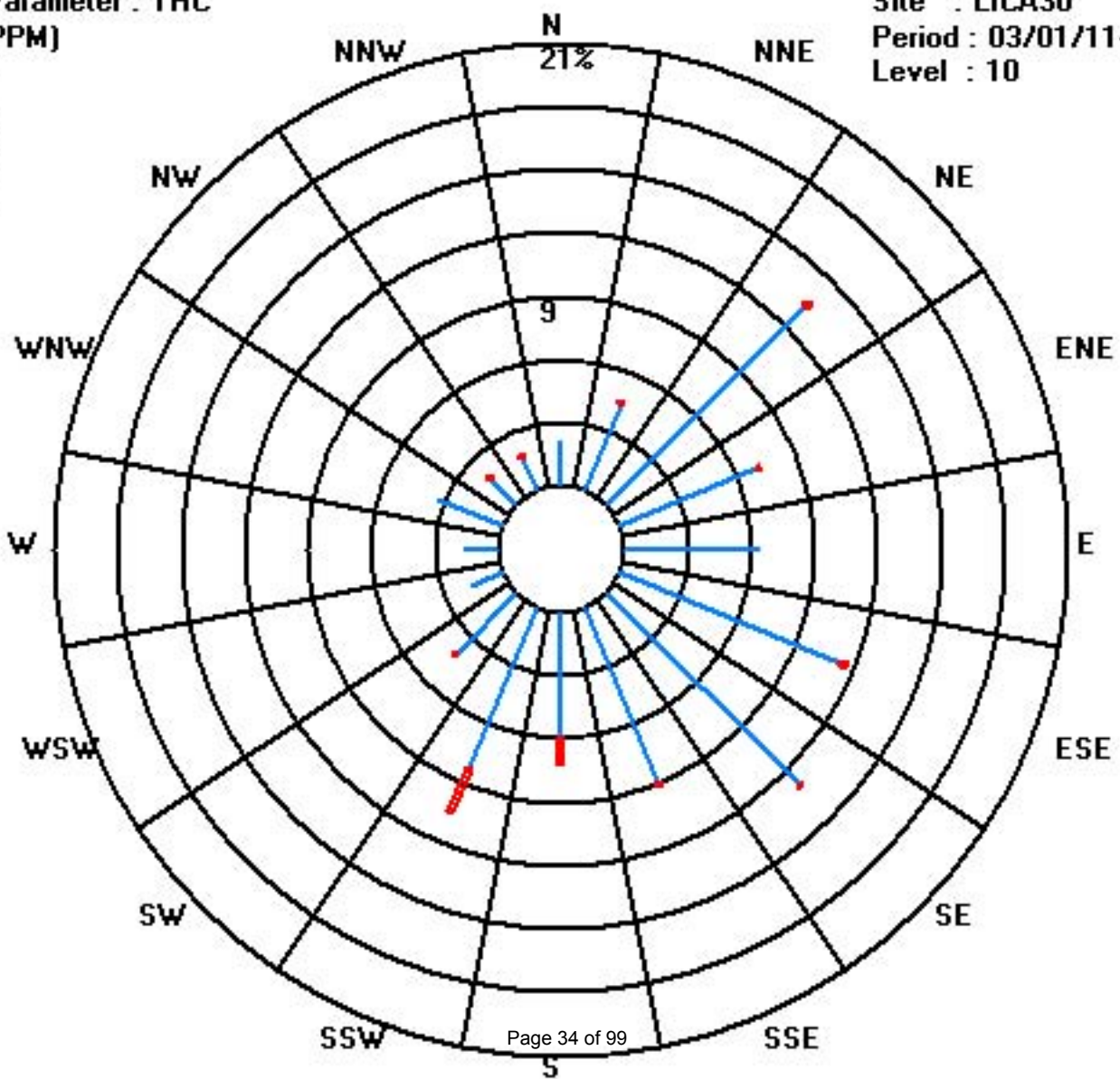
Calm : .00 %

Total # Operational Hours : 697

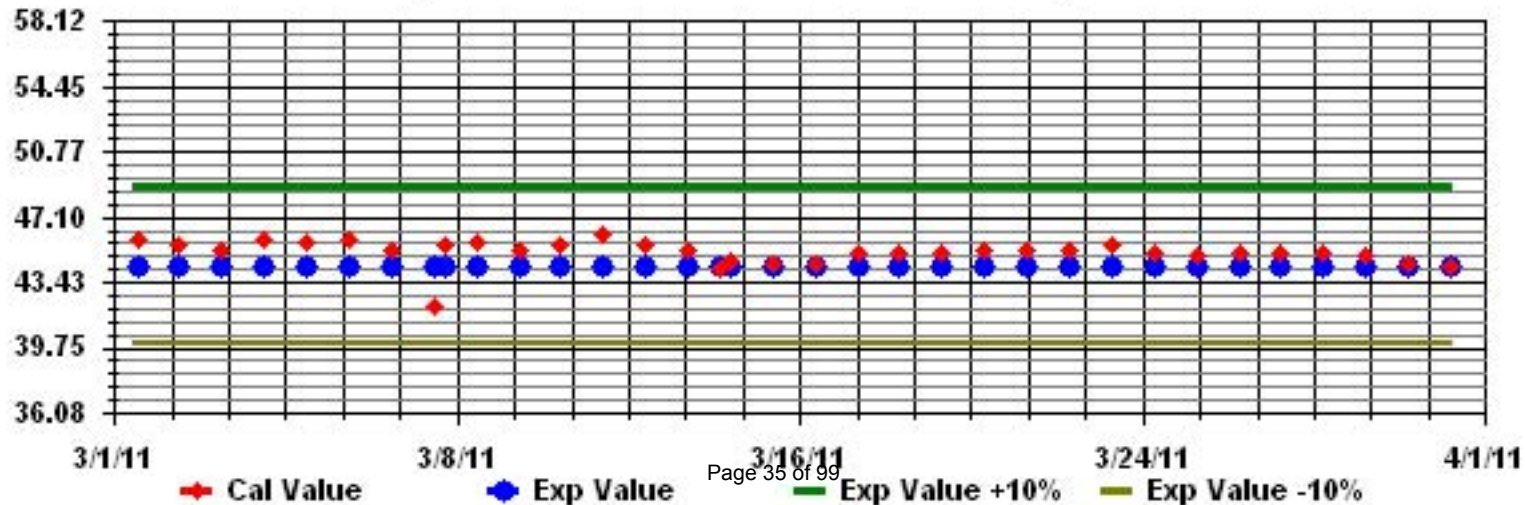
Class Limits (PPM)

Period : 03/01/11-03/31/11

Level : 10



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



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2011

NITROGEN DIOXIDE hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	7	6	6	4	4	3	4	7	8	5	2	0	IZS	1	1	1	1	1	1	3	4	4	8	7	8	3.8	24	
2	8	7	8	7	8	8	8	8	8	8	9	IZS	1	3	2	2	6	1	0	3	1	0	0	0	9	4.6	24	
3	0	0	0	1	0	0	1	3	2	2	IZS	1	1	0	1	1	2	1	2	1	1	1	0	1	3	1.0	24	
4	2	2	1	1	2	2	4	5	8	IZS	3	3	3	3	2	2	1	2	2	2	2	2	2	2	8	2.5	24	
5	4	2	1	0	0	0	0	1	IZS	1	1	0	1	2	1	2	2	2	3	2	2	2	2	2	4	1.4	24	
6	3	3	5	4	3	1	1	IZS	0	1	0	4	1	0	0	1	1	1	2	2	3	4	8	6	8	2.3	24	
7	6	5	4	3	4	3	IZS	6	4	4	3	3	2	4	3	3	3	4	4	4	5	5	5	6	6	4.0	24	
8	5	7	6	7	8	IZS	14	49	33	17	8	6	5	5	5	5	3	3	5	5	5	6	9	9	49	9.8	24	
9	9	8	7	9	IZS	6	7	6	9	8	7	8	8	7	7	8	9	11	12	10	10	10	7	5	12	8.2	24	
10	3	2	2	IZS	2	1	1	1	0	M	1	1	1	0	0	0	0	0	0	0	0	1	0	0	3	0.7	23	
11	0	0	IZS	1	0	0	1	1	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0.3	24	
12	0	IZS	0	0	0	0	0	1	1	2	1	2	2	1	1	1	2	1	1	1	1	1	1	1	2	0.9	24	
13	IZS	1	1	1	1	1	1	1	3	3	10	5	3	3	4	4	5	5	6	5	4	3	3	IZS	10	3.3	24	
14	2	2	2	2	2	2	2	1	2	C	C	C	C	C	C	C	10	11	7	5	1	3	IZS	7	11	3.8	24	
15	3	2	6	4	6	7	16	15	7	8	2	5	4	3	4	1	0	0	0	1	IZS	1	1	16	4.2	24		
16	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	
17	0	0	0	0	0	0	0	0	2	1	3	1	1	1	1	4	1	2	3	IZS	4	4	4	4	4	1.6	24	
18	4	4	4	4	4	4	5	6	10	19	19	18	10	8	5	3	3	3	IZS	3	2	2	2	2	2	19	6.3	24
19	3	3	3	2	3	3	4	5	4	4	3	3	3	2	4	8	4	IZS	1	1	1	1	1	1	8	2.9	24	
20	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	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	IZS	11	12	11	9	13	13	14	13	14	4.2	24	
22	11	9	5	3	6	11	9	10	5	3	2	3	2	2	IZS	2	8	8	6	2	0	0	0	0	11	4.7	24	
23	0	0	0	0	1	2	4	7	5	1	3	3	3	IZS	0	1	0	0	1	0	1	1	0	0	7	1.4	24	
24	0	0	1	1	2	11	3	7	8	7	5	4	IZS	3	0	3	2	3	4	4	1	0	1	2	11	3.1	24	
25	3	2	1	1	1	1	3	4	2	4	5	IZS	3	2	1	1	1	0	0	0	1	3	2	0	5	1.8	24	
26	0	0	1	6	11	5	10	10	7	10	IZS	7	5	7	8	5	0	1	2	0	0	0	1	1	11	4.2	24	
27	1	3	5	5	7	11	10	12	9	IZS	5	4	3	6	2	1	1	1	1	1	1	1	1	1	12	4.0	24	
28	2	1	1	1	1	1	1	2	IZS	1	2	2	2	2	2	2	2	2	2	3	3	2	2	2	3	1.8	24	
29	1	2	2	4	4	4	3	IZS	3	3	4	4	3	2	2	1	1	1	2	1	1	1	1	1	4	2.2	24	
30	1	1	2	2	2	2	IZS	2	3	2	2	2	2	2	3	3	4	3	3	4	4	5	5	8	8	2.9	24	
31	9	8	7	4	2	IZS	1	0	3	3	0	0	0	0	1	0	0	0	0	0	0	0	9	16	2.7	24		
HOURLY MAX		11	9	8	9	11	11	16	49	33	19	19	18	10	8	8	8	11	12	12	10	13	13	14	16			
HOURLY AVG		2.9	2.7	2.7	2.6	2.8	3.1	3.9	5.9	5.1	4.3	3.6	3.2	2.5	2.4	2.1	2.3	2.8	2.6	2.7	2.4	2.4	2.5	3.0	3.3			

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

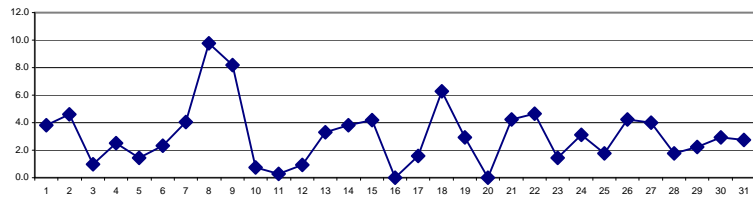
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	212	PPB	24-HR	106	PPB
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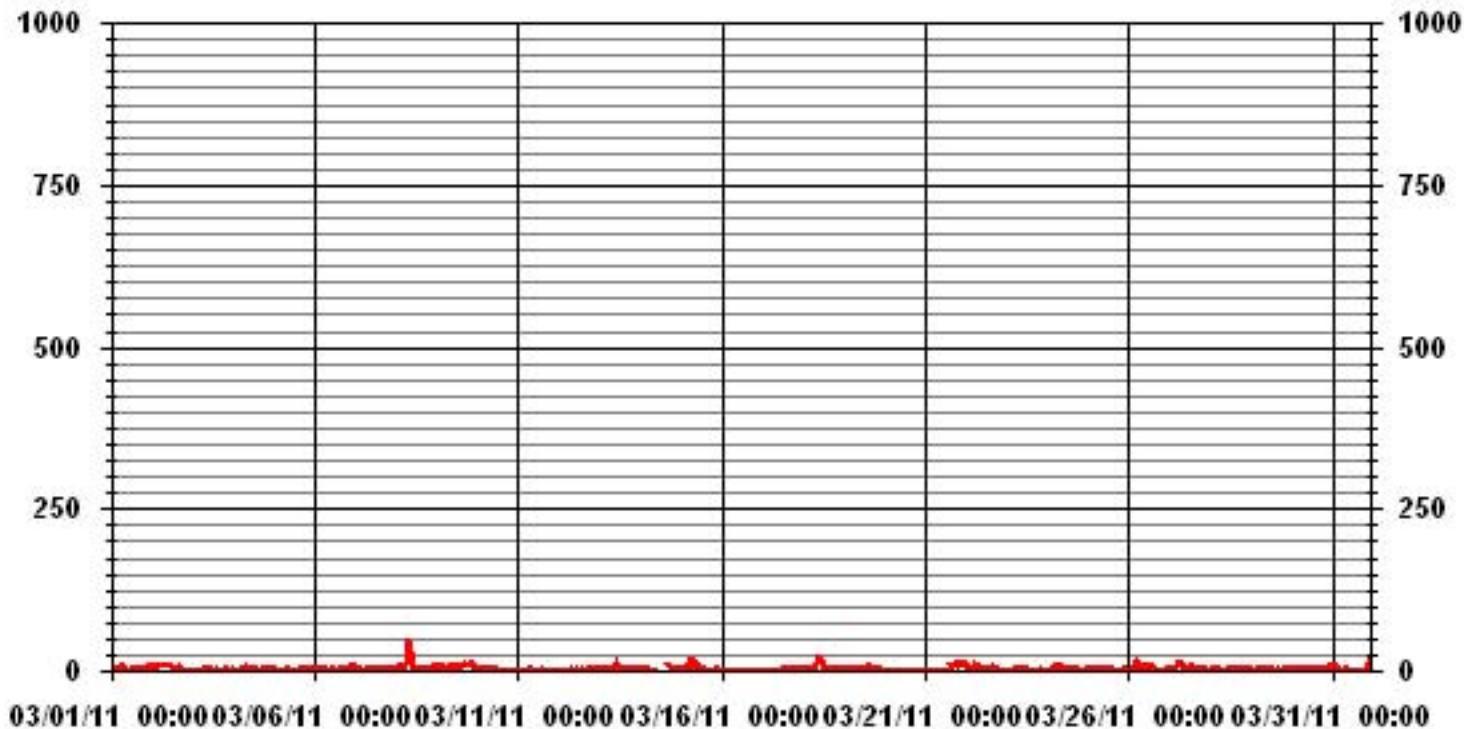
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	537
MAXIMUM 1-HR AVERAGE:	49 PPB @ HOUR(S) 7 ON DAY(S) 8
MAXIMUM 24-HR AVERAGE:	9.8 PPB ON DAY(S) 8
IZS CALIBRATION TIME:	32 HRS
OPERATIONAL TIME:	743 HRS
MONTHLY CALIBRATION TIME:	7 HRS
AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	3.86
MONTHLY AVERAGE:	3.05 PPB

24 HOUR AVERAGES FOR MARCH 2011



01 Hour Averages



— LICA30 NO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2011

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	11	8	8	7	8	6	6	19	12	11	6	2	IZS	2	2	3	2	2	2	4	6	8	20	13	20	7.3	24	
2	15	8	12	8	9	10	9	10	14	12	14	IZS	2	5	5	7	9	2	1	7	5	1	1	1	15	7.3	24	
3	1	1	1	1	1	1	2	9	4	5	IZS	3	3	3	7	3	3	2	2	2	2	1	1	2	9	2.6	24	
4	3	2	2	1	2	3	11	8	14	IZS	5	5	4	4	4	7	5	3	3	3	3	3	2	3	14	4.3	24	
5	29	5	2	1	0	0	0	3	IZS	3	2	1	12	3	2	3	4	3	3	3	3	3	3	4	29	4.0	24	
6	5	4	6	6	5	2	2	IZS	1	3	7	46	2	1	1	2	2	2	4	3	3	5	12	8	46	5.7	24	
7	7	6	5	4	5	4	IZS	12	6	7	5	4	3	7	3	4	4	17	5	5	6	6	6	7	17	6.0	24	
8	6	9	6	8	10	IZS	25	73	48	26	10	7	7	6	6	6	5	5	6	6	6	8	10	10	73	13.4	24	
9	10	9	8	11	IZS	12	9	19	12	12	9	10	20	8	8	10	10	12	13	12	11	11	9	7	20	11.0	24	
10	5	3	2	IZS	2	2	2	2	1	M	M	1	1	1	1	1	1	1	1	1	1	2	1	1	5	1.6	22	
11	1	1	IZS	1	1	1	3	2	2	2	1	1	1	1	1	2	1	1	1	1	1	1	2	2	3	1.3	24	
12	1	IZS	1	1	1	1	1	1	2	3	2	2	2	2	2	2	2	2	2	2	1	1	2	1	1	3	1.6	24
13	IZS	1	1	1	1	1	1	2	8	8	15	8	4	4	4	5	5	6	8	6	5	4	3	IZS	15	4.6	24	
14	2	3	3	3	3	2	2	2	2	C	C	C	C	C	C	C	22	22	24	21	2	6	IZS	14	24	8.3	24	
15	9	2	16	6	13	9	28	27	13	15	M	M	7	7	8	2	1	1	1	1	1	1	2	1	28	8.1	22	
16	1	1	1	1	1	0	0	1	1	1	2	2	1	0	1	0	1	0	0	0	IZS	0	0	0	2	0.7	24	
17	0	1	0	0	1	1	1	7	22	3	4	2	2	3	2	116	2	3	3	IZS	5	5	5	5	116	8.4	24	
18	6	5	5	5	5	5	7	8	16	26	23	22	19	11	6	4	3	4	IZS	4	3	3	3	3	26	8.5	24	
19	4	4	4	3	4	3	6	7	4	4	4	4	5	3	10	12	8	IZS	1	1	1	1	2	1	12	4.2	24	
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	1	0	1	1	0	1	0.8	24	
21	0	0	1	1	0	1	0	1	1	1	1	1	1	3	1	IZS	14	15	17	14	18	17	18	19	19	6.3	24	
22	14	13	7	8	10	16	14	14	11	8	6	6	6	6	IZS	6	11	11	12	5	1	0	0	0	16	8.0	24	
23	0	0	0	1	6	5	10	11	9	2	7	5	8	IZS	2	2	1	2	1	2	2	2	1	1	11	3.5	24	
24	1	1	1	1	11	14	6	13	11	11	9	10	IZS	9	2	10	9	10	9	10	3	1	3	4	14	6.9	24	
25	5	4	2	2	2	2	5	6	4	9	9	IZS	6	3	2	1	1	1	1	1	2	4	3	1	9	3.3	24	
26	1	1	3	14	17	9	15	13	11	14	IZS	11	9	14	13	11	1	4	4	2	1	1	1	1	17	7.4	24	
27	2	7	7	8	11	17	14	16	12	IZS	12	12	5	13	4	2	3	1	1	2	2	1	2	2	17	6.8	24	
28	2	3	2	2	2	2	3	IZS	2	2	2	2	3	3	3	3	4	4	4	2	3	2	3	4	2.6	24		
29	2	2	3	5	5	5	4	IZS	4	4	5	4	4	3	3	2	2	2	3	2	2	2	2	2	5	3.1	24	
30	2	2	2	3	3	3	IZS	3	4	4	2	2	2	3	5	4	4	4	4	4	5	5	6	12	12	3.8	24	
31	11	9	10	6	3	IZS	30	9	9	7	1	1	1	5	6	0	0	0	0	0	0	0	30	31	31	7.3	24	
HOURLY MAX	29	13	16	14	17	17	30	73	48	26	23	46	20	14	13	116	22	22	24	21	18	17	30	31				
HOURLY AVG	5.2	3.9	4.1	4.0	4.8	4.8	7.4	10.4	8.9	7.6	6.3	6.5	5.0	4.6	4.0	8.0	4.6	4.7	4.5	4.3	3.4	3.6	5.1	5.3				

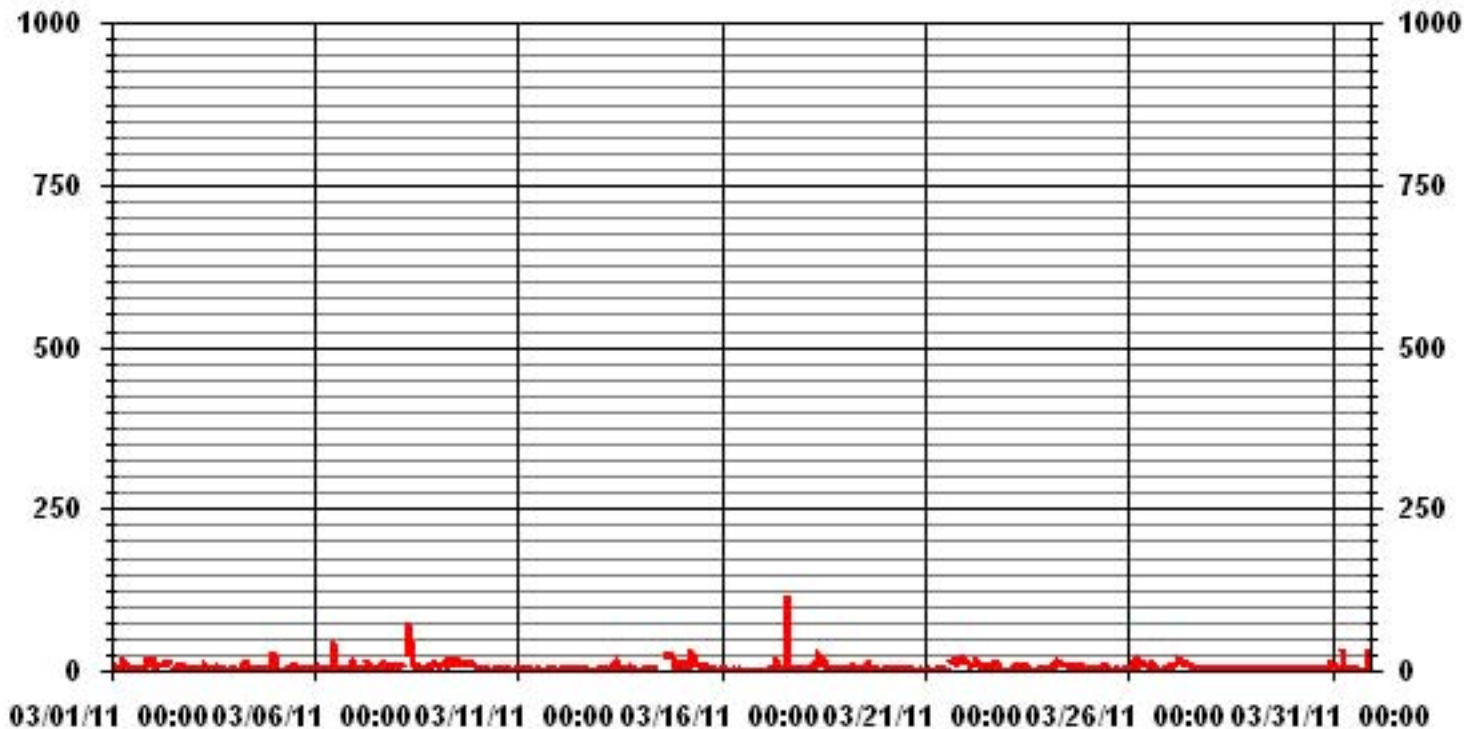
STATUS FLAG CODES

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:	664					
MAXIMUM INSTANTANEOUS VALUE:	116	PPB	@ HOUR(S)	15	ON DAY(S)	17
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	7.52					

01 Hour Averages



— LICA30 NO2MAX PPB

LICA30
 NO2_ / WDR Joint Frequency Distribution (Percent)

March 2011

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	2.14	4.57	13.42	6.85	6.28	11.57	13.00	9.14	7.28	10.85	4.28	1.57	1.57	3.57	2.00	1.85	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	2.14	4.57	13.42	6.85	6.28	11.57	13.00	9.14	7.28	10.85	4.28	1.57	1.57	3.57	2.00	1.85	

Calm : .00 %

Total # Operational Hours : 700

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	15	32	94	48	44	81	91	64	51	76	30	11	11	25	14	13	700
< 110																	
< 210																	
>= 210																	
Totals	15	32	94	48	44	81	91	64	51	76	30	11	11	25	14	13	

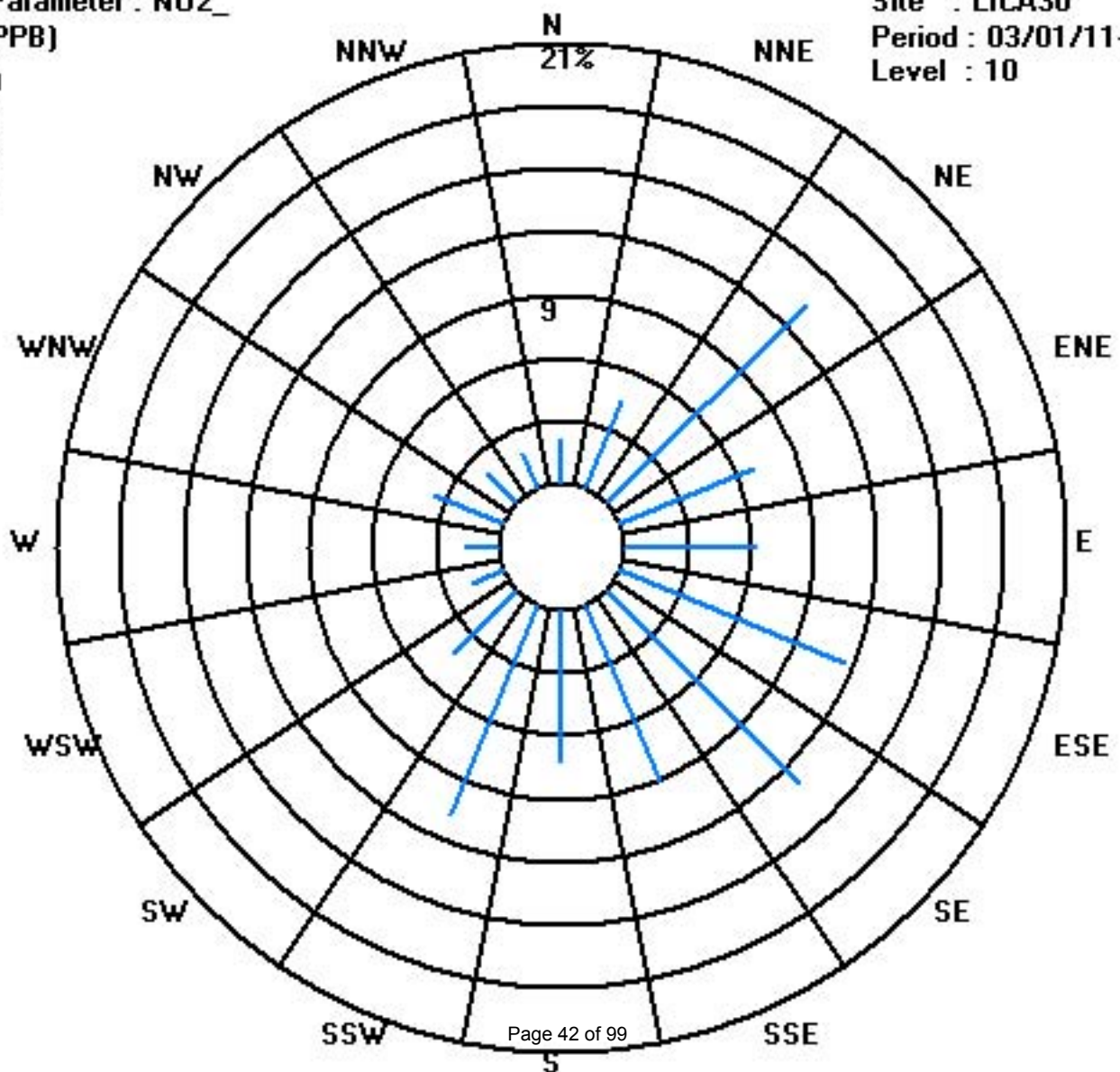
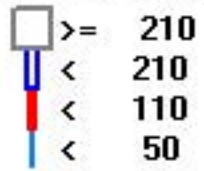
Calm : .00 %

Total # Operational Hours : 700

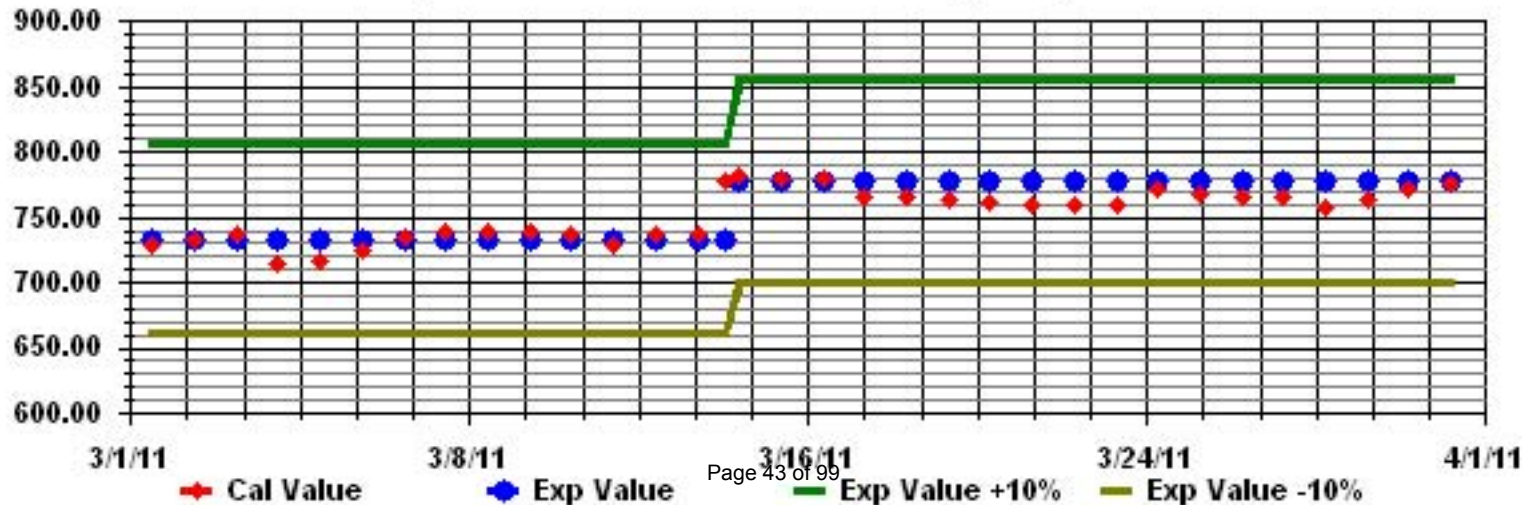
Class Limits (PPB)

Period : 03/01/11-03/31/11

Level : 10



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



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOICATION - MASKWA

MARCH 2011

NITRIC OXIDE hourly averages in ppb

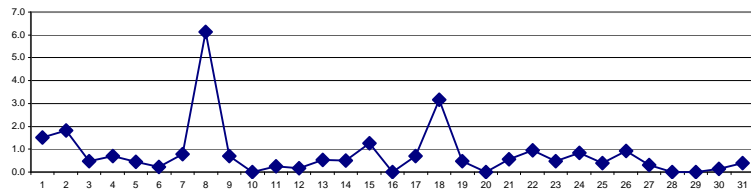
MST

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	0	0	0	0	0	4	6	5	4	1	IZS	3	2	1	1	0	0	0	1	1	3	1	6	1.5	24	
2	1	0	1	0	0	1	1	2	7	9	11	IZS	1	2	2	1	2	0	0	1	0	0	0	0	11	1.8	24	
3	0	0	1	0	0	0	0	1	1	2	IZS	2	1	1	1	0	1	0	0	0	0	0	0	0	2	0.5	24	
4	0	0	0	0	0	0	0	1	3	IZS	2	3	2	2	1	1	1	0	0	0	0	0	0	0	3	0.7	24	
5	2	0	1	0	0	0	0	0	IZS	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	2	0.4	24	
6	1	0	1	0	0	0	0	IZS	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3	0.2	24	
7	0	0	0	0	0	0	IZS	1	2	2	2	2	2	1	1	1	1	1	0	0	0	0	0	1	2	0.8	24	
8	0	0	0	0	0	IZS	1	64	37	17	6	4	3	3	3	2	1	0	0	0	0	0	0	0	64	6.1	24	
9	0	1	0	0	IZS	0	0	1	4	2	2	2	2	1	1	0	0	0	0	0	0	0	0	0	4	0.7	24	
10	0	0	0	IZS	0	0	0	0	0	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	23	
11	0	0	IZS	0	0	0	0	0	1	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	0.3	24	
12	0	IZS	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
13	IZS	0	0	0	0	0	0	0	0	1	7	2	1	0	1	0	0	0	0	0	0	0	0	0	IZS	7	0.5	24
14	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	C	3	2	1	1	0	0	IZS	1	3	0.5	24	
15	0	0	0	0	0	0	3	5	4	6	1	3	3	2	2	0	0	0	0	0	0	IZS	0	6	1.3	24		
16	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	
17	0	0	0	0	0	0	0	0	1	1	2	1	1	1	1	8	0	0	0	IZS	0	0	0	0	8	0.7	24	
18	0	0	0	0	0	0	0	1	3	12	17	23	8	6	2	1	0	0	0	IZS	0	0	0	0	23	3.2	24	
19	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	3	1	IZS	0	0	0	0	0	0	3	0.5	24	
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	3	2	1	1	1	1	2	3	0.6	24	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	3	2	1	1	1	1	2	2	3	0.6	24	
22	1	1	0	1	1	1	1	2	2	1	1	2	2	2	IZS	1	2	1	0	0	0	0	0	0	2	1.0	24	
23	0	0	0	0	0	0	0	1	1	1	1	2	2	IZS	1	1	0	0	0	0	0	0	0	0	2	0.5	24	
24	0	0	0	0	0	1	0	1	3	3	3	2	IZS	2	0	2	1	1	0	0	0	0	0	0	3	0.8	24	
25	0	0	0	0	0	0	0	1	1	2	2	IZS	2	1	0	0	0	0	0	0	0	0	0	0	2	0.4	24	
26	0	0	0	0	1	1	1	2	2	3	IZS	3	2	2	3	1	0	0	0	0	0	0	0	0	3	0.9	24	
27	0	0	0	0	0	1	1	1	2	IZS	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0.3	24	
28	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	
29	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	
30	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0.1	24	
31	0	0	0	0	0	IZS	1	1	2	2	0	1	1	0	1	0	0	0	0	0	0	0	0	0	2	0.4	24	
HOURLY MAX	2	1	1	1	1	1	3	64	37	17	17	23	8	6	3	8	3	2	1	1	1	1	3	2				
HOURLY AVG	0.2	0.1	0.1	0.0	0.1	0.2	0.3	3.1	2.9	2.7	2.4	2.1	1.3	1.2	0.9	0.9	0.6	0.2	0.1	0.1	0.1	0.1	0.2	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

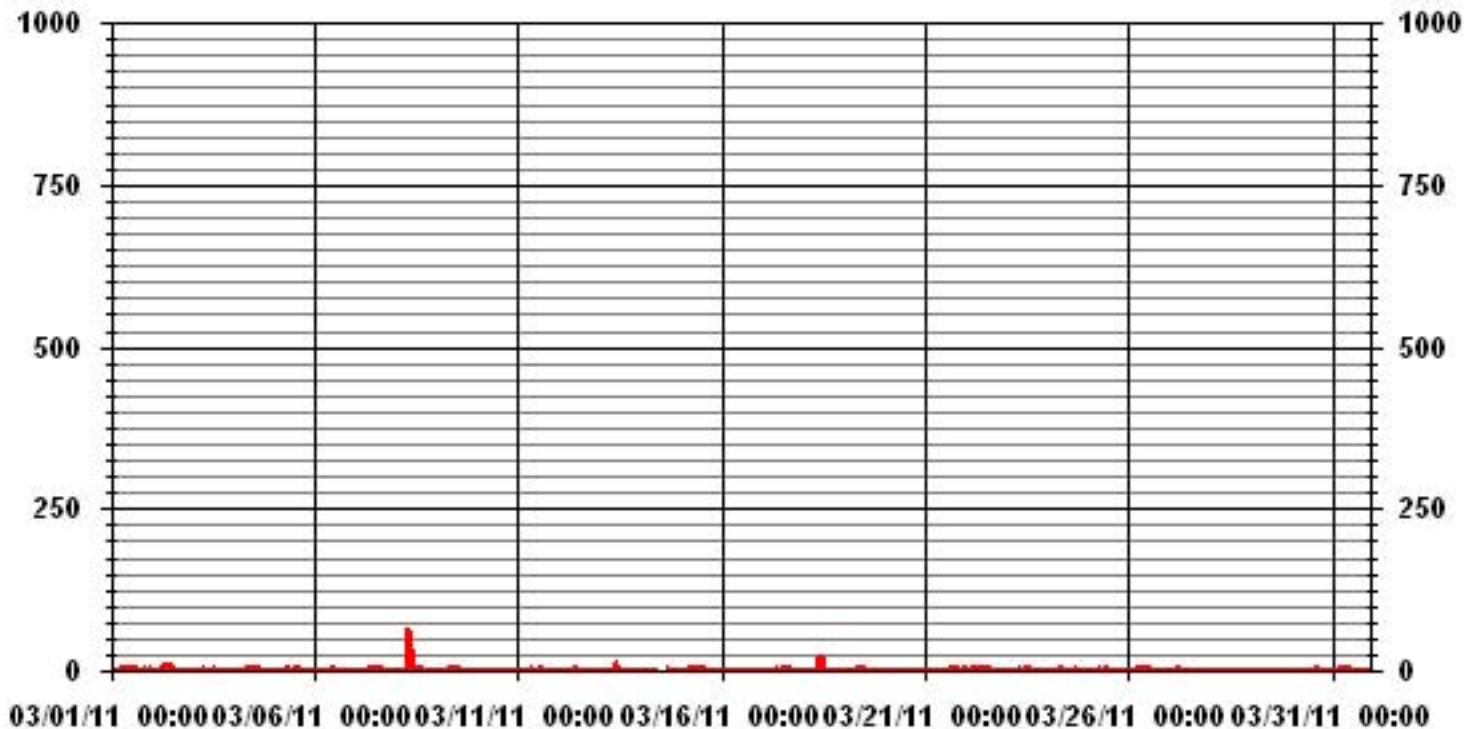
24 HOUR AVERAGES FOR MARCH 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	221					
MAXIMUM 1-HR AVERAGE:	64	PPB	@ HOUR(S)	7	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:	6.1	PPB			ON DAY(S)	8
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	3.26		MONTHLY AVERAGE:	0.81	PPB	

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2011

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	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00					
DAY																													
1	4	1	1	1	1	1	1	18	12	12	10	3	IZS	4	4	3	2	1	1	1	3	5	13	6	18	4.7	24		
2	5	1	4	1	1	1	1	6	14	15	20	IZS	2	4	4	3	3	1	1	2	1	1	1	1	20	4.0	24		
3	1	1	1	1	1	1	2	4	2	4	IZS	3	3	3	6	2	2	1	1	1	1	1	1	1	6	1.9	24		
4	1	1	1	1	1	1	2	4	7	IZS	4	4	4	3	2	3	2	1	1	1	1	1	1	1	7	2.1	24		
5	39	1	1	1	1	1	1	1	IZS	2	2	1	20	2	2	2	1	1	1	1	1	1	1	1	39	3.7	24		
6	1	1	1	1	1	1	1	IZS	0	2	12	34	1	0	1	0	1	0	0	0	0	0	0	0	34	2.5	24		
7	0	0	0	0	0	0	IZS	2	3	3	3	3	2	3	3	2	2	7	1	1	1	1	1	1	7	1.7	24		
8	1	1	1	1	1	IZS	4	135	75	30	9	5	4	3	3	3	2	1	1	1	1	1	1	1	135	12.4	24		
9	1	1	1	1	IZS	4	0	24	9	3	3	4	6	3	1	2	1	0	0	0	0	0	0	0	24	2.8	24		
10	0	0	0	IZS	0	0	0	0	0	M	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	22		
11	0	0	IZS	1	1	1	1	1	2	2	1	1	2	1	2	2	1	1	1	1	1	1	1	1	2	1.1	24		
12	1	IZS	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1.2	24		
13	IZS	0	0	0	0	0	0	0	3	5	14	4	1	1	1	1	1	0	0	0	0	0	0	IZS	14	1.4	24		
14	1	1	1	1	1	1	1	1	1	C	C	C	C	C	C	C	6	6	7	3	1	1	IZS	3	7	2.3	24		
15	1	1	1	1	3	1	16	11	10	15	M	M	5	5	6	1	1	1	1	1	1	1	IZS	1	16	4.0	22		
16	1	1	1	1	0	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	IZS	1	1	2	1.0	24		
17	1	1	1	1	1	1	1	2	19	2	3	2	3	3	2	347	1	1	1	IZS	1	1	1	1	347	17.3	24		
18	1	1	1	1	1	1	2	2	6	25	25	30	20	9	4	2	1	1	IZS	1	1	1	1	1	30	6.0	24		
19	1	1	1	1	1	1	1	1	2	2	2	2	2	1	4	4	2	IZS	1	1	1	1	1	1	4	1.5	24		
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1.0	24		
21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	4	3	2	2	3	2	2	3	4	1.6	24		
22	2	2	1	1	2	2	2	4	4	3	4	4	5	5	IZS	3	4	2	2	1	1	1	1	1	5	2.5	24		
23	1	1	1	1	1	1	1	2	3	1	4	3	5	IZS	2	1	1	1	1	1	1	1	1	1	5	1.6	24		
24	1	1	1	1	1	1	1	3	5	6	6	6	IZS	5	1	5	4	2	1	1	0	0	1	1	6	2.3	24		
25	1	1	1	1	1	1	1	2	1	5	6	IZS	4	1	1	1	1	1	1	1	1	1	1	1	6	1.6	24		
26	1	1	1	1	2	1	2	3	3	4	IZS	4	4	6	6	3	1	1	1	1	1	1	1	1	6	2.2	24		
27	1	1	1	1	1	1	2	2	2	IZS	5	5	1	4	0	0	0	0	0	0	0	0	0	0	5	1.2	24		
28	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		
29	0	0	0	0	0	0	0	IZS	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24		
30	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	0.8	24		
31	1	1	1	1	1	IZS	14	17	5	4	1	1	2	4	4	1	0	1	1	1	1	0	1	1	17	2.8	24		
HOURLY MAX	39	2	4	1	3	4	16	135	75	30	25	34	20	9	6	347	6	7	7	3	3	5	13	6					
HOURLY AVG	2.3	0.8	0.9	0.8	0.9	0.9	2.1	8.6	6.7	5.6	5.4	4.7	3.6	2.6	2.2	13.6	1.6	1.3	1.0	0.9	0.9	0.9	1.2	1.1					

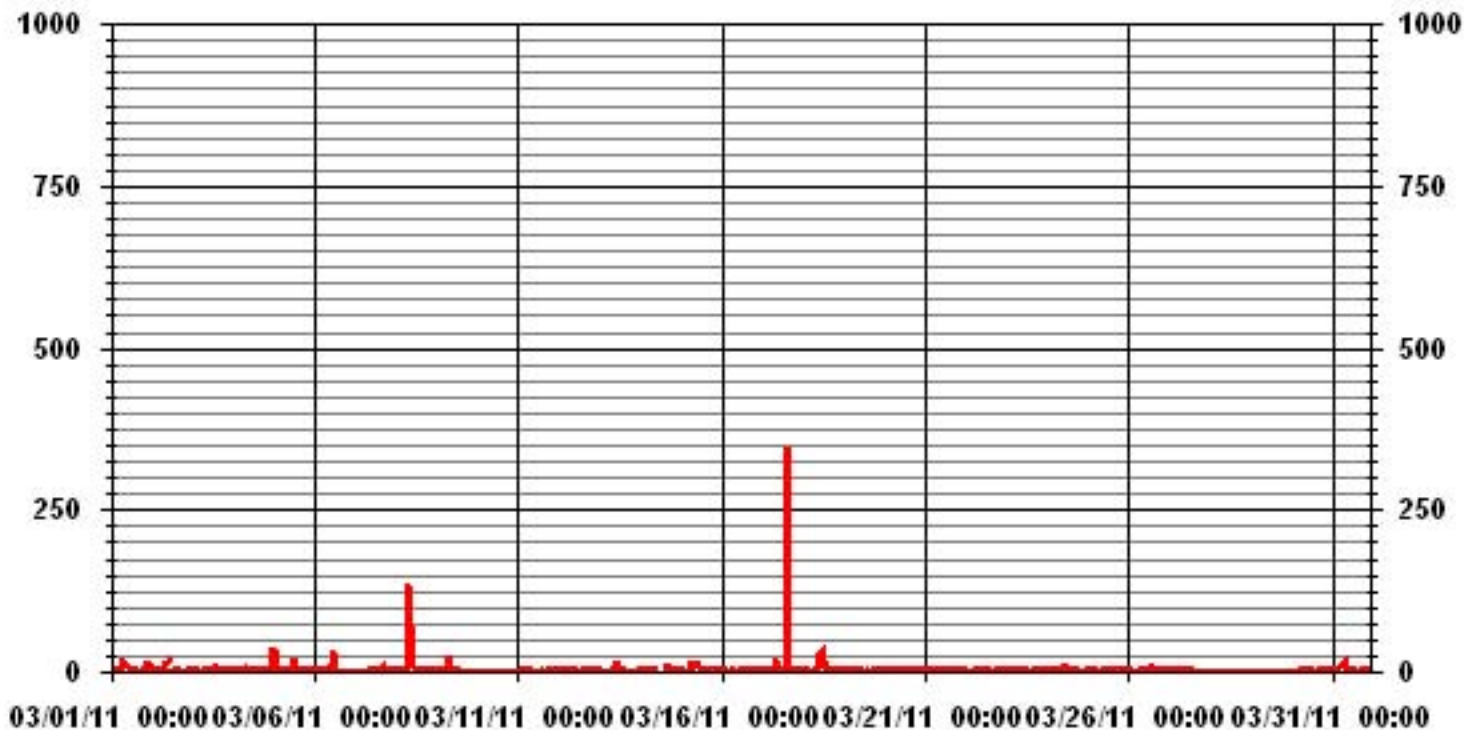
STATUS FLAG CODES

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

NUMBER OF NON-ZERO READINGS:	575					
MAXIMUM INSTANTANEOUS VALUE:	347	PPB	@ HOUR(S)	15	ON DAY(S)	17
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	14.72					

01 Hour Averages



LICA30
 NO_ / WDR Joint Frequency Distribution (Percent)

March 2011

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	2.14	4.57	13.42	6.85	6.28	11.57	13.00	9.14	7.28	10.85	4.28	1.57	1.57	3.42	2.00	1.85	99.85
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.14
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.14	4.57	13.42	6.85	6.28	11.57	13.00	9.14	7.28	10.85	4.28	1.57	1.57	3.57	2.00	1.85	

Calm : .00 %

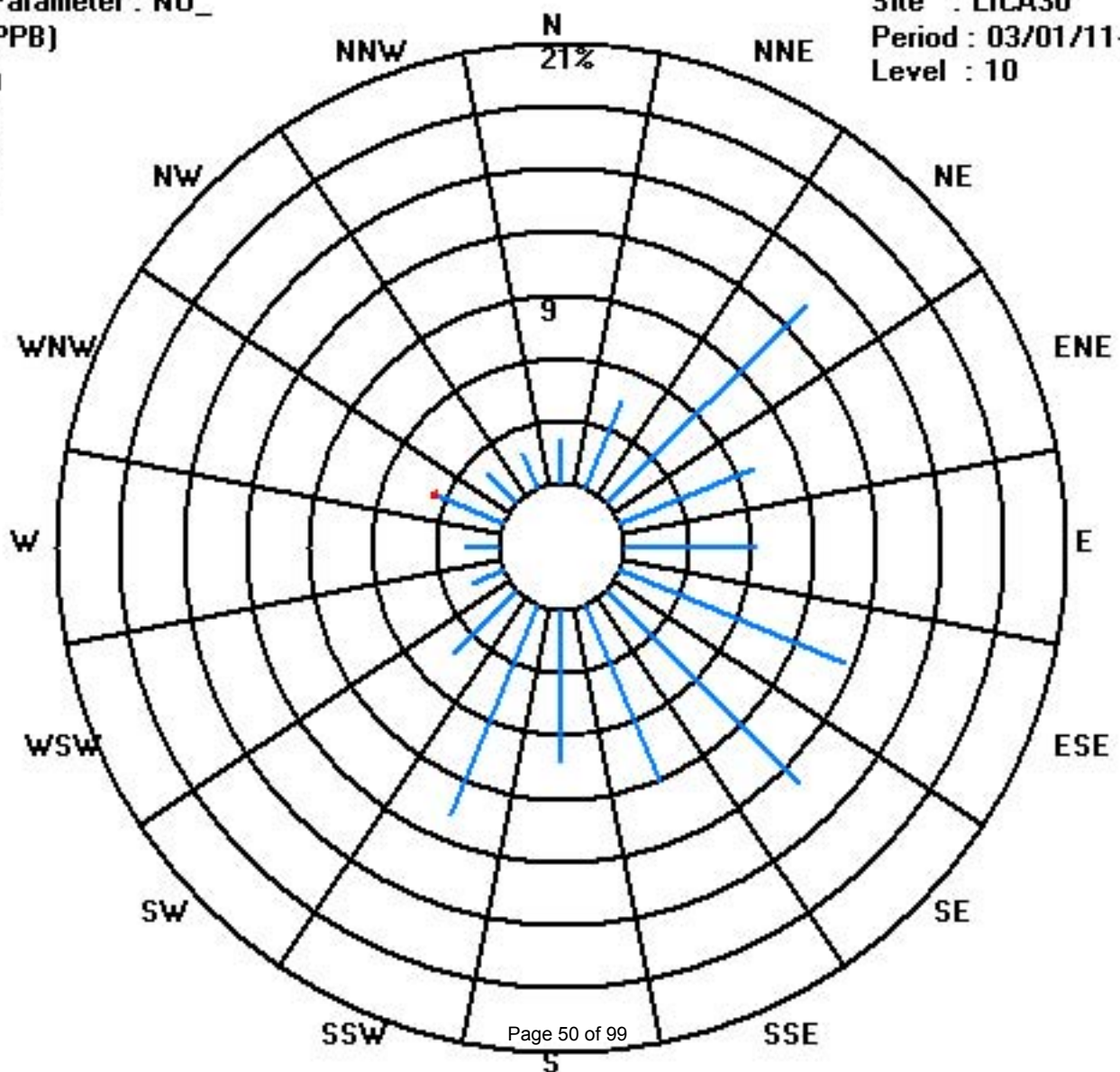
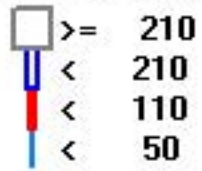
Total # Operational Hours : 700

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	15	32	94	48	44	81	91	64	51	76	30	11	11	24	14	13	699
< 110														1			1
< 210																	
>= 210																	
Totals	15	32	94	48	44	81	91	64	51	76	30	11	11	25	14	13	

Calm : .00 %

Total # Operational Hours : 700



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2011

NITROGEN DIOXIDE hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1		7	6	6	4	4	3	4	7	8	5	2	0	IZS	1	1	1	1	1	1	3	4	4	8	7	8	3.8	24	
2		8	7	8	7	8	8	8	8	8	8	9	IZS	1	3	2	2	6	1	0	3	1	0	0	0	9	4.6	24	
3		0	0	0	1	0	0	1	3	2	2	IZS	1	1	0	1	1	2	1	2	1	1	1	0	1	3	1.0	24	
4		2	2	1	1	2	2	4	5	8	IZS	3	3	3	3	2	2	1	2	2	2	2	2	2	2	8	2.5	24	
5		4	2	1	0	0	0	0	1	IZS	1	1	0	1	2	1	2	2	2	3	2	2	2	2	2	4	1.4	24	
6		3	3	5	4	3	1	1	IZS	0	1	0	4	1	0	0	1	1	1	2	2	3	4	8	6	8	2.3	24	
7		6	5	4	3	4	3	IZS	6	4	4	3	3	2	4	3	3	3	4	4	4	5	5	5	6	6	4.0	24	
8		5	7	6	7	8	IZS	14	49	33	17	8	6	5	5	5	5	3	3	5	5	5	6	9	9	49	9.8	24	
9		9	8	7	9	IZS	6	7	6	9	8	7	8	8	7	7	8	9	11	12	10	10	10	7	5	12	8.2	24	
10		3	2	2	IZS	2	1	1	1	0	M	1	1	1	0	0	0	0	0	0	0	1	0	0	3	0.7	23		
11		0	0	IZS	1	0	0	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0.3	24		
12		0	IZS	0	0	0	0	0	1	1	2	1	2	2	1	1	1	2	1	1	1	1	1	1	1	2	0.9	24	
13		IZS	1	1	1	1	1	1	1	3	3	10	5	3	3	4	4	5	5	6	5	4	3	3	IZS	10	3.3	24	
14		2	2	2	2	2	2	2	1	2	C	C	C	C	C	C	C	10	11	7	5	1	3	IZS	7	11	3.8	24	
15		3	2	6	4	6	7	16	15	7	8	2	5	4	3	4	1	0	0	0	1	IZS	1	1	16	4.2	24		
16		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	
17		0	0	0	0	0	0	0	0	2	1	3	1	1	1	4	1	2	3	IZS	4	4	4	4	4	4	1.6	24	
18		4	4	4	4	4	4	5	6	10	19	19	18	10	8	5	3	3	3	IZS	3	2	2	2	2	2	19	6.3	24
19		3	3	3	2	3	3	4	5	4	4	3	3	3	2	4	8	4	IZS	1	1	1	1	1	1	8	2.9	24	
20		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	
21		0	0	0	0	0	0	0	0	0	0	0	0	1	0	IZS	11	12	11	9	13	13	14	13	14	4.2	24		
22		11	9	5	3	6	11	9	10	5	3	2	3	2	2	IZS	2	8	8	6	2	0	0	0	0	11	4.7	24	
23		0	0	0	0	1	2	4	7	5	1	3	3	3	IZS	0	1	0	0	1	0	1	1	0	0	7	1.4	24	
24		0	0	1	1	2	11	3	7	8	7	5	4	IZS	3	0	3	2	3	4	4	1	0	1	2	11	3.1	24	
25		3	2	1	1	1	1	3	4	2	4	5	IZS	3	2	1	1	1	0	0	1	3	2	0	5	1.8	24		
26		0	0	1	6	11	5	10	10	7	10	IZS	7	5	7	8	5	0	1	2	0	0	0	1	1	11	4.2	24	
27		1	3	5	5	7	11	10	12	9	IZS	5	4	3	6	2	1	1	1	1	1	1	1	1	1	12	4.0	24	
28		2	1	1	1	1	1	1	2	IZS	1	2	2	2	2	2	2	2	2	3	3	2	2	2	2	3	1.8	24	
29		1	2	2	4	4	4	3	IZS	3	3	4	4	3	2	2	1	1	1	2	1	1	1	1	1	4	2.2	24	
30		1	1	2	2	2	2	IZS	2	3	2	2	2	2	2	3	3	4	3	3	4	4	5	5	8	8	2.9	24	
31		9	8	7	4	2	IZS	1	0	3	3	0	0	0	0	1	0	0	0	0	0	0	0	9	16	2.7	24		
HOURLY MAX		11	9	8	9	11	11	16	49	33	19	19	18	10	8	8	8	11	12	12	10	13	13	14	16				
HOURLY AVG		2.9	2.7	2.7	2.6	2.8	3.1	3.9	5.9	5.1	4.3	3.6	3.2	2.5	2.4	2.1	2.3	2.8	2.6	2.7	2.4	2.4	2.5	3.0	3.3				

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

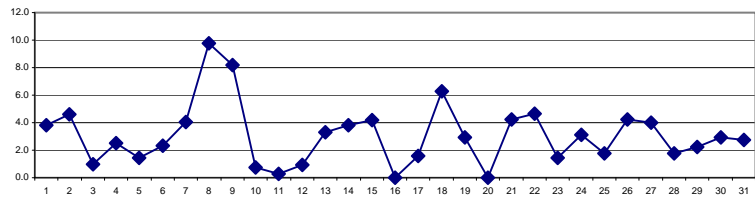
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	212	PPB	24-HR	106	PPB
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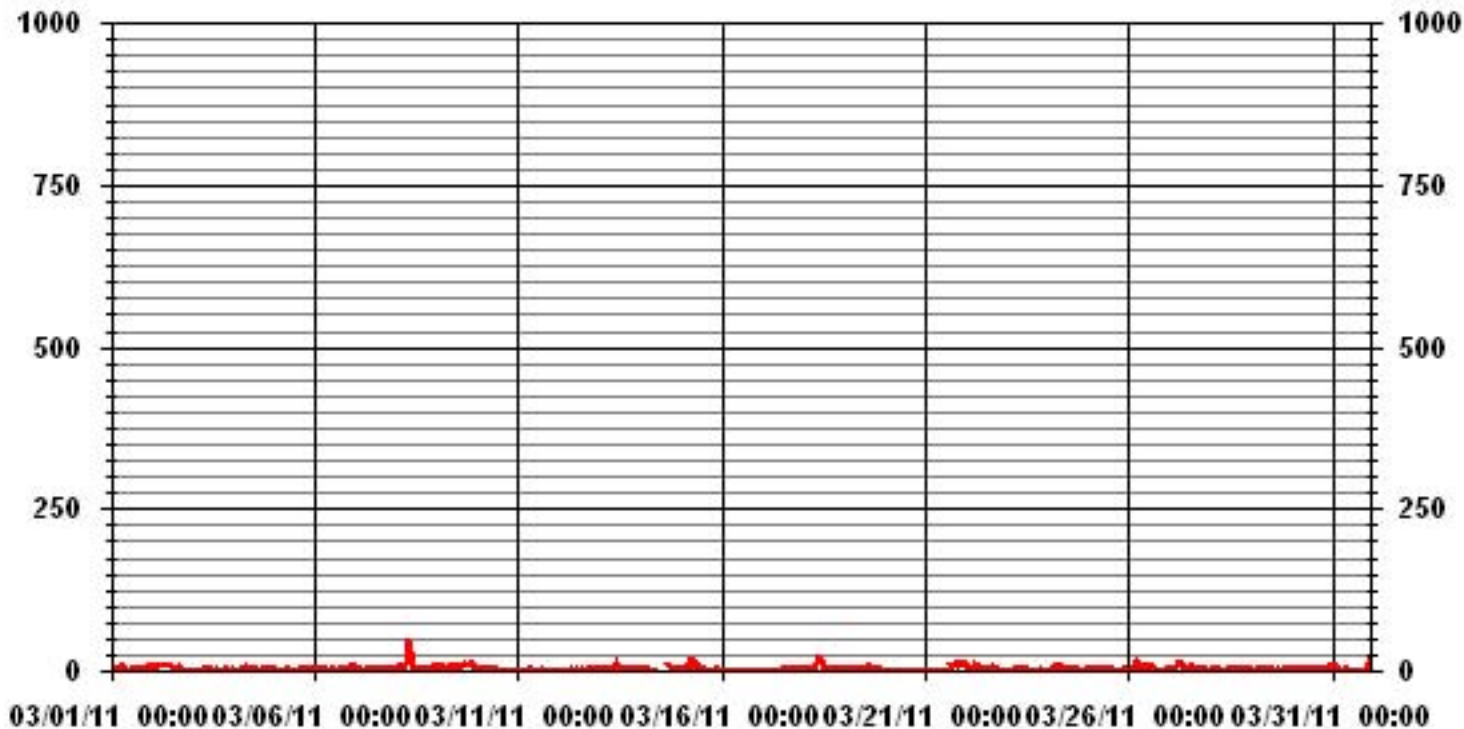
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	537
MAXIMUM 1-HR AVERAGE:	49 PPB @ HOUR(S) 7 ON DAY(S) 8
MAXIMUM 24-HR AVERAGE:	9.8 PPB ON DAY(S) 8
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	3.86
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
MONTHLY AVERAGE:	3.05 PPB

24 HOUR AVERAGES FOR MARCH 2011



01 Hour Averages



— LICA30 NO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2011

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	11	8	8	7	8	6	6	19	12	11	6	2	IZS	2	2	3	2	2	2	4	6	8	20	13	20	7.3	24	
2	15	8	12	8	9	10	9	10	14	12	14	IZS	2	5	5	7	9	2	1	7	5	1	1	1	15	7.3	24	
3	1	1	1	1	1	1	2	9	4	5	IZS	3	3	3	7	3	3	2	2	2	2	1	1	2	9	2.6	24	
4	3	2	2	1	2	3	11	8	14	IZS	5	5	4	4	4	7	5	3	3	3	3	3	2	3	14	4.3	24	
5	29	5	2	1	0	0	0	3	IZS	3	2	1	12	3	2	3	4	3	3	3	3	3	3	4	29	4.0	24	
6	5	4	6	6	5	2	2	IZS	1	3	7	46	2	1	1	2	2	2	4	3	3	5	12	8	46	5.7	24	
7	7	6	5	4	5	4	IZS	12	6	7	5	4	3	7	3	4	4	17	5	5	6	6	6	7	17	6.0	24	
8	6	9	6	8	10	IZS	25	73	48	26	10	7	7	6	6	6	5	5	6	6	6	8	10	10	73	13.4	24	
9	10	9	8	11	IZS	12	9	19	12	12	9	10	20	8	8	10	10	12	13	12	11	11	9	7	20	11.0	24	
10	5	3	2	IZS	2	2	2	2	1	M	M	1	1	1	1	1	1	1	1	1	1	2	1	1	5	1.6	22	
11	1	1	IZS	1	1	1	3	2	2	2	1	1	1	1	1	2	1	1	1	1	1	1	2	2	3	1.3	24	
12	1	IZS	1	1	1	1	1	1	2	3	2	2	2	2	2	2	2	2	2	2	1	1	2	1	1	3	1.6	24
13	IZS	1	1	1	1	1	1	2	8	8	15	8	4	4	4	5	5	6	8	6	5	4	3	IZS	15	4.6	24	
14	2	3	3	3	3	2	2	2	2	C	C	C	C	C	C	C	22	22	24	21	2	6	IZS	14	24	8.3	24	
15	9	2	16	6	13	9	28	27	13	15	M	M	7	7	8	2	1	1	1	1	1	1	2	1	28	8.1	22	
16	1	1	1	1	1	0	0	1	1	1	2	2	1	0	1	0	1	0	0	0	IZS	0	0	0	2	0.7	24	
17	0	1	0	0	1	1	1	7	22	3	4	2	2	3	2	116	2	3	3	IZS	5	5	5	5	116	8.4	24	
18	6	5	5	5	5	5	7	8	16	26	23	22	19	11	6	4	3	4	IZS	4	3	3	3	3	26	8.5	24	
19	4	4	4	3	4	3	6	7	4	4	4	4	5	3	10	12	8	IZS	1	1	1	1	2	1	12	4.2	24	
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	1	0	1	1	0	1	0.8	24	
21	0	0	1	1	0	1	0	1	1	1	1	1	1	3	1	IZS	14	15	17	14	18	17	18	19	19	6.3	24	
22	14	13	7	8	10	16	14	14	11	8	6	6	6	6	IZS	6	11	11	12	5	1	0	0	0	16	8.0	24	
23	0	0	0	1	6	5	10	11	9	2	7	5	8	IZS	2	2	1	2	1	2	2	2	1	1	11	3.5	24	
24	1	1	1	1	11	14	6	13	11	11	9	10	IZS	9	2	10	9	10	9	10	3	1	3	4	14	6.9	24	
25	5	4	2	2	2	2	5	6	4	9	9	IZS	6	3	2	1	1	1	1	1	2	4	3	1	9	3.3	24	
26	1	1	3	14	17	9	15	13	11	14	IZS	11	9	14	13	11	1	4	4	2	1	1	1	1	17	7.4	24	
27	2	7	7	8	11	17	14	16	12	IZS	12	12	5	13	4	2	3	1	1	2	2	1	2	2	17	6.8	24	
28	2	3	2	2	2	2	3	IZS	2	2	2	2	2	3	3	3	3	4	4	4	2	3	2	3	4	2.6	24	
29	2	2	3	5	5	5	4	IZS	4	4	5	4	4	3	3	2	2	2	3	2	2	2	2	2	5	3.1	24	
30	2	2	2	3	3	3	IZS	3	4	4	2	2	2	3	5	4	4	4	4	4	5	5	6	12	12	3.8	24	
31	11	9	10	6	3	IZS	30	9	9	7	1	1	1	5	6	0	0	0	0	0	0	0	30	31	31	7.3	24	
HOURLY MAX	29	13	16	14	17	17	30	73	48	26	23	46	20	14	13	116	22	22	24	21	18	17	30	31				
HOURLY AVG	5.2	3.9	4.1	4.0	4.8	4.8	7.4	10.4	8.9	7.6	6.3	6.5	5.0	4.6	4.0	8.0	4.6	4.7	4.5	4.3	3.4	3.6	5.1	5.3				

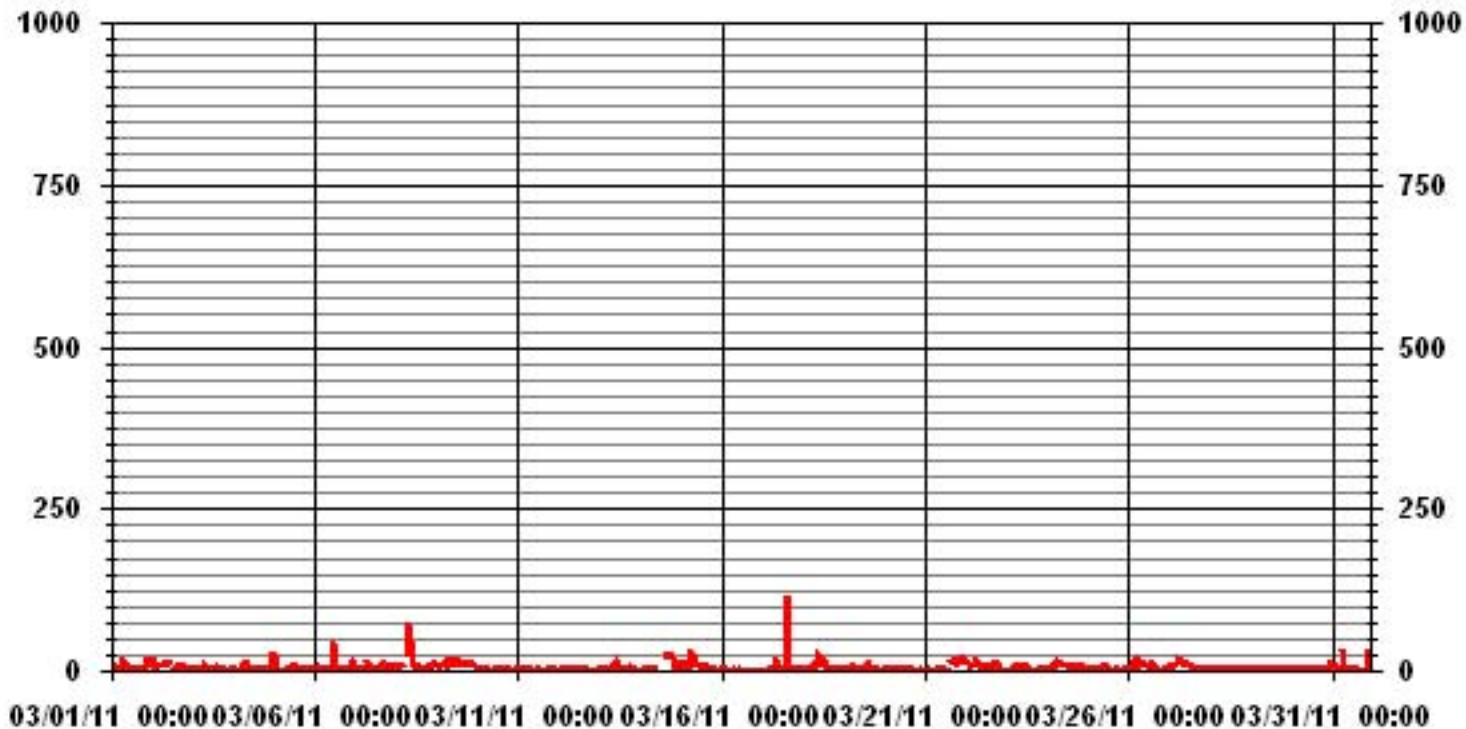
STATUS FLAG CODES

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:	664					
MAXIMUM INSTANTANEOUS VALUE:	116	PPB	@ HOUR(S)	15	ON DAY(S)	17
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	7.52					

01 Hour Averages



— LICA30 NO2MAX PPB

LICA30
 NO2_ / WDR Joint Frequency Distribution (Percent)

March 2011

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	2.14	4.57	13.42	6.85	6.28	11.57	13.00	9.14	7.28	10.85	4.28	1.57	1.57	3.57	2.00	1.85	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	2.14	4.57	13.42	6.85	6.28	11.57	13.00	9.14	7.28	10.85	4.28	1.57	1.57	3.57	2.00	1.85	

Calm : .00 %

Total # Operational Hours : 700

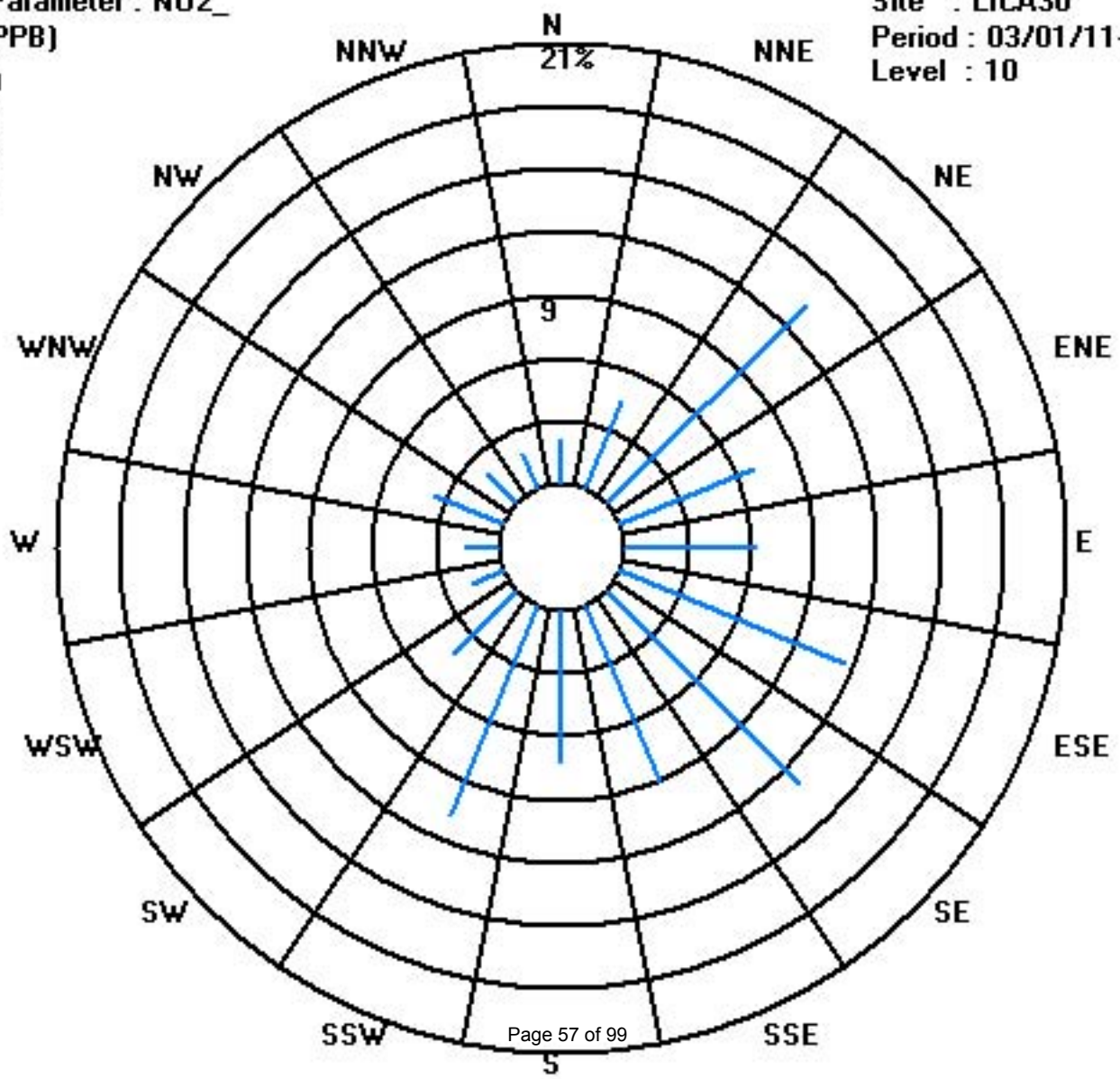
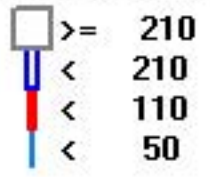
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	15	32	94	48	44	81	91	64	51	76	30	11	11	25	14	13	700
< 110																	
< 210																	
>= 210																	
Totals	15	32	94	48	44	81	91	64	51	76	30	11	11	25	14	13	

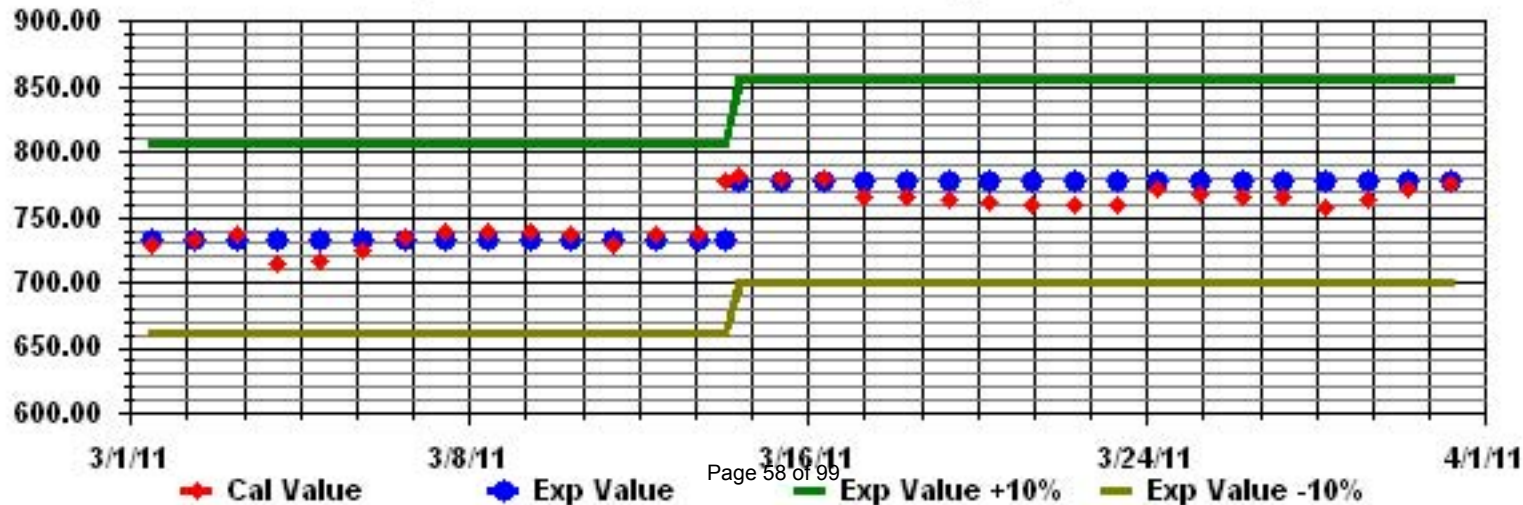
Calm : .00 %

Total # Operational Hours : 700

Class Limits (PPB)



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



Temperature

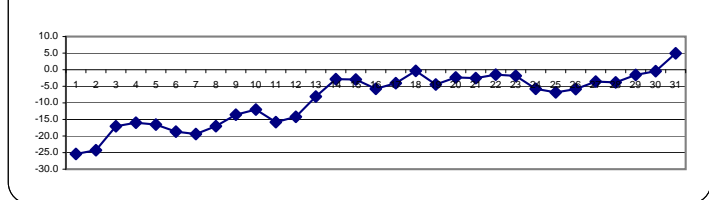
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA
MARCH 2011
AMBIENT TEMPERATURE hourly averages (Degrees C)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY	24-HOUR
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	1	-29.3	-30.1	-30.5	-30.8	-31.4	-31.7	-33	-32.3	-28.3	-24.1	-21.1	-19.7	-17.9	-17.1	-16.5	-16.8	-18.8	-21.9	-23.4	-24.8	-26.2	-27.1	-28.1	-28.9	-16.5	-25.4	24
2	2	-29.6	-31.6	-32.6	-33.4	-33.4	-33.6	-33.5	-33.4	-29.3	-23	-19.2	-18.4	-18.1	-17.8	-17.5	-18.9	-19.5	-20.2	-20.3	-20.1	-20	-19.8	-19.7	-19.8	-17.5	-24.3	24
3	3	-20.2	-20.2	-20.1	-19.7	-19.6	-20	-20	-19.6	-17.9	-16.4	-14.7	-14	-12.8	-13	-13.2	-13.9	-14.3	-15.1	-15.7	-16	-17	-18.3	-18.7	-18.9	-12.8	-17.1	24
4	4	-18.7	-18.5	-19.2	-18.4	-18.5	-20.4	-20.1	-19.4	-16.6	-14.2	-12.2	-11.9	-12.3	-12.2	-11.9	-12.7	-13.2	-14.1	-15.5	-16.1	-16.4	-16.8	-17.1	-17.3	-11.9	-16.0	24
5	5	-17.4	-17.7	-17.8	-18.7	-19.4	-19.7	-20.2	-21.1	-19.4	-16.6	-13.5	-12.4	-11.2	-11.9	-11.6	-12.4	-13.2	-13.7	-14.7	-16.1	-17.4	-18.4	-20.9	-21.7	-11.2	-16.5	24
6	6	-21.5	-21.5	-23.1	-25.7	-25.7	-26.5	-27.3	-27.2	-22.6	-17.4	-12.7	-10.4	-10.4	-9.7	-10.4	-11.2	-12.2	-14.3	-17.2	-19.6	-19.2	-20.6	-20.8	-21	-9.7	-18.7	24
7	7	-21.4	-21.8	-24.7	-27.3	-27.4	-28.2	-25.7	-23.9	-20.7	-17.7	-16.9	-15.5	-13.9	-13.1	-12.1	-12	-12.8	-14.5	-16.5	-17.9	-19.1	-20.3	-20.8	-21.3	-12.0	-19.4	24
8	8	-22.2	-23.5	-25.9	-26.8	-27.7	-28.1	-28.4	-26.7	-21.3	-14.6	-11.4	-8.4	-7.1	-6.5	-6.2	-6.8	-7.9	-9.9	-12.3	-14.3	-16	-17.6	-18.3	-20.7	-6.2	-17.0	24
9	9	-20.6	-22.8	-24	-25.3	-25.9	-25.6	-26.1	-24.7	-18.1	-14	-10.9	-7.1	-4.8	-3.9	-3	-3.2	-4.8	-6.8	-8.5	-9.8	-9.3	-8.7	-9	-8.8	-3.0	-13.6	24
10	10	-8.3	-8.9	-9.8	-9.9	-10	-10.4	-10.7	-11.3	-11.9	-11.7	-11.3	-10.7	-10.5	-10.4	-11.7	-13.3	-14.1	-14.6	-14.8	-14.9	-15.2	-16	-16.8	-8.3	-12.0	24	
11	11	-17.4	-18.1	-18.7	-19.2	-19.6	-19.9	-20.4	-21.1	-20.1	-18.4	-15.6	-12.2	-10.8	-8.4	-7.7	-8.9	-10.6	-13.4	-15.2	-16	-16.2	-16.3	-17	-18.2	-7.7	-15.8	24
12	12	-20.2	-20.2	-19.6	-19.7	-20.1	-19.7	-20.3	-19.1	-15.8	-13.8	-10.8	-10.6	-7.5	-7.5	-6.9	-9	-9.6	-10.3	-11.4	-12.6	-13.3	-13.8	-14.4	-14.7	-6.9	-14.2	24
13	13	-15.2	-15.5	-15.3	-14.7	-14.9	-15.4	-16.9	-15.5	-10.3	-7.9	-4.2	-2.1	-1.5	-0.2	1.1	0.6	-0.9	-2.5	-5	-6.4	-7.1	-8.3	-8.1	-8.1	1.1	-8.1	24
14	14	-7.2	-6.5	-5.5	-5.1	-5	-4.8	-4.9	-4.4	-3.5	-2.1	-1.1	-0.7	-0.8	1.2	1.3	0.8	1.2	0.1	-0.9	-2.1	-3.6	-4	-5	-5.6	1.3	-2.8	24
15	15	-6.8	-8.5	-8.8	-8.8	-10	-10.7	-10.5	-7.7	-3.7	0.4	3.4	3.2	3.5	5.4	5.3	3.6	3	0	-2	-2.4	-3.3	-4.6	-5.4	-5.7	5.4	-3.0	24
16	16	-6.3	-6.9	-7.5	-8	-8.6	-8.7	-8.9	-8.6	-8	-7.1	-5.6	-4.2	-2.6	-2	-1.3	-1.7	-2.7	-3.6	-4.1	-5	-5.8	-6.3	-6.9	-8.1	-1.3	-5.8	24
17	17	-8.4	-7.7	-7.4	-7.3	-7.5	-7.8	-8	-7.9	-6.7	-5.4	-3.9	-2.1	-1.2	-0.6	-0.4	-0.1	-0.2	-1.2	-1.9	-2.2	-2.3	-2.4	-2.4	-2.5	-0.1	-4.1	24
18	18	-2.8	-3.2	-3.5	-3.5	-3.5	-3.8	-4.2	-4.2	-3.7	-2.3	-0.2	4.8	6.6	6.7	5.6	5	5.3	3.6	1	-0.5	-0.9	-2.4	-3.5	-4.7	6.7	-0.3	24
19	19	-5.5	-6.6	-6.8	-9.1	-9.7	-8.6	-7.5	-6.6	-5.5	-4.4	-3.2	-2.2	-1.7	-1.1	-0.2	1.3	0.2	-1.3	-2.7	-4	-5.1	-5.3	-6	-5.5	1.3	-4.5	24
20	20	-4.8	-4.3	-4.3	-4.2	-4.1	-4	-3.9	-3.5	-3.2	-2.6	-2.1	-1.3	-0.6	-0.1	0.5	0.7	0	-1	-1.5	-1.9	-2.2	-2.3	-2.4	-3	0.7	-2.3	24
21	21	-4	-4.3	-4.4	-4.6	-5	-5	-5	-4.6	-3.8	-2.7	-2.1	-0.9	-1	-0.6	-0.5	-0.8	-0.4	-0.8	-1.3	-1.6	-1.8	-1.9	-1.8	-1.9	-0.4	-2.5	24
22	22	-1.9	-2.1	-2.2	-2.5	-2.7	-3.1	-3.4	-2.9	-2.8	-2.3	-1	-0.5	0.2	1.1	0.2	0	0	0.3	-0.2	-0.9	-1.6	-2.4	-2.6	-2.7	1.1	-1.5	24
23	23	-3	-3.1	-3.1	-3.4	-3.8	-4.2	-4.3	-3.5	-2.6	-1.6	0.4	2.6	2.8	2.2	3.6	2.7	1.6	-0.4	-2.1	-3.2	-4.2	-5.2	-5.9	-7	3.6	-1.9	24
24	24	-8	-8.5	-9.1	-9.6	-9.8	-10	-10.7	-10.5	-8.7	-7	-4.7	-2.8	-2.5	-1	0.7	0.7	0.3	-1.8	-3.3	-4.1	-5.5	-6.9	-7	-8.4	0.7	-5.8	24
25	25	-9.5	-10.8	-12.3	-13.3	-13.8	-14.4	-13.9	-12.1	-9.8	-7.3	-5.2	-3.4	-1.5	0.1	0.4	0.5	0.2	-1.3	-3.2	-4.6	-5.9	-7.2	-8.1	-7.8	0.5	-6.8	24
26	26	-8	-8.2	-8.4	-8.8	-9.4	-10.1	-10.8	-10.4	-9.4	-8.1	-7	-5.9	-4.7	-2.8	-1.2	-1.1	-1.3	-1.9	-2.4	-2.9	-3.5	-4.2	-4.7	-5.1	-1.1	-5.8	24
27	27	-5.3	-5.6	-6	-6.4	-6.7	-7	-7.2	-6.9	-6.2	-4.4	-3.4	-3	-1.7	-0.3	1.2	0.9	0	-0.9	-1.5	-2	-2.5	-3.1	-3.5	-4.3	1.2	-3.6	24
28	28	-4.9	-5.2	-5.5	-5.7	-5.8	-5.9	-5.8	-5.6	-5	-4.2	-3.4	-2.8	-2.5	-2.6	-2.1	-2.1	-2.1	-2.2	-2.6	-2.9	-2.9	-3.2	-3.4	-3.5	-2.1	-3.8	24
29	29	-3.5	-3.6	-3.9	-4.3	-4.5	-4.5	-4.5	-4.3	-3.7	-2.8	-1.7	-0.2	0.9	1.3	1.7	1.6	1.2	0.6	0.1	-0.2	-0.4	-0.6	-1	-1.4	1.7	-1.6	24
30	30	-1.7	-2	-2.4	-2.7	-2.8	-2.8	-2.5	-1.7	-1	0.9	2.8	4.7	5.4	3.5	1.7	1.1	1.2	0.2	-1.1	-1.5	-2	-2.5	-2.5	5.4	-0.4	24	
31	31	-2.2	-2.1	-2.1	-1.8	-1.1	0	0.7	3.3	5.4	8.2	9.9	10.3	11.3	11.3	10.6	10.9	10.3	9	6.5	4.9	4.6	4.7	3.6	2.5	11.3	4.9	24
HOURLY MAX		-1.7	-2.0	-2.1	-1.8	-1.1	0.0	0.7	3.3	5.4	8.2	9.9	10.3	11.3	11.3	10.6	10.9	10.3	9.0	6.5	4.9	4.6	4.7	3.6	2.5			
HOURLY AVG		-11.5	-11.9	-12.4	-12.9	-13.1	-13.4	-13.5	-12.8	-10.8	-8.6	-6.6	-5.2	-4.2	-3.5	-3.1	-3.6	-4.3	-5.6	-6.8	-7.8	-8.4	-9.0	-9.6	-10.1			

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

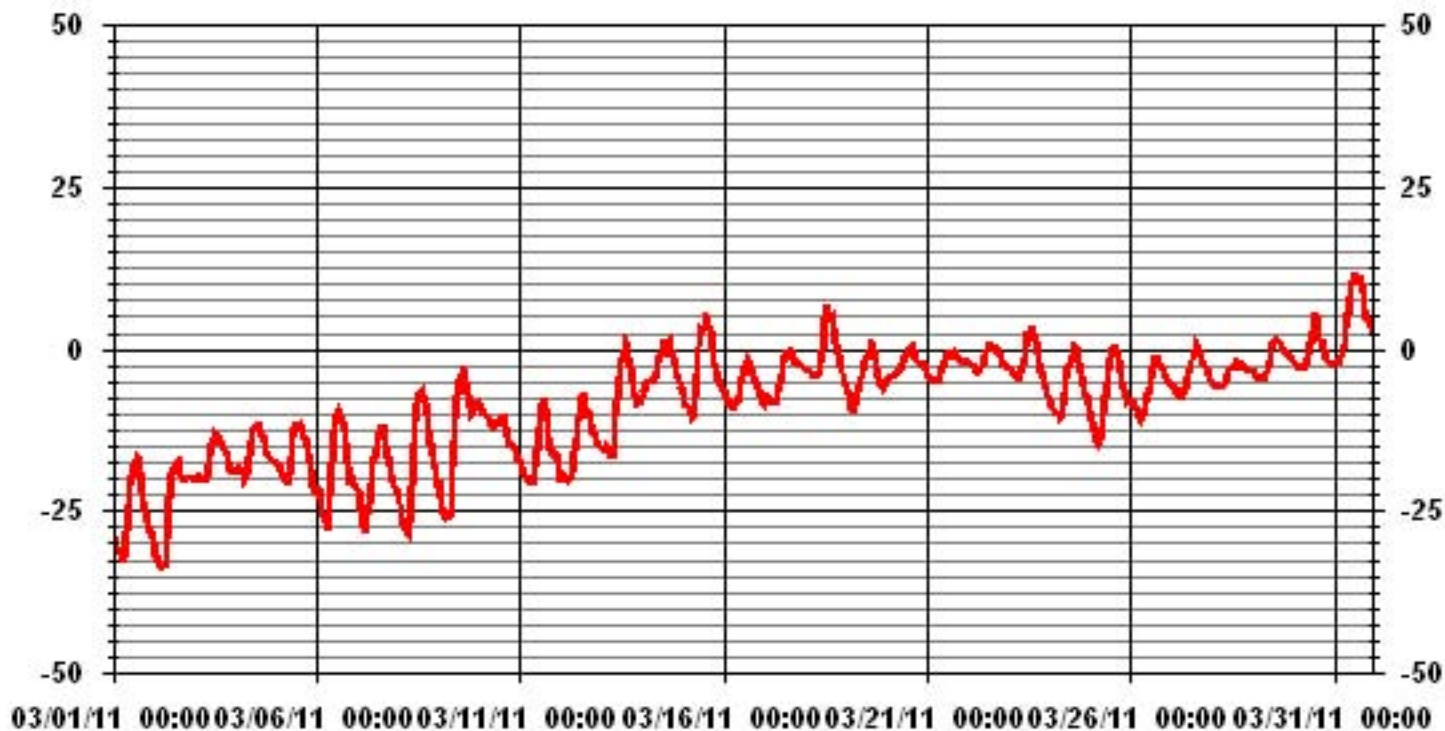
24 HOUR AVERAGES FOR MARCH 2011



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-33.6 °C	@ HOUR(S)	5	ON DAY(S)	2
MAXIMUM 1-HR AVERAGE:	11.3 °C	@ HOUR(S)	12, 13	ON DAY(S)	31
MAXIMUM 24-HR AVERAGE:	4.9 °C			ON DAY(S)	31
CALIBRATION TIME:	0	HRS			
OPERATIONAL TIME:			744	HRS	
AMD OPERATION UPTIME:			100.0	%	
STANDARD DEVIATION:	8.77				
MONTHLY AVERAGE:	-8.70	°C			

01 Hour Averages



Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2011

PRECIPITATION hourly averages (mm)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY		
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	TOTAL	RDGS.	
1	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
2	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	0.3	0.2	0.2	0.1	0	0	0.3	1.1	24	
3	0.0	0	0	0	0	0	0	0	0	0.1	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0.8	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	0.0	24	
5	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
6	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
7	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	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	0.0	24	
9	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
10	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4	0.1	0	0.4	0.8	24
11	0.0	0	0	0.2	0	0	0.3	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6	24	
12	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
13	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
14	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.1	0.1	0	0	0	0	0	0	0	0	0.3	0.5	24	
15	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
16	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
17	0.0	0	0	0.1	0.4	0.2	0.2	0.1	0	0.1	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0.4	1.2	24	
18	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	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	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	0.0	24	
21	0.0	0	0	0	0	0	0	0	0	0.1	0.2	0.1	0.2	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0.2	0.8	24	
22	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0.2	24	
23	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24	
24	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
25	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
26	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
27	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
28	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
29	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
30	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
31	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
HOURLY MAX		0.1	0.0	0.2	0.4	0.2	0.3	0.1	0.0	0.1	0.7	0.1	0.2	0.1	0.3	0.1	0.1	0.1	0.2	0.3	0.2	0.3	0.4	0.1	0.0				

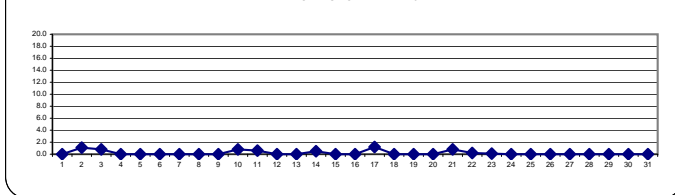
STATUS FLAG CODES

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

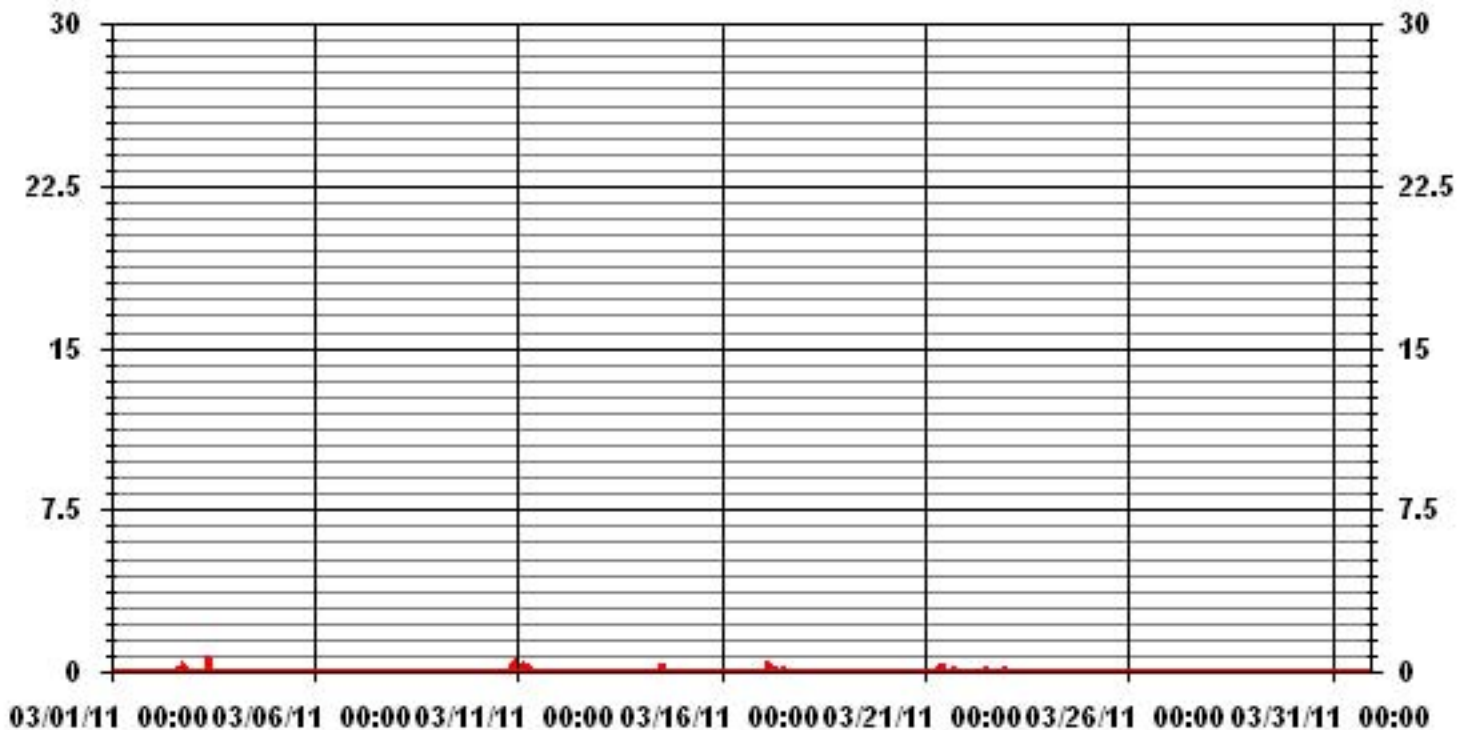
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	0.7	MM	HOUR(S)	9	ON DAY(S)	3
MAXIMUM DAILY TOTAL	1.2	MM			ON DAY(S)	17
MONTHLY TOTAL	6.1	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	0.05		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	0.01	MM	

DAILY TOTALS FOR MARCH 2011



01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2011

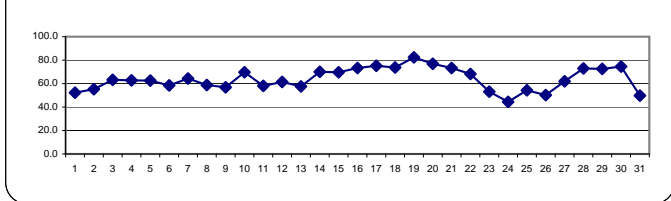
RELATIVE HUMIDITY hourly averages (%)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		65	65	65	63	63	63	62	61	59	50	42	38	35	36	35	35	39	45	48	51	55	57	60	62	65	52.3	24	
2		62	62	63	61	60	60	60	59	52	43	36	35	34	35	34	38	52	63	67	69	69	70	71	71	71	71	55.3	24
3		71	71	71	70	69	70	71	70	65	59	55	53	51	52	52	55	58	61	63	63	64	66	68	69	71	63.2	24	
4		70	70	73	71	71	73	73	72	65	57	50	49	49	55	49	49	51	52	58	65	68	71	72	73	73	73	62.8	24
5		73	73	72	71	70	69	70	71	67	61	53	49	44	47	46	51	57	58	57	62	66	69	73	72	73	62.5	24	
6		71	72	73	70	70	68	67	66	61	52	40	39	42	39	39	40	43	48	57	66	64	70	72	74	74	58.5	24	
7		74	73	69	65	66	65	66	66	67	66	64	61	58	56	52	51	52	58	63	66	69	72	73	72	74	64.3	24	
8		73	70	69	68	66	66	65	65	65	55	50	44	41	41	41	42	44	49	55	61	66	70	71	74	74	58.8	24	
9		72	71	69	68	67	68	67	65	62	60	52	44	40	40	40	41	44	49	54	58	57	57	58	61	72	56.8	24	
10		63	69	75	77	77	75	74	72	70	70	68	68	64	62	62	66	69	68	68	69	72	74	71	69	77	69.7	24	
11		68	65	64	65	66	66	64	63	57	53	49	43	43	40	41	45	49	56	60	62	63	67	71	73	73	58.0	24	
12		75	74	74	73	73	73	73	71	68	61	51	50	43	44	42	47	49	52	57	61	64	65	66	68	75	61.4	24	
13		70	72	72	72	70	71	74	71	56	53	45	41	40	39	38	41	42	47	55	60	61	64	64	65	74	57.6	24	
14		64	65	65	65	65	66	66	68	67	64	64	65	73	70	71	77	73	74	74	74	77	78	79	77	79	70.0	24	
15		80	84	85	84	83	82	83	81	72	58	50	51	52	48	49	55	57	65	70	72	73	77	80	80	85	69.6	24	
16		80	79	79	79	80	81	81	80	77	75	70	65	61	61	61	63	65	69	71	73	74	76	78	81	81	73.3	24	
17		82	80	80	81	80	80	79	76	72	69	67	64	64	65	68	69	71	75	79	79	79	80	82	83	83	75.2	24	
18		84	84	85	86	87	88	88	87	86	84	78	59	52	50	53	52	51	58	66	73	75	78	81	85	88	73.8	24	
19		86	86	85	83	83	85	85	85	85	85	85	84	83	81	78	74	68	71	77	82	85	87	87	86	86	87	82.4	24
20		86	86	87	87	88	88	88	87	86	83	80	75	70	66	63	62	64	68	70	71	72	73	74	71	88	76.9	24	
21		67	69	71	73	74	76	77	78	79	78	77	73	74	73	73	75	72	72	75	76	75	71	67	64	79	73.3	24	
22		64	65	66	66	67	68	69	68	71	70	66	66	63	60	64	66	68	64	62	66	75	81	81	81	81	68.2	24	
23		82	83	82	83	84	84	81	72	64	57	50	40	37	38	33	29	28	29	31	28	31	37	45	47	84	53.1	24	
24		49	55	59	61	60	60	59	56	51	42	34	32	29	27	28	28	32	35	36	38	41	43	51	61	61	44.4	24	
25		53	58	66	71	76	79	78	72	64	57	51	46	42	40	38	34	32	33	36	44	49	56	63	65	79	54.3	24	
26		63	62	60	59	60	62	60	58	56	51	46	44	41	38	38	31	32	33	34	44	54	59	60	63	50.2	24		
27		61	62	64	65	66	67	68	68	65	61	58	58	57	55	53	54	56	59	62	65	66	65	65	67	68	62.0	24	
28		68	69	72	73	73	74	75	75	75	74	72	71	72	74	72	72	71	72	73	74	74	74	75	76	76	72.9	24	
29		77	78	79	79	80	80	80	80	78	76	72	68	65	64	62	62	64	66	69	70	71	72	74	75	80	72.5	24	
30		76	78	80	82	83	83	82	82	81	78	71	65	59	57	63	68	70	69	72	76	76	78	79	80	83	74.5	24	
31		79	78	77	75	72	68	66	58	51	44	39	37	33	32	32	30	28	29	35	40	43	45	49	54	79	49.8	24	
HOURLY MAX		86	86	87	87	88	88	88	87	86	85	84	83	81	78	74	77	73	77	82	85	87	87	86	86				
HOURLY AVG		71.2	71.9	72.6	72.5	72.5	72.8	72.7	71.2	67.8	63.2	58.0	54.2	52.1	51.2	50.5	51.7	53.2	56.4	59.9	62.9	65.1	67.6	69.4	70.5				

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

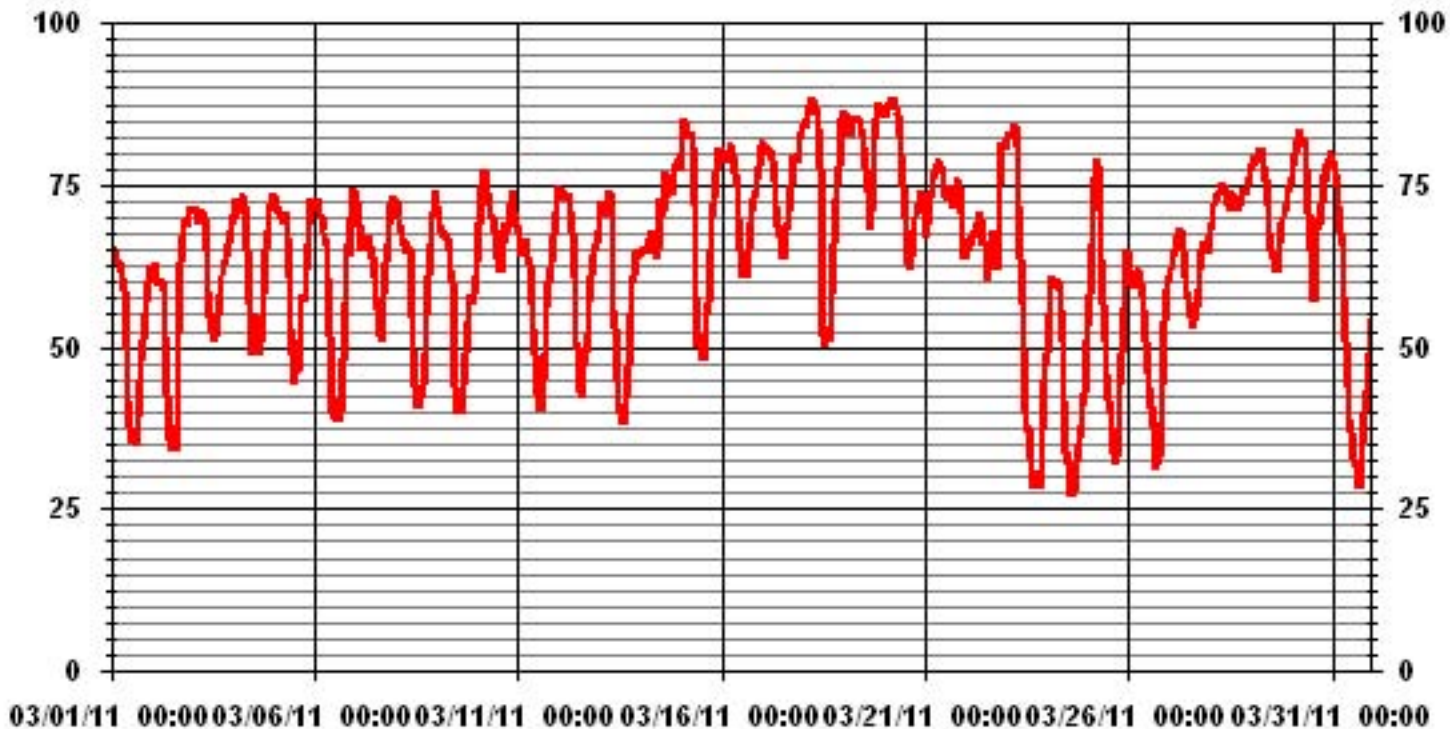
24 HOUR AVERAGES FOR MARCH 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	88	%	@ HOUR(S)	VAR	ON DAY(S)	18, 20
MAXIMUM 24-HR AVERAGE:	82.4	%			ON DAY(S)	19
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	14.01		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	63.79	%	

01 Hour Averages



Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2011

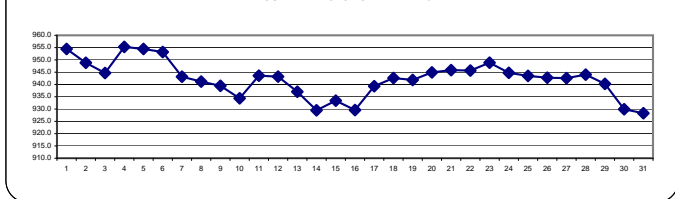
BAROMETRIC PRESSURE hourly averages (millibar)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY	24-HOUR	
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
1	950	951	952	953	954	954	955	955	955	955	955	955	955	955	955	955	955	955	955	955	955	956	956	956	956	956	956	954.5	24
2	956	956	956	956	955	955	955	955	954	953	952	951	950	948	947	946	945	945	943	942	942	942	941	941	941	956	948.8	24	
3	940	941	940	941	941	942	942	942	943	943	943	944	944	945	945	946	946	947	948	949	949	950	950	950	950	950	950	944.7	24
4	951	952	952	953	953	954	954	954	955	955	955	956	957	957	957	957	956	957	957	957	957	957	957	957	956	956	957	955.3	24
5	956	955	955	955	955	954	954	954	955	955	955	955	954	954	954	954	954	954	954	954	954	954	954	954	955	955	956	954.5	24
6	955	955	955	955	956	956	956	956	955	955	955	955	955	954	954	953	952	951	951	950	950	950	950	949	949	956	953.2	24	
7	949	948	947	947	946	946	945	944	944	943	943	943	942	942	941	941	941	940	940	940	941	941	941	941	941	949	943.2	24	
8	941	941	941	941	941	942	942	942	941	941	941	941	942	941	941	941	941	941	941	941	941	941	941	941	941	941	942	941.2	24
9	941	941	942	941	941	942	942	941	941	941	941	941	940	940	939	939	938	938	937	937	937	937	936	936	935	942	939.5	24	
10	935	935	935	935	935	936	936	935	935	935	934	934	934	934	933	933	933	933	932	932	933	934	935	935	936	936	932	934.4	24
11	936	937	938	939	940	941	942	943	943	944	944	945	945	945	945	946	946	946	947	946	947	947	947	947	947	947	947	943.6	24
12	947	947	947	946	946	946	946	946	945	945	945	945	945	944	943	942	942	941	941	940	939	939	939	938	938	947	943.2	24	
13	937	937	937	936	936	937	937	938	938	938	939	939	939	939	939	939	938	938	937	936	936	935	935	934	934	939	937.0	24	
14	933	932	931	930	929	928	928	927	927	927	927	926	926	927	927	928	929	930	931	932	932	933	934	934	934	934	934	929.5	24
15	934	934	935	935	935	935	935	935	935	935	935	936	935	935	934	933	932	932	931	931	931	930	930	930	930	936	933.4	24	
16	929	929	928	928	928	928	927	928	928	928	928	928	929	929	929	930	930	931	931	932	932	933	933	934	934	934	929.6	24	
17	934	935	935	936	937	937	938	938	939	939	940	940	940	941	941	941	941	941	941	941	941	942	942	942	942	942	942	939.3	24
18	942	942	942	942	942	942	943	943	943	943	944	944	944	944	943	943	943	942	942	942	942	942	942	942	942	942	942	942.6	24
19	941	941	941	941	941	941	941	941	942	942	942	942	942	943	942	942	942	942	942	942	942	942	942	943	943	943	941.8	24	
20	943	943	943	943	943	943	944	944	944	944	945	945	945	945	946	946	946	946	946	946	946	946	947	947	947	947	944.9	24	
21	947	947	947	947	946	946	946	946	946	946	946	946	946	946	946	945	945	945	945	945	945	945	945	945	945	947	945.8	24	
22	944	944	944	944	944	944	944	944	945	945	945	945	946	946	946	946	946	947	947	947	948	948	948	949	949	949	945.7	24	
23	949	949	949	949	949	949	950	950	950	950	950	950	950	950	950	949	949	949	948	948	947	947	946	946	950	948.9	24		
24	946	946	946	946	946	945	945	945	945	945	945	945	945	945	945	944	944	944	944	944	944	943	943	943	946	944.8	24		
25	943	943	943	943	943	943	943	943	943	943	943	944	944	944	944	944	944	944	943	943	944	944	944	944	944	944	943.5	24	
26	944	944	943	943	943	943	943	943	943	943	943	943	943	943	943	942	942	942	942	942	942	942	942	942	944	942.8	24		
27	942	942	942	942	942	942	942	942	942	942	942	942	943	943	943	943	943	943	943	943	943	943	943	943	944	944	942.6	24	
28	944	944	943	943	943	943	944	944	944	944	945	945	945	945	944	944	944	944	944	944	944	944	944	944	943	945	944.0	24	
29	943	943	942	942	942	942	941	941	941	941	941	941	940	940	940	939	939	939	938	938	938	938	937	937	943	940.3	24		
30	936	935	935	934	933	932	932	931	930	930	929	929	929	928	928	928	928	928	928	928	928	928	927	926	926	936	929.9	24	
31	926	926	926	926	927	927	927	928	928	928	929	929	928	929	929	929	929	929	929	929	929	930	930	931	931	931	928.3	24	
HOURLY MAX	956	956	956	956	956	956	956	956	955	955	955	956	957	957	957	957	957	957	957	957	957	957	957	956	956				
HOURLY AVG	942	942	942	942	942	942	943	942	943	942	943	943	943	942	942	942	942	942	942	942	942	942	942	942	942	942			

STATUS FLAG CODES

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

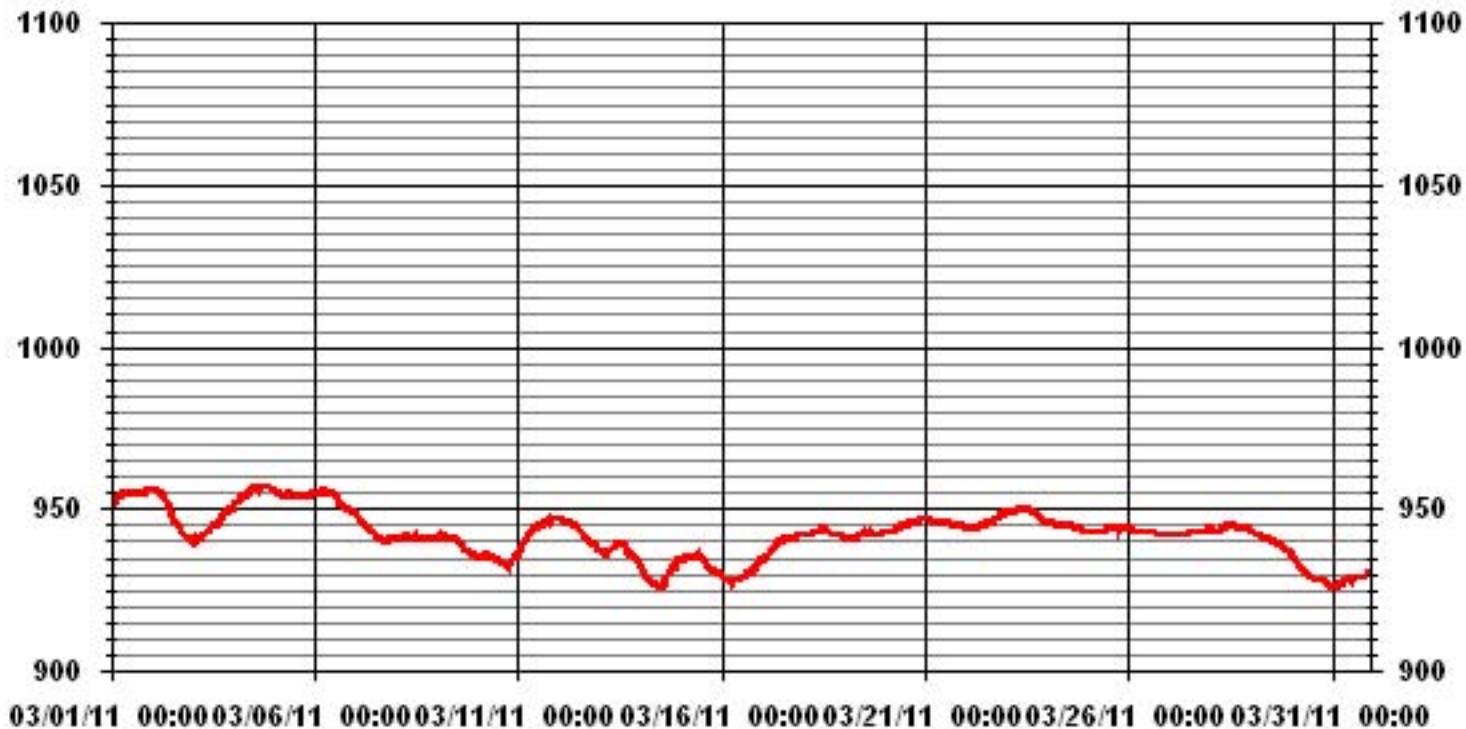
24 HOUR AVERAGES FOR MARCH 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	957	MB	@ HOUR(S)	VAR	ON DAY(S)	4
MAXIMUM 24-HR AVERAGE:	955.3	MB			ON DAY(S)	4
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
			AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	7.45		MONTHLY AVERAGE:	942	MB	

01 Hour Averages



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

MARCH 2011

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	3.2	1	4.7	2.1	3.2	1.7	1	1.1	2.5	6.6	5.9	5.7	4.6	4.8	5	4.7	5.8	7.5	5.7	5.7	5.1	4	3	3	7.5	2.4	24
2	2.9	0.2	1.2	0.7	0.4	0.5	0.3	0.5	0.7	0.6	0.9	4.7	6.3	6.7	7.5	7.4	6	7.5	7.4	5.9	6.1	4.8	4.1	3.8	7.5	2.8	24
3	2.3	1.3	2.7	1.1	1.5	0.4	0.7	0.9	2	4.4	4.3	4.5	4.6	5.3	5.3	5.2	4.5	4.4	3.9	4	3.9	1.6	1.2	1.4	5.3	2.4	24
4	2.3	1.5	0.7	0.3	0.7	0.8	0.9	0.3	0.2	0.8	1.8	0.8	3.3	2.2	3.1	3.1	2.9	2.4	0.9	1.8	1.4	1	1.6	1.9	3.3	0.8	24
5	0.6	2.1	3.2	4	4.4	4.4	2.6	2.5	4.4	3.8	5	5.9	2	2.3	2.1	1.2	2.4	2	3	1.3	1.4	1.8	1.3	0.5	5.9	1.9	24
6	1.3	1.8	1.9	2.2	0.9	2.9	0.7	1.7	4.3	2.8	3	0.3	6	4.6	7.3	8.9	6.2	6.4	4.1	3.8	5.1	4.2	4.5	4.6	8.9	2.2	24
7	4.5	4.8	2.9	2.8	3	2.6	1.2	1.1	0.9	4.5	8.3	8.2	8.3	8.3	9.9	10.4	10.6	8.4	4.4	4.6	4.3	3.7	4.2	4	10.6	4.6	24
8	3.4	2.7	1.4	1.4	1.1	0.9	0.5	0.6	0.6	2.8	4.2	6.3	7.5	8.2	8.3	8.8	9.3	6.9	5	4	3.8	3.7	3.6	1.8	9.3	3.9	24
9	3.5	1.1	0.6	0.9	1	0.4	0.7	0.8	3.9	6.7	4.8	4.4	6.1	7.6	8.5	7.8	5.5	3.7	0.9	2.8	2.5	3.7	3.4	7.3	8.5	2.3	24
10	8.2	9.9	6.2	5.5	9.3	9.7	11.1	11.3	14.4	C	C	C	C	C	14.7	14	11.8	15.1	15.1	15.2	12.8	11.3	15	15.4	15.4	11.7	24
11	12.3	14.8	13.6	11.3	8.1	8.4	9.9	7.9	12.4	9.8	6.6	3.3	2.6	2.8	5.1	6.4	4.7	4	3.7	4.3	5	2.4	1.7	14.8	6.4	24	
12	2.2	3.4	5.1	4.2	4.5	6.6	5.8	5.2	7.4	8.7	8.6	9.6	10.2	13.3	12.6	12.5	10.3	8.7	9.3	10.5	8.8	8.3	6.4	4.4	13.3	7.7	24
13	3.8	3.9	1.3	1	1.2	0.8	0.2	0.4	3	3.7	3.1	4.6	6.1	6	4.8	6.9	7.1	4.1	1.1	2.2	2.7	2.2	2.9	4.4	7.1	1.8	24
14	5.3	6.6	8.1	8.2	7.8	7.8	5.1	7.7	7.1	3.8	5.3	4.7	5.7	2	4.6	6.1	7.5	7.7	7	7.1	4.5	5.4	5.2	4.8	8.2	3.5	24
15	3.5	2.5	1.6	5.7	2.5	1.5	2.6	2.3	1.5	1	0.4	0.9	5.5	3.4	5.7	7.2	6.5	8	7.8	6.9	10.3	10.4	11.9	10.4	11.9	3.4	24
16	10.7	10.3	12.3	12.8	12.9	11.2	10.7	10.7	11	12	12	12.5	11.6	13.7	14.6	12.4	13.2	12.5	9.3	8.7	7.4	7	6.1	3	14.6	10.8	24
17	3.4	3.3	3.6	2.7	2.6	3.9	4.1	4.4	4.6	4.9	4.6	4.7	6	6.1	7	6.7	6.4	7.3	8.1	7.3	6.7	6.3	5.9	5.9	8.1	4.2	24
18	5.6	5.7	5.3	3.7	3.5	4.4	4.7	3.2	2.1	0.6	1.3	1.4	3.1	4.7	9	8.5	8.2	7.9	3.7	2.6	1.1	0.3	0.9	1.7	9	3.6	24
19	2.4	2.5	2.5	0.6	0.6	0.5	0.1	5.3	4.1	3.8	4.4	6.2	5.4	4.7	3.6	2.2	4.8	4.4	3.2	3.2	3.1	3.2	3.1	3.3	6.2	1.6	24
20	5.6	6.2	6.3	8.7	10	10	10.3	13.5	13	12.8	13.1	11.2	11.2	12.4	12.5	12.4	13.4	13.3	9.9	8.8	7.8	7.5	6.7	7.1	13.5	10.1	24
21	7.2	6.6	5.9	5.6	6	4.8	6.4	8	7.8	7.9	10.3	10.4	10.3	9.8	10.4	10.7	10.2	11.8	9.7	10.2	9.5	9.6	9.6	8.7	11.8	8.1	24
22	8.8	8.9	8.2	10	9.2	7.6	8.1	9.9	8.8	8.3	9.2	9.4	10.4	10.2	9.7	9.1	7.4	7.9	7.9	8	8.3	7.9	8.4	7.8	10.4	8.5	24
23	7.5	4.5	4.6	4.8	4.3	2.5	4.2	5.7	6.6	6.5	5.6	7.3	8	8.3	7.8	7.4	8.6	6.9	6.8	8	5.7	6.4	7.1	6.9	8.6	6	24
24	5.3	6.9	7.4	6.1	6	7.2	5.9	6.6	5.9	7.7	8.2	7	6.7	7	6.8	7.2	8.5	6.8	6.5	6.6	5.4	5.2	7.4	7.4	8.5	6.4	24
25	9.1	6.8	5.2	5.2	5.1	4.9	5.3	6.7	8.6	8.3	9	8.4	8.7	10.7	14.7	11.6	9.7	11	9.7	9	8.2	8.4	10.3	9.4	14.7	8.2	24
26	9.9	9	7	7.1	6.3	6.8	6.6	6.4	6.8	8.4	7.5	7.4	8.3	10.8	10.1	10.8	10.2	9.6	10.4	10.5	11.9	12.1	9.9	9.7	12.1	8.6	24
27	6.9	7.7	8	8.3	8.2	7.4	6.5	6.4	8.9	8.6	8.3	8.8	9.4	9.7	11.9	12.8	11.1	10.2	9.8	9.8	9.2	10.3	9.4	8.2	12.8	8.7	24
28	7.5	9.5	7.7	6.8	5.9	5.8	6.7	8.6	7.2	8.3	8.5	9.2	9.7	9.4	9.4	9.6	8.1	7.3	8	7.2	8	9.1	10.5	8.8	10.5	8	24
29	8.9	6.7	7.3	6.9	7.6	5.8	6.2	6.3	6.2	7.2	7.7	5.9	7.6	8.7	8.9	9.1	7.4	7	6.2	5.5	6.5	7.8	9.4	9.8	9.8	7.1	24
30	8.7	8.4	8.4	7.9	8.1	6.4	6.2	8.2	7.7	8.4	8.1	8.5	8.6	9.3	9.2	10.3	8.2	6.5	5.4	5.1	5.6	7.3	7.2	5.9	10.3	6.6	24
31	3.9	6.3	5.6	5.3	5.5	7.7	9.2	11	10.7	7.3	7.1	8.4	7.9	9.9	11.9	10.6	10.5	9.7	7.6	4.7	6.9	9.2	7.9	6.5	11.9	7.5	24
HOURLY MAX	12.3	14.8	13.6	12.8	12.9	11.2	11.1	13.5	14.4	12.8	13.1	12.5	11.6	13.7	14.7	14.0	13.4	15.1	15.1	15.2	12.8	12.1	15.0	15.4			
HOURLY AVG	5.5	5.4	5.2	5.0	4.9	4.7	4.7	5.3	6.0	6.0	6.2	6.4	7.1	7.4	8.4	8.4	8.0	7.7	6.5	6.3	6.1	6.1	6.1	5.8			

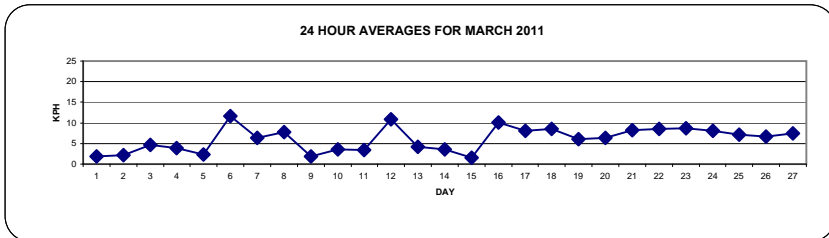
STATUS FLAG CODES

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

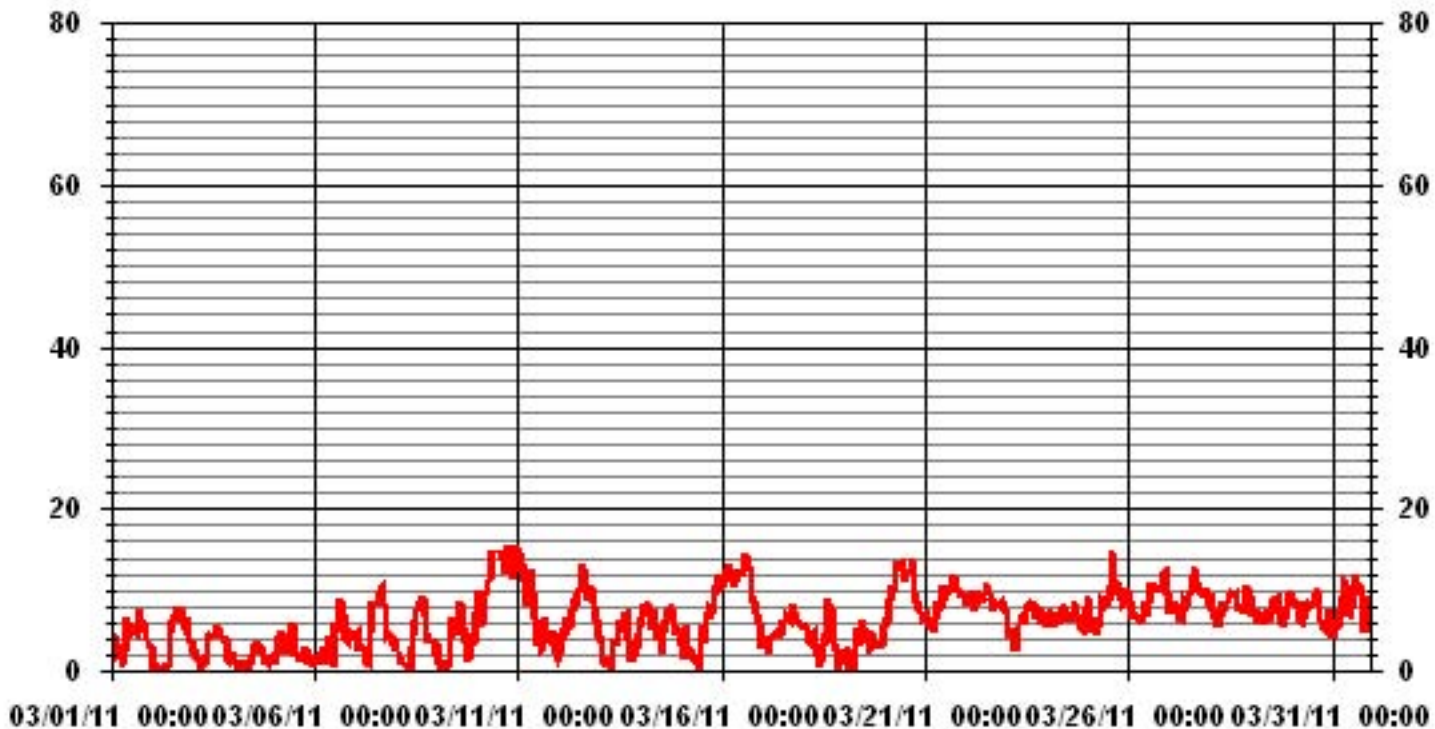
LAST CALIBRATION: March 10, 2011

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	15.4	KPH	@ HOUR(S)	23	ON DAY(S)	10
MAXIMUM 24-HR AVERAGE:	11.7	KPH			ON DAY(S)	10
CALMS (≤ 1 KPH)	5.24	%	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME	100.0	%	
STANDARD DEVIATION	3.39		MONTHLY AVERAGE	6.21	KPH	



01 Hour Averages



— LICA30 WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2011

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	57	50.5	90.6	51	111.3	101.7	94.1	102.5	53.1	25.1	69.7	21.2	20.6	49.4	77	44.6	29.8	20.8	15.4	16.7	12.4	16.2	25.3	18.2	111.3	
2	27.2	101	44.5	49.5	118.3	93.5	94.7	98.4	117.4	78.3	89.7	16.2	29.4	26.4	28.7	36.7	30	40.6	63.7	40.8	79.1	45.1	53.5	68	118.3	
3	81.7	56.8	65.8	75.1	56.3	92.5	77.9	83.5	75.1	52.4	25.9	28.3	19.9	18.4	27.9	21.2	21.6	16.2	28	17.1	17.3	52.2	69.9	35.2	92.5	
4	110.8	53.3	69	70.8	28.7	76.8	84.3	18	33.7	40.4	49.6	64	17.9	16	25.1	59.5	16.2	44.2	25.9	78.7	13	32.4	76.3	88.4	110.8	
5	60.9	65.4	25.3	24	69.5	25.7	73.6	28.2	23.6	66.4	14.9	19.2	17.3	20.1	26.1	27.2	14.6	15.1	42.7	82.6	13.6	42.7	80.2	28.8	82.6	
6	76.8	75.7	69.5	63.2	51.4	39.1	55.9	48.4	34.4	90.4	51.6	16.9	18.6	16.7	20.3	20.7	20.1	17.7	20.7	60.4	14.7	19	17.5	14.3	90.4	
7	16.2	14.7	16.9	17.5	35.6	51.2	59.6	32.7	68.2	18.4	17.5	19.3	22.5	23.8	26.8	25.1	24.4	19.5	13.8	14.8	12.8	25.3	26.2	15.8	68.2	
8	21.2	35.2	41.4	42.3	52	54.8	N	37.4	67.1	33.4	14.1	13.8	17.3	19.2	17.5	19.9	18.2	19	12.8	11.7	16.7	47	13.2	26.2	67.1	
9	27	N	57.6	62.1	53.1	48.3	41.3	42.3	59.6	20.1	14.7	16.9	16.4	18.4	22.5	25	16.2	15.4	16	11.7	39.1	16.9	18.8	20.9	62.1	
10	27.4	27.8	21	22.7	20.5	20.7	25.7	32.6	29.4	C	C	C	C	C	30.5	34.6	34.3	39.1	37.1	39.4	26.3	27.7	36.8	42.8	42.8	
11	27.9	34.3	31.9	26.7	21.2	22.3	23.5	18.7	28.5	21.2	21	13.1	16.2	15	11.4	15.8	17.4	14.9	11.4	11	17.2	12.2	7.5	8.2	34.3	
12	6.8	10.4	13	11.4	14.1	16.4	13.4	13.4	17.6	24	25.6	27.7	28	32.6	35.4	30.8	27.3	29.4	24.8	30.6	25.5	22.8	16.5	11.2	35.4	
13	9	8.2	5.1	4.8	4.5	4.8	2.9	2.1	11.2	9.3	9.8	13.4	14	13.4	13.3	15	15.2	10.6	3.9	5.5	7.9	6.9	7.6	12.2	15.2	
14	11.5	15.3	19.5	22.1	22.4	25.7	14.4	19.4	18	16.4	14.6	13.6	15.9	7.5	12.8	20.7	23.8	21.8	26.9	38.8	16.3	19.5	19.4	22.2	38.8	
15	15.4	9.1	6.6	11.4	8.4	6.3	9.5	8.2	6.9	7.9	8.6	10.5	18.2	13.1	15.5	19.5	18.1	19.8	21.5	16.3	24.7	24.8	27.7	27.1	27.7	
16	23.2	23.7	28.9	28.1	27.4	26.5	31.3	24.4	27.5	26.7	25.8	26	25.7	30.2	30.5	26	31.2	25.9	22.7	23.5	17.4	18.4	12.7	7.9	31.3	
17	10.2	9.3	10.6	9.6	8.4	11	11.6	10.9	11.2	12.3	12	11.1	15.2	15.3	16.6	16.1	15.3	18.2	18	18.4	18	15.5	13.6	13.7	18.4	
18	14.2	14.4	12.8	8.5	10.8	10.3	10.4	9.3	8.2	5.4	5.3	8.6	11.9	15.9	17.2	17.9	18.3	15.3	10.3	6.7	3.7	2.9	3.8	5	18.3	
19	6.9	8.2	8.1	2.8	2.5	3	2.8	13	12.7	11.1	13.4	16.1	14.8	13.2	13.3	10.9	13	12	8.3	6.3	6.9	7.6	7.7	8.9	16.1	
20	16.7	16	16.1	23	20.5	22.3	25.5	30.3	29.8	32.9	31.9	30	27.9	27.9	29.1	27.3	29.7	30.2	27.5	21.1	24.1	21.9	18.4	18	32.9	
21	18.9	16.8	16.7	14.3	14.7	13	20.2	24.3	23.6	24	29.6	36.1	33.2	27.9	34.2	27.6	33.3	35.9	30.6	32.1	26.5	30.2	30.1	26.4	36.1	
22	26.9	26.5	26	28.5	31.7	26.1	25.2	30.8	28.6	27.5	30.2	26.3	27.8	25.9	26.3	24.9	20	29.2	28.7	26.8	27.3	22.2	22.9	24.1	31.7	
23	20.1	14.5	13.5	12.2	10.9	8.7	13	17.2	17.7	15.6	15.7	19.8	20.1	20	21.2	21.1	21.6	16.5	18.8	20.8	16.6	18.7	18.2	18.6	21.6	
24	15.3	23.2	20.2	18.5	20.1	19.7	18.4	18.8	15.3	21.2	18.6	17.4	16.3	17.7	19.9	24.2	21.6	19.6	16.7	16.9	13.3	14.1	18.4	17.1	24.2	
25	23.4	17.4	12.6	11.9	12.8	11.1	17.1	22.9	25.5	29.3	25.1	22.2	25.7	35.1	41.2	36.7	29	34.4	25	24.1	25.1	20.3	31.9	27.9	41.2	
26	29.1	23.7	17	20.1	18.3	22	18.9	16.2	18.9	27.2	18.8	20.5	27.6	30.1	28	29.7	33.4	27.2	30.2	31.5	32.6	35.4	34.9	27.8	35.4	
27	22	22.8	20.1	21	21.4	20.1	18.1	17.1	23.9	26.6	26	25.4	25.4	26.3	33	32.2	29.3	27.8	27.4	25.8	31	28.1	23	22.3	33	
28	24.3	27.9	20.4	18.9	17	18.5	20.7	21	19.5	23.3	25.2	24	27.7	26.9	24.1	22.9	21.1	17.2	20.3	20	23.6	23.4	26.7	21.1	27.9	
29	23.2	17.5	18.6	16.9	21.2	15	14.7	17.8	15.3	21	18.8	15.4	23.3	22.4	22.2	25	19.5	16.6	15.2	17	17.1	17.4	24	25.4	25.4	
30	26	22.9	20.7	20.4	19.8	15.9	23.1	20.1	23.8	22.5	21.6	24.4	26.3	23.1	31.7	25.6	20.3	21.2	16.5	15.2	17.4	17.6	17	21	31.7	
31	13.2	14.1	12.5	14.7	25.6	20.1	28.9	32.1	31.1	22.8	25	26.2	34	33.5	37.2	33.5	34.8	30.3	30.3	18.9	26.7	24.5	22.2	17.1	37.2	
PEAK	110.8	101.0	90.6	75.1	118.3	101.7	94.7	102.5	117.4	90.4	89.7	64.0	34.0	49.4	77.0	59.5	34.8	44.2	63.7	82.6	79.1	52.2	80.2	88.4		

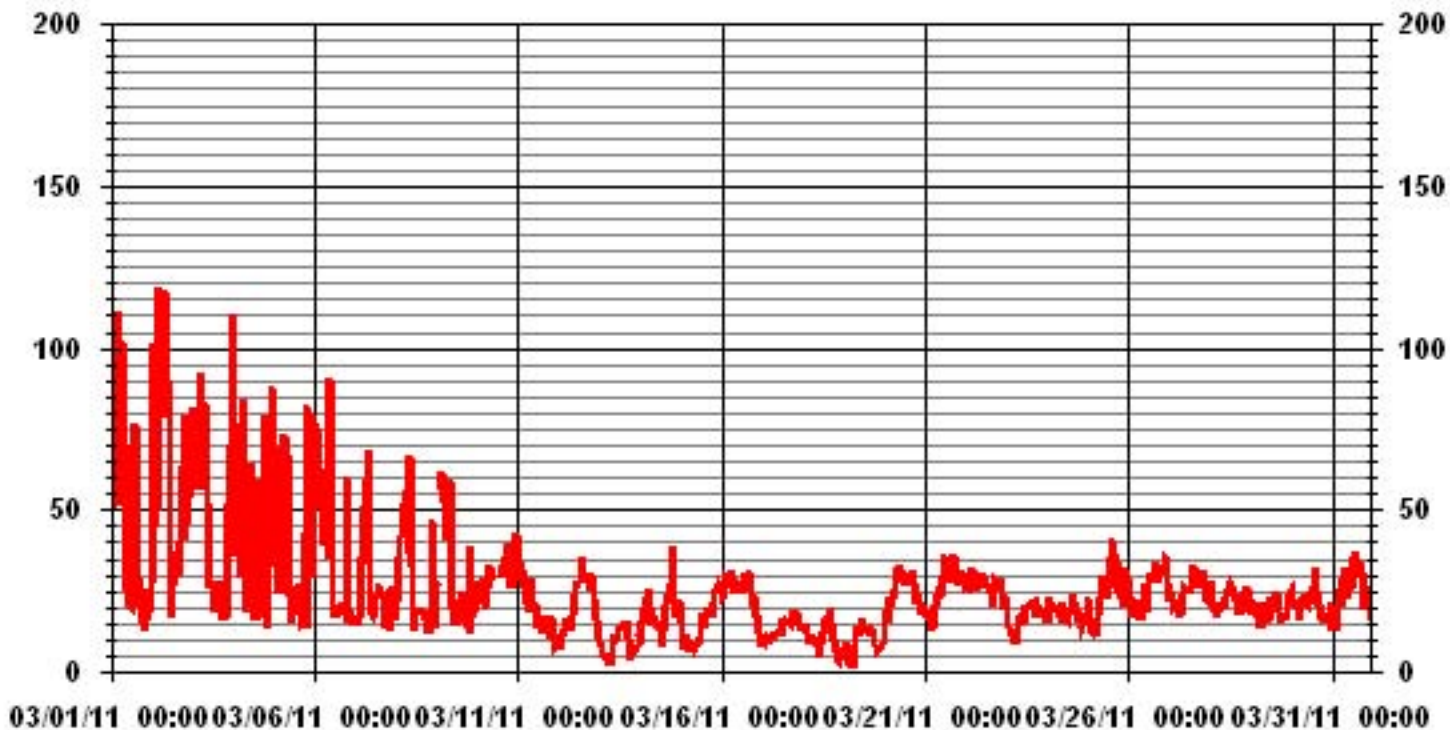
STATUS FLAG CODES

S - OUT OF SERVICE	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	118.3	KPH	@ HOUR(S)	4
			ON DAY(S)	2

01 Hour Averages



LICA30
WSP / WDR Joint Frequency Distribution (Percent)

March 2011

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	1.75	1.89	5.81	4.60	2.30	3.38	3.51	1.89	3.92	5.68	3.78	1.48	.94	1.62	1.89	1.89	46.41
< 12.0	.40	1.35	5.00	2.16	3.92	8.52	8.38	7.03	3.11	4.73	.40	.00	.67	2.16	.27	.13	48.30
< 20.0	.00	1.35	3.11	.00	.00	.00	.67	.13	.00	.00	.00	.00	.00	.00	.00	.00	5.27
< 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	2.16	4.60	13.93	6.76	6.22	11.90	12.58	9.06	7.03	10.41	4.19	1.48	1.62	3.78	2.16	2.02	

Calm : .00 %

Total # Operational Hours : 739

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	13	14	43	34	17	25	26	14	29	42	28	11	7	12	14	14	343
< 12.0	3	10	37	16	29	63	62	52	23	35	3		5	16	2	1	357
< 20.0		10	23				5	1									39
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	16	34	103	50	46	88	93	67	52	77	31	11	12	28	16	15	

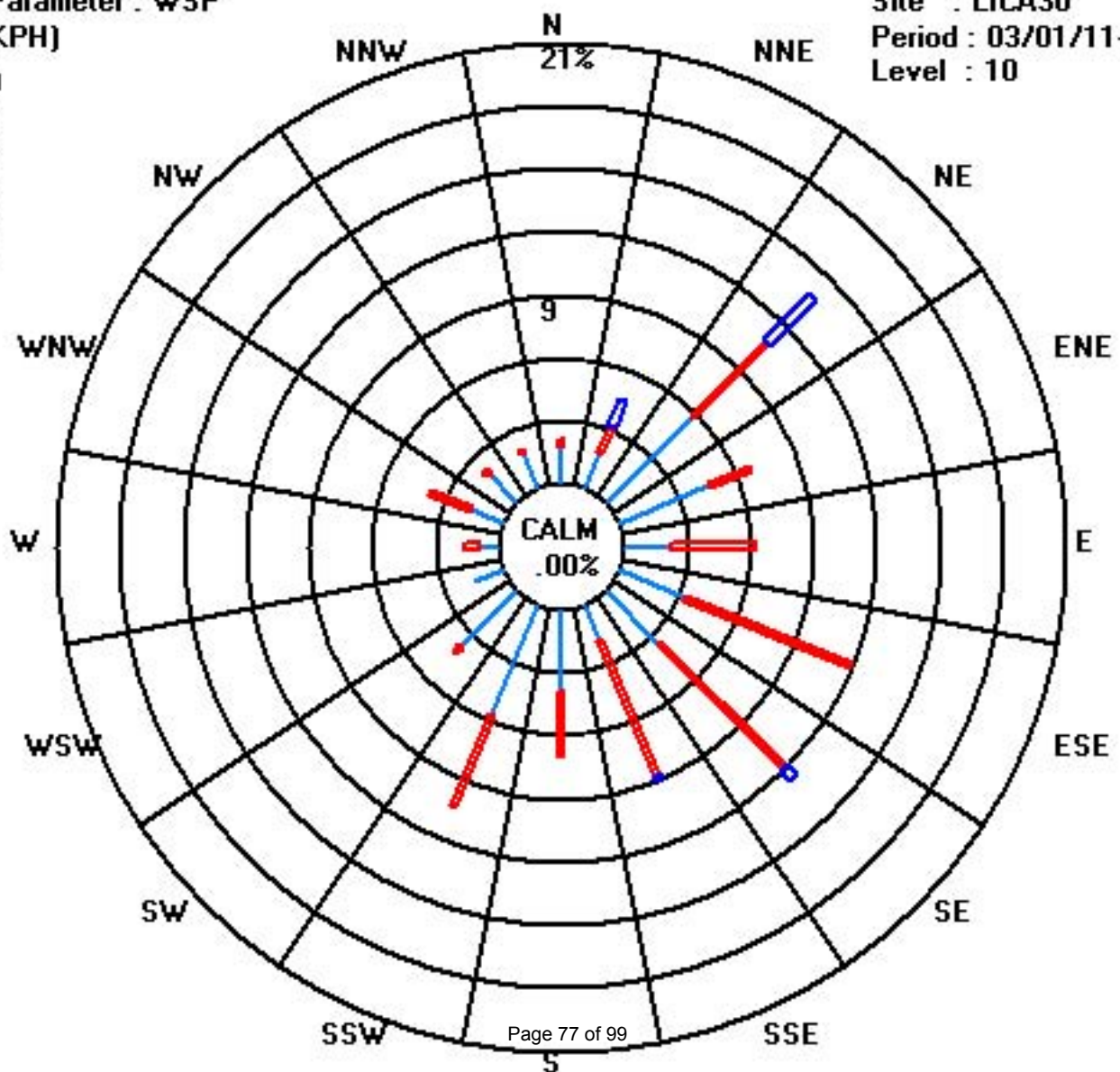
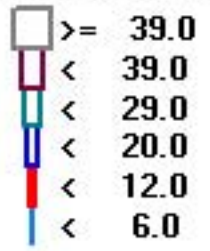
Calm : .00 %

Total # Operational Hours : 739

Class Limits (KPH)

Period : 03/01/11-03/31/11

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -COLD LAKE- MASKWA

MARCH 2011

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	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUADRANT	
DAY																											
1	67	239	129	296	267	248	241	276	118	292	314	334	321	255	279	256	219	213	214	213	208	216	218	219	246	WSW	24
2	219	240	211	173	257	196	241	74	327	319	192	159	150	117	118	99	106	86	81	112	80	64	62	66	105	ESE	24
3	56	103	70	56	47	113	328	292	294	316	329	337	313	326	333	334	331	359	0	7	3	343	43	49	346	NNW	24
4	29	47	135	15	98	38	93	77	326	296	318	271	297	254	313	355	349	348	42	93	104	93	64	68	7	N	24
5	35	59	40	40	52	57	66	45	44	40	31	63	58	192	320	26	11	16	5	17	187	192	202	195	45	NE	24
6	117	87	56	72	146	47	189	86	41	19	310	187	188	200	194	194	218	201	189	191	197	187	181	178	183	S	24
7	182	182	161	141	151	39	359	355	15	188	198	194	203	197	192	195	199	198	202	204	213	215	217	219	195	SSW	24
8	215	220	217	211	227	229	262	282	292	219	212	200	199	190	190	189	190	192	197	208	213	209	204	203	202	SSW	24
9	199	182	126	52	54	221	106	26	193	194	196	176	177	197	196	199	202	206	223	153	110	44	65	52	177	S	24
10	48	49	62	39	33	31	29	27	30	C	C	C	C	C	34	44	49	45	41	32	23	18	23	26	35	NE	24
11	20	20	22	18	11	8	19	10	23	20	23	3	23	351	39	44	85	70	46	53	55	71	96	77	28	NNE	24
12	117	115	125	121	136	139	127	119	138	131	149	163	139	139	138	144	133	133	131	130	135	141	132	127	136	SE	24
13	116	114	105	82	25	80	38	120	202	206	211	226	198	189	208	190	199	196	141	88	65	58	63	45	173	S	24
14	49	65	68	65	66	70	65	71	65	72	50	65	31	328	300	288	316	299	313	330	335	324	310	313	20	NNE	24
15	343	11	282	213	225	234	287	340	289	292	178	104	22	81	83	68	71	52	53	48	44	48	41	42	44	NE	24
16	40	41	42	39	40	41	49	39	41	41	37	33	42	38	34	42	35	34	43	39	43	35	32	42	39	NE	24
17	62	70	72	132	148	129	127	127	121	160	164	178	180	187	181	187	177	198	203	199	197	202	202	197	173	S	24
18	185	191	190	197	201	200	209	220	249	207	208	156	193	189	199	198	193	196	177	166	56	65	129	156	193	S	24
19	163	175	175	34	15	42	268	189	154	173	188	187	189	187	135	92	47	45	58	64	61	77	41	54	130	SE	24
20	54	57	56	42	36	37	38	39	42	43	44	45	48	39	35	41	40	39	42	47	59	67	67	48	44	NE	24
21	49	55	66	47	47	48	50	54	64	70	80	92	86	92	90	94	104	108	99	101	106	108	104	102	85	E	24
22	102	97	93	92	97	102	101	107	89	90	94	102	107	99	106	103	103	106	115	124	127	132	130	133	106	ESE	24
23	138	128	121	119	110	95	90	101	115	117	105	110	115	130	120	134	166	154	147	148	145	145	135	140	129	SE	24
24	129	141	146	128	112	105	91	106	114	109	118	117	104	119	139	118	125	88	106	114	128	131	153	155	120	ESE	24
25	160	151	136	127	118	124	112	114	123	121	122	116	118	126	149	152	150	141	133	141	150	152	146	135	136	SE	24
26	139	136	126	111	102	92	98	100	95	109	114	100	100	108	107	118	126	124	122	132	132	138	135	137	119	ESE	24
27	128	119	111	109	107	105	106	109	111	119	119	117	118	117	129	134	134	128	132	139	133	137	143	163	125	SE	24
28	150	147	144	137	129	128	125	117	129	141	148	156	154	152	150	156	156	157	149	159	165	166	164	178	149	SSE	24
29	188	166	154	154	149	147	143	156	163	158	148	156	150	152	152	154	156	147	146	170	171	177	191	189	161	SSE	24
30	181	172	166	144	148	154	149	154	147	140	140	145	156	172	215	202	205	220	222	223	217	207	212	222	177	S	24
31	221	211	228	226	257	280	285	287	290	288	282	259	269	286	290	288	290	285	278	269	277	286	291	284	277	W	24
HOURLY AVG	343	240	282	296	267	280	359	355	327	319	329	337	321	351	333	355	349	359	313	330	335	343	310	313			

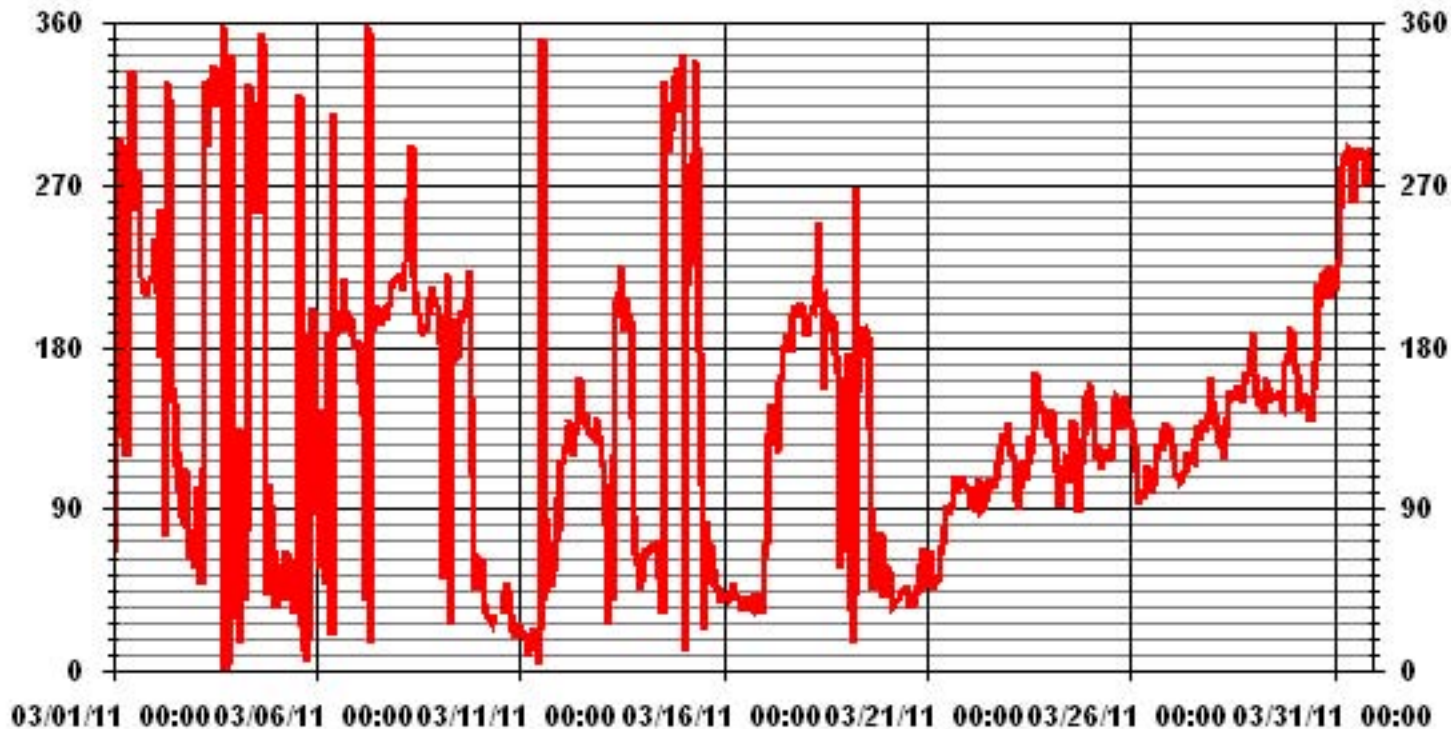
STATUS FLAG CODES

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: March 10, 2011
DECLINATION: 19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	5 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION	82.01	AMD OPERATION UPTIME	100.0 %
		MONTHLY AVERAGE	114 DEG

01 Hour Averages



— LICA30 WDR DEG

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MARCH 2011

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	74	52	64	51	40	50	44	50	73	26	33	40	41	40	37	35	31	18	16	15	12	16	15	16
2	14	73	31	44	53	45	65	39	45	50	58	38	32	34	30	29	25	24	26	25	26	23	25	26
3	28	33	32	44	21	48	37	37	41	31	37	37	41	38	37	33	34	26	27	22	25	31	52	35
4	21	38	49	65	60	38	39	48	77	57	58	71	51	48	45	39	36	33	34	29	50	40	31	38
5	64	41	18	17	23	20	25	16	20	23	16	30	71	62	53	59	30	49	20	37	28	24	44	49
6	35	36	24	29	47	19	44	37	19	25	33	50	28	49	28	23	25	16	12	12	10	12	12	14
7	15	14	20	18	26	42	45	43	54	52	16	18	19	20	20	18	17	15	13	13	15	17	18	16
8	15	23	44	27	43	38	48	42	36	32	24	18	20	19	18	18	15	12	8	13	11	17	17	43
9	16	37	43	44	48	50	55	56	48	19	18	38	30	24	23	23	25	17	30	15	29	43	48	20
10	21	21	21	17	14	14	14	15	14	C	C	C	C	C	17	21	23	22	20	16	14	17	15	15
11	17	17	16	18	20	20	18	19	16	21	29	52	51	49	49	30	25	23	18	20	22	19	16	14
12	12	13	17	17	17	17	17	19	22	24	29	26	25	22	25	22	23	25	22	21	23	22	21	20
13	14	14	14	13	11	17	15	15	21	32	38	31	22	24	33	18	18	18	13	15	14	20	16	15
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17	15	18	19	22	16	19	21	21	28	27	30	25	28	24	26	27	23	20	19	16	17	17	17	16
18	19	18	17	19	17	20	21	29	33	58	50	57	46	38	16	22	22	18	13	15	23	47	20	16
19	16	14	12	9	10	17	41	22	27	30	26	27	34	25	42	53	29	19	17	13	14	14	14	19
20	19	20	22	20	16	18	20	19	20	21	22	24	24	21	21	23	21	20	20	23	24	26	26	21
21	23	24	25	22	20	20	22	23	24	27	25	29	27	26	25	25	24	25	25	26	26	26	23	24
22	26	26	28	26	25	30	27	27	28	29	28	27	27	27	27	26	26	26	24	22	25	21	23	23
23	21	21	22	22	19	20	20	21	22	26	34	31	31	27	29	27	22	20	20	19	20	19	19	19
24	23	20	21	23	23	22	22	22	25	26	25	27	30	29	33	29	24	27	22	21	16	14	17	15
25	20	18	15	15	15	15	19	26	27	30	27	32	29	30	24	25	24	22	21	20	17	18	20	22
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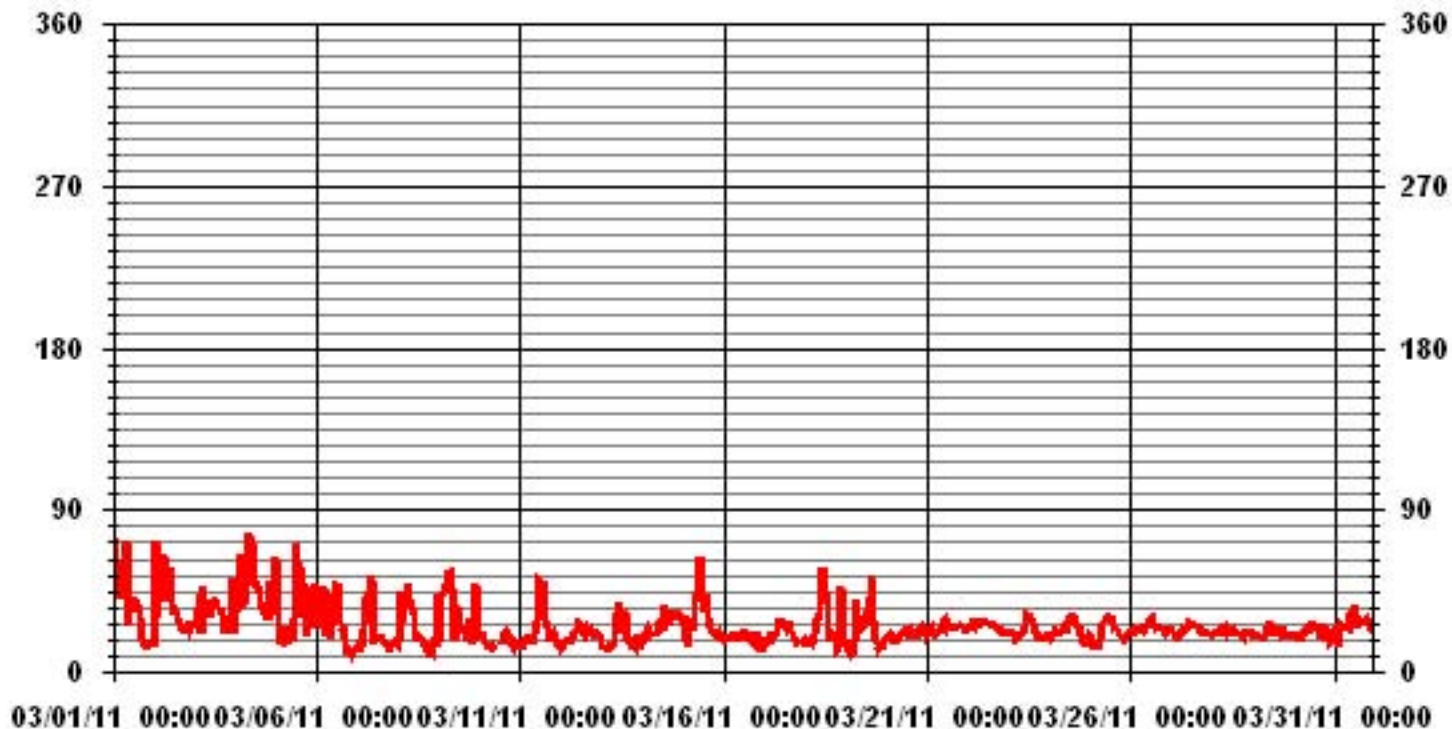
STATUS FLAG CODES

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N - INVALID DATA	M - MISSING DATA
D - INSTRUMENT DRIFT	P - POWER FAILURE
C - CALIBRATION	NA - NOT APPLICABLE

LAST CALIBRATION: March 10, 2011

CALIBRATION TIME: 5 HRS OPERATIONAL TIME: 744 HRS

01 Hour Averages



— LICA30 STDWDIR DEG

Calibration Reports

Sulphur Dioxide

SO₂ Calibration Report

Station Information

Calibration Date	March 15, 2011	Previous Calibration	February 10, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	8:02	End Time (MST)	11:30
Reason:	Monthly Calibration		
Barometric Pressure	935 mBar	Station Temperature	22 Deg C
Cal Gas	49 ppm	Cal Gas Expiry date	April 2, 2013
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	0 - 1 Volts

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	508	Method:	Fluorescent
Converter Make / Model:	-	S/N :	-		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 1000	0 - 1000	ppb
Sample Flow / Box Temp	592 ccm 30.3 Deg C	592 ccm 30.9 Deg C	
HVPS / Lamp Setting	494 3023	494 3022	
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 Deg C	
Offset / Slope	34.1 1.11	34.1 1.111	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	N/A
4922	76.5	750	748	1.0026
4922	76.5	750	750	0.9999
4960	40.8	400	396	1.0095
4981	17.3	170	169	1.0035
4996	0	0	0	N/A
Sum of Least Squares				1.0021
New Correction Factor				0.9999

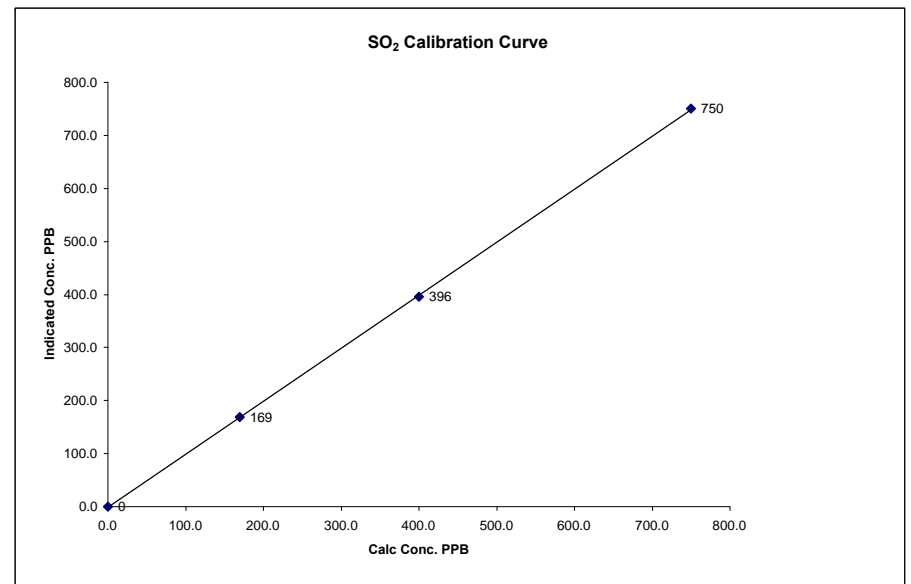
	Before Calibration	After Calibration
Auto Zero	0.9	0.6
Auto Span	375	374
Sample Lines Connected		YES
Percent Change from Previous Calibration		-0.3%

Calibration Performed by: Ting Xu

SO₂ Calibration Curve

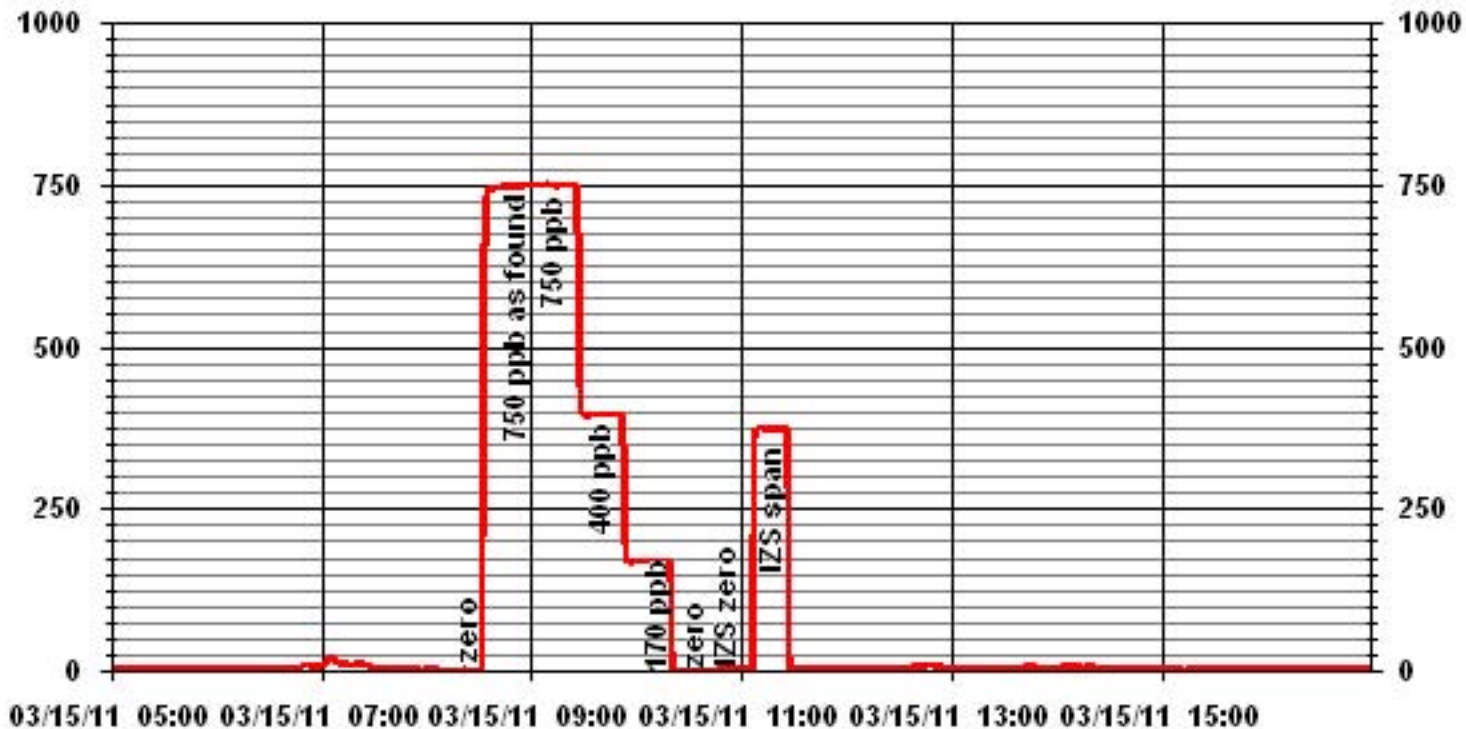
Calibration Date	March 15, 2011
Company	Lakeland Industry & Community Association
Plant / Location	Cold Lake - Maskwa
Start Time (MST)	8:02
End Time (MST)	11:30

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999968
0	0	n/a	Intercept	(± 3% F.S.)	-0.931747
170	169	1.0035			
400	396	1.0095			
750	750	0.9999			



Notes:

01 Minute Averages



Hydrogen Sulphide

H₂S Calibration Report

Station Information

Calibration Date	March 14, 2011	Previous Calibration	February 10, 2011
Company	Lakelnad Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	9:44	End Time (MST)	13:23
Reason:	Monthly Calibration		
Barometric Pressure	927 mBar	Station Temperature	23 Deg C
Cal Gas	10.2 ppm	Cal Gas Install date	02/22/2012
DAS Output Voltage	0 - 1 Volts		

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	511	Method:	Fluorescent
Converter Make / Model:	Internal	S/N :	N/A		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 100 ppb	0 - 100 ppb	
Sample Flow / Box Temp	524 ccm 30.5 Deg C	525 ccm 30 Deg C	
HVPS / Lamp Setting	552 2177	552 2175	
PMT / RxCell Temp	7.9 Deg C 50 Deg C	7.9 Deg C 50 Deg C	
Converter / IZS Temp	315.1 Deg C 45 Deg C	315.5 Deg C 45 Deg C	
Offset / Slope	30 0.953	30 0.991	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	N/A
4959	39.2	80	77	1.0127
4959	39.3	80	80	1.0000
4979	19.6	40	40	0.9756
4986	11.2	23	23	1.0000
4995	0	0	0	N/A
Sum of Least Squares				1.0015
New Correction Factor				1.0000

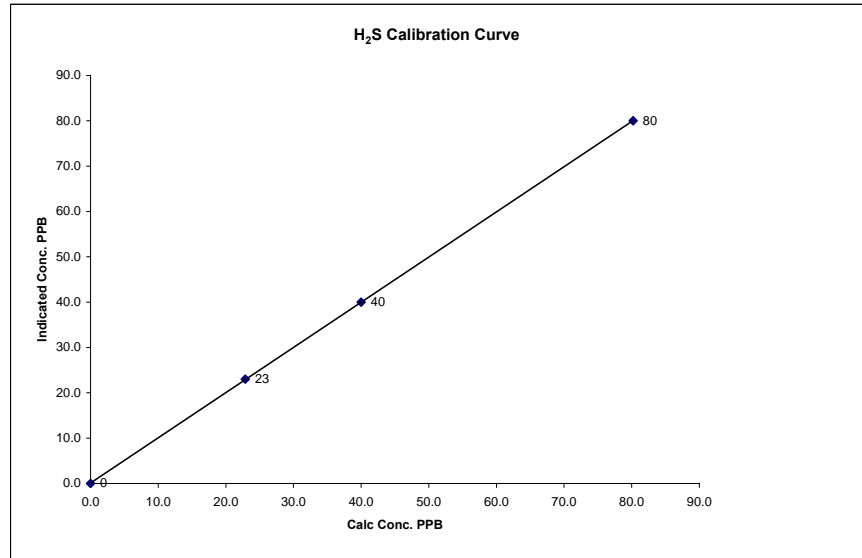
Before Calibration		After Calibration	
Auto Zero	0.1		-0.3
Auto Span	54		56
Sample Lines Connected			YES
Percent Change from Previous Calibration			-1.3%

Calibration Performed by: Ting Xu

H₂S Calibration Curve

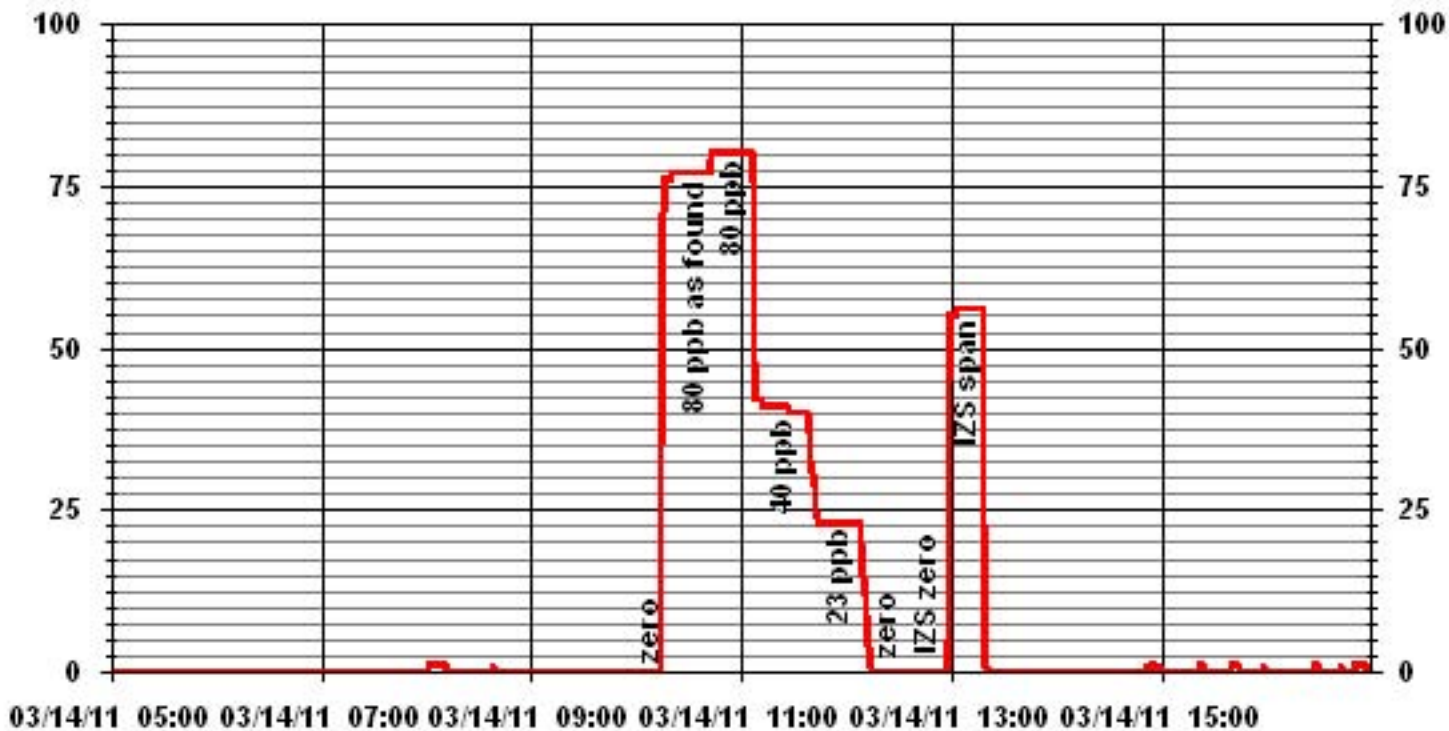
Calibration Date	March 14, 2011
Company	Lakelnad Industry & Community Association
Plant / Location	Cold Lake - Maskwa
Start Time (MST)	9:44
End Time (MST)	13:23

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999993
0	0	n/a	Intercept	(± 3% F.S.)	0.996908
23	23	0.9939			
40	40	0.9999			
80	80	1.0025			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	March 14, 2011	Previous Calibration	February 10, 2011
Company:	Lakeland Industry & Community Association		
Plant / Location:	Cold Lake - Maskwa		
:	(MST) 12:37	End Time	(MST) 16:19
Reason:	Monthly Calibration		
Barometric Pressure:	926 mBar	Station Temperature:	22 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	207 Prop/ 602 Meth/1171.25THC	ppm	Cal Gas Expiry Date: August 21, 2011
DAS make & Model:	ESC 8832	S/N :	AO 791
Output Voltage Range:	0 - 10	VDC	

Analyzer Information

Make / Model	TECO 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
1999	0	0.0	0.5	N/A
1999	0.0	0.0	0.0	N/A
1999	70.0	39.6	40.6	0.9760
1999	70.0	39.6	39.9	0.9931
1998	34.9	20.1	20.0	1.0054
1998	20.0	11.6	11.6	1.0007
1998	0	0.0	0.0	N/A
Correction Factor:				0.9931

Previous Calibration Correction Factor:	0.9931
Current Correction Factor Before Span Adjust:	0.9760
Percent Change:	1.75%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.5	0.0
Auto Span	45.3	44.2
Sample Lines Connected		YES

Cylinder Pressures

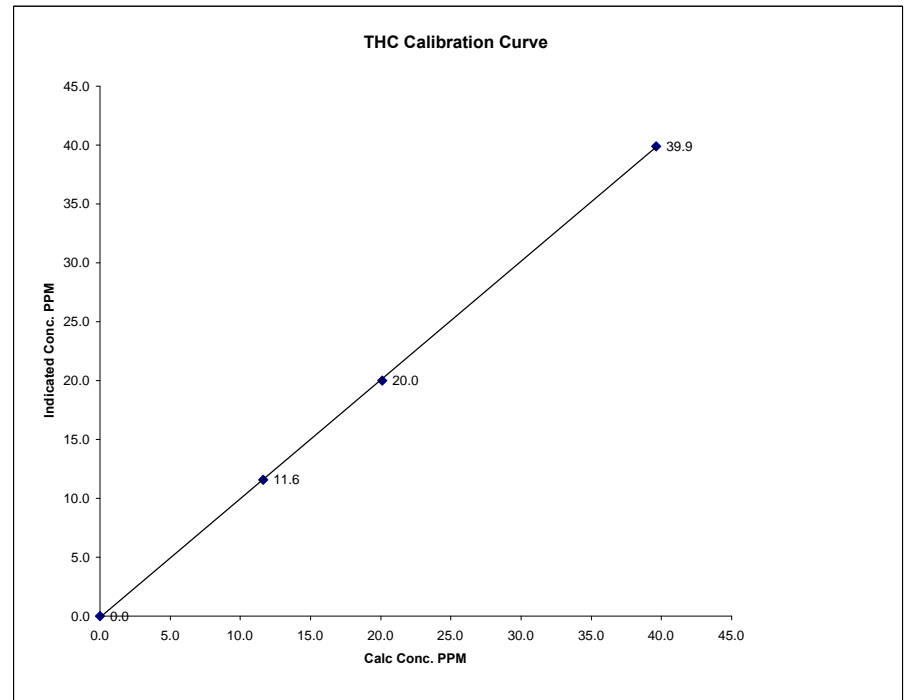
Span	900	psi
Hydrogen	1900	psi
Zero Air	32	psi

Calibration Performed by: Ting Xu

THC Calibration Curve

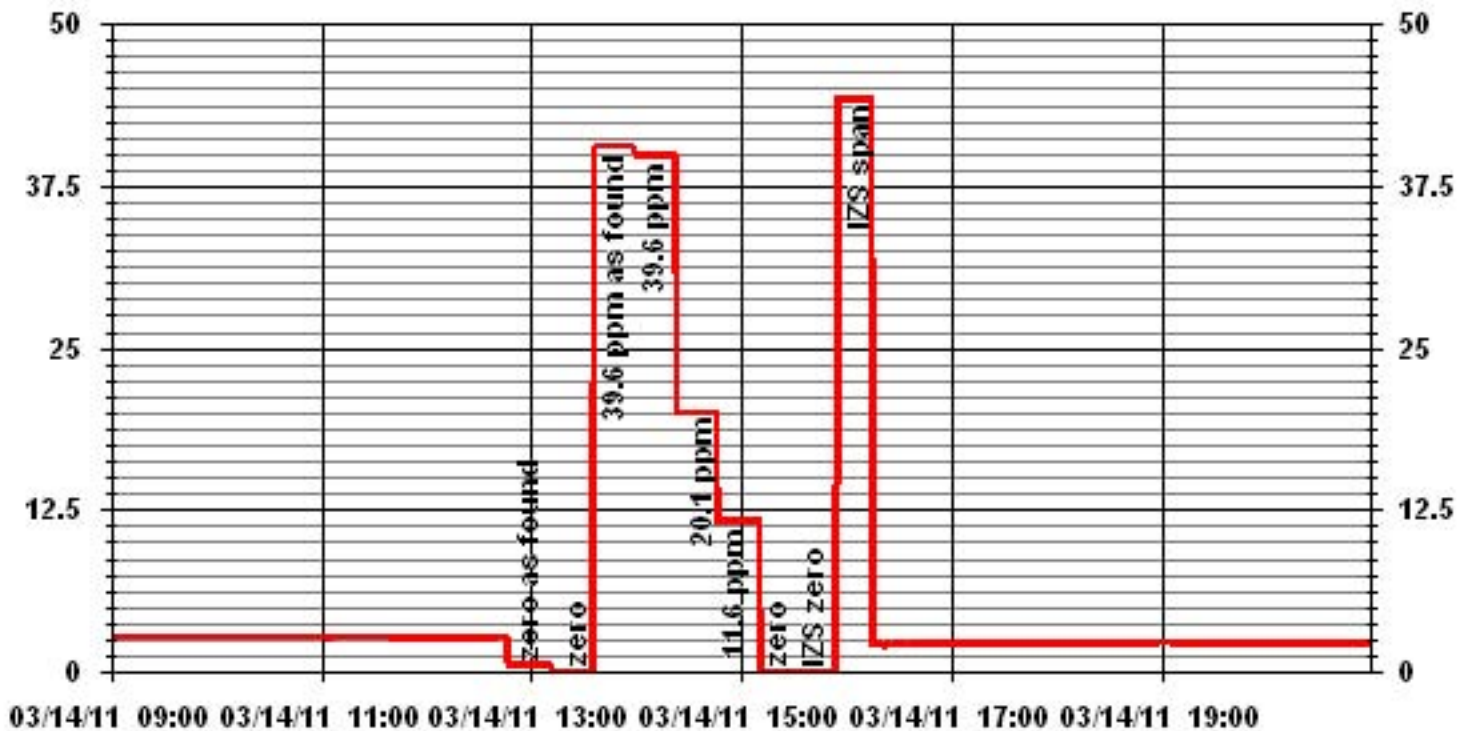
Calibration Date	March 14, 2011		
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	12:37	End Time (MST)	16:19

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999952
0.0	0.0		Intercept	(± 3% F.S.)	-0.083361
11.6	11.6	1.0007			
20.1	20.0	1.0054			
39.6	39.9	0.9931			



Notes:

01 Minute Averages



— LICA30 THC PPM

Nitrogen Dioxide

NOx - NO- NO2 Calibration Report

Station Information

Calibration Date	March 14, 2011		Previous Calibration	February 10, 2011	
Company	LICA		Plant/Location	Maskwa	
Start Time (MST)	9:44		End Time (MST)	15:33	
Reason:	Monthly Calibration		Other		
Barometric Pressure	927 mmHg	Station Temperature	23 Deg C	MFCF	1
Cal Gas Concentration	NOx 51.7 ppm	NO	50.4 ppm	Cal Gas Expiry date	04-Feb-13
DAS Output Voltage	0 - 1 Volts		Chart Rec. Output	NA Volts	

Equipment Information

Analyzer Make / Model:	API 200E	S/N :	594	Method:	Chemiluminescent
Calibrator Make / Model:	Envionics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Envionics 6100	S/N :	4760		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	0-1000			ppb			
Sample Flow/Conv. Temp	449 ccm	314.4 Deg C		450 ccm	316.5 Deg C		
Ozone Flow / Vacuum	78 ccm	5.6 "Hg-A		78 ccm	5.5 "Hg-A		
HVPS / A ZERO	767 Volts	16.5 MV		767 Volts	16.6 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.6 Deg C		50.0 Deg C	6.5 Deg C		
Box Temp / IZS Temp	29.7 Deg C	45.2 Deg C		31.5 Deg C	45.3 Deg C		
Offset	1.5 NOx	0.5 NO		1.5 NOx	0.5 NO		
Slope	1.110 NOx	1.105 NO		1.173 NOx	1.145 NO		
NO2 COEF / Conv Efficiency	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
4995	0.0	----	0	0	0	0	1	0	----	----
4921	74.2	----	768	749	----	728	724	4	1.0549	1.0355
4921	74.2	----	768	749	----	770	752	18	0.9974	0.9969
4960	34.6	----	358	349	----	359	351	8	0.9976	-0.9360
4973	19.8	----	205	200	----	206	202	5	0.9953	-0.3829
4995	0.0	----	0	0	0	0	1	0	----	----

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4921	74.2	----	768	749	----	769	752	17	----	----
4921	74.2	600	768	----	556	768	213	555	1.0018	99.81%
4921	74.2	250	768	----	241	770	528	243	0.9918	100.89%
4921	74.2	140	768	----	144	769	625	145	0.9931	100.79%

Linearity	Sum of Least Squares		NOx= 0.997	NO= 0.995	NO2= 1.000	
OK?	Yes	No	Correction Factors:	NOx= 0.9974	NO= 0.9969	NO2= 1.0018
Average Converter Efficiency= 100.50%						

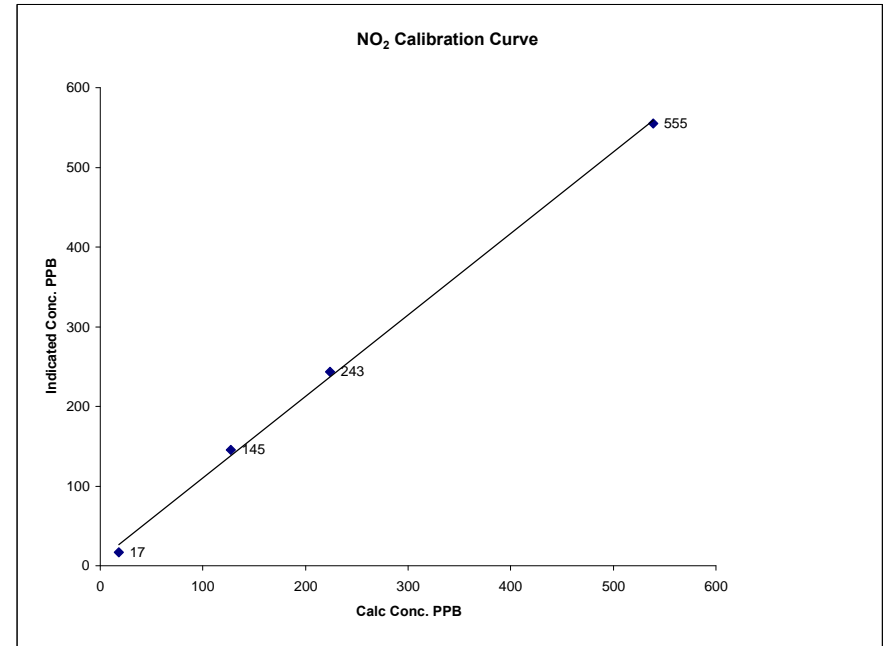
Before Calibration				After Calibration			
Auto Zero	0.8 NOx	0.8 NO2		0.5 NOx	0.5 NO2		
Auto Span	749 NOx	738 NO2		789 NOx	778 NO2		
Sample Lines Connected YES							
Percent Change from Previous Calibration				NOx -5.5%	NO -3.7%	NO2 -3.7%	

Notes

NO2 Calibration Curve

Calibration Date	March 14, 2011		LICA	
Company				
Plant / Location	Maskwa			
Start Time (MST)	9:44	End Time (MST)	15:33	

Calculated Conc.	Indicated Response	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.998785
ppb	ppb		Slope	(0.85 to 1.15)	1.022141
18	17	N/A	Intercept	(± 3% F.S.)	7.97406
127	145	0.8759			
224	243	0.9218			
539	555	0.9712			



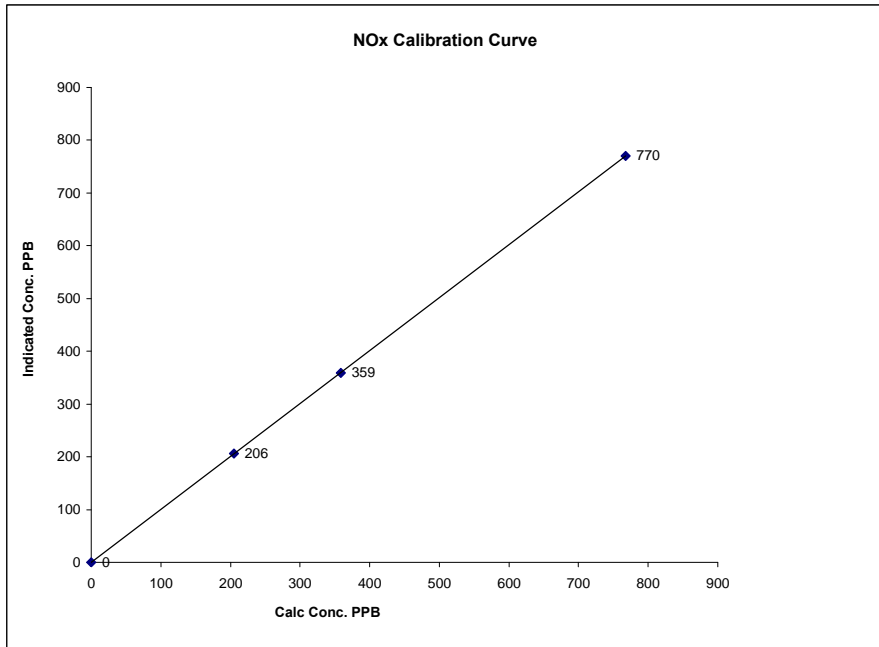
Notes:

Calibration Performed by: Ting Xu

NOx Calibration Curve

Calibration Date March 14, 2011
 Company LICA
 Plant / Location Maskwa
 Start Time (MST) 9:44 End Time (MST) 15:33

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
0	0	N/A	Slope (0.85 to 1.15)	1.000000
205	206	0.9953	Intercept (± 3% F.S.)	1.002468
358	359	0.9976		
768	770	0.9974		

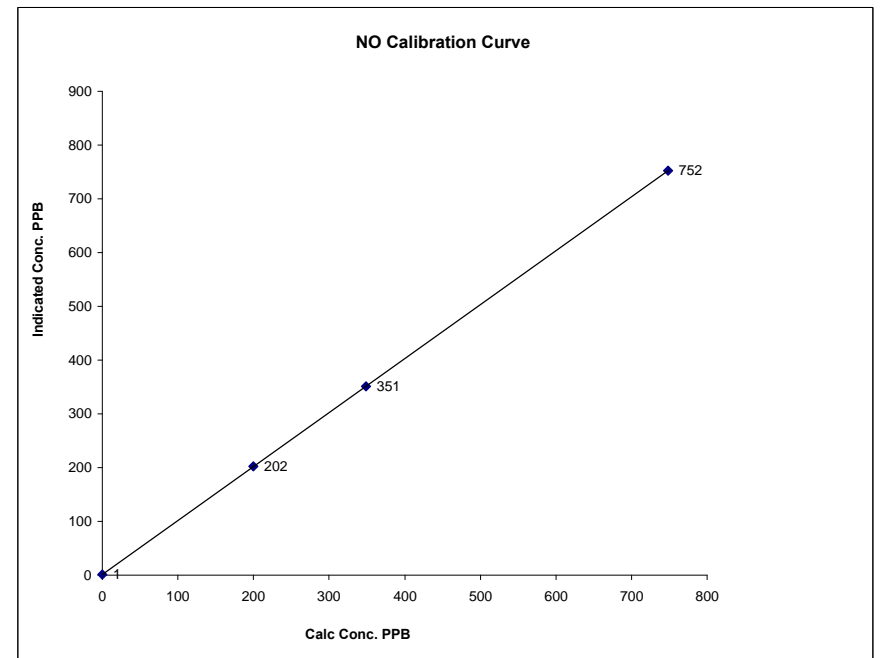


Notes:

NO Calibration Curve

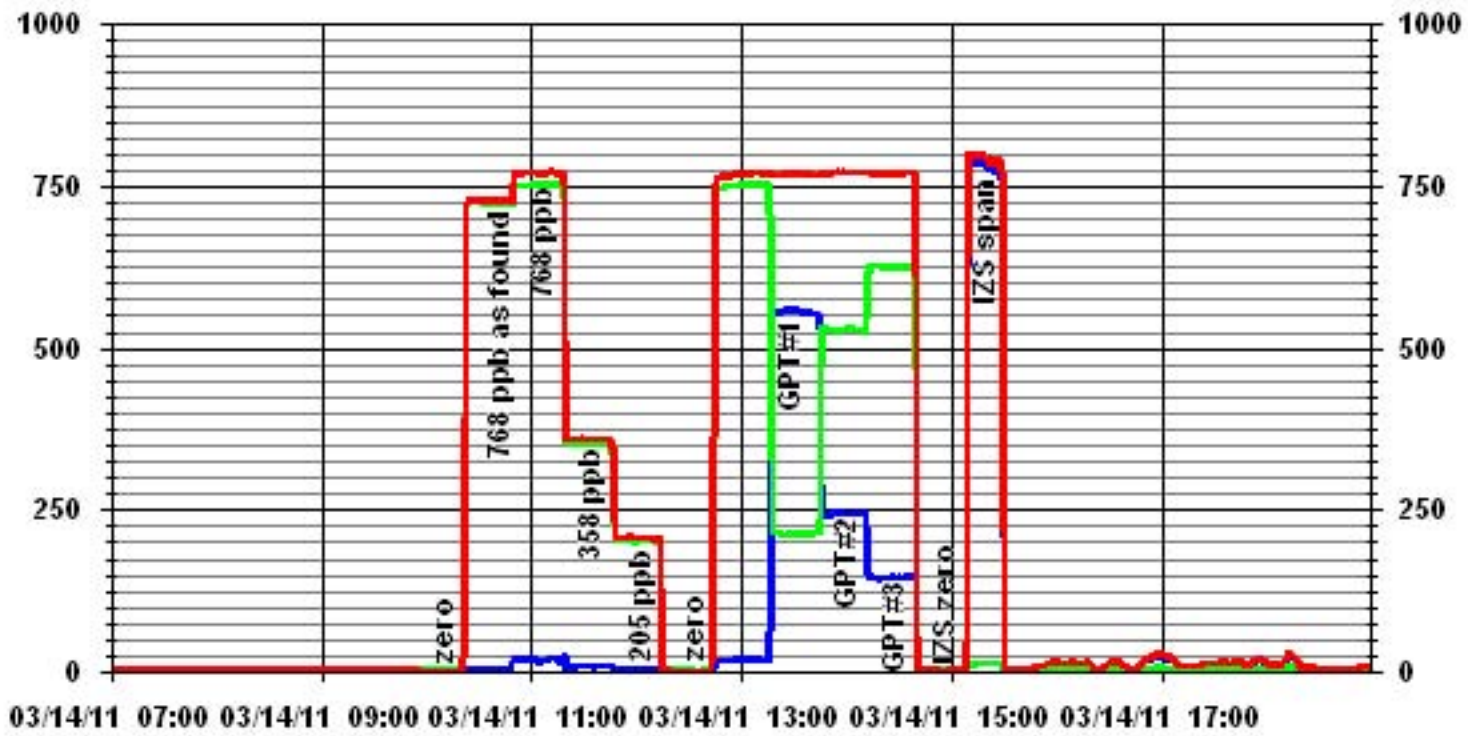
Calibration Date March 14, 2011
 Company LICA
 Plant / Location Maskwa
 Start Time (MST) 9:44 End Time (MST) 15:33

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
0	1	N/A	Slope (0.85 to 1.15)	0.999999
200	202	0.9895	Intercept (± 3% F.S.)	1.002531
349	351	0.9947		
749	752	0.9956		



Notes:

01 Minute Averages



— LICA30 IIOX_ PPB
 — LICA30 IIO_ PPB
 — LICA30 IIO2_ PPB

Wind System

Meteorological Sensor Audit Report Station Information

Audit Date	March 10, 2011	Previous Audit	-
Company	LICA		
Plant / Location	Maskwa		
Start Time (MST)	10:11	End Time (MST)	10:30
Reason:	Installation Calibration (Temporary)		
Translator make/model:	RM Young 5103VK	S/N:	46553
DAS make/model:	ESC 8832	S/N:	AO 791

Wind Speed

Sensor make/model:	RM Young 5103VK	S/N:	46553
Calibrator:	RM Young 18802	Variable speed motor	3309
Output voltage range:	0-1 vdc	Output signal range:	0-200 kph
Sensor height:	>10M		

Wind Speed Audit Data

RPM	Wind Speed Actual	Indicated WS - CW	Indicated WS-CCW	Correction Factor
0	0.00	0.04	0.04	-
1000	17.64	18.1	18.14	0.97
2000	35.28	36.2	36.21	0.97
3000	52.92	54.37	54.35	0.97
4000	70.56	72.46	72.46	0.97
5000	88.20	90.58	90.57	0.97
6000	105.84	108.7	108.7	0.97
7000	123.48	126.8	126.8	0.97
8000	141.12	144.9	144.9	0.97
9000	158.76	163.1	163.1	0.97
10000	176.40	181.1	181.2	0.97
Average Correction Factor				0.97

Wind Direction

Sensor make/model:	RM Young 5103VK	S/N:	46553
Calibrator:	RM Young 18802	Direction wheel	N/A
Output voltage range:	0-1vdc	Output signal range:	0 - 360 degree
Sensor height:	>10M		

Wind Direction Audit Data

Wind Direction	Indicated	Correction Factor
0	0.6	NA
45	45.8	0.98
90	90.2	1.00
135	135.1	1.00
180	180.1	1.00
225	224.9	1.00
270	270.2	1.00
315	314.8	1.00
360	0.6	NA
Average Correction Factor		1.00

Remarks: Wind system installed as a temporary replacement.

Audit Performed by: Shea Beaton

Lakeland Industry & Community Association

Portable / Devon Wellsite 13-16-62-5 W4M Monitoring Site

Ambient Air Monitoring Data Report

For

March 2011

Prepared By:



April 19, 2011

Lakeland Industry & Community Association Portable / Devon Wellsite 13-16-62-5 W4M Ambient Air Monitoring

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Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: Portable / Devon Wellsite 13-16-62-5 W4M
Data Period: March 2011

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

Continuous Ambient Monitoring – March 2011

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PORTABEL / DEVON WELLSITE 13-16-62-5 W4M SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						OBJECTIVES				EXCEEDENCES		MONTHLY AVERAGE	
PARAMETER	1-HR	24-HR	1-HR	24-HR	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY		
SO ₂ (PPB)	172	48	0	0	0.30	7	7	18	9.7	222(SW)	1.8	7	99.5
H ₂ S (PPB)	10	3	-	-	0.14	2	28	10	15.2	146(SE)	1.0	7	99.7
THC (PPM)	-	-	-	-	2.61	9.6	9	3	3.4	86(E)	4.6	9	99.9
NO ₂ (PPB)	212	106	0	0	5.52	30	28	10	15.2	146(SE)	13.1	8	99.6
NO (PPB)	-	-	-	-	1.08	64	28	10	15.2	146(SE)	5.8	28	99.6
NO _x (PPB)	-	-	-	-	4.04	92	28	10	15.2	146(SE)	12.1	8	99.6
O ₃ (PPB)	82	-	0	-	38.19	55	26	22	19.3	125(SE)	51.4	27	100.0
PM 2.5 (UG/M ³)	-	30	-	0	7.94	42.7	8	14	5.4	135(SE)	17.7	9	94.0
VECTOR WS (KPH)	-	-	-	-	10.53	28.9	21	16	-	98(E)	22.3	21	100.0
VECTOR WD (DEGREES)	-	-	-	-	105(ESE)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS

Volatile Organics Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE

Xontech Model 910A – March 4, 2010

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

Xontech Model 910A – March 10, 2010

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

Xontech Model 910A – March 16, 2010

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

Xontech Model 910A – March 22, 2010

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

Xontech Model 910A – March 28, 2010

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

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

PUF cartridge – March 4, 2010

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

PUF cartridge – March 10, 2010

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.055	3-Methylcholanthrene

PUF cartridge – March 16, 2010

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.055	3-Methylcholanthrene

PUF cartridge – March 22, 2010

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

PUF cartridge – March 28, 2010

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

Sulphur Dioxide (PPB)

- Analyzer make / model – API 100E, S/N: 467

No operational issue observed during this month. Following the as found points performed on March 9th, the pump was rebuilt, the UV lamp was peaked, and both lamp cal and factory cal were performed. The inlet filter was replaced as well. The slope and offset were then adjusted. A multi-point calibration was performed on March 10th. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

- Analyzer make / model –API 101E, S/N: 509
- Converter - Internal

No operational issues observed during the month. Following the as found points performed on March 9th, a lamp cal and a factory cal were performed, and the slope and offset were adjusted. The inlet filter was replaced as well. A multi-points calibration was performed on March 10th. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

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

No operational issue observed during the month. Following the as found points performed on March 9th, a new sample pump was installed; the old pump was rebuilt for spare. A factory cal was performed and the slope and the offset were adjusted as well as the inlet filter was replaced. A multi-points calibration was performed on March 10th. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Ozone (PPB)

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

No operational issues observed during the month. The inlet filter was replaced before the monthly calibration was started. Data was corrected using daily zero information.

THC (PPM)

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

No operational issues observed during the month. Following the as found points performed on March 9th, the H2 gas cylinder was replaced and the gas pressures were optimized. The inlet filter was replaced as well. The analyzer was allowed time to stabilize. A multi-points calibration was then performed. Data was corrected using daily zero information.

Particulate Matter 2.5 (ug/m³)

- Analyzer make / model –TEOM 1405F, S/N: 1405A207691003

A routine Teom audit attempted to be performed on March 9th. 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. 36 hours of data were invalidated as they were below –3.0 ug/m³. The Teom 1405F unit output provides hourly average, but no instantaneous output. As a result, no hourly maximum value is recorded.

General Monthly Summary

AQM STATION – LICA – PORTABLE

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

- System make / model – RM Young 5103VK, S/N: 41334

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

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

No issue was observed this month. The manifold was cleaned on March 15th.

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. Fifty-six hours of AQI values recorded in March 2011 were in the Fair range; four hours were due to PM2.5, and Fifty-two hours were due to ozone. Others were within the Good range. The highest hourly concentration of PM2.5 was 42.7ug/m³ and an AQI value of 32, hour 14 on March 8th. The highest hourly concentration of Ozone was 55 ppb on March 59th hour of 22. The AQI value for that hour is not applicable because not all parameters that use to calculate the AQI value are not available. The highest AQI value for O3 was 28 on March 26th in various hour.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Volatile Organics (VOCs)

The volatile organics were sampled from March 2nd to March 26th. 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.

Polycyclic Aromatic Hydrocarbons (PAHs)

The PAHs were sampled from March 2nd to March 26th. 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.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -PORTABLESITE

MARCH 2011

AIR QUALITY INDEX (AQI)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	
DAY	PEAK	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX	
1		8	8	7	9	8	-	8	8	11	13	13	14	14	15	15	15	16	15	14	14	15	15	15	14	16	16
2		03_	03_	03_	03_	03_	NA	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_
3		14	13	13	13	-	11	10	9	11	13	13	15	16	16	16	16	16	16	17	17	17	17	16	15	16	17
4		03_	03_	03_	03_	03_	NA	03_	PM2	03_	03_	03_	PM2	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_
5		16	16	16	-	16	17	15	14	12	14	-	16	17	18	-	18	17	17	16	16	15	14	13	13	18	18
6		03_	03_	03_	NA	03_	03_	03_	03_	03_	03_	NA	03_	03_	03_	NA	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_
7		13	11	-	9	13	11	7	9	11	13	16	17	17	17	17	18	18	18	17	16	16	14	12	9	8	15
8		03_	03_	NA	03_	03_	03_	PM2	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	PM2	03_	PM2	03_
9		7	-	11	9	15	16	17	17	18	18	18	18	19	19	20	20	19	19	18	18	18	17	15	13	13	19
10		03_	NA	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_
11		-	10	5	7	8	7	10	7	16	14	17	17	18	18	19	19	19	19	18	17	16	16	15	-	19	19
12		NA	03_	03_	03_	03_	PM2	PM2	03_	PM2	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	NA	03_
13		16	14	14	15	13	16	13	16	18	19	19	20	20	21	22	22	22	22	22	22	22	20	-	17	22	22
14		03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	NA	03_
15		16	15	16	14	12	12	11	10	12	15	18	18	19	26	32	21	21	21	19	18	19	-	19	16	32	32
16		03_	03_	03_	PM2	03_	03_	03_	03_	03_	03_	03_	PM2	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	NA	PM2
17		15	26	15	16	17	13	14	13	14	-	-	-	-	-	-	-	24	23	24	25	-	24	24	24	26	
18		PM2	PM2	03_	PM2	PM2	03_	PM2	03_	PM2	03_	NA	NA	NA	NA	NA	NA	03_	03_	03_	03_	03_	03_	03_	03_	PM2	PM2
19		27	28	26	25	23	21	18	19	-	-	-	-	-	-	-	-	-	18	-	18	-	18	17	18	28	
20		03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	NA	NA	NA	NA	NA	NA	NA	03_	03_	03_	03_	03_	03_	03_	03_	03_
21		17	17	18	19	19	19	18	18	19	19	19	19	19	19	19	19	19	18	-	17	14	15	16	16	19	
22		03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_
23		14	15	16	17	-	-	16	15	16	17	18	20	20	21	21	22	22	-	22	21	21	21	21	19	22	
24		03_	03_	03_	03_	03_	NA	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_
25		18	18	16	18	18	16	13	11	15	17	20	21	22	23	26	27	-	26	25	23	22	21	20	22	27	
26		03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_
27		21	22	23	24	25	25	24	23	23	23	24	24	25	25	25	-	24	23	22	22	22	21	20	19	25	
28		03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_
29		19	14	16	17	16	14	13	12	26	12	16	18	19	20	-	22	22	21	21	20	20	20	17	17	26	
30		03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_
31		17	17	-	18	18	18	-	17	17	17	17	17	17	17	17	17	17	16	15	15	15	13	13	18	18	
PEAK		03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_	03_

STATUS FLAG CODES NA - NOT APPLICABLE

V - VARIOUS

AQI CLASS	OZONE (O ₃)					PARTICULATE MATTER 2.5 (PM _{2.5})					NITROGEN DIOXIDE (NO ₂)					SULPHUR DIOXIDE (SO ₂)					FREQUENCY	
	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%
VERY POOR (101-255)	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%
POOR (51-100)	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%
FAIR (26-50)	52	7.0%	28	VAR	26	4	0.5%	32	14	8	0	0.0%	-	-	-	0	0.0%	-	-	-	56	7.5%
GOOD (1-25)	580	78.0%	-	-	-	26	3.5%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	606	81.5%
OVERALL	632	84.9%	-	-	-	30	4.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	662	89.0%
UNAVAILABLE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82	11.0%

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2011

SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY 1	0	0	0	0	0	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	0	IZS	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.2	24
3	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	0.0	24
4	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	0.0	24
5	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	0.0	24
6	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	IZS	1	0.2	24
7	0	0	0	0	1	1	1	1	1	1	1	1	2	4	5	3	3	4	7	2	1	1	IZS	1	7	1.8	24	
8	1	1	1	0	0	0	0	0	0	1	1	1	2	4	6	4	2	2	2	2	1	IZS	0	0	6	1.3	24	
9	0	0	0	0	0	0	0	0	0	C	C	M	M	M	M	2	2	2	1	1	IZS	2	2	2	2	0.8	20	
10	2	1	1	1	1	1	1	1	1	1	0	0	1	C	C	C	C	0	0	IZS	0	1	1	1	2	0.8	24	
11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	1	0.8	24
12	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	IZS	1	0	0	0	0	0	2	0.2	24	
13	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	IZS	1	1	1	2	1	1	2	2	0.5	24	
14	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	IZS	0	0	0	1	0	0	0	0	2	1.0	24	
15	0	0	0	0	0	0	0	0	0	0	0	0	1	1	IZS	0	0	0	0	0	0	0	0	0	1	0.1	24	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	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	IZS	0	0	0	0	0	0	0	0	0	0	0.0	24	
18	0	0	0	0	0	0	0	0	0	1	0	IZS	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0.1	24
19	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0.1	24
20	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	0.0	24
21	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	0.0	24
22	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	0.0	24
23	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	0.0	24
24	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	2	2	2	0.4	24	
25	1	0	1	1	IZS	0	0	1	1	2	2	2	2	2	1	0	0	1	0	0	0	0	0	0	0	2	0.7	24
26	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	0.0	24
27	0	0	IZS	0	0	0	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
28	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	0.0	24
29	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	0.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	IZS	0	1	0.1	24	
31	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	
HOURLY MAX	2	2	2	2	2	2	1	1	1	2	2	2	2	4	6	4	3	4	7	2	2	2	2	2	2			
HOURLY AVG	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.4	0.5	0.6	0.4	0.4	0.4	0.5	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

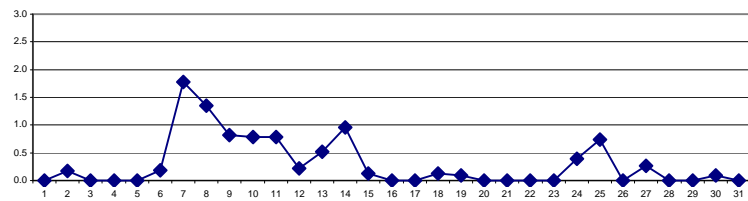
OBJECTIVE LIMIT:

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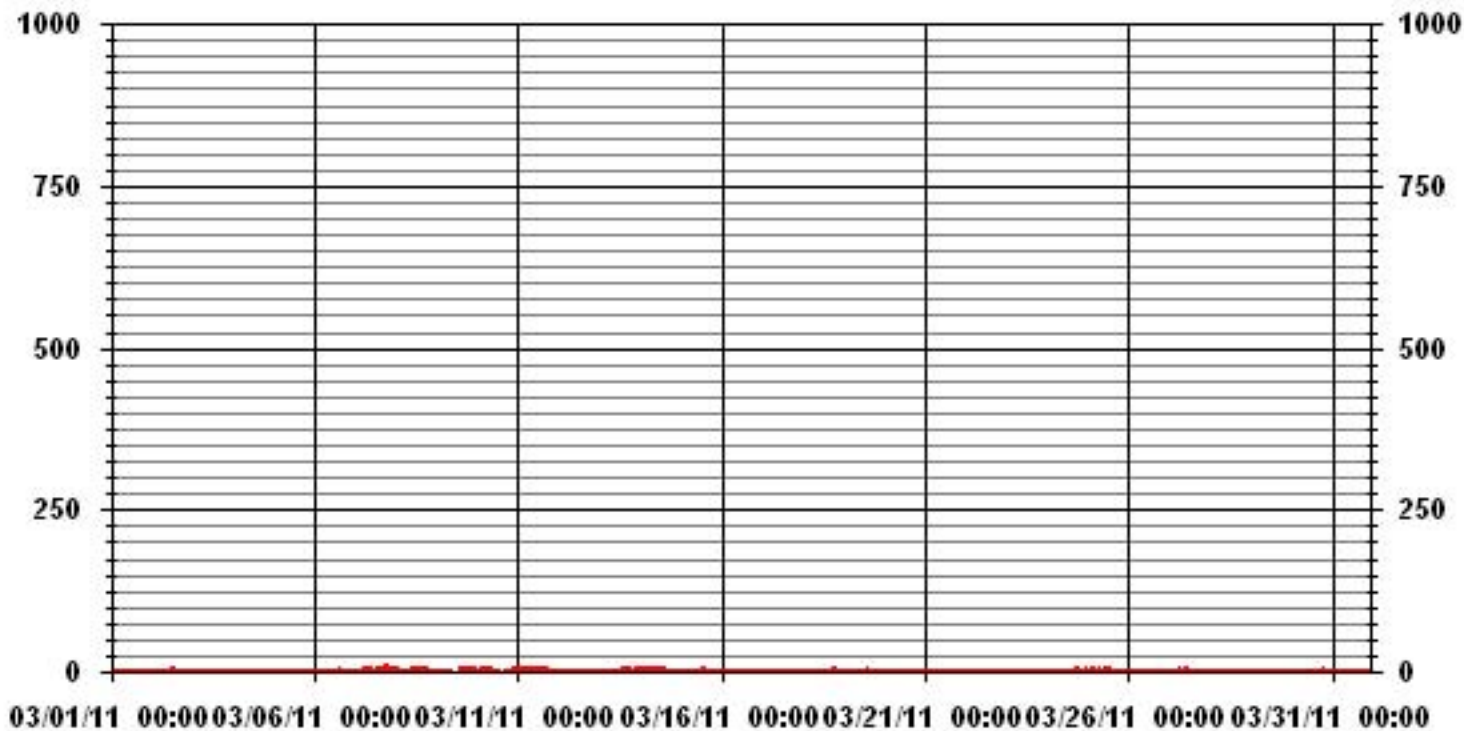
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	147					
MAXIMUM 1-HR AVERAGE:	7	PPB	@ HOUR(S)	18	ON DAY(S)	7
MAXIMUM 24-HR AVERAGE:	1.8	PPB			ON DAY(S)	7
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	99.5	%	
STANDARD DEVIATION:	0.71		MONTHLY AVERAGE:	0.30	PPB	

24 HOUR AVERAGES FOR MARCH 2011



01 Hour Averages



— LICA33 SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -PORTABLE SITE

MARCH 2011

SULPHUR DIOXIDE MAX instantaneous maximum in ppt

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.	RDGS.		
1	1	1	1	1	1	1	IZS	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
2	1	1	1	1	1	IZS	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	2	1.2	24
3	1	1	1	1	IZS	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
4	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
5	1	1	IZS	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.1	24
6	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	2	1	1	1	1	1	2	1.2	24
7	1	1	1	1	2	2	2	2	2	2	2	2	4	7	7	5	4	6	9	5	3	2	IZS	2	9	3.2	24		
8	2	2	2	1	1	1	1	1	1	2	2	2	3	8	8	5	4	3	3	3	3	4	IZS	1	1	8	2.7	24	
9	2	1	1	1	1	1	0	0	1	C	C	M	M	M	M	3	3	3	3	3	3	IZS	3	3	3	3	1.9	20	
10	3	2	2	2	2	2	2	3	2	2	1	1	2	C	C	C	C	C	1	IZS	2	2	2	2	2	3	1.9	24	
11	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	IZS	1	1	1	1	1	1	2	1.8	24
12	1	1	1	1	1	1	1	1	1	1	1	2	3	2	1	2	2	2	IZS	2	1	1	2	1	1	3	1.3	24	
13	2	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	IZS	2	2	3	3	3	3	3	3	1.8	24	
14	4	3	3	3	3	3	2	2	2	2	2	2	2	2	2	IZS	2	1	2	2	2	2	1	1	1	4	2.1	24	
15	2	1	1	1	1	1	1	0	1	1	1	2	2	M	IZS	1	1	1	1	1	1	1	1	2	2	2	1.2	23	
16	1	1	1	1	1	1	1	1	1	1	0	0	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
17	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	3	1	1	1	1	1	1	1	3	0.6	24	
18	1	1	1	1	2	1	1	1	2	2	2	2	IZS	1	1	2	2	1	1	2	2	1	2	1	1	2	1.4	24	
19	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	2	2	2	1	1	1	1	1	1	1	2	1.1	24	
20	2	1	1	1	2	2	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24
21	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
22	1	1	1	2	1	1	1	1	IZS	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.1	24
23	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
24	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	2	3	2	2	1	3	3	3	3	3	1.5	24	
25	2	1	1	1	2	IZS	1	1	2	2	3	3	3	3	3	3	1	1	2	1	1	1	1	1	1	3	1.7	24	
26	1	1	1	1	IZS	1	1	1	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2	1.3	24	
27	1	1	1	IZS	1	1	2	2	2	1	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	2	1.4	24	
28	1	IZS	0	0	0	0	0	0	0	0	3	3	2	0	0	1	0	0	0	0	0	0	0	0	0	3	0.4	24	
29	IZS	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.4	24	
30	0	1	1	0	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	2	2	1	IZS	2	3	1.1	24	
31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1.0	24	
HOURLY MAX		4	3	3	3	3	3	3	3	3	3	3	3	4	8	8	5	4	6	9	5	4	3	3	3				
HOURLY AVG		1.3	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.3	1.4	1.4	1.6	1.8	1.8	1.5	1.5	1.4	1.5	1.4	1.3	1.3	1.2	1.3				

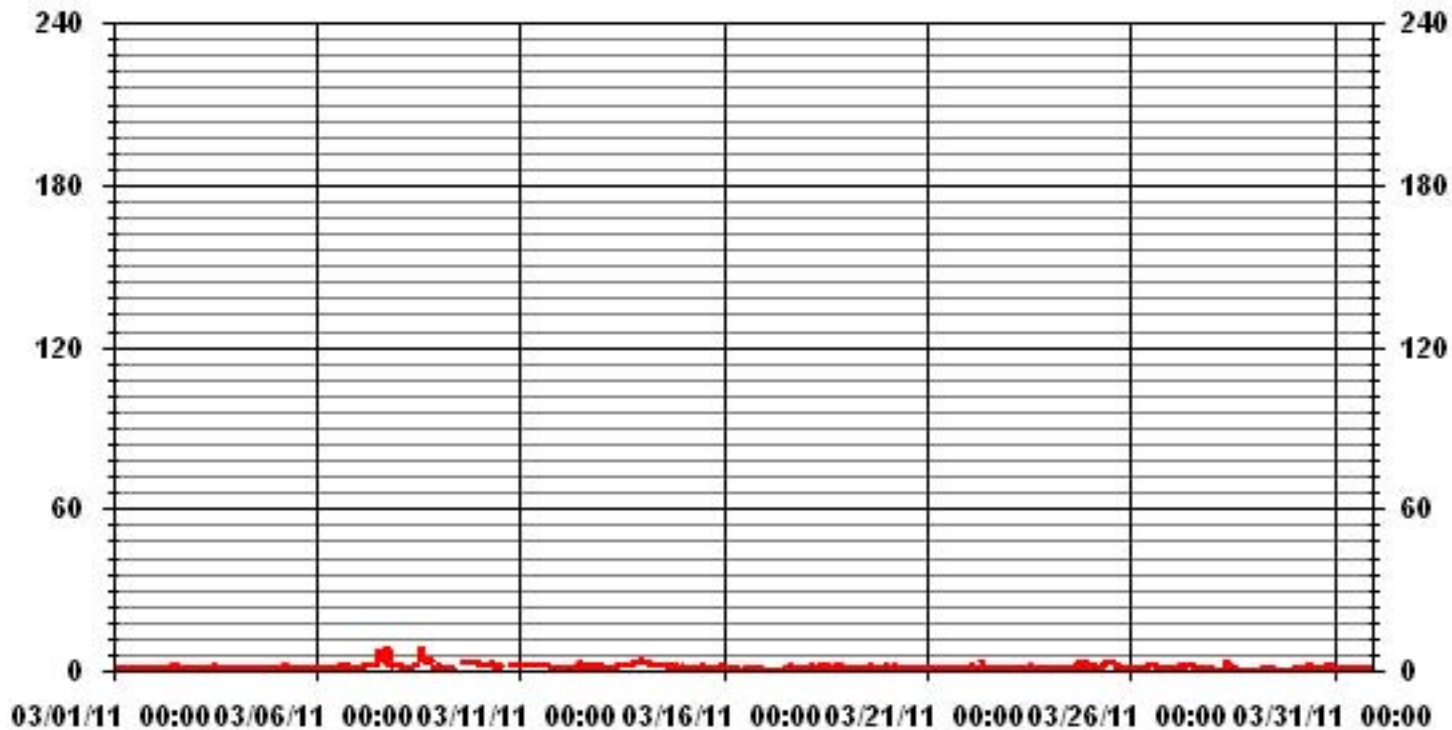
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	646					
MAXIMUM INSTANTANEOUS VALUE:	9	PPB	@ HOUR(S)	18	ON DAY(S)	7
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	739	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	0.95					

01 Hour Averages



— LICA33 SO2MAX PPB

LICA33
 SO2_ / WDR Joint Frequency Distribution (Percent)

March 2011

Distribution By % Of Samples

Logger Id : 33
 Site Name : LICA33
 Parameter : SO2_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	2.42	3.70	5.27	9.41	18.40	11.69	14.12	9.12	3.85	3.13	4.42	3.56	4.27	3.70	1.56	1.28	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	2.42	3.70	5.27	9.41	18.40	11.69	14.12	9.12	3.85	3.13	4.42	3.56	4.27	3.70	1.56	1.28	

Calm : .00 %

Total # Operational Hours : 701

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	17	26	37	66	129	82	99	64	27	22	31	25	30	26	11	9	701
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	17	26	37	66	129	82	99	64	27	22	31	25	30	26	11	9	

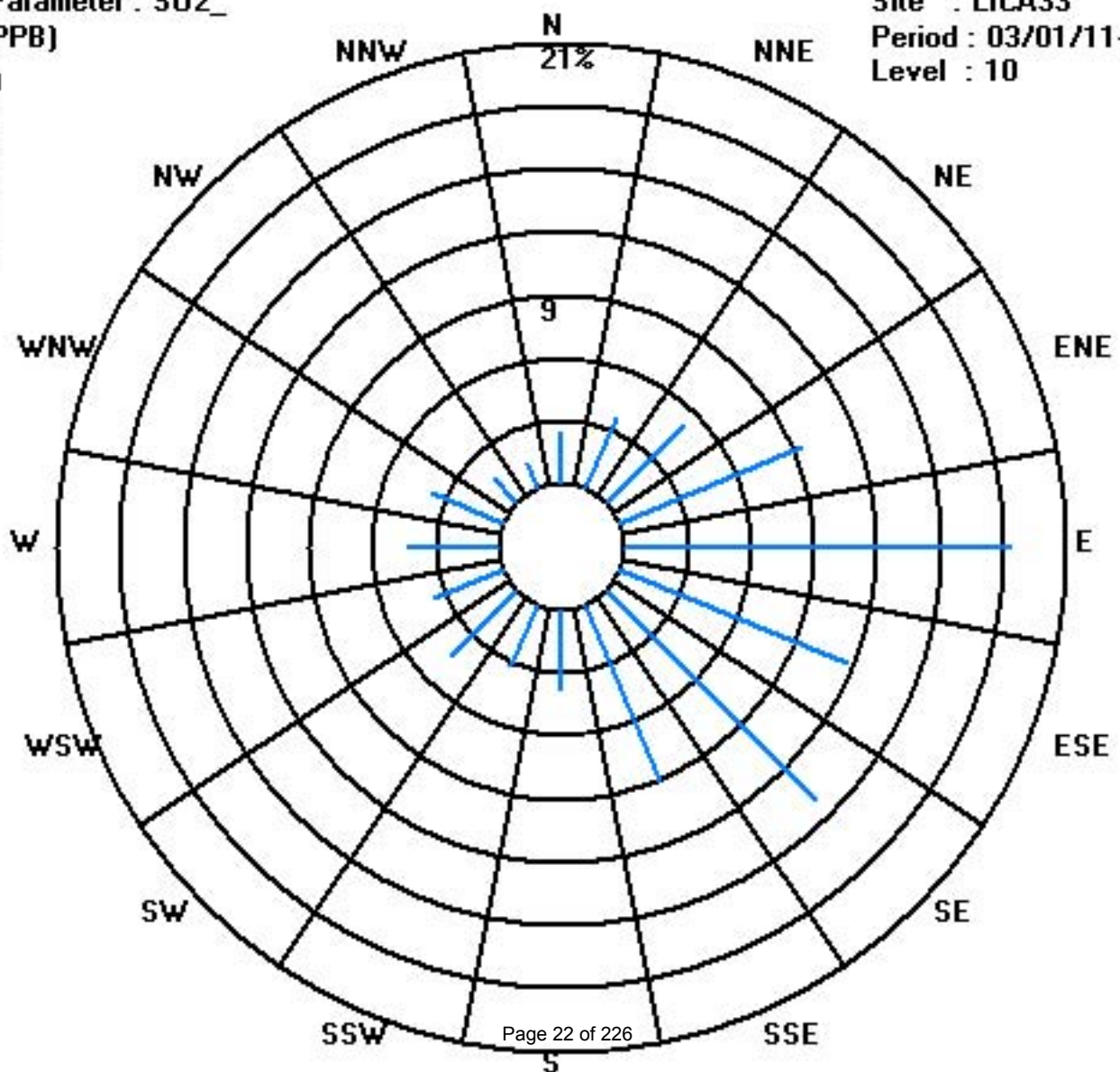
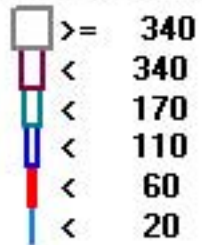
Calm : .00 %

Total # Operational Hours : 701

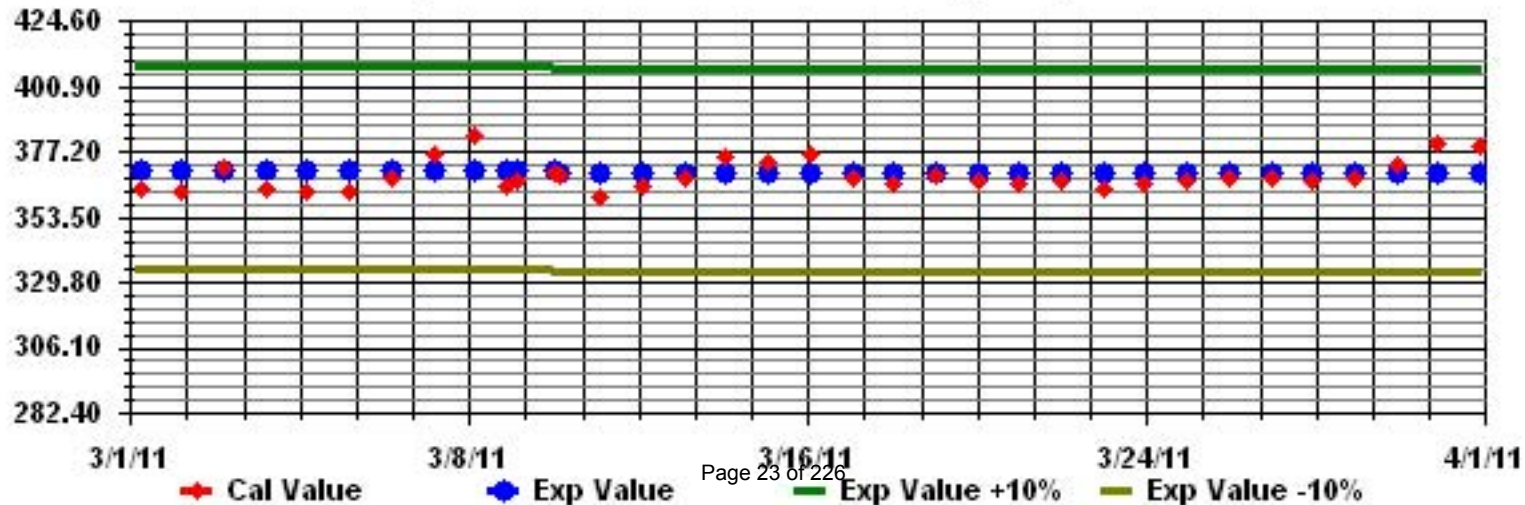
Class Limits (PPB)

Period : 03/01/11-03/31/11

Level : 10



Calibration Graph for Site: LICA33 Parameter: S02_ Sequence: S02 Phase: SPAll



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE

MARCH 2011

HYDROGEN SULPHIDE (H₂S) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR			
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1		0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
2		0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0.3	24	
3		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	
4		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	
5		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	
6		IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	IZS	1	0.0	24
7		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	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	IZS	0	0.0	24	
9		0	0	0	0	0	0	0	0	0	0	0	0	0	1	C	C	M	M	0	1	IZS	0	1	0	1	0.2	22	
10		0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0.2	24	
11		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	1	1	0	1	0.9	24	
12		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	1	0.7	24
13		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
14		0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	1	0.6	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	24	
16		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	
17		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	
18		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
19		0	0	0	0	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	24	
21		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
22		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
23		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
24		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.0	24
25		0	0	0	1	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
26		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
27		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
28		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24
29		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	0.0	24	
30		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
31		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
HOURLY MAX		1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
HOURLY AVG		0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			

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

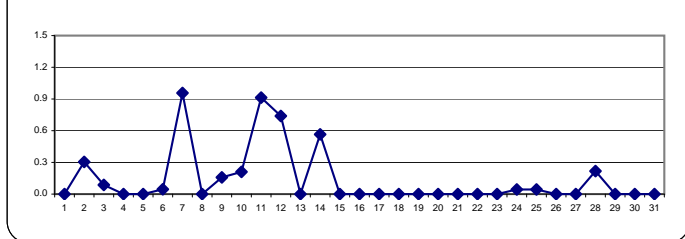
OBJECTIVE LIMIT:

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

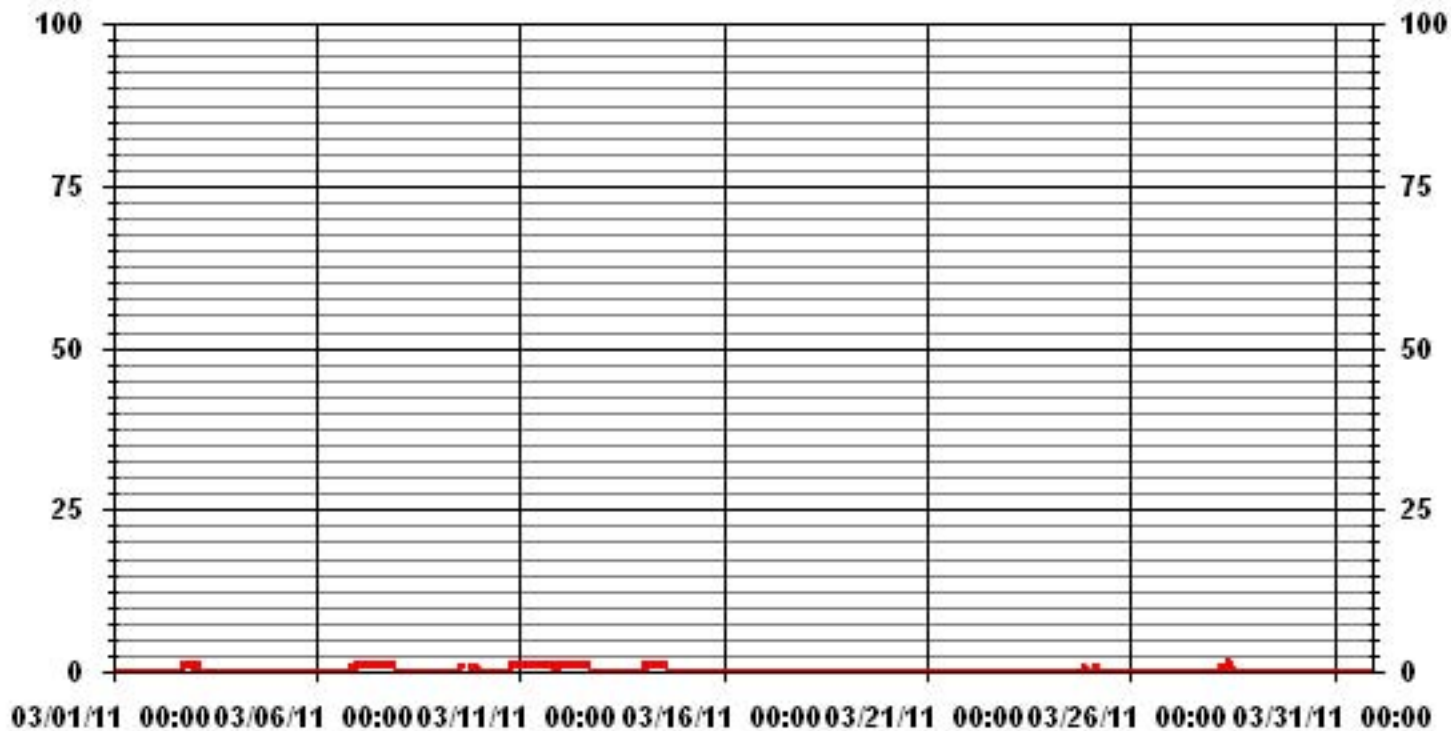
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	96
MAXIMUM 1-HR AVERAGE:	2 PPB @ HOUR(S) 10 ON DAY(S) 28
MAXIMUM 24-HR AVERAGE:	1.0 PPB ON DAY(S) 7
	VAR-VARIOUS
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	6 HRS
OPERATIONAL TIME:	742 HRS
AMD OPERATION UPTIME:	99.7 %
STANDARD DEVIATION:	0.35
MONTHLY AVERAGE:	0.14 PPB

24 HOUR AVERAGES FOR MARCH 2011



01 Hour Averages



— LICA33 H2S_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2011

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR				
HOUR START		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
HOUR END		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00					
DAY																														
1		0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
2		0	0	0	0	IZS	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	24	
3		1	1	1	IZS	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	
4		0	0	IZS	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0.5	24	
5		1	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	0.3	24	
6		IZS	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	1	1	1	IZS	1	0.8	24
7		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	1	1.0	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	IZS	0	0	0.0	24	
9		0	0	0	0	0	0	0	0	0	0	0	0	0	C	C	M	M	M	M	1	1	IZS	1	1	1	1	0.3	21	
10		1	1	1	1	1	1	1	1	C	C	C	C	C	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
11		1	1	1	1	1	1	1	1	2	2	1	1	1	2	2	1	1	1	1	2	IZS	1	2	2	1	1	2	1.3	24
12		1	1	1	1	1	1	1	2	2	1	1	1	1	2	1	2	2	2	IZS	1	0	0	0	0	0	2	1.0	24	
13		0	0	1	1	1	1	1	1	1	0	0	1	0	0	0	0	IZS	0	1	1	1	1	1	1	1	1	0.6	24	
14		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	1	0.7	24	
15		0	0	1	0	0	0	0	0	0	0	0	0	0	M	IZS	0	0	0	0	0	0	0	0	0	0	0	1	0.0	23
16		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	0.0	24
17		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	0.0	24
18		0	0	1	0	0	0	0	0	0	0	0	0	IZS	1	1	0	0	1	0	0	0	0	1	1	0	1	0.3	24	
19		1	1	1	1	1	1	1	1	0	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24
20		0	0	0	0	0	0	0	0	0	0	IZS	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	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
22		0	1	1	0	0	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
23		0	0	0	0	0	0	IZS	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24	
24		0	0	0	0	0	IZS	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	1	0.2	24	
25		1	1	0	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	
26		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	0.0	24	
27		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	0.0	24
28		0	IZS	1	1	1	1	1	0	0	4	5	3	1	0	0	1	1	1	1	0	1	1	0	0	0	5	1.0	24	
29		IZS	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	24	
30		0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
31		0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	0.1	24
HOURLY MAX		1	1	1	1	1	1	1	2	2	4	5	3	2	2	1	2	2	2	2	1	1	2	2	1	1				
HOURLY AVG		0.3	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.3				

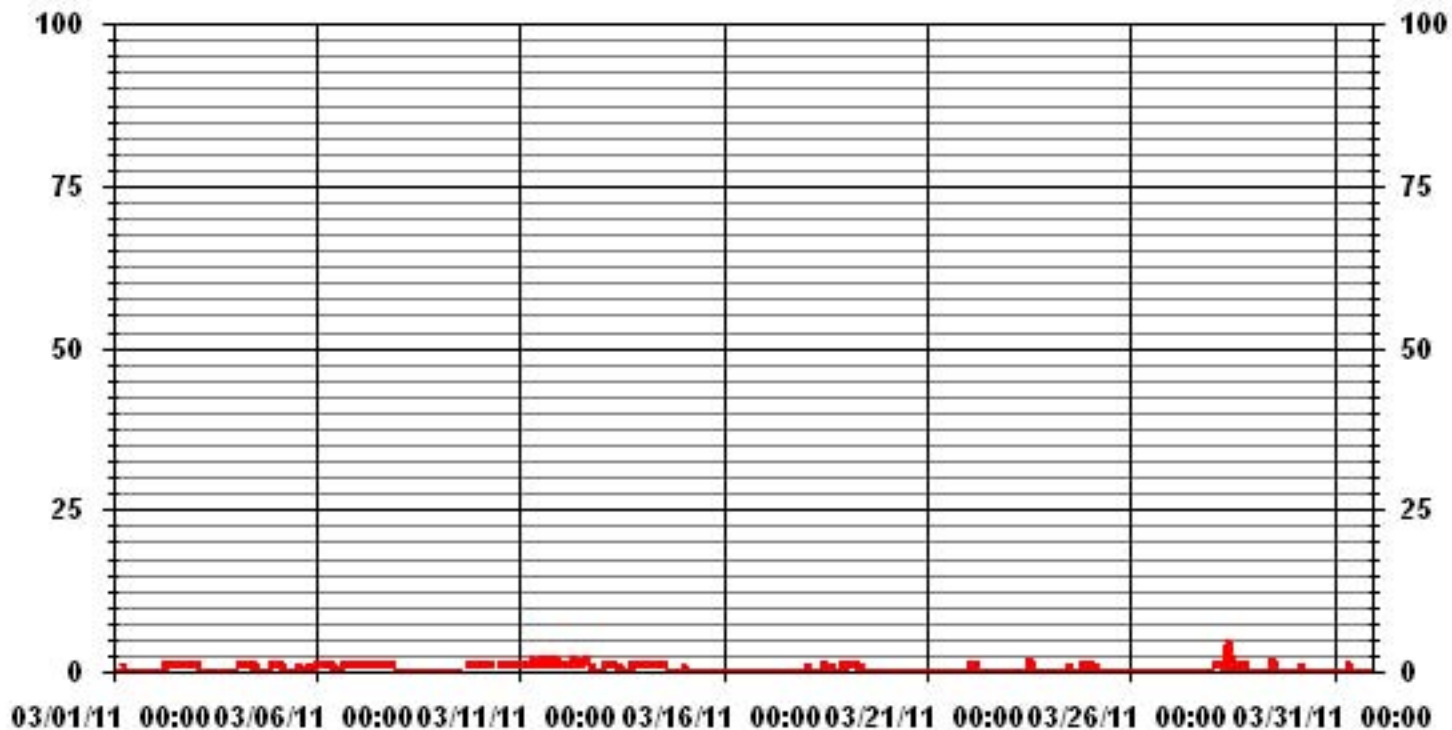
STATUS FLAG CODES

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:	219					
MAXIMUM INSTANTANEOUS VALUE:	5	PPB	@ HOUR(S)	10	ON DAY(S)	28
VAR - VARIOUS						
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	0.57					

01 Hour Averages



— LICA33 H2S MAX PPB

LICA33
H2S_ / WDR Joint Frequency Distribution (Percent)

March 2011

Distribution By % Of Samples

Logger Id : 33
Site Name : LICA33
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	2.41	3.69	5.26	9.67	18.63	11.66	14.08	8.96	3.69	3.12	4.40	3.55	4.26	3.69	1.56	1.28	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	2.41	3.69	5.26	9.67	18.63	11.66	14.08	8.96	3.69	3.12	4.40	3.55	4.26	3.69	1.56	1.28	

Calm : .00 %

Total # Operational Hours : 703

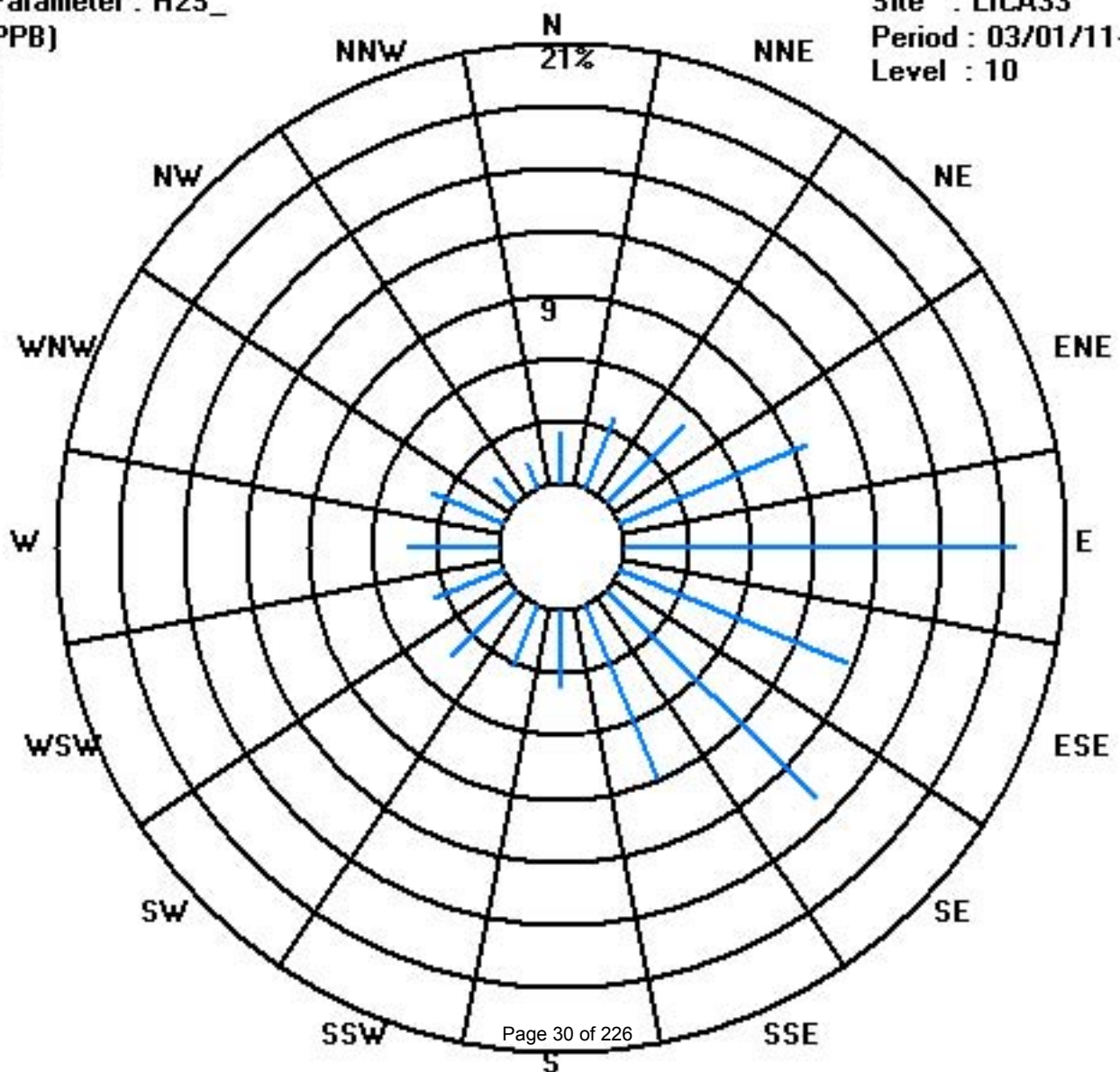
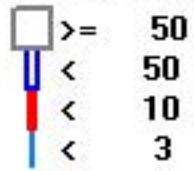
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	17	26	37	68	131	82	99	63	26	22	31	25	30	26	11	9	703
< 10																	
< 50																	
>= 50																	
Totals	17	26	37	68	131	82	99	63	26	22	31	25	30	26	11	9	

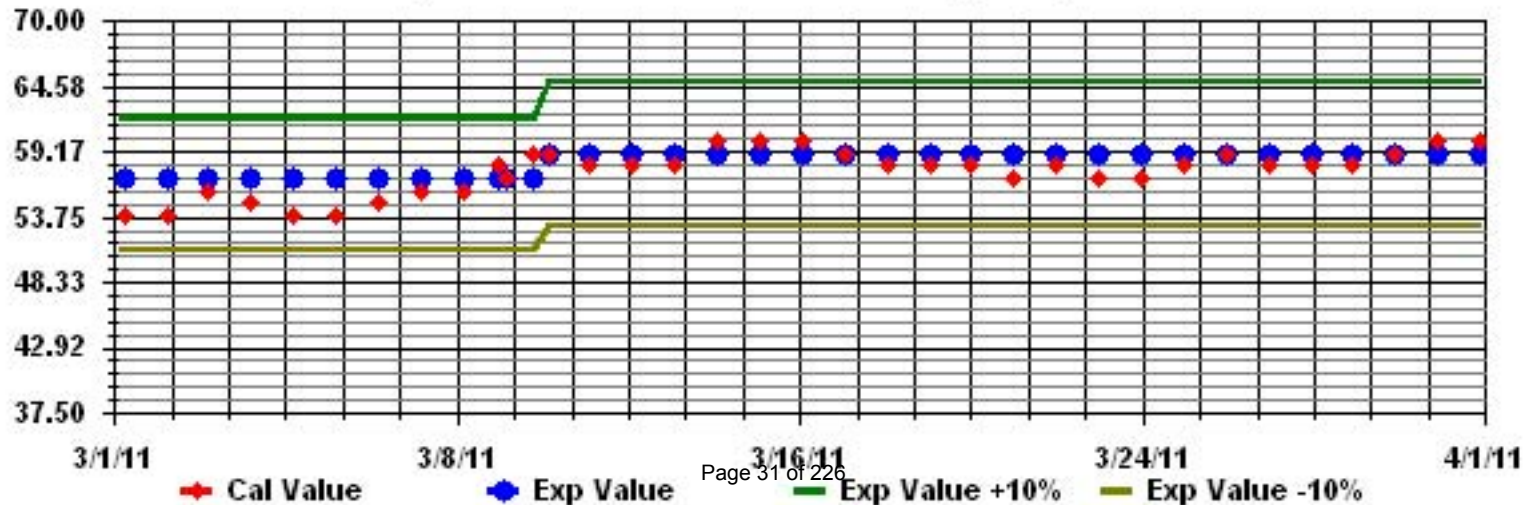
Calm : .00 %

Total # Operational Hours : 703

Class Limits (PPB)



Calibration Graph for Site: LICA33 Parameter: H2S_ Sequence: H2S Phase: SPAll



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2011

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

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	DAILY	24-HOUR
HOURLY MAX	HOURLY END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																												
1		4.3	0.8	2.7	6.3	5.2	5.7	1.7	5.2	6.2	6.7	8.7	11.2	7.3	6.2	2.7	4.8	3.7	2.7	3.2	9.2	8.3	7.7	3.7	6.7	11.2	5.5	24
2		3.7	4.3	4.7	8.3	12.7	11.2	12.2	4.7	6.8	12.2	15.2	12.7	12.2	7.7	7.3	6.7	5.7	2.7	10.7	2.7	7.7	0	2.7	6.2	15.2	7.5	24
3		2.2	8.3	5.2	0	5.2	3.7	4.2	5.2	5.2	3.2	N	5.2	0	12.2	N	0.7	3.2	3.2	6.2	3.7	2.7	2.2	4.7	4.7	12.2	4.1	22
4		9.2	3.7	4.2	2.2	0.8	1.2	8.7	2.7	5.2	3.2	4.7	0	9.2	4.7	4.2	3.7	10.7	2.2	8.3	10.2	17.2	12.8	10.7	9.2	17.2	6.2	24
5		5.2	17.7	9.7	7.7	3.2	5.2	6.2	3.2	0.2	9.7	2.2	0	0	1.2	13.7	5.2	0	0	8.7	3.7	3.7	2.3	9.2	11.7	17.7	5.4	24
6		8.3	6.8	5.7	8.3	7.3	8.3	12.2	8.3	18.7	8.7	0	8.2	0	5.7	8.7	5.7	6.8	13.2	8.7	11.2	10.2	6.7	13.2	13.2	18.7	8.5	24
7		13.2	13.7	12.2	4.2	1.7	5.2	11.2	1.2	5.7	8.3	3.2	3.7	12.7	18.2	10.7	6.2	5.2	10.2	8.2	17.7	6.7	4.2	9.7	5.2	18.2	8.3	24
8		12.7	12.7	14.7	16.2	9.2	10.7	7.7	3.7	11.7	8.3	21.7	6.7	9.2	30.3	42.7	18.7	9.7	12.7	22.7	2.7	18.7	19.3	22.7	19.7	42.7	15.2	24
9		18.2	30.3	16.8	19.7	19.8	8.7	17.2	15.2	14.3	24.3	16.8	24.3	22.8	24.8	C	C	24.3	24.3	10.7	23.8	21.2	5.3	0	5.8	30.3	17.7	24
10		19.6	26.2	4.3	15.3	9.8	8.3	15.2	12.7	8.3	4.8	3.7	10.7	4.8	13.8	5.6	6.8	6.2	N	8.7	6.7	6.6	4.4	0.8	0.8	26.2	8.9	23
11		11	8.5	3.2	3.6	3.2	6.7	3.8	1.9	6.3	10.6	1.8	2.3	12.3	0	6.1	2	5.1	9.3	0	9.8	6.3	7.3	2.2	3.3	12.3	5.3	24
12		4.1	4.4	3.6	3.9	N	N	6.5	1.4	0	1.2	6.2	11.6	18.6	1.5	10	17.8	15.3	1.2	10.6	0	6.6	6.6	2.1	10.4	18.6	6.5	22
13		6.4	2.3	12.6	4.2	9.5	5.2	11.7	2.4	4	12.7	0	11	9	7.1	15.2	15	14.1	14.2	20.2	20.7	23.2	22.2	19.6	18.7	23.2	11.7	24
14		20.7	5.5	6.5	20.7	15.6	4	20	6	14.2	2.4	10	12.2	11.6	6.7	6.5	9.5	9.7	10.1	5.7	10	4.5	16.2	16.5	4.7	20.7	10.4	24
15		8.3	10.1	16.5	6.7	8.7	7	12	13.8	30.1	9.6	14	7.4	8.5	6.2	4	2.4	8.1	4.7	1.7	11.9	1.1	3.3	10.8	2	30.1	8.7	24
16		10.8	13.4	N	1.4	13.9	2	N	3.8	14.3	11.4	3.2	6.6	4.7	4.9	5.1	5.1	2.4	2.6	1.7	2.1	11.4	9.2	0	3.9	14.3	6.1	22
17		3.2	4.9	5	5.3	3.5	5.3	0	0	N	3.2	13.5	2.4	6.5	4.3	5.8	6.6	6.9	9.2	3.3	10.6	4.7	7.1	17.9	14.1	17.9	6.2	23
18		3.2	0	0	7.8	14.2	10.3	11.1	17.7	15.2	12.3	19.3	15.7	12.7	13.2	11.3	11.7	12.7	16.2	17.4	31.7	11.7	20.2	2.2	0	31.7	12.0	24
19		N	2.3	3.7	13.3	10.7	5.2	4.3	4.3	4.8	10.2	5.7	7.7	6.2	15.2	4.2	5.2	4.2	8.3	10.2	0.2	6.2	16.8	12.7	18.2	18.2	7.8	23
20		3.7	0	0.2	N	0	4.7	16.8	9.7	4.7	5.8	6.2	3.2	7.3	7.3	8.7	5.7	5.7	5.8	5.2	5.2	8.7	6.2	0.2	11.7	16.8	5.8	23
21		7.7	N	11.7	0	4.7	3.7	6.2	3.2	0.7	9.2	4.3	1.8	4.2	5.7	4.3	3.2	0.2	0	0.2	1.2	3.7	1.8	9.7	N	11.7	4.0	22
22		9.2	1.2	0	4.8	1.2	0	7.7	0	0	0	0.8	2.7	0.8	1.7	3.2	1.2	5.2	3.2	3.2	3.2	0	1.7	3.2	5.2	9.2	2.5	24
23		2.7	5.7	N	11.2	6.2	N	N	10.2	1.8	1.2	0	0.2	1.2	6.2	2.7	4.2	1.2	7.7	N	3.2	4.7	0	N	N	11.2	3.9	18
24		4.2	10.2	0	8.3	6.2	9.7	N	3.7	5.7	6.2	17.7	N	10.2	0	0	0.2	4.2	8.7	N	0	N	N	1.2	6.7	17.7	5.4	19
25		5.8	0.8	5.7	8.7	5.2	3.7	8.7	9.7	8.7	20.7	20.2	18.2	5.7	9.2	1.7	9.2	7.3	2.7	0.8	8.3	N	12.2	0.8	11.7	20.7	8.1	23
26		0	N	0	5.2	15.3	18.2	3.7	N	11.7	0	N	N	12.2	0	2.7	13.3	0	5.2	N	15.7	12.7	4.2	N	N	18.2	7.1	17
27		0	N	N	N	N	0	5.7	11.7	11.7	6.8	0	16.8	2.3	10.2	6.2	7.3	5.2	9.2	2.2	13.8	0	6.2	15.2	18.2	18.2	7.4	20
28		11.2	0	N	7.7	19.3	19.3	9.7	0.2	0	19.8	8.3	13.3	13.8	14.2	12.2	15.2	17.7	14.2	9.7	17.2	12.2	15.2	3.2	13.3	19.8	11.6	23
29		6.8	12.2	11.2	8.3	19.3	6.2	21.2	18.2	9.2	20.7	11.2	12.2	12.7	12.7	10.2	8.7	10.2	6.2	12.7	9.7	13.8	12.7	19.3	11.2	21.2	12.4	24
30		9.7	10.7	8.3	16.8	13.7	4.2	11.7	2.7	11.2	5.2	9.2	9.7	2.7	3.2	8.3	11.2	11.2	6.2	11.2	12.2	17.2	17.2	27.7	20.2	27.7	10.9	24
31		15.2	15.7	2.3	0.8	0	0.2	3.7	2.3	3.7	0.8	0.2	1.2	2.3	0.2	2.7	2.3	3.7	0.2	11.2	0.2	6.3	1.2	0	0	15.7	3.2	24
HOURLY MAX		21	30	17	21	20	19	21	18	30	24	22	24	23	30	43	19	24	24	23	32	23	22	28	20			
HOURLY AVG		8.0	8.3	6.3	7.8	8.5	6.3	9.3	6.2	8.0	8.4	7.9	8.2	7.9	8.2	7.8	7.2	7.3	7.2	8.0	9.0	8.9	8.4	8.3	9.2			

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

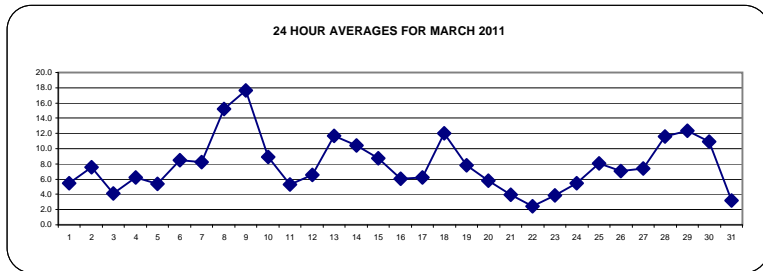
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:

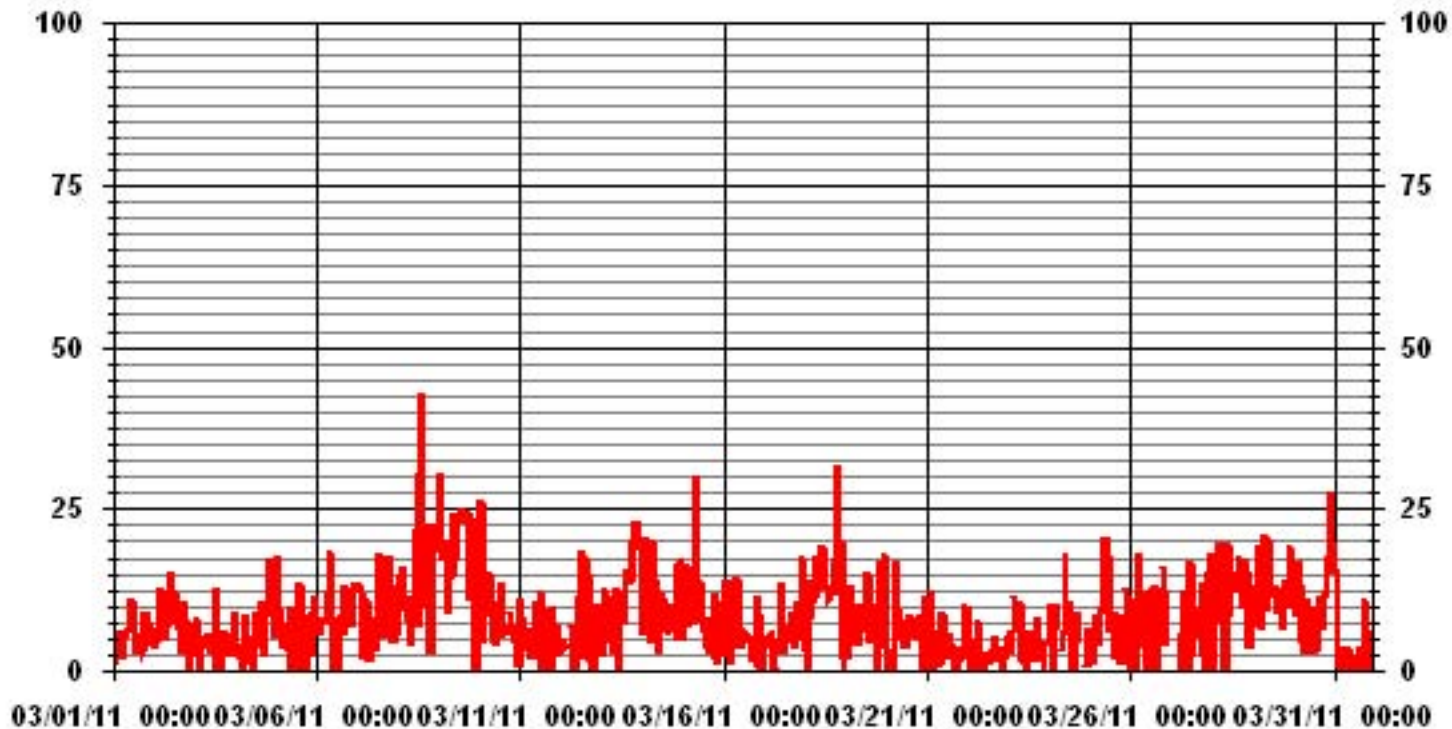
1-HR	-	PPB	24-HR	30	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-				
NUMBER OF 24-HR EXCEEDENCES:	0	PROPOSED CANADA WIDE GUIDELINE			
NUMBER OF NON-ZERO READINGS:	654				
MAXIMUM 1-HR AVERAGE:	42.7	UG/M ³	@ HOUR(S)	14	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	17.7	UG/M ³			ON DAY(S)
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	708	HRS
MONTHLY CALIBRATION TIME:	2	HRS	AMD OPERATION UPTIME:	95.2	%
STANDARD DEVIATION:	6.18		MONTHLY AVERAGE:	7.94	UG/M ³



01 Hour Averages



— LICA33 PM2 UG/M3

LICA33
PM2 / WDR Joint Frequency Distribution (Percent)

March 2011

Distribution By % Of Samples

Logger Id : 33
Site Name : LICA33
Parameter : PM2
Units : UG/M3

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	2.54	4.10	5.24	9.34	18.27	11.18	13.73	8.49	3.68	3.11	4.53	3.96	4.24	3.82	1.69	1.27	99.29
< 60.0	.00	.00	.00	.00	.14	.00	.28	.00	.14	.14	.00	.00	.00	.00	.00	.00	.70
< 80.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.54	4.10	5.24	9.34	18.41	11.18	14.02	8.49	3.82	3.25	4.53	3.96	4.24	3.82	1.69	1.27	

Calm : .00 %

Total # Operational Hours : 706

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	18	29	37	66	129	79	97	60	26	22	32	28	30	27	12	9	701
< 60.0					1		2		1	1							5
< 80.0																	
< 120.0																	
< 240.0																	
>= 240.0																	
Totals	18	29	37	66	130	79	99	60	27	23	32	28	30	27	12	9	

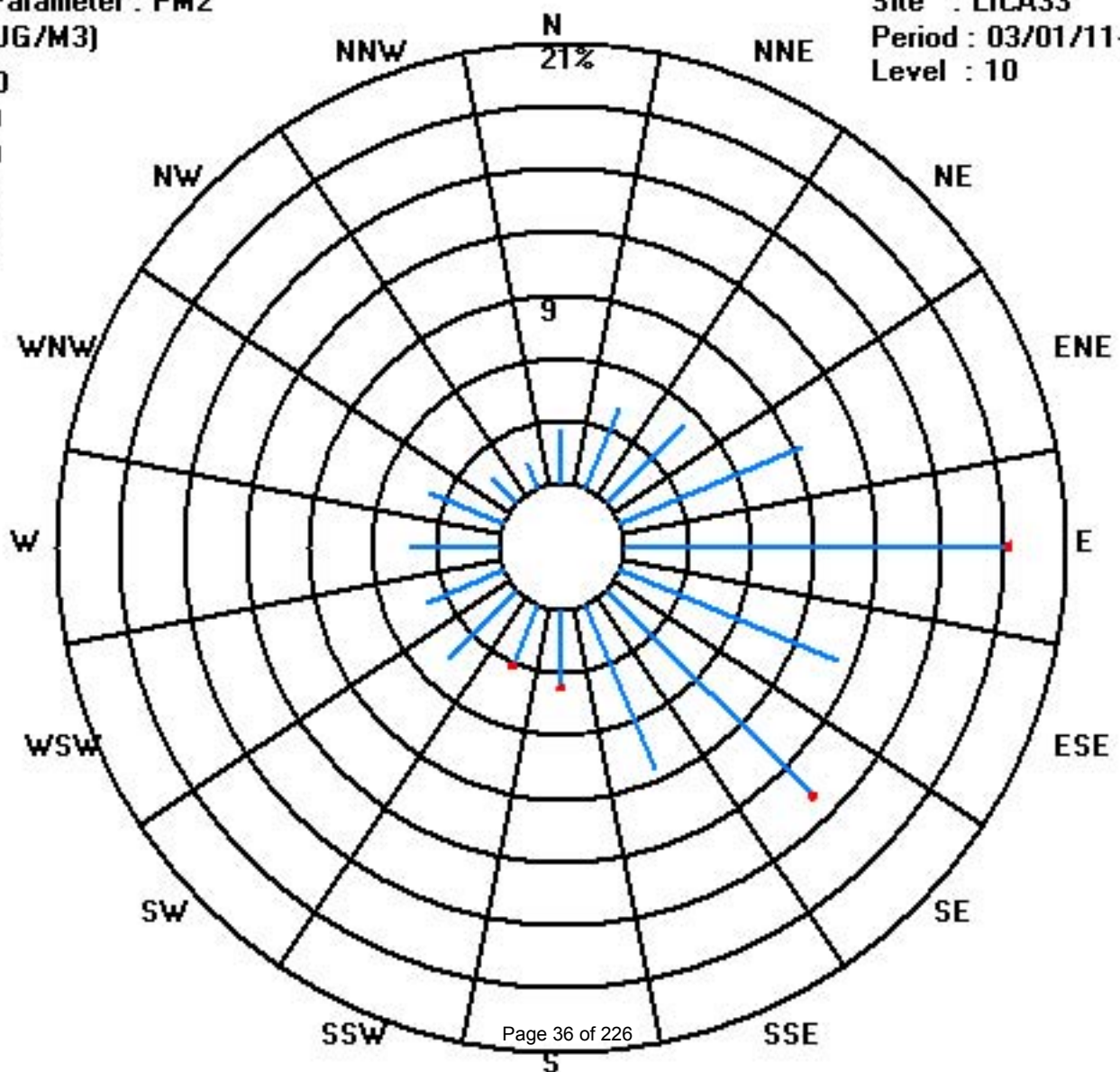
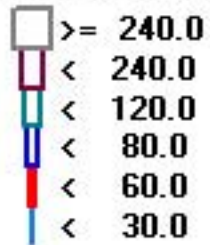
Calm : .00 %

Total # Operational Hours : 706

Class Limits (UG/M3)

Period : 03/01/11-03/31/11

Level : 10



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2011

NITROGEN DIOXIDE hourly averages in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
HOUR END	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
DAY																												
1	8	8	11	8	9	IZS	13	13	8	5	4	3	3	2	3	3	3	4	6	5	5	5	5	5	13	6.0	24	
2	6	7	5	6	IZS	9	11	12	13	11	11	10	7	6	5	5	6	6	5	6	6	5	6	5	13	7.3	24	
3	6	5	5	IZS	8	5	8	9	11	8	5	4	4	4	4	4	5	6	7	9	11	13	13	13	13	6.9	24	
4	12	14	IZS	19	10	13	19	15	13	9	5	5	5	4	4	4	4	5	8	7	10	14	23	26	26	10.8	24	
5	24	IZS	15	17	7	6	5	6	5	4	4	4	4	4	3	4	4	5	6	6	7	9	11	11	24	7.4	24	
6	IZS	13	24	18	16	16	17	16	13	8	5	5	5	5	5	4	4	4	5	7	10	8	10	IZS	24	9.9	24	
7	9	12	12	10	13	9	13	10	6	5	5	4	5	5	6	6	6	7	8	8	9	9	IZS	12	13	8.2	24	
8	13	11	11	12	16	15	14	18	14	11	12	12	12	13	14	11	9	9	12	13	14	IZS	16	19	19	13.1	24	
9	15	13	12	12	13	15	11	12	12	C	C	M	M	M	M	9	10	12	14	13	11	IZS	11	10	10	15	11.9	21
10	7	6	7	7	11	12	15	10	C	C	C	C	C	C	C	1	1	2	3	IZS	5	4	4	3	15	6.1	24	
11	4	4	4	3	4	4	5	4	4	3	3	3	3	3	3	3	5	5	IZS	6	12	10	7	7	12	4.7	24	
12	7	7	6	4	3	4	5	7	6	4	4	4	3	3	3	4	4	IZS	3	3	3	3	3	6	7	4.3	24	
13	8	7	10	7	6	9	12	17	11	7	7	6	5	5	4	4	IZS	4	5	8	8	9	12	8	17	7.8	24	
14	6	5	5	4	3	3	3	3	4	3	3	2	3	3	4	IZS	4	4	5	5	5	5	7	7	7	4.2	24	
15	6	16	7	5	5	8	10	10	12	18	8	5	6	4	IZS	3	3	2	2	2	2	2	2	2	2	18	6.1	24
16	2	2	2	2	2	2	2	3	2	1	1	2	2	IZS	2	3	3	4	5	5	5	5	7	7	7	3.1	24	
17	11	4	3	2	2	3	2	4	4	3	3	3	IZS	3	4	4	4	5	7	8	8	8	10	8	11	4.9	24	
18	8	7	6	10	11	11	12	12	13	9	7	IZS	4	4	4	4	5	8	9	10	6	6	5	5	13	7.7	24	
19	12	6	6	6	7	8	7	12	5	3	IZS	6	5	4	3	3	4	7	13	9	8	12	9	18	18	7.5	24	
20	10	10	8	5	9	8	3	2	2	IZS	1	1	1	1	2	1	2	3	2	1	2	1	1	1	10	3.3	24	
21	1	2	1	1	2	2	1	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.8	24
22	2	2	2	2	2	2	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	24
23	2	3	7	3	3	5	IZS	3	3	2	2	2	2	16	2	2	3	2	2	2	2	2	3	2	16	3.3	24	
24	2	3	4	4	4	IZS	3	3	3	3	3	2	2	2	2	2	3	3	3	4	4	4	4	4	4	3.1	24	
25	3	3	4	4	IZS	7	4	3	2	3	2	2	2	2	2	2	2	1	2	2	2	2	2	2	7	2.6	24	
26	2	2	2	IZS	2	3	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2	2	3	2.0	24	
27	2	2	IZS	2	2	2	2	2	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2.1	24	
28	2	IZS	2	2	2	3	3	3	3	21	30	8	2	3	3	5	3	4	3	3	3	3	3	3	30	5.1	24	
29	IZS	3	3	4	4	4	4	5	4	4	4	3	3	3	3	3	3	3	4	4	4	4	3	IZS	5	3.5	24	
30	3	3	2	3	3	2	2	3	2	2	3	3	3	3	4	4	4	4	5	5	6	6	IZS	7	7	3.6	24	
31	10	6	3	3	2	1	3	3	3	1	2	2	2	1	0	0	0	1	3	1	2	IZS	3	3	10	2.4	24	
HOURLY MAX	24	16	24	19	16	16	19	18	14	21	30	12	12	16	14	11	12	14	13	13	14	14	23	26				
HOURLY AVG	7.0	6.4	6.5	6.4	6.2	6.6	7.1	7.5	6.4	5.6	5.1	3.9	3.6	4.0	3.7	3.6	3.7	4.3	5.1	5.2	5.5	5.7	6.4	7.0				

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

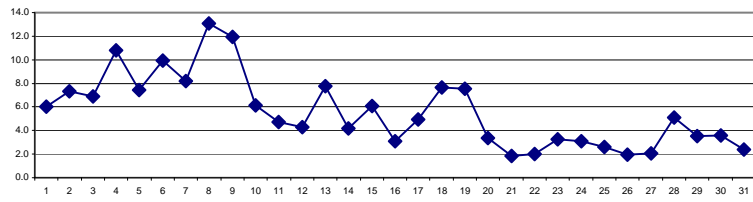
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	212	PPB	24-HR	106	PPB
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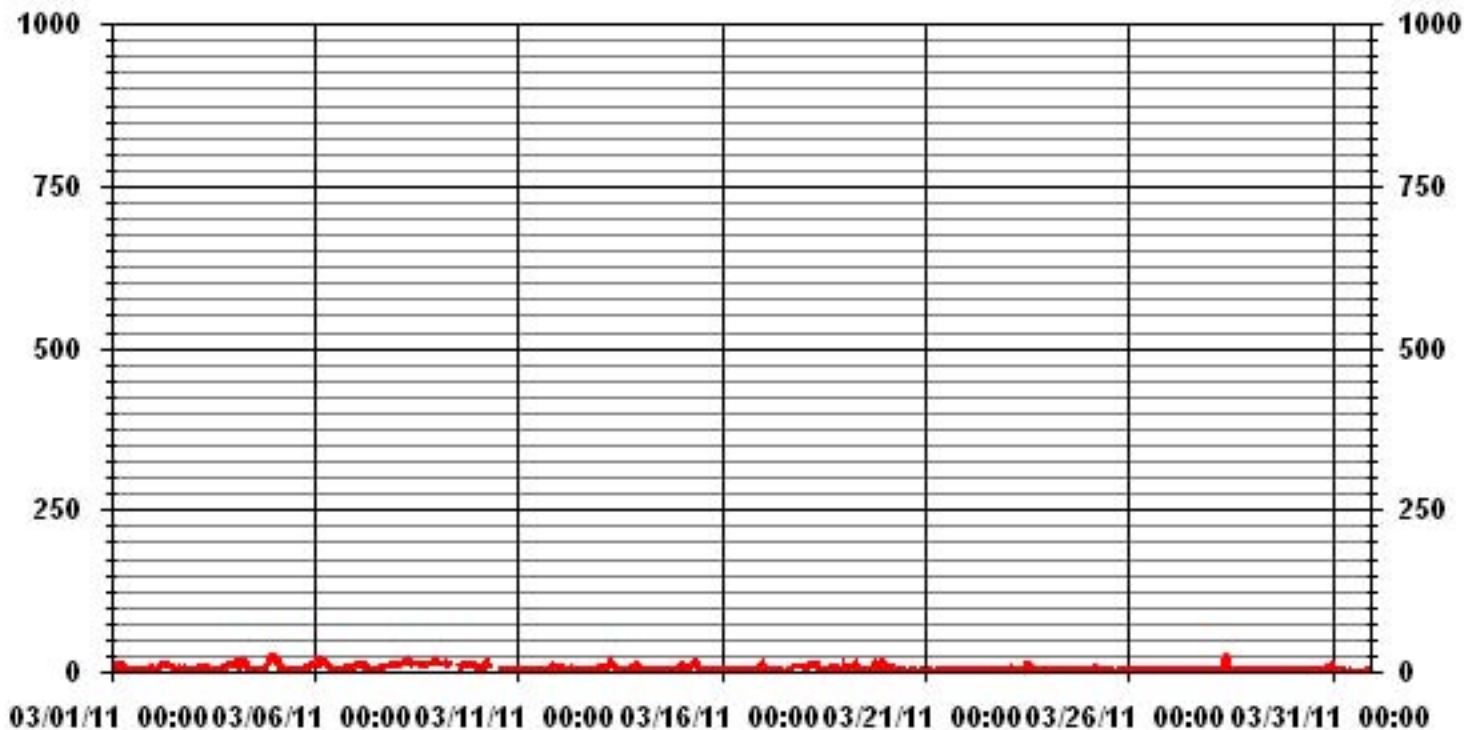
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	696					
MAXIMUM 1-HR AVERAGE:	30	PPB	@ HOUR(S)	10	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	13.1	PPB			ON DAY(S)	8
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	741	HRS	
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	99.6	%	
STANDARD DEVIATION:	4.28		MONTHLY AVERAGE:	5.52	PPB	

24 HOUR AVERAGES FOR MARCH 2011



01 Hour Averages



— LICA33 H02_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2011

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	11	14	13	9	13	IZS	20	19	14	8	5	12	3	3	4	3	4	5	7	6	6	6	6	7	20	8.6	24	
2	12	10	6	6	IZS	13	13	14	17	13	13	11	9	7	6	7	7	7	6	7	8	7	8	7	17	9.3	24	
3	7	6	6	IZS	11	8	12	12	26	10	7	5	5	5	5	5	6	8	8	8	16	16	18	19	26	10.0	24	
4	19	21	IZS	26	24	19	28	19	16	12	8	7	6	5	5	5	5	7	11	8	17	21	28	31	31	15.1	24	
5	27	IZS	17	25	12	8	6	7	6	5	5	5	5	5	4	4	5	5	6	8	8	10	15	14	27	9.2	24	
6	IZS	26	27	21	18	19	21	21	24	14	6	6	6	6	6	6	4	5	7	9	13	10	12	IZS	27	13.0	24	
7	9	15	15	12	20	10	27	17	7	6	5	5	5	6	7	6	7	9	9	9	10	10	IZS	13	27	10.4	24	
8	14	13	12	14	19	23	18	21	17	13	13	14	12	15	15	14	10	12	14	16	15	IZS	19	30	30	15.8	24	
9	17	15	13	14	17	17	17	16	14	C	C	M	M	M	10	11	13	18	15	12	IZS	14	15	11	18	14.4	21	
10	8	8	8	10	17	15	22	13	C	C	C	C	C	C	C	3	3	3	3	IZS	6	5	6	4	22	8.4	24	
11	5	5	6	5	6	5	8	5	6	4	4	4	5	5	4	4	6	7	IZS	8	23	14	10	9	23	6.9	24	
12	8	9	9	5	5	5	6	8	8	5	5	4	4	4	4	5	5	IZS	5	3	4	3	8	9	9	5.7	24	
13	11	9	16	11	13	20	23	25	15	8	9	8	6	7	4	4	IZS	6	7	11	9	15	15	11	25	11.4	24	
14	8	6	6	5	4	4	3	4	5	4	3	3	4	4	5	IZS	4	5	5	6	5	6	14	17	17	5.7	24	
15	7	54	10	7	7	11	17	14	15	25	15	7	7	M	IZS	5	4	4	4	3	3	3	3	3	54	10.4	23	
16	3	3	4	4	3	2	3	5	4	2	2	3	3	IZS	3	4	5	7	9	9	7	8	11	12	12	5.0	24	
17	32	12	5	4	4	5	3	5	6	3	3	3	IZS	4	4	5	5	6	8	8	9	8	11	9	32	7.0	24	
18	9	8	7	22	15	12	14	15	17	15	7	IZS	4	4	5	5	6	10	13	14	8	7	6	5	22	9.9	24	
19	46	7	7	7	9	9	10	13	9	4	IZS	8	7	6	4	4	5	9	24	25	20	21	22	29	46	13.3	24	
20	29	22	17	14	22	20	7	3	3	IZS	2	2	2	2	2	2	3	5	3	2	2	2	2	2	29	7.4	24	
21	2	2	2	2	3	3	2	2	IZS	3	3	3	3	3	3	3	2	3	3	3	2	2	2	2	3	2.5	24	
22	2	2	3	3	4	2	3	IZS	3	3	3	2	2	10	3	3	3	3	3	3	2	2	3	3	10	3.0	24	
23	3	7	10	6	4	6	IZS	5	4	3	3	3	8	65	3	3	4	3	3	3	3	3	3	3	65	6.9	24	
24	3	4	6	9	5	IZS	5	4	5	4	3	3	3	3	3	3	4	3	4	5	6	5	5	5	9	4.3	24	
25	4	4	4	5	IZS	9	7	3	3	3	3	3	3	3	3	2	2	2	3	2	3	3	3	3	9	3.5	24	
26	3	3	3	IZS	4	3	3	3	3	3	3	2	3	3	2	2	2	2	2	2	2	3	3	3	4	2.7	24	
27	3	2	IZS	2	3	3	3	3	5	4	3	3	3	3	3	2	3	2	3	2	2	2	3	2	5	2.8	24	
28	3	IZS	3	3	3	4	4	12	3	122	127	62	3	3	3	26	4	4	4	4	4	4	4	4	127	18.0	24	
29	IZS	3	4	4	4	5	5	5	5	5	4	4	4	4	3	3	3	4	4	5	5	5	4	IZS	5	4.2	24	
30	4	3	3	4	3	3	3	3	3	3	3	4	4	5	4	4	5	5	6	6	6	7	IZS	17	17	4.7	24	
31	30	7	6	12	4	2	7	8	8	2	3	3	5	3	1	1	1	7	6	2	7	IZS	5	7	30	6.0	24	
HOURLY MAX	46	54	27	26	24	23	28	25	26	122	127	62	12	65	15	26	13	18	24	25	23	21	28	31				
HOURLY AVG	11.7	10.3	8.6	9.3	9.5	9.1	10.7	10.1	9.3	10.9	9.6	7.1	4.8	7.1	4.4	5.1	4.6	5.9	6.8	7.0	7.7	7.7	9.1	10.0				

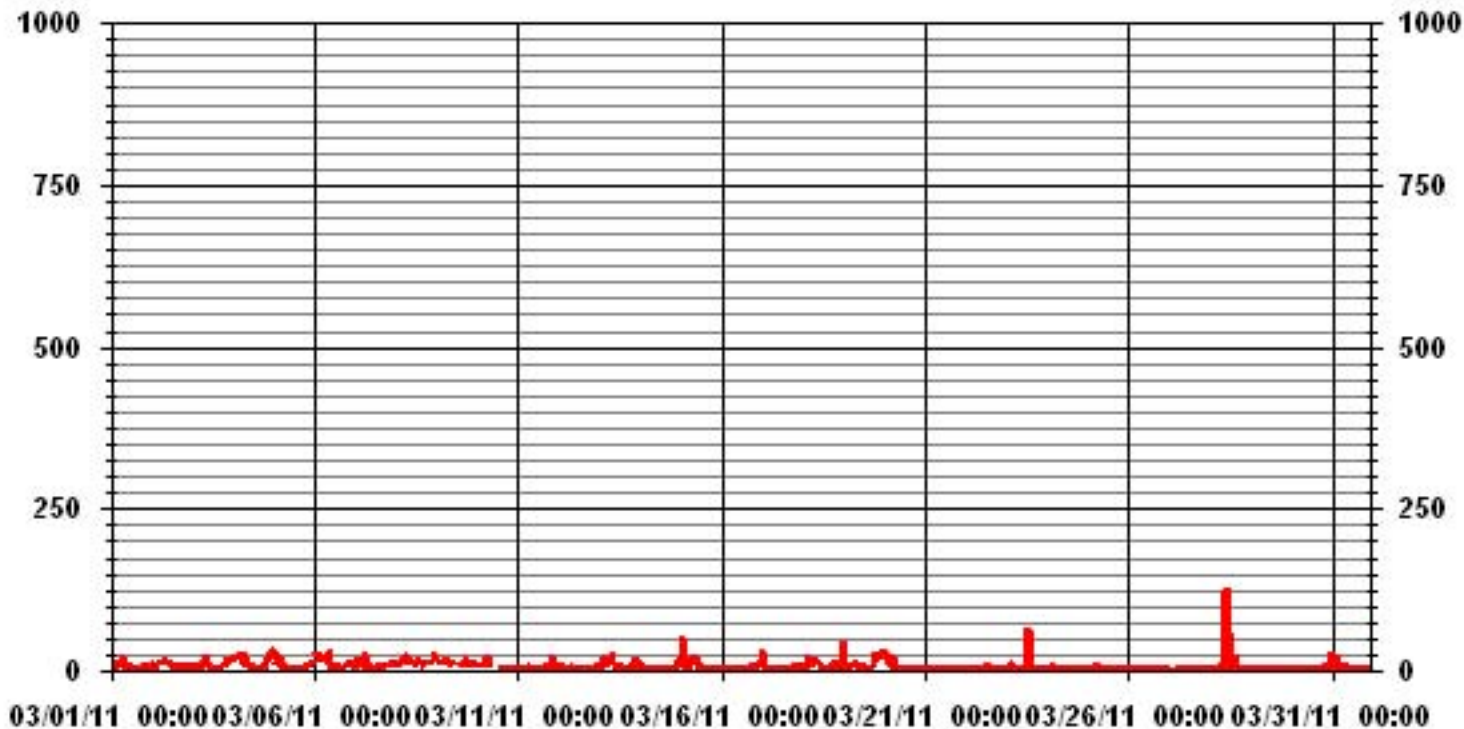
STATUS FLAG CODES

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:	698					
MAXIMUM INSTANTANEOUS VALUE:	127	PPB	@ HOUR(S)	10	ON DAY(S)	28
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION	9.42					

01 Hour Averages



— LICA33 NO2MAX PPB

LICA33
 NO2_ / WDR Joint Frequency Distribution (Percent)

March 2011

Distribution By % Of Samples

Logger Id : 33
 Site Name : LICA33
 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	2.43	3.43	5.15	9.44	18.45	11.73	14.30	9.15	3.86	3.14	4.43	3.57	4.29	3.71	1.57	1.28	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	2.43	3.43	5.15	9.44	18.45	11.73	14.30	9.15	3.86	3.14	4.43	3.57	4.29	3.71	1.57	1.28	

Calm : .00 %

Total # Operational Hours : 699

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	17	24	36	66	129	82	100	64	27	22	31	25	30	26	11	9	699
< 110																	
< 210																	
>= 210																	
Totals	17	24	36	66	129	82	100	64	27	22	31	25	30	26	11	9	

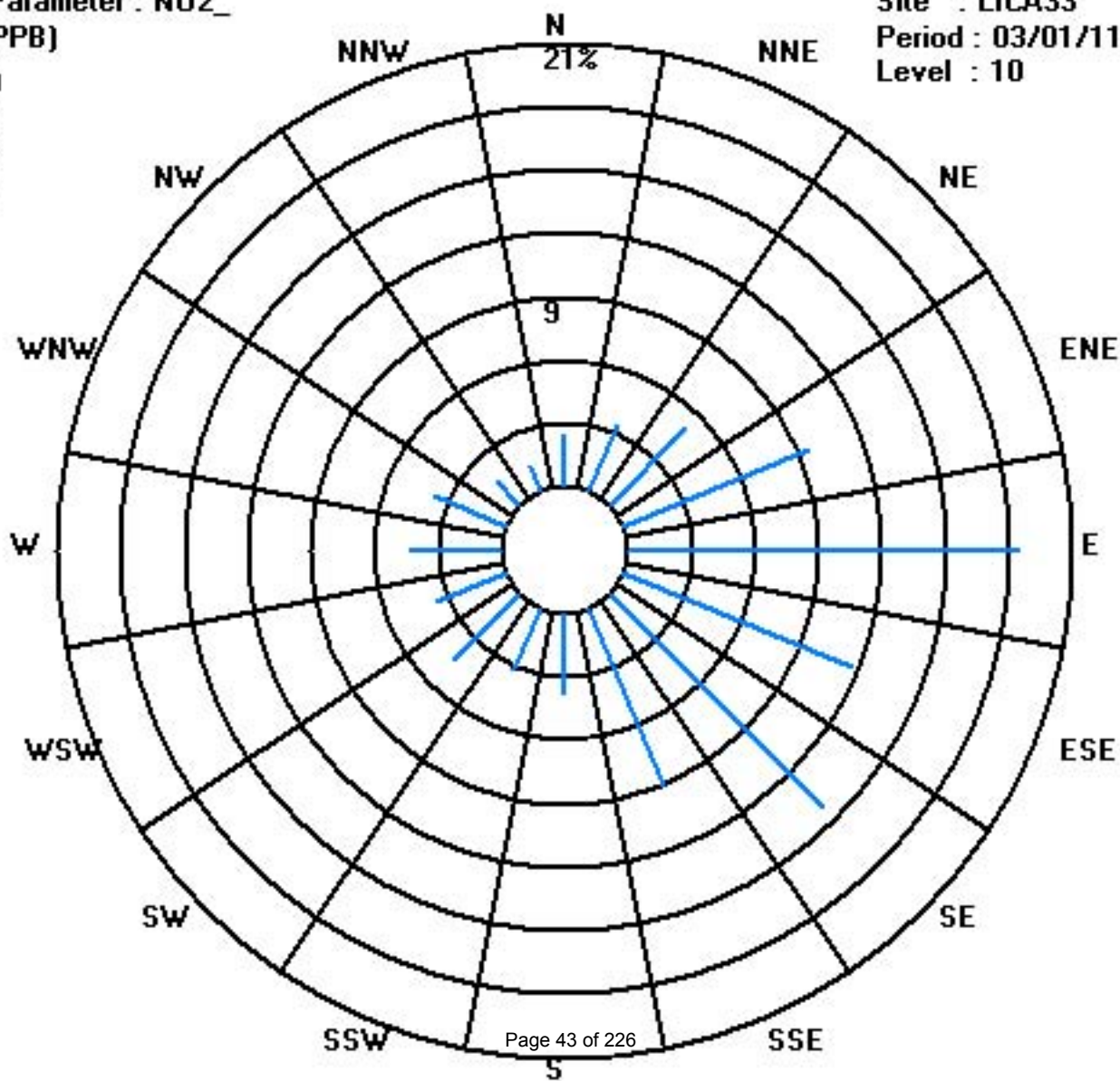
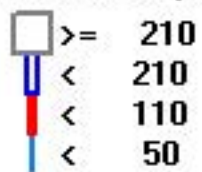
Calm : .00 %

Total # Operational Hours : 699

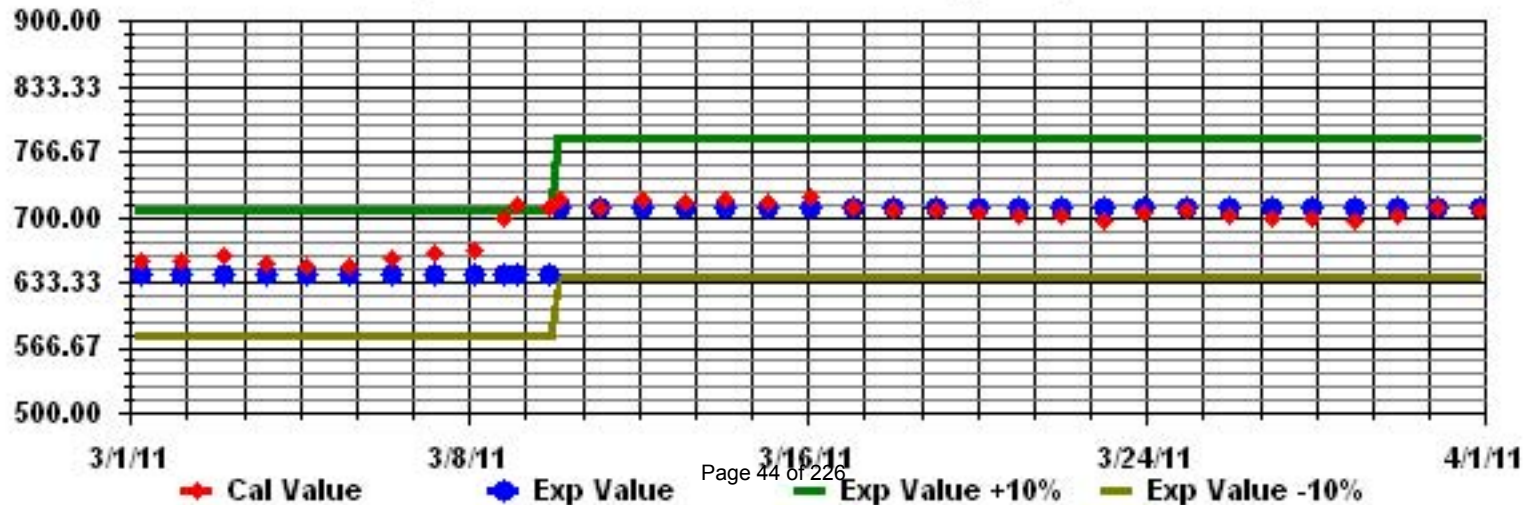
Class Limits (PPB)

Period : 03/01/11-03/31/11

Level : 10



Calibration Graph for Site: LICA33 Parameter: NO2_ Sequence: NO2 Phase: SPAN



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2011

NITRIC OXIDE hourly averages in ppb

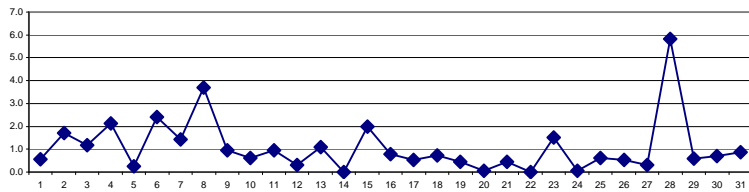
MST

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	IZS	0	2	4	3	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	4	0.6	24
2	0	0	0	0	IZS	0	0	1	8	8	8	8	3	2	1	0	0	0	0	0	0	0	0	0	0	8	1.7	24
3	0	0	0	IZS	1	1	1	2	4	4	2	2	1	1	1	1	1	0	0	1	1	1	1	1	1	4	1.2	24
4	1	1	IZS	1	1	1	2	3	7	7	3	3	4	3	2	2	1	1	1	1	1	1	1	1	1	7	2.1	24
5	1	IZS	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
6	IZS	1	2	1	1	1	1	4	11	7	3	3	4	3	2	2	1	1	1	1	1	1	1	1	IZS	11	2.4	24
7	1	1	1	1	1	1	2	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	IZS	1	2	1.4	24
8	1	1	1	1	1	1	1	6	9	8	9	10	8	8	8	4	2	1	1	1	1	1	IZS	1	10	3.7	24	
9	0	0	0	0	0	0	0	2	6	C	C	M	M	M	3	3	2	1	0	0	IZS	0	0	0	6	0.9	21	
10	0	0	0	0	0	0	0	1	C	C	C	C	C	C	C	2	1	1	1	IZS	1	1	1	1	2	0.6	24	
11	1	1	1	0	0	1	1	1	1	2	2	2	2	2	1	2	1	2	1	IZS	0	0	0	0	2	1.0	24	
12	0	0	0	0	0	0	0	1	2	1	2	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	0	5	5	4	4	3	2	2	0	0	IZS	0	0	0	0	0	0	0	5	1.1	24	
14	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	
15	0	10	0	0	0	0	0	2	6	14	4	2	3	1	IZS	1	1	1	0	0	0	1	0	0	14	2.0	24	
16	0	0	1	1	0	0	0	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	0.8	24
17	3	1	0	0	0	0	0	1	1	1	1	1	IZS	1	1	1	0	0	0	0	0	0	0	0	3	0.5	24	
18	0	0	0	0	0	0	0	2	5	3	2	IZS	2	1	1	1	0	0	0	0	0	0	0	0	5	0.7	24	
19	2	0	0	0	0	0	0	2	1	1	IZS	2	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0.4	24
20	0	0	0	0	1	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
21	0	1	0	0	0	0	1	0	IZS	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0.4	24	
22	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	0.0	24
23	0	0	0	0	0	0	IZS	1	1	1	1	1	1	26	0	1	1	1	0	0	0	0	0	0	26	1.5	24	
24	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.0	24	
25	1	0	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	0	0	1	0.6	24	
26	0	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0.5	24	
27	0	0	IZS	1	0	0	0	0	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	1	0.3	24	
28	0	IZS	1	0	0	0	1	1	1	40	64	18	1	1	1	3	1	1	0	0	0	0	0	0	64	5.8	24	
29	IZS	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	IZS	1	0.6	24	
30	1	1	0	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	IZS	1	1	0.7	24	
31	2	1	0	1	0	0	1	2	2	1	1	1	1	1	1	0	1	1	1	0	0	IZS	1	1	2	0.9	24	
HOURLY MAX	3	10	2	1	1	1	2	6	11	40	64	18	8	26	8	4	2	1	1	1	1	1	1	1	1			
HOURLY AVG	0.5	0.7	0.3	0.3	0.2	0.3	0.5	1.5	2.9	4.1	4.2	2.4	1.5	2.1	1.1	1.0	0.6	0.5	0.3	0.2	0.2	0.3	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

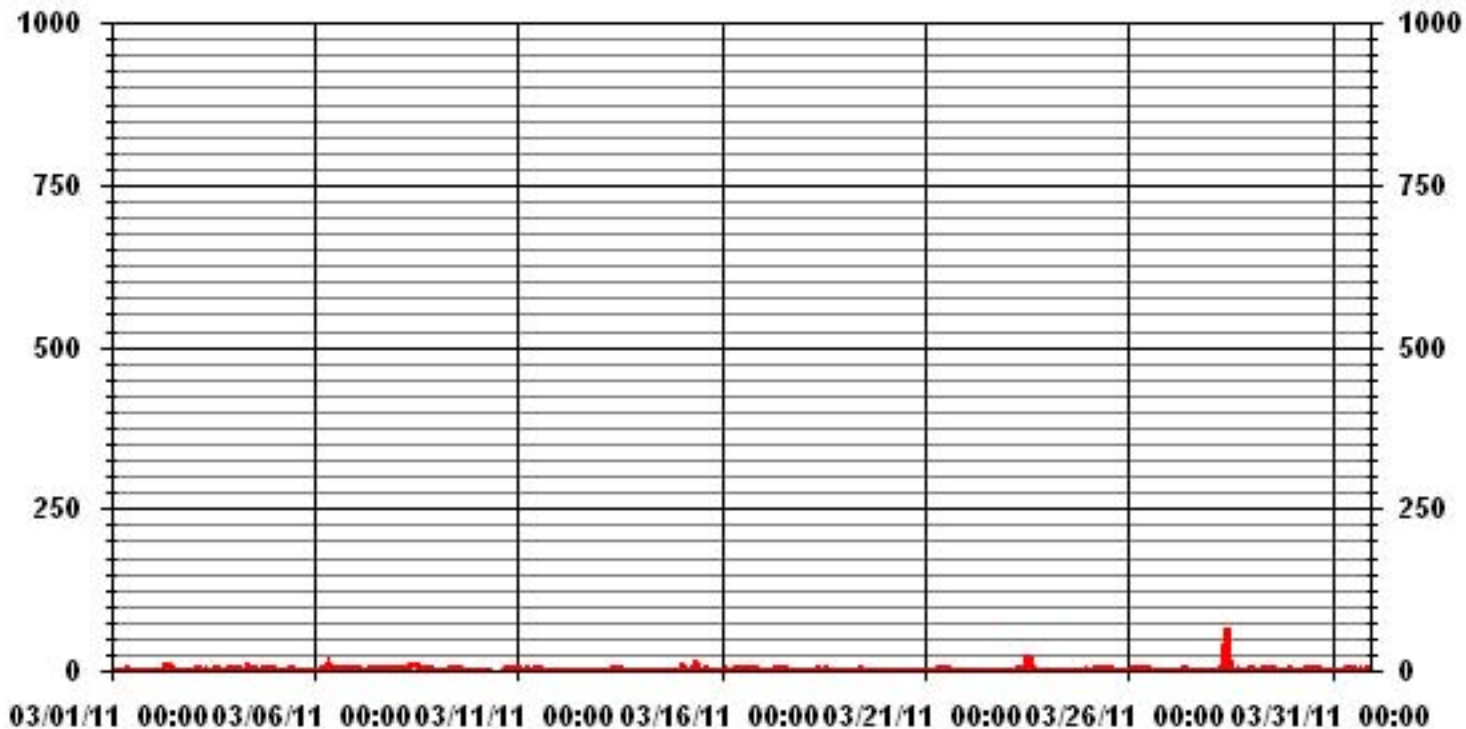
24 HOUR AVERAGES FOR MARCH 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	341
MAXIMUM 1-HR AVERAGE:	64 PPB @ HOUR(S) 10 ON DAY(S) 28
MAXIMUM 24-HR AVERAGE:	5.8 PPB ON DAY(S) 28
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	9 HRS
STANDARD DEVIATION:	3.41
OPERATIONAL TIME:	741 HRS
AMD OPERATION UPTIME:	99.6 %
MONTHLY AVERAGE:	1.08 PPB

01 Hour Averages



— LICA33 NO_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2011

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	3	0	0	0	IZS	3	6	24	5	4	13	1	1	2	1	1	1	0	0	0	0	0	0	24	2.9	24	
2	0	0	0	0	IZS	0	0	4	13	11	10	10	6	3	2	1	1	0	0	0	0	0	0	0	13	2.7	24	
3	0	0	0	IZS	2	2	3	5	10	13	4	3	2	2	2	2	2	2	1	1	1	1	1	1	13	2.6	24	
4	1	3	IZS	5	2	2	6	7	11	9	6	5	5	3	3	2	2	2	1	1	2	1	1	2	11	3.6	24	
5	1	IZS	1	2	0	0	0	1	2	1	1	2	1	1	1	1	0	0	0	0	0	0	1	0	2	0.7	24	
6	IZS	5	5	2	2	1	2	7	38	14	4	4	4	3	3	3	1	1	1	1	1	1	1	IZS	38	4.7	24	
7	2	2	2	1	2	1	8	2	2	3	2	3	3	4	2	2	2	2	1	1	2	1	IZS	2	8	2.3	24	
8	2	1	2	1	2	4	2	12	13	9	11	12	9	10	9	6	3	2	1	1	2	IZS	1	3	13	5.1	24	
9	1	1	1	1	1	1	1	5	8	C	C	M	M	M	4	3	3	17	1	0	IZS	1	0	0	17	2.7	21	
10	0	0	0	0	1	0	1	2	C	C	C	C	C	C	C	4	2	2	2	IZS	2	1	1	1	4	1.2	24	
11	1	1	1	1	1	1	1	1	2	2	3	3	3	3	2	2	2	2	IZS	1	0	0	0	0	3	1.4	24	
12	0	0	0	0	0	0	0	2	4	2	2	2	1	1	1	1	1	IZS	1	0	0	0	0	0	4	0.8	24	
13	0	0	0	0	0	1	3	9	6	5	6	6	3	3	1	0	IZS	1	0	0	0	0	0	0	9	1.9	24	
14	0	0	0	0	0	0	0	0	1	0	1	0	1	1	1	IZS	1	0	0	0	0	0	0	1	4	4	0.5	24
15	0	117	0	0	0	1	1	5	8	23	9	3	4	M	IZS	3	1	1	1	1	1	1	1	1	117	8.3	23	
16	1	1	1	1	1	1	1	2	1	1	1	2	2	IZS	2	2	2	2	2	2	2	1	2	3	3	1.6	24	
17	22	3	1	1	1	1	1	1	2	1	2	2	IZS	2	1	1	1	1	0	0	0	0	0	0	22	1.9	24	
18	0	0	0	3	0	0	2	3	10	8	3	IZS	2	2	2	2	1	1	0	0	0	0	0	0	10	1.7	24	
19	22	0	0	0	0	0	0	3	2	1	IZS	4	3	2	1	1	1	1	0	0	0	0	0	7	22	2.1	24	
20	5	4	3	2	4	4	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1.0	24	
21	0	0	0	0	0	0	0	0	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	0.7	24	
22	1	1	1	1	1	1	1	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
23	0	0	0	0	0	0	IZS	2	1	1	1	1	26	141	1	1	1	1	1	1	1	1	1	1	141	8.0	24	
24	1	1	1	1	1	IZS	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
25	0	0	0	0	IZS	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	0.9	24	
26	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
27	1	1	IZS	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
28	1	IZS	1	1	1	1	1	10	1	356	344	187	1	1	1	25	2	1	1	1	1	1	1	1	356	40.9	24	
29	IZS	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
30	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	IZS	4	4	1.3	24
31	9	1	1	3	1	1	3	4	5	2	3	3	4	2	1	2	1	2	1	1	1	IZS	1	1	9	2.3	24	
HOURLY MAX	22	117	5	5	4	4	8	12	38	356	344	187	26	141	9	25	3	17	2	2	2	1	2	7				
HOURLY AVG	2.6	5.1	0.8	1.0	0.9	1.0	1.5	3.3	5.9	17.0	15.3	9.6	3.1	7.1	1.8	2.4	1.2	1.6	0.7	0.6	0.7	0.6	0.6	1.2				

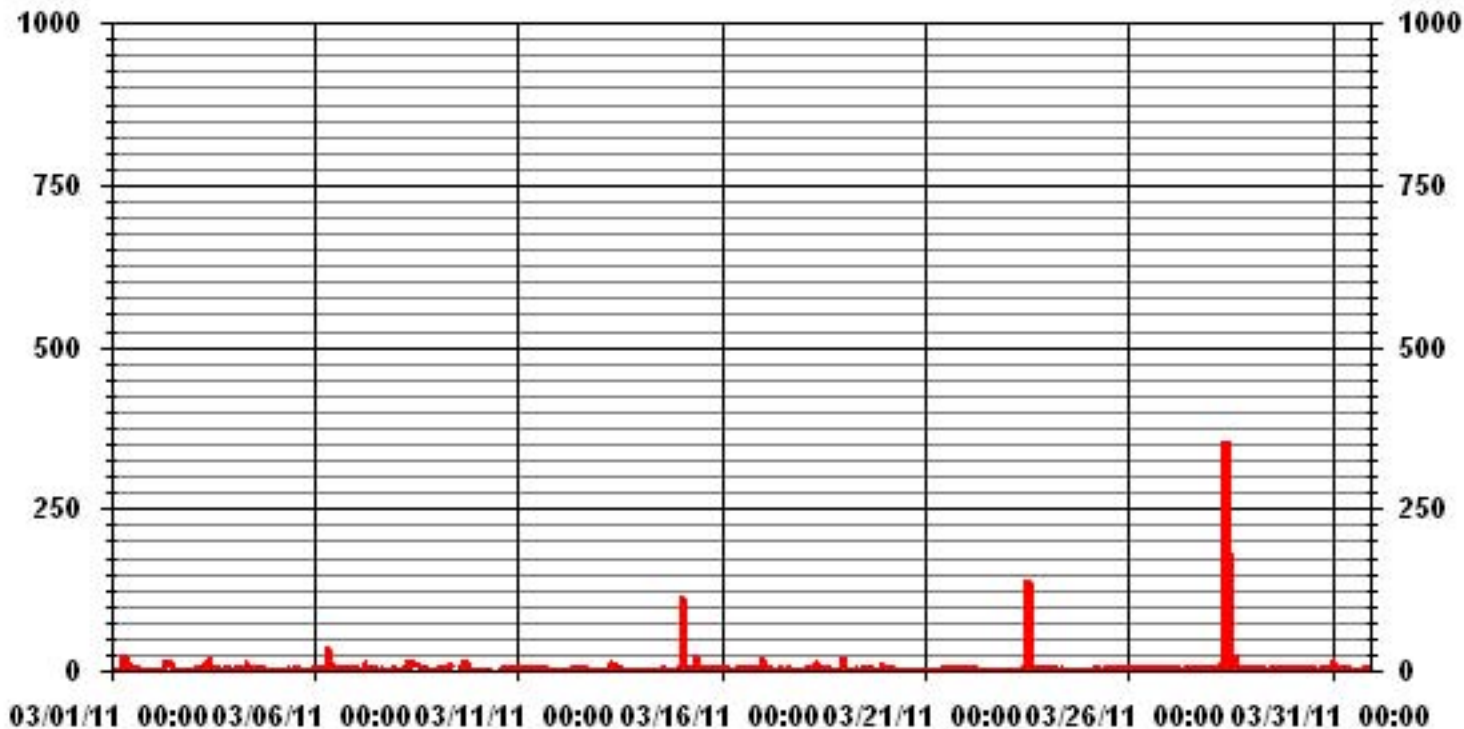
STATUS FLAG CODES

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:	517					
MAXIMUM INSTANTANEOUS VALUE:	356	PPB	@ HOUR(S)	9	ON DAY(S)	28
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION	21.25					

01 Hour Averages



LICA33
 NO_ / WDR Joint Frequency Distribution (Percent)

March 2011

Distribution By % Of Samples

Logger Id : 33
 Site Name : LICA33
 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	2.43	3.43	5.15	9.44	18.45	11.73	14.16	9.15	3.86	3.14	4.43	3.57	4.29	3.71	1.57	1.28	99.85
< 110	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.43	3.43	5.15	9.44	18.45	11.73	14.30	9.15	3.86	3.14	4.43	3.57	4.29	3.71	1.57	1.28	

Calm : .00 %

Total # Operational Hours : 699

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	17	24	36	66	129	82	99	64	27	22	31	25	30	26	11	9	698
< 110							1										1
< 210																	
>= 210																	
Totals	17	24	36	66	129	82	100	64	27	22	31	25	30	26	11	9	

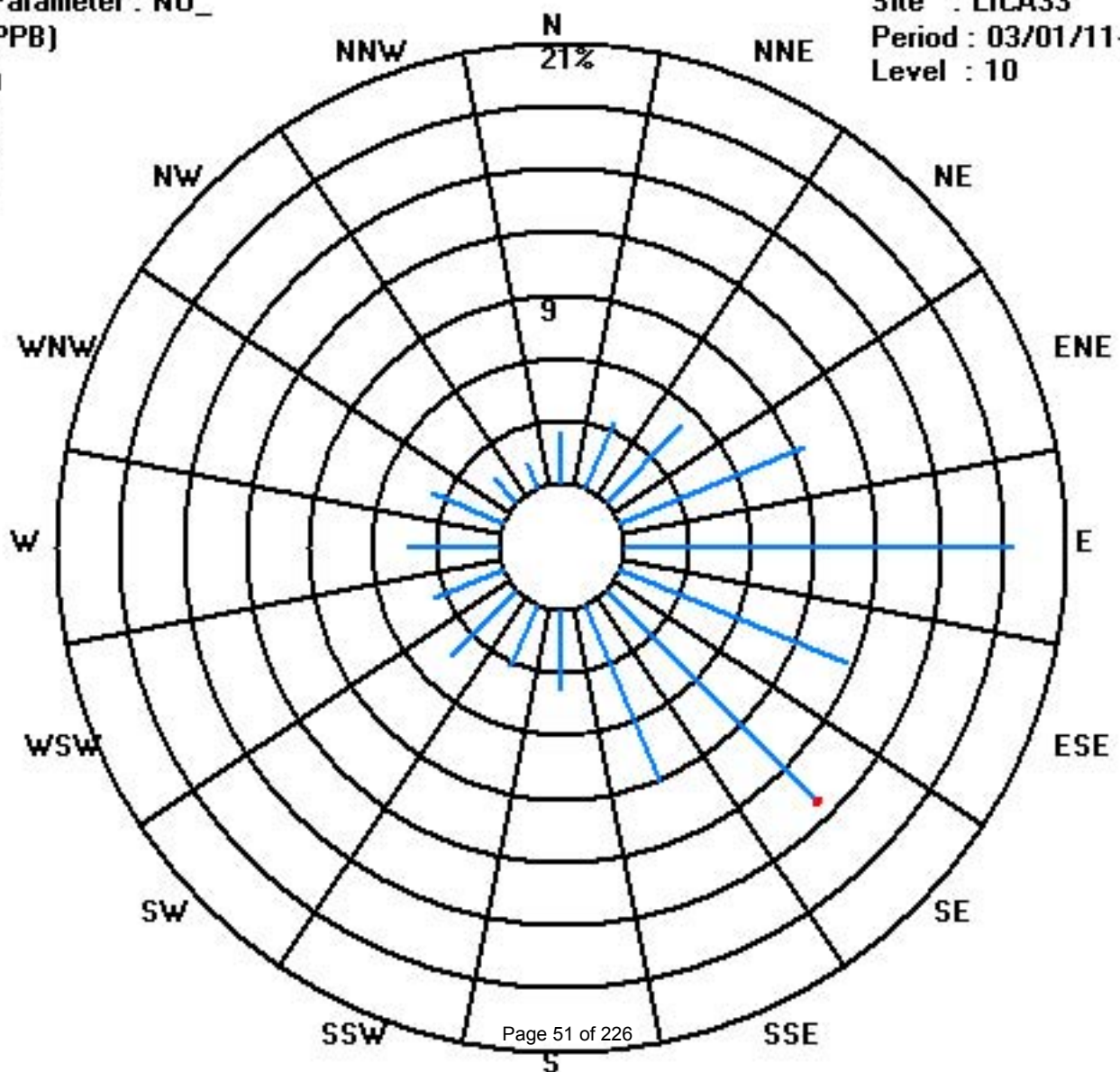
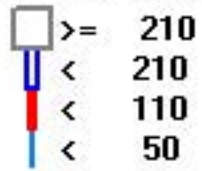
Calm : .00 %

Total # Operational Hours : 699

Class Limits (PPB)

Period : 03/01/11-03/31/11

Level : 10



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2011

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	9	9	11	8	10	IZS	9	12	8	5	3	1	0	0	0	0	0	1	1	1	0	0	1	12	3.9	24		
2	2	2	1	1	IZS	4	6	8	16	14	14	13	5	4	1	1	1	1	0	0	0	0	1	0	16	4.1	24	
3	0	0	0	IZS	3	0	3	5	9	6	1	0	0	0	0	0	0	1	2	4	6	8	8	9	2.4	24		
4	6	9	IZS	15	6	9	16	13	14	11	3	3	4	2	1	1	1	4	3	5	10	19	22	22	7.7	24		
5	20	IZS	11	14	3	2	1	2	2	1	1	1	1	0	0	0	0	1	2	2	4	7	7	20	3.6	24		
6	IZS	9	21	14	12	12	13	15	19	10	3	3	4	2	2	1	0	0	1	3	6	4	6	IZS	21	7.3	24	
7	5	8	8	6	9	5	10	6	2	2	2	1	2	2	3	2	3	4	3	4	4	4	IZS	9	10	4.5	24	
8	9	7	7	8	12	11	10	19	19	15	17	17	15	17	17	10	6	5	8	8	10	IZS	14	18	19	12.1	24	
9	13	12	10	10	11	13	10	12	16	C	C	M	M	M	M	10	11	11	13	11	8	IZS	10	8	7	16	10.9	21
10	5	4	5	5	9	9	13	9	C	C	C	C	C	C	C	1	1	1	2	IZS	3	1	2	1	13	4.4	24	
11	1	1	1	1	1	1	2	3	2	2	2	2	3	3	2	2	3	4	IZS	4	10	8	5	4	10	3.0	24	
12	4	4	4	2	1	1	3	6	7	4	4	3	2	1	2	2	2	IZS	2	1	1	1	2	5	7	2.8	24	
13	7	5	9	6	5	8	11	21	15	10	9	7	5	6	3	2	IZS	4	5	7	8	9	11	7	21	7.8	24	
14	6	5	4	3	3	3	2	3	4	3	3	2	3	4	4	IZS	3	3	3	3	3	4	6	6	6	3.6	24	
15	4	25	6	4	4	7	9	11	16	32	12	6	7	4	IZS	2	2	1	1	1	1	1	1	1	32	6.9	24	
16	1	0	1	0	0	0	0	2	0	0	0	1	1	IZS	1	1	1	2	3	3	3	2	6	5	6	1.4	24	
17	11	2	1	0	0	1	0	1	2	1	1	1	IZS	2	2	2	3	3	4	5	5	5	7	6	11	2.8	24	
18	6	4	4	8	9	9	11	12	17	10	7	IZS	5	5	6	5	5	8	9	10	6	5	5	4	17	7.4	24	
19	14	5	6	5	7	7	7	14	5	4	IZS	7	5	3	2	2	2	6	12	8	7	11	7	18	18	7.1	24	
20	9	10	7	4	9	6	2	1	0	IZS	0	0	0	0	0	0	0	2	0	0	0	0	0	0	10	2.2	24	
21	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	
22	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	
23	0	0	4	1	0	2	IZS	2	0	0	0	0	0	39	0	0	0	0	0	0	0	0	0	0	39	2.1	24	
24	0	0	1	2	2	IZS	1	0	2	1	1	0	0	0	0	0	1	0	0	1	1	1	2	2	0.7	24		
25	1	1	1	2	IZS	6	3	2	1	2	2	1	1	1	1	0	0	0	0	0	0	0	1	1	6	1.2	24	
26	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.6	24	
27	0	0	IZS	1	1	1	1	1	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	2	0.6	24	
28	1	IZS	1	1	1	1	1	1	1	58	92	24	1	2	2	5	2	2	2	2	2	2	2	1	92	9.0	24	
29	IZS	1	2	2	2	2	3	3	3	3	3	2	2	2	1	1	1	2	2	2	3	3	2	IZS	3	2.1	24	
30	2	1	1	1	1	1	1	1	1	1	1	2	2	3	3	3	3	3	3	4	4	5	IZS	7	7	2.3	24	
31	11	6	2	3	1	1	3	4	4	1	2	2	2	1	0	0	0	1	2	0	2	IZS	2	2	11	2.3	24	
HOURLY MAX	20	25	21	15	12	13	16	21	19	58	92	24	15	39	17	11	11	13	12	10	10	11	19	22				
HOURLY AVG	5.1	4.5	4.5	4.4	4.2	4.3	5.1	6.3	6.5	7.1	6.6	3.6	2.6	3.8	2.2	1.8	1.7	2.2	2.7	2.7	3.0	3.3	4.2	4.9				

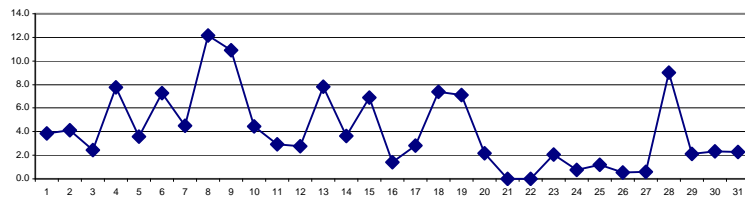
STATUS FLAG CODES

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

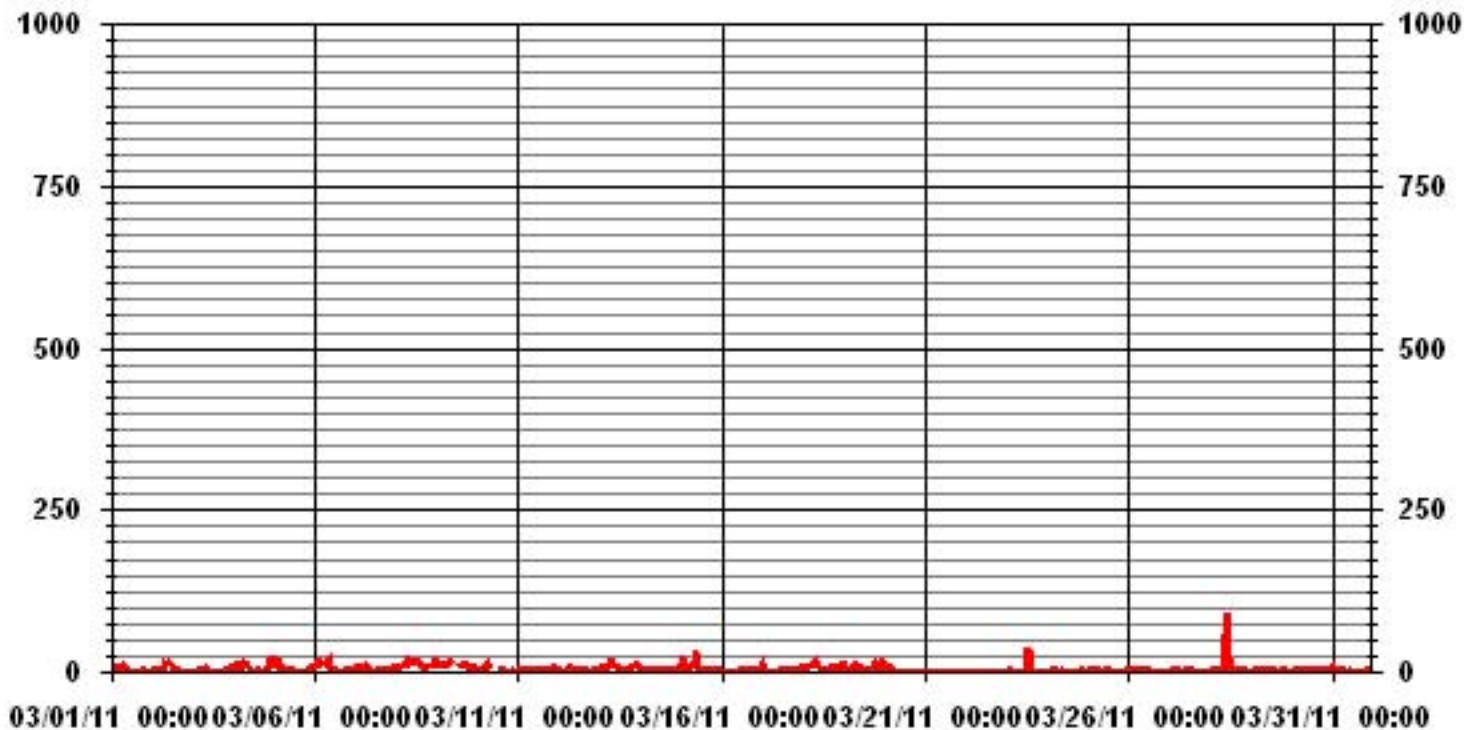
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	538					
MAXIMUM 1-HR AVERAGE:	92	PPB	@ HOUR(S)	10	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	12.1	PPB			ON DAY(S)	8
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	741	HRS	
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	99.6	%	
STANDARD DEVIATION:	6.18		MONTHLY AVERAGE:	4.04	PPB	

24 HOUR AVERAGES FOR MARCH 2011



01 Hour Averages



— LICA33 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2011

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	13	18	14	10	14	IZS	17	15	29	8	4	18	0	0	2	0	0	1	2	2	2	1	1	3	29	7.6	24	
2	8	6	1	2	IZS	8	8	12	24	19	17	16	9	5	3	2	2	2	1	1	2	2	2	1	24	6.7	24	
3	1	0	0	IZS	7	3	9	10	30	12	5	2	0	0	0	2	2	3	2	3	11	11	13	14	30	6.0	24	
4	14	17	IZS	26	20	15	29	20	20	14	8	6	6	3	2	1	1	2	7	3	14	17	24	27	29	12.9	24	
5	24	IZS	14	22	8	4	2	3	3	2	1	2	2	2	0	0	1	1	2	3	3	6	12	10	24	5.5	24	
6	IZS	26	26	17	15	15	17	18	57	23	5	4	5	4	4	3	0	1	2	4	9	6	7	IZS	57	12.2	24	
7	6	12	11	7	17	6	30	14	3	3	2	2	3	4	6	3	4	6	5	5	6	6	IZS	10	30	7.4	24	
8	10	9	8	10	16	21	15	27	24	16	19	20	15	20	19	15	7	9	10	12	12	IZS	18	29	29	15.7	24	
9	15	13	11	12	15	15	15	19	19	C	C	M	M	M	M	11	12	13	22	13	10	IZS	13	13	8	22	13.8	21
10	6	5	6	8	16	13	21	12	C	C	C	C	C	C	C	3	2	3	3	IZS	4	3	3	2	21	6.9	24	
11	2	3	3	2	4	3	6	3	4	3	4	4	5	5	2	2	5	5	IZS	5	21	12	8	7	21	5.1	24	
12	5	7	7	3	2	3	4	7	9	5	5	5	3	2	2	3	3	IZS	3	2	2	2	6	8	9	4.3	24	
13	10	7	15	10	12	19	25	29	19	12	14	13	7	9	4	3	IZS	6	6	11	9	15	15	11	29	12.2	24	
14	8	6	5	4	4	4	3	4	6	4	4	3	5	4	5	IZS	3	4	4	4	4	5	14	19	19	5.5	24	
15	5	165	9	5	5	10	17	16	22	46	23	9	9	M	IZS	5	3	2	2	2	2	2	1	1	165	16.4	23	
16	1	1	3	2	1	1	1	4	3	1	1	2	2	IZS	1	2	3	6	8	8	5	6	10	12	12	3.7	24	
17	49	12	2	2	1	2	0	3	5	1	2	2	IZS	3	3	3	3	4	5	6	6	6	6	9	7	49	5.9	24
18	7	5	5	22	13	10	13	16	25	20	8	IZS	6	6	7	6	7	11	13	14	8	7	6	5	25	10.4	24	
19	67	7	7	6	9	8	10	16	10	5	IZS	11	8	7	3	3	4	9	23	24	19	20	20	34	67	14.3	24	
20	33	25	19	15	25	23	6	2	1	IZS	1	1	1	1	1	1	2	4	1	1	1	0	0	0	33	7.1	24	
21	0	1	1	0	1	1	1	1	IZS	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1	0.6	24	
22	0	-1	0	1	1	0	1	IZS	1	1	0	0	0	8	0	0	0	0	0	1	0	0	0	0	8	0.6	24	
23	0	5	7	3	1	3	IZS	3	1	0	0	0	32	191	1	1	1	1	0	0	0	0	1	0	191	10.9	24	
24	1	1	3	7	3	IZS	3	1	3	2	1	1	1	1	0	2	1	1	1	2	4	2	2	3	7	2.0	24	
25	2	2	2	3	IZS	8	6	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	2	1	8	2.1	24	
26	1	1	1	IZS	3	2	2	2	2	2	2	1	2	1	1	1	1	0	0	1	1	1	1	1	3	1.3	24	
27	1	1	IZS	1	1	1	1	1	4	3	2	1	2	1	1	1	1	1	1	1	1	1	1	1	4	1.3	24	
28	1	IZS	2	1	2	2	2	20	2	426	448	209	2	2	2	43	3	3	3	2	2	2	2	2	448	51.4	24	
29	IZS	2	2	3	3	3	4	4	4	4	3	3	3	3	2	2	2	3	3	3	4	4	3	IZS	4	3.0	24	
30	3	2	2	2	2	1	1	2	2	1	2	2	2	4	3	4	4	4	4	4	4	5	6	IZS	20	20	3.6	24
31	38	7	5	13	4	1	8	11	11	2	5	5	7	4	1	1	0	9	5	1	7	IZS	4	6	38	6.7	24	
HOURLY MAX	67	165	26	26	25	23	30	29	57	426	448	209	32	191	19	43	13	22	23	24	21	20	24	34				
HOURLY AVG	11.4	12.6	6.6	7.6	7.8	7.1	9.2	9.9	11.9	22.8	21.0	12.3	5.0	10.9	3.0	4.1	2.7	4.1	4.4	4.5	5.5	5.4	6.8	8.3				

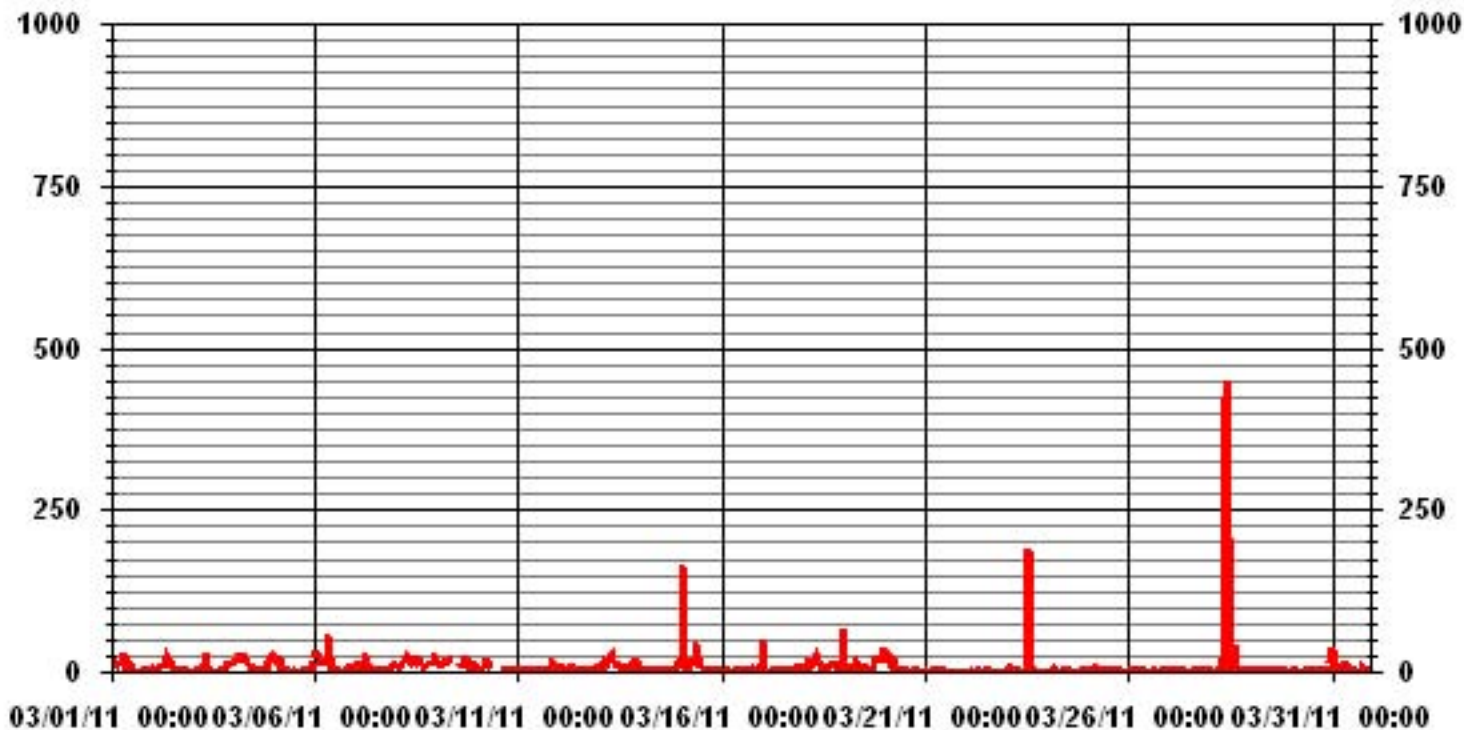
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	642
MAXIMUM INSTANTANEOUS VALUE:	448 PPB @ HOUR(S) 10 ON DAY(S) 28
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	9 HRS
STANDARD DEVIATION	27.06
OPERATIONAL TIME:	740 HRS

01 Hour Averages



— LICA33 NOxMAX PPB

LICA33
 NOX_ / WDR Joint Frequency Distribution (Percent)

March 2011

Distribution By % Of Samples

Logger Id : 33
 Site Name : LICA33
 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	2.43	3.43	5.15	9.44	18.45	11.73	14.02	9.15	3.86	3.14	4.43	3.57	4.29	3.71	1.57	1.28	99.71
< 110	.00	.00	.00	.00	.00	.00	.28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.28
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.43	3.43	5.15	9.44	18.45	11.73	14.30	9.15	3.86	3.14	4.43	3.57	4.29	3.71	1.57	1.28	

Calm : .00 %

Total # Operational Hours : 699

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	17	24	36	66	129	82	98	64	27	22	31	25	30	26	11	9	697
< 110							2										2
< 210																	
>= 210																	
Totals	17	24	36	66	129	82	100	64	27	22	31	25	30	26	11	9	

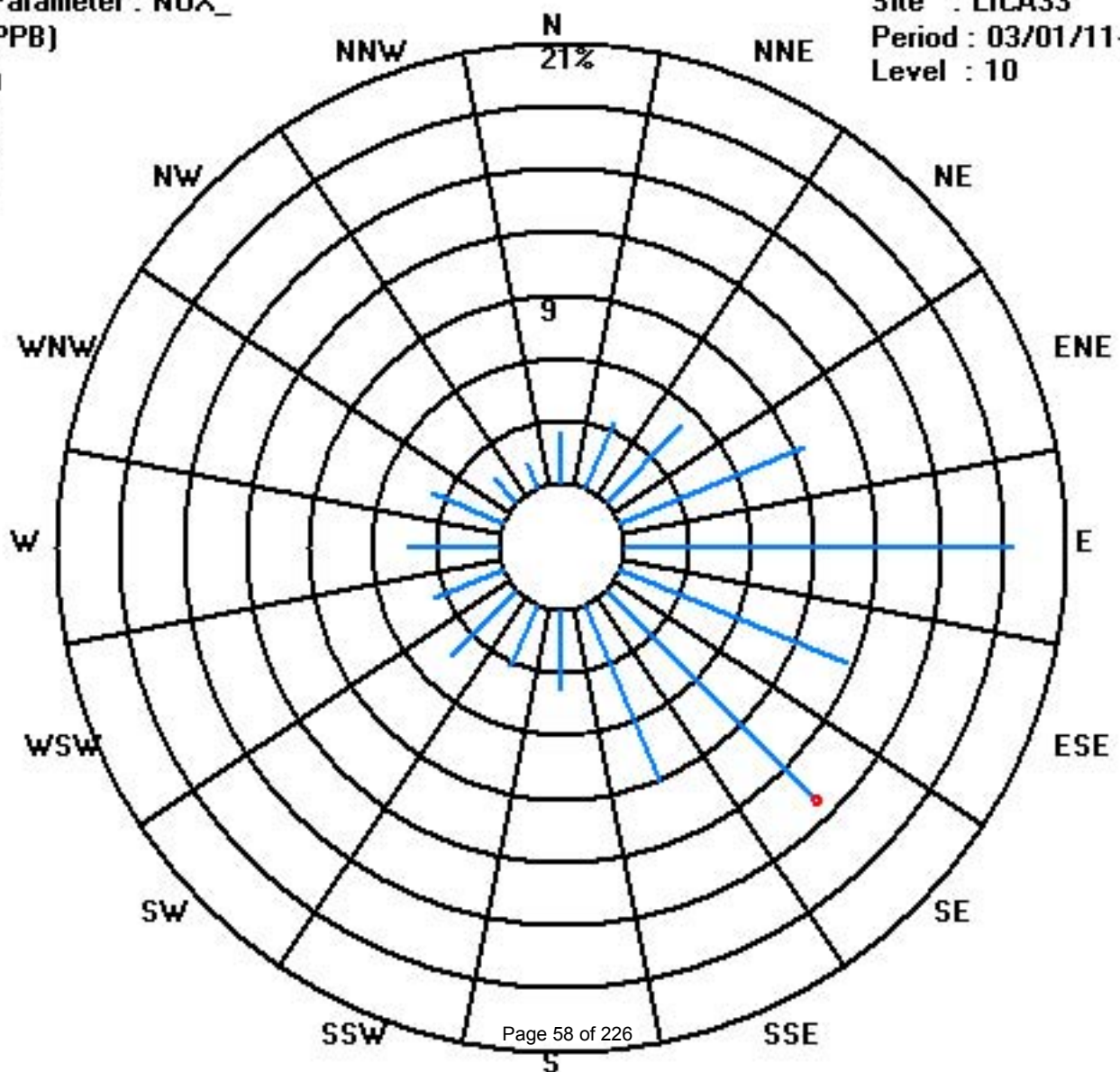
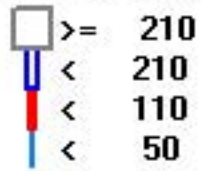
Calm : .00 %

Total # Operational Hours : 699

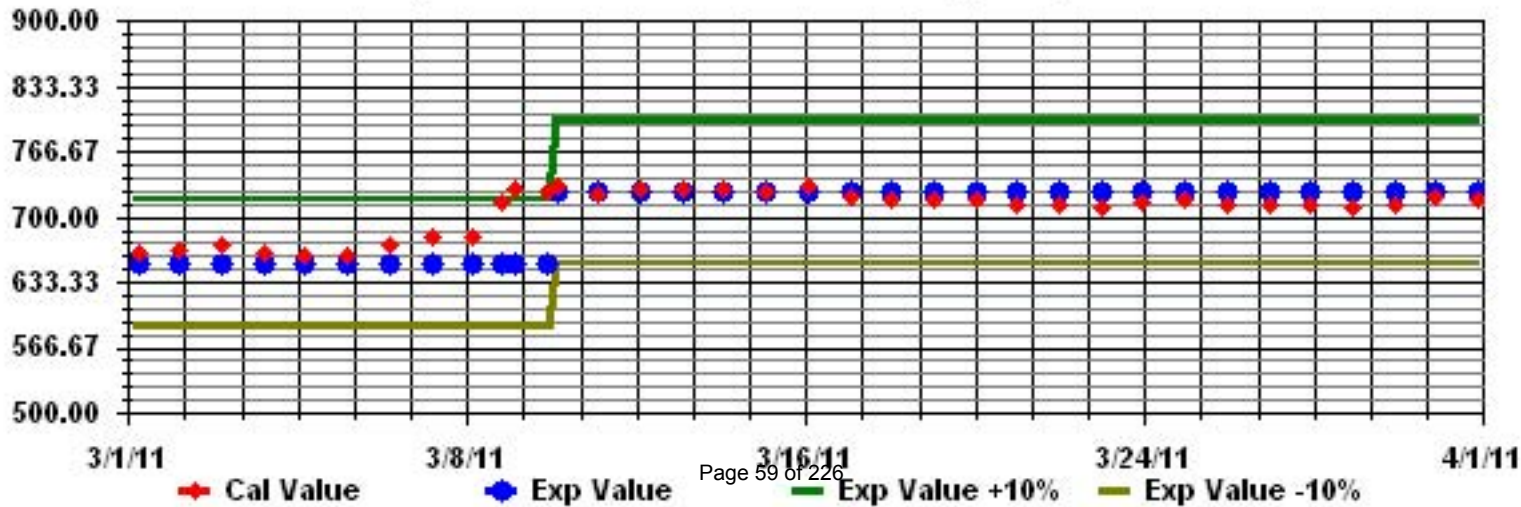
Class Limits (PPB)

Period : 03/01/11-03/31/11

Level : 10



Calibration Graph for Site: LICA33 Parameter: NOX_ Sequence: NO2 Phase: SPAN



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2011

OZONE (O₃) hourly averages in ppb

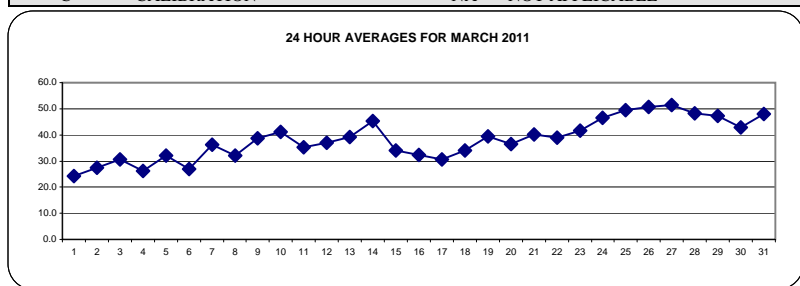
MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	16	16	14	17	16	IZS	15	16	22	25	26	27	28	30	29	29	31	30	27	28	29	29	29	28	31	24.2	24	
2	27	26	26	25	IZS	21	19	18	18	21	24	26	30	31	32	32	31	31	33	33	33	32	30	31	33	27.4	24	
3	31	31	31	IZS	31	33	30	28	24	27	31	32	34	35	35	34	33	32	31	29	28	25	25	35	30.7	24		
4	25	22	IZS	17	26	21	14	18	21	26	32	34	34	34	35	35	34	31	32	28	24	15	11	35	26.3	24		
5	13	IZS	21	18	29	32	34	34	35	36	36	36	37	38	39	39	38	37	35	35	33	30	26	25	39	32.0	24	
6	IZS	19	10	14	15	13	11	14	18	27	33	34	35	36	37	38	38	37	35	34	31	32	30	IZS	38	26.9	24	
7	32	27	27	29	25	32	26	31	36	37	38	40	40	42	43	44	44	43	43	43	40	39	IZS	33	44	36.3	24	
8	31	30	31	27	23	23	22	19	24	30	34	35	37	38	39	41	42	42	38	36	37	IZS	30	27	42	32.0	24	
9	28	31	30	29	28	25	25	24	27	33	39	44	47	50	50	49	48	45	47	50	IZS	47	48	48	50	38.8	24	
10	52	53	51	50	45	42	35	37	40	40	40	40	41	40	C	C	C	C	36	IZS	35	36	34	35	53	41.2	24	
11	34	34	35	37	37	37	35	36	37	37	37	37	37	37	38	38	37	36	IZS	33	28	30	31	31	38	35.2	24	
12	28	29	31	34	35	34	32	30	32	34	35	39	40	42	42	43	44	IZS	44	42	41	42	41	37	44	37.0	24	
13	35	36	32	35	35	31	26	22	30	34	39	42	44	46	51	52	IZS	51	49	45	43	41	40	43	52	39.2	24	
14	42	43	45	48	50	49	48	46	45	45	47	48	49	50	49	IZS	47	46	44	43	42	40	37	37	50	45.2	24	
15	37	27	32	34	32	28	25	24	23	23	32	36	37	39	IZS	43	43	42	41	40	40	39	34	33	43	34.1	24	
16	33	34	34	35	35	35	35	33	34	33	34	34	34	IZS	33	33	33	31	29	29	29	29	26	26	35	32.2	24	
17	22	28	29	30	30	30	30	29	29	30	31	31	IZS	34	35	35	34	34	33	32	31	31	28	29	35	30.7	24	
18	28	28	29	24	21	22	18	21	21	28	31	IZS	36	39	41	46	48	46	43	40	44	45	44	42	48	34.1	24	
19	34	37	35	33	32	30	33	30	39	41	IZS	42	46	51	53	54	54	48	40	42	39	34	36	26	54	39.5	24	
20	33	30	31	33	27	30	34	36	37	IZS	39	39	39	40	41	42	40	38	38	39	39	39	39	39	42	36.6	24	
21	41	40	41	42	42	42	41	39	IZS	36	35	35	35	36	38	40	43	44	44	43	42	42	41	41	44	40.1	24	
22	40	40	39	39	39	39	38	IZS	37	37	36	36	37	37	37	37	37	38	39	40	43	43	43	42	43	38.8	24	
23	41	40	34	37	37	35	IZS	36	37	40	42	44	45	40	47	46	45	45	44	45	44	44	44	43	47	41.5	24	
24	42	42	41	41	42	IZS	43	43	43	44	45	46	47	48	49	49	50	51	51	51	52	51	49	48	52	46.4	24	
25	50	49	48	47	IZS	42	46	47	47	47	48	50	52	52	53	52	51	51	50	50	51	51	51	50	53	49.3	24	
26	50	51	51	IZS	49	48	47	47	47	47	47	48	50	51	52	53	53	53	53	53	53	54	55	54	55	50.7	24	
27	53	53	IZS	53	53	53	53	54	50	51	53	52	52	50	51	50	49	51	49	49	50	50	51	52	54	51.4	24	
28	53	IZS	53	52	52	51	50	50	48	42	37	44	48	48	48	47	47	47	47	48	50	50	50	48	47	53	48.3	24
29	IZS	50	50	50	50	49	49	48	48	48	47	47	48	47	47	47	45	45	45	46	47	45	44	IZS	50	47.4	24	
30	42	42	42	42	42	42	42	42	42	43	44	43	44	43	44	43	43	44	43	43	44	45	IZS	42	45	42.9	24	
31	39	41	45	46	47	47	45	45	46	49	49	50	50	51	51	52	52	50	49	52	50	IZS	48	48	52	47.9	24	
HOURLY MAX	53	53	53	53	53	53	53	54	50	51	53	52	52	52	53	54	54	53	53	53	53	54	55	54				
HOURLY AVG	35.6	35.5	35.1	35.1	35.3	35.0	33.4	33.2	34.6	36.4	38.0	39.7	41.1	41.8	42.7	42.9	42.6	42.2	41.1	41.0	39.9	39.4	37.8	37.0				

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

OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 82 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	707					
MAXIMUM 1-HR AVERAGE:	55	PPB	@ HOUR(S)	22	ON DAY(S)	26
MAXIMUM 24-HR AVERAGE:	51.4	PPB			ON DAY(S)	27
					VAR-VARIOUS	
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME	100.0	%	
STANDARD DEVIATION	9.30		MONTHLY AVERAGE	38.19	PPB	

01 Hour Averages



— LICA33 03_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2011

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	18	19	17	19	19	IZS	19	20	24	26	26	28	30	31	29	31	31	31	29	29	29	29	29	29	31	25.7	24	
2	29	28	27	26	IZS	24	20	19	20	23	26	28	31	31	32	32	33	32	34	34	34	33	32	32	34	28.7	24	
3	32	32	33	IZS	34	34	33	31	26	29	34	33	34	35	35	35	35	34	34	32	32	31	30	29	35	32.5	24	
4	29	26	IZS	23	30	26	21	22	25	31	34	35	34	35	35	36	36	35	35	34	34	29	20	17	36	29.7	24	
5	16	IZS	23	25	30	34	35	35	36	36	37	36	37	39	39	39	39	38	36	36	34	33	28	27	39	33.4	24	
6	IZS	23	17	18	17	15	12	16	21	32	34	35	36	37	38	39	39	38	37	36	33	35	31	IZS	39	29.0	24	
7	33	33	31	31	31	33	34	35	37	38	39	40	42	43	44	44	45	44	44	44	41	41	IZS	35	45	38.3	24	
8	33	33	33	29	25	25	23	22	29	36	36	37	38	39	41	42	43	44	41	39	38	IZS	35	33	44	34.5	24	
9	33	33	35	31	30	27	27	27	29	36	43	46	49	51	50	50	49	47	48	51	IZS	50	50	51	51	41.0	24	
10	53	53	52	51	51	49	42	41	42	41	41	42	42	41	C	C	C	C	38	IZS	36	37	35	35	53	43.3	24	
11	35	35	36	38	39	38	37	37	38	38	37	38	38	38	39	39	38	37	IZS	34	34	34	34	34	32	39	36.7	24
12	31	32	34	34	35	35	32	31	34	35	37	40	41	42	43	44	45	IZS	45	44	42	43	43	43	38	45	38.3	24
13	37	37	38	37	38	38	36	27	33	35	42	43	45	49	52	52	IZS	52	50	49	45	43	45	45	52	42.1	24	
14	43	44	47	50	50	49	48	48	46	46	48	49	50	51	51	IZS	48	47	45	44	43	41	40	40	51	46.4	24	
15	38	38	35	35	33	31	28	26	26	28	34	38	41	M	IZS	44	43	43	42	41	41	40	37	34	44	36.2	23	
16	34	34	35	35	36	36	35	35	34	34	34	35	35	IZS	34	34	33	33	31	31	31	31	30	29	36	33.4	24	
17	29	30	30	31	31	31	31	30	31	31	31	32	IZS	35	35	35	35	35	34	32	32	32	30	30	35	31.9	24	
18	29	29	30	30	23	24	22	24	25	30	32	IZS	37	40	43	48	49	49	44	42	46	46	45	44	49	36.1	24	
19	41	39	36	35	35	32	37	38	40	42	IZS	45	48	53	53	55	55	52	45	47	45	39	40	35	55	42.9	24	
20	39	38	36	36	35	33	36	38	39	IZS	40	40	40	40	42	42	42	40	39	39	39	39	39	41	42	38.8	24	
21	42	41	42	43	42	43	42	41	IZS	37	36	35	35	38	40	42	44	44	45	44	43	42	42	41	45	41.0	24	
22	40	40	40	40	40	40	39	IZS	37	37	37	36	37	37	37	38	38	39	39	43	44	44	43	42	44	39.4	24	
23	42	42	36	38	38	36	IZS	37	39	42	43	45	46	48	48	47	47	47	45	45	45	45	45	44	48	43.0	24	
24	43	43	43	43	42	IZS	44	44	44	45	46	47	48	48	49	50	52	52	53	53	53	52	50	50	53	47.5	24	
25	50	50	49	48	IZS	44	48	48	47	47	49	51	52	52	53	53	52	52	51	51	52	52	52	51	53	50.2	24	
26	51	52	51	IZS	50	49	48	47	47	47	48	49	50	53	53	54	54	54	54	53	54	55	55	55	55	51.4	24	
27	54	53	IZS	53	53	53	54	54	54	53	53	53	51	51	51	50	52	51	50	50	50	51	52	53	54	52.3	24	
28	53	IZS	53	53	52	52	51	51	49	48	45	48	48	49	49	48	47	48	49	50	51	51	51	48	53	49.7	24	
29	IZS	51	50	50	50	50	49	49	48	48	48	48	48	48	48	47	46	46	45	47	47	46	44	IZS	51	47.9	24	
30	42	42	43	42	42	42	43	43	43	44	44	44	44	44	44	44	44	45	45	43	45	45	IZS	44	45	43.5	24	
31	43	42	47	48	48	48	47	47	48	50	50	51	52	53	52	53	53	52	52	53	52	IZS	50	49	53	49.6	24	
HOURLY MAX	54	53	53	53	53	53	54	54	54	53	53	53	53	53	53	55	55	54	54	53	54	55	55	55				
HOURLY AVG	37.7	37.7	37.2	37.0	37.2	36.9	35.8	35.4	36.4	38.2	39.5	40.9	42.0	43.1	43.4	43.7	43.6	43.5	43.5	42.7	42.3	41.5	41.0	39.9	39.1			

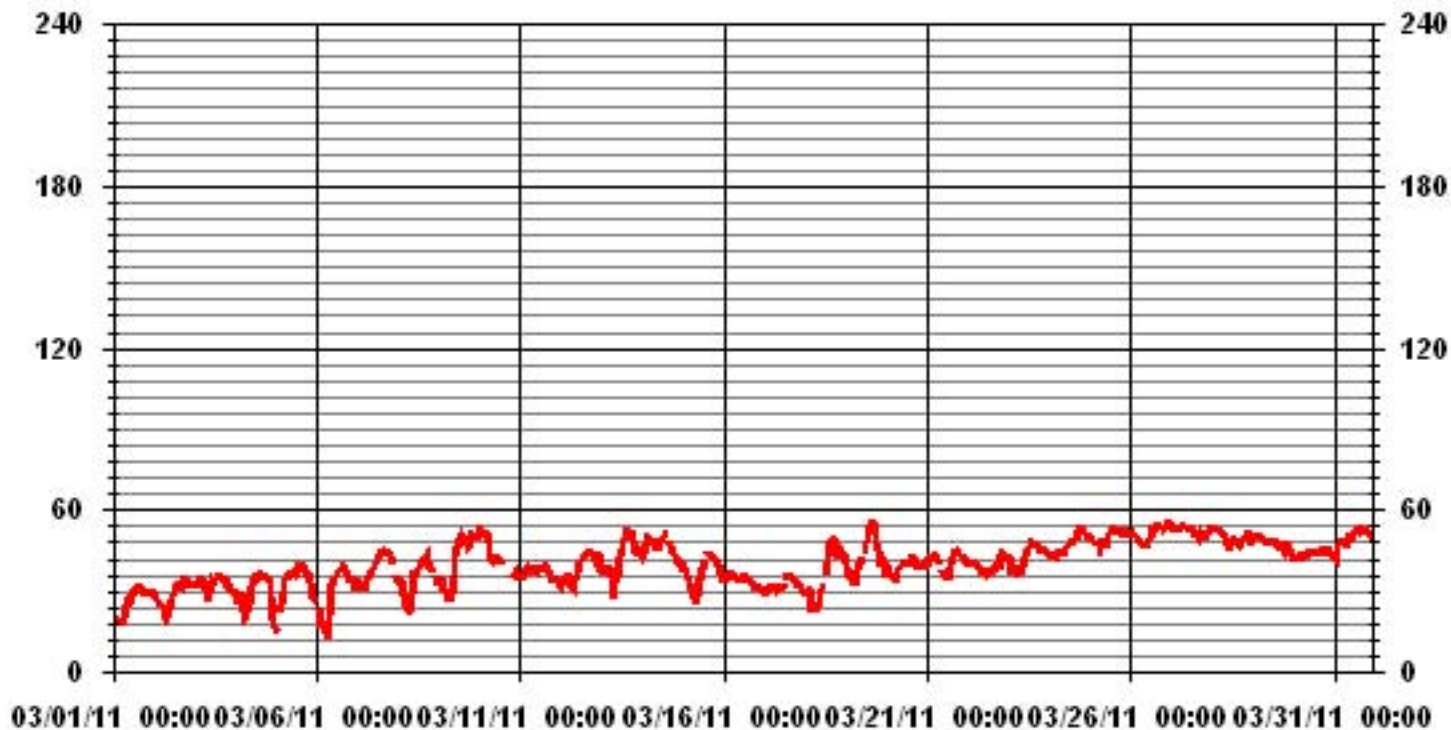
STATUS FLAG CODES

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:	706					
MAXIMUM INSTANTANEOUS VALUE:	55	PPB	@ HOUR(S)	VAR	ON DAY(S)	26
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION	8.71					

01 Hour Averages



— LICA33 O3MAX PPB

LICA33
 O3_ / WDR Joint Frequency Distribution (Percent)

March 2011

Distribution By % Of Samples

Logger Id : 33
 Site Name : LICA33
 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	2.40	3.81	5.09	9.05	17.39	7.21	10.32	7.49	3.53	3.11	4.38	3.11	3.96	2.97	1.55	1.27	86.70
< 110	.00	.00	.00	.56	1.13	4.52	3.81	1.55	.28	.00	.00	.42	.28	.70	.00	.00	13.29
< 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	2.40	3.81	5.09	9.61	18.52	11.73	14.14	9.05	3.81	3.11	4.38	3.53	4.24	3.67	1.55	1.27	

Calm : .00 %

Total # Operational Hours : 707

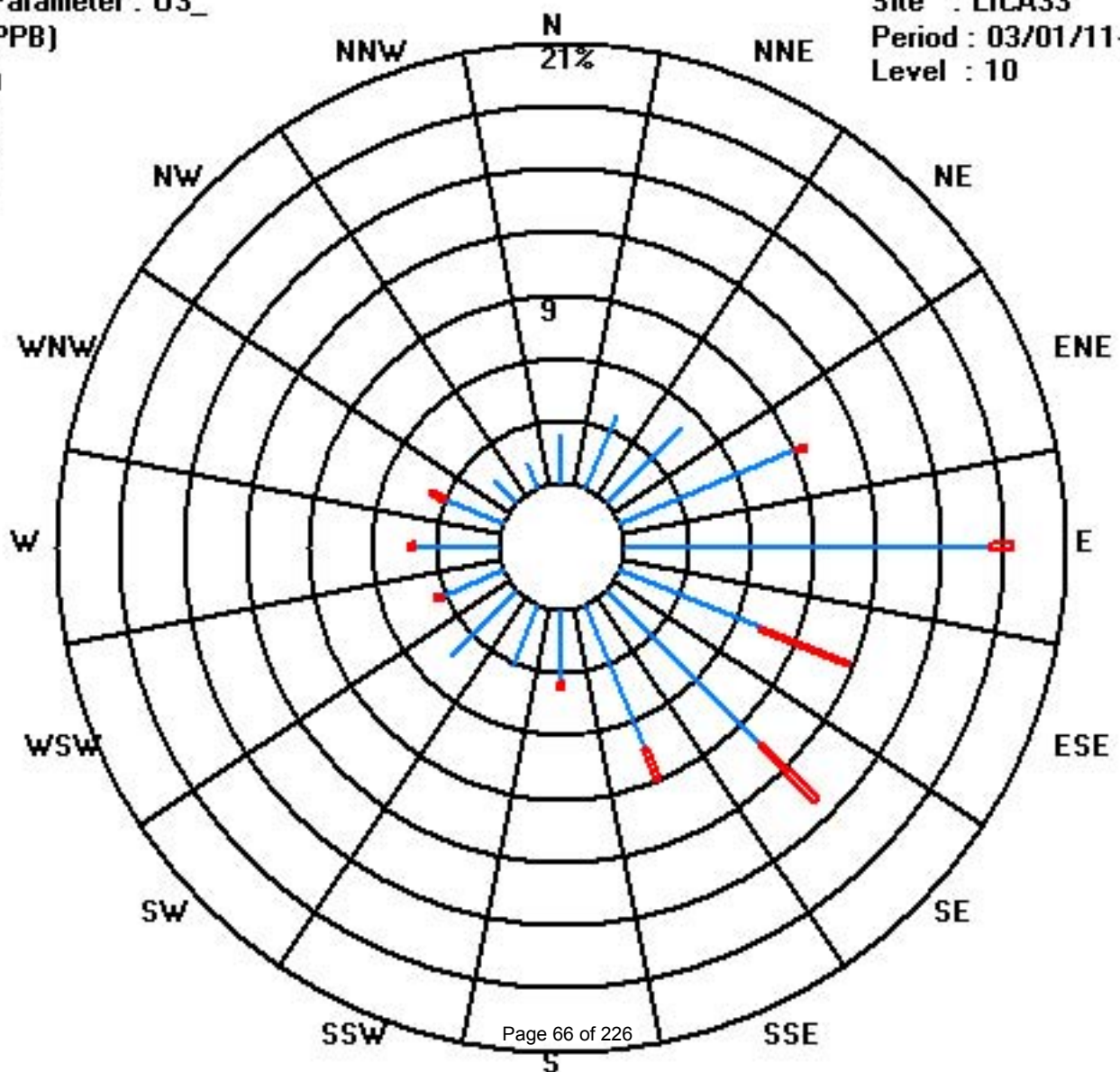
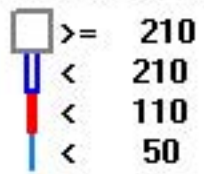
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	17	27	36	64	123	51	73	53	25	22	31	22	28	21	11	9	613
< 110				4	8	32	27	11	2			3	2	5			94
< 210																	
>= 210																	
Totals	17	27	36	68	131	83	100	64	27	22	31	25	30	26	11	9	

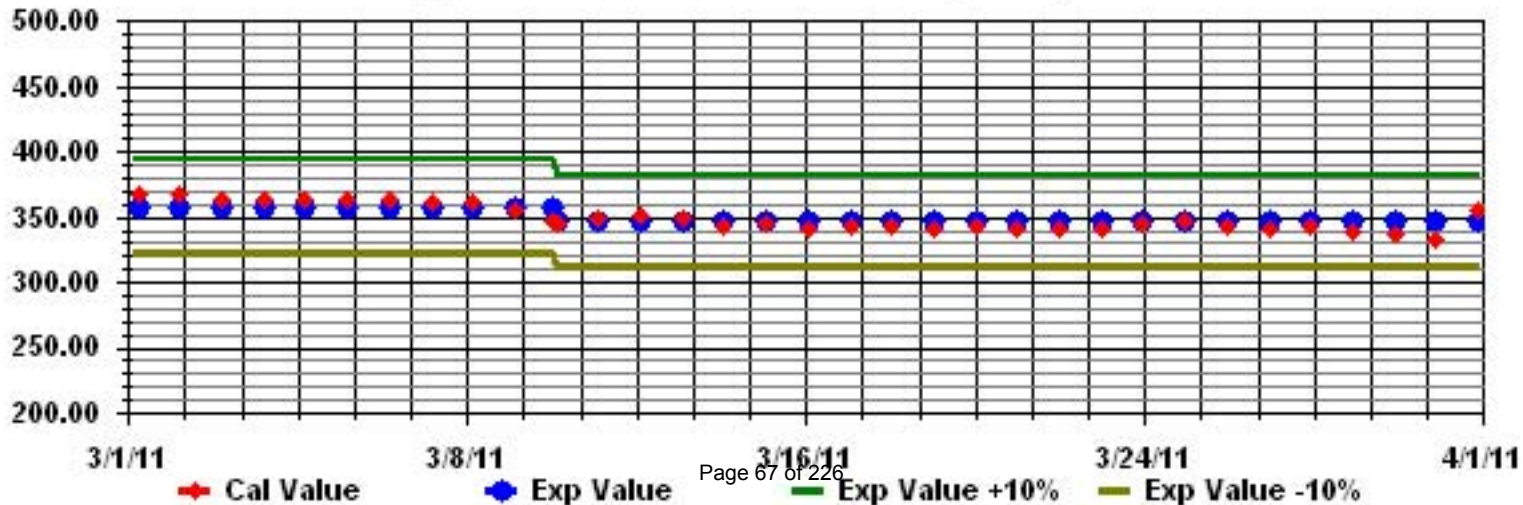
Calm : .00 %

Total # Operational Hours : 707

Class Limits (PPB)



Calibration Graph for Site: LICA33 Parameter: 03_ Sequence: 03 Phase: SPAN



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

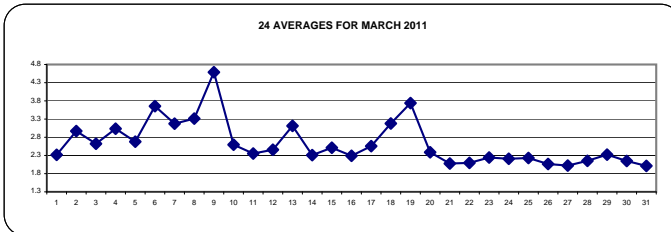
MARCH 2011

TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	2.9	2.8	2.6	2.8	2.8	IZS	2.5	2.4	2.3	2.4	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.9	2.3	24
2	2.2	2.3	2.5	2.5	IZS	4.5	5.5	4.2	4.5	4.9	4.5	3	2.6	2.7	2.3	2.3	2.3	2.1	2.1	2.2	2.1	2.3	2.6	2.1	5.5	3.0	24	
3	2.2	2.1	2.2	IZS	2.3	2.3	2.4	2.6	3	2.7	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.6	2.2	2.3	3.1	3.7	5.4	4.2	5.4	2.6	24	
4	3.8	4.1	IZS	6	3.4	2.8	5.2	4.7	3.1	3.3	2.5	2.2	2.2	2.3	2.2	2.2	2.2	2.3	2.2	2.4	2.5	2.9	3.1	6.0	3.0	24		
5	4.7	IZS	3.7	4.7	2.5	2.5	2.4	2.5	2.6	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.4	2.8	2.4	2.3	2.4	2.7	2.5	2.6	4.7	2.7	24	
6	IZS	5.4	6.9	4.9	4.4	4.8	5.2	6	6.2	4.4	2.7	2.7	2.5	2.5	2.3	2.3	2.2	2.3	2.4	2.4	2.6	3	IZS	6.9	3.7	24		
7	3.3	5	5	5.6	5.3	3.7	3.9	3.4	3	2.8	2.8	2.6	2.5	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.5	2.8	IZS	2.9	5.6	3.2	24	
8	3.1	4.1	3.8	3.6	5	3.6	4.4	3.9	4.2	3.8	3.1	3	2.7	2.7	2.6	2.4	2.3	2.4	2.5	2.7	3.2	IZS	3.3	3.8	5.0	3.3	24	
9	3.9	4.8	5.5	9.6	7.3	6.3	4.4	4.7	5.6	C	M	C	C	C	C	3.1	3.1	3.5	3.3	3	IZS	3.5	3.3	3.1	9.6	4.6	23	
10	2.7	2.6	2.6	2.7	3.6	4	5.1	2.8	2.2	2.1	2.1	2.1	3.7	2.7	2	2	2.1	2.1	2.1	2.1	IZS	2.2	2.1	2.1	2	5.1	2.6	24
11	2	2	2.1	2.1	2.3	2.5	2.6	2.3	2.3	2.2	2.8	2.5	2.2	2.1	2.1	2.1	2.1	2.1	IZS	2.2	2.9	3.2	2.6	2.8	3.2	2.4	24	
12	3	3.1	2.7	2.5	2.2	2.4	2.9	2.8	2.7	2.6	2.5	2.2	2.3	2.3	2.3	2.3	2.1	IZS	2.2	2.1	2.1	2.2	2.4	2.6	3.1	2.5	24	
13	3	3.2	3.6	2.9	2.8	3.1	4.4	5.5	3.4	3.3	2.6	2.4	2.4	2.6	2.3	2.5	IZS	2.3	2.4	3.8	3.6	3.3	3.3	2.9	5.5	3.1	24	
14	2.7	2.6	2.6	2.4	2.3	2.2	2.2	2.1	2.2	2.4	2.2	2	2.3	2.1	2.1	IZS	2.1	2.2	2.2	2.4	2.3	2.4	2.5	2.6	2.7	2.3	24	
15	2.5	2.8	2.5	2.5	2.6	3.3	2.9	3	2.7	2.5	2.4	2.4	2.3	2.4	IZS	2.1	2.5	2.4	2.3	2.4	2.2	2.3	2.4	2.4	3.3	2.5	24	
16	2.4	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2	2.1	2	2.1	2.1	2.1	IZS	2	2.7	4.7	2.1	2.2	2.2	2.2	2.2	2.3	2.3	4.7	2.3	24
17	2.9	2.7	2.5	2.3	2.2	2.3	2.4	2.5	2.3	2.3	2.3	IZS	2.3	2.3	2.3	2.3	2.4	2.6	2.9	3	3.1	3.3	3.3	3.3	3.3	2.6	24	
18	3.4	3.3	3.2	4.4	4.1	4.6	5	5.5	4.7	3	2.6	IZS	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.6	2.6	2.6	3.2	5.5	3.2	24	
19	3.4	4.4	4.8	5	5.2	5.8	3.8	3.3	3	3	IZS	3	3.1	2.7	2.4	2.4	2.6	3.3	5.2	3.8	3	3.2	3.5	6.1	6.1	3.7	24	
20	3.2	3.4	2.8	2.4	2.7	2.6	2.3	2.3	2.3	IZS	2.3	2.2	2.3	2.3	2.2	2.1	2.1	2.2	2.1	2.2	2.3	2.2	2.1	3.4	2.4	2.4	24	
21	2.1	2.2	2.1	2.1	2.2	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	2.1	2.1	2.2	2.1	24	
22	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2	2	2.1	2	2.3	2.1	24	
23	2.1	2.6	3	2.4	2.5	2.4	IZS	2.2	2.4	2.2	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	3.0	2.2	24	
24	2.2	2.3	2.3	2.5	2.3	IZS	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.1	2	2.1	2.1	2.1	2.2	2.2	2.2	2.5	2.2	24	
25	2.1	2.2	2.4	2.8	IZS	3.4	2.5	2.3	2.3	2.3	2.2	2.2	2.1	2	2	2	2	2	2	2.1	2.1	2.1	2.1	3.4	2.2	2.4	24	
26	2.1	2.1	2.1	IZS	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2.2	2.1	24	
27	2	2	IZS	2	2	2	2	2	2.2	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2.2	2.0	24	
28	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	24	
29	IZS	2.2	2.3	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.4	2.4	2.3	2.2	2.2	2.2	2.1	2.2	2.2	2.3	2.3	2.4	2.3	IZS	2.5	2.3	24	
30	2.2	2.1	2.1	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	2.2	2.2	2.1	2.1	2.1	2.1	IZS	2.2	2.2	2.1	24	
31	2.2	2.1	2	2.1	2	2	2	2	2.1	2	2.1	2	2	2	1.9	1.9	1.9	2	2	1.9	2	IZS	2.1	2	2.2	2.0	24	
HOURLY MAX	4.7	5.4	6.9	9.6	7.3	6.3	5.5	6.0	6.2	4.9	4.5	3.0	3.7	2.7	2.6	3.1	4.7	3.5	5.2	3.8	3.6	3.7	5.4	6.1				
HOURLY AVG	2.7	2.9	3.0	3.2	3.0	3.0	3.1	3.0	2.9	2.6	2.4	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.6	2.7					

STATUS FLAG CODES

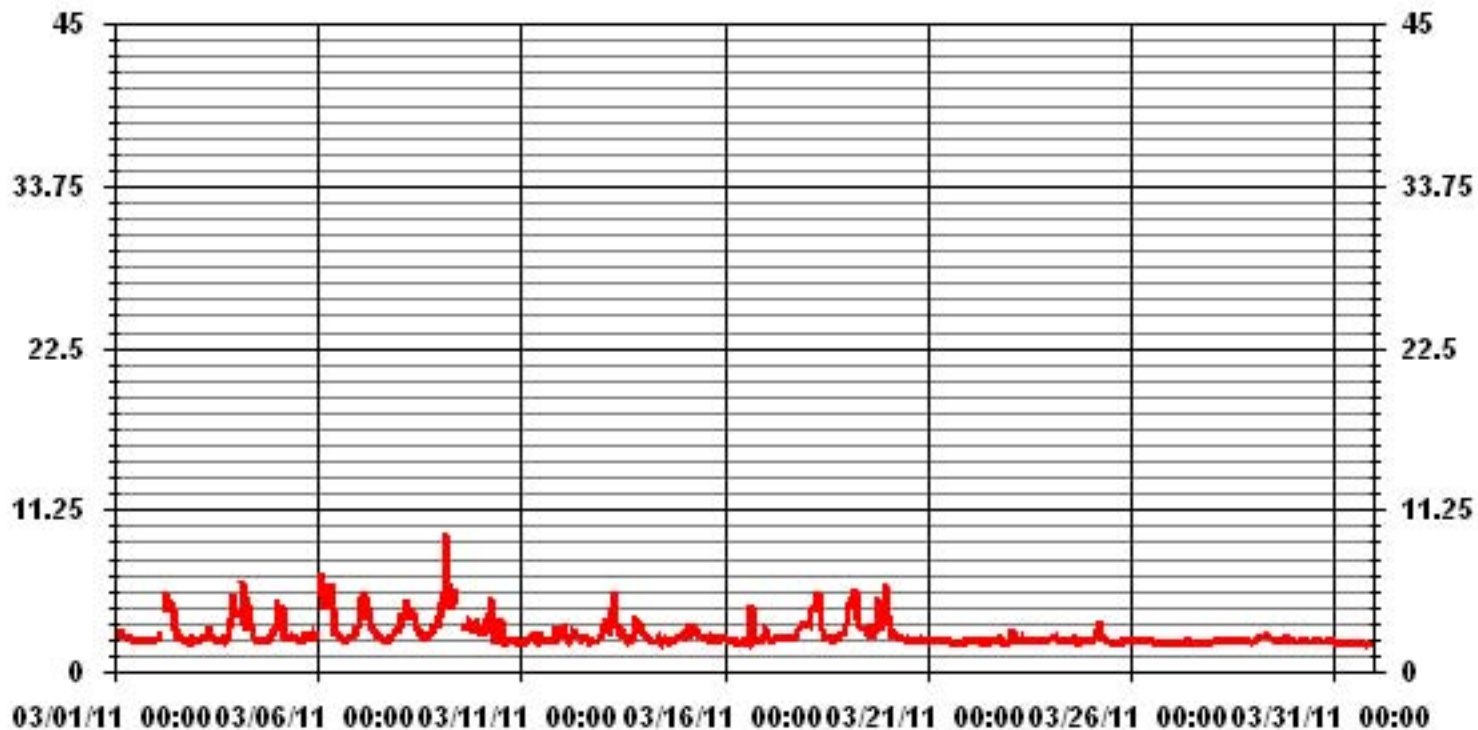
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	705					
MAXIMUM 1-HR AVERAGE:	9.6	PPM	@ HOUR(S)	3	ON DAY(S)	9
MAXIMUM 24-HR AVERAGE:	4.6	PPM			ON DAY(S)	9
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.88		MONTHLY AVERAGE:	2.61	PPM	

01 Hour Averages



— LICA33 THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2011

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1		3.8	3.3	2.7	2.9	2.8	IZS	2.7	2.7	2.4	2.5	2.5	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.2	3.8	2.4	24		
2		3.3	4.9	5.5	6.3	IZS	11.7	31.6	6.5	14.6	6.7	8.2	7	6.8	5.8	4.7	3.8	3.9	2.7	2.4	2.5	2.3	4.1	5.7	2.4	31.6	6.7	24	
3		2.8	3.3	5.7	IZS	3	2.9	3.2	3.1	3.1	3	2.5	2.2	2.3	2.2	2.2	2.2	2.2	4.7	2.3	2.5	30.5	26.9	18.7	6.6	30.5	6.0	24	
4		8	7.9	IZS	9.3	7.1	4.3	8.6	8.4	6.1	5.3	3.2	2.5	2.7	2.9	2.3	2.2	2.2	2.2	7.6	3	5	3.2	4.8	3.9	9.3	4.9	24	
5		53.9	IZS	6.7	12.8	3.3	4	3.4	4.3	3.9	4.4	2.9	2.8	2.4	2.3	2.2	2.2	9.1	5.8	2.6	2.4	4.3	5	5.4	3.3	53.9	6.5	24	
6		IZS	14.4	10.8	7.2	11.6	8.8	9.2	8.8	10.9	7	3.2	3.1	3.1	5.9	2.8	3.2	2.5	3.2	2.9	3.2	2.5	3.3	3.4	IZS	14.4	6.0	24	
7		3.7	7.3	7.2	7.2	7.1	7	7	6.2	3	3	2.8	2.7	2.7	2.4	2.4	2.3	2.3	2.3	2.3	2.4	2.6	5.6	IZS	3.9	7.3	4.1	24	
8		3.8	25.9	8	5.9	10.2	6.4	8.2	5.5	10.7	9.2	4.2	3.6	3.3	3.4	3.4	2.7	2.4	2.5	8	5.4	3.4	IZS	5.3	7.3	25.9	6.5	24	
9		7.8	8.7	8.5	18.5	12.5	9.6	12.9	10.7	10.2	C	M	C	C	C	C	3.1	3.2	10.4	4.4	3.3	IZS	5.2	4.9	3.9	18.5	8.1	23	
10		3.7	4.3	4.9	5.7	6.4	5.2	9.2	3.8	3.3	2.5	2.5	2.7	31.6	12.7	2.4	2.5	2.6	2.5	2.6	IZS	2.6	2.3	2.5	2.2	31.6	5.2	24	
11		2.1	2.1	2.5	2.4	3.3	3.4	3.5	3.2	3.2	2.9	11.9	7.2	4.4	2.3	2.1	2.1	2.2	2.2	IZS	3.5	8	13.6	5.6	5.5	13.6	4.3	24	
12		8.8	7	3.1	2.7	3.1	2.9	3.5	3	3.1	3	3	2.3	2.4	2.4	2.3	2.4	2.2	IZS	2.6	2.2	2.4	2.4	5.5	4.7	8.8	3.3	24	
13		4	3.8	6.2	6	16.4	5.4	8.2	10.5	6	7.1	2.9	2.8	3	3.1	2.7	5.8	IZS	2.4	2.7	4.8	8.6	5.7	4.9	3.6	16.4	5.5	24	
14		3	2.7	2.9	2.8	2.9	3.2	3.3	2.1	3.5	4	3.8	2.3	5.5	2.3	2.2	IZS	2.2	2.2	2.3	2.4	2.4	2.5	3.3	3.4	5.5	2.9	24	
15		2.6	4.4	3.1	3.3	5.5	6.9	6	16.2	5.7	3.2	2.9	4.8	3.2	M	IZS	2.9	4.3	3.2	3.7	3.4	3.1	3	3	3.1	16.2	4.4	23	
16		3.2	3.2	3.2	2.9	2.8	2.5	2.9	2.5	2.8	3.2	2.7	3.4	2.8	IZS	2.2	19	26.2	2.5	2.8	2.7	2.6	2.7	3.2	3.8	26.2	4.6	24	
17		4.6	6.1	3.4	2.8	2.6	2.8	2.8	3.1	2.9	2.7	2.7	3	IZS	2.8	2.7	2.3	2.4	2.6	2.8	3	3.1	3.3	3.3	3.4	6.1	3.1	24	
18		4.1	3.5	5.1	8.6	5.3	9.4	5.8	19.6	11.2	5.2	3.1	IZS	2.7	3	2.8	3.2	2.2	2.4	2.3	2.5	2.7	3.3	4.1	5.3	19.6	5.1	24	
19		4.9	5.8	6.5	6.2	12	7.4	6.2	7	3.1	3.1	IZS	5	5.1	4.3	2.8	3.9	5.4	4.5	10.9	11.1	5.6	4.1	6.7	10.4	12	6.2	24	
20		4.7	4.9	8.2	3.9	4.2	5.7	3.7	3	3	IZS	3	3	3.1	3	2.8	2.7	2.4	6.6	2.5	2.6	2.7	2.9	3	2.6	8.2	3.7	24	
21		2.2	2.4	2.3	2.3	3.1	2.4	2.4	2.2	IZS	2.2	2.4	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.2	3.1	2.3	24	
22		2.2	2.2	2.2	2.2	2.2	2.2	2.2	IZS	2.2	2.2	2.2	2.1	2.2	2.2	2.3	2.3	2.3	2.3	3	2.8	2.1	2.1	2.6	2.4	3	2.3	24	
23		4.4	4.1	5	3	2.7	3.2	IZS	2.4	2.6	2.5	2.5	2.4	2.2	3.9	2.1	2.1	2.2	2.1	2.1	2.1	2.3	4	2.5	2.6	5	2.8	24	
24		3	3.9	2.8	3.1	2.5	IZS	2.4	2.7	4.1	2.3	2.8	2.9	2.7	3.7	3.3	3.6	2.5	2.5	2.3	2.3	2.2	2.2	2.2	2.3	4.1	2.8	24	
25		2.4	2.6	2.9	3.2	IZS	4.1	2.9	2.5	2.6	2.6	2.3	2.5	2.3	2.1	2	2	2.1	2.3	2	2.2	2.2	2.5	2.4	2.1	4.1	2.5	24	
26		2.2	2.3	2.3	IZS	3.9	2.6	3	2.1	2.2	2.2	2.9	2.7	2.2	2.3	2.2	2	2	2	2.1	2.1	2	2.1	2.1	2.2	3.9	2.3	24	
27		2.1	2.2	IZS	2.2	2	2.2	2.2	2.2	2.5	2.3	2.3	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.2	24
28		2.1	IZS	2.1	2.2	2.4	2.3	2.3	2.2	2.2	2.2	2.8	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.3	2.2	2.2	2.8	2.2	24
29		IZS	2.3	2.4	2.5	2.4	2.5	2.5	2.5	2.6	2.5	2.5	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.4	2.4	IZS	2.6	2.4	24
30		2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.2	2.4	2.2	2.6	IZS	3.5	3.5	2.3	24	
31		3.6	2.1	3	2.9	2.7	2.3	2.1	2.4	2.8	2	2.6	2.4	2.3	2.5	2	2	1.9	2.6	2.2	2	2.1	IZS	2.7	2.6	3.6	2.4	24	
HOURLY MAX		54	26	11	19	16	12	32	20	15	9	12	7	32	13	5	19	26	10	11	11	31	27	19	10				
HOURLY AVG		5.5	5.2	4.5	4.9	5.1	4.7	5.5	5.1	4.6	3.6	3.3	3.1	3.9	3.2	2.5	3.2	3.5	3.1	3.2	3.0	4.0	4.3	4.1	3.6				

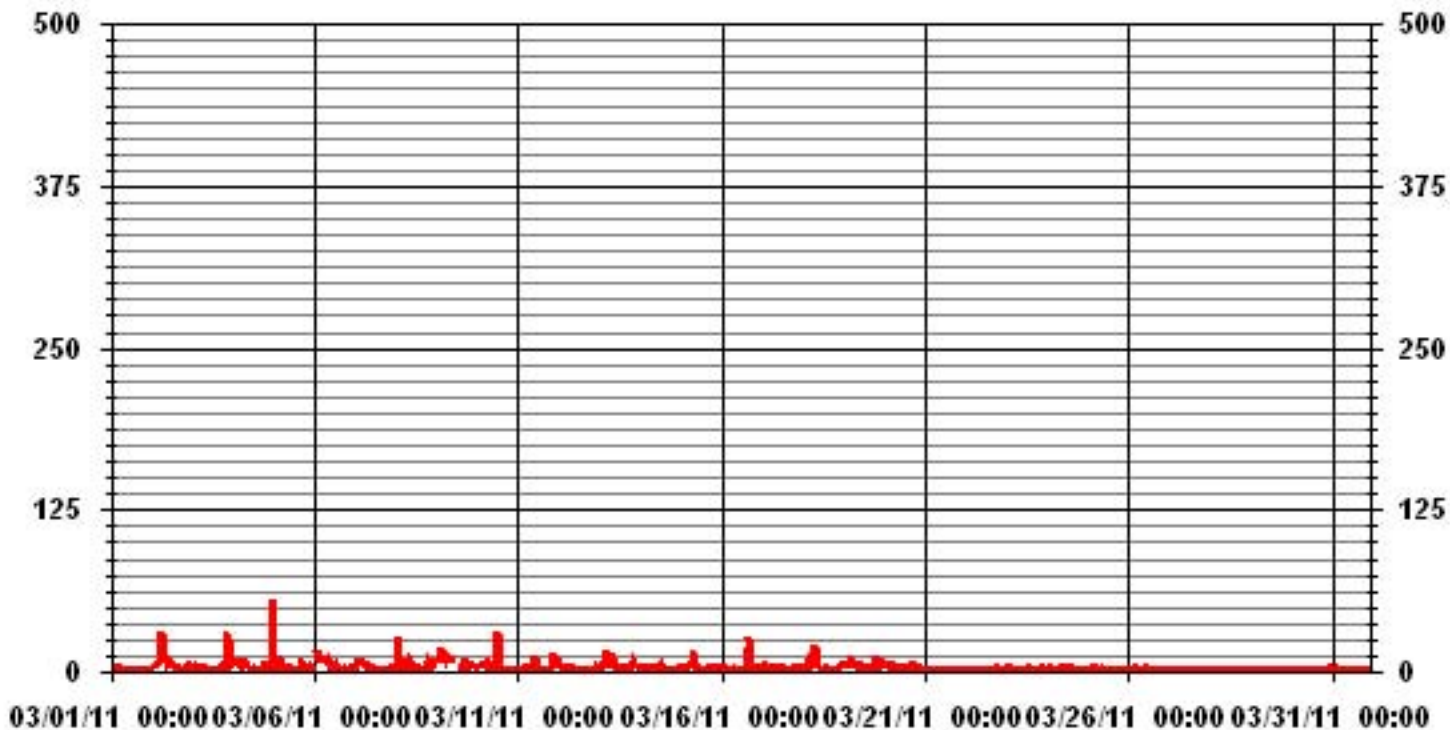
STATUS FLAG CODES

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

NUMBER OF NON-ZERO READINGS:	704					
MAXIMUM INSTANTANEOUS VALUE:	53.9	PPB	@ HOUR(S)	0	ON DAY(S)	5
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION	3.93					

01 Hour Averages



— LICA33 THCMAX PPM

LICA33
 THC / WDR Joint Frequency Distribution (Percent)

March 2011

Distribution By % Of Samples

Logger Id : 33
 Site Name : LICA33
 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	1.27	2.41	4.25	7.09	15.46	10.07	12.05	7.65	2.83	2.69	3.82	3.12	3.68	3.12	.85	.42	80.85
< 10.0	1.13	1.41	1.41	2.26	2.83	1.56	1.98	1.41	.99	.42	.56	.42	.56	.56	.70	.85	19.14
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.41	3.82	5.67	9.36	18.29	11.63	14.04	9.07	3.82	3.12	4.39	3.54	4.25	3.68	1.56	1.27	

Calm : .00 %

Total # Operational Hours : 705

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	9	17	30	50	109	71	85	54	20	19	27	22	26	22	6	3	570
< 10.0	8	10	10	16	20	11	14	10	7	3	4	3	4	4	5	6	135
< 50.0																	
>= 50.0																	
Totals	17	27	40	66	129	82	99	64	27	22	31	25	30	26	11	9	

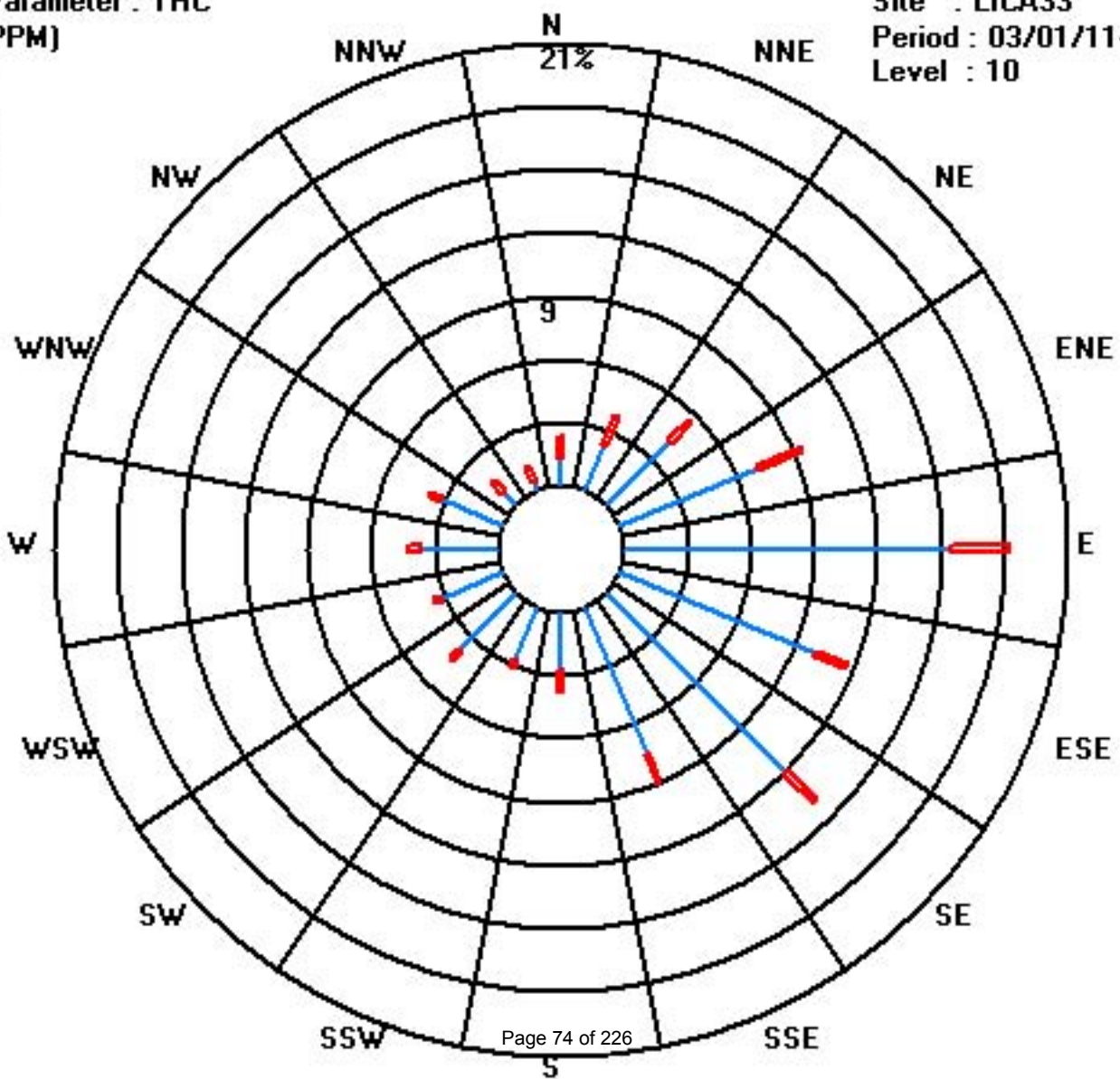
Calm : .00 %

Total # Operational Hours : 705

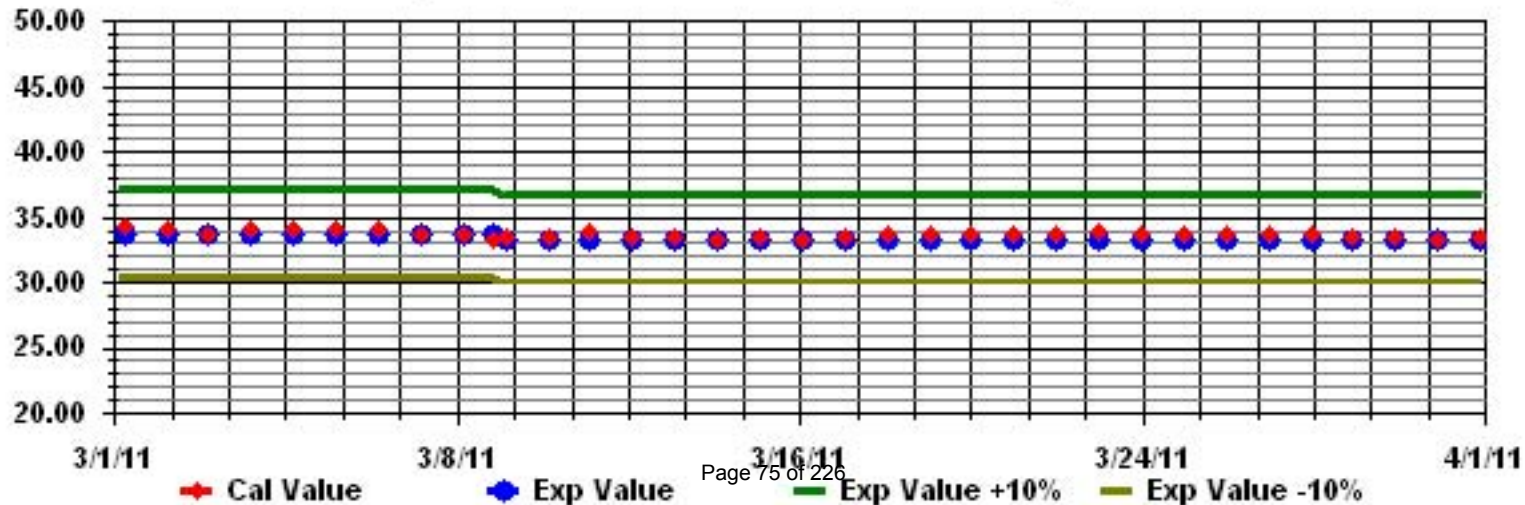
Class Limits (PPM)

Period : 03/01/11-03/31/11

Level : 10



Calibration Graph for Site: LICA33 Parameter: THC Sequence: THC Phase: SPAll



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2011

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

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOURLY MAX	HOURLY AVG	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																												
1		9.5	9.5	9.7	9.7	8.8	5.2	5	3.9	11.2	9.6	8.4	10.9	12	10.2	6	6.2	12.1	10.4	11	12.3	12.2	9.5	6.9	6.9	12.3	8	24
2		7.4	3.4	4.4	1.8	0.3	1.1	1.3	3.7	1.7	3.1	4.5	6.3	6.9	9.1	12.9	11.7	13.7	18.7	14.9	11.9	12.5	10.6	9.6	8	18.7	6	24
3		7.6	5	2.4	4.5	6	5.5	6.3	6	7.8	7.6	9.4	11.7	11.4	9.6	10.3	9.6	6.4	5.5	4.8	4.6	3.3	3.5	3.1	3.6	11.7	4.6	24
4		3.8	4.9	5.1	0.6	3	4.1	3.6	1.2	1.4	1	3.7	3	3.7	4.6	5	5	4.2	3.1	2.5	3.1	1.9	4	3.2	5.2	5.2	1	24
5		1.9	2.3	2.9	6.3	8.4	8.9	6.8	8.2	10.1	7.2	5.5	4.7	3.6	2.7	3.5	3.6	1.8	0.6	1.7	2.2	1.6	2	1.9	5.2	10.1	4.3	24
6		5.3	4.5	0.5	0.3	0.2	2.1	1.3	1.7	2.2	1.2	1.6	2	3	3.3	4.9	4.7	4.5	4.3	4.5	4.4	6.4	4.4	4.6	3.5	6.4	3.1	24
7		2.6	2.7	4	6.1	4.5	5.9	4.6	6	7.4	9.3	9	7.5	5.3	7	7.1	6.6	10.7	10.1	9.7	7.9	7.2	2.2	2.2	3.1	10.7	6.2	24
8		2.1	3.2	0.8	1.8	1.1	2.8	1.1	1.3	1	1	2.1	3.4	4	4.8	5.4	3.4	4.8	3	3.3	4.7	4.9	4.1	4.1	1.9	5.4	2.9	24
9		1.6	2	2.3	3.4	3	1.4	1.9	1.3	2.1	3.6	2.4	3.4	3.1	4.2	5.9	5.2	5	3	5.6	7	6	8.9	13.2	12.2	13.2	4.5	24
10		13.1	8.7	10.5	6.2	8.2	3.7	6.1	13.9	18.5	17.6	17.8	18.5	16.1	18.1	21.5	20.8	23.4	20.3	19.6	16.3	13.9	15	16.2	17.6	23.4	15.1	24
11		15.4	16.8	14.6	14.1	12.2	12.2	11.4	12.9	13.3	10.6	7	3	3.9	4.9	4.6	7.4	8.5	5.5	2.9	1.8	1.5	2.8	1.8	1.4	16.8	7.9	24
12		3.1	6.7	6.8	7	6.4	6.3	8	8	7.9	11.3	4.3	13.8	21.4	20.2	13.6	17.1	19.4	21	17.2	14.1	11.6	14.4	11.2	9.4	21.4	11.7	24
13		7.9	6.8	5.6	4.6	3	2	3.4	2.2	2.3	2.5	4.6	2.2	4.7	5	5.1	5.5	2.8	6.7	6.8	6.8	7.4	6.7	12.4	10	12.4	5.3	24
14		15	18	22	19.2	19.2	17.1	18.7	18.4	16.3	11.7	11.3	10.9	1.3	9.1	12.7	16.9	18.4	19.1	16.1	15.6	13.1	11.7	9.9	10.2	22.0	14.7	24
15		5.5	2.3	7.4	6.6	3.2	3.3	1.9	1.2	2.6	5.3	1.6	2.8	4	2.5	8	13.3	11.8	14.3	16.5	16.4	18.7	18.4	20.9	20.9	20.9	8.7	24
16		18.5	18.8	17.7	18	19.4	20.1	16.7	17.6	19.6	16.9	16.3	15.9	15.1	16	15	14.1	13.4	12.6	12.3	11.9	12.7	10.9	10.4	8.4	20.1	15.3	24
17		7.1	6.9	7.9	11.4	13	12	10.1	9.6	10.2	11.3	8.5	7.3	7.6	5.9	7.6	6.3	5.8	7.3	8.1	6.4	7.8	4.6	4.9	6.9	13.0	8.1	24
18		5.8	5.4	3.7	2.3	0.7	0.9	0.4	0.4	1.4	1.5	1.6	2.2	1.2	3.1	4.6	5.2	5.3	6.5	6.3	5.2	8.2	3.9	3.3	3.5	8.2	3.4	24
19		2.4	2.1	3.1	2.4	2.4	2.7	3.9	0.7	3.4	3.5	2.4	1.6	3.9	5.3	5.7	0.5	0.7	3.8	2.9	5.8	6.4	2.4	3	4.5	6.4	3.1	24
20		6.6	7.3	9	12.3	9.6	7.2	10.6	12.7	17	22	20.5	19.7	19	18.3	18.5	18.7	17.9	16	18.5	21.5	22.9	20.8	16.8	17.4	22.9	15.9	24
21		19.5	16.2	18.4	18.1	15.3	16.7	18.5	23.2	23.7	23.6	22.3	23.5	21.4	23.3	21.3	24.8	28.9	27	26.3	27.2	28.4	25.4	22.3	19.1	28.9	22.3	24
22		20.9	22.4	21.7	22.6	21.9	22.8	20.8	19.1	20.9	22	22.4	22.9	22.7	19.6	20.4	19.4	18.3	16	10.1	10.5	17.2	17.4	11.6	11.1	22.9	18.9	24
23		5.2	4	5	8.6	8.4	10.1	10.8	12	14.7	12.9	14.2	14.2	12	8.7	15.8	14.4	12.9	15.1	13.7	10.9	11.5	9.7	13.5	6.9	15.8	11.1	24
24		9	7.4	12	11.3	14.5	16.1	15.6	16.8	12.2	14.2	15.4	16.2	14.4	12.7	13.9	14.1	15.1	11.8	11.1	7.9	8.7	9.8	10.3	7.5	16.8	12.4	24
25		8.3	10.1	10.8	11.5	9.5	9.8	10.6	12.8	14.9	15	16.4	14.6	13	14.8	17.4	13.5	15.1	17.1	16.1	13.3	14.8	16.4	15.3	15.6	17.4	13.6	24
26		18.2	17.9	16	15.9	12.3	15.9	14.7	16.1	19.2	16.6	14.5	16.4	17	14.5	22.1	21.2	24.4	24.5	20.1	18.8	17.6	20.6	19.3	16.5	24.5	17.9	24
27		17.3	17.3	18.4	16.6	17.7	15.8	18.9	16.9	13.1	15.3	17.8	16.8	19.3	19.6	16.6	14.3	22.2	18.2	19.2	23.4	19.1	15.1	14.7	19.5	23.4	17.6	24
28		15	15.6	13.9	11.7	10.5	12.4	13.8	14.3	16.4	16.7	15.2	16	18.2	16.1	15.5	14.3	14.3	15.7	14.2	16.1	15.8	13.5	15.2	12.6	18.2	14.7	24
29		12.1	13.7	12.6	12.1	13.1	11.3	11.4	13.7	14.8	14.4	15.7	16.5	16.8	17.1	15.4	15.6	11	10.5	9.4	13.1	13	15.1	13.4	14.4	17.1	13.6	24
30		15	14.7	15.7	14.7	13.2	14.9	14.1	14.8	16.4	17.2	16	13.6	12.8	8.9	9.2	9.9	10	10.4	8.8	7.5	5.4	5.9	14.3	16	17.2	12.5	24
31		11.9	13.5	16.6	15.8	14.4	14	12.3	12.1	15.6	16.7	15.1	15.4	16.6	15.3	22	19.5	21.9	15.3	13.5	15.4	11.5	10.8	15.3	10.6	22.0	15.0	24
HOURLY MAX		20.9	22.4	22.0	22.6	21.9	22.8	20.8	23.2	23.7	23.6	22.4	23.5	22.7	23.3	22.1	24.8	28.9	27.0	26.3	27.2	28.4	25.4	22.3	20.9			
HOURLY AVG		9.5	9.4	9.7	9.6	9.1	9.2	9.2	9.8	10.9	11.0	10.6	10.9	10.8	10.8	11.9	11.7	12.4	12.0	11.2	11.1	11.1	10.3	10.5	10.0			

STATUS FLAG CODES

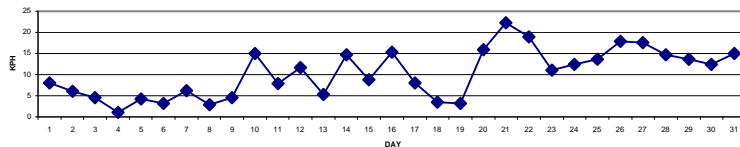
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: September 24, 2009

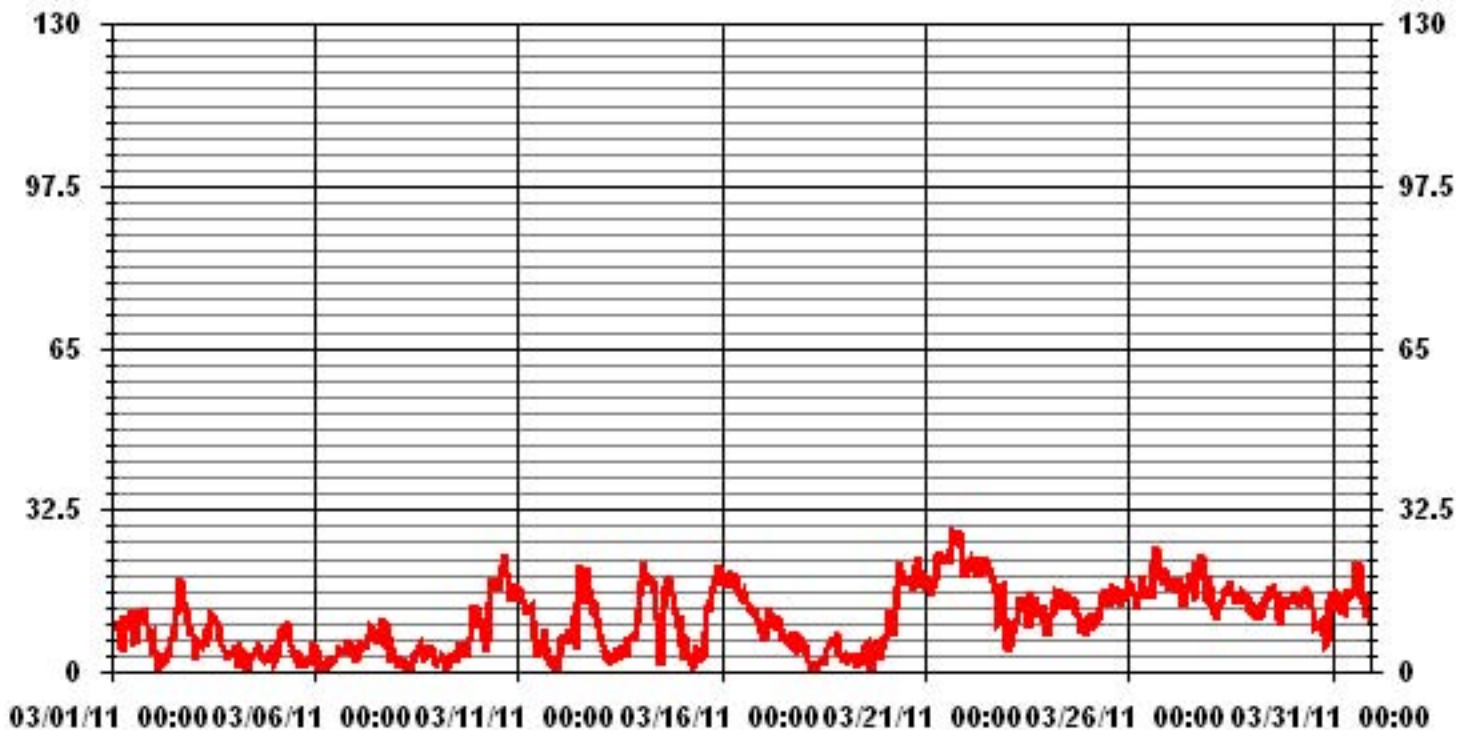
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	28.9	KPH	@ HOUR(S)	16	ON DAY(S)	21
MAXIMUM 24-HR AVERAGE:	22.3	KPH			ON DAY(S)	21
CALMS (≤ 0 KPH)	0.40	%	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME	100.0	%	
STANDARD DEVIATION:	6.40		MONTHLY AVERAGE	10.53	KPH	

24 HOUR AVERAGES FOR MARCH 2011



01 Hour Averages



— LICA33 WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2011

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	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	12.4	14.4	13.6	14.6	12.8	9.6	9.1	8.6	18.5	15.9	12.2	17	19.3	19.3	12.1	14	17.1	16	14.9	14.5	15.6	14	10.2	9	19.3
2	10.8	6.9	6.5	5.6	3	3.5	4.2	5.2	4.4	4.9	7.9	8.4	9.7	12.9	19	18.1	20.9	26.2	23.2	16	18.4	16.5	13.8	12.4	26.2
3	11.4	10.5	5.9	6.9	9.2	8.1	9.4	8.5	10.8	10.4	15.9	18.1	17.5	16.3	15.7	14.5	13.1	10.4	9	7.7	7.2	7	6.8	6	18.1
4	5.6	8.2	7.3	4.2	5.1	6.6	6	5	3.8	5.1	8.4	7.2	8.4	7.3	8.5	8.3	8.9	7	7.4	6.3	6.9	6.6	9.2	7.4	9.2
5	6.5	11.4	7.7	9.8	11.5	12.6	9.6	11.5	14.3	10.2	10.5	6.6	5.1	5.3	5.8	5.4	4.7	4	4	4.3	4.2	4.5	5.7	7.1	14.3
6	7.8	9.2	4.7	3.2	2.6	4.9	4.1	3.9	4.3	3.3	3.2	3.5	4.8	6.2	6.5	5.7	5.7	5.5	10.6	9.6	8.9	7.3	6.7	7	10.6
7	4.9	4.4	7.6	7.3	6.9	9.1	8	11.7	13.3	16.9	15.2	12.8	15.3	16.6	16.2	14.3	17.9	16.3	12.8	12.2	13.8	7.1	4.9	6.8	17.9
8	3.7	5.3	3.6	4.4	4	5.1	2.9	3.8	4.2	4.8	5.4	5.4	5.7	6.8	6.9	10.3	7.3	7.8	9.2	10.5	9	6.9	5.7	10.5	10.5
9	3.2	3.9	3.8	5.7	5.4	3.3	4.1	4	8.5	9.2	4.7	6.7	5.7	6.4	11	10.2	8.4	5.7	10.3	12.8	11.8	17.7	20.6	17.2	20.6
10	21.6	14.2	15.3	9.6	12.5	10.5	13.6	26.1	28.9	29	26	28.1	24.6	29.2	36	32.7	37	33.7	39	28.8	23.5	24.8	28.4	30.6	39
11	27.3	27.2	27.2	22.7	22.2	21.3	23.2	22	22.7	16.3	15.6	8.7	15.3	10.6	10.4	11.8	11.2	11.6	9.1	4.6	6.7	6.2	3.9	3.1	27.3
12	6.2	9.4	9.4	8.8	7.5	7.9	9.7	10	10	18.7	14.8	22.8	33.7	28	26.1	27.2	28.9	30.1	31.1	20.4	18	18.5	17.1	12	33.7
13	11.6	11.1	9.1	8.7	5.3	5.5	4.8	4.9	5.4	6	7.8	6.3	6.5	8.5	6.8	7.1	5.8	10.7	8.8	9.4	10.9	11.1	15.7	15.8	15.8
14	23	26.3	30.8	27.7	29.9	23.2	26.9	25.7	23.1	19.3	15.7	17.3	12.6	18	24.2	27.8	29.1	30	24.9	24.2	21.5	16.6	16.5	16	30.8
15	13	6.2	13.5	11.9	8.1	6.6	5.1	4.9	8.4	9.6	5.4	4.8	7.2	7.4	14.4	21.1	15.3	20.1	26.2	24.7	24.7	28.5	27.3	33	33
16	27.3	29.4	26.5	27.9	27.7	30.4	30.7	27	29.2	24.4	24	23	25.3	23.7	22.8	21.2	20.1	18.7	18.3	17.4	19.3	16.4	14.7	11.6	30.7
17	11	9.7	11.7	15.9	17.1	16.3	12.9	12.5	13.8	14.9	11.6	10.9	10	7.3	9.4	9.8	12.2	12.3	12.7	9.8	12.7	7.4	7.6	10.2	17.1
18	8	7.6	5.3	4.6	2.9	3.3	4.1	4	3.6	4.7	4.9	6.6	5	5.4	6.1	6.8	7.1	10.2	12.9	9.3	15	9.4	5.6	6.5	15
19	5.2	4.9	5.2	5.7	4.5	5.1	9.8	3.7	7	10.2	6.4	5.8	7.8	15.5	12.3	4.7	5.8	6.7	7.2	8.3	9.5	6.8	6.7	8.5	15.5
20	11.2	13.9	16.3	20.7	15.3	10	16	19.4	26.7	33.5	32	27.9	26.8	26.2	29.2	27.6	27.6	26.5	30	33.7	33.6	30.4	24.5	29	33.7
21	27.8	21.8	27.3	26.7	21.6	23.2	30	32.2	36.1	33.4	32.6	32.5	29.6	32.3	32.4	36.9	38.4	36.6	35.5	38.7	40.6	39.3	30.7	27	40.6
22	29	30	31.4	34.2	34.7	32.6	32.3	28.2	31.8	30.2	29.3	29	29	25.9	27.1	26.4	24.2	23.7	15.4	19.5	30.3	25.4	17.3	16	34.7
23	10.8	8.3	7.2	11.6	10.5	14.1	14.8	18.3	18.8	19.3	18.6	18.9	24.9	20.4	24.3	23.9	27.8	24.6	24	17.2	18.1	12.2	16.8	15.1	27.8
24	17.3	14.9	17	16.6	20.5	23.8	20.8	21.6	20.5	19.3	20.4	21.8	20	19.1	18.7	20.7	23.9	18	19.7	13.8	13.9	16.7	19	14.5	23.9
25	15.3	14.4	14.6	14.6	12.9	13.2	20.4	21.3	20	21	19.9	21	27.3	27.4	31.9	32.9	26.3	23.7	20.9	23.3	25.2	23.7	24	32.9	32.9
26	24.8	26.4	24.7	20.3	18.8	23.4	21.9	26	26.9	24.8	19.7	20.9	24.3	22.3	32.7	32.3	38.6	33.7	32.9	34.4	27.4	34.6	31.2	29.2	38.6
27	22.5	22.1	25.6	24.5	23.6	21.9	25.3	23.9	19.2	24.2	25.3	23.6	26.1	26.8	23.7	26	30.2	28.6	30.8	32.3	29.4	26.5	25.6	28.3	32.3
28	24.3	21.8	18.8	17	13.4	16.3	17.8	18.9	23.9	23.4	23.4	23.8	24.6	23.2	23.4	22.2	20	22.7	20.1	25.8	25.1	19.3	26.4	22.3	26.4
29	19.2	21.6	18.1	17.5	18.5	16.7	16.5	19.2	20.9	19.1	21.8	22.5	22.1	22.7	20.2	20.2	17.9	15.1	17.4	19.2	17.7	22.1	19.4	20.2	22.7
30	20.8	20.2	22.7	20.6	21.5	22	22.8	20	22.6	23.8	22.6	20.4	20.9	18.4	20.3	16.1	17.2	17.2	14.7	13.2	13.2	14.8	20.6	27.1	27.1
31	16.3	21	25.8	23.8	22	20.9	17.1	19.2	25.6	28.4	24	26.9	27.8	30.5	34.6	30.3	34.8	32.8	21	23.4	16.9	17	25.1	16.5	34.8
PEAK	29.0	30.0	31.4	34.2	34.7	32.6	32.3	32.2	36.1	33.5	32.6	32.5	33.7	32.3	36.0	36.9	38.6	36.6	39.0	38.7	40.6	39.3	31.2	33.0	

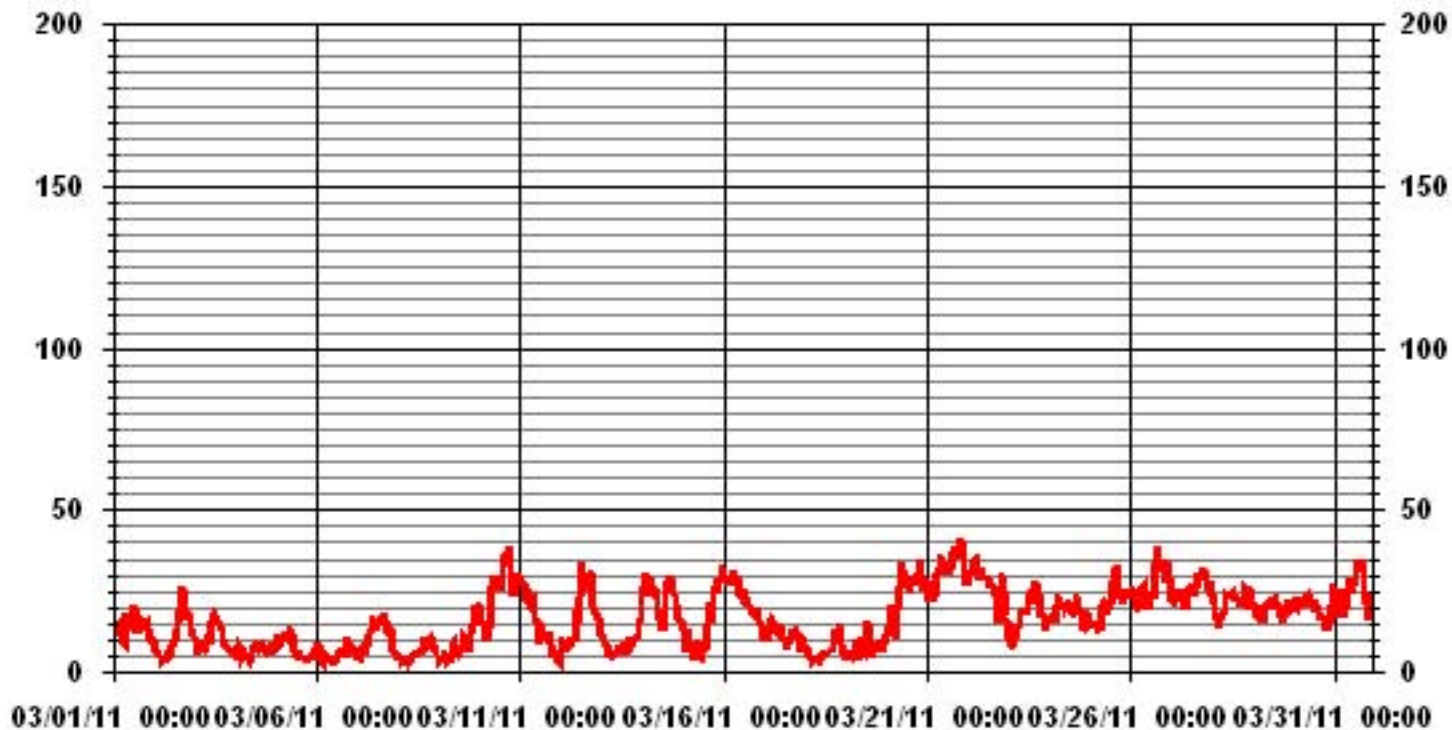
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS READING	40.6	KPH	@ HOUR(S)	20
			ON DAY(S)	21

01 Hour Averages



— LICA33 WSMAX KPH

LICA33
WSP / WDR Joint Frequency Distribution (Percent)

March 2011

Distribution By % Of Samples

Logger Id : 33
Site Name : LICA33
Parameter : WSP
Units : KPH

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	1.07	1.07	1.20	2.41	2.68	3.89	4.56	2.68	2.15	2.28	1.34	1.34	1.47	.94	1.61	.94	31.72
< 12.0	.40	.67	.80	2.41	5.24	2.68	1.34	2.82	1.07	.80	2.28	.94	2.01	1.20	.00	.13	24.86
< 20.0	.94	2.15	2.55	3.76	6.98	4.30	7.12	3.36	.53	.00	.67	1.47	.67	1.34	.00	.13	36.02
< 29.0	.00	.00	.80	.80	3.62	.80	1.07	.00	.00	.00	.00	.00	.00	.26	.00	.00	7.39
< 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	2.41	3.89	5.37	9.40	18.54	11.69	14.11	8.87	3.76	3.09	4.30	3.76	4.16	3.76	1.61	1.20	

Calm : .00 %

Total # Operational Hours : 744

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	8	8	9	18	20	29	34	20	16	17	10	10	11	7	12	7	236
< 12.0	3	5	6	18	39	20	10	21	8	6	17	7	15	9		1	185
< 20.0	7	16	19	28	52	32	53	25	4		5	11	5	10		1	268
< 29.0			6	6	27	6	8							2			55
< 39.0																	
>= 39.0																	
Totals	18	29	40	70	138	87	105	66	28	23	32	28	31	28	12	9	

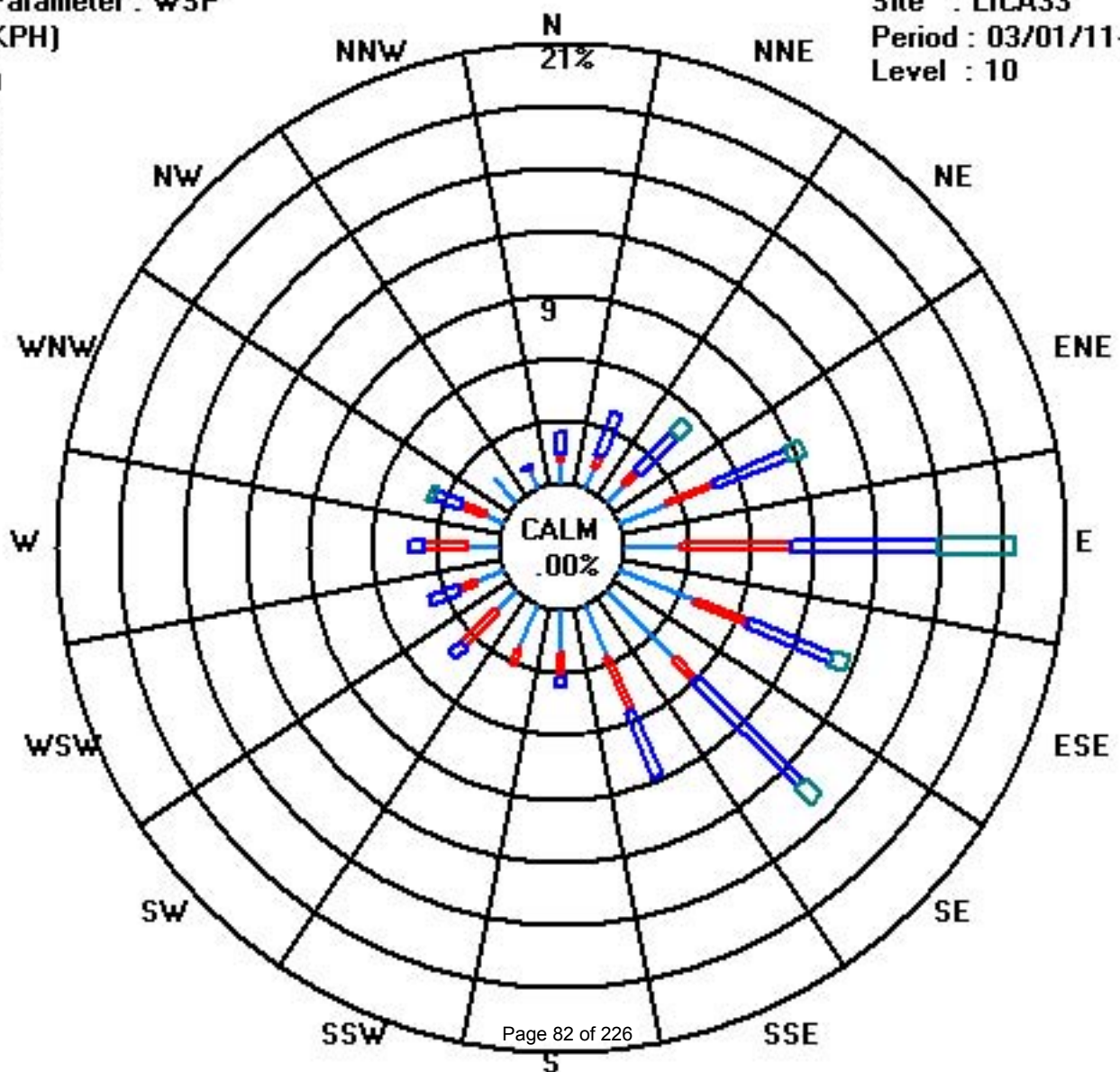
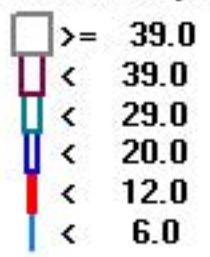
Calm : .00 %

Total # Operational Hours : 744

Class Limits (KPH)

Period : 03/01/11-03/31/11

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2011

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	24-HOUR QUADRANT	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUADRANT	RDGS.	
DAY																												
1	278	273	281	282	280	269	272	257	277	286	278	276	289	292	198	201	229	224	227	226	228	226	232	239	257	WSW	24	
2	230	228	222	207	306	108	48	16	73	85	74	83	87	70	73	79	65	75	90	93	89	76	68	82	81	E	24	
3	96	113	130	238	256	242	248	268	275	276	287	288	293	284	280	278	296	326	308	313	330	4	355	342	287	WNW	24	
4	316	354	351	320	311	331	357	336	240	177	153	185	149	129	142	160	175	197	196	150	221	153	167	130	163	SSE	24	
5	132	116	95	64	82	80	92	78	77	83	91	123	138	160	155	140	148	220	259	258	289	316	264	259	99	E	24	
6	298	330	322	305	333	16	44	25	47	103	121	93	114	127	129	100	106	123	185	189	173	164	141	144	130	SE	24	
7	142	74	96	97	104	102	83	128	157	163	155	154	195	210	191	205	219	223	222	219	216	193	159	181	176	S	24	
8	172	162	220	235	300	301	275	270	177	136	128	132	134	131	135	165	213	193	204	210	201	195	160	213	181	S	24	
9	143	99	87	86	68	73	64	71	69	65	75	84	95	106	143	157	172	123	170	157	92	67	65	78	100	E	24	
10	79	75	73	60	12	358	349	32	31	38	38	37	27	31	41	47	49	40	35	27	3	6	10	18	34	NE	24	
11	16	16	12	11	4	347	345	352	356	357	355	34	304	248	261	143	137	201	186	110	13	52	14	97	4	N	24	
12	116	97	97	104	119	103	106	99	95	100	116	152	131	136	146	141	139	136	131	121	108	116	105	81	122	ESE	24	
13	94	95	73	69	61	51	18	269	216	149	141	183	115	118	125	112	133	133	106	88	118	96	83	84	101	E	24	
14	79	79	80	81	79	73	73	82	78	78	71	86	297	300	293	300	295	294	292	287	292	276	271	267	29	NNE	24	
15	277	273	232	230	245	248	306	289	192	225	179	93	124	109	77	75	70	59	69	63	58	58	62	61	68	ENE	24	
16	63	60	60	55	54	52	53	42	49	48	44	35	38	27	22	27	21	27	28	29	29	26	33	38	42	NE	24	
17	41	62	85	99	94	96	98	89	97	99	108	103	121	109	113	140	158	167	172	169	158	150	149	156	113	ESE	24	
18	139	141	140	66	72	94	173	238	346	290	132	99	74	129	130	133	144	166	188	173	178	198	151	123	149	SSE	24	
19	126	104	92	109	87	108	219	125	187	205	255	14	56	113	116	113	71	1	352	82	52	40	46	31	83	E	24	
20	29	39	54	51	41	58	57	58	62	59	64	63	62	60	52	48	48	43	51	56	61	63	70	89	57	ENE	24	
21	87	90	102	96	82	78	82	83	83	85	84	85	84	91	90	95	98	98	97	96	107	109	103	100	92	E	24	
22	100	100	98	96	97	98	99	95	96	96	99	95	97	96	98	101	95	100	100	111	140	137	128	116	102	E	24	
23	108	85	76	74	79	85	86	93	100	101	96	98	128	165	176	164	150	153	152	153	147	115	117	147	122	ESE	24	
24	134	126	111	90	93	94	97	97	81	85	79	80	85	82	70	71	96	119	150	181	173	157	152	155	103	ESE	24	
25	145	118	106	100	95	92	97	107	105	100	94	95	120	156	151	153	140	117	122	135	147	139	116	122	121	ESE	24	
26	134	130	127	121	100	86	82	84	91	87	78	77	87	100	117	124	123	126	130	133	131	128	125	116	112	ESE	24	
27	117	111	112	112	117	111	113	112	92	100	106	111	117	117	120	125	116	120	120	125	129	146	145	140	118	ESE	24	
28	138	133	135	123	115	114	111	112	125	139	146	146	144	145	147	156	155	164	153	155	156	163	165	174	143	SE	24	
29	157	152	145	143	146	147	140	144	145	133	126	141	134	135	138	140	149	151	160	164	156	160	152	140	145	SE	24	
30	141	144	141	127	129	141	140	138	132	138	150	171	173	211	212	218	223	229	225	223	213	218	228	240	169	SSE	24	
31	241	236	250	252	250	248	244	256	273	278	262	261	251	287	282	283	282	266	244	246	245	238	245	248	259	WSW	24	
HOURLY AVG	316	354	351	320	333	358	357	352	356	357	355	288	304	300	293	300	296	326	352	313	330	316	355	342				

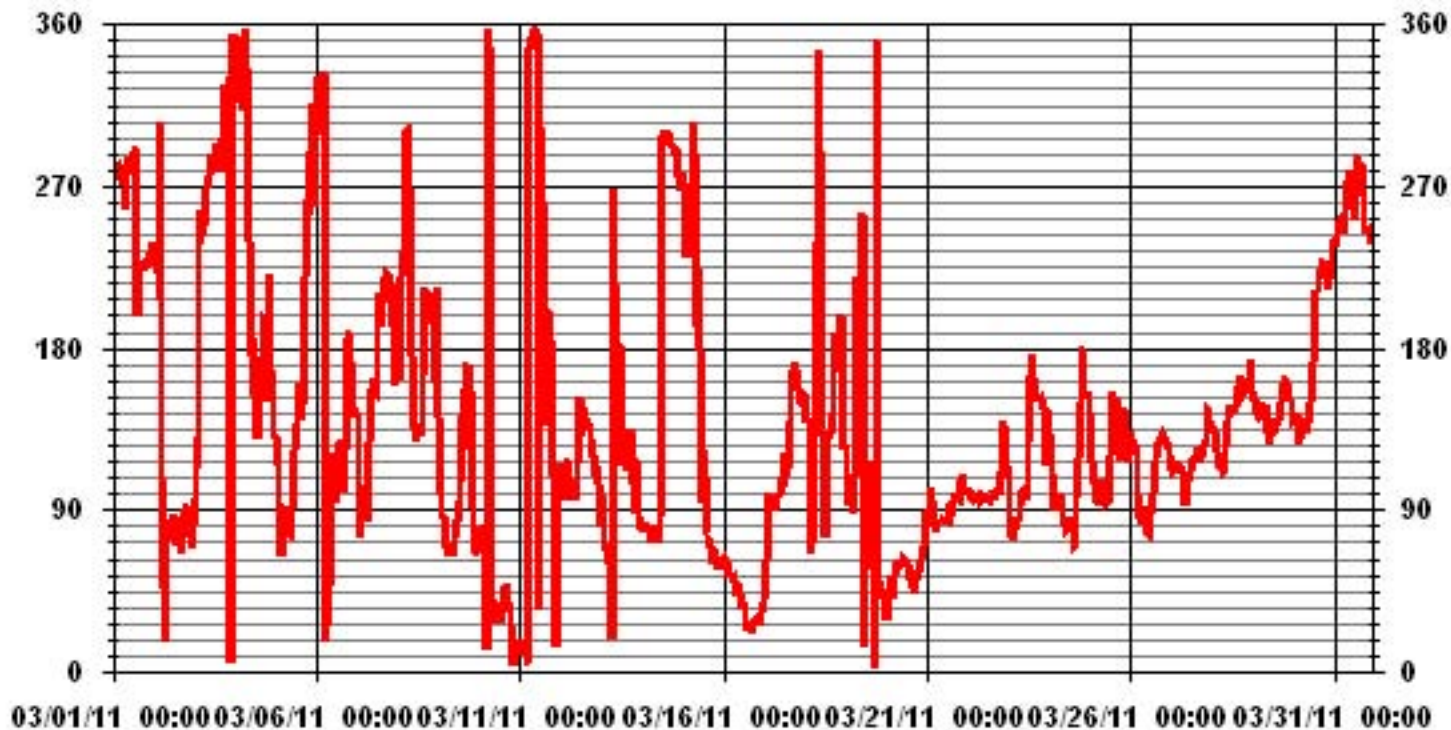
STATUS FLAG CODES

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:	September 24, 2009
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION	79.87	AMD OPERATION UPTIME	100.0 %
		MONTHLY AVERAGE	105 DEG

01 Hour Averages



Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MARCH 2011

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	4	5	4	4	6	14	12	17	6	6	5	7	10	23	21	18	6	7	4	3	3	6	4	4
2	6	11	6	17	30	23	10	4	19	12	8	9	7	8	6	9	6	5	6	5	5	6	6	6
3	7	9	20	8	7	7	7	7	6	6	10	10	9	13	9	9	13	11	10	10	16	18	9	9
4	11	12	9	42	11	8	8	8	39	30	16	33	16	11	9	12	16	16	43	15	46	13	17	11
5	27	58	18	7	5	5	7	8	4	5	10	7	8	16	13	11	30	21	12	10	56	17	22	6
6	8	16	42	43	34	28	14	14	8	12	8	12	9	7	4	4	3	6	13	14	6	7	6	16
7	8	10	8	4	10	10	17	15	12	13	14	14	14	20	20	21	12	7	5	11	20	24	19	13
8	12	8	16	14	13	12	16	17	20	28	25	14	7	5	6	16	19	20	16	20	18	17	11	35
9	10	14	17	15	6	13	12	36	43	13	16	13	21	8	17	15	17	18	14	11	10	13	7	6
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11	11	12	13	11	13	13	13	13	12	15	23	29	27	15	29	9	10	16	29	46	12	11	15	18
12	6	4	5	3	6	3	3	4	3	6	20	12	7	6	10	7	6	5	8	5	5	4	5	5
13	4	5	8	8	16	8	12	21	27	19	12	20	9	11	9	14	20	32	8	8	7	6	4	6
14	5	5	6	6	7	5	6	5	7	6	6	6	41	15	10	10	8	8	7	7	6	4	9	7
15	16	21	10	9	11	15	47	47	20	17	32	13	12	20	9	5	5	4	5	5	4	5	5	5
16	5	6	7	7	7	7	8	7	7	8	8	10	12	9	11	9	10	8	8	8	7	7	7	7
17	7	5	6	4	4	4	4	5	4	5	5	5	6	4	4	10	14	14	11	11	13	8	7	8
18	5	6	7	12	27	28	28	39	28	35	29	25	42	13	5	5	6	11	16	15	13	18	9	13
19	16	16	8	25	13	13	22	46	18	24	19	28	18	16	13	34	45	15	15	7	5	14	17	9
20	6	8	6	5	5	5	6	7	7	7	7	8	7	7	9	8	9	8	7	6	5	6	6	7
21	5	5	6	5	6	5	5	6	6	5	6	6	6	5	6	5	5	5	5	5	5	5	5	4
22	4	5	5	5	5	5	5	5	5	6	4	5	4	6	5	5	5	5	4	4	8	6	4	4
23	7	10	5	3	3	4	4	4	4	4	5	5	15	16	9	12	11	11	10	11	11	7	4	18
24	10	9	4	5	4	4	4	3	6	5	6	6	8	6	5	7	5	5	11	12	8	11	10	12
25	7	4	3	3	3	3	3	3	3	4	5	6	11	14	11	12	8	4	2	8	9	6	5	5
26	6	6	6	4	9	6	6	5	5	5	6	6	6	6	5	5	5	4	5	7	5	5	5	5
27	4	4	4	5	4	4	4	4	7	6	7	5	4	6	10	10	5	5	4	4	6	9	8	6
28	6	6	6	5	4	4	4	4	5	7	10	9	8	9	9	11	6	5	5	6	6	6	7	11
29	6	6	6	6	6	6	5	6	6	6	6	7	7	6	6	6	6	5	13	6	6	7	6	5
30	5	6	5	5	6	6	6	5	7	6	7	8	9	21	20	15	16	12	13	15	21	22	6	9
31	5	5	7	6	7	6	6	7	10	8	10	10	10	10	8	8	7	10	7	6	5	5	6	6

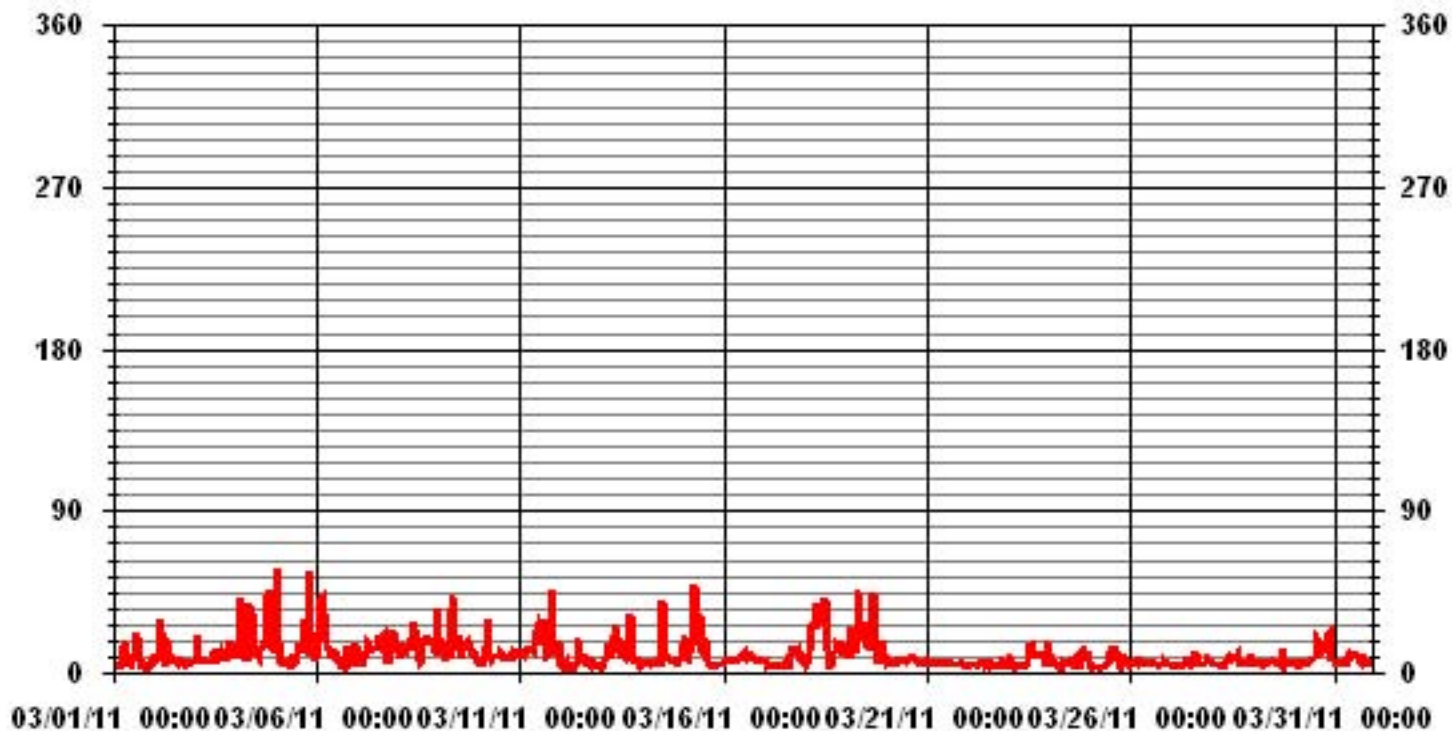
STATUS FLAG CODES

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

LAST CALIBRATION: September 24, 2009

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS

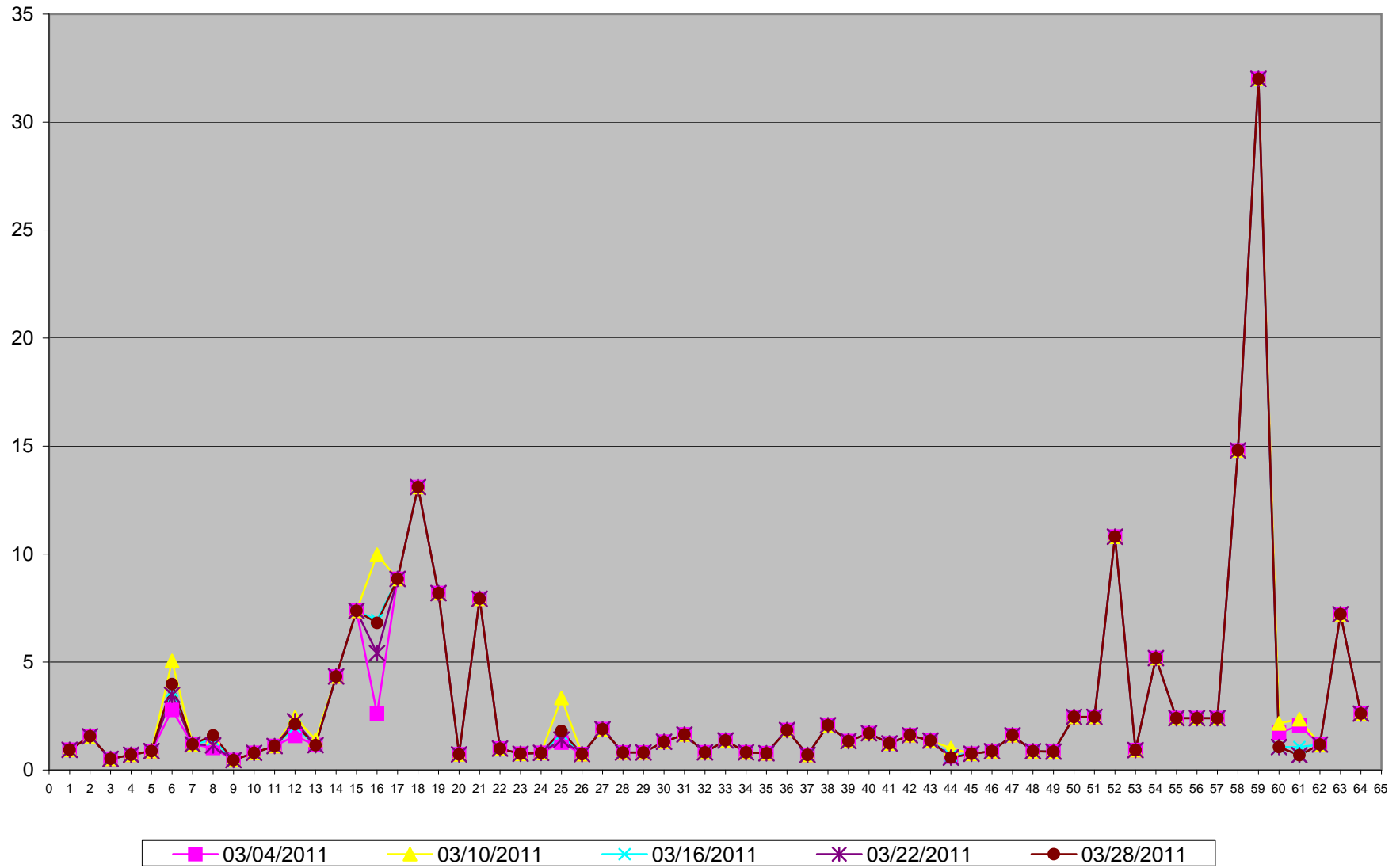
01 Hour Averages



— LICA33 STDWDIR DEG

Volatile Organics

Volatile Organics in ug/m3 Site: LICA - Portable Site



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	Ethylbenzene
15	2-Propanol	47	p+m-Xylene
16	2-Propanone	48	o-Xylene
17	Methyl 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 March 2011

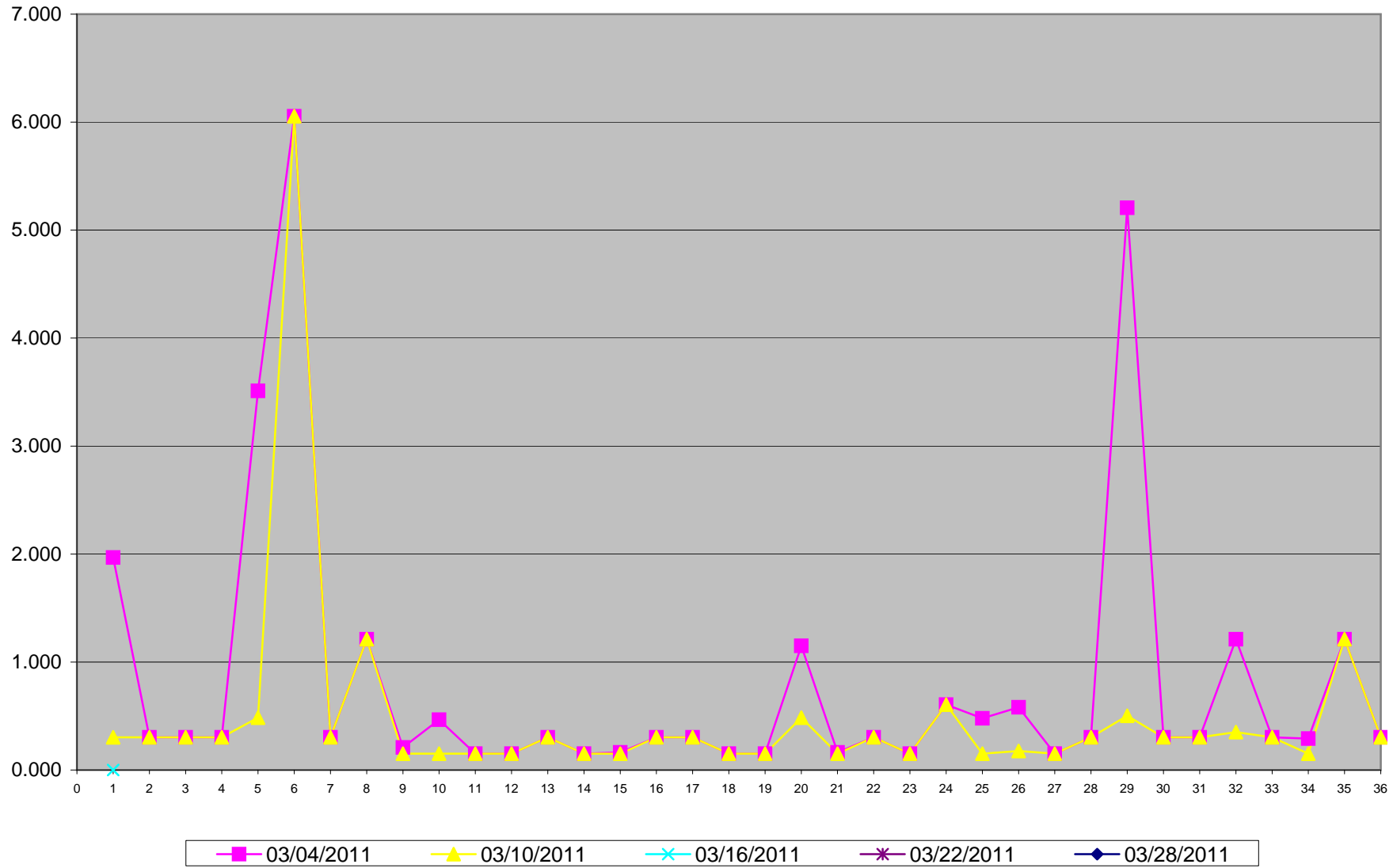
LICA- Portable Site

Unit: ng/m³

PAHs	03/04/2011	03/10/2011	03/16/2011	03/22/2011	03/28/2011
Sample Volume (unit: m3)	330.35	330.33	330.37	330.36	330.36
1 1-Methylnaphthalene	1.968	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-Methylantracene	0.303	0.303	0.303	0.303	0.303
5 2-Methylnaphthalene	3.511	0.484	0.303	0.303	0.303
6 3-Methylcholanthrene	6.054	6.055	6.055	6.054	6.054
7 7,12-Dimethylbenzo(a)anthracene	0.303	0.303	0.303	0.303	0.303
8 9,10-Dimethylantracene	1.211	1.211	1.211	1.211	1.211
9 Acenaphthene	0.209	0.151	0.151	0.151	0.151
10 Acenaphthylene	0.466	0.151	0.151	0.285	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	0.163	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	1.150	0.484	0.333	0.303	0.303
21 Chrysene	0.163	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	0.478	0.151	0.151	0.200	0.151
26 Fluorene	0.581	0.176	0.151	0.206	0.194
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	5.207	0.503	0.303	0.345	0.266
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	1.211	0.351	0.266	0.545	0.333
33 p-Terphenyl	0.303	0.303	0.303	0.303	0.303
34 Pyrene	0.291	0.151	0.151	0.151	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.
 - See analytical for details.

PAHs in ng/m3 Site: LICA - Portable Site

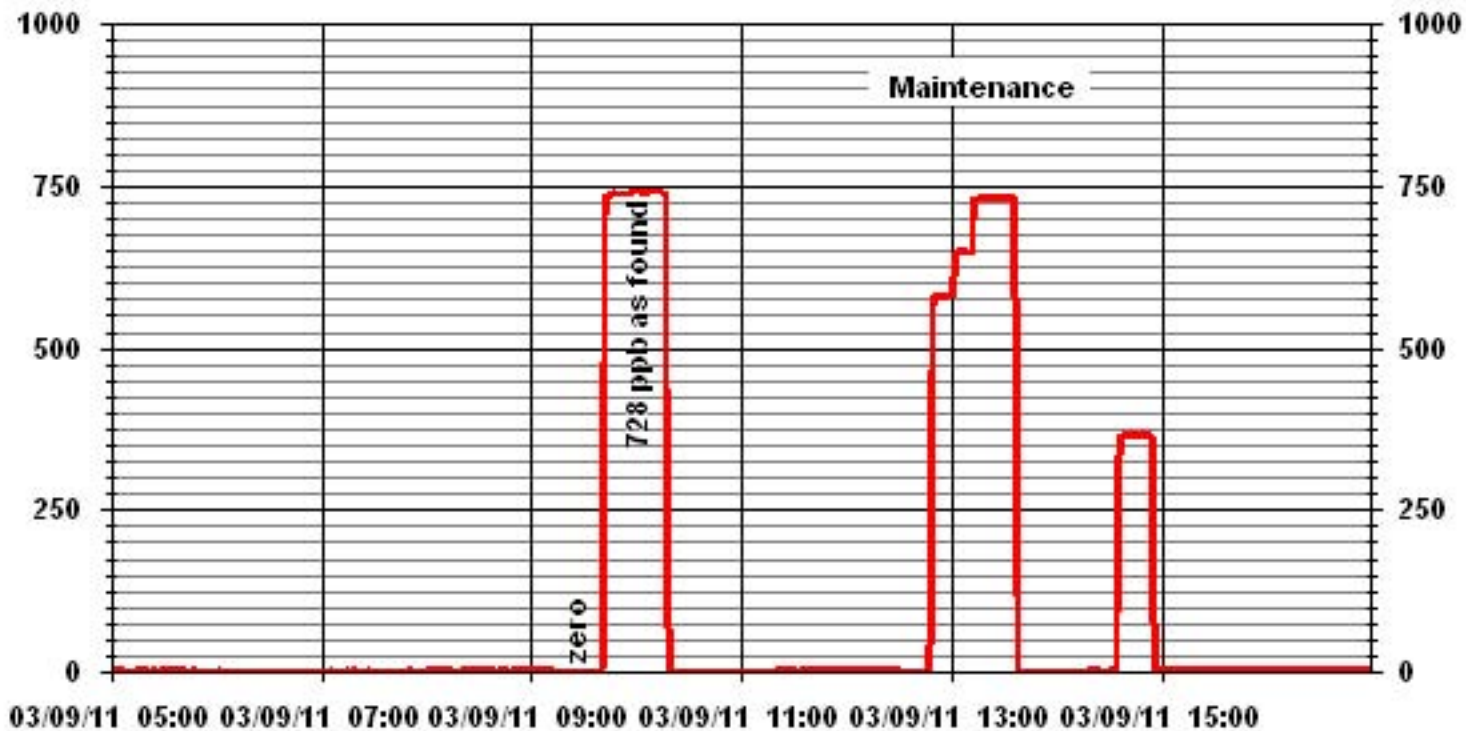


1	1-Methylnaphthalene
2	1-Methylphenanthrene
3	2-Chloronaphthalene
4	2-Methlyanthracene
5	2-Methylnaphthalene
6	3-Methylcholanthrene
7	7,12-Dimethylbenzo(a)anthracene
8	9,10-Dimethylanthracene
9	Acenaphthene
10	Acenaphthylene
11	Anthracene
12	Benzo(a)anthracene
13	Benzo(a)fluorene
14	Benzo(a)pyrene
15	Benzo(b)fluoranthene
16	Benzo(b)fluorene
17	Benzo(e)pyrene
18	Benzo(g,h,l)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

01 Minute Averages



— LICA33 SO2_ PPB

SO₂ Calibration Report

Station Information

Calibration Date	March 10, 2011	Previous Calibration	March 9, 2011
Company	Lakeland Community and Industry Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	13:39	End Time (MST)	17:05
Reason:	Monthly Calibration		
Barometric Pressure	0.935 atm	Station Temperature	22 Deg C
Cal Gas	49 ppm	Cal Gas Expiry date	2/4/2013
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	467	Method:	UV absorbtion
Converter Make / Model:	-	S/N :	-		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO 717		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	0 - 1000			ppb			
Sample Flow / Box Temp	572 ccm	32.9 Deg C	572	ccm	32.7	Deg C	
HVPS / Lamp Setting	612	2134	612	2133			
PMT / RxCell Temp	8.1 Deg C	50.0 Deg C	8.1	50.0	Deg C	Deg C	
Converter / IZS Temp	NA Deg C	45.0 Deg C	NA	45.0	Deg C	Deg C	
Offset / Slope	65.8	1.049	66.9	1.05			

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	N/A
4996	73	706	761	0.9273
4922	73	716	750	0.9548
4959	38.9	381	395	0.9655
4981	16.5	162	170	0.9517
4996	0	0	0	N/A
Sum of Least Squares				0.9362
New Correction Factor				0.9548

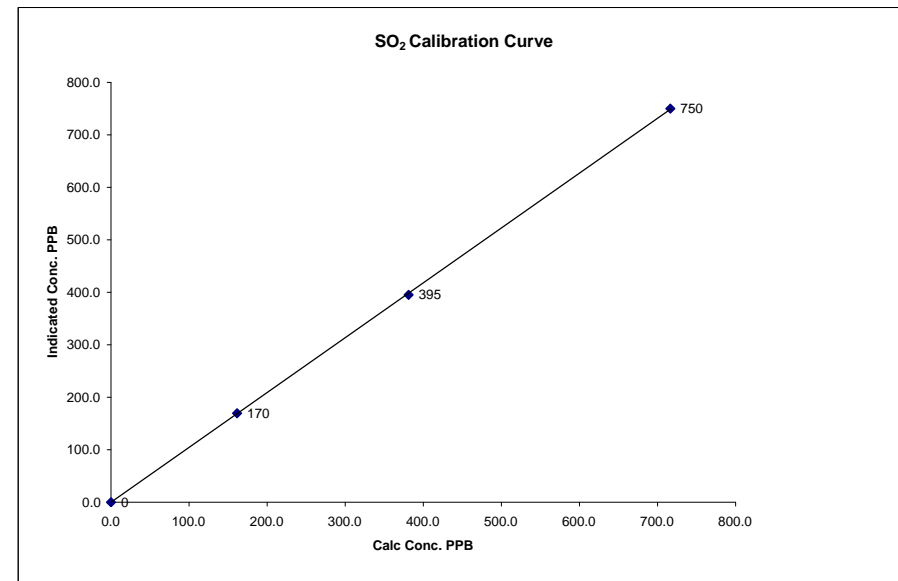
Before Calibration		After Calibration	
Auto Zero	0.8	0.7	
Auto Span	367	370	
Sample Lines Connected		YES	
Percent Change from Previous Calibration		-	

Calibration Performed by: Ting Xu

SO₂ Calibration Curve

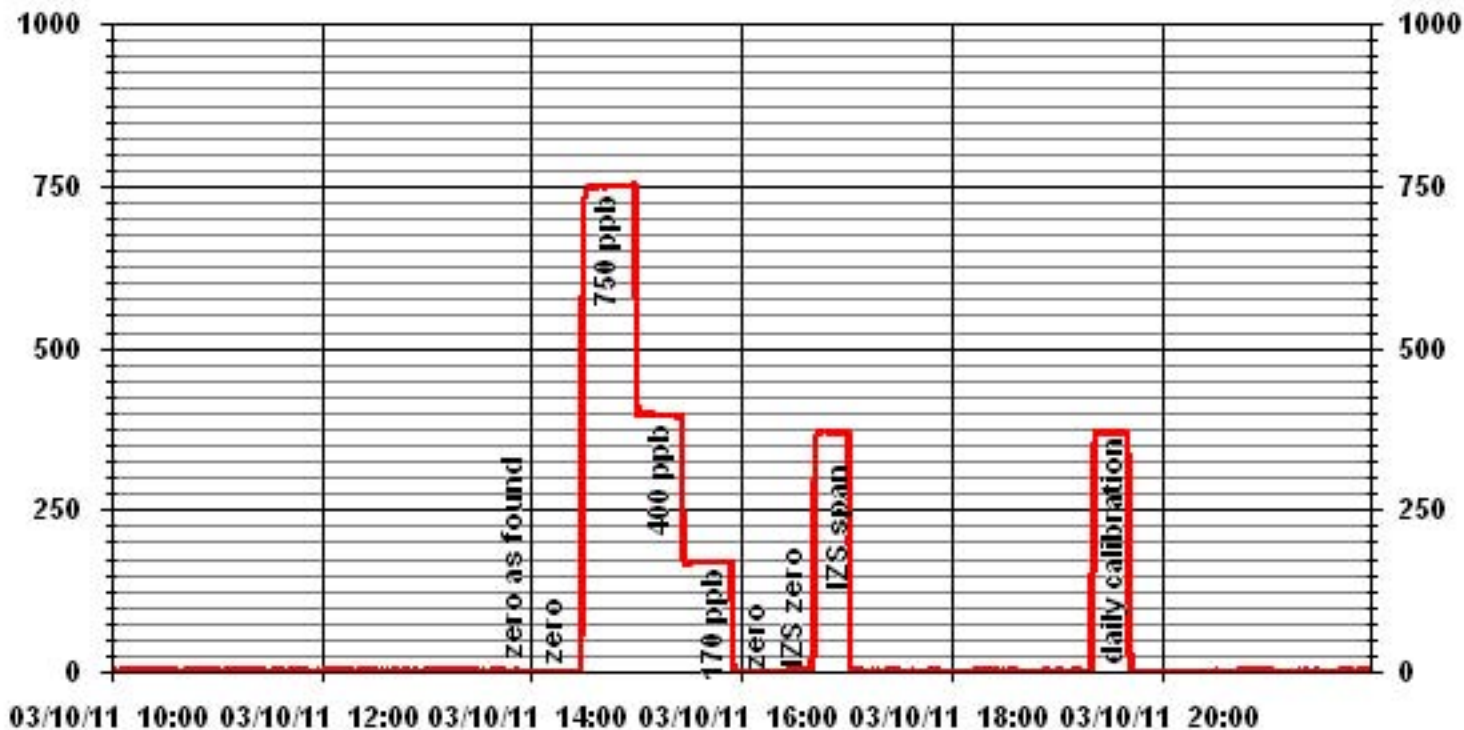
Calibration Date	March 10, 2011
Company	Lakeland Community and Industry Association
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M
Start Time (MST)	13:39
End Time (MST)	17:05

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999950
0	0	n/a	Intercept	(± 3% F.S.)	-0.548948
162	170	0.9517			
381	395	0.9655			
716	750	0.9548			



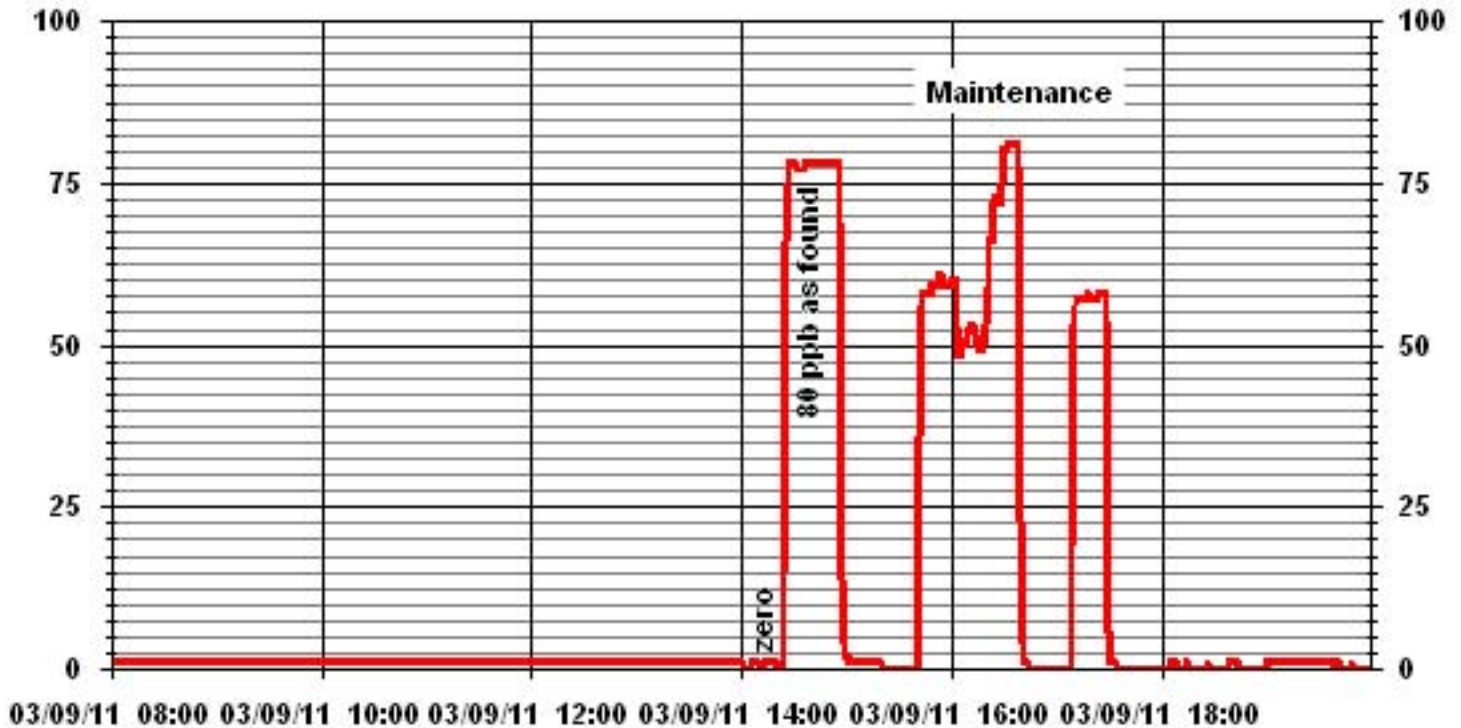
Notes:

01 Minute Averages



Hydrogen Sulphide

01 Minute Averages



H₂S Calibration Report

Station Information

Calibration Date	March 10, 2011		Previous Calibration	March 9, 2011	
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION				
Plant / Location	Portable/ Devon Wellsite 13-16-62-5-W4M				
Start Time (MST)	8:43	End Time (MST)	12:02		
Reason:	Monthly Calibration				
Barometric Pressure	0.93	atm	Station Temperature	22	Deg C
Cal Gas	10.2	ppm	Cal Gas Expiry date	02/02/2012	
DAS Output Voltage	0 - 1		Volts		

Equipment Information

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

Analyzer Settings

		Before Calibration		After Calibration	
Concentration Range		0 - 100		ppb	
Sample Flow / Box Temp	529	ccm	33.3	Deg C	528
HVPS / Lamp Setting	540		2159		540
PMT / RxCell Temp	7.9	Deg C	50	Deg C	7.9
Converter / IZS Temp	315.3	Deg C	45	Deg C	314.1
Offset / Slope	52.3		1.058		52.3

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	N/A
4959	39.2	80	80	1.0000
4981	19.6	40	41	0.9751
4985	11.2	23	23	0.9941
4996	0	0	0	N/A
Sum of Least Squares				0.9948
New Correction Factor				1.0000

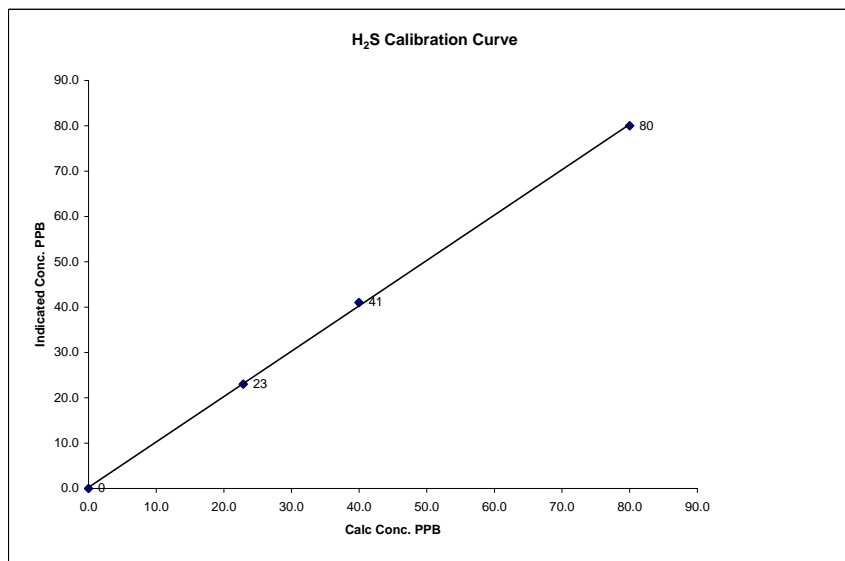
		Before Calibration	After Calibration
Auto Zero		-0.3	0.5
Auto Span		57	59
Sample Lines Connected			YES
Percent Change from Previous Calibration			-

Calibration Performed by: Ting Xu

H₂S Calibration Curve

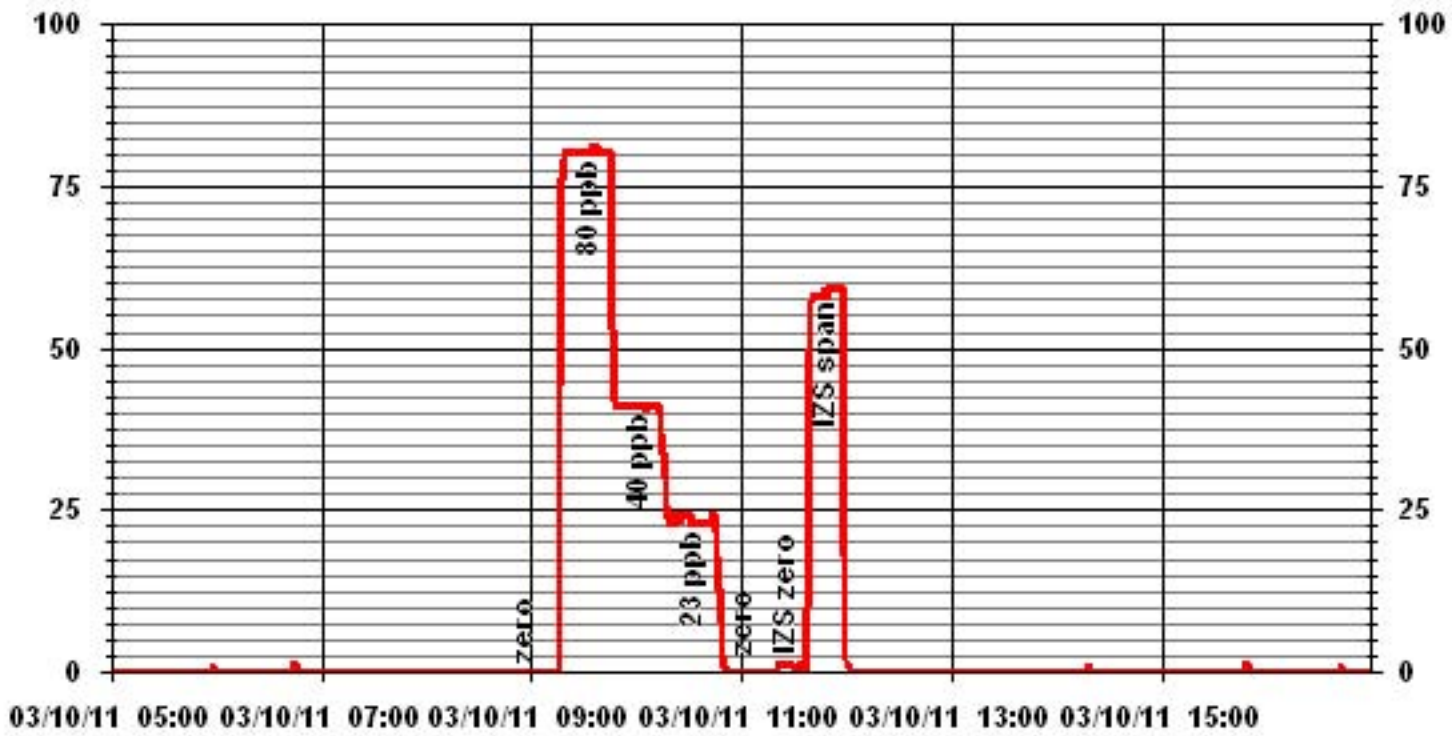
Calibration Date	March 10, 2011	
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION	
Plant / Location	Portable/ Devon Wellsite 13-16-62-5-W4M	
Start Time (MST)	8:43	End Time (MST)

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999789
0	0	n/a	Intercept	(± 3% F.S.)	0.260728
23	23	0.9941			
40	41	0.9751			
80	80	1.0000			



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOM 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	March 9, 2011	Make/Model:	Streamline FTS
Station Name:	Lica Portable (CASA # 33)	Serial Number:	Hi 091001
Location:	Devon Wellsite 13-16-62-5 W4M	Cell s/n:	Lo 091099
Operator:	LICA	Thermometer s/n:	Fisher Brad 15-021B

	<u>Sampler</u>		<u>Set-up and current Sampler readings</u>
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 (%)	25.9%
Firmware Ver.	1.51	K _o Factor	15634.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-7.2
		Press (ATM)	0.935

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 <0.10ug	0.003	Warnings	None
0.32	0.32	Pump Gauge (inHg)	-19
Temperature/Pressure			
Measured Temp (± 2 °C)	-7.2	D °C	0.0
Measured Press (± 0.01atm)	0.929	DATM	0.006
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	0.22%
Measured Main Flow (l/min)	2.99	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	0.38%
Measured Bypass Flow (l/min)	13.40	Flow Adjusted to Measured?	Yes
Leak Check			
Main (< 0.15 l/min)	NA	Instrument Setup	
Aux (< 0.6 l/min)	NA	Flow Control = Active	
		Report Conditions = Standard (25.0 C and 1atm)	
K_o Factor			
Measured	NA		
K _o Difference (± 2.5%)	NA		

Start Time: 14:44 **Finish Time:** 16:01

Sample Inlet Cleaned: Yes **New Filters Installed:** Yes
New Filter Loading %: 19.8%

Comments:

Auditor/s: Ting Xu

Nitrogen Dioxide

NOx - NO- NO2 Calibration Report

Station Information

Calibration Date	March 9, 2011	Previous Calibration	February 2, 2011
Company	LICA	Plant/Location	Portable/ 13-16-62-5W4M
Start Time (MST)	9:07	End Time (MST)	13:41
Reason:	As Found		Other
Barometric Pressure	0.94 atm	Station Temperature	22 Deg C
Cal Gas Concentration	NOx 51.7 ppm	NO 50.4 ppm	Cal Gas Expiry date 04-Feb-13
DAS Output Voltage	0 - 1	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	API 200E	S/N :	593	Method:	Chemiluminescent
Calibrator Make / Model:	EnviroNics 2000	S/N:	1991		
DAS Make / Model:	ESC 8832	S/N :	AO 717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	EnviroNics 2000	S/N :	1991		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range			0-1000	ppb			
Sample Flow/Conv. Temp	481	ccm	314.7	Deg C	484	ccm	314.6
Ozone Flow / Vacuum	78	ccm	5.4	"Hg-A	78	ccm	4.2
HVPS / A ZERO	634	Volts	5.7	MV	662	Volts	7.2
Rx/ Temp / PMT Temp	50.0	Deg C	6.7	Deg C	50.0	Deg C	6.7
Box Temp / IZS Temp	32.2	Deg C	45.3	Deg C	32.2	Deg C	45.2
Offset	3.7	NOx	0.6	NO	1.9	NOx	0.8
Slope	1.244	NOx	1.230	NO	1.039	NOx	1.008
NO2 COEF / Conv Efficiency	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
4993	0.0	----	0	0	0	1	0	0	----	----
4920	74.2	----	768	749	----	719	713	6	1.0698	1.0502

Gas Phase Titration Calibration Data

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

Linearity OK?	Yes	No	Sum of Least Squares	NOx=	NO=	NO2=
			Correction Factors:	NOx= 0.0000	NO= 0.0000	NO2= 0.0000
				Average Converter Efficiency=		

	Before Calibration				After Calibration			
Auto Zero	-1.1	NOx	-0.7	NO2	-0.7	NOx	-0.8	NO2
Auto Span	679	NOx	665	NO2	715	NOx	699	NO2
Percent Change from Previous Calibration		NOx	-6.7%	NO	-5.1%	NO2	-	

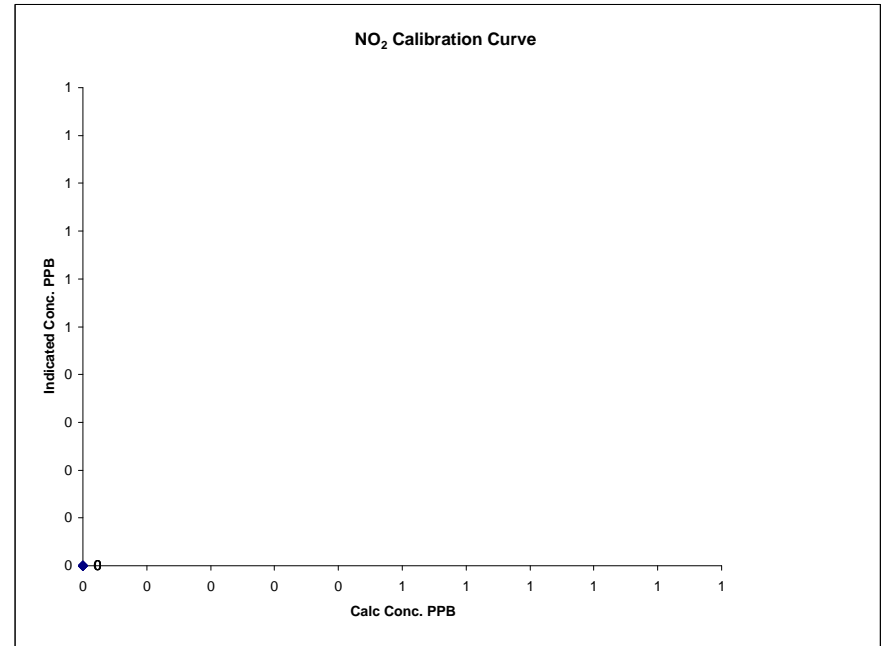
Notes

Calibration Performed by: Ting Xu/ Shea Beaton

NO2 Calibration Curve

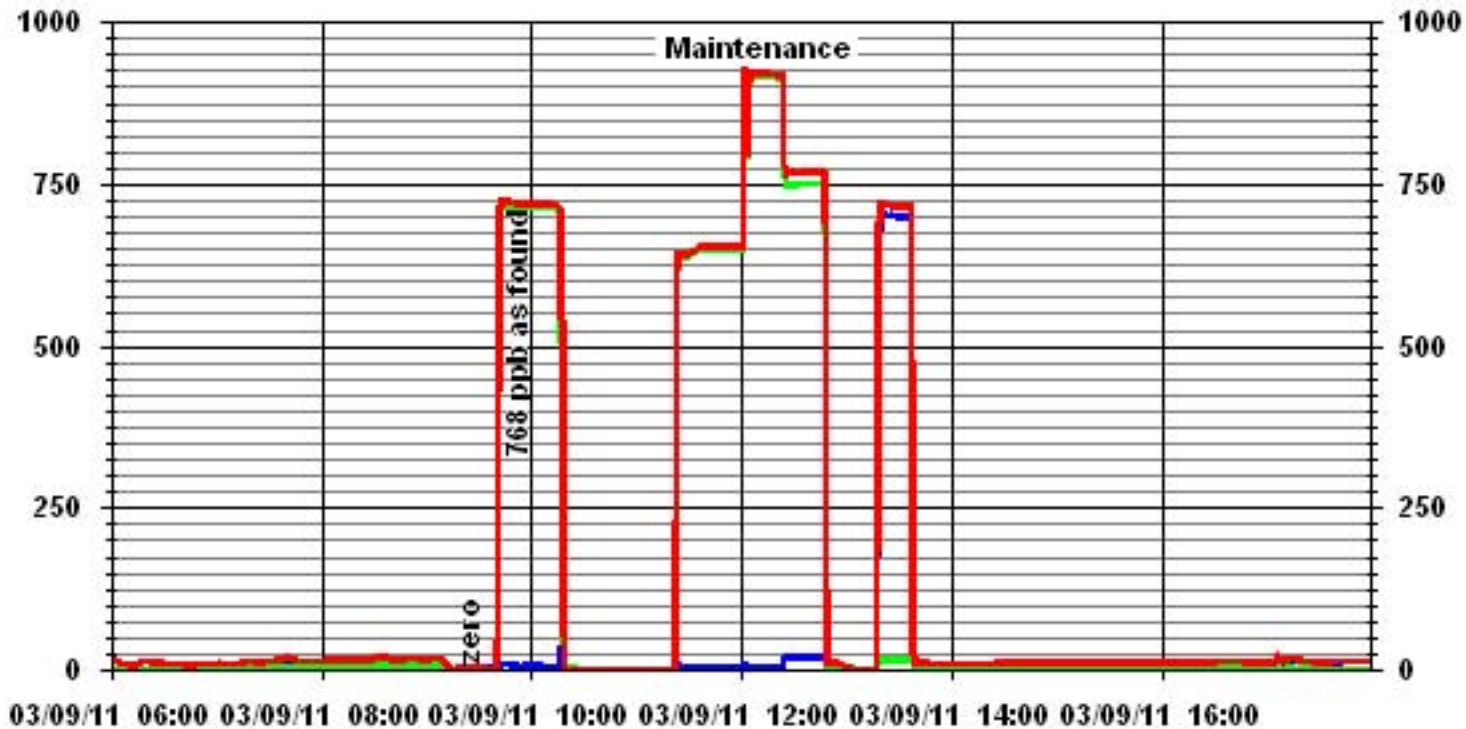
Calibration Date	March 9, 2011		
Company		LICA	
Plant / Location		Portable/ 13-16-62-5W4M	
Start Time (MST)	9:07	End Time (MST)	13:41

Calculated Conc.	Indicated Response	Correction Factor	Correlation Coefficient	(≥ 0.995)	#DIV/0!
ppb	ppb		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!			



Notes: Following the A/F points, a new sample pump was installed, the old pump was rebuilt for spare. A factory cal was performed, and the slope and offset were adjusted.

01 Minute Averages



— LICA33 IIOX_ PPB — LICA33 IIO_ PPB — LICA33 IIO2_ PPB

NOx - NO- NO₂ Calibration Report

Station Information

Calibration Date	March 10, 2011	Previous Calibration	March 9, 2011
Company	LICA	Plant/Location	Portable/ 13-16-62-5W4M
Start Time (MST)	8:43	End Time (MST)	14:58
Reason:	Monthly Calibration	Other	
Barometric Pressure	0.93 atm	Station Temperature	22 Deg C
Cal Gas Concentration	NOx 51.7 ppm	NO 50.4 ppm	Cal Gas Expiry date 04-Feb-13
DAS Output Voltage	0 - 1	Volts	Chart Rec. Output NA

Equipment Information

Analyzer Make / Model:	API 200E	S/N :	593	Method:	Chemiluminescent
Calibrator Make / Model:	Envionics 2000	S/N:	1991		
DAS Make / Model:	ESC 8832	S/N :	AO 717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Envionics 2000	S/N :	1991		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range			0-1000	ppb			
Sample Flow/Conv. Temp	477	ccm	313.9	Deg C	480	ccm	313.8
Ozone Flow / Vacuum	78	ccm	4.2	"Hg-A	78	ccm	4.2
HVPS / A ZERO	662	Volts	6.9	MV	662	Volts	6.9
Rx/ Temp / PMT Temp	50.0	Deg C	6.7	Deg C	50.0	Deg C	6.7
Box Temp / IZS Temp	33.1	Deg C	45.2	Deg C	32.8	Deg C	45.2
Offset	1.9	NOx	0.8	NO	1.9	NOx	0.8
Slope	1.039	NOx	1.008	NO	1.039	NOx	1.008
NO ₂ COEF / Conv Efficiency	NA	NO ₂	0.996		NA	NO ₂	0.996

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO ₂	NOx	NO	NO ₂	NOx	NO
4994	0.0	----	0	0	----	1	-1	1	----	----
4921	74.2	----	768	749	----	771	749	22	0.9974	0.9982
4954	39.6	----	410	400	----	409	399	10	1.0049	0.9992
4973	19.8	----	205	200	----	206	200	6	1.0001	0.9944
4995	0.0	----	0	0	0	-1	0	0	----	----

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO ₂ Correction Factor	NO ₂ Conv Efficiency
			NOx	NO	NO ₂	NOx	NO	NO ₂		
4921	74.2	----	768	749	----	771	750	21	----	----
4921	74.2	600	768	----	588	771	183	587	1.0034	99.82%
4921	74.2	250	768	----	254	772	517	255	1.0000	100.43%
4921	74.2	140	768	----	151	770	620	150	1.0134	99.23%

Linearity	Sum of Least Squares	NOx= 0.997	NO= 1.000	NO ₂ = 1.001	
OK?	Yes No	Correction Factors:	NOx= 0.9974	NO= 0.9982	NO ₂ = 1.0034
Average Converter Efficiency= 99.83%					

Before Calibration				After Calibration				
Auto Zero	-0.6	NOx	-0.1	NO ₂	-0.2	NOx	-1.2	NO ₂
Auto Span	728	NOx	723	NO ₂	725	NOx	709	NO ₂
Sample Lines Connected				YES				
Percent Change from Previous Calibration		NOx	-	NO	-	NO ₂	-	

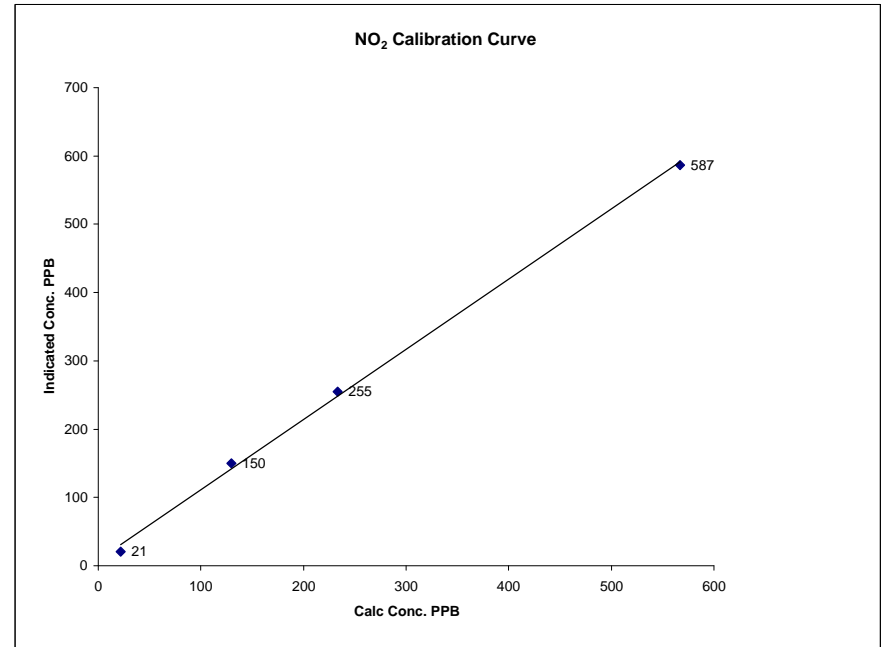
Notes Additional point done for ozone cal (O3 set point= 420), NOx=771, NO=355, NO₂=416.

Calibration Performed by: Ting Xu

NO₂ Calibration Curve

Calibration Date	March 10, 2011	Company	LICA
Plant / Location	Portable/ 13-16-62-5W4M	Start Time (MST)	8:43
End Time (MST)	14:58		

Calculated Conc.	Indicated Response	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.998683
ppb	ppb		Slope	(0.85 to 1.15)	1.027169
22	21	N/A	Intercept	(± 3% F.S.)	8.78374
130	150	0.8667			
233	255	0.9137			
567	587	0.9659			

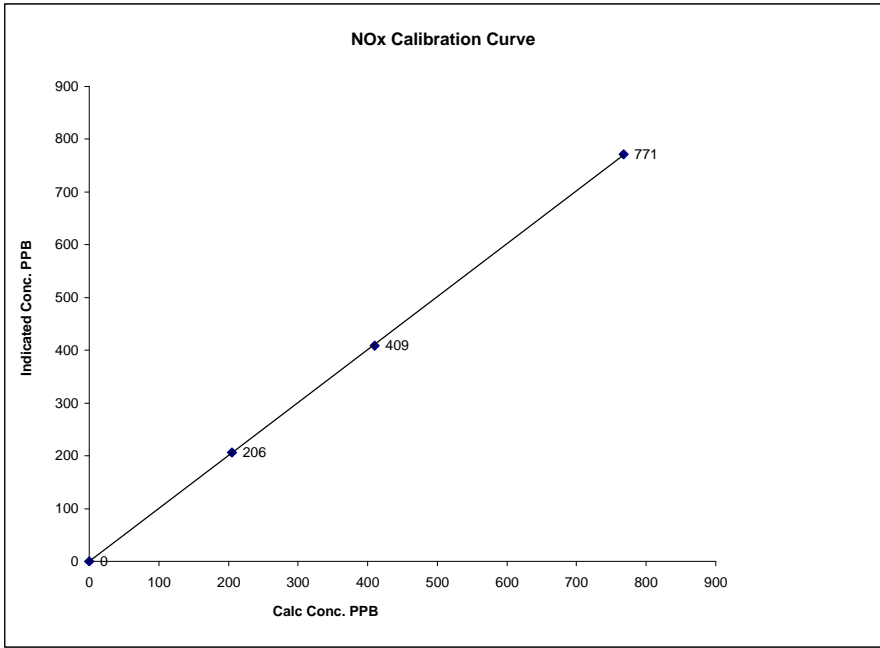


Notes:

NOx Calibration Curve

Calibration Date March 10, 2011
 Company LICA
 Plant / Location Portable/ 13-16-62-5W4M
 Start Time (MST) 8:43 End Time (MST) 14:58

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999984
0	0	N/A	Slope (0.85 to 1.15)	1.003360
205	206	0.9953	Intercept (± 3% F.S.)	-0.40690
410	409	1.0024		
768	771	0.9961		

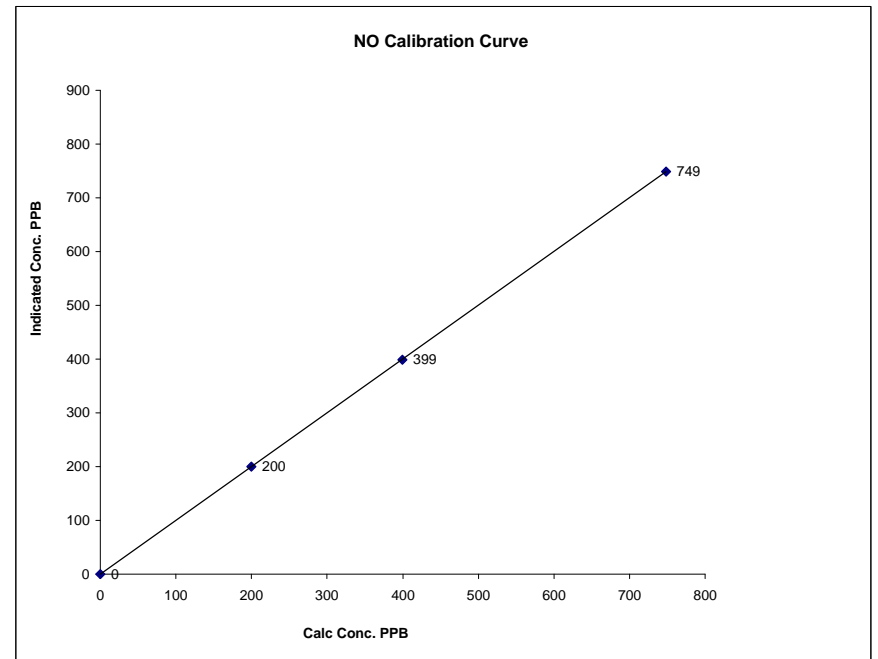


Notes:

NO Calibration Curve

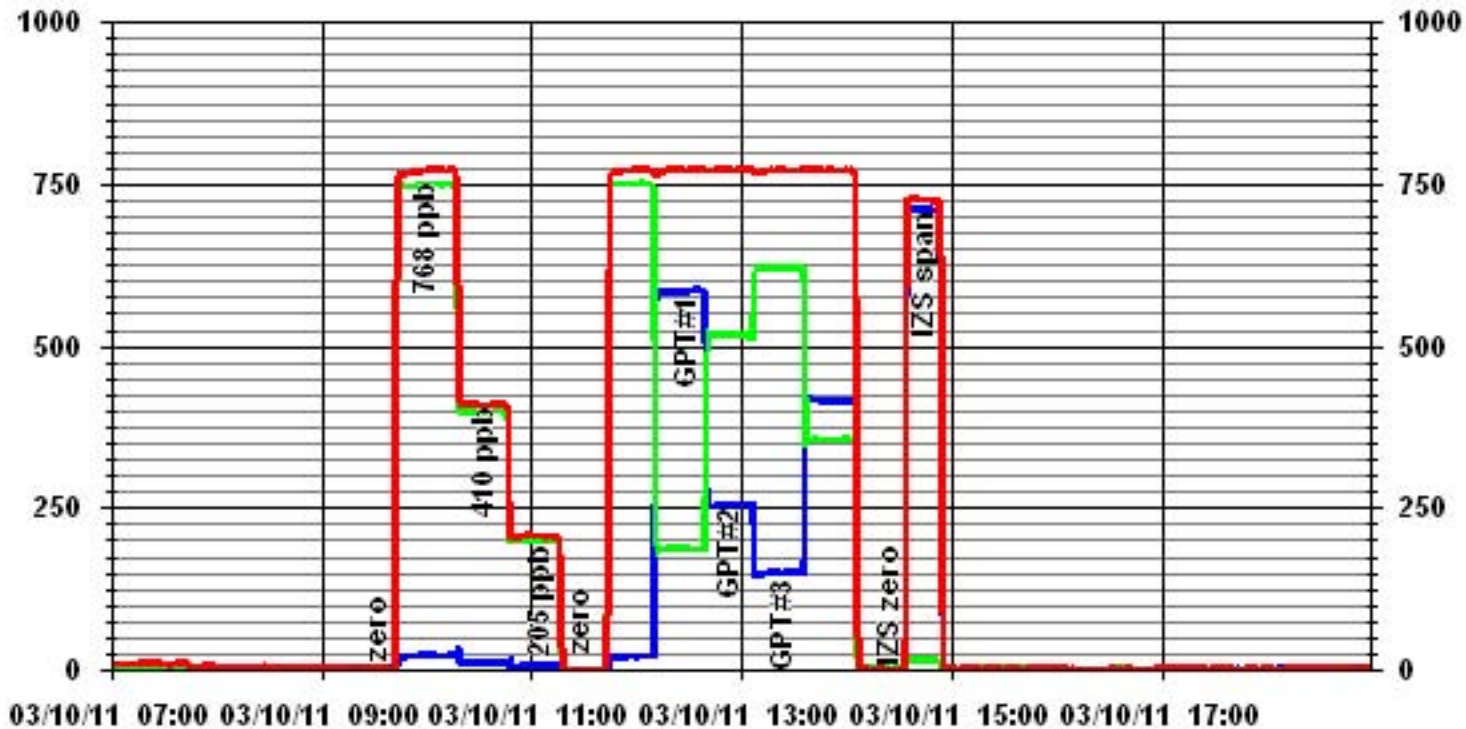
Calibration Date March 10, 2011
 Company LICA
 Plant / Location Portable/ 13-16-62-5W4M
 Start Time (MST) 8:43 End Time (MST) 14:58

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999998
0	0	N/A	Slope (0.85 to 1.15)	1.000681
200	200	0.9994	Intercept (± 3% F.S.)	-1.8534
400	399	1.0017		
749	749	0.9995		



Notes:

01 Minute Averages



Ozone

O₃ Calibration Report

Station Information

Calibration Date	March 10, 2011	Previous Calibration	February 11, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	9:36	End Time (MST)	17:54
Reason:	Monthly Calibration		
Barometric Pressure	0.934 mm Hg	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:	Enviroincs 2000	S/N :	1991	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO717		

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 500 ppb			
Cell A Flow / Cell B Flow	742 ccm	751 ccm	752 ccm	760 Deg C
Pressure	680 mmHg		694 mmHg	
Bench Lamp Temp	54.1 Deg C		54.1 Deg C	
O3 Lamp / Box Temp	68.2 Deg C	31.6 Deg C	68.2 Deg C	31.5 Deg C
Offset/Slop	0	0.993	0	0.971

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	N/A
4995	420	395	403	0.9801
4995	420	395	395	1.0000
4995	250	233	236	0.9873
4995	140	130	132	0.9848
4995	0	0	0	N/A
Sum of Least Squares				N/A
New Correction Factor				1.0000

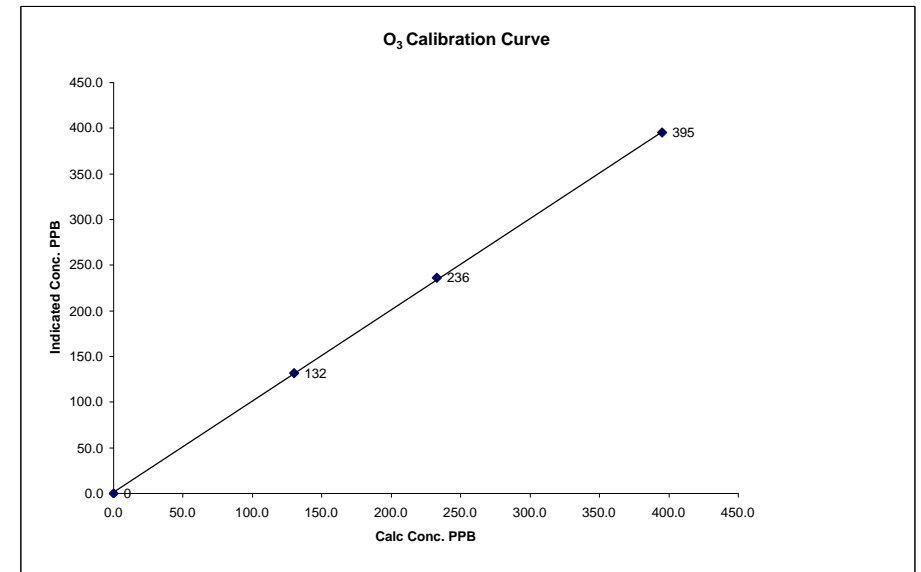
	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	356	347
Sample Lines Connected		YES
Percent Change from Previous Calibration		1.8%

Calibration Performed by: Ting Xu

O₃ Calibration Curve

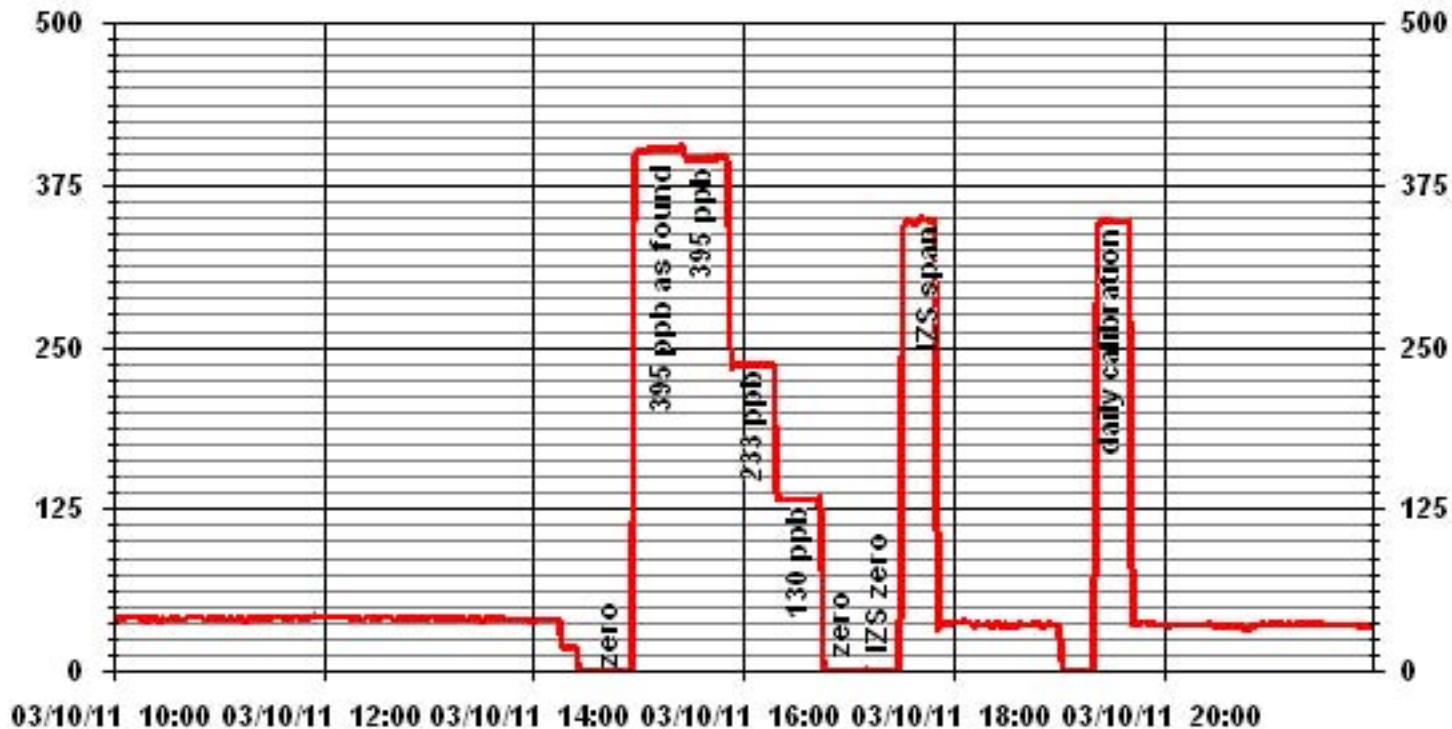
Calibration Date	March 10, 2011
Company	Lakeland Industry & Community Association
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M
Start Time (MST)	9:36
End Time (MST)	17:54

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999919
0	0	n/a	Intercept	(± 3% F.S.)	1.223924
130	132	0.9848			
233	236	0.9873			
395	395	1.0000			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	March 9, 2011	Previous Calibration	February 2, 2011
Company:	Lakeland Industry and Community Association		
Plant / Location:	Portable Station Devon Wellsite 13-16-62-5W4M		
Start Time (MST)	9:43	End Time (MST)	14:34
Reason:	Monthly Calibration		
Barometric Pressure:	0.94 atm	Station Temperature:	22 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	207Prop/602Meth/1171.25THC ppm	Cal Gas Expiry Date:	9/21/2011
DAS make & Model:	ESC 8832	S/N :	AO717
Output Voltage Range:	0 - 10 VDC		

Analyzer Information

Make / Model	TECO 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
1999	0	0.0	0.2	N/A
1999	70	39.6	39.9	0.9931
1999	0.0	0.0	0.0	N/A
1999	70.0	39.6	39.8	0.9956
1999	34.9	20.1	19.8	1.0150
1999	20.0	11.6	11.4	1.0177
1999	0	0.0	-0.1	N/A
			Correction Factor:	0.9956

Percent Change

Previous Calibration Correction Factor:	0.9907
Current Correction Factor Before Span Adjust:	0.9931
Percent Change:	-0.3%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.1	-0.1
Auto Span	33.8	33.3
Sample Lines Connected		YES

Cylinder Pressures

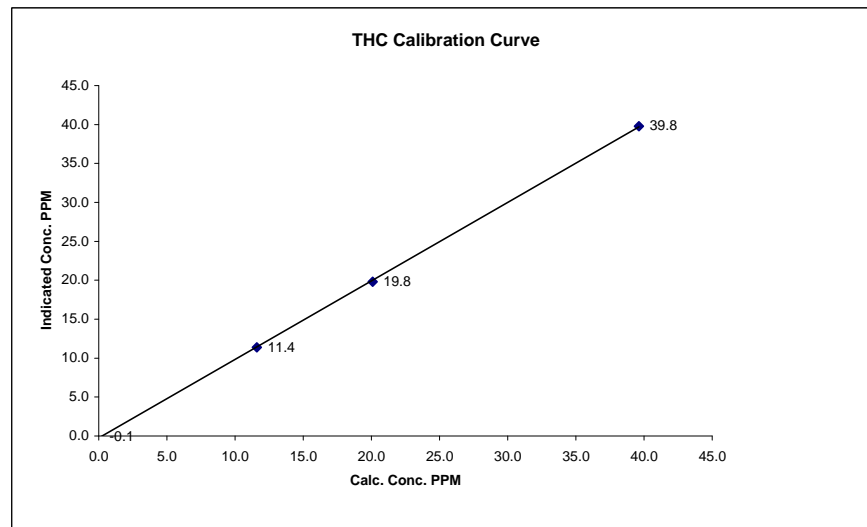
Span	1200 psi
Hydrogen	2000 psi
Zero Air	30 psi Using API 700

Calibration Performed by: Ting Xu / Shea Beaton

THC Calibration Curve

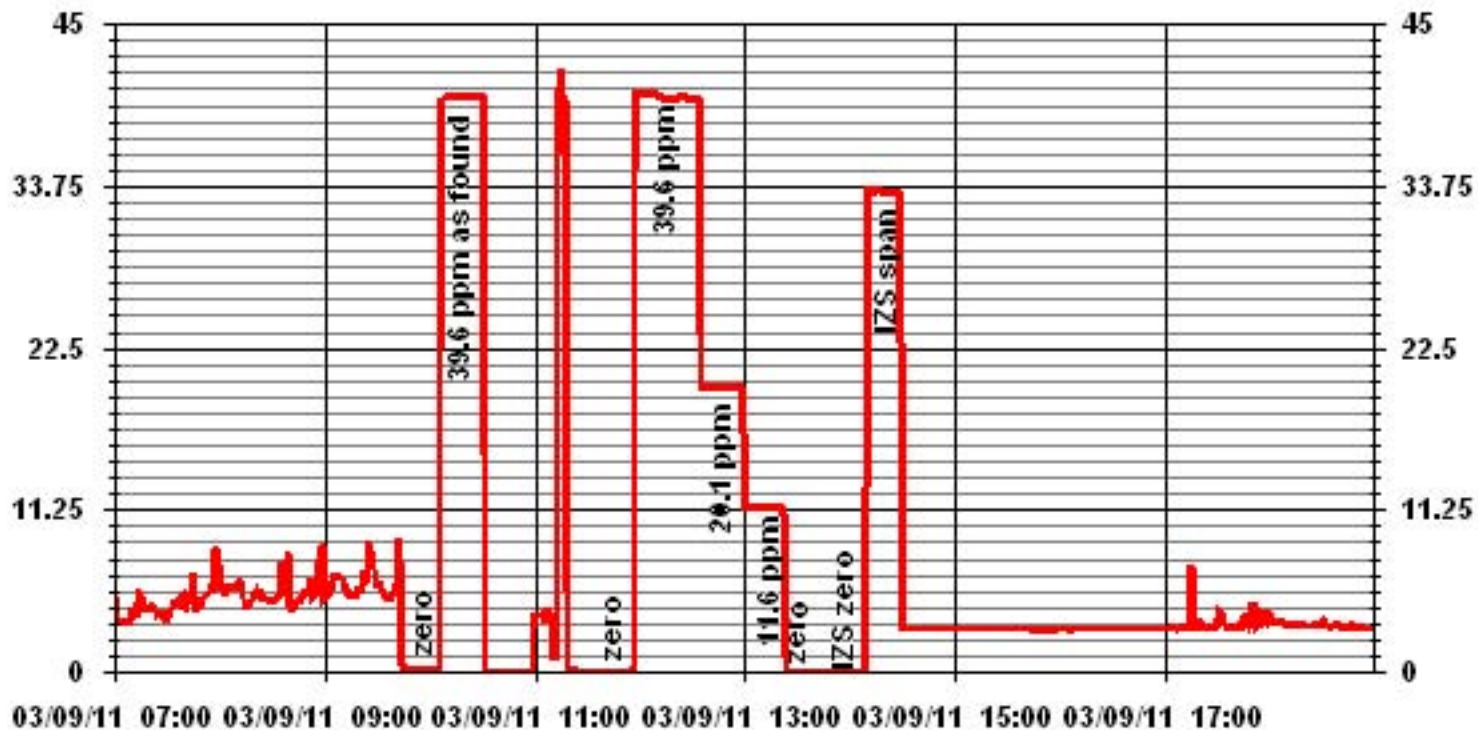
Calibration Date	March 9, 2011
Company	Lakeland Industry and Community Association
Plant / Location	Portable Station Devon Wellsite 13-16-62-5W4M
Start Time (MST)	9:43
End Time (MST)	14:34

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999907
0.0	-0.1		Intercept	(0.85 to 1.15)	1.007345
11.6	11.4	1.0177		(± 3% F.S.)	-0.237616
20.1	19.8	1.0150			
39.6	39.8	0.9956			



Notes: Following the A/F points, the H2 cylinder was replaced, and the gas pressures was optimized.

01 Minute Averages



Volatile Organics Laboratory Analysis

Maxxam Analytics Inc.

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
 Location: 13-16-62-5 W4M Canister ID: 7801
 Station ID: Lica 33 (Portable) Canister Installation Date/Time: Mar 03, 11 @ 10:08 mst
 Field Sample ID: LICA VOC/PORT/ Mar 04, 11 Canister Removal Date/Time: Mar 07, 11 @ 13:29 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
4-Mar-11	03/04/2011 0:00	03/05/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1492	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 # 06947

Technician Signature: Ting Xu _____



Your C.O.C. #: 06947

Attention: Michael Bisaga

Maxxam Analytics
 2608 6A Ave.
 Cold Lake, AB
 CANADA T9M 2C7

Report Date: 2011/03/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B131200

Received: 2011/03/09, 09:38

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/03/14	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/03/11	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.

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Total cover pages: 1

Maxxam Job #: B131200
 Report Date: 2011/03/16

RESULTS OF ANALYSES OF AIR

Maxxam ID		IV8000	IV8001	
Sampling Date		2011/03/04	2011/03/04	
COC Number		06947	06947	
	Units	LICA VOC/CLS/MAR 04,11 - 7802	LICA VOC/PORT/MAR 04,11 - 7801	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	22	2429154

QC Batch = Quality Control Batch

Maxxam Job #: B131200
 Report Date: 2011/03/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IV8000			IV8001				
Sampling Date		2011/03/04			2011/03/04				
COC Number		06947			06947				
	Units	LICA VOC/CLS/MAR 04,11 - 7802	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 04,11 - 7801	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics									
2,2,4-Trimethylpentane	ppbv	<0.20	<0.934	0.934	<0.20	0.20	<0.934	0.934	2429170
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2429170
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2429170
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2429170
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2429170
Dichlorodifluoromethane (FREON 12)	ppbv	0.57	2.80	0.989	0.56	0.20	2.78	0.989	2429170
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2429170
Chloromethane	ppbv	0.52	1.08	0.620	0.49	0.30	1.02	0.620	2429170
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2429170
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2429170
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2429170
Trichlorofluoromethane (FREON 11)	ppbv	0.27	1.50	1.12	0.28	0.20	1.58	1.12	2429170
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2429170
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2429170
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2429170
2-Propanone	ppbv	1.19	2.83	1.90	1.10	0.80	2.61	1.90	2429170
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2429170
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2429170
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2429170
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2429170
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2429170
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2429170
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2429170
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2429170
Methylene Chloride(Dichloromethane)	ppbv	0.43	1.49	1.04	0.37	0.30	1.27	1.04	2429170
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2429170
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2429170
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2429170
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2429170
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2429170
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2429170
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

Maxxam Job #: B131200
 Report Date: 2011/03/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IV8000			IV8001				
Sampling Date		2011/03/04			2011/03/04				
COC Number		06947			06947				
	Units	LICA VOC/CLS/MAR 04,11 - 7802	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 04,11 - 7801	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2429170
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2429170
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2429170
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2429170
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2429170
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2429170
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2429170
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2429170
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2429170
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2429170
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2429170
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2429170
Benzene	ppbv	0.22	0.695	0.575	0.19	0.18	0.623	0.575	2429170
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2429170
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2429170
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2429170
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2429170
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2429170
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2429170
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2429170
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2429170
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2429170
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2429170
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2429170
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2429170
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2429170
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2429170
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2429170
Hexane	ppbv	<0.30	<1.06	1.06	0.49	0.30	1.72	1.06	2429170
Cyclohexane	ppbv	<0.20	<0.688	0.688	0.60	0.20	2.06	0.688	2429170
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2429170
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2429170
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2429170
QC Batch = Quality Control Batch									

Maxxam Job #: B131200
 Report Date: 2011/03/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IV8000			IV8001				
Sampling Date		2011/03/04			2011/03/04				
COC Number		06947			06947				
	Units	LICA VOC/CLS/MAR 04,11 - 7802	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 04,11 - 7801	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)									
Bromochloromethane	%	75	N/A	N/A	69		N/A	N/A	2429170
D5-Chlorobenzene	%	73	N/A	N/A	69		N/A	N/A	2429170
Difluorobenzene	%	77	N/A	N/A	72		N/A	N/A	2429170

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

Maxxam Job #: B131200
 Report Date: 2011/03/16

Test Summary

Maxxam ID	IV8000	Collected	2011/03/04
Sample ID	LICA VOC/CLS/MAR 04,11 - 7802	Shipped	
Matrix	AIR	Received	2011/03/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2429154	N/A	2011/03/14	S_S
Volatile Organics in Air (TO-15)	GC/MS	2429170	N/A	2011/03/11	S_S

Maxxam ID	IV8001	Collected	2011/03/04
Sample ID	LICA VOC/PORT/MAR 04,11 - 7801	Shipped	
Matrix	AIR	Received	2011/03/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2429154	N/A	2011/03/14	S_S
Volatile Organics in Air (TO-15)	GC/MS	2429170	N/A	2011/03/11	S_S

Maxxam Job #: B131200
Report Date: 2011/03/16

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB131200

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2429170 S_S	Spiked Blank	Bromochloromethane	2011/03/11		86	%	60 - 140
		D5-Chlorobenzene	2011/03/11		90	%	60 - 140
		Difluorobenzene	2011/03/11		87	%	60 - 140
		2,2,4-Trimethylpentane	2011/03/11		99	%	70 - 130
		Carbon Disulfide	2011/03/11		92	%	70 - 130
		Propene	2011/03/11		88	%	70 - 130
		Vinyl Acetate	2011/03/11		106	%	70 - 130
		Vinyl Bromide	2011/03/11		95	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/03/11		96	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/03/11		111	%	70 - 130
		Chloromethane	2011/03/11		100	%	70 - 130
		Vinyl Chloride	2011/03/11		96	%	70 - 130
		Chloroethane	2011/03/11		98	%	70 - 130
		1,3-Butadiene	2011/03/11		97	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/03/11		100	%	70 - 130
		Trichlorotrifluoroethane	2011/03/11		98	%	70 - 130
		Ethanol	2011/03/11		93	%	70 - 130
		2-propanol	2011/03/11		99	%	70 - 130
		2-Propanone	2011/03/11		114	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/03/11		115	%	70 - 130
		Methyl Isobutyl Ketone	2011/03/11		103	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/03/11		104	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/03/11		101	%	70 - 130
		Ethyl Acetate	2011/03/11		104	%	70 - 130
		1,1-Dichloroethylene	2011/03/11		100	%	70 - 130
		cis-1,2-Dichloroethylene	2011/03/11		103	%	70 - 130
		trans-1,2-Dichloroethylene	2011/03/11		101	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/03/11		93	%	70 - 130
		Chloroform	2011/03/11		102	%	70 - 130
		Carbon Tetrachloride	2011/03/11		103	%	70 - 130
		1,1-Dichloroethane	2011/03/11		102	%	70 - 130
		1,2-Dichloroethane	2011/03/11		105	%	70 - 130
		Ethylene Dibromide	2011/03/11		102	%	70 - 130
		1,1,1-Trichloroethane	2011/03/11		103	%	70 - 130
		1,1,2-Trichloroethane	2011/03/11		102	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/03/11		93	%	70 - 130
		cis-1,3-Dichloropropene	2011/03/11		107	%	70 - 130
		trans-1,3-Dichloropropene	2011/03/11		107	%	70 - 130
		1,2-Dichloropropane	2011/03/11		102	%	70 - 130
		Bromomethane	2011/03/11		91	%	70 - 130
		Bromoform	2011/03/11		102	%	70 - 130
		Bromodichloromethane	2011/03/11		102	%	70 - 130
		Dibromochloromethane	2011/03/11		107	%	70 - 130
		Heptane	2011/03/11		102	%	70 - 130
		Trichloroethylene	2011/03/11		99	%	70 - 130
		Tetrachloroethylene	2011/03/11		101	%	70 - 130
		Benzene	2011/03/11		100	%	70 - 130
		Toluene	2011/03/11		104	%	70 - 130
		Ethylbenzene	2011/03/11		99	%	70 - 130
		p+m-Xylene	2011/03/11		99	%	70 - 130
		o-Xylene	2011/03/11		99	%	70 - 130
		Styrene	2011/03/11		99	%	70 - 130
		1,3,5-Trimethylbenzene	2011/03/11		94	%	70 - 130
		1,2,4-Trimethylbenzene	2011/03/11		93	%	70 - 130
		4-ethyltoluene	2011/03/11		102	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB131200

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2429170 S_S	Spiked Blank	Chlorobenzene	2011/03/11		95	%	70 - 130	
		Benzyl chloride	2011/03/11		102	%	70 - 130	
1,3-Dichlorobenzene		2011/03/11		90	%	70 - 130		
1,4-Dichlorobenzene		2011/03/11		91	%	70 - 130		
1,2-Dichlorobenzene		2011/03/11		87	%	70 - 130		
1,2,4-Trichlorobenzene		2011/03/11		91	%	70 - 130		
Hexachlorobutadiene		2011/03/11		86	%	70 - 130		
Hexane		2011/03/11		104	%	70 - 130		
Cyclohexane		2011/03/11		102	%	70 - 130		
Tetrahydrofuran		2011/03/11		107	%	70 - 130		
Method Blank		1,4-Dioxane	2011/03/11		100	%	70 - 130	
		Bromochloromethane	2011/03/11		81	%	60 - 140	
		D5-Chlorobenzene	2011/03/11		78	%	60 - 140	
		Difluorobenzene	2011/03/11		84	%	60 - 140	
		2,2,4-Trimethylpentane	2011/03/11	<0.20			ppbv	
		Carbon Disulfide	2011/03/11	<0.50			ppbv	
		Propene	2011/03/11	<0.30			ppbv	
		Vinyl Acetate	2011/03/11	<0.20			ppbv	
		Vinyl Bromide	2011/03/11	<0.20			ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/03/11	<0.20			ppbv	
		1,2-Dichlorotetrafluoroethane	2011/03/11	<0.17			ppbv	
		Chloromethane	2011/03/11	<0.30			ppbv	
		Vinyl Chloride	2011/03/11	<0.18			ppbv	
		Chloroethane	2011/03/11	<0.30			ppbv	
		1,3-Butadiene	2011/03/11	<0.50			ppbv	
		Trichlorofluoromethane (FREON 11)	2011/03/11	<0.20			ppbv	
		Trichlorotrifluoroethane	2011/03/11	<0.15			ppbv	
		Ethanol	2011/03/11	<2.3			ppbv	
		2-propanol	2011/03/11	<3.0			ppbv	
		2-Propanone	2011/03/11	<0.80			ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/03/11	<3.0			ppbv	
		Methyl Isobutyl Ketone	2011/03/11	<3.2			ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/03/11	<2.0			ppbv	
		Methyl t-butyl ether (MTBE)	2011/03/11	<0.20			ppbv	
		Ethyl Acetate	2011/03/11	<2.2			ppbv	
		1,1-Dichloroethylene	2011/03/11	<0.25			ppbv	
		cis-1,2-Dichloroethylene	2011/03/11	<0.19			ppbv	
		trans-1,2-Dichloroethylene	2011/03/11	<0.20			ppbv	
		Methylene Chloride(Dichloromethane)	2011/03/11	<0.30			ppbv	
		Chloroform	2011/03/11	<0.15			ppbv	
		Carbon Tetrachloride	2011/03/11	<0.30			ppbv	
		1,1-Dichloroethane	2011/03/11	<0.20			ppbv	
		1,2-Dichloroethane	2011/03/11	<0.20			ppbv	
		Ethylene Dibromide	2011/03/11	<0.17			ppbv	
		1,1,1-Trichloroethane	2011/03/11	<0.30			ppbv	
		1,1,2-Trichloroethane	2011/03/11	<0.15			ppbv	
		1,1,2,2-Tetrachloroethane	2011/03/11	<0.20			ppbv	
		cis-1,3-Dichloropropene	2011/03/11	<0.18			ppbv	
trans-1,3-Dichloropropene	2011/03/11	<0.17			ppbv			
1,2-Dichloropropane	2011/03/11	<0.40			ppbv			
Bromomethane	2011/03/11	<0.18			ppbv			
Bromoform	2011/03/11	<0.20			ppbv			
Bromodichloromethane	2011/03/11	<0.20			ppbv			
Dibromochloromethane	2011/03/11	<0.20			ppbv			
Heptane	2011/03/11	<0.30			ppbv			

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB131200

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2429170 S_S	Method Blank	Trichloroethylene	2011/03/11	<0.30		ppbv	
		Tetrachloroethylene	2011/03/11	<0.20		ppbv	
		Benzene	2011/03/11	<0.18		ppbv	
		Toluene	2011/03/11	<0.20		ppbv	
		Ethylbenzene	2011/03/11	<0.20		ppbv	
		p+m-Xylene	2011/03/11	<0.37		ppbv	
		o-Xylene	2011/03/11	<0.20		ppbv	
		Styrene	2011/03/11	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/03/11	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/03/11	<0.50		ppbv	
		4-ethyltoluene	2011/03/11	<2.2		ppbv	
		Chlorobenzene	2011/03/11	<0.20		ppbv	
		Benzyl chloride	2011/03/11	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/03/11	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/03/11	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/03/11	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/03/11	<2.0		ppbv	
		Hexachlorobutadiene	2011/03/11	<3.0		ppbv	
		Hexane	2011/03/11	<0.30		ppbv	
		Cyclohexane	2011/03/11	<0.20		ppbv	
		Tetrahydrofuran	2011/03/11	<0.40		ppbv	
		1,4-Dioxane	2011/03/11	<2.0		ppbv	
		Xylene (Total)	2011/03/11	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/03/11	NC		%	25
		Carbon Disulfide	2011/03/11	NC		%	25
		Propene	2011/03/11	NC		%	25
		Vinyl Acetate	2011/03/11	NC		%	25
		Vinyl Bromide	2011/03/11	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/03/11	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/03/11	NC		%	25
		Chloromethane	2011/03/11	NC		%	25
		Vinyl Chloride	2011/03/11	NC		%	25
		Chloroethane	2011/03/11	NC		%	25
		1,3-Butadiene	2011/03/11	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/03/11	NC		%	25
		Trichlorotrifluoroethane	2011/03/11	NC		%	25
		Ethanol	2011/03/11	NC		%	25
		2-propanol	2011/03/11	NC		%	25
		2-Propanone	2011/03/11	0.8		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/03/11	0.6		%	25
		Methyl Isobutyl Ketone	2011/03/11	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/03/11	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/03/11	NC		%	25
		Ethyl Acetate	2011/03/11	NC		%	25
		1,1-Dichloroethylene	2011/03/11	NC		%	25
		cis-1,2-Dichloroethylene	2011/03/11	NC		%	25
		trans-1,2-Dichloroethylene	2011/03/11	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/03/11	1.4		%	25
		Chloroform	2011/03/11	NC		%	25
		Carbon Tetrachloride	2011/03/11	NC		%	25
		1,1-Dichloroethane	2011/03/11	NC		%	25
		1,2-Dichloroethane	2011/03/11	NC		%	25
		Ethylene Dibromide	2011/03/11	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB131200

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2429170 S_S	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2011/03/11	NC		%	25
		1,1,2-Trichloroethane	2011/03/11	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/03/11	NC		%	25
		cis-1,3-Dichloropropene	2011/03/11	NC		%	25
		trans-1,3-Dichloropropene	2011/03/11	NC		%	25
		1,2-Dichloropropane	2011/03/11	NC		%	25
		Bromomethane	2011/03/11	NC		%	25
		Bromoform	2011/03/11	NC		%	25
		Bromodichloromethane	2011/03/11	NC		%	25
		Dibromochloromethane	2011/03/11	NC		%	25
		Heptane	2011/03/11	NC		%	25
		Trichloroethylene	2011/03/11	NC		%	25
		Tetrachloroethylene	2011/03/11	1.8		%	25
		Benzene	2011/03/11	2.7		%	25
		Toluene	2011/03/11	2.8		%	25
		Ethylbenzene	2011/03/11	1.7		%	25
		p+m-Xylene	2011/03/11	0.8		%	25
		o-Xylene	2011/03/11	0.9		%	25
		Styrene	2011/03/11	8.3		%	25
		1,3,5-Trimethylbenzene	2011/03/11	NC		%	25
		1,2,4-Trimethylbenzene	2011/03/11	0.3		%	25
		4-ethyltoluene	2011/03/11	NC		%	25
		Chlorobenzene	2011/03/11	NC		%	25
		Benzyl chloride	2011/03/11	NC		%	25
		1,3-Dichlorobenzene	2011/03/11	NC		%	25
		1,4-Dichlorobenzene	2011/03/11	NC		%	25
		1,2-Dichlorobenzene	2011/03/11	NC		%	25
		1,2,4-Trichlorobenzene	2011/03/11	NC		%	25
		Hexachlorobutadiene	2011/03/11	NC		%	25
		Hexane	2011/03/11	NC		%	25
		Cyclohexane	2011/03/11	NC		%	25
		Tetrahydrofuran	2011/03/11	NC		%	25
		1,4-Dioxane	2011/03/11	NC		%	25
		Xylene (Total)	2011/03/11	0.8		%	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.

Maxxam Analytics Inc.

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
 Location: 13-16-62-5 W4M Canister ID: 7798
 Station ID: Lica 33 (Portable) Canister Installation Date/Time: Mar 09, 11 @ 16:39 mst
 Field Sample ID: LICA VOC/PORT/ Mar 10, 11 Canister Removal Date/Time: Mar 11, 11 @ 10:40 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
10-Mar-11	03/10/2011 0:00	03/11/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1492	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	21

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 # 06647

Technician Signature: Ting Xu _____



Your C.O.C. #: 06647

Attention: Michael Bisaga

Maxxam Analytics
 2608 6A Ave.
 Cold Lake, AB
 CANADA T9M 2C7

Report Date: 2011/03/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B135110

Received: 2011/03/16, 08:55

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/03/21	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/03/21	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 Job #: B135110
 Report Date: 2011/03/25

RESULTS OF ANALYSES OF AIR

Maxxam ID		IX6171	IX6172	
Sampling Date		2011/03/10	2011/03/10	
COC Number		06647	06647	
	Units	LICAVOC\CLSMAR10,11 #7865	LICAVOC\PORTMAR10,11 #7798	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2436901

QC Batch = Quality Control Batch

Maxxam Job #: B135110
 Report Date: 2011/03/25

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IX6171				
Sampling Date		2011/03/10				
COC Number		06647				
	Units	LICAVOC\CLS\MAR10,11 #7865	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2436885
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2436885
Propene	ppbv	<0.30	0.30	<0.516	0.516	2436885
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2436885
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2436885
Dichlorodifluoromethane (FREON 12)	ppbv	1.06	0.20	5.23	0.989	2436885
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2436885
Chloromethane	ppbv	0.75	0.30	1.54	0.620	2436885
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2436885
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2436885
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2436885
Trichlorofluoromethane (FREON 11)	ppbv	0.45	0.20	2.56	1.12	2436885
Trichlorotrifluoroethane	ppbv	0.16	0.15	1.25	1.15	2436885
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2436885
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2436885
2-Propanone	ppbv	3.73	0.80	8.85	1.90	2436885
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2436885
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2436885
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2436885
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2436885
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2436885
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2436885
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2436885
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2436885
Methylene Chloride(Dichloromethane)	ppbv	0.58	0.30	2.01	1.04	2436885
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2436885
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2436885
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2436885
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2436885
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2436885
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2436885
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2436885
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B135110
 Report Date: 2011/03/25

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IX6171				
Sampling Date		2011/03/10				
COC Number		06647				
	Units	LICAVOC\CLS\MAR10,11 #7865	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2436885
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2436885
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2436885
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2436885
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2436885
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2436885
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2436885
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2436885
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2436885
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2436885
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2436885
Benzene	ppbv	0.35	0.18	1.11	0.575	2436885
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2436885
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2436885
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2436885
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2436885
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2436885
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2436885
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2436885
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2436885
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2436885
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2436885
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2436885
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2436885
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2436885
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2436885
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2436885
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2436885
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2436885
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2436885
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2436885
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2436885
Surrogate Recovery (%)						
Bromochloromethane	%	86		N/A	N/A	2436885
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B135110
 Report Date: 2011/03/25

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IX6171				
Sampling Date		2011/03/10				
COC Number		06647				
	Units	LICAVOC\CLS\MAR10,11	RDL	ug/m3	DL (ug/m3)	QC Batch
		#7865				

D5-Chlorobenzene	%	83		N/A	N/A	2436885
Difluorobenzene	%	84		N/A	N/A	2436885

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

Maxxam Job #: B135110
 Report Date: 2011/03/25

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IX6172				
Sampling Date		2011/03/10				
COC Number		06647				
	Units	LICAVOC\PORTMAR10,11 #7798	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2436885
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2436885
Propene	ppbv	<0.30	0.30	<0.516	0.516	2436885
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2436885
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2436885
Dichlorodifluoromethane (FREON 12)	ppbv	1.02	0.20	5.05	0.989	2436885
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2436885
Chloromethane	ppbv	0.73	0.30	1.50	0.620	2436885
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2436885
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2436885
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2436885
Trichlorofluoromethane (FREON 11)	ppbv	0.43	0.20	2.44	1.12	2436885
Trichlorotrifluoroethane	ppbv	0.18	0.15	1.40	1.15	2436885
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2436885
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2436885
2-Propanone	ppbv	4.20	0.80	9.97	1.90	2436885
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2436885
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2436885
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2436885
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2436885
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2436885
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2436885
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2436885
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2436885
Methylene Chloride(Dichloromethane)	ppbv	0.96	0.30	3.33	1.04	2436885
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2436885
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2436885
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2436885
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2436885
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2436885
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2436885
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2436885

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B135110
 Report Date: 2011/03/25

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IX6172				
Sampling Date		2011/03/10				
COC Number		06647				
	Units	LICAVOC\PORTMAR10,11 #7798	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2436885
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2436885
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2436885
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2436885
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2436885
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2436885
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2436885
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2436885
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2436885
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2436885
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2436885
Benzene	ppbv	0.32	0.18	1.01	0.575	2436885
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2436885
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2436885
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2436885
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2436885
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2436885
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2436885
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2436885
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2436885
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2436885
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2436885
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2436885
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2436885
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2436885
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2436885
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2436885
Hexane	ppbv	0.61	0.30	2.16	1.06	2436885
Cyclohexane	ppbv	0.68	0.20	2.35	0.688	2436885
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2436885
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2436885
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2436885
Surrogate Recovery (%)						
Bromochloromethane	%	84		N/A	N/A	2436885
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B135110
 Report Date: 2011/03/25

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IX6172				
Sampling Date		2011/03/10				
COC Number		06647				
	Units	LICAVOC\PORTMAR10,11	RDL	ug/m3	DL (ug/m3)	QC Batch
		#7798				

D5-Chlorobenzene	%	76		N/A	N/A	2436885
Difluorobenzene	%	83		N/A	N/A	2436885

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

Maxxam Job #: B135110
 Report Date: 2011/03/25

Test Summary

Maxxam ID IX6171
Sample ID LICAVOC\CLSMAR10,11 #7865
Matrix AIR
Collected 2011/03/10
Shipped
Received 2011/03/16

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2436901	N/A	2011/03/21	DVO
Volatile Organics in Air (TO-15)	GC/MS	2436885	N/A	2011/03/21	DVO

Maxxam ID IX6172
Sample ID LICAVOC\PORTMAR10,11 #7798
Matrix AIR
Collected 2011/03/10
Shipped
Received 2011/03/16

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2436901	N/A	2011/03/21	DVO
Volatile Organics in Air (TO-15)	GC/MS	2436885	N/A	2011/03/21	DVO

Maxxam Job #: B135110
Report Date: 2011/03/25

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB135110

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2436885 DVO	Spiked Blank	Bromochloromethane	2011/03/21		96	%	60 - 140
		D5-Chlorobenzene	2011/03/21		98	%	60 - 140
		Difluorobenzene	2011/03/21		97	%	60 - 140
		2,2,4-Trimethylpentane	2011/03/21		105	%	70 - 130
		Carbon Disulfide	2011/03/21		102	%	70 - 130
		Propene	2011/03/21		98	%	70 - 130
		Vinyl Acetate	2011/03/21		96	%	70 - 130
		Vinyl Bromide	2011/03/21		115	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/03/21		100	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/03/21		121	%	70 - 130
		Chloromethane	2011/03/21		110	%	70 - 130
		Vinyl Chloride	2011/03/21		110	%	70 - 130
		Chloroethane	2011/03/21		107	%	70 - 130
		1,3-Butadiene	2011/03/21		115	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/03/21		108	%	70 - 130
		Trichlorotrifluoroethane	2011/03/21		107	%	70 - 130
		Ethanol	2011/03/21		103	%	70 - 130
		2-propanol	2011/03/21		107	%	70 - 130
		2-Propanone	2011/03/21		119	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/03/21		96	%	70 - 130
		Methyl Isobutyl Ketone	2011/03/21		98	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/03/21		96	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/03/21		91	%	70 - 130
		Ethyl Acetate	2011/03/21		104	%	70 - 130
		1,1-Dichloroethylene	2011/03/21		109	%	70 - 130
		cis-1,2-Dichloroethylene	2011/03/21		105	%	70 - 130
		trans-1,2-Dichloroethylene	2011/03/21		97	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/03/21		93	%	70 - 130
		Chloroform	2011/03/21		107	%	70 - 130
		Carbon Tetrachloride	2011/03/21		107	%	70 - 130
		1,1-Dichloroethane	2011/03/21		102	%	70 - 130
		1,2-Dichloroethane	2011/03/21		108	%	70 - 130
		Ethylene Dibromide	2011/03/21		103	%	70 - 130
		1,1,1-Trichloroethane	2011/03/21		108	%	70 - 130
		1,1,2-Trichloroethane	2011/03/21		104	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/03/21		98	%	70 - 130
		cis-1,3-Dichloropropene	2011/03/21		103	%	70 - 130
		trans-1,3-Dichloropropene	2011/03/21		102	%	70 - 130
		1,2-Dichloropropane	2011/03/21		101	%	70 - 130
		Bromomethane	2011/03/21		109	%	70 - 130
		Bromoform	2011/03/21		98	%	70 - 130
		Bromodichloromethane	2011/03/21		102	%	70 - 130
		Dibromochloromethane	2011/03/21		102	%	70 - 130
		Heptane	2011/03/21		97	%	70 - 130
		Trichloroethylene	2011/03/21		103	%	70 - 130
		Tetrachloroethylene	2011/03/21		100	%	70 - 130
		Benzene	2011/03/21		100	%	70 - 130
		Toluene	2011/03/21		104	%	70 - 130
		Ethylbenzene	2011/03/21		105	%	70 - 130
		p+m-Xylene	2011/03/21		102	%	70 - 130
		o-Xylene	2011/03/21		103	%	70 - 130
		Styrene	2011/03/21		99	%	70 - 130
		1,3,5-Trimethylbenzene	2011/03/21		104	%	70 - 130
		1,2,4-Trimethylbenzene	2011/03/21		101	%	70 - 130
		4-ethyltoluene	2011/03/21		100	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB135110

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2436885 DVO	Spiked Blank	Chlorobenzene	2011/03/21		104	%	70 - 130	
		Benzyl chloride	2011/03/21		100	%	70 - 130	
1,3-Dichlorobenzene		2011/03/21		98	%	70 - 130		
1,4-Dichlorobenzene		2011/03/21		96	%	70 - 130		
1,2-Dichlorobenzene		2011/03/21		98	%	70 - 130		
1,2,4-Trichlorobenzene		2011/03/21		68 (1)	%	70 - 130		
Hexachlorobutadiene		2011/03/21		80	%	70 - 130		
Hexane		2011/03/21		95	%	70 - 130		
Cyclohexane		2011/03/21		102	%	70 - 130		
Tetrahydrofuran		2011/03/21		102	%	70 - 130		
Method Blank	Method Blank	1,4-Dioxane	2011/03/21		98	%	70 - 130	
		Bromochloromethane	2011/03/21		95	%	60 - 140	
		D5-Chlorobenzene	2011/03/21		95	%	60 - 140	
		Difluorobenzene	2011/03/21		95	%	60 - 140	
		2,2,4-Trimethylpentane	2011/03/21	<0.20			ppbv	
		Carbon Disulfide	2011/03/21	<0.50			ppbv	
		Propene	2011/03/21	<0.30			ppbv	
		Vinyl Acetate	2011/03/21	<0.20			ppbv	
		Vinyl Bromide	2011/03/21	<0.20			ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/03/21	<0.20			ppbv	
		1,2-Dichlorotetrafluoroethane	2011/03/21	<0.17			ppbv	
		Chloromethane	2011/03/21	<0.30			ppbv	
		Vinyl Chloride	2011/03/21	<0.18			ppbv	
		Chloroethane	2011/03/21	<0.30			ppbv	
		1,3-Butadiene	2011/03/21	<0.50			ppbv	
		Trichlorofluoromethane (FREON 11)	2011/03/21	<0.20			ppbv	
		Trichlorotrifluoroethane	2011/03/21	<0.15			ppbv	
		Ethanol	2011/03/21	<2.3			ppbv	
		2-propanol	2011/03/21	<3.0			ppbv	
		2-Propanone	2011/03/21	<0.80			ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/03/21	<3.0			ppbv	
		Methyl Isobutyl Ketone	2011/03/21	<3.2			ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/03/21	<2.0			ppbv	
		Methyl t-butyl ether (MTBE)	2011/03/21	<0.20			ppbv	
		Ethyl Acetate	2011/03/21	<2.2			ppbv	
		1,1-Dichloroethylene	2011/03/21	<0.25			ppbv	
		cis-1,2-Dichloroethylene	2011/03/21	<0.19			ppbv	
		trans-1,2-Dichloroethylene	2011/03/21	<0.20			ppbv	
		Methylene Chloride(Dichloromethane)	2011/03/21	0.78, RDL=0.30			ppbv	
		Chloroform	2011/03/21	<0.15			ppbv	
		Carbon Tetrachloride	2011/03/21	<0.30			ppbv	
		1,1-Dichloroethane	2011/03/21	<0.20			ppbv	
		1,2-Dichloroethane	2011/03/21	<0.20			ppbv	
		Ethylene Dibromide	2011/03/21	<0.17			ppbv	
		1,1,1-Trichloroethane	2011/03/21	<0.30			ppbv	
		1,1,2-Trichloroethane	2011/03/21	<0.15			ppbv	
		1,1,2,2-Tetrachloroethane	2011/03/21	<0.20			ppbv	
		cis-1,3-Dichloropropene	2011/03/21	<0.18			ppbv	
trans-1,3-Dichloropropene	2011/03/21	<0.17			ppbv			
1,2-Dichloropropane	2011/03/21	<0.40			ppbv			
Bromomethane	2011/03/21	<0.18			ppbv			
Bromoform	2011/03/21	<0.20			ppbv			
Bromodichloromethane	2011/03/21	<0.20			ppbv			
Dibromochloromethane	2011/03/21	<0.20			ppbv			
Heptane	2011/03/21	<0.30			ppbv			

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB135110

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2436885	DVO	Method Blank					
		Trichloroethylene	2011/03/21	<0.30		ppbv	
		Tetrachloroethylene	2011/03/21	<0.20		ppbv	
		Benzene	2011/03/21	<0.18		ppbv	
		Toluene	2011/03/21	<0.20		ppbv	
		Ethylbenzene	2011/03/21	<0.20		ppbv	
		p+m-Xylene	2011/03/21	<0.37		ppbv	
		o-Xylene	2011/03/21	<0.20		ppbv	
		Styrene	2011/03/21	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/03/21	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/03/21	<0.50		ppbv	
		4-ethyltoluene	2011/03/21	<2.2		ppbv	
		Chlorobenzene	2011/03/21	<0.20		ppbv	
		Benzyl chloride	2011/03/21	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/03/21	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/03/21	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/03/21	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/03/21	<2.0		ppbv	
		Hexachlorobutadiene	2011/03/21	<3.0		ppbv	
		Hexane	2011/03/21	<0.30		ppbv	
		Cyclohexane	2011/03/21	<0.20		ppbv	
		Tetrahydrofuran	2011/03/21	<0.40		ppbv	
		1,4-Dioxane	2011/03/21	<2.0		ppbv	
		Xylene (Total)	2011/03/21	<0.60		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.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: 13-16-62-5 W4M Canister ID: 7835
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Mar 15, 11 @ 14:17 mst
Field Sample ID: LICA VOC/PORT/ Mar 16, 11 Canister Removal Date/Time: Mar 17, 11 @ 9:50 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
16-Mar-11	03/16/2011 0:00	03/17/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1492	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	21

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 # 07014

Technician Signiture: Ting Xu_____



Your C.O.C. #: 07014

Attention: Michael Bisaga

Maxxam Analytics
 2608 6A Ave.
 Cold Lake, AB
 CANADA T9M 2C7

Report Date: 2011/03/31

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B137244

Received: 2011/03/19, 13:59

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/03/23	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/03/23	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.

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Total cover pages: 1

Maxxam Job #: B137244
 Report Date: 2011/03/31

RESULTS OF ANALYSES OF AIR

Maxxam ID		IY5848	IY5849	
Sampling Date		2011/03/16	2011/03/16	
COC Number		07014	07014	
	Units	LICA VOC/CLS/MAR 16,2011 - 7861	LICA VOC/PORT/MAR 16,2011 - 7835	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	21	2439892

QC Batch = Quality Control Batch

Maxxam Job #: B137244
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IY5848			IY5849				
Sampling Date		2011/03/16			2011/03/16				
COC Number		07014			07014				
	Units	LICA VOC/CLS/MAR 16,2011 - 7861	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 16,2011 - 7835	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics									
2,2,4-Trimethylpentane	ppbv	<0.20	<0.934	0.934	<0.20	0.20	<0.934	0.934	2440050
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2440050
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2440050
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2440050
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2440050
Dichlorodifluoromethane (FREON 12)	ppbv	0.74	3.65	0.989	0.74	0.20	3.67	0.989	2440050
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2440050
Chloromethane	ppbv	0.68	1.41	0.620	0.68	0.30	1.40	0.620	2440050
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2440050
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2440050
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2440050
Trichlorofluoromethane (FREON 11)	ppbv	0.35	1.96	1.12	0.35	0.20	1.99	1.12	2440050
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2440050
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2440050
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2440050
2-Propanone	ppbv	2.17	5.15	1.90	2.92	0.80	6.94	1.90	2440050
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2440050
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2440050
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2440050
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2440050
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2440050
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2440050
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2440050
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2440050
Methylene Chloride(Dichloromethane)	ppbv	0.48	1.68	1.04	0.48	0.30	1.66	1.04	2440050
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2440050
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2440050
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2440050
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2440050
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2440050
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2440050
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

Maxxam Job #: B137244
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IY5848			IY5849				
Sampling Date		2011/03/16			2011/03/16				
COC Number		07014			07014				
	Units	LICA VOC/CLS/MAR 16,2011 - 7861	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 16,2011 - 7835	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2440050
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2440050
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2440050
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2440050
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2440050
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2440050
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2440050
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2440050
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2440050
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2440050
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2440050
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2440050
Benzene	ppbv	0.22	0.705	0.575	0.21	0.18	0.664	0.575	2440050
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2440050
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2440050
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2440050
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2440050
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2440050
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2440050
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2440050
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2440050
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2440050
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2440050
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2440050
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2440050
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2440050
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2440050
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2440050
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2440050
Cyclohexane	ppbv	<0.20	<0.688	0.688	0.31	0.20	1.06	0.688	2440050
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2440050
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2440050
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2440050

QC Batch = Quality Control Batch

Maxxam Job #: B137244
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IY5848			IY5849				
Sampling Date		2011/03/16			2011/03/16				
COC Number		07014			07014				
	Units	LICA VOC/CLS/MAR 16,2011 - 7861	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 16,2011 - 7835	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)									
Bromochloromethane	%	74	N/A	N/A	73		N/A	N/A	2440050
D5-Chlorobenzene	%	72	N/A	N/A	73		N/A	N/A	2440050
Difluorobenzene	%	75	N/A	N/A	75		N/A	N/A	2440050

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

Maxxam Job #: B137244
 Report Date: 2011/03/31

Test Summary

Maxxam ID IY5848 **Collected** 2011/03/16
Sample ID LICA VOC/CLS/MAR 16,2011 - 7861 **Shipped**
Matrix AIR **Received** 2011/03/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2439892	N/A	2011/03/23	LSY
Volatile Organics in Air (TO-15)	GC/MS	2440050	N/A	2011/03/23	LSY

Maxxam ID IY5849 **Collected** 2011/03/16
Sample ID LICA VOC/PORT/MAR 16,2011 - 7835 **Shipped**
Matrix AIR **Received** 2011/03/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2439892	N/A	2011/03/23	LSY
Volatile Organics in Air (TO-15)	GC/MS	2440050	N/A	2011/03/23	LSY

Maxxam Job #: B137244
Report Date: 2011/03/31

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB137244

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2440050 LSY	Spiked Blank	Bromochloromethane	2011/03/23		97	%	60 - 140
		D5-Chlorobenzene	2011/03/23		98	%	60 - 140
		Difluorobenzene	2011/03/23		99	%	60 - 140
		2,2,4-Trimethylpentane	2011/03/23		98	%	70 - 130
		Carbon Disulfide	2011/03/23		90	%	70 - 130
		Propene	2011/03/23		92	%	70 - 130
		Vinyl Acetate	2011/03/23		106	%	70 - 130
		Vinyl Bromide	2011/03/23		97	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/03/23		97	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/03/23		111	%	70 - 130
		Chloromethane	2011/03/23		97	%	70 - 130
		Vinyl Chloride	2011/03/23		100	%	70 - 130
		Chloroethane	2011/03/23		98	%	70 - 130
		1,3-Butadiene	2011/03/23		84	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/03/23		96	%	70 - 130
		Trichlorotrifluoroethane	2011/03/23		97	%	70 - 130
		Ethanol	2011/03/23		95	%	70 - 130
		2-propanol	2011/03/23		104	%	70 - 130
		2-Propanone	2011/03/23		113	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/03/23		95	%	70 - 130
		Methyl Isobutyl Ketone	2011/03/23		98	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/03/23		99	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/03/23		105	%	70 - 130
		Ethyl Acetate	2011/03/23		101	%	70 - 130
		1,1-Dichloroethylene	2011/03/23		102	%	70 - 130
		cis-1,2-Dichloroethylene	2011/03/23		103	%	70 - 130
		trans-1,2-Dichloroethylene	2011/03/23		101	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/03/23		88	%	70 - 130
		Chloroform	2011/03/23		100	%	70 - 130
		Carbon Tetrachloride	2011/03/23		97	%	70 - 130
		1,1-Dichloroethane	2011/03/23		100	%	70 - 130
		1,2-Dichloroethane	2011/03/23		101	%	70 - 130
		Ethylene Dibromide	2011/03/23		97	%	70 - 130
		1,1,1-Trichloroethane	2011/03/23		97	%	70 - 130
		1,1,2-Trichloroethane	2011/03/23		96	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/03/23		86	%	70 - 130
		cis-1,3-Dichloropropene	2011/03/23		101	%	70 - 130
		trans-1,3-Dichloropropene	2011/03/23		100	%	70 - 130
		1,2-Dichloropropane	2011/03/23		97	%	70 - 130
		Bromomethane	2011/03/23		99	%	70 - 130
		Bromoform	2011/03/23		99	%	70 - 130
		Bromodichloromethane	2011/03/23		97	%	70 - 130
		Dibromochloromethane	2011/03/23		102	%	70 - 130
		Heptane	2011/03/23		101	%	70 - 130
		Trichloroethylene	2011/03/23		97	%	70 - 130
		Tetrachloroethylene	2011/03/23		99	%	70 - 130
		Benzene	2011/03/23		100	%	70 - 130
		Toluene	2011/03/23		103	%	70 - 130
		Ethylbenzene	2011/03/23		102	%	70 - 130
		p+m-Xylene	2011/03/23		100	%	70 - 130
		o-Xylene	2011/03/23		101	%	70 - 130
		Styrene	2011/03/23		96	%	70 - 130
		1,3,5-Trimethylbenzene	2011/03/23		92	%	70 - 130
		1,2,4-Trimethylbenzene	2011/03/23		88	%	70 - 130
		4-ethyltoluene	2011/03/23		92	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB137244

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2440050 LSY	Spiked Blank	Chlorobenzene	2011/03/23		94	%	70 - 130	
		Benzyl chloride	2011/03/23		68 (1)	%	70 - 130	
1,3-Dichlorobenzene		2011/03/23		77	%	70 - 130		
1,4-Dichlorobenzene		2011/03/23		75	%	70 - 130		
1,2-Dichlorobenzene		2011/03/23		75	%	70 - 130		
1,2,4-Trichlorobenzene		2011/03/23		71	%	70 - 130		
Hexachlorobutadiene		2011/03/23		95	%	70 - 130		
Hexane		2011/03/23		104	%	70 - 130		
Cyclohexane		2011/03/23		102	%	70 - 130		
Tetrahydrofuran		2011/03/23		103	%	70 - 130		
Method Blank	Method Blank	1,4-Dioxane	2011/03/23		94	%	70 - 130	
		Bromochloromethane	2011/03/23		85	%	60 - 140	
		D5-Chlorobenzene	2011/03/23		85	%	60 - 140	
		Difluorobenzene	2011/03/23		87	%	60 - 140	
		2,2,4-Trimethylpentane	2011/03/23	<0.20			ppbv	
		Carbon Disulfide	2011/03/23	<0.50			ppbv	
		Propene	2011/03/23	<0.30			ppbv	
		Vinyl Acetate	2011/03/23	<0.20			ppbv	
		Vinyl Bromide	2011/03/23	<0.20			ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/03/23	<0.20			ppbv	
		1,2-Dichlorotetrafluoroethane	2011/03/23	<0.17			ppbv	
		Chloromethane	2011/03/23	<0.30			ppbv	
		Vinyl Chloride	2011/03/23	<0.18			ppbv	
		Chloroethane	2011/03/23	<0.30			ppbv	
		1,3-Butadiene	2011/03/23	<0.50			ppbv	
		Trichlorofluoromethane (FREON 11)	2011/03/23	<0.20			ppbv	
		Trichlorotrifluoroethane	2011/03/23	<0.15			ppbv	
		Ethanol	2011/03/23	<2.3			ppbv	
		2-propanol	2011/03/23	<3.0			ppbv	
		2-Propanone	2011/03/23	<0.80			ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/03/23	<3.0			ppbv	
		Methyl Isobutyl Ketone	2011/03/23	<3.2			ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/03/23	<2.0			ppbv	
		Methyl t-butyl ether (MTBE)	2011/03/23	<0.20			ppbv	
		Ethyl Acetate	2011/03/23	<2.2			ppbv	
		1,1-Dichloroethylene	2011/03/23	<0.25			ppbv	
		cis-1,2-Dichloroethylene	2011/03/23	<0.19			ppbv	
		trans-1,2-Dichloroethylene	2011/03/23	<0.20			ppbv	
		Methylene Chloride(Dichloromethane)	2011/03/23	0.41, RDL=0.30			ppbv	
		Chloroform	2011/03/23	<0.15			ppbv	
		Carbon Tetrachloride	2011/03/23	<0.30			ppbv	
		1,1-Dichloroethane	2011/03/23	<0.20			ppbv	
		1,2-Dichloroethane	2011/03/23	<0.20			ppbv	
		Ethylene Dibromide	2011/03/23	<0.17			ppbv	
		1,1,1-Trichloroethane	2011/03/23	<0.30			ppbv	
		1,1,2-Trichloroethane	2011/03/23	<0.15			ppbv	
		1,1,2,2-Tetrachloroethane	2011/03/23	<0.20			ppbv	
		cis-1,3-Dichloropropene	2011/03/23	<0.18			ppbv	
trans-1,3-Dichloropropene	2011/03/23	<0.17			ppbv			
1,2-Dichloropropane	2011/03/23	<0.40			ppbv			
Bromomethane	2011/03/23	<0.18			ppbv			
Bromoform	2011/03/23	<0.20			ppbv			
Bromodichloromethane	2011/03/23	<0.20			ppbv			
Dibromochloromethane	2011/03/23	<0.20			ppbv			
Heptane	2011/03/23	<0.30			ppbv			

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB137244

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2440050 LSY	Method Blank	Trichloroethylene	2011/03/23	<0.30		ppbv	
		Tetrachloroethylene	2011/03/23	<0.20		ppbv	
		Benzene	2011/03/23	<0.18		ppbv	
		Toluene	2011/03/23	<0.20		ppbv	
		Ethylbenzene	2011/03/23	<0.20		ppbv	
		p+m-Xylene	2011/03/23	<0.37		ppbv	
		o-Xylene	2011/03/23	<0.20		ppbv	
		Styrene	2011/03/23	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/03/23	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/03/23	<0.50		ppbv	
		4-ethyltoluene	2011/03/23	<2.2		ppbv	
		Chlorobenzene	2011/03/23	<0.20		ppbv	
		Benzyl chloride	2011/03/23	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/03/23	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/03/23	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/03/23	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/03/23	<2.0		ppbv	
		Hexachlorobutadiene	2011/03/23	<3.0		ppbv	
		Hexane	2011/03/23	<0.30		ppbv	
		Cyclohexane	2011/03/23	<0.20		ppbv	
		Tetrahydrofuran	2011/03/23	<0.40		ppbv	
		1,4-Dioxane	2011/03/23	<2.0		ppbv	
		Xylene (Total)	2011/03/23	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane		TBA		%	25
		Carbon Disulfide		TBA		%	25
		Propene		TBA		%	25
		Vinyl Acetate		TBA		%	25
		Vinyl Bromide		TBA		%	25
		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
		Trichlorotrifluoroethane		TBA		%	25
		Ethanol		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

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB137244

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2440050 LSY	RPD - Sample/Sample Dup	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
		trans-1,3-Dichloropropene		TBA		%	25
		1,2-Dichloropropane		TBA		%	25
		Bromomethane		TBA		%	25
		Bromoform		TBA		%	25
		Bromodichloromethane		TBA		%	25
		Dibromochloromethane		TBA		%	25
		Heptane		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
		1,3,5-Trimethylbenzene		TBA		%	25
		1,2,4-Trimethylbenzene		TBA		%	25
		4-ethyltoluene		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
		Cyclohexane		TBA		%	25
		Tetrahydrofuran		TBA		%	25
		1,4-Dioxane		TBA		%	25
		Xylene (Total)		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.

(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 Sampler s/n: 6200
Location: 13-16-62-5 W4M Canister ID: 7794
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Mar 21, 11 @ 11:12 mst
Field Sample ID: LICA VOC/PORT/ Mar 22, 11 Canister Removal Date/Time: Mar 23, 11 @ 11:11mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
22-Mar-11	03/22/2011 0:00	03/23/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1492	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	21

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 # 07027

Technician Signiture: Ting Xu_____



Your C.O.C. #: 07027

Attention: Michael Bisaga

Maxxam Analytics
 2608 6A Ave.
 Cold Lake, AB
 CANADA T9M 2C7

Report Date: 2011/03/31

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B140280

Received: 2011/03/25, 09:38

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/03/28	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/03/28	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 Job #: B140280
 Report Date: 2011/03/31

RESULTS OF ANALYSES OF AIR

Maxxam ID		IZ9823	IZ9824	
Sampling Date		2011/03/22	2011/03/22	
		00:00	00:00	
COC Number		07027	07027	
	Units	LICAVOC\CLSMAR22,11/7827	LICAVOC\PORT\MAR22,11/7794	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	22	2442720

QC Batch = Quality Control Batch

Maxxam Job #: B140280
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IZ9823				
Sampling Date		2011/03/22				
		00:00				
COC Number		07027				
	Units	LICAVOCICLSMAR22,11/7827	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2442747
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2442747
Propene	ppbv	<0.30	0.30	<0.516	0.516	2442747
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2442747
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2442747
Dichlorodifluoromethane (FREON 12)	ppbv	0.69	0.20	3.39	0.989	2442747
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2442747
Chloromethane	ppbv	0.53	0.30	1.09	0.620	2442747
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2442747
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2442747
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2442747
Trichlorofluoromethane (FREON 11)	ppbv	0.39	0.20	2.20	1.12	2442747
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2442747
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2442747
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2442747
2-Propanone	ppbv	1.50	0.80	3.56	1.90	2442747
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2442747
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2442747
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2442747
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2442747
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2442747
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2442747
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2442747
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2442747
Methylene Chloride(Dichloromethane)	ppbv	0.40	0.30	1.38	1.04	2442747
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2442747
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2442747
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2442747
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2442747
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2442747
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2442747
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2442747
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B140280
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IZ9823				
Sampling Date		2011/03/22 00:00				
COC Number		07027				
	Units	LICAVOCICLSMAR22,11/7827	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2442747
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2442747
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2442747
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2442747
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2442747
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2442747
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2442747
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2442747
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2442747
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2442747
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2442747
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2442747
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2442747
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2442747
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2442747
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2442747
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2442747
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2442747
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2442747
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2442747
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2442747
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2442747
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2442747
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2442747
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2442747
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2442747
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2442747
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2442747
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2442747
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2442747
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2442747
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2442747
Surrogate Recovery (%)						
Bromochloromethane	%	85		N/A	N/A	2442747

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

Maxxam Job #: B140280
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IZ9823				
Sampling Date		2011/03/22 00:00				
COC Number		07027				
	Units	LICAVOCICLSMAR22,11/7827	RDL	ug/m3	DL (ug/m3)	QC Batch

D5-Chlorobenzene	%	78		N/A	N/A	2442747
Difluorobenzene	%	84		N/A	N/A	2442747

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

Maxxam Job #: B140280
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IZ9824				
Sampling Date		2011/03/22				
		00:00				
COC Number		07027				
	Units	LICAVOC\PORT\MAR22,11/7794	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2442747
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2442747
Propene	ppbv	<0.30	0.30	<0.516	0.516	2442747
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2442747
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2442747
Dichlorodifluoromethane (FREON 12)	ppbv	0.70	0.20	3.48	0.989	2442747
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2442747
Chloromethane	ppbv	0.55	0.30	1.14	0.620	2442747
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2442747
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2442747
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2442747
Trichlorofluoromethane (FREON 11)	ppbv	0.40	0.20	2.26	1.12	2442747
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2442747
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2442747
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2442747
2-Propanone	ppbv	2.28	0.80	5.41	1.90	2442747
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2442747
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2442747
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2442747
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2442747
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2442747
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2442747
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2442747
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2442747
Methylene Chloride(Dichloromethane)	ppbv	0.41	0.30	1.41	1.04	2442747
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2442747
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2442747
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2442747
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2442747
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2442747
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2442747
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2442747

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B140280
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IZ9824				
Sampling Date		2011/03/22				
		00:00				
COC Number		07027				
	Units	LICAVOC\PORT\MAR22,11/7794	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2442747
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2442747
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2442747
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2442747
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2442747
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2442747
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2442747
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2442747
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2442747
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2442747
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2442747
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2442747
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2442747
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2442747
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2442747
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2442747
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2442747
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2442747
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2442747
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2442747
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2442747
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2442747
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2442747
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2442747
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2442747
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2442747
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2442747
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2442747
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2442747
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2442747
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2442747
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2442747
Surrogate Recovery (%)						
Bromochloromethane	%	82		N/A	N/A	2442747

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

Maxxam Job #: B140280
 Report Date: 2011/03/31

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IZ9824				
Sampling Date		2011/03/22				
		00:00				
COC Number		07027				
	Units	LICAVOC\PORT\MAR22,11/7794	RDL	ug/m3	DL (ug/m3)	QC Batch

D5-Chlorobenzene	%	76		N/A	N/A	2442747
Difluorobenzene	%	82		N/A	N/A	2442747

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

Maxxam Job #: B140280
 Report Date: 2011/03/31

Test Summary

Maxxam ID IZ9823
Sample ID LICAVOC\CLSMAR22,11/7827
Matrix AIR
Collected 2011/03/22
Shipped
Received 2011/03/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2442720	N/A	2011/03/28	S_S
Volatile Organics in Air (TO-15)	GC/MS	2442747	N/A	2011/03/28	S_S

Maxxam ID IZ9823 Dup
Sample ID LICAVOC\CLSMAR22,11/7827
Matrix AIR
Collected 2011/03/22
Shipped
Received 2011/03/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organics in Air (TO-15)	GC/MS	2442747	N/A	2011/03/28	S_S

Maxxam ID IZ9824
Sample ID LICAVOC\PORT/MAR22,11/7794
Matrix AIR
Collected 2011/03/22
Shipped
Received 2011/03/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2442720	N/A	2011/03/28	S_S
Volatile Organics in Air (TO-15)	GC/MS	2442747	N/A	2011/03/28	S_S

Maxxam Job #: B140280
Report Date: 2011/03/31

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB140280

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2442747 S_S	Spiked Blank	Bromochloromethane	2011/03/28		98	%	60 - 140
		D5-Chlorobenzene	2011/03/28		96	%	60 - 140
		Difluorobenzene	2011/03/28		99	%	60 - 140
		2,2,4-Trimethylpentane	2011/03/28		95	%	70 - 130
		Carbon Disulfide	2011/03/28		87	%	70 - 130
		Propene	2011/03/28		79	%	70 - 130
		Vinyl Acetate	2011/03/28		99	%	70 - 130
		Vinyl Bromide	2011/03/28		102	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/03/28		114	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/03/28		126	%	70 - 130
		Chloromethane	2011/03/28		106	%	70 - 130
		Vinyl Chloride	2011/03/28		96	%	70 - 130
		Chloroethane	2011/03/28		91	%	70 - 130
		1,3-Butadiene	2011/03/28		95	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/03/28		128	%	70 - 130
		Trichlorotrifluoroethane	2011/03/28		105	%	70 - 130
		Ethanol	2011/03/28		107	%	70 - 130
		2-propanol	2011/03/28		101	%	70 - 130
		2-Propanone	2011/03/28		120	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/03/28		109	%	70 - 130
		Methyl Isobutyl Ketone	2011/03/28		105	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/03/28		112	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/03/28		100	%	70 - 130
		Ethyl Acetate	2011/03/28		99	%	70 - 130
		1,1-Dichloroethylene	2011/03/28		104	%	70 - 130
		cis-1,2-Dichloroethylene	2011/03/28		99	%	70 - 130
		trans-1,2-Dichloroethylene	2011/03/28		98	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/03/28		90	%	70 - 130
		Chloroform	2011/03/28		109	%	70 - 130
		Carbon Tetrachloride	2011/03/28		129	%	70 - 130
		1,1-Dichloroethane	2011/03/28		95	%	70 - 130
		1,2-Dichloroethane	2011/03/28		118	%	70 - 130
		Ethylene Dibromide	2011/03/28		111	%	70 - 130
		1,1,1-Trichloroethane	2011/03/28		121	%	70 - 130
		1,1,2-Trichloroethane	2011/03/28		106	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/03/28		99	%	70 - 130
		cis-1,3-Dichloropropene	2011/03/28		105	%	70 - 130
		trans-1,3-Dichloropropene	2011/03/28		114	%	70 - 130
		1,2-Dichloropropane	2011/03/28		95	%	70 - 130
		Bromomethane	2011/03/28		103	%	70 - 130
		Bromoform	2011/03/28		118	%	70 - 130
		Bromodichloromethane	2011/03/28		119	%	70 - 130
		Dibromochloromethane	2011/03/28		129	%	70 - 130
		Heptane	2011/03/28		97	%	70 - 130
		Trichloroethylene	2011/03/28		103	%	70 - 130
		Tetrachloroethylene	2011/03/28		108	%	70 - 130
		Benzene	2011/03/28		94	%	70 - 130
		Toluene	2011/03/28		101	%	70 - 130
		Ethylbenzene	2011/03/28		99	%	70 - 130
		p+m-Xylene	2011/03/28		99	%	70 - 130
		o-Xylene	2011/03/28		100	%	70 - 130
		Styrene	2011/03/28		99	%	70 - 130
		1,3,5-Trimethylbenzene	2011/03/28		103	%	70 - 130
		1,2,4-Trimethylbenzene	2011/03/28		103	%	70 - 130
		4-ethyltoluene	2011/03/28		105	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB140280

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2442747 S_S	Spiked Blank	Chlorobenzene	2011/03/28		98	%	70 - 130
		Benzyl chloride	2011/03/28		114	%	70 - 130
		1,3-Dichlorobenzene	2011/03/28		103	%	70 - 130
		1,4-Dichlorobenzene	2011/03/28		104	%	70 - 130
		1,2-Dichlorobenzene	2011/03/28		103	%	70 - 130
		1,2,4-Trichlorobenzene	2011/03/28		121	%	70 - 130
		Hexachlorobutadiene	2011/03/28		112	%	70 - 130
		Hexane	2011/03/28		90	%	70 - 130
		Cyclohexane	2011/03/28		93	%	70 - 130
		Tetrahydrofuran	2011/03/28		95	%	70 - 130
		1,4-Dioxane	2011/03/28		105	%	70 - 130
	Method Blank	Bromochloromethane	2011/03/28		93	%	60 - 140
		D5-Chlorobenzene	2011/03/28		84	%	60 - 140
		Difluorobenzene	2011/03/28		92	%	60 - 140
		2,2,4-Trimethylpentane	2011/03/28	<0.20		ppbv	
		Carbon Disulfide	2011/03/28	<0.50		ppbv	
		Propene	2011/03/28	<0.30		ppbv	
		Vinyl Acetate	2011/03/28	<0.20		ppbv	
		Vinyl Bromide	2011/03/28	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/03/28	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/03/28	<0.17		ppbv	
		Chloromethane	2011/03/28	<0.30		ppbv	
		Vinyl Chloride	2011/03/28	<0.18		ppbv	
		Chloroethane	2011/03/28	<0.30		ppbv	
		1,3-Butadiene	2011/03/28	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/03/28	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/03/28	<0.15		ppbv	
		Ethanol	2011/03/28	<2.3		ppbv	
		2-propanol	2011/03/28	<3.0		ppbv	
		2-Propanone	2011/03/28	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/03/28	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/03/28	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/03/28	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/03/28	<0.20		ppbv	
		Ethyl Acetate	2011/03/28	<2.2		ppbv	
		1,1-Dichloroethylene	2011/03/28	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/03/28	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/03/28	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/03/28	0.33, RDL=0.30		ppbv	
		Chloroform	2011/03/28	<0.15		ppbv	
		Carbon Tetrachloride	2011/03/28	<0.30		ppbv	
		1,1-Dichloroethane	2011/03/28	<0.20		ppbv	
		1,2-Dichloroethane	2011/03/28	<0.20		ppbv	
		Ethylene Dibromide	2011/03/28	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/03/28	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/03/28	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/03/28	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/03/28	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/03/28	<0.17		ppbv	
		1,2-Dichloropropane	2011/03/28	<0.40		ppbv	
		Bromomethane	2011/03/28	<0.18		ppbv	
		Bromoform	2011/03/28	<0.20		ppbv	
		Bromodichloromethane	2011/03/28	<0.20		ppbv	
		Dibromochloromethane	2011/03/28	<0.20		ppbv	
		Heptane	2011/03/28	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB140280

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2442747 S_S	Method Blank	Trichloroethylene	2011/03/28	<0.30		ppbv	
		Tetrachloroethylene	2011/03/28	<0.20		ppbv	
		Benzene	2011/03/28	<0.18		ppbv	
		Toluene	2011/03/28	<0.20		ppbv	
		Ethylbenzene	2011/03/28	<0.20		ppbv	
		p+m-Xylene	2011/03/28	<0.37		ppbv	
		o-Xylene	2011/03/28	<0.20		ppbv	
		Styrene	2011/03/28	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/03/28	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/03/28	<0.50		ppbv	
		4-ethyltoluene	2011/03/28	<2.2		ppbv	
		Chlorobenzene	2011/03/28	<0.20		ppbv	
		Benzyl chloride	2011/03/28	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/03/28	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/03/28	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/03/28	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/03/28	<2.0		ppbv	
		Hexachlorobutadiene	2011/03/28	<3.0		ppbv	
		Hexane	2011/03/28	<0.30		ppbv	
		Cyclohexane	2011/03/28	<0.20		ppbv	
		Tetrahydrofuran	2011/03/28	<0.40		ppbv	
		1,4-Dioxane	2011/03/28	<2.0		ppbv	
		Xylene (Total)	2011/03/28	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/03/28	NC		%	25
		Carbon Disulfide	2011/03/28	NC		%	25
		Propene	2011/03/28	NC		%	25
		Vinyl Acetate	2011/03/28	NC		%	25
		Vinyl Bromide	2011/03/28	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/03/28	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/03/28	NC		%	25
		Chloromethane	2011/03/28	NC		%	25
		Vinyl Chloride	2011/03/28	NC		%	25
		Chloroethane	2011/03/28	NC		%	25
		1,3-Butadiene	2011/03/28	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/03/28	NC		%	25
		Trichlorotrifluoroethane	2011/03/28	NC		%	25
		Ethanol	2011/03/28	NC		%	25
		2-propanol	2011/03/28	NC		%	25
		2-Propanone	2011/03/28	NC		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/03/28	NC		%	25
		Methyl Isobutyl Ketone	2011/03/28	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/03/28	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/03/28	NC		%	25
		Ethyl Acetate	2011/03/28	NC		%	25
		1,1-Dichloroethylene	2011/03/28	NC		%	25
		cis-1,2-Dichloroethylene	2011/03/28	NC		%	25
		trans-1,2-Dichloroethylene	2011/03/28	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/03/28	NC		%	25
		Chloroform	2011/03/28	NC		%	25
		Carbon Tetrachloride	2011/03/28	NC		%	25
		1,1-Dichloroethane	2011/03/28	NC		%	25
		1,2-Dichloroethane	2011/03/28	NC		%	25
		Ethylene Dibromide	2011/03/28	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB140280

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2442747 S_S	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2011/03/28	NC		%	25
		1,1,2-Trichloroethane	2011/03/28	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/03/28	NC		%	25
		cis-1,3-Dichloropropene	2011/03/28	NC		%	25
		trans-1,3-Dichloropropene	2011/03/28	NC		%	25
		1,2-Dichloropropane	2011/03/28	NC		%	25
		Bromomethane	2011/03/28	NC		%	25
		Bromoform	2011/03/28	NC		%	25
		Bromodichloromethane	2011/03/28	NC		%	25
		Dibromochloromethane	2011/03/28	NC		%	25
		Heptane	2011/03/28	NC		%	25
		Trichloroethylene	2011/03/28	NC		%	25
		Tetrachloroethylene	2011/03/28	NC		%	25
		Benzene	2011/03/28	NC		%	25
		Toluene	2011/03/28	NC		%	25
		Ethylbenzene	2011/03/28	NC		%	25
		p+m-Xylene	2011/03/28	NC		%	25
		o-Xylene	2011/03/28	NC		%	25
		Styrene	2011/03/28	NC		%	25
		1,3,5-Trimethylbenzene	2011/03/28	NC		%	25
		1,2,4-Trimethylbenzene	2011/03/28	NC		%	25
		4-ethyltoluene	2011/03/28	NC		%	25
		Chlorobenzene	2011/03/28	NC		%	25
		Benzyl chloride	2011/03/28	NC		%	25
		1,3-Dichlorobenzene	2011/03/28	NC		%	25
		1,4-Dichlorobenzene	2011/03/28	NC		%	25
		1,2-Dichlorobenzene	2011/03/28	NC		%	25
		1,2,4-Trichlorobenzene	2011/03/28	NC		%	25
		Hexachlorobutadiene	2011/03/28	NC		%	25
		Hexane	2011/03/28	NC		%	25
		Cyclohexane	2011/03/28	NC		%	25
		Tetrahydrofuran	2011/03/28	NC		%	25
		1,4-Dioxane	2011/03/28	NC		%	25
		Xylene (Total)	2011/03/28	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.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: 13-16-62-5 W4M Canister ID: 7836
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Mar 25, 11 @ 9:29 mst
Field Sample ID: LICA VOC/PORT/ Mar 28, 11 Canister Removal Date/Time: Mar 29, 11 @ 7:47 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
28-Mar-11	03/28/2011 0:00	03/29/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1492	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	21

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 # 07051

Technician Signiture: Ting Xu_____

Your C.O.C. #: 07051

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

Report Date: 2011/04/08

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B143292****Received: 2011/03/31, 09:24**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/04/06	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/04/06	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

Page 1 of 10

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Maxxam Job #: B143292
 Report Date: 2011/04/08

RESULTS OF ANALYSES OF AIR

Maxxam ID		JB3191	JB3192	
Sampling Date		2011/03/28	2011/03/28	
COC Number		07051	07051	
	Units	LICA VOC/CLS/MAR 28,11 - 7822	LICA VOC/PORT/MAR 28,11 - 7836	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	22	2452086

QC Batch = Quality Control Batch

Maxxam Job #: B143292
 Report Date: 2011/04/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JB3191			JB3192				
Sampling Date		2011/03/28			2011/03/28				
COC Number		07051			07051				
	Units	LICA VOC/CLS/MAR 28,11 - 7822	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 28,11 - 7836	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics									
2,2,4-Trimethylpentane	ppbv	<0.20	<0.934	0.934	<0.20	0.20	<0.934	0.934	2452107
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2452107
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2452107
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2452107
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2452107
Dichlorodifluoromethane (FREON 12)	ppbv	0.83	4.09	0.989	0.81	0.20	3.98	0.989	2452107
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2452107
Chloromethane	ppbv	0.74	1.53	0.620	0.78	0.30	1.60	0.620	2452107
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2452107
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2452107
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2452107
Trichlorofluoromethane (FREON 11)	ppbv	0.37	2.07	1.12	0.38	0.20	2.12	1.12	2452107
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2452107
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2452107
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2452107
2-Propanone	ppbv	2.75	6.53	1.90	2.87	0.80	6.81	1.90	2452107
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2452107
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2452107
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2452107
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2452107
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2452107
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2452107
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2452107
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2452107
Methylene Chloride(Dichloromethane)	ppbv	0.54	1.87	1.04	0.52	0.30	1.81	1.04	2452107
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2452107
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2452107
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2452107
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2452107
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2452107
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2452107
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

Maxxam Job #: B143292
 Report Date: 2011/04/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JB3191			JB3192				
Sampling Date		2011/03/28			2011/03/28				
COC Number		07051			07051				
	Units	LICA VOC/CLS/MAR 28,11 - 7822	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 28,11 - 7836	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2452107
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2452107
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2452107
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2452107
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2452107
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2452107
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2452107
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2452107
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2452107
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2452107
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2452107
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2452107
Benzene	ppbv	<0.18	<0.575	0.575	<0.18	0.18	<0.575	0.575	2452107
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2452107
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2452107
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2452107
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2452107
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2452107
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2452107
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2452107
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2452107
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2452107
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2452107
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2452107
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2452107
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2452107
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2452107
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2452107
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2452107
Cyclohexane	ppbv	<0.20	<0.688	0.688	<0.20	0.20	<0.688	0.688	2452107
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2452107
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2452107
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2452107
QC Batch = Quality Control Batch									

Maxxam Job #: B143292
 Report Date: 2011/04/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JB3191			JB3192				
Sampling Date		2011/03/28			2011/03/28				
COC Number		07051			07051				
	Units	LICA VOC/CLS/MAR 28,11 - 7822	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAR 28,11 - 7836	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)									
Bromochloromethane	%	83	N/A	N/A	83		N/A	N/A	2452107
D5-Chlorobenzene	%	82	N/A	N/A	84		N/A	N/A	2452107
Difluorobenzene	%	85	N/A	N/A	84		N/A	N/A	2452107

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

Maxxam Job #: B143292
 Report Date: 2011/04/08

Test Summary

Maxxam ID JB3191
Sample ID LICA VOC/CLS/MAR 28,11 - 7822
Matrix AIR
Collected 2011/03/28
Shipped
Received 2011/03/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2452086	N/A	2011/04/06	LSY
Volatile Organics in Air (TO-15)	GC/MS	2452107	N/A	2011/04/06	LSY

Maxxam ID JB3192
Sample ID LICA VOC/PORT/MAR 28,11 - 7836
Matrix AIR
Collected 2011/03/28
Shipped
Received 2011/03/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2452086	N/A	2011/04/06	LSY
Volatile Organics in Air (TO-15)	GC/MS	2452107	N/A	2011/04/06	LSY

Maxxam Job #: B143292
Report Date: 2011/04/08

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB143292

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2452107 LSY	Spiked Blank	Bromochloromethane	2011/04/06		102	%	60 - 140
		D5-Chlorobenzene	2011/04/06		104	%	60 - 140
		Difluorobenzene	2011/04/06		104	%	60 - 140
		2,2,4-Trimethylpentane	2011/04/06		102	%	70 - 130
		Carbon Disulfide	2011/04/06		91	%	70 - 130
		Propene	2011/04/06		98	%	70 - 130
		Vinyl Acetate	2011/04/06		114	%	70 - 130
		Vinyl Bromide	2011/04/06		98	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/04/06		104	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/04/06		115	%	70 - 130
		Chloromethane	2011/04/06		105	%	70 - 130
		Vinyl Chloride	2011/04/06		103	%	70 - 130
		Chloroethane	2011/04/06		99	%	70 - 130
		1,3-Butadiene	2011/04/06		91	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/04/06		102	%	70 - 130
		Trichlorotrifluoroethane	2011/04/06		96	%	70 - 130
		Ethanol	2011/04/06		110	%	70 - 130
		2-propanol	2011/04/06		107	%	70 - 130
		2-Propanone	2011/04/06		106	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/04/06		100	%	70 - 130
		Methyl Isobutyl Ketone	2011/04/06		106	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/04/06		112	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/04/06		109	%	70 - 130
		Ethyl Acetate	2011/04/06		108	%	70 - 130
		1,1-Dichloroethylene	2011/04/06		105	%	70 - 130
		cis-1,2-Dichloroethylene	2011/04/06		105	%	70 - 130
		trans-1,2-Dichloroethylene	2011/04/06		105	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/04/06		93	%	70 - 130
		Chloroform	2011/04/06		102	%	70 - 130
		Carbon Tetrachloride	2011/04/06		103	%	70 - 130
		1,1-Dichloroethane	2011/04/06		102	%	70 - 130
		1,2-Dichloroethane	2011/04/06		109	%	70 - 130
		Ethylene Dibromide	2011/04/06		97	%	70 - 130
		1,1,1-Trichloroethane	2011/04/06		101	%	70 - 130
		1,1,2-Trichloroethane	2011/04/06		95	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/04/06		89	%	70 - 130
		cis-1,3-Dichloropropene	2011/04/06		104	%	70 - 130
		trans-1,3-Dichloropropene	2011/04/06		108	%	70 - 130
		1,2-Dichloropropane	2011/04/06		97	%	70 - 130
		Bromomethane	2011/04/06		100	%	70 - 130
		Bromoform	2011/04/06		102	%	70 - 130
		Bromodichloromethane	2011/04/06		101	%	70 - 130
		Dibromochloromethane	2011/04/06		104	%	70 - 130
		Heptane	2011/04/06		106	%	70 - 130
		Trichloroethylene	2011/04/06		94	%	70 - 130
		Tetrachloroethylene	2011/04/06		94	%	70 - 130
		Benzene	2011/04/06		98	%	70 - 130
		Toluene	2011/04/06		102	%	70 - 130
		Ethylbenzene	2011/04/06		104	%	70 - 130
		p+m-Xylene	2011/04/06		104	%	70 - 130
		o-Xylene	2011/04/06		104	%	70 - 130
		Styrene	2011/04/06		104	%	70 - 130
		1,3,5-Trimethylbenzene	2011/04/06		96	%	70 - 130
		1,2,4-Trimethylbenzene	2011/04/06		94	%	70 - 130
		4-ethyltoluene	2011/04/06		99	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB143292

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2452107 LSY	Spiked Blank	Chlorobenzene	2011/04/06		96	%	70 - 130
		Benzyl chloride	2011/04/06		91	%	70 - 130
		1,3-Dichlorobenzene	2011/04/06		87	%	70 - 130
		1,4-Dichlorobenzene	2011/04/06		90	%	70 - 130
		1,2-Dichlorobenzene	2011/04/06		84	%	70 - 130
		1,2,4-Trichlorobenzene	2011/04/06		98	%	70 - 130
		Hexachlorobutadiene	2011/04/06		102	%	70 - 130
		Hexane	2011/04/06		107	%	70 - 130
		Cyclohexane	2011/04/06		105	%	70 - 130
		Tetrahydrofuran	2011/04/06		108	%	70 - 130
		1,4-Dioxane	2011/04/06		95	%	70 - 130
	Method Blank	Bromochloromethane	2011/04/06		85	%	60 - 140
		D5-Chlorobenzene	2011/04/06		75	%	60 - 140
		Difluorobenzene	2011/04/06		85	%	60 - 140
		2,2,4-Trimethylpentane	2011/04/06	<0.20		ppbv	
		Carbon Disulfide	2011/04/06	<0.50		ppbv	
		Propene	2011/04/06	<0.30		ppbv	
		Vinyl Acetate	2011/04/06	<0.20		ppbv	
		Vinyl Bromide	2011/04/06	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/04/06	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/04/06	<0.17		ppbv	
		Chloromethane	2011/04/06	<0.30		ppbv	
		Vinyl Chloride	2011/04/06	<0.18		ppbv	
		Chloroethane	2011/04/06	<0.30		ppbv	
		1,3-Butadiene	2011/04/06	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/04/06	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/04/06	<0.15		ppbv	
		Ethanol	2011/04/06	<2.3		ppbv	
		2-propanol	2011/04/06	<3.0		ppbv	
		2-Propanone	2011/04/06	0.93, RDL=0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/04/06	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/04/06	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/04/06	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/04/06	<0.20		ppbv	
		Ethyl Acetate	2011/04/06	<2.2		ppbv	
		1,1-Dichloroethylene	2011/04/06	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/04/06	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/04/06	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/04/06	0.56, RDL=0.30		ppbv	
		Chloroform	2011/04/06	<0.15		ppbv	
		Carbon Tetrachloride	2011/04/06	<0.30		ppbv	
		1,1-Dichloroethane	2011/04/06	<0.20		ppbv	
		1,2-Dichloroethane	2011/04/06	<0.20		ppbv	
		Ethylene Dibromide	2011/04/06	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/04/06	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/04/06	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/04/06	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/04/06	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/04/06	<0.17		ppbv	
		1,2-Dichloropropane	2011/04/06	<0.40		ppbv	
		Bromomethane	2011/04/06	<0.18		ppbv	
		Bromoform	2011/04/06	<0.20		ppbv	
		Bromodichloromethane	2011/04/06	<0.20		ppbv	
		Dibromochloromethane	2011/04/06	<0.20		ppbv	
		Heptane	2011/04/06	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB143292

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2452107 LSY	Method Blank	Trichloroethylene	2011/04/06	<0.30		ppbv	
		Tetrachloroethylene	2011/04/06	<0.20		ppbv	
		Benzene	2011/04/06	<0.18		ppbv	
		Toluene	2011/04/06	<0.20		ppbv	
		Ethylbenzene	2011/04/06	<0.20		ppbv	
		p+m-Xylene	2011/04/06	<0.37		ppbv	
		o-Xylene	2011/04/06	<0.20		ppbv	
		Styrene	2011/04/06	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/04/06	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/04/06	<0.50		ppbv	
		4-ethyltoluene	2011/04/06	<2.2		ppbv	
		Chlorobenzene	2011/04/06	<0.20		ppbv	
		Benzyl chloride	2011/04/06	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/04/06	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/04/06	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/04/06	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/04/06	<2.0		ppbv	
		Hexachlorobutadiene	2011/04/06	<3.0		ppbv	
		Hexane	2011/04/06	<0.30		ppbv	
		Cyclohexane	2011/04/06	<0.20		ppbv	
		Tetrahydrofuran	2011/04/06	<0.40		ppbv	
		1,4-Dioxane	2011/04/06	<2.0		ppbv	
		Xylene (Total)	2011/04/06	<0.60		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.

Polycyclic Aromatic Hydrocarbons Laboratory Analysis

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
 Location: 13-16-62-5 W4M
 Station ID: Lica 33 (Portable)
 Field Sample ID: LICA PUF/PORT/Mar 04, 11

Puf+ s/n: 100-1015
 Motor s/n: 1139
 Installation Date/Time: Mar 03, 2011 @ 10:21 mst
 Removal Date/Time: Mar 07, 2011 @ 13:43 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
04-Mar-11	03/04/2011 0:00	03/05/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
02-Mar-11	07-Mar-11	15-Mar-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 29-Mar-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
723	229	-16.5	330.35

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 # 06948

GB119541 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Mar 04, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 06948

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

Report Date: 2011/03/14

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B131259****Received: 2011/03/09, 08:59**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/03/10	2011/03/11	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

Page 1 of 7

Page 188 of 226

Maxxam Job #: B131259
 Report Date: 2011/03/14

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

Maxxam ID		IV8298		IV8299		
Sampling Date		2011/03/04		2011/03/04		
COC Number		06948		06948		
	Units	LICA PUFF+QFF/CLS/MARCH 04,11	RDL	LICA PUFF+QFF/PORT/MARCH 04,11	RDL	QC Batch

Semivolatile Organics						
1-Methylnaphthalene	ug	0.83	0.10	0.65	0.10	2425961
1-Methylphenanthrene	ug	<0.10	0.10	<0.10	0.10	2425961
2-Chloronaphthalene	ug	<0.10	0.10	<0.10	0.10	2425961
2-Methylantracene	ug	<0.10	0.10	<0.10	0.10	2425961
2-Methylnaphthalene	ug	1.80	0.10	1.16	0.10	2425961
3-Methylcholanthrene	ug	<2.0	2.0	<2.0	2.0	2425961
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	0.10	<0.10	0.10	2425961
9,10-Dimethylantracene	ug	<0.40	0.40	<0.40	0.40	2425961
Acenaphthene	ug	<0.11	0.11	<0.069	0.069	2425961
Acenaphthylene	ug	0.082	0.050	0.154	0.050	2425961
Anthracene	ug	<0.050	0.050	<0.050	0.050	2425961
Benzo(a)anthracene	ug	<0.050	0.050	<0.050	0.050	2425961
Benzo(a)fluorene	ug	<0.10	0.10	<0.10	0.10	2425961
Benzo(a)pyrene	ug	<0.050	0.050	<0.050	0.050	2425961
Benzo(b)fluoranthene	ug	<0.050	0.050	0.054	0.050	2425961
Benzo(b)fluorene	ug	<0.10	0.10	<0.10	0.10	2425961
Benzo(e)pyrene	ug	<0.10	0.10	<0.10	0.10	2425961
Benzo(g,h,i)perylene	ug	<0.050	0.050	<0.050	0.050	2425961
Benzo(k)fluoranthene	ug	<0.050	0.050	<0.050	0.050	2425961
Biphenyl	ug	0.33	0.10	0.38	0.10	2425961
Chrysene	ug	<0.050	0.050	0.054	0.050	2425961
Coronene	ug	<0.10	0.10	<0.10	0.10	2425961
Dibenz(a,h)anthracene	ug	<0.050	0.050	<0.050	0.050	2425961
Dibenzo(a,e)pyrene	ug	<0.20	0.20	<0.20	0.20	2425961
Fluoranthene	ug	0.070	0.050	0.158	0.050	2425961
Fluorene	ug	0.134	0.050	0.192	0.050	2425961
Indeno(1,2,3-cd)pyrene	ug	<0.050	0.050	<0.050	0.050	2425961
m-Terphenyl	ug	<0.10	0.10	<0.10	0.10	2425961
Naphthalene	ug	2.08	0.072	1.72	0.072	2425961
o-Terphenyl	ug	<0.10	0.10	<0.10	0.10	2425961
Perylene	ug	<0.10	0.10	<0.10	0.10	2425961

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B131259
 Report Date: 2011/03/14

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

Maxxam ID		IV8298		IV8299		
Sampling Date		2011/03/04		2011/03/04		
COC Number		06948		06948		
	Units	LICA PUFF+QFF/CLS/MARCH 04,11	RDL	LICA PUFF+QFF/PORT/MARCH 04,11	RDL	QC Batch
Phenanthrene	ug	0.264	0.050	0.400	0.050	2425961
p-Terphenyl	ug	<0.10	0.10	<0.10	0.10	2425961
Pyrene	ug	<0.050	0.050	0.096	0.050	2425961
Quinoline	ug	<0.40	0.40	<0.40	0.40	2425961
Tetralin	ug	<0.10	0.10	<0.10	0.10	2425961
Surrogate Recovery (%)						
D10-2-Methylnaphthalene	%	68		70		2425961
D10-Fluoranthene	%	86		84		2425961
D10-Fluorene (FS)	%	72		73		2425961
D10-Phenanthrene	%	78		78		2425961
D12-Benzo(a)anthracene	%	104		102		2425961
D12-Benzo(a)pyrene	%	96		94		2425961
D12-Benzo(b)fluoranthene	%	92		92		2425961
D12-Benzo(ghi)perylene	%	104		104		2425961
D12-Benzo(k)fluoranthene	%	86		86		2425961
D12-Chrysene	%	84		82		2425961
D12-Indeno(1,2,3-cd)pyrene	%	104		106		2425961
D12-Perylene	%	92		94		2425961
D14-Dibenzo(a,h)anthracene	%	106		110		2425961
D14-Terphenyl (FS)	%	82		81		2425961
D8-Acenaphthylene	%	72		74		2425961
D8-Naphthalene	%	66		68		2425961
QC Batch = Quality Control Batch						

Maxxam Job #: B131259
 Report Date: 2011/03/14

Test Summary

Maxxam ID	IV8298	Collected	2011/03/04
Sample ID	LICA PUFF+QFF/CLS/MARCH 04,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/03/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2425961	2011/03/10	2011/03/11	JIW

Maxxam ID	IV8299	Collected	2011/03/04
Sample ID	LICA PUFF+QFF/PORT/MARCH 04,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/03/09

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2425961	2011/03/10	2011/03/11	JIW

Maxxam Job #: B131259
Report Date: 2011/03/14

GENERAL COMMENTS

PAHMS-F(WS:2425961)

7,12-Dimethylbenzo(a)anthracene is above 25% RSD in initial calibration.

9.10-Dimethylanthracene is above 25% RSD in continuing calibration.

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene and Triphenylene. An estimated mdl for each of these compounds is 0.1ug.

Sample IV8298-01: PAHMS-F(WS:2425961)

Since Dibenzo(a,c) anthracene co-elutes with Dibenz(a,h) anthracene and Triphenylene with Chrysene each would have a value below estimated mdl.

Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chrysene. Picene elutes after Dibenz(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Mdl raised further for Acenaphthene due to matrix interference on a possible positive.

Sample IV8299-01: PAHMS-F(WS:2425961)

Since Dibenzo(a,c) anthracene co-elutes with Dibenz(a,h) anthracene and Triphenylene with Chrysene each would have a value below estimated mdl.

Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chrysene. Picene elutes after Dibenz(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Mdl raised further for Acenaphthene due to matrix interference on a possible positive.

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB131259

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2425961 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/03/11		72	%	50 - 150
		D10-Fluoranthene	2011/03/11		86	%	50 - 150
		D10-Phenanthrene	2011/03/11		80	%	50 - 150
		D12-Benzo(a)anthracene	2011/03/11		98	%	50 - 150
		D12-Benzo(a)pyrene	2011/03/11		94	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/03/11		90	%	50 - 150
		D12-Benzo(ghi)perylene	2011/03/11		98	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/03/11		84	%	50 - 150
		D12-Chrysene	2011/03/11		80	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/03/11		100	%	50 - 150
		D12-Perylene	2011/03/11		94	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/03/11		102	%	50 - 150
		D8-Acenaphthylene	2011/03/11		70	%	50 - 150
		D8-Naphthalene	2011/03/11		70	%	50 - 150
		Acenaphthene	2011/03/11		69	%	60 - 130
	RPD	Acenaphthene	2011/03/11	1.8		%	50
	Spiked Blank	Acenaphthylene	2011/03/11		67	%	60 - 130
	RPD	Acenaphthylene	2011/03/11	3.6		%	50
	Spiked Blank	Anthracene	2011/03/11		67	%	60 - 130
	RPD	Anthracene	2011/03/11	5.4		%	50
	Spiked Blank	Benzo(a)anthracene	2011/03/11		80	%	60 - 130
	RPD	Benzo(a)anthracene	2011/03/11	0.9		%	50
	Spiked Blank	Benzo(a)pyrene	2011/03/11		70	%	60 - 130
	RPD	Benzo(a)pyrene	2011/03/11	1.1		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/03/11		73	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/03/11	1.4		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/03/11		80	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/03/11	4.3		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/03/11		78	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/03/11	1.3		%	50
	Spiked Blank	Chrysene	2011/03/11		76	%	60 - 130
	RPD	Chrysene	2011/03/11	1.7		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/03/11		81	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/03/11	6.3		%	50
	Spiked Blank	Fluoranthene	2011/03/11		80	%	60 - 130
	RPD	Fluoranthene	2011/03/11	0.3		%	50
	Spiked Blank	Fluorene	2011/03/11		69	%	60 - 130
	RPD	Fluorene	2011/03/11	1.8		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/03/11		81	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/03/11	6.0		%	50
	Spiked Blank	Naphthalene	2011/03/11		65	%	60 - 130
	RPD	Naphthalene	2011/03/11	5.6		%	50
	Spiked Blank	Phenanthrene	2011/03/11		73	%	60 - 130
	RPD	Phenanthrene	2011/03/11	0		%	50
	Spiked Blank	Pyrene	2011/03/11		73	%	60 - 130
	RPD	Pyrene	2011/03/11	1.0		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/03/11		74	%	50 - 150
		D10-Fluoranthene	2011/03/11		86	%	50 - 150
		D10-Phenanthrene	2011/03/11		80	%	50 - 150
		D12-Benzo(a)anthracene	2011/03/11		96	%	50 - 150
		D12-Benzo(a)pyrene	2011/03/11		94	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/03/11		90	%	50 - 150
		D12-Benzo(ghi)perylene	2011/03/11		104	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/03/11		84	%	50 - 150
		D12-Chrysene	2011/03/11		78	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB131259

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2425961 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/03/11		106	%	50 - 150
		D12-Perylene	2011/03/11		92	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/03/11		106	%	50 - 150
		D8-Acenaphthylene	2011/03/11		72	%	50 - 150
		D8-Naphthalene	2011/03/11		74	%	50 - 150
		1-Methylnaphthalene	2011/03/11	<0.10		ug	
		1-Methylphenanthrene	2011/03/11	<0.10		ug	
		2-Chloronaphthalene	2011/03/11	<0.10		ug	
		2-Methylanthracene	2011/03/11	<0.10		ug	
		2-Methylnaphthalene	2011/03/11	<0.10		ug	
		3-Methylcholanthrene	2011/03/11	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/03/11	<0.10		ug	
		9,10-Dimethylanthracene	2011/03/11	<0.40		ug	
		Acenaphthene	2011/03/11	<0.050		ug	
		Acenaphthylene	2011/03/11	<0.050		ug	
		Anthracene	2011/03/11	<0.050		ug	
		Benzo(a)anthracene	2011/03/11	<0.050		ug	
		Benzo(a)fluorene	2011/03/11	<0.10		ug	
		Benzo(a)pyrene	2011/03/11	<0.050		ug	
		Benzo(b)fluoranthene	2011/03/11	<0.050		ug	
		Benzo(b)fluorene	2011/03/11	<0.10		ug	
		Benzo(e)pyrene	2011/03/11	<0.10		ug	
		Benzo(g,h,i)perylene	2011/03/11	<0.050		ug	
		Benzo(k)fluoranthene	2011/03/11	<0.050		ug	
		Biphenyl	2011/03/11	<0.10		ug	
		Chrysene	2011/03/11	<0.050		ug	
		Coronene	2011/03/11	<0.10		ug	
		Dibenz(a,h)anthracene	2011/03/11	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/03/11	<0.20		ug	
		Fluoranthene	2011/03/11	<0.050		ug	
		Fluorene	2011/03/11	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/03/11	<0.050		ug	
		m-Terphenyl	2011/03/11	<0.10		ug	
		Naphthalene	2011/03/11	<0.072		ug	
		o-Terphenyl	2011/03/11	<0.10		ug	
		Perylene	2011/03/11	<0.10		ug	
		Phenanthrene	2011/03/11	<0.050		ug	
		p-Terphenyl	2011/03/11	<0.10		ug	
		Pyrene	2011/03/11	<0.050		ug	
		Quinoline	2011/03/11	<0.40		ug	
		Tetralin	2011/03/11	<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: 13-16-62-5 W4M
 Station ID: Lica 33 (Portable)
 Field Sample ID: LICA PUF/PORT/Mar 10, 11

Puf+ s/n: 100-1015
 Motor s/n: 1139
 Installation Date/Time: Mar 09, 2011 @ 16:48 mst
 Removal Date/Time: Mar 11, 2011 @ 10:52 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
10-Mar-11	03/10/2011 0:00	03/11/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
08-Mar-11	14-Mar-11	28-Mar-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 29-Mar-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
706	229	-12.7	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 # 06648

GB120111 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Mar 10, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 06648

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

Report Date: 2011/03/24

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B135074****Received: 2011/03/16, 08:50**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/03/17	2011/03/21	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.

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Total cover pages: 1

Page 1 of 7

Page 196 of 226

Maxxam Job #: B135074
 Report Date: 2011/03/24

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

Maxxam ID		IX6041	IX6042		
Sampling Date		2011/03/10	2011/03/10		
COC Number		06648	06648		
	Units	LICA PUFF+QFF/CLS/MAR 10,11	LICA PUFF+QFF/PORT/MAR 10,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.10	<0.10	0.10	2432851
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2432851
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2432851
2-Methylantracene	ug	<0.10	<0.10	0.10	2432851
2-Methylnaphthalene	ug	0.22	0.16	0.10	2432851
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2432851
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2432851
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2432851
Acenaphthene	ug	<0.050	<0.050	0.050	2432851
Acenaphthylene	ug	<0.050	<0.050	0.050	2432851
Anthracene	ug	<0.050	<0.050	0.050	2432851
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2432851
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2432851
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2432851
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2432851
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2432851
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2432851
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2432851
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2432851
Biphenyl	ug	0.15	0.16	0.10	2432851
Chrysene	ug	<0.050	<0.050	0.050	2432851
Coronene	ug	<0.10	<0.10	0.10	2432851
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2432851
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2432851
Fluoranthene	ug	<0.050	<0.050	0.050	2432851
Fluorene	ug	0.066	0.058	0.050	2432851
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2432851
m-Terphenyl	ug	<0.10	<0.10	0.10	2432851
Naphthalene	ug	0.242	0.166	0.072	2432851
o-Terphenyl	ug	<0.10	<0.10	0.10	2432851
Perylene	ug	<0.10	<0.10	0.10	2432851

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B135074
 Report Date: 2011/03/24

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

Maxxam ID		IX6041	IX6042		
Sampling Date		2011/03/10	2011/03/10		
COC Number		06648	06648		
	Units	LICA PUFF+QFF/CLS/MAR 10,11	LICA PUFF+QFF/PORT/MAR 10,11	RDL	QC Batch
Phenanthrene	ug	0.166	0.116	0.050	2432851
p-Terphenyl	ug	<0.10	<0.10	0.10	2432851
Pyrene	ug	<0.050	<0.050	0.050	2432851
Quinoline	ug	<0.40	<0.40	0.40	2432851
Tetralin	ug	<0.10	<0.10	0.10	2432851
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	62	66		2432851
D10-Fluoranthene	%	88	86		2432851
D10-Fluorene (FS)	%	68	69		2432851
D10-Phenanthrene	%	78	76		2432851
D12-Benzo(a)anthracene	%	102	98		2432851
D12-Benzo(a)pyrene	%	88	84		2432851
D12-Benzo(b)fluoranthene	%	92	90		2432851
D12-Benzo(ghi)perylene	%	94	92		2432851
D12-Benzo(k)fluoranthene	%	88	84		2432851
D12-Chrysene	%	88	84		2432851
D12-Indeno(1,2,3-cd)pyrene	%	96	94		2432851
D12-Perylene	%	86	82		2432851
D14-Dibenzo(a,h)anthracene	%	96	96		2432851
D14-Terphenyl (FS)	%	84	83		2432851
D8-Acenaphthylene	%	66	70		2432851
D8-Naphthalene	%	60	64		2432851
QC Batch = Quality Control Batch					

Maxxam Job #: B135074
 Report Date: 2011/03/24

Test Summary

Maxxam ID IX6041 **Collected** 2011/03/10
Sample ID LICA PUFF+QFF/CLS/MAR 10,11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/03/16

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2432851	2011/03/17	2011/03/21	WZ

Maxxam ID IX6042 **Collected** 2011/03/10
Sample ID LICA PUFF+QFF/PORT/MAR 10,11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/03/16

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2432851	2011/03/17	2011/03/21	WZ

Maxxam Job #: B135074
Report Date: 2011/03/24

GENERAL COMMENTS

PAHMS-F

7,12-Dimethylbenzo(a)anthracene are above 25% RSD in initial calibration. No positives found for these 2 compounds.

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene or Triphenylene. An estimated mdl for each of these compounds is 0.1ug

. Since Dibenzo(a,c) anthracene co-elutes with Dibenzo(a,h) anthracene and Triphenylene with Chrysene each would have a value below estimated mdl.

Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chrysene. Picene elutes after Dibenzo(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB135074

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2432851 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/03/21		72	%	50 - 150
		D10-Fluoranthene	2011/03/21		84	%	50 - 150
		D10-Phenanthrene	2011/03/21		78	%	50 - 150
		D12-Benzo(a)anthracene	2011/03/21		98	%	50 - 150
		D12-Benzo(a)pyrene	2011/03/21		88	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/03/21		96	%	50 - 150
		D12-Benzo(ghi)perylene	2011/03/21		96	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/03/21		92	%	50 - 150
		D12-Chrysene	2011/03/21		94	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/03/21		96	%	50 - 150
		D12-Perylene	2011/03/21		88	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/03/21		98	%	50 - 150
		RPD	D8-Acenaphthylene	2011/03/21		72	%
	D8-Naphthalene		2011/03/21		70	%	50 - 150
	Spiked Blank	Acenaphthene	2011/03/21		68	%	60 - 130
		Acenaphthene	2011/03/21	5.3		%	50
	RPD	Acenaphthylene	2011/03/21		65	%	60 - 130
		Acenaphthylene	2011/03/21	4.0		%	50
	Spiked Blank	Anthracene	2011/03/21		63	%	60 - 130
		Anthracene	2011/03/21	4.9		%	50
	Spiked Blank	Benzo(a)anthracene	2011/03/21		82	%	60 - 130
		Benzo(a)anthracene	2011/03/21	6.3		%	50
	Spiked Blank	Benzo(a)pyrene	2011/03/21		68	%	60 - 130
		Benzo(a)pyrene	2011/03/21	4.5		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/03/21		81	%	60 - 130
		Benzo(b)fluoranthene	2011/03/21	7.4		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/03/21		80	%	60 - 130
		Benzo(g,h,i)perylene	2011/03/21	6.8		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/03/21		81	%	60 - 130
		Benzo(k)fluoranthene	2011/03/21	7.1		%	50
	Spiked Blank	Chrysene	2011/03/21		84	%	60 - 130
		Chrysene	2011/03/21	6.4		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/03/21		81	%	60 - 130
		Dibenz(a,h)anthracene	2011/03/21	5.1		%	50
	Spiked Blank	Fluoranthene	2011/03/21		75	%	60 - 130
		Fluoranthene	2011/03/21	3.8		%	50
	Spiked Blank	Fluorene	2011/03/21		67	%	60 - 130
		Fluorene	2011/03/21	6.2		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/03/21		80	%	60 - 130
		Indeno(1,2,3-cd)pyrene	2011/03/21	4.5		%	50
Spiked Blank	Naphthalene	2011/03/21		70	%	60 - 130	
	Naphthalene	2011/03/21	2.5		%	50	
Spiked Blank	Phenanthrene	2011/03/21		68	%	60 - 130	
	Phenanthrene	2011/03/21	7.2		%	50	
Spiked Blank	Pyrene	2011/03/21		70	%	60 - 130	
	Pyrene	2011/03/21	4.0		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/03/21		68	%	50 - 150	
	D10-Fluoranthene	2011/03/21		82	%	50 - 150	
	D10-Phenanthrene	2011/03/21		74	%	50 - 150	
	D12-Benzo(a)anthracene	2011/03/21		96	%	50 - 150	
	D12-Benzo(a)pyrene	2011/03/21		84	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/03/21		88	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/03/21		90	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/03/21		82	%	50 - 150	
	D12-Chrysene	2011/03/21		86	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB135074

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2432851 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/03/21		92	%	50 - 150
		D12-Perylene	2011/03/21		84	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/03/21		92	%	50 - 150
		D8-Acenaphthylene	2011/03/21		66	%	50 - 150
		D8-Naphthalene	2011/03/21		68	%	50 - 150
		1-Methylnaphthalene	2011/03/21	<0.10		ug	
		1-Methylphenanthrene	2011/03/21	<0.10		ug	
		2-Chloronaphthalene	2011/03/21	<0.10		ug	
		2-Methylanthracene	2011/03/21	<0.10		ug	
		2-Methylnaphthalene	2011/03/21	<0.10		ug	
		3-Methylcholanthrene	2011/03/21	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/03/21	<0.10		ug	
		9,10-Dimethylanthracene	2011/03/21	<0.40		ug	
		Acenaphthene	2011/03/21	<0.050		ug	
		Acenaphthylene	2011/03/21	<0.050		ug	
		Anthracene	2011/03/21	<0.050		ug	
		Benzo(a)anthracene	2011/03/21	<0.050		ug	
		Benzo(a)fluorene	2011/03/21	<0.10		ug	
		Benzo(a)pyrene	2011/03/21	<0.050		ug	
		Benzo(b)fluoranthene	2011/03/21	<0.050		ug	
		Benzo(b)fluorene	2011/03/21	<0.10		ug	
		Benzo(e)pyrene	2011/03/21	<0.10		ug	
		Benzo(g,h,i)perylene	2011/03/21	<0.050		ug	
		Benzo(k)fluoranthene	2011/03/21	<0.050		ug	
		Biphenyl	2011/03/21	<0.10		ug	
		Chrysene	2011/03/21	<0.050		ug	
		Coronene	2011/03/21	<0.10		ug	
		Dibenz(a,h)anthracene	2011/03/21	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/03/21	<0.20		ug	
		Fluoranthene	2011/03/21	<0.050		ug	
		Fluorene	2011/03/21	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/03/21	<0.050		ug	
		m-Terphenyl	2011/03/21	<0.10		ug	
		Naphthalene	2011/03/21	<0.072		ug	
		o-Terphenyl	2011/03/21	<0.10		ug	
		Perylene	2011/03/21	<0.10		ug	
		Phenanthrene	2011/03/21	<0.050		ug	
		p-Terphenyl	2011/03/21	<0.10		ug	
		Pyrene	2011/03/21	<0.050		ug	
		Quinoline	2011/03/21	<0.40		ug	
		Tetralin	2011/03/21	<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: 13-16-62-5 W4M
 Station ID: Lica 33 (Portable)
 Field Sample ID: LICA PUF/PORT/Mar 16, 11

Puf+ s/n: 100-1015
 Motor s/n: 1139
 Installation Date/Time: Mar 15, 2011 @ 14:29 mst
 Removal Date/Time: Mar 17, 2011 @ 9:55 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
16-Mar-11	03/16/2011 0:00	03/17/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
14-Mar-11	17-Mar-11	24-Mar-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 29-Mar-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
701	229	-5.5	330.37

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 # 07015
GB120280 Puff #2
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Mar 16, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 07015

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

Report Date: 2011/03/30

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B137224****Received: 2011/03/19, 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	2011/03/23	2011/03/24	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.

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Total cover pages: 1

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Maxxam Job #: B137224
 Report Date: 2011/03/30

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

Maxxam ID		IY5690	IY5691		
Sampling Date		2011/03/16	2011/03/16		
COC Number		07015	07015		
	Units	LICA PUFF+QFF/CLS/MAR 16,11	LICA PUF+QFFF/PORT/MAR 16,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2438012
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2438012
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2438012
2-Methylantracene	ug	<0.10	<0.10	0.10	2438012
2-Methylnaphthalene	ug	0.21	<0.10	0.10	2438012
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2438012
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2438012
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2438012
Acenaphthene	ug	<0.050	<0.050	0.050	2438012
Acenaphthylene	ug	0.070	<0.050	0.050	2438012
Anthracene	ug	<0.050	<0.050	0.050	2438012
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2438012
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2438012
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2438012
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2438012
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2438012
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2438012
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2438012
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2438012
Biphenyl	ug	0.11	0.11	0.10	2438012
Chrysene	ug	<0.050	<0.050	0.050	2438012
Coronene	ug	<0.10	<0.10	0.10	2438012
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2438012
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2438012
Fluoranthene	ug	<0.050	<0.050	0.050	2438012
Fluorene	ug	0.076	<0.050	0.050	2438012
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2438012
m-Terphenyl	ug	<0.10	<0.10	0.10	2438012
Naphthalene	ug	0.182	0.100	0.072	2438012
o-Terphenyl	ug	<0.10	<0.10	0.10	2438012
Perylene	ug	<0.10	<0.10	0.10	2438012

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B137224
 Report Date: 2011/03/30

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

Maxxam ID		IY5690	IY5691		
Sampling Date		2011/03/16	2011/03/16		
COC Number		07015	07015		
	Units	LICA PUFF+QFF/CLS/MAR 16,11	LICA PUF+QFFF/PORT/MAR 16,11	RDL	QC Batch

Phenanthrene	ug	0.148	0.088	0.050	2438012
p-Terphenyl	ug	<0.10	<0.10	0.10	2438012
Pyrene	ug	<0.050	<0.050	0.050	2438012
Quinoline	ug	<0.40	<0.40	0.40	2438012
Tetralin	ug	<0.10	<0.10	0.10	2438012
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	64	76		2438012
D10-Fluoranthene	%	84	90		2438012
D10-Fluorene (FS)	%	66	48 (1)		2438012
D10-Phenanthrene	%	80	86		2438012
D12-Benzo(a)anthracene	%	96	98		2438012
D12-Benzo(a)pyrene	%	88	88		2438012
D12-Benzo(b)fluoranthene	%	90	90		2438012
D12-Benzo(ghi)perylene	%	92	96		2438012
D12-Benzo(k)fluoranthene	%	86	86		2438012
D12-Chrysene	%	88	86		2438012
D12-Indeno(1,2,3-cd)pyrene	%	92	96		2438012
D12-Perylene	%	86	88		2438012
D14-Dibenzo(a,h)anthracene	%	94	98		2438012
D14-Terphenyl (FS)	%	79	83		2438012
D8-Acenaphthylene	%	66	80		2438012
D8-Naphthalene	%	64	76		2438012

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.

Maxxam Job #: B137224
 Report Date: 2011/03/30

Test Summary

Maxxam ID	IY5690	Collected	2011/03/16
Sample ID	LICA PUFF+QFF/CLS/MAR 16,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/03/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2438012	2011/03/23	2011/03/24	WZ

Maxxam ID	IY5691	Collected	2011/03/16
Sample ID	LICA PUF+QFFF/PORT/MAR 16,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/03/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2438012	2011/03/23	2011/03/24	WZ

Maxxam Job #: B137224
Report Date: 2011/03/30

GENERAL COMMENTS

PAHMS-F

7,12-Dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positive found for this compound.

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene or Triphenylene. An estimated mdl for each of these compounds is 0.1ug .

Since Dibenzo(a,c) anthracene co-elutes with Dibenzo(a,h) anthracene and Triphenylene with Chrysene each would have a value below estimated mdl.

Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chrysene. Picene elutes after Dibenzo(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample IY5691-01: PAHMS-F

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
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB137224

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2438012 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/03/24		82	%	50 - 150
		D10-Fluoranthene	2011/03/24		88	%	50 - 150
		D10-Phenanthrene	2011/03/24		86	%	50 - 150
		D12-Benzo(a)anthracene	2011/03/24		94	%	50 - 150
		D12-Benzo(a)pyrene	2011/03/24		88	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/03/24		88	%	50 - 150
		D12-Benzo(ghi)perylene	2011/03/24		94	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/03/24		88	%	50 - 150
		D12-Chrysene	2011/03/24		92	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/03/24		96	%	50 - 150
		D12-Perylene	2011/03/24		88	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/03/24		98	%	50 - 150
		RPD	D8-Acenaphthylene	2011/03/24		80	%
	D8-Naphthalene		2011/03/24		82	%	50 - 150
	RPD	Acenaphthene	2011/03/24		77	%	60 - 130
		Acenaphthene	2011/03/24	3.3		%	50
	Spiked Blank	Acenaphthylene	2011/03/24		76	%	60 - 130
		Acenaphthylene	2011/03/24	4.4		%	50
	Spiked Blank	Anthracene	2011/03/24		72	%	60 - 130
		Anthracene	2011/03/24	5.3		%	50
	Spiked Blank	Benzo(a)anthracene	2011/03/24		80	%	60 - 130
		Benzo(a)anthracene	2011/03/24	0.3		%	50
	Spiked Blank	Benzo(a)pyrene	2011/03/24		66	%	60 - 130
		Benzo(a)pyrene	2011/03/24	2.2		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/03/24		75	%	60 - 130
		Benzo(b)fluoranthene	2011/03/24	3.0		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/03/24		81	%	60 - 130
		Benzo(g,h,i)perylene	2011/03/24	4.4		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/03/24		82	%	60 - 130
		Benzo(k)fluoranthene	2011/03/24	0.6		%	50
	Spiked Blank	Chrysene	2011/03/24		83	%	60 - 130
		Chrysene	2011/03/24	0.6		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/03/24		82	%	60 - 130
		Dibenz(a,h)anthracene	2011/03/24	4.7		%	50
	Spiked Blank	Fluoranthene	2011/03/24		81	%	60 - 130
		Fluoranthene	2011/03/24	4.8		%	50
	Spiked Blank	Fluorene	2011/03/24		76	%	60 - 130
		Fluorene	2011/03/24	4.0		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/03/24		83	%	60 - 130
		Indeno(1,2,3-cd)pyrene	2011/03/24	4.7		%	50
Spiked Blank	Naphthalene	2011/03/24		82	%	60 - 130	
	Naphthalene	2011/03/24	4.1		%	50	
Spiked Blank	Phenanthrene	2011/03/24		77	%	60 - 130	
	Phenanthrene	2011/03/24	5.4		%	50	
Spiked Blank	Pyrene	2011/03/24		75	%	60 - 130	
	Pyrene	2011/03/24	5.2		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/03/24		84	%	50 - 150	
	D10-Fluoranthene	2011/03/24		86	%	50 - 150	
	D10-Phenanthrene	2011/03/24		84	%	50 - 150	
	D12-Benzo(a)anthracene	2011/03/24		92	%	50 - 150	
	D12-Benzo(a)pyrene	2011/03/24		84	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/03/24		88	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/03/24		90	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/03/24		84	%	50 - 150	
	D12-Chrysene	2011/03/24		88	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB137224

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2438012 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/03/24		90	%	50 - 150
		D12-Perylene	2011/03/24		84	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/03/24		92	%	50 - 150
		D8-Acenaphthylene	2011/03/24		80	%	50 - 150
		D8-Naphthalene	2011/03/24		84	%	50 - 150
		1-Methylnaphthalene	2011/03/24	<0.10		ug	
		1-Methylphenanthrene	2011/03/24	<0.10		ug	
		2-Chloronaphthalene	2011/03/24	<0.10		ug	
		2-Methylanthracene	2011/03/24	<0.10		ug	
		2-Methylnaphthalene	2011/03/24	<0.10		ug	
		3-Methylcholanthrene	2011/03/24	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/03/24	<0.10		ug	
		9,10-Dimethylanthracene	2011/03/24	<0.40		ug	
		Acenaphthene	2011/03/24	<0.050		ug	
		Acenaphthylene	2011/03/24	<0.050		ug	
		Anthracene	2011/03/24	<0.050		ug	
		Benzo(a)anthracene	2011/03/24	<0.050		ug	
		Benzo(a)fluorene	2011/03/24	<0.10		ug	
		Benzo(a)pyrene	2011/03/24	<0.050		ug	
		Benzo(b)fluoranthene	2011/03/24	<0.050		ug	
		Benzo(b)fluorene	2011/03/24	<0.10		ug	
		Benzo(e)pyrene	2011/03/24	<0.10		ug	
		Benzo(g,h,i)perylene	2011/03/24	<0.050		ug	
		Benzo(k)fluoranthene	2011/03/24	<0.050		ug	
		Biphenyl	2011/03/24	<0.10		ug	
		Chrysene	2011/03/24	<0.050		ug	
		Coronene	2011/03/24	<0.10		ug	
		Dibenz(a,h)anthracene	2011/03/24	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/03/24	<0.20		ug	
		Fluoranthene	2011/03/24	<0.050		ug	
		Fluorene	2011/03/24	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/03/24	<0.050		ug	
		m-Terphenyl	2011/03/24	<0.10		ug	
		Naphthalene	2011/03/24	<0.072		ug	
		o-Terphenyl	2011/03/24	<0.10		ug	
		Perylene	2011/03/24	<0.10		ug	
		Phenanthrene	2011/03/24	<0.050		ug	
		p-Terphenyl	2011/03/24	<0.10		ug	
		Pyrene	2011/03/24	<0.050		ug	
		Quinoline	2011/03/24	<0.40		ug	
		Tetralin	2011/03/24	<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: 13-16-62-5 W4M
Station ID: Lica 33 (Portable)
Field Sample ID: LICA PUF/PORT/Mar 22, 11

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Mar 21, 2011 @ 11:25 mst
Removal Date/Time: Mar 23, 2011 @ 11:15 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
22-Mar-11	03/22/2011 0:00	03/23/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
18-Mar-11	23-Mar-11	30-Mar-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 29-Mar-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
713	229	-2.9	330.36

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

Comments:

GB124661 Puff #2
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Mar 22, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 07028

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

Report Date: 2011/04/01

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B140354**

Received: 2011/03/25, 09:05

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/03/28	2011/03/29	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

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Maxxam Job #: B140354
 Report Date: 2011/04/01

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

Maxxam ID		JA0123	JA0124		
Sampling Date		2011/03/22	2011/03/22		
		00:00	00:00		
COC Number		07028	07028		
	Units	LICAPUFF/QFF/CLS/MAR22,11	LICAPUFF/QFF/PORT/MAR22,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2442004
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2442004
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2442004
2-Methylanthracene	ug	<0.10	<0.10	0.10	2442004
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2442004
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2442004
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2442004
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2442004
Acenaphthene	ug	<0.050	<0.050	0.050	2442004
Acenaphthylene	ug	<0.050	0.094	0.050	2442004
Anthracene	ug	<0.050	<0.050	0.050	2442004
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2442004
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2442004
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2442004
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2442004
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2442004
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2442004
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2442004
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2442004
Biphenyl	ug	<0.10	<0.10	0.10	2442004
Chrysene	ug	<0.050	<0.050	0.050	2442004
Coronene	ug	<0.10	<0.10	0.10	2442004
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2442004
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2442004
Fluoranthene	ug	<0.050	0.066	0.050	2442004
Fluorene	ug	0.070	0.068	0.050	2442004
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2442004
m-Terphenyl	ug	<0.10	<0.10	0.10	2442004
Naphthalene	ug	0.076	0.114	0.072	2442004
o-Terphenyl	ug	<0.10	<0.10	0.10	2442004
Perylene	ug	<0.10	<0.10	0.10	2442004
Phenanthrene	ug	0.168	0.180	0.050	2442004

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B140354
 Report Date: 2011/04/01

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

Maxxam ID		JA0123	JA0124		
Sampling Date		2011/03/22	2011/03/22		
		00:00	00:00		
COC Number		07028	07028		
	Units	LICAPUFF/QFF/CLS/MAR22,11	LICAPUFF/QFF/PORT/MAR22,11	RDL	QC Batch

p-Terphenyl	ug	<0.10	<0.10	0.10	2442004
Pyrene	ug	<0.050	<0.050	0.050	2442004
Quinoline	ug	<0.40	<0.40	0.40	2442004
Tetralin	ug	<0.10	<0.10	0.10	2442004
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	62	68		2442004
D10-Fluoranthene	%	92	92		2442004
D10-Fluorene (FS)	%	44 (1)	26 (1)		2442004
D10-Phenanthrene	%	80	82		2442004
D12-Benzo(a)anthracene	%	98	106		2442004
D12-Benzo(a)pyrene	%	94	94		2442004
D12-Benzo(b)fluoranthene	%	88	94		2442004
D12-Benzo(ghi)perylene	%	94	98		2442004
D12-Benzo(k)fluoranthene	%	86	86		2442004
D12-Chrysene	%	82	86		2442004
D12-Indeno(1,2,3-cd)pyrene	%	96	98		2442004
D12-Perylene	%	92	92		2442004
D14-Dibenzo(a,h)anthracene	%	96	98		2442004
D14-Terphenyl (FS)	%	88	86		2442004
D8-Acenaphthylene	%	70	76		2442004
D8-Naphthalene	%	60	66		2442004

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.

Maxxam Job #: B140354
Report Date: 2011/04/01

Test Summary

Maxxam ID JA0123
Sample ID LICAPUFF/QFF/CLS/MAR22,11
Matrix PUF AND FILTER
Collected 2011/03/22
Shipped
Received 2011/03/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2442004	2011/03/28	2011/03/29	WZ

Maxxam ID JA0124
Sample ID LICAPUFF/QFF/PORT/MAR22,11
Matrix PUF AND FILTER
Collected 2011/03/22
Shipped
Received 2011/03/25

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2442004	2011/03/28	2011/03/29	WZ

Maxxam Job #: B140354
Report Date: 2011/04/01

GENERAL COMMENTS

PAHMS-F

7,12-Dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positive found for this compound.

Internal Std area response criteria was high in Spike:dup. Rerun with similar results. Original run reported.

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene or Triphenylene. An estimated mdl for each of these compounds is 0.1ug. Since Dibenzo(a,c) anthracene co-elutes with Dibenzo(a,h) anthracene and Triphenylene with Chrysene each would have a value below estimated mdl.

Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chrysene. Picene elutes after Dibenzo(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample JA0123-01: PAHMS-F

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

Sample JA0124-01: PAHMS-F

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
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB140354

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2442004 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/03/29		80	%	50 - 150
		D10-Fluoranthene	2011/03/29		98	%	50 - 150
		D10-Phenanthrene	2011/03/29		86	%	50 - 150
		D12-Benzo(a)anthracene	2011/03/29		100	%	50 - 150
		D12-Benzo(a)pyrene	2011/03/29		98	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/03/29		92	%	50 - 150
		D12-Benzo(ghi)perylene	2011/03/29		98	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/03/29		86	%	50 - 150
		D12-Chrysene	2011/03/29		82	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/03/29		100	%	50 - 150
		D12-Perylene	2011/03/29		96	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/03/29		100	%	50 - 150
		D8-Acenaphthylene	2011/03/29		84	%	50 - 150
		D8-Naphthalene	2011/03/29		80	%	50 - 150
		RPD	Acenaphthene	2011/03/29	0.6		%
	Spiked Blank	Acenaphthene	2011/03/29			%	50
	RPD	Acenaphthylene	2011/03/29	4.9		%	60 - 130
	RPD	Acenaphthylene	2011/03/29			%	50
	Spiked Blank	Anthracene	2011/03/29			%	60 - 130
	RPD	Anthracene	2011/03/29	7.9		%	50
	Spiked Blank	Benzo(a)anthracene	2011/03/29			%	60 - 130
	RPD	Benzo(a)anthracene	2011/03/29	1.8		%	50
	Spiked Blank	Benzo(a)pyrene	2011/03/29			%	60 - 130
	RPD	Benzo(a)pyrene	2011/03/29	2.3		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/03/29			%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/03/29	3.3		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/03/29			%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/03/29	2.6		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/03/29			%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/03/29	7.2		%	50
	Spiked Blank	Chrysene	2011/03/29			%	60 - 130
	RPD	Chrysene	2011/03/29	2.0		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/03/29			%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/03/29	6.1		%	50
	Spiked Blank	Fluoranthene	2011/03/29			%	60 - 130
	RPD	Fluoranthene	2011/03/29	3.5		%	50
	Spiked Blank	Fluorene	2011/03/29			%	60 - 130
	RPD	Fluorene	2011/03/29	1.9		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/03/29			%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/03/29	3.7		%	50
Spiked Blank	Naphthalene	2011/03/29			%	60 - 130	
RPD	Naphthalene	2011/03/29	5.9		%	50	
Spiked Blank	Phenanthrene	2011/03/29			%	60 - 130	
RPD	Phenanthrene	2011/03/29	3.5		%	50	
Spiked Blank	Pyrene	2011/03/29			%	60 - 130	
RPD	Pyrene	2011/03/29	3.8		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/03/29			%	50 - 150	
	D10-Fluoranthene	2011/03/29			%	50 - 150	
	D10-Phenanthrene	2011/03/29			%	50 - 150	
	D12-Benzo(a)anthracene	2011/03/29			%	50 - 150	
	D12-Benzo(a)pyrene	2011/03/29			%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/03/29			%	50 - 150	
	D12-Benzo(ghi)perylene	2011/03/29			%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/03/29			%	50 - 150	
	D12-Chrysene	2011/03/29			%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB140354

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2442004 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/03/29		100	%	50 - 150
		D12-Perylene	2011/03/29		96	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/03/29		100	%	50 - 150
		D8-Acenaphthylene	2011/03/29		88	%	50 - 150
		D8-Naphthalene	2011/03/29		80	%	50 - 150
		1-Methylnaphthalene	2011/03/29	<0.10		ug	
		1-Methylphenanthrene	2011/03/29	<0.10		ug	
		2-Chloronaphthalene	2011/03/29	<0.10		ug	
		2-Methylantracene	2011/03/29	<0.10		ug	
		2-Methylnaphthalene	2011/03/29	<0.10		ug	
		3-Methylcholanthrene	2011/03/29	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/03/29	<0.10		ug	
		9,10-Dimethylantracene	2011/03/29	<0.40		ug	
		Acenaphthene	2011/03/29	<0.050		ug	
		Acenaphthylene	2011/03/29	<0.050		ug	
		Anthracene	2011/03/29	<0.050		ug	
		Benzo(a)anthracene	2011/03/29	<0.050		ug	
		Benzo(a)fluorene	2011/03/29	<0.10		ug	
		Benzo(a)pyrene	2011/03/29	<0.050		ug	
		Benzo(b)fluoranthene	2011/03/29	<0.050		ug	
		Benzo(b)fluorene	2011/03/29	<0.10		ug	
		Benzo(e)pyrene	2011/03/29	<0.10		ug	
		Benzo(g,h,i)perylene	2011/03/29	<0.050		ug	
		Benzo(k)fluoranthene	2011/03/29	<0.050		ug	
		Biphenyl	2011/03/29	<0.10		ug	
		Chrysene	2011/03/29	<0.050		ug	
		Coronene	2011/03/29	<0.10		ug	
		Dibenz(a,h)anthracene	2011/03/29	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/03/29	<0.20		ug	
		Fluoranthene	2011/03/29	<0.050		ug	
		Fluorene	2011/03/29	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/03/29	<0.050		ug	
		m-Terphenyl	2011/03/29	<0.10		ug	
		Naphthalene	2011/03/29	<0.072		ug	
		o-Terphenyl	2011/03/29	<0.10		ug	
		Perylene	2011/03/29	<0.10		ug	
		Phenanthrene	2011/03/29	<0.050		ug	
		p-Terphenyl	2011/03/29	<0.10		ug	
		Pyrene	2011/03/29	<0.050		ug	
		Quinoline	2011/03/29	<0.40		ug	
		Tetralin	2011/03/29	<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: 13-16-62-5 W4M
 Station ID: Lica 33 (Portable)
 Field Sample ID: LICA PUF/PORT/Mar 28, 11

Puf+ s/n: 100-1015
 Motor s/n: 1139
 Installation Date/Time: Mar 25, 2011 @ 9:42 mst
 Removal Date/Time: Mar 29, 2011 @ 7:53 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
28-Mar-11	03/28/2011 0:00	03/29/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
24-Mar-11	29-Mar-11	05-Apr-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 29-Mar-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
712	229	-4.3	330.36

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# 07052

GB124668 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Mar 28, 11

Technician Signiture: Ting Xu

Site: COLD LAKE SOUTH
Your C.O.C. #: 07052

Attention: Michael Bisaga

Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/04/07

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B143433

Received: 2011/03/31, 09:15

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/04/02	2011/04/04	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 #: B143433
 Report Date: 2011/04/07

Maxxam Analytics

Project name: COLD LAKE SOUTH

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

Maxxam ID		JB3758	JB3759		
Sampling Date		2011/03/28 00:00	2011/03/28 00:00		
COC Number		07052	07052		
	Units	LICA PUFF/QFF/CLS/MAR 28, 11	LICA PUFF/QFF/PORT/MAR 28, 11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2448007
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2448007
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2448007
2-Methylantracene	ug	<0.10	<0.10	0.10	2448007
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2448007
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2448007
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2448007
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2448007
Acenaphthene	ug	<0.050	<0.050	0.050	2448007
Acenaphthylene	ug	<0.050	<0.050	0.050	2448007
Anthracene	ug	<0.050	<0.050	0.050	2448007
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2448007
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2448007
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2448007
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2448007
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2448007
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2448007
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2448007
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2448007
Biphenyl	ug	<0.10	<0.10	0.10	2448007
Chrysene	ug	<0.050	<0.050	0.050	2448007
Coronene	ug	<0.10	<0.10	0.10	2448007
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2448007
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2448007
Fluoranthene	ug	<0.050	<0.050	0.050	2448007
Fluorene	ug	<0.050	0.064	0.050	2448007
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2448007
m-Terphenyl	ug	<0.10	<0.10	0.10	2448007
Naphthalene	ug	<0.072	0.088	0.072	2448007
o-Terphenyl	ug	<0.10	<0.10	0.10	2448007

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B143433
 Report Date: 2011/04/07

Maxxam Analytics

Project name: COLD LAKE SOUTH

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

Maxxam ID		JB3758	JB3759		
Sampling Date		2011/03/28 00:00	2011/03/28 00:00		
COC Number		07052	07052		
	Units	LICA PUFF/QFF/CLS/MAR 28, 11	LICA PUFF/QFF/PORT/MAR 28, 11	RDL	QC Batch

Perylene	ug	<0.10	<0.10	0.10	2448007
Phenanthrene	ug	0.092	0.110	0.050	2448007
p-Terphenyl	ug	<0.10	<0.10	0.10	2448007
Pyrene	ug	<0.050	<0.050	0.050	2448007
Quinoline	ug	<0.40	<0.40	0.40	2448007
Tetralin	ug	<0.10	<0.10	0.10	2448007
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	70	74		2448007
D10-Fluoranthene	%	98	98		2448007
D10-Fluorene (FS)	%	35 (1)	44 (1)		2448007
D10-Phenanthrene	%	84	86		2448007
D12-Benzo(a)anthracene	%	98	98		2448007
D12-Benzo(a)pyrene	%	100	96		2448007
D12-Benzo(b)fluoranthene	%	92	92		2448007
D12-Benzo(ghi)perylene	%	104	102		2448007
D12-Benzo(k)fluoranthene	%	90	90		2448007
D12-Chrysene	%	82	86		2448007
D12-Indeno(1,2,3-cd)pyrene	%	106	104		2448007
D12-Perylene	%	98	98		2448007
D14-Dibenzo(a,h)anthracene	%	106	104		2448007
D14-Terphenyl (FS)	%	91	94		2448007
D8-Acenaphthylene	%	80	84		2448007
D8-Naphthalene	%	68	72		2448007

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.

Maxxam Job #: B143433
 Report Date: 2011/04/07

Maxxam Analytics

Project name: COLD LAKE SOUTH

Test Summary

Maxxam ID	JB3758	Collected	2011/03/28
Sample ID	LICA PUFF/QFF/CLS/MAR 28, 11	Shipped	
Matrix	PUF AND FILTER	Received	2011/03/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2448007	2011/04/02	2011/04/04	WZ

Maxxam ID	JB3759	Collected	2011/03/28
Sample ID	LICA PUFF/QFF/PORT/MAR 28, 11	Shipped	
Matrix	PUF AND FILTER	Received	2011/03/31

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2448007	2011/04/02	2011/04/04	WZ

Maxxam Job #: B143433
Report Date: 2011/04/07

Maxxam Analytics

Project name: COLD LAKE SOUTH

GENERAL COMMENTS

PAHMS-F

9,10-Dimethylanthracene and 7,12-Dimethylbenzo(a)anthracene are above 25% RSD in initial calibration. No positives found for these 2 compounds.

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene or Triphenylene. An estimated mdl for each of these compounds is 0.1ug. Since Dibenzo(a,c) anthracene co-elutes with Dibenzo(a,h) anthracene and Triphenylene with Chrysene each would have a value below estimated mdl.

Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chrysene. Picene elutes after Dibenzo(a,h) anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample JB3758-01: PAHMS-F

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

Sample JB3759-01: PAHMS-F

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
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name: COLD LAKE SOUTH

Quality Assurance Report
 Maxxam Job Number: GB143433

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2448007 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/04/04		76	%	50 - 150
		D10-Fluoranthene	2011/04/04		100	%	50 - 150
		D10-Phenanthrene	2011/04/04		84	%	50 - 150
		D12-Benzo(a)anthracene	2011/04/04		98	%	50 - 150
		D12-Benzo(a)pyrene	2011/04/04		100	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/04/04		92	%	50 - 150
		D12-Benzo(ghi)perylene	2011/04/04		102	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/04/04		90	%	50 - 150
		D12-Chrysene	2011/04/04		86	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/04/04		106	%	50 - 150
		D12-Perylene	2011/04/04		98	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/04/04		104	%	50 - 150
		D8-Acenaphthylene	2011/04/04		80	%	50 - 150
		D8-Naphthalene	2011/04/04		76	%	50 - 150
		Acenaphthene	2011/04/04		76	%	60 - 130
	RPD	Acenaphthene	2011/04/04	13.4		%	50
	Spiked Blank	Acenaphthylene	2011/04/04		76	%	60 - 130
	RPD	Acenaphthylene	2011/04/04	13.0		%	50
	Spiked Blank	Anthracene	2011/04/04		83	%	60 - 130
	RPD	Anthracene	2011/04/04	19.9		%	50
	Spiked Blank	Benzo(a)anthracene	2011/04/04		79	%	60 - 130
	RPD	Benzo(a)anthracene	2011/04/04	14.3		%	50
	Spiked Blank	Benzo(a)pyrene	2011/04/04		76	%	60 - 130
	RPD	Benzo(a)pyrene	2011/04/04	14.6		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/04/04		76	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/04/04	12.2		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/04/04		88	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/04/04	18.8		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/04/04		80	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/04/04	12.0		%	50
	Spiked Blank	Chrysene	2011/04/04		79	%	60 - 130
	RPD	Chrysene	2011/04/04	13.5		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/04/04		86	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/04/04	20.1		%	50
	Spiked Blank	Fluoranthene	2011/04/04		92	%	60 - 130
	RPD	Fluoranthene	2011/04/04	10.6		%	50
	Spiked Blank	Fluorene	2011/04/04		76	%	60 - 130
	RPD	Fluorene	2011/04/04	13.1		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/04/04		88	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/04/04	18.7		%	50
	Spiked Blank	Naphthalene	2011/04/04		72	%	60 - 130
	RPD	Naphthalene	2011/04/04	12.9		%	50
	Spiked Blank	Phenanthrene	2011/04/04		74	%	60 - 130
	RPD	Phenanthrene	2011/04/04	12.5		%	50
	Spiked Blank	Pyrene	2011/04/04		85	%	60 - 130
	RPD	Pyrene	2011/04/04	8.9		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/04/04		78	%	50 - 150
		D10-Fluoranthene	2011/04/04		90	%	50 - 150
		D10-Phenanthrene	2011/04/04		76	%	50 - 150
		D12-Benzo(a)anthracene	2011/04/04		90	%	50 - 150
		D12-Benzo(a)pyrene	2011/04/04		92	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/04/04		88	%	50 - 150
		D12-Benzo(ghi)perylene	2011/04/04		98	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/04/04		88	%	50 - 150
		D12-Chrysene	2011/04/04		88	%	50 - 150

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name: COLD LAKE SOUTH

Quality Assurance Report (Continued)

Maxxam Job Number: GB143433

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2448007 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/04/04		96	%	50 - 150
		D12-Perylene	2011/04/04		94	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/04/04		96	%	50 - 150
		D8-Acenaphthylene	2011/04/04		82	%	50 - 150
		D8-Naphthalene	2011/04/04		80	%	50 - 150
		1-Methylnaphthalene	2011/04/04	<0.10		ug	
		1-Methylphenanthrene	2011/04/04	<0.10		ug	
		2-Chloronaphthalene	2011/04/04	<0.10		ug	
		2-Methylanthracene	2011/04/04	<0.10		ug	
		2-Methylnaphthalene	2011/04/04	<0.10		ug	
		3-Methylcholanthrene	2011/04/04	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/04/04	<0.10		ug	
		9,10-Dimethylanthracene	2011/04/04	<0.40		ug	
		Acenaphthene	2011/04/04	<0.050		ug	
		Acenaphthylene	2011/04/04	<0.050		ug	
		Anthracene	2011/04/04	<0.050		ug	
		Benzo(a)anthracene	2011/04/04	<0.050		ug	
		Benzo(a)fluorene	2011/04/04	<0.10		ug	
		Benzo(a)pyrene	2011/04/04	<0.050		ug	
		Benzo(b)fluoranthene	2011/04/04	<0.050		ug	
		Benzo(b)fluorene	2011/04/04	<0.10		ug	
		Benzo(e)pyrene	2011/04/04	<0.10		ug	
		Benzo(g,h,i)perylene	2011/04/04	<0.050		ug	
		Benzo(k)fluoranthene	2011/04/04	<0.050		ug	
		Biphenyl	2011/04/04	<0.10		ug	
		Chrysene	2011/04/04	<0.050		ug	
		Coronene	2011/04/04	<0.10		ug	
		Dibenz(a,h)anthracene	2011/04/04	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/04/04	<0.20		ug	
		Fluoranthene	2011/04/04	<0.050		ug	
		Fluorene	2011/04/04	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/04/04	<0.050		ug	
		m-Terphenyl	2011/04/04	<0.10		ug	
		Naphthalene	2011/04/04	<0.072		ug	
		o-Terphenyl	2011/04/04	<0.10		ug	
		Perylene	2011/04/04	<0.10		ug	
		Phenanthrene	2011/04/04	<0.050		ug	
		p-Terphenyl	2011/04/04	<0.10		ug	
		Pyrene	2011/04/04	<0.050		ug	
		Quinoline	2011/04/04	<0.40		ug	
		Tetralin	2011/04/04	<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.

Lakeland Industry & Community Association

St. Lina Monitoring Site
Ambient Air Monitoring
Data Report
For
March 2011

Prepared By:



April 18, 2011

Lakeland Industry & Community Association

St. Lina

Ambient Air Monitoring

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Introduction

The following Ambient Air Monitoring report was prepared for:

Mr. Mike Bisaga

Lakeland Industry & Community Association

Box 8237

5107W – 50 Street

Bonnyville, Alberta

T9N 2J5

Monitoring Location: St. Lina

Data Period: March 2011

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 – March 2011

LICA ST. LINA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)		
						OBJECTIVES					EXCEEDENCES				
PARAMETER	1-HR	24-HR	1-HR	24-HR	MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY			
SO2 (PPB)	172	48	0	0	0.55	7	24	21	12.7	214(SW)	1.7	VAR	100.0		
H2S (PPB)	10	3	0	0	0.03	2	13, 14	VAR	VAR	VAR	0.3	5	99.9		
THC (PPM)	-	-	-	-	2.31	3.2	6	8	6	82(E)	2.8	9	99.9		
OZONE (PPB)	82	-	0	-	40.26	55	26	22	9.1	191(S)	51.0	27	100.0		
NOx (PPB)	-	-	-	-	2.91	16	8	11	12.8	337(NNW)	10.0	9	99.9		
NO (PPB)	-	-	-	-	0.32	7	8	11	12.8	337(NNW)	1.3	9	99.9		
NO2 (PPB)	212	106	0	0	2.47	11	9	VAR	VAR	VAR	8.8	9	99.9		
PM2.5 (ug/m3)	-	30	-	0	8.61	33.5	9	12	6.7	353(N)	24.2	9	99.7		
TEMPERATURE (DEGREE C)	-	-	-	-	-9.24	9.9	31	14	9.4	8(N)	3.9	31	100.0		
BP (MILLIBAR)	-	-	-	-	928	943	4	12	10.7	199(SSW)	939.9	4	100.0		
RH (%)	-	-	-	-	68.46	87	VAR	VAR	VAR	VAR	83.6	19	100.0		
PRECIPITATION (MM)	-	-	-	-	0.00	0.4	10	19	8.8	154(SSE)	0.9	2	100.0		
VECTOR WS (KPH)	-	-	-	-	9.50	19.9	20	9	-	67(ENE)	14.3	29	100.0		
VECTOR WD (DEGREES)	-	-	-	-	272(W)	-	-	-	-	-	-	-	100.0		

VAR-VARIOUS

General Monthly Summary

Equipment Operation

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

AQM STATION – LICA – St. Lina

Sulphur Dioxide (PPB)

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

No operational issue was observed during this month. The inlet filter was changed before the monthly calibration was started.

Hydrogen Sulphide (PPB)

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

No operational issue was observed during this month. 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, S/N: 77021-384

No operational issue was observed during this month. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – St. Lina

Ozone (PPB)

- Analyzer make / model –Thermo 49C, S/N: 49C-54926-302

No operational issue was observed during this month. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

- Analyzer make / model - API 200E, S/N: 592

No operational issue was observed during this month. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Particulate Matter 2.5 (UG/M3)

- Analyzer make / model – Thermo Scientific Series 1405F, S/N: 1405A208301003

No operational issue was observed this month. A routine Teom audit was performed on March 23rd. Data was corrected using Alberta air quality guideline. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. Two hours of data were invalidated as the data were below –3 ug/m3.

Temperature (Degree C)

- Analyzer make / model – Met One 060

No operational issue was observed during the month.

General Monthly Summary

AQM STATION – LICA – St. Lina

Barometric Pressure (Millibar)

- Analyzer make / model - Met One 092

No operational issue was observed during this month.

Relative Humidity (%)

- Analyzer make / model - Met One 083

No operational issue was observed during this month.

Precipitation (MM)

- Analyzer make / model - Met One 387

No operational issue was observed during this month.

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

- System make / model – Met 50.5, S/N: H12635

The wind system is reported as vector wind speed and vector wind direction. One hour of data for wind speed maximum was invalidated as the data went above the full scale.

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.

General Monthly Summary

AQM STATION – LICA – St. Lina

Trailer

No issue was observed this month. The manifold was cleaned on March 23rd.

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. Sixty-seven hours of AQI values recorded in March 2011 were in the Fair range; three hours were due to PM2.5, and sixty-four hours were due to ozone. Others were within the Good range. The highest hourly concentration of PM2.5 was 33.5ug/m³ and an AQI value of 28, hour 12 on March 9th. The highest hourly concentration of Ozone was 55 ppb and an AQI value of 29, on January 26th, hour of 22.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

MARCH 2011

AIR QUALITY INDEX (AQI)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY		
DAY	PEAK	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX		
1		12	12	13	13	13	13	13	13	13	13	13	14	14	15	-	15	15	15	15	16	15	14	13	13	16		
2		03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	
3		17	17	16	16	16	16	16	16	16	16	16	16	16	16	17	17	17	18	18	18	18	17	17	17	18		
4		17	17	16	16	16	15	15	15	15	16	16	16	16	18	18	19	18	18	18	17	17	16	16	16	19		
5		16	16	17	17	17	17	16	16	16	14	-	17	18	19	19	19	19	19	19	18	18	18	18	18	19		
6		18	18	18	17	16	15	14	14	12	-	16	17	18	18	19	19	19	20	19	19	19	19	18	18	20		
7		18	18	18	18	18	18	18	18	-	19	19	20	20	21	21	22	22	22	22	22	21	21	21	20	22		
8		20	19	18	18	17	17	17	-	18	18	18	18	20	22	22	23	21	21	20	21	20	21	21	19	23		
9		18	18	18	18	18	20	-	19	23	22	21	25	28	27	27	25	25	23	23	24	24	24	22	24	28		
10		03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03		
11		18	18	18	19	-	20	20	20	20	-	20	20	20	19	19	19	19	19	19	19	18	18	17	17	20		
12		17	17	17	-	17	18	18	18	18	18	18	18	18	19	19	21	22	22	22	22	22	22	22	22	22		
13		03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03		
14		23	-	21	21	22	23	24	24	24	24	24	24	25	25	25	25	25	24	22	22	21	20	20	19	25		
15		03	NA	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03		
16		-	19	18	18	18	18	18	18	18	17	18	19	21	22	22	23	22	21	21	21	20	20	20	-	23		
17		NA	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03		
18		17	17	17	17	18	18	17	17	17	-	-	-	-	-	-	-	19	18	18	17	17	16	-	14	19		
19		03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03		
20		14	14	14	14	14	14	14	13	13	15	16	-	-	-	-	-	19	18	20	21	21	20	-	20	21		
21		20	20	19	18	17	16	15	15	15	15	16	18	21	24	24	23	24	25	28	28	-	24	24	24	28		
22		03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03		
23		24	23	23	22	22	24	25	25	25	25	25	25	25	26	26	28	28	27	26	-	24	24	24	23	28		
24		03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03		
25		20	17	16	16	15	15	17	17	18	19	20	20	21	21	21	21	21	20	-	20	20	20	20	19	21		
26		03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03		
27		20	21	21	21	21	21	21	21	21	21	21	21	20	19	19	19	20	21	21	-	20	20	21	21	20	21	
28		03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03		
29		03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03		
30		21	20	20	20	20	20	20	20	-	21	20	20	21	20	21	22	23	23	22	23	23	22	22	22	23		
31		03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03		
31	PEAK	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03	03		

STATUS FLAG CODES

NA - NOT APPLICABLE

V - VARIOUS

AQI CLASS	OZONE (O ₃)					PARTICULATE MATTER 2.5 (PM _{2.5})					NITROGEN DIOXIDE (NO ₂)					SULPHUR DIOXIDE (SO ₂)					FREQUENCY	
	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%
VERY POOR (101-255)	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%
POOR (51-100)	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%
FAIR (26-50)	64	8.6%	29	22	26	3	0.4%	28	12	9	0	0.0%	-	-	-	0	0.0%	-	-	-	67	9.0%
GOOD (1-25)	620	83.3%	-	-	-	9	1.2%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	629	84.5%
OVERALL	519	91.9%	-	-	-	12	1.6%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	696	93.5%
UNAVAILABLE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	6.5%

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2011

SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																												
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0.0	24
2	0	0	0	0	0	0	0	0	0	0	0	0	1	IZS	0	1	1	1	1	0	0	0	0	0	0	1	0.2	24
3	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	0.0	24
4	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	2	2	2	2	2	2	2	2	2	3	3	1.1	24	
5	2	2	2	3	2	2	2	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.8	24	
6	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	
7	0	0	0	0	0	0	0	0	0	IZS	0	1	0	0	0	0	0	0	1	0	1	1	1	1	1	0.3	24	
8	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	2	1.2	24	
9	1	1	2	2	1	1	IZS	1	1	1	1	1	2	2	3	3	3	2	2	2	2	2	2	2	3	1.7	24	
10	2	2	2	2	2	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	2	1.0	24		
11	0	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0.3	24	
12	1	1	1	IZS	1	1	1	1	1	1	2	2	3	4	6	3	2	2	1	2	1	1	1	1	6	1.7	24	
13	1	1	IZS	1	1	1	1	1	1	1	1	2	2	2	3	3	3	3	2	2	2	2	2	2	3	1.7	24	
14	2	IZS	2	2	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	2	0.7	24		
15	IZS	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
16	1	1	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	
17	0	0	0	0	0	0	0	0	0	0	1	C	C	C	C	0	1	0	0	0	0	0	0	2	0.3	24		
18	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	3	2	1	0	IZS	0	0	0	3	0.8	24	
19	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	1	0.3	24	
20	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	1	0.2	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	0	0	0	0	0	0	0	IZS	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	IZS	0	0	0	0	0	0	0	0	0	0.0	24	
24	0	0	0	0	0	0	0	1	1	1	1	0	0	0	IZS	0	2	2	1	2	4	7	6	5	7	1.4	24	
25	3	2	1	1	1	1	1	1	1	2	2	2	1	IZS	2	2	1	1	1	1	0	0	0	0	3	1.2	24	
26	0	0	0	0	0	0	0	1	0	0	1	1	IZS	1	1	1	1	1	0	0	0	0	0	0	1	0.3	24	
27	0	0	0	0	0	0	0	1	1	1	1	IZS	1	1	0	0	0	0	1	0	0	0	0	0	1	0.3	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	1	0	1	1	1	1	1	1	1	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24	
30	1	0	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	2	2	1	1	0	0	2	0.6	24		
31	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	
HOURLY MAX	3	2	2	3	2	2	2	1	1	2	2	2	3	4	6	3	3	3	2	2	4	7	6	5				
HOURLY AVG	0.5	0.5	0.5	0.6	0.5	0.4	0.4	0.5	0.4	0.4	0.6	0.5	0.5	0.5	0.8	0.7	0.8	0.7	0.6	0.5	0.5	0.6	0.6	0.6				

STATUS FLAG CODES

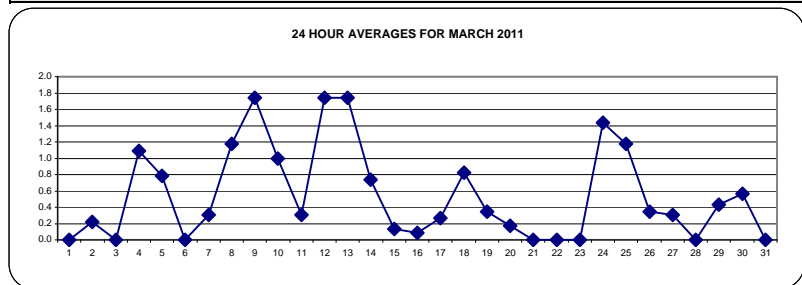
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

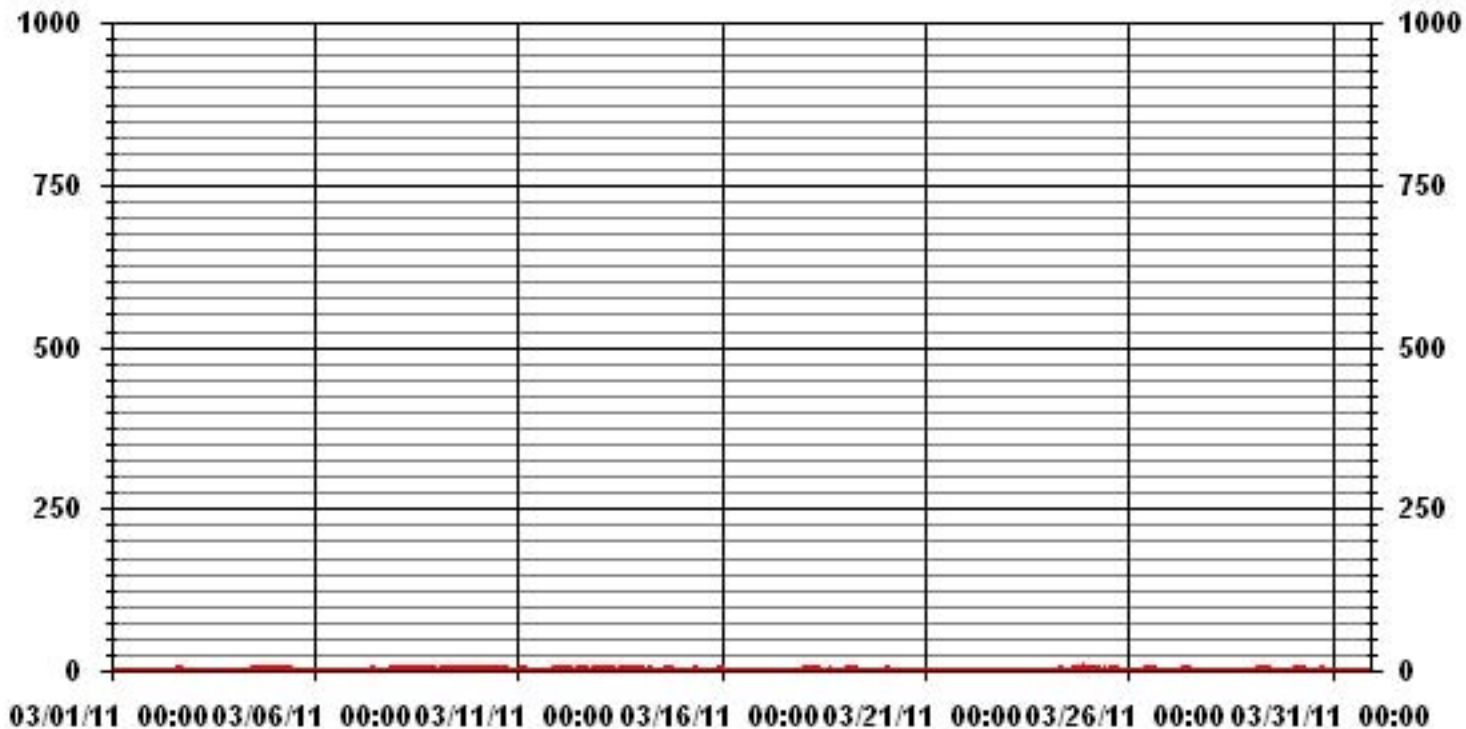
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	269					
MAXIMUM 1-HR AVERAGE:	7	PPB	@ HOUR(S)	21	ON DAY(S)	24
MAXIMUM 24-HR AVERAGE:	1.7	PPB			ON DAY(S)	VAR
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.87		MONTHLY AVERAGE:	0.55	PPB	



01 Hour Averages



— LICA31 SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

MARCH 2011

SULPHUR DIOXIDE MAX instantaneous maximum in ppt

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR			
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.1	24		
2		1	1	1	1	1	1	1	1	1	1	1	1	2	IZS	1	2	2	3	2	1	1	1	1	1	1	3	1.3	24	
3		1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	0	0	1	0.9	24		
4		0	0	0	0	1	0	0	0	1	1	1	IZS	3	3	3	3	3	3	3	3	3	3	3	3	3	1.7	24		
5		3	3	4	4	3	3	3	2	2	2	IZS	1	1	1	0	1	1	0	1	0	0	0	1	1	4	1.6	24		
6		1	1	1	1	1	1	1	1	1	1	IZS	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24		
7		1	1	1	1	1	1	1	1	IZS	1	2	3	1	1	1	1	1	1	1	1	2	2	2	2	3	1.3	24		
8		2	2	2	2	2	2	2	IZS	2	3	2	2	2	2	3	3	3	3	2	2	2	2	2	2	3	2.2	24		
9		2	2	3	2	2	2	IZS	2	2	2	2	2	2	4	4	5	5	4	3	3	3	3	3	3	5	2.8	24		
10		3	3	3	2	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	3	1.9	24		
11		1	2	2	2	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1.3	24		
12		2	2	2	IZS	2	1	2	1	2	2	3	3	4	5	8	6	3	3	2	3	2	2	2	2	8	2.7	24		
13		2	2	IZS	2	2	2	2	1	2	2	2	3	3	4	4	4	4	4	4	3	4	4	3	3	4	2.9	24		
14		3	IZS	3	3	3	2	2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	1	1	3	1.7	24	
15		IZS	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1.1	24	
16		2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	2	1.1	24
17		1	1	1	1	1	0	0	0	0	0	C	C	C	C	C	2	2	2	1	0	1	IZS	2	2	2	0.9	24		
18		2	2	2	2	2	2	2	2	2	2	2	1	1	1	3	4	4	4	1	1	IZS	1	1	1	4	1.8	24		
19		1	1	1	1	2	1	1	2	2	2	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	2	1.2	24		
20		1	2	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	3	1.2	24		
21		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1.0	24		
22		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1.0	24		
23		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	1.0	24		
24		1	1	1	1	1	1	1	2	2	2	2	1	1	1	IZS	2	3	4	2	2	6	8	7	6	8	2.5	24		
25		5	3	2	2	2	1	2	2	3	3	4	4	2	IZS	3	4	1	2	2	2	1	1	1	1	5	2.3	24		
26		1	1	1	1	1	1	1	1	1	1	2	1	1	IZS	2	2	2	2	1	1	1	1	1	1	2	1.3	24		
27		1	1	1	1	1	1	1	2	2	2	2	2	IZS	1	1	1	1	1	1	2	2	1	1	1	2	1.3	24		
28		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		
29		1	1	1	1	1	2	2	2	2	2	IZS	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1.3	24		
30		2	1	1	2	1	2	2	2	IZS	1	1	1	1	1	1	1	2	3	3	2	2	1	1	1	3	1.5	24		
31		1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0.9	24		
HOURLY MAX		5	3	4	4	3	3	3	3	3	3	4	4	4	5	8	6	5	4	4	3	6	8	7	6					
HOURLY AVG		1.5	1.4	1.5	1.4	1.4	1.2	1.3	1.2	1.3	1.4	1.5	1.4	1.4	1.5	1.8	1.9	1.8	1.8	1.5	1.4	1.5	1.5	1.5	1.5					

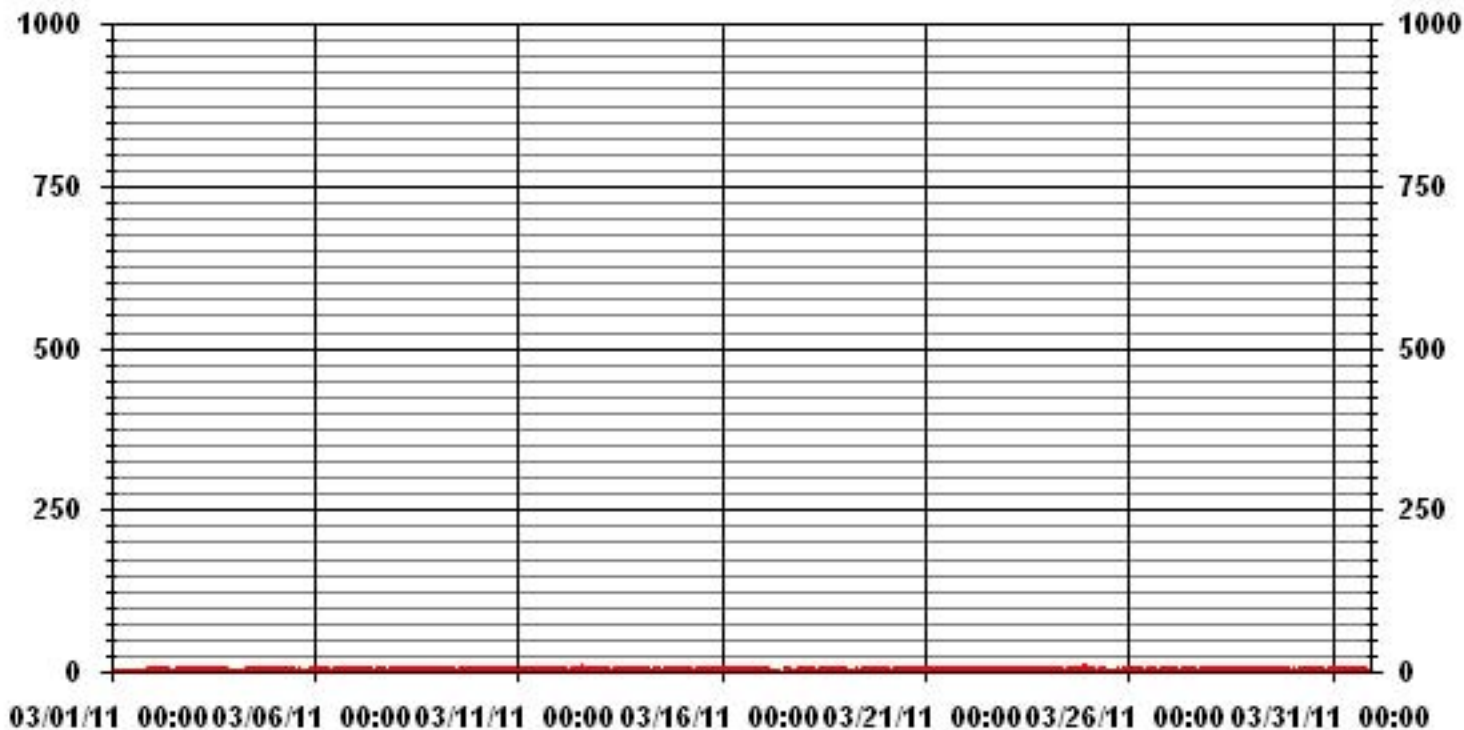
STATUS FLAG CODES

S - OUT OF SERVICE	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:	663					
MAXIMUM INSTANTANEOUS VALUE:	8	PPB	@ HOUR(S)	14, 21	ON DAY(S)	12, 24
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	1.01					

01 Hour Averages



— LICA31 SO2MAX PPB

LICA31
 SO2_ / WDR Joint Frequency Distribution (Percent)

March 2011

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	12.99	5.50	4.66	5.36	5.79	4.80	3.95	3.53	8.75	11.15	11.44	3.53	.98	3.24	4.09	10.16	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	12.99	5.50	4.66	5.36	5.79	4.80	3.95	3.53	8.75	11.15	11.44	3.53	.98	3.24	4.09	10.16	

Calm : .00 %

Total # Operational Hours : 708

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	92	39	33	38	41	34	28	25	62	79	81	25	7	23	29	72	708
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	92	39	33	38	41	34	28	25	62	79	81	25	7	23	29	72	

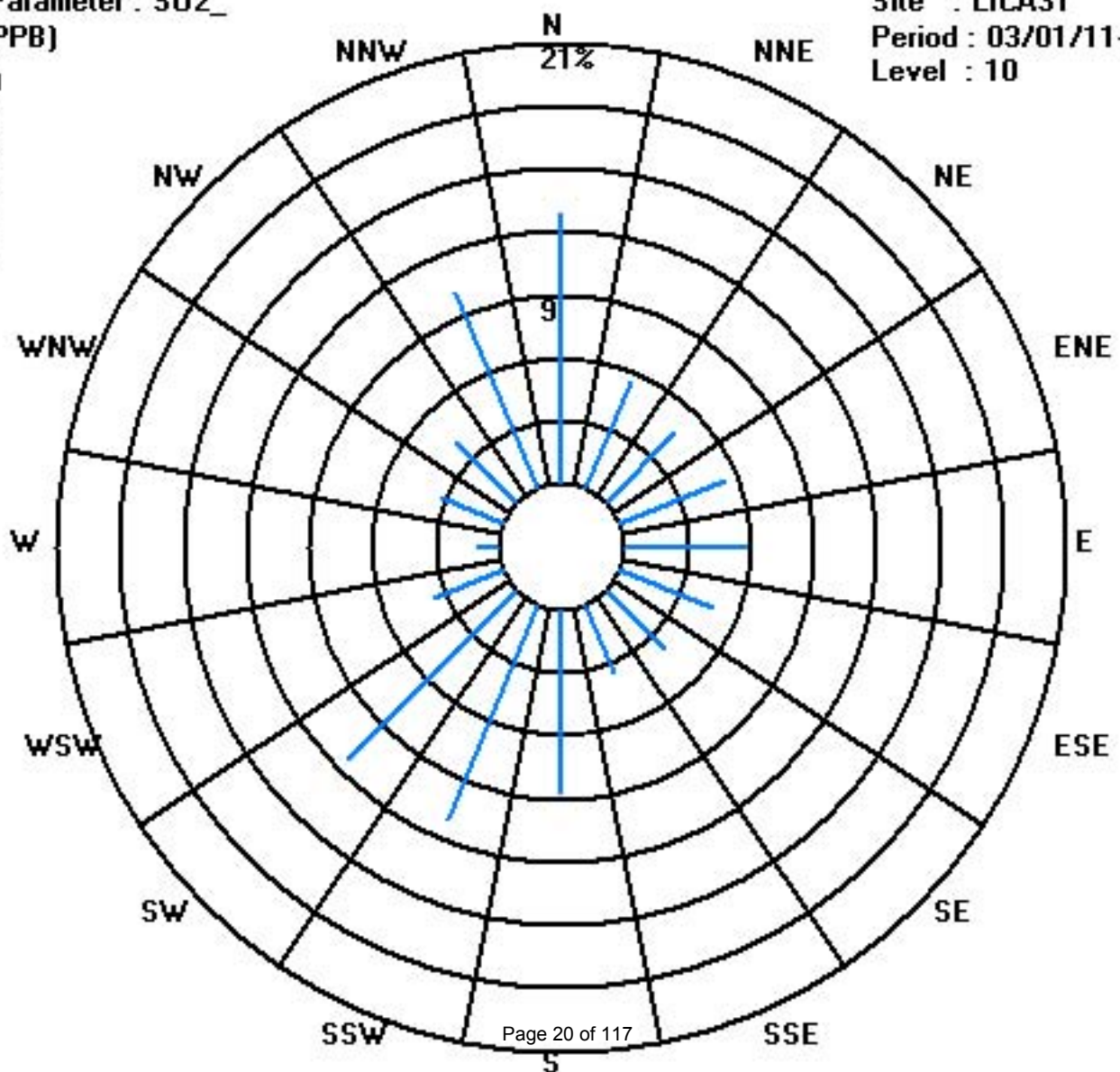
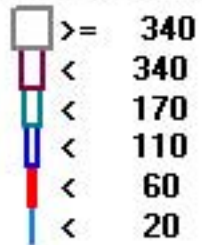
Calm : .00 %

Total # Operational Hours : 708

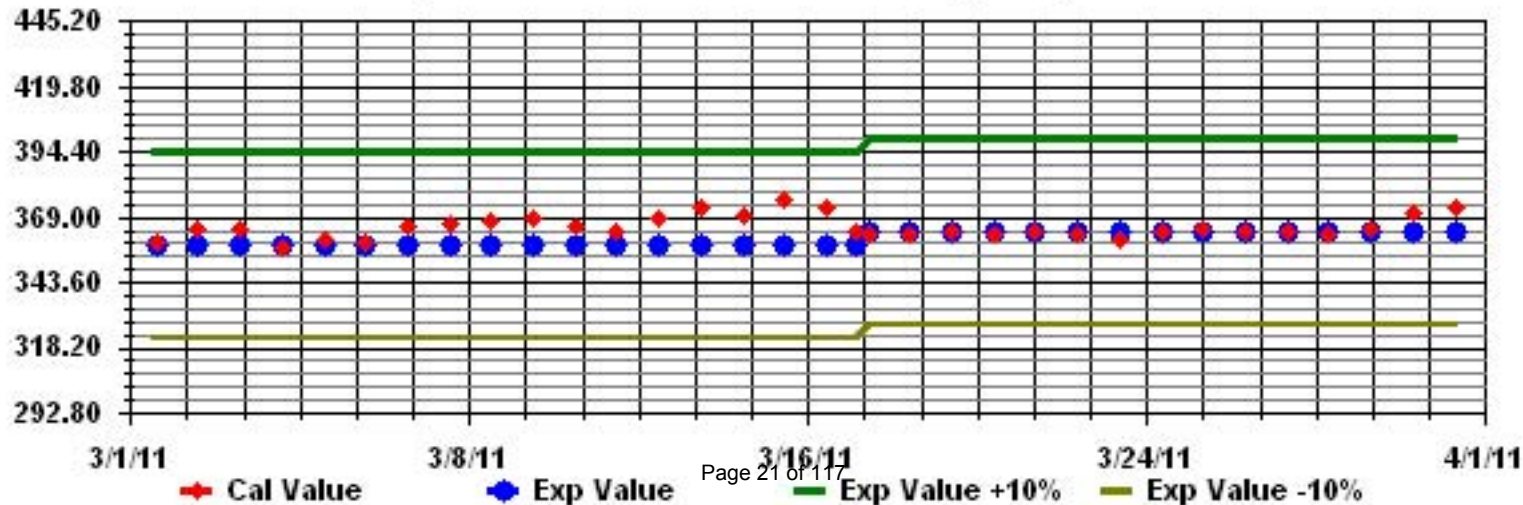
Class Limits (PPB)

Period : 03/01/11-03/31/11

Level : 10



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



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2011

HYDROGEN SULPHIDE (H₂S) hourly averages in ppb

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

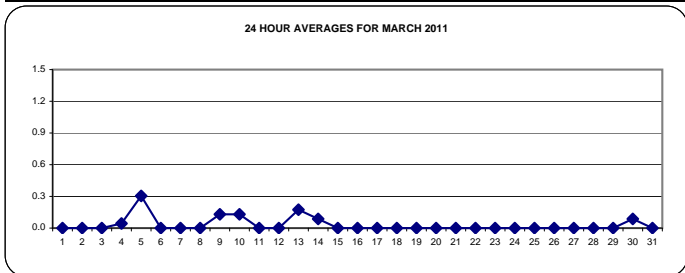
OBJECTIVE LIMIT:

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

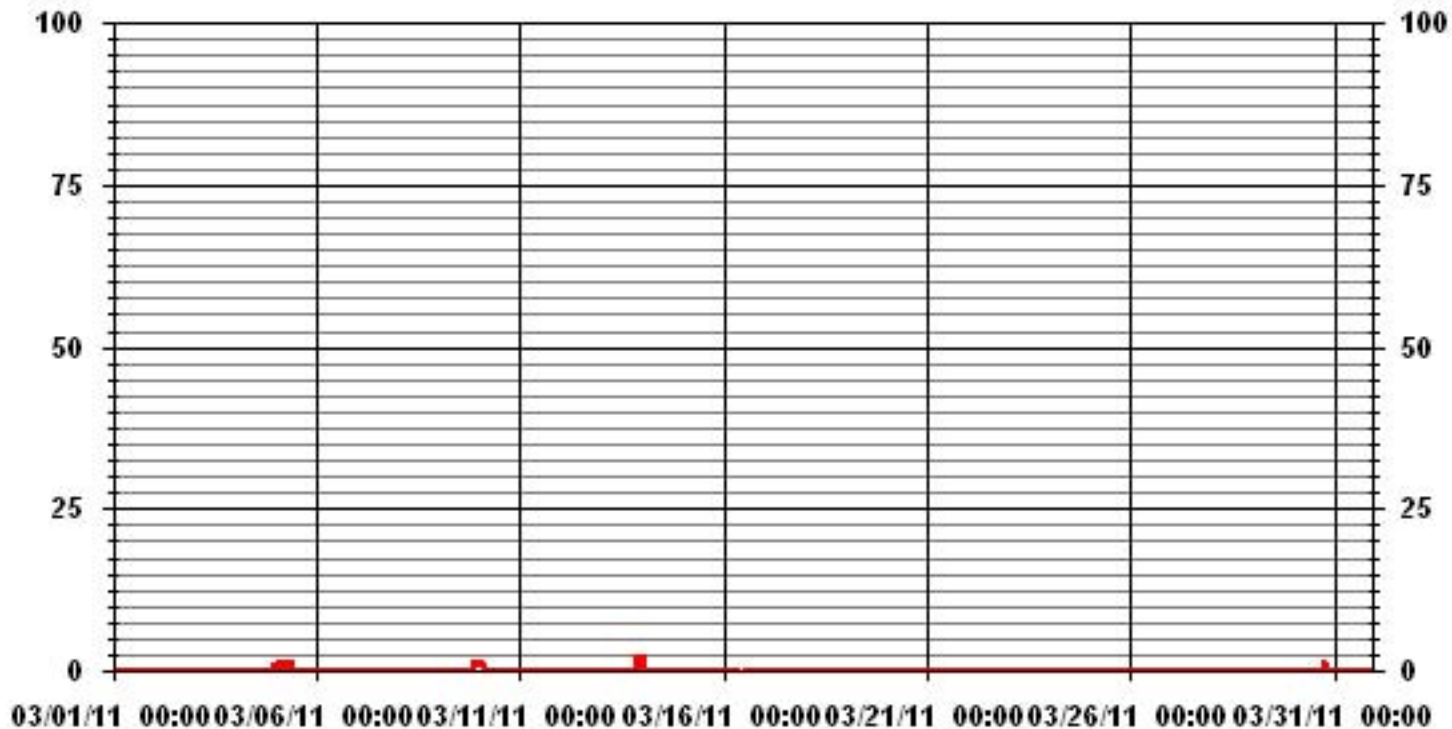
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF 24-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	19				
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S) 13, 14
MAXIMUM 24-HR AVERAGE:	0.3	PPB			ON DAY(S) 5
					VAR-VARIOUS
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.9	%
STANDARD DEVIATION:	0.20		MONTHLY AVERAGE:	0.03	PPB

24 HOUR AVERAGES FOR MARCH 2011



01 Hour Averages



— LICA31 H2S_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST.LINA

MARCH 2011

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

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

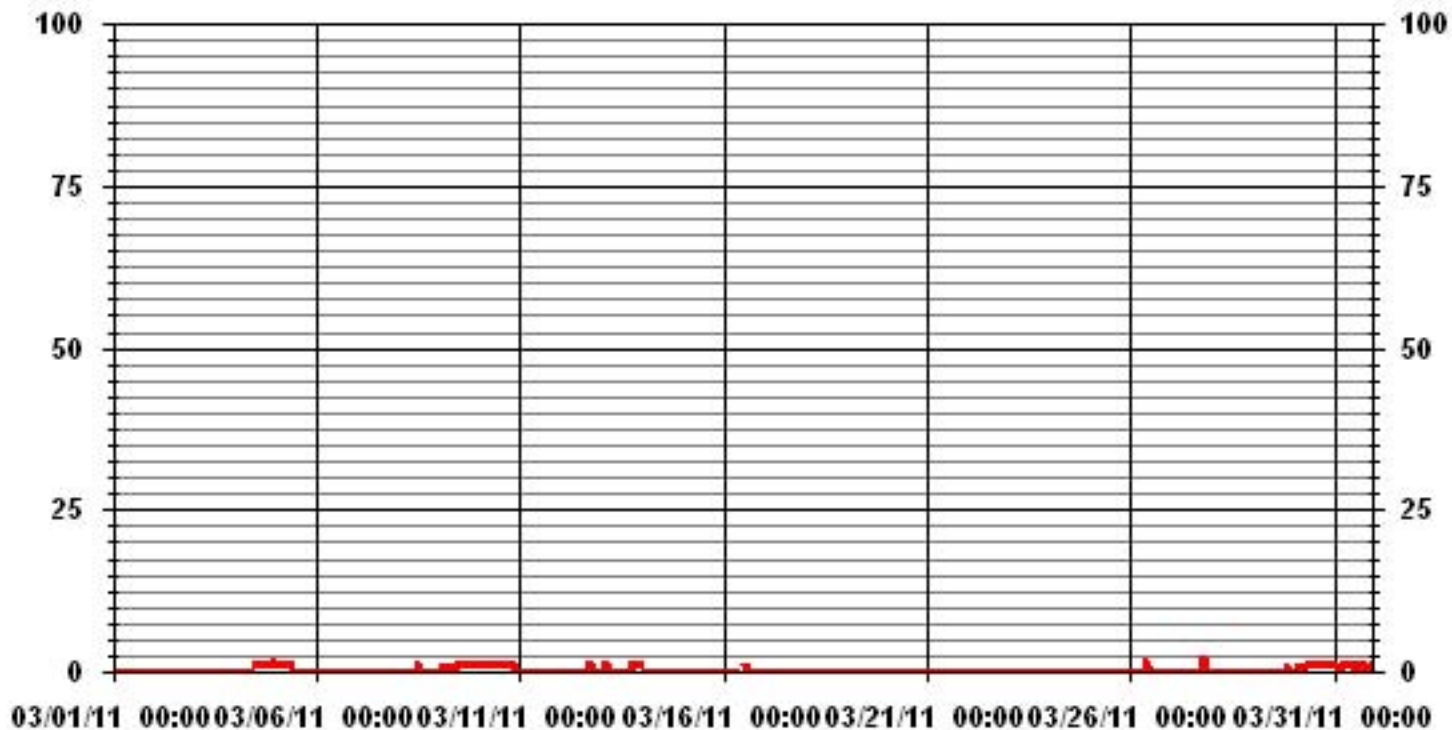
STATUS FLAG CODES

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:	110					
MAXIMUM INSTANTANEOUS VALUE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
IZS CALIBRATION TIME:	32	HRS		OPERATIONAL TIME:	743	HRS
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	0.38					

01 Hour Averages



— LICA31 H2S MAX PPB

LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

March 2011

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	13.43	5.51	4.66	5.37	5.79	4.80	3.96	3.53	8.76	11.17	11.45	3.53	.99	3.25	4.10	9.61	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	13.43	5.51	4.66	5.37	5.79	4.80	3.96	3.53	8.76	11.17	11.45	3.53	.99	3.25	4.10	9.61	

Calm : .00 %

Total # Operational Hours : 707

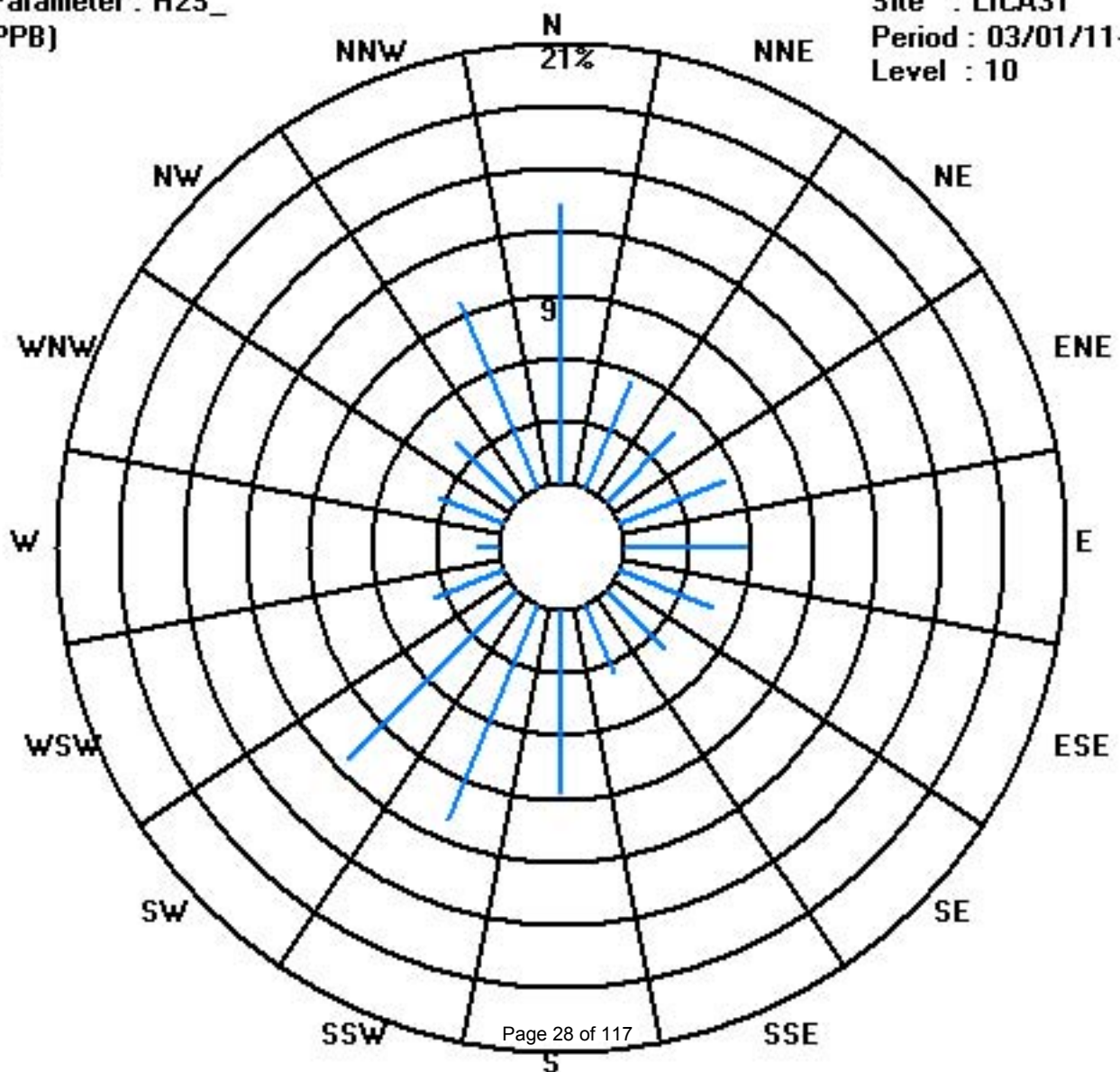
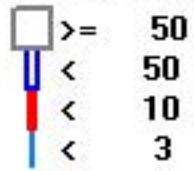
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	95	39	33	38	41	34	28	25	62	79	81	25	7	23	29	68	707
< 10																	
< 50																	
>= 50																	
Totals	95	39	33	38	41	34	28	25	62	79	81	25	7	23	29	68	

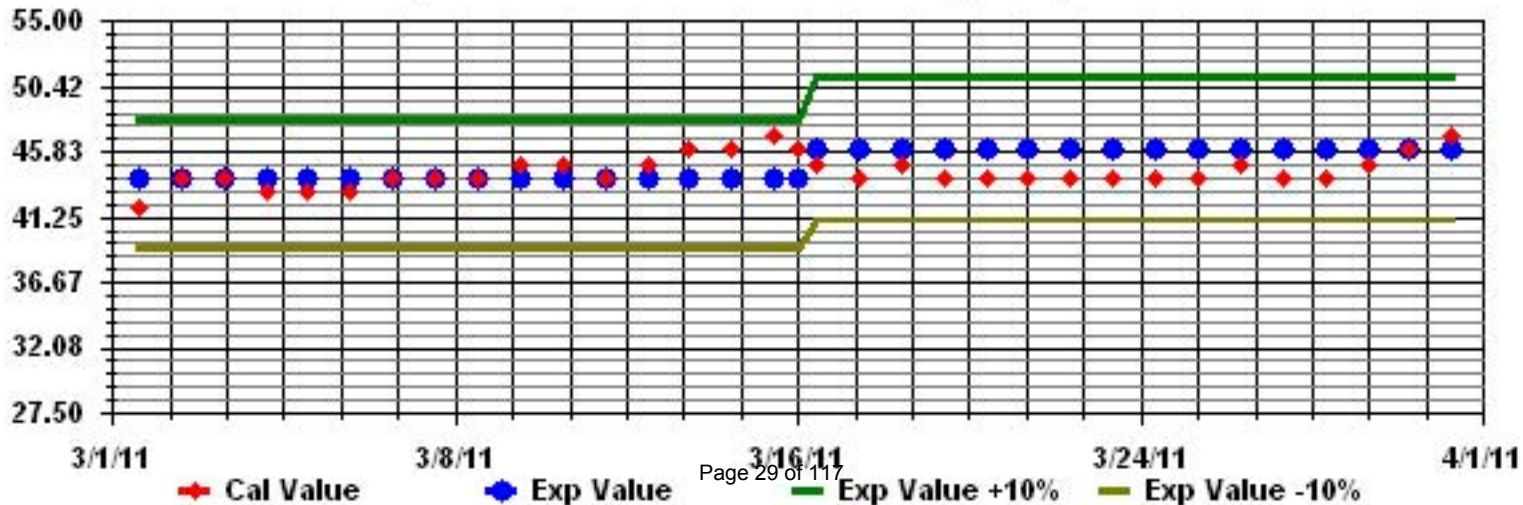
Calm : .00 %

Total # Operational Hours : 707

Class Limits (PPB)



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST.LINA

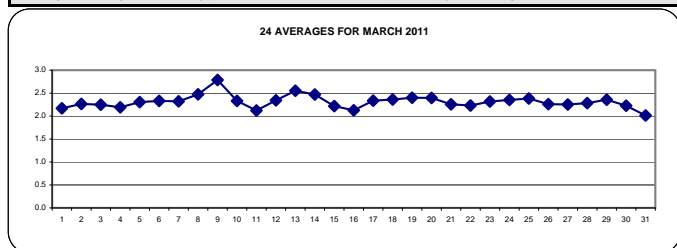
MARCH 2011

TOTAL HYDROCARBONS hourly averages in ppm

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

STATUS FLAG CODES

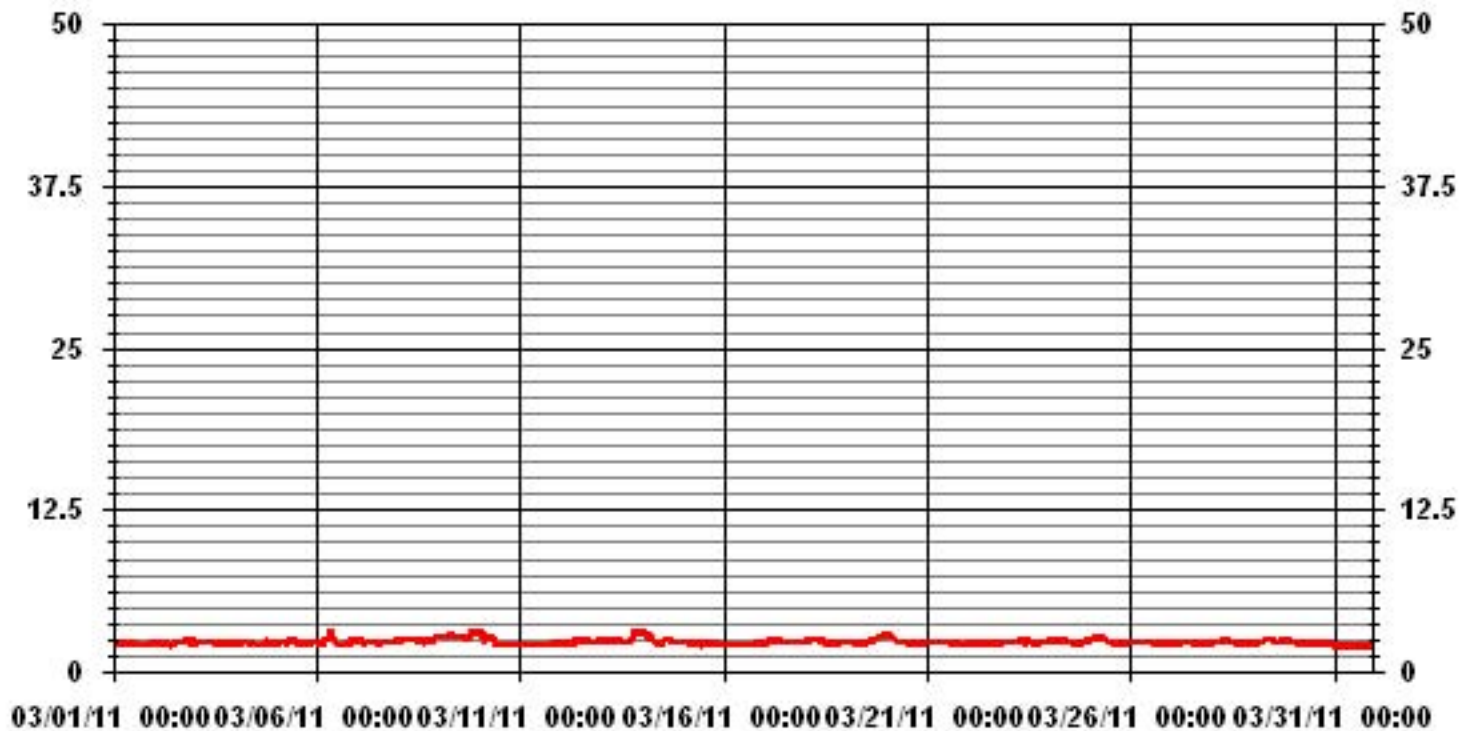
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	707					
MAXIMUM 1-HR AVERAGE:	3.2	PPM	@ HOUR(S)	8	ON DAY(S)	6
MAXIMUM 24-HR AVERAGE:	2.8	PPM			ON DAY(S)	9
					VAR- VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.20		MONTHLY AVERAGE:	2.31	PPM	

01 Hour Averages



— LICA31 THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2011

TOTAL HYDROCARBONS MAX instantaneous maximum in ppr

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	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	2.3	2.3	2.2	2.4	2.4	2.3	2.3	2.3	2.4	2.3	2.4	2.3	IZS	2.2	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.4	2.2	24
2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.2	2.4	IZS	2.5	2.5	2.8	2.5	2.4	2.5	2.5	2.4	3	3.4	3.4	3.4	2.4	24
3	2.5	3.5	2.7	2.8	3	2.5	2.4	2.4	2.4	2.5	2.4	2.4	IZS	2.3	2.2	2.2	2.2	2.5	2.4	2.4	2.2	2.3	2.6	2.5	3.5	2.5	24	
4	2.2	2.2	2.5	2.6	2.6	2.6	2.6	2.4	2.5	2.4	IZS	2.2	2.3	2.2	2.1	2.2	2.1	4.5	2.2	2.2	2.2	3.5	2.2	4.5	2.5	24		
5	2.4	2.3	3.3	3.9	3.7	3.5	2.9	3.4	2.9	2.8	IZS	3.2	2.9	2.7	2.5	2.8	2.7	2.2	2.2	2.3	2.4	2.4	2.4	3.9	2.8	24		
6	2.3	2.6	2.8	2.5	2.2	3.2	2.9	6.1	4.4	IZS	2.7	2.4	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.6	2.6	2.5	6.1	2.7	24	
7	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	IZS	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.4	24	
8	2.4	2.4	2.5	2.5	2.5	2.5	IZS	2.5	2.5	2.6	2.6	2.5	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.7	2.7	2.5	24	
9	2.7	2.8	2.8	2.8	2.8	2.8	IZS	2.9	2.9	2.7	2.8	2.8	2.8	2.8	2.7	2.7	3.5	3.8	2.8	4.6	4.1	3.9	3.5	3.2	4.6	3.1	24	
10	3.2	3.8	3.4	2.5	2.8	IZS	2.9	2.6	2.6	2.4	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	3.8	2.4	24	
11	2.1	2.1	2.1	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.3	2.2	2.4	2.2	2.2	2.2	2.3	2.2	2.2	2.4	2.2	24	
12	2.2	2.2	2.2	IZS	2.2	2.2	2.2	2.3	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.4	2.4	2.4	2.4	2.5	2.4	24
13	2.4	4.7	IZS	2.8	2.5	2.5	2.6	2.5	2.5	2.8	2.6	2.4	2.3	2.3	2.3	2.3	2.4	4.2	3.5	4.3	3.2	3.7	3.4	3.5	4.7	2.9	24	
14	3.6	IZS	3.3	3.4	3.3	2.8	2.6	2.8	2.4	2.3	2.3	2.3	2.5	2.5	2.7	2.7	2.6	2.5	2.7	2.5	2.8	2.7	2.5	2.3	3.6	2.7	24	
15	IZS	2.9	2.5	2.3	2.4	2.3	2.9	2.2	3.4	3.4	2.6	2.5	2.5	2.5	2.5	2.3	3.1	2.8	2.7	2.9	2.6	2.2	2.5	IZS	3.4	2.6	24	
16	2.2	2.1	2.1	2.1	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.1	C	C	C	C	2.4	2.1	2.2	4.6	2.8	2.3	IZS	2.2	4.6	2.3	24	
17	2.6	3	3	3.3	4.1	4.5	2.3	2.8	2.5	2.6	2.6	2.4	2.3	2.3	M	2.3	2.3	2.3	2.3	2.4	2.4	IZS	2.4	2.4	4.5	2.7	23	
18	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.3	2.2	2.3	2.4	2.3	2.2	2.2	2.2	IZS	2.3	2.3	2.3	2.5	2.4	24	
19	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.7	2.7	2.9	3	3	2.9	3.2	2.5	IZS	3.3	2.8	2.7	2.9	3.3	2.6	24	
20	3	3	2.9	2.9	2.8	2.7	2.5	2.4	2.4	2.5	2.8	2.6	2.7	2.5	2.4	2.6	2.4	2.4	IZS	2.2	2.2	2.5	2.5	2.7	3	2.6	24	
21	2.8	2.7	2.9	2.8	2.7	2.7	2.8	2.6	2.6	2.7	2.6	2.6	2.7	2.9	2.6	2.5	2.7	IZS	2.5	2.5	2.2	2.2	2.5	2.6	2.9	2.6	24	
22	2.5	2.6	2.6	2.7	2.7	2.7	2.7	2.6	2.6	2.5	2.6	2.6	2.6	2.6	2.4	2.3	IZS	2.2	2.2	2.3	2.2	2.3	2.3	2.3	2.7	2.5	24	
23	2.3	2.3	2.3	2.3	2.4	2.4	2.9	2.4	2.5	2.7	2.5	2.4	2.5	2.6	2.7	IZS	2.3	2.4	2.2	2.3	2.3	2.3	2.3	2.4	2.9	2.4	24	
24	2.4	2.5	2.5	2.4	2.5	2.7	2.6	2.5	2.5	2.6	2.8	2.8	2.5	2.6	IZS	2.4	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.8	2.5	24	
25	2.5	2.5	2.6	2.6	2.6	3.2	2.9	2.9	2.6	2.5	2.4	2.4	2.3	IZS	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.3	3.2	2.5	24		
26	2.4	2.4	2.3	2.4	2.4	2.4	2.6	2.7	2.3	2.3	2.4	2.3	IZS	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.2	2.7	2.3	24	
27	2.3	2.3	2.3	2.4	2.3	2.5	2.3	2.6	2.3	2.5	2.3	IZS	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.6	2.3	24	
28	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	IZS	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.4	2.3	24	
29	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.5	IZS	2.6	2.6	2.4	2.3	2.3	2.3	2.3	2.4	2.4	2.5	2.5	2.4	2.3	2.3	2.6	2.4	24	
30	2.3	2.3	2.3	2.3	2.3	2.2	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	2.2	2.3	2.3	2.3	2.3	2.3	2.2	24	
31	2.2	2.1	2	2	2.1	2.1	2.1	IZS	2.1	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	2.1	2.2	2.1	24	
HOURLY MAX	4	5	3	4	4	5	3	6	4	3	3	3	3	3	3	3	4	4	5	5	4	4	4	4				
HOURLY AVG	2.5	2.6	2.5	2.6	2.6	2.6	2.5	2.6	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.4	2.5	2.5			

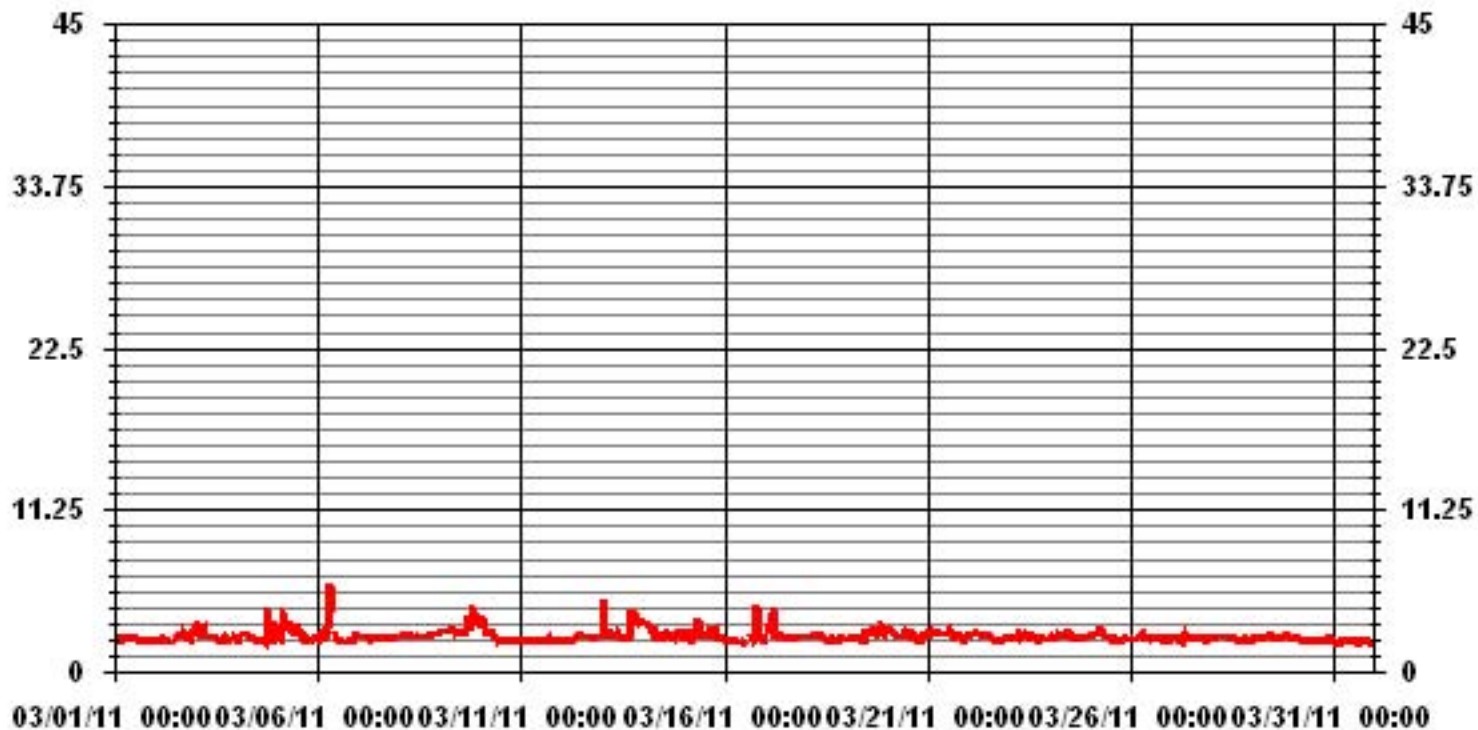
STATUS FLAG CODES

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
BB	- BELOW BACKGROUND OF 1.5 PPM		

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	707					
MAXIMUM INSTANTANEOUS VALUE:	6.1	PPM	@ HOUR(S)	7	ON DAY(S)	6
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	0.41					

01 Hour Averages



— LICA31 THCMAX PPM

LICA31
 THC / WDR Joint Frequency Distribution (Percent)

March 2011

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	13.29	5.23	4.52	4.66	5.37	4.66	3.67	3.53	8.76	11.17	11.45	3.53	.99	3.11	3.81	9.90	97.73
< 10.0	.14	.28	.14	.70	.42	.14	.28	.00	.00	.00	.00	.00	.00	.00	.00	.14	2.26
< 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	13.43	5.51	4.66	5.37	5.79	4.80	3.96	3.53	8.76	11.17	11.45	3.53	.99	3.11	3.81	10.04	

Calm : .00 %

Total # Operational Hours : 707

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	94	37	32	33	38	33	26	25	62	79	81	25	7	22	27	70	691
< 10.0	1	2	1	5	3	1	2									1	16
< 50.0																	
>= 50.0																	
Totals	95	39	33	38	41	34	28	25	62	79	81	25	7	22	27	71	

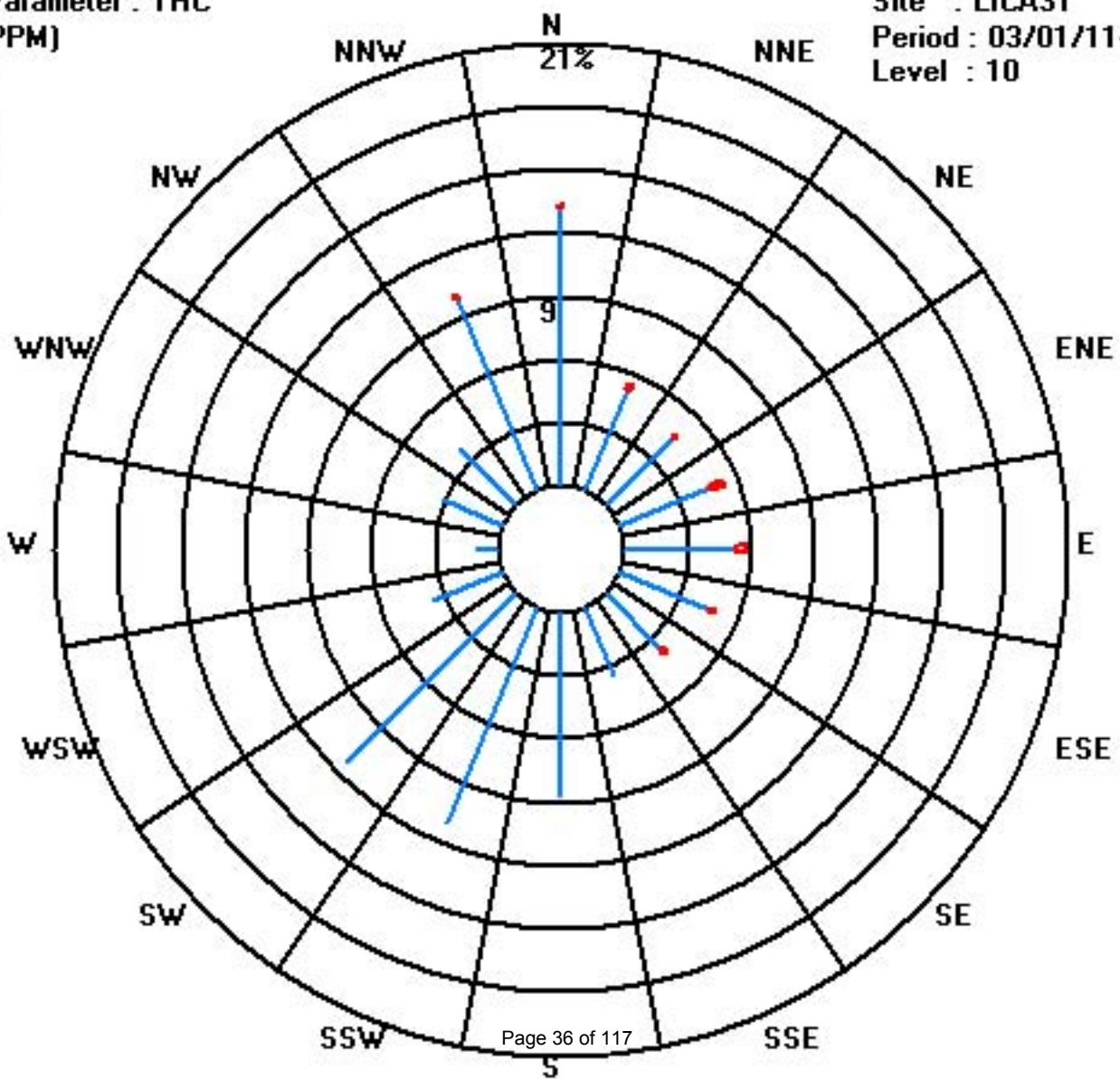
Calm : .00 %

Total # Operational Hours : 707

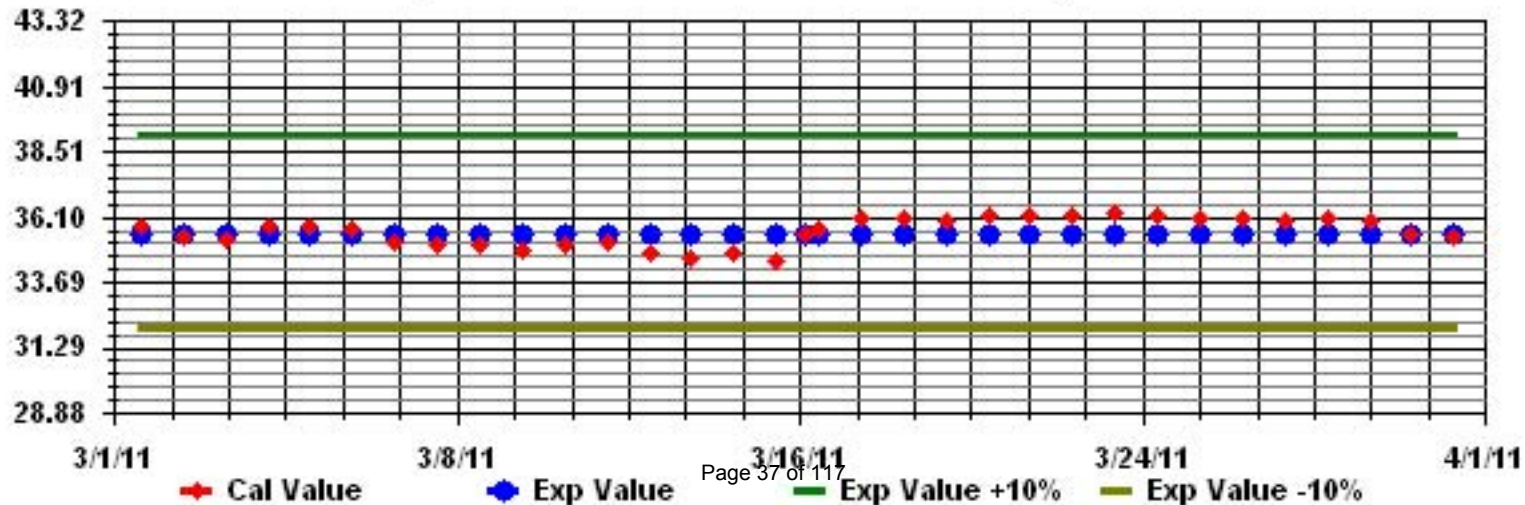
Class Limits (PPM)

Period : 03/01/11-03/31/11

Level : 10



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



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2011

OZONE (O₃) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.		
DAY																												
1	23	24	25	25	25	25	25	25	25	26	26	27	28	30	IZS	29	29	30	31	30	30	28	26	25	31	26.8	24	
2	25	25	25	23	19	20	21	23	24	27	28	29	30	IZS	30	30	30	30	31	31	32	34	33	33	34	27.5	24	
3	33	33	32	32	32	32	32	32	32	32	32	32	IZS	34	34	34	35	35	35	35	34	33	33	33	35	33.1	24	
4	33	33	32	31	31	29	29	29	29	31	32	IZS	35	36	37	36	36	35	34	34	33	32	31	32	37	32.6	24	
5	32	32	33	33	33	33	32	31	31	28	IZS	33	35	37	38	38	37	37	36	36	36	36	35	35	38	34.2	24	
6	35	35	35	33	32	30	27	27	24	IZS	31	34	36	36	37	37	38	39	38	38	37	36	35	36	39	34.2	24	
7	36	36	36	36	36	36	36	36	IZS	37	38	39	40	42	42	43	44	43	43	42	42	41	40	39	44	39.3	24	
8	39	37	36	35	34	34	34	IZS	36	36	35	35	40	44	44	45	42	41	40	41	40	41	41	37	45	38.6	24	
9	36	35	35	36	36	37	IZS	38	40	41	41	42	43	44	46	46	47	46	46	47	48	47	44	47	48	42.1	24	
10	46	46	48	50	49	IZS	43	42	41	39	38	38	39	38	38	37	37	38	37	36	36	36	36	35	50	40.1	24	
11	35	35	36	37	IZS	39	40	39	39	38	39	39	39	38	37	38	38	37	37	36	35	34	34	33	40	37.0	24	
12	33	33	33	IZS	34	35	35	35	35	35	35	35	36	37	38	41	43	43	44	44	43	43	43	43	44	38.1	24	
13	43	42	IZS	42	42	42	42	41	43	42	41	43	45	46	46	48	47	48	47	44	47	48	47	47	48	44.5	24	
14	45	IZS	41	41	43	45	47	47	47	48	48	48	49	49	50	50	49	47	44	43	41	39	39	38	50	45.1	24	
15	IZS	37	36	36	35	36	35	35	34	36	38	42	43	44	44	45	44	42	41	42	39	39	39	IZS	45	39.2	24	
16	34	33	33	34	35	35	33	33	33	34	34	34	35	35	36	37	37	36	35	33	33	31	IZS	28	37	34.0	24	
17	28	27	27	27	27	27	26	26	26	29	32	C	C	C	C	37	36	39	41	41	40	IZS	40	40	41	32.4	24	
18	39	39	38	36	33	31	30	29	29	29	32	35	41	47	48	46	47	50	54	53	IZS	48	47	47	54	40.3	24	
19	47	45	45	44	44	48	49	49	50	50	50	50	50	51	51	53	53	52	51	IZS	48	47	47	45	53	48.7	24	
20	39	34	32	31	30	30	33	33	36	37	39	40	41	42	41	42	42	40	IZS	39	39	39	39	38	42	37.2	24	
21	39	41	41	41	41	42	42	42	42	41	39	38	38	38	40	42	42	IZS	40	40	41	41	40	39	42	40.4	24	
22	39	39	39	38	38	38	38	38	37	36	36	37	37	37	38	IZS	37	36	37	37	38	39	39	39	37.6	24		
23	39	39	38	38	38	38	38	38	38	39	40	41	42	42	43	IZS	43	42	41	41	40	41	42	43	43	40.2	24	
24	42	42	42	42	42	41	41	42	42	42	43	44	45	46	IZS	47	48	47	50	52	49	46	45	45	52	44.6	24	
25	47	47	47	47	47	46	46	45	45	45	46	48	51	IZS	52	53	54	52	52	52	52	51	51	51	54	49.0	24	
26	50	50	50	49	48	48	48	47	47	47	47	47	IZS	49	50	50	51	53	54	54	54	55	54	55	50.3	24		
27	53	51	51	51	51	51	51	51	51	51	51	IZS	51	50	50	50	48	49	51	53	53	52	52	52	53	51.0	24	
28	53	52	52	52	51	50	50	49	48	46	IZS	46	47	47	48	48	48	47	47	47	47	45	45	46	53	48.3	24	
29	50	52	52	51	51	50	49	49	48	IZS	47	47	47	47	48	49	48	50	50	49	47	46	45	43	52	48.5	24	
30	41	40	40	39	40	40	40	IZS	41	40	40	41	40	41	40	42	43	46	45	44	45	44	44	43	46	41.9	24	
31	44	47	48	48	48	47	47	IZS	47	48	49	50	51	51	51	53	53	53	55	55	54	51	50	49	55	50.0	24	
HOURLY MAX	53	52	52	52	51	51	51	51	51	51	51	50	51	51	52	53	54	53	55	55	54	54	55	54	54			
HOURLY AVG	39.3	38.7	38.6	38.6	38.2	37.8	38.0	37.6	37.9	38.3	38.9	39.8	41.3	42.0	42.8	42.8	43.1	42.8	42.8	42.3	41.7	41.4	41.2	40.5				

STATUS FLAG CODES

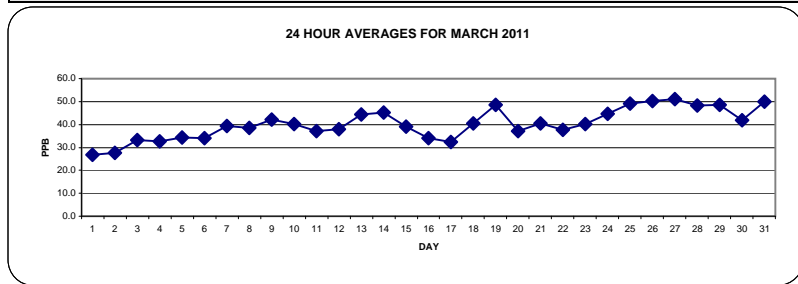
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	708
MAXIMUM 1-HR AVERAGE:	55 PPB @ HOUR(S) 22 ON DAY(S) 26
MAXIMUM 24-HR AVERAGE:	51.0 PPB ON DAY(S) 27
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION	7.33
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME	100.0 %
MONTHLY AVERAGE	40.26 PPB



01 Hour Averages



— LICA31_03_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2011

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	25	25	25	26	26	26	25	25	26	26	27	28	30	31	IZS	29	31	31	31	31	30	29	28	25	31	27.7	24	
2	26	26	27	24	20	21	22	24	26	28	29	30	30	IZS	31	30	30	30	32	31	34	34	34	34	34	34	28.4	24
3	34	33	33	33	32	32	32	32	32	32	33	33	IZS	34	34	35	36	36	36	36	35	34	34	34	34	36	33.7	24
4	34	34	33	32	32	30	29	29	30	32	33	IZS	36	38	39	37	36	36	35	35	34	33	33	33	39	33.6	24	
5	34	34	34	34	34	34	33	32	32	31	IZS	34	37	37	39	39	37	37	37	36	37	36	36	36	39	35.2	24	
6	36	36	35	34	33	33	29	28	25	IZS	32	36	36	36	38	38	39	39	39	38	38	38	36	36	39	35.1	24	
7	37	37	37	37	36	36	36	37	IZS	38	39	40	42	43	43	44	44	44	44	43	42	42	41	40	44	40.1	24	
8	40	38	37	36	35	35	35	IZS	37	37	36	38	45	45	46	47	43	42	41	41	41	43	43	39	47	40.0	24	
9	37	36	36	37	37	38	IZS	40	40	41	41	43	44	46	46	47	47	47	47	48	49	49	47	48	49	43.1	24	
10	48	47	50	51	51	IZS	46	43	42	41	39	39	39	39	39	37	38	38	38	37	37	37	37	36	51	41.3	24	
11	36	36	37	38	IZS	40	40	40	39	38	40	39	39	39	38	38	38	38	38	38	35	34	35	34	40	37.7	24	
12	34	34	34	IZS	36	36	35	36	36	35	35	36	37	38	40	42	43	44	44	44	44	43	43	44	44	38.8	24	
13	44	43	IZS	43	42	43	43	42	43	43	42	44	46	46	47	49	48	49	48	46	48	49	48	48	49	45.4	24	
14	47	IZS	42	42	45	47	48	47	48	48	48	49	50	50	50	50	50	48	45	44	42	41	40	39	50	46.1	24	
15	IZS	38	37	36	36	37	37	36	35	37	40	43	44	45	45	46	45	44	43	43	41	40	40	IZS	46	40.4	24	
16	35	34	34	35	35	35	34	34	34	34	35	35	35	36	37	37	38	37	37	34	35	32	IZS	29	38	34.8	24	
17	29	28	28	28	28	27	27	26	27	31	C	C	C	C	C	38	39	41	41	41	41	IZS	41	41	41	33.4	24	
18	40	40	40	37	35	32	31	30	30	31	34	39	45	49	50	48	48	54	55	54	IZS	51	48	47	55	42.1	24	
19	47	47	46	44	48	49	50	50	50	50	51	51	50	51	52	53	53	53	IZS	49	48	48	47	53	49.6	24		
20	41	37	33	32	31	32	35	36	37	39	40	40	41	42	42	43	42	IZS	40	40	40	40	39	43	38.4	24		
21	40	41	42	42	42	42	42	43	42	42	40	39	39	38	42	43	42	IZS	40	40	42	42	41	40	43	41.1	24	
22	40	39	39	39	39	38	38	38	37	37	37	37	38	38	38	38	IZS	37	37	38	38	39	40	40	40	38.2	24	
23	39	39	39	39	39	39	39	39	39	40	41	42	42	43	44	IZS	44	43	42	41	41	42	43	43	44	41.0	24	
24	42	42	43	43	42	42	42	42	43	43	44	44	46	46	IZS	48	49	48	52	52	52	47	45	46	52	45.3	24	
25	47	48	47	48	47	47	47	45	45	46	47	49	52	IZS	53	54	54	53	52	53	53	52	52	51	54	49.7	24	
26	50	50	50	50	48	48	48	48	48	48	48	48	IZS	50	50	51	52	54	55	54	54	55	55	55	55	50.8	24	
27	54	52	52	51	52	52	51	51	52	52	IZS	51	51	51	51	49	51	52	54	54	53	52	53	54	51.9	24		
28	53	53	53	52	51	53	50	50	49	47	IZS	47	47	48	49	49	48	48	47	48	48	46	45	48	53	49.1	24	
29	52	52	52	52	51	51	50	49	49	IZS	48	48	47	48	49	49	49	50	50	50	48	47	46	44	52	49.2	24	
30	43	41	40	40	41	41	41	41	IZS	41	41	41	41	42	43	45	46	46	45	46	45	45	44	46	42.8	24		
31	47	48	49	49	48	48	47	IZS	47	49	50	51	51	51	52	54	53	55	56	56	56	54	50	50	56	50.9	24	
HOURLY MAX	54	53	53	52	52	53	51	51	52	52	52	51	52	51	53	54	54	55	56	56	56	55	55	55				
HOURLY AVG	40.4	39.6	39.5	39.5	39.1	38.8	38.7	38.4	38.6	39.2	40.1	40.8	42.1	42.9	43.8	43.6	43.7	43.8	43.7	43.1	42.8	42.5	42.2	41.4				

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:	707				
MAXIMUM INSTANTANEOUS VALUE:	56	PPB	@ HOUR(S)	VAR	ON DAY(S) 31
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	5	HRS			
STANDARD DEVIATION	7.30				

01 Hour Averages



— LICA31 O3MAX PPB

LICA31
O3_ / WDR Joint Frequency Distribution (Percent)

March 2011

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	12.14	4.80	4.51	5.36	5.22	4.37	3.38	2.82	5.93	6.63	10.31	3.10	.98	3.24	4.09	10.16	87.14
< 110	.84	.70	.14	.00	.56	.42	.56	.70	2.82	4.51	1.12	.42	.00	.00	.00	.00	12.85
< 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	12.99	5.50	4.66	5.36	5.79	4.80	3.95	3.53	8.75	11.15	11.44	3.53	.98	3.24	4.09	10.16	

Calm : .00 %

Total # Operational Hours : 708

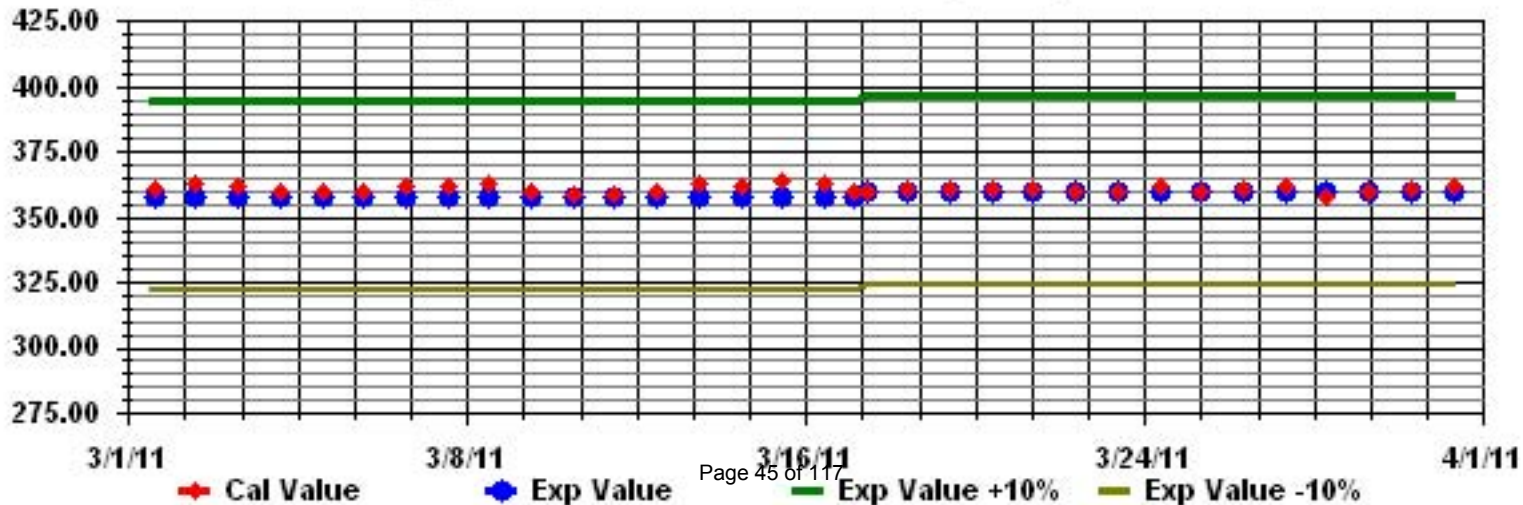
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	86	34	32	38	37	31	24	20	42	47	73	22	7	23	29	72	617
< 110	6	5	1		4	3	4	5	20	32	8	3					91
< 210																	
>= 210																	
Totals	92	39	33	38	41	34	28	25	62	79	81	25	7	23	29	72	

Calm : .00 %

Total # Operational Hours : 708

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



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2011

NITROGEN DIOXIDE hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	IZS	1	1	1	1	1	2	3	5	6	6	6	1.7	24
2	6	6	5	7	10	10	8	6	5	4	2	2	3	IZS	1	2	2	3	3	3	2	1	1	1	1	10	4.0	24
3	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	0	1	1	1	1.0	24
4	1	1	1	1	2	3	3	3	2	2	1	1	IZS	2	2	2	2	2	3	3	4	5	5	4	5	2.5	24	
5	4	4	3	2	2	2	3	4	3	6	IZS	2	2	1	1	1	1	1	1	1	1	1	1	2	6	2.1	24	
6	2	1	2	1	1	3	5	5	7	IZS	3	2	1	1	1	1	1	1	2	2	1	3	4	3	7	2.3	24	
7	3	3	2	2	2	2	2	2	IZS	1	2	2	2	2	2	3	3	3	4	4	4	5	5	5	5	2.7	24	
8	5	6	7	7	8	7	7	IZS	5	5	7	10	7	5	5	4	4	5	6	6	7	6	6	8	10	6.2	24	
9	9	9	9	9	9	9	IZS	7	7	8	8	10	10	11	11	11	10	9	9	8	7	7	8	7	11	8.8	24	
10	6	5	4	3	3	IZS	4	3	3	1	1	1	1	1	1	1	2	1	1	1	0	0	0	0	6	1.9	24	
11	0	0	0	0	IZS	0	0	1	1	1	0	0	1	1	1	1	1	1	1	2	2	2	2	2	2	2	0.9	24
12	2	2	3	IZS	2	2	2	2	2	3	3	3	3	3	4	3	3	3	3	2	2	2	2	2	2	4	2.5	24
13	2	2	IZS	2	2	2	2	2	2	3	3	4	4	5	5	5	6	6	6	7	7	6	7	6	7	4.2	24	
14	7	IZS	7	6	5	4	4	4	5	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	7	4.3	24
15	IZS	2	3	2	3	2	2	2	2	2	2	2	2	2	2	3	3	3	4	5	3	3	2	2	IZS	5	2.5	24
16	2	1	1	1	1	1	1	1	1	1	C	C	C	C	C	C	C	0	1	1	1	1	1	IZS	3	3	1.1	24
17	3	3	3	2	2	2	3	3	3	3	2	2	2	3	M	4	5	5	5	5	5	IZS	4	4	5	3.3	23	
18	4	4	4	5	5	6	6	6	6	6	5	5	4	3	3	5	6	5	4	4	IZS	3	4	4	6	4.7	24	
19	3	4	4	3	2	1	1	1	1	0	0	0	0	0	1	0	1	1	1	1	IZS	2	2	2	3	4	1.4	24
20	5	7	8	7	6	5	3	3	2	2	1	1	1	0	0	0	1	1	IZS	1	1	1	1	1	1	8	2.5	24
21	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	1	0.0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	1	0	1	0	0	0	1	0.1	24
23	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	2	2	2	2	2	2	1.0	24
24	2	3	3	3	3	3	3	3	3	3	3	2	2	2	IZS	1	1	1	1	1	2	4	4	3	4	2.4	24	
25	3	3	3	3	3	3	3	4	3	3	3	2	2	IZS	2	2	1	2	2	2	2	2	2	2	2	4	2.5	24
26	2	2	2	2	2	2	2	2	2	2	2	2	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2.0	24
27	2	2	2	2	2	2	2	2	2	2	3	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.5	24
28	1	1	1	1	1	1	1	1	1	2	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
29	1	1	1	1	1	1	2	2	2	IZS	2	2	2	2	2	2	1	2	3	3	3	3	2	2	3	1.9	24	
30	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	2	2	4	5	5	5	6	6	6	6	2.4	24	
31	3	1	1	1	0	0	0	IZS	1	1	0	1	0	0	0	1	1	1	1	1	1	1	0	1	3	0.7	24	
HOURLY MAX		9	9	9	9	10	10	8	7	7	8	8	10	10	11	11	11	10	9	9	8	7	7	8	8			
HOURLY AVG		2.7	2.5	2.7	2.5	2.7	2.6	2.5	2.6	2.6	2.4	2.2	2.3	2.1	2.0	2.1	2.2	2.3	2.5	2.6	2.6	2.5	2.5	2.7	2.8			

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

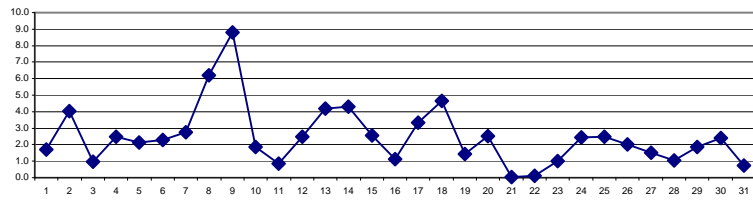
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	212	PPB	24-HR	106	PPB
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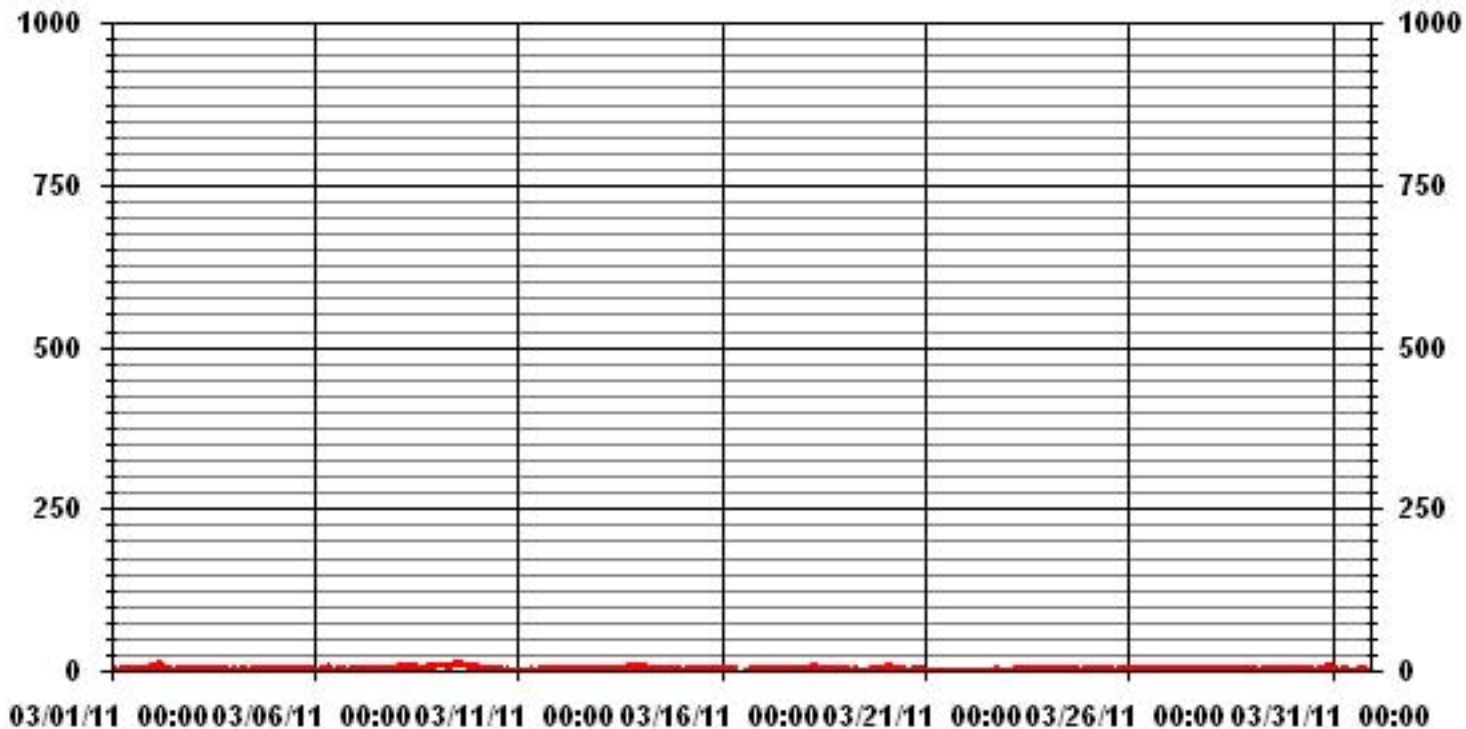
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	627
MAXIMUM 1-HR AVERAGE:	11 PPB @ HOUR(S) VAR ON DAY(S) 9
MAXIMUM 24-HR AVERAGE:	8.8 PPB ON DAY(S) 9
IZS CALIBRATION TIME:	32 HRS
OPERATIONAL TIME:	743 HRS
MONTHLY CALIBRATION TIME:	7 HRS
AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	2.15
MONTHLY AVERAGE:	2.47 PPB

24 HOUR AVERAGES FOR MARCH 2011



01 Hour Averages



— LICA31 NO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2011

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	3	3	3	2	2	2	2	2	IZS	2	2	6	2	2	3	4	6	7	7	2.8	24		
2	7	7	6	9	11	11	9	8	6	4	3	3	3	IZS	2	3	3	4	4	3	3	1	2	2	11	5.0	24		
3	2	2	2	2	2	2	2	2	2	1	2	1	IZS	1	1	1	2	3	2	2	2	2	1	2	3	1.8	24		
4	2	2	2	2	3	3	4	14	3	2	2	IZS	3	3	3	3	3	4	4	4	5	7	6	4	14	3.8	24		
5	5	6	4	3	3	3	5	5	4	9	IZS	3	3	2	2	2	2	2	3	3	2	2	2	2	9	3.3	24		
6	3	2	3	2	2	5	6	8	8	IZS	4	3	2	2	2	1	2	3	2	2	4	4	4	8	3.3	24			
7	3	3	3	3	3	3	3	3	3	IZS	2	2	2	3	3	3	3	4	3	5	5	5	5	6	6	3.3	24		
8	6	6	7	8	9	9	8	IZS	7	7	9	32	30	6	5	5	5	6	9	7	8	8	8	9	32	9.3	24		
9	9	10	10	10	10	10	IZS	10	8	9	10	11	11	12	12	12	11	11	10	9	8	8	11	8	12	10.0	24		
10	7	6	5	5	4	IZS	5	4	4	3	2	2	2	2	2	2	2	2	2	2	1	0	0	0	7	2.8	24		
11	0	0	0	0	IZS	1	1	3	2	1	2	1	1	2	4	1	2	9	3	3	3	3	5	9	2.2	24			
12	4	3	4	IZS	3	3	3	3	3	3	4	4	4	4	4	4	4	3	3	3	3	3	3	3	4	3.4	24		
13	3	3	IZS	3	3	3	3	3	4	3	4	4	5	6	6	6	6	7	7	9	8	7	8	7	9	5.1	24		
14	7	IZS	9	7	6	7	5	5	7	4	4	5	4	5	4	5	5	5	5	4	4	4	4	3	9	5.1	24		
15	IZS	3	3	3	3	4	3	3	3	3	2	3	3	C	C	C	C	4	4	7	7	4	5	4	3	IZS	7	3.7	24
16	4	2	2	2	2	2	2	2	2	C	C	C	C	C	C	C	1	2	2	2	3	2	IZS	3	4	2.2	24		
17	3	4	4	3	3	3	3	4	4	4	3	3	3	3	M	6	6	5	6	6	14	IZS	7	5	14	4.6	23		
18	5	5	5	5	6	6	14	7	9	7	6	5	5	4	4	7	7	7	5	5	IZS	6	7	5	14	6.2	24		
19	4	5	4	4	3	2	2	1	1	1	1	1	1	1	1	1	1	2	2	IZS	3	3	3	5	5	2.3	24		
20	6	8	9	8	7	7	5	4	3	3	2	2	1	1	1	1	1	2	IZS	2	2	1	1	2	9	3.4	24		
21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1.0	24		
22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	2	1	1	1	1	2	1.0	24		
23	1	1	1	1	1	1	2	2	2	2	1	2	1	1	1	IZS	2	2	2	2	2	2	2	2	2	2	1.6	24	
24	3	3	4	4	4	4	4	4	4	4	4	3	3	3	IZS	2	2	2	2	2	2	4	4	4	4	3.3	24		
25	4	4	4	3	4	4	4	4	4	4	3	3	2	IZS	3	3	2	2	2	2	3	2	2	3	3	4	3.1	24	
26	3	3	3	3	3	2	2	2	2	2	2	3	IZS	2	2	3	3	3	3	3	3	3	3	3	3	2.7	24		
27	3	2	2	2	2	3	3	3	3	3	3	IZS	2	2	2	2	1	2	2	2	1	1	1	3	2.1	24			
28	1	1	2	2	2	2	2	2	2	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.9	24		
29	2	2	2	2	2	2	2	3	3	IZS	3	3	3	2	2	2	2	3	3	4	4	4	3	2	4	2.6	24		
30	2	2	2	2	2	2	2	2	IZS	2	2	2	2	2	2	3	3	6	6	7	6	7	7	7	7	3.5	24		
31	6	3	2	1	1	1	1	IZS	8	2	1	1	1	1	1	1	1	1	2	1	2	2	1	2	8	1.9	24		
HOURLY MAX	9	10	10	10	11	11	14	14	9	9	10	32	30	12	12	12	11	11	10	9	14	8	11	9					
HOURLY AVG	3.6	3.4	3.6	3.4	3.6	3.6	3.7	4.0	3.9	3.3	3.1	3.8	3.7	2.8	2.9	3.1	3.0	3.9	3.6	3.5	3.7	3.4	3.7	3.7					

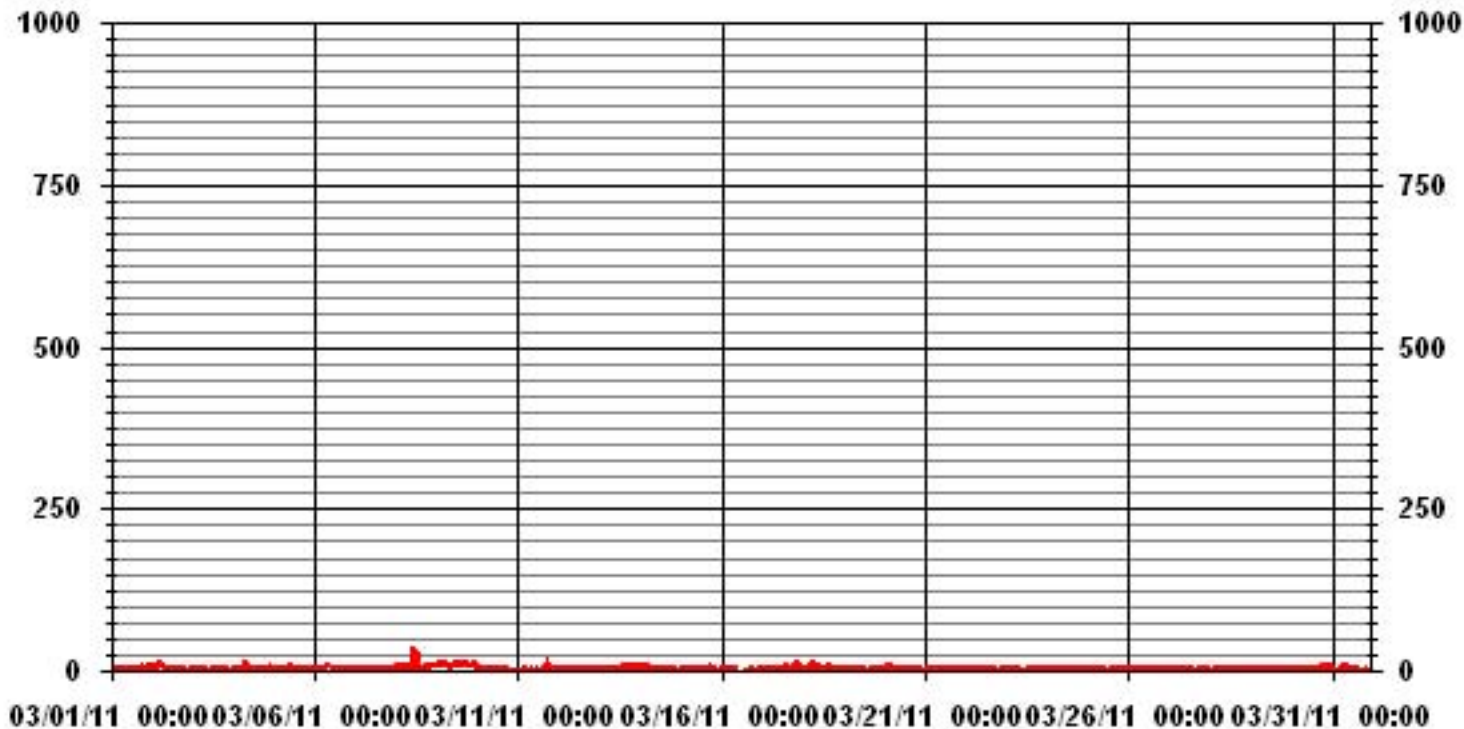
STATUS FLAG CODES

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:	697					
MAXIMUM INSTANTANEOUS VALUE:	32	PPB	@ HOUR(S)	11	ON DAY(S)	8
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	2.81					

01 Hour Averages



— LICA31 IIO2MAX PPB

LICA31
 NO2_ / WDR Joint Frequency Distribution (Percent)

March 2011

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	13.49	5.53	4.68	5.39	5.82	4.82	3.97	3.55	8.80	11.22	11.50	3.55	.99	3.12	3.83	9.65	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	13.49	5.53	4.68	5.39	5.82	4.82	3.97	3.55	8.80	11.22	11.50	3.55	.99	3.12	3.83	9.65	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	95	39	33	38	41	34	28	25	62	79	81	25	7	22	27	68	704
< 110																	
< 210																	
>= 210																	
Totals	95	39	33	38	41	34	28	25	62	79	81	25	7	22	27	68	

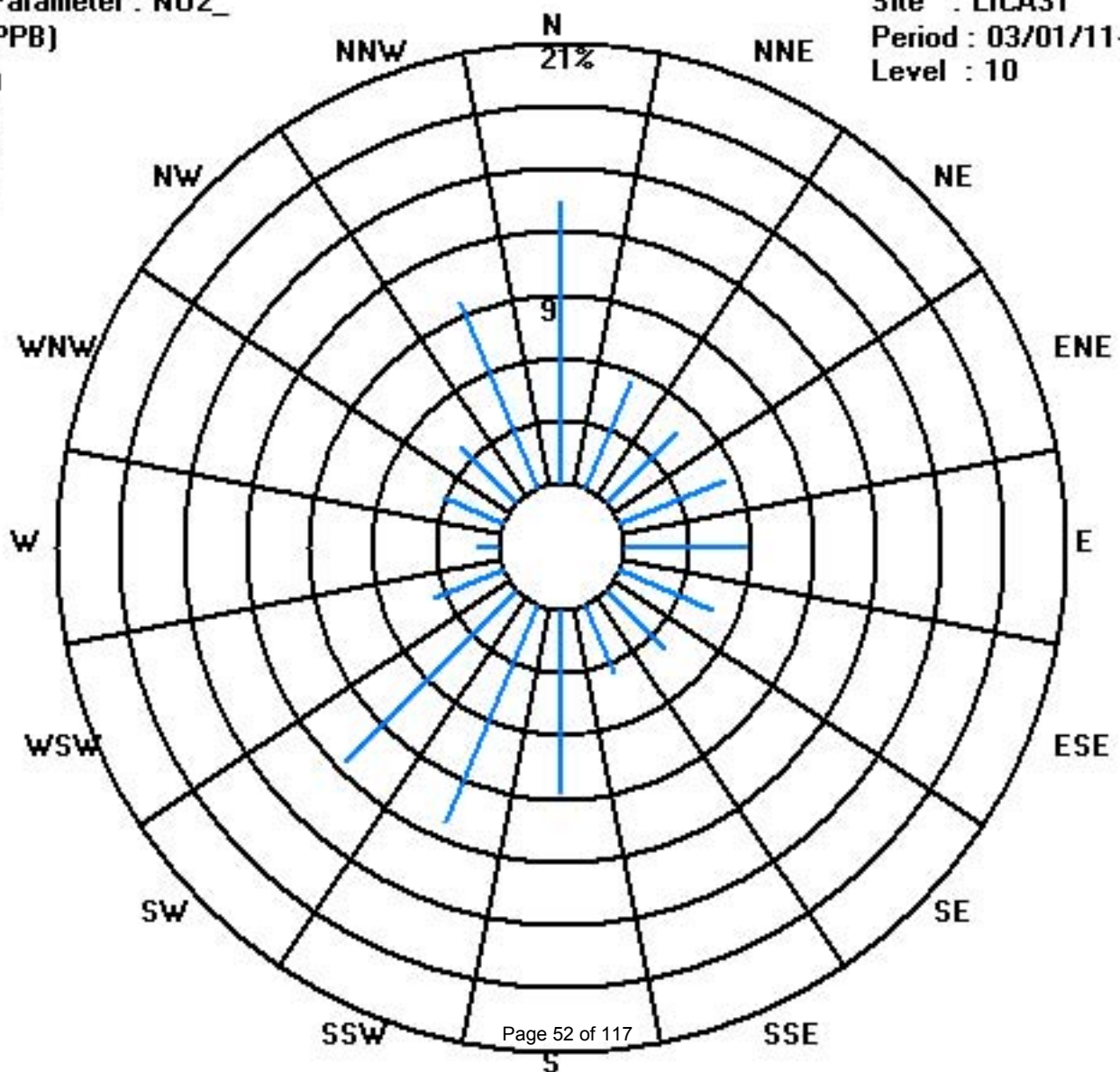
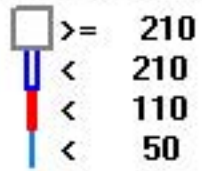
Calm : .00 %

Total # Operational Hours : 704

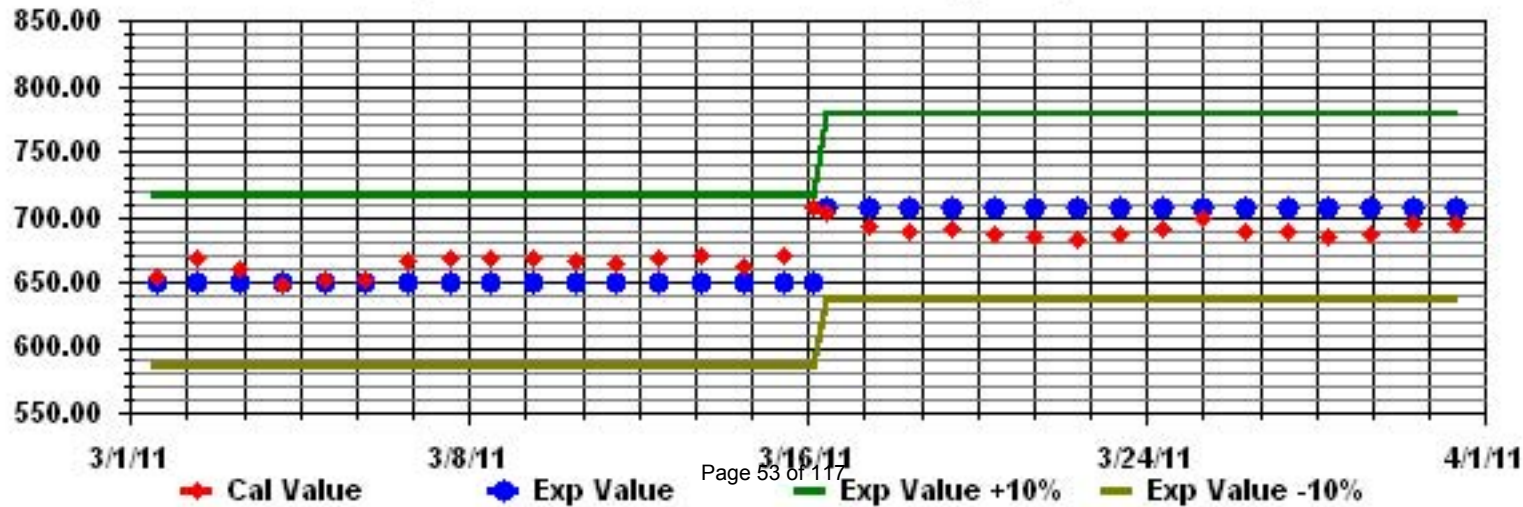
Class Limits (PPB)

Period : 03/01/11-03/31/11

Level : 10



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



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOICATION - ST. LINA

MARCH 2011

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	1	1	1	1	0	0	IZS	1	1	0	0	0	0	0	0	0	0	1	0.3	24	
2	0	0	0	0	0	1	1	1	1	1	1	1	1	IZS	1	1	1	0	0	0	0	0	0	0	0	1	0.5	24	
3	0	0	0	0	0	0	0	0	0	1	1	1	IZS	1	1	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
4	0	0	0	0	0	0	0	1	1	1	1	IZS	2	1	1	1	1	0	0	0	0	0	0	0	0	1	0.4	24	
5	0	0	0	0	0	0	0	0	1	3	IZS	2	1	1	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24	
6	0	0	0	0	0	0	0	1	4	IZS	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.4	24	
7	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	0.4	24	
8	0	0	0	0	0	0	0	IZS	2	3	3	7	4	1	1	1	1	1	0	0	0	0	0	0	0	7	1.0	24	
9	1	0	0	0	0	0	IZS	1	2	2	3	3	3	3	3	3	2	1	1	0	0	0	1	0	3	1.3	24		
10	0	0	0	0	0	IZS	1	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	0.4	24		
11	0	0	0	0	IZS	1	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0.3	24	
12	0	0	0	IZS	1	0	0	1	1	1	2	2	2	2	2	1	1	0	0	0	0	0	0	0	0	2	0.7	24	
13	0	0	IZS	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	0	1	0.5	24		
14	0	IZS	1	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0.2	24	
15	IZS	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	IZS	1	0.2	24
16	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	C	1	0	0	0	0	0	0	IZS	0	1	0.1	24	
17	0	0	0	0	0	0	0	0	1	1	1	1	1	1	M	1	1	1	0	0	0	IZS	1	0	1	0.5	23		
18	0	0	0	0	0	0	1	1	2	2	2	2	2	1	1	1	1	0	0	IZS	1	0	0	0	2	0.7	24		
19	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	0.0	24	
20	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	1	0.1	24	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	1	0.0	24	
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0.0	24	
23	0	0	0	0	0	0	0	0	1	0	1	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
24	0	0	0	0	0	0	0	0	1	1	1	1	1	0	IZS	1	0	0	0	0	0	0	0	0	0	1	0.3	24	
25	0	0	0	0	0	0	0	1	1	1	1	1	0	IZS	1	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
26	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	1	1	0	0	0	0	0	0	0	0	1	0.1	24	
27	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
28	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
29	0	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	
30	0	0	0	0	0	0	0	0	IZS	1	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	1	0.3	24	
31	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
HOURLY MAX	1	1	1	0	1	1	1	1	4	3	3	7	4	3	3	3	2	1	1	1	0	0	1	0					
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.7	0.9	1.0	1.1	0.8	0.6	0.7	0.6	0.6	0.3	0.1	0.0	0.0	0.0	0.1	0.0					

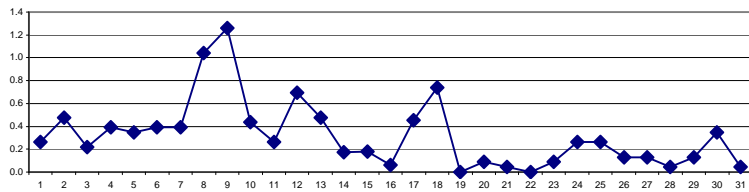
STATUS FLAG CODES

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

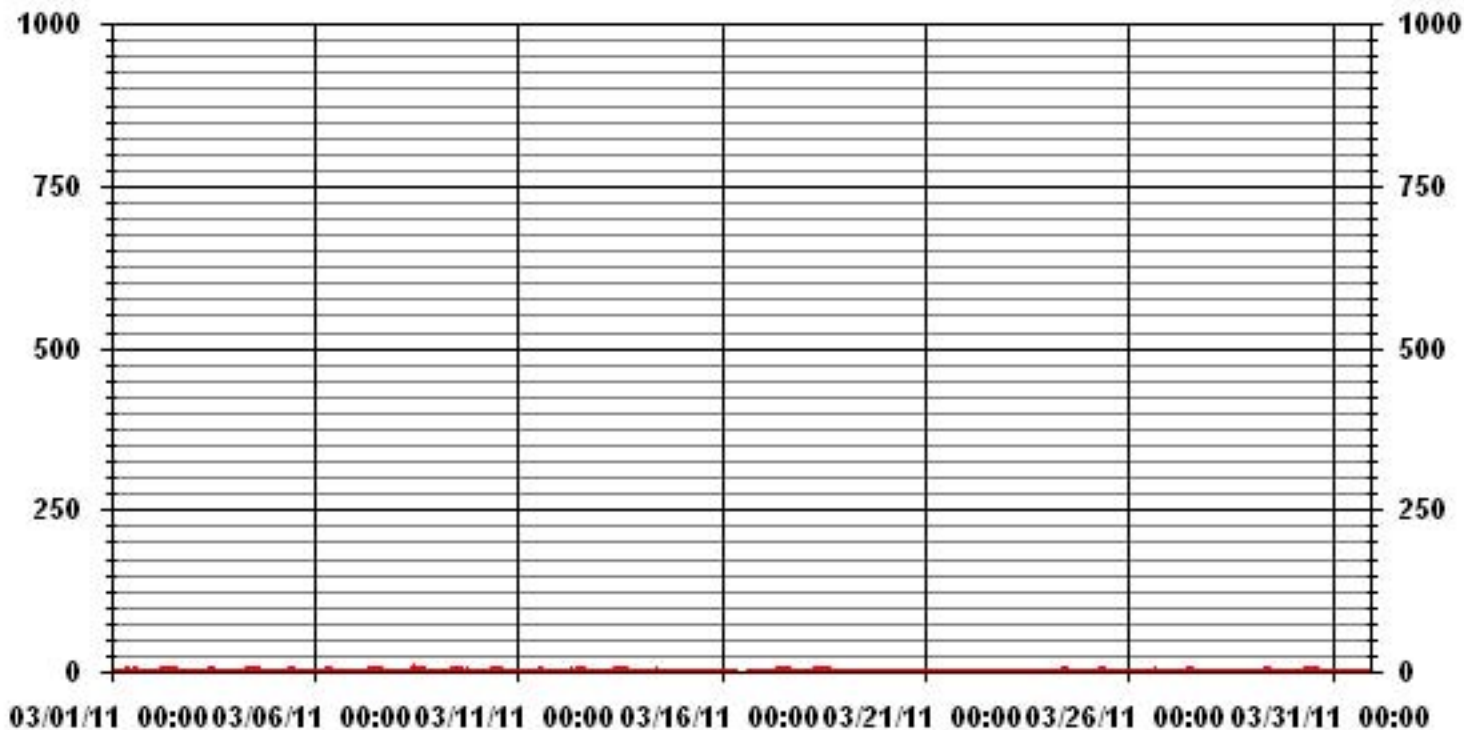
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	178
MAXIMUM 1-HR AVERAGE:	7 PPB @ HOUR(S) 11 ON DAY(S) 8
MAXIMUM 24-HR AVERAGE:	1.3 PPB ON DAY(S) 9
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	0.66
MONTHLY AVERAGE:	0.32 PPB

24 HOUR AVERAGES FOR MARCH 2011



01 Hour Averages



— LICA31 NO_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2011

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	1	1	0	1	1	1	1	1	1	1	1	1	1	IZS	2	2	8	1	1	1	1	1	2	8	1.4	24
2	1	1	1	1	1	1	1	2	2	2	2	2	2	IZS	3	2	1	1	1	1	1	1	1	1	3	1.4	24
3	0	0	1	0	1	1	1	2	1	1	2	2	IZS	2	1	1	1	2	1	1	1	1	0	1	2	1.0	24
4	1	1	1	1	1	1	1	10	2	2	2	IZS	3	2	1	1	1	1	1	1	1	1	1	1	10	1.7	24
5	1	1	1	1	1	1	1	1	1	6	IZS	4	2	1	1	1	1	1	1	1	1	1	0	1	6	1.3	24
6	1	1	1	1	1	1	1	3	5	IZS	4	3	1	1	2	1	1	1	1	1	1	1	1	1	5	1.5	24
7	1	1	1	1	1	1	1	1	IZS	2	2	2	1	1	1	1	2	1	1	2	1	2	1	1	2	1.2	24
8	1	1	1	1	1	1	1	IZS	3	4	5	33	33	2	2	1	1	1	2	1	1	1	1	1	33	4.3	24
9	1	1	1	1	1	1	IZS	2	2	3	3	4	4	4	4	4	2	2	1	1	1	1	1	1	4	2.0	24
10	1	1	1	1	1	IZS	2	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24
11	1	1	1	1	IZS	2	1	2	1	1	1	1	1	4	1	1	6	1	1	1	1	1	1	2	6	1.5	24
12	1	1	1	IZS	1	1	1	1	2	2	3	3	3	3	2	2	1	1	1	1	1	1	1	1	3	1.5	24
13	1	1	IZS	1	1	1	1	1	2	2	2	2	1	2	2	2	1	1	1	1	1	1	1	1	2	1.3	24
14	1	IZS	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
15	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
16	1	1	1	1	1	1	1	1	1	C	C	C	C	C	C	C	2	1	1	1	1	1	1	IZS	2	1.1	24
17	1	1	1	1	1	1	1	1	1	2	1	1	1	1	M	4	2	1	1	1	6	IZS	2	1	6	1.5	23
18	1	1	1	1	1	1	8	2	3	4	3	2	3	2	1	2	2	1	1	1	IZS	1	1	1	8	1.9	24
19	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
20	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	1.0	24
21	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	2	1.0	24
22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1.0	24
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	2	1.0	24
24	1	1	1	1	1	1	1	1	1	1	2	1	1	1	IZS	1	1	1	1	1	1	1	1	1	2	1.0	24
25	1	1	1	1	1	1	1	1	1	1	2	1	1	1	IZS	2	1	1	1	1	1	1	1	1	2	1.1	24
26	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	2	1.0	24
27	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
28	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
29	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
30	1	1	1	1	1	1	1	1	IZS	2	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	1.1	24
31	1	1	1	1	1	1	1	IZS	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1.2	24
HOURLY MAX	1	1	1	1	1	2	8	10	5	6	5	33	33	4	4	4	2	8	2	1	6	1	2	2			
HOURLY AVG	1.0	0.9	1.0	0.9	1.0	1.0	1.3	1.6	1.6	1.7	1.8	2.8	2.6	1.4	1.5	1.4	1.2	1.5	1.1	1.0	1.2	1.0	1.0	1.1			

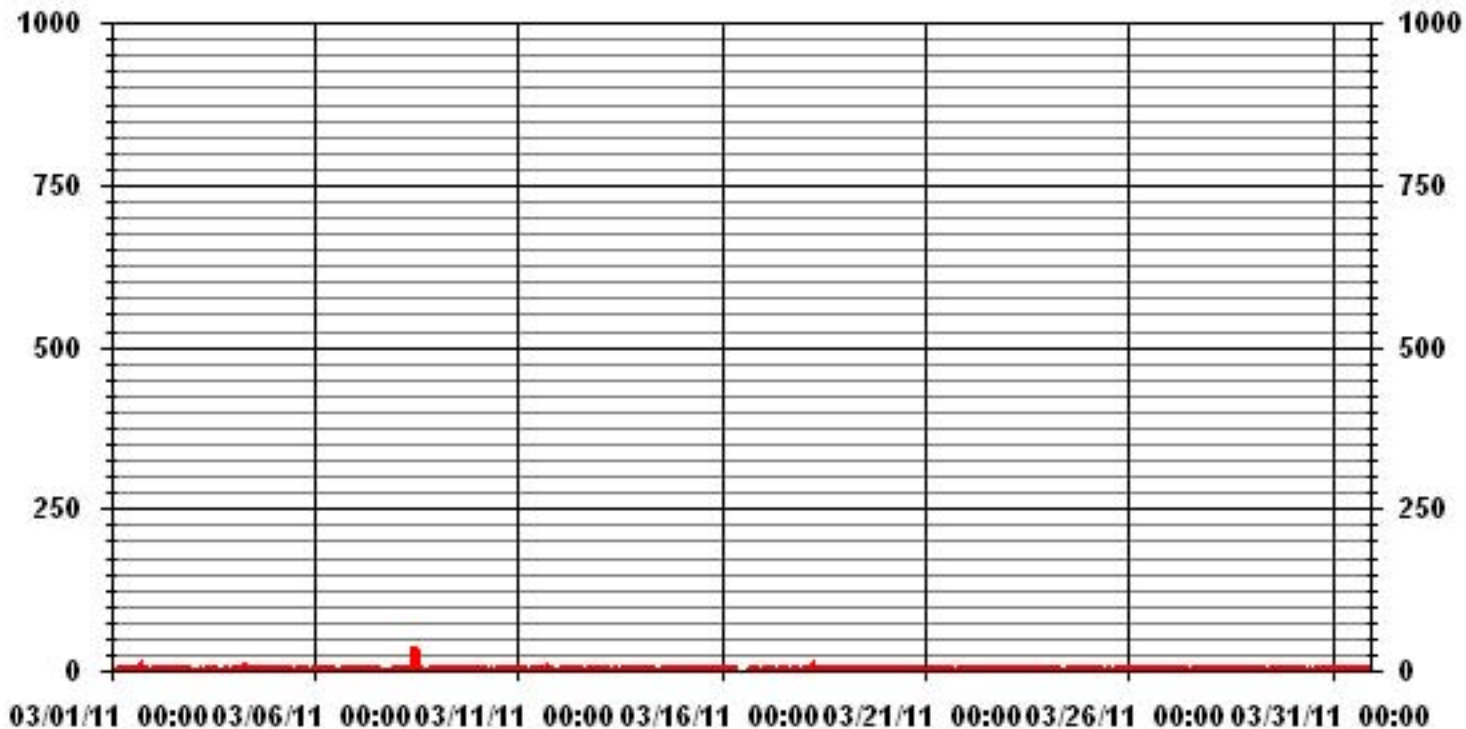
STATUS FLAG CODES

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

NUMBER OF NON-ZERO READINGS:	697					
MAXIMUM INSTANTANEOUS VALUE:	33	PPB	@ HOUR(S)	11, 12	ON DAY(S)	8
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	1.89					

01 Hour Averages



LICA31
 NO_ / WDR Joint Frequency Distribution (Percent)

March 2011

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	13.49	5.53	4.68	5.39	5.82	4.82	3.97	3.55	8.80	11.22	11.50	3.55	.99	3.12	3.83	9.65	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	13.49	5.53	4.68	5.39	5.82	4.82	3.97	3.55	8.80	11.22	11.50	3.55	.99	3.12	3.83	9.65	

Calm : .00 %

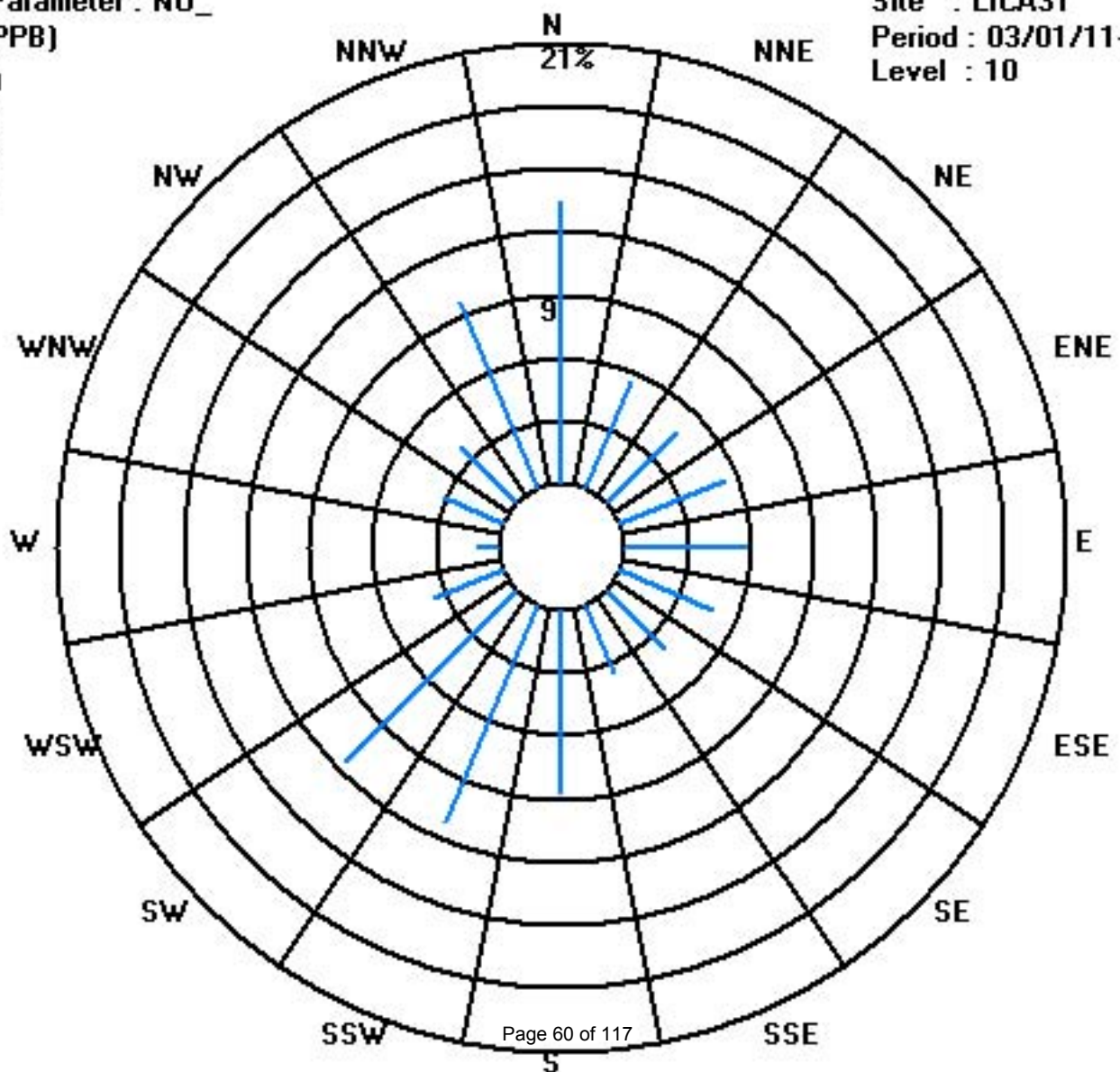
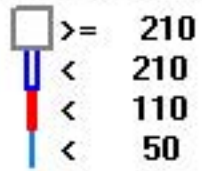
Total # Operational Hours : 704

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	95	39	33	38	41	34	28	25	62	79	81	25	7	22	27	68	704
< 110																	
< 210																	
>= 210																	
Totals	95	39	33	38	41	34	28	25	62	79	81	25	7	22	27	68	

Calm : .00 %

Total # Operational Hours : 704



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2011

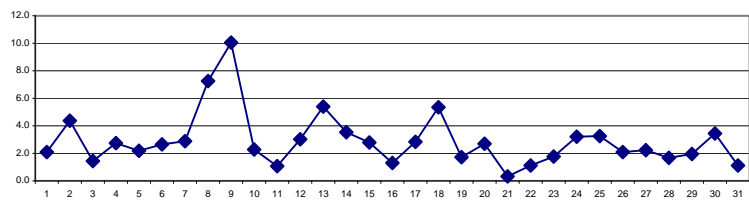
OXIDES OF NITROGEN hourly averages in ppb

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	1	1	2	2	2	3	2	2	2	2	2	1	IZS	2	2	1	1	1	2	3	5	7	7	2.1	24
2	6	6	5	7	10	10	8	6	6	5	3	3	4	IZS	2	3	3	3	3	3	2	1	1	1	10	4.4	24
3	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	2	2	2	2	2	2	2	2	1	2	2	1.4	24
4	2	2	2	2	3	4	4	4	4	4	3	IZS	2	2	1	2	2	2	2	2	3	4	4	3	4	2.7	24
5	3	3	2	1	1	2	3	3	3	8	IZS	4	3	2	1	1	1	1	1	1	1	2	1	2	8	2.2	24
6	2	1	2	1	1	3	5	5	11	IZS	6	3	1	1	1	1	1	1	2	2	1	3	4	3	11	2.7	24
7	3	3	2	2	2	2	2	2	IZS	2	2	2	2	2	3	3	3	3	4	4	5	5	5	5	5	2.9	24
8	5	6	7	7	8	8	8	IZS	7	8	10	16	11	6	6	4	4	5	6	6	7	7	7	8	16	7.3	24
9	9	9	9	9	9	9	IZS	8	9	10	11	13	13	14	14	13	12	10	10	9	8	7	9	7	14	10.0	24
10	6	6	4	3	3	IZS	5	3	3	2	2	2	2	2	2	2	2	1	1	1	0	0	0	0	6	2.3	24
11	0	0	0	0	IZS	0	0	1	1	1	1	1	1	1	2	1	1	2	1	2	2	2	2	3	3	1.1	24
12	2	2	3	IZS	3	2	2	3	3	4	4	5	5	5	5	4	3	3	2	2	2	2	2	2	5	3.0	24
13	2	2	IZS	3	3	3	3	3	4	4	5	5	6	7	7	7	7	7	7	8	8	8	8	7	8	5.4	24
14	8	IZS	7	5	4	4	3	3	4	3	3	3	3	3	3	4	3	3	3	3	3	2	2	2	8	3.5	24
15	IZS	3	3	2	3	3	2	2	2	2	3	2	2	2	3	3	4	5	5	3	3	2	2	IZS	5	2.8	24
16	2	1	1	1	1	1	1	2	2	C	C	C	C	C	C	C	C	1	1	1	1	2	IZS	2	2	1.3	24
17	2	2	2	1	1	1	2	2	3	3	2	2	2	2	M	4	5	4	4	4	5	IZS	5	4	5	2.8	23
18	4	4	4	5	5	6	6	7	7	8	7	6	6	4	4	7	7	6	4	4	IZS	4	4	4	8	5.3	24
19	3	4	4	3	2	2	1	1	1	0	0	0	1	1	1	1	1	1	1	IZS	3	3	2	4	4	1.7	24
20	6	7	8	7	6	5	3	3	3	2	1	1	1	1	1	1	1	1	IZS	1	1	0	1	1	8	2.7	24
21	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	IZS	2	1	1	1	1	2	0.3	24
22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	2	2	2	1	1	1	2	1.1	24
23	1	1	2	1	2	2	2	2	2	2	2	2	2	2	2	IZS	2	2	1	2	1	2	2	2	2	1.8	24
24	2	3	3	3	3	3	3	3	3	4	4	3	3	3	IZS	2	3	3	2	2	4	5	5	5	5	3.2	24
25	4	4	4	4	4	4	4	5	5	5	5	4	3	IZS	3	2	1	2	2	2	2	2	2	2	5	3.3	24
26	2	2	2	2	2	2	2	2	2	2	2	2	IZS	2	2	3	3	2	2	2	2	2	2	2	3	2.1	24
27	2	2	2	2	2	2	2	2	2	3	3	IZS	3	3	3	2	2	2	2	2	2	2	2	2	3	2.2	24
28	1	2	2	2	2	2	2	2	3	3	IZS	2	1	2	2	1	1	1	1	2	1	1	1	1	3	1.7	24
29	1	1	1	1	1	1	2	2	2	IZS	3	2	2	2	2	2	2	3	3	3	3	3	2	2	3	2.0	24
30	1	2	1	1	1	1	1	1	IZS	2	2	2	3	3	3	3	4	6	7	7	7	7	7	7	7	3.4	24
31	5	2	2	1	1	1	1	IZS	2	1	1	1	0	0	0	1	1	1	1	1	1	1	0	1	5	1.1	24
HOURLY MAX	9	9	9	9	10	10	8	8	11	10	11	16	13	14	14	13	12	10	10	9	8	8	9	8			
HOURLY AVG	2.9	2.8	2.9	2.6	2.9	2.9	2.7	2.8	3.4	3.3	3.2	3.2	3.0	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.9	3.0	3.1			

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

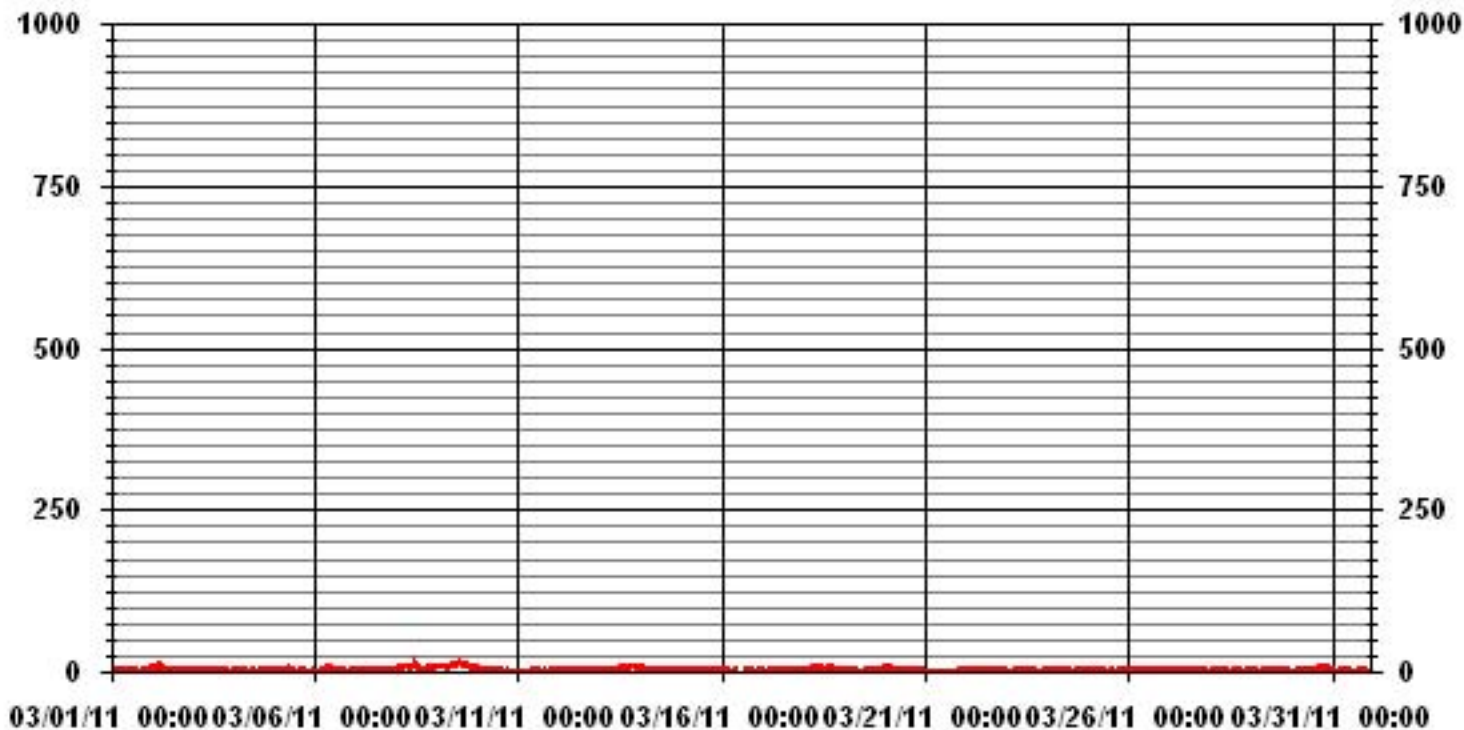
24 HOUR AVERAGES FOR MARCH 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	670
MAXIMUM 1-HR AVERAGE:	16 PPB @ HOUR(S) 11 ON DAY(S) 8
MAXIMUM 24-HR AVERAGE:	10.0 PPB ON DAY(S) 9
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	2.40
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
MONTHLY AVERAGE:	2.91 PPB

01 Hour Averages



— LICA31 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2011

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	2	2	2	2	2	3	3	4	3	3	2	2	2	2	IZS	4	3	12	1	3	3	4	6	8	12	3.4	24	
2	7	8	7	9	12	11	9	8	7	6	4	4	4	IZS	3	4	4	4	4	3	3	1	2	2	12	5.5	24	
3	1	2	2	2	2	1	2	3	2	2	3	3	IZS	3	3	3	3	5	4	3	3	3	2	2	5	2.6	24	
4	3	3	3	3	4	4	5	24	5	5	4	IZS	3	3	2	3	3	3	3	3	4	7	5	4	24	4.6	24	
5	4	5	3	2	2	2	4	4	4	14	IZS	7	4	3	2	2	2	1	3	3	3	2	2	3	14	3.5	24	
6	3	2	2	2	2	5	6	10	12	IZS	7	5	2	2	2	2	1	2	2	2	2	4	4	4	12	3.7	24	
7	4	3	3	3	3	3	3	3	IZS	3	3	3	3	3	4	4	4	5	3	5	6	6	6	6	6	3.9	24	
8	6	7	8	8	9	9	9	IZS	10	11	14	59	62	7	7	6	6	7	10	6	8	8	8	9	62	12.8	24	
9	9	10	10	10	10	10	IZS	11	10	11	12	14	15	15	16	14	12	12	11	10	9	9	11	9	16	11.3	24	
10	8	7	5	4	4	IZS	6	4	4	3	3	3	3	2	2	3	2	2	2	1	0	0	0	0	8	3.1	24	
11	0	0	0	0	IZS	1	1	4	2	2	2	1	2	2	7	2	2	15	3	3	3	3	6	15	2.8	24		
12	4	3	4	IZS	3	3	3	3	4	4	5	5	6	5	6	5	4	3	3	3	3	3	3	3	6	3.8	24	
13	2	3	IZS	4	4	4	4	4	5	5	6	6	6	8	8	8	8	8	8	10	10	8	9	9	10	6.4	24	
14	8	IZS	9	6	5	6	4	4	7	4	4	6	4	5	4	5	5	4	4	4	3	3	3	3	9	4.8	24	
15	IZS	3	3	3	3	4	3	3	3	3	4	3	3	3	4	4	5	7	7	3	5	4	3	IZS	7	3.8	24	
16	5	2	2	2	2	2	2	2	2	C	C	C	C	C	C	C	C	2	2	2	2	3	2	IZS	3	5	2.3	24
17	2	3	3	2	2	2	2	3	4	3	3	2	3	3	M	8	6	5	5	5	17	IZS	8	5	17	4.4	23	
18	5	5	5	5	6	7	21	8	11	11	9	7	7	5	5	9	8	7	5	5	IZS	6	8	5	21	7.4	24	
19	4	5	4	4	3	2	2	1	1	1	1	1	1	1	2	2	1	2	2	IZS	4	3	3	5	5	2.4	24	
20	7	9	9	8	7	7	5	4	4	3	2	2	1	1	1	1	1	2	IZS	2	2	1	1	2	9	3.6	24	
21	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	IZS	3	2	2	2	2	2	3	1.3	24	
22	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	IZS	3	2	3	2	2	2	2	3	2.0	24	
23	2	2	2	2	2	2	3	2	3	3	3	3	3	3	3	IZS	3	2	2	2	2	2	2	3	3	2.4	24	
24	3	3	4	4	3	4	4	4	4	5	5	4	3	3	IZS	3	3	3	3	3	5	5	5	5	5	3.8	24	
25	5	4	5	5	5	5	5	6	5	5	5	4	4	IZS	3	3	2	3	2	2	2	2	3	6	3.8	24		
26	3	2	3	3	2	2	2	3	3	3	3	3	IZS	3	3	3	3	3	3	3	3	3	3	3	3	2.8	24	
27	3	2	2	2	2	3	3	3	3	3	3	IZS	4	3	3	3	3	3	3	2	2	2	2	4	2.7	24		
28	2	2	3	3	3	3	3	3	3	3	IZS	2	2	2	2	2	2	2	2	2	2	2	2	3	2.3	24		
29	2	2	2	2	2	2	2	3	3	IZS	4	3	3	3	2	2	2	3	3	3	4	4	3	2	4	2.7	24	
30	2	2	2	2	2	2	2	2	IZS	4	3	3	4	4	4	4	5	7	8	9	7	8	8	8	9	4.4	24	
31	7	4	3	2	2	3	2	IZS	9	2	2	2	1	1	1	1	2	2	2	1	2	2	1	2	9	2.4	24	
HOURLY MAX	9	10	10	10	12	11	21	24	12	14	14	59	62	15	16	14	12	15	11	10	17	9	11	9				
HOURLY AVG	3.9	3.6	3.8	3.6	3.7	3.8	4.1	4.7	4.7	4.5	4.3	5.7	5.6	3.5	3.8	3.9	3.6	4.6	3.8	3.7	4.2	3.7	4.0	4.1				

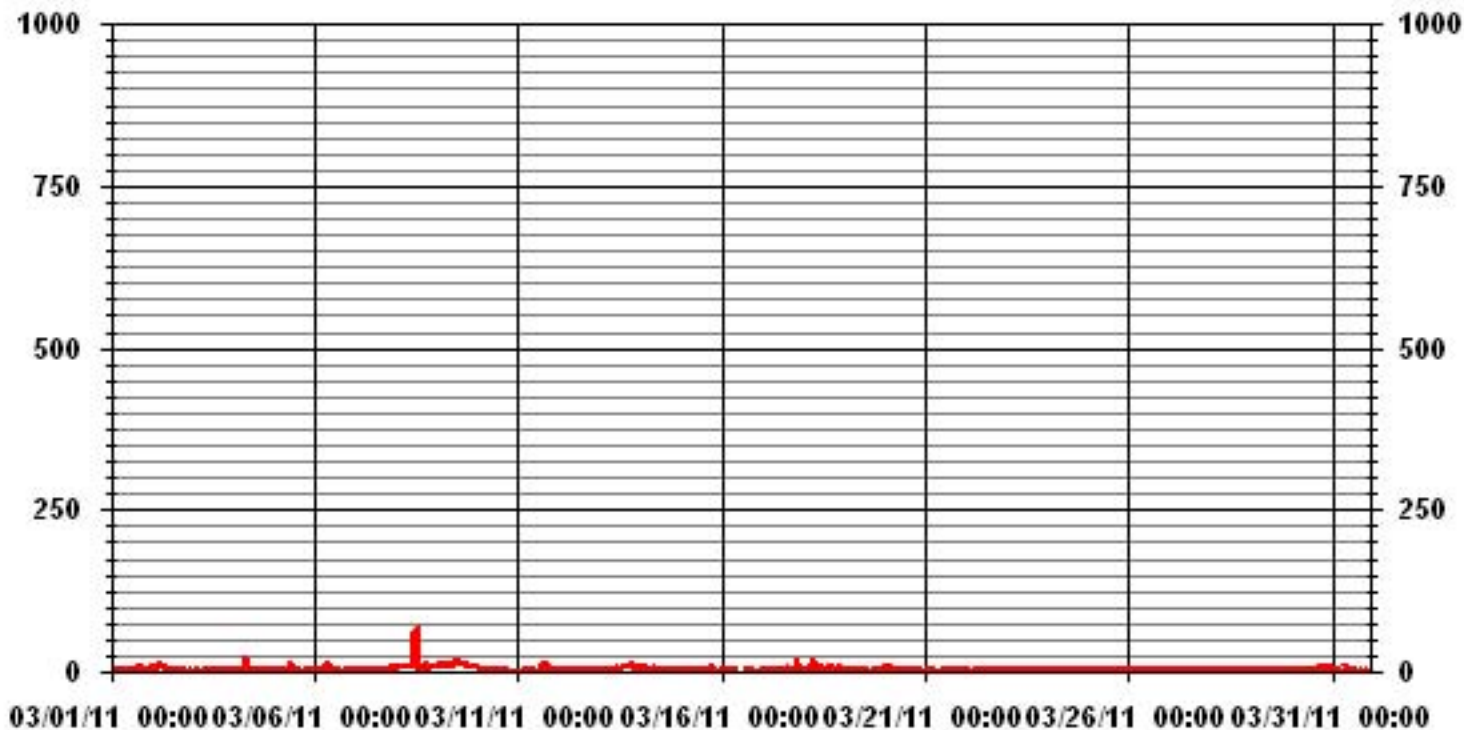
STATUS FLAG CODES

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

NUMBER OF NON-ZERO READINGS:	697					
MAXIMUM INSTANTANEOUS VALUE:	62	PPB	@ HOUR(S)	12	ON DAY(S)	8
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	4.15					

01 Hour Averages



— LICA31 NOxMAX PPB

LICA31
 NOX_ / WDR Joint Frequency Distribution (Percent)

March 2011

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	13.49	5.53	4.68	5.39	5.82	4.82	3.97	3.55	8.80	11.22	11.50	3.55	.99	3.12	3.83	9.65	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	13.49	5.53	4.68	5.39	5.82	4.82	3.97	3.55	8.80	11.22	11.50	3.55	.99	3.12	3.83	9.65	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	95	39	33	38	41	34	28	25	62	79	81	25	7	22	27	68	704
< 110																	
< 210																	
>= 210																	
Totals	95	39	33	38	41	34	28	25	62	79	81	25	7	22	27	68	

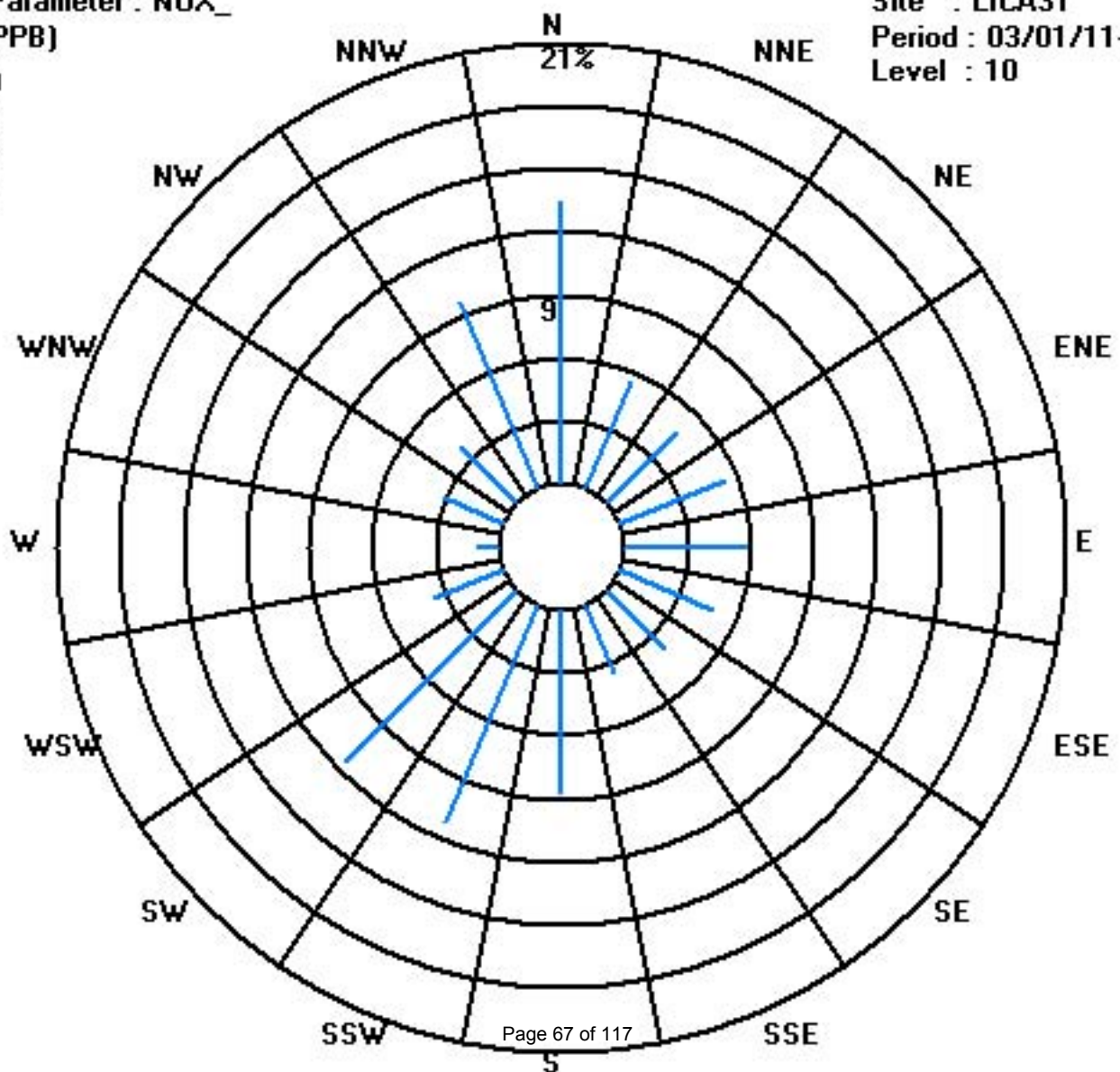
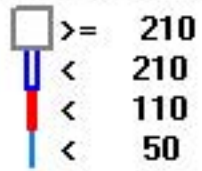
Calm : .00 %

Total # Operational Hours : 704

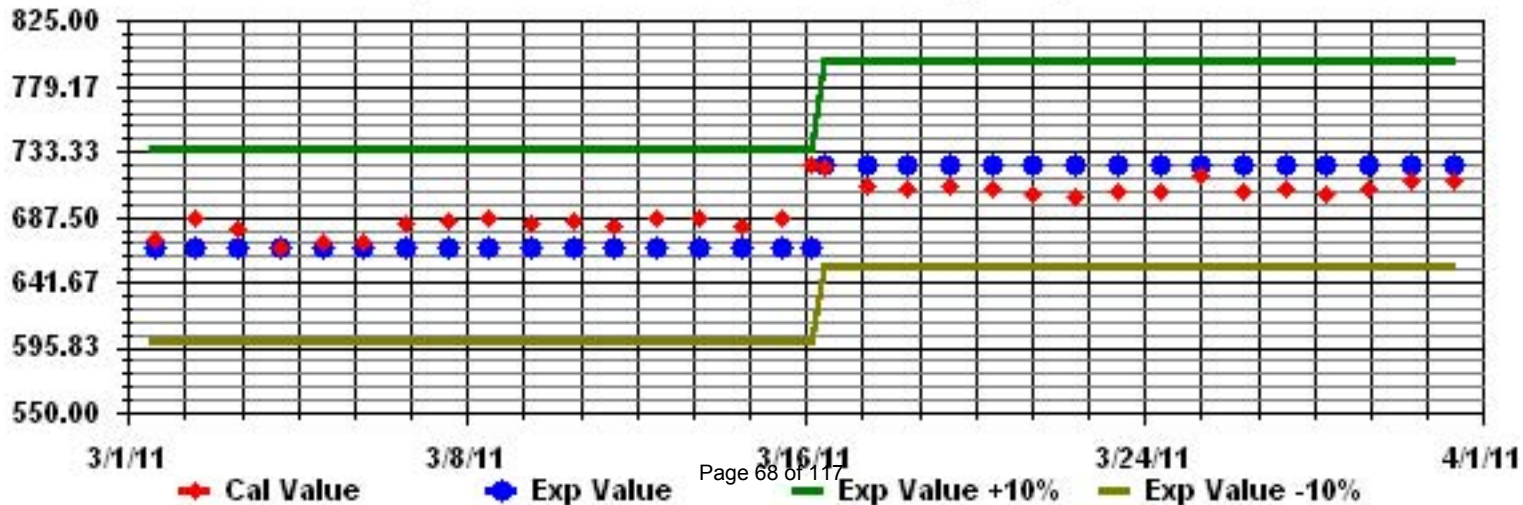
Class Limits (PPB)

Period : 03/01/11-03/31/11

Level : 10



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



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2011

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

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	4.7	3.8	4.7	3.2	5.6	5.4	5.9	4.8	7.1	5.5	4.6	3.6	3.6	3.6	3.9	4.5	4.8	3.6	3.7	4.2	3.4	6.1	6	12.3	12.3	4.9	24
2	16.2	11.8	10.2	11.4	11.2	11.6	11.8	7.8	9.3	11.8	11.4	6.2	10.1	9.4	4.6	5.6	7.3	8.3	6.8	1.8	3.2	1.7	3.2	2.7	16.2	8.1	24
3	4.8	4.6	2.1	1.4	3.8	4.9	2.8	3.5	6.4	4.8	5.2	6.9	6	5.1	3.6	3.1	3.8	4.6	2.7	3.3	4.6	5.7	3.8	4	6.9	4.2	24
4	4.1	4.2	3.2	3.9	5.5	5.2	5.7	3.9	4.5	4	2.4	3.2	4.1	4.9	5.3	5.3	4	5.2	5.5	6.2	5.2	5.9	5.1	5.8	6.2	4.7	24
5	4.2	4.3	6.1	6.6	5.7	4	3.1	5.9	4.9	6.9	7	4.5	5.8	5.1	5.7	5.6	4.9	5.9	4.9	4.9	4	5.4	5.1	4.5	7.0	5.2	24
6	3.3	4.6	4.2	5.5	5.3	8.2	6.6	6.1	6.2	7.5	3.8	2.3	4.4	3.3	6.4	5.3	8.4	7.6	5.7	7	3.5	4.5	6	8.4	8.4	5.6	24
7	7.7	8.2	5.6	3.1	4.9	7	4.3	5.9	4.7	5.6	4.5	5.6	5.3	5.6	6.1	11.4	10	11.7	9.3	8.6	9.9	8.4	8.5	10.2	11.7	7.2	24
8	9.3	10.7	11.2	10.1	9.8	10.2	12.4	11.4	11.3	11	17.9	19.6	17.4	16.4	11.4	12.8	12.4	11.6	12.9	14.5	13.3	15.3	19.4	19.4	19.6	13.4	24
9	19.3	17.7	18.6	21	21.9	23.9	20.5	20.9	27.1	25.9	25.7	29.5	33.5	32.5	32.6	29.9	29.8	26.1	20.5	22.7	24.4	19.5	18.7	17.4	33.5	24.2	24
10	15.1	17.3	15.9	12	10.1	10.2	18.6	11.9	9.1	9.9	5.2	6	6	8.5	6.9	9.1	8.7	7.9	7.9	7.7	6.3	6.8	10	5.5	18.6	9.7	24
11	2.8	3.5	5.1	5.9	5.8	6.5	6.1	2.1	3.5	N	2.6	4.8	7.5	4.4	3.4	7.9	3.2	3.2	4.2	4.3	8	8.3	8.9	6.7	8.9	5.2	23
12	8	6.4	5.7	7.4	7	6.4	6	5.8	5.1	12.2	7.7	5.8	8.5	6.6	7.7	8.3	9.4	9.3	8.7	7.7	8.4	9.2	7.7	8.1	12.2	7.6	24
13	9.5	9.5	8.9	8.6	6.3	8.6	9	8.1	9.3	11.3	12.7	13	14	15.4	18.7	18.7	19.8	23.5	24.3	20	17.5	16.5	17	18.6	24.3	14.1	24
14	15.9	17.4	14.5	15.4	13.8	12	17.4	13.8	14.7	13.2	11.4	12.3	14.4	12.4	15.5	16.6	12.4	11.5	11.6	10.5	10.6	12.5	12	9.6	17.4	13.4	24
15	9.3	8.3	7.4	10.8	11.5	10.5	10.4	11	10.8	10.8	10.4	8.6	8.9	10.3	12.5	8.6	6.9	6	8.8	9.2	7.2	7.4	8.3	8.4	12.5	9.3	24
16	8.8	8.1	8.8	6.3	6.3	7.8	5.4	5.3	8	14.8	9.9	6.9	8.8	10.8	6.5	4.1	7.6	7.9	9	8.6	9.7	10	8	6.4	14.8	8.1	24
17	7	3.5	4.1	4.5	3.6	4.4	6	7.8	6.2	7.4	6.8	9.7	8.6	8.4	9.8	10.5	13.5	16.1	12.7	12.5	13.8	16.2	15.7	16.6	16.6	9.4	24
18	15	14.1	12.1	9.1	9.6	11	13	14.1	15.6	15	15.1	14.6	10.3	4.3	8	11.9	19.2	14.8	10.1	7.9	8.8	9.3	10.3	9.4	19.2	11.8	24
19	10.8	8.6	6.9	5.5	5.3	4	3	2.5	2.8	2.9	3.8	3.3	4.1	4.8	7.1	6.5	4.6	7	6	5.8	6.8	3.3	5.7	7.4	10.8	5.4	24
20	7.9	8.5	8.9	10.5	9.9	10.6	9.5	6.6	6.7	4.7	5.1	6.2	7.5	8.1	6.4	8.8	5.4	4.1	5.4	3	5.5	6.6	6.4	2.6	10.6	6.9	24
21	3.8	5.2	4.7	4.2	4.6	6.3	7	5.6	5	5.5	6.4	8.8	6.7	5.5	6.3	5.9	5.3	2.3	2.5	3.7	2.6	3	3.3	2.9	8.8	4.9	24
22	3.9	4.5	3.9	5	3.5	2.9	2	2.9	2	2.5	2.7	1.3	3.2	2.3	3.4	2.7	3.4	4.8	4	4.7	3.9	1.4	0	2.7	5.0	3.1	24
23	1.4	0.8	2.4	4.5	2.9	5.4	4.5	4.3	4.2	4.5	1.4	5.8	C	C	C	9.2	1.4	2.4	5.2	1.8	2.8	2.4	4.3	3.8	9.2	3.6	24
24	3.8	5.6	7.1	6.2	4.4	2.4	5.7	6.4	16.2	6.7	7.1	5	7.5	6.4	6	5.8	5.3	4.8	6	5.6	5.3	5.7	5.7	8.8	16.2	6.2	24
25	9.8	8.2	7.7	9.3	7	9.6	7.7	9.6	10	12.4	13.6	12.8	10.7	9.8	7.9	10.3	7.3	4.5	6.3	5.2	7.5	7.2	8.4	8	13.6	8.8	24
26	9	9.3	8.6	7.3	5.3	5.5	6.1	5.7	2.9	3.5	8.1	10.6	6.1	8.6	9.6	12.1	7	6.3	9.6	11.6	9.9	9.7	9.3	5.4	12.1	7.8	24
27	6.4	7.9	8.1	10	10.8	10.1	9.9	9.8	9.8	9.6	8.9	10.6	12.8	12.5	13	10.3	9.5	8.5	5.9	9.3	9.3	8.4	7.6	6.5	13.0	9.4	24
28	6.6	9.1	10.3	10.8	11.6	10.8	11.9	12.3	10.5	9.4	11.4	14.8	17.4	18.4	19.2	18.6	16.6	16.9	18.1	19	14.6	13.5	13.1	11.1	19.2	13.6	24
29	12.5	16.3	15.3	14	17.1	16.4	13.8	11.9	12.9	16.2	17.5	16.2	14.2	13	12.8	12	12.7	14.4	21.1	21.3	19.4	17.3	16.9	15.2	21.3	15.4	24
30	8.8	0	0	8.5	8.7	9.7	8.8	10.2	13.5	7.9	6.6	8.4	8.7	11.3	11	10.2	12.4	13.8	19.6	18.1	20.2	20.6	21	21	21.0	11.6	24
31	14.3	5.8	1.7	3.5	3	4.1	2.9	4.2	2.3	1.2	0.9	2	0	N	3.6	1	1.5	8.5	4.9	1.9	2.6	2.9	2.5	2.4	14.3	3.4	23
HOURLY MAX	19	18	19	21	22	24	21	21	27	26	26	30	34	33	33	30	30	26	24	23	24	21	21	21			
HOURLY AVG	8.5	8.0	7.5	7.9	7.8	8.2	8.3	7.8	8.5	8.8	8.3	8.7	9.2	9.2	9.2	9.4	9.0	9.1	9.2	8.8	8.8	8.7	9.0	8.8			

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

OBJECTIVE LIMIT:

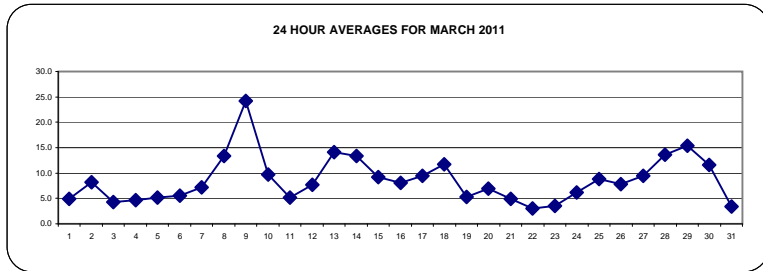
ALBERTA ENVIRONMENT:

1-HR	-	ug/m3	24-HR	30	ug/m3
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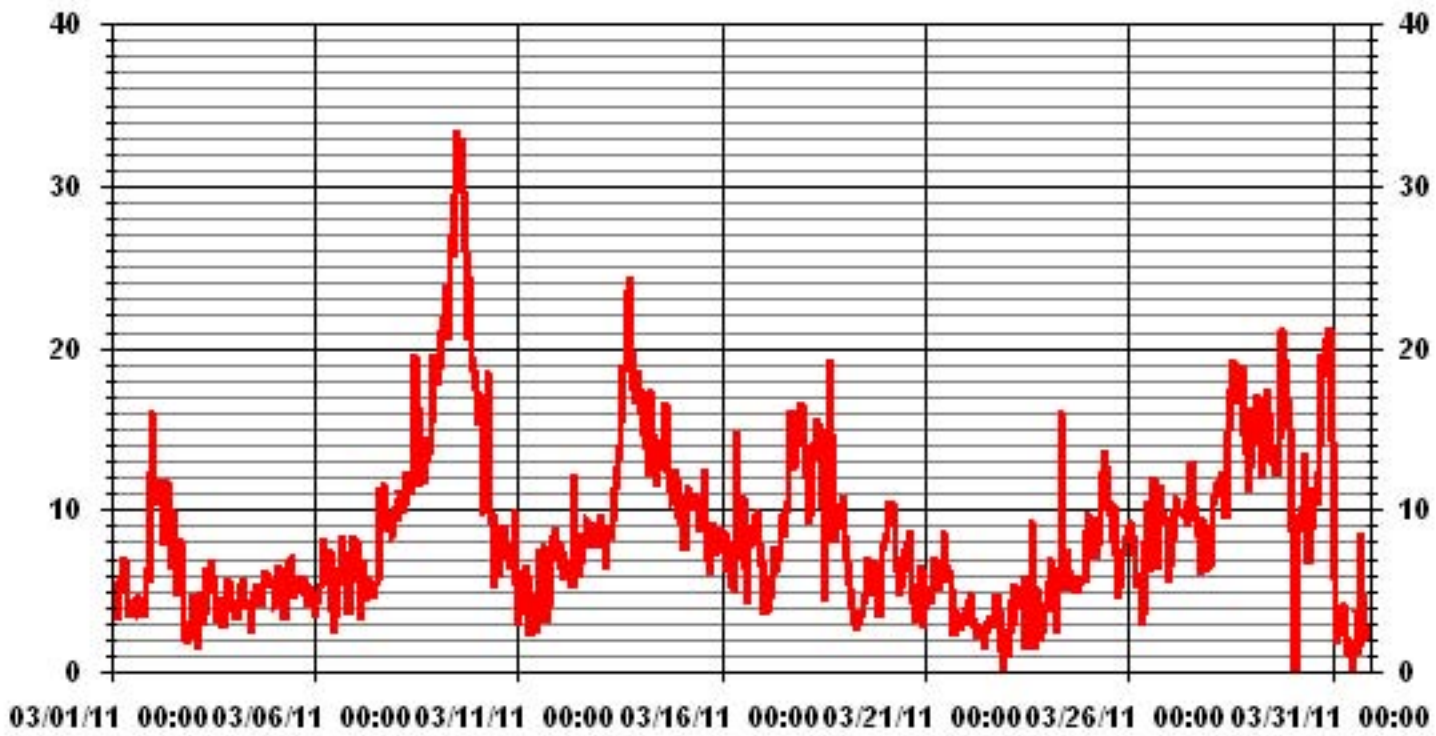
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-			
NUMBER OF 24-HR EXCEEDENCES:	0	PROPOSED CANADA WIDE GUIDELINE		
NUMBER OF NON-ZERO READINGS:	735			
MAXIMUM 1-HR AVERAGE:	33.5	UG/M ³	@ HOUR(S)	12 ON DAY(S) 9
MAXIMUM 24-HR AVERAGE:	24.2	UG/M ³		ON DAY(S) 9
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	742 HRS
MONTHLY CALIBRATION TIME:	3	HRS	AMD OPERATION UPTIME:	99.7 %
STANDARD DEVIATION:	5.27		MONTHLY AVERAGE:	8.61 UG/M ³

24 HOUR AVERAGES FOR MARCH 2011



01 Hour Averages



— LICA31 PM2 UG/M3

LICA31
PM2 / WDR Joint Frequency Distribution (Percent)

March 2011

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	12.99	5.54	4.60	5.41	5.95	4.73	4.05	3.51	8.93	10.41	11.77	3.38	.94	3.24	4.05	10.01	99.59
< 60.0	.40	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.40
< 80.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	13.39	5.54	4.60	5.41	5.95	4.73	4.05	3.51	8.93	10.41	11.77	3.38	.94	3.24	4.05	10.01	

Calm : .00 %

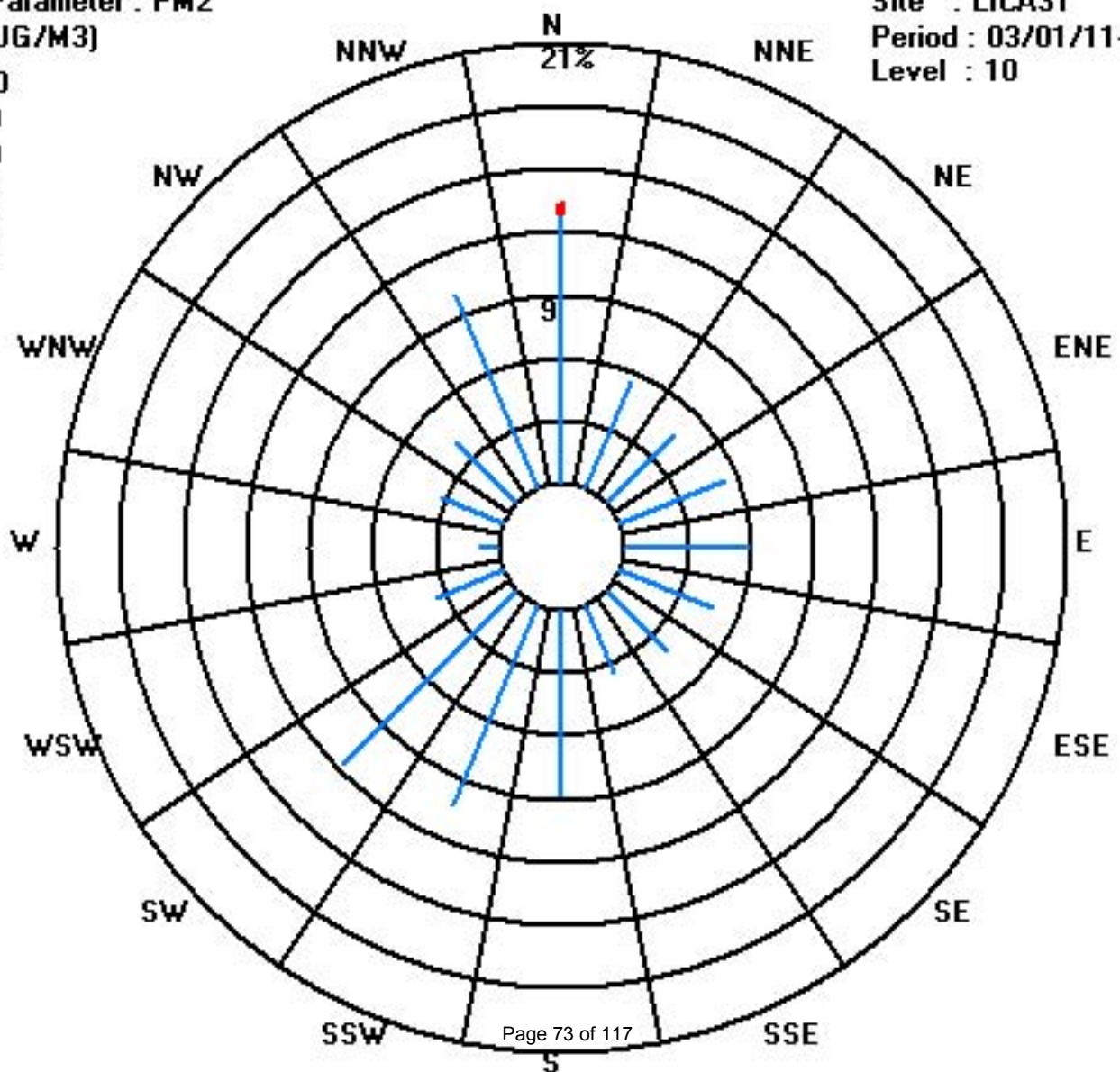
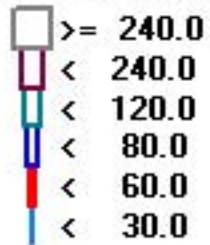
Total # Operational Hours : 739

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	96	41	34	40	44	35	30	26	66	77	87	25	7	24	30	74	736
< 60.0	3																3
< 80.0																	
< 120.0																	
< 240.0																	
>= 240.0																	
Totals	99	41	34	40	44	35	30	26	66	77	87	25	7	24	30	74	

Calm : .00 %

Total # Operational Hours : 739



Temperature

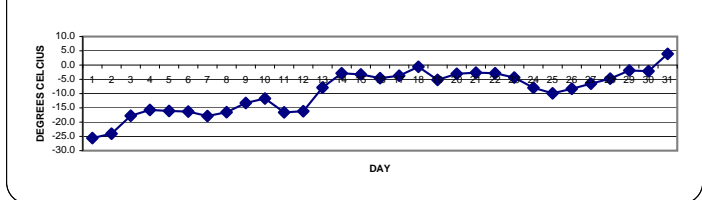
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA
MARCH 2011
AMBIENT TEMPERATURE hourly averages (Degrees C)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY	1	-28.5	-28.6	-29	-29.2	-29.4	-29.6	-29.7	-29.6	-27.1	-25	-22.3	-20.5	-19.5	-19.4	-19.9	-20.9	-21.7	-23.3	-25.3	-26.2	-26.7	-27.3	-27.7	-27.7	-19.4	-25.6	24	
2	2	-28.3	-28.2	-28.6	-28.4	-29	-28.8	-28.4	-27.8	-26.4	-23.9	-21.5	-20.7	-21.2	-20.6	-20.6	-21.3	-21.7	-21.7	-21.8	-21.9	-21.9	-21.6	-21.5	-21.7	-20.6	-24.1	24	
3	3	-21.7	-21.9	-22.1	-22.1	-22.1	-22.4	-22.1	-21.8	-20	-17.8	-15.1	-13.7	-12.4	-12.8	-12.8	-12.8	-14	-15	-17	-17.1	-17.1	-17.3	-17.4	-17.7	-17.7	-12.4	-17.8	24
4	4	-17.9	-17.9	-17.9	-18.2	-18.4	-18.5	-18.6	-18.8	-15.8	-13.7	-12.5	-11.7	-11	-12.2	-10.8	-10.9	-12.3	-13.8	-15.9	-16.8	-17.8	-18.5	-19	-18.6	-10.8	-15.7	24	
5	5	-20	-19.6	-19.5	-19.1	-19.2	-19.4	-19.6	-19.3	-18.2	-17	-14.6	-12.6	-10.2	-10.9	-10.7	-12.5	-13.8	-14.5	-15.4	-15.7	-15.8	-15.8	-16.2	-16.4	-10.2	-16.1	24	
6	6	-16.5	-17.2	-17.3	-16.7	-17.6	-18.4	-19.2	-19.1	-17.5	-14.9	-13.3	-12.3	-12.9	-12.5	-11.4	-11.8	-12.9	-14.6	-16.9	-18.3	-19.4	-19.9	-20.2	-20.6	-11.4	-16.3	24	
7	7	-20.1	-20.2	-19.9	-19.7	-19.6	-19.6	-19.5	-19.3	-18.8	-18.3	-17.5	-15.3	-14.1	-13.6	-13.6	-14.2	-15.2	-17.2	-18.5	-19.3	-20.1	-20.6	-20.9	-13.6	-17.9	24		
8	8	-21.6	-22.3	-22.9	-23.2	-23.6	-23.4	-23.5	-23	-20.3	-16	-11.9	-10.9	-9.2	-8.4	-8.5	-9.1	-9.7	-11.1	-13.3	-14.4	-15.9	-17.2	-18.2	-19.1	-8.4	-16.5	24	
9	9	-19.5	-19.9	-19.2	-19.4	-19.9	-20	-20.3	-20	-17.3	-14.6	-12.8	-10.1	-9.5	-7.3	-5.8	-5.2	-6.1	-8.9	-10.2	-10.6	-10.8	-10.4	-10.6	-10.7	-5.2	-13.3	24	
10	10	-10.5	-10.8	-11.8	-12.5	-13	-13.2	-12.7	-12.1	-11	-10.2	-10.5	-9.8	-9.4	-9	-9.3	-10.1	-10.2	-11.2	-12.5	-13.1	-13.7	-14.3	-15	-15.5	-9.0	-11.7	24	
11	11	-16.4	-17	-17.7	-18.1	-18.3	-19.7	-21.1	-20.8	-18.9	-18	-15.6	-14.2	-12.7	-11.3	-12.3	-12.4	-14.8	-15.6	-16.1	-16.9	-17.9	-19.2	-19.2	-11.3	-16.6	24		
12	12	-19.6	-20.4	-20.9	-20.7	-20.9	-21	-21.3	-19.9	-18.2	-17	-14.3	-14.1	-13.7	-12	-11.9	-12	-12.2	-13	-13.7	-13.9	-14.2	-14.3	-14.4	-14.7	-11.9	-16.2	24	
13	13	-15.1	-15.5	-16	-15.6	-15	-14.8	-14.9	-13.8	-8.8	-5.8	-3.5	-0.9	-1.3	0.8	-0.5	-1.9	-2.6	-4	-5.5	-6.1	-6.9	-7.7	-7.2	-6.8	0.8	-7.9	24	
14	14	-6.7	-6.2	-6	-6	-5.9	-6.2	-6.1	-5.5	-4.3	-2.7	-1.8	-0.2	0.7	1.5	2.3	1.7	2.6	1	-1	-2.2	-3.3	-4.1	-4.9	-5.8	2.6	-2.9	24	
15	15	-6.2	-6.8	-7.7	-8	-8.1	-7.9	-7.5	-6.4	-5.3	-1.5	-0.6	-0.1	0.3	1.9	1	0.5	0.2	-0.5	-1.6	-1.8	-2.4	-2.9	-3.3	-3.8	1.9	-3.3	24	
16	16	-4.6	-5.7	-6.2	-6.2	-6.4	-6.6	-7.5	-7.7	-7.3	-6.2	-5.4	-4.4	-3.8	-2.7	-2.1	-1.6	-1.7	-1.8	-2.4	-2.7	-2.9	-3.8	-4.9	-5.7	-1.6	-4.6	24	
17	17	-6.1	-6.4	-6.7	-6.7	-6.8	-6.9	-6.8	-6.1	-5	-3.5	-2.1	-1.9	-0.4	-0.7	-0.6	-0.2	-0.9	-1.7	-2.6	-3	-3.2	-3.4	-3.8	-4	-0.2	-3.7	24	
18	18	-4.4	-4.5	-4.8	-5	-5	-4.8	-5	-4.9	-4.2	-0.8	3.3	5	5.5	6.2	6.4	5.3	4.7	3.3	1	-0.6	-1.5	-2.5	-3.2	-3.8	6.4	-0.6	24	
19	19	-4.4	-5	-6.1	-7.6	-8.6	-9	-8.1	-7.7	-6.8	-5.3	-4.1	-2.9	-2.1	-2.5	-3.3	-3.4	-3.2	-3	-4.2	-5.2	-5.4	-5.7	-5.6	-5.3	-2.1	-5.2	24	
20	20	-5.5	-5.5	-5.9	-6	-5.9	-5.6	-5.2	-4.8	-4.2	-3.7	-2.9	-2.2	-1.2	-0.7	-0.3	0.1	0.6	-0.6	-1.6	-2.1	-2.4	-2.4	-2.6	-2.8	0.6	-3.1	24	
21	21	-2.8	-2.9	-2.9	-2.9	-3.1	-3.2	-3.5	-3.6	-3.3	-3.2	-2.7	-2.5	-2.2	-1.9	-1.5	-1.2	-1.4	-1.7	-1.9	-2.2	-2.5	-3.2	-3.6	-4	-1.2	-2.7	24	
22	22	-3.8	-3.6	-3.5	-3.9	-4	-4.3	-4.4	-4.4	-4	-3.7	-2.7	-2	-1.3	-1.2	-0.6	-0.8	-1	-1.3	-2	-2.2	-2.6	-3	-3.7	-4.5	-0.6	-2.9	24	
23	23	-4.8	-4.6	-4.5	-4.6	-4.9	-4.9	-4.9	-4.6	-4.2	-3.5	-2.8	-1.9	-1.9	-1.8	-1.7	-2.1	-3	-4.1	-5	-5.6	-6.1	-6.8	-7.8	-8.7	-1.7	-4.4	24	
24	24	-9.2	-9.6	-9.9	-9.8	-10	-10.4	-11.1	-10.5	-9.8	-9.1	-8.1	-6.3	-4.3	-3.5	-2.8	-2.6	-3.1	-4.8	-6.7	-8.1	-8.9	-9.8	-10.8	-11.8	-2.6	-8.0	24	
25	25	-12.7	-13.5	-14.2	-14.8	-14.4	-14.4	-14.5	-13.7	-11.8	-10.5	-9.2	-7.5	-6	-5.5	-5.8	-5.4	-5.4	-5.9	-7.7	-8.8	-9.1	-9	-9	-9.1	-5.4	-9.9	24	
26	26	-9.4	-9.5	-9.8	-9.9	-10	-10.2	-10.4	-10.1	-9.9	-9.5	-8.9	-8.3	-7.7	-7.2	-6.5	-6.7	-6.6	-6.7	-7	-7.1	-7.1	-7	-6.9	-6.9	-6.5	-8.3	24	
27	27	-7	-7.2	-7.5	-7.5	-7.5	-7.7	-7.8	-7.6	-7.3	-6.9	-6.5	-6.2	-6.3	-6	-5.3	-4.7	-4.1	-4.7	-5.5	-5.9	-6.3	-6.8	-7.2	-7.3	-4.1	-6.5	24	
28	28	-7.4	-7.5	-7.4	-7.2	-7.1	-7.1	-7	-6.6	-6	-5.1	-4.2	-3.8	-3.5	-3.2	-2.8	-2.7	-2.9	-2.8	-3	-3.2	-3.3	-3.4	-3.4	-3.7	-2.7	-4.8	24	
29	29	-4	-4.2	-4.3	-4.4	-4.4	-4.4	-4.5	-4.4	-4	-3.3	-2.3	-1.3	-0.5	0.3	1	1	0.8	0.6	-0.1	-0.8	-1.1	-1.2	-1.4	-1.5	-1.6	1.0	-1.9	24
30	30	-2.3	-3.7	-4.7	-5	-4.7	-4.6	-4.8	-4	-4	-3.4	-2.3	-1.1	-0.7	-0.7	0.9	1.7	2.3	0.8	-0.5	-1.5	-2.2	-2.4	-2.6	-1.6	2.3	-2.1	24	
31	31	-0.6	0.8	0.4	0	-0.5	-1.1	-0.7	1.1	3.4	5	7.7	8.8	9.7	9.7	9.9	7.5	7.1	5.7	5.1	4.8	3.7	2.8	2.1	1.8	9.9	3.9	24	
HOURLY MAX		-0.6	0.8	0.4	0.0	-0.5	-1.1	-0.7	1.1	3.4	5.0	7.7	8.8	9.7	9.7	9.9	7.5	7.1	5.7	5.1	4.8	3.7	2.8	2.1	1.8				
HOURLY AVG		-11.5	-11.8	-12.1	-12.2	-12.4	-12.5	-12.6	-12.1	-10.8	-9.3	-7.7	-6.6	-5.9	-5.4	-5.2	-5.4	-5.8	-6.8	-8.0	-8.6	-9.1	-9.6	-10.0	-10.3				

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

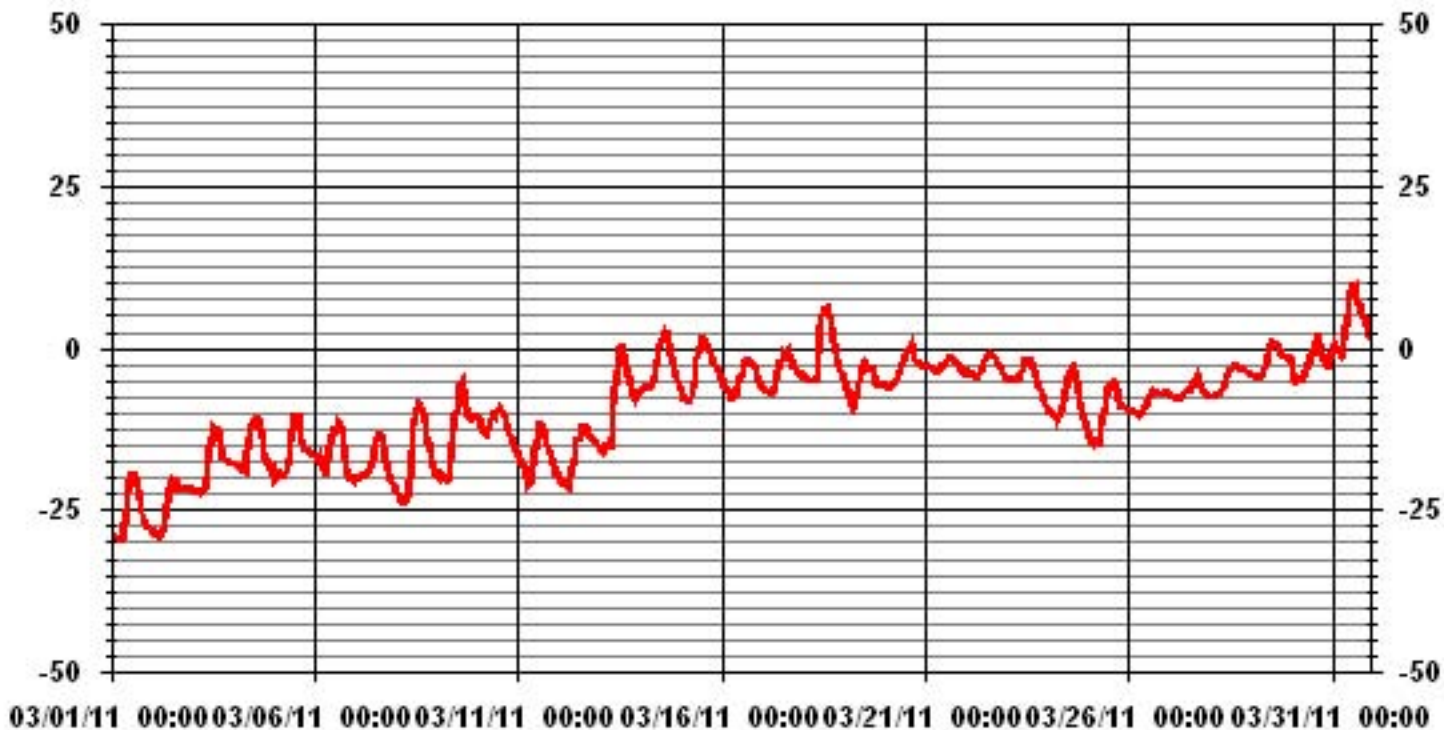
24 HOUR AVERAGES FOR MARCH 2011



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-29.7 °C	@ HOUR(S)	6	ON DAY(S)	1
MAXIMUM 1-HR AVERAGE:	9.9 °C	@ HOUR(S)	14	ON DAY(S)	31
MAXIMUM 24-HR AVERAGE:	3.9 °C			ON DAY(S)	31
CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS		
STANDARD DEVIATION:	7.86	AMD OPERATION UPTIME:	100.0 %		
		MONTHLY AVERAGE:	-9.24 °C		

01 Hour Averages



— LICA31 TPX DGC

Barometric Pressure

01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2011

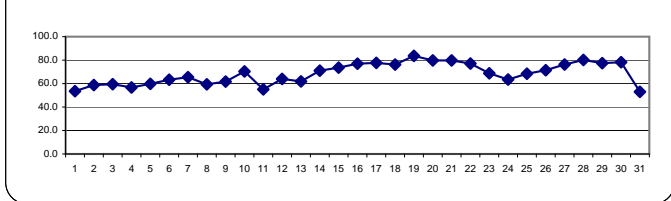
RELATIVE HUMIDITY hourly averages (%)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		66	66	65	65	64	64	64	63	59	55	50	45	40	37	38	41	41	43	47	50	52	55	57	58	66	53.5	24	
2		59	59	61	63	64	64	63	62	58	51	41	40	45	43	42	51	65	68	69	68	68	68	69	69	69	69	58.8	24
3		69	69	69	68	69	69	69	69	68	65	61	53	45	43	43	42	45	48	54	58	62	63	63	64	69	59.5	24	
4		64	65	65	66	67	68	70	70	59	51	47	45	42	44	39	39	43	47	53	57	61	64	67	68	70	56.7	24	
5		72	72	71	70	70	69	69	69	68	64	57	53	45	46	42	45	49	52	55	57	57	57	60	66	72	59.8	24	
6		70	74	75	70	72	74	74	71	66	59	53	51	51	48	45	46	49	55	63	67	69	72	73	72	75	63.3	24	
7		71	71	71	71	71	71	71	71	70	67	63	57	53	52	53	54	57	58	64	67	70	72	73	73	73	75	65.5	24
8		73	72	71	71	71	71	70	68	63	61	53	45	41	40	42	44	46	48	54	57	61	66	68	69	73	59.4	24	
9		69	70	69	71	73	73	72	69	64	58	53	50	50	47	46	46	49	56	62	66	67	67	66	68	73	61.7	24	
10		66	67	69	71	73	74	79	79	77	72	68	64	63	62	61	61	65	71	77	77	76	75	73	69	79	70.4	24	
11		69	67	65	64	66	65	66	65	57	53	46	42	40	37	39	40	44	49	53	55	57	58	62	63	69	55.1	24	
12		65	70	74	71	69	68	67	62	57	56	54	54	55	54	55	58	61	64	67	69	70	71	72	73	74	64.0	24	
13		75	76	76	77	77	77	77	74	60	49	43	40	44	41	45	48	50	56	60	62	67	70	71	70	77	61.9	24	
14		71	71	71	72	73	75	76	76	75	70	70	66	64	63	61	64	61	65	72	74	78	79	79	79	79	79	71.0	24
15		79	81	84	85	85	85	83	82	79	66	63	71	70	61	63	65	65	68	71	73	74	74	74	75	85	73.6	24	
16		78	80	81	82	83	83	82	84	82	81	79	77	75	73	71	70	72	71	73	71	72	74	76	77	84	77.0	24	
17		77	78	79	79	79	80	80	79	77	75	73	76	70	72	73	69	72	74	79	83	83	84	86	87	87	77.7	24	
18		87	87	87	86	86	86	86	85	85	84	74	65	60	55	51	57	60	65	72	77	80	83	85	86	87	87	76.2	24
19		87	87	86	85	83	83	83	83	83	84	84	83	81	81	80	81	81	80	83	86	85	86	86	86	86	87	83.6	24
20		86	85	85	85	85	85	85	85	85	85	85	84	81	76	74	72	69	71	72	73	75	76	77	78	86	79.8	24	
21		79	79	79	77	78	78	81	84	84	83	81	80	79	78	76	73	74	77	79	81	82	85	85	82	85	79.8	24	
22		76	76	76	80	82	83	83	81	79	78	76	75	74	75	69	69	70	73	78	76	78	80	80	83	83	77.1	24	
23		84	83	83	82	84	85	85	84	79	68	60	58	59	56	57	55	58	60	61	61	61	63	64	85	68.8	24		
24		67	69	70	70	71	71	72	71	68	66	65	62	57	55	54	56	57	60	53	55	54	59	69	72	72	63.5	24	
25		74	75	76	77	77	77	77	75	70	65	63	60	58	58	60	60	57	56	60	66	72	75	76	78	78	68.4	24	
26		82	81	80	74	72	75	75	76	75	73	70	68	63	62	63	63	65	68	69	71	71	72	73	73	82	71.4	24	
27		74	76	80	80	80	81	82	81	79	77	75	73	73	74	72	72	73	75	76	75	73	74	77	78	82	76.3	24	
28		79	83	84	84	83	83	84	84	84	83	82	80	77	76	75	76	76	77	78	79	79	79	79	81	84	80.2	24	
29		82	83	83	83	83	83	83	82	79	76	73	71	69	68	68	69	71	74	78	79	80	81	80	80	83	77.4	24	
30		82	85	86	86	86	86	86	86	85	84	80	76	74	74	67	64	63	67	72	75	78	79	80	77	86	78.3	24	
31		69	63	64	66	68	69	66	60	53	50	41	38	34	31	28	40	40	45	46	47	52	64	69	69	69	53.0	24	
HOURLY MAX		87	87	87	86	86	86	86	86	85	85	85	84	81	81	80	81	81	80	83	86	85	86	86	87				
HOURLY AVG		74.2	74.8	75.3	75.2	75.6	76.0	76.1	75.2	71.8	68.0	64.0	61.4	59.1	57.5	56.5	57.7	59.6	62.5	66.0	68.1	69.8	71.7	73.2	73.8				

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

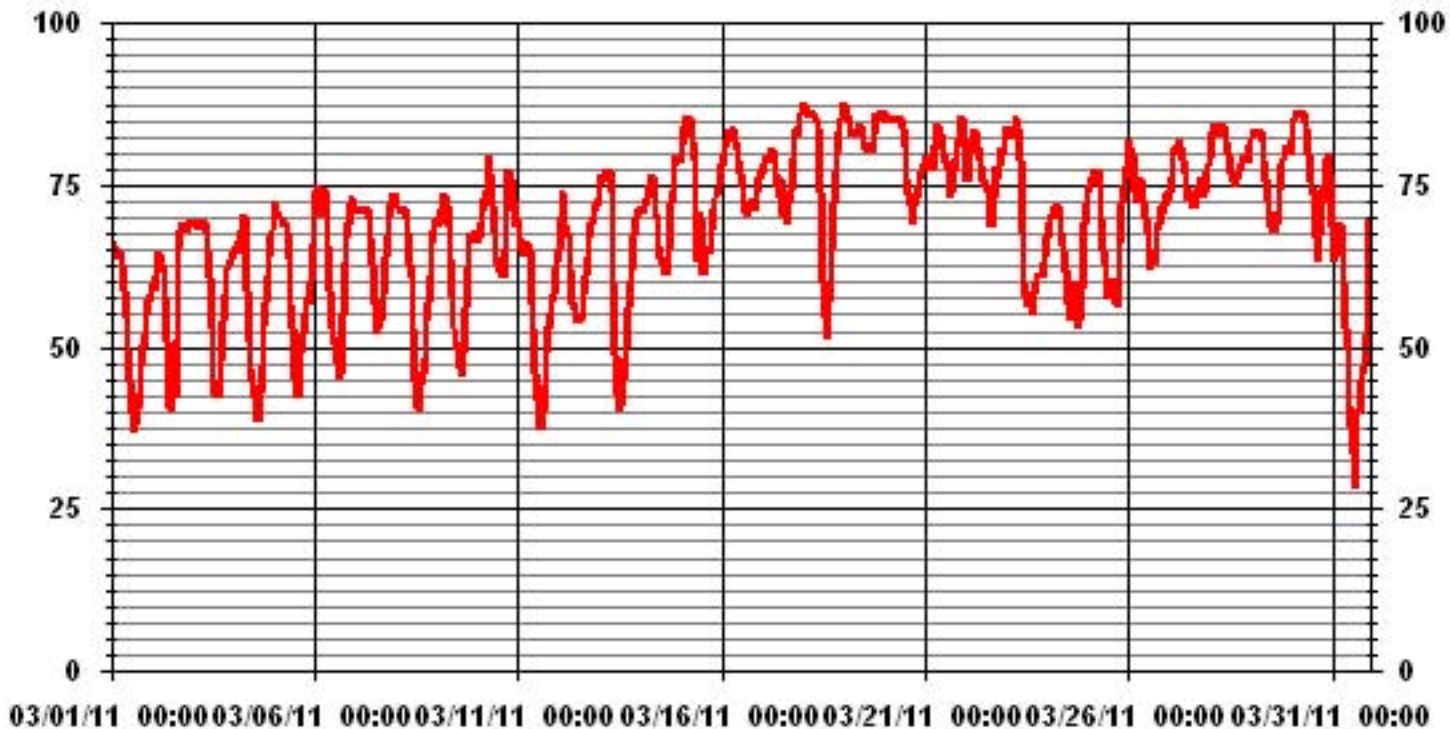
24 HOUR AVERAGES FOR MARCH 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	87	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	83.6	%			ON DAY(S)	19
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	12.20		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	68.46	%	

01 Hour Averages



— LICA31 RH %FS

Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2011

PRECIPITATION hourly averages (mm)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY	DAILY	
HOURLY START	HOURLY END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
2		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.2	0.3	0	0.1	0	0	0	0	0.3	0.9	24
3		0	0	0	0	0.1	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	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	0.0	24
5		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
6		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
7		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
8		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
9		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
10		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.1	0	0	0	0.4	0.5	24
11		0	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2	24
12		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
13		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
14		0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
15		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
16		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
17		0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
18		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
19		0	0	0	0	0	0	0	0	0	0	0	0	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	0.0	24
21		0	0	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	24
22		0	0	0	0	0	0	0	0.1	0	0.1	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4	24
23		0.1	0	0	0	0	0.1	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	24
24		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
25		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
26		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
27		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
28		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
29		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
30		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
31		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
HOURLY MAX		0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.3	0.4	0.1	0.0	0.0	0.0				

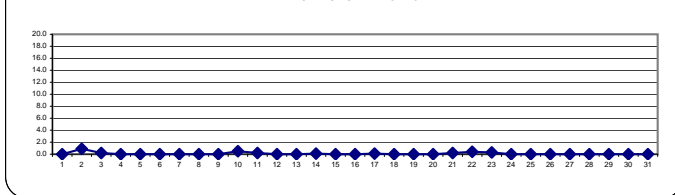
STATUS FLAG CODES

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

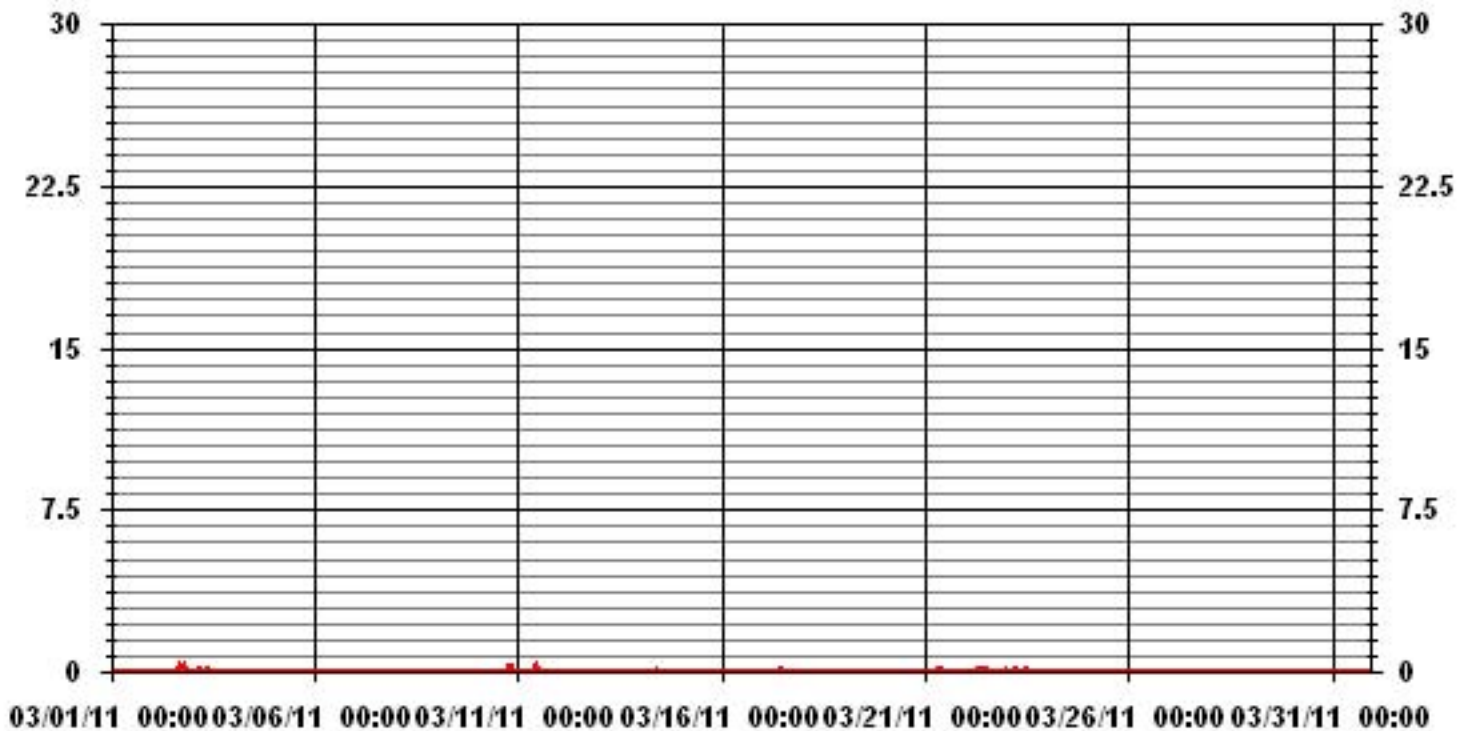
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	0.4	MM	HOUR(S)	19	ON DAY(S)	10
MAXIMUM DAILY TOTAL	0.9	MM			ON DAY(S)	2
MONTHLY TOTAL	2.9	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	0.03		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	0.00	MM	

DAILY TOTALS FOR MARCH 2011



01 Hour Averages



— LICA31 PRECIP MM

Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

MARCH 2011

WIND SPEED hourly averages (km/hr)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOURLY MAX	HOURLY AVG	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		8.2	10.5	10.3	10.3	10.2	10.6	11.1	9.9	9.8	7.4	6.5	7.4	7.8	9.6	7.4	10.7	11.1	11	11.2	11.7	12	11	12	12.7	12.7	8.9	24	
2		12.1	12.1	10.2	11	1.7	5.1	10.7	12.6	11.8	11.6	7.9	10.9	14.2	16	16	15	13.4	13.3	11.4	14.2	15.9	12.6	7.9	6.2	16	7.3	24	
3		3.9	3.4	12.6	1.6	4.9	5.9	6.1	7.7	8.3	11.7	6.2	8.8	8.1	11.5	11.2	11.3	12.1	12.7	5.7	12.8	13.7	12.3	14.3	12.5	14.3	6.5	24	
4		10.5	11.3	9.1	14.2	13.4	13	13.4	12.4	12.6	13.3	12.5	8.2	10.7	12	11.7	13	13.3	16.4	11.3	12.9	12.9	13.5	15.5	15.7	16.4	5.9	24	
5		7.4	3.9	12.3	14.3	10.4	8.5	5.8	4.7	5.5	6.6	7.2	5.8	4.5	4.4	9.1	5.9	5.1	15.3	8.1	14.5	11.8	4.9	5.4	4.5	15.3	4.5	24	
6		4.2	3.2	12.4	12.5	13.5	8	6.2	6.7	6	5.8	9.1	10.8	10.8	10.2	9.2	8.9	8	10.8	12.4	12.5	10.3	8.7	7.5	8.5	13.5	3.8	24	
7		7.4	8.3	7.2	7.8	10.4	12	10.7	10.4	8.5	5.9	5.8	9.2	8.5	8.6	8	6.9	6.1	9.3	11	11.6	12.7	10.4	9.7	10.8	12.7	8.1	24	
8		10.4	10.8	10.9	11	11.1	12.6	11.6	11.1	11.7	14.4	13.7	12.8	13.1	12.4	10.5	10.1	10.4	12.5	13.2	11.6	11.1	9.4	7.5	8	14.4	11.1	24	
9		9.2	8.7	9.6	10.2	7.8	6.8	5.1	6.6	5.9	7.7	9.2	9.3	6.7	9.8	12.7	12.2	7.8	8.4	6.7	6.9	11.2	13.9	18.5	18.7	18.7	6.7	24	
10		18	12.7	13.4	11.1	6.6	9.2	9	10.7	11.1	10.5	11.2	8.2	8.8	10.2	16.1	14.1	15.9	16.4	11.5	8.8	5.5	5.3	6.4	5.3	18	9.2	24	
11		4.9	4.3	4.2	6.7	7.9	8.6	9	9.7	8.1	7.6	9.6	10.7	11.3	8.5	7.6	5.6	6.1	5.1	12.2	12.9	12.1	12.9	12.8	12.8	12.9	2.7	24	
12		11.9	11.3	12.5	9.9	8.4	8.9	10.3	12.3	8.3	11.3	11.7	18.9	19.6	19.3	19.3	19.3	16.7	15.8	15.5	14.2	11.9	11.1	10.6	11.9	19.6	12.2	24	
13		11.9	12.3	5.8	2.9	12.9	13.7	12.5	10.3	4.1	13.8	4.5	3.6	13.2	5.5	7.8	8.9	12	8.8	9.2	10.7	10.1	11.1	0.5	2	13.8	4.4	24	
14		4.3	7.2	5.3	5	4.3	6.8	7.5	6.4	11.3	14.4	14.7	5.8	3.6	8.5	11	11.2	7.5	10.2	11.8	14.1	12.3	10.1	9.6	12.6	14.7	6.2	24	
15		14.2	7	6.4	4.7	5.4	12.3	10.3	6.5	6.2	6.8	10.2	11.3	10.4	3.5	6.8	7.2	6.4	5.6	5	2.8	5.4	6.7	5.2	7.5	14.2	2.4	24	
16		9.1	10.8	11.6	11.3	10.9	8.9	11.4	10.3	10.9	9.9	9.6	10.1	8.9	10.1	11.1	13.1	12.4	9.8	10.7	11.4	14	8.2	5.6	7.7	14	6.1	24	
17		8.5	7.4	6.6	6	4.2	4.9	3.5	6.8	11.6	11.9	10.5	8.2	8.8	9.4	8.1	8.8	7.4	7.9	8.7	8	8.5	10.3	9.2	9.7	11.9	6.3	24	
18		8.8	9	9.7	10.3	11.1	11.4	12.1	13.7	4.3	12	3.9	3.9	12.9	12.8	10.5	8.8	8.4	9	8.7	8.1	11.2	9.5	8.8	8.8	13.7	9	24	
19		8.4	10.2	9.8	10.2	8.4	8.3	8.9	9.2	8.9	10.5	9.8	6.4	6.6	9.7	10.9	10.7	9.8	8.9	6.8	7.2	3.4	6.5	8	8.4	10.9	4.5	24	
20		10	10.2	12.4	13.5	15.7	15.3	18.7	19.9	19.5	19.9	17.4	12.1	6.1	8.4	8.1	6.9	8.9	10	11.6	11.8	11.3	8.7	6	4.4	19.9	10.5	24	
21		1.6	1	0.3	2.5	2.9	2.1	2.8	3.1	3.6	2.3	1.2	3.3	1.4	3	3.1	5.7	3.1	3.3	3.5	4.1	7.9	8.8	5.5	4.2	8.8	1.8	24	
22		3.4	3.5	0.8	0.5	0.8	1.8	1	3.4	2.2	3.5	1.4	1.2	0.9	2.6	6.9	6.1	7.4	9.8	11.5	12.6	11.9	9.6	14	9.6	14	4.1	24	
23		8.7	9.9	9.2	8.4	6.5	5.7	4.6	7.4	7.7	4	6.8	10.7	9.9	6.2	5	7	7.6	5.7	8.3	7.1	8.5	13.4	15.5	15	15.5	7.6	24	
24		14.8	8.7	5.1	9.1	5.9	4.8	3.9	5.4	6.5	7.3	3.2	4.2	3.2	2.5	5.7	6.3	10.7	13.4	11.8	8.4	10.7	12.7	13.5	12.8	14.8	7.8	24	
25		12.5	12	8.3	7.8	4.3	2.4	1.6	14.9	13.2	17.2	17.4	10.2	10.7	11.4	14	15.1	15.2	10.5	10.8	9.4	11.9	11.5	13	11.5	17.4	9.2	24	
26		11.1	10.2	8.5	5.8	5.4	7.6	4.5	2.9	5.4	5.3	5.6	7.9	7	7.2	10.6	12.1	11.4	9	9.6	10.2	10.3	10.3	9.1	9.1	12.1	8.1	24	
27		8.1	7.5	7.8	5.3	5.6	4.1	3.6	4.3	5.6	5.7	6.7	6.4	6.2	9.2	8	8.5	11.4	13.5	9.8	10.9	11.4	13.1	10.7	10	13.5	7.9	24	
28		9.5	7.6	8	7.8	7.9	8.1	9.7	10.2	11.7	14.2	15.3	16.8	15.9	16.3	15.1	16.4	17.2	15.7	15.7	15.8	16.1	18	17.3	17.4	18	13.4	24	
29		15.9	15.9	14.8	14.5	13.1	12.9	12.6	11.4	14.6	12.8	11.2	13	14.8	14.6	16.2	15.8	15.5	12.9	14.2	14.9	14.9	16.2	17	15.3	17	14.3	24	
30		15.1	16.3	15.7	14	17.4	17	16.7	15.1	15.6	15.5	15.8	15.5	10.8	11.6	10.3	14.9	14.3	12.1	12.5	12.8	14.8	15.2	12.7	7	17.4	10.7	24	
31		4.5	3.4	5	2.9	4	5	4.5	4.6	4.4	3.2	0.8	0.8	2.5	9.5	9.4	6.9	6.6	4.3	4.2	2.6	4.6	1.4	5	4.5	9.5	2.1	24	
HOURLY MAX		18.0	16.3	15.7	14.5	17.4	17.0	18.7	19.9	19.5	19.9	17.4	18.9	19.6	19.3	19.3	19.3	17.2	16.4	15.7	15.8	16.1	18.0	18.5	18.7				
HOURLY AVG		9.3	8.7	8.9	8.5	8.2	8.5	8.4	9.1	8.9	9.8	8.9	8.8	9.0	9.5	10.2	10.4	10.3	10.6	10.1	10.6	11.0	10.6	10.1	9.8				

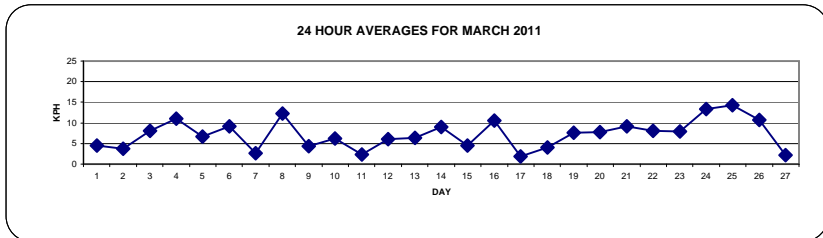
STATUS FLAG CODES

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

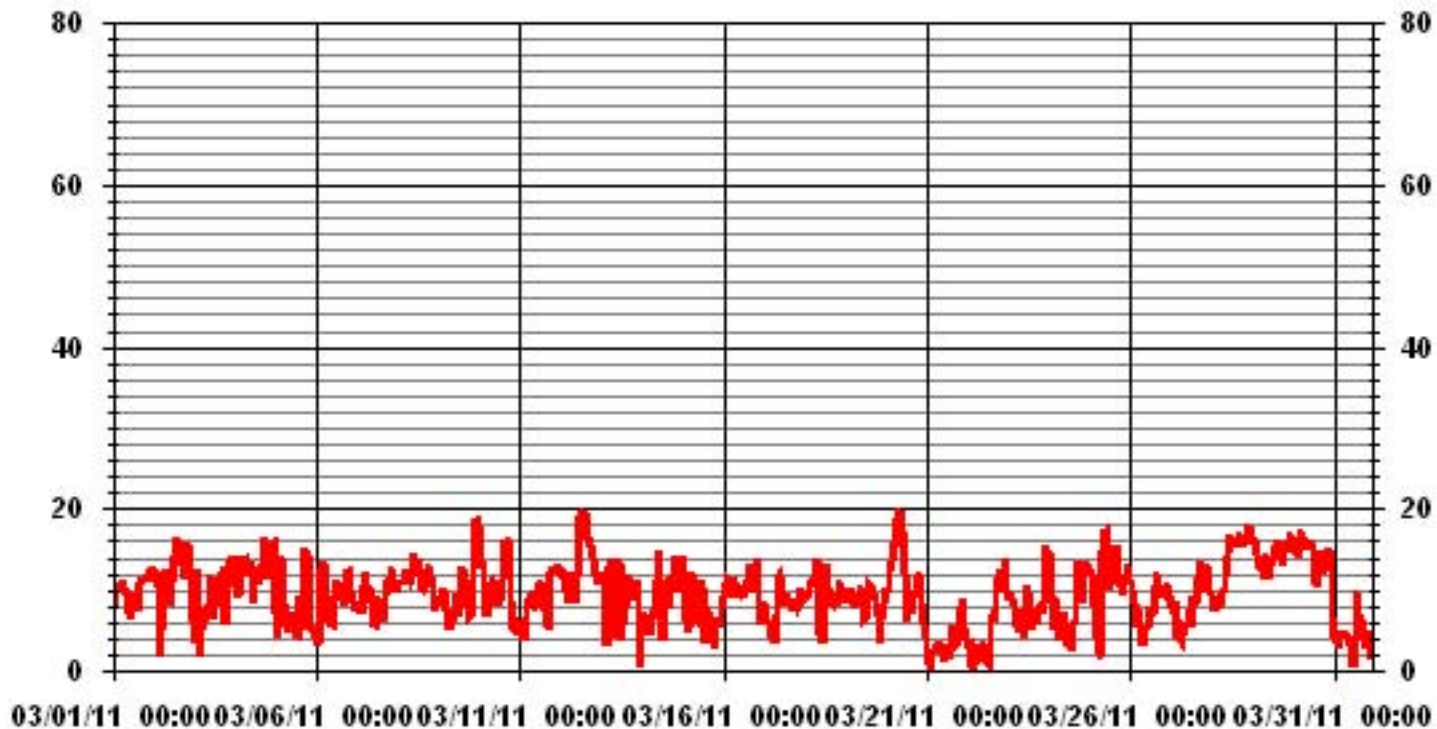
LAST CALIBRATION: June 17, 2010

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	19.9 KPH	@ HOUR(S)	9	ON DAY(S)	20
MAXIMUM 24-HR AVERAGE:	14.3 KPH			ON DAY(S)	29
CALMS (≤ 0 KPH)	0.94 %	OPERATIONAL TIME:	744 HRS		
MONTHLY CALIBRATION TIME:	0 HRS	AMD OPERATION UPTIME	100.0 %		
STANDARD DEVIATION	3.95	MONTHLY AVERAGE	9.50 KPH		



01 Hour Averages



— LICA31 WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MARCH 2011

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	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	20.6	19.8	20	17.3	18.2	18.5	18.2	20.6	19.5	24.8	31.4	23	26.7	27.4	20.8	16.3	16.2	16.5	14.3	14.7	14.7	14.8	13.6	14.3	31.4
2	13.4	19.3	25.9	22.4	N	26.8	26.3	21.1	22.2	23.7	20.4	26.7	31.4	29.2	30.3	31.8	35.5	31	24.3	27.2	32.9	30.3	22.1	36.4	36.4	
3	61.6	49.3	34.9	91.1	22.8	18.7	20.6	16.7	25.2	19.1	20.4	23	22.8	27.4	22.6	24.3	26.1	25.2	22.1	17.1	58.5	27.4	25.6	41.2	91.1	
4	25.4	25.2	63.1	24.8	18.4	17.8	18.2	21.7	28.7	27.8	26.1	22.4	24.5	20.8	24.1	27.2	30.3	36.6	25.6	23.9	24.3	25	30	35.3	63.1	
5	24.8	20.2	17.8	17.3	17.8	17.3	36.2	50.2	13.8	12.3	14.9	25.6	23.9	20.4	28.1	23.2	20	28.1	29.4	16.2	35.1	11.2	15.1	23.7	50.2	
6	22.6	40.5	25.6	30.7	17.8	17.1	14.5	13.8	14.5	14.3	25.6	23	23	20.2	20.4	21.9	20.6	22.6	22.4	21	18.2	18	17.3	18	40.5	
7	18.2	19.5	18.2	19.5	23.5	21.7	21.5	22.2	21.5	20.2	18	21	20.6	21	20.8	20.8	19.3	16.5	16	14.9	18	15.1	13	13.4	23.5	
8	13	13	12.8	13.2	13.4	14.7	15.8	18.2	18.4	27.2	23.9	21.7	21.7	29.4	21.7	22.2	20	21.5	20.8	20.4	20.8	20.8	21.5	20.4	29.4	
9	20	16.7	22.4	21.3	18.4	18.2	16.7	18	18	23.7	20.4	20.8	21.9	23	21.5	21.9	17.3	14.9	15.8	22.6	32.2	32.9	30.7	32.9	32.9	
10	32	23.9	25	22.8	23.9	24.5	20.4	23.2	18.7	28.5	26.5	21.3	22.2	26.1	34.2	34.9	40.8	38.8	24.1	20.4	20.4	21.9	20.8	21.5	40.8	
11	20.2	22.8	42.5	24.3	25.2	23	23.5	23.9	25.2	23.7	24.3	25.6	25	26.3	22.8	24.4	22.8	24.6	30.5	23.5	22.4	20.4	20.8	22.1	42.5	
12	22.6	22.6	20.6	17.6	18.9	16.7	23.7	21.3	19.5	29.4	31.8	34.2	37.3	41.5	40.8	38.1	34.9	42.3	32	32	30	27.4	18.2	17.5	42.3	
13	17.1	18.7	15.2	21	26.3	24.5	21	17.3	27.2	27.2	24.5	6.6	22.6	21.7	14.7	21.3	21.3	19.7	16.9	23.2	19.1	28.7	14.7	11.9	28.7	
14	15.4	24.3	22.3	17.5	21.9	19.1	16	14.2	19.3	20.8	26.3	23.6	17.5	27.8	28.1	25.4	20.4	20.6	24.8	24.3	18.9	16.5	19.3	25	28.1	
15	25.4	24.4	14.3	12.3	19.9	20	16.2	11.4	13.6	14	16.7	22.6	18.9	18.2	18.5	18.5	14.9	15.6	14.3	33.5	16	19.5	17.1	26.3	33.5	
16	28	27.2	27.6	32.4	27.4	24.3	23	22.8	27.2	23.9	22.8	23.4	29.4	22.8	21.7	21.7	19.7	22.6	22.6	26.9	24.5	19.1	10.1	12.1	32.4	
17	16.5	12.5	14.3	15.3	15.3	13.6	23	21.7	20.6	19.7	20.2	22.3	22.1	18.4	16.9	18	17.3	15.8	15.6	16	14	16.2	16	17.5	23	
18	16.4	18.4	17.3	16.5	14.9	17.3	18	19.9	22.8	25.2	24.7	18.6	20.8	21.1	18.9	20.8	22.8	17.1	16.2	16.9	19.7	18	17.3	16.7	25.2	
19	16.2	17.5	16.9	17.8	17.8	17.8	19.5	18.9	18.6	22.6	21	14.7	15.1	18.9	19.5	19.1	18.2	16	13.4	14.5	19.9	12.1	12.1	13.2	22.6	
20	18.2	18	22.6	25.2	29.6	28.3	35.7	36.8	37.2	38.1	37.2	35.7	29.4	32.4	28.3	36.1	23.9	25	28.3	28.9	28.3	35.3	32.9	26.1	38.1	
21	16	14.7	23.6	13.4	27.6	28.5	31.6	32.7	33.3	31.6	28.7	36.1	34	32.2	36.6	37.9	37.2	37	31.8	35.5	32.4	31.3	35.3	39.9	39.9	
22	33.5	31.6	31.6	23.9	26.1	13.4	25.6	25	28.7	27.8	28.3	30.9	27.8	13.8	30	18.6	19.7	18.4	18	22.6	23.2	27.8	26.9	18.7	33.5	
23	15.8	18.4	17.1	16.4	14.5	13.4	15.3	18.6	20.6	30.2	25.8	27.6	24.1	27	28.7	32	32.7	34.8	29.6	25	25	36.8	30.9	30.9	36.8	
24	28.1	21.9	18.2	18.6	16.2	16.5	11.7	19.5	19.9	19.1	15	16.5	14.5	25.2	21.7	20.6	25.2	26.1	30.2	16.5	29.4	23.9	26.7	23.9	30.2	
25	21.3	22.6	18.2	17.5	18	11.9	23.7	28.1	27.4	31.2	37.3	29.4	30.5	33.5	36.4	41.6	40.5	29.8	26.9	23.5	32.7	27.6	30.9	26.7	41.6	
26	25.4	26.1	22.8	19.7	20.2	23.5	18.4	18.2	17.5	17.3	18	21.9	19.7	21.9	23.7	31.1	26.3	24.1	28.7	24.8	29.2	29.4	28.9	27	31.1	
27	23.4	21	21.9	18.5	19.3	21.5	14	19.7	21.7	20.2	25	25.4	24.5	30.2	30.9	25.8	34.5	34.4	26.7	31.1	34	32	25.2	26.1	34.5	
28	25.2	19.7	19.9	22.6	17.8	23.1	21.7	22.6	23.7	29.2	28.7	29.2	28.3	27.6	30.5	28.3	31.6	27.6	27.4	29.2	29.2	31.6	31.3	31.3	31.6	
29	27.2	27.6	24.3	24.3	19.7	20.4	20.2	20.8	24.5	24.1	19.7	23.9	25.6	27.4	26.1	25.6	26.9	23.9	24.5	21.9	22.8	27.2	28.7	29.1	29.1	
30	26.9	24.3	23.2	32.4	37.2	30.2	30.5	27.2	28.9	28.5	29.6	28.5	30.5	28	27.4	24.6	23.2	21	20.6	17.3	19.6	20.4	17.1	13.1	37.2	
PEAK	61.6	49.3	63.1	91.1	37.2	30.2	36.2	50.2	37.2	38.1	37.3	36.1	37.3	41.5	40.8	41.6	40.8	42.3	32.0	35.5	58.5	36.8	35.3	41.2		

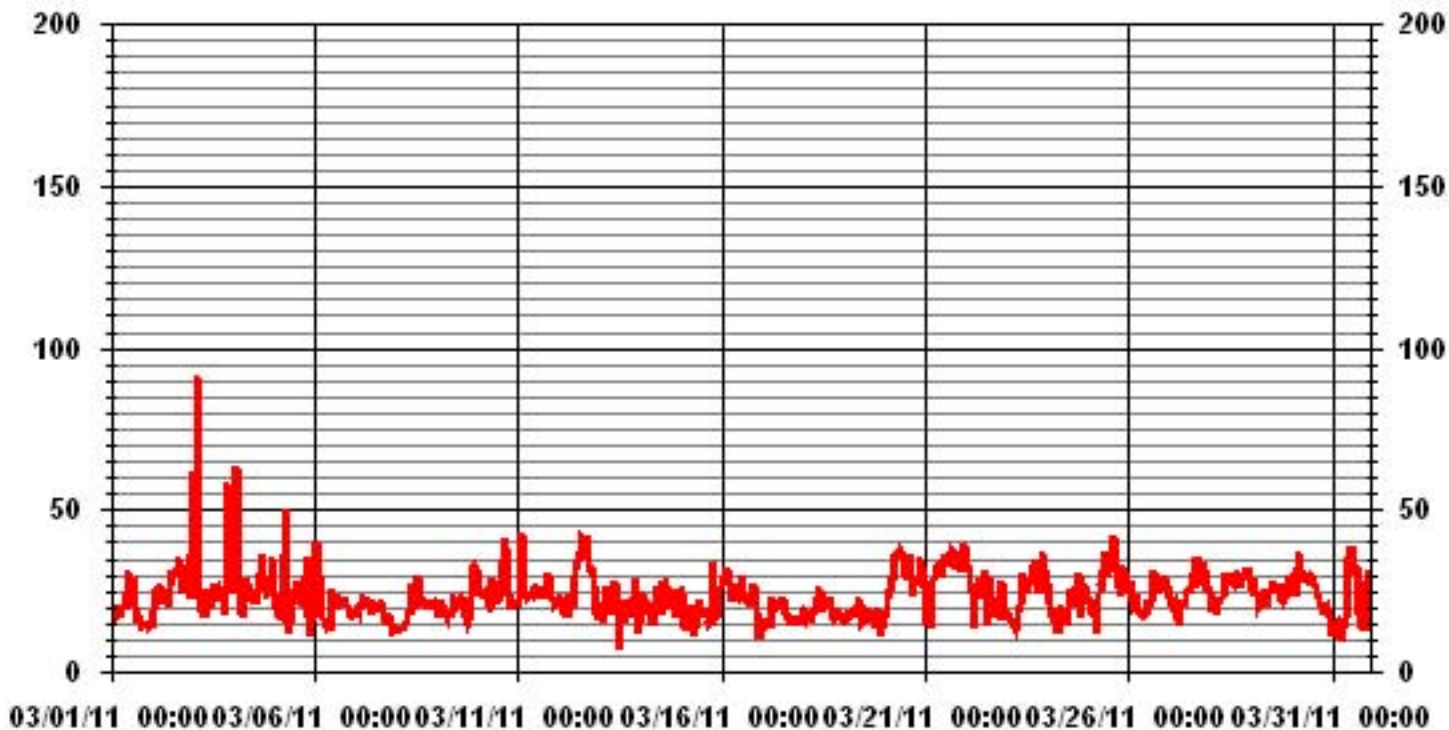
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS READING	91.1	KPH	@ HOUR(S)	3
			ON DAY(S)	3

01 Hour Averages



LICA31
WSP / WDR Joint Frequency Distribution (Percent)

March 2011

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	1.20	1.07	.67	.80	2.28	1.34	1.61	1.47	2.15	1.74	1.07	1.47	.53	.40	.94	.94	19.75
< 12.0	8.60	4.03	2.41	2.15	2.15	2.01	1.47	1.47	4.30	6.45	4.03	1.20	.40	2.28	2.82	6.58	52.41
< 20.0	3.49	.40	1.34	2.28	1.47	1.20	.94	.53	2.55	2.28	6.58	.67	.00	.53	.13	2.41	26.88
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	13.30	5.51	4.43	5.24	5.91	4.56	4.03	3.49	9.00	10.48	11.69	3.36	.94	3.22	3.89	9.94	

Calm : .94 %

Total # Operational Hours : 744

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	9	8	5	6	17	10	12	11	16	13	8	11	4	3	7	7	147
< 12.0	64	30	18	16	16	15	11	11	32	48	30	9	3	17	21	49	390
< 20.0	26	3	10	17	11	9	7	4	19	17	49	5		4	1	18	200
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	99	41	33	39	44	34	30	26	67	78	87	25	7	24	29	74	

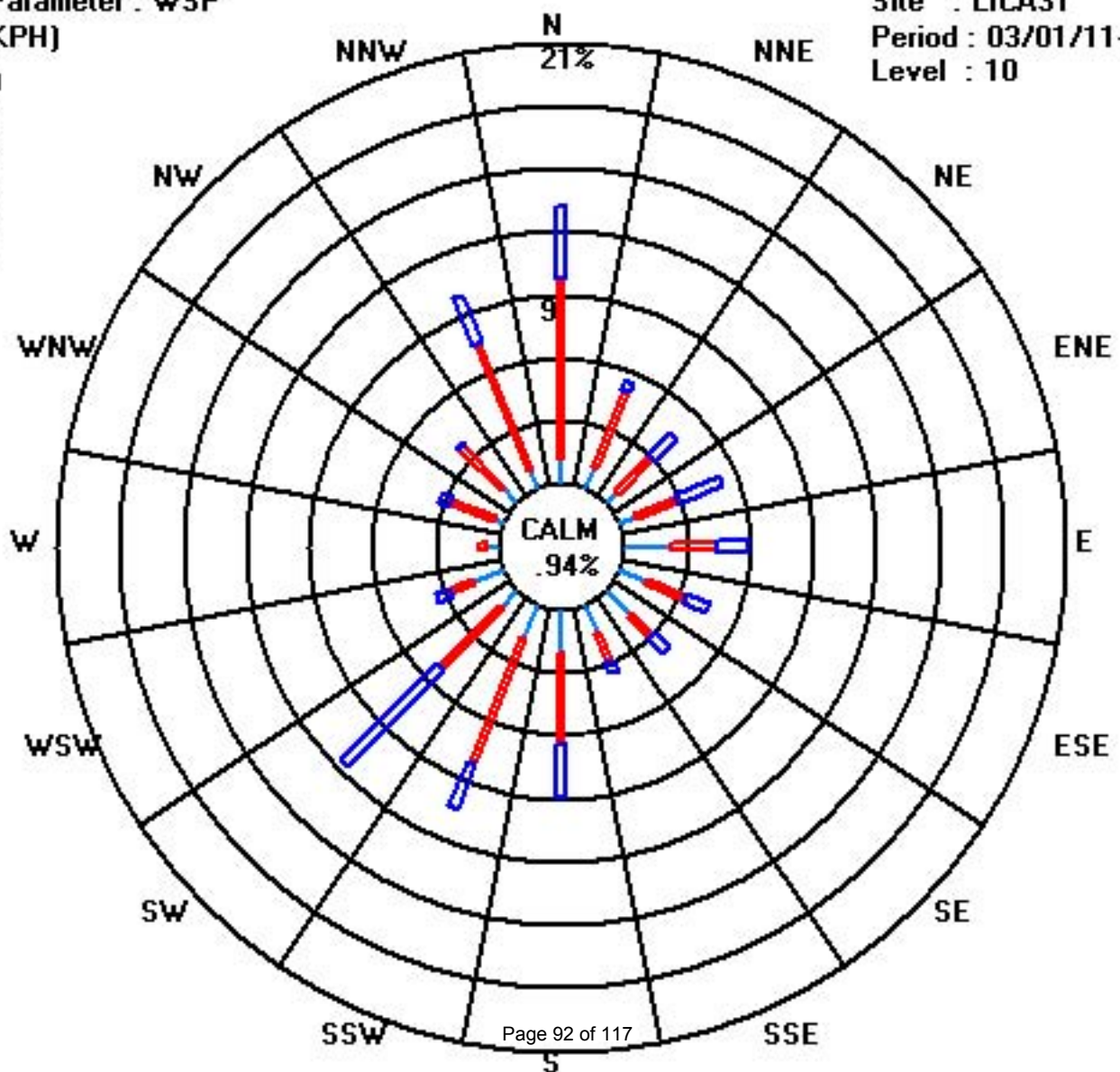
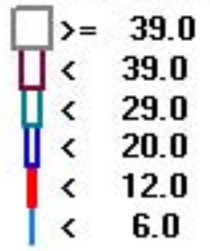
Calm : .94 %

Total # Operational Hours : 744

Class Limits (KPH)

Period : 03/01/11-03/31/11

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

MARCH 2011

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		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUADRANT	RDGS.	
DAY																												
1	284	283	289	293	290	298	306	286	290	274	287	243	236	245	291	312	307	312	324	327	333	338	335	331	301	WNW	24	
2	336	340	351	349	356	3	6	14	11	16	53	61	96	101	109	114	90	104	115	108	105	109	100	95	67	ENE	24	
3	29	29	0	300	246	243	270	292	232	214	255	222	222	200	182	197	183	187	223	204	187	184	189	185	210	SSW	24	
4	184	182	190	191	196	199	197	202	190	197	199	217	199	206	186	175	185	179	8	354	354	355	355	352	202	SSW	24	
5	357	62	34	29	56	98	74	45	64	57	64	93	75	82	164	85	137	4	7	347	344	247	252	276	39	NE	24	
6	285	268	188	175	164	125	115	94	82	94	14	2	343	316	339	8	347	346	2	7	14	17	21	16	16	NNE	24	
7	12	16	15	16	10	11	12	5	6	358	348	338	352	357	5	339	331	320	322	306	297	303	315	313	344	NNW	24	
8	323	332	330	332	330	331	339	342	345	353	347	337	338	350	348	359	351	355	353	3	4	0	2	349	345	NNW	24	
9	331	327	352	357	343	354	4	347	334	299	343	356	353	350	3	5	37	106	129	95	69	68	63	68	19	NNE	24	
10	55	62	61	56	162	160	118	119	132	122	113	113	108	107	101	100	101	110	139	154	167	139	102	125	108	ESE	24	
11	152	177	146	159	178	171	184	209	205	197	182	196	181	194	244	226	255	248	355	349	345	335	348	348	226	SW	24	
12	354	6	9	24	29	45	54	55	65	66	68	70	75	78	81	80	80	73	75	79	71	71	45	37	60	ENE	24	
13	34	28	112	87	3	355	345	315	246	350	322	230	354	336	220	359	9	37	103	139	134	92	122	330	16	NNE	24	
14	5	15	32	23	16	357	326	314	295	284	308	103	88	26	26	29	40	48	42	51	71	69	57	48	23	NNE	24	
15	57	56	273	268	206	166	144	48	79	97	99	97	92	330	339	334	297	317	319	322	346	352	352	26	45	NE	24	
16	31	20	17	26	19	6	339	333	350	343	334	334	342	319	311	302	294	297	296	214	174	151	53	63	341	NNW	24	
17	71	74	76	87	97	97	53	24	8	2	355	351	353	353	345	350	357	347	333	334	321	309	335	343	2	N	24	
18	348	335	340	334	330	333	340	352	313	355	323	217	338	348	352	12	8	4	0	353	354	351	351	350	346	NNW	24	
19	336	342	332	338	323	316	344	357	2	9	19	136	126	98	102	99	105	99	116	143	43	59	44	33	38	NE	24	
20	47	52	52	51	49	54	55	59	62	67	73	59	1	8	358	352	352	347	350	3	9	17	13	1	38	NE	24	
21	359	285	20	244	254	321	356	47	62	93	32	88	68	21	79	101	115	95	91	103	163	170	132	107	105	ESE	24	
22	149	152	207	68	39	345	267	108	96	119	172	123	141	237	215	213	236	240	245	221	217	209	217	228	216	SW	24	
23	238	225	234	235	228	240	239	216	230	206	204	207	197	180	148	167	192	165	172	187	195	191	196	202	204	SSW	24	
24	219	214	204	222	219	223	224	215	213	225	204	190	168	179	182	199	215	209	206	221	208	214	215	213	211	SSW	24	
25	212	210	218	218	209	170	116	97	123	124	129	173	182	183	175	175	178	196	210	207	189	194	202	202	178	S	24	
26	195	184	205	191	203	209	183	204	196	190	202	199	189	173	205	200	204	206	194	197	195	191	191	191	196	SSW	24	
27	190	188	192	175	176	172	189	199	194	154	174	190	157	174	167	192	187	189	199	192	181	199	197	203	186	SSW	24	
28	205	207	204	216	226	197	204	218	221	220	224	218	221	218	218	220	219	226	227	215	219	218	222	222	218	SW	24	
29	227	229	234	237	249	247	248	239	236	235	231	227	227	221	225	229	225	229	232	230	228	226	219	231	231	SW	24	
30	228	238	235	228	218	216	220	217	222	221	218	221	177	156	193	136	136	148	154	134	134	123	137	126	238	SW	24	
31	138	188	200	168	145	119	133	128	153	195	313	148	25	14	8	212	199	172	173	135	140	151	97	79	313	NW	24	
HOURLY AVG	359	342	352	357	356	357	356	357	350	358	355	356	354	357	358	359	357	355	355	354	354	355	355	352				

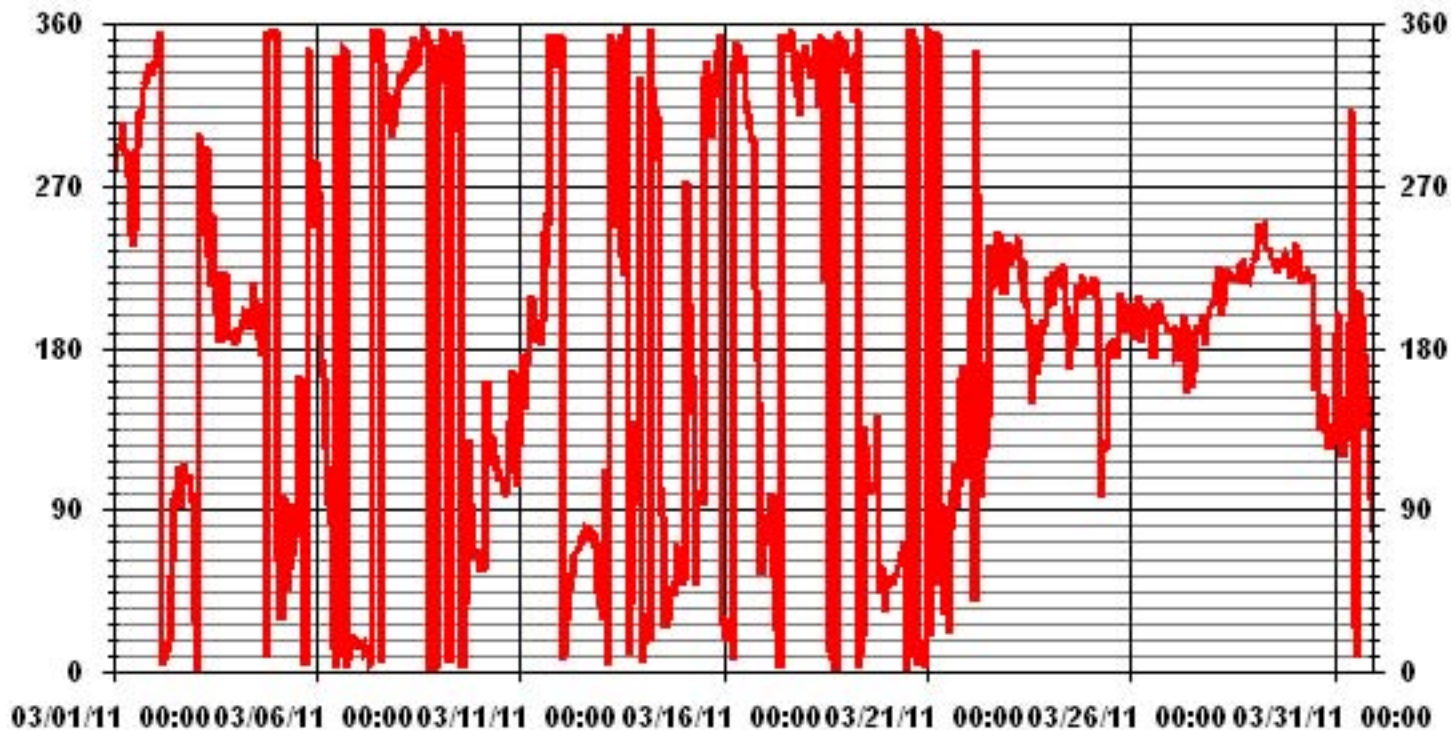
STATUS FLAG CODES

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 17, 2010
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION	108.91	AMD OPERATION UPTIME	100.0 %
		MONTHLY AVERAGE	272 DEG

01 Hour Averages



— LICA31 WDR DEG

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

MARCH 2011

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	15	11	10	10	9	9	10	12	13	32	36	43	43	34	30	14	11	10	7	6	4	6	3	3	
2	2	12	46	26	86	59	42	4	8	10	22	28	20	14	13	13	37	10	13	11	10	12	20	28	
3	34	28	27	52	35	37	24	15	27	12	45	38	41	21	21	19	17	28	32	9	20	25	15	36	
4	24	23	30	6	4	5	5	6	28	13	13	38	34	16	18	18	29	33	28	8	10	25	16	9	
5	55	20	32	4	9	12	16	36	11	10	14	27	48	43	47	26	33	35	42	2	24	5	12	32	
6	22	55	39	41	3	27	14	15	21	25	32	18	20	23	31	29	27	15	9	7	8	17	24	22	
7	39	25	37	29	14	9	12	23	33	55	55	27	35	31	34	45	46	16	8	6	6	7	5	5	
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9	12	10	20	20	31	40	63	47	41	22	21	23	37	27	13	12	35	10	11	13	9	15	9	9	
10	9	10	9	10	25	18	19	16	14	20	22	31	29	29	19	20	18	16	16	22	59	49	41	48	
11	55	64	61	46	42	34	27	16	39	38	31	24	29	49	38	55	30	31	22	9	8	5	5	5	
12	22	19	6	10	18	18	17	15	27	22	20	15	14	16	16	16	17	17	15	19	19	19	15	10	
13	10	21	15	20	29	34	7	17	54	21	33	11	30	20	11	24	13	24	9	16	10	42	89	71	
14	52	30	43	42	44	30	19	22	11	9	10	42	54	40	25	24	35	20	17	15	9	11	18	37	
15	28	28	14	14	35	5	20	6	13	11	10	19	15	31	33	25	25	33	35	59	38	33	40	35	
16	33	26	22	28	30	31	19	19	21	26	26	24	29	25	16	12	11	39	41	29	14	25	9	7	
17	9	9	10	10	15	12	16	47	13	13	15	41	32	21	23	18	24	22	16	15	14	12	12	12	
18	19	14	13	10	7	7	5	4	32	26	34	29	10	12	16	14	15	12	15	21	9	12	20	20	
19	12	6	10	12	21	23	22	22	18	20	39	24	22	15	14	13	16	10	10	10	51	8	6	7	
20	9	9	8	8	9	9	9	9	10	11	13	28	46	34	34	35	31	26	20	22	25	34	46	52	
21	77	85	93	63	50	67	64	68	66	81	86	70	89	68	70	55	73	71	68	60	34	32	43	56	
22	59	60	85	91	90	76	84	64	78	61	82	81	83	62	32	31	21	14	10	15	17	23	15	16	
23	13	16	16	16	20	21	27	25	21	46	39	22	26	48	50	40	34	41	32	35	26	20	16	17	
24	14	21	34	20	30	37	37	35	34	31	63	50	60	70	48	43	20	17	18	18	19	15	13	14	
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26	22	26	27	37	36	27	46	59	37	40	38	31	35	36	28	22	22	27	27	24	25	24	28	28	
27	29	31	30	42	40	53	48	51	41	46	42	41	43	34	36	32	27	23	25	24	27	21	24	22	
28	22	26	26	25	20	27	24	19	17	17	17	17	17	16	15	15	20	15	15	15	17	17	23	22	
29	16	16	26	30	15	14	11	13	17	25	15	16	16	19	16	17	15	19	15	12	12	18	22	37	
30	33	20	11	12	22	16	22	17	21	18	15	27	53	42	54	25	16	12	10	7	8	11	6	12	
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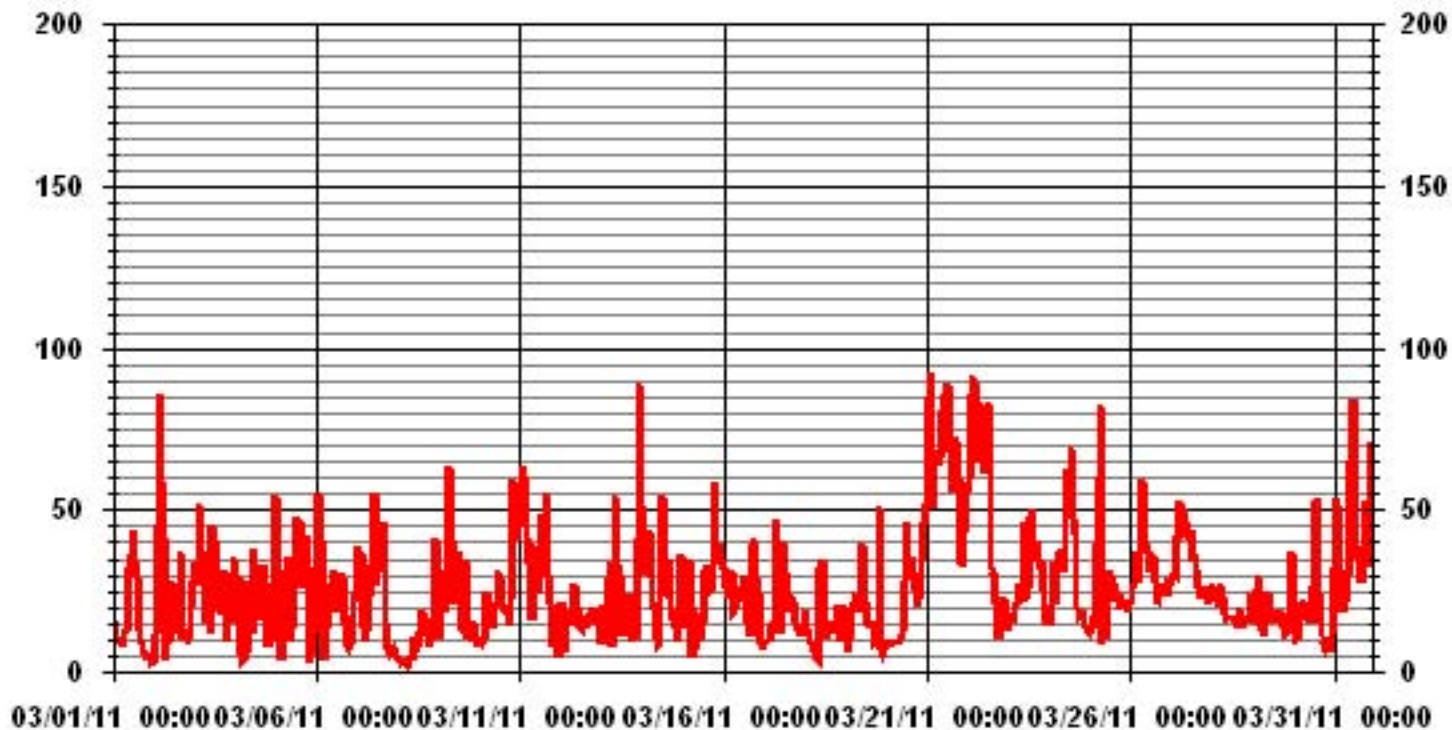
STATUS FLAG CODES

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: June 17, 2010

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS

01 Hour Averages



— LICA31 STDWDIR DEG

Calibration Reports

Sulphur Dioxide

SO₂ Calibration Report

Station Information

Calibration Date	March 17, 2011	Previous Calibration	February 24, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	10:55	End Time (MST)	14:46
Reason:	Monthly Calibration		
Barometric Pressure	927 mmHg	Station Temperature	25 Deg C
Cal Gas	49 ppm	Cal Gas Expiry date	February 4, 2013
DAS Output Voltage	0 - 1 Volts		

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	468	Method:	Fluorescent
Converter Make / Model:	-	S/N :	-		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 1000	ppb	
Sample Flow / Box Temp	526 ccm 33.3 Deg C	527 ccm 33.5 Deg C	
HVPS / Lamp Setting	529 2453	529 2452	
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 Deg C	
Offset / Slope	62.5 1.137	64.4 1.127	

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
4922	76.5	750	757	0.9907
4922	76.5	750	750	0.9999
4959	40.8	400	396	1.0097
4979	17.3	170	169	1.0039
4998	0	0	0	N/A
Sum of Least Squares				1.0021
New Correction Factor				0.9999

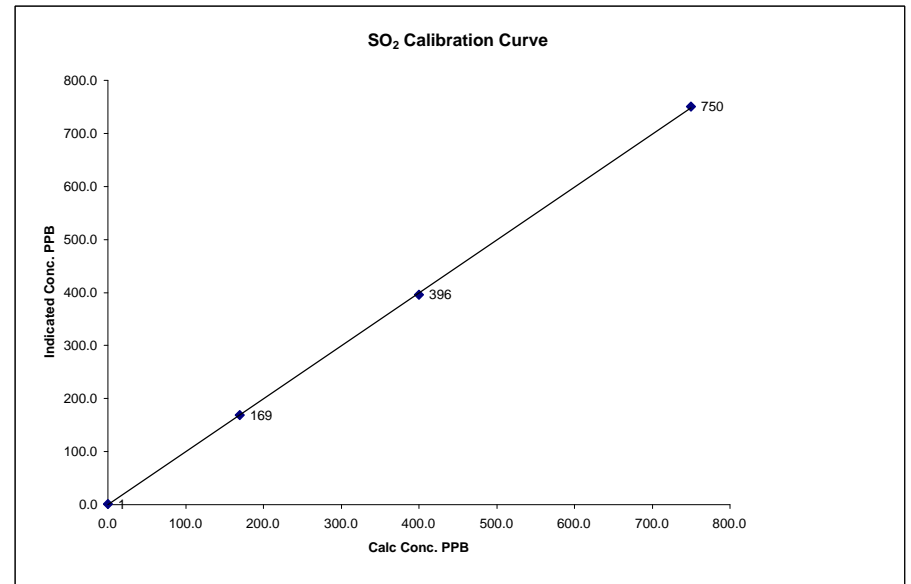
	Before Calibration	After Calibration
Auto Zero	1.8	0.2
Auto Span	373	363
Sample Lines Connected		YES
Percent Change from Previous Calibration		1.1%

Calibration Performed by: Ting Xu

SO₂ Calibration Curve

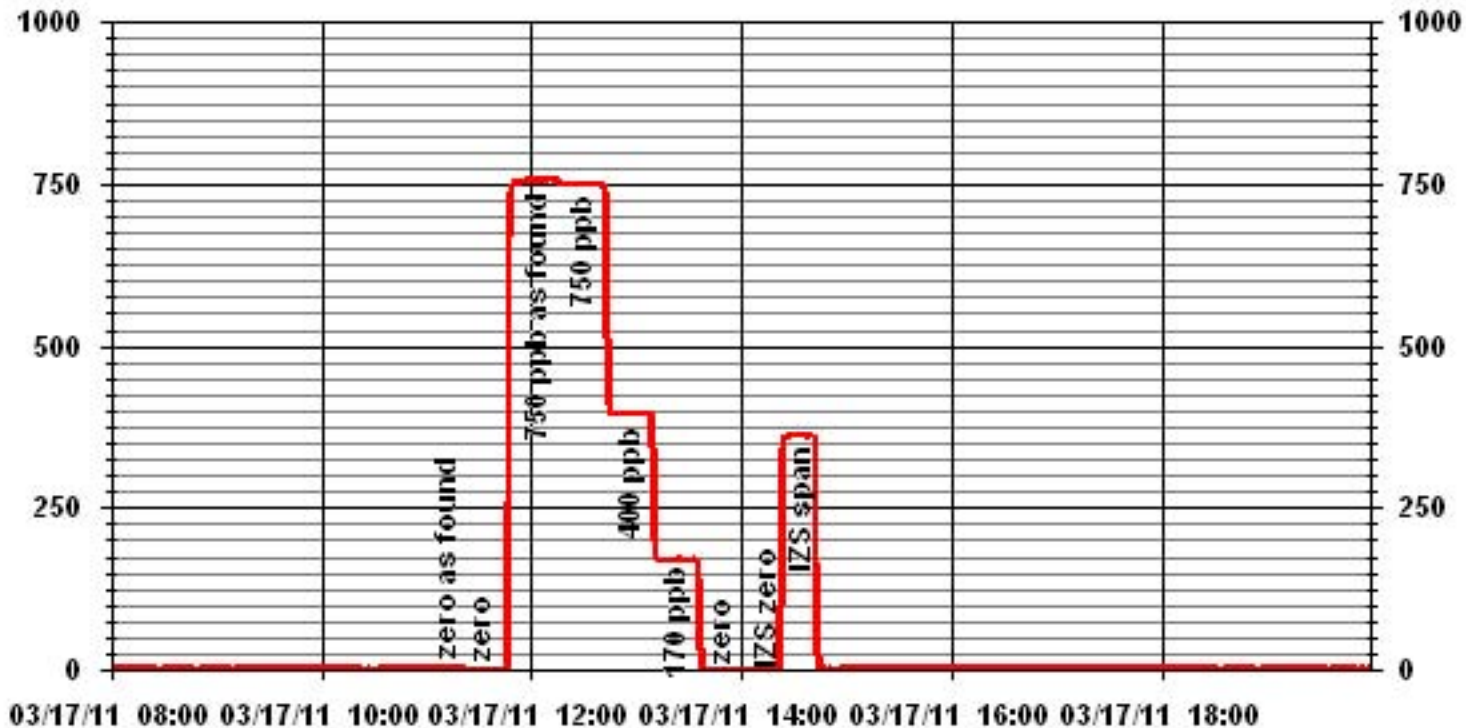
Calibration Date	March 17, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	10:55
End Time (MST)	14:46

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999960
0	1	n/a	Intercept	(± 3% F.S.)	-0.379486
170	169	1.0039			
400	396	1.0097			
750	750	0.9999			



Notes:

01 Minute Averages



Hydrogen Sulphide

H₂S Calibration Report

Station Information

Calibration Date	March 16, 2011	Previous Calibration	February 23, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST.LINA		
Start Time (MST)	9:25	End Time (MST)	12:55
Reason:	Monthly Calibration		
Barometric Pressure	914 mmHg	Station Temperature	24 Deg C
Cal Gas	10.2 ppm	Cal Gas Expiry date	02/02/2012
DAS Output Voltage	0 - 1 Volts		

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	510	Method:	Fluorescent
Converter Make / Model:	Internal	S/N :	N/A		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

		Before Calibration		After Calibration	
Concentration Range		0 - 100		ppb	
Sample Flow / Box Temp	541 ccm	34.9 Deg C	540 ccm	34.8 Deg C	
HVPS / Lamp Setting	518	2559	518	2560	
PMT / RxCell Temp	8.4 Deg C	50 Deg C	8.4 Deg C	50 Deg C	
Converter / IZS Temp	315 Deg C	45 Deg C	315.4 Deg C	45 Deg C	
Offset / Slope	56.8	1.006	59.8	1.026	

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
4959	39.2	80	80	1.0000
4979	19.6	40	40	0.9999
4985	11.2	23	23	0.9941
4994	0	0	0	N/A
Sum of Least Squares				0.9996
New Correction Factor				1.0000

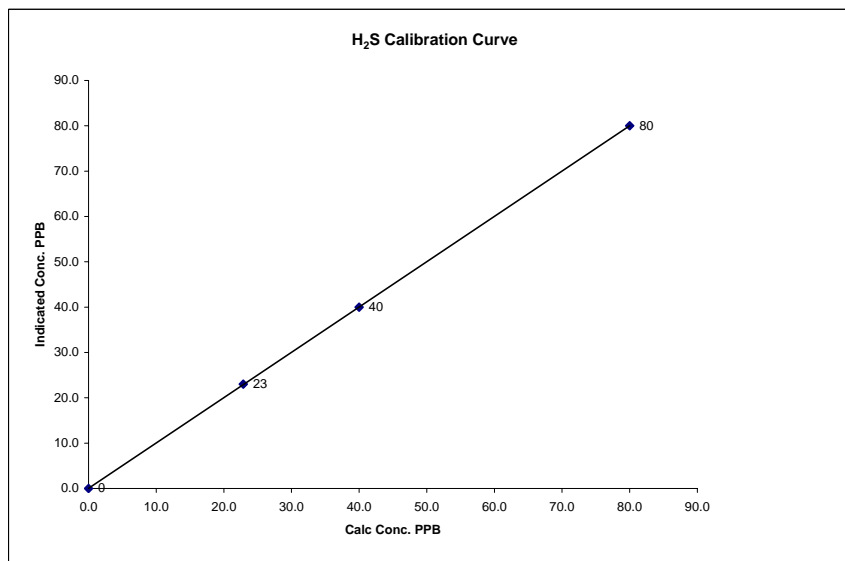
		Before Calibration	After Calibration
Auto Zero		1.7	0.4
Auto Span		47	46
Sample Lines Connected			YES
Percent Change from Previous Calibration			0.0%

Calibration Performed by: Ting Xu

H₂S Calibration Curve

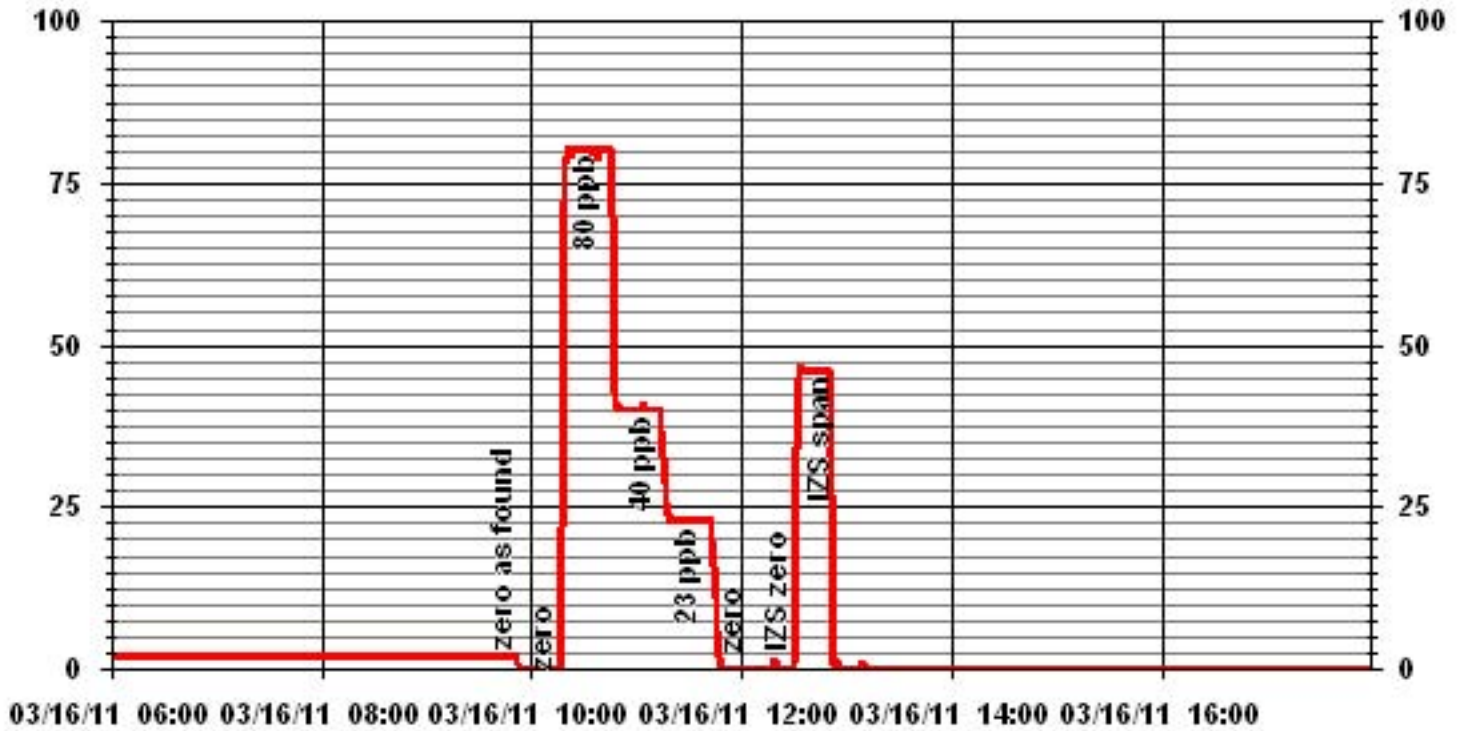
Calibration Date	March 16, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST.LINA
Start Time (MST)	9:25
End Time (MST)	12:55

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999996
0	0	n/a	Intercept	(± 3% F.S.)	0.052025
23	23	0.9941			
40	40	0.9999			
80	80	1.0000			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	March 15, 2011	Previous Calibration	February 23, 2011
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	ST. LINA		
:	(MST) 12:15	End Time	(MST) 15:37
Reason:	Monthly Calibration		
Barometric Pressure:	915 mmHg	Station Temperature:	25 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	207 Prop/ 602 Meth/1171.25 THC	ppm	Cal Gas Expiry Date: June 11, 2012
DAS make & Model:	ESC 8832	S/N :	AO717
Output Voltage Range:	0 - 10	VDC	

Analyzer Information

Make / Model	TECO 51C	S/N :	77021-384	Method	Flame Ionization
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Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 -50	ppm	0 - 50	ppm
Sample Pressure	6.9	psi	6.9	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
1998	0.0	0.0	0.0	N/A
1999	70.0	39.6	39.1	1.0135
1999	70.0	39.6	40.0	0.9907
1999	34.9	20.1	20.0	1.0050
1999	20.0	11.6	11.5	1.0087
1999	0	0.0	0.0	N/A
Correction Factor:				0.9907

Previous Calibration Correction Factor:	0.9882
Current Correction Factor Before Span Adjust:	1.0135
Percent Change:	-2.49%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	34.5	35.5
Sample Lines Connected		YES

Cylinder Pressures

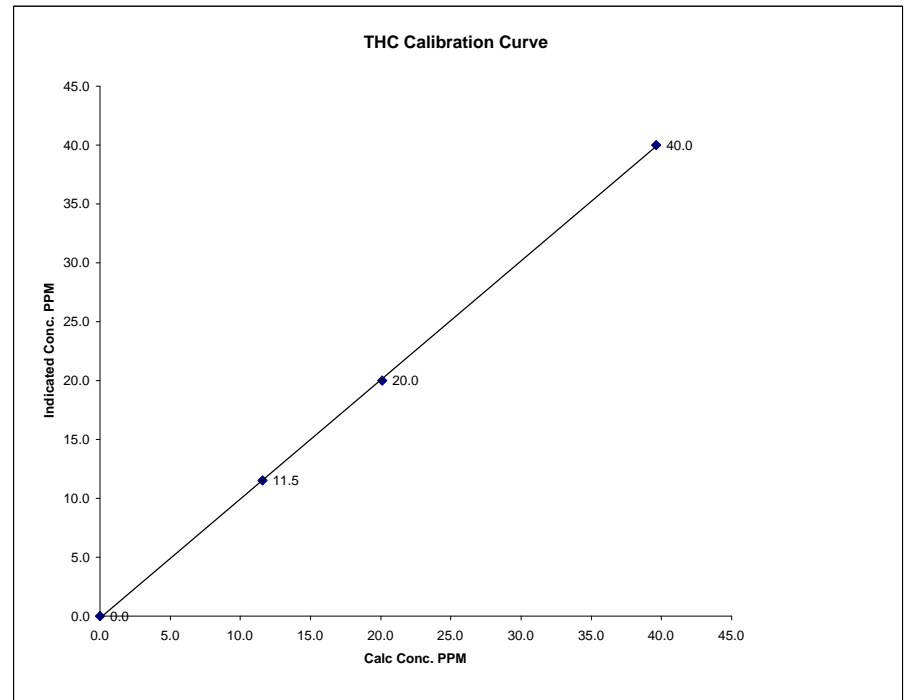
Span	700	psi	
Hydrogen	1700	psi	
Zero Air	34	psi	Unlimited API 701

Calibration Performed by: Ting Xu

THC Calibration Curve

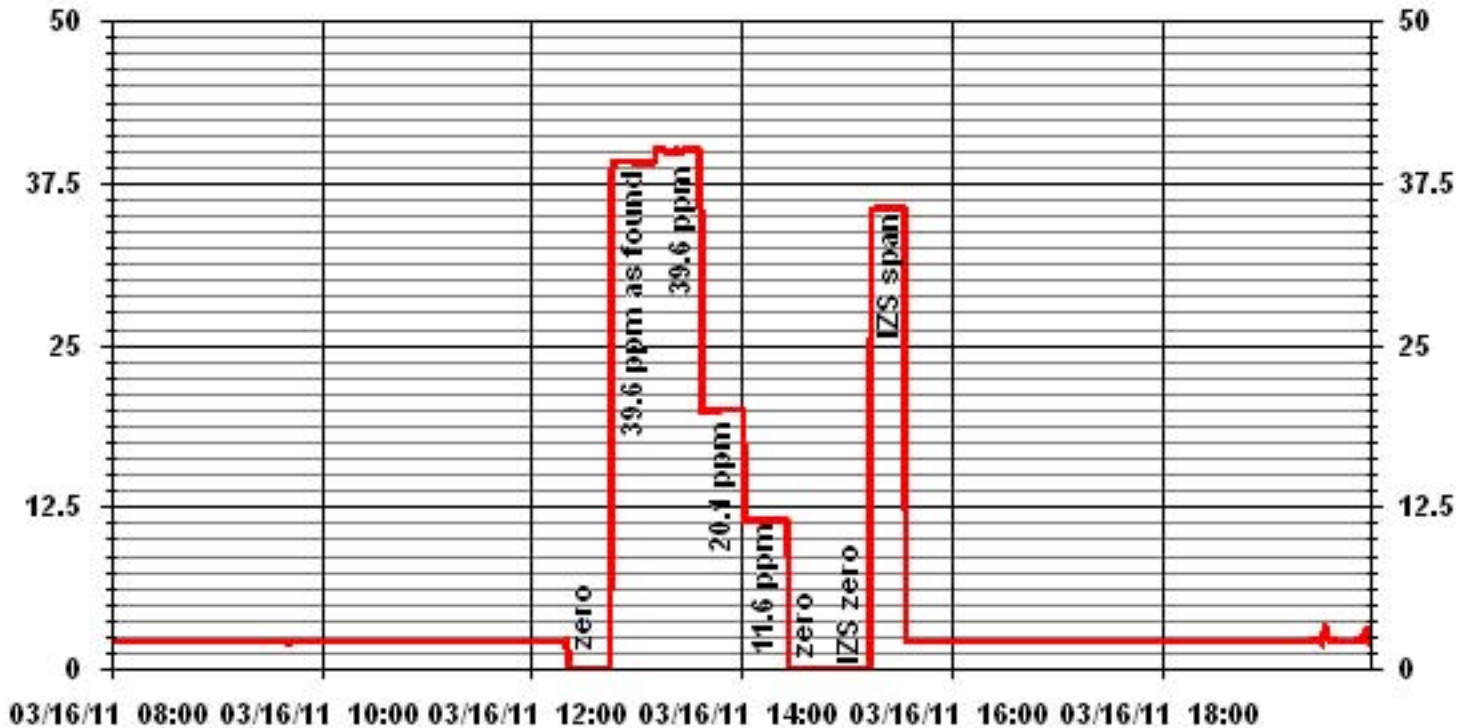
Calibration Date	March 15, 2011		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	12:15	End Time (MST)	15:37

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient (≥ 0.995)	Slope (0.85 to 1.15)	Intercept (± 3% F.S.)
0.0	0.0		0.999924	1.010196	-0.138473
11.6	11.5	1.0087			
20.1	20.0	1.0050			
39.6	40.0	0.9907			



Notes:

01 Minute Averages



— LICA31 THC PPM

Nitrogen Dioxide

NOx - NO- NO₂ Calibration Report

Station Information

Calibration Date	March 16, 2011	Previous Calibration	February 23, 2011
Company	LICA	Plant/Location	St. Lina
Start Time (MST)	9:25	End Time (MST)	15:41
Reason:	Monthly Calibration		Other
Barometric Pressure	914 mmHg	Station Temperature	24 Deg C
Cal Gas Concentration	NOx 51.7 ppm	NO 50.4 ppm	Cal Gas Expiry date 04-Feb-13
DAS Output Voltage	0 - 1	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	593	Method:	Chemiluminescent
Calibrator Make / Model:	EnviroNics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO 717		
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	472 ccm	314.2 Deg C		465 ccm	316.5 Deg C		
Ozone Flow / Vacuum	72 ccm	4.6 "Hg-A		72 ccm	4.6 "Hg-A		
HVPS / A ZERO	662 Volts	19.0 MV		662 Volts	19.2 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	31.4 Deg C	45.3 Deg C		32.7 Deg C	45 Deg C		
Offset	2.5 NOx	0.5 NO		2.5 NOx	0.5 NO		
Slope	1.030 NOx	1.019 NO		1.092 NOx	1.059 NO		
NO ₂ COEF / Conv Efficiency	NA	0.993		NA	0.993		

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO ₂	NOx	NO	NO ₂	NOx	NO
4995	0.0	----	0	0	0	0	0	0	----	----
4921	74.2	----	768	749	----	725	722	3	1.0593	1.0369
4921	74.2	----	768	749	----	767	748	19	1.0013	1.0009
4960	34.6	----	358	349	----	358	349	9	1.0004	1.0004
4978	16.8	----	174	170	----	175	171	4	0.9937	0.9913
4996	0.0	----	0	0	0	0	0	-1	----	----

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO ₂ Correction Factor	NO ₂ Conv Efficiency
			NOx	NO	NO ₂	NOx	NO	NO ₂		
4921	74.2	----	768	749	----	769	749	20	----	----
4921	74.2	550	768	----	507	770	262	509	0.9961	100.41%
4921	74.2	300	768	----	288	771	481	290	0.9931	100.75%
4921	74.2	100	768	----	126	770	643	127	0.9921	100.94%

Linearity	Sum of Least Squares	NOx= 1.001	NO= 1.000	NO ₂ = 0.995
OK? Yes	Correction Factors:	NOx= 1.0013	NO= 1.0009	NO ₂ = 0.9961
Average Converter Efficiency= 100.70%				

Before Calibration				After Calibration			
Auto Zero	-0.5 NOx	-0.6 NO ₂		-0.5 NOx	-1.5 NO ₂		
Auto Span	724 NOx	708 NO ₂		667 NOx	651 NO ₂		
Sample Lines Connected				YES			
Percent Change from Previous Calibration		NOx -5.6%	NO -3.6%	NO ₂ 0.0%			

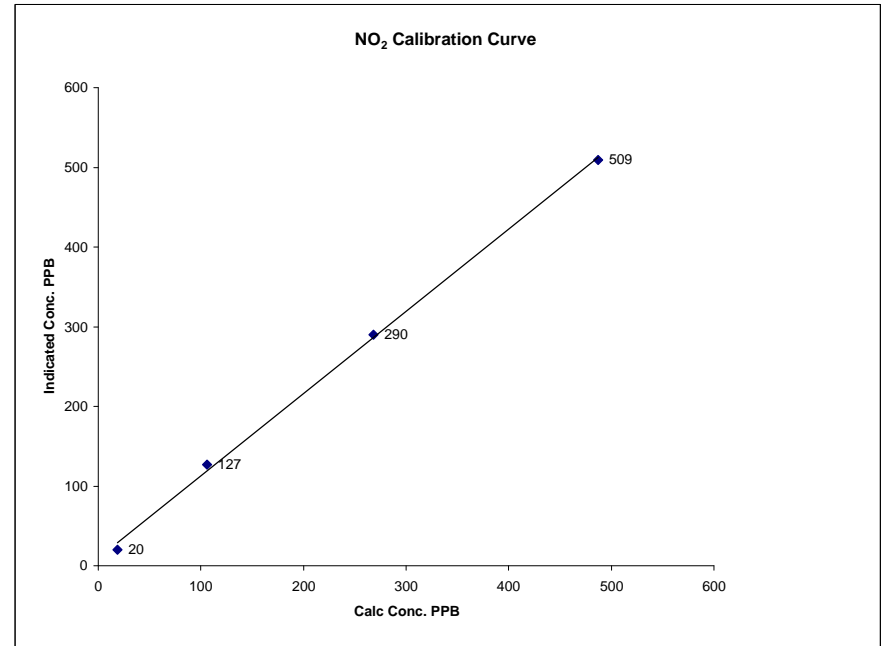
Notes Additional GPT point done for ozone calibration. O3 set point 450, NO=347, NO₂=425
When did additional GPT point, the cal gas pressure warning appeared, cleared the warning and redid the point.

Calibration Performed by: Ting Xu

NO₂ Calibration Curve

Calibration Date	March 16, 2011	LICA	
Company		St. Lina	
Plant / Location			
Start Time (MST)	9:25	End Time (MST)	15:41

Calculated Conc.	Indicated Response	Correction Factor	Correlation Coefficient	(≥ 0.995)	
ppb	ppb		Slope	(0.85 to 1.15)	0.998728
19	20	N/A	Intercept	(± 3% F.S.)	1.034137
106	127	0.8346			8.98996
268	290	0.9241			
487	509	0.9568			

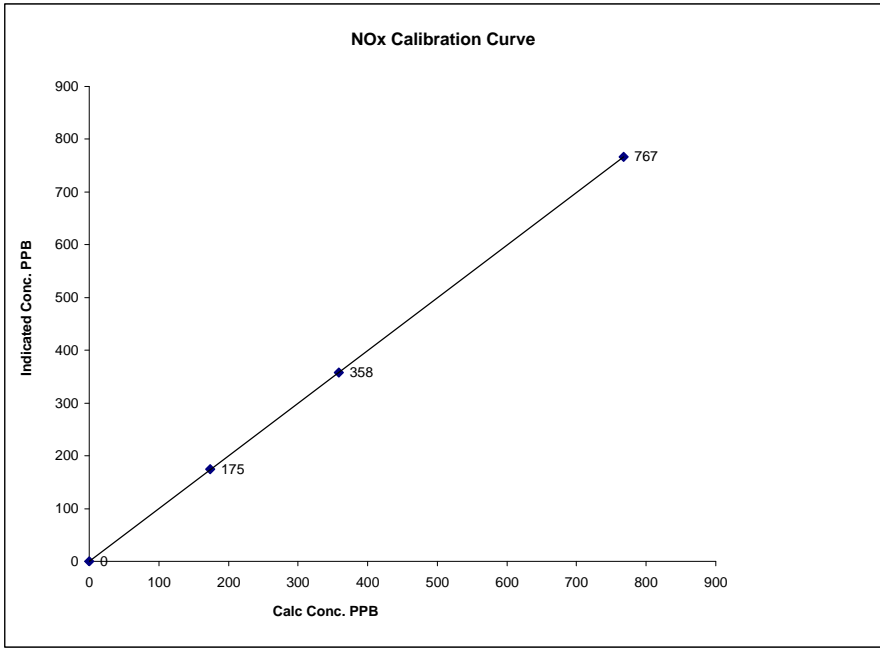


Notes:

NOx Calibration Curve

Calibration Date March 16, 2011
 Company LICA
 Plant / Location St. Lina
 Start Time (MST) 9:25 End Time (MST) 15:41

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999997
0	0	N/A	Slope (0.85 to 1.15)	0.998159
174	175	0.9937	Intercept (± 3% F.S.)	0.59622
358	358	1.0004		
768	767	1.0013		

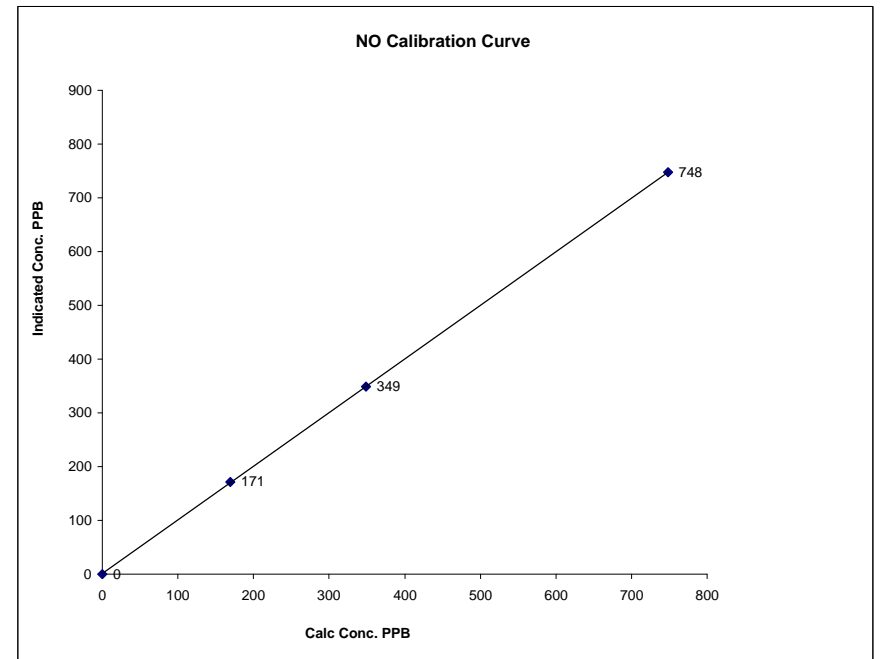


Notes:

NO Calibration Curve

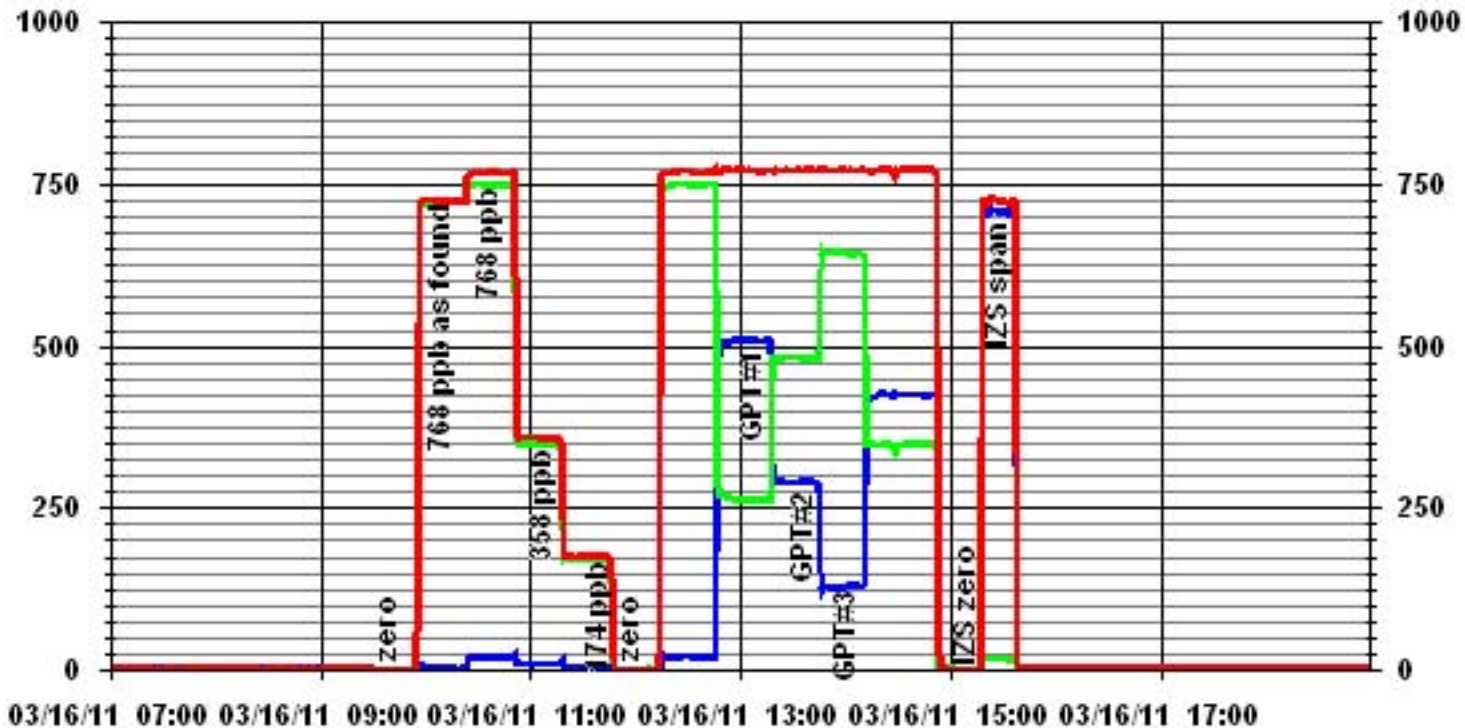
Calibration Date March 16, 2011
 Company LICA
 Plant / Location St. Lina
 Start Time (MST) 9:25 End Time (MST) 15:41

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999994
0	0	N/A	Slope (0.85 to 1.15)	0.996716
170	171	0.9913	Intercept (± 3% F.S.)	0.3003
349	349	1.0004		
749	748	1.0009		



Notes:

01 Minute Averages



Ozone

O₃ Calibration Report

Station Information

Calibration Date	March 17, 2011	Previous Calibration	February 24, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	10:55	End Time (MST)	14:46
Reason:	Monthly Calibration		
Barometric Pressure	927 mm Hg	Station Temperature	25 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			
Cell A Flow / Cell B Flow	717 ccm	735 ccm	722 ccm	740 ccm
Pressure	695 mmHg		702 mmHg	
Bench Temp	55.5 Deg C		55.6 Deg C	
O3 Lamp / Box Temp	80 Deg C	32.4 Deg C	80 Deg C	32 Deg C
Offset / Slope	-0.8	0.996	0.2	1.002

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	1	N/A
4995	450	402	399	1.0075
4995	450	402	403	0.9975
4995	300	268	270	0.9926
4995	120	106	108	0.9815
4995	0	0	0	N/A
Sum of Least Squares				N/A
New Correction Factor				0.9975

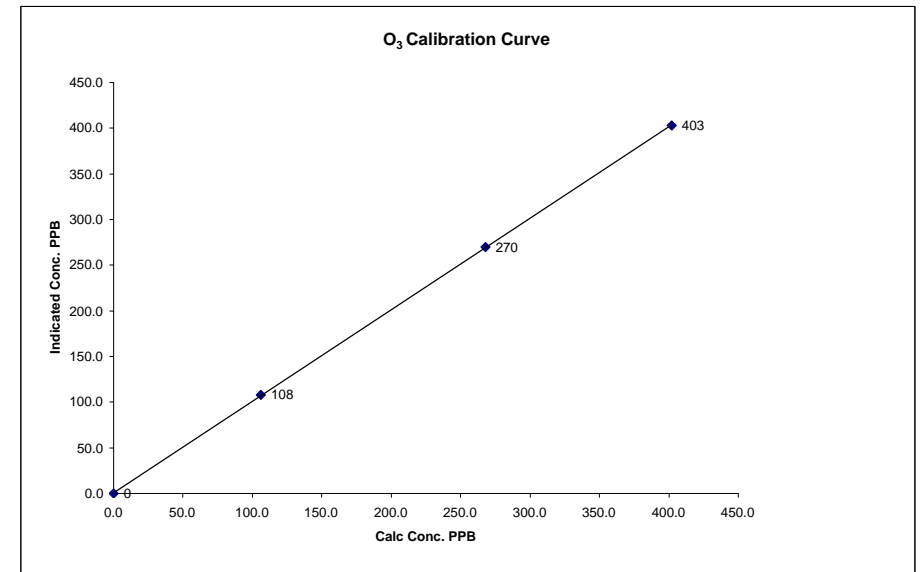
	Before Calibration	After Calibration
Auto Zero	1.6	0.6
Auto Span	363	360
Sample Lines Connected		YES
Percent Change from Previous Calibration		-1.2%

Calibration Performed by: Ting Xu

O₃ Calibration Curve

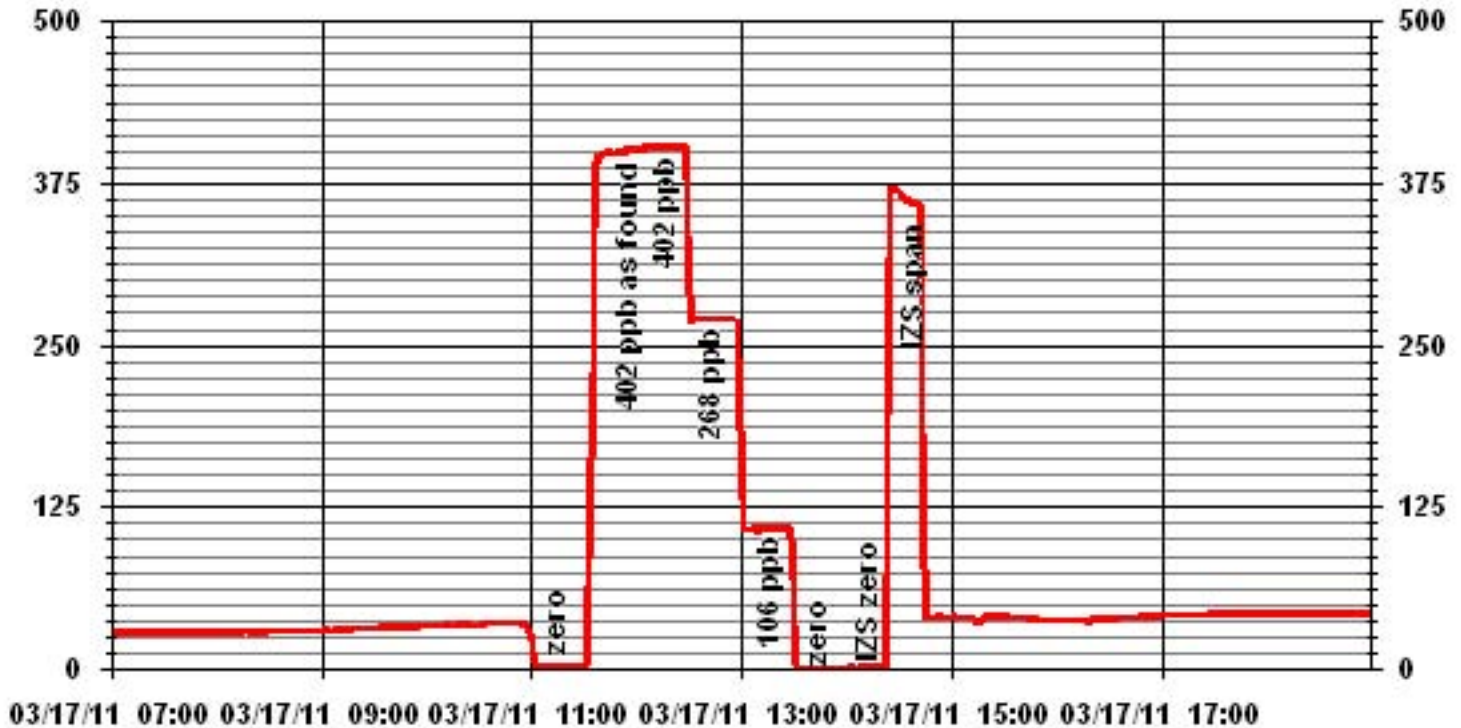
Calibration Date	March 17, 2011
Company	Lakeland Industry & Community Association
Plant / Location	St. Lina
Start Time (MST)	10:55
End Time (MST)	14:46

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope (≥ 0.995)	Intercept (± 3% F.S.)	
0	0	n/a			0.999975
106	108	0.9815			1.001912
268	270	0.9926			
402	403	0.9975			0.878984



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOMÒ 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	March 23, 2011	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

	<u>Sampler</u>		<u>Set-up and current Sampler readings</u>
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	1405A208301003	Filter Load (%)	33.1%
Firmware Ver.	1.52	K _o Factor	13125.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-2.8
		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

Audit

Status			
Noise <0.10ug	0.003	Warnings	None
Pump Vacuum <0.4atm	0.30	Pump Gauge (inHg)	-20
Temperature/Pressure			
Measured Temp (± 2 °C)	-1.9	D °C	-0.9
Measured Press (± 0.01atm)	0.921	DATM	0.006
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	2.83%
Measured Main Flow (l/min)	2.98	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	NA
Measured Bypass Flow (l/min)	13.45	Flow Adjusted to Measured?	NA
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	NA	Flow Control = Active	
Aux (< 0.6 l/min)	NA	Report Conditions = Standard (25.0 C and 1atm)	
K_o Factor			
Measured	NA		
K _o Difference (± 2.5%)	NA		

Start Time: 12:05 **Finish Time:** 14:33

Sample Inlet Cleaned: Yes **New Filters Installed:** Yes
New Filter Loading %: 21.4%

Comments: Bypass flow calculated by measuring the total flow.

Auditor/s: Ting Xu